

PROJECT ID 2155-03-71
WITH: N/A
COUNTY MILWAUKEE

SEL NOV 2014

ORDER OF SHEETS

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

TOTAL: 64



04

DESIGN DESIGNATION

A.D.T. (CURRENT)	23,000
A.D.T. (2034)	27,600
D.H.V.	2,400
D.	53%
DESIGN SPEED	35 M.P.H.
ESALS	N/A

CONVENTIONAL SIGNS

COUNTY LINE	---
TOWNSHIP OR RANGE LINE	---
SECTION LINE	---
CORPORATE OR CITY LIMITS	---
PROPERTY LINE	P.L.
STANDARD BENCH MARK	●
EXISTING RIGHT OF WAY LINE	R/W
PROPOSED SEWER LATERAL	---
BASE OF SURVEY LINE	---
CONCRETE WALK/DWY. REMOVAL	XXXXXX
LIMITS OF CONCRETE PAVEMENT REMOVAL	XXXXXX
CATCH BASIN OR INLET	□
EXISTING	□
PROPOSED	□

COMBUSTIBLE FLUIDS UNDER PRESSURE	⚡
RAILROADS	+
FENCE	---
FIRE & POLICE CALL BOX	⬮
LIGHT POLE	●
POWER POLE	⬮
TELEPHONE OR TELEGRAPH POLE	⬮
TRAFFIC SIGNAL	⬮
TRAFFIC SIGNAL CONTROL BOX	⬮
HYDRANT	⬮
GAS OR WATER GATE VALVE	⬮
MANHOLES - SEWER	○
UTILITY (TYPE)	□
TREES - EXISTING	●
TO BE REMOVED	✕



CAUTION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

WEST FOND DU LAC AVENUE (S.T.H. 145)

INTERSECTION OF NORTH SHERMAN BOULEVARD

S.T.H. 145

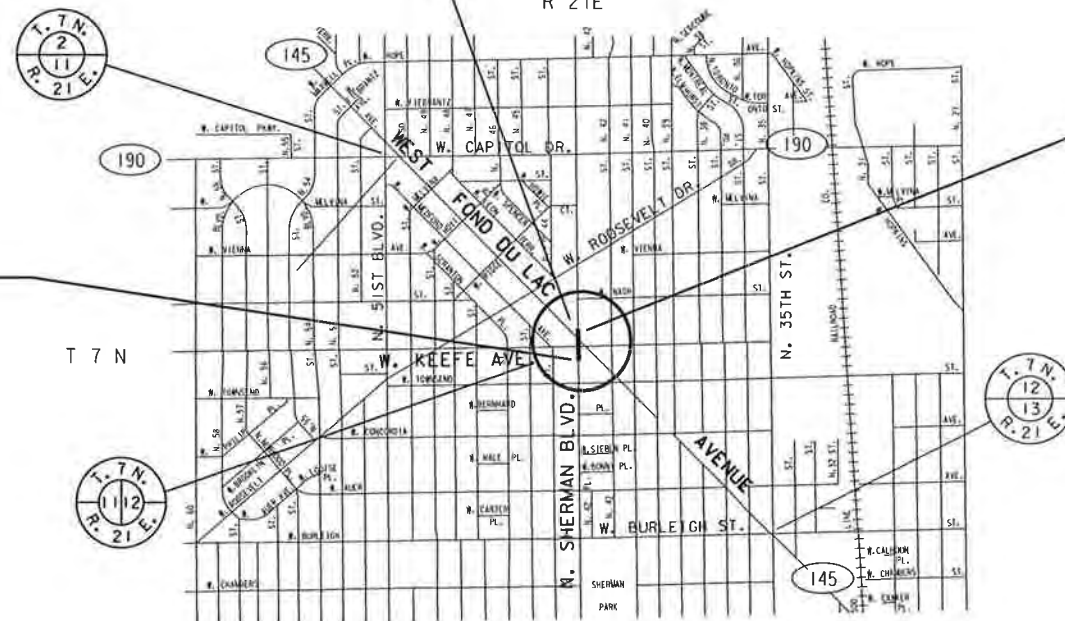
MILWAUKEE COUNTY

STATE PROJECT NUMBER

2155-03-71

AREA FOR MONOTUBE MAST ARM INSTALLATIONS

R 21E



END PROJECT
STA. 04+53.20, T/L

BEGIN PROJECT

STA. 01+17.90, T/L

Y. = 401,350.10

X. = 2,543,039.10

T 7 N

LAYOUT

SCALE 1/2 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.064 MI. (URBAN)

THE COORDINATES ON THIS PLAN ARE BASED ON THE WISCONSIN STATE PLANE COORDINATE SYSTEM, MILWAUKEE COUNTY, NAD 27 SOUTH ZONE.

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

2155-03-71

FEDERAL PROJECT

PROJECT

WISC 2014384

CONTRACT

1

Accepted For
City of Milwaukee

7/29/14
(Date) Commissioner of Public Works

Original Plans Prepared By



7/29/14
(Date) City Engineer

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor City of Milwaukee

Designer City of Milwaukee

Management Consultant Daar Engineering, Inc.

C.O. Examiner

APPROVED FOR THE DEPARTMENT

DATE: 7/31/14
(Management Consultant Signature)

GENERAL NOTES

1. ALL DISTURBED AREAS, NOT SURFACED, ARE TO BE COVERED WITH 4"OF TOPSOIL, SODDED AND FERTILIZED UNLESS OTHERWISE DIRECTED BY THE ENGINEER. TOPSOIL IS NOT TO REMAIN EXPOSED FOR MORE THAN FIVE (5) CALENDAR DAYS.
2. NO TREES OR SHRUBS SHALL BE REMOVED UNLESS DESIGNATED FOR REMOVAL BY THE ENGINEER.
3. THE LOCATION OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLAN IS APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA WHICH ARE NOT SHOWN.
4. REPLACE ALL CONCRETE CURB AND GUTTER INDICATED FOR REMOVAL AND REPLACEMENT IN EXISTING LOCATION, UNLESS OTHERWISE NOTED ON PLANS
5. INLET PROTECTION IS TO BE PLACED BETWEEN THE FRAME AND GRATE OF CATCH BASINS/ INLETS TO PREVENT SOIL FROM ENTERING THE SEWERS.
6. THE EROSION CONTROL ITEMS SPECIFIED AT EACH INLET ARE SUGGESTED LOCATIONS, THE ENGINEER MAY MODIFY LOCATIONS AS NEEDED. ALL EROSION CONTROL ITEMS ARE TO BE MAINTAINED UNTIL SUCH A TIME THAT THE ENGINEER DETERMINES THE MEASURE IS NO LONGER NEEDED.

ORDER OF SECTION 2 SHEETS
GENERAL NOTES
UTILITY CONTACTS
TYPICAL SECTIONS
CONSTRUCTION DETAILS
DRAINAGE DETAILS
PLAN DETAIL
CONCRETE SIDEWALK REMOVAL
UTILITIES
TRAFFIC SIGNAL CONDUIT DETAILS
TRAFFIC SIGNAL CONDUIT PLANS
PAVEMENT MARKING
TRAFFIC CONTROL PLANS

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
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
V.T. OR VT	- VARIABLE THICKNESS
WEP	- WISCONSIN ELECTRIC POWER

UTILITY CONTACTS

CITY OF MILWAUKEE, SEWER AND WATER

MUSA ABU-KHADER
841 N. BROADWAY,
MILWAUKEE, WI 53202
PHONE: 414-286-2432

CITY OF MILWAUKEE - FORESTRY

JAMES KRINGER
841 N. BROADWAY
MILWAUKEE, WI 53202
PHONE: 414-708-2428

CITY OF MILWAUKEE - STREET LIGHTING

DENIS KOZELEK
841 N. BROADWAY
MILWAUKEE, WI 53202
PHONE: 414-286-3252

CITY OF MILWAUKEE - UNDERGROUND CONDUIT (TES)

KAREN ROGNEY
841 N. BROADWAY
MILWAUKEE, WI 53202
PHONE: 414-286-3243

CITY OF MILWAUKEE - TRAFFIC SIGNALS & SIGNS

JOSEPH BLAKEMAN
841 N. BROADWAY
MILWAUKEE, WI 53202
PHONE: 414-286-8070

WE ENERGIES - GAS & ELECTRIC

LA TROY BRUMFIELD
333 W. EVERETT ST.
MILWAUKEE, WI 53203
PHONE: 414-221-5617

AT & T (TCG) WISCONSIN

JAY BULANEK
7721 W. FOND DU LAC AVE.
MILWAUKEE, WI 53218
PHONE: 414 535-7404

OTHER CONTACTS

MILWAUKEE COUNTY TRANSIT SYSTEM

DAVID ZIAREK
1942 N. 17TH ST.
MILWAUKEE, WI 53205
PHONE: 414-343-1764

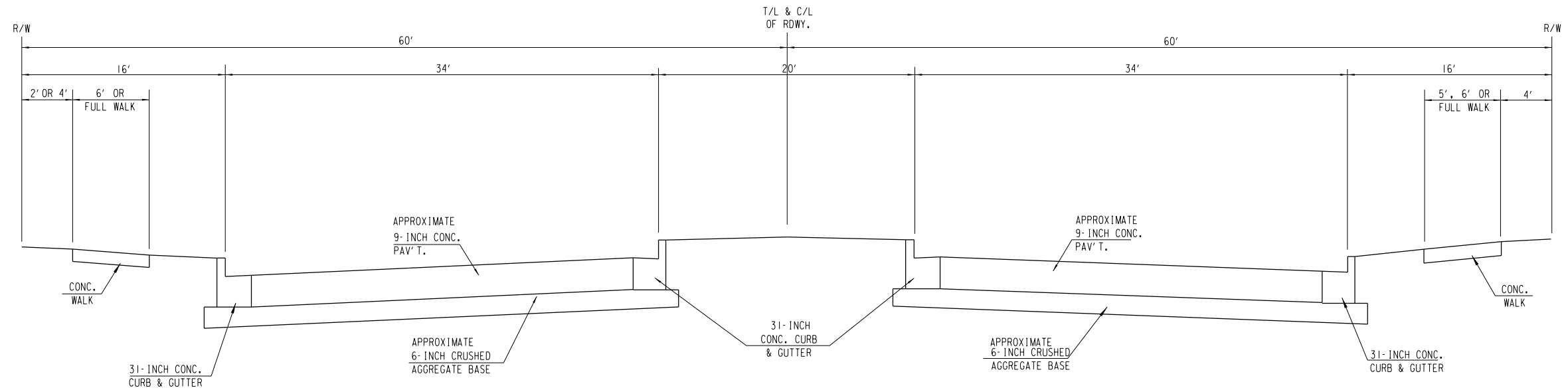
WISCONSIN DEPT. OF NATURAL RESOURCES

KRISTINA BETZOLD
2300 N. DR. MARTIN LUTHER KING JR. DR.
MILWAUKEE, WI 53212-0436
PHONE: 414-263-8517

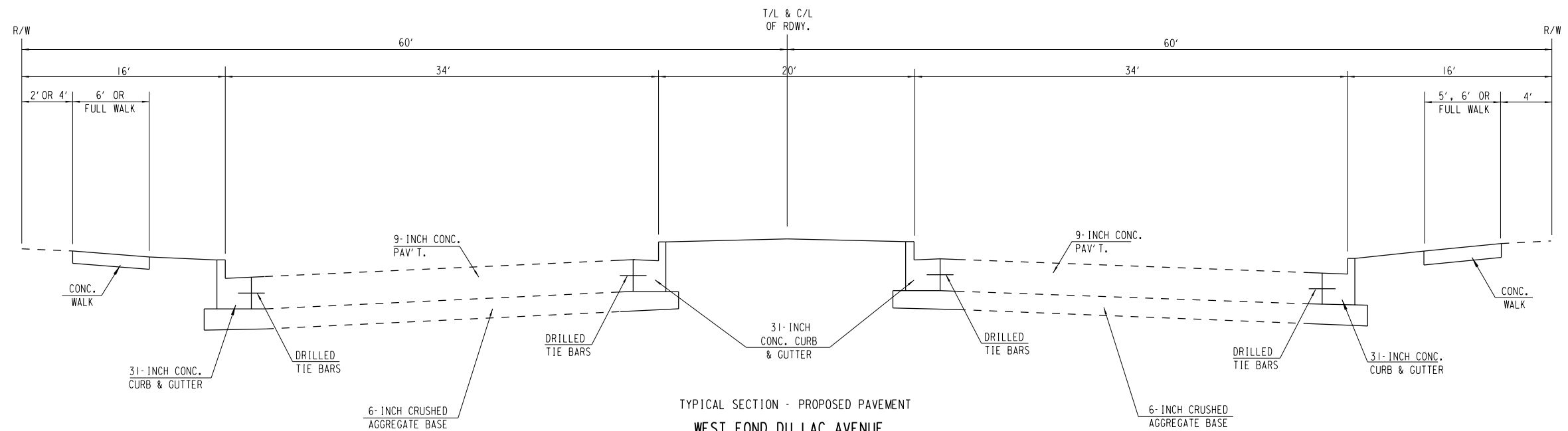
DESIGN CONSULTANT

SAMUEL MEDHIN
841 N. BROADWAY, RM 902
MILWAUKEE, WI 53202
PHONE: 414-286-0474

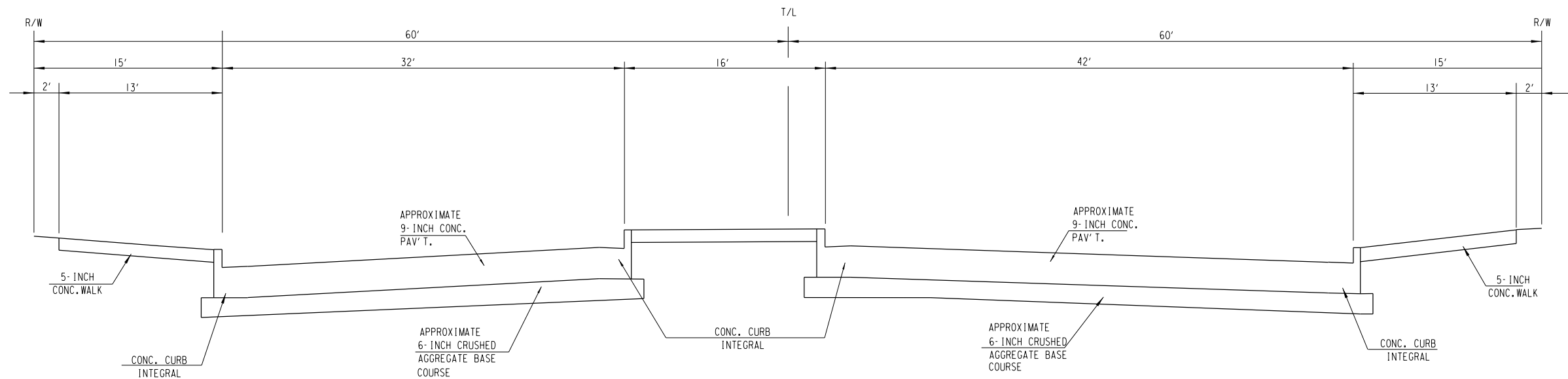




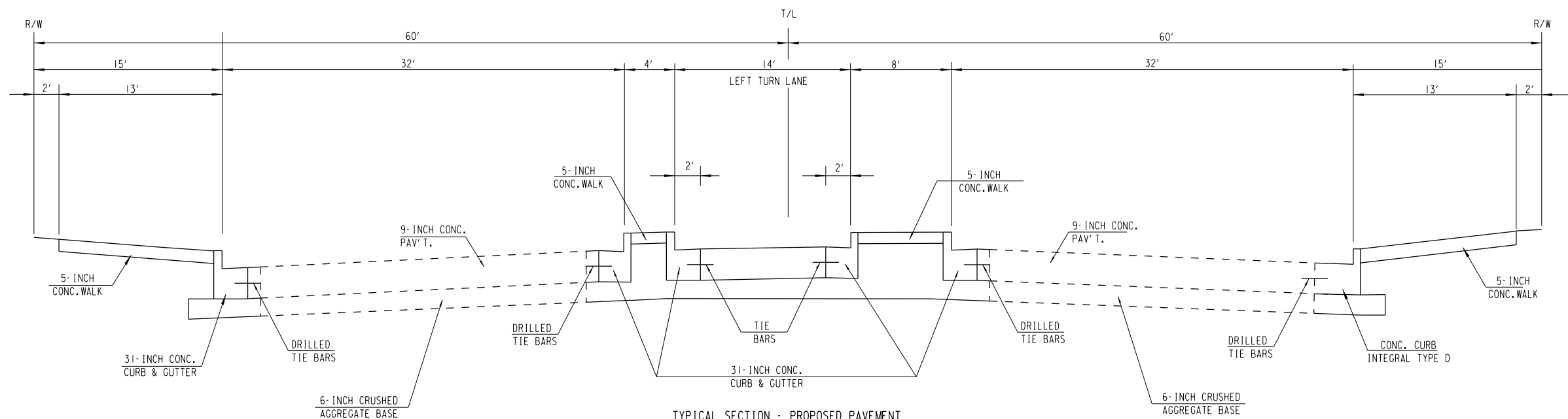
TYPICAL SECTION - EXISTING PAVEMENT
WEST FOND DU LAC AVENUE
AT NORTH SHERMAN BOULEVARD



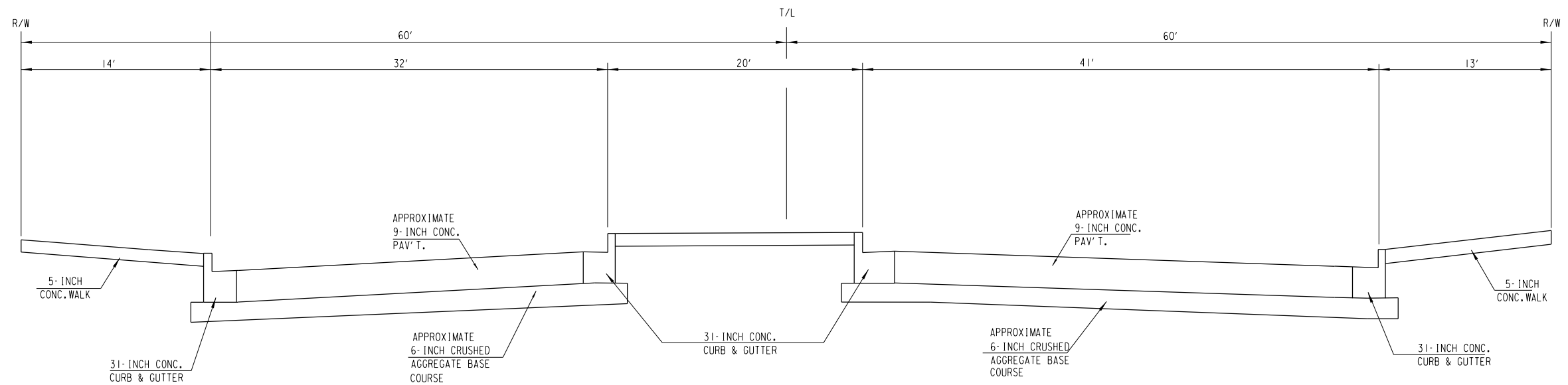
TYPICAL SECTION - PROPOSED PAVEMENT
WEST FOND DU LAC AVENUE
AT NORTH SHERMAN BOULEVARD



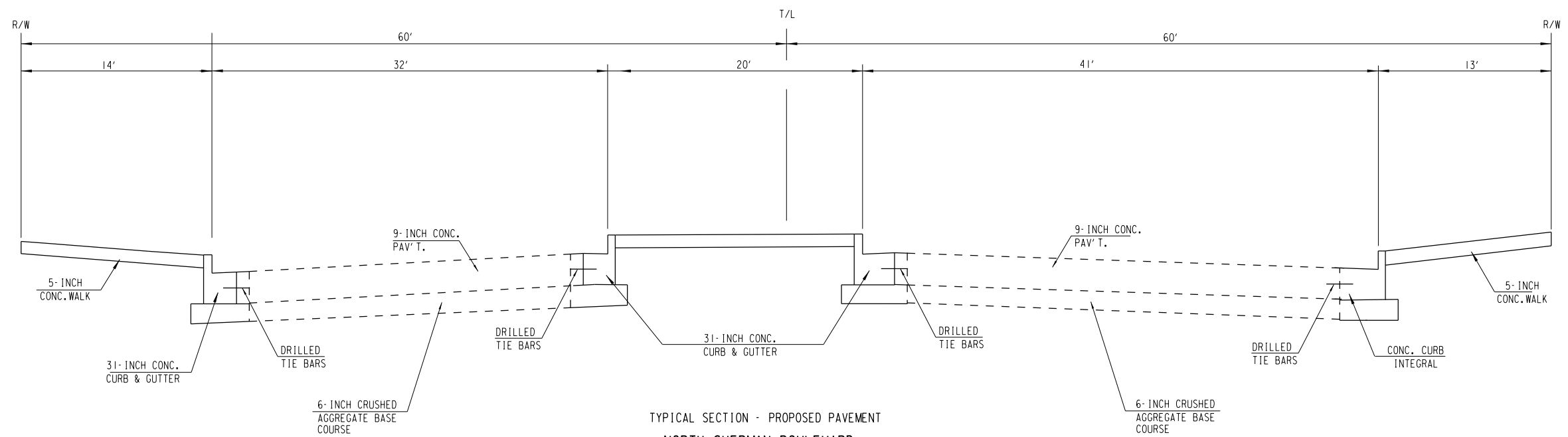
TYPICAL SECTION - EXISTING PAVEMENT
 NORTH SHERMAN BOULEVARD
 AT NORTH SIDE OF WEST FOND DU LAC AVENUE
 LOOKING SOUTH



TYPICAL SECTION - PROPOSED PAVEMENT
 NORTH SHERMAN BOULEVARD
 AT NORTH SIDE OF WEST FOND DU LAC AVENUE
 LOOKING SOUTH



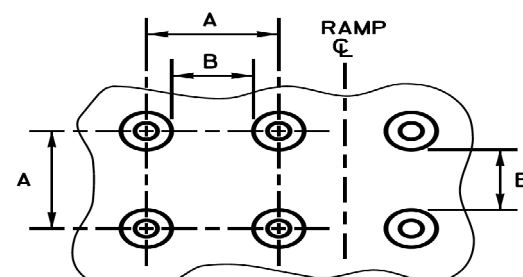
TYPICAL SECTION - EXISTING PAVEMENT
NORTH SHERMAN BOULEVARD
AT SOUTH SIDE OF WEST FOND DU LAC AVENUE
LOOKING NORTH



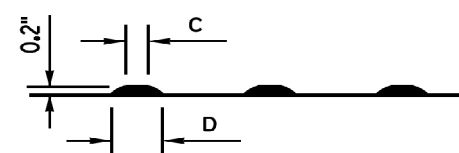
TYPICAL SECTION - PROPOSED PAVEMENT
NORTH SHERMAN BOULEVARD
AT SOUTH SIDE OF WEST FOND DU LAC AVENUE
LOOKING NORTH

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

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

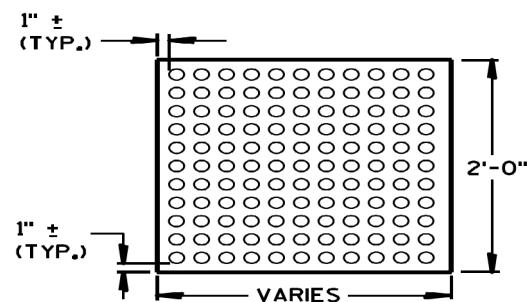


PLAN VIEW



ELEVATION VIEW

**TRUNCATED DOMES
DETECTABLE WARNING
PATTERN DETAIL**

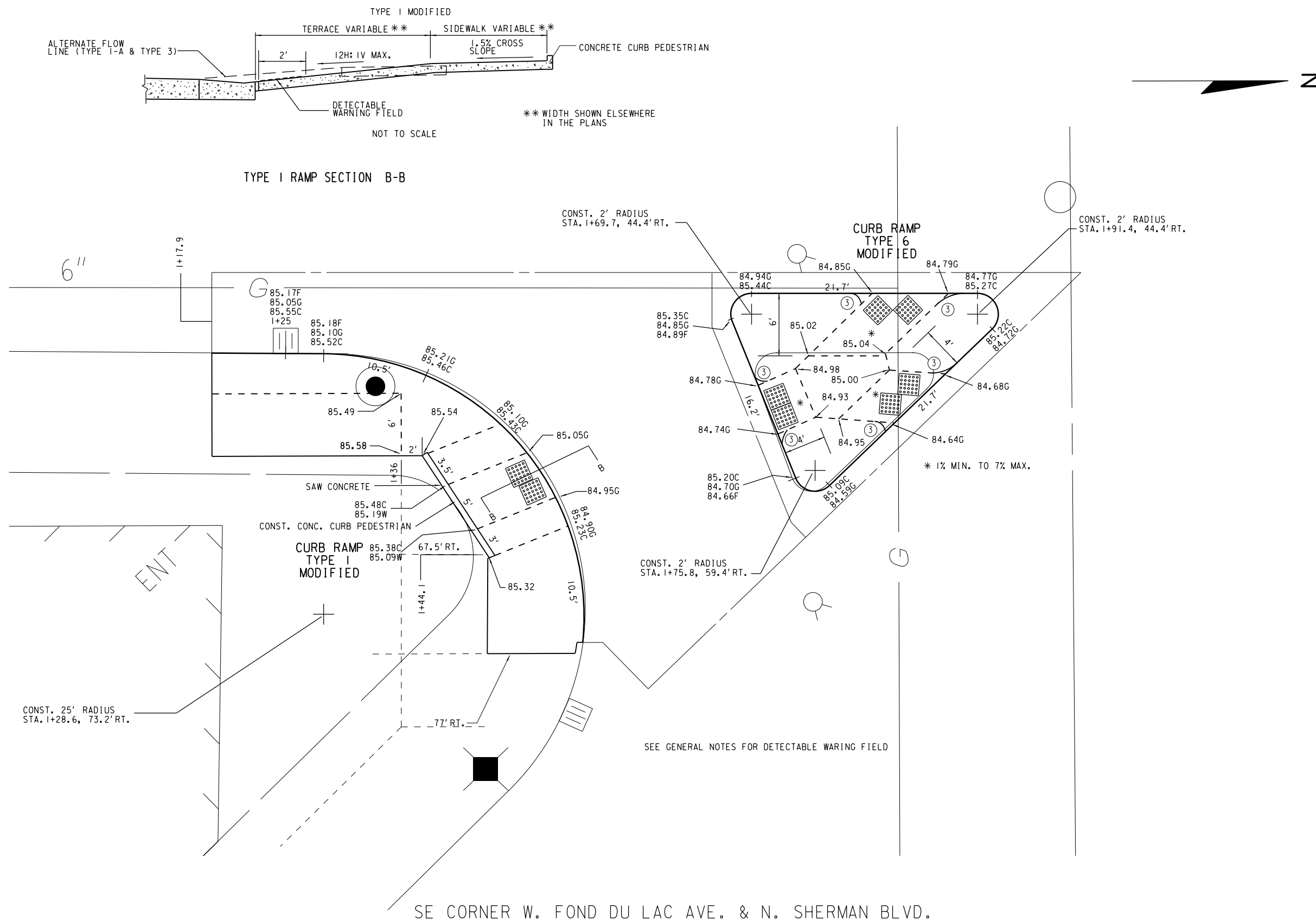


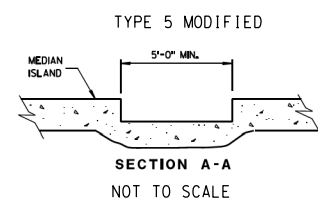
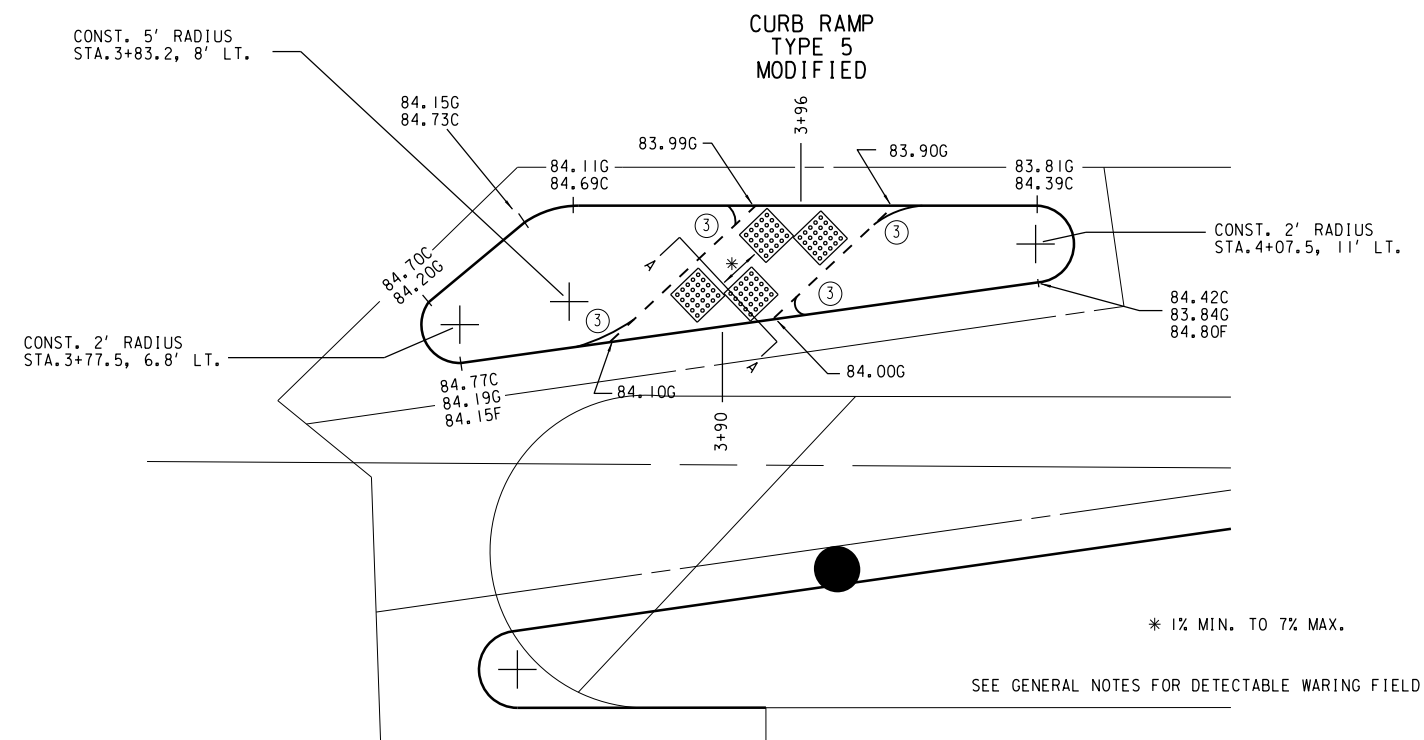
PLAN VIEW

**DETECTABLE WARNING
FIELD (TYPICAL)**

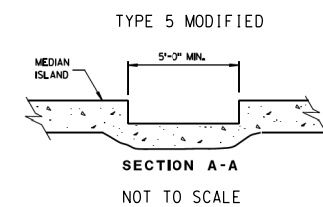
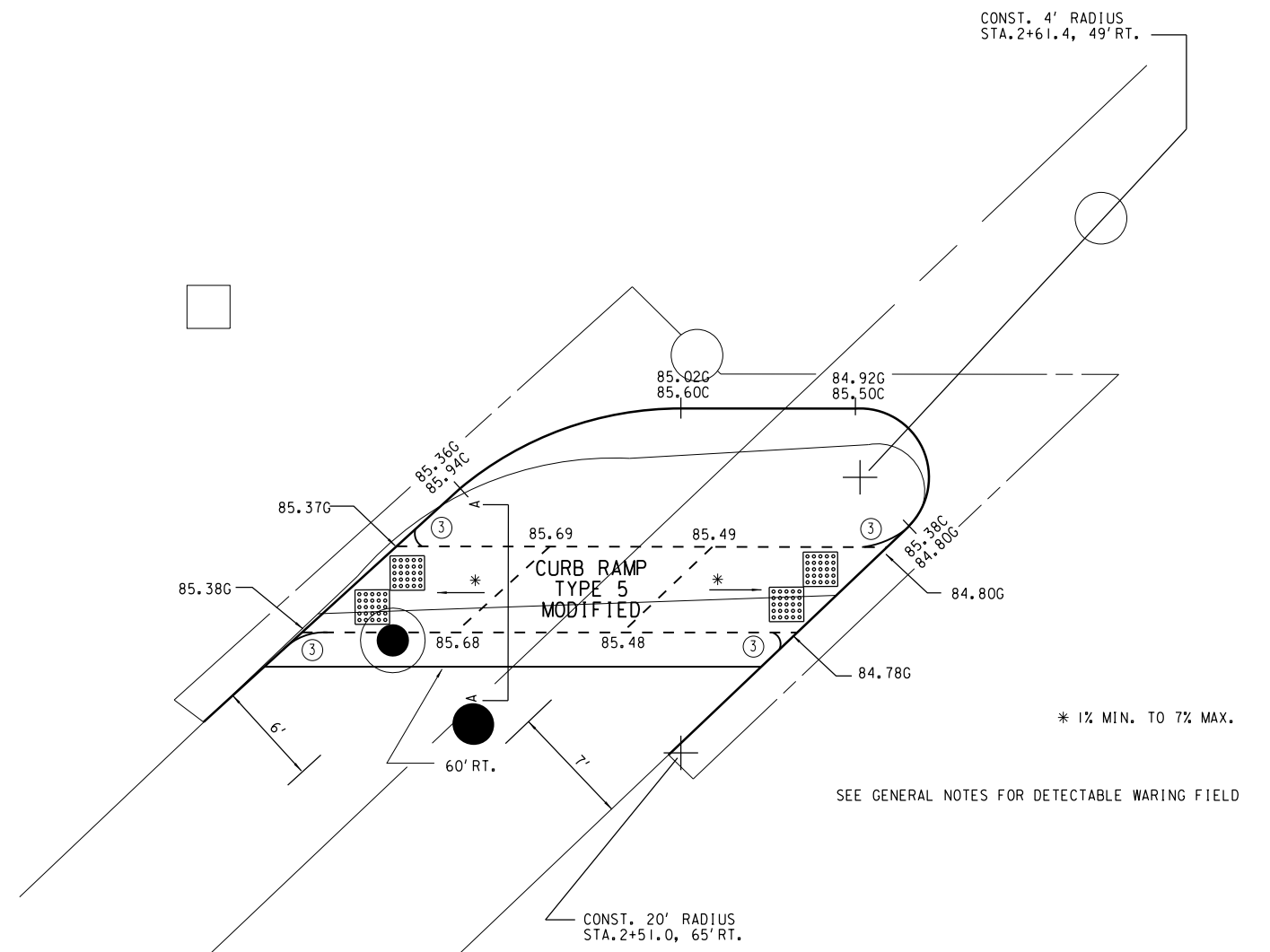
GENERAL NOTES:

- ① CURB RAMP DETECTABLE WARNING FIELD YELLOW WILL BE PAID BY THE SQUARE FOOT INSTALLED ACCORDING TO CONTRACT DOCUMENTS.
- ② DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE SHALL BE FROM THE SAME MANUFACTURER.
- ③ INSTALL TRANSITION NOSE. DO NOT MARK TRANSITION NOSE. (INCIDENTAL TO OTHER PAY ITEMS.)

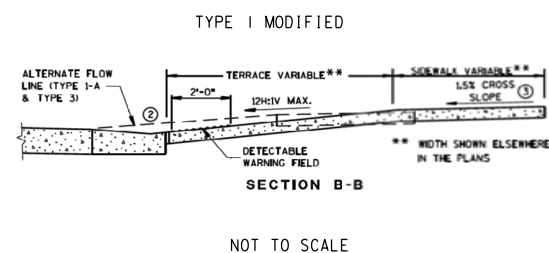
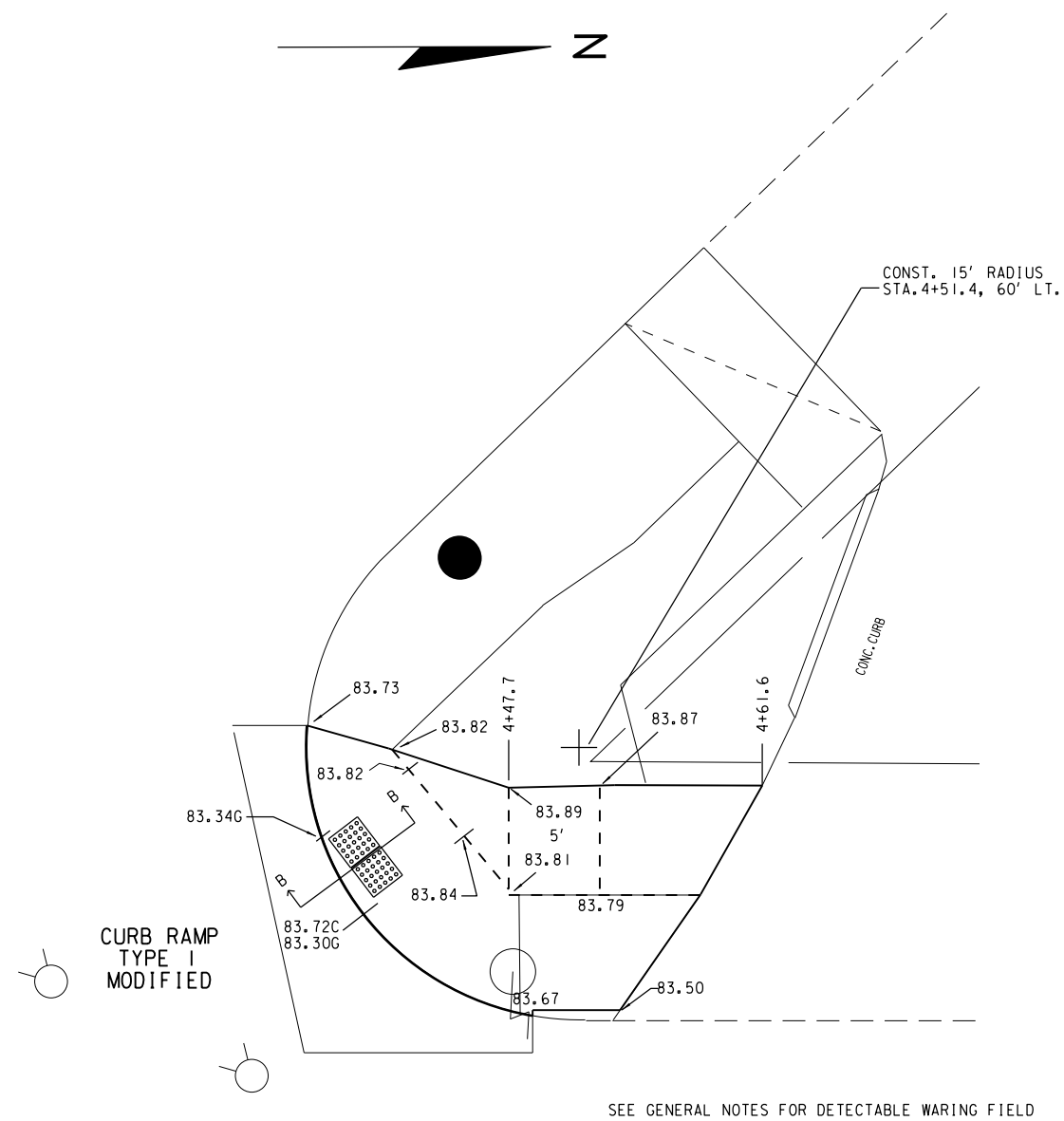




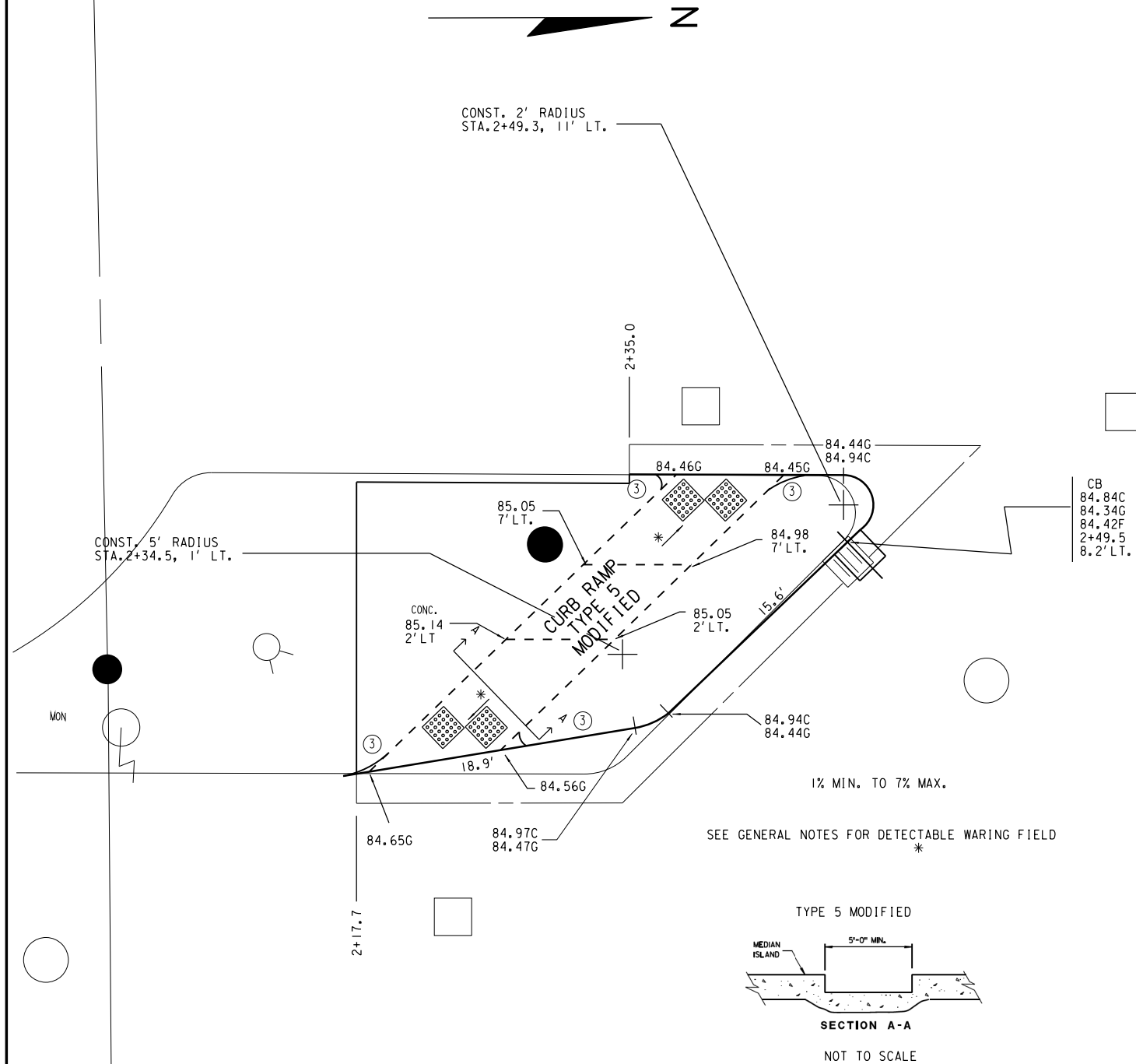
MEDIAN IN N. SHERMAN BLVD. NORTH OF W. FOND DU LAC AVE.



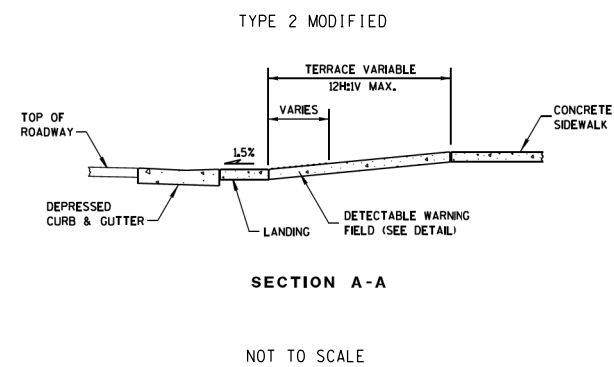
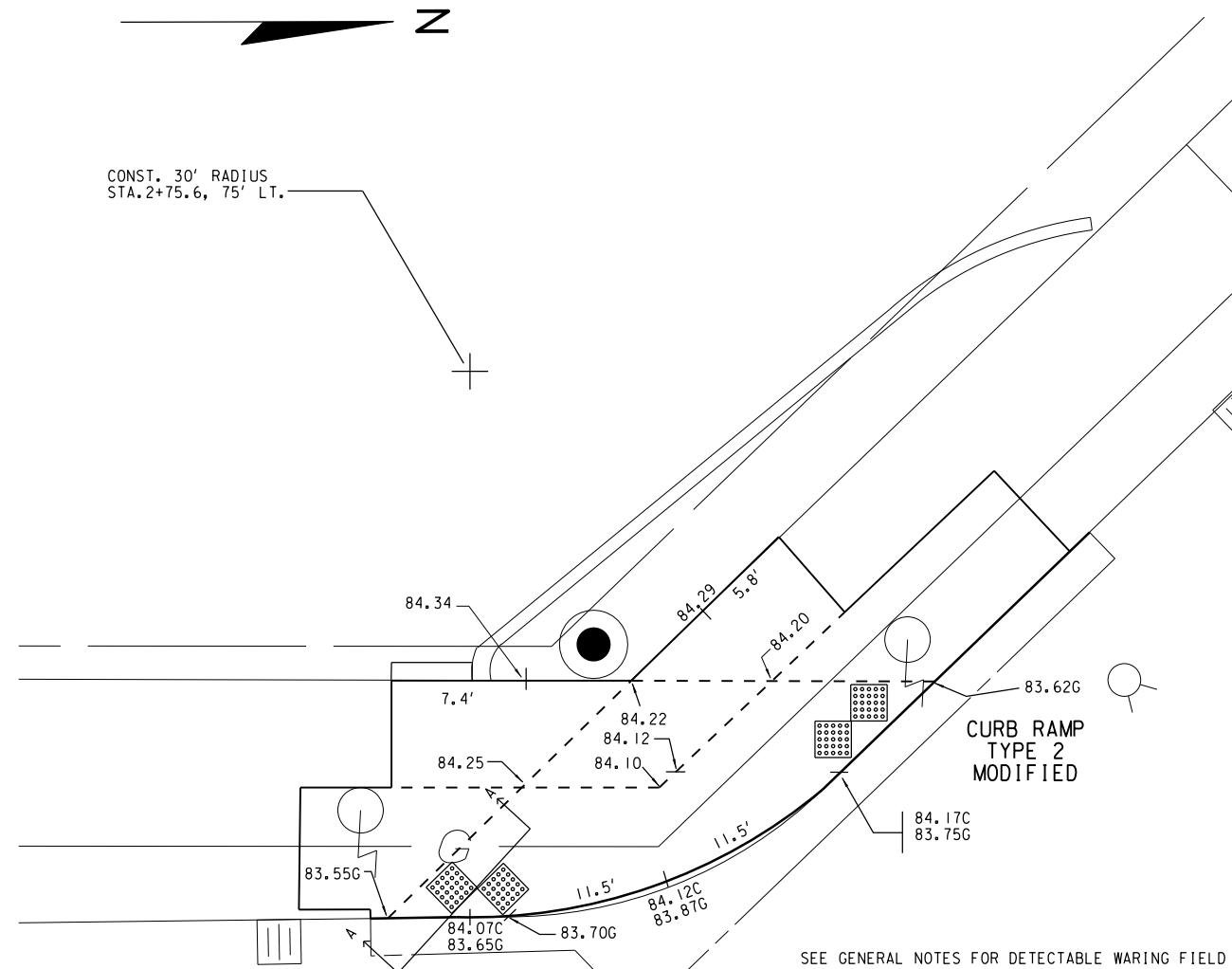
MEDIAN EAST SIDE N. SHERMAN BLVD.



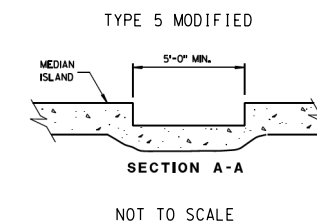
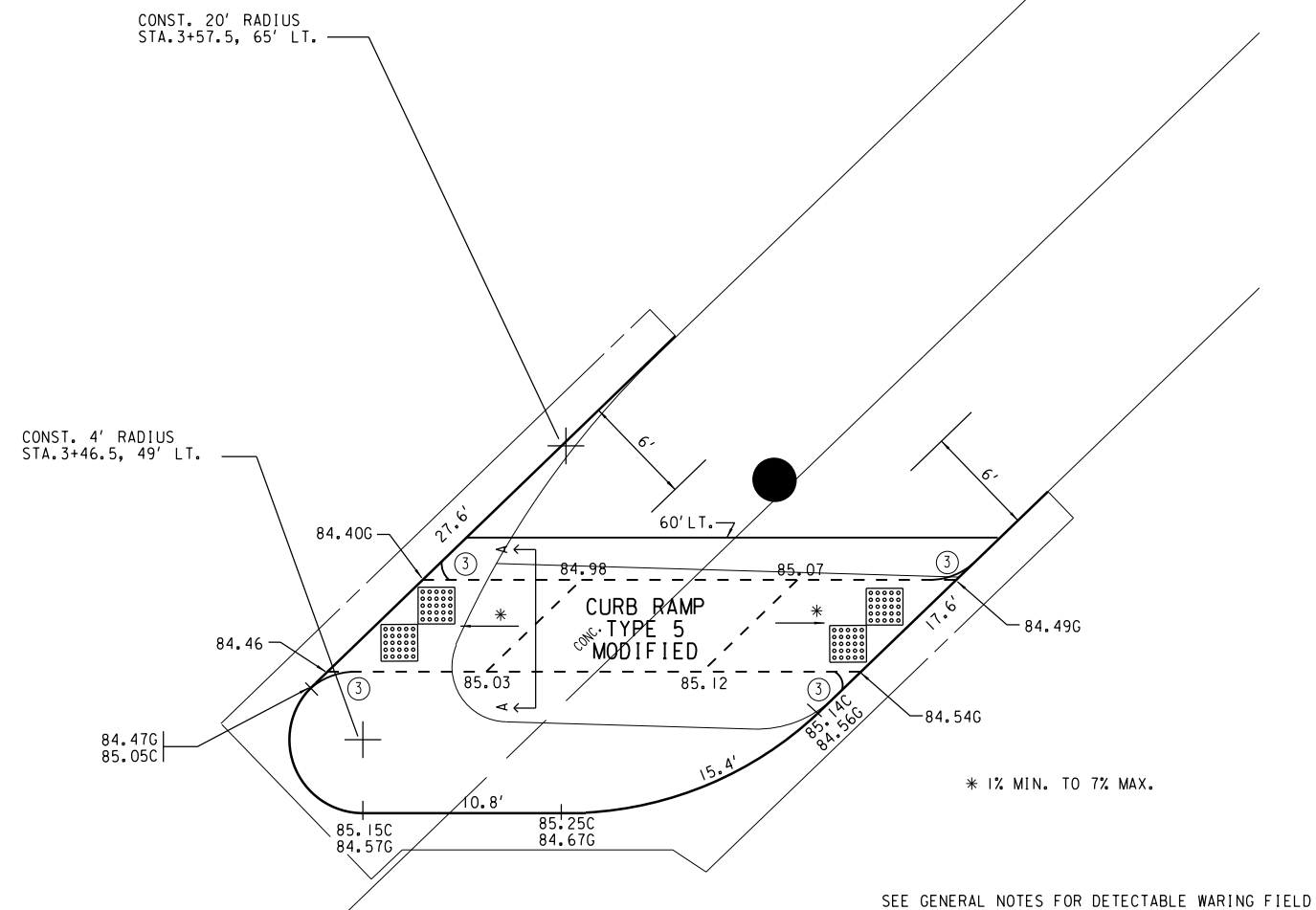
NW CORNER W. FOND DU LAC AVE. & N. SHERMAN BLVD.



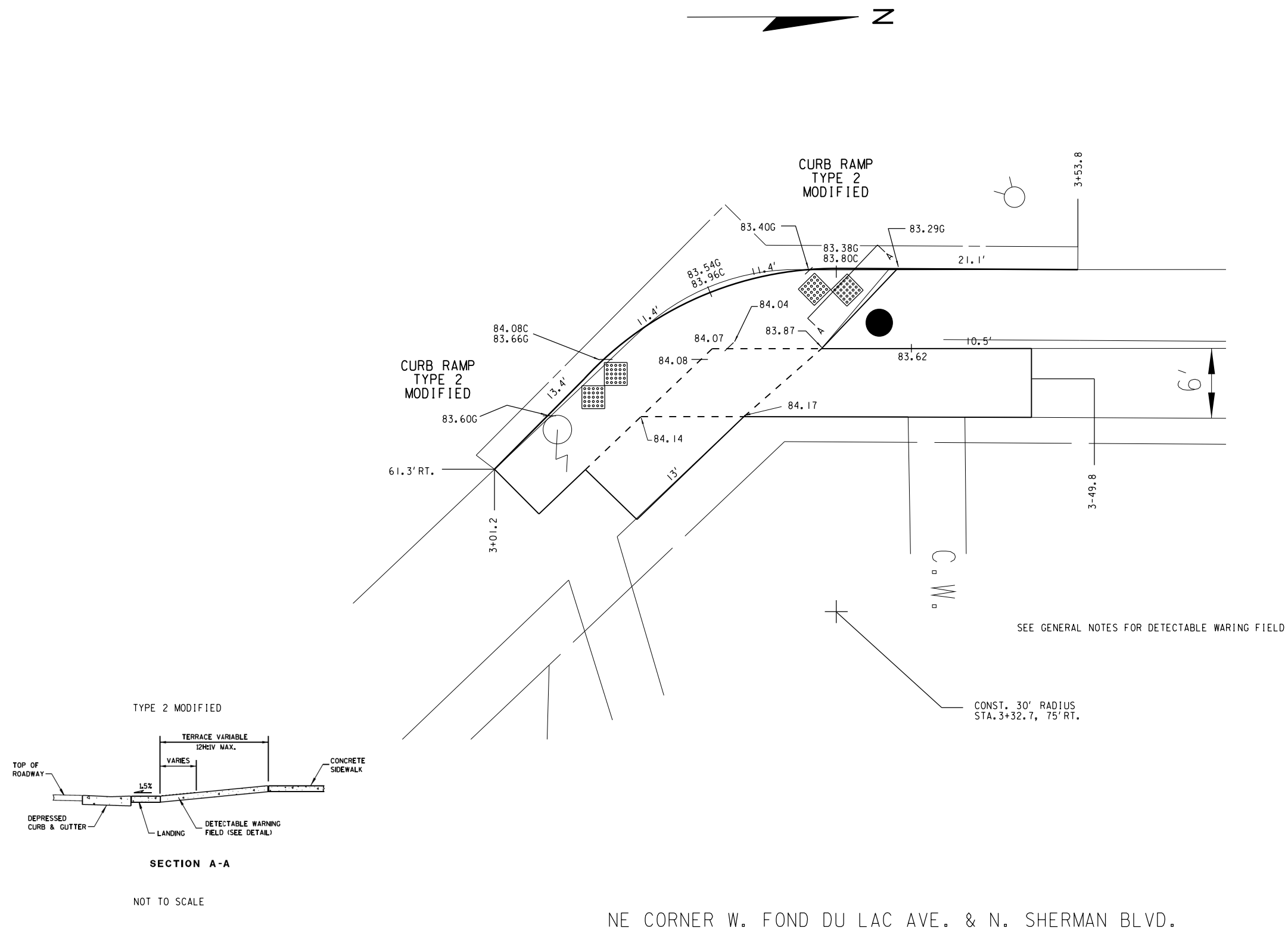
MEDIAN IN N. SHERMAN BLVD. SOUTH OF W. FOND DU LAC AVE.

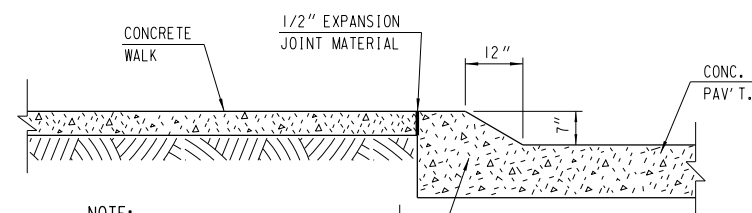
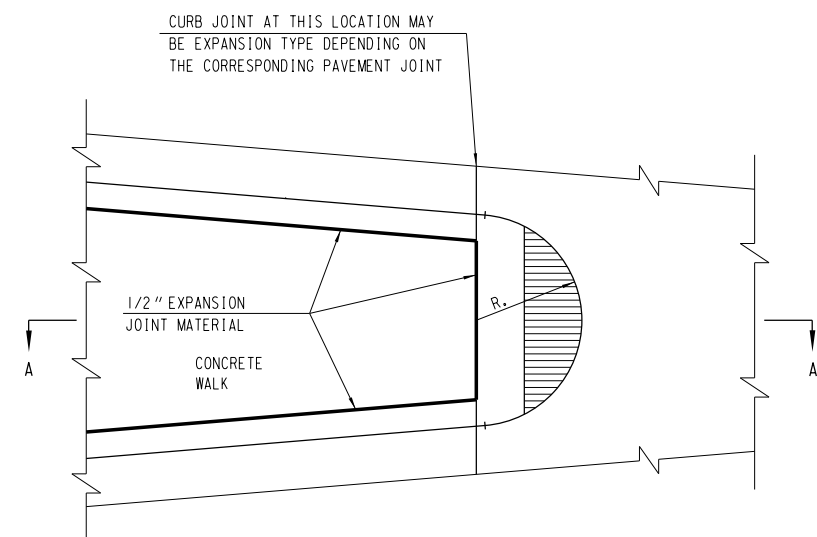


SW CORNER W. FOND DU LAC AVE. & N. SHERMAN BLVD.



MEDIAN WEST SIDE N. SHERMAN BLVD.





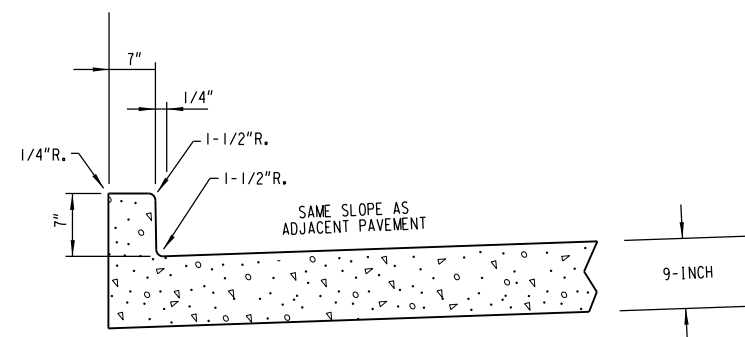
NOTE:
THE COST FOR THE ADDITIONAL MATERIALS AND LABOR IN THIS SECTION SHALL BE INCLUDED IN THE PRICE BID FOR CONCRETE CURB AND GUTTER

SECTION A-A

SNOWPLOWABLE MEDIAN ISLAND NOSE

(TYPICAL SECTION OF CONCRETE CURB & GUTTER TO BE CONSTRUCTED AT END OF MEDIAN ISLAND)

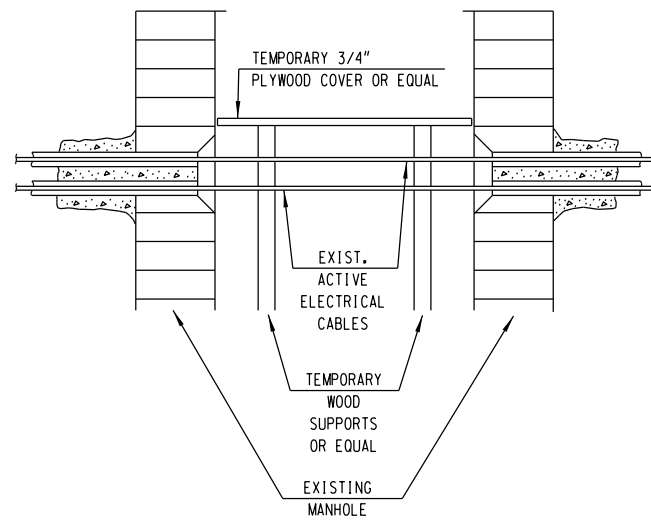
(D)



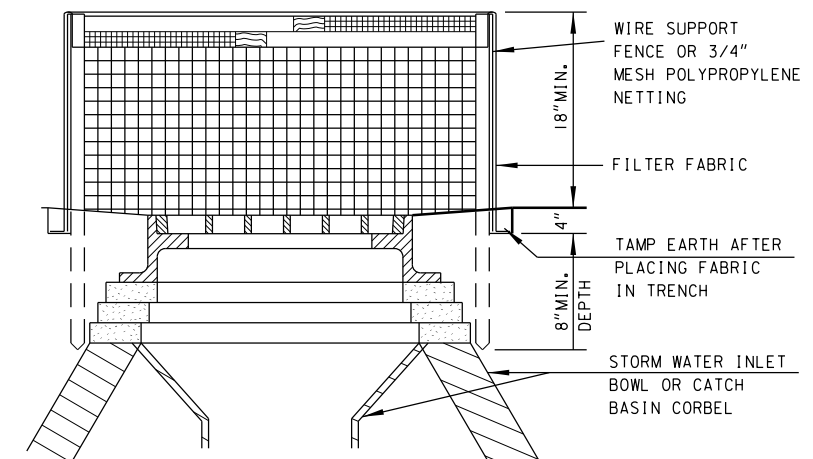
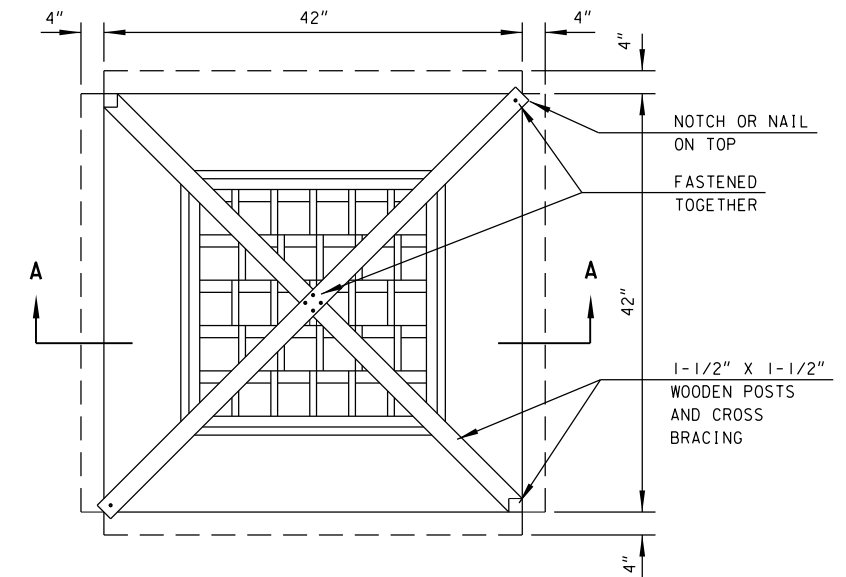
CONCRETE CURB INTEGRAL TYPE D ITEM 601.0150
(REVISED)

(G)

ADJUSTING TES MANHOLE FRAMES AND LIDS

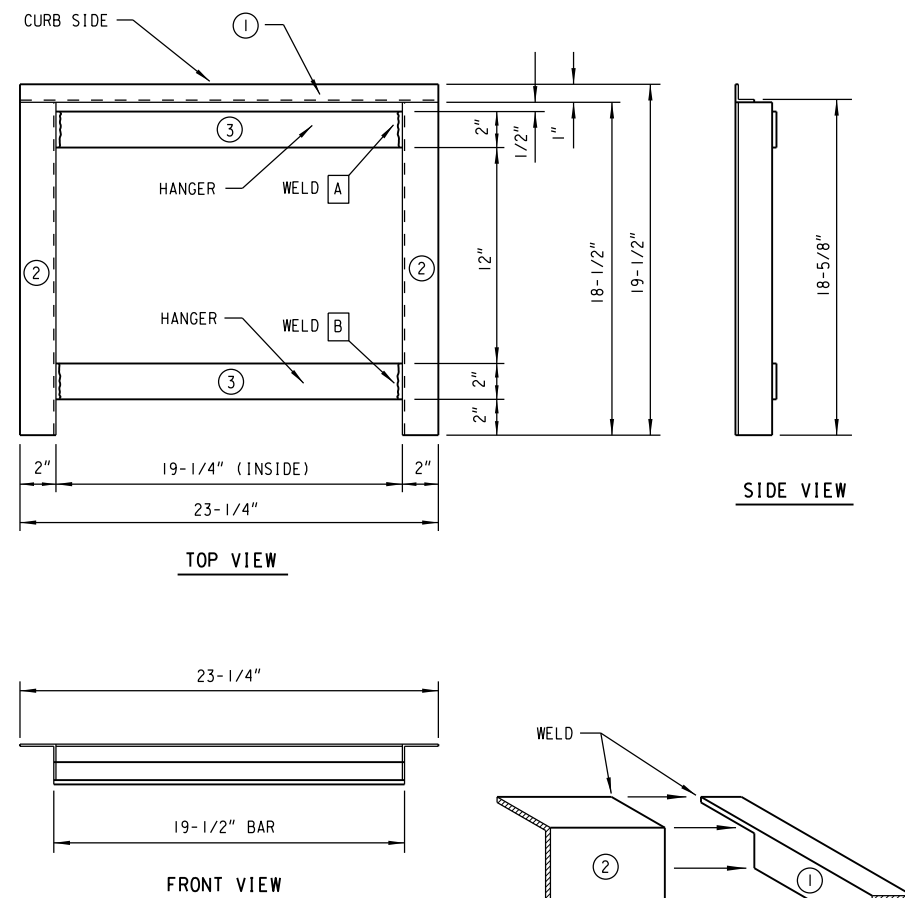
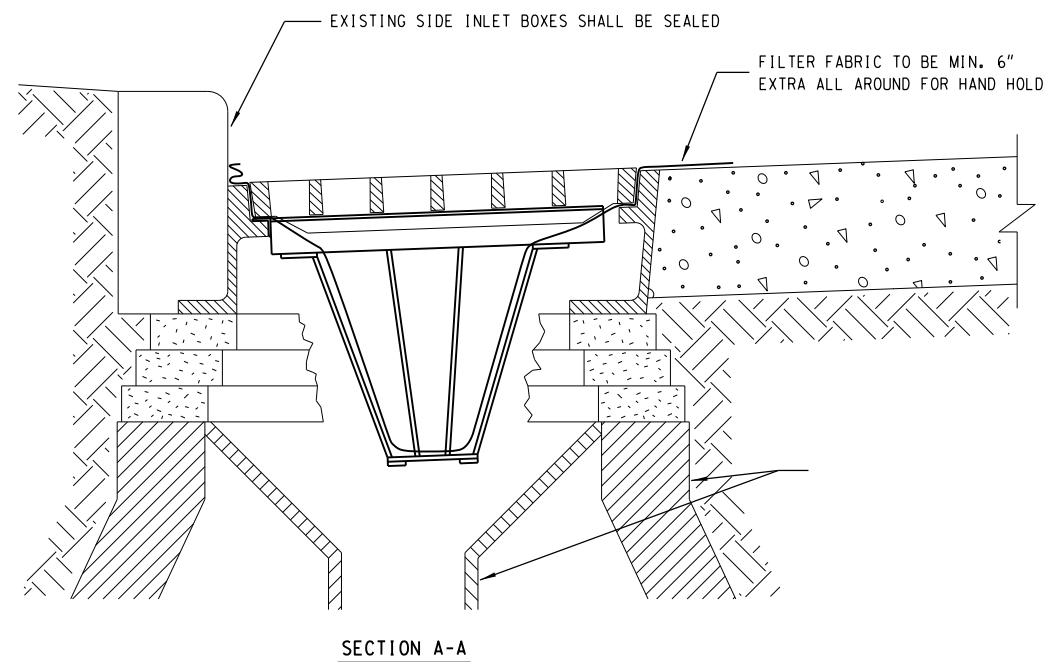
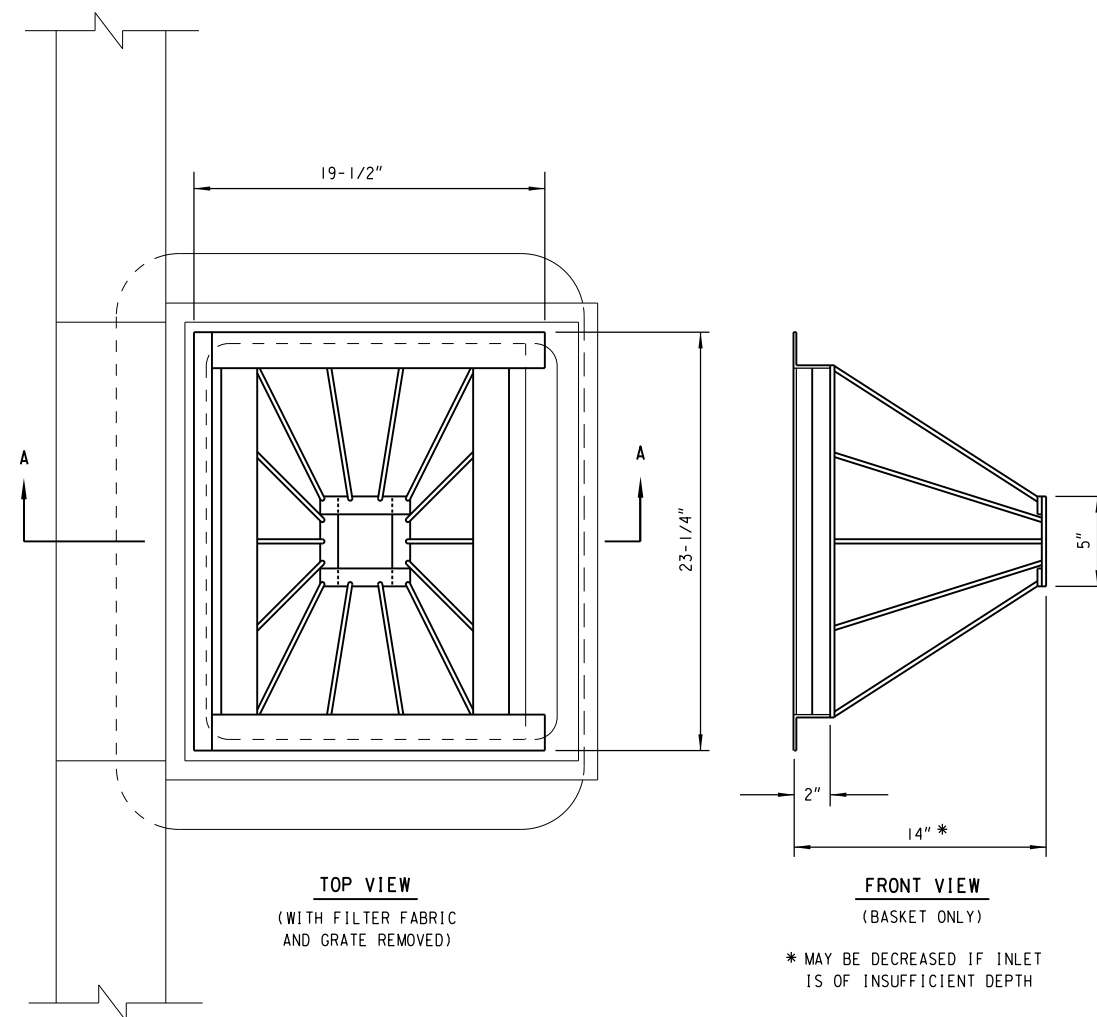


BLOCK OR BRICK ROUND MANHOLE

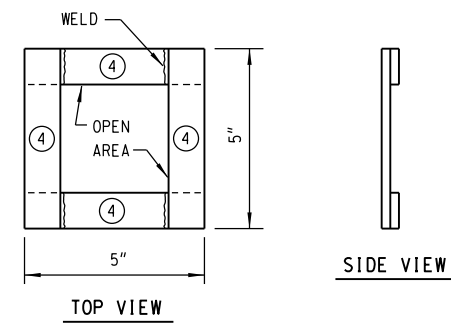


SECTION A-A

INLET SCREEN
(NOT PAVED) (TYPE R)

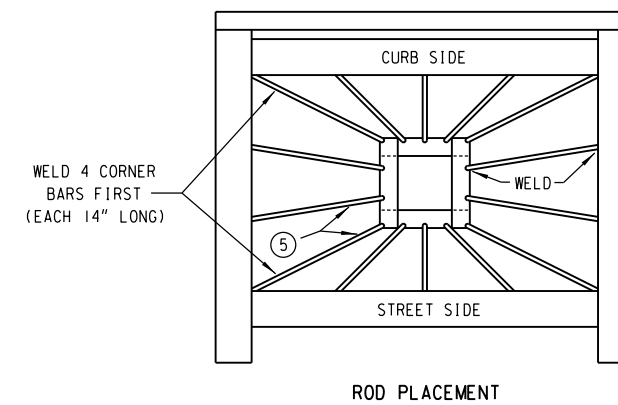


BAR SCHEDULE					
NO.	SHAPE	SIZE	THICKNESS	LENGTH	QUANTITY
①	ANGLE	1" X 1"	1/8"	23-1/4"	1
②	ANGLE	2" X 2"	1/8"	18-1/2"	2
③	BAR	2"	1/4"	19-1/2"	2



BAR SCHEDULE					
NO.	SHAPE	SIZE	THICKNESS	LENGTH	QUANTITY
④	BAR	1"	1/4"	5"	4

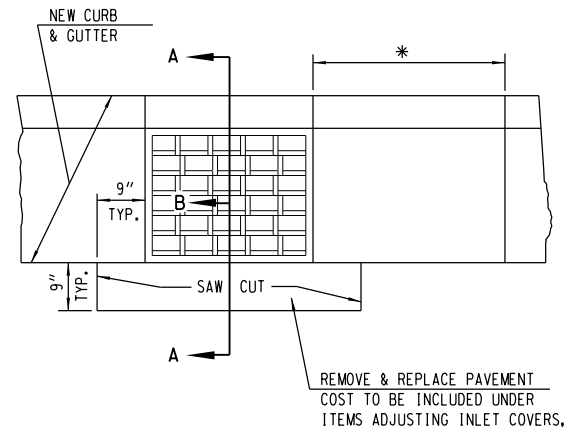
BASKET BOTTOM



ROD SCHEDULE					
NO.	SHAPE	SIZE	THICKNESS	LENGTH	QUANTITY
⑤	ROD	1/4" MIN.	1/8"	12" TO 14" (CUT TO FIT)	14

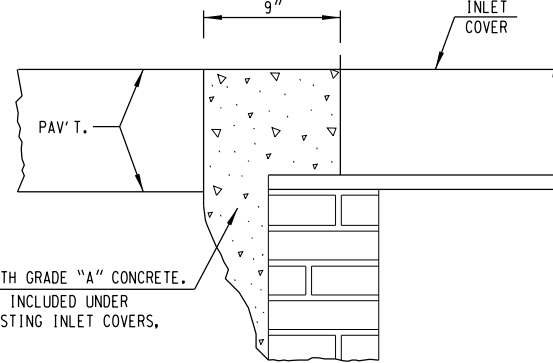
**TYPE M
INLET BASKET**

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



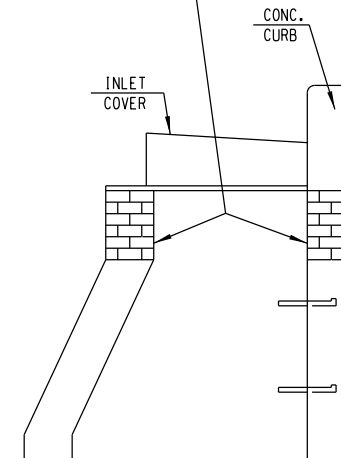
PLAN VIEW

REPLACE WITH GRADE "A" CONCRETE.
COST TO BE INCLUDED UNDER
ITEMS ADJUSTING INLET COVERS,



SECTION A-B

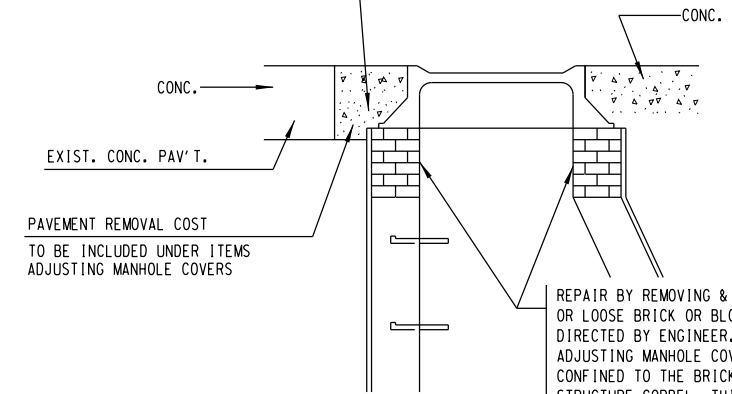
REPAIR BY REMOVING & REPLACING DAMAGED OR LOOSE BRICK OR BLOCK TO DEPTH AS DIRECTED BY ENGINEER. WORK UNDER ADJUSTING CATCH BASIN COVERS SHALL BE CONFINED TO THE BRICK SHIMMING ABOVE THE STRUCTURE CORBEL. THIS SHIMMING SHALL NOT EXCEED 1 FOOT BETWEEN THE TOP OF THE CORBEL AND THE FRAME BOTTOM. ANY WORK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



SECTION A-A

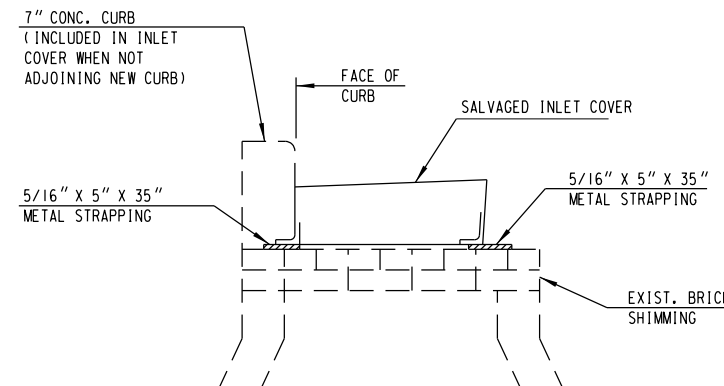
ADJUSTING INLET COVERS

REPLACE WITH CONCRETE
COST TO BE INCLUDED UNDER ITEMS
ADJUSTING MANHOLE COVERS



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.

ADJUSTING MANHOLE COVERS



EXIST. DRAINAGE
STRUCTURE

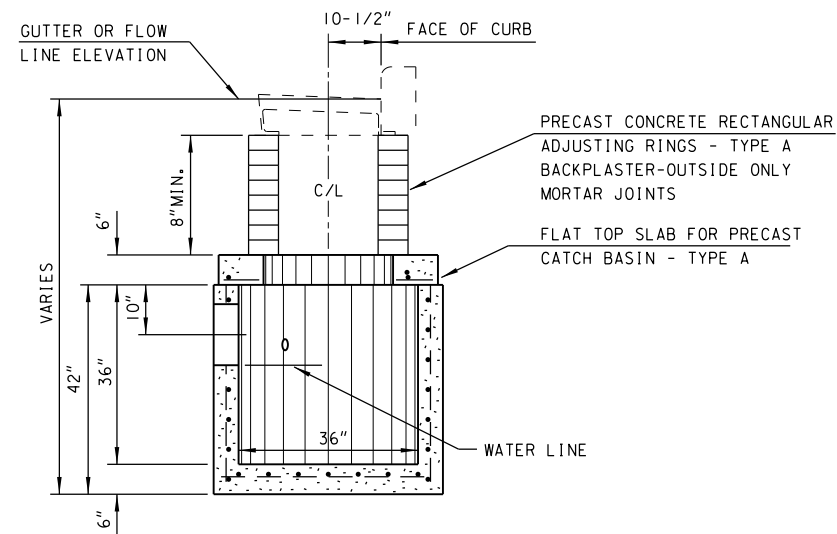
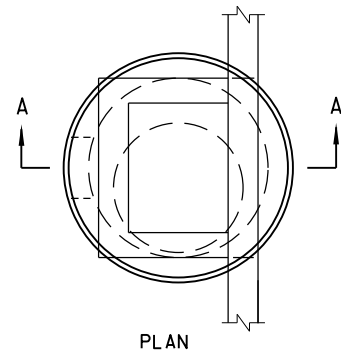
NOTES:

1. METAL STRAPPING TO BE 5/16" X 5" X 35" FLAT STEEL, HOT ROLLED (ASTM A36).
2. METAL STRAPPING TO BE PLACED ACROSS EXISTING DRAINAGE STRUCTURE TO SUPPORT NEW COVER. THE METAL STRAPPING SHALL BE SET ON A BED OF MORTAR.
3. PRECAST CONCRETE FLAT SLAB TOPS MAY BE USED ON THE STRUCTURE. THE TOPS SHALL BE INSTALLED ON A BED OF MORTAR.
4. COST OF MATERIALS AND LABOR TO BE INCLUDED IN PRICE BID FOR SALVAGED INLET COVER.

DETAIL FOR PLACING SALVAGED INLET COVER ON EXISTING
INLET USING METAL STRAPPING MATERIALS

CONSTRUCTION NOTES

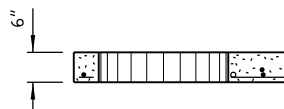
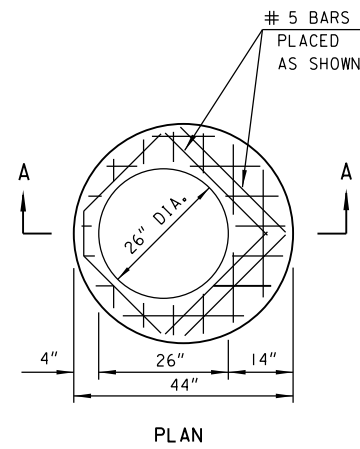
1. LOCATIONS OF STRUCTURES IN CURB & GUTTER SECTIONS REFER TO FACE OF CURB.
2. LOCATIONS OF STRUCTURES NOT IN CURB AND GUTTER SECTIONS REFER TO CENTERLINE OF STRUCTURE.
3. PIPE LENGTHS GIVEN ARE APPROXIMATE OUT TO OUT OF STRUCTURE.
4. GRATE & RIM ELEVATIONS ARE GIVEN AT FLOW LINE OF INLET COVER OR AT CENTERLINE OF MANHOLE COVER.
5. WHEN NEW COVERS ARE PLACED, THE FIRST 12" OF ADJUSTMENT OR REPAIRING SHALL BE INCLUDED IN THE COST OF THE NEW COVER. ANY ADJUSTMENT OR REPAIR OF BRICKWORK 12" OR LESS WILL BE PAID AS ADJUSTING COVERS WHEN RESETTING EXISTING COVERS, ANY ADJUSTMENT OR REPAIR OF BRICKWORK MORE THAN 12" WILL BE PAID AS A RECONSTRUCT.
6. MANHOLE ADJUSTMENTS IN ASPHALTIC PAVEMENT WILL BE MADE AFTER THE LOWER LAYER IS PLACED.
7. WHEN CONSTRUCTING CONCRETE CURB ADJACENT TO INLET COVER, TWO (2) DEFORMED TIE BARS SHALL BE PLACED LONGITUDINALLY THROUGH THE CURB SECTION AND EXTENDED ONE (1) FOOT BEYOND EACH SIDE OF THE FRAME. A DUMMY JOINT SHALL BE CUT IN THE CURB AT EACH SIDE OF THE FRAME.



SECTION A-A

INLET - 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

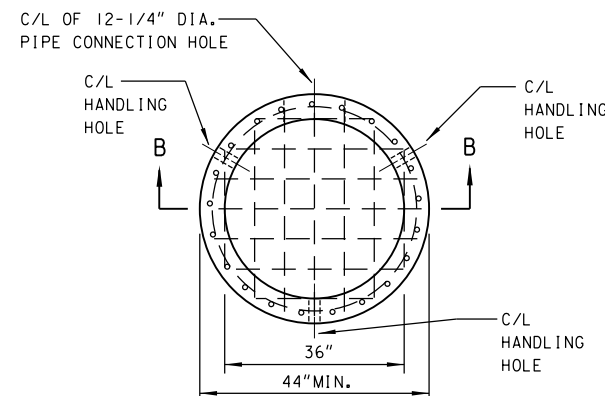
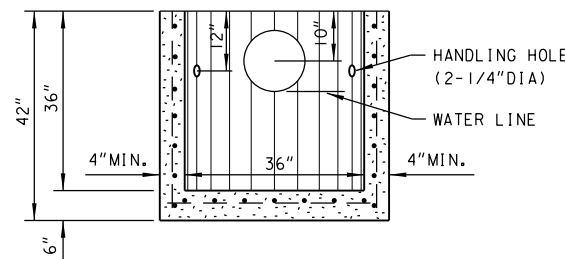
TOP SLAB - TYPE A

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.

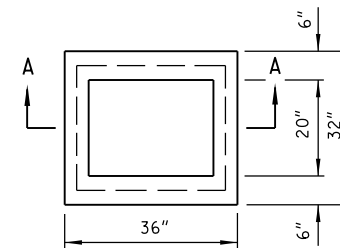
ADDITIONALLY, NO. 5 BARS SHALL BE PLACED AROUND TOP SLAB OPENING AS SHOWN.

REINFORCEMENT SHALL BE TIED OR WELDED TOGETHER.

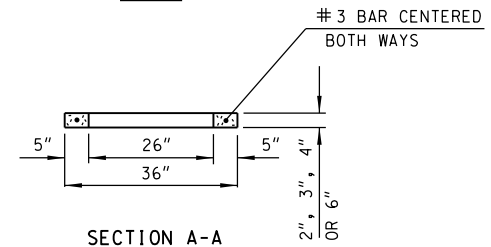
THE MINIMUM COMPRESSIVE STRENGTH OF THE CONCRETE SHALL BE 4000 P.S.I.

**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.

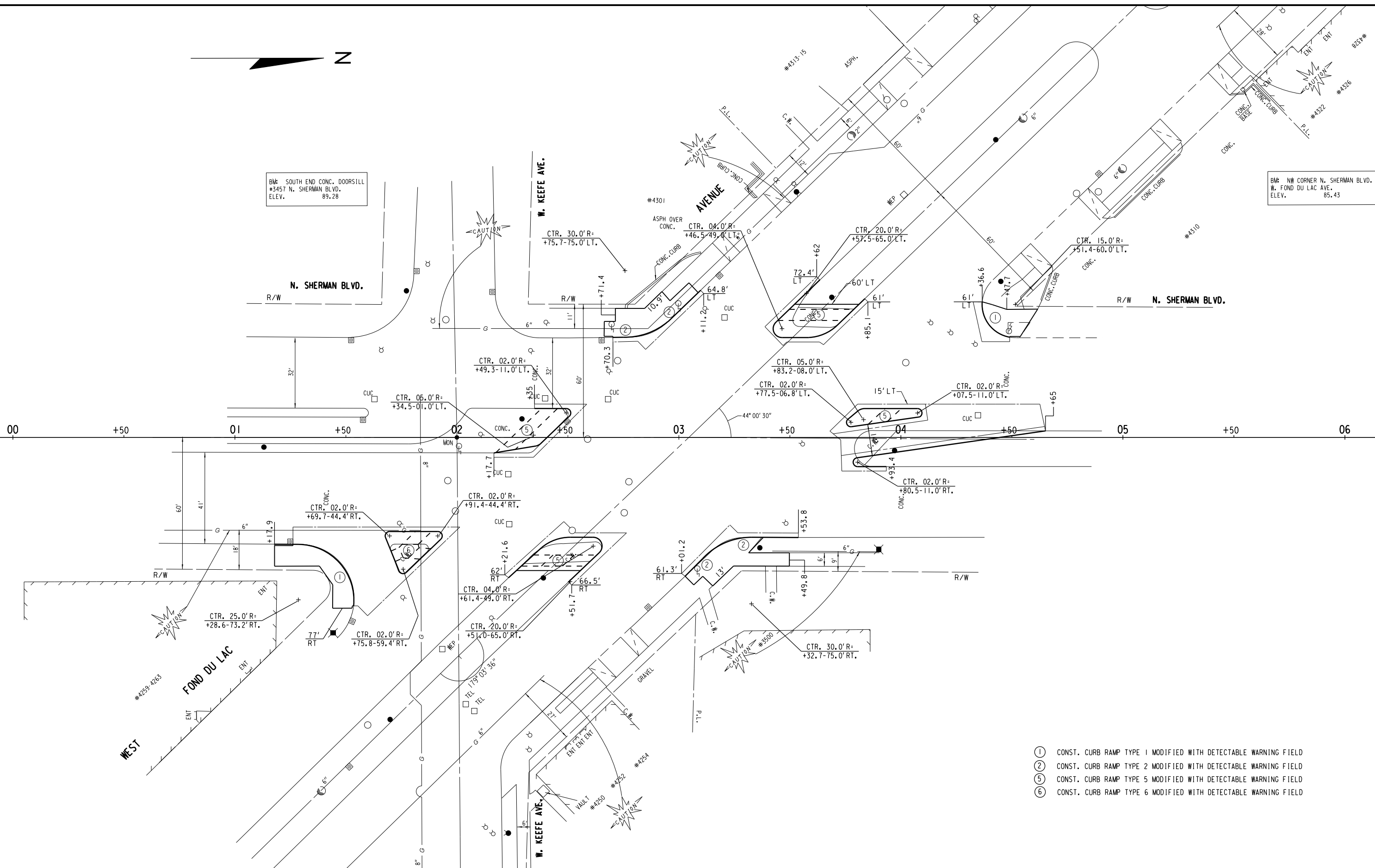
RISER SECTION AND BASE SLAB REINFORCEMENT SHALL BE TIED OR WELDED TOGETHER.

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.



STATE PROJECT NUMBER 2155-03-71

HWY: STH 145

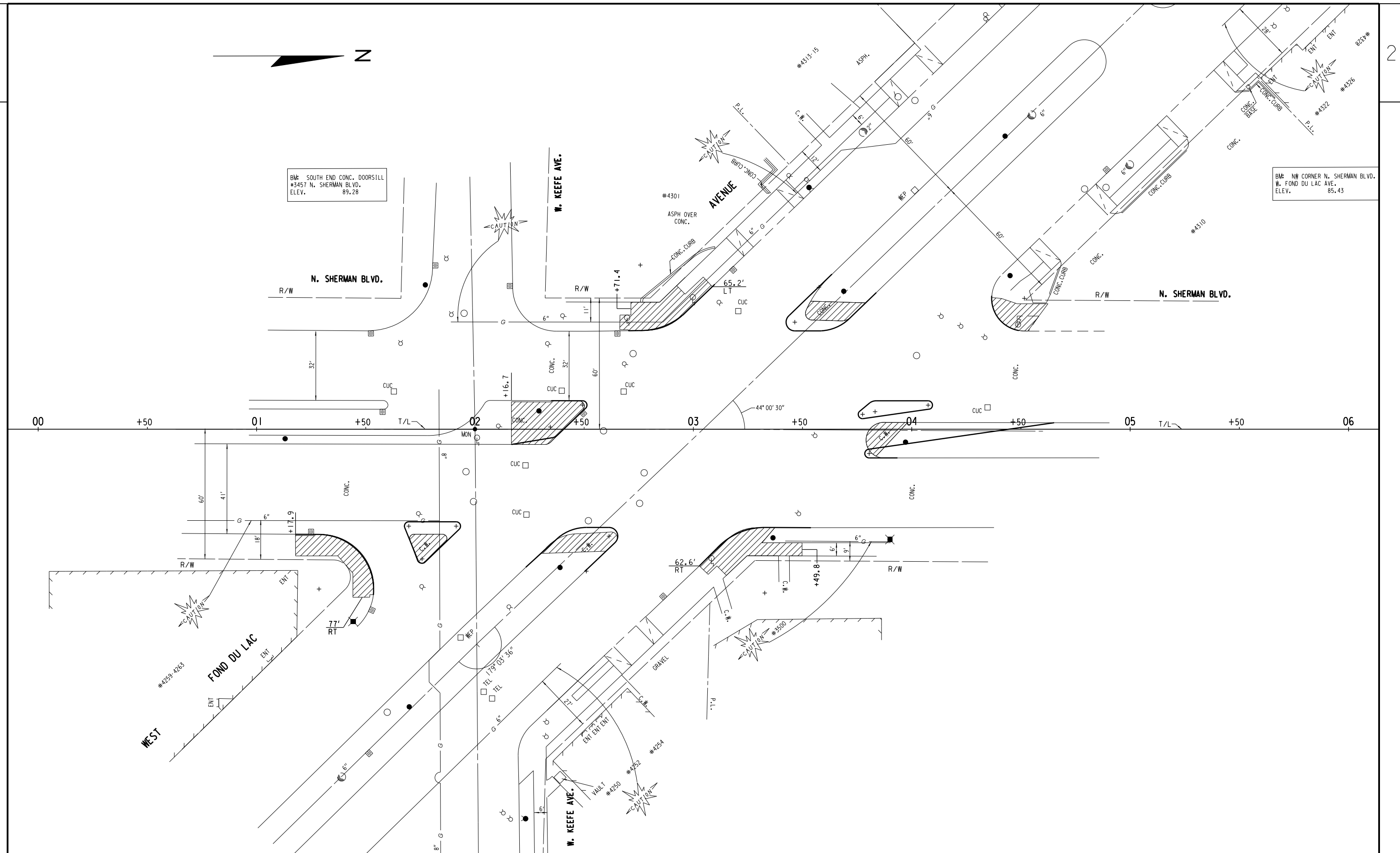
COUNTY: MILWAUKEE

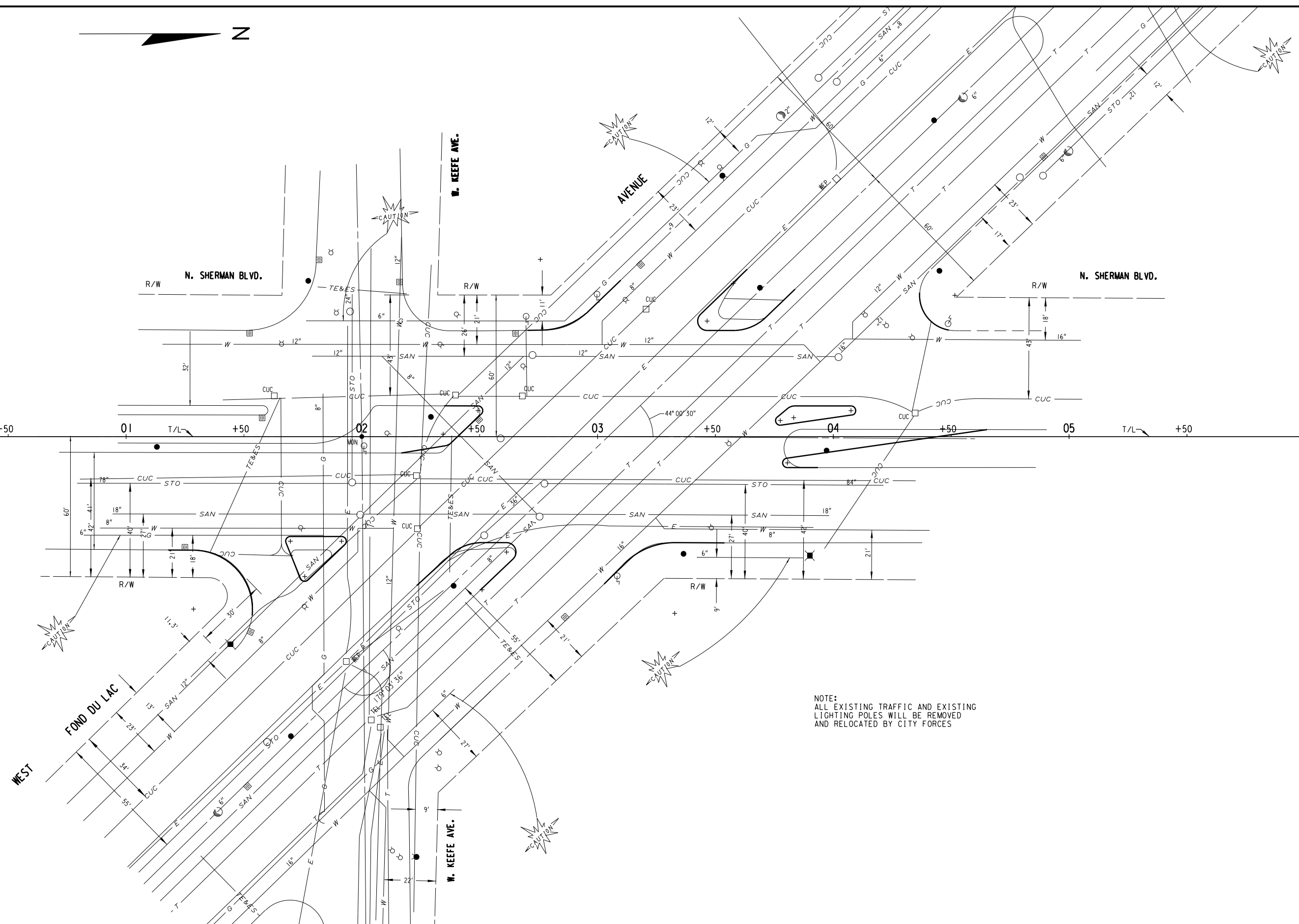
PLAN DETAIL

SCALE FEET 0' 40'

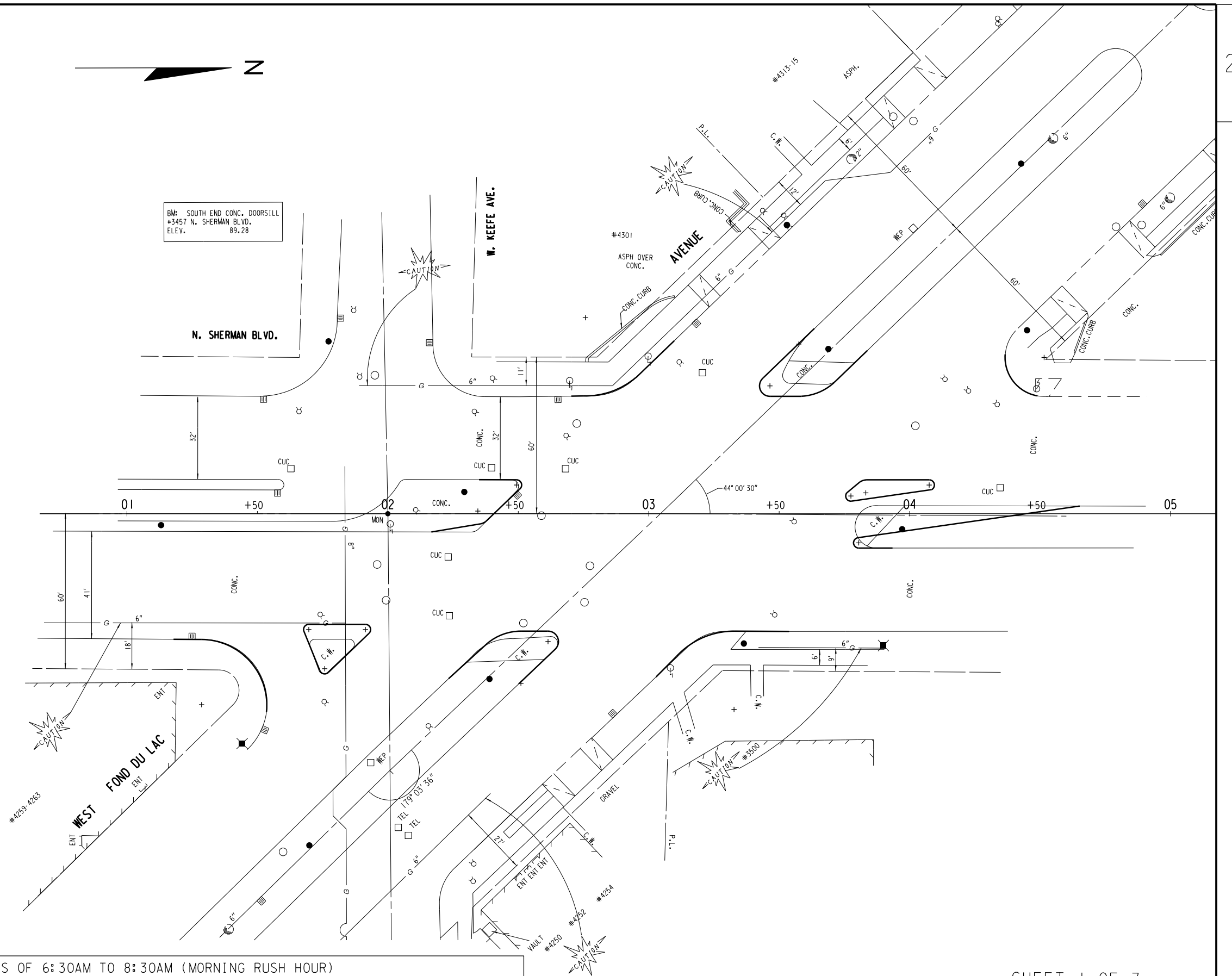
SHEET NO:

E





NOTE:
ALL EXISTING TRAFFIC AND EXISTING
LIGHTING POLES WILL BE REMOVED
AND RELOCATED BY CITY FORCES



ALL TRAFFIC CONTROL
SHALL FOLLOW
MUTCD GUIDELINES

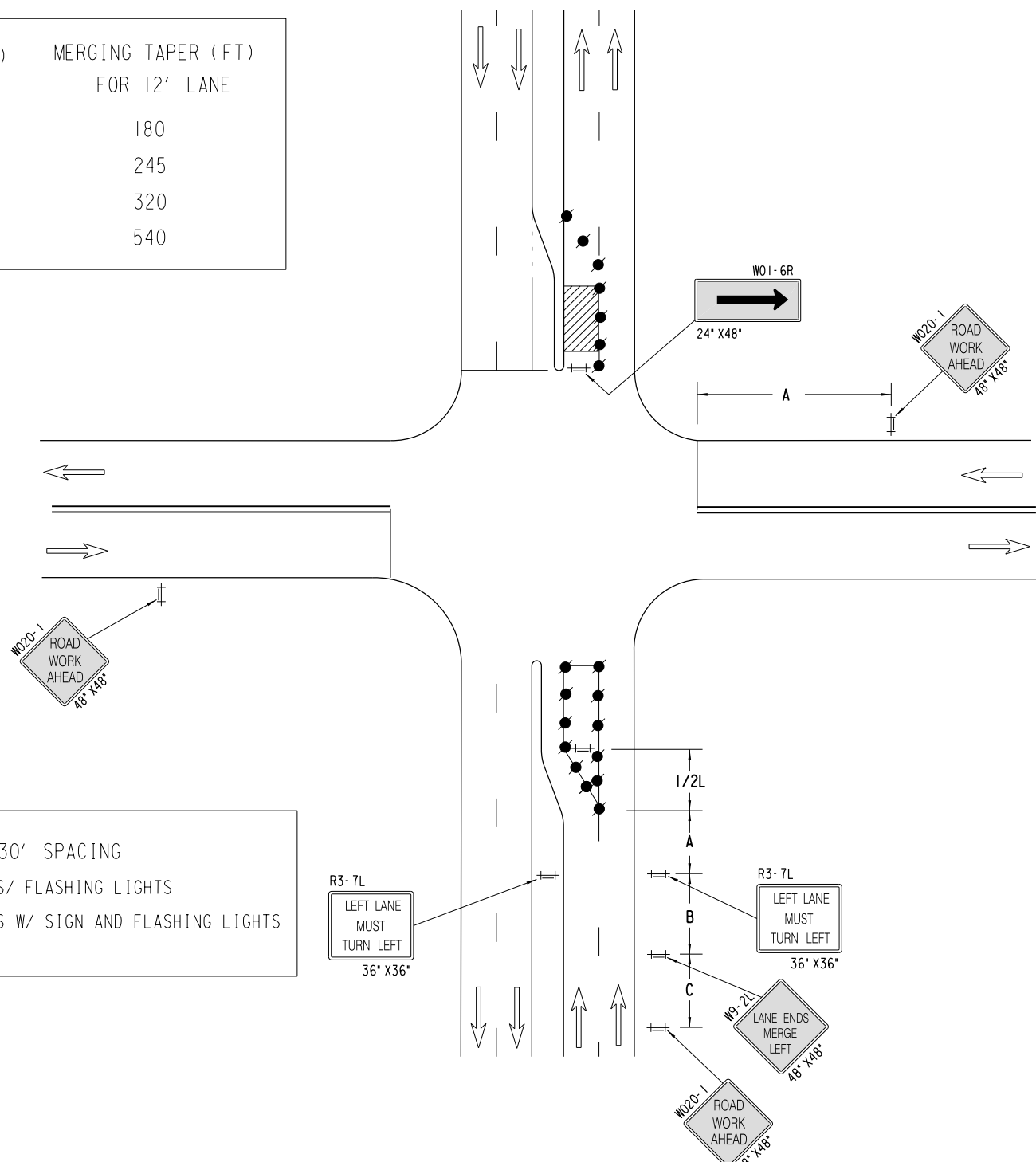
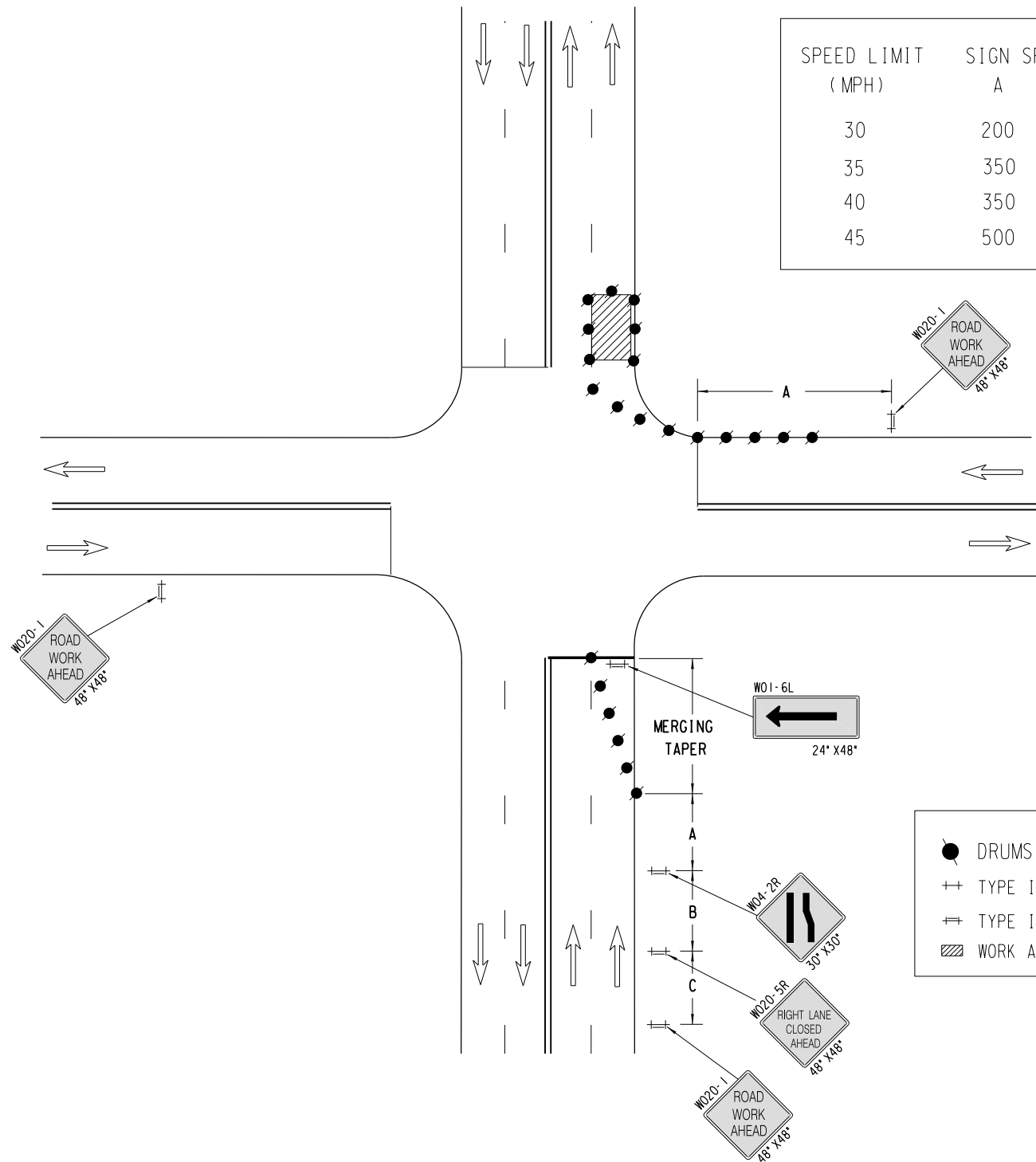
NO WORK EASTBOUND FOND DU LAC AVE. DURING THE HOURS OF 6:30AM TO 8:30AM (MORNING RUSH HOUR)
NO WORK WESTBOUND FOND DU LAC AVE. DURING THE HOURS OF 3:00PM TO 6:00PM (EVENING RUSH HOUR)
MAINTAIN 1 LANE FOR EACH DIRECTION DURING WORKING HOURS AND 2 LANES DURING NON WORKING HOURS AND DURING RUSH HOUR.

SHEET 1 OF 3

RIGHT LANE CLOSURE

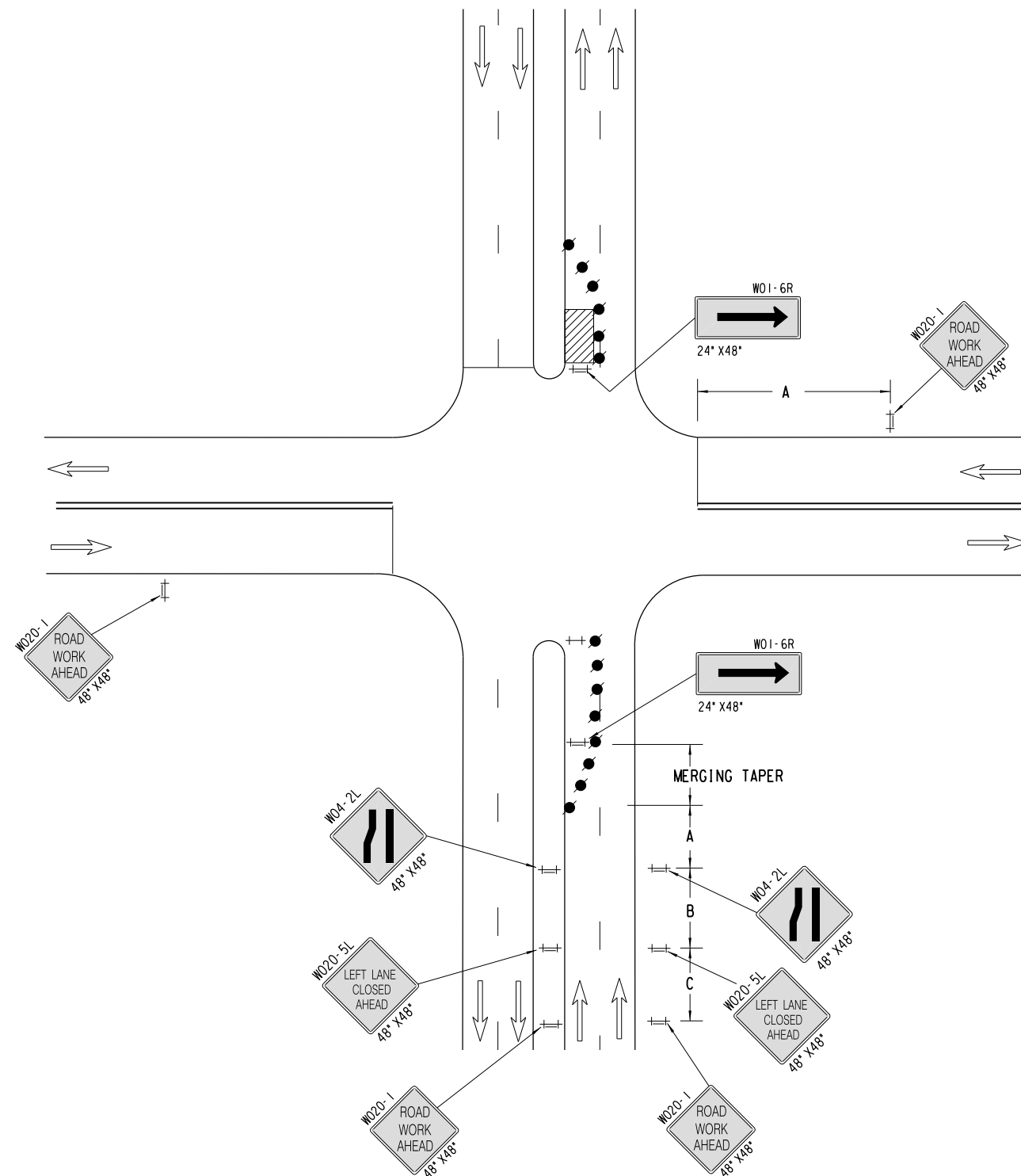
LEFT LANE CLOSURE
WITH LEFT TURN LANE

SPEED LIMIT (MPH)	SIGN SPACING (FT.)			MERGING TAPER (FT) FOR 12' LANE
	A	B	C	
30	200	200	200	180
35	350	350	350	245
40	350	350	350	320
45	500	500	500	540



- DRUMS W/LIGHTS, 30' SPACING
- ++ TYPE III BARRICADES/ FLASHING LIGHTS
- ≡ TYPE III BARRICADES W/ SIGN AND FLASHING LIGHTS
- ▨ WORK AREA

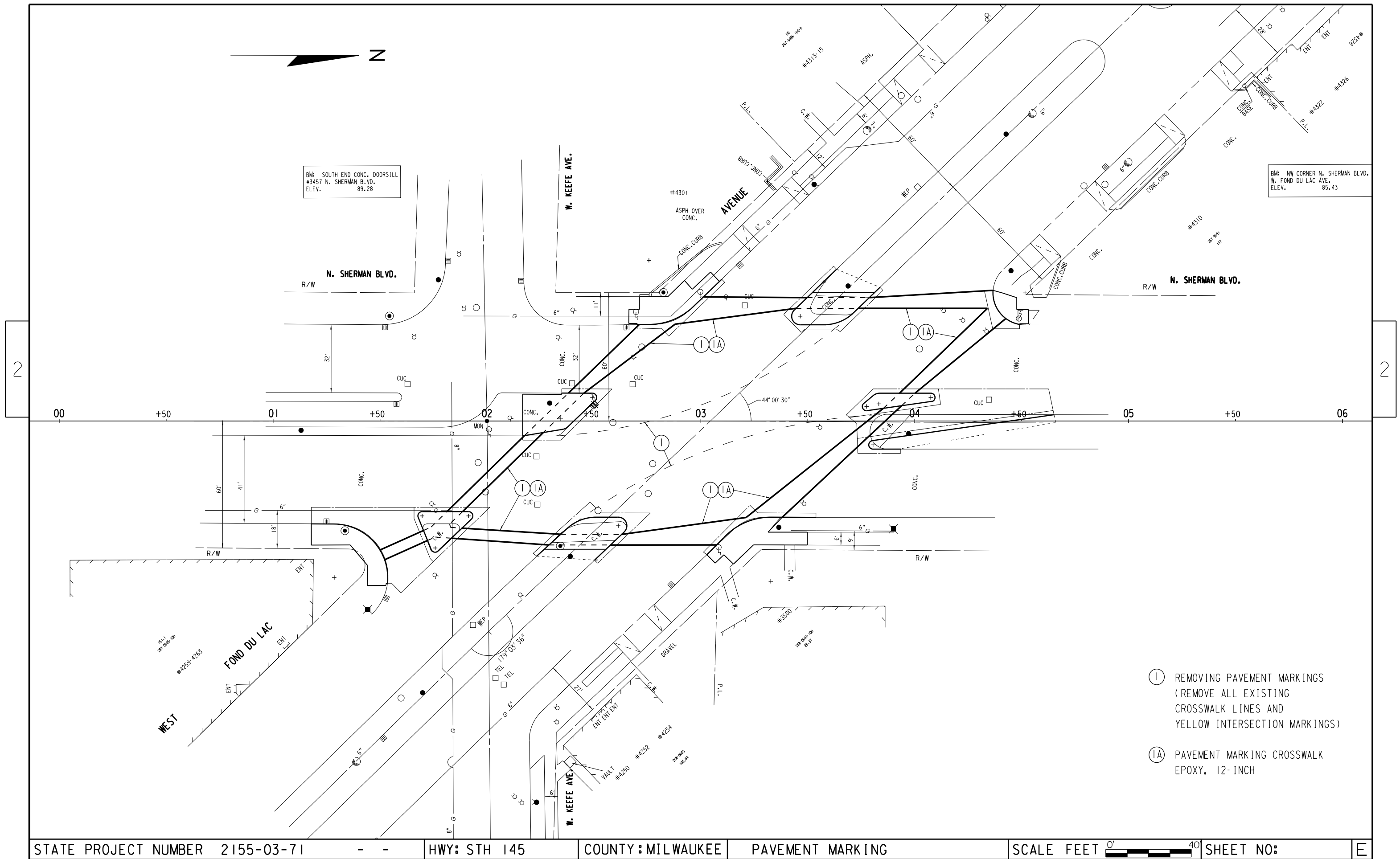
LEFT LANE CLOSURE WITH NO LEFT TURN LANE



SPEED LIMIT (MPH)	SIGN SPACING (FT.)			MERGING TAPER (FT) FOR 12' LANE
	A	B	C	
30	200	200	200	180
35	350	350	350	245
40	350	350	350	320
45	500	500	500	540

- DRUMS W/LIGHTS, 30' SPACING
- ++ TYPE III BARRICADES/ FLASHING LIGHTS
- ++ TYPE III BARRICADES W/ SIGN AND FLASHING LIGHTS
- ▨ WORK AREA

SHEET 3 OF 3



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 THE BASE OF THE BACKSIDE OF THE CURB/GUTTER SECTION.
- 6 WHEN THERE IS MORE THAN ONE CONDUIT TO BE LAID BEHIND THE CURB, 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 WITHIN TRENCH SHALL BE FREE OF DEBRIS AND OVERPOUR AND SHALL NOT BE BACKFILLED PRIOR TO INSPECTION OF THE CONDUIT.
- 9 BENDING OF PVC ELECTRICAL CONDUIT SHALL BE ACCOMPLISHED BY USING A BLANKET OR EMERSION TYPE TANK DESIGNED FOR THE PURPOSE OF BENDING PVC ELECTRICAL CONDUIT.
- 10 ALL CUT ENDS SHALL BE TRIMMED INSIDE AND OUTSIDE TO REMOVE ALL ROUGH EDGES ON ALL CONDUITS. (SEE NEC 352.28 2008 CODE)
- 11 PRIOR TO CONDUIT ACCEPTANCE, ALL CONDUIT ENDS SHALL BE THOROUGHLY CLEANED AND BE CAPPED IMMEDIATELY AFTER INSTALLATION WITH THE APPROPRIATE CAST PLASTIC CAP WHICH FITS SNUGGLY ON THE CONDUIT, BUT EASILY REMOVED IN THE FUTURE. DUCT TAPE OR ANY OTHER CAPPING METHOD IS NOT ACCEPTABLE.
- 12 ALL CONDUIT BEING FURNISHED AND INSTALLED SHALL HAVE THE U.L. LABEL FIRMLY ATTACHED.
- 13 CONDUIT RUNS SHALL BE THE SAME SIZE PIPE FROM ONE END TO THE OTHER (FROM PULL BOX TO PULL BOX OR JUNCTION BOX OR BASE TO BASE, ETC.).
- 14 PULL ROPE (3/8-INCH NYLON) SHALL BE INSTALLED IN ALL NEW CONDUIT.
- 15 ALL CONDUIT RUNS SHALL BE STRAIGHT (WITHOUT BENDS) FROM PULL BOX TO PULL BOX, PULL BOX TO BASE AND BASE TO BASE AS SHOWN ON THE PLANS UNLESS OTHERWISE APPROVED BY THE STREET LIGHTING ENGINEER.
- 16 WHEN ENDS OF CONDUIT DO NOT CONNECT TO A VAULT AND WILL END UP UNDER CONCRETE WALK. THE CONTRACTOR IS REQUIRED TO LEAVE A 24" X 24" BOX FORM CENTERED OVER THE END OF CONDUIT AND FILL THE BOXFORM WITH CRUSHED GRAVEL. (PER WISDOT SPEC 209.2.1(I) GRANULAR BACKFILL)
- 17 ALL PIPE CROSSINGS AND 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 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:

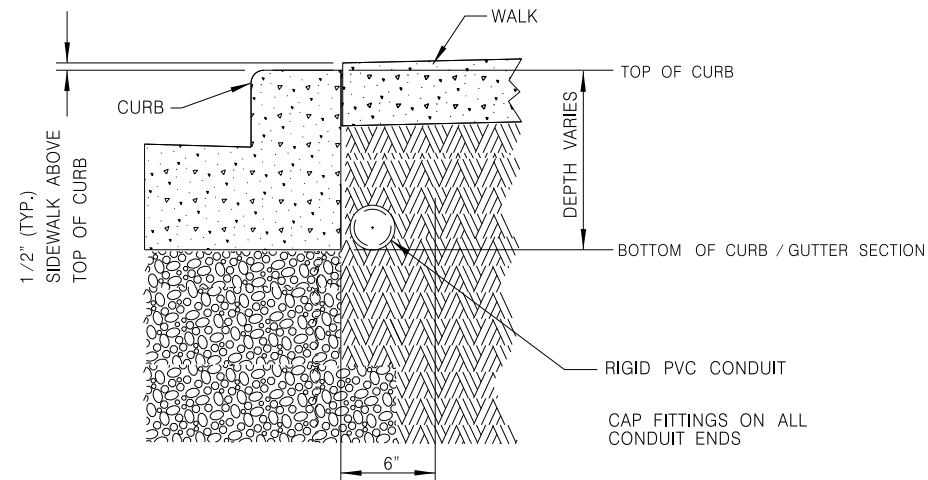
- 20 COORDINATE NEW CONDUIT CONNECTIONS WITH EXISTING CONDUIT, DUCT PACKAGES, AND VAULTS/ MANHOLES WITH CITY OF MILWAUKEE STREET LIGHTING. THE CITY REQUIRES THREE WORKING DAYS ADVANCED NOTICE. CONTACT ELECTRICAL SUPERVISOR STREET LIGHTING - DENNIS MILLER (OFFICE) 414-286-5942 (CELL) 414-708-4251 OR DISPATCHER @ 414-286-5944 TRAFFIC SIGNALS - AL NICHOLS (OFFICE) 414-286-3687 (CELL) 414-708-5148 OR DISPATCHER @ 414-286-3687
- 21 IMMEDIATELY AFTER THE CONTRACTOR HAS COMPLETED ALL THE ELECTRICAL VAULT, 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 - DENNIS MILLER (OFFICE) 414-286-5942 (CELL) 414-708-4251 STREET LIGHTING - GEORGE BERDINE (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 - AL NICHOLS (OFFICE) 414-286-3687 (CELL) 414-708-5148 TRAFFIC SIGNALS - DISPATCHER @ 414-286-3687
- 22 CONDUIT WILL ONLY BE INSTALLED AFTER THE CURB IS POURED, UNLESS APPROVED BY BOTH THE ENGINEER & STREET LIGHTING SHOP SUPERVISOR.

UTILITY LINE CODE

- SAN SANITARY SEWER
- STO STORM SEWER
- W WATER
- G GAS
- E ELECTRIC
- TE&ES CITY TRAFFIC, LIGHTING, COMM. & UNDERGROUND CONDUIT
- OHL OVERHEAD LINE
- T TELEPHONE
- TV CABLE

OTHER UTILITIES AS NOTED

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



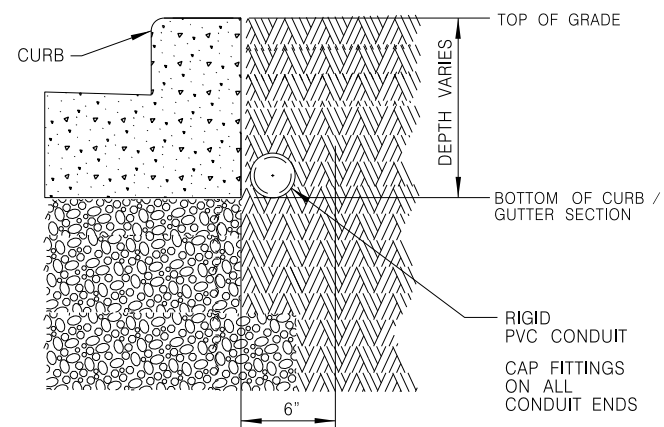
100 DETAIL "A"
TYPICAL CONDUIT INSTALLATION
BEHIND CURB NOT TO SCALE

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

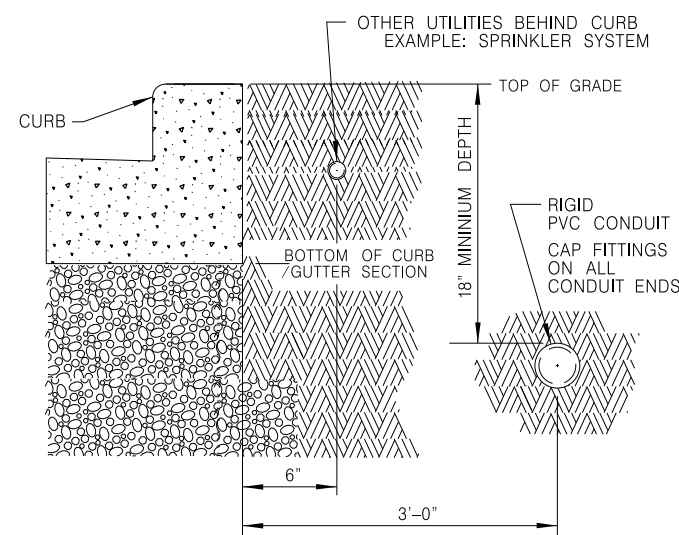
NOTE: 1.) KEEP AREA BEHIND CURB FREE OF DEBRIS AND CONCRETE OVERPOUR.

DETAIL "B"

CONDUIT TO BE PLACED WITHIN A 6" AREA DIRECTLY BEHIND CURB, UNLESS NOTED OR APPROVED BY ENGINEER.

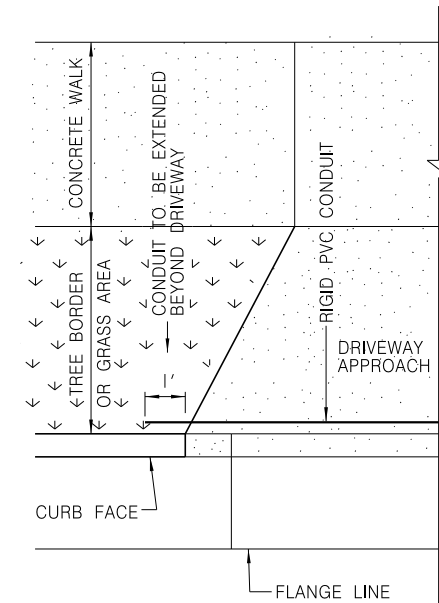


DETAIL "C"

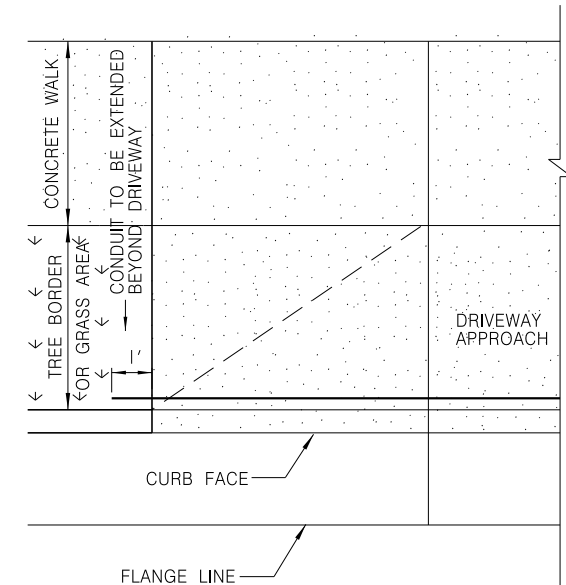


100 DETAIL "B" & "C"
TYPICAL CONDUIT INSTALLATION
BEHIND CURB NOT TO SCALE

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

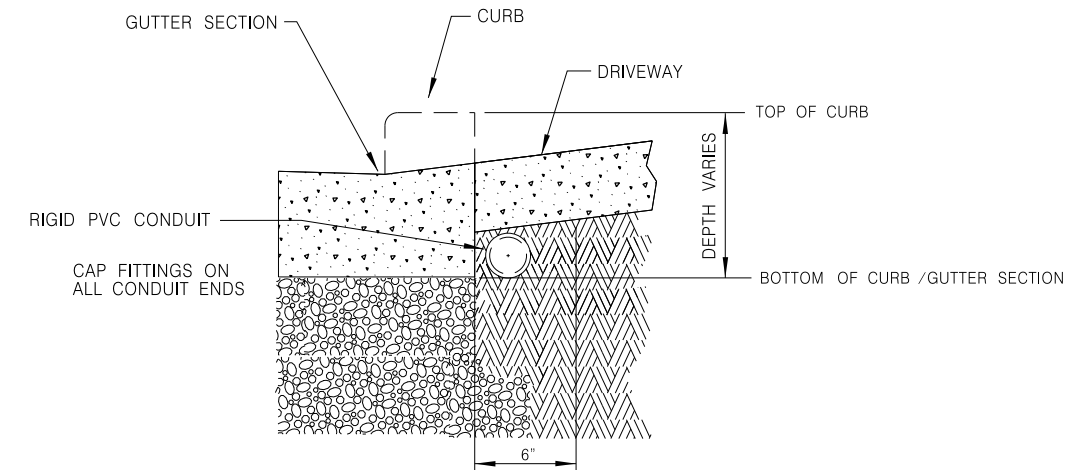


TYPICAL PLAN VIEW FOR
FLARED DRIVEWAY



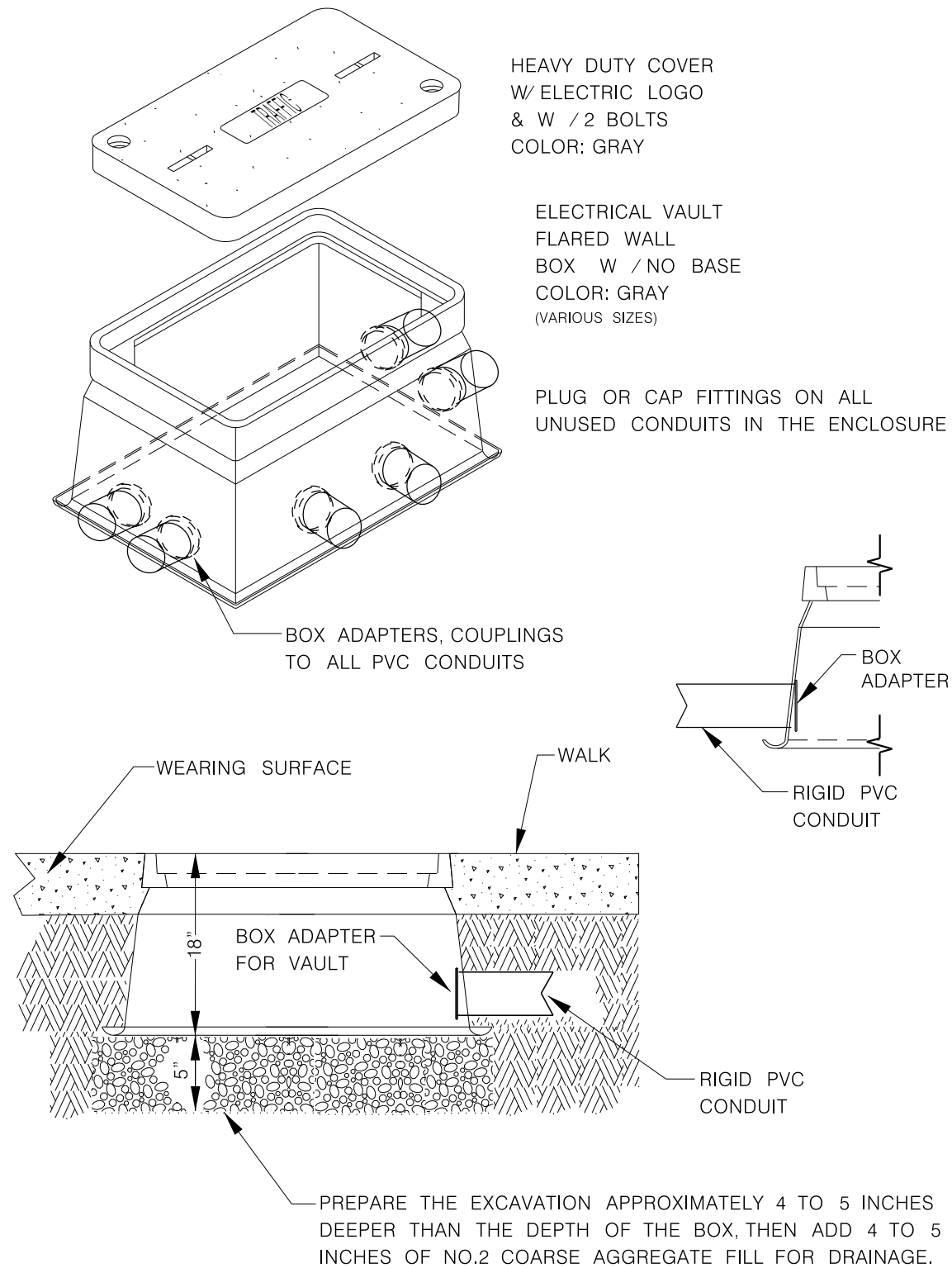
TYPICAL PLAN VIEW FOR
DEPRESSED DRIVEWAY

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



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

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



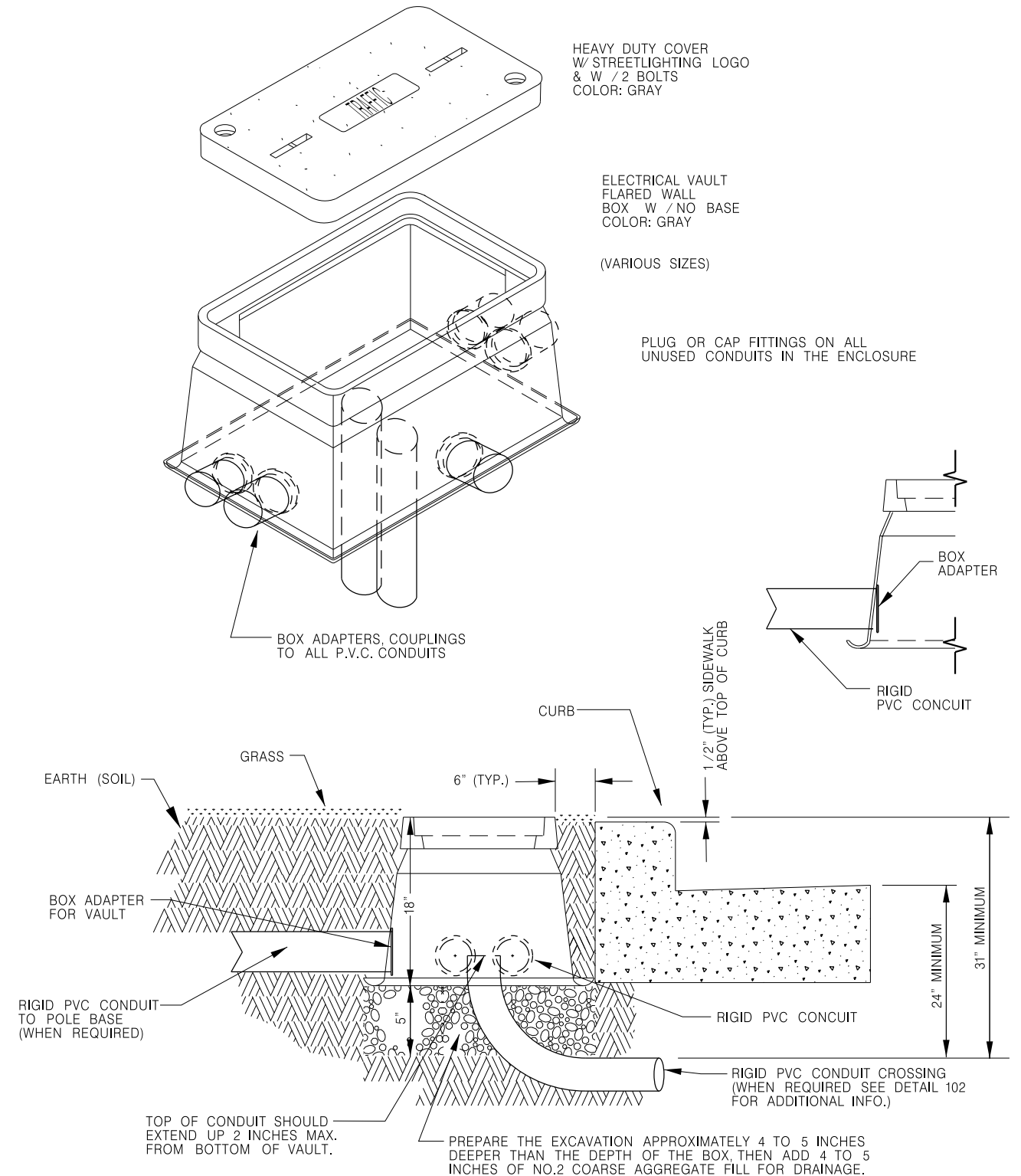
113

DETAIL

TYPICAL VAULT INSTALLATION
IN SIDEWALK

NOT TO SCALE

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



121

DETAIL

TYPICAL VAULT INSTALLATION IN GRASS AREA

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.

SHEET 3 OF 5

GENERAL NOTES

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

BASES SHALL BE EXCAVATED BY USE OF A CIRCULAR AUGER.

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

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

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

MINIMUM BENDING RADIUS OF CONDUIT IS EQUAL TO 6 X THE DIAMETER. CONDUIT HEIGHT ABOVE CONCRETE BASES SHALL BE 4 INCHES. ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED. NONMETALLIC CONDUIT SHALL HAVE BELL END INSTALLED. ALL CONDUIT SHALL BE SLOPED TO PULL BOX.

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

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

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

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

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

A NO. 4 AWG. STRANDED COPPER EQUIPMENT GROUNDING CONDUCTOR SHALL BE EXOTHERMICALLY WELDED TO THE EQUIPMENT GROUNDING ELECTRODE (GROUND ROD).

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

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

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

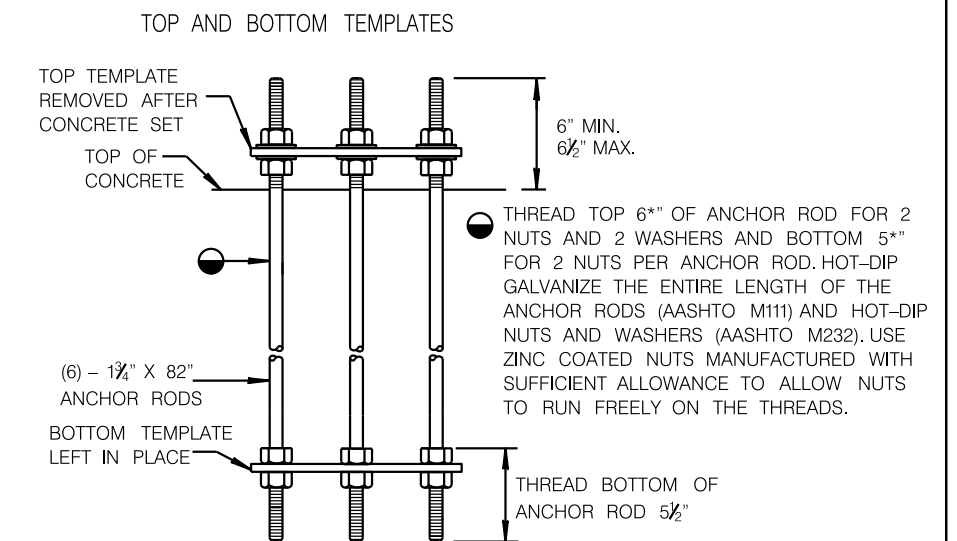
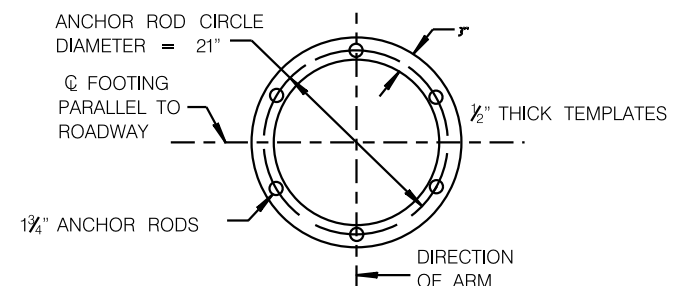
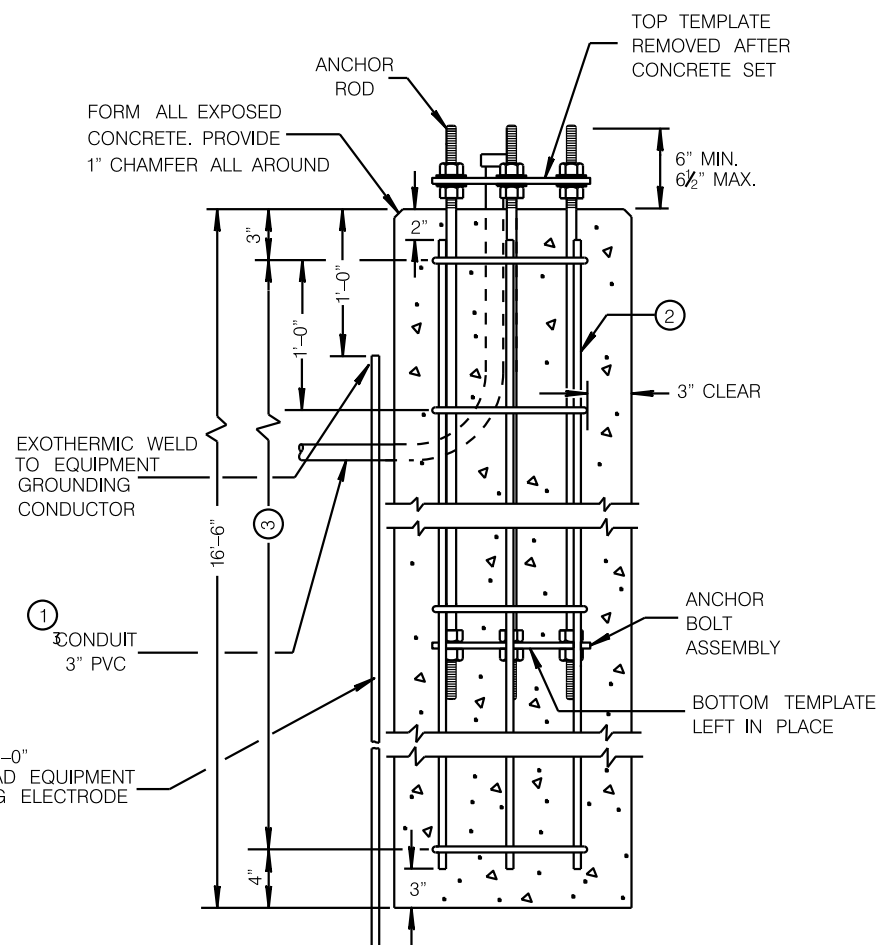
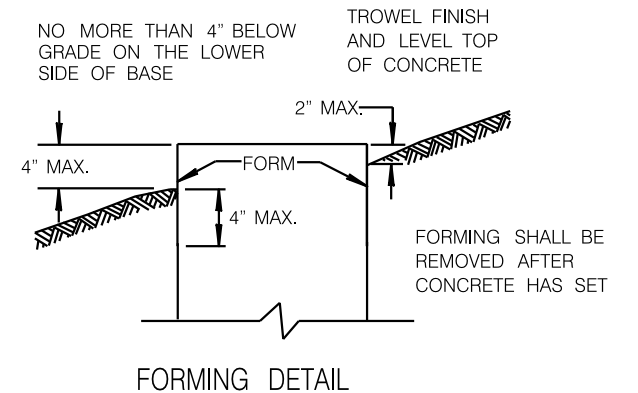
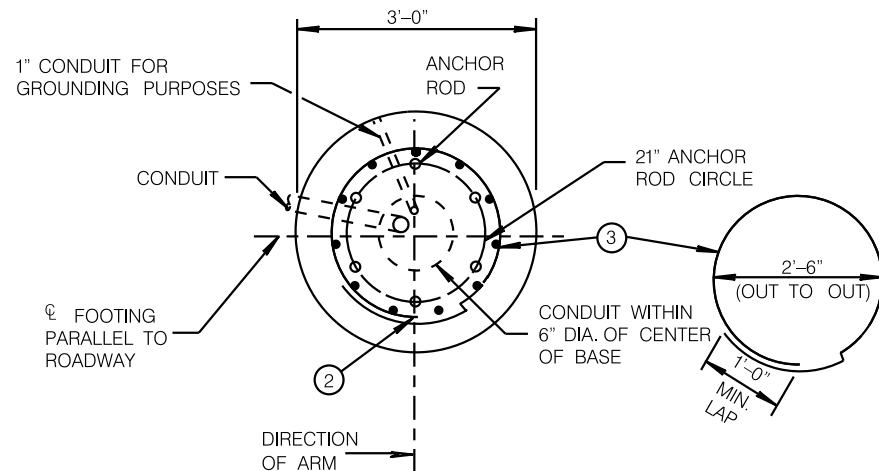
ANCHOR RODS SHALL BE INSTALLED WITH MISALIGNMENTS OF LESS THAN 1:40 FROM VERTICAL.

- ① THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE AND INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES. THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE THAT IS NOT INSTALLED BELOW THE TRAVELED WAY SHALL BE 18 INCHES. THE MAXIMUM DEPTH OF ALL CONDUIT SHALL BE 36 INCHES, (GREATER THAN 36 INCHES IF INSTALLED IN BREAKER-RUN), EXCEPT WITH WRITTEN APPROVAL BY THE ENGINEER.

- ② (11) NO. 8 X 16'-1" BAR STEEL REINFORCEMENT.

- ③ (17) NO. 4 X 9'-0" BAR STEEL REINFORCEMENT @ 1'-0" C-C.

CONCRETE MASONRY _____ $f_c = 3,500$ p.s.i.
HIGH STRENGTH BAR STEEL REINFORCEMENT, GRADE 60 _____ $f_y = 60,000$ p.s.i.
ANCHOR RODS, AASHTO M314 GRADE 55 _____ $f_y = 55,000$ p.s.i.
TEMPLATES, ASTM, A709 GRADE 36 _____ $f_y = 36,000$ p.s.i.



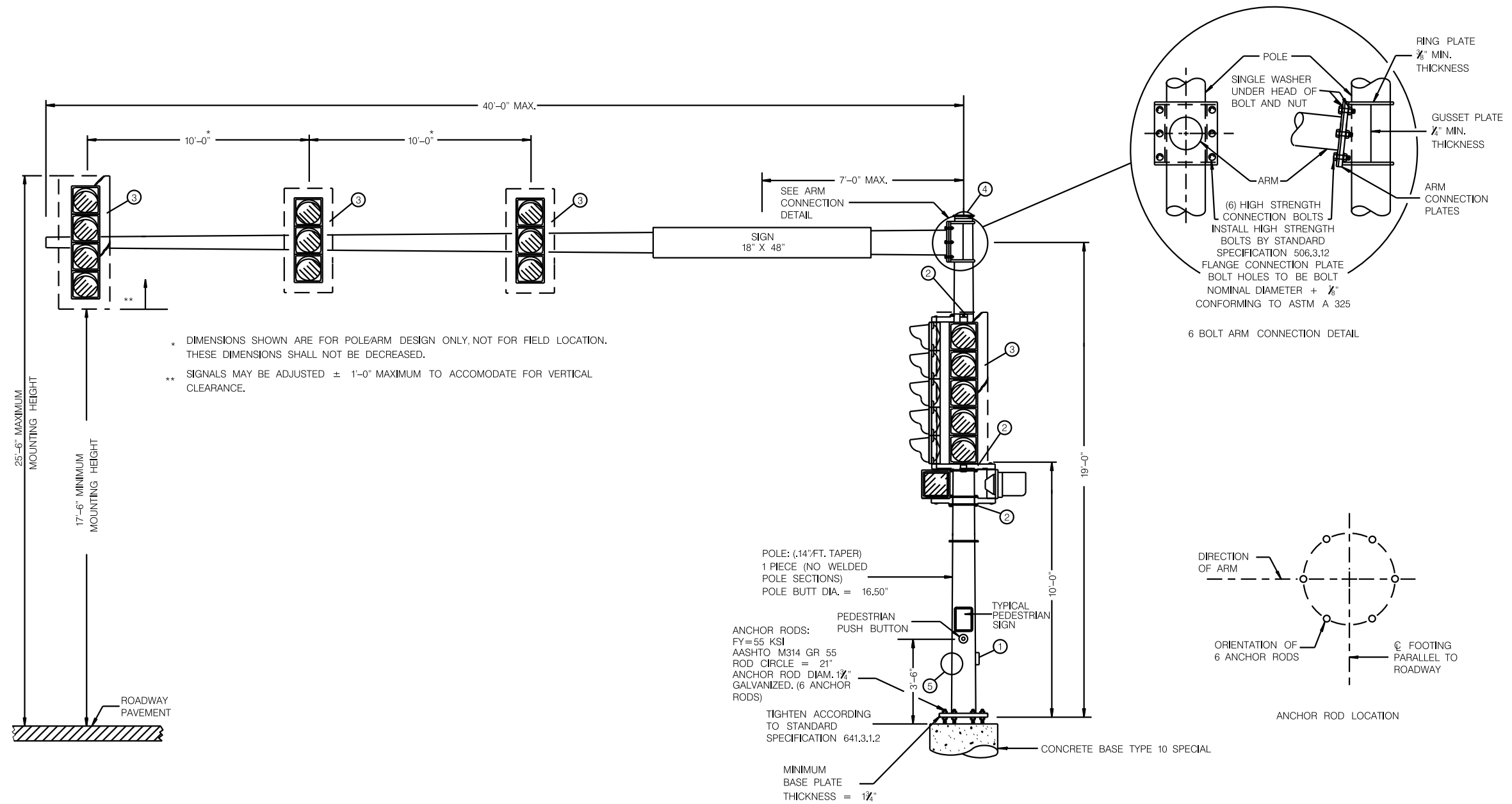
CONCRETE BASE TYPE 10 SPECIAL
ANCHOR ASSEMBLY

QUANTITY REQUIREMENTS	
APPROX. CUBIC YARDS OF CONCRETE	4.32
LBS. OF HOOP BAR STEEL	103
LBS. OF VERTICAL BAR STEEL	473

CONCRETE BASE TYPE 10 SPECIAL

CITY OF MILWAUKEE
DEPARTMENT OF PUBLIC WORKS

SHEET 4 OF 5



* DIMENSIONS SHOWN ARE FOR POLE/ARM DESIGN ONLY, NOT FOR FIELD LOCATION.
THESE DIMENSIONS SHALL NOT BE DECREASED.

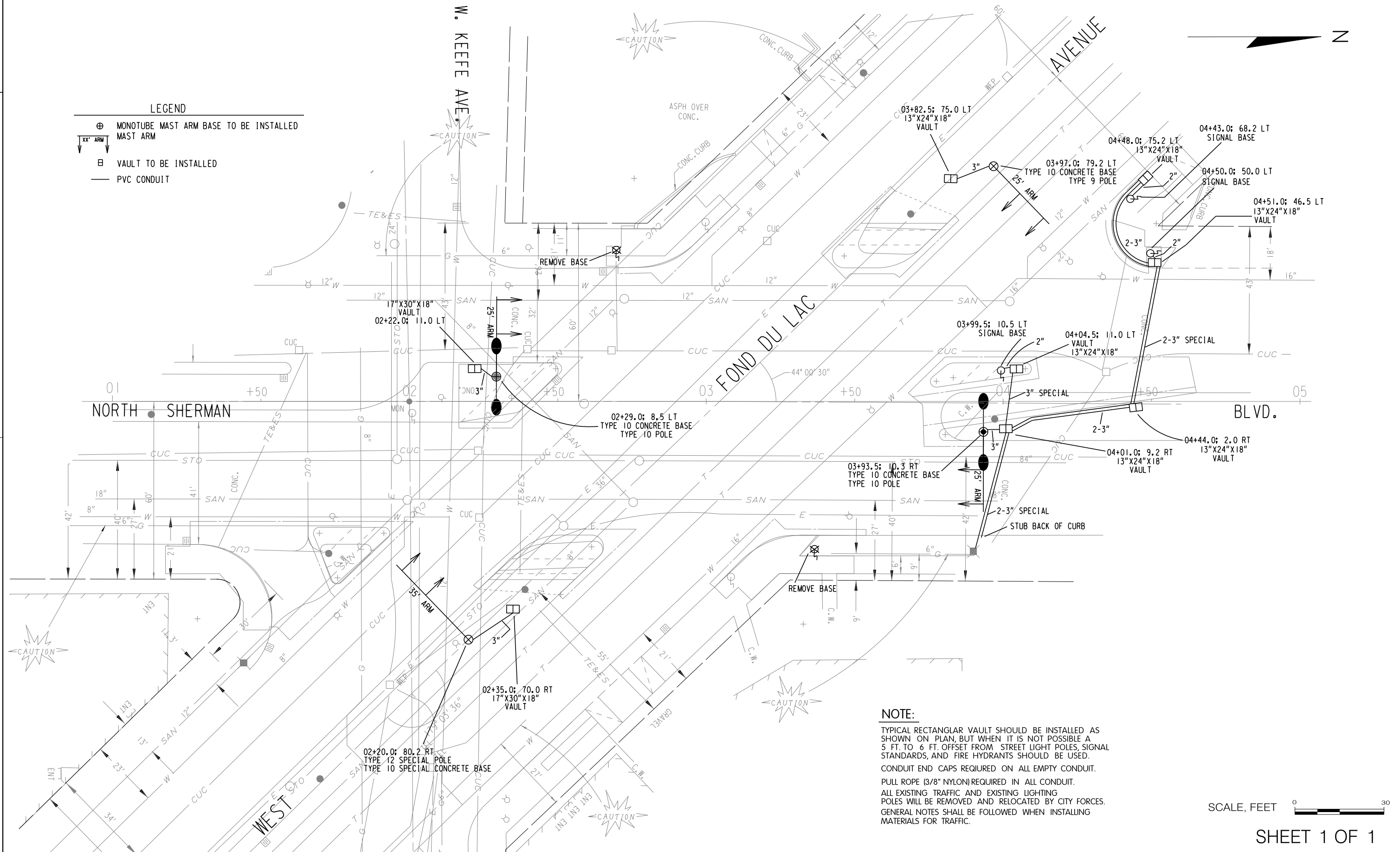
** SIGNALS MAY BE ADJUSTED \pm 1'-0" MAXIMUM TO ACCOMMODATE FOR VERTICAL
CLEARANCE.

(MAXIMUM LOAD)
TYPE 12 POLE SPECIAL
35'- 40' MONOTUBE ARM

TYPE 12 POLE SPECIAL
35'- 40' MONOTUBE ARM

CITY OF MILWAUKEE
DEPARTMENT OF PUBLIC WORKS

SHEET 5 OF 5



DATE 12AUG14		E S T I M A T E O F Q U A N T I T I E S			
LINE					2155-03-71
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0010	204.0100	REMOVING PAVEMENT	SY	250.000	250.000
0020	204.0150	REMOVING CURB & GUTTER	LF	480.000	480.000
0030	204.0155	REMOVING CONCRETE SIDEWALK	SY	260.000	260.000
0040	204.0195	REMOVING CONCRETE BASES	EACH	2.000	2.000
0050	204.0220	REMOVING INLETS	EACH	1.000	1.000
0060	213.0100	FINISHING ROADWAY (PROJECT) 01. 2155-03-71	EACH	1.000	1.000
0070	305.0125	BASE AGGREGATE DENSE 1 1/4-INCH	CY	160.000	160.000
0080	415.0090	CONCRETE PAVEMENT 9-INCH	SY	230.000	230.000
0090	416.0610	DRILLED TIE BARS	EACH	52.000	52.000
0100	455.0605	TACK COAT	GAL	1.000	1.000
0110	465.0105	ASPHALTIC SURFACE	TON	1.000	1.000
0120	601.0150	CONCRETE CURB INTEGRAL TYPE D	LF	70.000	70.000
0130	601.0331	CONCRETE CURB & GUTTER 31-INCH	LF	590.000	590.000
0140	601.0600	CONCRETE CURB PEDESTRIAN	LF	11.500	11.500
0150	602.0410	CONCRETE SIDEWALK 5-INCH	SF	2,450.000	2,450.000
0160	602.0505	CURB RAMP DETECTABLE WARNING FIELD YELLOW	SF	128.000	128.000
0170	611.8110	ADJUSTING MANHOLE COVERS	EACH	1.000	1.000
0180	611.8115	ADJUSTING INLET COVERS	EACH	1.000	1.000
0190	611.9705	SALVAGED MANHOLE COVERS	EACH	1.000	1.000
0200	611.9710	SALVAGED INLET COVERS	EACH	2.000	2.000
0210	619.1000	MOBILIZATION	EACH	1.000	1.000
0220	625.0100	TOPSOIL	SY	75.000	75.000
0230	629.0210	FERTILIZER TYPE B	CWT	0.050	0.050
0240	631.1000	SOD LAWN	SY	75.000	75.000
0250	642.5001	FIELD OFFICE TYPE B 01. 2155-03-71	EACH	1.000	1.000
0260	643.0100	TRAFFIC CONTROL (PROJECT) 01. 2155-03-71	EACH	1.000	1.000
0270	643.0300	TRAFFIC CONTROL DRUMS	DAY	2,860.000	2,860.000
0280	643.0420	TRAFFIC CONTROL BARRICADES TYPE III	DAY	780.000	780.000
0290	643.0705	TRAFFIC CONTROL WARNING LIGHTS TYPE A	DAY	1,560.000	1,560.000
0300	643.0715	TRAFFIC CONTROL WARNING LIGHTS TYPE C	DAY	2,860.000	2,860.000
0310	643.0900	TRAFFIC CONTROL SIGNS	DAY	1,196.000	1,196.000
0320	646.0600	REMOVING PAVEMENT MARKINGS	LF	1,266.000	1,266.000
0330	647.0776	PAVEMENT MARKING CROSSWALK EPOXY 12-INCH	LF	942.000	942.000
0340	650.5500	CONSTRUCTION STAKING CURB GUTTER AND CURB & GUTTER	LF	654.000	654.000
0350	650.8500	CONSTRUCTION STAKING ELECTRICAL INSTALLATIONS (PROJECT) 01. 2155-03-71	LS	1.000	1.000
0360	650.9910	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) 01. 2155-03-71	LS	1.000	1.000
0370	652.0225	CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH	LF	20.000	20.000
0380	652.0235	CONDUIT RIGID NONMETALLIC SCHEDULE 40 3-INCH	LF	220.000	220.000
0390	652.0615	CONDUIT SPECIAL 3-INCH	LF	195.000	195.000
0400	654.0110	CONCRETE BASES TYPE 10	EACH	3.000	3.000
0410	690.0150	SAWING ASPHALT	LF	4.000	4.000
0420	690.0250	SAWING CONCRETE	LF	715.000	715.000
0430	SPV.0060	SPECIAL 01. MONOTUBE ARMS 25-FT	EACH	3.000	3.000
0440	SPV.0060	SPECIAL 02. MONOTUBE ARMS 35 FT	EACH	1.000	1.000
0450	SPV.0060	SPECIAL 03. POLES TYPE 9	EACH	1.000	1.000
0460	SPV.0060	SPECIAL 04. POLES TYPE 10	EACH	2.000	2.000
0470	SPV.0060	SPECIAL 05. POLES TYPE 12 SPECIAL	EACH	1.000	1.000
0480	SPV.0060	SPECIAL 06. INSTALL TRAFFIC SIGNAL BASE	EACH	3.000	3.000

DATE 12AUG14		E S T I M A T E O F Q U A N T I T I E S			
LINE		2155-03-71			
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0490	SPV. 0060	SPECIAL 07. TRAFFIC POLYMER CONCRETE	EACH	6.000	6.000
		VAULT 13" X 24" X 18"			
0500	SPV. 0060	SPECIAL 08. TRAFFIC POLYMER CONCRETE	EACH	2.000	2.000
		VAULT 17" X 30" X 18 "			
0510	SPV. 0060	SPECIAL 09. CONCRETE BASE TYPE 10	EACH	1.000	1.000
		SPECIAL			
0520	SPV. 0060	SPECIAL 10. INLET TYPE 45A	EACH	1.000	1.000
0530	SPV. 0060	SPECIAL 11. ADJUST TES MANHOLE COVERS	EACH	1.000	1.000
0540	SPV. 0060	SPECIAL 12. INLET SCREEN TYPE M	EACH	2.000	2.000
0550	SPV. 0060	SPECIAL 13. INLET SCREEN TYPE R	EACH	1.000	1.000
0560	SPV. 0060	SPECIAL 14. UTILITY LINE OPENING (ULO)	EACH	4.000	4.000
0570	SPV. 0090	SPECIAL 01. CONSTRUCTION STAKING	LF	220.000	220.000
		CONCRETE WALK			
0580	SPV. 0090	SPECIAL 02. STORM SEWER PIPE CORRUGATED	LF	5.000	5.000
		PVC 8 INCH			
0590	SPV. 0195	SPECIAL 01. MANAGEMENT OF SOLID WASTE	TON	8.700	8.700

		<u>REMOVALS</u>				
2155-03-71						
CATEGORY 0010		REMOVING PAVEMENT	REMOVING CURB & GUTTER	REMOVING CONCRETE SIDEWALK	SAWING ASPHALT	SAWING CONCRETE
ITEM NO.		204.0100	204.0150	204.0155	690.0150	690.0250
UNIT PAY		SY	LF	SY	LF	LF
LOCATION						
STA 1+00 TO 5+00	LT	110	250	130	4	328
SUBTOTALS (LEFT)		110	250	130	4	328
STA 1+00 TO 5+00	RT	140	230	130	0	387
SUBTOTALS (RIGHT)		140	230	130	0	387
GRAND TOTALS		250	480	260	4	715

CONCRETE CONSTRUCTION ITEMS

2155-03-71

		BASE AGGREGATE DENSE 1 ¼- INCH 305.0125 CY 0010	CONCRETE PAVEMENT 9- INCH 415.0090 SY 0010	CONCRETE CURB INTEGRAL TYPE D 601.0150 LF 0010	CONCRETE CURB & GUTTER 31-INCH 601.0331 LF 0010	CONCRETE SIDEWALK 5-INCH 602.0410 SF 0010	CURB RAMP DETECTABLE WARNING FIELD YELLOW 602.0505 SF 0010	CONCRETE CURB PEDESTRIAN 601.0600 LF 0010
ITEM NO.	UNIT PAY							
CATEGORY								
LOCATION								
STA 1+00 TO 5+00	LT	80	130	20	270	1300	64	0
SUBTOTALS (LEFT)		80	130	20	270	1300	64	0
STA 1+00 TO 5+00	RT	80	100	50	320	1150	64	11.5
SUBTOTALS (RIGHT)		80	100	50	320	1150	64	11.5
GRAND TOTALS		160	230	70	590	2,450	128	11.5

2155-03-71

MISCELLANEOUS ITEMS

		FINISHING ROADWAY (PROJECT)	DRILLED TIE BARS	MOBILIZATION	FIELD OFFICE TYPE B (PROJECT)	TRAFFIC CONTROL (PROJECT)	INLET SCREEN TYPE M	INLET SCREEN TYPE R	UTILITY LINE OPENING (ULO)	MANAGEMENT OF SOLID WASTE
ITEM NO.		213.0100	416.0610	619.1000	642.5001	643.0100	SPV.0060.12	SPV.0060.13	SPV.0060.14	SPV.0195.01
UNIT PAY		EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	TON
CATEGORY		0010	0010	0010	0010	0010	0010	0010	0010	0010
LOCATION										
STA 1+00 TO 5+00	LT	↑	↑	↑	↑	↑	1		↑	
SUBTOTALS (LEFT)							1	1		
STA 1+00 TO 5+00	RT	↓	↓	↓	↓	↓	1		↓	8.7
SUBTOTALS (RIGHT)							1			
GRAND TOTALS		1	52	1	1	1	2	1	4	8.7

2155-03-71

Item No	Description	Unit	Quantity
204.0195	Removing Concrete Bases	Each	2
652.0225	Conduit Rigid Nonmetallic Schedule 40 2-Inch	LF	20
652.0235	Conduit Rigid Nonmetallic Schedule 40 3-inch	LF	220
652.0615	Conduit Special 3-Inch	LF	195
654.0110	Concrete Bases Type 10	Each	3
SPV.0060.01	Monotube Arms 25-FT	Each	3
SPV.0060.02	Monotube Arms 35-FT	Each	1
SPV.0060.03	Poles Type 9	Each	1
SPV.0060.04	Poles Type 10	Each	2
SPV.0060.05	Poles Type 12 Special	Each	1
SPV.0060.06	Install Traffic Signal Base	Each	3
SPV.0060.07	Traffic Polymer Concrete Vault 13"X24"X18"	Each	6
SPV.0060.08	Traffic Polymer Concrete Vault 17"X30"X18"	Each	2
SPV.0060.09	Concrete Base Type 10 Special	Each	1

ALL ITEMS ARE CATEGORY 0010

2155-03-71

Adjust TES Mahole Covers				
GROUP CODE	NO.	LOCATION	PROP. ELEV	REMARKS
0010	601	STA 4 + 34.8 - 9.9' LT	83.52	

0010	ADJUST TES MANHOLE COVERS SPV.0060.11	1
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2155-03-71					
CONSTRUCTION STAKING ROADWAY ITEMS					
		CONSTRUCTION STAKING CURB GUTTER AND CURB & GUTTER	CONSTRUCTION STAKING ELECTRICAL INSTALLATIONS (PROJECT)	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT)	CONSTRUCTION STAKING CONCRETE WALK
		650.5500	650.8500	650.9910	SPV.0090.01
		LF	LS	LS	LF
CATEGORY	ITEM NO UNIT PAY	0010	0010	0010	0010
LOCATION					
STA 1+00 TO STA 5+00	LT	286	↑	↑	105
SUBTOTALS (LEFT)		286			105
STA 1+00 TO STA 5+00	RT	368	↓	↓	115
SUBTOTALS (RIGHT)		368			115
GRAND TOTALS		654	1	1	220

MISCELLANEOUS LANDSCAPING ITEMS

2155-03-71

CATEGORY 0010	FERTILIZER			
		TOPSOIL	TYPE B	SOD LAWN
	ITEM NO.	625.0100	629.0210	631.1000
	UNIT PAY	SY	CWT	SY
LOCATION				
STA 1+00 TO STA 5+00	LT	25	↑ ↓	25
	SUBTOTALS (LEFT)	25		25
STA 1+00 TO STA 5+00	RT	50		50
	SUBTOTALS (RIGHT)	50		50
GRAND TOTALS		75	0.05	75

2155-03-71

ADJUSTING INLET COVERS				
GROUP CODE	NO.	LOCATION	PROP. ELEV	REMARKS
0010	101	01 + 25.0 - 47.8 ' RT	85.05	REPAIR 6" OF BRICKWORK

0010 ADJUSTING INLET COVERS (611.8115) 1

SALVAGED INLET COVERS				
GROUP CODE	NO.	LOCATION	PROP. ELEV	REMARKS
0010	101	STA 1 + 25.0 - 47.8 ' RT	85.05	REUSE
0010	102	STA 2 + 49.5 - 8.2 ' LT	84.34	REUSE

0010 SALVAGED INLET COVERS (611.9710) 2

ADJUSTING MANHOLE COVERS				
GROUP CODE	NO.	LOCATION	PROP. ELEV.	REMARKS
0010	201	STA 2 + 52.0 - 41.8' RT	85.06	REPAIR 3" OF BRICKWORK, REUSE COVER

0010 ADJUSTING MANHOLE COVERS (611.8110) 1
0010 SALVAGED MANHOLE COVERS (611.9705) 1

REMOVING INLETS			
GROUP CODE	NUMBER	STATION	OFFSET
0010	102	STA 2 + 49.5	8.2' LT

0010 REMOVING INLETS (204.0220) 1

New Structures															
STRUCTURES								PVC PIPE, STORM SEWER							REMARKS
GROUP CODE	No.	LOCATION		COVER ELEV.	STRUCT.	FRAME & LID	DEPTH	CONNECTION STRUCTURE		SIZE (IN)	LENGTH (FT)	INVERT ELEV.			
		STATION	OFFSET					FROM	TO			INLET	OUTLET	Slope	
0010	1	2+49.5	8.2' LT	84.34	45A	57	3.08	1	Use existing drains	8	5	81.26		Reuse Existing Type 57 Frame & Grate	

1 Inlet Type 45A (SPV.0060.10) (0010 - Participating)
5 LF STORM SEWER PIPE CORRUGATED PVC 8" (SPV.0090.02) (0010 - PARTICIPATING)

PAVEMENT MARKING QUANTITIES				
GROUP CODE	ITEM NUMBER	DESCRIPTION	UNIT	QUANTITY
0010	647.0776	PAVEMENT MARKING CROSSWALK EPOXY 12-INCH	LF	942
0010	646.0600	REMOVING PAVEMENT MARKINGS	LF	1266

ALL CATEGORY 0010 (PARTICIPATING)

		<u>ASPHALT ITEMS</u>	
2155-03-71			
CATEGORY 0010	ITEM NO.	ASPHALTIC	TACK
	UNIT PAY	SURFACE	COAT
		465.0105	455.0605
		TON	GAL
LOCATION			
STA 1+00 TO 5+00	LT	1	1
SUBTOTALS (LEFT)		1	1
STA 1+00 TO 5+00	RT	0	0
SUBTOTALS (RIGHT)		0	0
GRAND TOTALS		1	1

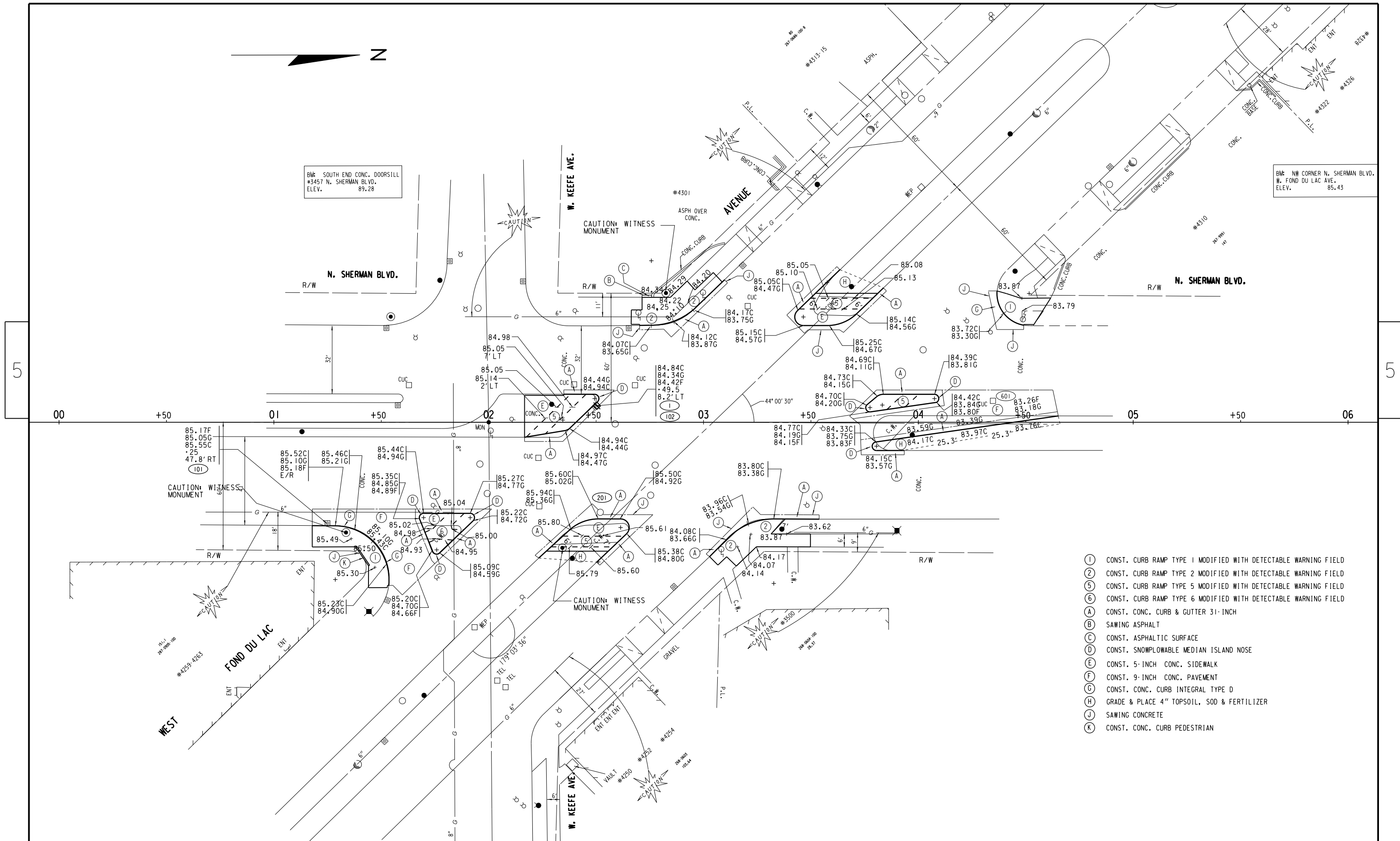
2155-03-71

Traffic Control Quantities

Items	Stage 1	
	(Each)	* (Days)
(1)643.0300 Traffic Control , Drums	55	2,860
(2)643.0420 Traffic Control , Barricades , Type III	15	780
643.0705 Traffic Control , Warning Lights , Type "A" (Flashing)	30	1,560
643.0715 Traffic Control , Warning Lights , Type "C" (Steady)	55	2,860
643.0900 Traffic Control , Signs	23	1,196

Items	
W020-1	10
W01-6L	1
W01-6R	3
W04-2L	2
W020-5L	2
W04-2R	1
W020-5R	1
R3-7L	2
W9-2L	1
Total	23

(1) All Drums have one steady burning yellow light
(2) All Type III Barricades have 2 flashing yellow lights



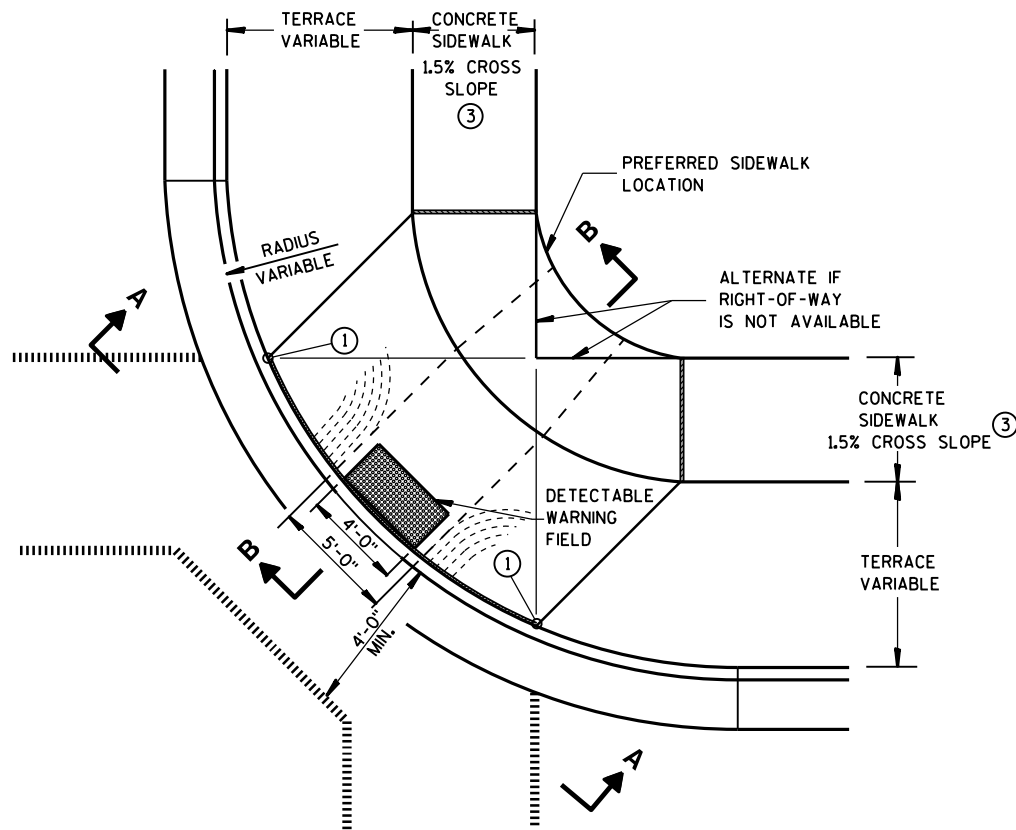
B.M. SOUTH END CONC. DOORSILL
#3457 N. SHERMAN BLVD.
ELEV. 89.28

B.M. NW CORNER N. SHERMAN BLVD.
W. FOND DU LAC AVE.
ELEV. 85.43

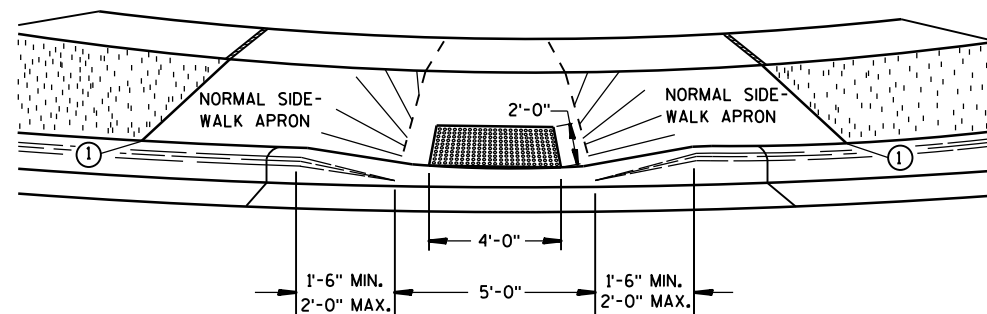
- ① CONST. CURB RAMP TYPE 1 MODIFIED WITH DETECTABLE WARNING FIELD
- ② CONST. CURB RAMP TYPE 2 MODIFIED WITH DETECTABLE WARNING FIELD
- ⑤ CONST. CURB RAMP TYPE 5 MODIFIED WITH DETECTABLE WARNING FIELD
- ⑥ CONST. CURB RAMP TYPE 6 MODIFIED WITH DETECTABLE WARNING FIELD
- A CONST. CONC. CURB & GUTTER 31-INCH
- B SAWING ASPHALT
- C CONST. ASPHALTIC SURFACE
- D CONST. SNOWPLOWABLE MEDIAN ISLAND NOSE
- E CONST. 5-INCH CONC. SIDEWALK
- F CONST. 9-INCH CONC. PAVEMENT
- G CONST. CONC. CURB INTEGRAL TYPE D
- H GRADE & PLACE 4" TOPSOIL, SOD & FERTILIZER
- J SAWING CONCRETE
- K CONST. CONC. CURB PEDESTRIAN

Standard Detail Drawing List

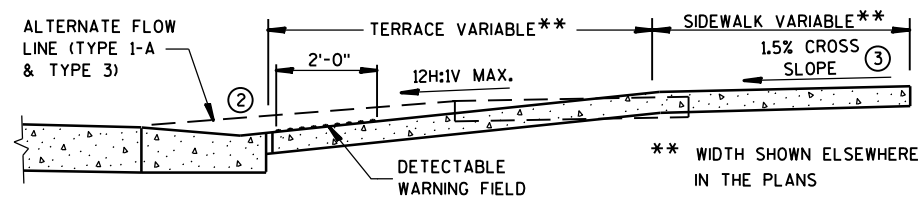
08D05-15A	CURB RAMPS TYPES 1 AND 1-A
08D16-10	CONCRETE GUTTER, CURB AND GUTTER AND PAVEMENT TIES
09B02-07	CONDUIT
09C11-04	CONCRETE BASE TYPE 10
09E08-04A	TYPE 9 POLE 15' -30' MONOTUBE ARM
09E08-04B	TYPE 10 POLE 15' -30' MONOTUBE ARM
09E08-04E	GENERAL NOTES AND HARDWARE DETAILS FOR TYPE 9, 10, 12 & 13 POLES WITH MONOTUBE ARMS
13C01-16	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES
13C13-08	URBAN DOWELED CONCRETE PAVEMENT
13C18-02A	CONCRETE PAVEMENT JOINTING
13C18-02B	CONCRETE PAVEMENT STEEL REINFORCEMENT
13C18-02C	CONCRETE PAVEMENT JOINT TIES
13C18-02D	CONCRETE PAVEMENT JOINTING AT UTILITY FIXTURES
15C33-01	STOP LINE AND CROSSWALK PAVEMENT MARKING
15D21-02	TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE
15D30-01	TRAFFIC CONTROL, SIDEWALK CLOSURE



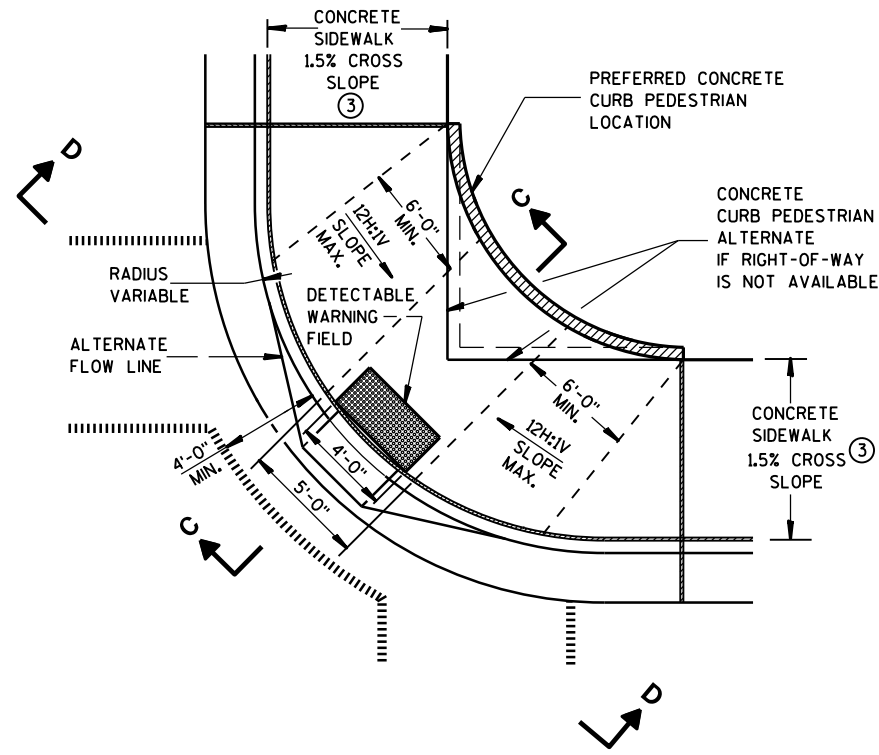
**PLAN VIEW
TYPE 1 RAMP**
(CENTER OF CORNER RADIUS)



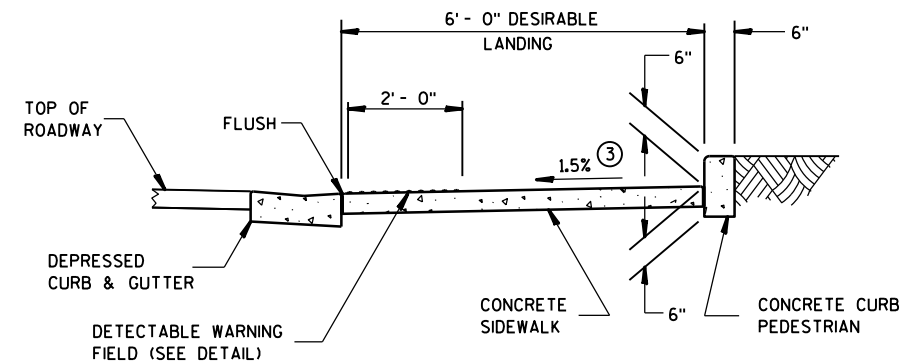
VIEW A-A



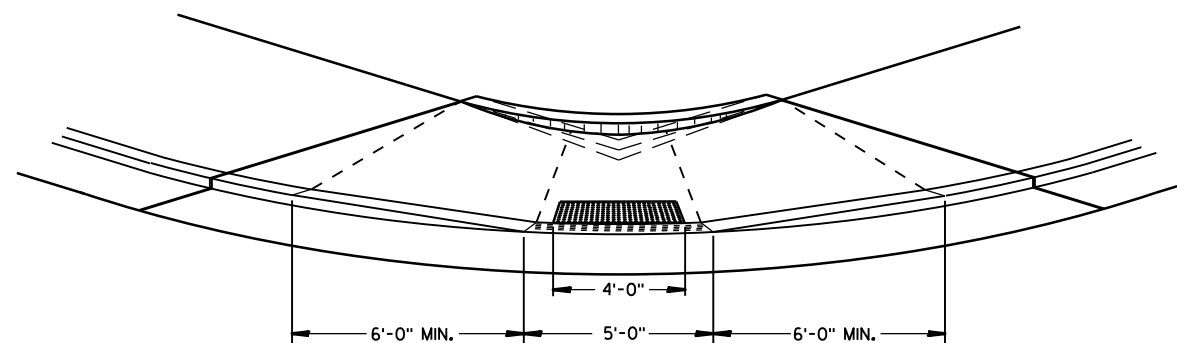
SECTION B-B



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



SECTION C-C



VIEW D-D

GENERAL NOTES

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

RAMPS SHALL BE BUILT AT 12H:1V OR FLATTER. WHEN NECESSARY, THE SIDEWALK ELEVATION MAY BE LOWERED TO MEET THE HIGH POINT ON THE RAMP.

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

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

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

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

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

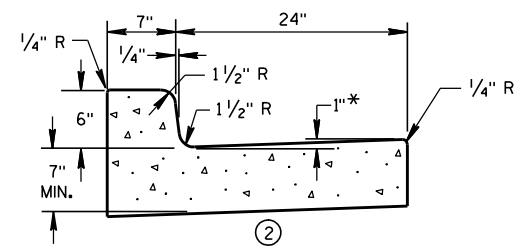
- ① THIS POINT IS AN EXTENSION OF OUTSIDE EDGE OF APPROACHING SIDEWALK WHERE IT MEETS THE BACK OF CONCRETE CURB.
- ② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. PROVIDE DRAINAGE AWAY FROM CURB RAMP AT GUTTER FLAG INTERFACE.
- ③ $\pm 0.5\%$ CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

LEGEND

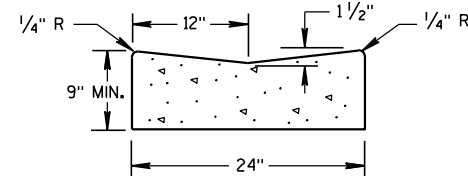
- 1/2" EXPANSION JOINT-SIDEWALK
- - - - - CONTRACTION JOINT FIELD LOCATED
- ||||||| PAVEMENT MARKING CROSSWALK (WHITE)
- ALTERNATIVE LAYOUT

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

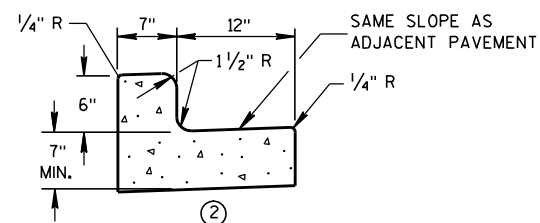
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



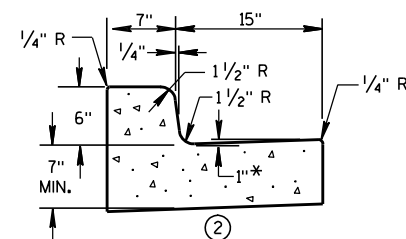
① CONCRETE CURB & GUTTER 31"



① CONCRETE GUTTER 24"

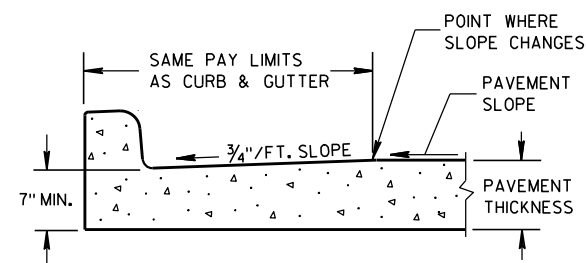


① CONCRETE CURB & GUTTER 19"

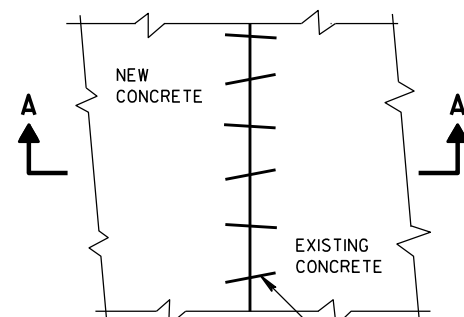


① CONCRETE CURB & GUTTER 22"

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



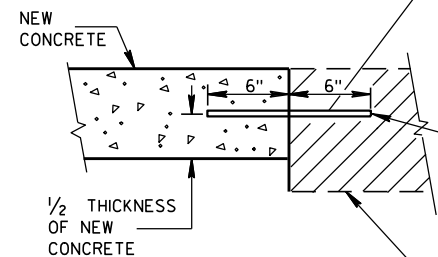
PARTIAL SECTION OF PAVEMENT WITH INTEGRAL CURB & GUTTER



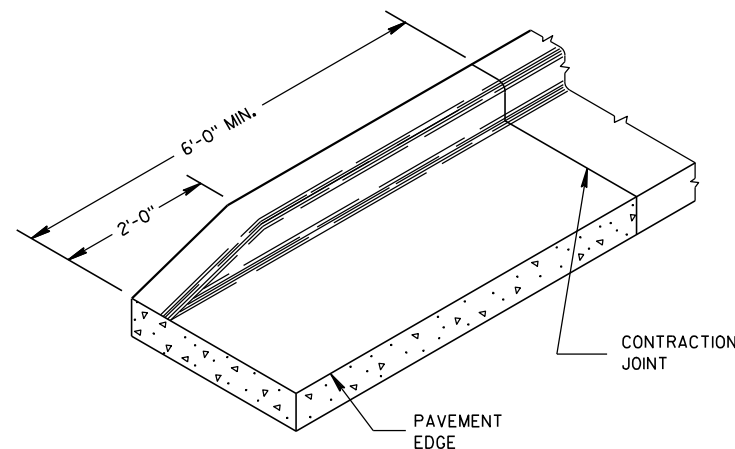
PLAN VIEW

EXISTING AND NEW CONCRETE MAY BE CURB & GUTTER, SURFACE DRAIN, PAVEMENT OR OTHER CONCRETE STRUCTURE.

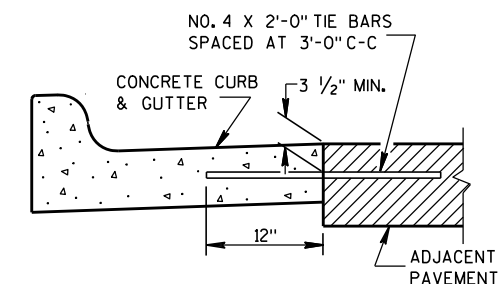
NO. 6 X 12" DEF. BARS SPACED 3'-0" C-C, INSTALLED ON 6:1 SKEW HORIZONTALLY. DIRECTION OF SKEW ALTERNATING AFTER EVERY ONE OR TWO BARS.



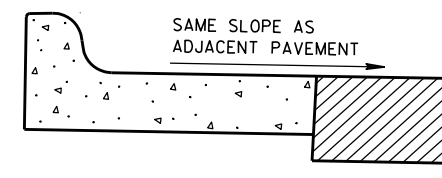
SECTION A-A
PAVEMENT TIES



END SECTION CURB & GUTTER



① TYPICAL TIE BAR LOCATION



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

GENERAL NOTES

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

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

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

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

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

- 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 PLAN.

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

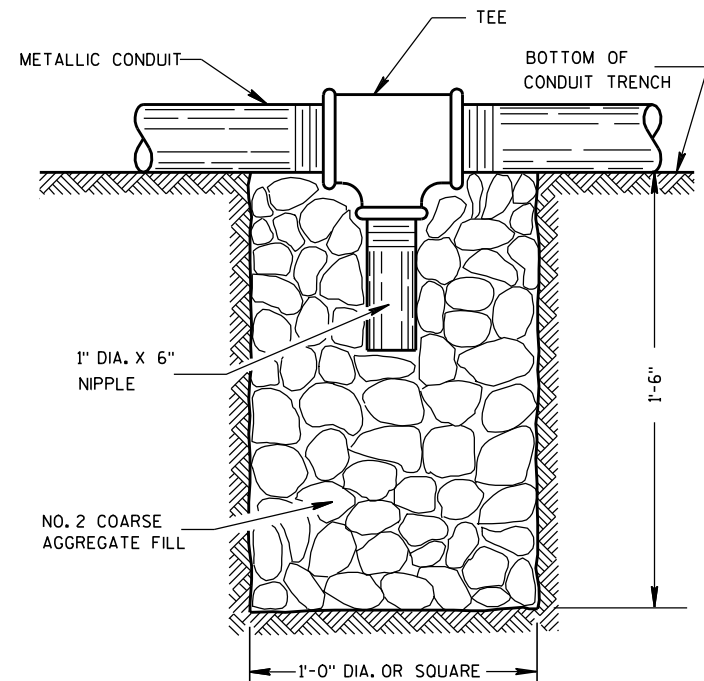
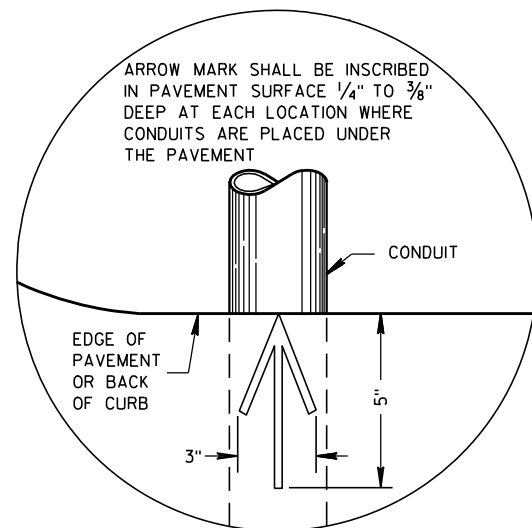
APPROVED

11/22/2010

DATE

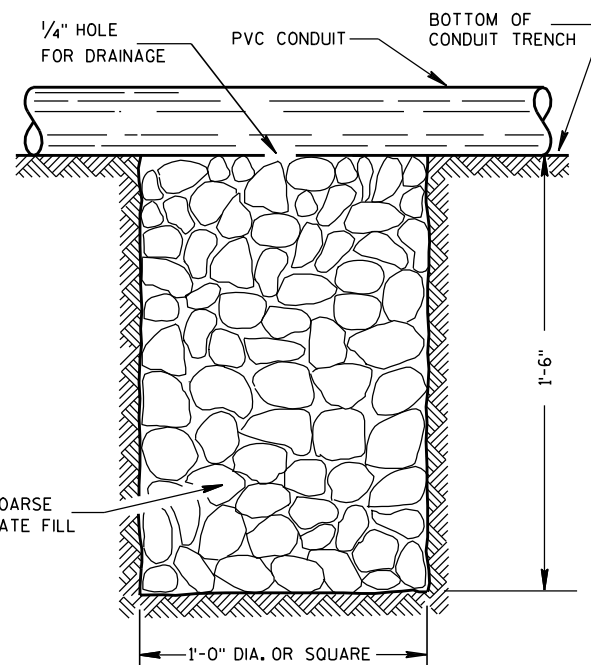
FHWA

/S/ Jerry Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER



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

DRAIN SUMP FOR METALLIC CONDUIT



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

DRAIN SUMP FOR PVC CONDUIT

GENERAL NOTES

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

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

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

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

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

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

ALL METALLIC CONDUIT RACEWAY ENDS SHALL BE REAMED AND THREADED.

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

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

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

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

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

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

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

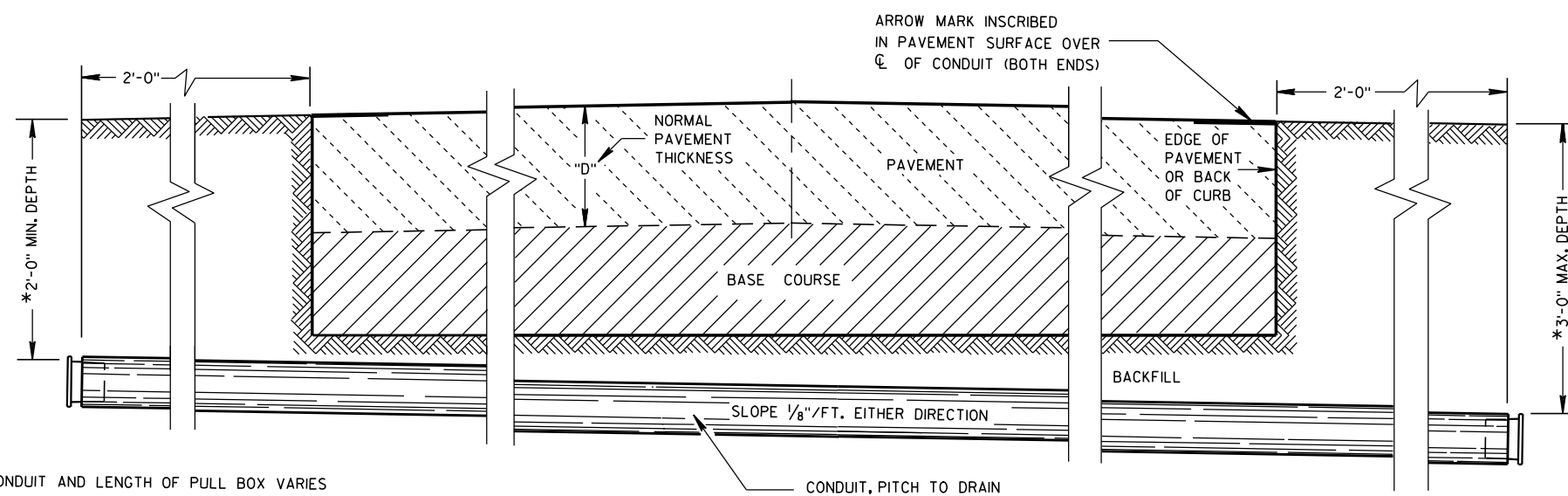
PRIOR TO CONDUIT ACCEPTANCE, CONDUIT CAPS OR PLUGS SHALL BE REMOVED, AND THE CAPS, PLUGS AND CONDUIT ENDS SHALL BE THOROUGHLY CLEANED AND THEN THE CAPS OR PLUGS REINSTALLED TO ENSURE THAT THE CAPS OR PLUGS CAN BE EASILY REMOVED IN THE FUTURE.

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

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

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

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



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

SIDE ELEVATION
DETAIL FOR CONDUIT UNDER PAVED HIGHWAYS

CONDUIT	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED <u>10/23/03</u> DATE	<u>/S/ Balu Ananthanarayanan</u> STATE ELECTRICAL ENGINEER FOR HWYS
FHWA	

6

S.D.D. 9 C 11-4

S.D.D. 9 C 11-4

S.D.D. 9 C 11-4

S.D.D. 9 C 11-4

S.D.D. 9 C 11-4

S.D.D. 9 C 11-4

S.D.D. 9 C 11-4

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S.D.D. 9 C 11-4

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S.D.D. 9 C 11-4



S.D.D. 9 C 11-4



S.D.D. 9 C 11-4



S.D.D. 9 C 11-4

S.D.D. 9 C 11-4

S.D.D. 9 C 11-4

S.D.D. 9 C 11-4



APPROVED
3/2/2011 /S/ Thomas J. Gonring
DATE STATE ELECTRICAL ENGINEER FOR HWYS
FHWA



GENERAL NOTES

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

POLE TYPES 9 AND 10 ARE FOR ARM LENGTHS 15-FOOT TO 30-FOOT.

POLE TYPES 12 AND 13 ARE FOR ARM LENGTHS 35-FOOT TO 55-FOOT.

MONOTUBE POLE AND ARM SHALL BE GALVANIZED STEEL.

RING-STIFFENED BUILT-UP BOX TYPE OF ATTACHMENT FOR TRAFFIC SIGNAL ARM.

ONE (1) PIECE POLE CONSTRUCTION (NO WELDED POLE SECTIONS).

STANDARD STRAIGHT ARM DESIGN (3 % ± RISE).

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

PROVIDE WIREWAY THRU POLE WALL AND ARM CONNECTION PLATES. PROVIDE ROUND, SMOOTH INSIDE SURFACE.

MANUFACTURER'S SUBMITTED POLE DESIGNS AND DRAWINGS SHALL BE SIGNED AND STAMPED BY A REGISTERED PROFESSIONAL ENGINEER AND CERTIFIED AS BEING IN COMPLIANCE WITH THE LATEST AASHTO AND ALL PERTINENT WISDOT SPECIFICATIONS AND DRAWINGS FOR TRAFFIC AND LIGHTING STRUCTURES AND AS FOLLOWS:

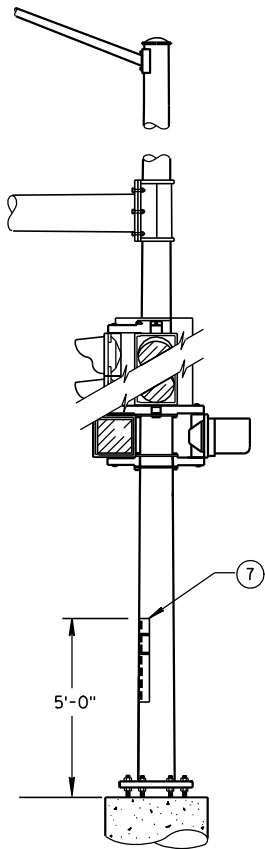
- CATEGORY III FATIGUE LOADS OF GALLOPING, TRUCK GUSTS (AT 45 MPH VEHICLE VELOCITY) AND NATURAL WIND GUSTS FOR DESIGN OF TYPE 9 AND TYPE 10 STRUCTURES.
- CATEGORY II FATIGUE LOADS OF GALLOPING, TRUCK GUSTS (AT 45 MPH VEHICLE VELOCITY) AND NATURAL WIND GUSTS FOR DESIGN OF TYPE 12 AND TYPE 13 STRUCTURES.
- 90 MPH (3-SECOND GUST) WIND SPEED AND A 50 YEAR DESIGN LIFE.

SECURE THE OPENING BELOW THE BASE PLATE WITH STAINLESS STEEL OR GALVANIZED STEEL MESH AND SECURE THE MESH WITH 3/4" S.S. BANDING AROUND THE LEVELING NUTS.

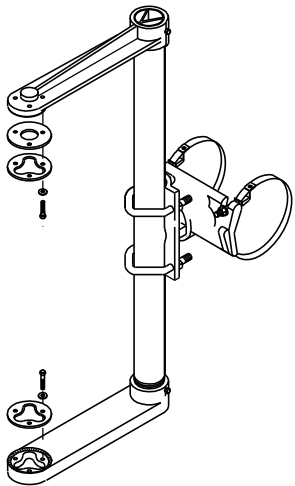
INDENT PRINT (NOMINAL 1/2" HIGH) THE POLE LENGTH AND FIRST TWO LETTERS OF THE MANUFACTURERS NAME ON TWO SIDES OF THE BASE PLATE 180 DEGREES APART, BEFORE GALVANIZING. THE ARM SHALL BE IDENTIFIED WITH THE SAME INFORMATION BY INDENT PRINT.

SIGNAL FACE SHALL BE MOUNTED 6 INCHES (NOMINAL) FROM THE END OF THE MONOTUBE ARM OR AS SHOWN ON THE PLAN CONSTRUCTION DETAIL OR AS DIRECTED BY THE PROJECT ENGINEER/ELECTRICAL OPERATIONS PERSONNEL. MOUNT ALL LIKE HEADS AT SAME ELEVATION.

SIGN MOUNTING BRACKETS SHALL BE FURNISHED IN ACCORDANCE WITH SECTION 637 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION.

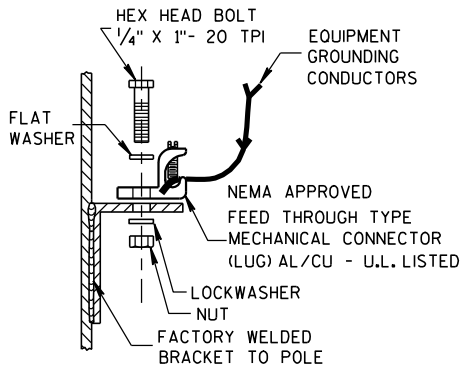


STRUCTURAL IDENTIFICATION
PLAQUE PLACEMENT



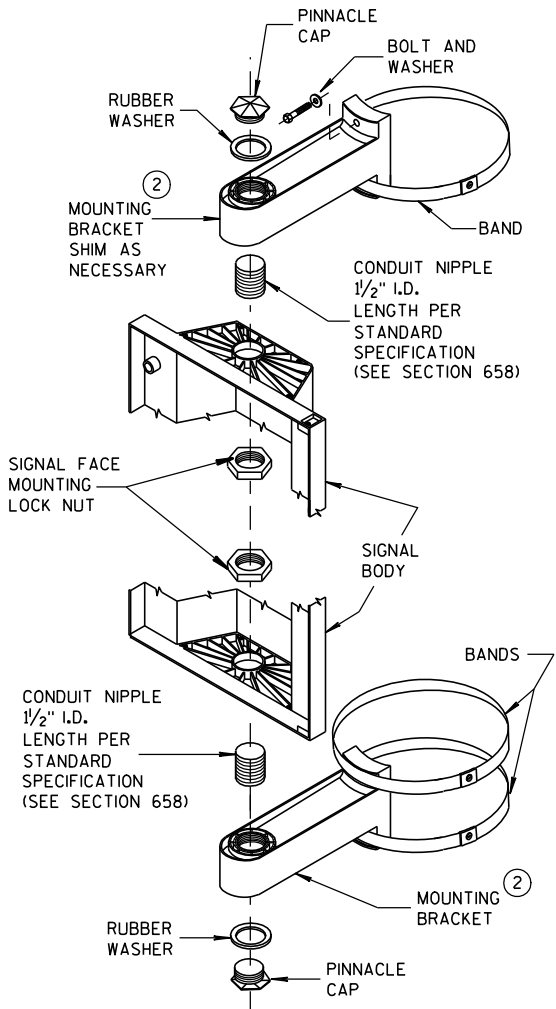
SIGNAL FACE MOUNTING BRACKET
DETAIL FOR MONOTUBE ARM

(MOUNT PER MANUFACTURER'S RECOMMENDATION)

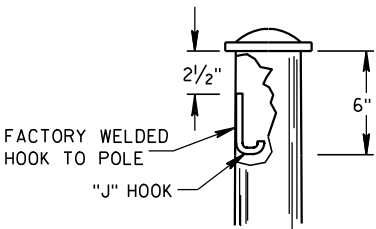


TYPICAL GROUNDING CONNECTIONS

NUT, BOLT AND WASHERS SHALL
BE STAINLESS STEEL



SIGNAL FACE
VERTICAL MOUNTING DETAIL



"J" HOOK WIRE SUPPORT

GENERAL NOTES AND HARDWARE
DETAILS FOR TYPE 9, 10, 12 & 13
POLES WITH MONOTUBE ARMS

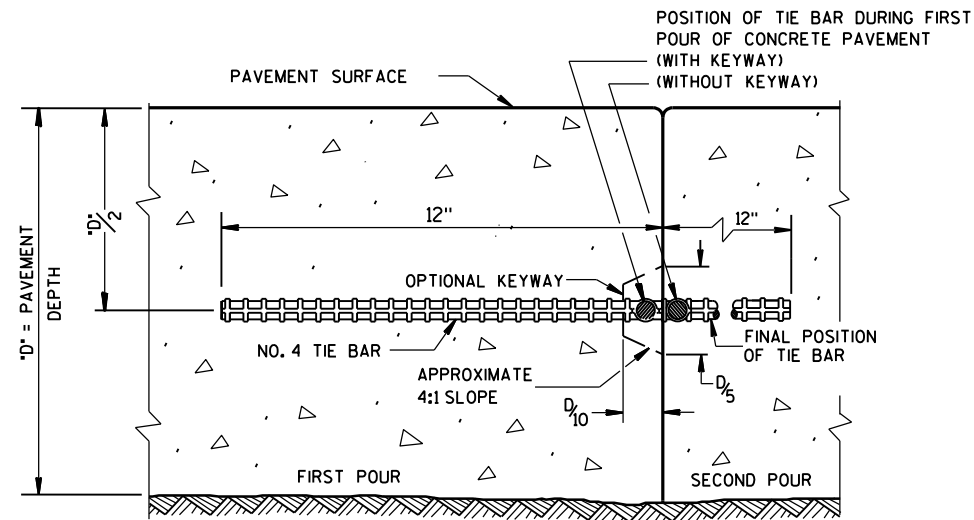
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

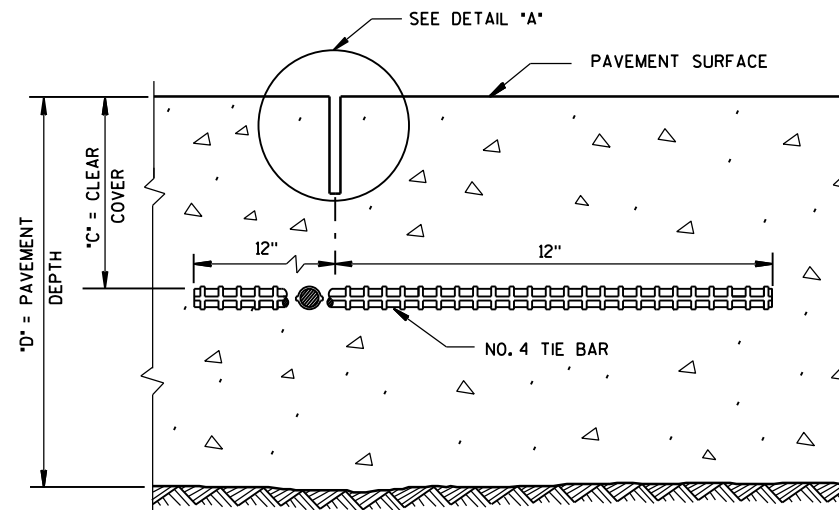
3/2/2011
DATE

FHWA

/S/ Thomas J. Goring
STATE ELECTRICAL ENGINEER FOR HWYS



CONSTRUCTION JOINT



SAWED JOINT

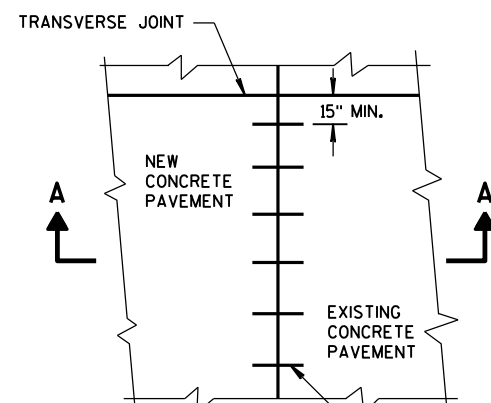
GENERAL NOTES

DO NOT SEAL OR FILL LONGITUDINAL JOINTS.

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

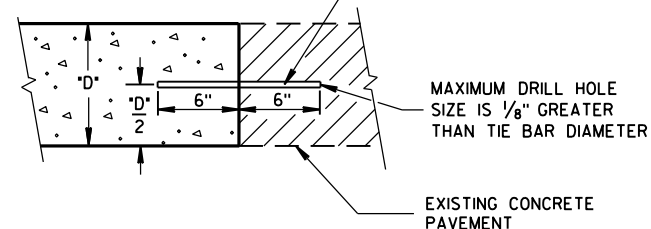
CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

- ① ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

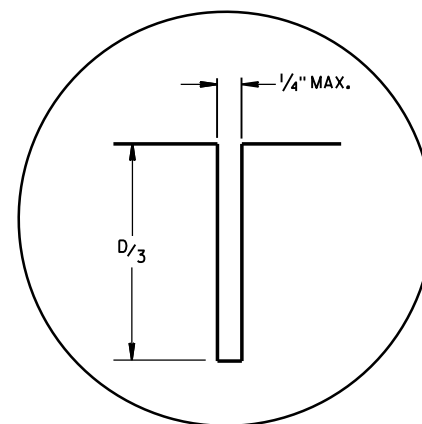


PLAN VIEW

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



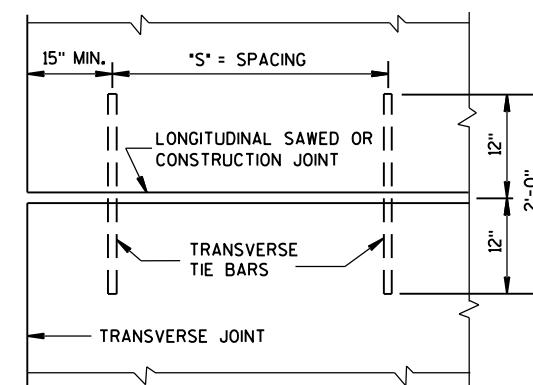
**SECTION A-A
LONGITUDINAL CONSTRUCTION JOINT
TIE BARS ANCHORED
INTO EXISTING PAVEMENT**



DETAIL "A"

TIE BAR TABLE

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



**PLAN VIEW
SHOWING LOCATION OF TIE BARS**

**CONCRETE PAVEMENT
LONGITUDINAL JOINTS AND TIES**

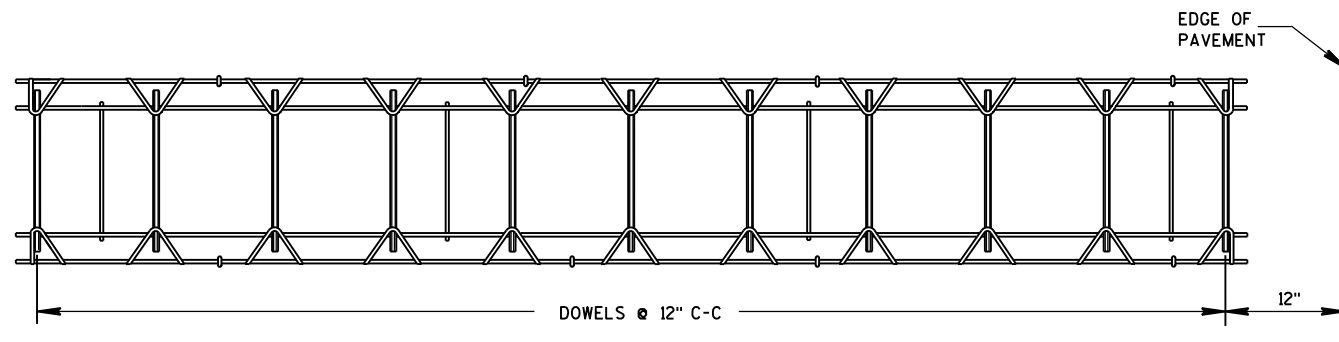
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

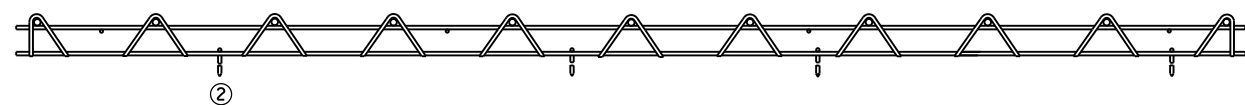
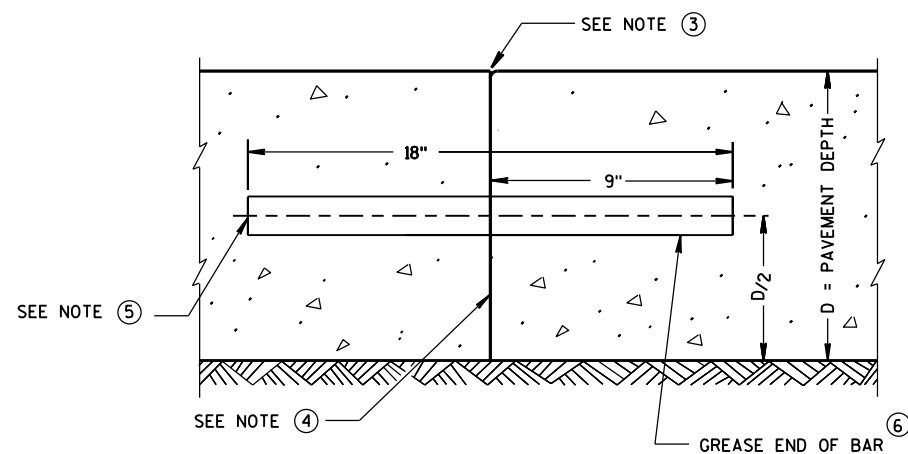
5-3-2013
DATE

/S/ Deb Bischoff
PAVEMENT POLICY & DESIGN ENGINEER

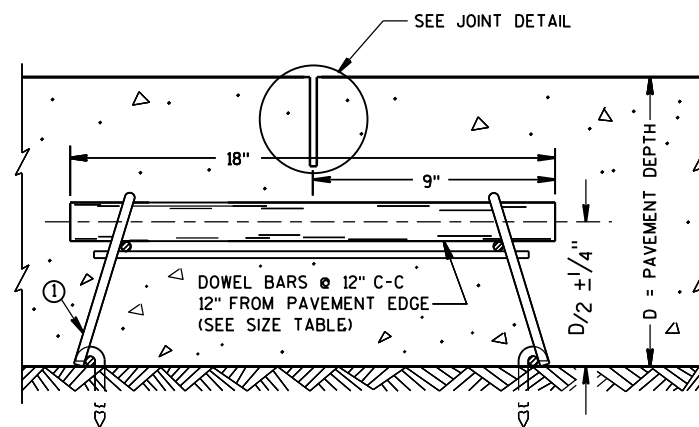
FHWA



PLAN VIEW

SIDE VIEW
CONTRACTION JOINT DOWEL ASSEMBLY (1)

TRANSVERSE CONSTRUCTION JOINT



DOWELED CONTRACTION JOINT

PAVEMENT DEPTH, DOWEL BAR SIZE
AND JOINT SPACING TABLE

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

GENERAL NOTES

CONTRACTION JOINTS

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

DO NOT SEAL OR FILL CONTRACTION JOINTS.

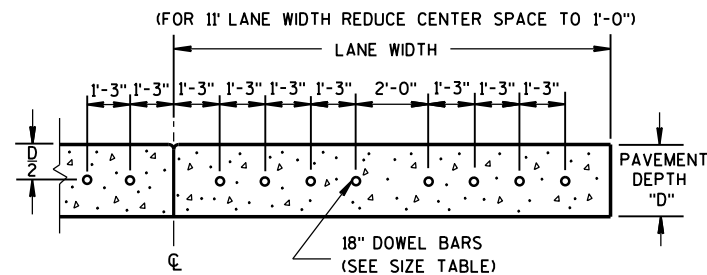
INSTALL DOWEL BARS PARALLEL TO THE PAVEMENT CENTERLINE AND PAVEMENT SURFACE.

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

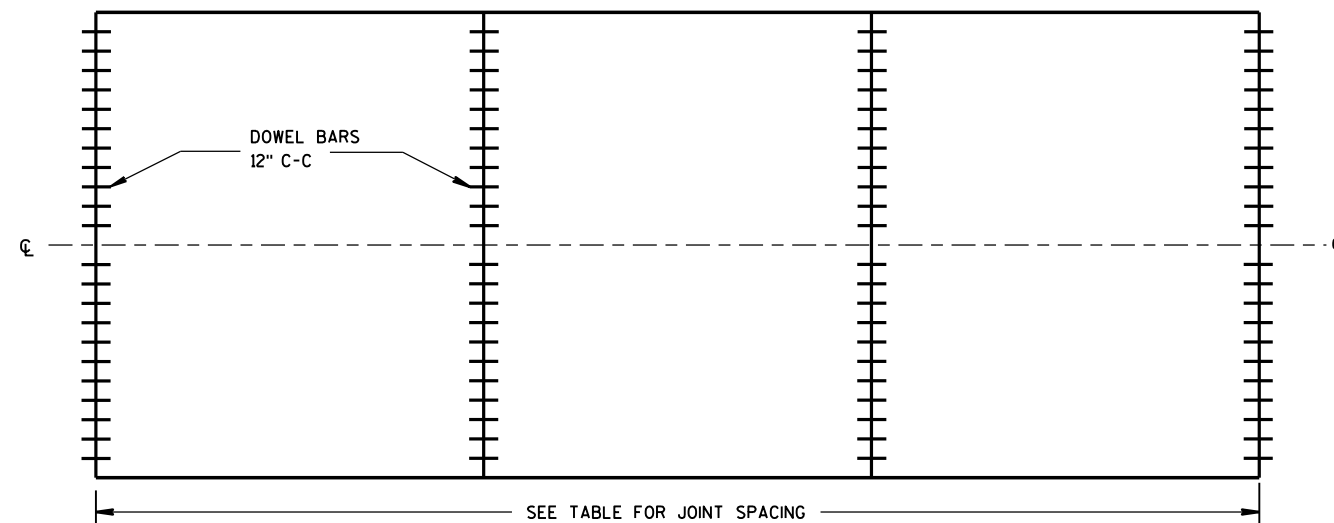
CONSTRUCTION JOINTS

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

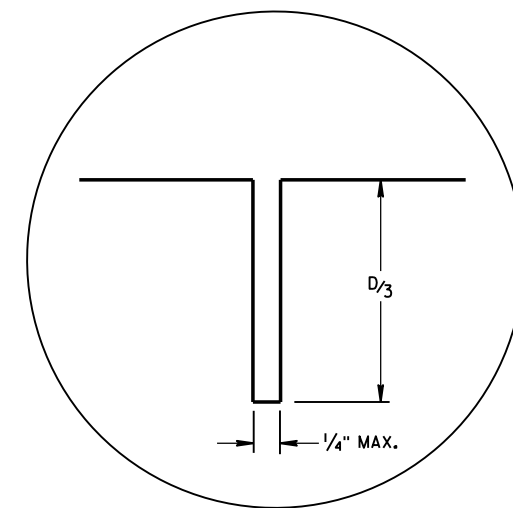
- OBTAIN THE ENGINEER'S APPROVAL FOR THE USE OF ALTERNATIVE DESIGNS OF THE DOWEL ASSEMBLY. USE MECHANICAL DOWEL BAR INSERTERS OR DOWEL ASSEMBLIES WHEN CONSTRUCTING CONTRACTION JOINTS.
- SECURE BASKETS WITH ANCHORS TO HOLD DOWEL BARS IN THE CORRECT POSITION AND ALIGNMENT. TYPE, LOCATION, NUMBER AND LENGTH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



DRILLED DOWEL BAR CONSTRUCTION JOINT (7)



CONTRACTION JOINT LOCATIONS



JOINT DETAIL

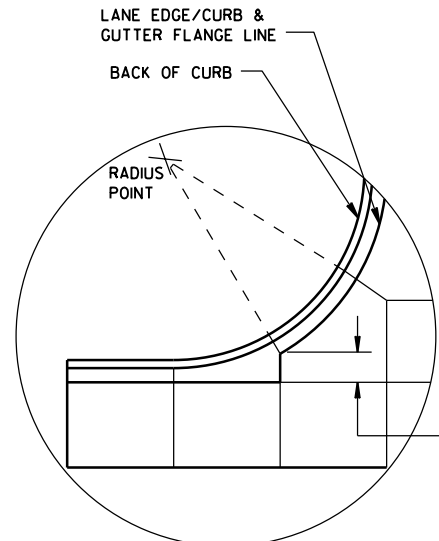
URBAN DOWELED
CONCRETE PAVEMENTSTATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

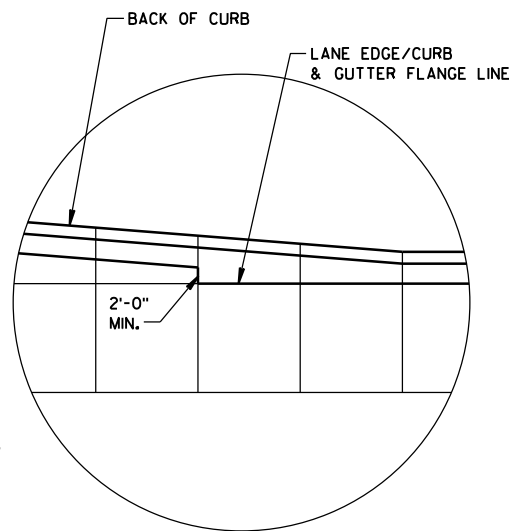
5/3/2013
DATE

FHWA

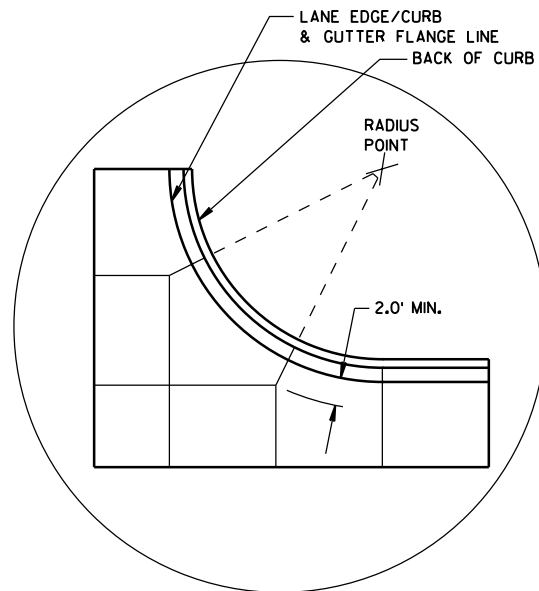
/S/ Deb Bischoff
PAVEMENT POLICY & DESIGN ENGINEER



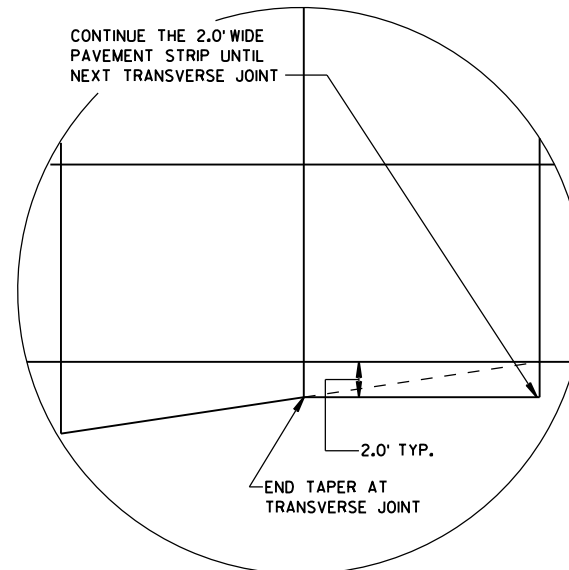
DETAIL "A"



DETAIL "B"



DETAIL "C"



DETAIL "D"

GENERAL NOTES

THE PRIMARY ROADWAY CONTROLS THE TRANSVERSE JOINT PATTERN.

ALIGN NEW JOINTS WITH EXISTING JOINTS OR CRACKS.

CONSTRUCT TRANSVERSE JOINTS PERPENDICULAR TO THE ROADWAY.

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

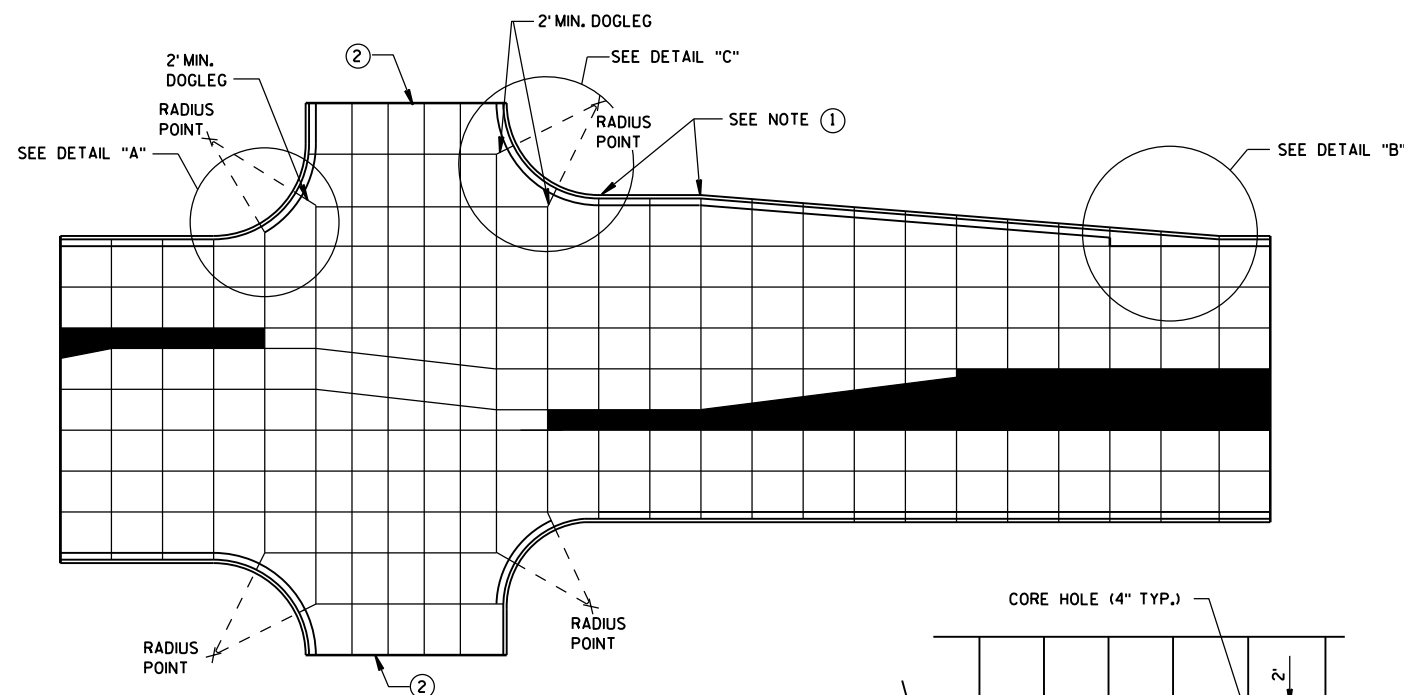
AVOID SLABS LESS THAN 2 FEET WIDE OR GREATER THAN 15 FEET WIDE.

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

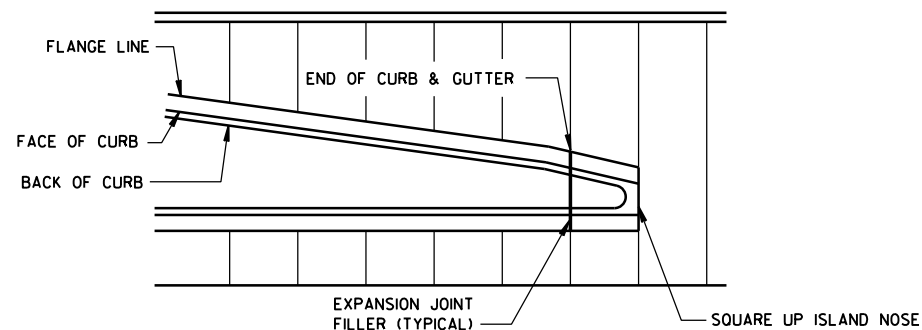
AVOID ANGLES LESS THAN 60° BY DOGLEGGING JOINTS THROUGH CURVE RADIUS POINTS. USE 90° ANGLES WHEN POSSIBLE.

CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

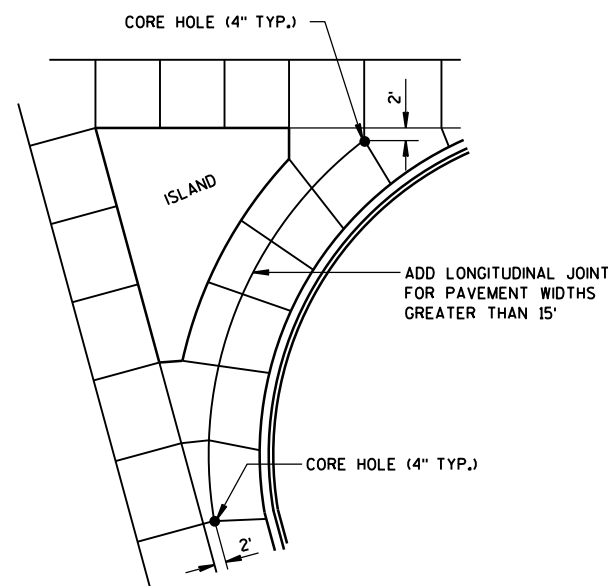
1. PROVIDE TRANSVERSE JOINTS AT ALL PAVEMENT WIDTH CHANGES.
2. CONSTRUCT DOWELED EXPANSION JOINT ON THE SIDE ROAD OF AN INTERSECTION IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH. ALIGN EXPANSION JOINT WITH EDGE OF RADIUS.
3. THE ENGINEER MAY APPROVE SLIGHT VARIATIONS FROM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



STANDARD INTERSECTION



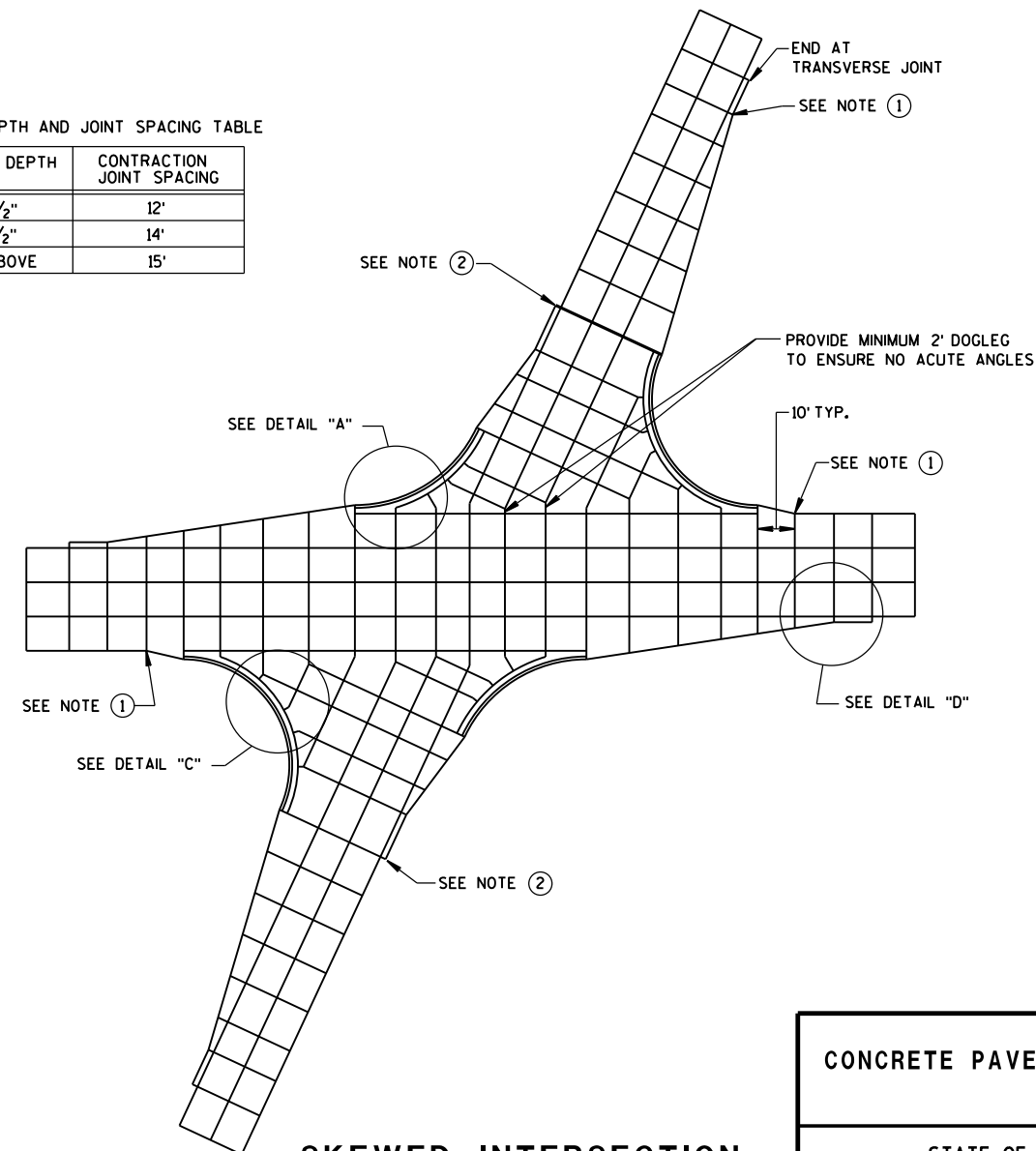
APPROACH TO MEDIAN



LARGE RIGHT TURN

PAVEMENT DEPTH AND JOINT SPACING TABLE

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



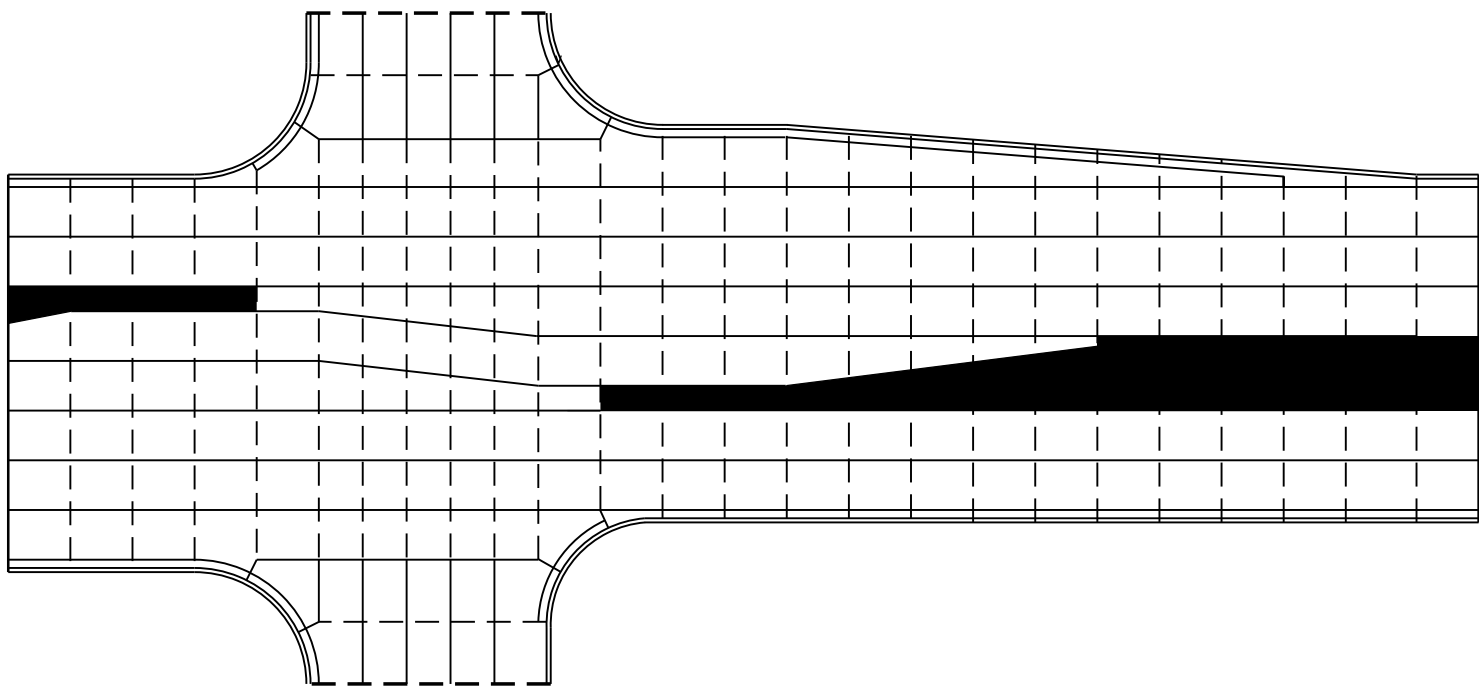
SKewed INTERSECTION

CONCRETE PAVEMENT JOINTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

LEGEND

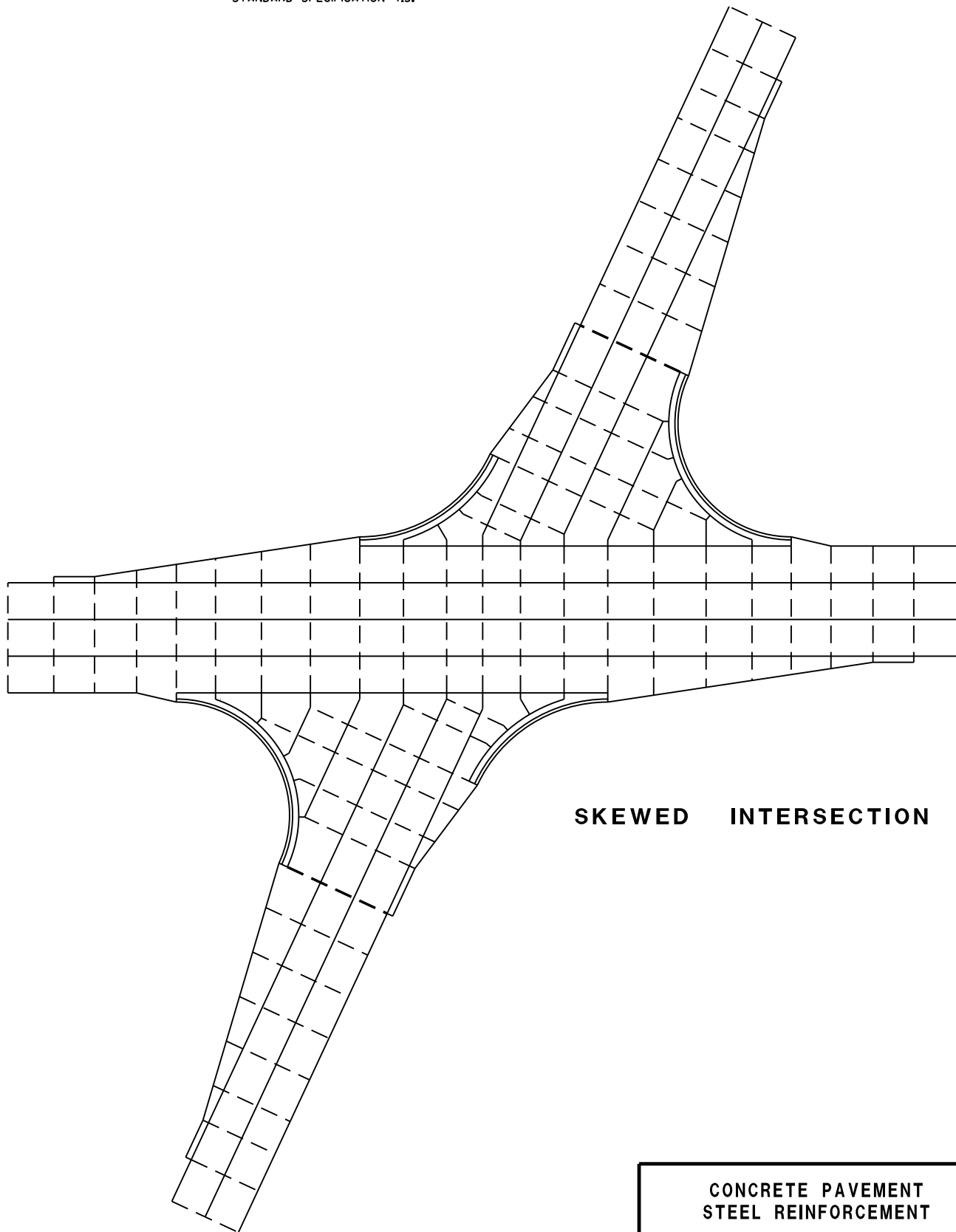
- POTENTIAL DOWELED EXPANSION JOINT
- DOWELED JOINT
- TIED JOINT



STANDARD INTERSECTION

GENERAL NOTES

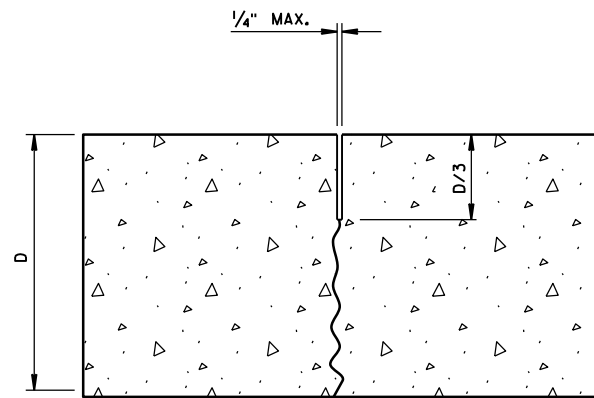
USE AN EXPANSION JOINT FILLER MEETING THE REQUIREMENTS OF STANDARD SPECIFICATION 415.



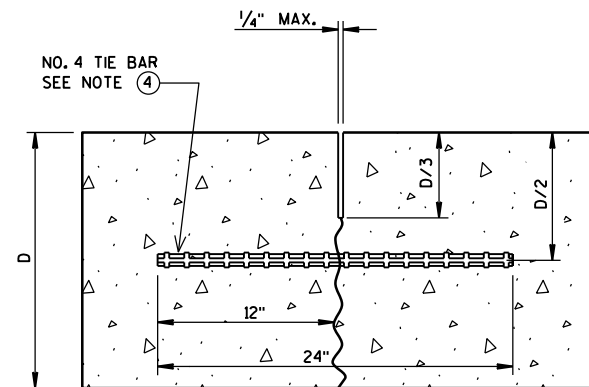
SKewed INTERSECTION

CONCRETE PAVEMENT
STEEL REINFORCEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

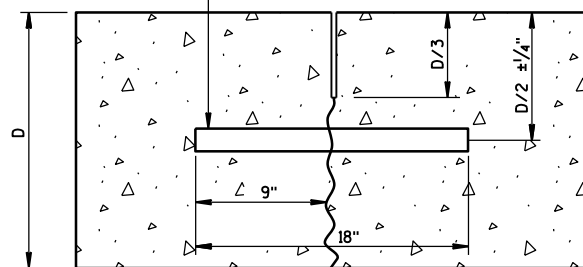


UNDOWELED-TRANSVERSE



TIED LONGITUDINAL

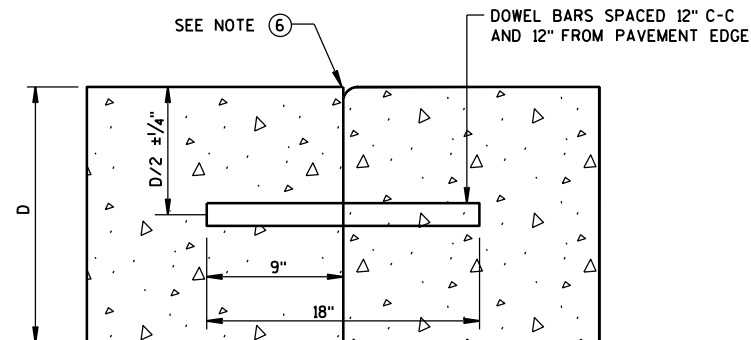
DOWEL BARS AT 12" C-C
12" FROM PAVEMENT EDGE



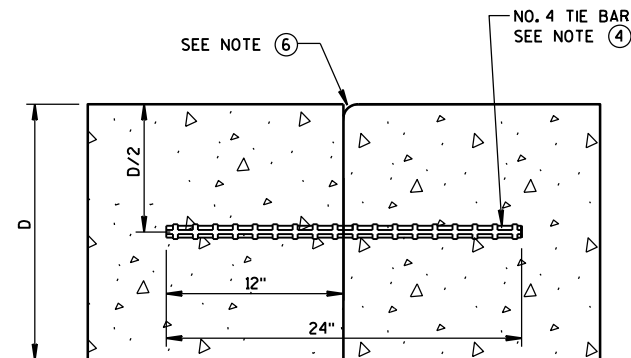
DOWELED-TRANSVERSE

CONTRACTION JOINTS

SEE NOTE ②

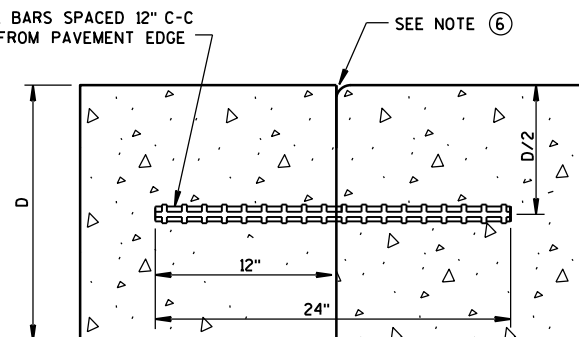
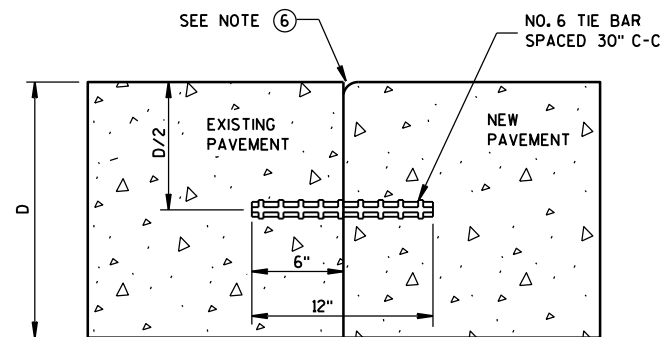


DOWELED TRANSVERSE



TIED LONGITUDINAL

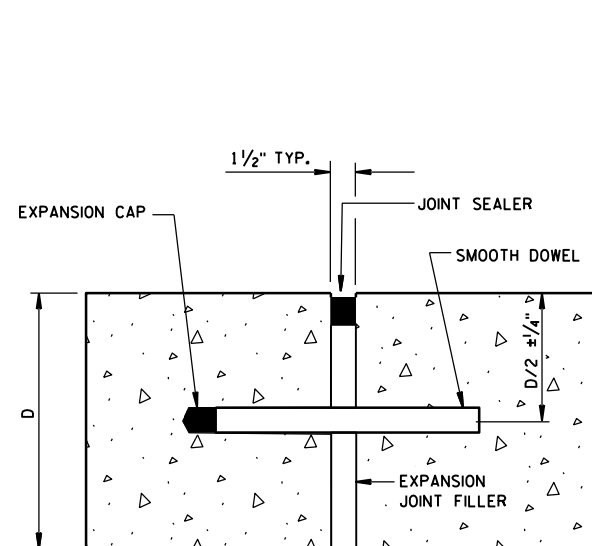
NO. 6 TIE BARS SPACED 12" C-C
AND 12" FROM PAVEMENT EDGE

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

TIED LONGITUDINAL TO EXISTING

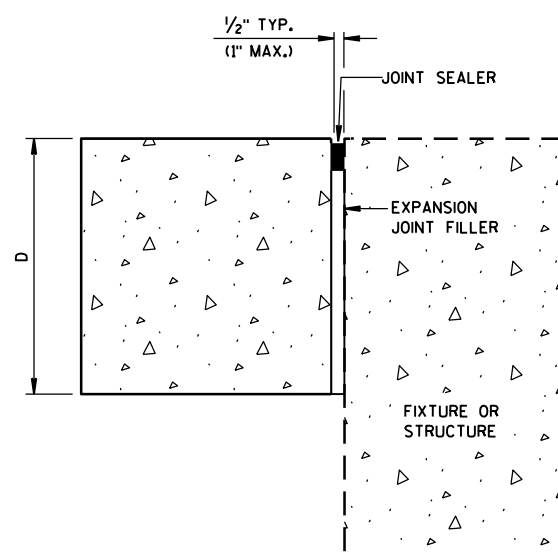
CONSTRUCTION JOINTS

SEE NOTE ⑤



DOWELED-TRANSVERSE

SEE NOTE ①



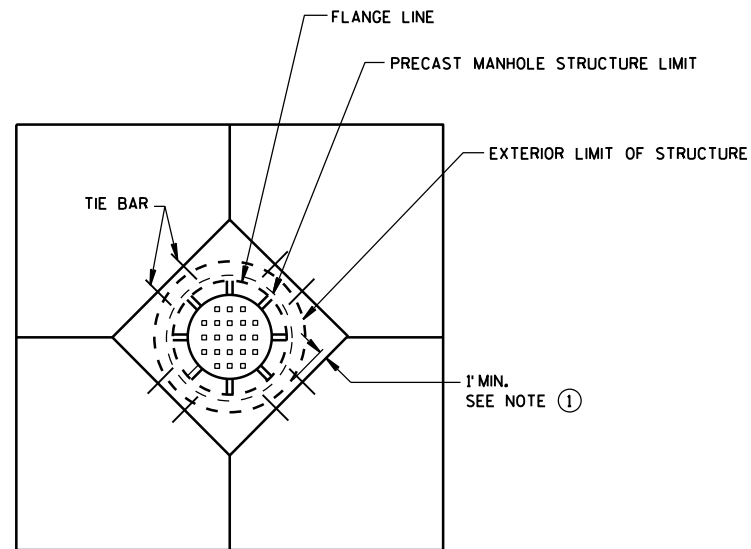
UNTIED-LONGITUDINAL

EXPANSION JOINTS

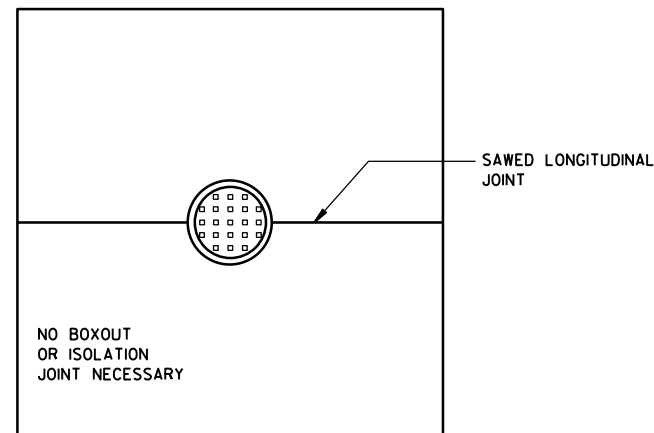
GENERAL NOTES

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

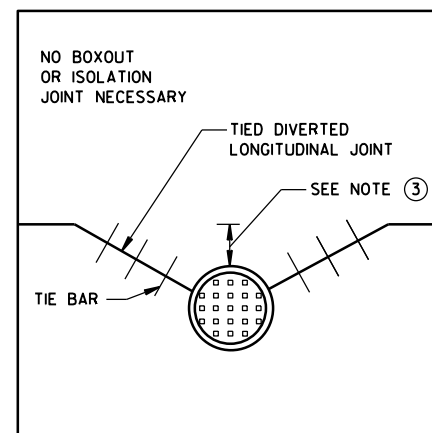
CONCRETE PAVEMENT
JOINT TYPESSTATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



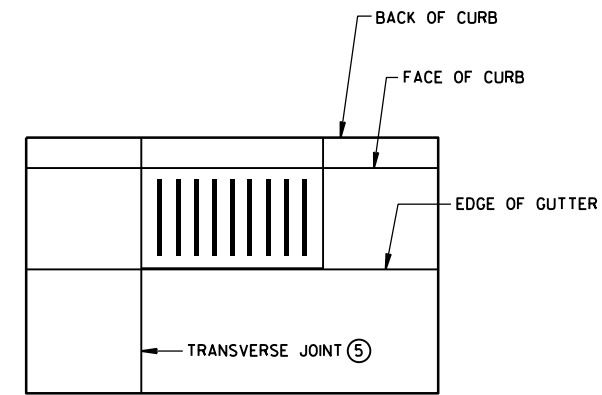
**DIAGONAL MANHOLE BOXOUT
FOR CONSTRUCTION JOINTS**



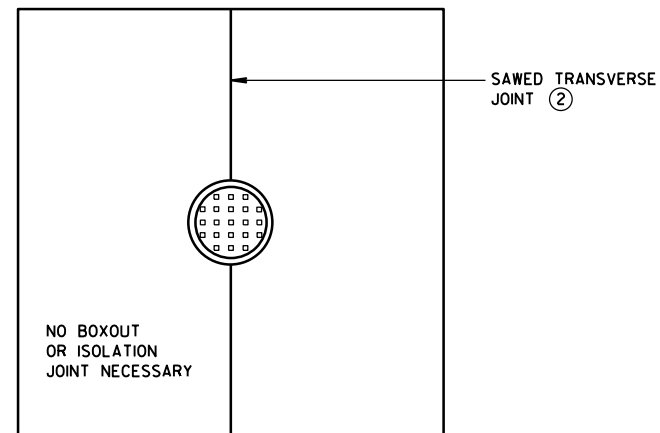
**MANHOLE WITH
LONGITUDINAL JOINT**



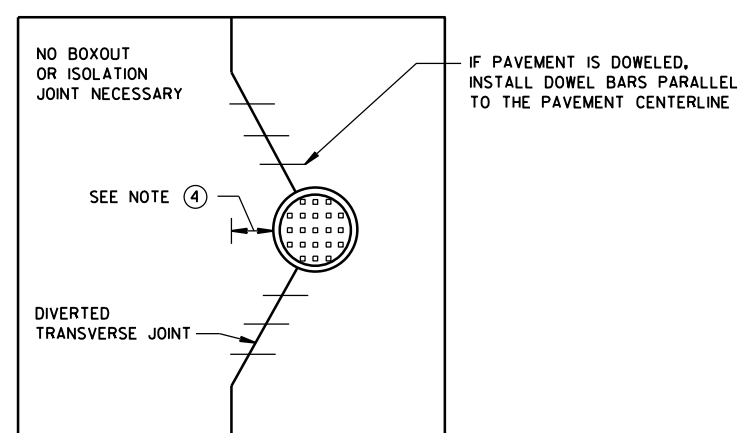
**MANHOLE WITH DIVERTED
LONGITUDINAL CONTRACTION JOINT**



**INLET WITH
TRANSVERSE JOINT**



**MANHOLE WITH
TRANSVERSE JOINT**



**MANHOLE WITH DIVERTED
TRANSVERSE CONTRACTION JOINT**

GENERAL NOTES

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

**CONCRETE PAVEMENT
JOINTING AT UTILITY FIXTURES**

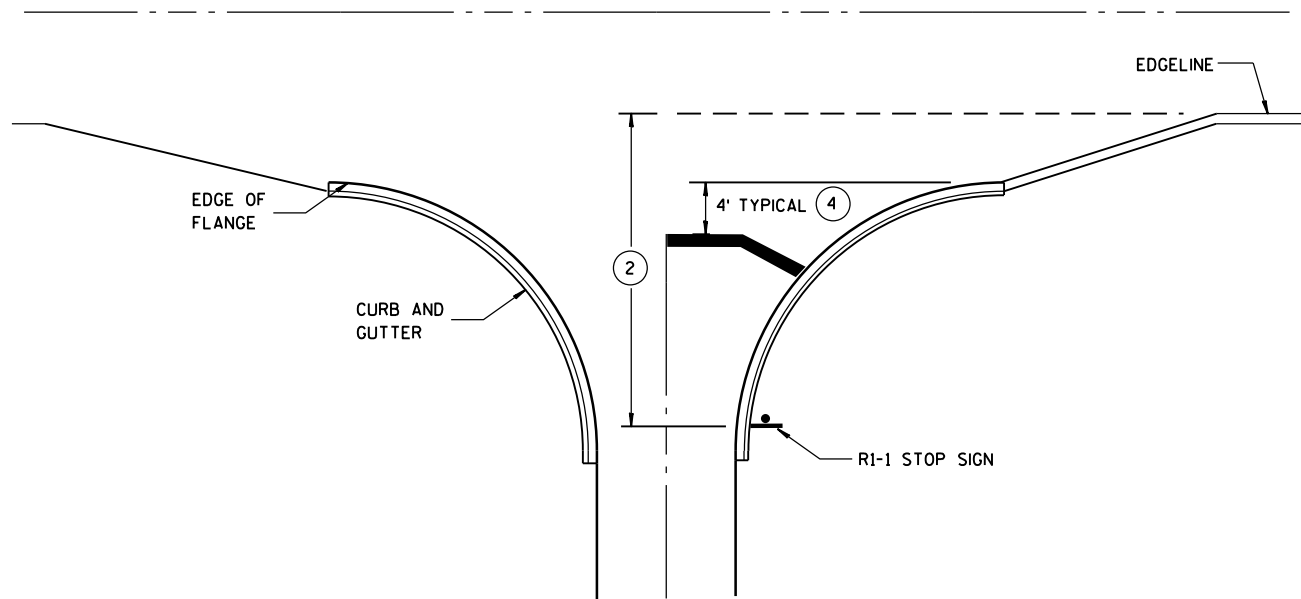
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

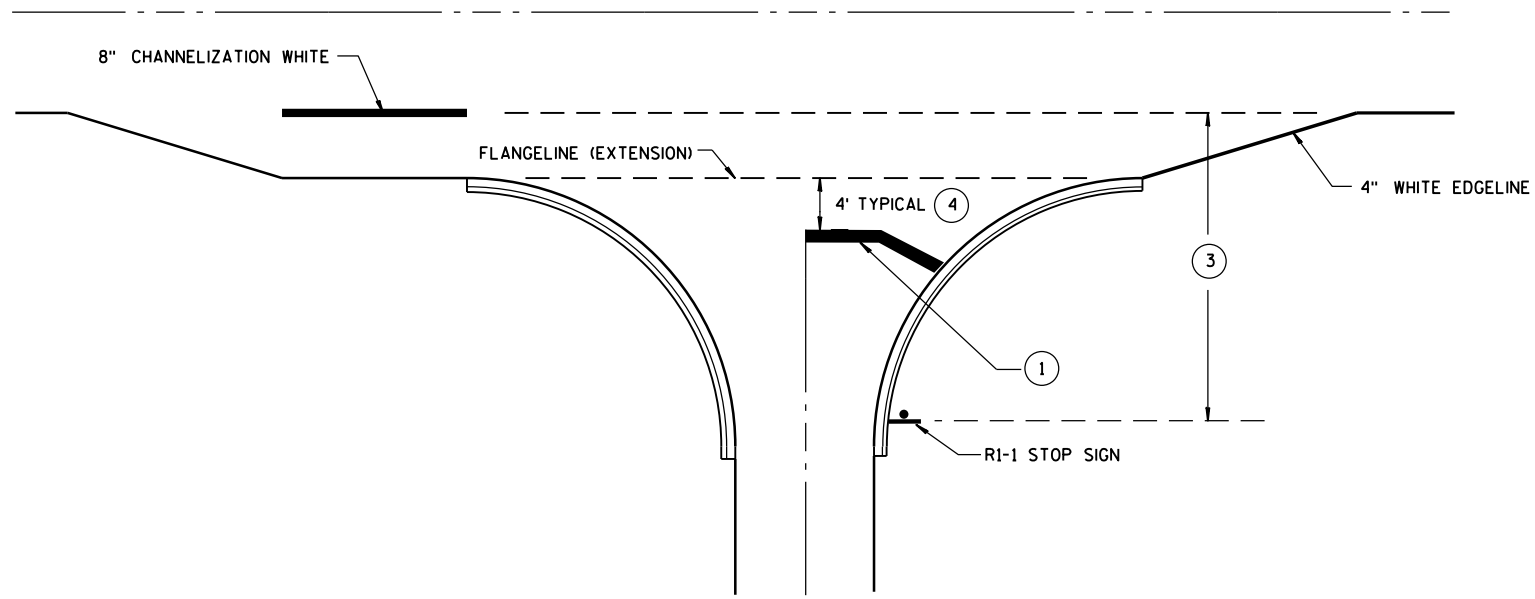
5-3-2013
DATE

FHWA

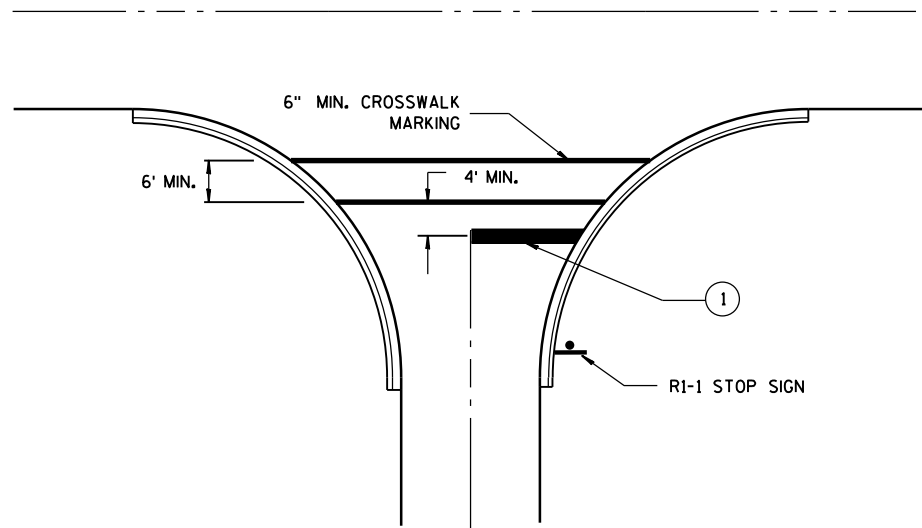
/S/ Deb Bischoff
PAVEMENT POLICY & DESIGN ENGINEER



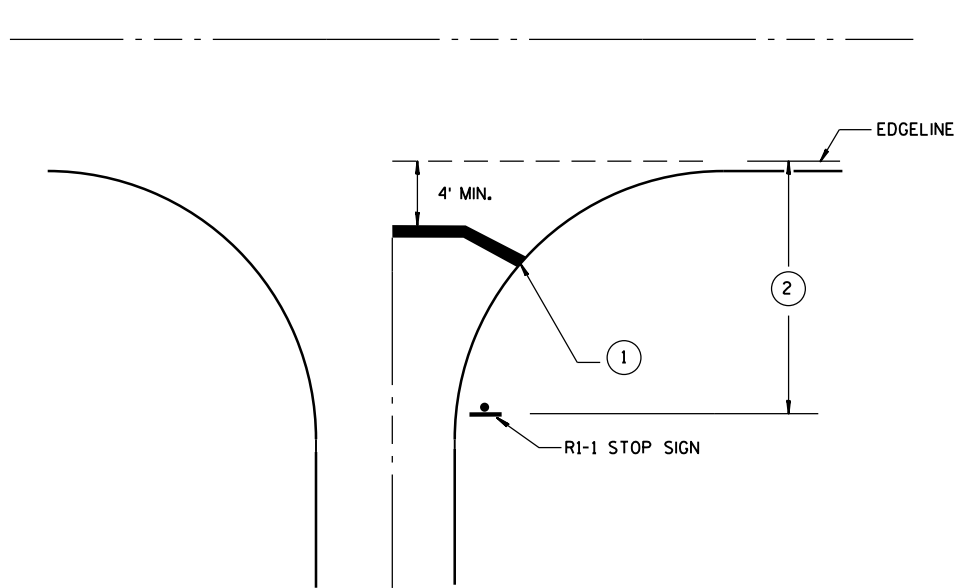
TYPICAL STOP LINE PAVEMENT MARKING
WITH CURB AND GUTTER



TYPICAL STOP LINE PAVEMENT MARKING
FOR SIDEROADS WITH RIGHT TURN LANE



TYPICAL STOP LINE PAVEMENT MARKING
FOR SIDEROADS WITH CROSSWALK MARKING



TYPICAL STOP LINE PAVEMENT MARKING
WITHOUT CURB AND GUTTER

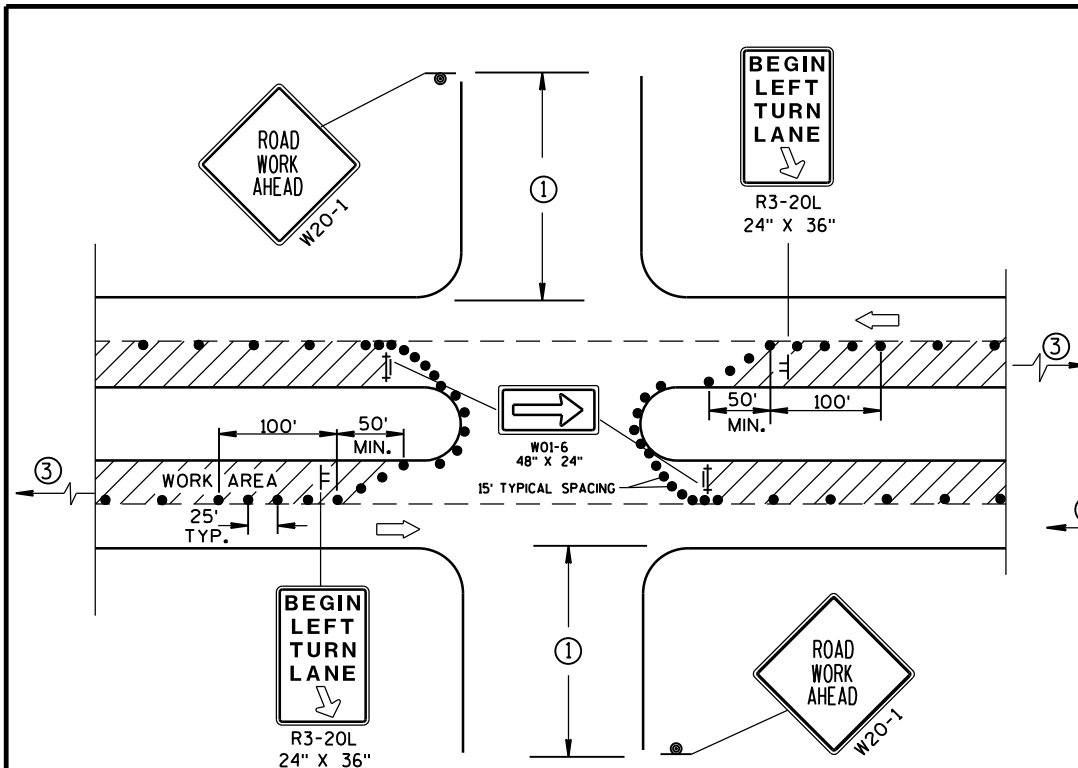
GENERAL NOTES

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

STOP LINE AND CROSSWALK
PAVEMENT MARKING

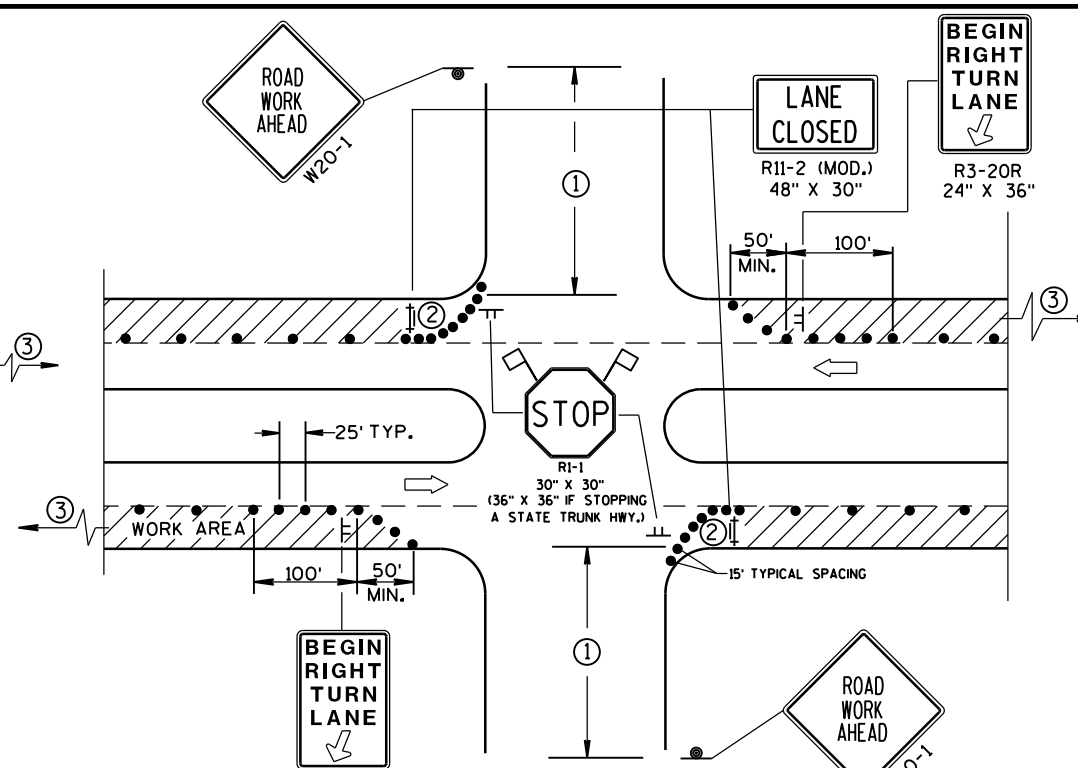
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4/30/2013 DATE /S/ Travis Feltz
STATE TRAFFIC ENGINEER
FHWA



DETAIL A
FOR LEFT LANE CLOSURE AT
INTERSECTION OR MEDIAN OPENING

PROVIDE TURN LANES AT
INTERSECTIONS WHENEVER
STAGING OF WORK ALLOWS.
TAPER AND TURN LANE
LENGTHS BASED ON FIELD
CONDITIONS AS APPROVED
BY THE ENGINEER.



DETAIL B
FOR RIGHT LANE CLOSURE
AT INTERSECTION

- ① 500' TYPICAL OR AT LAST INTERSECTION, WHICHEVER IS CLOSER.
350' IF 35-40 MPH.
200' IF 25-30 MPH.
- ② ALSO USE BARRICADE AND 15-FOOT TYPICAL DRUM SPACING AT COMMERCIAL DRIVEWAYS.
- ③ SEE SEPARATE LANE CLOSURE DETAIL FOR ADDITIONAL TRAFFIC CONTROL.

GENERAL NOTES

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

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

ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" SIGNS MAY BE USED IF APPROVED BY DISTRICT TRAFFIC UNIT.

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

SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FHWA'S MANUAL OF STANDARD HIGHWAY SIGNS OR THE WISCONSIN STANDARD SIGN PLATES.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, OR THAT WILL BE PLACED IN A CLOSED LANE, MAY BE MOUNTED ON PORTABLE SUPPORTS.

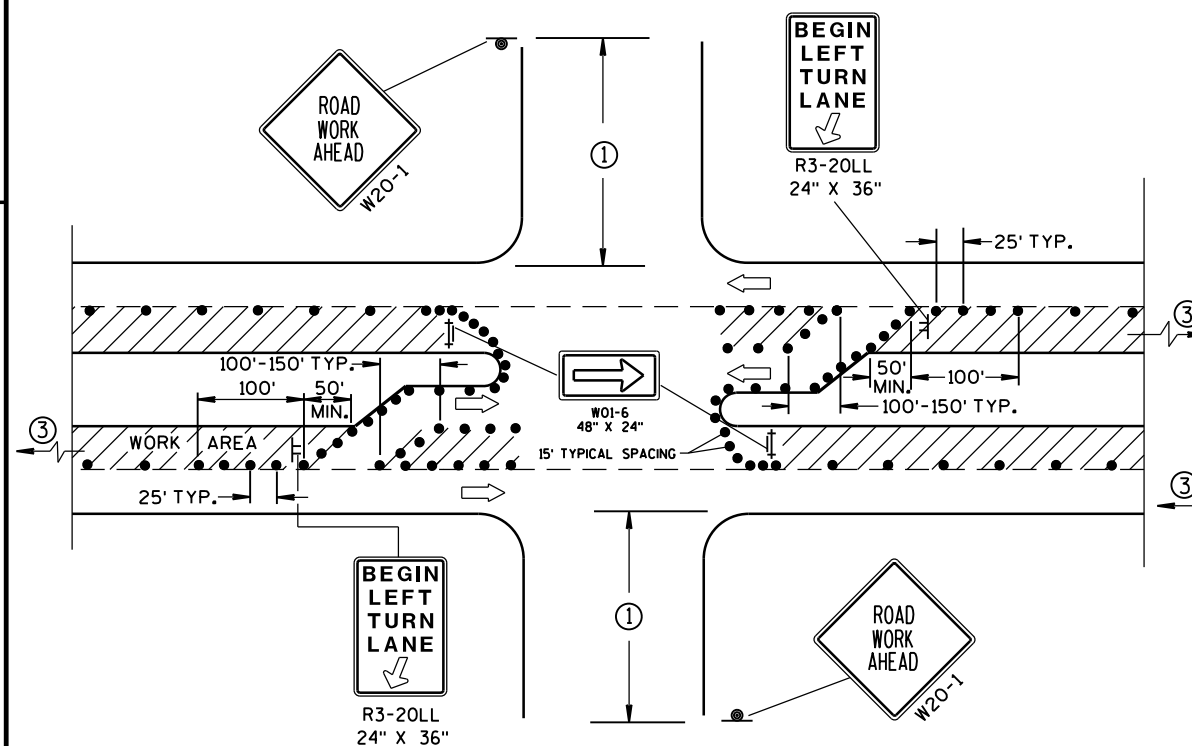
ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

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

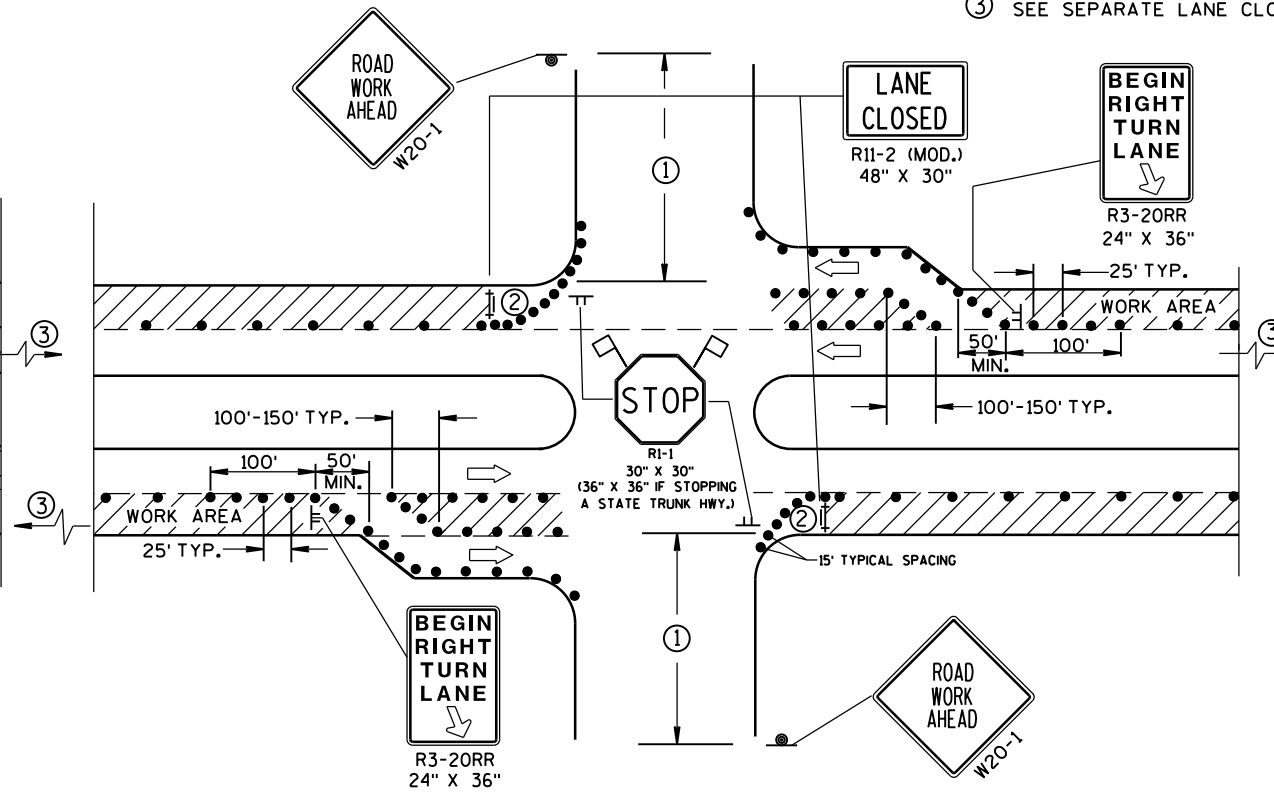
BARRICADES IN A CLOSED LANE THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY RE-ESTABLISHED UPON COMPLETION OF THE OPERATION OR, FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.

LEGEND

- TRAFFIC CONTROL DRUM
- ⊙ SIGN ON PERMANENT SUPPORT
- ⊢ SIGN ON TEMPORARY SUPPORT (5' MIN. MOUNTING HEIGHT)
- ⊢ TYPE III BARRICADE WITH ATTACHED SIGN AND TYPE "A" WARNING LIGHT (FLASHING)
- ➡ DIRECTION OF TRAFFIC
- 🚩 FLAGS, 16" X 16" MIN., (ORANGE)
- ▨ WORK AREA



DETAIL C
FOR LEFT LANE CLOSURE AT INTERSECTION OR
MEDIAN OPENING (WITH LEFT TURN BAY OPEN)

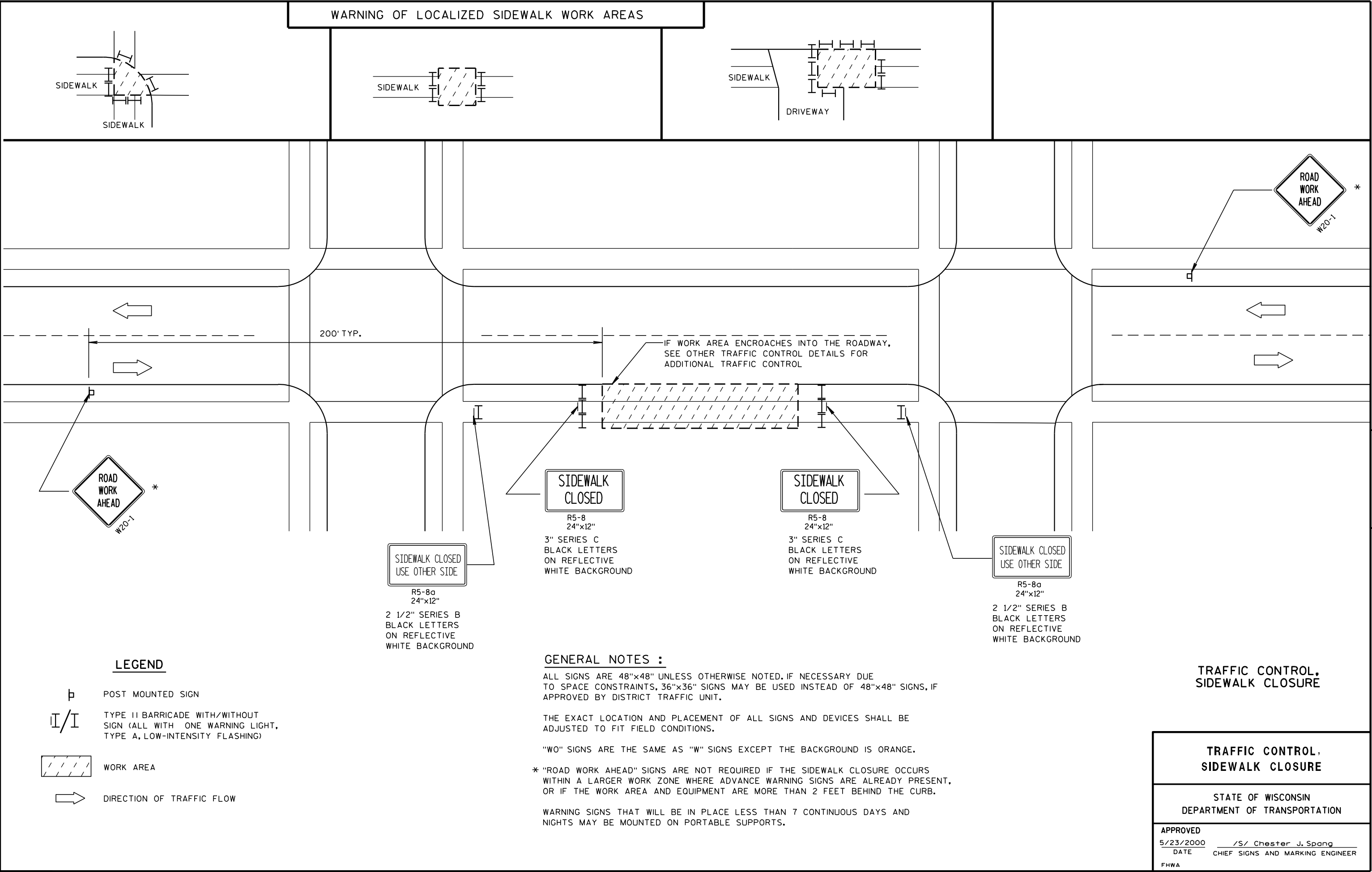


DETAIL D
FOR RIGHT LANE CLOSURE AT INTERSECTION
(WITH RIGHT TURN BAY OPEN)

TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



Notes



Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

<http://www.dot.wisconsin.gov>