WKE SEPTEMBER 2016

PROJECT ID WITH: N/A

2200-13-70

COUNTY MILWAUKEE

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 SHEETS = 294



05

STATE OF WISCONSIN

DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

WEST HIGHLAND AVENUE, CITY OF MILWAUKEE

NORTH 27TH STREET TO NORTH 12TH STREET

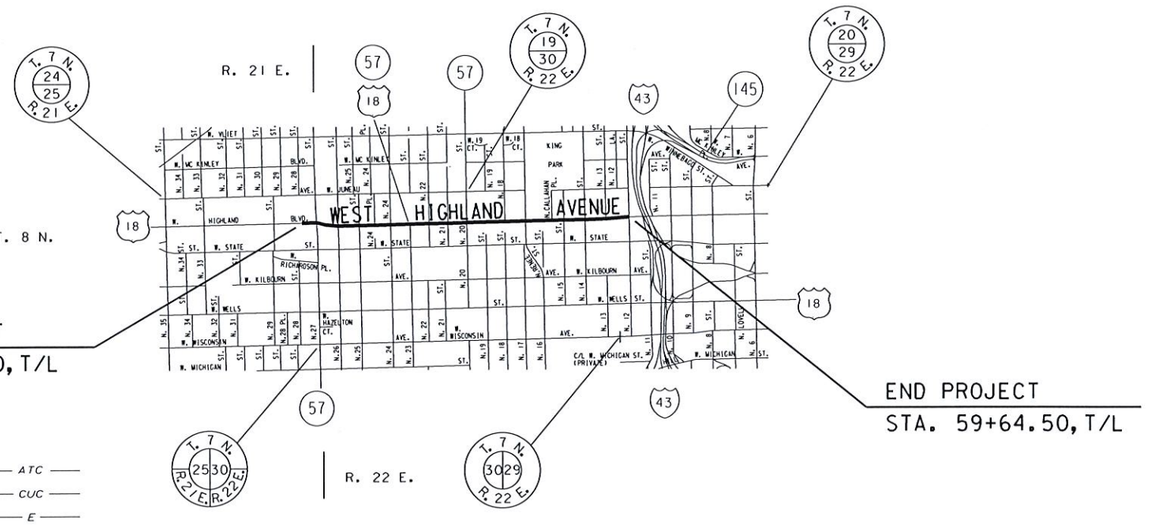
U.S.H. 18

MILWAUKEE COUNTY

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
2200-13-70	WISC 2016307	1

STATE PROJECT NUMBER

2200-13-70



BEGIN PROJECT

STA. 02+05.00, T/L

Y. = 387,367.43

X. = 2,548,307.51

END PROJECT

STA. 59+64.50, T/L

DESIGN DESIGNATION

A.D.T. (CURRENT)	=	15,900
A.D.T. (2036)	=	18,300
D.H.V.	=	2,400
D.	=	70%
T.	=	1.3%
DESIGN SPEED	=	35 M.P.H.
ESALS	=	299,300

CONVENTIONAL SYMBOLS

PLAN

- 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 (SIZE)
- REFERENCE LINE
- CONCRETE WALK/DWY. REMOVAL
- LIMITS OF CONCRETE PAVEMENT REMOVAL (X X X X X)
- COMBUSTIBLE FLUIDS (CAUTION)
- RAILROADS
- FENCE (TYPE)
- CATCH BASIN OR INLET EXISTING PROPOSED

PROFILE

- GRADE LINE
- ORIGINAL GROUND
- GRADE ELEVATION (95.36)

UTILITIES

AMERICAN TRANSMISSION COMPANY	ATC
CITY UNDERGROUND CONDUIT	CUC
ELECTRIC	E
GAS	G
SANITARY SEWER	SAN
STORM SEWER	STO
COMBINED SEWER	CMB
TELEPHONE	T
WATER	W
TRAFFIC & ELECTRICAL SERVICES	TE&ES
CABLE TELEVISION	TV
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	

LAYOUT

SCALE 1/2 MI.

TOTAL NET LENGTH OF CENTERLINE = 1.091 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 GEODEDIC VERTICAL DATUM OF 1929, ADD 580.603 TO ELEVATIONS SHOWN ON THIS PLAN.

Accepted For

City of Milwaukee

4/22/16 Ghassan Khalaf

(Date) Commissioner of Public Works

Original Plans Prepared By

WISCONSIN JEFFREY S. POLENSKE E-3[illegible] MILWAUKEE WIS. PROFESSIONAL ENGINEER

4/21/16

(Date) City Engineer

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

SURVEYOR	CITY OF MILWAUKEE
DESIGNER	CITY OF MILWAUKEE
PROJECT MANAGER	
DISTRICT EXAMINER	
DISTRICT SUPERVISOR	
C.O. EXAMINER	

APPROVED FOR DISTRICT OFFICE

DATE: 4/26/16 Christine Fanna

(SIGNATURE)

E

FILE NAME: W:\SPR\HIGHLAND_27-12\TITLE.DGN

PLOT DATE:

GENERAL NOTES

1. ALL OPENINGS BELOW SUBGRADE, RESULTING FROM REMOVALS OR ABANDONMENTS, SHALL BE BACKFILLED WITH BASE AGGREGATE DENCE 1-1/4".
2. ALL DISTURBED AREAS, NOT SURFACED, ARE TO BE COVERED WITH 4" OF TOPSOIL, AND SODDED UNLESS OTHERWISE DIRECTED BY THE ENGINEER. APPLY FINISHING ITEMS INCLUDING SOD, WITHIN (5) CALENDAR DAYS AFTER PLACEMENT OF TOPSOIL.
3. NO TREES OR SHRUBS SHALL BE REMOVED UNLESS DESIGNATED FOR REMOVAL BY THE ENGINEER.
4. ALL ELEVATIONS ARE REFERENCED TO CITY OF MILWAUKEE DATUM.
5. ALL CURB AND GUTTER IS LOW SIDE UNLESS OTHERWISE INDICATED ON THE PLAN.
6. TRANSVERSE JOINTS IN THE CONCRETE WALK SHALL BE CONSTRUCTED AT INTERVALS EQUAL TO THE WIDTH OF THE CONCRETE UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
7. THE LOCATION OF LONGITUDINAL JOINTS IN THE HMA PAVEMENT SHALL BE APPROVED BY THE ENGINEER.
8. CONSTRUCTION PERMITS HAVE BEEN OBTAINED WHICH RIGHTS HAVE BEEN EXTENDED TO THE CONTRACTORS.
9. 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.
10. ALL COORDINATES SHOWN ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COORDINATE SYSTEM, SOUTH ZONE. THE CONTROL SURVEY FOR THIS IMPROVEMENT PROJECT WAS CONDUCTED UNDER AND MET SPECIFICATIONS FOR THIRD ORDER CONTROL SURVEYS.
11. REPLACE ALL CONCRETE CURB AND GUTTER INDICATED FOR REMOVAL AND REPLACEMENT IN EXISTING LOCATION UNLESS OTHERWISE NOTED ON PLAN.
12. INLET SCREENS/BASKETS ARE TO BE PLACED BETWEEN THE FRAME AND GRATE OF CATCH BASINS/ INLETS TO PREVENT SOIL FROM ENTERING THE SEWERS. GEOTEXTILE FABRIC SHALL MEET REQUIREMENTS FOR SILTY SOIL.
13. EROSION CONTROL BMP'S ARE AT SUGGESTED LOCATIONS. THE ACTUAL LOCATIONS WILL BE DETERMINED BY THE CONTRACTOR'S ECIP AND THE ENGINEER. ALL EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL SUCH TIME AS THE ENGINEER DETERMINES THE MEASURE IS NO LONGER NECESSARY.
14. THE LIMITS OF CONCRETE BASE PATCHING AS SHOWN ON THE PLANS ARE APPROXIMATE. THE ACTUAL LIMITS OR AREAS WILL BE DETERMINED BY THE ENGINEER AT THE TIME OF CONSTRUCTION.
15. DIMENSIONS SHOWN TO CURB ARE TO FACE UNLESS OTHERWISE NOTED.
16. NEW CURB & GUTTER WILL BE TIED TO EXISTING PAVEMENT.

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
WEP	- WISCONSIN ELECTRIC POWER

SECTION 2 SHEET ORDER

GENERAL NOTES
UTILITY CONTACTS
PROJECT OVERVIEW
TYPICAL SECTIONS
CONSTRUCTION DETAILS
INTERSECTION DETAILS
EROSION CONTROL PLAN
UTILITIES & DRAINAGE
PLAN DETAIL
BIO-SWALES
TREE PLANTING
CITY UNDERGROUND CONDUIT (TES)
PERMANENT SIGNS
TRAFFIC SIGNALS
SIGNING
PAVEMENT MARKINGS
TRAFFIC CONTROL
ALIGNMENT PLAN

HMA PAVEMENT
1-3/4" OF HMA PAVEMENT 4 LT 58-28 S AS THE LOWER LAYER
1-3/4" OF HMA PAVEMENT 4 LT 58-28 S AS THE UPPER LAYER

2

UTILITY CONTACTS

CITY OF MILWAUKEE - UTILITY COORDINATOR

MUSA ABU-KHADER
841 N. BROADWAY, RM 710
MILWAUKEE, WI 53202
PHONE: 414-286-2432

WE ENERGIES - ELECTRIC

KENNETH FRANECKI
500 S. 116TH ST.
WEST ALLIS, WI 53214
PHONE: 414-944-5531

TIME WARNER CABLE

STEVE CRAMER
1320 N. DR. MARTIN LUTHER KING JR. DR.
MILWAUKEE, WI 53212
PHONE: 414-277-4045

AMERICAN TRANSMISSION COMPANY

CHRIS DAILEY
P.O. BOX 47
WAUKESHA, WI 53187
PHONE: 262-506-6884

WE ENERGIES - GAS

JOSH MOUNT
500 S. 116TH ST.
WEST ALLIS, WI 53214
PHONE: 414-218-2053

WE ENERGIES - STEAM

KEITH SCHAEFER
231 W. MICHIGAN ST.
MILWAUKEE, WI 53203
PHONE: 414-221-2464

AT & T WISCONSIN

JEFF OLDENBURG
2005 PEWAUKEE RD
WAUKESHA, WI 53188
PHONE: 262-523-7407

OTHER CONTACTS

WISCONSIN DEPT. OF NATURAL RESOURCES

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

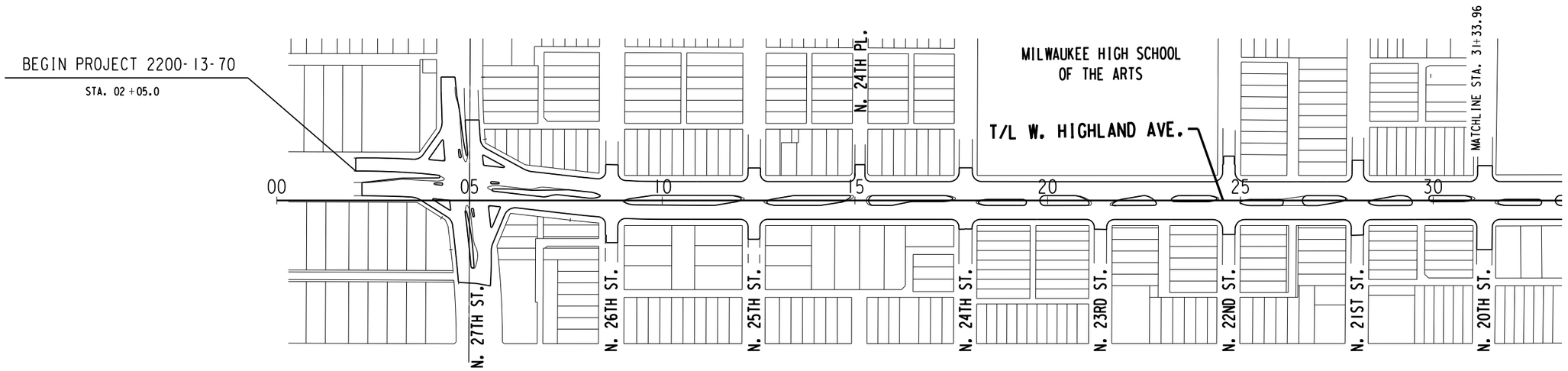
DIGGERS HOTLINE
Dial 811 or (800) 242-8511
www.DiggersHotline.com

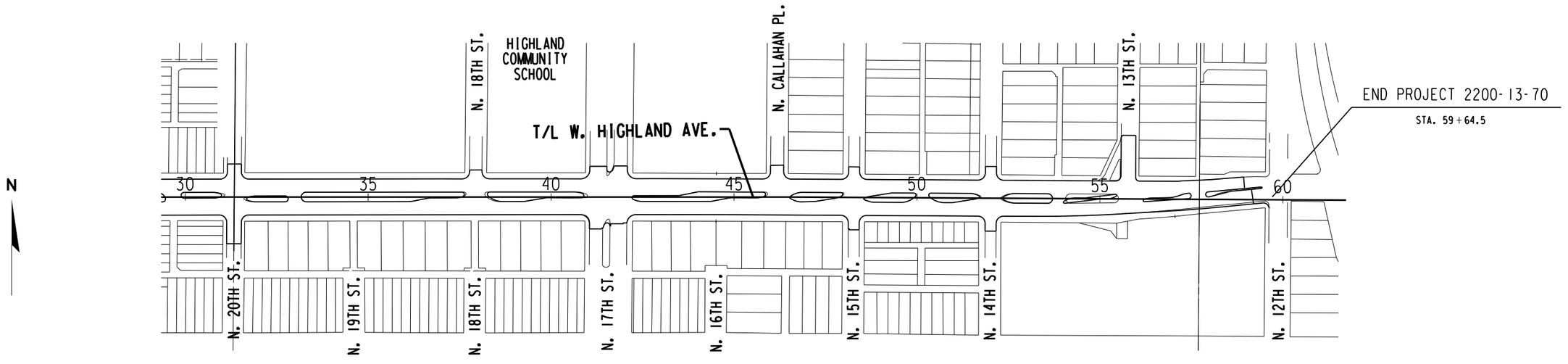
STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	UTILITY CONTACTS	SCALE FEET	SHEET NO: 3	E

FILE NAME: W:\SPR\HIGHLAND 27-12\TYPSEC.DGN

REVISED DATE: 04-15-2016 BY PN

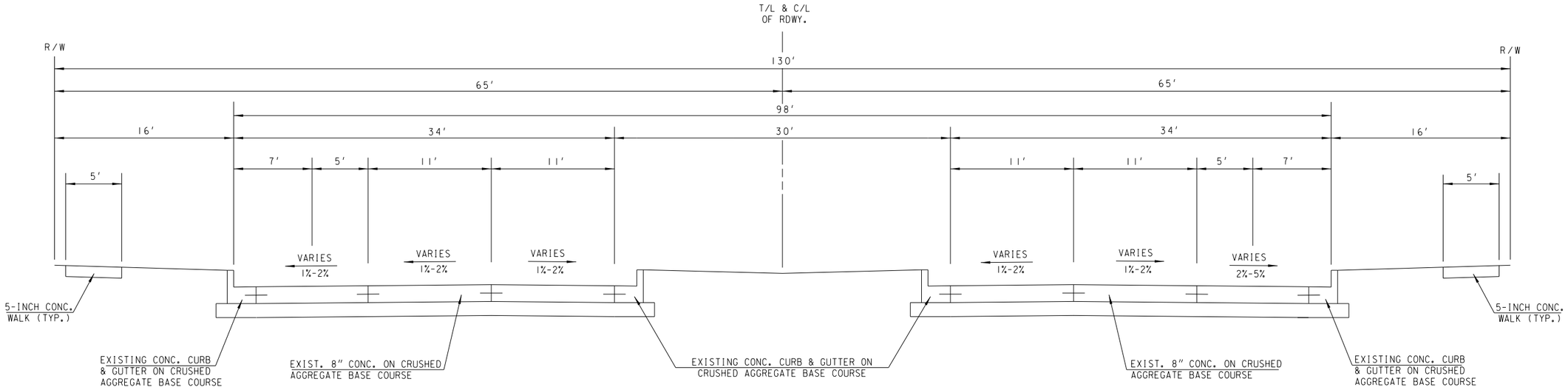
2





STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18	COUNTY: MILWAUKEE	PROJECT OVERVIEW	SCALE FEET 0' 300'	SHEET NO: 4 E

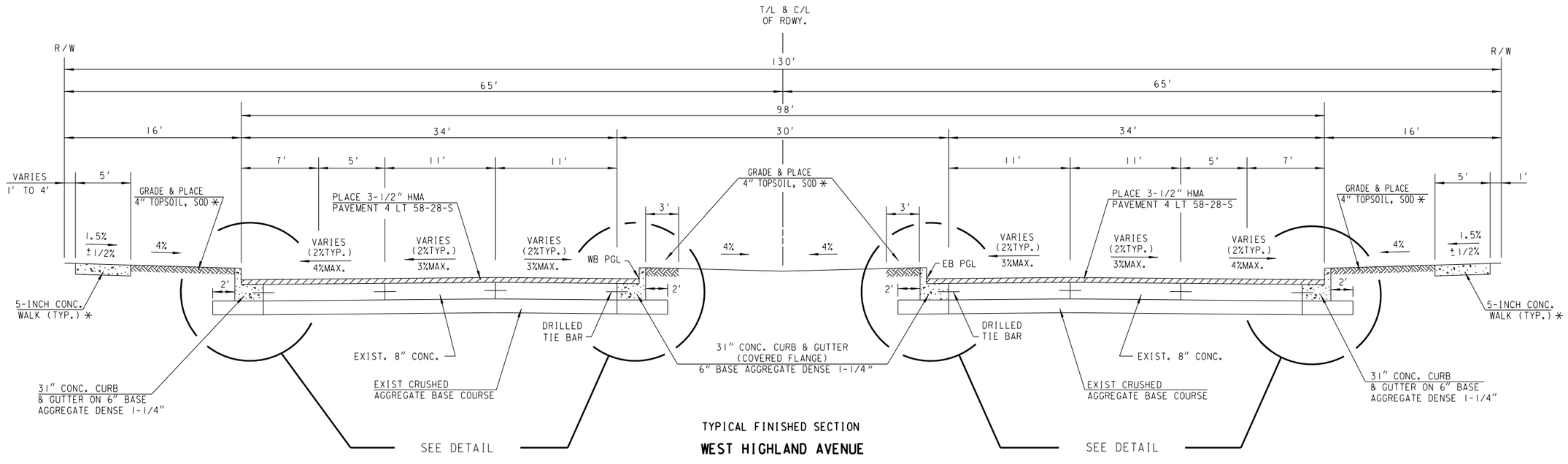
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TYPICAL EXISTING SECTION

WEST HIGHLAND AVENUE

STA. 02+31.00 TO STA. 59+64.50



TYPICAL FINISHED SECTION

WEST HIGHLAND AVENUE

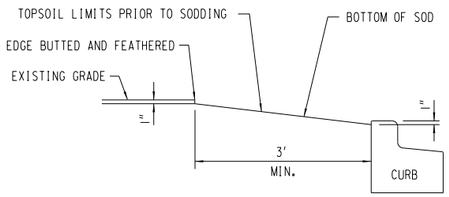
STA. 02+31.00 TO STA. 59+64.50

* WHERE INDICATED ON PLAN

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	TYPICAL SECTIONS	SCALE FEET	SHEET NO: 5	E

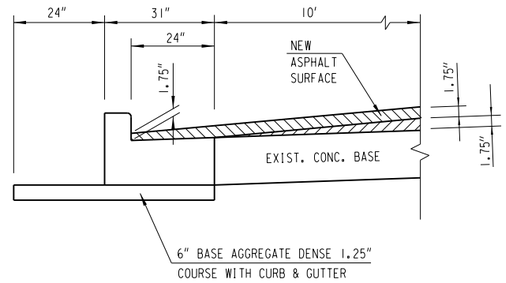
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REVISED DATE: 04-15-2016 BY PN

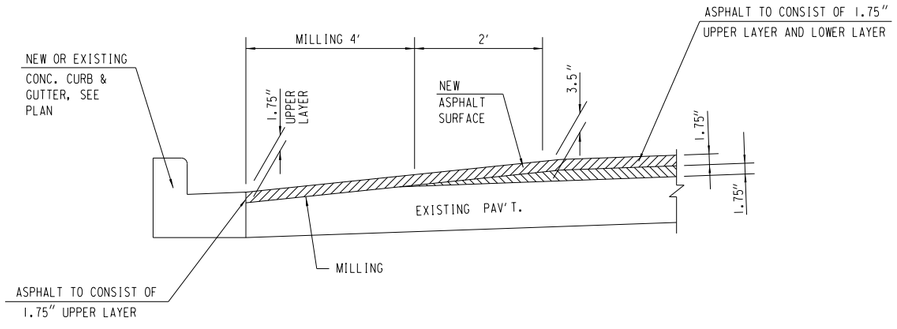


NOTE:
SOIL TO BE COMPACTED PRIOR TO PLACEMENT OF SOD.
SOIL LEVEL OF SOD TO BE FLUSH WITH TOP OF CURB.

GRADING DETAIL

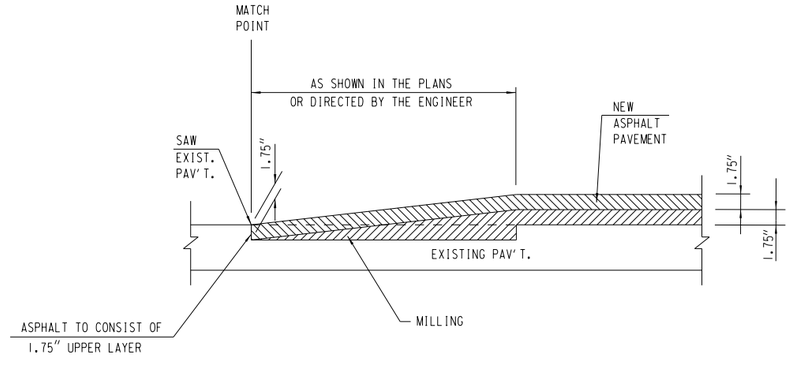


CONCRETE CURB & GUTTER
31-INCH, COVERED FLANGE



MILLING PAVEMENT

AT SIDE STREETS &
AROUND RADIUS POINTS



MILLING PAVEMENT, BUTT JOINT

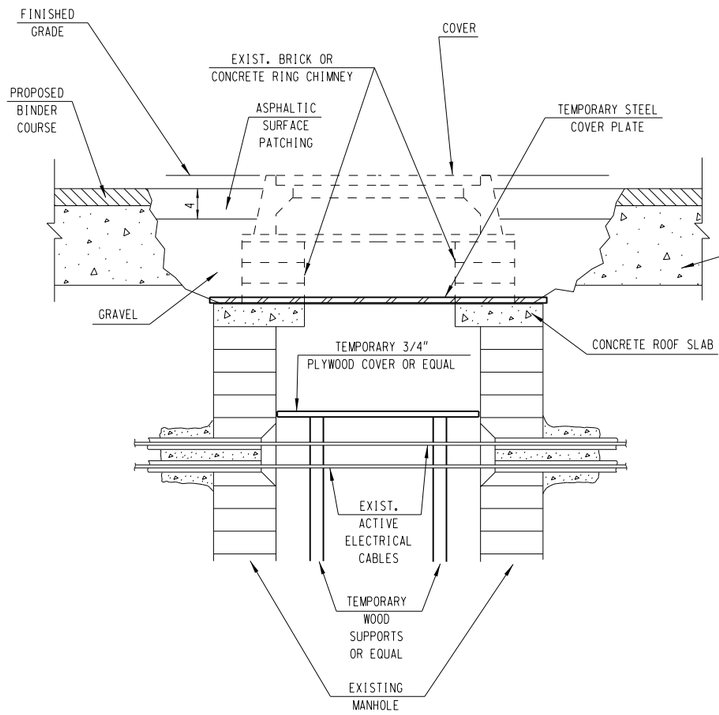
IN ROADWAY AT INTERSECTIONS

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	CONSTRUCTION DETAILS	SCALE FEET 0' 40'	SHEET NO: 6	E

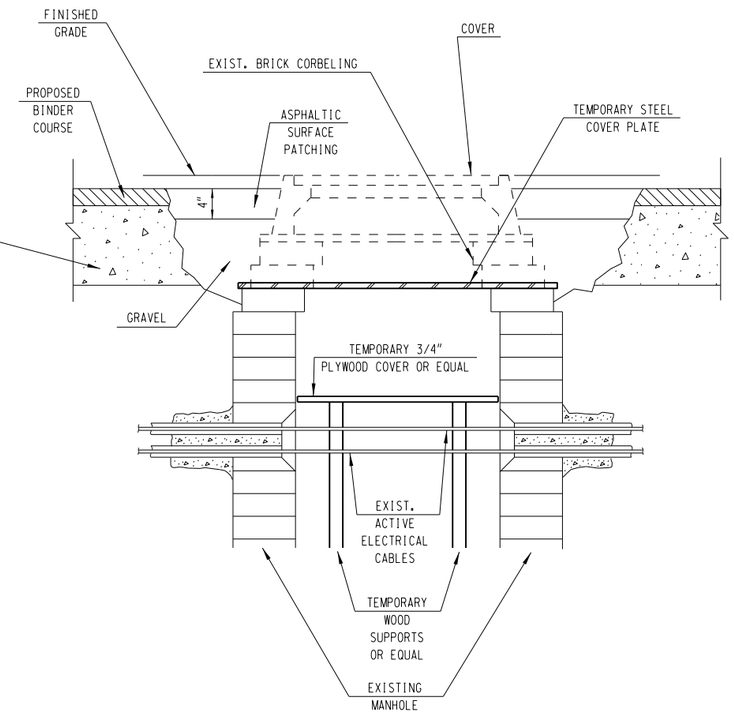
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REVISED DATE: 04-18-2016 BY PN

ADJUSTING TES MANHOLE COVERS AND TEMPORARY COVER PLATE DETAIL IN ASPHALT PAVEMENT ROADWAY



BLOCK OR PRECAST MANHOLE



BRICK ROUND MANHOLE

EXISTING CONCRETE PAVEMENT

TWO STEP METHOD OF ADJUSTING TES MANHOLE COVERS IN ASPHALT PAVEMENT ROADWAY

STEP 1

PRIOR TO REMOVING ASPHALT SURFACE

A. REMOVE AND STORE MANHOLE COVER.

B. FURNISH AND INSTALL TEMPORARY WOOD SUPPORTS OR EQUAL.

C. FURNISH AND INSTALL TEMPORARY 3/4" PLYWOOD COVER OR EQUAL.

D. FURNISH AND INSTALL TEMPORARY 1/4" STEEL PLATE.

E. BACKFILL FROM PLATE TO SURFACE USING GRAVEL AND ASPHALTIC BINDER COURSE. *

* TO BE PAID FOR UNDER CONTR. ITEMS.

STEP 2

AFTER PAVING BINDER COURSES

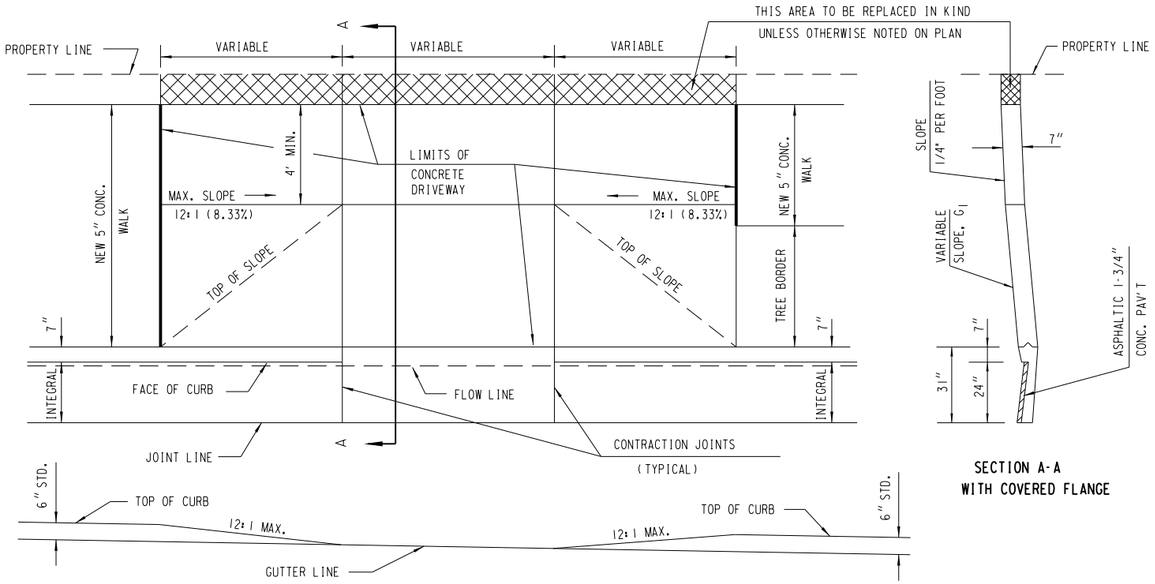
A. EXCAVATE AND REMOVE TEMPORARY COVER PLATE.

B. REMOVE DEBRIS FROM TEMPORARY PLYWOOD COVER.

C. REMOVE TEMPORARY PLYWOOD COVER AND WOOD SUPPORTS.

D. ADJUST MANHOLE CHIMNEY WITH PROPER SIZE CONCRETE ADJUSTING RINGS (SIZE OF OPENING OF CONCRETE ADJUSTING RING TO BE DETERMINED BY SIZE OF OPENING IN FRAME) AND REINSTALL EXIST. OR NEW MANHOLE COVER TO FINISH GRADE.

(BACKFILL AND OTHER WORK TO BE DONE IN ACCORDANCE WITH ITEM - ADJUSTING MANHOLE COVERS)



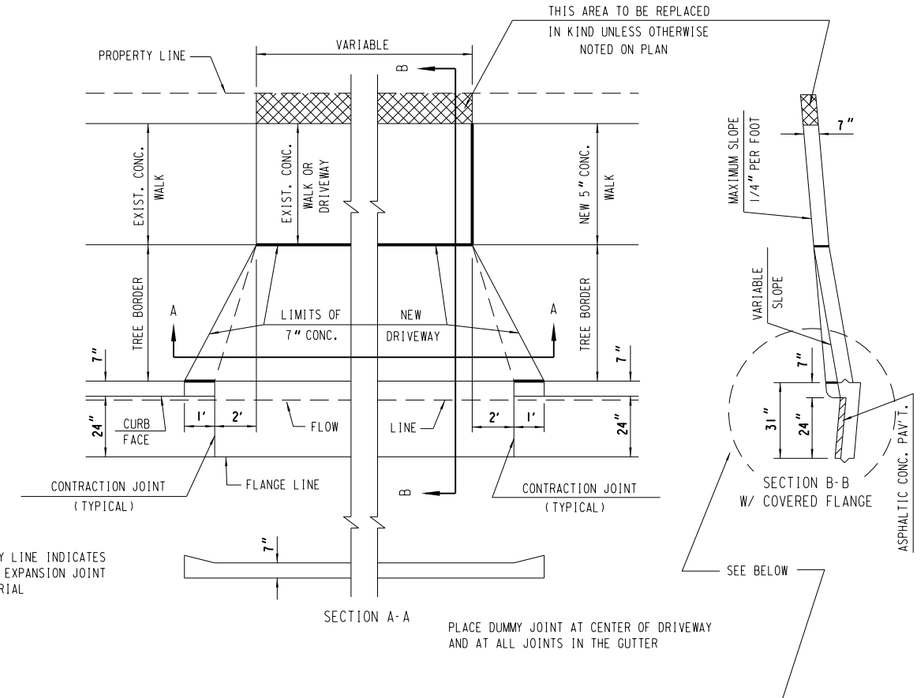
SECTION A-A
WITH COVERED FLANGE

HEAVY LINE INDICATES 1/2" EXPANSION JOINT MATERIAL

DRIVEWAY CONSTRUCTION NOTES

CONSTRUCT DRIVEWAY TO PROPERTY LINE ONLY WHEN MATCHING EXISTING DRIVEWAY AND INSTALL 1/2" EXPANSION JOINT MATERIAL BETWEEN NEW AND OLD DRIVEWAY, PLACE DUMMY JOINT AT CENTER OF DRIVEWAY AND AT ALL JOINTS IN THE GUTTER

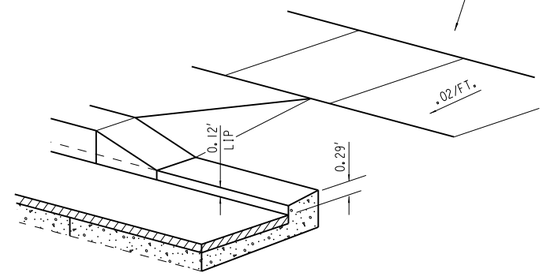
DEPRESSED CONCRETE DRIVEWAY (MODIFIED)



SECTION A-A

HEAVY LINE INDICATES 1/2" EXPANSION JOINT MATERIAL

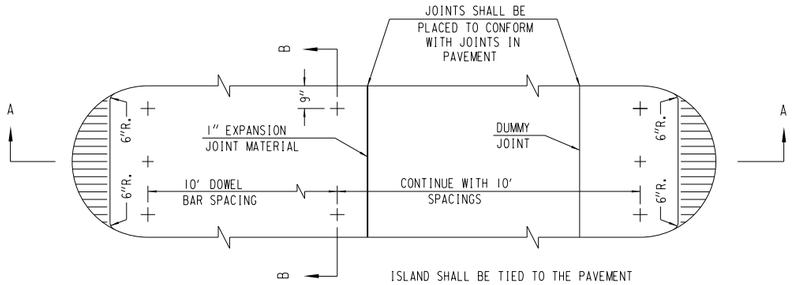
PLACE DUMMY JOINT AT CENTER OF DRIVEWAY AND AT ALL JOINTS IN THE GUTTER



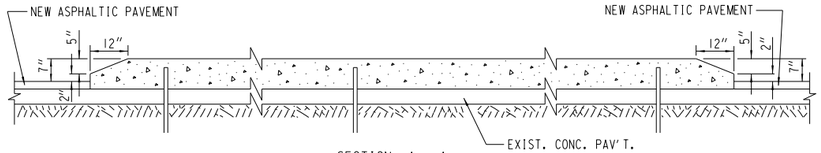
CURB SECTION DETAIL

FLARED CONCRETE DRIVEWAY (MODIFIED)

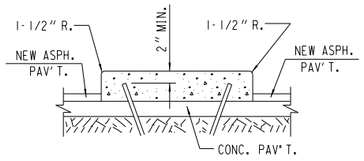
W/ 24" COVERED FLANGE



ISLAND SHALL BE TIED TO THE PAVEMENT BY PLACING 3/4" DIA. X 18" DOWEL BARS AS DIRECTED BY THE ENGINEER.



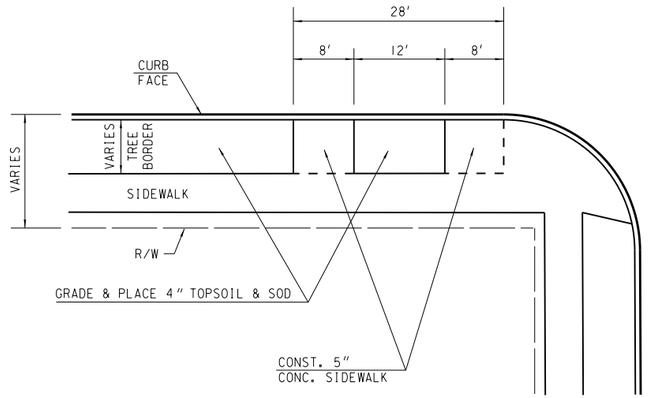
SECTION A - A



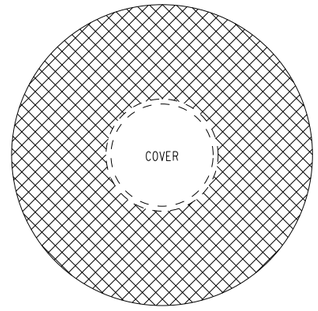
SECTION B - B

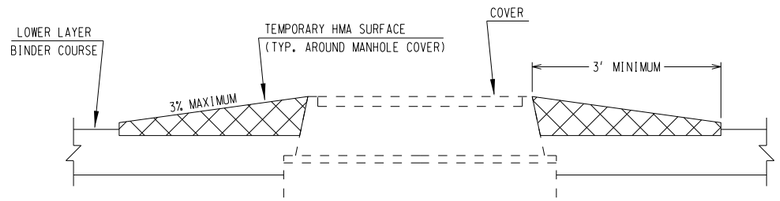
NOTE :
SIZE AND LOCATION OF CITY OF MILWAUKEE ELECTRICAL SERVICES BOXOUTS IN CONCRETE ISLANDS ON BASE TO BE DETERMINED IN FIELD AT THE TIME OF CONSTRUCTION

CONCRETE LOADING ZONE



BUS STOP WALK DETAIL



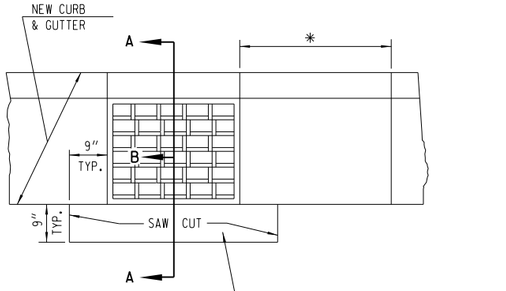


TEMPORARY RAMPING

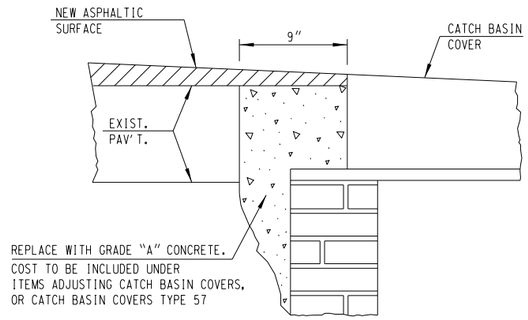
PLACEMENT OF, AND REMOVAL OF, TEMPORARY HMA SURFACE SHALL BE INCIDENTAL TO THE ITEMS OF ADJUSTING AND RECONSTRUCTING MANHOLES, INLETS, CATCH BASINS AND VALVES.

2

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

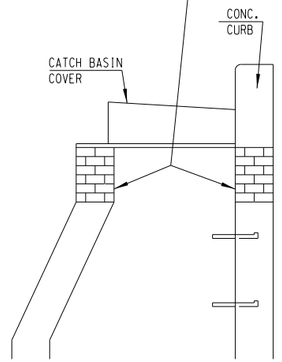


PLAN VIEW



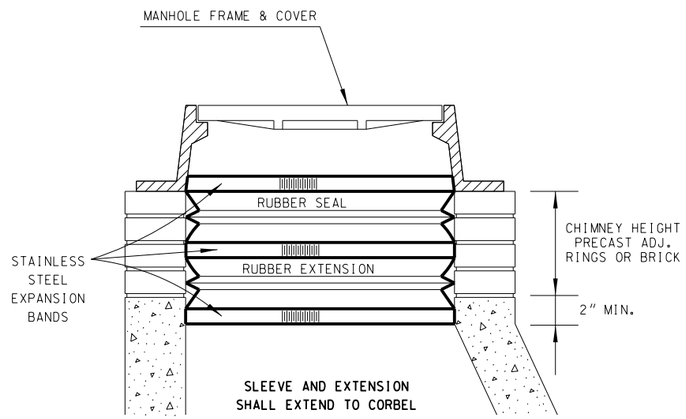
SECTION A-B

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.

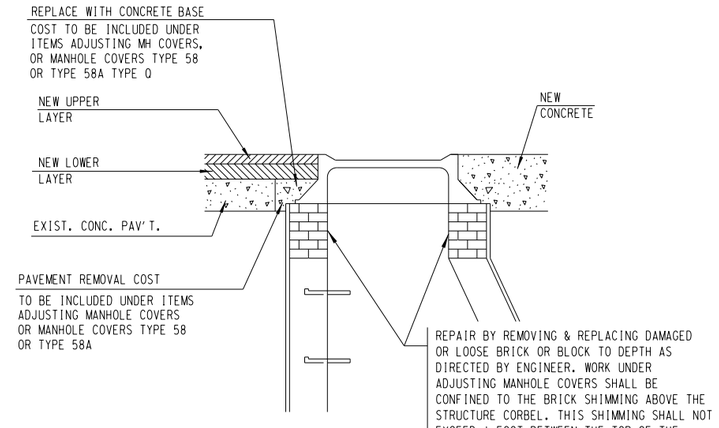


SECTION A-A

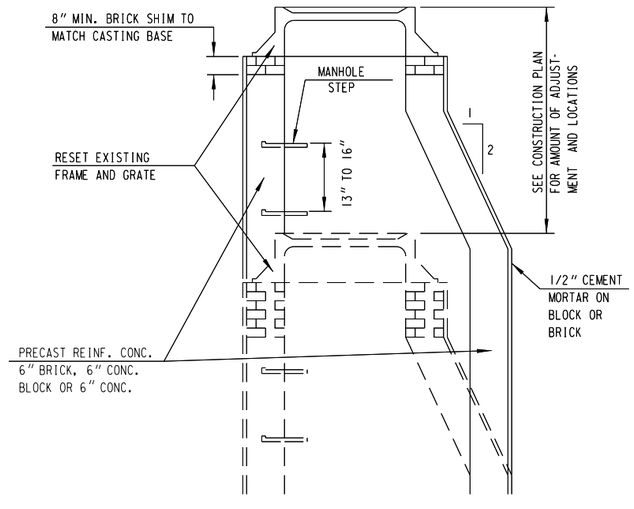
ADJUSTING CATCH BASIN COVERS



INTERNAL SANITARY MANHOLE SEAL



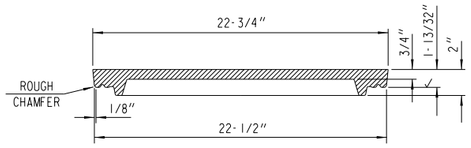
ADJUSTING MANHOLE COVERS OR MANHOLE COVERS TYPE 58A



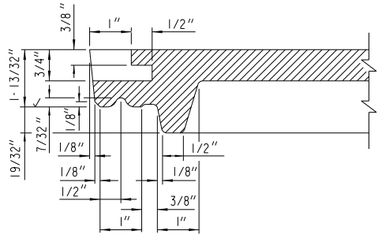
RECONSTRUCTING MANHOLES AND CATCH BASIN

CONSTRUCTION NOTES

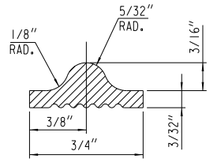
1. LOCATIONS OF STRUCTURES IN CURB & GUTTER SECTIONS REFER TO FACE OF CURB.
2. LOCATIONS OF STRUCTURES NOT IN CURB AND GUTTER SECTIONS REFER TO CENTERLINE OF STRUCTURE.
3. PIPE LENGTHS GIVEN ARE APPROXIMATE OUT TO OUT OF STRUCTURE.
4. GRATE & RIM ELEVATIONS ARE GIVEN AT FLOW LINE OF CATCH BASIN COVER OR AT CENTER-LINE 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 CATCH BASIN COVER TYPE 57, 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.



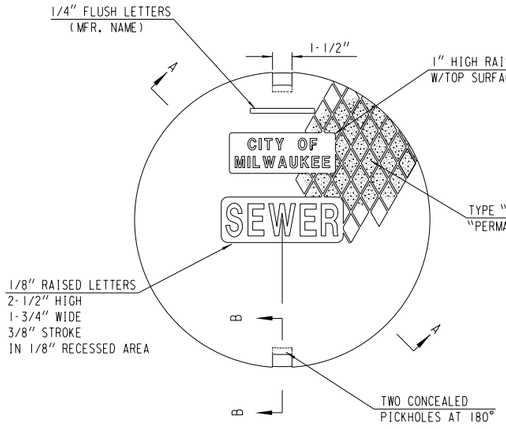
SECTION A-A



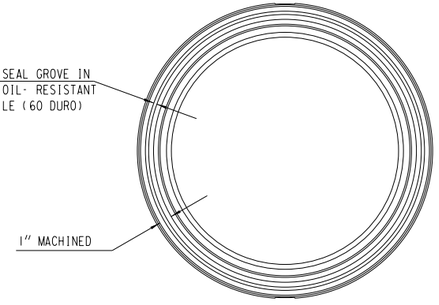
SECTION B-B



"T" GASKET DETAIL



TOP VIEW



BOTTOM VIEW

MANHOLE COVER - TYPE 58-A

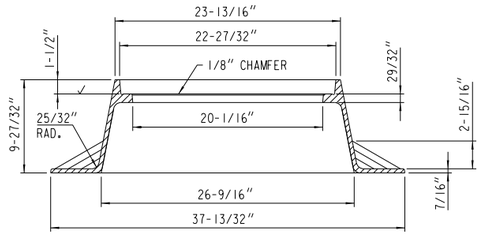
LID - 107 LBS.

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:

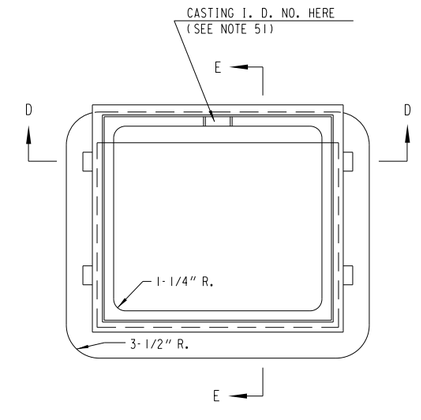
1. THE INITIALS OR MONOGRAM OF THE FOUNDRY.
2. THE CONTRACT NUMBER AND YEAR MADE.
3. THE CASTING IDENTIFICATION NUMBER.
4. THE SERIAL NUMBER OF THE INDIVIDUAL CASTING.

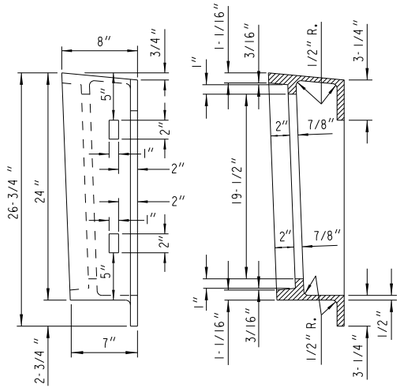
NOTE: ALL EXTERIOR EDGES SHALL BE GROUND.



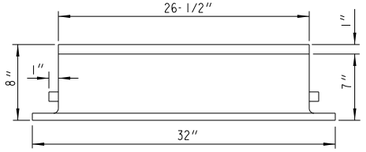
MANHOLE FRAME - TYPE MS21

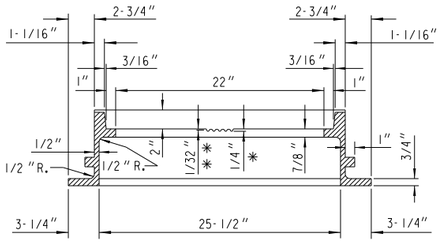
FRAME - 182 LBS.





SECTION E-E





SECTION D-D

* DEPRESSION FOR LETTERS

** CLEARANCE FROM TOP OF LETTERS TO FACE OF SEAT

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"

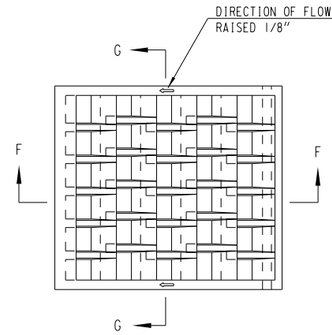
ON THE FRAME

1. 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.
2. ON THE SEAT OF THE FRAME IN 1 INCH HIGH LETTERS, THE CASTING IDENTIFICATION NUMBER (51).

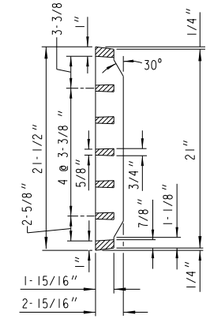
ON THE GRATE

1. 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.

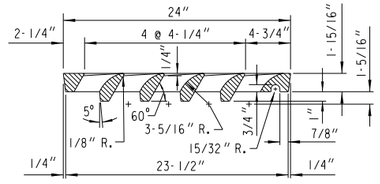
FRAME



GRATE



SECTION G-G



SECTION F-F

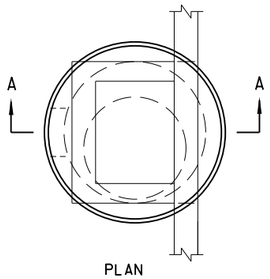
CATCH BASIN COVER - TYPE 57

LID-145 LBS., FRAME-204 LBS.

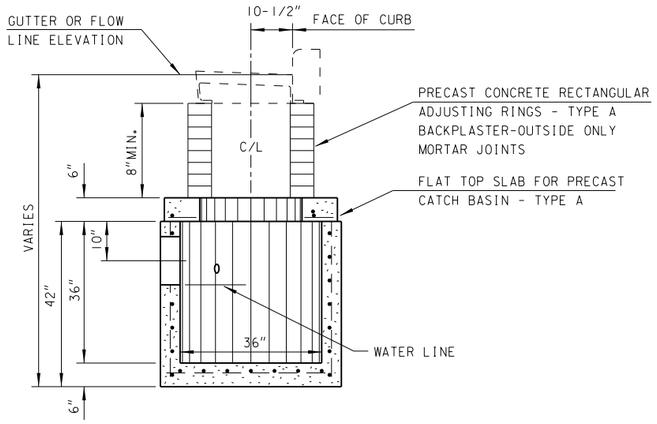
STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	CONSTRUCTION DETAIL	SCALE FEET 0' 40'	SHEET NO: 11	E

FILENAME: W:\SPR\HIGHLAND_27-12\DRAINDET.DGN

REVISED DATE: 4-12-16 BY ML



PLAN



SECTION A-A

INLET - TYPE 45A

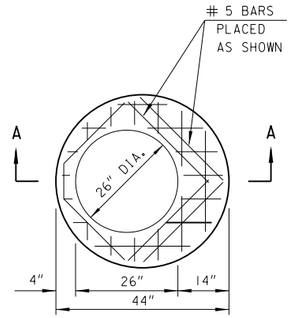
GENERAL NOTES

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.



PLAN

SECTION A-A

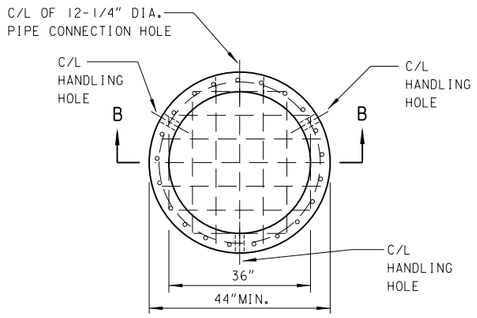
TOP SLAB - TYPE A

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.

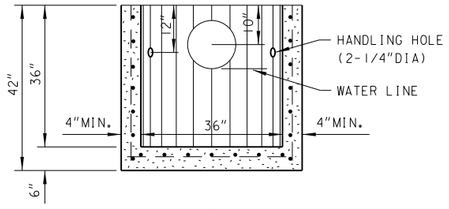
ADDITIONALLY, NO. 5 BARS SHALL BE PLACED AROUND TOP SLAB OPENING AS SHOWN.

REINFORCEMENT SHALL BE TIED OR WELDED TOGETHER.

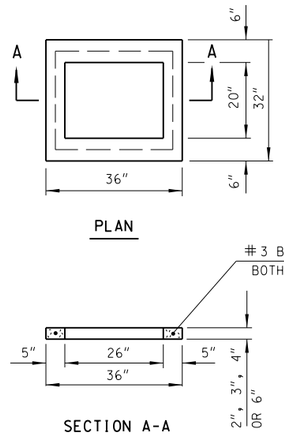
THE MINIMUM COMPRESSIVE STRENGTH OF THE CONCRETE SHALL BE 4000 P.S.I.



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 SECTON 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.

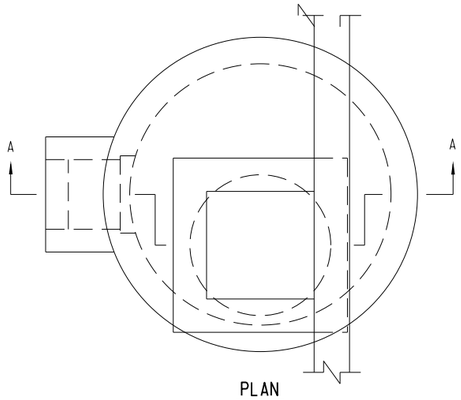
RISER SECTION AND BASE SLAB REINFORCEMENT SHALL BE TIED OR WELDED TOGETHER.

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.

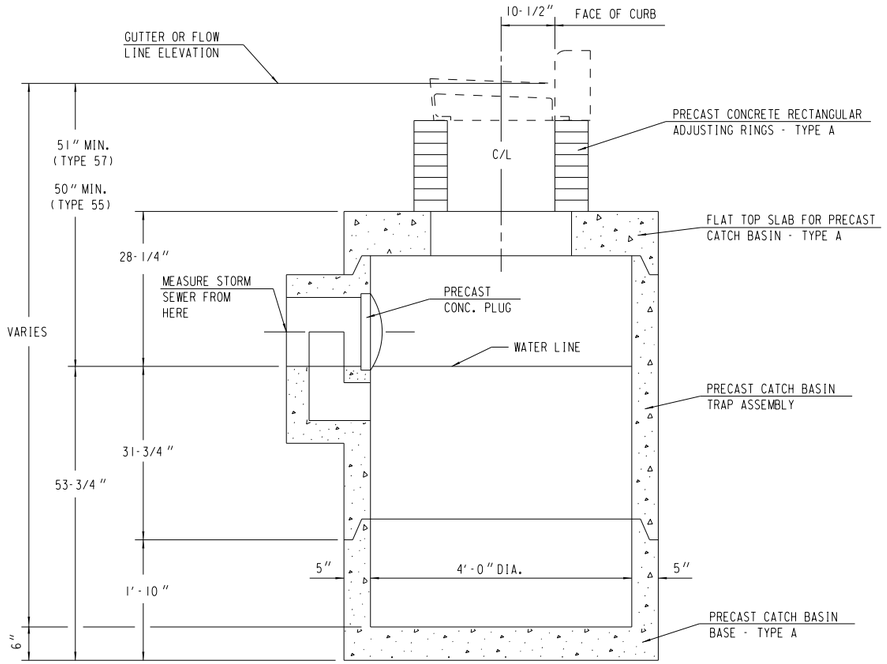
NO JOINTS OR HOLES SHALL BE BELOW THE WATERLINE.

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.



PLAN

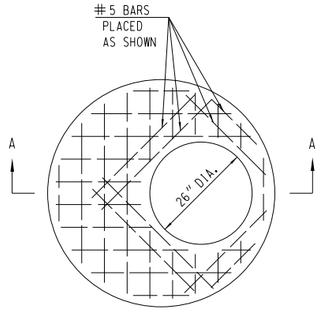


SECTION A-A

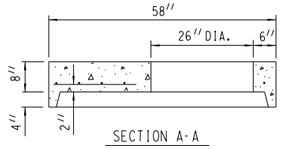
CATCH BASIN - TYPE 44A

GENERAL NOTES

1. REINFORCEMENT FOR 5" PRECAST REINFORCED CONCRETE SHALL BE 6" X 6" W16 X W16 WELDED STEEL WIRE FABRIC AND SHALL BE EMBEDDED 2" CLEAR.
2. PRECAST INLET UNITS AND BASES SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M199.
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.
5. A PRECAST CONCRETE PLUG SHALL BE CEMENTED INTO THE OPENING AT THE INNER FACE OF THE CATCH BASIN TRAP ASSEMBLY.



PLAN



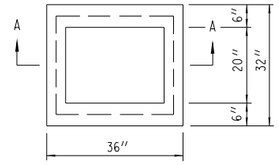
SECTION A-A

TOP SLAB - TYPE A

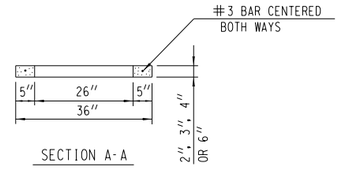
FLAT TOP SLAB SHALL BE 8" THICK REINFORCED WITH ONE LAYER OF STEEL WITH A MINIMUM AREA OF 0.12 SQ. IN. PER LINEAL FOOT IN BOTH DIRECTIONS, PLACED IN THE CENTER THIRD OF THE SECTION AS SHOWN.

REINFORCEMENT SHALL BE TIED OR WELDED TOGETHER.

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



PLAN

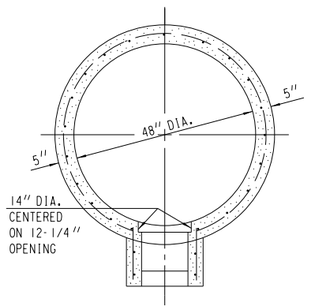


SECTION A-A

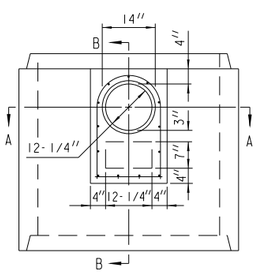
RECTANGULAR ADJUSTING RING - TYPE A

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

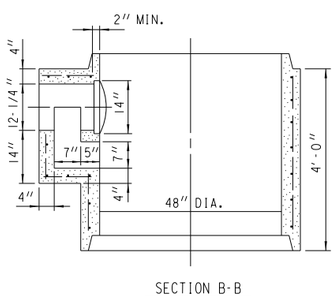
THE MINIMUM COMPRESSIVE STRENGTH OF THE CONCRETE SHALL BE 3300 P.S.I.



SECTION A-A



PLAN



SECTION B-B

TRAP ASSEMBLY

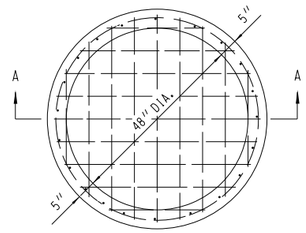
CIRCUMFERENTIAL REINFORCEMENT SHALL CONSIST OF ONE LINE OF STEEL NOT LESS THAN 0.12 SQ. IN. PER LINEAL FOOT, AND SHALL BE PLACED IN THE CENTER THIRD OF THE WALL.

TRAP ASSEMBLY SHALL BE REINFORCED WITH ONE LAYER OF STEEL WITH A MINIMUM AREA OF 0.12 SQ. IN. PER LINEAL FOOT IN BOTH DIRECTIONS, PLACED IN THE CENTER THIRD OF THE SECTION AS SHOWN.

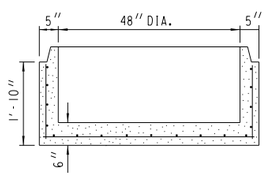
CIRCUMFERENTIAL AND TRAP ASSEMBLY REINFORCEMENT SHALL BE TIED OR WELDED TOGETHER.

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

TWO HANDLING HOLES 2 1/4 INCHES IN DIAMETER SHALL BE CAST OR DRILLED IN THE WALL.



PLAN



SECTION A-A

BASE - TYPE A

CIRCUMFERENTIAL REINFORCEMENT SHALL CONSIST OF ONE LINE OF STEEL NOT LESS THAN 0.12 SQ. IN. PER LINEAL FOOT, AND SHALL BE PLACED IN THE CENTER THIRD OF THE WALL.

BOTTOM SLAB SHALL BE REINFORCED WITH ONE LAYER OF STEEL WITH A MINIMUM AREA OF 0.12 SQ. IN. PER LINEAL FOOT IN BOTH DIRECTIONS, PLACED IN THE CENTER THIRD OF THE SLAB.

CIRCUMFERENTIAL AND BOTTOM SLAB REINFORCEMENT SHALL BE TIED OR WELDED TOGETHER.

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

TWO HANDLING HOLES 2 1/4 INCHES IN DIAMETER SHALL BE CAST OR DRILLED IN THE WALL.

2

CURB RAMP GENERAL NOTES

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 DRAINAGE AWAY FROM CURB RAMP AT GUTTER FLAG INTERFACE. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN *-INCH ARE ALLOWED.

ABSOLUTE MAXIMUM 12H:1V (7.00%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

ALL CURB RADII ARE MEASURED TO THE FACE OF CURB FOR THE CURB SECTIONS AT CORNERS

ALL OTHER NOTES ARE NOT NUMBERED

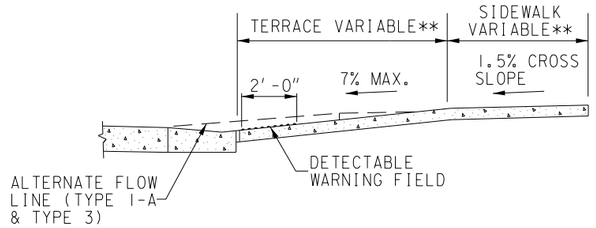
±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

WHEN ADDING ELEVATIONS TO LANDINGS SHOWN IN THE PLAN PROVIDE A LEVEL LANDING (MAXIMUM 1.5% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL.
STANDARD LANDING SIZE IS 5 FEET X 5 FEET (MINIMUM 4 FEET X 4 FEET).

WHEN THIS DISTANCE EXCEEDS 5 FEET, USE MULTIPLE DETECTABLE WARNING PANELS ACROSS THE RAMP AND STAGGER ADDITIONAL DETECTABLE WARNING PANEL(S) FORWARD TO REDUCE THIS DISTANCE.

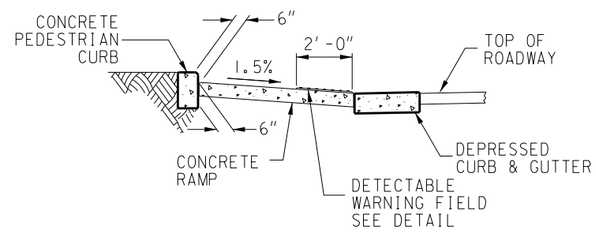
PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

CURB RAMP TYPE
PLAN VIEW



SECTION B-B

CURB RAMP TYPE
PLAN VIEW



SECTION C-C

CURB RAMP LEGEND

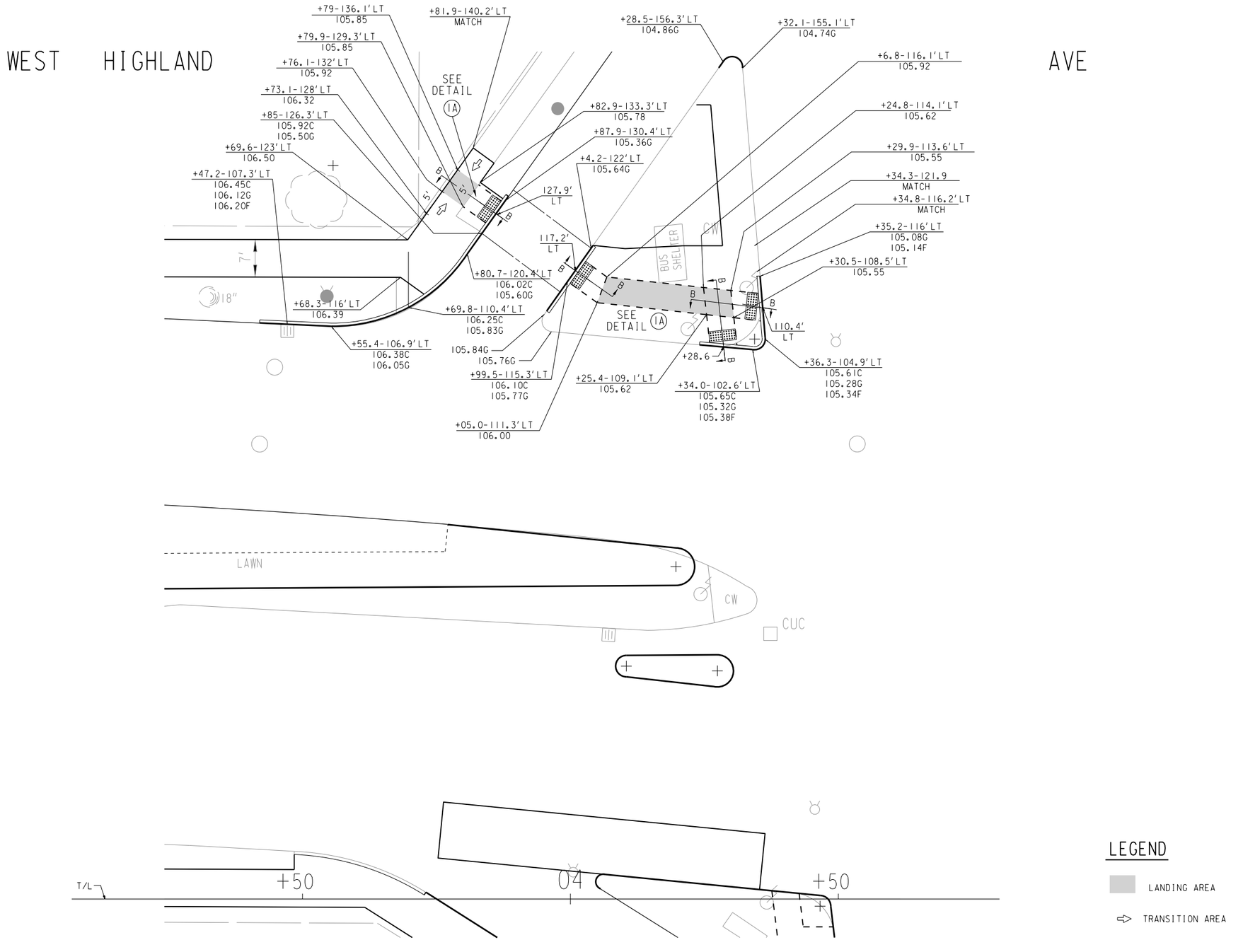
- DETECTABLE WARNING FIELD
- PAVEMENT MARKING CROSSWALK (WHITE)
- 1/2" EXPANSION JOINT
- LANDING AREA

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	INTERSECTION DETAILS	SCALE FEET	SHEET NO: 14 E

FILENAME: W:\SPR\HIGHLAND_27-12\RAMPDET.DGN

REVISED DATE: 04-13-2016 SB

2



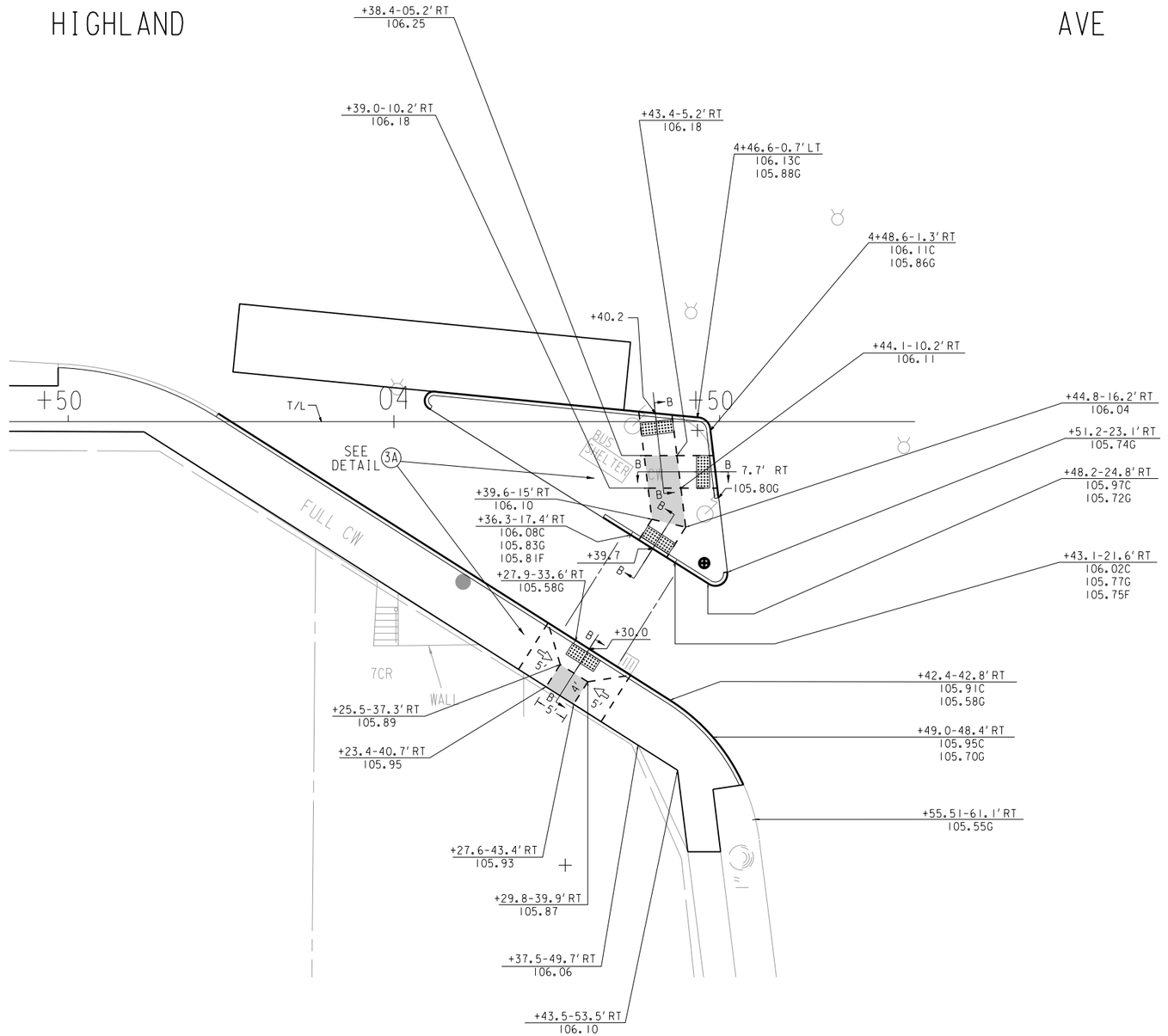
NW CORNER W. HIGHLAND & N. 27TH ST.

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	INTERSECTION DETAILS	SCALE FEET 0' 20'	SHEET NO: 15	E

FILENAME: W:\SPR\HIGHLAND_27-12\RAMPDET.DGN

REVISED DATE: 04-13-2016 BY SB

2



LEGEND

⊕ MONOTUBE MAST ARM BASE TO BE INSTALLED

LANDING AREA

⇨ TRANSITION AREA

SW CORNER W. HIGHLAND & N. 27TH ST.

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	INTERSECTION DETAILS	SCALE FEET 0' 20'	SHEET NO: 16	E

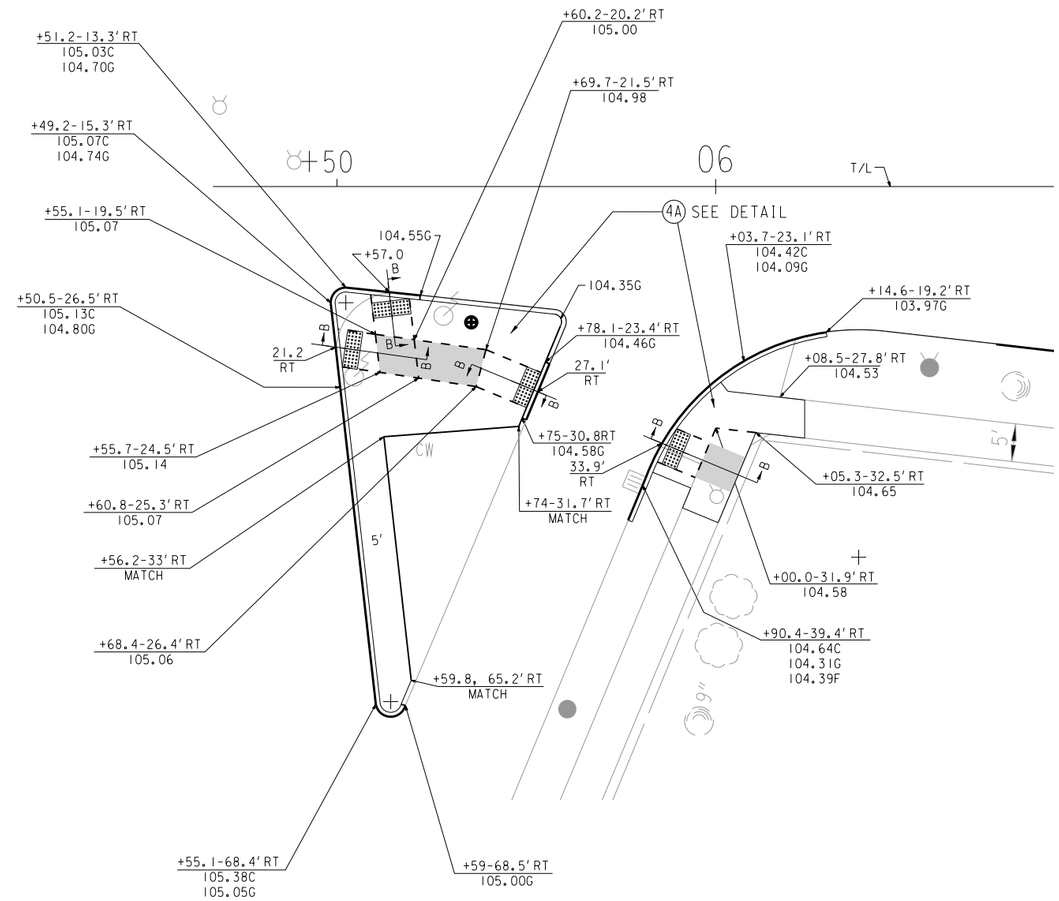
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REVISED DATE: 04-13-2016 BY SB

WEST HIGHLAND AVE

2

N



LEGEND

⊕ MONOTUBE MAST ARM BASE TO BE INSTALLED

LANDING AREA

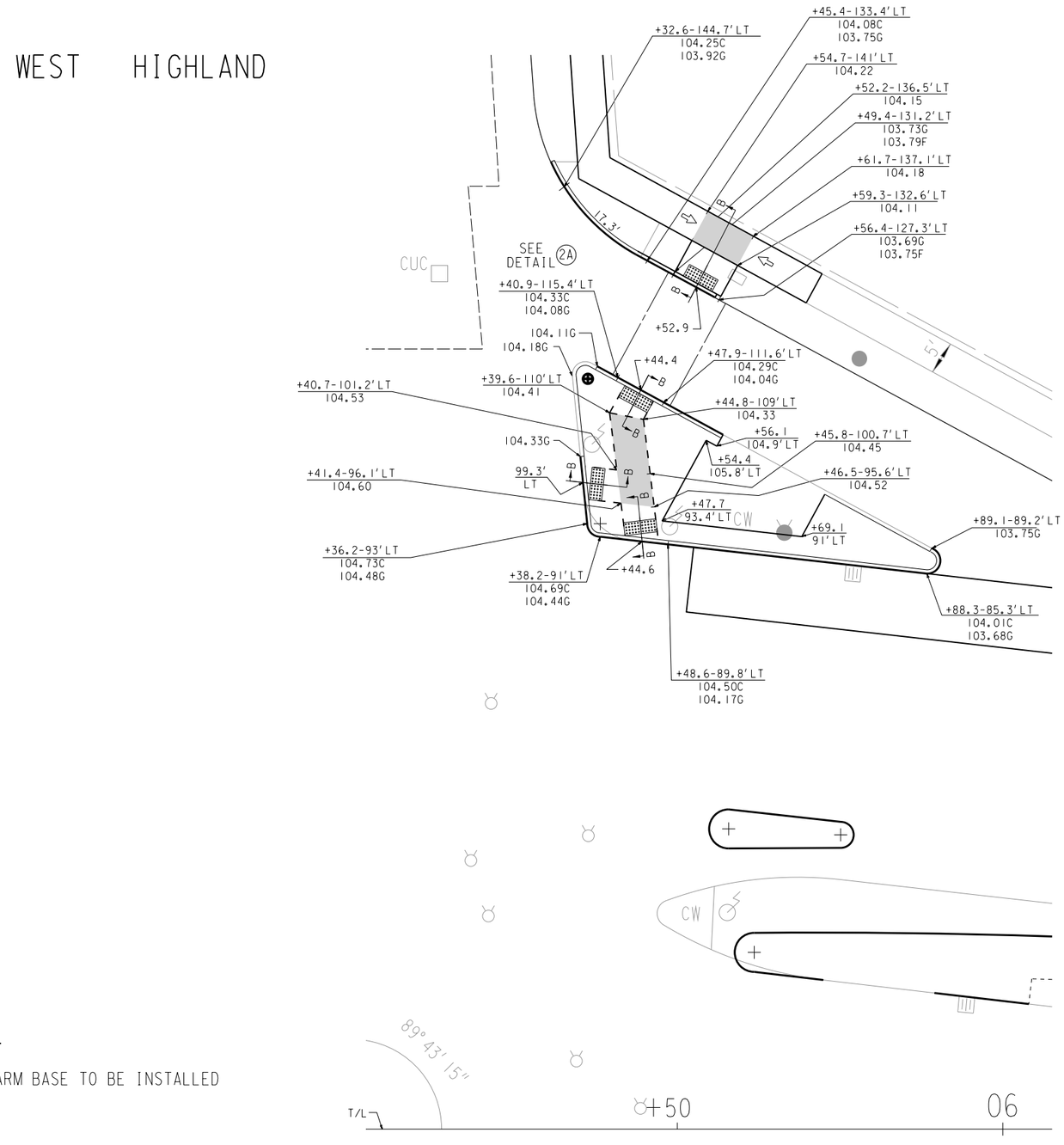
⇨ TRANSITION AREA

SE CORNER W. HIGHLAND & N. 27TH ST.

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	INTERSECTION DETAILS	SCALE FEET 0' 20'	SHEET NO: 17	E

FILENAME: W:\SPR\HIGHLAND_27-12\RAMPDET.DGN

REVISED DATE: 04-13-2016 BY SB



LEGEND

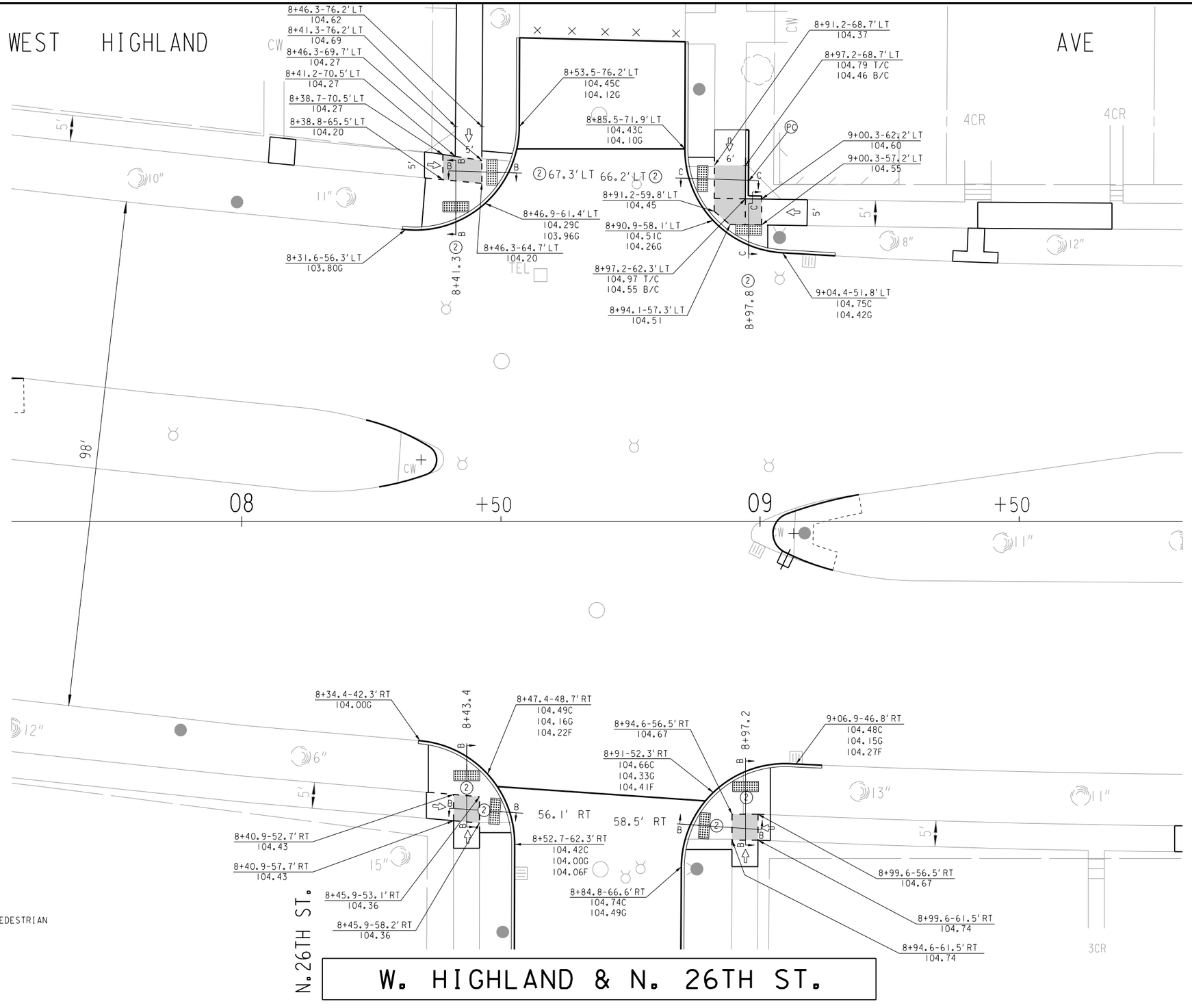
- ⊕ MONOTUBE MAST ARM BASE TO BE INSTALLED
- LANDING AREA
- ⇨ TRANSITION AREA

NE CORNER W. HIGHLAND & N. 27TH ST.

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	INTERSECTION DETAILS	SCALE FEET 0' 20'	SHEET NO: 18	E

FILENAME: W:\SPR\HIGHLAND_27-12\RAMPDET.DGN

REVISED DATE: 04-13-2016 BY SB



LEGEND

- LANDING AREA
- (PC) CONST. CONC. CURB PEDESTRIAN
- TRANSITION AREA

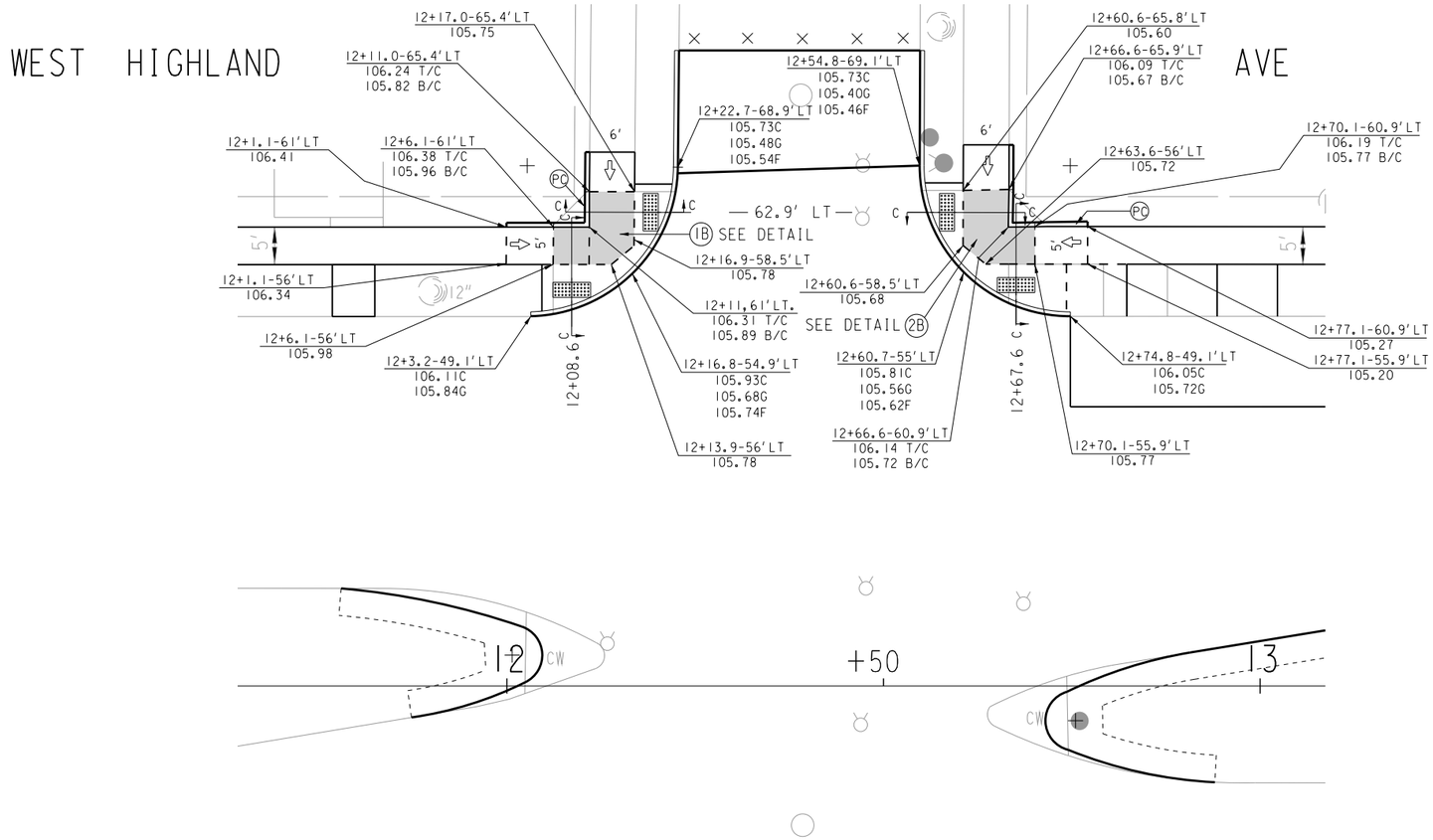
W. HIGHLAND & N. 26TH ST.

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	INTERSECTION DETAILS	SCALE FEET 0' 20'	SHEET NO: 19	E

FILENAME: W:\SPR\HIGHLAND_27-12\RAMPDET.DGN

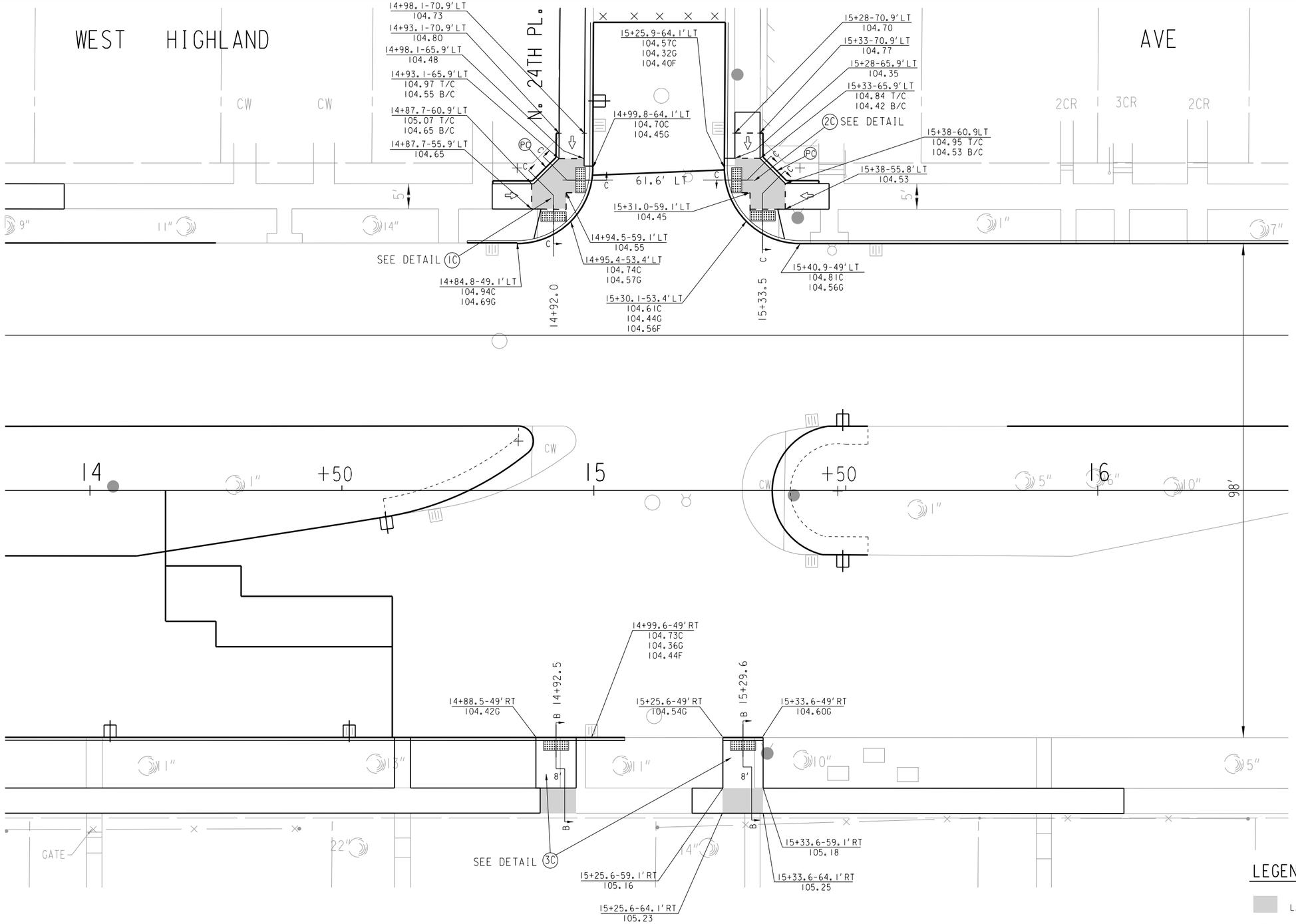
REVISED DATE: 04-13-2016 BY SB

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W. HIGHLAND & N. 25TH ST.

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	INTERSECTION DETAILS	SCALE FEET 0' 20'	SHEET NO: 20	E

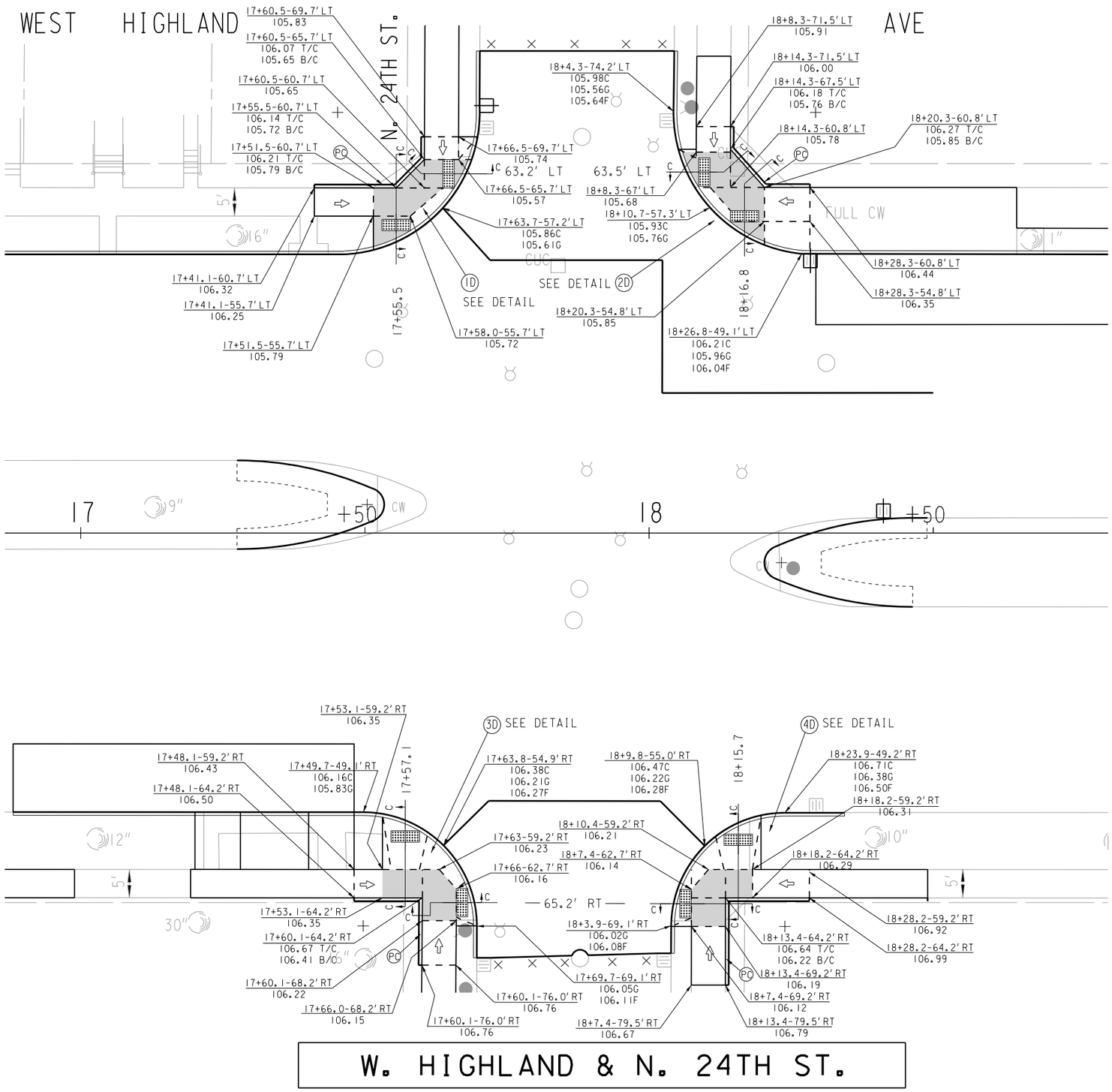


W. HIGHLAND & N. 24TH PL.

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	INTERSECTION DETAILS	SCALE FEET 0' 20'	SHEET NO: 21	E

FILENAME: W:\SPR\HIGHLAND_27-12\RAMPDET.DGN

REVISED DATE: 04-13-2016 BY SB

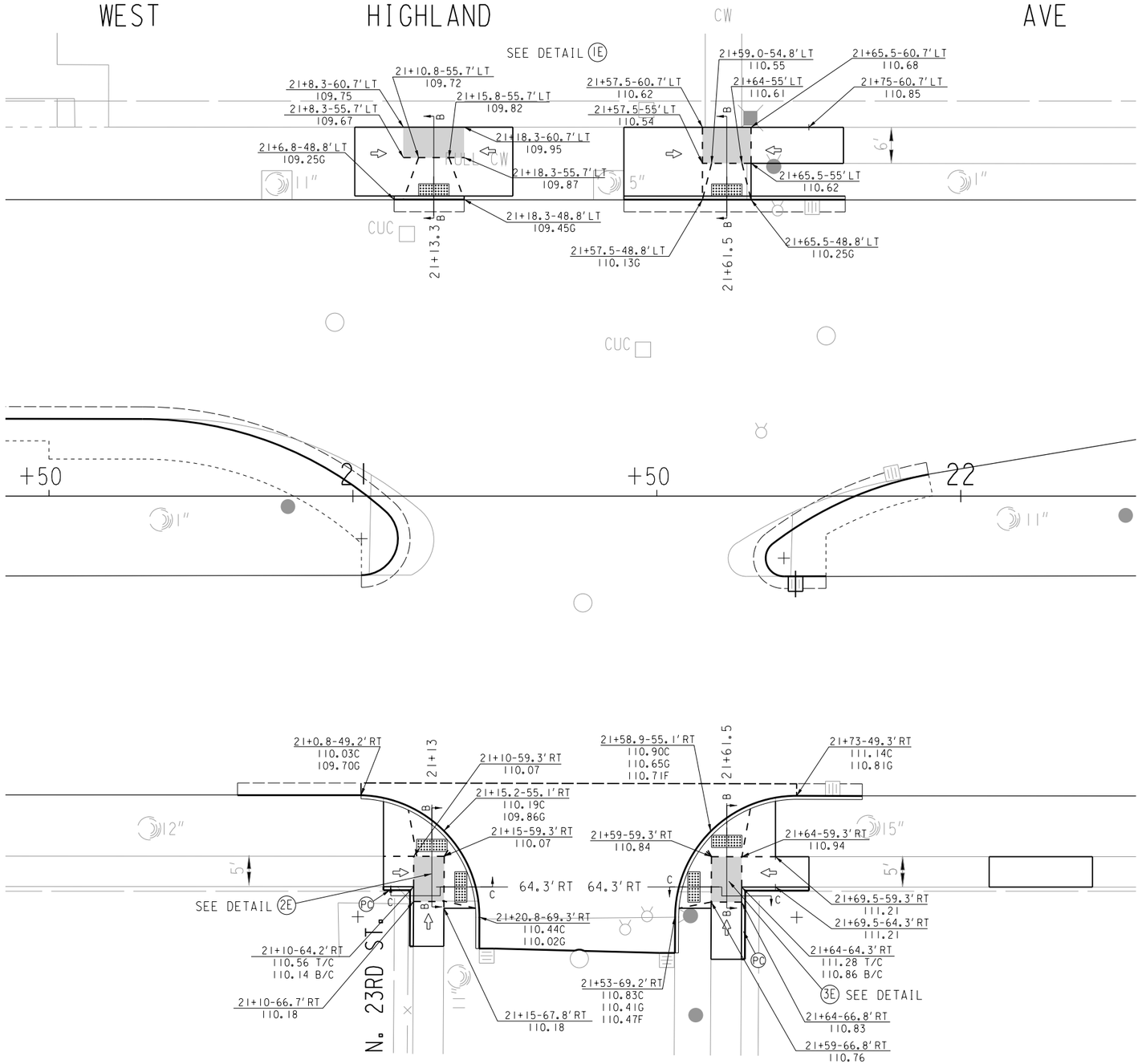


W. HIGHLAND & N. 24TH ST.

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	INTERSECTION DETAILS	SCALE FEET 0' 20'	SHEET NO: 22	E

FILENAME: W:\SPR\HIGHLAND_27-12\RAMPDET.DGN

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W. HIGHLAND & N. 23RD ST.

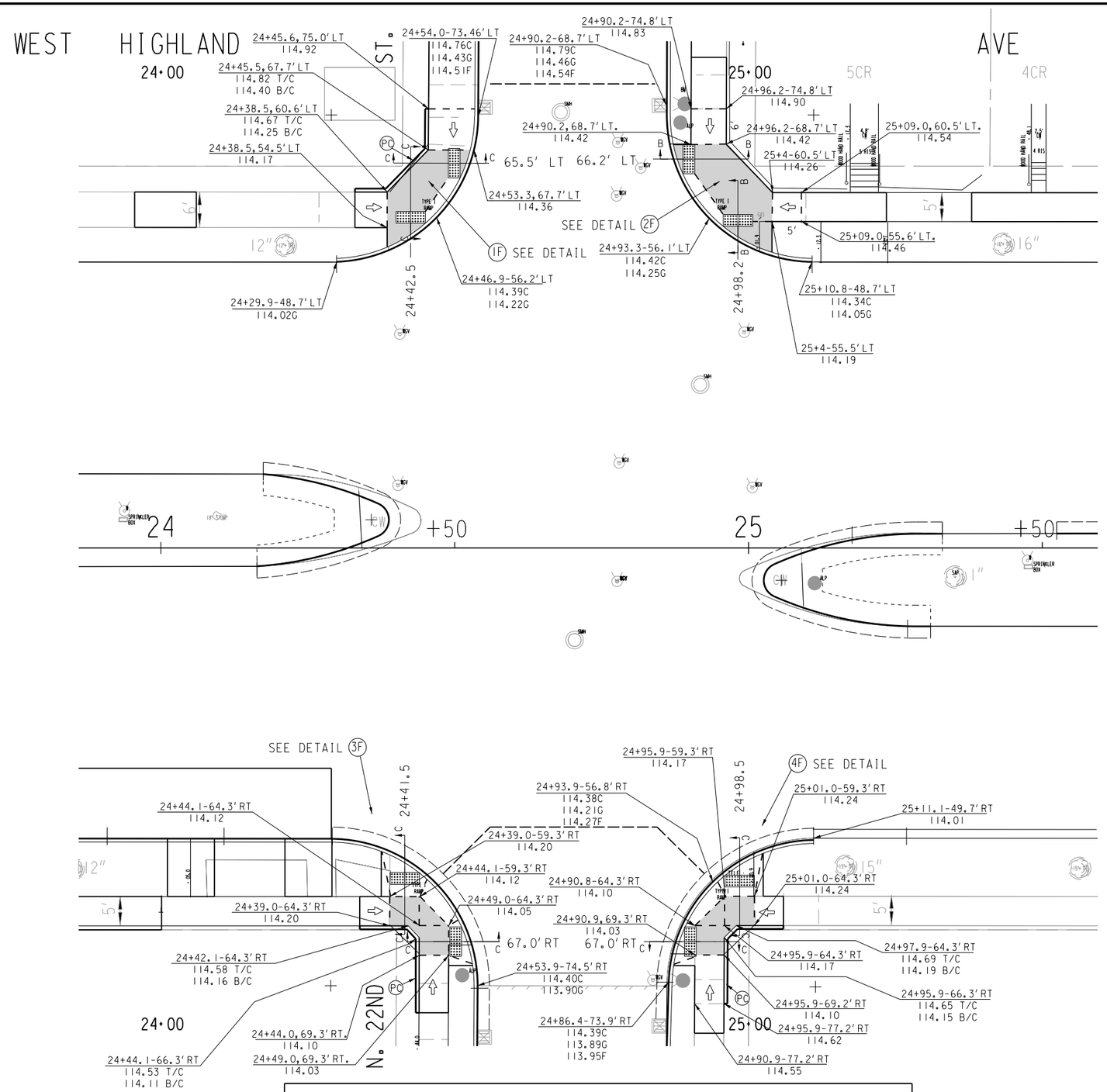
LEGEND

- LANDING AREA
- (PC) CONST. CONC. CURB PEDESTRIAN
- TRANSITION AREA

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	INTERSECTION DETAILS	SCALE FEET 0' 20'	SHEET NO: 23	E

FILENAME: W:\SPR\HIGHLAND_27-12\RAMPDET.DGN

REVISED DATE: 04-13-2016 BY SB

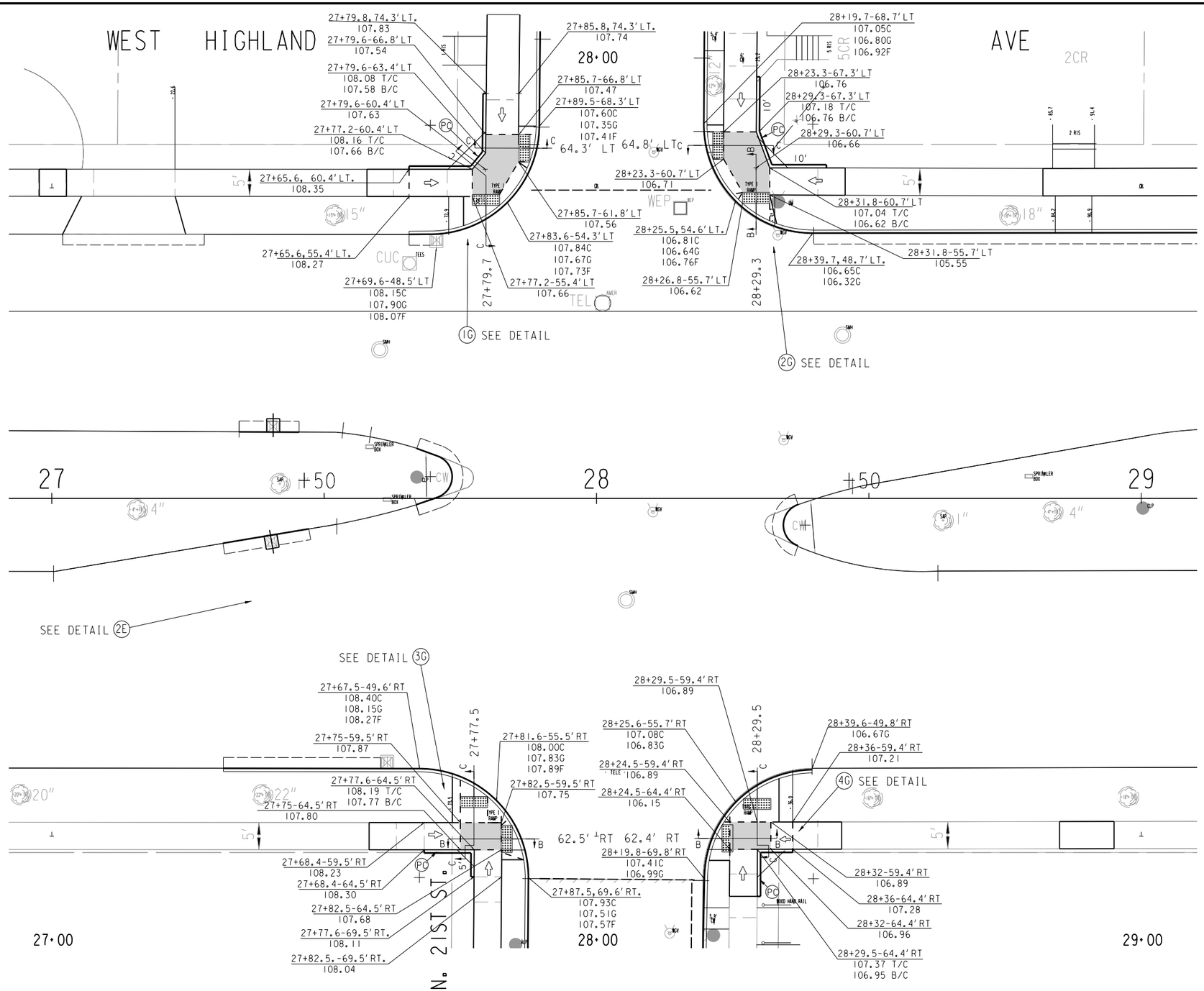


W. HIGHLAND & N. 22ND ST.

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	INTERSECTION DETAILS	SCALE FEET 0' 20'	SHEET NO: 24	E

FILENAME: W:\SPR\HIGHLAND_27-12\RAMPDET.DGN

REVISED DATE: 04-13-2016 BY SB



W. HIGHLAND & N. 21ST ST.

LEGEND

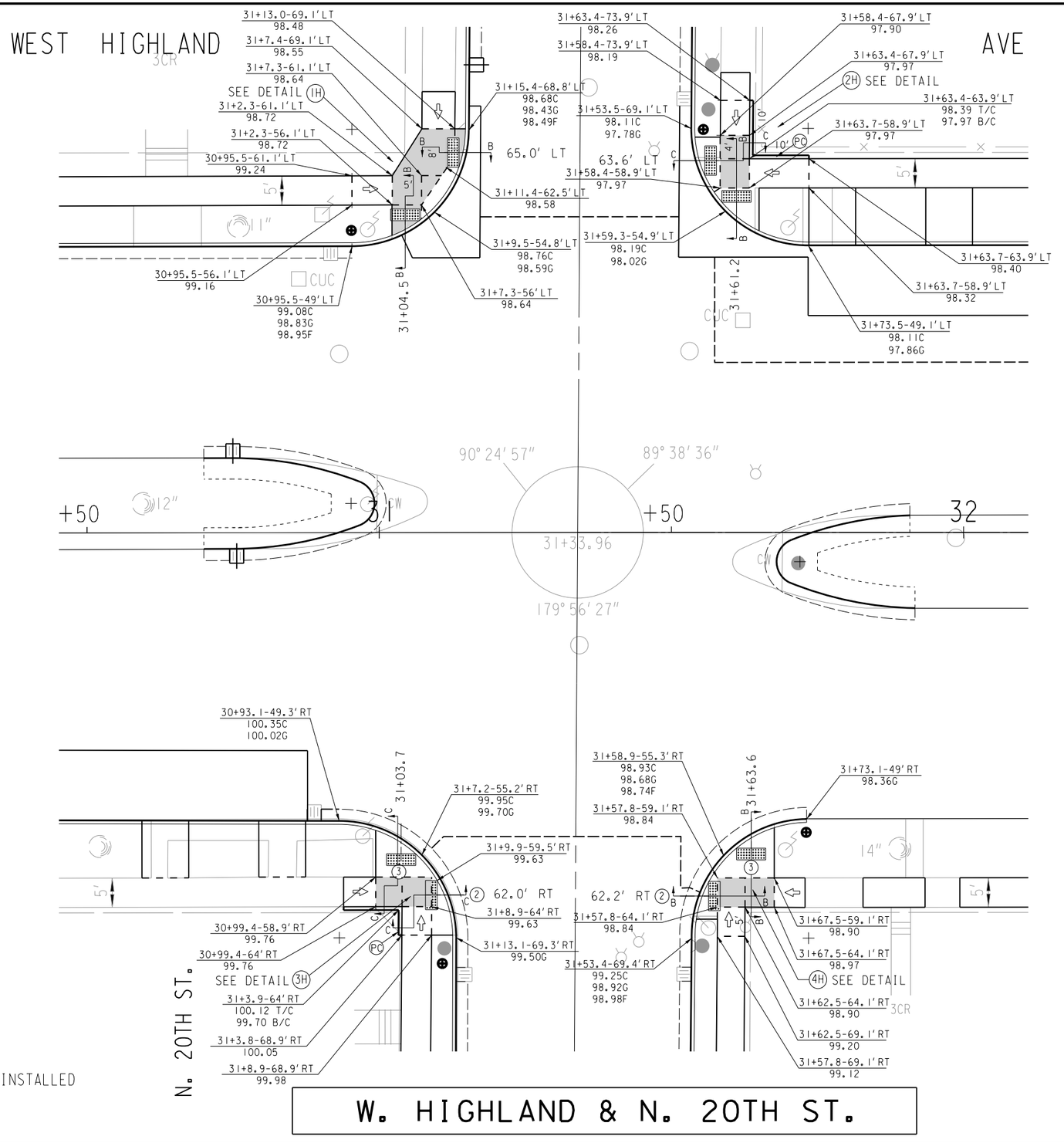
- LANDING AREA
- (PC) CONST. CONC. CURB PEDESTRIAN
- TRANSITION AREA

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	INTERSECTION DETAILS	SCALE FEET 0' 20'	SHEET NO: 25	E

FILENAME: W:\SPR\HIGHLAND_27-12\RAMPDET.DGN

REVISED DATE: 04-13-2016 BY SB

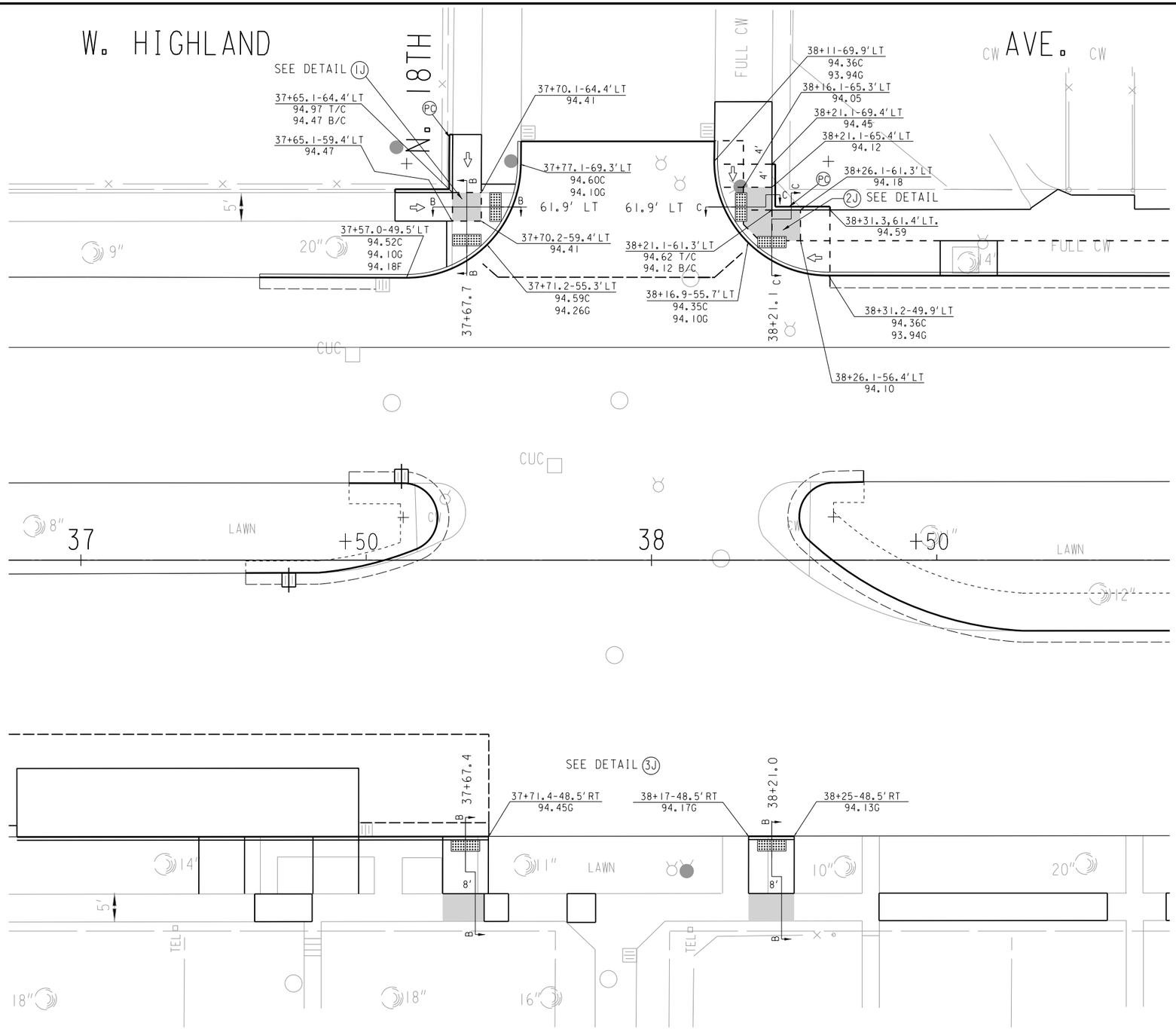
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STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	INTERSECTION DETAILS	SCALE FEET 0' 20'	SHEET NO: 26	E

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REVISED DATE: 04-13-2016 BY SB



W. HIGHLAND & N. 18TH ST.

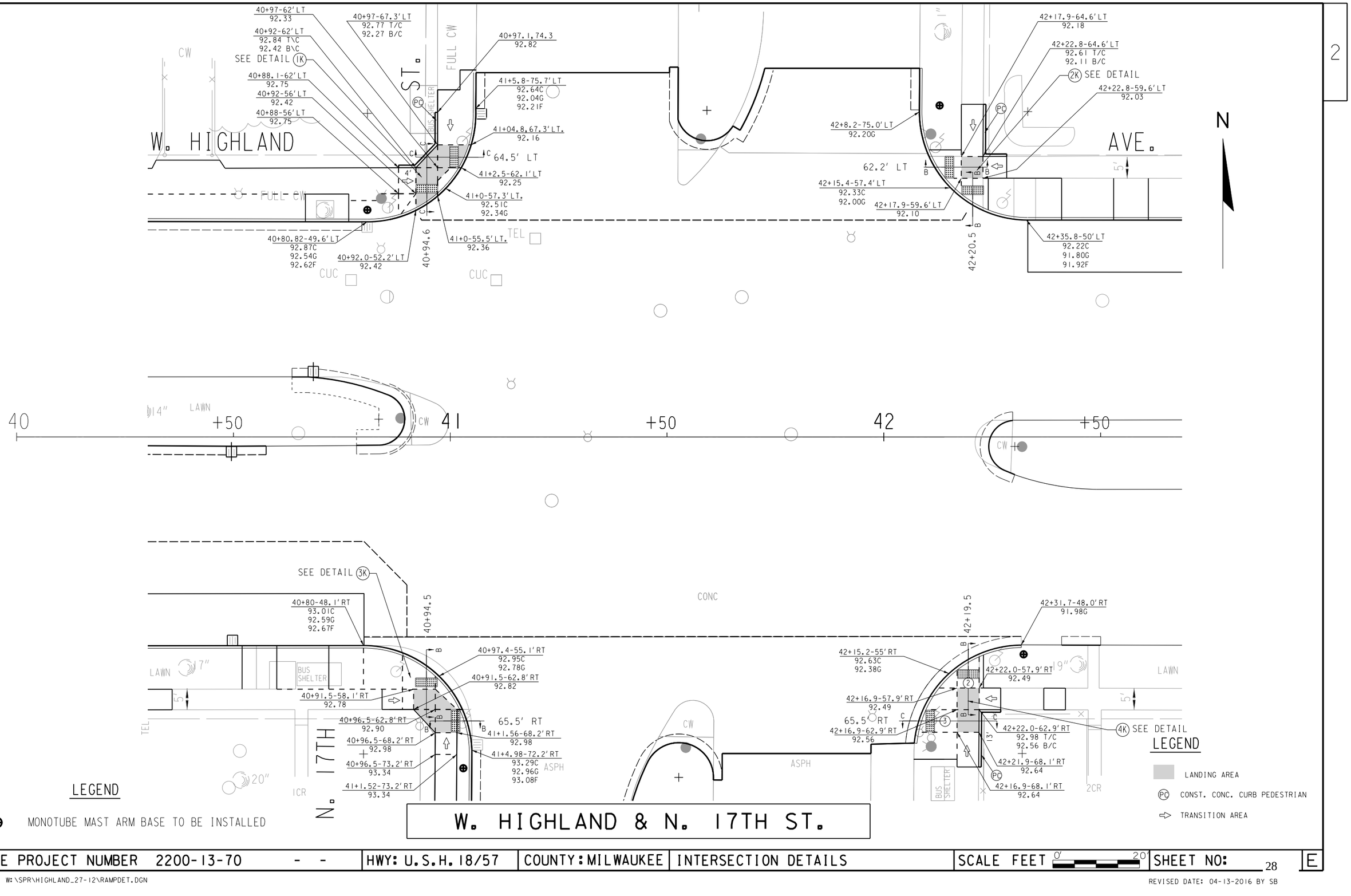
LEGEND

- LANDING AREA
- (PC) CONST. CONC. CURB PEDESTRIAN
- TRANSITION AREA

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	INTERSECTION DETAILS	SCALE FEET 0' 20'	SHEET NO: 27	E

FILENAME: W:\SPR\HIGHLAND_27-12\RAMPDET.DGN

REVISED DATE: 04-13-2016 BY SB

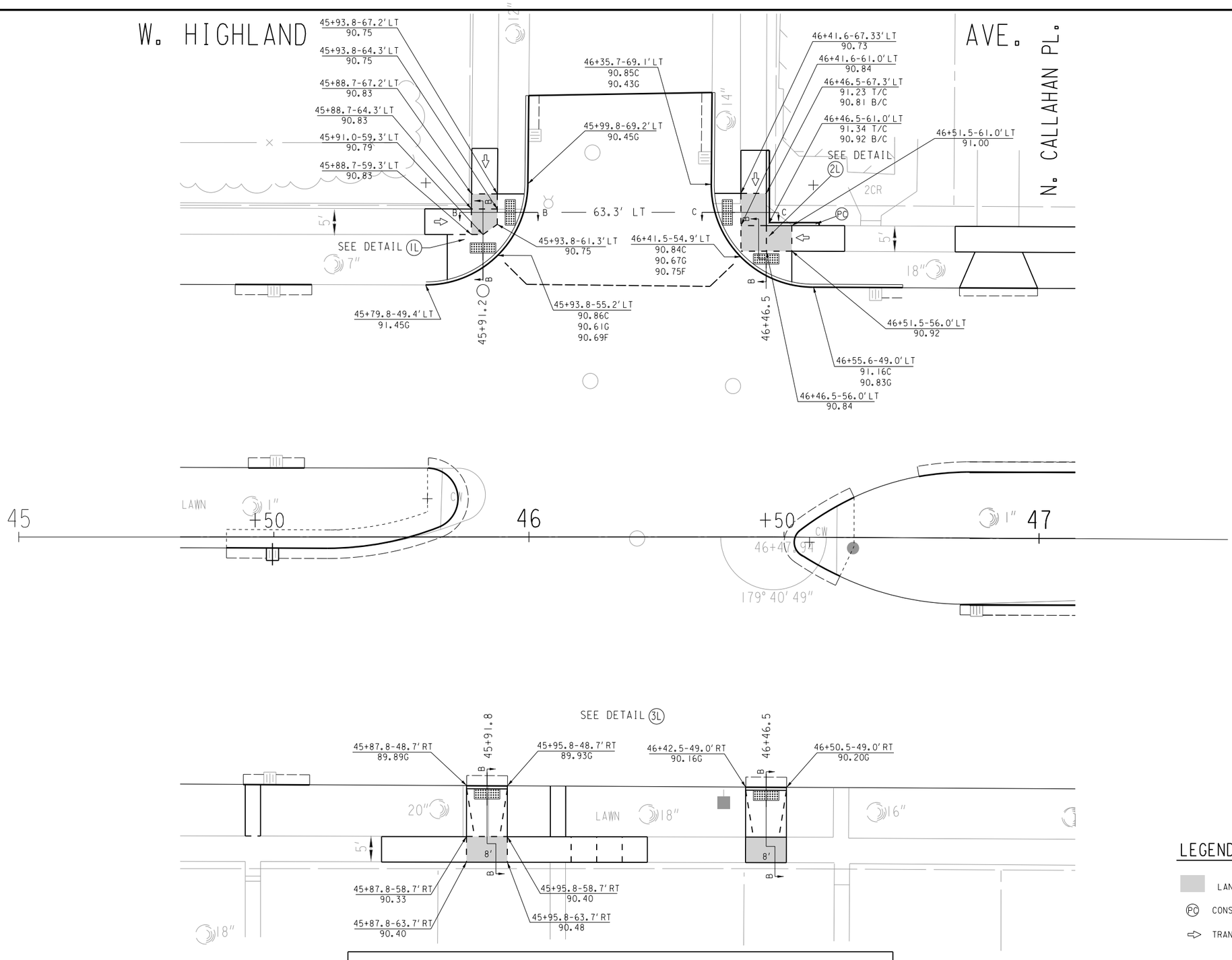


W. HIGHLAND & N. 17TH ST.

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	INTERSECTION DETAILS	SCALE FEET 0' 20'	SHEET NO: 28	E

FILENAME: W:\SPR\HIGHLAND_27-12\RAMPDET.DGN

REVISED DATE: 04-13-2016 BY SB



W. HIGHLAND & N. CALLAHAN PL.

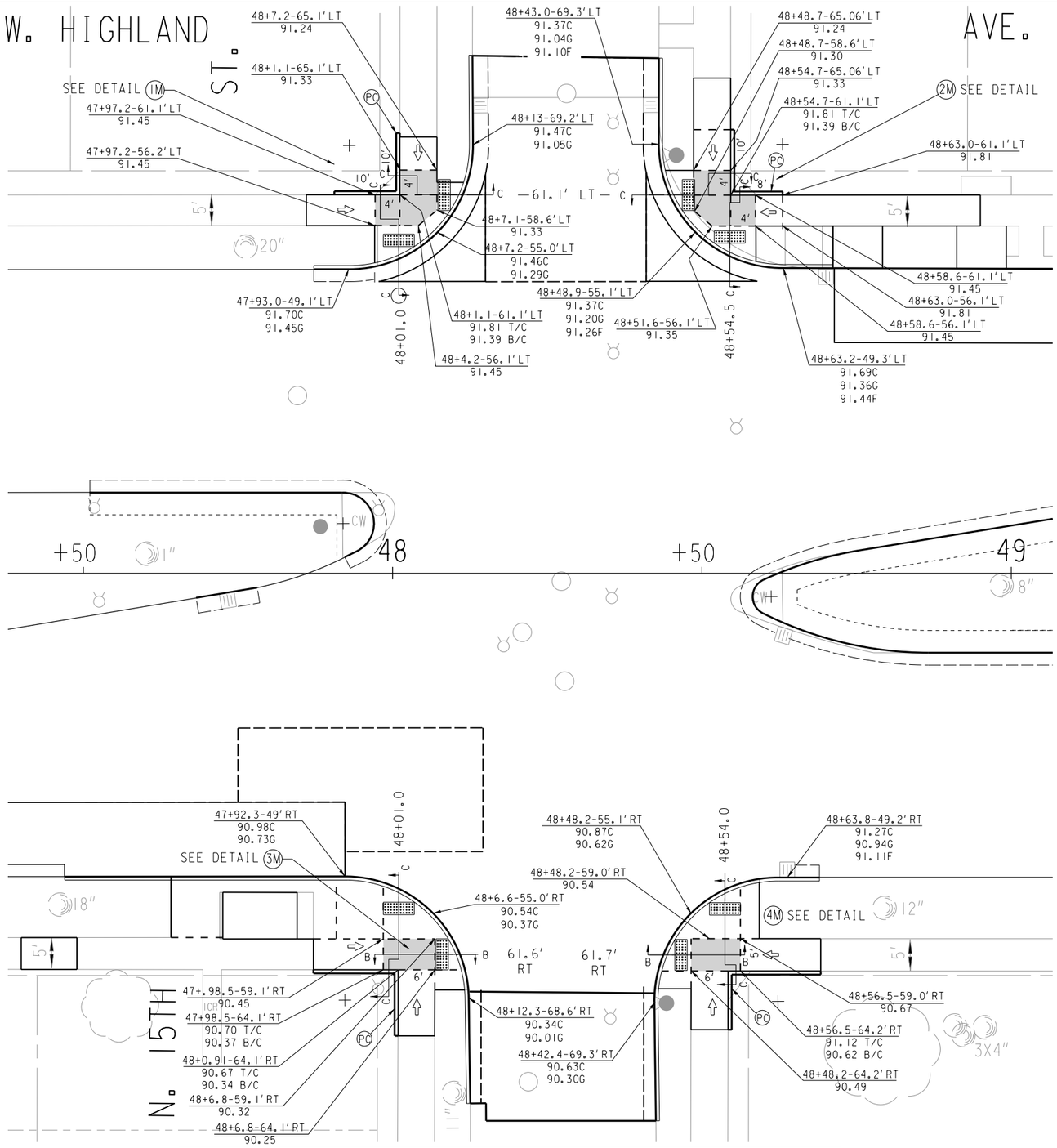
LEGEND

- LANDING AREA
- (PC) CONST. CONC. CURB PEDESTRIAN
- TRANSITION AREA

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	INTERSECTION DETAILS	SCALE FEET 0' 20'	SHEET NO: 29	E

FILENAME: W:\SPR\HIGHLAND_27-12\RAMPDET.DGN

REVISED DATE: 04-13-2016 BY SB

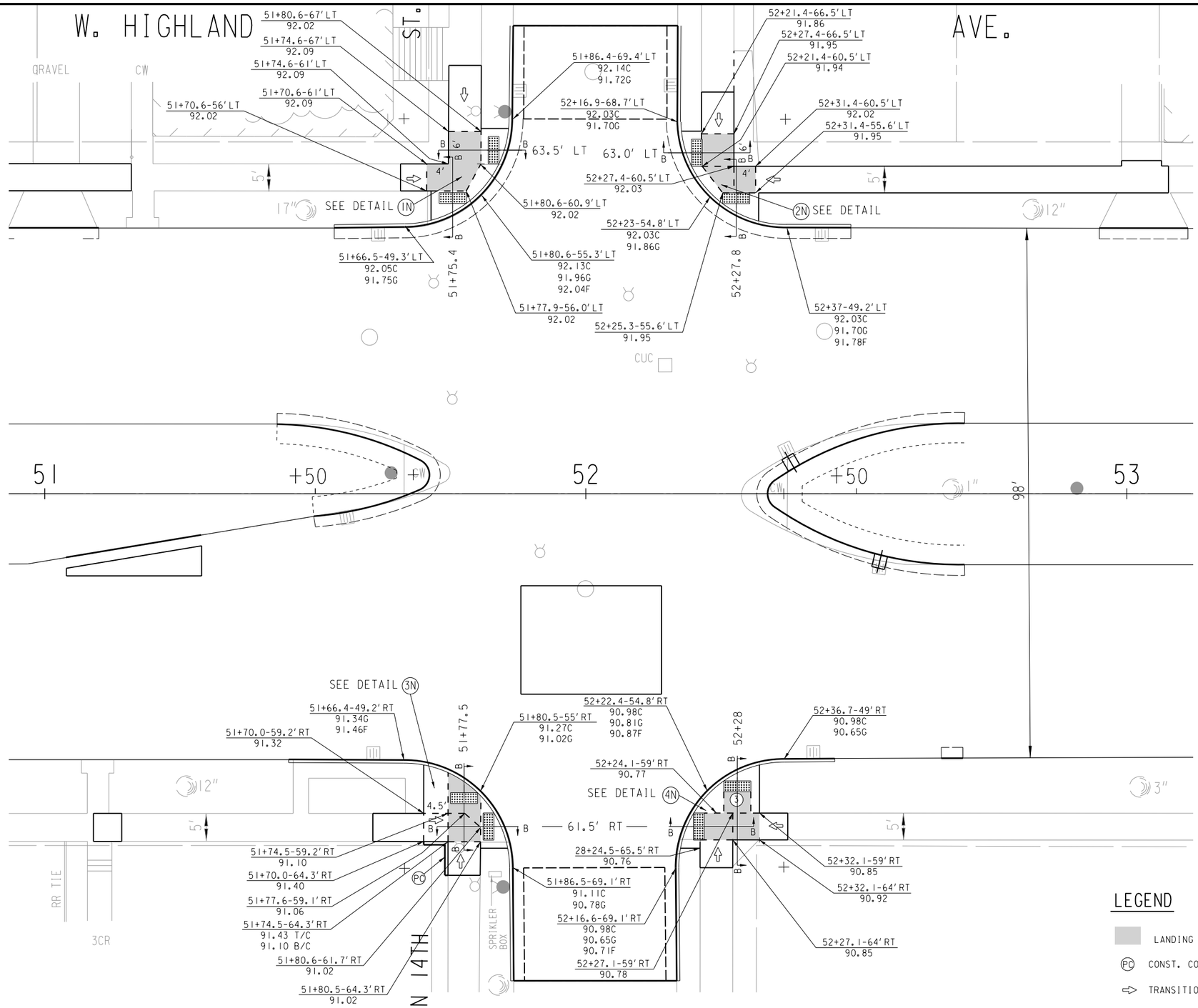


W. HIGHLAND & N. 15TH ST.

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	INTERSECTION DETAILS	SCALE FEET 0' 20'	SHEET NO: 30 E

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REVISED DATE: 04-13-2016 BY SB

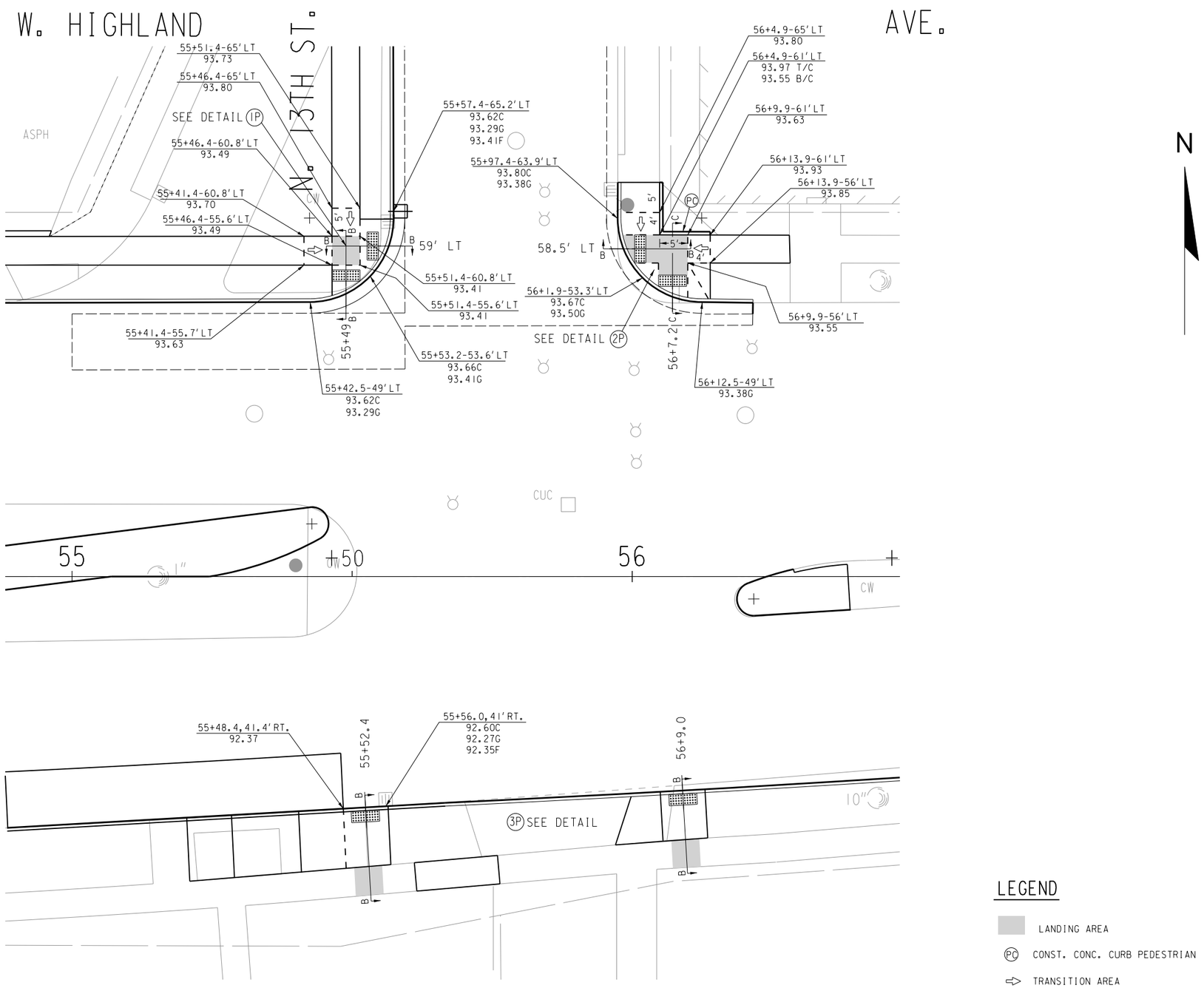


W. HIGHLAND & N. 14TH ST.

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	INTERSECTION DETAILS	SCALE FEET 0' 20'	SHEET NO: 31	E

FILENAME: W:\SPR\HIGHLAND_27-12\RAMPDET.DGN

REVISED DATE: 04-13-2016 BY SB



LEGEND

- LANDING AREA
- PC CONST. CONC. CURB PEDESTRIAN
- TRANSITION AREA

W. HIGHLAND & N. 13TH ST.

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	INTERSECTION DETAILS	SCALE FEET 0' 20'	SHEET NO: 32	E

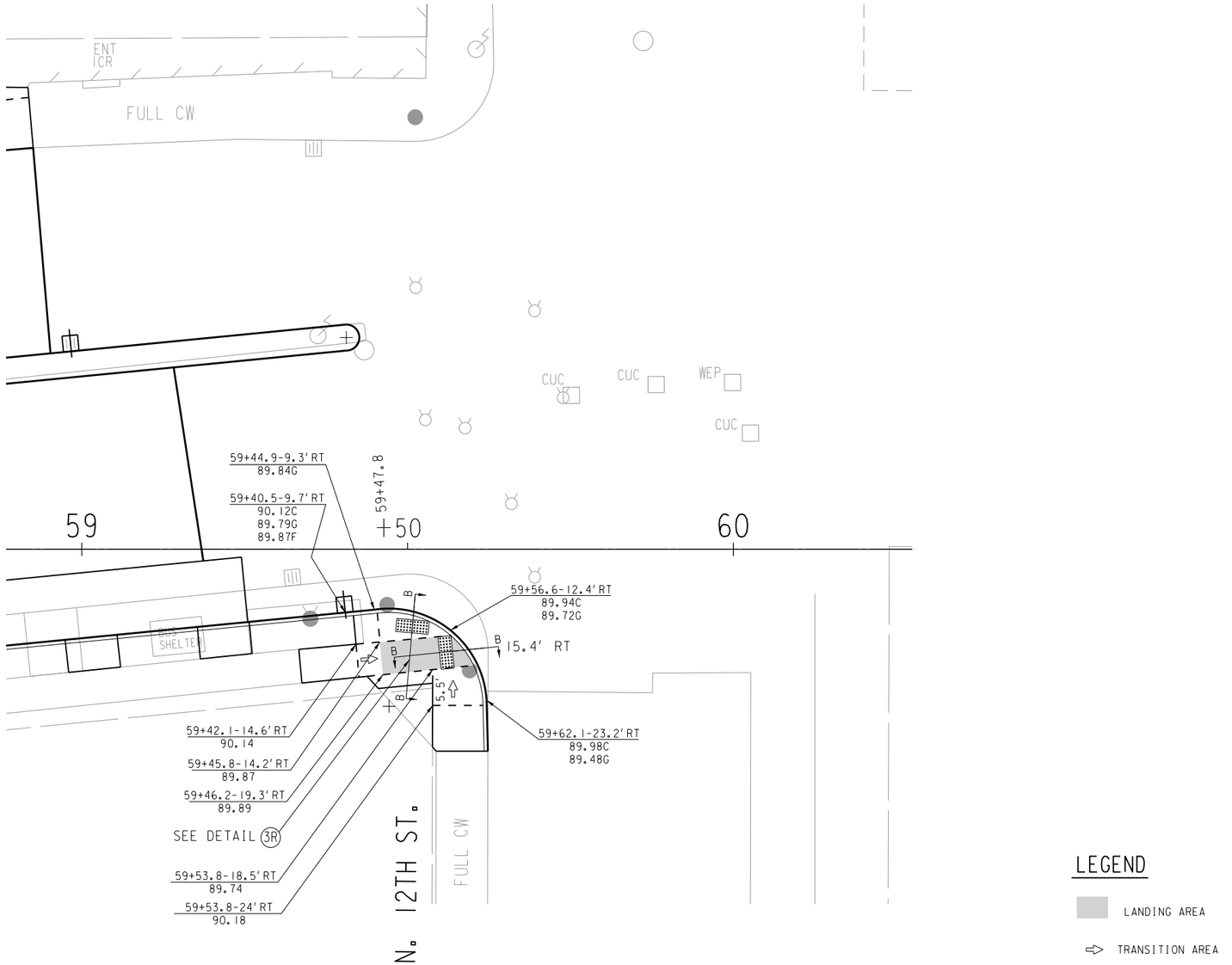
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REVISED DATE: 04-13-2016 BY SB

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2

W. HIGHLAND AVE.



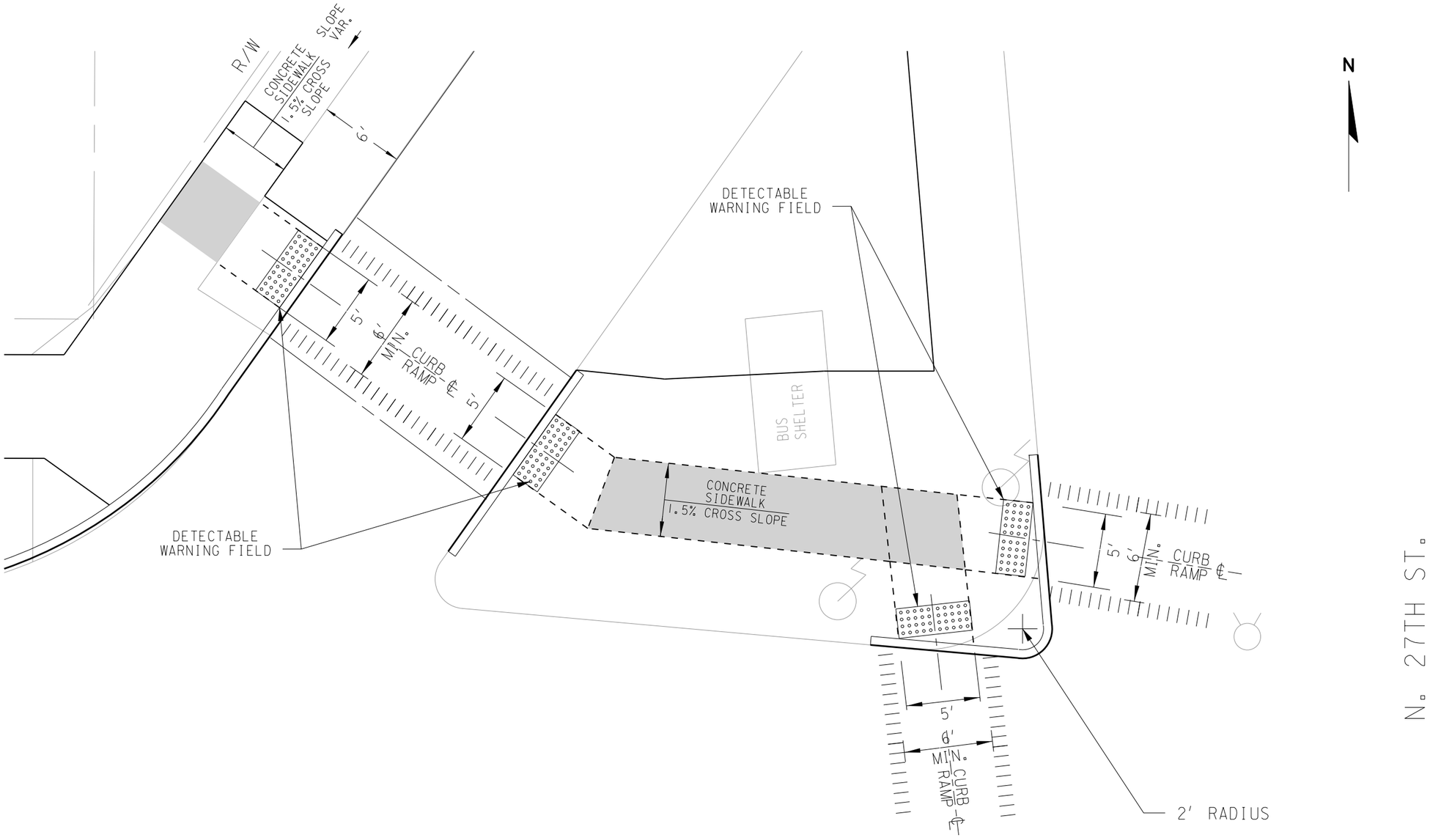
W. HIGHLAND & N. 12TH ST.

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	INTERSECTION DETAILS	SCALE FEET 0' 20'	SHEET NO: 33	E

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REVISED DATE: 04-13-2016 BY SB

2



1A

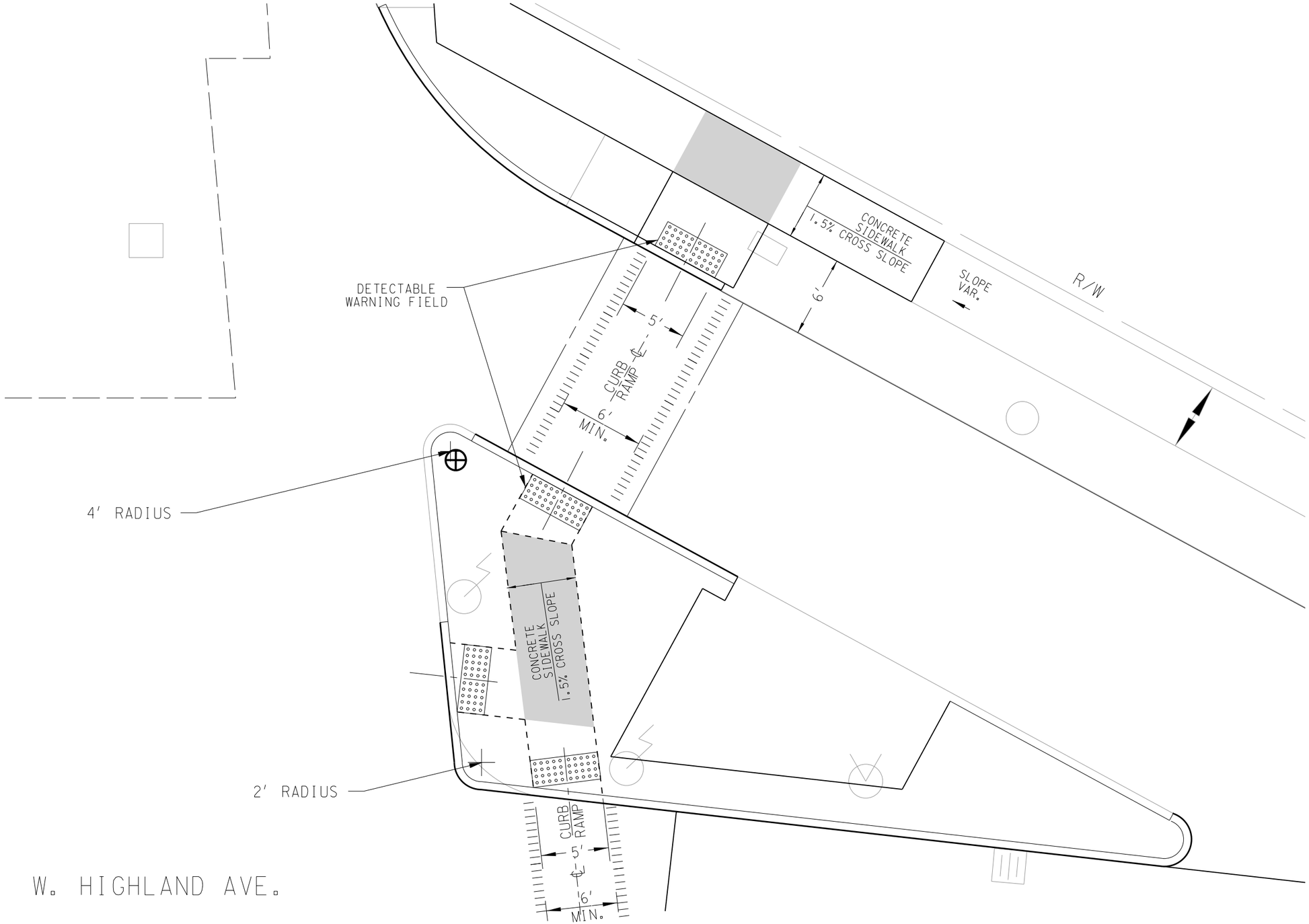
CURB RAMP DETAIL - W. HIGHLAND AVE. AND N. 27TH ST.- NW CORNER

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	INTERSECTION DETAILS	SCALE FEET 0' 15'	SHEET NO: 34 E

FILENAME: W:\SPR\HIGHLAND_27-12\RAMPDET.DGN

REVISED DATE: 04-13-2016 SB

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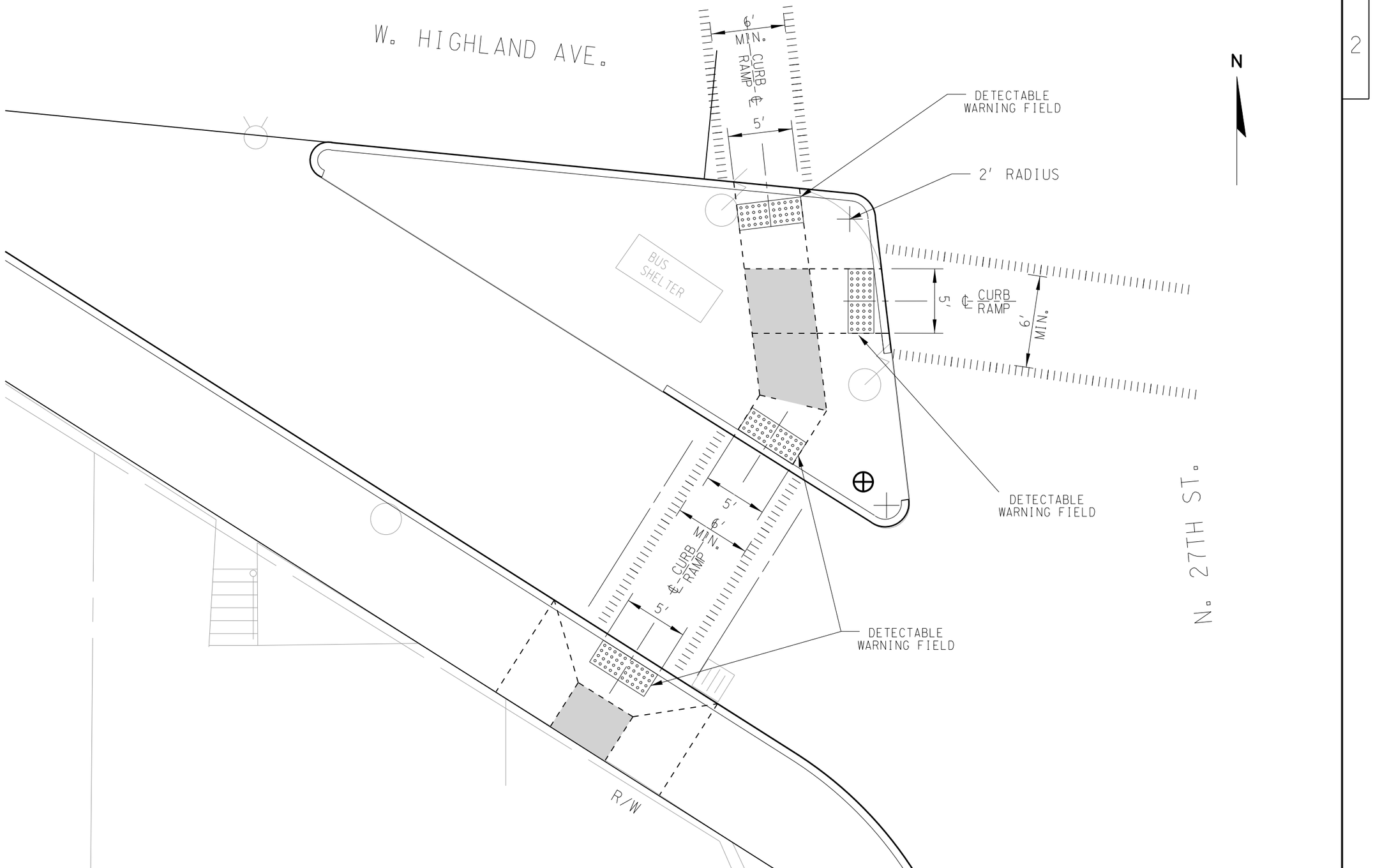
CURB RAMP DETAIL - W. HIGHLAND AVE. AND N. 27TH ST.- NE CORNER

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	INTERSECTION DETAILS	SCALE FEET 0' 15'	SHEET NO: 35	E

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REVISED DATE: 04-13-2016 SB

2



3A

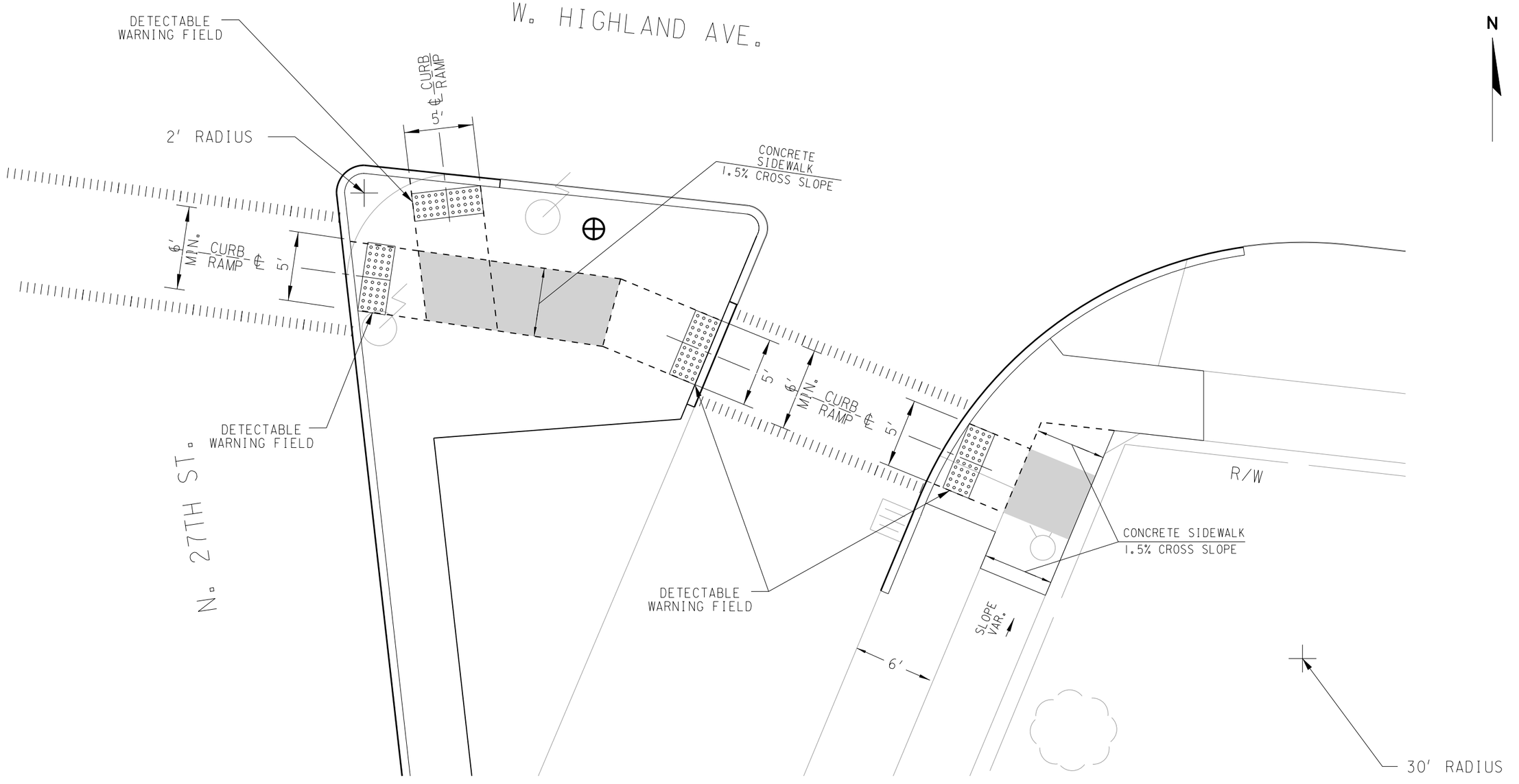
CURB RAMP DETAIL - W. HIGHLAND AVE. AND N. 27TH ST.- SW CORNER

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	INTERSECTION DETAILS	SCALE FEET 0' 15'	SHEET NO: 36 E

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REVISED DATE: 04-13-2016 SB

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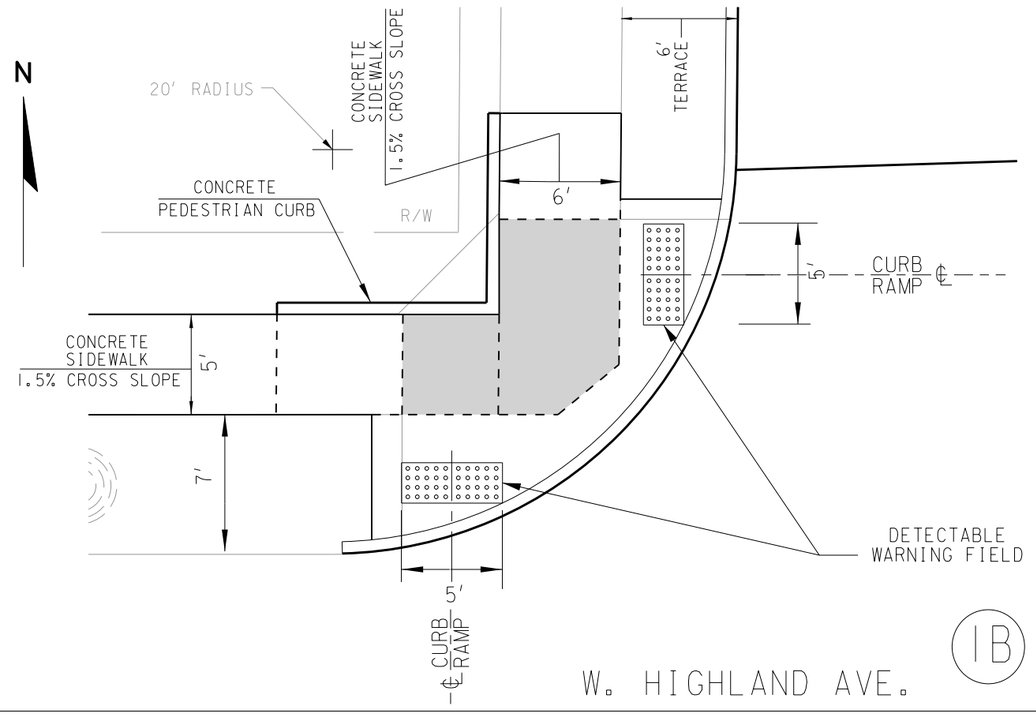
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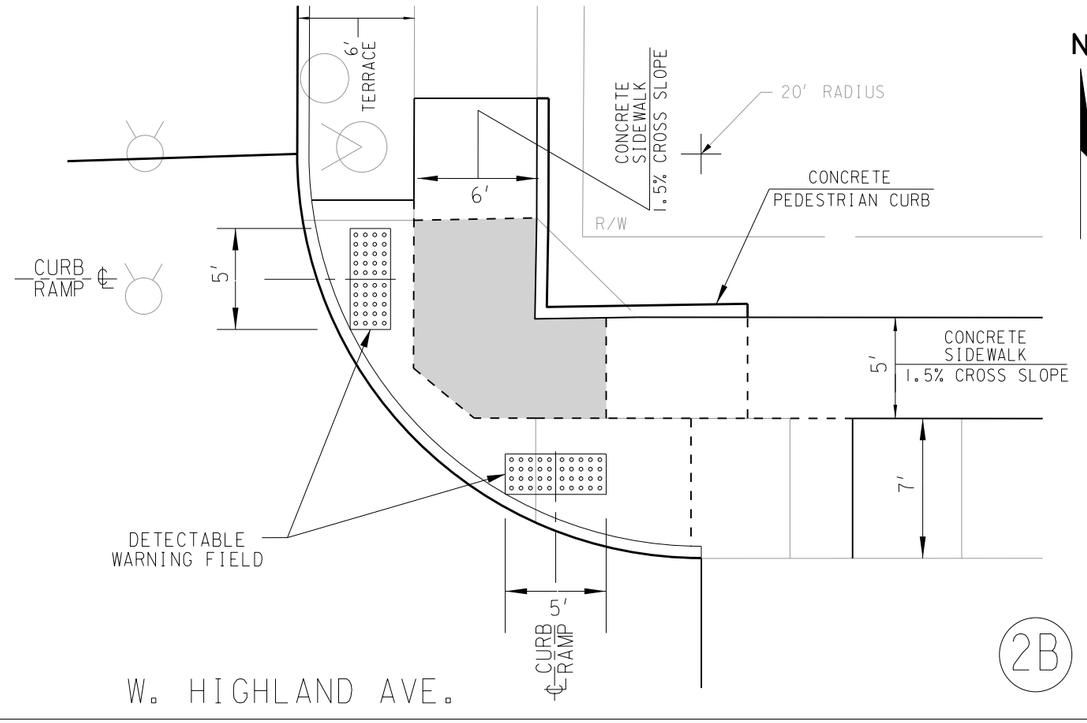
CURB RAMP DETAIL - W. HIGHLAND AVE. AND N. 27TH ST.- SE CORNER

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	INTERSECTION DETAILS	SCALE FEET 0' 15'	SHEET NO: 37 E

FILENAME: W:\SPR\HIGHLAND_27-12\RAMPDET.DGN

REVISED DATE: 04-13-2016 SB





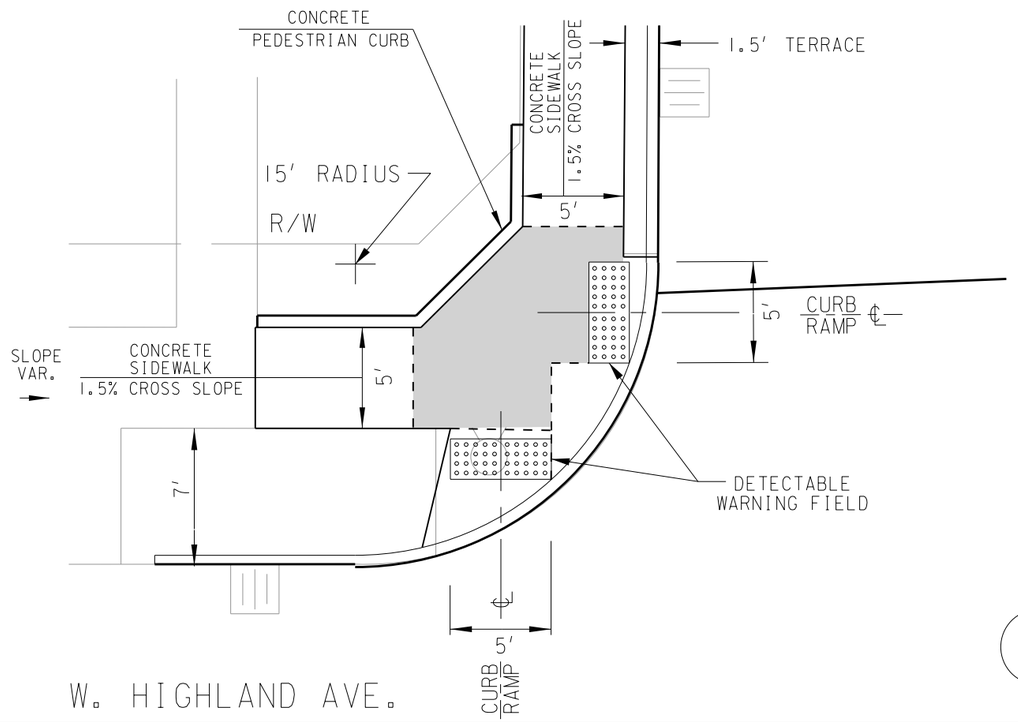
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CURB RAMP DETAILS - W. HIGHLAND AVE. AND N. 25TH ST.

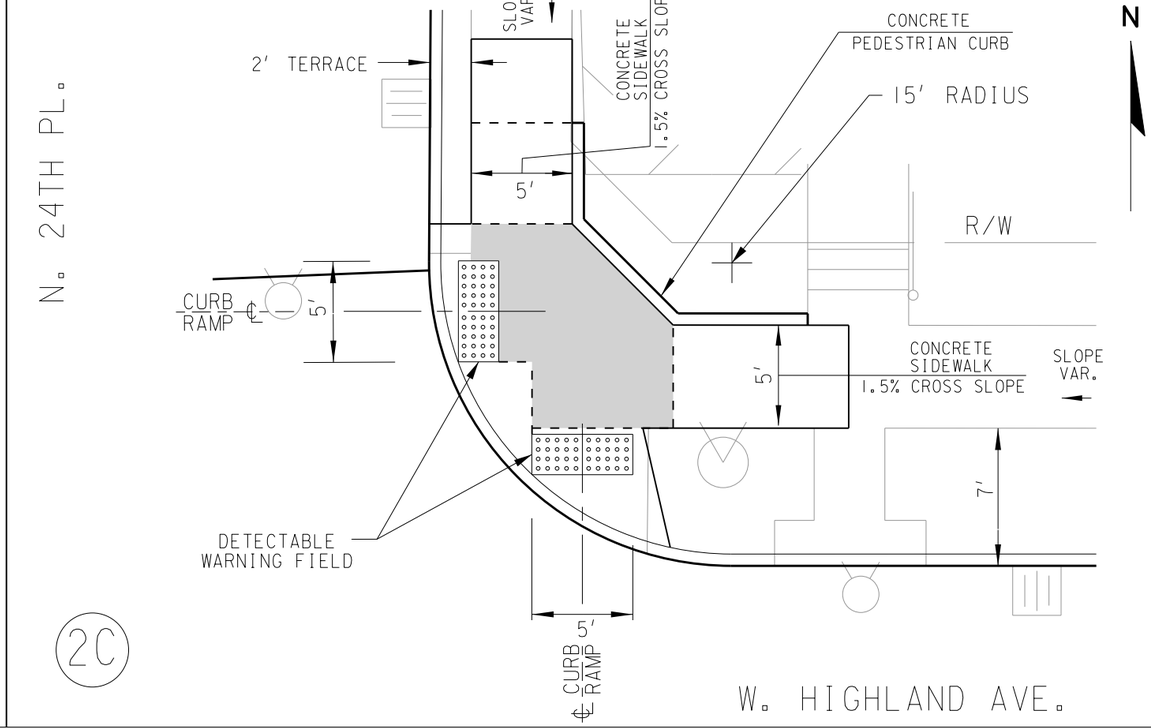
STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	INTERSECTION DETAILS	SCALE FEET 0' 15'	SHEET NO: 38	E

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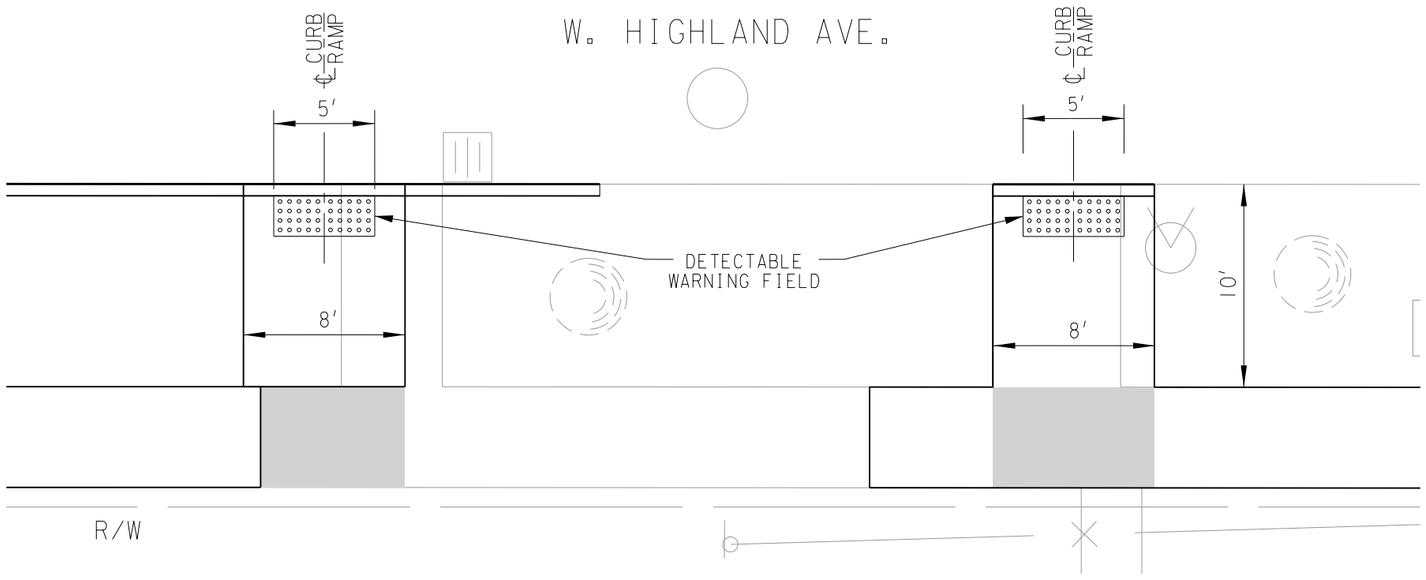
REVISED DATE: 04-13-2016 SB



1C



2C



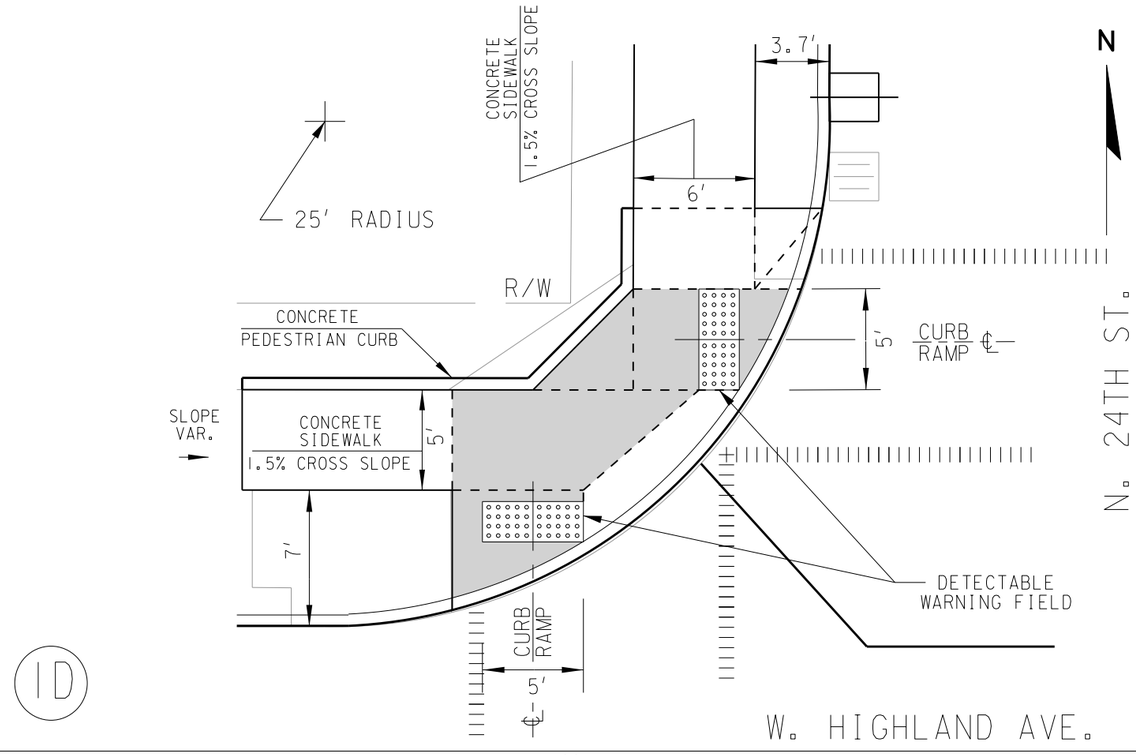
3C

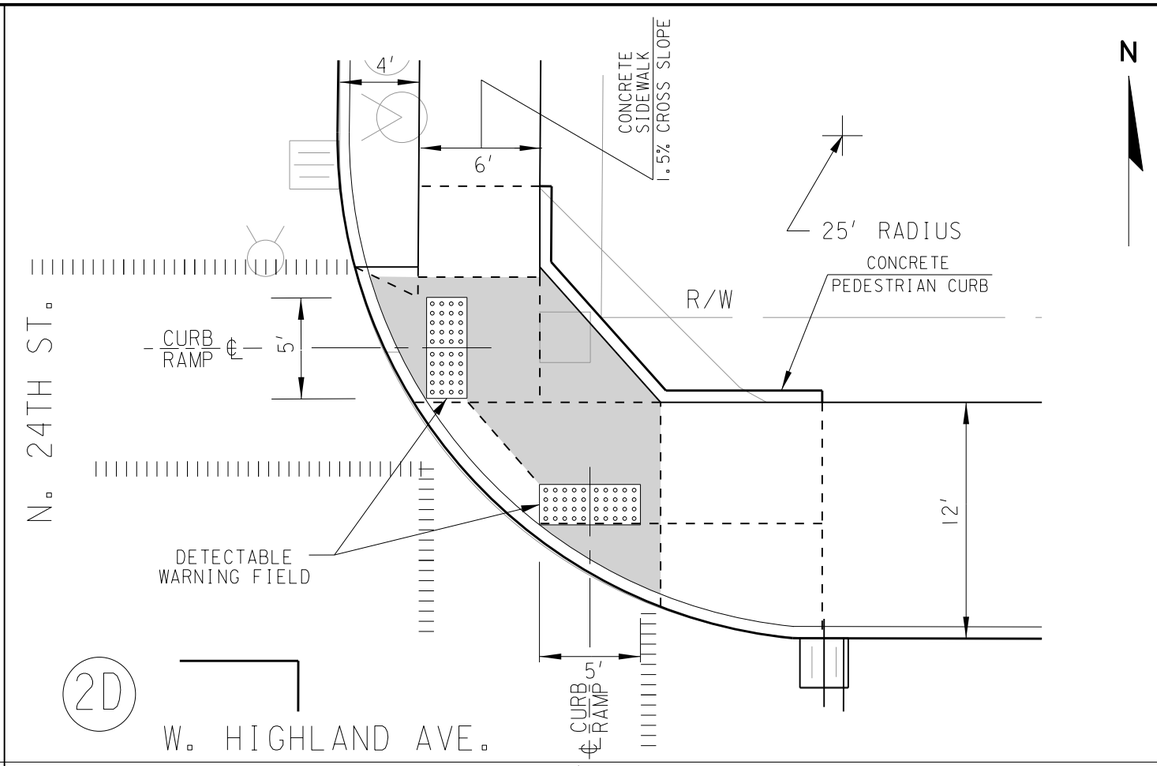
CURB RAMP DETAILS - W. HIGHLAND AVE. AND N. 24TH PL.

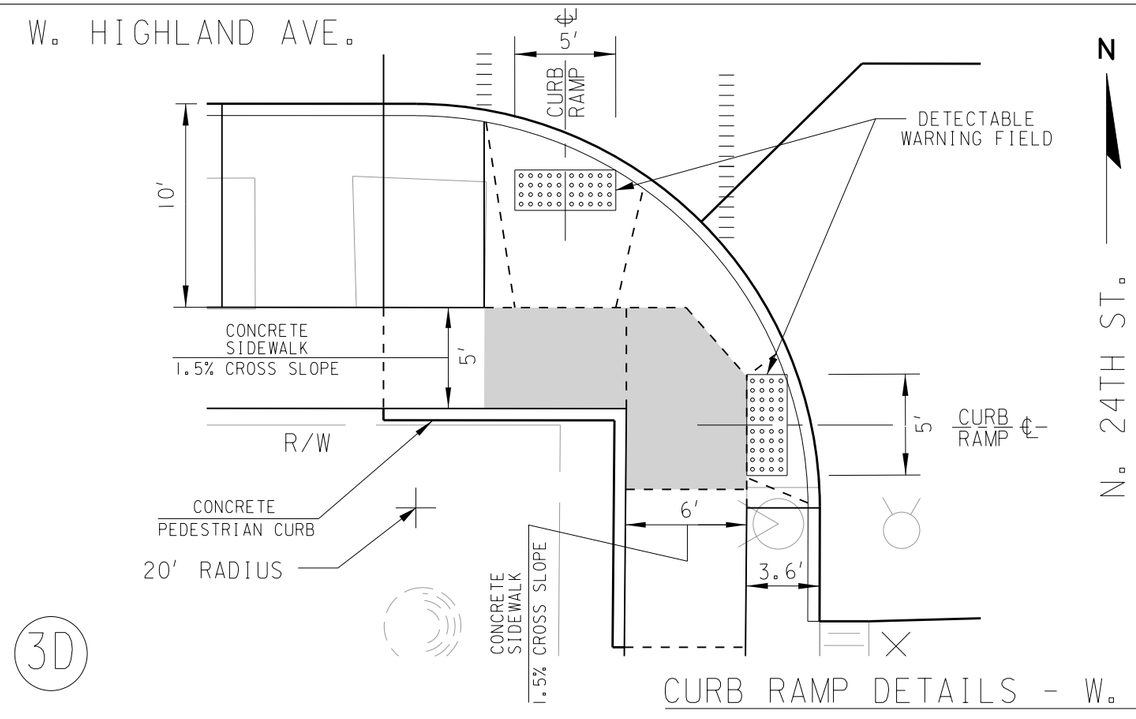
STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	INTERSECTION DETAILS	SCALE FEET 0' 15'	SHEET NO: 39 E

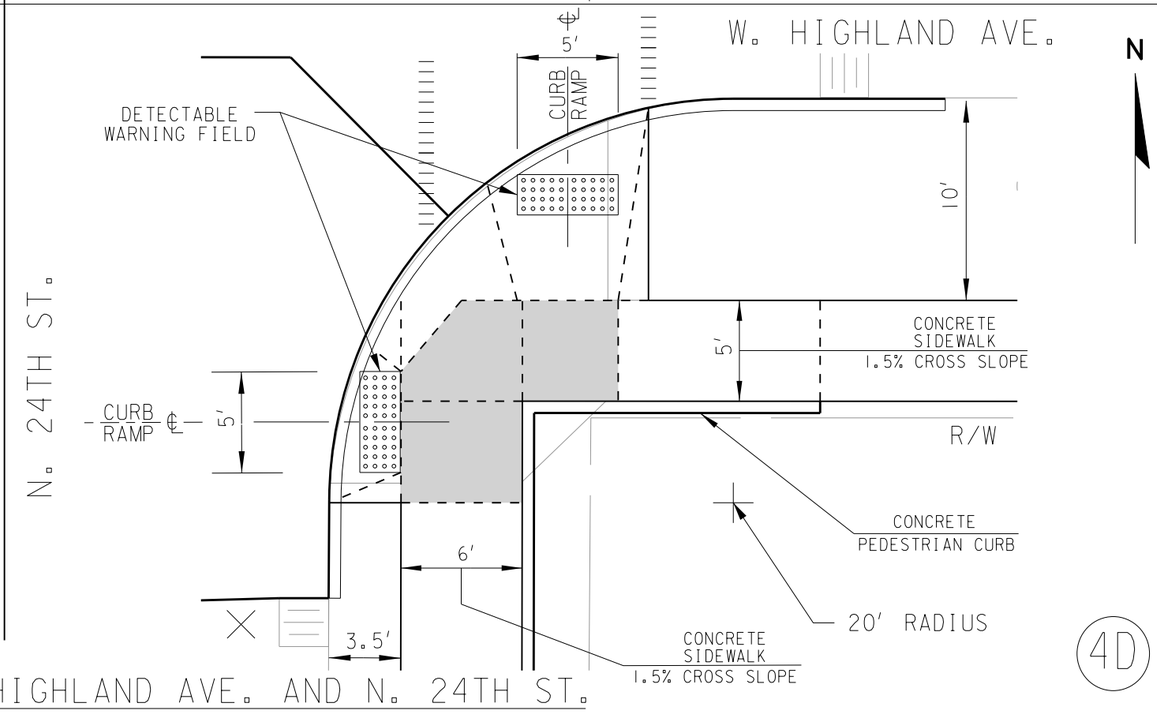
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REVISED DATE: 04-13-2016 SB







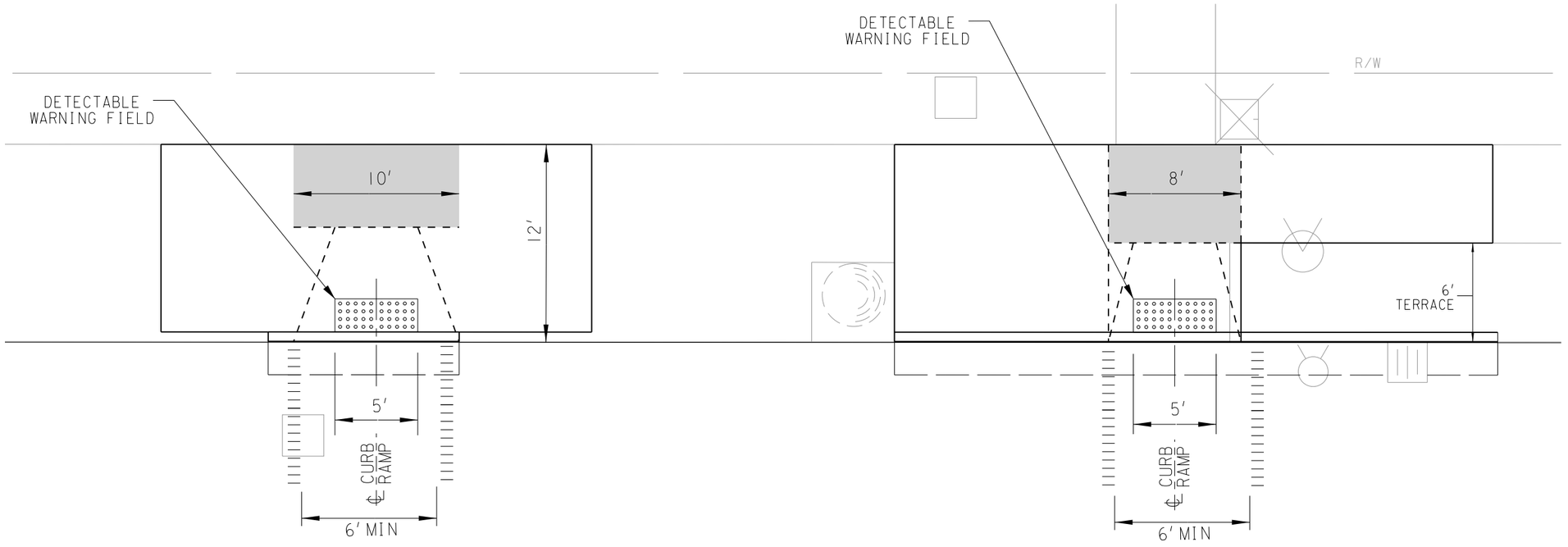


CURB RAMP DETAILS - W. HIGHLAND AVE. AND N. 24TH ST.

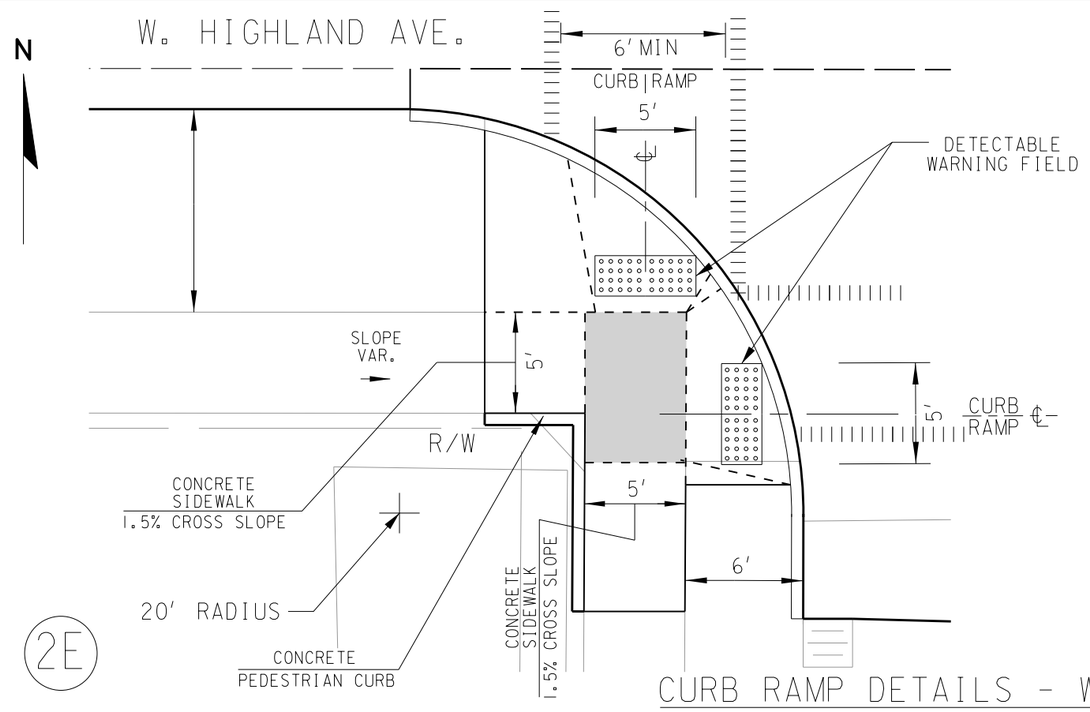
STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	INTERSECTION DETAILS	SCALE FEET 0′ 15′	SHEET NO: 40 E

FILENAME: W:\SPR\HIGHLAND_27-12\RAMPDET.DGN

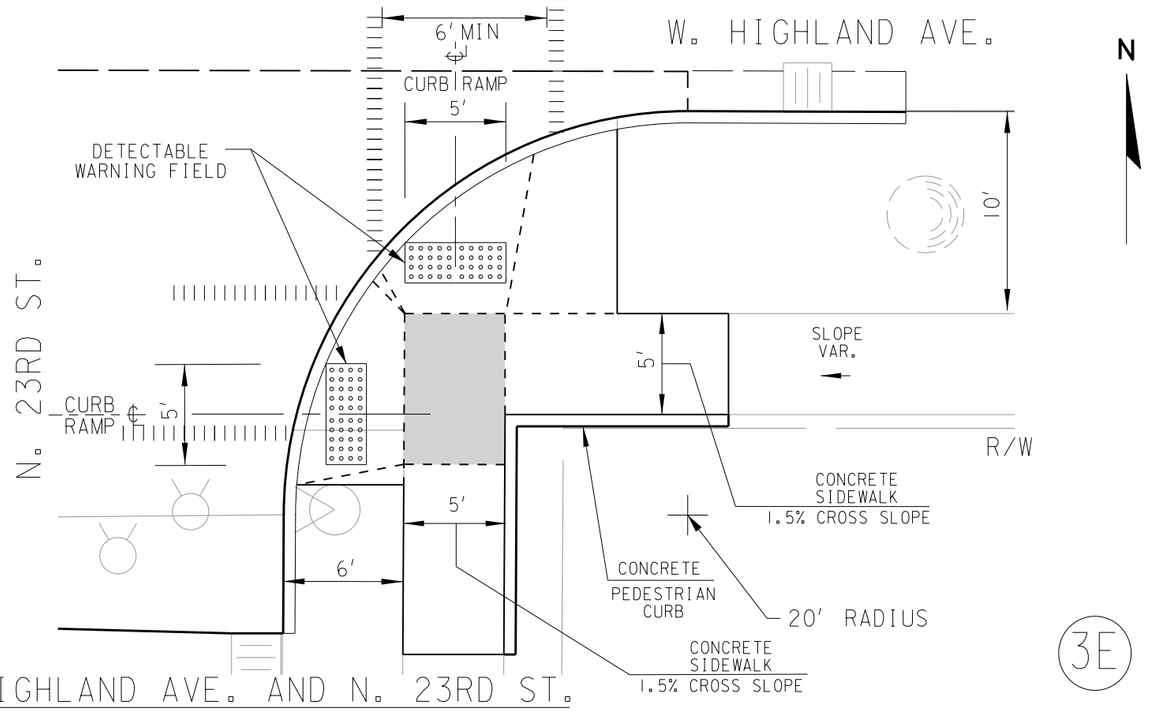
REVISED DATE: 04-13-2016 SB



W. HIGHLAND AVE.



N. 23RD ST.

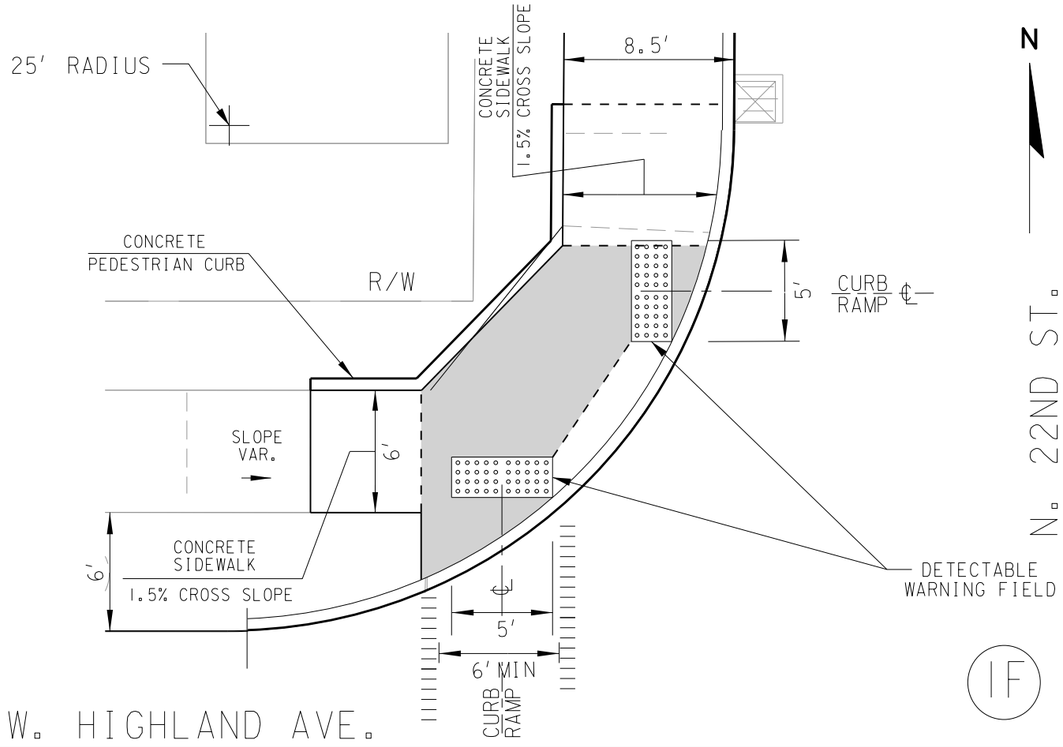


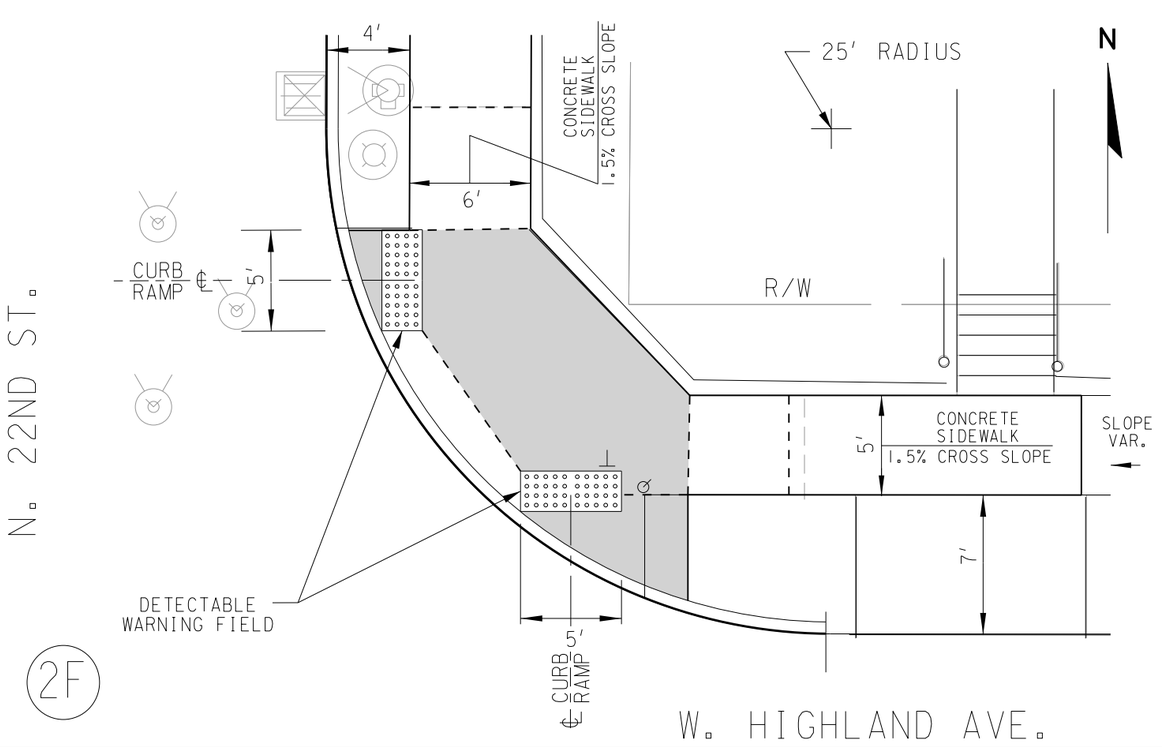
CURB RAMP DETAILS - W. HIGHLAND AVE. AND N. 23RD ST.

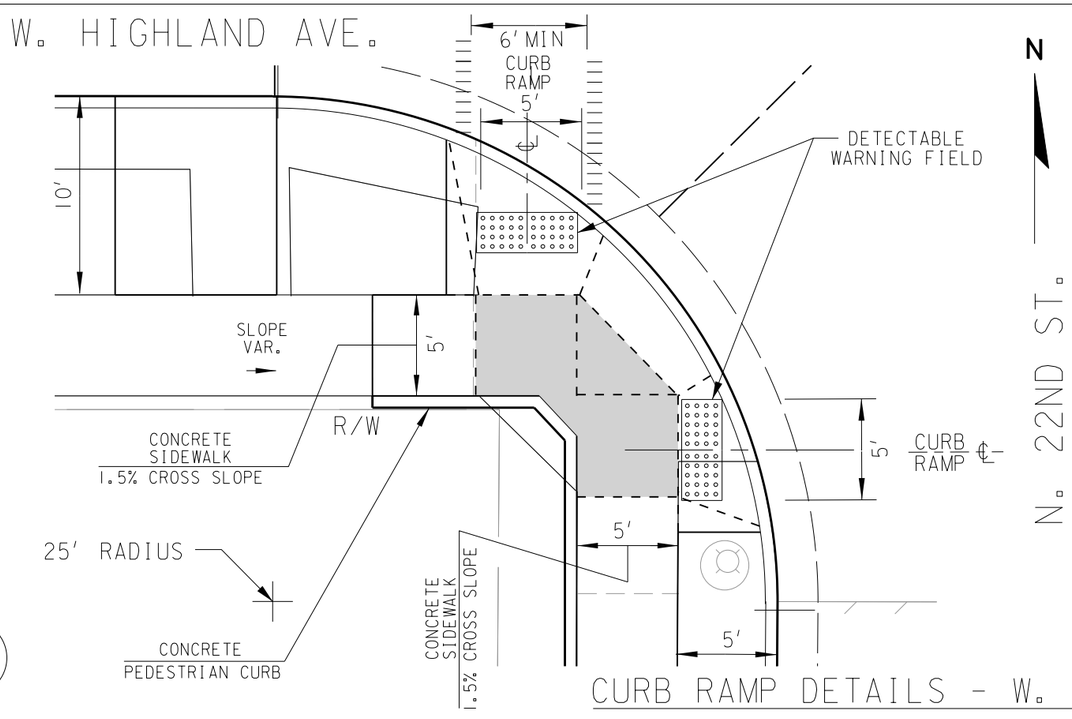
STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	INTERSECTION DETAILS	SCALE FEET 0' 15'	SHEET NO: 41 E

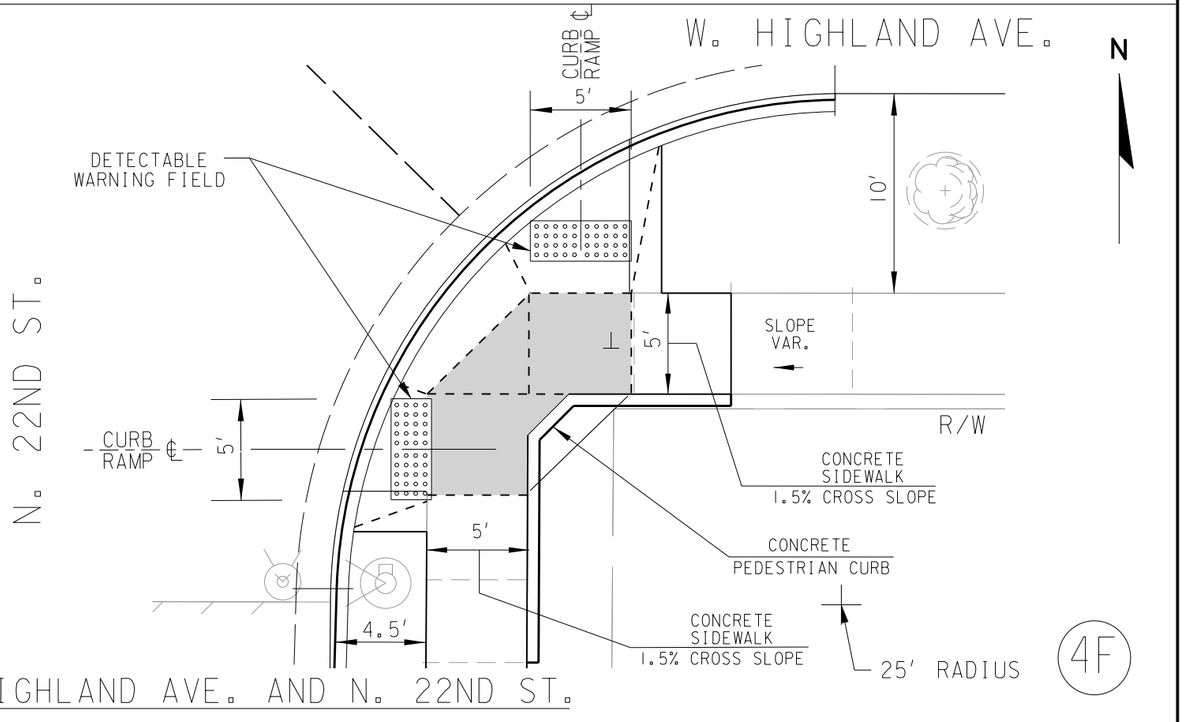
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REVISED DATE: 04-13-2016 SB







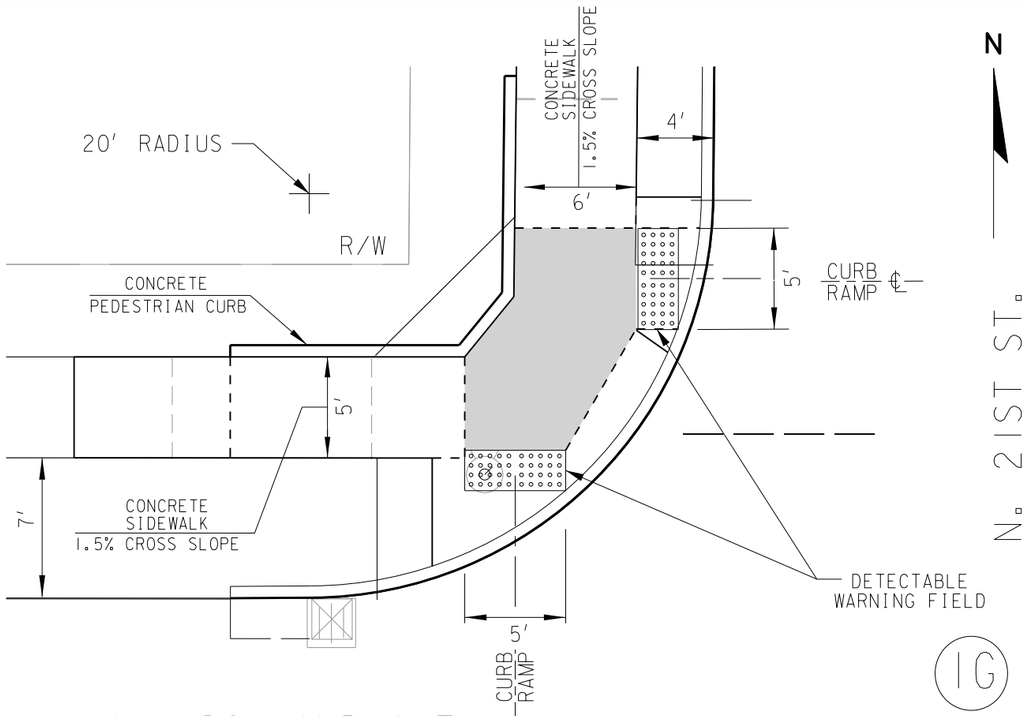


CURB RAMP DETAILS - W. HIGHLAND AVE. AND N. 22ND ST.

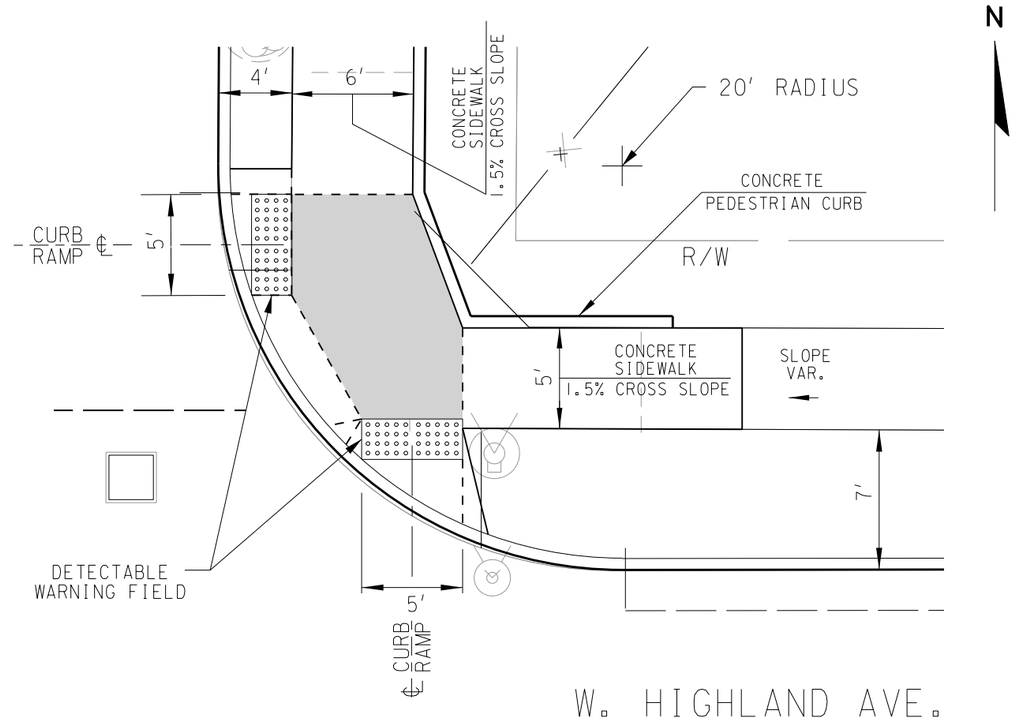
STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	INTERSECTION DETAILS	SCALE FEET 0' 15'	SHEET NO: 42 E

FILENAME: W:\SPR\HIGHLAND_27-12\RAMPDET.DGN

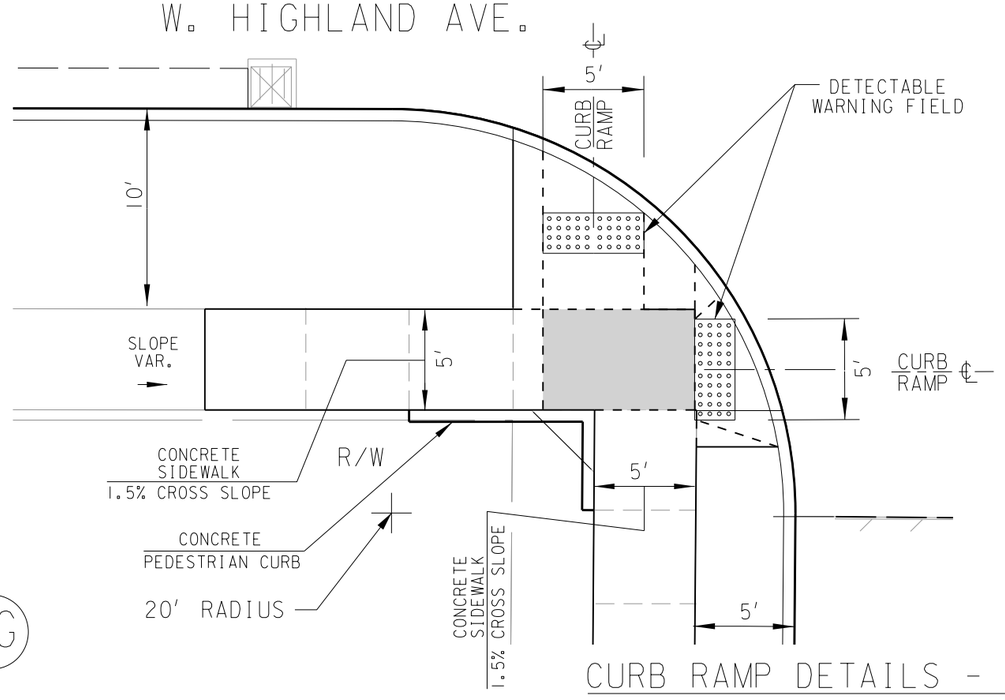
REVISED DATE: 04-13-2016 SB



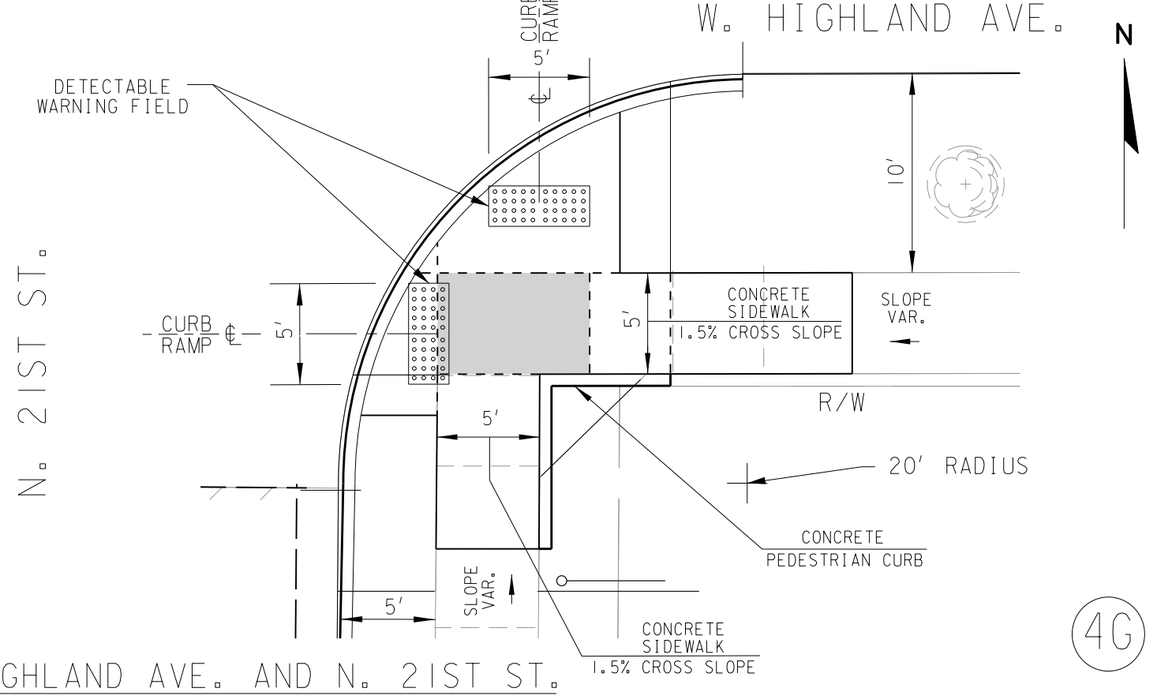
1G



2G



3G



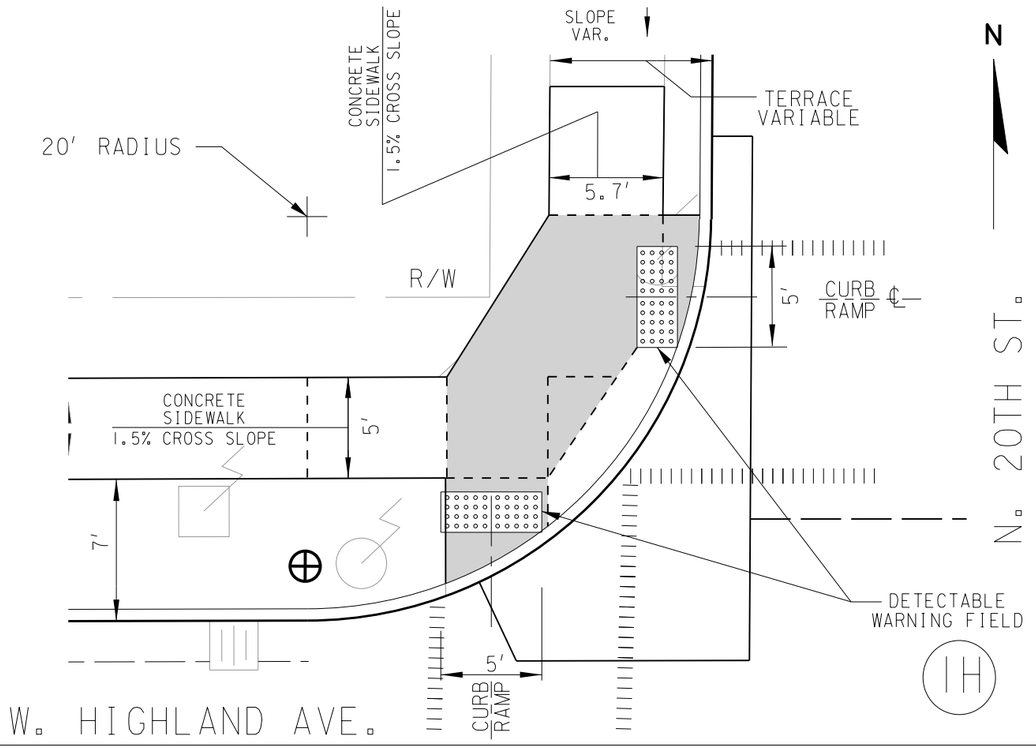
4G

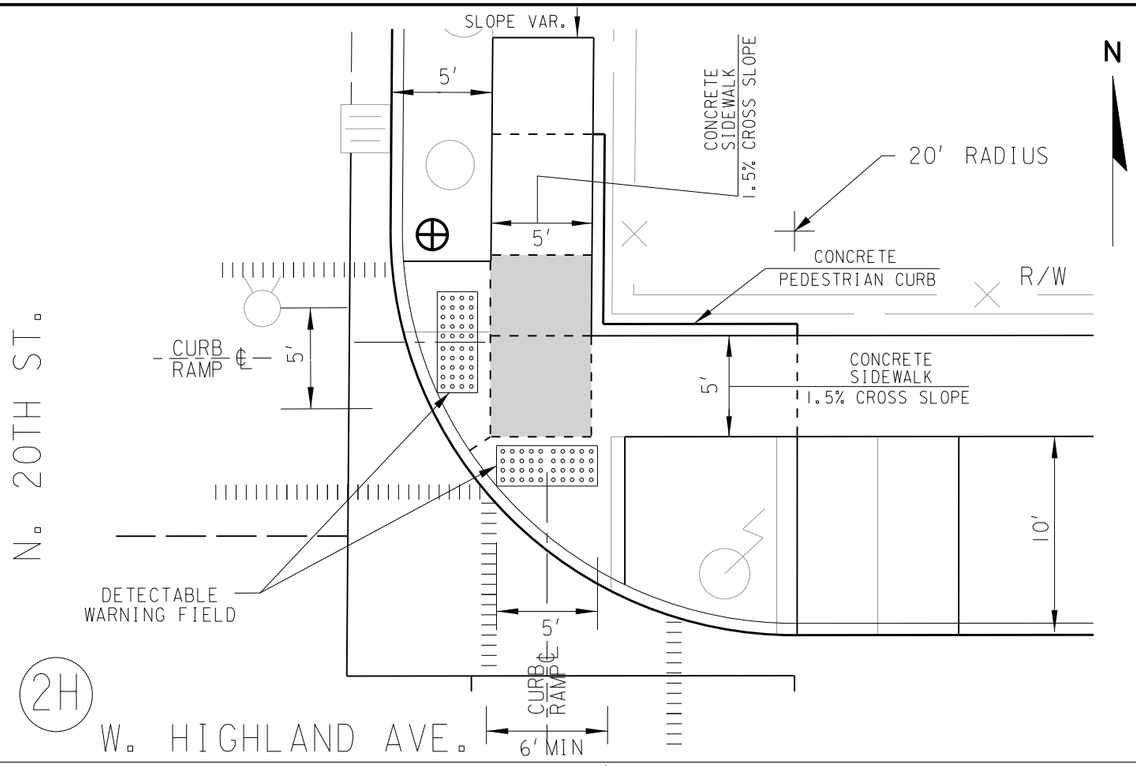
CURB RAMP DETAILS - W. HIGHLAND AVE. AND N. 21ST ST.

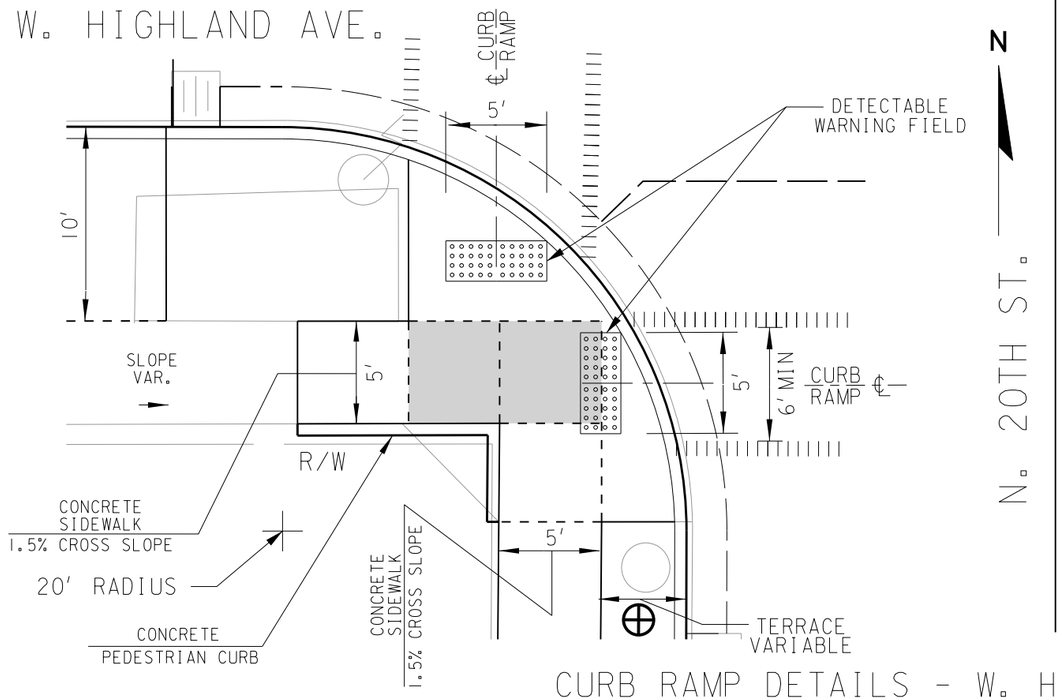
STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	INTERSECTION DETAILS	SCALE FEET 0' 15'	SHEET NO: 43 E

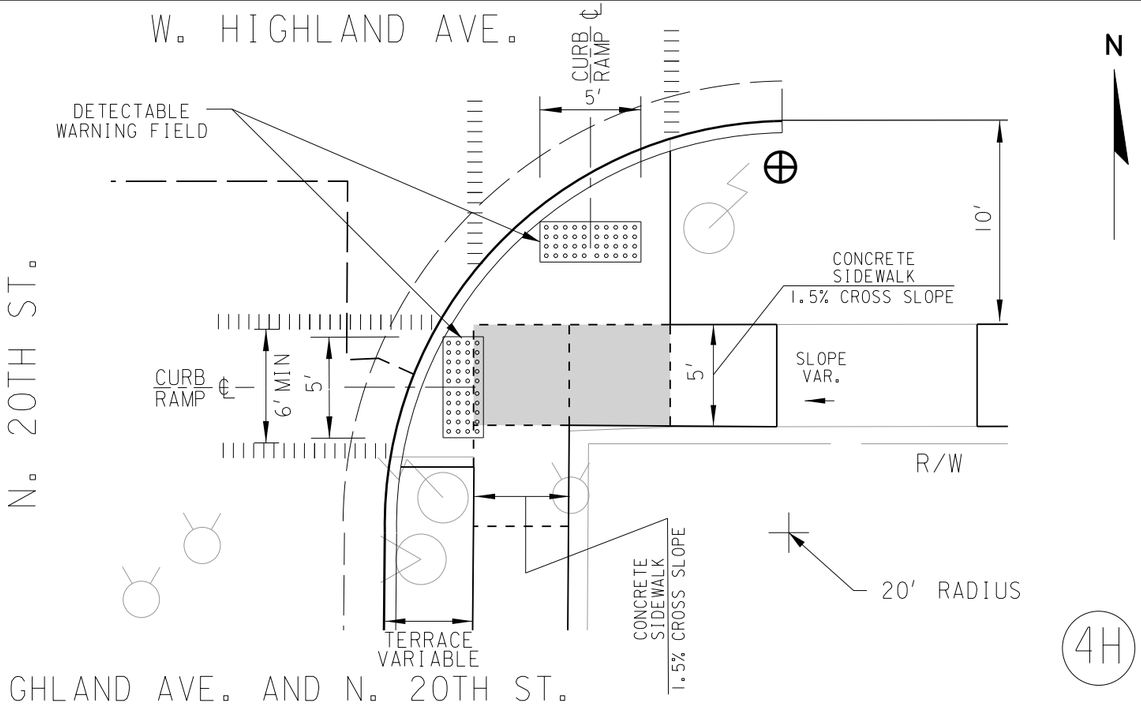
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REVISED DATE: 04-13-2016 SB







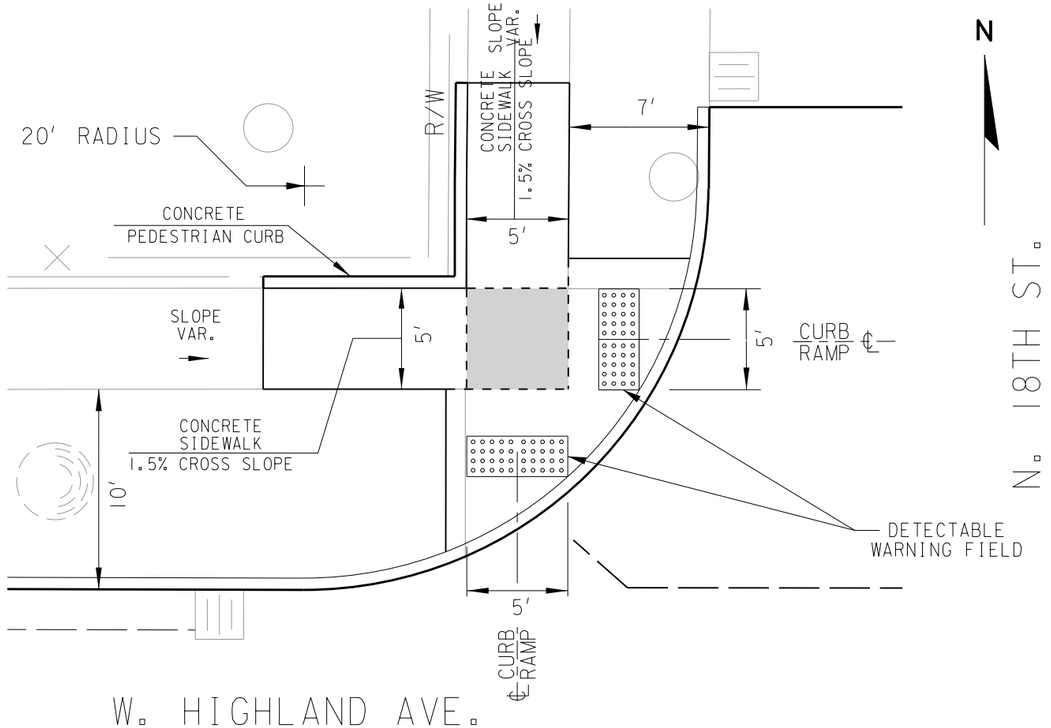


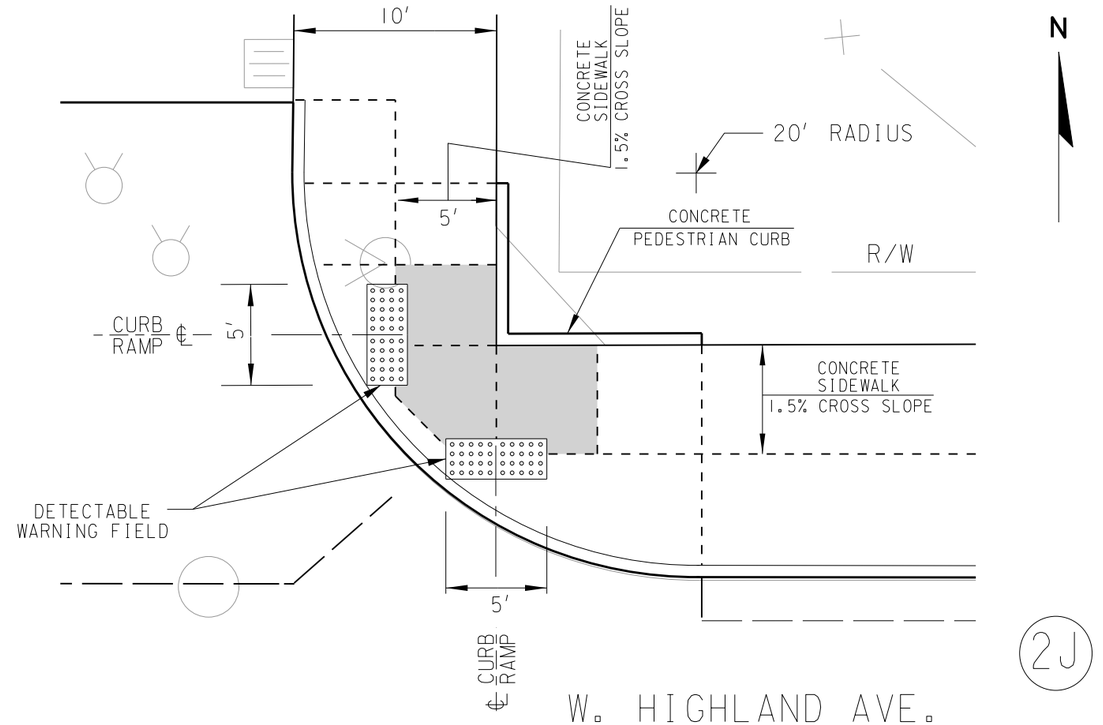
CURB RAMP DETAILS - W. HIGHLAND AVE. AND N. 20TH ST.

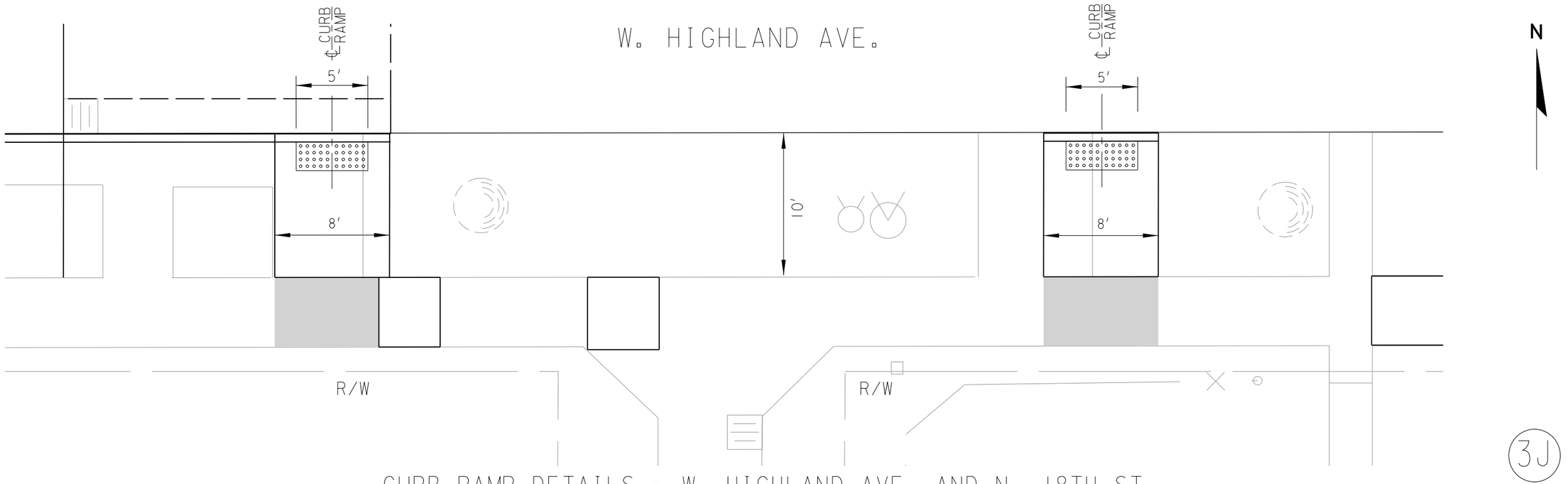
STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	INTERSECTION DETAILS	SCALE FEET 0' 15'	SHEET NO: 44 E

FILENAME: W:\SPR\HIGHLAND_27-12\RAMPDET.DGN

REVISED DATE: 04-13-2016 SB





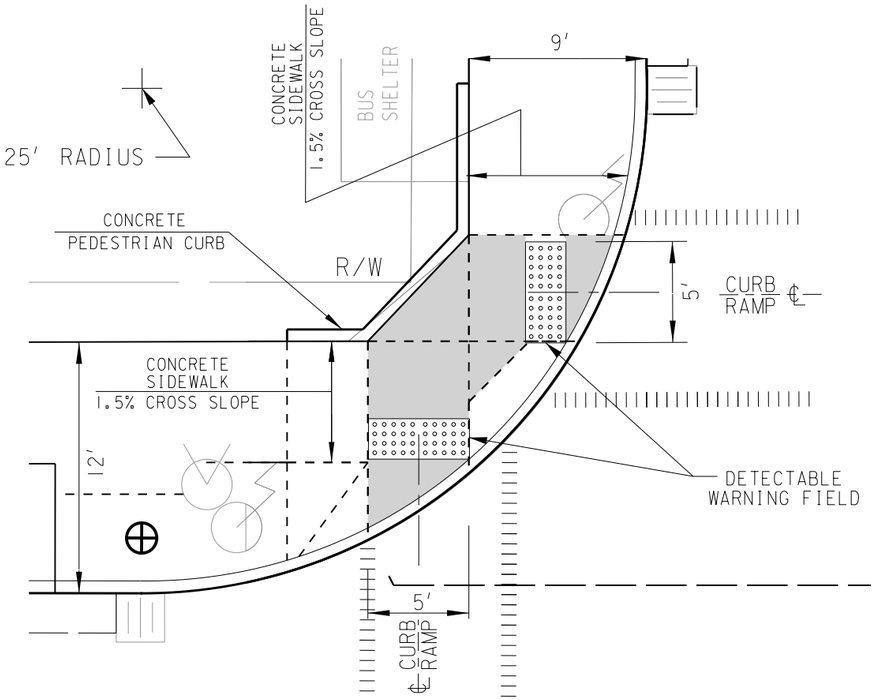


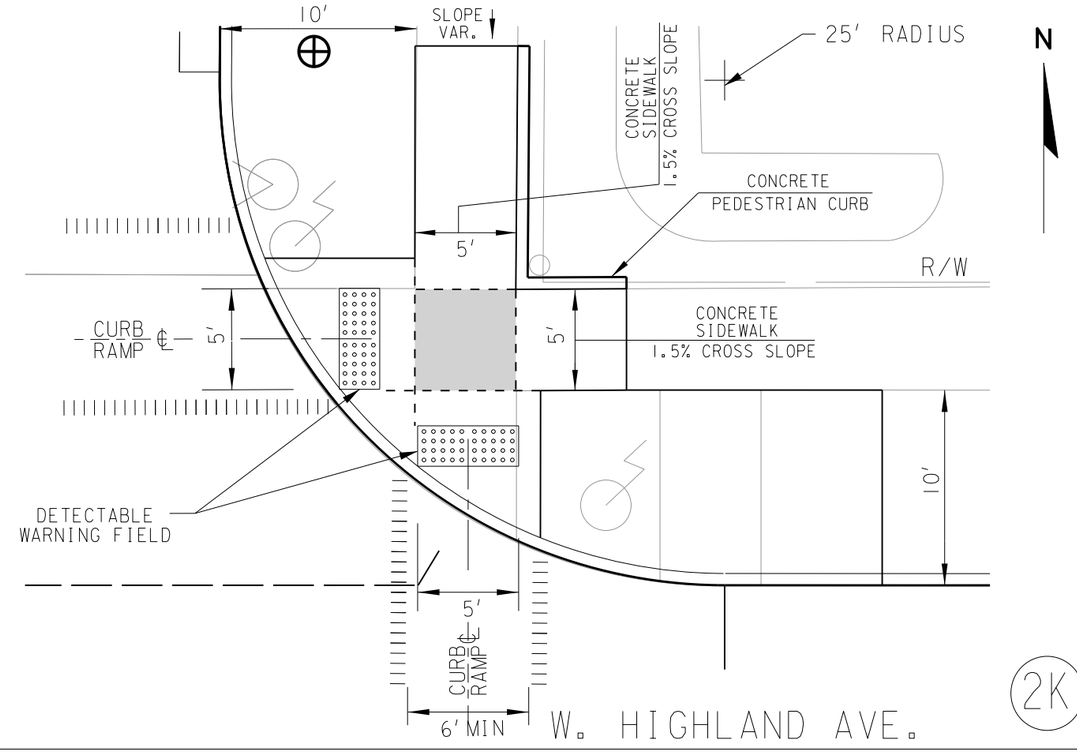
CURB RAMP DETAILS - W. HIGHLAND AVE. AND N. 18TH ST.

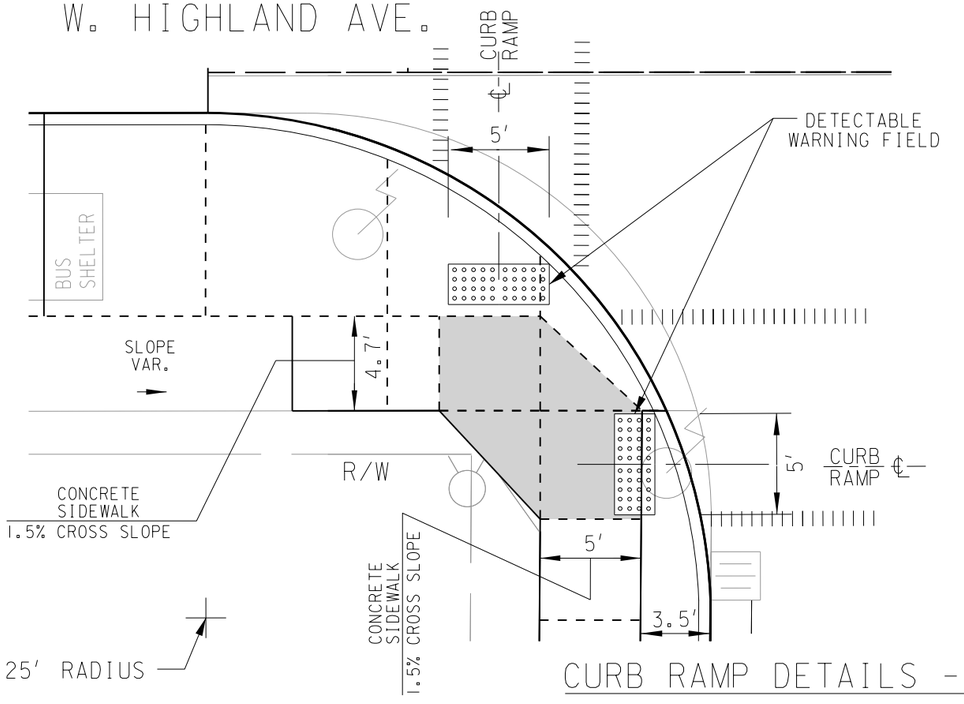
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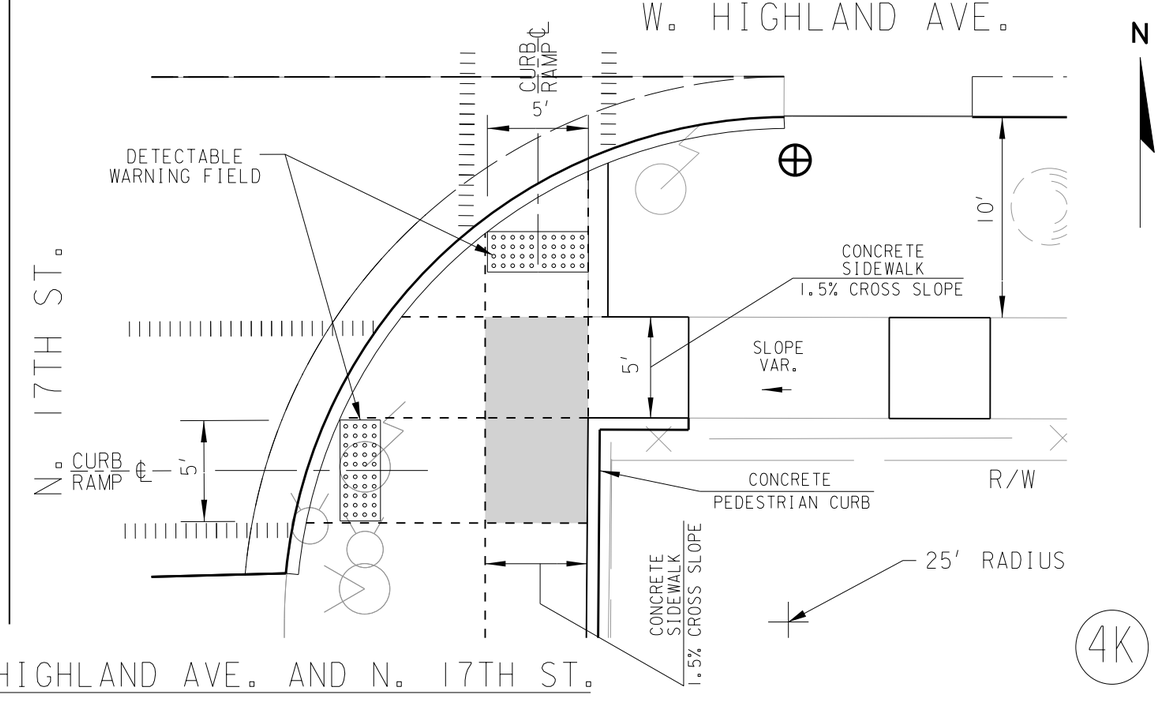
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REVISED DATE: 04-13-2016 SB







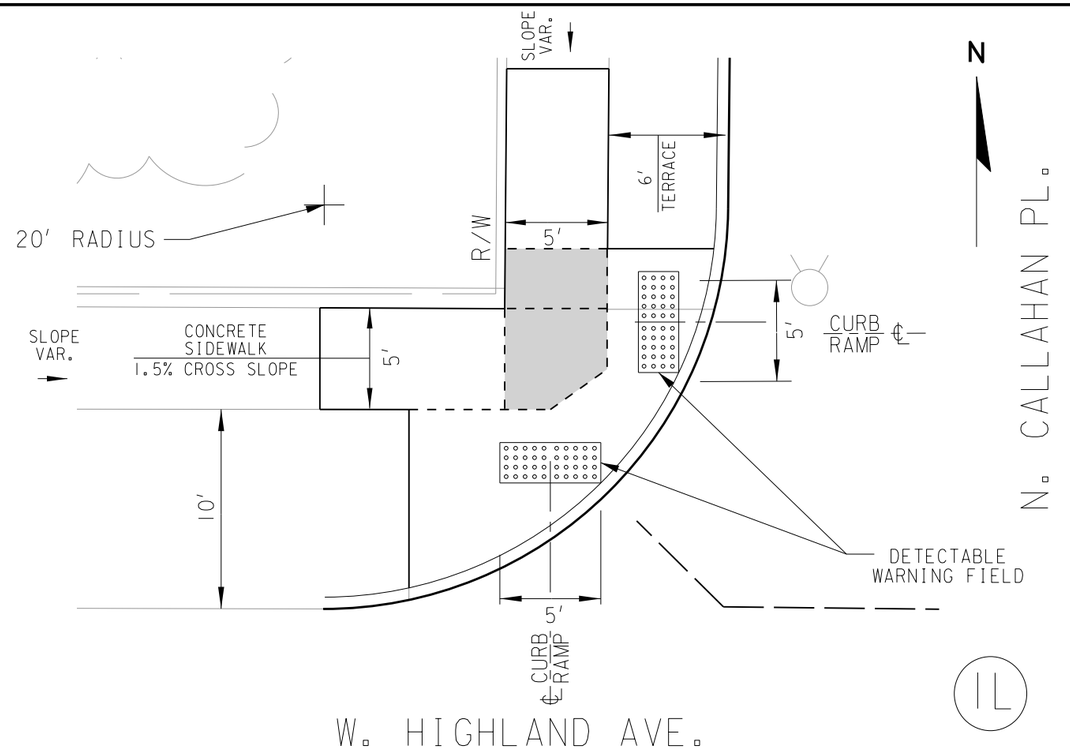


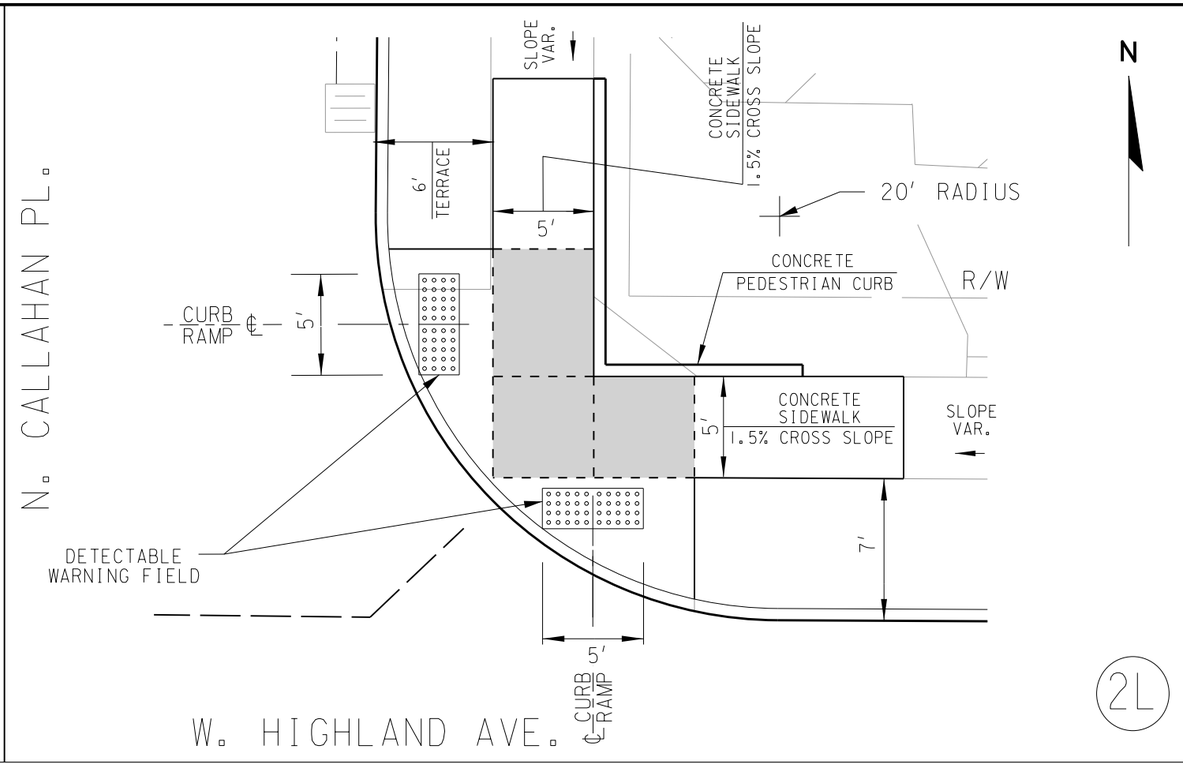
CURB RAMP DETAILS - W. HIGHLAND AVE. AND N. 17TH ST.

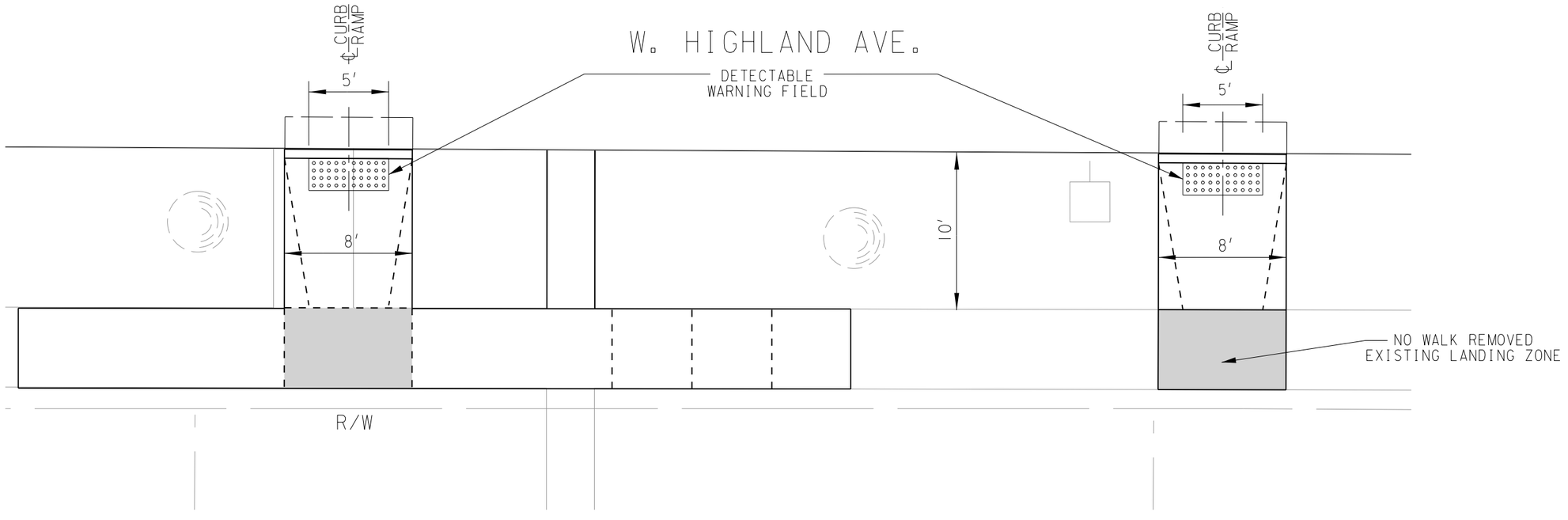
STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	INTERSECTION DETAILS	SCALE FEET 0' 15'	SHEET NO: 46 E

FILENAME: W:\SPR\HIGHLAND_27-12\RAMPDET.DGN

REVISED DATE: 04-13-2016 SB





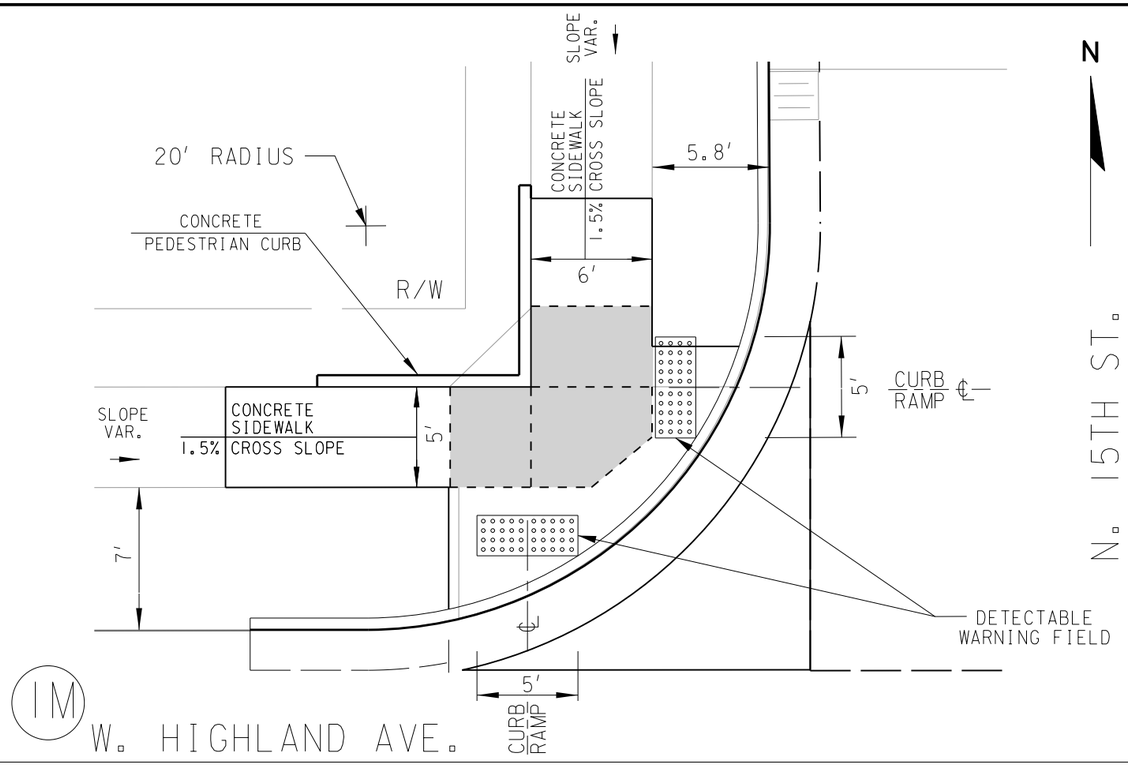


CURB RAMP DETAILS - W. HIGHLAND AVE. AND N. CALLAHAN PL.

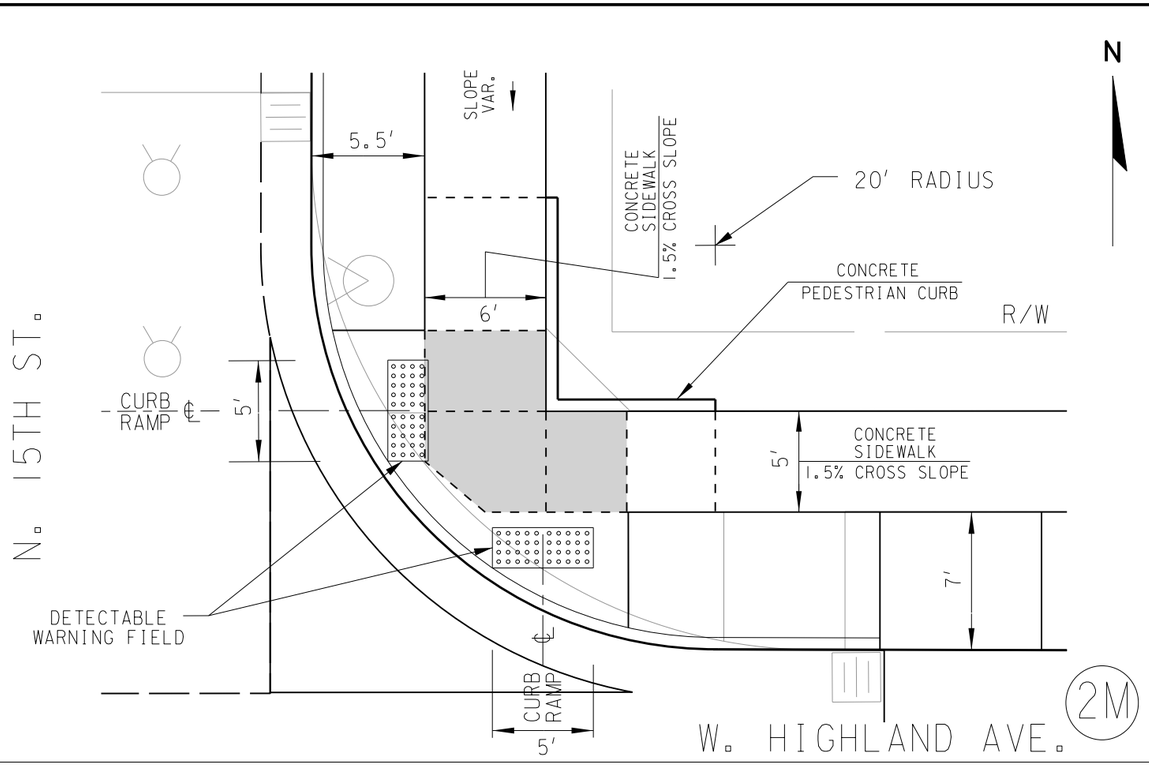
STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	INTERSECTION DETAILS	SCALE FEET 0' 15'	SHEET NO: 47 E

FILENAME: W:\SPR\HIGHLAND_27-12\RAMPDET.DGN

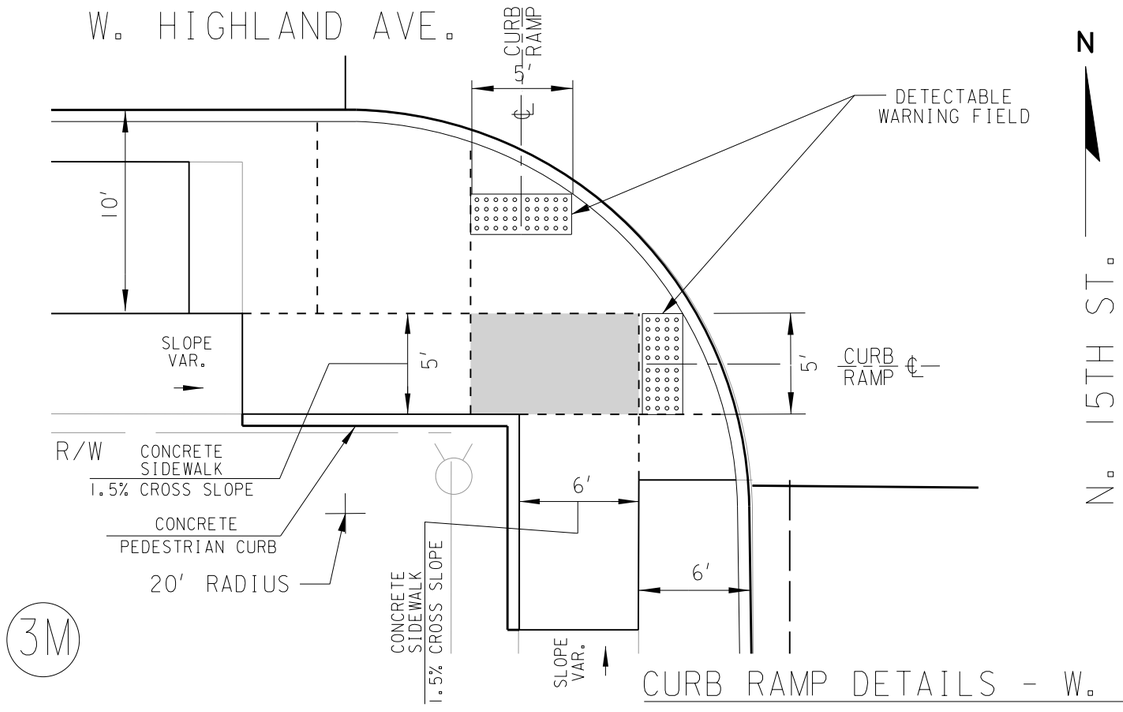
REVISED DATE: 04-13-2016 SB)



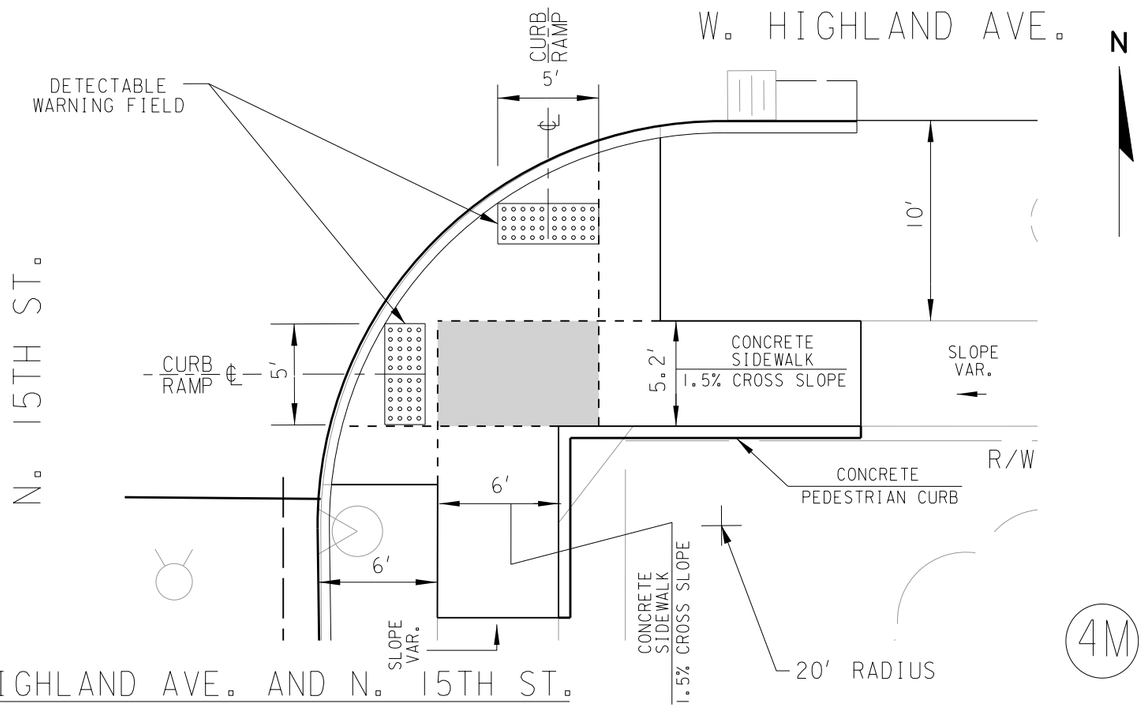
1M



2M



3M



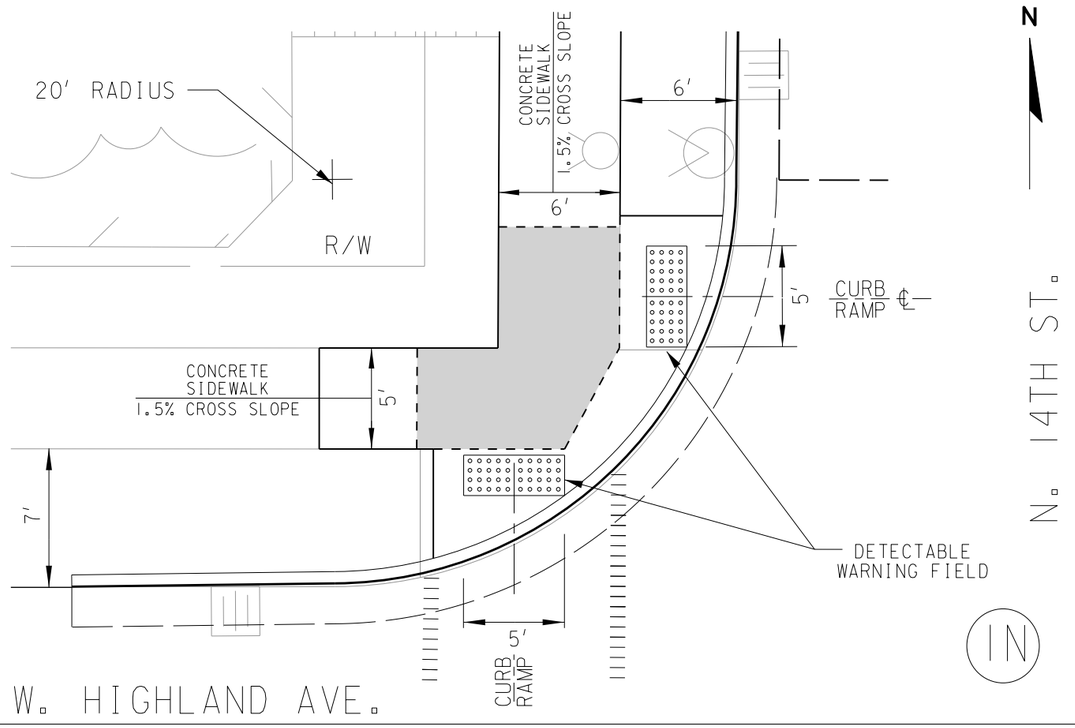
4M

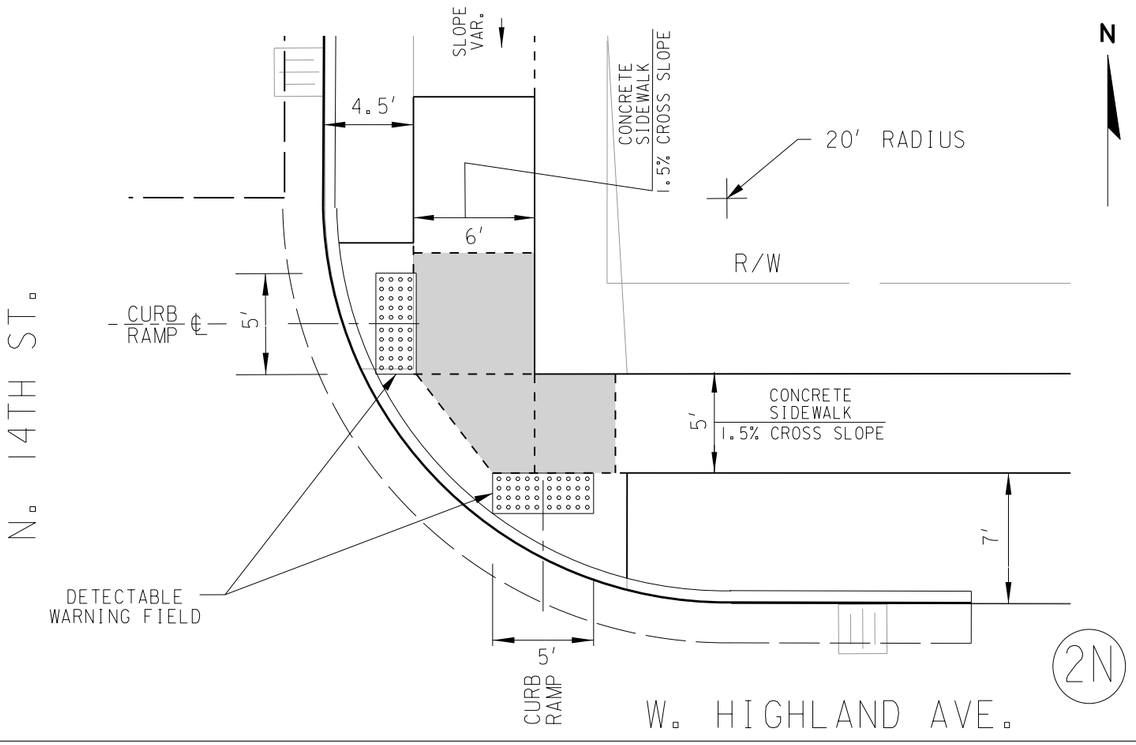
CURB RAMP DETAILS - W. HIGHLAND AVE. AND N. 15TH ST.

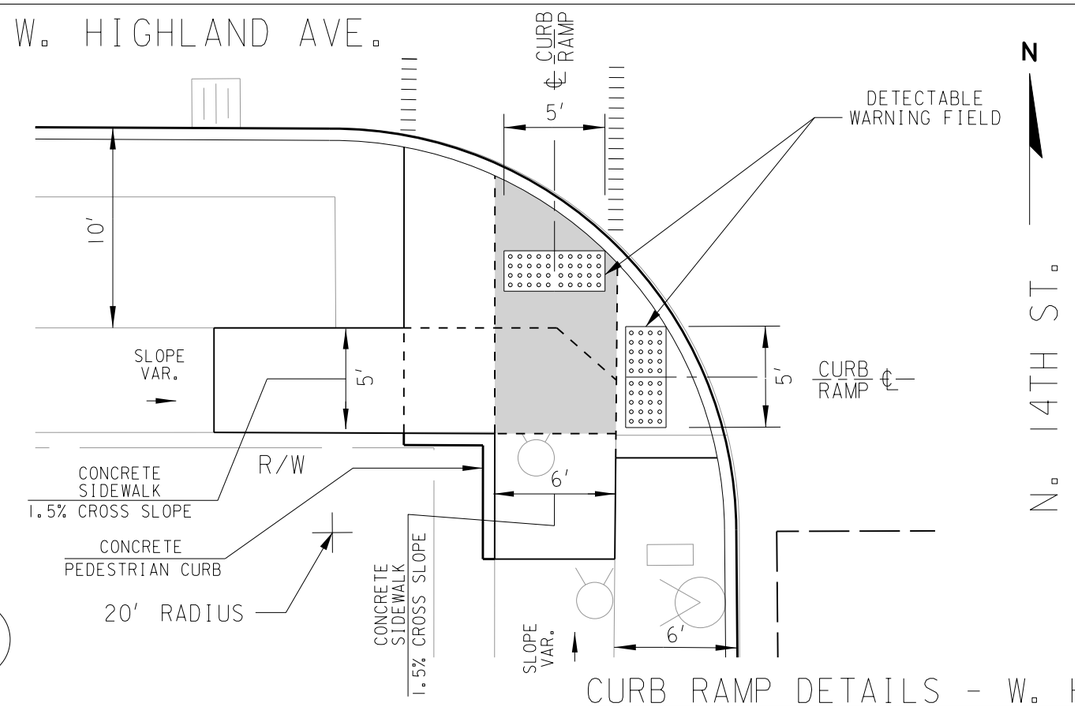
STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	INTERSECTION DETAILS	SCALE FEET 0' 15'	SHEET NO: 48 E

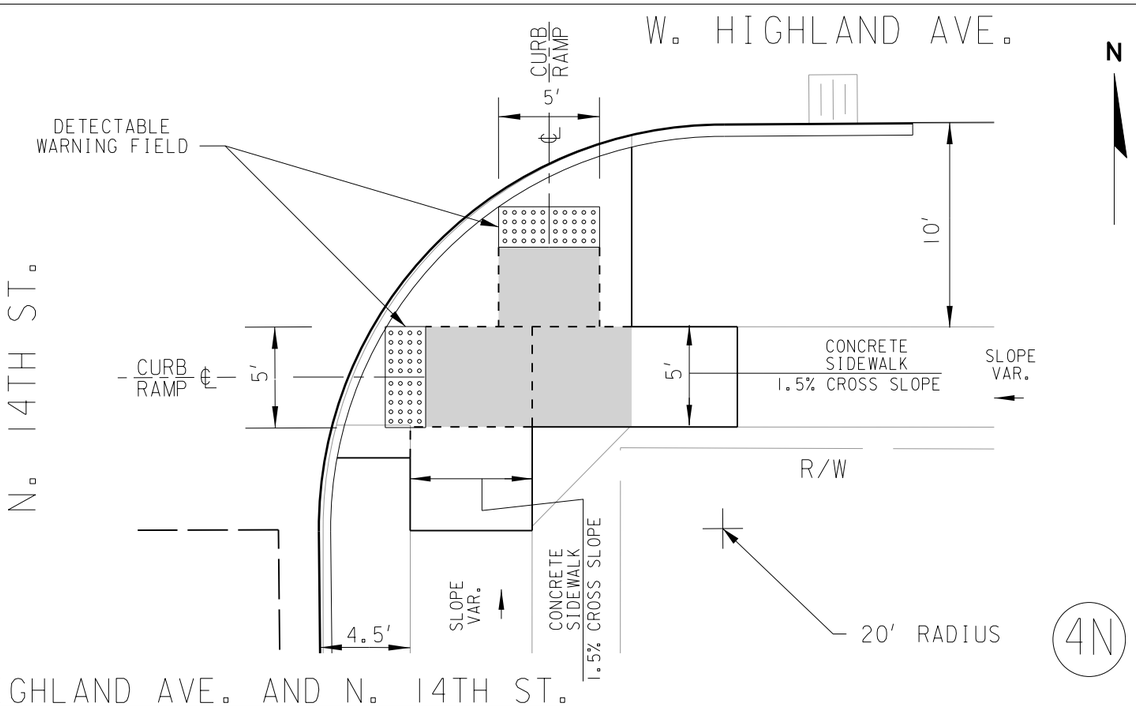
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REVISED DATE: 04-13-2016 SB







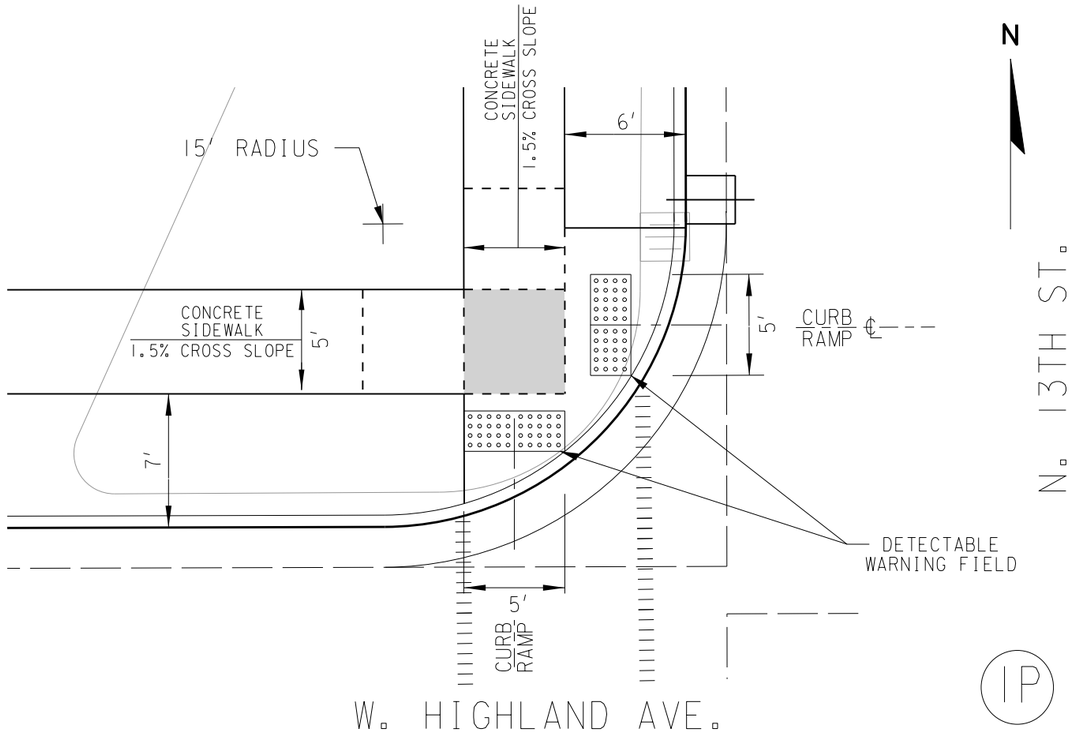


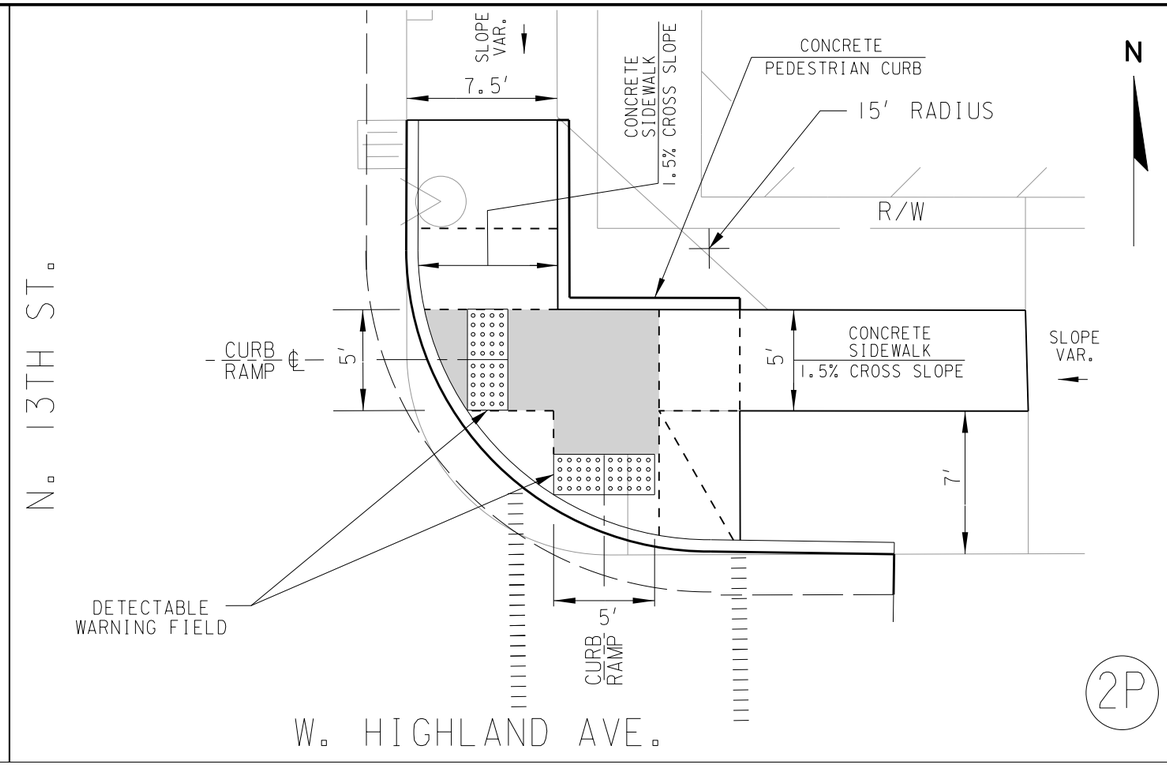
CURB RAMP DETAILS - W. HIGHLAND AVE. AND N. 14TH ST.

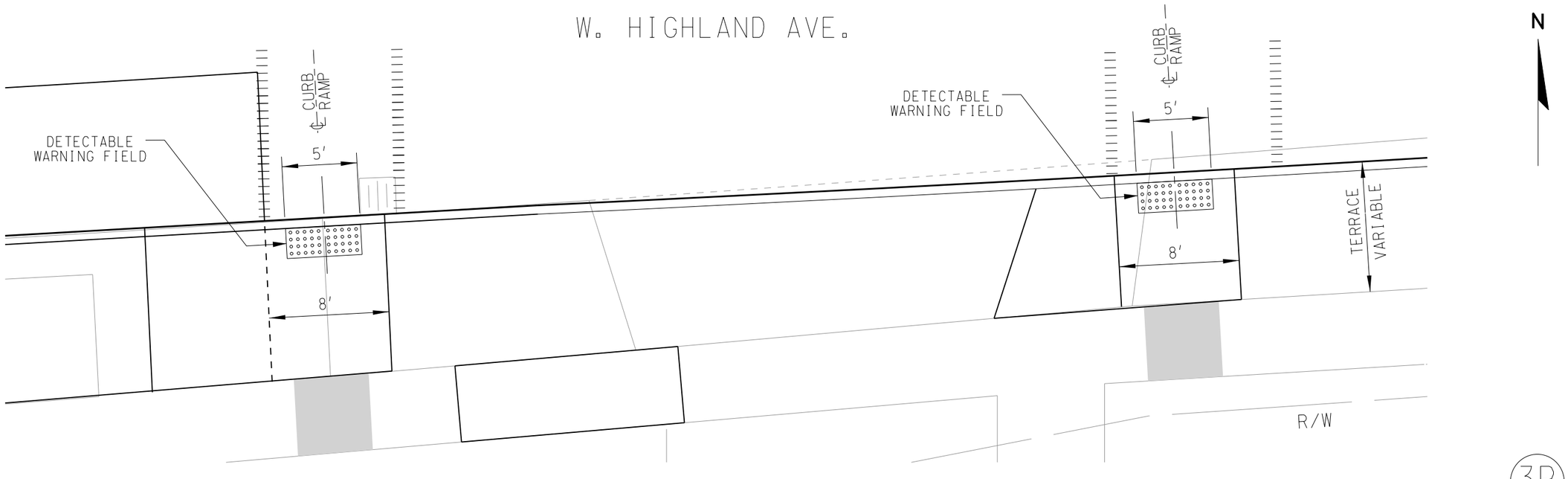
STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	INTERSECTION DETAILS	SCALE FEET 0' 15'	SHEET NO: 49 E

FILENAME: W:\SPR\HIGHLAND_27-12\RAMPDET.DGN

REVISED DATE 04-13-2016 SB







CURB RAMP DETAILS - W. HIGHLAND AVE. AND N. 13TH ST.

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	INTERSECTION DETAILS	SCALE FEET 0' 15'	SHEET NO: 50 E

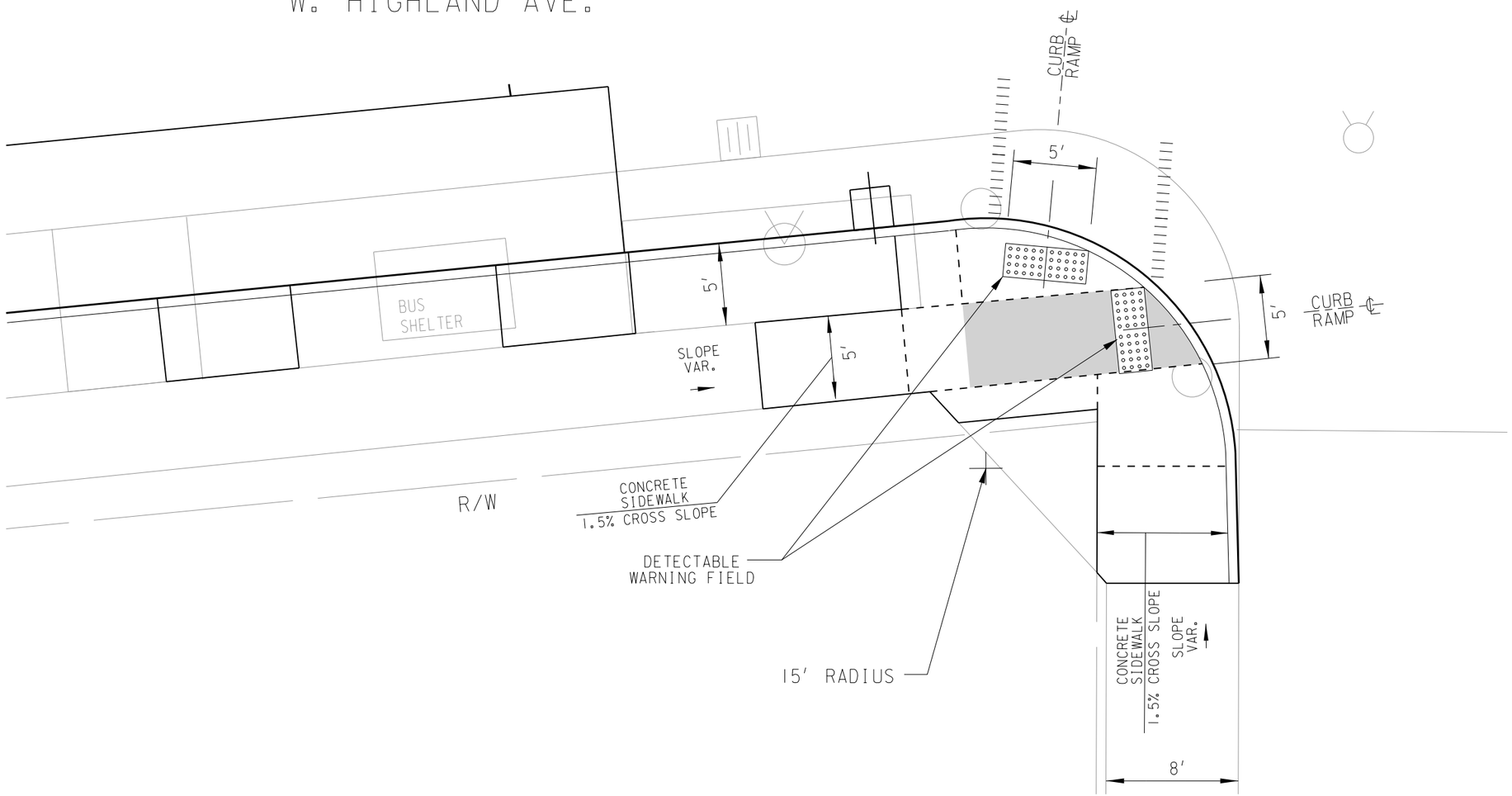
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REVISED DATE: 04-13-2016 SB

2

N

W. HIGHLAND AVE.



3R

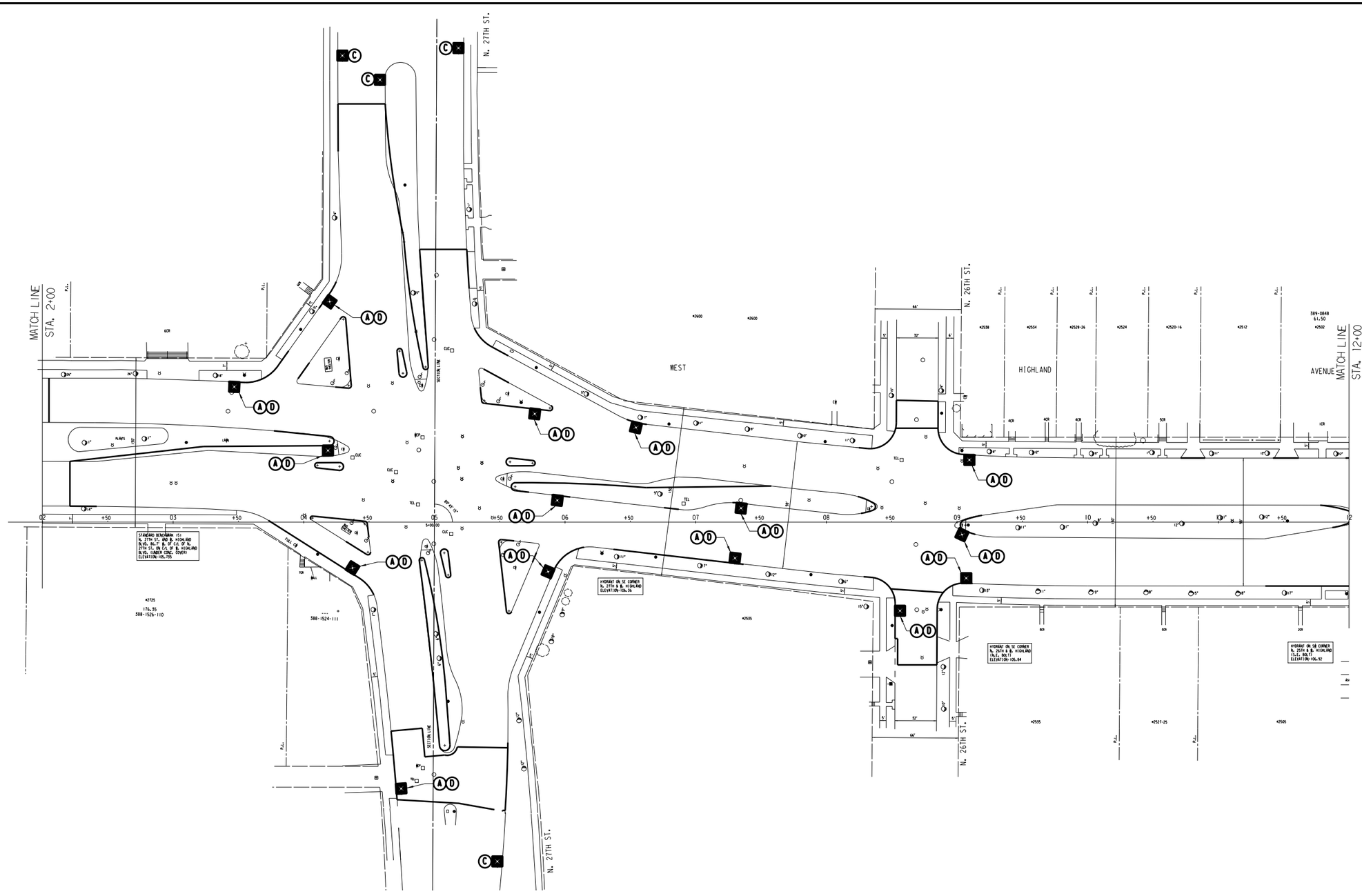
CURB RAMP DETAILS - W. HIGHLAND AVE. AND N. 12TH ST.

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	INTERSECTION DETAILS	SCALE FEET 0′ 15′	SHEET NO: 51 E

FILENAME: W:\SPR\HIGHLAND_27-12\RAMPDET.DGN

REVISED DATE: 04-13-2016 SB

2



LEGEND

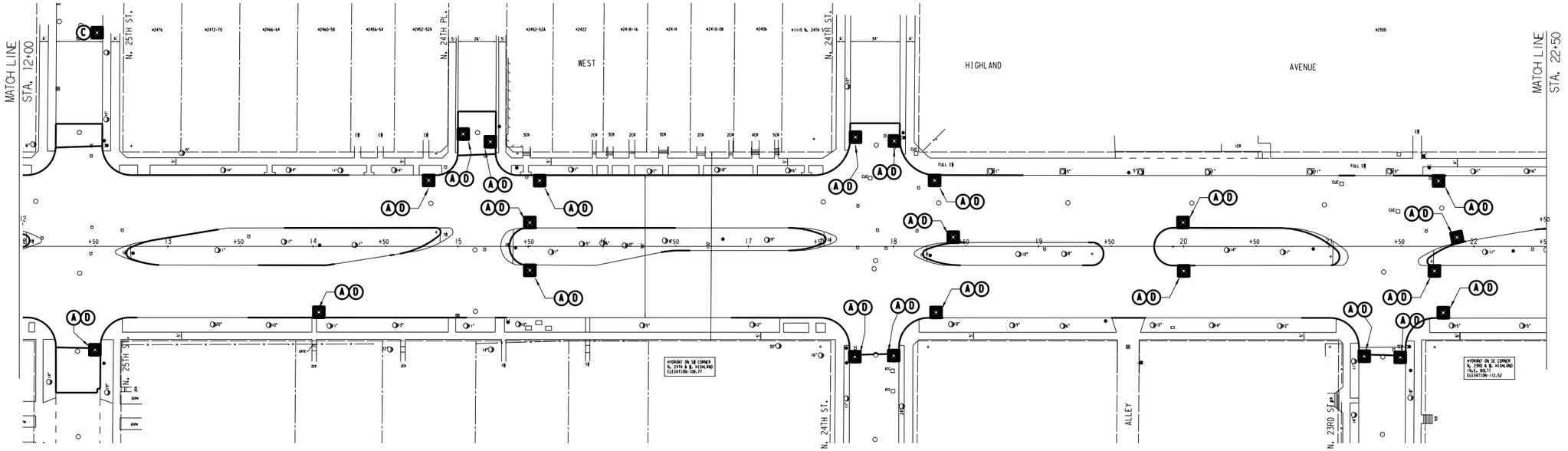
NOTE:
USE INLET PROTECTION TYPE A PRIOR TO PLACEMENT OF CURB & GUTTER. USE INLET PROTECTION TYPE D AFTER PLACEMENT OF CURB & GUTTER AND INSTALLATION OF CURB BOX. WHERE NEW CURB & GUTTER IS NOT BEING PLACED, INLET PROTECTION TYPE C SHOULD BE USED.

- (A) INLET PROTECTION TYPE A
- (C) INLET PROTECTION TYPE C
- (D) INLET PROTECTION TYPE D

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	EROSION CONTROL	SCALE FEET	SHEET NO: 52 E

FILENAME: W:\SPR\HIGHLAND_27-12\EROSION.DGN

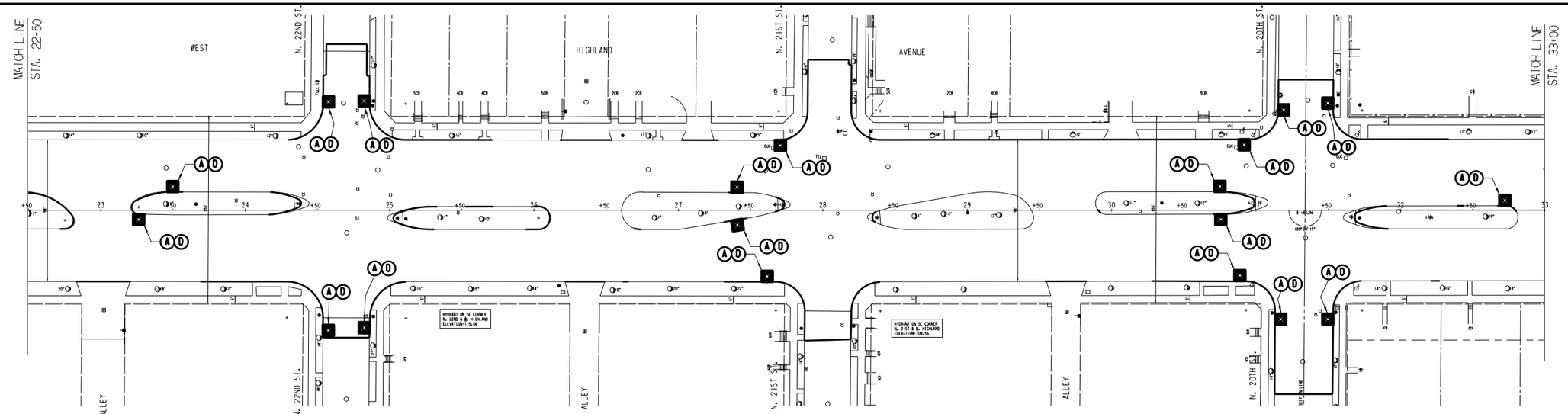
REVISED DATE: 04-18-2016 BY MJ



NOTE:
USE INLET PROTECTION TYPE A PRIOR TO PLACEMENT OF CURB & GUTTER.
USE INLET PROTECTION TYPE D AFTER PLACEMENT OF CURB & GUTTER AND INSTALLATION OF CURB BOX. WHERE NEW CURB & GUTTER IS NOT BEING PLACED, INLET PROTECTION TYPE C SHOULD BE USED.

LEGEND

- (A) INLET PROTECTION TYPE A
- (C) INLET PROTECTION TYPE C
- (D) INLET PROTECTION TYPE D



NOTE:
USE INLET PROTECTION TYPE A PRIOR TO PLACEMENT OF CURB & GUTTER.
USE INLET PROTECTION TYPE D AFTER PLACEMENT OF CURB & GUTTER AND INSTALLATION OF CURB BOX. WHERE NEW CURB & GUTTER IS NOT BEING PLACED, INLET PROTECTION TYPE C SHOULD BE USED.

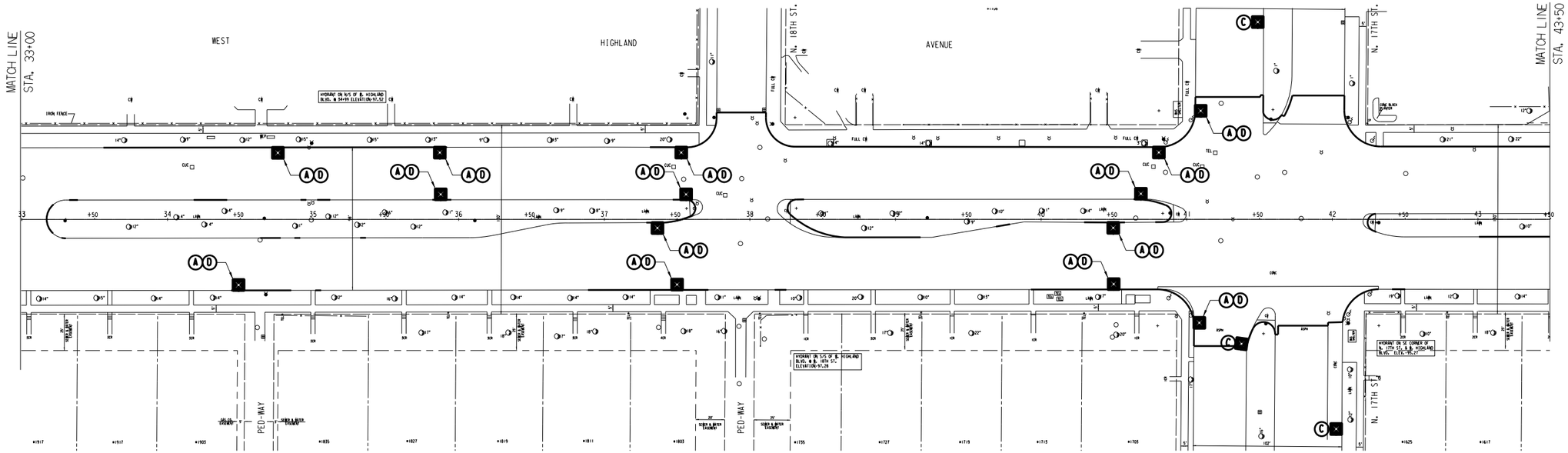
LEGEND

- (A) INLET PROTECTION TYPE A
- (C) INLET PROTECTION TYPE C
- (D) INLET PROTECTION TYPE D

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	EROSION CONTROL	SCALE FEET	SHEET NO: 53 E

FILENAME: W:\SPR\HIGHLAND_27-12\EROSION.DGN

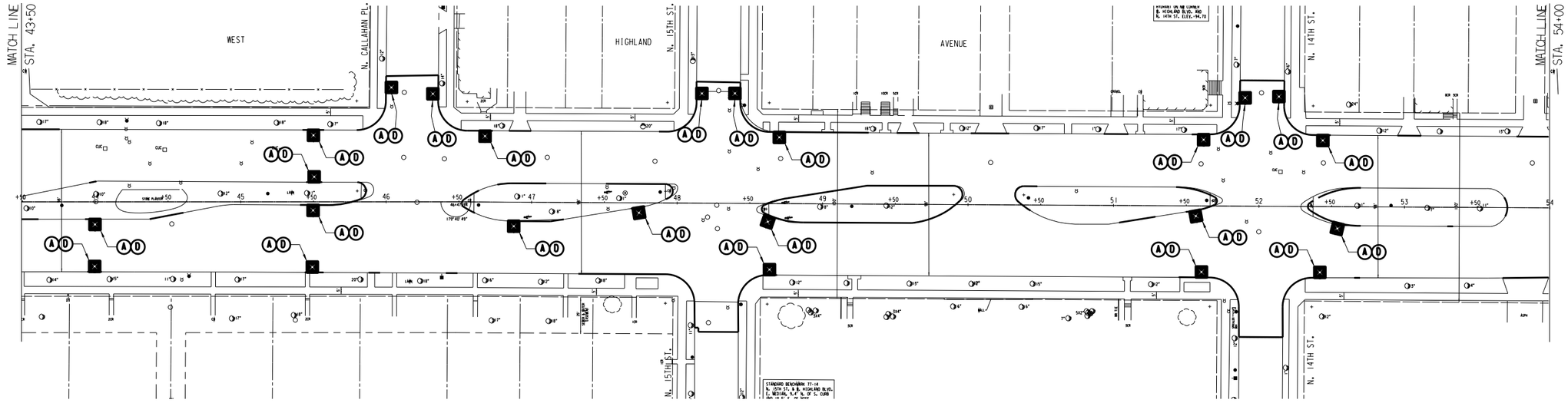
REVISED DATE: 04-18-2016 BY MJ



NOTE:
USE INLET PROTECTION TYPE A PRIOR TO PLACEMENT OF CURB & GUTTER.
USE INLET PROTECTION TYPE D AFTER PLACEMENT OF CURB & GUTTER AND INSTALLATION OF CURB BOX. WHERE NEW CURB & GUTTER IS NOT BEING PLACED, INLET PROTECTION TYPE C SHOULD BE USED.

LEGEND

- (A) INLET PROTECTION TYPE A
- (C) INLET PROTECTION TYPE C
- (D) INLET PROTECTION TYPE D



NOTE:
USE INLET PROTECTION TYPE A PRIOR TO PLACEMENT OF CURB & GUTTER.
USE INLET PROTECTION TYPE D AFTER PLACEMENT OF CURB & GUTTER AND INSTALLATION OF CURB BOX. WHERE NEW CURB & GUTTER IS NOT BEING PLACED, INLET PROTECTION TYPE C SHOULD BE USED.

LEGEND

- (A) INLET PROTECTION TYPE A
- (C) INLET PROTECTION TYPE C
- (D) INLET PROTECTION TYPE D

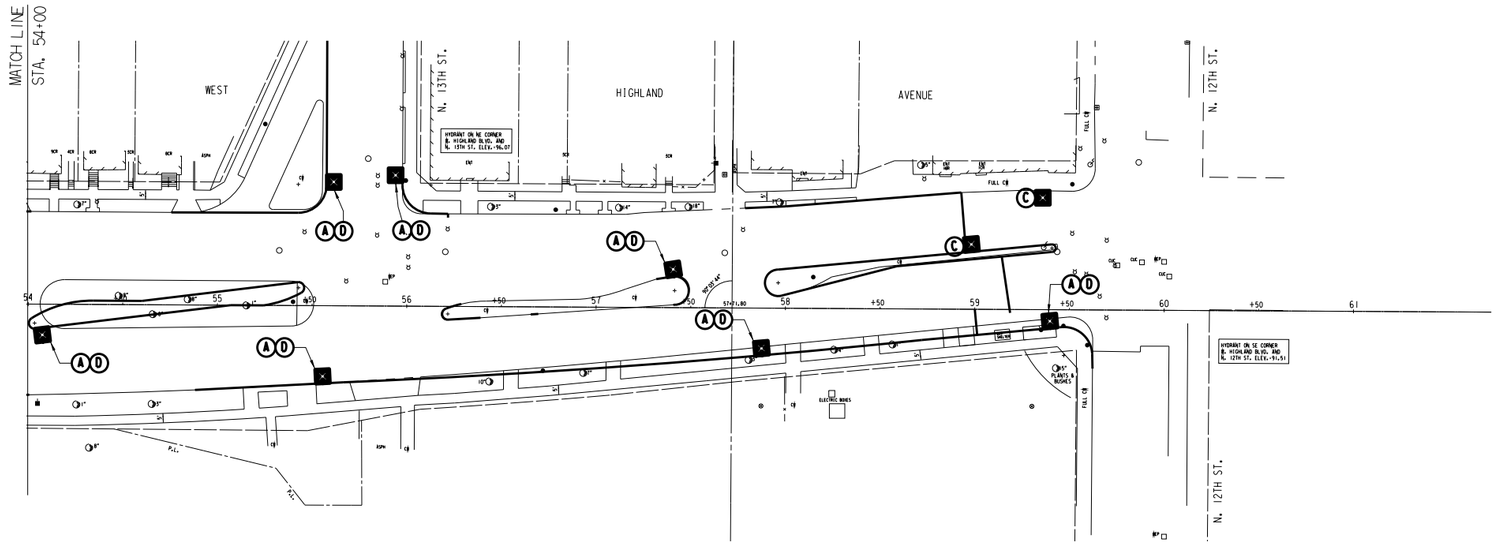
STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	EROSION CONTROL	SCALE FEET	SHEET NO: 54 E

FILENAME: W:\SPR\HIGHLAND_27-12\EROSION.DGN

REVISED DATE: 04-18-2016 BY MJ

2

N



NOTE:
USE INLET PROTECTION TYPE A PRIOR TO PLACEMENT OF CURB & GUTTER.
USE INLET PROTECTION TYPE D AFTER PLACEMENT OF CURB & GUTTER AND INSTALLATION OF CURB BOX. WHERE NEW CURB & GUTTER IS NOT BEING PLACED, INLET PROTECTION TYPE C SHOULD BE USED.

LEGEND

- (A) INLET PROTECTION TYPE A
- (C) INLET PROTECTION TYPE C
- (D) INLET PROTECTION TYPE D

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	EROSION CONTROL	SCALE FEET	SHEET NO: 55 E

FILENAME: W:\SPR\HIGHLAND_27-12\EROSION.DGN

REVISED DATE: 04-18-2016 BY MJ

2

2

LEGEND

MONOTUBE MAST ARM BASE TO BE INSTALLED

XX' ARM — MAST ARM

WEST HIGHLAND BOULEVARD

N. 27TH ST.

WEST HIGHLAND AVENUE

N

BEGIN PROJECT
STA. 02+5.0 T/L

100' (CUC)
66' (12"WATER)
117' (2"GAS)
108' (8"WATER)
89' (15"CMB)
78' (WEP)
75' (C/L 96"CMB)
75' (T)
69' (6"GAS)
58' (CUC)

TE&ES

G — 6" ABAND.

40' ARM

25' ARM

BIO-SWALE NO.2
(SEE BIO-SWALE PLAN)

BIO-SWALE NO.1
(SEE BIO-SWALE PLAN)

SECTION LINE

02 +50 03 +50 04 +50 05 +50 T/L 06 +50 07

#2600

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	UTILITIES AND DRAINAGE	SCALE FEET 0' 40'	SHEET NO: 56	E

FILENAME: W:\SPR\HIGHLAND_27-12\UTIL 01-07.DGN

REVISED: 04-25-2016 SB

2

WEST HIGHLAND BOULEVARD

N. 27TH ST.

WEST HIGHLAND AVENUE

N

BEGIN PROJECT
STA. 02+5.0 T/L

69' (6"GAS)
58' (CUC)

P.L.

6CR

R/W

TE&ES

CUC

CMB

CW

BUS SHELTER

40' ARM

25' ARM

35' ARM

SECTION LINE

BIO-SWALE NO.2
(SEE BIO-SWALE PLAN)

BIO-SWALE NO.1
(SEE BIO-SWALE PLAN)

PLANTS

LAWN

FULL CW

7CR

WALL

T/L

02 +50 03 +50 04 +50 05 +50 06 +50 07

#2600

#2725

MYSTERY 2" I.P.

STANDARD BENCHMARK 151
N. 27TH ST. AND W. HIGHLAND BLVD. 86.7' W. OF C/L OF N. 27TH ST. ON C/L OF W. HIGHLAND BLVD. (UNDER CONC. COVER)
ELEVATION=105.735

HYDRANT ON SE CORNER
N. 27TH & W. HIGHLAND
ELEVATION=106.36

LEGEND

- MONOTUBE MAST ARM BASE TO BE INSTALLED
- XX' ARM — MAST ARM

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	UTILITIES AND DRAINAGE	SCALE FEET 0' 40'	SHEET NO: 57	E

FILENAME: W:\SPR\HIGHLAND_27-12\UTIL 01-07.DGN

REVISED: 04-25-2016 SB

2

N

WEST HIGHLAND BOULEVARD

WEST HIGHLAND AVENUE

BEGIN PROJECT
STA. 02+5.0 T/L

STANDARD BENCHMARK 151
N. 27TH ST. AND W. HIGHLAND BLVD. 86.7' W. OF C/L OF N. 27TH ST. ON C/L OF W. HIGHLAND BLVD. (UNDER CONC. COVER)
ELEVATION=105.735

HYDRANT ON SE CORNER
N. 27TH & W. HIGHLAND
ELEVATION=106.36

LEGEND

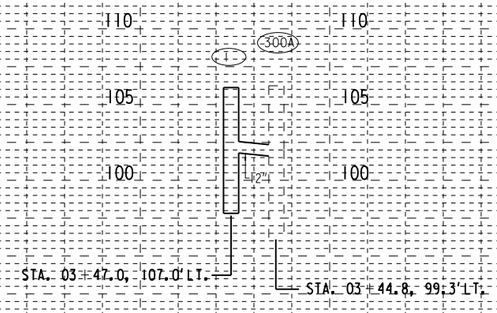
MONOTUBE MAST ARM BASE TO BE INSTALLED

XX' ARM MAST ARM

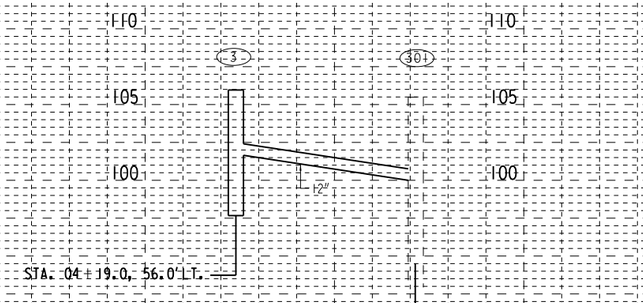
STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	UTILITIES AND DRAINAGE	SCALE FEET 0' 40'	SHEET NO: 58	E

FILENAME: W:\SPR\HIGHLAND_27-12\UTIL 01-07.DGN

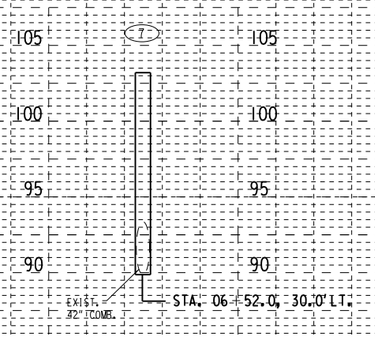
2



(LOOKING EASTERLY)



(LOOKING NORTHWESTERLY)



WEST

HIGHLAND

AVENUE

N

N. 26TH ST.

N. 25TH ST.

BIO-SWALE NO. 3
(SEE BIO-SWALE PLAN)

BIO-SWALE NO. 14
(SEE BIO-SWALE PLAN)

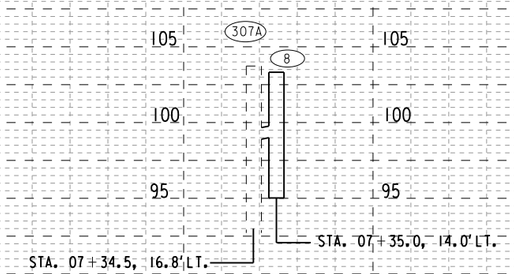
HYDRANT ON SE CORNER
N. 26TH & W. HIGHLAND
(N.E. BOLT)
ELEVATION: 105.84

HYDRANT ON SW CORNER
N. 25TH & W. HIGHLAND
(S.E. BOLT)
ELEVATION: 106.92

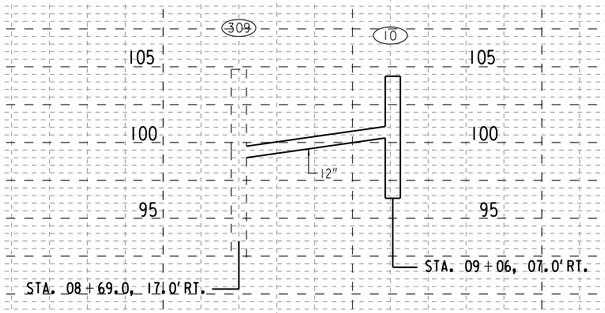
STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	UTILITIES AND DRAINAGE	SCALE FEET 0' 40'	SHEET NO: 60 E

FILENAME: W:\SPR\HIGHLAND_27-12\UTIL 07-13.DGN

2



(LOOKING EASTERLY)



(LOOKING NORTHERLY)

+50 +50 +50 +50 +50 +50

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	UTILITIES AND DRAINAGE	SCALE FEET	SHEET NO: 61	E

FILENAME: W:\STFRR\HIGHLAND\227-122\UTILITY\07-03.DGN

REVISED DATE: 03-15-2016 SB

WEST HIGHLAND AVENUE

N. 24TH PL.

#2476 #2472-70 #2466-64 #2460-58 #2456-54 #2452-52A #2452-52A #2422 #2418-16 #2414 #2410-08 #2406 #1115 N. 24TH ST.

#2300 MILWAUKEE HIGH SCHOOL OF THE ARTS

BIO-SWALE NO. 4 (SEE BIO-SWALE PLAN)

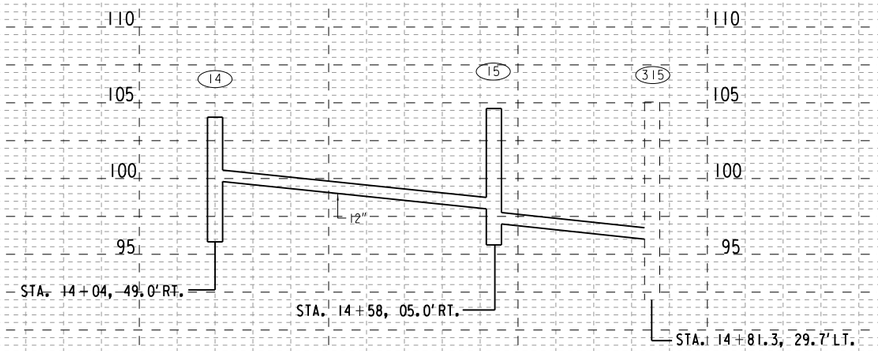
HYDRANT ON SW CORNER N. 24TH & W. HIGHLAND ELEVATION-108.77

#1040 N. 25TH ST. #2459 #2449 #2425 #2417 #2405 #1036 N. 24TH ST.

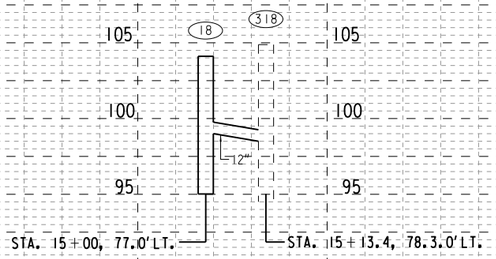
N. 24TH ST.

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	UTILITIES AND DRAINAGE	SCALE FEET 0' 40'	SHEET NO: 62	E

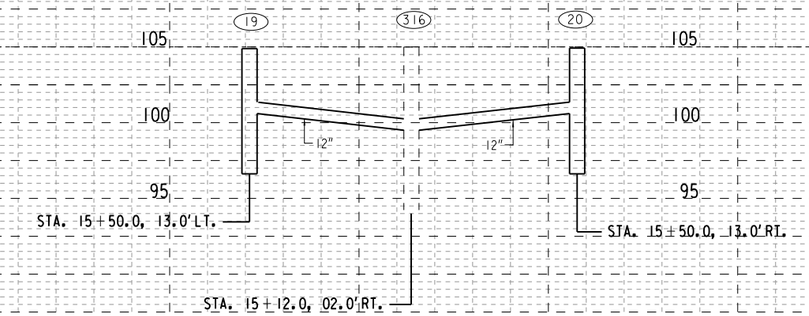
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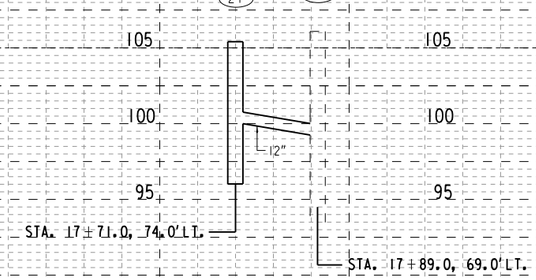
(LOOKING NORTHWESTERLY)



(LOOKING NORTHERLY)



(LOOKING EASTERLY)



(LOOKING NORTHERLY)

+50 +50 +50 +50 +50 +50

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	UTILITIES AND DRAINAGE	SCALE FEET	SHEET NO: 63	E

FILENAME: W:\SPR\HIGHLAND_27-12\UTIL 13-19.DGN

REVISED DATE: 03-15-2016 SB

2

WEST HIGHLAND AVENUE

#2300
MILWAUKEE HIGH SCHOOL OF THE ARTS

N

BIO-SWALE NO.5
(SEE BIO-SWALE PLAN)

BIO-SWALE NO.6
(SEE BIO-SWALE PLAN)

EXACT LOCATION UNKNOWN

HYDRANT ON SE CORNER
N. 23RD & W. HIGHLAND
(N.E. BOLT)
ELEVATION=112.52

24TH ST.

#1035-21 N. 23RD ST.

#1032-34 N. 23RD ST.

1039 N. 22ND ST.

N. 23RD ST.

15' ALLEY

30' ALLEY

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	UTILITIES AND DRAINAGE	SCALE FEET 0' 40'	SHEET NO: 64	E

FILENAME: W:\SPR\HIGHLAND_27-12\UTIL 19-24.DGN

2

WEST HIGHLAND AVENUE

#2132 #2126 #2122 #2114-12 #2104 #1102 N. 21ST ST. #2024

N

30' ALLEY

(EXACT LOCATION UNKNOWN)

BIO-SWALE NO.7
(SEE BIO-SWALE PLAN)

HYDRANT ON SE CORNER
N. 22ND & W. HIGHLAND
ELEVATION=115.06

HYDRANT ON SE CORNER
N. 21ST & W. HIGHLAND
ELEVATION=109.56

#1036 N. 22ND ST.

#1035 ADJ N. 21ST ST.

#1038 N. 21ST ST.

N. 22ND ST.

N. 21ST ST.

20' ALLEY

20' ALLEY

24 25 26 27 28 29 30

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	UTILITIES AND DRAINAGE	SCALE FEET 0' 40'	SHEET NO: 65	E

FILENAME: W:\SPR\HIGHLAND_27-12\UTIL 24-30.DGN

WEST HIGHLAND AVENUE

N

#2004

#1924-1812

BIO-SWALE NO. 15
(SEE BIO-SWALE PLAN)

HYDRANT ON N/S OF W. HIGHLAND BLVD. @ 34+99 ELEVATION=97.52

BIO-SWALE NO. 8
(SEE BIO-SWALE PLAN)

#1037 N. 20TH ST.

#1933

#1925

#1917

#1917

#1903

#1835

#1827

N. 20TH ST.

LEGEND

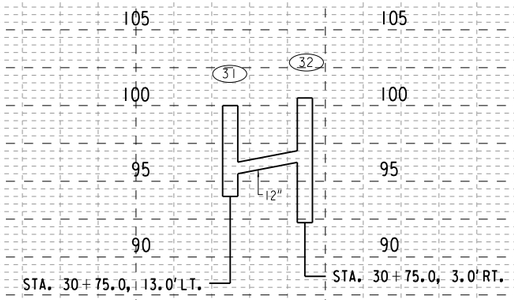
MONOTUBE MAST ARM BASE TO BE INSTALLED

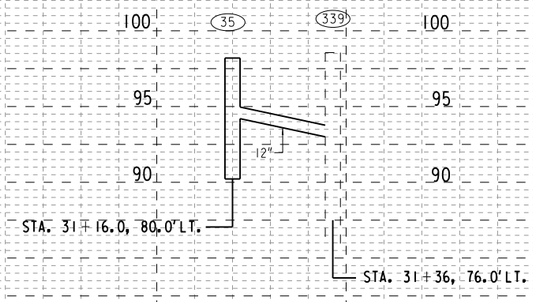
XX' ARM MAST ARM

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	UTILITIES AND DRAINAGE	SCALE FEET 0' 40'	SHEET NO: 66	E

FILENAME: W:\SPR\HIGHLAND_27-12\UTIL 30-36.DGN

2





(LOOKING NORTHERLY)

+50 +50 +50 +50 +50 +50

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	UTILITIES AND DRAINAGE	SCALE FEET	SHEET NO: 67	E

FILENAME: W:\SPR\HIGHLAND_27-12\UTIL 30-36.DGN

REVISED DATE: 03-15-2016 SB

WEST HIGHLAND AVENUE

N

#1706
MACDOWELL ELEMENTARY SCHOOL

N. 18TH ST.

N. 17TH ST.

BIO-SWALE NO.8
(SEE BIO-SWALE PLAN)

BIO-SWALE NO.9
(SEE BIO-SWALE PLAN)

HYDRANT ON S/S OF W. HIGHLAND BLVD. @ W. 18TH ST.
ELEVATION=97.28

SEWER & WATER EASEMENT 20'

SEWER & WATER EASEMENT 25'

PED-WAY 20'

BUS SHELTER

35' ARM

#1827 #1819 #1811 #1803 #1735 #1727 #1719 #1713 #1703

LEGEND

MONOTUBE MAST ARM BASE TO BE INSTALLED

MAST ARM

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	UTILITIES AND DRAINAGE	SCALE FEET 0' 40'	SHEET NO: 68 E

FILENAME: W:\SPR\HIGHLAND_27-12\UTIL 36-41.DGN

WEST HIGHLAND AVENUE

N

N. CALLAHAN PL.

BIO-SWALE NO. 11 (SEE BIO-SWALE PLAN)

BIO-SWALE NO. 10 (SEE BIO-SWALE PLAN)

BIO-SWALE NO. 12 (SEE BIO-SWALE PLAN)

35' ARM

HYDRANT ON SE CORNER OF N. 17TH ST. & W. HIGHLAND BLVD. ELEV.=95.27

N. 17TH ST.

#1600 #1516 #1512-10 #1625 #1617 #1611 #1601 #1541 #1533 #1525 #1517

LEGEND

MONOTUBE MAST ARM BASE TO BE INSTALLED

MAST ARM

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	UTILITIES AND DRAINAGE	SCALE FEET 0' 40'	SHEET NO: 69 E

FILENAME: W:\SPR\HIGHLAND_27-12\UTIL 41-47.DGN

WEST HIGHLAND AVENUE

N

#1512-10 | #1506 | #1101-03 N. 15TH ST. | #1436 | #1434 | #1430-28 | #1424 | #1412 | #1101 N. 14TH ST. | #1340 | #1334

HYDRANT ON NW CORNER
W. HIGHLAND BLVD. AND
N. 14TH ST. ELEV.=94.70

BIO-SWALE NO. 12
(SEE BIO-SWALE PLAN)

BIO-SWALE NO. 13
(SEE BIO-SWALE PLAN)

STANDARD BENCHMARK 77-14
N. 15TH ST. & W. HIGHLAND BLVD.
E. MEDIAN, 9.4' N. OF S. CURB
AND 18.5' E. OF NOSE.
ELEV.=91.995

#1511 | #1503 | #1435-07

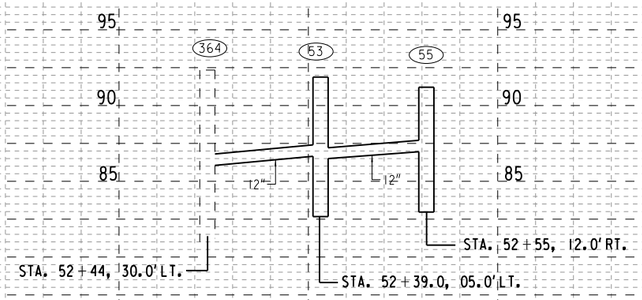
N. 15TH ST. | N. 14TH ST.

SCOTT MIDDLE SCHOOL
(CITY OF MILWAUKEE)

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	UTILITIES AND DRAINAGE	SCALE FEET 0' 40'	SHEET NO: 70 E

FILENAME: W:\SPR\HIGHLAND_27-12\UTIL 47-53.DGN

2



(LOOKING EASTERLY)

+50 +50 +50 +50 +50 +50

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	UTILITIES AND DRAINAGE	SCALE FEET	SHEET NO: 71	E

FILENAME: W:\SPR\HIGHLAND_27-12\UTIL 47-53.DGN

REVISED DATE: 03-15-2016 SB

WEST AVENUE

HIGHLAND AVENUE

N. 13TH ST.

20' ALLEY

10' ALLEY

SECTION LINE

#1328 #1322 #1316 #1314-12 #1308 #1242 #1236 #1232-30 #1218 #1202

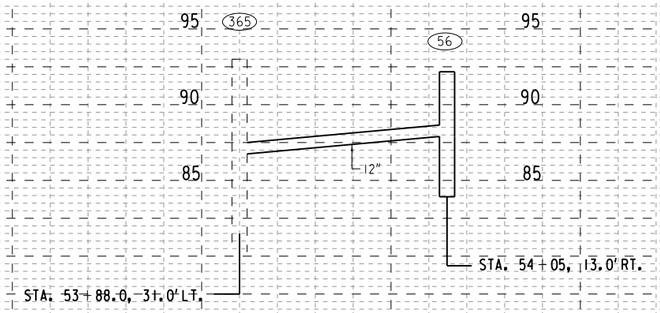
HYDRANT ON NE CORNER
W. HIGHLAND BLVD. AND
N. 13TH ST. ELEV.=96.07

SCOTT MIDDLE SCHOOL
(CITY OF MILWAUKEE)
1017 N. 12TH ST.

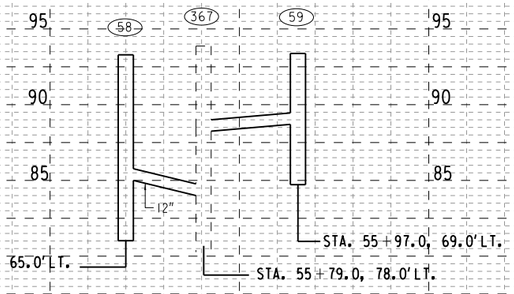
ELECTRIC BOXES

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	UTILITIES AND DRAINAGE	SCALE FEET 0' 40'	SHEET NO: 72	E

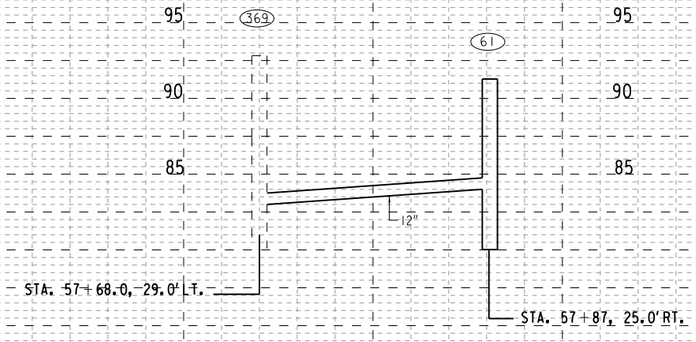
FILENAME: W:\SPR\HIGHLAND_27-12\UTIL 53-59.DGN



(LOOKING EASTERLY)



(LOOKING NORTHERLY)



(LOOKING EASTERLY)

+50 +50 +50 +50 +50 +50

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	UTILITIES AND DRAINAGE	SCALE FEET	SHEET NO: 73	E

FILENAME: W:\SPR\HIGHLAND_27-12\UTIL 53-59.DGN

REVISED DATE: 03-15-2016 SB

391-0255-110
116.29

WEST HIGHLAND AVENUE

2

2

N

END PROJECT
STA. 59+64.5 T/L

HYDRANT ON SE CORNER
W. HIGHLAND BLVD. AND
N. 12TH ST. ELEV.-91.51

391-0237-110-4

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	UTILITIES AND DRAINAGE	SCALE FEET 0' 40'	SHEET NO: 74	E

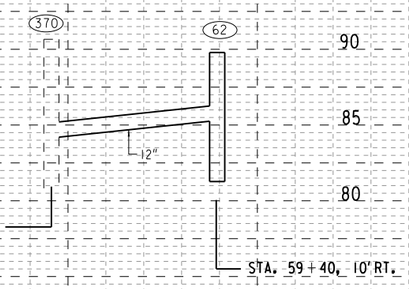
FILENAME: W:\SPR\HIGHLAND_27-12\UTIL 59-63.DGN

95

90

85

80



(LOOKING EASTERLY)

95

90

85

80

+50 +50 +50 +50 +50 +50

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	UTILITIES AND DRAINAGE	SCALE FEET	SHEET NO: 75	E

FILENAME: W:\SPR\HIGHLAND_27-12\UTIL 59-63.DGN

REVISED DATE: 03-15-2016 SB

2

BEGIN PROJECT 2265-00-74
320.2' LT. OF T/L

P.C. - +62.5
320.24' LT.

320.2'
LT.

283.8'
LT.

117' (2" GAS)

725' R.

BEGIN PROJECT 2265-00-74
208.8' LT. OF T/L

P.C.C. - +75.8
221.6' LT.

388-1820
150.26

69' (6" GAS)

60' R.

12' 12' 12'

208.8'
LT.

+24.9
206.6' LT.

P.C.C. - +76.8
214.5' LT.

+26.6
178.8' LT.

389-0947-100

+24.8
184.0' LT.

+30.6
148.6' LT.

+11.5
163.5' LT.

4+32.1
155.1' LT.

+27.7
155.1' LT.

725' R.

+56.4
127.7' LT.

CTR. 02.0' R=
+30.2-155.2' LT.

CTR. 30.0' R=
+55.7-136.9' LT.

6CR

+88.4
131.2' LT.

105.12C
104.70G

105.18C
104.76G

CTR. 2.0' R=
+73.4-130.9' LT.

#2600

+40.0

R/W

+35.4
116.3' LT.

BUS SHELTER

CW

66" ABAND.

CUC

105.58C
105.00G

105.49C
104.91G

105.66C
105.08G

+24.1
103.4' LT.

4" ABAND.

SECTION LINE

+37.7
107.1' LT.

+57.0
106.6' LT.

+35.1
103.3' LT.

+52.5, 89.3' LT.
104.07

+12.5, 82.6' LT.
103.56

+11.4, 72.7' LT.
103.86

103.75G

104.01C
103.68G

CTR. 02.0' R=
+88.4-87.3' RT.

+51.4, 79.4' LT.
104.33

+47.2
78.6' LT.

+62.6
74.8' LT.

60' R.

R/W

+42.0
107.5' LT.

+95.6, 109.7' LT.
105.84G

CTR. 2.0' R=
+34.4-104.5' LT.

CTR. 2.0' R=
+75.9-114.0' LT.

105.57C
104.99G

CTR. 2.0' R=
+38.2-93.0' LT.

CTR. 2.0' R=
+93.3-118.8' LT.

VARIES

11'

13'

+40.2

PLANTS

LAWN

WEP

CUC

BEGIN PROJECT
STA. 02 + 05.0 T/L

89°43'15"

116'

5+00.00

02 +50 03 +50 04 +50 05 +50 06 +50 07

FULL CW

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	PLAN DETAIL	SCALE FEET 0' 40'	SHEET NO: 76	E

FILENAME: W:\SPR\HIGHLAND_27-12\PDET 01-07.DGN

REVISED DATE: 04-25-2016 BY SB

2

388-1820
150.26

389-0947-100

#2600

69' (6"GAS)

12' 12' 12'

6" ABAND.

SECTION LINE

P.L.

P.L.

6CR

R/W

+88.4
131.2'LT.

+04.2
122.0'LT.

+24.1
103.4'LT.

BUS SHELTER

CW

CUC

+82.0
107.5'LT.

+95.6, 109.7'LT.
105.84G

CTR. 2.0'R=
+34.4-104.5'LT.

CTR. 2.0'R=
+75.9-114.0'LT.

105.57C
104.99G

CTR. 2.0'R=
+93.3-118.8'LT.

CTR. 2.0'R=
+38.2-93.0'LT.

5+57.9, 49.1'LT.
105.08C
104.50G

104.01C
103.68G

CTR. 02.0'R=
+88.4-87.3'RT.

+47.2
78.6'LT.

60'R.

+62.6
74.8'LT.

R/W

VARIES

+05.0

+77.1
69.9'LT.

CTR. 03.5'R=
+19.7-62.0'LT.

4+19.7, 65.5'LT.
106.26C
105.84G

∠PT. +23.3
57.9'LT.

PLANTS

LAWN

4+27.4, 45.6'LT.
106.56C
105.98G

WEP

4+10.4, 45.5'LT.
106.86C
106.28G

CTR. 3.0'R=
+27.4-42.6'LT.

CTR. 3.0'R=
+57.9-46.1'LT.

5+57.9, 43.1'LT.
104.98C
104.40G

5+75.1, 47.2'LT.
104.91C
104.33G

CTR. 2.0'R=
+75.1-45.2'LT.

5+75.1, 43.2'LT.
104.81C
104.23G

1085'R.

∠PT. +62.0
26.4'LT.

+20.8

+40.9
48.7'LT.

CTR. 2.0'R=
+10.4-43.5'LT.

4+10.4, 41.5'LT.
106.92C
106.34G

4+36.3, 12.2'LT.
105.97

4+27.4, 39.6'LT.
106.62C
106.04G

5+61.8, 30.1'LT.
104.62C
104.20G

5+61.8, 24.1'LT.
104.90C
104.48G

CTR. 3.0'R=
+61.8-27.1'LT.

3+76.3, 18.1'LT.
106.70

4+6.5, 4.6'LT.
106.40C
106.07G

4+35.3, 1.8'LT.
105.93

4+46.6, 0.66'LT.
106.13C
105.88G

TEL

+89.5
20.9'LT.

+72.4
22.9'LT.

+75.8
11.0'LT.

+41.5
12.1'LT.

VARIES

02 +50 03 +50 04 +50 05 +00.00 06 T/L +50 07

R/W

+73.0
1.3'LT.

3+75.3, 7.6'LT.
106.48

4+5.6, 1.9'LT.
106.04G

FULL CW

+49.8
11.7'RT.

106.11C
105.53G

CTR. 03.0'R=
+07.5-23.6'RT.

CTR. 2.0'R=
+51.2-15.3'RT.

+61.0
14.4'RT.

+04.0
19.2'LT.

+87.0
9.8'LT.

+37.1
20.8'RT.

CTR. 02.0'R=
+90.4-29.2'RT.

CTR. 02.0'R=
+49.1-23.0'RT.

106.01C
105.43G

CTR. 1.5'R=
+6.6-3.1'LT.

7CR

WALL

+32.1
14.7'RT.

CTR. 02.0'R=
+46.6-01.3'RT.

+40.5, 27.6'RT.
105.05

+50.4, 26.5'RT.
105.13C
104.80G

BEGIN PROJECT
STA. 02+05.0 T/L

#2725

176.35
388-1526-110

CTR. 30.0'R=
+26.3-68.1'RT.

+53.6
55.8'RT.

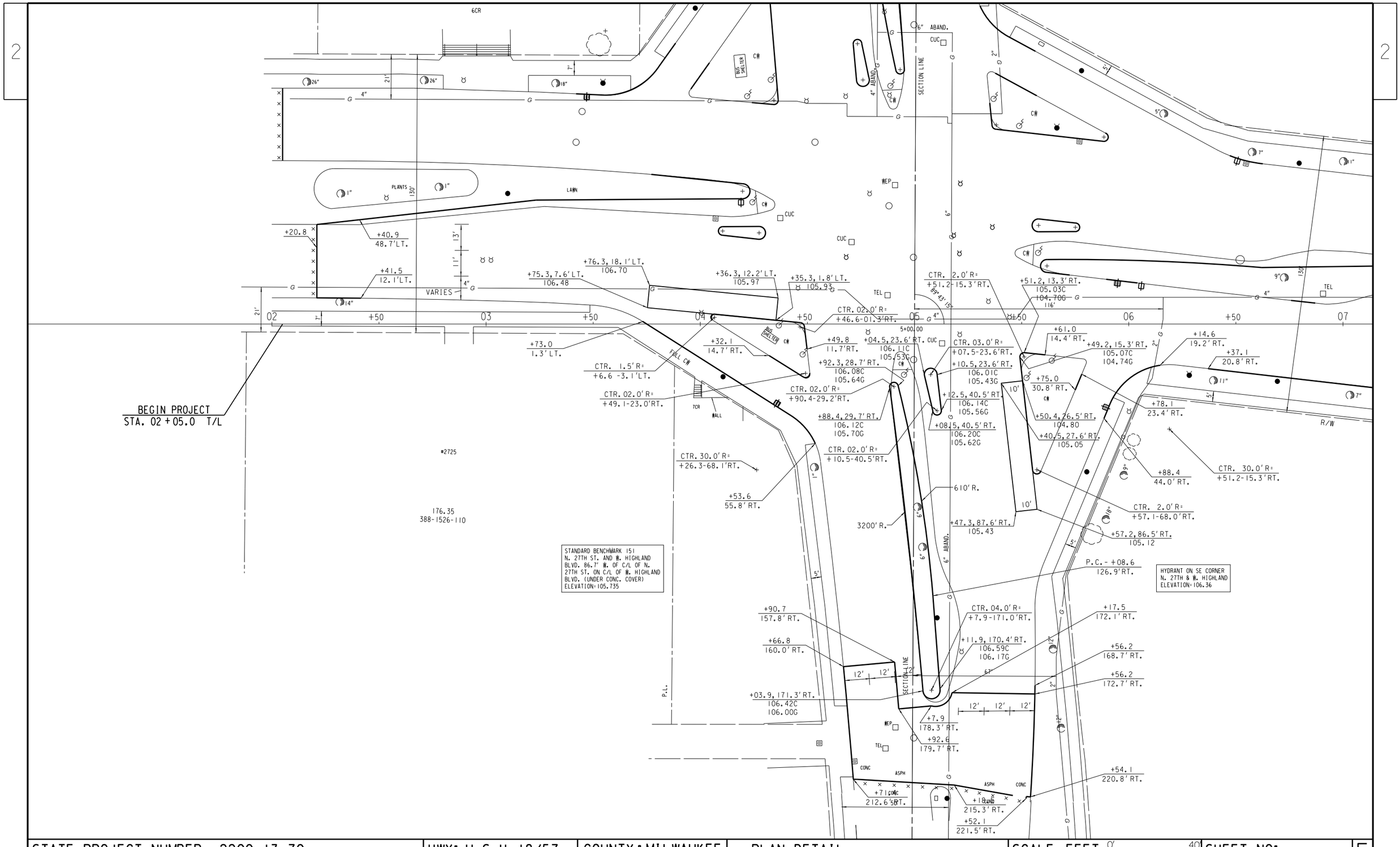
STANDARD BENCHMARK 151
N. 27TH ST. AND W. HIGHLAND BLVD. 86.7' W. OF C/L OF N. 27TH ST. ON C/L OF W. HIGHLAND BLVD. (UNDER CONC. COVER)
ELEVATION=105.735

HYDRANT ON SE CORNER
N. 27TH & W. HIGHLAND
ELEVATION=106.36

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	PLAN DETAIL	SCALE FEET 0' 40	SHEET NO: 77	E

FILENAME: W:\SPR\HIGHLAND_27-12\PDET 01-07.DGN

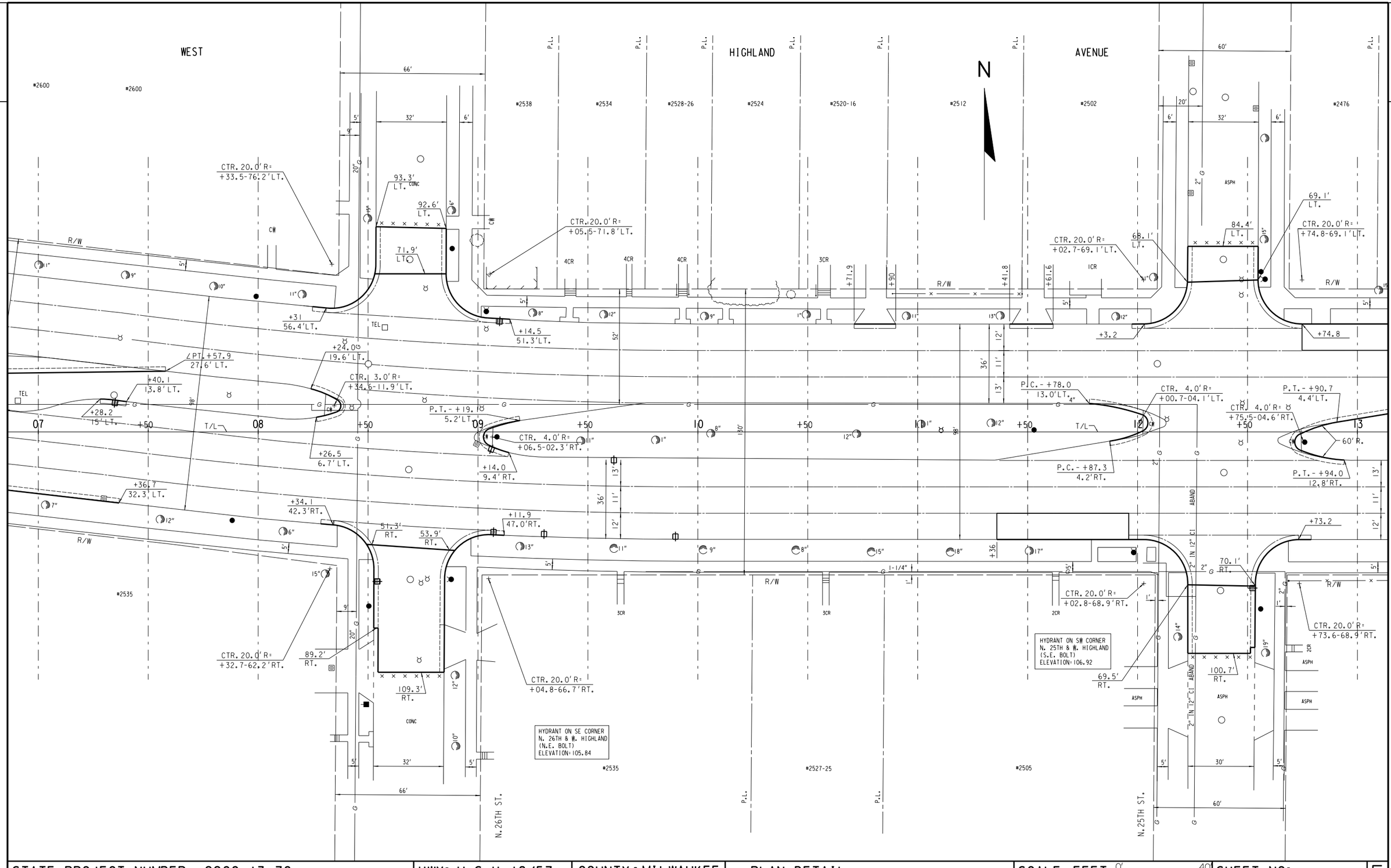
REVISED DATE: 04-25-2016 BY SB



STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	PLAN DETAIL	SCALE FEET 0' 40'	SHEET NO: 78	E

FILENAME: W:\SPR\HIGHLAND_27-12\PDET 01-07.DGN

REVISED DATE: 04-25-2016 BY SB



STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	PLAN DETAIL	SCALE FEET 0' 40	SHEET NO: 79	E

FILENAME: W:\SPR\HIGHLAND_27-12\PDET 07-13.DGN

REVISED DATE: 04-14-2016 BY ML

WEST HIGHLAND AVENUE

N. 24TH PL.

N

#2476 | #2472-70 | #2466-64 | #2460-58 | #2456-54 | #2452-52A | #2452-52A | #2422 | #2418-16 | #2414 | #2410-08 | #2406 | #1115 N. 24TH ST.

#2300 MILWAUKEE HIGH SCHOOL OF THE ARTS

P.L.

40' | 26' | 5' | 5' | 60' | 6' | 34' | 6' | 20'

5' ASPH 2" IN 4" CI ABAND

92.9' LT.

63.6' LT.

62.6' LT.

CTR. 15.0' R= +84.8-64.0' LT.

CTR. 15.0' R= +40.9-64.0' LT.

CTR. 25.0' R= +45.2-74.0' LT.

CTR. 25.0' R= +29.3-74.0' LT.

CONC

FULL CW

CUC

R/W

CW 3CR 2CR 3CR 2CR 3CR 2CR 2CR 4CR 5CR

15" 14" 9" 11" 14" 11" 7" 18" 16" 13" 1"

+25 +74.9 +63.8 57.8' LT.

+35.0 11.7' LT.

CTR. 3.0' R= +85.0-09.8' LT.

CTR. 13.0' R= +48.4-00.1' RT.

P.C.- +27.5 12.8' LT.

CTR. 3.0' R= +50.4-05.0' LT.

P.T.- +46.4 02.7' LT.

60' R.

13 14 15 16 17 18 19

T/L

P.T.- +09.3 13.0' LT.

+15.0 12.1' RT.

+52.8 6.2' RT.

P.C.- +58.8 05.2' RT.

+39.8 4.1' RT.

P.C.- +27.5 2.8' RT.

CTR. 3.0' R= +23.3-05.2' RT.

P.T.- +46.3 13.0' RT.

+62.0 +54.4 +82 +50 +60 +49

36' 11' 12' 13' 10' 46'

+6.1 +25.6 +33.6 +88.1 +34.4

20" 10" 1" 13" 1" 10" 5" 12" 10" 9"

GATE 2CR 2CR CW CW

HYDRANT ON SW CORNER N. 24TH & W. HIGHLAND ELEVATION= 108.77

CTR. 20.0' R= +49.7-69.1' RT.

CTR. 20.0' R= +23.9-69.2' RT.

ATC ATC

CONC

30" 16" 11" 24" 4" 23

#1040 N. 25TH ST. | #2459 | #2449 | #2425 | #2417 | #2405 | #1036 N. 24TH ST.

N. 24TH ST.

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	PLAN DETAIL	SCALE FEET 0' 40'	SHEET NO: 80	E

FILENAME: W:\SPR\HIGHLAND_27-12\PDET 13-19.DGN

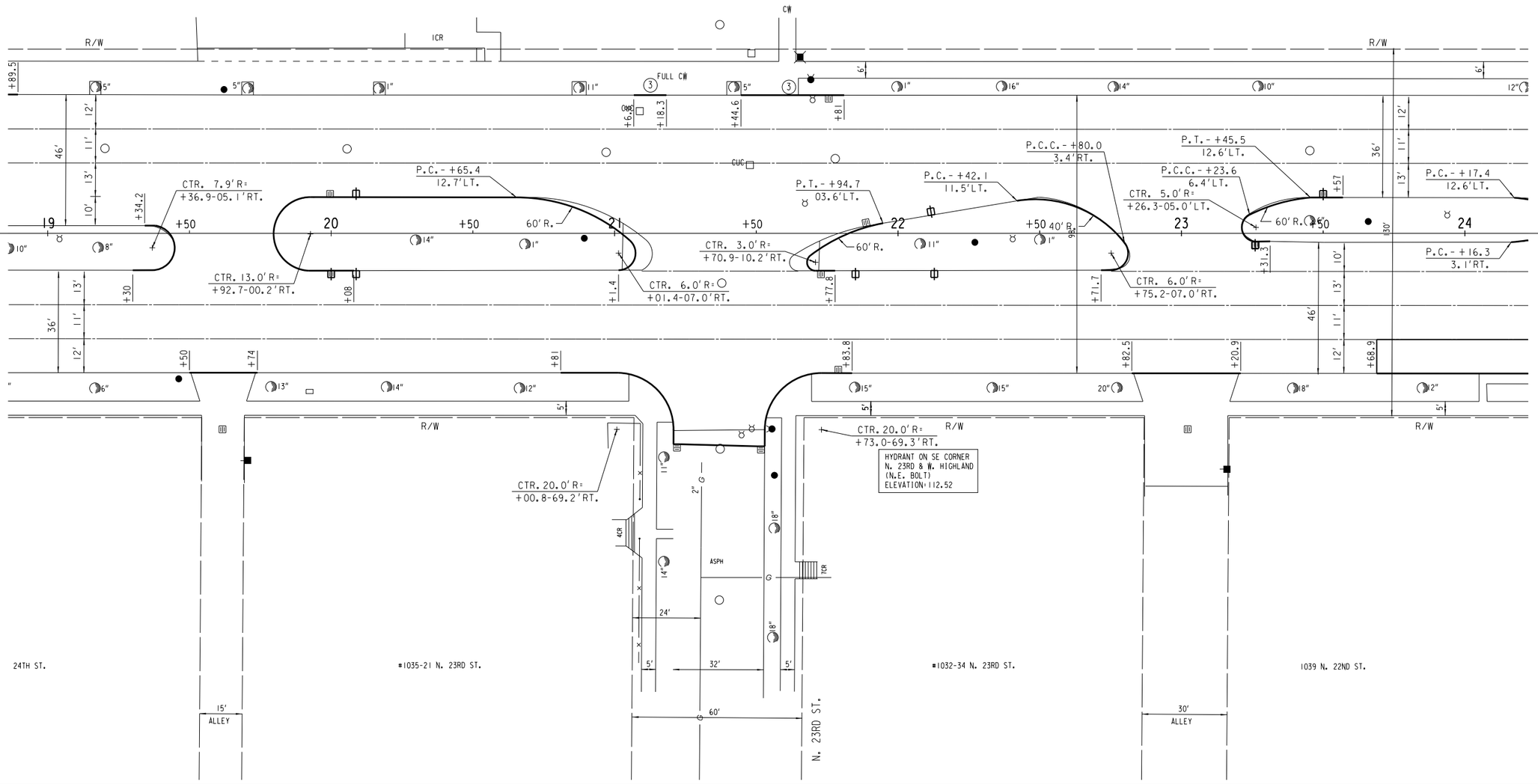
REVISED DATE: 04-18-2016 BY SB

2

WEST HIGHLAND AVENUE

N

#2300
MILWAUKEE HIGH SCHOOL OF THE ARTS



STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	PLAN DETAIL	SCALE FEET 0' 40'	SHEET NO: 81	E

FILENAME: W:\SPR\HIGHLAND_27-12\PDET 19-24.DGN

REVISED DATE: 04-14-2016 BY ML

WEST HIGHLAND AVENUE

N

#2132 #2126 #2122 #2114-12 #2104 #1102 N. 21ST ST. #2024

30' ALLEY

60' 32' 6' 26" ASPH 2" IN 4" ABAND FULL CW 17" 2" 6' 5' 8' 2" R/W 5CR 4CR 4CR 5CR 2CR 2CR 1CR 2" 16" 19" 13" 6' 30' 6' 19" 16" 12" RAMP 5CR 2CR 4CR WALL 18" 12"

CTR. 25.0' R= +29.0-73.7' LT.

CTR. 25.0' R= +11.1-73.7' LT.

CTR. 20.0' R= +69.5-68.5' LT.

CTR. 20.0' R= +39.7-68.7' LT.

+29.9 48.7' LT.

+12 48.7' LT.

WEP CUS TEL

CTR. 4.0' R= +69.5-04.0' LT.

P.C. - +17.4 12.6' LT.

CTR. 3.0' R= +35.8-04.8' LT.

P.T. - +28.5 2.4' LT.

+33 +52.5 +72 +99.4

CTR. 8.0' R= +03.1-05.4' RT.

+34.4 +45.4 +67.0 9.2' LT.

+66.9 1.15' RT.

P.C.C. - +37 1.1' RT.

+90.0 0.8' LT.

+93.0 2.0' RT.

24 60' R. T/L +50 25 +50 26 +50 27 +50 28 +50 29 T/L +50 30

P.C. - +16.4 3.1' RT.

60' R. 1" 10" 1" 4" 1" P.T. - +62.5 13' RT. 12" 98'

CTR. 3.0' R= +05.6-05.5' RT.

P.T. - +28.4 13.3' RT.

+31 +94.2

+69.2 12.6' RT. +74.5

+31.4 08.2' RT.

+47.2 05.6' RT.

CTR. 4.0' R= +38.3-04.9' RT.

P.C.C. - +37 8.7' RT.

46' 36' 12' 11' 13' 10' 12' 36' 11' 13' 12' 13' 36' 11' 13' 12'

+11.1 +21.5 +49.1 +61.5 +65.5 +31.5 +39.6 +53.8 +82.8

12" +29.9 48.7' LT. 16" 17" 15" 18" 12"

15" 15" 14" 10" 20" 22"

HYDRANT ON SE CORNER N. 22ND & W. HIGHLAND ELEVATION=115.06

CTR. 25.0' R= +11.4-74.7' RT.

CTR. 25.0' R= +28.9-74.5' RT.

CTR. 20.0' R= +67.5-69.6' RT.

HYDRANT ON SE CORNER N. 21ST & W. HIGHLAND ELEVATION=109.56

CTR. 20.0' R=

#1036 N. 22ND ST. #1035 ADJ N. 21ST ST. #1038 N. 21ST ST.

N. 22ND ST. N. 21ST ST.

20' ALLEY 20' ALLEY

ASPH 2" IN 4" ABAND 14" 18" 23" 24" 4CR 5CR 32' 5' 23" 60' 6CR 4' 3CR 5" 20' 60'

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	PLAN DETAIL	SCALE FEET 0' 40'	SHEET NO: 82	E

FILENAME: W:\SPR\HIGHLAND_27-12\PDET 24-30.DGN

REVISED DATE: 04-14-2016 BY ML

WEST HIGHLAND AVENUE

N

#2004 #1924-1812

60' 1/4 SECTION LINE

CONC

CTR. 20.0' R= +95.4-69.0' LT. 3CR

CTR. 20.0' R= +73.4-69.1' LT.

HYDRANT ON N/S OF W. HIGHLAND BLVD. @ 34+99 ELEVATION=97.52

IRON FENCE

WALL R/W CUC CW WEP

P.C.- +75.0 12.8' LT. CTR. 4.0' R= +95.2-05.0' LT.

P.C.- +75.0 2.7' RT.

180° 00' 15"

CTR. 4.0' R= +72.0-05.0' RT.

P.T.- +90.8 02.9' LT.

P.T.- +91.7 12.9' RT.

+80.3 0.9' RT.

+21.7 10.2' RT.

CTR. 13.0' R= +30.2-00.0' RT.

+21.5 9.5' RT.

+26.2 12.6' RT.

+30.2 13.0' RT.

30 32 33 34 35 36

T/L LAWN

CTR. 20.0' R= +93.1-69.3' RT.

CTR. 20.0' R= +73.4-69.4' RT.

3CR

1/4 SECTION LINE

SEWER & WATER EASEMENT

GAS CO. EASEMENT

20' PED-WAY

ASPH

N. 20TH ST.

#1037 N. 20TH ST. #1933 #1925 #1917 #1917 #1903 #1835 #1827

P.L.

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	PLAN DETAIL	SCALE FEET 0' 40'	SHEET NO: 83	E

FILENAME: W:\SPR\HIGHLAND_27-12\PDET 30-36.DGN

REVISED DATE: 04-14-2016 BY ML

WEST HIGHLAND AVENUE

N

#1706
MACDOWELL ELEMENTARY SCHOOL

N. 18TH ST.

N. 17TH ST.

CTR. 20.0' R=
+57.1-69.5'LT.

CTR. 20.0' R=
+31.0-69.9'LT.

CTR. 20.0' R=
+80.9-74.6'LT.

CTR. 7.0' R=
+59.2-75.3'LT.

+65.2
71.7'LT.

CTR. 6.0' R=
+56.5-07.5'LT.

CTR. 6.0' R=
+31.9-07.6'LT.

CTR. 6.0' R=
+83.5-04.1'LT.

P.T.- +63.5
13.8'LT.

P.C.- +27.2
3.9'LT.

P.T.- +65.0
12.4'RT.

CTR. 20.0' R=
+80.0-73.1'RT.

CTR. 8.0' R=
+52.7-78.5'RT.

+60.7
79.1'RT.

HYDRANT ON S/S OF W. HIGHLAND BLVD. @ W. 18TH ST.
ELEVATION=97.28

#1819 #1811 #1803 #1735 #1727 #1719 #1713 #1703

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	PLAN DETAIL	SCALE FEET 0' 40'	SHEET NO: 84	E

FILENAME: W:\SPR\HIGHLAND_27-12\PDET 36-41.DGN

REVISED DATE: 04-14-2016 BY ML

WEST HIGHLAND AVENUE

N

N. CALLAHAN PL.

#1600 #1516 #1512-10

CONC BLOCK PLANTER

CTR. 25.0' R=
+33.2-75.0' LT.

CTR. 20.0' R=
+79.8-68.8' LT.

CTR. 20.0' R=
+55.7-68.4' LT.

CTR. 6.0' R=
+30.2-02.2' RT.

+29.7
3.8' LT.

+30.2
8.7' RT.

+00.8
14.1' LT.

2" IN 4" CL 49.9
13.1' LT.

∠PT. +37.4
11.9' RT.

+60.6
7.5' RT.

CTR. 6.0' R=
+80.1-07.5' LT.

P.C. - +60.5
2.2' RT.

CTR. 3.0' R=
+55.0-01.0' RT.

+63.7
7.9' LT.

P.T. - +85.8
12.9' LT.

+76.5
12.0' LT.

+61
7.6' RT.

∠PT. +12.9
13.1' RT.

179° 40' 49"

HYDRANT ON SE CORNER OF N. 17TH ST. & W. HIGHLAND BLVD. ELEV. +95.27

CTR. 25.0' R=
+31.9-73.0' RT.

20' SEWER EASEMENT

25' SEWER & WATER EASEMENT

#1625 #1617 #1611 #1601 #1541 #1533 #1525 #1517

N. 17TH ST.

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	PLAN DETAIL	SCALE FEET 0' 40'	SHEET NO: 85	E

FILENAME: W:\SPR\HIGHLAND_27-12\PDET 41-47.DGN

REVISED DATE: 04-14-2016 BY ML

WEST HIGHLAND AVENUE

N

#1512-10 | #1506 | #1101-03 N. 15TH ST. | #1436 | #1434 | #1430-28 | #1424 | #1412 | #1101 N. 14TH ST. | #1340 | #1334

HYDRANT ON NW CORNER W. HIGHLAND BLVD. AND N. 14TH ST. ELEV.=94.70

CTR. 20.0' R= +93.0-69.1'LT.

CTR. 20.0' R= +63.0-69.3'LT.

CTR. 20.0' R= +66.4-69.3'LT.

CTR. 20.0' R= +36.9-69.2'LT.

CTR. 5.0' R= +92.0-08.0'LT.

∠PT. +30.5 12.7'LT.

P.T. - +75.8 3.7'LT.

+08 6.0'LT.

+22 11.3'LT.

CTR. 6.0' R= +90.1-06.9'LT.

CTR. 6.0' R= +38.3-06.9'LT.

CTR. 3.0' R= +68.1- 3.5'LT.

CTR. 3.0' R= +36.6- 0.0'LT.

+70.0 13.0'LT.

+43.0 12.9'LT.

+92.3 2.6'LT.

+78.1 2.3'RT.

+68.2 4.0'RT.

+22.2 11.7'RT.

∠PT. +12.9 13.1'RT.

CTR. 3.0' R= +61.2-03.8'RT.

P.T. - +86.6 12.9'RT.

+50.4 12.8'RT.

+85.1 4.7'RT.

+43 3.9'RT.

+3.9 11.8'RT.

+28.9 7.6'RT.

+49.7 4.2'RT.

+70.0 13.0'RT.

47 48 49 50 51 52 53

CTR. 20.0' R= +92.3-69.0'RT.

CTR. 20.0' R= +62.3-69.2'RT.

CTR. 20.0' R= +66.5-69.2'RT.

CTR. 20.0' R= +36.6-69.0'RT.

STANDARD BENCHMARK 77-14
N. 15TH ST. & W. HIGHLAND BLVD.
E. MEDIAN, 9.4' N. OF S. CURB
AND 18.5' E. OF NOSE.
ELEV.=91.995

#1511 | #1503 | #1435-07

N. 15TH ST. | N. 14TH ST.

SCOTT MIDDLE SCHOOL (CITY OF MILWAUKEE)

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	PLAN DETAIL	SCALE FEET 0' 40'	SHEET NO: 86	E

FILENAME: W:\SPR\HIGHLAND_27-12\PDET 47-53.DGN

REVISED DATE: 04-14-2016 BY ML

WEST

HIGHLAND

AVENUE

N. 13TH ST.

20' ALLEY

10' ALLEY

SECTION LINE

334 #1328 #1322 #1316 #1314-12 #1308 #1242 #1236 #1232-30 #1218 #1202

N

ASPH 60'

20' 19'

69.1' LT.

CTR. 15.0' R= +42.4-64.0' LT.

CTR. 15.0' R= +12.4-64.0' LT.

HYDRANT ON NE CORNER W. HIGHLAND BLVD. AND N. 13TH ST. ELEV.-96.07

70.4' LT.

+78.4 52.7' LT.

+92.5 61.6' LT.

+95.2 30.1' LT.

CTR. 7.0' R= +96.1-13.4' LT.

∠PT.+76.0 24.2' LT.

CTR. 7.5' R= +41.4- 9.0' LT.

+31.7 5.0' LT.

90°03'44"

57+71.80

+40.8 1.5' LT.

+21.6

+28.8 1.3' LT.

CTR. 3.0' R= +21.7- 4.0' RT.

+68.5 7.0' LT.

P.C. 60.0' R. +34.3- 2.0' LT.

∠PT.+60.2 2.0' LT.

CTR. 3.0' R= +42.8- 9.4' LT.

+29.5 13.1' RT.

+33.5 13.1' RT.

+67.7 6.0' RT.

CTR. 3.0' R= +03.5-10.0' RT.

∠PT.+07.0 0.0' LT.

P.C. 60.0' R. +17.5- 0.0' LT.

+88.4 44.9' RT.

P.C.C. +66.6 40.4' RT.

+67.7 48.5' RT.

+01.0 47.9' RT.

+39.0 5.9' RT.

+65.5 4.0' RT.

+69.5 3.7' RT.

P.T. 4932.9' R. +76.4-15.9' RT.

ELECTRIC BOXES

SCOTT MIDDLE SCHOOL
(CITY OF MILWAUKEE)
1017 N. 12TH ST.

53 54 55 56 57 58 59 T/L +50

R/W ASPH P.L. FULL ENT CW G

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	PLAN DETAIL	SCALE FEET 0' 40'	SHEET NO: 87	E

FILENAME: W:\SPR\HIGHLAND_27-12\PDET 53-59.DGN

WEST HIGHLAND AVENUE

N

1202

14'

FULL CW

R/W

ENT ICR

FULL CW

+92.5
61.6' LT.

+95.2
30.1' LT.

CTR. 2.0' R=
+40.6-32.5 LT.

END PROJECT
STA. 59 + 64.5 T/L

CUC

CUC

WEP

CUC

6"

40'

59 +50 60 +50 61

T/E

BUS SHELTER

R/W

CTR. 15.0' R=
+47.2-24.1' LT.

15" PLANTS & BUSHES

+62.3
31.0' RT.

FULL CW

8"

HYDRANT ON SE. CORNER
W. HIGHLAND BLVD. AND
N. 12TH ST. ELEV.=91.51

16'

WEP

N. 12TH ST.

70'

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	PLAN DETAIL	SCALE FEET 0' 40'	SHEET NO: 88	E

FILENAME: W:\SPR\HIGHLAND_27-12\PDET 59-63.DGN

2

2

2

WEST HIGHLAND BOULEVARD

WEST HIGHLAND AVENUE

N

BEGIN PROJECT 2265-00-74
320.2' LT. OF T/L

N. 27TH ST.

69' (6"GAS)

G – 6" ABAND.

+10.8, 172.2'LT.
+6.0, 175.1'LT.
+4.1, 162.9'LT.
+.13, 165.8'LT.

+85.7, 137.3'LT.
+81.9, 140.2'LT.

+29.8, 234.3'LT.
+34.8, 234.3'LT.

388-1820
150.26

389-0947-100

P.L.

123.7'LT.
123.1'LT.
+45.3
+70.3
+19.9
+67.4

6CR

R/W

BIG GULLY

SECTION LINE

6" ABAND. CUC

4" ABAND.

+67.2, 172.2'LT.
+64.8, 172.2'LT.

BEGIN PROJECT
STA. 02+05.0 T/L

PLANTS

LAWN

CUC

WEP

TEL

85°43'15"

116'

5+00.00

02 +50 03 +50 04 +50 05 +50 06 +50 07

FULL CW

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	REMOVAL PLAN	SCALE FEET 0' 40'	SHEET NO: 89	E

FILENAME: W:\SPR\HIGHLAND_27-12\REMO1-07.DGN

REVISED DATE: 04-25-2016 BY SB

2

+10.8, 172.2' LT.
+6.0, 175.1' LT.
+4.6, 173.8' LT.
+4.1, 162.9' LT.
+0.13, 165.8' LT.
+85.7, 137.3' LT.
+81.9, 140.2' LT.

N. 27TH ST.

69' (6"GAS)

G – 6" ABAND.

388-1820
150.26

389-0947-100

N

WEST HIGHLAND BOULEVARD

WEST HIGHLAND AVENUE

#2600

P.L.

R/W

123.7' LT.
+45.3
+70.3
+19.9
123.1' LT.
+67.4

6CR

+67.2, 172.2' LT.
+64.8, 172.2' LT.

6" ABAND.

CUC

4" ABAND.

SECTION LINE

BEGIN PROJECT
STA. 02 + 05.0 T/L

PLANTS

LAWN

WEP

TEL

+48.5

02 +50 03 +50 04 +50 05 +50 06 +50 07

5+00.00

69° 43' 15"

116'

+71.0
+61.6

7CR

WALL

#2725

+37.5, 49.7' RT.
+
+45.1, 66.0' RT.
+50.1, 66.0' RT.

+10.5

+11.7, 28.1' RT.
+11.7, 33.2' RT.
+0.03, 44.3' RT.
+95.6, 42.4' RT.

STANDARD BENCHMARK 151
N. 27TH ST. AND W. HIGHLAND BLVD. 86.7' W. OF C/L OF N. 27TH ST. ON C/L OF W. HIGHLAND BLVD. (UNDER CONC. COVER)
ELEVATION= 105.735

HYDRANT ON SE CORNER
N. 27TH & W. HIGHLAND
ELEVATION= 106.36

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	REMOVAL PLAN	SCALE FEET 0' 40'	SHEET NO: 90	E

FILENAME: W:\SPR\HIGHLAND_27-12\REM01-07.DGN

REVISED DATE: 04-25-2016 BY SB

WEST HIGHLAND BOULEVARD

WEST HIGHLAND AVENUE

N

BEGIN PROJECT
STA. 02+05.0 T/L

02 03 04 05 06 07

+50

5+00.00

R/W

#2725

176.35
388-1526-110

STANDARD BENCHMARK 151
N. 27TH ST. AND W. HIGHLAND BLVD. 86.7' W. OF C/L OF N. 27TH ST. ON C/L OF W. HIGHLAND BLVD. (UNDER CONC. COVER)
ELEVATION=105.735

HYDRANT ON SE CORNER
N. 27TH & W. HIGHLAND
ELEVATION=106.36

+37.5, 49.7' RT.
+45.1, 66.0' RT.
+50.1, 66.0' RT.
+68.5, 178.3' RT.
+58.1, 178.7' RT.
+57.8, 185.3' RT.
+59.0, 206.2' RT.
+60.5, 211.8' RT.
+71.3, 211.4' RT.
+11.7, 28.1' RT.
+11.7, 33.2' RT.
+0.03, 44.3' RT.
+95.6, 42.4' RT.

N. 27TH ST.

P.L.

SECTION LINE

89° 43' 15"

116'

67'

50'

Ⓙ SAW CONC.

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	REMOVAL PLAN	SCALE FEET 0' 40'	SHEET NO: 91	E

FILENAME: W:\SPR\HIGHLAND_27-12\REM01-07.DGN

REVISED DATE: 04-25-2016 BY SB

2

WEST

HIGHLAND

AVENUE

N

#2600 #2600 #2538 #2534 #2528-26 #2524 #2520-16 #2512 #2502 #2476

#2535 #2535 #2527-25 #2505

P.L.

66′ 60′ 32′ 20′ 6′ 5′

101.4′LT. 75.6′LT. 71.0′LT. 71.8′LT.

60.7′RT. 66.5′RT. 80.0′RT. 89.0′RT.

+42.0 +67.5 +60.2 +9.0 +57.9 +35.6 +2.0 +80.8 +95.8 +45.3 +26.9 +42.1 +57.1 +79.0 +81.8 +97.6 +99.3 +4.3 +73.6

4CR 3CR 2CR 1CR

CONC ASPH

CW TEL

07 +50 08 +50 09 +50 10 +50 11 +50 12 +50 13

HYDRANT ON SE CORNER
N. 26TH & W. HIGHLAND
(N.E. BOLT)
ELEVATION=105.84

HYDRANT ON SW CORNER
N. 25TH & W. HIGHLAND
(S.E. BOLT)
ELEVATION=106.92

2" TN 12" CI ABAND

2" IN 12" CI ABAND

N. 26TH ST.

N. 25TH ST.

(J) SAW CONC.

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	REMOVAL PLAN	SCALE FEET 0′ 40′	SHEET NO: 92	E

FILENAME: W:\SPR\HIGHLAND_27-12\REM07-13.DGN

REVISED DATE: 04-28-2016 BY SB

WEST HIGHLAND AVENUE

N. 24TH PL.

#2476 #2472-70 #2466-64 #2460-58 #2456-54 #2452-52A #2452-52A #2422 #2418-16 #2414 #2410-08 #2406 #1115 N. 24TH ST.

#2300 MILWAUKEE HIGH SCHOOL OF THE ARTS

N

97.2' LT.

97.2' LT.

94.6' LT.

83.8' LT.

2" IN 4" CI ABAND

ASPH

CONC

+79.8 +46.6 +40.0 +60.0 +41.1 +64.6

13 14 15 16 17 18 19

+50

4'

3'

J

68.8' RT.

68.8' RT.

GATE

+72.4 +89.0 +19.5 +5.2 +84.9 +98.9 +19.9 +21.6 +24.3 +41.7 +50.3 +46.7 +49.0

HYDRANT ON SW CORNER
N. 24TH & W. HIGHLAND
ELEVATION= 108.77

79.5' RT.

94.4' RT.
CONC

J SAW CONC.

#1040 N. 25TH ST. #2459 #2449 #2425 #2417 #2405 #1036 N. 24TH ST.

N. 24TH ST.

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	REMOVAL PLAN	SCALE FEET 0' 40'	SHEET NO: 93	E

FILENAME: W:\SPR\HIGHLAND_27-12\REM13-19.DGN

REVISED DATE: 04-28-2016 BY SB

WEST HIGHLAND AVENUE

N

#2300
MILWAUKEE HIGH SCHOOL OF THE ARTS

97.2' LT.

2" IN 4" ABAND

R/W

ICR

CW

FULL CM

CUC

19 20 21 22 23 24

+50

3.5'

+48.3

98'

150'

#1036 N. 24TH ST.

#1035-21 N. 23RD ST.

#1032-34 N. 23RD ST.

1039 N. 22ND ST.

N. 23RD ST.

N. 22ND ST.

15' ALLEY

30' ALLEY

74.0' RT.

76.1' RT.

59.3' RT.

HYDRANT ON SE CORNER
N. 23RD & W. HIGHLAND
(N.E. BOLT)
ELEVATION=112.52

ASPH

4CR

7CR

5CR

24'

32'

60'

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	REMOVAL PLAN	SCALE FEET 0' 40'	SHEET NO: 94	E

FILENAME: W:\SPR\HIGHLAND_27-12\REM19-24.DGN

REVISED DATE: 04-28-2016 BY SB

389-1149 40 | 389-1150 40 | 389-1151 40 | 389-1152-100 61 | 389-1154-100 62.36 | 389-1014-100 66 | 389-1014-200 29 | 389-1016-100-5 175

2

WEST HIGHLAND AVENUE

N

#2132 | #2126 | #2122 | #2114-12 | #2104 | #1102 N. 21ST ST. | #2024

30' ALLEY

60' | 32' | 30' | 6' | ASPH | 2" IN 4" ABAND | RAMP | WALL | R/W | FULL CM | 5' | 8' | 2" | 16" | 17" | 15" | 18" | 12" | 19" | 13" | 26" | 17" | 2" | 19" | 16" | 12" | 5CR | 4CR | 2CR | 1CR | 6CR | 3CR | CW

96.8' LT. | 86.5' LT. | 88.8' LT. | 100.3' LT.

+33.0 | +23.4 | +38.9 | +57.2 | +97.5 | +2.6 | +57.7 | +45.6 | +81.9 | +49.9 | +84.6

WEP | CUC | TEL

24 | 25 | 26 | 27 | 28 | 29 | 30 | +50 | 2.8' | 6.5' | 3.5' | 98'

(J) SAW CONC.

HYDRANT ON SE CORNER
N. 22ND & W. HIGHLAND
ELEVATION= 115.06

HYDRANT ON SE CORNER
N. 21ST & W. HIGHLAND
ELEVATION= 109.56

79.1' RT. | 73' RT. | 76.1' RT.

+0.1 | +5.0 | +7.8 | +58.2 | +45.3 | +84.9 | +94.9 | +38.2 | +53.5

#1036 N. 22ND ST. | #1035 ADJ N. 21ST ST. | #1038 N. 21ST ST.

N. 22ND ST. | N. 21ST ST.

20' ALLEY

123.28
389-1104-100

125
389-1135-100

128.36
389-1122-100

125
389-1034-100

125
389-1025-110-1

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	REMOVAL PLAN	SCALE FEET 0' 40'	SHEET NO: 95	E

FILENAME: W:\SPR\HIGHLAND_27-12\REM24-30.DGN

REVISED DATE: 04-27-2016 BY SB

2

WEST HIGHLAND AVENUE

N

#2004

#1924-1812

60'

1/4 SECTION LINE

16'

6'

38'

5'

???

CONC

(J) SAW CONC.

3CR

WALL

R/W

CUC

CW

IRON FENCE

HYDRANT ON N/S OF W. HIGHLAND BLVD. @ 34+99 ELEVATION=97.52

WEP

+99.6

+11.2

+57.5

+69

30 31 32 33 34 35 36

+50

LAWN

31+33.96

180° 00' 15"

+60.9

+72.9

+82.8

+93.4

+99.4

+32.9

90.7' RT.

102.9' RT.

25' SEWER & WATER EASEMENT

GAS CO. EASEMENT

SEWER & WATER EASEMENT

20' PED-WAY

#1037 N. 20TH ST.

#1933

#1925

#1917

#1917

#1903

#1835

#1827

ASPH

N. 20TH ST.

P.L.

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	REMOVAL PLAN	SCALE FEET 0' 40'	SHEET NO: 96	E

FILENAME: W:\SPR\HIGHLAND_27-12\REM30-36.DGN

REVISED DATE: 04-27-2016 BY SB

WEST

HIGHLAND

AVENUE

N. 18TH ST.

N

#1706
MACDOWELL ELEMENTARY SCHOOL

(J) SAW CONC.

HYDRANT ON S/S OF W. HIGHLAND BLVD. @ W. 18TH ST.
ELEVATION=97.28

N. 17TH ST.

#1819 #1811 #1803 #1735 #1727 #1719 #1713 #1703

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	REMOVAL PLAN	SCALE FEET 0' 40'	SHEET NO: 97	E

FILENAME: W:\SPR\HIGHLAND_27-12\REM36-41.DGN

REVISED DATE: 04-26-2016 BY SB

WEST HIGHLAND AVENUE

N

N. CALLAHAN PL.

J SAW CONC.

HYDRANT ON SE CORNER OF N. 17TH ST. & W. HIGHLAND BLVD. ELEV.: 95.27

N. 17TH ST.

20' SEWER EASEMENT

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	REMOVAL PLAN	SCALE FEET 0' 40'	SHEET NO: 98 E

FILENAME: W:\SPR\HIGHLAND_27-12\REM41-47.DGN

REVISED DATE: 04-27-2016 BY SB

390-0185 40 | 390-0184 25 | 390-0183 50 | 390-0153 35 | 390-0151-120-7 30 | 390-0151-110-X 42.5 | 390-0150 42.5 | 390-0148-100 70.65 | 390-0147 72.39 | 390-0557 37.5 | 390-0556 37.5

2

WEST HIGHLAND AVENUE

P.L. P.L. P.L. P.L. P.L. P.L. P.L. P.L.

20' ALLEY

#1512-10 | #1506 | #1101-03 N. 15TH ST. | #1436 | #1434 | #1430-28 | #1424 | #1412 | #1101 N. 14TH ST. | #1340 | #1334

N

HYDRANT ON NW CORNER
W. HIGHLAND BLVD. AND
N. 14TH ST. ELEV.=94.70

60' 30' 6' 6' 2" G 3" 3' 5' 7' 6" 10" 13" 7" 6" 24" 12" 18" 20" 17" 1" 9CR 10CR 5CR 1CR

ASPH R/W GRAVEL CW UNKNOWN CUC CONC

70.5' LT | 61.1' LT | 80' LT | 61.0' LT. | 79.2' LT. | 81.9' LT. | 74.2' LT. | 60.5' LT. | 61.6' LT.

+16.2 +86.1 +95.0 +48.5 +70.5 +98 +16.0 +66.0 +99.0 +6.4 +7.7

47 48 49 50 51 52 53

+50 +63 +50.2 4.5' 3.5' 3' 180' 98' 1"

(J) SAW CONC.

R/W 25' SEWER & WATER EASEMENT 40 3" 11" 10" 12" 18" 2" 7" 5' 3X4" 3CR 6" 5X2" RR TIE 3" 12" 15" 13" 2" 12" 3" 6" 12"

+49 +64.2 +99 +14.2 +9.0 +14.2 +60.6 +37.3

64.0' RT | 74.8' RT | 73.8' RT | 64.2' RT. | 70.5' RT. | 69.1' RT.

WALK

STANDARD BENCHMARK 77-14
N. 15TH ST. & W. HIGHLAND BLVD.
E. MEDIAN, 9.4' N. OF S. CURB
AND 18.5' E. OF NOSE.
ELEV.=91.995

#1511 | #1503 | #1435-07

SCOTT MIDDLE SCHOOL
(CITY OF MILWAUKEE)

N. 15TH ST. N. 14TH ST.

50 390-1164 | 55 390-1165 | 313.99 390-0011-100

391-0237-110-4

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	REMOVAL PLAN	SCALE FEET 0' 40'	SHEET NO: 99	E

FILENAME: W:\SPR\HIGHLAND_27-12\REM47-53.DGN

REVISED DATE: 04-27-2016 BY SB

WEST

HIGHLAND AVENUE

N. 13TH ST.

SECTION LINE

P.L.

20' ALLEY

10' ALLEY

#1328 #1322 #1316 #1314-12 #1308 #1242 #1236 #1232-30 #1218 #1202

334

173.7' LT.
+49.9
168.6' LT.

ASPH 60'

20' 19' X X X X X X

61.6' LT.
60.6' LT.
61.6' LT.
60.7' LT.
+65.4
+3.3
65.1' LT.
+95.9
60.6' LT.
70.4' LT.
+62.5, 63' LT.
+56.4, 55.6' LT.
+76.2, 63.2' LT.
+78.3, 61.2' LT.
+66.9
66.8' LT.
+36.8
63.7' LT.
+91.8
71' LT.
+87.2
71' LT.
70' LT.
+81.1
71.1' LT.
+67.1
71.1' LT.

HYDRANT ON NE CORNER
W. HIGHLAND BLVD. AND
N. 13TH ST. ELEV.=96.07

+99.0 +06.4 +07.7 +72.4 +81.6 +97.2 +08.1 +28.1 +09.4 +19.6 +35.9 +58.0 +04.2 +14.2 +28.9

8CR 3CR 9CR 4CR 8CR 3CR 8CR 3CR ENT ENT ENT ENT

R/W R/W FULL

13" 7" 3" 14" 18" 5" 7"

CW

G 20" G 3"

53 54 55 56 57 58 59

+50 +50 +50 +50 +50

130'

6" 8" 6" 1" 6" 4' 90° 03' 44"

WEP CONC +32 +42 +97 +28

16' RT

J

57+71.80

3' CW

3" 4" 1" 3" 10" 7" 3" 4" 1" 5"

R/W

+23.6 +28.6 +71.1 +95.3 +56.7 +91.7 +14.5 +22.4 +37.4 +52.8 +61.5 +76.4 +6.2 +51.3 +59.3 +5.4 +13.1 +00.4 +08.2 +42.1 +50 +83.9 +92.1 +0.2

ASPH ASPH CW CW

P.L.

ELECTRIC BOXES

SCOTT MIDDLE SCHOOL
(CITY OF MILWAUKEE)
1017 N. 12TH ST.

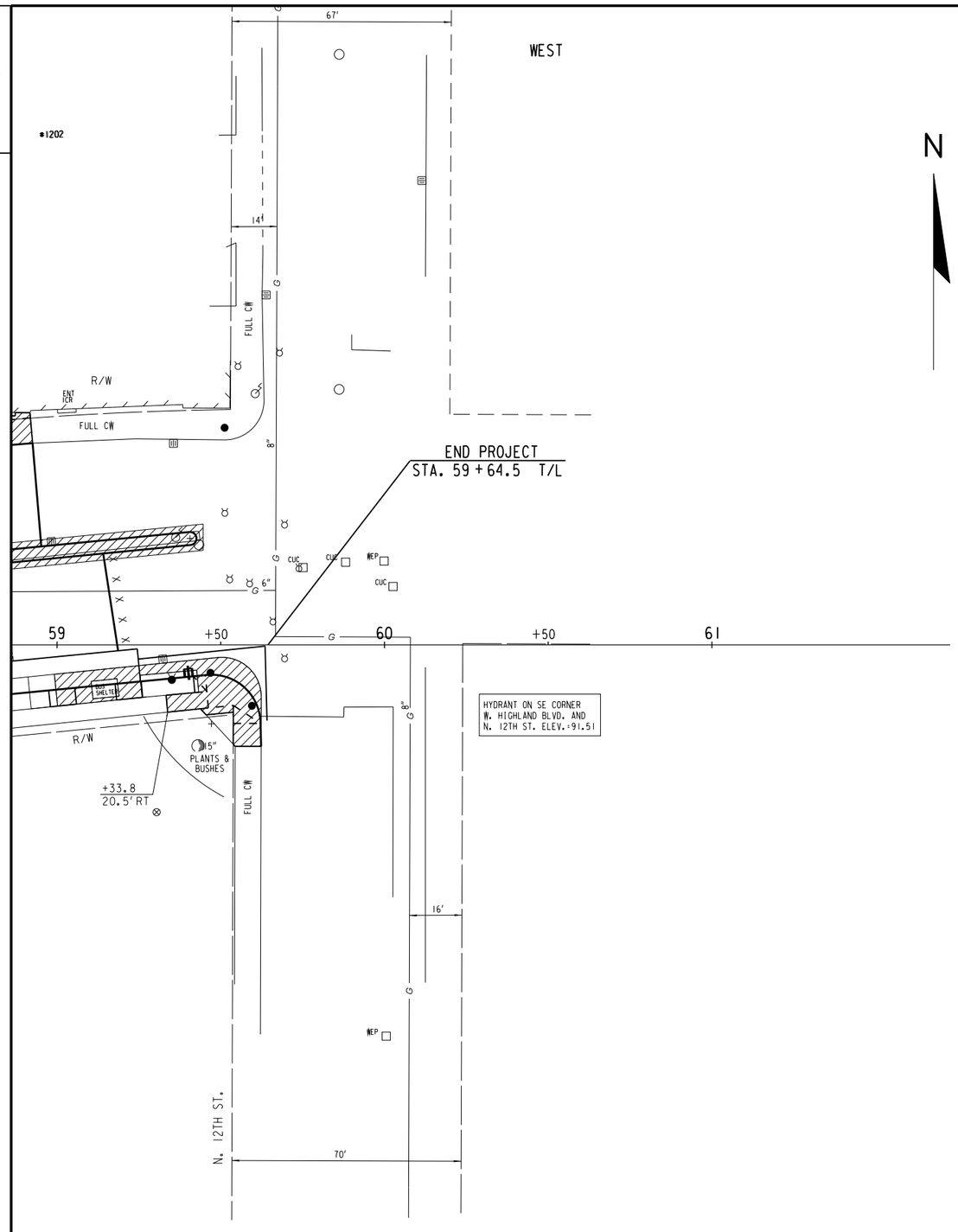
(J) SAW CONC.

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	REMOVAL PLAN	SCALE FEET 0' 40	SHEET NO: 100	E

FILENAME: W:\SPR\HIGHLAND_27-12\REM53-59.DGN

REVISED DATE: 04-27-2016 BY SB

WEST HIGHLAND AVENUE



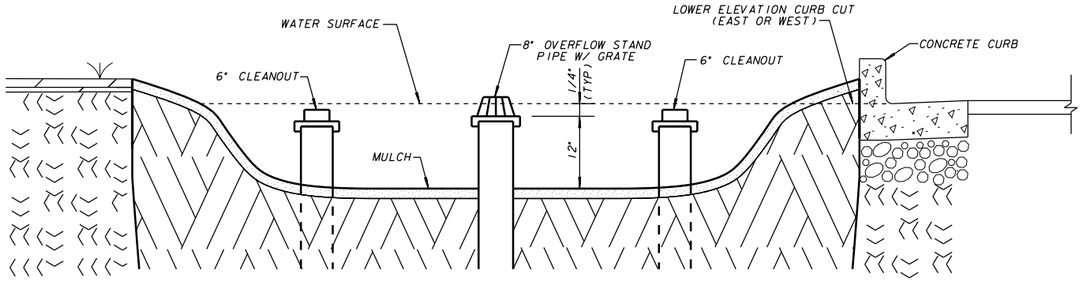
N

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	REMOVAL PLAN	SCALE FEET 0' 40'	SHEET NO: 101	E

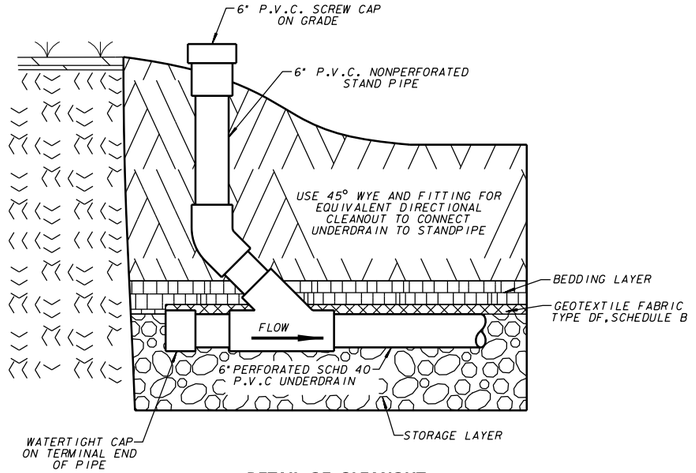
FILENAME: W:\SPR\HIGHLAND_27-12\REM59-63.DGN

REVISED DATE: 04-27-2016 BY SB

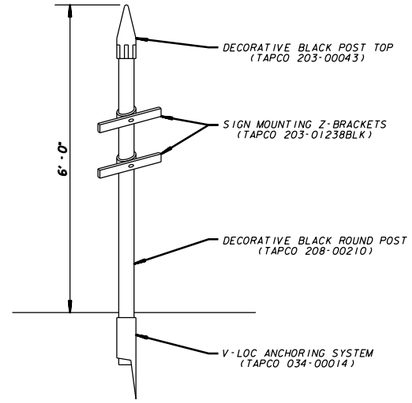
BIO-SWALE DETAILS



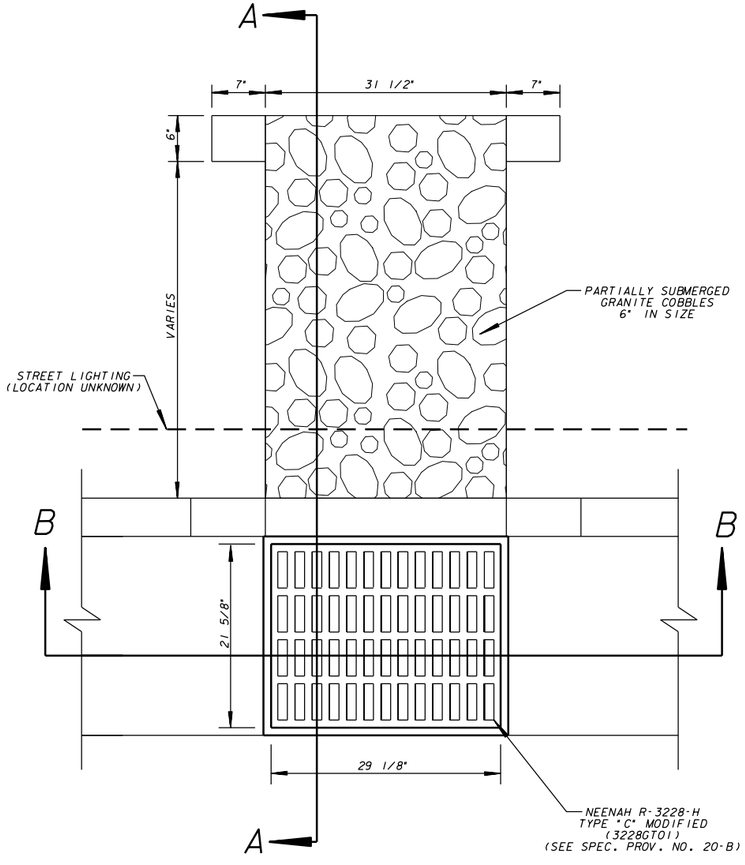
DETAIL OF 8" OVERFLOW STAND PIPE
SCALE • N.T.S.



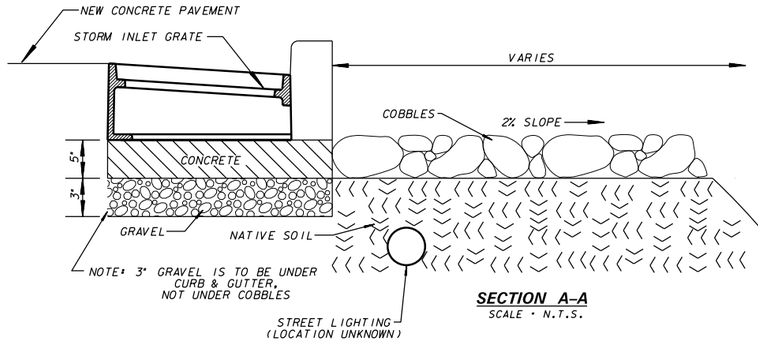
DETAIL OF CLEANOUT
SCALE • N.T.S.



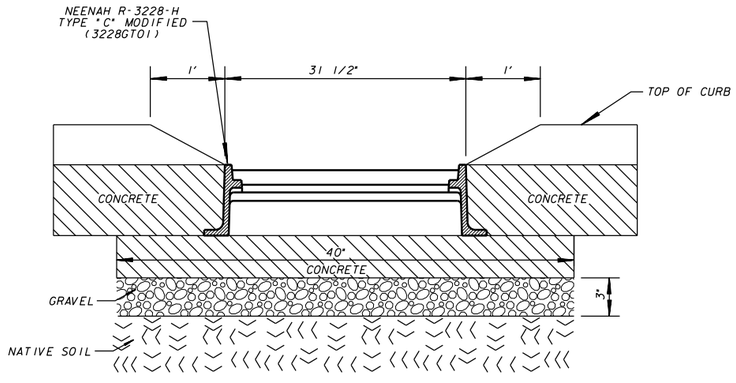
DETAIL OF INFORMATIONAL SIGN
SCALE • N.T.S.



STORM CURB INLET WITH GRATE TYPE "A"
SCALE • N.T.S.

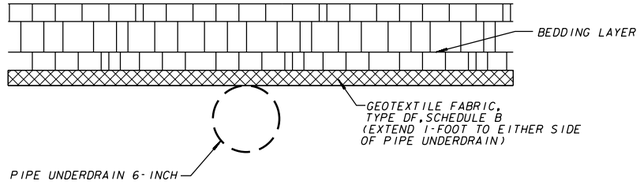


SECTION A–A
SCALE • N.T.S.



SECTION B–B
SCALE • N.T.S.

NOTE: MULCH IS INCIDENTAL TO THE BIOSWALE PLANTINGS. SEE BIOSWALE PLANTS

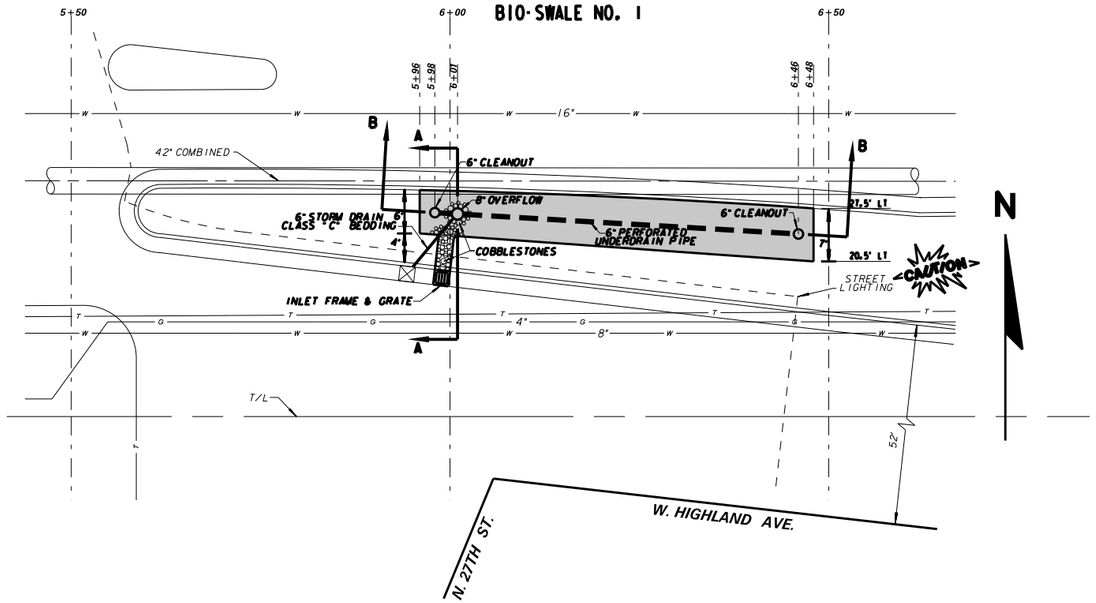


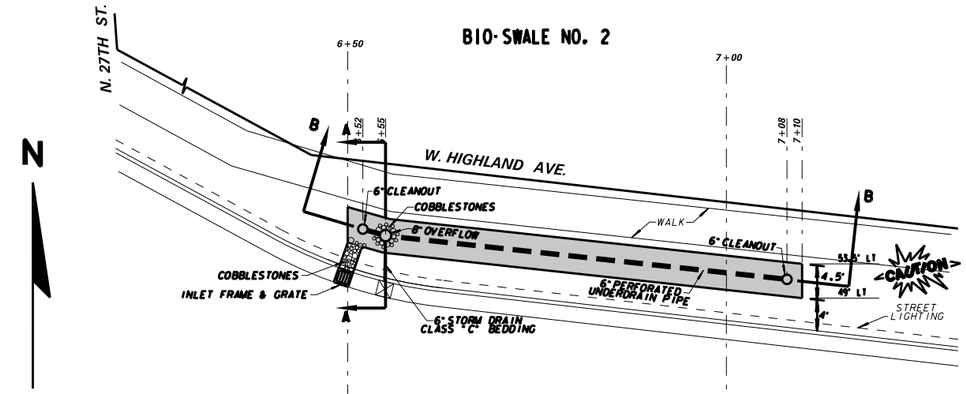
DETAIL OF GEOTEXTILE FABRIC
SCALE • N.T.S.

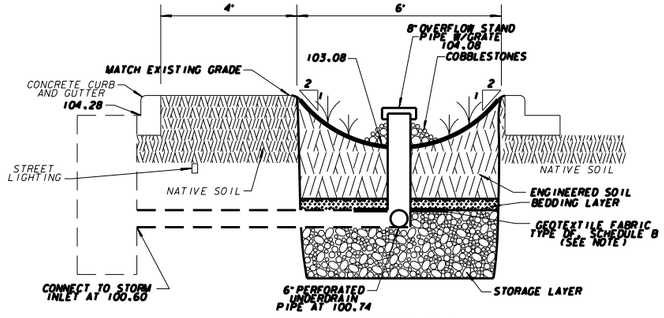
STATE PROJECT NUMBER 2200-13-70	HWY:	COUNTY: MILWAUKEE	BIO-SWALE DETAIL	SCALE FEET 0' 20'	SHEET NO: 102	E

FILE NAME: W:\

BIO-SWALE NO. 1



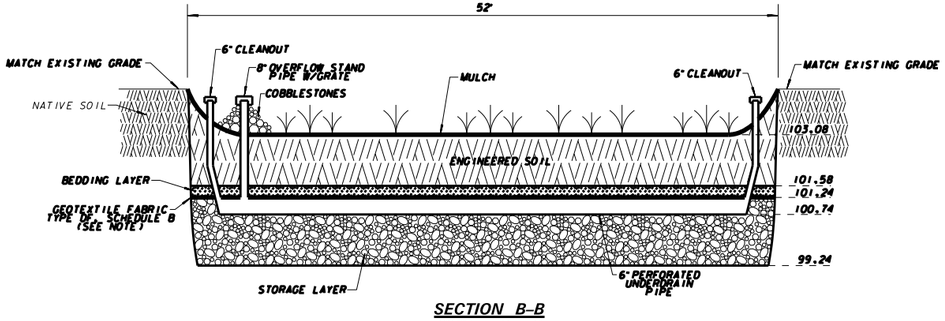




SECTION A-A

SCALE - N.T.S.

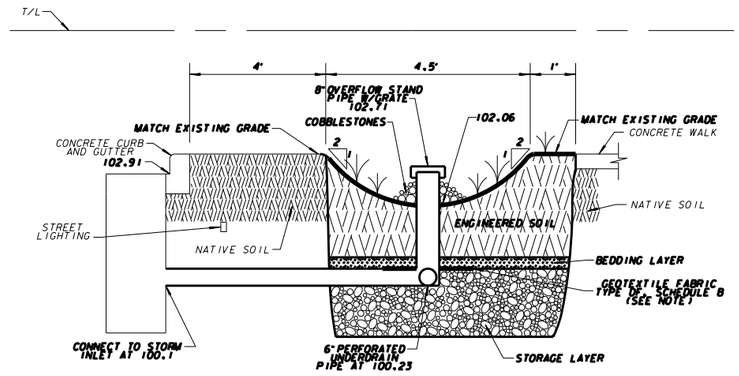
NOTE: DO NOT WRAP FILTER FABRIC AROUND PERFORATED UNDERDRAINS. EXTEND FABRIC 1' ON EITHER SIDE.



SECTION B-B

SCALE - N.T.S.

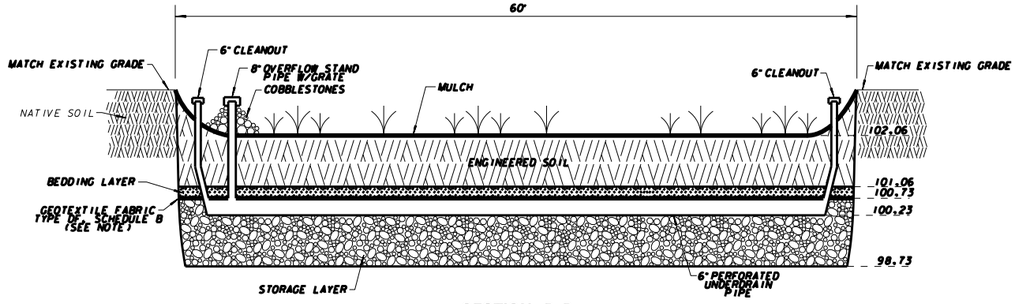
NOTE: DO NOT WRAP FILTER FABRIC AROUND PERFORATED UNDERDRAINS. EXTEND FABRIC 1' ON EITHER SIDE.



SECTION A-A

SCALE - N.T.S.

NOTE: DO NOT WRAP FILTER FABRIC AROUND PERFORATED UNDERDRAINS. EXTEND FABRIC 1' ON EITHER SIDE.



SECTION B-B

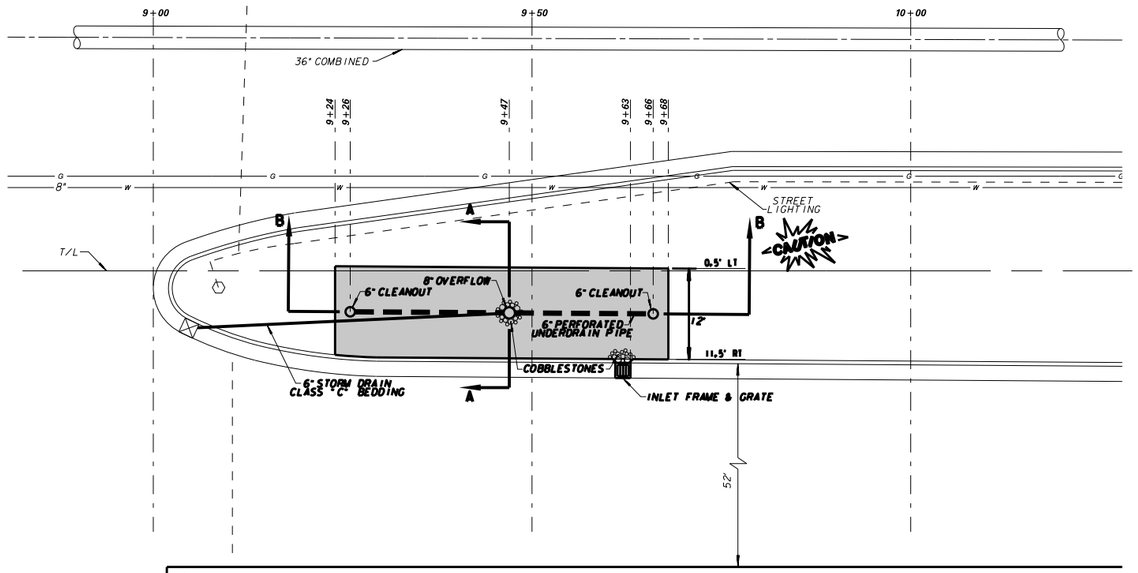
SCALE - N.T.S.

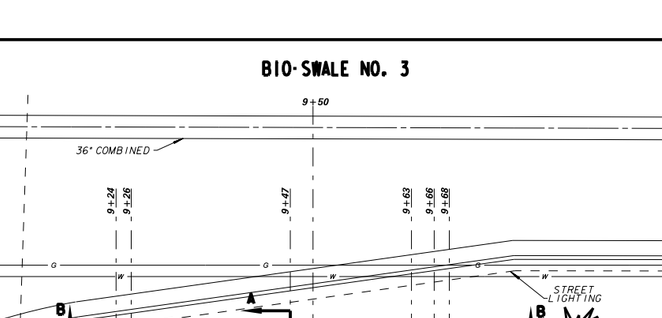
NOTE: DO NOT WRAP FILTER FABRIC AROUND PERFORATED UNDERDRAINS. EXTEND FABRIC 1' ON EITHER SIDE.

STATE PROJECT NUMBER 2200-13-70	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	BIO-SWALE PLAN	SCALE FEET 0' 20'	SHEET NO: 103 E

FILE NAME: W:\

BIO-SWALE NO. 3

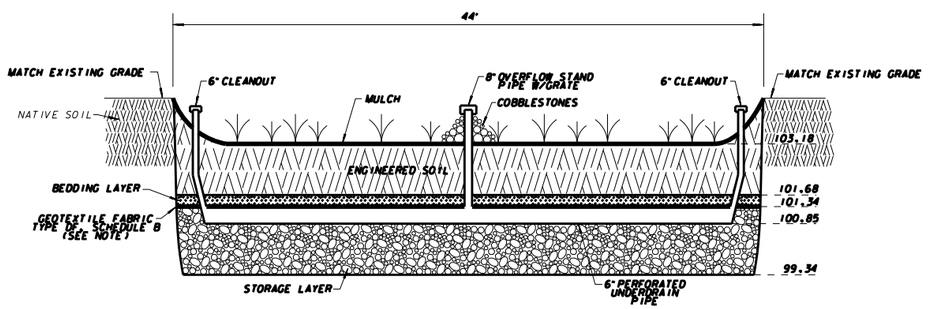




SECTION A–A

SCALE - N.T.S.

NOTE: DO NOT WRAP FILTER FABRIC AROUND PERFORATED UNDERDRAINS, EXTEND FABRIC 1' ON EITHER SIDE.

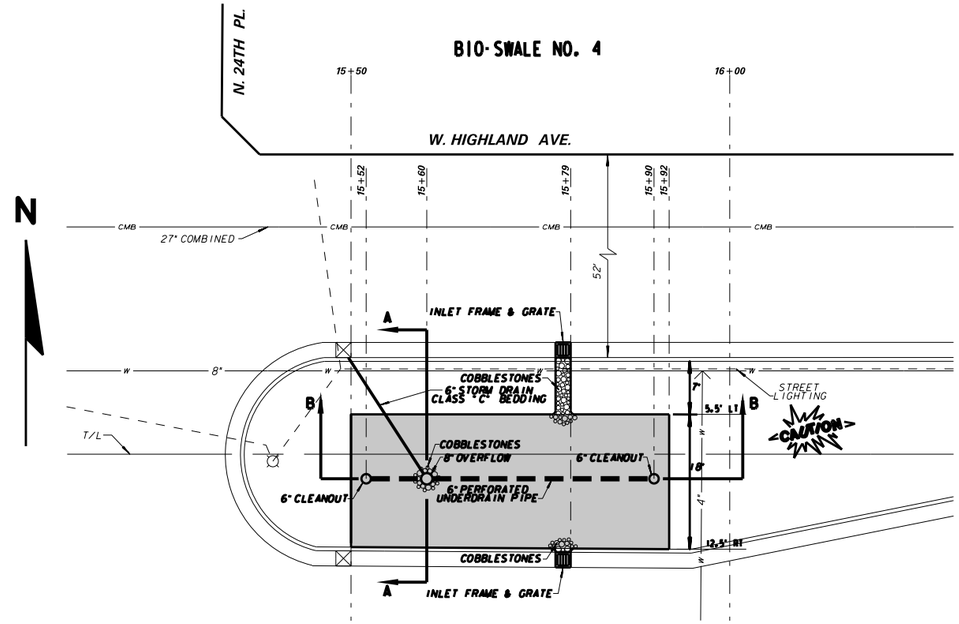


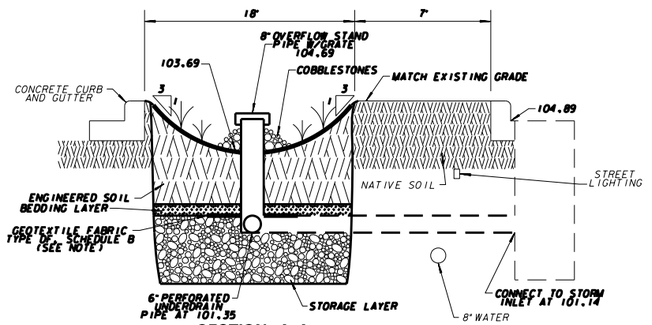
SECTION B–B

SCALE - N.T.S.

NOTE: DO NOT WRAP FILTER FABRIC AROUND PERFORATED UNDERDRAINS, EXTEND FABRIC 1' ON EITHER SIDE.

BIO-SWALE NO. 4

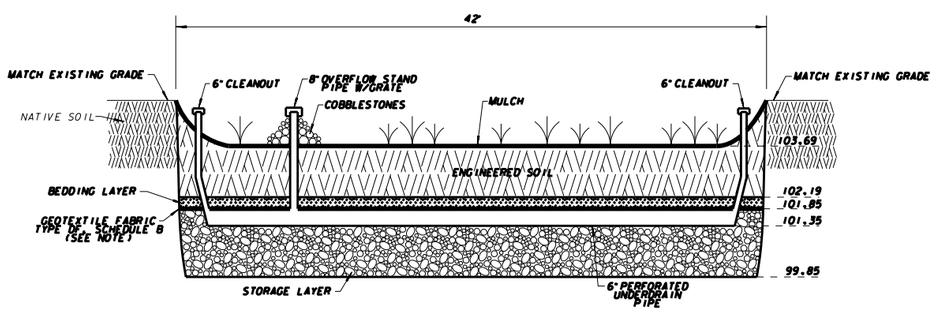




SECTION A–A

SCALE - N.T.S.

NOTE: DO NOT WRAP FILTER FABRIC AROUND PERFORATED UNDERDRAINS, EXTEND FABRIC 1' ON EITHER SIDE.



SECTION B–B

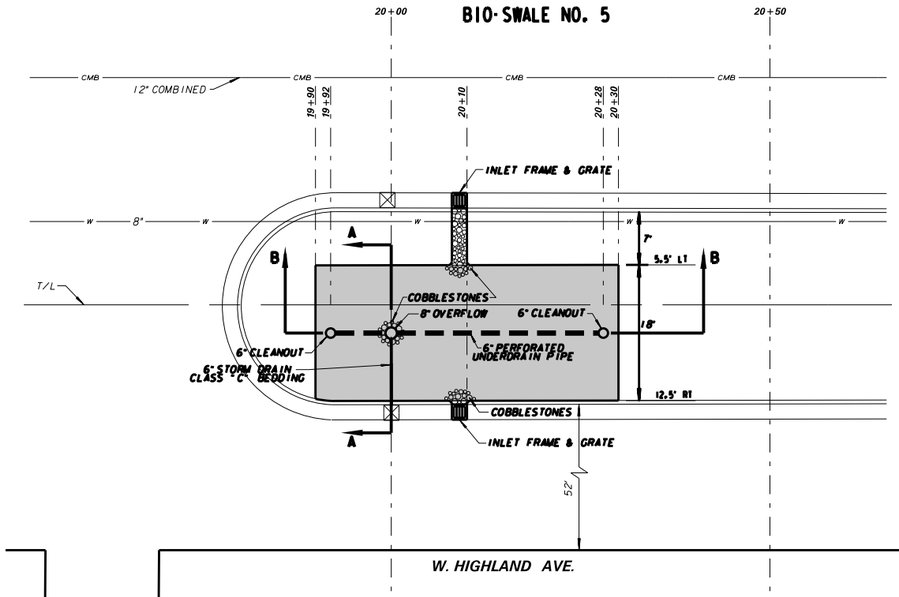
SCALE - N.T.S.

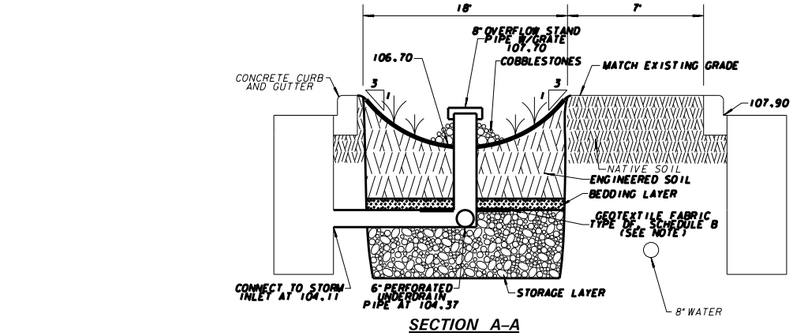
NOTE: DO NOT WRAP FILTER FABRIC AROUND PERFORATED UNDERDRAINS, EXTEND FABRIC 1' ON EITHER SIDE.

STATE PROJECT NUMBER 2200-13-70	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	BIO-SWALE PLAN	SCALE FEET 0' 20'	SHEET NO: 104 E

FILE NAME: W:\

BIO-SWALE NO. 5

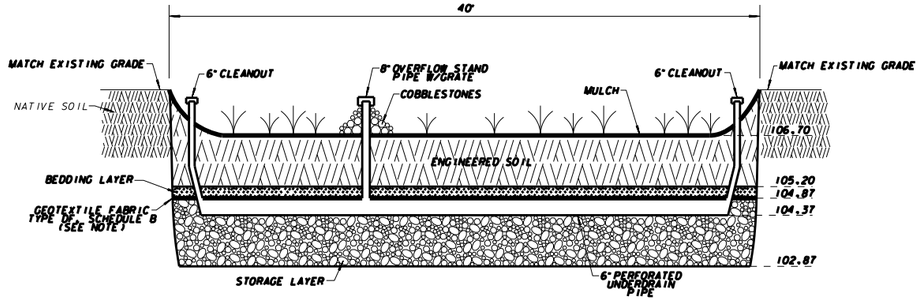




SECTION A-A

SCALE - N.T.S.

NOTE: DO NOT WRAP FILTER FABRIC AROUND PERFORATED UNDERDRAINS. EXTEND FABRIC 1' ON EITHER SIDE.

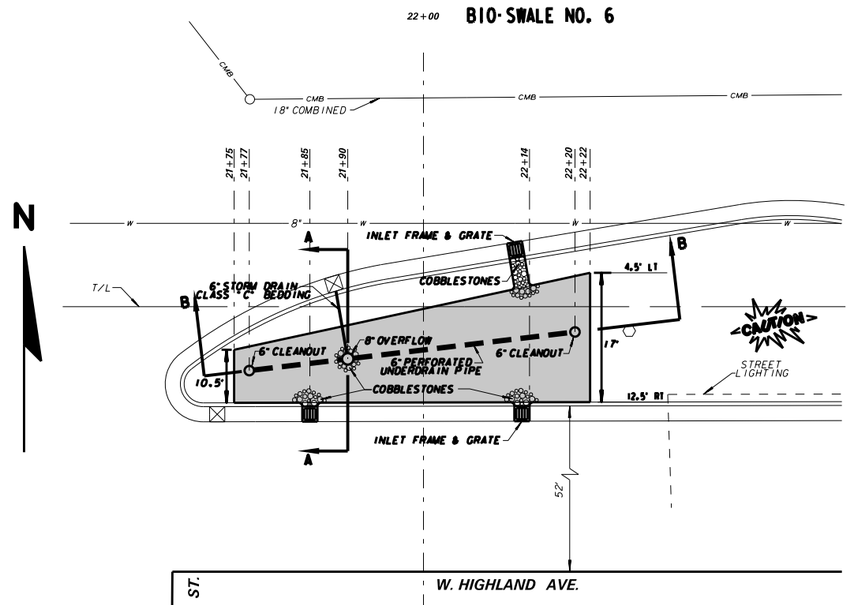


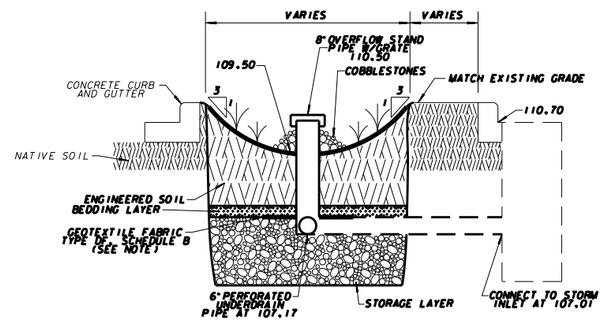
SECTION B-B

SCALE - N.T.S.

NOTE: DO NOT WRAP FILTER FABRIC AROUND PERFORATED UNDERDRAINS. EXTEND FABRIC 1' ON EITHER SIDE.

BIO-SWALE NO. 6

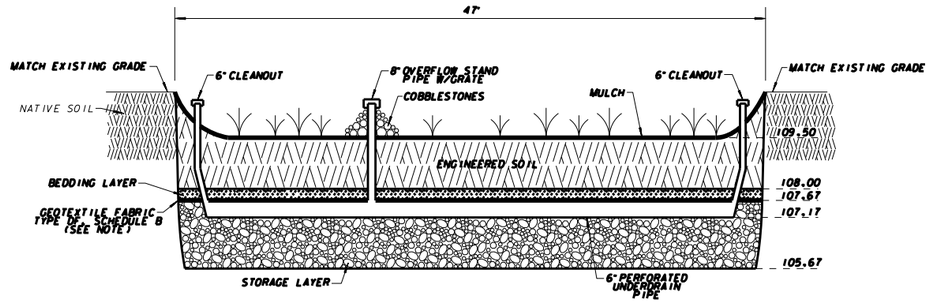




SECTION A-A

SCALE - N.T.S.

NOTE: DO NOT WRAP FILTER FABRIC AROUND PERFORATED UNDERDRAINS. EXTEND FABRIC 1' ON EITHER SIDE.



SECTION B-B

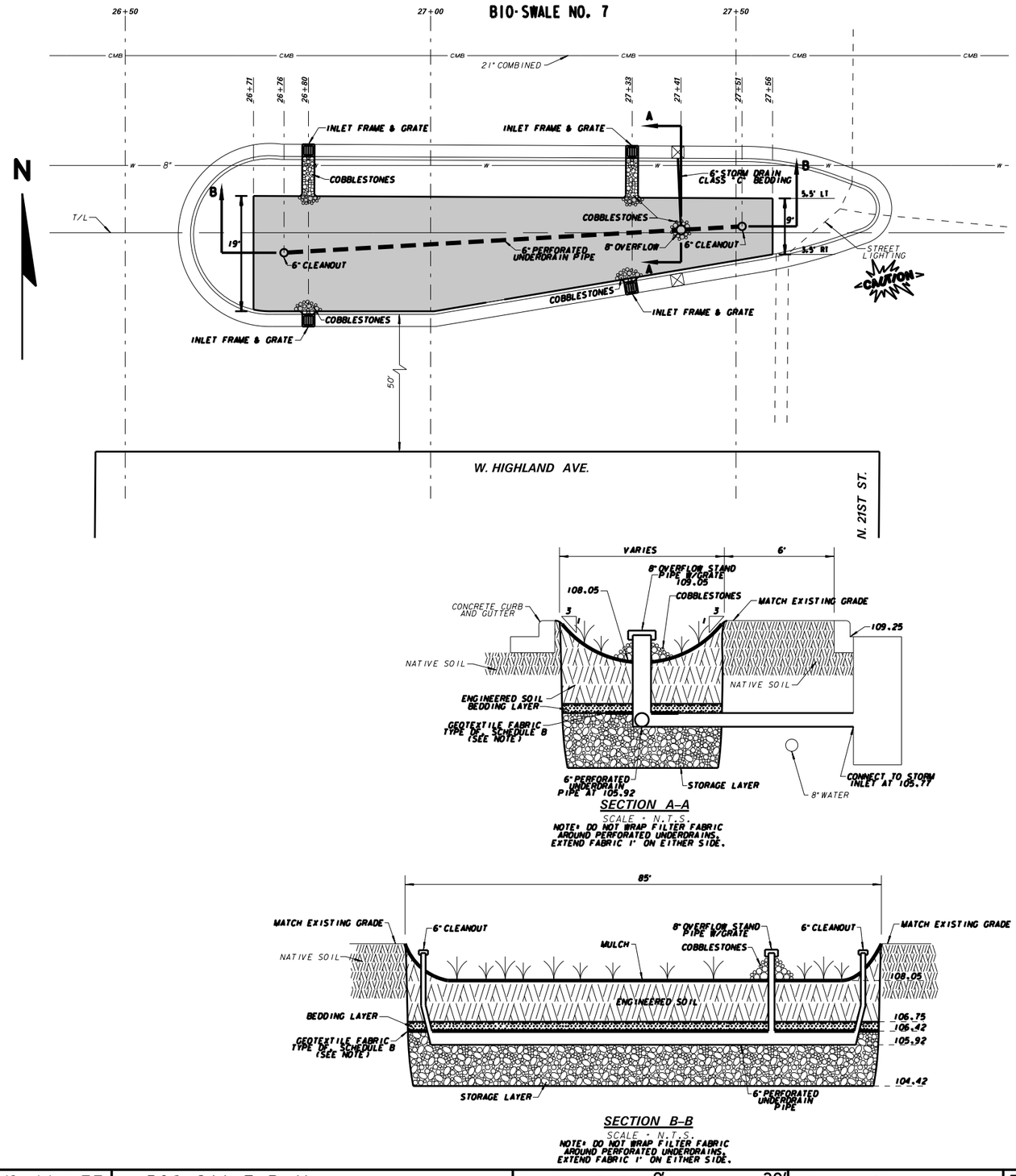
SCALE - N.T.S.

NOTE: DO NOT WRAP FILTER FABRIC AROUND PERFORATED UNDERDRAINS. EXTEND FABRIC 1' ON EITHER SIDE.

STATE PROJECT NUMBER 2200-13-70	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	BIO-SWALE PLAN	SCALE FEET 0' 20'	SHEET NO: 105 E

FILE NAME: W:\

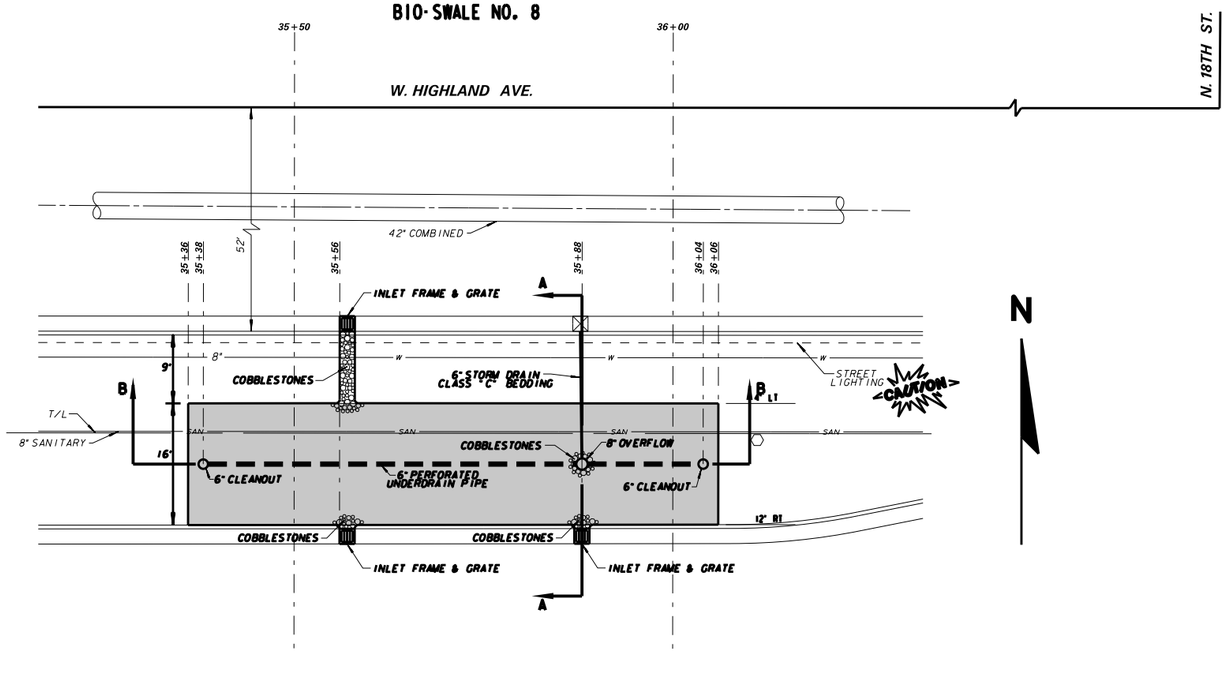
2

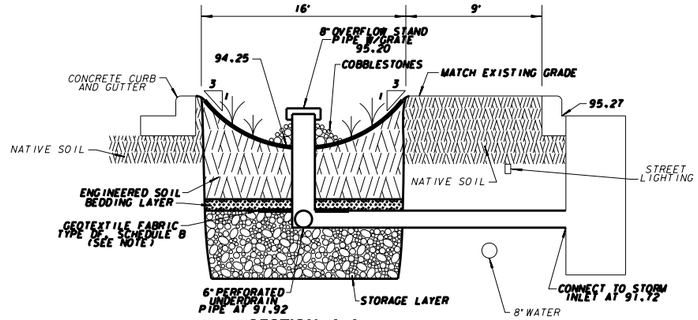


STATE PROJECT NUMBER 2200-13-70	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	BIO-SWALE PLAN	SCALE FEET 0' 20'	SHEET NO: E

FILE NAME: W:\

BIO-SWALE NO. 8

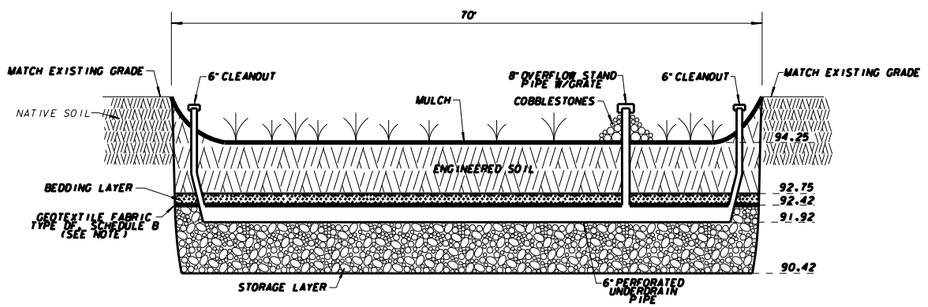




SECTION A–A

SCALE - N.T.S.

NOTE: DO NOT WRAP FILTER FABRIC AROUND PERFORATED UNDERDRAINS. EXTEND FABRIC 1' ON EITHER SIDE.

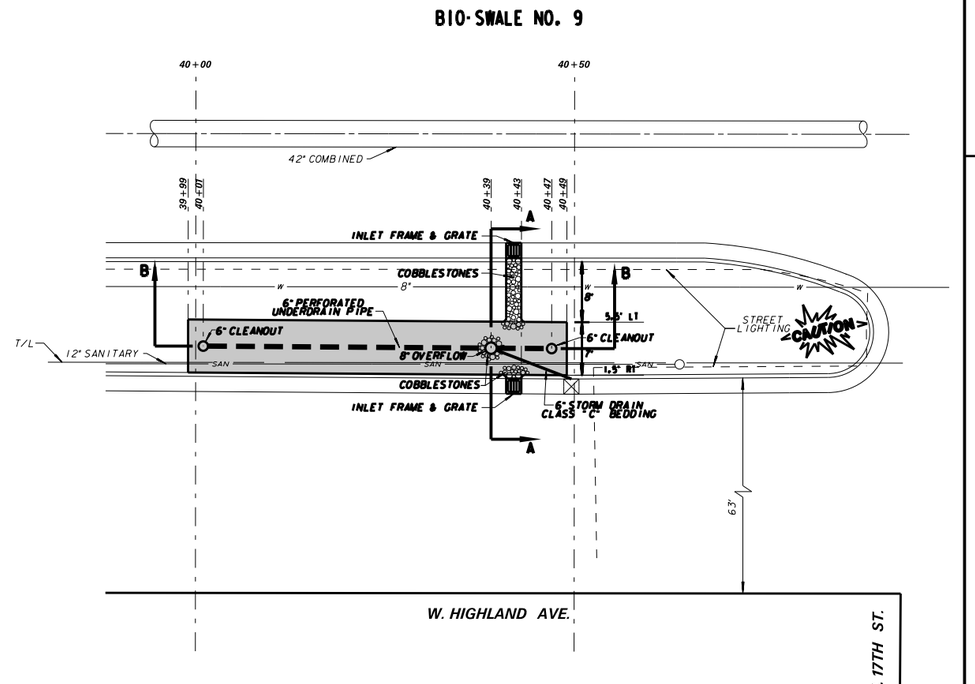


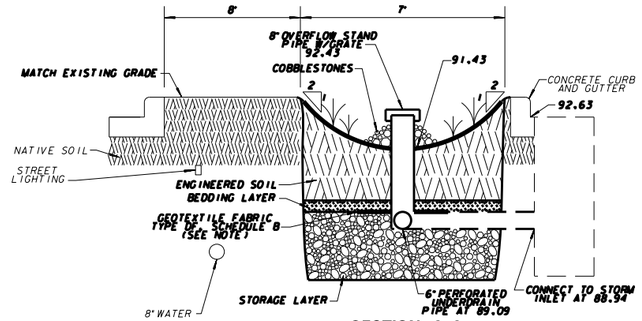
SECTION B–B

SCALE - N.T.S.

NOTE: DO NOT WRAP FILTER FABRIC AROUND PERFORATED UNDERDRAINS. EXTEND FABRIC 1' ON EITHER SIDE.

BIO-SWALE NO. 9

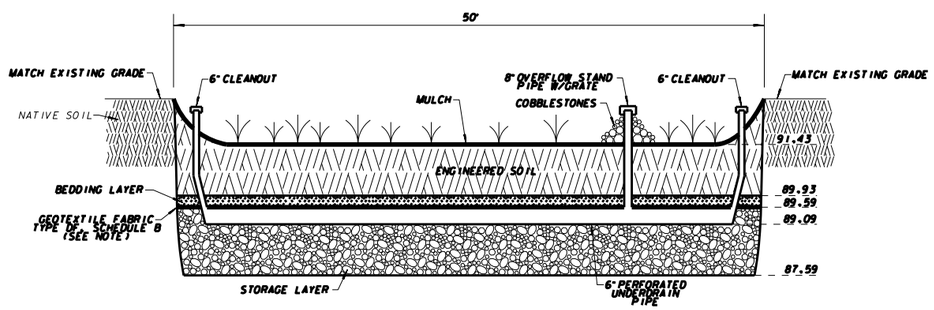




SECTION A–A

SCALE - N.T.S.

NOTE: DO NOT WRAP FILTER FABRIC AROUND PERFORATED UNDERDRAINS. EXTEND FABRIC 1' ON EITHER SIDE.



SECTION B–B

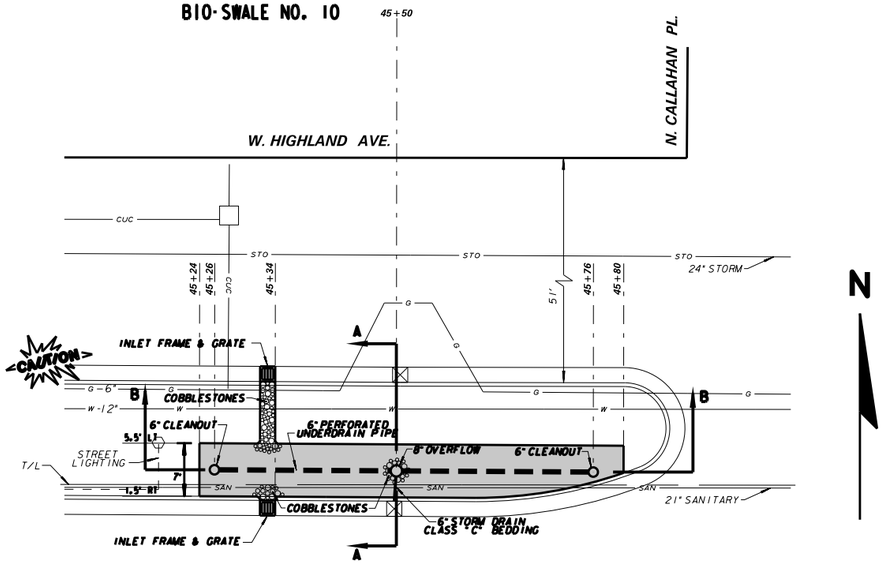
SCALE - N.T.S.

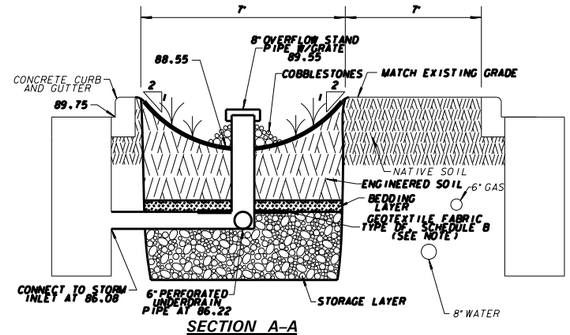
NOTE: DO NOT WRAP FILTER FABRIC AROUND PERFORATED UNDERDRAINS. EXTEND FABRIC 1' ON EITHER SIDE.

STATE PROJECT NUMBER 2200-13-70	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	BIO-SWALE PLAN	SCALE FEET 0' 20'	SHEET NO: 107 E

FILE NAME: W:\

BIO-SWALE NO. 10

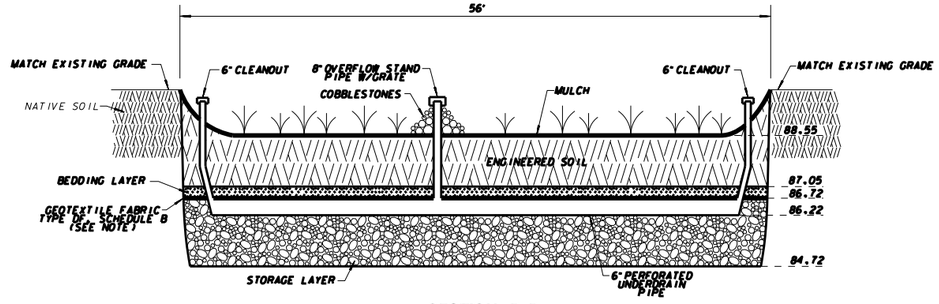




SECTION A-A

SCALE - N.T.S.

NOTE: DO NOT WRAP FILTER FABRIC AROUND PERFORATED UNDERDRAINS, EXTEND FABRIC 1' ON EITHER SIDE.

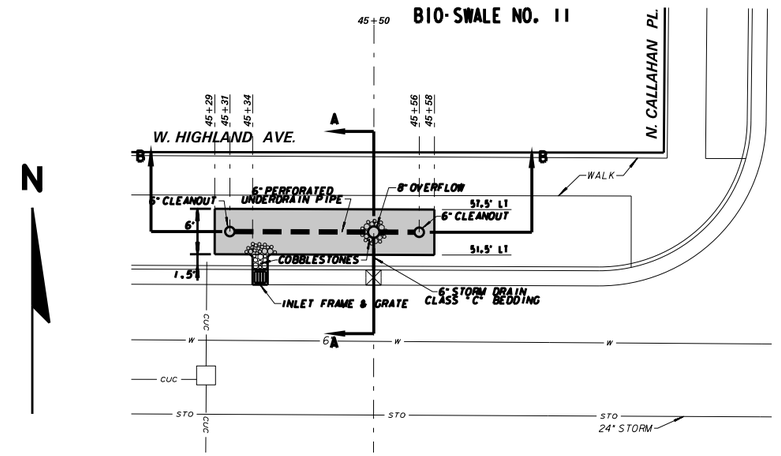


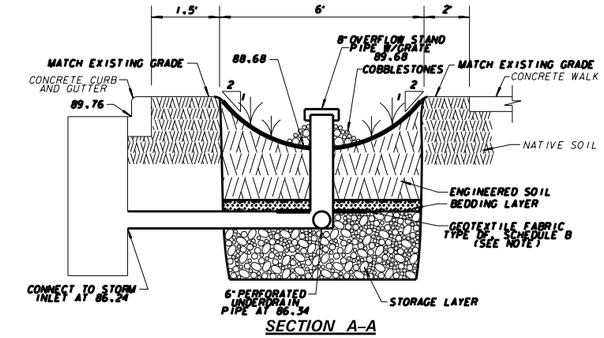
SECTION B-B

SCALE - N.T.S.

NOTE: DO NOT WRAP FILTER FABRIC AROUND PERFORATED UNDERDRAINS, EXTEND FABRIC 1' ON EITHER SIDE.

BIO-SWALE NO. 11

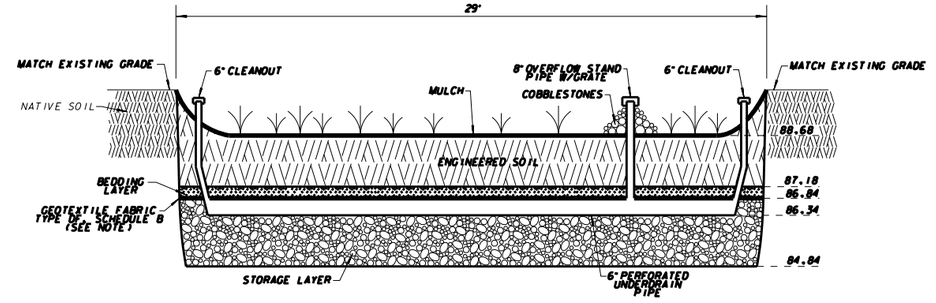




SECTION A-A

SCALE - N.T.S.

NOTE: DO NOT WRAP FILTER FABRIC AROUND PERFORATED UNDERDRAINS, EXTEND FABRIC 1' ON EITHER SIDE.



SECTION B-B

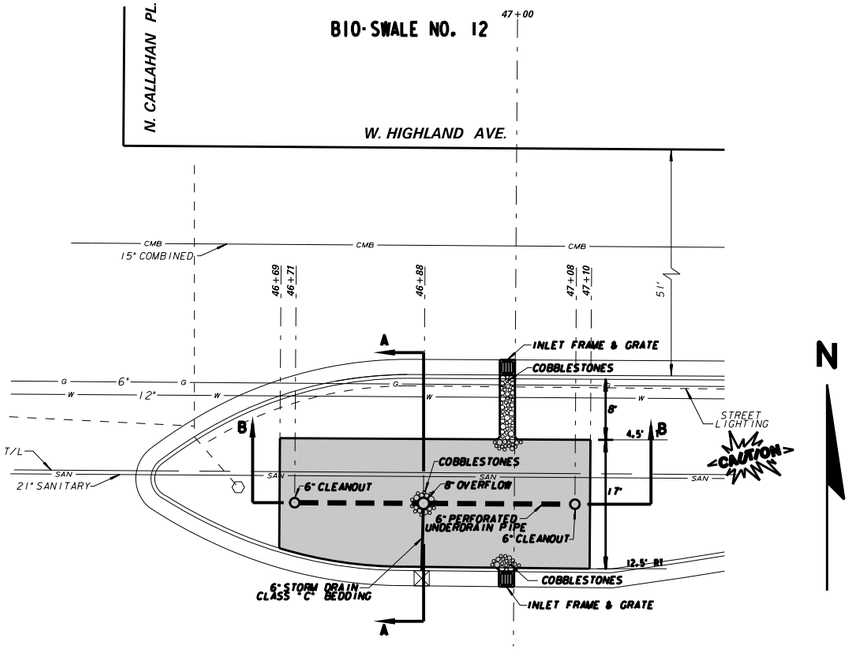
SCALE - N.T.S.

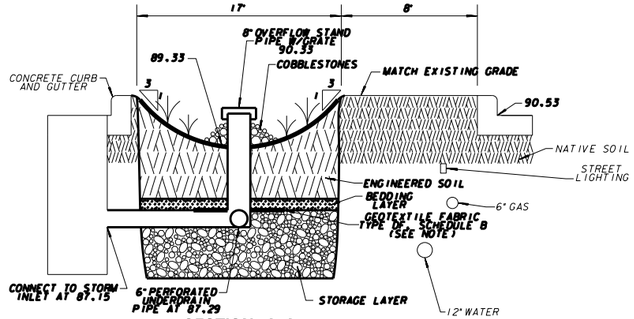
NOTE: DO NOT WRAP FILTER FABRIC AROUND PERFORATED UNDERDRAINS, EXTEND FABRIC 1' ON EITHER SIDE.

STATE PROJECT NUMBER 2200-13-70	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	BIO-SWALE PLAN	SCALE FEET 0' 20'	SHEET NO: 108 E

FILE NAME: W:\

BIO-SWALE NO. 12

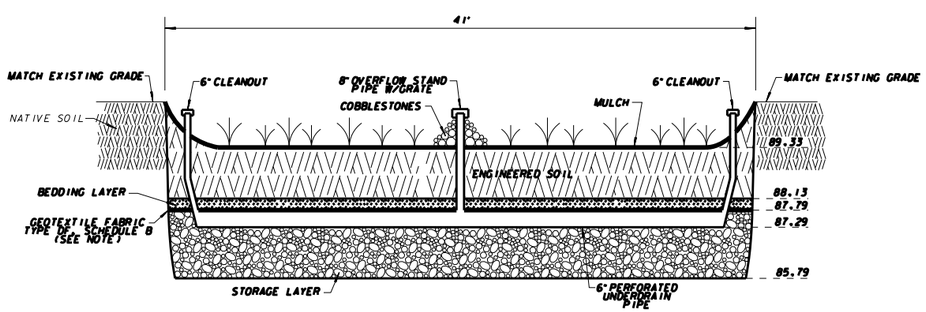




SECTION A–A

SCALE - N.T.S.

NOTE: DO NOT WRAP FILTER FABRIC AROUND PERFORATED UNDERDRAINS. EXTEND FABRIC 1' ON EITHER SIDE.

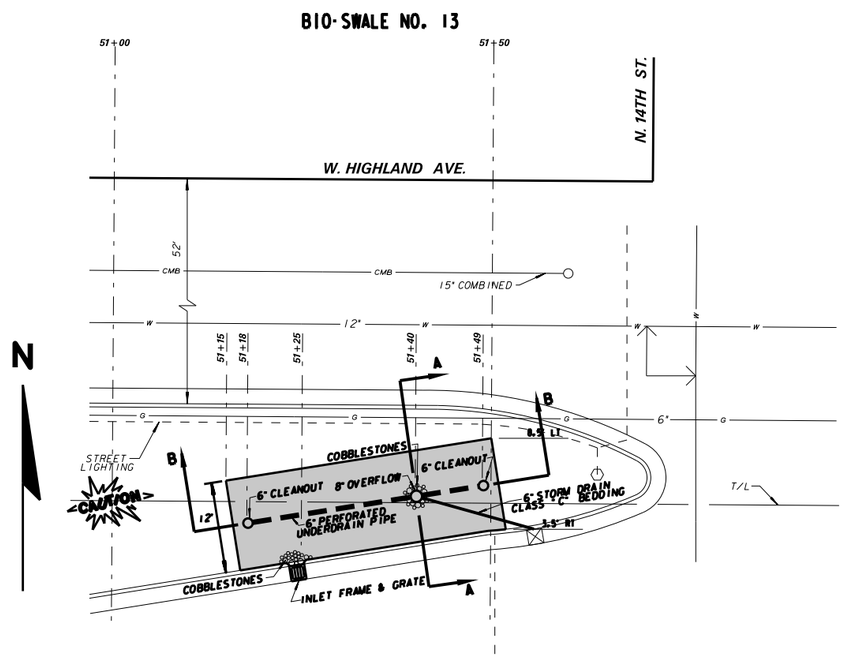


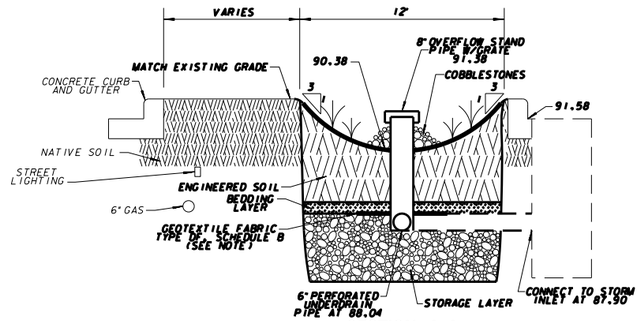
SECTION B–B

SCALE - N.T.S.

NOTE: DO NOT WRAP FILTER FABRIC AROUND PERFORATED UNDERDRAINS. EXTEND FABRIC 1' ON EITHER SIDE.

BIO-SWALE NO. 13

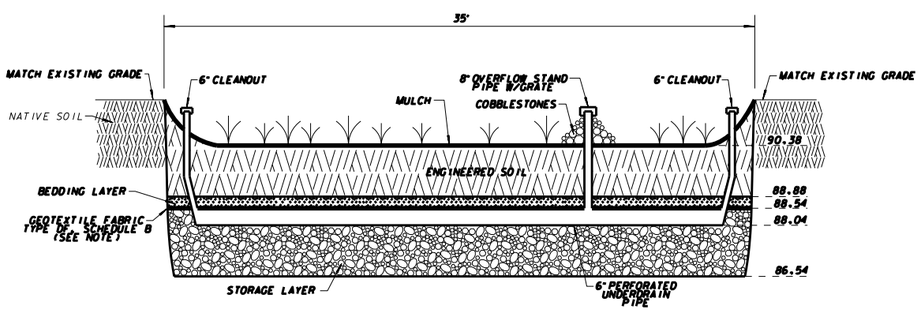




SECTION A–A

SCALE - N.T.S.

NOTE: DO NOT WRAP FILTER FABRIC AROUND PERFORATED UNDERDRAINS. EXTEND FABRIC 1' ON EITHER SIDE.



SECTION B–B

SCALE - N.T.S.

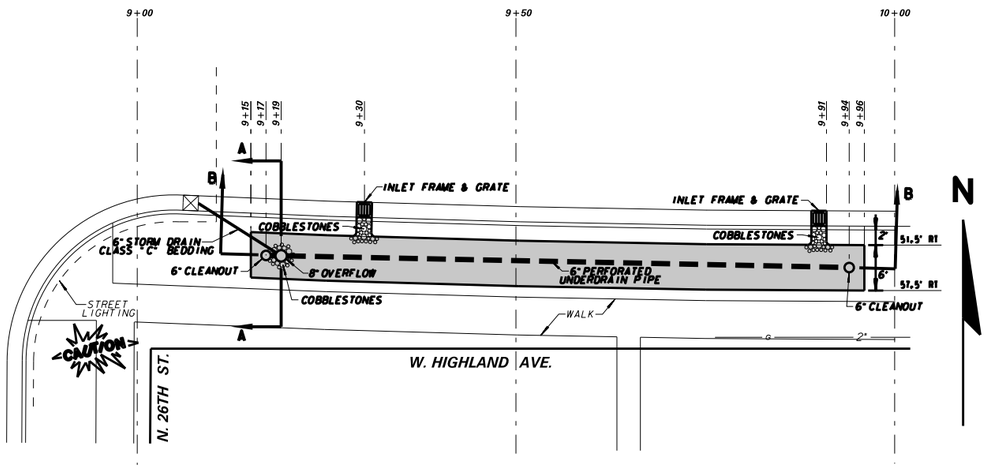
NOTE: DO NOT WRAP FILTER FABRIC AROUND PERFORATED UNDERDRAINS. EXTEND FABRIC 1' ON EITHER SIDE.

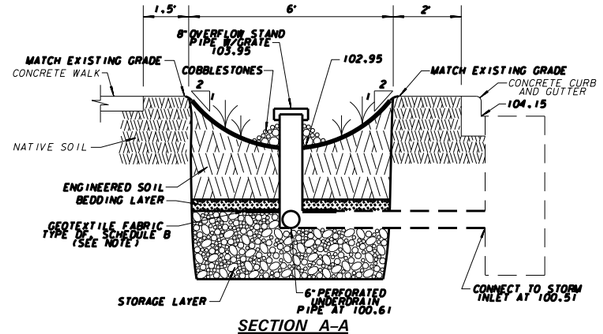
STATE PROJECT NUMBER 2200-13-70	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	BIO-SWALE PLAN	SCALE FEET 0' 20'	SHEET NO: 109 E

FILE NAME: W:\

2

BIO-SWALE NO. 14

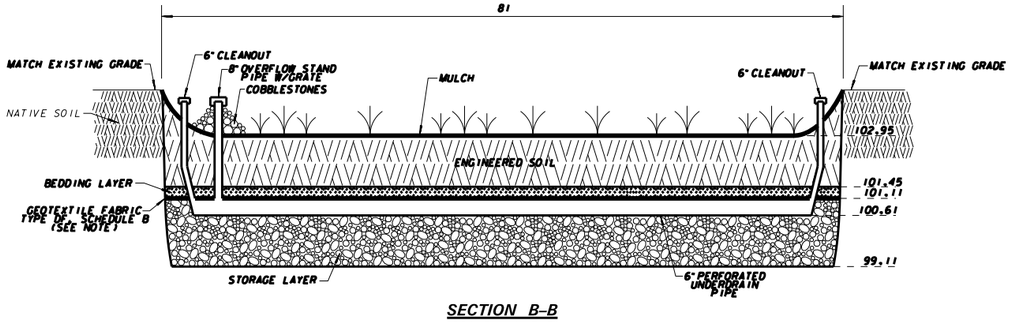




SECTION A–A

SCALE • N.T.S.

NOTE: DO NOT WRAP FILTER FABRIC AROUND PERFORATED UNDERDRAINS, EXTEND FABRIC 1' ON EITHER SIDE.

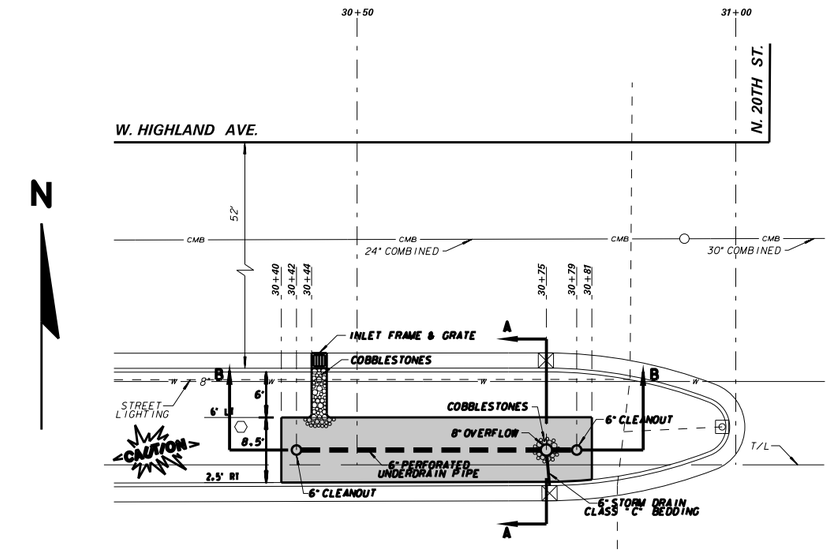


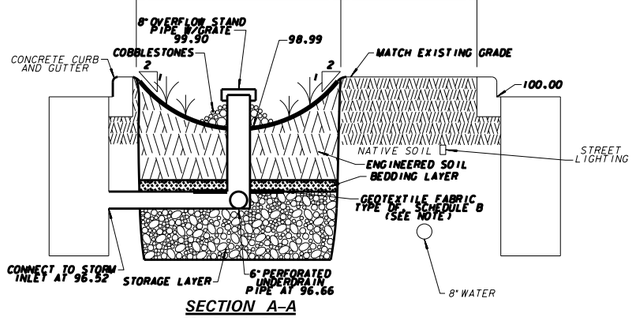
SECTION B–B

SCALE • N.T.S.

NOTE: DO NOT WRAP FILTER FABRIC AROUND PERFORATED UNDERDRAINS, EXTEND FABRIC 1' ON EITHER SIDE.

BIO-SWALE NO. 15

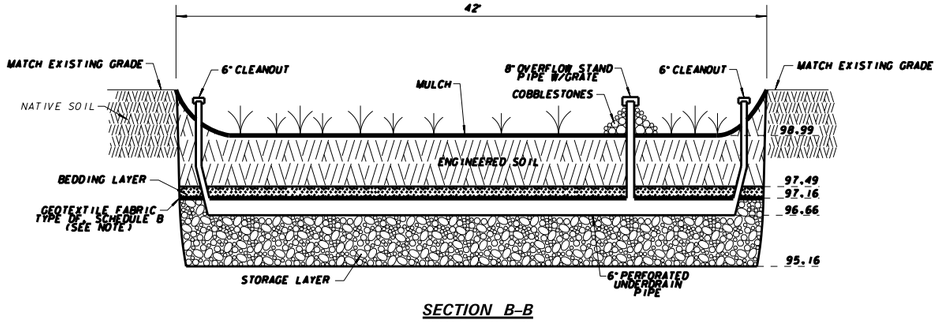




SECTION A–A

SCALE • N.T.S.

NOTE: DO NOT WRAP FILTER FABRIC AROUND PERFORATED UNDERDRAINS, EXTEND FABRIC 1' ON EITHER SIDE.



SECTION B–B

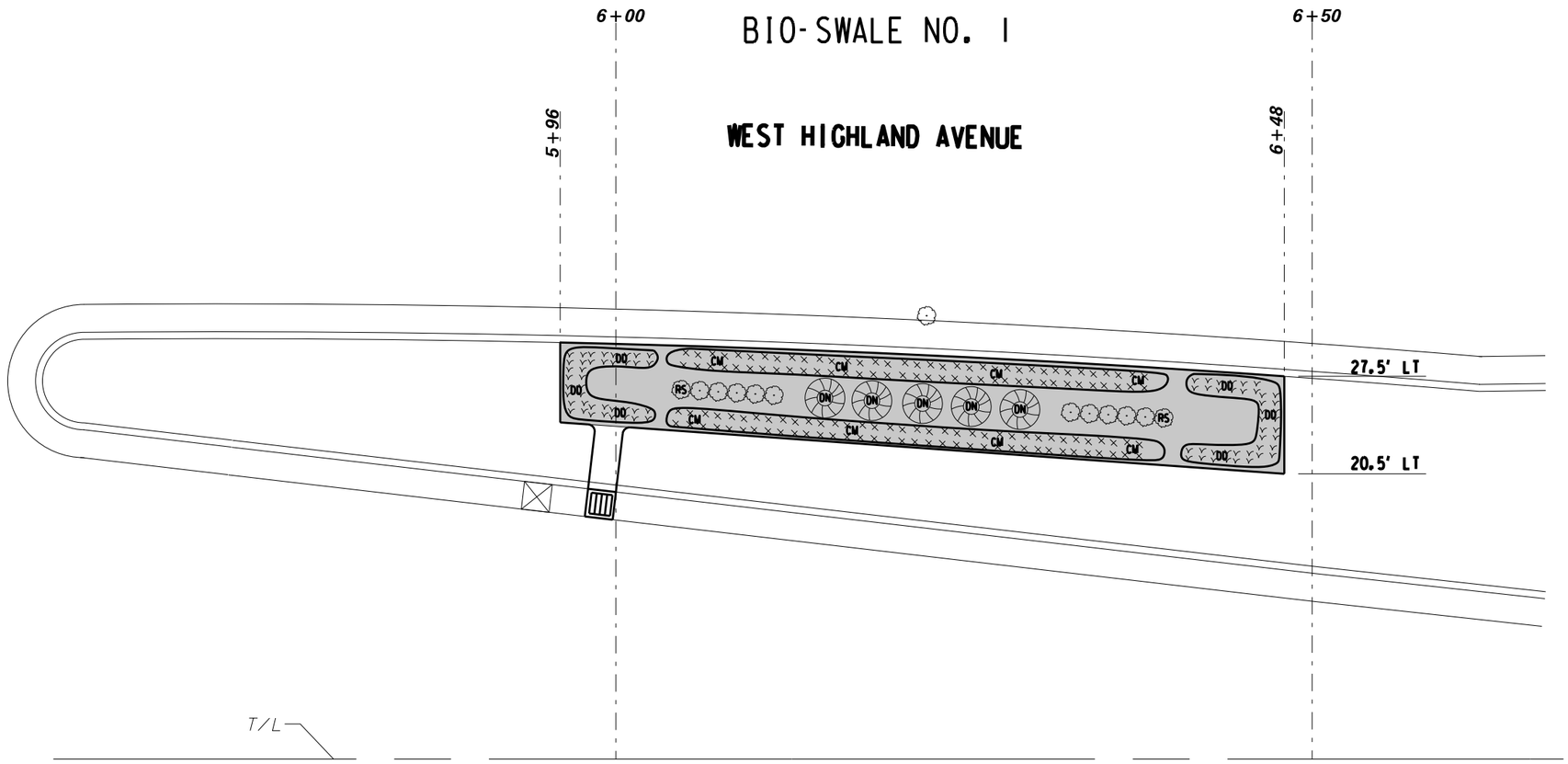
SCALE • N.T.S.

NOTE: DO NOT WRAP FILTER FABRIC AROUND PERFORATED UNDERDRAINS, EXTEND FABRIC 1' ON EITHER SIDE.

STATE PROJECT NUMBER 2200-13-70	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	BIO-SWALE PLAN	SCALE FEET 0' 20'	SHEET NO: 110 E

FILE NAME: W:\

BIO-SWALE NO. 1



SHRUBS

(5)	DN	DIABLO NINEBARK

PERENNIALS, GRASS, AND BULBS

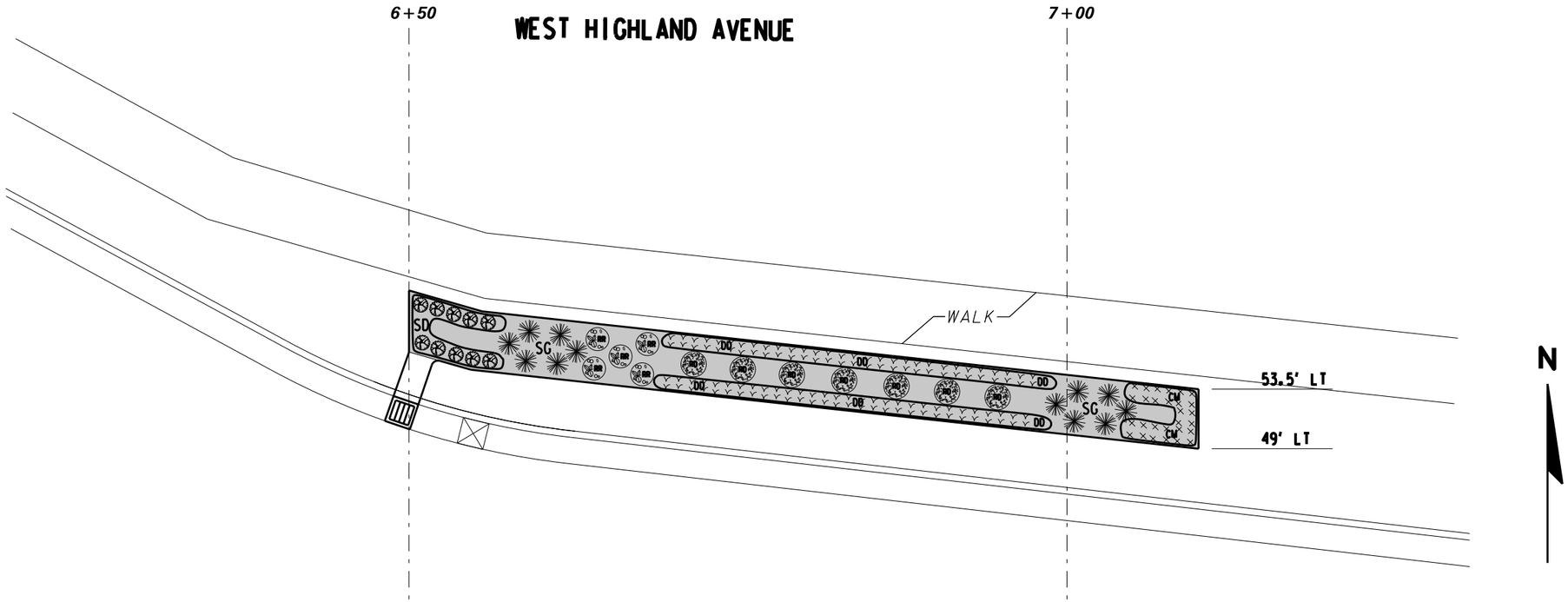
(60)	CM	CATMINT
(48)	DD	DWARF DAYLILIES
(12)	RS	RUSSIAN SAGE

STATE PROJECT NUMBER - - - -	HWY:	COUNTY: MILWAUKEE	BIO-SWALE PLAN	SCALE FEET 0' 10'	SHEET NO: 111 E

FILE NAME: W:\

2

BIO-SWALE NO. 2



SHRUBS

(5)	RR	RUGOSA ROSES
(7)	RD	RED TWIG DOGWOODS

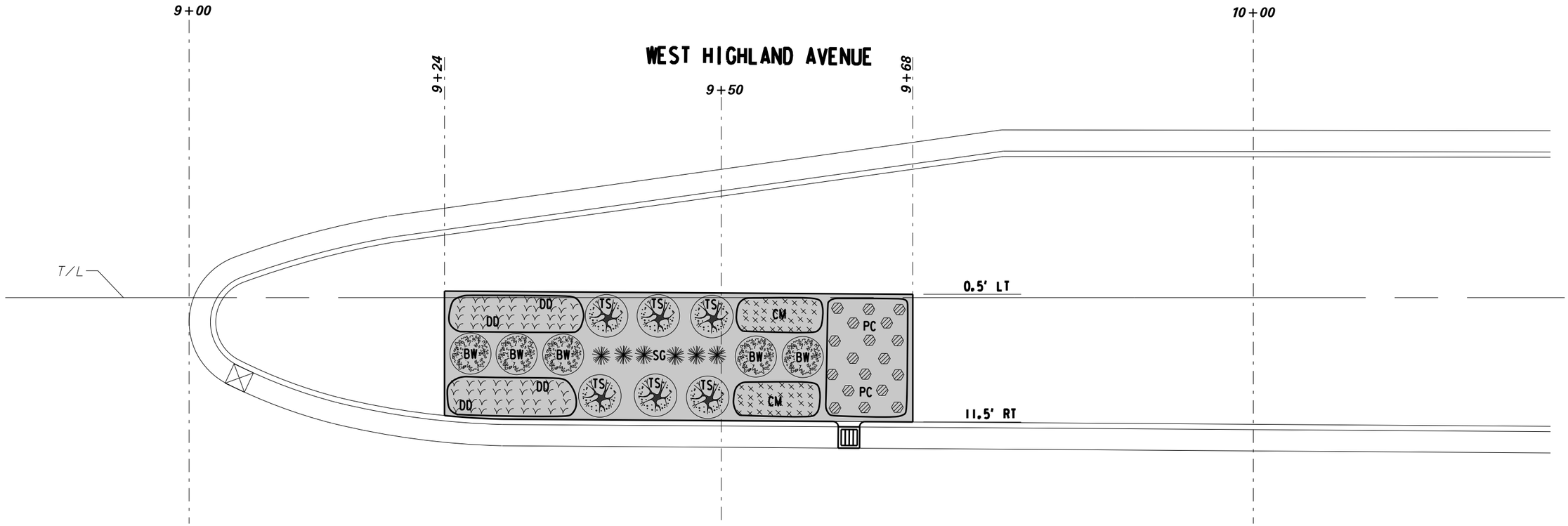
PERENNIALS, GRASS, AND BULBS

(12)	SG	SWITCH GRASS
(24)	SD	SHASTA DAISIES
(24)	CM	CATMINT
(72)	DD	DWARF DAYLILIES

STATE PROJECT NUMBER - - - -	HWY:	COUNTY: MILWAUKEE	BIO-SWALE PLAN	SCALE FEET 0' 10'	SHEET NO:	E

FILE NAME: W:\

BIO-SWALE NO. 3



SHRUBS

(6)	TS	TIGERS EYE SUMAC
(5)	BW	ARCTIC BLUE WILLOW

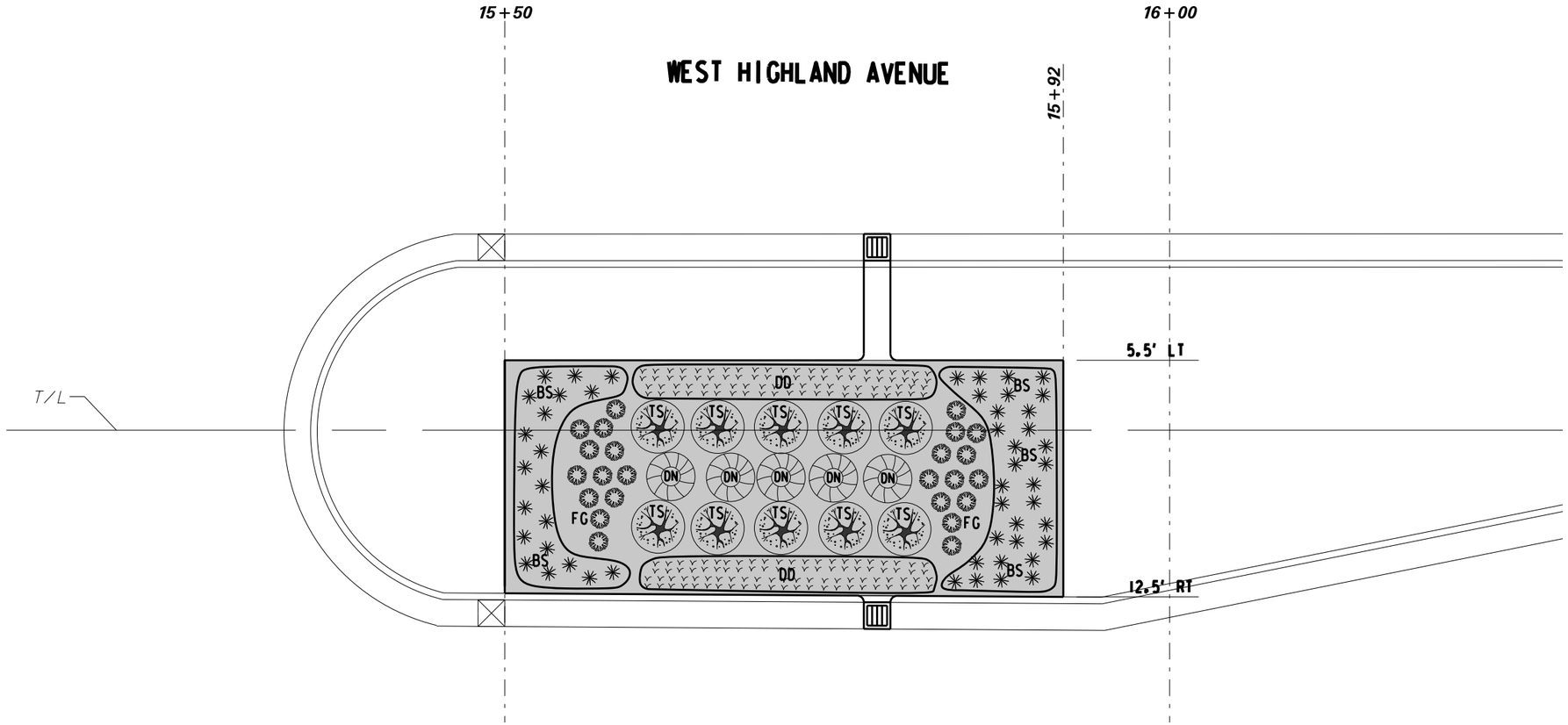
PERENNIALS, GRASS, AND BULBS

(11)	SG	SWITCH GRASS
(48)	PC	PURPLE CONEFLOWER
(48)	CM	CATMINT
(72)	DD	DWARF DAYLILIES

STATE PROJECT NUMBER - - - -	HWY:	COUNTY: MILWAUKEE	BIO-SWALE PLAN	SCALE FEET 0' 10'	SHEET NO: 113	E

FILE NAME: W:\SEW\SNDRAFT\ 1423719.SMP

BIO-SWALE NO. 4



SHRUBS

(5)	DN	DIABLO NINEBARK
(10)	TS	TIGERS EYE SUMAC

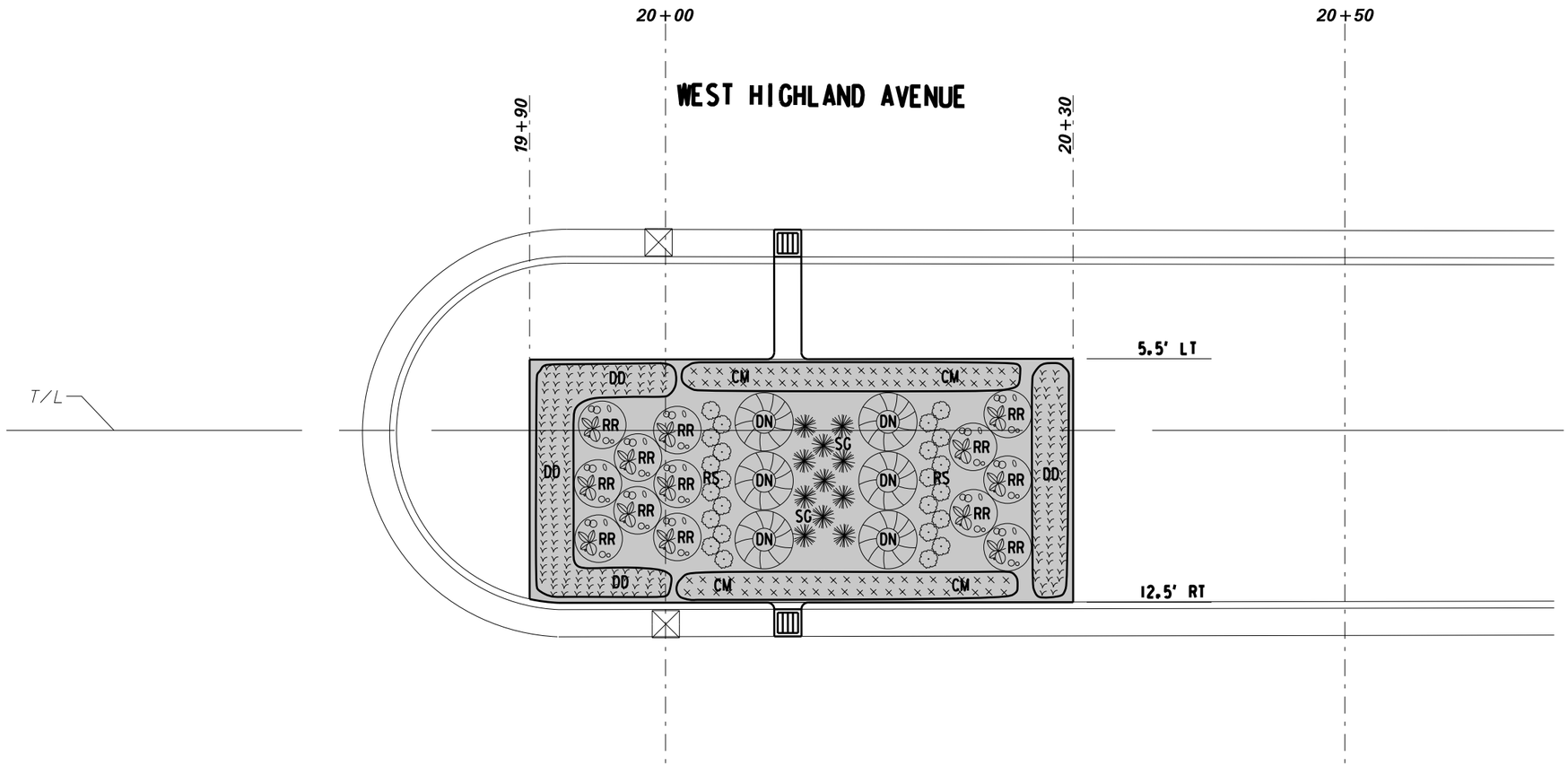
PERENNIALS, GRASS, AND BULBS

(72)	BS	BLACK EYED SUSANS
(72)	DD	DWARF DAYLILIES
(24)	FG	RED FLAME GRASS

STATE PROJECT NUMBER - - - -	HWY:	COUNTY: MILWAUKEE	BIO-SWALE PLAN	SCALE FEET 0' 10'	SHEET NO: 114	E

FILE NAME: W:\SEW\SNDRAFT\ 1423719.SMP

BIO-SWALE NO. 5



SHRUBS

(13)	RR	RUGOSA ROSES
(6)	DN	DIABLO NINEBARK

PERENNIALS, GRASS, AND BULBS

(11)	SG	SWITCH GRASS
(24)	RS	RUSSIAN SAGE
(72)	CM	CATMINT
(96)	DD	DWARF DAYLILIES

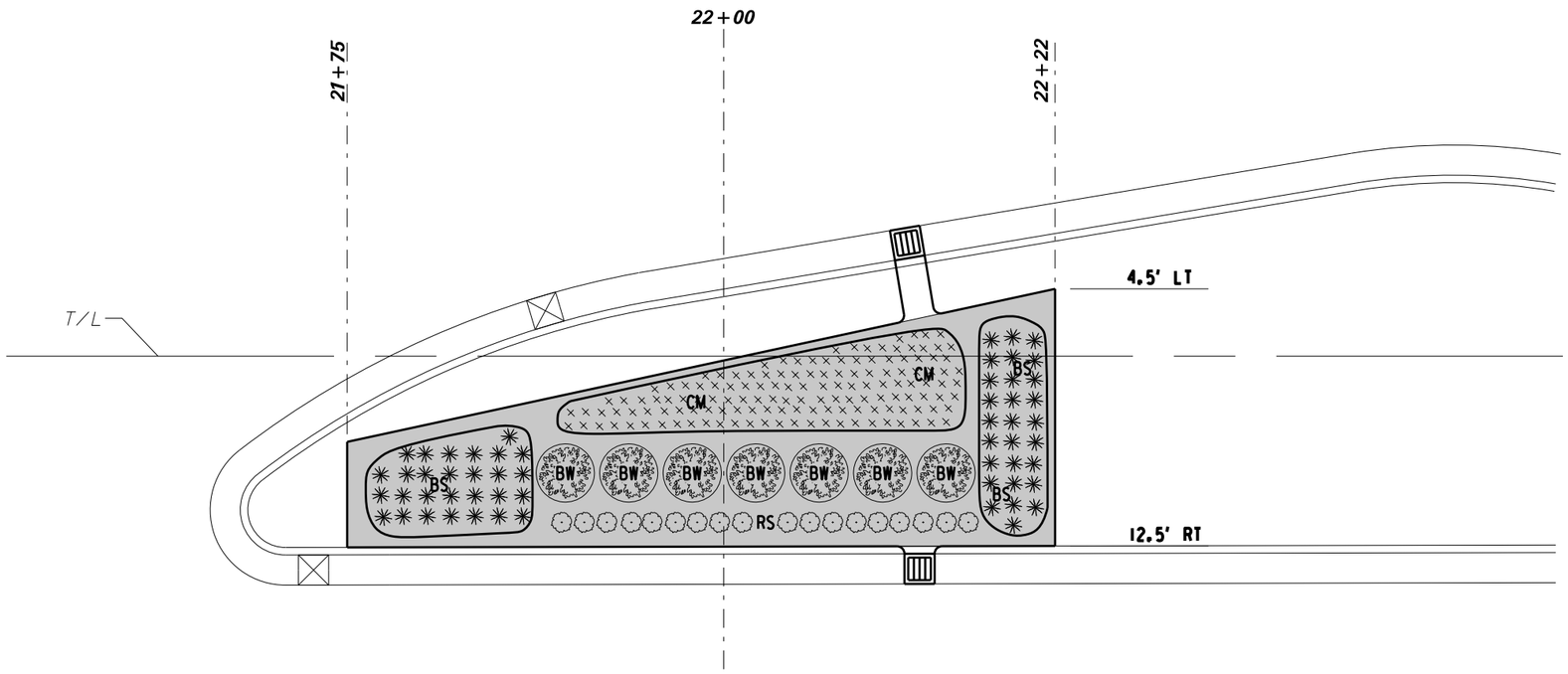
STATE PROJECT NUMBER - - - -	HWY:	COUNTY: MILWAUKEE	BIO-SWALE PLAN	SCALE FEET 0' 10'	SHEET NO: 115	E

FILE NAME: W:\SEW\SNDRAFT\ 1423719.SMP

2

BIO-SWALE NO. 6

WEST HIGHLAND AVENUE



SHRUBS

(7)	BW	ARCTIC BLUE WILLOW

PERENNIALS, GRASS, AND BULBS

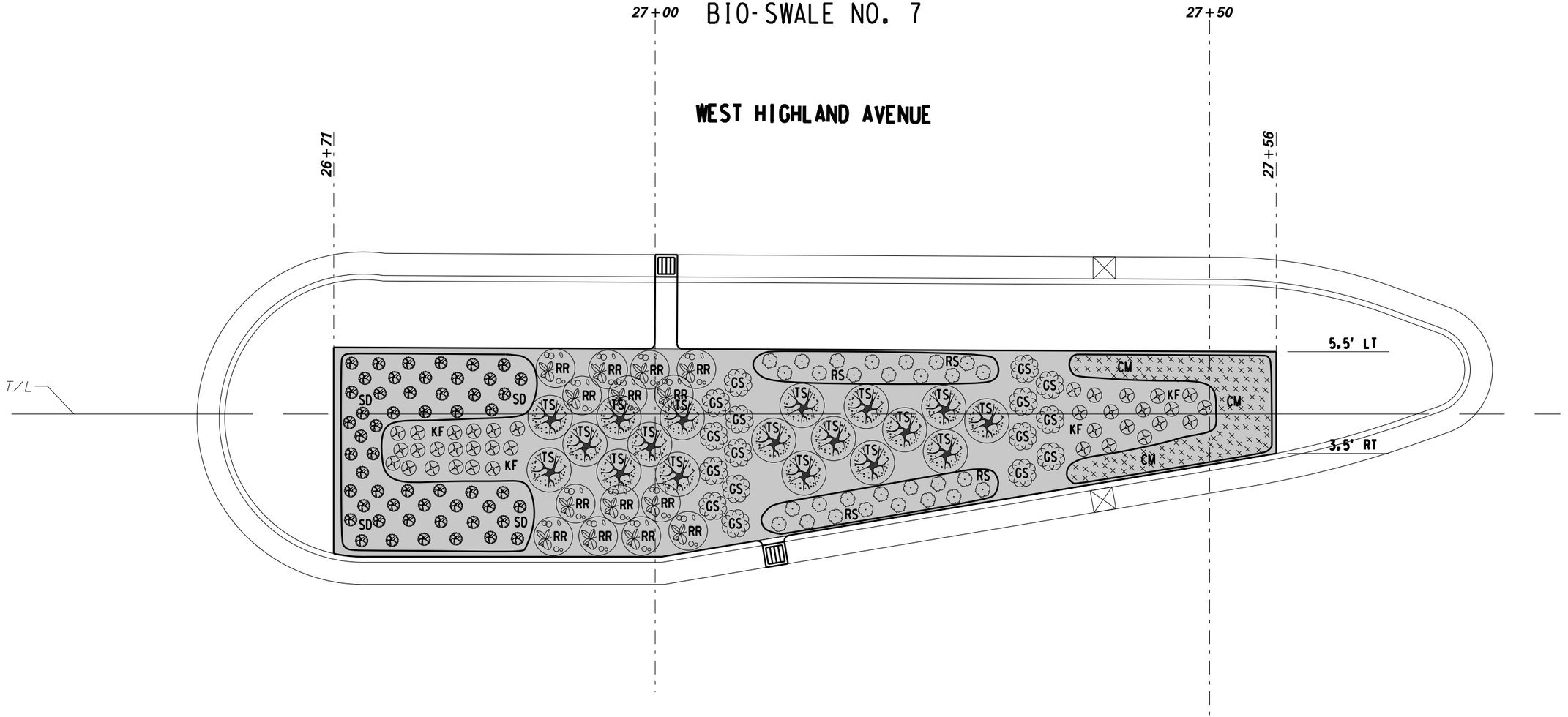
(18)	RS	RUSSIAN SAGE
(72)	BS	BLACK EYED SUSANS
(60)	CM	CATMINT

STATE PROJECT NUMBER - - - -	HWY:	COUNTY: MILWAUKEE	BIO-SWALE PLAN	SCALE FEET 0' 10'	SHEET NO: 116	E

FILE NAME: W:\SEW\SNDRAFT\ 1423719.SMP

2

BIO-SWALE NO. 7



SHRUBS

(14)	RR	RUGOSA ROSES
(18)	TS	TIGERS EYE SUMAC

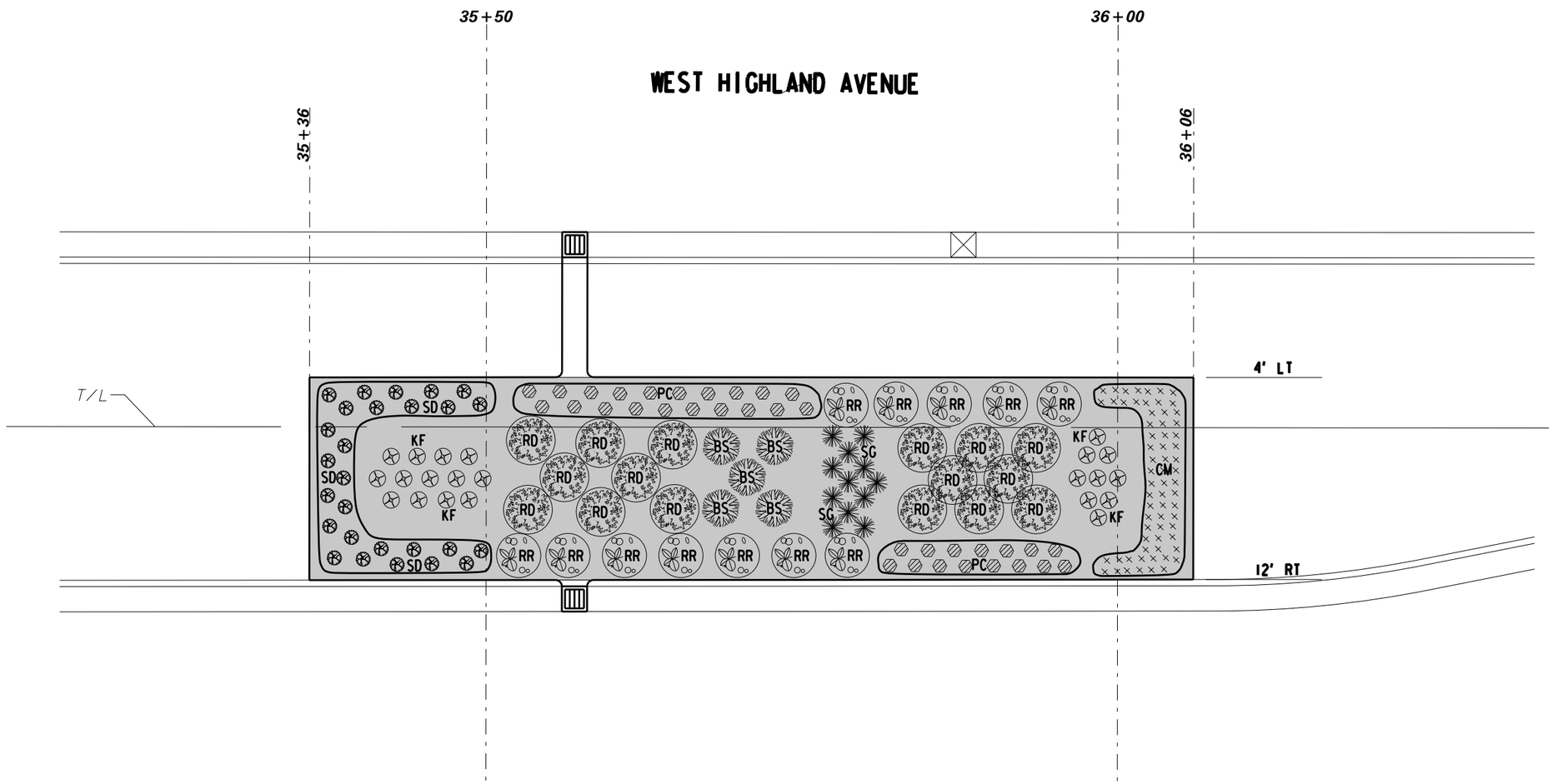
PERENNIALS, GRASS, AND BULBS

(36)	KF	KARL FOERSTER GRASS
(60)	SD	SHASTA DAISIES
(60)	CM	CATMINT
(48)	RS	RUSSIAN SAGE
(16)	GS	GROW LOW SUMAC

STATE PROJECT NUMBER - - - -	HWY:	COUNTY: MILWAUKEE	BIO-SWALE PLAN	SCALE FEET 0' 10'	SHEET NO: 117	E

FILE NAME: W:\SEW\SNDRAFT\ 1423719.SMP

BIO-SWALE NO. 8



SHRUBS

(12)	RR	RUGOSA ROSES
(16)	RD	RED TWIG DOGWOODS
(5)	BS	BLACK LACE ELDERBERRY

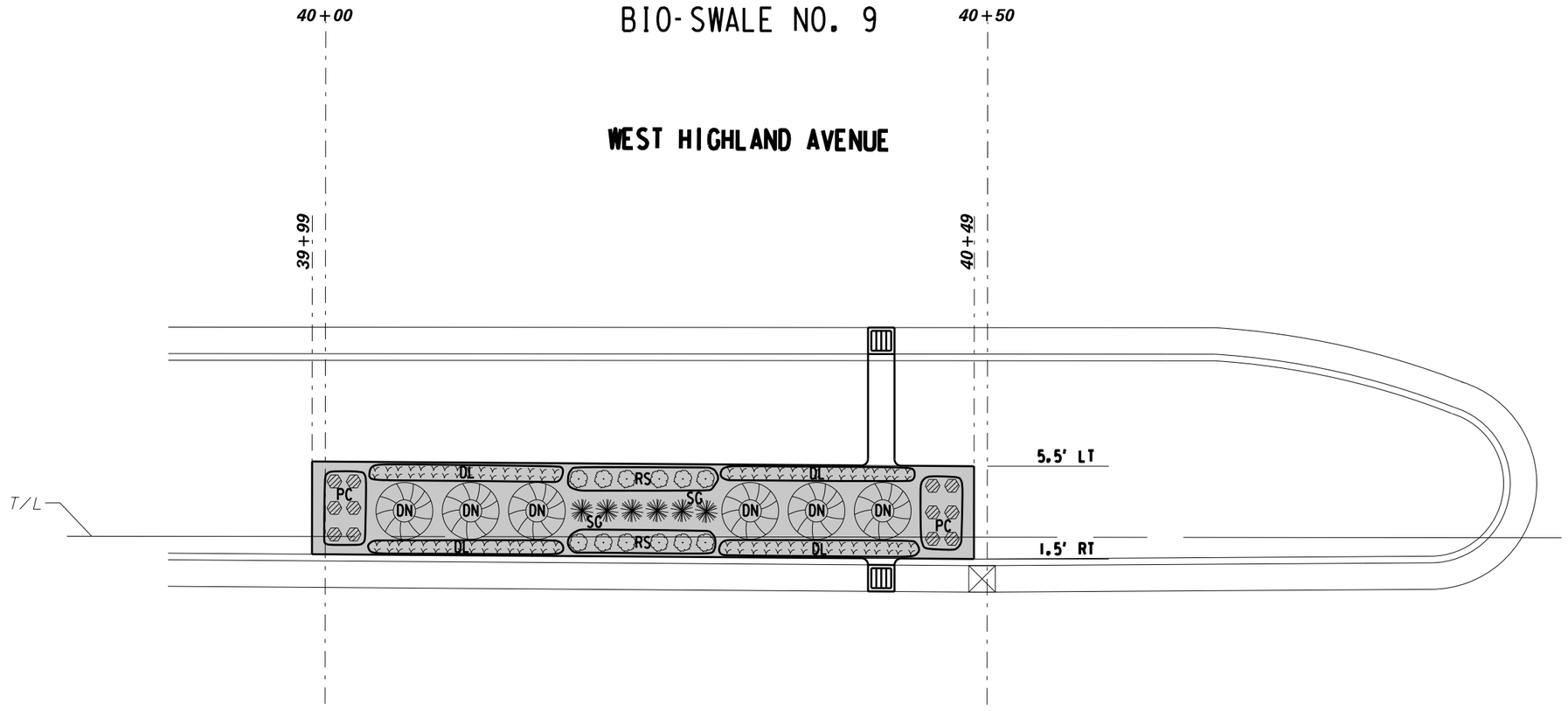
PERENNIALS, GRASS, AND BULBS

(12)	SG	SWITCH GRASS
(72)	PC	PURPLE CONEFLOWER
(48)	CM	CATMINT
(36)	KF	KARL FOERSTER GRASS
(48)	SD	SHASTA DAISIES

STATE PROJECT NUMBER - - - -	HWY:	COUNTY: MILWAUKEE	BIO-SWALE PLAN	SCALE FEET 0' 10'	SHEET NO: 118	E

FILE NAME: W:\SEW\SNDRAFT\ 1423719.SMP

BIO-SWALE NO. 9



SHRUBS

(6)	DN	DIABLO NINEBARK

PERENNIALS, GRASS, AND BULBS

(24)	PC	PURPLE CONEFLOWER
(12)	RS	RUSSIAN SAGE
(6)	SG	SWITCH GRASS
(48)	DL	DAYLILYS

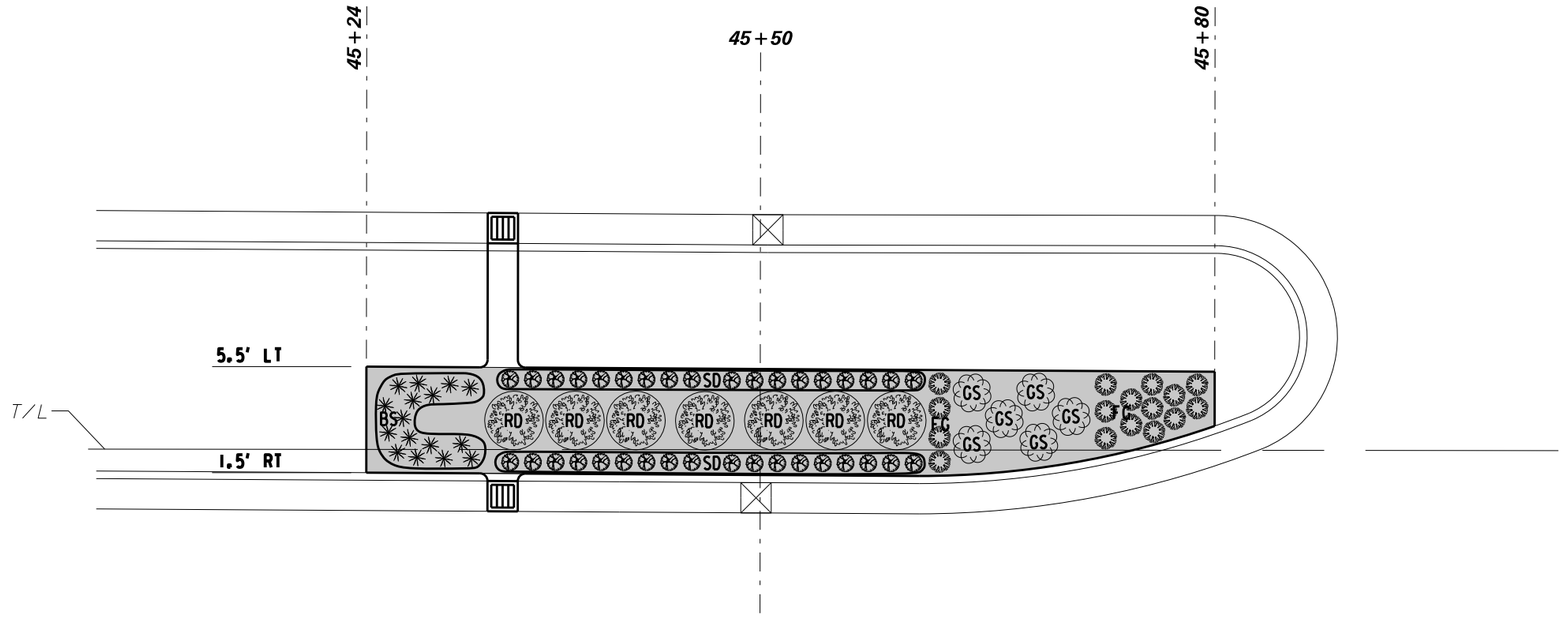
STATE PROJECT NUMBER - - - -	HWY:	COUNTY: MILWAUKEE	BIO-SWALE PLAN	SCALE FEET 0' 10'	SHEET NO: 119	E

FILE NAME: W:\SEW\SNDRAFT\ 1423719.SMP

2

BIO-SWALE NO. 10

WEST HIGHLAND AVENUE



SHRUBS

(7)	RD	RED TWIG DOGWOODS

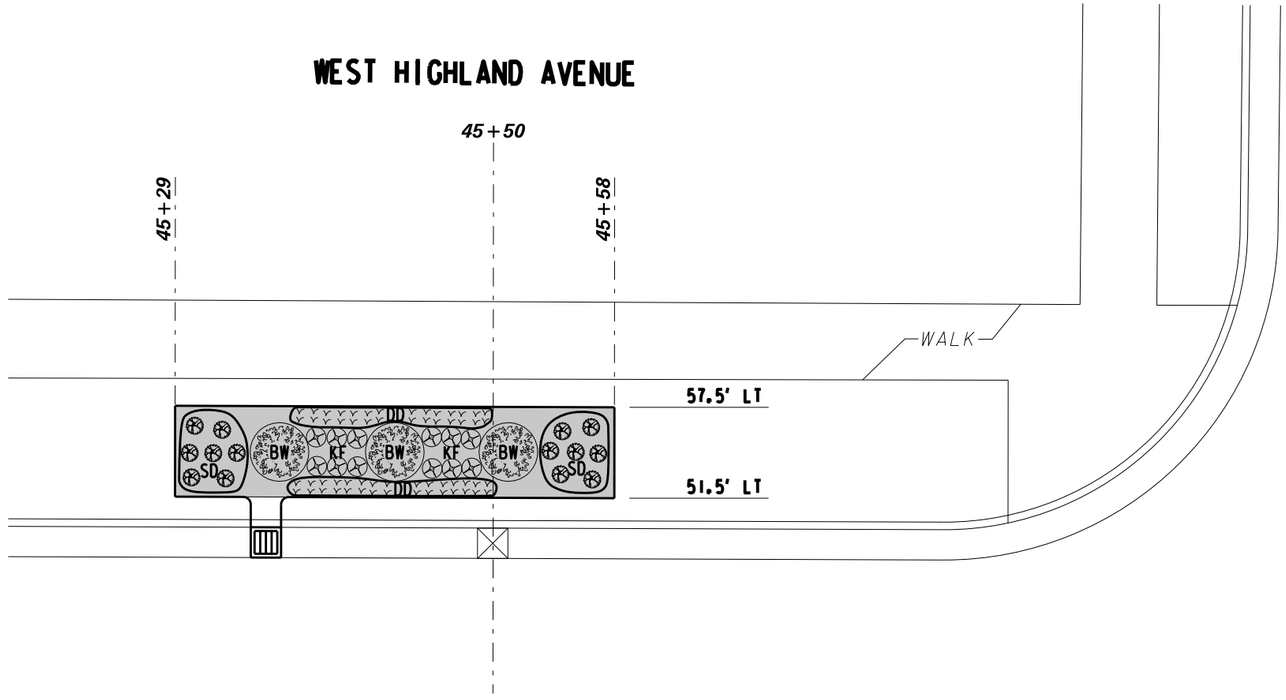
PERENNIALS, GRASS, AND BULBS

(30)	BS	BLACK EYED SUSANS
(48)	SD	SHASTA DAISIES
(18)	FG	RED FLAME GRASS
(6)	GS	GROW LOW SUMAC

STATE PROJECT NUMBER - - - -	HWY:	COUNTY: MILWAUKEE	BIO-SWALE PLAN	SCALE FEET 0' 10'	SHEET NO: 120	E

FILE NAME: W:\SEW\SNDRAFT\ 1423719.SMP

BIO-SWALE NO. II



SHRUBS

(3)	BW	ARCTIC BLUE WILLOW

PERENNIALS, GRASS, AND BULBS

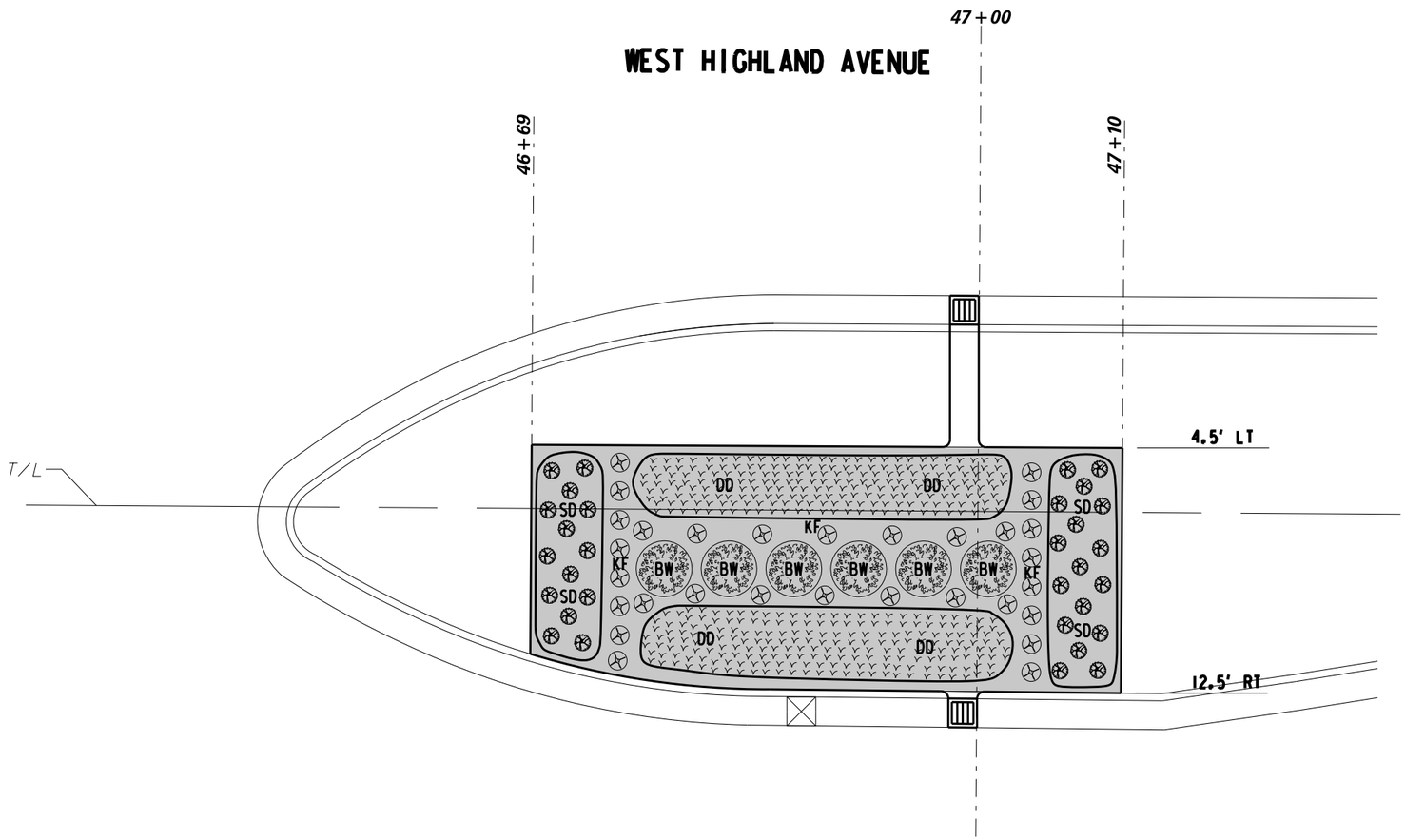
(24)	SD	SHASTA DAISIES
(36)	DD	DWARF DAYLILIES
(12)	KF	KARL FOERSTER GRASS

T/L

STATE PROJECT NUMBER - - - -	HWY:	COUNTY: MILWAUKEE	BIO-SWALE PLAN	SCALE FEET 0' 10'	SHEET NO: 121	E

FILE NAME: W:\SEW\SNDRAFT\ 1423719.SMP

BIO-SWALE NO. 12



SHRUBS

(6)	BW	ARCTIC BLUE WILLOW

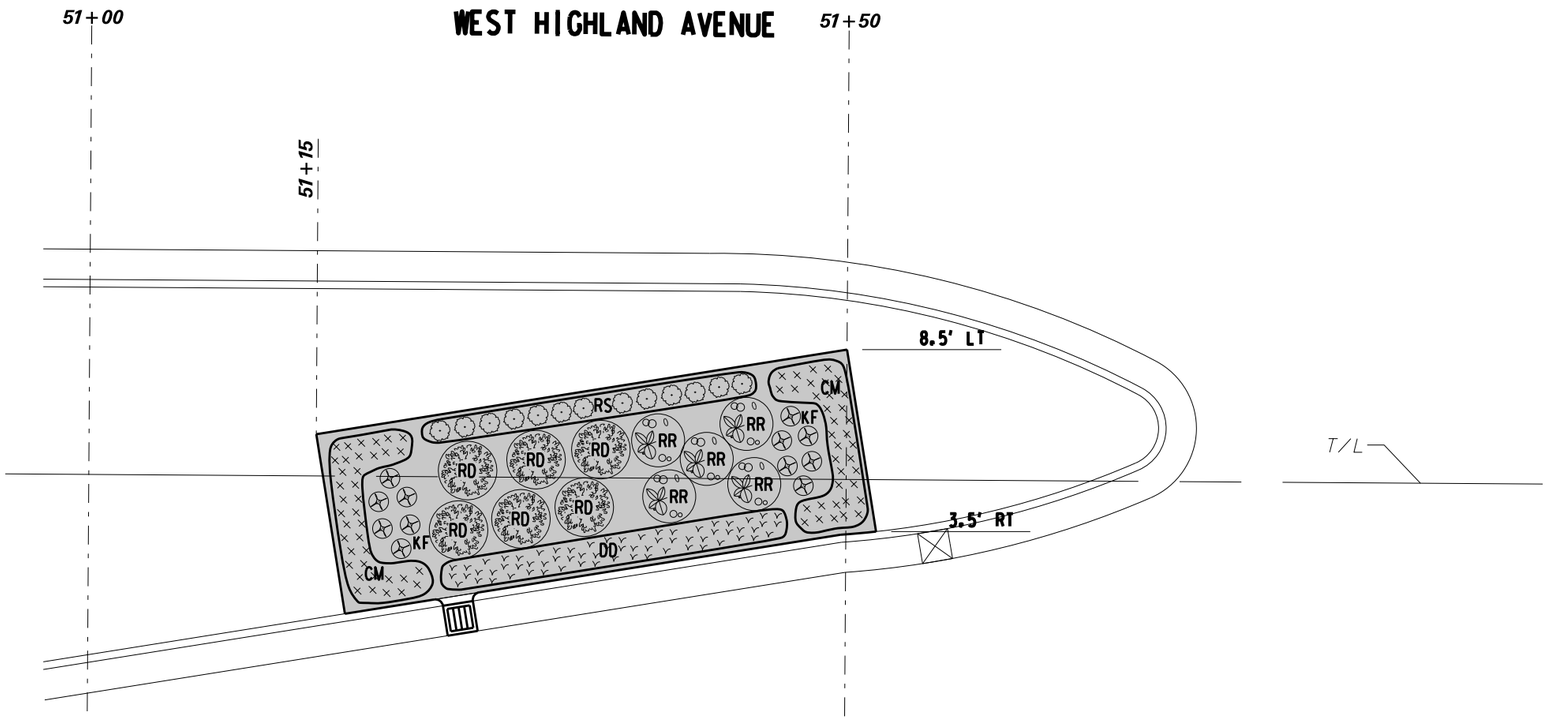
PERENNIALS, GRASS, AND BULBS

(48)	SD	SHASTA DAISIES
(30)	KF	KARL FOERSTER GRASS
(96)	DD	DWARF DAYLILIES

STATE PROJECT NUMBER - - - -	HWY:	COUNTY: MILWAUKEE	BIO-SWALE PLAN	SCALE FEET 0' 10'	SHEET NO: 122	E

FILE NAME: W:\SEW\SNDRAFT\ 1423719.SMP

BIO-SWALE NO. 13



SHRUBS

(5)	RR	RUGOSA ROSES
(6)	RD	RED TWIG DOGWOODS

PERENNIALS, GRASS, AND BULBS

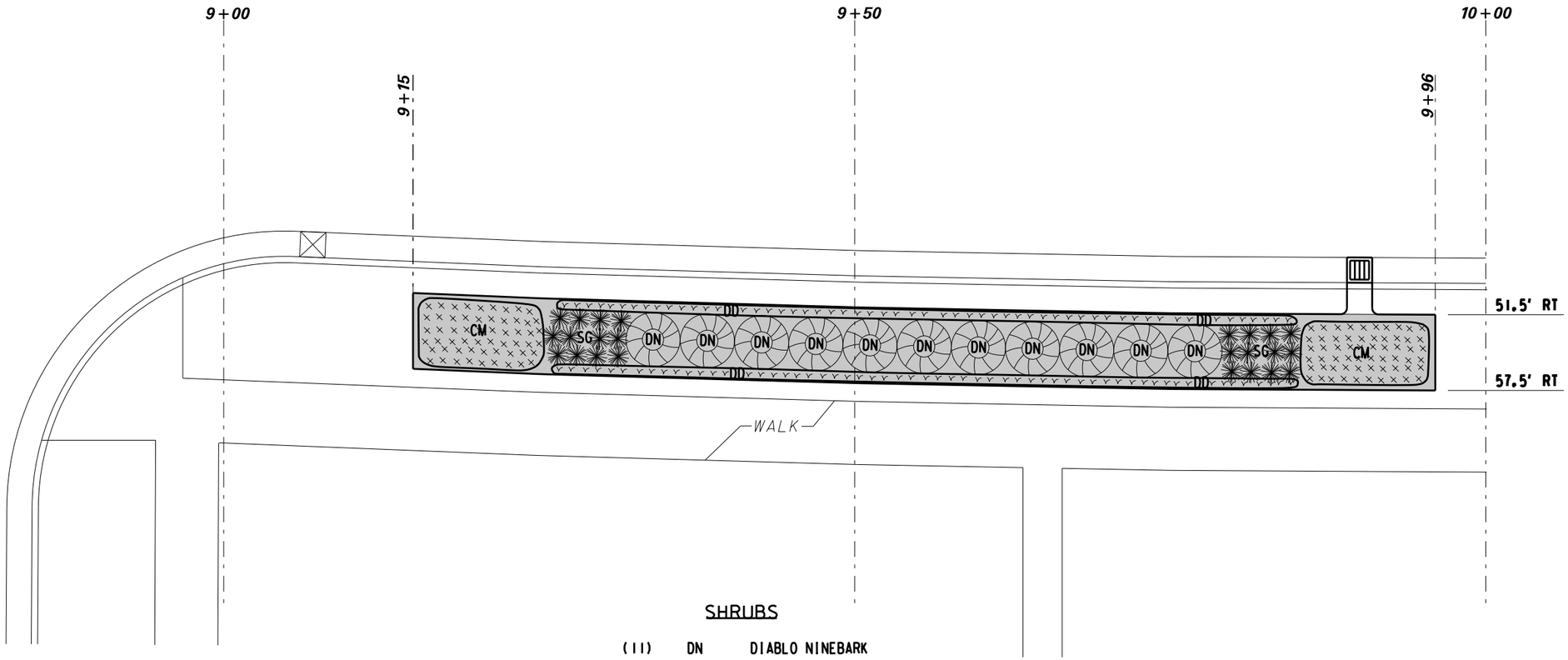
(72)	CM	CATMINT
(24)	DD	DWARF DAYLILIES
(24)	KF	KARL FOERSTER GRASS
(24)	RS	RUSSIAN SAGE

STATE PROJECT NUMBER - - - -	HWY:	COUNTY: MILWAUKEE	BIO-SWALE PLAN	SCALE FEET 0' 10'	SHEET NO: 123	E

FILE NAME: W:\SEW\SNDRAFT\ 1423719.SMP

BIO-SWALE NO. 14

WEST HIGHLAND AVENUE



SHRUBS

(11)	DN	DIABLO NINEBARK

PERENNIALS, GRASS, AND BULBS

(36)	CM	CATMINT
(120)	DD	DWARF DAYLILIES
(24)	SG	SWITCH GRASS

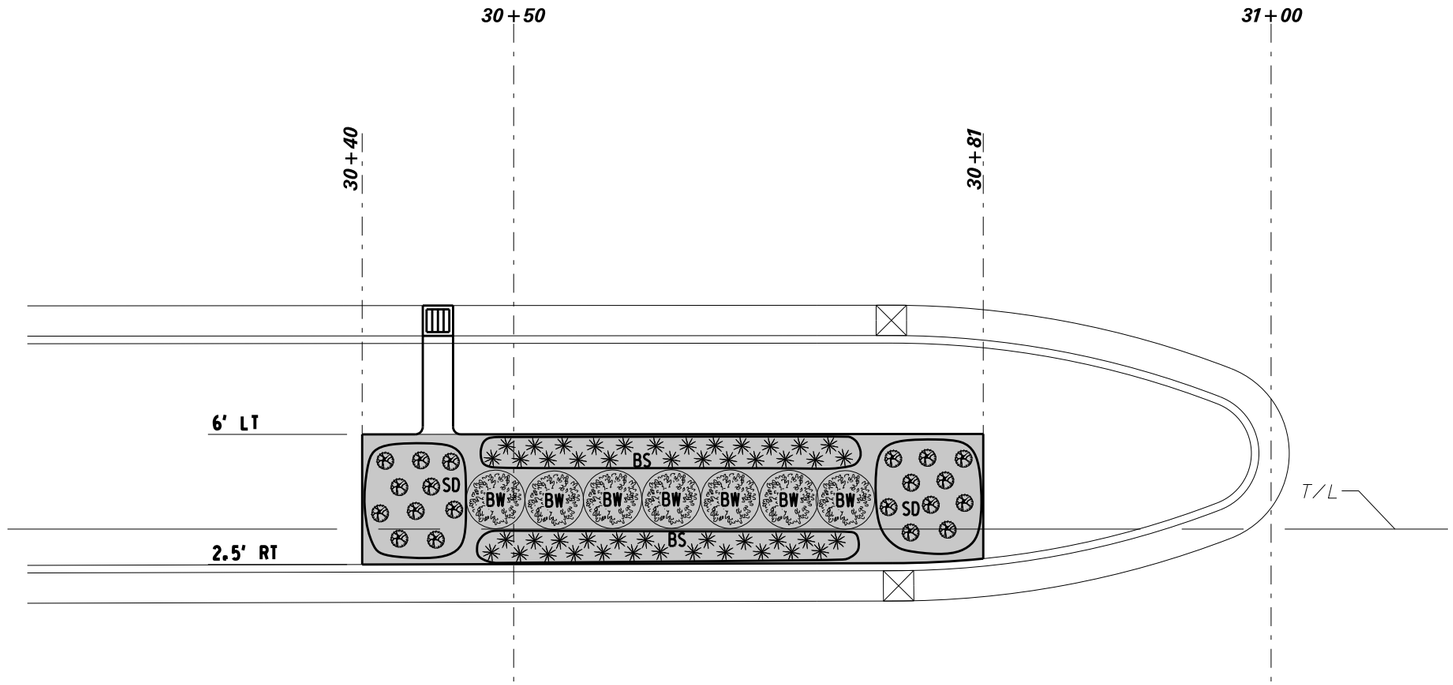
STATE PROJECT NUMBER - - - -	HWY:	COUNTY: MILWAUKEE	BIO-SWALE PLAN	SCALE FEET 0' 10'	SHEET NO: 124	E

FILE NAME: W:\SEW\SNDRAFT\ 1423719.SMP

2

BIO-SWALE NO. 15

WEST HIGHLAND AVENUE



SHRUBS

(7)	BW	ARCTIC BLUE WILLOW

PERENNIALS, GRASS, AND BULBS

(24)	SD	SHASTA DAISIES
(48)	BS	BLACK EYED SUSANS

STATE PROJECT NUMBER - - - -	HWY:	COUNTY: MILWAUKEE	BIO-SWALE PLAN	SCALE FEET 0' 10'	SHEET NO: 125	E

FILE NAME: W:\SEW\SNDRAFT\ 1423719.SMP

2

LEGEND:

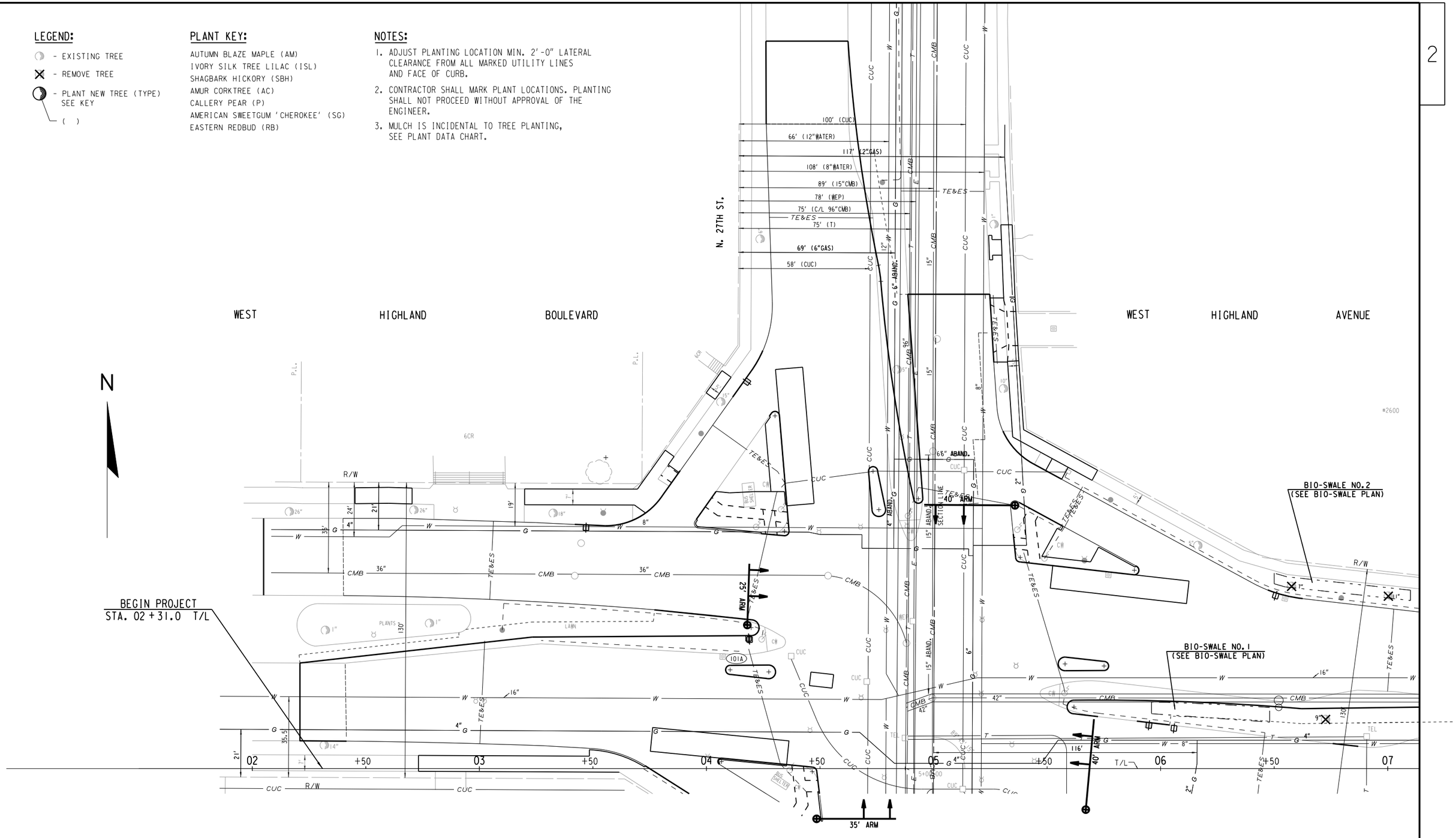
- EXISTING TREE
- REMOVE TREE
- PLANT NEW TREE (TYPE) SEE KEY
- ( )

PLANT KEY:

AUTUMN BLAZE MAPLE (AM)
IVORY SILK TREE LILAC (ISL)
SHAGBARK HICKORY (SBH)
AMUR CORKTREE (AC)
CALLERY PEAR (P)
AMERICAN SWEETGUM 'CHEROKEE' (SG)
EASTERN REDBUD (RB)

NOTES:

1. ADJUST PLANTING LOCATION MIN. 2'-0" LATERAL CLEARANCE FROM ALL MARKED UTILITY LINES AND FACE OF CURB.
2. CONTRACTOR SHALL MARK PLANT LOCATIONS. PLANTING SHALL NOT PROCEED WITHOUT APPROVAL OF THE ENGINEER.
3. MULCH IS INCIDENTAL TO TREE PLANTING, SEE PLANT DATA CHART.



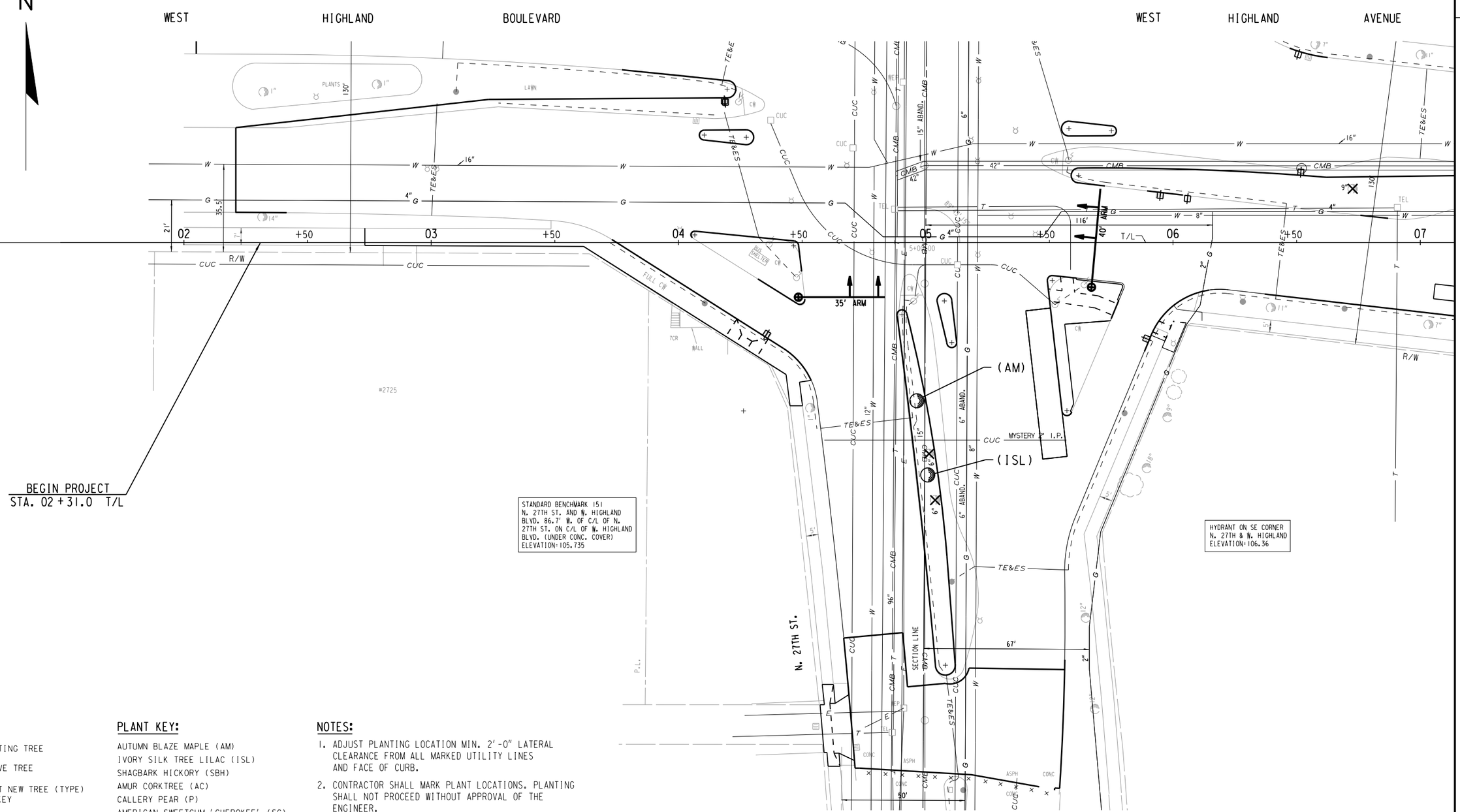
SHEET 1 OF 12

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	TREE REMOVAL AND PLANTING	SCALE FEET 0' 40'	SHEET NO: 126	E

FILENAME: W:\SPR\HIGHLAND_27-12\TREE REMOVAL PLANS\TREES 01-07.DGN

REVISED DATE: 04-20-2016 BY SB

2



LEGEND:

- ◑ - EXISTING TREE
- ✕ - REMOVE TREE
- ◑ - PLANT NEW TREE (TYPE) SEE KEY
- ( )

PLANT KEY:

AUTUMN BLAZE MAPLE (AM)
IVORY SILK TREE LILAC (ISL)
SHAGBARK HICKORY (SBH)
AMUR CORKTREE (AC)
CALLERY PEAR (P)
AMERICAN SWEETGUM 'CHEROKEE' (SG)
EASTERN REDBUD (RB)

NOTES:

1. ADJUST PLANTING LOCATION MIN. 2'-0" LATERAL CLEARANCE FROM ALL MARKED UTILITY LINES AND FACE OF CURB.
2. CONTRACTOR SHALL MARK PLANT LOCATIONS. PLANTING SHALL NOT PROCEED WITHOUT APPROVAL OF THE ENGINEER.
3. MULCH IS INCIDENTAL TO TREE PLANTING, SEE PLANT DATA CHART.

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	TREE REMOVAL AND PLANTING	SCALE FEET 0' 40'	SHEET NO: 127	E

FILE NAME: W:\SPR\HIGHLAND_27-12\TREE REMOVAL PLANS\TREES 01-07.DGN

REVISED DATE: 04-20-2016 BY SB

WEST

HIGHLAND

AVENUE

N

#2600 #2600 #2538 #2534 #2528-26 #2524 #2520-16 #2512 #2502 #2476

#2535 #2527-25 #2505

N.26TH ST.

N.25TH ST.

BIO-SWALE NO.3
(SEE BIO-SWALE PLAN)

BIO-SWALE NO.14
(SEE BIO-SWALE PLAN)

HYDRANT ON SE CORNER
N. 26TH & W. HIGHLAND
(N.E. BOLT)
ELEVATION=105.84

HYDRANT ON SW CORNER
N. 25TH & W. HIGHLAND
(S.E. BOLT)
ELEVATION=106.92

07 +50 T/L 08 +50 09 +50 10 +50 11 +50 12 +50 T/L 13 +50

NOTES:

1. ADJUST PLANTING LOCATION MIN. 2'-0" LATERAL CLEARANCE FROM ALL MARKED UTILITY LINES AND FACE OF CURB.
2. CONTRACTOR SHALL MARK PLANT LOCATIONS. PLANTING SHALL NOT PROCEED WITHOUT APPROVAL OF THE ENGINEER.
3. MULCH IS INCIDENTAL TO TREE PLANTING, SEE PLANT DATA CHART.

LEGEND:

- EXISTING TREE
- REMOVE TREE
- PLANT NEW TREE (TYPE) SEE KEY
- ( )

PLANT KEY:

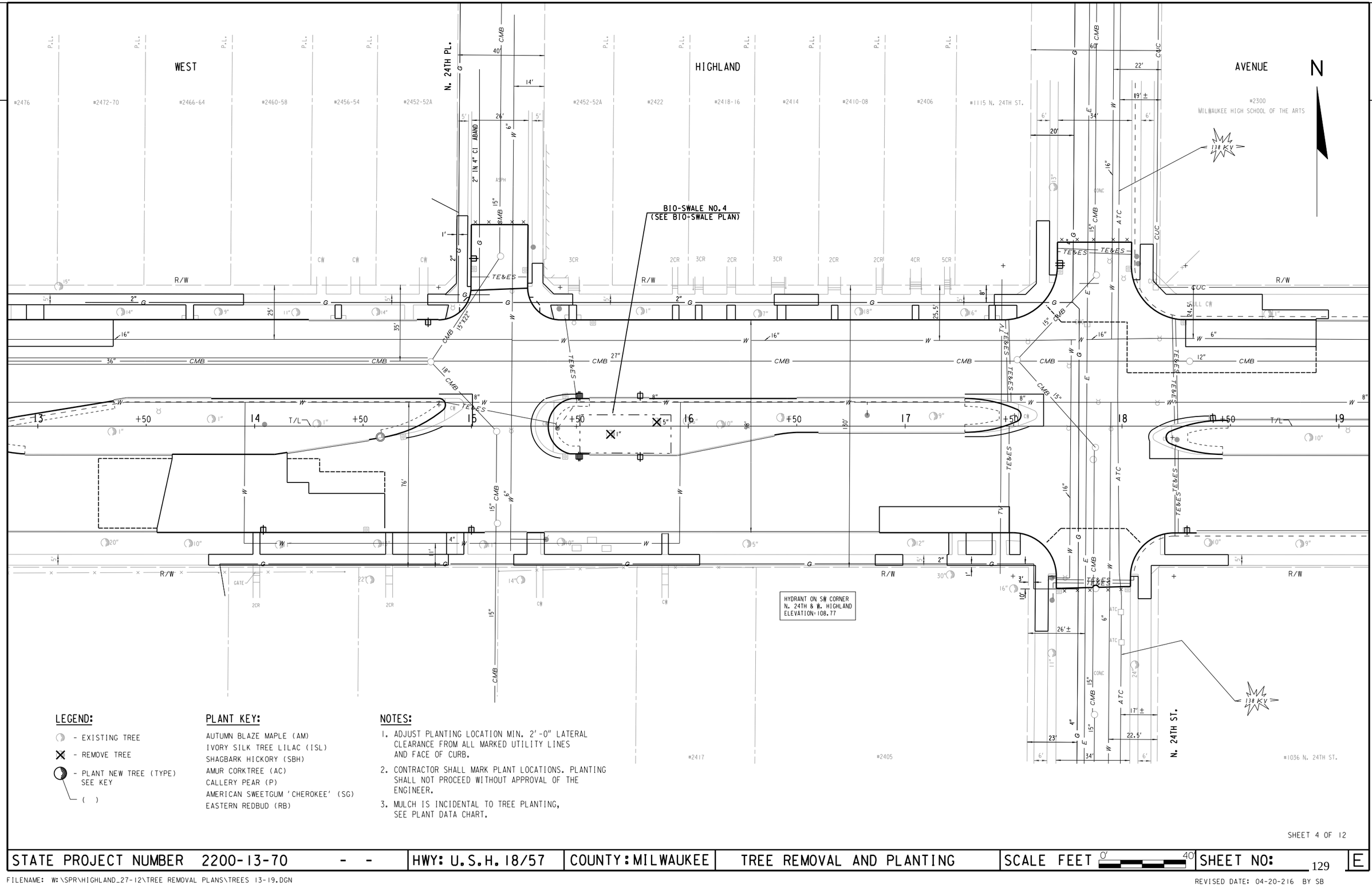
AUTUMN BLAZE MAPLE (AM)
IVORY SILK TREE LILAC (ISL)
SHAGBARK HICKORY (SBH)
AMUR CORKTREE (AC)
CALLERY PEAR (P)
AMERICAN SWEETGUM 'CHEROKEE' (SG)
EASTERN REDBUD (RB)

SHEET 3 OF 12

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	TREE REMOVAL AND PLANTING	SCALE FEET 0' 40'	SHEET NO: 128	E

FILENAME: W:\SPR\HIGHLAND_27-12\TREE REMOVAL PLANS\TREES 07-13.DGN

REVISED DATE: 04-20-2016 BY SB



LEGEND:

- ◑ - EXISTING TREE
- ✕ - REMOVE TREE
- ◑ - PLANT NEW TREE (TYPE) SEE KEY
  - ( )

PLANT KEY:

AUTUMN BLAZE MAPLE (AM)
IVORY SILK TREE LILAC (ISL)
SHAGBARK HICKORY (SBH)
AMUR CORKTREE (AC)
CALLERY PEAR (P)
AMERICAN SWEETGUM 'CHEROKEE' (SG)
EASTERN REDBUD (RB)

NOTES:

1. ADJUST PLANTING LOCATION MIN. 2'-0" LATERAL CLEARANCE FROM ALL MARKED UTILITY LINES AND FACE OF CURB.
2. CONTRACTOR SHALL MARK PLANT LOCATIONS. PLANTING SHALL NOT PROCEED WITHOUT APPROVAL OF THE ENGINEER.
3. MULCH IS INCIDENTAL TO TREE PLANTING, SEE PLANT DATA CHART.

SHEET 4 OF 12

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	TREE REMOVAL AND PLANTING	SCALE FEET 0' 40'	SHEET NO: 129	E

FILENAME: W:\SPR\HIGHLAND_27-12\TREE REMOVAL PLANS\TREES 13-19.DGN

REVISED DATE: 04-20-216 BY SB

WEST HIGHLAND AVENUE

#2300
MILWAUKEE HIGH SCHOOL OF THE ARTS

N

BIO-SWALE NO.5
(SEE BIO-SWALE PLAN)

BIO-SWALE NO.6
(SEE BIO-SWALE PLAN)

EXACT LOCATION UNKNOWN

HYDRANT ON SE CORNER
N. 23RD & W. HIGHLAND
(N.E. BOLT)
ELEVATION=112.52

N. 23RD ST.

#1036 N. 24TH ST.

#1035-21 N. 23RD ST.

#1032-34 N. 23RD ST.

1039 N. 22ND ST.

LEGEND:

- EXISTING TREE
- REMOVE TREE
- PLANT NEW TREE (TYPE) SEE KEY ( )

PLANT KEY:

AUTUMN BLAZE MAPLE (AM)
IVORY SILK TREE LILAC (ISL)
SHAGBARK HICKORY (SBH)
AMUR CORKTREE (AC)
CALLERY PEAR (P)
AMERICAN SWEETGUM 'CHEROKEE' (SG)
EASTERN REDBUD (RB)

NOTES:

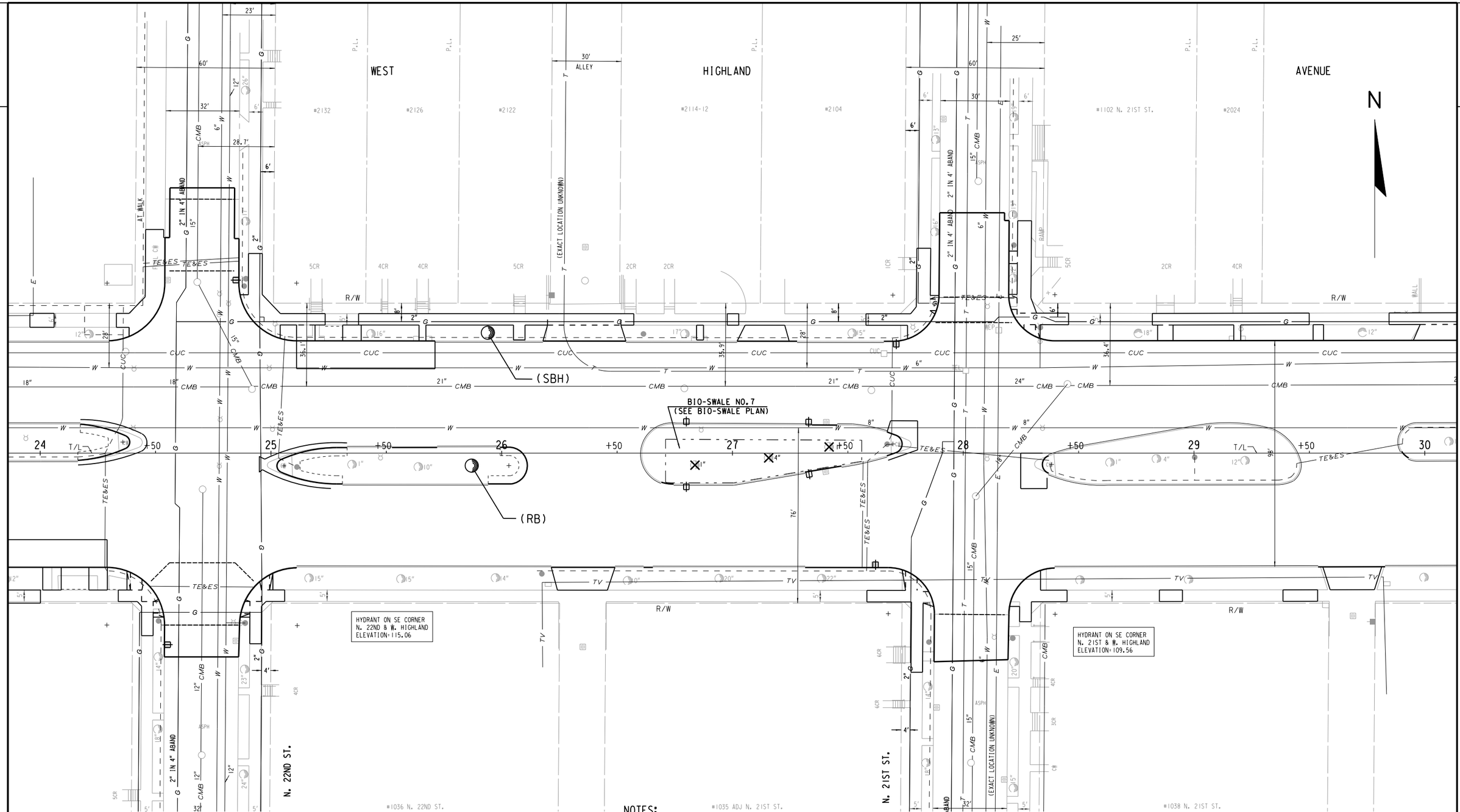
1. ADJUST PLANTING LOCATION MIN. 2'-0" LATERAL CLEARANCE FROM ALL MARKED UTILITY LINES AND FACE OF CURB.
2. CONTRACTOR SHALL MARK PLANT LOCATIONS. PLANTING SHALL NOT PROCEED WITHOUT APPROVAL OF THE ENGINEER.
3. MULCH IS INCIDENTAL TO TREE PLANTING, SEE PLANT DATA CHART.

SHEET 5 OF 12

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	TREE REMOVAL AND PLANTING	SCALE FEET 0' 40'	SHEET NO: 130	E

FILENAME: W:\SPR\HIGHLAND_27-12\TREE REMOVAL PLANS\TREES 19-24.DGN

REVISED DATE: 04-20-2016 BY SB



LEGEND:

- EXISTING TREE
- REMOVE TREE
- PLANT NEW TREE (TYPE) SEE KEY ( )

PLANT KEY:

AUTUMN BLAZE MAPLE (AM)	CALLERY PEAR (P)
IVORY SILK TREE LILAC (ISL)	AMERICAN SWEETGUM 'CHEROKEE' (SG)
SHAGBARK HICKORY (SBH)	EASTERN REDBUD (RB)
AMUR CORKTREE (AC)	

NOTES:

1. ADJUST PLANTING LOCATION MIN. 2'-0" LATERAL CLEARANCE FROM ALL MARKED UTILITY LINES AND FACE OF CURB.
2. CONTRACTOR SHALL MARK PLANT LOCATIONS. PLANTING SHALL NOT PROCEED WITHOUT APPROVAL OF THE ENGINEER.
3. MULCH IS INCIDENTAL TO TREE PLANTING, SEE PLANT DATA CHART.

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	TREE REMOVAL AND PLANTING	SCALE FEET 0' 40'	SHEET NO: 131	E

FILENAME: W:\SPR\HIGHLAND_27-12\TREE REMOVAL PLANS\TREES 24-30.DGN

REVISED DATE: 04-20-2016 BY SB

WEST HIGHLAND AVENUE

N

BIO-SWALE NO.15
(SEE BIO-SWALE PLAN)

HYDRANT ON N/S OF W. HIGHLAND BLVD. @ 34+99 ELEVATION=97.52

BIO-SWALE NO.8
(SEE BIO-SWALE PLAN)

(AC)

N. 20TH ST.

#2004 #1924-1812 #1037 N. 20TH ST. #1933 #1925 #1917 #1917 #1903 #1835 #1827

LEGEND:

- EXISTING TREE
- REMOVE TREE
- PLANT NEW TREE (TYPE) SEE KEY ( )

PLANT KEY:

AUTUMN BLAZE MAPLE (AM)	CALLERY PEAR (P)
IVORY SILK TREE LILAC (ISL)	AMERICAN SWEETGUM 'CHEROKEE' (SG)
SHAGBARK HICKORY (SBH)	EASTERN REDBUD (RB)
AMUR CORKTREE (AC)	

NOTES:

1. ADJUST PLANTING LOCATION MIN. 2'-0" LATERAL CLEARANCE FROM ALL MARKED UTILITY LINES AND FACE OF CURB.
2. CONTRACTOR SHALL MARK PLANT LOCATIONS. PLANTING SHALL NOT PROCEED WITHOUT APPROVAL OF THE ENGINEER.
3. MULCH IS INCIDENTAL TO TREE PLANTING, SEE PLANT DATA CHART.

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	TREE REMOVAL AND PLANTING	SCALE FEET 0' 40'	SHEET NO: 132	E

FILENAME: W:\SPR\HIGHLAND_27-12\TREE REMOVAL PLANS\TREES 30-36.DGN

REVISED DATE: 04-20-2016 BY SB

WEST HIGHLAND AVENUE

N

N. 18TH ST.

#1706
MACDOWELL ELEMENTARY SCHOOL

BIO-SWALE NO. 8
(SEE BIO-SWALE PLAN)

BIO-SWALE NO. 9
(SEE BIO-SWALE PLAN)

HYDRANT ON S/S OF W. HIGHLAND BLVD. @ N. 18TH ST.
ELEVATION=97.28

N. 17TH ST.

#1827 #1819 #1811 #1803 #1735 #1727 #1719 #1713 #1703

LEGEND:

- EXISTING TREE
- REMOVE TREE
- PLANT NEW TREE (TYPE) SEE KEY
- ( )

PLANT KEY:

AUTUMN BLAZE MAPLE (AM)
IVORY SILK TREE LILAC (ISL)
SHAGBARK HICKORY (SBH)
AMUR CORKTREE (AC)
CALLERY PEAR (P)
AMERICAN SWEETGUM 'CHEROKEE' (SG)
EASTERN REDBUD (RB)

NOTES:

1. ADJUST PLANTING LOCATION MIN. 2'-0" LATERAL CLEARANCE FROM ALL MARKED UTILITY LINES AND FACE OF CURB.
2. CONTRACTOR SHALL MARK PLANT LOCATIONS. PLANTING SHALL NOT PROCEED WITHOUT APPROVAL OF THE ENGINEER.
3. MULCH IS INCIDENTAL TO TREE PLANTING, SEE PLANT DATA CHART.

SHEET 8 OF 12

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	TREE REMOVAL AND PLANTING	SCALE FEET 0' 40'	SHEET NO: 133	E

FILENAME: W:\SPR\HIGHLAND_27-12\TREE REMOVAL PLANS\TREES 36-41.DGN

REVISED DATE: 04-20-2016 BY SB

WEST HIGHLAND AVENUE

N

N. CALLAHAN PL.

BIO-SWALE NO. 11
(SEE BIO-SWALE PLAN)

BIO-SWALE NO. 10
(SEE BIO-SWALE PLAN)

BIO-SWALE NO. 12
(SEE BIO-SWALE PLAN)

35' ARM

HYDRANT ON SE CORNER OF N. 17TH ST. & W. HIGHLAND BLVD. ELEV.=95.27

N. 17TH ST.

LEGEND:

- EXISTING TREE
- REMOVE TREE
- PLANT NEW TREE (TYPE) SEE KEY ( )

PLANT KEY:

AUTUMN BLAZE MAPLE (AM)
IVORY SILK TREE LILAC (ISL)
SHAGBARK HICKORY (SBH)
AMUR CORKTREE (AC)
CALLERY PEAR (P)
AMERICAN SWEETGUM 'CHEROKEE' (SG)
EASTERN REDBUD (RB)

NOTES:

1. ADJUST PLANTING LOCATION MIN. 2'-0" LATERAL CLEARANCE FROM ALL MARKED UTILITY LINES AND FACE OF CURB.
2. CONTRACTOR SHALL MARK PLANT LOCATIONS. PLANTING SHALL NOT PROCEED WITHOUT APPROVAL OF THE ENGINEER.
3. MULCH IS INCIDENTAL TO TREE PLANTING, SEE PLANT DATA CHART.

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	TREE REMOVAL AND PLANTING	SCALE FEET 0' 40'	SHEET NO: 134 E

FILENAME: W:\SPR\HIGHLAND_27-12\TREE REMOVAL PLANS\TREES 41-47.DGN

REVISED DATE: 04-20-2016 BY SB

WEST HIGHLAND AVENUE

N

HYDRANT ON NW CORNER
W. HIGHLAND BLVD. AND
N. 14TH ST. ELEV.=94.70

BIO-SWALE NO. 13
(SEE BIO-SWALE PLAN)

STANDARD BENCHMARK 77-14
N. 15TH ST. & W. HIGHLAND BLVD.
E. MEDIAN, 9.4' N. OF S. CURB
AND 18.5' E. OF NOSE.
ELEV.=91.995

N. 15TH ST.

N. 14TH ST.

SCOTT MIDDLE SCHOOL

LEGEND:

- EXISTING TREE
- REMOVE TREE
- PLANT NEW TREE (TYPE) SEE KEY ( )

PLANT KEY:

AUTUMN BLAZE MAPLE (AM)	CALLERY PEAR (P)
IVORY SILK TREE LILAC (ISL)	AMERICAN SWEETGUM 'CHEROKEE' (SG)
SHAGBARK HICKORY (SBH)	EASTERN REDBUD (RB)
AMUR CORKTREE (AC)	

NOTES:

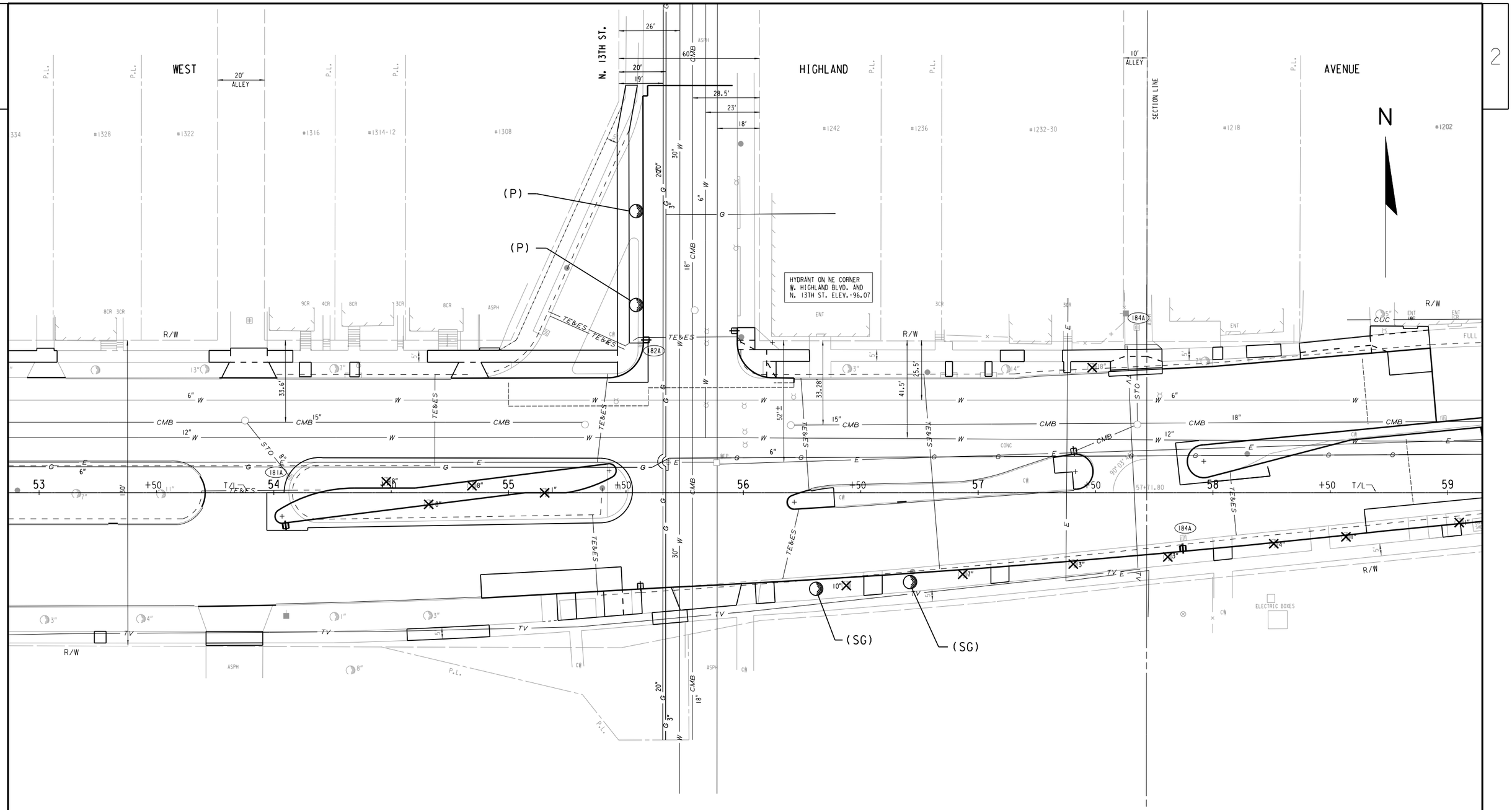
1. ADJUST PLANTING LOCATION MIN. 2'-0" LATERAL CLEARANCE FROM ALL MARKED UTILITY LINES AND FACE OF CURB.
2. CONTRACTOR SHALL MARK PLANT LOCATIONS. PLANTING SHALL NOT PROCEED WITHOUT APPROVAL OF THE ENGINEER.
3. MULCH IS INCIDENTAL TO TREE PLANTING, SEE PLANT DATA CHART.

SHEET 10 OF 12

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	TREE REMOVAL AND PLANTING	SCALE FEET 0' 40'	SHEET NO: 135	E

FILENAME: W:\SPR\HIGHLAND_27-12\TREE REMOVAL PLANS\TREES 47-53.DGN

REVISED DATE: 04-20-2016 BY SB



LEGEND:

- ◑ - EXISTING TREE
- ✕ - REMOVE TREE
- ◑ - PLANT NEW TREE (TYPE) SEE KEY
  ( )

PLANT KEY:

AUTUMN BLAZE MAPLE (AM)	CALLERY PEAR (P)
IVORY SILK TREE LILAC (ISL)	AMERICAN SWEETGUM 'CHEROKEE' (SG)
SHAGBARK HICKORY (SBH)	EASTERN REDBUD (RB)
AMUR CORKTREE (AC)	

NOTES:

1. ADJUST PLANTING LOCATION MIN. 2'-0" LATERAL CLEARANCE FROM ALL MARKED UTILITY LINES AND FACE OF CURB.
2. CONTRACTOR SHALL MARK PLANT LOCATIONS. PLANTING SHALL NOT PROCEED WITHOUT APPROVAL OF THE ENGINEER.
3. MULCH IS INCIDENTAL TO TREE PLANTING, SEE PLANT DATA CHART.

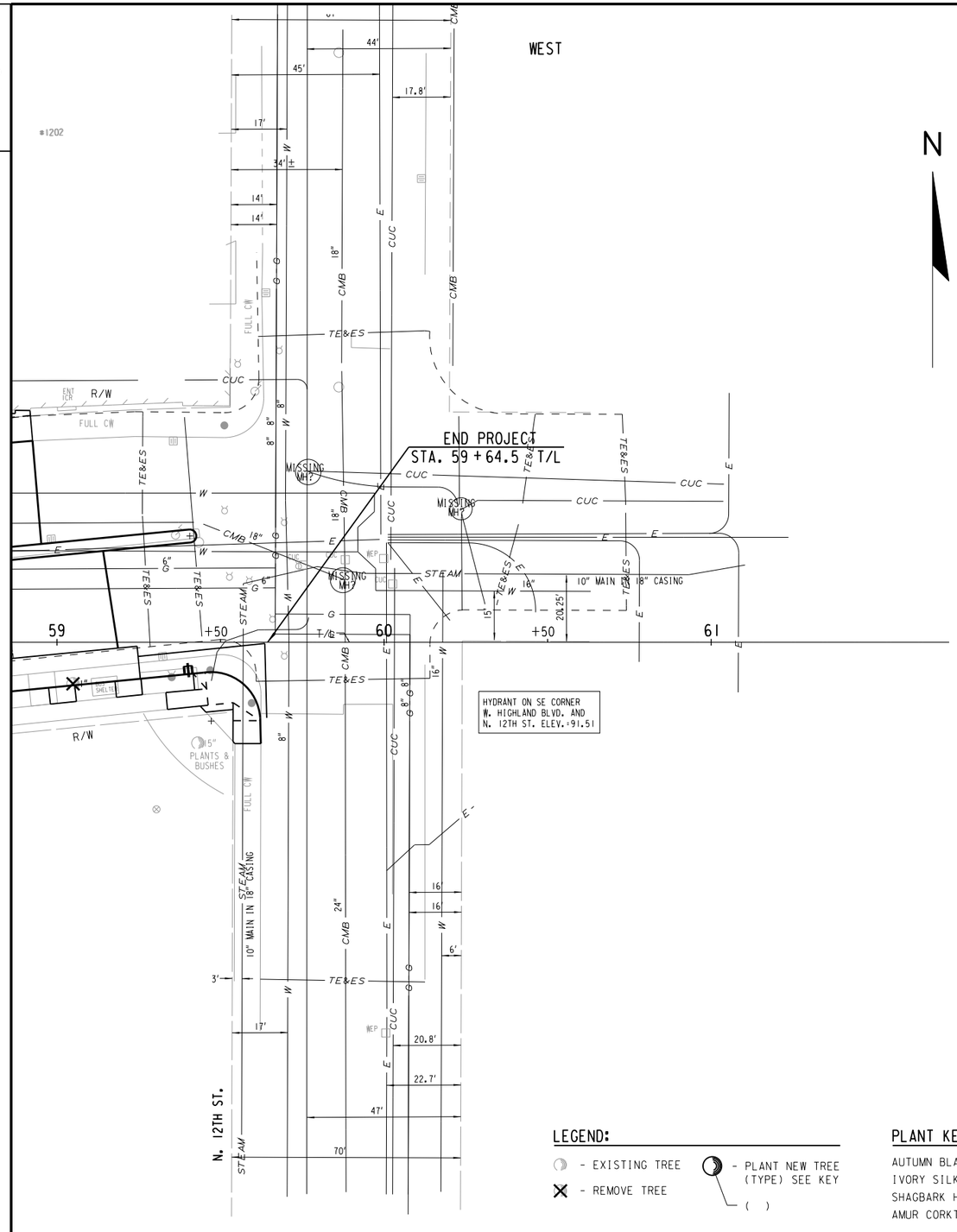
SHEET 11 OF 12

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	TREE REMOVAL AND PLANTING	SCALE FEET 0' 40'	SHEET NO: 136	E

FILENAME: W:\SPR\HIGHLAND_27-12\TREE REMOVAL PLANS\TREES 53-59.DGN

REVISED DATE: 04-20-2016 BY SB

WEST HIGHLAND AVENUE



LEGEND:

- EXISTING TREE
- REMOVE TREE
- PLANT NEW TREE (TYPE) SEE KEY ( )

PLANT KEY:

AUTUMN BLAZE MAPLE (AM)
IVORY SILK TREE LILAC (ISL)
SHAGBARK HICKORY (SBH)
AMUR CORKTREE (AC)
CALLERY PEAR (P)
AMERICAN SWEETGUM 'CHEROKEE' (SG)
EASTERN REDBUD (RB)

NOTES:

1. ADJUST PLANTING LOCATION MIN. 2'-0" LATERAL CLEARANCE FROM ALL MARKED UTILITY LINES AND FACE OF CURB.
2. CONTRACTOR SHALL MARK PLANT LOCATIONS. PLANTING SHALL NOT PROCEED WITHOUT APPROVAL OF THE ENGINEER.
3. MULCH IS INCIDENTAL TO TREE PLANTING, SEE PLANT DATA CHART.

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	TREE REMOVAL AND PLANTING	SCALE FEET 0' 40'	SHEET NO: 137	E

FILENAME: W:\SPR\HIGHLAND_27-12\TREE REMOVAL PLANS\TREES 59-63 .DGN

REVISED DATE: 04-20-2016 BY SB

N. 27TH

W. HIGHLAND BLVD.

W. HIGHLAND AVE.

ST.

EXISTING TES MANHOLE #501
STA. 04+70.6, 38.3'LT.

LOCATE AND ATTACH
TO EXISTING CONDUIT
STA. 05+36.8, 218.5'RT.

324'-6-4"PVC CONDUIT
CEMENT ENCASED

11.25°, 12.5'R. HUB
STA. 05+14.7, 0.2'RT.

EXISTING TES MANHOLE #502
STA. 05+12.9, 09.0'RT.

EXISTING TES MANHOLE #500
STA. 04+37.3, 49.5'LT.

71'-3-4"PVC CONDUIT
CEMENT ENCASED

PROP. 4'DIA. MANHOLE #501A
STA. 04+94.2, 104.1'LT.

5° BEND
STA. 04+72.8, 214.5'LT.

217'-6-4"PVC CONDUIT
CEMENT ENCASED
LOCATE AND ATTACH
TO EXISTING CONDUIT
STA. 04+66.1, 320.2'LT.

11.25°, 12.5'R. HUB
STA. 04+98.3, 129.7'LT.

EXISTING TES MANHOLE #503
STA. 05+13.5, 131.4'LT.

69'-1-4"PVC CONDUIT
CEMENT ENCASED
W/VENT PIPE
SEE INSTALLATION DETAIL

45°, 12.5'R. HUB
STA. 04+84.6, 76.8'LT.

NOTES:

1) 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.
2) THE LOCATION OF THE EXISTING AND PROPOSED UTILITY INSTALLATIONS SHALL BE FIELD VERIFIED BY THE CONTRACTOR.
3) DIMENSIONS SHOWN ARE TO CENTER OF MANHOLE, DUCT PACKAGE OR UTILITY.
4) MAINTAIN A STANDARD DEPTH OF 39-INCHES BETWEEN FINISHED GRADE AND TOP OF CONDUIT.
5) INSTALL PROPOSED CONDUIT ALONGSIDE EXISTING ACTIVE CONDUIT.
6) ATTACH PROPOSED 4" PVC TO EXISTING DUCTS (CLAY TILE) USING APPROPRIATE ADAPTOR.
7) USE SPLIT 4" PVC OVER EXISTING CABLES TO CONNECT CONDUIT THROUGH ABANDON MANHOLE LOCATION.
8) CONDUIT ENTERING AND EXITING A MANHOLE SHALL BE INSTALLED AT 180° TO EACH OTHER.

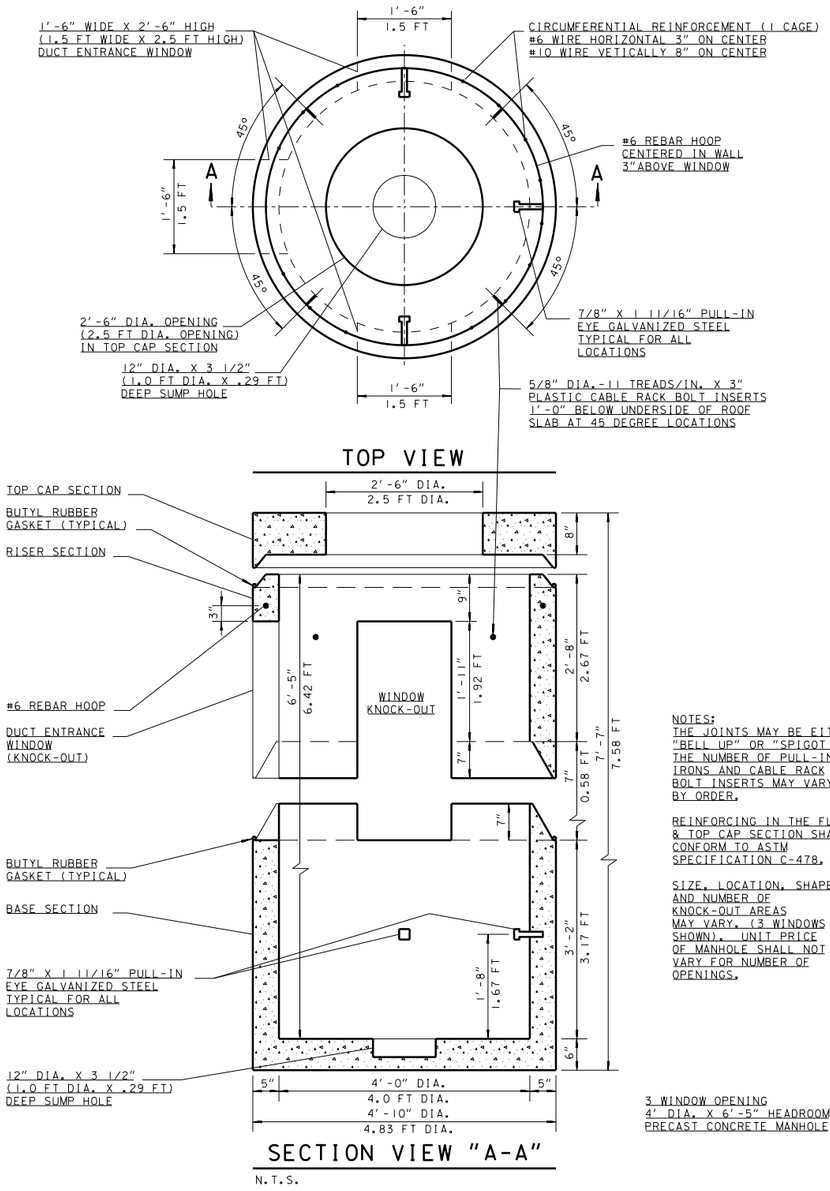
LEGEND

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

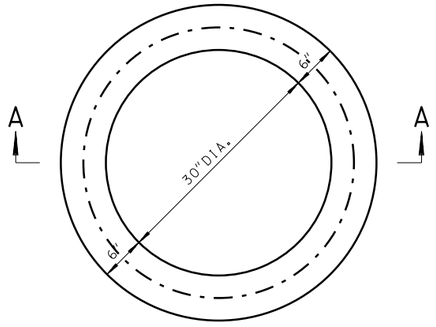
SHEET 1 OF 3

STATE PROJECT NUMBER 2200-13-70	HWY: LOCAL STREET	COUNTY: MILWAUKEE	CITY UG CONDUIT (TES)	SCALE FEET	SHEET NO: 138	E

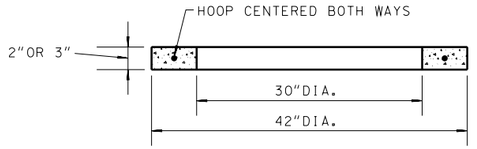
FILENAME: W:\UGD\CONDUIT WORK FILES\UCONDUIT\2016\HIGHLAND @ 27TH\FULL PLAN.DGN



4' DIAMETER "DOGHOUSE" TYPE TES DETAIL



PLAN



SECTION A-A

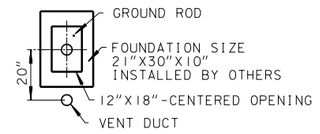
THE ADJUSTING RING SHALL BE 2" OR 3" IN HEIGHT.

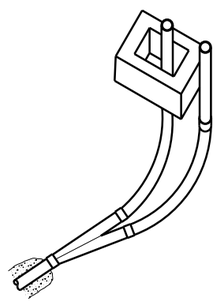
THE CIRCUMFERENTIAL STEEL SHALL BE CENTERED WITHIN THE RING.

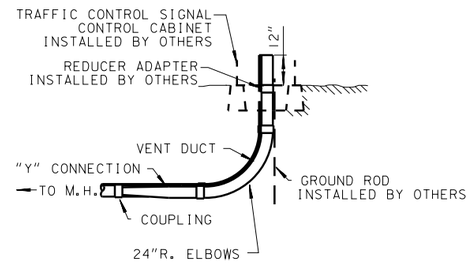
AREA OF CIRCUMFERENTIAL STEEL = 0.07 SQ. INCH PER VERTICAL FOOT WITH A MINIMUM OF .024 SQ. INCH IN ANY ONE RING.

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

CONCRETE ADJUSTING RING



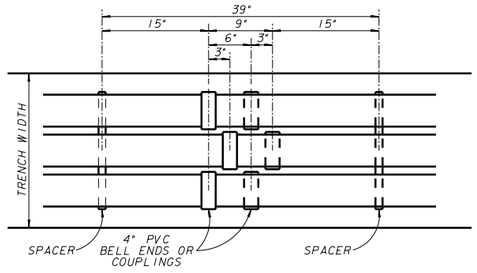




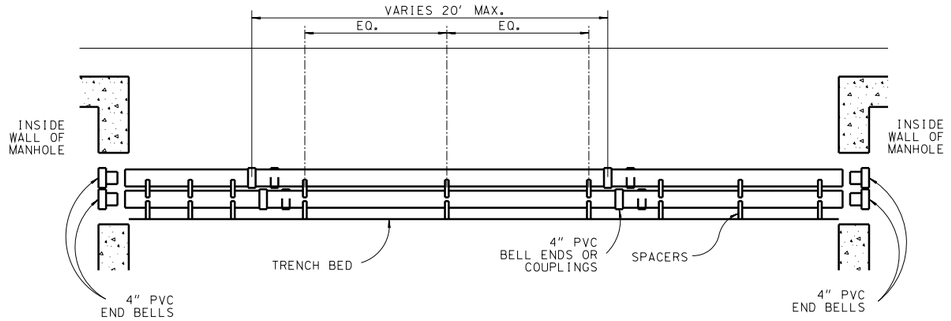
SHEET 2 OF 3

STATE PROJECT NUMBER 2200-13-70 - -	HWY:	COUNTY: MILWAUKEE	CITY UG CONDUIT (TES)	SCALE FEET 0' 40'	SHEET NO: 139	E

FILENAME: W:\UGD\CONDUIT WORK FILES\UCONDUIT\2016\HIGHLAND @ 27TH\FULL PLAN.DGN

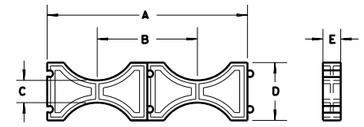


PLAN VIEW
N.T.S.



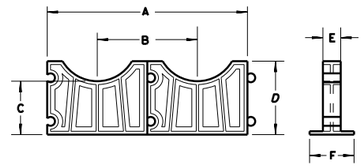
SECTION VIEW
N.T.S.

COND.	3"	4"
A	10"	11 ½"
B	5"	5 ⅝"
C	1 ½"	1 ¼"
D	3 ½"	3 ½"
E	1"	1"



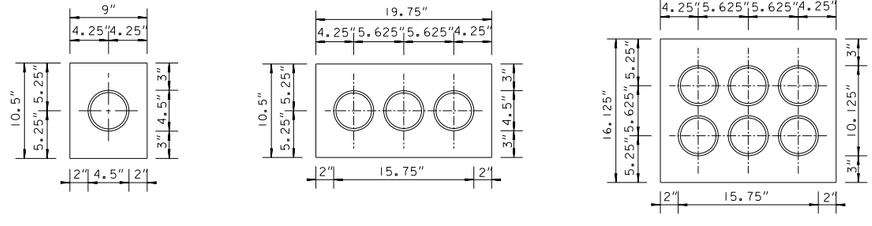
INTERMEDIATE SPACER

COND.	3"	4"
A	10"	11 ½"
B	5"	5 ⅝"
C	3"	3"
D	3 ⅛"	4 ⅛"
E	1"	1"
F	2 ½"	2 ½"

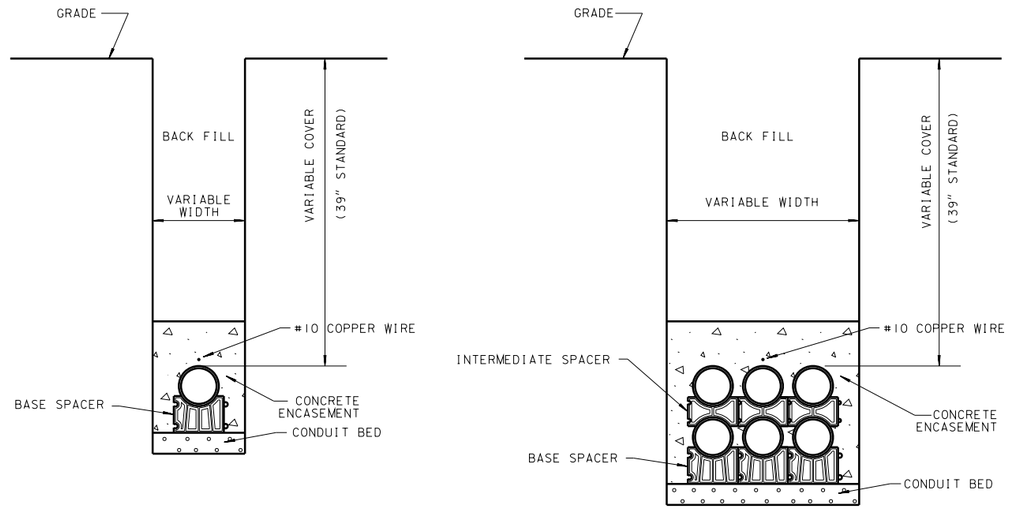


BASE SPACER

INTERMEDIATE AND BASE SPACER DETAIL



CROSS SECTION VIEW
N.T.S.

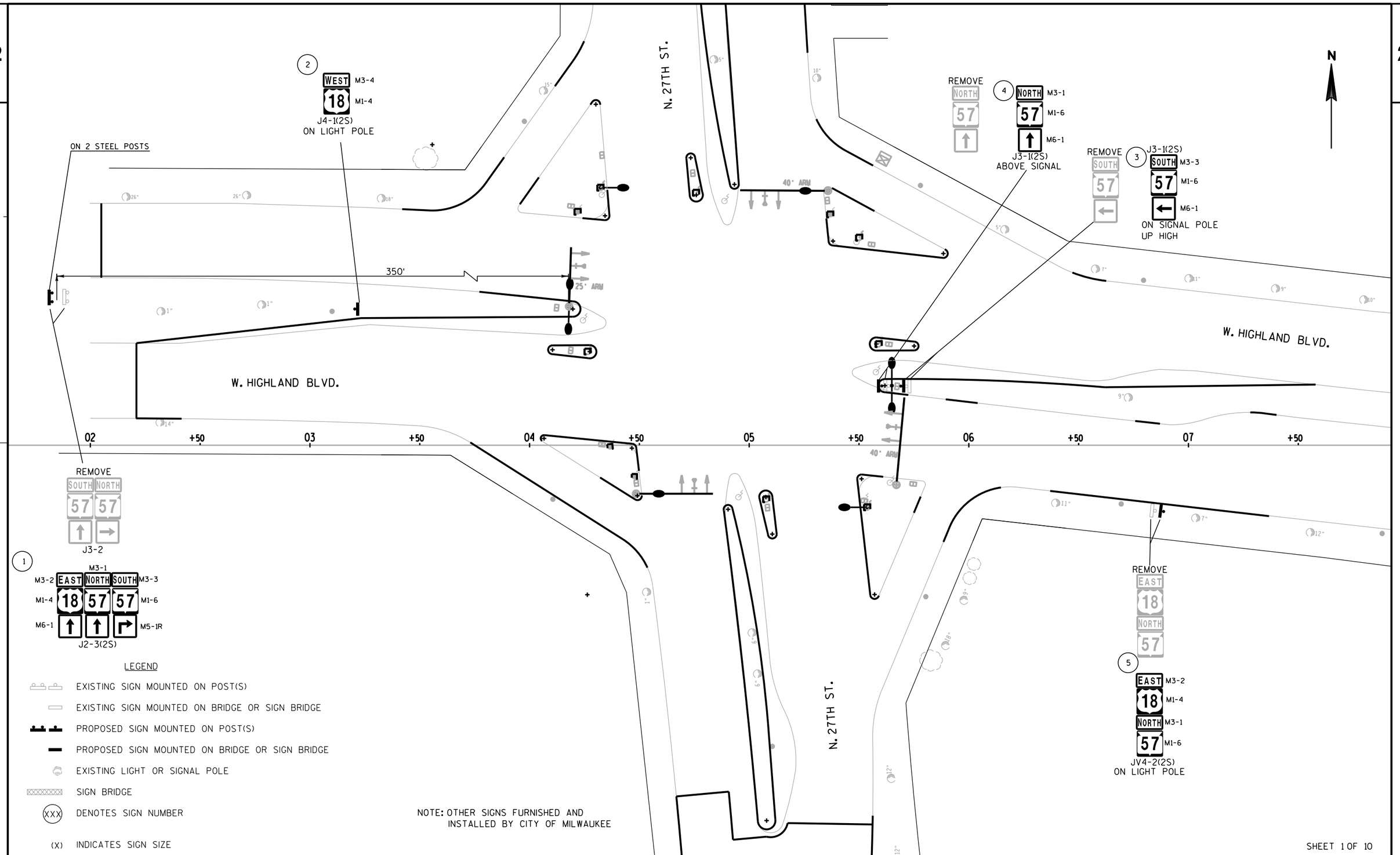


CROSS SECTION VIEW, TYP.
N.T.S.

SHEET 3 OF 3

STATE PROJECT NUMBER 2200-13-70 - -	HWY:	COUNTY: MILWAUKEE	CITY UG CONDUIT (TES)	SCALE FEET 0' 40'	SHEET NO: 140	E

FILENAME: W:\UGD\CONDUIT WORK FILES\UCONDUIT\2016\HIGHLAND @ 27TH\FULL PLAN.DGN



LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- EXISTING LIGHT OR SIGNAL POLE
- SIGN BRIDGE
- (XXX) DENOTES SIGN NUMBER
- (X) INDICATES SIGN SIZE

NOTE: OTHER SIGNS FURNISHED AND INSTALLED BY CITY OF MILWAUKEE

SHEET 1 OF 10

PROJECT NO: 2200-13-70	HWY: USH 18	COUNTY: MILWAUKEE	PERMANENT SIGNING - ROUTE MARKERS	SHEET 141	E

2

LEGEND

EXISTING SIGN MOUNTED ON POST(S)

EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE

PROPOSED SIGN MOUNTED ON POST(S)

PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE

EXISTING LIGHT OR SIGNAL POLE

SIGN BRIDGE

(XXX) DENOTES SIGN NUMBER

(X) INDICATES SIGN SIZE

REMOVE

SOUTH WEST

57 18

6 ON LIGHT POLE

M3-3 SOUTH WEST M3-4

M1-6 57 18 M1-4

M5-1L M6-1

J2-2(2S)

N. 26TH ST.

N. 25TH ST.

N

W. HIGHLAND BLVD.

+50 08 +50 09 +50 10 +50 11 +50 12 +50 13 +50

SHEET 2 OF 10

PROJECT NO: 2200-13-70	HWY: USH 18	COUNTY: MILWAUKEE	PERMANENT SIGNING - ROUTE MARKERS	SHEET 142	E

2

LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- EXISTING LIGHT OR SIGNAL POLE
- SIGN BRIDGE
- (XXX) DENOTES SIGN NUMBER
- (X) INDICATES SIGN SIZE

N

N. 24TH PL.

NO SIGNS ON THIS SHEET

N. 24TH ST.

W. HIGHLAND BLVD.

N. 24TH ST.

2

SHEET 3 OF 10

PROJECT NO: 2200-13-70	HWY: USH 18	COUNTY: MILWAUKEE	PERMANENT SIGNING - ROUTE MARKERS	SHEET 143	E

FILE NAME : J:\projects\D2_22001318\SIGN\023203_PS.dgn PLOT DATE : 04-FEB-2016 13:46 PLOT BY : dotshw PLOT NAME : PLOT SCALE : 40:1

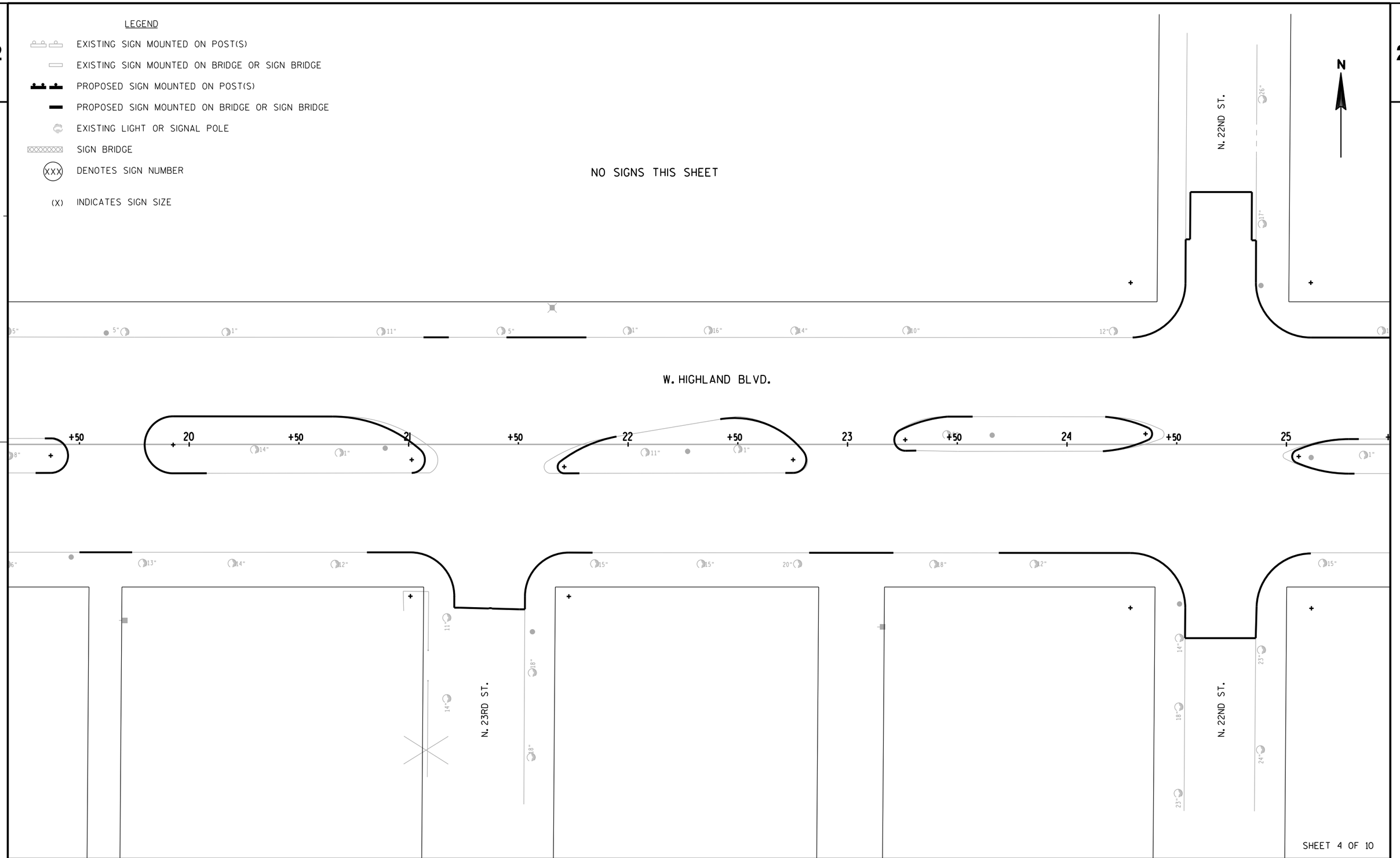
WISDOT/CADDS SHEET 42

2

LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- EXISTING LIGHT OR SIGNAL POLE
- SIGN BRIDGE
- (XXX) DENOTES SIGN NUMBER
- (X) INDICATES SIGN SIZE

NO SIGNS THIS SHEET



2

SHEET 4 OF 10

PROJECT NO: 2200-13-70	HWY: USH 18	COUNTY: MILWAUKEE	PERMANENT SIGNING - ROUTE MARKERS	SHEET 144	E

FILE NAME : J:\projects\D2_22001318\SIGN\023204_PS.dgn PLOT DATE : 04-FEB-2016 13:46 PLOT BY : dotshw PLOT NAME : PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

2

LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- EXISTING LIGHT OR SIGNAL POLE
- SIGN BRIDGE
- (XXX) DENOTES SIGN NUMBER
- (X) INDICATES SIGN SIZE

N

N. 21ST ST.

N. 20ST ST.

W. HIGHLAND BLVD.

8

WEST M3-4
18 M1-4
SOUTH M3-3
57 M1-6

JV4-2(2S)
ON LIGHT POLE
UP HIGH

REMOVE
NORTH EAST
57 18

7

M3-1 NORTH EAST M3-2
M1-6 57 18 M1-4
M5-1L M6-1

J2-2(2S)
ON LIGHT POLE
UP HIGH

35' ARM

20' ARM

SHEET 5 OF 10

PROJECT NO: 2200-13-70	HWY: USH 18	COUNTY: MILWAUKEE	PERMANENT SIGNING - ROUTE MARKERS	SHEET 145	E

FILE NAME : J:\projects\D2_22001318\SIGN\023205_PS.dgn PLOT DATE : 04-FEB-2016 13:46 PLOT BY : dotshw PLOT NAME : PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

2

2

LEGEND

EXISTING SIGN MOUNTED ON POST(S)

EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE

PROPOSED SIGN MOUNTED ON POST(S)

PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE

EXISTING LIGHT OR SIGNAL POLE

SIGN BRIDGE

(XXX) DENOTES SIGN NUMBER

(X) INDICATES SIGN SIZE

N

N. 20TH ST.

W. HIGHLAND BLVD.

10
NORTH M3-1
57 M1-6
M6-1
J3-1(2S)
ON SIGNAL POLE
UP HIGH

12
NORTH M3-1
57 M1-6
M5-1L
J3-1(2S)
ON LIGHT POLE
UP HIGH

9
NORTH M3-1
57 M1-6
M6-1
EAST M3-2
18 M1-4
M6-1
JV3-2(2S)
UP HIGH ON
SIGNAL POLE

REMOVE
EAST
18

11
EAST M3-2
18 M1-4
J4-1(2S)
ON LIGHT POLE
UP HIGH

N. 20TH ST.

SHEET 6 OF 10

PROJECT NO: 2200-13-70	HWY: USH 18	COUNTY: MILWAUKEE	PERMANENT SIGNING - ROUTE MARKERS	SHEET 146	E

FILE NAME : J:\projects\D2_22001318\SIGN\023206_PS.dgn PLOT DATE : 04-FEB-2016 13:46 PLOT BY : dotshw PLOT NAME : PLOT SCALE : 40:1

LEGEND

EXISTING SIGN MOUNTED ON POST(S)

EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE

PROPOSED SIGN MOUNTED ON POST(S)

PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE

EXISTING LIGHT OR SIGNAL POLE

SIGN BRIDGE

(XXX) DENOTES SIGN NUMBER

(X) INDICATES SIGN SIZE

N. 18TH ST.

N. 17TH ST.

W. HIGHLAND BLVD.

13 J4-1(2S) WEST M3-4 18 M1-4 STEEL POST

14 JCT M2-1 57 M1-6 J1-1(2S)

15 WEST M3-4 18 M1-4 M6-1 J3-1(2S) ON SIGNAL POLE UP HIGH

REMOVE WEST 18

16 EAST M3-2 18 M1-4 M6-1 J3-1(2S) ON SIGNAL POLE UP HIGH

REMOVE EAST 18

35' ARM

SHEET 7 OF 10

PROJECT NO: 2200-13-70	HWY: USH 18	COUNTY: MILWAUKEE	PERMANENT SIGNING - ROUTE MARKERS	SHEET 147	E

FILE NAME : J:\projects\D2_22001318\SIGN\023207_PS.dgn PLOT DATE : 04-FEB-2016 13:46 PLOT BY : dotshw PLOT NAME : PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

2

LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- EXISTING LIGHT OR SIGNAL POLE
- SIGN BRIDGE
- (XXX) DENOTES SIGN NUMBER
- (X) INDICATES SIGN SIZE

N

N. CALLAHAN PL.

N. 15TH ST.

W. HIGHLAND BLVD.

43 +50 44 +50 45 +50 46 +50 47 +50 48 +50 49

REMOVE

17

EAST 18 M3-2

EAST 18 M1-4

J4-1(2S)
ON LIGHT POLE
UP HIGH

SHEET 8 OF 10

PROJECT NO: 2200-13-70	HWY: USH 18	COUNTY: MILWAUKEE	PERMANENT SIGNING - ROUTE MARKERS	SHEET 148	E

FILE NAME : J:\projects\D2_22001318\SIGN\023208_PS.dgn PLOT DATE : 04-FEB-2016 13:46 PLOT BY : dotshw PLOT NAME : PLOT SCALE : 40:1

2

LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- EXISTING LIGHT OR SIGNAL POLE
- SIGN BRIDGE
- (XXX) DENOTES SIGN NUMBER
- (X) INDICATES SIGN SIZE

N

N. 14TH ST.

NO SIGNS THIS SHEET

W. HIGHLAND BLVD.

49 +50 50 +50 51 +50 52 +50 53 +50 54 +50

N. 14TH ST.

2

SHEET 9 OF 10

PROJECT NO: 2200-13-70	HWY: USH 18	COUNTY: MILWAUKEE	PERMANENT SIGNING - ROUTE MARKERS	SHEET 149	E

2

LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- EXISTING LIGHT OR SIGNAL POLE
- SIGN BRIDGE
- (XXX) DENOTES SIGN NUMBER
- (X) INDICATES SIGN SIZE

N. 13TH ST.

W. HIGHLAND BLVD.

N. 12TH ST.

N

REMOVE
WEST 18

19 WEST M3-4
18 M1-4
J4-1(2S)
ON LIGHT POLE

21 WEST M3-4
18 M1-4
M6-1
J3-1(2S)
ON SIGNAL POLE

1

55 +50 56 +50 57 +50 58 +50 59 +50 60 +50 61

20 EAST M3-2
18 M1-4
J4-1(2S)
UP HIGH ON
SIGNAL POLE

REMOVE
EAST 18

18 EAST M3-2
18 M1-4
M6-1
J3-1(2S)
ON LIGHT POLE

SHEET 10 OF 10

PROJECT NO: 2200-13-70	HWY: USH 18	COUNTY: MILWAUKEE	PERMANENT SIGNING - ROUTE MARKERS	SHEET 150	E

FILE NAME : J:\projects\D2_22001318\SIGN\023210_PS.dgn PLOT DATE : 04-FEB-2016 13:46 PLOT BY : dotshw PLOT NAME : PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

2

STREET LIGHTING & TRAFFIC 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.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(1) 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 CONRETE, 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) 414-286-5941 (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.

23 ASPHALTIC SURFACE TEMPORARY WILL BE INCIDENTAL TO THE ITEMS FOR INSTALLING CONDUIT AND BOX FORMS

LEGEND

- STREET LIGHT POLE
- TRAFFIC SIGNAL MOUNTED ON LIGHT POLE
- EXISTING SIGNAL STANDARD BASE
- VAULT TO BE INSTALLED
- TRAFFIC CONTROL CABINET
- STREET LIGHTING ENCLOSURE
- PVC CONDUIT
- TRAFFIC SIGNAL BASE TO BE INSTALLED
- MONOTUBE MAST ARM BASE TO BE INSTALLED
- XX' ARM — MAST ARM
- SIGNAL HEAD LOCATION ON MAST ARM
- XX' ARM — EVP DETECTOR LOCATION ON MAST ARM
- CONCRETE BOX JOINT AROUND FACILITIES
- 000 — SEE DETAIL NUMBER FOR ADDITIONAL INFORMATION

UTILITY LINE CODE

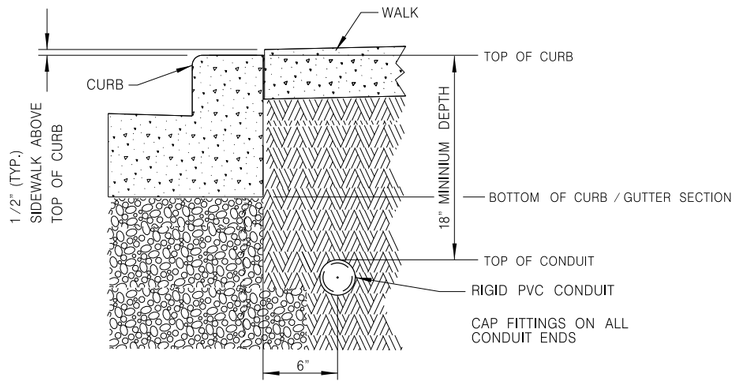
- SAN — SANITARY SEWER
- STO — STORM SEWER
- W — WATER
- G — GAS
- G — PROPOSED GAS
- E — ELECTRIC
- TE&ES — TRAFFIC & STREET LIGHTING
- OLD CITY UNDERGROUND CONDUIT
- CUC — PROPOSED CITY UNDERGROUND CONDUIT
- T — TELEPHONE
- TV — CABLE

SHEET 1 OF 12

PROJECT NO: 2200–13–70	HWY: U.S.H. 18 /S.T.H. 57	COUNTY: MILWAUKEE	TRAFFIC SIGNAL CONDUIT DETAILS	SHEET	E

FILE NAME : W:\bte\signals\PAVING AND DESIGN\State Projects–LFA\Preliminary Engineering\2200–13–90 Highland 27th to 12th\2200–13–70 Signals.dgn PLOT DATE : 05–JUL–2016 16:23 PLOT BY : sbiega PLOT NAME : PLOT SCALE : 20.000000:1.000000
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

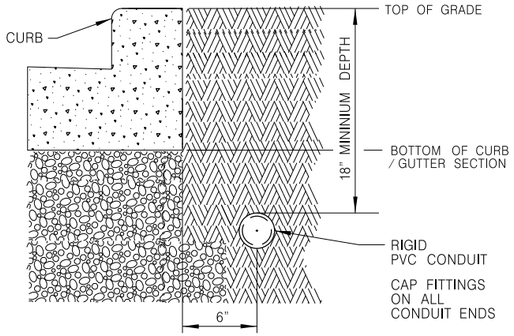
NOT TO SCALE

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

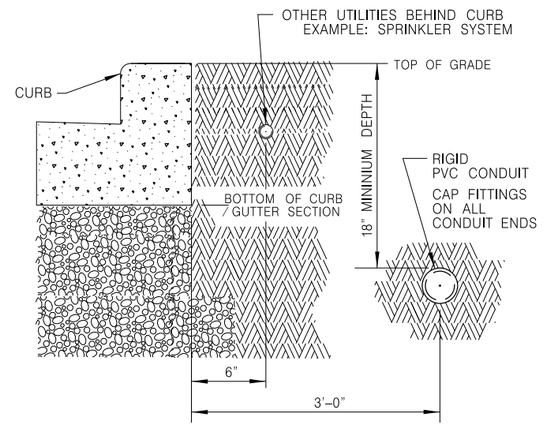
NOTE: 1.) KEEP AREA BEHIND CURB FREE OF DEBRIS AND CONCRETE OVERPOUR.

DETAIL "B"

CONDUIT TO BE PLACED 6" ON CENTER DIRECTLY BEHIND CURB,
UNLESS NOTED OR APPROVED BY ENGINEER.



DETAIL "C"

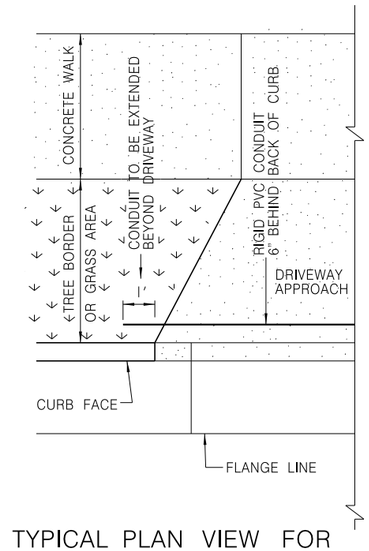


100 DETAIL "B" & "C"

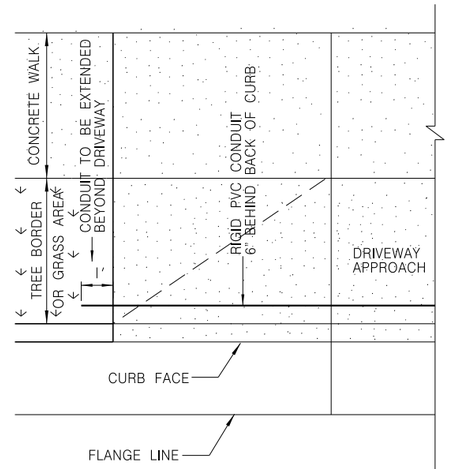
TYPICAL CONDUIT INSTALLATION
BEHIND CURB

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.

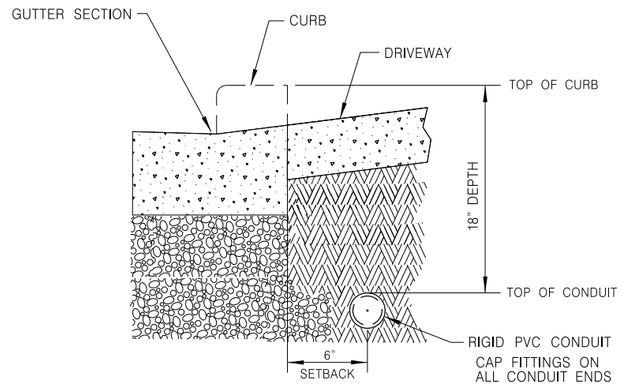


TYPICAL PLAN VIEW FOR
FLARED DRIVEWAY



TYPICAL PLAN VIEW FOR
DEPRESSED DRIVEWAY

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



101 DETAIL

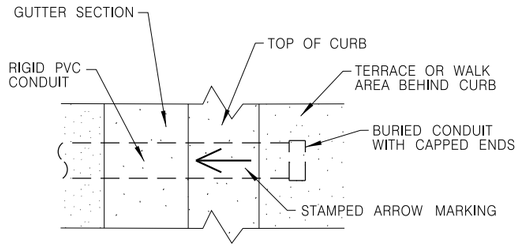
TYPICAL CONDUIT INSTALLATION
UNDER DRIVEWAYS OR PEDESTRIAN RAMPS

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.

SHEET 2 OF 12

PROJECT NO: 2200-13-70	HWY: U.S.H. 18 /S.T.H. 57	COUNTY: MILWAUKEE	TRAFFIC SIGNAL CONDUIT DETAILS	SHEET 152	E

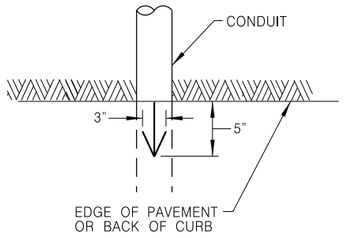


TOP VIEW OF CURB STAMPING

NOT TO SCALE

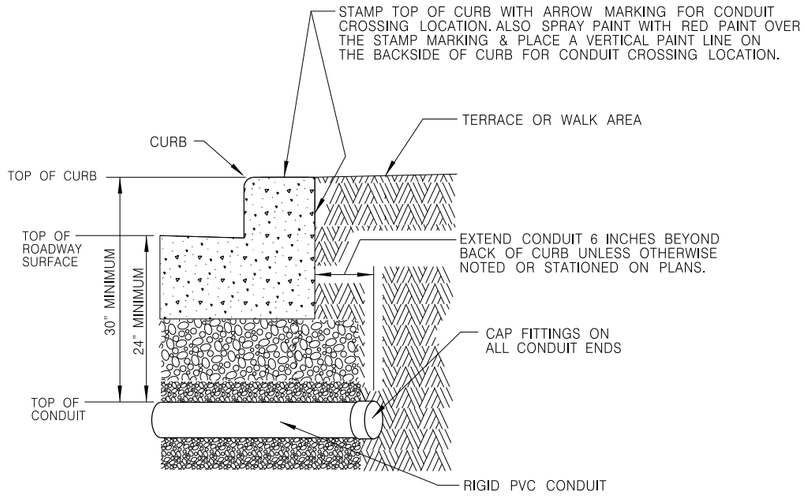
NOTE:

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



ARROW MARK

NOT TO SCALE



102

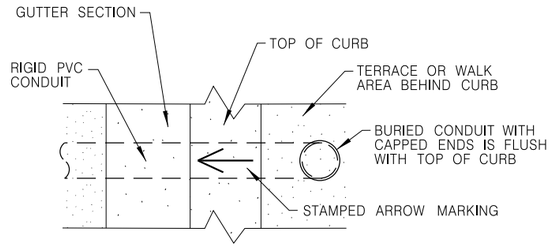
DETAIL VERSION #1

TYPICAL CONDUIT INSTALLATION FOR CROSSING ROADWAYS

NOT TO SCALE

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

2

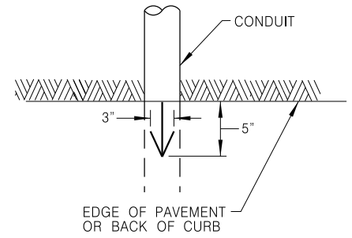


TOP VIEW OF CURB STAMPING

NOT TO SCALE

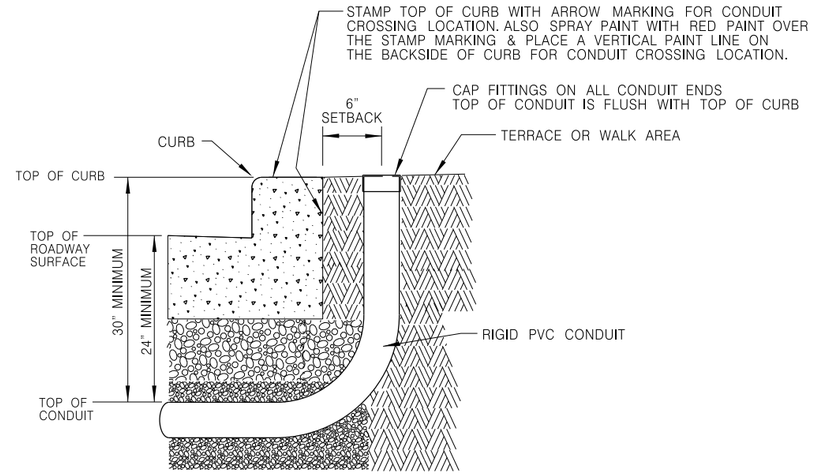
NOTE:

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



ARROW MARK

NOT TO SCALE



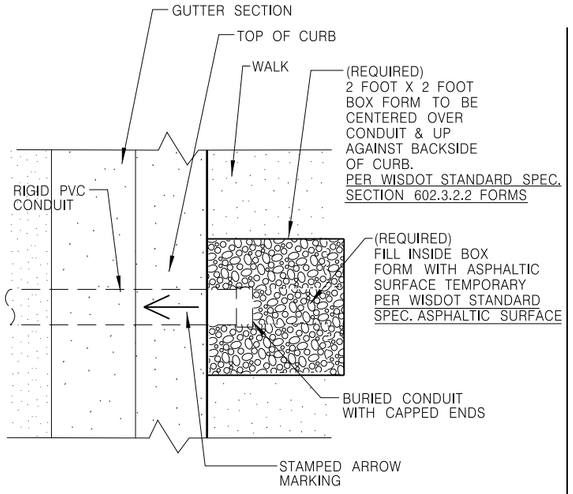
102

DETAIL VERSION #2

TYPICAL CONDUIT INSTALLATION FOR CROSSING ROADWAYS

NOT TO SCALE

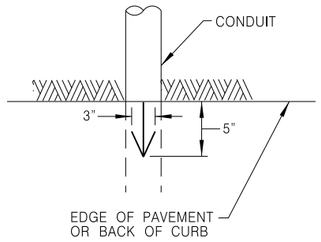
ANY DEVIATIONS FROM DETAIL WILL REQUIRE PERMISSION FROM STREET LIGHTING FORCES. CONTACT DISPATCHER AT (414) 286–5944 FOR THE APPROPRIATE SHOP SUPERVISOR.



TOP VIEW OF CURB STAMPING

NOT TO SCALE

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

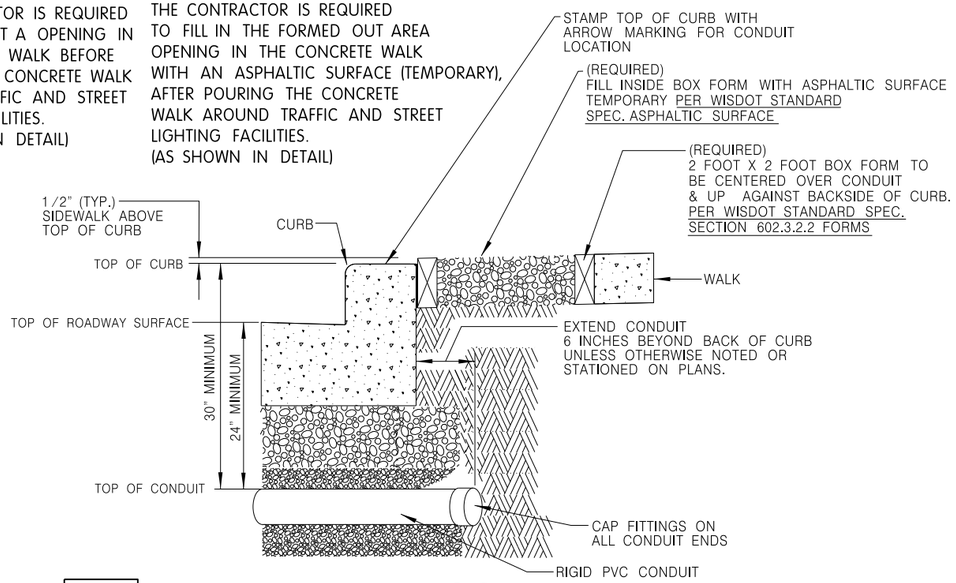


ARROW MARK

NOT TO SCALE

THE CONTRACTOR IS REQUIRED TO FORM OUT A OPENING IN THE CONCRETE WALK BEFORE POURING THE CONCRETE WALK AROUND TRAFFIC AND STREET LIGHTING FACILITIES.
(AS SHOWN IN DETAIL)

THE CONTRACTOR IS REQUIRED TO FILL IN THE FORMED OUT AREA OPENING IN THE CONCRETE WALK WITH AN ASPHALTIC SURFACE (TEMPORARY), AFTER POURING THE CONCRETE WALK AROUND TRAFFIC AND STREET LIGHTING FACILITIES.
(AS SHOWN IN DETAIL)



103

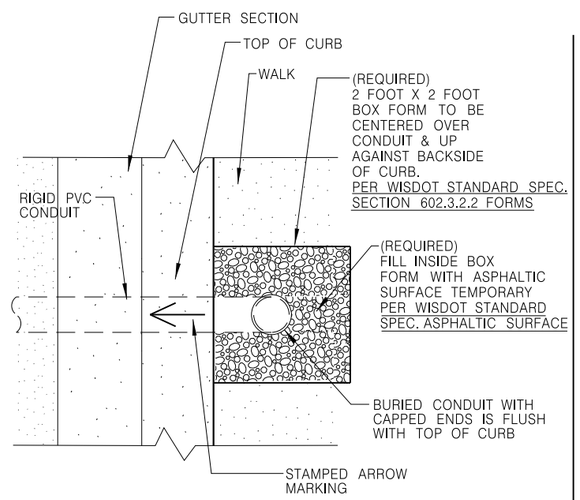
DETAIL VERSION #1

TYPICAL CONDUIT INSTALLATION FOR CROSSING ROADWAYS FROM FULL WALK AREAS

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.

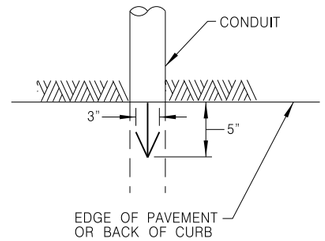
2



TOP VIEW OF CURB STAMPING

NOT TO SCALE

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

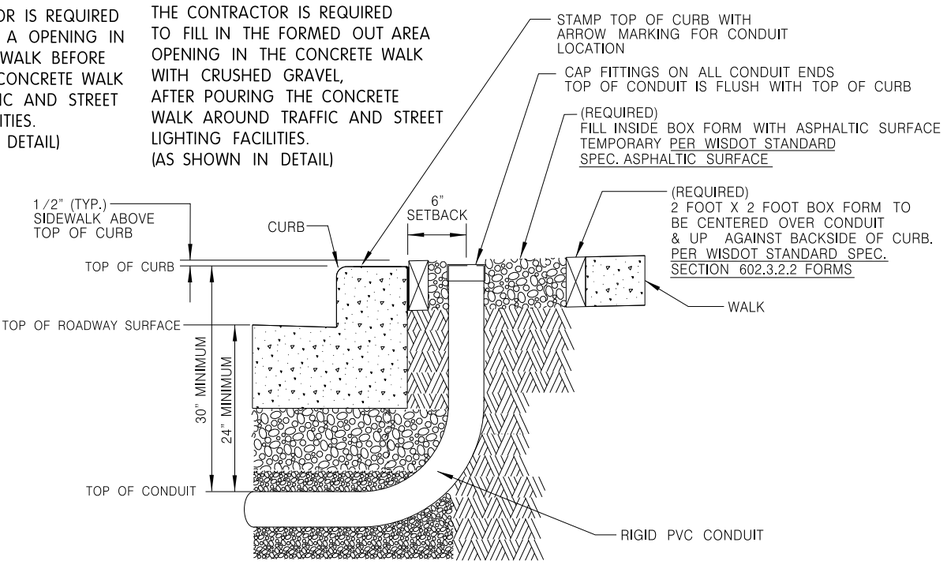


ARROW MARK

NOT TO SCALE

THE CONTRACTOR IS REQUIRED TO FORM OUT A OPENING IN THE CONCRETE WALK BEFORE POURING THE CONCRETE WALK AROUND TRAFFIC AND STREET LIGHTING FACILITIES.
(AS SHOWN IN DETAIL)

THE CONTRACTOR IS REQUIRED TO FILL IN THE FORMED OUT AREA OPENING IN THE CONCRETE WALK WITH CRUSHED GRAVEL, AFTER POURING THE CONCRETE WALK AROUND TRAFFIC AND STREET LIGHTING FACILITIES.
(AS SHOWN IN DETAIL)



103

DETAIL VERSION #2

TYPICAL CONDUIT INSTALLATION FOR CROSSING ROADWAYS FROM FULL WALK AREAS

NOT TO SCALE

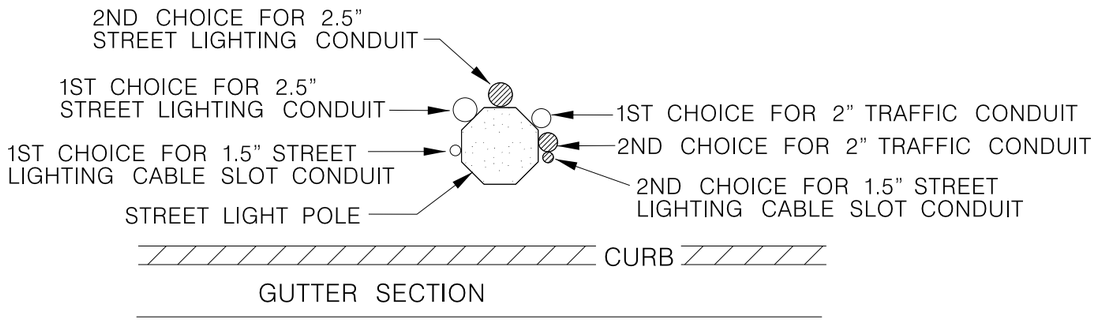
ANY DEVIATIONS FROM DETAIL WILL REQUIRE PERMISSION FROM STREET LIGHTING FORCES.
CONTACT DISPATCHER AT (414) 286–5944 FOR THE APPROPRIATE SHOP SUPERVISOR.

SHEET 4 OF 12

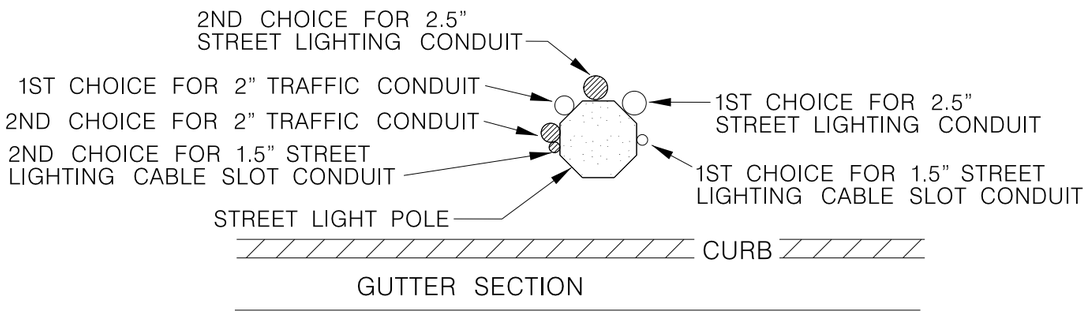
PROJECT NO: 2200–13–70	HWY: U.S.H. 18 /S.T.H. 57	COUNTY: MILWAUKEE	TRAFFIC SIGNAL CONDUIT DETAILS	SHEET E

FILE NAME : W:\bte\slgnals\PAVING AND DESIGN\State Projects–LFA\Prelimlnary Englneerlng\2200–13–90 Highland 27th to 12th\2200–13–70 Slgnals.dgn
PLOT DATE : 12–JUL–2016 09:21
PLOT BY : sbiega
PLOT NAME :
PLOT SCALE : 20.000000:1.000000
WISDOT/CADDS Sheet 42

NOTE: CAP FITTINGS ON CONDUIT ENDS



DIRECTION OF TRAFFIC AT CURB



DIRECTION OF TRAFFIC AT CURB

104 DETAIL

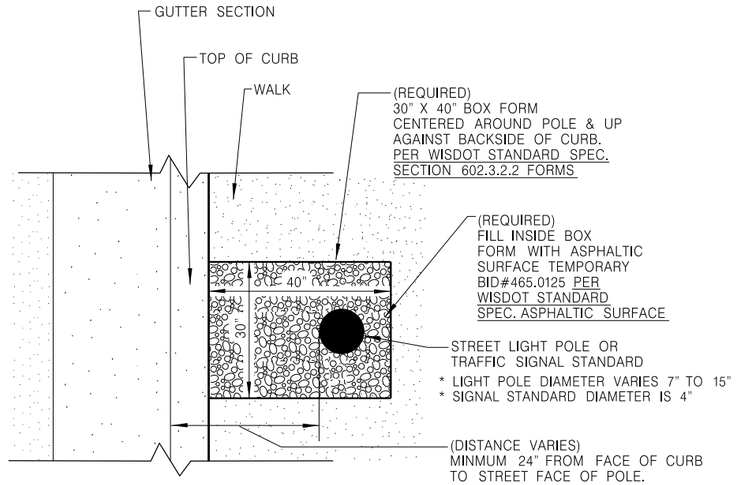
TYPICAL TRAFFIC SIGNAL RISER AND STREET LIGHTING CONDUIT LOCATIONS ON LIGHT POLES DEPENDING ON DIRECTION OF TRAFFIC AT CURB

NOT TO SCALE

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

THE CONTRACTOR IS REQUIRED TO FORM OUT A OPENING IN THE CONCRETE WALK BEFORE POURING THE CONCRETE WALK AROUND TRAFFIC AND STREET LIGHTING FACILITIES.
(AS SHOWN IN ADJACENT DETAIL)

THE CONTRACTOR IS REQUIRED TO FILL IN THE FORMED OUT AREA OPENING IN THE CONCRETE WALK WITH AN ASPHALTIC SURFACE (TEMPORARY), AFTER POURING THE CONCRETE WALK AROUND TRAFFIC AND STREET LIGHTING FACILITIES.
(AS SHOWN IN ADJACENT DETAIL)



105 DETAIL

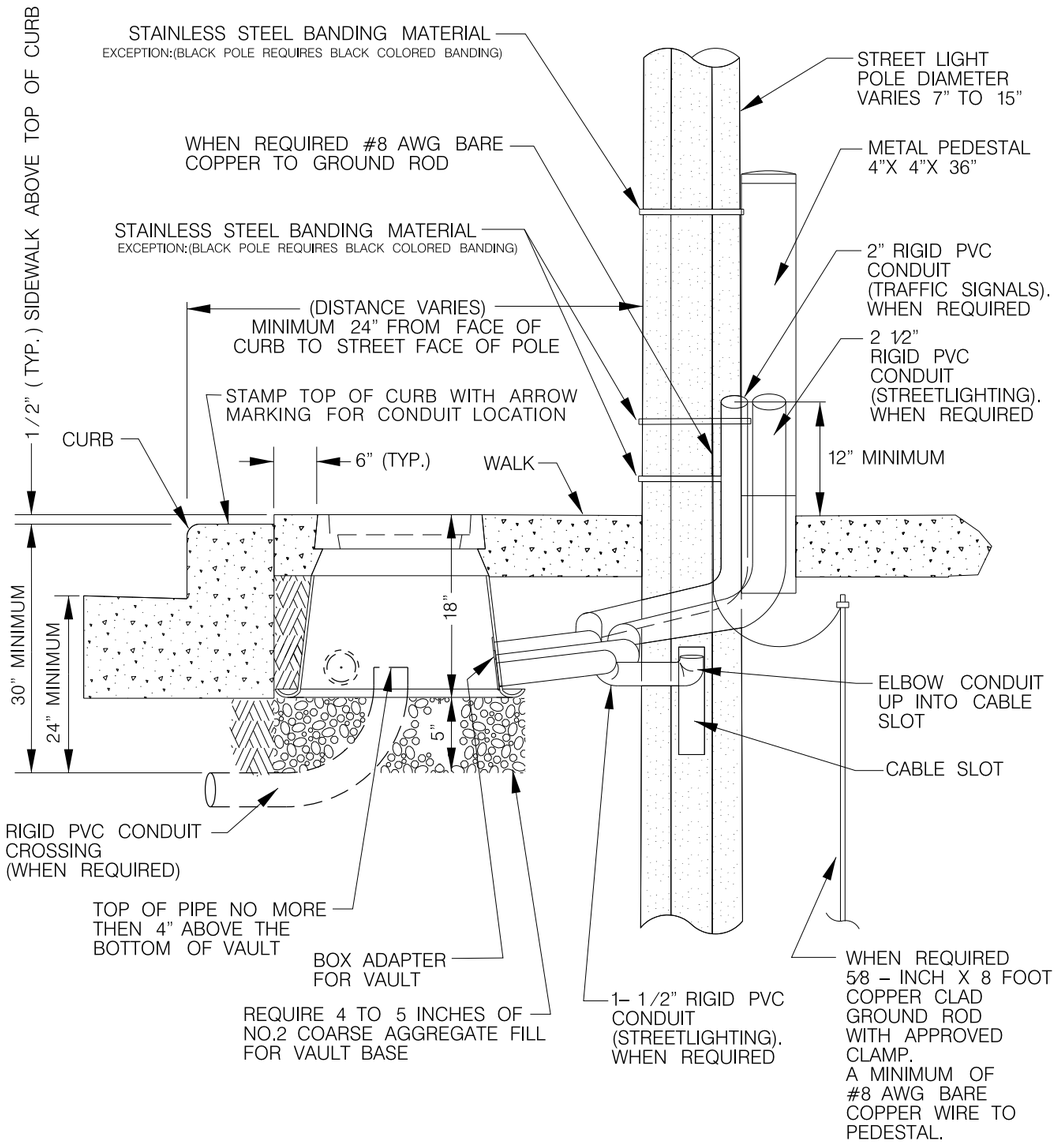
TYPICAL 30" X 40" BOX FORM AROUND STREET LIGHTING POLE OR TRAFFIC SIGNAL STANDARD

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

NOT TO SCALE

2

SHEET 5 OF 12

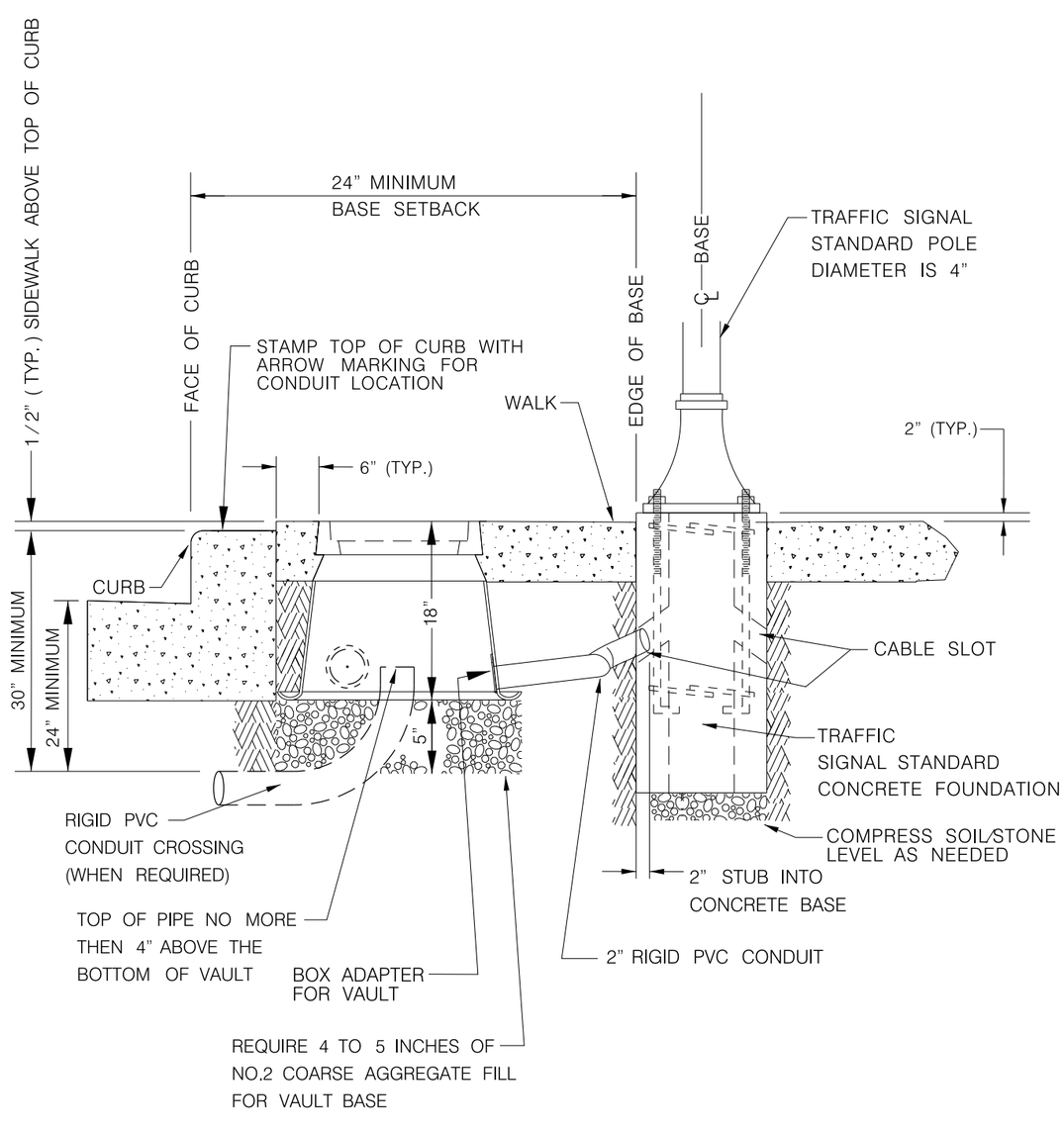


108 DETAIL VERSION #1

TYPICAL CONDUIT INSTALLATION FROM VAULT TO POLE

NOT TO SCALE

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



109 DETAIL

TYPICAL CONDUIT INSTALLATION FROM VAULT TO SIGNAL STANDARD AND TYPICAL BASE INSTALLATION

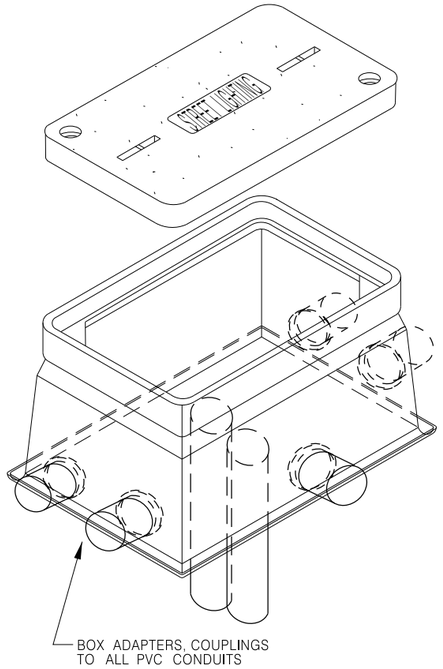
NOT TO SCALE

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

2

SHEET 6 OF 12

PROJECT NO: 2200–13–70	HWY: U.S.H. 18 /S.T.H. 57	COUNTY: MILWAUKEE	TRAFFIC SIGNAL CONDUIT DETAILS	SHEET 156	E



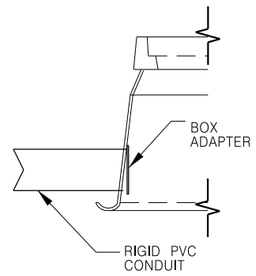
HEAVY DUTY COVER
W/ STREETLIGHTING LOGO
& W /2 BOLTS
COLOR: GRAY

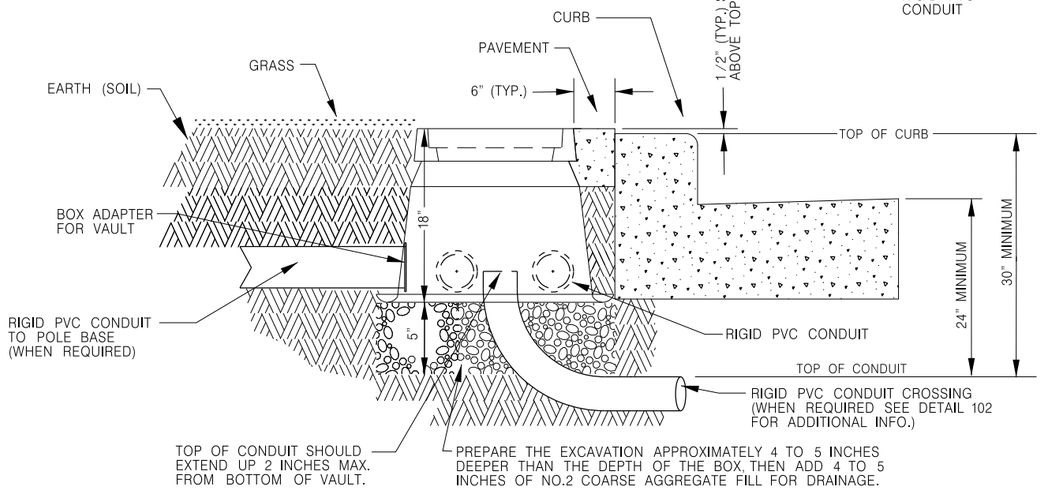
ELECTRICAL VAULT
FLARED WALL
BOX W /NO BASE
COLOR: GRAY

(VARIOUS SIZES)

PLUG OR CAP FITTINGS ON ALL
UNUSED CONDUITS IN THE ENCLOSURE

BOX ADAPTERS, COUPLINGS
TO ALL PVC CONDUITS



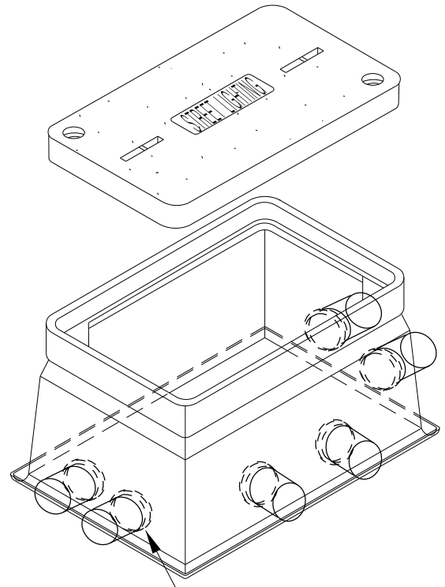


112 DETAIL

TYPICAL VAULT INSTALLATION IN EITHER PAVEMENT OR GRASS AREAS

NOT TO SCALE

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

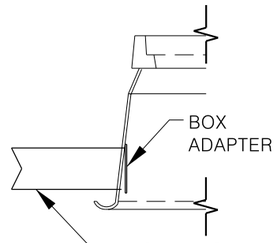


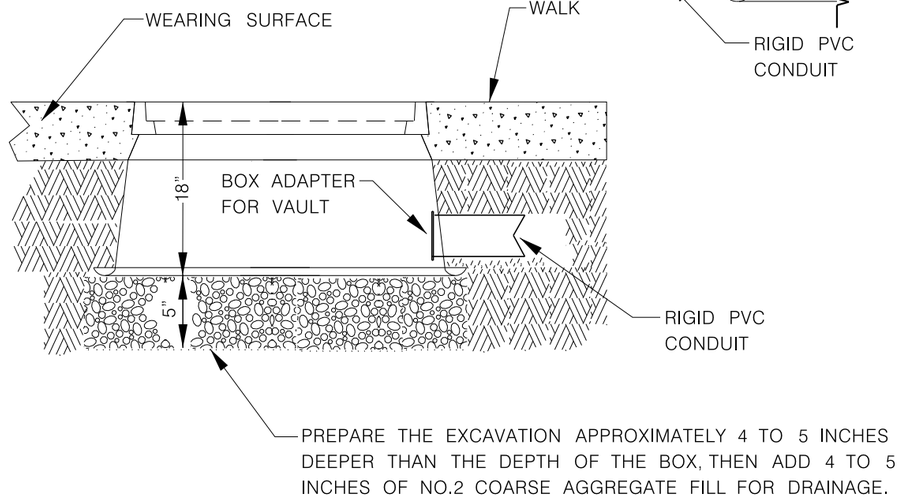
HEAVY DUTY COVER
W/ STREET LIGHTING LOGO
& W /2 BOLTS
COLOR: GRAY

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

PLUG OR CAP FITTINGS ON ALL
UNUSED CONDUITS IN THE ENCLOSURE

BOX ADAPTERS, COUPLINGS
TO ALL PVC CONDUITS





113 DETAIL

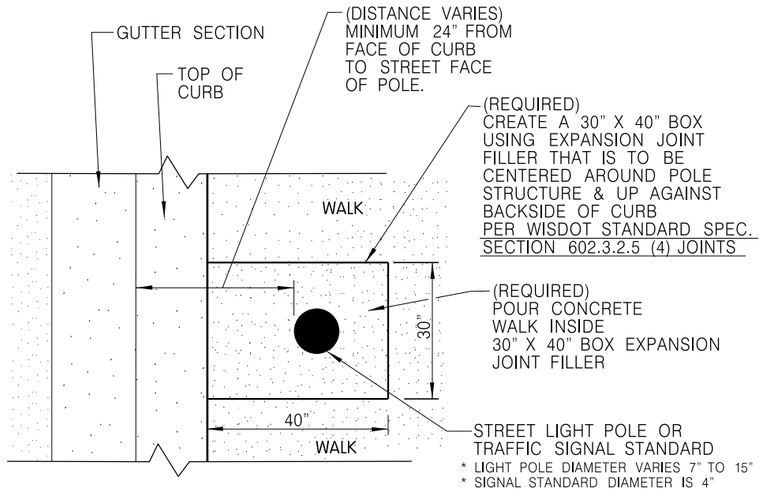
TYPICAL VAULT INSTALLATION IN SIDEWALK

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

NOT TO SCALE

THE CONTRACTOR IS REQUIRED TO INSTALL EXPANSION JOINT FILLER INTO THE CONCRETE WALK, WHICH SHALL BE 1/2" WIDE MINIMUM TO BE USED TO CREATE A SEPARATION BETWEEN A SMALL CONCRETE AREA AROUND THE TRAFFIC & STREET LIGHTING FACILITIES AND THE REST OF THE CONCRETE WALK.

THE BOX SIZE OF THE AREA CREATED USING THE EXPANSION JOINT FILLER IS STANDARD AROUND LIGHT POLES AND TRAFFIC SIGNALS, BUT WILL VARY WHEN PLACED AROUND TRAFFIC & LIGHTING CONTROL CABINETS.



122

DETAIL VERSION #1

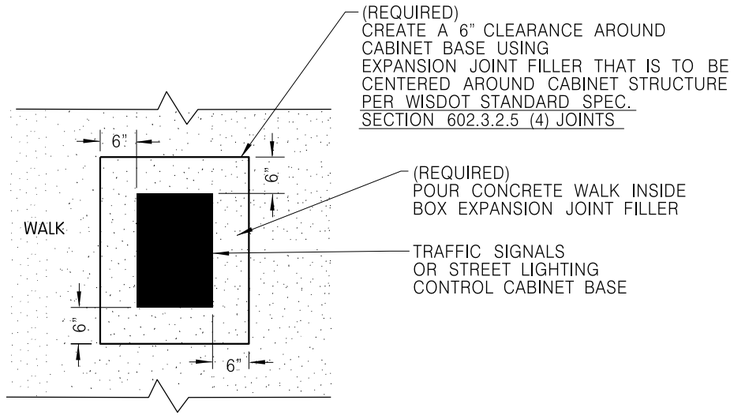
NOT TO SCALE

TYPICAL 30" X 40" BOX EXPANSION JOINT FILLER AROUND STREET LIGHTING AND TRAFFIC SIGNAL FACILITIES

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

THE CONTRACTOR IS REQUIRED TO INSTALL EXPANSION JOINT FILLER INTO THE CONCRETE WALK, WHICH SHALL BE 1/2" WIDE MINIMUM TO BE USED TO CREATE A SEPARATION BETWEEN A SMALL CONCRETE AREA AROUND THE TRAFFIC & STREET LIGHTING FACILITIES AND THE REST OF THE CONCRETE WALK.

THE BOX SIZE OF THE AREA CREATED USING THE EXPANSION JOINT FILLER IS STANDARD AROUND LIGHT POLES AND TRAFFIC SIGNALS, BUT WILL VARY WHEN PLACED AROUND TRAFFIC & LIGHTING CONTROL CABINETS.



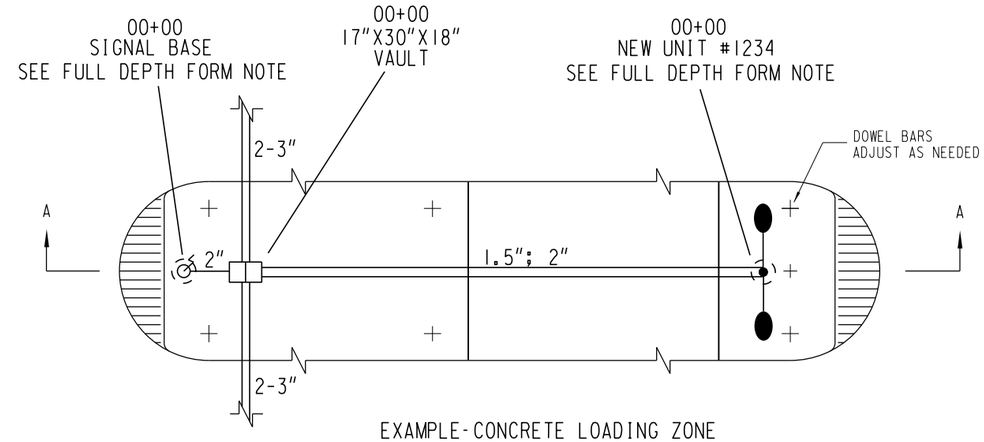
122

DETAIL VERSION #2

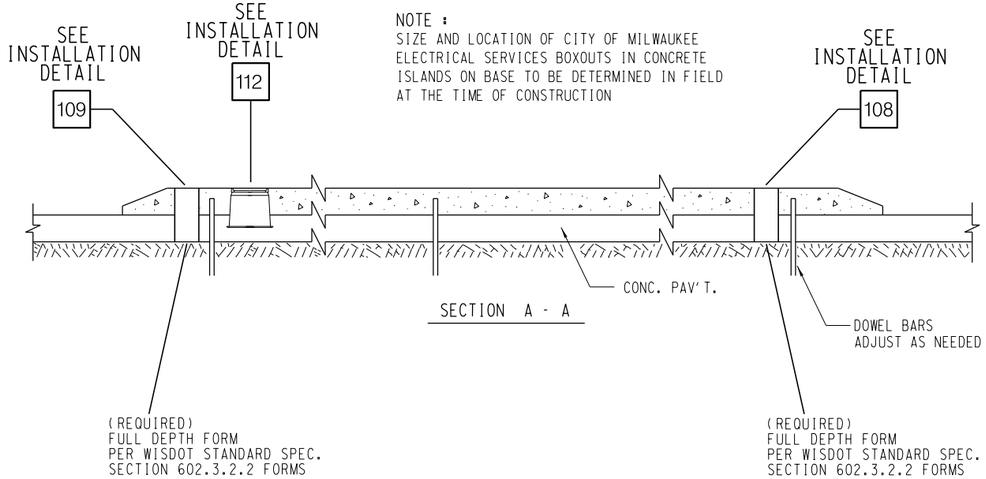
NOT TO SCALE

TYPICAL BOX EXPANSION JOINT FILLER AROUND TRAFFIC SIGNAL OR STREET LIGHTING CONTROL CABINET

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



EXAMPLE-CONCRETE LOADING ZONE



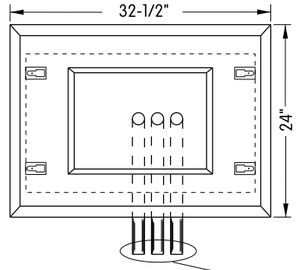
NOTE :
SIZE AND LOCATION OF CITY OF MILWAUKEE ELECTRICAL SERVICES BOXOUTS IN CONCRETE ISLANDS ON BASE TO BE DETERMINED IN FIELD AT THE TIME OF CONSTRUCTION

FULL DEPTH FORM NOTE

TYPICAL 30" X 40" BOX FORM AROUND STREET LIGHTING POLE OR TRAFFIC SIGNAL STANDARD

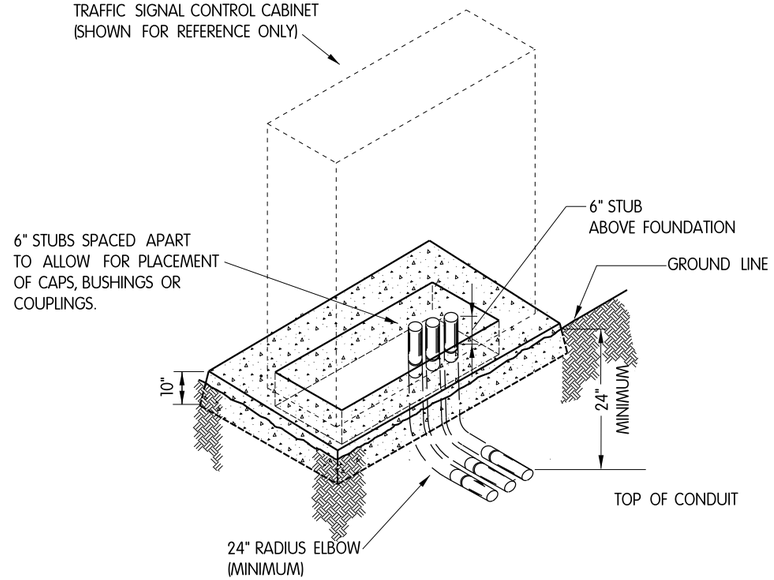
ANY DEVIATIONS FROM DETAIL WILL REQUIRE PERMISSION FROM STREET LIGHTING FORCES.
CONTACT DISPATCHER AT (414) 286–5944 FOR THE APPROPRIATE SHOP SUPERVISOR.

NOT TO SCALE



NOTE:
REFER TO STREET LIGHTING AND TRAFFIC SIGNAL CONDUIT PLAN FOR THE QUANTITY & SIZE OF CONDUIT REQUIRED IN THE CONCRETE CONTROL CABINET BASE

PLAN VIEW

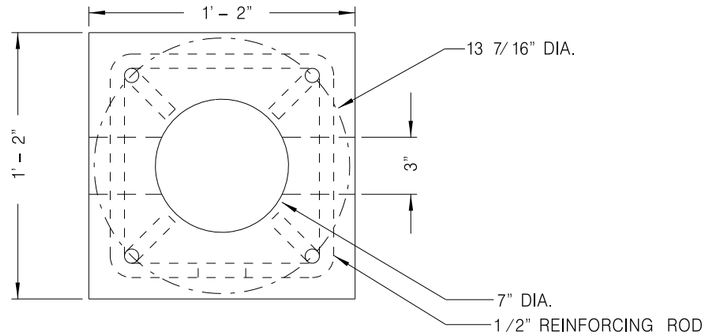


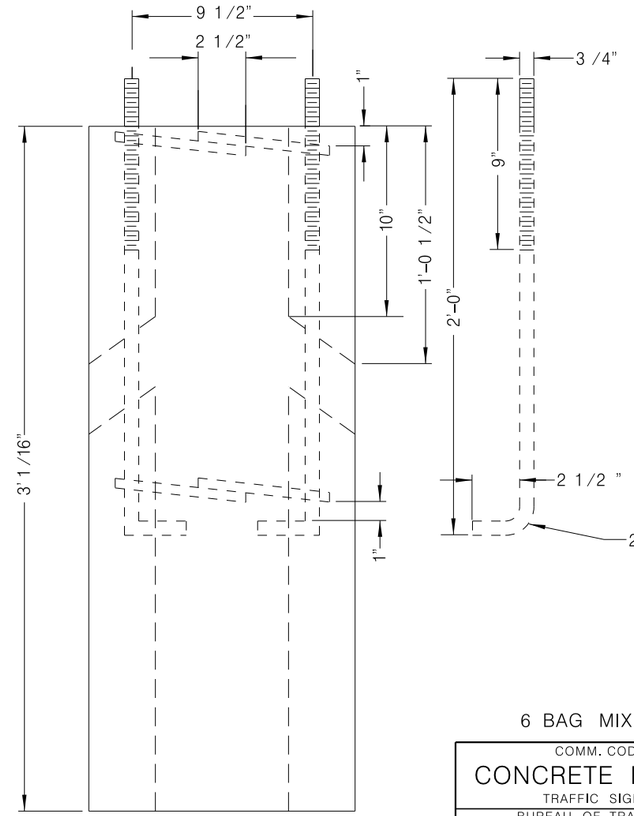
ISOMETRIC VIEW

125A TYPICAL DETAIL — NOT TO SCALE

CONDUIT INSTALLATION TO TRAFFIC CONTROL CABINET CONCRETE FOUNDATION

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





NOT TO SCALE

6 BAG MIX #1 STONE

COMM. CODE 1238-936				
CONCRETE FOUNDATION				
TRAFFIC SIGNAL STANDARD				
BUREAU OF TRAFFIC ENGINEERING AND ELECTRICAL SERVICES D.P.W. CITY OF MILWAUKEE				
TRAFFIC CONTROL MATERIAL				
DATE 4-18-75	SCALE Not To Scale	DRAWN J.H.S.	CHECKED B.J.T.	APPROVED R.J.B.
SUPERSEDES	REVISED DATE 07-29-03	DRG. C-75-563-T		
SUPERSEDED BY	NEW DRG. F-82-535-T			

126 DETAIL

TYPICAL TRAFFIC SIGNAL STANDARD CONCRETE FOUNDATION

ANY DEVIATIONS FROM DETAIL WILL REQUIRE PERMISSION FROM TRAFFIC SIGNAL FORCES.
CONTACT DISPATCHER AT (414) 286-3687 FOR SHOP SUPERVISOR.

2

SHEET 9 OF 12

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).

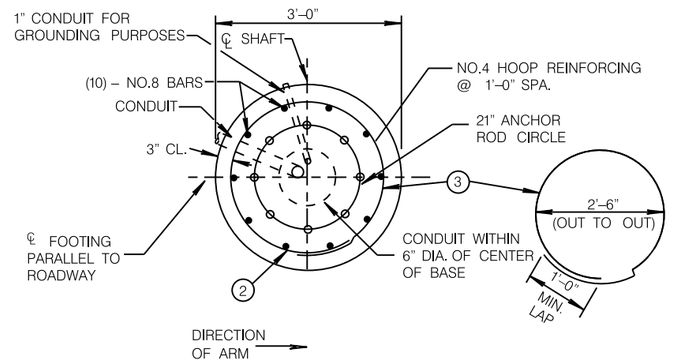
ANCHOR RODS SHALL BE INSTALLED WITH MISALIGNMENTS OF LESS THAN 1:40 FROM VERTICAL.

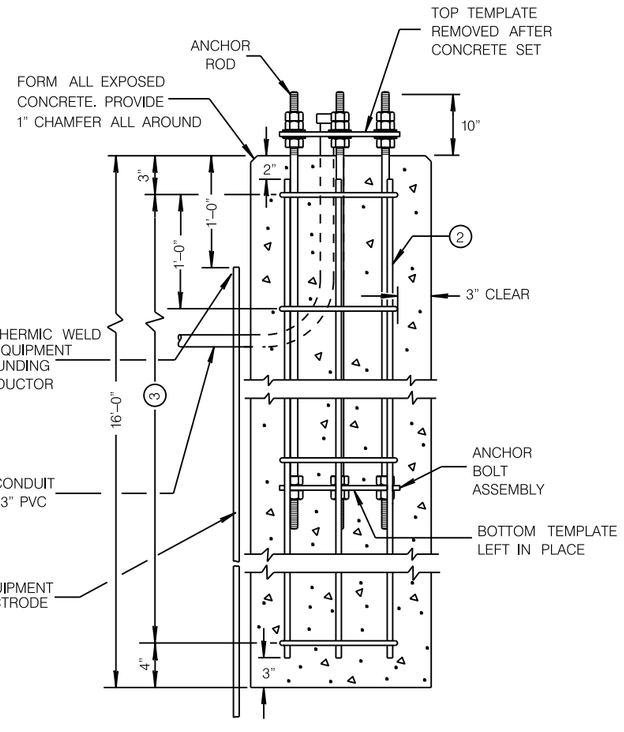
(1) THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE AND INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES. THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE THAT IS NOT INSTALLED BELOW THE TRAVELED WAY SHALL BE 18 INCHES. THE MAXIMUM DEPTH OF ALL CONDUIT SHALL BE 36 INCHES, (GREATER THAN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

(2) (10) NO. 8 X 15'–7" BAR STEEL REINFORCEMENT.

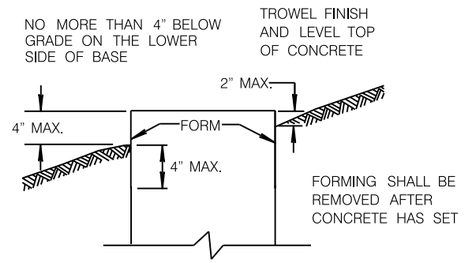
(3) (17) NO. 4 X 9'–0" BAR STEEL REINFORCEMENT @ 1'–0" C–C.

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

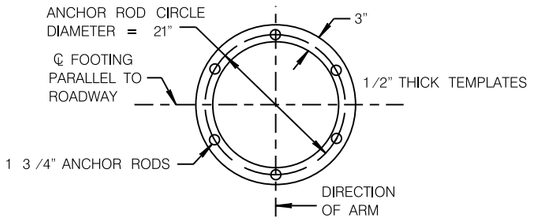




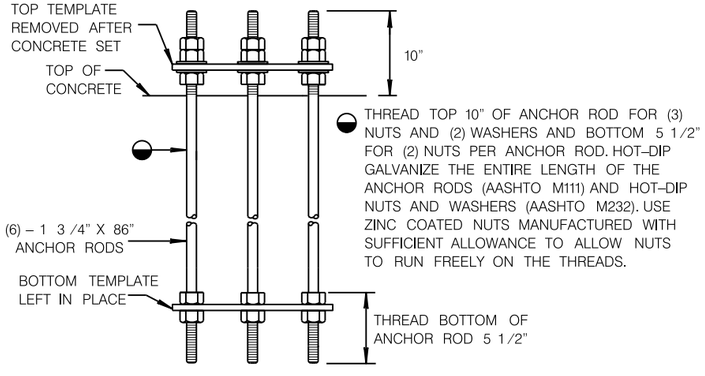
CONCRETE BASE TYPE 10 SPECIAL



FORMING DETAIL



TOP AND BOTTOM TEMPLATES



ANCHOR BOLT ASSEMBLY DETAIL

CONCRETE BASE TYPE 10 SPECIAL

ANCHOR ASSEMBLY

QUANTITY REQUIREMENTS	
APPROX. CUBIC YARDS OF CONCRETE	4.19
LBS. OF HOOP BAR STEEL	103
LBS. OF VERTICAL BAR STEEL	417

SHEET 10 OF 12

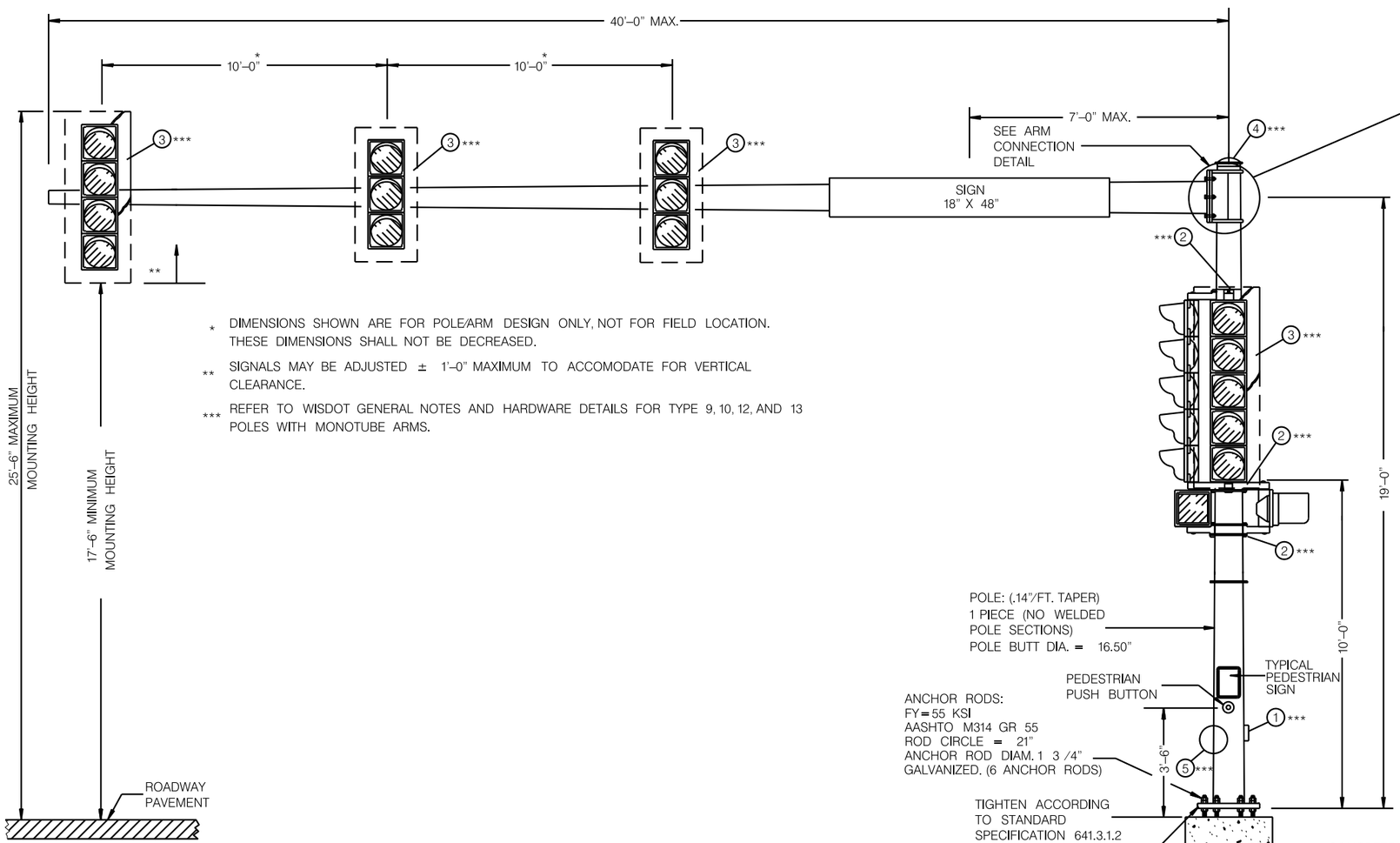
CONCRETE BASE TYPE 10 SPECIAL

CITY OF MILWAUKEE
DEPARTMENT OF PUBLIC WORKS

REVISED:	DECEMBER 2014 (DATE)	2013 AASHTO (REVISION)
REVISED:	JULY 2015 (DATE)	2015 DESIGN UPDATE (REVISION)
REVISED:	NOVEMBER 2015 (DATE)	ANCHOR ROD PROJECTION UPDATE (REVISION)

PROJECT NO: 2200–13–70	HWY: U.S.H. 18 /S.T.H. 57	COUNTY: MILWAUKEE	TRAFFIC SIGNAL CONDUIT DETAILS	SHEET 160	E

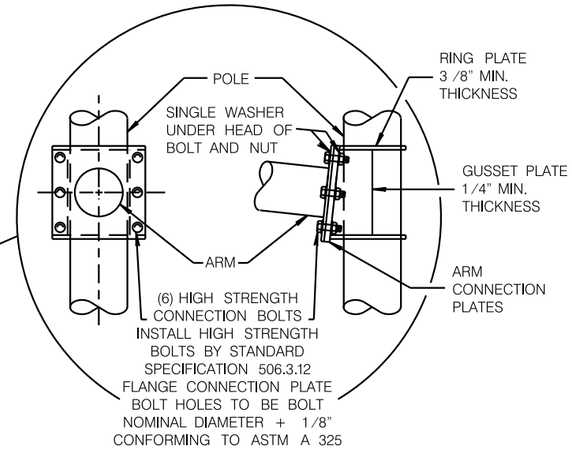
2



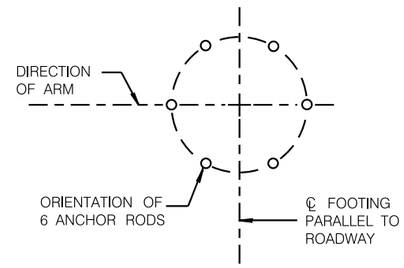
* DIMENSIONS SHOWN ARE FOR POLE/ARM DESIGN ONLY, NOT FOR FIELD LOCATION. THESE DIMENSIONS SHALL NOT BE DECREASED.

** SIGNALS MAY BE ADJUSTED ± 1'–0" MAXIMUM TO ACCOMODATE FOR VERTICAL CLEARANCE.

*** REFER TO WISDOT GENERAL NOTES AND HARDWARE DETAILS FOR TYPE 9, 10, 12, AND 13 POLES WITH MONOTUBE ARMS.



6 BOLT ARM CONNECTION DETAIL



ANCHOR ROD LOCATION

(MAXIMUM LOAD)

TYPE 12 POLE SPECIAL
35'– 40' MONOTUBE ARM

SHEET 11 OF 12

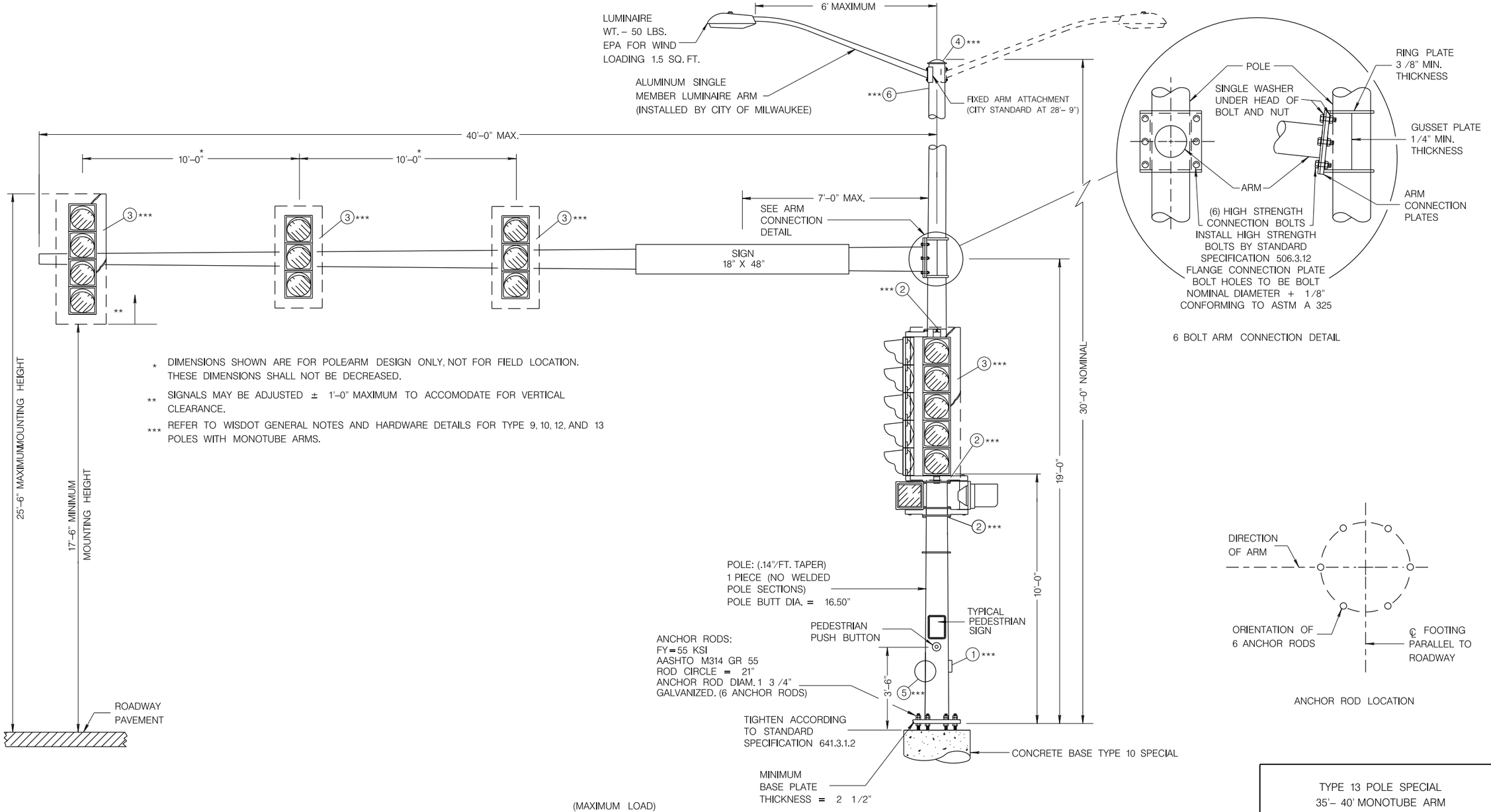
TYPE 12 POLE SPECIAL
35'– 40' MONOTUBE ARM

CITY OF MILWAUKEE
DEPARTMENT OF PUBLIC WORKS

REVISED: DECEMBER 2014 (DATE) 2013 AASHTO (REVISION)
REVISED: JULY 2015 (DATE) 2015 DESIGN UPDATE (REVISION)

PROJECT NO: 2200–13–70	HWY: U.S.H. 18 /S.T.H. 57	COUNTY: MILWAUKEE	TRAFFIC SIGNAL CONDUIT DETAILS	SHEET 161	E

2



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

** SIGNALS MAY BE ADJUSTED ± 1'–0" MAXIMUM TO ACCOMODATE FOR VERTICAL CLEARANCE.

*** REFER TO WISDOT GENERAL NOTES AND HARDWARE DETAILS FOR TYPE 9, 10, 12, AND 13 POLES WITH MONOTUBE ARMS.

6 BOLT ARM CONNECTION DETAIL

ANCHOR ROD LOCATION

(MAXIMUM LOAD)

TYPE 13 POLE SPECIAL
35'– 40' MONOTUBE ARM

TYPE 13 POLE SPECIAL
35'– 40' MONOTUBE ARM

CITY OF MILWAUKEE
DEPARTMENT OF PUBLIC WORKS

REVISED: DECEMBER 2014 (DATE) 2013 AASHTO (REVISION)
REVISED: JULY 2015 (DATE) 2015 DESIGN UPDATE (REVISION)

SHEET 12 OF 12

PROJECT NO: 2200–13–70	HWY: U.S.H. 18 /S.T.H. 57	COUNTY: MILWAUKEE	TRAFFIC SIGNAL CONDUIT DETAILS	SHEET 162	E

2

04+32; 132.1'LT

2-3" SPECIAL

2-3" SPECIAL

1.5"; 2"; 2.5"

RELOCATED POLE (BY CITY)

2"

04+18.5; 108.5'LT

STREET

04+74; 124.0'LT

2"

04+75.5; 115.0'LT

TYPE 10 SPECIAL BASE
TYPE 13 SPECIAL POLE
05+35.5, 115.5'LT.

EXISTING CONTROL CABINET

40' ARM

3-3" SPECIAL

2-3" SPECIAL

2"

3"

CAUTION

05+35; 111.5'LT

2-3" SPECIAL

CAUTION

2-3" SPECIAL

CAUTION

WEST HIGHLAND

25' ARM

TYPE 10 BASE
TYPE 10 POLE
04+18, 63.2'LT.

04+12; 62.7'LT

3"

2-3" SPECIAL

2"

04+19; 43.2'LT

04+26.5; 42.7'LT

CAUTION

2-3" SPECIAL

04+33: .5'LT

2"

2-3" SPECIAL

2"

3"

04+48.5; 17.2'RT

35' ARM

TYPE 10 SPECIAL BASE
TYPE 13 SPECIAL POLE
04+48, 22.1'RT.

05+49.5; 94.5'LT

2"

05+55.5; 91.5'LT

2-3" SPECIAL

05+59; 46.0'LT

05+64; 46.0'LT

BOULEVARD

RELOCATED POLE (BY CITY)

2"

2-3" SPECIAL

05+67.5; 27.0'LT

1.5"; 2.5"

CAUTION

2-3" SPECIAL

T/L

40' ARM

TYPE 10 SPECIAL BASE
TYPE 12 SPECIAL POLE
05+67, 25.5'RT.

05+07.5; 24.7'RT

CAUTION

05+52.5; 25.5'RT

3"

05+74.5; 17.8'RT

2"

2-3" SPECIAL

2-3" SPECIAL

1.5"; 2"; 2.5"

RELOCATED POLE (BY CITY)

05+08.5; 28.4'RT

NORTH 27TH

N

SCALE, FEET 0 20

SHEET 1 OF 4

NOTE:

GENERAL NOTES MUST BE FOLLOWED WHEN INSTALLING MATERIALS FOR STREET LIGHTING AND TRAFFIC SIGNALS.

ALL CONDUIT SHALL BE SCHEDULE 40 RIGID PVC.

CONDUIT END CAPS REQUIRED ON ALL EMPTY CONDUIT.

PULL ROPE (3/8" NYLON) REQUIRED IN ALL CONDUIT.

SEE STREET LIGHTING & TRAFFIC SIGNAL CONDUIT DETAILS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

SEE UTILITY SPECIALS FOR ADDITIONAL INFORMATION AND ALL CONTACT NUMBERS.

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

ALL CONDUIT LABELED FOR SERIES CIRCUITRY SHALL NOT BE CONNECTED TO ANY VAULTS UNLESS NOTED OTHERWISE.

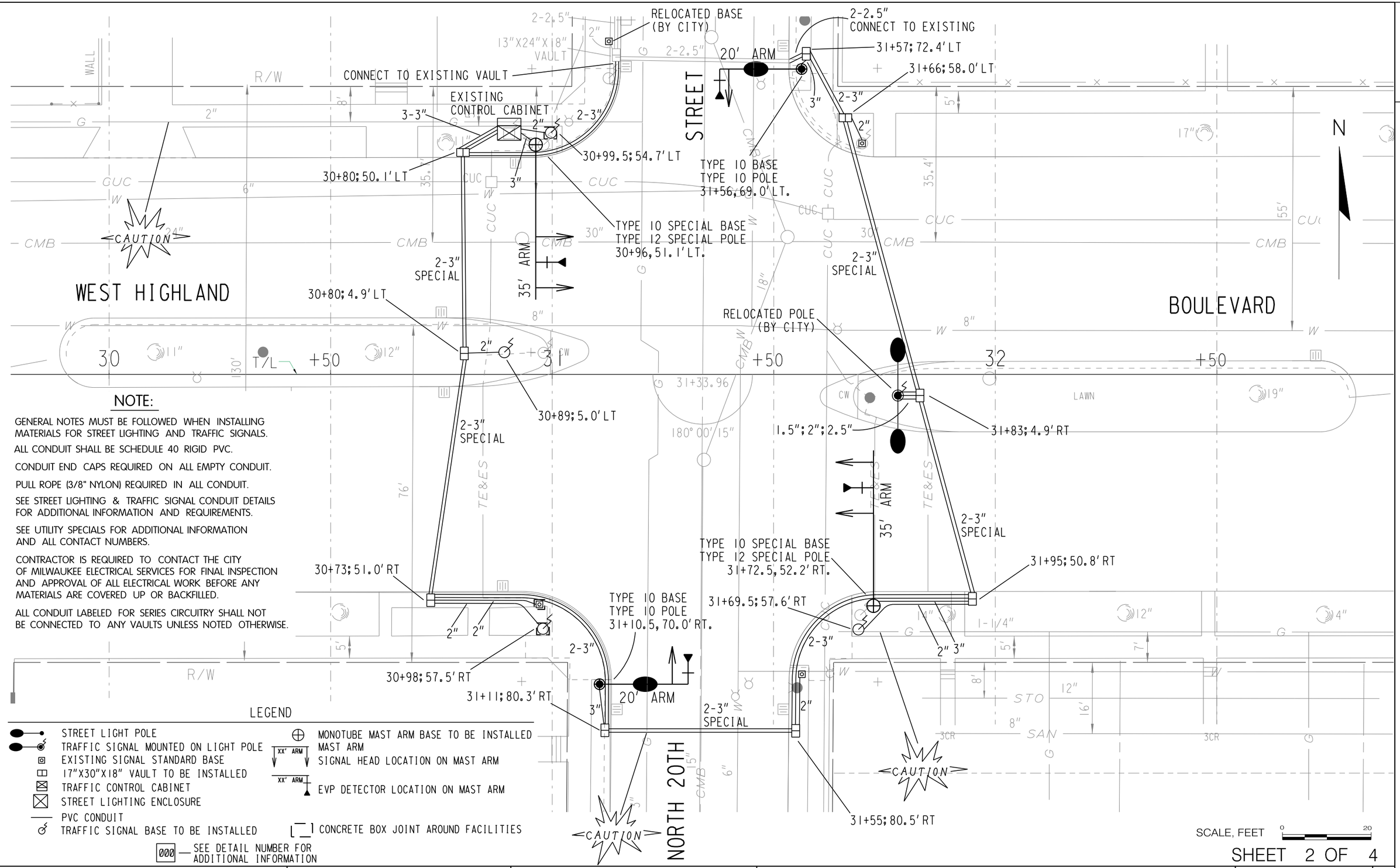
LEGEND

- STREET LIGHT POLE
- TRAFFIC SIGNAL MOUNTED ON LIGHT POLE
- EXISTING SIGNAL STANDARD BASE
- 17"X30"X18" VAULT TO BE INSTALLED
- TRAFFIC CONTROL CABINET
- STREET LIGHTING ENCLOSURE
- PVC CONDUIT
- TRAFFIC SIGNAL BASE TO BE INSTALLED
- MONOTUBE MAST ARM BASE TO BE INSTALLED
- XX' ARM — SIGNAL HEAD LOCATION ON MAST ARM
- XX' ARM — EVP DETECTOR LOCATION ON MAST ARM
- CONCRETE BOX JOINT AROUND FACILITIES
- 000 — SEE DETAIL NUMBER FOR ADDITIONAL INFORMATION

PROJECT NO: 2200-13-70	HWY: U.S.H. 18 /S.T.H. 57	COUNTY: MILWAUKEE	TRAFFIC SIGNAL BASE AND CONDUIT PLAN	SHEET 163	E

FILE NAME : W:\bte\signals\PAVING AND DESIGN\State Projects-LFA\Preliminary Engineering\2200-13-90 Highland 27th to 12th\2200-13-70 Signals.dgn
PLOT DATE : 23-NOV-2015 08:08
PLOT BY : jbondo
PLOT NAME :
PLOT SCALE : 20.000000:1.000000
WISDOT/CADDS SHEET 42

2



NOTE:

GENERAL NOTES MUST BE FOLLOWED WHEN INSTALLING MATERIALS FOR STREET LIGHTING AND TRAFFIC SIGNALS.

ALL CONDUIT SHALL BE SCHEDULE 40 RIGID PVC.

CONDUIT END CAPS REQUIRED ON ALL EMPTY CONDUIT.

PULL ROPE (3/8" NYLON) REQUIRED IN ALL CONDUIT.

SEE STREET LIGHTING & TRAFFIC SIGNAL CONDUIT DETAILS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

SEE UTILITY SPECIALS FOR ADDITIONAL INFORMATION AND ALL CONTACT NUMBERS.

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

ALL CONDUIT LABELED FOR SERIES CIRCUITRY SHALL NOT BE CONNECTED TO ANY VAULTS UNLESS NOTED OTHERWISE.

LEGEND

- STREET LIGHT POLE
- TRAFFIC SIGNAL MOUNTED ON LIGHT POLE
- EXISTING SIGNAL STANDARD BASE
- 17"X30"X18" VAULT TO BE INSTALLED
- TRAFFIC CONTROL CABINET
- STREET LIGHTING ENCLOSURE
- PVC CONDUIT
- TRAFFIC SIGNAL BASE TO BE INSTALLED
- MONOTUBE MAST ARM BASE TO BE INSTALLED MAST ARM
- XX' ARM — SIGNAL HEAD LOCATION ON MAST ARM
- XX' ARM — EVP DETECTOR LOCATION ON MAST ARM
- CONCRETE BOX JOINT AROUND FACILITIES
- 000 — SEE DETAIL NUMBER FOR ADDITIONAL INFORMATION

SCALE, FEET 0 20

SHEET 2 OF 4

PROJECT NO: 2200–13–70	HWY: U.S.H. 18 /S.T.H. 57	COUNTY: MILWAUKEE	TRAFFIC SIGNAL BASE AND CONDUIT PLAN	SHEET 164	E

FILE NAME : W:\bte\signals\PAVING AND DESIGN\State Projects–LFA\Preliminary Engineering\2200–13–90 Highland 27th to 12th\2200–13–70 Signals.dgn
PLOT DATE : 23–NOV–2015 08:12
PLOT BY : jbondo
PLOT NAME :
PLOT SCALE : 20.000000:1.000000
WISDOT/CADDS SHEET 42

NOTE:

GENERAL NOTES MUST BE FOLLOWED WHEN INSTALLING MATERIALS FOR STREET LIGHTING AND TRAFFIC SIGNALS.

ALL CONDUIT SHALL BE SCHEDULE 40 RIGID PVC.

CONDUIT END CAPS REQUIRED ON ALL EMPTY CONDUIT.

PULL ROPE (3/8" NYLON) REQUIRED IN ALL CONDUIT.

SEE STREET LIGHTING & TRAFFIC SIGNAL CONDUIT DETAILS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

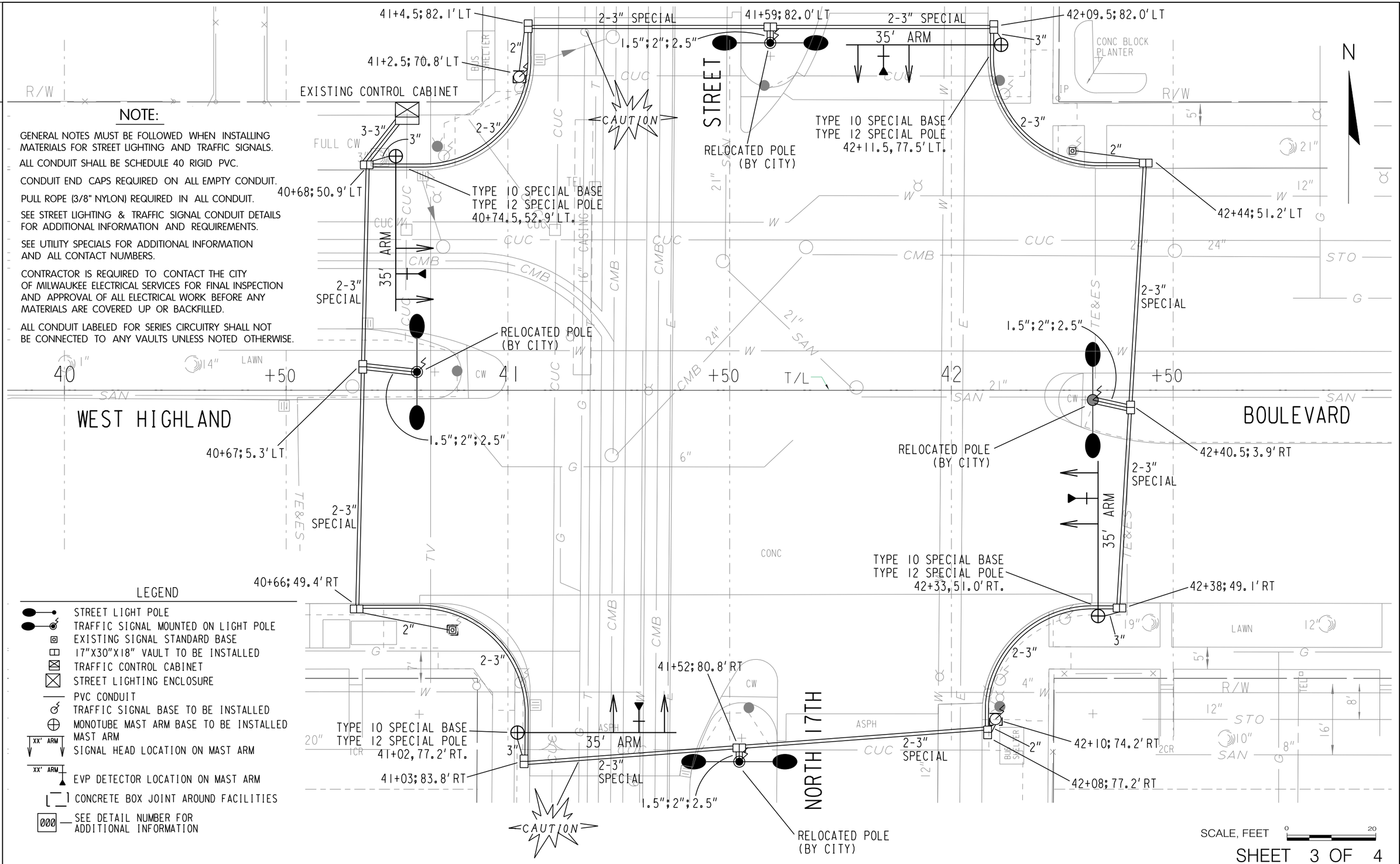
SEE UTILITY SPECIALS FOR ADDITIONAL INFORMATION AND ALL CONTACT NUMBERS.

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

ALL CONDUIT LABELED FOR SERIES CIRCUITRY SHALL NOT BE CONNECTED TO ANY VAULTS UNLESS NOTED OTHERWISE.

LEGEND

- STREET LIGHT POLE
- TRAFFIC SIGNAL MOUNTED ON LIGHT POLE
- EXISTING SIGNAL STANDARD BASE
- 17"X30"X18" VAULT TO BE INSTALLED
- TRAFFIC CONTROL CABINET
- STREET LIGHTING ENCLOSURE
- PVC CONDUIT
- TRAFFIC SIGNAL BASE TO BE INSTALLED
- MONOTUBE MAST ARM BASE TO BE INSTALLED
- XX' ARM — MAST ARM
- XX' ARM — SIGNAL HEAD LOCATION ON MAST ARM
- XX' ARM — EVP DETECTOR LOCATION ON MAST ARM
- CONCRETE BOX JOINT AROUND FACILITIES
- 000 — SEE DETAIL NUMBER FOR ADDITIONAL INFORMATION



SHEET 3 OF 4

PROJECT NO: 2200–13–70	HWY: U.S.H. 18 /S.T.H. 57	COUNTY: MILWAUKEE	TRAFFIC SIGNAL BASE AND CONDUIT PLAN	SHEET 165	E

2

N

STREET

WEST HIGHLAND

BOULEVARD

NORTH 12TH

CONNECT TO EXISTING 2-3" 59+26; 31.6' LT

59+36.5; 32.1' LT

CONNECT TO EXISTING 2-3" 2"

RELOCATED POLE (BY CITY)

CONNECT TO EXISTING 2-3" 59+29.5; 12.0' RT

1.5"; 2"; 2.5"

1.5"; 2"; 2.5"

CONNECT TO EXISTING 2-3" 59+60; 25.0' RT

RELOCATED POLE (BY CITY)

CAUTION

10" MAIN IN 18" CASING

+50 59 +50 60 +50 61

BUS SHELTER

PLANTS & BUSHES

FULL CW

CMB

CUC

TE&ES

STEAM

WEP

ENT ICR

NOTE:

GENERAL NOTES MUST BE FOLLOWED WHEN INSTALLING MATERIALS FOR STREET LIGHTING AND TRAFFIC SIGNALS.

ALL CONDUIT SHALL BE SCHEDULE 40 RIGID PVC.

CONDUIT END CAPS REQUIRED ON ALL EMPTY CONDUIT.

PULL ROPE (3/8" NYLON) REQUIRED IN ALL CONDUIT.

SEE STREET LIGHTING & TRAFFIC SIGNAL CONDUIT DETAILS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

SEE UTILITY SPECIALS FOR ADDITIONAL INFORMATION AND ALL CONTACT NUMBERS.

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

ALL CONDUIT LABELED FOR SERIES CIRCUITRY SHALL NOT BE CONNECTED TO ANY VAULTS UNLESS NOTED OTHERWISE.

LEGEND

- STREET LIGHT POLE
- TRAFFIC SIGNAL MOUNTED ON LIGHT POLE
- EXISTING SIGNAL STANDARD BASE
- 17"X30"X18" VAULT TO BE INSTALLED
- TRAFFIC CONTROL CABINET
- STREET LIGHTING ENCLOSURE
- PVC CONDUIT
- TRAFFIC SIGNAL BASE TO BE INSTALLED
- MONOTUBE MAST ARM BASE TO BE INSTALLED
- XX' ARM — SIGNAL HEAD LOCATION ON MAST ARM
- XX' ARM — EVP DETECTOR LOCATION ON MAST ARM
- CONCRETE BOX JOINT AROUND FACILITIES
- 000 — SEE DETAIL NUMBER FOR ADDITIONAL INFORMATION

SCALE, FEET 0 20

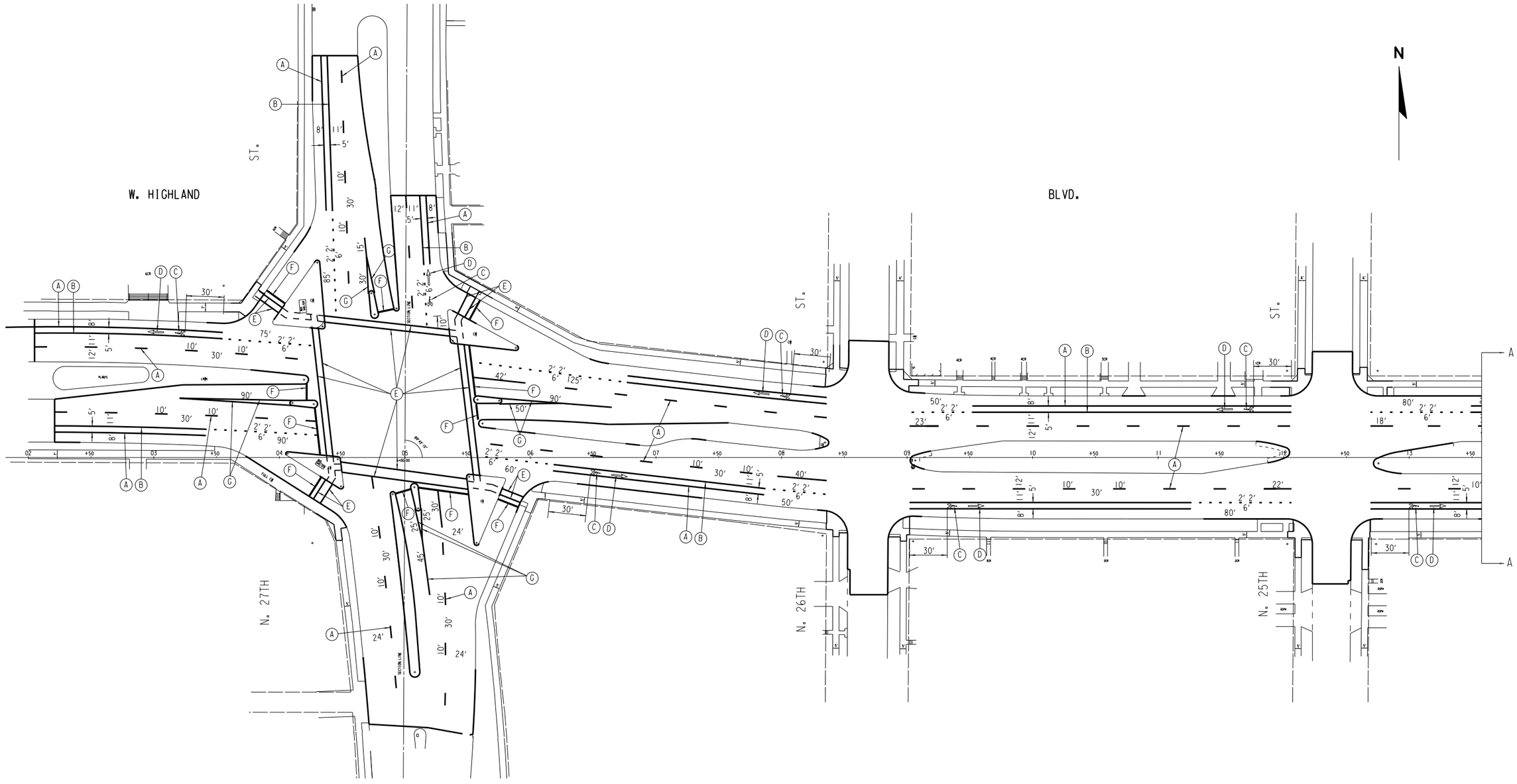
SHEET 4 OF 4

PROJECT NO: 2200–13–70	HWY: U.S.H. 18 /S.T.H. 57	COUNTY: MILWAUKEE	TRAFFIC SIGNAL BASE AND CONDUIT PLAN	SHEET 166	E

FILE NAME : W:\bte\signals\PAVING AND DESIGN\State Projects–LFA\Preliminary Engineering\2200–13–90 Highland 27th to 12th\2200–13–70 Signals.dgn PLOT DATE : 23–NOV–2015 08:15 PLOT BY : jbondo PLOT NAME : PLOT SCALE : 20.000000:1.000000

WISDOT/CADDS SHEET 42

2



(A) PAVEMENT MARKING EPOXY, 4-INCH WHITE

(B) PAVEMENT MARKING EPOXY, 6-INCH WHITE

(C) PAVEMENT MARKING SYMBOLS BIKE LANE EPOXY

(D) PAVEMENT MARKING ARROWS BIKE LANE EPOXY

(E) PAVEMENT MARKING CROSS WALK EPOXY, 12-INCH WHITE

(F) PAVEMENT MARKING STOP LINE EPOXY, 24-INCH WHITE

(G) PAVEMENT MARKING EPOXY, 8-INCH WHITE

SHEET 1 OF 5

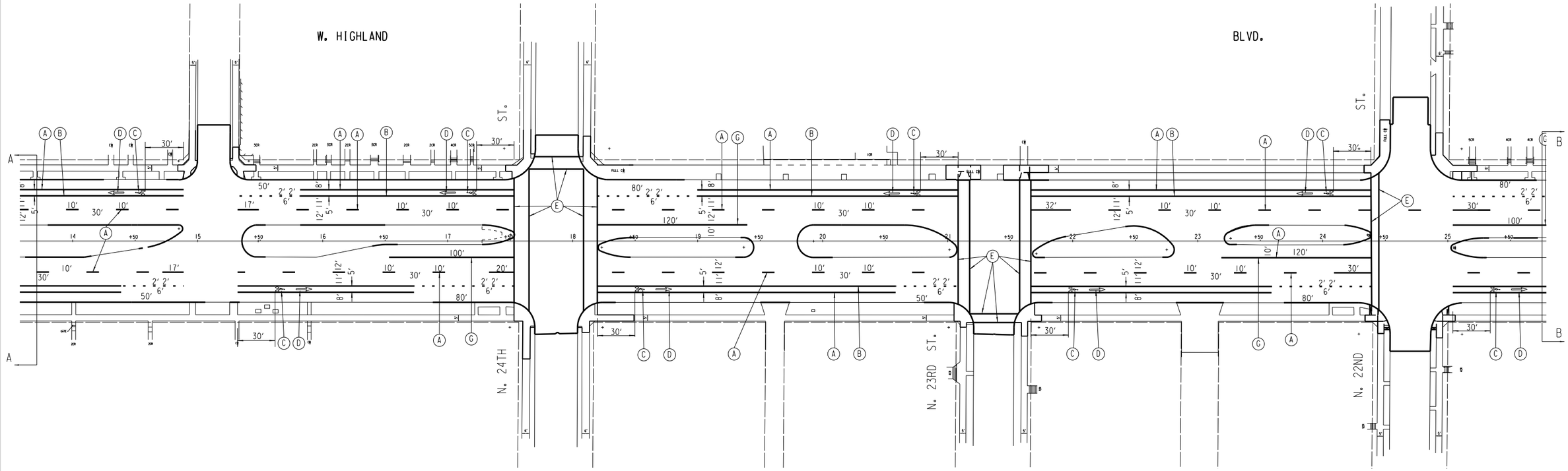
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FILE NAME: W:\SPR\HIGHLAND_27-12\PAVEMARK.DGN

REVISED DATE: 04-18-2016 BY MJ

2

N



(A) PAVEMENT MARKING EPOXY, 4-INCH WHITE

(B) PAVEMENT MARKING EPOXY, 6-INCH WHITE

(C) PAVEMENT MARKING SYMBOLS BIKE LANE EPOXY

(D) PAVEMENT MARKING ARROWS BIKE LANE EPOXY

(E) PAVEMENT MARKING CROSS WALK EPOXY, 12-INCH WHITE

(F) PAVEMENT MARKING STOP LINE EPOXY, 24-INCH WHITE

(G) PAVEMENT MARKING EPOXY, 8-INCH WHITE

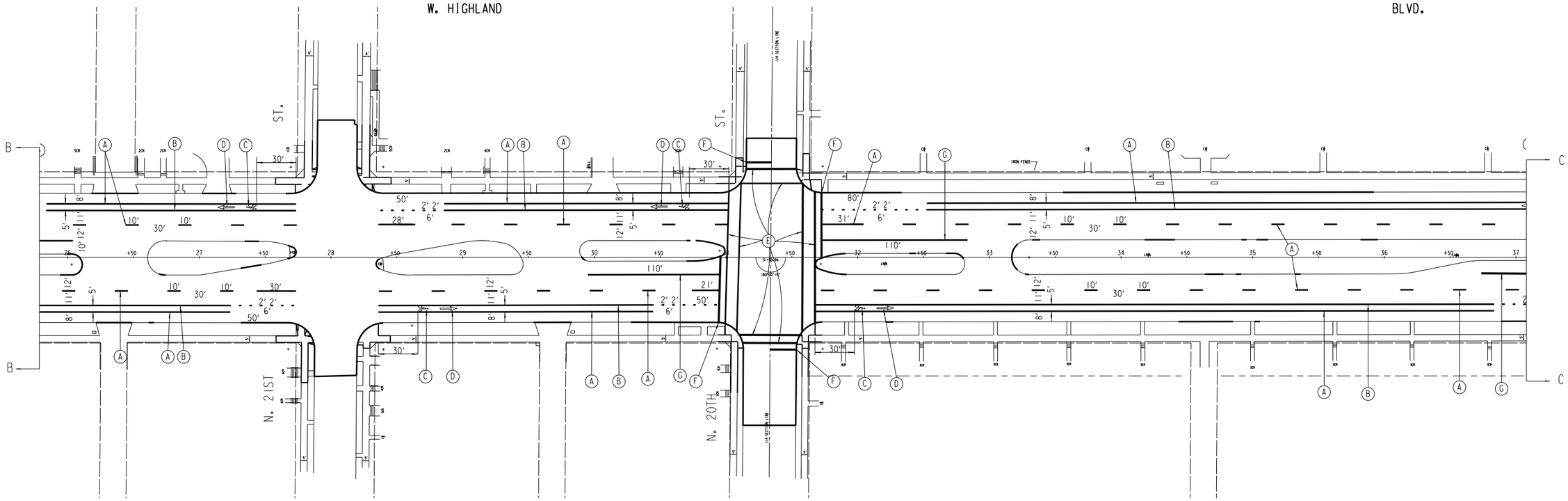
STATE PROJECT NUMBER: 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	PAVEMENT MARKING	SCALE FEET	SHEET NO: 168	E

FILE NAME: W:\SPR\HIGHLAND_27-12\PAVEMARK.DGN

REVISED DATE: 04-18-2016 BY MJ

2

N



(A) PAVEMENT MARKING EPOXY, 4-INCH WHITE

(B) PAVEMENT MARKING EPOXY, 6-INCH WHITE

(C) PAVEMENT MARKING SYMBOLS BIKE LANE EPOXY

(D) PAVEMENT MARKING ARROWS BIKE LANE EPOXY

(E) PAVEMENT MARKING CROSS WALK EPOXY, 12-INCH WHITE

(F) PAVEMENT MARKING STOP LINE EPOXY, 24-INCH WHITE

(G) PAVEMENT MARKING EPOXY, 8-INCH WHITE

STATE PROJECT NUMBER: 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	PAVEMENT MARKING	SCALE FEET	SHEET NO: 169	E

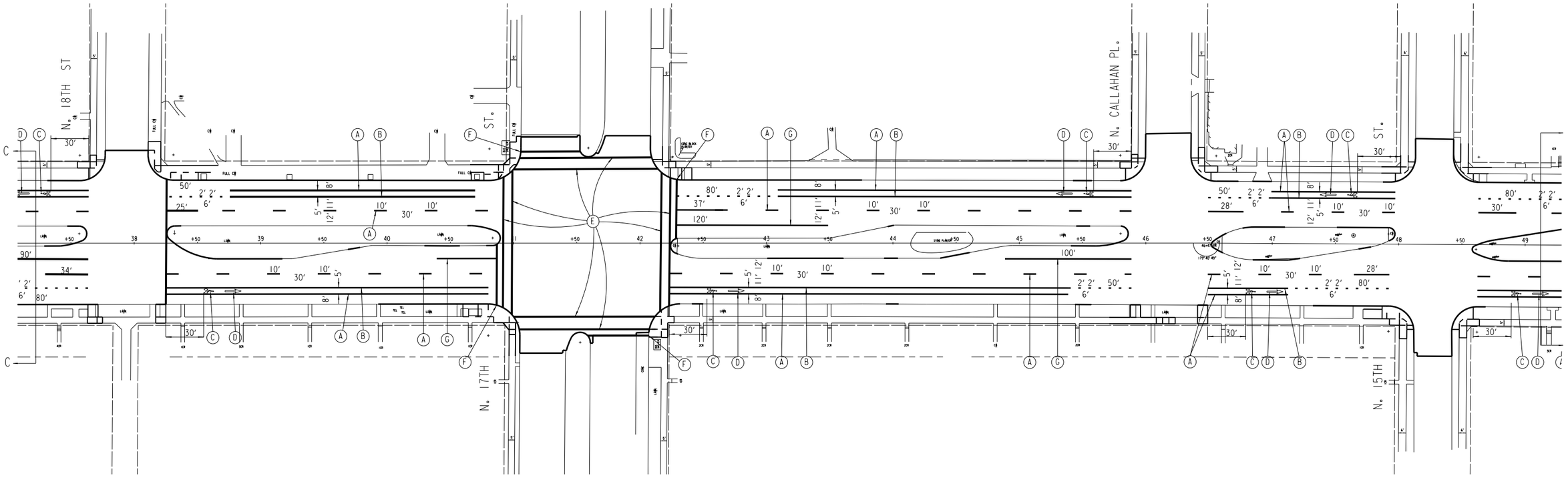
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REVISED DATE: 04-18-2016 BY MJ

2

N

W. HIGHLAND BLVD.



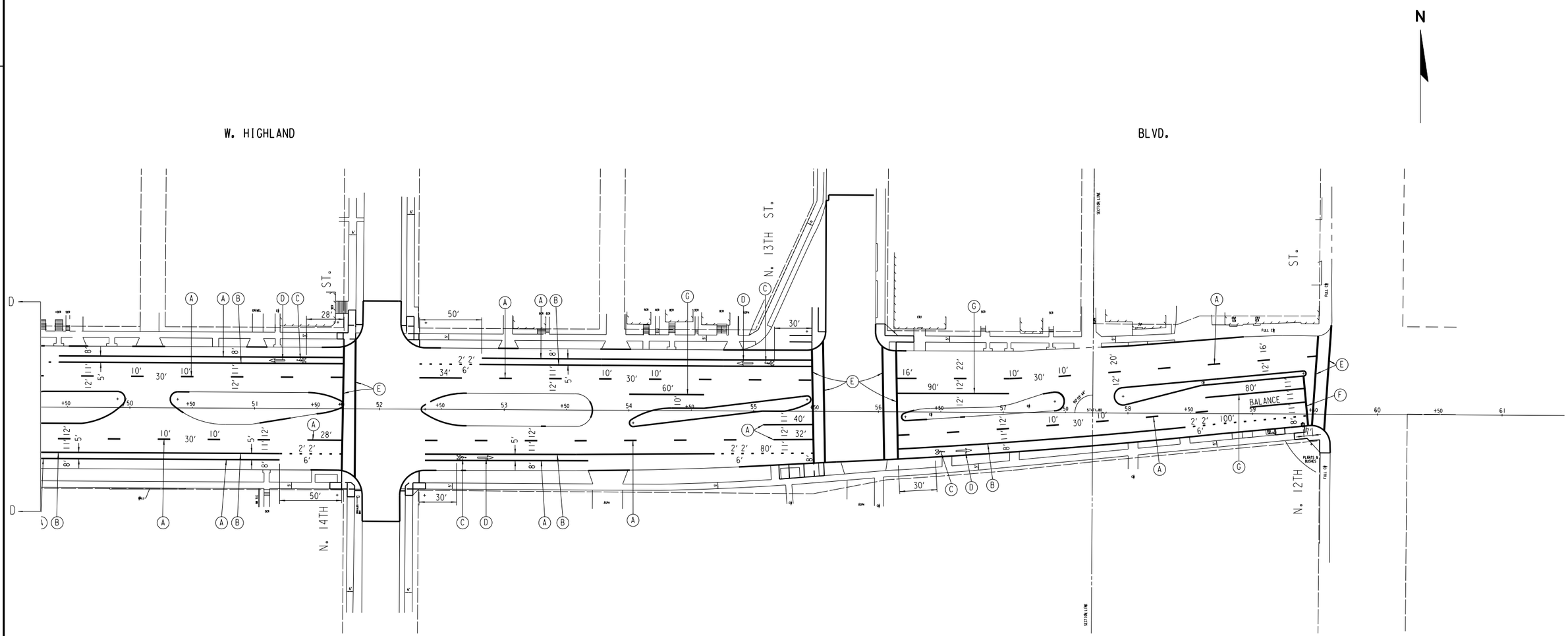
SHEET 4 OF 5

STATE PROJECT NUMBER: 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	PAVEMENT MARKING	SCALE FEET	SHEET NO: 170	E

FILE NAME: W:\SPR\HIGHLAND_27-12\PAVEMARK.DGN

REVISED DATE: 04-18-2016 BY MJ

2



(A) PAVEMENT MARKING EPOXY, 4-INCH WHITE

(B) PAVEMENT MARKING EPOXY, 6-INCH WHITE

(C) PAVEMENT MARKING SYMBOLS BIKE LANE EPOXY

(D) PAVEMENT MARKING ARROWS BIKE LANE EPOXY

(E) PAVEMENT MARKING CROSS WALK EPOXY, 12-INCH WHITE

(F) PAVEMENT MARKING STOP LINE EPOXY, 24-INCH WHITE

(G) PAVEMENT MARKING EPOXY, 8-INCH WHITE

SHEET 5 OF 5

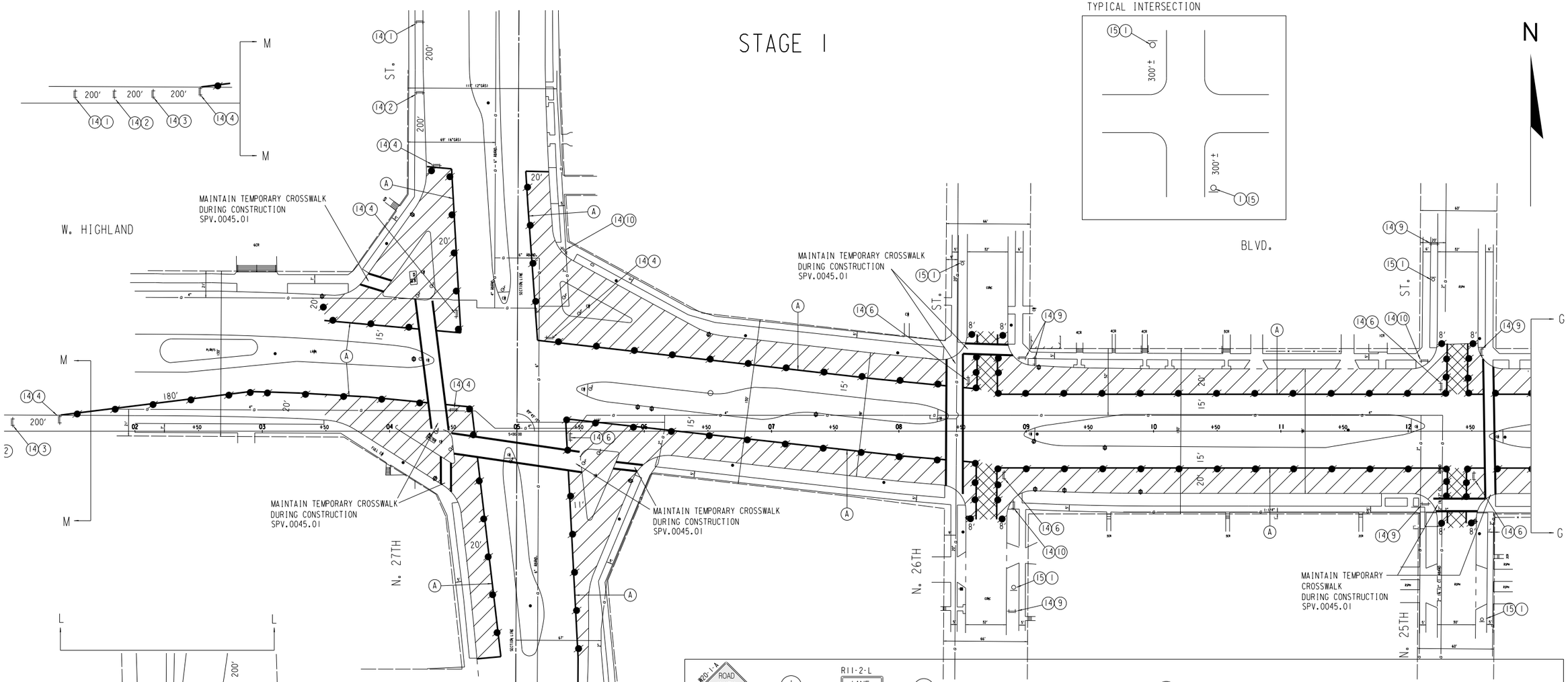
STATE PROJECT NUMBER: 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	PAVEMENT MARKING	SCALE FEET	SHEET NO: 171	E

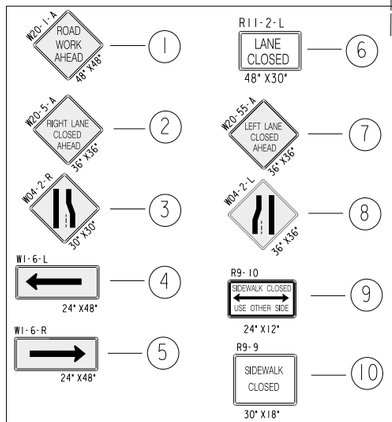
FILE NAME: W:\SPR\HIGHLAND_27-12\PAVEMARK.DGN

REVISED DATE: 04-18-2016 BY MJ

STAGE I

TYPICAL INTERSECTION





DRUMS W/LIGHTS 30' SPACING — 13

TYPE III BARRICADES — 14

TYPE III BARRICADES W/ SIGN — 14 + X

SIGNS BANDED TO UTILITY POLE — 15

WORK AREA

WORK AREA UNDER TRAFFIC FLAGGING TO OCCUR

DIRECTION OF TRAFFIC

(A) TPM, REMOVABLE TAPE, 4" WHITE

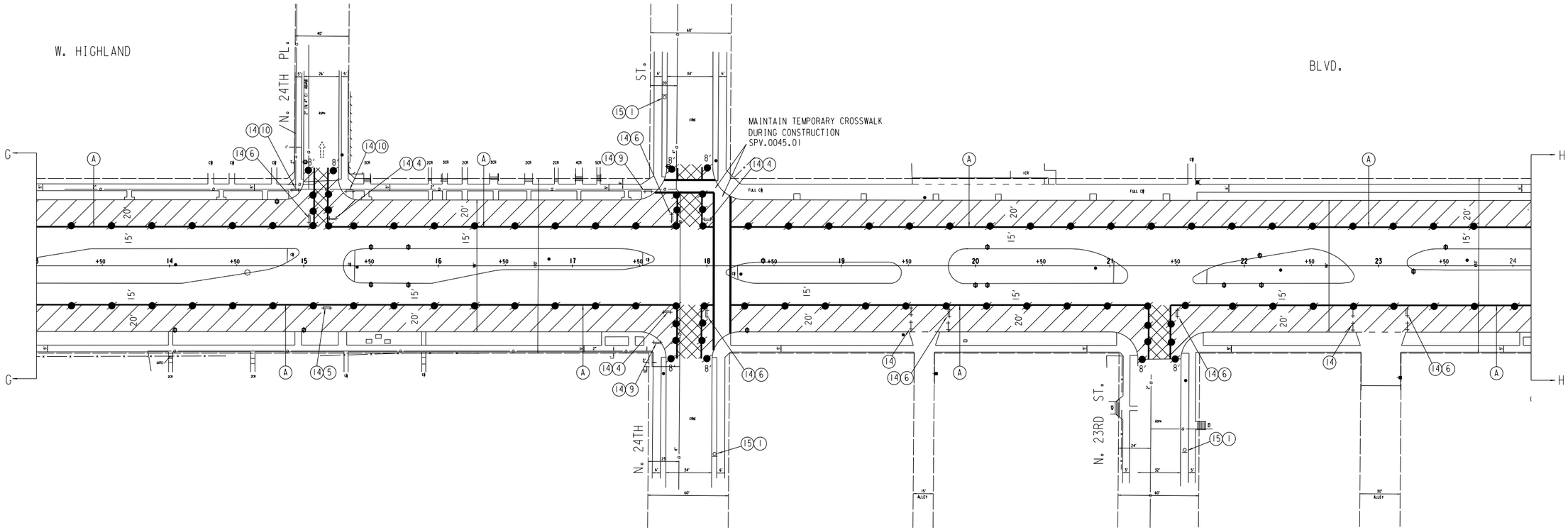
NOTE: ALL SIGNING SHALL BE THE CONTRACTORS RESPONSIBILITY.
ALL SIGNS SHALL BE BANDED TO EXISTING UTILITY POLES UNLESS OTHERWISE NOTED.
CONTRACTOR RESPONSIBLE FOR COVERING ALL CONFLICTING PAVEMENT MARKINGS.
CONTRACTOR RESPONSIBLE FOR COVERING ALL SIGNS THAT ARE IN CONFLICT WITH TEMPORARY TRAFFIC CONTROL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

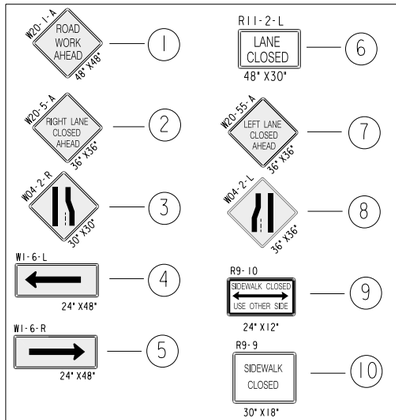
SHEET 1 OF 10

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	TRAFFIC CONTROL	SCALE FEET 0' 80'	SHEET NO: 172	E

FILE NAME = W: \SPR\HIGHLAND_27_12\TRAFFIC.DGN

STAGE 1





DRUMS W/LIGHTS 30' SPACING — (13)

TYPE III BARRICADES — (14)

TYPE III BARRICADES W/ SIGN — (14) + (X)

SIGNS BANDED TO UTILITY POLE — (15)

WORK AREA

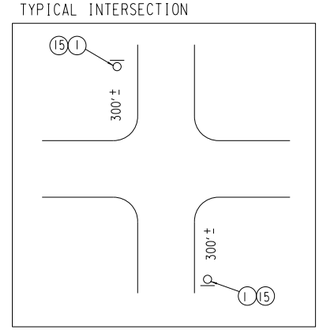
WORK AREA UNDER TRAFFIC FLAGGING TO OCCUR

DIRECTION OF TRAFFIC

(A) TPM, REMOVABLE TAPE, 4" WHITE

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

TYPICAL INTERSECTION

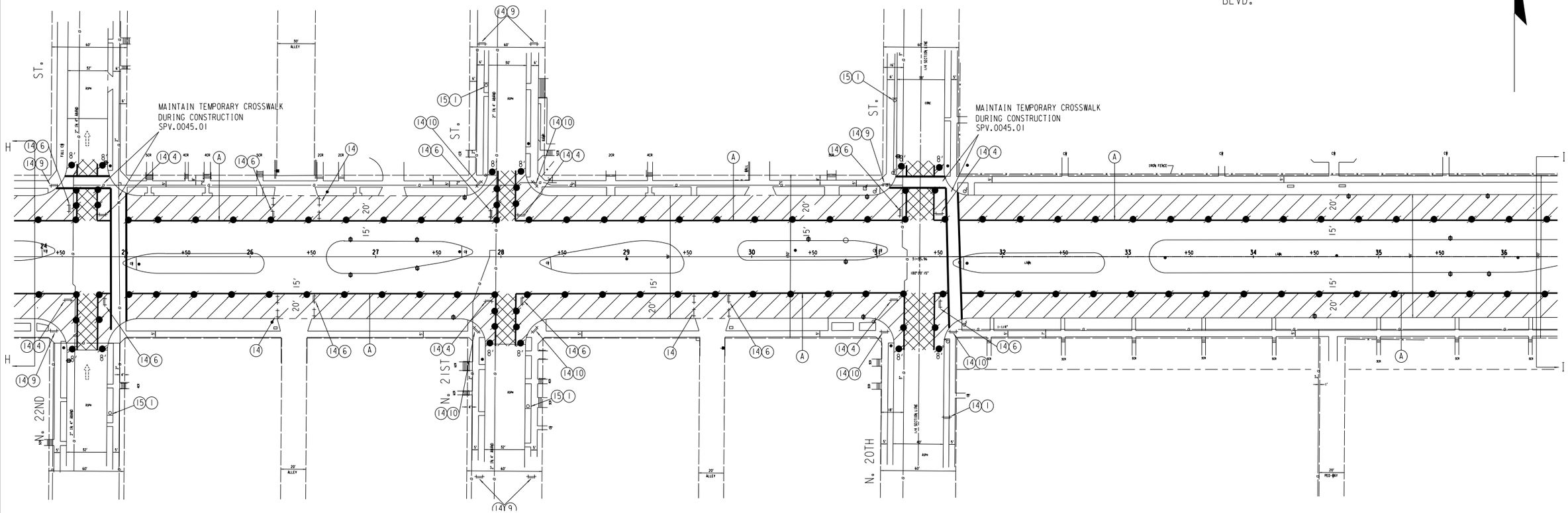


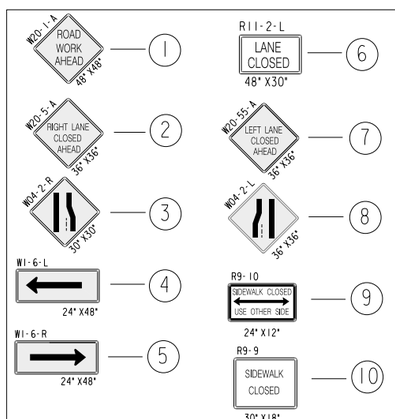
SHEET 2 OF 10

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	TRAFFIC CONTROL	SCALE FEET 0' 80'	SHEET NO: 173	E

FILE NAME = W: \SPR\HIGHLAND_27_12\TRAFFIC.DGN

STAGE I





DRUMS W/LIGHTS 30' SPACING — 13

TYPE III BARRICADES — 14

TYPE III BARRICADES W/ SIGN — 14 + X

SIGNS BANDED TO UTILITY POLE — 15

WORK AREA

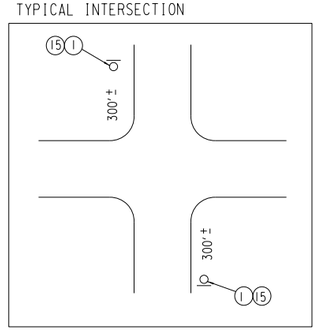
WORK AREA UNDER TRAFFIC FLAGGING TO OCCUR

DIRECTION OF TRAFFIC

(A) TPM, REMOVABLE TAPE, 4" WHITE

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

TYPICAL INTERSECTION



SHEET 3 OF 10

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	TRAFFIC CONTROL	SCALE FEET 0' 80'	SHEET NO: 174	E

FILE NAME = W: \SPR\HIGHLAND_27_12\TRAFFIC.DGN

STAGE I

N

W. HIGHLAND

N. 18TH ST

N. 17TH ST.

N. CALLAHAN PL.

BLVD.

N. 15TH ST.

MAINTAIN TEMPORARY CROSSWALK DURING CONSTRUCTION SPV.0045.01

MAINTAIN TEMPORARY CROSSWALK DURING CONSTRUCTION SPV.0045.01

MAINTAIN TEMPORARY CROSSWALK DURING CONSTRUCTION SPV.0045.01

MAINTAIN TEMPORARY CROSSWALK DURING CONSTRUCTION SPV.0045.01

W20-1-A ROAD WORK AHEAD 48" X48" — (1)

W20-5-A RIGHT LANE CLOSED AHEAD 36" X36" — (2)

W4-2-R 30" X30" — (3)

W1-6-L 24" X48" — (4)

W1-6-R 24" X48" — (5)

R11-2-L LANE CLOSED 48" X30" — (6)

W20-5-A LEFT LANE CLOSED AHEAD 36" X36" — (7)

W4-2-L 36" X36" — (8)

R9-10 SIDEWALK CLOSED USE OTHER SIDE 24" X12" — (9)

R9-9 SIDEWALK CLOSED 30" X18" — (10)

DRUMS W/LIGHTS 30' SPACING — (13)

TYPE III BARRICADES — (14)

TYPE III BARRICADES W/ SIGN — (14) + (X)

SIGNS BANDED TO UTILITY POLE — (15)

WORK AREA

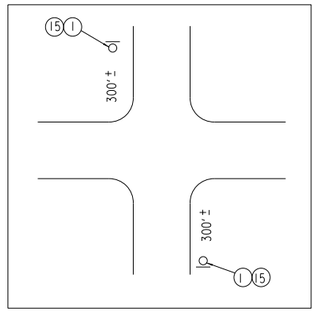
WORK AREA UNDER TRAFFIC FLAGGING TO OCCUR

DIRECTION OF TRAFFIC

(A) TPM, REMOVABLE TAPE, 4" WHITE

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

TYPICAL INTERSECTION

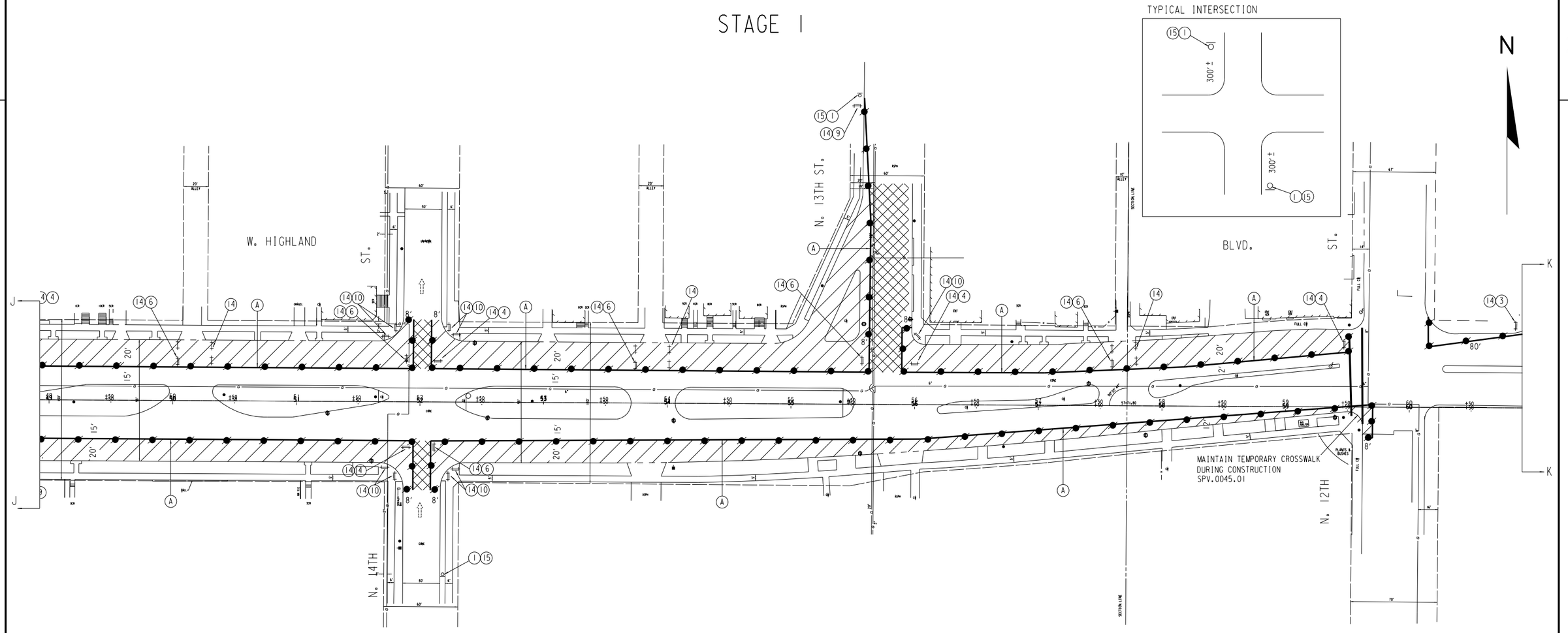


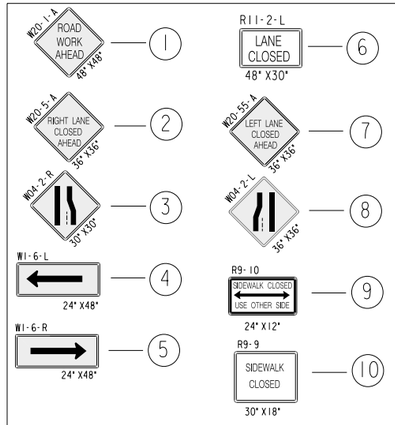
SHEET 4 OF 10

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	TRAFFIC CONTROL	SCALE FEET 0' 80'	SHEET NO: 175	E

FILE NAME = W: \SPR\HIGHLAND_27_12\TRAFFIC.DGN

STAGE I





DRUMS W/LIGHTS 30' SPACING — 13

TYPE III BARRICADES — 14

TYPE III BARRICADES W/ SIGN — 14 + X

SIGNS BANDED TO UTILITY POLE — 15

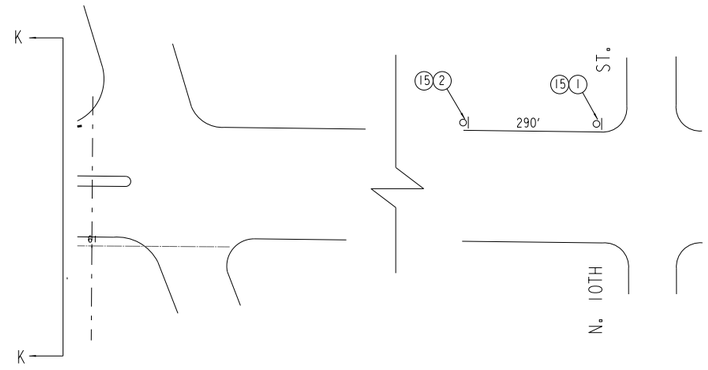
WORK AREA

WORK AREA UNDER TRAFFIC FLAGGING TO OCCUR

DIRECTION OF TRAFFIC

(A) TPM, REMOVABLE TAPE, 4" WHITE

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



SHEET 5 OF 10

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	TRAFFIC CONTROL	SCALE FEET 0' 80'	SHEET NO: 176	E

FILE NAME = W: \SPR\HIGHLAND_27_12\TRAFFIC.DGN

STAGE 2

N

W. HIGHLAND

ST.

W. STATE

N. 27TH

N. 26TH

BLVD.

W20-1-A ROAD WORK AHEAD 48"X48"	1	R11-2-L LANE CLOSED 48"X30"	6
W20-5-A RIGHT LANE CLOSED AHEAD 36"X36"	2	W20-5-A LEFT LANE CLOSED AHEAD 36"X36"	7
W04-2-R 30"X30"	3	W04-2-L 36"X36"	8
W1-6-L 24"X48"	4	R9-10 SIDEWALK CLOSED USE OTHER SIDE 24"X12"	9
W1-6-R 24"X48"	5	R9-9 SIDEWALK CLOSED 30"X18"	10

DRUMS W/LIGHTS 30' SPACING — 13

TYPE III BARRICADES — 14

TYPE III BARRICADES W/ SIGN — 14 + X

SIGNS BANDED TO UTILITY POLE — 15

WORK AREA

WORK AREA UNDER TRAFFIC FLAGGING TO OCCUR

DIRECTION OF TRAFFIC

(A) TPM, REMOVABLE TAPE, 4" WHITE

NOTE: ALL SIGNING SHALL BE THE CONTRACTORS RESPONSIBILITY. ALL SIGNS SHALL BE BANDED TO EXISTING UTILITY POLES UNLESS OTHERWISE NOTED.
CONTRACTOR RESPONSIBLE FOR COVERING ALL CONFLICTING PAVEMENT MARKINGS.

CONTRACTOR RESPONSIBLE FOR COVERING ALL SIGNS THAT ARE IN CONFLICT WITH TEMPORARY TRAFFIC CONTROL SIGNS

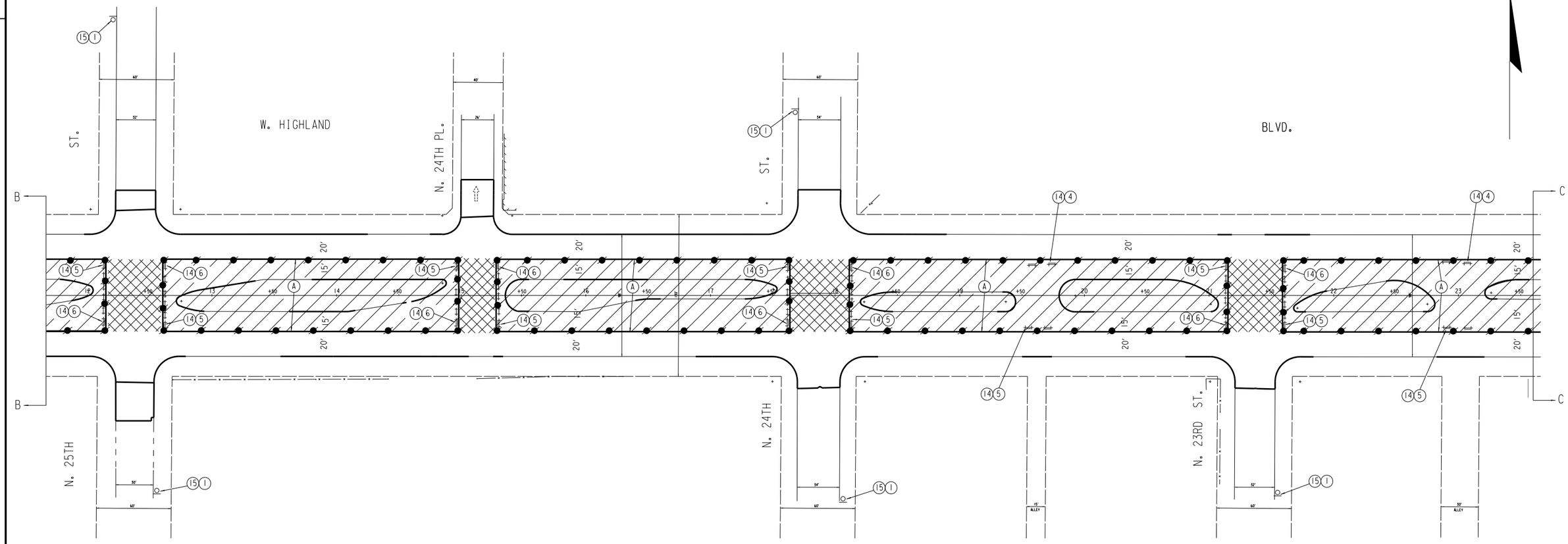
SHEET 6 OF 10

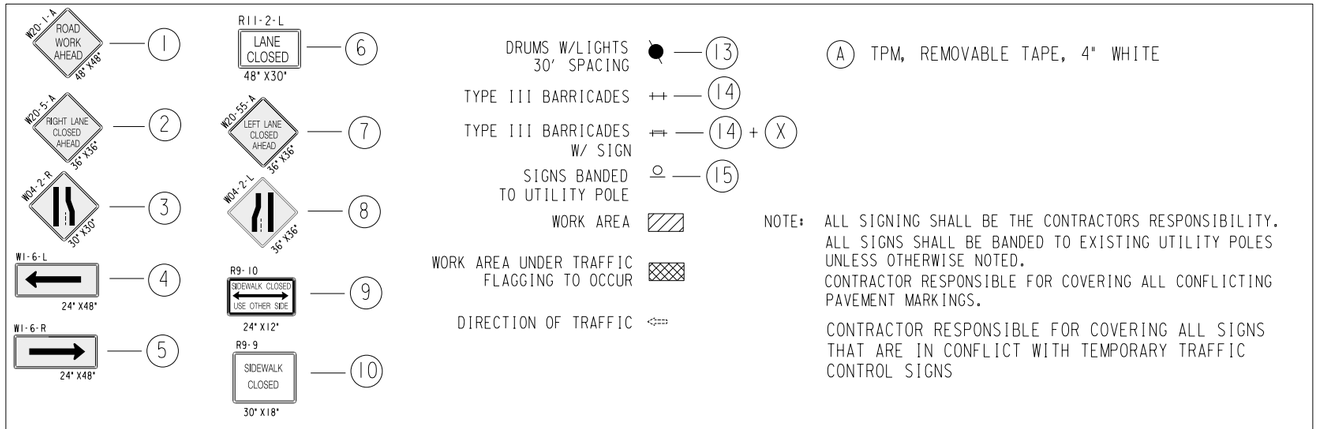
STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	TRAFFIC CONTROL	SCALE FEET 0' 80'	SHEET NO: 177	E

FILE NAME = W: \SPR\HIGHLAND_27_12\TRAFFIC.DGN

STAGE 2

2





STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	TRAFFIC CONTROL	SCALE FEET 0' 80'	SHEET NO: 178	E

FILE NAME = W: \SPR\HIGHLAND_27_12\TRAFFIC.DGN

STAGE 2

N

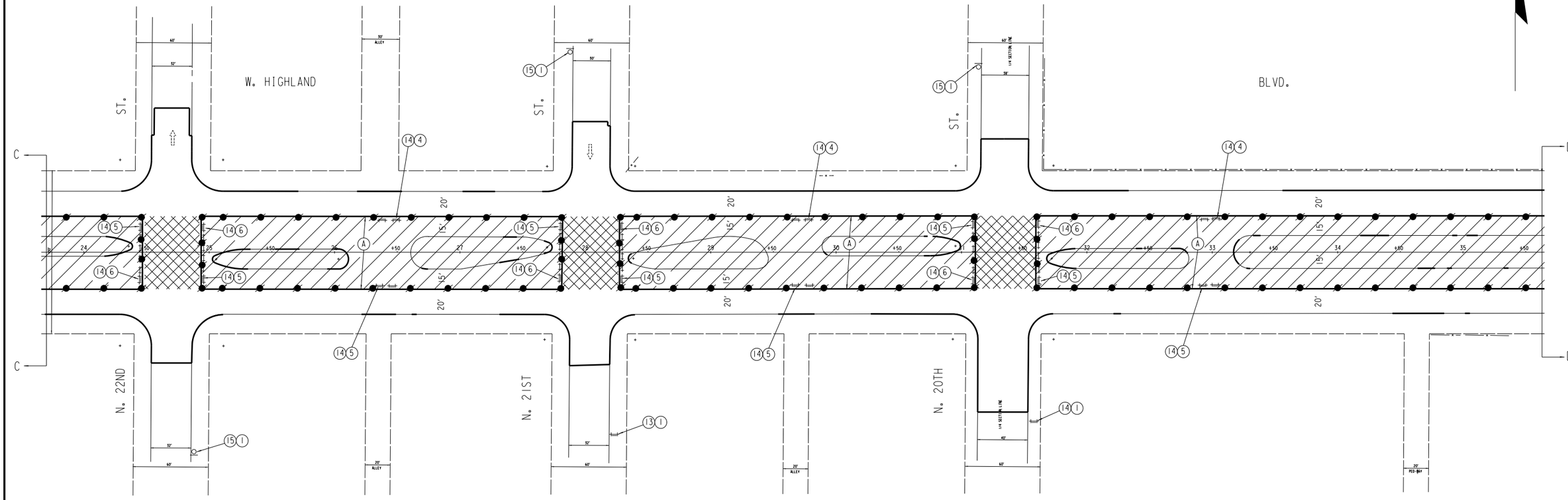
W. HIGHLAND ST.

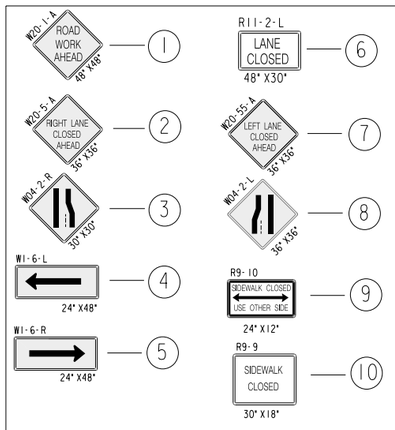
BLVD.

N. 22ND ST.

N. 21ST ST.

N. 20TH ST.





DRUMS W/LIGHTS 30' SPACING — 13

TYPE III BARRICADES — 14

TYPE III BARRICADES W/ SIGN — 14 + X

SIGNS BANDED TO UTILITY POLE — 15

WORK AREA

WORK AREA UNDER TRAFFIC FLAGGING TO OCCUR

DIRECTION OF TRAFFIC

(A) TPM, REMOVABLE TAPE, 4" WHITE

NOTE: ALL SIGNING SHALL BE THE CONTRACTORS RESPONSIBILITY. ALL SIGNS SHALL BE BANDED TO EXISTING UTILITY POLES UNLESS OTHERWISE NOTED.

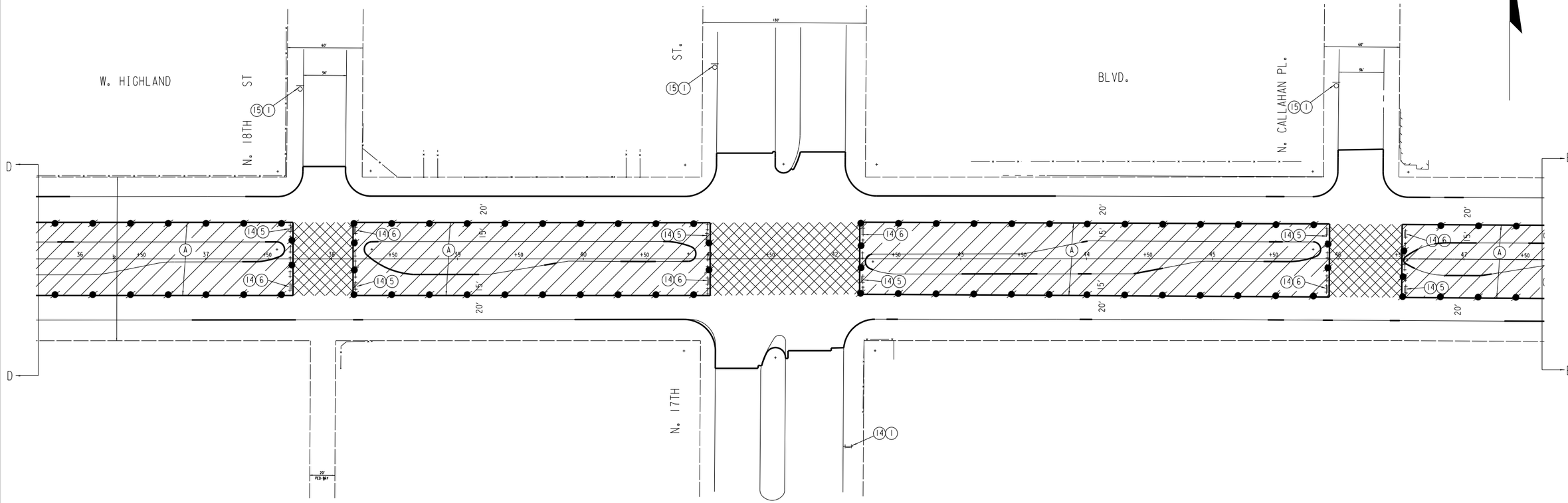
CONTRACTOR RESPONSIBLE FOR COVERING ALL CONFLICTING PAVEMENT MARKINGS.

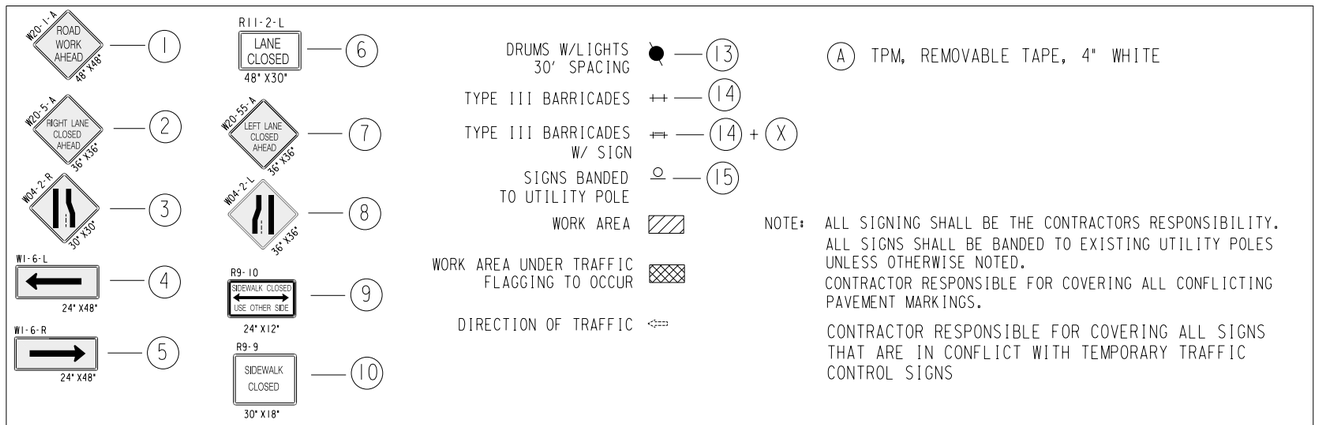
CONTRACTOR RESPONSIBLE FOR COVERING ALL SIGNS THAT ARE IN CONFLICT WITH TEMPORARY TRAFFIC CONTROL SIGNS

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	TRAFFIC CONTROL	SCALE FEET 0' 80'	SHEET NO: 179	E

FILE NAME = W: \SPR\HIGHLAND_27_12\TRAFFIC.DGN

STAGE 2





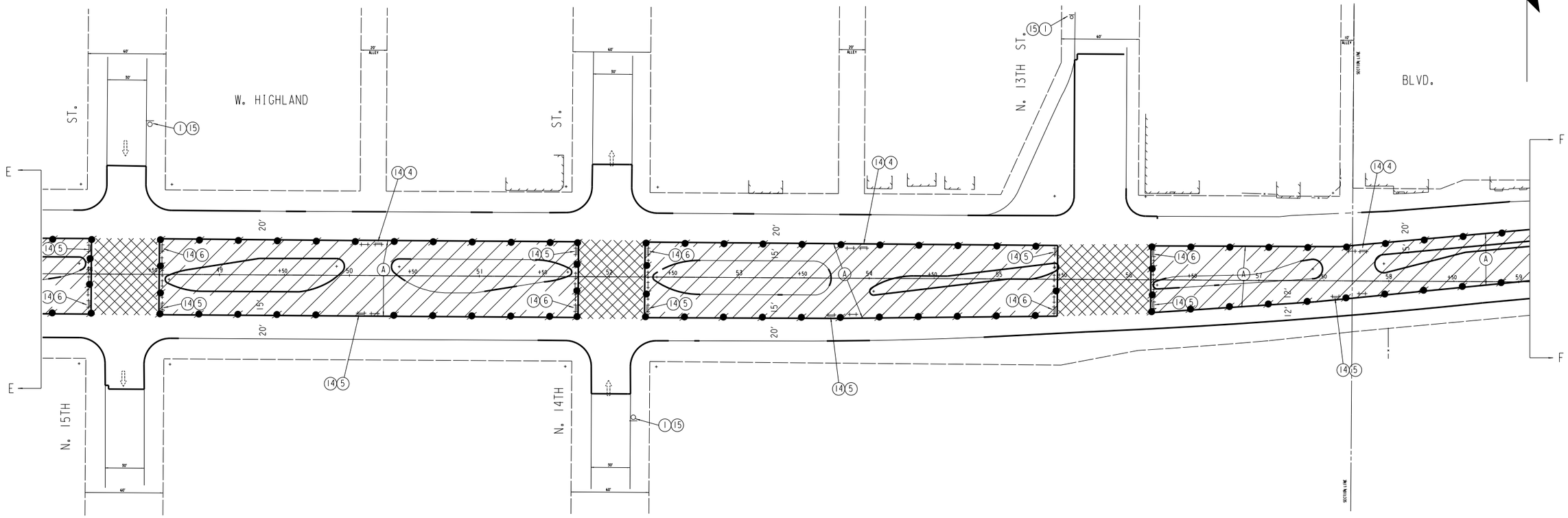
NOTE: ALL SIGNING SHALL BE THE CONTRACTORS RESPONSIBILITY. ALL SIGNS SHALL BE BANDED TO EXISTING UTILITY POLES UNLESS OTHERWISE NOTED.
CONTRACTOR RESPONSIBLE FOR COVERING ALL CONFLICTING PAVEMENT MARKINGS.
CONTRACTOR RESPONSIBLE FOR COVERING ALL SIGNS THAT ARE IN CONFLICT WITH TEMPORARY TRAFFIC CONTROL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

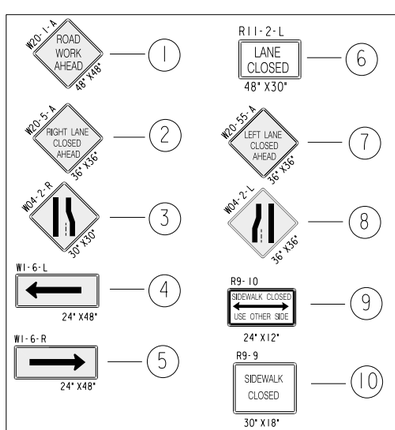
SHEET 9 OF 10

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	TRAFFIC CONTROL	SCALE FEET 0' 80'	SHEET NO: 180	E

FILE NAME = W: \SPR\HIGHLAND_27_12\TRAFFIC.DGN

STAGE 2





DRUMS W/LIGHTS 30' SPACING — 13

TYPE III BARRICADES — 14

TYPE III BARRICADES W/ SIGN — 14 + X

SIGNS BANDED TO UTILITY POLE — 15

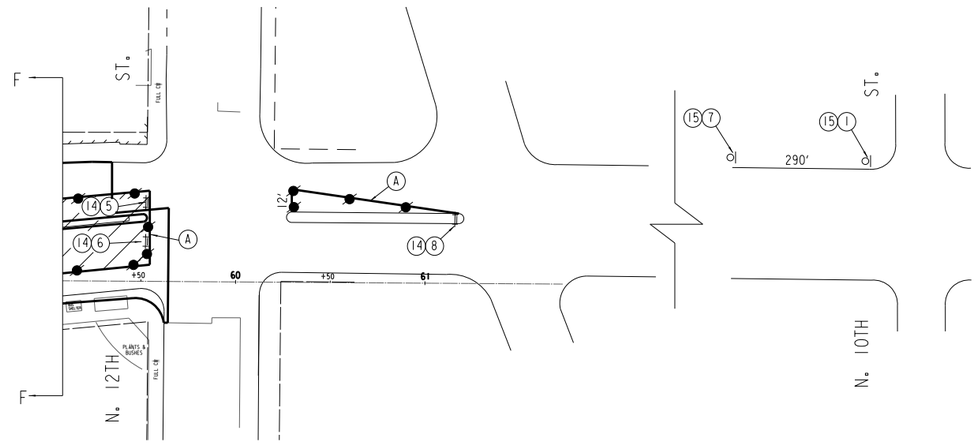
WORK AREA

WORK AREA UNDER TRAFFIC FLAGGING TO OCCUR

DIRECTION OF TRAFFIC

(A) TPM, REMOVABLE TAPE, 4" WHITE

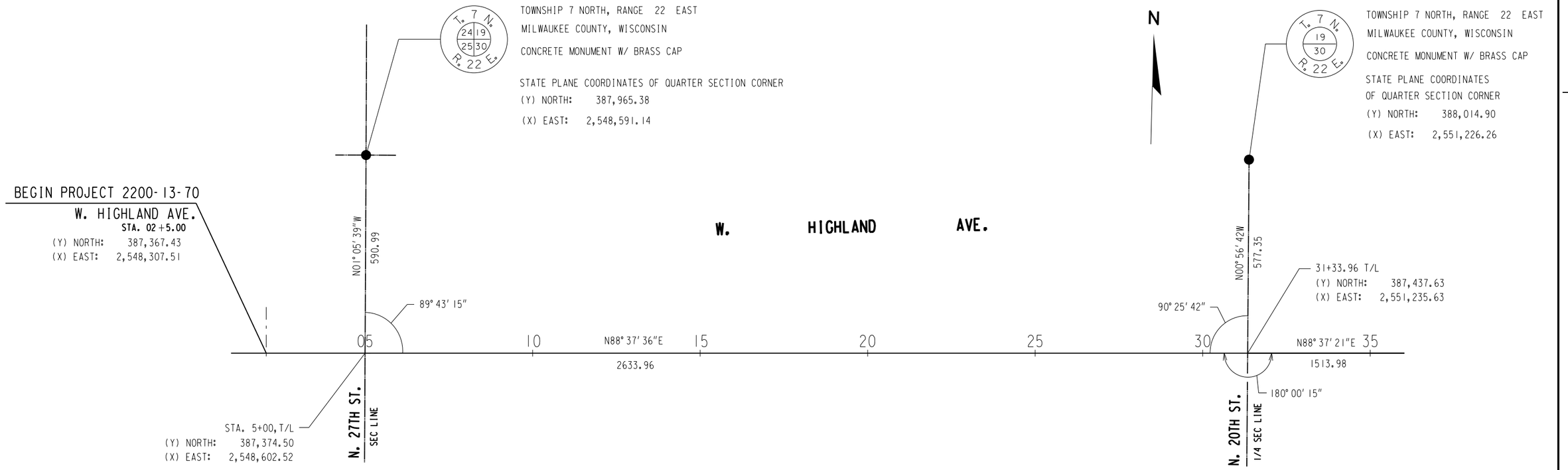
NOTE:
1. ALL SIGNING SHALL BE THE CONTRACTORS RESPONSIBILITY.
2. ALL SIGNS SHALL BE BANDED TO EXISTING UTILITY POLES UNLESS OTHERWISE NOTED.
3. CONTRACTOR RESPONSIBLE FOR COVERING ALL CONFLICTING PAVEMENT MARKINGS.
4. CONTRACTOR RESPONSIBLE FOR COVERING ALL SIGNS THAT ARE IN CONFLICT WITH TEMPORARY TRAFFIC CONTROL SIGNS

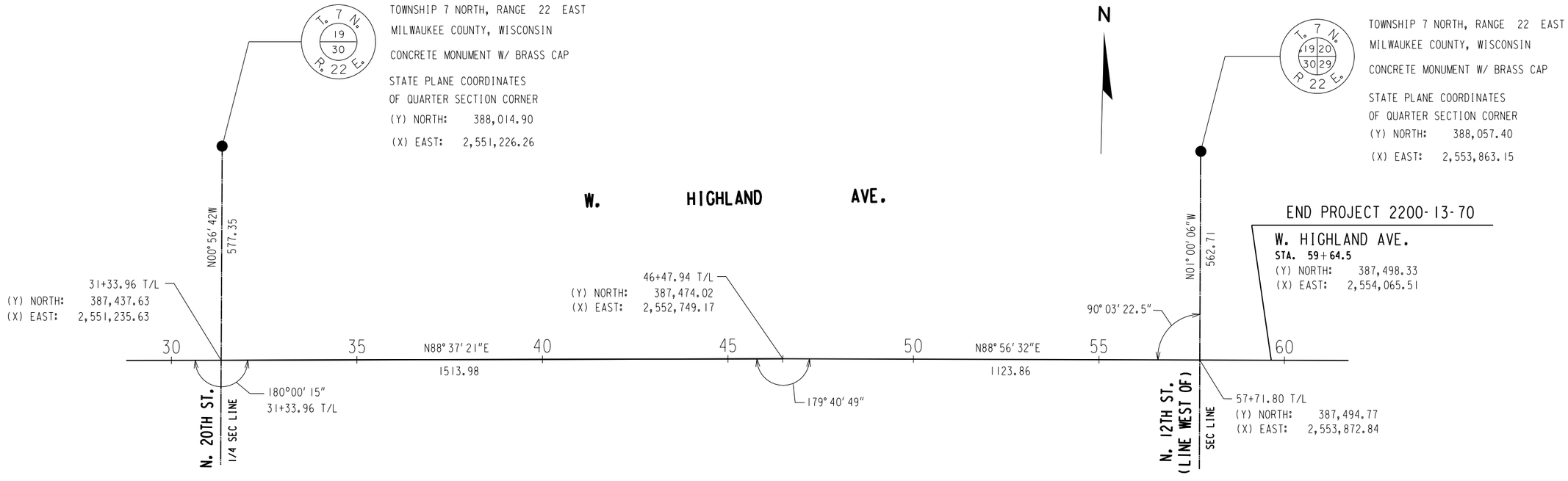


SHEET 10 OF 10

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	TRAFFIC CONTROL	SCALE FEET 0' 80'	SHEET NO: 181	E

FILE NAME = W: \SPR\HIGHLAND_27_12\TRAFFIC.DGN





STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	ALIGNMENT	SCALE FEET 0' 300'	SHEET NO: 182 E

FILENAME: W:\SPR\HIGHLAND_27-12\ALIGNMENT.DGN

DATE 02AUG16 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	2200-13-70 QUANTITY
0010	201.0120	Clearing	ID	222.000	222.000
0020	201.0220	Grubbing	ID	222.000	222.000
0030	204.0100	Removing Pavement	SY	1,750.000	1,750.000
0040	204.0105	Removing Pavement Butt Joints	SY	3,650.000	3,650.000
0050	204.0109.S	Removing Concrete Surface Partial Depth	SF	1,172.000	1,172.000
0060	204.0115	Removing Asphaltic Surface Butt Joints	SY	1,800.000	1,800.000
0070	204.0150	Removing Curb & Gutter	LF	11,870.000	11,870.000
0080	204.0155	Removing Concrete Sidewalk	SY	5,000.000	5,000.000
0090	204.0215	Removing Catch Basins	EACH	52.000	52.000
0100	204.0255	Abandoning Catch Basins	EACH	9.000	9.000
0110	205.0100	Excavation Common	CY	4,414.000	4,414.000
0120	211.0100	Prepare Foundation for Asphaltic Paving (project) 01. 2200-13-70	LS	1.000	1.000
0130	213.0100	Finishing Roadway (project) 01. 2200-13-70	EACH	1.000	1.000
0140	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	3,170.000	3,170.000
0150	320.0145	Concrete Base 8-Inch	SY	1,620.000	1,620.000
0160	390.0303	Base Patching Concrete	SY	3,000.000	3,000.000
0170	390.0403	Base Patching Concrete Shes	SY	59.000	59.000
0180	415.0090	Concrete Pavement 9-Inch	SY	1,110.000	1,110.000
0190	416.0170	Concrete Driveway 7-Inch	SY	523.000	523.000
0200	416.0610	Drilled Tie Bars	EACH	370.000	370.000
0210	416.0620	Drilled Dowel Bars	EACH	2,666.000	2,666.000
0220	450.4000	HMA Cold Weather Paving	TON	560.000	560.000
0230	455.0605	Tack Coat	GAL	3,030.000	3,030.000
0240	460.2000	Incentive Density HMA Pavement	DOL	7,170.000	7,170.000
0250	601.0331	Concrete Curb & Gutter 31-Inch	LF	9,420.000	9,420.000
0260	601.0600	Concrete Curb Pedestrian	LF	669.000	669.000
0270	602.0410	Concrete Sidewalk 5-Inch	SF	37,333.000	37,333.000
0280	602.0505	Curb Ramp Detectable Warning Field Yellow	SF	1,230.000	1,230.000
0290	602.1000	Concrete Loading Zone	SF	420.000	420.000
0300	608.0312	Storm Sewer Pipe Reinforced Concrete Class III 12-Inch	LF	583.000	583.000
0310	611.0410	Reconstructing Catch Basins	EACH	2.000	2.000
0320	611.0420	Reconstructing Manholes	EACH	2.000	2.000
0330	611.2004	Manholes 4-FT Diameter	EACH	3.000	3.000
0340	611.2006	Manholes 6-FT Diameter	EACH	1.000	1.000
0350	611.8105	Adjusting Catch Basin Covers	EACH	39.000	39.000
0360	611.8110	Adjusting Manhole Covers	EACH	83.000	83.000
0370	611.8120.S	Cover Plates Temporary	EACH	50.000	50.000
0380	611.9710	Salvaged Inlet Covers	EACH	13.000	13.000
0390	612.0106	Pipe Underdrain 6-Inch	LF	681.000	681.000
0400	612.0206	Pipe Underdrain Unperforated 6-Inch	LF	1,329.000	1,329.000
0410	612.0208	Pipe Underdrain Unperforated 8-Inch	LF	215.000	215.000
0420	619.1000	Mobilization	EACH	1.000	1.000
0430	620.0300	Concrete Median Sloped Nose	SF	2,900.000	2,900.000
0440	625.0100	Topsoil	SY	3,800.000	3,800.000
0450	628.7005	Inlet Protection Type A	EACH	105.000	105.000
0460	628.7015	Inlet Protection Type C	EACH	37.000	37.000
0470	628.7020	Inlet Protection Type D	EACH	105.000	105.000
0480	631.1000	Sod Lawn	SY	3,800.000	3,800.000
0490	632.0101	Trees (species) (size) (root) 01. American Sweet Gum 'Cherokee' 3" B&B	EACH	2.000	2.000

3

DATE 02AUG16 — E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	2200-13-70 QUANTITY
0500	632.0101	Trees (species) (size) (root) 02. Amur Corktree 3" B&B	EACH	1.000	1.000
0510	632.0101	Trees (species) (size) (root) 03. Autumn Blaze Maple 3.5" B&B	EACH	1.000	1.000
0520	632.0101	Trees (species) (size) (root) 04. Callery Pear 3" B&B	EACH	2.000	2.000
0530	632.0101	Trees (species) (size) (root) 05. Eastern Redbud 3" B&B	EACH	1.000	1.000
0540	632.0101	Trees (species) (size) (root) 06. Ivory Silk Tree Lilac 3" B&B	EACH	1.000	1.000
0550	632.0101	Trees (species) (size) (root) 07. Shagbark Hickory 3" B&B	EACH	1.000	1.000
0560	632.0201	Shrubs (species) (size) (root) 01. Arctic Blue Willow #2 CG	EACH	28.000	28.000
0570	632.0201	Shrubs (species) (size) (root) 02. Diablo Ninebark #5 CG	EACH	28.000	28.000
0580	632.0201	Shrubs (species) (size) (root) 03. Elderberry 'Black Lace' #5 CG	EACH	5.000	5.000
0590	632.0201	Shrubs (species) (size) (root) 04. Grow Low Sumac #2 CG	EACH	22.000	22.000
0600	632.0201	Shrubs (species) (size) (root) 05. Red Twig Dogwood #5 CG	EACH	36.000	36.000
0610	632.0201	Shrubs (species) (size) (root) 06. Rugosa Roses #3 CG	EACH	57.000	57.000
0620	632.0201	Shrubs (species) (size) (root) 07. Tiger Eye Sumac #5 CG	EACH	34.000	34.000
0630	632.9101	Landscape Planting Surveillance and Care Cycles	EACH	1.000	1.000
0640	634.0816	Posts Tubular Steel 2x2-Inch X 16-FT	EACH	4.000	4.000
0650	637.2210	Signs Type II Reflective H	SF	228.000	228.000
0660	638.2602	Removing Signs Type II	EACH	12.000	12.000
0670	638.3000	Removing Small Sign Supports	EACH	2.000	2.000
0680	642.5201	Field Office Type C	EACH	1.000	1.000
0690	643.0100	Traffic Control (project) 01. 2200-13-70	EACH	1.000	1.000
0700	643.0300	Traffic Control Drums	DAY	105,574.000	105,574.000
0710	643.0420	Traffic Control Barricades Type III	DAY	9,125.000	9,125.000
0720	643.0715	Traffic Control Warning Lights Type C	DAY	105,574.000	105,574.000
0730	643.0900	Traffic Control Signs	DAY	13,492.000	13,492.000
0740	644.1410.S	Temporary Pedestrian Surface Asphalt	SF	26,300.000	26,300.000
0750	644.1420.S	Temporary Pedestrian Surface Plywood	SF	600.000	600.000
0760	644.1430.S	Temporary Pedestrian Surface Plate	SF	1,450.000	1,450.000
0770	645.0112	Geotextile Type DF Schedule B	SY	215.000	215.000
0780	646.0106	Pavement Marking Epoxy 4-Inch	LF	9,500.000	9,500.000
0790	646.0116	Pavement Marking Epoxy 6-Inch	LF	7,400.000	7,400.000
0800	646.0126	Pavement Marking Epoxy 8-Inch	LF	1,600.000	1,600.000
0810	647.0206	Pavement Marking Arrows Bike Lane Epoxy	EACH	29.000	29.000
0820	647.0306	Pavement Marking Symbols Bike Lane Epoxy	EACH	29.000	29.000
0830	647.0576	Pavement Marking Stop Line Epoxy 24-Inch	LF	606.000	606.000
0840	647.0776	Pavement Marking Crosswalk Epoxy 12-Inch	LF	4,300.000	4,300.000
0850	649.0400	Temporary Pavement Marking Removable Tape 4-Inch	LF	25,700.000	25,700.000
0860	649.1400	Temporary Pavement Marking Stop Line Removable Tape 24-Inch	LF	200.000	200.000
0870	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	9,610.000	9,610.000

3

DATE 02AUG16 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	2200-13-70 QUANTITY
0880	650.7000	Construction Staking Concrete Pavement	LF	1,040.000	1,040.000
0890	650.8500	Construction Staking Electrical Installations (project) 01. 2200-13-70	LS	1.000	1.000
0900	652.0220	Conduit Rigid Nonmetallic Schedule 40 1 1/2-Inch	LF	70.000	70.000
0910	652.0225	Conduit Rigid Nonmetallic Schedule 40 2-Inch	LF	330.000	330.000
0920	652.0230	Conduit Rigid Nonmetallic Schedule 40 2 1/2-Inch	LF	90.000	90.000
0930	652.0235	Conduit Rigid Nonmetallic Schedule 40 3-Inch	LF	180.000	180.000
0940	652.0615	Conduit Special 3-Inch	LF	2,515.000	2,515.000
0950	654.0110	Concrete Bases Type 10	EACH	3.000	3.000
0960	690.0150	Sawing Asphalt	LF	310.000	310.000
0970	690.0250	Sawing Concrete	LF	5,960.000	5,960.000
0980	715.0415	Incentive Strength Concrete Pavement	DOL	500.000	500.000
0990	ASP.1T0A	On-the-Job Training Apprentice at $5.00/HR	HRS	900.000	900.000
1000	ASP.1T0G	On-the-Job Training Graduate at $5.00/HR	HRS	850.000	850.000
1010	SPV.0035	Special 01. Engineered Soil	CY	449.000	449.000
1020	SPV.0035	Special 02. Bedding Layer	CY	107.000	107.000
1030	SPV.0035	Special 03. Storage Layer	CY	598.000	598.000
1040	SPV.0045	Special 01. Temporary Crosswalk	DAY	213.000	213.000
1050	SPV.0060	Special 01. Construction Staking Curb Ramp	EACH	80.000	80.000
1060	SPV.0060	Special 02. Utility Line Opening	EACH	12.000	12.000
1070	SPV.0060	Special 03. Concrete Base Type 10	EACH	9.000	9.000
1080	SPV.0060	Special 04. Pole Type 12 Special	EACH	7.000	7.000
1090	SPV.0060	Special 05. Pole Type 13 Special	EACH	2.000	2.000
1100	SPV.0060	Special 06. Pole Type 10	EACH	3.000	3.000
1110	SPV.0060	Special 07. Polymer Concrete Vault 17"x30"x18"	EACH	38.000	38.000
1120	SPV.0060	Special 08. Monotube Arm 20-FT	EACH	2.000	2.000
1130	SPV.0060	Special 09. Monotube Arm 25-FT	EACH	1.000	1.000
1140	SPV.0060	Special 10. Monotube Arm 35-FT	EACH	7.000	7.000
1150	SPV.0060	Special 11. Monotube Arm 40-FT	EACH	2.000	2.000
1160	SPV.0060	Special 12. Catch Basin Type 44A	EACH	58.000	58.000
1170	SPV.0060	Special 13. Catch Basin Cover Type 57	EACH	89.000	89.000
1180	SPV.0060	Special 16. Internal Sanitary Manhole Seal	EACH	7.000	7.000
1190	SPV.0060	Special 17. Adjusting Water Box	EACH	50.000	50.000
1200	SPV.0060	Special 18. Adjusting TES Manhole Covers	EACH	20.000	20.000
1210	SPV.0060	Special 19. Manhole Cover Type 58A	EACH	59.000	59.000
1220	SPV.0060	Special 20. Inlet Frame and Grate	EACH	28.000	28.000
1230	SPV.0060	Special 21. Informational Sign Post	EACH	6.000	6.000
1240	SPV.0060	Special 22. 6-Inch Cleanout	EACH	30.000	30.000
1250	SPV.0060	Special 23. Black Eyed Susans #1 CG	EACH	222.000	222.000
1260	SPV.0060	Special 24. Blue Wonder Catmint #1 CG	EACH	480.000	480.000
1270	SPV.0060	Special 25. Dwarf Daylillies #1 CG	EACH	618.000	618.000
1280	SPV.0060	Special 26. Karl Foerster Grass #1 CG	EACH	150.000	150.000
1290	SPV.0060	Special 27. Purple Coneflower #1 CG	EACH	144.000	144.000
1300	SPV.0060	Special 28. Red Flame Grass #1 CG	EACH	42.000	42.000
1310	SPV.0060	Special 29. Russian Sage #1 CG	EACH	138.000	138.000

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DATE 02AUG16 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	2200-13-70 QUANTITY
1320	SPV.0060	Special 30. Becky Shasta Daisy #1 CG	EACH	276.000	276.000
1330	SPV.0060	Special 31. Switch Grass #1 CG	EACH	76.000	76.000
1340	SPV.0060	Special 32. 8-Inch PVC Standpipe w/ Dome Grate	EACH	15.000	15.000
1350	SPV.0060	Special 33. Install Traffic Signal Base	EACH	12.000	12.000
1360	SPV.0060	Special 34. Installing Conduit Into Existing MH	EACH	1.000	1.000
1370	SPV.0060	Special 35. 4' Diameter Manhole Type TES	EACH	1.000	1.000
1380	SPV.0060	Special 36. Inlet Type 45A	EACH	2.000	2.000
1390	SPV.0060	Special 37. Storm Sewer Pipe Coupling 8-Inch	EACH	42.000	42.000
1400	SPV.0090	Special 01. Construction Staking Conc Sidewalk	LF	4,528.000	4,528.000
1410	SPV.0090	Special 02. Construction Staking Lower Layer	LF	5,975.000	5,975.000
1420	SPV.0090	Special 03. Construction Staking Upper Layer	LF	5,975.000	5,975.000
1430	SPV.0090	Special 04. Concrete C&G Integral 19-Inch	LF	970.000	970.000
1440	SPV.0090	Special 05. Joint and Crack Repair Special	LF	1,350.000	1,350.000
1450	SPV.0090	Special 06. 6-Duct Conduit Cement Encased DB-60	LF	541.000	541.000
1460	SPV.0090	Special 07. 3-Duct Conduit Cement Encased DB-60	LF	71.000	71.000
1470	SPV.0090	Special 08. 1-Duct Conduit Cement Encased DB-60	LF	69.000	69.000
1480	SPV.0180	Special 01. Cobblestone	SY	124.000	124.000
1490	SPV.0195	Special 01. HMA Pavement 4 LT 58-28 S 3% Va Regression Special	TON	11,880.000	11,880.000

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REMOVALS

CATEGORY 010

LOCATION	ITEM ITEM NO. UNIT PAY: CLEARING 201.0120 ID — LEFT	RIGHT	MEDIAN
STA 1+00 TO 7+00	0	0	15
STA 7+00 TO 13+00	9	9	0
STA 13+00 TO 19+00	0	0	0
STA 19+00 TO 24+00	0	0	11
STA 24+00 TO 30+00	0	0	0
STA 30+00 TO 36+00	0	0	0
STA 36+00 TO 42+00	0	0	0
STA 42+00 TO 47+00	0	20	0
STA 47+00 TO 53+00	0	0	0
STA 53+00 TO 59+00	18	29	24
STA 59+00 TO 59+65	0	0	0
	27	58	50
TOTAL	135		

REMOVALS

CATEGORY 010

LOCATION	ITEM ITEM NO. UNIT PAY: GRUBBING 201.0220 ID — LEFT	RIGHT	MEDIAN
STA 1+00 TO 7+00	0	0	15
STA 7+00 TO 13+00	9	9	0
STA 13+00 TO 19+00	0	0	0
STA 19+00 TO 24+00	0	0	11
STA 24+00 TO 30+00	0	0	0
STA 30+00 TO 36+00	0	0	0
STA 36+00 TO 42+00	0	0	0
STA 42+00 TO 47+00	0	20	0
STA 47+00 TO 53+00	0	0	0
STA 53+00 TO 59+00	18	29	24
STA 59+00 TO 59+65	0	0	0
	27	58	50
TOTAL	135		

REMOVALS

CATEGORY 010

LOCATION	ITEM ITEM NO. UNIT PAY: REMOVING CURB & GUTTER 204.0150 LF — LEFT	RIGHT
STA 1+00 TO 7+00	1220	850
STA 7+00 TO 13+00	460	450
STA 13+00 TO 19+00	950	350
STA 19+00 TO 24+00	290	350
STA 24+00 TO 30+00	470	600
STA 30+00 TO 36+00	660	400
STA 36+00 TO 42+00	560	460
STA 42+00 TO 47+00	460	260
STA 47+00 TO 53+00	670	550
STA 53+00 TO 59+00	940	650
STA 59+00 TO 59+65	90	10
	6,770	4,930
TOTAL	11,700	

REMOVALS

CATEGORY 010

LOCATION	ITEM ITEM NO. UNIT PAY	REMOVING PAVEMENT 204.0100 SY	REMOVING PAVEMENT BUTT JOINTS 204.0105 SY	REMOVING ASPHALTIC SURFACE BUTT JOINTS 204.0115 SY	REMOVING CONCRETE SIDEWALK 204.0155 SY	SAWING ASPHALT 690.0150 LF	SAWING CONCRETE 690.0250 LF
STA 1+00 to STA 7+00		210	50	860	540	110	520
STA 7+00 to STA 13+00		100	250	140	460	60	190
STA 13+00 to STA 19+00		510	560	70	560	0	590
STA 19+00 to STA 24+00		30	90	20	270	0	480
STA 24+00 to STA 30+00		30	230	230	570	0	210
STA 30+00 to STA 36+00		160	720	0	500	0	870
STA 36+00 to STA 42+00		140	610	380	610	30	930
STA 42+00 to STA 47+00		70	180	40	260	30	360
STA 47+00 to STA 53+00		160	280	60	480	50	840
STA 53+00 to STA 59+00		300	680	0	660	30	860
STA 59+00 to STA 59+65		40	0	0	90	0	110
TOTAL		1,750	3,650	1,800	5,000	310	5,960

REMOVALS

CATEGORY 010

LOCATION	ITEM ITEM NO. UNIT PAY	REMOVING CONCRETE SURFACE PARTIAL DEPTH 204.0109.S SY
UNDISTRIBUTED		1,172

CONSTRUCTION ITEM

CATEGORY 010

LOCATION	ITEM ITEM NO. UNIT PAY	BASE PATCHING CONCRETE 390.0303 SY	
		LEFT	RIGHT
STA 2+50 to 7+00		14	
STA 7+00 TO 13+00			13
STA 13+00 TO 19+00			7
STA 30+00 TO 36+00		43	
STA 36+00 TO 42+00		64	
STA 36+00 TO 42+00			8
STA 42+00 TO 48+00		8	
STA 48+00 TO 53+00			86
		129	114
UNDISTRIBUTED		2,757	
TOTAL		3,000	

ROADWAY CONSTRUCTION ITEMS

CATEGORY 010

ITEM ITEM NO. UNIT PAY	BASE AGGREGATE DENSE 1 1/4 INCH 305.0120 TON	CONCRETE BASE 8-INCH 320.0145 SY	BASE PATCHING CONCRETE SHES 390.0303 SY	CONCRETE PAVEMENT 9-INCH 415.0090 SY	CONCRETE DRIVEWAY 7-INCH 416.0170 SY	DRILLED TIE BARS 416.0610 EACH	DRILLED DOWEL BARS 416.0620 EACH	CONCRETE CURB & GUTTER 31-INCH 601.0331 LF	CONCRETE CURB PEDESTRIAN 601.0600 LF	CONCRETE SIDEWALK 5-INCH 602.0410 SF	CURB RAMP DETECTABLE WARNING FIELD YELLOW 602.0505 EACH	CONCRETE LOADING ZONE 602.1000 SF
STA 1+00 to STA 7+00	570	550	3	180	40	60	116	1,690	0	3,980	190	420
STA 7+00 to STA 13+00	180	50	2	100	40	40	70	680	79	2,870	160	0
STA 13+00 to STA 19+00	550	350	6	180	0	60	280	1,220	139	3,690	140	0
STA 19+00 to STA 24+00	130	40	6	30	60	0	230	420	37	900	60	0
STA 24+00 to STA 30+00	170	40	2	30	110	0	110	710	150	2,660	160	0
STA 30+00 to STA 36+00	320	50	10	130	10	60	450	940	35	1,850	80	0
STA 36+00 to STA 42+00	290	80	9	130	0	50	430	740	56	4,270	100	0
STA 42+00 to STA 47+00	160	10	4	70	10	30	180	580	59	1,410	100	0
STA 47+00 to STA 53+00	330	60	9	140	30	30	400	950	96	2,270	160	0
STA 53+00 to STA 59+00	430	390	8	100	223	40	350	1,170	18	1,940	60	0
STA 59+00 to STA 59+65	40	0	0	20	0	0	50	150	0	460	20	0
TOTAL	3,170	1,620	59	1,110	523	370	2,666	9,250	669	26,300	1,230	420

ROADWAY CONSTRUCTION ITEMS

CATEGORY 010

ITEM ITEM NO. UNIT PAY	CONCRETE MEDIAN SLOPED NOSE 620.0300 SF	TOPSOIL 625.0100 SY	SOD LAWN 631.1000 SY	CONSTRUCTION STAKING CURB GUTTER and CURB & GUTTER 650.5500 LF	CONSTRUCTION STAKING CONCRETE PAVEMENT 650.7000 LF	CONSTRUCTION STAKING CONC SIDEWALK SPV.0090.01 LF	CONSTRUCTION STAKING LOWER LAYER SPV.0090.02 LF	CONSTRUCTION STAKING UPPER LAYER SPV.0090.03 LF	CONCRETE C&G INTEGRAL 19-INCH SPV.0090.04 LF
STA 1+00 to STA 7+00	230	580	580	1,570	180	160	705	705	110
STA 7+00 to STA 13+00	230	330	330	800	90	270	600	600	90
STA 13+00 to STA 19+00	130	440	440	1,350	150	320	600	600	150
STA 19+00 to STA 24+00	460	200	200	380	30	50	500	500	30
STA 24+00 to STA 30+00	260	300	300	810	30	200	600	600	30
STA 30+00 to STA 36+00	120	440	440	870	120	400	600	600	120
STA 36+00 to STA 42+00	480	280	280	810	120	270	600	600	120
STA 42+00 to STA 47+00	230	180	180	450	60	150	500	500	60
STA 47+00 to STA 53+00	350	390	390	980	120	250	600	600	120
STA 53+00 to STA 59+00	370	640	640	1,250	110	250	660	660	110
STA 59+00 to STA 59+65	40	20	20	170	30	0	10	10	30
TOTAL	2,900	3,800	3,800	9,440	1,040	2,320	5,975	5,975	970

ROADWAY CONSTRUCTION ITEMS

CATEGORY 010

ITEM ITEM NO. UNIT PAY	COVER PLATE TEMPORARY 611.8120.S EACH	MOBILIZATION 619.1000 EACH	FIELD OFFICE TYPE C 642.5201 EACH	TRAFFIC CONTROL (PROJECT) 643.0100 EACH	TEMPORARY PEDESTRIAN SURFACE ASPHALT 644.1410.S SF	TEMPORARY PEDESTRIAN SURFACE PLYWOOD 644.1420.S SF	TEMPORARY PEDESTRIAN SURFACE PLATE 644.1430.S SF	CONSTRUCTION STAKING ELECECTRICAL INSTALLATIONS (PROJECT) 650.8500 LS	TEMPORARY CROSSWALK SPV.0045.01 DAY	CONSTRUCTION STAKING CURB RAMP SPV.0060.01 EACH
TOTAL	36	1	1	1	26,300	600	1,450	1	213	80

REMOVING CATCH BASINS

CATEGORY 0010
ITEM NO. 204.0215 (52)
UNIT PAY EACH

NO	LOCATION	NO	LOCATION
100	3+47, 107' LT	140	30+92, 49' LT
101	4+17, 171' LT	145	34+49, 49' RT
102	4+35, 38' RT	146	34+76, 49' LT
105	5+90, 39' RT	147	35+87, 49' LT
106	5+95, 20' LT	149	37+36, 2' RT
109	7+35, 14' LT	151	37+53, 49' LT
110	8+53, 68' LT	152	37+56, 13' LT
111	9+07, 46' RT	153	40+50, 2' RT
112	9+10, 51' LT	155	40+68, 16' LT
113	12+54, 71' RT	157	41+05, 71' RT
114	15+00, 49' RT	165	46+00, 79' LT
115A	15+44, 14' LT	166	46+36, 74' LT
115B	15+44, 14' RT	167	46+68, 49' LT
116A	17+71, 71' LT	169	47+73, 3' RT
119	18+30, 49' RT	170	48+13, 76' LT
120	18+42, 3' LT	171	48+43, 76' LT
122	20+00, 13' RT	172	48+64, 9' RT
127	23+26, 3' RT	176	51+61, 49' RT
128	23+50, 13' LT	179A	52+37, 8' LT
130	24+54, 83' RT	180A	52+55, 14' RT
131	24+86, 75' LT	181	52+44, 49' LT
135	27+62, 49' RT	182	55+56, 41' RT
136	27+71, 48' LT	182A	55+55, 63' LT
137	30+75, 13' LT	183	55+97, 69' LT
138	30+75, 3' RT	184	57+41, 16' LT
139	30+89, 49' RT	184A	57+87, 20' RT

ABANDONING CATCH BASINS

CATEGORY 0010
ITEM NO. 204.0255 (9)
UNIT PAY: EACH

NO	LOCATION
101A	4+07, 45' LT
110A	9+00, 5' RT
113A	14+52, 49' RT
113B	14+68, 4' RT
114A	15+00, 72' LT
140A	31+14, 69' LT
181A	54+07, 6' LT
181B	55+15, 68' LT
185A	59+32, 5' RT

RECONSTRUCTING CATCH BASINS

CATEGORY 0010
ITEM NO. 611.0410 (2)
UNIT PAY: EACH

NO	LOCATION (at Gutter	ELEVATION (at Gutter)	REMARKS
103	4+71, 204' RT	**104.60**	Repair 16" New Type 57 Cover
160	44+00 48' RT	**90.44**	Repair 16" New Type 57 Cover

ADJUSTING CATCH BASIN COVERS

CATEGORY 0010
ITEM NO. 611.8105 (39)
UNIT PAY: EACH

NO	LOCATION (at Gutter	ELEVATION (at Gutter)	REMARKS
104	5+77, 87' LT	**103.62**	Use Salvaged Cover
107	6+55, 76' LT	**102.91**	Repair 9" New Type 57 Cover
108	7+34, 32' RT	**103.34**	Use Salvaged Cover
115	15+26, 72' LT	**104.12**	Repair 9" New Type 57 Cover
116	15+56, 49' LT	**104.72**	New Type 57 Cover
117	18+04, 72' LT	**105.56**	New Type 57 Cover
118	18+29, 49' LT	**105.96**	Use Salvaged Cover
121	20+00, 13' LT	**107.97**	New Type 57 Cover
123	21+73, 13' RT	**111.07**	Repair 12" New Type 57 Cover
124	21+76, 48' LT	**110.40**	Use Salvaged Cover
125	21+80, 49' RT	**110.86**	Repair 12" New Type 57 Cover
126	21+89, 2' LT	**110.70**	Repair 9" New Type 57 Cover
129	24+54, 75' LT	**114.43**	Repair 4" New Type 57 Cover
132	24+86, 81' RT	**113.71**	New Type 57 Cover
133	27+41, 12' LT	**109.25**	Use Salvaged Cover
134	27+40, 7' RT	**109.25**	Repair 8" New Type 57 Cover
141	31+13, 75' RT	**99.42**	Repair 3" New Type 57 Cover
142	31+54, 74' LT	**97.68**	Use Salvaged Cover
143	31+53, 75' RT	**99.97**	Use Salvaged Cover
144	32+72, 3' LT	**97.00**	New Type 57 Cover
148	35+88, 13' LT	**95.27**	New Type 57 Cover
150	37+50, 48' RT	**94.56**	New Type 57 Cover
154	40+50, 48' RT	**92.44**	Use Salvaged Cover
156	40+81, 50, LT	**92.54**	New Type 57 Cover
158	41+06, 75' LT	**92.04**	Use Salvaged Cover
159	44+00, 12' RT	**90.85**	Repair 6" New Type 57 Cover
161	45+49, 48' RT	**89.66**	Repair 3" New Type 57 Cover
162	45+50, 2' RT	**89.75**	New Type 57 Cover
163	45+50, 49'LT	**90.21**	New Type 57 Cover
164	45+51, 14' LT	**90.52**	New Type 57 Cover
168	46+88, 13' RT	**90.53**	New Type 57 Cover
173	48+64, 49' RT	**90.94**	New Type 57 Cover
174	48+70, 49' LT	**91.46**	New Type 57 Cover
175	51+56, 3' RT	**91.58**	Use Salvaged Cover
177	51+62, 49' LT	**91.66**	Use Salvaged Cover
178	51+87, 74' LT	**91.67**	Use Salvaged Cover
179	52+17, 75' LT	**91.64**	Use Salvaged Cover
180	52+42, 49' RT	**90.62**	New Type 57 Cover
185	58+98, 30' LT	**91.23**	Repair 3" New Type 57 Cover

SALVAGED INLET COVERS

CATEGORY 0010
ITEM NO. 611.9710 (13)
UNIT PAY: EACH

NO	LOCATION (at Gutter	ELEVATION (at Gutter)
104	5+77, 87' LT	**103.62**
108	7+34, 32' RT	**103.34**
118	18+29, 49' LT	**105.96**
124	21+76, 48' LT	**110.40**
133	27+41, 12' LT	**109.25**
142	31+54, 74' LT	**97.68**
143	31+53, 75' RT	**99.97**
154	40+50, 48' RT	**92.44**
158	41+06, 75' LT	**92.04**
175	51+56, 3' RT	**91.58**
177	51+62, 49' LT	**91.66**
178	51+87, 74' LT	**91.67**
179	52+17, 75' LT	**91.64**

RECONSTRUCTING MANHOLES

CATEGORY 0010
ITEM NO. 611.0420 (2)
UNIT PAY: EACH

NO	LOCATION	PROPOSED ELEVATION		NOTE
323	19+20, 30' LT	**107.40**	Repair 18"	New Type 58A Cover
352	44+53, 15' RT	**90.68**	Repair 22"	New Type 58A Cover

EROSION CONTROL ITEMS

CATEGORY 0010

LOCATION	INLET PROTECTION TYPE A 628.7005 EACH	INLET PROTECTION TYPE C 628.7015 EACH	INLET PROTECTION TYPE D 628.7025 EACH
STA 2+00 TO STA 12+00	16	4	16
STA 12+00 TO STA 22+50	24	1	24
STA 22+50 TO STA 33+00	19	0	19
STA 33+00 TO STA 43+50	14	2	14
STA 43+50 TO STA 54+00	25	0	25
STA 54+00 TO STA 59+64.50	7	2	7
	105	9	105

ROADWAY DRAINAGE ITEMS

CATEGORY 0010
*ITEM NO. SPV.0060.13 CATCH BASIN COVER TYPE 57 (28)
UNIT PAY: EACH

NO	LOCATION (at Gutter	ELEVATION (at Gutter)
103	4+71, 204' RT	**104.60**
107	6+55, 76' LT	**102.91**
115	15+26, 72' LT	**104.12**
116	15+56, 49' LT	**104.72**
117	18+04, 72' LT	**105.56**
121	20+00, 13' LT	**107.97**
123	21+73, 13' RT	**111.07**
125	21+80, 49' RT	**110.86**
126	21+89, 2' LT	**110.70**
129	24+54, 75' LT	**114.43**
132	24+86, 81' RT	**113.71**
134	27+40, 7' RT	**109.25**
141	31+13, 75' RT	**99.42**
144	32+72, 3' LT	**97.00**
148	35+88, 13' LT	**95.27**
150	37+50, 48' RT	**94.56**
156	40+81, 50, LT	**92.54**
159	44+00, 12' RT	**90.85**
160	44+00 48' RT	**90.44**
161	45+49, 48' RT	**89.66**
162	45+50, 2' RT	**89.75**
163	45+50, 49'LT	**90.21**
164	45+51, 14' LT	**90.52**
168	46+88, 13' RT	**90.53**
173	48+64, 49' RT	**90.94**
174	48+70, 49' LT	**91.46**
180	52+42, 49' RT	**90.62**
185	58+98, 30' LT	**91.23**

*Quantities shown elsewhere

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ADJUSTING MANHOLE COVERS

CATEGORY 0010
ITEM NO. 611.8110 (76)
UNIT PAY: EACH

NO	LOCATION	PROPOSED ELEVATION	NOTE
200	46+12, 30' LT	**91.15**	Repair 3" New Type 58A Cover
201	46+13, 75' LT	**90.91**	Repair 3" New Type 58A Cover
300	3+42, 84' LT	**106.93**	Use existing cover
300A	3+45, 98' LT	**106.54**	Repair 6" New Type 58A Cover
301	4+55, 85' LT	**105.49**	New Type 58A
302	4+89, 55' LT	**105.40**	New Type 58A
303	5+00, 193' RT	**105.72**	New Type 58A
304	5+00, 139' LT	**104.50**	New Type 58A
305	5+00, 31' LT	**105.41**	New Type 58A
306	5+00, 17' RT	**105.59**	New Type 58A
307	5+01, 188' LT	**103.90**	New Type 58A
307A	7+34, 12' LT	**103.73**	New Type 58A
308	8+51, 31' LT	**104.70**	New Type 58A
308A	8+51, 31' LT	**104.67**	New Type 58A
309	8+69, 17' RT	**104.83**	New Type 58A
310	8+70, 78' LT	**104.46**	New Type 58A
311	12+09, 31' LT	**106.39**	New Type 58A
312	12+38, 72' RT	**105.29**	New Type 58A
313	12+39, 18' RT	**106.14**	New Type 58A
314	12+39, 78' LT	**105.83**	New Type 58A
315	14+82, 29' LT	**105.38**	New Type 58A
316	15+12, 2' RT	**104.99**	New Type 58A
317	15+12, 44' RT	**104.65**	Repair 6" New Type 58A Cover
318	15+13, 78' LT	**104.83**	Use existing cover
319	17+52, 30' LT	**106.39**	New Type 58A
320	17+88, 10' RT	**106.73**	Repair 9" New Type 58A Cover
320A	17+87, 15' RT	**106.82**	Repair 12" New Type 58A Cover
321	17+89, 69' LT	**106.09**	New Type 58A
322	18+31, 30' LT	**106.66**	New Type 58A
323	19+20, 30' LT	**107.40**	New Type 58A
324	20+06, 30' RT	**108.35**	Repair 3" New Type 58A Cover
325	20+97, 29' LT	**109.84**	New Type 58A
326	21+38, 13' RT	**110.82**	Repair 12" New Type 58A Cover
327	21+79, 26' LT	**111.06**	New Type 58A
328	23+46, 29' LT	**113.61**	New Type 58A
329	24+69, 74' LT	**114.82**	Use existing cover
330	24+72, 16' RT	**114.85**	Repair 9" New Type 58A Cover
331	24+93, 27' LT	**114.64**	Use existing cover
332	26+79, 28' LT	**111.36**	Use existing cover
333	27+60, 27' LT	**109.07**	New Type 58A
334	28+05, 29' RT	**107.96**	New Type 58A
335	28+45, 30' LT	**106.84**	Use existing cover
336	30+93, 30' LT	**99.67**	Use existing cover
337	31+32, 105' RT	**100.30**	Use existing cover
338	31+34, 19' RT	**99.75**	Use existing cover
339	31+36, 76' LT	**98.56**	Use existing cover
340	31+53, 31' LT	**98.94**	Use existing cover
341	33+01, 28' LT	**97.06**	Use existing cover
342	34+64, 14' RT	**96.41**	Use existing cover
343	35+07, 32' LT	**95.88**	Use existing cover
344	37+54, 27' LT	**94.78**	Use existing cover
345	37+94, 28' LT	**94.67**	Use existing cover
346	37+94, 16' RT	**94.98**	Repair 12" New Type 58A Cover
347	40+82, 32' LT	**93.14**	Repair 6" New Type 58A Cover
348	41+24, 15' RT	**93.68**	New Type 58A
349	41+24, 79' LT	**92.69**	New Type 58A
350	41+67, 32' LT	**93.47**	New Type 58A
351	42+51, 43' LT	**92.53**	New Type 58A
353	46+40, 30' LT	**91.30**	Repair 3" New Type 58A Cover
354	47+11, 31' LT	**91.72**	New Type 58A
355	47+85, 29' LT	**91.98**	New Type 58A
356	48+27, 1' RT	**91.77**	New Type 58A
357	48+28, 17' RT	**91.61**	New Type 58A
358	48+28, 77' LT	**91.54**	Use existing cover
359	48+71, 31' LT	**92.05**	New Type 58A
360	50+15, 29' LT	**92.96**	New Type 58A
361	51+60, 29' LT	**92.41**	New Type 58A
362	52+00, 28' RT	**92.04**	New Type 58A
363	52+01, 78' LT	**92.17**	New Type 58A
364	52+44, 30' LT	**92.34**	Repair 12" New Type 58A Cover
365	53+78, 31' LT	**93.02**	New Type 58A
366	55+33, 29' LT	**93.70**	Repair 3" New Type 58A Cover
367	55+79, 78' LT	**93.87**	New Type 58A
368	56+20, 28' LT	**93.83**	New Type 58A
369	57+68, 29' LT	**92.82**	New Type 58A
370	59+43, 30' LT	**90.66**	New Type 58A

MANHOLE COVERS TYPE 58A

CATEGORY 0010
ITEM NO. SPV.0060.19 (59)
UNIT PAY: EACH

NO	LOCATION	PROPOSED ELEVATION
200	46+12, 30' LT	**91.15**
201	46+13, 75' LT	**90.91**
300A	3+45, 98' LT	**106.54**
301	4+55, 85' LT	**105.49**
302	4+89, 55' LT	**105.40**
303	5+00, 193' RT	**105.72**
304	5+00, 139' LT	**104.50**
305	5+00, 31' LT	**105.41**
306	5+00, 17' RT	**105.59**
307	5+01, 188' LT	**103.90**
307A	7+34, 12' LT	**103.73**
308	8+51, 31' LT	**104.70**
308A	8+69, 67' LT	**104.67**
309	8+69, 17' RT	**104.83**
310	8+70, 78' LT	**104.46**
311	12+09, 31' LT	**106.39**
312	12+38, 72' RT	**105.29**
313	12+39, 18' RT	**106.14**
314	12+39, 78' LT	**105.83**
315	14+82, 29' LT	**105.38**
316	15+12, 2' RT	**104.99**
317	15+12, 44' RT	**104.65**
319	17+52, 30' LT	**106.39**
320	17+88, 10' RT	**106.73**
320A	17+87, 15' RT	**106.82**
321	17+89, 69' LT	**106.09**
322	18+31, 30' LT	**106.66**
323	19+20, 30' LT	**107.40**
324	20+06, 30' RT	**108.35**
325	20+97, 29' LT	**109.84**
326	21+38, 13' RT	**110.82**
327	21+79, 26' LT	**111.06**
328	23+46, 29' LT	**113.61**
329	24+69, 74' LT	**114.82**
330	24+72, 16' RT	**114.85**
331	24+93, 27' LT	**114.64**
346	37+94, 16' RT	**94.98**
347	40+82, 32' LT	**93.14**
348	41+24, 15' RT	**93.68**
349	41+24, 79' LT	**92.69**
350	41+67, 32' LT	**93.47**
351	42+51, 43' LT	**92.53**
353	46+40, 30' LT	**91.30**
354	47+11, 31' LT	**91.72**
355	47+85, 29' LT	**91.98**
356	48+27, 1' RT	**91.77**
357	48+28, 17' RT	**91.61**
359	48+71, 31' LT	**92.05**
360	50+15, 29' LT	**92.96**
361	51+60, 29' LT	**92.41**
362	52+00, 28' RT	**92.04**
363	52+01, 78' LT	**92.17**
364	52+44, 30' LT	**92.34**
365	53+78, 31' LT	**93.02**
366	55+33, 29' LT	**93.70**
367	55+79, 78' LT	**93.87**
368	56+20, 28' LT	**93.83**
369	57+68, 29' LT	**92.82**

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ROADWAY DRAINAGE ITEMS

CATEGORY 0010
Item No. 611.2006 Manhole 6-FT Diameter (1)
*Item No. 611.2004 Manhole 4-FT Diameter (1)
*Item No. SPV.0060.12 Catch Basin Type 44A (21)
*Item No. SPV.0060.13 Catch Basin Cover Type 57 (21)
UNIT PAY: EACH

CATEGORY 0010
*Item No. 608.0312 Storm Sewer Pipe Reinforced Concrete Class III 12-Inch (308)
UNIT PAY: LF

CATEGORY 0010
*Item No. 612.0208 Pipe Underdrain Unperforated 8-Inch (50)
UNIT PAY: LF

CATEGORY 0010
*Item No. SPV.0060.37 Storm Sewer Pipe Coupling 8-Inch (10)
UNIT PAY: EACH

NO	LOCATION (at Gutter)	ITEM DESCRIPTION	INLET COVER	ELEVATION (at Gutter)	DEPTH (FT)	SPAN FROM	SPAN TO	12-INCH RCP (FT)	8-INCH PVC (FT)	COUPLING	INVERT ELEVATION INLET	INVERT ELEVATION OUTLET	SLOPE FT/FT	REMARKS
1	3+47, 107' LT	Catch Basin Type 44A	Type 57	106.12	8.30	1	300A	8	--	--	101.80	101.60	0.025	--
2	4+17, 171' LT	Catch Basin Type 44A	Type 57	104.18	--	--	--	--	5	1	--	--	--	Connect new PVC pipe to new catch basin and couple to existing pipe.
3	4+19, 56' LT	Catch Basin Type 44A	Type 57	105.96	8.29	3	301	44	--	--	101.65	100.00	0.038	--
4	4+35, 38' RT	Catch Basin Type 44A	Type 57	105.53	--	--	--	--	5	1	--	--	--	Connect new PVC pipe to new catch basin and couple to existing pipe.
5	5+90, 39' RT	Catch Basin Type 44A	Type 57	104.31	--	--	--	--	5	1	--	--	--	Connect new PVC pipe to new catch basin and couple to existing pipe.
6	5+95, 20' LT	Catch Basin Type 44A	Type 57	104.28	--	--	--	--	5	1	--	--	--	Connect new PVC pipe to new catch basin and couple to existing pipe.
7	6+52, 30' LT	Manhole 6- FT DIA	Type 57	103.20	13.00	--	--	--	--	--	90.59	90.59	--	--
8	7+35, 14' LT	Catch Basin Type 44A	Type 57	103.32	8.30	8	307A	2	--	--	99.00	98.90	0.050	--
9	8+53, 68' LT	Catch Basin Type 44A	Type 57	103.96	--	--	--	--	5	1	--	--	--	Connect new PVC pipe to new catch basin and couple to existing pipe.
10	9+06, 7' RT	Catch Basin Type 44A	Type 57	104.38	8.06	10	309	37	--	--	100.30	99.00	0.035	--
11	9+07, 46' RT	Catch Basin Type 44A	Type 57	104.15	--	--	--	--	5	1	--	--	--	Connect new PVC pipe to new catch basin and couple to existing pipe.
12	9+10, 51' LT	Catch Basin Type 44A	Type 57	104.37	--	--	--	--	5	1	--	--	--	Connect new PVC pipe to new catch basin and couple to existing pipe.
13	12+54, 71' RT	Catch Basin Type 44A	Type 57	104.78	--	--	--	--	5	1	--	--	--	Connect new PVC pipe to new catch basin and couple to existing pipe.
14	14+04, 49' RT	Catch Basin Type 44A	Type 57	104.05	8.23	14	15	70	--	--	99.80	98.00	0.026	--
15	14+58, 5' RT	Manhole 4-FT Dia	Type 57	104.62	8.62	15	315	38	--	--	97.00	96.00	0.026	--
16	14+80, 49' LT	Catch Basin Type 44A	Type 57	104.63	--	--	--	--	5	1	--	--	--	Connect new PVC pipe to new catch basin and couple to existing pipe.
17	15+00, 49' RT	Catch Basin Type 44A	Type 57	104.36	--	--	--	--	5	1	--	--	--	Connect new PVC pipe to new catch basin and couple to existing pipe.
18	15+00, 77' LT	Catch Basin Type 44A	Type 57	104.11	9.09	18	318	12	--	--	99.00	98.50	0.042	--
19	15+50, 13' LT	Catch Basin Type 44A	Type 57	104.89	8.27	19	316	39	--	--	100.60	99.50	0.028	--
20	15+50, 13' RT	Catch Basin Type 44A	Type 57	104.92	8.30	20	316	40	--	--	100.60	99.50	0.027	--
21	17+71, 74' LT	Catch Basin Type 44A	Type 57	105.41	9.39	21	321	18	--	--	100.00	99.25	0.042	--

*Quantities shown elsewhere

ROADWAY DRAINAGE ITEMS

CATEGORY 0010
*Item No. 611.2004 Manhole 4-FT Diameter (1)
*Item No. SPV.0060.12 Catch Basin Type 44A (20)
*Item No. SPV.0060.13 Catch Basin Cover Type 57 (21)
UNIT PAY: EACH

CATEGORY 0010
*Item No. 608.0312 Storm Sewer Pipe Reinforced Concrete Class III 12-Inch (39)
UNIT PAY: LF

CATEGORY 0010
*Item No. 612.0208 Pipe Underdrain Unperforated 8-Inch (95)
UNIT PAY: LF

CATEGORY 0010
*Item No. SPV.0060.37 Storm Sewer Pipe Coupling 8-Inch (19)
UNIT PAY: EACH

NO	LOCATION (at Gutter)	ITEM DESCRIPTION	INLET COVER	ELEVATION (at Gutter)	DEPTH (FT)	SPAN FROM	SPAN TO	12-INCH RCP (FT)	8-INCH PVC (FT)	COUPLING	INVERT ELEVATION INLET	INVERT ELEVATION OUTLET	SLOPE FT/FT	REMARKS
22	18+30, 49' RT	Catch Basin Type 44A	Type 57	106.42	--	--	--	--	5	1	--	--	--	Connect new PVC pipe to new catch basin and couple to existing pipe.
23	18+42, 3' LT	Catch Basin Type 44A	Type 57	106.32	--	--	--	--	5	1	--	--	--	Connect new PVC pipe to new catch basin and couple to existing pipe.
24	20+00, 13' RT	Catch Basin Type 44A	Type 57	107.90	--	--	--	--	5	1	--	--	--	Connect new PVC pipe to new catch basin and couple to existing pipe.
25	23+26, 3' RT	Catch Basin Type 44A	Type 57	112.78	--	--	--	--	5	1	--	--	--	Connect new PVC pipe to new catch basin and couple to existing pipe.
26	23+50, 13' LT	Catch Basin Type 44A	Type 57	113.23	--	--	--	--	5	1	--	--	--	Connect new PVC pipe to new catch basin and couple to existing pipe.
27	24+54, 83' RT	Catch Basin Type 44A	Type 57	113.72	--	--	--	--	5	1	--	--	--	Connect new PVC pipe to new catch basin and couple to existing pipe.
28	24+86, 75' LT	Catch Basin Type 44A	Type 57	114.46	--	--	--	--	5	1	--	--	--	Connect new PVC pipe to new catch basin and couple to existing pipe.
29	27+62, 49' RT	Catch Basin Type 44A	Type 57	108.23	--	--	--	--	5	1	--	--	--	Connect new PVC pipe to new catch basin and couple to existing pipe.
30	27+71, 48' LT	Catch Basin Type 44A	Type 57	107.90	--	--	--	--	5	1	--	--	--	Connect new PVC pipe to new catch basin and couple to existing pipe.
31	30+75, 13' LT	Manhole 4-FT Dia	Type 57	100.00	5.00	--	--	--	5	1	--	--	--	Connect new PVC pipe to new manhole and couple to existing pipe.
32	30+75, 3' RT	Catch Basin Type 44A	Type 57	100.50	8.23	32	31	16	--	--	96.25	95.50	0.047	--
33	30+89, 49' RT	Catch Basin Type 44A	Type 57	100.08	--	--	--	--	5	1	--	--	--	Connect new PVC pipe to new catch basin and couple to existing pipe.
34	30+92, 49' LT	Catch Basin Type 44A	Type 57	98.91	--	--	--	--	5	1	--	--	--	Connect new PVC pipe to new catch basin and couple to existing pipe.
35	31+16, 80' LT	Catch Basin Type 44A	Type 57	98.20	7.98	35	339	23	--	--	94.20	93.00	0.052	--
36	34+49, 49' RT	Catch Basin Type 44A	Type 57	96.07	--	--	--	--	5	1	--	--	--	Connect new PVC pipe to new catch basin and couple to existing pipe.
37	34+76, 49' LT	Catch Basin Type 44A	Type 57	95.37	--	--	--	--	5	1	--	--	--	Connect new PVC pipe to new catch basin and couple to existing pipe.
38	35+87, 49' LT	Catch Basin Type 44A	Type 57	94.79	--	--	--	--	5	1	--	--	--	Connect new PVC pipe to new catch basin and couple to existing pipe.
39	37+36, 2' RT	Catch Basin Type 44A	Type 57	94.76	--	--	--	--	5	1	--	--	--	Connect new PVC pipe to new catch basin and couple to existing pipe.
40	37+53, 49' LT	Catch Basin Type 44A	Type 57	94.08	--	--	--	--	5	1	--	--	--	Connect new PVC pipe to new catch basin and couple to existing pipe.
41	37+56, 13' LT	Catch Basin Type 44A	Type 57	94.37	--	--	--	--	5	1	--	--	--	Connect new PVC pipe to new catch basin and couple to existing pipe.
42	40+50, 2' RT	Catch Basin Type 44A	Type 57	92.63	--	--	--	--	5	1	--	--	--	Connect new PVC pipe to new catch basin and couple to existing pipe.

*Quantities shown elsewhere

ROADWAY DRAINAGE ITEMS

CATEGORY 0010
*Item No. 611.2004 Manhole 4-FT Diameter (1)
*Item No. SPV.0060.12 Catch Basin Type 44A (17)
*Item No. SPV.0060.36 Inlet Type 45A (2)
*Item No. SPV.0060.13 Catch Basin Cover Type 57 (19)
UNIT PAY: EACH

CATEGORY 0010
*Item No. 608.0312 Storm Sewer Pipe Reinforced Concrete Class III 12-Inch (236)
UNIT PAY: LF

CATEGORY 0010
*Item No. 612.0208 Pipe Underdrain Unperforated 8-Inch (70)
UNIT PAY: LF

CATEGORY 0010
*Item No. SPV.0060.37 Storm Sewer Pipe Coupling 8-Inch (13)
UNIT PAY: EACH

NO	LOCATION (at Gutter)	ITEM DESCRIPTION	INLET COVER	ELEVATION (at Gutter)	DEPTH (FT)	SPAN FROM	SPAN TO	12-INCH RCP (FT)	8-INCH PVC (FT)	COUPLING	INVERT ELEVATION INLET	INVERT ELEVATION OUTLET	SLOPE FT/FT	REMARKS
43	40+68, 16' LT	Catch Basin Type 44A	Type 57	92.66	--	--	--	--	5	1	--	--	--	Connect new PVC pipe to new catch basin and couple to existing pipe.
44	41+05, 71' RT	Catch Basin Type 44A	Type 57	92.96	--	--	--	--	5	1	--	--	--	Connect new PVC pipe to new catch basin and couple to existing pipe.
45	46+00, 79' LT	Inlet Type 45A	Type 57	90.30	--	--	--	--	5	1	--	--	--	Connect new PVC pipe to new inlet and couple to existing pipe.
46	46+36, 74' LT	Inlet Type 45A	Type 57	90.23	--	--	--	--	5	1	--	--	--	Connect new PVC pipe to new inlet and connect to existing pipe.
47	46+68, 49' LT	Catch Basin Type 44A	Type 57	90.77	--	--	--	--	5	1	--	--	--	Connect new PVC pipe to new catch basin and couple to existing pipe.
48	47+73, 3' RT	Catch Basin Type 44A	Type 57	90.84	--	--	--	--	5	1	--	--	--	Connect new PVC pipe to new catch basin and couple to existing pipe.
49	48+13, 76' LT	Catch Basin Type 44A	Type 57	90.93	--	--	--	--	5	1	--	--	--	Connect new PVC pipe to new catch basin and couple to existing pipe.
50	48+43, 76' LT	Catch Basin Type 44A	Type 57	90.92	--	--	--	--	5	1	--	--	--	Connect new PVC pipe to new catch basin and couple to existing pipe.
51	48+64, 9' RT	Catch Basin Type 44A	Type 57	91.35	--	--	--	--	10	1	--	--	--	Connect new PVC pipe to new catch basin and couple to existing pipe.
52	51+61, 49' RT	Catch Basin Type 44A	Type 57	91.27	--	--	--	--	5	1	--	--	--	Connect new PVC pipe to new catch basin and couple to existing pipe.
53	52+39, 5' LT	Manhole 4-FT Dia	Type 57	91.88	5.23	53	364	26	--	--	86.65	86.05	0.023	--
54	52+44, 49' LT	Catch Basin Type 44A	Type 57	91.60	--	--	--	--	5	1	--	--	--	Connect new PVC pipe to new catch basin and couple to existing pipe.
55	52+55, 12' RT	Catch Basin Type 44A	Type 57	91.21	8.24	55	53	24	--	--	86.95	86.50	0.019	--
56	54+05, 13' RT	Catch Basin Type 44A	Type 57	92.17	8.25	56	365	51	--	--	87.90	86.75	0.023	--
57	55+56, 41' RT	Catch Basin Type 44A	Type 57	92.27	--	--	--	--	5	1	--	--	--	Connect new PVC pipe to new catch basin and couple to existing pipe.
58	55+57, 65' LT	Catch Basin Type 44A	Type 57	93.29	12.27	58	367	17	--	--	85.00	84.00	0.059	--
59	55+97, 69' LT	Catch Basin Type 44A	Type 57	93.38	8.66	59	367	21	--	--	88.70	88.25	0.021	--
60	57+41, 16' LT	Catch Basin Type 44A	Type 57	92.65	--	--	--	--	5	1	--	--	--	Connect new PVC pipe to new catch basin and couple to existing pipe.
61	57+87, 25' RT	Catch Basin Type 44A	Type 57	91.28	11.26	61	369	57	--	--	84.00	83.00	0.018	--
62	59+40, 10' RT	Catch Basin Type 44A	Type 57	89.79	8.52	62	370	40	--	--	85.25	84.20	0.026	--

*Quantities shown elsewhere

TRAFFIC CONTROL ITEMS

CATEGORY 0010

ITEMS	STAGE 1 (EACH)	STAGE 1 (DAYS)	STAGE 2 (EACH)	STAGE 2 (DAYS)	TOTAL	
# TRAFFIC CONTROL DRUMS (643.0300)	528	56,496	463	49,078	105,574	DAYS
## TRAFFIC CONTROL BARRICADES, TYPE III (643.0420)	9	963	77	8,162	9,125	DAYS
TRAFFIC CONTROL WARNING LIGHTS, TYPE "C" (STEADY) (643.0715)	528	56,496	463	49,078	105,574	DAYS
### TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH, WHITE (649.0400)	13,400	LF	12,300	LF	25,700	LF
### TEMPORARY PAVEMENT MARKING STOP LINE REMOVABLE TAPE 24-INCH, WHITE (649.1400)	100	LF	100	LF	200	LF

ALL DRUMS HAVE STEADY BURNING YELLOW LIGHTS (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)

WHEN PLACING TEMPORARY PAVEMENT MARKING REMOVABLE TAPE, THE TAPE SHALL BE SLICED OR CUT ACROSS IT'S WIDTH EVERY TWENTY FIVE FEET

ALL TEMPORARY PAVEMENT MARKINGS MUST BE REMOVED PRIOR TO FINAL ACCEPTANCE OF PROJECT

ITEM	SIZE	DESCRIPTION	STAGE 1	STAGE 2	TOTAL
RO11-2	48"x30"	"ROAD CLOSED"	1	33	34
WO1-6L	24"x48"		2	0	2
WO1-6R	24"x48"		0	33	33
WO4-2L	48"x48"	PAVEMANT WIDTH TRANSITION (LEFT)	0	4	4
WO4-2R	30"x30"	PAVEMANT WIDTH TRANSITION (RIGHT)	2	0	2
WO20-1	48"x48"	"ROAD WORK AHEAD"	23	23	46
WO20-5L	48"x48"	'LEFT LANE CLOSED AHEAD"	0	4	4
WO20-5R	48"x48"	'RIGHT LANE CLOSED AHEAD"	2	0	2
		643.0900 TOTAL	30 3,210 (DAYS)	97 10,282 (DAYS)	127 13,492 (DAYS)

TRAFFIC CONTROL, SIGNS

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

PAVEMENT MARKING ITEMS

CATEGORY 0010

ITEM	PAVEMENT MARKING EPOXY 4-INCH	PAVEMENT MARKING EPOXY 6-INCH	PAVEMENT MARKING EPOXY 8-INCH	PAVEMENT MARKING ARROWS BIKE LANE EPOXY	PAVEMENT MARKING SYMBOLS BIKE LANE EPOXY	PAVEMENT MARKING STOPLINE EPOXY 24-INCH	PAVEMENT MARKING CROSSWALK EPOXY 12-INCH
ITEM NO.	646.0106	646.0116	646.0126	647.0206	647.0306	647.0576	647.0776
UNIT PAY	LF	LF	LF	EACH	EACH	LF	LF
TOTAL	9,500	7,400	1,600	29	29	606	4,300

TRAFFIC SIGNAL ITEMS

CATEGORY 010

ITEM	CONDUIT RIGID NONMETALLIC SCHEDULE 40 1 1/2-INCH	CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH	CONDUIT RIGID NONMETALLIC SCHEDULE 40 2 1/2-INCH	CONDUIT RIGID NONMETALLIC SCHEDULE 40 3-INCH	CONDUIT SPECIAL 3-INCH	CONCRETE BASE TYPE 10	UTILITY LINE OPENING	CONCRETE BASE TYPE 10 SPECIAL	POLE TYPE 12 SPECIAL	POLE TYPE 13 SPECIAL	POLE TYPE 10
ITEM NO.	652.0220	652.0225	652.0230	652.0235	652.0615	654.0110	SPV.0060.02	SPV .0060.03	SPV.0060.04	SPV.0060.05	SPV.0060.06
UNIT PAY	LF	LF	LF	LF	LF	EACH	EACH	EACH	EACH	EACH	EACH
TOTAL	70	330	90	180	2,515	3	12	9	7	2	3

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TRAFFIC SIGNAL ITEMS

CATEGORY 010

ITEM	POLYMER CONCRETE VAULT 17" x 30" x 18"	MONOTUBE ARM 20-FT	MONOTUBE ARM 25-FT	MONOTUBE ARM 35-FT	MONOTUBE ARM 40-FT	INSTALL TRAFFIC SIGNAL BASE
ITEM NO.	SPV.0060.07	SPV.0060.08	SPV.0060.09	SPV.0060.10	SPV.0060.11	SPV.0060.33
UNIT PAY	EACH	EACH	EACH	EACH	EACH	EACH
TOTAL	38	2	1	7	2	12

LANDSCAPING ITEMS

CATEGORY 0010

ITEM NO. UNIT PAY	AMERICAN SWEET GUM 'CHEROKEE' 3" CAL B&B 632.0101.01 EACH	AMUR CORKTREE 3" CAL B&B 632.0101.02 EACH	AUTUMN BLAZE MAPLE 3.5" CAL B&B 632.0101.03 EACH	CALLERY PEAR 3" CAL B&B 632.0101.04 EACH	EASTERN REDBUD 3" CAL B&B 632.0101.05 EACH	IVORY SILK TREE LILAC 3" CAL B&B 632.0101.06 EACH	SHAGBARK HICKORY 3" CAL B&B 632.0101.07 EACH	LANDSCAPE PLANTING SURVEILLANCE and CARE CYCLES 632.9101 EACH
	2	1	1	2	1	1	1	1

TREE PLANTING TABLE - LANDSCAPING

LOCATION	COMMON NAME	SCIENTIFIC NAME	SIZE WHEN PLANTED	ROOT ZONE MODE	BALL (MIN. SIZE)		HOLE (MIN. SIZE)		BRACE OR GUY	FERT. UNITS REQ'D	RODENT PROTECTION REQ'D	MULCH RING DIAMETER
					DIA.	DEPTH	DIA.	DEPTH				
STA. 5+00 MEDIAN **50' south of median nose on N. 27th St**	AUTUMN BLUE BLAZE	ACER FREEMANII "AUTUMN BLAZE"	3.5" CAL.	B&B	24"	19"	48"	24"	BRACE	4 EACH	NONE	68"
STA. 5+05 MEDIAN **80' south of median nose on N. 27th St**	IVORY SILK TREE LILAC	SYRINGA RETICULATA "IVORY SILK"	3" CAL.	B&B	24"	19"	48"	24"	BRACE	4 EACH	NONE	68"
STA. 25+90 NORTHSIDE	SHAGBARK HICKORY	CARY OVATA	3" CAL.	B&B	24"	20"	48"	24"	BRACE	4 EACH	NONE	68"
STA. 25+80 MEDIAN	EASTERN REDBUD	CERIS CANADENSIS	3" CAL.	B&B	24"	19"	48"	24"	BRACE	4 EACH	NONE	68"
STA. 26+50 MEDIAN	AMUR CORKTREE	PHELLODENDRON AMURENSE	3" CAL.	B&B	24"	19"	48"	24"	BRACE	4 EACH	NONE	68"
STA. 55+50 NORTHSIDE **80' north of center line**	CALLERY PEAR	PYRUS CALLERYANA "CLEVELAND SELECT"	3" CAL.	B&B	24"	19"	48"	24"	BRACE	4 EACH	NONE	68"
STA. 55+50 NORTHSIDE **120' north of center line**	CALLERY PEAR	PYRUS CALLERYANA "CLEVELAND SELECT"	3" CAL.	B&B	24"	19"	48"	24"	BRACE	4 EACH	NONE	68"
STA. 56+30 SOUTHSIDE	AMERICAN SWEET GUM 'CHEROKEE'	LIQUIDDAMBAR STYRACIFLUA	3" CAL.	B&B	24"	19"	48"	24"	BRACE	4 EACH	NONE	68"
STA. 56+70 SOUTHSIDE	AMERICAN SWEET GUM 'CHEROKEE'	LIQUIDDAMBAR STYRACIFLUA	3" CAL.	B&B	24"	19"	48"	24"	BRACE	4 EACH	NONE	68"

3

ASPHALT PAVEMENT ITEMS

CATEGORY 020

ITEM	PREPARE FOUNDATION for ASPHALTIC PAVING (PROJECT)	TACK COAT	HMA COLD WEATHER PAVING
ITEM NO.	211.0100	455.0605	450.4000
UNIT PAY	LS	GAL	TON
TOTAL	1	3,030	560

ASPHALT PAVEMENT ITEMS

CATEGORY 020

ITEM	HMA PAVEMENT 4 LT 58-28 S 3.0% Va Regression Special
ITEM NO.	SPV.0195.01
UNIT PAY	TON
STA 1+00 to STA 7+00	1,800
STA 7+00 to STA 13+00	1,210
STA 13+00 to STA 19+00	1,100
STA 19+00 to STA 24+00	940
STA 24+00 to STA 30+00	1,270
STA 30+00 to STA 36+00	1,120
STA 36+00 to STA 42+00	1,220
STA 42+00 to STA 47+00	940
STA 47+00 to STA 53+00	1,160
STA 53+00 to STA 59+00	1,110
STA 59+00 to STA 59+65	10
TOTAL	11,880

ROADWAY CONSTRUCTION ITEMS

CATEGORY 030

ITEM	CONCRETE SIDEWALK 5-INCH	COVER PLATE TEMPORARY	CONSTRUCTION STAKING CONC. SIDEWALK	JOINT & CRACK REPAIR SPECIAL
ITEM NO.	602.0410	611.8120.S	SPV.0090.01	SPV.0090.05
UNIT PAY	SF	EACH	LF	LF
TOTAL	11,033	14	2,208	1,350

3

ADJUSTING MANHOLE COVERS

CATEGORY 0030
ITEM NO. 611.8110 (7)
UNIT PAY: EACH

NO	LOCATION	PROPOSED ELEVATION	NOTE
400	38+07, 49' LT	**94.46**	Use existing cover
401	38+12, TL	**94.53**	Use existing cover
402	41+49, 29' LT	**93.55**	Use existing cover
403	41+79, 1' RT	**93.66**	Use existing cover
404	46+21, TL	**90.84**	Use existing cover
405	48+21, 9' RT	**91.56**	Use existing cover
406	48+22, 82' RT	**90.03**	Use existing cover

INTERNAL SANITARY MANHOLE SEALS

CATEGORY 0030
ITEM NO. SPV.0060.16 (7)
UNIT PAY: EACH

NO	LOCATION	REMARKS
400	38+07, 49' LT	Replace if needed
401	38+12, TL	Replace if needed
402	41+49, 29' LT	Replace if needed
403	41+79, 1' RT	Replace if needed
404	46+21, TL	Replace if needed
405	48+21, 9' RT	Replace if needed
406	48+22, 82' RT	Replace if needed

WATER SERVICE ITEMS

CATEGORY 030

ITEM	ADJUSTING WATER BOX
ITEM NO.	SPV.0060.17
UNIT PAY	EACH
TOTAL	50

CITY UNDERGROUND CONDUIT ITEMS

LOCATION			CATEGORY 030				
			SPV.0060.34	SPV.0060.35	SPV.0090.06	SPV0090.07	SPV0090.08
			INSTALLING CONDUIT INTO EXISTING MANHOLE	4' DIAMETER MANHOLE TPYE TES	6-DUCT CONDUIT CEMENT ENCASED DB-60	3-DUCT CONDUIT CEMENT ENCASED DB-60	1-DUCT CONDUIT CEMENT ENCASED DB-60
			EACH	EACH	LF	LF	LF
STA 05 + 36.8, 218.5 RT	TO	MANHOLE 501A			324		
MANHOLE 501A	-	STA 4 + 94, 104 LT		1			
MANHOLE 501A	TO	MANHOLE 501				71	
MANHOLE 501	-	STA 4 + 71, 38 LT	1				
MANHOLE 501A	TO	TRAFFIC CONTROL CABINET					69
MANHOLE 501A	TO	STA 04 + 66.1, 320.2 LT			217		
TOTAL			1	1	541	71	69

ADJUSTING TES MANHOLE COVERS

CATEGORY 0030
ITEM NO. SPV.0060.18 (20)
UNIT PAY: EACH

NO	LOCATION	PROPOSED ELEVATION	REMARKS
500	4+38, 50' LT	**105.85**	NEW COVER
501	4+71, 38' LT	**105.66**	NEW COVER
501A	4+94, 104' LT		EXISTING
502	5+13, 9' LT	**105.41**	NEW COVER
503	5+13, 131' LT	**104.51**	NEW COVER
504	18+16, 64' LT	**106.28**	NEW COVER
505	21+09, 43' LT	**109.57**	NEW COVER
506	21+48, 24' LT	**110.58**	NEW COVER
507	24+37, 44' LT	**114.34**	NEW COVER
508	27+65, 43' LT	**108.50**	NEW COVER
509	30+87, 43' LT	**99.48**	NEW COVER
510	31+62, 37' LT	**98.62**	NEW COVER
511	34+17, 36' LT	**96.29**	NEW COVER
512	37+49, 36, LT	**94.71**	NEW COVER
513	37+82, 16' LT	**94.60**	NEW COVER
514	40+77, 36' LT	**93.08**	NEW COVER
515	41+11, 36' LT	**93.20**	NEW COVER
516	44+07, 37' LT	**91.47**	NEW COVER
517	44+48, 36' LT	**91.23**	NEW COVER
518	45+28, 38' LT	**90.93**	NEW COVER
519	52+15, 34' LT	**92.25**	NEW COVER

3

3

BIOSWALES ITEMS

CATEGORY 0040

ITEM NO. UNIT PAY	CLEARING 201.0120 ID	GRUBBING 201.0220 ID	REMOVING CURB & GUTTER 204.0150 LF	EXCAVATION COMMON 205.0100 CY	CONCRETE CURB & GUTTER 31-INCH 601.0331 LF	PIPE UNDERDRAIN 6-INCH 612.0106 LF	PIPE UNDERDRAIN UNPERFORATED 6-INCH 612.0206 EACH	ARCTIC BLUE WILLOW #2 CG 632.0201.01 EACH	DIABLO NINEBARK #5 CG 632.0201.02 EACH	ELDERBERRY 'BLACK LACE' #5 CG 632.0201.03 EACH	GROW LOW SUMAC #2 CG 632.0201.04 EACH	RED TWIG DOGWOODS #5 CG 632.0201.05 EACH	RUGOSA ROSES #3 CG 632.0201.06 EACH	TIGER EYE SUMAC #5 CG 632.0201.07 EACH
TOTAL	87	87	170	1,457	170	681	1,329	28	28	5	22	36	57	34

3

BIOSWALES ITEMS

CATEGORY 0040

ITEM NO. UNIT PAY	GEOTEXTILE FABRIC TYPE DF SCHEDULE B 645.0112 SY	CONSTRUCTION STAKING CURB GUTTER and CURB & GUTTER 650.5500 LF	ENGINEERED SOIL SPV.0035.01 CY	BEDDING LAYER SPV.0035.02 CY	STORAGE LAYER SPV.0035.03 CY	INFORMATIONAL SIGN POSTS SPV.0060.21 EACH	6-INCH CLEANOUT SPV.0060.22 EACH
TOTAL	215	170	449	107	598	6	30

BIOSWALES ITEMS

CATEGORY 0040

ITEM NO. UNIT PAY	BLACK EYED SUSANS #1 CG SPV.0060.23 EACH	BLUE WONDER CATMINT #1 CG SPV.0060.24 EACH	DWARF DAYLILLIES #1 CG SPV.0060.25 EACH	KARL FOERSTER GRASS #1 CG SPV.0060.26 EACH	PURPLE CONEFLOWER #1 CG SPV.0060.27 EACH	RED FLAME GRASS #1 CG SPV.0060.28 EACH	RUSSIAN SAGE #1 CG SPV.0060.29 EACH	BECKY SHASTA DAISIES #1 CG SPV.0060.30 EACH	SWITCH GRASS #1 CG SPV.0060.31 EACH	8-INCH PVC STANDPIPE with DOME GRATE SPV.0060.32 EACH	COBBLESTONE SPV.0180.01 SY
TOTAL	222	480	618	150	144	42	138	276	76	15	124

BIOSWALE ITEMS

CATEGORY 0040
Item No. SPV.0060.20 Inlet Frame and Grate (28)
Item No. 628.7015 Inlet Protection Type C (28)
UNIT PAY: EACH

NO	LOCATION (at Gutter)	ITEM DESCRIPTION	ELEVATION (at Gutter)	INLET PROTECTION	REMARKS
600	6+01, 19' LT	Inlet Frame and Grate	104.28	TYPE C	See Bioswale Plan #1
601	6+51, 77' LT	Inlet Frame and Grate	102.91	TYPE C	See Bioswale Plan #2
602	9+30, 47' RT	Inlet Frame and Grate	104.15	TYPE C	See Bioswale Plan #14
603	9+63, 12' RT	Inlet Frame and Grate	104.38	TYPE C	See Bioswale Plan #3
604	9+91, 49' LT	Inlet Frame and Grate	104.15	TYPE C	See Bioswale Plan #14
605	15+79, 13' RT	Inlet Frame and Grate	104.89	TYPE C	See Bioswale Plan #4
606	15+79, 13' LT	Inlet Frame and Grate	104.89	TYPE C	See Bioswale Plan #4
607	20+10,13' LT	Inlet Frame and Grate	107.90	TYPE C	See Bioswale Plan #5
608	20+10, 13' RT	Inlet Frame and Grate	107.90	TYPE C	See Bioswale Plan #5
609	21+85, 14' RT	Inlet Frame and Grate	110.70	TYPE C	See Bioswale Plan #6
610	22+13, 6' LT	Inlet Frame and Grate	110.70	TYPE C	See Bioswale Plan #6
611	22+14,133' RT	Inlet Frame and Grate	110.70	TYPE C	See Bioswale Plan #6
612	26+80, 13' LT	Inlet Frame and Grate	109.25	TYPE C	See Bioswale Plan #7
613	26+80, 14' RT	Inlet Frame and Grate	109.24	TYPE C	See Bioswale Plan #7
614	27+33, 12' LT	Inlet Frame and Grate	109.25	TYPE C	See Bioswale Plan #7
615	27+33, 8' RT	Inlet Frame and Grate	109.25	TYPE C	See Bioswale Plan #7
616	30+44, 12.5' LT	Inlet Frame and Grate	100.00	TYPE C	See Bioswale Plan #15
617	35.56, 13.5' LT	Inlet Frame and Grate	95.27	TYPE C	See Bioswale Plan #8
618	35+56, 13' RT	Inlet Frame and Grate	95.27	TYPE C	See Bioswale Plan #8
619	35+88, 13' RT	Inlet Frame and Grate	95.27	TYPE C	See Bioswale Plan #8
620	40+43, 14' LT	Inlet Frame and Grate	92.63	TYPE C	See Bioswale Plan #9
621	40+43, 2' RT	Inlet Frame and Grate	92.63	TYPE C	See Bioswale Plan #9
622	45+34, 14' LT	Inlet Frame and Grate	89.75	TYPE C	See Bioswale Plan #10
623	45+34, 50' LT	Inlet Frame and Grate	89.76	TYPE C	See Bioswale Plan #10
624	45+34, 2' RT	Inlet Frame and Grate	89.75	TYPE C	See Bioswale Plan #11
625	47+00, 13' LT	Inlet Frame and Grate	90.53	TYPE C	See Bioswale Plan #12
626	47+00, 13' RT	Inlet Frame and Grate	90.53	TYPE C	See Bioswale Plan #12
627	51+25, 8' RT	Inlet Frame and Grate	91.58	TYPE C	See Bioswale Plan #13

TYPE I&II PERMANENT SIGNING -

2200-13-70 USH 18

3

SIGN NO.	SIGN CODE & SIZE	SIGN MESSAGE	SIGN SIZE W [IN.]	x	H [IN.]	637.2210 SIGNS TYPE II REFLECTIVE H [SF]	637.2230 SIGNS TYPE II RELFECTIVE F [SF]	637.2215 SIGNS TYPE II REFLECTIVE H FOLDING [SF]	638.2602 REM SIGNS TYPE II [EA]	638.3000 REM SMALL SIGN SUP [EA]	638.2102 MOVING SIGNS TYPE II [EA]	634.0816 POSTS TUBULAR STEEL 2" X 2" X 16' [EA]	MOUNT ON SAME POST AS SIGN #	REMARKS / NEW SIGN LOCATION
1	J2-3 (2S)		72	X	57	28.500			1	2		2		REMOVE THE J3-2
	M3-2	EAST	24	X	12									
	M1-4	USH 18	24	X	24									
	M6-1	ARROW UP	21	X	21									
	M3-1	NORTH	24	X	12									
	M1-6	STH 57	24	X	24									
	M6-1	ARROW UP	21	X	21									
	M3-3	SOUTH	24	X	12									
	M1-6	STH 57	24	X	24									
	M5-1R	ADVANCE ARROW RIGHT	21	X	21									
2	J4-1 (2S)		24	X	36	6.000								MOUNT ON LIGHT POLE
	M3-4	WEST	24	X	12									
	M1-4	USH 18	24	X	24									
3	J3-1 (2S)		24	X	57	9.500			1					MOUNT HIGH ON SIGNAL POLE
	M3-3	SOUTH	24	X	12									
	M1-6	STH 57	24	X	24									
	M6-1	ARROW LEFT	21	X	21									
4	J3-1 (2S)		24	X	57	9.500			1					MOUNT ABOVE SIGNAL POLE
	M3-1	NORTH	24	X	12									
	M1-6	STH 57	24	X	24									
	M6-1	ARROW UP	21	X	21									
5	JV4-2 (2S)		24	X	72	12.000			1					MOUNT ON LIGHT POLE
	M3-2	EAST	24	X	12									
	M1-4	USH 18	24	X	24									
	M3-1	NORTH	24	X	12									
	M1-6	STH 57	24	X	24									

NOTE: OTHER SIGNS INSTALLED & FURNISHED BY CITY OF MILWAUKEE

SHEET: 1 OF 4

TYPE I&II PERMANENT SIGNING -

SIGN NO.	SIGN CODE & SIZE	SIGN MESSAGE	SIGN SIZE W [IN.]	x	H [IN.]	637.2210 SIGNS TYPE II REFLECTIVE H [SF]	637.2230 SIGNS TYPE II RELFECTIVE F [SF]	637.2215 SIGNS TYPE II REFLECTIVE H FOLDING [SF]	638.2602 REM SIGNS TYPE II [EA]	638.3000 REM SMALL SIGN SUP [EA]	638.2102 MOVING SIGNS TYPE II [EA]	634.0816 POSTS TUBULAR STEEL 2" X 2" X 16' [EA]	MOUNT ON SAME POST AS SIGN #	REMARKS / NEW SIGN LOCATION
6	J2-2 (2S)		48	X	57	19.000			1					MOUNT ON LIGHT POLE
	M3-3	SOUTH	24	X	12									
	M1-6	STH 57	24	X	24									
	M5-1L	ADVANCE ARROW LEFT	21	X	21									
	M3-4	WEST	24	X	12									
	M1-4	USH 18	24	X	24									
	M6-1	ARROW UP	21	X	21									
7	J2-2 (2S)		48	X	57	19.000			1					MOUNT ON LIGHT POLE
	M3-1	NORTH	24	X	12									
	M1-6	STH 57	24	X	24									
	M5-1L	ADVANCE ARROW LEFT	21	X	21									
	M3-2	EAST	24	X	12									
	M1-4	USH 18	24	X	24									
	M6-1	ARROW UP	21	X	21									
8	JV4-2 (2S)		24	X	72	12.000								MOUNT HIGH ON LIGHT POLE
	M3-4	WEST	24	X	12									
	M1-4	USH 18	24	X	24									
	M3-3	SOUTH	24	X	12									
	M1-6	STH 57	24	X	24									
9	JV3-2 (2S)		24	X	114	19.000								MOUNT HIGH ON SIGNAL POLE
	M3-1	NORTH	24	X	12									
	M1-6	STH 57	24	X	24									
	M6-1	ARROW LEFT	21	X	21									
	M3-2	EAST	24	X	12									
	M1-4	USH 18	24	X	24									
	M6-1	ARROW UP	21	X	21									

TYPE I&II PERMANENT SIGNING -

SIGN NO.	SIGN CODE & SIZE	SIGN MESSAGE	SIGN SIZE W [IN.]	x	H [IN.]	637.2210 SIGNS TYPE II REFLECTIVE H [SF]	637.2230 SIGNS TYPE II RELFECTIVE F [SF]	637.2215 SIGNS TYPE II REFLECTIVE H FOLDING [SF]	638.2602 REM SIGNS TYPE II [EA]	638.3000 REM SMALL SIGN SUP [EA]	638.2102 MOVING SIGNS TYPE II [EA]	634.0816 POSTS TUBULAR STEEL 2" X 2" X 16' [EA]	MOUNT ON SAME POST AS SIGN #	REMARKS / NEW SIGN LOCATION
10	J3-1 (2S)		24	X	57	9.500								MOUNT HIGH ON SIGNAL POLE
	M3-1	NORTH	24	X	12									
	M1-6	STH 57	24	X	24									
	M6-1	ARROW RIGHT	21	X	21									
11	J4-1 (2S)		24	X	36	6.000			1					MOUNT HIGH ON LIGHT POLE
	M3-2	EAST	24	X	12									
	M1-4	USH 18	24	X	24									
12	J2-1 (2S)		24	X	57	9.500								MOUNT HIGH ON LIGHT POLE
	M3-1	NORTH	24	X	12									
	M1-6	STH 57	24	X	24									
	M5-1L	ADVANCE ARROW LEFT	21	X	21									
13	J4-1 (2S)		24	X	36	6.000						1		
	M3-4	WEST	24	X	12									
	M1-4	USH 18	24	X	24									
14	J1-1 (2S)		24	X	39	6.500						1		
	M2-1	JCT	21	X	15									
	M1-6	STH 57	24	X	24									
15	J3-1 (2S)		24	X	57	9.500			1					MOUNT HIGH ON SIGNAL POLE
	M3-4	WEST	24	X	12									
	M1-4	USH 18	24	X	24									
	M6-1	ARROW UP	21	X	21									
16	J3-1 (2S)		24	X	57	9.500			1					MOUNT HIGH ON SIGNAL POLE
	M3-2	EAST	24	X	12									
	M1-4	USH 18	24	X	24									
	M6-1	ARROW UP	21	X	21									

TYPE I&II PERMANENT SIGNING -

SIGN NO.	SIGN CODE & SIZE	SIGN MESSAGE	SIGN SIZE W [IN.]	x	H [IN.]	**637.2210** SIGNS TYPE II REFLECTIVE H [SF]	**637.2230** SIGNS TYPE II RELFECTIVE F [SF]	**637.2215** SIGNS TYPE II REFLECTIVE H FOLDING [SF]	**638.2602** REM SIGNS TYPE II [EA]	**638.3000** REM SMALL SIGN SUP [EA]	**638.2102** MOVING SIGNS TYPE II [EA]	**634.0816** POSTS TUBULAR STEEL 2" X 2" X 16' [EA]	MOUNT ON SAME POST AS SIGN #	REMARKS / NEW SIGN LOCATION
17	J4-1 (2S)		24	X	36	6.000			1					MOUNT HIGH ON LIGHT POLE
	M3-2	EAST	24	X	12									
	M1-4	USH 18	24	X	24									
18	J3-1 (2S)		24	X	57	9.500			1					MOUNT ON LIGHT POLE
	M3-2	EAST	24	X	12									
	M1-4	USH 18	24	X	24									
	M6-1	ARROW UP	21	X	21									
19	J4-1 (2S)		24	X	36	6.000			1					MOUNT ON LIGHT POLE
	M3-4	WEST	24	X	12									
	M1-4	USH 18	24	X	24									
20	J4-1 (2S)		24	X	36	6.000								MOUNT HIGH ON SIGNAL POLE
	M3-2	EAST	24	X	12									
	M1-4	USH 18	24	X	24									
21	J3-1 (2S)		24	X	57	9.500								MOUNT ON SIGNAL POLE
	M3-4	WEST	24	X	12									
	M1-4	USH 18	24	X	24									
	M6-1	ARROW UP	21	X	21									
UNDISTRIBUTED						--							--	--
TOTALS						228.000	0	0	12	2	0	4	--	--

NOTES:

THERE WILL BE MONOTUBES INSTALLED AT ALL SIGNALIZED INTERSECTIONS. ALSO THE MEDIAN NOSES WILL BE SLIGHTLY MODIFIED, TO PROVIDE A CLEAR CROSSWALK PATH, AT ALL THE INTERSECTIONS.

SEE CONST. DETAIL FOR ADDITIONAL INFORMATION ON CURB RAMP AREAS

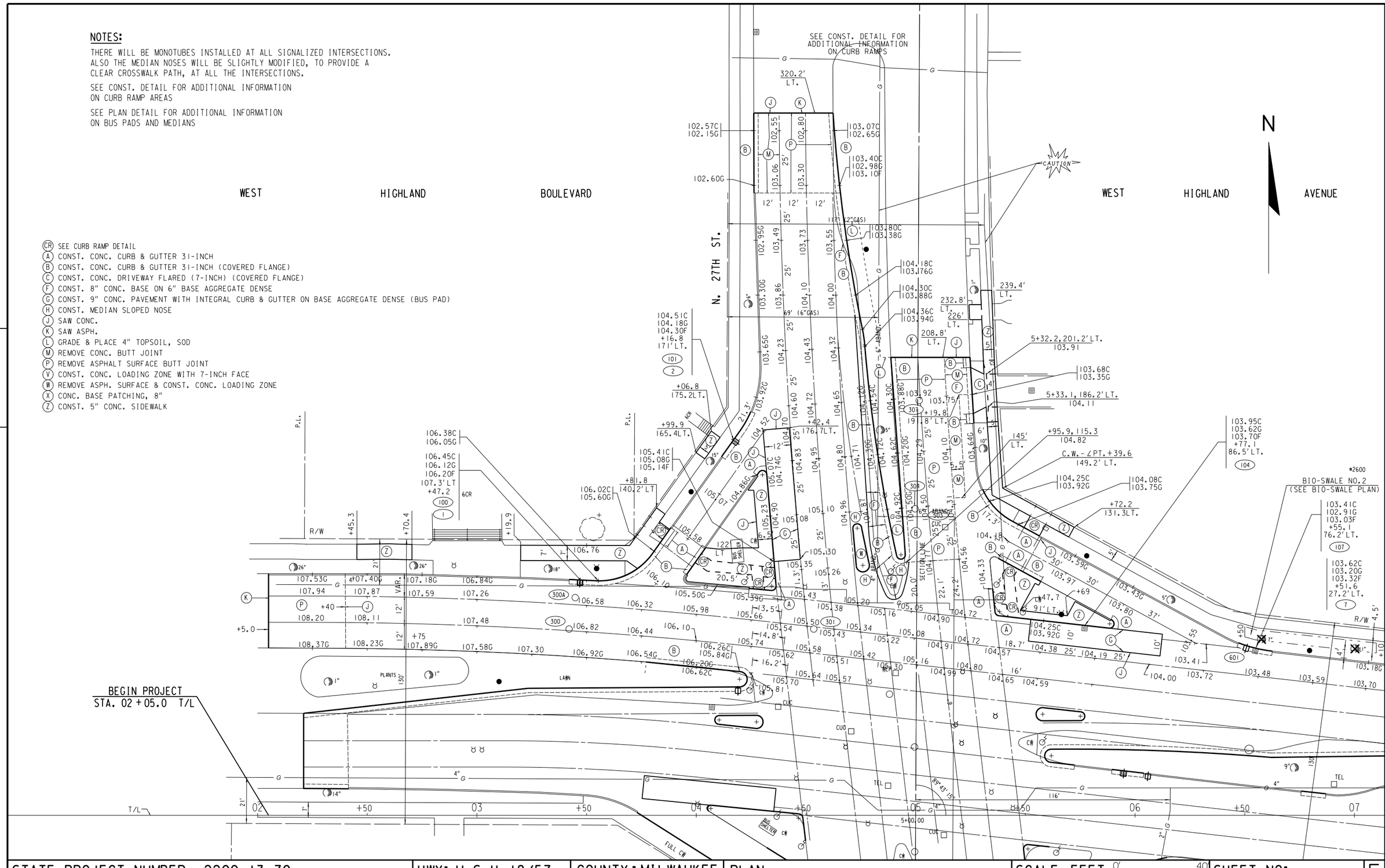
SEE PLAN DETAIL FOR ADDITIONAL INFORMATION ON BUS PADS AND MEDIANS

WEST HIGHLAND BOULEVARD

WEST HIGHLAND AVENUE

N

- (CR) SEE CURB RAMP DETAIL
- (A) CONST. CONC. CURB & GUTTER 31-INCH
- (B) CONST. CONC. CURB & GUTTER 31-INCH (COVERED FLANGE)
- (C) CONST. CONC. DRIVEWAY FLARED (7-INCH) (COVERED FLANGE)
- (F) CONST. 8" CONC. BASE ON 6" BASE AGGREGATE DENSE
- (G) CONST. 9" CONC. PAVEMENT WITH INTEGRAL CURB & GUTTER ON BASE AGGREGATE DENSE (BUS PAD)
- (H) CONST. MEDIAN SLOPED NOSE
- (J) SAW CONC.
- (K) SAW ASPH.
- (L) GRADE & PLACE 4" TOPSOIL, SOD
- (M) REMOVE CONC. BUTT JOINT
- (P) REMOVE ASPHALT SURFACE BUTT JOINT
- (V) CONST. CONC. LOADING ZONE WITH 7-INCH FACE
- (W) REMOVE ASPH. SURFACE & CONST. CONC. LOADING ZONE
- (X) CONC. BASE PATCHING, 8"
- (Z) CONST. 5" CONC. SIDEWALK



STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	PLAN	SCALE FEET 0' 40'	SHEET NO: 208	E

FILENAME: W:\SPR\HIGHLAND_27-12\01-07.DGN

REVISED DATE: - - BY

NOTES:

THERE WILL BE MONOTUBES INSTALLED AT ALL SIGNALIZED INTERSECTIONS. ALSO THE MEDIAN NOSES WILL BE SLIGHTLY MODIFIED, TO PROVIDE A CLEAR CROSSWALK PATH, AT ALL THE INTERSECTIONS.

SEE CONST. DETAIL FOR ADDITIONAL INFORMATION ON CURB RAMP AREAS

SEE PLAN DETAIL FOR ADDITIONAL INFORMATION ON BUS PADS AND MEDIANS

BEGIN PROJECT
STA. 02+05.0 T/L

WEST HIGHLAND BOULEVARD

N. 27TH ST.

WEST HIGHLAND AVENUE

N

SEE CONST. DETAIL FOR ADDITIONAL INFORMATION ON CURB RAMPS

BIO-SWALE NO.2
(SEE BIO-SWALE PLAN)

BIO-SWALE NO.1
(SEE BIO-SWALE PLAN)

SEE CONST. DETAIL FOR ADDITIONAL INFORMATION ON CURB RAMPS

STANDARD BENCHMARK 151
N. 27TH ST. AND W. HIGHLAND BLVD. 86.7' W. OF C/L OF N. 27TH ST. ON C/L OF W. HIGHLAND BLVD. (UNDER CONC. COVER)
ELEVATION=105.735

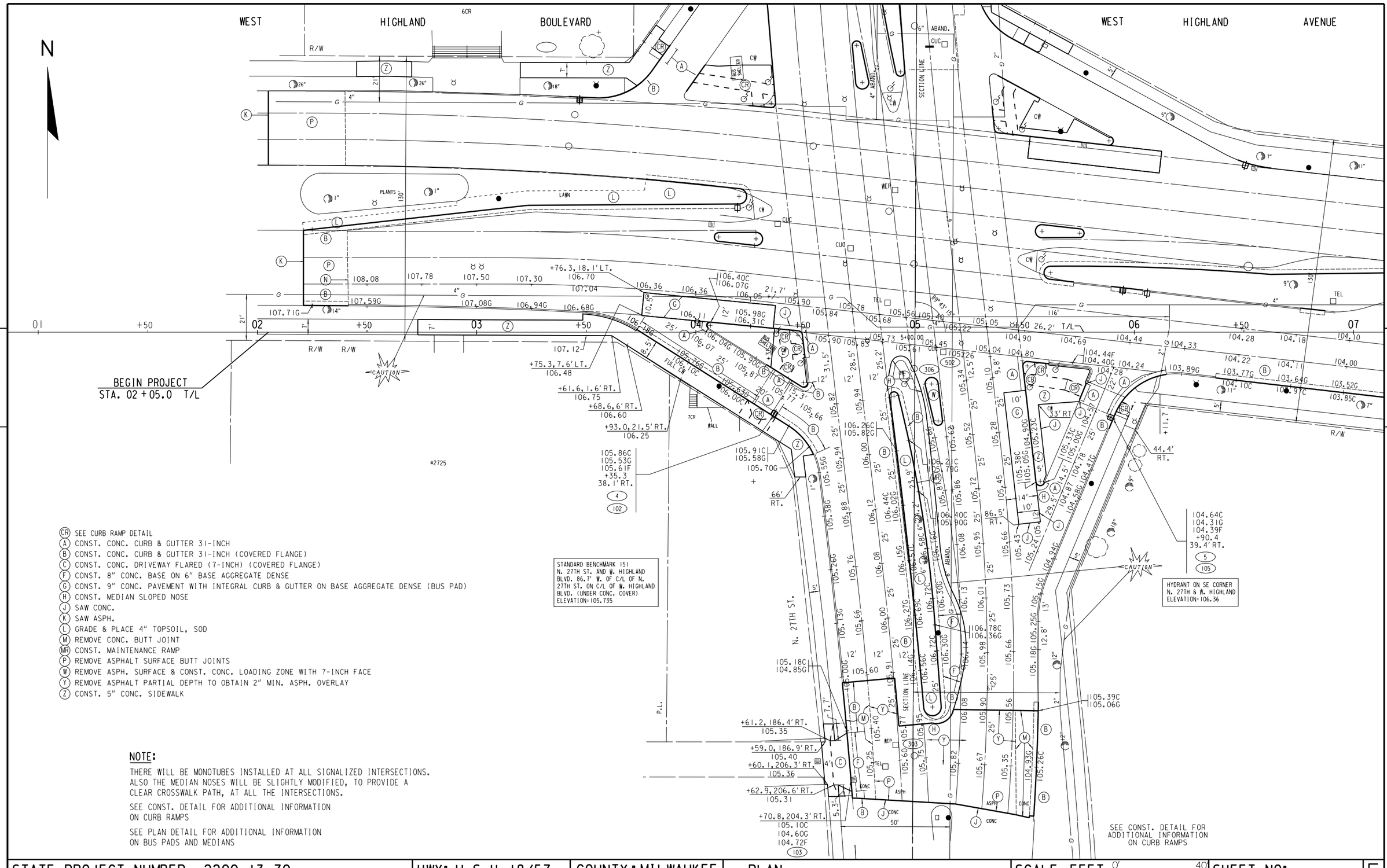
HYDRANT ON SE CORNER
N. 27TH & W. HIGHLAND
ELEVATION=106.36

- (CR) SEE CURB RAMP DETAIL
- (A) CONST. CONC. CURB & GUTTER 31-INCH
- (B) CONST. CONC. CURB & GUTTER 31-INCH (COVERED FLANGE)
- (C) CONST. CONC. DRIVEWAY FLARED (7-INCH) (COVERED FLANGE)
- (F) CONST. 8" CONC. BASE ON 6" BASE AGGREGATE DENSE
- (G) CONST. 9" CONC. PAVEMENT WITH INTEGRAL CURB & GUTTER ON BASE AGGREGATE DENSE (BUS PAD)
- (H) CONST. MEDIAN SLOPED NOSE
- (J) SAW CONC.
- (K) SAW ASPH.
- (L) GRADE & PLACE 4" TOPSOIL, SOD
- (M) REMOVE CONC. BUTT JOINT
- (P) REMOVE ASPHALT SURFACE BUTT JOINT
- (V) CONST. CONC. LOADING ZONE WITH 7-INCH FACE
- (W) REMOVE ASPH. SURFACE & CONST. CONC. LOADING ZONE
- (Z) CONST. 5" CONC. SIDEWALK

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	PLAN	SCALE FEET 0' 40'	SHEET NO: 209	E

FILENAME: W:\SPR\HIGHLAND_27-12\01-07.DGN

REVISED DATE: - - BY



(CR) SEE CURB RAMP DETAIL
(A) CONST. CONC. CURB & GUTTER 31-INCH
(B) CONST. CONC. CURB & GUTTER 31-INCH (COVERED FLANGE)
(C) CONST. CONC. DRIVEWAY FLARED (7-INCH) (COVERED FLANGE)
(F) CONST. 8" CONC. BASE ON 6" BASE AGGREGATE DENSE
(G) CONST. 9" CONC. PAVEMENT WITH INTEGRAL CURB & GUTTER ON BASE AGGREGATE DENSE (BUS PAD)
(H) CONST. MEDIAN SLOPED NOSE
(J) SAW CONC.
(K) SAW ASPH.
(L) GRADE & PLACE 4" TOPSOIL, SOD
(M) REMOVE CONC. BUTT JOINT
(MR) CONST. MAINTENANCE RAMP
(P) REMOVE ASPHALT SURFACE BUTT JOINTS
(W) REMOVE ASPH. SURFACE & CONST. CONC. LOADING ZONE WITH 7-INCH FACE
(Y) REMOVE ASPHALT PARTIAL DEPTH TO OBTAIN 2" MIN. ASPH. OVERLAY
(Z) CONST. 5" CONC. SIDEWALK

NOTE:

THERE WILL BE MONOTUBES INSTALLED AT ALL SIGNALIZED INTERSECTIONS. ALSO THE MEDIAN NOSES WILL BE SLIGHTLY MODIFIED, TO PROVIDE A CLEAR CROSSWALK PATH, AT ALL THE INTERSECTIONS.

SEE CONST. DETAIL FOR ADDITIONAL INFORMATION ON CURB RAMPS

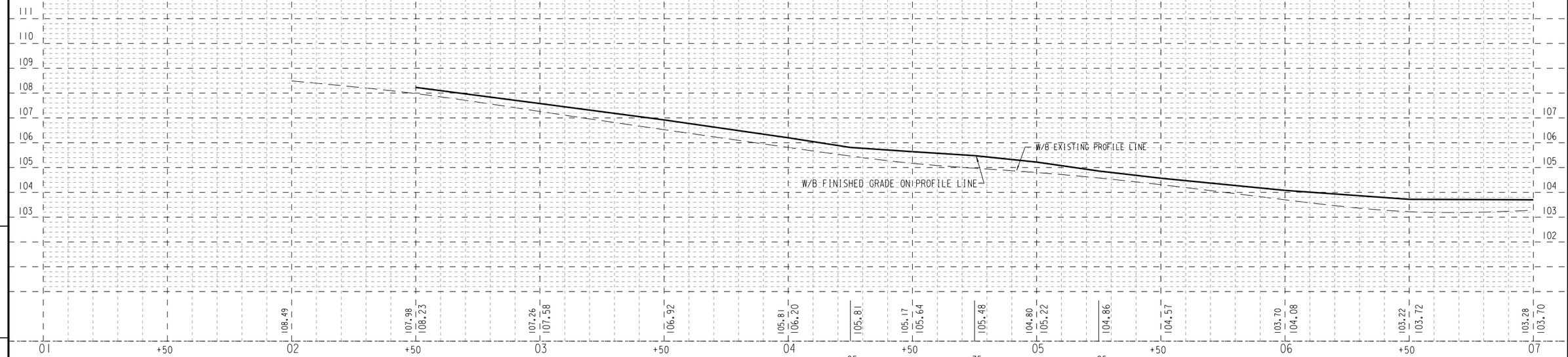
SEE PLAN DETAIL FOR ADDITIONAL INFORMATION ON BUS PADS AND MEDIANS

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	PLAN	SCALE FEET 0' 40'	SHEET NO: 210	E

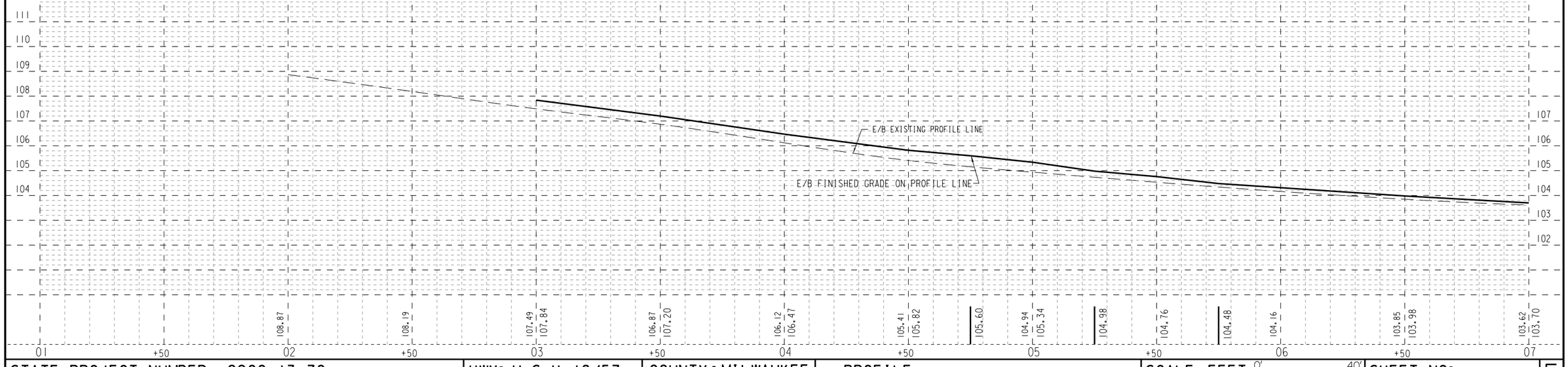
FILENAME: W:\SPR\HIGHLAND_27-12\01-07.DGN

REVISED DATE: - - BY

WESTBOUND W. HIGHLAND AVE. LOOKING NORTH

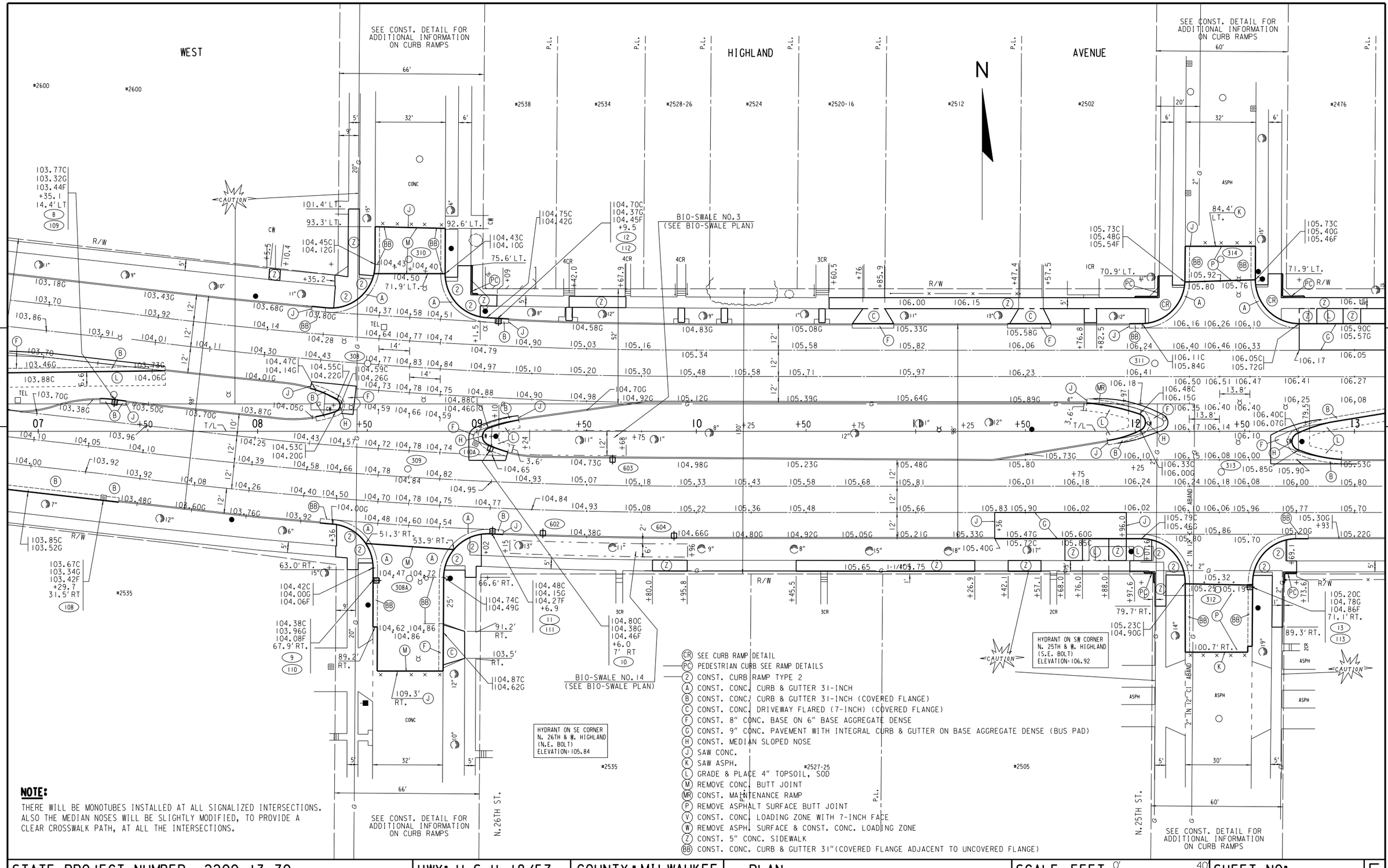


EASTBOUND W. HIGHLAND AVE. LOOKING NORTH)



STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	PROFILE	SCALE FEET 0' 40'	SHEET NO: 211 E

FILENAME: W:\SPR\HIGHLAND_27-12\01-07.DGN



(CR) SEE CURB RAMP DETAIL
(PC) PEDESTRIAN CURB SEE RAMP DETAILS
(Z) CONST. CURB RAMP TYPE 2
(A) CONST. CONC. CURB & GUTTER 31-INCH
(B) CONST. CONC. CURB & GUTTER 31-INCH (COVERED FLANGE)
(C) CONST. CONC. DRIVEWAY FLARED (7-INCH) (COVERED FLANGE)
(F) CONST. 8" CONC. BASE ON 6" BASE AGGREGATE DENSE
(G) CONST. 9" CONC. PAVEMENT WITH INTEGRAL CURB & GUTTER ON BASE AGGREGATE DENSE (BUS PAD)
(H) CONST. MEDIAN SLOPED NOSE
(J) SAW CONC.
(K) SAW ASPH.
(L) GRADE & PLACE 4" TOPSOIL, SOD
(M) REMOVE CONC. BUTT JOINT
(MR) CONST. MAINTENANCE RAMP
(P) REMOVE ASPHALT SURFACE BUTT JOINT
(V) CONST. CONC. LOADING ZONE WITH 7-INCH FACE
(W) REMOVE ASPH. SURFACE & CONST. CONC. LOADING ZONE
(Z) CONST. 5" CONC. SIDEWALK
(BB) CONST. CONC. CURB & GUTTER 31"(COVERED FLANGE ADJACENT TO UNCOVERED FLANGE)

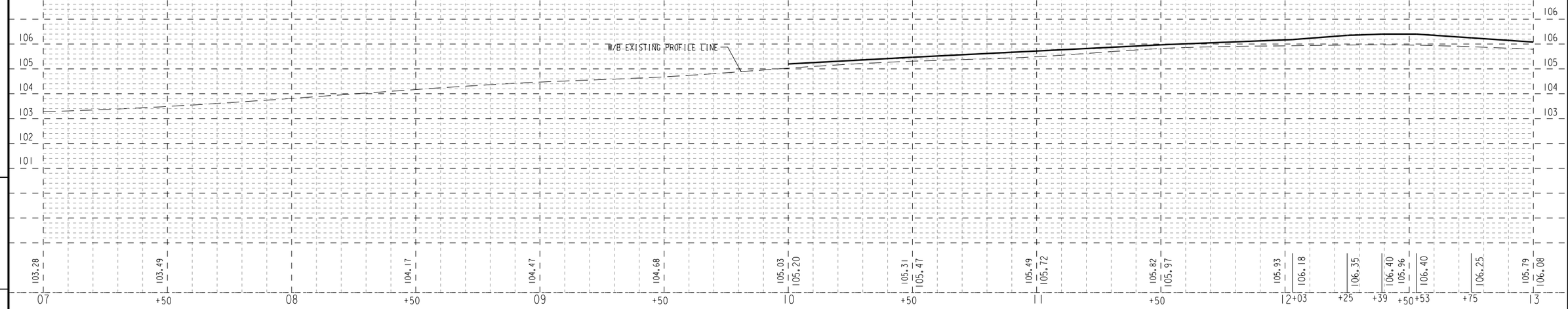
NOTE:

THERE WILL BE MONOTUBES INSTALLED AT ALL SIGNALIZED INTERSECTIONS. ALSO THE MEDIAN NOSES WILL BE SLIGHTLY MODIFIED, TO PROVIDE A CLEAR CROSSWALK PATH, AT ALL THE INTERSECTIONS.

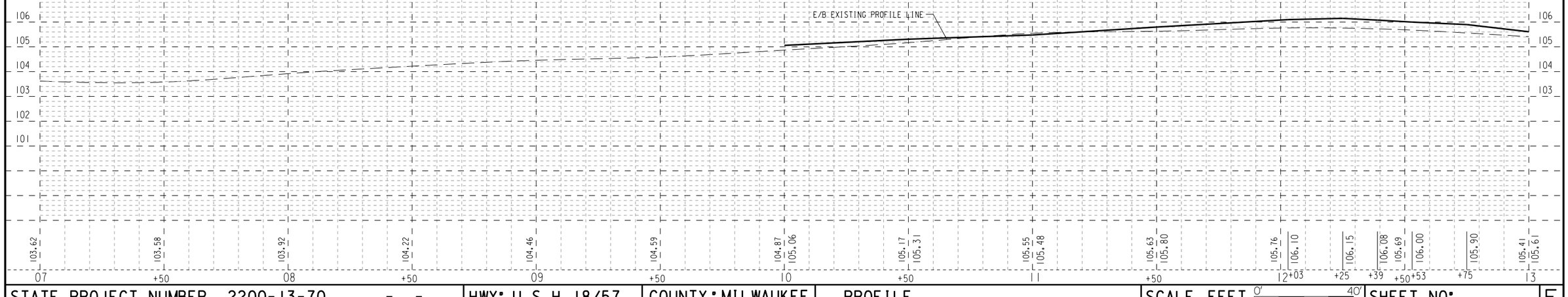
STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	PLAN	SCALE FEET 0' 40	SHEET NO: 212 E

FILENAME: W:\SPR\HIGHLAND_27-12\07-13.DGN

WESTBOUND W. HIGHLAND AVE.



EASTBOUND W. HIGHLAND AVE.



STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	PROFILE	SCALE FEET 0' 40'	SHEET NO: 213	E

FILENAME: W:\SPR\HIGHLAND_27-12\07-13.DGN

WEST HIGHLAND AVENUE

N. 24TH PL.

SEE CONST. DETAIL FOR ADDITIONAL INFORMATION ON CURB RAMPS

SEE CONST. DETAIL FOR ADDITIONAL INFORMATION ON CURB RAMPS

#2476 #2472-70 #2466-64 #2460-58 #2456-54 #2452-52A #2452-52A #2422 #2418-16 #2414 #2410-08 #2406 #1115 N. 24TH ST. #2300 MILWAUKEE HIGH SCHOOL OF THE ARTS

BIO-SWALE NO.4 (SEE BIO-SWALE PLAN)

HYDRANT ON SW CORNER N. 24TH & W. HIGHLAND ELEVATION= 108.77

#1040 N. 25TH ST. #2459 #2449 #2425 #2417 #2405 #1036 N. 24TH ST.

SEE CONST. DETAIL FOR ADDITIONAL INFORMATION ON CURB RAMPS

(CR) SEE CURB RAMP DETAIL
(PC) PEDESTRIAN CURB SEE RAMP DETAILS
(A) CONST. CONC. CURB & GUTTER 31-INCH
(B) CONST. CONC. CURB & GUTTER 31-INCH (COVERED FLANGE)
(C) CONST. CONC. DRIVEWAY FLARED (7-INCH) (COVERED FLANGE)
(F) CONST. 8"CONC. BASE ON 6"BASE AGGREGATE DENSE
(G) CONST. 9"CONC. PAVEMENT WITH INTEGRAL CURB & GUTTER ON BASE AGGREGATE DENSE (BUS PAD)
(H) CONST. MEDIAN SLOPED NOSE
(J) SAW CONC.
(K) SAW ASPH.
(L) GRADE & PLACE 4"TOPSOIL, SOD
(M) REMOVE CONC. BUTT JOINT
(MR) CONST. MAINTENANCE RAMP
(P) REMOVE ASPHALT SURFACE BUTT JOINT
(V) CONST. CONC. LOADING ZONE WITH 7-INCH FACE
(W) REMOVE ASPH. SURFACE & CONST. CONC. LOADING ZONE
(X) CONC. BASE PATCHING, 8"
(Z) CONST. 5"CONC. SIDEWALK
(BB) CONST. CONC. CURB & GUTTER 31"(COVERED FLANGE ADJACENT TO UNCOVERED FLANGE)

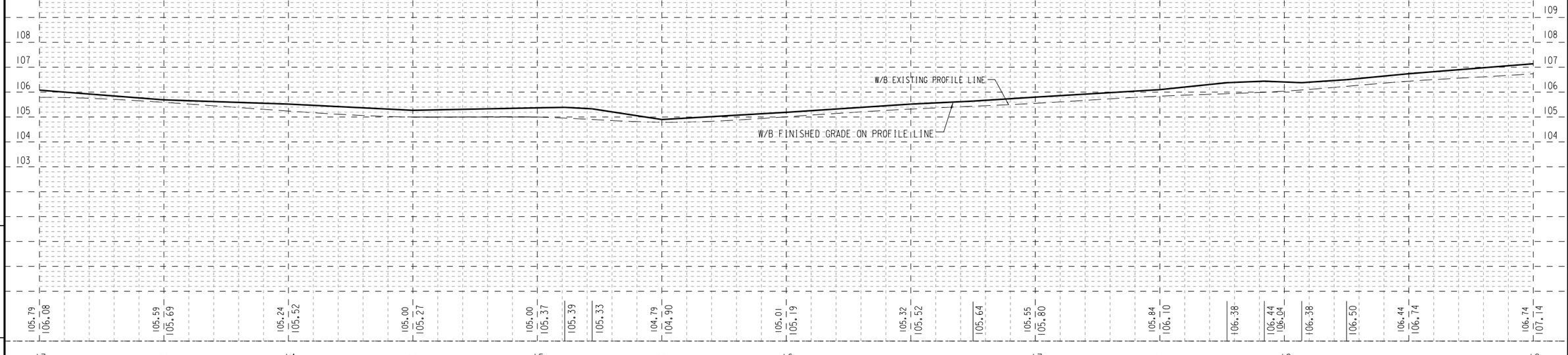
NOTE:

THERE WILL BE MONOTUBES INSTALLED AT ALL SIGNALIZED INTERSECTIONS. ALSO THE MEDIAN NOSES WILL BE SLIGHTLY MODIFIED, TO PROVIDE A CLEAR CROSSWALK PATH, AT ALL THE INTERSECTIONS.

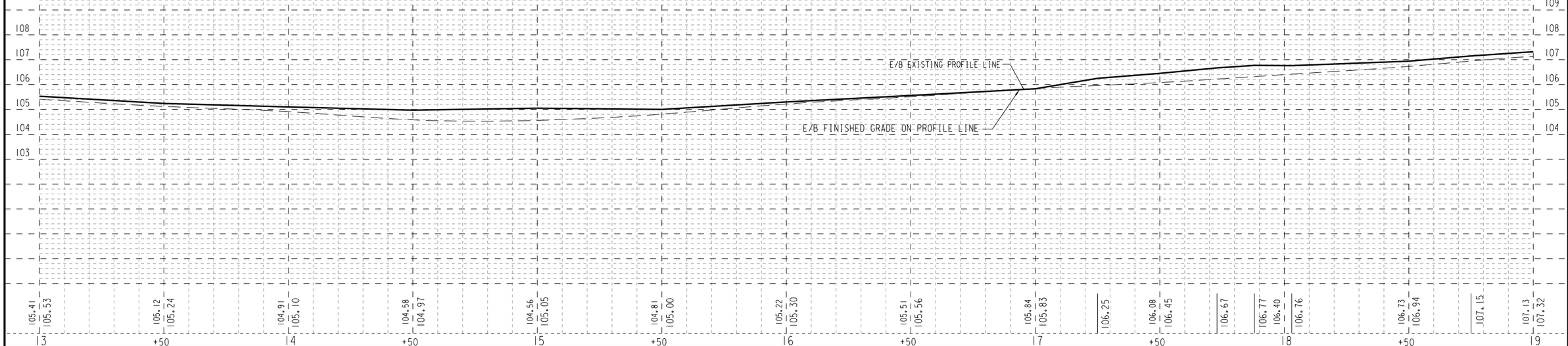
STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	PLAN	SCALE FEET 0' 40'	SHEET NO: 214 E

FILENAME: W:\SPR\HIGHLAND_27-12\13-19.DGN

WESTBOUND W. HIGHLAND AVE.



EASTBOUND W. HIGHLAND AVE.



STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	PROFILE	SCALE FEET 0' 40'	SHEET NO: 215 E

FILENAME: W:\SPR\HIGHLAND_27-12\13-19.DGN

WEST HIGHLAND AVENUE

N

#2300
MILWAUKEE HIGH SCHOOL OF THE ARTS

BIO-SWALE NO.6
(SEE BIO-SWALE PLAN)

HYDRANT ON SE CORNER
N. 23RD & W. HIGHLAND
(N.E. BOLT)
ELEVATION=112.52

(CR) SEE CURB RAMP DETAIL
(PC) PEDESTRIAN CURB SEE RAMP DETAILS
(A) CONST. CONC. CURB & GUTTER 31-INCH
(B) CONST. CONC. CURB & GUTTER 31-INCH (COVERED FLANGE)
(C) CONST. CONC. DRIVEWAY FLARED (7-INCH) (COVERED FLANGE)
(F) CONST. 8"CONC. BASE ON 6"BASE AGGREGATE DENSE
(G) CONST. 9"CONC. PAVEMENT WITH INTEGRAL CURB & GUTTER ON BASE AGGREGATE DENSE (BUS PAD)
(H) CONST. MEDIAN SLOPED NOSE
(J) SAW CONC.
(K) SAW ASPHALT
(L) GRADE & PLACE 4"TOPSOIL, SOD
(M) REMOVE CONC. BUTT JOINT
(MR) CONST. MAINTENANCE RAMP
(P) REMOVE ASPHALT SURFACE BUTT JOINT
(Z) CONST. 5"CONC. SIDEWALK

#1035-21 N. 23RD ST.
#1036 N. 24TH ST.
#1032-34 N. 23RD ST.
1039 N. 22ND ST.
N. 23RD ST.

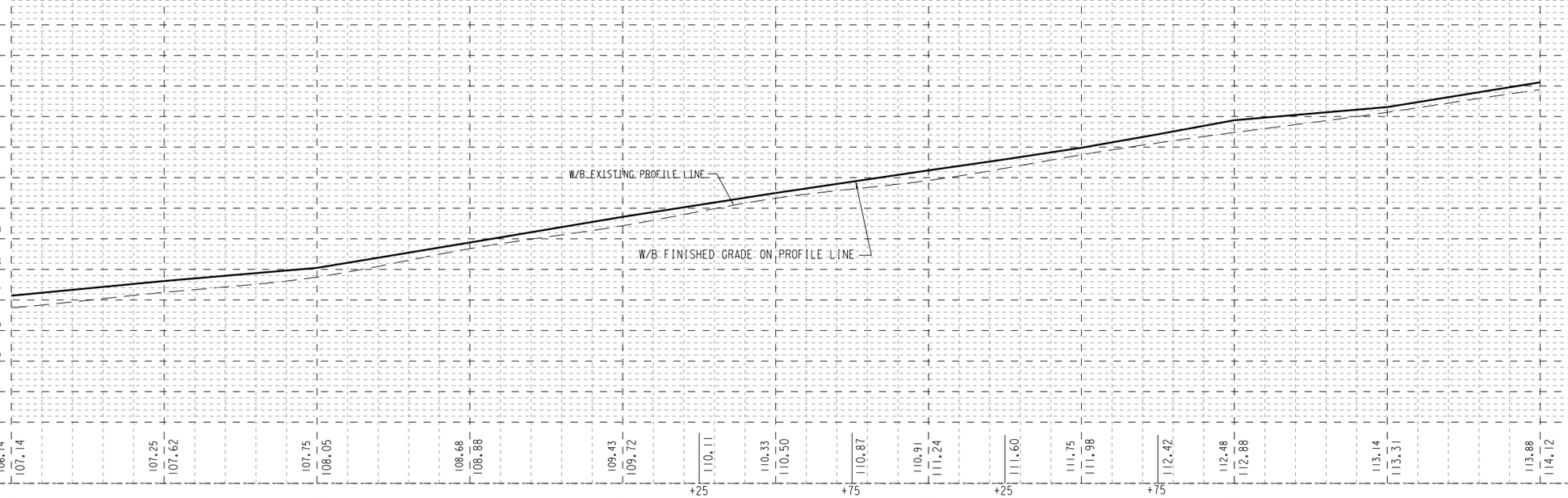
SEE CONST. DETAIL FOR ADDITIONAL INFORMATION ON CURB RAMPS

NOTE:
THERE WILL BE MONOTUBES INSTALLED AT ALL SIGNALIZED INTERSECTIONS. ALSO THE MEDIAN NOSES WILL BE SLIGHTLY MODIFIED, TO PROVIDE A CLEAR CROSSWALK PATH, AT ALL THE INTERSECTIONS.

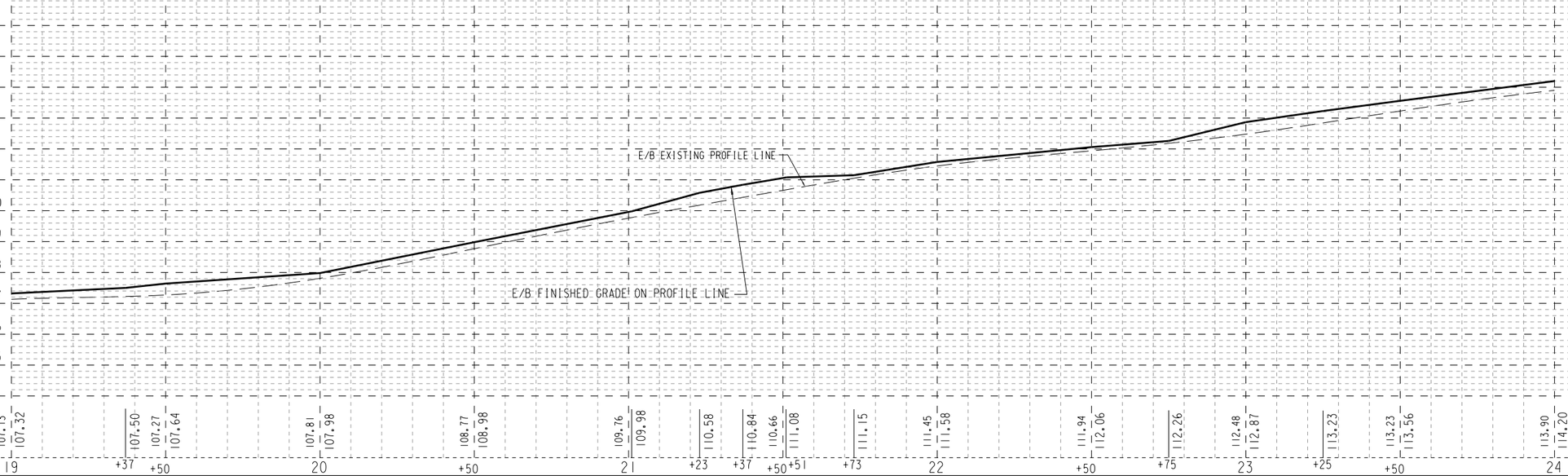
STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	PLAN	SCALE FEET 0' 40'	SHEET NO: 216 E

FILENAME: W:\SPR\HIGHLAND_27-12\19-24.DGN

WESTBOUND W. HIGHLAND AVE.



EASTBOUND W. HIGHLAND AVE.



STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	PROFILE	SCALE FEET 0' 40'	SHEET NO: 217 E

FILENAME: W:\SPR\HIGHLAND_27-12\19-24.DGN

WEST HIGHLAND AVENUE

N

SEE CONST. DETAIL FOR ADDITIONAL INFORMATION ON CURB RAMPS

SEE CONST. DETAIL FOR ADDITIONAL INFORMATION ON CURB RAMPS

#2132 #2126 #2122 #2114-12 #2104 #1102 N. 21ST ST. #2024

30' ALLEY

BIO-SWALE NO.7 (SEE BIO-SWALE PLAN)

HYDRANT ON SE CORNER N. 22ND & W. HIGHLAND ELEVATION=115.06

HYDRANT ON SE CORNER N. 21ST & W. HIGHLAND ELEVATION=109.56

24 25 26 27 28 29 30

N. 22ND ST. N. 21ST ST.

#1036 N. 22ND ST. #1035 ADJ N. 21ST ST. #1038 N. 21ST ST.

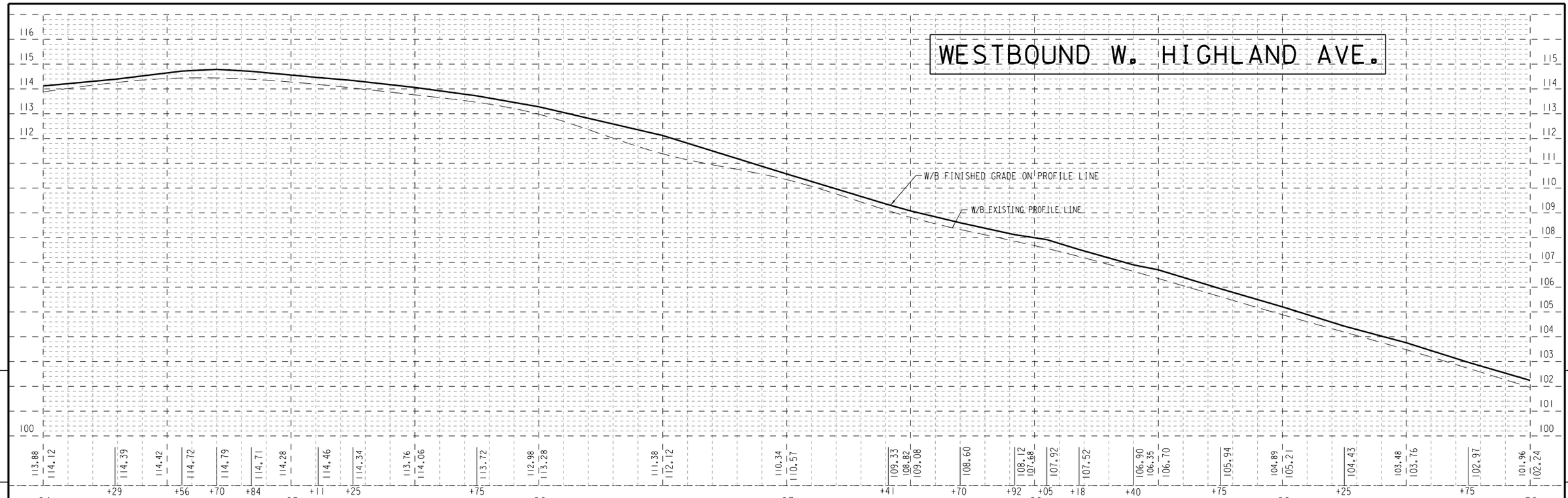
(CR) SEE CURB RAMP DETAIL
(PC) PEDESTRIAN CURB SEE RAMP DETAILS
(A) CONST. CONC. CURB & GUTTER 31-INCH
(B) CONST. CONC. CURB & GUTTER 31-INCH (COVERED FLANGE)
(C) CONST. CONC. DRIVEWAY FLARED (7-INCH) (COVERED FLANGE)
(F) CONST. 8" CONC. BASE ON 6" BASE AGGREGATE DENSE
(G) CONST. 9" CONC. PAVEMENT WITH INTEGRAL CURB & GUTTER ON BASE AGGREGATE DENSE (BUS PAD)
(H) CONST. MEDIAN SLOPED NOSE
(J) SAW CONC.
(K) SAW ASPHALT
(L) GRADE & PLACE 4" TOPSOIL, SOD
(M) REMOVE CONC. BUTT JOINT
(MR) CONST. MAINTENANCE RAMP
(P) REMOVE ASPHALT SURFACE BUTT JOINT
(T) CONST. CONC. DRIVEWAY (7-IN.)
(Z) CONST. 5" CONC. SIDEWALK

NOTE:
THERE WILL BE MONOTUBES INSTALLED AT ALL SIGNALIZED INTERSECTIONS. ALSO THE MEDIAN NOSES WILL BE SLIGHTLY MODIFIED, TO PROVIDE A CLEAR CROSSWALK PATH, AT ALL THE INTERSECTIONS.

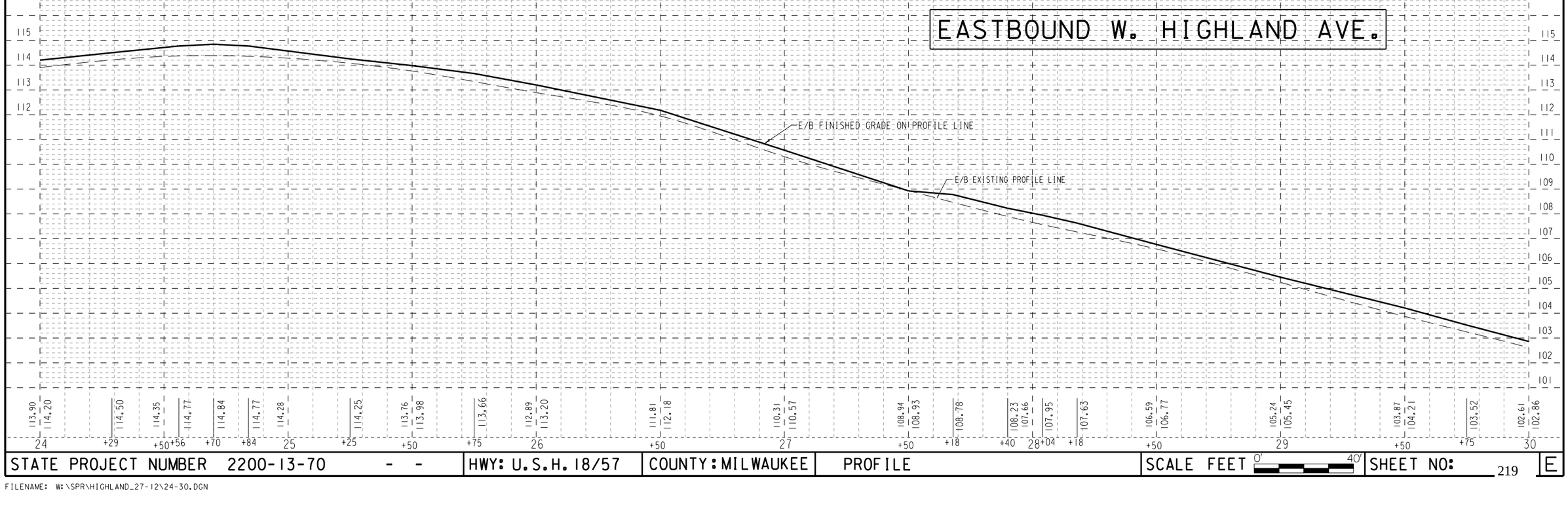
STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	PLAN	SCALE FEET 0' 40'	SHEET NO: 218 E

FILENAME: W:\SPR\HIGHLAND_27-12\24-30.DGN

WESTBOUND W. HIGHLAND AVE.



EASTBOUND W. HIGHLAND AVE.



STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	PROFILE	SCALE FEET 0' 40'	SHEET NO: 219 E

FILENAME: W:\SPR\HIGHLAND_27-12\24-30.DGN

389-1016-100-5
175

390-1291 THRU 390-1302
599.84

WEST HIGHLAND AVENUE

N

SEE CONST. DETAIL FOR ADDITIONAL INFORMATION ON CURB RAMPS

CAUTION

#2004

#1924-1812

BIO-SWALE NO.15 (SEE BIO-SWALE PLAN)

HYDRANT ON N/S OF W. HIGHLAND BLVD. @ 34+99 ELEVATION=97.52

IRON FENCE

BIO-SWALE NO.8 (SEE BIO-SWALE PLAN)

(CR) SEE CURB RAMP DETAIL
(PC) PEDESTRIAN CURB SEE RAMP DETAILS
(A) CONST. CONC. CURB & GUTTER 31-INCH
(B) CONST. CONC. CURB & GUTTER 31-INCH (COVERED FLANGE)
(C) CONST. CONC. DRIVEWAY FLARED (7-INCH) (COVERED FLANGE)
(F) CONST. 8" CONC. BASE ON 6"BASE AGGREGATE DENSE
(G) CONST. 9" CONC. PAVEMENT WITH INTEGRAL CURB & GUTTER ON BASE AGGREGATE DENSE (BUS PAD)
(H) CONST. MEDIAN SLOPED NOSE
(J) SAW CONC.
(K) SAW ASPHALT
(L) GRADE & PLACE 4" TOPSOIL, SOD
(M) REMOVE CONC. BUTT JOINT
(MR) CONST. MAINTENANCE RAMP
(P) REMOVE ASPHALT SURFACE BUTT JOINT
(Z) CONST. 5" CONC. SIDEWALK
(BB) CONST. CONC. CURB & GUTTER 31 (COVERED FLANGE ADJACENT TO UNCOVERED FLANGE)

#1037 N. 20TH ST.
#1933
N. 20TH ST.
#1925
#1917
#1917
#1903
#1835
#1827

NOTE:
THERE WILL BE MONOTUBES INSTALLED AT ALL SIGNALIZED INTERSECTIONS. ALSO THE MEDIAN NOSES WILL BE SLIGHTLY MODIFIED, TO PROVIDE A CLEAR CROSSWALK PATH, AT ALL THE INTERSECTIONS.

125
389-1025-110-1

SEE CONST. DETAIL FOR ADDITIONAL INFORMATION ON CURB RAMPS

64.64
390-1141

55
390-1142

55
390-1143

55
390-1144

60
390-1145

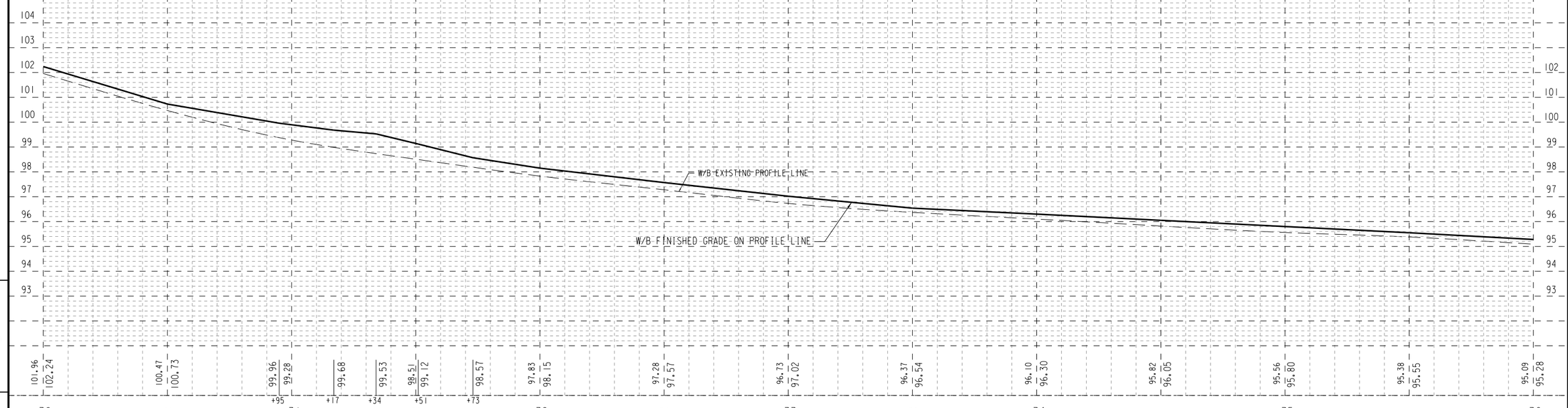
64.98
390-1146

60
390-1147

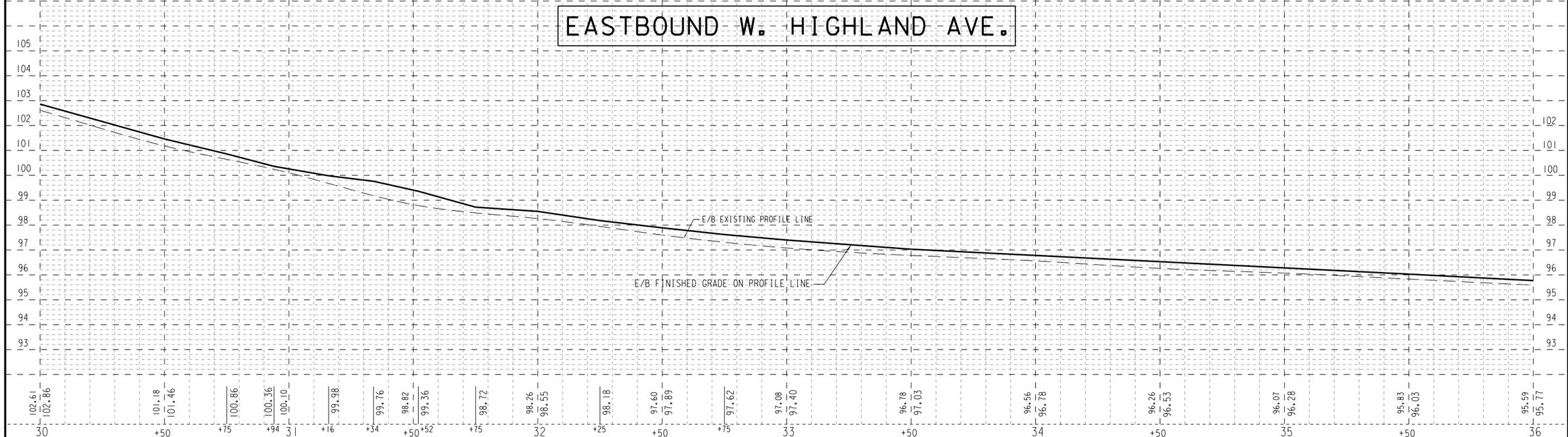
STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	PLAN	SCALE FEET 0' 40'	SHEET NO: 220 E

FILENAME: W:\SPR\HIGHLAND_27-12\30-36.DGN

WESTBOUND W. HIGHLAND AVE.



EASTBOUND W. HIGHLAND AVE.



STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	PROFILE	SCALE FEET 0' 40'	SHEET NO: 221 E

FILENAME: W:\SPR\HIGHLAND_27-12\30-36.DGN

WEST

HIGHLAND

AVENUE

N

N. 18TH ST.

#1706
MACDOWELL ELEMENTARY SCHOOL

SEE CONST. DETAIL FOR ADDITIONAL INFORMATION ON CURB RAMPS

SEE CONST. DETAIL FOR ADDITIONAL INFORMATION ON CURB RAMPS

BIO-SWALE NO.8 (SEE BIO-SWALE PLAN)

BIO-SWALE NO.9 (SEE BIO-SWALE PLAN)

HYDRANT ON S/S OF W. HIGHLAND BLVD. @ W. 18TH ST. ELEVATION=97.28

SEE CONST. DETAIL FOR ADDITIONAL INFORMATION ON CURB RAMPS

N. 17TH ST.

#1819 #1811 #1803 #1735 #1727 #1719 #1713 #1703

(CR) SEE CURB RAMP DETAIL
(PC) PEDESTRIAN CURB SEE RAMP DETAILS
(A) CONST. CONC. CURB & GUTTER 31-INCH
(B) CONST. CONC. CURB & GUTTER 31-INCH (COVERED FLANGE)
(F) CONST. 8" CONC. BASE ON 6" BASE AGGREGATE DENSE
(G) CONST. 9" CONC. PAVEMENT WITH INTEGRAL CURB & GUTTER ON BASE AGGREGATE DENSE (BUSES AHEAD)
(H) CONST. MEDIAN SLOPED NOSE
(J) SAW CONC.
(K) SAW ASPH.
(L) GRADE & PLACE 4" TOPSOIL, SOD
(M) REMOVE CONC. BUTT JOINT
(MR) CONST. MAINTENANCE RAMP
(P) REMOVE ASPHALT SURFACE BUTT JOINT
(Z) CONST. 5" CONC. SIDEWALK
(BB) CONST. CONC. CURB & GUTTER 31"(COVERED FLANGE ADJACENT TO UNCOVERED FLANGE)

NOTE:

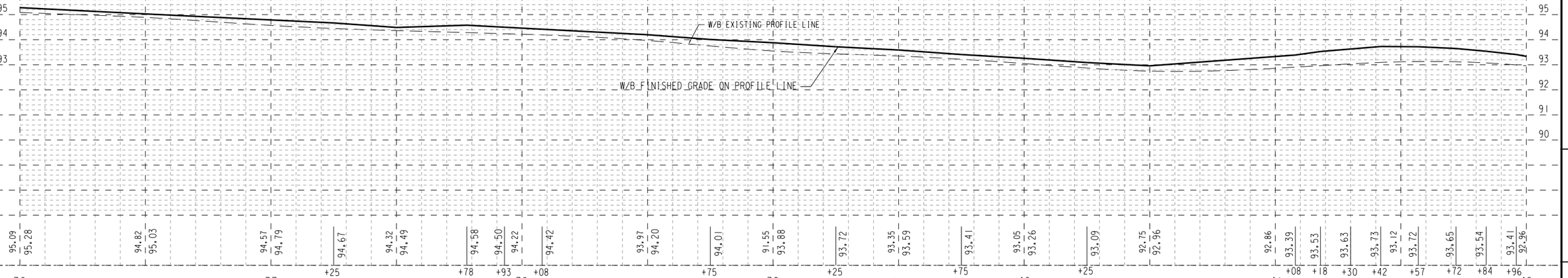
THERE WILL BE MONOTUBES INSTALLED AT ALL SIGNALIZED INTERSECTIONS. ALSO THE MEDIAN NOSES WILL BE SLIGHTLY MODIFIED, TO PROVIDE A CLEAR CROSSWALK PATH, AT ALL THE INTERSECTIONS.

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	PLAN	SCALE FEET 0' 40	SHEET NO: 222	E

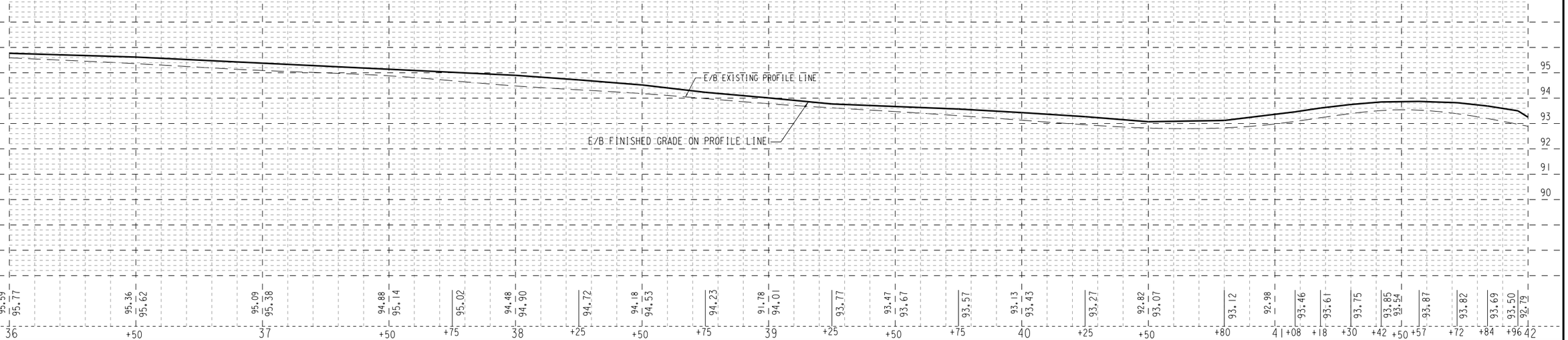
FILENAME: W:\SPR\HIGHLAND_27-12\36-41.DGN

REVISED: - -

WESTBOUND W. HIGHLAND AVE.



EASTBOUND W. HIGHLAND AVE.



STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	PROFILE	SCALE FEET 0' 40'	SHEET NO: 223 E

FILENAME: W:\SPR\HIGHLAND_27-12\36-41.DGN

HIGHLAND

WEST AVENUE

N

N. CALLAHAN PL.

- (CR) SEE CURB RAMP DETAIL
- (PC) PEDESTRIAN CURB SEE RAMP DETAILS
- (A) CONST. CONC. CURB & GUTTER 31-INCH
- (B) CONST. CONC. CURB & GUTTER 31-INCH (COVERED FLANGE)
- (F) CONST. 8" CONC. BASE ON 6" BASE AGGREGATE DENSE
- (G) CONST. 9" CONC. PAVEMENT WITH INTEGRAL CURB & GUTTER ON BASE AGGREGATE DENSE (BUS PAD)
- (H) CONST. MEDIAN SLOPED NOSE
- (J) SAW CONC.
- (K) SAW ASPH.
- (L) GRADE & PLACE 4" TOPSOIL, SOD
- (M) REMOVE CONC. BUTT JOINTS
- (MR) CONST. MAINTENANCE RAMP
- (P) REMOVE ASPHALT SURFACE BUTT JOINT
- (Z) CONST. 5" CONC. SIDEWALK
- (BB) CONST. CONC. CURB & GUTTER 31"(COVERED FLANGE ADJACENT TO UNCOVERED FLANGE)

SEE CONST. DETAIL FOR ADDITIONAL INFORMATION ON CURB RAMPS

BIO-SWALE NO.11 (SEE BIO-SWALE PLAN)

BIO-SWALE NO.10 (SEE BIO-SWALE PLAN)

BIO-SWALE NO.12 (SEE BIO-SWALE PLAN)

HYDRANT ON SE CORNER OF N. 17TH ST. & W. HIGHLAND BLVD. ELEV. 95.27

N. 17TH ST.

NOTE:

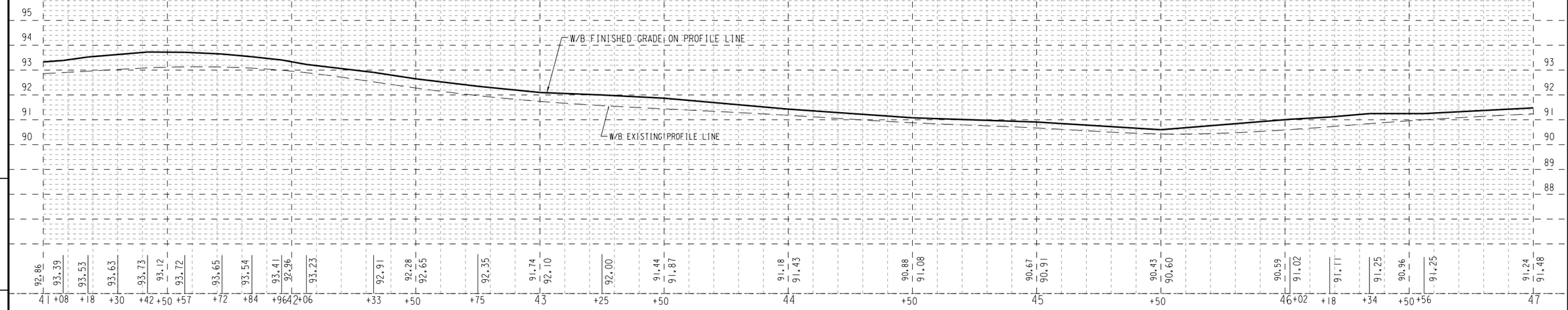
THERE WILL BE MONOTUBES INSTALLED AT ALL SIGNALIZED INTERSECTIONS. ALSO THE MEDIAN NOSES WILL BE SLIGHTLY MODIFIED, TO PROVIDE A CLEAR CROSSWALK PATH, AT ALL THE INTERSECTIONS.

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	PLAN	SCALE FEET 0' 40'	SHEET NO: 224	E

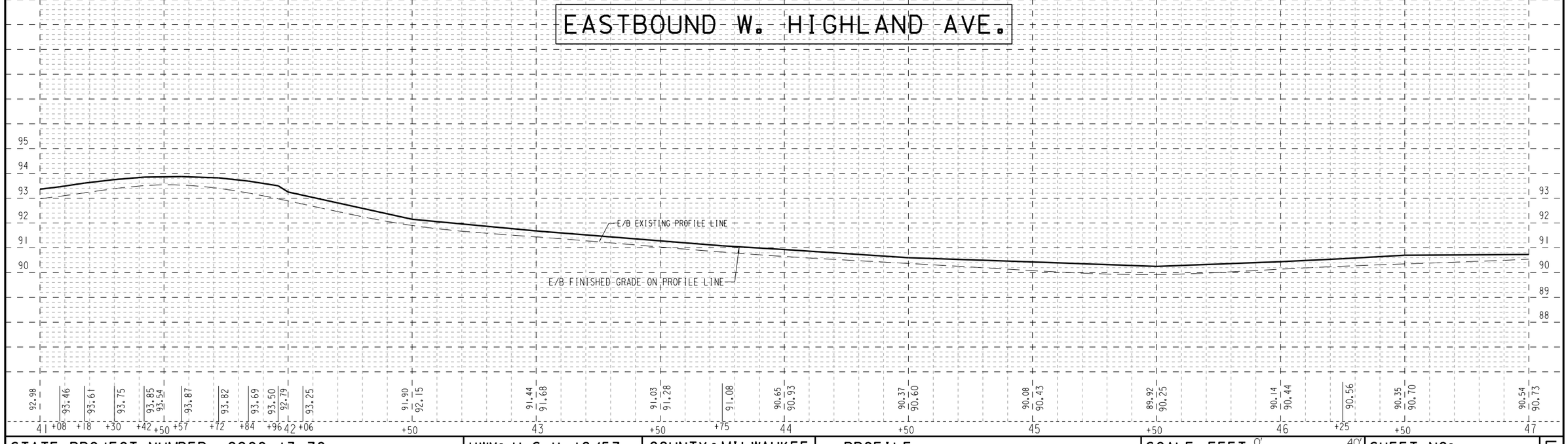
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REVISED: - -

WESTBOUND W. HIGHLAND AVE.



EASTBOUND W. HIGHLAND AVE.



STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	PROFILE	SCALE FEET 0' 40'	SHEET NO: 225	E

FILENAME: W:\SPR\HIGHLAND_27-12\41-47.DGN

WEST HIGHLAND AVENUE

SEE CONST. DETAIL FOR ADDITIONAL INFORMATION ON CURB RAMPS

SEE CONST. DETAIL FOR ADDITIONAL INFORMATION ON CURB RAMPS

20' ALLEY

HYDRANT ON NW CORNER W. HIGHLAND BLVD. AND N. 14TH ST. ELEV.=94.70

BIO-SWALE NO.12 (SEE BIO-SWALE PLAN) R/W

BIO-SWALE NO.13 (SEE BIO-SWALE PLAN)

STANDARD BENCHMARK 77-14
N. 15TH ST. & W. HIGHLAND BLVD. E. MEDIAN, 9.4' N. OF S. CURB AND 18.5' E. OF NOSE. ELEV.=91.995

N. 15TH ST.

N. 14TH ST.

SCOTT MIDDLE SCHOOL (CITY OF MILWAUKEE)

(CR) SEE CURB RAMP DETAIL
(PC) PEDESTRIAN CURB SEE RAMP DETAILS
(A) CONST. CONC. CURB & GUTTER 31-INCH
(B) CONST. CONC. CURB & GUTTER 31-INCH (COVERED FLANGE)
(C) CONST. CONC. DRIVEWAY FLARED (7-INCH) (COVERED FLANGE)
(F) CONST. 8" CONC. BASE ON 6" BASE AGGREGATE DENSE
(G) CONST. 9" CONC. PAVEMENT WITH INTEGRAL CURB & GUTTER ON BASE AGGREGATE DENSE (BUS PAD)
(H) CONST. MEDIAN SLOPED NOSE
(J) SAW CONC.
(K) SAW ASPH.
(L) GRADE & PLACE 4" TOPSOIL, SOD
(M) REMOVE CONC. BUTT JOINT
(MR) CONST. MAINTENANCE RAMP
(N) REMOVE PAVEMENT BUTT JOINT
(P) REMOVE ASPHALT SURFACE BUTT JOINT
(T) SAW FULL DEPTH AT OR NEAR BUILDING, OR WALL
(Z) CONST. 5" CONC. SIDEWALK
(BB) CONST. CONC. CURB & GUTTER 31"(COVERED FLANGE ADJACENT TO UNCOVERED FLANGE)

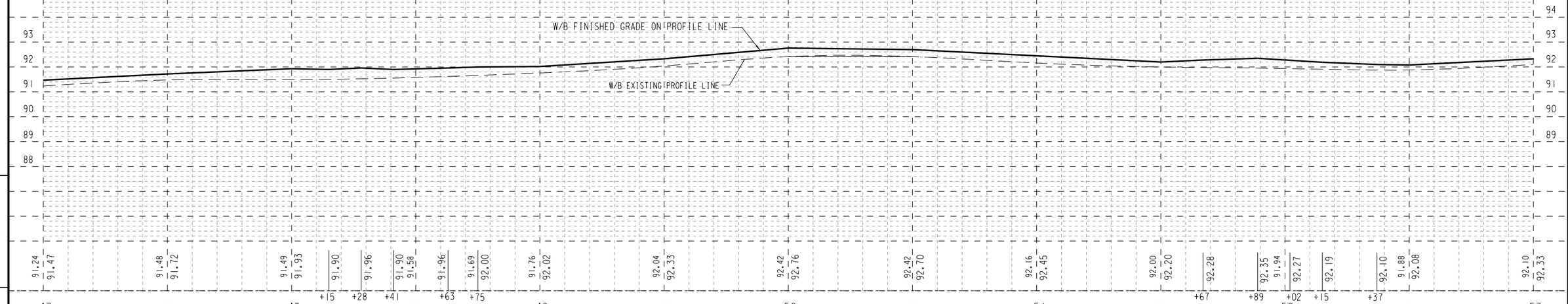
NOTE:

THERE WILL BE MONOTUBES INSTALLED AT ALL SIGNALIZED INTERSECTIONS. ALSO THE MEDIAN NOSES WILL BE SLIGHTLY MODIFIED, TO PROVIDE A CLEAR CROSSWALK PATH, AT ALL THE INTERSECTIONS.

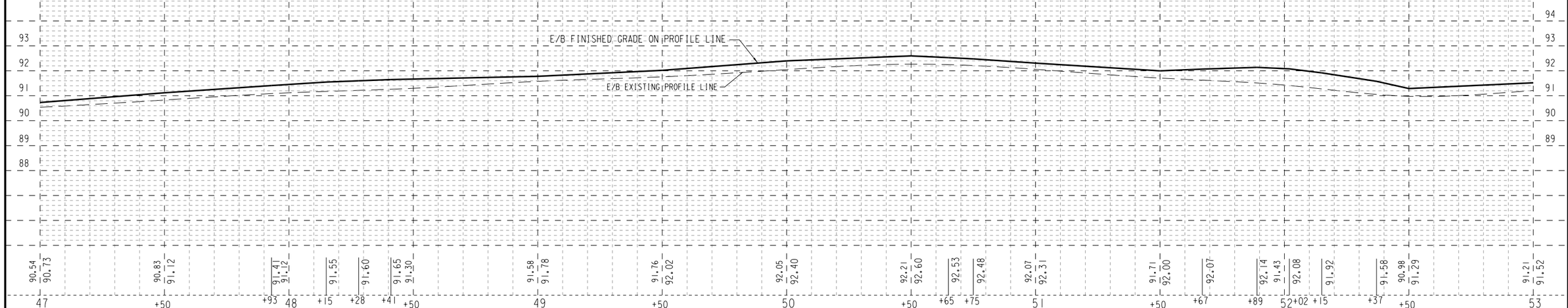
STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	PLAN	SCALE FEET 0' 40'	SHEET NO: 226	E

FILENAME: W:\SPR\HIGHLAND_27-12\47-53.DGN

WESTBOUND W. HIGHLAND AVE.

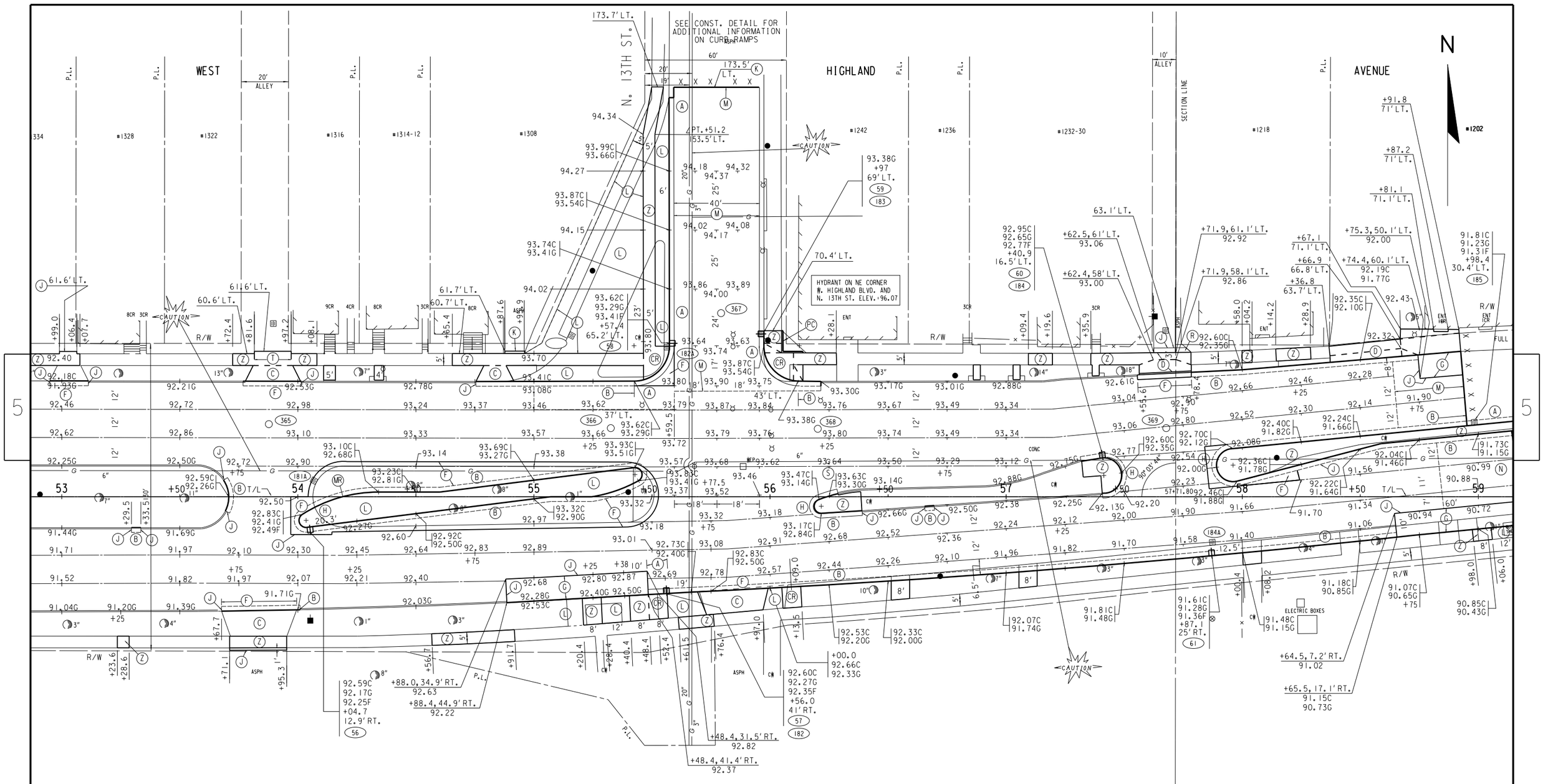


EASTBOUND W. HIGHLAND AVE.



STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	PROFILE	SCALE FEET 0' 40'	SHEET NO: 227	E

FILENAME: W:\SPR\HIGHLAND_27-12\47-53.DGN



NOTE:

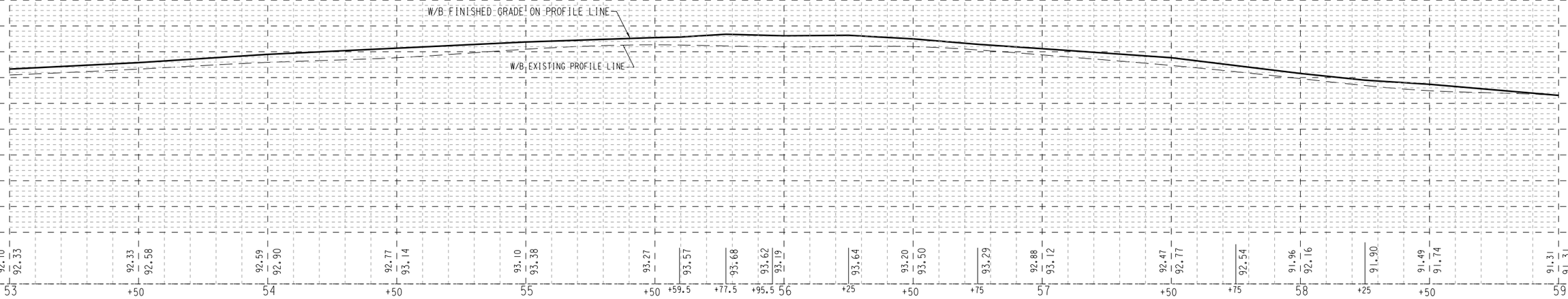
THERE WILL BE MONOTUBES INSTALLED AT ALL SIGNALIZED INTERSECTIONS. ALSO THE MEDIAN NOSES WILL BE SLIGHTLY MODIFIED, TO PROVIDE A CLEAR CROSSWALK PATH, AT ALL THE INTERSECTIONS.

(CR) SEE CURB RAMP DETAIL
(PC) PEDESTRIAN CURB SEE RAMP DETAILS
(A) CONST. CONC. CURB & GUTTER 31-INCH
(B) CONST. CONC. CURB & GUTTER 31-INCH (COVERED FLANGE)
(C) CONST. CONC. DRIVEWAY FLARED (7-INCH) (COVERED FLANGE)
(D) CONST. CONC. DWY DEPRESSED - MODIFIED (7")
(F) CONST. 8"CONC. BASE ON 6"BASE AGGREGATE DENSE
(G) CONST. 9"CONC. PAVEMENT WITH INTEGRAL CURB & GUTTER ON BASE AGGREGATE DENSE (BUS PAD)
(H) CONST. MEDIAN SLOPED NOSE
(J) SAW CONC.
(K) SAW ASPH.
(L) GRADE & PLACE 4"TOPSOIL, SOD
(M) REMOVE CONC. BUTT JOINT
(MR) CONST. MAINTENANCE RAMP
(P) REMOVE ASPHALT SURFACE BUTT JOINT
(T) SAW FULL DEPTH AT OR NEAR BUILDING, OR WALL
(Z) CONST. 5"CONC. SIDEWALK

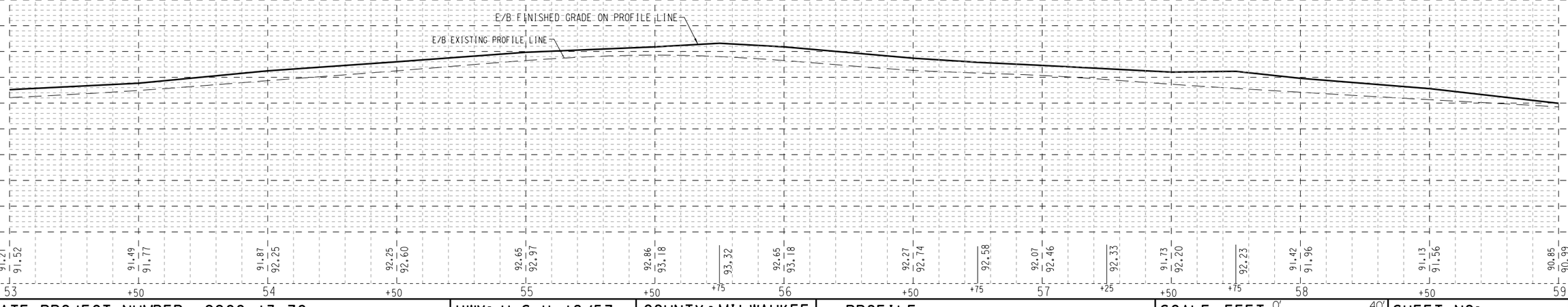
STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	PLAN	SCALE FEET 0' 40'	SHEET NO: 228 E

FILENAME: W:\SPR\HIGHLAND_27-12\53-59.DGN

WESTBOUND W. HIGHLAND AVE.



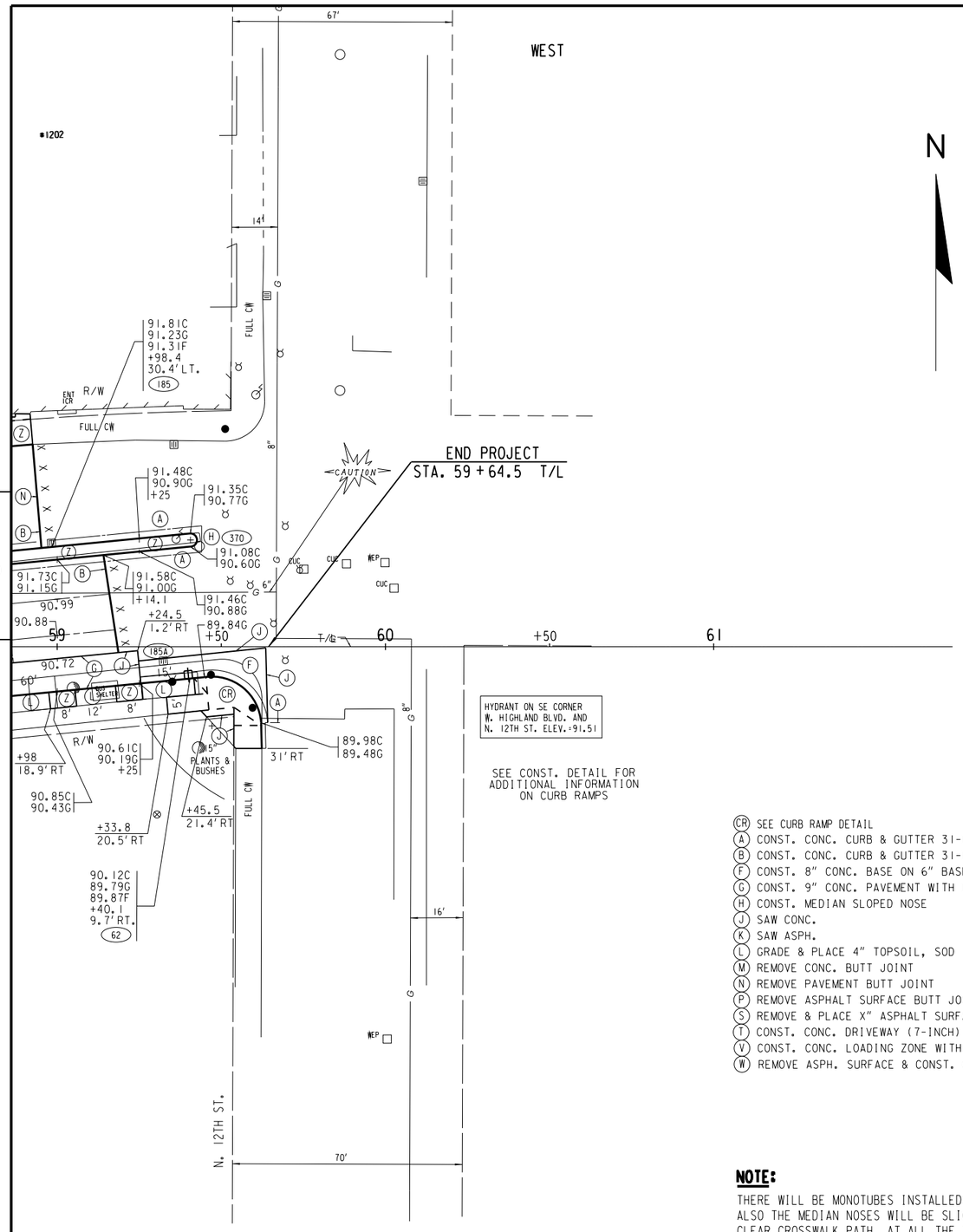
EASTBOUND W. HIGHLAND AVE.



STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	PROFILE	SCALE FEET 0' 40'	SHEET NO: 229	E

FILENAME: W:\SPR\HIGHLAND_27-12\53-59.DGN

WEST HIGHLAND AVENUE



HYDRANT ON SE CORNER
W. HIGHLAND BLVD. AND
N. 12TH ST. ELEV.=91.51

SEE CONST. DETAIL FOR ADDITIONAL INFORMATION ON CURB RAMPS

- (CR) SEE CURB RAMP DETAIL
- (A) CONST. CONC. CURB & GUTTER 31-INCH
- (B) CONST. CONC. CURB & GUTTER 31-INCH (COVERED FLANGE)
- (F) CONST. 8" CONC. BASE ON 6" BASE AGGREGATE DENSE
- (G) CONST. 9" CONC. PAVEMENT WITH INTEGRAL CURB & GUTTER ON BASE AGGREGATE DENSE (BUS PAD)
- (H) CONST. MEDIAN SLOPED NOSE
- (J) SAW CONC.
- (K) SAW ASPH.
- (L) GRADE & PLACE 4" TOPSOIL, SOD
- (M) REMOVE CONC. BUTT JOINT
- (N) REMOVE PAVEMENT BUTT JOINT
- (P) REMOVE ASPHALT SURFACE BUTT JOINT
- (S) REMOVE & PLACE X" ASPHALT SURFACE ON X" CONC BASE
- (T) CONST. CONC. DRIVEWAY (7-INCH)
- (V) CONST. CONC. LOADING ZONE WITH 7-INCH FACE
- (W) REMOVE ASPH. SURFACE & CONST. CONC. LOADING ZONE

NOTE:

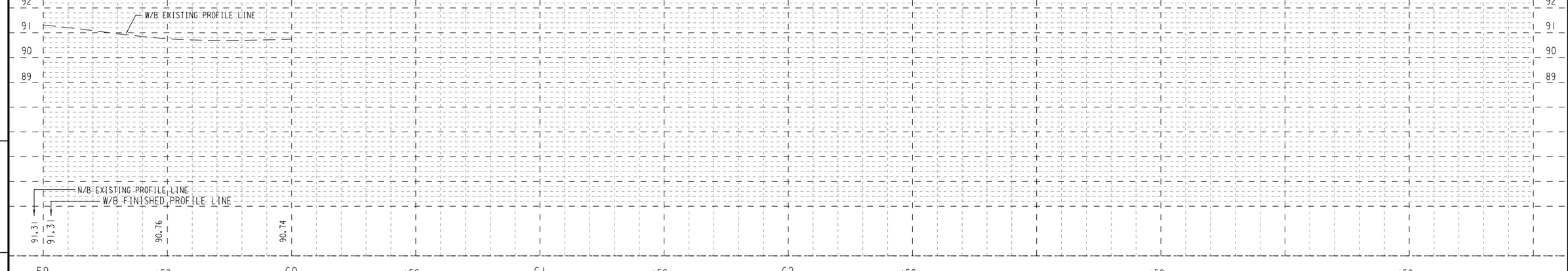
THERE WILL BE MONOTUBES INSTALLED AT ALL SIGNALIZED INTERSECTIONS. ALSO THE MEDIAN NOSES WILL BE SLIGHTLY MODIFIED, TO PROVIDE A CLEAR CROSSWALK PATH, AT ALL THE INTERSECTIONS.

STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	PLAN	SCALE FEET 0' 40'	SHEET NO: 230	E

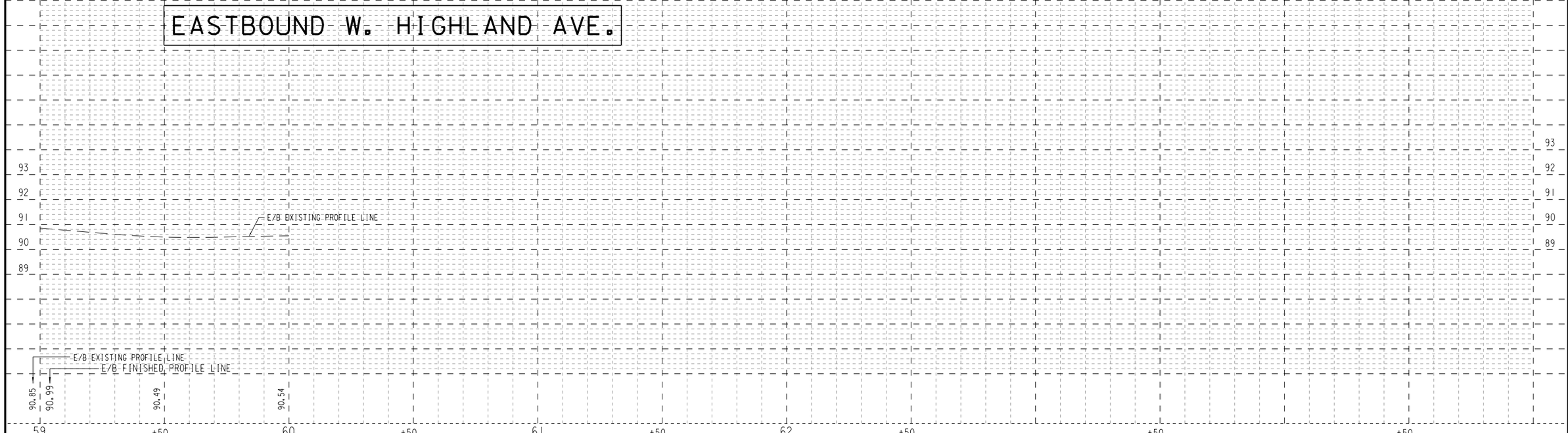
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REVISED: - -

WESTBOUND W. HIGHLAND AVE.



EASTBOUND W. HIGHLAND AVE.



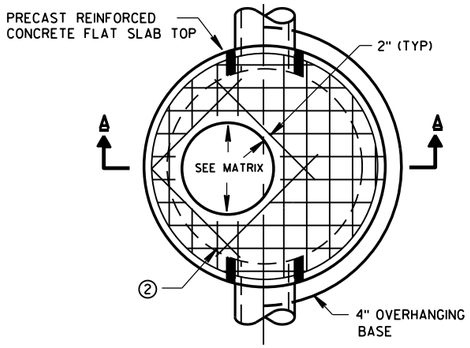
STATE PROJECT NUMBER 2200-13-70 - -	HWY: U.S.H. 18/57	COUNTY: MILWAUKEE	PROFILE	SCALE FEET 0' 40'	SHEET NO: 231	E

FILENAME: W:\SPR\HIGHLAND_27-12\59-63.DGN

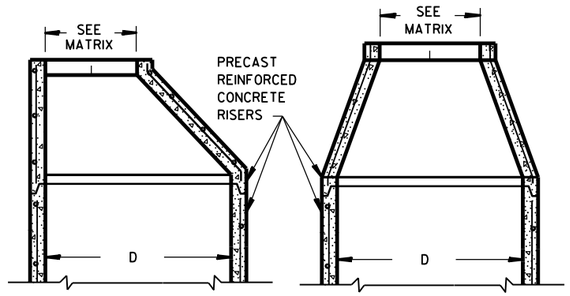
Standard Detail Drawing List

08B09-01	MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT AND 8-FT DIAMETER
08D05-16A	CURB RAMPS TYPES 1 AND 1-A
08D05-16B	CURB RAMPS TYPES 2 AND 3
08D05-16C	CURB RAMPS TYPES 4A AND 4A1
08D05-16D	CURB RAMPS TYPE 4B AND 4B1
08D05-16E	CURB RAMPS TYPES 5, 6, 7A, 7B & 8
08D16-10	CONCRETE GUTTER, CURB AND GUTTER AND PAVEMENT TIES
08E05-02	SODDED BACKSLOPE FLUME AND INTERCEPTING EMBANKMENT
08E10-02	INLET PROTECTION TYPE A, B, C AND D
09A01-13A	AT-GRADE SIDE ROAD INTERSECTION, TYPES "B1", "B2", "C" AND D AND TEE INTERSECTION BYPASS LANE
09A01-13B	AT-GRADE SIDE ROAD INTERSECTION, TYPE "A1" & "A2"
09C11-08	CONCRETE BASE TYPE 10
11B02-02	CONCRETE MEDIAN NOSE
13C01-18	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES
13C08-02	CONCRETE PAVEMENT PARTIAL DEPTH REPAIR
13C13-08	URBAN DOWELED CONCRETE PAVEMENT
13C14-06A	BASE PATCHING CONCRETE
13C14-06B	BASE PATCHING CONCRETE
13C14-06C	BASE PATCHING CONCRETE
13C18-03A	CONCRETE PAVEMENT JOINTING
13C18-03C	CONCRETE PAVEMENT JOINT TIES
14A02-01	TREE PLANTING DETAIL
15C02-06A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-06B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C03-03	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C05-03	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 M.P.H. OR LESS
15C07-12A	PAVEMENT MARKING SYMBOLS
15C07-12C	PAVEMENT MARKING ARROWS
15C08-16A	PAVEMENT MARKING (MAINLINE)
15C08-16B	PAVEMENT MARKING (INTERSECTIONS)
15C08-16E	PAVEMENT MARKING (LEFT TURN LANE)
15C29-03A	BICYCLE LANE MARKING
15C29-03B	BICYCLE LANE MARKING
15C29-03E	PAVEMENT MARKING FOR BIKE LANES
15C33-01	STOP LINE AND CROSSWALK PAVEMENT MARKING
15D06-03	TRAFFIC CONTROL, TWO LANE TWO WAY OPERATION
15D20-03	TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY
15D30-02A	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D30-02B	TRAFFIC CONTROL, TEMPORARY ADA COMPLIANT PEDESTRIAN ACCOMMODATION
15D30-02C	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION

6

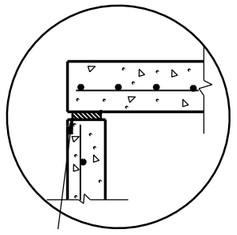


PLAN VIEW CIRCULAR OPENING

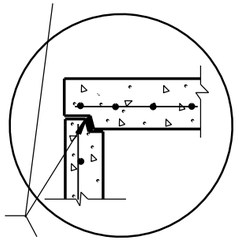


OPTIONAL PRECAST REINFORCED CONCRETE ECCENTRIC TOP

OPTIONAL PRECAST REINFORCED CONCRETE CONCENTRIC TOP

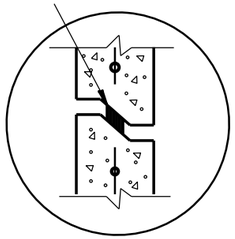


TOP WITH PLAIN END JOINT



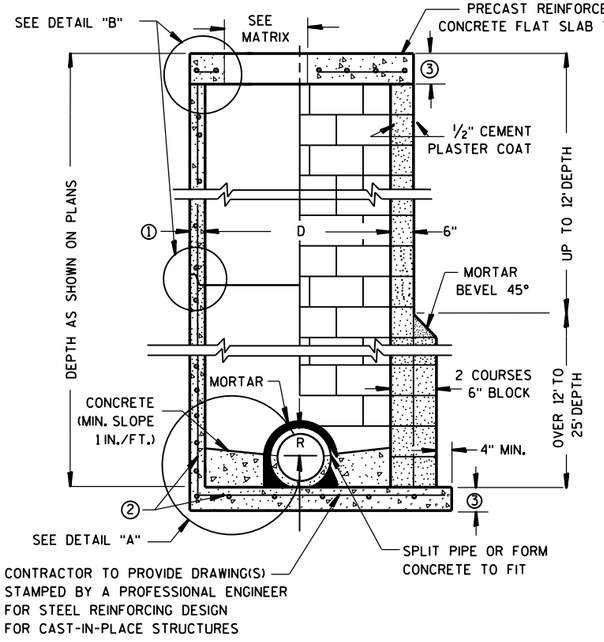
JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C990 (TYP)

TOP WITH TONGUE AND GROOVE JOINT



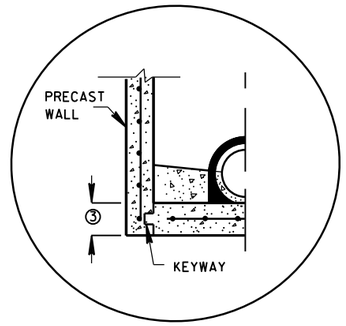
RISER WITH TONGUE AND GROOVE JOINT

DETAIL "B"

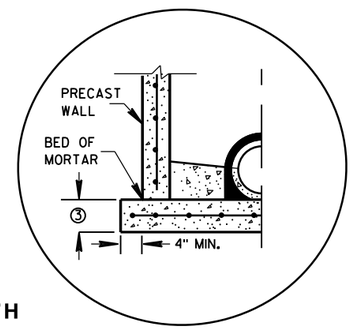


PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE

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

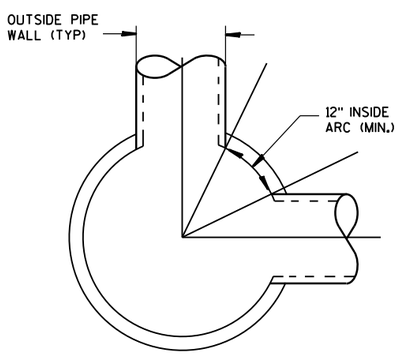


PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE OPTION



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

DETAIL "A"



DETAIL "C"

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

MANHOLE COVER OPENING MATRIX

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

PIPE MATRIX

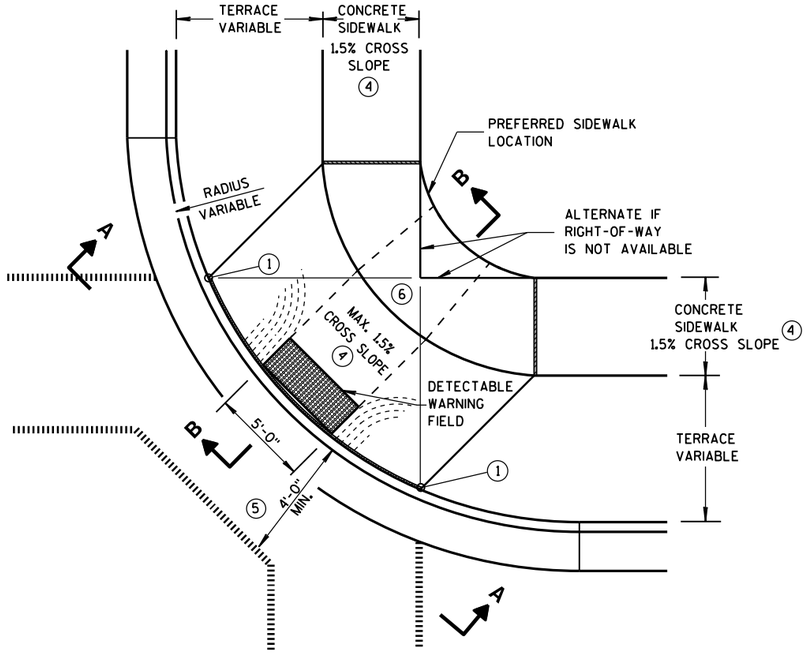
MANHOLE SIZE	MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES	
	180° SEPARATION (IN)	90° SEPARATION (IN)
3-FT	15	12
4-FT	24	18
5-FT	36	24
6-FT	42	36
7-FT	48	36
8-FT	60	42

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

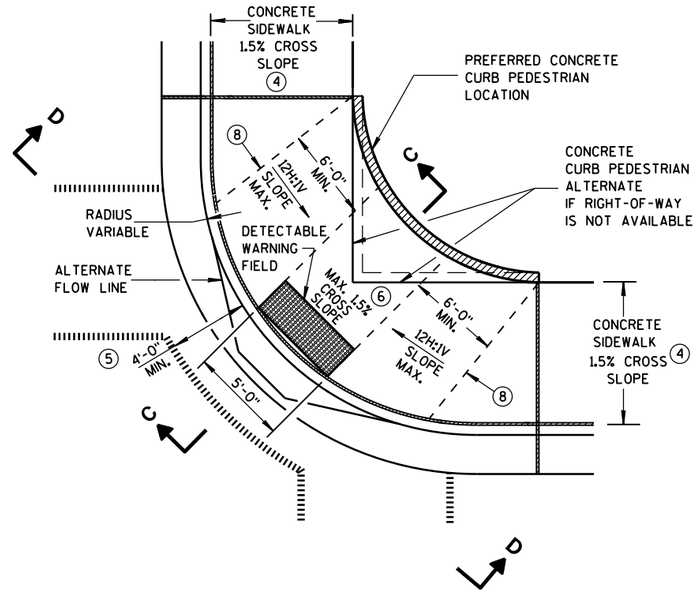
6
S.D.D. 8 B 9-1



PLAN VIEW

TYPE 1 RAMP

(CENTER OF CORNER RADIUS)



PLAN VIEW

TYPE 1-A RAMP

(NO TERRACE)

GENERAL NOTES

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

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

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

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

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

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

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

(1) THIS POINT IS AN EXTENSION OF OUTSIDE EDGE OF APPROACHING SIDEWALK WHERE IT MEETS THE BACK OF CONCRETE CURB.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE DRAINAGE AWAY FROM CURB RAMP AT GUTTER FLAG INTERFACE. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN $\frac{1}{4}$-INCH ARE ALLOWED.

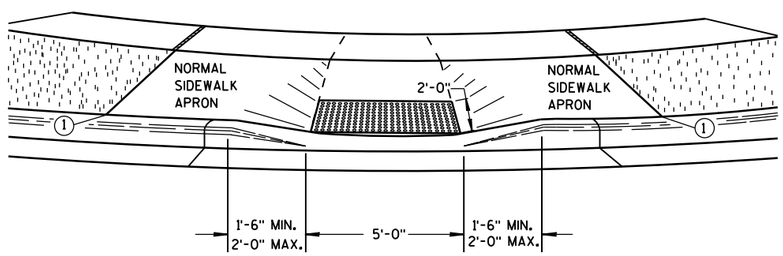
(3) ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

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

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

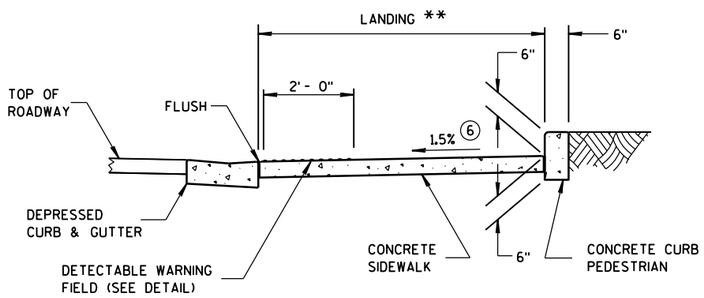
(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET (MINIMUM 4 FEET X 4 FEET).

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



VIEW A-A

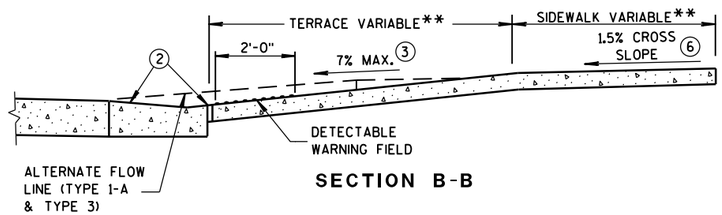
** WIDTH SHOWN ELSEWHERE IN THE PLANS



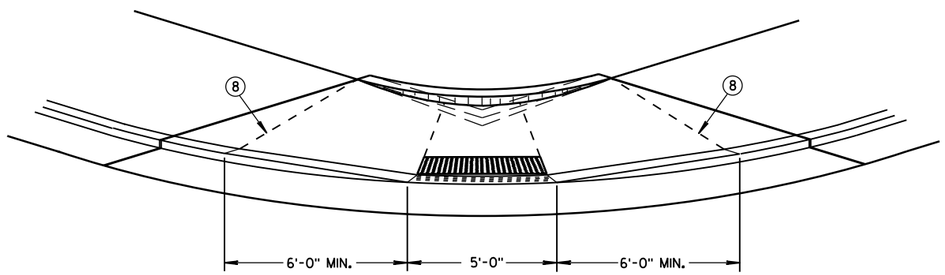
SECTION C-C

LEGEND

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

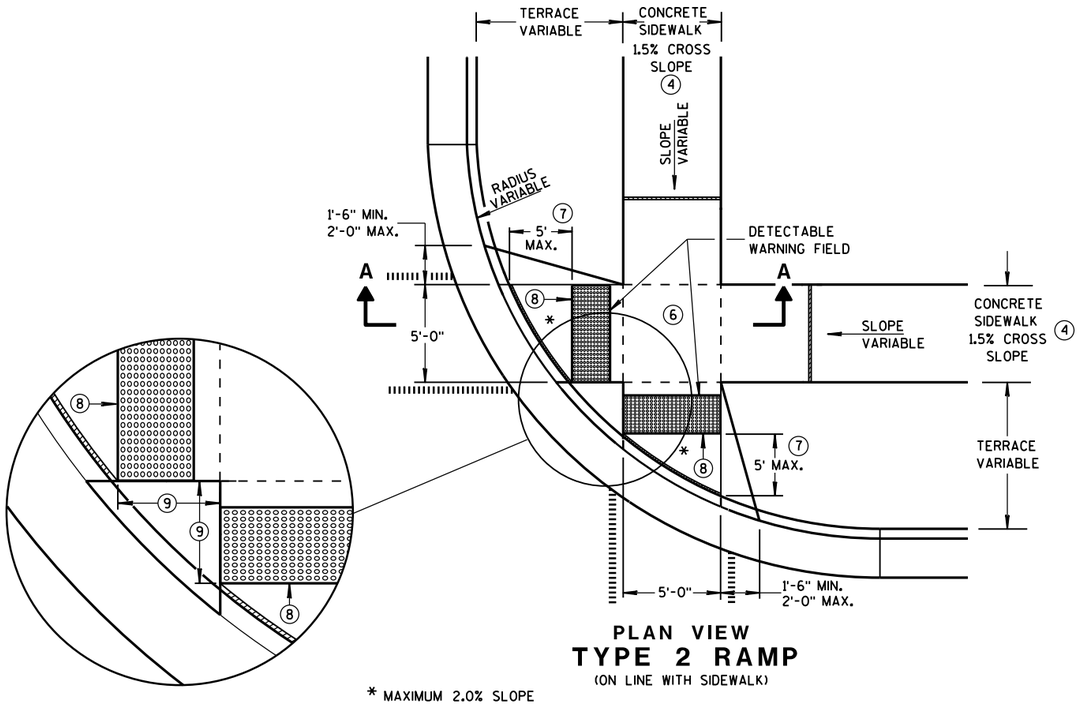


SECTION B-B



VIEW D-D

CURB RAMPS TYPES 1 AND 1-A

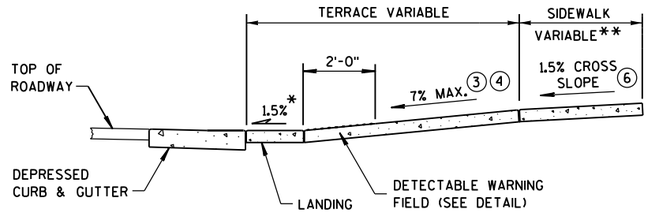


PLAN VIEW

TYPE 2 RAMP

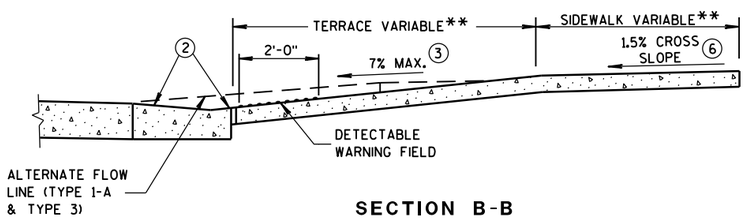
(ON LINE WITH SIDEWALK)

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



SECTION A-A

** WIDTH SHOWN ELSEWHERE IN THE PLANS



SECTION B-B

GENERAL NOTES

USE THE TYPE 3 RAMP ONLY WHEN A TYPE 1 OR TYPE 2 CANNOT BE ACHIEVED BECAUSE OF FIELD CONDITIONS.

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 DRAINAGE AWAY FROM CURB RAMP AT GUTTER FLAG INTERFACE. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4-INCH ARE ALLOWED.

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

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

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

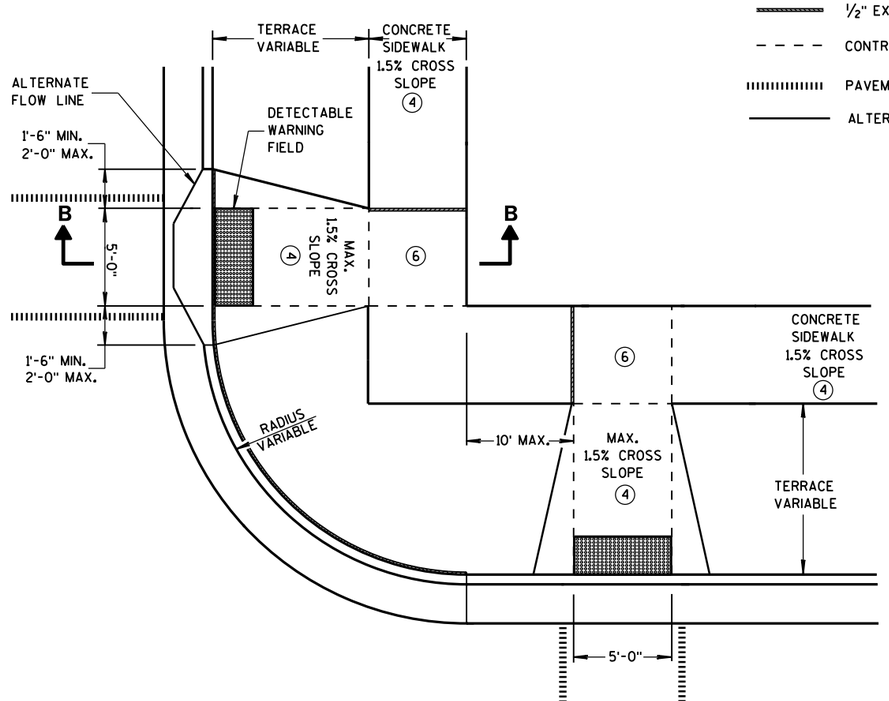
(7) WHEN THIS DISTANCE EXCEEDS 5 FEET, USE MULTIPLE DETECTABLE WARNING PANELS ACROSS THE RAMP AND STAGGER ADDITIONAL DETECTABLE WARNING PANEL(S) FORWARD TO REDUCE THIS DISTANCE.

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

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

LEGEND

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



PLAN VIEW

TYPE 3 RAMP

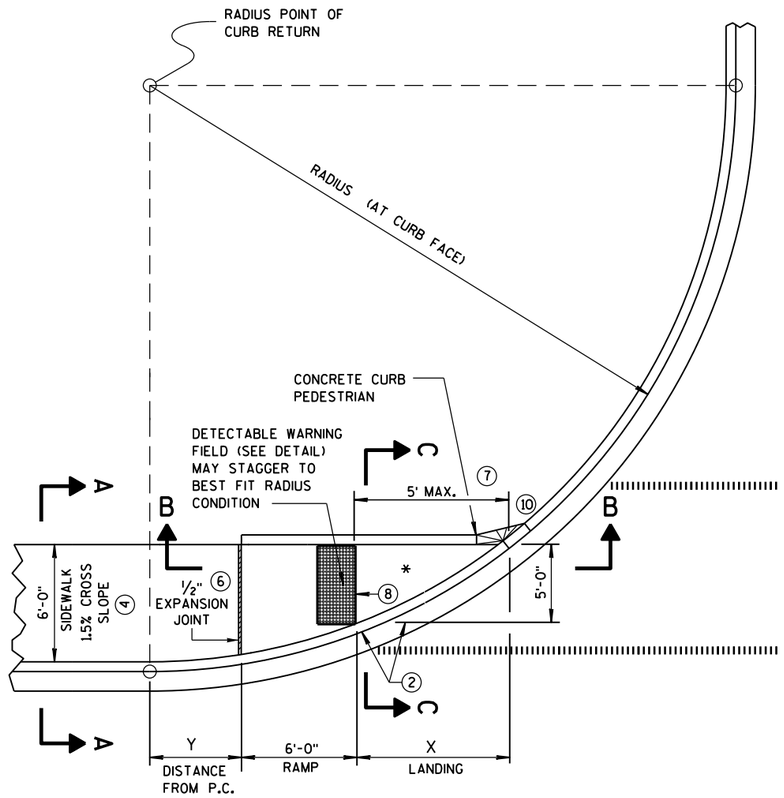
(OUTSIDE OF CROSSWALK AREA)

CURB RAMPS TYPES 2 AND 3

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

S.D.D. 8 D 5-16b

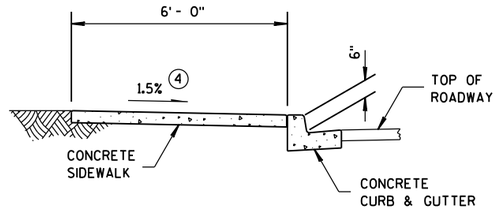


CURB RAMP TYPE 4A

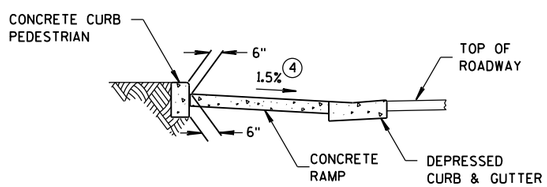
PLAN VIEW

RADIUS (AT CURB FACE)	X	Y
20 FEET	6'-1¾"	2'-7¼"
30 FEET	7'-11¾"	4'-8¼"
40 FEET	9'-5¼"	6'-5"
50 FEET	10'-8¾"	7'-11¼"
60 FEET	11'-10¼"	9'-3½"

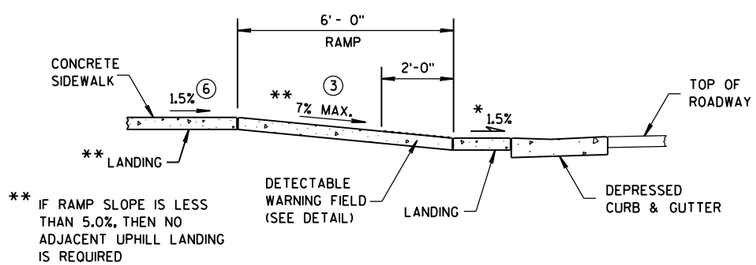
INTERMEDIATE RADII CAN BE INTERPOLATED



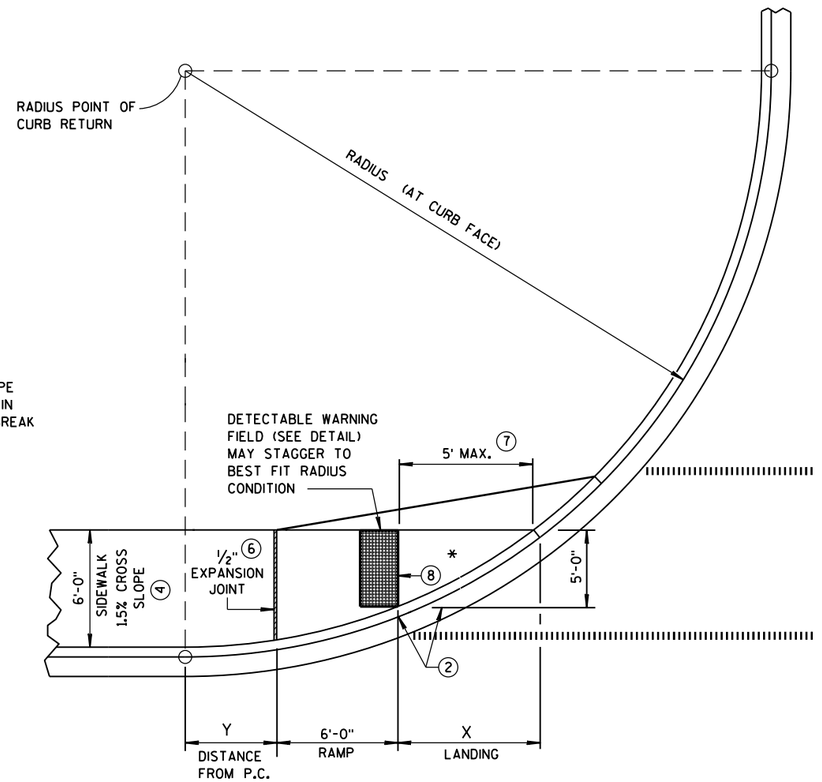
SECTION A-A FOR TYPE 4A



SECTION C-C FOR TYPE 4A



SECTION B-B FOR TYPE 4A



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

CURB RAMP TYPE 4A1

PLAN VIEW

GENERAL NOTES

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

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

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

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

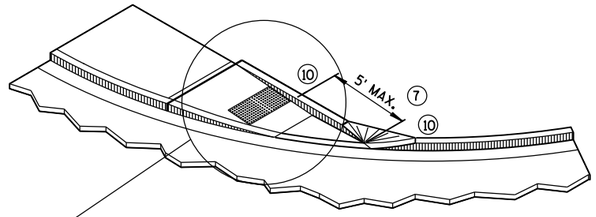
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

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

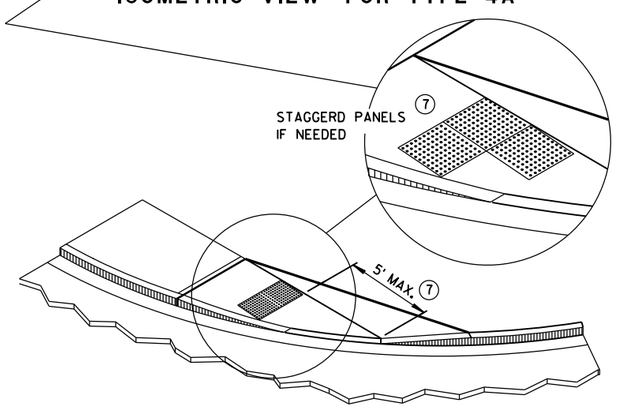
(7) WHEN THIS DISTANCE EXCEEDS 5 FEET, USE MULTIPLE DETECTABLE WARNING PANELS ACROSS THE RAMP AND STAGGER ADDITIONAL DETECTABLE WARNING PANEL(S) FORWARD TO REDUCE THIS DISTANCE.

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

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



ISOMETRIC VIEW FOR TYPE 4A



ISOMETRIC VIEW FOR TYPE 4A1

LEGEND

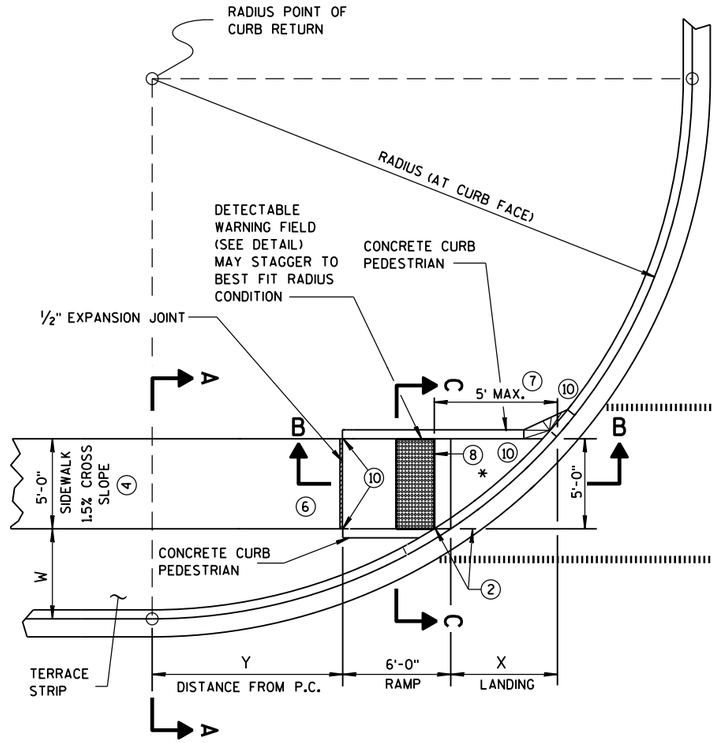
- ½" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)

CURB RAMPS
TYPES 4A AND 4A1

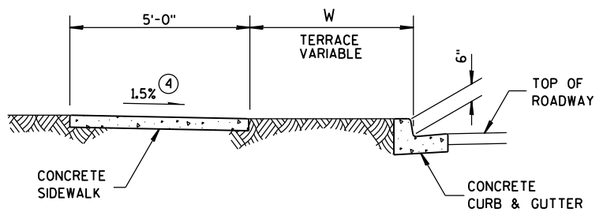
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

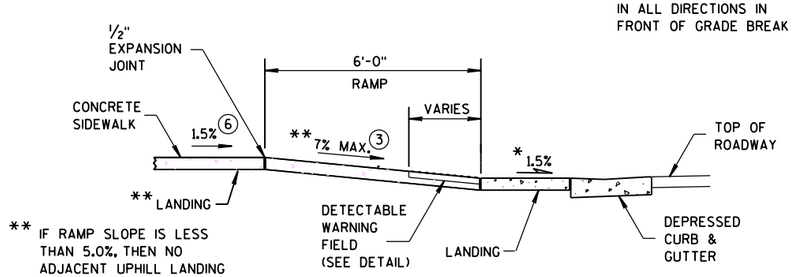
S.D.D. 8 D 5-16c



CURB RAMP TYPE 4B
PLAN VIEW



SECTION A-A FOR TYPE 4B



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

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

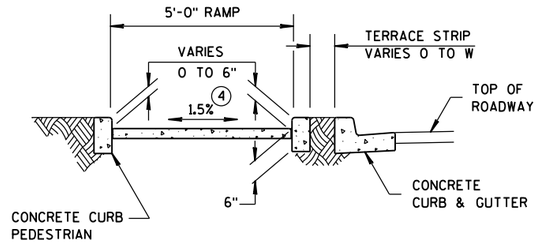
SECTION B-B FOR TYPE 4B

LEGEND

½" EXPANSION JOINT-SIDEWALK

CONTRACTION JOINT FIELD LOCATED

PAVEMENT MARKING CROSSWALK (WHITE)



SECTION C-C FOR TYPE 4B

RADIUS (AT CURB FACE)	W = 3'-0"		W = 4'-0"		W = 5'-0"		W = 6'-0"		W = 7'-0"	
	X	Y	X	Y	X	Y	X	Y	X	Y
20 FEET	5'-5½"	4'-6½"	4'-8½"	6'-0"	4'-1"	7'-2¾"	3'-7"	8'-3½"	3'-1½"	9'-2½"
30 FEET	7'-3¾"	7'-1"	6'-5½"	8'-11½"	5'-9¼"	10'-7"	5'-2½"	12'-0"	4'-8¾"	13'-3¼"
40 FEET	8'-9½"	9'-2½"	7'-10"	11'-5¼"	7'-1"	13'-4½"	6'-5¾"	15'-¾"	5'-11½"	16'-7¼"
50 FEET	10'-¾"	11'-¾"	9'-¼"	13'-7¼"	8'-2½"	15'-9½"	7'-6½"	17'-9"	6'-11¾"	19'-6¼"
60 FEET	11'-2½"	12'-8¾"	10'-¾"	15'-6½"	9'-2¼"	17'-11¾"	8'-5¾"	20'-1¾"	7'-10½"	22'-1½"

INTERMEDIATE RADII CAN BE INTERPOLATED

GENERAL NOTES

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

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

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

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

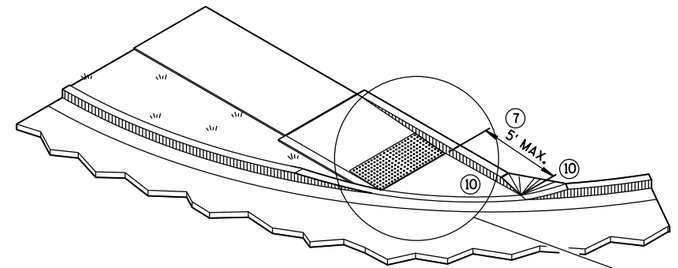
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

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

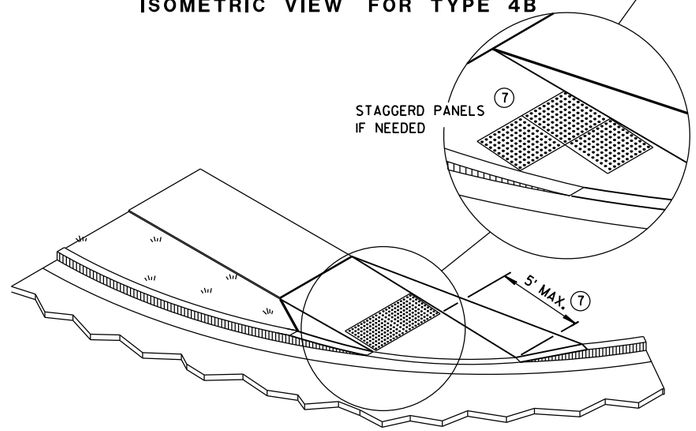
(7) WHEN THIS DISTANCE EXCEEDS 5 FEET, USE MULTIPLE DETECTABLE WARNING PANELS ACROSS THE RAMP AND STAGGER ADDITIONAL DETECTABLE WARNING PANEL(S) FORWARD TO REDUCE THIS DISTANCE.

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

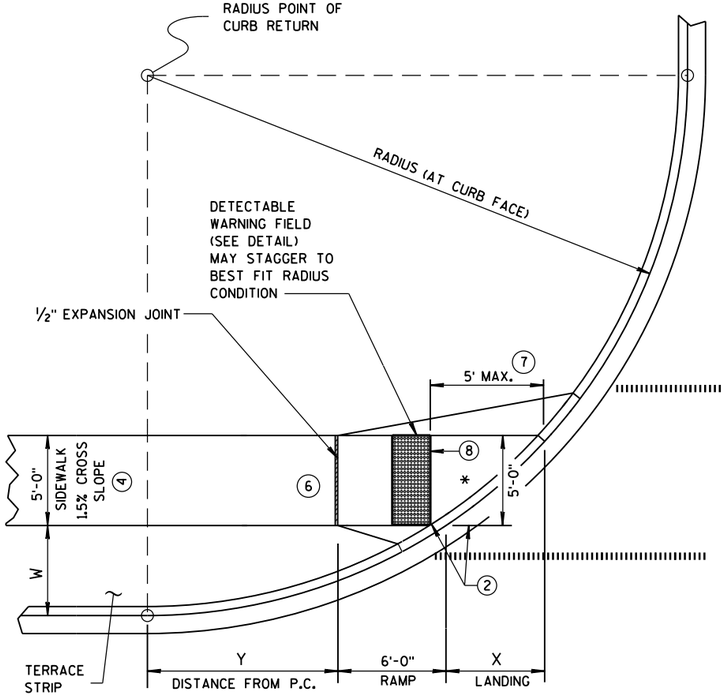
(10) INSTALL TRANSITION NOSE. (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.



ISOMETRIC VIEW FOR TYPE 4B



ISOMETRIC VIEW FOR TYPE 4B1



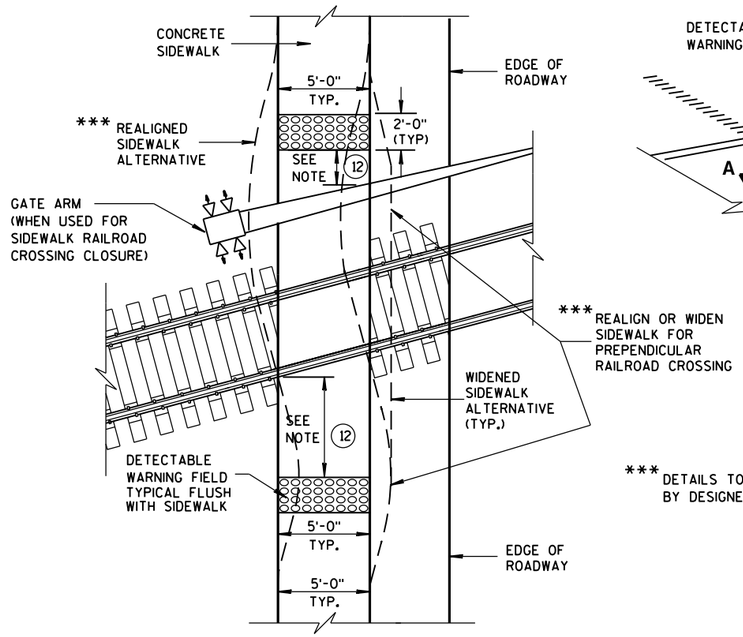
CURB RAMP TYPE 4B1
PLAN VIEW

CURB RAMPS
TYPE 4B AND 4B1

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

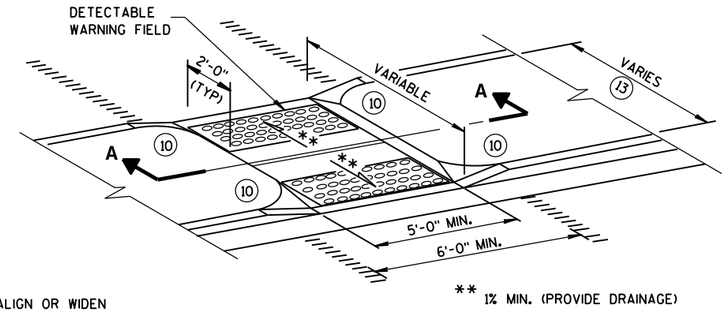
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S.D.D. 8 D 5-16d



TYPE 8
DETECTABLE WARNINGS AT RAILROAD CROSSING

*** DETAILS TO BE DETERMINED BY DESIGNER



** 1% MIN. (PROVIDE DRAINAGE)

MEDIAN ISLAND
NON-ELEVATED CROSSING
TYPE 5

GENERAL NOTES

SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.

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

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

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

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

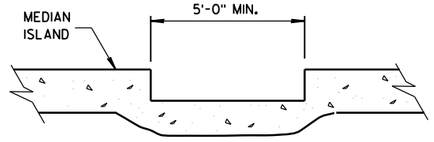
(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET (MINIMUM 4 FEET X 4 FEET).

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

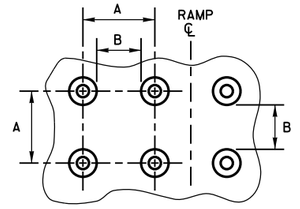
(11) SLOPE SIDEWALK TOWARD LANDING AS SHOWN WHERE THERE IS NO TERRACE OR WHERE THE TERRACE WIDTH IS LESS THAN 6 FEET WIDE.

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

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



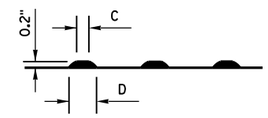
SECTION A-A



PLAN VIEW

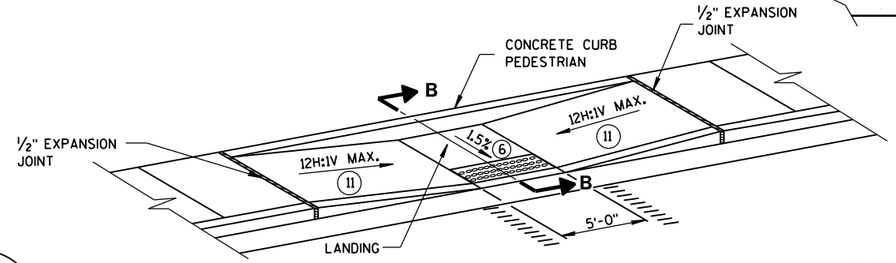
	MIN.	MAX.
A	1.6"	2.4"
B	0.65"	1.5"
C	*	*
D	0.9"	1.4"

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

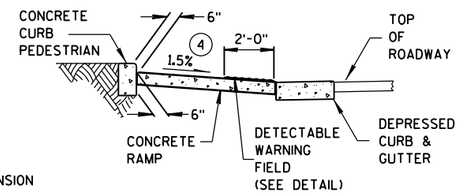


ELEVATION VIEW

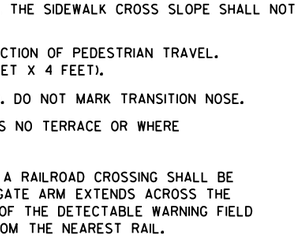
TRUNCATED DOMES
DETECTABLE WARNING PATTERN DETAIL



MID-BLOCK CROSSING
TYPE 7A



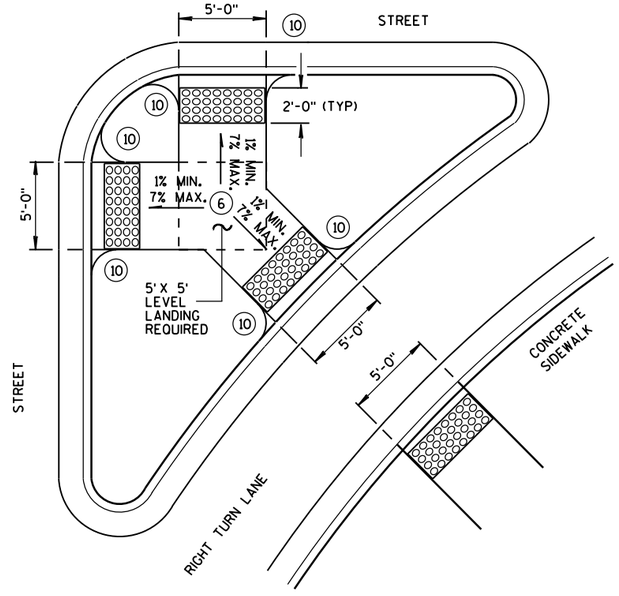
SECTION B-B



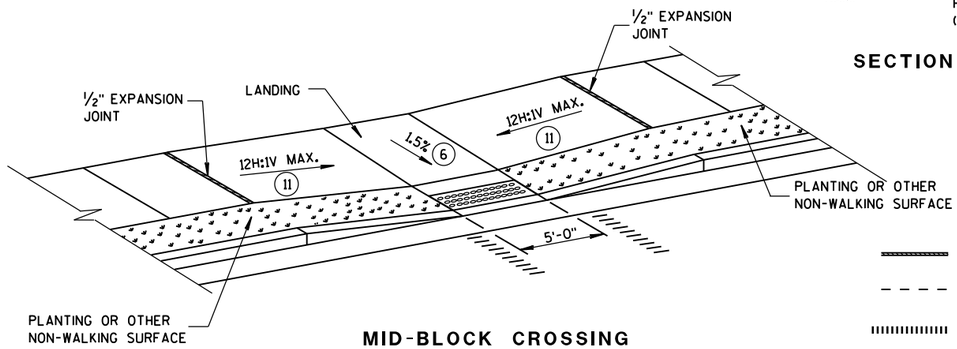
PLAN VIEW

DETECTABLE WARNING FIELD (TYPICAL)

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



TYPE 6
DETECTABLE WARNING AT ISLANDS



MID-BLOCK CROSSING
TYPE 7B

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

LEGEND

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

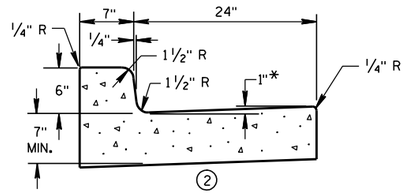
CURB RAMPS
TYPES 5, 6, 7A, 7B & 8

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

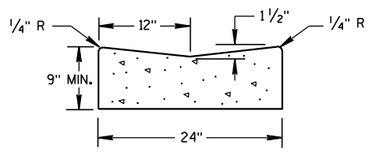
APPROVED
June, 2015 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA

6

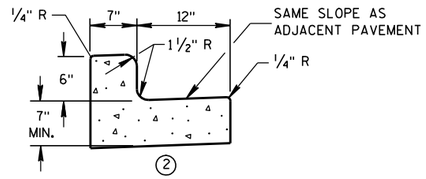
S.D.D. 8 D 5-16e



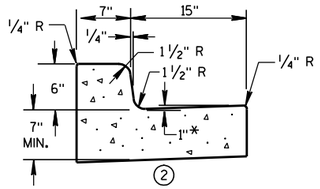
① CONCRETE CURB & GUTTER 31"



① CONCRETE GUTTER 24"

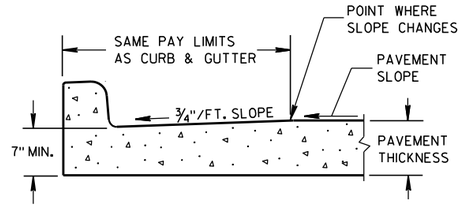


① CONCRETE CURB & GUTTER 19"



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

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.

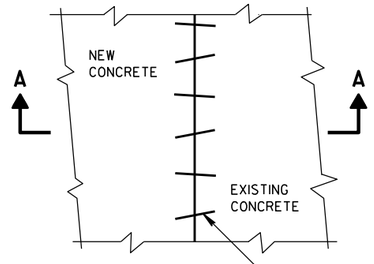
WHERE THE TRANSVERSE JOINTS IN THE PAVEMENT ARE REQUIRED TO BE SEALED, THE JOINTS IN THE INTEGRAL CURB AND GUTTER SHALL BE SEALED TO THE FACE OF CURB WITH THE SAME TYPE OF SEALANT. THE COST OF FURNISHING AND INSTALLING THIS SEALANT SHALL BE INCIDENTAL TO THE ITEM CONCRETE CURB AND GUTTER.

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" MIMIMUM GUTTER THICKNESS IS MAINTAINED.

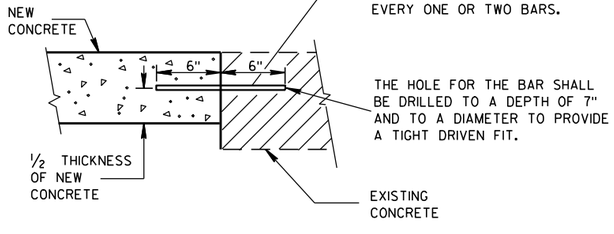
③ WHEN HIGH SIDE CURB SECTION IS REQUIRED, THE LOCATION(S) WILL BE NOTED ON THE PLAN.



PLAN VIEW

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

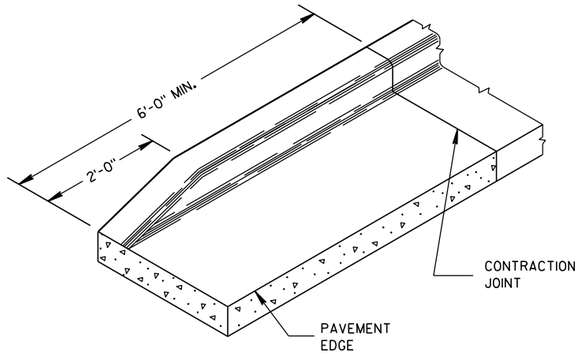
NO. 6 X 12" DEF. BARS SPACED 3'-0" C-C, INSTALLED ON 6:1 SKEW HORIZONTALLY. DIRECTION OF SKEW ALTERNATING AFTER EVERY ONE OR TWO BARS.



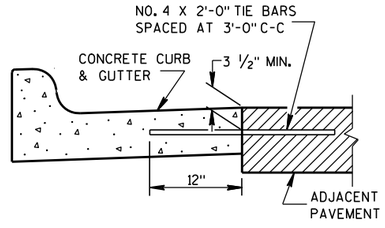
THE HOLE FOR THE BAR SHALL BE DRILLED TO A DEPTH OF 7" AND TO A DIAMETER TO PROVIDE A TIGHT DRIVEN FIT.

SECTION A-A

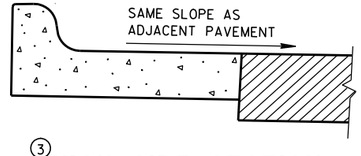
PAVEMENT TIES



END SECTION CURB & GUTTER



① TYPICAL TIE BAR LOCATION



③ HIGH SIDE SECTION

(TYPICAL FOR ALL CURB & GUTTER)

CONCRETE GUTTER, CURB AND GUTTER AND PAVEMENT TIES

(For Optional Use in Milwaukee Co. Only)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

11/2/2010 — DATE

/S/ Jerry Zogg — ROADWAY STANDARDS ENGINEER

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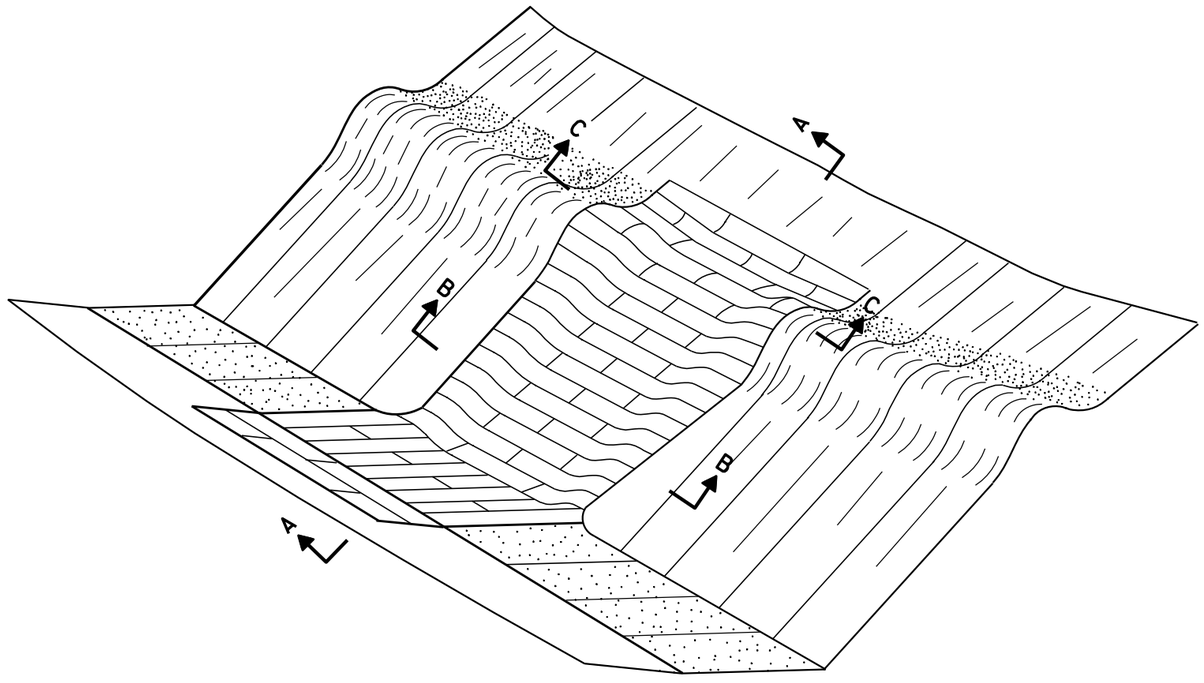
FHWA

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S.D.D. 8 D 16-10

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S.D.D. 8 D 16-10



PERSPECTIVE

BACKSLOPE WITH FLUME AND INTERCEPTING EMBANKMENT

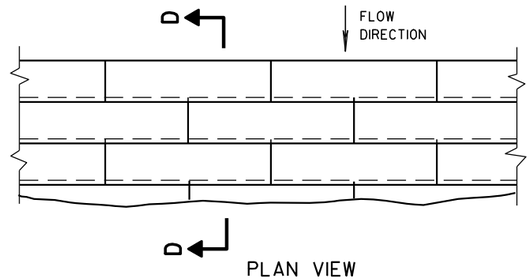
GENERAL NOTES

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

GRADING AND SHAPING INTERCEPTING EMBANKMENT WILL BE MEASURED AND PAID FOR IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS, SECTION 205, "ROADWAY AND DRAINAGE EXCAVATION".

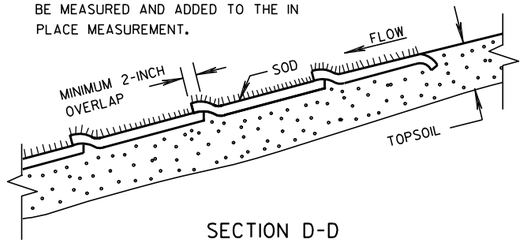
SOD STRIPS SHALL BE LAID TRANSVERSELY TO THE DIRECTION OF THE WATER FLOW.

DIMENSIONS SHALL BE ADJUSTED TO FIT SITE CONDITIONS AS DIRECTED BY THE ENGINEER.



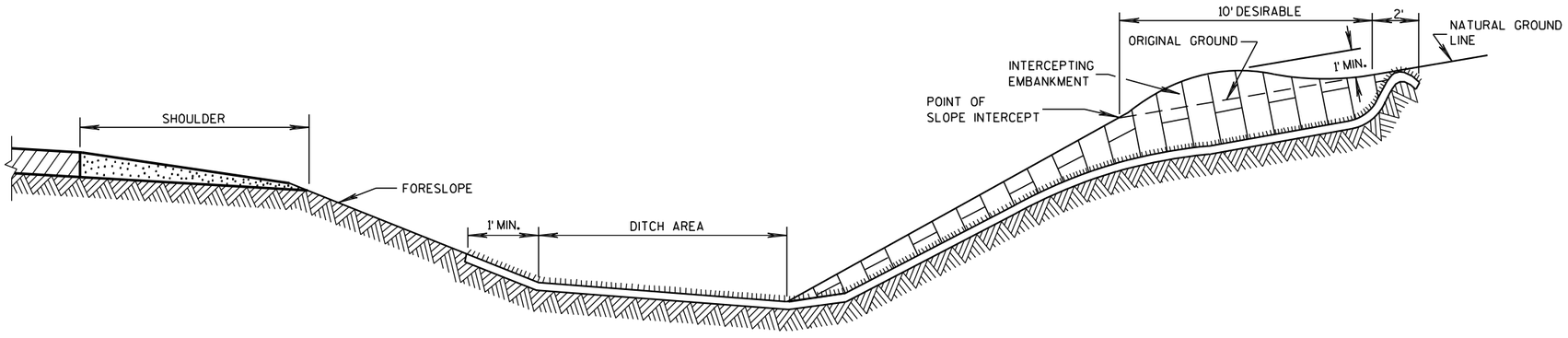
PLAN VIEW

NOTE:
SOD SHALL BE LAID AS SHOWN ON THE PLAN VIEW, AND AS DIRECTED BY THE ENGINEER. THE SOD OVERLAP WILL BE MEASURED AND ADDED TO THE IN PLACE MEASUREMENT.

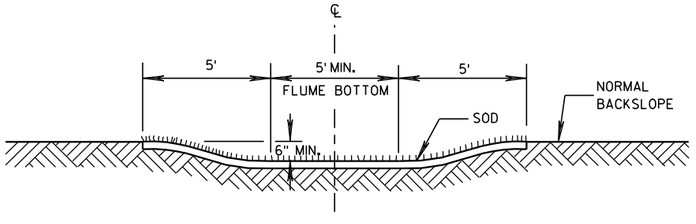


SECTION D-D

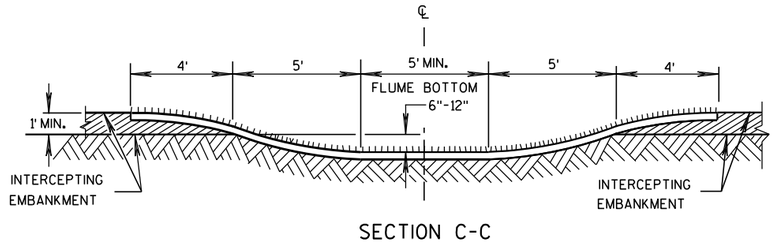
DETAIL FOR OVERLAP OF SOD STRIPS



SECTION A-A



SECTION B-B



SECTION C-C

SODDED BACKSLOPE FLUME AND INTERCEPTING EMBANKMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

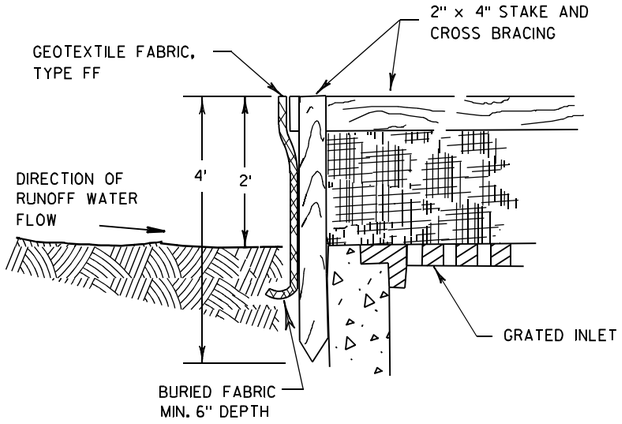
APPROVED
10/24/95 — DATE
/S/ Rory L. Rhinesmith — CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

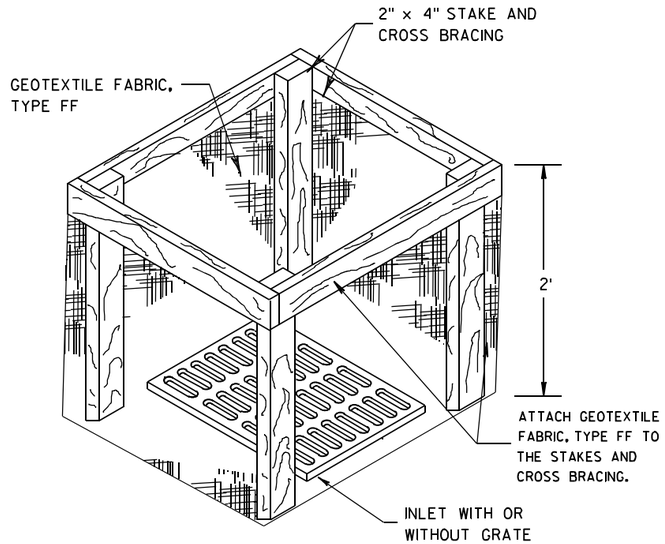
6

S.D.D. 8 E 5-2

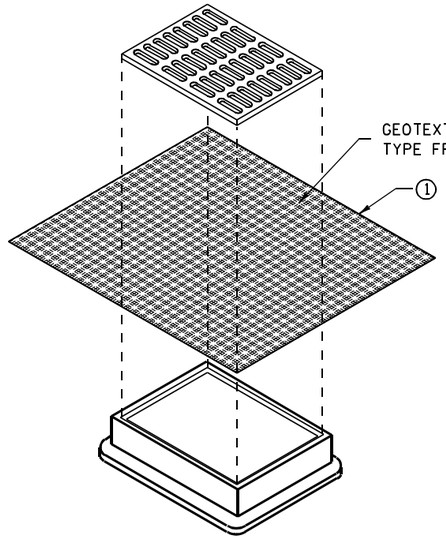
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S.D.D. 8 E 5-2



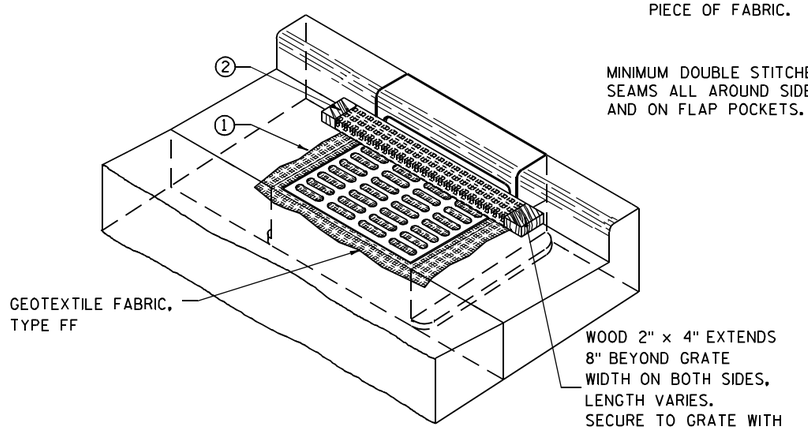


INLET PROTECTION, TYPE A

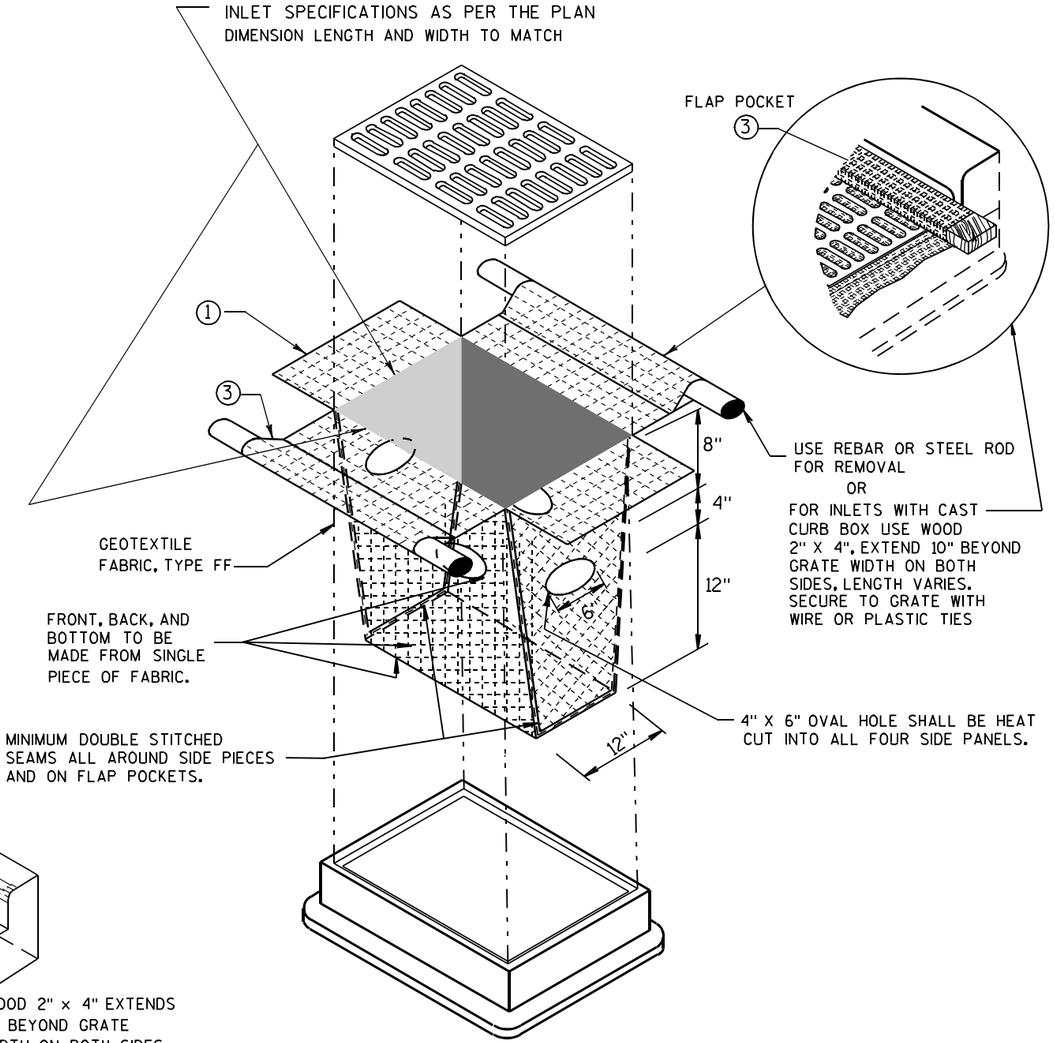


INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)

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



INLET PROTECTION, TYPE C (WITH CURB BOX)



INLET PROTECTION, TYPE D

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

GENERAL NOTES

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

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

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

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

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

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

INSTALLATION NOTES

TYPE B & C

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

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

TYPE D

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

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

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

INLET PROTECTION
TYPE A, B, C, AND D

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

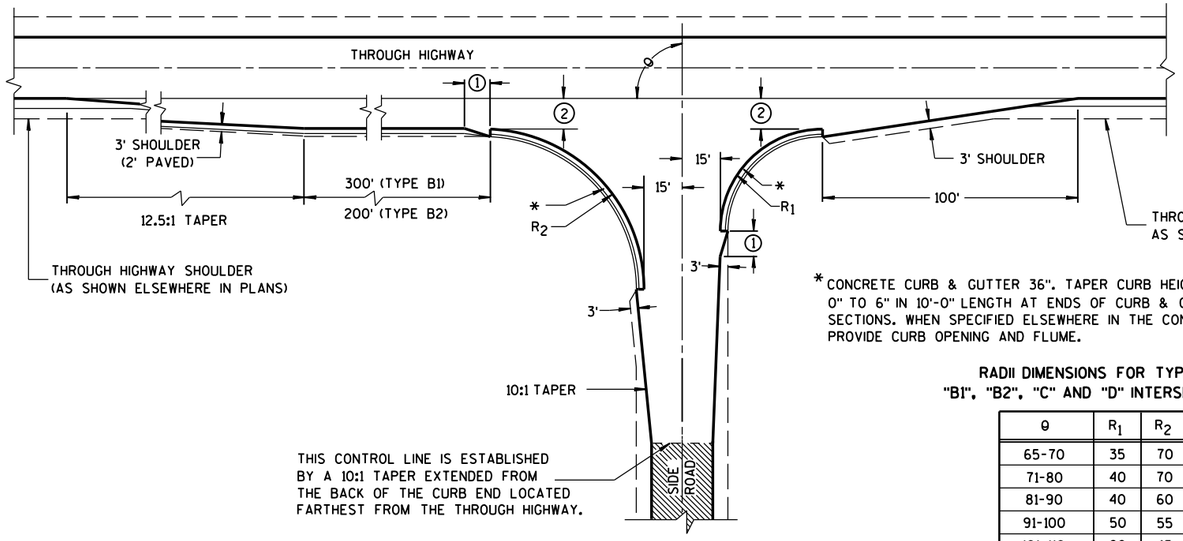
APPROVED
10/16/02
DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

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S.D.D. 8 E 10-2

6

S.D.D. 8 E 10-2

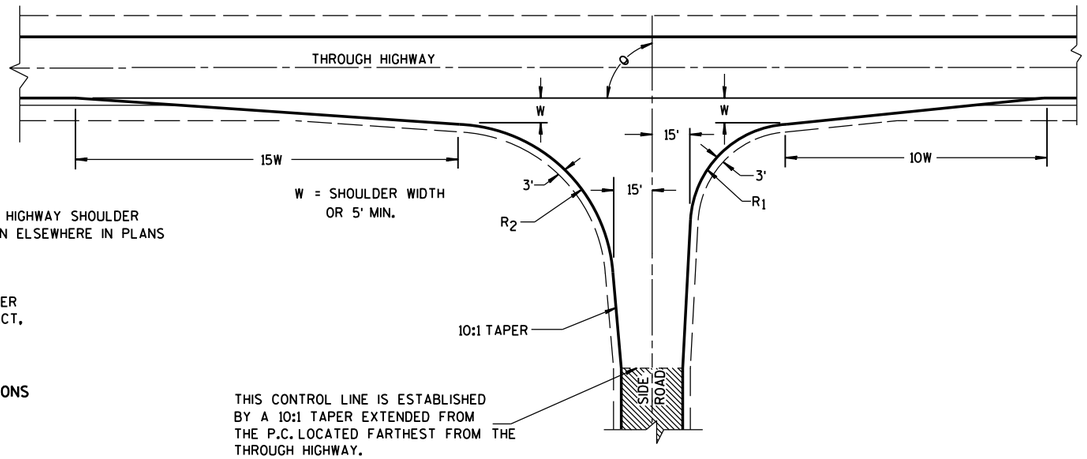


TYPE "B1" AND "B2"

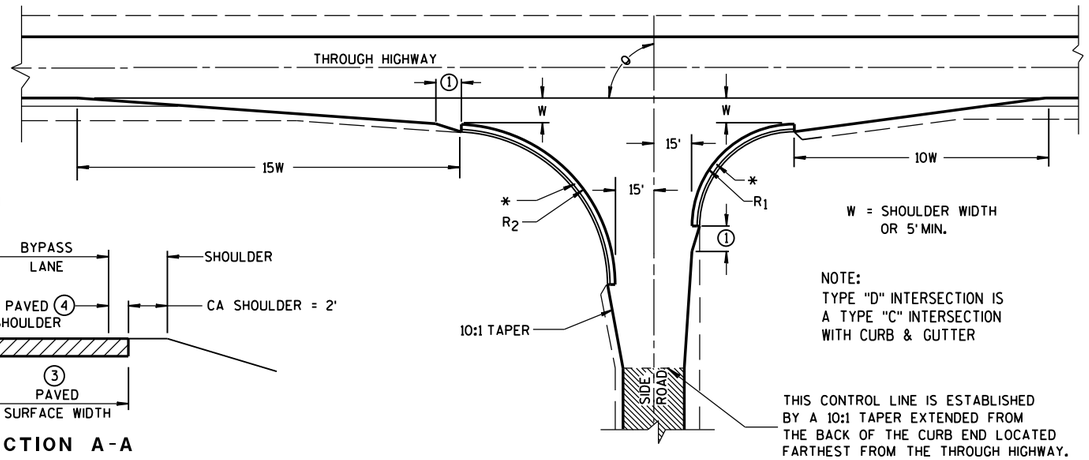
*CONCRETE CURB & GUTTER 36". TAPER CURB HEIGHT 0" TO 6" IN 10'-0" LENGTH AT ENDS OF CURB & GUTTER SECTIONS. WHEN SPECIFIED ELSEWHERE IN THE CONTRACT, PROVIDE CURB OPENING AND FLUME.

RADII DIMENSIONS FOR TYPES "B1", "B2", "C" AND "D" INTERSECTIONS

θ	R_1	R_2
65-70	35	70
71-80	40	70
81-90	40	60
91-100	50	55
101-110	60	45



TYPE "C"



TYPE "D"

GENERAL NOTES

DESIGNS MAY BE USED INTERCHANGEABLY IN COMBINATION OR SEPARATELY FOR ANY ONE COMPLETE INTERSECTION DEPENDING UPON INTERSECTION ANGLE AND SURFACING OF EACH APPROACH ROADWAY.

SIDE ROAD SURFACING NOTE

WHEN THE SIDE ROAD IS NOT PRESENTLY PAVED, PAVEMENT SHALL BE PLACED TO THE LIMITS SHOWN UNLESS OTHERWISE PROVIDED IN THE CONTRACT. WHERE THE CONSTRUCTION LIMITS ARE BEYOND THE PAVING LIMITS, CRUSHED AGGREGATE SURFACING SHALL BE PLACED BETWEEN THE PAVING LIMITS AND CONSTRUCTION LIMITS.

WHEN THE SIDE ROAD IS PRESENTLY PAVED, NEW PAVEMENT SHALL BE PLACED TO THE LIMITS OF DESIGN AS SHOWN AND BEYOND, IF NECESSARY, TO MEET EXISTING PAVEMENT.

WHEN THE SIDE ROAD IS THE CONSTRUCTION PROJECT, THE INTERSECTION SURFACING SHALL BE THE SAME AS FOR THE PROJECT.

EXISTING PAVED SURFACE

BYPASS LANE

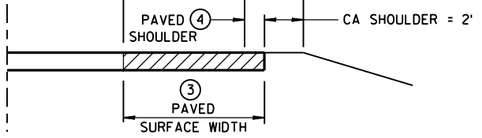
(1) 10-FT TYPICAL.

(2) 12-FT** PLUS ADDITIONAL WIDTH FOR BIKE LANE IF SHOWN ELSEWHERE IN THE PLAN.

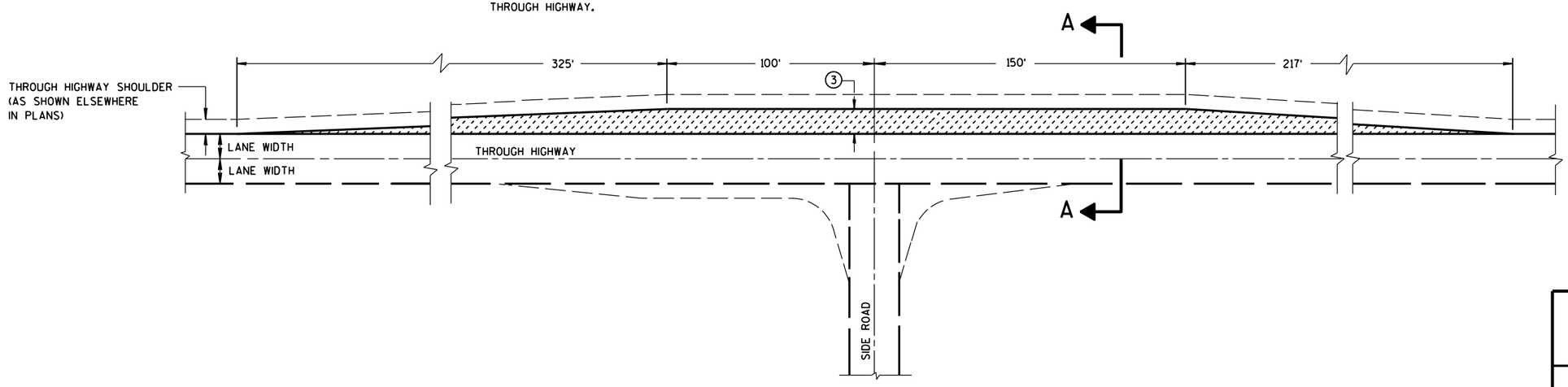
**10-FT MAY BE USED ON TYPE B2 ON RESURFACING PROJECTS IF SPECIFIED IN THE CONTRACT.

(3) BYPASS LANE PAVED SURFACE WIDTH OUTSIDE OF TRAVEL LANE
-ASPHALT = 12-FT PLUS PAVED SHOULDER WIDTH.
-PC CPNCRETE = 13-FT PLUS PAVED SHOULDER WIDTH.

(4) BYPASS LANE PAVED SHOULDER WIDTH = THE GREATER OF 1-FT OR THE PAVED SHOULDER WIDTH OF THE THROUGH HIGHWAY.



SECTION A-A
(SHOWING BYPASS LANE AND SHOULDER)

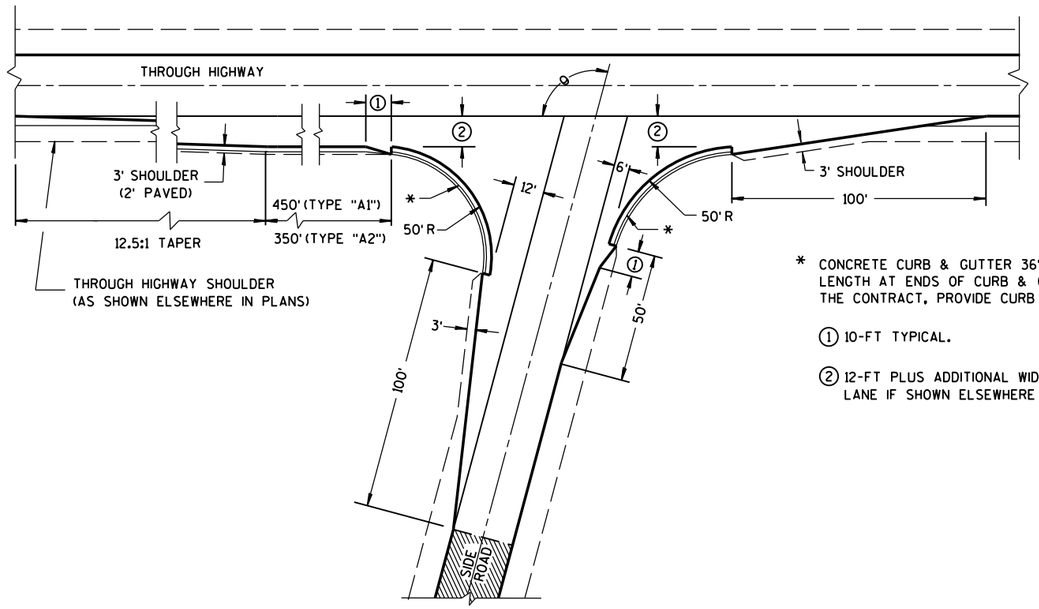


TEE INTERSECTION BYPASS LANE DETAIL

AT-GRADE SIDE ROAD INTERSECTION, TYPES "B1", "B2", "C" AND "D" AND TEE INTERSECTION BYPASS LANE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

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S.D.D. 9 A 1-13a



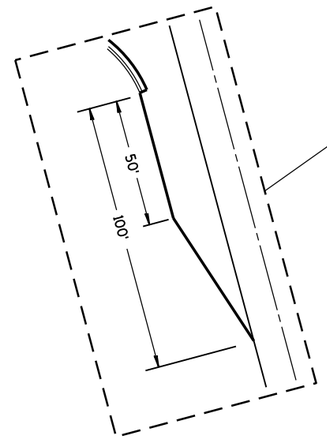
θ = MORE THAN 80°

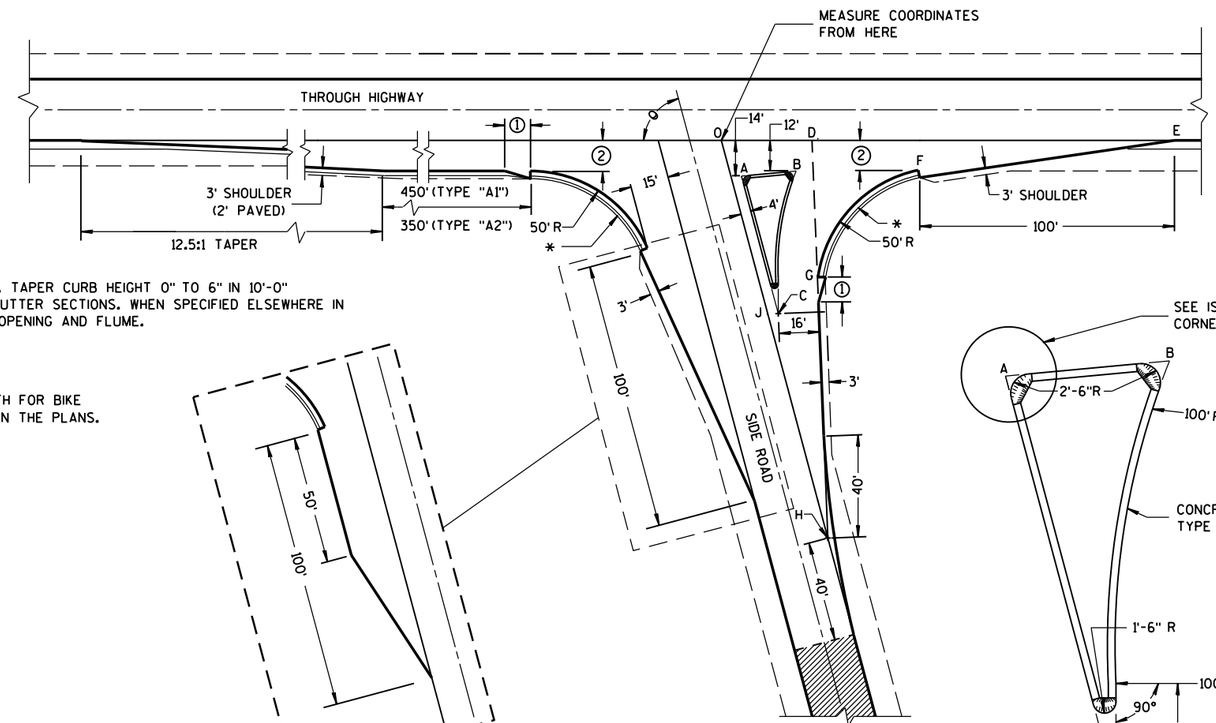
* CONCRETE CURB & GUTTER 36". TAPER CURB HEIGHT 0" TO 6" IN 10'-0" LENGTH AT ENDS OF CURB & GUTTER SECTIONS. WHEN SPECIFIED ELSEWHERE IN THE CONTRACT, PROVIDE CURB OPENING AND FLUME.

① 10-FT TYPICAL.

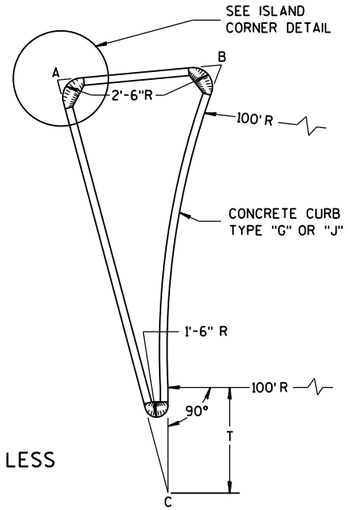
② 12-FT PLUS ADDITIONAL WIDTH FOR BIKE LANE IF SHOWN ELSEWHERE IN THE PLANS.

EXISTING PAVED SURFACE

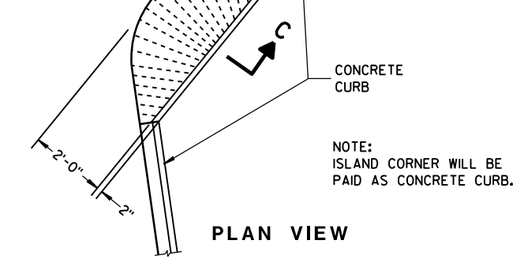




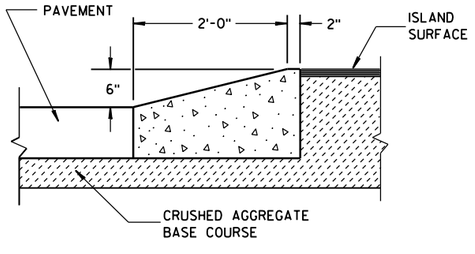
θ = ACUTE ANGLES 80° OR LESS



SIDE ROAD WIDENING AND TAPER REQUIRED WHERE
THE THROUGH HIGHWAY CARRIES TWO-WAY TRAFFIC
θ = ACUTE ANGLES 70° OR LESS



PLAN VIEW



SECTION C-C

ISLAND CORNER DETAIL

(TO BE CONSTRUCTED AT ALL ISLAND CORNERS)

TABLE OF DIMENSIONS FOR
VARIABLE SIDE ROAD INTERSECTION ANGLES
(INTERPOLATE VALUES FOR ANGLES NOT SHOWN)

ANGLE θ DEGREES	COORDINATES IN FEET (MEASURED FROM POINT "O") X / Y								LENGTH IN FEET				
	A	B	C	D	E	F	G	H	AB	AC	T	OJ	OH
60	12.7 / -14.0	44.9 / -12.0	46.4 / -72.4	41.9 / 0.0	205.0 / 0.0	104.6 / -12.0	64.0 / -75.5	85.0 / -147.1	32.3	67.4	4.9	85.9	169.9
65	10.9 / -14.0	39.0 / -12.0	37.8 / -71.6	39.4 / 0.0	196.1 / 0.0	95.7 / -12.0	54.1 / -71.5	70.5 / -151.3	28.2	63.6	8.5	80.9	166.9
70	9.4 / -14.0	33.9 / -12.0	29.8 / -70.1	37.4 / 0.0	188.3 / 0.0	87.8 / -12.0	45.6 / -67.5	56.1 / -154.2	24.6	59.7	11.5	76.1	164.1
75	7.9 / -14.0	29.3 / -12.0	22.3 / -67.9	35.7 / 0.0	181.2 / 0.0	80.7 / -12.0	38.2 / -63.4	41.8 / -155.9	21.5	55.8	13.8	71.4	161.4
80	6.5 / -14.0	25.4 / -12.0	15.6 / -65.2	34.4 / 0.0	174.8 / 0.0	74.4 / -12.0	31.8 / -59.3	27.6 / -156.5	18.9	52.0	15.6	66.9	158.9

TYPE "A1" & "A2" SIDE ROAD INTERSECTION DETAILS

AT-GRADE SIDE ROAD
INTERSECTION, TYPE "A1" & "A2"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
12/18/12 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

6
S.D.D. 9 A 1-13b

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).

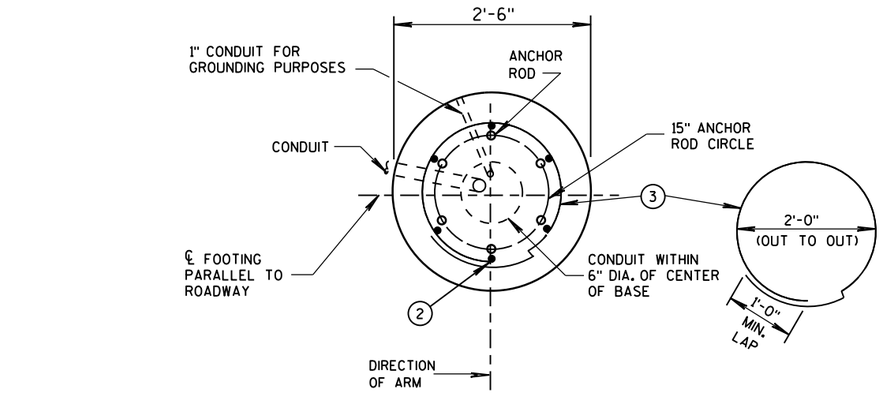
ANCHOR RODS SHALL BE INSTALLED WITH MISALIGNMENTS OF LESS THAN 1:40 FROM VERTICAL.

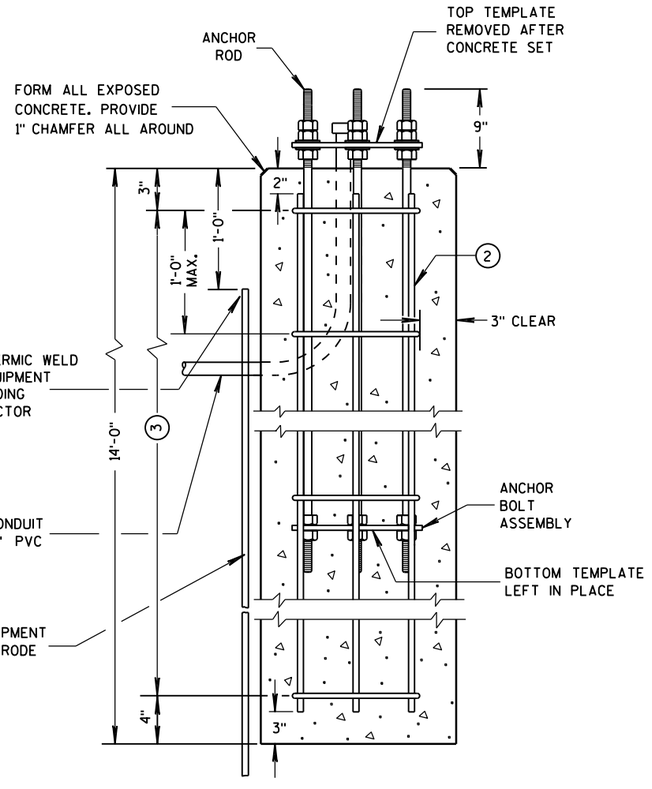
(1) THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE AND INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES. THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE THAT IS NOT INSTALLED BELOW THE TRAVELED WAY SHALL BE 18 INCHES. THE MAXIMUM DEPTH OF ALL CONDUIT SHALL BE 36 INCHES, (GREATER THAN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

(2) (6) NO. 6 X 13'-7" BAR STEEL REINFORCEMENT.

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

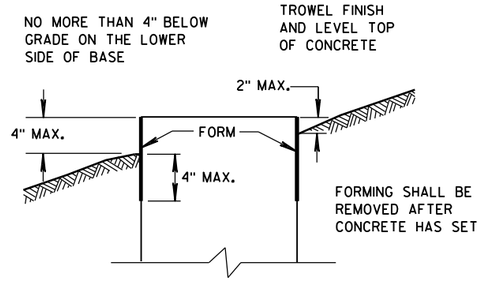
CONCRETE MASONRY	fc=3,500 p.s.i.
HIGH STRENGTH BAR STEEL REINFORCEMENT, GRADE 60	fy=60,000 p.s.i.
ANCHOR RODS, AASHTO M314 GRADE 55	fy=55,000 p.s.i.
TEMPLATES, ASTM, A709 GRADE 36	fy=36,000 p.s.i.



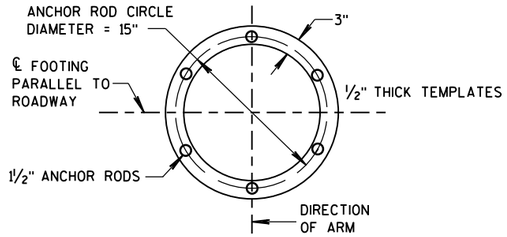


CONCRETE BASE TYPE 10
(FOR TYPE 9 & 10 POLES)

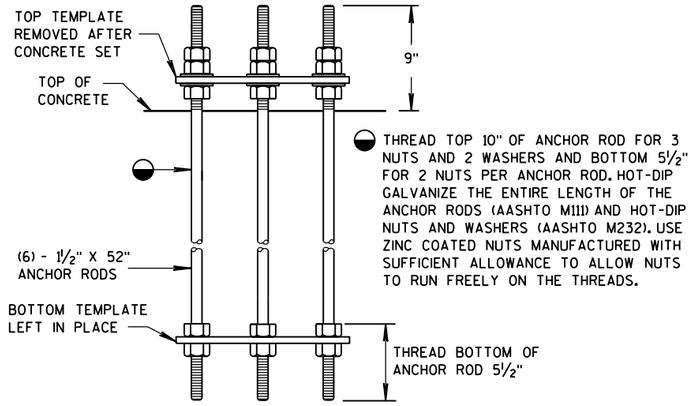
TO BE USED WHEN GROUND ELEVATION AT BASE EQUALS OR IS GREATER THAN HIGH POINT OF ROADWAY ELEVATION. SEE S.D.D. 9C13-2 WHEN GROUND ELEVATION AT BASE IS LOWER THAN HIGH POINT OF ROADWAY ELEVATION.



FORMING DETAIL



TOP AND BOTTOM TEMPLATES



ANCHOR BOLT ASSEMBLY DETAIL

CONCRETE BASE TYPE 10
ANCHOR ASSEMBLY

QUANTITY REQUIREMENTS	
APPROX. CUBIC YARDS OF CONCRETE	2.5
LBS. OF HOOP BAR STEEL	69
LBS. OF VERTICAL BAR STEEL	122

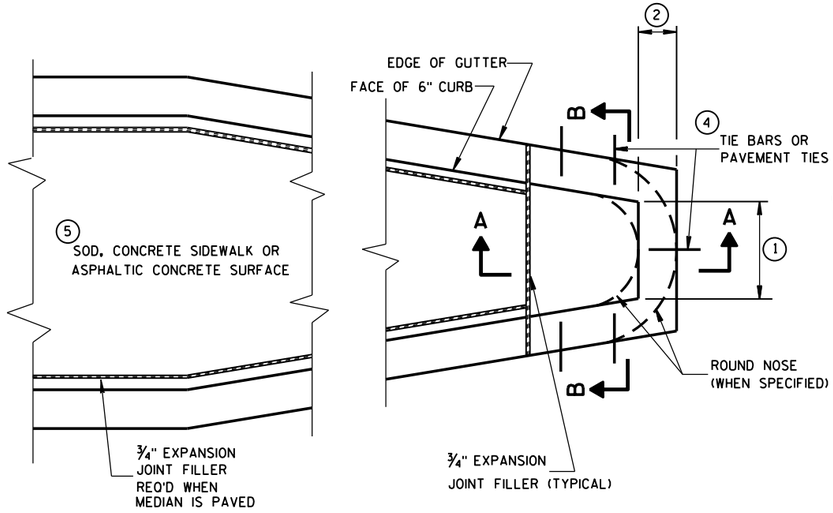
CONCRETE BASE TYPE 10

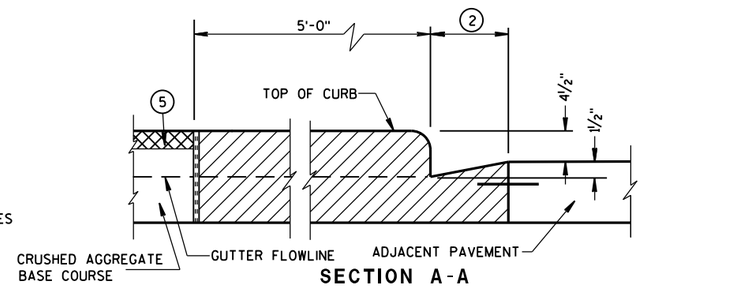
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

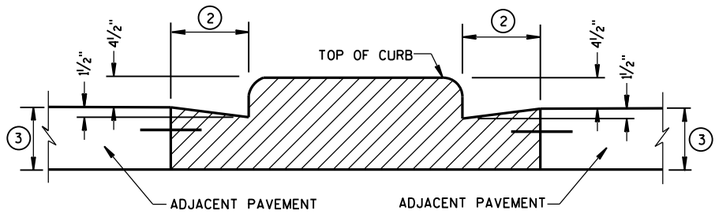
APPROVED
Sept., 2015 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL
FHWA

6

S.D.D. 9 C 11-8







CONCRETE MEDIAN BLUNT NOSE DETAIL

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.

(1) SEE PLAN FOR MEDIAN NOSE WIDTH AND RADIUS (FOR ROUND NOSE ALTERNATE).

(2) WIDTH OF GUTTER TO MATCH EXISTING ADJACENT GUTTER OR AS SPECIFIED ELSEWHERE IN THE PLAN.

(3) DEPTH EQUAL TO ADJACENT PAVEMENT. ADJACENT PAVEMENT STRUCTURE DETAILS ARE SHOWN ON THE PLAN. TYPICAL OPTIONS ARE:

(1) NEW OR EXISTING CONCRETE PAVEMENT.

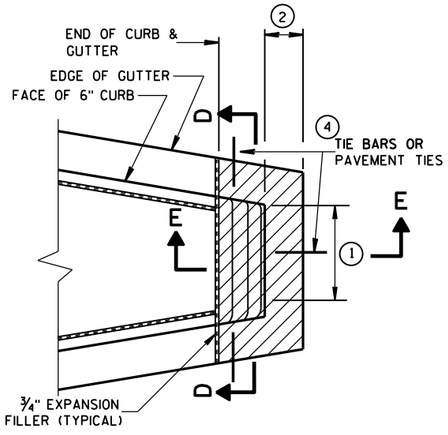
(2) ASPHALTIC CONCRETE PAVEMENT OVER NEW OR EXISTING CONCRETE BASE COURSE.

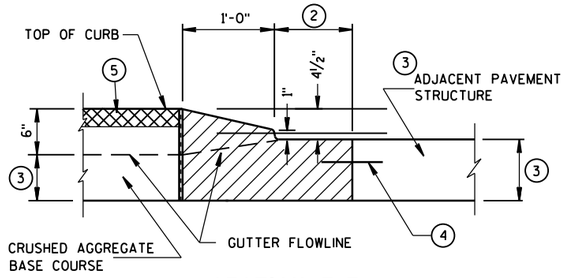
(3) ASPHALTIC CONCRETE PAVEMENT OVER CRUSHED AGGREGATE BASE COURSE.

(4) TIE BARS OR PAVEMENT TIES REQUIRED IN NEW CONCRETE PAVEMENT OR CONCRETE BASE COURSE. TIE BARS SHALL BE NO. 4 X 2'-0" SPACED AT 2'-0" C-C.

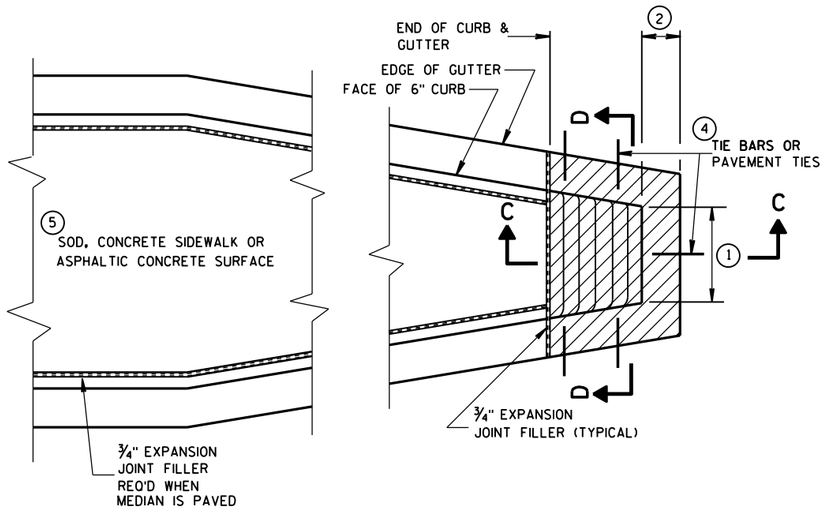
PAVEMENT TIES REQUIRED IN EXISTING CONCRETE BASE COURSE. PAVEMENT TIES SHALL BE NO. 6 X 1'-0" SPACED AT 3'-0" C-C INSTALLED ON A HORIZONTAL SKEW OF 6:1. THE DIRECTION OF SKEW SHALL ALTERNATE AFTER EVERY ONE OR TWO BARS.

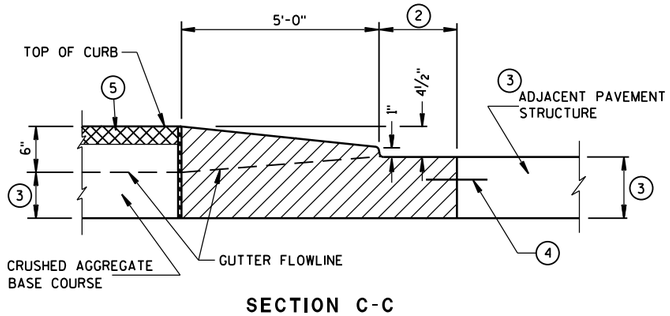
(5) SURFACE TYPE AND DETAILS ARE SHOWN ELSEWHERE IN THE PLAN.



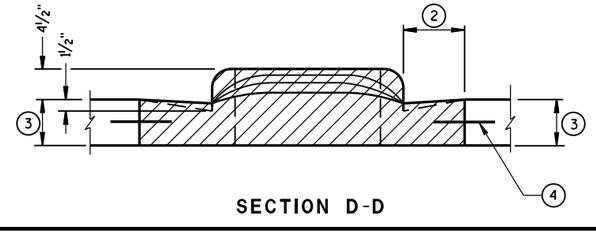


CONCRETE MEDIAN SLOPED NOSE TYPE 2





CONCRETE MEDIAN SLOPED NOSE TYPE 1



CONCRETE MEDIAN NOSE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/8/2006 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS DEVELOPMENT ENGINEER

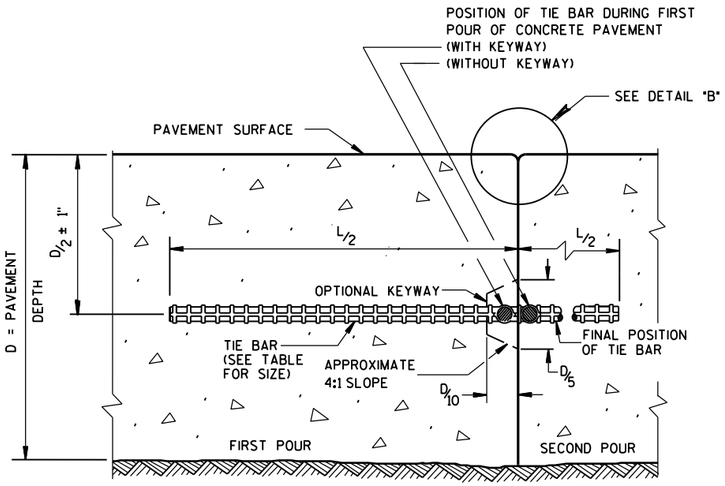
FHWA

6

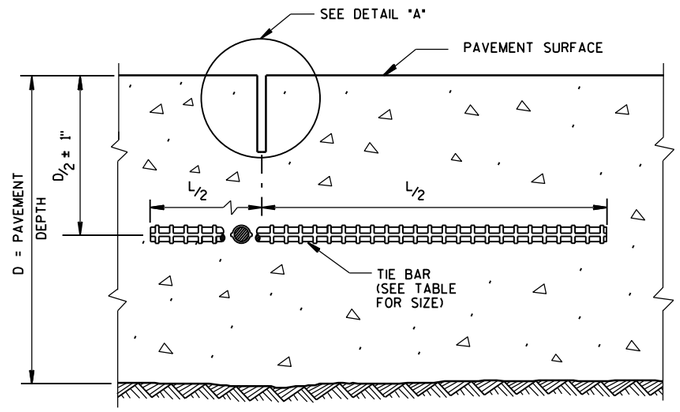
S.D.D. 11 B 2-2

6

S.D.D. 11 B 2-2



CONSTRUCTION JOINT



SAWED JOINT

GENERAL NOTES

DO NOT SEAL OR FILL LONGITUDINAL JOINTS.

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

CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

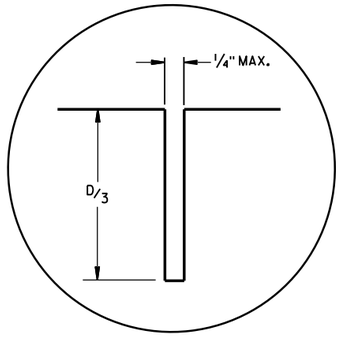
(1) ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

(2) PAVEMENT THAT WAS IN PLACE PRIOR TO THE CONTRACT.

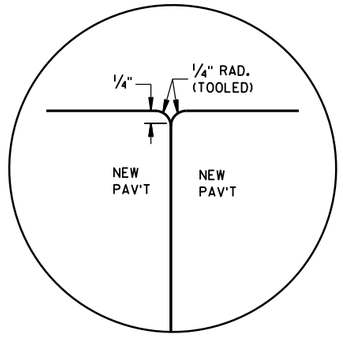
PLAN VIEW

SECTION A-A

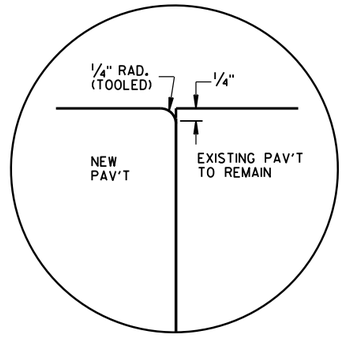
LONGITUDINAL CONSTRUCTION JOINT TIE BARS ANCHORED INTO EXISTING PAVEMENT



DETAIL "A"



DETAIL "B"



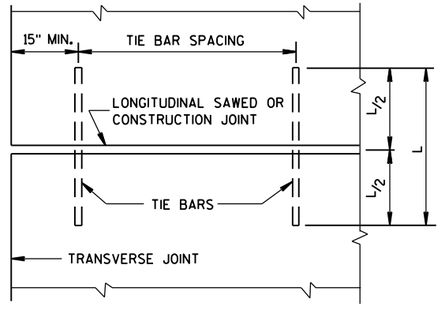
DETAIL "C"

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" MINUMUM SPACING FROM TRANSVERSE JOINTS; SPACING BETWEEN TIE BARS WILL BE 30" AT TRANSVERSE JOINTS.



PLAN VIEW
SHOWING LOCATION OF TIE BARS

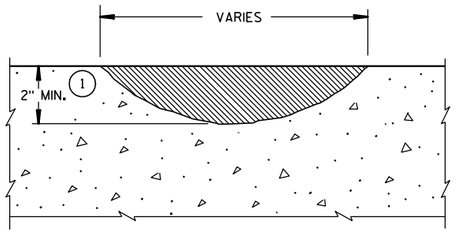
CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

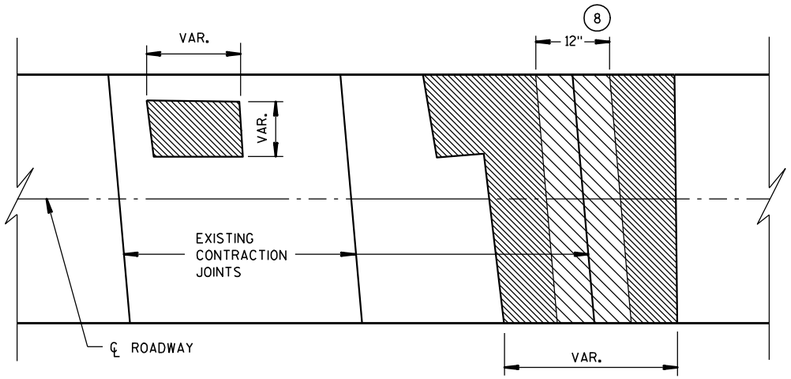
APPROVED
June, 2015 — DATE
/S/ Peter Kemp, P.E. — PAVEMENT SUPER
FHWA

6

S.D.D. 13 C 1-18

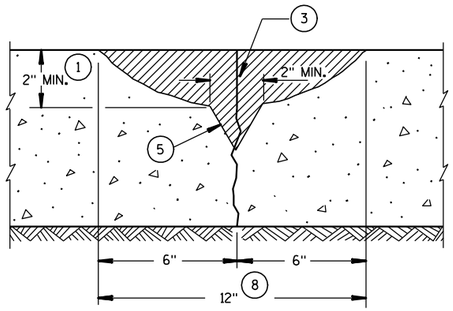


PROFILE VIEW

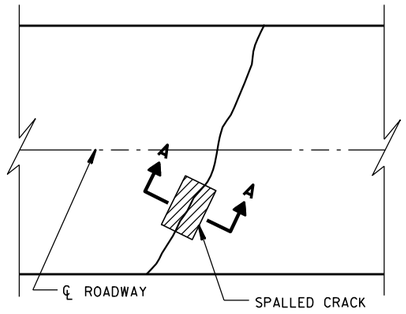


PLAN VIEW

SURFACE REPAIR



SECTION A-A

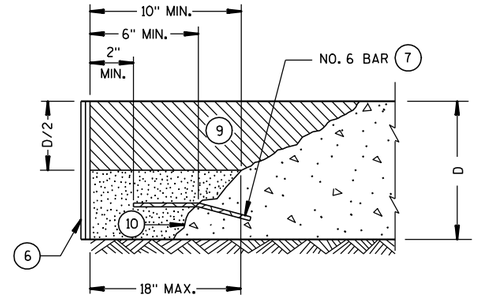


PLAN VIEW

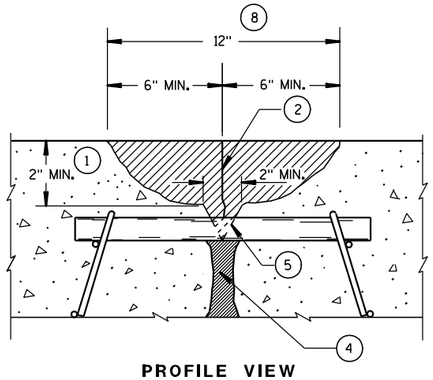
CRACK REPAIR

GENERAL NOTES

1. REMOVE ALL CONCRETE, TO LIMITS SHOWN, TO A MAXIMUM OF ½ THE PAVEMENT DEPTH OR TOP OF DOWELS.
2. IF REPAIR IS DEEPER THAN ANTICIPATED SAWCUT, COMPRESSION RELIEF MATERIAL MUST BE USED. THE THICKNESS OF COMPRESSION RELIEF MATERIAL MUST BE EQUAL TO OR GREATER THAN THE WIDTH OF THE JOINT OR CRACK (1/4"). THIS MATERIAL SHOULD EXTEND FULL DEPTH OF THE REPAIR.
3. COMPRESSION RELIEF MATERIAL MUST BE USED. THE THICKNESS OF COMPRESSION RELIEF MATERIAL MUST BE EQUAL TO OR GREATER THAN THE WIDTH OF THE JOINT OR CRACK (1/4"). THIS MATERIAL SHOULD EXTEND FULL DEPTH OF THE REPAIR.
4. CLEAN, DRY SAND WHEN NECESSARY.
5. REMOVE UNSOUND MATERIAL BY CHIPPING AT 1:1 SLOPE.
6. ¼" MINIMUM PREFORMED JOINT FILLER IF ADJACENT TO CONCRETE. EDGING REQUIRED. FULLY FORMED EDGE IF ADJACENT TO SHOULDER.
7. PAVEMENT TIES AS SHOWN. ALL EMBEDMENTS 6" MINIMUM AND INSTALLED WITH GROUT.
8. OVER 12" (NOMINAL WIDTH) WILL BE PAID AS SURFACE REPAIR.
9. PAID AS JOINT OR CRACK REPAIR.
10. FULL-DEPTH ADJUSTMENT SHALL BE CHIPPED TO BOTTOM OF PCC PAVEMENT AT 1:1 SLOPE.
11. BEYOND 18" WILL BE PAID AS SURFACE REPAIR.

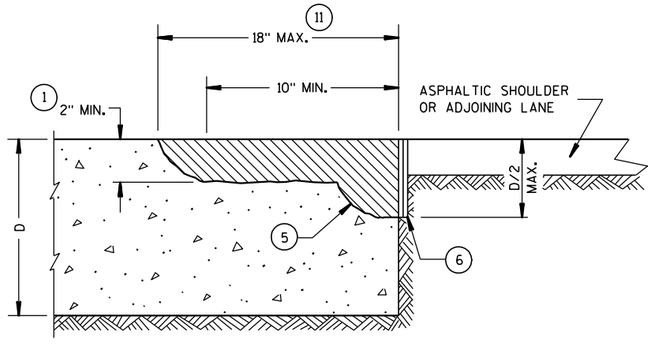


PROFILE VIEW

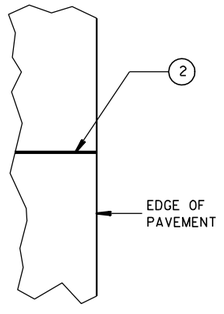


PROFILE VIEW

JOINT REPAIR

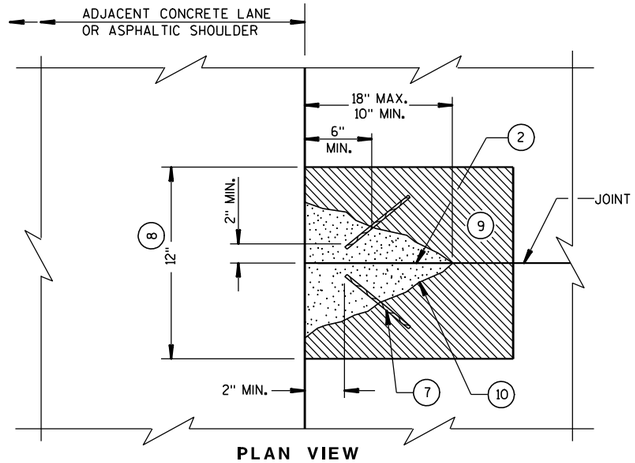


PROFILE VIEW



PLAN VIEW

EDGE REPAIR



PLAN VIEW

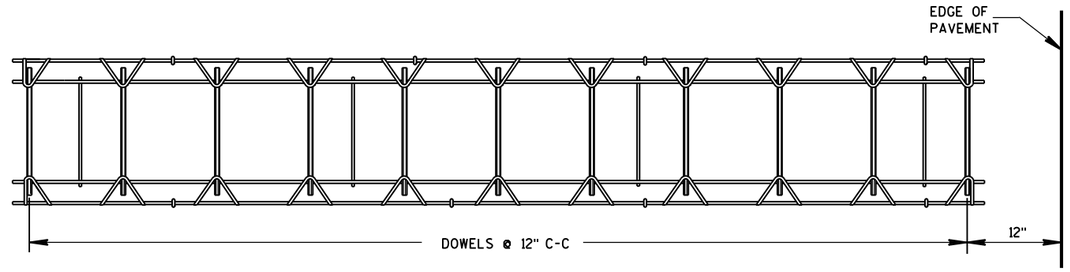
FULL DEPTH REPAIR ADJUSTMENT

CONCRETE PAVEMENT PARTIAL DEPTH REPAIR

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
3/21/03 DATE
/S/ Bill Duckett PAVEMENT ENGR
FHWA

6
S.D.D. 13 C 8-2

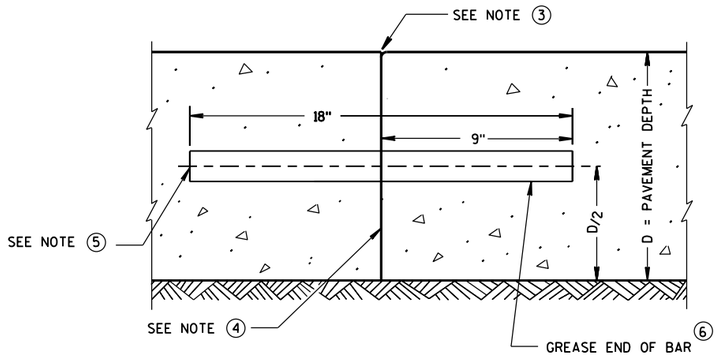


PLAN VIEW

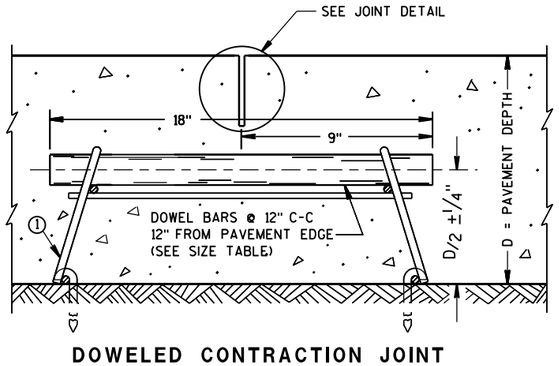


SIDE VIEW

CONTRACTION JOINT DOWEL ASSEMBLY ①



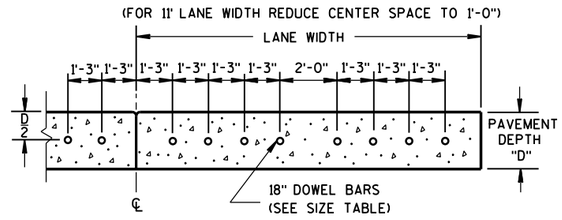
TRANSVERSE CONSTRUCTION JOINT



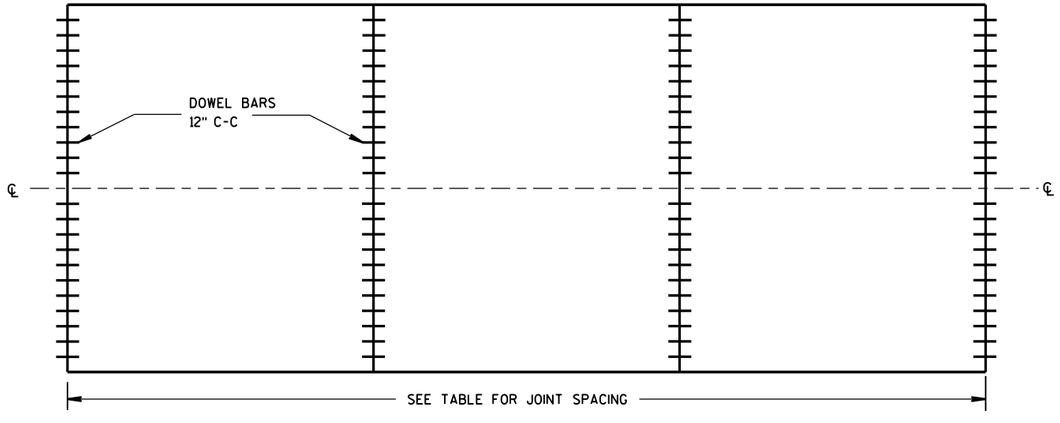
DOWELED CONTRACTION JOINT

PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER	CONTRACTION JOINT SPACING
5 ½", 6", 6 ½"	NONE	12'
7", 7 ½"	1"	14'
8", 8 ½"	1 ¼"	15'
9", 9 ½"	1 ¼"	15'
10" & ABOVE	1 ½"	15'



DRILLED DOWEL BAR CONSTRUCTION JOINT ⑦



CONTRACTION JOINT LOCATIONS

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.

① **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.**

② 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.

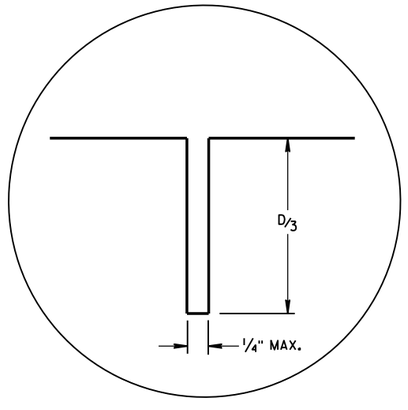
③ FORM OR SAW CONSTRUCTION JOINTS. PROVIDE A ¼-INCH RADIUS AT FORMED JOINTS.

④ PROVIDE A SMOOTH VERTICAL FACE FOR THE ENTIRE DEPTH OF THE PAVEMENT WHEN FORMING CONSTRUCTION JOINTS.

⑤ 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.

⑥ APPLY A THIN UNIFORM COATING OF SURFACE TREATMENT TO THE FREE END OF DOWEL BARS TO PREVENT BONDING.

⑦ ANCHOR DOWEL BARS INTO DRILLED HOLES WITH AN EPOXY. MAXIMUM DRILLED HOLE SIZE IS ⅛-INCH GREATER THAN DOWEL BAR DIAMETER, 9 INCHES IN LENGTH.



JOINT DETAIL

URBAN DOWELED CONCRETE PAVEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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S.D.D. 13 C 13-8

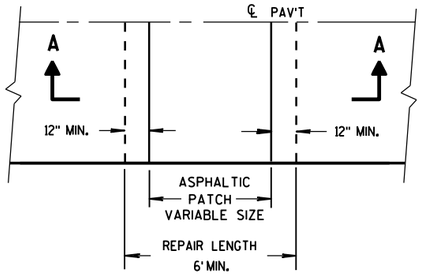
GENERAL NOTES

SAW CUT, DRILL, AND LIFT OUT EXISTING CONCRETE PAVEMENT WITHIN THE BOUNDARIES OF CONCRETE REPAIR AREAS. THE CONTRACTOR MAY MAKE ADDITIONAL SAW CUTS INSIDE THE REPAIR LIMITS TO REDUCE WEIGHT AND SIZE OF CONCRETE PIECES.

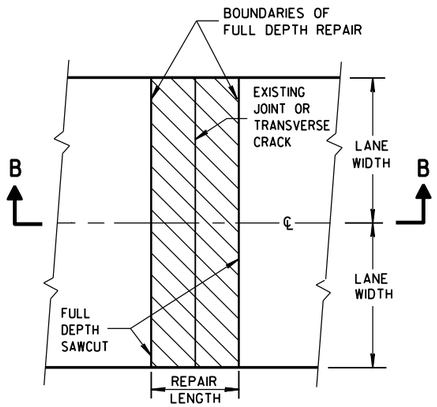
PROVIDE 6-FOOT MINIMUM DISTANCE FROM BOUNDARIES OF CONCRETE REPAIR AREAS TO ADJACENT TRANSVERSE JOINT OR CRACK.

THE LENGTH OF THE REPAIRS MAY VARY FROM THE DIMENSIONS SHOWN IF THE EXISTING CONCRETE PAVEMENT IS NONDOWELED AND THE PAVEMENT IS TO BE OVERLAID AFTER REPAIRING.

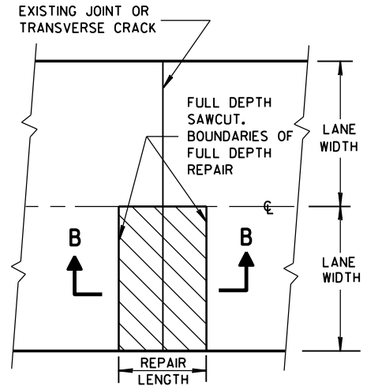
(1) DOWEL BARS MIGHT NOT EXIST.



PLAN VIEW

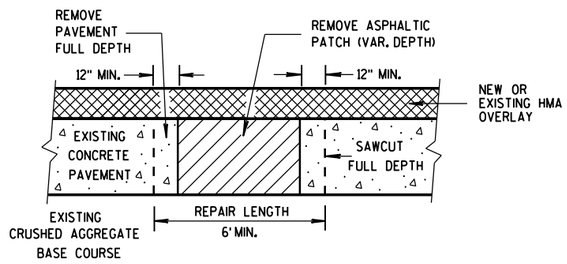


PLAN VIEW
(DOUBLE LANE REPAIR)



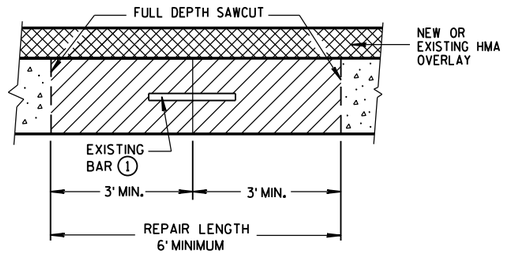
PLAN VIEW
(SINGLE LANE REPAIR)

FULL DEPTH CONCRETE PAVEMENT REMOVAL



SECTION A-A

HMA PATCH REMOVAL



SECTION B-B

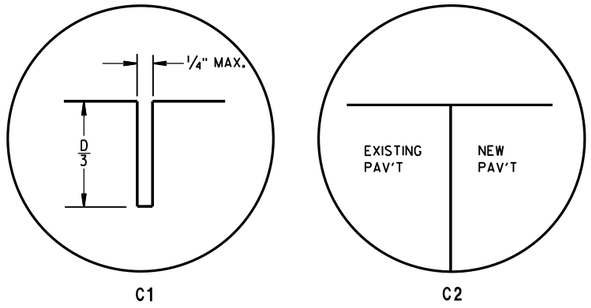
CONCRETE REMOVAL

BASE PATCHING CONCRETE

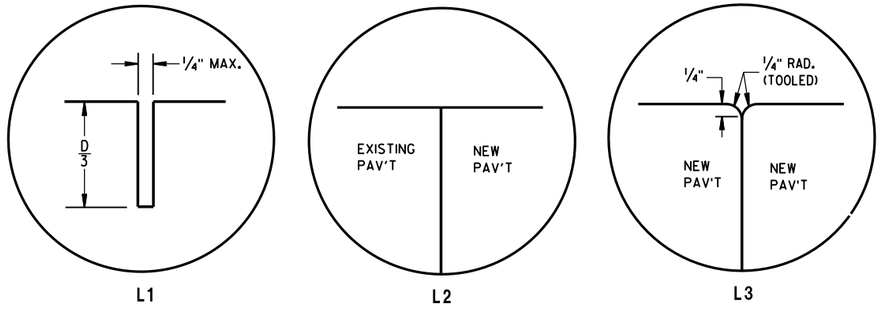
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

S.D.D. 13 C 14-6a

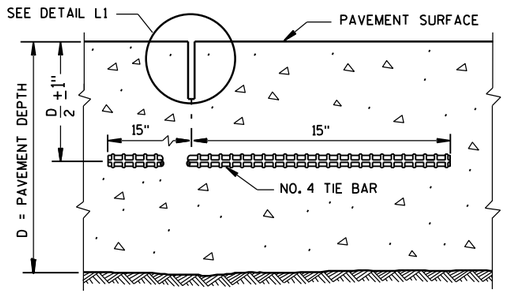
S.D.D. 13 C 14-6a



TRANSVERSE JOINTS

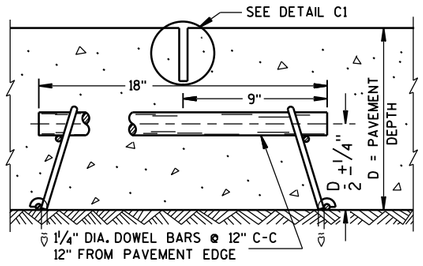


LONGITUDINAL JOINTS



SECTION C-C

SAWED LONGITUDINAL JOINT



SECTION F-F

CONTRACTION JOINT

GENERAL NOTES

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

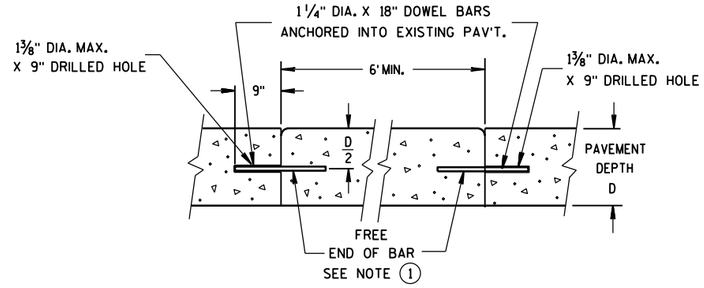
CONCRETE BASE PATCHES OF EXISTING NONDOWELED CONCRETE PAVEMENTS DO NOT NEED TO BE DOWELED.

DO NOT SEAL OR FILL JOINTS.

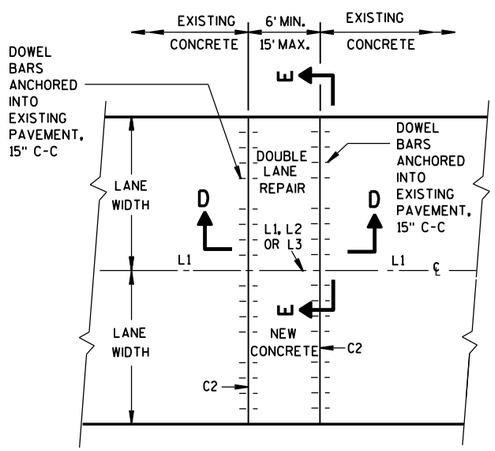
ANCHOR DOWEL BARS AND TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

PROVIDE A MINIMUM DISTANCE OF 15 INCHES FROM AN EXISTING TRANSVERSE JOINT OR THE EDGE OF REPLACEMENT TO THE CENTER OF THE TIE BAR NEAREST THAT JOINT OR EDGE.

(1) APPLY A THIN UNIFORM COATING OF SURFACE TREATMENT TO THE FREE END OF DOWEL BARS TO PREVENT BONDING.

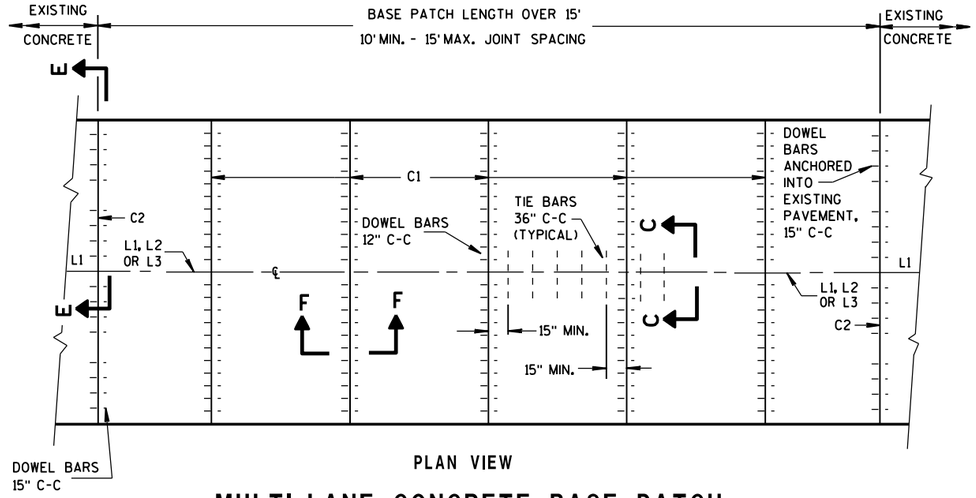


SECTION D-D



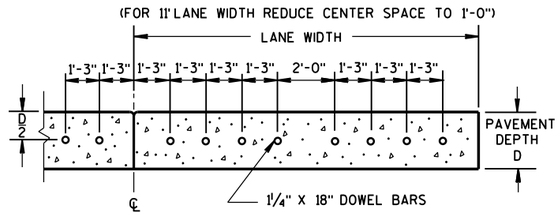
PLAN VIEW

MULTI-LANE CONCRETE BASE PATCH 15' MAXIMUM LENGTH



PLAN VIEW

MULTI-LANE CONCRETE BASE PATCH GREATER THAN 15' IN LENGTH



SECTION E-E

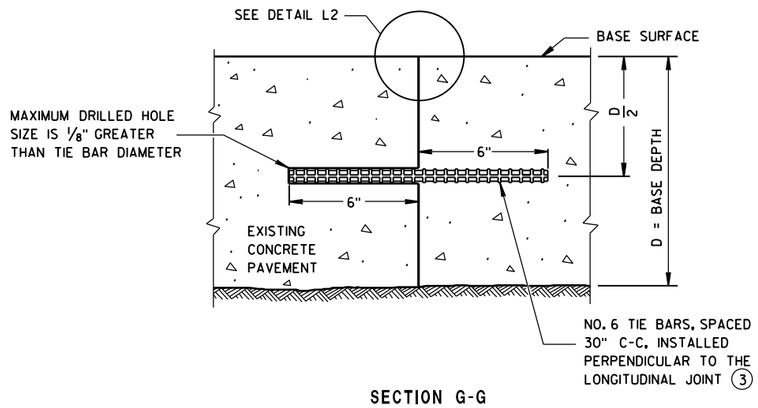
SPACING OF DOWEL BARS ANCHORED INTO EXISTING PAVEMENT

BASE PATCHING CONCRETE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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S.D.D. 13 C 14-6b



SECTION G-G

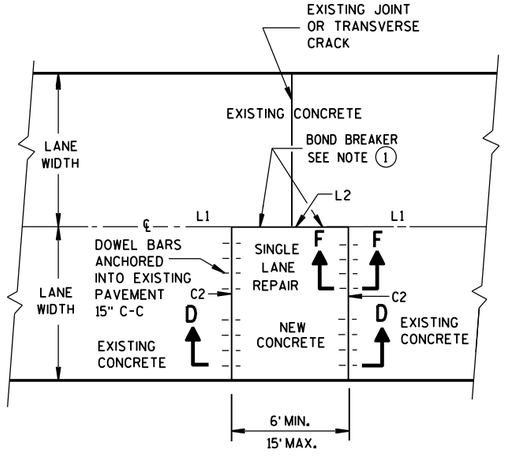
TIE BARS ANCHORED INTO EXISTING PAVEMENT

GENERAL NOTES

(1) USE AN ENGINEER-APPROVED BOND BREAKER (E.G. RELEASE AGENT, CURING COMPOUND) FOR SINGLE LANE BASE PATCHES UP TO 15 FEET IN LENGTH.

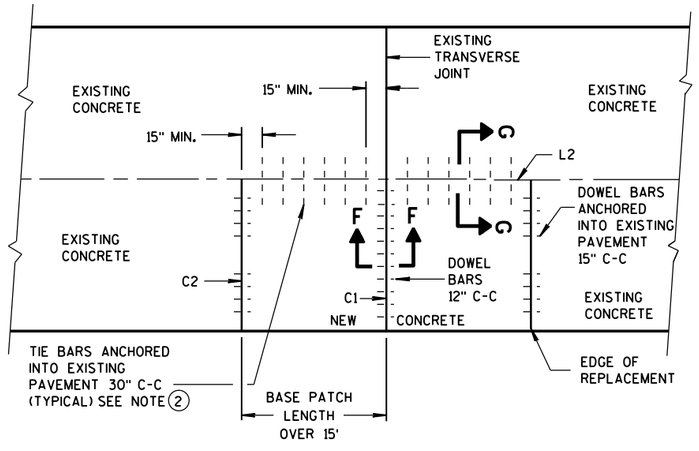
(2) WITH THE APPROVAL OF THE ENGINEER, FOR SINGLE LANE PAVEMENT REPLACEMENTS LESS THAN 30 FEET IN LENGTH, DRILLED TIE BARS MAY BE INSTALLED ON 6:1 SKEW HORIZONTALLY, DIRECTION OF SKEW ALTERNATING WITH EACH SUCCESSIVE BAR. DRIVE SKEWED TIE BARS TO A DEPTH OF 6 INCHES IN A HOLE OF SUCH A DIAMETER AS TO PROVIDE A TIGHT DRIVEN FIT.

(3) ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.



PLAN VIEW

SINGLE LANE CONCRETE BASE PATCH 15' MAXIMUM LENGTH



PLAN VIEW

SINGLE LANE CONCRETE BASE PATCH GREATER THAN 15' IN LENGTH

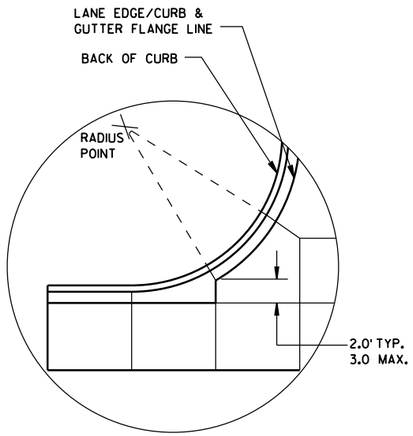
BASE PATCHING CONCRETE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

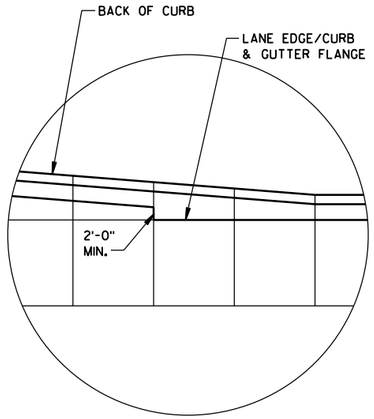
APPROVED
Sept., 2015 — DATE
/S/ Peter Kemp, P.E. — PAVEMENT SUPER
FHWA

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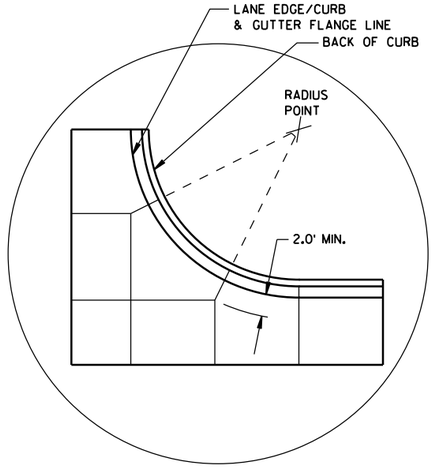
S.D.D. 13 C 14-6c



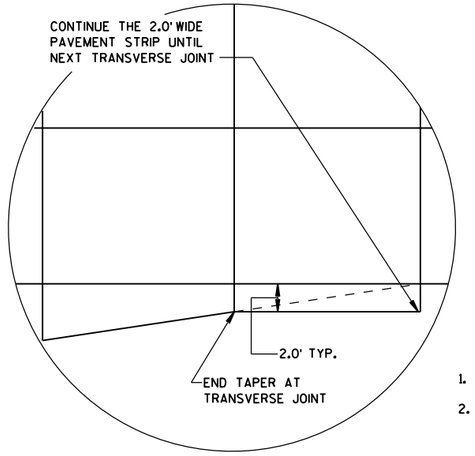
DETAIL "A"



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.

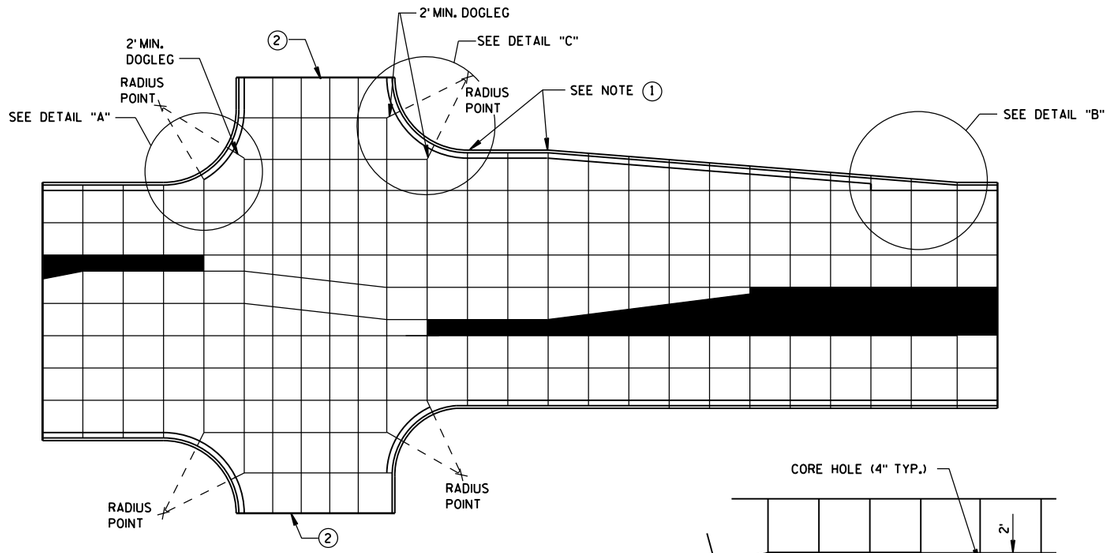
AVOID SLABS LESS THAN 2 FEET WIDE OR GREATER THAN 15 FEET WIDE.

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.

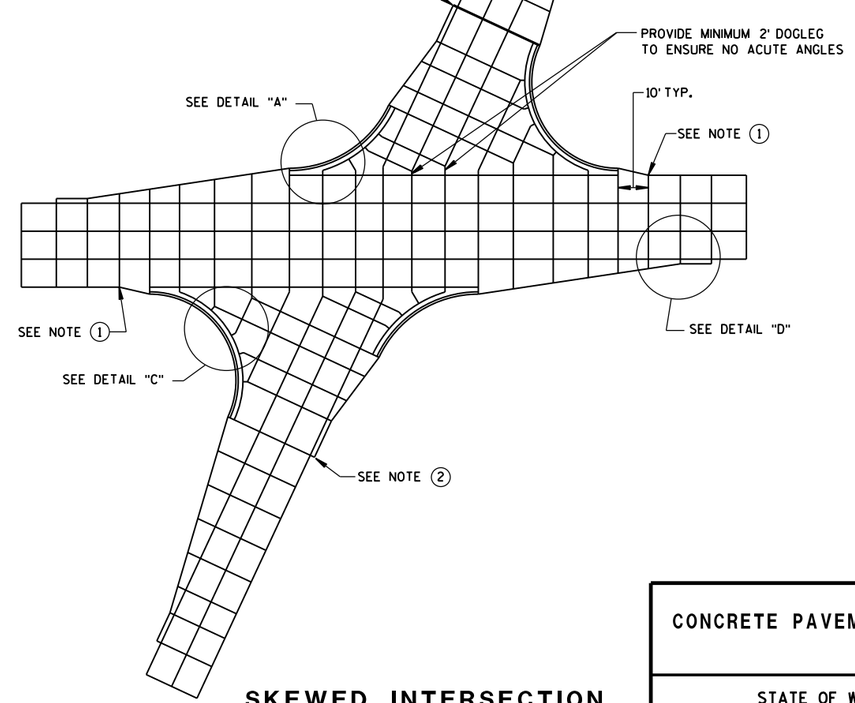
1. PROVIDE TRANSVERSE JOINTS AT ALL PAVEMENT WIDTH CHANGES.
2. CONSTRUCT DOWELED EXPANSION JOINT ON THE SIDE ROAD OF AN INTERSECTION IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH. ALIGN EXPANSION JOINT WITH EDGE OF RADIUS.
3. THE ENGINEER MAY APPROVE SLIGHT VARIATIONS FROM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



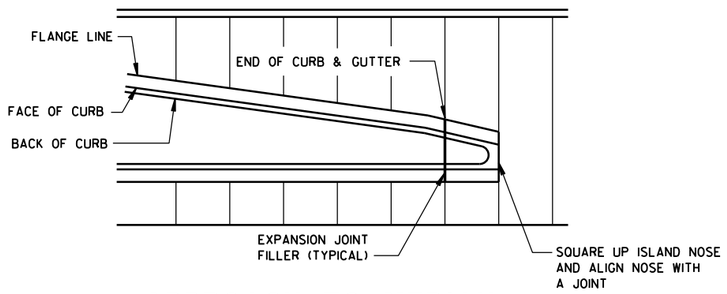
STANDARD INTERSECTION

PAVEMENT DEPTH AND JOINT SPACING TABLE

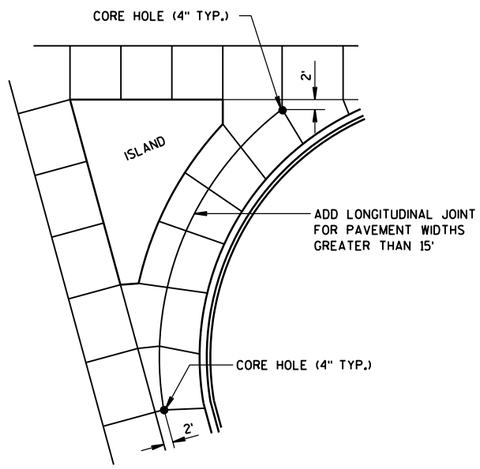
PAVEMENT DEPTH (D)	CONTRACTION JOINT SPACING
6", 6½"	12'
7", 7½"	14'
8" & ABOVE	15'



SKEWED INTERSECTION



APPROACH TO MEDIAN



LARGE RIGHT TURN

CONCRETE PAVEMENT JOINTING

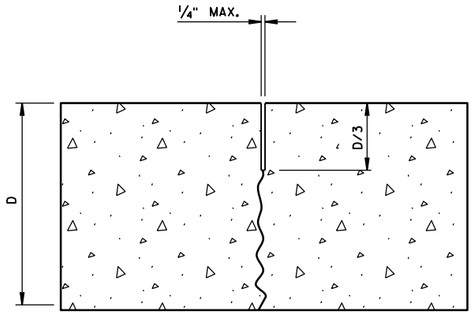
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR 252

6

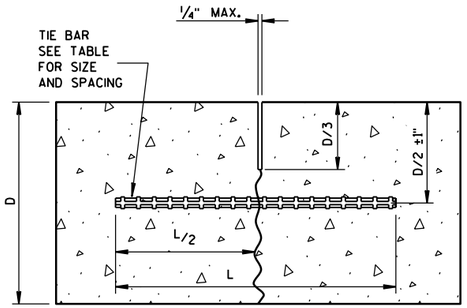
S.D.D. 13 C 18-3a

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S.D.D. 13 C 18-3a



UNDOWELED-TRANSVERSE



TIED LONGITUDINAL

TIE BAR TABLE

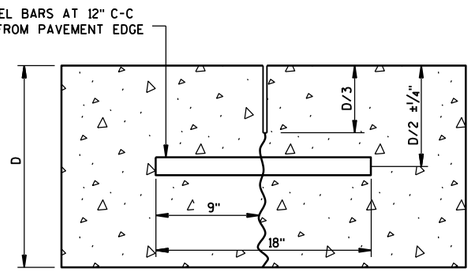
PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 1/2"	NO. 4	30"	36"
≥ 10 1/2"	NO. 5	36"	36"
	NO. 4*	30"	24"**

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

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

GENERAL NOTES

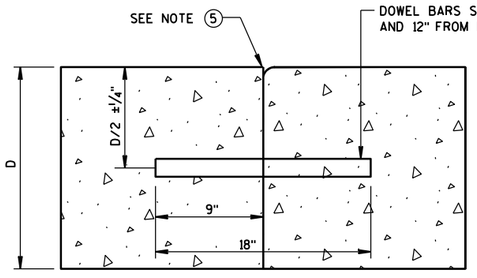
1. USE DOWELED EXPANSION JOINTS ON SIDE ROADS AT INTERSECTIONS (TO ISOLATE THE SIDE ROAD FROM THE THROUGH STREET) IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH.
2. SPACE CONTRACTION JOINTS IN ACCORDANCE WITH 13C4, 13C11 OR 13C13.
3. LOCATE CONSTRUCTION JOINTS A MINIMUM OF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



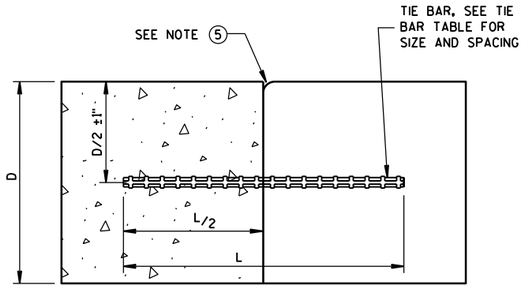
DOWELED-TRANSVERSE

CONTRACTION JOINTS

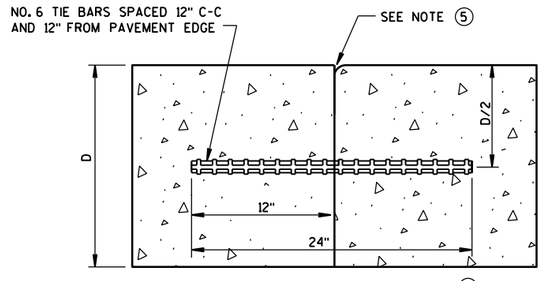
SEE NOTE (2)



DOWELED TRANSVERSE (3)

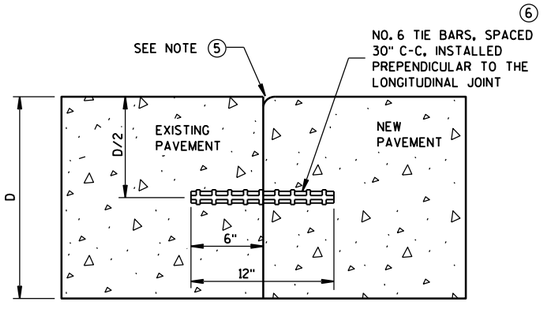


TIED LONGITUDINAL



TIED TRANSVERSE (3)

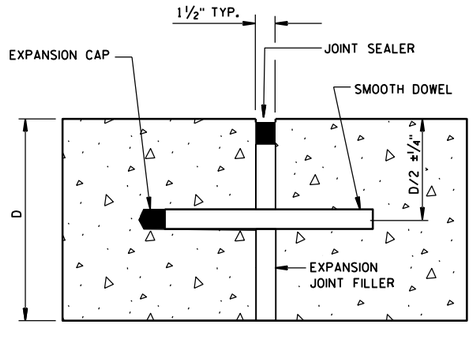
(FOR USE ON NON-DOWELED PAVEMENTS ONLY)



TIED LONGITUDINAL TO EXISTING

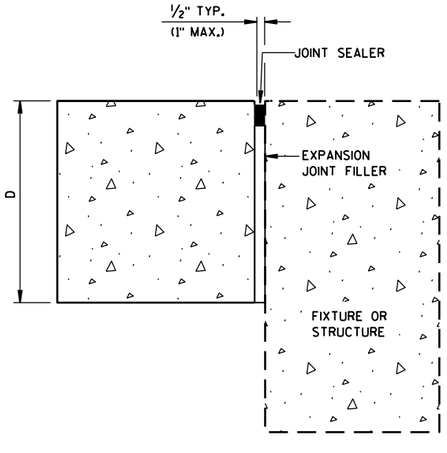
CONSTRUCTION JOINTS

SEE NOTE (4)



DOWELED-TRANSVERSE

SEE NOTE (1)



UNTIED-LONGITUDINAL

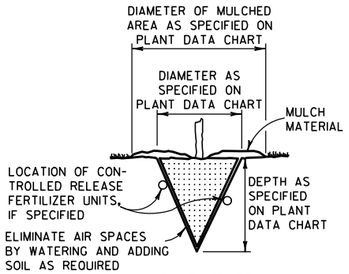
EXPANSION JOINTS

CONCRETE PAVEMENT
JOINT TYPES

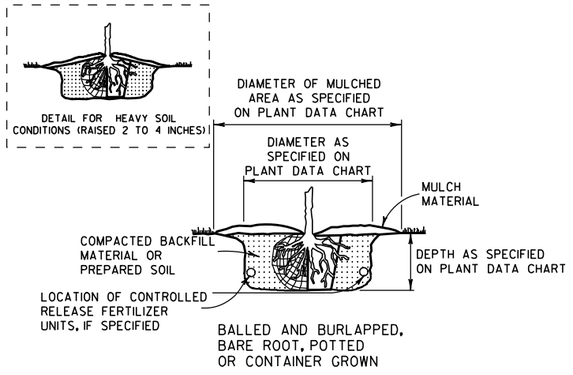
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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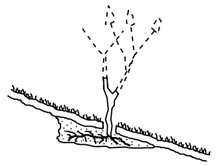
S.D.D. 13 C 18-3c



MACHINE MOVED

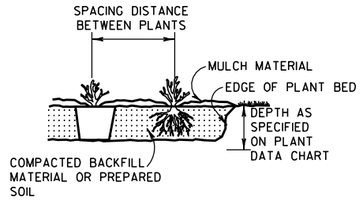


BALLED AND BURLAPPED, BARE ROOT, POTTED OR CONTAINER GROWN



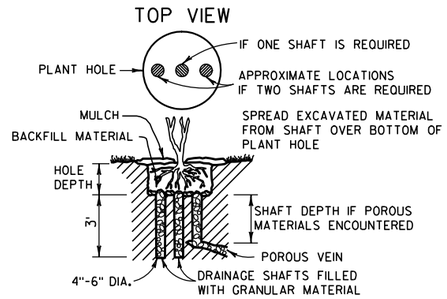
ACCOMMODATE ROOTS (SMOOTH AND STAGHORN SUMAC)

NOTE:
1) ENGINEER SHALL REQUIRE 3 SLITS IN POT TO SPEED DETERIORATION
2) METAL, PLASTIC OR OTHER NONDEGRADABLE POTS SHALL BE REMOVED PRIOR TO PLANTING



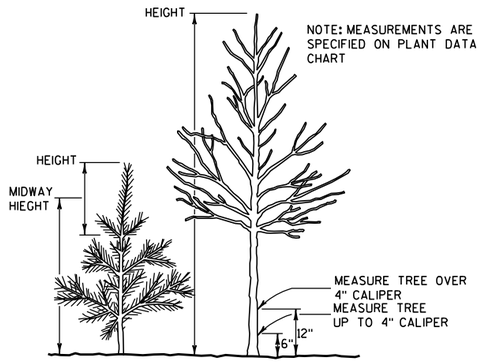
PREPARED BED (BARE ROOT AND POTTED)

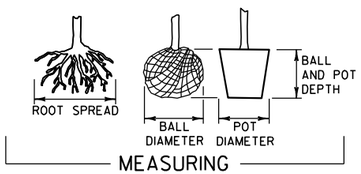
PLANTING



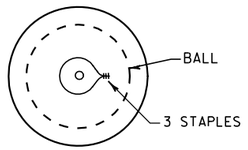
NOTE:
DRAINAGE SHAFT AS SPECIFIED ON PLANT DATA CHART

DRAINING

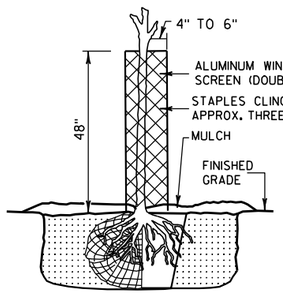




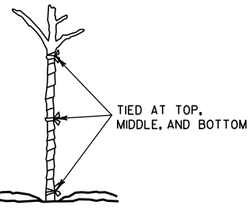
MEASURING



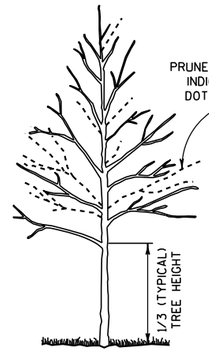
TOP VIEW



RODENT PROTECTION



WRAPPING



TALL DECIDUOUS TREES (ASH, MAPLE, LINDEN, OAK)

SINGLE STEMMED LOW DECIDUOUS TREES (CRABS AND OTHER SINGLE STEM TYPE)

MULTI-STEMMED LOW DECIDUOUS TREES OR LARGE SHRUBS (HAWTHORN, SERVICEBERRY)

NOTE: WHEN PRUNING, PRESERVE CHARACTER AND SHAPE OF TREE. AVOID LEAVING STUBS - REMOVE BRANCH OR TWIG BACK TO THE NEAREST CROTCH
1) PRUNE TO REMOVE DEAD AND BROKEN BRANCHES
2) PRUNE TO REMOVE BRANCHES THAT TOUCH OR ARE TOO CLOSE TO OTHER BRANCHES

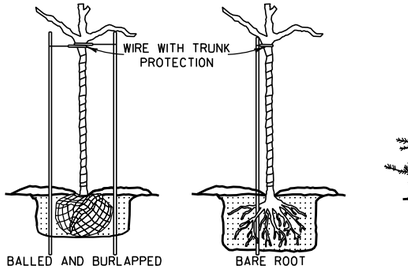


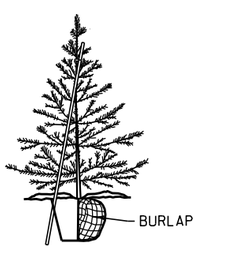
SHRUBS (GRAY DOGWOOD ARROWWOOD VIBURNUM)

SUMAC

TREE TYPE EVERGREENS (PINE, SPRUCE, FIR) EVERGREENS USUALLY ARE NOT PRUNED

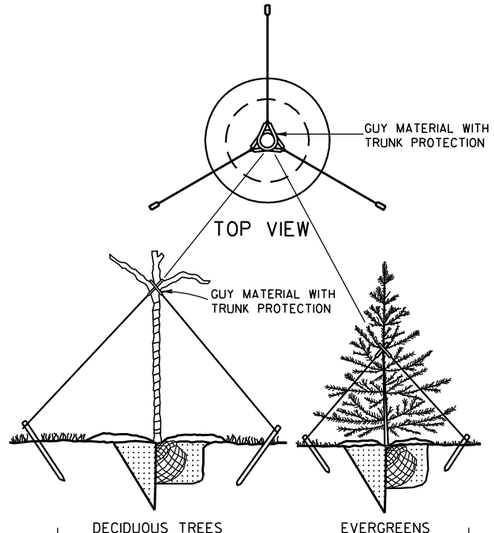
PRUNING





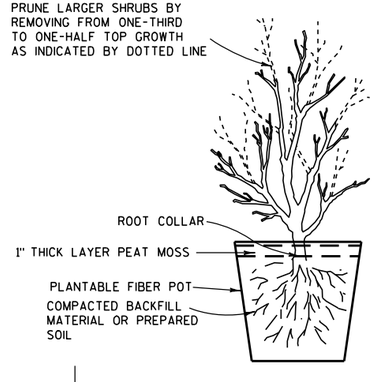
NOTE: BRACING STAKE
1) SHALL BE DRIVEN INTO THE GROUND AS CLOSE TO THE TREE AS POSSIBLE WITHOUT DAMAGING THE BRANCHES.
2) MAY BE DRIVEN AT SUCH AN ANGLE THAT IT DOES NOT PENETRATE THE BALL OR POT.
3) SHALL NOT PROTRUDE ABOVE THE TOP OF THE TREE; AND
4) SHALL HAVE A HOLE NEAR THE TOP TO HOLD THE WIRE IN PLACE.

BRACING



GUYING

PRUNE LARGER SHRUBS BY REMOVING FROM ONE-THIRD TO ONE-HALF TOP GROWTH AS INDICATED BY DOTTED LINE



POTTING

NOTES

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

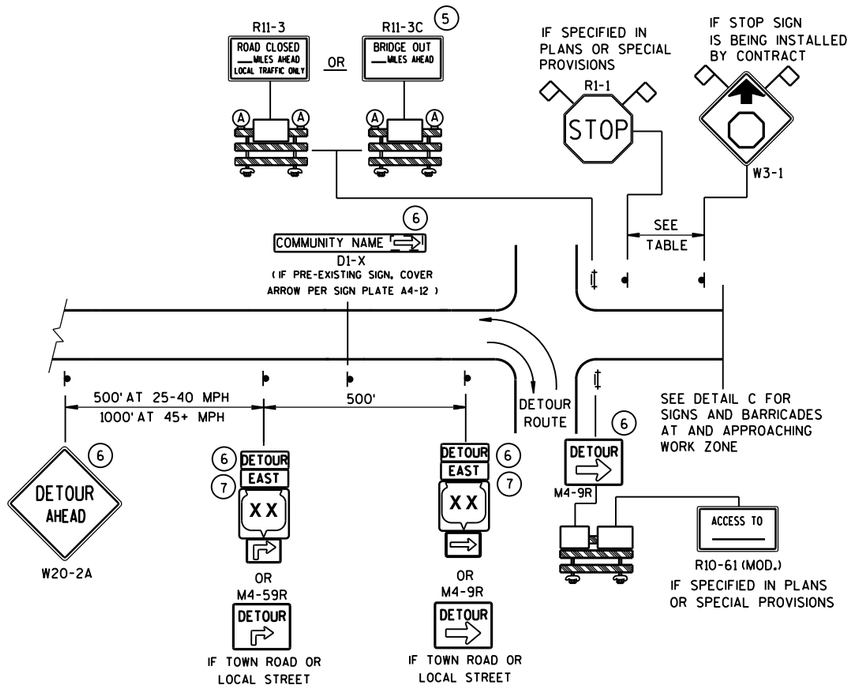
BRACING, WRAPPING, GUYING, RODENT PROTECTION, FERTILIZER AND MULCH SHALL BE USED ONLY WHEN SPECIFIED ON THE PLANT DATA CHART (PART OF PLAN) OR SPECIAL PROVISIONS.

TREE PLANTING DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4/11/94
DATE
/S/ Rory L. Rhinesmith
CHIEF METHODS DEVELOPMENT ENGINEER
FHWA

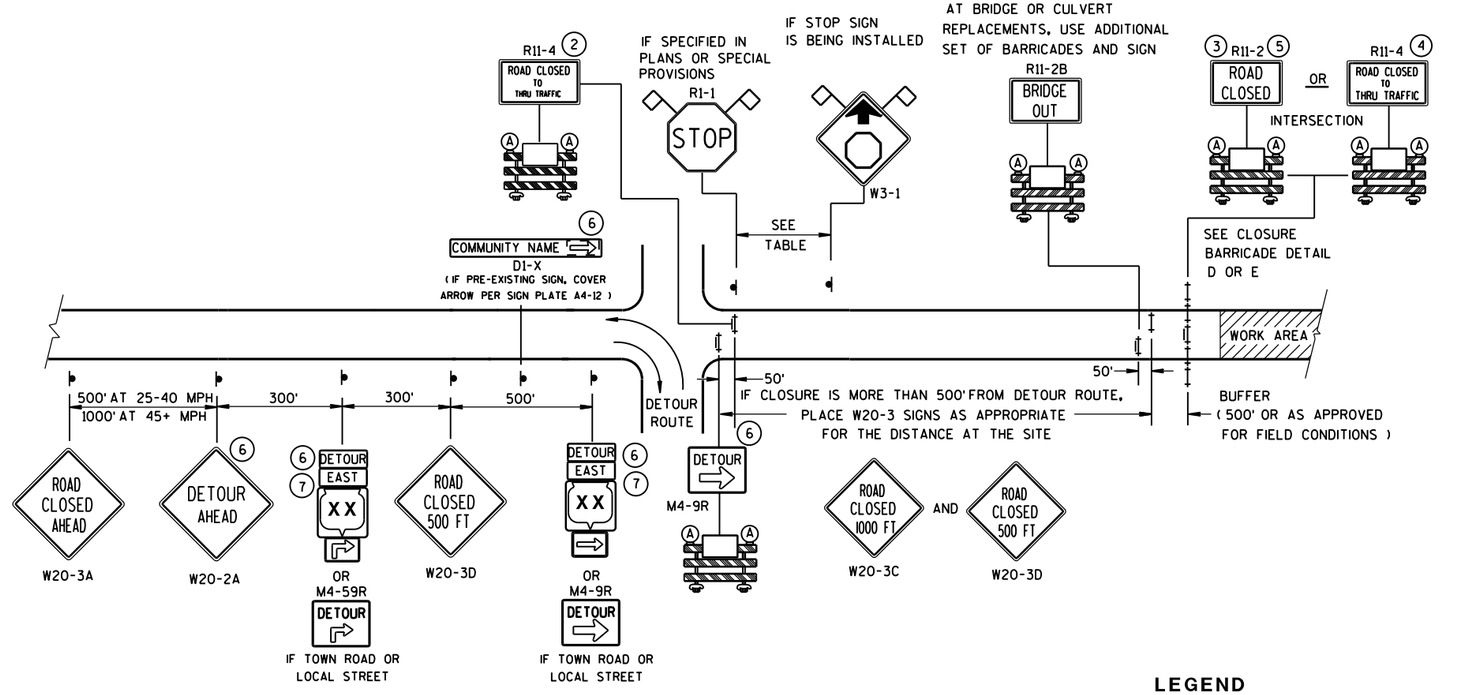
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S.D.D. 14 A 2-1



DETAIL A

MAINLINE CLOSURE WITH POSTED DETOUR

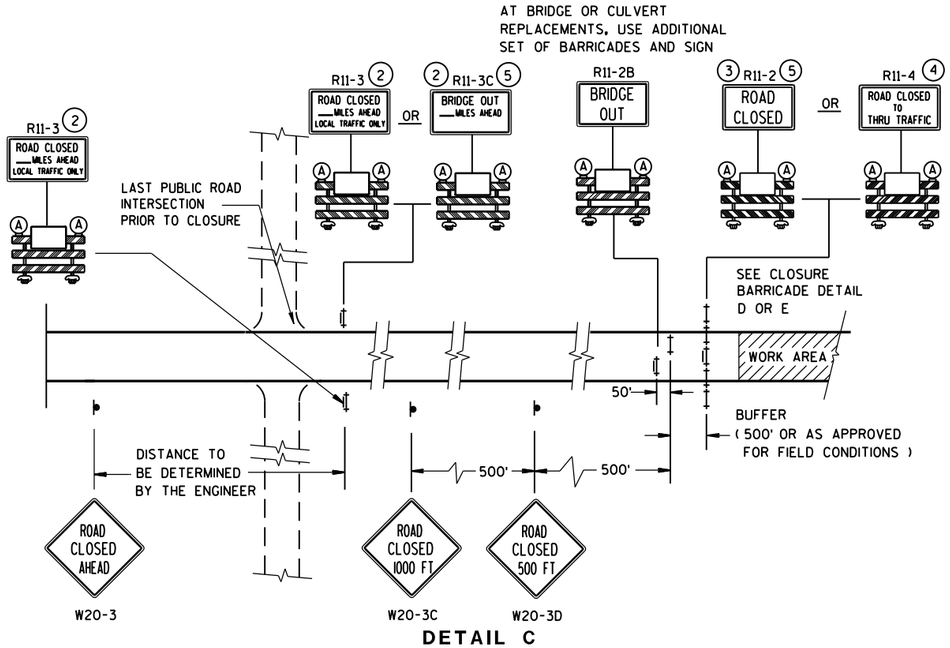
WORK ZONE GREATER THAN ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL B

MAINLINE CLOSURE WITH POSTED DETOUR

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



DETAIL C

MAINLINE CLOSURE, NO POSTED DETOUR

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

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

LEGEND

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

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

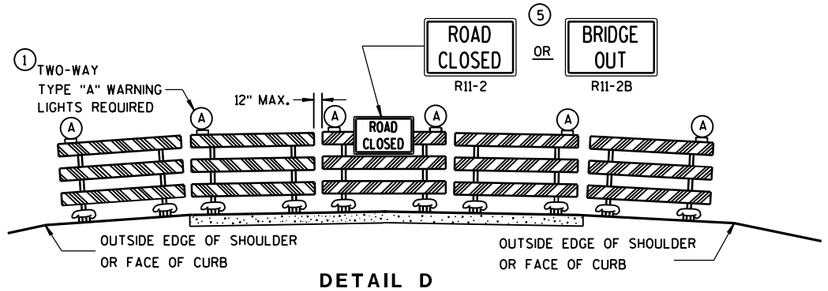
Sept. 2015 — DATE
/S/ Peter Amakobe Atepe
STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER
FHWA

6

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

6

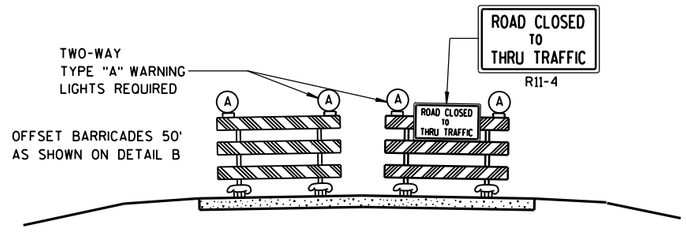
S.D.D. 15 C 2-6a



DETAIL D

ROAD CLOSURE BARRICADE DETAIL

APPROACH VIEW



DETAIL E

LANE CLOSURE BARRICADE DETAIL

APPROACH VIEW

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

GENERAL NOTES

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

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

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

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

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

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

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

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

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

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
- R11-2 SHALL BE 48" X 30".
- R11-3, R11-4 AND R10-61 SHALL BE 60" X 30".
- M4-9 SHALL BE 30" X 24".
- M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
- M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)
- M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.
- R1-1 SHALL BE 36" X 36".

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

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

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

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

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

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

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

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

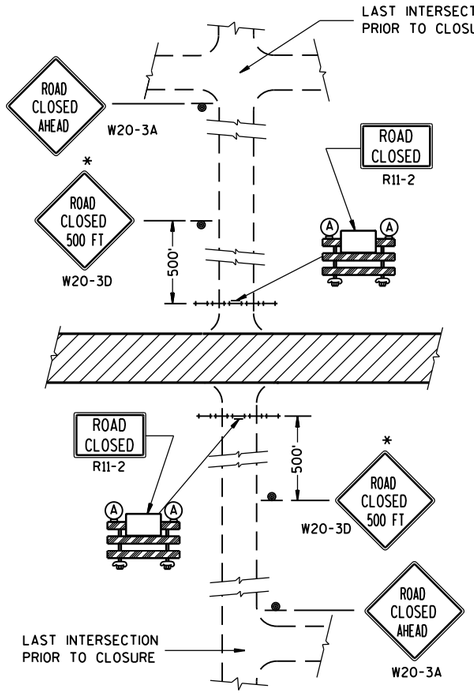
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

Sept. 2015 — DATE

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

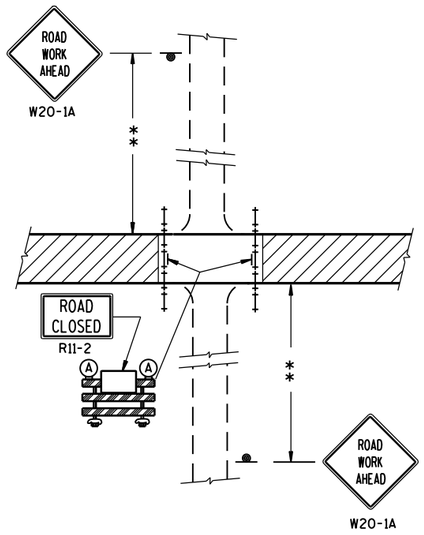
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S.D.D. 15 C 2-6b



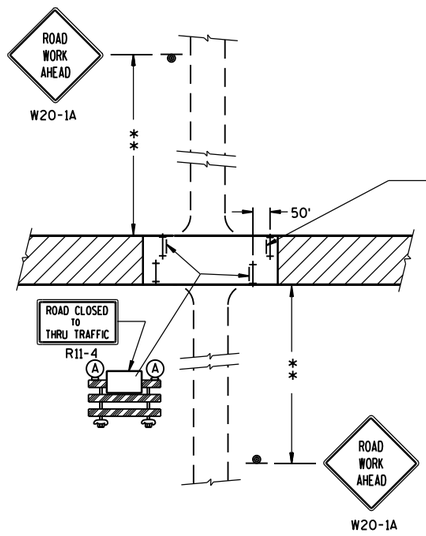
DETAIL 1

(NO ACCESS TO PROJECT)

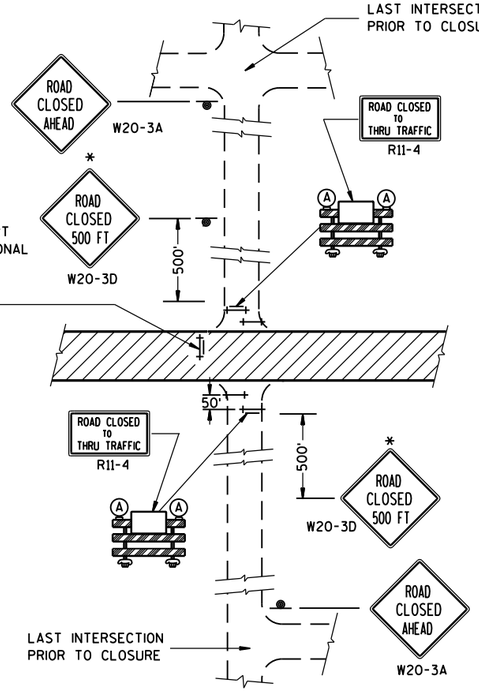


DETAIL 2

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







DETAIL 3

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

DETAIL 4

(CONTRACTOR, LOCAL BUSINESS AND RESIDENT ACCESS TO PROJECT)

GENERAL NOTES

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

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

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

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

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

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

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

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

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

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
R11-2 SHALL BE 48" X 30".
R11-4 AND R11-3 SHALL BE 60" X 30".

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

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

LEGEND

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

BARRICADES AND SIGNS FOR SIDEROAD CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2015 — DATE
/S/ Peter Amakobe Atepe
STATEWIDE WORK ZO... SAFETY ENGI... — FHWA

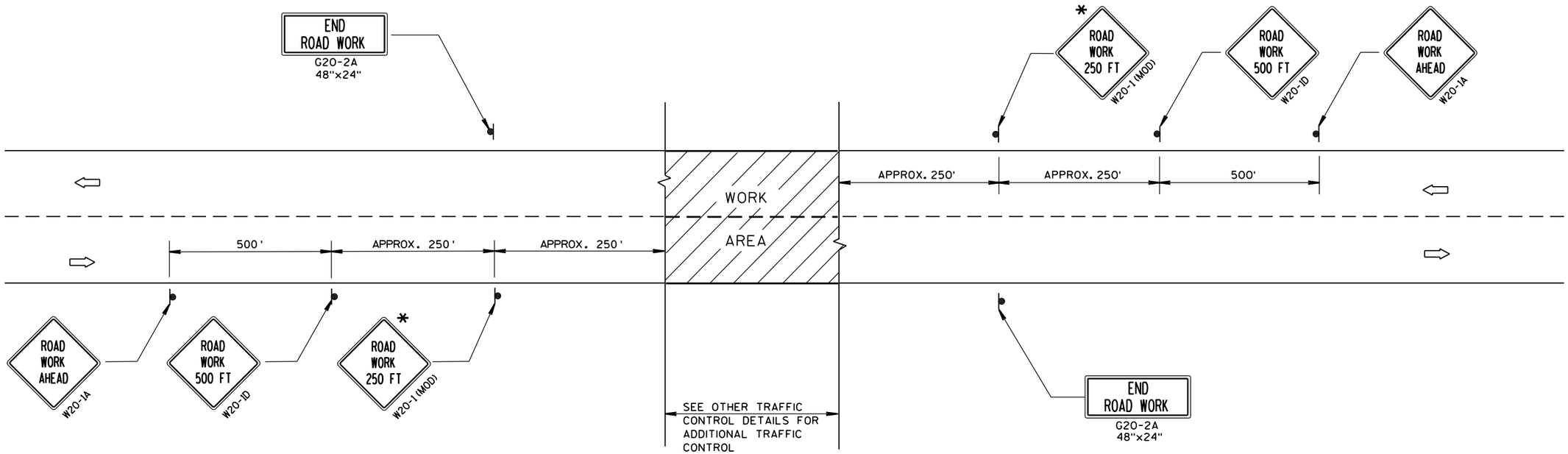
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S.D.D. 15 C 3-3

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S.D.D. 15 C 3-3

TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL



GENERAL NOTES

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

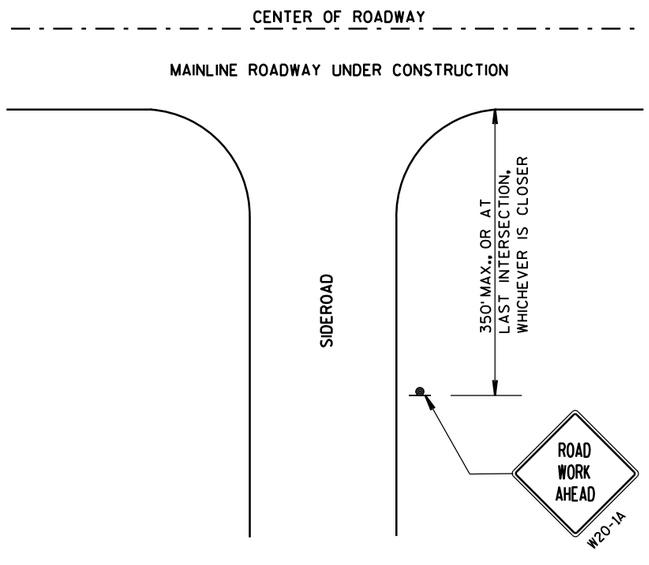
THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS, 36"x36" SIGNS MAY BE USED INSTEAD OF 48"x48" SIGNS.

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

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

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



LEGEND

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

TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 M.P.H. OR LESS TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

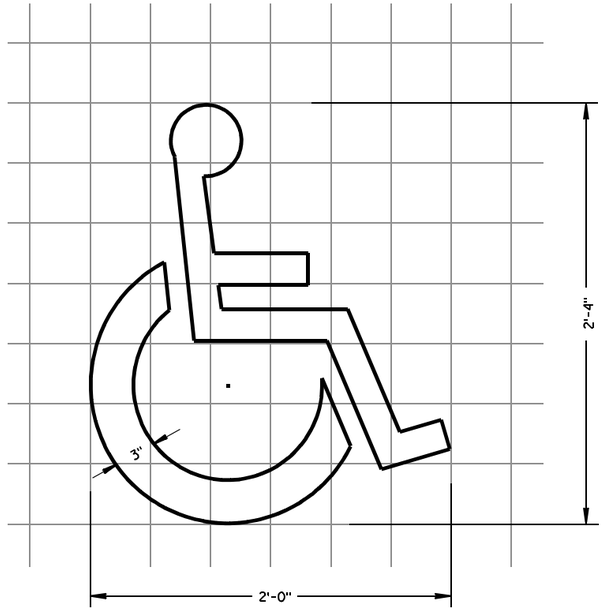
S.D.D. 15 C 5-3

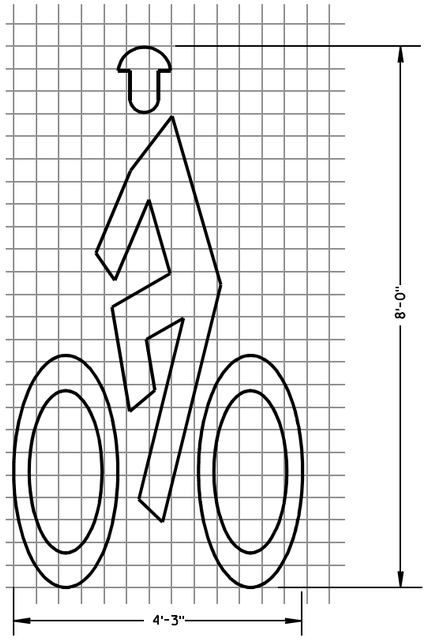
GENERAL NOTES

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

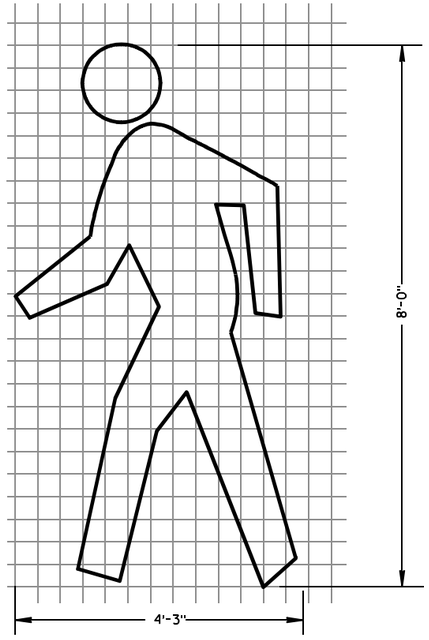
ALL LETTERS, ARROWS AND SYMBOLS SHALL BE IN CONFORMANCE WITH REQUIREMENTS INCLUDED IN "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKING" BOOK BY THE FEDERAL HIGHWAY ADMINISTRATION. ALL LETTERS, ARROWS AND SYMBOLS SHALL BE WHITE AND REFLECTORIZED. SMALL DIFFERENCES IN DIMENSIONS WITHIN THE TOLERANCES OF THAT BOOK ARE ACCEPTABLE.

A DETAILED DRAWING OF THE HANDICAPPED PARKING SYMBOL IS ILLUSTRATED IN THE "STANDARD HIGHWAY SIGNS MANUAL" BY THE FEDERAL HIGHWAY ADMINISTRATION.

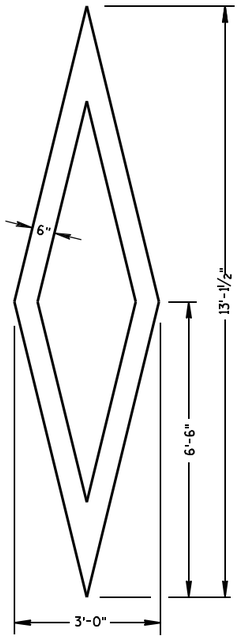




BIKE CROSSING SYMBOL



PEDESTRIAN SYMBOL



PREFERENTIAL LANE SYMBOL

6

6

S.D.D. 15 C 7-12a

S.D.D. 15 C 7-12a

PAVEMENT MARKING SYMBOLS

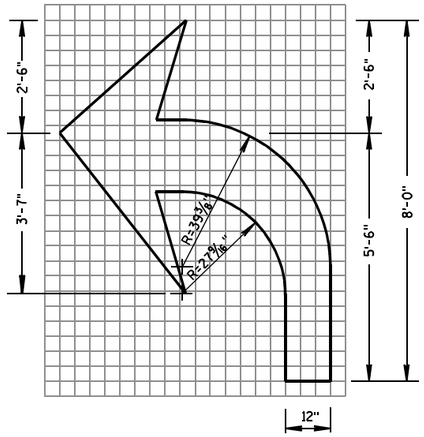
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

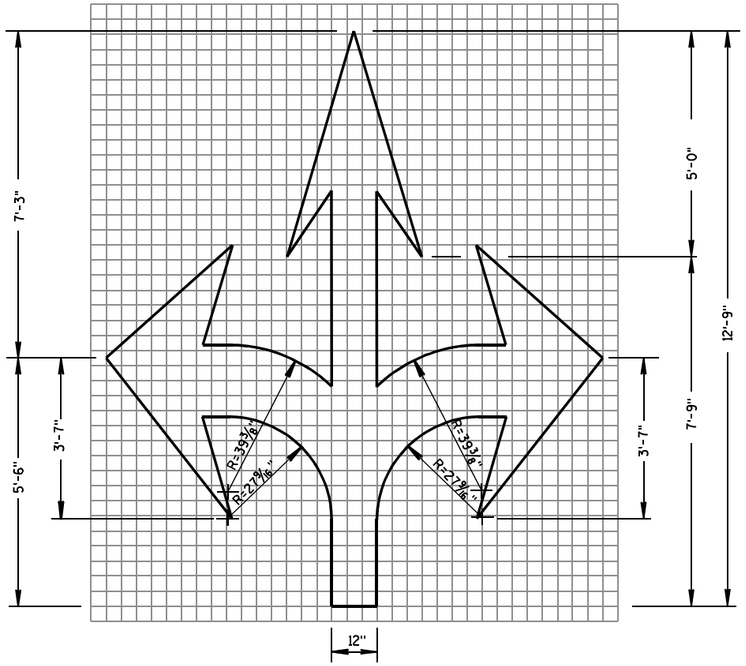
7/1/11 DATE

/S/ Thomas N Nathan
STATE TRAFFIC ENGINEER

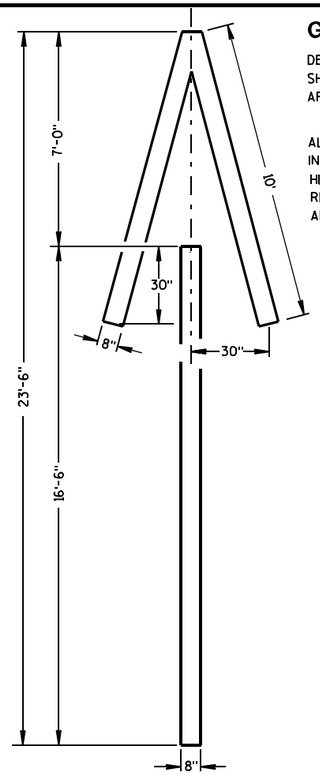
FHWA



TYPE 2



TYPE 6

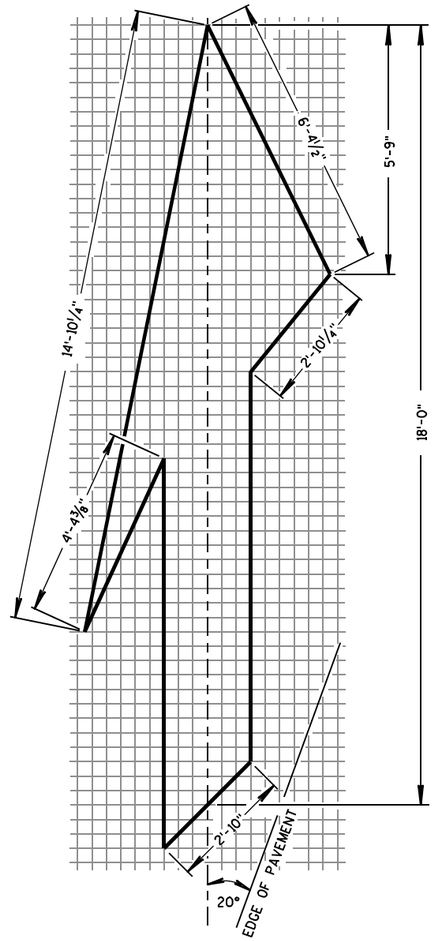


TYPE 4

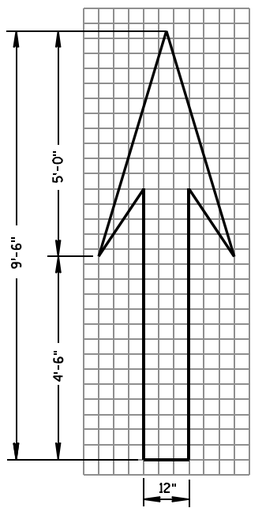
GENERAL NOTES

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

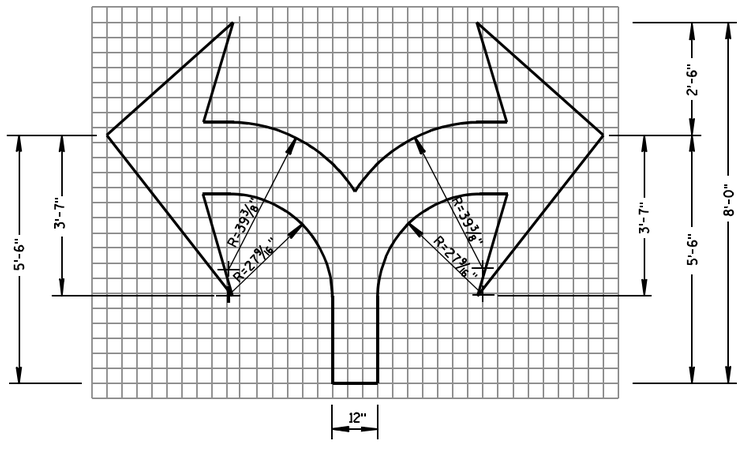
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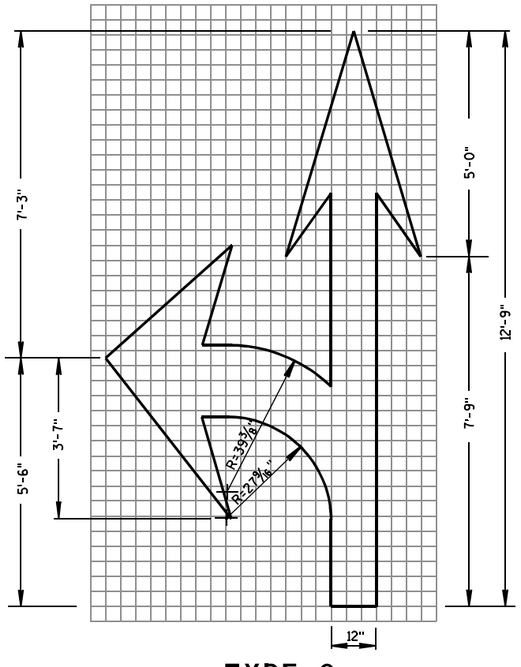
TYPE 5 LANE DROP ARROW



TYPE 1



TYPE 7



TYPE 3

PAVEMENT MARKING ARROWS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

7/1/11 — DATE

/S/ Thomas N. Nothdurft — STATE TRAFFIC ENGINEER

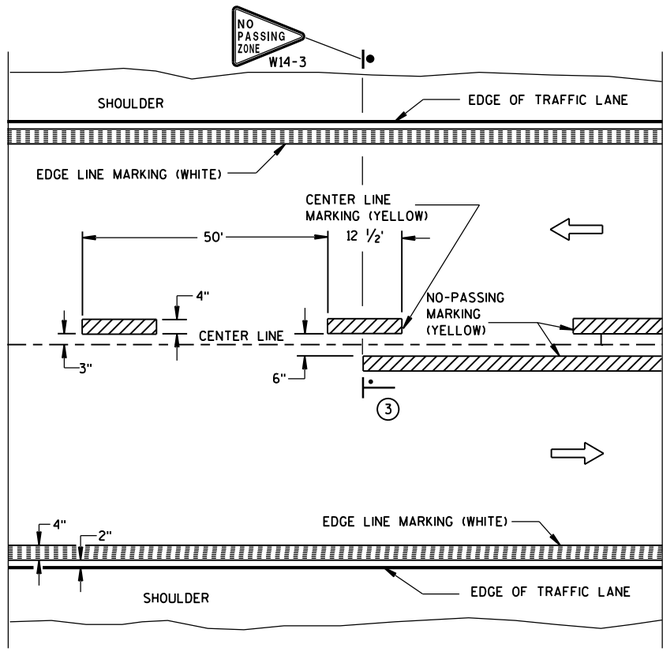
FHWA

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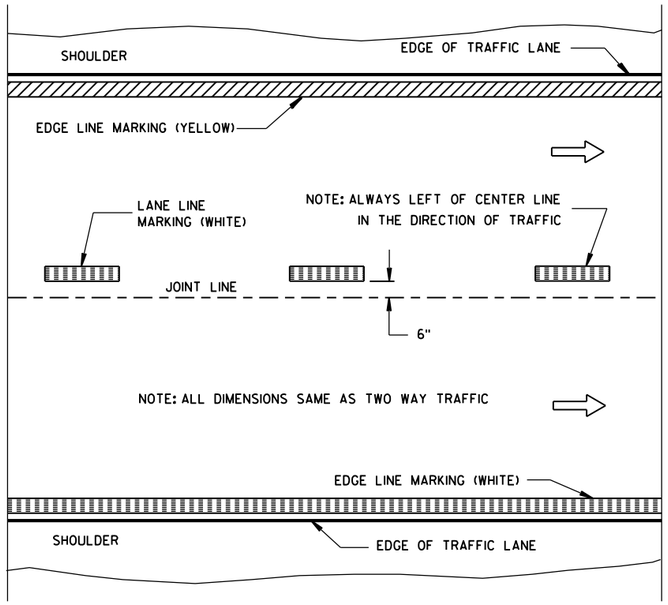
S.D.D. 15 C 7-12c

6

S.D.D. 15 C 7-12c

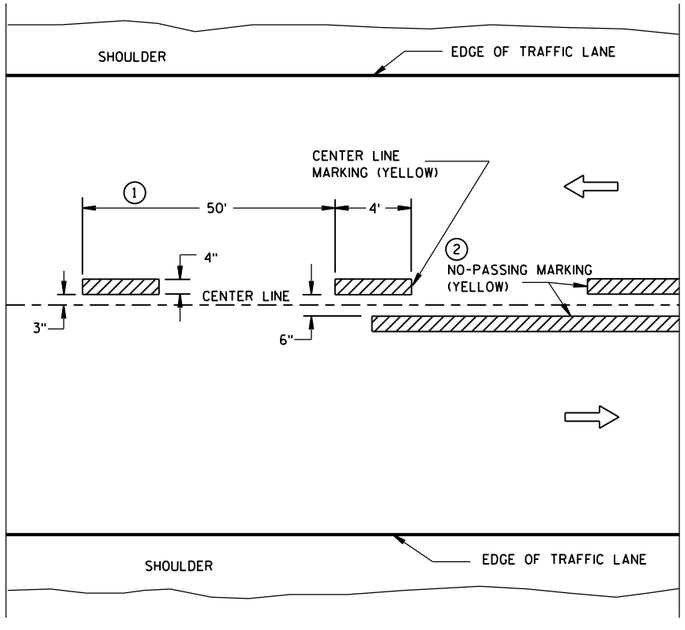


TWO WAY TRAFFIC

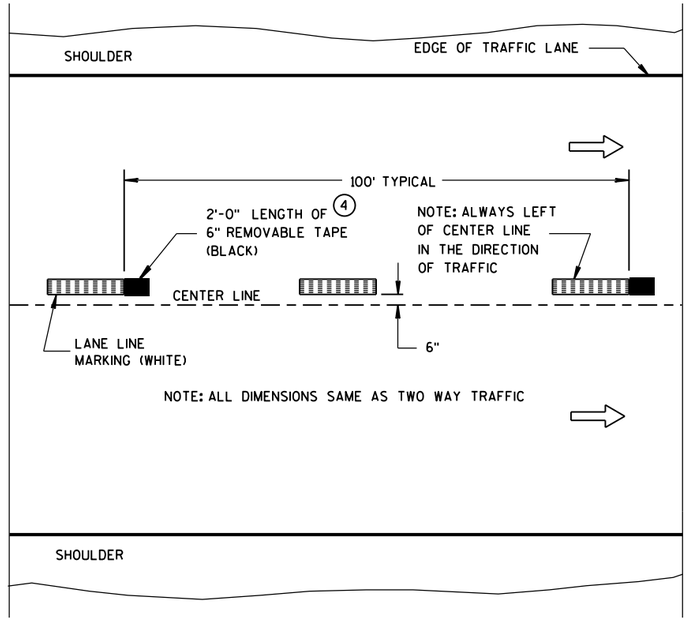


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY (INTERMEDIATE) PAVEMENT MARKING

(SHOWS CYCLE FOR TEMPORARY CENTER LINE OR TEMPORARY LANE LINE MARKING)

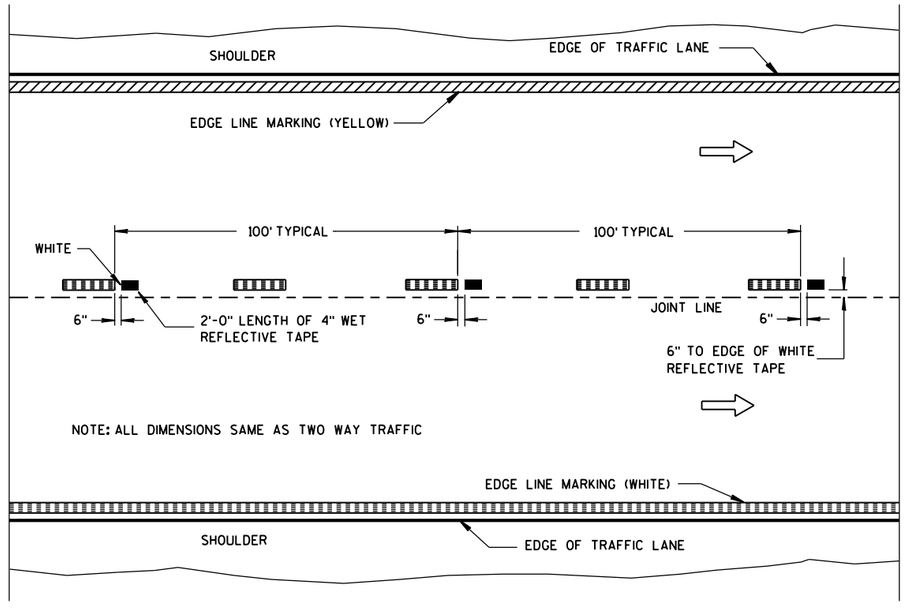
GENERAL NOTES

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

1. HALF CYCLE LENGTHS (25'±) WITH 2' MINIMUM STRIPE LENGTHS SHALL BE PROVIDED ON ROADWAYS (INCLUDING TEMPORARY TRAVELED WAYS) WITH REVERSE CURVATURE, CURVATURE OF OVER 5 DEGREES OR WHEN DIRECTED BY THE ENGINEER TO MARK UNUSUAL ALIGNMENT OF THE TRAVELED WAY.
2. NO PASSING ZONE TEMPORARY PAVEMENT MARKING IS REQUIRED TO BE PLACED, WHERE APPROPRIATE, ALONG WITH CENTERLINE TEMPORARY PAVEMENT MARKING WHEN A SAME DAY PERMANENT PAVEMENT MARKING ITEM IS INCLUDED IN THE CONTRACT.
3. NO PASSING ZONE MARKINGS ARE PLACED ACCORDING TO "T" MARKINGS. IF EXISTING NO PASSING ZONE W14-3 SIGNS ARE BEYOND 50 FEET IN EITHER DIRECTION, THE SIGNS SHALL BE MOVED TO THE "T" MARKINGS.
4. CONCRETE ONLY.

NOTE

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL



WET REFLECTIVE TAPE SUPPLEMENT TO
SPRAYED OR NON WET REFLECTIVE TAPE LANE LINE

LEGEND

"T" MARKING

POST MOUNTED SIGN

PAVEMENT MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

5-13-2013 — DATE

/S/ Travis Feltes — STATE TRAFFIC E

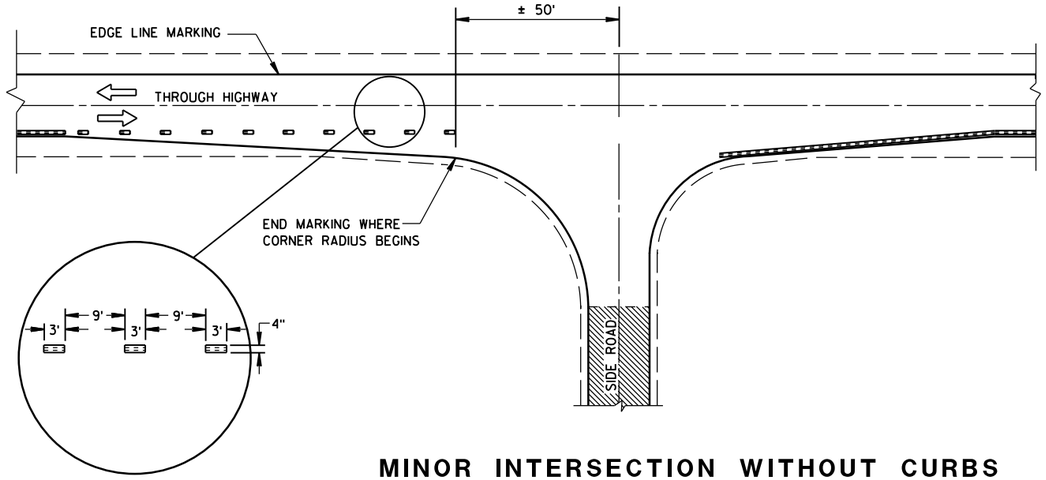
FHWA

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S.D.D. 15 C 8-16a

6

S.D.D. 15 C 8-16a



MINOR INTERSECTION WITHOUT CURBS

GENERAL NOTES

EDGE LINES SHALL BE OMITTED THROUGH INTERSECTIONS. EDGE LINES SHALL BE CONTINUED THROUGH DRIVEWAYS.

(1) WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.

(2) WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.

(3) ALTERNATIVE MARKING SHALL BE PROVIDED WHEN SPECIFIED IN THE CONTRACT. TYPICAL SITUATIONS WHERE THIS MARKING MAY BE REQUIRED ARE WHERE THE INTERSECTION IS ON A SHARP HORIZONTAL CURVE OR CREST VERTICAL CURVE IN AN UNLIGHTED AREA SUCH THAT THE EDGE LINE MAY BE MISLEADING TO THE MOTORIST OR DISAPPEAR FROM SIGHT.

(4) THE EDGE LINE IN THE TAPER AREAS OF THE BYPASS LANE AND THE BYPASS LANE SHALL BE LOCATED 1-FOOT FROM EDGE OF PAVEMENT TO THE OUTSIDE EDGE OF EDGE LINE.

(5) BARRIER LINE ENDS AT SIDE ROAD PAVEMENT/SURFACE EDGE EXTENSION.

(6) BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.

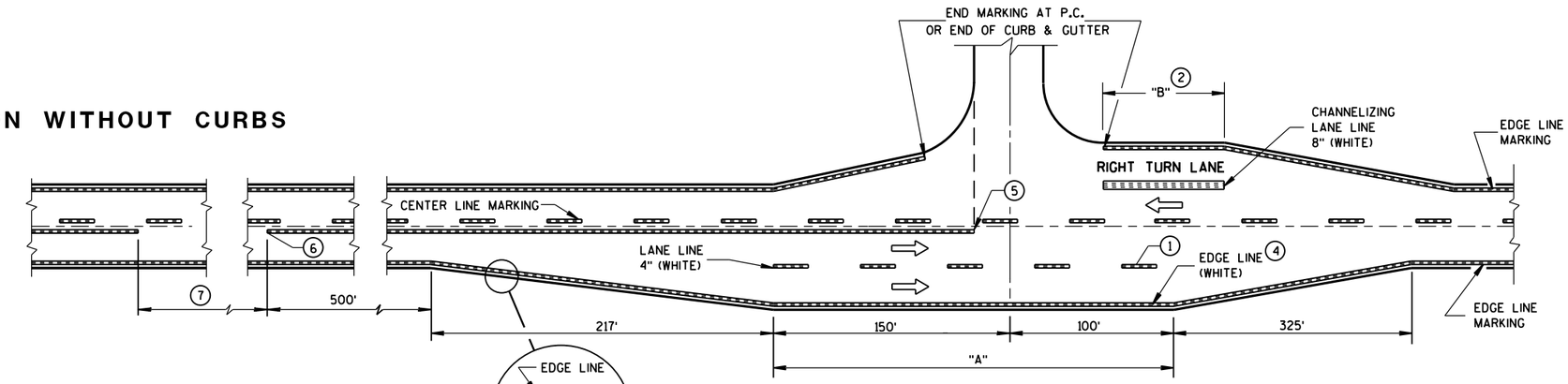
(7) IF THE DISTANCE BETWEEN 2 SUCCESSIVE NO-PASSING ZONES IS LESS THAN THE MINIMUM DISTANCE BETWEEN ZONES, CONNECT THE 2 ZONES.

(8) 3' LINE 9' GAP, EXCEPT RETRACE THE EXISTING LINE - GAP PATTERN WHERE EXISTING MARKINGS ARE IN PLACE.

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL

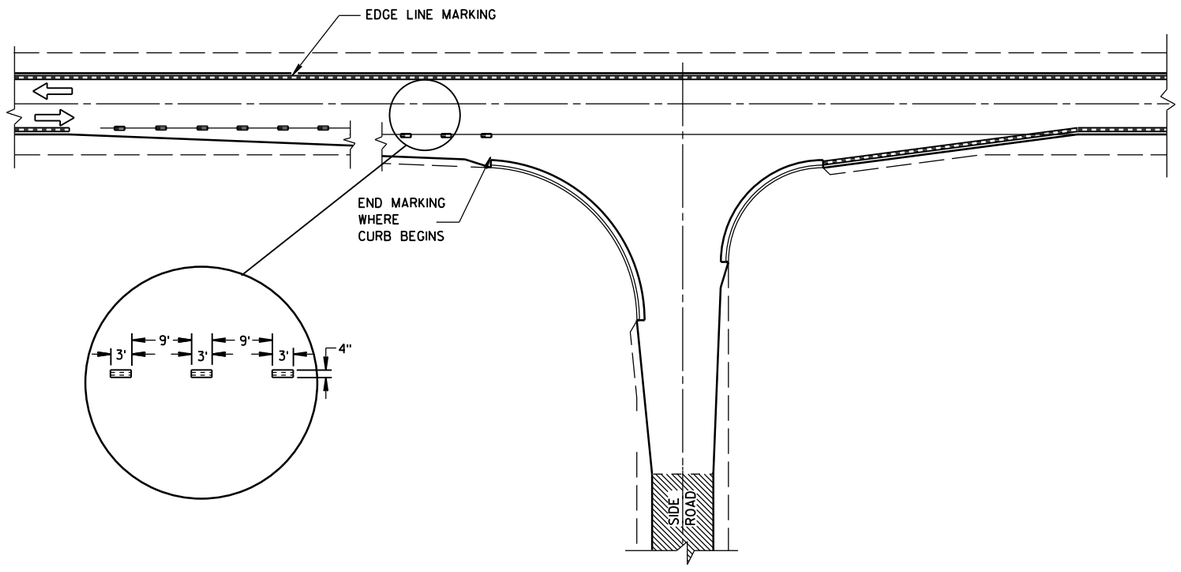
(7)

POSTED SPEED (MPH)	MINIMUM DISTANCE BETWEEN ZONES (FEET)
25 - 30	528
35 - 40	528
45 - 50	686
55	792



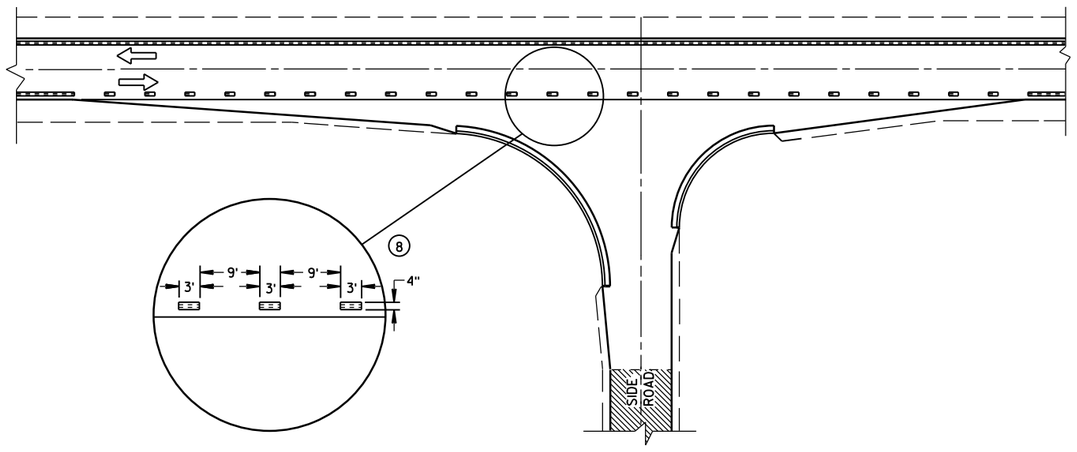
MAJOR INTERSECTIONS

(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANES)



MINOR INTERSECTION WITH CURBS

(TYPICAL MARKING)



MINOR INTERSECTION WITH CURBS

(3) (FOR SPECIAL CONDITIONS AS SPECIFIED)

PAVEMENT MARKING
(INTERSECTIONS)

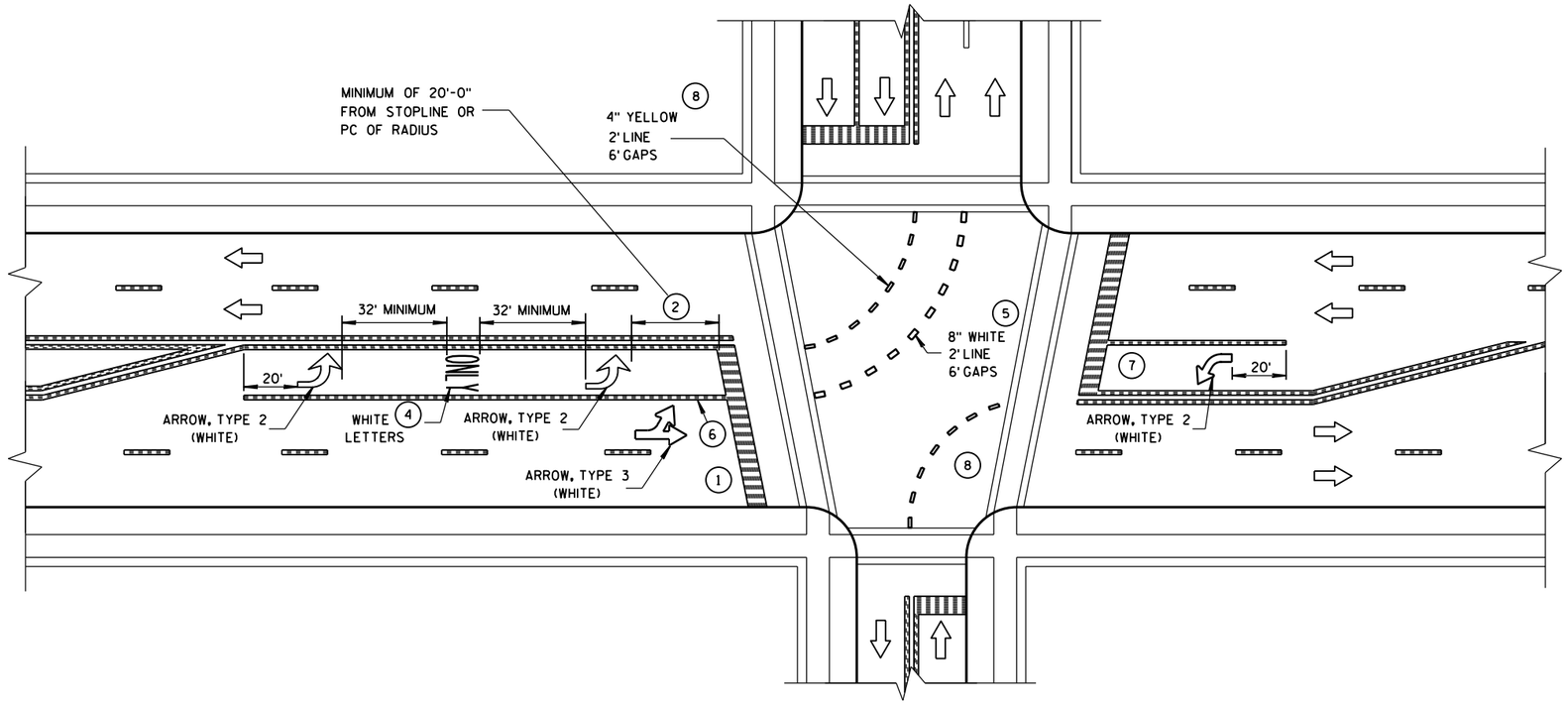
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

S.D.D. 15 C 8-16b

6

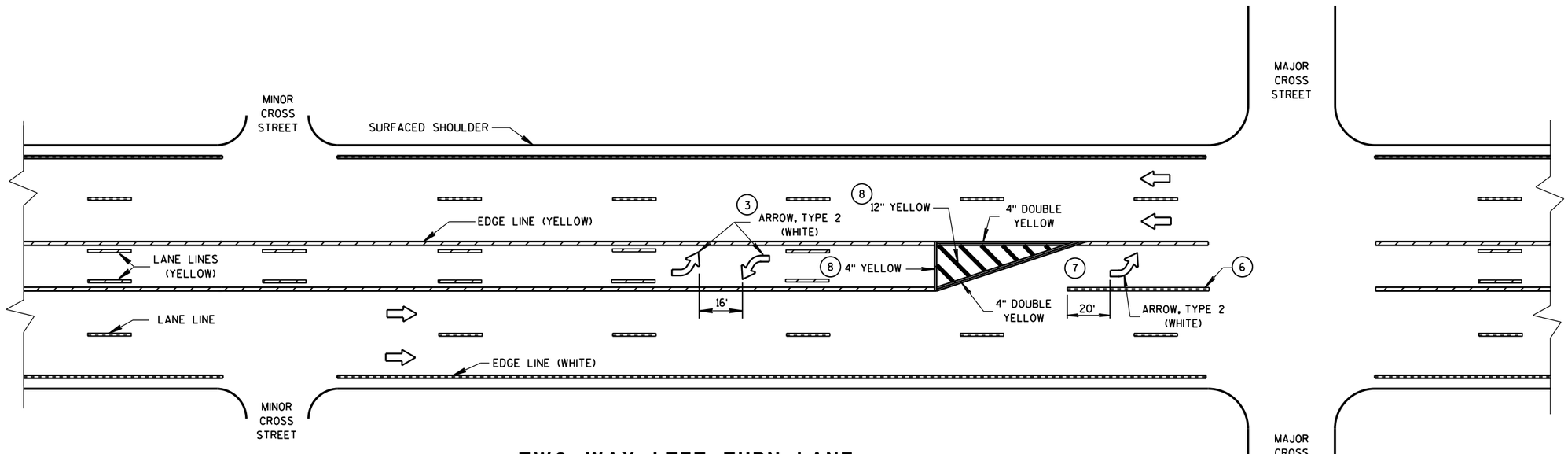
S.D.D. 15 C 8-16b



GENERAL NOTES

1. STOP BAR IS REQUIRED ONLY WHEN SPECIFIED IN THE CONTRACT.
2. DISTANCE MAY BE ADJUSTED TO ACCOMODATE SHORT LEFT TURN LANES. AS APPROVED BY THE ENGINEER.
3. A SET OF ARROWS IS REQUIRED EVERY 400 FEET OR NEAR INTERSECTIONS OR DRIVEWAYS WITH TURNING TRAFFIC.
4. ADD EXTRA SETS OF ONE ARROW AND ONE ONLY PER 160 FEET OR WHEN ON A CURVE.
5. 8" WHITE WITH 2' LINE 6' GAPS FOR DUAL TURN LANE.
6. 8" WHITE
7. ADD SECOND ARROW WHEN TURN BAY IS GREATER THAN OR EQUAL TO 108 FEET.
8. REQUIRED ONLY WHEN SPECIFIED IN THE CONTRACT.

NOTE:
ARROW SYMBOL (⇨)
SHOWS DIRECTION OF TRAVEL



TWO WAY LEFT TURN LANE

PAVEMENT MARKING (LEFT TURN LANE)

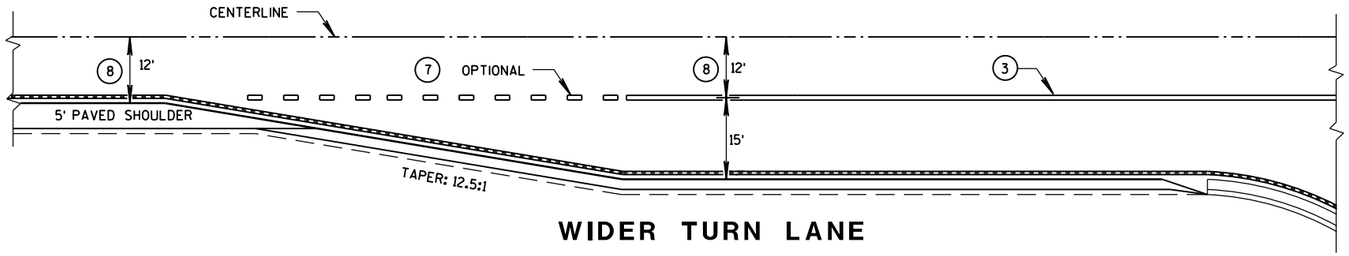
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

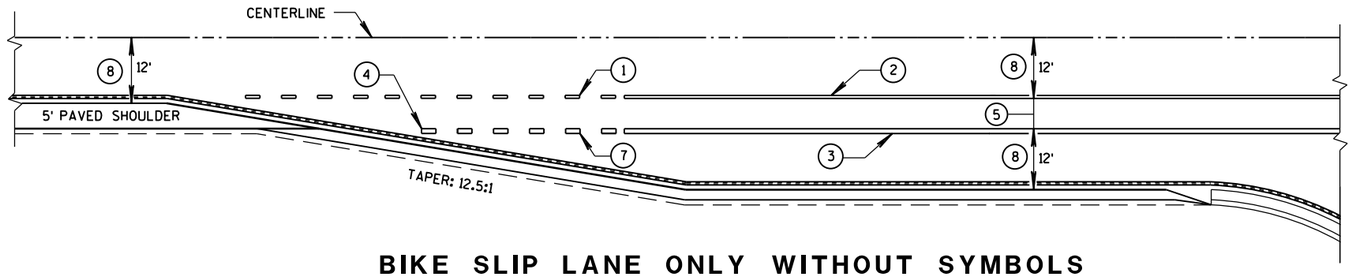
S.D.D. 15 C 8-16e

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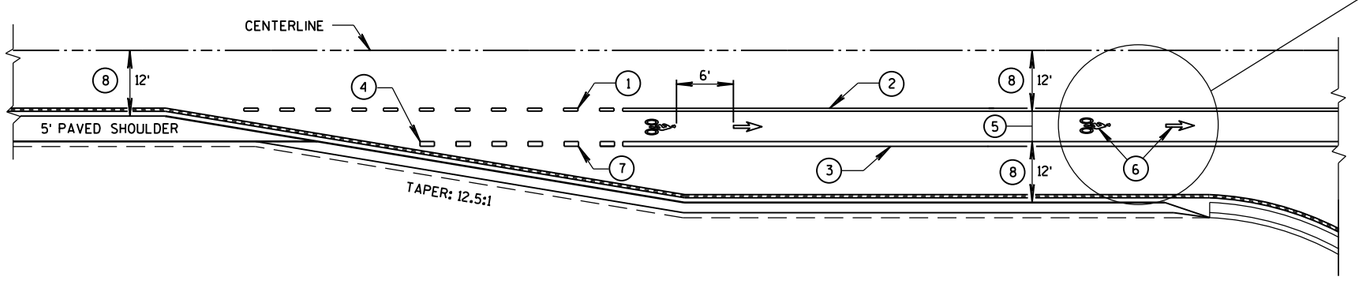
S.D.D. 15 C 8-16e



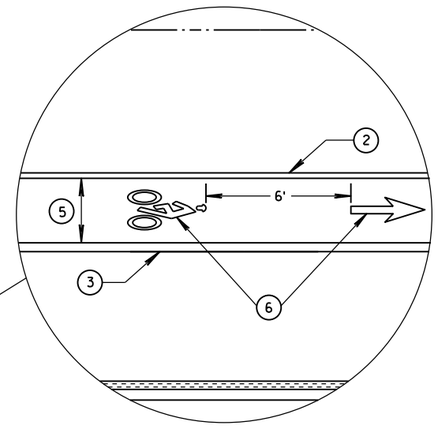
WIDER TURN LANE



BIKE SLIP LANE ONLY WITHOUT SYMBOLS



BIKE LANE WITH SYMBOLS



GENERAL NOTES

1. 3' LINE, 9' GAP - 4-INCH WIDE, WHITE.
2. 4-INCH, WHITE.
3. 8-INCH, WHITE.
4. IF SIGNED AND/OR MARKED AS A BICYCLE FACILITY INCLUDE SECOND LINE OF LINE-SPACE MARKING, OTHERWISE DO NOT.
5. BIKE ACCOMMODATION FOR CONCRETE PAVEMENT IS 5' WIDE. BIKE ACCOMMODATION FOR ASPHALT PAVEMENT IS A MINIMUM OF 4', 5' AT ≥ 45 MPH.
6. REQUIRED ONLY WHEN SPECIFIED IN THE CONTRACT.
7. 3' LINE, 9' GAP - 8-INCH WIDE, WHITE.
8. REFER TO CONTRACT PLANS.

6

S.D.D. 15 C 29-3a

BICYCLE LANE MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

4/30/2013
DATE

/S/ Travis Feltes
STATE TRAFFIC E

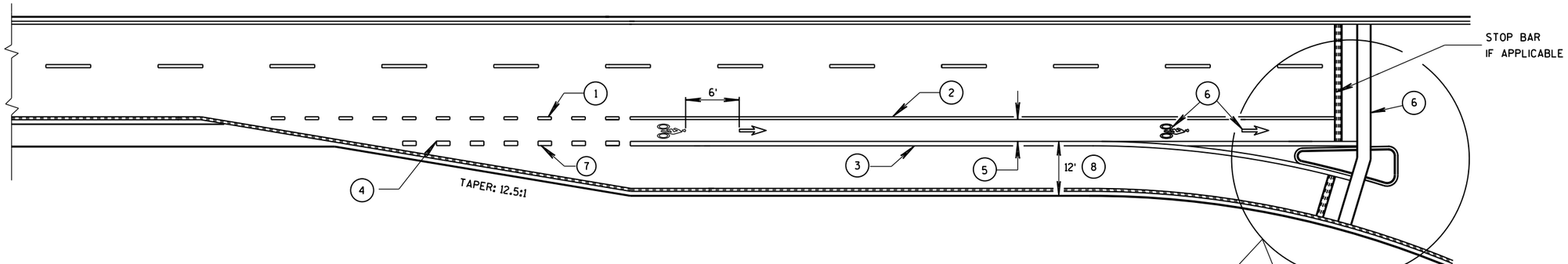
FHWA

6

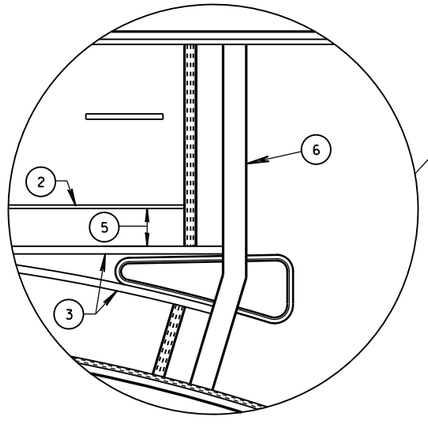
S.D.D. 15 C 29-3a

GENERAL NOTES

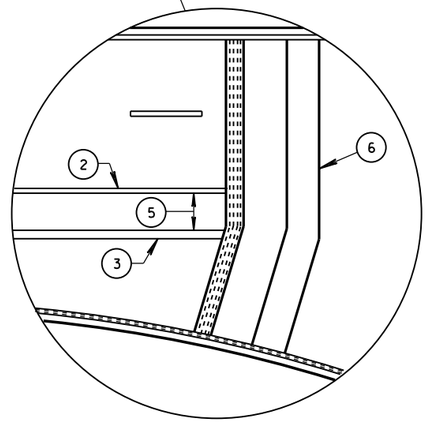
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2. 4-INCH, WHITE.
3. 8-INCH, WHITE.
4. IF SIGNED AND/OR MARKED AS A BICYCLE FACILITY INCLUDE SECOND LINE OF LINE-SPACE MARKING, OTHERWISE DO NOT.
5. 5' TYPICAL.
6. REQUIRED ONLY WHEN SPECIFIED IN THE CONTRACT.
7. 3' LINE, 9' GAP - 8-INCH WIDE, WHITE.
8. REFER TO CONTRACT PLANS.



BIKE LANE - 4-LANE DIVIDED WITH RIGHT TURN LANE



4 LANE DIVIDED WITH ISLAND



4 LANE DIVIDED WITHOUT ISLAND

BICYCLE LANE MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4/30/2013 — DATE
/S/ Travis Feltes — STATE TRAFFIC E
FHWA

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S.D.D. 15 C 29-3b

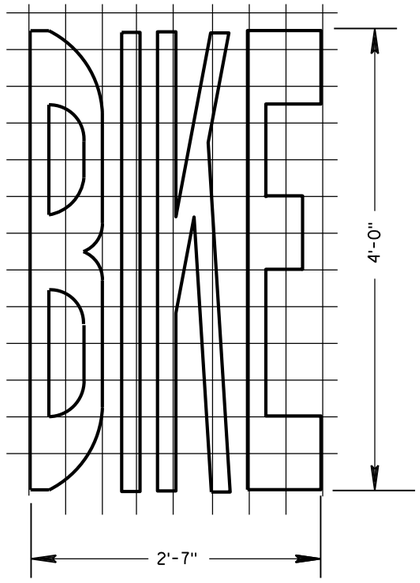
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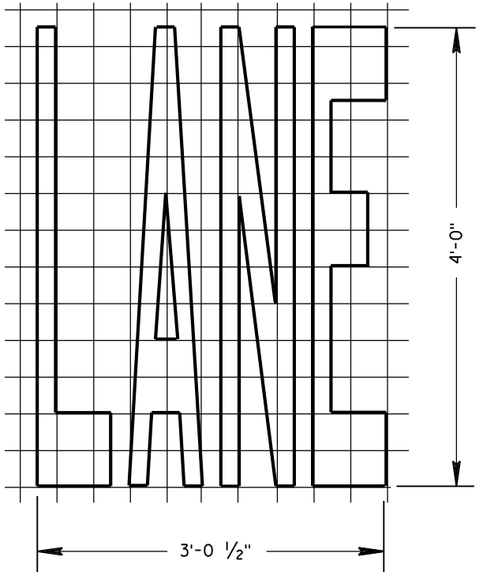
S.D.D. 15 C 29-3b

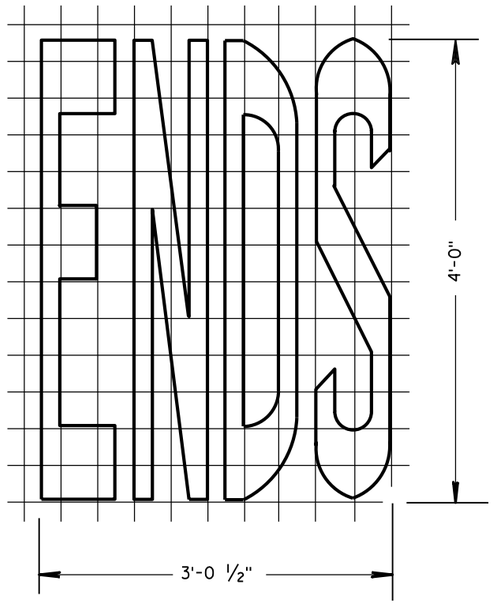
GENERAL NOTES

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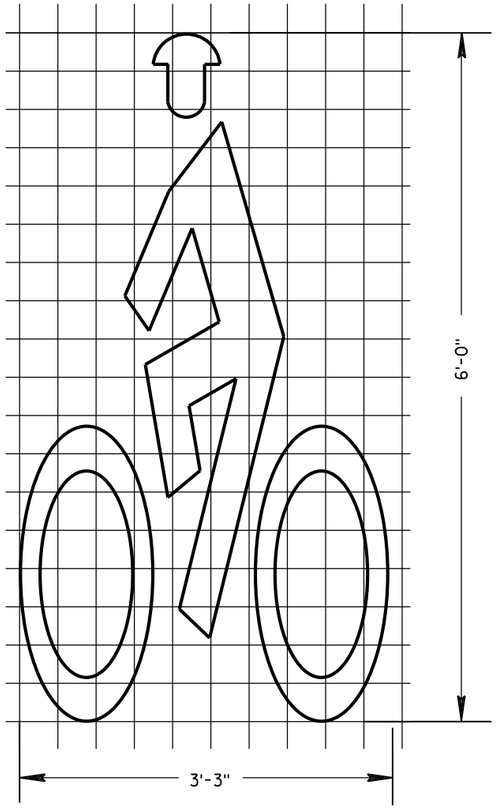
ALL LETTERS, ARROWS AND SYMBOLS SHALL BE IN CONFORMANCE WITH REQUIREMENTS INCLUDED IN "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKING" BOOK BY THE FEDERAL HIGHWAY ADMINISTRATION. ALL LETTERS, ARROWS AND SYMBOLS SHALL BE WHITE AND REFLECTORIZED. SMALL DIFFERENCES IN DIMENSIONS WITHIN THE TOLERANCES OF THAT BOOK ARE ACCEPTABLE.



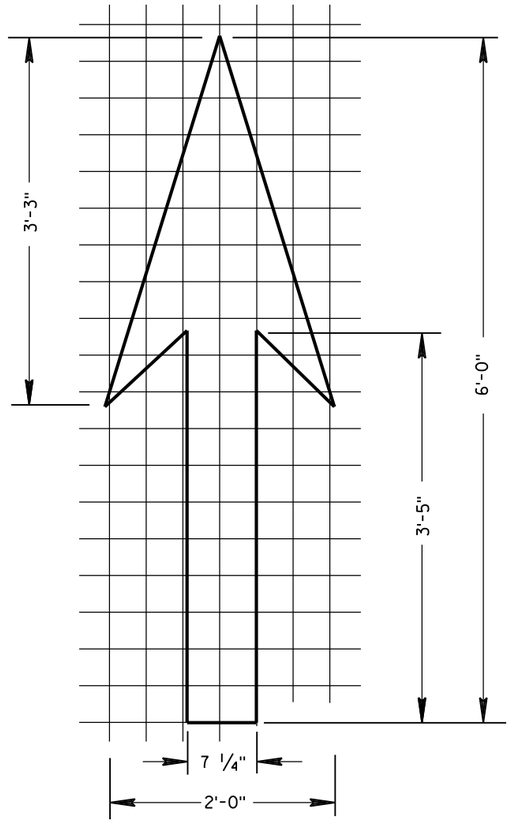




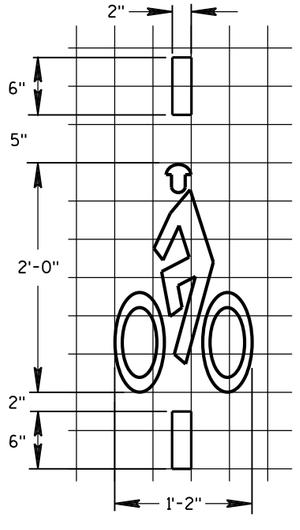
BIKE LANE WORDS



BIKE LANE SYMBOL



BIKE LANE ARROW



BICYCLE DETECTOR PAVEMENT MARKING

PAVEMENT MARKING FOR BIKE LANES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4-30-2013
DATE

/S/ Travis Feltes
STATE TRAFFIC EN

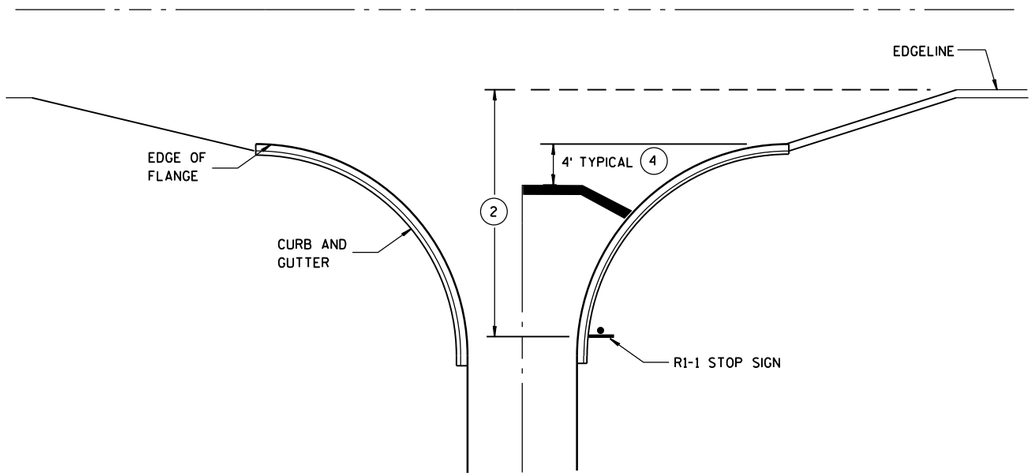
FHWA

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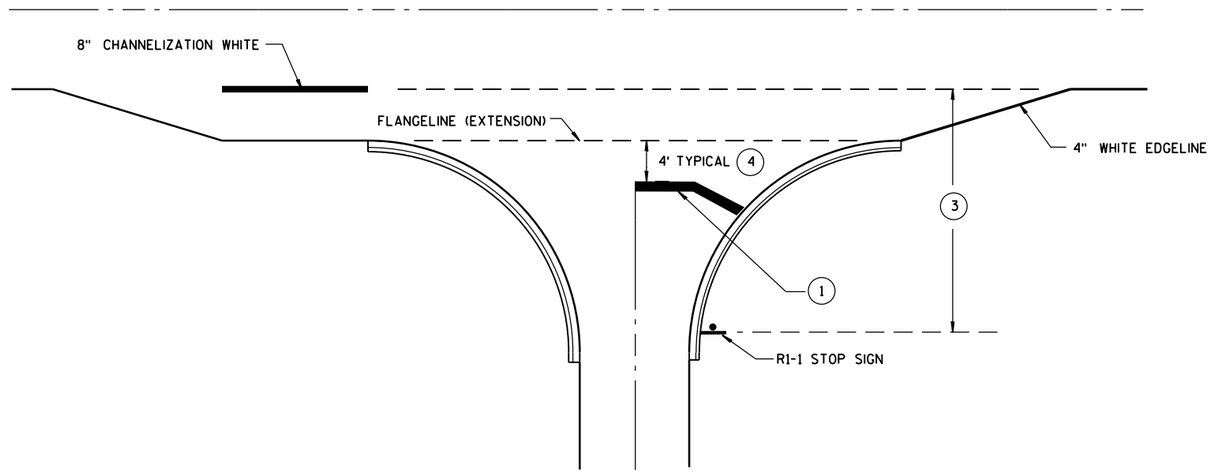
S.D.D. 15 C 29-3e

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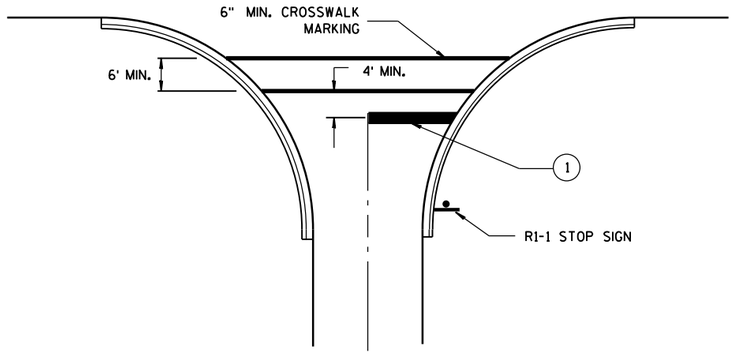
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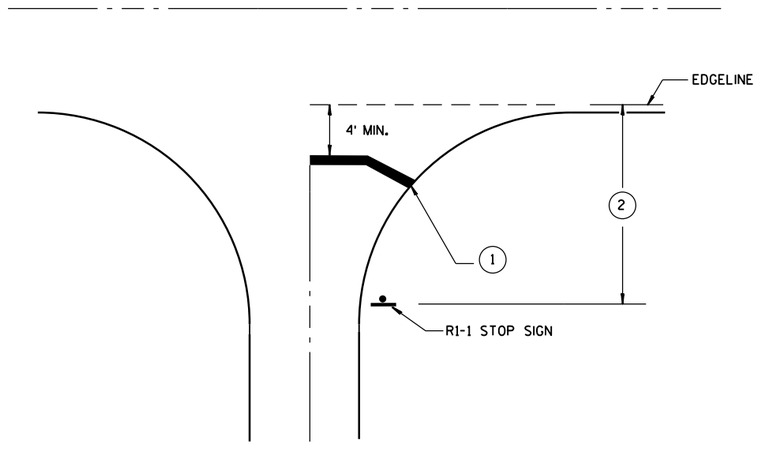
TYPICAL STOP LINE PAVEMENT MARKING WITH CURB AND GUTTER



TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH RIGHT TURN LANE



TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH CROSSWALK MARKING



TYPICAL STOP LINE PAVEMENT MARKING WITHOUT CURB AND GUTTER

GENERAL NOTES

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

STOP LINE AND CROSSWALK PAVEMENT MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

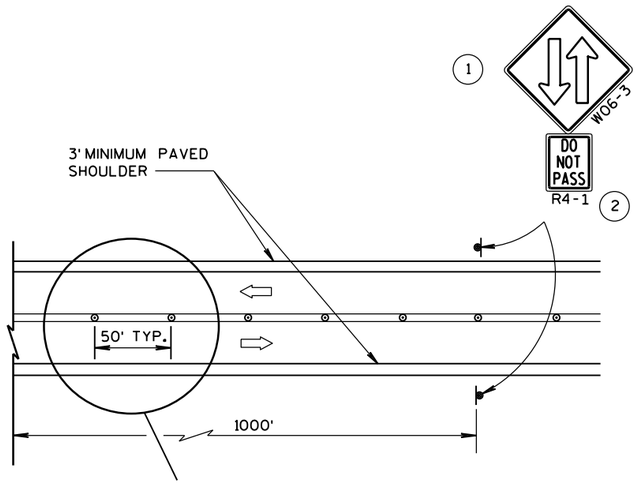
4/30/2013
DATE

/S/ Travis Feltes
STATE TRAFFIC E

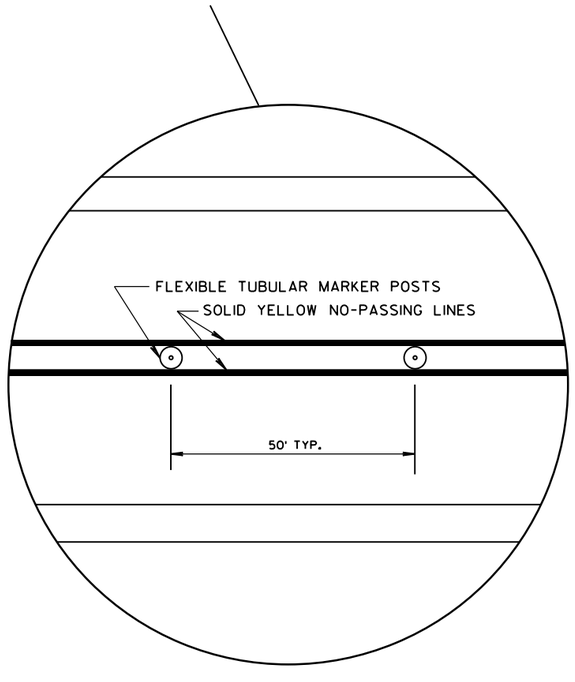
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S.D.D. 15 C 33-1



TWO LANE, TWO WAY OPERATION



LEGEND

- SIGN ON PERMANENT SUPPORT
- DELINEATOR FLEXIBLE/TUBULAR MARKER
- DIRECTION OF TRAFFIC

GENERAL NOTES

ALL SIGNS ARE 48"x48" UNLESS OTHERS NOTED.

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

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH THE TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER. NO WARNING LIGHTS SHALL BE WORKING ON "COVERED" OR "DOWNED" SIGNS.

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 TO PROVIDE A MINIMUM OF 200 FEET, (500 FEET DESIRABLE) DISTANCE TO EXISTING SIGNS.

A SINGLE ROW OF FLEXIBLE TUBULAR MARKERS ON CENTERLINE EXTEND FOR THE ENTIRE LENGTH OF TWO-WAY TRAFFIC AT 50-FOOT SPACING.

COVER EXISTING CENTERLINE STRIPE WITH TEMPORARY PAVEMENT MARKING, 4-INCH DOUBLE YELLOW.



THE W06-3 WITH THE W057-51 SHALL BE LOCATED 200 FEET BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP AND/OR 500 FEET BEYOND ANY SIDEROAD. THE W06-3 WITH THE R4-1 SHALL BE LOCATED 1000 FEET BEYOND THE W06-3 AND THE W057-51 AND THE SIGNS SHALL BE ALTERNATED WITH ONE MILE INTERVALS BETWEEN W06-3 SIGNS.

(2) CONVENTIONAL: 24"x30"
FREEWAY AND EXPRESSWAY: 36"x48"

TRAFFIC CONTROL, TWO LANE TWO WAY OPERATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

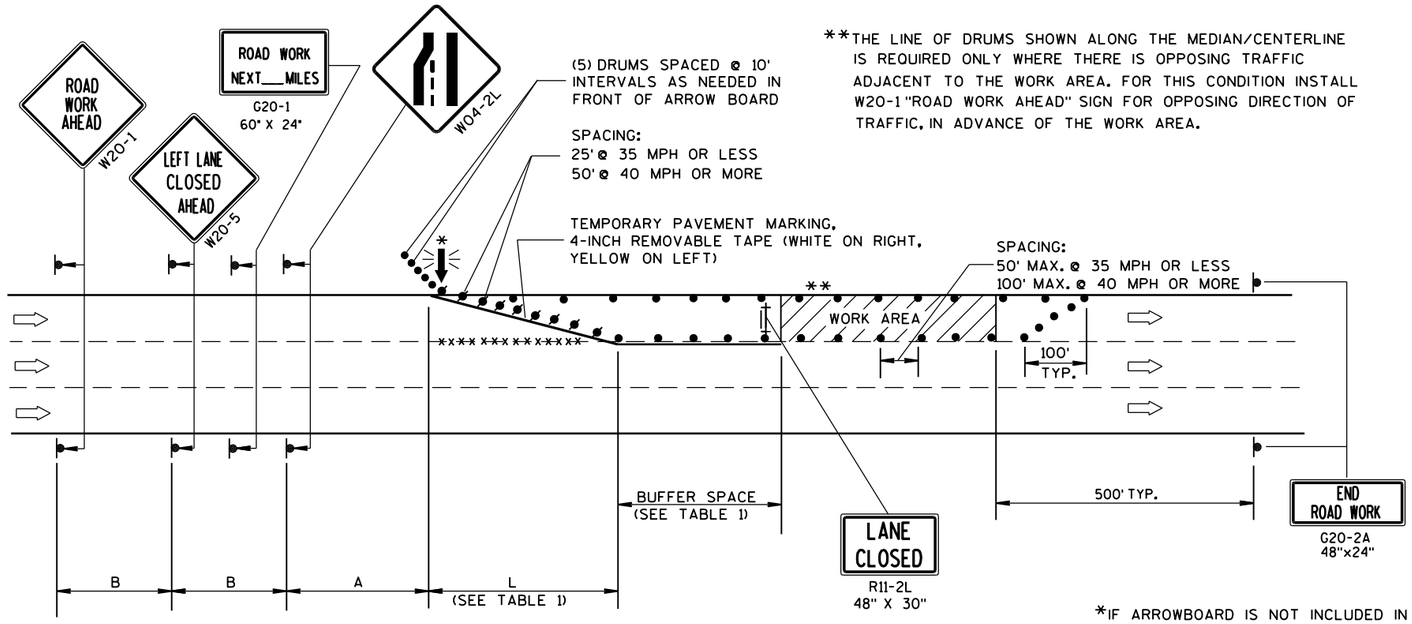
APPROVED

8/2013	/S/ Travis Feltes	
DATE	STATE TRAFFIC ENGINEER	SIGN

FHWA

6

S.D.D. 15 D 6-3



**THE LINE OF DRUMS SHOWN ALONG THE MEDIAN/CENTERLINE IS REQUIRED ONLY WHERE THERE IS OPPOSING TRAFFIC ADJACENT TO THE WORK AREA. FOR THIS CONDITION INSTALL W20-1 "ROAD WORK AHEAD" SIGN FOR OPPOSING DIRECTION OF TRAFFIC, IN ADVANCE OF THE WORK AREA.

B=400' AT 25-30 MPH
700' AT 35-40 MPH
1000' AT 45-55 MPH

A=200' AT 25-30 MPH
350' AT 35-40 MPH
500' AT 45-55 MPH

(PLACE BARRICADE AND SIGN APPROX. EVERY 1000' ACROSS THE CLOSED LANE)

*IF ARROWBOARD IS NOT INCLUDED IN MISCELLANEOUS QUANTITIES, SUBSTITUTE A TYPE III BARRICADE WITH W01-6 SIGN IN THE LANE CLOSURE TAPER.

W01-6
48"x24"

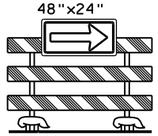


TABLE 1
TAPER AND BUFFER SPACE FOR 12' LANE WIDTH

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

FOR LANE WIDTH OTHER THAN 12':

L = WS AT 45 MPH OR GREATER

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

L = TAPER LENGTH IN FEET

S = NON-CONSTRUCTION SPEED LIMIT (MPH)

W = WIDTH OF LANE CLOSURE

LEGEND

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

GENERAL NOTES

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

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

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

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

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" SIGNS MAY BE USED IF APPROVED BY DISTRICT TRAFFIC UNIT.

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

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

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

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

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

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

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

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

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

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

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

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Feb. 2015 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

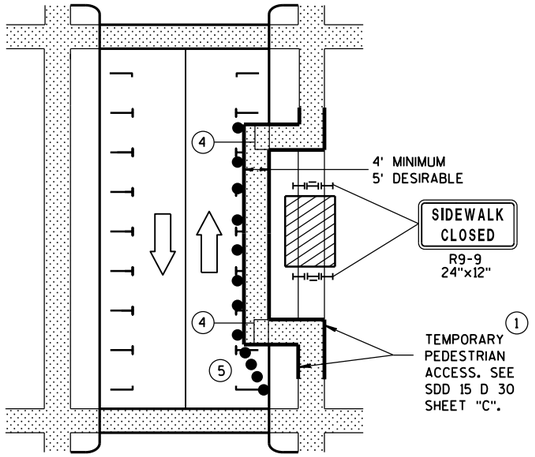
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S.D.D. 15 D 20-3

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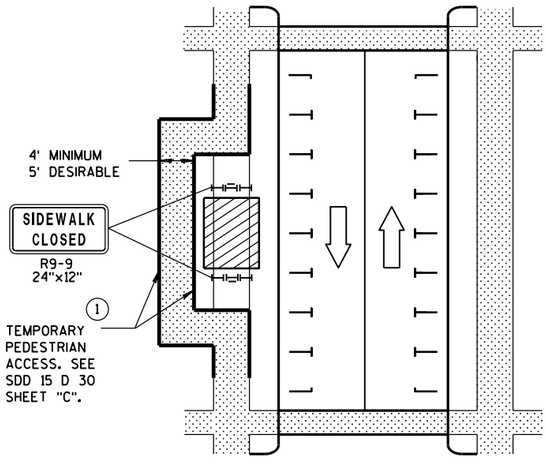
S.D.D. 15 D 20-3

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

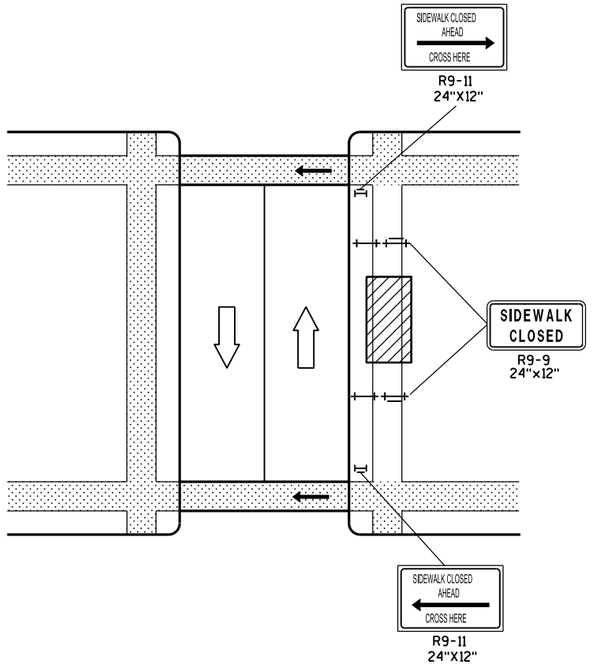


MID-BLOCK SIDEWALK CLOSURE IN PARKING LANE

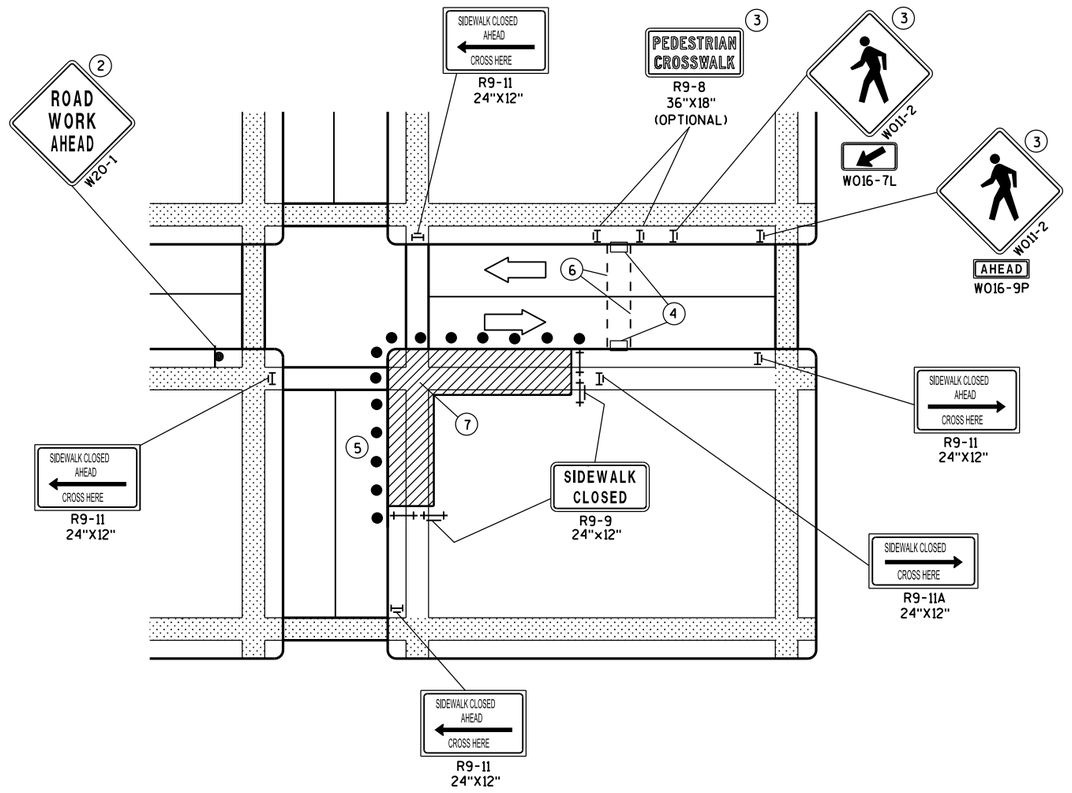
NOTE: LAYOUT SAME AS ABOVE.



SIDEWALK DIVERSION



MID-BLOCK SIDEWALK CLOSURE



CORNER SIDEWALK CLOSURE WITH TEMPORARY CROSSWALK

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

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

(6) TEMPORARY PAVEMENT MARKING FOR CROSSWALK LINES.

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

LEGEND

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

TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION

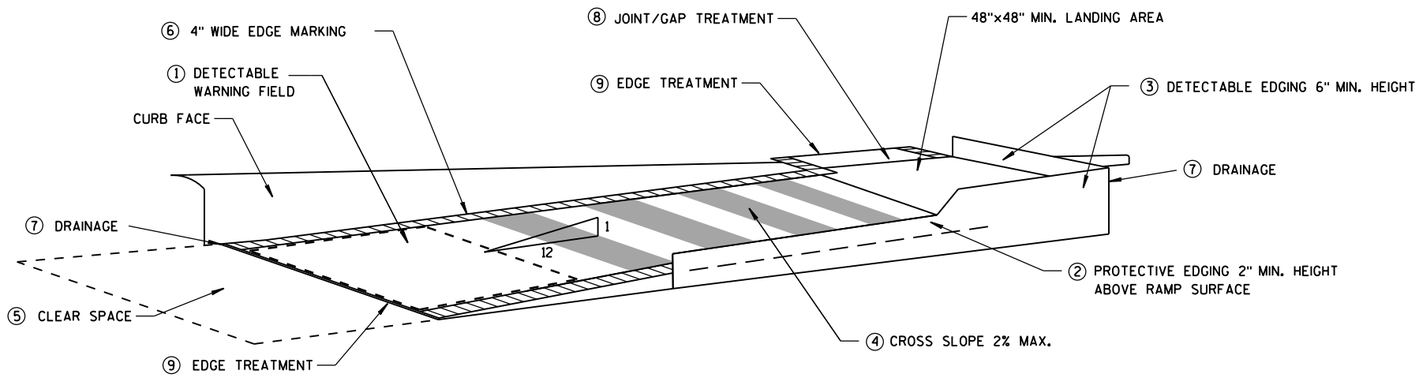
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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S.D.D. 15 D 30-2a

6

S.D.D. 15 D 30-2a



TEMPORARY CURB RAMP PARALLEL TO CURB

GENERAL NOTES

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

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

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

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

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

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

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

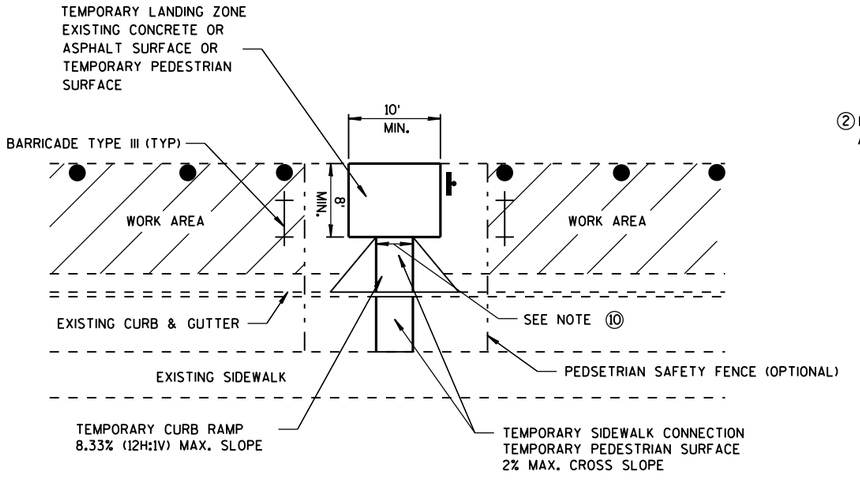
⑥ THE CURB RAMP WALKWAY EDGE SHALL BE MARKED WITH A YELLOW COLOR, 4" WIDE MARKING, UNLESS A CONTRASTING DETECTABLE WARNING FIELD IS PROVIDED.

⑦ DO NOT RESTRICT WATER FLOW IN THE GUTTER SYSTEM.

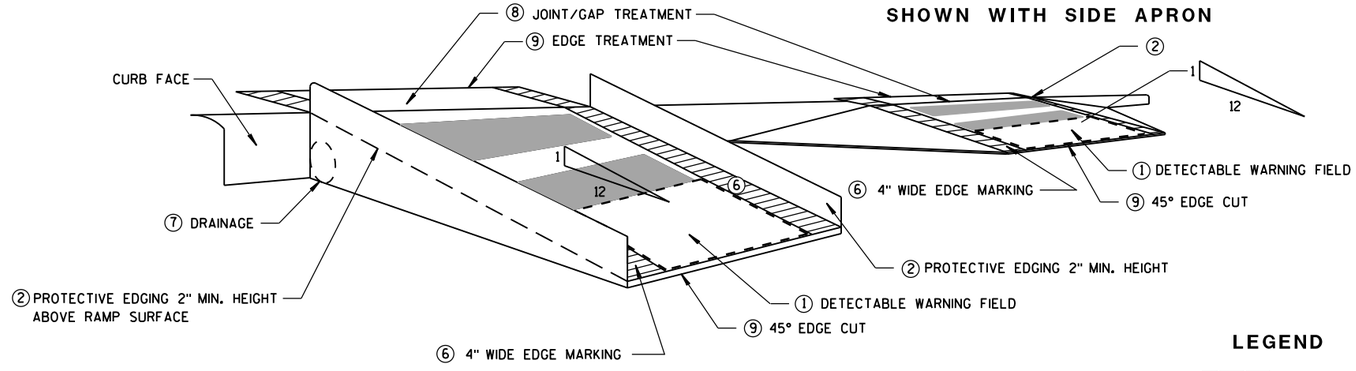
⑧ LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL BE LESS THAN 1/2" WIDTH.

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

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



TEMPORARY BUS STOP PAD



SHOWN WITH PROTECTIVE EDGE

SHOWN WITH SIDE APRON

TEMPORARY CURB RAMP PERPENDICULAR TO CURB

LEGEND

WORK AREA

TYPE III BARRICADE

TRAFFIC CONTOL DRUM

TRAFFIC CONTROL, TEMPORARY ADA COMPLIANT PEDESTRIAN ACCOMMODATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

March 2015 — DATE

/S/ Travis Feltes — STATE TRAFFIC ENGINEER — SIGN

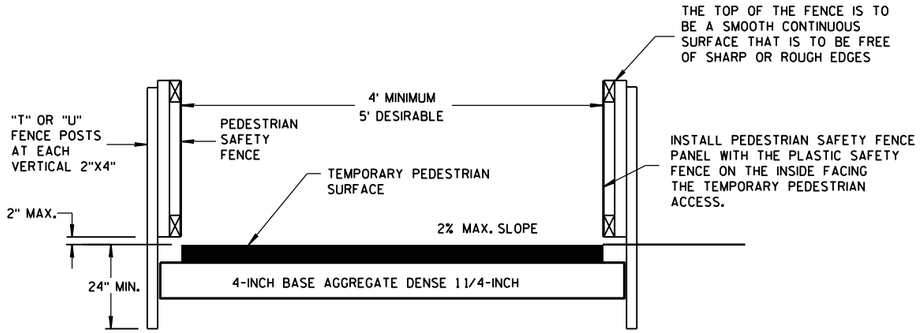
FHWA

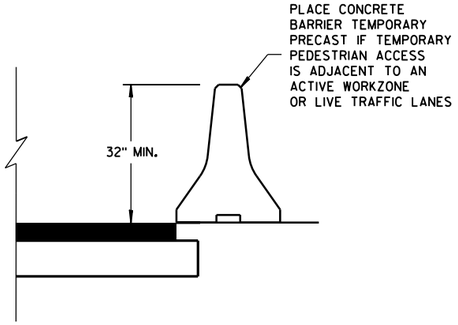
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S.D.D. 15 D 30-2b

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S.D.D. 15 D 30-2b

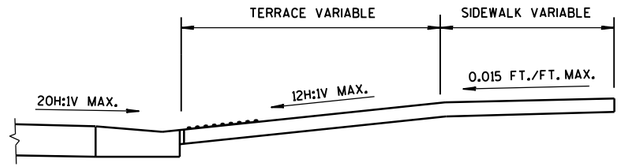




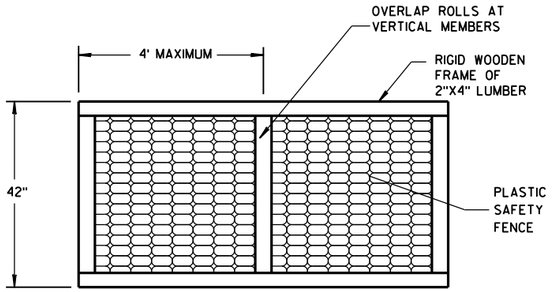
TEMPORARY PEDESTRIAN ACCESS

GENERAL NOTES

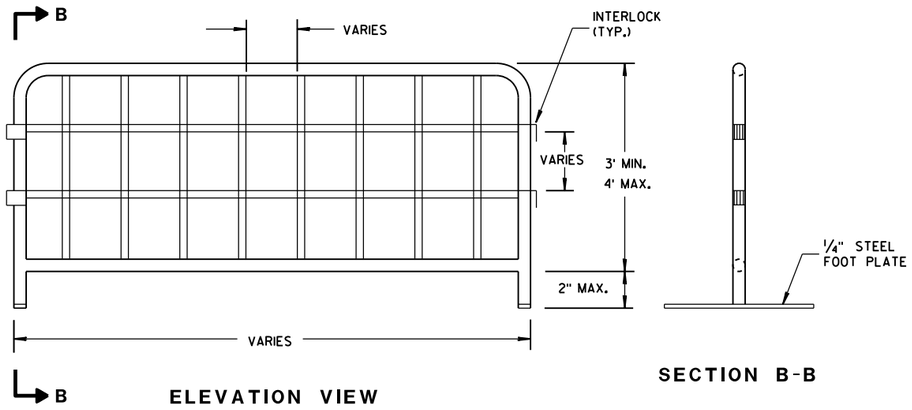
(1) INTERCHANGEABLE WITH THE PEDESTRIAN SAFETY FENCE.



SECTION A-A



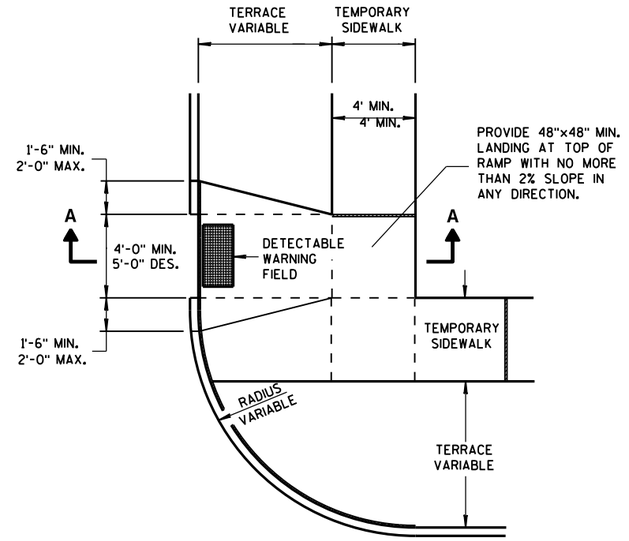
PEDESTRIAN SAFETY FENCE



ELEVATION VIEW

SECTION B-B

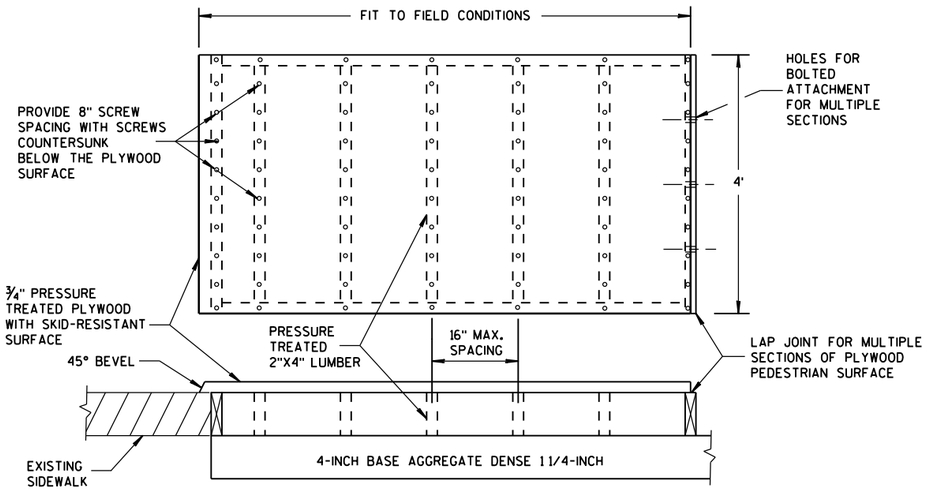
TEMPORARY PEDESTRIAN STEEL BARRICADE (1)



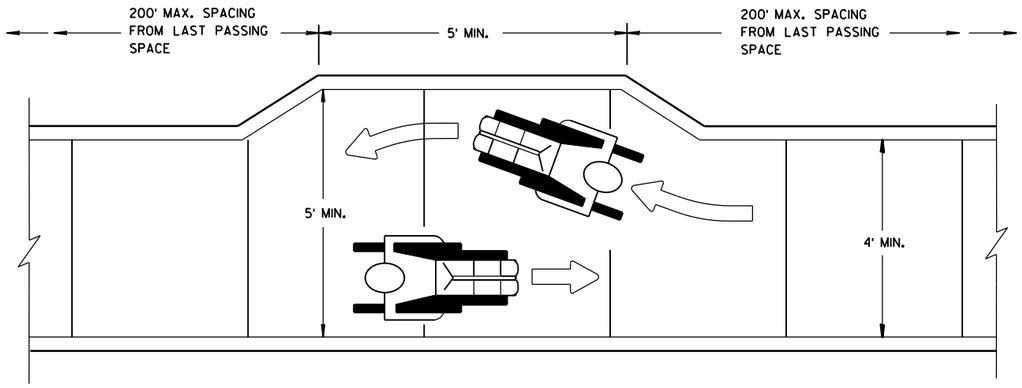
PLAN VIEW

TEMPORARY TYPE 3 RAMP

(OUTSIDE OF CROSSWALK AREA)



TEMPORARY PEDESTRIAN SURFACE PLYWOOD



NARROW SIDEWALK PASSING DETAIL

TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2015 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER — SIGN
FHWA

6

S.D.D. 15 D 30-2c

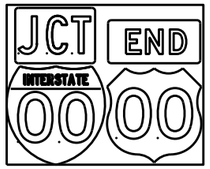
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S.D.D. 15 D 30-2c

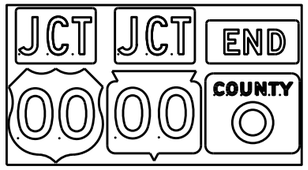
TYPICAL ASSEMBLIES



J1-1



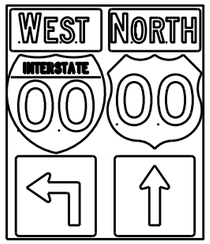
J1-2



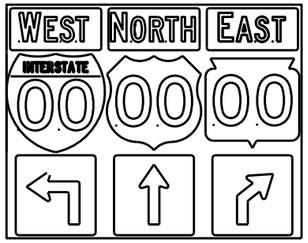
J1-3



J2-1



J2-2

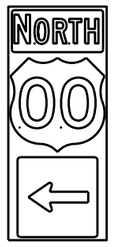


J2-3

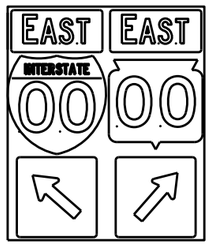


JV

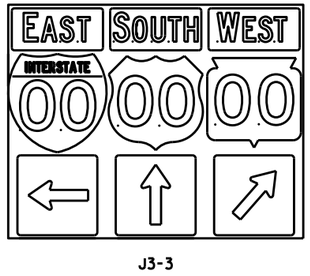
(Typical Vertical J-Assembly
See Note 10 and 11)



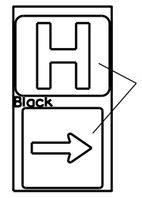
J3-1



J3-2



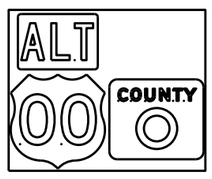
J3-3



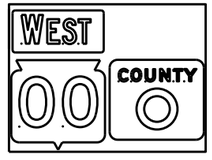
JH-1



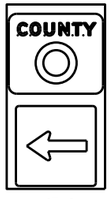
J4-1



J4-2



J4-2



J13-1



J12-1



J32-1



J33-1

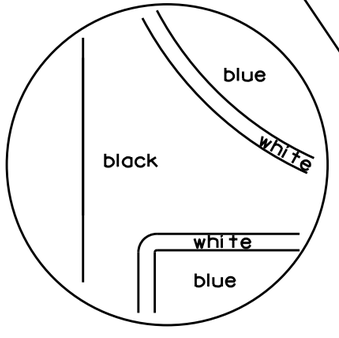


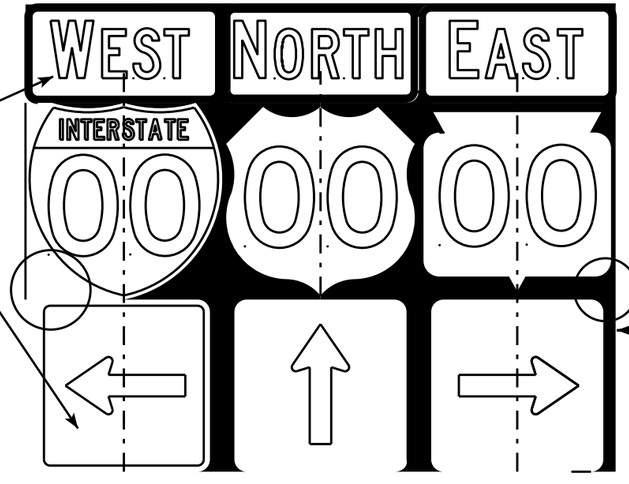
J23-1

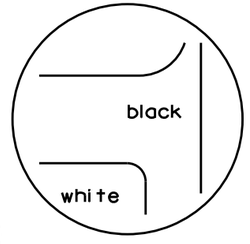


J22-1

blue background
with interstate







black background

NOTES

1. Signs are Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Black Non-reflective
   Message - see Note 5
3. Message Series - See Note 5
4. Corners shall be square or rounded if base material is plywood. If base material is metal the corners shall be rounded.
5. The colors and message spacing on each marker shall be according to the applicable route marker panel specifications.
6. Certain marker heads require the component pieces to be the same color. As an example, all the components used with an M1-1 Interstate marker shall be blue.
7. Single panel j-assemblies shall only be used with route marker shields that are same size. If the route marker shields are different size use multiple piece component.
8. Route assemblies that have 24 inch route shields and have dimensions greater than 48 inches (both vertical and horizontal) shall have one horizontal splice between the arrows and route shields. Vertical splices shall not be used on route assemblies with a horizontal dimension of 144 inches or less. The contractor shall not use more than one vertical joint per sign and the joint shall be between route shields.
9. Route assemblies that have 36 inch shields and have dimensions greater than 48 inchs (both vertical and horizontal) shall have two horizontal splices. One horizontal splice shall be between the cardinal direction and route shields and the other horizontal splice shall be between the arrows and route shields. Vertical splices shall not be used on route assemblies with a horizontal dimension of 144 or less. The contractor shall not use more than one vertical joint per sign and the joint shall be between route shields.
10. All Vertical J Assemblies are given a Sign Code of JV
11. For JV Assemblies that have a mixture of Interstate and non Interstate shields, arrows and cardinals shall be white on blue.

ROUTE MARKERS & COMPONENTS
IN TYPICAL ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

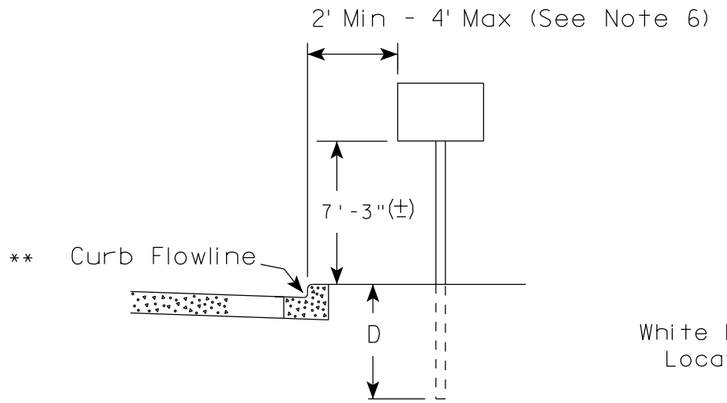
DATE 2/06/14 PL A2-1S.8

PROJECT NO: SHEET NO: E

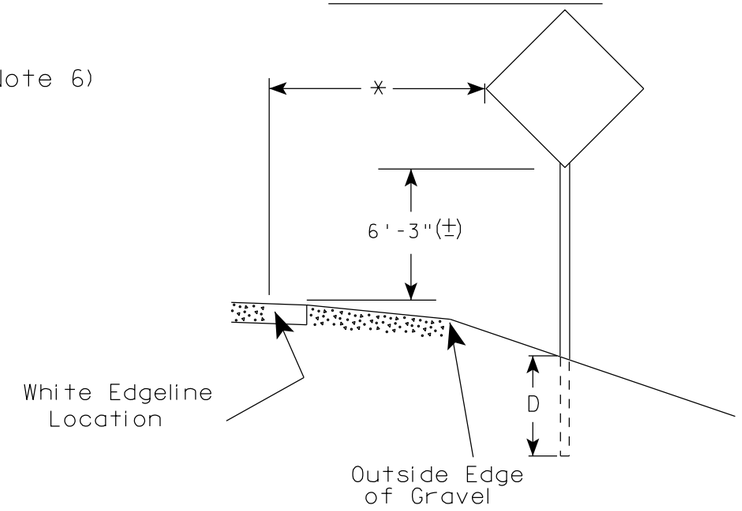
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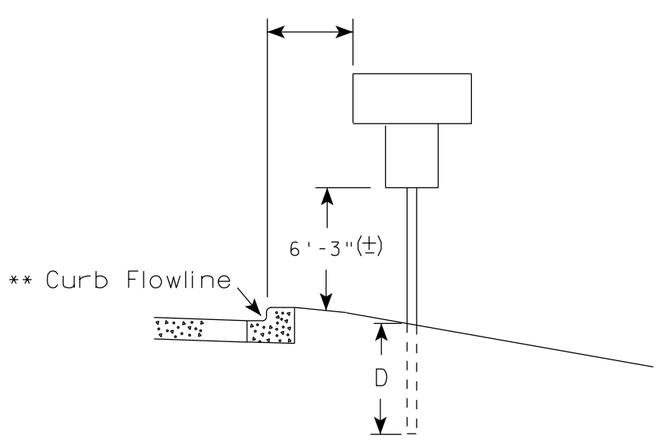
WISDOT/CADDS SHEET 42

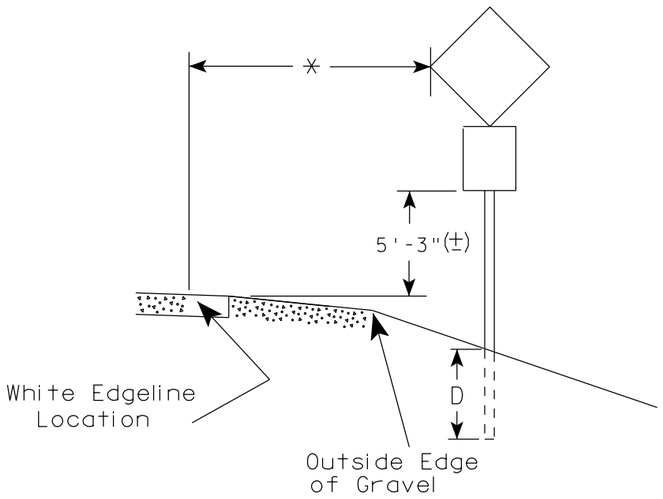
URBAN AREA



RURAL AREA (See Note 2)







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

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

POST EMBEDMENT DEPTH

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

GENERAL NOTES

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

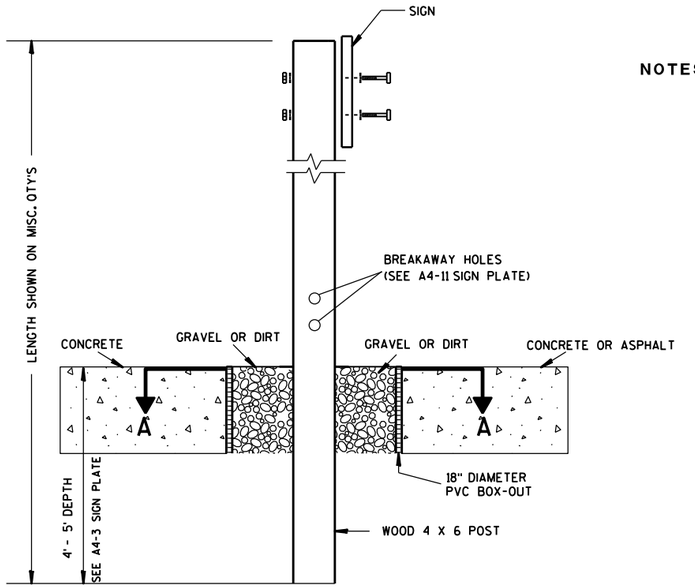
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

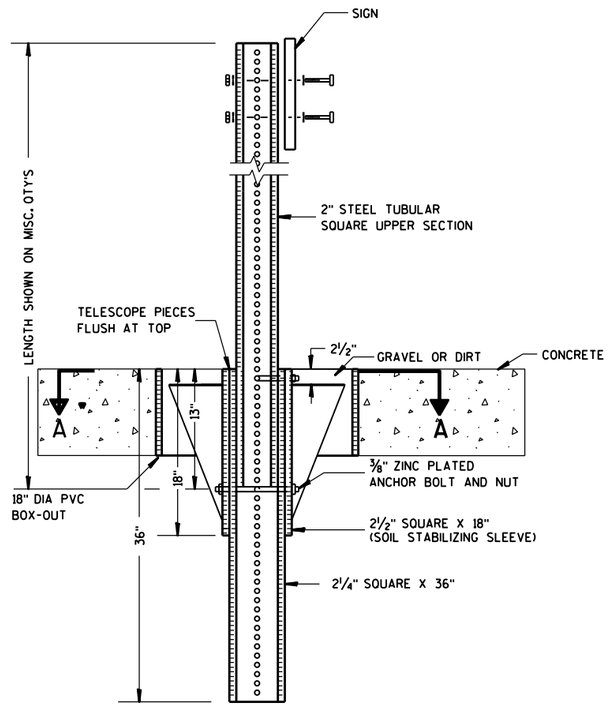
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E



ELEVATION VIEW

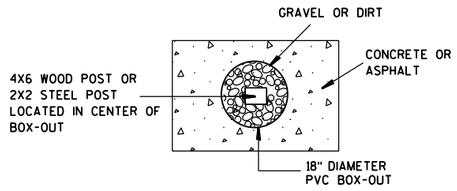
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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

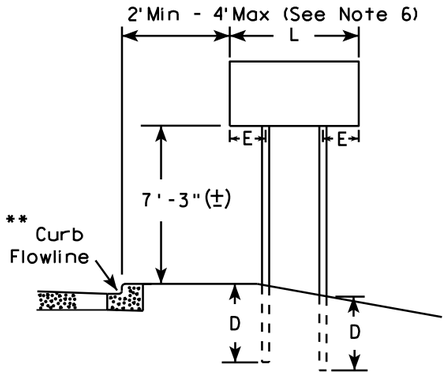
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

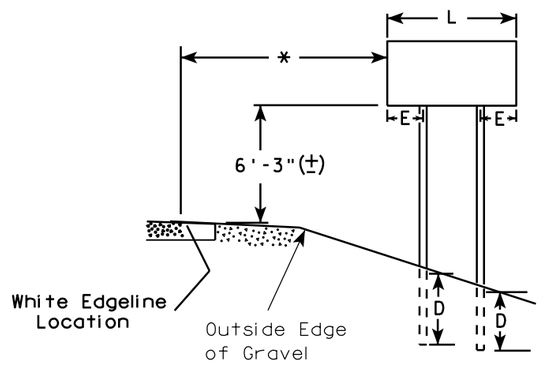
DATE 1/27/14 PLATE NO. A4-3B.1

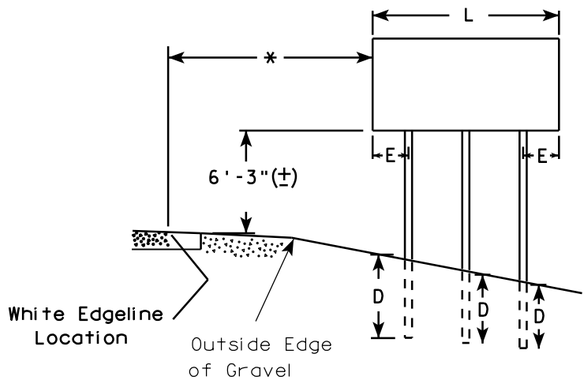
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

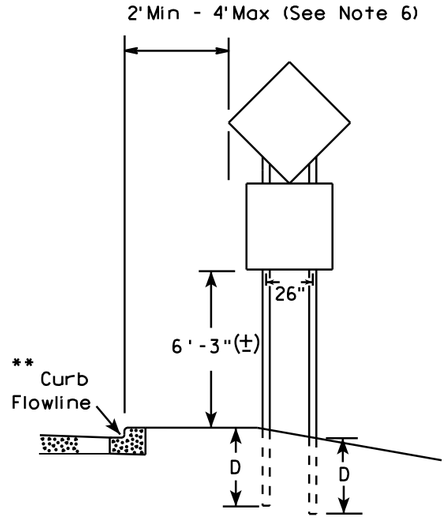
URBAN AREA



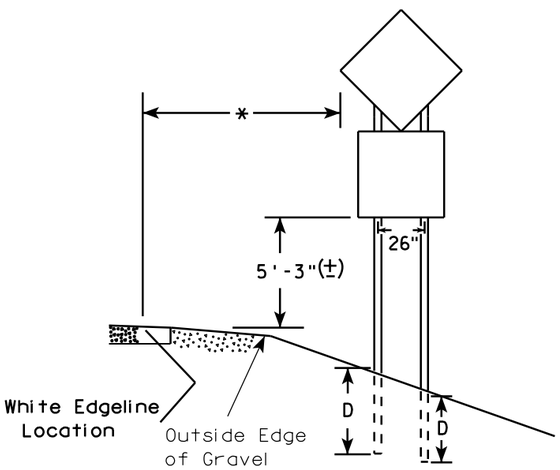
RURAL AREA (See Note 3)







48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

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. Minimum mounting height for J assemblies (A2-1S) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
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 120"	L/5

***

SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 120" less than 168"	12"

SIGN SHAPE OTHER THAN DIAMOND (FOUR POSTS REQUIRED)	
L	E
168" and greater	12"

POST EMBEDMENT DEPTH

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

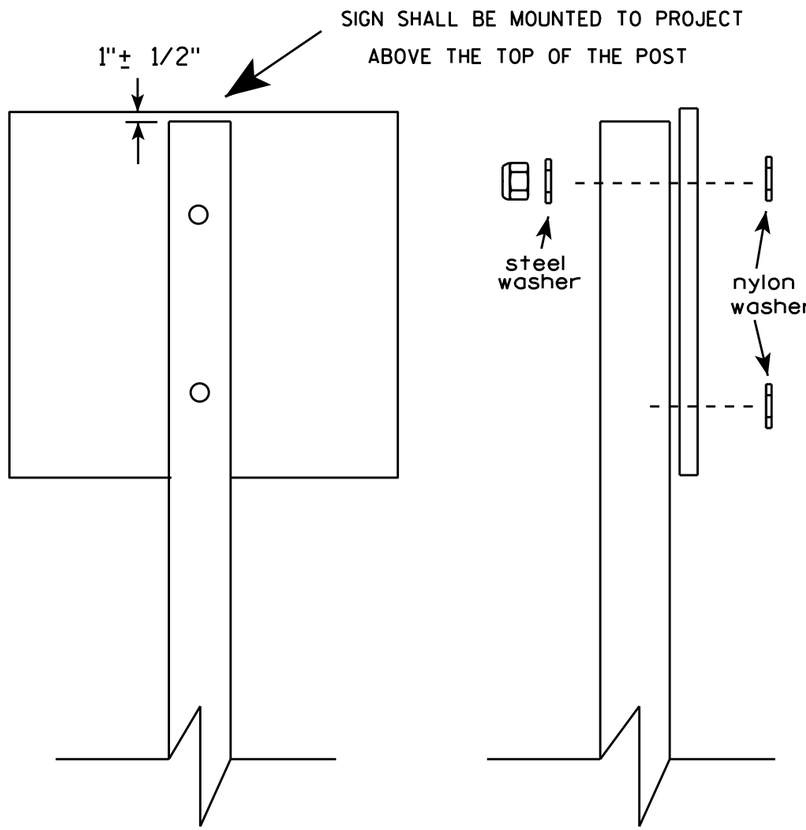
TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

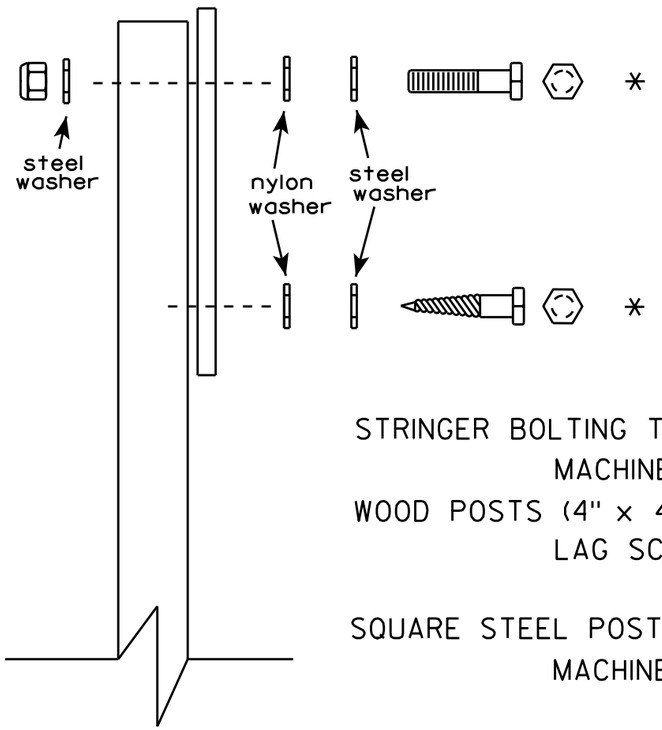
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 7/23/15 PLATE NO. A4-4 276 14

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E





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

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

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

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

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

ATTACHMENT OF SIGNS TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

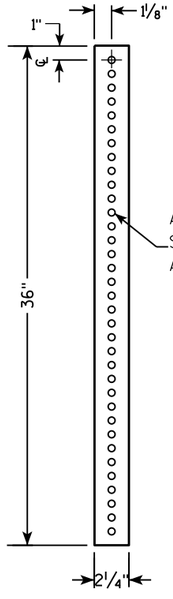
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 4/27/16 PLATE NO. A4-8.8

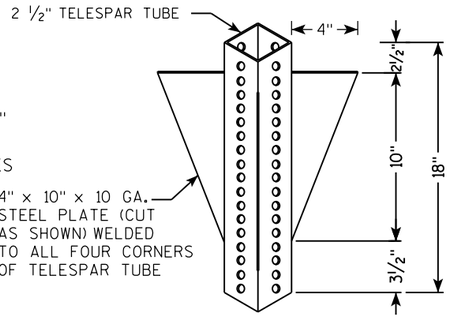
PROJECT NO: SHEET NO: E

TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM

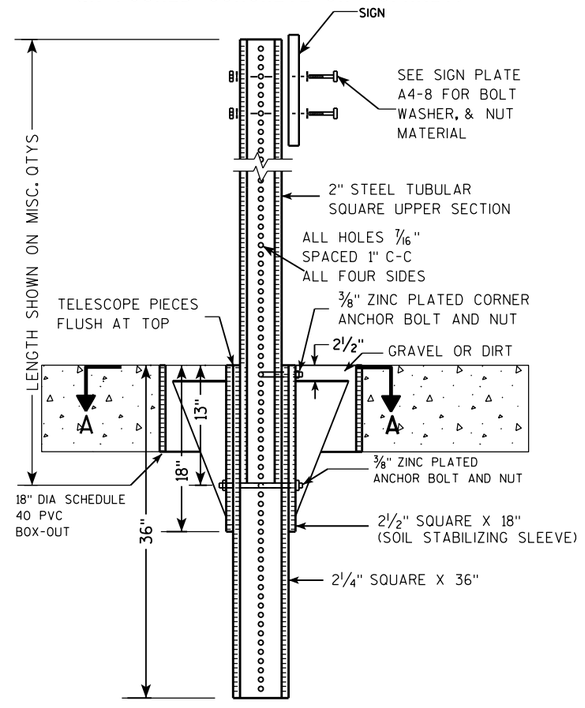
2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



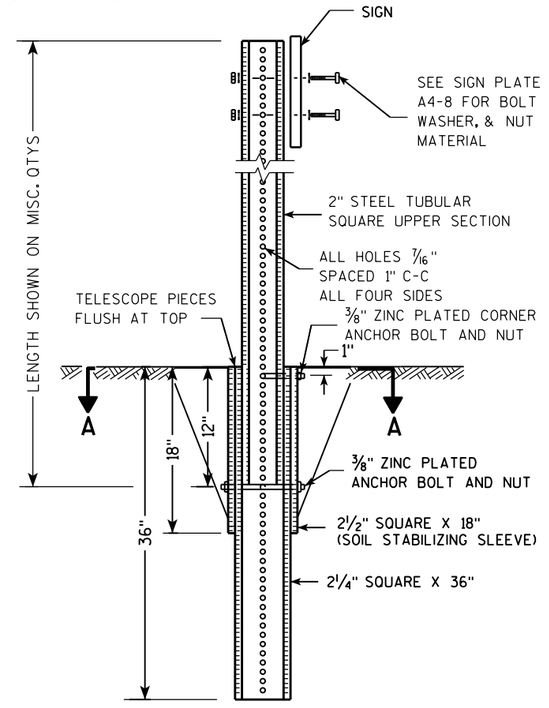
2 1/2 " SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH

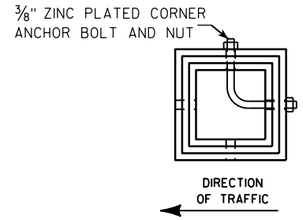


DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)



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





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

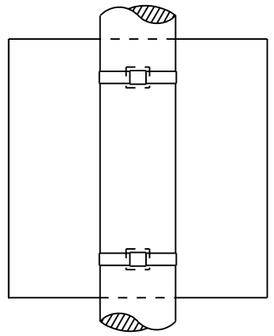
APPROVED Matthew R Rauch
for State Traffic Engineer

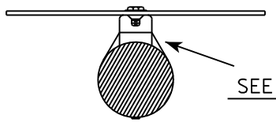
DATE 2/05/15 PLATE 278 A4-9.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

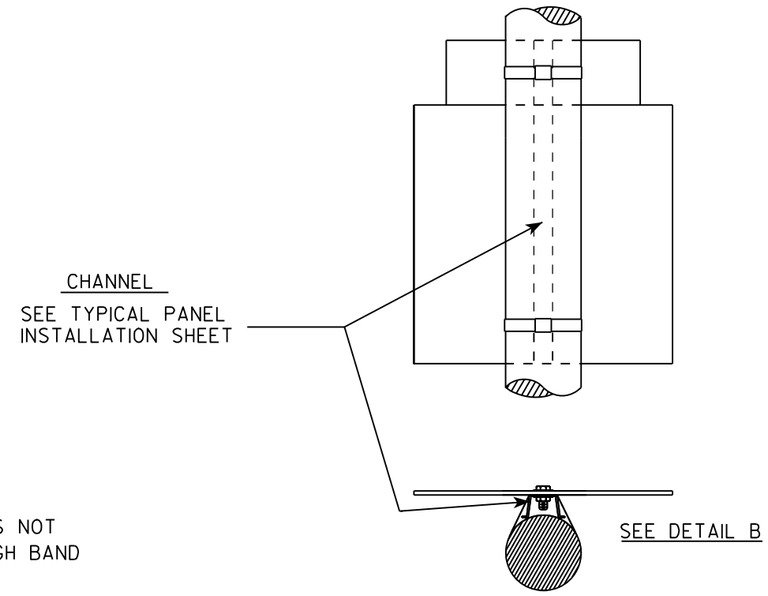
BANDING

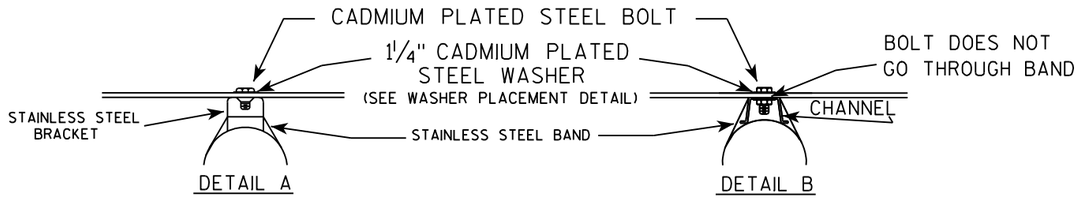
SINGLE SIGN



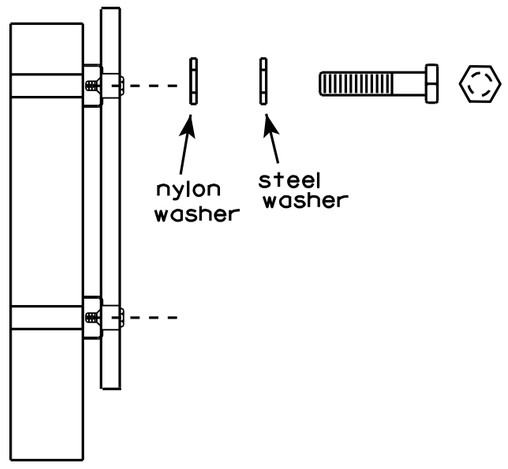


"J" ASSEMBLY





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 ¾" in width and 0.025" thickness.

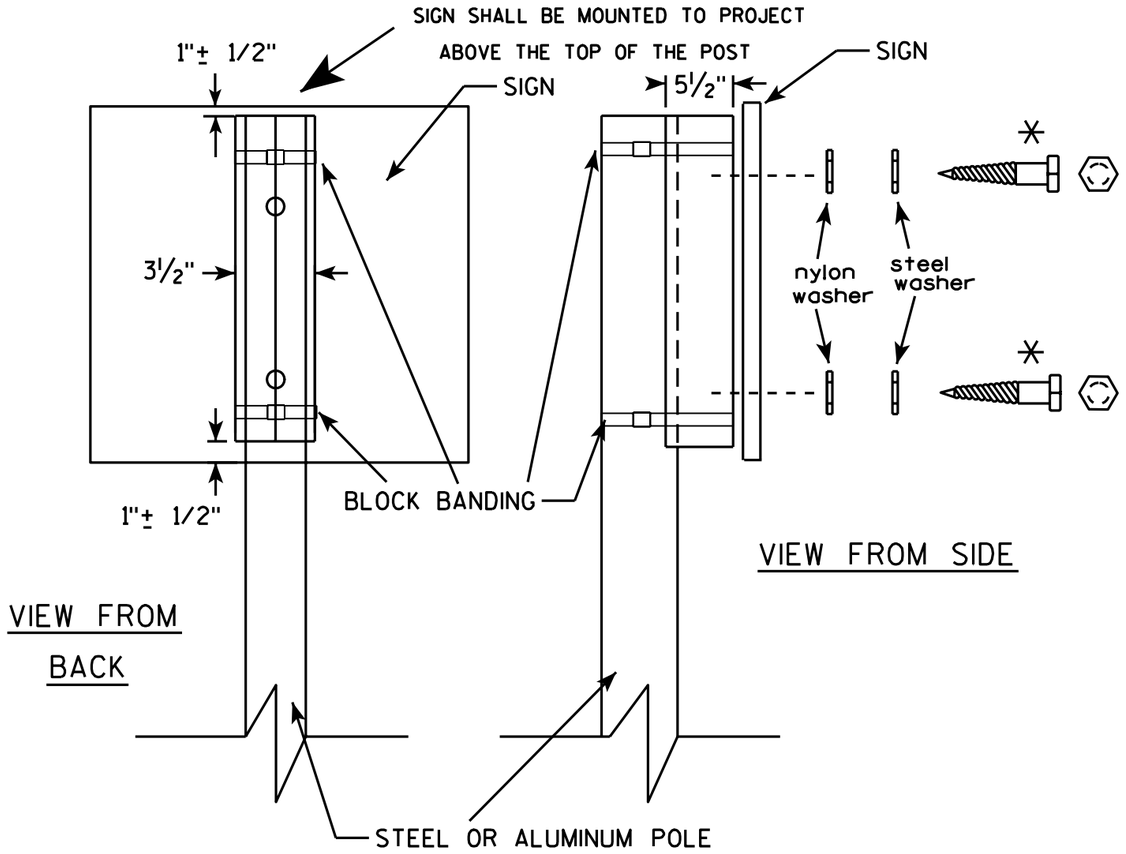
STANDARD SIGN
SIGN BANDING DETAILS

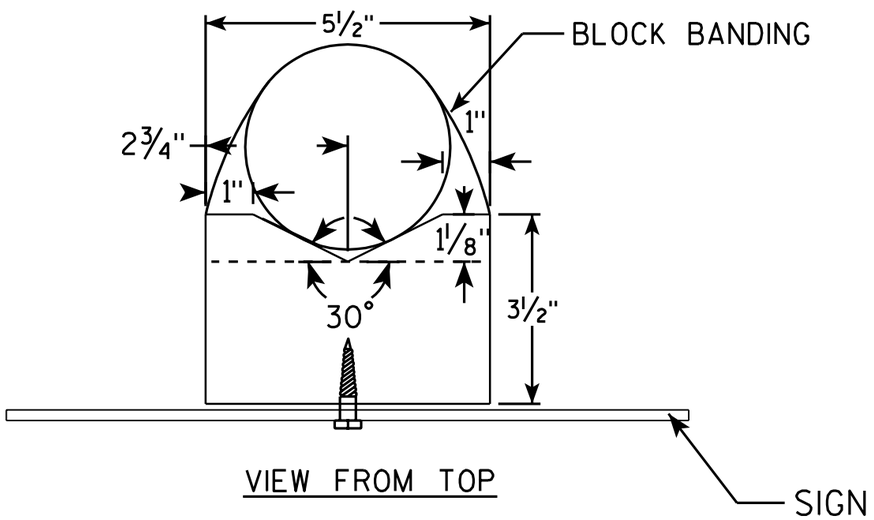
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 8/16/13 PLATE NO. A5-9.3

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 279	E





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, ¾" 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 NORNALLY 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, or
   b. Cadmium plated in accordance with ASTM Designation : B 766 TYPE 3, Class 12, or
   c. 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 1¼" O.D. X ⅜" I.D. X 1/16"
8. NYLON WASHERS SHALL BE 1¼" O.D. X ⅜" I.D. X .080 FOR TYPE H OR TYPE F FACE SIGN

✳ LAG BOLTS SHALL BE ⅜" X 2½"

BLOCK BANDING DETAIL (V-BLOCK OPTION)

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 7/12/07 PLATE NO. A5-10.1

PROJECT NO:

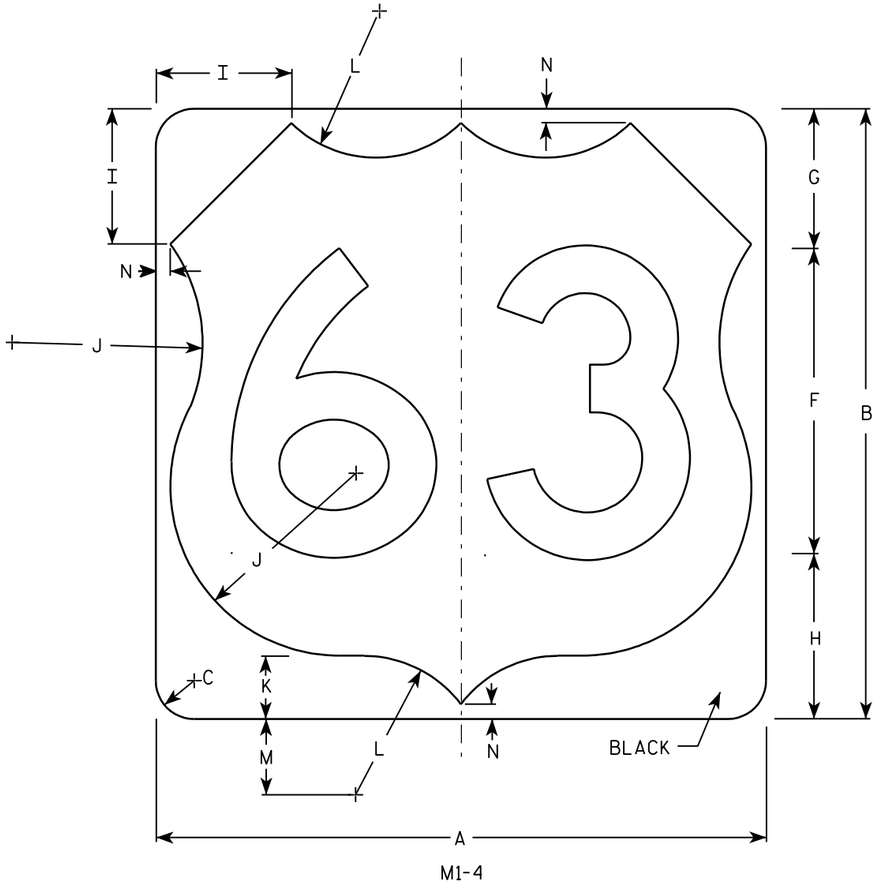
SHEET NO: 280 E

FILE NAME : C:\Users\Projects\tr_stdplate\A510.dgn PLOT DATE : 06-AUG-2007 13:37 PLOT BY : ditjph

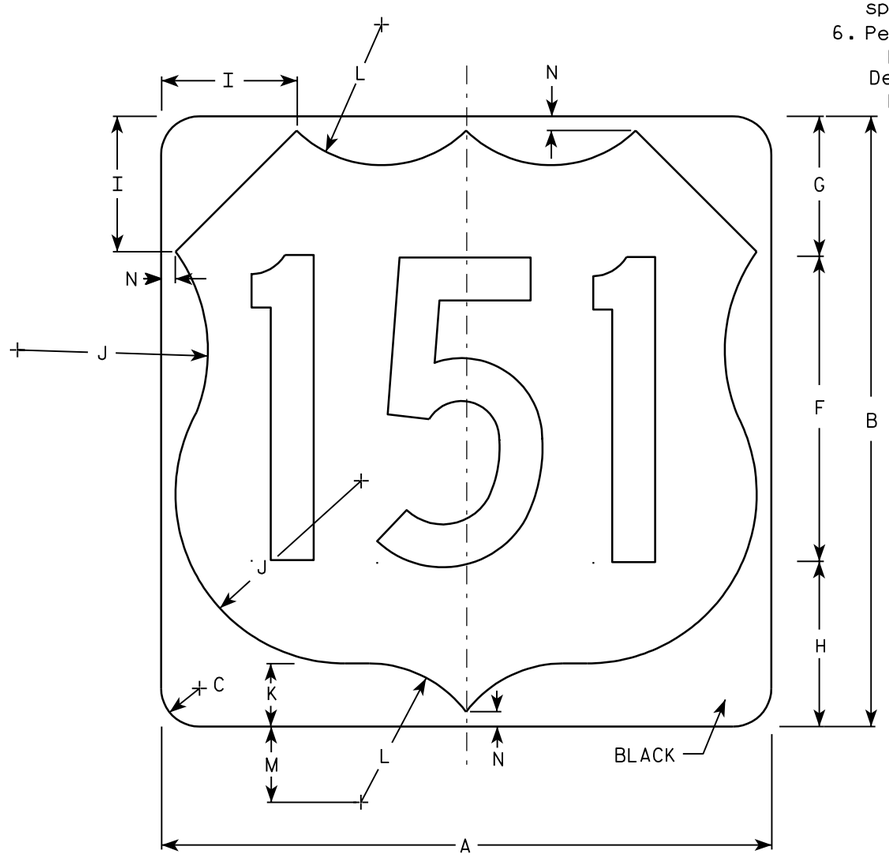
WISDOT/CADDS SHEET 42

NOTES

1. Sign is Type II - See Note 6 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White & Black - See Note 6
   Message - Black
3. Message Series - See note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals and adjust spacing as per Plate A10-1.
6. Permanent Signs
   Background - Type H Reflective
   Detour or other temporary signs
   Background - Reflective



M1-4



M1-4

Metric equivalent for this sign is:

SIZE	
1	
2	600 mm X 600 mm
3	900 mm X 900 mm
4	900 mm X 900 mm
5	900 mm X 900 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 m2
1																												
2	24	24	1 1/2			12	5 1/2	6 1/2	5	7 1/2	2 1/2	5 1/2	3	1/2													4.0	.36
3	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0	.81
4	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0	.81
5	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0	.81

USH MARKER
M1-4 FOR ASSEMBLIES

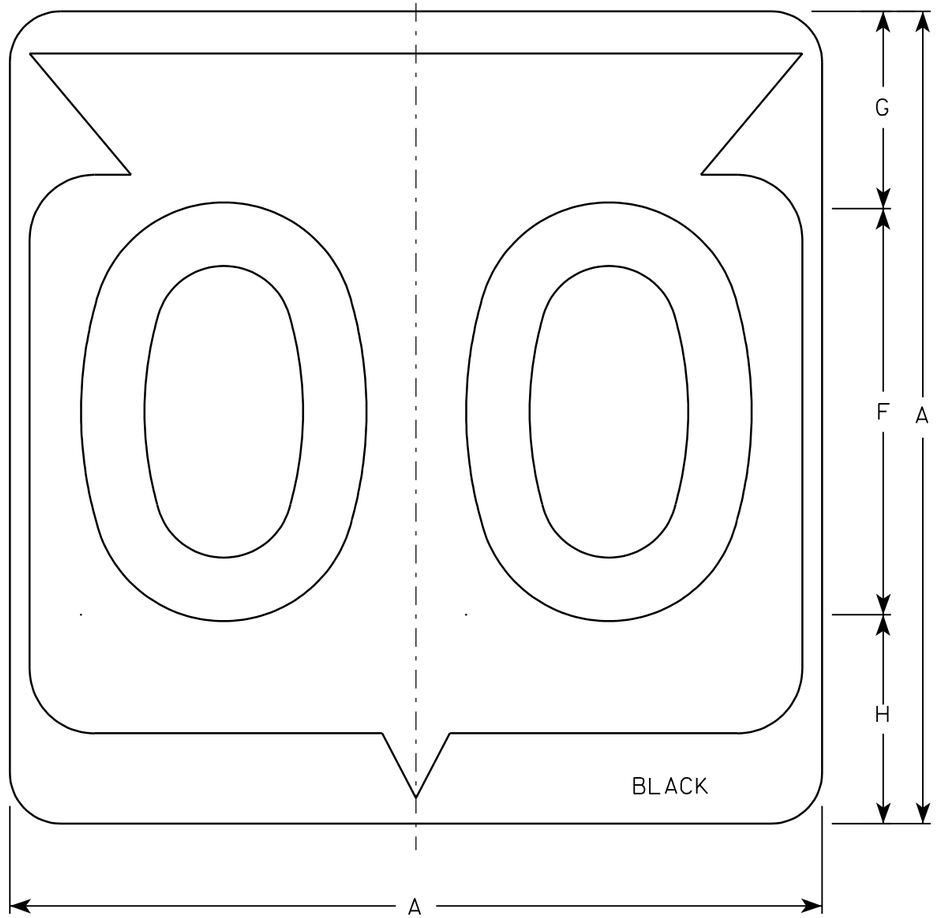
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 08/25/05 PLATE NO. M1-4.9

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 281 | E

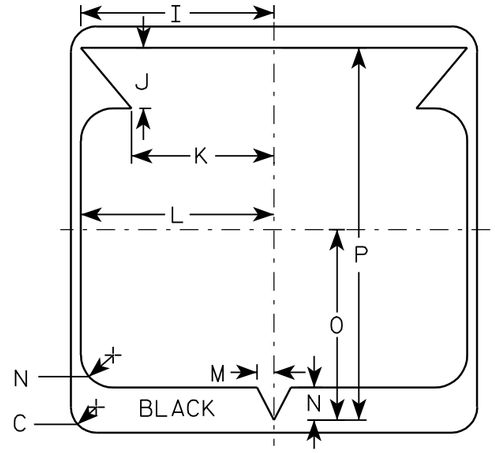
FILE NAME : C:\Users\Projects\tr_stdplate\M14.DGN PLOT DATE : 13-OCT-2005 14:52 PLOT BY : DITJPH PLOT NAME : PLOT SCALE : 5.960833:1.000000 WISDOT/CADDS SHEET 42



M1-6

NOTES

1. Sign is Type II - See Note 6 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White & Black - See Note 6
   Message - Black
3. Message Series - See note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate Series numerals and adjust spacing as per plate A10-1.
6. Permanent Signs
   Background - Type H Reflective
   Detour or temporary Signs
   Background - Reflective



Metric equivalent for this sign is:

SIZE	
1	
2	600 mm X 600 mm
3	900 mm X 900 mm
4	900 mm X 900 mm
5	900 mm X 900 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 m2
1																												
2	24		1 1/2			12	5 1/2	6 1/2	10 1/4	2 1/2	8 7/8	11 1/2	1	1 7/8	11 1/4	21 7/8											4.0	.36
3	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0	.81
4	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0	.81
5	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0	.81

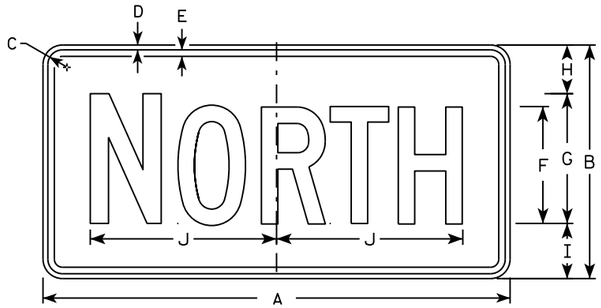
STATE ROUTE MARKER M1-6 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

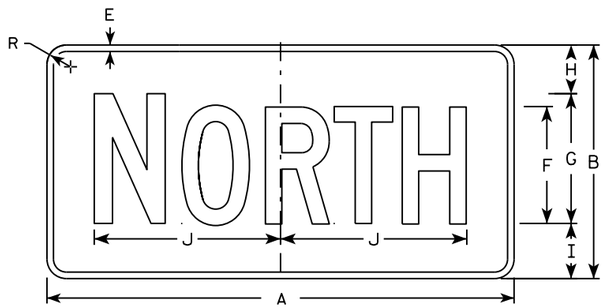
APPROVED Chester J Spang for State Traffic Engineer

DATE 3/20/02 PLATE NO. M1-6.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 282	E



M3-1
MM3-1
MP3-1



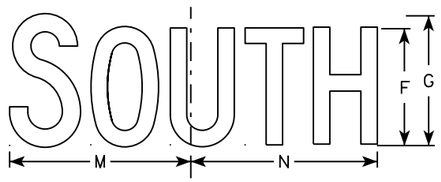
MB3-1
MK3-1
MN3-1



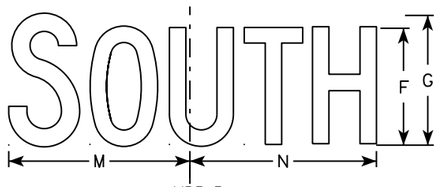
M3-2
MM3-2
MP3-2



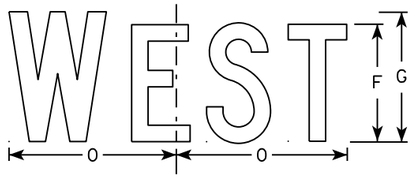
MB3-2
MK3-2
MN3-2



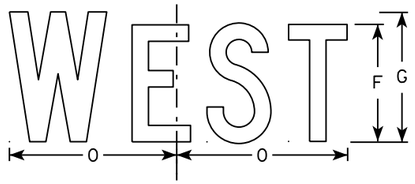
M3-3
MM3-3
MP3-3



MB3-3
MK3-3
MN3-3



M3-4
MM3-4
MP3-4



MB3-4
MK3-4
MN3-4

NOTES

1. All Signs Type II - Type H
2. Color:
   Background - See note 5
   Message - See note 5
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. M3-1 thru M3-4 Background - White
   Message - Black
   MB3-1 thru MB3-4 Background - Blue
   Message - White
   MK3-1 thru MK3-4 Background - Green
   Message - White
   MM3-1 thru MM3-4 Background - White
   Message - Green
   MN3-1 thru MN3-4 Background - Brown
   Message - White
   MP3-1 thru MP3-4 Background - White
   Message - Blue
6. Note the first letter of each direction is larger than the remainder of the message.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4	7 7/8	8 3/8	10 1/4	9 3/4	8 3/4			1 1/2									2.00
3	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
4	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
5	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5

STANDARD SIGNS
M3-1 thur M3-4
SERIES

WISCONSIN DEPT OF TRANSPORTATION

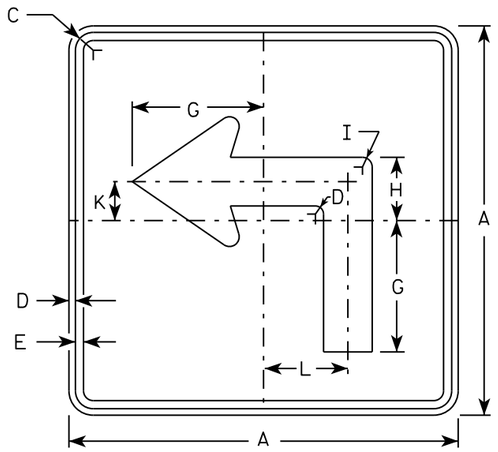
APPROVED Matthew P Rauch for State Traffic Engineer

DATE 10/15/15 PLATE NO M3-1.14

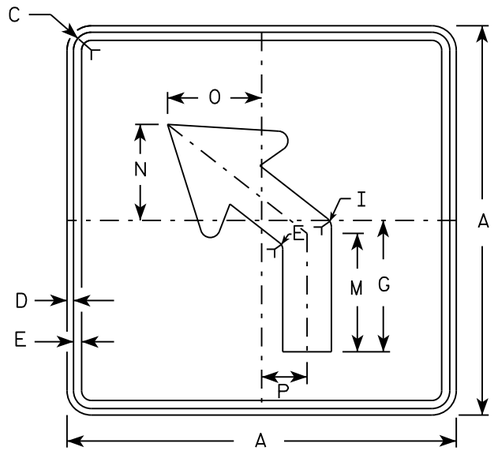
PROJECT NO: | HWY: | COUNTY: | SHEET NO: E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\M31.DGN PLOT DATE : 01-DEC-2015 17:54 PLOT BY : $$ plotuser $$ PLOT NAME : PLOT SCALE : 11.675051:1.000000

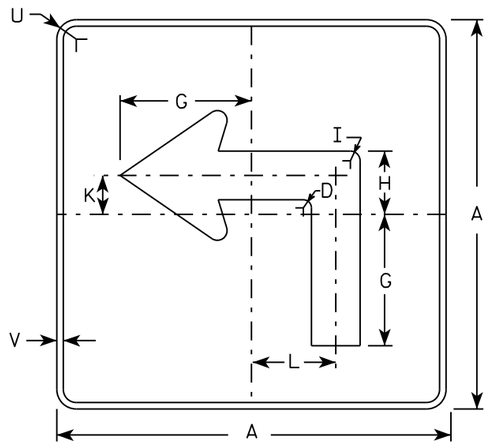
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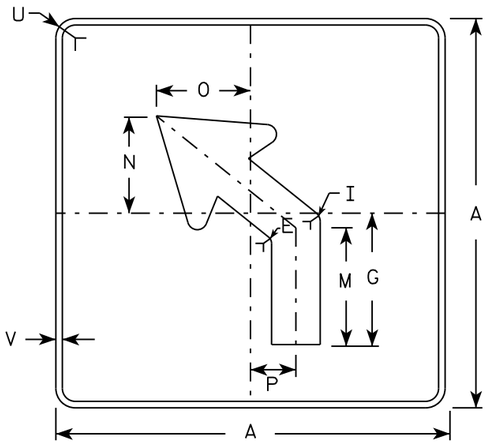
M5-1L
MM5-1L
MO5-1L
MP5-1L



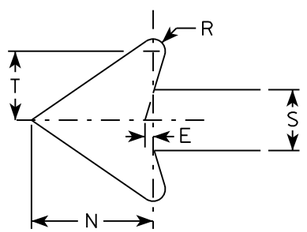
M5-2L
MM5-2L
MO5-2L
MP5-2L



MB5-1L
MK5-1L
MN5-1L
MR5-1L



MB5-2L
MK5-2L
MN5-2L
MR5-2L



NOTES

1. Signs are Type II - Type H reflective except as shown
2. Color:
   Background - See note 4
   Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. M5-1 and M5-2 Background - White
   Message - Black
   MB5-1 and MB5-2 Background - Blue
   Message - White
   MK5-1 and MK5-2 Background - Green
   Message - White
   MM5-1 and MM5-2 Background - White
   Message - Green
   MN5-1 and MN5-2 Background - Brown
   Message - White
   MO5-1 and MO5-2 Background - Orange - Type F Reflective
   Message - Black
   MP5-1 and MP5-2 Background - White - Type H Reflective
   Message - Blue
   MR5-1 and MR5-2 Background - Brown
   Message - Yellow
5. M5-1R same as M5-1L except arrow points right.
6. M5-2R same as M5-2L except arrow tilts right.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	21		1 1/8	3/8	3/8		7	3 3/8	5/8		2 1/8	4 1/2	6 3/8	5 1/4	5	2 1/2		1/2	2 5/8	3	1 1/2	1/2					3.06
3	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25
4	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25
5	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25

STANDARD SIGN
M5-1 & M5-2

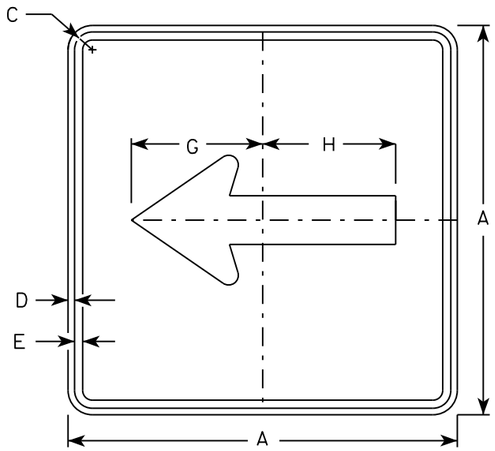
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

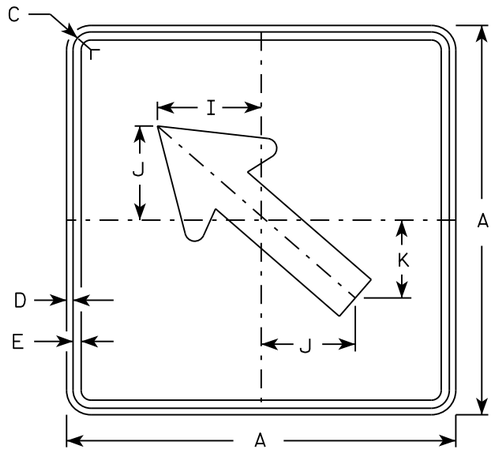
DATE 10/15/15 PLATE NO. M5-1.13

PROJECT NO: | HWY: | COUNTY: | SHEET NO: E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\M51.DGN PLOT DATE : 01-DEC-2015 18:07 PLOT BY : $$ plotuser $$ PLOT NAME : PLOT SCALE : 11.675051:1.000000



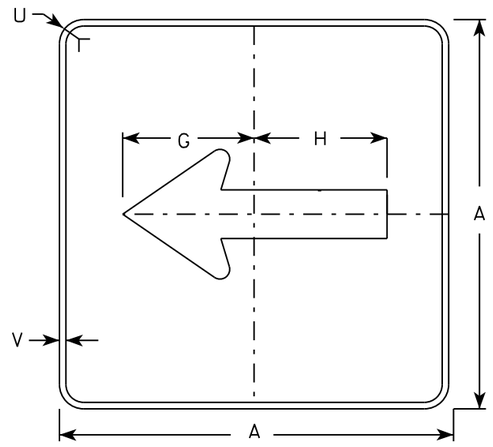
M6-1
MM6-1
MO6-1
MP6-1



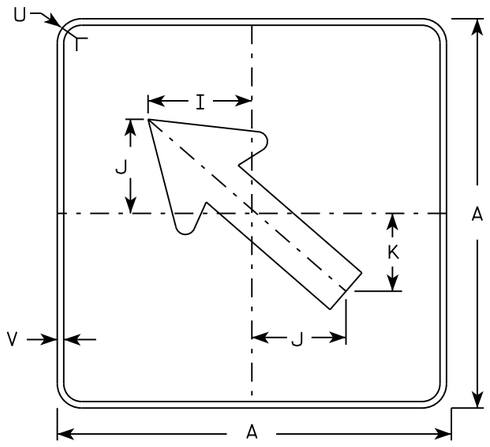
M6-2
MM6-2
MO6-2
MP6-2

NOTES

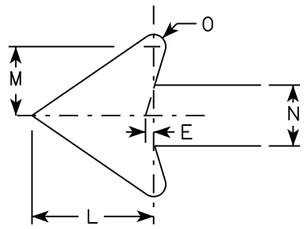
1. Signs are Type II - Type H except as Shown
2. Color:
   Background - See note 4
   Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. M6-1 and M6-2 Background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



MB6-1
MK6-1
MN6-1
MR6-1



MB6-2
MK6-2
MN6-2
MR6-2



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

STANDARD SIGN
M6-1 & M6-2
SERIES

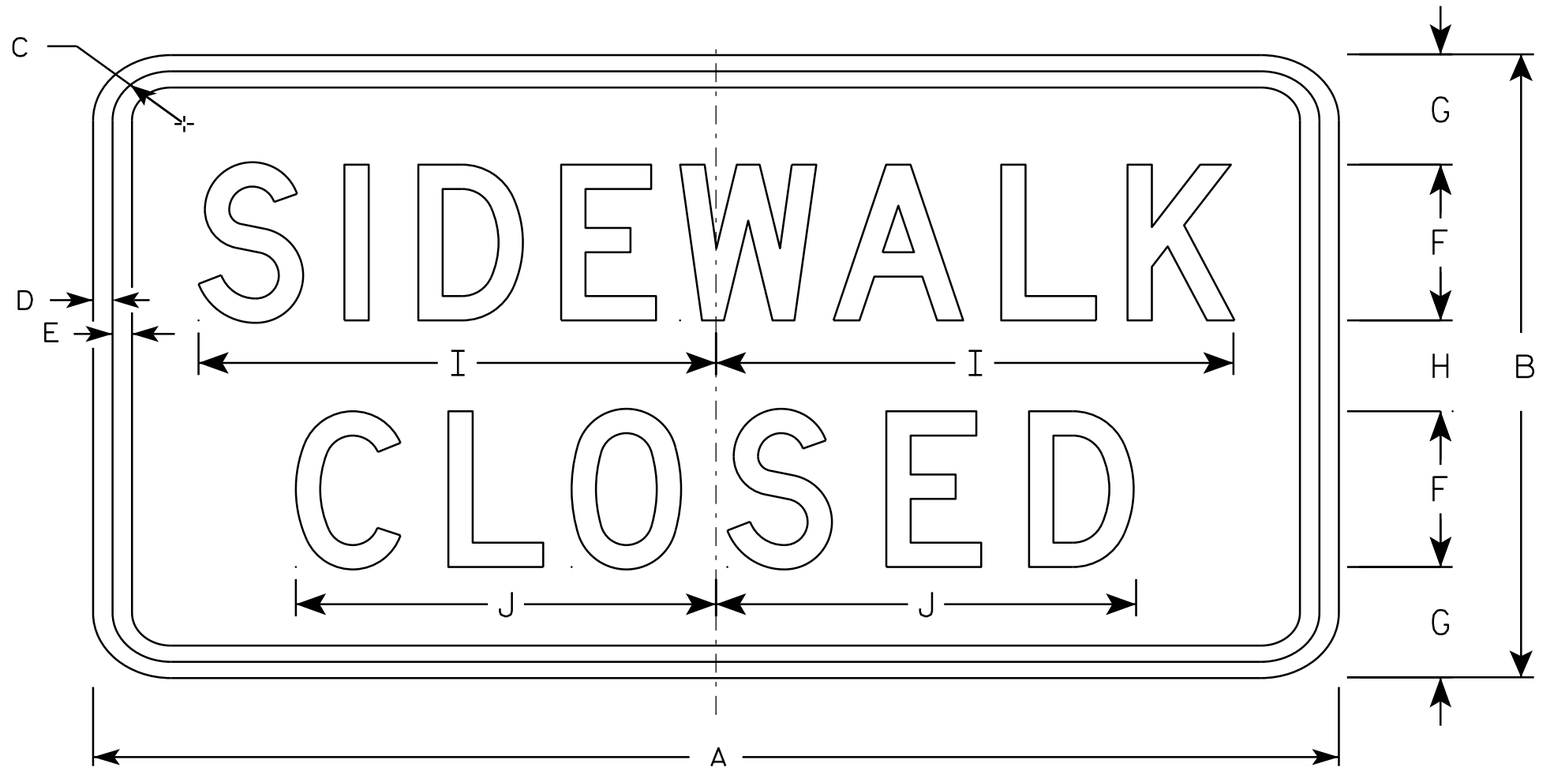
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 10/15/15 PLATE 285 M6-1.15

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\M61.DGN PLOT DATE : 01-DEC-2015 17:57 PLOT BY : $$ plotuser $$ PLOT NAME : PLOT SCALE : 11.675051:1.000000



R9-9

NOTES

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

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

STANDARD SIGN
R9-9

WISCONSIN DEPT OF TRANSPORTATION

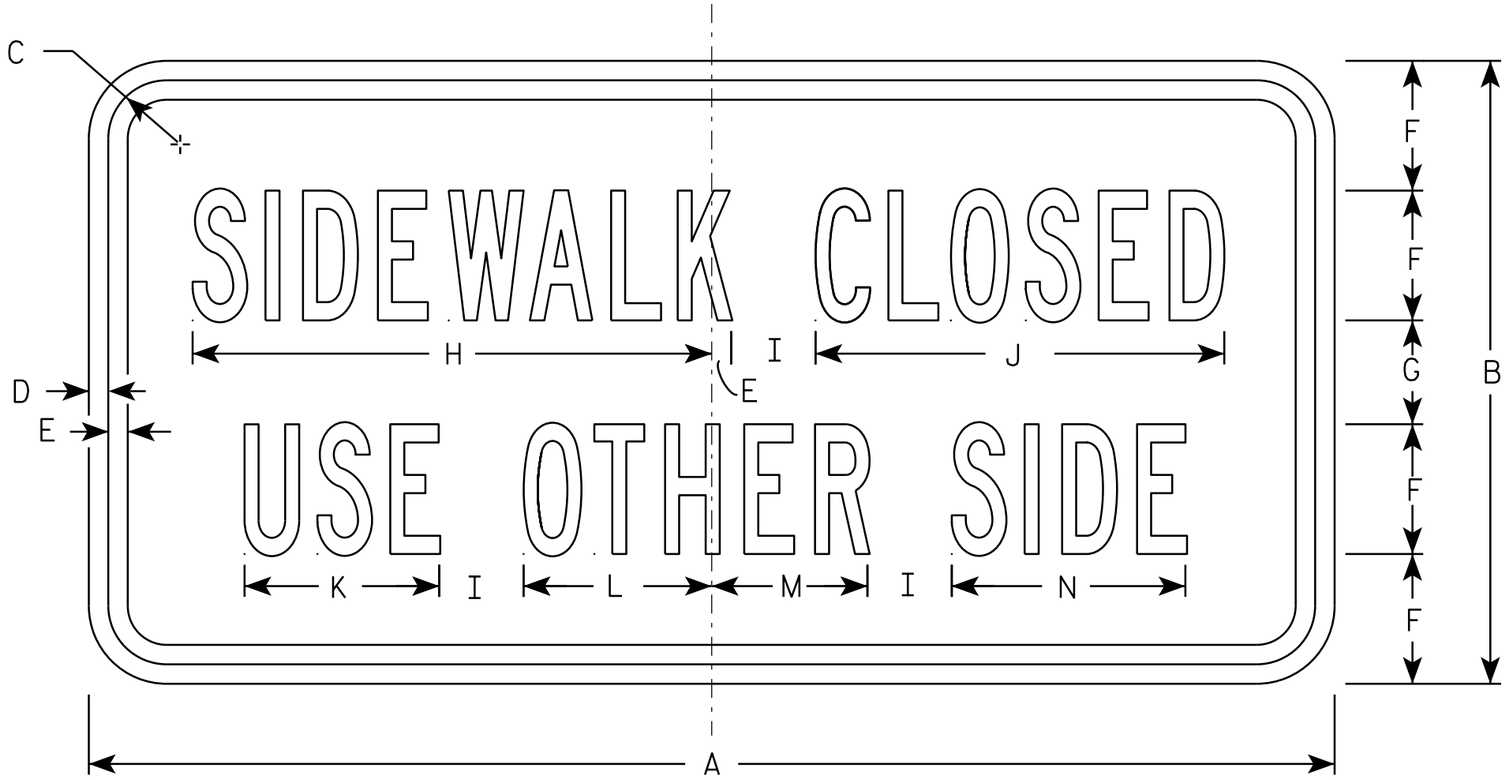
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/10/16 PLATE R9-9.6

PROJECT NO: | HWY: | COUNTY: | SHEET NO: E

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\R99.DGN PLOT DATE : 10-MAR-2016 15:44 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 2.918761:1.000000
WISDOT/CADDS SHEET 42

7



R9-10

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	12	1 1/8	3/8	3/8	2 1/2	2	10	1 5/8	7 7/8	3 3/4	3 5/8	3	4 1/2													2.0
2M	24	12	1 1/8	3/8	3/8	2 1/2	2	10	1 5/8	7 7/8	3 3/4	3 5/8	3	4 1/2													2.0
3	48	24	2 3/4	3/4	3/4	5	4	20	3 1/4	15 3/4	7 1/2	7 1/4	6	9													8.0
4																											
5																											

STANDARD SIGN
R9-10

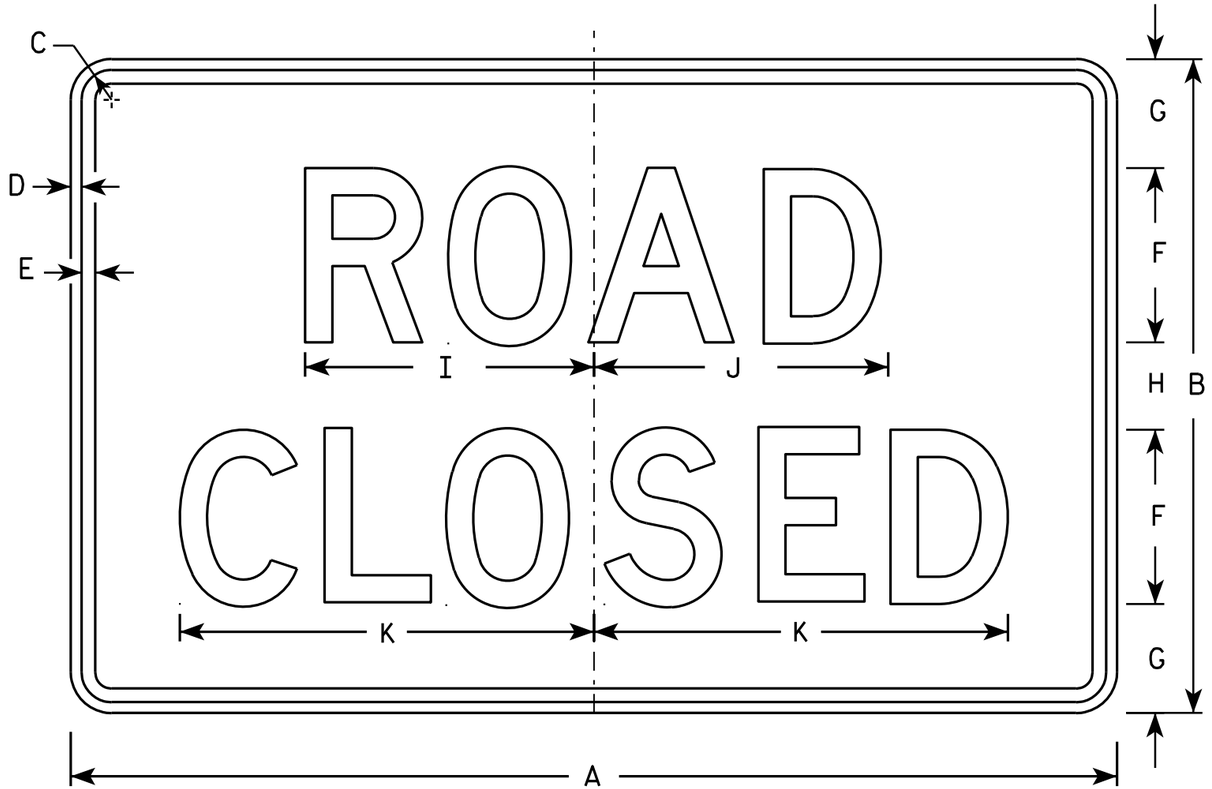
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/10/16 PLATE P9-10.6

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

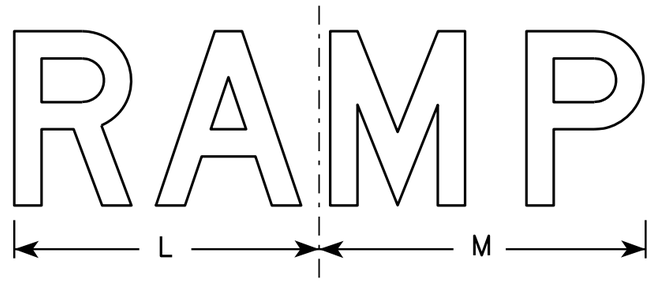
7



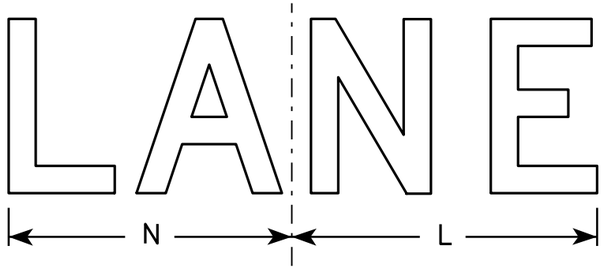
R11-2

NOTES

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



R11-2R



R11-2L

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

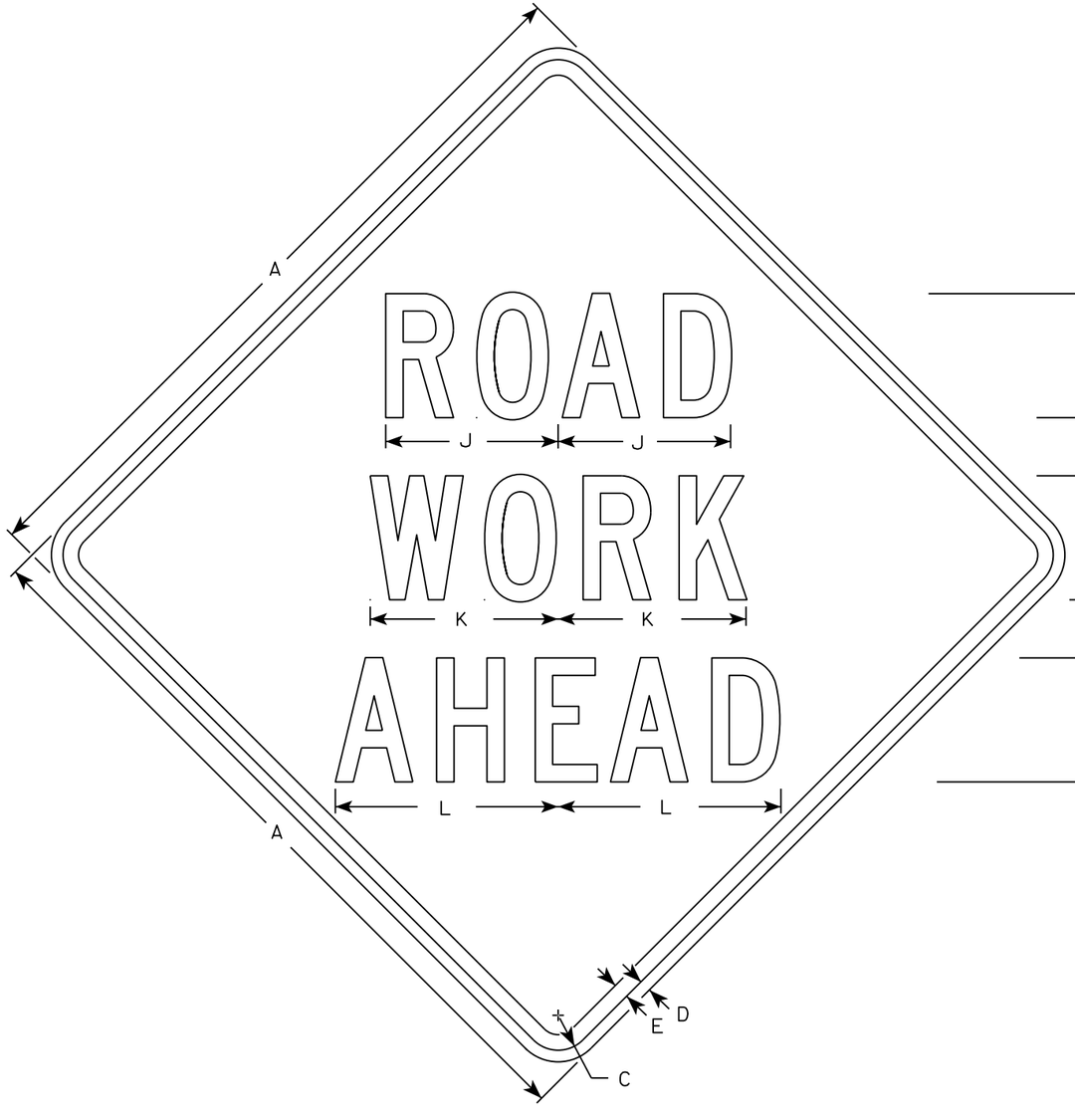
STANDARD SIGN
R11-2

WISCONSIN DEPT OF TRANSPORTATION

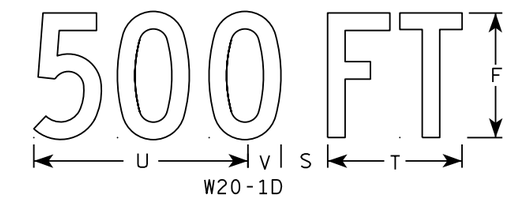
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 4/1/11 PLATE NO. R11-2.10

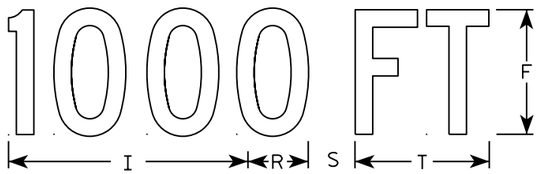
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 288	E



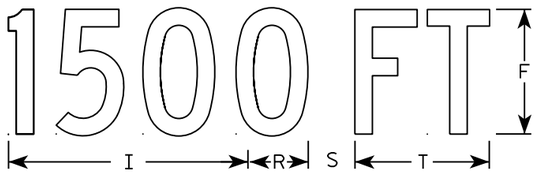
W20-1A



W20-1D



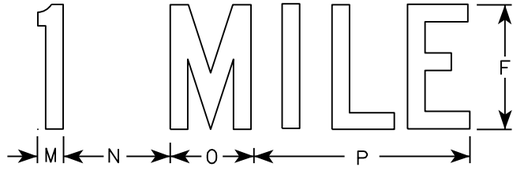
W20-1C



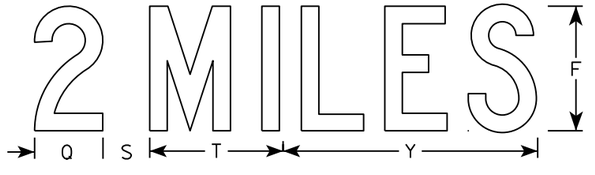
W20-1B



W20-1G



W20-1F



W20-1E

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 3/8	1/2	5/8	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		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, F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/07/15 PLATE NO. W20-1.10

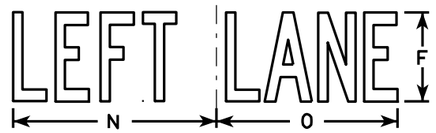
PROJECT NO:

SHEET NO: E

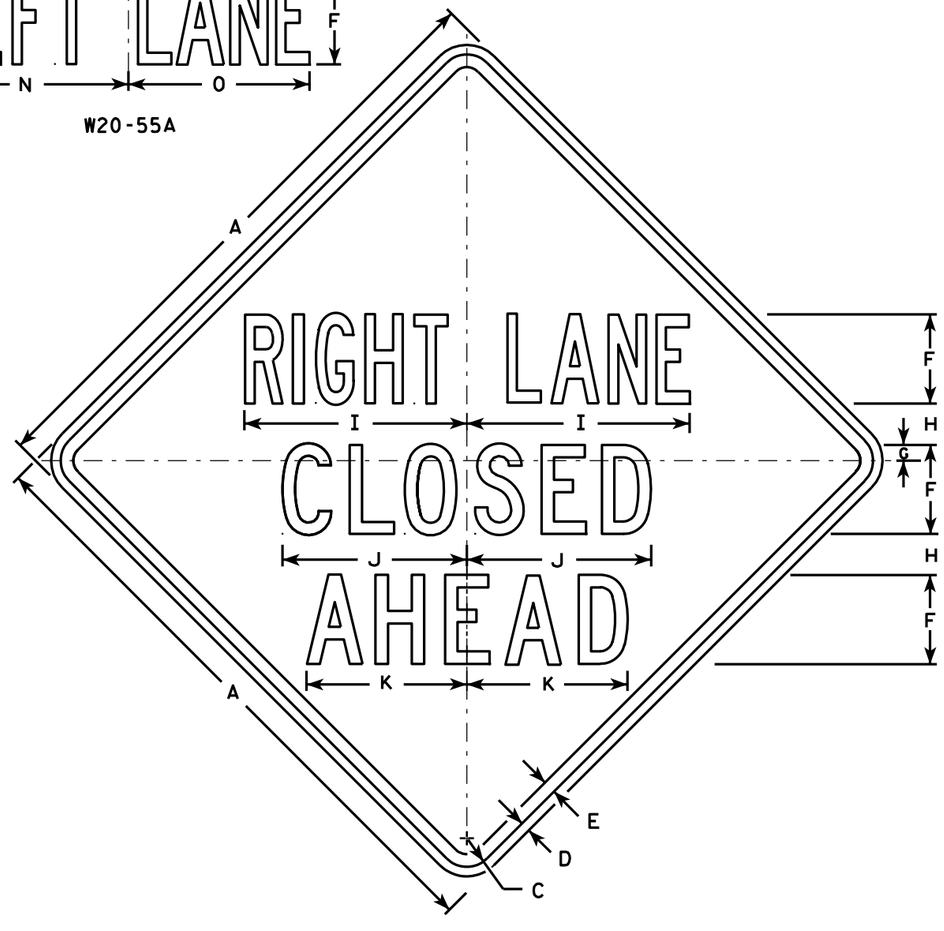
FILE NAME : C:\CAEfiles\Projects\tr_stdplate\W201.DGN PLOT DATE : 01-DEC-2015 18:24 PLOT BY : $$ plotuser $$



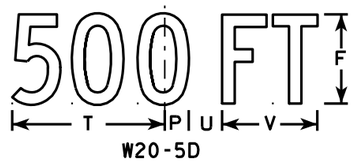
W20-56A



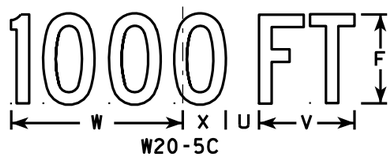
W20-55A



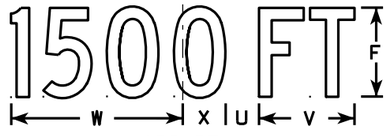
W20-5A



W20-5D



W20-5C



W20-5B



W20-5G



W20-5F

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	6	1 5/8	5/8	3/4	5	1/8	2 1/2	13 1/8	10 3/4	9 1/2	14 1/4	13 5/8	12	12	1 3/8	1 1/8	4 1/2	3 1/2	9	1 1/8	5 5/8	10 1/8	2 1/2	1 3/4	8	9.0
2S	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
2M	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
3	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
4	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
5	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0

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

WISCONSIN DEPT OF TRANSPORTATION

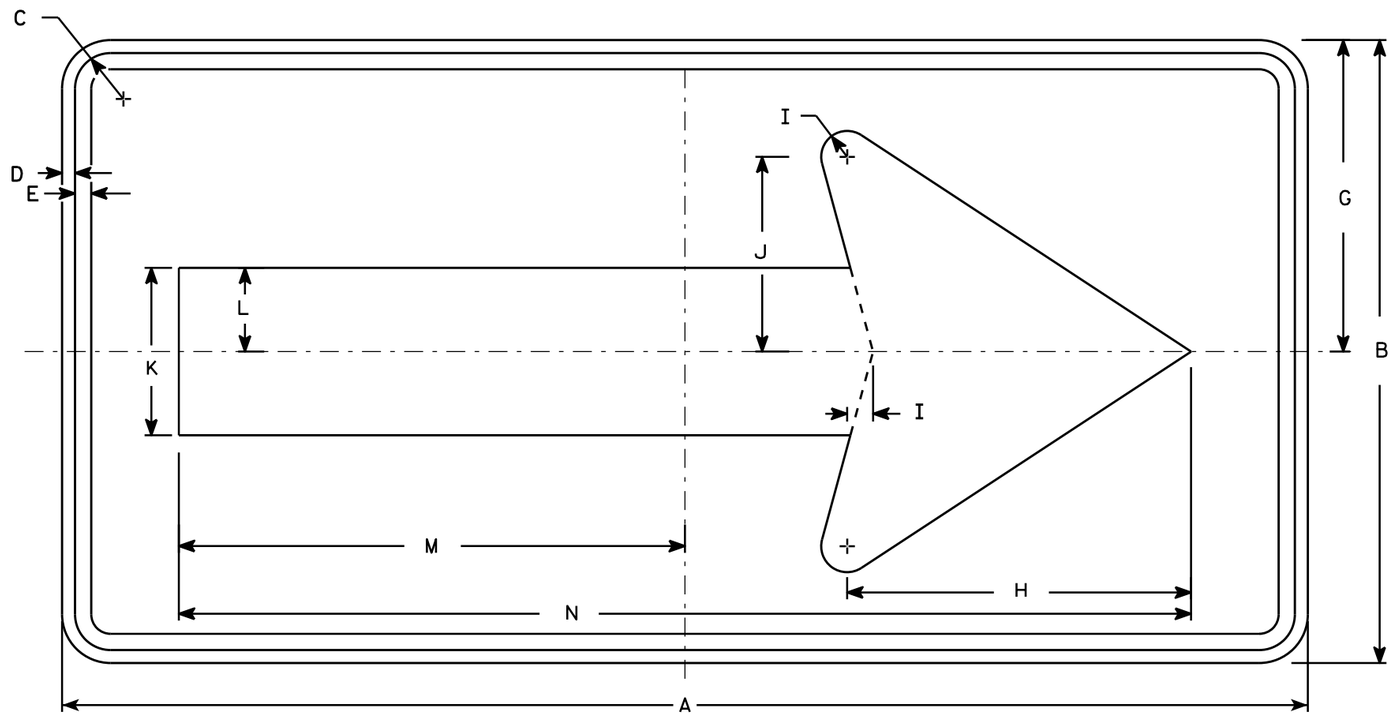
APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 290 | E

7

FILE NAME : C:\Users\PROJECTS\tr_stdplate\W205.DGN PLOT DATE : 18-MAR-2011 12:15 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 11.918087:1.000000
WISDOT/CADDS SHEET 42



W01-6

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.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	24	1 3/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
2M	48	24	1 3/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
3	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5
4	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5
5	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5

STANDARD SIGN
W01-6

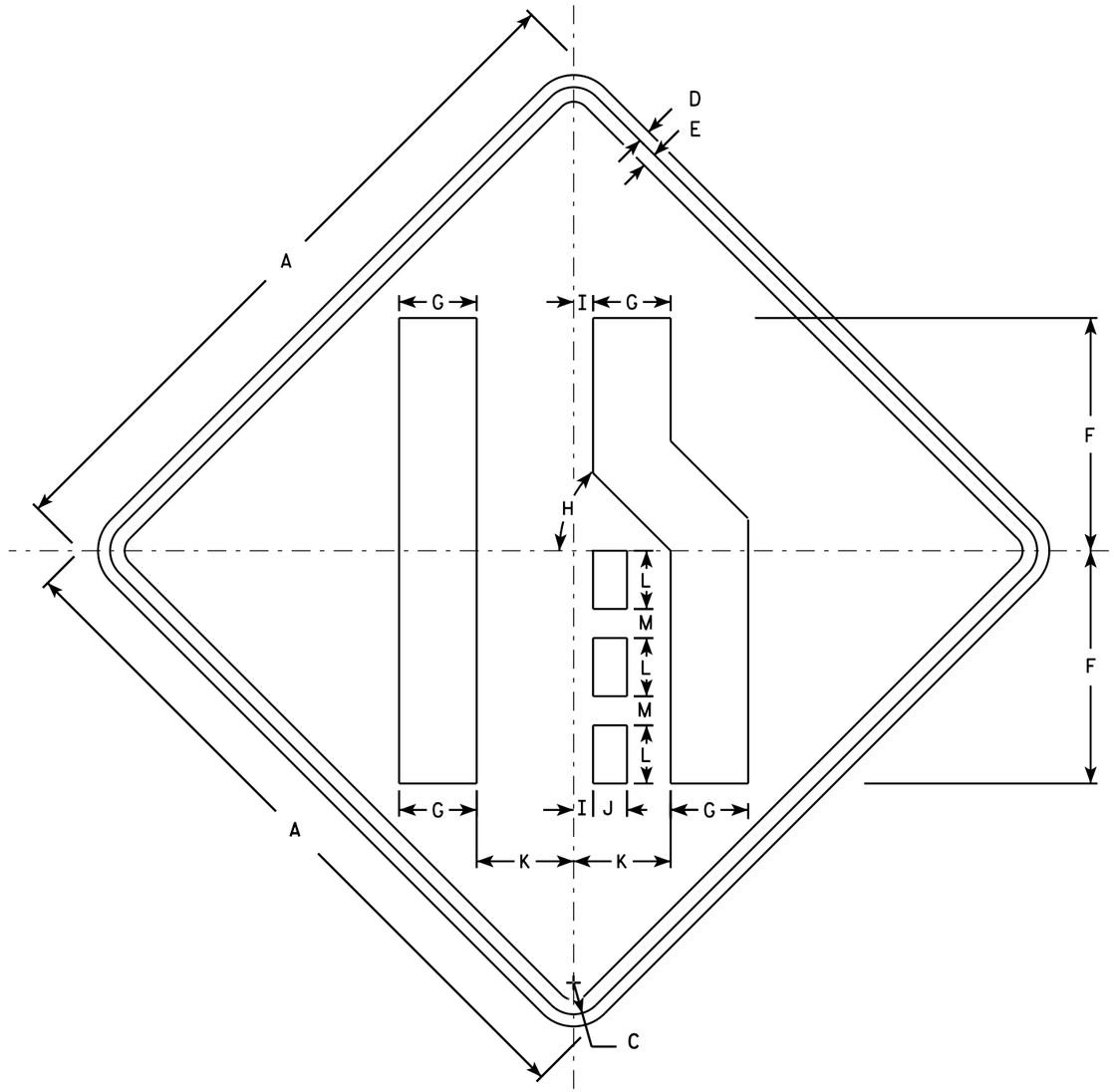
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO: | HWY: | COUNTY: | SHEET NO: E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\W016.DGN PLOT DATE : 28-FEB-2014 11:37 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 5.837526:1.000000 WISDOT/CADDS SHEET 42



W04-2R

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W04-2L is the same as W04-2R except the symbol is reversed along the vertical centerline.

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

STANDARD SIGN
W04-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/20/13 PLATE 292 W04-2.1

PROJECT NO: | SHEET NO: E

Notes

Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

http://www.dot.wisconsin.gov