WKE JAN 2015

PROJECT ID 2060-11-70

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: 294



N

DESIGN DESIGNATION

A.D.T. (CURRENT)	=	21,500
A.D.T. (2033)	=	25,800
D.H.V.	=	2,500
D.	=	61%
T.	=	4.9%
DESIGN SPEED	=	40 M.P.H.
ESALS	=	2,160,800

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 X)
COMBUSTIBLE FLUIDS (CAUTION)
RAILROADS
FENCE (TYPE)
CATCH BASIN OR INLET EXISTING (E) PROPOSED (P)

PROFILE

GRADE LINE
ORIGINAL GROUND
GRADE ELEVATION (955.56)

UTILITIES

CITY UNDERGROUND CONDUIT	CUC
ELECTRIC	E
FIBER OPTIC	FO
GAS	G
SANITARY SEWER	SAN
STORM SEWER	STO
TELEPHONE	T
WATER	W
TRAFFIC & ELECTRICAL SERVICES	TE&ES
MILWAUKEE METRO SEWERAGE DIST	MMSD
CABLE TELEVISION	TV
WISCONSIN DEPT. OF TRANS.	WISDOT
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	

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

HOWELL AVENUE-CITY OF MILWAUKEE

LAYTON AVENUE TO HOWARD AVENUE

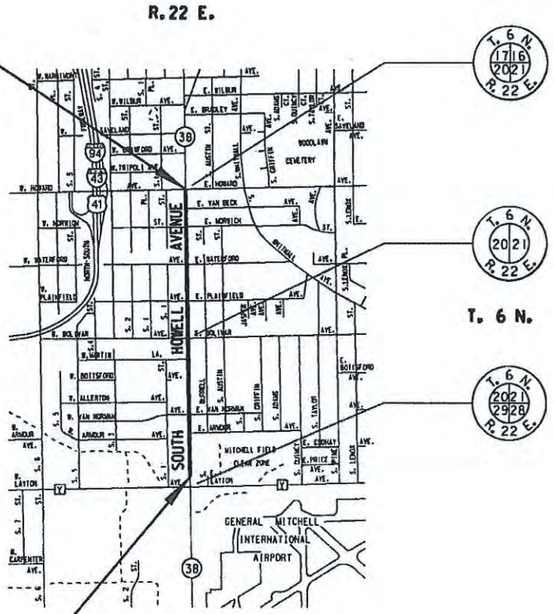
S.T.H. 38

MILWAUKEE COUNTY

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
2060-11-70	WISC 2015005	1

STATE PROJECT NUMBER
2060-11-70

END PROJECT
STA. 120+18.0, T/L



BEGIN PROJECT
STA. 68+17.0, T/L
Y. = 356,772.153
X. = 2,559,537.192

LAYOUT
SCALE 1/2 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.985 MI. (URBAN)

THE COORDINATES ON THIS PLAN ARE REFERENCED TO 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

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

Original Plans Prepared By

WISCONSIN JEFFREY S. POLENSKE E-30626 MILWAUKEE WIS. PROFESSIONAL ENGINEER

7/29/14 (Date) City Engineer

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	City of Milwaukee
Designer	City of Milwaukee
Project Manager	Christine Hanna
Region Examiner	
Region Supervisor	xxxxx xxxxx
C.O. Examiner	

APPROVED FOR THE DEPARTMENT

DATE: 7/30/14 Christine Hanna (Signature)

E

FILE NAME:

PLOT DATE:

GENERAL NOTES

1. ALL OPENINGS BELOW SUBGRADE, RESULTING FROM REMOVALS OR ABANDONMENTS, SHALL BE BACKFILLED WITH GRANULAR MATERIAL TO SUBGRADE ELEVATION.

2. ALL DISTURBED AREAS, NOT SURFACED, ARE TO BE COVERED WITH 4"OF TOPSOIL, SODDED AND FERTILIZED UNLESS OTHERWISE DIRECTED BY THE ENGINEER. TOPSOILED AREAS SHALL BE SODDED AND FERTILIZED WITHIN 5 CALENDAR DAYS.

3. WHEN THE QUANTITY OF ITEMS OF BASE & / OR HMA PAVEMENT IS MEASURED FOR PAYMENT BY THE TON, THE DEPTH OR THICKNESS OF THE LAYER SHOWN ON THE PLAN IS APPROXIMATE, AND THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF MATERIALS AS DIRECTED BY THE ENGINEER.

4. NO TREES OR SHRUBS SHALL BE REMOVED UNLESS DESIGNATED FOR REMOVAL BY THE ENGINEER.

5. ALL ELEVATIONS ARE REFERENCED TO CITY OF MILWAUKEE DATUM.

6. ALL CURB AND GUTTER IS LOW SIDE UNLESS OTHERWISE INDICATED ON THE PLAN.

7. TRANSVERSE JOINTS IN THE CONCRETE WALK SHALL BE CONSTRUCTED AT INTERVALS EQUAL TO THE WIDTH OF THE CONCRETE UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

8. ALL LONGITUDINAL AND TRANSVERSE JOINTS REQUIRING SEALING SHALL BE SEALED IN ACCORDANCE WITH THE DETAIL.

9. 'PAVEMENT TIES' AS SHOWN ON STANDARD DETAIL DRAWING 'CONCRETE GUTTER,CURB AND GUTTER AND PAVEMENT TIES' ARE REQUIRED TO TIE EXISTING CONCRETE TO NEW CONCRETE CURB AND GUTTER.

10. 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.

11. 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.

12. REPLACE ALL CONCRETE CURB AND GUTTER INDICATED FOR REMOVAL AND REPLACEMENT IN EXISTING LOCATION UNLESS OTHERWISE NOTED ON PLAN.

13. CONSTRUCTION PERMITS FOR CONCRETE WALK &/ OR CONCRETE DRIVEWAY WORK HAVE BEEN OBTAINED, WHICH RIGHTS SHALL BE EXTENDED TO THE CONTRACTORS.

14. INLET SCREENS ARE TO BE PLACED BETWEEN THE FRAME AND GRATE OF CATCH BASINS / INLETS TO PREVENT SOIL FROM ENTERING THE SEWERS.

15. CONTRACTOR SHALL CONTACT THE PROJECT ENGINEER AND SEWRPC AT LEAST TWO WEEKS PRIOR TO WORK NEAR ANY PUBLIC SURVEY MONUMENT.

16. EROSION CONTROL BMP'S ARE AT SUGGESTED LOCATIONS. THE ACTUAL LOCATIONS WILL BE DETERMINED BY THE CONTRACTORS 'ECIP' AND BY THE ENGINEER. EROSION CONTROL BMP'S SHALL BE MAINTAINED UNTIL PERMANENT VEGATATION IS ESTABLISHED OR UNTIL THE ENGINEER DETERMINES THAT THE BMP IS NO LONGER REQUIRED.

17. RE-TOPSOIL OF GRADED AREAS, AS DESIGNATED BY THE ENGINEER, IMMEDIATELY AFTER GRADING IS COMPLETED WITHIN THOSE AREAS. SEED, FERTILIZE, AND MULCH/EROSION MAT TOP-SOIL AREAS, AS DESIGNATED BY THE ENGINEER, WITHIN FIVE (5) CALENDAR DAYS AFTER PLACEMENT OF TOPSOIL.

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

ORDER OF SECTION 2 SHEETS

GENERAL NOTES
PLAN OVERVIEW
TYPICAL SECTIONS
ALIGNMENT PLAN
CONSTRUCTION DETAILS
LANDMARK REFERENCE PLANS
TREE REMOVAL AND PLANTING
WALK AND DRIVEWAY REMOVAL
EROSION CONTROL PLAN
DRAINAGE DETAILS
UTILITIES & DRAINAGE PLANS
PAVEMENT MARKING
TRAFFIC CONTROL

UTILITY CONTACTS

CITY OF MILWAUKEE, SEWER, WATER AND TRAFFIC ENGINEERING AND ELECTRIC SERVICES

ANTHONY KOTECKI
841 N. BROADWAY,
MILWAUKEE, WI 53202
PHONE: 414-708-3886

WE ENERGIES - ELECTRIC

BRYAN STOEHR
500 S. 116TH ST.
WEST ALLIS, WI 53214
PHONE: 414-944-5516

WE ENERGIES - GAS

TOM MINESAL
500 S. 116TH ST.
WEST ALLIS, WI 53214
PHONE: 414-540-5377

MIDWEST FIBER NETWORKS (CABLE COM, LLC)

RICHARD TRGOVEC
3701 W. BURNHAM ST., SUITE C
MILWAUKEE, WI 53215
PHONE: 414-672-5612

SBC/AT&T

MARK EDER
2005 PEWAUKEE RD.
WAUKESHA, WI 53188
PHONE: 262-896-7434

TIME WARNER CABLE

LUKAS LACROSSE
1320 N. DR. MARTIN LUTHER KING JR. DR.
MILWAUKEE, WI 53212
PHONE: 414-908-4766

LEVEL3 COMMUNICATIONS

1025 ELDORADO BLVD.
BROOMFIELD, CO 80021
PHONE: 720-888-0336
level3.networkrelocations@level3.com

OTHER CONTACTS

CITY OF MILWAUKEE - DESIGN

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

MILWAUKEE COUNTY TRANSIT SYSTEM - ROUTES

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

MILWAUKEE COUNTY TRANSIT SYSTEM - BUS STOPS

WILLIAM LOCHER
1942 N. 17TH ST.
MILWAUKEE, WI 53205
PHONE: 414-937-3217

MILWAUKEE METROPOLITAN SEWERAGE DISTRICT

DEBRA JENSEN
200 W. SEEBOTH ST.
MILWAUKEE, WI 53204
PHONE: 414-225-2143

MILWAUKEE COUNTY - HIGHWAY MAINTENANCE

GREG HEISEL
10190 W. WATERTOWN PLANK RD.
WAUWATOSA, WI 53226
PHONE: 414-257-6568

MILWAUKEE COUNTY - AIRPORT ENGINEERING

EDWARD BATSCH
5300 S. HOWELL AVE.
MILWAUKEE, WI 53207
PHONE: 414-747-5320

SEWRPC - LAND MONUMENTS

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

DON SIMON
W239 N1812 ROCKWOOD DR.
WAUKESHA, WI 53187
PHONE: 262-547-6722 EXT 249

WISCONSIN DEPT. OF NATURAL RESOURCES

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

WISDOT - PROJECT MANAGER

CHRISTINE HANNA
141 NW BARSTOW ST.
WAUKESHA, WI 53187
PHONE: 262-548-8809

CLEAR CHANNEL OUTDOOR - BUS SHELTERS

DAVID JASENSKI
908 SILVERNAIL RD.
PEWAUKEE, WI 53072
PHONE: 262-506-9031

MILWAUKEE COUNTY - DEPT. OF TRANSPORTATION

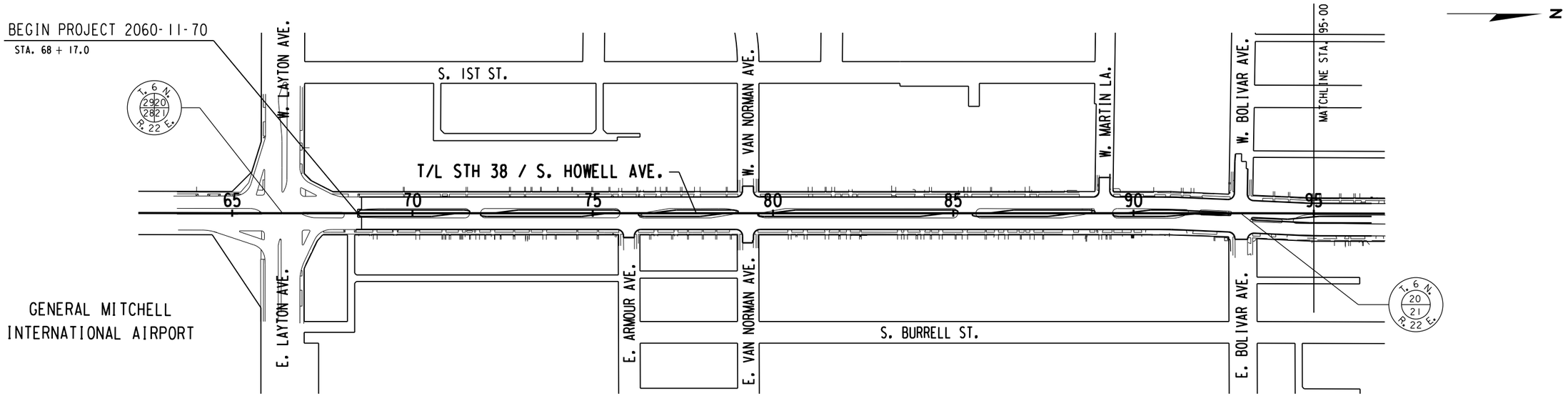
ANDREA WEDDLE-HENNING
2711 W. WELLS ST., SUITE 300
MILWAUKEE, WI 53208
PHONE: 414-278-4934

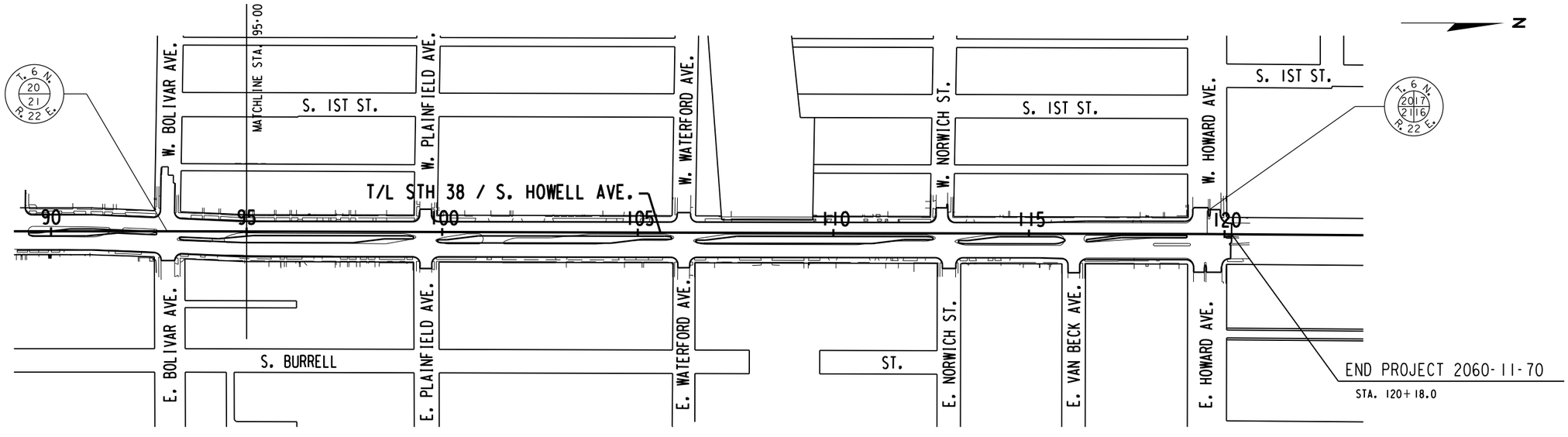
DIGGERS HOTLINE
Dial 811 or (800) 242-8511
www.DiggersHotline.com

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	UTILITY CONTACTS	SCALE FEET	SHEET NO: 3	E

FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\TYPSEC

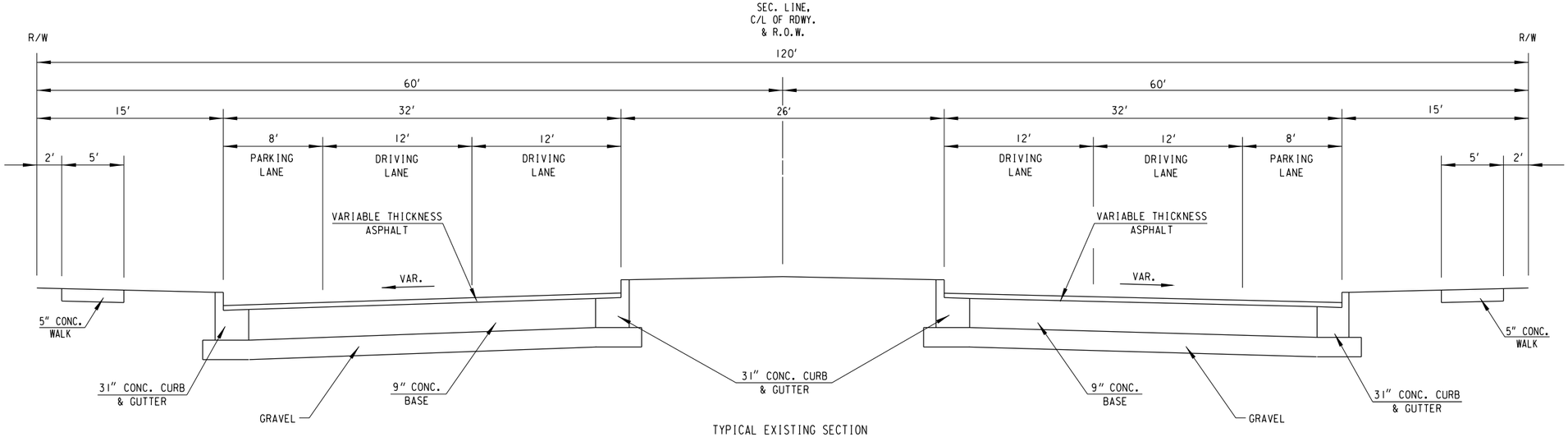
CONSTRUCTION PERMIT LOCATIONS		
NUMBER	STATION	ADDRESS OF PROPERTY
1	89+40 TO 89+62, LT	4337 SOUTH HOWELL AVENUE
2	105+13, RT	4100 SOUTH HOWELL AVENUE
3	113+26, RT	3974 SOUTH HOWELL AVENUE





STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	PROJECT OVERVIEW	SCALE FEET 0' 300'	SHEET NO: 5	E

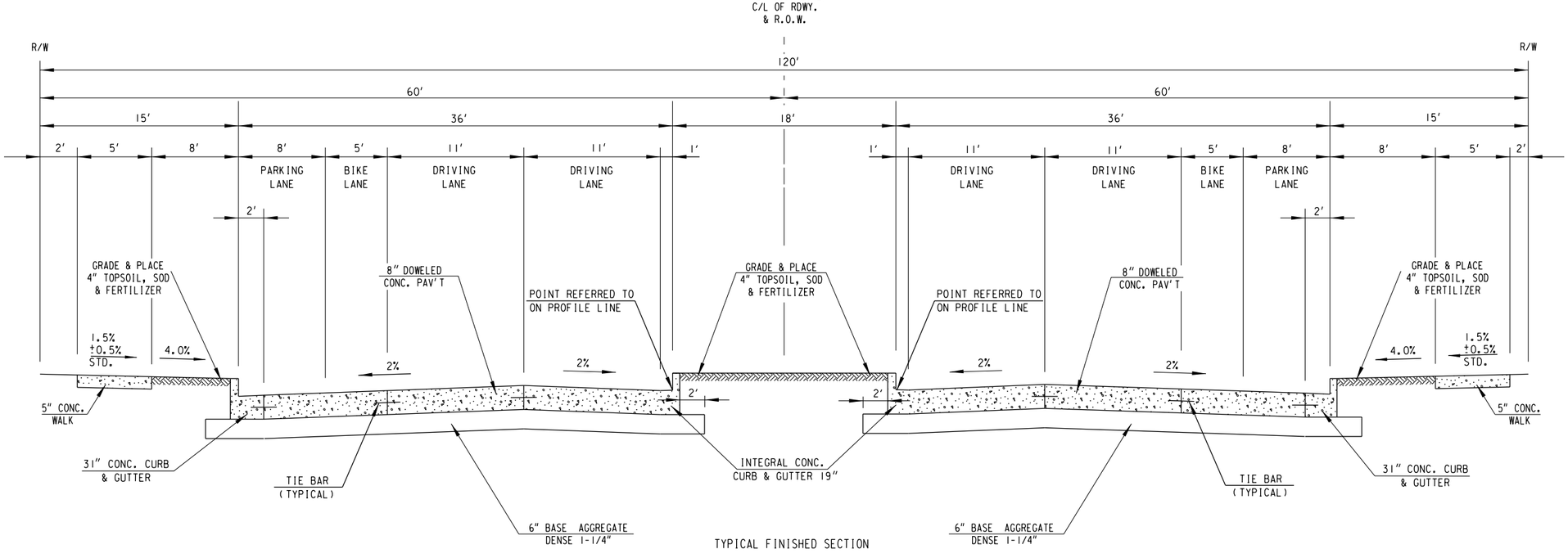
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TYPICAL EXISTING SECTION

SOUTH HOWELL AVENUE

STA. 68+17.0 TO STA. 92+97.0



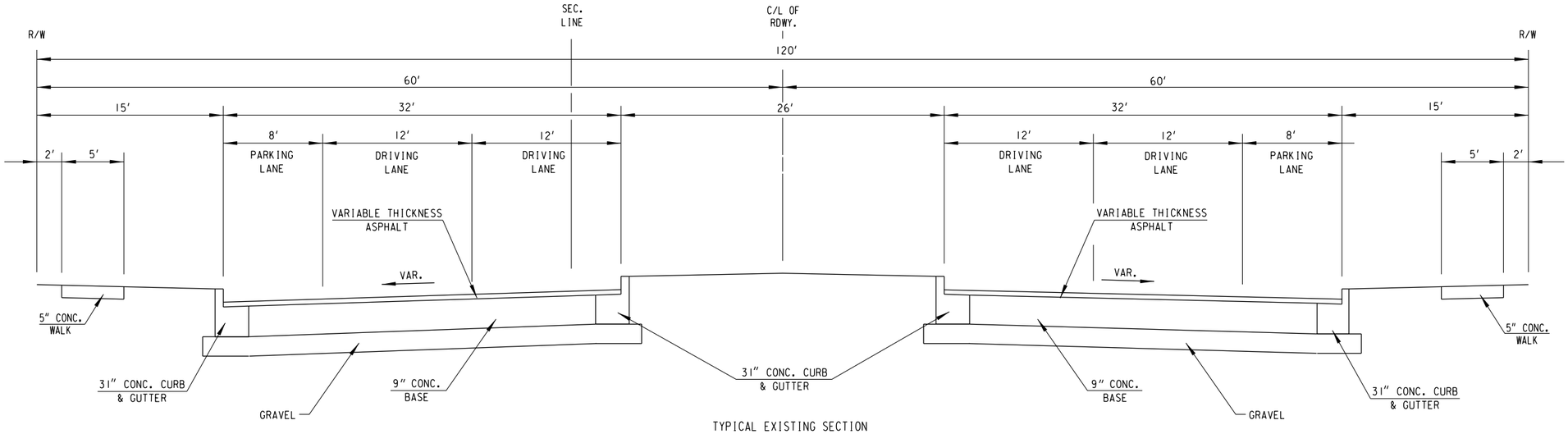
TYPICAL FINISHED SECTION

SOUTH HOWELL AVENUE

STA. 68+17.0 TO STA. 92+97.0

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	TYPICAL SECTIONS	SCALE FEET	SHEET NO: 6	E

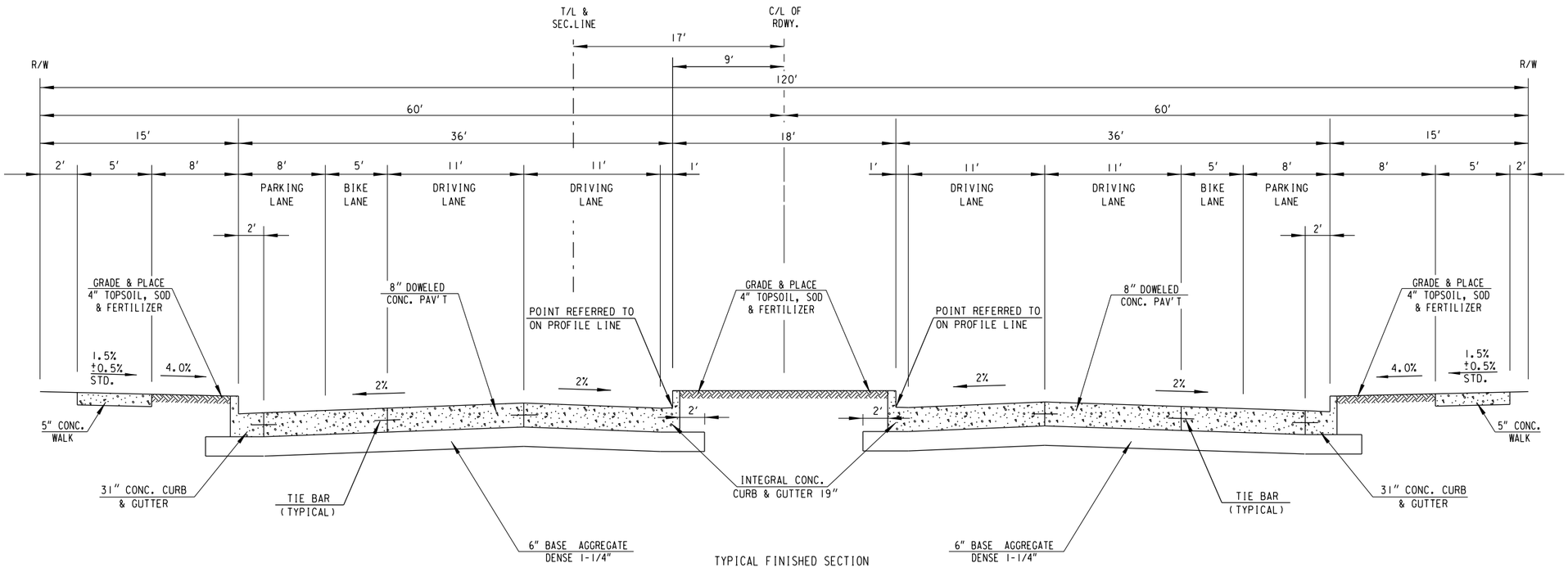
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TYPICAL EXISTING SECTION

SOUTH HOWELL AVENUE

STA. 92+97.0 TO STA. 120+18.0



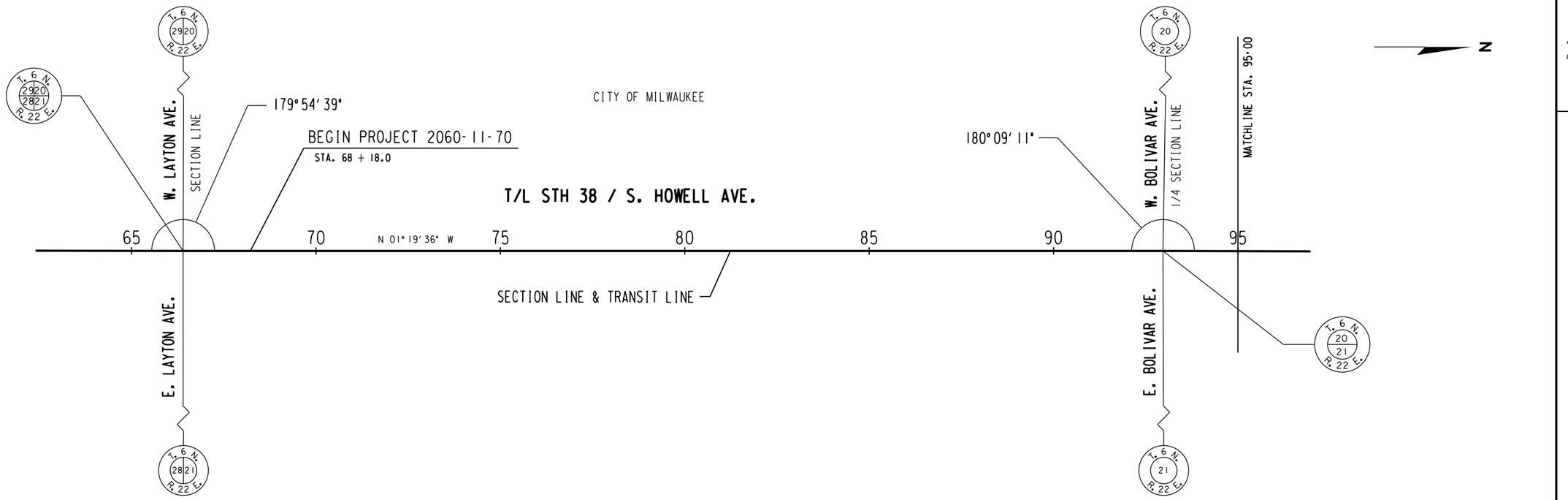
TYPICAL FINISHED SECTION

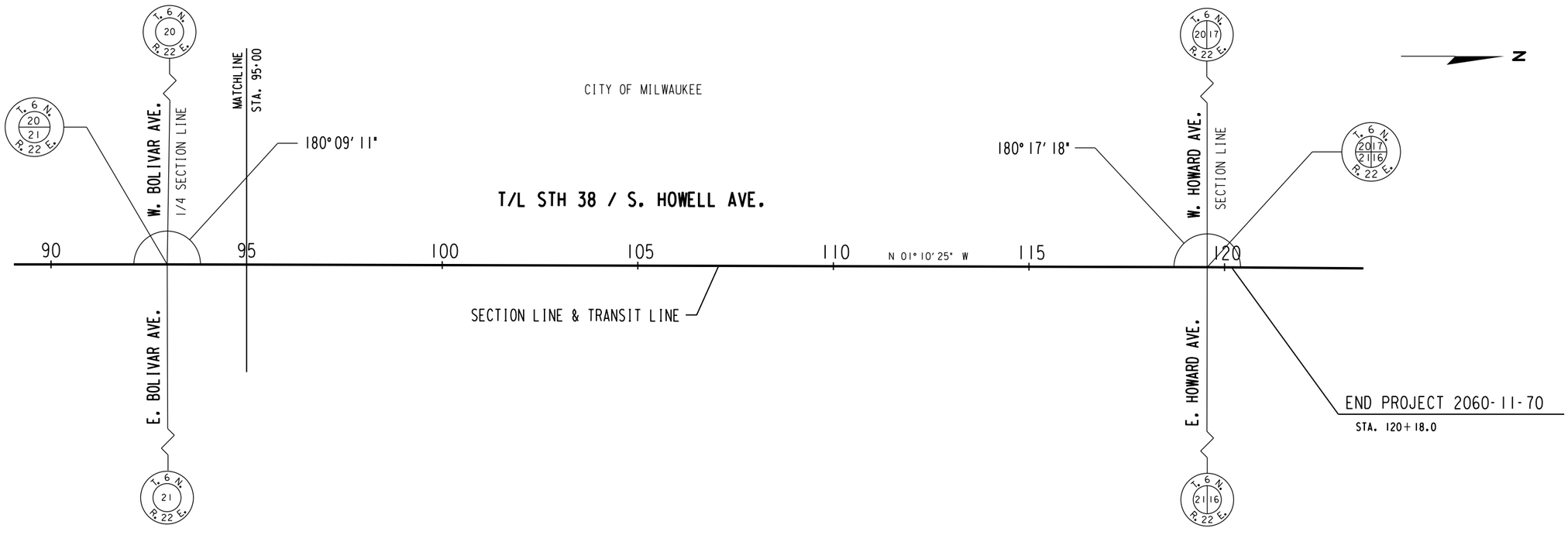
SOUTH HOWELL AVENUE

STA. 92+97.0 TO STA. 120+18.0

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	TYPICAL SECTIONS	SCALE FEET	SHEET NO: 7	E

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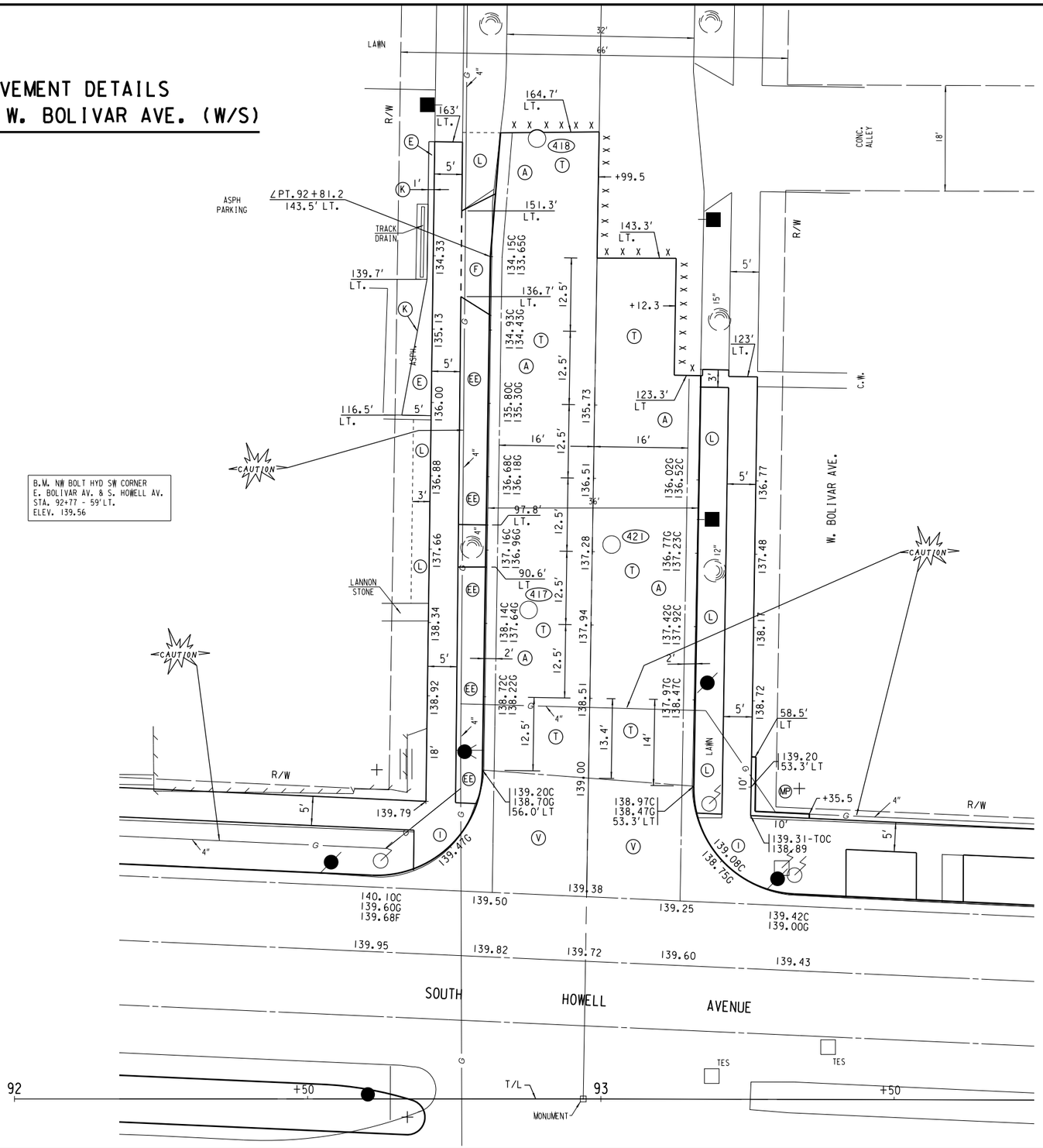




STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	ALIGNMENT	SCALE FEET 0' 300'	SHEET NO: 8	E

FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\ALIGN.DGN

WALK AND PAVEMENT DETAILS
S. HOWELL AVE. AND W. BOLIVAR AVE. (W/S)

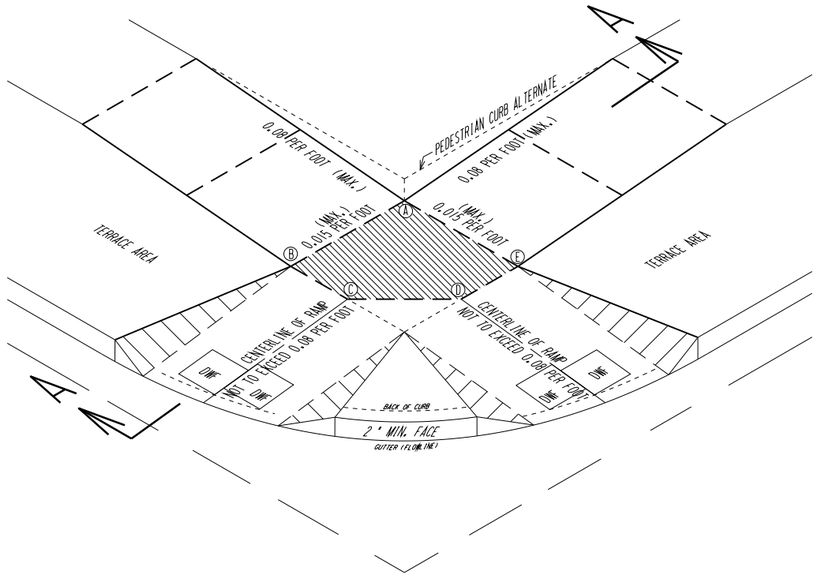


- (I) CONST. CURB RAMP TYPE I WITH DETECTABLE WARNING FIELD
- (A) CONST. CONC. CURB & GUTTER 31-INCH
- (E) REMOVE & CONST. 3-INCH ASPH. ON V.T. CONC. BASE
- (EE) REMOVE & CONST. 2-INCH ASPH. ON V.T. CONC. BASE
- (F) CONST. CONC. DRIVEWAY FLARED (7-INCH)
- (K) SAWING ASPHALT
- (L) GRADE & PLACE 4" TOPSOIL, SOD & FERTILIZER
- (MP) CONST. CONC. CURB PREDESTRIAN
- (T) CONST. 7-INCH CONC. PAVEMENT
- (V) CONST. 8-INCH CONC. PAVEMENT

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	CONSTRUCTION DETAILS	SCALE FEET 0' 20'	SHEET NO: 9	E

FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\CONDET.DGN

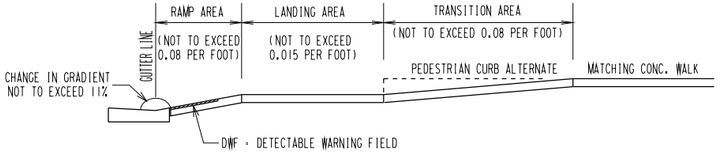
2



TYPE - 2 RAMP MODIFIED

SECTION A - A

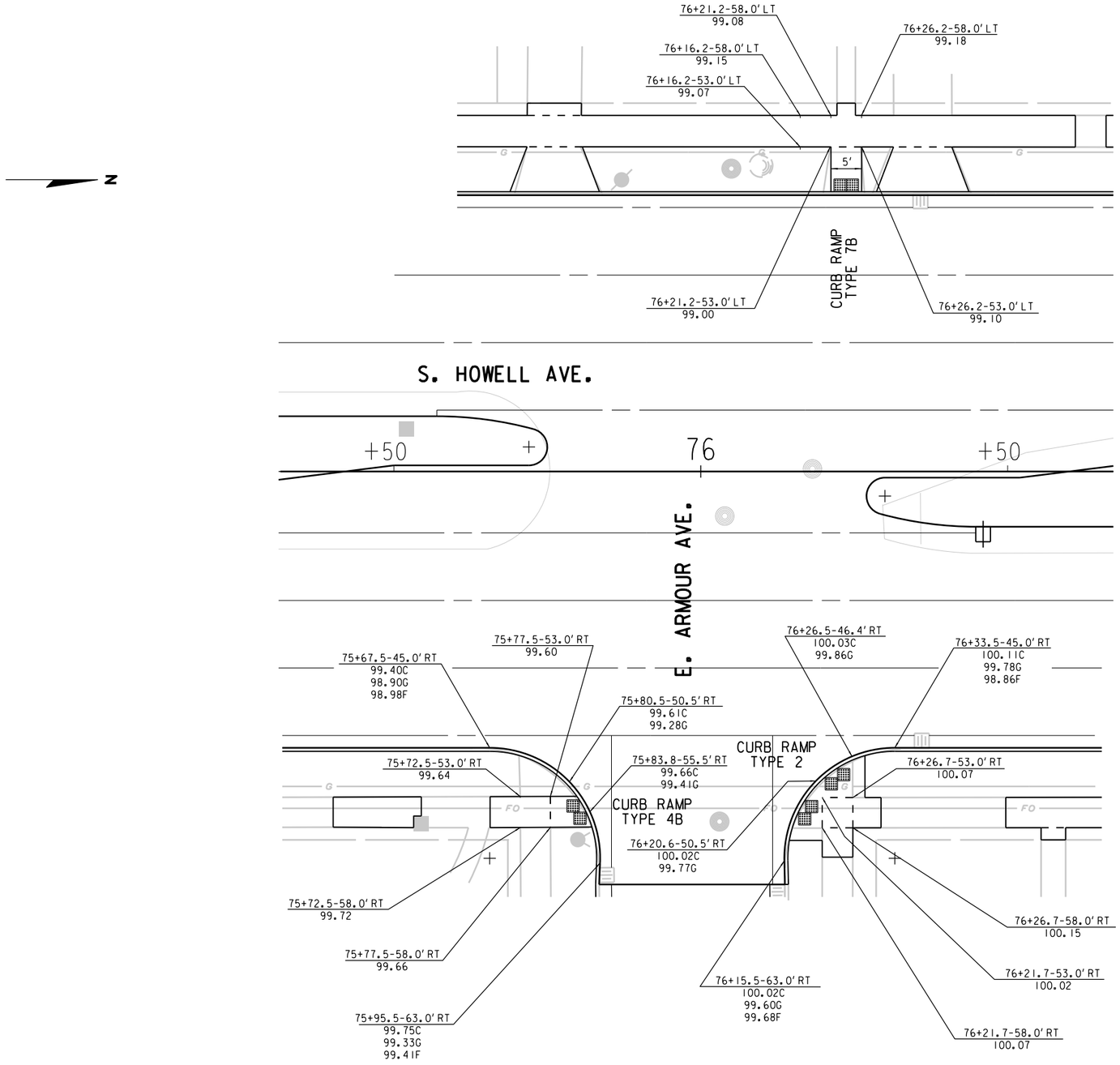
(NOT TO SCALE)



TYPE 2 MODIFIED RAMP LOCATIONS AND GRADES

		GRADES				
LOCATION	STATION	A	B	C	D	E
NE CORNER AT W BOLIVAR AVE	93+25, 63' RT	140.49	140.41	140.39	140.39	140.41
SW CORNER AT W PLAINFIELD AVE	99+32, 38' LT	144.92	144.84	144.82	144.82	144.84
SE CORNER AT W PLAINFIELD AVE	99+32, 73' RT	145.24	145.19	145.24	145.14	145.16
NW CORNER AT W PLAINFIELD AVE	99+83, 38' LT	145.05	144.97	144.94	144.97	145.00
NE CORNER AT W PLAINFIELD AVE	99+83, 73' RT	145.85	145.80	145.78	145.75	145.77
SE CORNER AT WATERFORD AVE	105+92, 73' RT	145.04	145.02	145.00	144.98	144.96
NW CORNER AT WATERFORD AVE	106+45, 38' LT	MATCH	144.26	144.24	144.21	144.23
NW CORNER AT NORWICH ST	113+00, 38' LT	MATCH	132.92	132.88	132.88	132.92

2



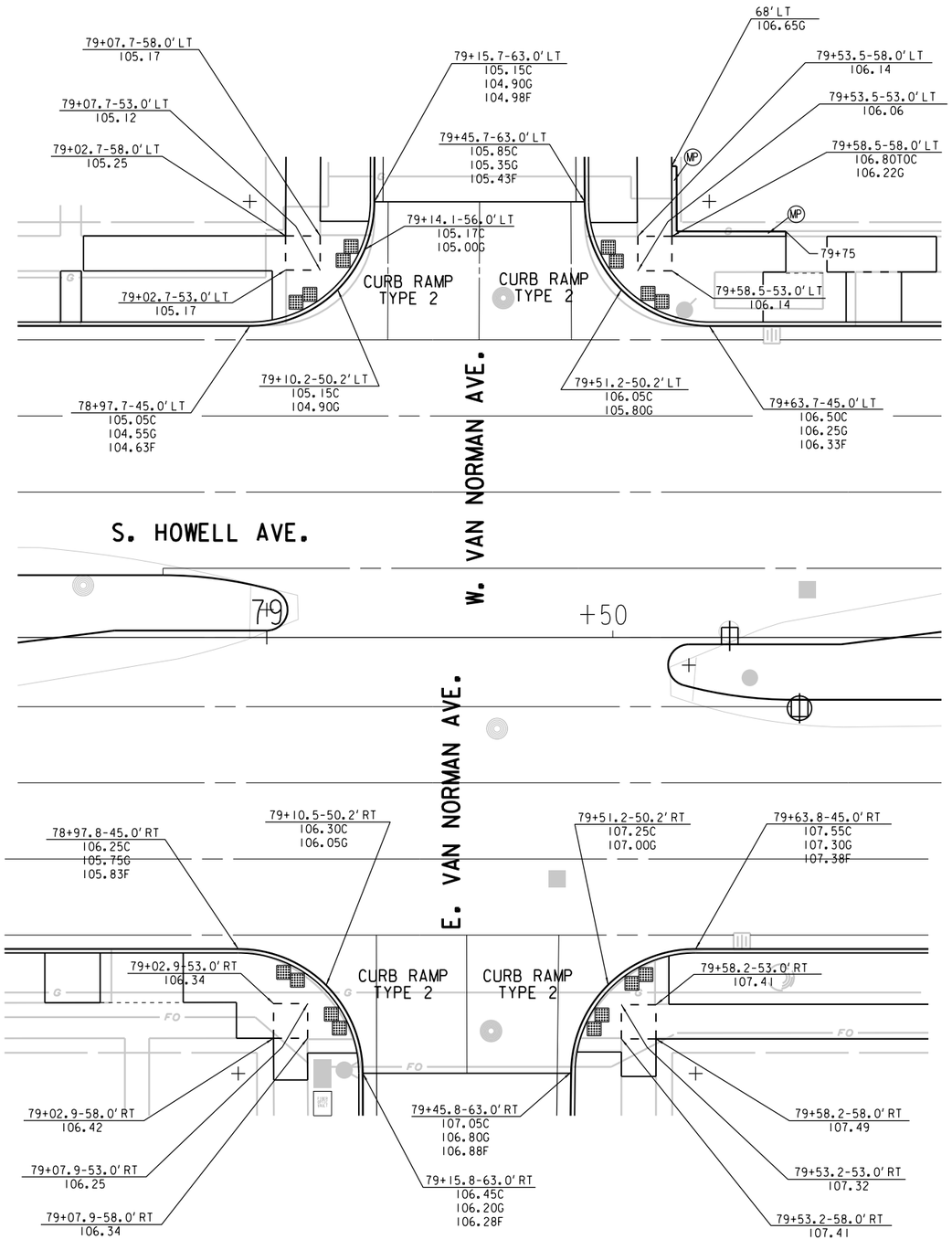
CURB RAMP DETAILS - S. HOWELL AVE. AND E. ARMOUR AVE.

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	CONSTRUCTION DETAILS	SCALE FEET 0' 20'	SHEET NO: 11	E

FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\CONRAMPDET.DGN

2

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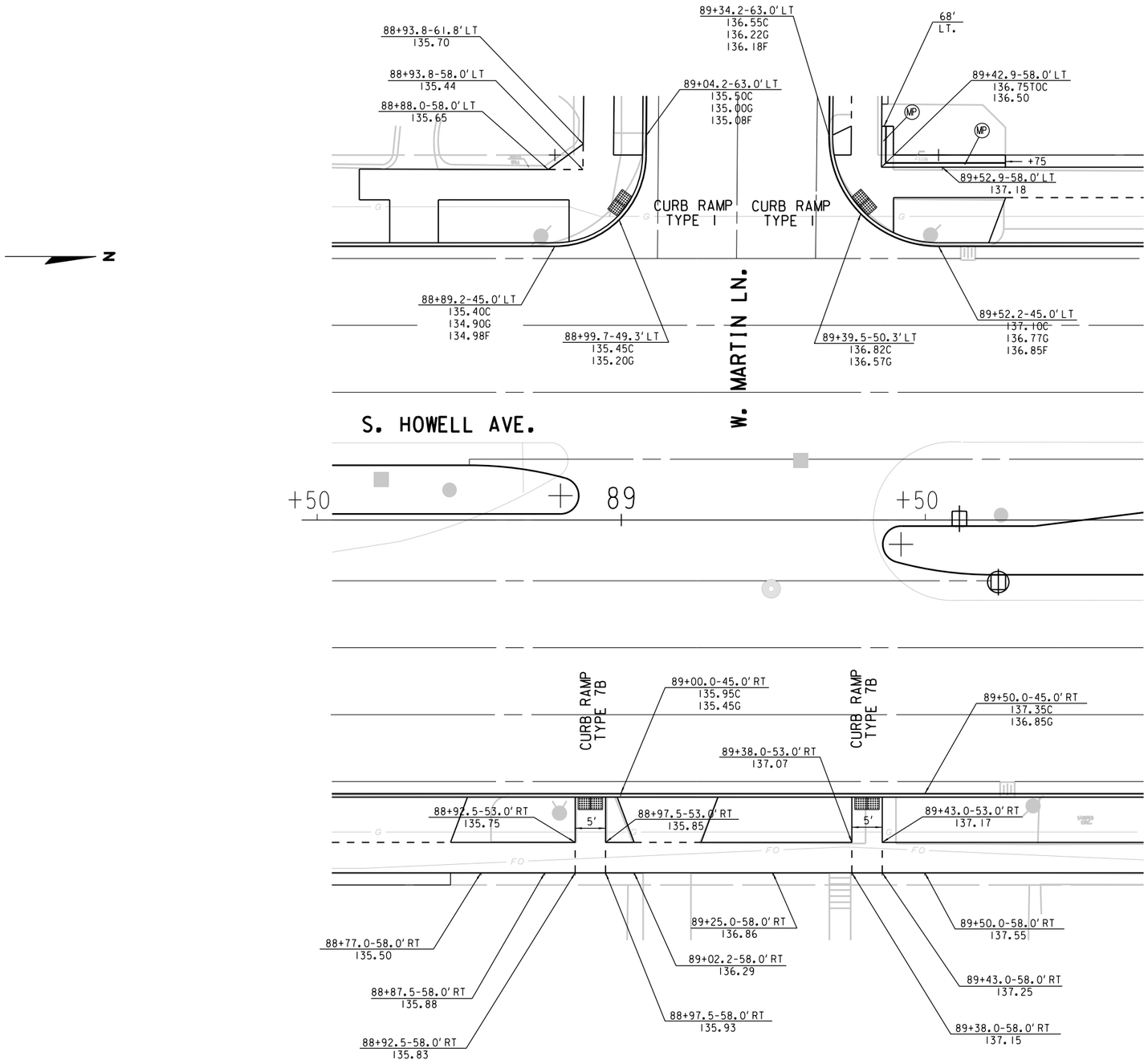
CURB RAMP DETAILS - S. HOWELL AVE. AND E./W. VAN NORMAN AVE.

(MP) CONST. CONC. CURB PREDESTRIAN

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	CONSTRUCTION DETAILS	SCALE FEET 0' 20'	SHEET NO: 12	E

FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\CONRAMPDET.DGN

2



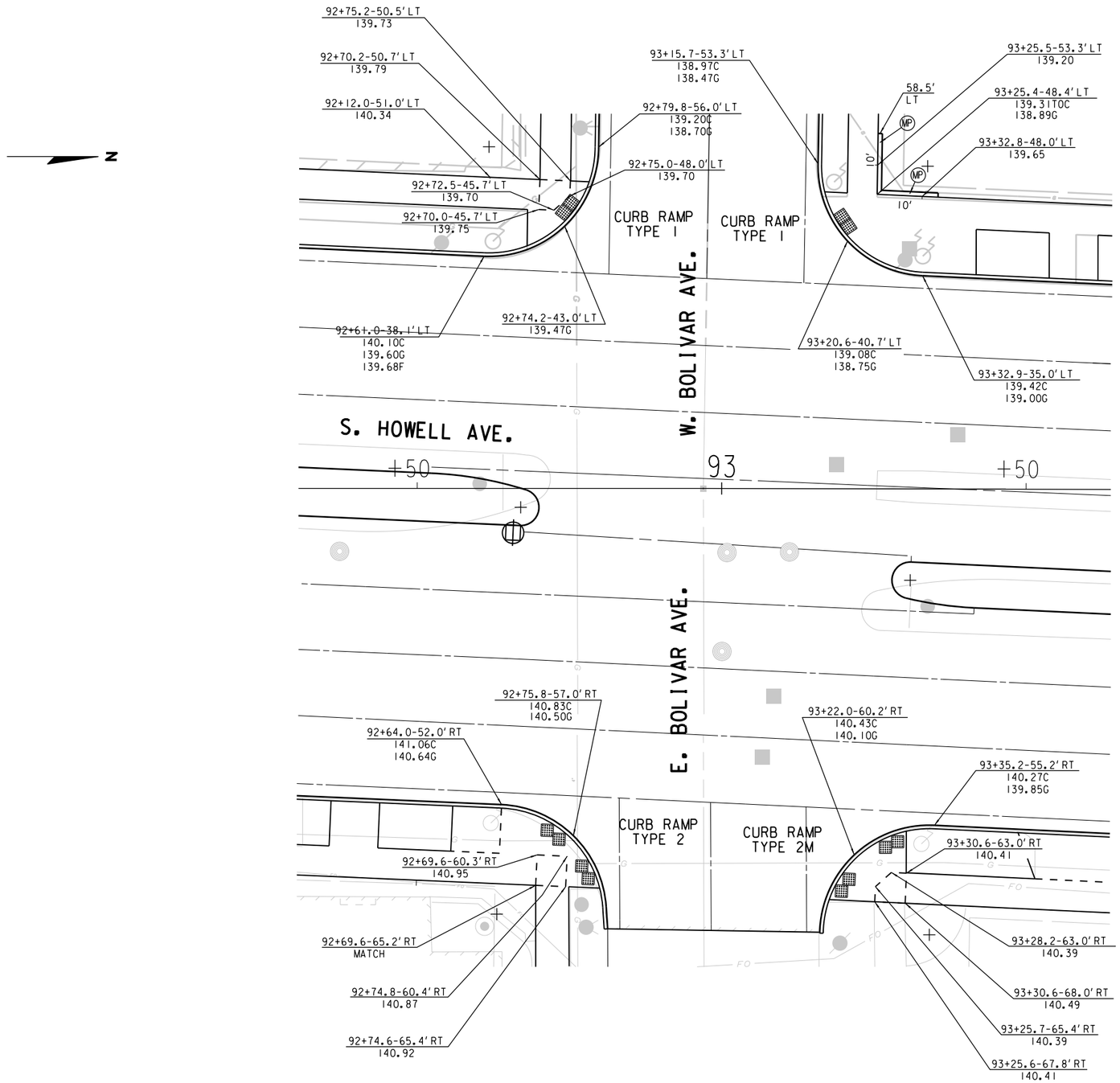
MP CONST. CONC. CURB PREDESTRIAN

CURB RAMP DETAILS - S. HOWELL AVE. AND W. MARTIN LN.

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	CONSTRUCTION DETAILS	SCALE FEET 0' 20'	SHEET NO: 13	E

FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\CONRAMPDET.DGN

2



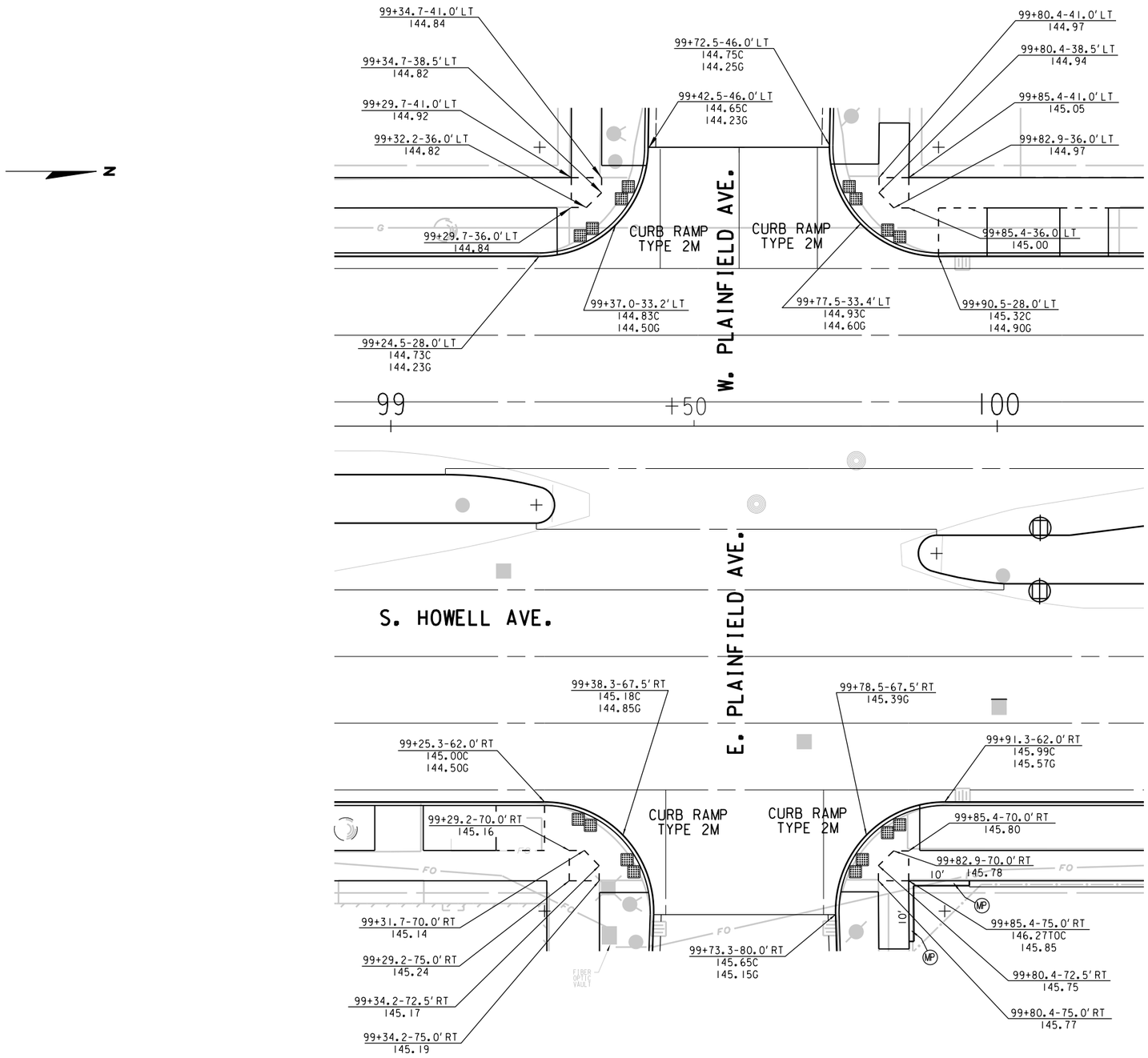
MP CONST. CONC. CURB PREDESTRIAN

CURB RAMP DETAILS - S. HOWELL AVE. AND E./W. BOLIVAR AVE.

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	CONSTRUCTION DETAILS	SCALE FEET 0' 20'	SHEET NO: 14	E

FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\CONRAMPDET.DGN

2



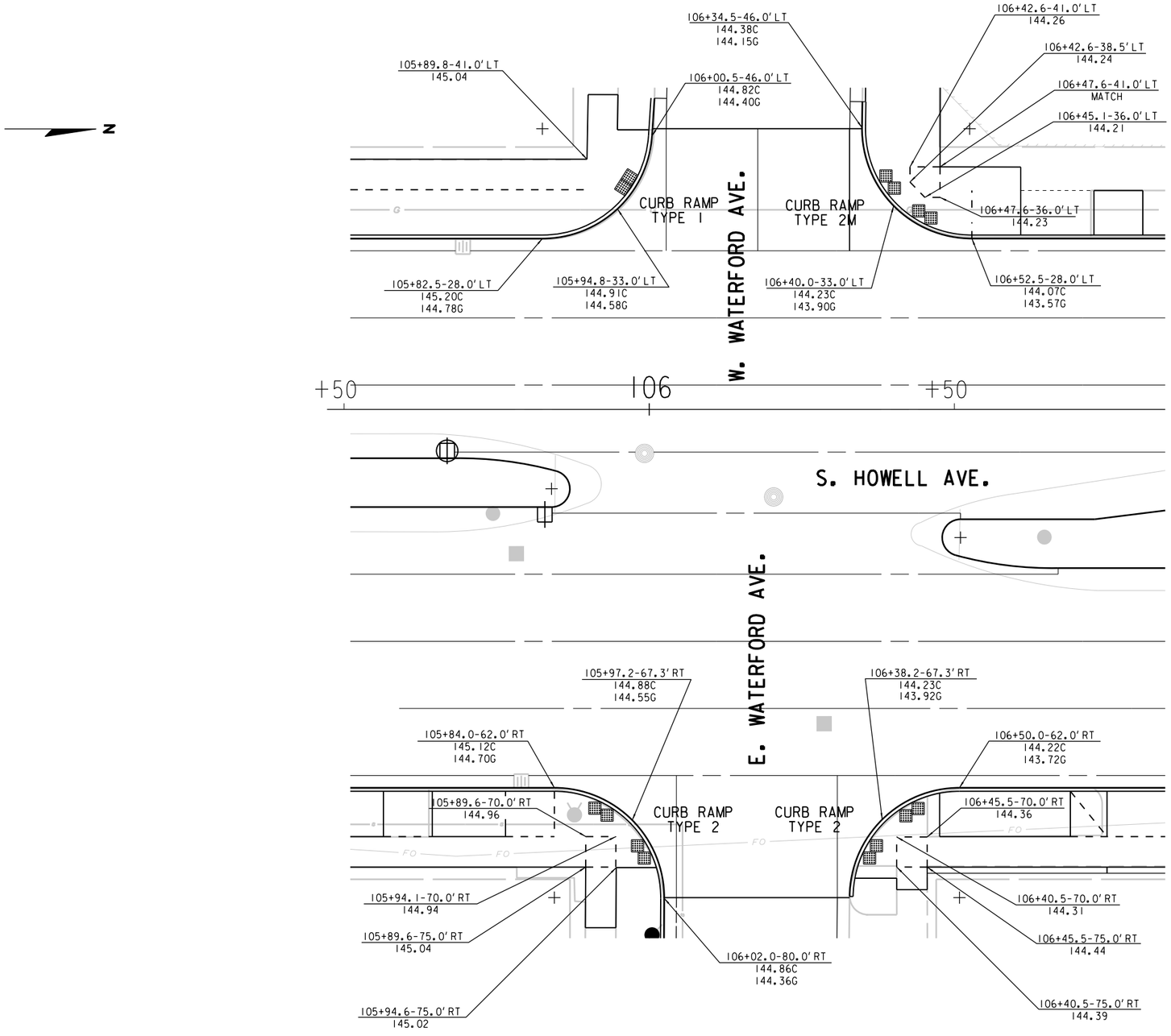
MP CONST. CONC. CURB PREDESTRIAN

CURB RAMP DETAILS - S. HOWELL AVE. AND E./W. PLAINFIELD AVE.

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	CONSTRUCTION DETAILS	SCALE FEET 0' 20'	SHEET NO: 15 E

FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\CONRAMPDET.DGN

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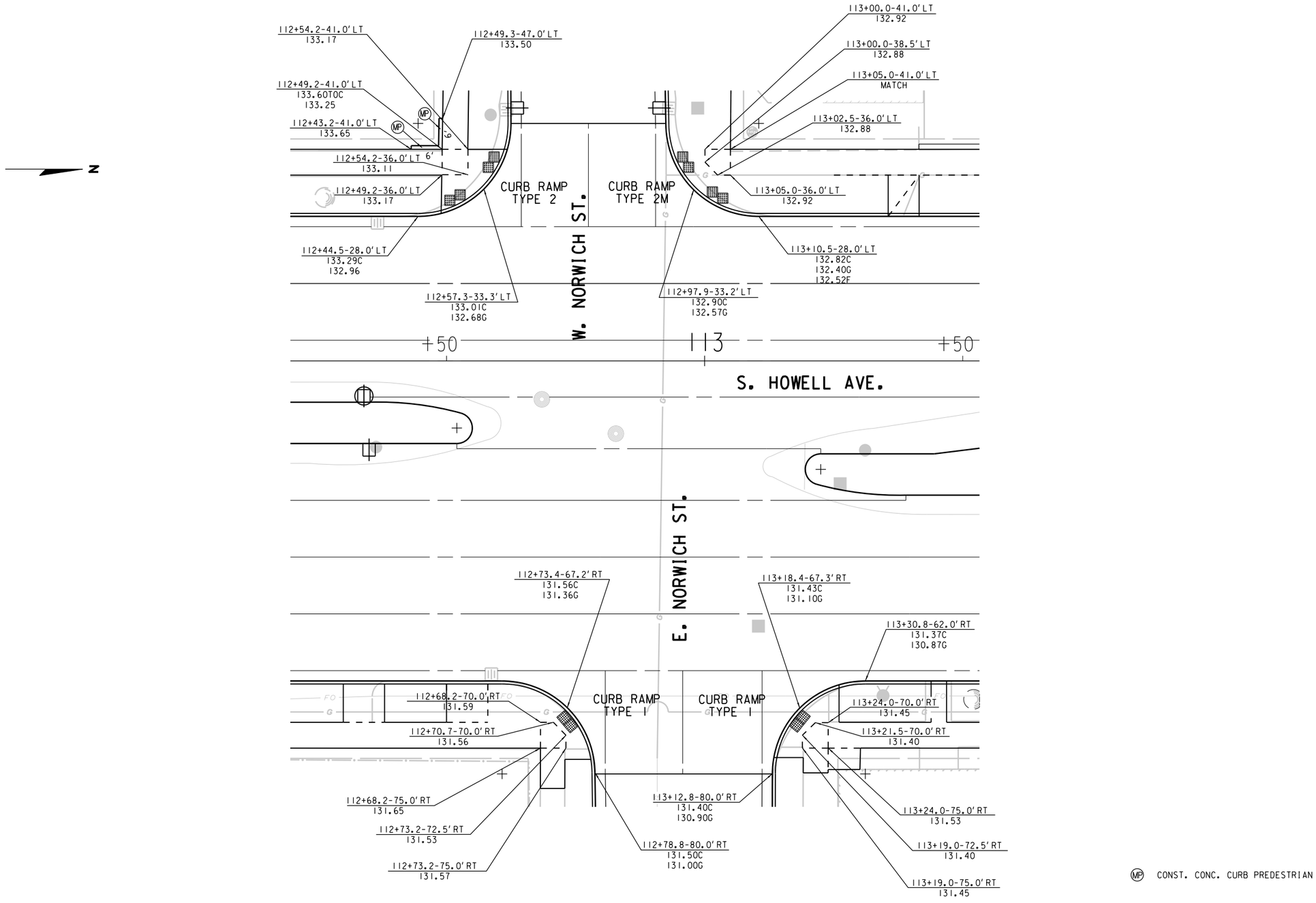


CURB RAMP DETAILS - S. HOWELL AVE. AND E./W. WATERFORD AVE.

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	CONSTRUCTION DETAILS	SCALE FEET 0' 20'	SHEET NO: 16	E

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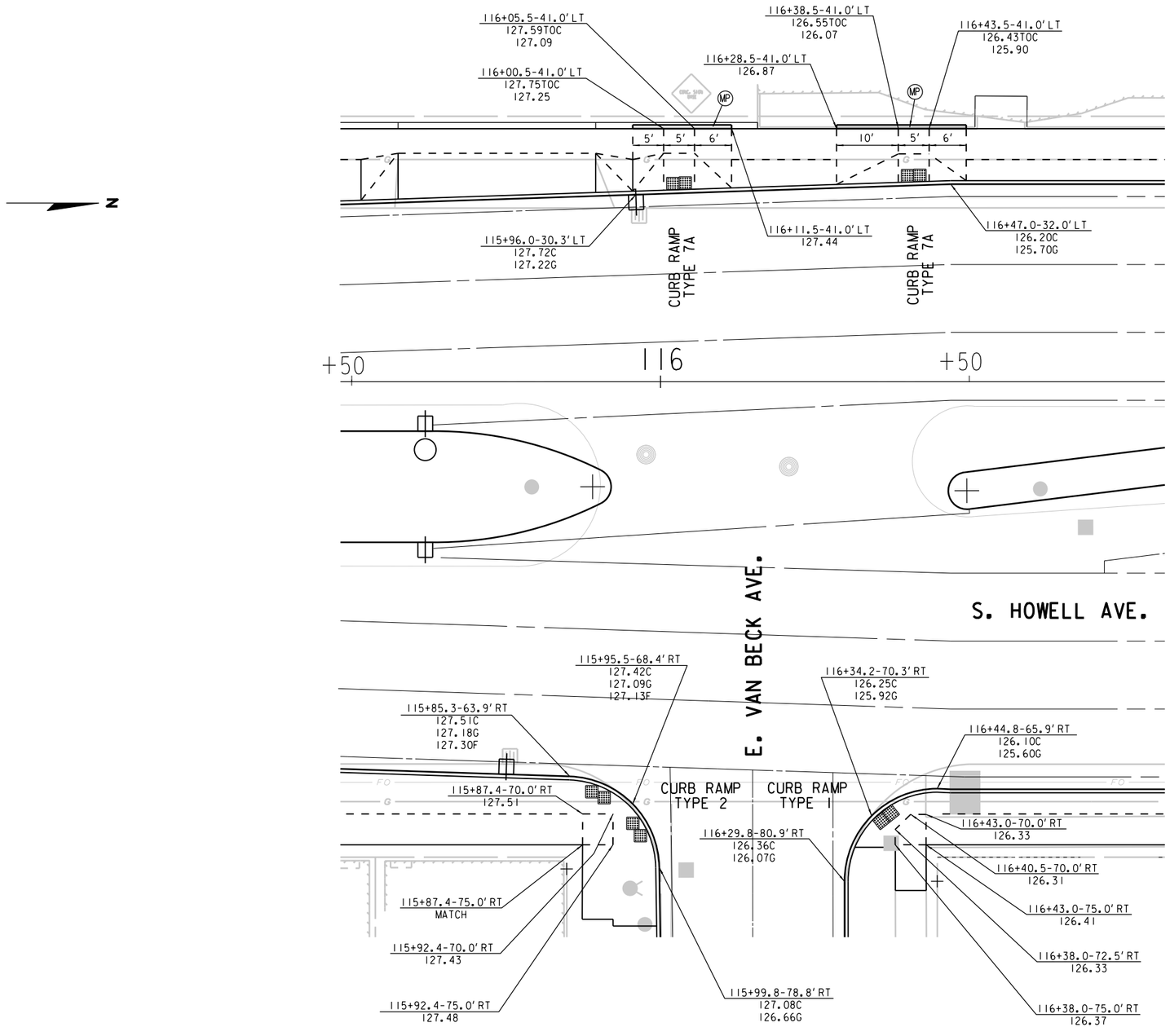


(MP) CONST. CONC. CURB PREDESTRIAN

CURB RAMP DETAILS - S. HOWELL AVE. AND E./W. NORWICH ST.

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	CONSTRUCTION DETAILS	SCALE FEET 0' 20'	SHEET NO: 17	E

FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\CONRAMPDET.DGN



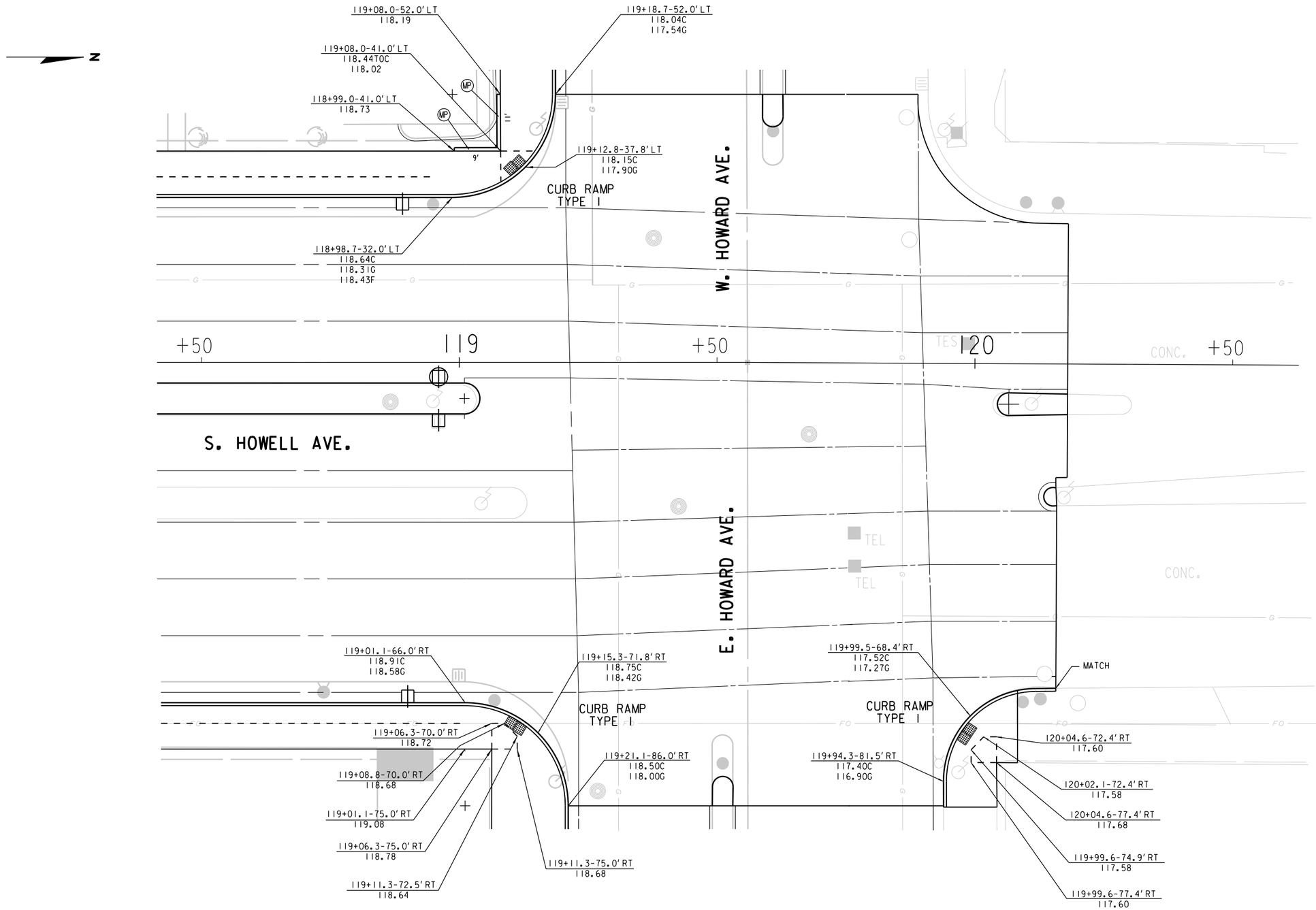
MP CONST. CONC. CURB PREDESTRIAN

CURB RAMP DETAILS - S. HOWELL AVE. AND E. VAN BECK AVE.

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	CONSTRUCTION DETAILS	SCALE FEET 0' 20'	SHEET NO: 18	E

FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\CONRAMPDET.DGN

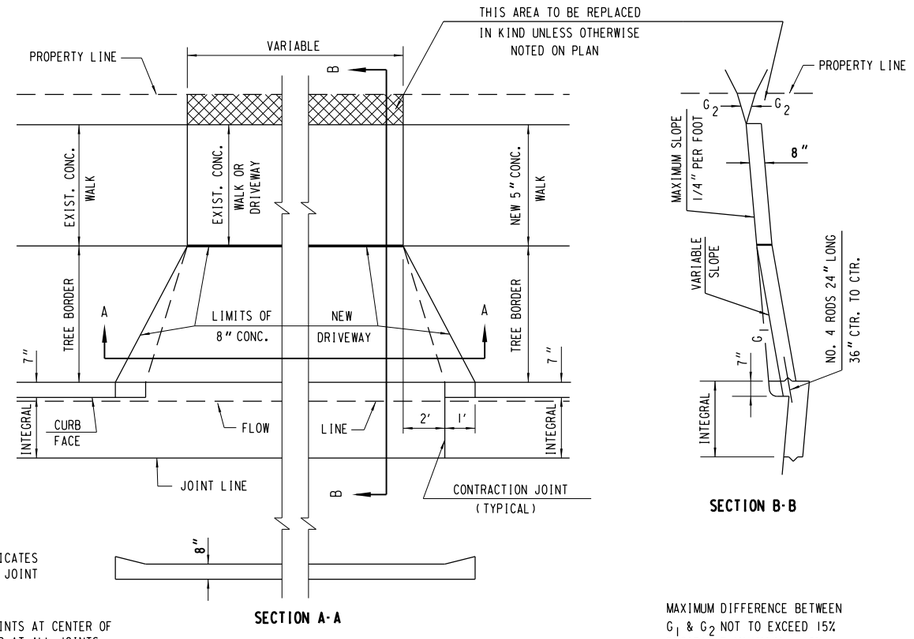
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CURB RAMP DETAILS - S. HOWELL AVE. AND E./W. HOWARD AVE.

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	CONSTRUCTION DETAILS	SCALE FEET 0' 20'	SHEET NO: 19	E

FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\CONRAMPDET.DGN



HEAVY LINE INDICATES 1/2" EXPANSION JOINT MATERIAL

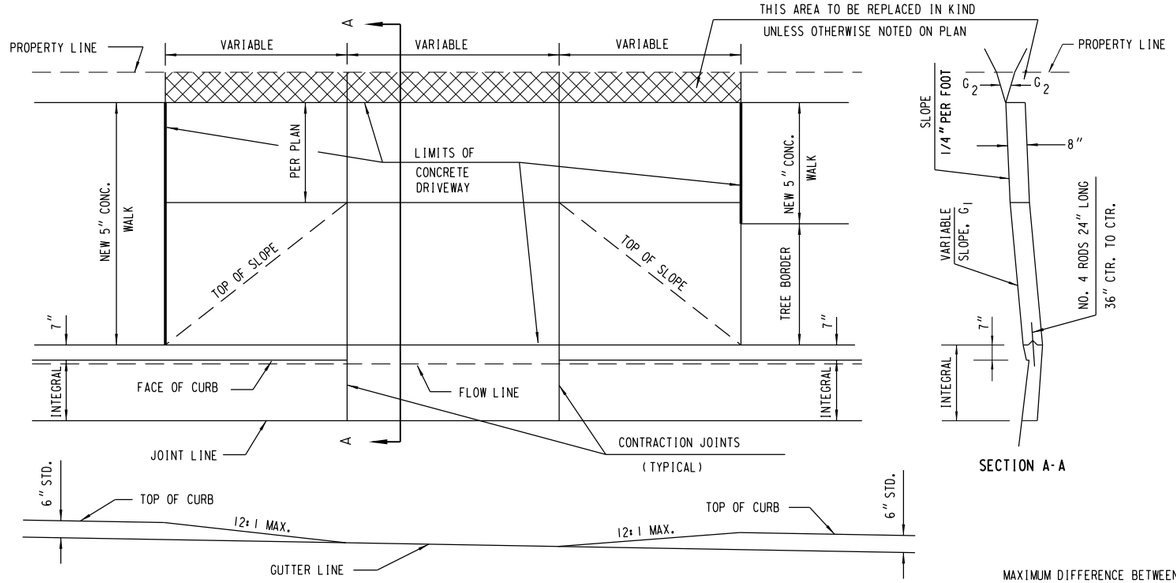
PLACE DUMMY JOINTS AT CENTER OF DRIVEWAY AND/OR AT ALL JOINTS IN THE GUTTER

MAXIMUM DIFFERENCE BETWEEN G_1 & G_2 NOT TO EXCEED 15% DESIRABLE MAXIMUM = 10%

MAXIMUM DIFFERENCE BETWEEN G_1 & G_2 IN FILL = 14%

FLARED CONCRETE DRIVEWAY HES

Ⓕ



HEAVY LINE INDICATES 1/2" EXPANSION JOINT MATERIAL

DRIVEWAY CONSTRUCTION NOTES

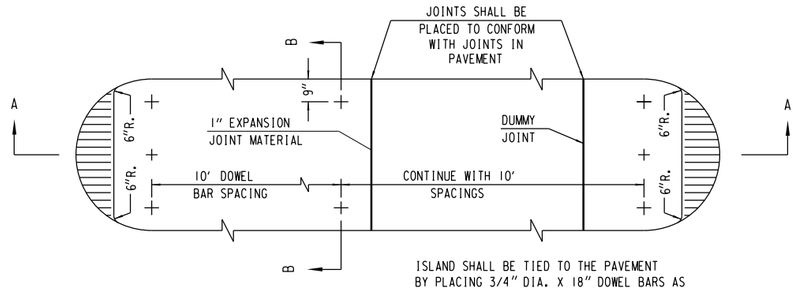
CONSTRUCT DRIVEWAY TO PROPERTY LINE ONLY WHEN MATCHING EXISTING DRIVEWAY AND INSTALL 1/2" EXPANSION JOINT MATERIAL BETWEEN NEW AND OLD DRIVEWAY, PLACE DUMMY JOINT AT CENTER OF DRIVEWAY AND AT ALL JOINTS IN THE GUTTER

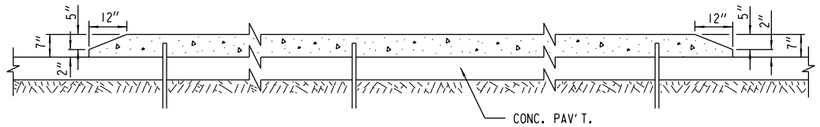
MAXIMUM DIFFERENCE BETWEEN G_1 & G_2 NOT TO EXCEED 15% DESIRABLE MAXIMUM = 10%

MAXIMUM DIFFERENCE BETWEEN G_1 & G_2 IN FILL = 14%

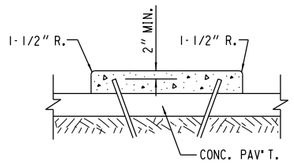
DEPRESSED CONCRETE DRIVEWAY (MODIFIED) HES

Ⓓ





SECTION A - A

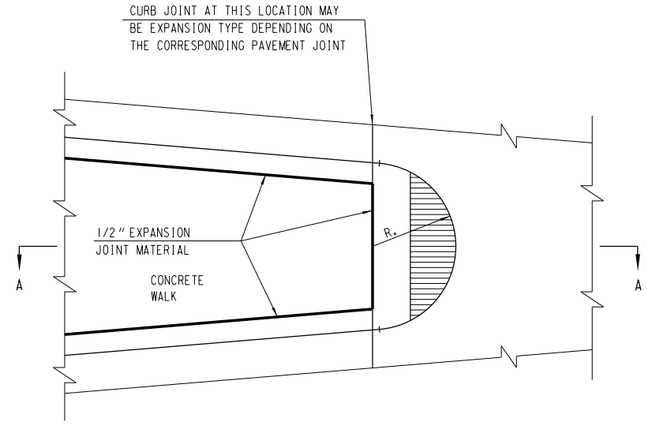


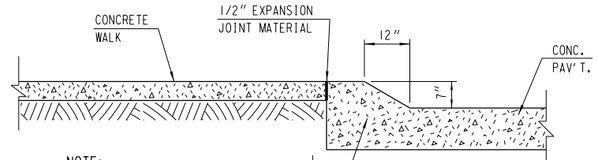
SECTION B - B

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
(WITH SNOWPLOWABLE NOSE)

(Z)





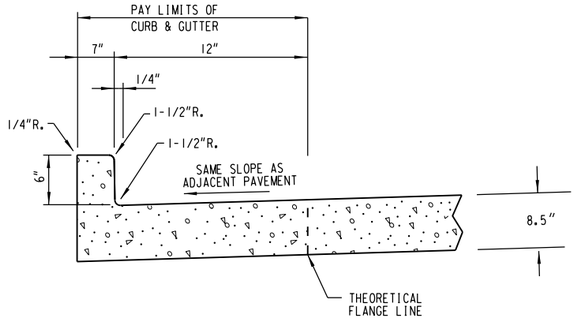
NOTE:
THE COST FOR THE ADDITIONAL MATERIALS AND LABOR IN THIS SECTION SHALL BE INCLUDED IN THE PRICE BID FOR CONCRETE CURB AND GUTTER

SECTION A-A

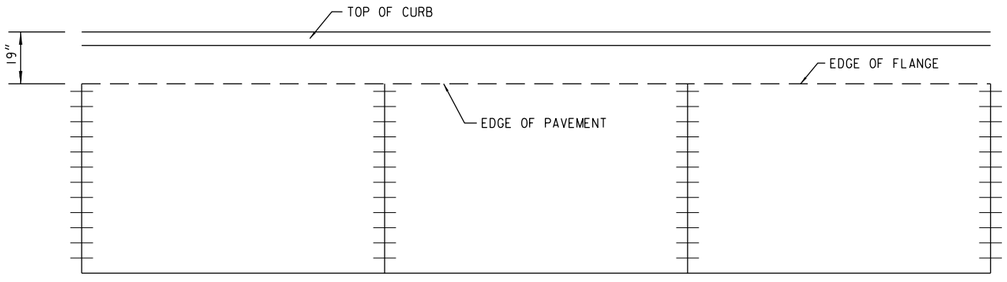
SNOWPLOWABLE MEDIAN ISLAND NOSE

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

(Y)



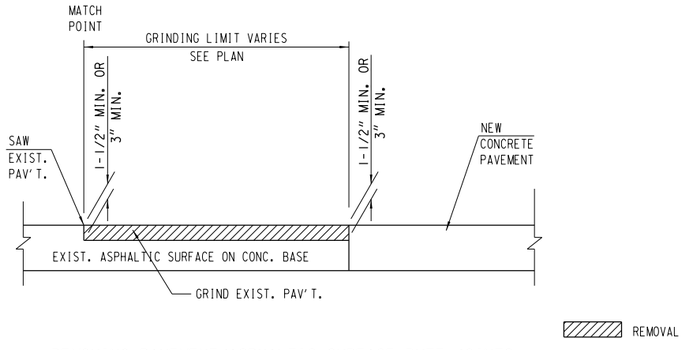
CONCRETE CURB & GUTTER INTEGRAL 19-INCH



CONTRACTION JOINT LOCATIONS

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	CONSTRUCTION DETAILS	SCALE FEET	SHEET NO: 21	E

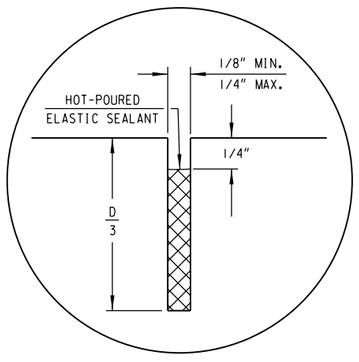
FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\CONDET.DGN



REMOVING PAVEMENT/ASPHALTIC SURFACE BUTT JOINTS

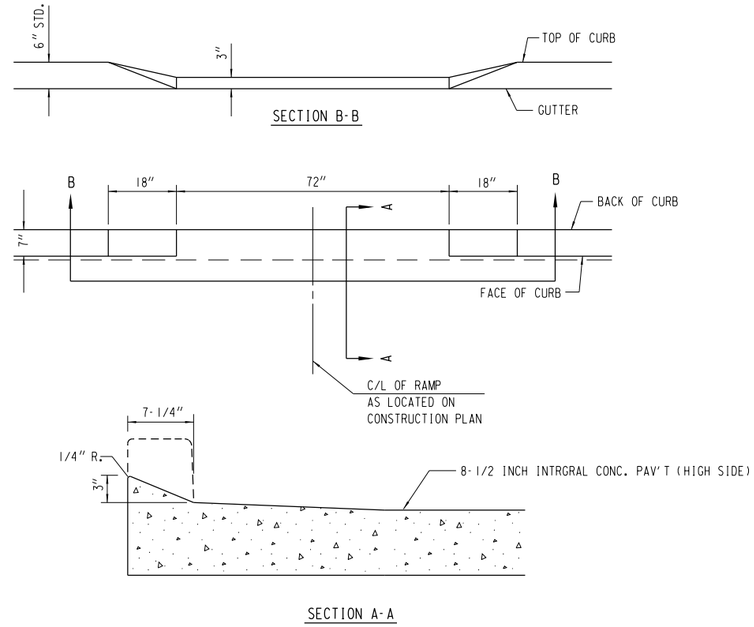
IN ROADWAY AT INTERSECTIONS AND ABUTTING PAVEMENT

(GI) (G)



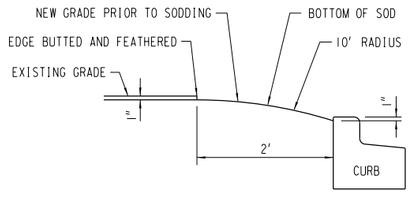
JOINT SEALING DETAIL

PAVEMENT DEPTH AND JOINT SPACING TABLE	
PAVEMENT DEPTH (D)	CONTRACTION JOINT SPACING
6"	12'
7"	14'
8"	15'
9"	15'
10" & ABOVE	18'



MAINTENANCE RAMP

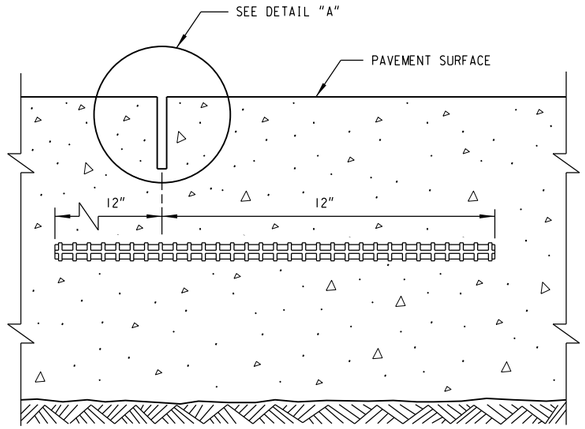
(X)



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

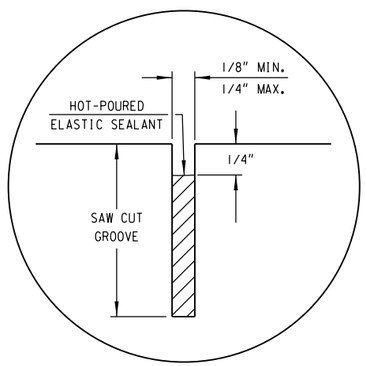
GRADING DETAIL

JOINTS WITH HOT POURED SEALANT

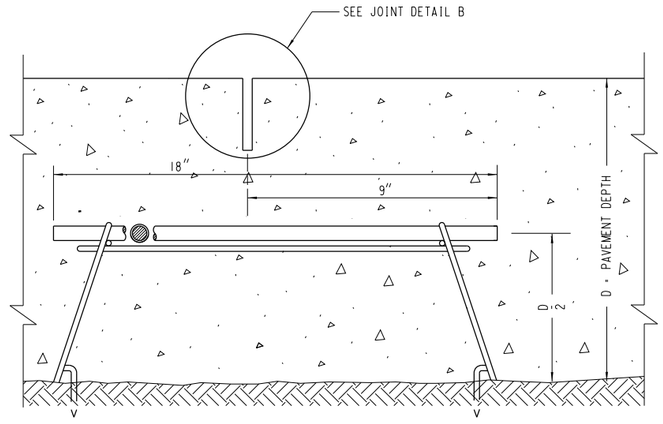


SAWED JOINT

NOTE: DETAIL 'A' SHOWN IN S.D.D. "CONCRETE PAVEMENT LONGITUDINAL JOINTS AND PAVEMENT TIES" HAS BEEN REVISED AND SHOWN AS 'JOINT DETAIL A'.

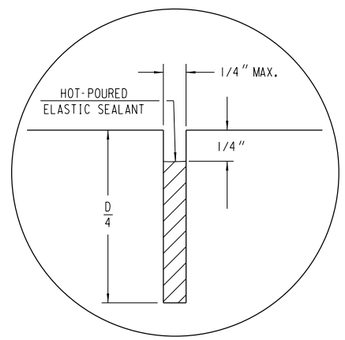


JOINT DETAIL "A"



DOWELED CONTRACTION JOINT

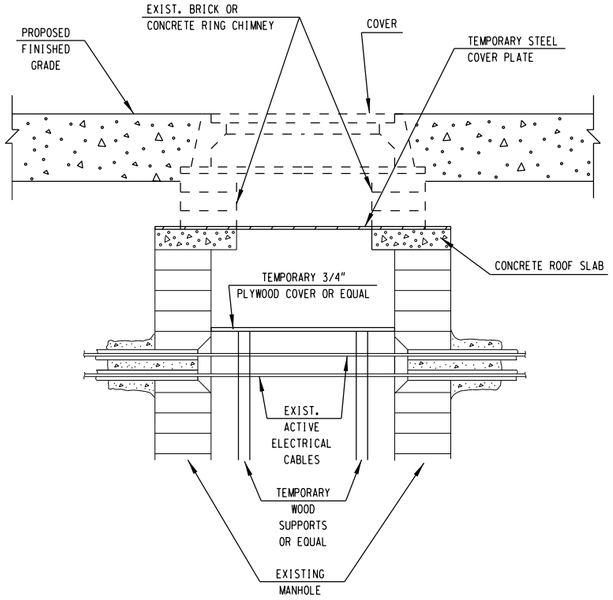
NOTE: 'JOINT DETAIL' SHOWN IN S.D.D. "URBAN DOWELED CONCRETE PAVEMENT" HAS BEEN REVISED AND SHOWN AS 'JOINT DETAIL B'.



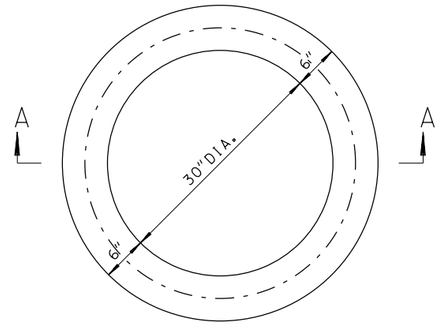
JOINT DETAIL "B"

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	CONSTRUCTION DETAILS	SCALE FEET	SHEET NO: 23	E

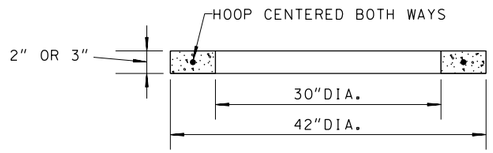
FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\CONDET.DGN



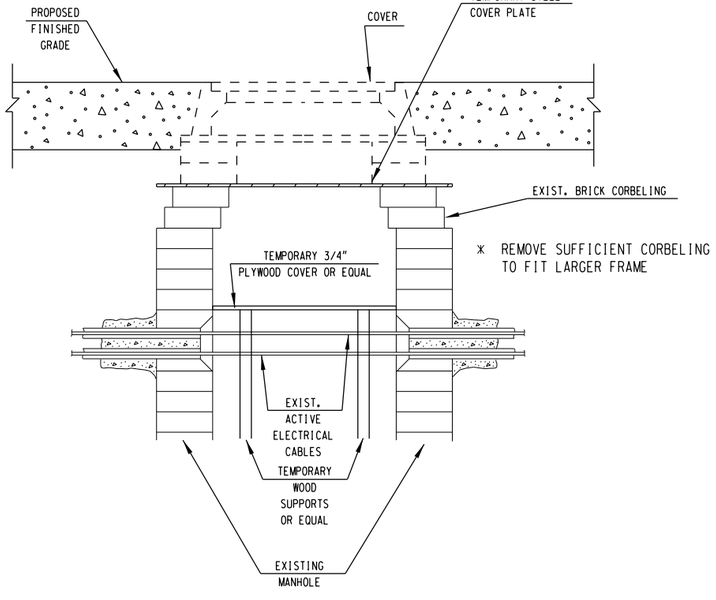
BLOCK OR PRECAST MANHOLE



PLAN



SECTION A-A



BRICK ROUND MANHOLE

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

THE CIRCUMFERENTIAL STEEL SHALL BE CENTERED WITHIN THE RING.

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

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

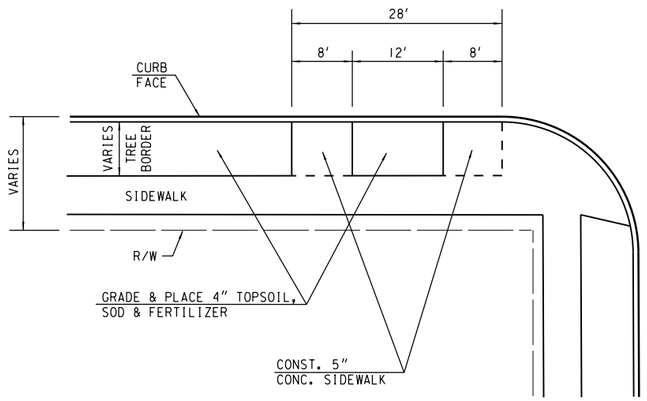
CONCRETE ADJUSTING RING

ADJUSTING TES MANHOLES

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	CONSTRUCTION DETAILS	SCALE FEET	SHEET NO: 24 E

FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\CONDET.DGN

2



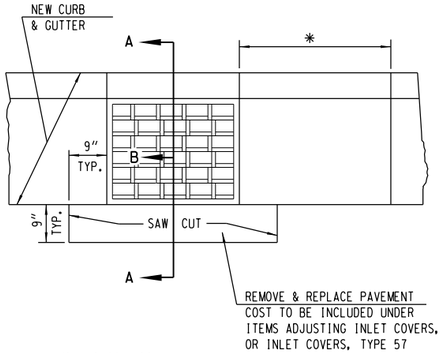
BUS STOP WALK DETAIL

BS

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	CONSTRUCTION DETAILS	SCALE FEET	SHEET NO: 25 E

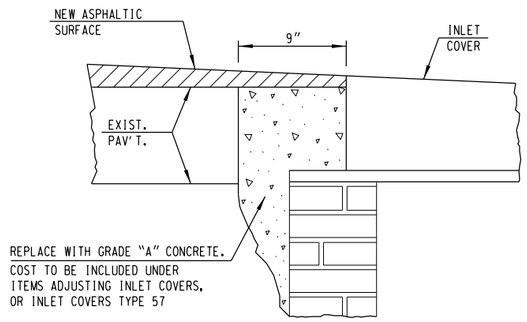
FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\CONDET.DGN

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

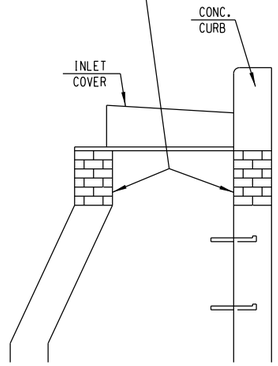


PLAN VIEW

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.

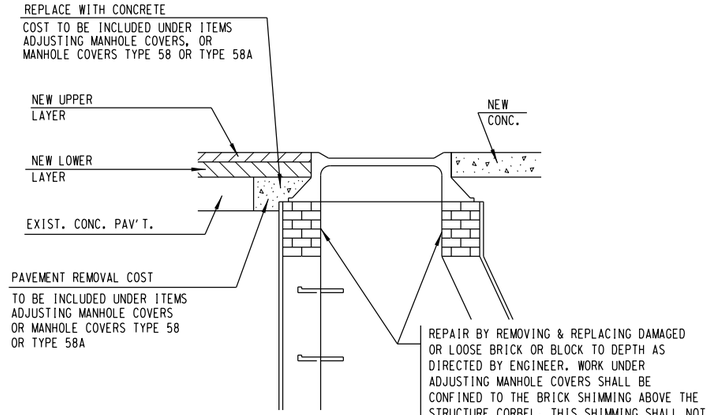


SECTION A-B

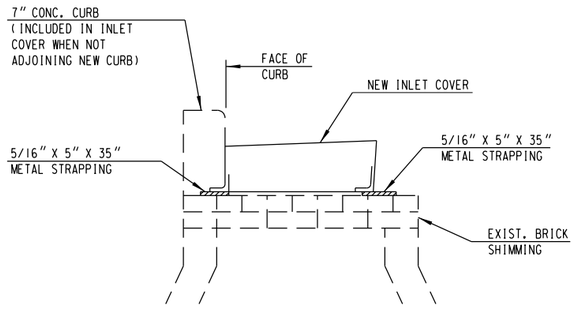


SECTION A-A

ADJUSTING INLET COVERS



ADJUSTING MANHOLE COVERS OR MANHOLE COVERS TYPE 58 OR TYPE 58A

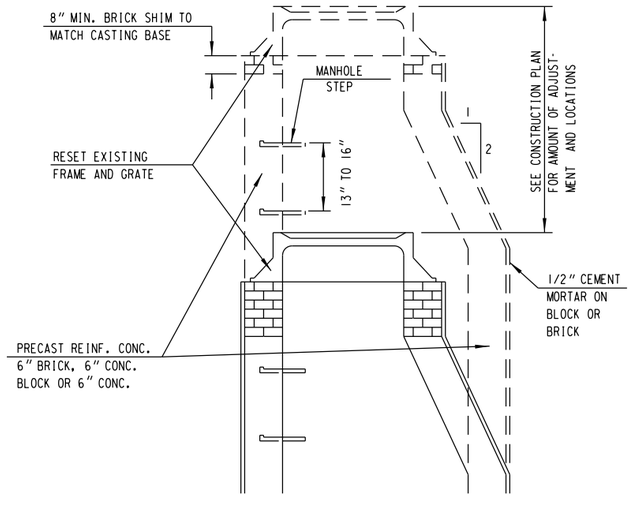


EXIST. DRAINAGE STRUCTURE

NOTES:

1. METAL STRAPPING TO BE 5/16" X 5" X 35" FLAT STEEL, HOT ROLLED (ASTM A36).
2. METAL STRAPPING TO BE PLACED ACROSS EXISTING DRAINAGE STRUCTURE TO SUPPORT NEW COVER. THE METAL STRAPPING SHALL BE SET ON A BED OF MORTAR.
3. PRECAST CONCRETE FLAT SLAB TOPS MAY BE USED ON THE STRUCTURE. THE TOPS SHALL BE INSTALLED ON A BED OF MORTAR.
4. COST OF MATERIALS AND LABOR TO BE INCLUDED IN PRICE BID FOR INLET COVER, TYPE 57.

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



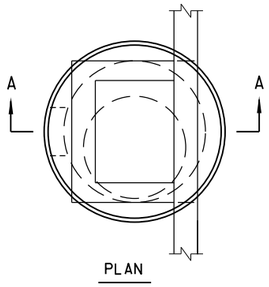
CORBEL MAY BE REVERSED STRAIGHT SIDE LEANED SLIGHTLY TO CLEAR CURB HEAD.

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

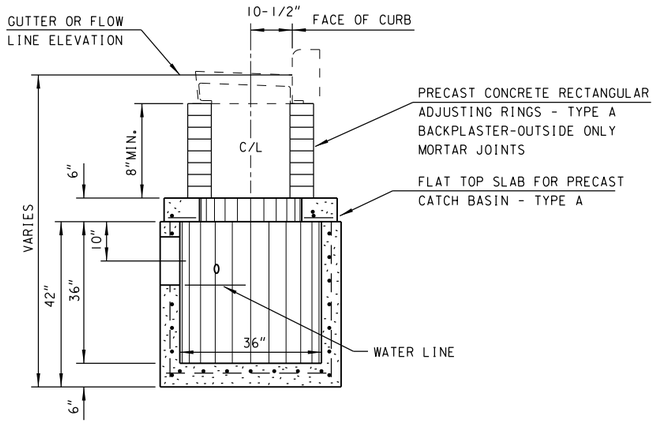
RECONSTRUCTING MANHOLES AND INLETS

CONSTRUCTION NOTES

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



PLAN



SECTION A-A

INLET - TYPE 45A

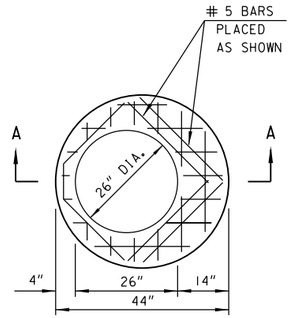
GENERAL NOTES

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.

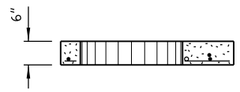
2. ALL REINFORCEMENT STEEL SHALL BE GRADE 60 OR GREATER AND EMBEDDED AT LEAST 1" CLEAR.

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

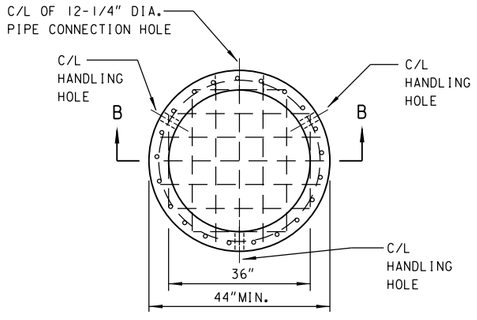
TOP SLAB - TYPE A

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.

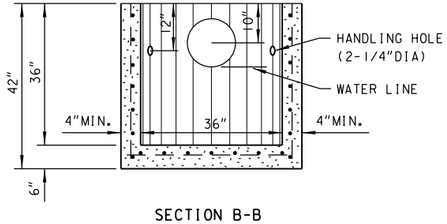
ADDITIONALLY, NO. 5 BARS SHALL BE PLACED AROUND TOP SLAB OPENING AS SHOWN.

REINFORCEMENT SHALL BE TIED OR WELDED TOGETHER.

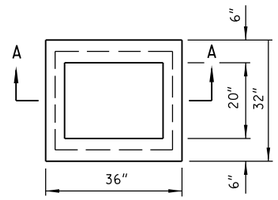
THE MINIMUM COMPRESSIVE STRENGTH OF THE CONCRETE SHALL BE 4000 P.S.I.



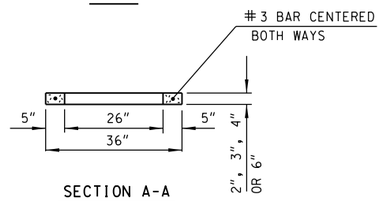
RISER SECTION WITH INTEGRAL BASE PLAN



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.

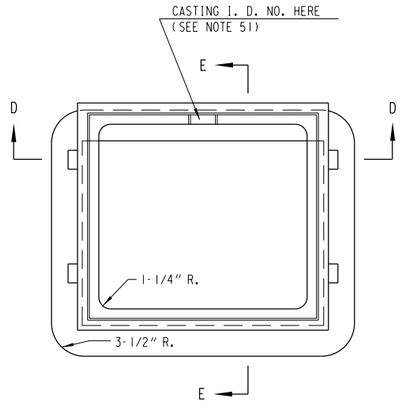
RISER SECTION AND BASE SLAB REINFORCEMENT SHALL BE TIED OR WELDED TOGETHER.

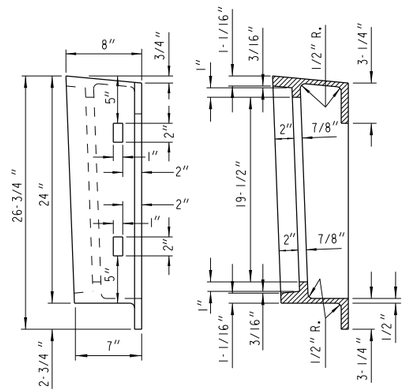
TWO TO THREE HANDLING HOLES 2-1/4" IN DIAMETER AND A PIPE CONNECTION HOLE 12-1/4" IN DIAMETER SHALL BE CAST OR CORED IN THE RISER SECTION AT THE LOCATIONS SHOWN. LIFTING DEVICES MAY BE SUBSTITUTED FOR HANDLING HOLES.

NO JOINTS OR HOLES SHALL BE BELOW THE WATERLINE.

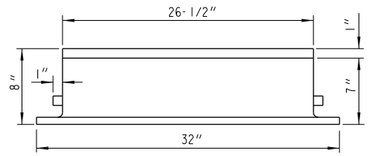
THE MINIMUM COMPRESSIVE STRENGTH OF THE CONCRETE SHALL BE 4000 P.S.I.

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

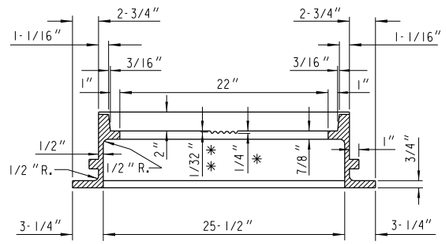




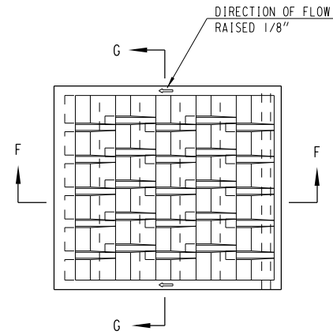
SECTION E-E



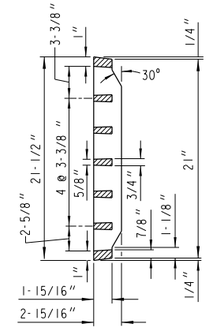
FRAME



SECTION D-D



GRATE



SECTION G-G

* DEPRESSION FOR LETTERS

* * CLEARANCE FROM TOP OF LETTERS TO FACE OF SEAT

GENERAL NOTES

ALL EDGES ARE TO BE GROUND

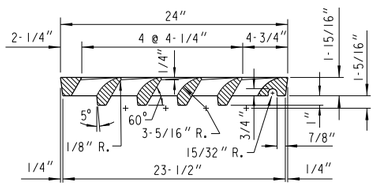
ALL CASTINGS SHALL BEAR THE FOLLOWING IDENTIFICATION MARKS IN THE FORM OF LEGIBLE LETTERS OR NUMERALS RAISED 1/8"

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

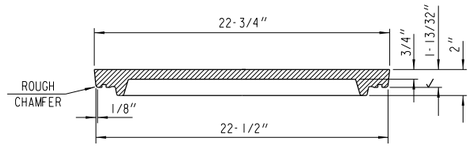
1. ON THE UPPER SIDE OF THE GRATE IN 1 INCH HIGH LETTERS, THE INITIALS OR MONOGRAM OF THE FOUNDRY, THE YEAR MADE, THE CASTING IDENTIFICATION NUMBER (57) AND THE SERIAL NUMBER OF THE INDIVIDUAL CASTING.



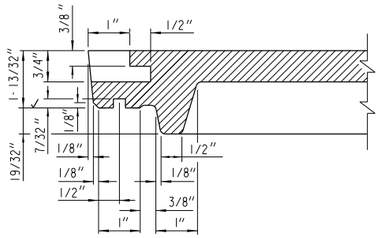
SECTION F-F

INLET COVER - TYPE 57

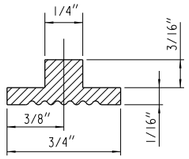
LID-145 LBS., FRAME-204 LBS.

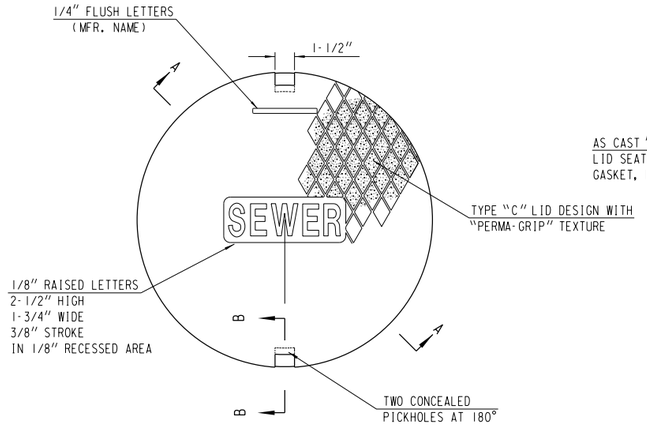


SECTION A-A

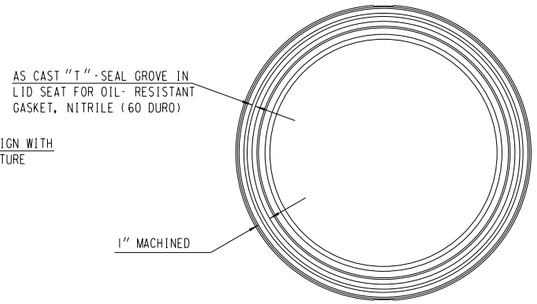


SECTION B-B





TOP VIEW



BOTTOM VIEW

MANHOLE COVER - TYPE 58-A

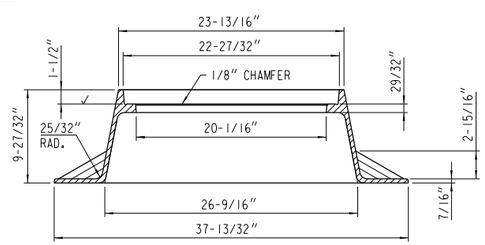
LID - 107 LBS.

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.



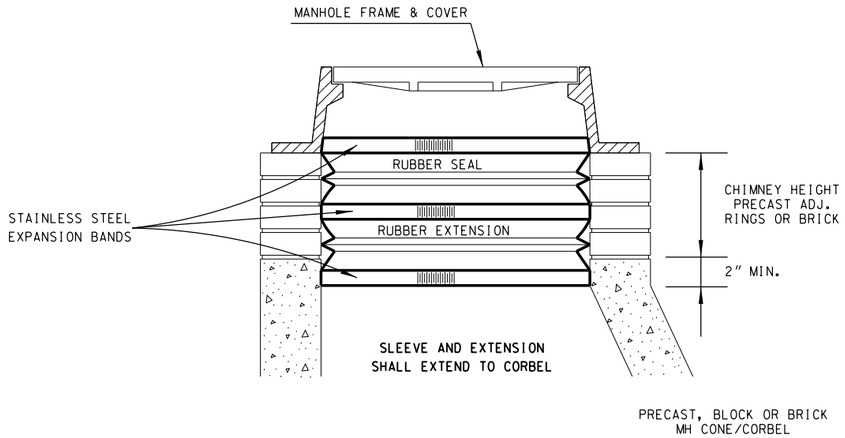
MANHOLE FRAME - TYPE MS21

FRAME - 182 LBS.

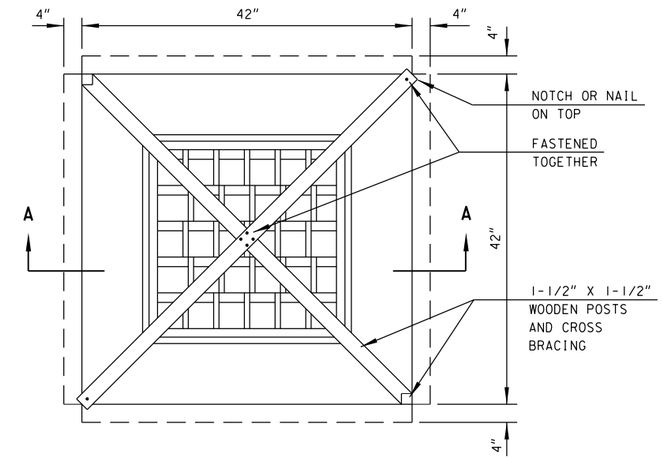
STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	DRAINAGE DETAILS	SCALE FEET	SHEET NO: 29	E

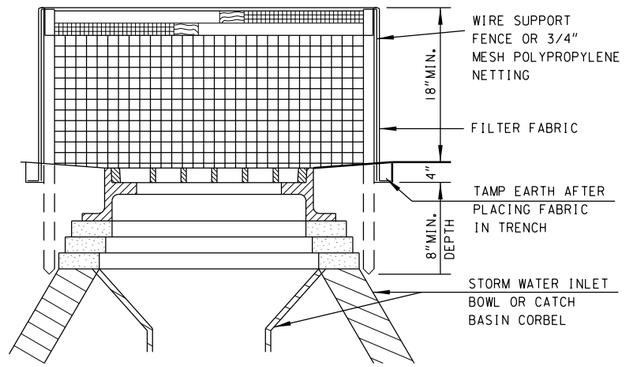
FILE NAME: W:\SPR\

2



INTERNAL SANITARY MANHOLE SEAL

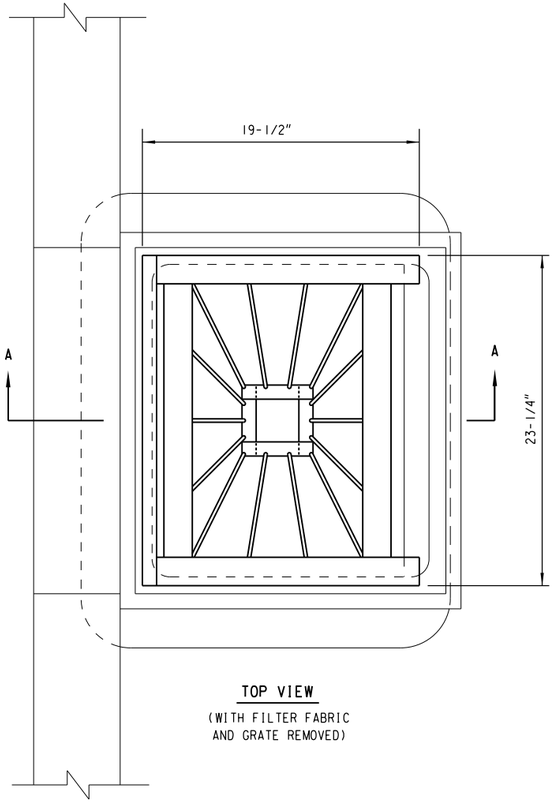




SECTION A-A

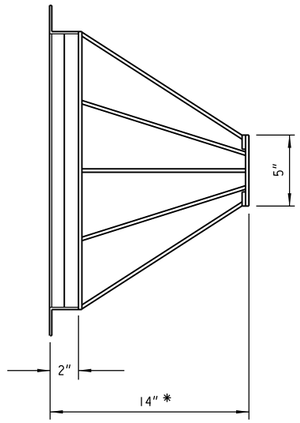
INLET SCREEN

(NOT PAVED) (TYPE R)



TOP VIEW

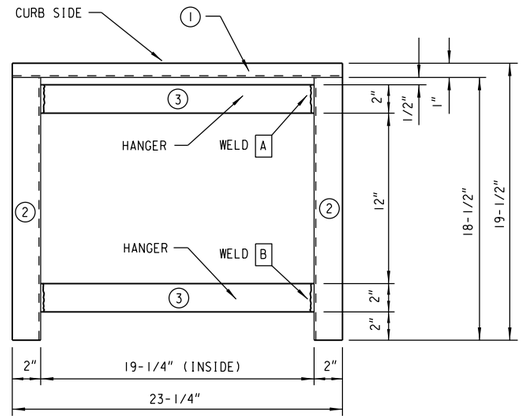
(WITH FILTER FABRIC AND GRATE REMOVED)



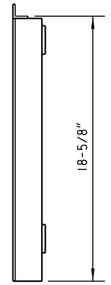
FRONT VIEW

(BASKET ONLY)

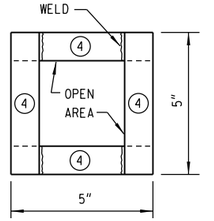
* MAY BE DECREASED IF INLET IS OF INSUFFICIENT DEPTH



TOP VIEW



SIDE VIEW



TOP VIEW

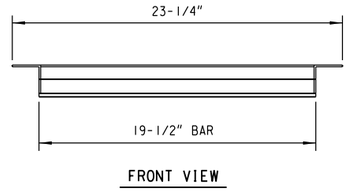


SIDE VIEW

BAR SCHEDULE

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

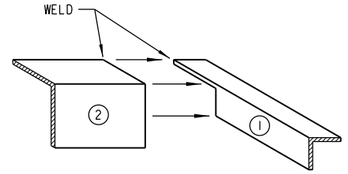
BASKET BOTTOM



FRONT VIEW

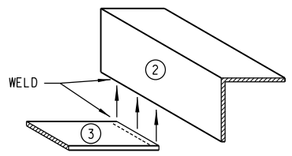
BAR SCHEDULE

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



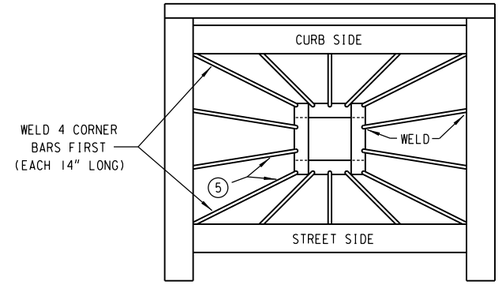
WELD CONNECTION - A

TOP FRAME



WELD CONNECTION - B

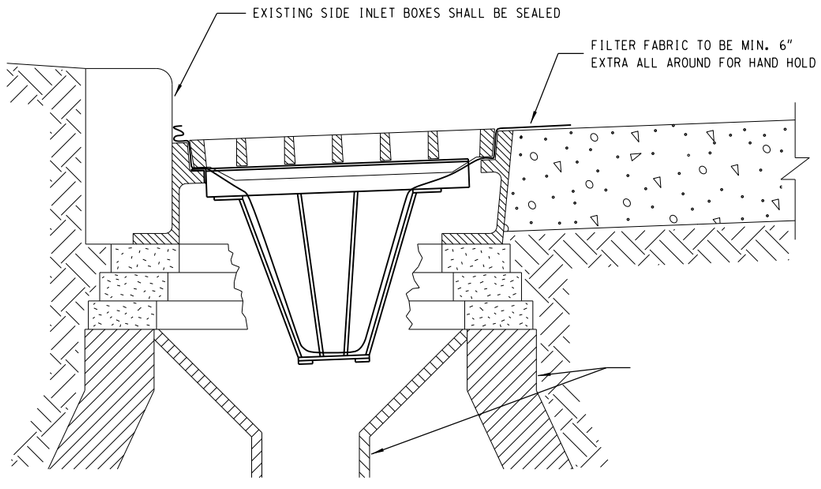
BASKET HANGER TO TOP FRAME



ROD PLACEMENT

ROD SCHEDULE

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

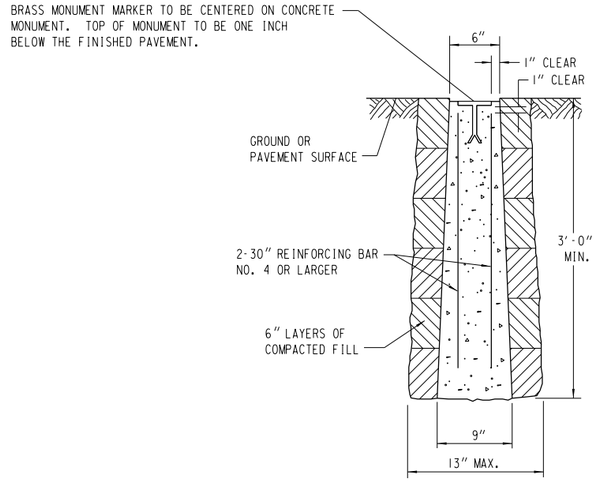


SECTION A-A

TYPE M
INLET BASKET

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	DRAINAGE DETAILS	SCALE FEET	SHEET NO: 31	E

FILE NAME: W:\SPR\



PRECAST

CONCRETE MONUMENT

S.E. WISCONSIN REGIONAL PLANNING COMMISSION
FOR SURVEYING AND MONUMENTING IN THIS AREA
T. N.
21 | 22
28 | 27
R. 22 E.

MONUMENT MARKER LOGO

(TO BE FURNISHED BY OTHERS)

GENERAL NOTES

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

MONUMENTS SHALL BE LOCATED AND PLACED AT THE DIRECTION OF THE CITY OF MILWAUKEE, INFRASTRUCTURE SERVICES DIVISION, CONSTRUCTION SECTION.

INSTALLATION OF PRECAST MONUMENT TO BE SUPERVISED BY CITY OF MILWAUKEE, INFRASTRUCTURE SERVICES DIVISION, CONSTRUCTION SECTION FOR ACCURACY OF LOCATION.

LANDMARK REFERENCE MONUMENTS TO BE REPLACED

LOCATION	MONUMENTS	STATION	REMARKS
S. HOWELL AVE.			
AT E. BOLIVAR AVE.	1	92+97.00 ON T/L	SEE SPECIAL PROVISIONS FOR INFORMATION ON RESTORATION OF MONUMENTS
AT E. HOWARD AVE.	1	119+55.90 ON T/L	SEE SPECIAL PROVISIONS FOR INFORMATION ON RESTORATION OF MONUMENTS

LANDMARK REFERENCE MONUMENT

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	LANDMARK REFERENCE MONUMENT	SCALE FEET	SHEET NO: 32	E

FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\LANDMARK.DGN

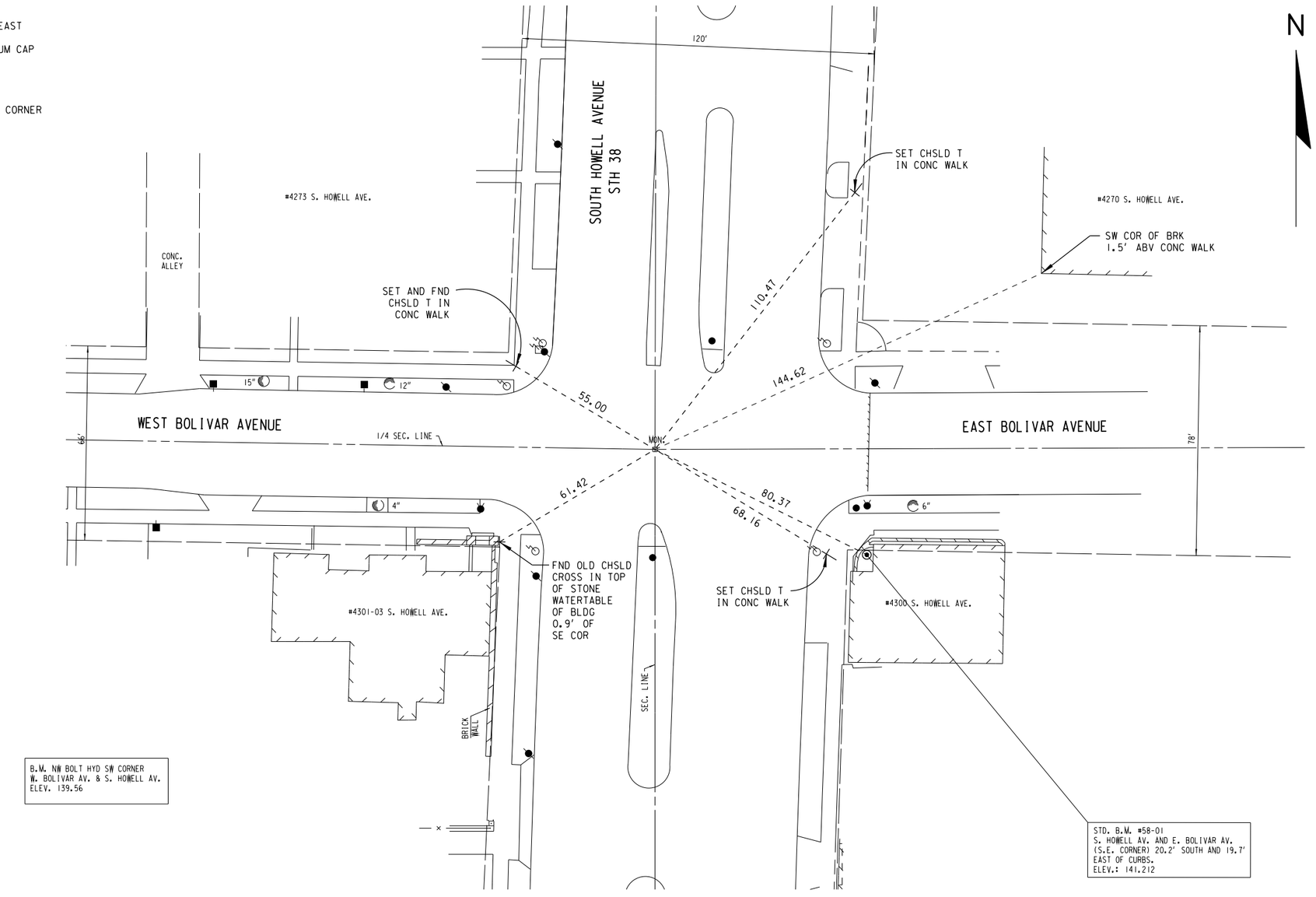
2

T. 6 N.
2021
2021
R. 22 E.

TOWNSHIP 6 NORTH, RANGE 22 EAST
MILWAUKEE COUNTY
CONCRETE MONUMENT W/ ALUMINUM CAP

STATE PLANE COORDINATES OF QUARTER SECTION CORNER
NORTH: 359,251.25
EAST: 2,559,479.78

SURVEY DATE: JUNE 01, 2009



U.S. PUBLIC LAND SURVEY CORNER
S. HOWELL AVE. AND W. BOLIVAR AVE./E. BOLIVAR AVE

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	LANDMARK REFERENCE MONUMENT	SCALE FEET	SHEET NO: 33	E

FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\LANDMARK.DGN

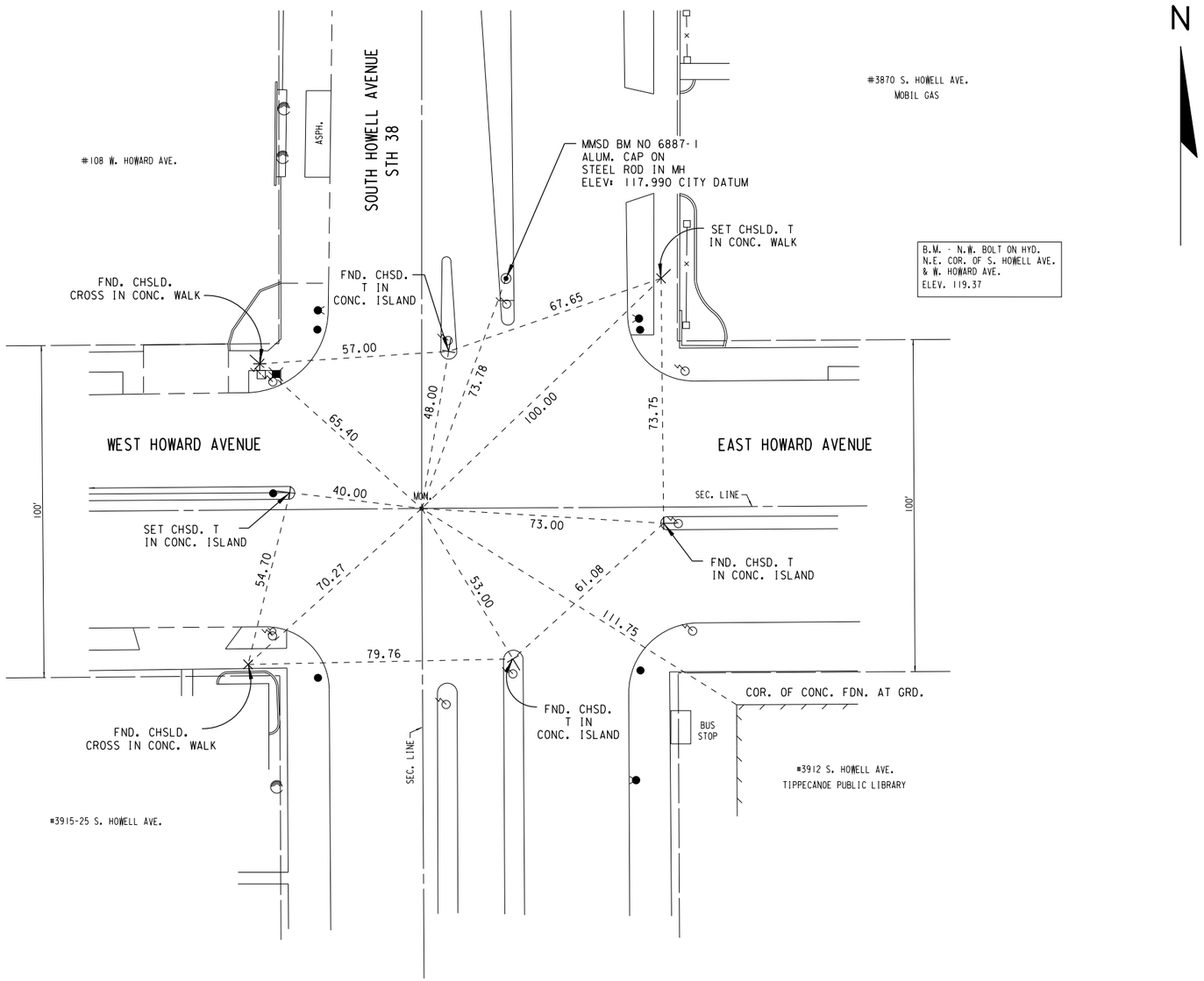
2



TOWNSHIP 6 NORTH, RANGE 22 EAST
MILWAUKEE COUNTY
CONCRETE MONUMENT W/ ALUMINUM CAP

STATE PLANE COORDINATES OF QUARTER SECTION CORNER
NORTH: 361,909.40
EAST: 2,559,425.33

SURVEY DATE: APRIL 05, 1988
REVISED: OCT. 02, 1997



U.S. PUBLIC LAND SURVEY CORNER
S. HOWELL AVE. AND W. HOWARD AVE./E. HOWARD AVE

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	LANDMARK REFERENCE MONUMENT	SCALE FEET	SHEET NO: 34	E

FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\LANDMARK.DGN

SOUTH HOWELL AVENUE

N

B.M. E BOLT HYD N/W CORNER
W. LAYTON AV. & S. HOWELL AV.
STA. 67+05 - 60'LT.
ELEV. 89.66

BEGIN PROJECT
STA. 68+17.0 T/L

W. LAYTON AVE.

SEC. LINE

#108 E. LAYTON AVE.

#4641 S. HOWELL AVE.

#4619 S. HOWELL AVE.

P.I.

CAUTION

CTR. 09.0' R=
+59.0-T/L

P.C. 60.0' R=
+41.0-09.0'LT.

CTR. 03.0' R=
+56.0-04.0'LT.

∠PT.+54.0
09.0' RT.

∠PT.+34.0
01.0' LT.

CTR. 03.0' R=
+92.0-04.0'RT.

179°54'39"

N.01°19'36"W.

66 67 68 69 70 71 72

PLANTINGS

30" STO.

ASPH.

ASPH. ON CONC.

TES WMSD WEP MH MON. TEL CW FO R/W LAWN ASPH DWY

#110 E. LAYTON AVE.

STD. B.W. #65-17
S. HOWELL AV. AND W. LAYTON AV.
IN S. HOWELL AV. CENTER PLOT NORTH OF
W. LAYTON AV., 15.8' NORTH OF SOUTH
CURB TIP AND 4.5' EAST OF WEST CURB
(IN CONCRETE BOX)
ELEV.: 88.618

CONC. ALLEY 20'

#4650 S. HOWELL AVE.

#4646-46A S. HOWELL AVE.

#4640 S. HOWELL AVE.

#4630 S. HOWELL AVE.

#4620 S. HOWELL AVE.

#4612 S. HOWELL AVE.

#4608 S. HOWELL AVE.

B.M. NW BOLT HYD
E/S S. HOWELL AV. @ #4640
STA. 70+02 - 48'RT.
ELEV. 92.77

E. LAYTON AVE.

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	PLAN DETAIL	SCALE FEET 0' 40'	SHEET NO: 35	E

FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\66 72PDET.DGN

SOUTH HOWELL AVENUE

N

#4603-4601 S. HOWELL AVE. | #4583 S. HOWELL AVE. | #4577 S. HOWELL AVE. | #4571 S. HOWELL AVE. | #4565 S. HOWELL AVE. | #4559 S. HOWELL AVE. | #4555 S. HOWELL AVE. | #4547 S. HOWELL AVE. | #4531 S. HOWELL AVE. | #4529-29A S. HOWELL AVE. | #4525 S. HOWELL AVE.

P.L. CAUTION CW TEL. G FO MH

∠PT. +14.0 01.0' RT.
∠PT. +94.0 09.0' LT.
P.C. 60.0' R= +57.0-09.0'LT.
CTR. 03.0' R= +30.0-04.0'RT.
∠PT. +52.0 01.0' RT.
∠PT. +32.0 09.0' LT.
P.T. 60.0' R= +07.0-09.0'RT.
∠PT. +70.0 09.0' RT.
CTR. 03.0' R= +72.0-04.0'LT.
∠PT. +50.0 01.0' LT.
P.T. 60.0' R= +45.0-09.0'RT.
∠PT. +98.0 09.0' RT.

72 73 74 75 76 77 78

N.01° 19' 36"W.

LANDSCAPE RETAINING WALL
CTR. 18.0' R= +67.5-63.0'RT.
67.3' RT.
83' RT.
CTR. 18.0' R= +33.5-63.0'RT.
E. ARMOUR AVE.
5' 30' 5'
ASPH.
60'
LUNKNOWN LOC.
FIBER OPTIC

#4608 S. HOWELL AVE. | #4602 S. HOWELL AVE. | #4582-82A S. HOWELL AVE. | #4576 S. HOWELL AVE. | #4570 S. HOWELL AVE. | #4560 S. HOWELL AVE. | #4556-56A S. HOWELL AVE. | #4548 S. HOWELL AVE. | #4532 S. HOWELL AVE. | #4524 S. HOWELL AVE. | #4518 S. HOWELL AVE. | #4514 S. HOWELL AVE.

B.M. NW BOLT HYD
E/S S. HOWELL AV. @ #4576
STA. 73+07 - 48'RT.
ELEV. 97.19

B.M. NW BOLT HYD SE CORNER
E. ARMOUR AV. & S. HOWELL AV.
STA. 75+81 - 60'RT.
ELEV. 101.64

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	PLAN DETAIL	SCALE FEET 0' 40'	SHEET NO: 36	E

FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\72 78PDET.DGN

B.M. NW BOLT HYD NW CORNER
W. VAN NORMAN AV. & S. HOWELL AV.
STA. 79+48 - 69'LT.
ELEV. 108.20

SOUTH HOWELL AVENUE

N

#4503 S. HOWELL AVE.

W. VAN NORMAN AVE.

60'

ASPH.

5' 30' 5'

CTR. 18.0' R=
+97.7-63.0'LT.

75'
LT.

CTR. 18.0' R=
+63.7-63.0'LT.

#4477 #4459 #4453 #4445 #4437

P.L.

CAUTION

ASPH DWY

CW

R/W

BRICK

P.C. 60.0' R=
+85.0-09.0'LT.

CTR. 03.0' R=
+00.0-04.0'LT.

∠PT. +63.0
09.0' LT.

∠PT. +83.0
01.0' RT.

TES

∠PT. +78.0
01.0' LT.

∠PT. +98.0
09.0' RT.

CTR. 03.0' R=
+61.0-04.0'RT.

TEL

P.T. 60.0' R=
+76.0-09.0'RT.

T/L

MMSD

SEC. LINE

N.01° 19' 36"W.

PINE

78 79 80 81 82 83 84

+50

FO

FIBER OPTIC VAULT

63'
RT

82'
RT.

CTR. 18.0' R=
+97.8-63.0'RT.

CTR. 18.0' R=
+63.8-63.0'RT.

E. VAN NORMAN AVE.

UNKNOWN LOC.

FIBER OPTIC

LANDSCAPE RETAINING WALL

#4514 S. HOWELL AVE. #4508 S. HOWELL AVE. #4502 S. HOWELL AVE. #102 E. VAN NORMAN AVE. #4464 S. HOWELL AVE. #4460-60A S. HOWELL AVE. #4452 S. HOWELL AVE. #4444 S. HOWELL AVE. #4436 S. HOWELL AVE. #4424-24A S. HOWELL AVE.

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	PLAN DETAIL	SCALE FEET 0' 40'	SHEET NO: 37	E

FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\78 84PDET.DGN

SOUTH HOWELL AVENUE

N

#4419 | #4389 | #4379 S. HOWELL AVE. | #4369 S. HOWELL AVE. | #4359 S. HOWELL AVE. | #4353 S. HOWELL AVE. | #4337 S. HOWELL AVE.

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

CAUTION CAUTION

CW GRAVEL CW ASPH DWY GRAVEL GRAVEL GRAVEL BRICK WALL BRICK WALL

R/W R/W

STUMP ASPH

W. MARTIN LN.

50' ASPH.

109' LT. 30' 99' LT.

X X X X X

SIGN

CTR. 15.0' R= +89.2-60.0'LT.

CTR. 18.0' R= +52.2-63.0'LT.

P.C. 60.0' R= +95.0-09.0'LT.

CTR. 03.0' R= +10.0-04.0'LT.

∠PT. +88.0 01.0' RT.

∠PT. +68.0 09.0' LT.

P.C. 60.0' R= +75.0-09.0'LT.

CTR. 03.0' R= +90.0-04.0'LT.

∠PT. +68.0 01.0' RT.

84 T/L +50 85 +50 86 +50 87 N.01° 19' 36"W. +50 88 +50 89 +50 90

ELECTRICAL BOX TES TES

∠PT. +88.0 01.0' LT.

∠PT. +43.0 01.0' LT.

∠PT. +08.0 09.0' RT.

CTR. 03.0' R= +56.0-04.0'RT.

P.T. 60.0' R= +71.0-09.0'RT.

∠PT. +63.0 09.0' RT.

CTR. 03.0' R= +46.0-04.0'RT.

P.T. 60.0' R= +61.0-09.0'RT.

TEL TEL

FLAG BASE STAMPED CONC. STAMPED CONC.

CONC. ASPH.

FIBER OPTIC CAUTION CAUTION FIBER OPTIC

#4400-00A S. HOWELL AVE.

B.W. NW BOLT HYD
E/S S. HOWELL AV. @ #4400
STA. 85+64 - 48' RT.
ELEV. 128.88

B.W. NW BOLT HYD
E/S S. HOWELL AV. @ #4358
STA. 88+90 - 48' RT.
ELEV. 137.79

HOWELL AVE. | #4416 S. HOWELL AVE. | #4408 S. HOWELL AVE. | #4388 S. HOWELL AVE. | #4376 S. HOWELL AVE. | #4368-68A S. HOWELL AVE. | #4358 S. HOWELL AVE. | #4342 S. HOWELL AVE. | #4332 S. HOWELL AVE.

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	PLAN DETAIL	SCALE FEET 0' 40'	SHEET NO: 38	E

FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\84 90PDET.DGN

SOUTH HOWELL

B.W. NW BOLT HYD SW CORNER
W. BOLIVAR AV. & S. HOWELL AV.
STA. 92+77 - 59'LT.
ELEV. 139.56

PLACE LANDMARK REFERENCE
MONUMENT STA. 92 + 96.99-T/L

W. BOLIVAR AVE.

E. BOLIVAR AVE.

#4325 S. HOWELL AVE. | #4317-17A S. HOWELL AVE. | #4301-03 S. HOWELL AVE. | #4273 S. HOWELL AVE. | #4265 S. HOWELL AVE. | #4259A S. HOWELL AVE. | #4253A S. HOWELL AVE. | #4247A S. HOWELL AVE. | #4243A S. HOWE

#4330 S. HOWELL AVE. | #4300 S. HOWELL AVE. | #4270 S. HOWELL AVE. | #4262 S. HOWELL AVE. | #4258-60 S. HOWELL AVE. | #4258 S. HOWELL AVE. | #4242 S. HOWELL

STD. B.W. #58-01
S. HOWELL AV. AND E. BOLIVAR AV.
(S.E. CORNER) 20.2' SOUTH AND 19.7'
EAST OF CURBS.
ELEV.: 141.212

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	PLAN DETAIL	SCALE FEET 0' 40'	SHEET NO: 39 E

FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\90 96PDET.DGN

SOUTH HOWELL AVENUE

N

#4243A S. HOWELL AVE. | #4235A S. HOWELL AVE. | #4229 S. HOWELL AVE. | #4221 S. HOWELL AVE. | #4213 S. HOWELL AVE. | #4209-11 S. HOWELL AVE. | #4203 S. HOWELL AVE. | #4177 S. HOWELL AVE. | #4161 S.

W. PLAINFIELD AVE. — 60' — ASPH. 5' 30' 5'

CTR. 18.0' R= +24.5-46.0' LT.

CTR. 18.0' R= +90.5-46.0' LT.

58' LT. | 46' LT.

CAUTION | CAUTION

R/W | CW | ASPH DWY | CW | LAWN | BRICKS | LOC. UNKNOWN | BRICKS | R/W | CW

96 +50 97 T/L +50 SEC. LINE 98 N.01° 10' 25"W. +50 99 +50 100 +50 101 +50 102

P.C. 60.0' R= +09.0-08.0' LT.

CTR. 03.0' R= +90.0-21.0' RT.

∠PT. +12.0 18.0' RT.

∠PT. +92.0 08.0' RT.

∠PT. +52.0 16.0' RT.

CTR. 03.0' R= +24.0-13.0' RT.

P.T. 60.0' R= +01.1-26.0' RT.

∠PT. +72.0 26.0' RT.

WMSO | TES | TEL | TEL

R/W | CW | CW | CW | CW | ENT. | FIBER OPTIC VAULT | ASPH. PARKING | LAWN R/W

FIBER OPTIC | CAUTION

CTR. 18.0' R= +25.3-80.0' RT.

80.5' RT. | 93.5' RT. | 30' ASPH. | 2" | 4'

CTR. 18.0' R= +91.3-80.0' RT.

FIBER OPTIC

E. PLAINFIELD AVE. — 60'

CAUTION

#4242 S. HOWELL AVE. | #4236 S. HOWELL AVE. | #4230 S. HOWELL AVE. | #4222 S. HOWELL AVE. | #4214 S. HOWELL AVE. | #4200-04 S. HOWELL AVE. | #4170 S. HOWELL AVE.

B.W. NW BOLT HYD SW CORNER
E. PLAINFIELD AV. & S. HOWELL AV.
STA. 99+39 - 79' RT.
ELEV. 147.79

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	PLAN DETAIL	SCALE FEET 0' 40'	SHEET NO: 40	E

FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\96 102PDET.DGN

SOUTH HOWELL AVENUE

N

#4161 S. HOWELL AVE. | #4125 S. HOWELL AVE. | #4111-13 S. HOWELL AVE. | #4107 S. HOWELL AVE. | #4101-01A S. HOWELL AVE. | #4015 S. HOWELL AVE.

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

CAUTION — FENCE — DIRT — LANDSCAPE BOARDER — FENCE — R/W — 4" G — 5' — G — ASPH. — G — BRICK WALL — LOC. UNKNOWN — G — ASPH. — CONC. — 5" — G — ASPH. PARKING — 2' — W. WATERFORD AVE. — 60' — ASPH. 34' — 19" — 56' LT. — 46' LT. — X X X X X X — 4" — G — PLANT POT — G — 1" — PLANT POT — 4" — 5' — R/W

CTR. 18.0' R= +82.5-46.0'LT.

CTR. 18.0' R= +52.5-46.0'LT.

CAUTION

102 — 36' — 11' — 11' — 12' — +50 — T/L — 103 — +50 — 104 — N.01° 10' 25"W. — +50 — 105 — +50 — 106 — +50 — 107 — +50 — 108

P.C. 60.0' R= +68.0-08.0'RT.

∠PT. +73.0 21.0' RT.

∠PT. +53.0 12.0' RT.

CTR. 03.0' R= +51.0-13.0'RT.

18' — 12" — 12" — 9" — 1" — 4" — 8' — 11' — 10' — 10' — 11' — 16" — WMSD — 18'

∠PT. +12.0 16.0' RT.

∠PT. +32.0 26.0' RT.

CTR. 03.0' R= +84.0-13.0'RT.

P.T. 60.0' R= +67.0-26.0'RT.

TES — TEL — TEL

2' — 8' — 2" — G — FO — G — FO — G — FO — 9" — 8' — 2' — G — 15" — 11' — FO — FO — 5' — FO — FO — 5' — 10" — R/W — LAWN — ASPH. PARKING — LOC. UNKNOWN — CW — CONC. — LAWN

CTR. 18.0' R= +84.0-80.0'RT.

2" — 80' RT. — 90' RT. — LOC. UNKNOWN — 5' — 5' — 30' — ASPH. — 60' — E. WATERFORD AVE.

CTR. 18.0' R= +50.0-80.0'RT.

FIBER OPTIC — CAUTION — FIBER OPTIC

B.W. NW BOLT HYD
E/S S. HOWELL AV. @ #4130
STA. 102+81 - 64'RT.
ELEV. 149.67

B.W. NW BOLT HYD SW CORNER
E. WATERFORD AV. & S. HOWELL AV.
STA. 105+88 - 66'RT.
ELEV. 147.13

#4130 S. HOWELL AVE. | #4114 S. HOWELL AVE. | #4100 S. HOWELL AVE. | #4068 S. HOWELL AVE. | #4068 S. HOWELL AVE.

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

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	PLAN DETAIL	SCALE FEET 0' 40'	SHEET NO: 41	E

FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\102 108PDET.DGN

SOUTH HOWELL AVENUE

N

#4015 S. HOWELL AVE.

#4015 S. HOWELL AVE.

#3977-79 S. HOWELL AVE.

#3969 S. HOWELL AVE.

P.L.

W. NORWICH ST.

CAUTION

60'

ASPH.

28'

20'

5'

8"

CTR. 18.0' R=
+44.5-46.0'LT.

CTR. 18.0' R=
+10.5-46.0'LT.

46' LT

65' LT

32"

WATER

WATER

ASPH. PARKING

LAWN

R/W

R/W

SIGN POST

10"

10"

7"

5"

3"

4"

3"

2'

11'

11'

36'

12'

108 +50 109 +50 110 +50 N.01° 10' 25"W. 111 +50 112 +50 113 +50 114

T/L

18'

TES

18"

17"

1"

1"

1"

1"

1"

1"

8'

10'

10'

TES

19"

P.C. 60.0' R=
+35.0-08.0'RT.

CTR. 03.0' R=
+22.5-21.0'RT.

∠PT. +44.5
18.0' RT.

∠PT. +80.0
16.0' RT.

CTR. 03.0' R=
+52.0-13.0'RT.

∠PT. +00.0
26.0' RT.

TEL

TEL

P.T. 60.0' R=
+39.0-26.0'RT.

FO

FO

16"

2"

6"

FO

4"

12"

2"

8"

FO

FO

15"

2"

10"

5'

9'

R/W

10"

CONC. PORCH

LAWN

WOOD RAMP

PARKING

CTR. 18.0' R=
+60.8-80.0'RT.

80' RT

90' RT

18"

6"

14"

CTR. 18.0' R=
+30.8-80.0'RT.

CW

23'

ASPH.

34'

5'

60'

FIBER OPTIC

CAUTION

FIBER OPTIC

E. NORWICH ST.

#4056-60 S. HOWELL AVE.

#4040-42 S. HOWELL AVE.

#4036 S. HOWELL AVE.

#4028-30A S. HOWELL AVE.

#4014-24 S. HOWELL AVE.

#4008-10A S. HOWELL AVE.

#4002 S. HOWELL AVE.

#3970-74 S. HOWELL AVE.

B.M. NW BOLT HYD
E/S S. HOWELL AV. @ #4028
STA. 109+68 - 65' RT.
ELEV. 140.52

B.M. NW BOLT HYD NE CORNER
E. NORWICH AV. & S. HOWELL AV.
STA. 113.35 - 65' RT.
ELEV. 133.37

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	PLAN DETAIL	SCALE FEET 0' 40'	SHEET NO: 42	E

FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\108 114PDET.DGN

SOUTH HOWELL AVENUE

N

AVE. | #3967 S. HOWELL AVE. | #3959 S. HOWELL AVE. | #3955 S. HOWELL AVE. | #3935-33 S. HOWELL AVE. | #3929-31 S. HOWELL AVE. | #3915-25 S. HOWELL AVE.

W. HOWARD AVE.

CAUTION

CTR. 20.0' R= +98.7-52.0'LT.

ASPH. ON CONC.

ASPH. PARKING

CONC. LIGHT BASE

CONC. SIGN BASE

∠PT. +27.0 28.0' LT.

∠PT. +47.0 32.0' LT.

R/W

ENT

CW

∠PT. +25.0 08.0' RT.

∠PT. +27.0

∠PT. +47.0

P.C. 60.0' R= +63.0-08.0'RT.

∠PT. +34.7 04.0' RT.

114 T/L +50 115 +50 116 +50 117 SEC. LINE +50 118 +50 119 T/L +50

N.01° 10' 25"W.

180° 17' 18"

MON.

TES

CTR. 03.0' R= +49.6-17.6'RT.

∠PT. +36.0 10.0' RT.

∠PT. +36.7

CTR. 03.0' R= +01.0-07.0'RT.

WMSD

TEL

CTR. 03.0' R= +89.0-17.0'RT.

∠PT. +47.0

+71.9 29'RT.

P.C. 60.0' R= +63.0-26.0'RT.

∠PT. +27.0 62.0' RT.

BRICK

FO

LAWN

BUS SHELTER

CTR. 15.0' R= +84.8-78.9'RT.

100' RT

FIBER OPTIC VAULT

CTR. 15.0' R= +44.8-80.9'RT.

CTR. 20.0' R= +01.0-86.0'RT.

FIBER OPTIC

E. VAN BECK AVE.

E. HOWARD AVE.

CONC.

ASPH. ON CONC.

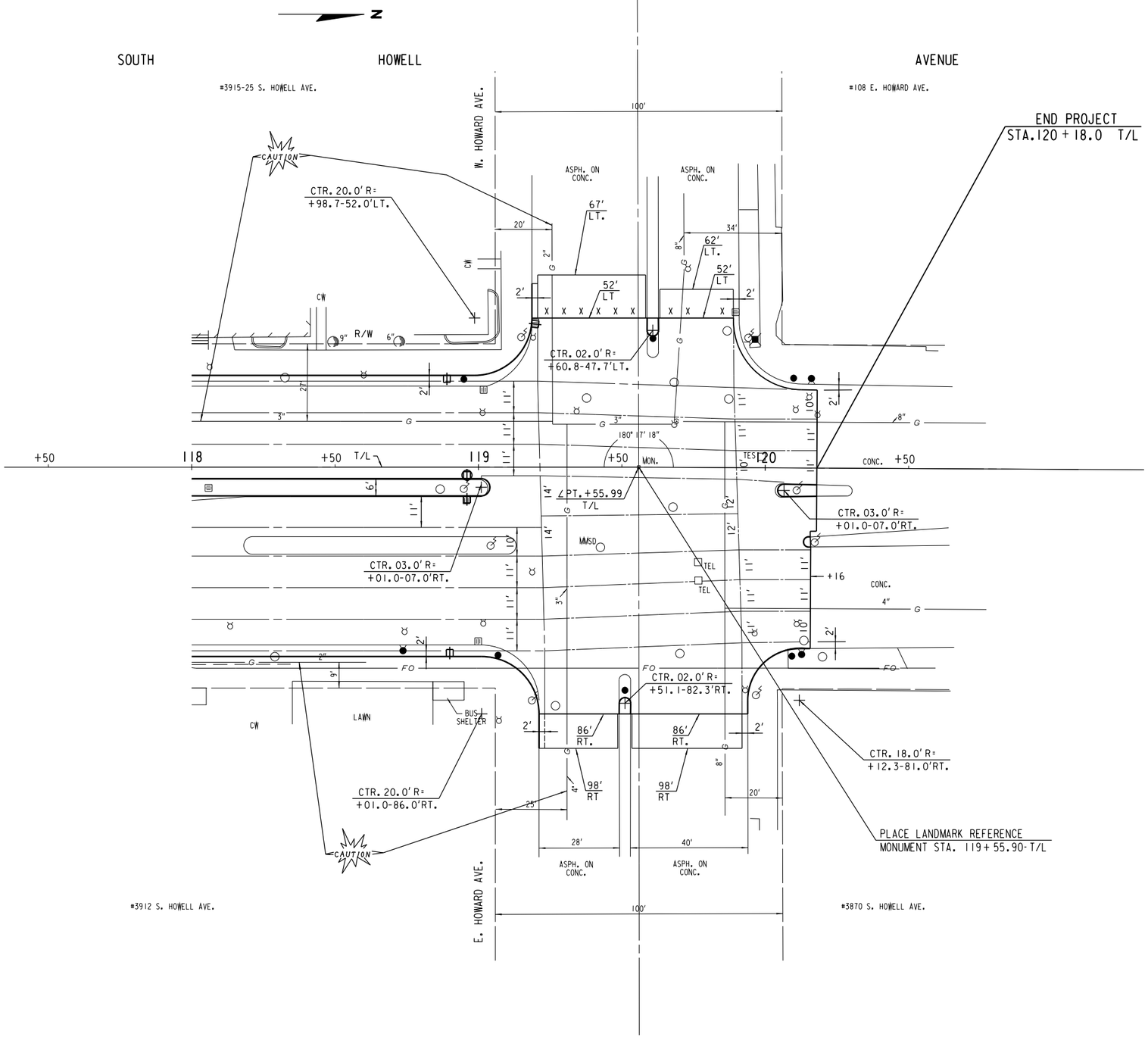
#3962 S. HOWELL AVE. | #3956 S. HOWELL AVE. | #3950-50A S. HOWELL AVE. | #3946 S. HOWELL AVE. | #3912 S. HOWELL AVE.

P.L.

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	PLAN DETAIL	SCALE FEET 0' 40'	SHEET NO: 43	E

FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\114 120PDET.DGN

2



STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	PLAN DETAIL	SCALE FEET 0' 40'	SHEET NO: 44	E

FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\119 121PDET.DGN

2

SOUTH HOWELL AVENUE

N

B.M. E BOLT HYD N/W CORNER
W. LAYTON AV. & S. HOWELL AV.
STA. 67+05 - 60'LT.
ELEV. 89.66

BEGIN PROJECT
STA. 68+48.0 T/L

W. LAYTON AVE.

#108 E. LAYTON AVE.

#4641 S. HOWELL AVE.

#4619 S. HOWELL AVE.

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

PLANTINGS

CAUTION

FIBER OPTIC

#110 E. LAYTON AVE.

STD. B.M. #65-17
S. HOWELL AV. AND W. LAYTON AV.
IN S. HOWELL AV. CENTER PLOT NORTH OF
W. LAYTON AV., 15.8' NORTH OF SOUTH
CURB TIP AND 4.5' EAST OF WEST CURB
(IN CONCRETE BOX)
ELEV.: 88.618

CONC. ALLEY

#4650 S. HOWELL AVE.

#4646-46A S. HOWELL AVE.

#4640 S. HOWELL AVE.

#4630 S. HOWELL AVE.

#4620 S. HOWELL AVE.

#4612 S. HOWELL AVE.

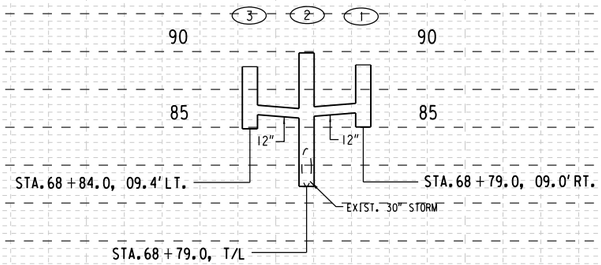
#4608 S. HOWELL AVE.

B.M. NW BOLT HYD
E/S S. HOWELL AV. @ #4640
STA. 70+02 - 48'RT.
ELEV. 92.77

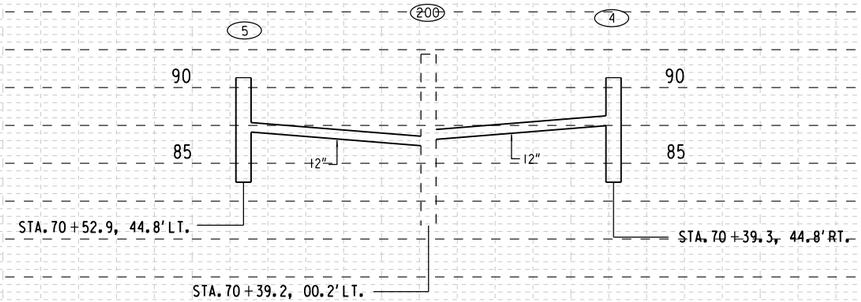
E. LAYTON AVE.

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	UTILITIES & DRAINAGE	SCALE FEET 0' 40'	SHEET NO: 45	E

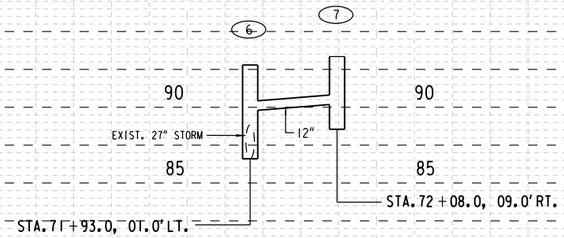
FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\UTIL 66 72.DGN



(LOOKING NORTHERLY)



(LOOKING NORTHERLY)



(LOOKING NORTHERLY)

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	UTILITIES & DRAINAGE	SCALE FEET 0' 40'	SHEET NO: 46	E

FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\UTIL 66 72.DGN

SOUTH HOWELL AVENUE

N

#4603-4601 S. HOWELL AVE. | #4583 S. HOWELL AVE. | #4577 S. HOWELL AVE. | #4571 S. HOWELL AVE. | #4565 S. HOWELL AVE. | #4559 S. HOWELL AVE. | #4555 S. HOWELL AVE. | #4547 S. HOWELL AVE. | #4531 S. HOWELL AVE. | #4529-29A S. HOWELL AVE. | #4525 S. HOWELL AVE.

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

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

LANDSCAPE RETAINING WALL

E. ARMOUR AVE.

#4576 S. HOWELL AVE.

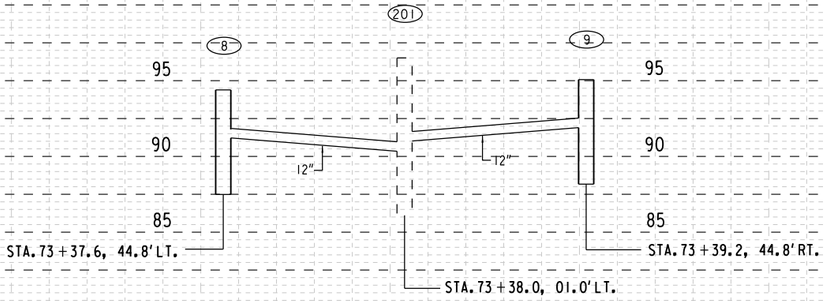
B.M. NW BOLT HYD
E/S S. HOWELL AV. @ #4576
STA. 73+07 - 48'RT.
ELEV. 97.19

B.M. NW BOLT HYD SE CORNER
E. ARMOUR AV. & S. HOWELL AV.
STA. 75+81 - 60'RT.
ELEV. 101.64

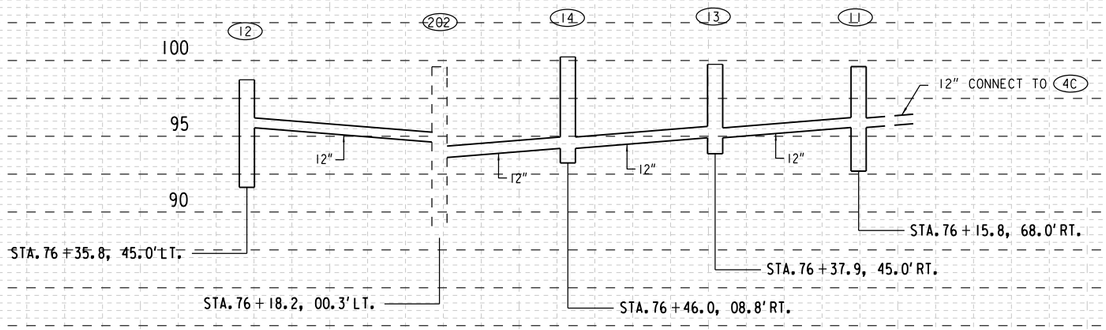
#4608 S. HOWELL AVE. | #4602 S. HOWELL AVE. | #4582-82A S. HOWELL AVE. | #4570 S. HOWELL AVE. | #4560 S. HOWELL AVE. | #4556-56A S. HOWELL AVE. | #4548 S. HOWELL AVE. | #4532 S. HOWELL AVE. | #4524 S. HOWELL AVE. | #4518 S. HOWELL AVE. | #4514 S. HOWELL AVE.

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	UTILITIES & DRAINAGE	SCALE FEET 0' 40'	SHEET NO: 47	E

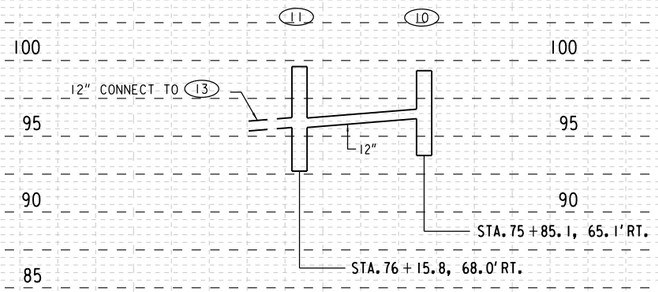
FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\UTIL 72 78.DGN



(LOOKING NORTHERLY)



(LOOKING NORTHERLY)



(LOOKING EASTERLY)

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	UTILITIES & DRAINAGE	SCALE FEET 0' 40'	SHEET NO: 48	E

FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\UTIL 72 78.DGN

2

B.M. NW BOLT HYD NW CORNER
W. VAN NORMAN AV. & S. HOWELL AV.
STA. 79+48 - 69'LT.
ELEV. 108.20

SOUTH HOWELL AVENUE

N

#4503 S. HOWELL AVE.

W. VAN NORMAN AVE.

#4477 #4459 #4453 #4445 #4437

P.L.

CAUTION

ASPH.

60' 5' 30' 5'

2" G

R/W

CW

ASPH DWY

BRICK

4" G

SAN 10" G 2" SAN

TE&ES

CUC

MMSD 144" MMSD

STO

TEL

TEL

SAN 15"

W 8"

W 12"

T

FO

G

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

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

N.01° 19' 36"W. SEC. LINE

408 409 410 411

406 407

111 112 113

110

15 16 17 18 19 20 21

203 204 606 607

78 79 80 81 82 83 84

T/L

TES

24" 21" 12" 8" 6"

40' 31' 25' 12' 3'

FIBER OPTIC VAULT

UNKNOWN LOC.

LANDSCAPE RETAINING WALL

FIBER OPTIC

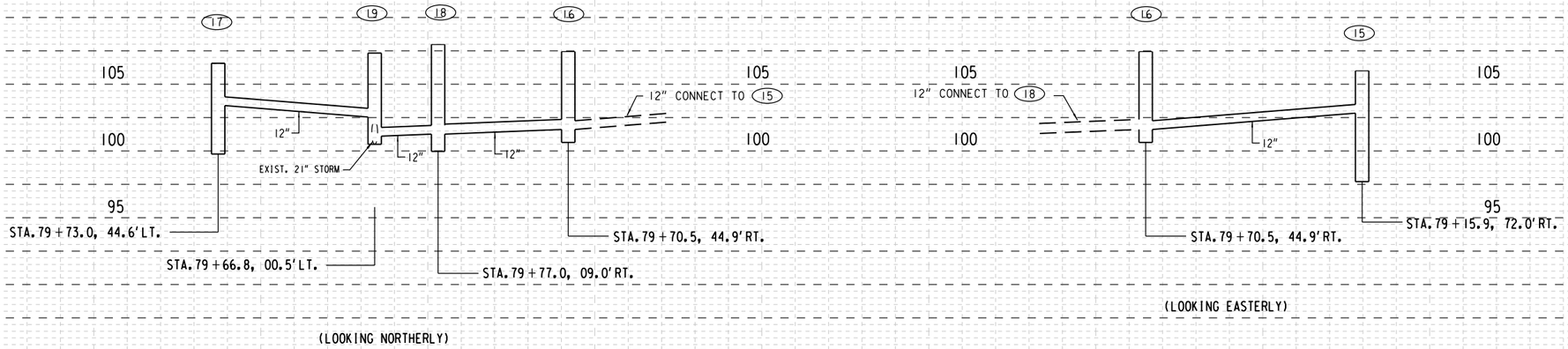
20' 26' 15"

E. VAN NORMAN AVE.

#4514 S. HOWELL AVE. #4508 S. HOWELL AVE. #4502 S. HOWELL AVE. #102 E. VAN NORMAN AVE. #4464 S. HOWELL AVE. #4460-60A S. HOWELL AVE. #4452 S. HOWELL AVE. #4444 S. HOWELL AVE. #4436 S. HOWELL AVE. #4424-24A S. HOWELL AVE.

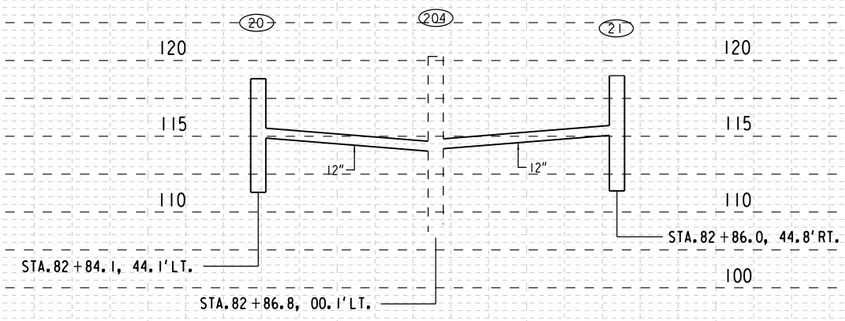
STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	UTILITIES & DRAINAGE	SCALE FEET 0' 40'	SHEET NO: 49	E

FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\UTIL 78 84.DGN



(LOOKING NORTHERLY)

(LOOKING EASTERLY)



(LOOKING NORTHERLY)

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	UTILITIES & DRAINAGE	SCALE FEET 0' 40'	SHEET NO: 50	E

FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\UTIL 78 84.DGN

SOUTH HOWELL AVENUE

N

#4419 | #4389 | #4379 S. HOWELL AVE. | #4369 S. HOWELL AVE. | #4359 S. HOWELL AVE. | #4353 S. HOWELL AVE. | #4337 S. HOWELL AVE.

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

50' ASPH.

W. MARTIN LN.

CAUTION CAUTION

CW GRAVEL CW ASPH DWY GRAVEL GRAVEL BRICK WALL BRICK WALL SIGN

R/W R/W

8" SAN G SAN ASPH 8" SAN G SAN G SAN G SAN G SAN G

412 114 24 414 116 26

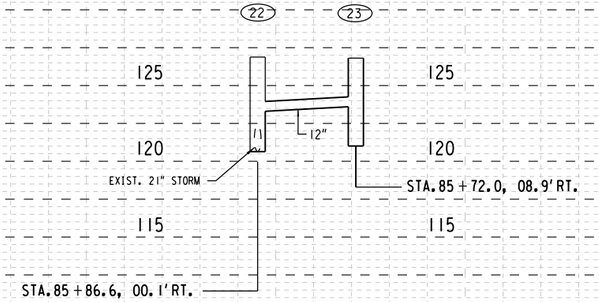
53' 53' 60'

TE&ES T

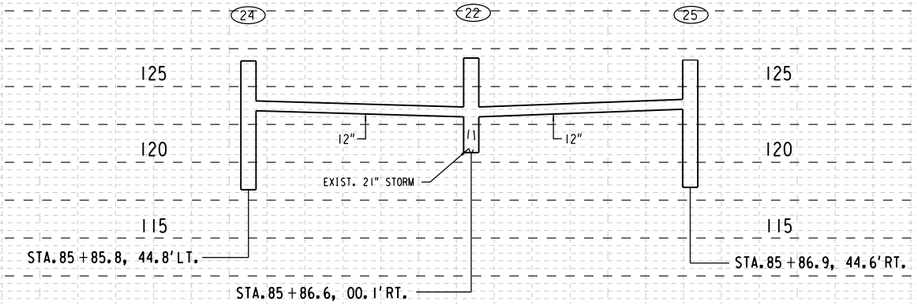
CUC STO 84 T/L 144" MMSD 21" 85 TE&ES MMSD SAN W T T T 12" TEL TEL

22 205 86 STO MMSD SAN 23 413 12" W T T T TE&ES

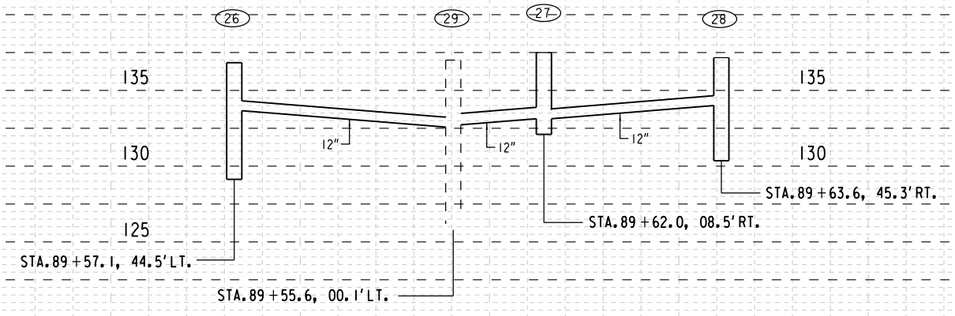
CUC STO 87 N.01° 19' 36"W. ELECTRICAL BOX 88 CUC 21" TES 610 40' 89 CUC TES 611 CUC 29 206 T/L 90 STO MMSD SAN 144" MMSD SAN 27 415 CUC 12" W T T T



(LOOKING NORTHERLY)



(LOOKING NORTHERLY)



(LOOKING NORTHERLY)

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	UTILITIES & DRAINAGE	SCALE FEET 0' 40'	SHEET NO: 52	E

FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\UTIL 84 90.DGN

2

SOUTH HOWELL AVENUE

N

B.W. NW BOLT HYD SW CORNER
W. BOLIVAR AV. & S. HOWELL AV.
STA. 92+77 - 59'LT.
ELEV. 139.56

#4317-17A S. HOWELL AVE. | #4301-03 S. HOWELL AVE. | #4273 S. HOWELL AVE. | #4265 S. HOWELL AVE. | #4259A S. HOWELL AVE. | #4253A S. HOWELL AVE. | #4247A S. HOWELL AVE. | #4243A S. HOWE

W. BOLIVAR AVE.

#4325 S. HOWELL AVE. | #4300 S. HOWELL AVE. | #4270 S. HOWELL AVE. | #4262 S. HOWELL AVE. | #4258-60 S. HOWELL AVE. | #4258 S. HOWELL AVE. | #4242 S. HOWELL

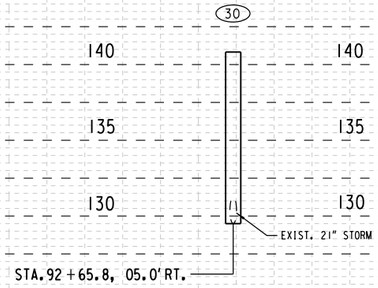
E. BOLIVAR AVE.

STD. B.M. #58-01
S. HOWELL AV. AND E. BOLIVAR AV.
(S.E. CORNER) 20.2' SOUTH AND 19.7'
EAST OF CURBS.
ELEV.: 141.212

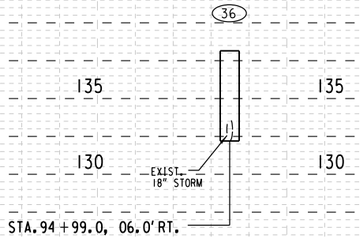
STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	UTILITIES & DRAINAGE	SCALE FEET 0' 40'	SHEET NO: 53	E

FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\UTIL 90 96.DGN

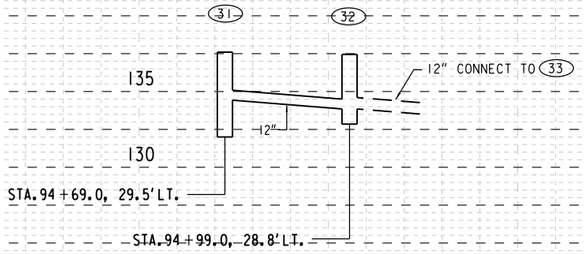
2



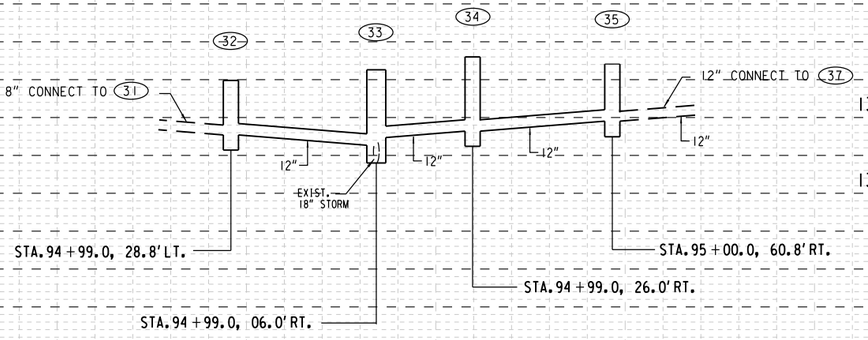
(LOOKING NORTHERLY)



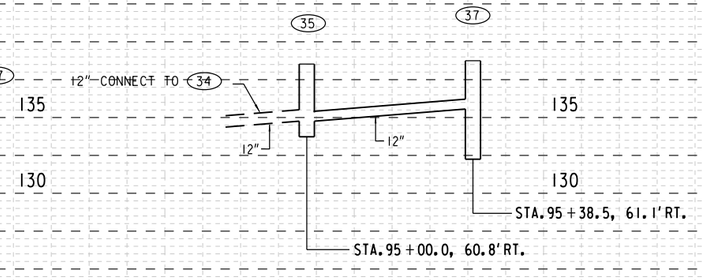
(LOOKING NORTHERLY)



(LOOKING WESTERLY)



(LOOKING NORTHERLY)



(LOOKING EASTERLY)

SOUTH HOWELL AVENUE

N

#4243A S. HOWELL AVE. | #4235A S. HOWELL AVE. | #4229 S. HOWELL AVE. | #4221 S. HOWELL AVE. | #4213 S. HOWELL AVE. | #4209-11 S. HOWELL AVE. | #4203 S. HOWELL AVE. | #4177 S. HOWELL AVE. | #4161 S.

W. PLAINFIELD AVE.

E. PLAINFIELD AVE.

#4242 S. HOWELL AVE. | #4236 S. HOWELL AVE. | #4230 S. HOWELL AVE. | #4222 S. HOWELL AVE. | #4214 S. HOWELL AVE. | #4200-04 S. HOWELL AVE. | #4170 S. HOWELL AVE.

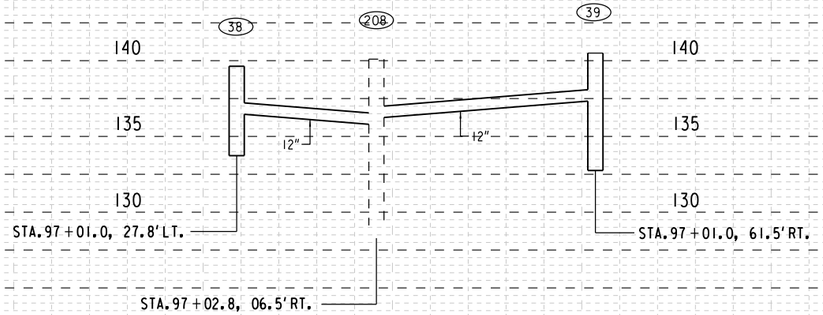
96 T/L 97 SEC. LINE 98 N.01° 10' 25"W. 99 100 101 T/L 102

B.W. NW BOLT HYD SW CORNER
E. PLAINFIELD AV. & S. HOWELL AV.
STA. 99+39 - 79'RT.
ELEV. 147.79

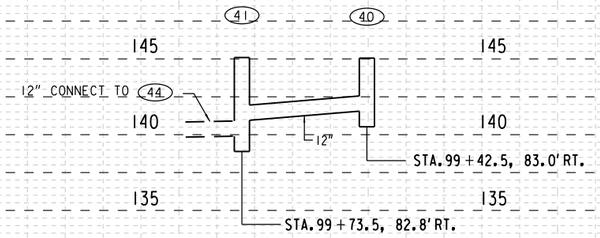
STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	UTILITIES & DRAINAGE	SCALE FEET 0' 40'	SHEET NO: 55	E

FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\UTIL 96 102.DGN

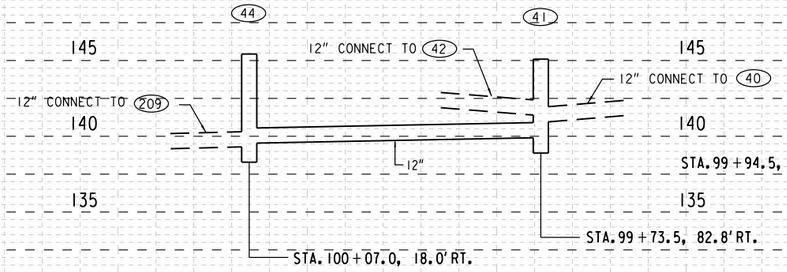
2



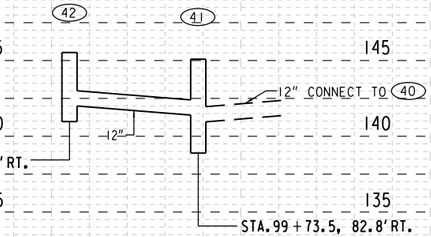
(LOOKING NORTHERLY)



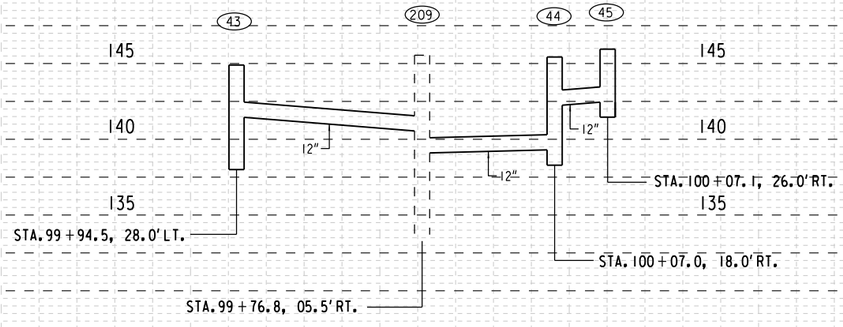
(LOOKING EASTERLY)



(LOOKING NORTHERLY)



(LOOKING NORTHERLY)



(LOOKING NORTHERLY)

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	UTILITIES & DRAINAGE	SCALE FEET 0' 40'	SHEET NO: 56	E

FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\UTIL 96 102.DGN

SOUTH HOWELL AVENUE

N

#4161 S. HOWELL AVE. | #4125 S. HOWELL AVE. | #4111-13 S. HOWELL AVE. | #4107 S. HOWELL AVE. | #4101-01A S. HOWELL AVE. | W. WATERFORD AVE. | #4015 S. HOWELL AVE.

102 T/L 103 104 105 106 107 T/L 108

N.01° 10' 25"W.

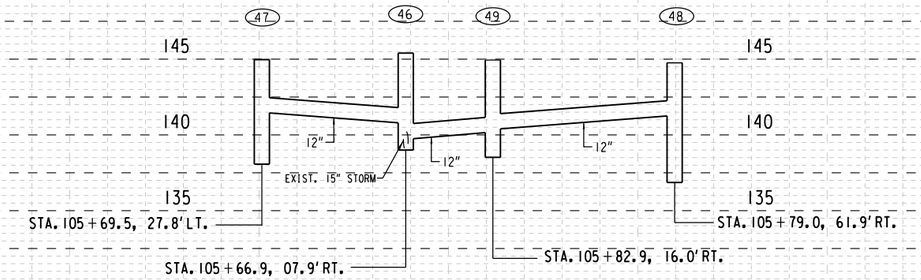
#4130 S. HOWELL AVE. | #4114 S. HOWELL AVE. | #4100 S. HOWELL AVE. | E. WATERFORD AVE. | #4068 S. HOWELL AVE. | #4068 S. HOWELL AVE.

B.W. NW BOLT HYD
E/S S. HOWELL AV. @ #4130
STA. 102+81 - 64' RT.
ELEV. 149.67

B.W. NW BOLT HYD SW CORNER
E. WATERFORD AV. & S. HOWELL AV.
STA. 105+88 - 66' RT.
ELEV. 147.13

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	UTILITIES & DRAINAGE	SCALE FEET 0' 40'	SHEET NO: 57	E

FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\UTIL 102 108.DGN



(LOOKING NORTERLY)

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	UTILITIES & DRAINAGE	SCALE FEET 0' 40'	SHEET NO: 58	E

FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\UTIL 102 108.DGN

2

SOUTH HOWELL AVENUE

N

#4015 S. HOWELL AVE.

#4015 S. HOWELL AVE.

#3977-79 S. HOWELL AVE.

#3969 S. HOWELL AVE.

P.L.

W. NORWICH ST.

CAUTION

60'

ASPH.

28'

26'

5' 20'

5'

8"

16"

G

30" WASTE WATER

W

LAWN

R/W

WATER

134

55

136

57

133

53

SIGN POST

TE&ES

ASPH. PARKING

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

4" ABN'D

108 T/L 109 110 111 112 113 T/L 114

N.01° 10' 25"W.

211 212 213 52 431

12" STO

15" STO

8" SAN

620 TES 430

54

TES 622

CUC

MMSD

144" MMSD

T

53'

39'

2" ABN'D

16"

TEL

51 132

56 135

FO

CONC. PORCH

WOOD RAMP

11.7'

6"

26'

23'

28'

ASPH.

5'

W 34'

60'

FIBER OPTIC

CAUTION

E. NORWICH ST.

#4056-60 S. HOWELL AVE.

#4040-42 S. HOWELL AVE.

#4036 S. HOWELL AVE.

#4028-30A S. HOWELL AVE.

#4014-24 S. HOWELL AVE.

#4008-10A S. HOWELL AVE.

#4002 S. HOWELL AVE.

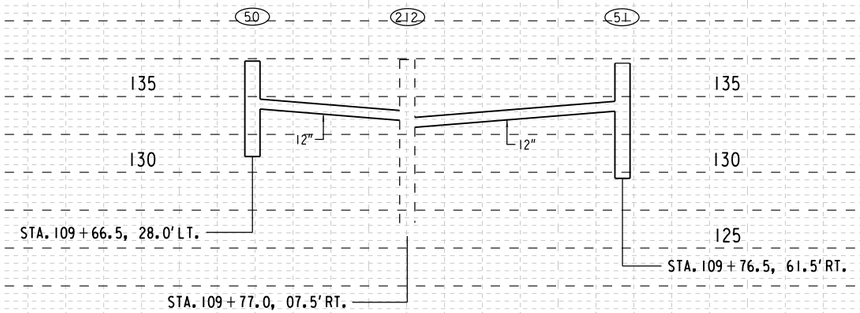
#3970-74 S. HOWELL AVE.

B.M. NW BOLT HYD
E/S S. HOWELL AV. @ #4028
STA. 109+68 - 65' RT.
ELEV. 140.52

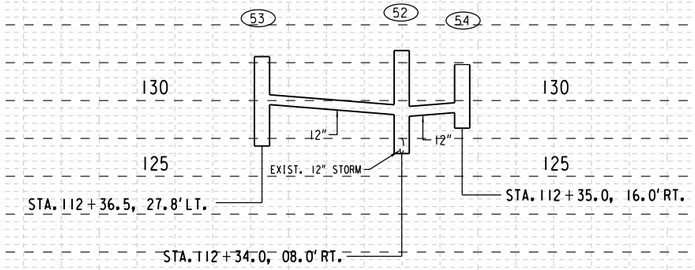
B.M. NW BOLT HYD NE CORNER
E. NORWICH AV. & S. HOWELL AV.
STA. 113.35 - 65' RT.
ELEV. 133.37

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	UTILITIES & DRAINAGE	SCALE FEET 0' 40'	SHEET NO: 59	E

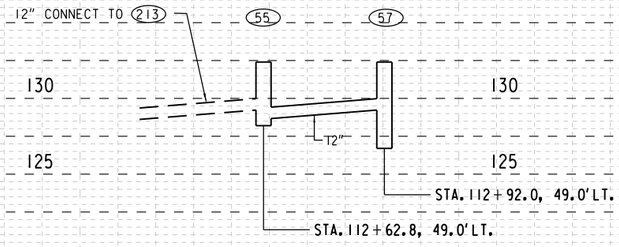
FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\UTIL 108 114.DGN



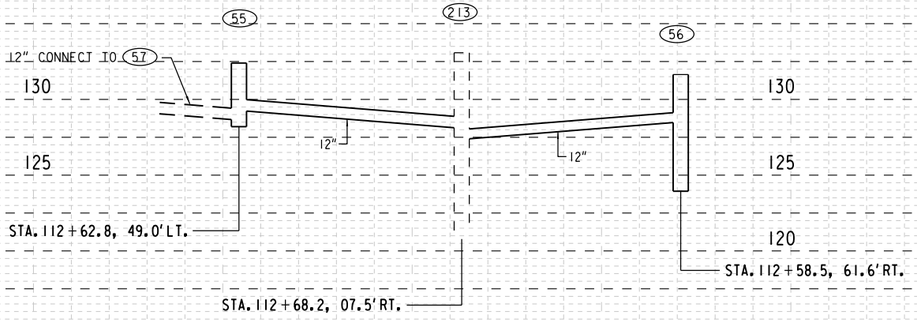
(LOOKING NORTHERLY)



(LOOKING NORTHERLY)



(LOOKING WESTERLY)



(LOOKING NORTHERLY)

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	UTILITIES & DRAINAGE	SCALE FEET 0' 40'	SHEET NO: 60	E

FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\UTIL 108 114.DGN

SOUTH HOWELL AVENUE

N

AVE. | #3967 S. HOWELL AVE. | #3959 S. HOWELL AVE. | #3955 S. HOWELL AVE. | #3935-33 S. HOWELL AVE. | #3929-31 S. HOWELL AVE. | #3915-25 S. HOWELL AVE.

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

W. HOWARD AVE.

CAUTION CAUTION

CONC. LIGHT BASE

CONC. SIGN BASE

ASPH. PARKING ASPH. PARKING

ASPH. ON CONC. ASPH. ON CONC.

R/W R/W

ENT ENT ENT ENT

CW CW CW

G W T E FO SAN STO CUC MMSD TE&ES

114 T/L 115 116 117 SEC. LINE 118 119 T/L 120

N.01° 10' 25"W.

180° 17' 18"

58 59A 59 60 137 61 138 214 432 623 215 139 216 64 65 140 62 142 434 141 433 63 143 66 219 218 220 217

144" MMSD 4" ABN'D 2" ABN'D 8" SAN 16" W 15" STO 12" STO 21" STO 24" STO 8" W 8" T 8" G 8" E 8" FO 8" TE&ES 8" CUC

BRICK LAWN

FIBER OPTIC VAULT BUS SHELTER

FIBER OPTIC FIBER OPTIC

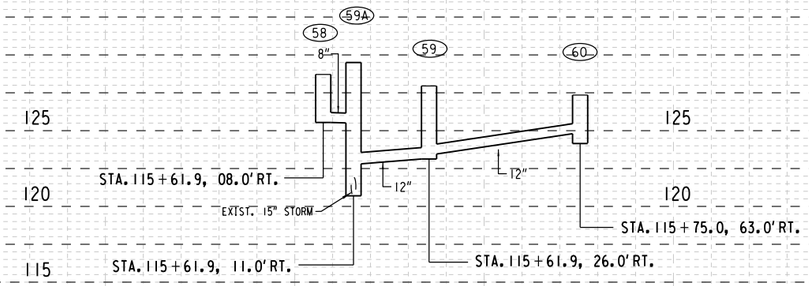
CONC. 26' 30' 60' 5' 19' 25' 28' 40' 100'

E. VAN BECK AVE. E. HOWARD AVE.

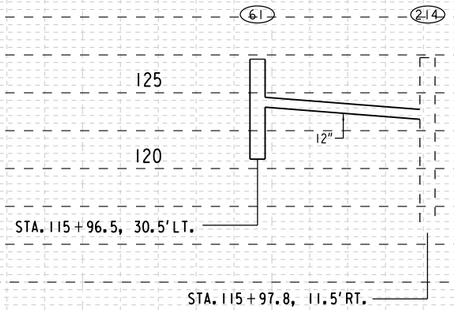
#3962 S. HOWELL AVE. #3956 S. HOWELL AVE. #3950-50A S. HOWELL AVE. #3946 S. HOWELL AVE. #3912 S. HOWELL AVE.

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	UTILITIES & DRAINAGE	SCALE FEET 0' 40'	SHEET NO: 61	E

FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\UTIL 114 120.DGN



(LOOKING NORTHERLY)

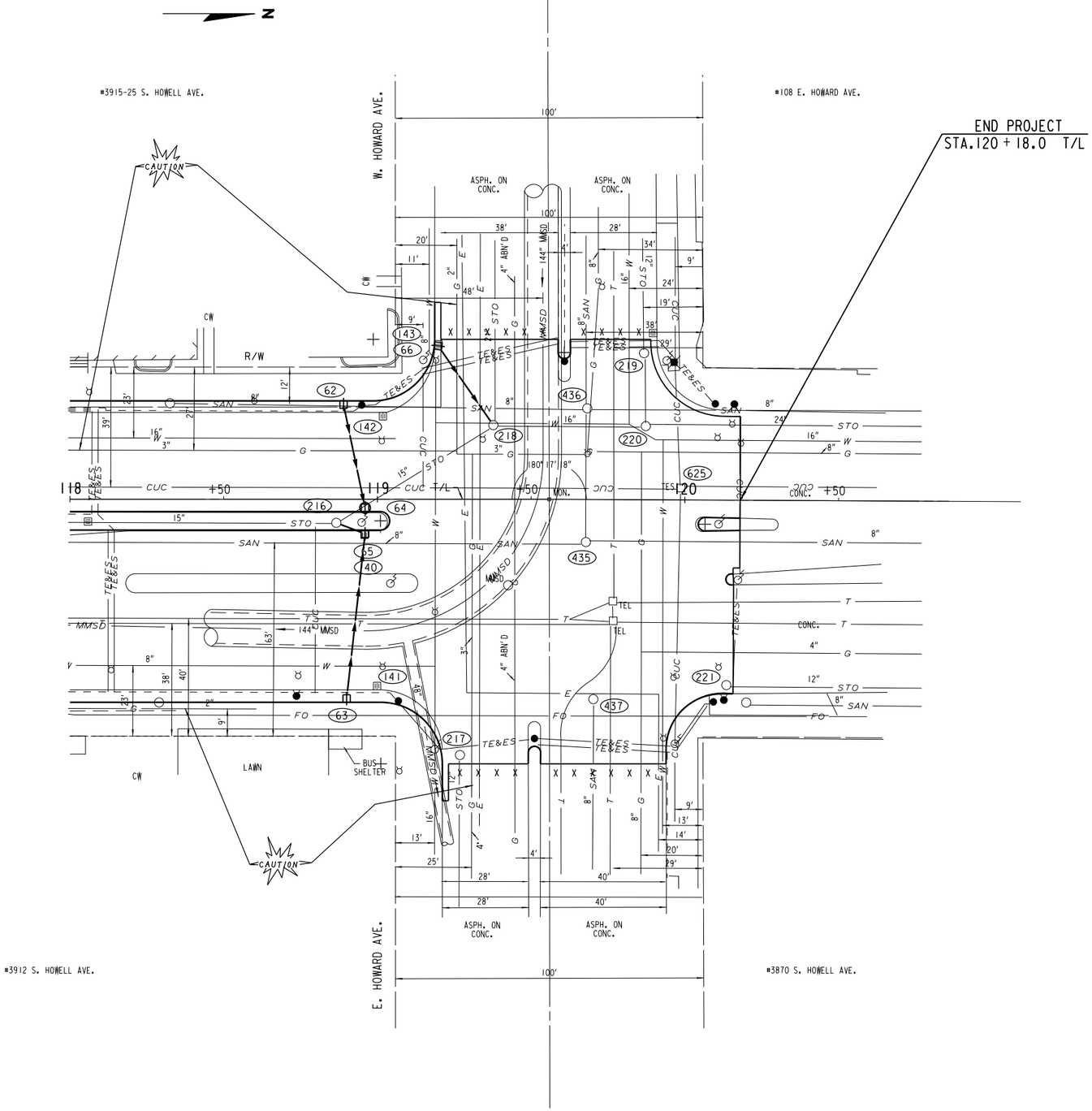


(LOOKING NORTHERLY)

STATE PROJECT NUMBER 2060-11-70 - -	HWY:	COUNTY: MILWAUKEE	UTILITES & DRAINAGE	SCALE FEET 0' 40'	SHEET NO: 62	E

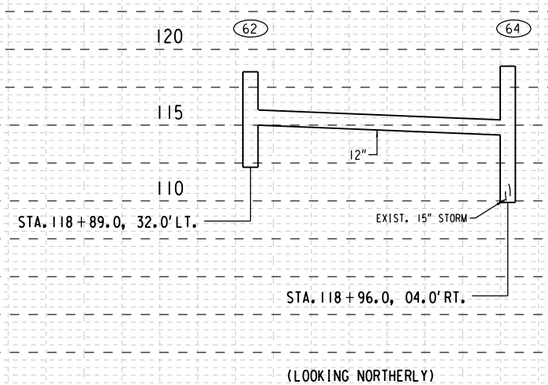
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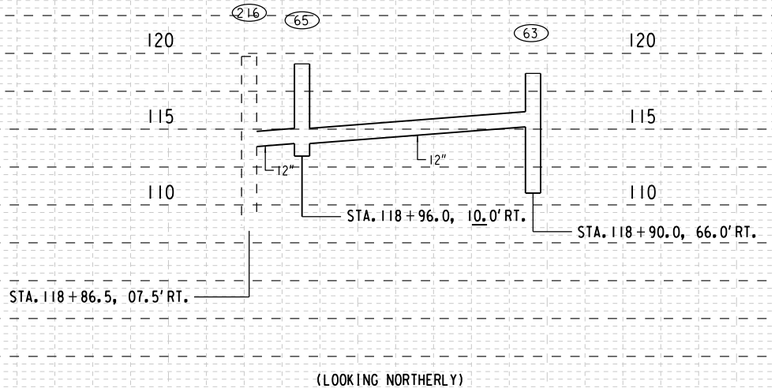


STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	UTILITIES AND DRAINAGE	SCALE FEET 0' 40'	SHEET NO: 63	E

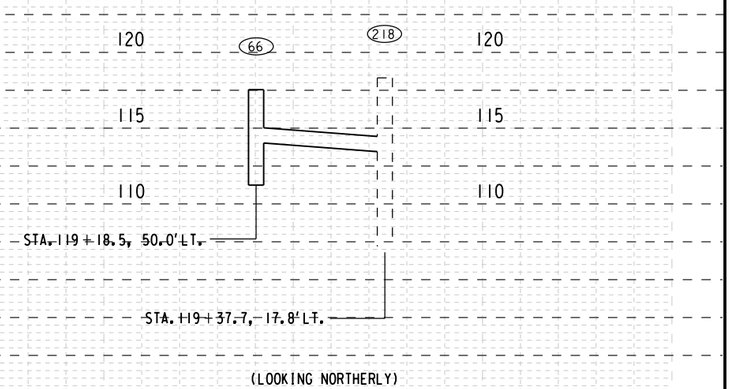
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(LOOKING NORTHERLY)



(LOOKING NORTHERLY)



(LOOKING NORTHERLY)

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	UTILITIES AND DRAINAGE	SCALE FEET 0' 40'	SHEET NO: 64	E

FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\UTIL 119 121.DGN

2

STAGE 1

N

W. LAYTON AVE.

E. LAYTON AVE.

S. HOWELL AVE.

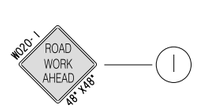
500'

350'

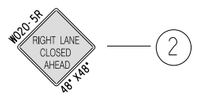
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CONTRACTOR TO REMOVE NOSE OF ISLAND AND ASPHALT FOR TRAFFIC

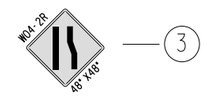
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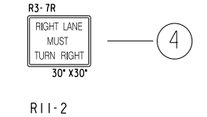
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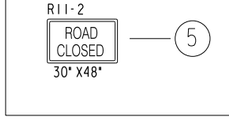
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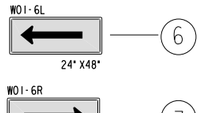
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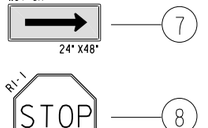
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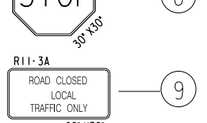
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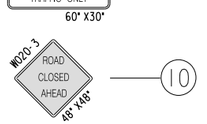
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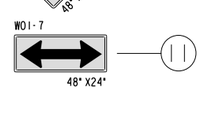
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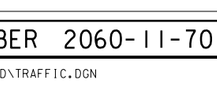
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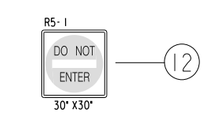
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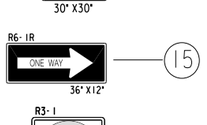
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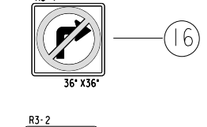
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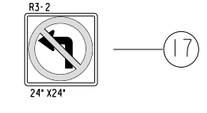
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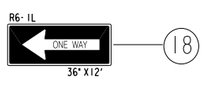
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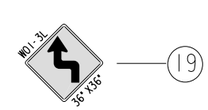
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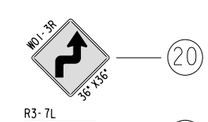
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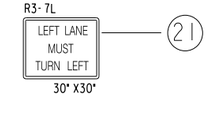
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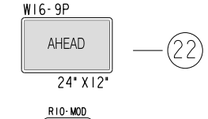
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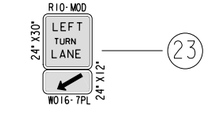
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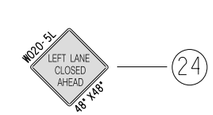
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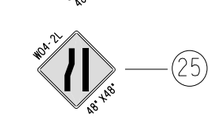
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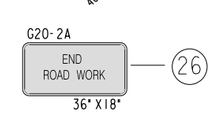
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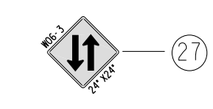
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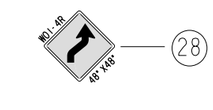
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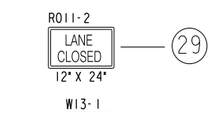
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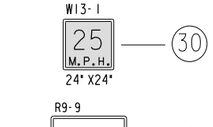
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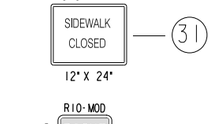
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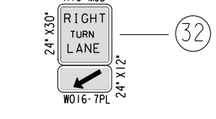
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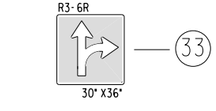
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31



32



33

DRUMS W/LIGHTS 30' SPACING — 13

TYPE III BARRICADES — 14

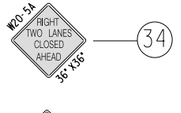
TYPE III BARRICADES W/ SIGN — 14 + X

SIGNS BANDED TO UTILITY POLE — 13 + X

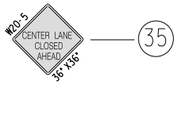
WORK AREA

DIRECTION OF TRAFFIC

TUBULAR MARKERS 25' SPACING



34



35

(A) TPM, REFLECTIVE PAINT, 4" WHITE

(B) TPM, REFLECTIVE PAINT, 24" WHITE

(C) TPM, REFLECTIVE PAINT, 4" DOUBLE YELLOW

(D) TPM, ARROWS REMOVABLE TAPE

(E) TPM, WORDS REMOVABLE TAPE

(F) TPM, REMOVABLE TAPE, 4" WHITE

(G) TPM, REMOVABLE TAPE, 4" DOUBLE YELLOW

(H) TPM, REMOVABLE TAPE, 24" WHITE

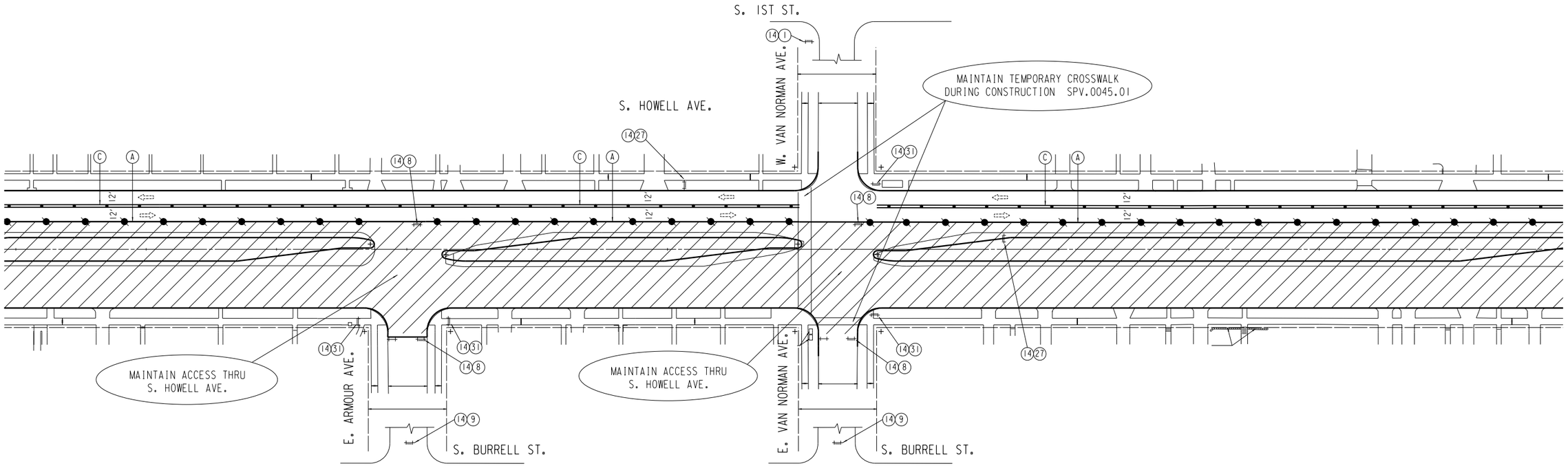
NOTE: ALL SIGNING SHALL BE THE CONTRACTORS RESPONSIBILITY. ALL SIGNS SHALL BE BANDED TO EXISTING UTILITY POLES UNLESS OTHERWISE NOTED. CONTRACTOR RESPONSIBLE FOR COVERING ALL CONFLICTING PAVEMENT MARKINGS.

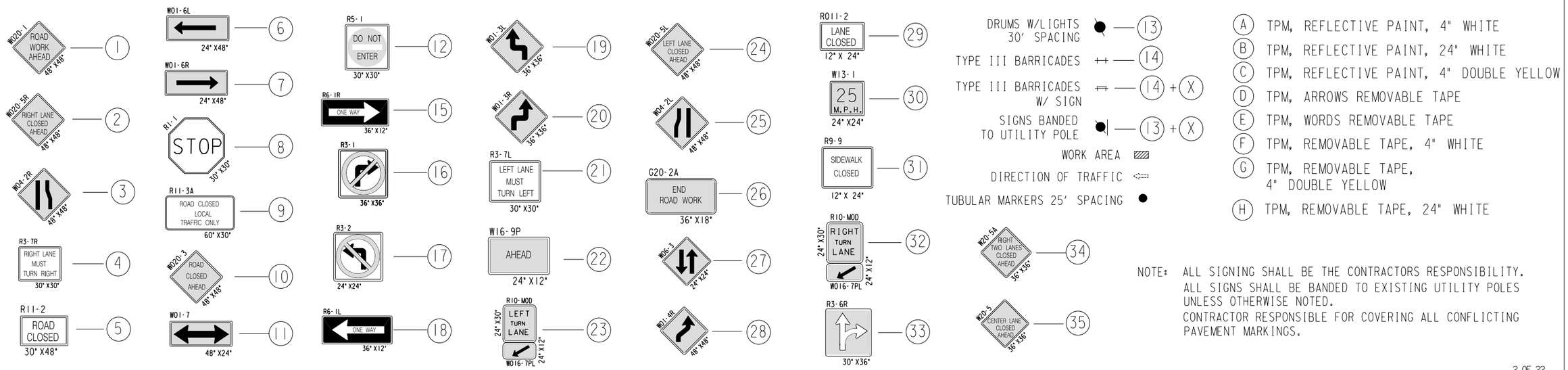
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FILENAME: W:\SPR\HOWELL_LAYTON_HOWARD\TRAFFIC.DGN

REVISED: 10-30-2014

STAGE I





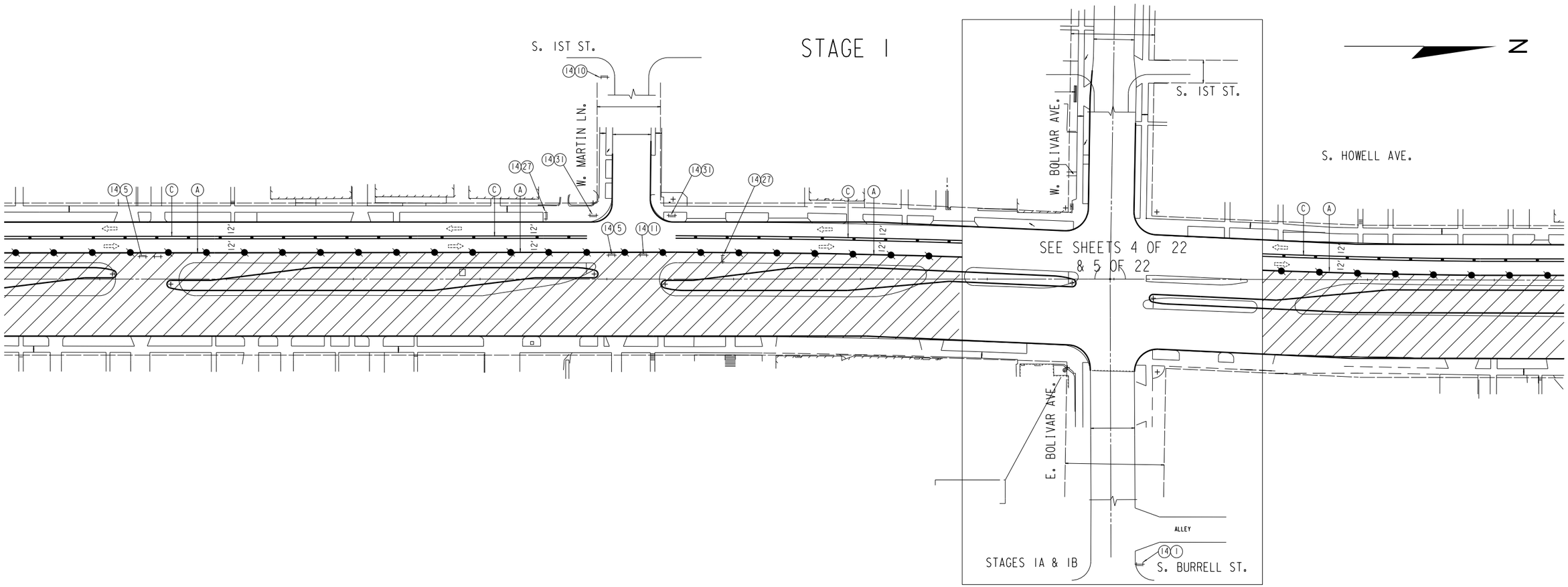
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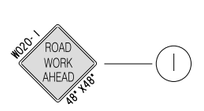
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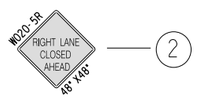
REVISED: 10-30-2014

STAGE I

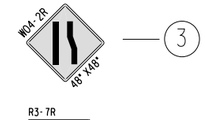




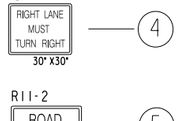
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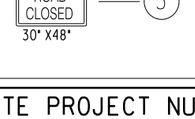
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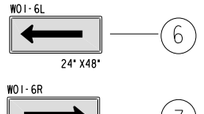
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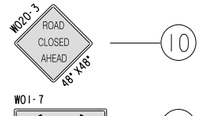
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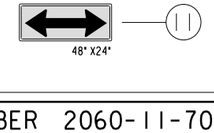
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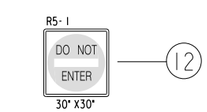


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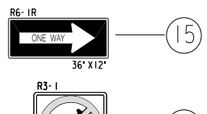


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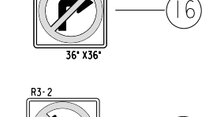
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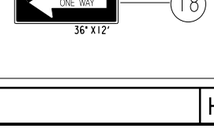
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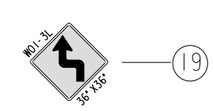
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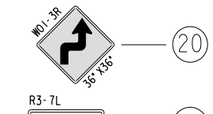
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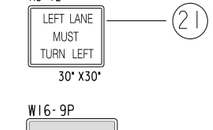
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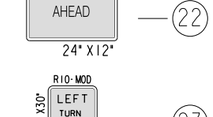
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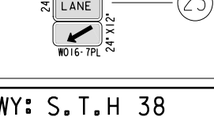
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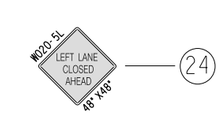
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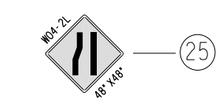
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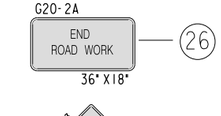
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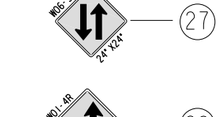
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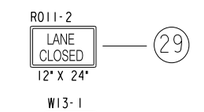
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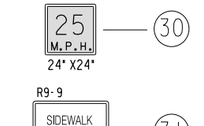
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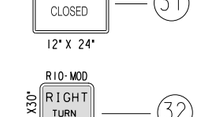
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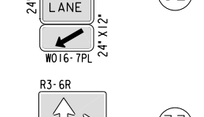
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32



33

DRUMS W/LIGHTS 30' SPACING — 13

TYPE III BARRICADES — 14

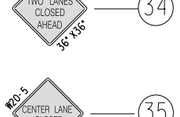
TYPE III BARRICADES W/ SIGN — 14 + X

SIGNS BANDED TO UTILITY POLE — 13 + X

WORK AREA

DIRECTION OF TRAFFIC

TUBULAR MARKERS 25' SPACING



34



35

(A) TPM, REFLECTIVE PAINT, 4" WHITE

(B) TPM, REFLECTIVE PAINT, 24" WHITE

(C) TPM, REFLECTIVE PAINT, 4" DOUBLE YELLOW

(D) TPM, ARROWS REMOVABLE TAPE

(E) TPM, WORDS REMOVABLE TAPE

(F) TPM, REMOVABLE TAPE, 4" WHITE

(G) TPM, REMOVABLE TAPE, 4" DOUBLE YELLOW

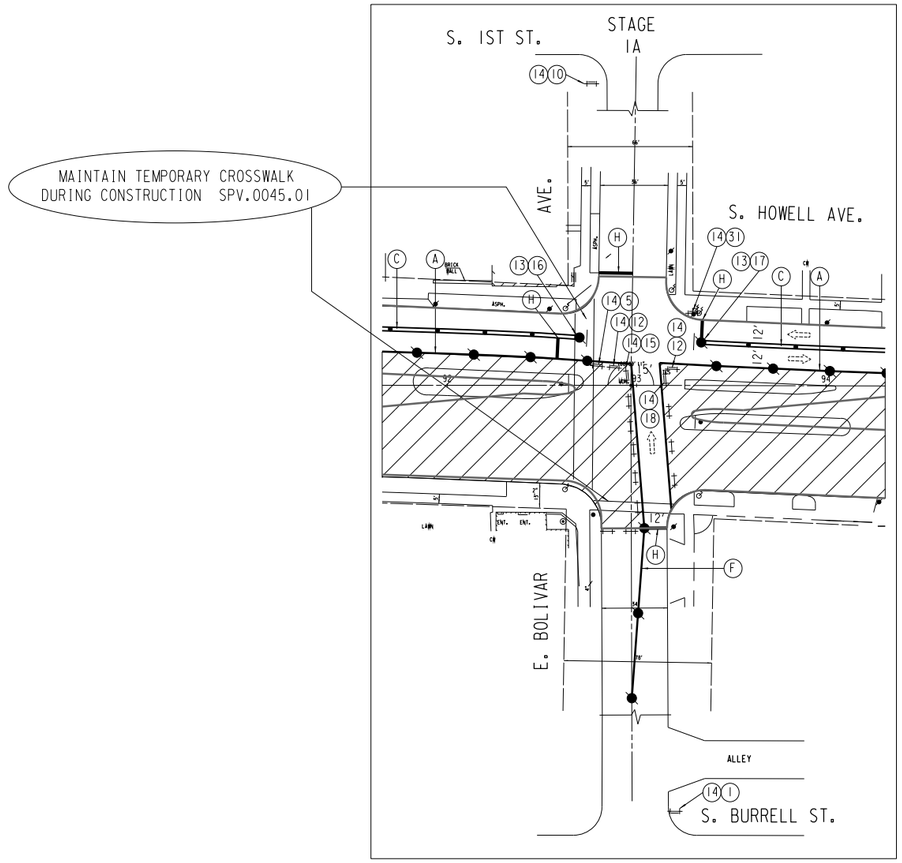
(H) TPM, REMOVABLE TAPE, 24" WHITE

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.

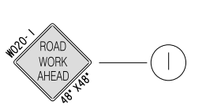
STATE PROJECT NUMBER 2060-11-70	HWY: S.T.H 38	COUNTY: MILWAUKEE	TRAFFIC CONTROL	SCALE FEET 0' 80'	SHEET NO: 167	E

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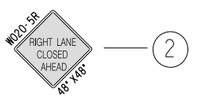
REVISED: 10-30-2014



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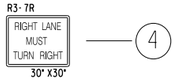
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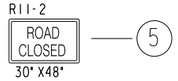
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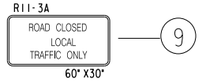
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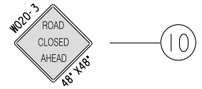
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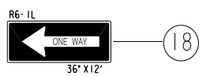
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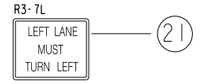
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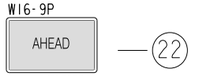
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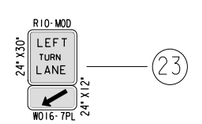
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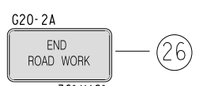
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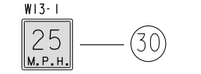
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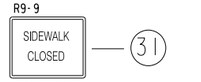
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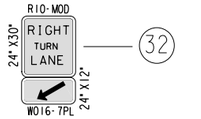
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32



33

DRUMS W/LIGHTS 30' SPACING — 13

TYPE III BARRICADES — 14

TYPE III BARRICADES W/ SIGN — 14 + X

SIGNS BANDED TO UTILITY POLE — 13 + X

WORK AREA

DIRECTION OF TRAFFIC

TUBULAR MARKERS 25' SPACING



34



35

(A) TPM, REFLECTIVE PAINT, 4" WHITE

(B) TPM, REFLECTIVE PAINT, 24" WHITE

(C) TPM, REFLECTIVE PAINT, 4" DOUBLE YELLOW

(D) TPM, ARROWS REMOVABLE TAPE

(E) TPM, WORDS REMOVABLE TAPE

(F) TPM, REMOVABLE TAPE, 4" WHITE

(G) TPM, REMOVABLE TAPE, 4" DOUBLE YELLOW

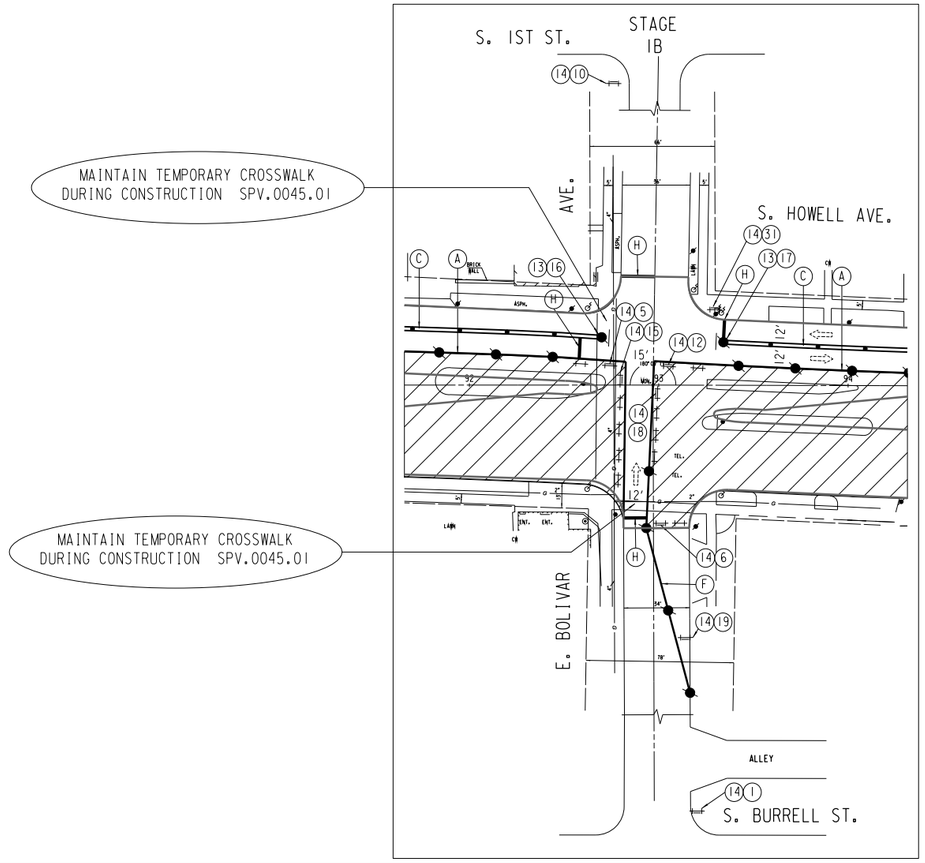
(H) TPM, REMOVABLE TAPE, 24" WHITE

NOTE: ALL SIGNING SHALL BE THE CONTRACTORS RESPONSIBILITY.
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CONTRACTOR RESPONSIBLE FOR COVERING ALL CONFLICTING PAVEMENT MARKINGS.

STATE PROJECT NUMBER 2060-11-70	HWY: S.T.H 38	COUNTY: MILWAUKEE	TRAFFIC CONTROL	SCALE FEET 0' 80'	SHEET NO: 168	E

DGNFILENAME: W:\SPR\HOWELL_LAYTON_HOWARD\TRAFFIC.DGN

REVISED: 11-3-2014



N

W20-1 ROAD WORK AHEAD 48" X48" — 1
W20-5R RIGHT LANE CLOSED AHEAD 48" X48" — 2
W4-2R 48" X48" — 3
R3-7R RIGHT LANE MUST TURN RIGHT 30" X30" — 4
R11-2 ROAD CLOSED 30" X48" — 5
W1-6L 24" X48" — 6
W1-6R 24" X48" — 7
R1-1 STOP 30" X30" — 8
R11-3A ROAD CLOSED LOCAL TRAFFIC ONLY 60" X30" — 9
W20-3 ROAD CLOSED AHEAD 48" X48" — 10
W1-7 48" X24" — 11
R5-1 DO NOT ENTER 30" X30" — 12
R6-1R ONE WAY 36" X12" — 15
R3-1 36" X36" — 16
R3-2 24" X24" — 17
R6-1L ONE WAY 36" X12" — 18
W1-3L 36" X36" — 19
W1-3R 36" X36" — 20
R3-7L LEFT LANE MUST TURN LEFT 30" X30" — 21
W16-9P AHEAD 24" X12" — 22
R10-MOD LEFT TURN LANE 24" X30" / W16-7PL 24" X12" — 23
W20-5L LEFT LANE CLOSED AHEAD 48" X48" — 24
W4-2L 48" X48" — 25
G20-2A END ROAD WORK 36" X18" — 26
W16-3 24" X24" — 27
W1-4R 48" X48" — 28
R011-2 LANE CLOSED 12" X 24" — 29
W13-1 25 M.P.H. 24" X24" — 30
R9-9 SIDEWALK CLOSED 12" X 24" — 31
R10-MOD RIGHT TURN LANE 24" X30" / W16-7PL 24" X12" — 32
R3-6R 30" X36" — 33
W20-5A RIGHT TWO LANES CLOSED AHEAD 36" X36" — 34
W20-5 CENTER LANE CLOSED AHEAD 36" X36" — 35

DRUMS W/LIGHTS 30' SPACING — 13
TYPE III BARRICADES — 14
TYPE III BARRICADES W/ SIGN — 14 + X
SIGNS BANDED TO UTILITY POLE — 13 + X
WORK AREA
DIRECTION OF TRAFFIC
TUBULAR MARKERS 25' SPACING

(A) TPM, REFLECTIVE PAINT, 4" WHITE
(B) TPM, REFLECTIVE PAINT, 24" WHITE
(C) TPM, REFLECTIVE PAINT, 4" DOUBLE YELLOW
(D) TPM, ARROWS REMOVABLE TAPE
(E) TPM, WORDS REMOVABLE TAPE
(F) TPM, REMOVABLE TAPE, 4" WHITE
(G) TPM, REMOVABLE TAPE, 4" DOUBLE YELLOW
(H) TPM, REMOVABLE TAPE, 24" WHITE

NOTE: ALL SIGNING SHALL BE THE CONTRACTORS RESPONSIBILITY.
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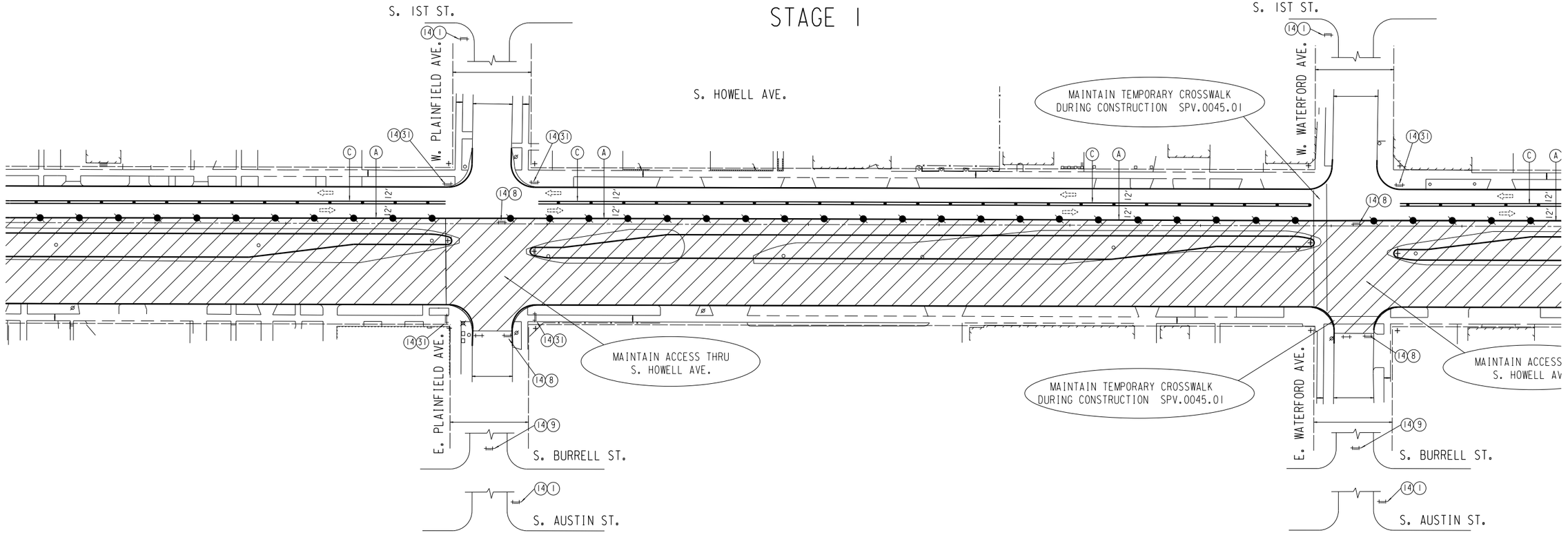
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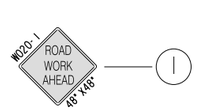
STATE PROJECT NUMBER 2060-11-70	HWY: S.T.H 38	COUNTY: MILWAUKEE	TRAFFIC CONTROL	SCALE FEET 0' 80'	SHEET NO: 07 69	E

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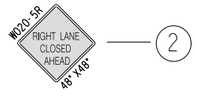
REVISED: 11-3-2014

STAGE I





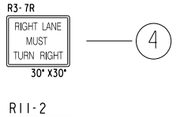
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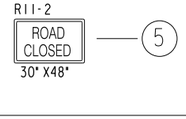
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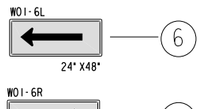
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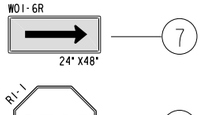
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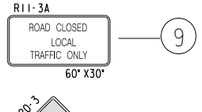
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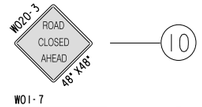
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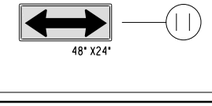
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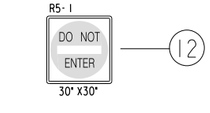
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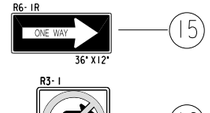
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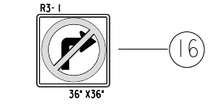
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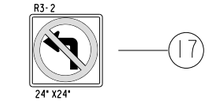
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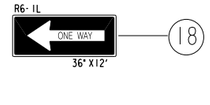
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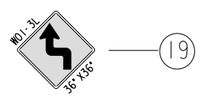
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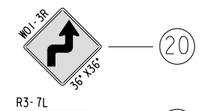
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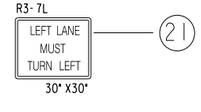
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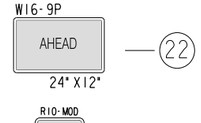
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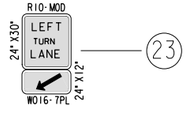
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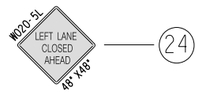
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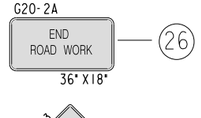
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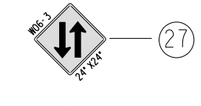
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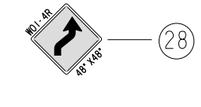
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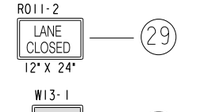
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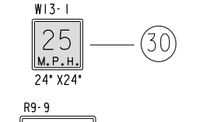
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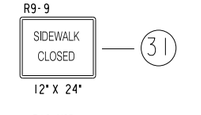
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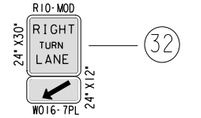
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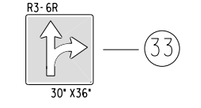
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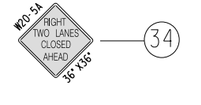
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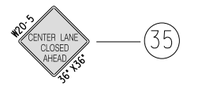
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34



35

DRUMS W/LIGHTS 30' SPACING — 13

TYPE III BARRICADES — 14

TYPE III BARRICADES W/ SIGN — 14 + X

SIGNS BANDED TO UTILITY POLE — 13 + X

WORK AREA

DIRECTION OF TRAFFIC

TUBULAR MARKERS 25' SPACING

- (A) TPM, REFLECTIVE PAINT, 4" WHITE
- (B) TPM, REFLECTIVE PAINT, 24" WHITE
- (C) TPM, REFLECTIVE PAINT, 4" DOUBLE YELLOW
- (D) TPM, ARROWS REMOVABLE TAPE
- (E) TPM, WORDS REMOVABLE TAPE
- (F) TPM, REMOVABLE TAPE, 4" WHITE
- (G) TPM, REMOVABLE TAPE, 4" DOUBLE YELLOW
- (H) TPM, REMOVABLE TAPE, 24" WHITE

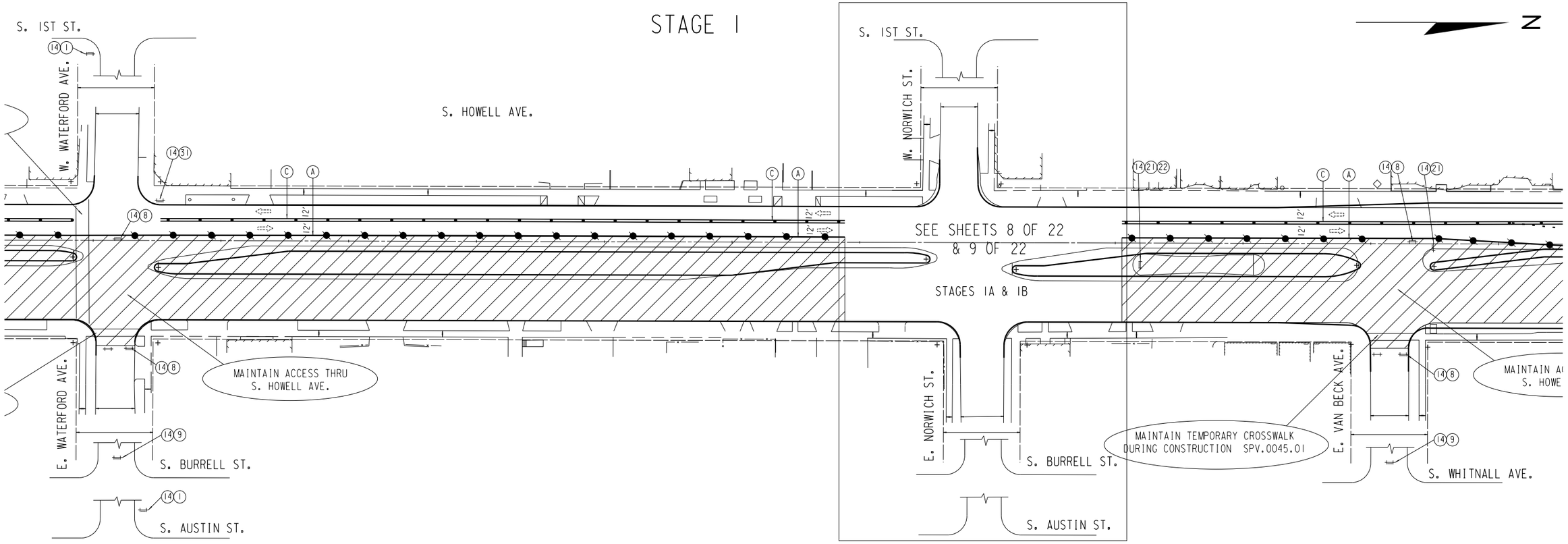
NOTE: ALL SIGNING SHALL BE THE CONTRACTORS RESPONSIBILITY. ALL SIGNS SHALL BE BANDED TO EXISTING UTILITY POLES UNLESS OTHERWISE NOTED. CONTRACTOR RESPONSIBLE FOR COVERING ALL CONFLICTING PAVEMENT MARKINGS.

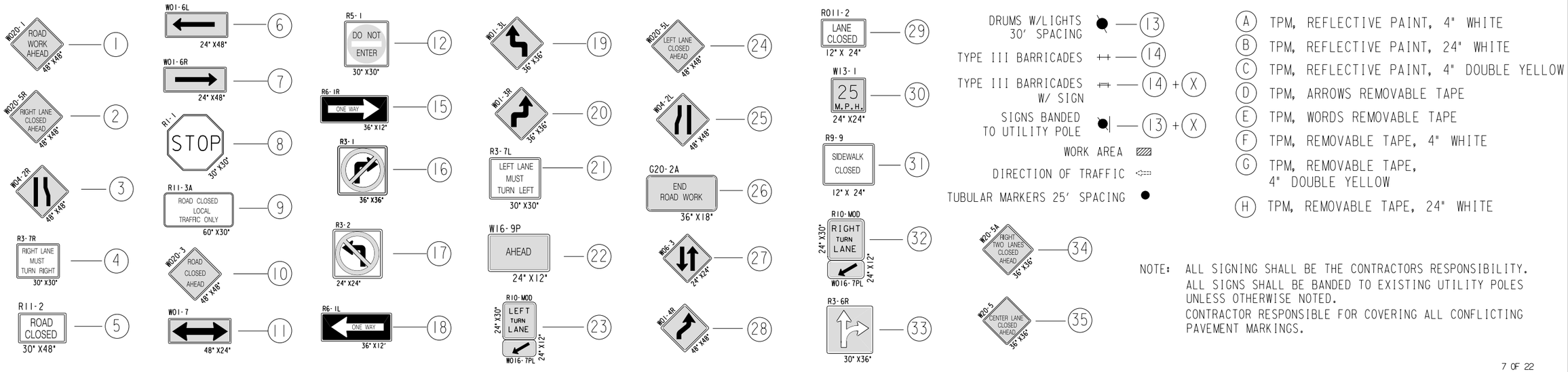
STATE PROJECT NUMBER 2060-11-70	HWY: S.T.H 38	COUNTY: MILWAUKEE	TRAFFIC CONTROL	SCALE FEET 0' 80'	SHEET NO: 170	E

DGNFILENAME: W:\SPR\HOWELL_LAYTON_HOWARD\TRAFFIC.DGN

REVISED: 10-30-2014

STAGE 1





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.

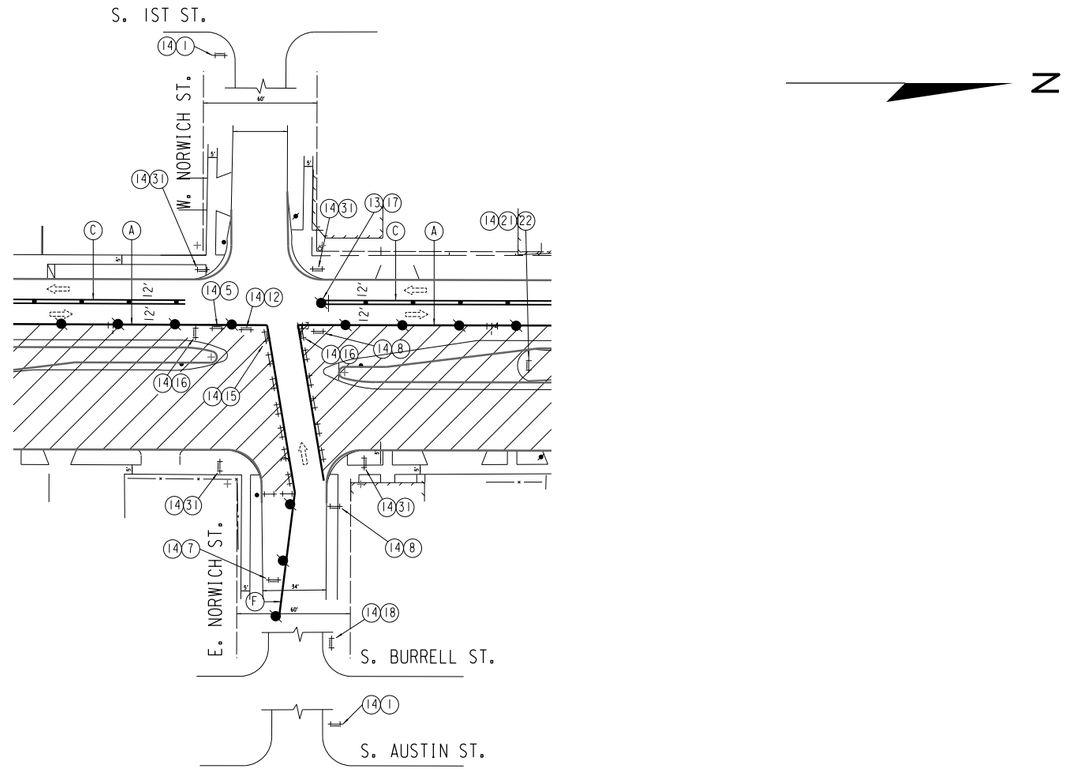
7 OF 22

STATE PROJECT NUMBER 2060-11-70	HWY: S.T.H 38	COUNTY: MILWAUKEE	TRAFFIC CONTROL	SCALE FEET 0' 80'	SHEET NO: 171	E

DGNFILENAME: W:\SPR\HOWELL_LAYTON_HOWARD\TRAFFIC.DGN

REVISED: 10-30-2014

STAGE 1A



W020-1 ROAD WORK AHEAD 48" X48" — 1
W020-5R RIGHT LANE CLOSED AHEAD 48" X48" — 2
W04-2R 48" X48" — 3
R3-7R RIGHT LANE MUST TURN RIGHT 30" X30" — 4
R11-2 ROAD CLOSED 30" X48" — 5
W01-6L 24" X48" — 6
W01-6R 24" X48" — 7
R1-1 STOP 30" X30" — 8
R11-3A ROAD CLOSED LOCAL TRAFFIC ONLY 60" X30" — 9
W020-3 ROAD CLOSED AHEAD 48" X48" — 10
W01-7 48" X24" — 11
R5-1 DO NOT ENTER 30" X30" — 12
R6-1R ONE WAY 36" X12" — 15
R3-1 36" X36" — 16
R3-2 24" X24" — 17
R6-1L ONE WAY 36" X12" — 18
W01-3L 36" X36" — 19
W01-3R 36" X36" — 20
R3-7L LEFT LANE MUST TURN LEFT 30" X30" — 21
W16-9P AHEAD 24" X12" — 22
R10-MOD LEFT TURN LANE 24" X30" / W016-7PL 24" X12" — 23
W020-5L LEFT LANE CLOSED AHEAD 48" X48" — 24
W04-2L 48" X48" — 25
G20-2A END ROAD WORK 36" X18" — 26
W06-3 24" X24" — 27
W01-4R 48" X48" — 28
R011-2 LANE CLOSED 12" X 24" — 29
W13-1 25 M.P.H. 24" X24" — 30
R9-9 SIDEWALK CLOSED 12" X 24" — 31
R10-MOD RIGHT TURN LANE 24" X30" / W016-7PL 24" X12" — 32
R3-6R 30" X36" — 33
W20-5A RIGHT TWO LANES CLOSED AHEAD 36" X36" — 34
W20-5 CENTER LANE CLOSED AHEAD 36" X36" — 35

DRUMS W/LIGHTS 30' SPACING — 13
TYPE III BARRICADES — 14
TYPE III BARRICADES W/ SIGN — 14 + X
SIGNS BANDED TO UTILITY POLE — 13 + X
WORK AREA
DIRECTION OF TRAFFIC
TUBULAR MARKERS 25' SPACING

(A) TPM, REFLECTIVE PAINT, 4" WHITE
(B) TPM, REFLECTIVE PAINT, 24" WHITE
(C) TPM, REFLECTIVE PAINT, 4" DOUBLE YELLOW
(D) TPM, ARROWS REMOVABLE TAPE
(E) TPM, WORDS REMOVABLE TAPE
(F) TPM, REMOVABLE TAPE, 4" WHITE
(G) TPM, REMOVABLE TAPE, 4" DOUBLE YELLOW
(H) TPM, REMOVABLE TAPE, 24" WHITE

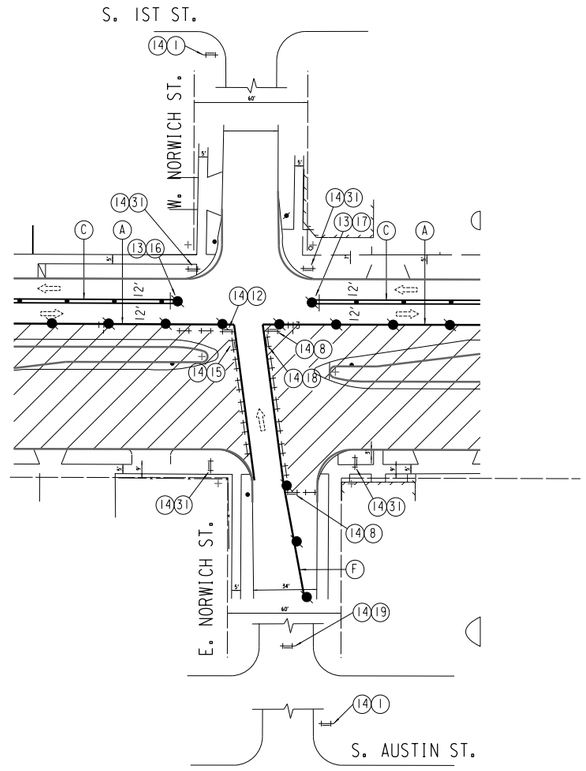
NOTE: ALL SIGNING SHALL BE THE CONTRACTORS RESPONSIBILITY. ALL SIGNS SHALL BE BANDED TO EXISTING UTILITY POLES UNLESS OTHERWISE NOTED. CONTRACTOR RESPONSIBLE FOR COVERING ALL CONFLICTING PAVEMENT MARKINGS.

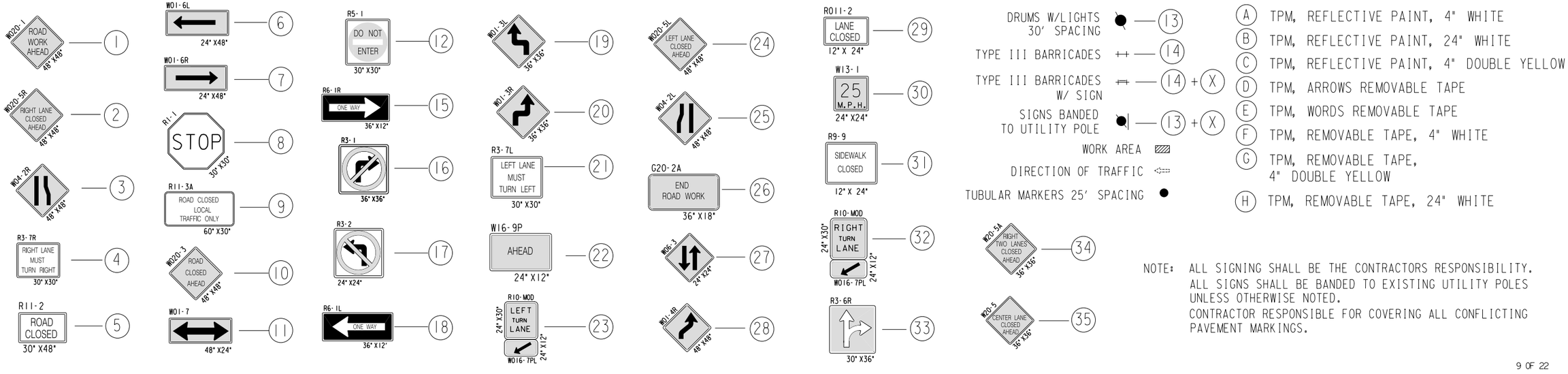
8 OF 22

STATE PROJECT NUMBER 2060-11-70	HWY: S.T.H 38	COUNTY: MILWAUKEE	TRAFFIC CONTROL	SCALE FEET 0' 80'	SHEET NO: 172	E

DGNFILENAME: W:\SPR\HOWELL_LAYTON_HOWARD\TRAFFIC.DGN

STAGE 1B



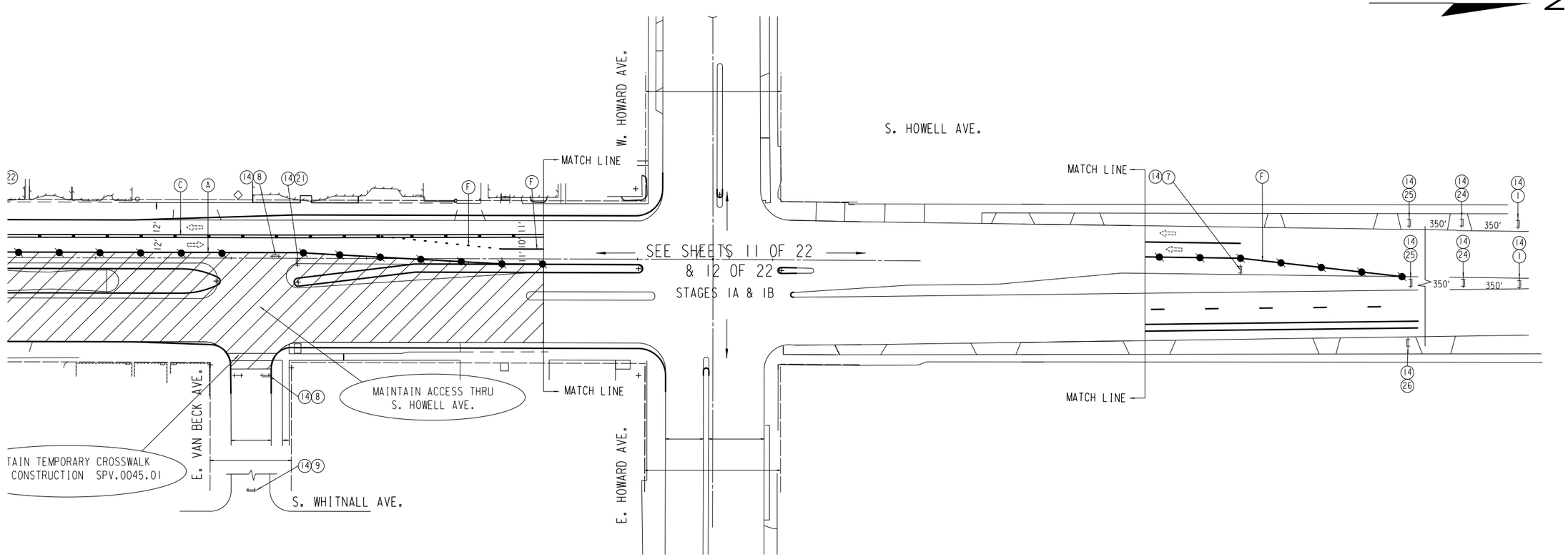


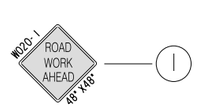
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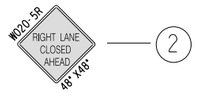
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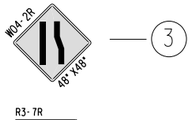
REVISED: 10-30-2014

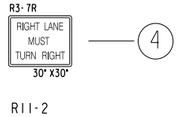
STAGE I

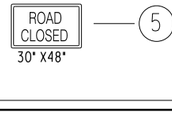


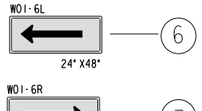


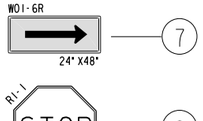


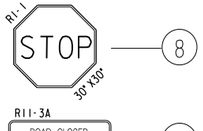


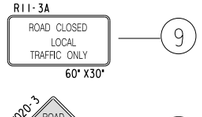


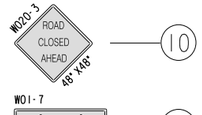


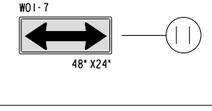


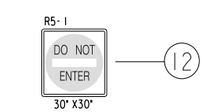


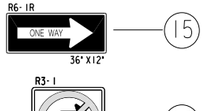


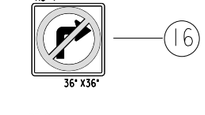


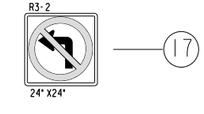


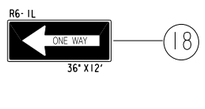


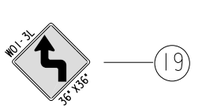


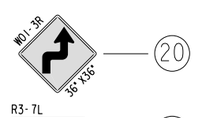


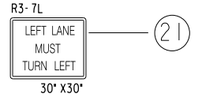


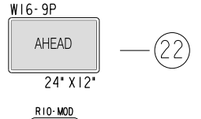


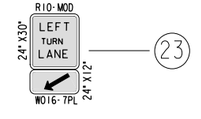


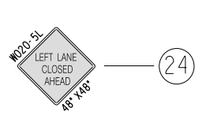


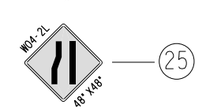


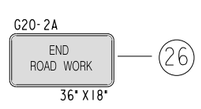


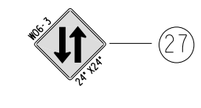


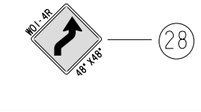


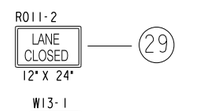


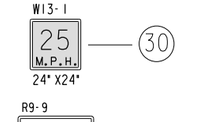


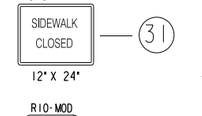


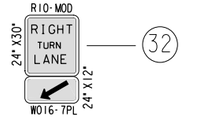


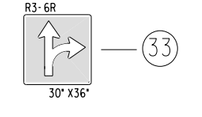












DRUMS W/LIGHTS 30' SPACING — 13

TYPE III BARRICADES — 14

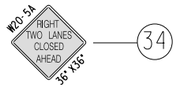
TYPE III BARRICADES W/ SIGN — 14 + X

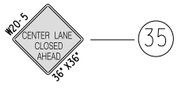
SIGNS BANDED TO UTILITY POLE — 13 + X

WORK AREA

DIRECTION OF TRAFFIC

TUBULAR MARKERS 25' SPACING





(A) TPM, REFLECTIVE PAINT, 4" WHITE

(B) TPM, REFLECTIVE PAINT, 24" WHITE

(C) TPM, REFLECTIVE PAINT, 4" DOUBLE YELLOW

(D) TPM, ARROWS REMOVABLE TAPE

(E) TPM, WORDS REMOVABLE TAPE

(F) TPM, REMOVABLE TAPE, 4" WHITE

(G) TPM, REMOVABLE TAPE, 4" DOUBLE YELLOW

(H) TPM, REMOVABLE TAPE, 24" WHITE

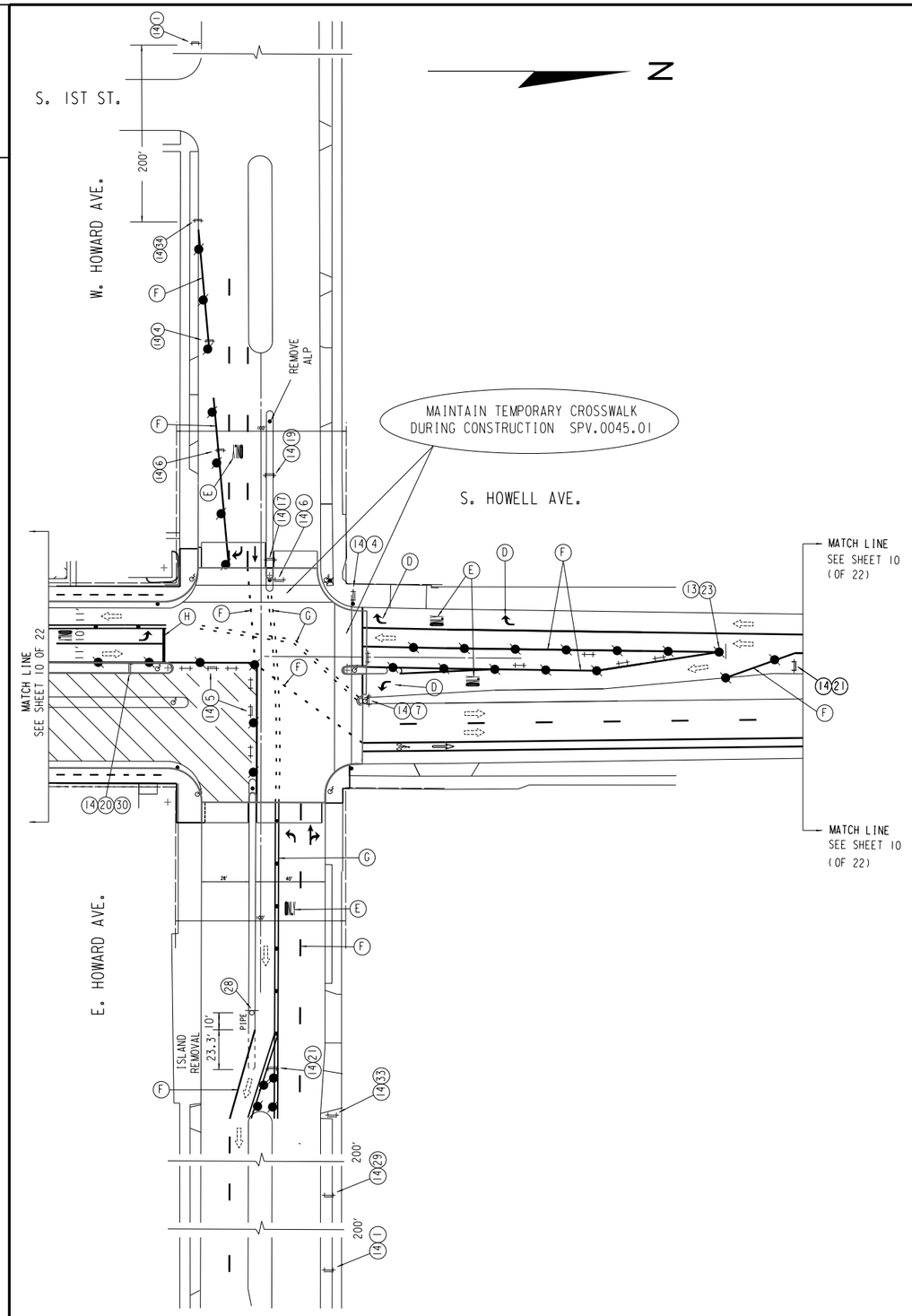
NOTE: ALL SIGNING SHALL BE THE CONTRACTORS RESPONSIBILITY. ALL SIGNS SHALL BE BANDED TO EXISTING UTILITY POLES UNLESS OTHERWISE NOTED. CONTRACTOR RESPONSIBLE FOR COVERING ALL CONFLICTING PAVEMENT MARKINGS.

STATE PROJECT NUMBER 2060-11-70	HWY: S.T.H 38	COUNTY: MILWAUKEE	TRAFFIC CONTROL	SCALE FEET 0' 80'	SHEET NO: 174	E

DGNFILENAME: W:\SPR\HOWELL_LAYTON_HOWARD\TRAFFIC.DGN

REVISED: 10-30-2014

STAGE 1A



DRUMS W/LIGHTS 30' SPACING — (13)

TYPE III BARRICADES — (14)

TYPE III BARRICADES W/ SIGN — (14) + (X)

SIGNS BANDED TO UTILITY POLE — (13) + (X)

WORK AREA

DIRECTION OF TRAFFIC

TUBULAR MARKERS 25' SPACING

(A) TPM, REFLECTIVE PAINT, 4" WHITE

(B) TPM, REFLECTIVE PAINT, 24" WHITE

(C) TPM, REFLECTIVE PAINT, 4" DOUBLE YELLOW

(D) TPM, ARROWS REMOVABLE TAPE

(E) TPM, WORDS REMOVABLE TAPE

(F) TPM, REMOVABLE TAPE, 4" WHITE

(G) TPM, REMOVABLE TAPE, 4" DOUBLE YELLOW

(H) TPM, REMOVABLE TAPE, 24" 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.

W020-1 ROAD WORK AHEAD 48" X48" — 1

R1-1 STOP 30" X30" — 8

R3-2 24" X24" — 17

W020-5L LEFT LANE CLOSED AHEAD 48" X48" — 24

R9-9 SIDEWALK CLOSED 12" X 24" — 31

W020-5R RIGHT LANE CLOSED AHEAD 48" X48" — 2

R11-3A ROAD CLOSED LOCAL TRAFFIC ONLY 60" X30" — 9

R6-1L ONE WAY 36" X12" — 18

W04-2L 48" X48" — 25

R10-MOD RIGHT TURN LANE 24" X30" / W016-7PL 24" X12" — 32

W04-2R 48" X48" — 3

W020-3 ROAD CLOSED AHEAD 48" X48" — 10

W01-3L 36" X36" — 19

G20-2A END ROAD WORK 36" X18" — 26

R3-6R 30" X36" — 33

R3-7R RIGHT LANE MUST TURN RIGHT 30" X30" — 4

W01-7 48" X24" — 11

W01-3R 36" X36" — 20

W06-3 24" X24" — 27

W20-5A RIGHT TWO LANES CLOSED AHEAD 36" X36" — 34

R11-2 ROAD CLOSED 30" X48" — 5

R5-1 DO NOT ENTER 30" X30" — 12

R3-7L LEFT LANE MUST TURN LEFT 30" X30" — 21

W01-4R 48" X48" — 28

W20-5 CENTER LANE CLOSED AHEAD 36" X36" — 35

W01-6L 24" X48" — 6

R6-1R ONE WAY 36" X12" — 15

W16-9P AHEAD 24" X12" — 22

R011-2 LANE CLOSED 12" X 24" — 29

W01-6R 24" X48" — 7

R3-1 36" X36" — 16

R10-MOD LEFT TURN LANE 24" X30" / W016-7PL 24" X12" — 23

W13-1 25 M.P.H. 24" X24" — 30

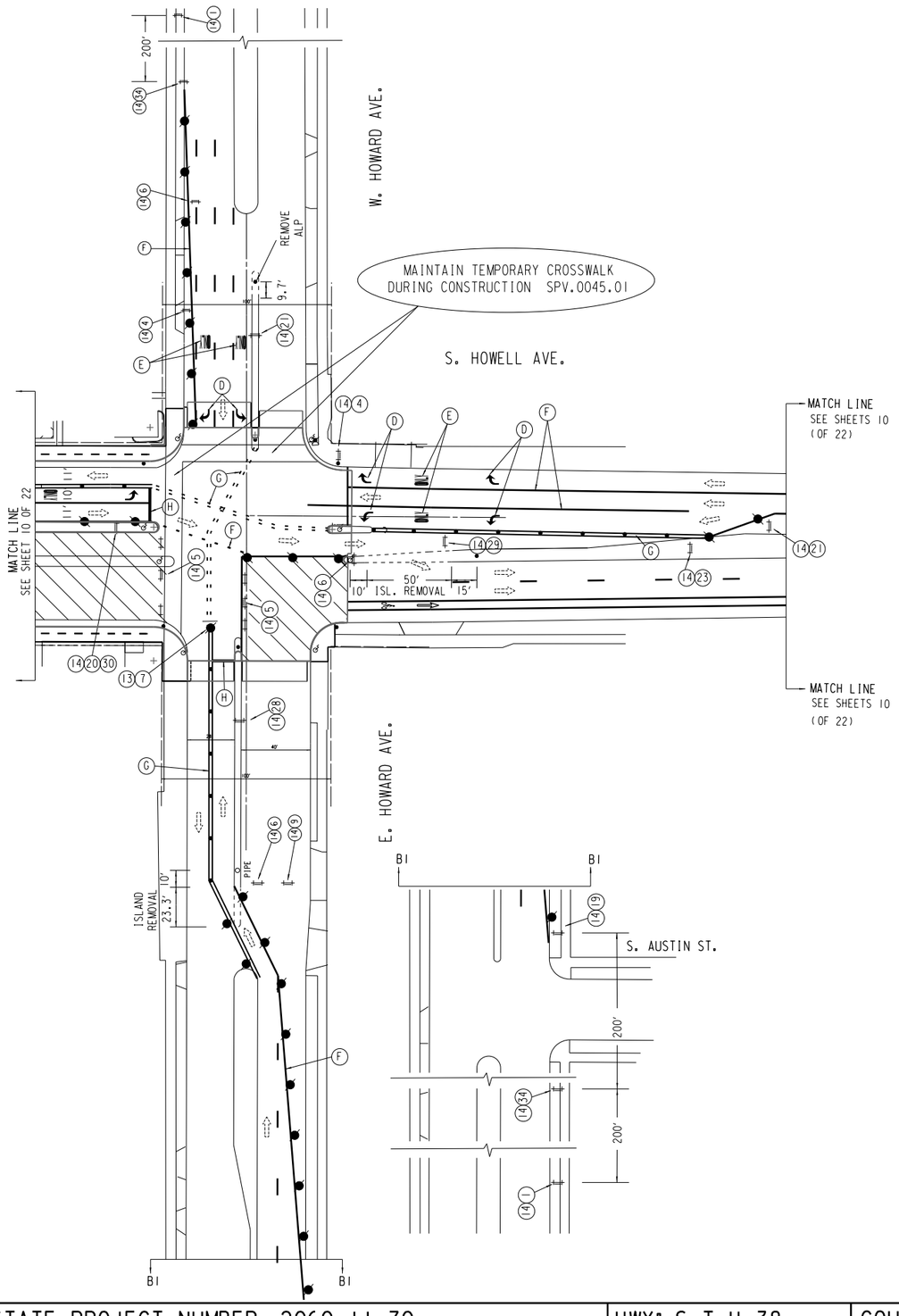
11 OF 22

STATE PROJECT NUMBER 2060-11-70	HWY: S.T.H 38	COUNTY: MILWAUKEE	TRAFFIC CONTROL	SCALE FEET 0' 80'	SHEET NO: 175	E

DGNFILENAME: W:\SPR\HOWELL_LAYTON_HOWARD\TRAFFIC.DGN

REVISED: 11-3-2014

STAGE 1B



DRUMS W/LIGHTS 30' SPACING — (13)

TYPE III BARRICADES — (14)

TYPE III BARRICADES W/ SIGN — (14) + (X)

SIGNS BANDED TO UTILITY POLE — (13) + (X)

WORK AREA

DIRECTION OF TRAFFIC

TUBULAR MARKERS 25' SPACING

(A) TPM, REFLECTIVE PAINT, 4" WHITE

(B) TPM, REFLECTIVE PAINT, 24" WHITE

(C) TPM, REFLECTIVE PAINT, 4" DOUBLE YELLOW

(D) TPM, ARROWS REMOVABLE TAPE

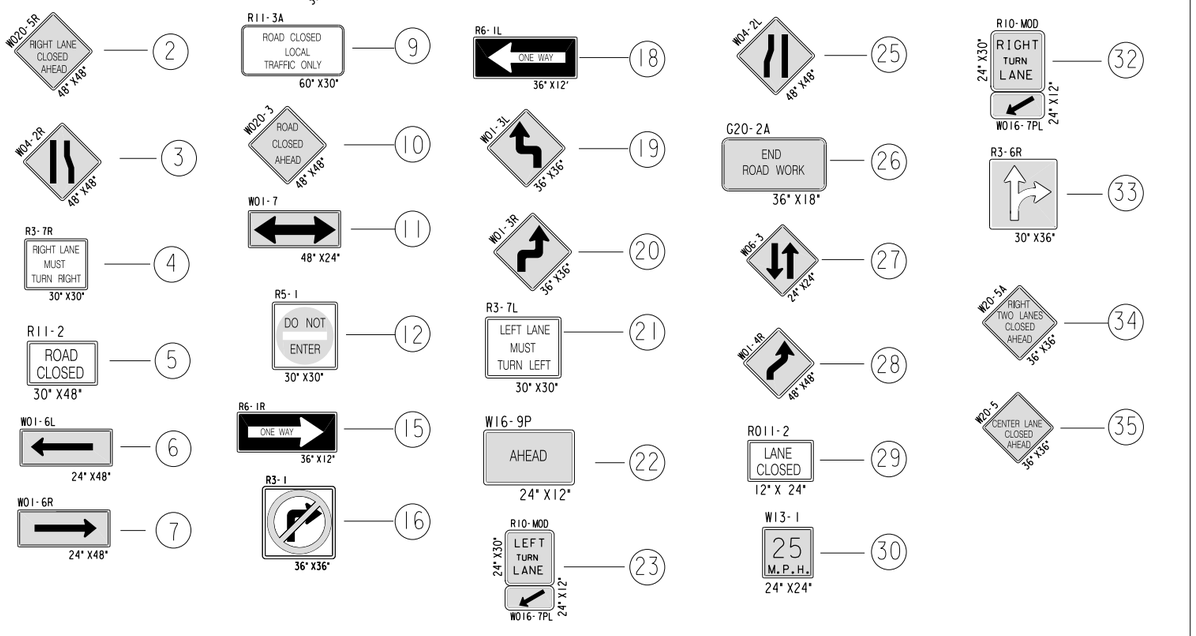
(E) TPM, WORDS REMOVABLE TAPE

(F) TPM, REMOVABLE TAPE, 4" WHITE

(G) TPM, REMOVABLE TAPE, 4" DOUBLE YELLOW

(H) TPM, REMOVABLE TAPE, 24" 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.



STATE PROJECT NUMBER 2060-11-70	HWY: S.T.H 38	COUNTY: MILWAUKEE	TRAFFIC CONTROL	SCALE FEET 0' 80'	SHEET NO: C7 76	E

FILENAME: W:\SPR\HOWELL_LAYTON_HOWARD\TRAFFIC_STAGE1.DGN

REVISED: 11-3-2014

STAGE II

N

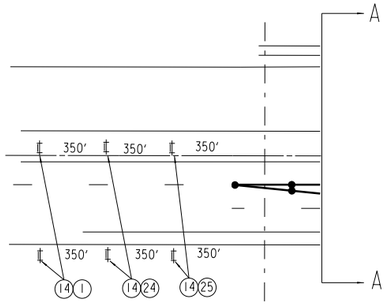
W. LAYTON AVE.

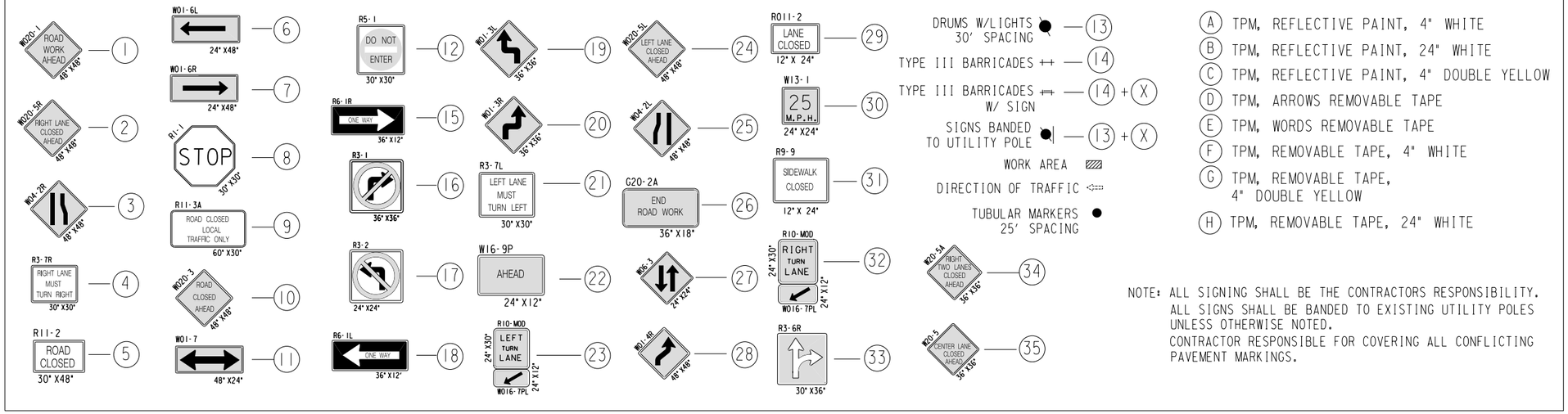
S. HOWELL AVE.

E. LAYTON AVE.

350'

12'





(A) TPM, REFLECTIVE PAINT, 4" WHITE
(B) TPM, REFLECTIVE PAINT, 24" WHITE
(C) TPM, REFLECTIVE PAINT, 4" DOUBLE YELLOW
(D) TPM, ARROWS REMOVABLE TAPE
(E) TPM, WORDS REMOVABLE TAPE
(F) TPM, REMOVABLE TAPE, 4" WHITE
(G) TPM, REMOVABLE TAPE, 4" DOUBLE YELLOW
(H) TPM, REMOVABLE TAPE, 24" WHITE

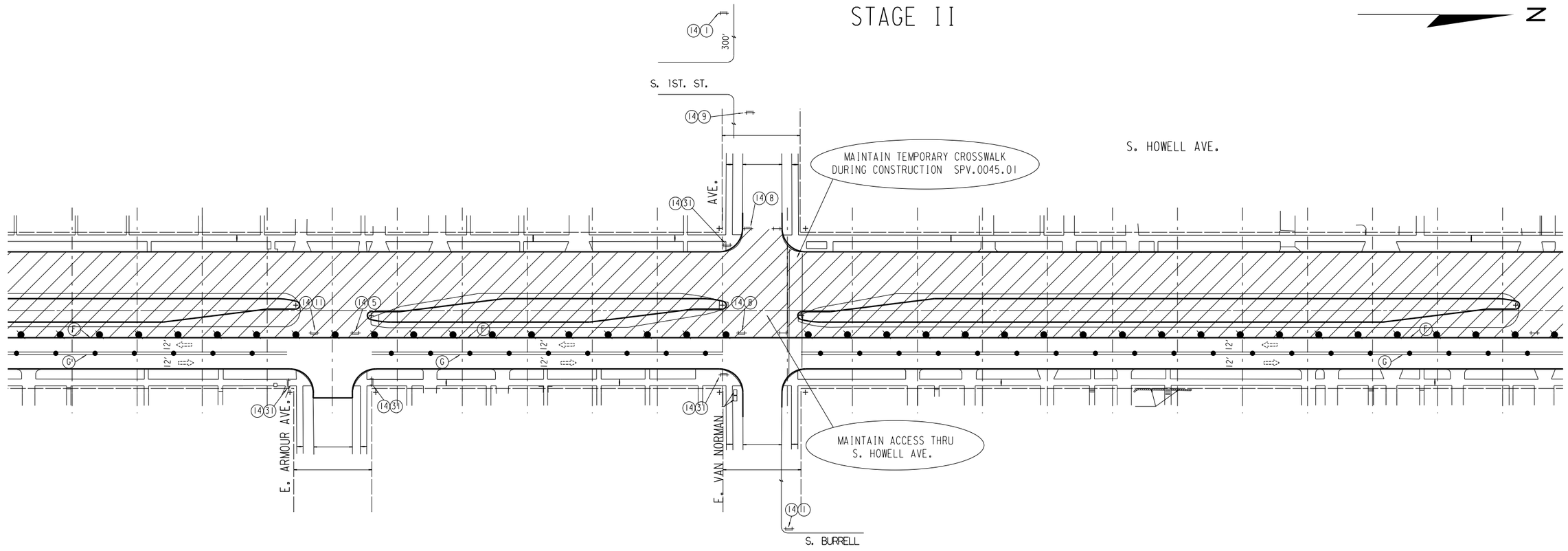
NOTE: ALL SIGNING SHALL BE THE CONTRACTORS RESPONSIBILITY. ALL SIGNS SHALL BE BANDED TO EXISTING UTILITY POLES UNLESS OTHERWISE NOTED. CONTRACTOR RESPONSIBLE FOR COVERING ALL CONFLICTING PAVEMENT MARKINGS.

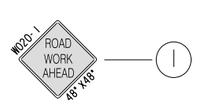
STATE PROJECT NUMBER 2060-11-70	HWY: S.T.H 38	COUNTY: MILWAUKEE	TRAFFIC CONTROL	SCALE FEET 0' 80'	SHEET NO: 177	E

DGNFILENAME: W:\SPR\HOWELL_LAYTON_HOWARD\TRAFFIC.DGN

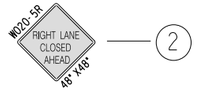
REVISED: 10-30-2014

STAGE II

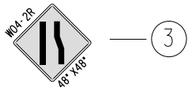




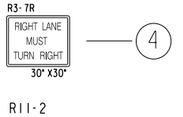
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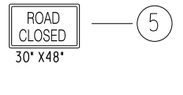
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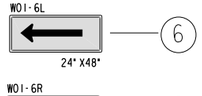
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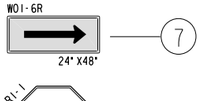
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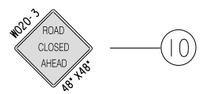
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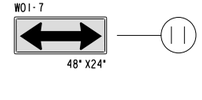
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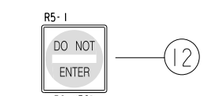
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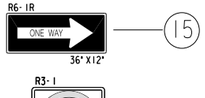
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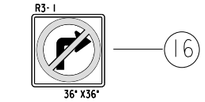
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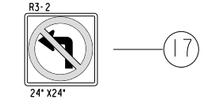
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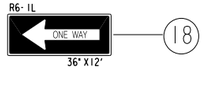
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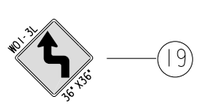
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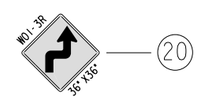
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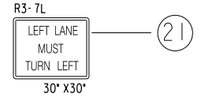
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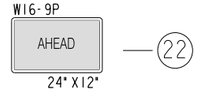
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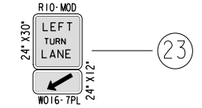
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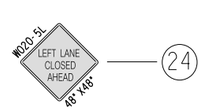
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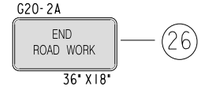
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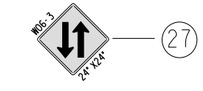
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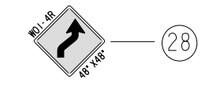
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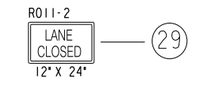
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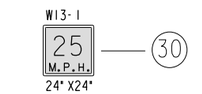
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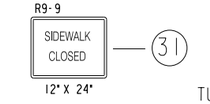
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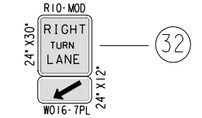
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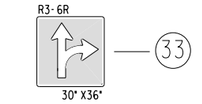
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32



33

DRUMS W/LIGHTS 30' SPACING — 13

TYPE III BARRICADES — 14

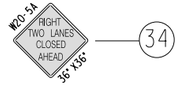
TYPE III BARRICADES W/ SIGN — 14 + X

SIGNS BANDED TO UTILITY POLE — 13 + X

WORK AREA

DIRECTION OF TRAFFIC

TUBULAR MARKERS 25' SPACING



34



35

(A) TPM, REFLECTIVE PAINT, 4" WHITE

(B) TPM, REFLECTIVE PAINT, 24" WHITE

(C) TPM, REFLECTIVE PAINT, 4" DOUBLE YELLOW

(D) TPM, ARROWS REMOVABLE TAPE

(E) TPM, WORDS REMOVABLE TAPE

(F) TPM, REMOVABLE TAPE, 4" WHITE

(G) TPM, REMOVABLE TAPE, 4" DOUBLE YELLOW

(H) TPM, REMOVABLE TAPE, 24" WHITE

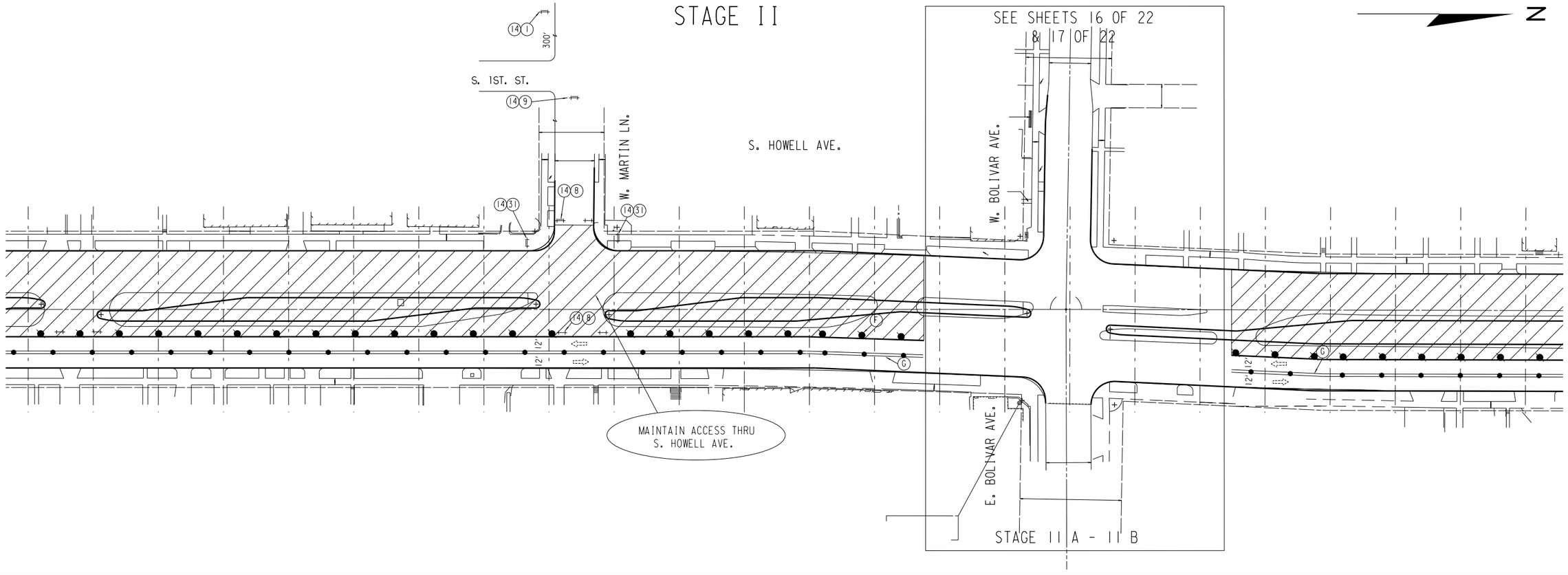
NOTE: ALL SIGNING SHALL BE THE CONTRACTORS RESPONSIBILITY.
ALL SIGNS SHALL BE BANDED TO EXISTING UTILITY POLES UNLESS OTHERWISE NOTED.
CONTRACTOR RESPONSIBLE FOR COVERING ALL CONFLICTING PAVEMENT MARKINGS.

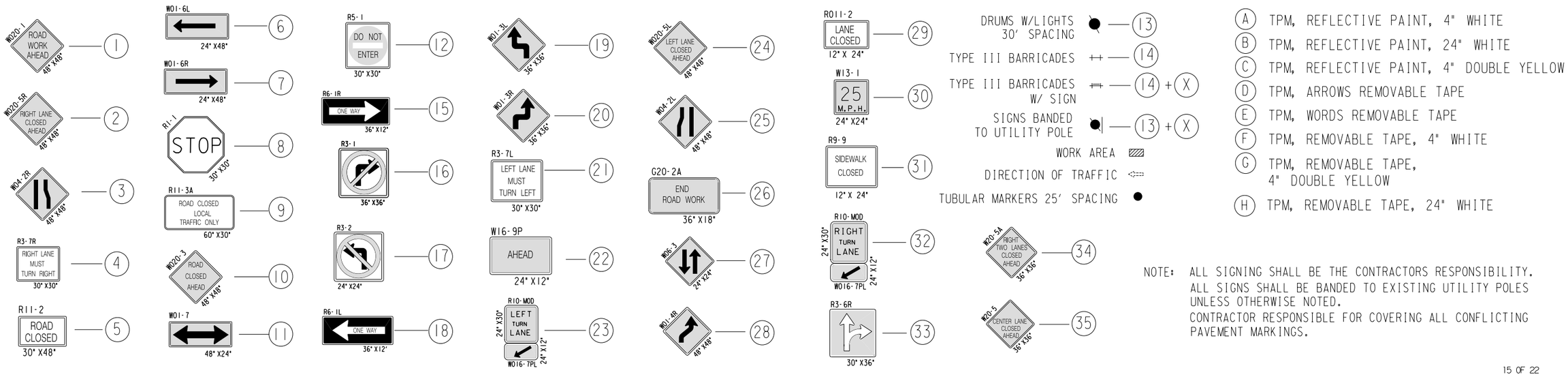
STATE PROJECT NUMBER 2060-11-70	HWY: S.T.H 38	COUNTY: MILWAUKEE	TRAFFIC CONTROL	SCALE FEET 0' 80'	SHEET NO: 178	E

DGNFILENAME: W:\SPR\HOWELL_LAYTON_HOWARD\TRAFFIC.DGN

REVISED: 10-30-2014

STAGE II





- (A) TPM, REFLECTIVE PAINT, 4" WHITE
- (B) TPM, REFLECTIVE PAINT, 24" WHITE
- (C) TPM, REFLECTIVE PAINT, 4" DOUBLE YELLOW
- (D) TPM, ARROWS REMOVABLE TAPE
- (E) TPM, WORDS REMOVABLE TAPE
- (F) TPM, REMOVABLE TAPE, 4" WHITE
- (G) TPM, REMOVABLE TAPE, 4" DOUBLE YELLOW
- (H) TPM, REMOVABLE TAPE, 24" 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.

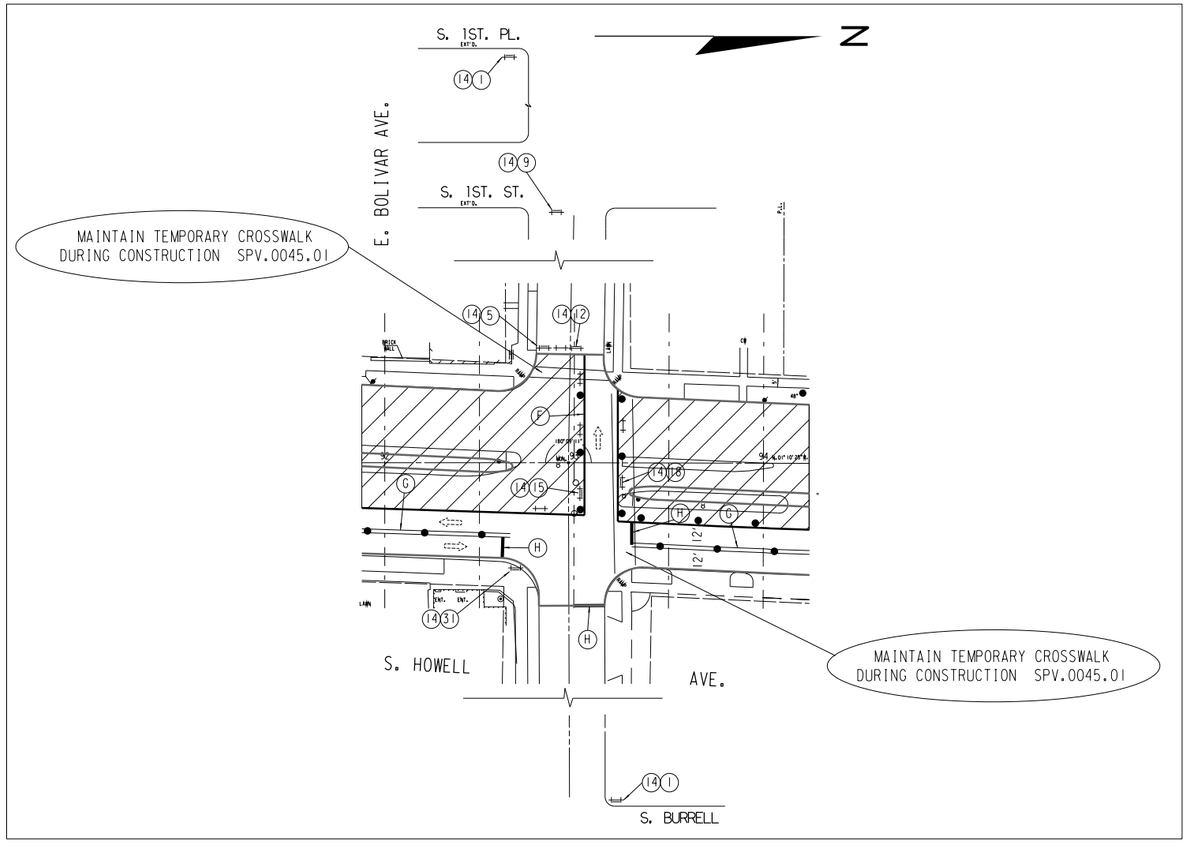
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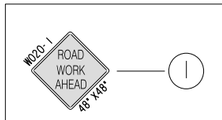
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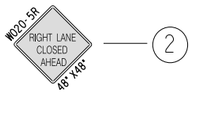
REVISED: 10-30-2014

STAGE II A

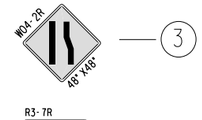




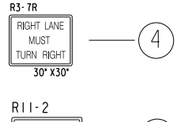
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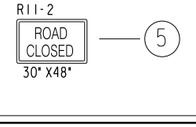
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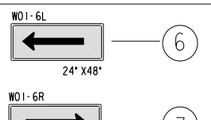
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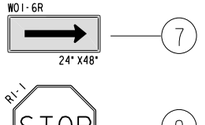
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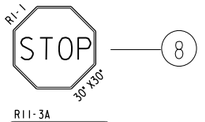
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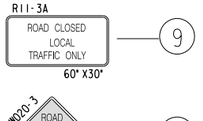
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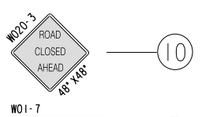
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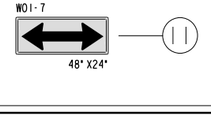
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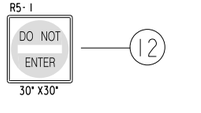
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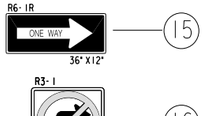
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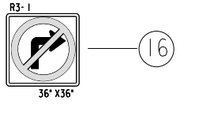
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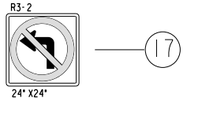
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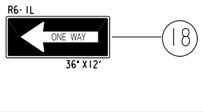
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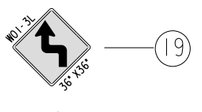
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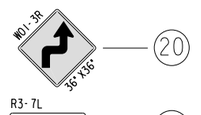
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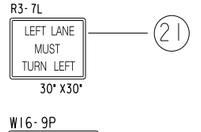
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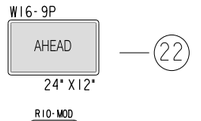
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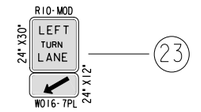
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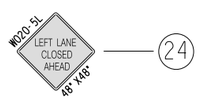
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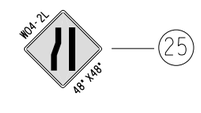
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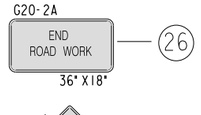
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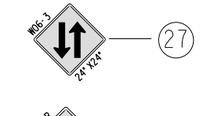
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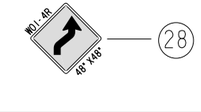
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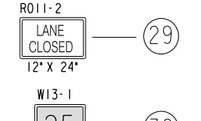
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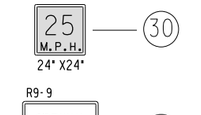
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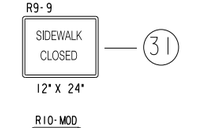
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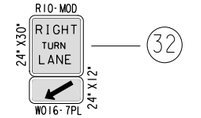
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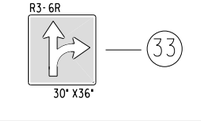
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DRUMS W/LIGHTS 30' SPACING — 13

TYPE III BARRICADES — 14

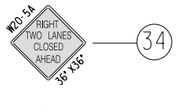
TYPE III BARRICADES W/ SIGN — 14 + X

SIGNS BANDED TO UTILITY POLE — 13 + X

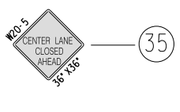
WORK AREA

DIRECTION OF TRAFFIC

TUBULAR MARKERS 25' SPACING



34



35

(A) TPM, REFLECTIVE PAINT, 4" WHITE

(B) TPM, REFLECTIVE PAINT, 24" WHITE

(C) TPM, REFLECTIVE PAINT, 4" DOUBLE YELLOW

(D) TPM, ARROWS REMOVABLE TAPE

(E) TPM, WORDS REMOVABLE TAPE

(F) TPM, REMOVABLE TAPE, 4" WHITE

(G) TPM, REMOVABLE TAPE, 4" DOUBLE YELLOW

(H) TPM, REMOVABLE TAPE, 24" 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.

16 OF 22

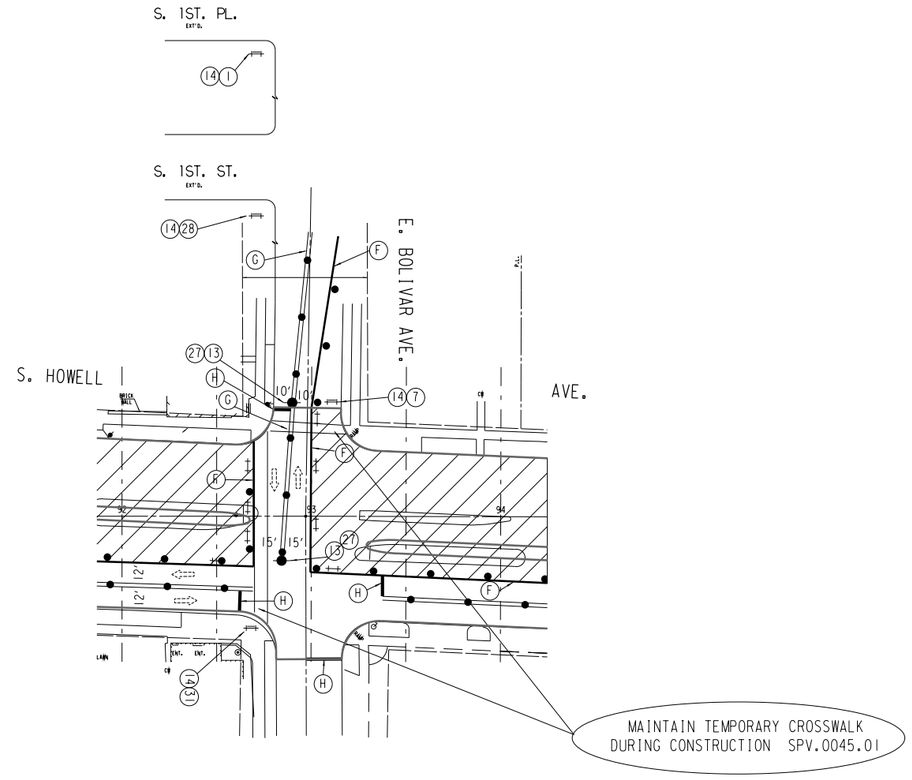
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DGNFILENAME: W:\SPR\HOWELL_LAYTON_HOWARD\TRAFFIC.DGN

REVISED: 11-3-2014

2

STAGE II B



N

1 W020-1 ROAD WORK AHEAD 48" X48"
2 W020-5R RIGHT LANE CLOSED AHEAD 48" X48"
3 W04-2R 48" X48"
4 R3-7R RIGHT LANE MUST TURN RIGHT 30" X30"
5 R11-2 ROAD CLOSED 30" X48"
6 W01-6L 24" X48"
7 W01-6R 24" X48"
8 R1-1 STOP 30" X30"
9 R11-3A ROAD CLOSED LOCAL TRAFFIC ONLY 60" X30"
10 W020-3 ROAD CLOSED AHEAD 48" X48"
11 W01-7 48" X24"
12 R5-1 DO NOT ENTER 30" X30"
13 DRUMS W/LIGHTS 30' SPACING
14 TYPE III BARRICADES
15 R6-1R ONE WAY 36" X12"
16 R3-1 36" X36"
17 R3-2 24" X24"
18 R6-1L ONE WAY 36" X12"
19 W01-3L 36" X36"
20 W01-3R 36" X36"
21 R3-7L LEFT LANE MUST TURN LEFT 30" X30"
22 W16-9P AHEAD 24" X12"
23 R10-MOD LEFT TURN LANE 24" X30" W016-7PL 24" X12"
24 W020-5L LEFT LANE CLOSED AHEAD 48" X48"
25 W04-2L 48" X48"
26 G20-2A END ROAD WORK 36" X18"
27 W06-3 24" X24"
28 W01-4R 48" X48"
29 R011-2 LANE CLOSED 12" X 24"
30 W13-1 25 M.P.H. 24" X24"
31 R9-9 SIDEWALK CLOSED 12" X 24"
32 R10-MOD RIGHT TURN LANE 24" X30" W016-7PL 24" X12"
33 R3-6R 30" X36"
34 W020-5A RIGHT TWO LANES CLOSED AHEAD 36" X36"
35 W020-5 CENTER LANE CLOSED AHEAD 36" X36"

TYPE III BARRICADES W/ SIGN — 14 + X
SIGNS BANDED TO UTILITY POLE — 13 + X
WORK AREA
DIRECTION OF TRAFFIC
TUBULAR MARKERS 25' SPACING

(A) TPM, REFLECTIVE PAINT, 4" WHITE
(B) TPM, REFLECTIVE PAINT, 24" WHITE
(C) TPM, REFLECTIVE PAINT, 4" DOUBLE YELLOW
(D) TPM, ARROWS REMOVABLE TAPE
(E) TPM, WORDS REMOVABLE TAPE
(F) TPM, REMOVABLE TAPE, 4" WHITE
(G) TPM, REMOVABLE TAPE, 4" DOUBLE YELLOW
(H) TPM, REMOVABLE TAPE, 24" 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.

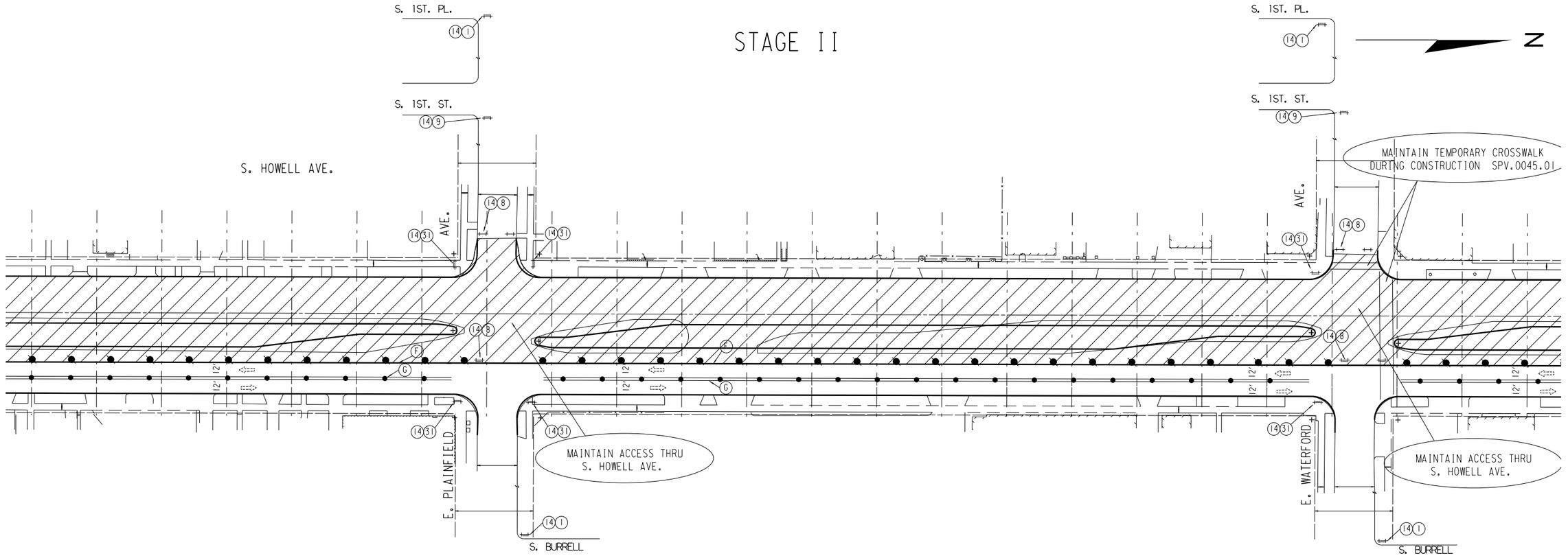
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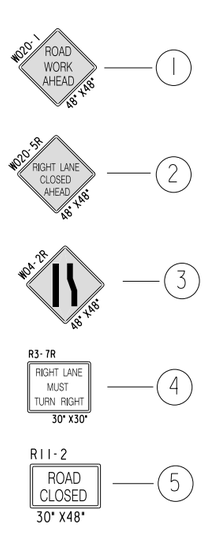
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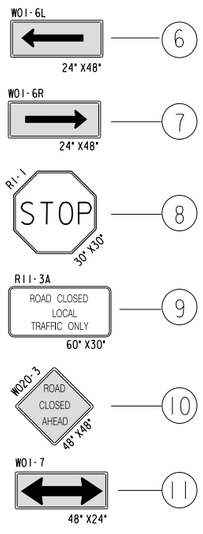
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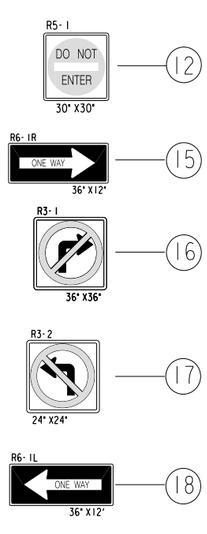
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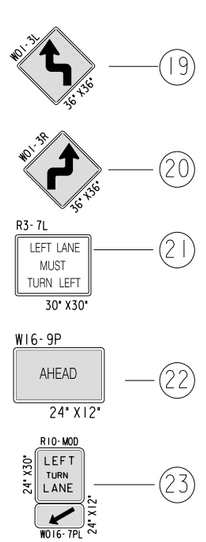
STAGE II

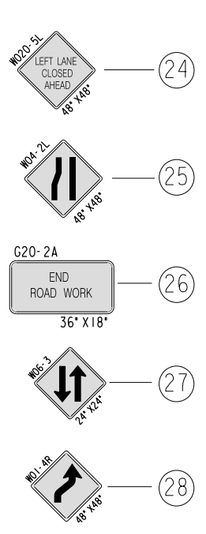


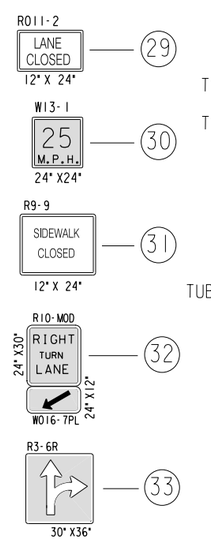














DRUMS W/LIGHTS 30' SPACING — 13

TYPE III BARRICADES — 14

TYPE III BARRICADES W/ SIGN — 14 + X

SIGNS BANDED TO UTILITY POLE — 13 + X

WORK AREA

DIRECTION OF TRAFFIC

TUBULAR MARKERS 25' SPACING

(A) TPM, REFLECTIVE PAINT, 4" WHITE

(B) TPM, REFLECTIVE PAINT, 24" WHITE

(C) TPM, REFLECTIVE PAINT, 4" DOUBLE YELLOW

(D) TPM, ARROWS REMOVABLE TAPE

(E) TPM, WORDS REMOVABLE TAPE

(F) TPM, REMOVABLE TAPE, 4" WHITE

(G) TPM, REMOVABLE TAPE, 4" DOUBLE YELLOW

(H) TPM, REMOVABLE TAPE, 24" WHITE

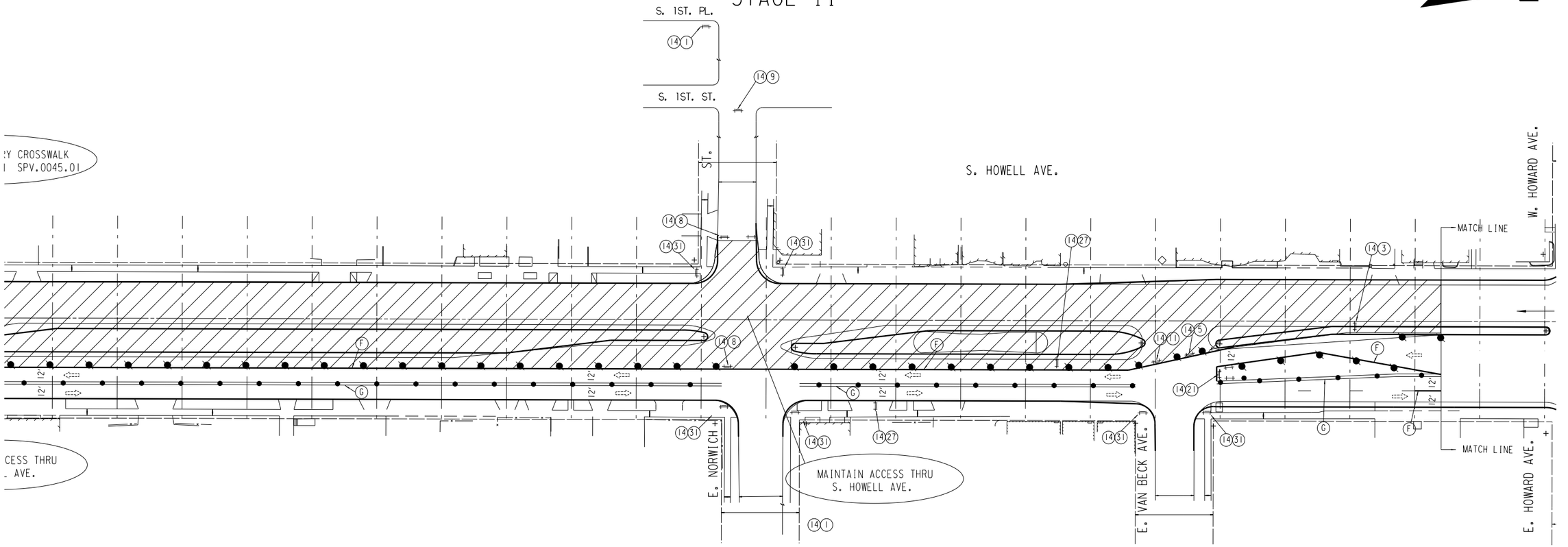
NOTE: ALL SIGNING SHALL BE THE CONTRACTORS RESPONSIBILITY. ALL SIGNS SHALL BE BANDED TO EXISTING UTILITY POLES UNLESS OTHERWISE NOTED.
CONTRACTOR RESPONSIBLE FOR COVERING ALL CONFLICTING PAVEMENT MARKINGS.

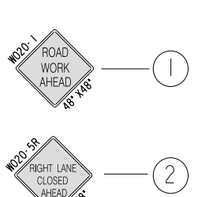
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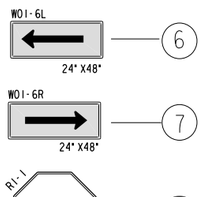
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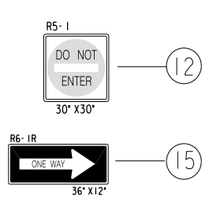
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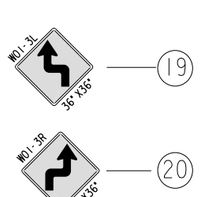
STAGE II

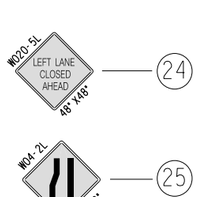


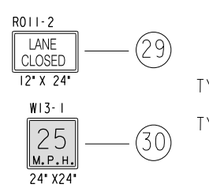














DRUMS W/LIGHTS 30' SPACING — 13

TYPE III BARRICADES — 14

TYPE III BARRICADES W/ SIGN — 14 + X

SIGNS BANDED TO UTILITY POLE — 13 + X

WORK AREA

DIRECTION OF TRAFFIC

TUBULAR MARKERS 25' SPACING

- (A) TPM, REFLECTIVE PAINT, 4" WHITE
- (B) TPM, REFLECTIVE PAINT, 24" WHITE
- (C) TPM, REFLECTIVE PAINT, 4" DOUBLE YELLOW
- (D) TPM, ARROWS REMOVABLE TAPE
- (E) TPM, WORDS REMOVABLE TAPE
- (F) TPM, REMOVABLE TAPE, 4" WHITE
- (G) TPM, REMOVABLE TAPE, 4" DOUBLE YELLOW
- (H) TPM, REMOVABLE TAPE, 24" 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.

19 OF 22

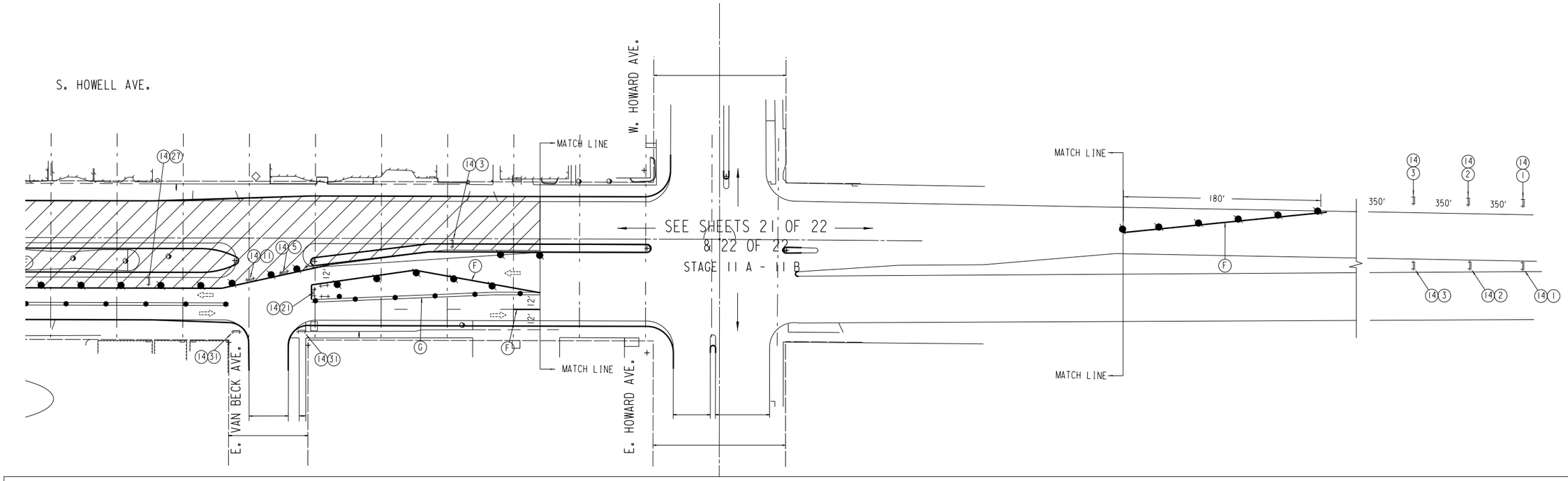
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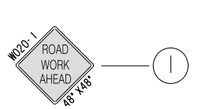
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REVISED: 10-30-2014

STAGE II

N

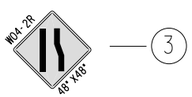




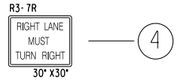
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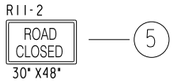
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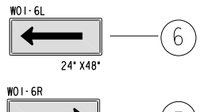
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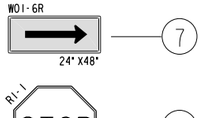
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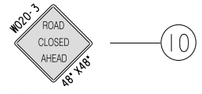
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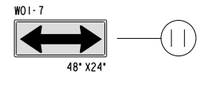
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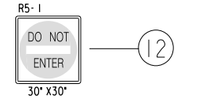
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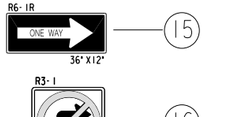
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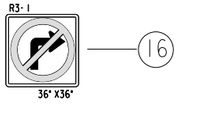
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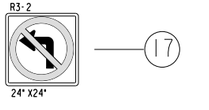
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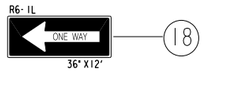
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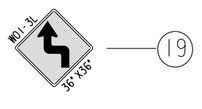
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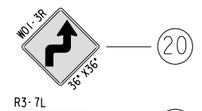
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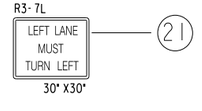
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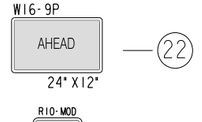
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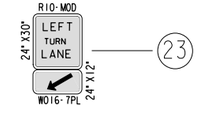
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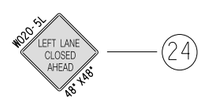
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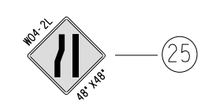
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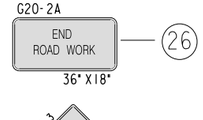
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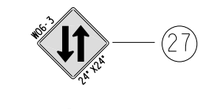
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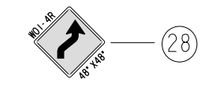
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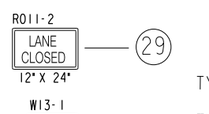
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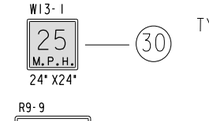
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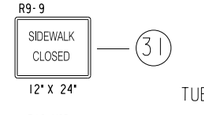
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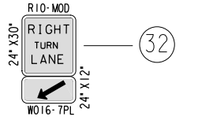
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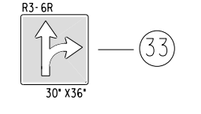
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31



32



33

DRUMS W/LIGHTS 30' SPACING — 13

TYPE III BARRICADES — 14

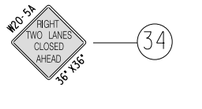
TYPE III BARRICADES W/ SIGN — 14 + X

SIGNS BANDED TO UTILITY POLE — 13 + X

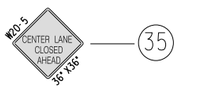
WORK AREA

DIRECTION OF TRAFFIC

TUBULAR MARKERS 25' SPACING



34



35

(A) TPM, REFLECTIVE PAINT, 4" WHITE

(B) TPM, REFLECTIVE PAINT, 24" WHITE

(C) TPM, REFLECTIVE PAINT, 4" DOUBLE YELLOW

(D) TPM, ARROWS REMOVABLE TAPE

(E) TPM, WORDS REMOVABLE TAPE

(F) TPM, REMOVABLE TAPE, 4" WHITE

(G) TPM, REMOVABLE TAPE, 4" DOUBLE YELLOW

(H) TPM, REMOVABLE TAPE, 24" WHITE

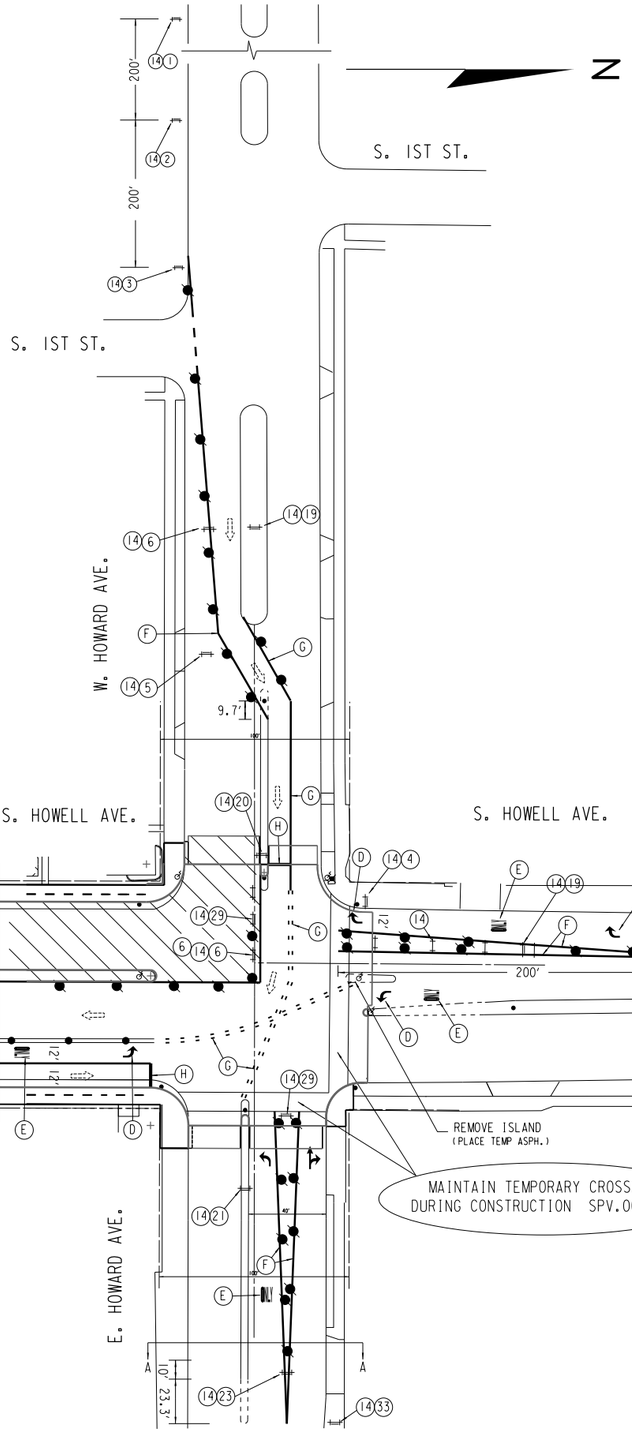
NOTE: ALL SIGNING SHALL BE THE CONTRACTORS RESPONSIBILITY. ALL SIGNS SHALL BE BANDED TO EXISTING UTILITY POLES UNLESS OTHERWISE NOTED. CONTRACTOR RESPONSIBLE FOR COVERING ALL CONFLICTING PAVEMENT MARKINGS.

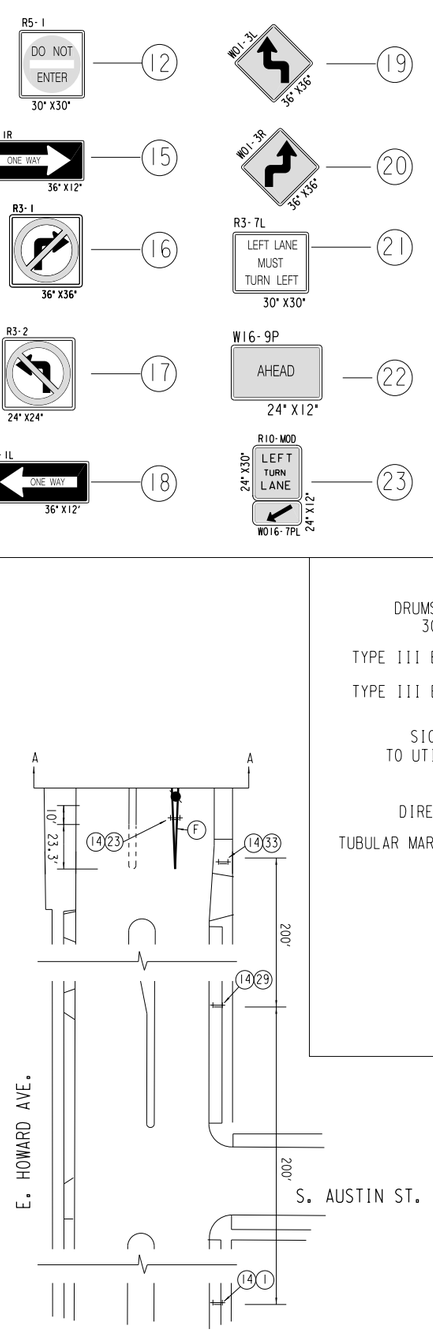
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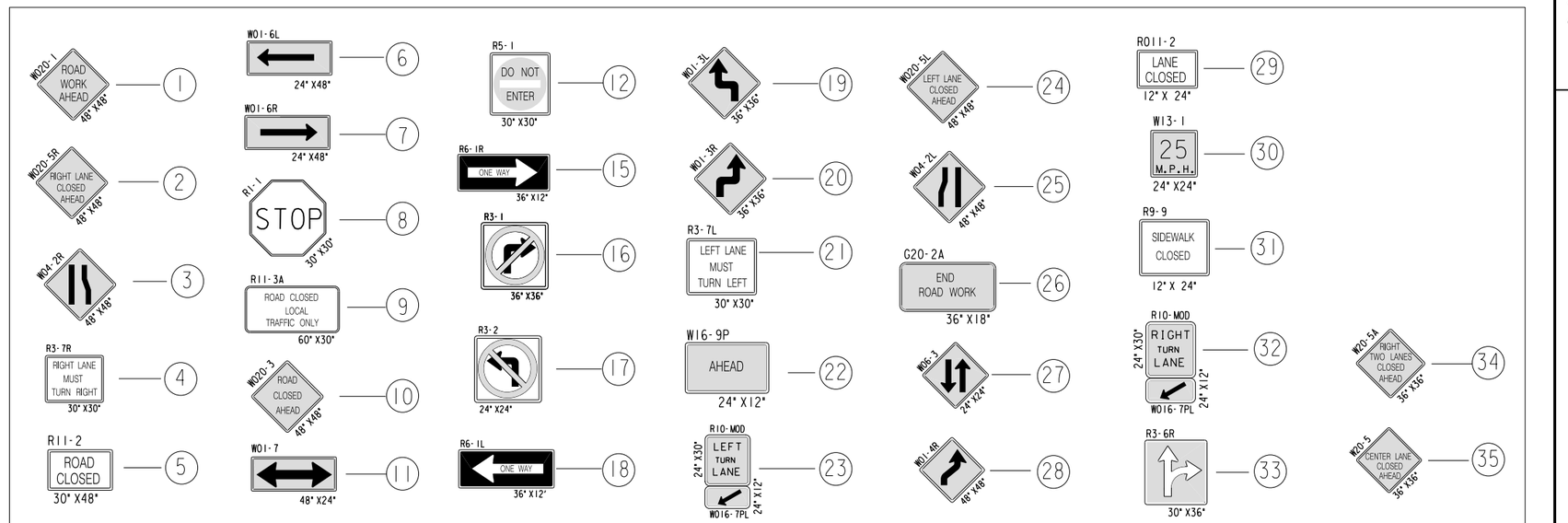
STATE PROJECT NUMBER 2060-11-70	HWY: S.T.H 38	COUNTY: MILWAUKEE	TRAFFIC CONTROL	SCALE FEET 0' 80'	SHEET NO: 184	E

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STAGE II A







DRUMS W/LIGHTS 30' SPACING — (13)

TYPE III BARRICADES — (14)

TYPE III BARRICADES W/ SIGN — (14) + (X)

SIGNS BANDED TO UTILITY POLE — (13) + (X)

WORK AREA

DIRECTION OF TRAFFIC

TUBULAR MARKERS 25' SPACING

(A) TPM, REFLECTIVE PAINT, 4" WHITE

(B) TPM, REFLECTIVE PAINT, 24" WHITE

(C) TPM, REFLECTIVE PAINT, 4" DOUBLE YELLOW

(D) TPM, ARROWS REMOVABLE TAPE

(E) TPM, WORDS REMOVABLE TAPE

(F) TPM, REMOVABLE TAPE, 4" WHITE

(G) TPM, REMOVABLE TAPE, 4" DOUBLE YELLOW

(H) TPM, REMOVABLE TAPE, 24" WHITE

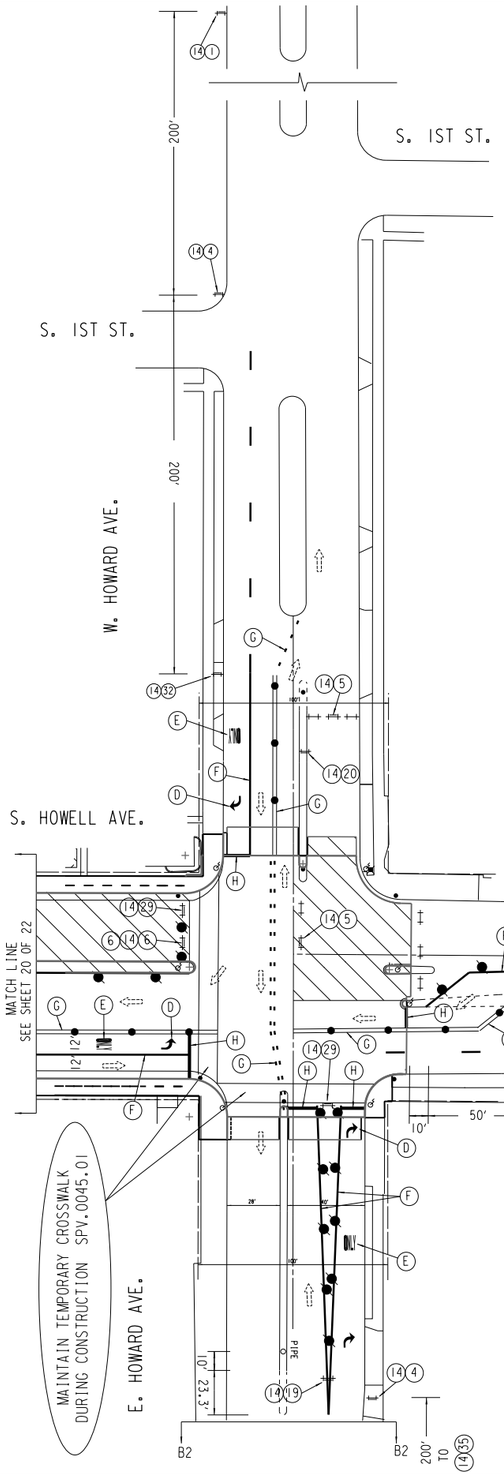
NOTE: ALL SIGNING SHALL BE THE CONTRACTORS RESPONSIBILITY. ALL SIGNS SHALL BE BANDED TO EXISTING UTILITY POLES UNLESS OTHERWISE NOTED.
CONTRACTOR RESPONSIBLE FOR COVERING ALL CONFLICTING PAVEMENT MARKINGS.

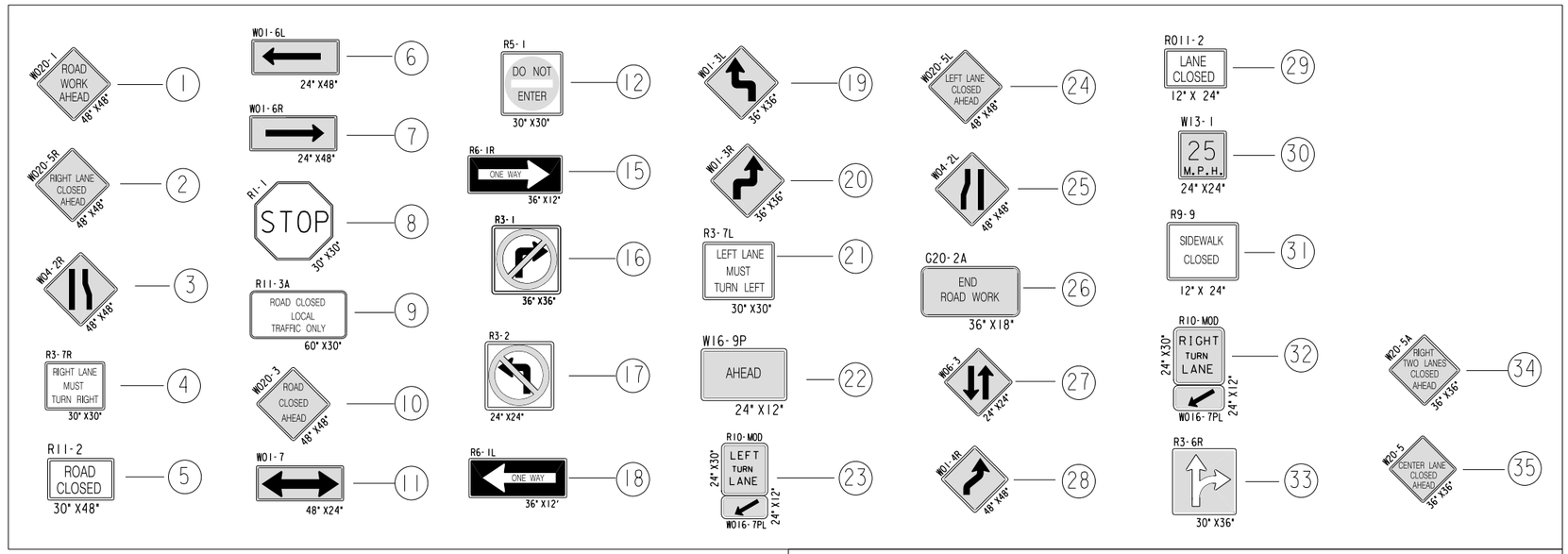
STATE PROJECT NUMBER 2060-11-70	HWY: S.T.H 38	COUNTY: MILWAUKEE	TRAFFIC CONTROL	SCALE FEET 0' 80'	SHEET NO: 185	E

DGNFILENAME: W:\SPR\HOWELL_LAYTON_HOWARD\TRAFFIC.DGN

REVISED: 11-3-2014

STAGE II B





DRUMS W/LIGHTS 30' SPACING — (13)

TYPE III BARRICADES — (14)

TYPE III BARRICADES W/ SIGN — (14) + (X)

SIGNS BANDED TO UTILITY POLE — (13) + (X)

WORK AREA

DIRECTION OF TRAFFIC

TUBULAR MARKERS 25' SPACING

(A) TPM, REFLECTIVE PAINT, 4" WHITE

(B) TPM, REFLECTIVE PAINT, 24" WHITE

(C) TPM, REFLECTIVE PAINT, 4" DOUBLE YELLOW

(D) TPM, ARROWS REMOVABLE TAPE

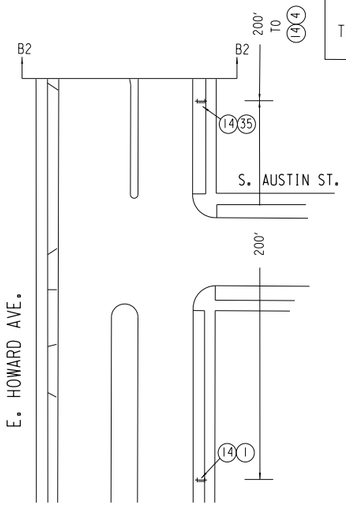
(E) TPM, WORDS REMOVABLE TAPE

(F) TPM, REMOVABLE TAPE, 4" WHITE

(G) TPM, REMOVABLE TAPE, 4" DOUBLE YELLOW

(H) TPM, REMOVABLE TAPE, 24" 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.

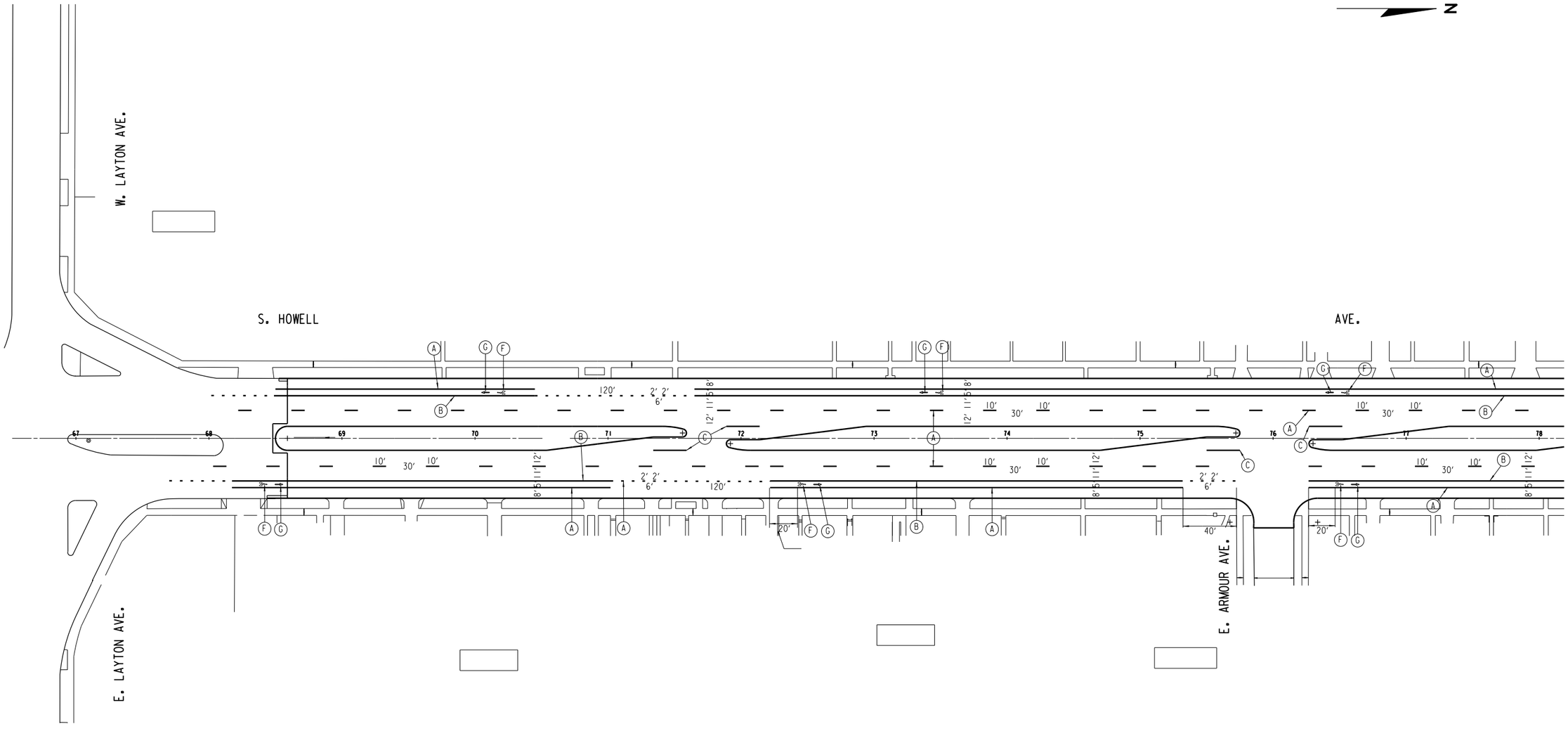


STATE PROJECT NUMBER 2060-11-70	HWY: S.T.H 38	COUNTY: MILWAUKEE	TRAFFIC CONTROL	SCALE FEET 0' 80	SHEET NO: 86	E

DGNFILENAME: W:\SPR\HOWELL_LAYTON_HOWARD\TRAFFIC.DGN

REVISED: 11-3-2014

PAVEMENT MARKING



(A) PAVEMENT MARKING EPOXY, 4-IN. WHITE
(B) PAVEMENT MARKING EPOXY, 6-IN. WHITE
(C) PAVEMENT MARKING EPOXY, 8-IN. WHITE
(D) PAVEMENT MARKING EPOXY, 12-IN. WHITE
(E) PAVEMENT MARKING EPOXY, 24-INCH WHITE
(F) PAVEMENT MARKING SYMBOLS BIKE LANE EPOXY
(G) PAVEMENT MARKING ARROWS BIKE LANE EPOXY
(H) PAVEMENT MARKING ARROW EPOXY (TYPE 2)
(I) PAVEMENT MARKING WORDS EPOXY

SHEET 1 OF 6

STATE PROJECT NUMBER 2060-11-70	HWY: S.T.H. 38	COUNTY: MILWAUKEE	PAVEMENT MARKING	SCALE FEET 0' 80'	SHEET NO: 87

FILE NAME: W:\SPR\HOWELL_LAYTON_HOWARD\PAVEMARK.DGN

2

PAVEMENT MARKING

2

N

W. VAN NORMAN AVE.

S. HOWELL AVE.

W. MARTIN LN.

E. VAN NORMAN AVE.

- (A) PAVEMENT MARKING EPOXY, 4-IN. WHITE
- (B) PAVEMENT MARKING EPOXY, 6-IN. WHITE
- (C) PAVEMENT MARKING EPOXY, 8-IN. WHITE
- (D) PAVEMENT MARKING EPOXY, 12-IN. WHITE
- (E) PAVEMENT MARKING EPOXY, 24-INCH WHITE
- (F) PAVEMENT MARKING SYMBOLS BIKE LANE EPOXY
- (G) PAVEMENT MARKING ARROWS BIKE LANE EPOXY
- (H) PAVEMENT MARKING ARROW EPOXY (TYPE 2)
- (I) PAVEMENT MARKING WORDS EPOXY

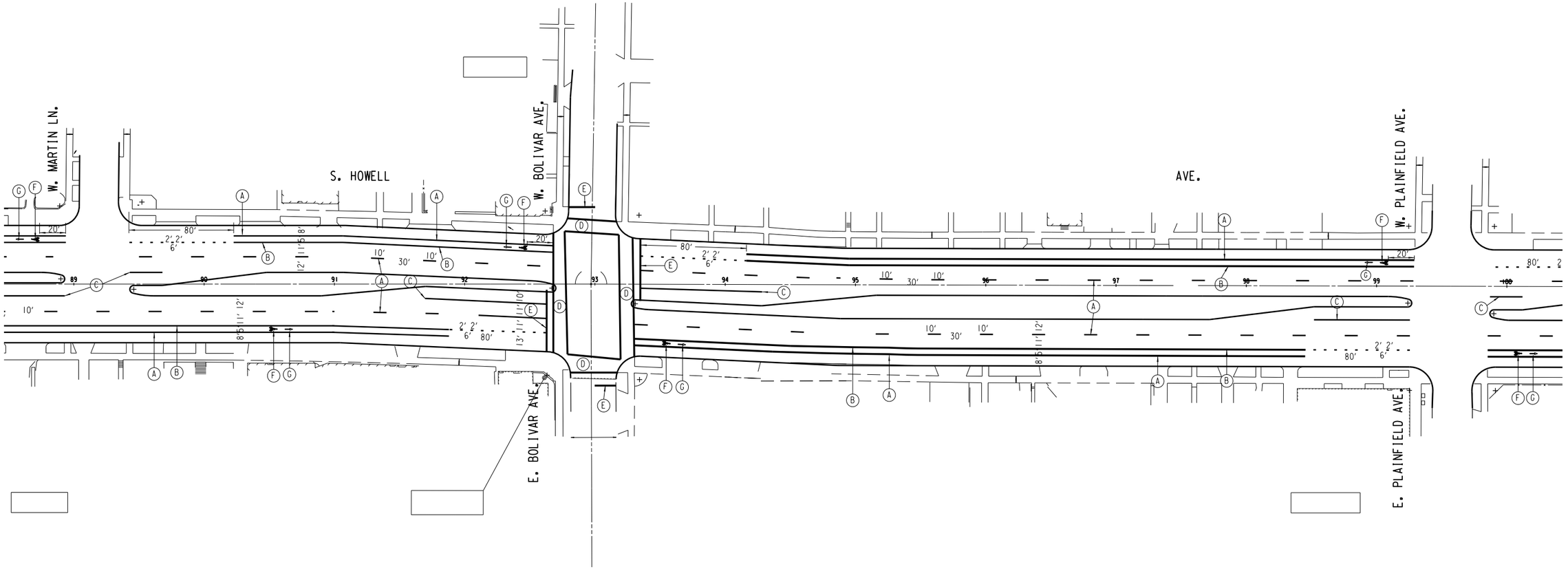
SHEET 2 OF 6

STATE PROJECT NUMBER 2060-11-70	HWY: S.T.H. 38	COUNTY: MILWAUKEE	PAVEMENT MARKING	SCALE FEET 0' 80'	SHEET NO: 88	E

FILE NAME: W:\SPR\HOWELL_LAYTON_HOWARD\PAVEMARK.DGN

PAVEMENT MARKING

2



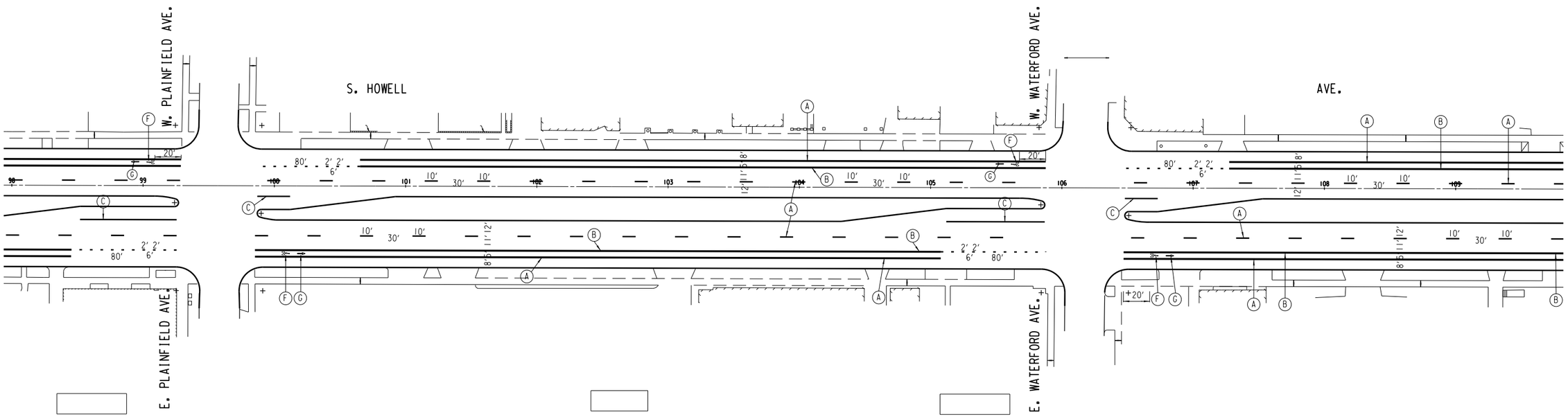
(A) PAVEMENT MARKING EPOXY, 4-IN. WHITE
(B) PAVEMENT MARKING EPOXY, 6-IN. WHITE
(C) PAVEMENT MARKING EPOXY, 8-IN. WHITE
(D) PAVEMENT MARKING EPOXY, 12-IN. WHITE
(E) PAVEMENT MARKING EPOXY, 24-INCH WHITE
(F) PAVEMENT MARKING SYMBOLS BIKE LANE EPOXY
(G) PAVEMENT MARKING ARROWS BIKE LANE EPOXY
(H) PAVEMENT MARKING ARROW EPOXY (TYPE 2)
(I) PAVEMENT MARKING WORDS EPOXY

SHEET 3 OF 6

STATE PROJECT NUMBER 2060-11-70	HWY: S.T.H. 38	COUNTY: MILWAUKEE	PAVEMENT MARKING	SCALE FEET 0' 80'	SHEET NO: 89	E

FILE NAME: W:\SPR\HOWELL_LAYTON_HOWARD\PAVEMARK.DGN

PAVEMENT MARKING



(A) PAVEMENT MARKING EPOXY, 4-IN. WHITE
(B) PAVEMENT MARKING EPOXY, 6-IN. WHITE
(C) PAVEMENT MARKING EPOXY, 8-IN. WHITE
(D) PAVEMENT MARKING EPOXY, 12-IN. WHITE
(E) PAVEMENT MARKING EPOXY, 24-INCH WHITE
(F) PAVEMENT MARKING SYMBOLS BIKE LANE EPOXY
(G) PAVEMENT MARKING ARROWS BIKE LANE EPOXY
(H) PAVEMENT MARKING ARROW EPOXY (TYPE 2)
(I) PAVEMENT MARKING WORDS EPOXY

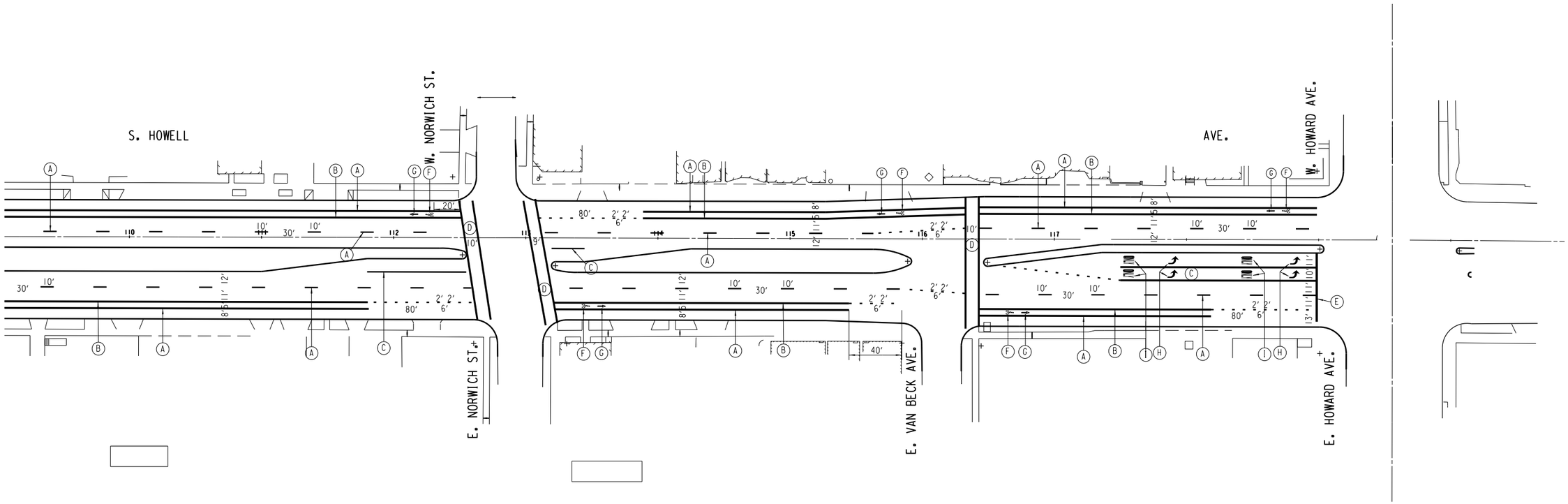
SHEET 4 OF 6

STATE PROJECT NUMBER 2060-11-70	HWY: S.T.H. 38	COUNTY: MILWAUKEE	PAVEMENT MARKING	SCALE FEET 0' 80'	SHEET NO: 90	E

FILE NAME: W:\SPR\HOWELL_LAYTON_HOWARD\PAVEMARK.DGN

PAVEMENT MARKING

2



(A) PAVEMENT MARKING EPOXY, 4-IN. WHITE
(B) PAVEMENT MARKING EPOXY, 6-IN. WHITE
(C) PAVEMENT MARKING EPOXY, 8-IN. WHITE
(D) PAVEMENT MARKING EPOXY, 12-IN. WHITE
(E) PAVEMENT MARKING EPOXY, 24-INCH WHITE
(F) PAVEMENT MARKING SYMBOLS BIKE LANE EPOXY
(G) PAVEMENT MARKING ARROWS BIKE LANE EPOXY
(H) PAVEMENT MARKING ARROW EPOXY (TYPE 2)
(I) PAVEMENT MARKING WORDS EPOXY

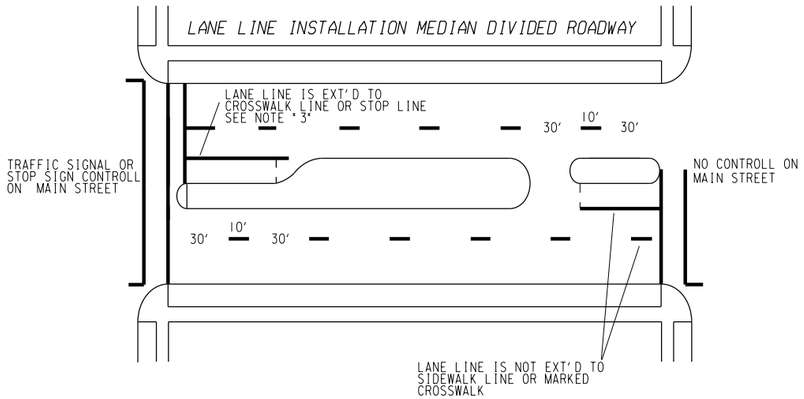
SHEET 5 OF 6

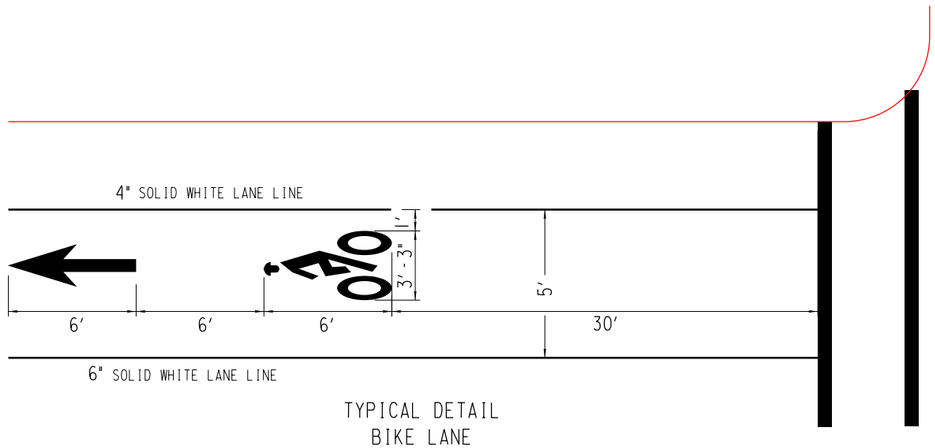
STATE PROJECT NUMBER 2060-11-70	HWY: S.T.H. 38	COUNTY: MILWAUKEE	PAVEMENT MARKING	SCALE FEET 0' 80'	SHEET NO: 91	E

FILE NAME: W:\SPR\HOWELL_LAYTON_HOWARD\PAVEMARK.DGN

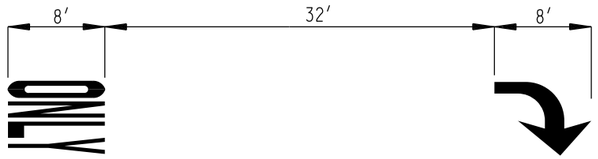
2

LANE LINE INSTALLATION MEDIAN DIVIDED ROADWAY

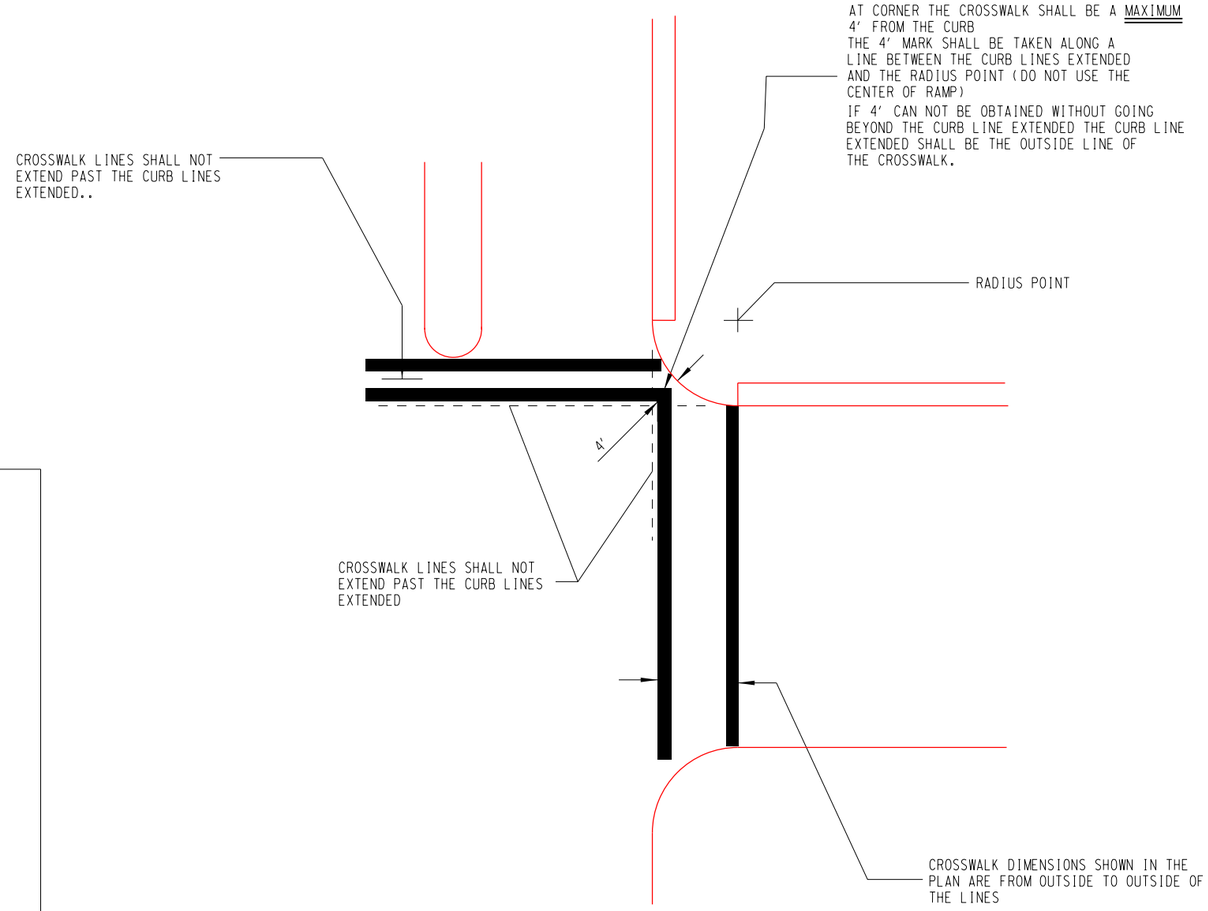




TYPICAL DETAIL
BIKE LANE



TYPICAL DETAIL
ARROW AND ONLY



4' TYPICAL
CROSSWALK INSTALLATION
(PLASTIC, EPOXY, PAINT)

PAVEMENT MARKING NOTES

1. DASHED YELLOW CENTER LINES AND WHITE LANE LINES ARE 10 FEET LONG WITH A 30 FOOT GAP.
2. ALL DASHED CENTER LINES AND LANE LINES ARE 4 INCHES WIDE. ALL DOUBLE YELLOW CENTER LINES HAVE A 4 INCH SPACE BETWEEN TWO 4 INCH LINES.
3. AT CONTROLLED INTERSECTION IF LANE LINE IS LESS THAN 10 FEET, THE PRECEEDING LINE IS EXTENDED TO THE STOP LINE OR CROSSWALK LINE. THIS BALANCE LINE SHOULD NOT EXCEED 49 FEET. THIS POLICY APPLIES TO LANE LINES ONLY AT TRAFFIC SIGNALIZED OR STOP SIGN CONTROLLED INTERSECTIONS AND CENTER LINES AT ALL LOCATIONS.
4. ALL DIMENSIONS ARE FROM THE FACE OF THE CURB TO THE CENTER OF THE MARKING UNLESS OTHERWISE NOTED.
5. TEMPORARY PAVEMENT MARKINGS MUST BE PLACED ON THE PAVEMENT IF PERMANENT MARKINGS ARE NOT INSTALLED AFTER THE COMPLETION OF PAVING.

STATE PROJECT NUMBER 2060-11-70	HWY: S.T.H. 38	COUNTY: MILWAUKEE	PAVEMENT MARKINGS	SCALE FEET	SHEET NO: 92	E

FILE NAME: W:\SPR\HOWELL_LAYTON_HOWARD\PAVEMARK.DGN

2

B.W. E BOLT HYD NW CORNER
W. LAYTON AV. & S. HOWELL AV.
STA. 67+05 - 60'LT.
ELEV. 89.66

W. LAYTON AVE.

SOUTH HOWELL AVENUE

N

#108 E. LAYTON AVE.

#4641 S. HOWELL AVE.

#4619 S. HOWELL AVE.

#110 E. LAYTON AVE.

STA. 67+30.0, 08.3'RT.
EXISTING TES MANHOLE #600

11'-4-4" PVC CONDUIT
CEMENT ENCASED
CAP DUCT ENDS

PROPOSED 4' DIAMETER
MANHOLE #601
STA. 68+72.0, 26.5'LT.

531'-4-4" PVC CONDUIT
CEMENT ENCASED

ABANDON MANHOLE
STA. 70+82.6, 06.9'LT.
EXISTING TES MANHOLE #602

HUB STA. 68+59.5, 14.5'LT.
90°, 12.5' RADIUS BEND

3"FIBER
DUCT ON
CONC.

45'-4-4" PVC CONDUIT
CEMENT ENCASED

SAW CUT EXISTING CONDUIT
STA. 68+54.5, 8.5'RT.
SEE NOTE #5

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) ATTACH PROPOSED 4" PVC TO EXISTING DUCTS (3" FIBER OR 3" PVC) USING APPROPRIATE ADAPTOR. REMOVE ABANDONED CONDUIT AS NEEDED FOR PROPOSED INSTALLATION.

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 13

STATE PROJECT NUMBER 2060-11-70	HWY: S.T.H. 38	COUNTY: MILWAUKEE	CITY UG CONDUIT (TES)	SCALE FEET	SHEET NO: 93	E

SOUTH HOWELL AVENUE

N

#4603-4601 S. HOWELL AVE. | #4583 S. HOWELL AVE. | #4577 S. HOWELL AVE. | #4571 S. HOWELL AVE. | #4565 S. HOWELL AVE. | #4559 S. HOWELL AVE. | #4555 S. HOWELL AVE. | #4547 S. HOWELL AVE. | #4531 S. HOWELL AVE. | #4529-29A S. HOWELL AVE. | #4525 S. HOWELL AVE.

546'-4-4" PVC CONDUIT
CEMENT ENCASED

PROPOSED 4' DIAMETER
MANHOLE #603
STA. 74+07.0, 26.5'LT.

ABANDON MANHOLE
STA. 75+52.0, 06.9'LT.
EXISTING TES MANHOLE #604

LANDSCAPE RETAINING WALL

E. ARMOUR AVE.

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) ATTACH PROPOSED 4" PVC TO EXISTING DUCTS (3" FIBER OR 3" PVC) USING APPROPRIATE ADAPTOR. REMOVE ABANDONED CONDUIT AS NEEDED FOR PROPOSED INSTALLATION.

LEGEND

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

SHEET 2 OF 13

STATE PROJECT NUMBER 2060-11-70	HWY: S.T.H. 38	COUNTY: MILWAUKEE	CITY UG CONDUIT (TES)	SCALE FEET	SHEET NO: 94 E

B.M. NW BOLT HYD NW CORNER
W. VAN NORMAN AV. & S. HOWELL AV.
STA. 79+48 - 69'LT.
ELEV. 108.20

SOUTH HOWELL AVENUE

N

#4503 S. HOWELL AVE.

W. VAN NORMAN AVE.

#4477 #4459 #4453 #4445 #4437

33'-2-4" PVC CONDUIT CEMENT ENCASED CAP DUCT ENDS STA. 79+51.5, 61.0'LT.

PROPOSED 4' DIAMETER MANHOLE #605
STA. 79+57.0, 26.5'LT.

ABANDON MANHOLE
STA. 79+78.2, 06.9'LT.
EXISTING TES MANHOLE #606

PROPOSED 4' DIAMETER MANHOLE #608
STA. 83+75.0, 26.5'LT.

414'-4-4" PVC CONDUIT CEMENT ENCASED

ABANDON MANHOLE
STA. 83+71.0, 06.6'LT.
EXISTING TES MANHOLE #607

23'-2-4" PVC CONDUIT CEMENT ENCASED

EXISTING POLICE CALL BOX
STA. 83+71.7, 51.5'LT.

FIBER OPTIC VAULT

LANDSCAPE RETAINING WALL

NORMAN AVE.

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) ATTACH PROPOSED 4" PVC TO EXISTING DUCTS (3" FIBER OR 3" PVC) USING APPROPRIATE ADAPTOR. REMOVE ABANDONED CONDUIT AS NEEDED FOR PROPOSED INSTALLATION.

LEGEND

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

SHEET 3 OF 13

STATE PROJECT NUMBER 2060-11-70	HWY: S.T.H. 38	COUNTY: MILWAUKEE	CITY UG CONDUIT (TES)	SCALE FEET	SHEET NO: 95	E

SOUTH HOWELL AVENUE

N

#4419 | #4389 | #4379 S. HOWELL AVE. | #4369 S. HOWELL AVE. | #4359 S. HOWELL AVE. | #4353 S. HOWELL AVE. | #4337 S. HOWELL AVE.

411'-4-4" PVC CONDUIT
CEMENT ENCASED

PROPOSED 4' DIAMETER
MANHOLE #609
STA. 87+90.0, 26.5'LT.

ADJUST TES MANHOLE
STA. 89+29.5, 09.8'LT.
EXISTING TES MANHOLE #611

ABANDON MANHOLE
STA. 88+60.6, 06.7'LT.
EXISTING TES MANHOLE #610

CAUTION! EXISTING
ELECTRICAL CONDUIT
TO REMAIN IN SERVICE

CAUTION! EXISTING
ELECTRICAL CONDUIT
TO REMAIN IN SERVICE

W. MARTIN LN.

STA. 87+90.0, 4.5'LT.

20'-2-4" PVC CONDUIT
CEMENT ENCASED

CAUTION! EXISTING
ELECTRICAL CONDUIT
TO REMAIN IN SERVICE

#4400-00A S. HOWELL AVE.

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) ATTACH PROPOSED 4" PVC TO EXISTING DUCTS (3" FIBER OR 3" PVC) USING APPROPRIATE ADAPTOR. REMOVE ABANDONED CONDUIT AS NEEDED FOR PROPOSED INSTALLATION.

LEGEND

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

SHEET 4 OF 13

STATE PROJECT NUMBER 2060-11-70	HWY: S.T.H. 38	COUNTY: MILWAUKEE	CITY UG CONDUIT (TES)	SCALE FEET	SHEET NO: 96 E

SAW EXISTING CONDUIT

3"FIBER DUCTS

HUB

HUB

HUB

RAMP

DETAIL

SOUTH HOWELL AVENUE

B.M. NW BOLT HYD SW CORNER
W. BOLIVAR AV. & S. HOWELL AV.
STA. 92+77 - 59'LT.
ELEV. 139.56

N

#4301-03 S. HOWELL AVE.
125'-4-4" PVC CONDUITS
CEMENT ENCASED
TO PAVING LIMITS
CAP DUCT ENDS

SAW CUT EXISTING CONDUITS
STA. 93+13.4, 48.5'LT.

HUB 93+07.7, 23.8'LT.
22.5°, 12.5' RADIUS BEND

ABANDON MANHOLE
STA. 93+18.9, 03.9'LT.
EXISTING TES MANHOLE #612

3"FIBER DUCTS

W. BOLIVAR AVE.

HUB 93+22.3, 55.2'LT.
22.5°, 12.5' RADIUS BEND

29'-3-4" PVC CONDUIT
CEMENT ENCASED
SEE NOTE #5

27'-2-4 PVC CONDUIT
CEMENT ENCASED

EXISTING TRAFFIC CONTROL CABINET
STA. 93+30.7, 40.1'LT.

HUB 93+25.2,
90°, 5' RADIUS BEND

PROPOSED 5' DIAMETER MANHOLE #613
STA. 93+20.2, 17.0'LT.

ADJUST TES MANHOLE
STA. 93+38.7, 08.9'LT.
EXISTING TES MANHOLE #614

℄ PT 94+96.0, 9.5'LT.

#4259A S. HOWELL AVE.

#4253A S. HOWELL AVE.

#4247A S. HOWELL AVE.

#4243A S. HOWE

554'-4-4" PVC CONDUIT
CEMENT ENCASED

℄ PT 91+08.2,
26.5'LT.

CAUTION! EXISTING
ELECTRICAL CONDUIT
TO REMAIN IN SERVICE

HUB 93+07.9, 39.0'RT.
22.5°, 12.5' RADIUS BEND

82'-3-4" PVC CONDUITS
CEMENT ENCASED

3"PVC DUCTS

SAW CUT EXISTING CONDUIT
STA. 93+11.7, 72.0'RT.
SEE NOTE #5

93'-2-4" PVC CONDUITS
CEMENT ENCASED

HUB 93+24.6, 69.0'RT.
22.5°, 12.5' RADIUS BEND

PROPOSED POLICE CALL BOX
STA. 93+24.5, 78.0'RT.
(BY OTHERS)

ABANDON MANHOLE
STA. 94+59.3, 22.7'RT.
EXISTING TES MANHOLE #615

26.5

9.5

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 GROUND AND TOP OF CONDUIT.
5) ATTACH PROPOSED 4" PVC TO EXISTING DUCTS (3" FIBER OR 3" PVC) USING APPROPRIATE ADAPTOR. REMOVE ABANDONED CONDUIT AS NEEDED FOR PROPOSED INSTALLATION.

LEGEND

— CUC — PROPOSED 4-INCH CEMENT ENCASED NONMETALLIC CONDUIT, NUMBER OF RUNS AS NOTED.

PROPOSED TES MANHOLE

— CUC — EXISTING CONDUIT

— — — — ABANDONED CONDUIT

2

SOUTH HOWELL AVENUE

N

#4243A S. HOWELL AVE. | #4235A S. HOWELL AVE. | #4229 S. HOWELL AVE. | #4221 S. HOWELL AVE. | #4213 S. HOWELL AVE. | #4209-11 S. HOWELL AVE. | #4203 S. HOWELL AVE. | #4177 S. HOWELL AVE. | #4161 S.

624'-6-4" PVC CONDUIT
CEMENT ENCASED

PROPOSED 4' DIAMETER
MANHOLE #617
STA. 99+45.0, 9.5'LT.

W. PLAINFIELD AVE.

ABANDON MANHOLE
STA. 99+18.6, 23.9'RT.
EXISTING TES MANHOLE #616

E. PLAINFIELD AVE.

N.01° 10' 25"W.

SEC. LINE

96 | 97 | 98 | 99 | 100 | 101 | 102

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.
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LEGEND

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

SHEET 6 OF 13

STATE PROJECT NUMBER 2060-11-70	HWY: S.T.H. 38	COUNTY: MILWAUKEE	CITY UG CONDUIT (TES)	SCALE FEET	SHEET NO: 98	E

SOUTH HOWELL AVENUE

N

#4161 S. HOWELL AVE. | #4125 S. HOWELL AVE. | #4111-13 S. HOWELL AVE. | #4107 S. HOWELL AVE. | #4101-01A S. HOWELL AVE. | #4015 S. HOWELL AVE.

643'-6-4" PVC CONDUIT CEMENT ENCASED

PROPOSED 4' DIAMETER MANHOLE #619
STA. 105+92.0, 9.5'LT.

W. WATERFORD AVE.

36'-2-4" PVC CONDUIT CEMENT ENCASED
STA. 105+96.5, 47.5'RT.
CAP DUCT ENDS

ABANDON MANHOLE
STA. 105+78.2, 23.6'RT.
EXISTING TES MANHOLE #618

85'-2-4" PVC CONDUIT CEMENT ENCASED
STA. 105+96.0, 77.0'RT.
CAP DUCT ENDS

HUB STA. 92.0, 56.5'RT.
11.25 ,4.0' RADIUS BEND

SEE NOTE #5

NOTES:

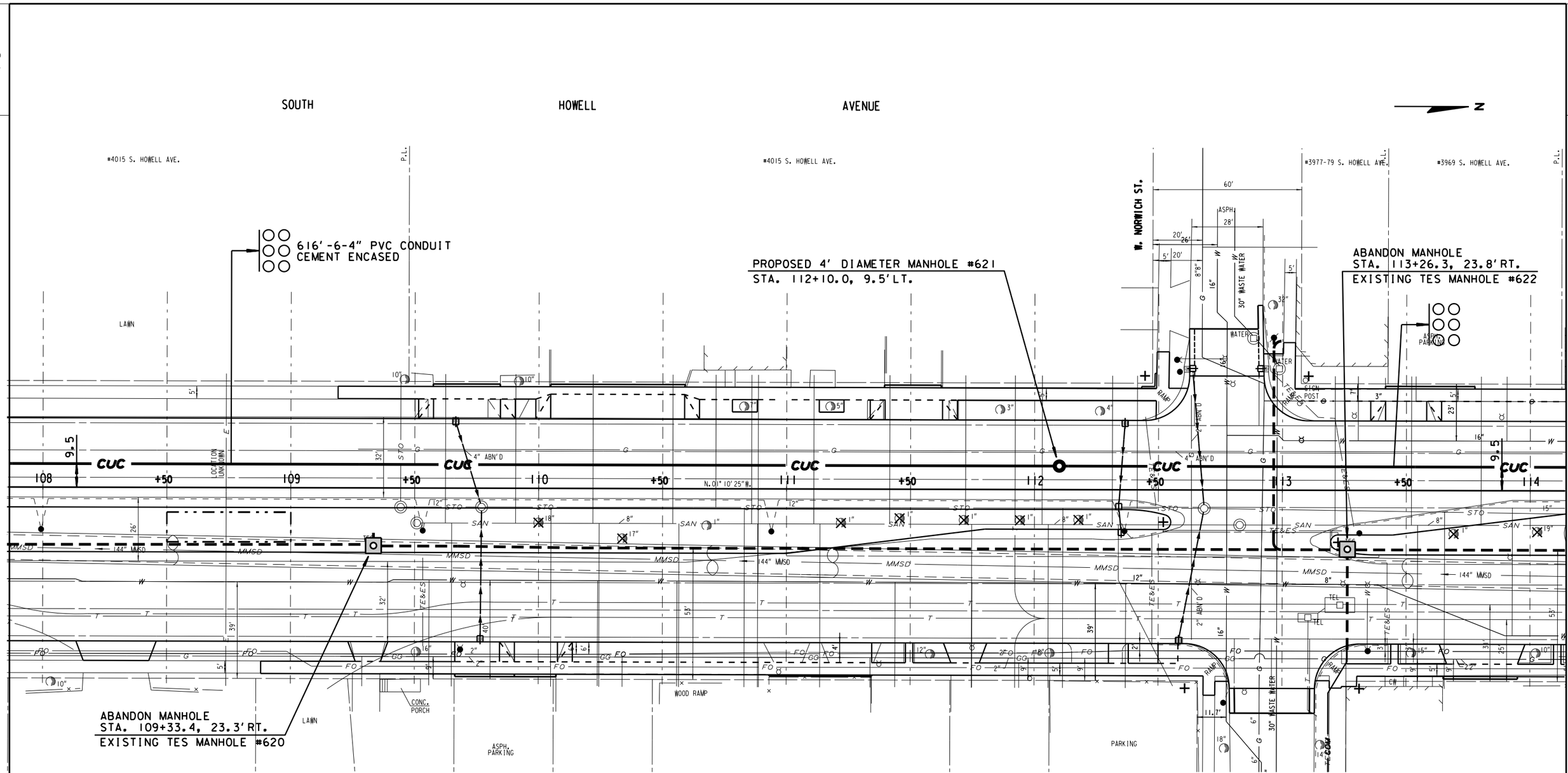
1) THE LOCATION OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS IS APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA WHICH ARE NOT SHOWN.
2) THE LOCATION OF THE EXISTING AND PROPOSED UTILITY INSTALLATIONS SHALL BE FIELD VERIFIED BY THE CONTRACTOR.
3) DIMENSIONS 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) ATTACH PROPOSED 4" PVC TO EXISTING DUCTS (3" FIBER OR 3" PVC) USING APPROPRIATE ADAPTOR. REMOVE ABANDONED CONDUIT AS NEEDED FOR PROPOSED INSTALLATION.

LEGEND

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

SHEET 7 OF 13

STATE PROJECT NUMBER 2060-11-70	HWY: S.T.H. 38	COUNTY: MILWAUKEE	CITY UG CONDUIT (TES)	SCALE FEET	SHEET NO: 99	E



NOTES:

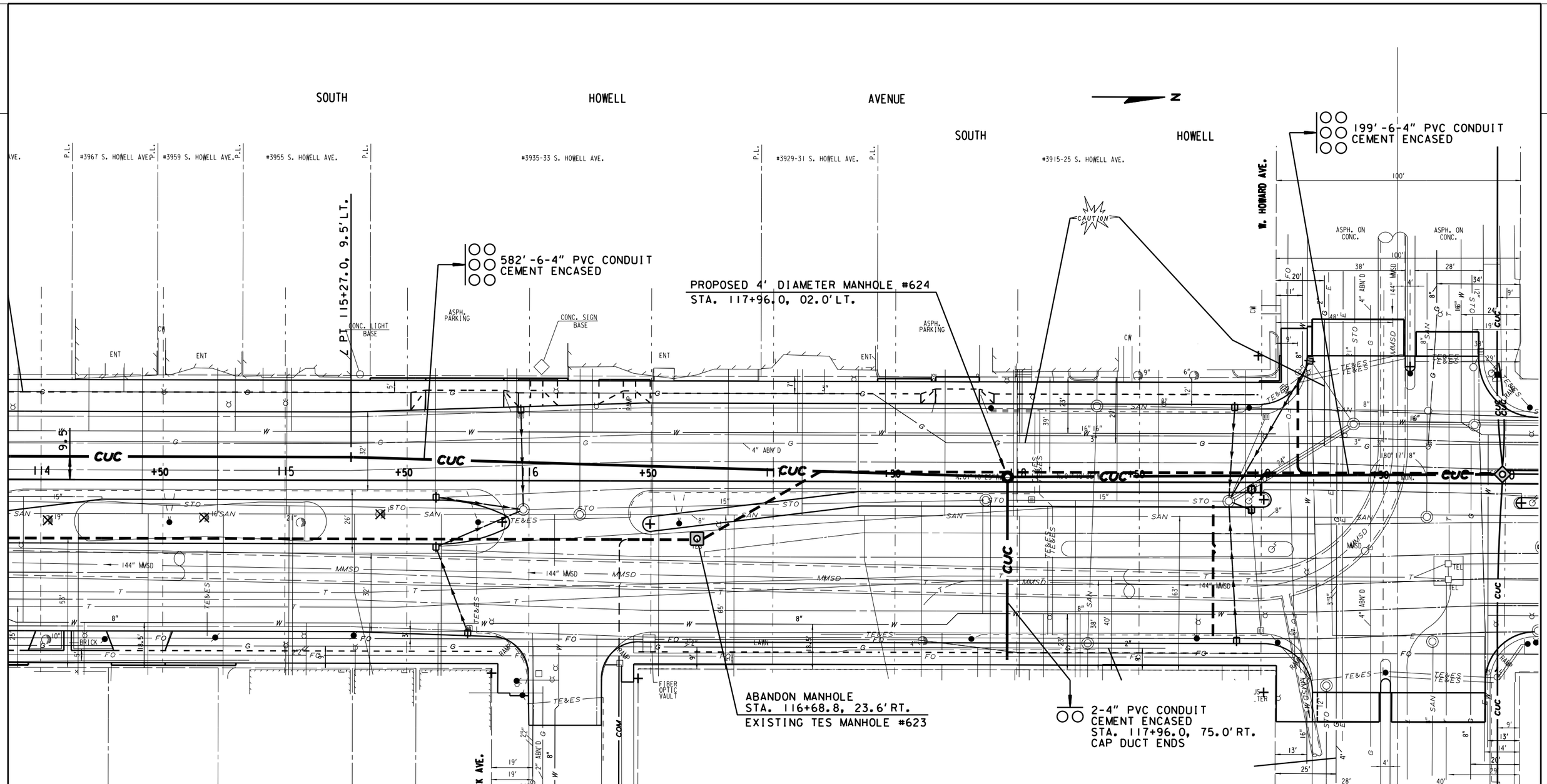
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2) THE LOCATION OF THE EXISTING AND PROPOSED UTILITY INSTALLATIONS SHALL BE FIELD VERIFIED BY THE CONTRACTOR.
3) DIMENSIONS SHOWN ARE TO CENTER OF MANHOLE, DUCT PACKAGE OR UTILITY.
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LEGEND

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

SHEET 8 OF 13

STATE PROJECT NUMBER 2060-11-70	HWY: S.T.H. 38	COUNTY: MILWAUKEE	CITY UG CONDUIT (TES)	SCALE FEET	SHEET NO: 100	E



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) ATTACH PROPOSED 4" PVC TO EXISTING DUCTS (3" FIBER OR 3" PVC) USING APPROPRIATE ADAPTOR. REMOVE ABANDONED CONDUIT AS NEEDED FOR PROPOSED INSTALLATION.
6) REMOVE ABANDONED CONDUIT FROM MANHOLE WALL AND TO THE SOUTH AS NEEDED. INSTALL THE PROPOSED CONDUIT INTO THE MANHOLE AT THE SAME LOCATION OF THE ABANDONED CONDUIT.

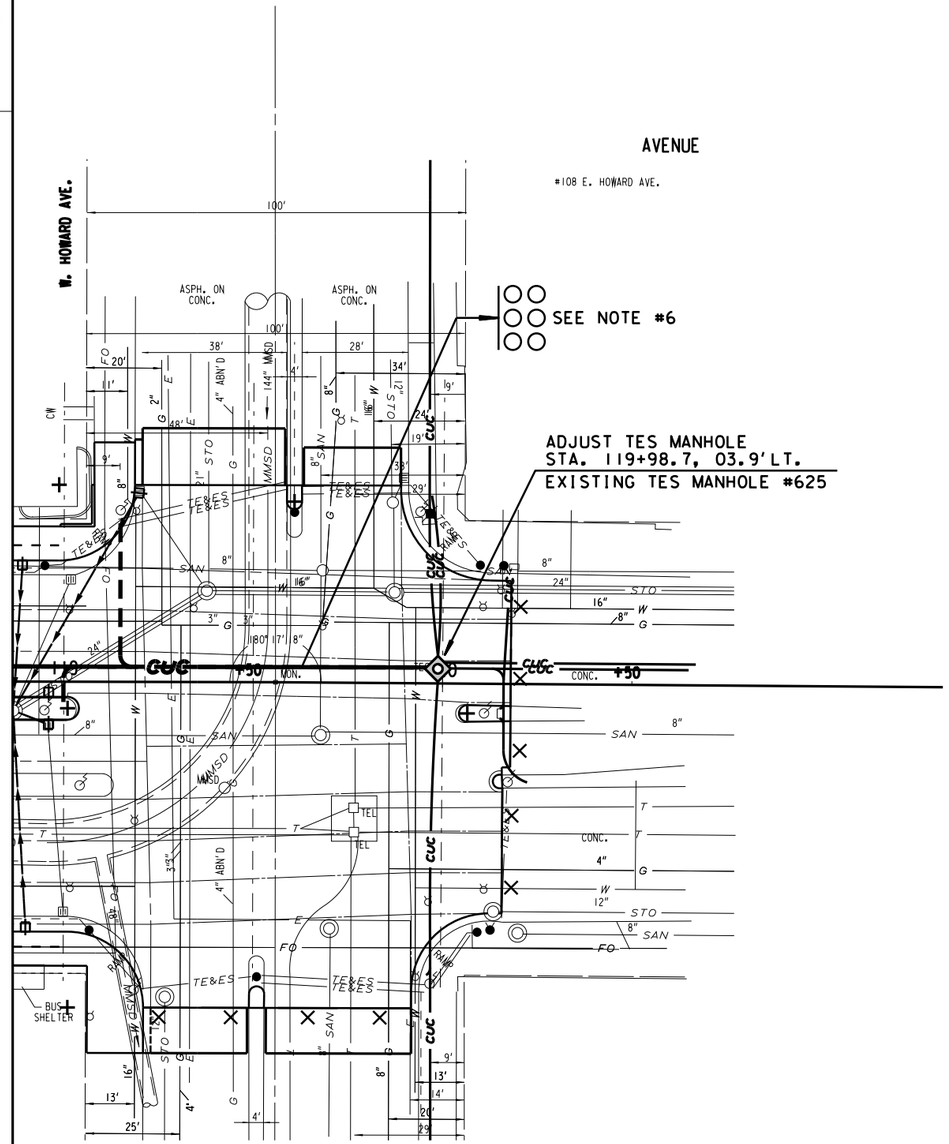
LEGEND

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

SHEET 9 OF 13

STATE PROJECT NUMBER 2060-11-70	HWY: S.T.H. 38	COUNTY: MILWAUKEE	CITY UG CONDUIT (TES)	SCALE FEET	SHEET NO: 101 E

2



NOTES:

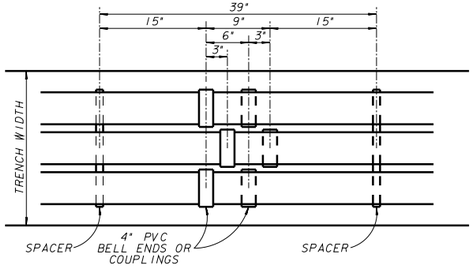
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2) THE LOCATION OF THE EXISTING AND PROPOSED UTILITY INSTALLATIONS SHALL BE FIELD VERIFIED BY THE CONTRACTOR.
3) DIMENSIONS SHOWN ARE TO CENTER OF MANHOLE, DUCT PACKAGE OR UTILITY.
4) MAINTAIN A STANDARD DEPTH OF 39-INCHES BETWEEN FINISHED GRADE AND TOP OF CONDUIT.
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6) REMOVE ABANDONED CONDUIT FROM MANHOLE WALL AND TO THE SOUTH AS NEEDED. INSTALL THE PROPOSED CONDUIT INTO THE MANHOLE AT THE SAME LOCATION OF THE ABANDONED CONDUIT.

LEGEND

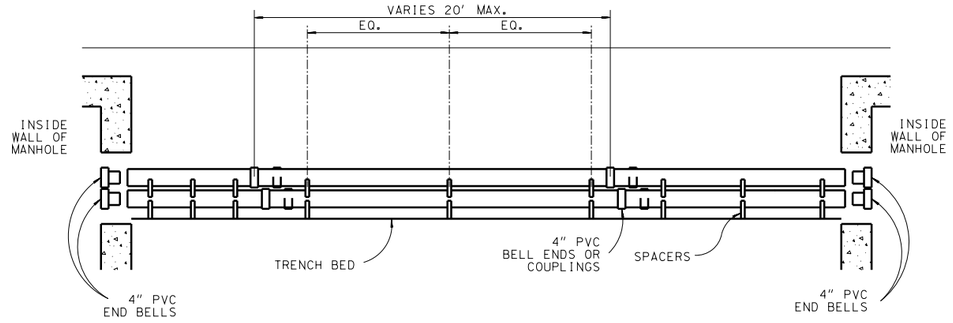
— CUC —	PROPOSED 4-INCH CEMENT ENCASED NONMETALLIC CONDUIT, NUMBER OF RUNS AS NOTED.
○	PROPOSED TES MANHOLE
— CUC —	EXISTING CONDUIT
- - - -	ABANDONED CONDUIT

SHEET 10 OF 13

STATE PROJECT NUMBER 2060-11-70	HWY: S.T.H. 38	COUNTY: MILWAUKEE	CITY UG CONDUIT (TES)	SCALE FEET	SHEET NO: 102	E

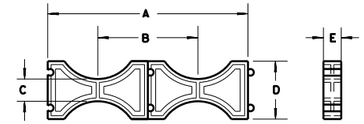


PLAN VIEW
N.T.S.



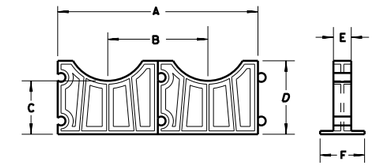
SECTION VIEW
N.T.S.

COND.	3"	4"
A	10"	11 1/2"
B	5"	5 7/8"
C	1 1/2"	1 1/4"
D	3 1/4"	3 1/4"
E	1"	1"



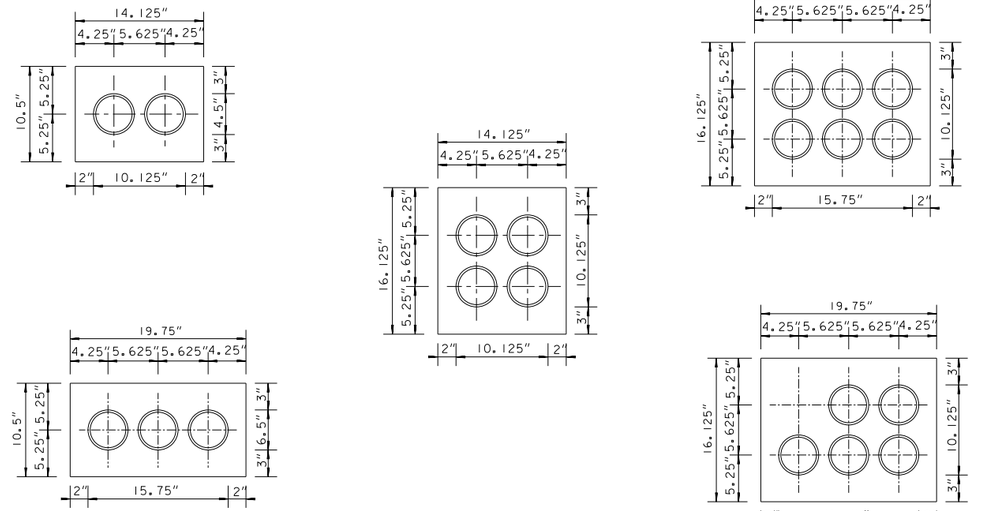
INTERMEDIATE SPACER

COND.	3"	4"
A	10"	11 1/2"
B	5"	5 7/8"
C	3"	3"
D	3 7/8"	4 1/8"
E	1"	1"
F	2 1/2"	2 1/2"

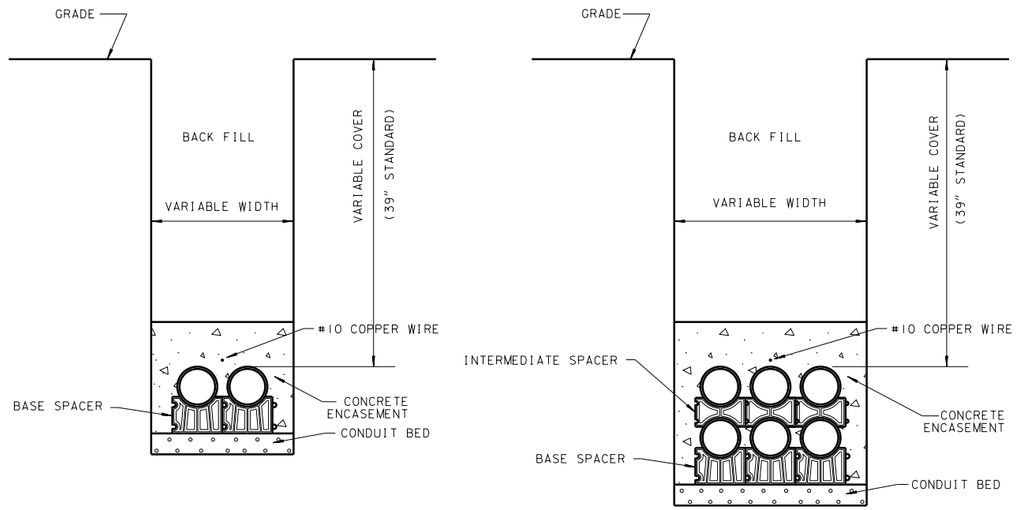


BASE SPACER

INTERMEDIATE AND BASE SPACER DETAIL



CROSS SECTION VIEW
N.T.S.



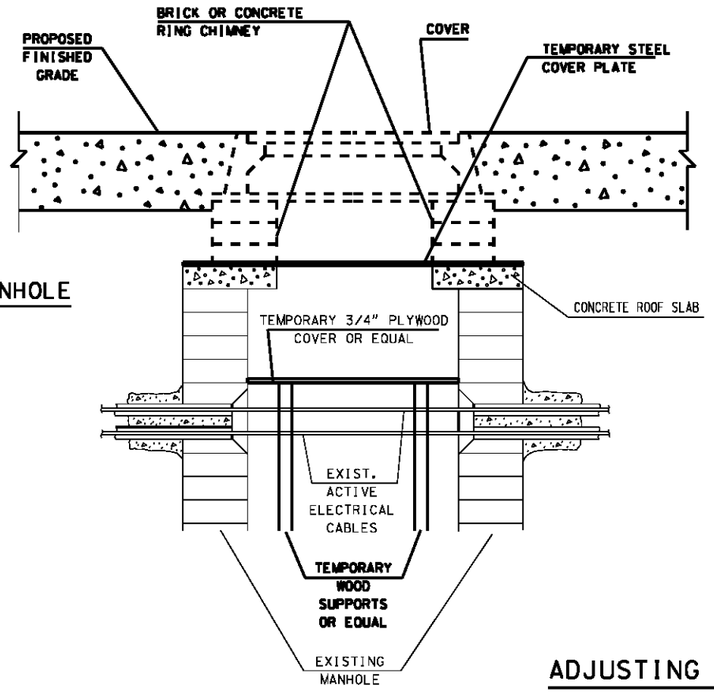
CROSS SECTION VIEW, TYP.
N.T.S.

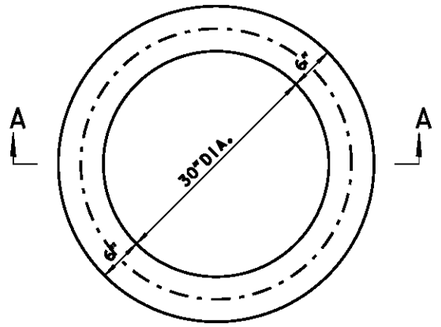
SHEET 11 OF 13

STATE PROJECT NUMBER 2060-11-70	HWY: S.T.H. 38	COUNTY: MILWAUKEE	CITY UG CONDUIT DETAILS (TES)	SCALE FEET	SHEET NO: 103	E

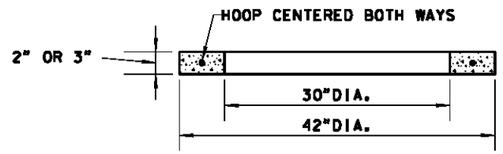
2

BLOCK OR PRECAST MANHOLE





PLAN



SECTION A-A

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

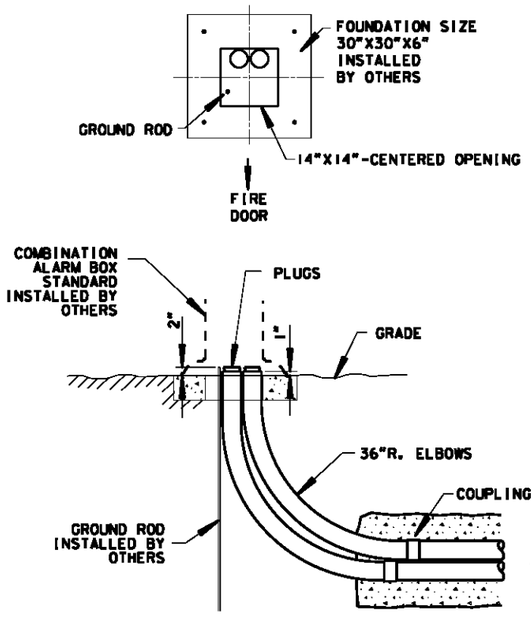
THE CIRCUMFERENTIAL STEEL SHALL BE CENTERED WITHIN THE RING.

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

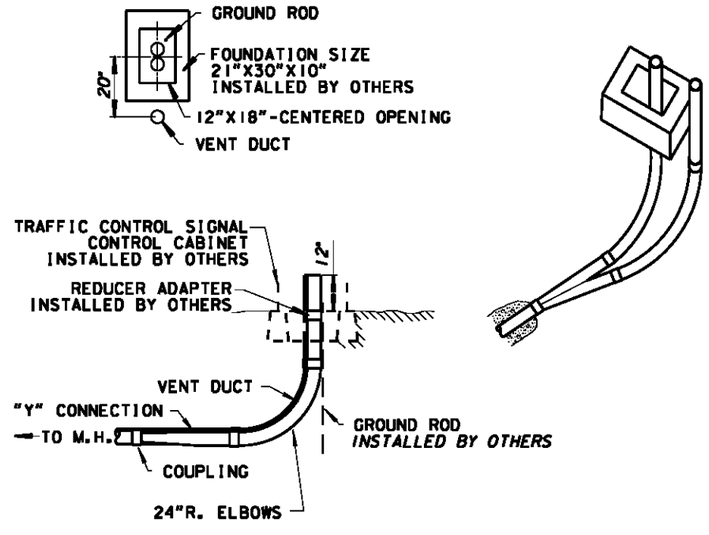
THE MINIMUM COMPRESSIVE STRENGTH OF THE CONCRETE CORE SHALL BE 4000 P.S.I.

CONCRETE ADJUSTING RING

ADJUSTING TES MANHOLES



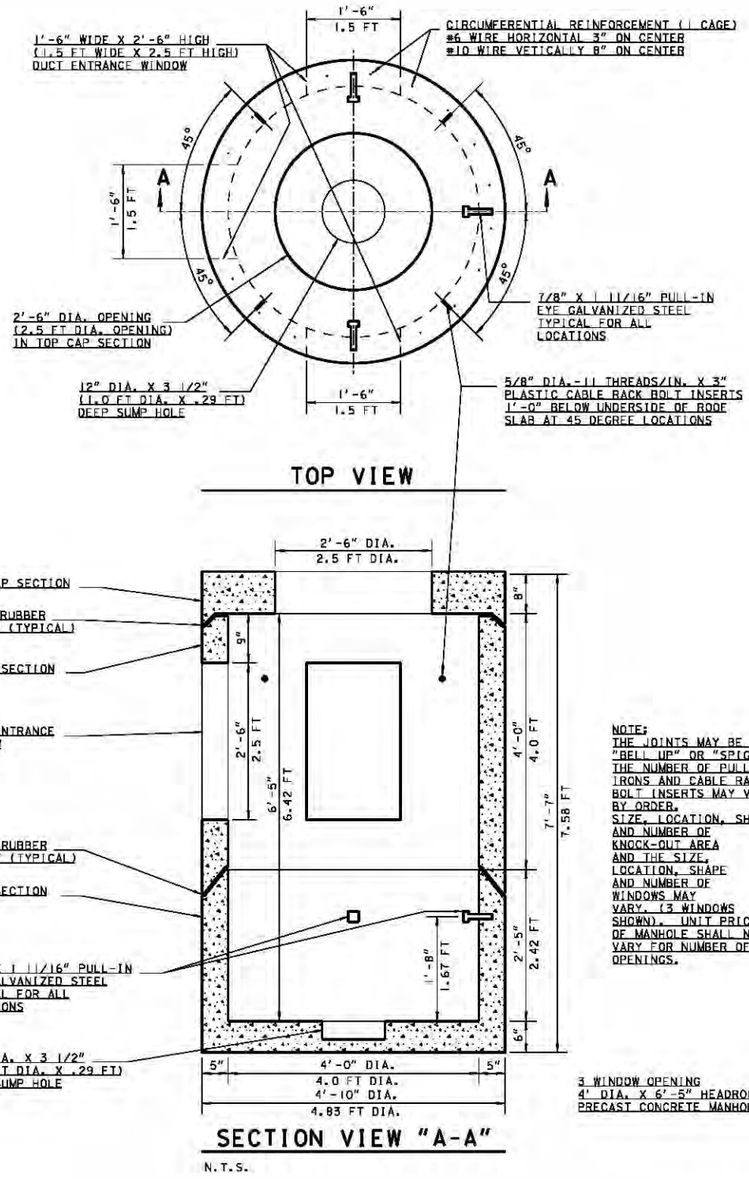
POLICE CALL BOX DETAIL



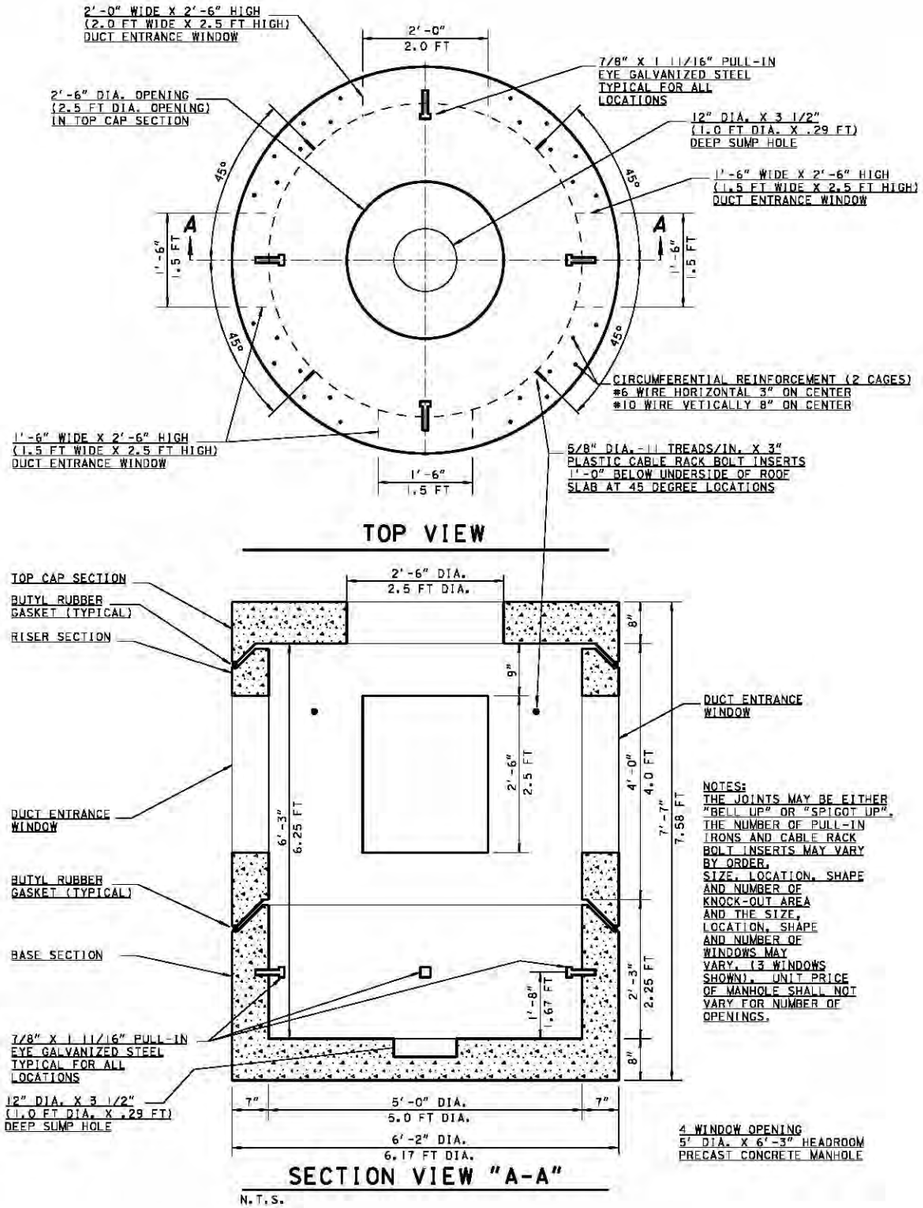
TRAFFIC CONTROL CABINET DETAIL

SHEET 12 OF 13

STATE PROJECT NUMBER 2060-11-70	HWY: S.T.H. 38	COUNTY: MILWAUKEE	CITY UG CONDUIT DETAILS (TES)	SCALE FEET	SHEET NO: 104	E



4' DIAMETER MANHOLE TYPE TES DETAIL



5' DIAMETER MANHOLE TYPE TES DETAIL

2

TRAFFIC & STREET LIGHTING GENERAL NOTES:

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

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

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

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

2 LOCATIONS OF THE PVC CONDUITS WHERE THEY ARE REQUIRED ARE IDENTIFIED IN THE PRINTS. HOWEVER, INSTALLATION MAY REQUIRE INTEGRATION WITH EXISTING FIELD CONDITIONS. APPROPRIATE ADJUSTMENT ON CONDUIT LOCATIONS MAY BE MADE IF THE FIELD CONDITIONS ARE SUCH THAT THE CONDUIT CANNOT BE INSTALLED AT THE SPECIFIED LOCATIONS. ANY RELOCATIONS MUST BE APPROVED BY THE ENGINEER. FIELD MARK EACH CONDUIT LOCATION BY STAMPING AND PAINTING WITH RED PAINT ON TOP AND BACKSIDE OF CURB.

3 TYPICAL CONDUIT INSTALLED UP TO DIRECT BURIED STREET LIGHT POLES IS AS FOLLOWS 3-INCH OR 2.5-INCH (AS NOTED) SCHEDULE 40 RIGID PVC TO STREET LIGHTING METAL HOUSING (PEDESTAL), THE 1.5-INCH SCHEDULE 40 RIGID PVC TO STREET LIGHT POLE CABLE SLOT, AND THE 2-INCH SCHEDULE 40 RIGID PVC TO SIGNAL STANDARD BASE AND RISER FOR TRAFFIC SIGNAL ON STREET LIGHT POLE.

4 DEPTH OF CONDUIT INSTALLED BELOW THE STREETS, HIGHWAYS, ROADS, AND ALLEYS SHALL BE 24-INCHES MINIMUM AND 36-INCHES MAXIMUM. (MEASURED FROM FINISHED FLANGE LINE)

5 CONDUIT INSTALLED BEHIND CURB, AND UNDER DRIVEWAYS SHALL BE INSTALLED AT THE BASE OF THE BACKSIDE OF THE CURB/GUTTER SECTION.

6 WHEN THERE IS MORE THAN ONE CONDUIT TO BE LAID BEHIND THE CURB, PLACE ALL CONDUITS IN THE SAME TRENCH.

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

8 THE CONTRACTOR OR HIS SUBCONTRACTOR MUST MAKE SURE THE AREA BEHIND CURB AND/OR WITHIN TRENCH SHALL BE FREE OF DEBRIS AND OVERPOUR AND SHALL NOT BE BACKFILLED PRIOR TO INSPECTION OF THE CONDUIT.

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

10 ALL CUT ENDS SHALL BE TRIMMED INSIDE AND OUTSIDE TO REMOVE ALL ROUGH EDGES ON ALL CONDUITS. (SEE NEC 352.28 2008 CODE)

11 PRIOR TO CONDUIT ACCEPTANCE, ALL CONDUIT ENDS SHALL BE THOROUGHLY CLEANED AND BE CAPPED IMMEDIATELY AFTER INSTALLATION WITH THE APPROPRIATE CAST PLASTIC CAP WHICH FITS SNUGGLY ON THE CONDUIT, BUT EASILY REMOVED IN THE FUTURE. DUCT TAPE OR ANY OTHER CAPPING METHOD IS NOT ACCEPTABLE.

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

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

14 PULL ROPE (3/8-INCH NYLON) SHALL BE INSTALLED IN ALL NEW CONDUIT.

15 ALL CONDUIT RUNS SHALL BE STRAIGHT (WITHOUT BENDS) FROM PULL BOX TO PULL BOX, PULL BOX TO BASE AND BASE TO BASE AS SHOWN ON THE PLANS UNLESS OTHERWISE APPROVED BY THE STREET LIGHTING ENGINEER.

16 WHEN ENDS OF CONDUIT DO NOT CONNECT TO A VAULT AND WILL END UP UNDER CONCRETE WALK. THE CONTRACTOR IS REQUIRED TO LEAVE A 24" X 24" BOX FORM CENTERED OVER THE END OF CONDUIT AND FILL THE BOXFORM WITH CRUSHED GRAVEL. (PER WISDOT SPEC 209.2.1(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) 414-286-3687 (CELL) 414-708-5148
TRAFFIC SIGNALS - DISPATCHER @ 414-286-3687

22 CONDUIT WILL ONLY BE INSTALLED AFTER THE CURB IS POURED, UNLESS APPROVED BY BOTH THE ENGINEER & STREET LIGHTING SHOP SUPERVISOR.

2

UTILITY LINE CODE

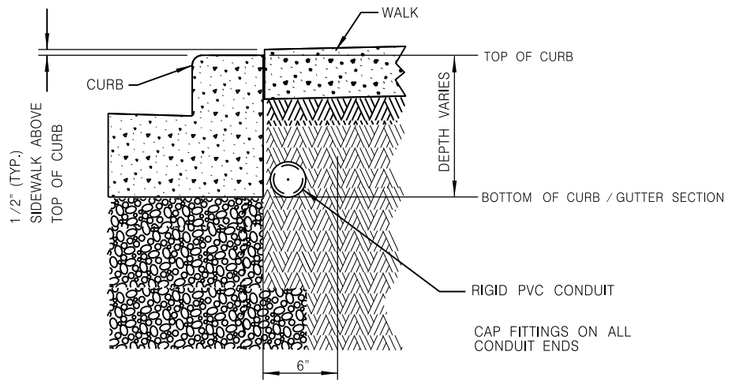
SAN	SANITARY SEWER
STO	STORM SEWER
W	WATER
G	GAS
G	PROPOSED GAS
E	ELECTRIC
TE&ES	TRAFFIC & STREET LIGHTING
	OLD CITY UNDERGROUND CONDUIT
CUC	PROPOSED CITY UNDERGROUND CONDUIT
T	TELEPHONE
TV	CABLE

SHEET 1 OF 28

PROJECT NO: 2060–11–70	HWY: S.T.H. 38	COUNTY: MILWAUKEE	STREET LIGHTING & TRAFFIC SIGNAL CONDUIT DETAILS & PLAN	SHEET 106	E

2

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



100 DETAIL "A"

TYPICAL CONDUIT INSTALLATION
BEHIND CURB

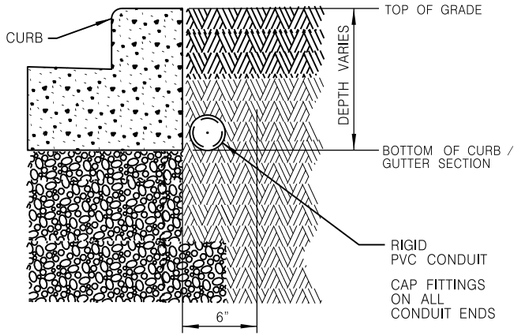
NOT TO SCALE

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

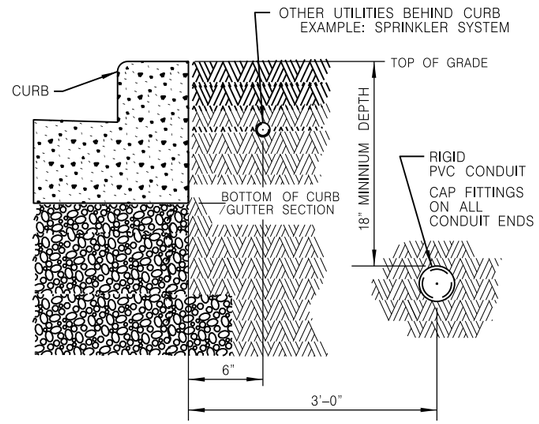
NOTE: 1.) KEEP AREA BEHIND CURB FREE OF DEBRIS AND CONCRETE OVERPOUR.

DETAIL "B"

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



DETAIL "C"

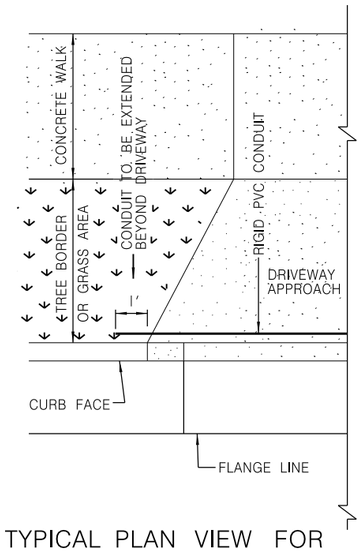


100 DETAIL "B" & "C"

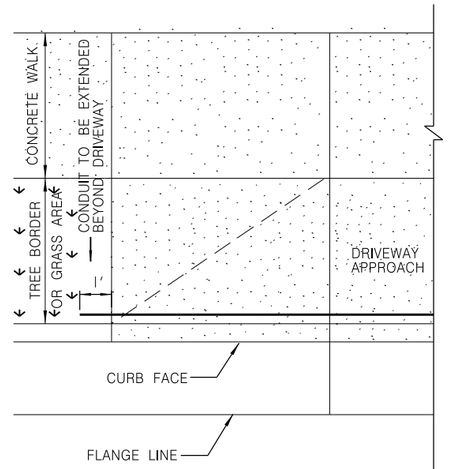
TYPICAL CONDUIT INSTALLATION
BEHIND CURB

NOT TO SCALE

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

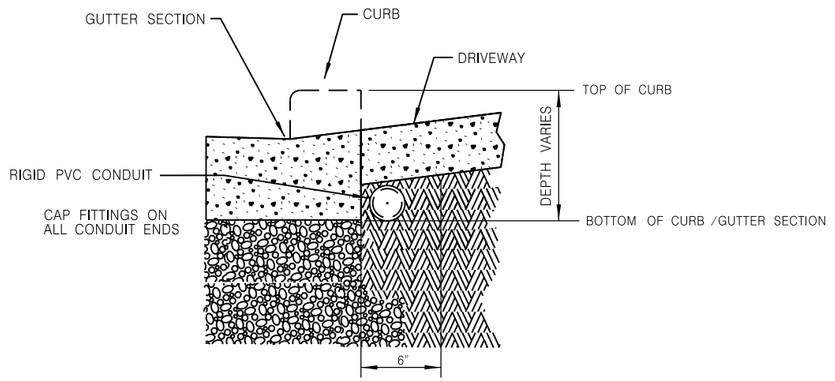


TYPICAL PLAN VIEW FOR
FLARED DRIVEWAY



TYPICAL PLAN VIEW FOR
DEPRESSED DRIVEWAY

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



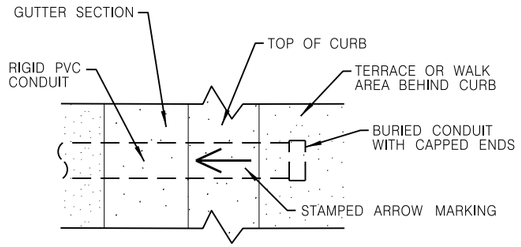
101 DETAIL

TYPICAL CONDUIT INSTALLATION
UNDER DRIVEWAYS OR PEDESTRIAN RAMPS

NOT TO SCALE

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

SHEET 2 OF 28

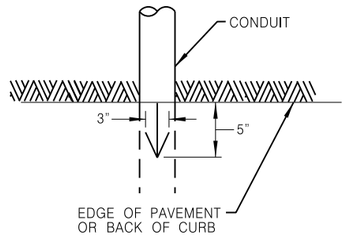


TOP VIEW OF CURB STAMPING

NOT TO SCALE

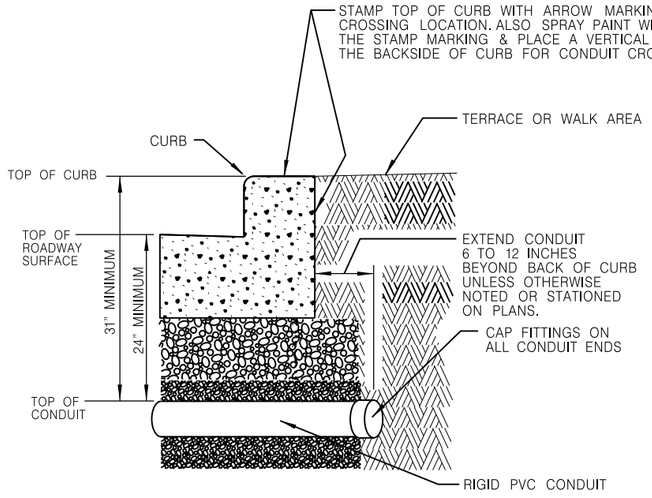
NOTE:

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



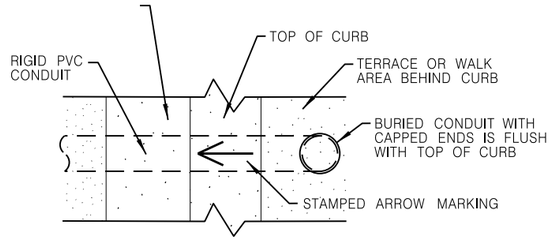
102

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.

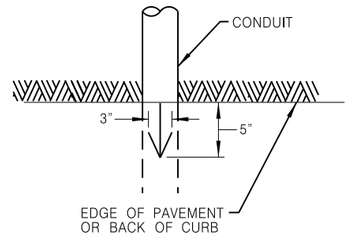


TOP VIEW OF CURB STAMPING

NOT TO SCALE

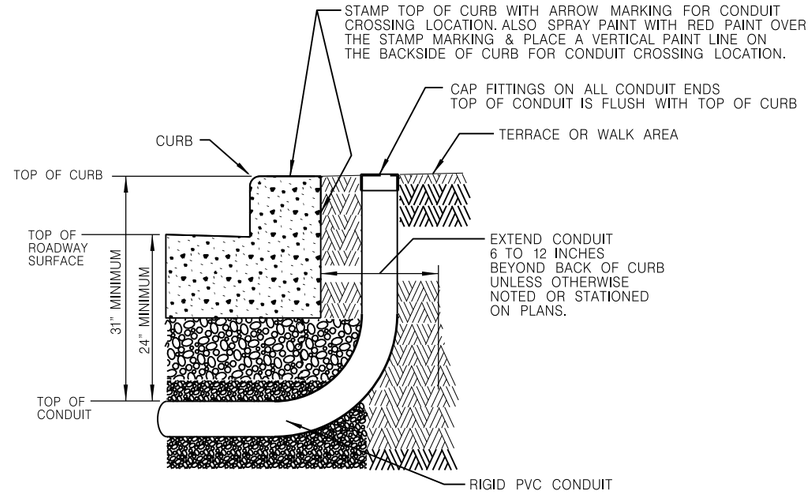
NOTE:

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



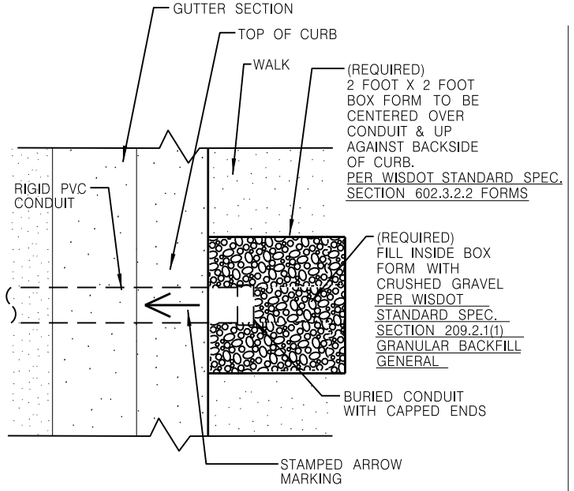
102

DETAIL VERSION #2

TYPICAL CONDUIT INSTALLATION FOR CROSSING ROADWAYS

NOT TO SCALE

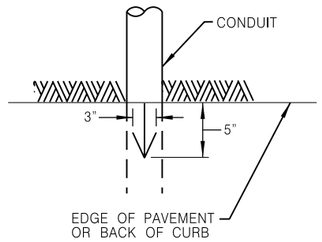
ANY DEVIATIONS FROM DETAIL WILL REQUIRE PERMISSION FROM STREET LIGHTING FORCES.
CONTACT DISPATCHER AT (414) 286–5944 FOR THE APPROPRIATE SHOP SUPERVISOR.



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.

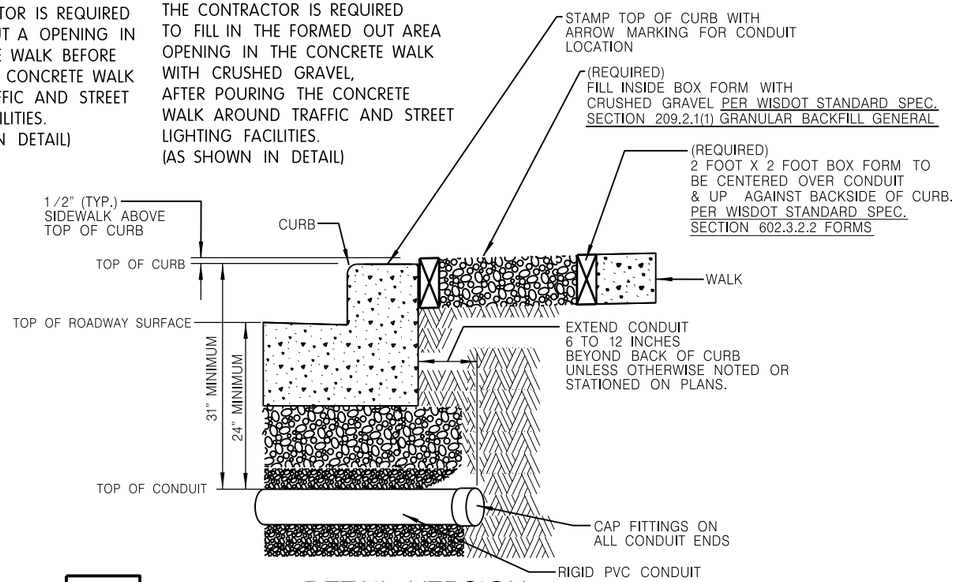


ARROW MARK

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 CRUSHED GRAVEL, AFTER POURING THE CONCRETE WALK AROUND TRAFFIC AND STREET LIGHTING FACILITIES.
(AS SHOWN IN DETAIL)



103

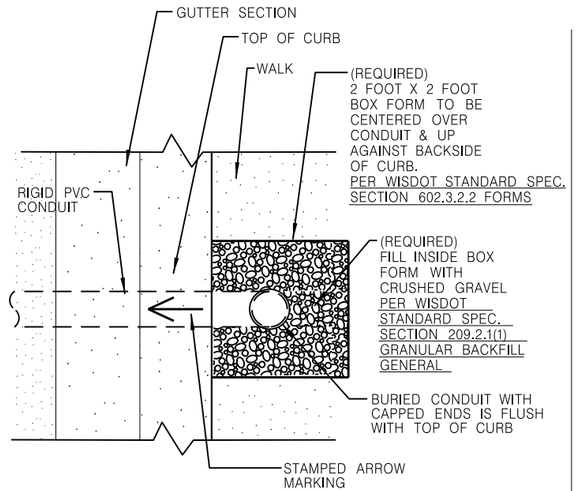
DETAIL VERSION 1

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.

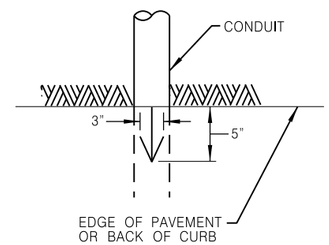
2



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.

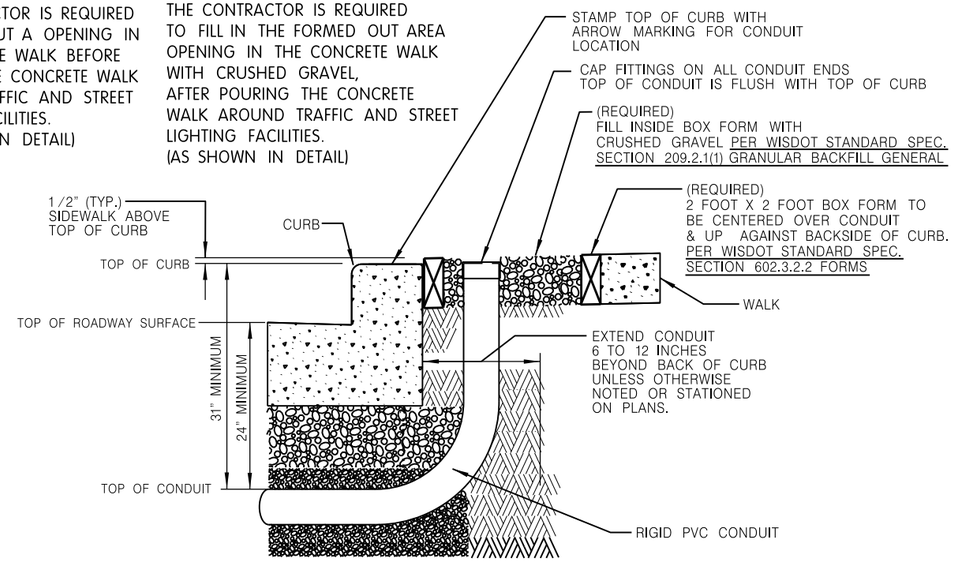


ARROW MARK

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

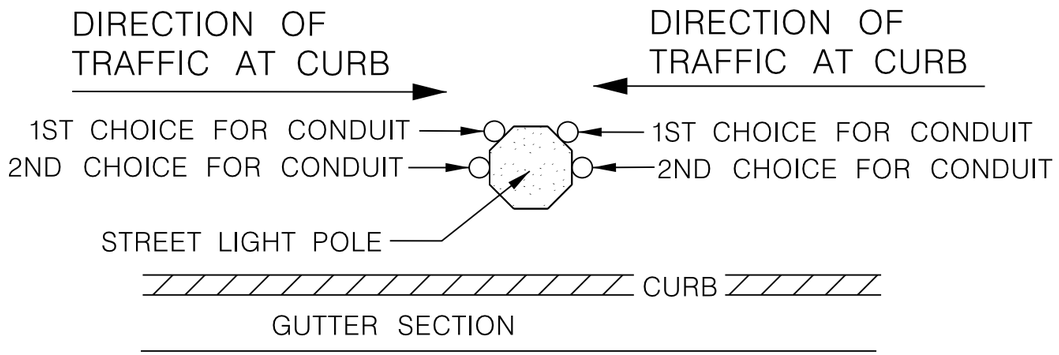
TYPICAL CONDUIT INSTALLATION
FOR CROSSING ROADWAYS
FROM FULL WALK AREAS

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.

FILE NAME : W:\bes\pavings\2015work\sHowellAveLaytonHoward\sHowellLaytonHoward_CONDUIT.dgn
PLOT DATE : 30-JUL-2014 11:08
PLOT BY : cblack
PLOT NAME :
PLOT SCALE : 20.000000:1.000000
WISDOT/CADDS SHEET 42

NOTE: CAP FITTINGS ON CONDUIT ENDS



104 DETAIL

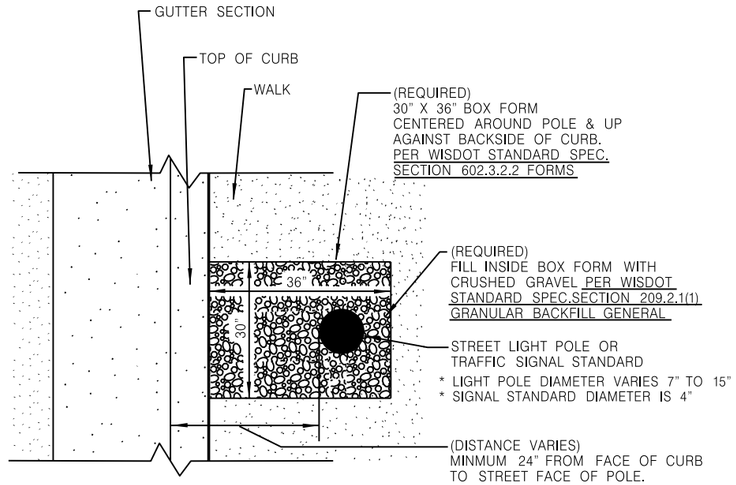
TYPICAL TRAFFIC SIGNAL RISER CONDUIT LOCATIONS ON STREET LIGHT POLE DEPENDING ON DIRECTION OF TRAFFIC AT CURB

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 CRUSHED GRAVEL, AFTER POURING THE CONCRETE WALK AROUND TRAFFIC AND STREET LIGHTING FACILITIES.
(AS SHOWN IN ADJACENT DETAIL)



105 DETAIL

TYPICAL 30" X 36" BOX FORM AROUND STREET LIGHTING POLE OR TRAFFIC SIGNAL STANDARD

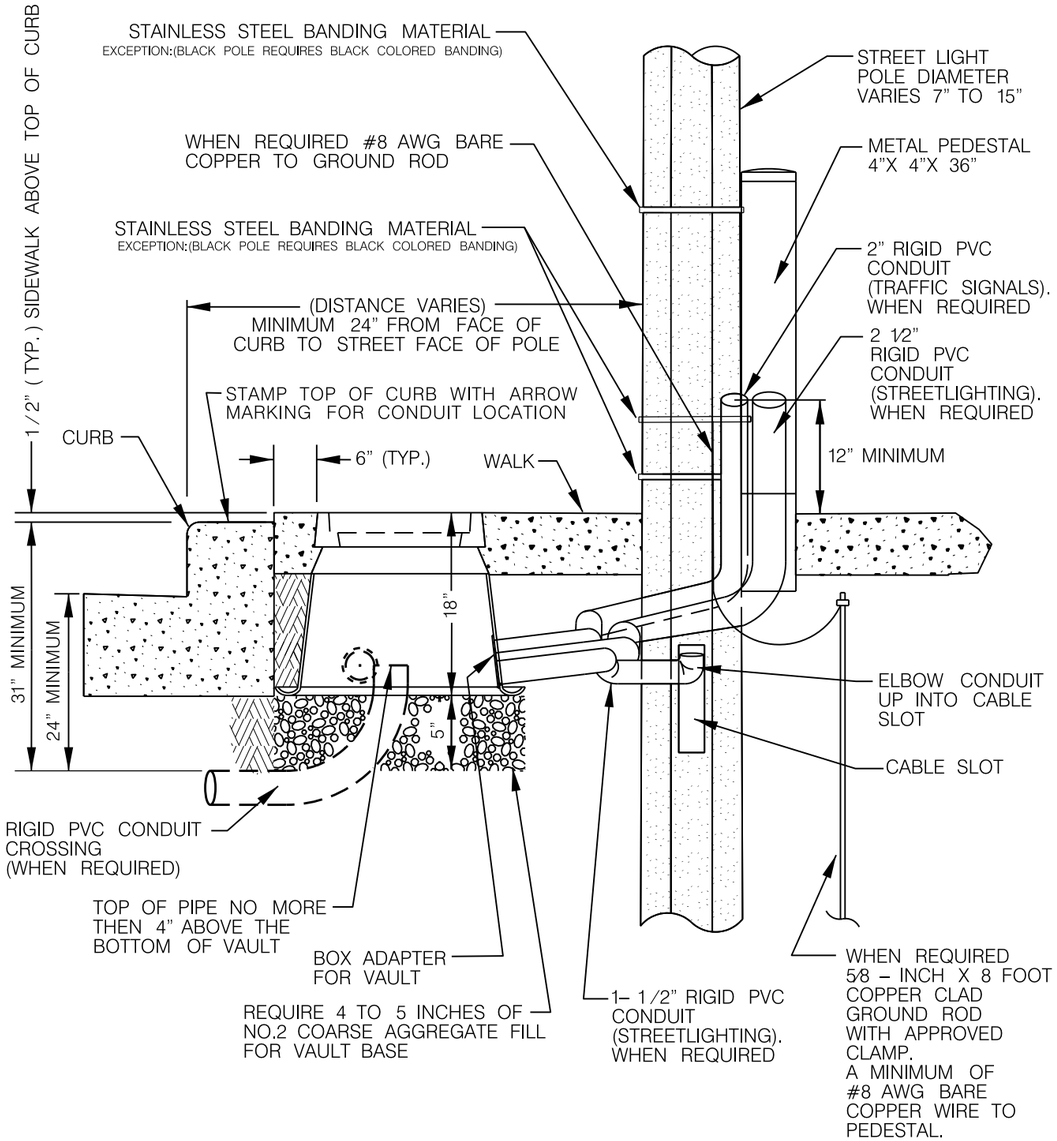
ANY DEVIATIONS FROM DETAIL WILL REQUIRE PERMISSION FROM STREET LIGHTING FORCES.
CONTACT DISPATCHER AT (414) 286–5944 FOR THE APPROPRIATE SHOP SUPERVISOR.

NOT TO SCALE

SHEET 5 OF 28

PROJECT NO: 2060–11–70	HWY: S.T.H. 38	COUNTY: MILWAUKEE	STREET LIGHTING & TRAFFIC SIGNAL CONDUIT DETAILS & PLAN	SHEET 110	E

FILE NAME : W:\bes\pavings\2015work\sHowellAveLaytonHoward\sHowellLaytonHoward_CONDUIT.dgn PLOT DATE : 30-JUL-2014 11:08 PLOT BY : cblack PLOT NAME : PLOT SCALE : 20.000000:1.000000
WISDOT/CADDS SHEET 42

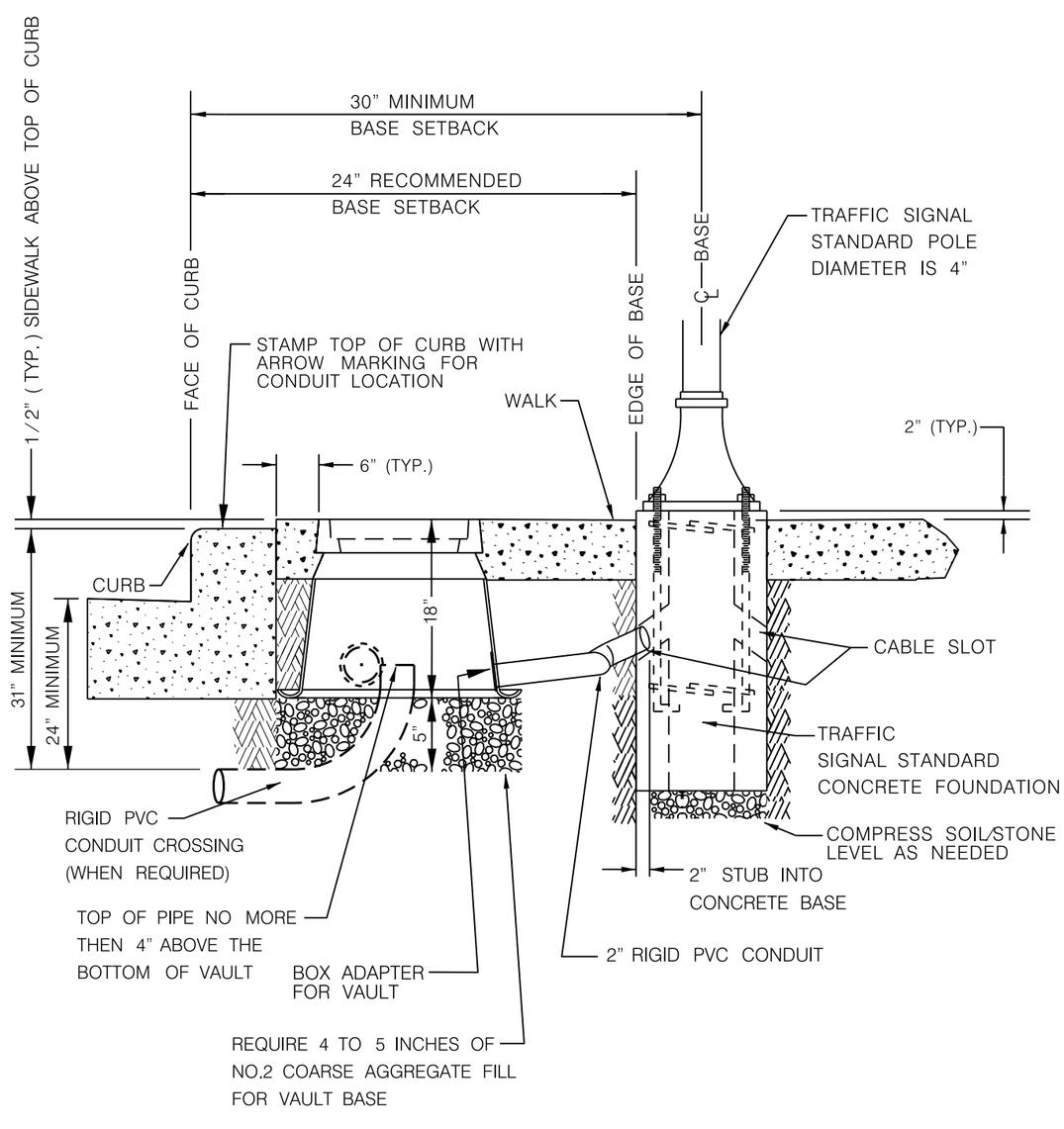


108 DETAIL

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.

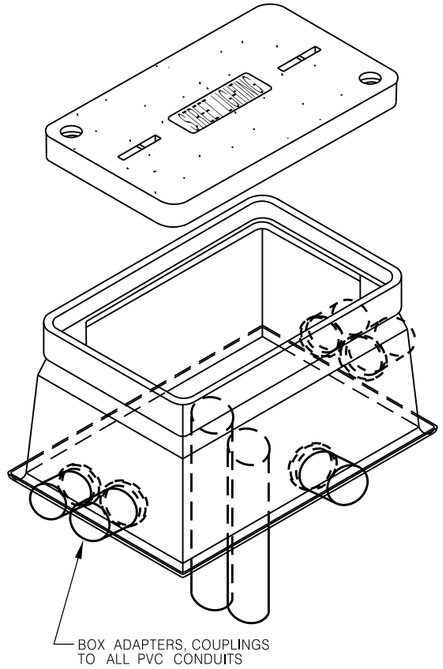


109 DETAIL

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.



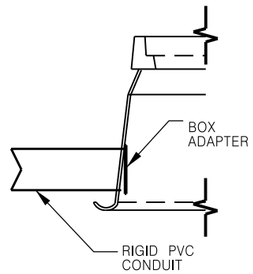
HEAVY DUTY COVER
W/ STREETLIGHTING LOGO
& W /2 BOLTS
COLOR: GRAY

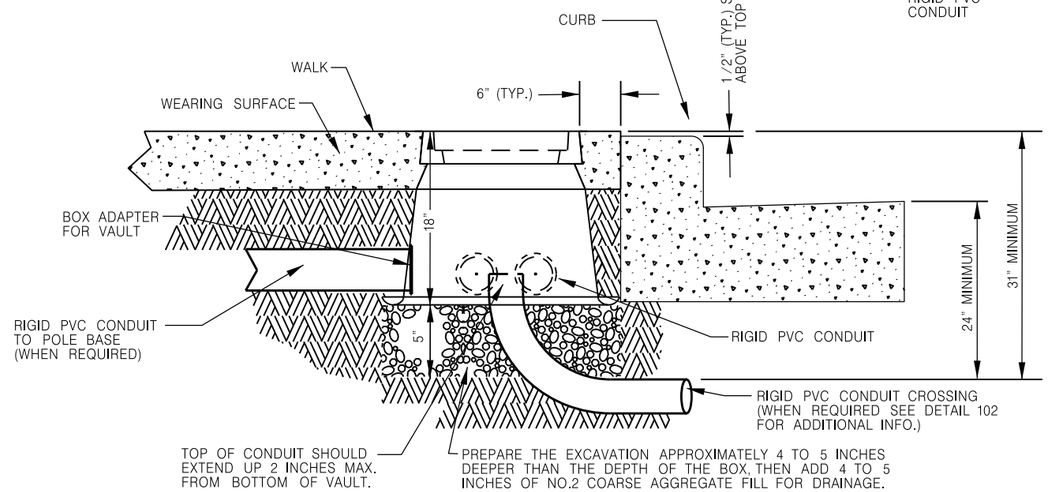
ELECTRICAL VAULT
FLARED WALL
BOX W /NO BASE
COLOR: GRAY

(VARIOUS SIZES)

PLUG OR CAP FITTINGS ON ALL
UNUSED CONDUITS IN THE ENCLOSURE

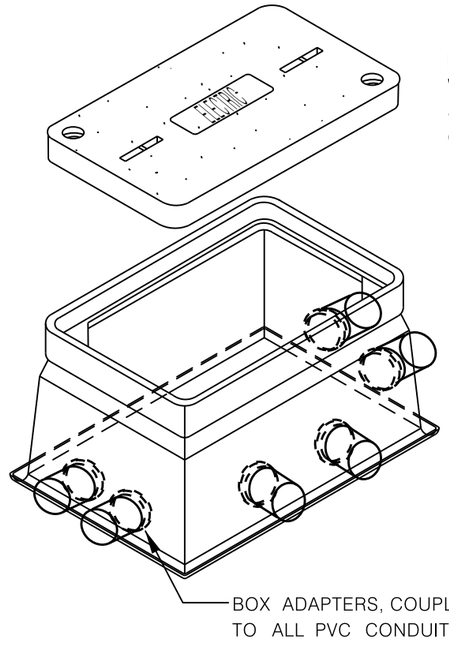
BOX ADAPTERS, COUPLINGS
TO ALL PVC CONDUITS





112 DETAIL
TYPICAL VAULT INSTALLATION IN WALK
NOT TO SCALE

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

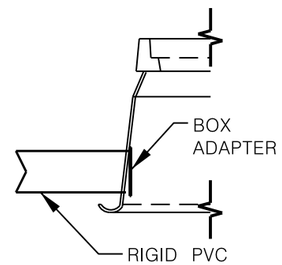


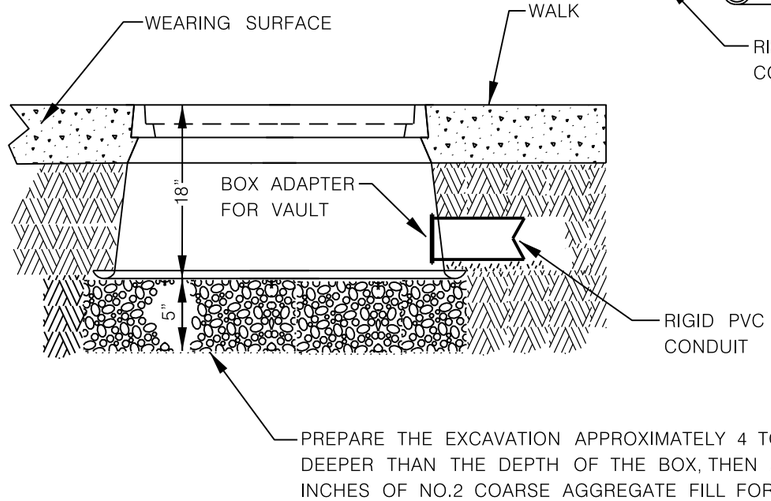
HEAVY DUTY COVER
W/ ELECTRIC LOGO
& W /2 BOLTS
COLOR: GRAY

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

PLUG OR CAP FITTINGS ON ALL
UNUSED CONDUITS IN THE ENCLOSURE

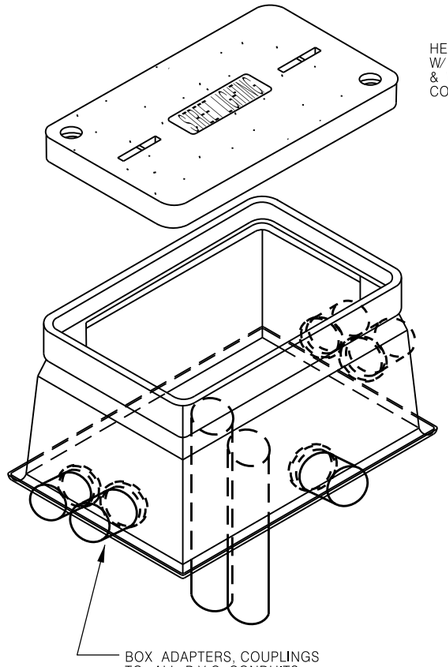
BOX ADAPTERS, COUPLINGS
TO ALL PVC CONDUITS

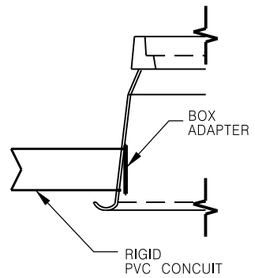


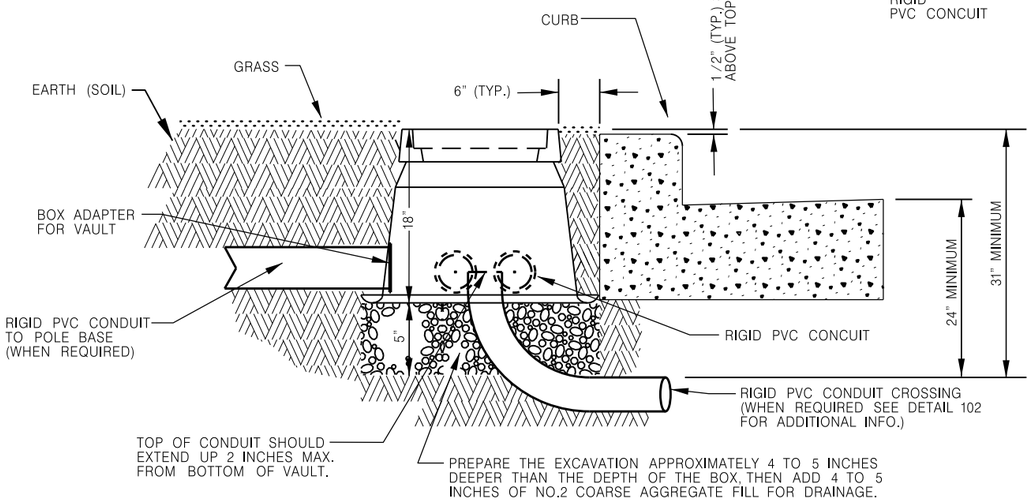


113 DETAIL
TYPICAL VAULT INSTALLATION
IN SIDEWALK
NOT TO SCALE

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







121 DETAIL

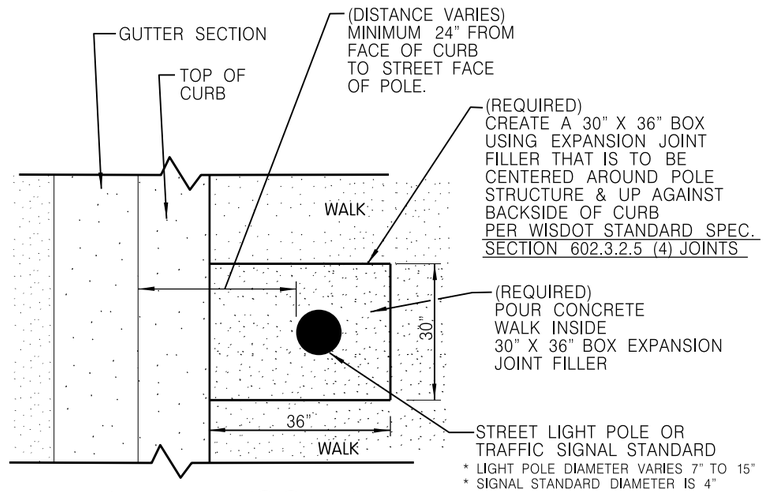
TYPICAL VAULT INSTALLATION IN GRASS AREA

NOT TO SCALE

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

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

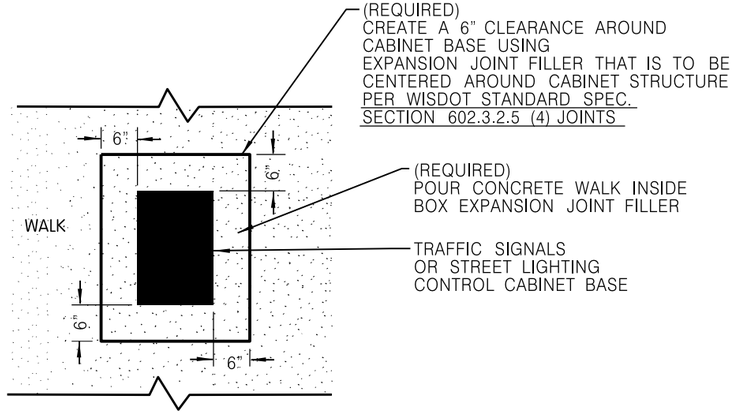
TYPICAL 30" X 36" BOX EXPANSION JOINT FILLER AROUND STREET LIGHTING POLE OR TRAFFIC SIGNAL STANDARD

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.

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.

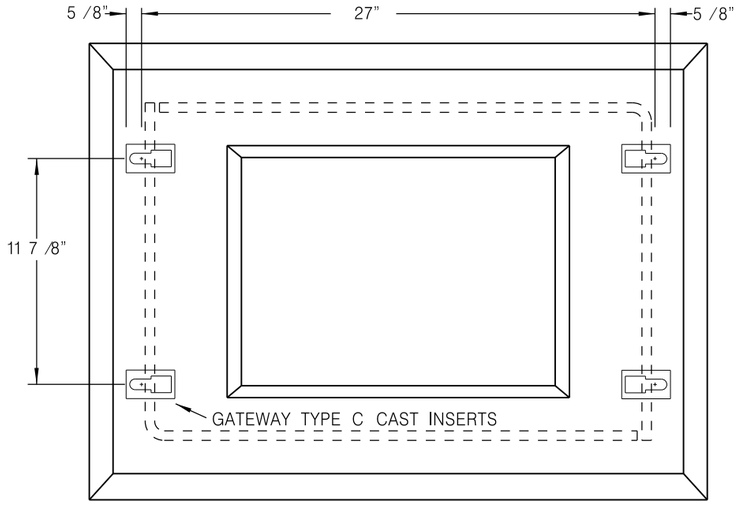


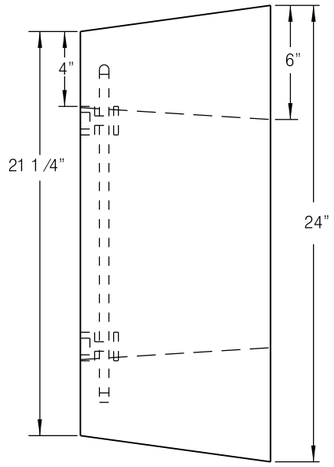
122 DETAIL VERSION #2

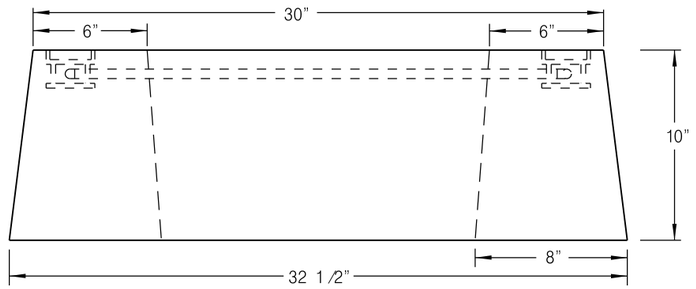
TYPICAL BOX EXPANSION JOINT FILLER AROUND TRAFFIC SIGNAL OR STREET LIGHTING CONTROL CABINET

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.







NOT TO SCALE

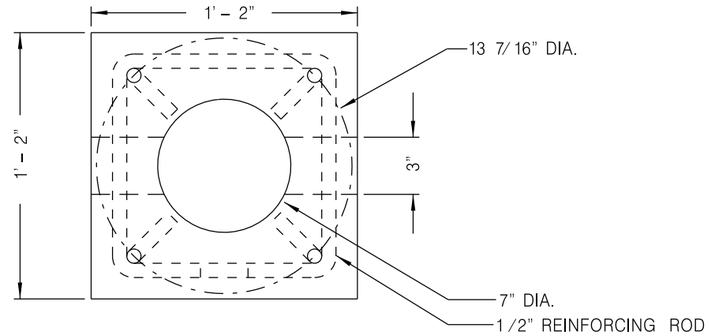
6 BAG MIX #1 STONE

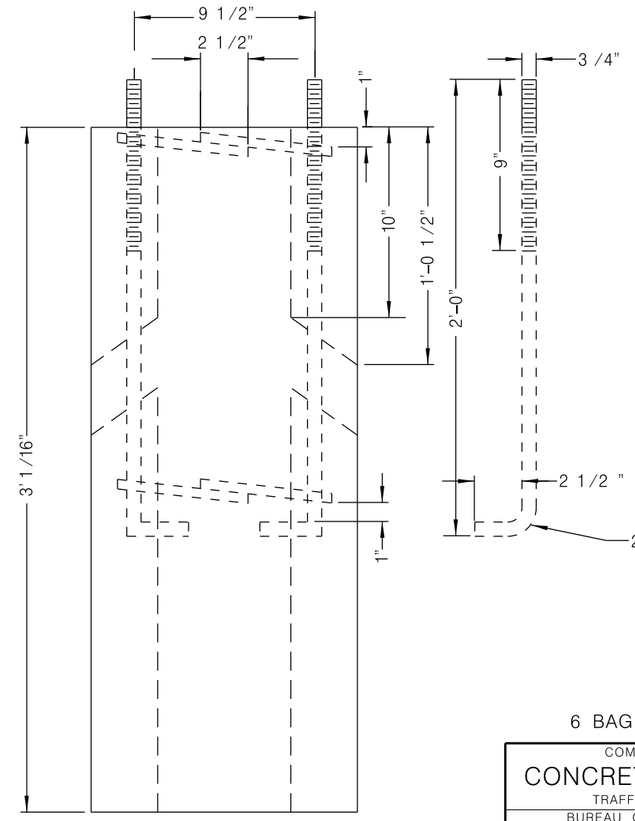
125 DETAIL

TYPICAL TRAFFIC CONTROL CABINET CONCRETE FOUNDATION

COMM. CODE 1238-927				
CONCRETE FOUNDATION				
TRAFFIC SIGNAL CONTROL CABINET				
BUREAU OF TRAFFIC ENGINEERING AND ELECTRICAL SERVICES D.P.W. CITY OF MILWAUKEE				
TRAFFIC CONTROL MATERIAL				
DATE 4-22-75	SCALE 1/4" = 1"	DRAWN J.H.S.	CHECKED B.J.T.	APPROVED R.J.B.
SUPERSEDES C-65-546-T	REVISED DATE 01-30-02	DRG. C-75-564-T		
SUPERSEDED BY	NEW DRG. F-82-536-T			

ANY DEVIATIONS FROM DETAIL WILL REQUIRE PERMISSION FROM TRAFFIC SIGNAL FORCES. CONTACT DISPATCHER AT (414) 286-3687 FOR SHOP SUPERVISOR.





NOT TO SCALE

6 BAG MIX #1 STONE

126 DETAIL

TYPICAL TRAFFIC SIGNAL STANDARD CONCRETE FOUNDATION

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			

ANY DEVIATIONS FROM DETAIL WILL REQUIRE PERMISSION FROM TRAFFIC SIGNAL FORCES. CONTACT DISPATCHER AT (414) 286-3687 FOR SHOP SUPERVISOR.

NOTE:

COORDINATE STREET LIGHTING CONDUIT INSTALLATION WITH THE TRAFFIC SIGNAL CONDUIT INSTALLATION.

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

CONDUIT END CAPS REQIURED ON ALL EMPTY CONDUIT.

PULL ROPE (3/8" NYLON) REQUIRED IN ALL CONDUIT.

ALL POLES WILL BE RELOCATED BY CITY FORCES.

GENERAL NOTES SHALL BE FOLLOWED WHEN INSTALLING MATERIALS FOR TRAFFIC AND STREET LIGHTING.

SEE STREET LIGHTING CONDUIT DETAILS FOR ADDITIONAL INFORMATION.

B.M. E BOLT HYD NW CORNER
W. LAYTON AV. & S. HOWELL AV.
STA. 67+05 - 60' LT.
ELEV. 89.66

#102 LIGHT POLE

#4669 LIGHT POLE

#4676 LIGHT POLE

#4654 LIGHT POLE

#103 LIGHT POLE

S. HOWELL AVE.

179° 54' 39"

MON.

STA. 68+06.8
5.3' RT.

102
VERSION#2

3" SPECIAL

STA. 68+58
1.0' RT.

DETAIL B
100

3"

BIO-SWALE

30" STO.

ASPH. ON CONC.

STD. B.M. #65-17
S. HOWELL AV. AND W. LAYTON AV.
IN S. HOWELL AV. CENTER PLOT NORTH OF W. LAYTON AV., 15.8' NORTH OF SOUTH CURB TIP AND 4.5' EAST OF WEST CURB (IN CONCRETE BOX)
ELEV.: 88.618

FIBER OPTIC

CAUTION

SHEET 10 OF 28

PROJECT NO: 2060-11-70	HWY: S.T.H. 38	COUNTY: MILWAUKEE	STREET LIGHTING & TRAFFIC SIGNAL CONDUIT DETAILS & PLAN	SHEET 115	E

2

NOTE:

COORDINATE STREET LIGHTING CONDUIT INSTALLATION WITH THE TRAFFIC SIGNAL CONDUIT INSTALLATION.

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

CONDUIT END CAPS REQIURED ON ALL EMPTY CONDUIT.

PULL ROPE (3/8" NYLON) REQUIRED IN ALL CONDUIT.

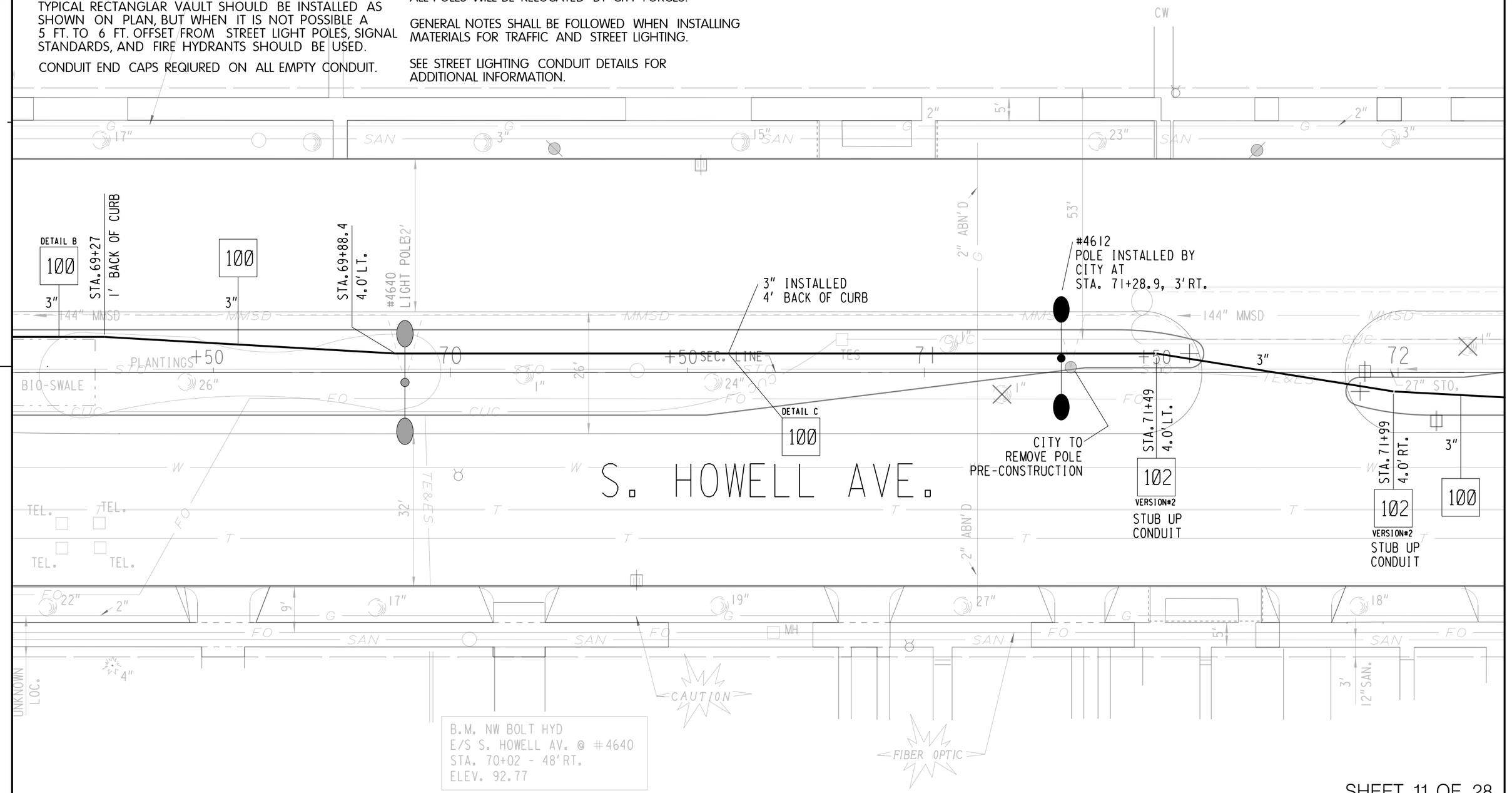
ALL POLES WILL BE RELOCATED BY CITY FORCES.

GENERAL NOTES SHALL BE FOLLOWED WHEN INSTALLING MATERIALS FOR TRAFFIC AND STREET LIGHTING.

SEE STREET LIGHTING CONDUIT DETAILS FOR ADDITIONAL INFORMATION.

N

2



SHEET 11 OF 28

PROJECT NO: 2060–11–70	HWY: S.T.H. 38	COUNTY: MILWAUKEE	STREET LIGHTING & TRAFFIC SIGNAL CONDUIT DETAILS & PLAN	SHEET 116	E

2

NOTE:

COORDINATE STREET LIGHTING CONDUIT INSTALLATION WITH THE TRAFFIC SIGNAL CONDUIT INSTALLATION.

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

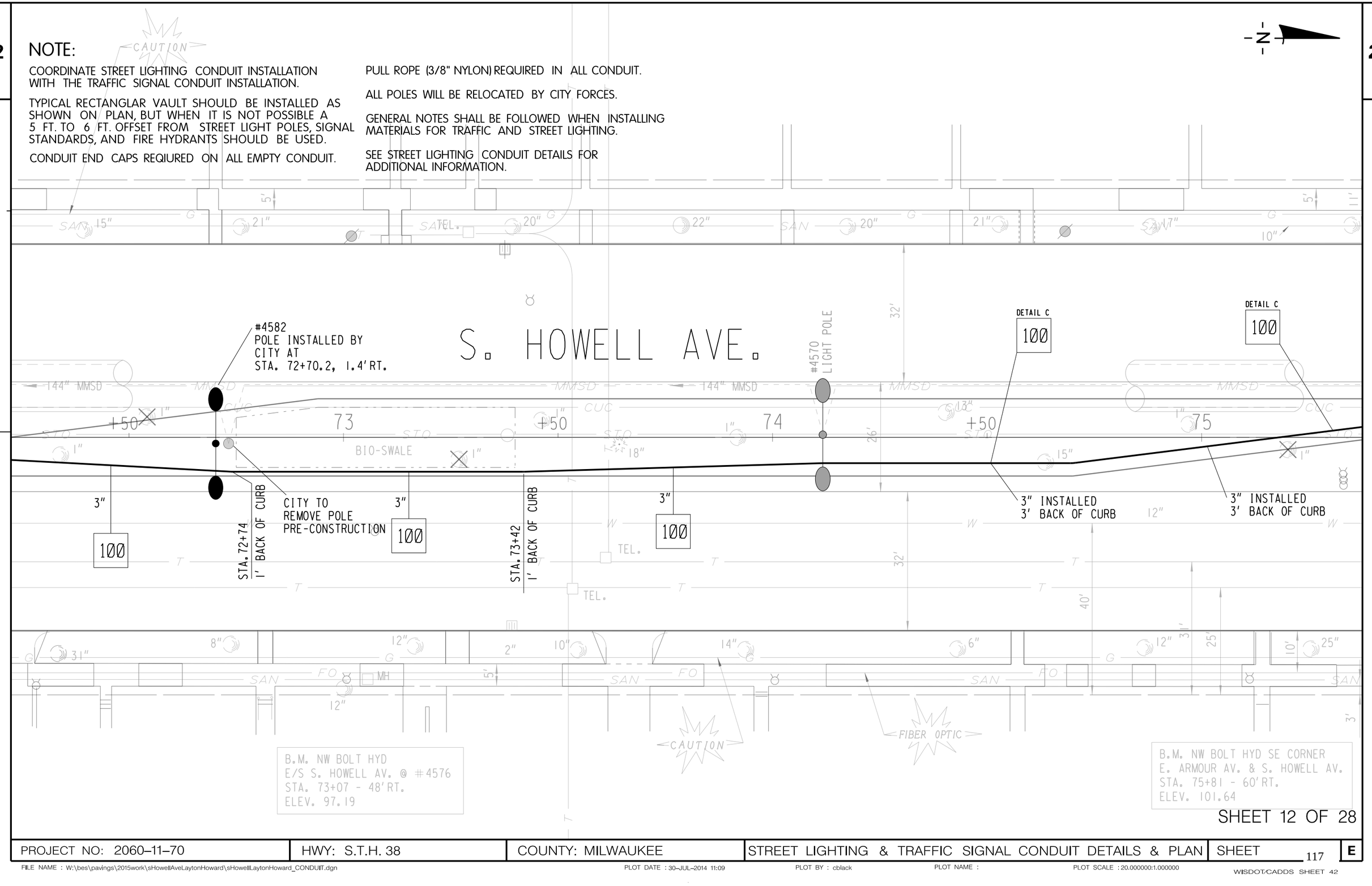
CONDUIT END CAPS REQIURED ON ALL EMPTY CONDUIT.

PULL ROPE (3/8" NYLON) REQUIRED IN ALL CONDUIT.

ALL POLES WILL BE RELOCATED BY CITY FORCES.

GENERAL NOTES SHALL BE FOLLOWED WHEN INSTALLING MATERIALS FOR TRAFFIC AND STREET LIGHTING.

SEE STREET LIGHTING CONDUIT DETAILS FOR ADDITIONAL INFORMATION.



B.M. NW BOLT HYD
E/S S. HOWELL AV. @ #4576
STA. 73+07 - 48'RT.
ELEV. 97.19

B.M. NW BOLT HYD SE CORNER
E. ARMOUR AV. & S. HOWELL AV.
STA. 75+81 - 60'RT.
ELEV. 101.64

SHEET 12 OF 28

PROJECT NO: 2060–11–70	HWY: S.T.H. 38	COUNTY: MILWAUKEE	STREET LIGHTING & TRAFFIC SIGNAL CONDUIT DETAILS & PLAN	SHEET 117	E

FILE NAME : W:\bes\pavings\2015work\sHowellAveLaytonHoward\sHowellLaytonHoward_CONDUIT.dgn PLOT DATE : 30-JUL-2014 11:09 PLOT BY : cblack PLOT NAME : PLOT SCALE : 20.000000:1.000000

WISDOT/CADDS SHEET 42

2

NOTE:

COORDINATE STREET LIGHTING CONDUIT INSTALLATION WITH THE TRAFFIC SIGNAL CONDUIT INSTALLATION.

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

CONDUIT END CAPS REQIURED ON ALL EMPTY CONDUIT.

PULL ROPE (3/8" NYLON) REQUIRED IN ALL CONDUIT.

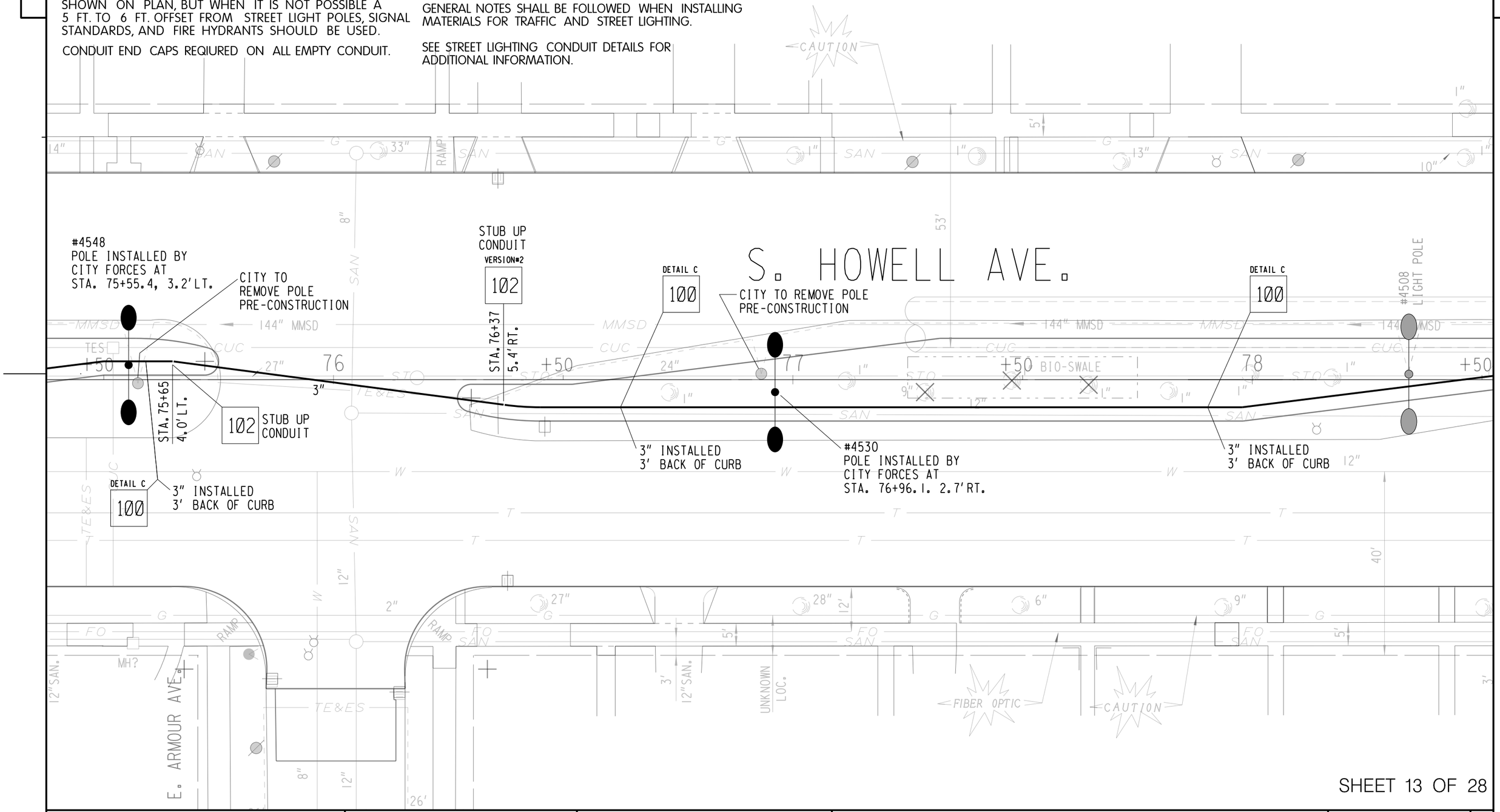
ALL POLES WILL BE RELOCATED BY CITY FORCES.

GENERAL NOTES SHALL BE FOLLOWED WHEN INSTALLING MATERIALS FOR TRAFFIC AND STREET LIGHTING.

SEE STREET LIGHTING CONDUIT DETAILS FOR ADDITIONAL INFORMATION.

N

2



SHEET 13 OF 28

PROJECT NO: 2060–11–70	HWY: S.T.H. 38	COUNTY: MILWAUKEE	STREET LIGHTING & TRAFFIC SIGNAL CONDUIT DETAILS & PLAN	SHEET 118	E

FILE NAME : W:\bes\pavings\2015work\sHowellAveLaytonHoward\sHowellLaytonHoward_CONDUIT.dgn
PLOT DATE : 30-JUL-2014 11:09
PLOT BY : cblack
PLOT NAME :
PLOT SCALE : 20.000000:1.000000
WISDOT/CADDS SHEET 42

NOTE:

COORDINATE STREET LIGHTING CONDUIT INSTALLATION WITH THE TRAFFIC SIGNAL CONDUIT INSTALLATION.

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

CONDUIT END CAPS REQIURED ON ALL EMPTY CONDUIT.

PULL ROPE (3/8" NYLON) REQUIRED IN ALL CONDUIT.

ALL POLES WILL BE RELOCATED BY CITY FORCES.

GENERAL NOTES SHALL BE FOLLOWED WHEN INSTALLING MATERIALS FOR TRAFFIC AND STREET LIGHTING.

SEE STREET LIGHTING CONDUIT DETAILS FOR ADDITIONAL INFORMATION.

B.M. NW BOLT HYD NW CORNER
W. VAN NORMAN AV. & S. HOWELL AV.
STA. 79+48 - 69'LT.
ELEV. 108.20

W. VAN NORMAN AVE.

S. HOWELL AVE.

E. VAN NORMAN AVE.

VERSION#2 102

#101 LIGHT POLE

64'LT.

64'LT.

3"

100

3"

4"

STA. 79+95

3"

101

3"

101

STA. 78+99.7

102 VERSION#1

STA. 78+93
4.0'LT.

102 STUB UP CONDUIT
VERSION#2

3" INSTALLED
3' BACK OF CURB

#4480 LIGHT POLE

121

100

STA. 80+50
6.0'LT.

#4460 LIGHT POLE

3" INSTALLED
3' BACK OF CURB

DETAIL C
100

3" INSTALLED
3' BACK OF CURB

13" X 24" X 18"
VAULT
STA. 79+95
3' BACK OF CURB
ON CENTER

DETAIL C
100

DETAIL C
100

STA. 79+68.8
4'RT.

102 STUB UP CONDUIT
VERSION#2

102
VERSION#1

STA. 78+68.8

101

3"

101

3"

100

3"

72'RT.

3"

100

STA. 79+95

FIBER OPTIC VAULT

77'LT.

3"

102
VERSION#2

BIO-SWALE

UNKNOWN LOC.

FIBER OPTIC

CAUTION

SHEET 14 OF 28

PROJECT NO: 2060–11–70	HWY: S.T.H. 38	COUNTY: MILWAUKEE	STREET LIGHTING & TRAFFIC SIGNAL CONDUIT DETAILS & PLAN	SHEET 119	E

FILE NAME : W:\bes\pavings\2015work\sHowellAveLaytonHoward\sHowellLaytonHoward_CONDUIT.dgn PLOT DATE : 30-JUL-2014 11:09 PLOT BY : cblack PLOT NAME : PLOT SCALE : 20.000000:1.000000

WISDOT/CADDS SHEET 42

NOTE:

COORDINATE STREET LIGHTING CONDUIT INSTALLATION WITH THE TRAFFIC SIGNAL CONDUIT INSTALLATION.

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

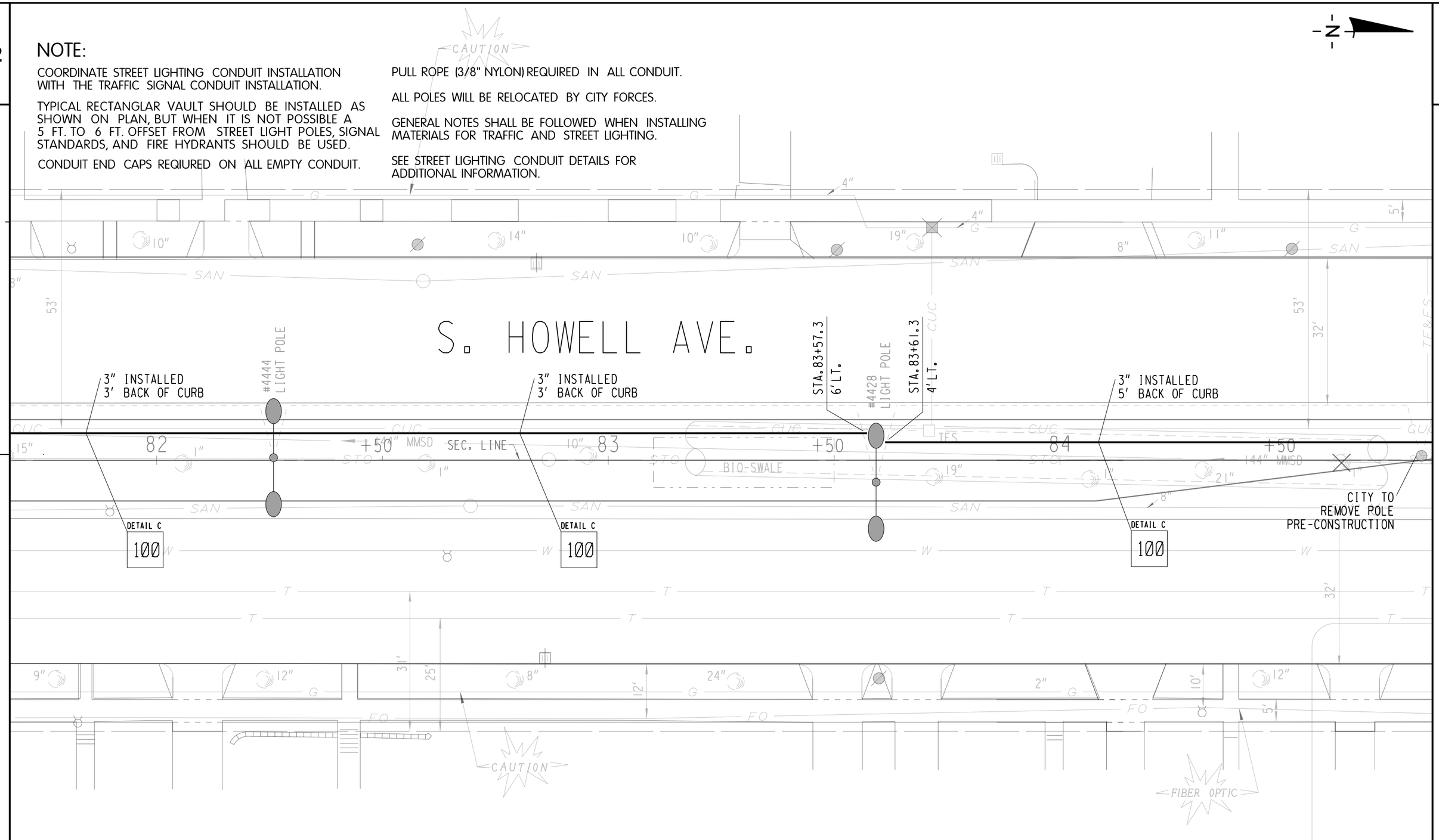
CONDUIT END CAPS REQIURED ON ALL EMPTY CONDUIT.

PULL ROPE (3/8" NYLON) REQUIRED IN ALL CONDUIT.

ALL POLES WILL BE RELOCATED BY CITY FORCES.

GENERAL NOTES SHALL BE FOLLOWED WHEN INSTALLING MATERIALS FOR TRAFFIC AND STREET LIGHTING.

SEE STREET LIGHTING CONDUIT DETAILS FOR ADDITIONAL INFORMATION.



SHEET 15 OF 28

PROJECT NO: 2060–11–70	HWY: S.T.H. 38	COUNTY: MILWAUKEE	STREET LIGHTING & TRAFFIC SIGNAL CONDUIT DETAILS & PLAN	SHEET 120	E

2

NOTE:

COORDINATE STREET LIGHTING CONDUIT INSTALLATION WITH THE TRAFFIC SIGNAL CONDUIT INSTALLATION.

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

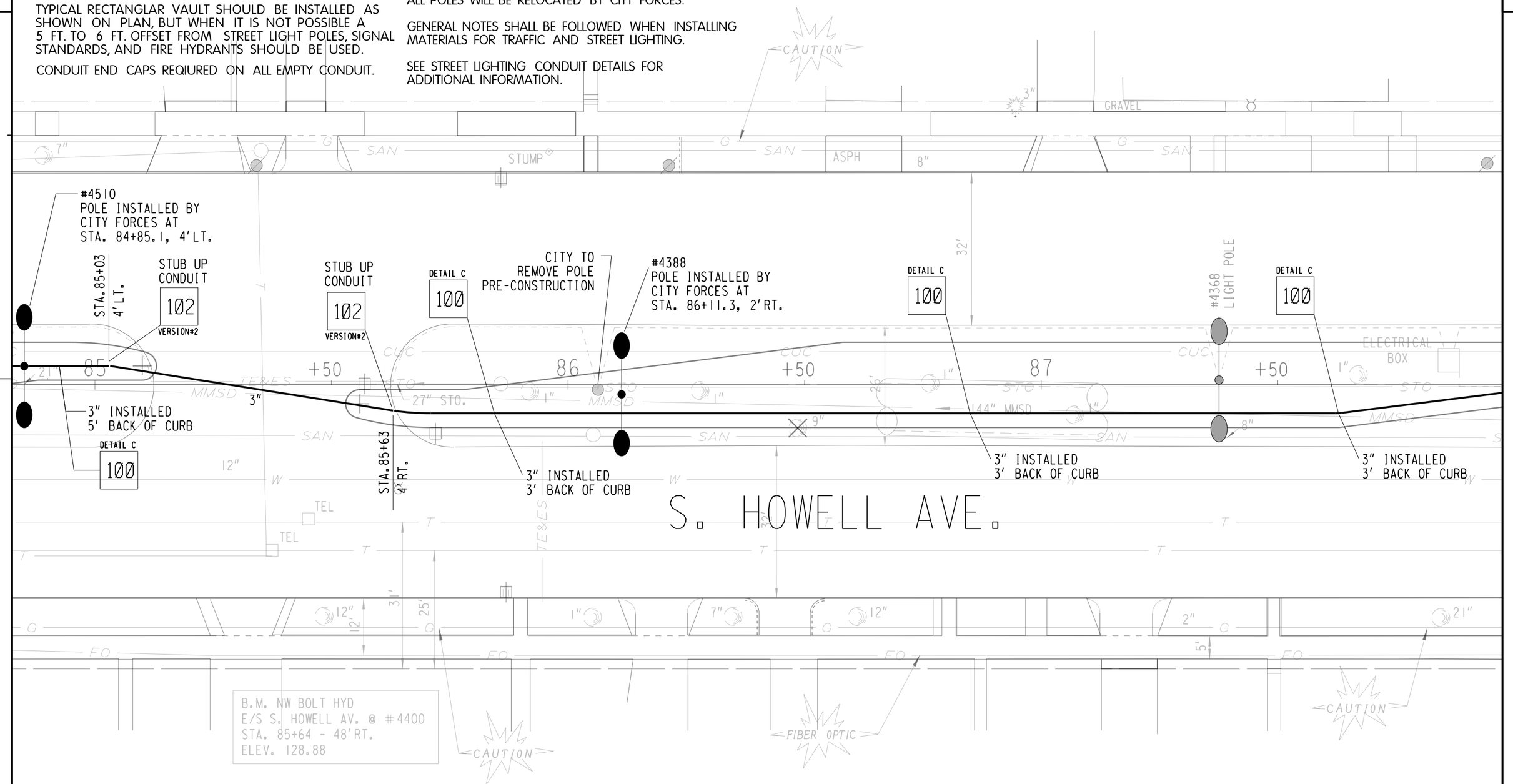
CONDUIT END CAPS REQIURED ON ALL EMPTY CONDUIT.

PULL ROPE (3/8" NYLON) REQUIRED IN ALL CONDUIT.

ALL POLES WILL BE RELOCATED BY CITY FORCES.

GENERAL NOTES SHALL BE FOLLOWED WHEN INSTALLING MATERIALS FOR TRAFFIC AND STREET LIGHTING.

SEE STREET LIGHTING CONDUIT DETAILS FOR ADDITIONAL INFORMATION.



SHEET 16 OF 28

PROJECT NO: 2060–11–70	HWY: S.T.H. 38	COUNTY: MILWAUKEE	STREET LIGHTING & TRAFFIC SIGNAL CONDUIT DETAILS & PLAN	SHEET 121	E

NOTE:

COORDINATE STREET LIGHTING CONDUIT INSTALLATION WITH THE TRAFFIC SIGNAL CONDUIT INSTALLATION.

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

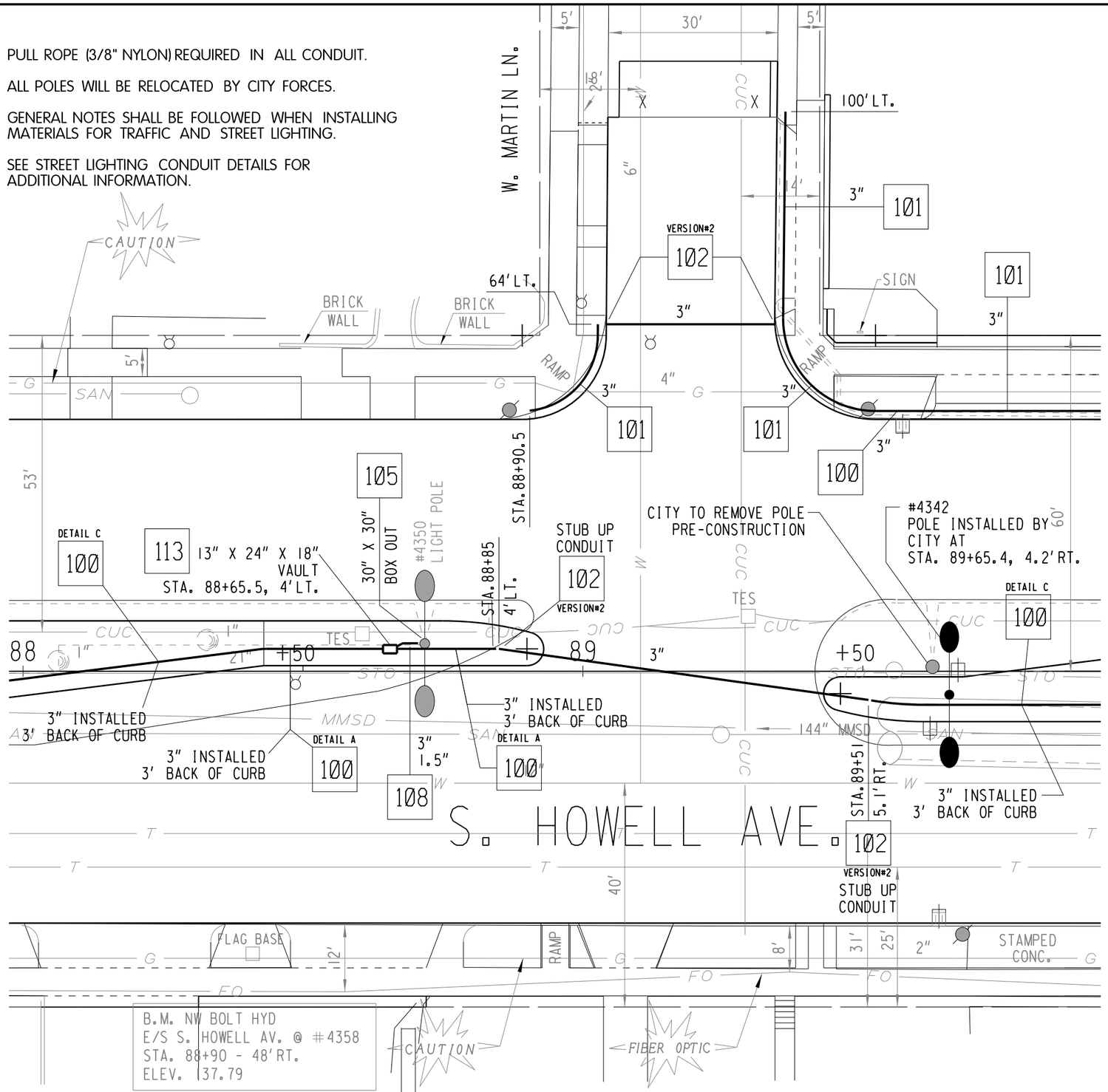
CONDUIT END CAPS REQIURED ON ALL EMPTY CONDUIT.

PULL ROPE (3/8" NYLON) REQUIRED IN ALL CONDUIT.

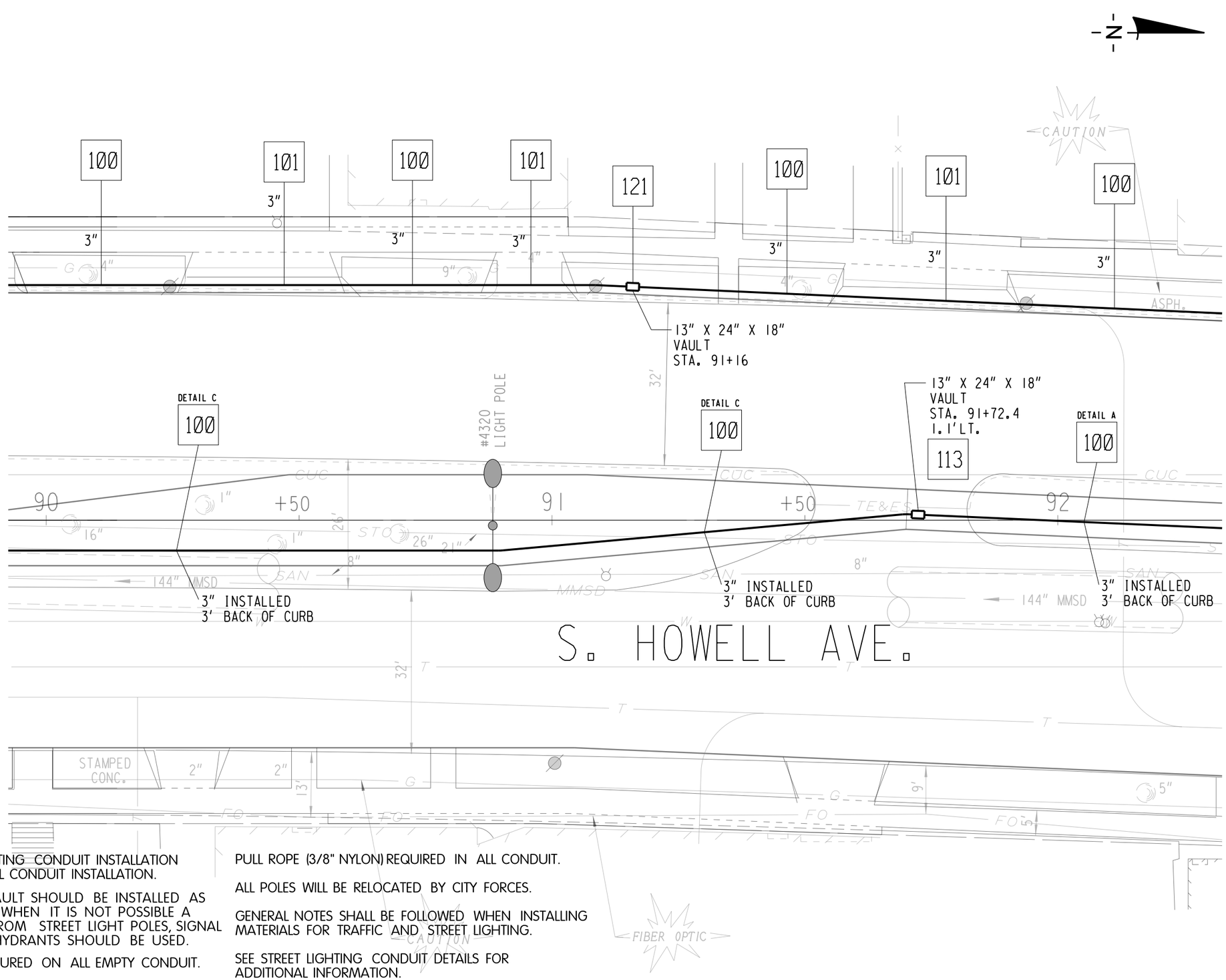
ALL POLES WILL BE RELOCATED BY CITY FORCES.

GENERAL NOTES SHALL BE FOLLOWED WHEN INSTALLING MATERIALS FOR TRAFFIC AND STREET LIGHTING.

SEE STREET LIGHTING CONDUIT DETAILS FOR ADDITIONAL INFORMATION.



2



NOTE:

COORDINATE STREET LIGHTING CONDUIT INSTALLATION WITH THE TRAFFIC SIGNAL CONDUIT INSTALLATION.

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

CONDUIT END CAPS REQIURED ON ALL EMPTY CONDUIT.

PULL ROPE (3/8" NYLON) REQUIRED IN ALL CONDUIT.

ALL POLES WILL BE RELOCATED BY CITY FORCES.

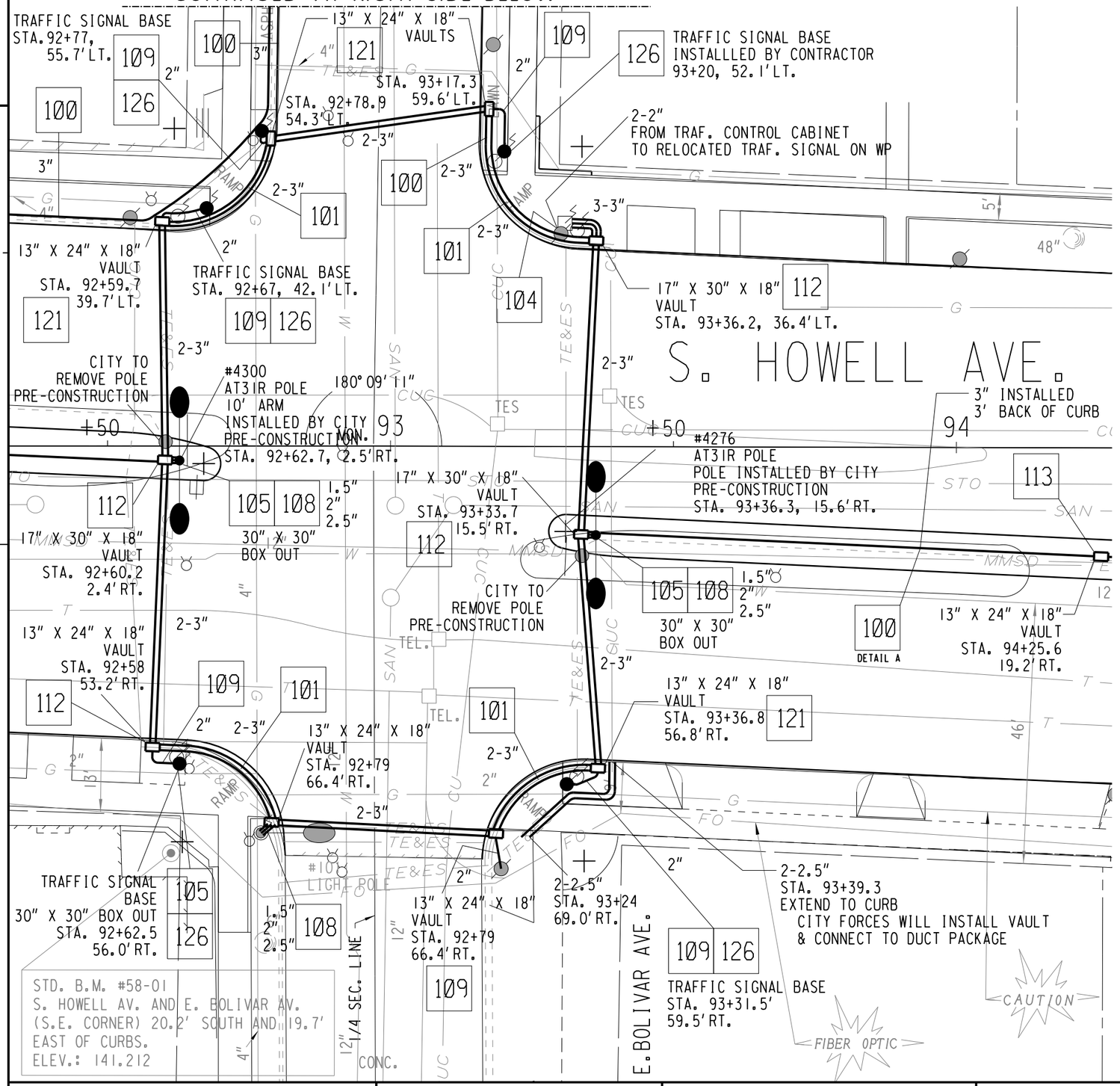
GENERAL NOTES SHALL BE FOLLOWED WHEN INSTALLING MATERIALS FOR TRAFFIC AND STREET LIGHTING.

SEE STREET LIGHTING CONDUIT DETAILS FOR ADDITIONAL INFORMATION.

SHEET 18 OF 28

PROJECT NO: 2060–11–70	HWY: S.T.H. 38	COUNTY: MILWAUKEE	STREET LIGHTING & TRAFFIC SIGNAL CONDUIT DETAILS & PLAN	SHEET 123	E

CONTINUED AT RIGHT SIDE BELOW



NOTE:

COORDINATE STREET LIGHTING CONDUIT INSTALLATION WITH THE TRAFFIC SIGNAL CONDUIT INSTALLATION.

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

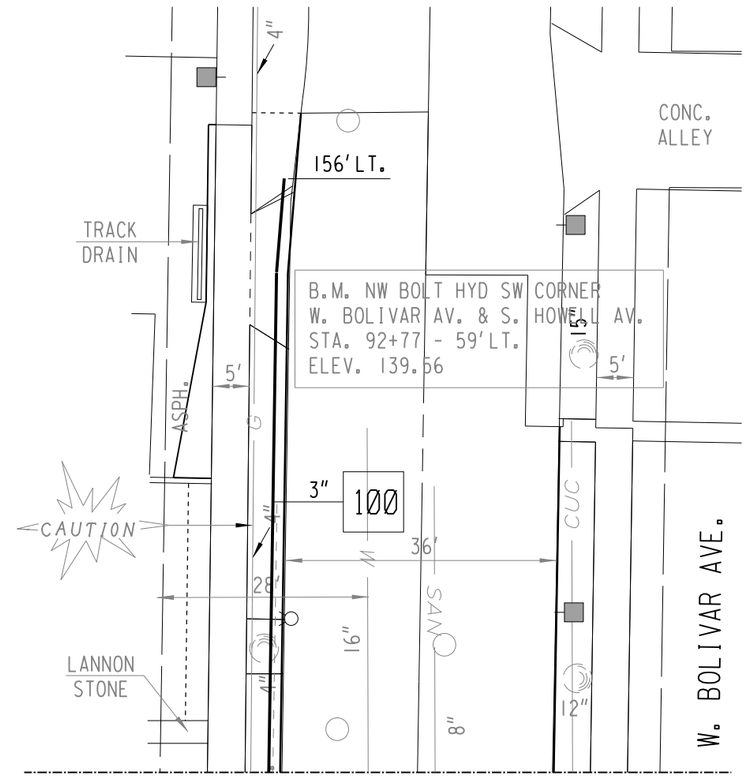
CONDUIT END CAPS REQIURED ON ALL EMPTY CONDUIT.

PULL ROPE (3/8" NYLON) REQUIRED IN ALL CONDUIT.

ALL POLES WILL BE RELOCATED BY CITY FORCES.

GENERAL NOTES SHALL BE FOLLOWED WHEN INSTALLING MATERIALS FOR TRAFFIC AND STREET LIGHTING.

SEE STREET LIGHTING CONDUIT DETAILS FOR ADDITIONAL INFORMATION.



CONTINUED FROM LEFT SIDE ABOVE

PROJECT NO: 2060–11–70	HWY: S.T.H. 38	COUNTY: MILWAUKEE	STREET LIGHTING & TRAFFIC SIGNAL CONDUIT DETAILS & PLAN	SHEET 124	E

FILE NAME : W:\bes\pavings\2015work\sHowellAveLaytonHoward\sHowellLaytonHoward_CONDUIT.dgn PLOT DATE : 05-NOV-2014 12:55 PLOT BY : cblack PLOT NAME : PLOT SCALE : 20.000000:1.000000 WISDOT/CADDS SHEET 42

NOTE:

COORDINATE STREET LIGHTING CONDUIT INSTALLATION WITH THE TRAFFIC SIGNAL CONDUIT INSTALLATION.

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

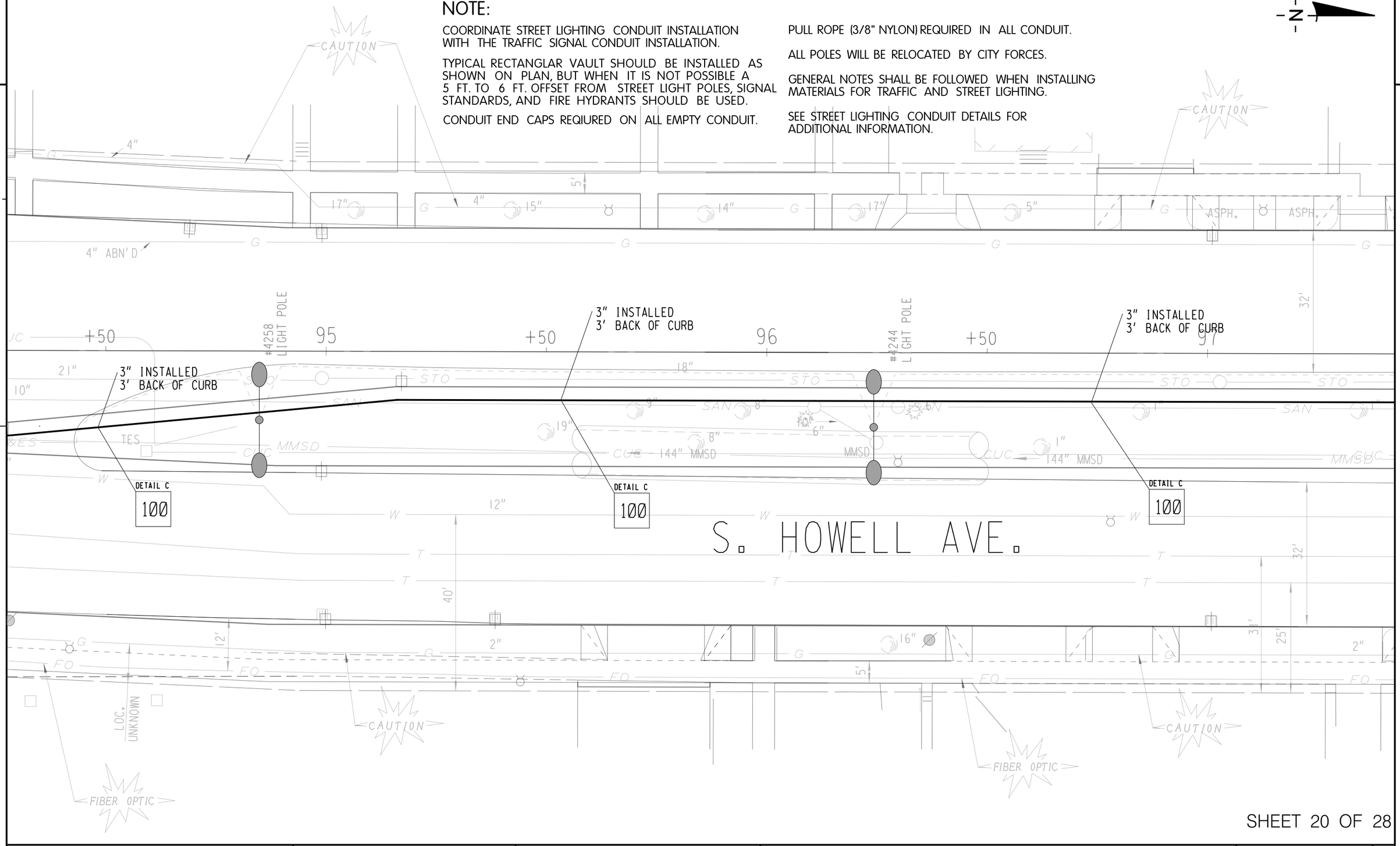
CONDUIT END CAPS REQIURED ON ALL EMPTY CONDUIT.

PULL ROPE (3/8" NYLON) REQUIRED IN ALL CONDUIT.

ALL POLES WILL BE RELOCATED BY CITY FORCES.

GENERAL NOTES SHALL BE FOLLOWED WHEN INSTALLING MATERIALS FOR TRAFFIC AND STREET LIGHTING.

SEE STREET LIGHTING CONDUIT DETAILS FOR ADDITIONAL INFORMATION.



SHEET 20 OF 28

PROJECT NO: 2060–11–70	HWY: S.T.H. 38	COUNTY: MILWAUKEE	STREET LIGHTING & TRAFFIC SIGNAL CONDUIT DETAILS & PLAN	SHEET 125	E

NOTE:

COORDINATE STREET LIGHTING CONDUIT INSTALLATION WITH THE TRAFFIC SIGNAL CONDUIT INSTALLATION.

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

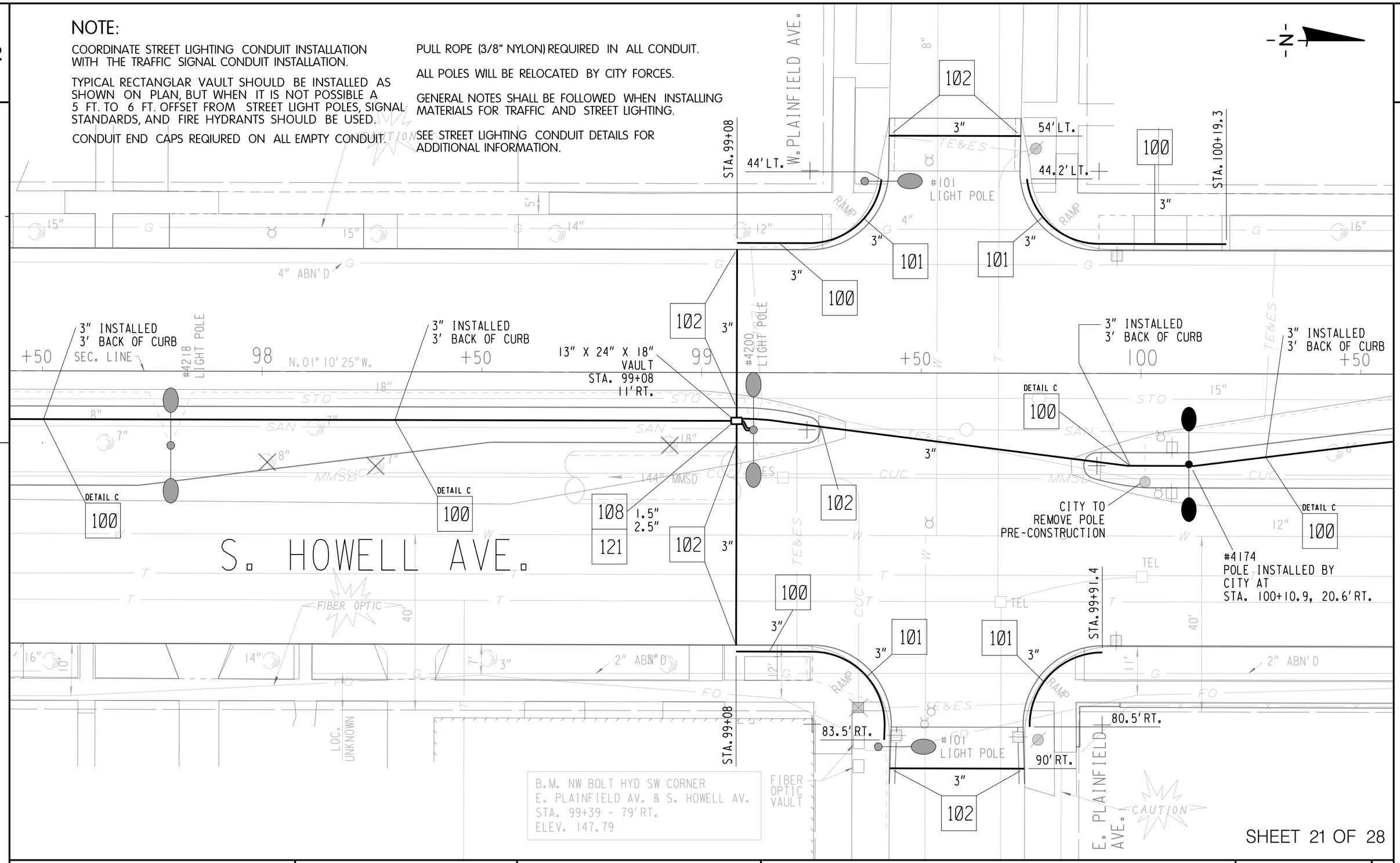
CONDUIT END CAPS REQIURED ON ALL EMPTY CONDUIT.

PULL ROPE (3/8" NYLON) REQUIRED IN ALL CONDUIT.

ALL POLES WILL BE RELOCATED BY CITY FORCES.

GENERAL NOTES SHALL BE FOLLOWED WHEN INSTALLING MATERIALS FOR TRAFFIC AND STREET LIGHTING.

SEE STREET LIGHTING CONDUIT DETAILS FOR ADDITIONAL INFORMATION.



SHEET 21 OF 28

PROJECT NO: 2060–11–70	HWY: S.T.H. 38	COUNTY: MILWAUKEE	STREET LIGHTING & TRAFFIC SIGNAL CONDUIT DETAILS & PLAN	SHEET 126	E

NOTE:

COORDINATE STREET LIGHTING CONDUIT INSTALLATION WITH THE TRAFFIC SIGNAL CONDUIT INSTALLATION.

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

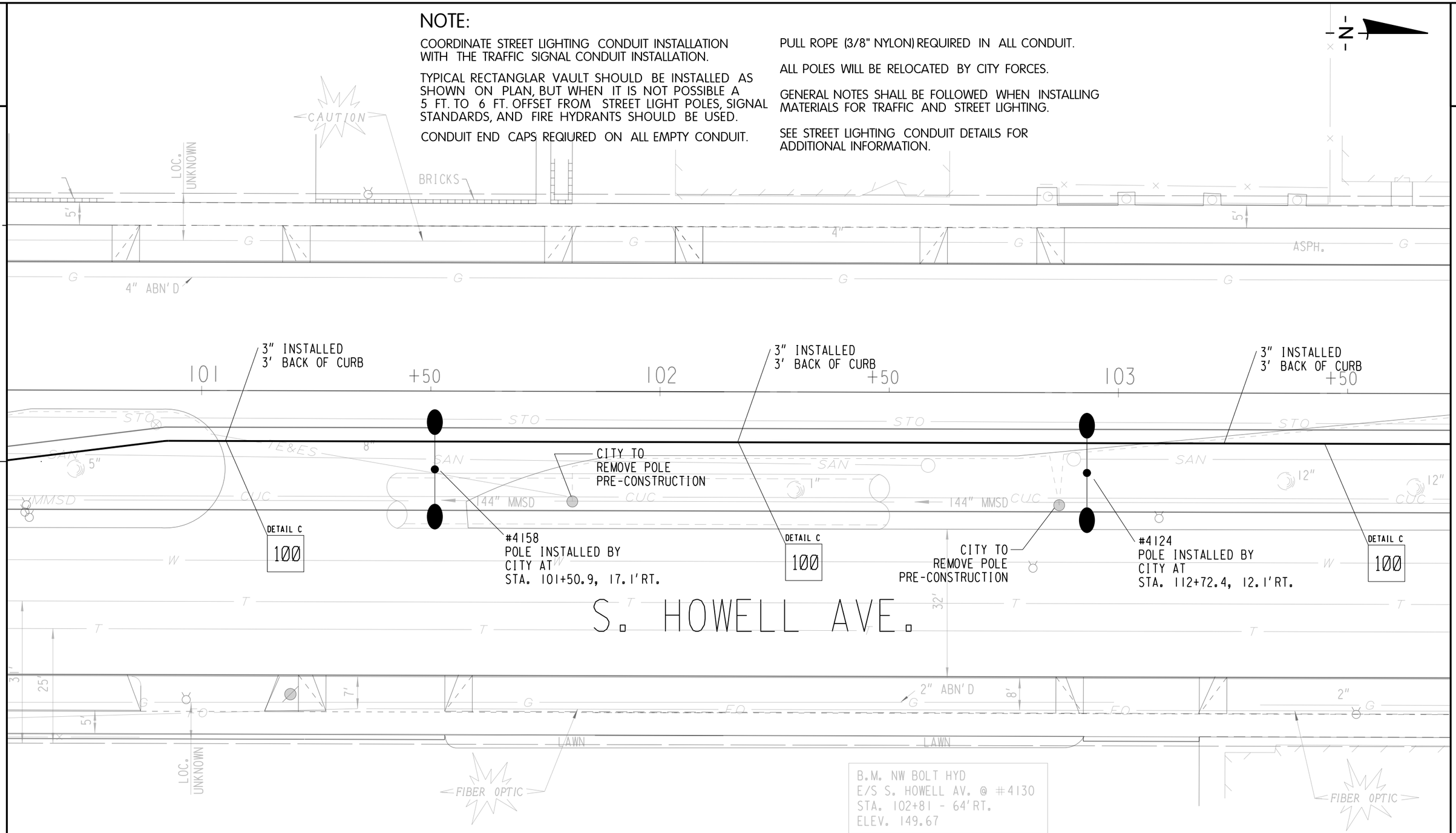
CONDUIT END CAPS REQIURED ON ALL EMPTY CONDUIT.

PULL ROPE (3/8" NYLON) REQUIRED IN ALL CONDUIT.

ALL POLES WILL BE RELOCATED BY CITY FORCES.

GENERAL NOTES SHALL BE FOLLOWED WHEN INSTALLING MATERIALS FOR TRAFFIC AND STREET LIGHTING.

SEE STREET LIGHTING CONDUIT DETAILS FOR ADDITIONAL INFORMATION.



SHEET 22 OF 28

PROJECT NO: 2060–11–70	HWY: S.T.H. 38	COUNTY: MILWAUKEE	STREET LIGHTING & TRAFFIC SIGNAL CONDUIT DETAILS & PLAN	SHEET 127	E

NOTE:

COORDINATE STREET LIGHTING CONDUIT INSTALLATION WITH THE TRAFFIC SIGNAL CONDUIT INSTALLATION.

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

CONDUIT END CAPS REQIURED ON ALL EMPTY CONDUIT.

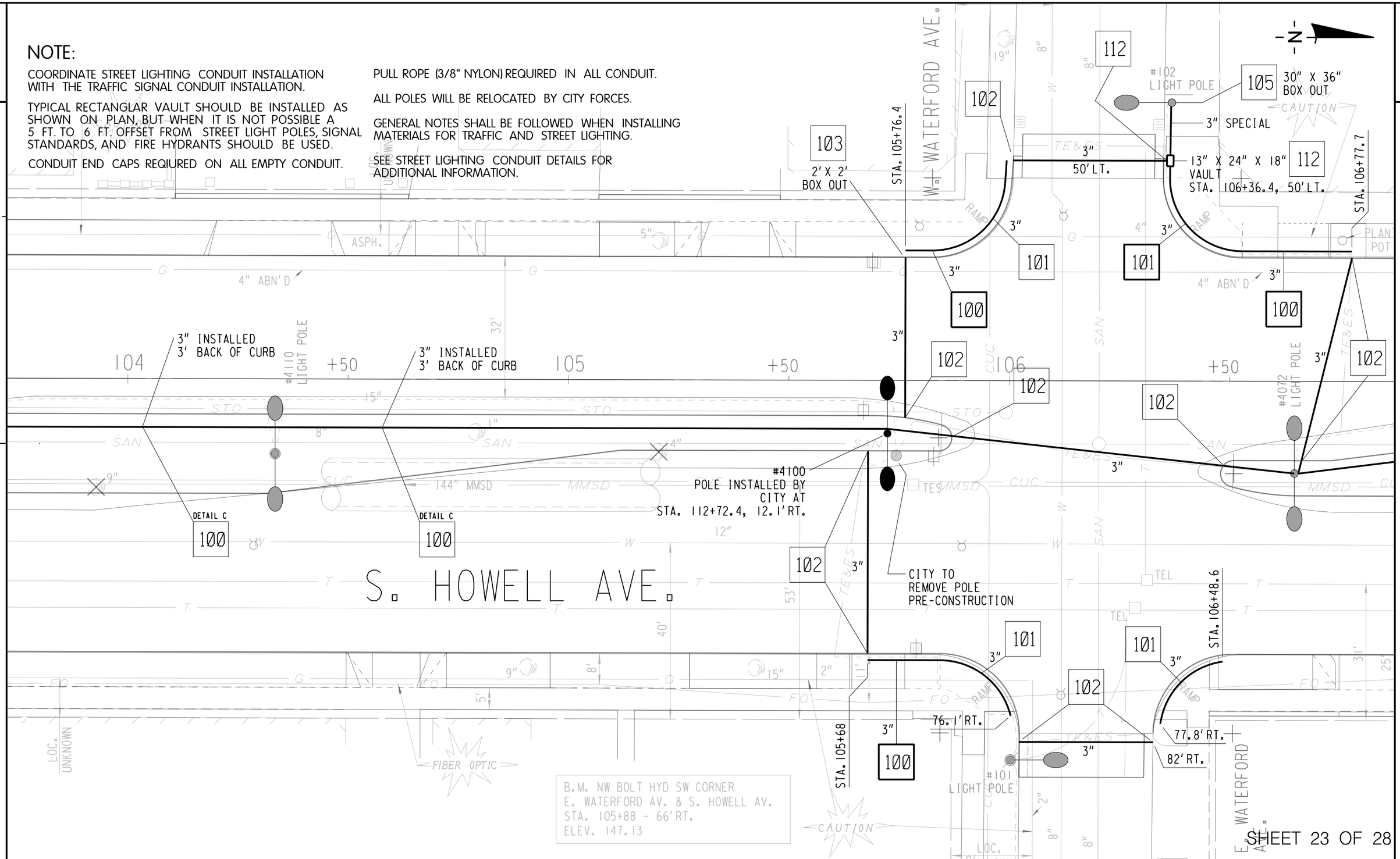
PULL ROPE (3/8" NYLON) REQUIRED IN ALL CONDUIT.

ALL POLES WILL BE RELOCATED BY CITY FORCES.

GENERAL NOTES SHALL BE FOLLOWED WHEN INSTALLING MATERIALS FOR TRAFFIC AND STREET LIGHTING.

SEE STREET LIGHTING CONDUIT DETAILS FOR ADDITIONAL INFORMATION.

2



PROJECT NO: 2060–11–70	HWY: S.T.H. 38	COUNTY: MILWAUKEE	STREET LIGHTING & TRAFFIC SIGNAL CONDUIT DETAILS & PLAN	SHEET 128	E

FILE NAME : W:\bes\pavings\2015work\sHowellAveLaytonHoward\sHowellLaytonHoward_CONDUIT.dgn
PLOT DATE : 30-JUL-2014 11:10
PLOT BY : cblack
PLOT NAME :
PLOT SCALE : 20.000000:1.000000
WISDOT/CADDS SHEET 42

NOTE:

COORDINATE STREET LIGHTING CONDUIT INSTALLATION WITH THE TRAFFIC SIGNAL CONDUIT INSTALLATION.

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

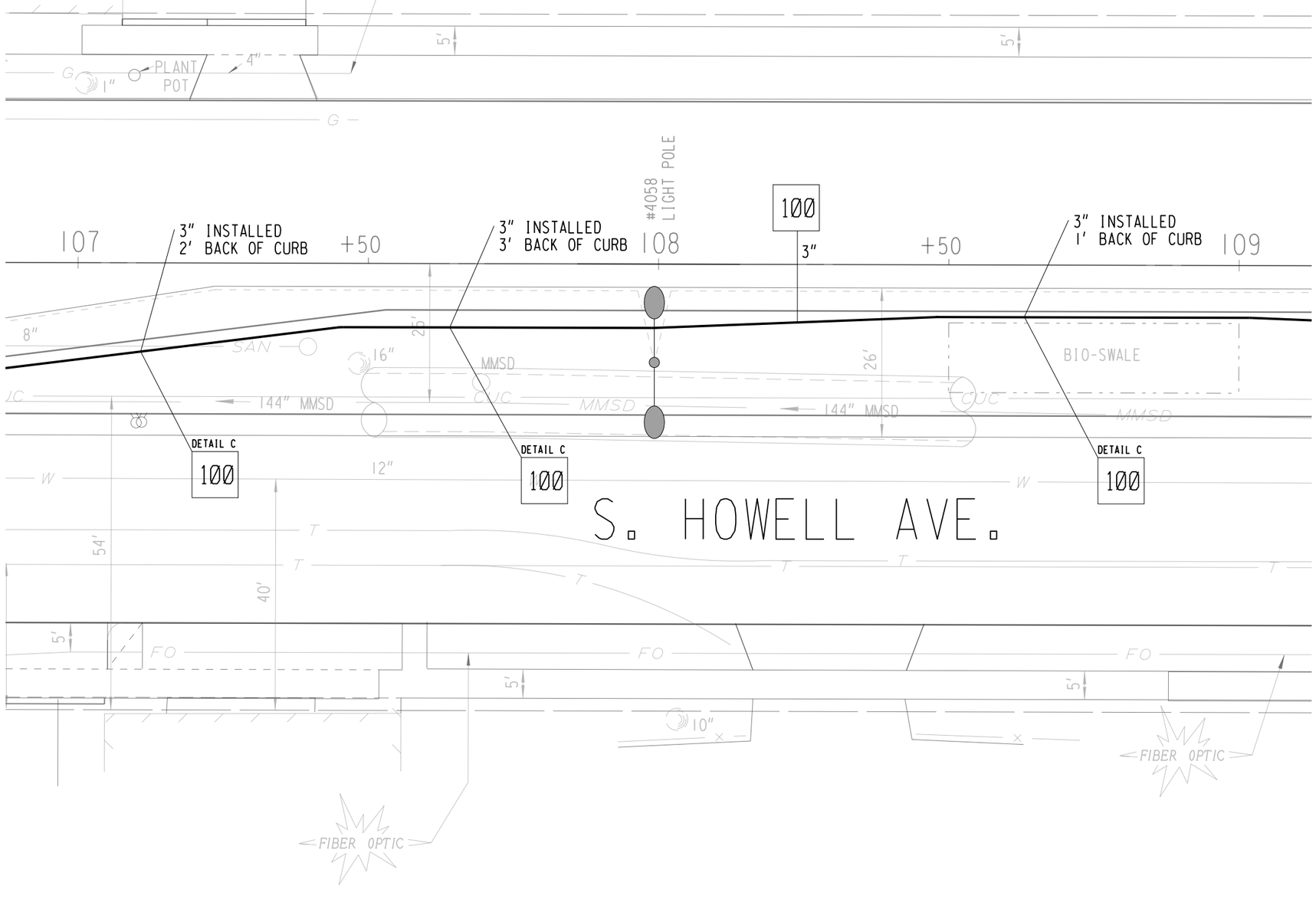
CONDUIT END CAPS REQIURED ON ALL EMPTY CONDUIT.

PULL ROPE (3/8" NYLON) REQUIRED IN ALL CONDUIT.

ALL POLES WILL BE RELOCATED BY CITY FORCES.

GENERAL NOTES SHALL BE FOLLOWED WHEN INSTALLING MATERIALS FOR TRAFFIC AND STREET LIGHTING.

SEE STREET LIGHTING CONDUIT DETAILS FOR ADDITIONAL INFORMATION.



SHEET 24 OF 28

PROJECT NO: 2060–11–70	HWY: S.T.H. 38	COUNTY: MILWAUKEE	STREET LIGHTING & TRAFFIC SIGNAL CONDUIT DETAILS & PLAN	SHEET 129	E

FILE NAME : W:\bes\pavings\2015work\sHowellAveLaytonHoward\sHowellLaytonHoward_CONDUIT.dgn PLOT DATE : 30-JUL-2014 11:10 PLOT BY : cblack PLOT NAME : PLOT SCALE : 20.000000:1.000000

WISDOT/CADDS SHEET 42

NOTE:

COORDINATE STREET LIGHTING CONDUIT INSTALLATION WITH THE TRAFFIC SIGNAL CONDUIT INSTALLATION.

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

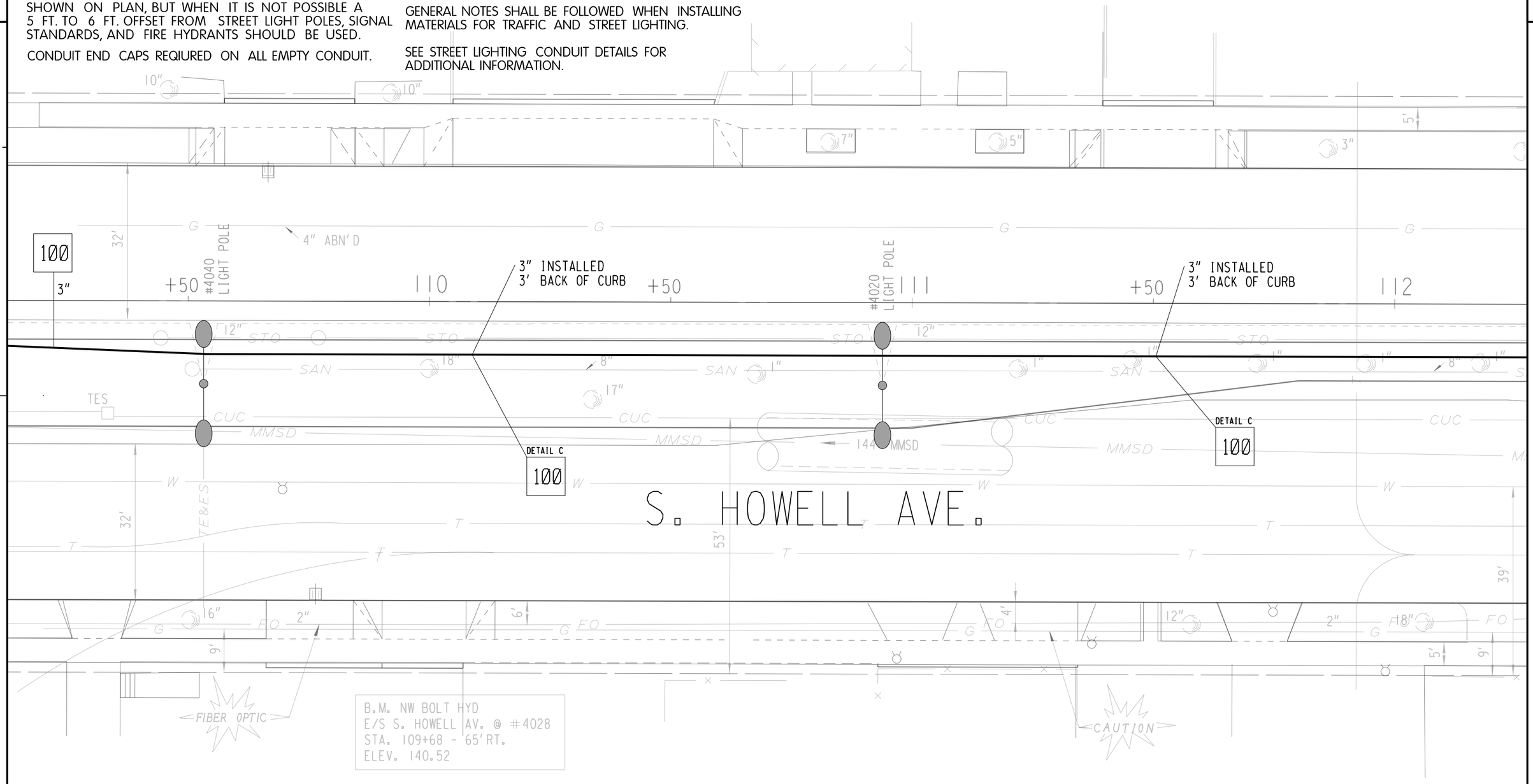
CONDUIT END CAPS REQIURED ON ALL EMPTY CONDUIT.

PULL ROPE (3/8" NYLON) REQUIRED IN ALL CONDUIT.

ALL POLES WILL BE RELOCATED BY CITY FORCES.

GENERAL NOTES SHALL BE FOLLOWED WHEN INSTALLING MATERIALS FOR TRAFFIC AND STREET LIGHTING.

SEE STREET LIGHTING CONDUIT DETAILS FOR ADDITIONAL INFORMATION.



SHEET 25 OF 28

PROJECT NO: 2060–11–70	HWY: S.T.H. 38	COUNTY: MILWAUKEE	STREET LIGHTING & TRAFFIC SIGNAL CONDUIT DETAILS & PLAN	SHEET 130	E

NOTE:

COORDINATE STREET LIGHTING CONDUIT INSTALLATION WITH THE TRAFFIC SIGNAL CONDUIT INSTALLATION.

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

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ALL POLES WILL BE RELOCATED BY CITY FORCES.

GENERAL NOTES SHALL BE FOLLOWED WHEN INSTALLING MATERIALS FOR TRAFFIC AND STREET LIGHTING.

SEE STREET LIGHTING CONDUIT DETAILS FOR ADDITIONAL INFORMATION.

W. NORWICH ST.

STA. 112+31.3

#101 LIGHT POLE

42.'LT.

57.'LT.

STA. 113+32

#4000 POLE INSTALLED BY CITY AT STA. 112+31.3, 11.7'RT.

#3974 POLE INSTALLED BY CITY AT STA. 113+34.1 21.3'RT.

2' X 2' BOX OUT

#3954 LIGHT POLE

DETAIL C

CITY TO REMOVE POLE PRE-CONSTRUCTION

CITY TO REMOVE POLE PRE-CONSTRUCTION

13" X 24" X 18" VAULT STA. 112+42.6, 12.8'RT.

STA. 113+41

3" INSTALLED 4' BACK OF CURB

3" INSTALLED 4' BACK OF CURB

S. HOWELL AVE.

78.2'RT.

77.8'RT.

89'RT.

STA. 112+42.7

E. NORWICH ST.

#101 LIGHT POLE

B.M. NW BOLT HYD NE CORNER
E. NORWICH AV. & S. HOWELL AV.
STA. 113.35 - 65'RT.
ELEV. 133.37

SHEET 26 OF 28

PROJECT NO: 2060–11–70	HWY: S.T.H. 38	COUNTY: MILWAUKEE	STREET LIGHTING & TRAFFIC SIGNAL CONDUIT DETAILS & PLAN	SHEET 131	E

FILE NAME : W:\bes\pavings\2015work\sHowellAveLaytonHoward\sHowellLaytonHoward_CONDUIT.dgn PLOT DATE : 30-JUL-2014 11:10 PLOT BY : cblack PLOT NAME : PLOT SCALE : 20.000000:1.000000 WISDOT/CADDS SHEET 42

NOTE:

COORDINATE STREET LIGHTING CONDUIT INSTALLATION WITH THE TRAFFIC SIGNAL CONDUIT INSTALLATION.

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

CONDUIT END CAPS REQIURED ON ALL EMPTY CONDUIT.

PULL ROPE (3/8" NYLON) REQUIRED IN ALL CONDUIT.

ALL POLES WILL BE RELOCATED BY CITY FORCES.

GENERAL NOTES SHALL BE FOLLOWED WHEN INSTALLING MATERIALS FOR TRAFFIC AND STREET LIGHTING.

SEE STREET LIGHTING CONDUIT DETAILS FOR ADDITIONAL INFORMATION.

STA. 116+56

103 2' X 2' BOX OUT

4" ABN'D

100 SEC. LINE

#3944 LIGHT POLE

#3934 LIGHT POLE

#3918 POLE INSTALLED BY CITY AT STA. 117+77.2, 6.7'RT.

CITY TO REMOVE POLE PRE-CONSTRUCTION

DETAIL C 100

DETAIL A 100

116 117 118 +50

102 13" X 24" X 18" VAULT STA. 116+56, 15.6'RT.

112 1.5" 2.5"

105 108 30" X 30" BOX OUT

112 13" X 24" X 18" VAULT STA. 117+81.3, 46.1'LT.

3" INSTALLED 4' BACK OF CURB

102 3"

112 13" X 24" X 18" VAULT STA. 115+67, 64.8'RT.

101 3"

DETAIL A 100 STA. 116+58

112 13" X 24" X 18" VAULT STA. 116+58, 67.2'RT.

76.4'RT.

#101 LIGHT POLE

FIBER OPTIC VAULT

92'RT. 102

3" SPECIAL

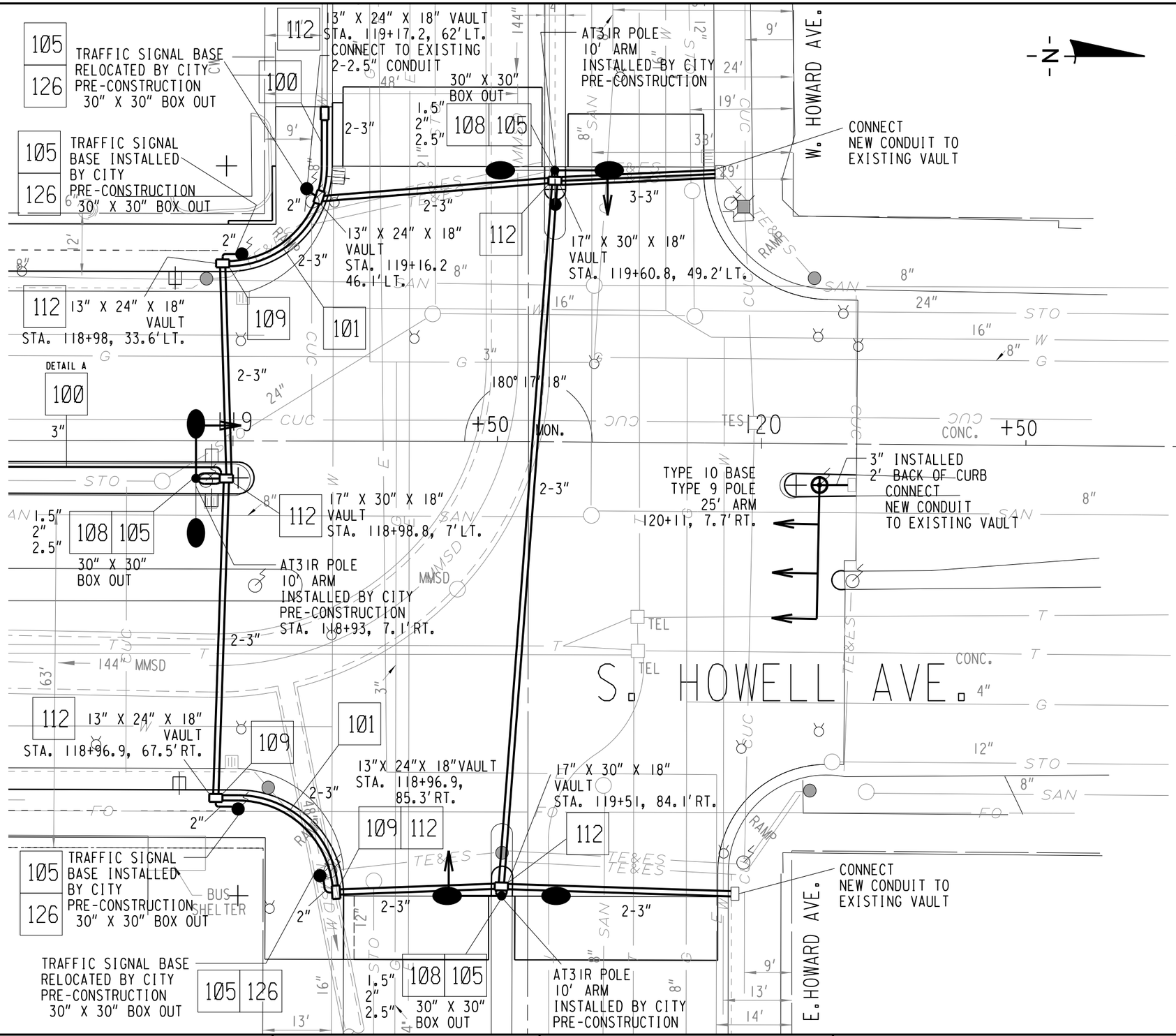
112 13" X 24" X 18" VAULT STA. 115+98.5, 92'LT.

E. VAN BECK AVE.

S. HOWELL AVE.

SHEET 27 OF 28

PROJECT NO: 2060-11-70	HWY: S.T.H. 38	COUNTY: MILWAUKEE	STREET LIGHTING & TRAFFIC SIGNAL CONDUIT DETAILS & PLAN	SHEET 132	E



NOTE:

COORDINATE STREET LIGHTING CONDUIT INSTALLATION WITH THE TRAFFIC SIGNAL CONDUIT INSTALLATION.

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

CONDUIT END CAPS REQIURED ON ALL EMPTY CONDUIT.

PULL ROPE (3/8" NYLON) REQUIRED IN ALL CONDUIT.

ALL POLES WILL BE RELOCATED BY CITY FORCES.

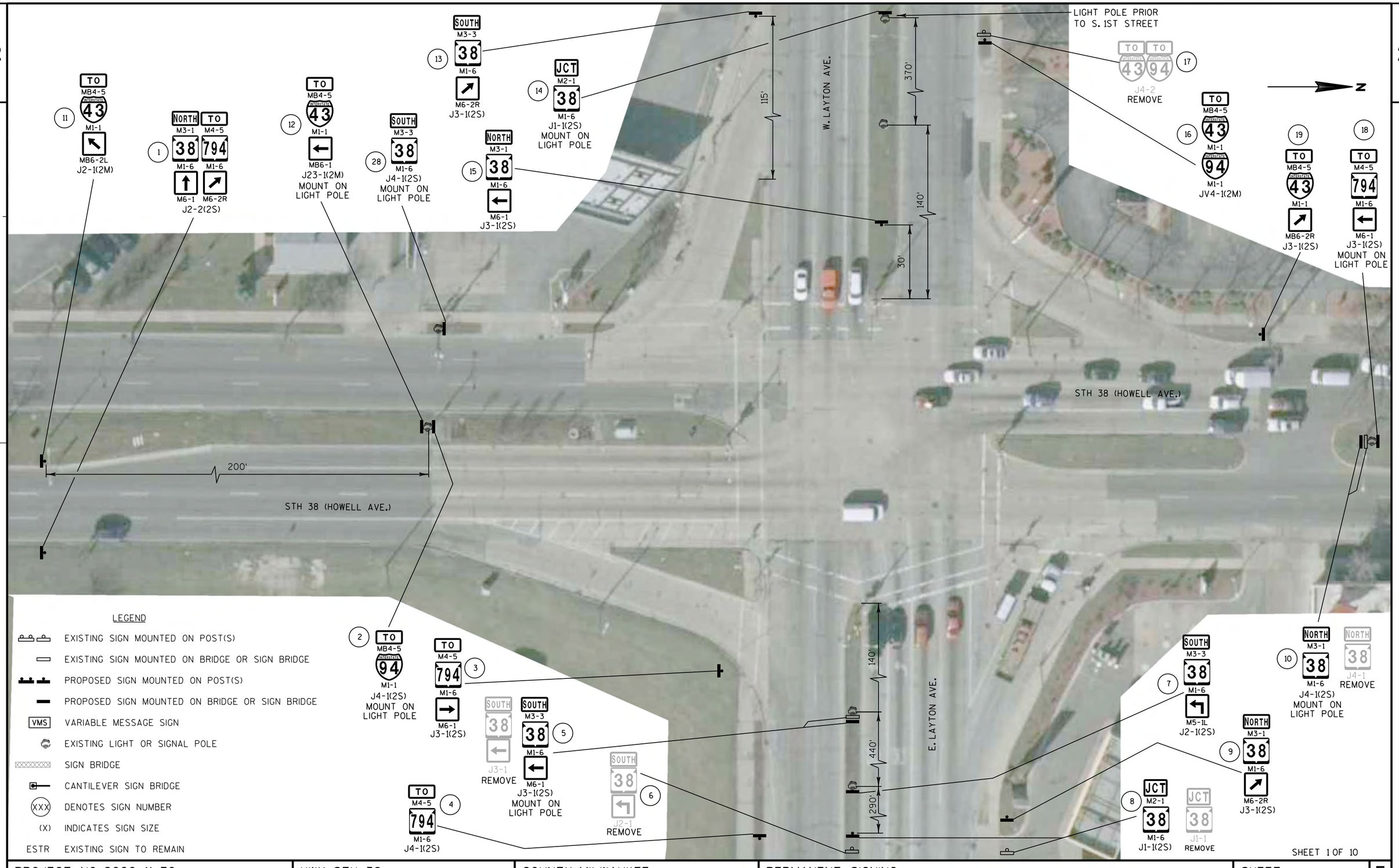
GENERAL NOTES SHALL BE FOLLOWED WHEN INSTALLING MATERIALS FOR TRAFFIC AND STREET LIGHTING.

SEE STREET LIGHTING CONDUIT DETAILS FOR ADDITIONAL INFORMATION.

SHEET 28 OF 28

PROJECT NO: 2060-11-70	HWY: S.T.H. 38	COUNTY: MILWAUKEE	STREET LIGHTING & TRAFFIC SIGNAL CONDUIT DETAILS & PLAN	SHEET 133	E

FILE NAME : W:\bes\pavings\2015work\sHowellAveLaytonHoward\sHowellLaytonHoward_CONDUIT.dgn PLOT DATE : 05-NOV-2014 12:55 PLOT BY : cblack PLOT NAME : PLOT SCALE : 20.000000:1.000000
WISDOT/CADDS SHEET 42



SHEET 1 OF 10

PROJECT NO: 2060-11-70	HWY: STH 38	COUNTY: MILWAUKEE	PERMANENT SIGNING	SHEET 134 E

2

2

N

NO SIGNS THIS SHEET



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
- VMS — VARIABLE MESSAGE SIGN
- EXISTING LIGHT OR SIGNAL POLE
- SIGN BRIDGE
- CANTILEVER SIGN BRIDGE
- XXX — DENOTES SIGN NUMBER
- (X) — INDICATES SIGN SIZE
- ESTR — EXISTING SIGN TO REMAIN

SHEET 2 OF 10

PROJECT NO: 2060-11-70	HWY: STH 38	COUNTY: MILWAUKEE	PERMANENT SIGNING	SHEET 135	E

2

NO SIGNS THIS SHEET



N

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
- VMS — VARIABLE MESSAGE SIGN
- EXISTING LIGHT OR SIGNAL POLE
- SIGN BRIDGE
- CANTILEVER SIGN BRIDGE
- XXX — DENOTES SIGN NUMBER
- (X) — INDICATES SIGN SIZE
- ESTR — EXISTING SIGN TO REMAIN

SHEET 3 OF 10

PROJECT NO: 2060-11-70	HWY: STH 38	COUNTY: MILWAUKEE	PERMANENT SIGNING	SHEET 136 E

2

N

2

NO SIGNS THIS SHEET



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
- VMS — VARIABLE MESSAGE SIGN
- EXISTING LIGHT OR SIGNAL POLE
- SIGN BRIDGE
- CANTILEVER SIGN BRIDGE
- XXX — DENOTES SIGN NUMBER
- (X) — INDICATES SIGN SIZE
- ESTR — EXISTING SIGN TO REMAIN

FILE NAME : J:\projects\d2_20601138\sign\023204_ps.dgn PLOT DATE : 13-MAY-2014 10:02 PLOT BY : dotklm PLOT NAME : PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

2

N

W. MARTIN LN.

STH 38 (HOWELL AVE.)

SOUTH
M3-3
20
38
M1-6
J4-1(2S)
MOUNT ON
LIGHT POLE

SOUTH
38
J4-1
REMOVE

STH 38 (HOWELL AVE.)

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
- VMS — VARIABLE MESSAGE SIGN
- EXISTING LIGHT OR SIGNAL POLE
- SIGN BRIDGE
- CANTILEVER SIGN BRIDGE
- XXX — DENOTES SIGN NUMBER
- (X) — INDICATES SIGN SIZE
- ESTR — EXISTING SIGN TO REMAIN

2

N

W. BOLIVAR AVE.

STH 38 (HOWELL AVE.)

STH 38 (HOWELL AVE.)

E. BOLIVAR AVE.

21

NORTH
M3-1
38
M1-6
J4-1(2S)
MOUNT ON
LIGHT POLE

NORTH
38
J4-1
REMOVE

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
- VMS — VARIABLE MESSAGE SIGN
- EXISTING LIGHT OR SIGNAL POLE
- SIGN BRIDGE
- CANTILEVER SIGN BRIDGE
- XXX — DENOTES SIGN NUMBER
- (X) — INDICATES SIGN SIZE
- ESTR — EXISTING SIGN TO REMAIN

SHEET 6 OF 10

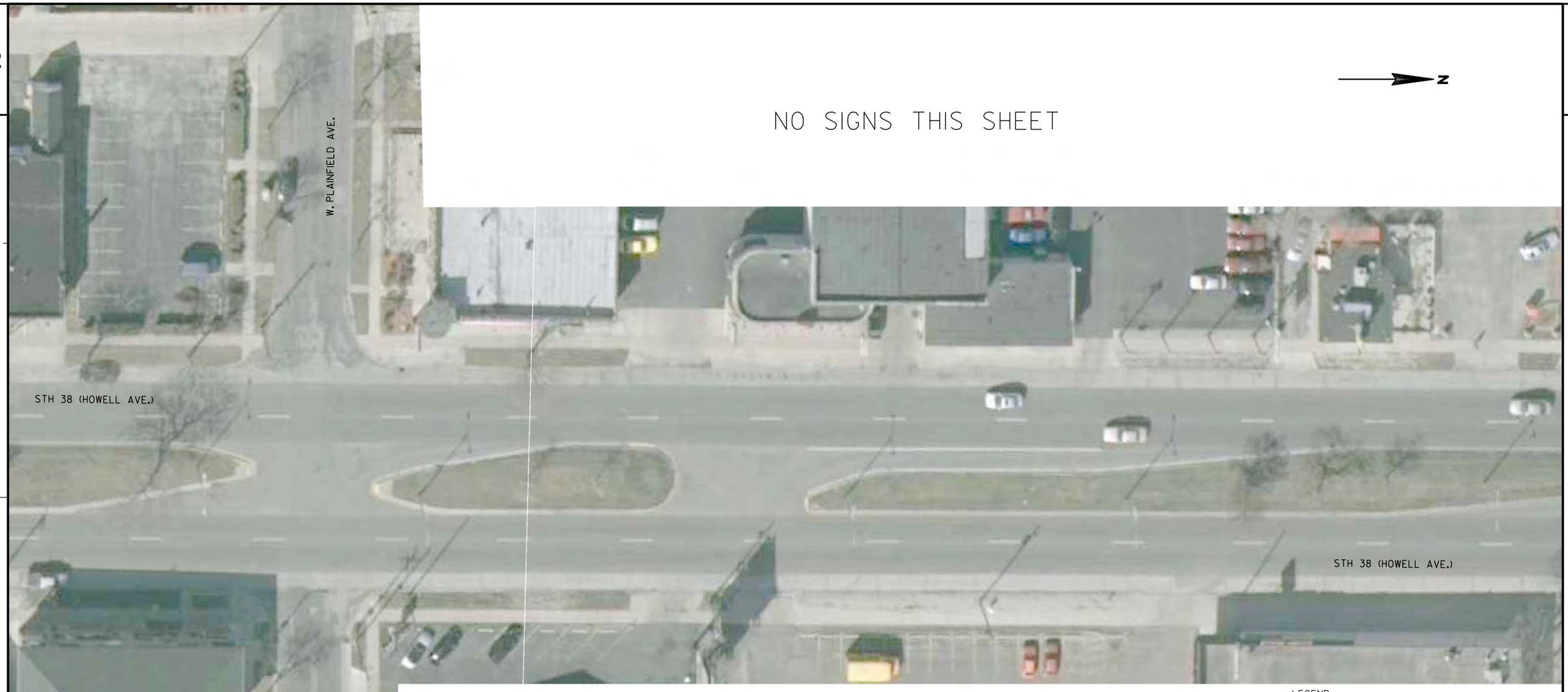
PROJECT NO: 2060-11-70	HWY: STH 38	COUNTY: MILWAUKEE	PERMANENT SIGNING	SHEET 139	E

2

2

N

NO SIGNS THIS SHEET



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
- VMS — VARIABLE MESSAGE SIGN
- EXISTING LIGHT OR SIGNAL POLE
- SIGN BRIDGE
- CANTILEVER SIGN BRIDGE
- XXX — DENOTES SIGN NUMBER
- (X) — INDICATES SIGN SIZE
- ESTR — EXISTING SIGN TO REMAIN

SHEET 7 OF 10

PROJECT NO: 2060-11-70	HWY: STH 38	COUNTY: MILWAUKEE	PERMANENT SIGNING	SHEET 140	E

FILE NAME : J:\projects\d2_20601138\sign\023207_ps.dgn PLOT DATE : 13-MAY-2014 10:02 PLOT BY : dotklm PLOT NAME : PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

2

N

NO SIGNS THIS SHEET



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
- VMS — VARIABLE MESSAGE SIGN
- EXISTING LIGHT OR SIGNAL POLE
- SIGN BRIDGE
- CANTILEVER SIGN BRIDGE
- XXX — DENOTES SIGN NUMBER
- (X) — INDICATES SIGN SIZE
- ESTR — EXISTING SIGN TO REMAIN

SHEET 8 OF 10

PROJECT NO: 2060-11-70	HWY: STH 38	COUNTY: MILWAUKEE	PERMANENT SIGNING	SHEET 141	E

2

2

N

W. NORWICH AVE.

STH 38 (HOWELL AVE.)

STH 38 (HOWELL AVE.)

E. NORWICH AVE.

E. VAN BECK AVE.

[10]
TO
INTERSTATE
43
INTERSTATE
94

ESTR
MOUNTED ON
LIGHT POLE

LEGEND

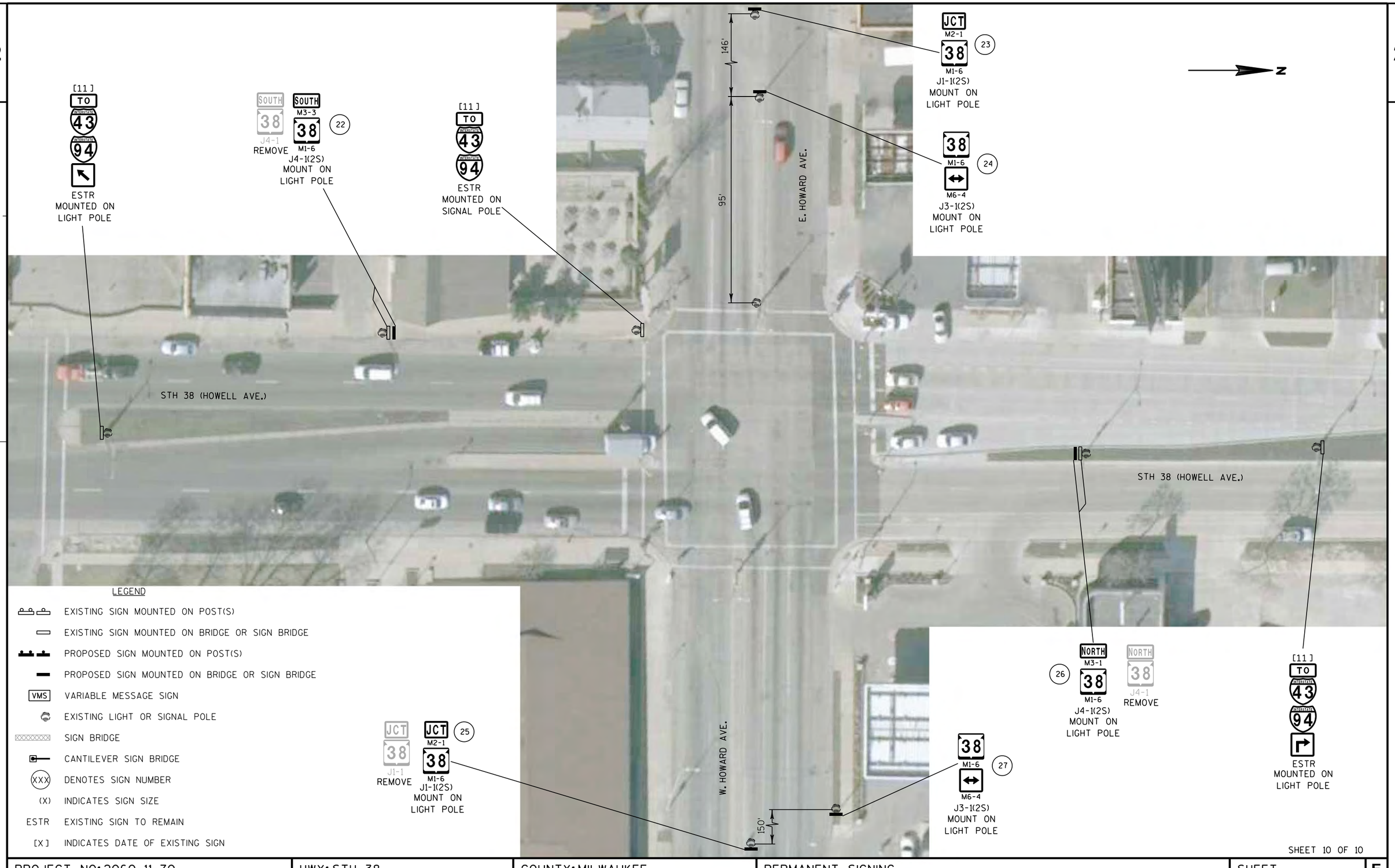
- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- VMS — VARIABLE MESSAGE SIGN
- EXISTING LIGHT OR SIGNAL POLE
- SIGN BRIDGE
- CANTILEVER SIGN BRIDGE
- XXX — DENOTES SIGN NUMBER
- (X) — INDICATES SIGN SIZE
- ESTR — EXISTING SIGN TO REMAIN
- [10] — INDICATES DATE OF EXISTING SIGN

SHEET 9 OF 10

PROJECT NO: 2060-11-70	HWY: STH 38	COUNTY: MILWAUKEE	PERMANENT SIGNING	SHEET 142	E

FILE NAME : J:\projects\d2_20601138\sign\023209_ps.dgn PLOT DATE : 13-MAY-2014 10:02 PLOT BY : dotklm PLOT NAME : PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42



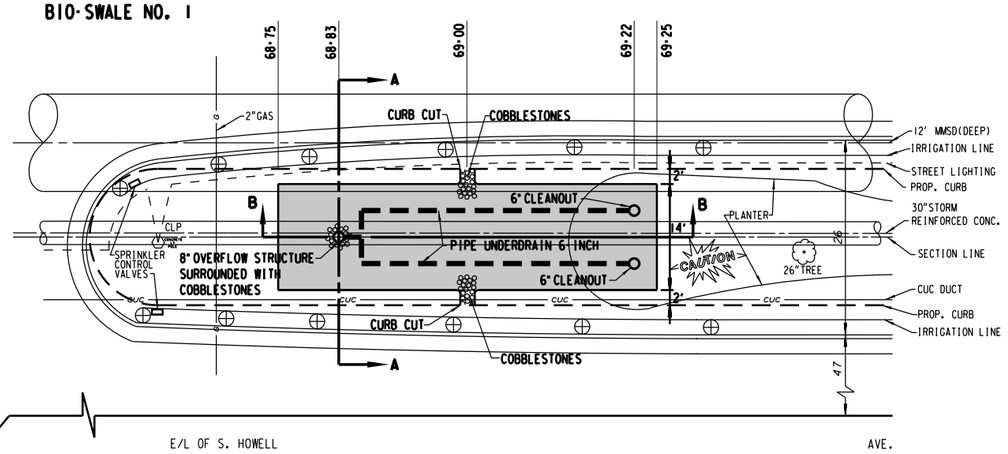
LEGEND

- 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
- VMS — VARIABLE MESSAGE SIGN
- EXISTING LIGHT OR SIGNAL POLE
- SIGN BRIDGE
- CANTILEVER SIGN BRIDGE
- XXX — DENOTES SIGN NUMBER
- (X) — INDICATES SIGN SIZE
- ESTR — EXISTING SIGN TO REMAIN
- [X] — INDICATES DATE OF EXISTING SIGN

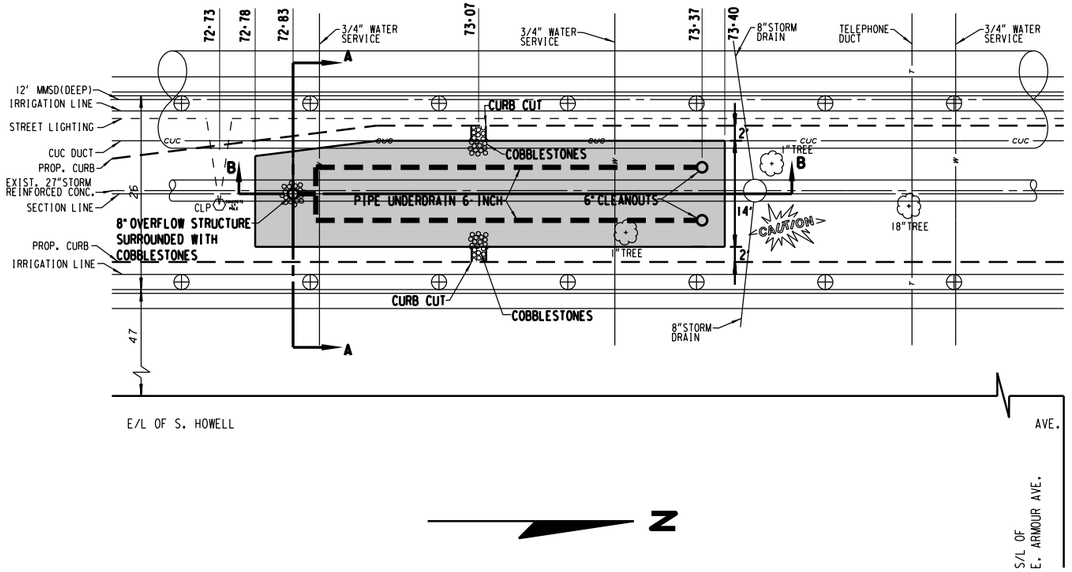
SHEET 10 OF 10

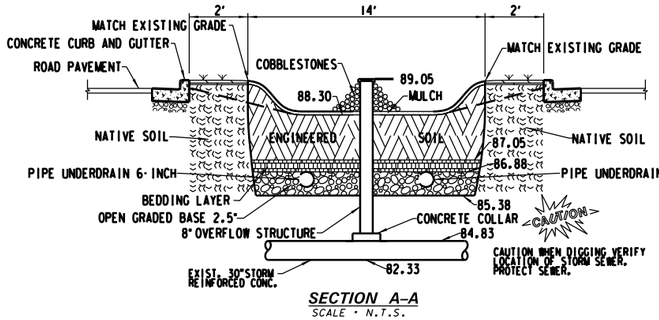
PROJECT NO: 2060-11-70	HWY: STH 38	COUNTY: MILWAUKEE	PERMANENT SIGNING	SHEET 143	E

BIO-SWALE NO. 1

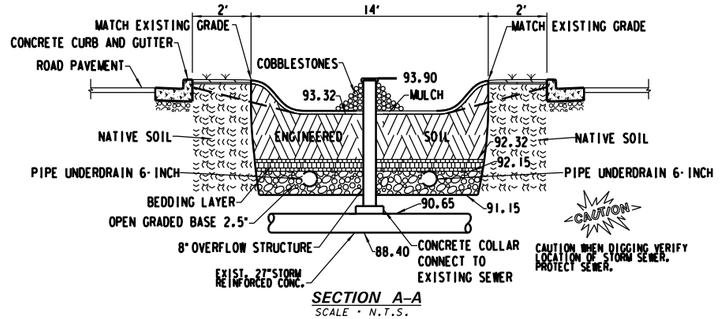


BIO-SWALE NO. 2

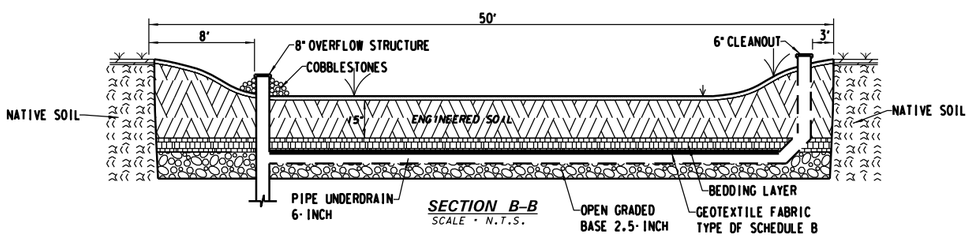




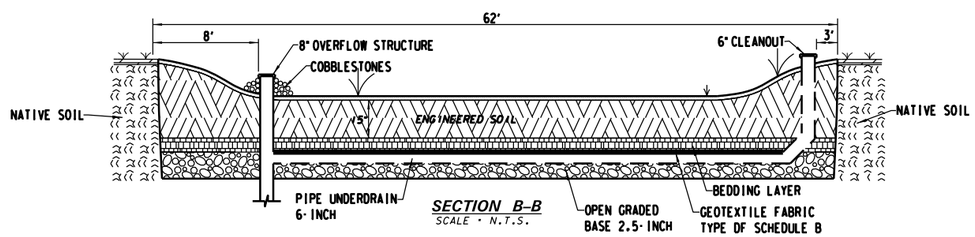
SECTION A–A
SCALE · N.T.S.



SECTION A–A
SCALE · N.T.S.



SECTION B–B
SCALE · N.T.S.

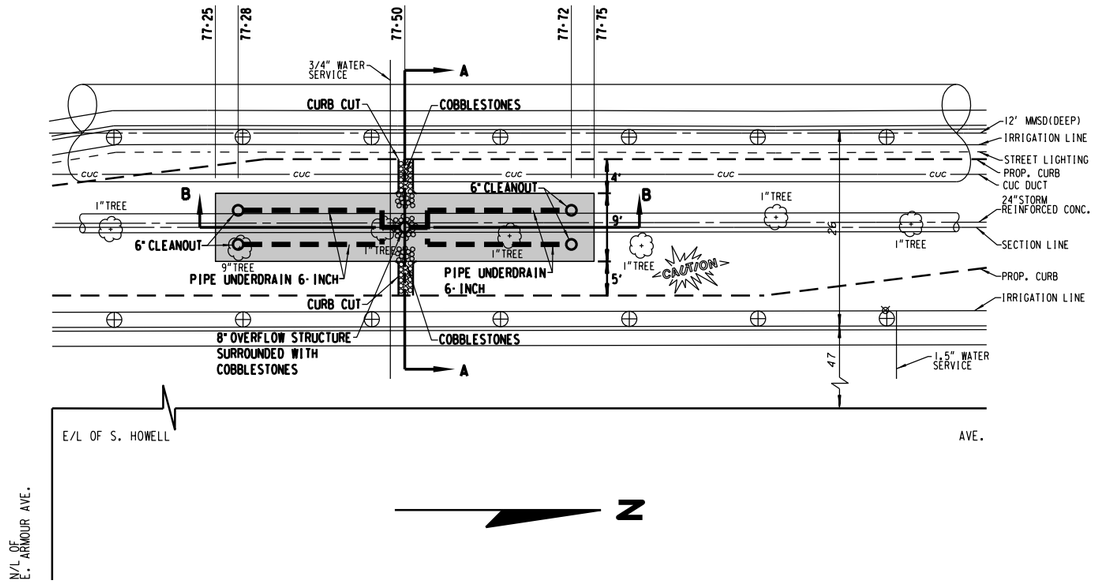


SECTION B–B
SCALE · N.T.S.

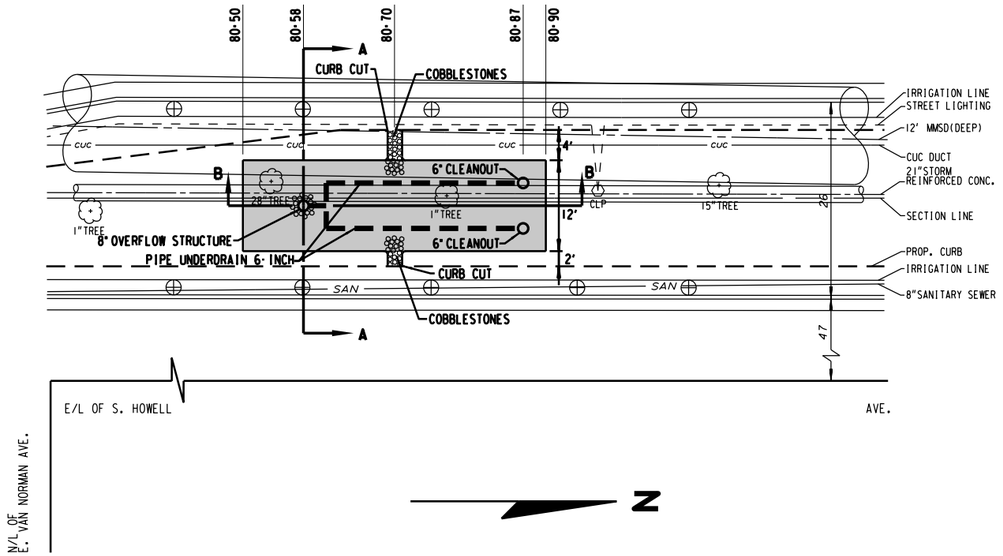
STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	BIO-SWALE PLAN	SCALE FEET 0 20	SHEET NO: 144	E

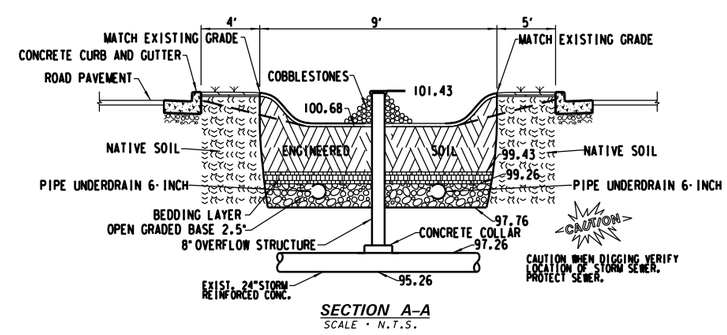
FILE NAME: W:\SEW\SNDRAFT\ 1323571.SMP

BIO-SWALE NO. 3

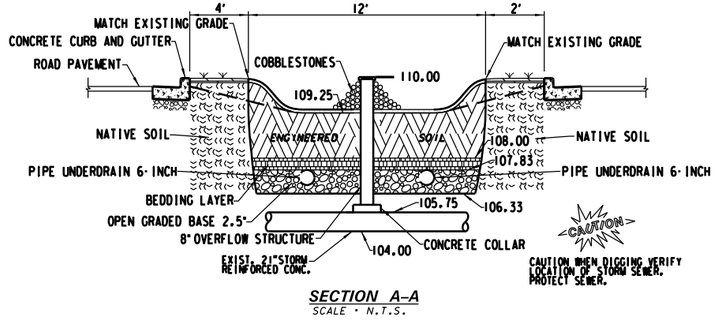


BIO-SWALE NO. 4

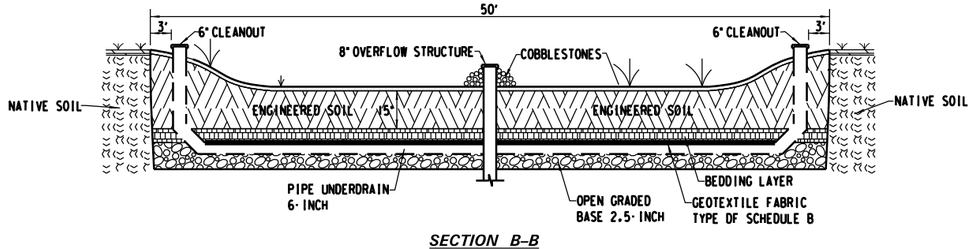




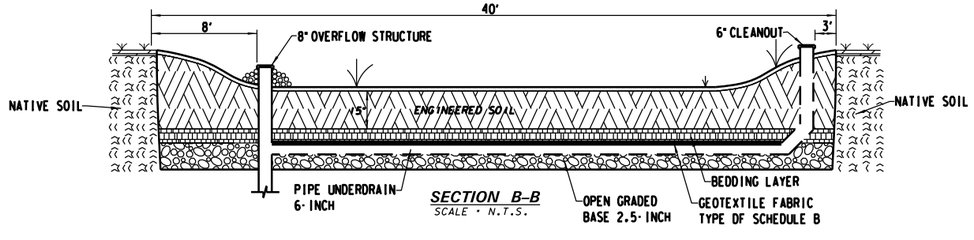
SECTION A–A
SCALE · N.T.S.



SECTION A–A
SCALE · N.T.S.



SECTION B–B
SCALE · N.T.S.

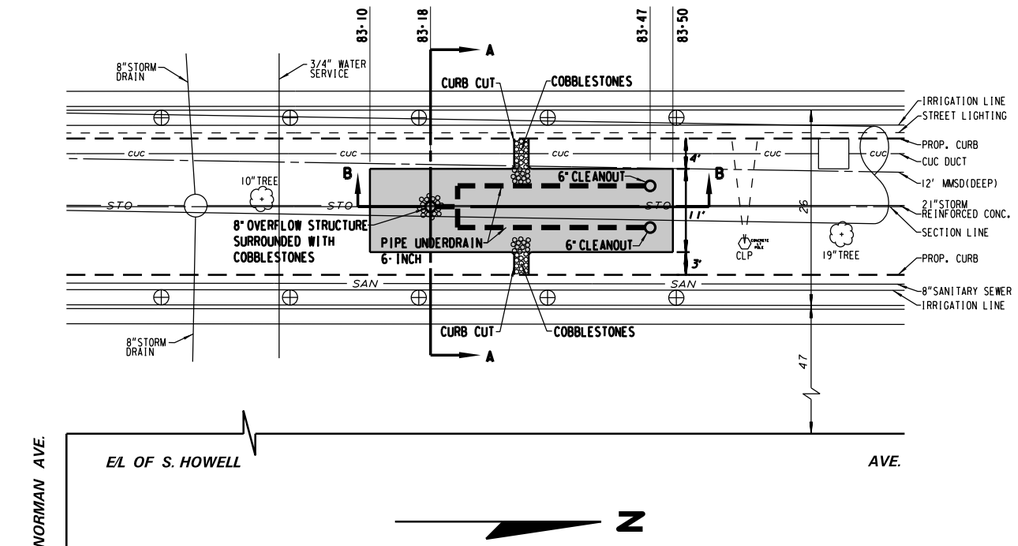


SECTION B–B
SCALE · N.T.S.

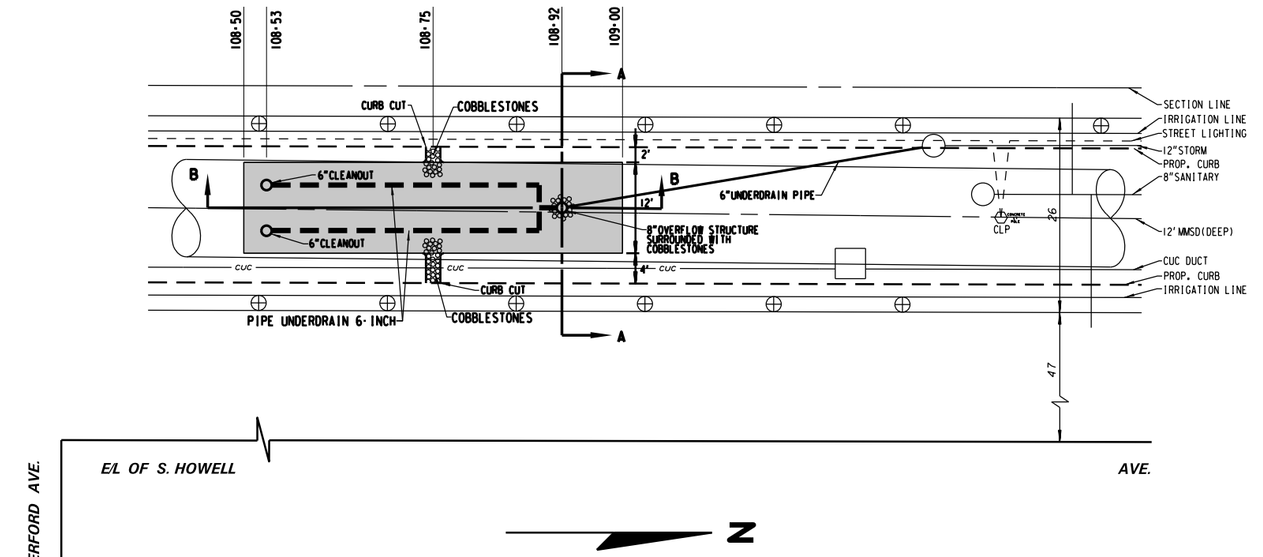
STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	BIO-SWALE PLAN	SCALE FEET 0' 20'	SHEET NO: 145	E

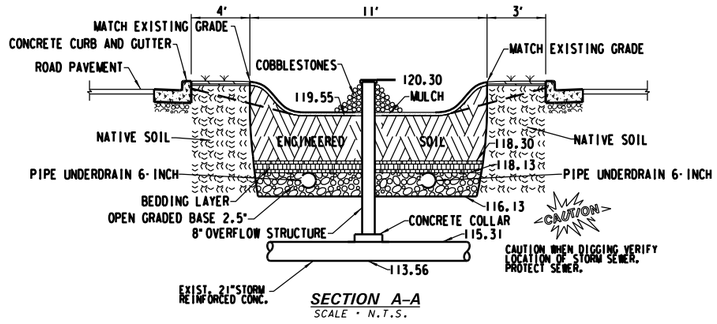
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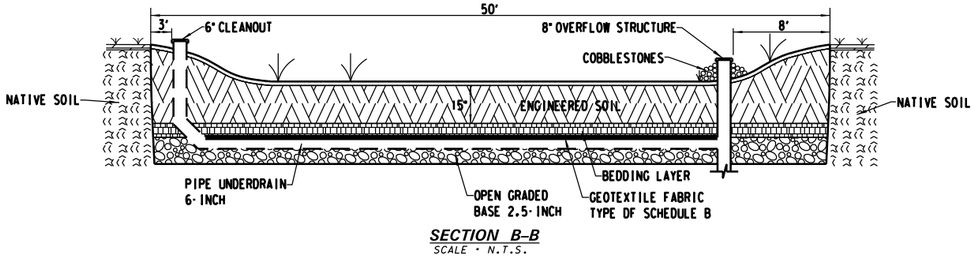


BIO-SWALE NO. 6

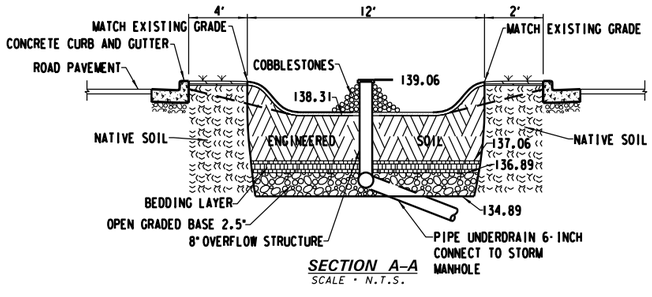




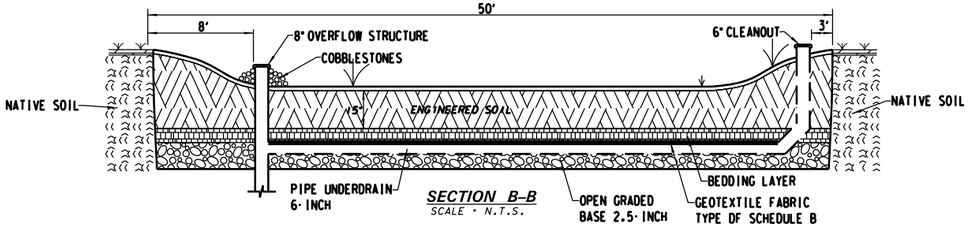
SECTION A–A
SCALE · N.T.S.



SECTION B–B
SCALE · N.T.S.



SECTION A–A
SCALE · N.T.S.



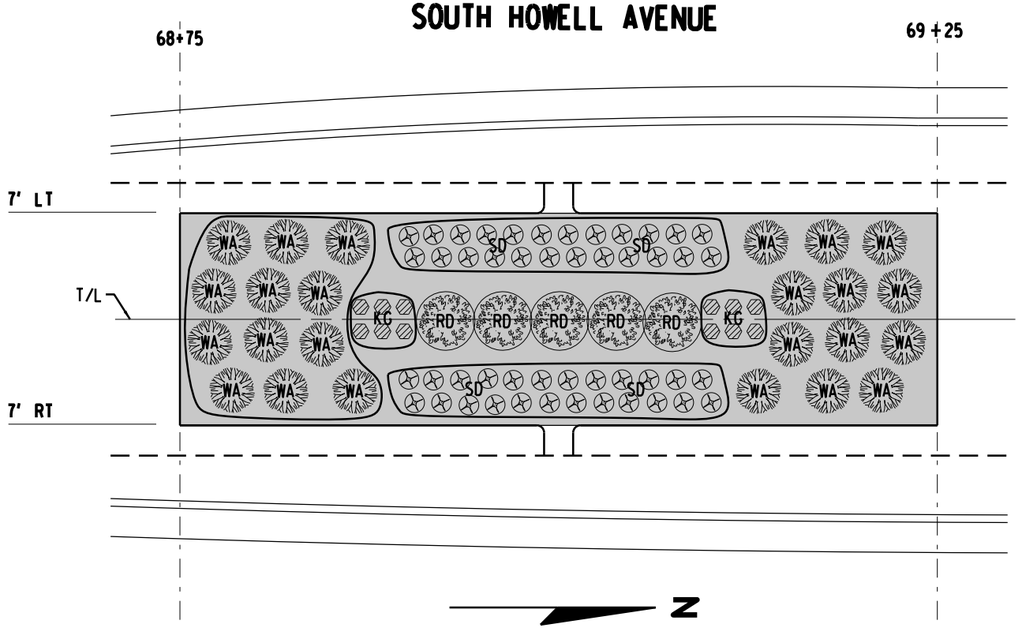
SECTION B–B
SCALE · N.T.S.

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	BIO-SWALE PLAN	SCALE FEET 0' 20'	SHEET NO: 146	E

FILE NAME: W:\SEW\SNDRAFT\ 1323573.SMP

2

BIO-SWALE NO. 1



SHRUBS

(24)	WA	WOODS BLUE ASTERS
	RD	RED TWIG DOGWOODS

PERENNIALS, GRASS, AND BULBS

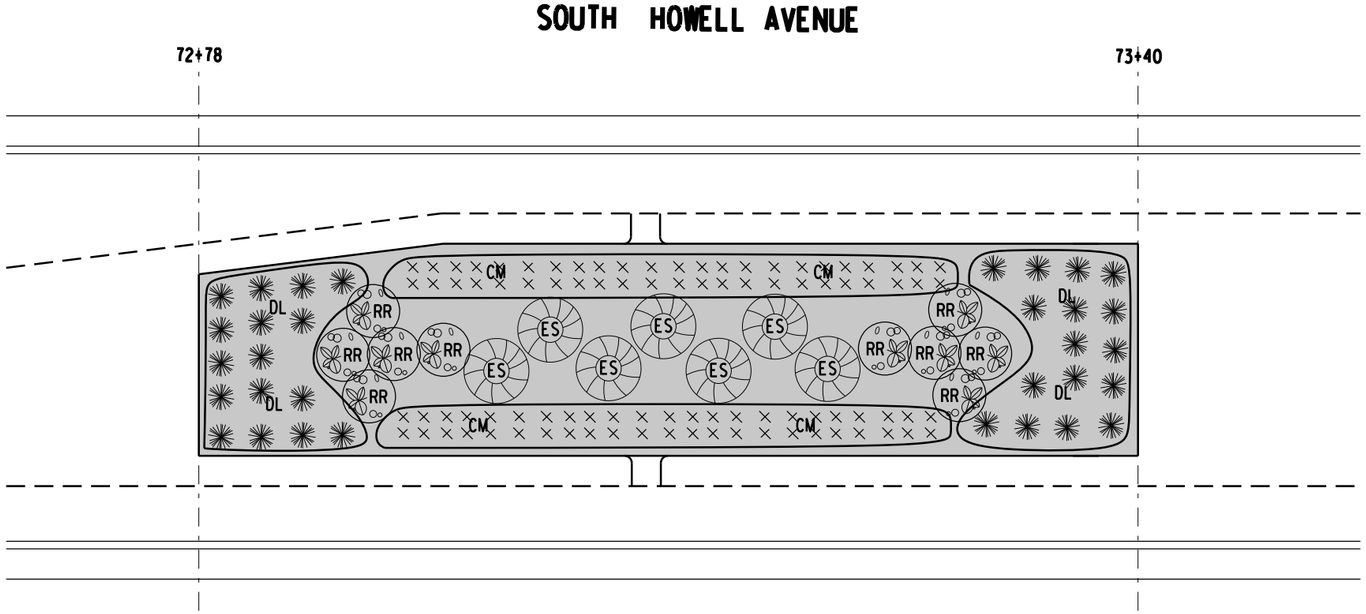
(48)	SD	SHASTA DAISIES
(12)	KG	KARL FOERSTER GRASS

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	BIO-SWALE LANDSCAPE PLAN	SCALE FEET 0' 10'	SHEET NO: 147 E

FILE NAME: W:\SEW\SNDRAFT\HOWELL BIO\ 1423718.SMP

2

BIO-SWALE NO. 2



SHRUBS

(07)	ES	ELDERBERRY SAMBUCUS
(10)	RR	RUGOSA ROSES

PERENNIALS, GRASS, AND BULBS

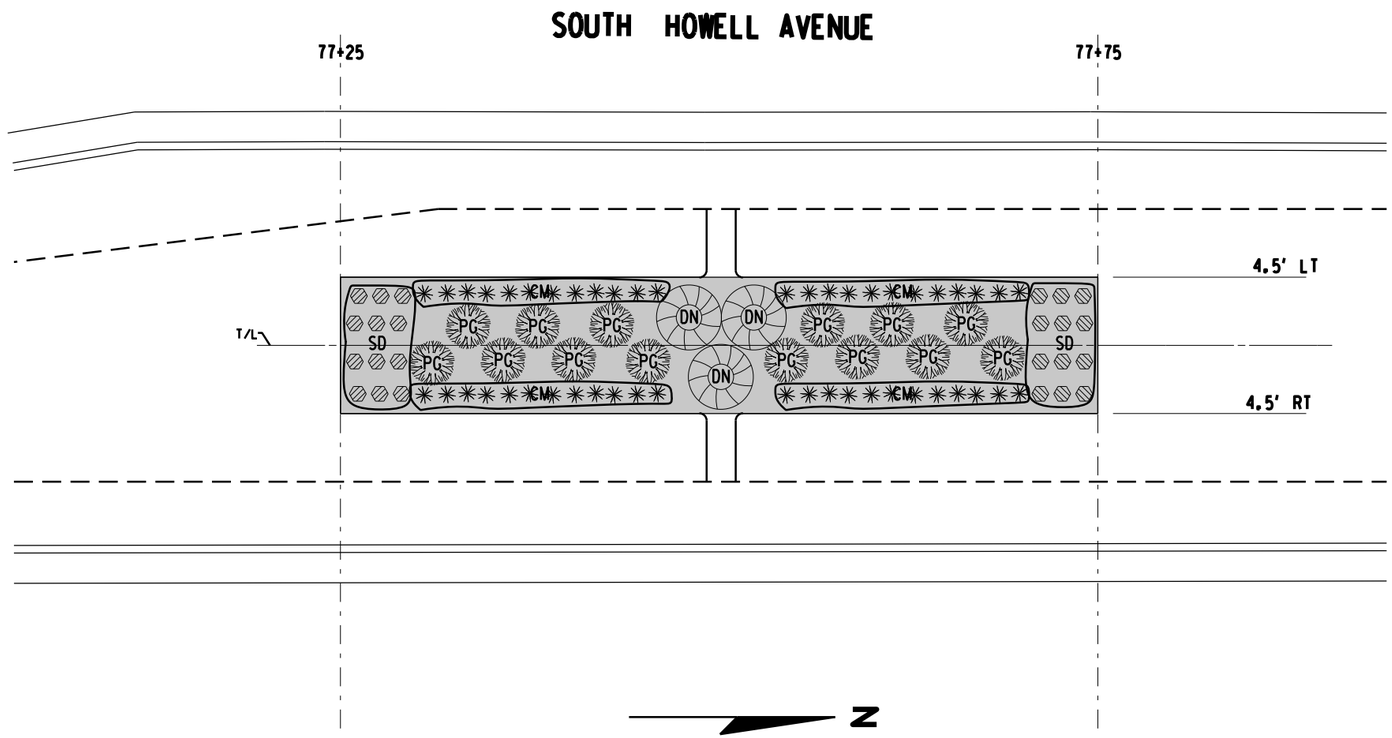
(92)	CM	CATMINT
(32)	DL	DAYLILIES

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	BIO-SWALE PLAN	SCALE FEET 0' 10'	SHEET NO: 148	E

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

2

BIO-SWALE NO. 3



SHRUBS

(03) DN DIABLO NINEBARK

PERENNIALS, GRASS, AND BULBS

(14) PG PANICUM GRASS
(48) CM CATMINT
(24) SD SHASTA DAISY

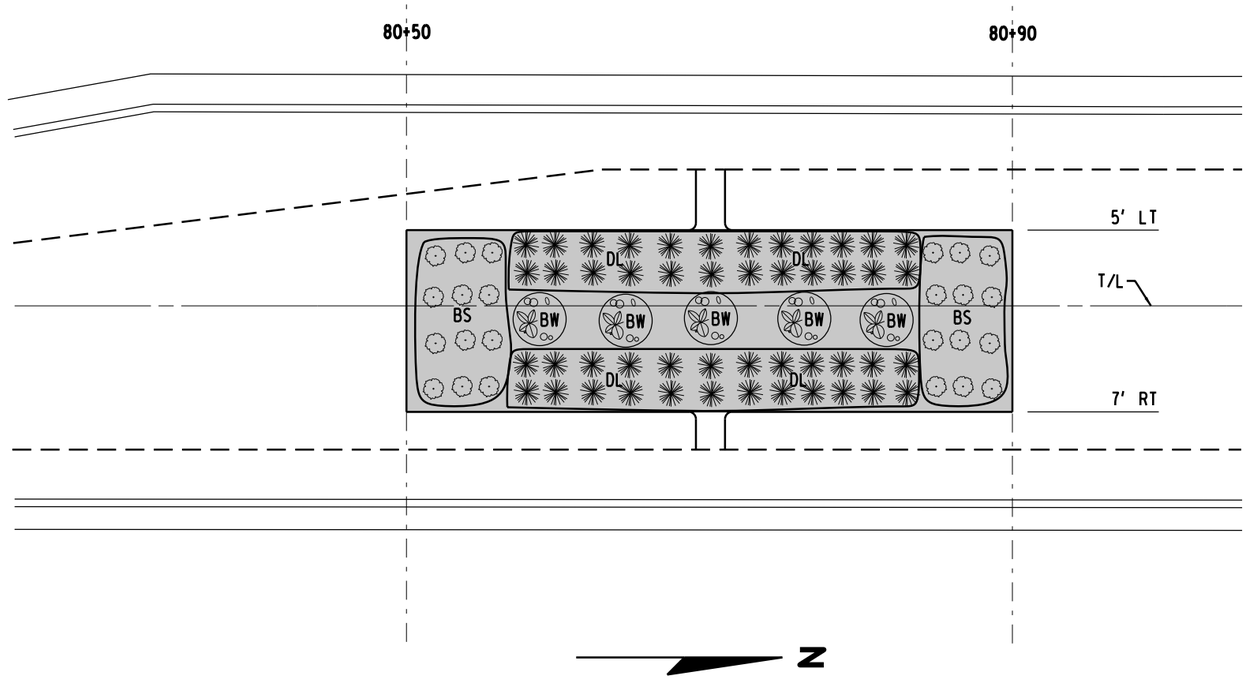
STATE PROJECT NUMBER 2265-08-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	BIO-SWALE LANDSCAPE PLAN	SCALE FEET 0' 10'	SHEET NO: 149	E

FILE NAME: W:\SEW\SNDRAFT\HOWELL BIO\ 1423721.SMP

2

BIO-SWALE NO. 4

SOUTH HOWELL AVENUE



SHRUBS

(05)	BW	DWARF ARCTIC BLUE WILLOW

PERENNIALS, GRASS, AND BULBS

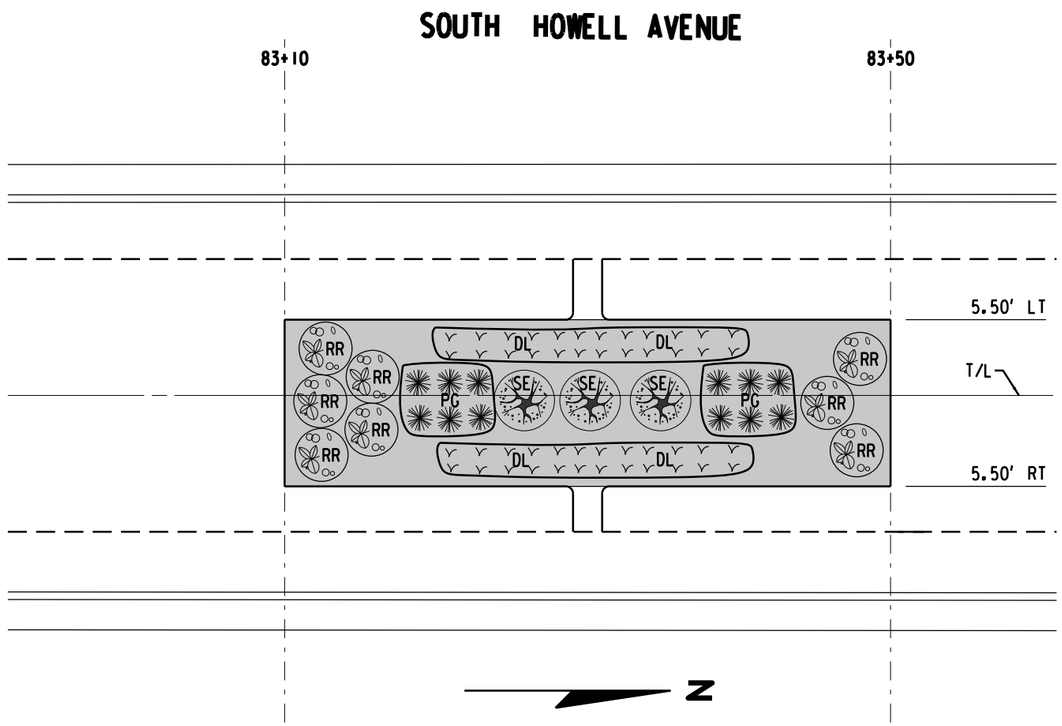
(24)	BS	BLACK EYED SUSANS
(48)	DL	DAYLILIES

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	BIO-SWALE LANDSCAPE PLAN	SCALE FEET 0' 10'	SHEET NO: 150	E

FILE NAME: W:\SEW\SNDRAFT\HOWELL BIO\ 1423721.SMP

2

BIO-SWALE NO. 5



SHRUBS

(03) SE SAMBUBUS ELDERBERRY

PERENNIALS, GRASS, AND BULBS

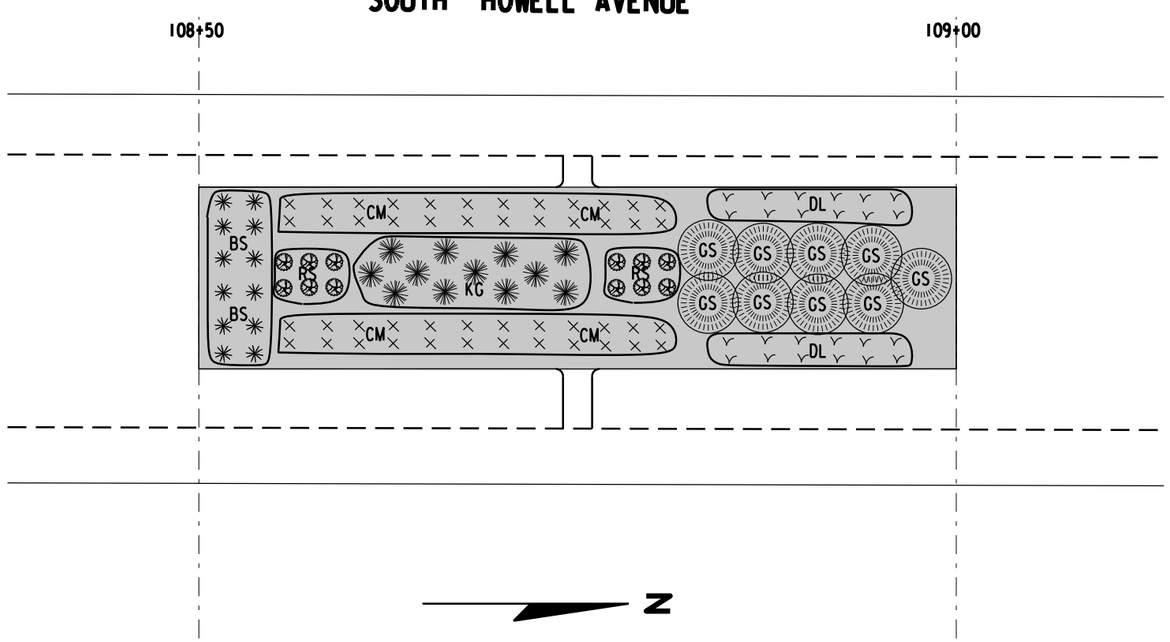
(08) RR RUGOSA ROSES
(12) PG PANICUM GRASS
(48) DL DAYLILIES

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	BIO-SWALE LANDSCAPE PLAN	SCALE FEET 0' 10'	SHEET NO: 151	E

FILE NAME: W:\SEW\SNDRAFT\HOWELL BIO\ 1423722.SMP

2

BIO-SWALE NO. 6



SHRUBS

(09)	GS	GROW-LO SUMAC

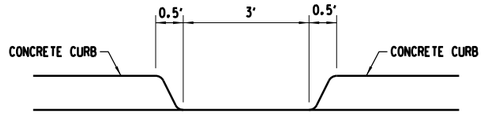
PERENNIALS, GRASS, AND BULBS

(24)	DL	DAYLILIES
(48)	CM	CATMINT
(12)	BS	BLACK EYED SUSANS
(12)	RS	RUSSIAN SAGE
(12)	KG	KARL FOERSTER GRASS

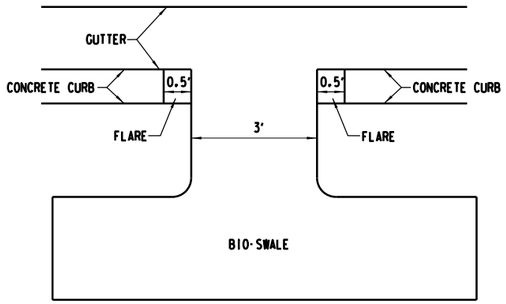
STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	BIO-SWALE LANDSCAPE PLAN	SCALE FEET 0' 10'	SHEET NO: 152	E

FILE NAME: W:\SEW\SNDRAFT\HOWELL BIO\ 1423723.SMP

BIO-SWALE DETAILS

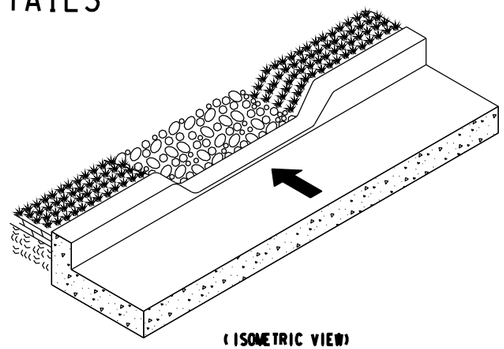


(FRONT VIEW)



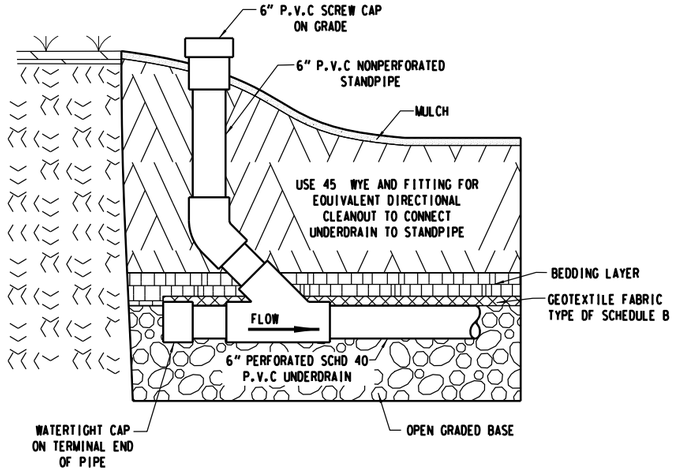
(TOP VIEW)

DETAIL OF CURB CUT
SCALE - N.T.S.

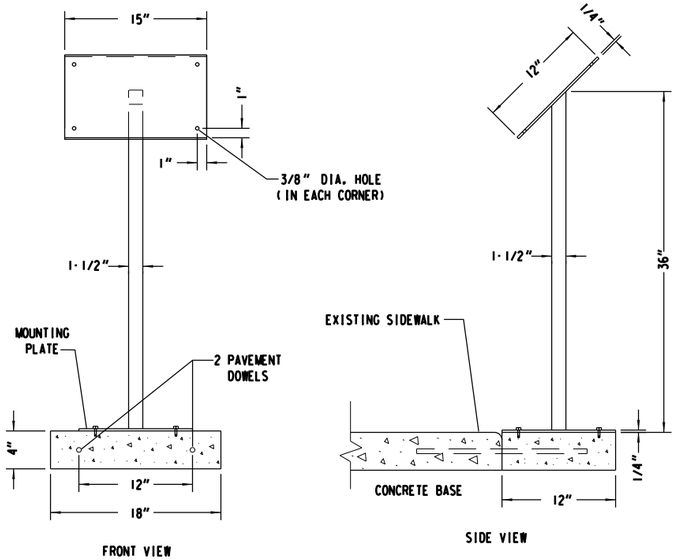


(ISOMETRIC VIEW)

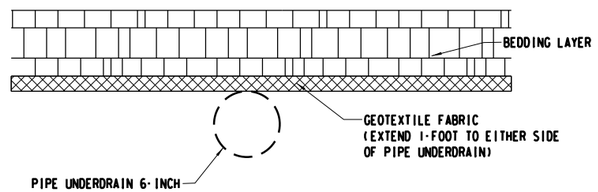
DETAIL OF CURB CUT
SCALE - N.T.S.



DETAIL OF CLEANOUT
SCALE - N.T.S.



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



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

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	BIO-SWALE PLAN AND DETAILS	SCALE FEET 0' 20'	SHEET NO: 153	E

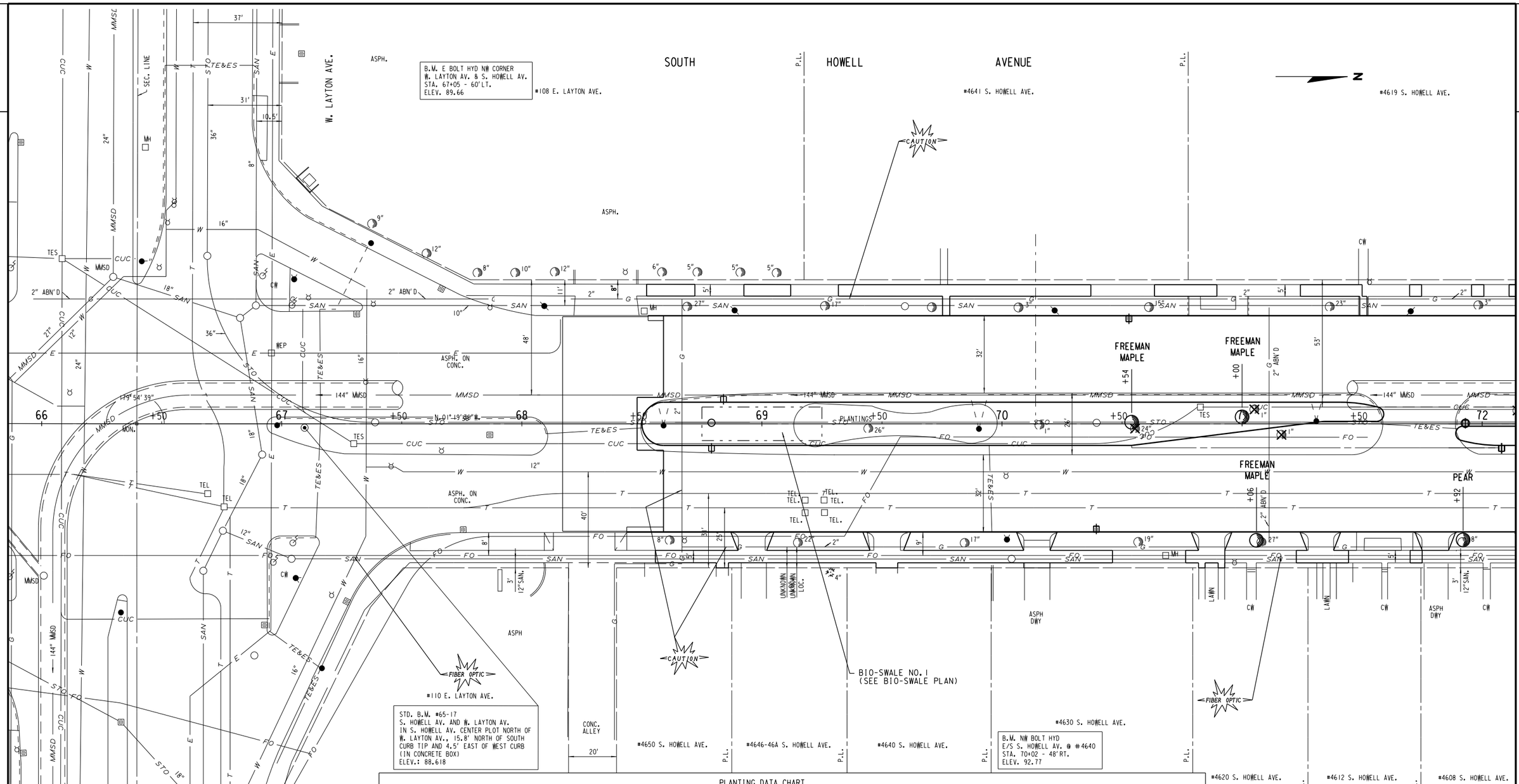
FILE NAME: W:\SEW\SNDRAFT\HOWELL BIO\DETAILS.SMP

2

BIOSWALES-PLANTING DATA TABLE

LOCATION	SYMBOL	TYPE	COMMON NAME	SPECIFIC NAME	SIZE WHEN PLANTED	ROOT ZONE MODE	BALL/POT		HOLE		ROOT SPREAD	BRACE OR GUY	FERT. UNITS REQ'D	MULCH RING DIAMETER	REMARKS
							DIA.	DEPTH	DIA.	DEPTH					
VARIOUS	BW	SHRUB	DWARFT BUSH HONEYSUCKLE	DIERVILLA LONICERA	18" POT	CG	18"	12"	36"	12"	36"	N/A	2 EACH	24"	SPECIMEN QUALITY
VARIOUS	DN	SHRUB	DIABLO NINEBARK	PHYSOCARPUS 'DIABLO'	24" POT	CG	24"	12"	36"	12"	36"	N/A	2 EACH	24"	SPECIMEN QUALITY
VARIOUS	GS	SHRUB	GROW LOW SUMAC	RHUS AROMATICA "GROW LOW"	18" POT	CG	18"	12"	36"	12"	36"	N/A	2 EACH	24"	SPECIMEN QUALITY
VARIOUS	TD	SHRUB	RED TWIG DOGWOOD	CORNUS SPECIES	24" POT	CG	24'	12"	36"	12"	36"	N/A	2 EACH	24"	SPECIMEN QUALITY
VARIOUS	BS	SHRUB	BLACK LACE ELDERBERRY	SAMBUCAS CANADENSIS	24" POT	CG	24'	12"	36"	12"	36"	N/A	2 EACH	24"	SPECIMEN QUALITY
VARIOUS	RR	SHRUB	RUGOSA ROSE	ROSA SPECIES	18" POT	CG	18"	12"	36"	12"	36"	N/A	2 EACH	24"	SPECIMEN QUALITY
VARIOUS	BE	PERENNIAL	BLACK EYED SUSAN	RUDBECKIA HIRTA	1 GALLON	CG	12"	9"	30"	9"	24"	N/A	1 EACH	12"	SPECIMEN QUALITY
VARIOUS	CM	PERENNIAL	CATMINT "BLUE WONDER"	NEPETA	1 GALLON	CG	12"	9"	30"	9"	24"	N/A	1 EACH	12"	SPECIMEN QUALITY
VARIOUS	DL	PERENNIAL	DWARF DAYLILIES	HEMEROCALLIS "STELLA DORO"	1 GALLON	CG	12"	9"	30"	9"	24"	N/A	1 EACH	12"	SPECIMEN QUALITY
VARIOUS	RS	PERENNIAL	RUSSIAN SAGE	PEROVSKIA	1 GALLON	CG	12"	9"	30"	9"	24"	N/A	1 EACH	12"	SPECIMEN QUALITY
VARIOUS	SD	PERENNIAL	SHASTA DAISY "BECKY"	LEUCANTHEMUM	1 GALLON	CG	12"	9"	30"	9"	24"	N/A	1 EACH	12"	SPECIMEN QUALITY
VARIOUS	KF	PERENNIAL	KARL FOERSTER GRASS	CALAMOGROSTIS ACUTIFLORA	1 GALLON	CG	12"	9"	30"	9"	24"	N/A	1 EACH	12"	SPECIMEN QUALITY

2



PLANTING DATA CHART

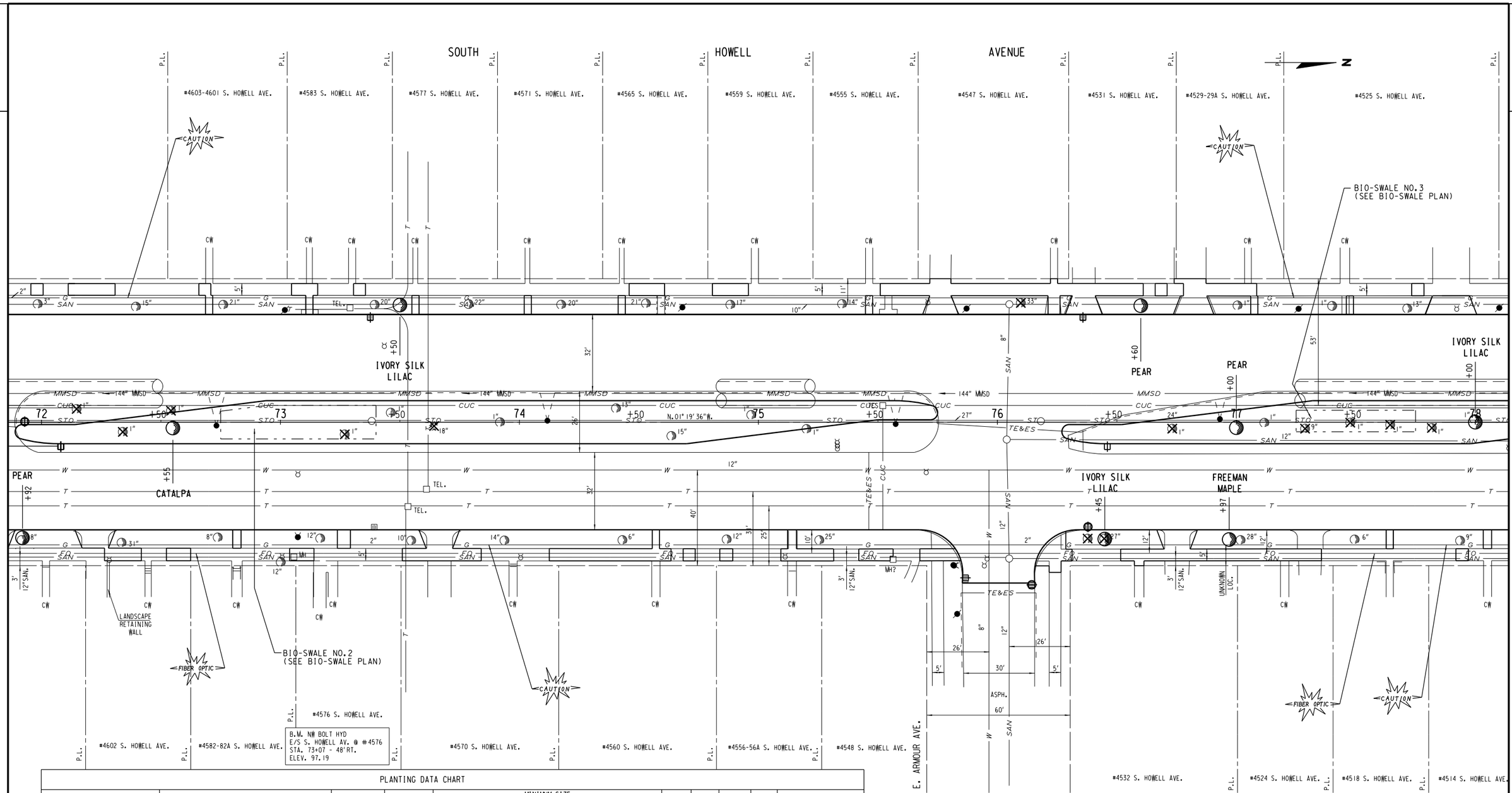
COMMON NAME	SCIENTIFIC NAME	SIZE WHEN PLANTED	ROOT ZONE MODE	MINIMUM SIZE BALL / POT DIA.	MINIMUM SIZE BALL / POT DEPTH	MINIMUM SIZE ROOT SPREAD	MINIMUM SIZE PLANT HOLE DIA.	MINIMUM SIZE PLANT HOLE DEPTH	BRACE OR GUY	FERT. UNITS REQ'D	RODENT PROTECT REQ'D	MULCH RING DIA.	REMARKS
FREEMAN MAPLE	ACER X FREEMANII "AUTUMN BLAZE"	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
CATALPA	CATALPA SPECIOSA	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
PEAR	PYRUS CALLERYANA "CLEVELAND SELECT"	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
IVERY SILK LILAC	SYRINGA RETICULATA "IVORY SILK"	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
KENTUCKY COFFEE	GYMOCLADUS DIOICUS "ESPRESSO"	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
BALD CYPRESS	TAXODIUM DISTICHUM	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
RED BUD	CERCIS CANADENSIS	2.0" CAL.	B & B	39" MIN	18" MIN	INDEFINITE	48" MIN	18" MIN	GUY	3-EACH	NONE	48"	SPECIMEN QUALITY
ENGLISH OAK	QUERCUS ROBUR "CRIMSON SPIRE"	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
LOCUST	GLEDITSIA TRIACANTHOS "SKYLINE"	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY

- PLANT NEW TREE (TYPE)
- CLEAR & GRUB TREE

BR BARE ROOT
B&B BALLED AND BURLAPPED
CAL CALIPER
CG CONTAINER GROWTH

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	TREE REMOVAL AND PLANTING	SCALE FEET 0' 40'	SHEET NO: 155	E

FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\TREES.DGN



B.M. NW BOLT HYD
E/S S. HOWELL AV. @ #4576
STA. 73+07 - 48'RT.
ELEV. 97.19

B.M. NW BOLT HYD SE CORNER
E. ARMOUR AV. & S. HOWELL AV.
STA. 75+81 - 60'RT.
ELEV. 101.64

PLANTING DATA CHART

COMMON NAME	SCIENTIFIC NAME	SIZE WHEN PLANTED	ROOT ZONE MODE	MINIMUM SIZE BALL / POT DIA.	MINIMUM SIZE BALL / POT DEPTH	MINIMUM SIZE ROOT SPREAD	MINIMUM SIZE PLANT HOLE DIA.	MINIMUM SIZE PLANT HOLE DEPTH	BRACE OR GUY	FERT. UNITS REQ'D	RODENT PROTECT REQ'D	MULCH RING DIA.	REMARKS
FREEMAN MAPLE	ACER X FREEMANII "AUTUMN BLAZE"	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
CATALPA	CATALPA SPECIOSA	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
PEAR	PYRUS CALLERYANA "CLEVELAND SELECT"	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
IVERY SILK LILAC	SYRINGA RETICULATA "IVORY SILK"	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
KENTUCKY COFFEE	GYMOCLADUS DIOICUS "ESPRESSO"	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
BALD CYPRESS	TAXODIUM DISTICHUM	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
RED BUD	CERCIS CANADENSIS	2.0" CAL.	B & B	39" MIN	18" MIN	INDEFINITE	48" MIN	18" MIN	GUY	3-EACH	NONE	48"	SPECIMEN QUALITY
ENGLISH OAK	QUERCUS ROBUR "CRIMSON SPIRE"	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
LOCUST	GLEDITSIA TRIACANTHOS "SKYLINE"	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY

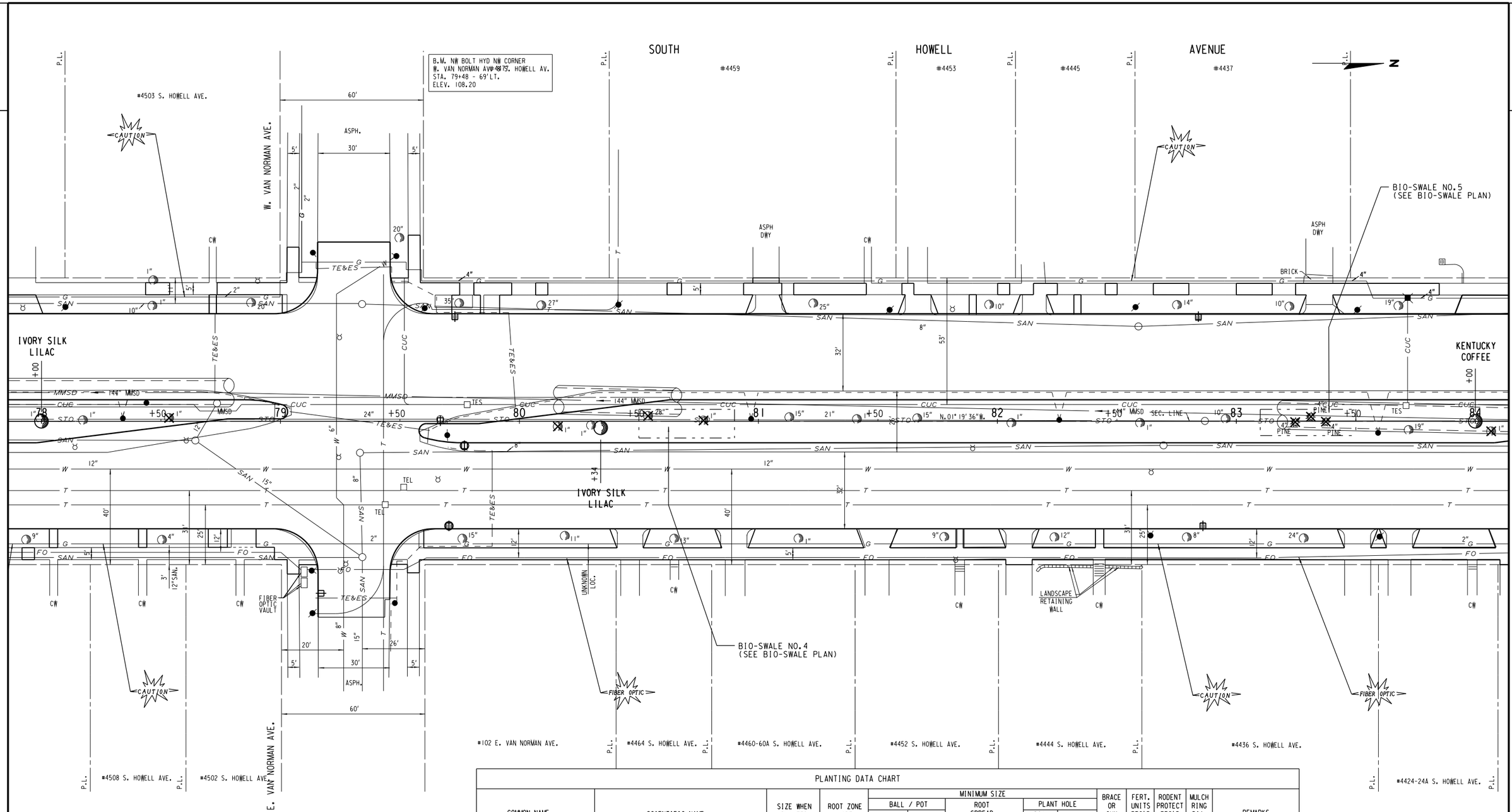
- PLANT NEW TREE (TYPE)
- CLEAR & GRUB TREE

BR BARE ROOT
B&B BALLED AND BURLAPPED
CAL CALIPER
CG CONTAINER GROWTH

2 OF 10

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	TREE REMOVAL AND PLANTING	SCALE FEET 0' 40'	SHEET NO: 156 E

FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\TREES.DGN



- PLANT NEW TREE (TYPE)
- CLEAR & GRUB TREE

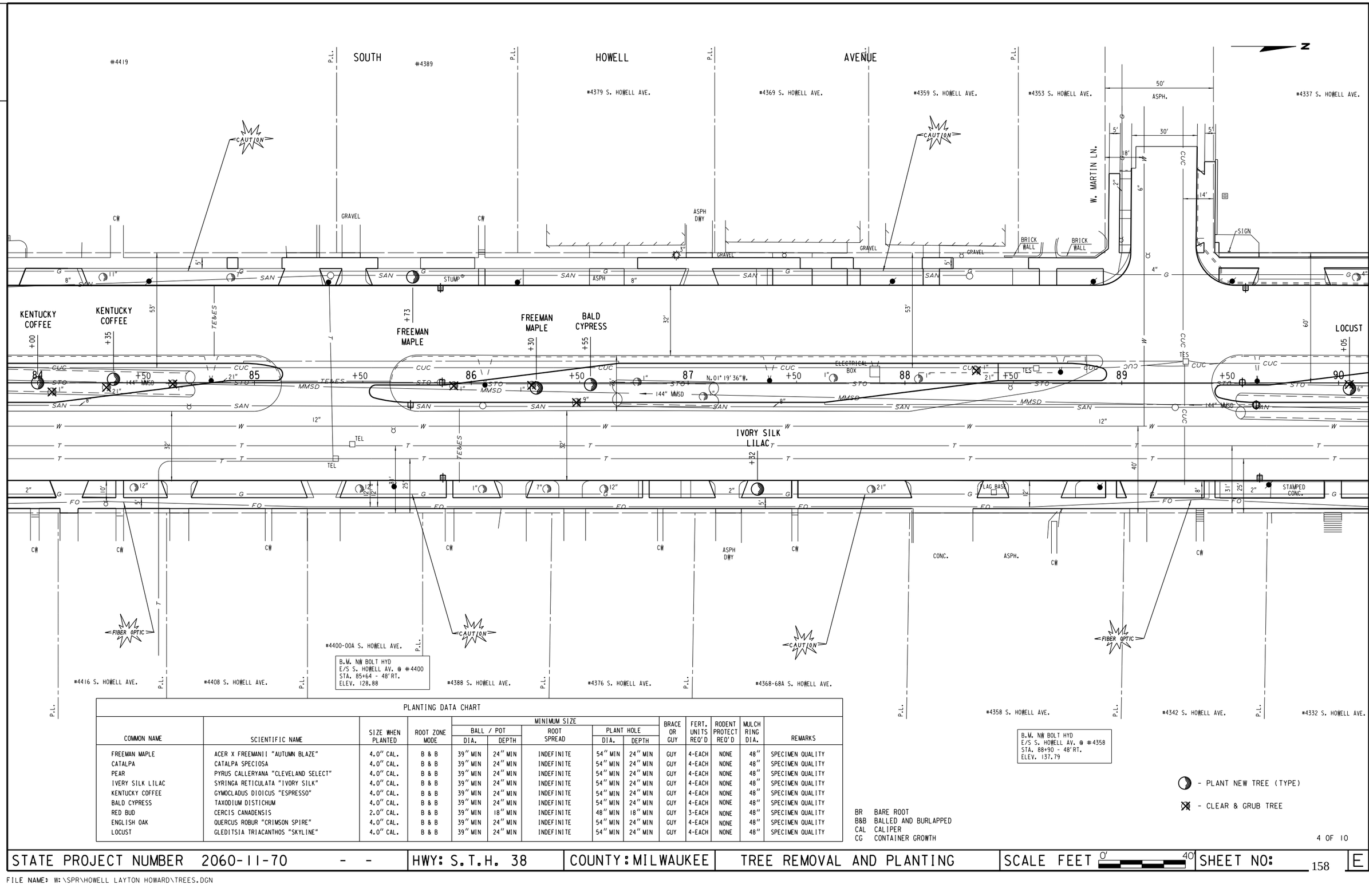
PLANTING DATA CHART

COMMON NAME	SCIENTIFIC NAME	SIZE WHEN PLANTED	ROOT ZONE MODE	MINIMUM SIZE BALL / POT DIA.	BALL / POT DEPTH	ROOT SPREAD	PLANT HOLE DIA.	PLANT HOLE DEPTH	BRACE OR GUY	FERT. UNITS REQ'D	RODENT PROTECT REQ'D	MULCH RING DIA.	REMARKS
FREEMAN MAPLE	ACER X FREEMANII "AUTUMN BLAZE"	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
CATALPA	CATALPA SPECIOSA	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
PEAR	PYRUS CALLERYANA "CLEVELAND SELECT"	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
IVERY SILK LILAC	SYRINGA RETICULATA "IVORY SILK"	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
KENTUCKY COFFEE	GYMOCLADUS DIOICUS "ESPRESSO"	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
BALD CYPRESS	TAXODIUM DISTICHUM	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
RED BUD	CERCIS CANADENSIS	2.0" CAL.	B & B	39" MIN	18" MIN	INDEFINITE	48" MIN	18" MIN	GUY	3-EACH	NONE	48"	SPECIMEN QUALITY
ENGLISH OAK	QUERCUS ROBUR "CRIMSON SPIRE"	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
LOCUST	GLEDITSIA TRIACANTHOS "SKYLINE"	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY

BR BARE ROOT
B&B BALLED AND BURLAPPED
CAL CALIPER
CG CONTAINER GROWTH

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	TREE REMOVAL AND PLANTING	SCALE FEET 0' 40'	SHEET NO: 157 E

FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\TREES.DGN



PLANTING DATA CHART

COMMON NAME	SCIENTIFIC NAME	SIZE WHEN PLANTED	ROOT ZONE MODE	MINIMUM SIZE BALL / POT DIA.	MINIMUM SIZE BALL / POT DEPTH	MINIMUM SIZE ROOT SPREAD	MINIMUM SIZE PLANT HOLE DIA.	MINIMUM SIZE PLANT HOLE DEPTH	BRACE OR GUY	FERT. UNITS REQ'D	RODENT PROTECT REQ'D	MULCH RING DIA.	REMARKS
FREEMAN MAPLE	ACER X FREEMANII "AUTUMN BLAZE"	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
CATALPA	CATALPA SPECIOSA	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
PEAR	PYRUS CALLERYANA "CLEVELAND SELECT"	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
IVERY SILK LILAC	SYRINGA RETICULATA "IVORY SILK"	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
KENTUCKY COFFEE	GYMOCLADUS DIOICUS "ESPRESSO"	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
BALD CYPRESS	TAXODIUM DISTICHUM	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
RED BUD	CERCIS CANADENSIS	2.0" CAL.	B & B	39" MIN	18" MIN	INDEFINITE	48" MIN	18" MIN	GUY	3-EACH	NONE	48"	SPECIMEN QUALITY
ENGLISH OAK	QUERCUS ROBUR "CRIMSON SPIRE"	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
LOCUST	GLEDITSIA TRIACANTHOS "SKYLINE"	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY

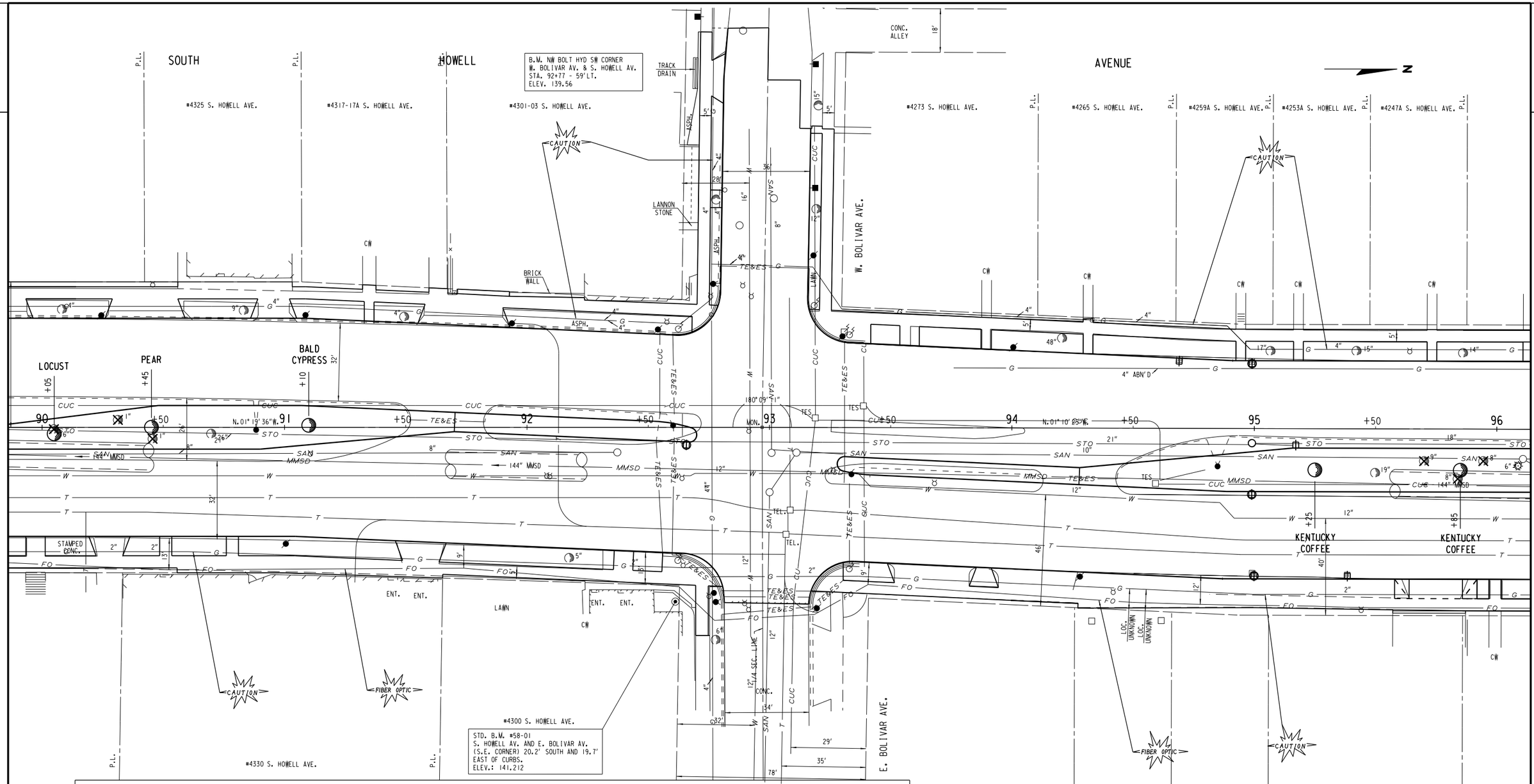
BR BARE ROOT
B&B BALLED AND BURLAPPED
CAL CALIPER
CG CONTAINER GROWTH

- PLANT NEW TREE (TYPE)
- CLEAR & GRUB TREE

4 OF 10

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	TREE REMOVAL AND PLANTING	SCALE FEET 0' 40'	SHEET NO: 158	E

FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\TREES.DGN



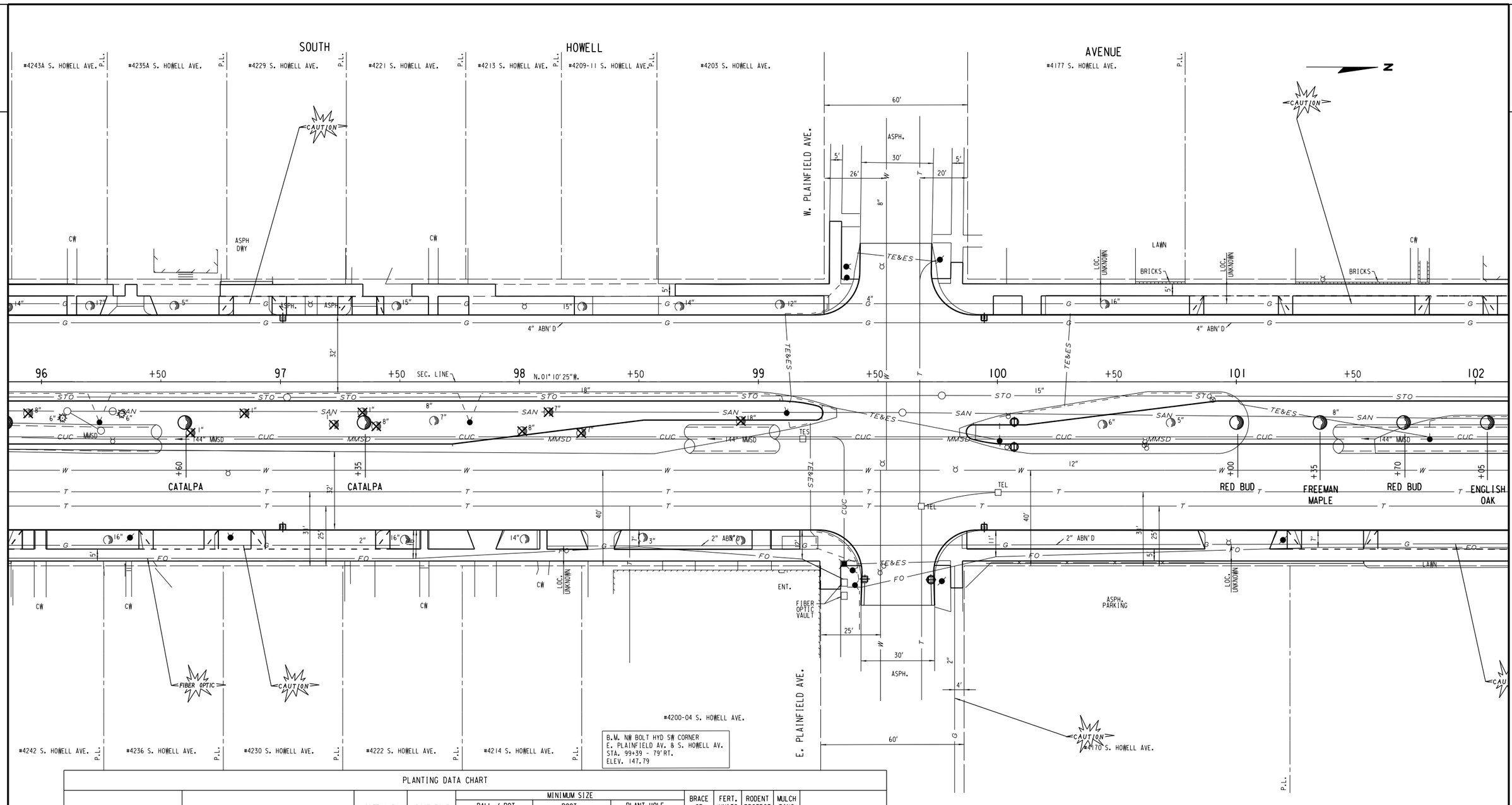
PLANTING DATA CHART

COMMON NAME	SCIENTIFIC NAME	SIZE WHEN PLANTED	ROOT ZONE MODE	MINIMUM SIZE BALL / POT DIA.	BALL / POT DEPTH	ROOT SPREAD	PLANT HOLE DIA.	PLANT HOLE DEPTH	BRACE OR GUY	FERT. UNITS REQ'D	RODENT PROTECT REQ'D	MULCH RING DIA.	REMARKS
FREEMAN MAPLE	ACER X FREEMANII "AUTUMN BLAZE"	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
CATALPA	CATALPA SPECIOSA	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
PEAR	PYRUS CALLERYANA "CLEVELAND SELECT"	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
IVERY SILK LILAC	SYRINGA RETICULATA "IVORY SILK"	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
KENTUCKY COFFEE	GYMOCLADUS DIOICUS "ESPRESSO"	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
BALD CYPRESS	TAXODIUM DISTICHUM	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
RED BUD	CERCIS CANADENSIS	2.0" CAL.	B & B	39" MIN	18" MIN	INDEFINITE	48" MIN	18" MIN	GUY	3-EACH	NONE	48"	SPECIMEN QUALITY
ENGLISH OAK	QUERCUS ROBUR "CRIMSON SPIRE"	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
LOCUST	GLEDITSIA TRIACANTHOS "SKYLINE"	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY

BR BARE ROOT
B&B BALLED AND BURLAPPED
CAL CALIPER
CG CONTAINER GROWTH

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	TREE REMOVAL AND PLANTING	SCALE FEET 0' 40'	SHEET NO: 159	E

FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\TREES.DGN



PLANTING DATA CHART

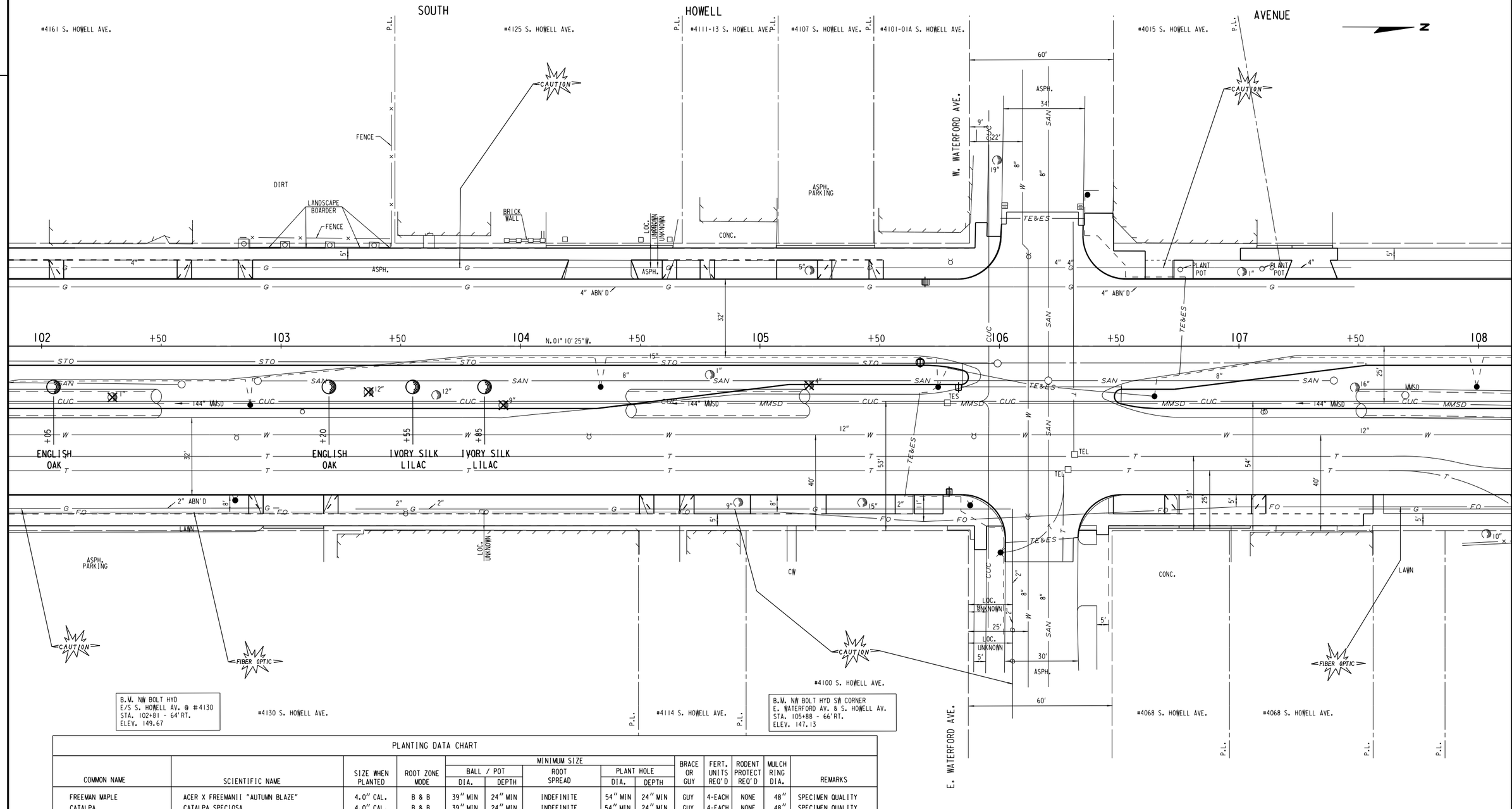
COMMON NAME	SCIENTIFIC NAME	SIZE WHEN PLANTED	ROOT ZONE MODE	MINIMUM SIZE BALL / POT DIA.	BALL / POT DEPTH	ROOT SPREAD	PLANT HOLE DIA.	PLANT HOLE DEPTH	BRACE OR GUY	FERT. UNITS REQ'D	RODENT PROTECT REQ'D	MULCH RING DIA.	REMARKS
FREEMAN MAPLE	ACER X FREEMANII "AUTUMN BLAZE"	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
CATALPA	CATALPA SPECIOSA	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
PEAR	PYRUS CALLERYANA "CLEVELAND SELECT"	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
IVERY SILK LILAC	SYRINGA RETICULATA "IVORY SILK"	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
KENTUCKY COFFEE	GYMOCLADUS DIOICUS "ESPRESSO"	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
BALD CYPRESS	TAXODIUM DISTICHUM	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
RED BUD	CERCIS CANADENSIS	2.0" CAL.	B & B	39" MIN	18" MIN	INDEFINITE	48" MIN	18" MIN	GUY	3-EACH	NONE	48"	SPECIMEN QUALITY
ENGLISH OAK	QUERCUS ROBUR "CRIMSON SPIRE"	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
LOCUST	GLEDITSIA TRIACANTHOS "SKYLINE"	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY

- PLANT NEW TREE (TYPE)
- CLEAR & GRUB TREE

BR BARE ROOT
B&B BALLED AND BURLAPPED
CAL CALIPER
CG CONTAINER GROWTH

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	TREE REMOVAL AND PLANTING	SCALE FEET 0' 40'	SHEET NO: 160 E

FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\TREES.DGN



PLANTING DATA CHART

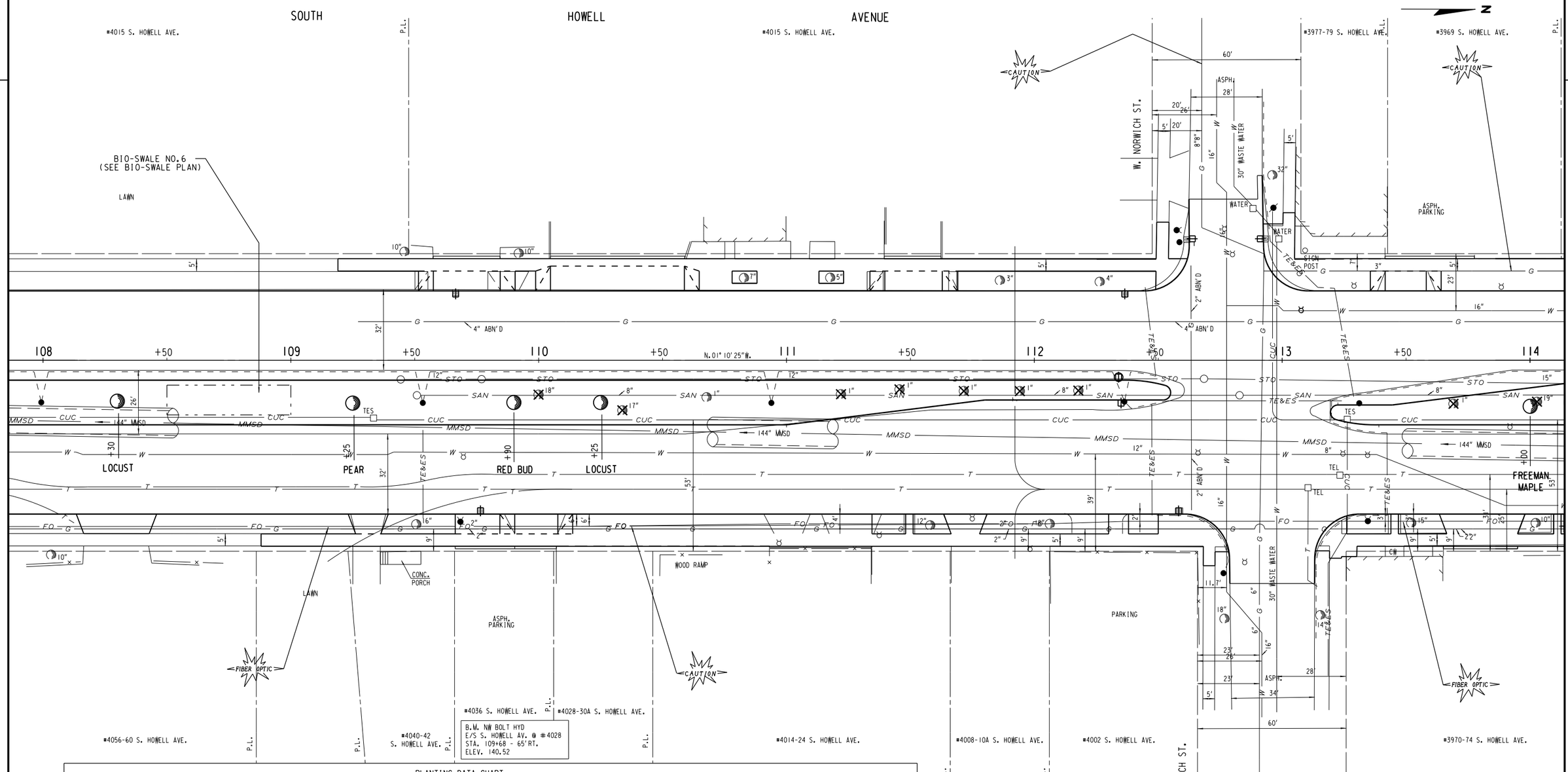
COMMON NAME	SCIENTIFIC NAME	SIZE WHEN PLANTED	ROOT ZONE MODE	MINIMUM SIZE BALL / POT DIA.	BALL / POT DEPTH	ROOT SPREAD	PLANT HOLE DIA.	PLANT HOLE DEPTH	BRACE OR GUY	FERT. UNITS REQ'D	RODENT PROTECT REQ'D	MULCH RING DIA.	REMARKS
FREEMAN MAPLE	ACER X FREEMANII "AUTUMN BLAZE"	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
CATALPA	CATALPA SPECIOSA	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
PEAR	PYRUS CALLERYANA "CLEVELAND SELECT"	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
IVERY SILK LILAC	SYRINGA RETICULATA "IVORY SILK"	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
KENTUCKY COFFEE	GYMOCLADUS DIOICUS "ESPRESSO"	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
BALD CYPRESS	TAXODIUM DISTICHUM	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
RED BUD	CERCIS CANADENSIS	2.0" CAL.	B & B	39" MIN	18" MIN	INDEFINITE	48" MIN	18" MIN	GUY	3-EACH	NONE	48"	SPECIMEN QUALITY
ENGLISH OAK	QUERCUS ROBUR "CRIMSON SPIRE"	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
LOCUST	GLEDITSIA TRIACANTHOS "SKYLINE"	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY

- PLANT NEW TREE (TYPE)
- CLEAR & GRUB TREE

BR BARE ROOT
B&B BALLED AND BURLAPPED
CAL CALIPER
CG CONTAINER GROWTH

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	TREE REMOVAL AND PLANTING	SCALE FEET 0' 40'	SHEET NO: 161 E

FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\TREES.DGN



PLANTING DATA CHART

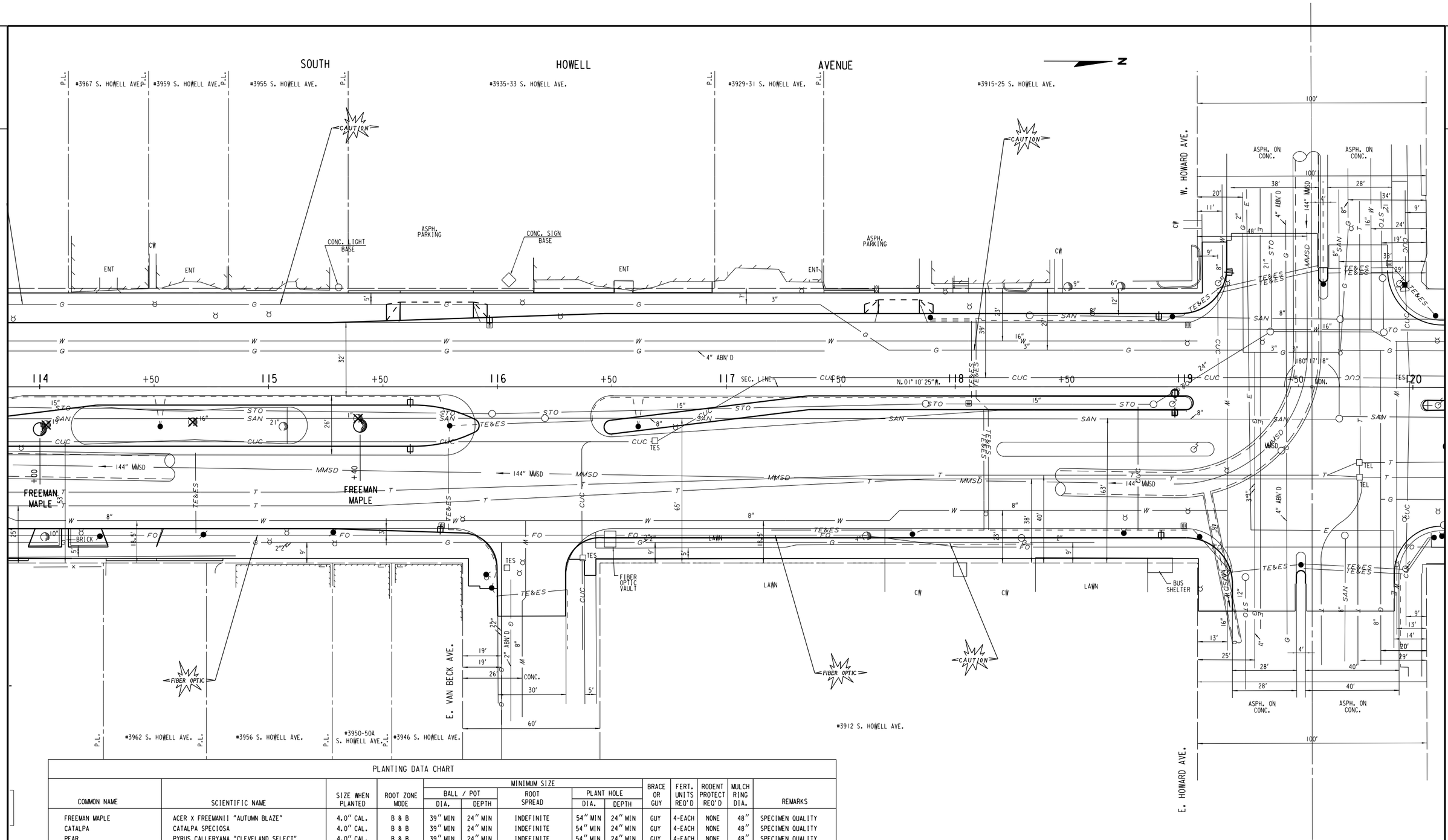
COMMON NAME	SCIENTIFIC NAME	SIZE WHEN PLANTED	ROOT ZONE MODE	MINIMUM SIZE BALL / POT DIA.	MINIMUM SIZE BALL / POT DEPTH	MINIMUM SIZE ROOT SPREAD	MINIMUM SIZE PLANT HOLE DIA.	MINIMUM SIZE PLANT HOLE DEPTH	BRACE OR GUY	FERT. UNITS REQ'D	RODENT PROTECT REQ'D	MULCH RING DIA.	REMARKS
FREEMAN MAPLE	ACER X FREEMANII "AUTUMN BLAZE"	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
CATALPA	CATALPA SPECIOSA	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
PEAR	PYRUS CALLERYANA "CLEVELAND SELECT"	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
IVERY SILK LILAC	SYRINGA RETICULATA "IVORY SILK"	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
KENTUCKY COFFEE	GYMOCLADUS DIOICUS "ESPRESSO"	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
BALD CYPRESS	TAXODIUM DISTICHUM	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
RED BUD	CERCIS CANADENSIS	2.0" CAL.	B & B	39" MIN	18" MIN	INDEFINITE	48" MIN	18" MIN	GUY	3-EACH	NONE	48"	SPECIMEN QUALITY
ENGLISH OAK	QUERCUS ROBUR "CRIMSON SPIRE"	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
LOCUST	GLEDITSIA TRIACANTHOS "SKYLINE"	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY

- PLANT NEW TREE (TYPE)
- CLEAR & GRUB TREE

BR BARE ROOT
B&B BALLED AND BURLAPPED
CAL CALIPER
CG CONTAINER GROWTH

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	TREE REMOVAL AND PLANTING	SCALE FEET 0' 40'	SHEET NO: 162	E

FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\TREES.DGN



PLANTING DATA CHART

COMMON NAME	SCIENTIFIC NAME	SIZE WHEN PLANTED	ROOT ZONE MODE	MINIMUM SIZE BALL / POT DIA.	MINIMUM SIZE BALL / POT DEPTH	MINIMUM SIZE ROOT SPREAD	MINIMUM SIZE PLANT HOLE DIA.	MINIMUM SIZE PLANT HOLE DEPTH	BRACE OR GUY	FERT. UNITS REQ'D	RODENT PROTECT REQ'D	MULCH RING DIA.	REMARKS
FREEMAN MAPLE	ACER X FREEMANII "AUTUMN BLAZE"	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
CATALPA	CATALPA SPECIOSA	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
PEAR	PYRUS CALLERYANA "CLEVELAND SELECT"	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
IVERY SILK LILAC	SYRINGA RETICULATA "IVORY SILK"	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
KENTUCKY COFFEE	GYMOCLADUS DIOICUS "ESPRESSO"	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
BALD CYPRESS	TAXODIUM DISTICHUM	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
RED BUD	CERCIS CANADENSIS	2.0" CAL.	B & B	39" MIN	18" MIN	INDEFINITE	48" MIN	18" MIN	GUY	3-EACH	NONE	48"	SPECIMEN QUALITY
ENGLISH OAK	QUERCUS ROBUR "CRIMSON SPIRE"	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
LOCUST	GLEDITSIA TRIACANTHOS "SKYLINE"	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY

- PLANT NEW TREE (TYPE)

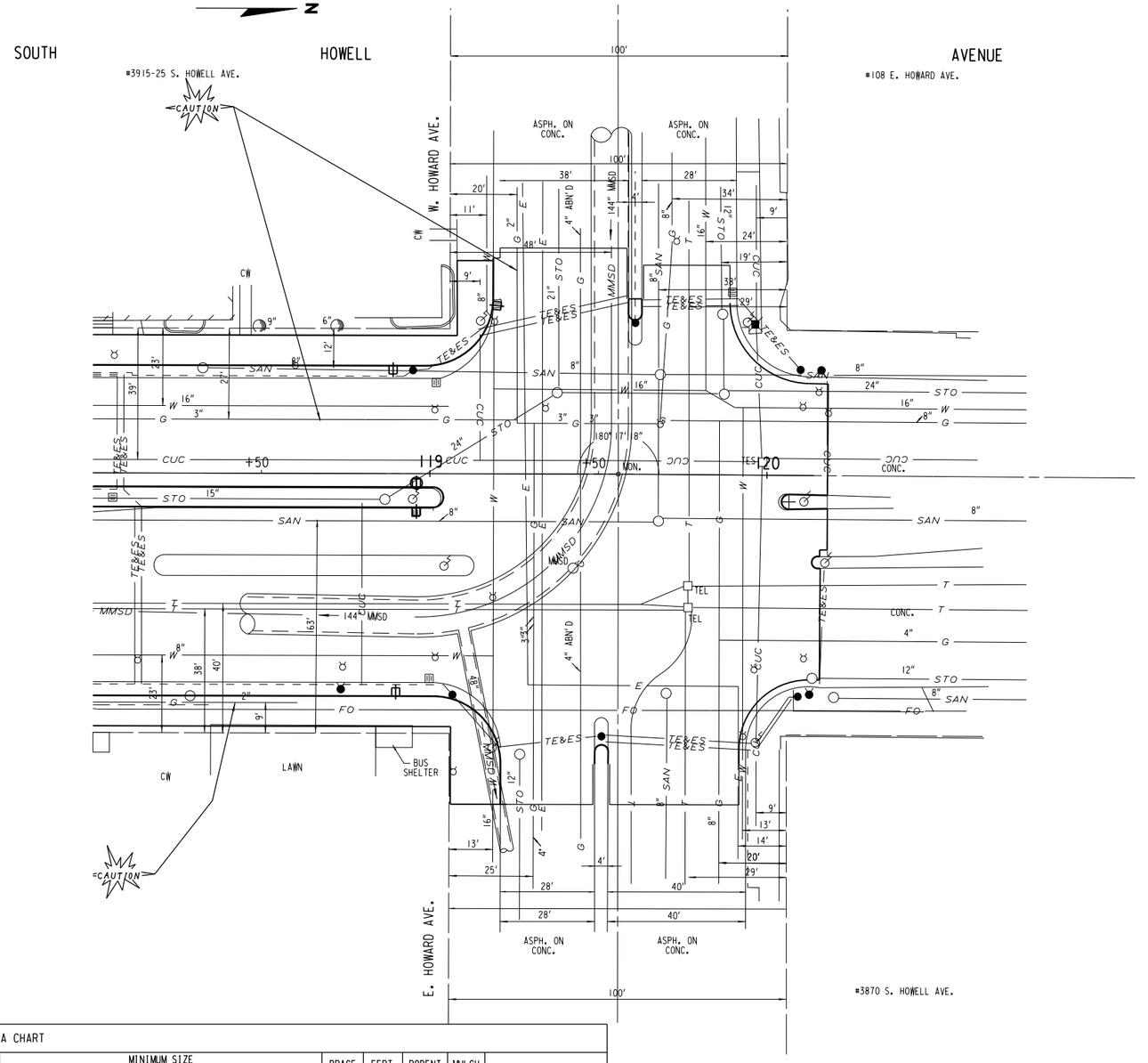
- CLEAR & GRUB TREE

BR BARE ROOT
B&B BALLED AND BURLAPPED
CAL CALIPER
CG CONTAINER GROWTH

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	TREE REMOVAL AND PLANTING	SCALE FEET 0' 40'	SHEET NO: 163 E

FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\TREES.DGN

2



PLANTING DATA CHART													
				MINIMUM SIZE									
				BALL / POT			PLANT HOLE						
COMMON NAME	SCIENTIFIC NAME	SIZE WHEN PLANTED	ROOT ZONE MODE	DIA.	DEPTH	ROOT SPREAD	DIA.	DEPTH	BRACE OR GUY	FERT. UNITS REQ'D	RODENT PROTECT REQ'D	MULCH RING DIA.	REMARKS
FREEMAN MAPLE	ACER X FREEMANII "AUTUMN BLAZE"	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
CATALPA	CATALPA SPECIOSA	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
PEAR	PYRUS CALLERYANA "CLEVELAND SELECT"	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
IVERY SILK LILAC	SYRINGA RETICULATA "IVORY SILK"	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
KENTUCKY COFFEE	GYMOCLADUS DIOICUS "ESPRESSO"	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
BALD CYPRESS	TAXODIUM DISTICHUM	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
RED BUD	CERCIS CANADENSIS	2.0" CAL.	B & B	39" MIN	18" MIN	INDEFINITE	48" MIN	18" MIN	GUY	3-EACH	NONE	48"	SPECIMEN QUALITY
ENGLISH OAK	QUERCUS ROBUR "CRIMSON SPIRE"	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY
LOCUST	GLEDITSIA TRIACANTHOS "SKYLINE"	4.0" CAL.	B & B	39" MIN	24" MIN	INDEFINITE	54" MIN	24" MIN	GUY	4-EACH	NONE	48"	SPECIMEN QUALITY

- PLANT NEW TREE (TYPE)

- CLEAR & GRUB TREE

BR BARE ROOT
B&B BALLED AND BURLAPPED
CAL CALIPER
CG CONTAINER GROWTH

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	TREE REMOVAL AND PLANTING	SCALE FEET 0' 40'	SHEET NO: 164	E

FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\TREES.DGN

SOUTH HOWELL AVENUE

N

B.M. E BOLT HYD NW CORNER
W. LAYTON AV. & S. HOWELL AV.
STA. 67+05 - 60'LT.
ELEV. 89.66

W. LAYTON AVE.

SEC. LINE

BEGIN PROJECT
STA. 68 + 17.0 T/L

#108 E. LAYTON AVE.

#4641 S. HOWELL AVE.

#4619 S. HOWELL AVE.

P.I.

CAUTION

ASPH.

ASPH. ON CONC.

WEP

MWSD

TES

WH

CW

R/W

179° 54' 39"

N. 01° 19' 36" W.

MON.

T/L

66 67 68 69 70 71 72

+50

PLANTINGS

SEC. LINE

32'

26'

TEL.

FO

LAMP

ASPH DWY

FIBER OPTIC

#110 E. LAYTON AVE.

STD. B.W. #65-17
S. HOWELL AV. AND W. LAYTON AV.
IN S. HOWELL AV. CENTER PLOT NORTH OF
W. LAYTON AV., 15.8' NORTH OF SOUTH
CURB TIP AND 4.5' EAST OF WEST CURB
(IN CONCRETE BOX)
ELEV.: 88.618

CONC. ALLEY

20'

#4650 S. HOWELL AVE.

#4646-46A S. HOWELL AVE.

#4640 S. HOWELL AVE.

#4630 S. HOWELL AVE.

#4620 S. HOWELL AVE.

#4612 S. HOWELL AVE.

#4608 S. HOWELL AVE.

B.W. NW BOLT HYD
E/S S. HOWELL AV. @ #4640
STA. 70+02 - 48'RT.
ELEV. 92.77

E. LAYTON AVE.

1 OF 10

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	WALK AND DRIVEWAY REMOVAL	SCALE FEET 0' 40'	SHEET NO: 165 E

FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\WALK REMOVAL.DGN

SOUTH HOWELL AVENUE

N

#4603-4601 S. HOWELL AVE. | #4583 S. HOWELL AVE. | #4577 S. HOWELL AVE. | #4571 S. HOWELL AVE. | #4565 S. HOWELL AVE. | #4559 S. HOWELL AVE. | #4555 S. HOWELL AVE. | #4547 S. HOWELL AVE. | #4531 S. HOWELL AVE. | #4529-29A S. HOWELL AVE. | #4525 S. HOWELL AVE.

P.L.

CAUTION

+95.6 +0.7 +11.2 R/W +30.8 +65.9 +70.9 +04.6 +15.6 +30.6 +35.6 +45.9 +60.7 +80.7 +95.8 +51 60' LT 60' LT +61 +66 +71 +74 +77.9 +08.5 R/W +73.4 +78.5

CW

2" 3" 15" 21" TEL. 20" 22" 20" 21" 17" 14" 33" 1" 1" 13"

G

5'

72 73 74 75 76 77 78

+50

1" 1" 1" 1" 13" 1" 1" 1" 1" 1" 9" 1" 1" 1"

27" STO.

T/L 18"

26'

32'

N. 01° 19' 36" W.

15"

TES

TEL.

TEL.

18" 31" 8" 12" 12" 2" 10" 14" 6" 12" 10" 25" 2" 27" 28" 12" 6" 9"

FO

MH

12"

+26.4 +41.8 +52.3 +62.4 +03.8 +14 +51 +84 +12.5 +63.4 +68.5 +73.5 +83.8 +89.3 +109.4 +31.5 +42 +56.5 +67.6 +31.3 +51.6 +35.6 +91.9 +47.1

LANDSCAPE RETAINING WALL

FIBER OPTIC

CAUTION

62.8' LT.

60' RT

UNKNOWN LOC.

5' 30' 5'

ASPH.

60'

E. ARMOUR AVE.

#4602 S. HOWELL AVE. | #4582-82A S. HOWELL AVE. | #4576 S. HOWELL AVE. | #4570 S. HOWELL AVE. | #4560 S. HOWELL AVE. | #4556-56A S. HOWELL AVE. | #4548 S. HOWELL AVE. | #4532 S. HOWELL AVE. | #4524 S. HOWELL AVE. | #4518 S. HOWELL AVE. | #4514 S. HOWELL AVE.

B.M. NW BOLT HYD
E/S S. HOWELL AV. @ #4576
STA. 73+07 - 48' RT.
ELEV. 97.19

B.M. NW BOLT HYD SE CORNER
E. ARMOUR AV. & S. HOWELL AV.
STA. 75+81 - 60' RT.
ELEV. 101.64

2 OF 10

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	WALK AND DRIVEWAY REMOVAL	SCALE FEET 0' 40'	SHEET NO: 166 E

FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\WALK REMOVAL.DGN

2

B.M. NW BOLT HYD NW CORNER
W. VAN NORMAN AV. & S. HOWELL AV.
STA. 79+48 - 69'LT.
ELEV. 108.20

SOUTH HOWELL AVENUE

N

#4503 S. HOWELL AVE.

W. VAN NORMAN AVE.

60'

ASPH.

30'

5'

5'

72.8' LT.

77.9' LT.

#4477

#4459

#4453

#4445

#4437

P.L.

CAUTION

R/W

CW

ASPH DWY

BRICK

+43.6 +53.6 +73.5 +75 +81 +96.7 +06.8 +11.9 +61.8 +67.8 +93.8 +09.8 +14.8 +45.1 +60 +65.1 +0.1 +5.1 +15.1 +25.1 +45.1 +50.1 +65.2 +80.1 +00 +15 +24.8 +84.9

1" 20" 35" 4" 27" 25" 10" 14" 10" 19" 4"

32'

78 79 80 81 82 83 84

+50 WMSD T/L TES SEC. LINE

N.01° 19' 36"W.

26'

+79.4

TEL

9" 4" 12" 2" 15" 11" 13" 1" 9" 12" 8" 24" 2"

+91.9 +47.1 +97.5

FIBER OPTIC VAULT

63.9' RT.

63.4' RT.

UNKNOWN LOC.

60' RT

LANDSCAPE RETAINING WALL

FIBER OPTIC

E. VAN NORMAN AVE.

#4508 S. HOWELL AVE. | #4502 S. HOWELL AVE. | #102 E. VAN NORMAN AVE. | #4464 S. HOWELL AVE. | #4460-60A S. HOWELL AVE. | #4452 S. HOWELL AVE. | #4444 S. HOWELL AVE. | #4436 S. HOWELL AVE. | #4424-24A S. HOWELL AVE.

3 OF 10

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	WALK AND DRIVEWAY REMOVAL	SCALE FEET 0' 40'	SHEET NO: 167	E

FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\WALK REMOVAL.DGN

2

SOUTH HOWELL AVENUE

N

#4419 | #4389 | #4379 S. HOWELL AVE. | #4369 S. HOWELL AVE. | #4359 S. HOWELL AVE. | #4353 S. HOWELL AVE. | #4337 S. HOWELL AVE.

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

CAUTION CAUTION

CW R/W GRAVEL ASPH DWY GRAVEL GRAVEL BRICK WALL BRICK WALL R/W

+87.4 +92.4 +12.7 +56.9 +76.6 +01.6 +76.7 +51.7 +66.1 +76.2 +08 +22.2 +57

STUMP ASPH

W. MARTIN LN.

50' ASPH.

5' 30' 5'

102' LT.

96.5' LT

SIGN

11" 7" 3" 4" 2" 4"

32' 32'

84 +50 85 +50 86 +50 87 +50 88 +50 89 +50 90

1" 21" 1" 27" STO. 1" 1" 9" 1" 1" N.01° 19' 36"W. 1" ELECTRICAL BOX 1" 1" TES TES

TEL TEL

32' 32'

+68.7

2" 10' 12" 5' 12" 12" 1" 7" 12" 2" 5' 21" FLAG BASE 12" 10' 8' 2" STAMPED CONC.

R/W R/W

CW CW CW CW CW CW ASPH DWY CW CONC. ASPH. CW CW

60' RT 60' RT

FIBER OPTIC CAUTION CAUTION FIBER OPTIC

#4400-00A S. HOWELL AVE.

B.W. NW BOLT HYD
E/S S. HOWELL AV. @ #4400
STA. 85+64 - 48' RT.
ELEV. 128.88

#4416 S. HOWELL AVE. | #4408 S. HOWELL AVE. | #4388 S. HOWELL AVE. | #4376 S. HOWELL AVE. | #4368-68A S. HOWELL AVE. | #4358 S. HOWELL AVE. | #4342 S. HOWELL AVE. | #4332 S. HOWELL AVE.

B.W. NW BOLT HYD
E/S S. HOWELL AV. @ #4358
STA. 88+90 - 48' RT.
ELEV. 137.79

4 OF 10

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	WALK AND DRIVEWAY REMOVAL	SCALE FEET 0' 40'	SHEET NO: 168 E

FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\WALK REMOVAL.DGN

SOUTH HOWELL AVENUE

B.W. NW BOLT HYD SW CORNER
W. BOLIVAR AV. & S. HOWELL AV.
STA. 92+77 - 59'LT.
ELEV. 139.56

#4325 S. HOWELL AVE. | #4317-17A S. HOWELL AVE. | #4301-03 S. HOWELL AVE. | #4273 S. HOWELL AVE. | #4265 S. HOWELL AVE. | #4259A S. HOWELL AVE. | #4253A S. HOWELL AVE. | #4247A S. HOWELL AVE.

W. BOLIVAR AVE.

#4330 S. HOWELL AVE. | #4300 S. HOWELL AVE. | #4270 S. HOWELL AVE. | #4262 S. HOWELL AVE. | #4258-60 S. HOWELL AVE. | #4258 S. HOWELL AVE.

E. BOLIVAR AVE.

STD. B.W. #58-01
S. HOWELL AV. AND E. BOLIVAR AV.
(S.E. CORNER) 20.2' SOUTH AND 19.7'
EAST OF CURBS.
ELEV.: 141.212

5 OF 10

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	WALK AND DRIVEWAY REMOVAL	SCALE FEET 0' 40'	SHEET NO: 169 E

FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\WALK REMOVAL.DGN

2

SOUTH HOWELL AVENUE

N

#4243A S. HOWELL AVE. | #4235A S. HOWELL AVE. | #4229 S. HOWELL AVE. | #4221 S. HOWELL AVE. | #4213 S. HOWELL AVE. | #4209-11 S. HOWELL AVE. | #4203 S. HOWELL AVE. | #4177 S. HOWELL AVE.

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

W. PLAINFIELD AVE.

60'

ASPH.

5' 30' 5'

67.2' LT.

50' LT.

CAUTION

CAUTION

R/W

CW +30 +35 +40 +74.8 ASPH DWY +34.5 +55 CW +90 +30.7 +35.7 +58.2 +65.2 R/W

CONC. LAWN CONC. GRAVEL CW

BRICKS LOC. UNKNOWN BRICKS R/W

14" 17" 5" ASPH. ASPH. 15" 15" 14" 12" 4" 16"

32'

96 +50 T/L 97 +50 SEC. LINE 98 N.01° 10' 25"W. +50 99 +50 100 +50 101 +50 102

8" 6" 6" WMSD 1" 1" 7" 7" 8" 7" 18" TES 6" 5"

32'

TEL TEL

16" 2" 16" 14" 7" 3" 3" 12" 11"

G 5' FO FO FO FO FO FO FO FO FO FO FO FO FO

R/W CW CW CW CW ENT. FIBER OPTIC VAULT 86.7' RT. 86.2' RT. ASPH. PARKING LAWN R/W

FIBER OPTIC CAUTION FIBER OPTIC

30' ASPH. 2" 4' 60' G

E. PLAINFIELD AVE.

CAUTION

#4242 S. HOWELL AVE. | #4236 S. HOWELL AVE. | #4230 S. HOWELL AVE. | #4222 S. HOWELL AVE. | #4214 S. HOWELL AVE. | #4200-04 S. HOWELL AVE. | #4170 S. HOWELL AVE.

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

B.M. NW BOLT HYD SW CORNER
E. PLAINFIELD AV. & S. HOWELL AV.
STA. 99+39 - 79' RT.
ELEV. 147.79

6 OF 10

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	WALK AND DRIVEWAY REMOVAL	SCALE FEET 0' 40'	SHEET NO: 170	E

FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\WALK REMOVAL.DGN

2

SOUTH HOWELL AVENUE

N

#4161 S. HOWELL AVE. | #4125 S. HOWELL AVE. | #4111-13 S. HOWELL AVE. | #4107 S. HOWELL AVE. | #4101-01A S. HOWELL AVE. | #4015 S. HOWELL AVE.

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

W. WATERFORD AVE.

60'

ASPH. 34'

FENCE

DIRT

LANDSCAPE BOARDER

FENCE

CAUTION

BRICK WALL

LOC. UNKNOWN

CONC.

ASPH. PARKING

19"

55.5' LT.

39.7' LT.

51.6' LT.

+60.8

+0.6

+41.2

CAUTION

PLANT POT

PLANT POT

1"

4"

5'

4" G

5" G

ASPH. G

ASPH. G

G

102 +50 103 +50 104 +50 105 +50 106 +50 107 +50 108

N.01° 10' 25"W.

32'

1"

12"

12"

9"

4"

TES

16"

WMSD

TEL

TEL

32'

FO

LAWN

LOC. UNKNOWN

CW

15" 2"

FO

FO

FO

FO

FO

FO

FO

FO

5'

5'

5'

5'

9"

11"

10"

+52

84.9' RT.

78.7' RT.

CONC.

LAWN

LOC. UNKNOWN

5'

5"

30'

ASPH.

60'

E. WATERFORD AVE.

FIBER OPTIC

CAUTION

FIBER OPTIC

2

#4130 S. HOWELL AVE. | #4114 S. HOWELL AVE. | #4100 S. HOWELL AVE. | #4068 S. HOWELL AVE. | #4068 S. HOWELL AVE.

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

B.M. NW BOLT HYD
E/S S. HOWELL AV. @ #4130
STA. 102+81 - 64' RT.
ELEV. 149.67

B.M. NW BOLT HYD SW CORNER
E. WATERFORD AV. & S. HOWELL AV.
STA. 105+88 - 66' RT.
ELEV. 147.13

7 OF 10

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	WALK AND DRIVEWAY REMOVAL	SCALE FEET 0' 40'	SHEET NO: 171	E

FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\WALK REMOVAL.DGN

SOUTH HOWELL AVENUE

N

#4015 S. HOWELL AVE. | #4015 S. HOWELL AVE. | #3977-79 S. HOWELL AVE. | #3969 S. HOWELL AVE.

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

CAUTION

W. NORWICH ST.

60'

ASPH.

28'

20'

5' 8" G 5'

32"

59.5' LT

55.7' LT.

WATER

WATER

SIGN POST

ASPH. PARKING

LAWN

R/W

+19

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

5' 5' 5' 3'

32'

108 +50 109 +50 110 +50 N.01° 10' 25"W. 111 +50 112 +50 113 +50 T/L 114

26'

TES

18" 17" 1" 1" 1" 1" 1" 1" 1"

TES 1" 19"

TEL

TEL

32'

FO FO G 16" 2" 6" FO 4" 12" 2" G 18" FO 12" G FO G 15" FO G 10"

5' 9' 5' 9' 5' 5' 2'

10" R/W

+88

LAWN

CONC. PORCH

WOOD RAMP

+30 ℄W

82.8' RT

79.8' RT

PARKING

18" 14"

6"

23'

ASPH.

34'

5'

60'

E. NORWICH ST.

FIBER OPTIC

CAUTION

FIBER OPTIC

3

#4056-60 S. HOWELL AVE. | #4040-42 S. HOWELL AVE. | #4036 S. HOWELL AVE. | #4028-30A S. HOWELL AVE. | #4014-24 S. HOWELL AVE. | #4008-10A S. HOWELL AVE. | #4002 S. HOWELL AVE. | #3970-74 S. HOWELL AVE.

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

B.M. NW BOLT HYD
E/S S. HOWELL AV. @ #4028
STA. 109+68 - 65' RT.
ELEV. 140.52

B.M. NW BOLT HYD NE CORNER
E. NORWICH AV. & S. HOWELL AV.
STA. 113.35 - 65' RT.
ELEV. 133.37

8 OF 10

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	WALK AND DRIVEWAY REMOVAL	SCALE FEET 0' 40'	SHEET NO: 172	E

FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\WALK REMOVAL.DGN

SOUTH HOWELL AVENUE

N

#3967 S. HOWELL AVE. | #3959 S. HOWELL AVE. | #3955 S. HOWELL AVE. | #3935-33 S. HOWELL AVE. | #3929-31 S. HOWELL AVE. | #3915-25 S. HOWELL AVE.

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

CAUTION CAUTION

ASPH. PARKING ASPH. PARKING

CONC. LIGHT BASE

CONC. SIGN BASE

ENT ENT ENT ENT

CW CW

R/W R/W

W. HOWARD AVE.

100'

ASPH. ON CONC. ASPH. ON CONC.

63.2' LT

20' 34'

2" 8"

9" 6"

5' 7' 3" 24' 3" 3"

32'

114 T/L +50 115 +50 116 +50 117 SEC. LINE +50 N.01°10'25"W. 118 +50 119 +50 120

180°17'18"

MON.

TES

19" 16" 21" 26' 1"

TES

WMSD

TEL TEL

3"

10" 2" 9" 2" 9" 2" 9" 5' 19"

FO FO FO FO

G G G

2

N

SOUTH HOWELL AVENUE

#3915-25 S. HOWELL AVE.

#108 E. HOWARD AVE.

W. HOWARD AVE.

100'

CAUTION

ASPH. ON CONC.

ASPH. ON CONC.

63.2' LT

20'

34'

CW

2"

8"

G

CW

9"

R/W

6"

2%

3"

180° 17' 18"

+50 118 N.01° 10' 25"W. +50 119 +50 MON. TES 120 CONC. +50

WMSD

TEL

TEL

CONC.

4"

3"

FO

FO

FO

LAWN

BUS SHELTER

CW

98' RT

CAUTION

25'

28'

40'

20'

ASPH. ON CONC.

ASPH. ON CONC.

E. HOWARD AVE.

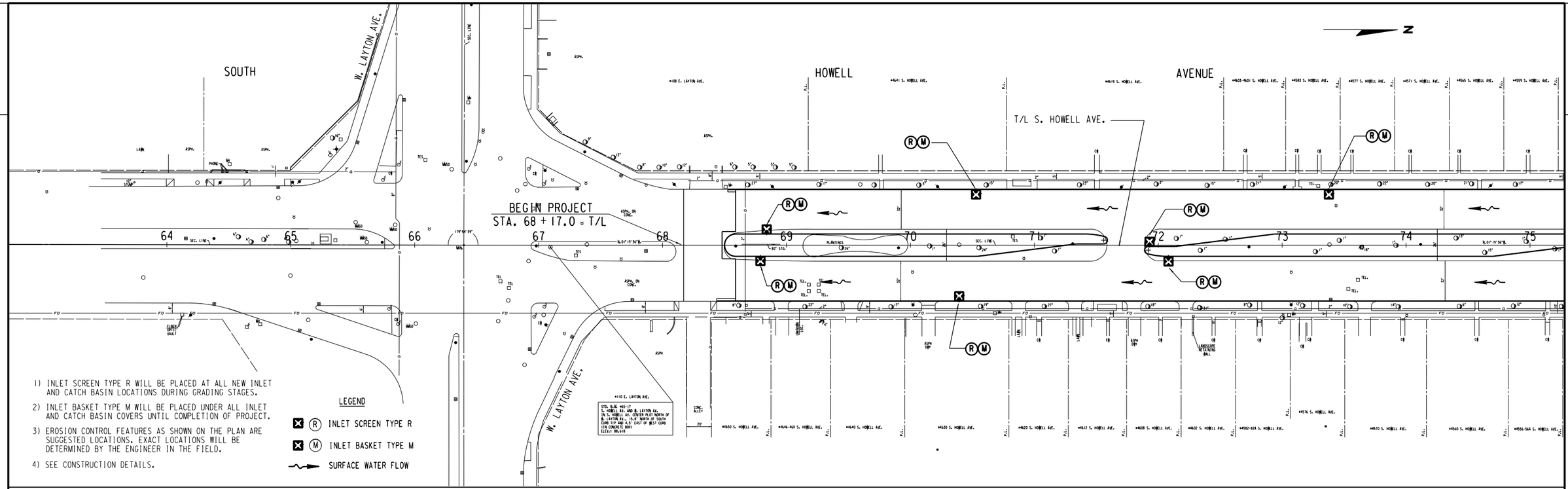
100'

#3912 S. HOWELL AVE.

#3870 S. HOWELL AVE.

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	WALK AND DRIVEWAY REMOVAL	SCALE FEET 0' 40'	SHEET NO: 174	E

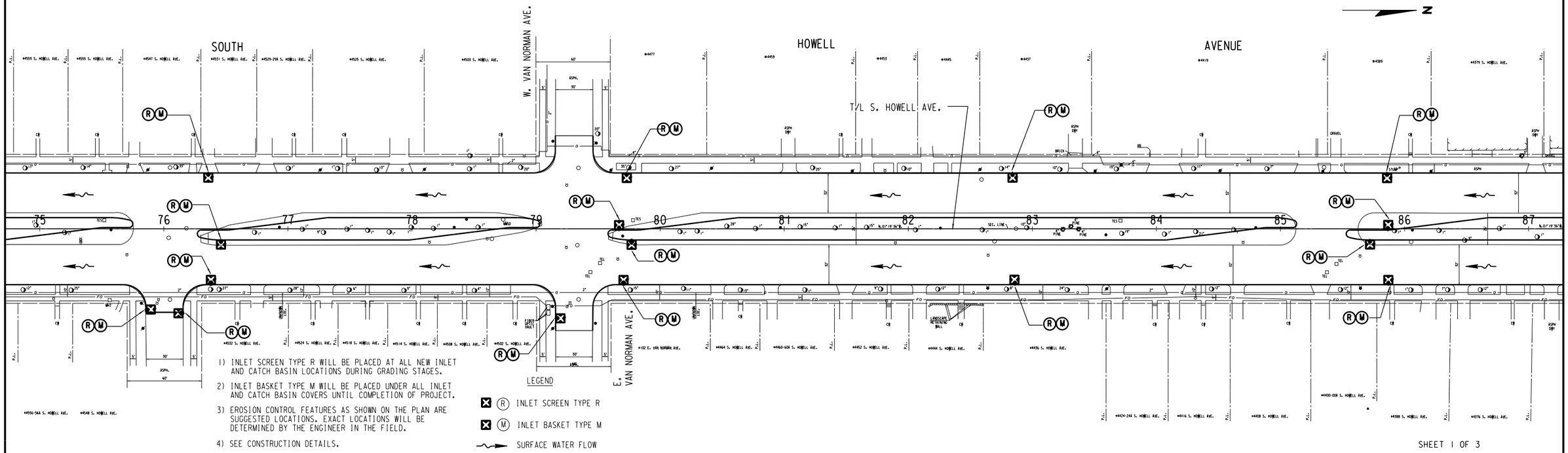
FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\WALK REMOVAL.DGN



1) INLET SCREEN TYPE R WILL BE PLACED AT ALL NEW INLET AND CATCH BASIN LOCATIONS DURING GRADING STAGES.
2) INLET BASKET TYPE M WILL BE PLACED UNDER ALL INLET AND CATCH BASIN COVERS UNTIL COMPLETION OF PROJECT.
3) EROSION CONTROL FEATURES AS SHOWN ON THE PLAN ARE SUGGESTED LOCATIONS. EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.
4) SEE CONSTRUCTION DETAILS.

LEGEND

- (R) INLET SCREEN TYPE R
- (M) INLET BASKET TYPE M
- SURFACE WATER FLOW



1) INLET SCREEN TYPE R WILL BE PLACED AT ALL NEW INLET AND CATCH BASIN LOCATIONS DURING GRADING STAGES.
2) INLET BASKET TYPE M WILL BE PLACED UNDER ALL INLET AND CATCH BASIN COVERS UNTIL COMPLETION OF PROJECT.
3) EROSION CONTROL FEATURES AS SHOWN ON THE PLAN ARE SUGGESTED LOCATIONS. EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.
4) SEE CONSTRUCTION DETAILS.

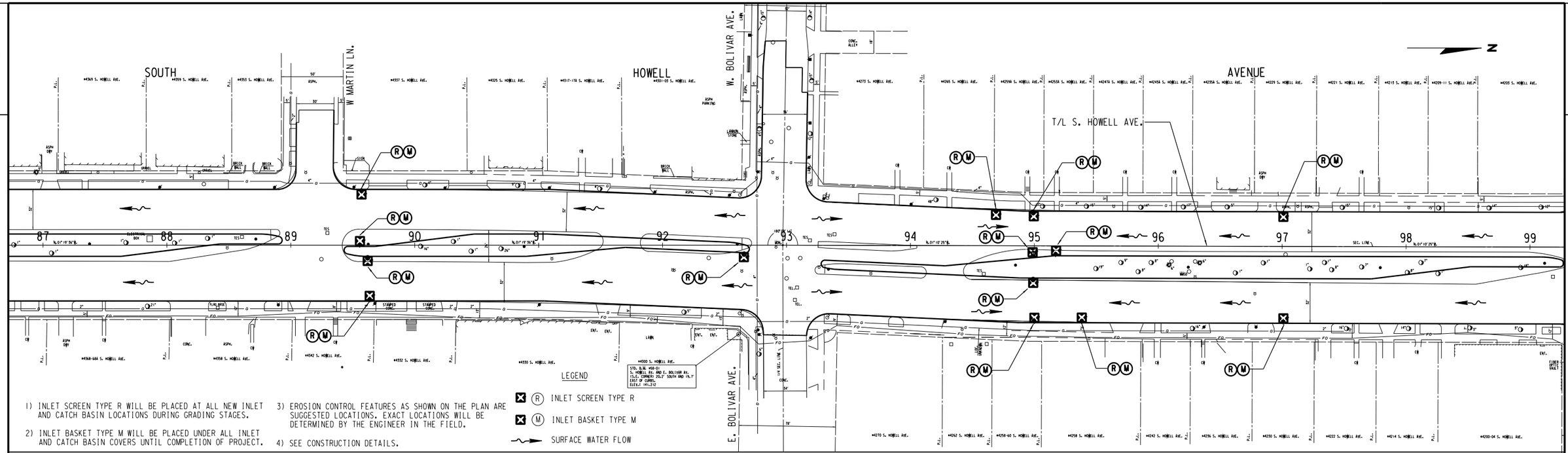
LEGEND

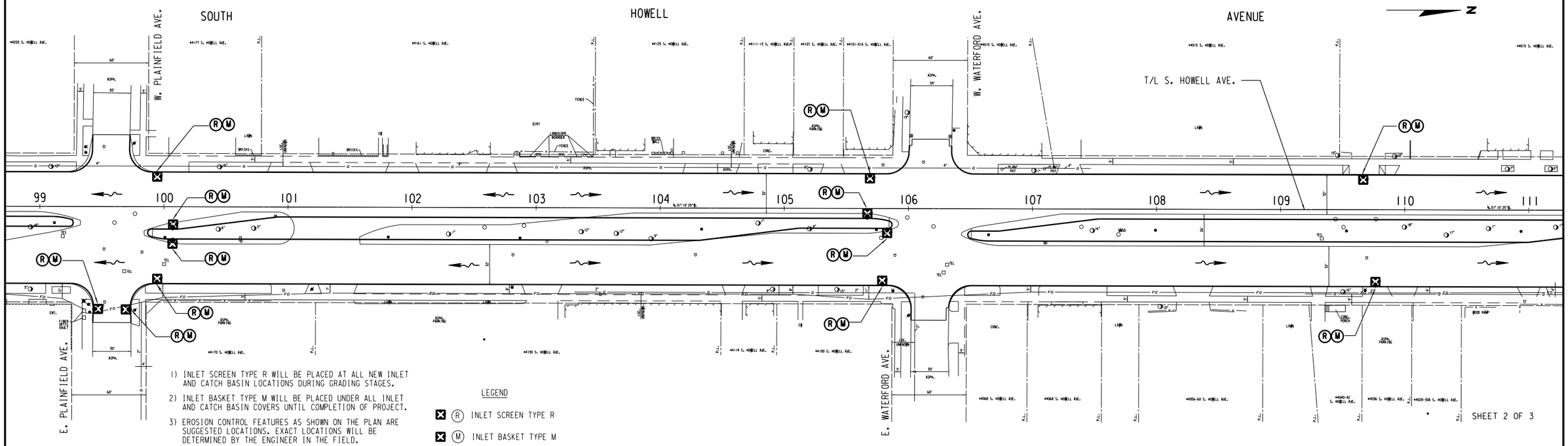
- (R) INLET SCREEN TYPE R
- (M) INLET BASKET TYPE M
- SURFACE WATER FLOW

SHEET 1 OF 3

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	EROSION CONTROL PLAN	SCALE FEET 0' 80'	SHEET NO: 175 E

FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\EROSION CONTROL.DGN

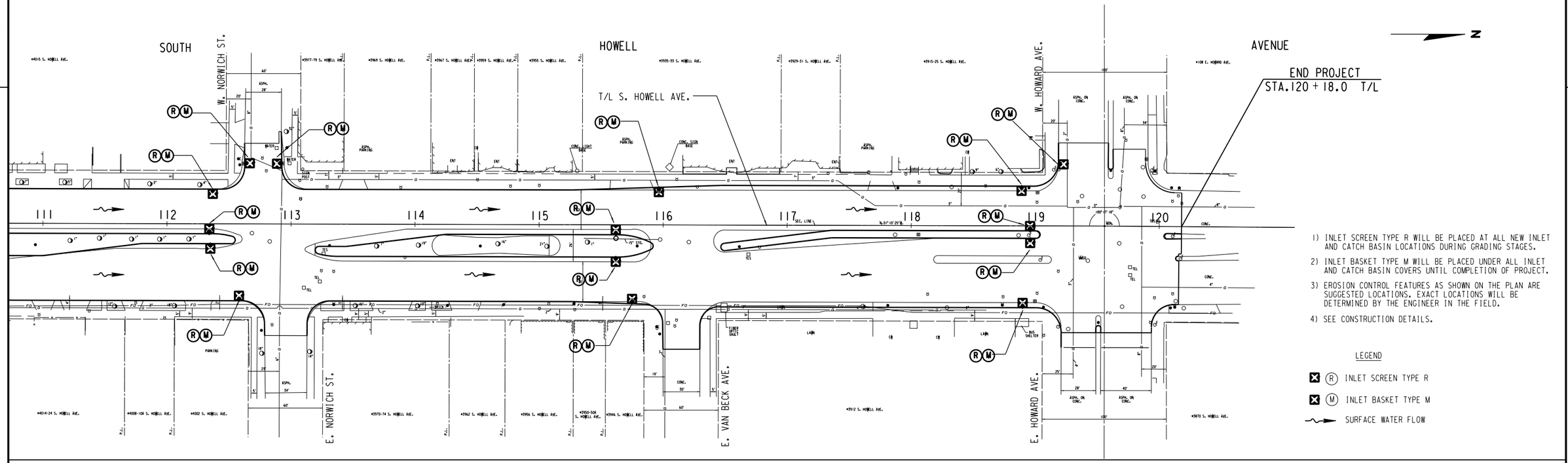




SHEET 2 OF 3

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	EROSION CONTROL PLAN	SCALE FEET 0' 80'	SHEET NO: 176	E

FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\EROSION CONTROL.DGN



SHEET 3 OF 3

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	EROSION CONTROL PLAN	SCALE FEET 0' 80'	SHEET NO: 177	E

FILE NAME: W:\SPR\HOWELL LAYTON HOWARD\EROSION CONTROL.DGN

DATE 01DEC14 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	2060-11-70 QUANTITY
0010	201.0120	CLEARING	ID	459.000	459.000
0020	201.0220	GRUBBING	ID	459.000	459.000
0030	204.0100	REMOVING PAVEMENT	SY	44,300.000	44,300.000
0040	204.0115	REMOVING ASPHALTIC SURFACE BUTT JOINTS	SY	970.000	970.000
0050	204.0150	REMOVING CURB & GUTTER	LF	220.000	220.000
0060	204.0155	REMOVING CONCRETE SIDEWALK	SY	7,950.000	7,950.000
0070	204.0220	REMOVING INLETS	EACH	38.000	38.000
0080	204.0250	ABANDONING MANHOLES	EACH	12.000	12.000
0090	204.0260	ABANDONING INLETS	EACH	4.000	4.000
0100	205.0100	EXCAVATION COMMON **P**	CY	24,500.000	24,500.000
0110	205.0501.S	EXCAVATION, HAULING, AND DISPOSAL OF PETROLEUM CONTAMINATED SOIL	TON	95.000	95.000
0120	213.0100	FINISHING ROADWAY (PROJECT) 01. 2060-11-70	EACH	1.000	1.000
0130	305.0110	BASE AGGREGATE DENSE 3/4-INCH	TON	200.000	200.000
0140	305.0120	BASE AGGREGATE DENSE 1 1/4-INCH	TON	18,000.000	18,000.000
0150	310.0115	BASE AGGREGATE OPEN GRADED	CY	223.000	223.000
0160	320.0125	CONCRETE BASE 6-INCH	SY	390.000	390.000
0170	415.0070	CONCRETE PAVEMENT 7-INCH	SY	326.000	326.000
0180	415.0080	CONCRETE PAVEMENT 8-INCH	SY	45,250.000	45,250.000
0190	415.0210	CONCRETE PAVEMENT GAPS	EACH	10.000	10.000
0200	416.0170	CONCRETE DRIVEWAY 7-INCH	SY	1,730.000	1,730.000
0210	416.0270	CONCRETE DRIVEWAY HES 7-INCH	SY	270.000	270.000
0220	416.0610	DRILLED TIE BARS	EACH	38.000	38.000
0230	440.4410.S	INCENTIVE IRI RIDE	DOL	7,800.000	7,800.000
0240	455.0605	TACK COAT	GAL	180.000	180.000
0250	465.0105	ASPHALTIC SURFACE	TON	150.000	150.000
0260	601.0150	CONCRETE CURB INTEGRAL TYPE D	LF	9,080.000	9,080.000
0270	601.0322	CONCRETE CURB & GUTTER 22-INCH	LF	84.000	84.000
0280	601.0331	CONCRETE CURB & GUTTER 31-INCH	LF	10,550.000	10,550.000
0290	601.0600	CONCRETE CURB PEDESTRIAN	LF	110.000	110.000
0300	602.0410	CONCRETE SIDEWALK 5-INCH	SF	54,950.000	54,950.000
0310	602.0505	CURB RAMP DETECTABLE WARNING FIELD YELLOW	SF	420.000	420.000
0320	611.2004	MANHOLES 4-FT DIAMETER	EACH	23.000	23.000
0330	611.2005	MANHOLES 5-FT DIAMETER	EACH	2.000	2.000
0340	611.8110	ADJUSTING MANHOLE COVERS	EACH	2.000	2.000
0350	611.8115	ADJUSTING INLET COVERS	EACH	3.000	3.000
0360	611.9705	SALVAGED MANHOLE COVERS	EACH	47.000	47.000
0370	611.9710	SALVAGED INLET COVERS	EACH	8.000	8.000
0380	612.0106	PIPE UNDERDRAIN 6-INCH	LF	566.000	566.000
0390	612.0206	PIPE UNDERDRAIN UNPERFORATED 6-INCH	LF	48.000	48.000
0400	619.1000	MOBILIZATION	EACH	1.000	1.000
0410	620.0300	CONCRETE MEDIAN SLOPED NOSE	SF	340.000	340.000
0420	621.0100	LANDMARK REFERENCE MONUMENTS	EACH	2.000	2.000
0430	623.0200	DUST CONTROL SURFACE TREATMENT	SY	45,250.000	45,250.000
0440	625.0100	TOPSOIL	SY	10,600.000	10,600.000
0450	627.0200	MULCHING	SY	428.000	428.000
0460	629.0210	FERTILIZER TYPE B	CWT	7.000	7.000
0470	631.1000	SOD LAWN	SY	10,600.000	10,600.000
0480	632.0101	TREES (SPECIES, ROOT, SIZE) 01. FREEMAN MAPLE, B&B, 4" CAL	EACH	9.000	9.000
0490	632.0101	TREES (SPECIES, ROOT, SIZE) 02. CATALPA, B&B, 4" CAL	EACH	4.000	4.000

3

DATE 01DEC14 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	2060-11-70 QUANTITY
0500	632.0101	TREES (SPECIES, ROOT, SIZE) 03. PEAR, B&B, 4" CAL	EACH	5.000	5.000
0510	632.0101	TREES (SPECIES, ROOT, SIZE) 04. IVORY SILK LILAC, B&B, 4" CAL	EACH	7.000	7.000
0520	632.0101	TREES (SPECIES, ROOT, SIZE) 05. KENTUCKY COFFEE, B&B, 4" CAL	EACH	4.000	4.000
0530	632.0101	TREES (SPECIES, ROOT, SIZE) 06. BALD CYPRESS, B&B, 4" CAL	EACH	2.000	2.000
0540	632.0101	TREES (SPECIES, ROOT, SIZE) 07. RED BUD, B&B, 2" CAL	EACH	3.000	3.000
0550	632.0101	TREES (SPECIES, ROOT, SIZE) 08. ENGLISH OAK, B&B, 4" CAL	EACH	3.000	3.000
0560	632.0101	TREES (SPECIES, ROOT, SIZE) 09. LOCUST, B&B, 4" CAL	EACH	3.000	3.000
0570	632.0201	SHRUBS (SPECIES, ROOT, SIZE) 06. RUGOSA ROSES CG 18 INCH POT	EACH	18.000	18.000
0580	632.0201	SHRUBS (SPECIES, ROOT, SIZE) 08. DIABLO NINEBARK CG 24 INCH POT	EACH	3.000	3.000
0590	632.0201	SHRUBS (SPECIES, ROOT, SIZE) 10. RED TWIG DOGWOOD CG 24 INCH POT	EACH	5.000	5.000
0600	632.0201	SHRUBS (SPECIES, ROOT, SIZE) 11. BLACK LACE SAMBUCUS CG 24 INCH POT	EACH	10.000	10.000
0610	632.9101	LANDSCAPE PLANTING SURVEILLANCE AND CARE CYCLES	EACH	26.000	26.000
0620	634.0618	POSTS WOOD 4X6-INCH X 18-FT	EACH	10.000	10.000
0630	637.2210	SIGNS TYPE II REFLECTIVE H	SF	213.000	213.000
0640	638.2602	REMOVING SIGNS TYPE II	EACH	10.000	10.000
0650	638.3000	REMOVING SMALL SIGN SUPPORTS	EACH	3.000	3.000
0660	642.5001	FIELD OFFICE TYPE B	EACH	1.000	1.000
0670	643.0100	TRAFFIC CONTROL (PROJECT) 01. 2060-11-70	EACH	1.000	1.000
0680	643.0300	TRAFFIC CONTROL DRUMS	DAY	27,890.000	27,890.000
0690	643.0420	TRAFFIC CONTROL BARRICADES TYPE III	DAY	16,740.000	16,740.000
0700	643.0500	TRAFFIC CONTROL FLEXIBLE TUBULAR MARKER POSTS	EACH	377.000	377.000
0710	643.0600	TRAFFIC CONTROL FLEXIBLE TUBULAR MARKER BASES	EACH	377.000	377.000
0720	643.0705	TRAFFIC CONTROL WARNING LIGHTS TYPE A	DAY	33,480.000	33,480.000
0730	643.0715	TRAFFIC CONTROL WARNING LIGHTS TYPE C	DAY	27,890.000	27,890.000
0740	643.0900	TRAFFIC CONTROL SIGNS	DAY	13,910.000	13,910.000
0750	645.0112	GEOTEXTILE FABRIC TYPE DF SCHEDULE B	SY	96.000	96.000
0760	646.0106	PAVEMENT MARKING EPOXY 4-INCH	LF	10,772.000	10,772.000
0770	646.0116	PAVEMENT MARKING EPOXY 6-INCH	LF	8,102.000	8,102.000
0780	646.0126	PAVEMENT MARKING EPOXY 8-INCH	LF	1,040.000	1,040.000
0790	647.0166	PAVEMENT MARKING ARROWS EPOXY TYPE 2	EACH	4.000	4.000
0800	647.0206	PAVEMENT MARKING ARROWS BIKE LANE EPOXY	EACH	25.000	25.000
0810	647.0306	PAVEMENT MARKING SYMBOLS BIKE LANE EPOXY	EACH	25.000	25.000
0820	647.0356	PAVEMENT MARKING WORDS EPOXY	EACH	4.000	4.000
0830	647.0576	PAVEMENT MARKING STOP LINE EPOXY 24-INCH	LF	90.000	90.000
0840	647.0776	PAVEMENT MARKING CROSSWALK EPOXY 12-INCH	LF	1,100.000	1,100.000
0850	649.0200	TEMPORARY PAVEMENT MARKING REFLECTIVE PAINT 4-INCH	LF	14,825.000	14,825.000
0860	649.0400	TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH	LF	49,801.000	49,801.000
0870	649.1400	TEMPORARY PAVEMENT MARKING STOP LINE REMOVABLE TAPE 24-INCH	LF	196.000	196.000

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DATE 01DEC14 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	2060-11-70 QUANTITY
0880	649.1800	TEMPORARY PAVEMENT MARKING ARROWS REMOVABLE TAPE	EACH	20.000	20.000
0890	649.2000	TEMPORARY PAVEMENT MARKING WORDS REMOVABLE TAPE	EACH	15.000	15.000
0900	650.4000	CONSTRUCTION STAKING STORM SEWER	EACH	119.000	119.000
0910	650.4500	CONSTRUCTION STAKING SUBGRADE	LF	10,950.000	10,950.000
0920	650.7000	CONSTRUCTION STAKING CONCRETE PAVEMENT	LF	10,950.000	10,950.000
0930	650.9910	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) 01. 2060-11-70	LS	1.000	1.000
0940	652.0220	CONDUIT RIGID NONMETALLIC SCHEDULE 40 1 1/2-INCH	LF	100.000	100.000
0950	652.0225	CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH	LF	100.000	100.000
0960	652.0230	CONDUIT RIGID NONMETALLIC SCHEDULE 40 2 1/2-INCH	LF	150.000	150.000
0970	652.0235	CONDUIT RIGID NONMETALLIC SCHEDULE 40 3-INCH	LF	9,700.000	9,700.000
0980	652.0615	CONDUIT SPECIAL 3-INCH	LF	75.000	75.000
0990	654.0110	CONCRETE BASES TYPE 10	EACH	1.000	1.000
1000	690.0150	SAWING ASPHALT	LF	1,570.000	1,570.000
1010	690.0250	SAWING CONCRETE	LF	510.000	510.000
1020	715.0415	INCENTIVE STRENGTH CONCRETE PAVEMENT	DOL	13,573.000	13,573.000
1030	ASP.1T0A	ON-THE-JOB TRAINING APPRENTICE AT $5. 00/HR	HRS	1,200.000	1,200.000
1040	ASP.1T0G	ON-THE-JOB TRAINING GRADUATE AT $5.00/HR	HRS	1,200.000	1,200.000
1050	SPV.0035	SPECIAL 01. ENGINEERED SOIL	CY	399.000	399.000
1060	SPV.0035	SPECIAL 02. BEDDING LAYER	CY	50.000	50.000
1070	SPV.0045	SPECIAL 01. TEMPORARY CROSSWALK	DAY	120.000	120.000
1080	SPV.0060	SPECIAL 01. INLET COVERS TYPE 57	EACH	62.000	62.000
1090	SPV.0060	SPECIAL 02. MANHOLE COVERS TYPE 58A	EACH	11.000	11.000
1100	SPV.0060	SPECIAL 03. INLETS TYPE 45A	EACH	41.000	41.000
1110	SPV.0060	SPECIAL 04. ADJUSTING WATER BOX	EACH	50.000	50.000
1120	SPV.0060	SPECIAL 05. ADJUSTING WATER MANHOLE FRAME AND LID	EACH	2.000	2.000
1130	SPV.0060	SPECIAL 06. WATER MAIN PROTECTION	EACH	50.000	50.000
1140	SPV.0060	SPECIAL 07. INLET SCREEN TYPE M	EACH	60.000	60.000
1150	SPV.0060	SPECIAL 08. INLET SCREEN TYPE R	EACH	60.000	60.000
1160	SPV.0060	SPECIAL 09. ADJUSTING TES MANHOLE COVERS	EACH	13.000	13.000
1170	SPV.0060	SPECIAL 10. 4 FOOT DIAMETER MANHOLE TYPE TES	EACH	9.000	9.000
1180	SPV.0060	SPECIAL 11. 5 FOOT DIAMETER MANHOLE TYPE TES	EACH	1.000	1.000
1190	SPV.0060	SPECIAL 12. INSTALLING CONDUIT INTO EXISTING MANHOLE	EACH	1.000	1.000
1200	SPV.0060	SPECIAL 13. SAWING CONCRETE ENCASED DUCT PACKAGE	EACH	3.000	3.000
1210	SPV.0060	SPECIAL 14. POLES TYPE 9	EACH	1.000	1.000
1220	SPV.0060	SPECIAL 15. MONOTUBE ARMS 25 - FT	EACH	1.000	1.000
1230	SPV.0060	SPECIAL 16. CONCRETE BASE TYPE 10 SPECIAL	EACH	1.000	1.000
1240	SPV.0060	SPECIAL 17. RECTANGULAR POLYMER CONCRETE VAULT 13"X24"X18"	EACH	25.000	25.000
1250	SPV.0060	SPECIAL 18. RECTANGULAR POLYMER CONCRETE VAULT 17"X30"X18"	EACH	6.000	6.000
1260	SPV.0060	SPECIAL 19. INSTALL TRAFFIC SIGNAL BASE	EACH	5.000	5.000
1270	SPV.0060	SPECIAL 20. INFORMATIONAL SIGNS	EACH	6.000	6.000

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DATE 01DEC14 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	2060-11-70 QUANTITY
1280	SPV.0060	SPECIAL 21. 6-INCH CLEANOUTS	EACH	18.000	18.000
1290	SPV.0060	SPECIAL 22. BLACK EYED SUSAN CG 1 GAL	EACH	36.000	36.000
1300	SPV.0060	SPECIAL 23. BLUE WONDER CATMINT CG 1 GAL	EACH	180.000	180.000
1310	SPV.0060	SPECIAL 24. RUSSIAN SAGE CG 1 GAL	EACH	12.000	12.000
1320	SPV.0060	SPECIAL 25. BECKY SHASTA DAISY CG 1 GAL	EACH	72.000	72.000
1330	SPV.0060	SPECIAL 26. DAYLILIES CG 1 GAL	EACH	156.000	156.000
1340	SPV.0060	SPECIAL 27. DWARF BUSH HONEYSUCKLE CG 18 INCH POT	EACH	4.000	4.000
1350	SPV.0060	SPECIAL 28. GRO LOW SUMAC CG 18 INCH POT	EACH	9.000	9.000
1360	SPV.0060	SPECIAL 29. KARL FOERSTER GRASS CG 1 GAL	EACH	36.000	36.000
1370	SPV.0060	SPECIAL 30. 8-INCH PVC STANDPIPE WITH GRATE	EACH	6.000	6.000
1380	SPV.0090	SPECIAL 01. STORM SEWER PIPE CORRUGATED PVC 12 INCH	LF	1,955.000	1,955.000
1390	SPV.0090	SPECIAL 02. STORM SEWER PIPE CORRUGATED PVC 15 INCH	LF	12.000	12.000
1400	SPV.0090	SPECIAL 03. STORM SEWER PIPE CORRUGATED PVC 18 INCH	LF	6.000	6.000
1410	SPV.0090	SPECIAL 04. STORM SEWER PIPE CORRUGATED PVC 21 INCH	LF	18.000	18.000
1420	SPV.0090	SPECIAL 05. STORM SEWER PIPE CORRUGATED PVC 24 INCH	LF	6.000	6.000
1430	SPV.0090	SPECIAL 06. STORM SEWER PIPE CORRUGATED PVC 27 INCH	LF	6.000	6.000
1440	SPV.0090	SPECIAL 07. STORM SEWER PIPE CORRUGATED PVC 30 INCH	LF	6.000	6.000
1450	SPV.0090	SPECIAL 08. 6-DUCT CONDUIT,CEMENT ENCASED,4-INCH RIGID NONMETALLIC CONDUIT DB-60	LF	2,664.000	2,664.000
1460	SPV.0090	SPECIAL 09. 4-DUCT CONDUIT,CEMENT ENCASED,4-INCH RIGID NONMETALLIC CONDUIT DB-60	LF	2,637.000	2,637.000
1470	SPV.0090	SPECIAL 10. 3-DUCT CONDUIT,CEMENT ENCASED,4-INCH RIGID NONMETALLIC CONDUIT DB-60	LF	111.000	111.000
1480	SPV.0090	SPECIAL 11. 2-DUCT CONDUIT,CEMENT ENCASED,4-INCH RIGID NONMETALLIC CONDUIT DB-60	LF	387.000	387.000
1490	SPV.0090	SPECIAL 12. CONSTRUCTION STAKING CONCRETE SIDEWALK	LF	6,600.000	6,600.000
1500	SPV.0180	SPECIAL 01. JOINT SEALING	SY	45,250.000	45,250.000
1510	SPV.0195	SPECIAL 01. COBBLESTONES	TON	6.000	6.000

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REMOVALS

2060-11-70

CATEGORY 0010

ITEM NO. / UNIT PAY / LOCATION		CLEARING 201.0120 ID	GRUBBING 201.0220 ID	REMOVING PAVEMENT 204.0100 SY	REMOVING ASPHALTIC SURFACE BUTT JOINTS 204.0115 SY	REMOVING CURB & GUTTER 204.0150 LF	REMOVING CONCRETE SIDEWALK 204.0155 SY	SAWING ASPHALT 690.0150 LF	SAWING CONCRETE 690.0250 LF
STA 68+17 TO 72+00	LT	13	13	1340	190	0	120	40	20
STA 72+00 TO 78+00	LT	66	66	2640	0	0	200	0	20
STA 78+00 TO 84+00	LT	15	15	2400	40	20	240	40	0
STA 84+00 TO 90+00	LT	17	17	2600	30	10	350	100	30
STA 90+00 TO 96+00	LT	23	23	2760	0	0	570	90	70
STA 96+00 TO 102+00	LT	18	18	1980	40	20	480	50	0
STA 102+00 TO 108+00	LT	10	10	2280	30	10	510	160	0
STA 108+00 TO 114+00	LT	21	21	1960	70	50	520	200	0
STA 114+00 TO 118+00	LT	18	18	1480	0	0	460	120	0
STA 118+00 TO 120+18	LT	9	9	930	90	10	180	60	0
SUBTOTALS (LEFT)		**210**	**210**	**20370**	**490**	**120**	**3630**	**860**	**140**
STA 68+17 TO 72+00	RT	13	13	1330	190	0	180	60	40
STA 72+00 TO 78+00	RT	66	66	2670	50	0	230	0	30
STA 78+00 TO 84+00	RT	15	15	2390	50	30	360	30	0
STA 84+00 TO 90+00	RT	17	17	2460	0	0	510	60	60
STA 90+00 TO 96+00	RT	23	23	2950	0	0	600	30	100
STA 96+00 TO 102+00	RT	18	18	2780	40	30	540	200	0
STA 102+00 TO 108+00	RT	10	10	2770	30	10	640	110	0
STA 108+00 TO 114+00	RT	21	21	2880	30	20	560	110	40
STA 114+00 TO 118+00	RT	18	18	2010	0	0	510	50	100
STA 118+00 TO 120+18	RT	9	9	1690	90	10	190	60	0
SUBTOTALS (RIGHT)		**210**	**210**	**23930**	**480**	**100**	**4320**	**710**	**370**
GRAND TOTALS		**420**	**420**	**44,300**	**970**	**220**	**7,950**	**1,570**	**510**

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CONCRETE CONSTRUCTION ITEMS

2060-11-70

		BASE AGGREGATE DENSE 3/4 INCH	BASE AGGREGATE DENSE 1-1/4 INCH	CONCRETE BASE 6-INCH	CONCRETE PAVEMENT 8-INCH	CONCRETE DRIVEWAY 7-INCH	CONCRETE DRIVEWAY 7-INCH HES	CONCRETE CURB INTEGRAL TYPE D	CONCRETE CURB & GUTTER 22-INCH	CONCRETE CURB & GUTTER 31-INCH	CONCRETE SIDEWALK 5-INCH	CONCRETE SIDEWALK 5-INCH	CURB RAMP DETECTABLE WARNING FIELD YELLOW	CONCRETE MEDIAN NOSE	CONCRETE PAVEMENT GAPS	BASE AGGREGATE DENSE 1 ¼-INCH	CONCRETE PAVEMENT 8-INCH	CONCRETE PAVEMENT 7-INCH
ITEM NO.		305.0110	305.0120	320.0125	415.0080	416.0170	416.0270	601.0150	601.0322	601.0331	602.0410	602.0411	602.0505	620.0300	415.0210	305.0120	415.0080	415.0070
UNIT PAY		TON	TON	SY	SY	SY	SY	LF	LF	LF	SF	SF	SF	SF	EACH	TON	SY	SY
CATEGORY		0010	0010	0010	0010	0010	0010	0010	0010	0010	0010	0030	0010	0010	0010	0020	0020	0020
LOCATION																		
STA 68+17 TO 72+00	LT		460	0	1110	0	0	310	0	350	120	960	0	10	0	90	200	0
STA 72+00 TO 78+00	LT		864	0	2220	50	0	550	0	600	1100	250	10	10	0	150	360	0
STA 78+00 TO 84+00	LT		870	0	2210	50	0	570	24	590	1190	590	30	10	0	150	370	0
STA 84+00 TO 90+00	LT		940	20	2400	85	35	470	0	680	2300	150	30	30	0	160	400	0
STA 90+00 TO 96+00	LT		910	20	2300	90	20	280	0	760	4120	0	20	0	1	160	370	326
STA 96+00 TO 102+00	LT		610	0	1550	140	20	0	24	600	3320	0	30	0	1	100	270	0
STA 102+00 TO 108+00	LT		730	10	1930	150	20	0	0	600	2900	0	30	0	1	120	330	0
STA 108+00 TO 114+00	LT		610	140	1530	195	35	0	0	650	2700	0	20	0	2	100	260	0
STA 114+00 TO 118+00	LT		480	20	1250	80	0	0	0	400	3310	0	20	0	0	80	220	0
STA 118+00 TO 120+18	LT		290	0	800	0	0	0	0	150	1160	0	10	10	0	50	160	0
SUBTOTALS (LEFT)			**6764**	**210**	**17300**	**840**	**130**	**2180**	**48**	**5380**	**22220**	**1950**	**200**	**70**	**5**	**1160**	**2940**	**326**
STA 68+17 TO 72+00	RT		470	20	1160	60	0	310	0	360	1190	30	0	10	0	80	210	0
STA 72+00 TO 78+00	RT		864	0	2220	40	0	560	0	600	1200	470	20	30	0	150	360	0
STA 78+00 TO 84+00	RT		870	0	2210	70	0	550	0	620	2750	0	30	10	0	150	360	0
STA 84+00 TO 90+00	RT		920	10	2280	110	40	530	0	600	2960	0	20	30	2	150	370	0
STA 90+00 TO 96+00	RT		1020	0	2540	160	20	820	0	580	5110	0	30	30	1	160	420	0
STA 96+00 TO 102+00	RT		1090	20	2650	190	40	1070	26	600	2970	0	30	30	1	170	440	0
STA 102+00 TO 108+00	RT		1060	10	2560	130	0	1090	10	590	4930	0	30	30	0	170	420	0
STA 108+00 TO 114+00	RT		1090	110	2650	130	20	1060	0	640	3700	0	20	30	1	190	440	0
STA 114+00 TO 118+00	RT		732	10	1760	0	20	710	0	430	4190	0	30	40	0	120	300	0
STA 118+00 TO 120+18	RT		520	0	1370	0	0	200	0	150	1280	0	10	30	0	100	290	0
SUBTOTALS (RIGHT)			**8636**	**180**	**21400**	**890**	**140**	**6900**	**36**	**5170**	**30280**	**500**	**220**	**270**	**5**	**1440**	**3610**	**0**
GRAND TOTALS		**200**	**15,400**	**390**	**38,700**	**1,730**	**270**	**9,080**	**84**	**10,550**	**52,500**	**2,450**	**420**	**340**	**10**	**2,600**	**6,550**	**326**

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2060-11-70

MISCELLANEOUS ITEMS

CATEGORY / LOCATION		EXCAV. HAUL & DISPOSAL OF PETRO CONTAM. SOIL 205.0501.S TON 0010	FINSIHING ROADWAY (PROJECT) 213.0100 EACH 0010	DRILLED TIE BARS 416.0610 EACH 0010	TACK COAT 455.0605 GAL 0010	ASPHALTIC SURFACE 465.0105 TON 0010	CONC. CURB PEDESTRIAN 601.0600 LF 0010	MOBILIZATION 619.1000 EACH 0010	LANDMARK REFERENCE MONUMENTS 621.0100 EACH 0010	DUST CONTROL SURFACE TREATMENT 623.0200 SY 0010	FIELD OFFICE TYPE B (PROJECT) 642.5001 EACH 0010	ADJUSTING WATER BOX SPV.0060.04 EACH 0030	ADJUSTING WATER MH FRAME & LID SPV.0060.05 EACH 0030	INLET SCREEN TYPE M SPV.0060.07 EACH 0010	INLET SCREEN TYPE R SPV.0060.08 EACH 0010	JOINT SEALING SPV.0180.01 SY 0010
STAGE 1																
STA 68+17 TO 72+00	LT	0		0	20	17	0		0	1300			0	3	3	1300
STA 72+00 TO 78+00	LT	0		0	0	0	0		0	2580			0	2	2	2580
STA 78+00 TO 84+00	LT	0		0	9	7.5	30		0	2580			1	3	3	2580
STA 84+00 TO 90+00	LT	0		0	11	9	30		0	2800			0	4	4	2800
STA 90+00 TO 96+00	LT	0		0	4	3	13		0	2670			0	4	4	2670
STA 96+00 TO 102+00	LT	0		0	11	7.5	0		0	1820			0	3	3	1820
STA 102+00 TO 108+00	LT	0		0	13	11	0		0	2260			0	2	2	2260
STA 108+00 TO 114+00	LT	0		0	14	14	12		0	1790			0	5	5	1790
STA 114+00 TO 118+00	LT	0		0	4	3	25		0	1470			0	2	2	1470
STA 118+00 TO 120+18	LT	0		**11**	**4**	3	0		1	960			0	3	3	960
SUBTOTALS (LEFT)		**0**		**11**	**90**	**75**	**110**		**1**	**20,230**			**1**	**31**	**31**	**20230**
STAGE 2																
STA 68+17 TO 72+00	RT	0		0	19	16	0		0	1370			0	2	2	1370
STA 72+00 TO 78+00	RT	0		0	11	9	0		0	2580			1	5	5	2580
STA 78+00 TO 84+00	RT	0		0	9	10	0		0	2570			0	4	4	2570
STA 84+00 TO 90+00	RT	0		0	8	6	0		0	2650			0	4	4	2650
STA 90+00 TO 96+00	RT	95		0	2	1.5	0		1	2960			0	4	4	2960
STA 96+00 TO 102+00	RT	0		0	14	11	0		0	3090			0	5	5	3090
STA 102+00 TO 108+00	RT	0		0	12	9.5	0		0	2980			0	2	2	2980
STA 108+00 TO 114+00	RT	0		0	11	9	0		0	3090			0	3	3	3090
STA 114+00 TO 118+00	RT	0		10	2	1.5	0		0	2060			0	2	2	2060
STA 118+00 TO 120+18	RT	0		17	2	1.5	0		0	1670			0	2	2	1670
SUBTOTALS (RIGHT)		**95**		**27**	**90**	**75**	**0**		**1**	**25,020**			**1**	**33**	**33**	**25020**
GRAND TOTALS		**95**	**1**	**38**	**180**	**150**	**110**	**1**	**2**	**45,250**	**1**	**50**	**2**	**60**	**60**	**45,250**

		CONSTRUCTION STAKING STORM SEWER	CONSTRUCTION STAKING STORM SEWER	CONSTRUCTION STAKING SUBGRADE	CONSTRUCTION STAKING CONCRETE PAVEMENT	CONSTRUCTION STAKING SUPPLEMENTAL CONTRON	CONSTRUCTION STAKING CONCRETE WALK	TEMP. CROSSWALK
ITEM NO.		650.4000	650.4000	650.4500	650.7000	650.9910	SPV.0090.12	SPV.0045.01
UNIT PAY		LF	LF	LF	LF	LS	LF	DAY
CATEGORY		0030	0010	0010	0010	0010	0010	0010
LOCATION								
STAGE 1								
STA 68+17 TO 72+00	LT			400	400		250	
STA 72+00 TO 78+00	LT			650	650		380	
STA 78+00 TO 84+00	LT			650	650		380	
STA 84+00 TO 90+00	LT			650	650		380	
STA 90+00 TO 96+00	LT			650	650		380	
STA 96+00 TO 102+00	LT			625	625		380	
STA 102+00 TO 108+00	LT			600	600		380	
STA 108+00 TO 114+00	LT			600	600		380	
STA 114+00 TO 118+00	LT			400	400		250	
STA 118+00 TO 120+18	LT			250	250		140	
SUBTOTALS (LEFT)				**5,475**	**5,475**		**3300**	
STAGE 2								
STA 68+17 TO 72+00	RT			400	400		250	
STA 72+00 TO 78+00	RT			650	650		380	
STA 78+00 TO 84+00	RT			650	650		380	
STA 84+00 TO 90+00	RT			650	650		380	
STA 90+00 TO 96+00	RT			650	650		380	
STA 96+00 TO 102+00	RT			625	625		380	
STA 102+00 TO 108+00	RT			600	600		380	
STA 108+00 TO 114+00	RT			600	600		380	
STA 114+00 TO 118+00	RT			400	400		250	
STA 118+00 TO 120+18	RT			250	250		140	
SUBTOTALS (RIGHT)				**5,475**	**5,475**		**3300**	
GRAND TOTALS		**31**	**88**	**10,950**	**10,950**	**1**	**6,600**	**120**

EARTH WORK SUMMARY

From/To Station	Location	Excavation Common (1) (item # 205.0100)	Salvaged/Unusable Pavement Material (3)	Available Material (4)	Unexpanded fill	Expanded Fill (5)	Mass Ordinate +/- (6)	Waste	Borrow
		Cut (2)				1.20 Factor			
		CY	CY	CY	CY	CY	CY	CY	CY
STA 68+17 TO STA 120+18	S. Howell Ave. (STH 38)	24500	14703	9797	40.0	48	9749	24452	0

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1) No EBS is anticipated, if EBS is required it will be paid as Excavation common, Item number 205.0100
2) Salvaged/Unsuable Pavement Material is included in Cut.
3) Salvaged/Unusable Pavement Material
4) Available Material = Cut - Salvaged/Unusuable Pavement Material
5) Expanded Fill. Factor = 1.20
6) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material.

See Section 9 of Plan for Cut & Fill Quantities

		EXCAVATION COMMON
	ITEM NO.	205.0100
	UNIT PAY	CY
CATEGORY		0010
LOCATION		
STAGE 1		
STA 68+17 TO 72+00	LT	1000
STA 72+00 TO 78+00	LT	1400
STA 78+00 TO 84+00	LT	1400
STA 84+00 TO 90+00	LT	1400
STA 90+00 TO 96+00	LT	1400
STA 96+00 TO 102+00	LT	1400
STA 102+00 TO 108+00	LT	1400
STA 108+00 TO 114+00	LT	1400
STA 114+00 TO 118+00	LT	900
STA 118+00 TO 120+18	LT	500
SUBTOTALS (LEFT)		**12200**
STAGE 2		
STA 68+17 TO 72+00	RT	1000
STA 72+00 TO 78+00	RT	1400
STA 78+00 TO 84+00	RT	1400
STA 84+00 TO 90+00	RT	1400
STA 90+00 TO 96+00	RT	1400
STA 96+00 TO 102+00	RT	1400
STA 102+00 TO 108+00	RT	1400
STA 108+00 TO 114+00	RT	1400
STA 114+00 TO 118+00	RT	900
STA 118+00 TO 120+18	RT	600
SUBTOTALS (RIGHT)		**12300**
GRAND TOTALS		**24,500**

MISCELLANEOUS LANDSCAPING ITEMS

2060-11-70

CATEGORY 0010			TOPSOIL	SOD LAWN	FERTILIZER TYPE B
	ITEM NO.		625.0100	631.1000	629.0210
	UNIT PAY		SY	SY	CWT
LOCATION					
STA 68+17 TO 72+00		LT	500	500	
STA 72+00 TO 78+00		LT	730	730	
STA 78+00 TO 84+00		LT	840	840	
STA 84+00 TO 90+00		LT	640	640	
STA 90+00 TO 96+00		LT	580	580	
STA 96+00 TO 102+00		LT	230	230	
STA 102+00 TO 108+00		LT	230	230	
STA 108+00 TO 114+00		LT	210	210	
STA 114+00 TO 118+00		LT	0	0	
STA 118+00 TO 120+18		LT	0	0	
	SUBTOTALS (LEFT)		**3960**	**3960**	
STA 68+17 TO 72+00		RT	420	420	
STA 72+00 TO 78+00		RT	780	780	
STA 78+00 TO 84+00		RT	800	800	
STA 84+00 TO 90+00		RT	700	700	
STA 90+00 TO 96+00		RT	610	610	
STA 96+00 TO 102+00		RT	1060	1060	
STA 102+00 TO 108+00		RT	940	940	
STA 108+00 TO 114+00		RT	920	920	
STA 114+00 TO 118+00		RT	390	390	
STA 118+00 TO 120+18		RT	20	20	
	SUBTOTALS (RIGHT)		**6640**	**6640**	
	GRAND TOTALS		**10,600**	**10,600**	**7**

3

TRAFFIC CONTROL ITEMS

2060-11-70

CATEGORY 010

	ITEMS	STAGE 1		STAGE 1A		STAGE 1B		STAGE 2		STAGE 2A		STAGE 2B		TOTAL	
		EACH	DAY	EACH	DAY	EACH	DAY	EACH	DAY	EACH	DAY	EACH	DAY		
#	**TRAFFIC CONTROL DRUMS (643.0300)**	180	12,600	53	1060	52	1,040	165	11,550	49	980	33	660	**27,890**	DAY
##	**TRAFFIC CONTROL BARRICADES TYPE III (643.0420)**	97	6,790	74	1480	67	1,340	81	5,670	38	760	35	700	**16,740**	DAY
	TRAFFIC CONTROL WARNING LIGHTS TYPE A (FLASHING) (643.0705)	194	13,580	148	2960	134	2,680	162	11,340	76	1,520	70	1,400	**33,480**	DAY
	TRAFFIC CONTROL WARNING LIGHTS TYPE C (STEADY) (643.0715)	180	12,600	53	1060	52	1,040	165	11,550	49	980	33	660	**27,890**	DAY
###	*TEMPORARY PAVEMENT MARKING ITEMS:*														
	TRAFFIC CONTROL FLEXIBLE TUBULAR MARKER POSTS (643.0500)	156	EACH	14	EACH	28	EACH	144	EACH	14	EACH	21	EACH	**377**	EACH
	TRAFFIC CONTROL FLEXIBLE TUBULAR MARKER BASES (643.0600)	156	EACH	14	EACH	28	EACH	144	EACH	14	EACH	21	EACH	**377**	EACH
####	TEMPORARY PAVEMENT MARKING REFLECTIVE PAINT 4-INCH, WHITE (649.0200)	4,629		704		102		0		0		0		5,435	LF
####	TEMPORARY PAVEMENT MARKING REFLECTIVE PAINT 4-INCH, YELLOW (649.0200)	8,378		874		138		0		0		0		9,390	LF
	TOTAL PAINT (649.0200)													**14,825**	LF
####	TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH, WHITE (649.0400)	1,009		963		1,212		6,366		11,865		1,321		22,736	LF
####	TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH, YELLOW (649.0400)	490		596		938		7,320		929		16,792		27,065	LF
	TOTAL REMOVABLE TAPE (649.0400)													**49,801**	LF
####	**TEMPORARY PAVEMENT MARKING STOP LINE REMOVALBE TAPE 24-INCH (649.1400)**	14		73		45				64		0		**196**	LF
####	**TEMPORARY PAVEMENT MARKING ARROWS REMOVABLE TAPE (649.1800)**			5		7				5		3		**20**	EACH
####	**TEMPORARY PAVEMENT MARKING WORDS REMOVABLE TAPE (649.2000)**			4		5				3		3		**15**	EACH

\# ALL DRUMS HAVE ONE STEADY BURNING YELLOW LIGHT (LIGHTS ARE TO BE PAID FOR SEPERATLY UNDER THEIR APPROPRIATE BID ITEM)

ALL TYPE III BARRICADES HAVE TWO (2) FLASHING YELLOW LIGHTS (LIGHTS ARE TO BE PAID FOR SEPERATLY UNDER THEIR APPROPRIATE BID ITEM)

WHEN PLACING TEMPORARY PAVEMENT MARKING REMOVABLE TAPE, THE TAPE SHALL BE SLICED OR CUT ACROSS IT'S WIDTH EVERY TWENTY FIVE (25) FEET

ALL TEMPORARY PAVEMENT MARKINGS MUST BE REMOVED PRIOR TO FINAL ACCEPTANCE OF PROJECT

SOME ITEMS FROM STAGE 1A AND 2A ARE USED IN 1B AND 2B

3

TRAFFIC CONTROL SIGNS

2060-11-70

CATEGORY 010

ITEM	SIZE	DESCRIPTION	STAGE 1	STAGE 1A	STAGE 1B	STAGE 2	STAGE 2A	STAGE 2B	**TOTAL**
W020-1	48"x48"	"ROAD WORK AHEAD"	15	5	5	12	2	0	**39**
W020-5R	48"x48"	"RIGHT LANE CLOSED AHEAD"	2	0	0	0	1	0	**3**
W04-2R	48"x48"	"MERGE LEFT"	2	0	0	1	1	0	**4**
R3-7R	30"x30"	"RIGHT LANE MUST TURN RIGHT"	1	2	2	0	2	3	**10**
R11-2	30"x48"	"ROAD CLOSED"	3	4	3	2	2	2	**16**
W01-6L	24"x48"	"GO LEFT ARROW"	2	2	4	0	3	2	**13**
W01-6R	24"x48"	"GO RIGHT ARROW"	2	2	1	1	0	2	**8**
R1-1	30"x30"	"STOP'	11	2	2	10	0	0	**25**
R11-3A	60"x30"	"ROAD CLOSED LOCAL TRAFFIC ONLY"	5	0	1	5	1	0	**12**
W020-3	48"x48"	"ROAD CLOSED AHEAD"	1	1	1	0	0	0	**3**
W01-7	48"x24"	"GO LEFT OR RIGHT DOUBLE ARROW"	1	0	0	3	0	0	**4**
R5-1	30"x30"	"DO NOT ENTER"	0	3	2	0	1	0	**6**
R6-1R	36"x12"	"ONE WAY RIGHT ARROW"	0	2	2	0	1	0	**5**
R3-1	36"x36"	"NO RIGHT TURN SYMBOL"	0	3	2	0	0	0	**5**
R3-2	36"x36"	"NO LEFT TURN SYMBOL"	0	3	2	0	0	0	**5**
R6-1L	36"x12"	"ONE WAY LEFT ARROW"	0	2	2	0	1	0	**5**
W01-3L	36"x36"	"LANE SHIFT (LEFT)"	1	1	3	0	2	2	**9**
W01-3R	36"x36"	"LANE SHIFT (RIGHT)"	0	1	1	1	1	1	**5**
R3-7L	30"x30"	"LEFT LANE MUST TURN LEFT"	2	2	2	1	2	0	**9**
W16-9P	24"x12"	"AHEAD"	1	0	0	0	0	0	**1**
R10-MOD	24"x30"	"LEFT TURN LANE"	0	1	1	0	2	0	**4**
W016-7PL	24"x12"	"DOWNWARD ARROW TO THE LEFT "	0	1	1	0	2	0	**4**
W020-5L	48"x48"	"LEFT LANE CLOSED AHEAD"	2	0	0	2	0	0	**4**
W04-2L	48"x48"	"MERGE RIGHT"	2	0	0	4	0	0	**6**
G20-2A	36"x18"	"END ROAD WORK"	1	0	0	0	0	0	**1**
W06-3	24"x24"	"TWO WAY TRAFFIC"	5	0	0	2	0	2	**9**
W01-4R	48"x48"	"LANE SHIFT (RIGHT)"	0	1	1	0	0	1	**3**
R011-2	12"x24"	"LANE CLOSED"	1	1	1	0	2	2	**7**
W13-1	24"x24"	"25 M.P.H."	2	1	1	1	0	0	**5**
R9-9	12"x24"	"SIDEWALK CLOSED"	11	5	5	18	2	1	**42**
R10-MOD	24"x30"	"RIGHT TURN LANE"	1	0	4	18	2	2	**27**
W016-7PL	24"x12"	"DOWNWARD ARROW TO THE LEFT "	0	0	0	0	0	1	**1**
R3-6R	30"x36"	"THROUGH OR RIGHT TURN"	0	1	0	0	2	1	**4**
W20-5A	36"x36"	"RIGHT TWO LANES CLOSED AHEAD"	0	1	2	0	0	0	**3**
W20-5	36"x36"	"CENTER LANE CLOSED AHEAD"	0	0	0	0	0	1	**1**
TRAFFIC CONTROL SIGNS		**643.0900 TOTAL**	74 5,180	47 940	51 1,020	81 5,670	32 640	23 460	308 **13,910 DAY**
			"W0" SIGNS ARE THE SAME AS "W" SIGNS, EXCEPT THE BACKGROUND IS ORANGE.						

NOTE:

SIGN LAYOUT SHALL BE IN ACCORDANCE WITH THE FEDERAL HIGHWAY ADMINISTARTION (FHWA) MANUAL OF STANDARD HIGHWAY SIGNS, UNLESS OTHERWISE PROVIDED IN THE PLAN.

FILE NAME : _____ PLOT DATE : _____ PLOT BY : _____ PLOT NAME : _____ PLOT SCALE : 1:1

3

PAVEMENT MARKING QUANTITIES				
GROUP CODE	ITEM NUMBER	DESCRIPTION	UNIT	QUANTITY
0010	646.0106	PAVEMENT MARKING EPOXY 4 - INCH	LF	10772
0010	646.0116	PAVEMENT MARKING EPOXY 6 - INCH	LF	8102
0010	646.0126	PAVEMENT MARKING EPOXY 8 - INCH	LF	1040
0010	647.0166	PAVEMENT MARKING ARROWS EPOXY TYPE II	EACH	4
0010	647.0206	PAVEMENT MARKING ARROWS BIKE LANE EPOXY	EACH	25
0010	647.0306	PAVEMENT MARKING SYMBOLS BIKE LANE EPOXY	EACH	25
0010	647.0356	PAVEMENT MARKING WORDS EPOXY	EACH	4
0010	647.0576	PAVEMENT MARKING STOP LINE EPOXY 24 - INCH	LF	90
0010	647.0776	PAVEMENT MARKING CROSSWALK EPOXY - 12 INCH	LF	1100

ALL CATEGORY 0010 (PARTICIPATING)

TYPE II PERMANENT SIGNING - 2060-11-70 STH 38

SIGN NO.	SIGN CODE & SIZE	SIGN MESSAGE	SIGN SIZE W [IN.]	x	H [IN.]	637.2210 SIGNS TYPE II REFLC H [SF]	638.2602 REM SIGNS TYPE II (EA)	638.3000 REM SMALL SIGN SUP (EA)	634.0618 WOOD POSTS 4"X 6"x18' [EA]	REMARKS / NEW SIGN LOCATION
1	J2-2 (2S)	--	48	x	57	19	--	--	1	
	M3-1	--	24	x	12	--	--	--	--	
	M1-6	STH 38	24	x	24	--	--	--	--	
	M6-1	--	21	x	21	--	--	--	--	
	M4-5	--	24	x	12	--	--	--	--	
	M1-6	STH 794	24	x	24	--	--	--	--	
	M6-2	--	21	x	21	--	--	--	--	
2	J4-1(2S)		24	x	36	6	--	--	--	MOUNT ON LIGHT POLE
	MB4-5		24	x	12	--	--	--		
	M1-1		24	x	24	--	--	--		
3	J3-1(2S)	--	24	X	57	9.5	--	--	1	
	M4-5	--	24	x	12	--	--	--	--	
	M1-6	STH 794	24	x	24	--	--	--	--	
	M6-1	--	21	x	21	--	--	--	--	
4	J4-1(2S)	--	24	x	36	6	--	--	1	
	M4-5	--	24	x	12	--	--	--	--	
	M1-6	STH 794	24	x	24	--	--	--	--	
5	J3-1(2S)	--	24	X	57	9.5	1	--	--	MOUNT ON LIGHT POLE
	M3-3	--	24	x	12	--	--	--	--	
	M1-6	STH 38	24	x	24	--	--	--	--	
	M6-1	--	21	x	21	--	--	--	--	
6	J2-1	--	--		--	--	1	1	--	
7	J2-1(2S)	--	24	X	57	9.5	--	--	--	MOUNT ON LIGHT POLE
	M3-3	--	24	x	12	--	--	--	--	290' E. OF SIGN # 8
	M1-6	STH 38	24	x	24	--	--	--	--	
	M5-1L	--	21	x	21	--	--	--	--	
8	J1-1 (2S)	--	24	X	39	6.5	1	1	1	MOUNT 75' W. IN MEDIAN
	M2-1	--	21	X	15	--	--	--	--	
	M1-6	STH 38	24	x	24	--	--	--	--	
9	J3-1(2S)	--	24	X	57	9.5	--	--	1	
	M3-1	--	24	x	12	--	--	--	--	
	M1-6	STH 38	24	x	24	--	--	--	--	
	M6-2	--	21	x	21	--	--	--	--	

SHEET 1 OF 3

PROJECT NO:2060-11-70	HWY:STH 38	COUNTY:MILWAUKEE	MISC PERMANENT TYPE ll, SIGNING	SHEET:	E

FILE NAME
N:\SPO\Operations\Traffic_Ops\Signing\Miscellaneous Quantities\2060-11-70:

PLOT DATE :7/1/2014 PLOT BY D. STEEL_ PLOT NAME : _____ PLOT SCALE : 1:1

TYPE II PERMANENT SIGNING - 2060-11-70 STH 38

SIGN NO.	SIGN CODE & SIZE	SIGN MESSAGE	SIGN SIZE W [IN.]	x	H [IN.]	637.2210 SIGNS TYPE II REFLC H [SF]	638.2602 REM SIGNS TYPE II (EA)	638.3000 REM SMALL SIGN SUP (EA)	634.0618 WOOD POSTS 4"X 6"x18' [EA]	REMARKS / NEW SIGN LOCATION
10	J4-1(2S)	--	24	X	36	6	1	--	--	MOUNT ON LIGHT POLE
	M3-1	--	24	x	12	--	--	--	--	
	M1-6	STH 38	24	x	24	--	--	--	--	
11	J2-1(2M)		24	X	57	9.5	--	--	1	
	MB4-5	--	24	x	12	--	--	--	--	
	M1-1	IH 43	24	x	24	--	--	--	--	
	MB6-2	--	21	x	21	--	--	--	--	
12	J23-1(2M)		24		57	9.5	--	--	--	MOUNT ON LIGHT POLE
	MB4-5	--	24	x	12	--	--	--	--	
	M1-1	IH 43	24	x	24	--	--	--	--	
	MB6-1	--	21	x	21	--	--	--	--	
13	J3-1(2S)	--	24	X	57	9.5	--	--	1	
	M3-3	--	24	x	12	--	--	--	--	
	M1-6	STH 38	24	x	24	--	--	--	--	
	M6-2	--	21	x	21	--	--	--	--	
14	J1-1 (2S)	--	24	X	39	6.5	--	--	--	MOUNT ON LIGHT POLE
	M2-1	--	21	X	15	--	--	--	--	
	M1-6	STH 38	24	x	24	--	--	--	--	
15	J3-1(2S)	--	24	X	57	9.5	--	--	1	20' E. OF MAN HOLE IN MEDIAN
	M3-1	--	24	x	12	--	--	--	--	
	M1-6	STH 38	24	x	24	--	--	--	--	
	M6-1	--	21	x	21	--	--	--	--	
16	JV4-1(2M)		24	X	60	10	--	--	1	
	MB4-5	--	24	x	12	--	--	--	--	
	M1-1	IH 43	24	x	24	--	--	--	--	
	M1-1	IH 94	24	x	24	--	--	--	--	
17	J4-2	--	--		--	--	1	1	--	
18	J3-1(2S)	--	24	X	57	9.5	--	--	--	MOUNT ON LIGHT POLE
	M4-5	--	24	x	12	--	--	--	--	
	M1-6	STH 794	24	x	24	--	--	--	--	
	M6-1	--	21	x	21	--	--	--	--	

SHEET 2 OF 3

TYPE II PERMANENT SIGNING - 2060-11-70 STH 38

SIGN NO.	SIGN CODE & SIZE	SIGN MESSAGE	SIGN SIZE W [IN.]	x	H [IN.]	637.2210 SIGNS TYPE II REFLC H [SF]	638.2602 REM SIGNS TYPE II (EA)	638.3000 REM SMALL SIGN SUP (EA)	634.0618 WOOD POSTS 4"X 6"x18' [EA]	REMARKS / NEW SIGN LOCATION
19	J2-1(2M)		24	X	57	9.5	--	--	1	
	MB4-5	--	24	x	12	--	--	--	--	
	M1-1	IH 43	24	x	24	--	--	--	--	
	MB6-2	--	21	x	21	--	--	--	--	
20	J4-1(2S)	--	24	X	36	6	1	--	--	MOUNT ON LIGHT POLE
	M3-3	--	24	x	12	--	--	--	--	SEE SHT 5 OF 10
	M1-6	STH 38	24	x	24	--	--	--	--	
21	J4-1(2S)	--	24	X	36	6	1	--	--	MOUNT ON LIGHT POLE
	M3-1	--	24	x	12	--	--	--	--	SEE SHT 6 OF 10
	M1-6	STH 38	24	x	24	--	--	--	--	
22	J4-1(2S)	--	24	X	36	6	1	--	--	MOUNT ON LIGHT POLE
	M3-3	--	24	x	12	--	--	--	--	
	M1-6	STH 38	24	x	24	--	--	--	--	
23	J1-1 (2S)	--	24	X	39	6.5	--	--	--	MOUNT ON LIGHT POLE
	M2-1	--	21	X	15	--	--	--	--	
	M1-6	STH 38	24	x	24	--	--	--	--	
24	J3-1(2S)	--	24	X	45	7.5	--	--	--	MOUNT ON LIGHT POLE
	M1-6	STH 38	24	x	24	--	--	--	--	
	M6-4	--	21	x	21					
25	J1-1 (2S)	--	24	X	39	6.5	1	--	--	MOUNT ON LIGHT POLE
	M2-1	--	21	X	15	--	--	--	--	
	M1-6	STH 38	24	x	24	--	--	--	--	
26	J4-1(2S)	--	24	X	36	6	1	--	--	MOUNT ON LIGHT POLE
	M3-1	--	24	x	12	--	--	--	--	
	M1-6	STH 38	24	x	24	--	--	--	--	
27	J3-1(2S)	--	24	X	45	7.5	--	--	--	MOUNT ON LIGHT POLE
	M1-6	STH 38	24	x	24	--	--	--	--	
	M6-4	--	21	x	21					
28	J4-1(2S)	--	24	X	36	6	--	--	--	MOUNT ON LIGHT POLE
	M3-3	--	24	x	12	--	--	--	--	SEE SHEET 1 OF 10
	M1-6	STH 38	24	x	24	--	--	--	--	
TOTAL						213	10	3	10	

SHEET 3 OF 3

ROAD WORK
(BIOSWALES)

2060-11-70

CATEGORY 0030 NON PARTICIPATING

ITEM NO. / UNIT PAY / CATEGORY / LOCATION	BASE AGGREGATE OPEN GRADED 310.0115 CY 0030	PIPE UNDERDRAIN 6-INCH 612.0106 LF 0030	PIPE UNDERDRAIN UNPERFORATED 6-INCH 612.0206 LF 0030	MULCHING 627.0200 SY 0030	RUGOSA ROSES 632.0201 EACH 0030	DIABLO NINEBARK 632.0201 EACH 0030	RED TWIG DOGWOOD 632.0201 EACH 0030	BLACK LACE SAMBUCUS 632.0201 EACH 0030	GEOTEXTILE FABRIC 645.0112 SY 0030	COBBLESTONES SPV.0195.01 TON 0030	CLEARING 201.0120 ID 0030	GRUBBING 201.0220 ID 0030
Bioswale 1	53	93	0	79	0	0	5	0	12	1	0	0
Bioswale 2	44	91	0	67	10	0	0	7	12	1	0	0
Bioswale 3	25	93	0	50	0	3	0	0	22	1	10	10
Bioswale 4	27	73	0	53	0	0	0	0	12	1	29	29
Bioswale 5	40	93	0	79	8	0	0	3	12	1	0	0
Bioswale 6	34	123	48	100	0	0	0	0	26	1	0	0
TOTAL	**223**	**566**	**48**	**428**	**18**	**3**	**5**	**10**	**96**	**6**	**39**	**39**

2060-11-70

CATEGORY 0030 NON PARTICIPATING

ITEM NO. / UNIT PAY / CATEGORY / LOCATION	ENGINEERED SOIL SPV.0035.01 CY 0030	BEDDING LAYER SPV.0035.02 CY 0030	INFORMATION AL SIGNS SPV.0060.20 EACH 0030	6-INCH CLEANOUTS SPV.0060.21 EACH 0030	BLACK EYED SUSAN SPV.0060.22 EACH 0030	BLUE WONDER CATMINT SPV.0060.23 EACH 0030	RUSSIAN SAGE SPV.0060.24 EACH 0030	BECKY SHASTA DAISY SPV.0060.25 EACH 0030	DAYLILIES "STELLA DORO" SPV.0060.26 EACH 0030	DWARF BUSH HONEYSUCKLE SPV.0060.27 EACH 0030	GRO LOW SUMAC SPV.0060.28 EACH 0030	KARL FOERSTER GRASS SPV.0060.29 EACH 0030	8-INCH PVC STANDPIPE WITH GRATE SPV.0060.30 EACH 0030
Bioswale 1	68	9	1	3	0	0	0	48	0	0	0	12	1
Bioswale 2	67	8	1	3	0	96	0	0	36	0	0	0	1
Bioswale 3	67	6	1	3	0	36	0	24	0	0	0	0	1
Bioswale 4	54	6	1	3	24	0	0	0	48	4	0	12	1
Bioswale 5	68	9	1	3	0	0	0	0	48	0	0	12	1
Bioswale 6	75	12	1	3	12	48	12	0	24	0	9	0	1
TOTAL	**399**	**50**	**6**	**18**	**36**	**180**	**12**	**72**	**156**	**4**	**9**	**36**	6

NEW STRUCTURES

STRUCTURE NUMBER	STATION	CENTERLINE OFFSET	COVER ELEV.	STRUCTURE	FRAME & GRATE	DEPTH	CONNECTION TO STRUCTURE	SIZE (IN)	LENGTH (FT)	INVERT ELEV. INLET	INVERT ELEV. OUTLET
1	68+79.0	9.0' RT	89.12	45A	57	5.5	2	12-inch	11	85.60	85.40
2	68+79.0	0.0 LT	90.00	5' Dia. MH	58A	7.3	Existing 36-inch STO	30-inch	6	82.25	-
3	68+84.0	9.4' LT	89.00	45A	57	5.5	2	12-inch	11	85.50	85.30
4	70+39.3	44.8' RT	90.86	45A	57	6.9	200	12-inch	45	87.35	86.45
5	70+52.9	44.8' LT	90.44	45A	57	6.9	200	12-inch	45	86.90	86.00
6	71+93.0	0.1' LT	92.79	5' Dia. MH	57	5.9	Existing 27-inch STO	27-inch	6	86.40	-
7	72+08.0	9.0' RT	93.35	45A	57	5.5	6	12-inch	19	89.85	89.45
8	73+37.6	44.8' LT	94.39	45A	57	6.9	201	12-inch	45	90.90	90.00
9	73+39.2	44.8' RT	95.07	45A	57	6.9	201	12-inch	45	91.55	90.65
10	75+85.1	65.1' RT	99.33	45A	57	5.6	11	12-inch	29	95.80	95.50
11	76+15.8	68.0' RT	99.60	4' Dia. MH	57	6.9	13	12-inch	34	95.50	95.15
12	76+35.8	45.0' LT	98.73	45A	57	7.1	202	12-inch	47	95.20	94.25
13	76+37.9	45.0' RT	99.75	4' Dia. MH	57	6.8	14	12-inch	35	94.00	93.30
14	76+46.0	8.8' RT	100.24	4' Dia. MH	57	8.2	202	12-inch	30	93.05	92.45
15	79+15.9	72.0' RT	106.00	45A	57	5.2	16	12-inch	61	101.80	101.00
16	79+70.5	44.9' RT	107.44	4' Dia. MH	57	7.7	18	12-inch	35	100.70	100.55
17	79+73.0	44.6' LT	106.57	45A	57	6.8	19 (203)	12-inch	43	103.05	102.60
18	79+77.0	9.0' RT	107.97	4' Dia. MH	57	8.4	19 (203)	12-inch	15	100.55	100.45
19	79+66.9	1.0' RT	107.15	4' Dia. MH	57	6.2	Existing 24-inch STO	24-inch	6	100.50	-
20	82+84.1	44.1' LT	118.80	45A	57	7.5	204	12-inch	43	114.85	114.00
21	82+86.0	44.8' RT	118.98	45A	57	6.2	204	12-inch	44	113.75	113.00
22	85+86.6	0.1' RT	126.88	4' Dia. MH	57	5.6	Existing 21-inch STO	21-inch	6	120.75	-
23	85+72.0	8.9' RT	126.81	45A	57	5.8	22 (205)	12-inch	22	122.85	122.45
24	85+85.8	44.8' LT	126.69	45A	57	8.5	22 (205)	12-inch	55	122.75	121.65
25	85+86.9	44.6' RT	126.75	45A	57	8.4	22 (205)	12-inch	54	122.80	121.75
26	89+57.1	44.5' LT	136.83	45A	57	7.7	29 (206)	12-inch	54	133.30	132.25
27	89+62.0	8.5' RT	137.49	4' Dia. MH	57	5.4	29 (206)	12-inch	20	132.55	132.15
28	89+63.6	45.3' RT	137.16	45A	57	6.8	27	12-inch	43	133.65	132.80
29	89+55.6	0.8' RT	137.01	4' Dia. MH	57	8.9	Existing 21-inch STO	21-inch	6	127.60	-
30	92+65.8	5.0' RT	140.82	4' Dia. MH	57	10.2	Existing 21-inch STO	21-inch	6	130.10	-
31	94+69.0	29.5' LT	137.60	45A	-	5.6	32	12-inch	29	134.10	133.55
32	94+99.0	28.8' LT	137.45	4' Dia. MH	57	4.6	33	12-inch	34	133.30	132.65
33	94+99.0	6.0' RT	138.22	-	-	-	-	-	-	132.00	-
34	94+99.0	26.0' RT	138.96	4' Dia. MH	57	5.9	33	12-inch	21	133.50	133.10
35	95+00.0	60.8' RT	138.53	4' Dia. MH	57	4.4	34	12-inch	33	134.15	133.50
36	95+17.1	12.5' RT	138.06	4' Dia. MH	57	5.5	Existing 18-inch STO	18-inch	6	132.10	-
37	95+38.5	61.1' RT	138.73	45A	-	6.5	35	12-inch	40	135.20	134.40
38	97+01.0	27.8' LT	139.63	45A	57	5.9	208	12-inch	33	136.10	135.45
39	97+01.0	61.5' RT	140.50	45A	57	7.7	208	12-inch	54	137.00	135.90
40	99+42.5	83.0' RT	145.05	45A	57	5.5	41	12-inch	29	141.55	140.95
41	99+73.5	82.8' RT	145.09	4' Dia. MH	57	4.8	44	12-inch	70	139.90	139.55
42	99+94.5	61.8' RT	145.53	45A	57	5.5	41	12-inch	30	142.00	141.40
43	99+94.5	28.0' LT	144.95	45A	57	6.9	209	12-inch	45	141.45	140.55
44	100+07.0	18.0' RT	145.43	4' Dia. MH	57	5.0	209	12-inch	31	139.20	139.10
45	100+07.1	26.0' RT	145.95	45A	57	5.3	44	12-inch	10	139.30	142.25
46	105+66.9	7.9' RT	145.40	4' Dia. MH	57	6.4	Existing 15-inch STO	15-inch	6	139.00	-
47	105+69.5	27.8' LT	144.97	45A	57	6.9	210	12-inch	34	141.45	140.80
48	105+79.0	61.9' RT	144.76	45A	57	7.9	210	12-inch	44	141.25	140.40
49	105+82.9	16.0' RT	144.94	45A	57	5.5	46	12-inch	19	140.15	139.75
50	109+66.5	28.0' LT	137.34	45A	-	6.3	212	12-inch	37	133.80	133.10
51	109+76.5	61.5' RT	137.20	45A	-	5.4	212	12-inch	53	132.75	131.70
52	112+34.0	8.0' RT	133.30	4' Dia. MH	57	6.2	Existing 12-inch STO	12-inch	6	126.60	-
53	112+36.5	27.8' LT	132.90	45A	57	5.9	52	12-inch	33	129.40	128.75
54	112+35.0	16.0' RT	132.37	45A	57	5.5	52	12-inch	12	128.85	128.65
55	112+62.8	49.0' LT	132.40	4' Dia. MH	57	5.5	213	12-inch	55	128.40	127.30
56	112+58.5	61.6' RT	131.64	45A	57	4.2	213	12-inch	54	128.45	127.35
57	112+92.0	49.0' LT	132.40	45A	57	5.5	55	12-inch	28	128.90	128.65
58	115+61.9	8.0' RT	128.76	45A	57	8.2	59A	12-inch	5	125.25	125.15
59	115+61.9	26.0' RT	127.95	4' Dia. MH	57	4.2	59A	12-inch	16	122.90	122.60
59A	115+62.0	11.0' RT	130.00	4' Dia. MH	58A	9.9	Existing 12" STO	12-inch	6	120.10	-
60	115+75.0	63.0' RT	127.35	45A	57	5.5	59	12-inch	37	123.85	123.15
61	115+96.5	30.5' LT	127.22	45A	57	6.6	214	12-inch	41	123.70	122.90
62	118+89.0	32.0' LT	118.52	45A	57	6.3	64	12-inch	34	115.00	114.35
63	118+90.0	66.0' RT	118.68	45A	57	4.2	65	12-inch	57	115.50	114.40
64	118+96.0	4.0' RT	118.89	4' Dia. MH	57	8.5	Existing 15-inch STO	15-inch	6	109.90	-
65	118+96.0	10.0' RT	119.31	4' Dia. MH	57	5.5	216	12-inch	10	114.05	115.94
66	119+18.5	50.0' LT	117.54	45A	-	5.8	218	12-inch	30	114.05	113.45

0010	INLET COVERS TYPE 57 (SPV.0060.01)	59	EACH
0010	MANHOLE COVERS TYPE 58A (SPV.0060.02)	2	EACH
0010	INLETS TYPE 45A (SPV.0060.03)	41	EACH
0010	STORM SEWER PIPE CORRUGATED PVC 12" (SPV.0090.01)	1,955	LF
0010	STORM SEWER PIPE CORRUGATED PVC 15" (SPV.0090.02)	12	LF
0010	STORM SEWER PIPE CORRUGATED PVC 18" (SPV.0090.03)	6	LF
0010	STORM SEWER PIPE CORRUGATED PVC 21" (SPV.0090.04)	18	
0010	STORM SEWER PIPE CORRUGATED PVC 24" (SPV.0090.05)	6	LF
0010	STORM SEWER PIPE CORRUGATED PVC 27" (SPV.0090.06)	6	LF
0010	STORM SEWER PIPE CORRUGATED PVC 30" (SPV.0090.07)	6	LF
0010	MANHOLE 4-FT DIAMETER (611.2004)	23	EACH
0010	MANHOLE 5-FT DIAMETER (611.2005)	2	EACH

ABANDONING INLETS

GROUP CODE	NUMBER	STATION	OFFSET
0010	128	100+90.0	7.5' RT
0010	139	118+06.0	7.0' RT
0010	141	119+00.0	61.5' RT
0010	142	119+01.8	28.0' LT

0010 ABANDONING INLETS (204.0260) 4

REMOVING INLETS

GROUP CODE	NUMBER	STATION	OFFSET
0010	101	70+39.3	44.8' RT
0010	102	70+52.9	44.8' LT
0010	103	73+37.6	44.8' LT
0010	105	73+39.2	44.8' RT
0010	106	75+85.1	65.1' RT
0010	107	76+15.8	68.0' RT
0010	108	76+35.8	45.0' LT
0010	109	76+37.9	45.0' RT
0010	110	79+70.5	44.9' RT
0010	111	79+73.0	44.6' LT
0010	112	82+84.1	44.1' LT
0010	113	82+86.0	44.8' RT
0010	114	85+85.8	44.8' LT
0010	115	85+86.9	44.6' RT
0010	116	89+57.1	44.5' LT
0010	117	89+63.6	45.3' RT
0010	118	94+69.0	29.5' LT
0010	119	94+99.0	28.8' LT
0010	120	95+00.0	60.8' RT
0010	121	95+38.5	61.1' RT
0010	122	97+01.0	27.8' LT
0010	123	97+01.0	61.5' RT
0010	124	99+42.5	82.5' RT
0010	125	99+73.5	82.8' RT
0010	126	99+94.5	61.8' RT
0010	127	99+94.5	28.0' LT
0010	129	105+68.9	27.8' LT
0010	130	105+79.0	61.9' RT
0010	131	109+66.5	28.0' LT
0010	132	109+76.5	61.5' RT
0010	133	112+36.5	27.8' LT
0010	134	112+60.5	48.5' LT
0010	135	112+58.5	61.6' RT
0010	136	112+94.5	48.8' LT
0010	137	115+75.8	61.5' RT
0010	138	115+96.5	28.0' LT
0010	140	118+96.0	10.0' RT
0010	143	119+18.5	50.0' LT

0010 REMOVING INLETS (204.0220) 38

SALVAGED MANHOLE COVERS

GROUP CODE	NUMBER	STATION	OFFSET	PROPOSED ELEV.	REMARKS
0010	200	70+39.2	0.2' LT	92.41	
0020	403	76+03.9	7.2' RT	99.58	
0020	405	76+05.0	56.5' RT	99.77	
0010	202	76+18.2	0.3' LT	99.59	
0020	406	78+64.5	9.0' RT	105.04	
0020	407	79+33.1	13.0' RT	107.11	
0020	408	79+34.1	48.8' LT	105.61	
0020	409	79+34.2	56.5' RT	106.91	
0020	411	82+69.5	10.0' RT	118.82	
0010	204	82+86.8	0.1' LT	120.27	
0020	413	86+05.0	10.6' RT	127.60	
0020	415	89+24.5	10.9' RT	136.59	
0020	416	92+37.2	10.2' RT	141.10	
0020	417	92+87.2	83.0' LT	137.71	
0020	418	92+88.0	162.0' LT	132.87	
0020	421	93+02.2	94.0' LT	137.15	
0020	419	93+0.5	26.0' RT	141.00	
0020	422	93+10.0	10.0' RT	140.57	
0010	207	94+99.0	6.0' RT	138.15	
0020	423	96+10.9	12.0' RT	139.38	
0020	424	96+30.0	10.0' RT	139.30	
0010	208	97+02.8	6.5' RT	140.09	
0020	425	99+60.2	12.5' RT	145.57	
0010	209	99+76.8	5.5' RT	145.55	
0020	426	102+58.5	15.8' RT	148.35	
0020	427	102+90.5	14.2' RT	148.75	
0010	210	105+99.1	7.1' RT	144.85	
0020	428	106+20.5	14.1' RT	144.49	
0020	429	107+39.8	14.2' RT	143.22	
0010	211	109+44.2	7.8' RT	138.36	
0020	430	109+51.0	14.0' RT	138.75	
0010	212	109+77.0	7.5' RT	137.44	
0010	213	112+68.2	7.5' RT	113.08	
0020	431	112+82.9	14.0' RT	132.76	
0010	214	115+97.8	11.5' RT	127.32	
0020	432	116+21.0	13.5' RT	126.62	
0020	433	118+29.0	65.5' RT	120.26	
0020	434	118+32.5	31.0' LT	120.43	
0010	216	118+86.5	7.5' RT	119.79	
0010	217	119+26.8	82.8' RT	118.12	
0010	218	119+37.5	24.0' LT	118.29	
0020	435	119+67.8	14.0' RT	118.46	
0020	436	119+68.1	29.4' LT	118.10	
0020	437	119+70.0	65.0' RT	117.78	
0010	219	119+86.8	47.2' LT	117.38	
0010	220	119+87.2	23.5' LT	117.87	
0010	221	120+13.4	60.0' RT	116.98	

0010 SALVAGED MANHOLE COVERS (611.9705) 17
0030 SALVAGED MANHOLE COVERS (611.9705) 30

SALVAGED INLET COVERS

GROUP CODE	NUMBER	STATION	OFFSET	PROPSOSED ELEV.	REMARKS
0010	118	94+69.0	29.5' LT	137.60	
0010	121	95+38.5	61.1' RT	138.73	
0010	131	109+76.5	61.5' RT	137.20	
0010	134	112+60.5	48.5' LT	132.38	
0010	135	112+94.5	48.8' LT	132.28	
0010	137	115+96.5	28.0' LT	127.07	
0010	140	119+01.8	28.0' LT	118.15	
0010	141	119+18.5	50.0' LT	117.54	

0010 SALVAGED INLET COVERS (611.9710) 8

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NEW MANHOLE COVERS

GROUP CODE	NUMBER	STATION	OFFSET	PROPOSED ELEV.	COVER TYPE	REMARKS
0030	401	69+59.5	48.5' LT	89.77	58A	
0030	402	70+04.0	55.8' RT	91.18	58A	
0010	201	73+38.0	0.1' LT	96.50	58A	
0030	404	76+05.0	49.0' LT	98.75	58A	
0030	410	82+58.8	39.5' LT	118.04	58A	
0030	412	85+35.2	49.1' LT	126.35	58A	
0030	414	88+29.8	48.9' LT	133.65	58A	
0030	420	93+0.8	10.0' RT	140.44	58A	
0010	215	117+87.0	7.2' RT	121.80	58A	

0010	MANHOLE COVERS TYPE 58A (SPV.0060.02)	2
0030	MANHOLE COVERS TYPE 58A (SPV.0060.02)	7

NEW INLET COVERS (FOR EXISTING STORM MANHOLES). SEE ALSO DRAINAGE TABLE FOR INLETS

GROUP CODE	NUMBER	STATION	OFFSET	PROPOSED ELEV.	COVER TYPE	REMARKS
0010	203	79+66.8	0.5' LT	107.33	57	Replace Manhole Cover with Inlet Frame and Grate
0010	205	85+86.0	0.0' LT	127.50	57	Replace Manhole Cover with Inlet Frame and Grate
0010	206	89+55.6	0.1' LT	137.02	57	Replace Manhole Cover with Inlet Frame and Grate

0010	INLET COVERS TYPE 57 (SPV.0060.01)	3	NEW INLET COVERS (FOR EXISTING STORM MANHOLES). SEE ALSO DRAINAGE TABLE FOR INLETS

ADJUSTING MANHOLE COVERS

GROUP CODE	NUMBER	STATION	OFFSET	PROPOSED ELEV.	REMARKS
0010	208	97+02.8	6.5' RT	140.09	Repair 12 vertical inches of manhole structure
0030	429	107+39.8	14.2' RT	143.22	REPLACE 1 STEP

0010	ADJUSTING MANHOLE COVERS (611.8110)	1	
0030	ADJUSTING MANHOLE COVERS (611.8110)	1	

ADJUSTING INLET COVERS

GROUP CODE	NUMBER	STATION	OFFSET	PROPOSED ELEV.	REMARKS
0010	203	79+66.8	0.5' LT	107.33	replace the existing cover with Type 57, repair 12 vertical inches of manhole structure
0010	205	85+86.0	0.0' LT	126.88	Will be replacing the existing manhole cover with inlet frame and grate
0010	206	89+55.6	0.1' LT	137.02	replace the existing cover with Type 57, repair 12 vertical inches of manhole structure

0010	ADJUSTING INLET COVERS (611.8115)	3

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TREE PLANTING

CATEGORY		Category 0040									
ITEM NUMBER		632.0101.01	632.0101.02	632.0101.03	632.0101.04	632.0101.05	632.0101.06	632.0101.07	632.0101.08	632.0101.09	632.9101
DESCRIPTION	LOCATION	FREEMAN MAPLE, B&B, 4" CAL	CATALPA, B&B, 4" CAL	PEAR, B&B, 4" CAL	IVORY SILK LILAC, B&B, 4" CAL	KENTUCKY COFFEE, B&B, 4" CAL	BALD CYPRESS, B&B, 4" CAL	RED BUD, B&B, 2" CAL	ENGLISH OAK, B&B, 4" CAL	LOCUST, B&B, 4" CAL	PLANTING SURVEILLANCE AND CARE CYCLES
UNIT PAY		EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH
STATION TO STATION											
STA 68+17 TO 72+00	LT	2	0	0	0	0	0	0	0	0	
STA 72+00 TO 78+00	LT	0	0	1	1	0	0	0	0	0	
STA 78+00 TO 84+00	LT	0	0	0	0	1	0	0	0	0	
STA 84+00 TO 90+00	LT	1	0	0	0	1	1	0	0	0	
STA 90+00 TO 96+00	LT	0	0	1	0	0	1	0	0	0	
STA 96+00 TO 102+00	LT	1	3	0	0	0	0	0	0	0	
STA 102+00 TO 108+00	LT	0	0	0	0	0	0	0	0	0	
STA 108+00 TO 114+00	LT	0	0	1	0	0	0	0	0	0	
STA 114+00 TO 118+00	LT	1	0	0	0	0	0	0	0	0	
STA 118+00 TO 120+18	LT	0	0	0	0	0	0	0	0	0	
STA 68+17 TO 72+00	RT	1	0	1	0	0	0	0	0	0	
STA 72+00 TO 78+00	RT	1	1	1	3	0	0	0	0	0	
STA 78+00 TO 84+00	RT	0	0	0	1	0	0	0	0	0	
STA 84+00 TO 90+00	RT	1	0	0	1	0	0	0	0	0	
STA 90+00 TO 96+00	RT	0	0	0	0	2	0	0	0	1	
STA 96+00 TO 102+00	RT	0	0	0	0	0	0	2	0	0	
STA 102+00 TO 108+00	RT	0	0	0	1	0	0	0	3	0	
STA 108+00 TO 114+00	RT	1	0	0	0	0	0	1	0	2	
STA 114+00 TO 118+00	RT	0	0	0	0	0	0	0	0	0	
STA 118+00 TO 120+18	RT	0	0	0	0	0	0	0	0	0	
TOTALS		**9**	**4**	**5**	**7**	**4**	**2**	**3**	**3**	**3**	**26**

Item No	Description	Unit	Quantity
652.0220	Conduit Rigid Nonmetallic Schedule 40 1-1/2 Inch	LF	100
652.0225	Conduit Rigid Nonmetallic Schedule 40 2-Inch	LF	100
652.0230	Conduit Rigid Nonmetallic Schedule 40 2-1/2 Inch	LF	150
652.0235	Conduit Rigid Nonmetallic Schedule 40 3-inch	LF	9,700
652.0615	Conduit Special 3-Inch	LF	75
654.0110	Concrete Bases Type 10	Each	1
SPV.0060.14	Poles Type 9	Each	1
SPV.0060.15	Monotube Arms 25-FT	Each	1
SPV.0060.16	Concrete Base Type 10 Special	Each	1
SPV.0060.17	Rectangular Concrete Vault 13"X24"X18"	Each	25
SPV.0060.18	Rectangular Concrete Vault 17"X30"X18"	Each	6
SPV.0060.19	Install Traffic Signal Base	Each	5

ALL ITEMS ARE CATEGORY 0010

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WATER ITEMS

2265-09-70

ITEM NO.	ADJUSTING WATER BOX SPV.0060.04	ADJUSTING WATER MANHOLE FRAME AND LID SPV.0060.05	WATER MAIN PROTECTION SPV.0060.06
UNIT PAY	EACH	EACH	EACH
CATEGORY	0030	0030	0030
LOCATION			
STA 68+17 TO 120+18	50	2	50

CITY UNDERGROUND CONDUIT

LOCATION	CATEGORY 0010 ABANDON MANHOLES	ADJUSTING TES MANHOLE COVERS	4' DIAMETER MANHOLE TYPE TES	5' DIAMETER MANHOLE TYPE TES	INSTALLING CONDUIT INTO EXISTING MANHOLE	SAWING CONCRETE ENCASED DUCT PACKAGE
	204.0250	SPV.0060.09	SPV.0060.10	SPV.0060.11	SPV.0060.12	SPV.0060.13
	EACH	EACH	EACH	EACH	EACH	EACH
STA 68+54.5, 8.5 RT						1
MANHOLE 601 - STA 68 + 72.0, 26.5 LT		1	1			
MANHOLE 602 - STA 70 + 82.6, 06.9 LT	1					
MANHOLE 603 - STA 74 + 07.0, 26.5 LT		1	1			
MANHOLE 604 - STA 75 + 52.0, 06.9 LT	1					
MANHOLE 605 - STA 79 + 57.0, 26.5 LT		1	1			
MANHOLE 606 - STA 79 + 78.2, 06.9 LT	1					
MANHOLE 607 - STA 83 + 71.0, 06.6 LT	1					
MANHOLE 608 - STA 83 + 75.0, 26.5 LT		1	1			
MANHOLE 609 - STA 87 + 90.0, 26.5 LT		1	1			
MANHOLE 610 - STA 88 + 60.6, 06.7 LT	1					
MANHOLE 611 - STA 89 + 29.5, 09.8 LT		1 NEW FRAME				
MANHOLE 612 - STA 93 + 18.9, 03.9 LT	1					
MANHOLE 613 - STA 93 + 20.2, 17.0 LT		1		1		
MANHOLE 614 - STA 93 + 38.7, 08.9 LT		1 NEW FRAME				
MANHOLE 615 - STA 94 + 59.3, 22.7 RT	1					
MANHOLE 616 - STA 99 + 18.6, 23.9 RT	1					
MANHOLE 617 - STA 99 + 45.0, 09.5 LT		1	1			
MANHOLE 618 - STA 105 + 78.2, 23.6 RT	1					
MANHOLE 619 - STA 105 + 92.0, 09.5 LT		1	1			
MANHOLE 620 - STA 109 + 33.4, 23.3 RT	1					
MANHOLE 621 - STA 112 + 10.0, 09.5 LT		1	1			
MANHOLE 622 - STA 113 + 26.3, 23.8 RT	1					
MANHOLE 623 - STA 116 + 68.8, 23.6 RT	1					
MANHOLE 624 - STA 117 + 96.0, 02.0 LT		1	1			
MANHOLE 625 - STA 119 + 98.7, 03.9 LT		1 NEW FRAME			1	
TOTAL CATEGORY 0010	12	13	9	1	1	1
	CATEGORY 0030					
STA 93 + 18.4, 48.5 LT						1
STA 93 + 11.7, 72.0 RT						1
TOTAL CATEGORY 0030	0	0	0	0	0	2
GRAND TOTAL	**12**	**13**	**9**	**1**	**1**	**3**

LOCATION	CATEGORY 0010 6-DUCT, 4-INCH RIGID NONMETALLIC CONDUIT, CEMENT ENCASED, DB-60	4-DUCT, 4-INCH RIGID NONMETALLIC CONDUIT, CEMENT ENCASED, DB-60	3-DUCT, 4 INCH RIGID NONMETALLIC CONDUIT, CEMENT ENCASED, DB-60	2-DUCT, 4-INCH RIGID NONMETALLIC CONDUIT, CEMENT ENCASED, DB-60
	SPV0090.08	SPV0090.09	SPV0090.10	SPV0090.11
	LF	LF	LF	LF
STA 68 + 54.5, 8.5 RT to MH 601		45		
STA 68 + 59.0, 4.5 LT to MH 601		11		
MH 601 to MH 603		531		
MH 603 to MH 605		546		
MH 605 to MH 608		414		
MH 608 to MH 609		411		
MH 609 to STA 87 + 90.0, 04.5 LT				20
MH 609 to MH 613		554		
MH 613 to TRAFFIC CONTROL CABINET - STA 93 + 30.7, 40.1 LT				27
MH 613 to MH 617	624			
MH 617 to MH 619	643			
MH 619 to MH 621	616			
MH 621 to MH 624	582			
MH 624 TO MH 625	199			
TOTAL CATEGORY 0010	2664	2512	0	47
	CATEGORY 0030			
MH 605 to STA 79 +51.5, 61.0 LT				33
MH 608 to POLICE CALL BOX STA. 83 + 71.7, 51.5 LT				23
MH 613 to PAVING LIMITS - STA 93 + 11.1, 143.3 LT		125		
MH 613 to EXISTING CONDUIT - STA 93 + 18.4, 48.5 LT			29	
MH 613 to EXISTING CONDUIT - STA 93 + 11.7, 72.0 RT			82	
MH 613 to PROP. POLICE CALL BOX STA 93 + 24.5, 78.0 RT				93
MH 619 to STA 105 + 96.5, 47.5 LT				36
MH 619 to STA 105 + 96.0, 77.0 RT				85
MH 624 to STA 117 + 96.0, 70.0 RT				70
TOTAL CATEGORY 0030	0	125	111	340
GRAND TOTAL	**2664**	**2637**	**111**	**387**

SOUTH HOWELL AVENUE

N

B.M. E BOLT HYD N/W CORNER
W. LAYTON AV. & S. HOWELL AV.
STA. 67+05 - 60'LT.
ELEV. 89.66

W. LAYTON AVE.

SEC. LINE

BEGIN PROJECT
STA. 68+17.0 T/L

#108 E. LAYTON AVE.

#4641 S. HOWELL AVE.

#4619 S. HOWELL AVE.

P.L.

CAUTION

ASPH.

ASPH. ON CONC.

WMSD

WEP

TES

TEL

MH

CW

179°54'39"

N.01°19'36"W.

MON.

T/L

66 67 68 69 70 71 72

PLANTINGS

30" STO.

SEC. LINE

11' LT.

11' RT.

R/W

FO

F/L

RESHAPE GRAVEL

60' RT

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

FIBER OPTIC

#110 E. LAYTON AVE.

STD. B.W. #65-17
S. HOWELL AV. AND W. LAYTON AV.
IN S. HOWELL AV. CENTER PLOT NORTH OF W. LAYTON AV., 15.8' NORTH OF SOUTH CURB TIP AND 4.5' EAST OF WEST CURB (IN CONCRETE BOX)
ELEV.: 88.618

B.M. NW BOLT HYD
E/S S. HOWELL AV. @ #4640
STA. 70+02 - 48'RT.
ELEV. 92.77

CONC. ALLEY

20'

#4650 S. HOWELL AVE. | #4646-46A S. HOWELL AVE. | #4640 S. HOWELL AVE. | #4630 S. HOWELL AVE. | #4620 S. HOWELL AVE. | #4612 S. HOWELL AVE. | #4608 S. HOWELL AVE.

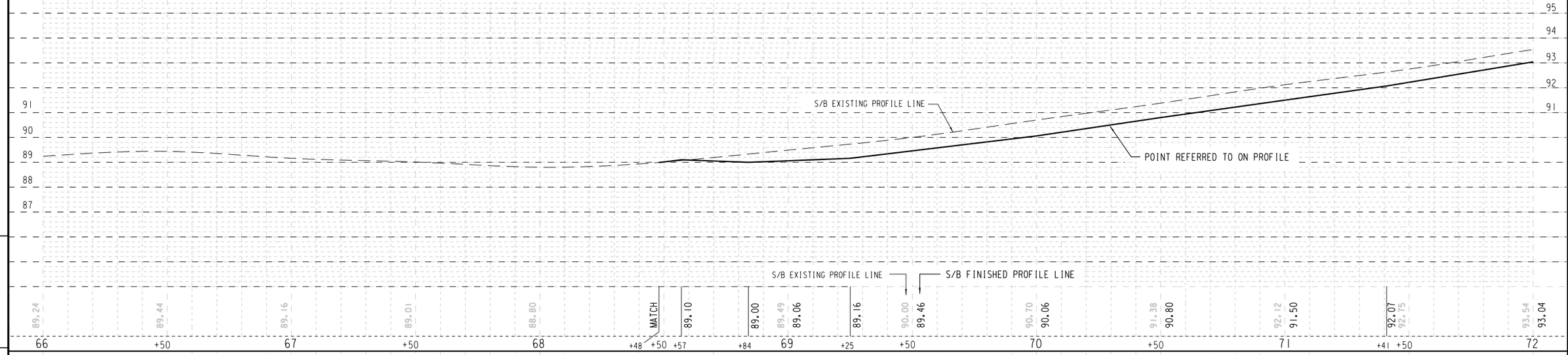
E. LAYTON AVE.

(A) CONST. CONC. CURB & GUTTER 31-INCH
(AC) CONST. CONC. CURB & GUTTER 31-INCH (COVERED FLANGE)
(E) REMOVE & CONST. 3-INCH ASPH. ON V.T. CONC. BASE
(F) CONST. CONC. DRIVEWAY FLARED (7-INCH)
(GI) REMOVE ASPHALT PARTIAL DEPTH TO OBTAIN 1-1/2" MIN. ASPH. OVERLAY
(HC) CONST. 8" CONC. BASE WITH INTEGRAL CURB
(J) SAWING CONCRETE
(K) SAWING ASPHALT
(L) GRADE & PLACE 4" TOPSOIL, SOD & FERTILIZER
(N) BIOSWALE CURB CUT (SEE CONSTRUCTION DETAILS)
(W) CONST. 8-INCH CONC. PAVEMENT WITH INTEGRAL CURB
(X) CONST. MAINTENANCE RAMP
(Y) CONST. SNOWPLOWABLE MEDIAN ISLAND NOSE

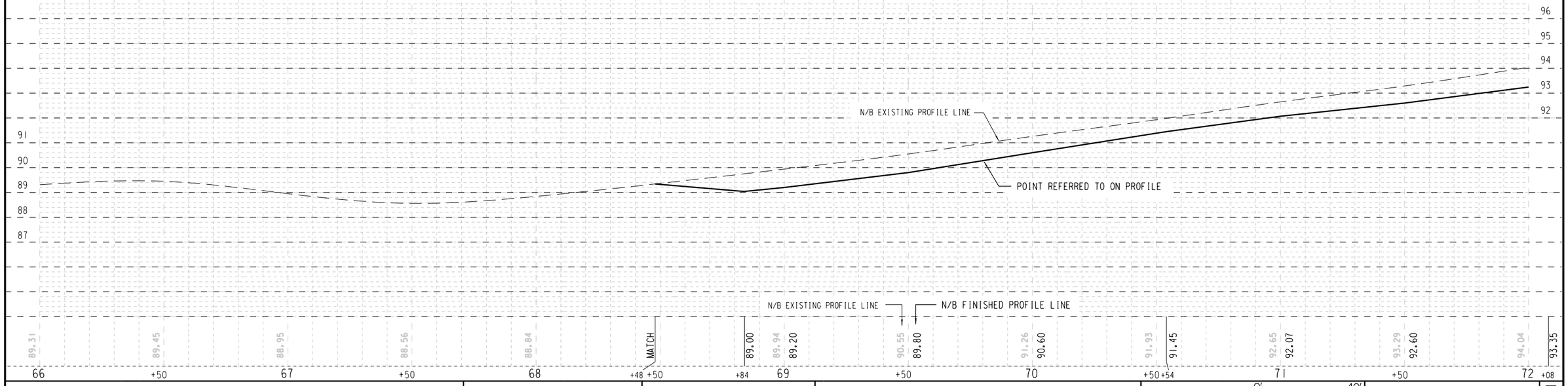
STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	PLAN	SCALE FEET 0' 40'	SHEET NO: 203 E

FILE NAME: W:\SPR\

SOUTHBOUND S. HOWELL AVE.



NORTHBOUND S. HOWELL AVE.



STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	PROFILE	SCALE FEET 0' 40'	SHEET NO: 204	E

FILE NAME: W:\SPR\

SOUTH HOWELL AVENUE

N

#4603-4601 S. HOWELL AVE. | #4583 S. HOWELL AVE. | #4577 S. HOWELL AVE. | #4571 S. HOWELL AVE. | #4565 S. HOWELL AVE. | #4559 S. HOWELL AVE. | #4555 S. HOWELL AVE. | #4547 S. HOWELL AVE. | #4531 S. HOWELL AVE. | #4529-29A S. HOWELL AVE. | #4525 S. HOWELL AVE.

P.L. | +95.6 | +0.7 | +11.2 | R/W | +30.8 | +65.9 | +70.9 | +04.6 | +15.6 | +30.6 | +35.6 | +45.9 | +60.7 | +80.7 | +95.8 | +51 | +71.7 | +80.7 | +22.2 | +25.2 | +31.2 | +41.2 | +61 | +66 | +71 | +74 | +76.6 | +77.9 | +87.3 | +08.5 | R/W | +73.4 | +78.5 | +82.1 | +97.6 | P.L.

CAUTION — 94.89C / 94.39G / 94.47F / +37.6 / 8 / 103

CAUTION — 99.23C / 98.73G / 98.81F / +35.8 / 12 / 108

CAUTION

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

60' LT (J) | 60' LT (J) | 60' LT (J)

98.30 | 98.85 | 404 | 99.70 / +42.6

93.70C | 97.17C | 98.55C | 99.50C

93.00C / 92.50G | 93.20G | +70.1 | 94.40C / 93.90G | +12.1 | 95.05C / 94.55G | +56.5 | 95.80C / 95.30G | +03.5 | +42.8 | 96.55C / 96.05G | 96.67G | 97.11 | +46.3 | 97.78C / 97.28G | 98.05G | 98.53 | +21.2 | +26.2 | 99.00G | 99.43 | 100.25C / 99.75G | 100.23 | +07.5 | +47.5 | 101.20C / 100.70G | 101.13 | 102.40C / 101.90G | 102.33

92.93 | 93.63 | 94.33 | 94.98 | 96.48 | 97.74 | 99.43 | 100.23 | 101.13 | 102.33

93.15 | 93.85 | 94.55 (N) | +08 | 2' | 95.20 | 95.95 | 96.70 | 97.35 | 98.00 | 98.81 | 99.66 | 100.50 | 101.35 | 102.55

94.80C / 94.22G / 94.24F | 98.07F / 98.05G / 98.63C | 99.06C / 98.48G | 101.38C / 100.80G | 100.71 | 102.17C / 101.59G | +50 (N) | W

93.04 | 93.62 | 94.95G / 95.53C | 95.70G / 96.28C | W | 96.45G / 97.03C | 97.10G / 97.68C | W | 98.46C / 97.88G | 99.06 | 99.86 | 100.67C / 100.09G | 102.79G / 103.37C

72 | +50 | 73 | 201 | +50 | T/L | 74 | +50 | 75 | +25 | +50 | TES | 604 | 76 | 202 | +50 | 77 | +50 | 78

94.06C / 93.48G | 96.23C | 96.93C | 97.68C | 98.41C / 97.83G | 99.09C / 98.51G | 99.55C / 98.95G | 99.13 | 99.34 | 99.52 | 100.40C / 99.82G | 101.49C

94.68C | 95.38C | 95.65G | 96.35G | 97.10G | 98.00C / 97.42G / 97.44F | 97.93 | 98.83 | 99.18 | 99.48 | 403 | 99.76 | 99.62 | 100.54C / 99.96G | 100.86C / 100.28G | 100.91G | 102.49C / 101.91G | 103.79C / 103.21G / 103.23F

93.50 | 94.10G | +75 | 94.80G | +08 | 2' | +40 | 95.90 | 96.60 | 97.35 | 98.15 | 98.65 | 99.15 | 99.50 | 99.80 | 99.94 | 100.08 | 100.52 | 111.15 | +25 | 102.15 | +75 | 103.50

94.40 | 95.05 (N) | 13' | 13' | 100.32 / +33.5 | 100.15 | 100.28 | 100.93 | 101.93 | 103.28

93.40 | 94.25 | 94.83 | 95.68 | 96.38 | 97.13 | 97.93 | 98.37 | 98.87 | 99.30 | 99.73 | 99.93 | 100.05 | 99.86F / 99.78G / 100.11C | 99.83G / 100.33C | 100.50G / 101.00C | 101.50G / 102.00C | +64.2 | 102.85G / 103.35C | +03.3 | +06.8

93.10G / 93.60C | 93.90G | +81.7 | 94.40C / 94.90C | +23.8 | +29.3 | 95.25C / 95.75C | 95.95G | 97.20C / 96.70G | +57.1 | 97.50G | +12.2 | +15.9 | 98.40C / 97.90G | 98.40G | 98.98F / 98.90G / 99.40C | 99.55 | 99.80 | 99.90 | 100.49 | 100.78 | 101.25 | 102.15 | 103.03

18" | F | 31" | 94.40C | 8" | 12" | 2' | 10" | F | 14" | 96.45C | 6" | 12" | 98.00C | 10' | 25" | 98.90C | 48 | 2 | 27" | F | 28" | L | 6" | 9"

FO | G | FO | MH | FO | G | FO | G | FO | MH | FO | 2 | 4' | FO | FO

R/W | +17 | +26.4 | +28 | +41.8 | +52.3 | +62.4 | +03.8 | +14 | +51 | +61 | +72 | +84 | +12.5 | +63.4 | +68.5 | +73.5 | +83.8 | +89.3 | +09.4 | +31.5 | +42 | R/W | +56.5 | +67.6 | +00 | 405 | 99.69 | +31.3 | +51.6 | +57.3 | +61.3 | +69.7 | +80.7 | R/W | +35.6 | +91.9 | +47.1

CW | CW | CW | CW | CW | CW | CW | CW | CW | CW | CW | CW | CW | CW | CW | CW | CW | CW | CW | CW | CW | CW | CW | CW | CW | CW | CW | CW | CW | CW | CW | CW | CW | CW | CW | CW | CW

LANDSCAPE RETAINING WALL

93.93C / 93.35G / 93.39F / +08.0 / 7

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

FIBER OPTIC

95.57C / 95.07G / 95.15F / +39.2 / 9 / 105

CAUTION

99.62 | 99.73 | 67.3' RT. | 62.8' LT. | 83' (J) RT. | 60' (J) RT

99.75C / 99.33G / 99.41F | 100.02C / 99.60G / 99.68F

10 / 106 | 11 / 107

E. ARMOUR AVE. | 5' | 30' | 5' | ASPH. | 60'

SEE CONST. DETAIL FOR ADDITIONAL INFORMATION ON CURB RAMPS

100.82C / 100.24G / 100.28F / +46 / 14

FIBER OPTIC

CAUTION

100.17C / 99.75G / 99.83F / +37.9 / 13 / 109

UNKNOWN LOC.

P.L. | #4576 S. HOWELL AVE. | P.L. | #4582-82A S. HOWELL AVE. | P.L. | #4570 S. HOWELL AVE. | P.L. | #4560 S. HOWELL AVE. | P.L. | #4556-56A S. HOWELL AVE. | P.L. | #4548 S. HOWELL AVE. | #4532 S. HOWELL AVE. | P.L. | #4524 S. HOWELL AVE. | P.L. | #4518 S. HOWELL AVE. | P.L. | #4514 S. HOWELL AVE.

#4608 S. HOWELL AVE. | #4602 S. HOWELL AVE.

B.M. NW BOLT HYD E/S S. HOWELL AV. @ #4576 STA. 73+07 - 48' RT. ELEV. 97.19

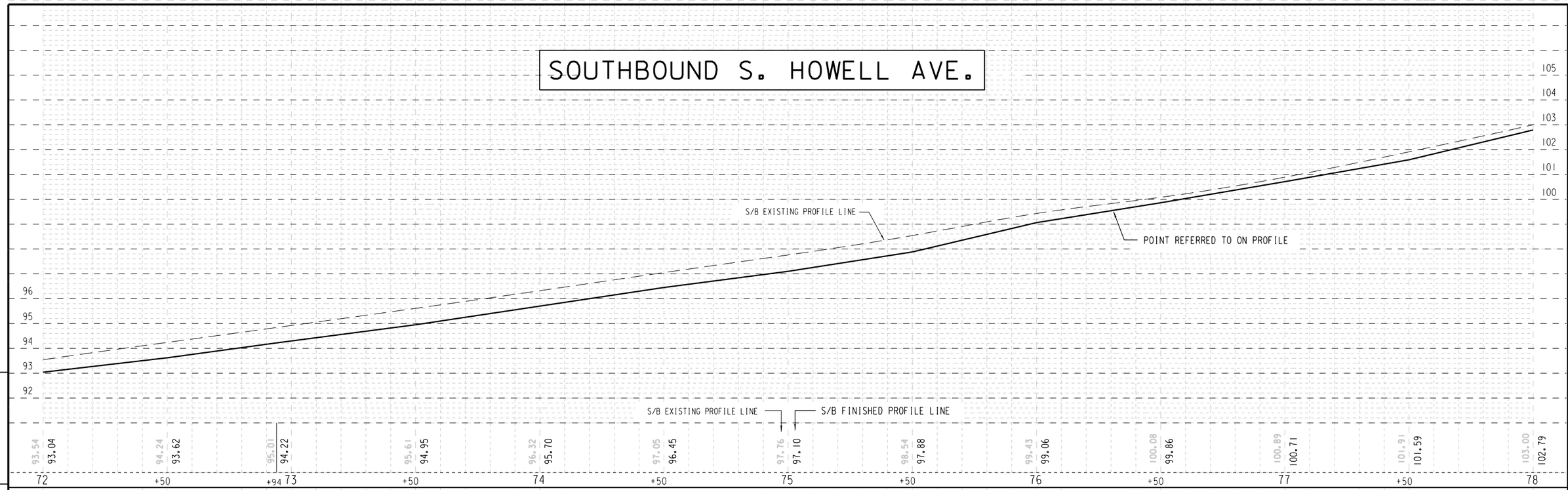
B.M. NW BOLT HYD SE CORNER E. ARMOUR AV. & S. HOWELL AV. STA. 75+81 - 60' RT. ELEV. 101.64

(2) CONST. CURB RAMP TYPE 2 WITH DETECTABLE WARNING FIELD
(4B) CONST. CURB RAMP TYPE 4B WITH DETECTABLE WARNING FIELD (MODIFIED)
(7B) CONST. CURB RAMP TYPE 7B WITH DETECTABLE WARNING FIELD
(A) CONST. CONC. CURB & GUTTER 31-INCH
(F) CONST. CONC. DRIVEWAY FLARED (7-INCH)
(G1) REMOVE ASPHALT PARTIAL DEPTH TO OBTAIN 1-1/2" MIN. ASPH. OVERLAY
(J) SAWING CONCRETE
(K) SAWING ASPHALT
(L) GRADE & PLACE 4" TOPSOIL, SOD & FERTILIZER
(N) BIOSWALE CURB CUT (SEE CONSTRUCTION DETAILS)
(W) CONST. 8-INCH CONC. PAVEMENT WITH INTEGRAL CURB
(X) CONST. MAINTENANCE RAMP
(Y) CONST. SNOWPLOWABLE MEDIAN ISLAND NOSE

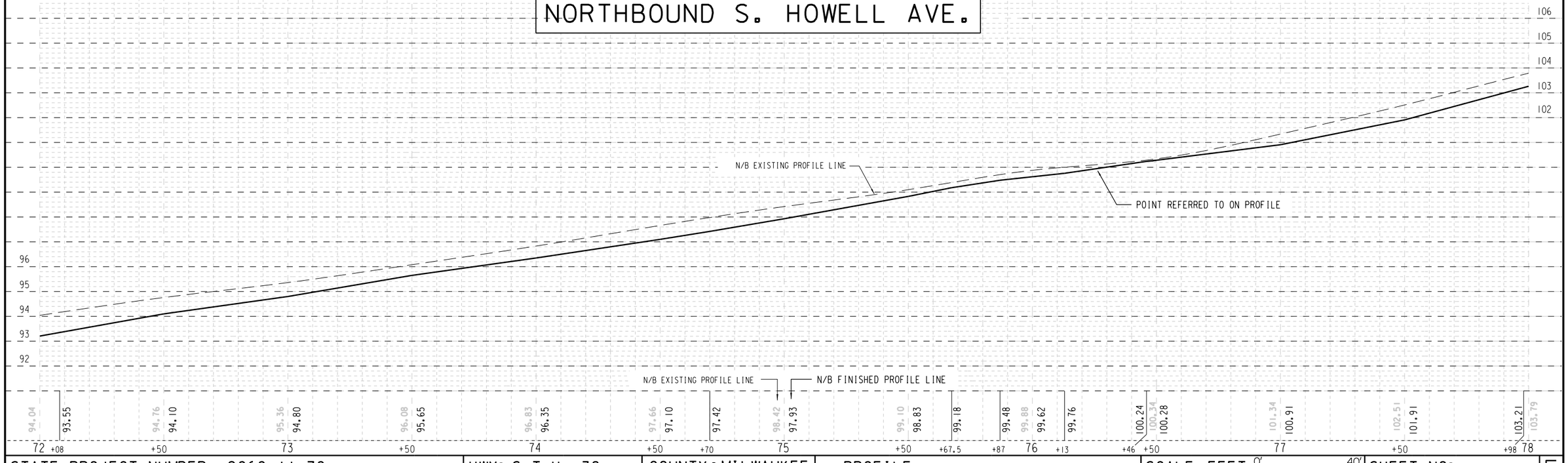
STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	PLAN	SCALE FEET 0' 40'	SHEET NO: 205 E

FILE NAME: W:\SPR\

SOUTHBOUND S. HOWELL AVE.



NORTHBOUND S. HOWELL AVE.



STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	PROFILE	SCALE FEET 0' 40'	SHEET NO: 206	E

FILE NAME: W:\SPR\

B.M. NW BOLT HYD NW CORNER
W. VAN NORMAN AV. & S. HOWELL AV.
STA. 79+48 - 69'LT.
ELEV. 108.20

SOUTH HOWELL AVENUE

N

SEE CONST. DETAIL FOR ADDITIONAL INFORMATION ON CURB RAMPS

#4503 S. HOWELL AVE. | W. VAN NORMAN AVE. | #4477 | #4459 | #4453 | #4445 | #4437

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

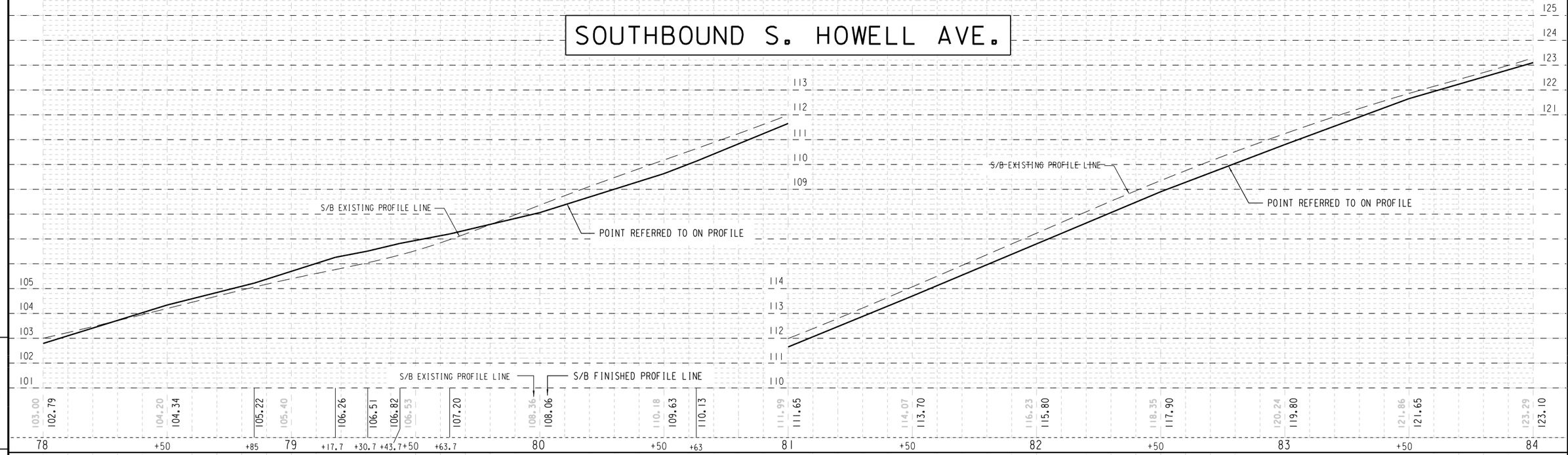
BIO-SWALE NO.4 (SEE BIO-SWALE PLAN)

(2) CONST. CURB RAMP TYPE 2 WITH DETECTABLE WARNING FIELD
(A) CONST. CONC. CURB & GUTTER 31-INCH
(BS) CONST. 5" CONC. WALK FOR BUS STOP (SEE DETAIL)
(C) CONST. CONC. CURB & GUTTER 22-INCH
(E) REMOVE & CONST. 3-INCH ASPH. ON V.T. CONC. BASE
(F) CONST. CONC. DRIVEWAY FLARED (7-INCH)
(GI) REMOVE ASPHALT PARTIAL DEPTH TO OBTAIN 1-1/2" MIN. ASPH. OVERLAY
(K) SAWING ASPHALT
(L) GRADE & PLACE 4" TOPSOIL, SOD & FERTILIZER
(MP) CONST. CONC. CURB PREDESTRIAN
(N) BIOSWALE CURB CUT (SEE CONSTRUCTION DETAILS)
(W) CONST. 8-INCH CONC. PAVEMENT WITH INTEGRAL CURB
(X) CONST. MAINTENANCE RAMP
(Y) CONST. SNOWPLOWABLE MEDIAN ISLAND NOSE

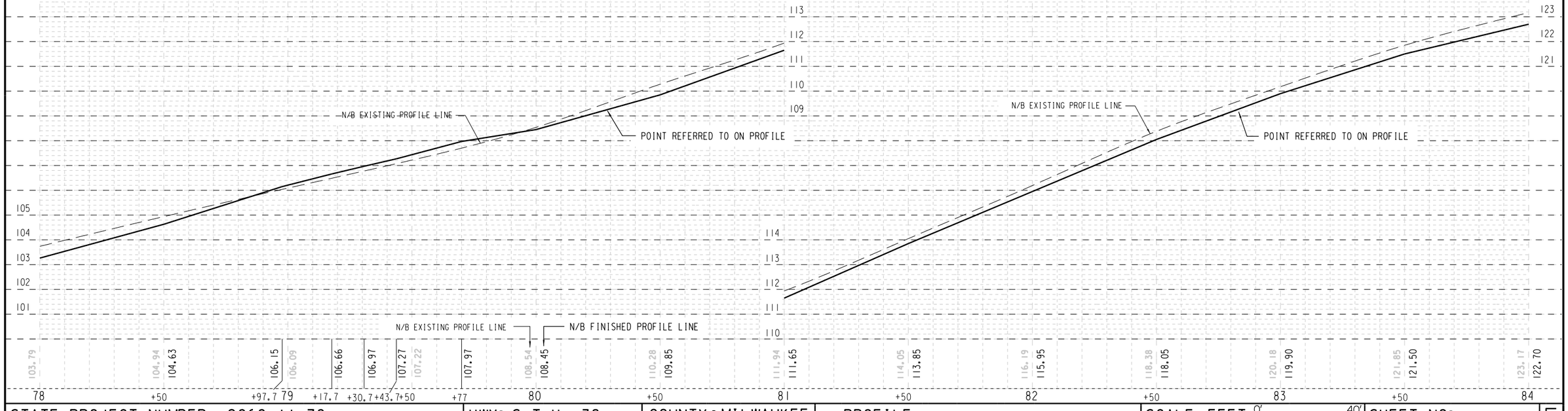
STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	PLAN	SCALE FEET 0' 40'	SHEET NO: 207	E

FILE NAME: W:\SPR\

SOUTHBOUND S. HOWELL AVE.

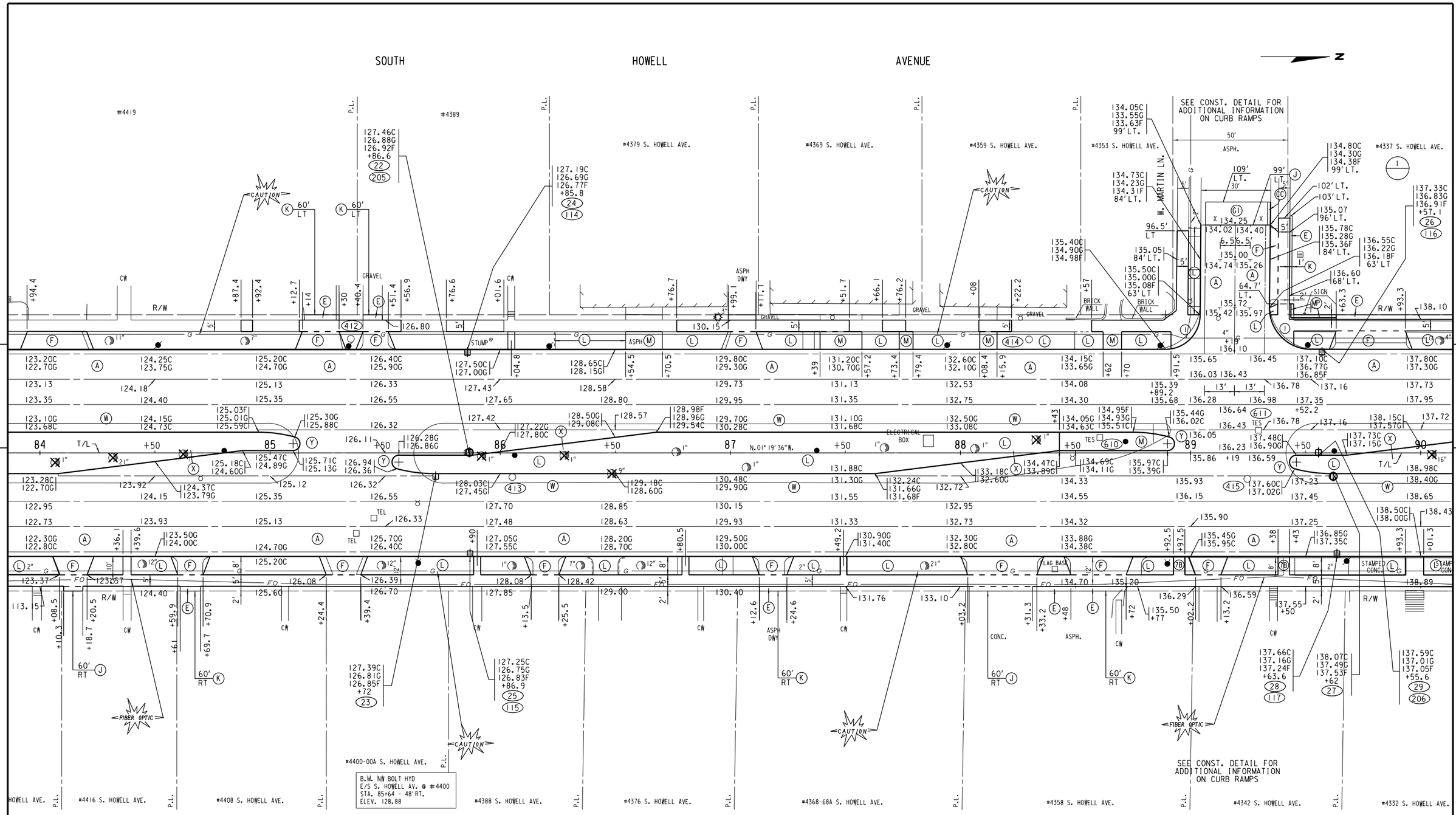


NORTHBOUND S. HOWELL AVE.



STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	PROFILE	SCALE FEET 0' 40'	SHEET NO: 208	E

FILE NAME: W:\SPR\

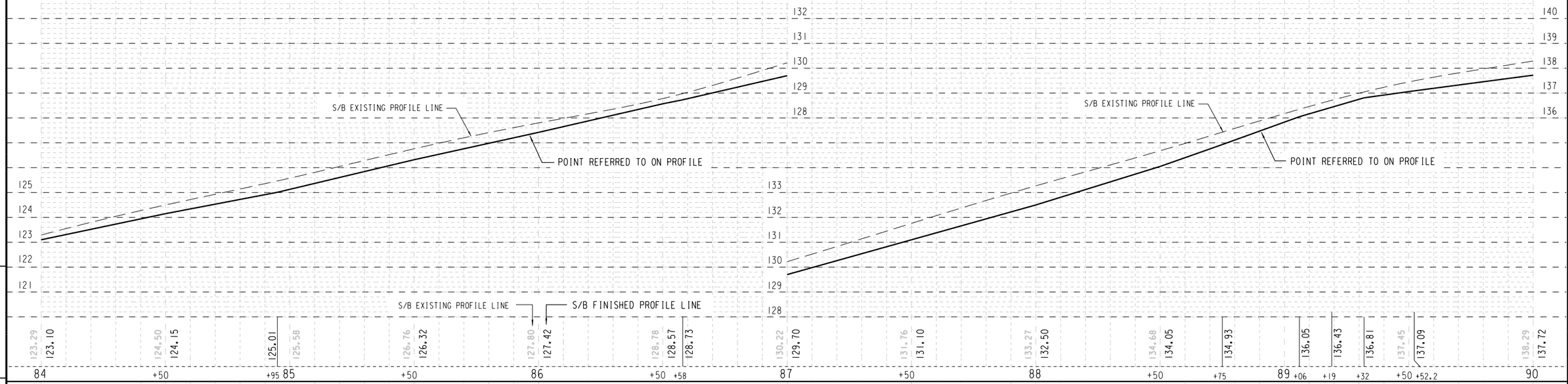


(2) CONST. CURB RAMP TYPE 2 WITH DETECTABLE WARNING FIELD
(7B) CONST. CURB RAMP TYPE 7B WITH DETECTABLE WARNING FIELD
(A) CONST. CONC. CURB & GUTTER 31-INCH
(CC) CONST. CONC. CURB & GUTTER 22-INCH (COVERED FLANGE)
(E) REMOVE & CONST. 3-INCH ASPH. ON V.T. CONC. BASE
(F) CONST. CONC. DRIVEWAY FLARED (7-INCH)
(G1) REMOVE ASPHALT PARTIAL DEPTH TO OBTAIN 1-1/2" MIN. ASPH. OVERLAY
(J) SAWING CONCRETE
(K) SAWING ASPHALT
(L) GRADE & PLACE 4" TOPSOIL, SOD & FERTILIZER
(M) CONST. 5" CONC. SIDEWALK
(MP) CONST. CONC. CURB PREDESTRIAN
(W) CONST. 8-INCH CONC. PAVEMENT WITH INTEGRAL CURB
(X) CONST. MAINTENANCE RAMP
(Y) CONST. SNOWPLOWABLE MEDIAN ISLAND NOSE

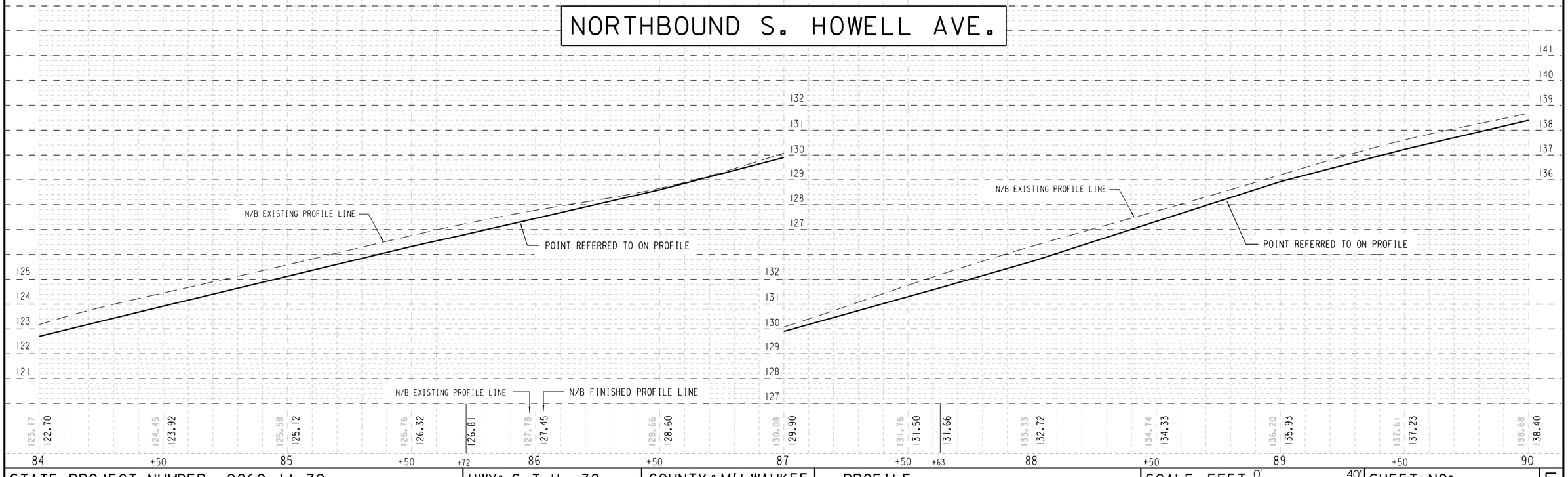
STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	PLAN	SCALE FEET 0' 40'	SHEET NO: 209	E

FILE NAME: W:\SPR\

SOUTHBOUND S. HOWELL AVE.



NORTHBOUND S. HOWELL AVE.



STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	PROFILE	SCALE FEET 0' 40'	SHEET NO: 210 E

FILE NAME: W:\SPR\

SOUTH HOWELL AVENUE

B.M. NW BOLT HYD SW CORNER W. BOLIVAR AV. & S. HOWELL AV. STA. 92+77 - 59'LT. ELEV. 139.56

PLACE LANDMARK REFERENCE MONUMENT STA. 92+96.99-T/L

SEE CONST. DETAILS FOR ADDITIONAL INFORMATION ON WALKS, PAVEMENT AND CURB RAMPS

SEE CONST. DETAIL FOR ADDITIONAL INFORMATION ON CURB RAMPS

STD. B.M. #58-01
S. HOWELL AV. AND E. BOLIVAR AV. (S.E. CORNER) 20.2' SOUTH AND 19.7' EAST OF CURBS.
ELEV.: 141.212

W. BOLIVAR AVE.

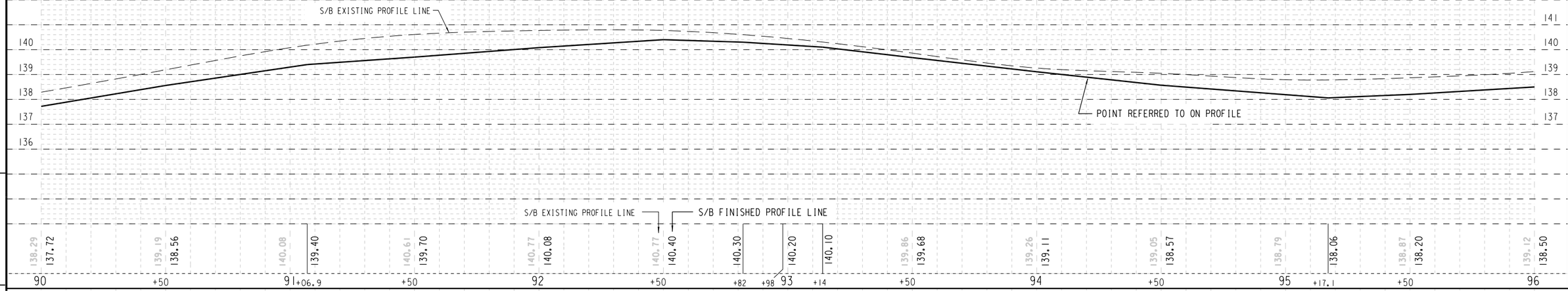
E. BOLIVAR AVE.

(I) CONST. CURB RAMP TYPE 1 WITH DETECTABLE WARNING FIELD
(2) CONST. CURB RAMP TYPE 2 WITH DETECTABLE WARNING FIELD
(2M) CONST. CURB RAMP TYPE 2 WITH DETECTABLE WARNING FIELD (MODIFIED)
(A) CONST. CONC. CURB & GUTTER 31-INCH
(BS) CONST. 5" CONC. WALK FOR BUS STOP (SEE DETAIL)
(D) CONST. CONC. DRIVEWAY DEPRESSED - MODIFIED (7-INCH)
(E) REMOVE & CONST. 3-INCH ASPH. ON V.T. CONC. BASE
(EE) REMOVE & CONST. 2-INCH ASPH. ON V.T. CONC. BASE
(F) CONST. CONC. DRIVEWAY FLARED (7-INCH)
(J) SAWING CONCRETE
(K) SAWING ASPHALT
(L) GRADE & PLACE 4" TOPSOIL, SOD & FERTILIZER
(M) CONST. 5" CONC. SIDEWALK
(MP) CONST. CONC. CURB PREDESTRIAN
(W) CONST. 8-INCH CONC. PAVEMENT WITH INTEGRAL CURB
(X) CONST. MAINTENANCE RAMP
(Y) CONST. SNOWPLOWABLE MEDIAN ISLAND NOSE

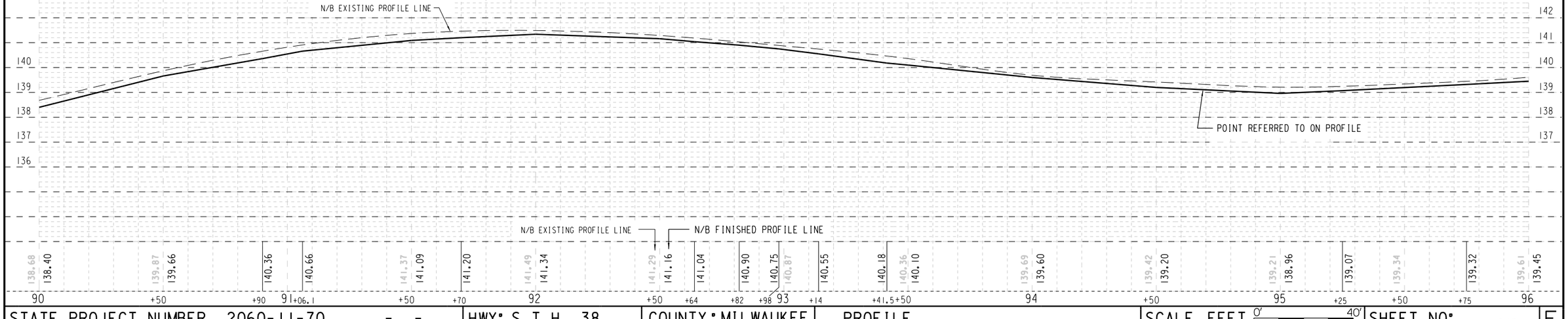
STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	PLAN	SCALE FEET 0' 40'	SHEET NO: 211	E

FILE NAME: W:\SPR\

SOUTHBOUND S. HOWELL AVE.



NORTHBOUND S. HOWELL AVE.



STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	PROFILE	SCALE FEET 0' 40'	SHEET NO: 212	E

FILE NAME: W:\SPR\

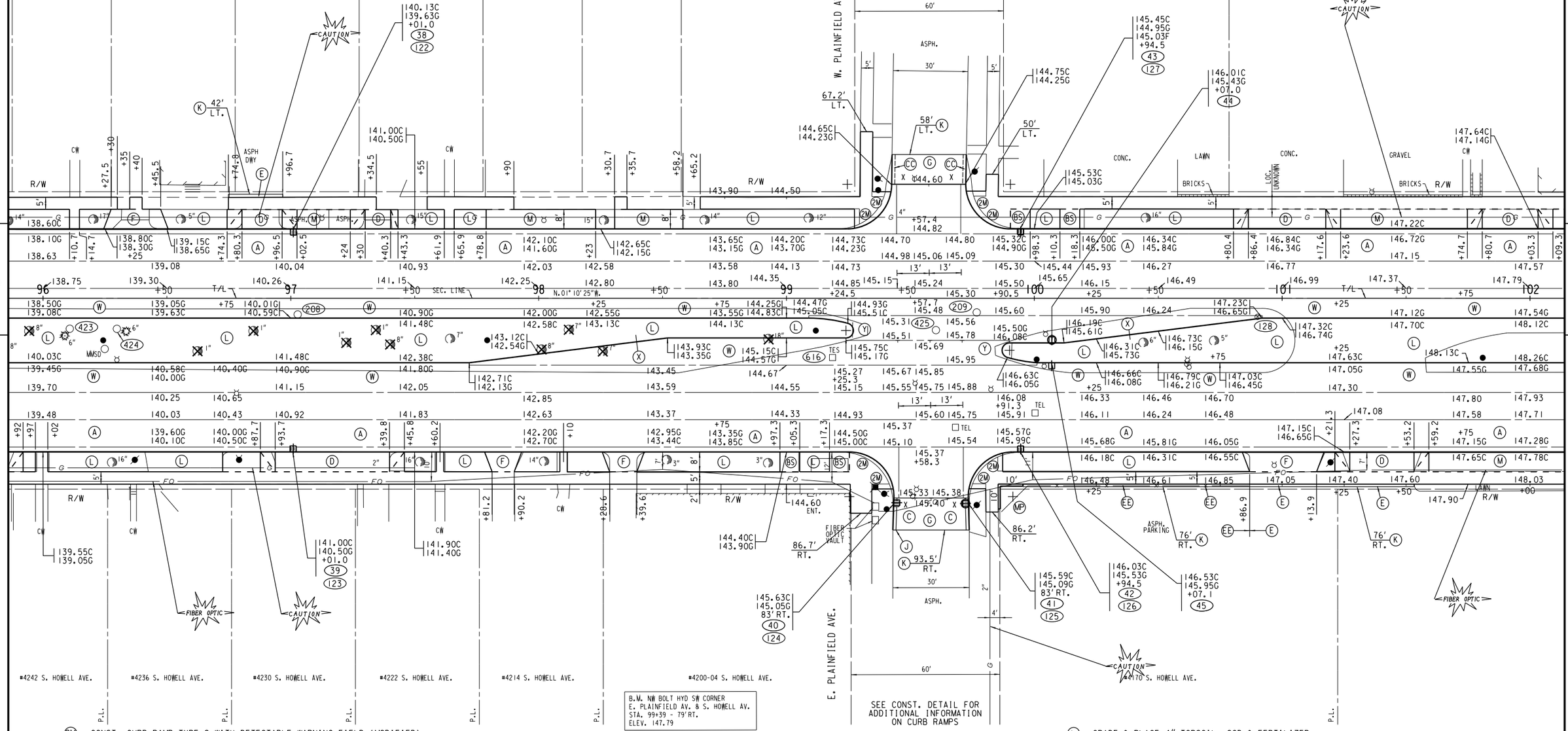
SOUTH HOWELL AVENUE

N

#4243A S. HOWELL AVE. | #4235A S. HOWELL AVE. | #4229 S. HOWELL AVE. | #4221 S. HOWELL AVE. | #4213 S. HOWELL AVE. | #4209-11 S. HOWELL AVE. | #4203 S. HOWELL AVE. | #4177 S. HOWELL AVE. | #4161 S.

W. PLAINFIELD AVE.

SEE CONST. DETAIL FOR ADDITIONAL INFORMATION ON CURB RAMPS



#4242 S. HOWELL AVE. | #4236 S. HOWELL AVE. | #4230 S. HOWELL AVE. | #4222 S. HOWELL AVE. | #4214 S. HOWELL AVE. | #4200-04 S. HOWELL AVE. | #4170 S. HOWELL AVE.

E. PLAINFIELD AVE.

B.M. NW BOLT HYD S/W CORNER E. PLAINFIELD AV. & S. HOWELL AV. STA. 99+39 - 79' RT. ELEV. 147.79

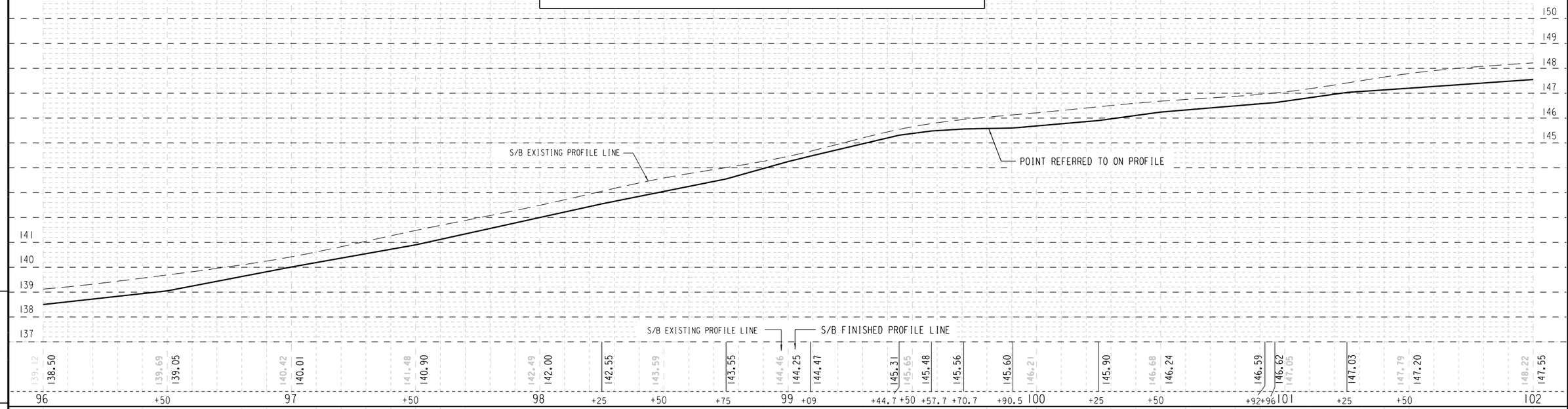
SEE CONST. DETAIL FOR ADDITIONAL INFORMATION ON CURB RAMPS

(2M) CONST. CURB RAMP TYPE 2 WITH DETECTABLE WARNING FIELD (MODIFIED)
(A) CONST. CONC. CURB & GUTTER 31-INCH
(BS) CONST. 5" CONC. WALK FOR BUS STOP (SEE DETAIL)
(CC) CONST. CONC. CURB & GUTTER 22-INCH (COVERED FLANGE)
(D) CONST. CONC. DRIVEWAY DEPRESSED - MODIFIED (7-INCH)
(E) REMOVE & CONST. 3-INCH ASPH. ON V.T. CONC. BASE
(EE) REMOVE & CONST. 2-INCH ASPH. ON V.T. CONC. BASE
(F) CONST. CONC. DRIVEWAY FLARED (7-INCH)
(G) REMOVE ASPHALT PARTIAL DEPTH TO OBTAIN 3" MIN. ASPH. OVERLAY
(J) SAWING CONCRETE
(K) SAWING ASPHALT
(L) GRADE & PLACE 4" TOPSOIL, SOD & FERTILIZER
(M) CONST. 5" CONC. SIDEWALK
(MP) CONST. CONC. CURB PREDESTRIAN
(W) CONST. 8-INCH CONC. PAVEMENT WITH INTEGRAL CURB
(X) CONST. MAINTENANCE RAMP
(Y) CONST. SNOWPLOWABLE MEDIAN ISLAND NOSE

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	PLAN	SCALE FEET 0' 40'	SHEET NO: 213 E

FILE NAME: W:\SPR\

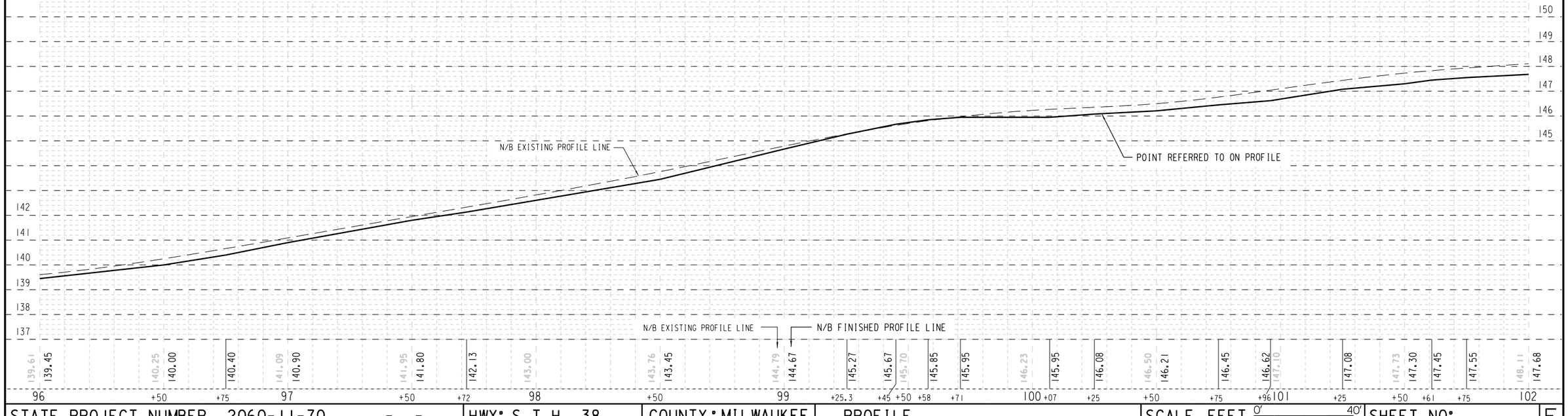
SOUTHBOUND S. HOWELL AVE.



5

5

NORTHBOUND S. HOWELL AVE.



STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	PROFILE	SCALE FEET 0' 40'	SHEET NO: 214	E

FILE NAME: W:\SPR\

SOUTH HOWELL AVENUE

N

#4161 S. HOWELL AVE. | #4125 S. HOWELL AVE. | #4111-13 S. HOWELL AVE. | #4107 S. HOWELL AVE. | #4101-01A S. HOWELL AVE. | #4015 S. HOWELL AVE.

SEE CONST. DETAIL FOR ADDITIONAL INFORMATION ON CURB RAMPS

W. WATERFORD AVE.

#4130 S. HOWELL AVE. | #4114 S. HOWELL AVE. | #4100 S. HOWELL AVE. | #4068 S. HOWELL AVE. | #4068 S. HOWELL AVE.

E. WATERFORD AVE.

SEE CONST. DETAIL FOR ADDITIONAL INFORMATION ON CURB RAMPS

B.M. NW BOLT HYD
E/S S. HOWELL AV. @ #4130
STA. 102+81 - 64'RT.
ELEV. 149.67

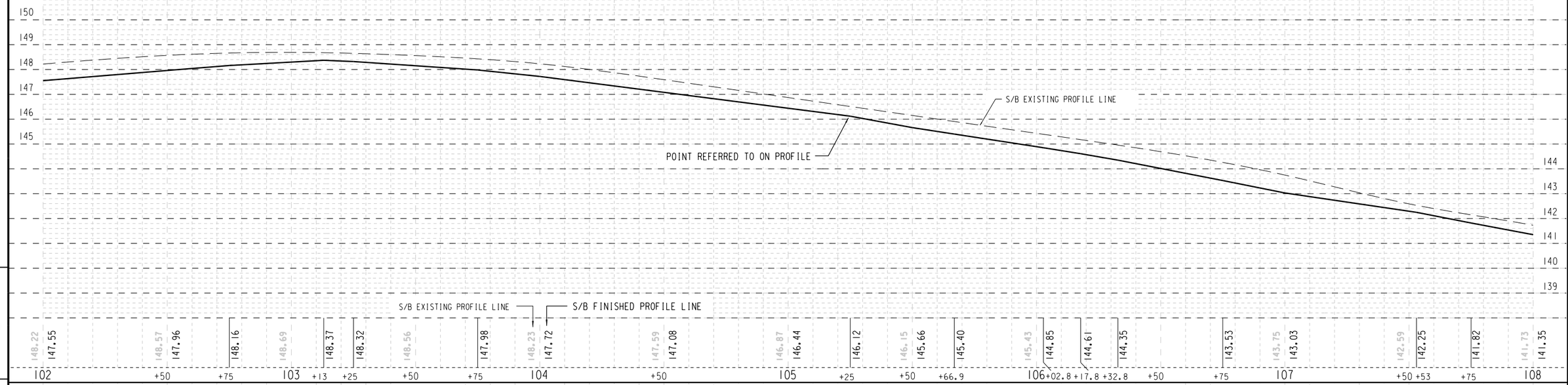
B.M. NW BOLT HYD SW CORNER
E. WATERFORD AV. & S. HOWELL AV.
STA. 105+88 - 66'RT.
ELEV. 147.13

(1) CONST. CURB RAMP TYPE 1 WITH DETECTABLE WARNING FIELD
(2) CONST. CURB RAMP TYPE 2 WITH DETECTABLE WARNING FIELD
(2M) CONST. CURB RAMP TYPE 2 WITH DETECTABLE WARNING FIELD (MODIFIED)
(A) CONST. CONC. CURB & GUTTER 31-INCH
(BS) CONST. 5" CONC. WALK FOR BUS STOP (SEE DETAIL)
(CC) CONST. CONC. CURB & GUTTER 22-INCH (COVERED FLANGE)
(D) CONST. CONC. DRIVEWAY DEPRESSED - MODIFIED (7-INCH)
(E) REMOVE & CONST. 3-INCH ASPH. ON V.T. CONC. BASE
(EE) REMOVE & CONST. 2-INCH ASPH. ON V.T. CONC. BASE
(F) CONST. CONC. DRIVEWAY FLARED (7-INCH)
(G) REMOVE ASPHALT PARTIAL DEPTH TO OBTAIN 3" MIN. ASPH. OVERLAY
(J) SAWING CONCRETE
(K) SAWING ASPHALT
(L) GRADE & PLACE 4" TOPSOIL, SOD & FERTILIZER
(M) CONST. 5" CONC. SIDEWALK
(W) CONST. 8-INCH CONC. PAVEMENT WITH INTEGRAL CURB
(X) CONST. MAINTENANCE RAMP
(Y) CONST. SNOWPLOWABLE MEDIAN ISLAND NOSE

STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	PLAN	SCALE FEET 0' 40'	SHEET NO: 215 E

FILE NAME: W:\SPR\

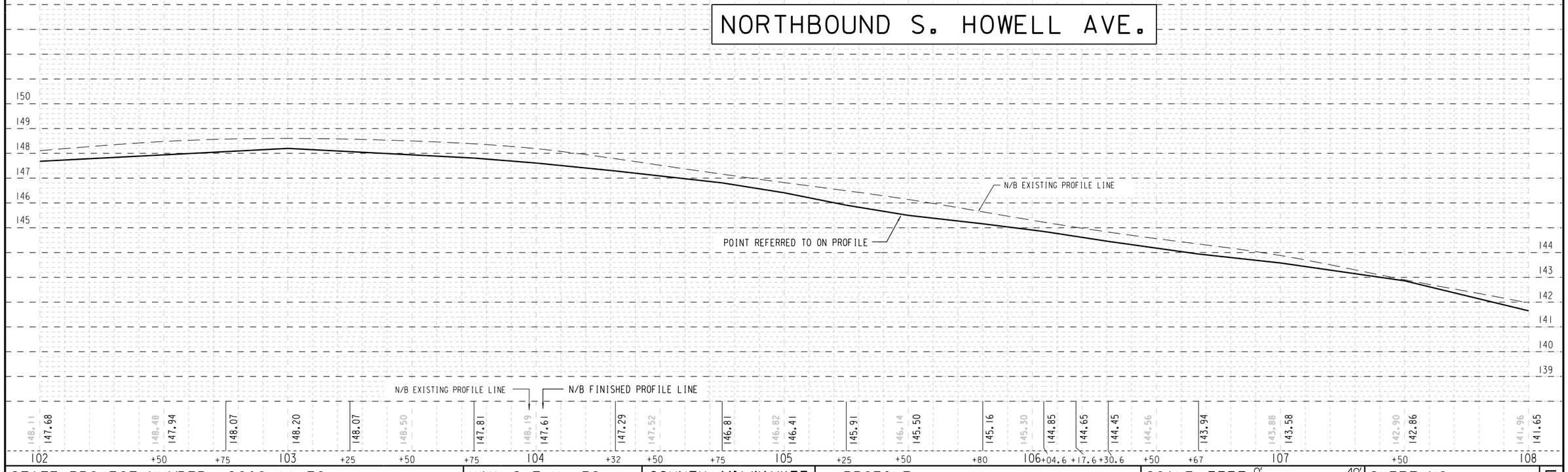
SOUTHBOUND S. HOWELL AVE.



5

5

NORTHBOUND S. HOWELL AVE.



STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	PROFILE	SCALE FEET 0' 40'	SHEET NO: 216	E

FILE NAME: W:\SPR\

SOUTH HOWELL AVENUE

N

#4015 S. HOWELL AVE. | #4015 S. HOWELL AVE. | #3977-79 S. HOWELL AVE. | #3969 S. HOWELL AVE.

SEE CONST. DETAIL FOR ADDITIONAL INFORMATION ON CURB RAMPS

W. NORWICH ST.

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

LAWN

R/W

ASPH. PARKING

CAUTION

FIBER OPTIC

WOOD RAMP

CONC. PORCH

PARKING

E. NORWICH ST.

#4056-60 S. HOWELL AVE. | #4040-42 S. HOWELL AVE. | #4036 S. HOWELL AVE. | #4028-30A S. HOWELL AVE. | #4014-24 S. HOWELL AVE. | #4008-10A S. HOWELL AVE. | #4002 S. HOWELL AVE. | #3970-74 S. HOWELL AVE.

B.M. NW BOLT HYD
E/S S. HOWELL AV. @ #4028
STA. 109+68 - 65'RT.
ELEV. 140.52

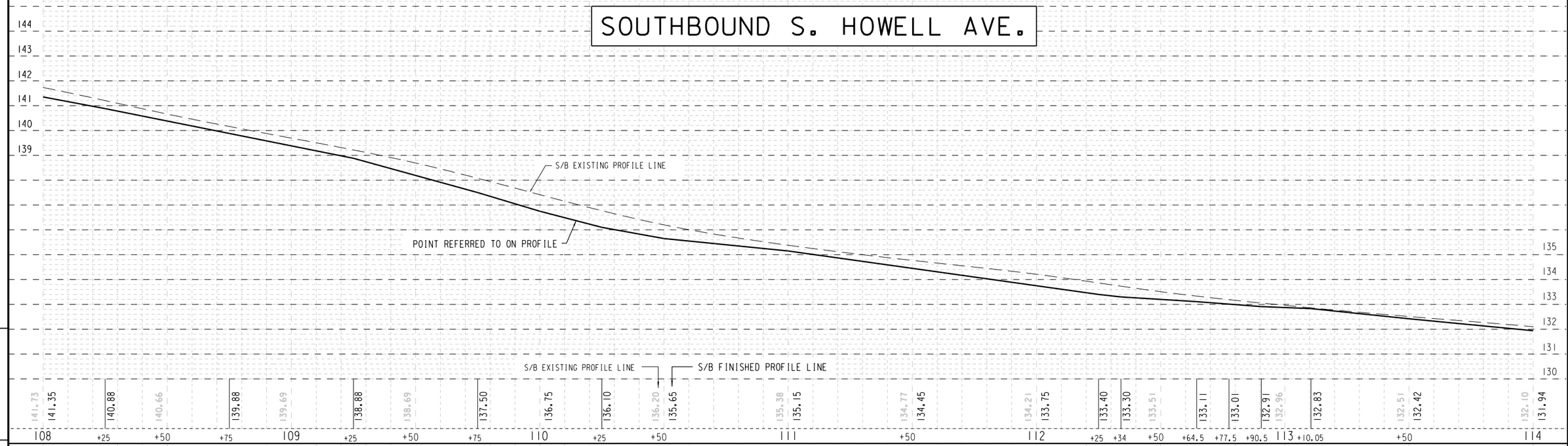
B.M. NW BOLT HYD NE CORNER
E. NORWICH AV. & S. HOWELL AV.
STA. 113.35 - 65'RT.
ELEV. 133.37

(1) CONST. CURB RAMP TYPE 1 WITH DETECTABLE WARNING FIELD
(2) CONST. CURB RAMP TYPE 2 WITH DETECTABLE WARNING FIELD
(2M) CONST. CURB RAMP TYPE 2 WITH DETECTABLE WARNING FIELD (MODIFIED)
(A) CONST. CONC. CURB & GUTTER 31-INCH
(AC) CONST. CONC. CURB & GUTTER 31-INCH (COVERED FLANGE)
(BS) CONST. 5" CONC. WALK FOR BUS STOP (SEE DETAIL)
(D) CONST. CONC. DRIVEWAY DEPRESSED - MODIFIED (7-INCH)
(E) REMOVE & CONST. 3-INCH ASPH. ON V.T. CONC. BASE
(EE) REMOVE & CONST. 2-INCH ASPH. ON V.T. CONC. BASE
(F) CONST. CONC. DRIVEWAY FLARED (7-INCH)
(GI) REMOVE ASPHALT PARTIAL DEPTH TO OBTAIN 1-1/2" MIN. ASPH. OVERLAY
(K) SAWING ASPHALT
(L) GRADE & PLACE 4" TOPSOIL, SOD & FERTILIZER
(M) CONST. 5" CONC. SIDEWALK
(MP) CONST. CONC. CURB PREDESTRIAN
(N) BIOSWALE CURB CUT (SEE CONSTRUCTION DETAILS)
(O) SAWING CONCRETE AT OR NEAR BUILDING, OR WALL
(W) CONST. 8-INCH CONC. PAVEMENT WITH INTEGRAL CURB
(X) CONST. MAINTENANCE RAMP
(Y) CONST. SNOWPLOWABLE MEDIAN ISLAND NOSE

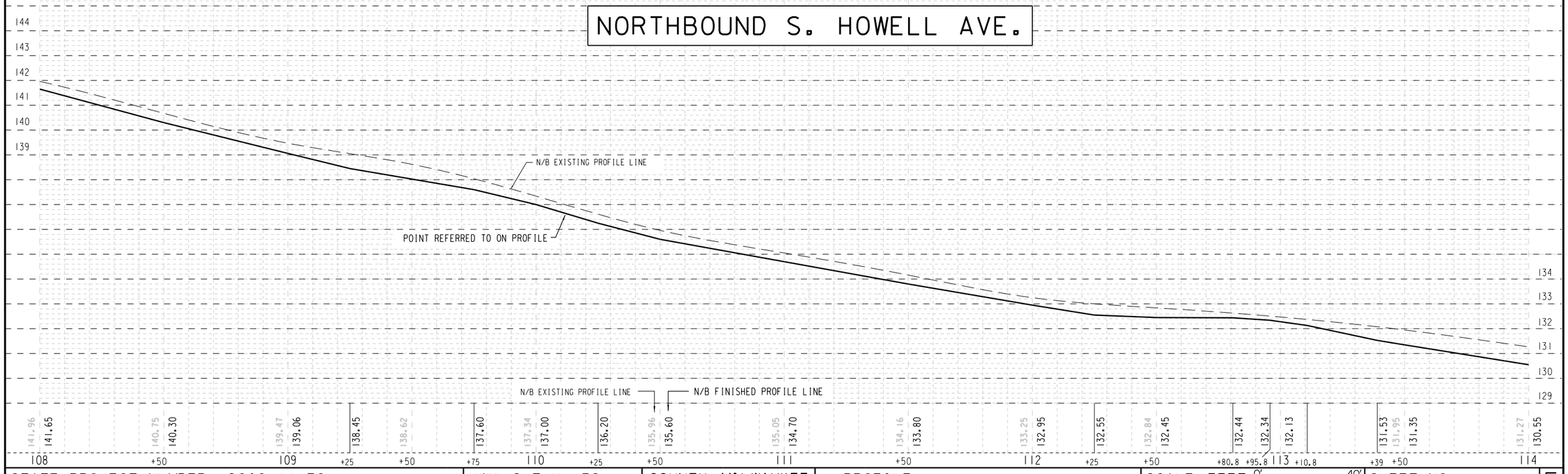
STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	PLAN	SCALE FEET 0' 40'	SHEET NO: 217 E

FILE NAME: W:\SPR\

SOUTHBOUND S. HOWELL AVE.



NORTHBOUND S. HOWELL AVE.



STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	PROFILE	SCALE FEET 0' 40'	SHEET NO: 218 E

FILE NAME: W:\SPR\

SOUTH HOWELL AVENUE

N

SEE CONST. DETAIL FOR ADDITIONAL INFORMATION ON CURB RAMPS

#3967 S. HOWELL AVE. | #3959 S. HOWELL AVE. | #3955 S. HOWELL AVE. | #3935-33 S. HOWELL AVE. | #3929-31 S. HOWELL AVE. | #3915-25 S. HOWELL AVE.

W. HOWARD AVE.

CONST. PED CURB

ASPH. ON CONC.

CONC. LIGHT BASE

CONC. SIGN BASE

ASPH. PARKING

CAUTION

FIBER OPTIC

E. VAN BECK AVE.

E. HOWARD AVE.

#3962 S. HOWELL AVE. | #3956 S. HOWELL AVE. | #3950-50A S. HOWELL AVE. | #3946 S. HOWELL AVE. | #3912 S. HOWELL AVE.

SEE CONST. DETAIL FOR ADDITIONAL INFORMATION ON INTERSECTION

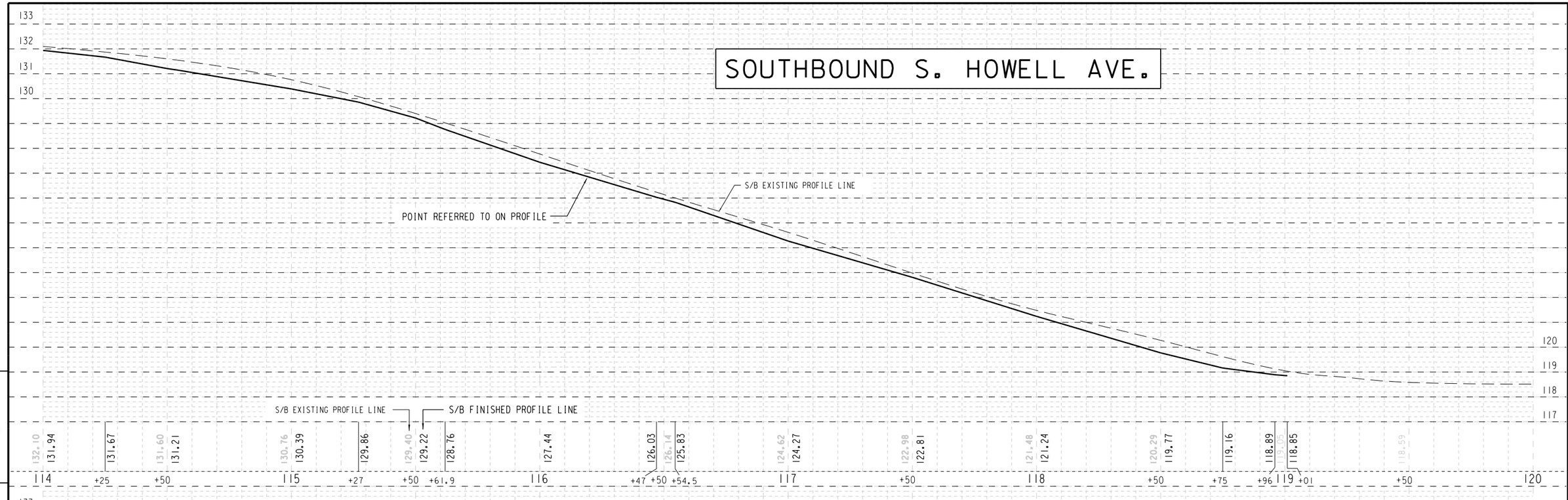
SEE CONST. DETAIL FOR ADDITIONAL INFORMATION ON CURB RAMPS

(I) CONST. CURB RAMP TYPE 1 WITH DETECTABLE WARNING FIELD
(2) CONST. CURB RAMP TYPE 2 WITH DETECTABLE WARNING FIELD
(7A) CONST. CURB RAMP TYPE 7A WITH DETECTABLE WARNING FIELD
(9) CONST. CURB RAMP TYPE 9 WITH DETECTABLE WARNING FIELD
(A) CONST. CONC. CURB & GUTTER 31-INCH
(D) CONST. CONC. DRIVEWAY DEPRESSED - MODIFIED (7-INCH)
(E) REMOVE & CONST. 3-INCH ASPH. ON V.T. CONC. BASE
(EE) REMOVE & CONST. 2-INCH ASPH. ON V.T. CONC. BASE
(F) CONST. CONC. DRIVEWAY FLARED (7-INCH)
(K) SAWING ASPHALT
(L) GRADE & PLACE 4" TOPSOIL, SOD & FERTILIZER
(M) CONST. 5" CONC. SIDEWALK
(MP) CONST. PREDESTRIAN CURB
(P) REMOVE & CONST. 2-INCH ASPHALT ON V.T. AGGREGATE
(P) REMOVE & CONST. 2-INCH ASPHALT ON V.T. AGGREGATE
(W) CONST. 8-INCH CONC. PAVEMENT WITH INTEGRAL CURB
(X) CONST. MAINTENANCE RAMP
(Y) CONST. SNOWPLOWABLE MEDIAN ISLAND NOSE

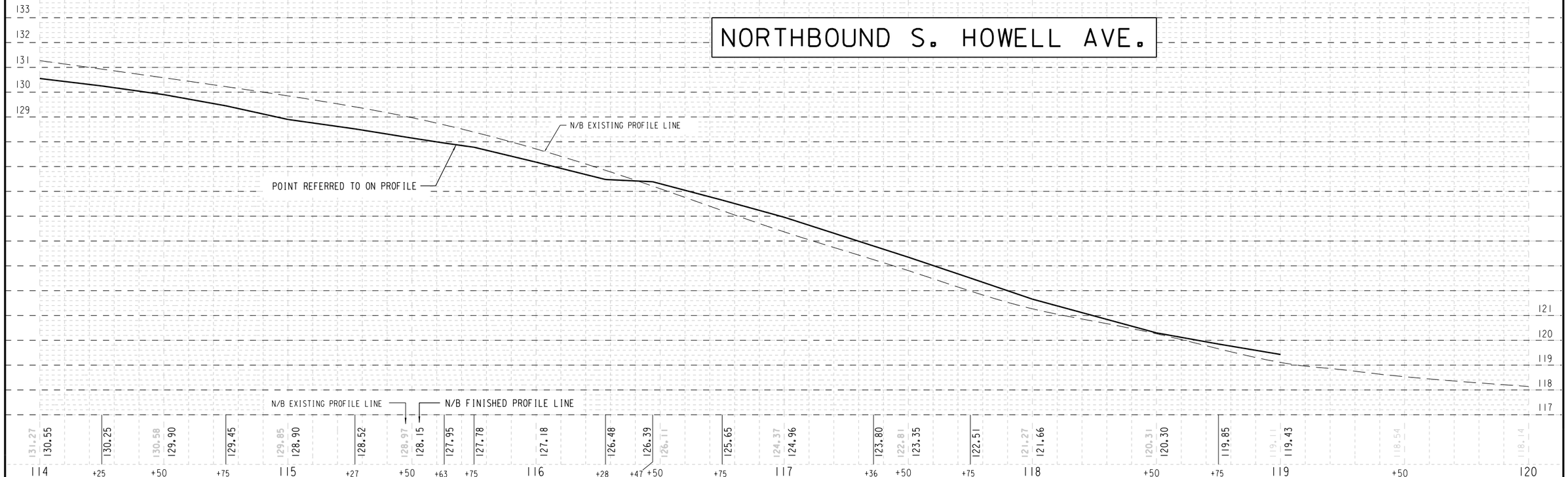
STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	PLAN	SCALE FEET 0' 40'	SHEET NO: 219 E

FILE NAME: W:\SPR\

SOUTHBOUND S. HOWELL AVE.

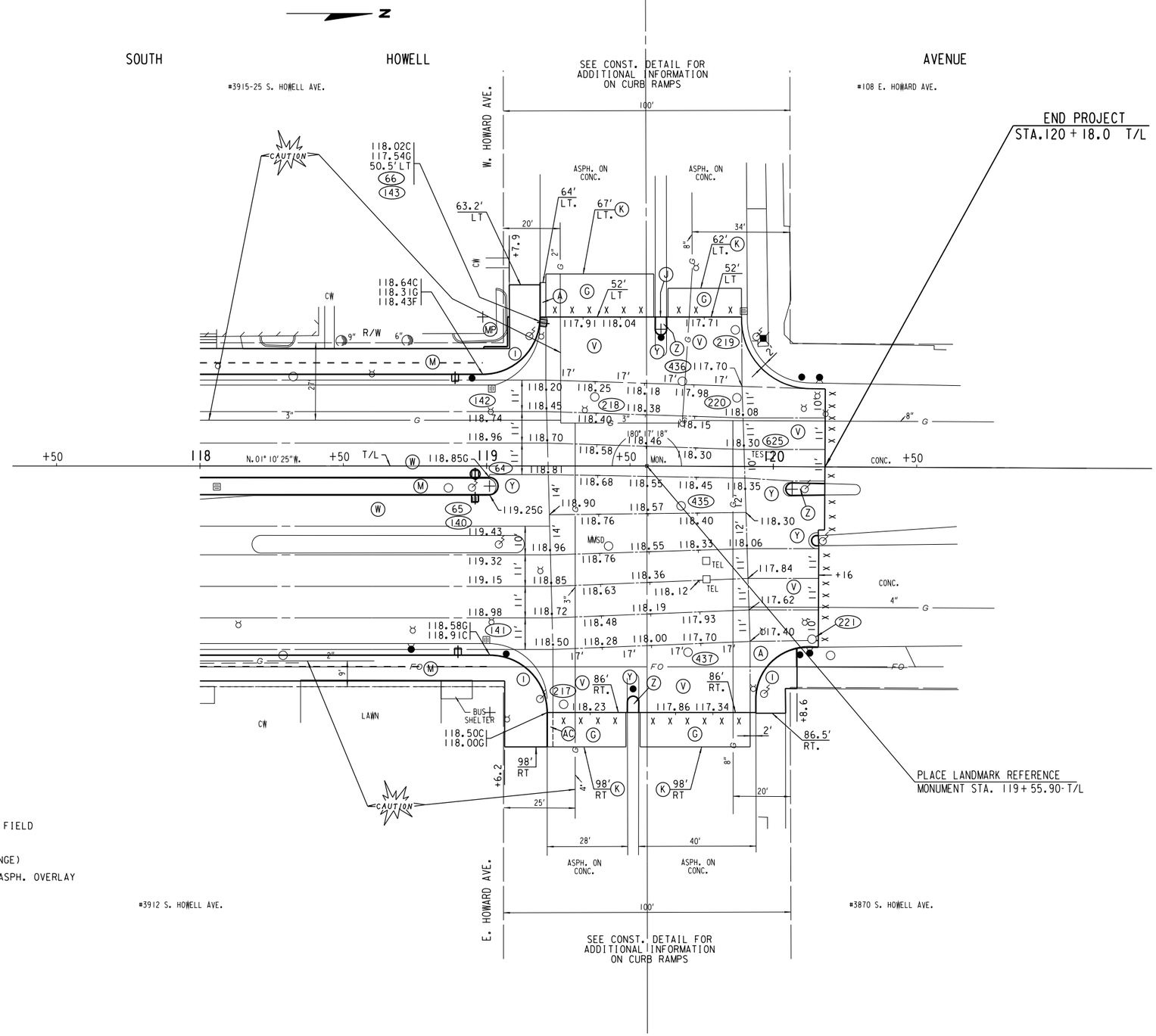


NORTHBOUND S. HOWELL AVE.



STATE PROJECT NUMBER 2060-11-70 - -	HWY: S.T.H. 38	COUNTY: MILWAUKEE	PROFILE	SCALE FEET 0' 40'	SHEET NO: 220	E

FILE NAME: W:\SPR\

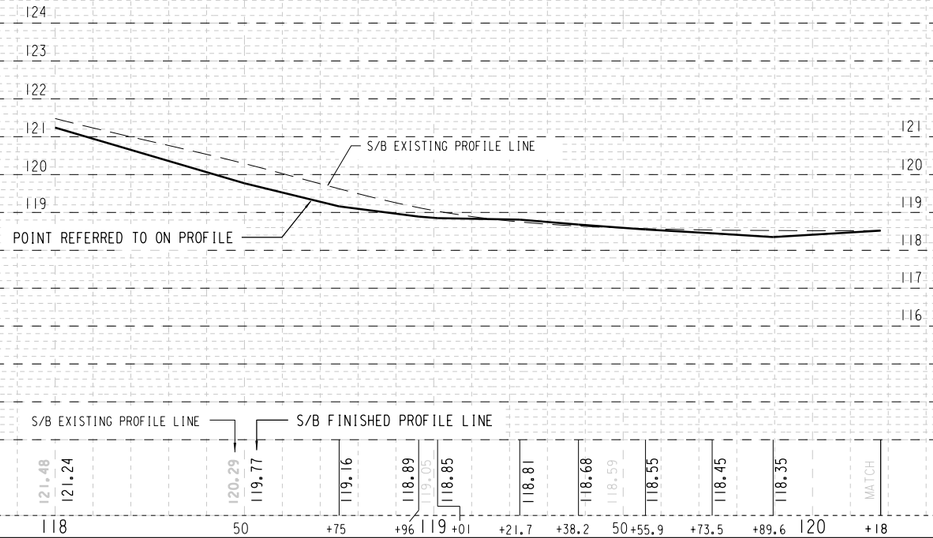


- (I) CONST. CURB RAMP TYPE I WITH DETECTABLE WARNING FIELD
- (A) CONST. CONC. CURB & GUTTER 31-INCH
- (AC) CONST. CONC. CURB & GUTTER 31-INCH (COVERED FLANGE)
- (G) REMOVE ASPHALT PARTIAL DEPTH TO OBTAIN 3" MIN. ASPH. OVERLAY
- (J) SAWING CONCRETE
- (K) SAWING ASPHALT
- (M) CONST. 5" CONC. SIDEWALK
- (MP) CONST. PREDESTRIAN CURB
- (V) CONST. 8-INCH CONC. PAVEMENT
- (W) CONST. 8-INCH CONC. PAVEMENT WITH INTEGRAL CURB
- (Y) CONST. SNOWPLOWABLE MEDIAN ISLAND NOSE
- (Z) CONST. CONC. LOADING ZONE WITH 7-INCH FACE

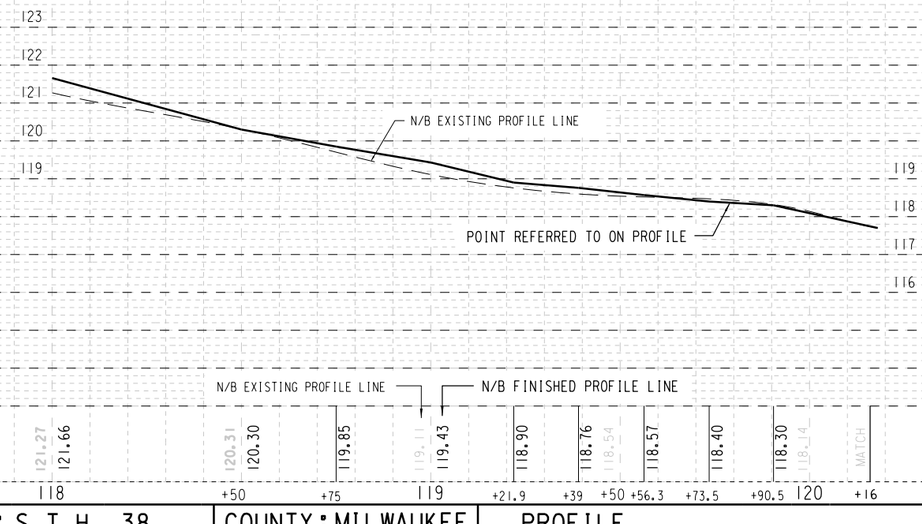
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FILE NAME: W:\SPR\

SOUTHBOUND S. HOWELL AVE.



NORTHBOUND S. HOWELL AVE.

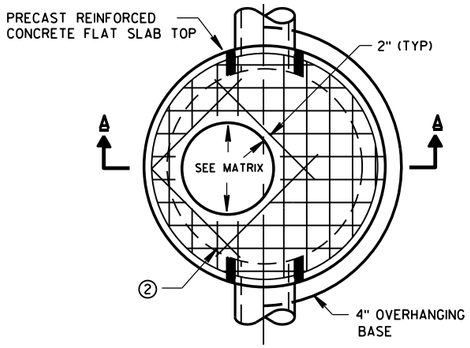


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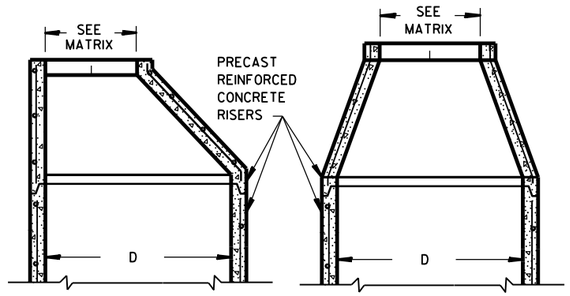
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Standard Detail Drawing List

08B09-01	MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT AND 8-FT DIAMETER
08D05-15A	CURB RAMPS TYPES 1 AND 1-A
08D05-15B	CURB RAMPS TYPES 2 AND 3
08D05-15C	CURB RAMPS TYPES 4A AND 4A1
08D05-15D	CURB RAMPS TYPE 4B AND 4B1
08D05-15E	CURB RAMPS TYPES 5, 6, 7A, 7B & 8
08D16-10	CONCRETE GUTTER, CURB AND GUTTER AND PAVEMENT TIES
09B02-08	CONDUIT UNDER PAVED HIGHWAYS
09C11-05	CONCRETE BASE TYPE 10
09E08-05A	TYPE 9 POLE 15'-30' MONOTUBE ARM
09E08-05E	GENERAL NOTES AND HARDWARE DETAILS FOR TYPE 9, 10, 12 & 13 POLES WITH MONOTUBE ARMS
13C01-17	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES
13C13-08	URBAN DOWELED CONCRETE PAVEMENT
13C15-05A	CONCRETE BASE
13C15-05B	CONCRETE BASE
13C18-02A	CONCRETE PAVEMENT JOINTING
13C18-02B	CONCRETE PAVEMENT STEEL REINFORCEMENT
13C18-02C	CONCRETE PAVEMENT JOINT TIES
13C18-02D	CONCRETE PAVEMENT JOINTING AT UTILITY FIXTURES
14A02-01	TREE PLANTING DETAIL
15C07-12A	PAVEMENT MARKING SYMBOLS
15C07-12B	PAVEMENT MARKING WORDS
15C07-12C	PAVEMENT MARKING ARROWS
15C08-16A	PAVEMENT MARKING (MAINLINE)
15C08-16B	PAVEMENT MARKING (INTERSECTIONS)
15C08-16E	PAVEMENT MARKING (LEFT TURN LANE)
15C18-03	MEDIAN ISLAND MARKING
15C29-03C	URBAN BICYCLE LANE MARKING
15C29-03D	URBAN BICYCLE LANE MARKING
15C29-03E	PAVEMENT MARKING FOR BIKE LANES
15C33-01	STOP LINE AND CROSSWALK PAVEMENT MARKING
15D30-01	TRAFFIC CONTROL, SIDEWALK CLOSURE
16A01-06	LANDMARK REFERENCE MONUMENTS AND COVERS

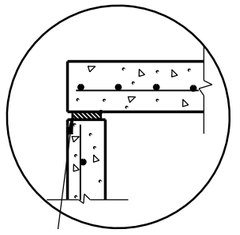


PLAN VIEW CIRCULAR OPENING

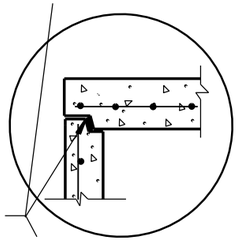


OPTIONAL PRECAST REINFORCED CONCRETE ECCENTRIC TOP

OPTIONAL PRECAST REINFORCED CONCRETE CONCENTRIC TOP

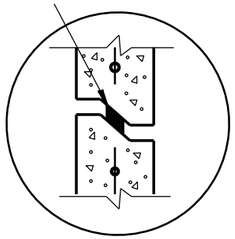


TOP WITH PLAIN END JOINT



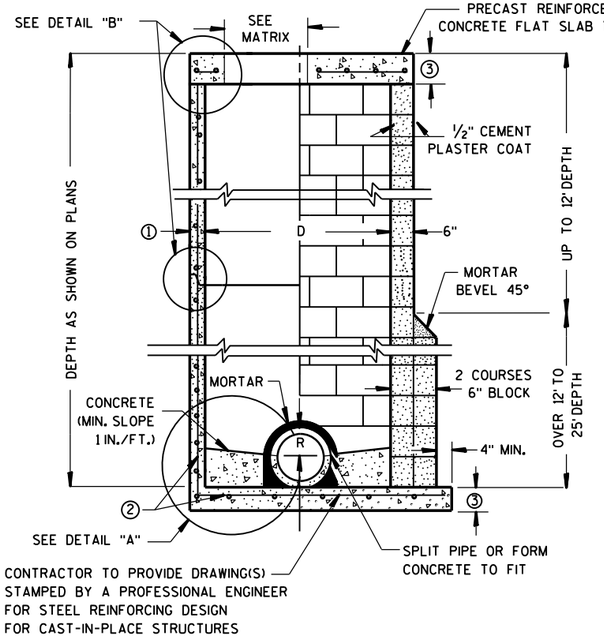
JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C990 (TYP)

TOP WITH TONGUE AND GROOVE JOINT



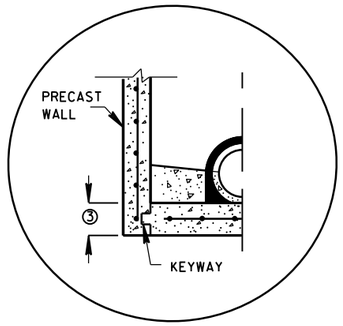
RISER WITH TONGUE AND GROOVE JOINT

DETAIL "B"

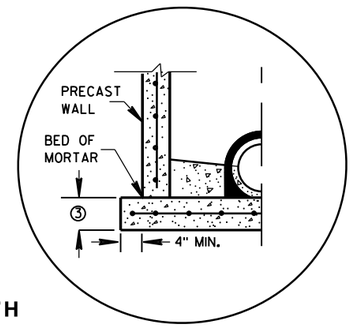


PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE

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

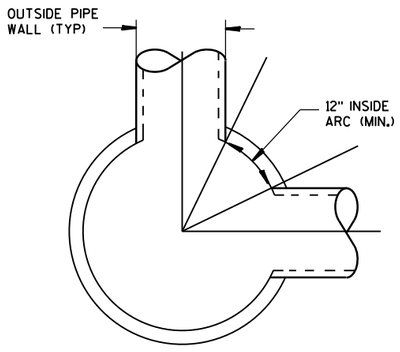


PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE OPTION



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

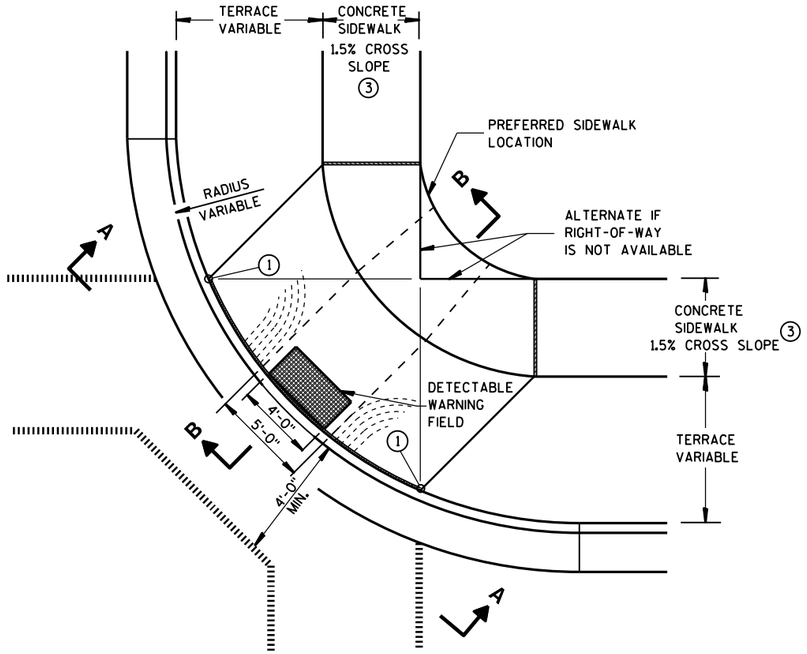
MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT AND 8-FT DIAMETER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/5/2012
DATE
FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER

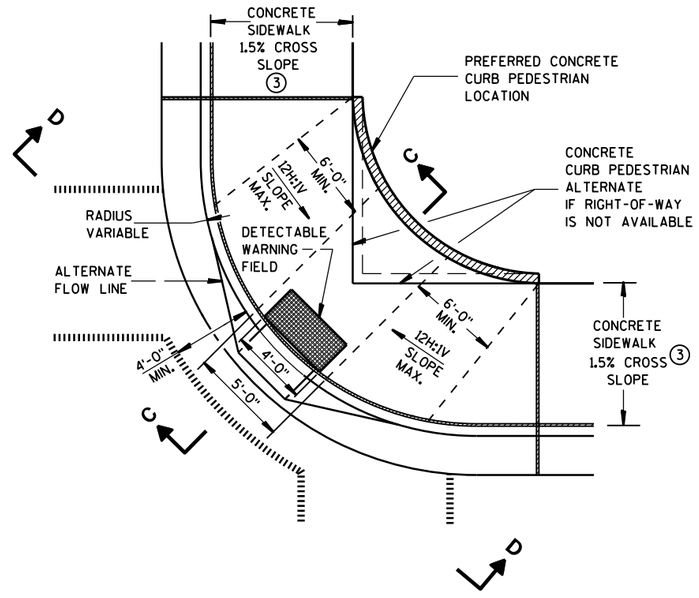
6
S.D.D. 8 B 9-1



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.

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

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

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

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

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

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

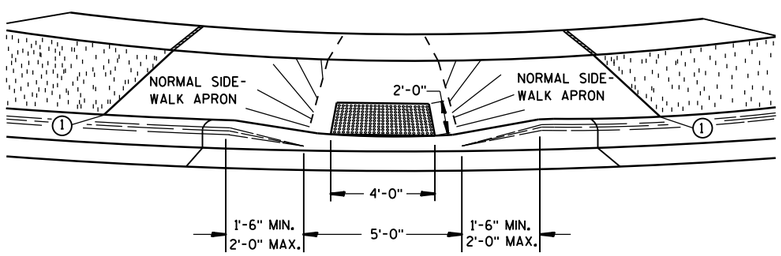
① THIS POINT IS AN EXTENSION OF OUTSIDE EDGE OF APPROACHING SIDEWALK WHERE IT MEETS THE BACK OF CONCRETE CURB.

② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. PROVIDE DRAINAGE AWAY FROM CURB RAMP AT GUTTER FLAG INTERFACE.

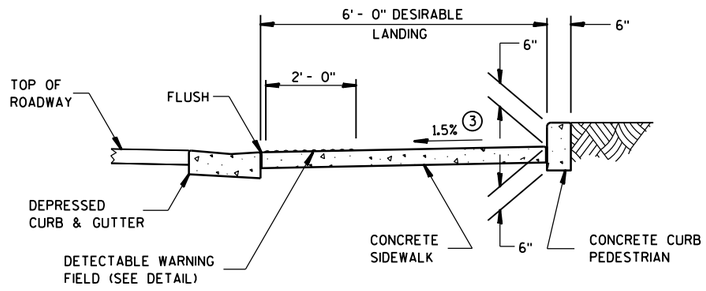
③ ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

LEGEND

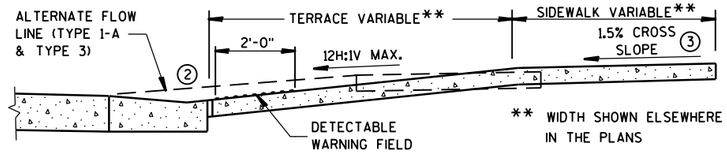
- ½" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)
- ALTERNATIVE LAYOUT



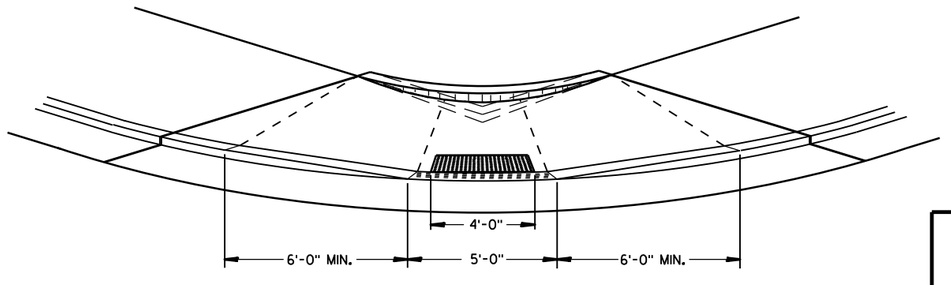
VIEW A-A



SECTION C-C



SECTION B-B



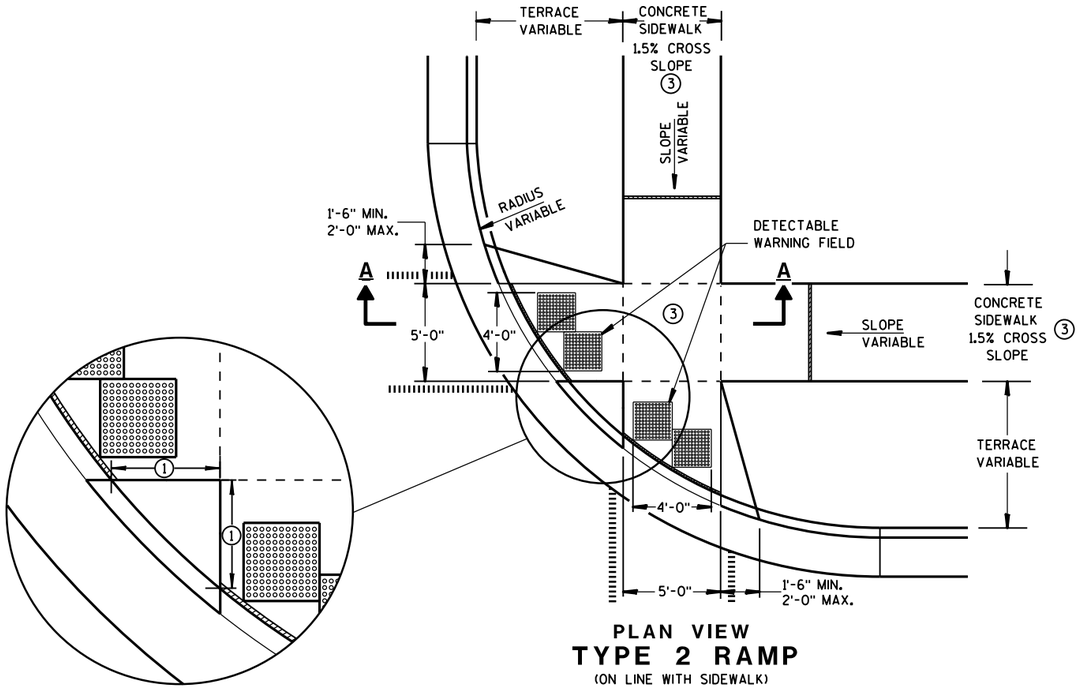
VIEW D-D

CURB RAMPS TYPES 1 AND 1-A

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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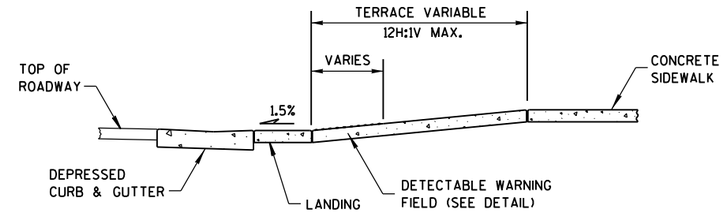
S.D.D. 8 D 5-15a



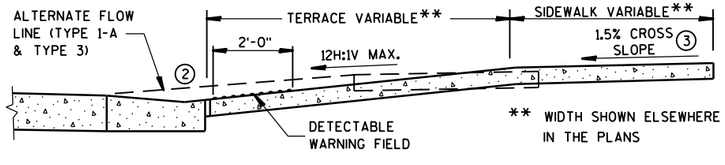
PLAN VIEW

TYPE 2 RAMP

(ON LINE WITH SIDEWALK)



SECTION A-A



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.

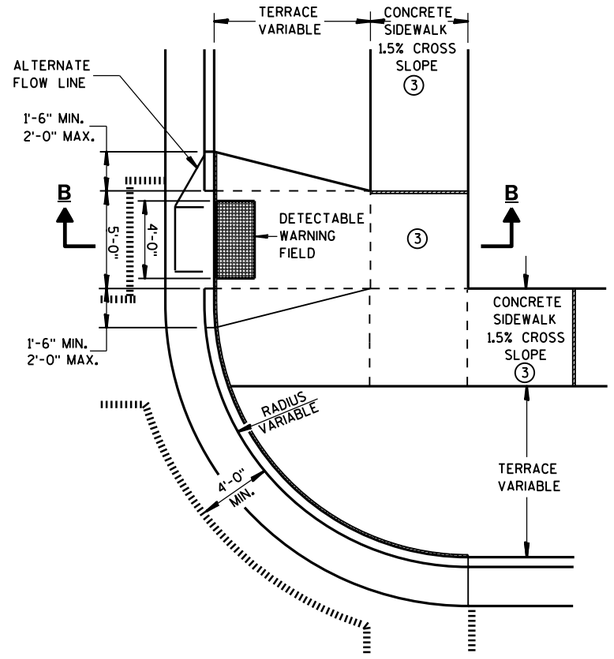
① WHEN THIS DISTANCE IS LESS THAN 6'-0" IT MAY BE DIFFICULT TO ACHIEVE A 12H:1V SLOPE, OR FLATTER, ON THE RAMP. REDUCE CURB HEIGHT IN TRIANGLE AREA TO ACHIEVE 12H:1V SLOPE, OR FLATTER, ON RAMP. 2" MINIMUM CURB HEIGHT.

② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. PROVIDE DRAINAGE AWAY FROM CURB RAMP AT GUTTER FLAG INTERFACE.

③ ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

LEGEND

- ½" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)
- ALTERNATIVE LAYOUT



PLAN VIEW

TYPE 3 RAMP

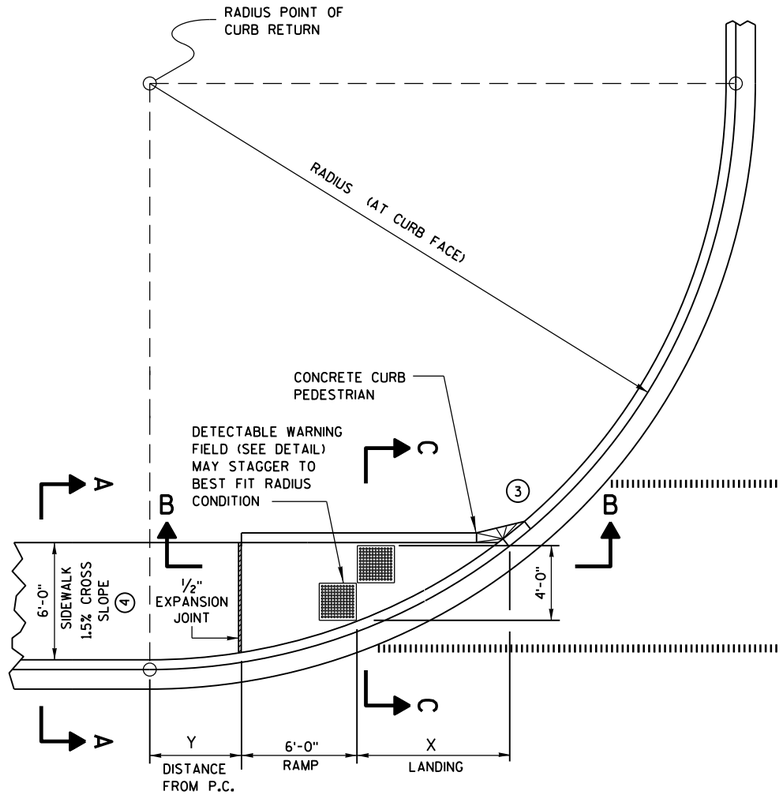
(OUTSIDE OF CROSSWALK AREA)

CURB RAMPS TYPES 2 AND 3

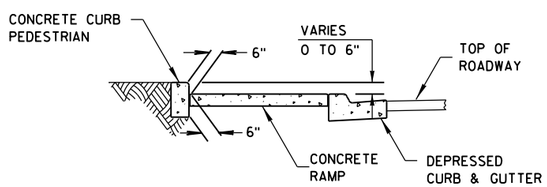
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

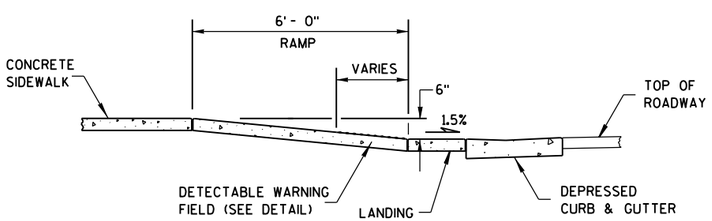
S.D.D. 8 D 5-15b



CURB RAMP TYPE 4A
PLAN VIEW



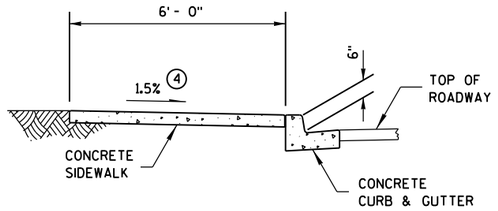
SECTION C-C FOR TYPE 4A



SECTION B-B FOR TYPE 4A

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

GENERAL NOTES

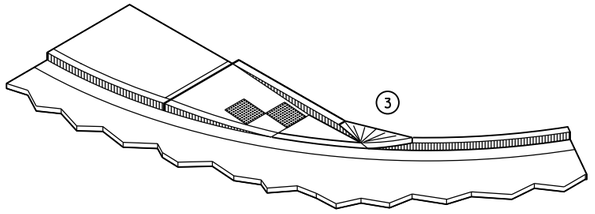
AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

RAMP SLOPES SHALL NOT BE STEEPER THAN 12:1.

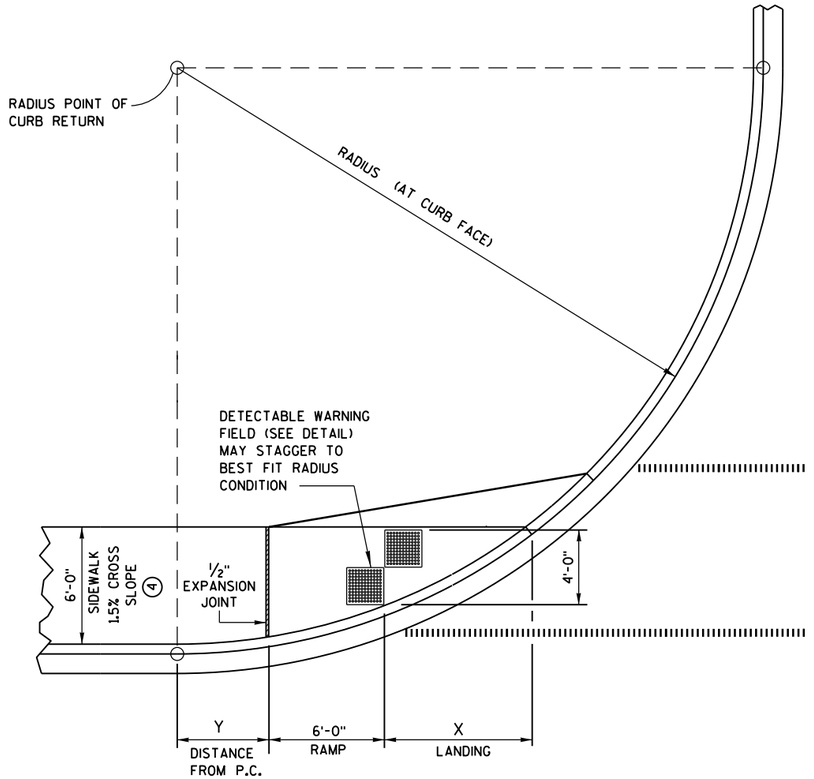
DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

(3) INSTALL TRANSITION NOSE. (INCIDENTAL TO OTHER PAY ITEMS.) DO NOT MARK TRANSITION NOSE.

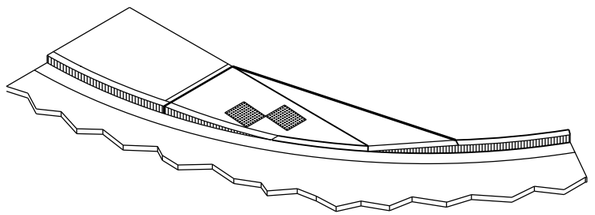
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.



ISOMETRIC VIEW FOR TYPE 4A



CURB RAMP TYPE 4A1
PLAN VIEW



ISOMETRIC VIEW FOR TYPE 4A1

LEGEND

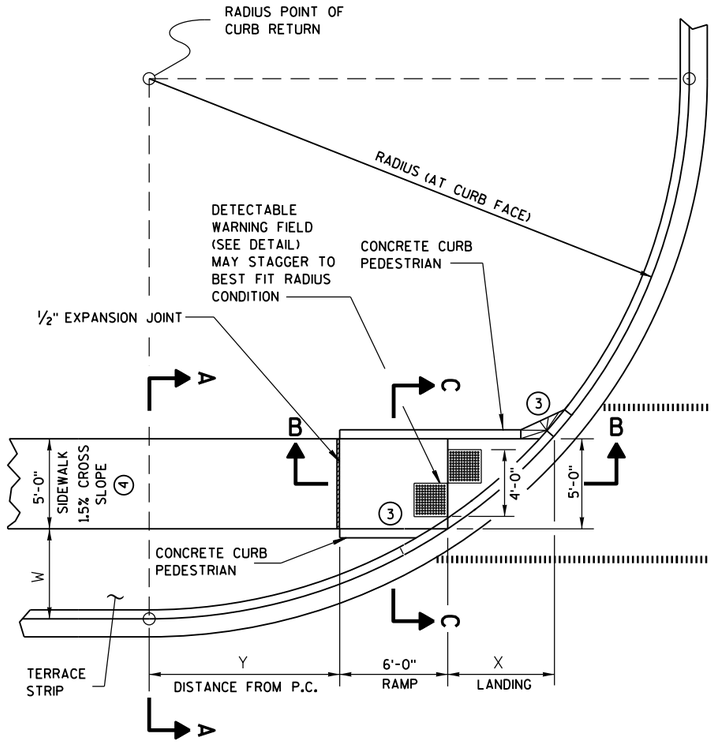
- ½" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)

CURB RAMPS
TYPES 4A AND 4A1

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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S.D.D. 8 D 5-15c



CURB RAMP TYPE 4B
PLAN VIEW

LEGEND

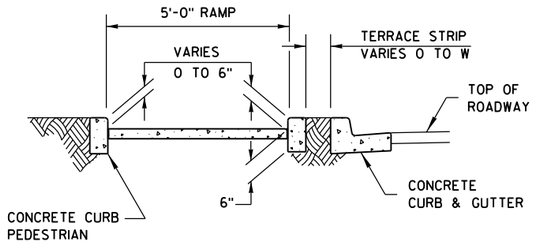
½" EXPANSION JOINT-SIDEWALK

CONTRACTION JOINT FIELD LOCATED

PAVEMENT MARKING CROSSWALK (WHITE)

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



SECTION C-C FOR TYPE 4B

GENERAL NOTES

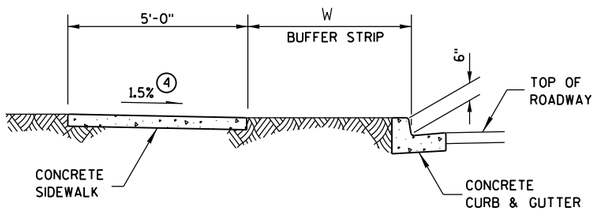
AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

RAMP SLOPES SHALL NOT BE STEEPER THAN 12:1.

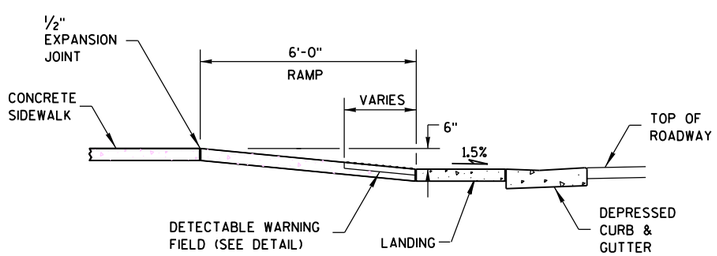
DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

(3) INSTALL TRANSITION NOSE. (INCIDENTAL TO OTHER PAY ITEMS.) DO NOT MARK TRANSITION NOSE.

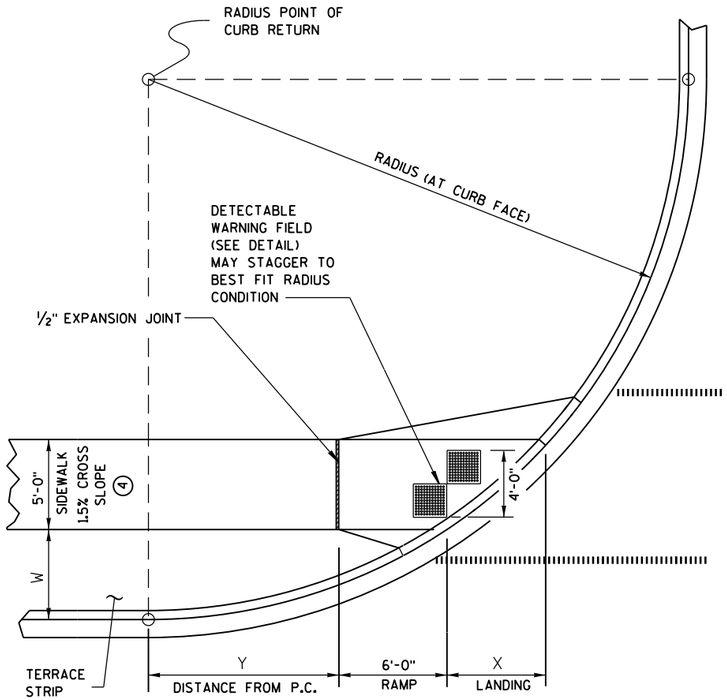
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.



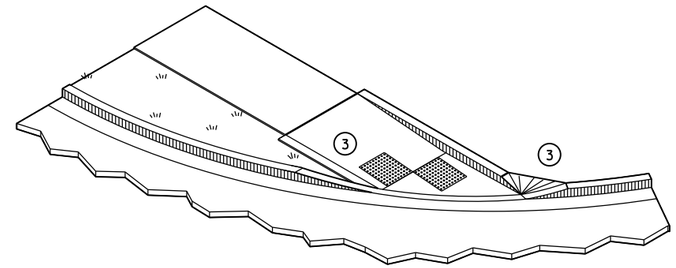
SECTION A-A FOR TYPE 4B



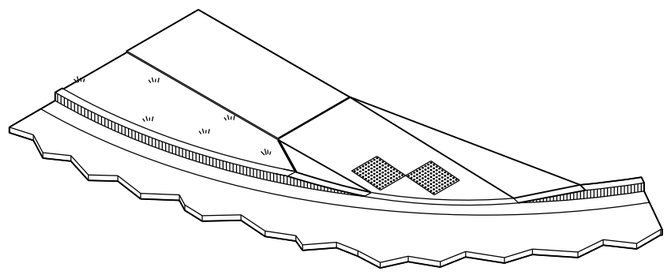
SECTION B-B FOR TYPE 4B



CURB RAMP TYPE 4B1
PLAN VIEW



ISOMETRIC VIEW FOR TYPE 4B



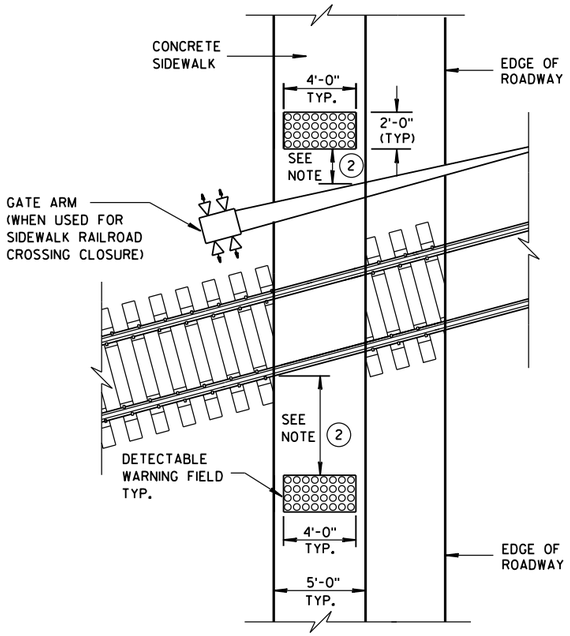
ISOMETRIC VIEW FOR TYPE 4B1

CURB RAMPS
TYPE 4B AND 4B1

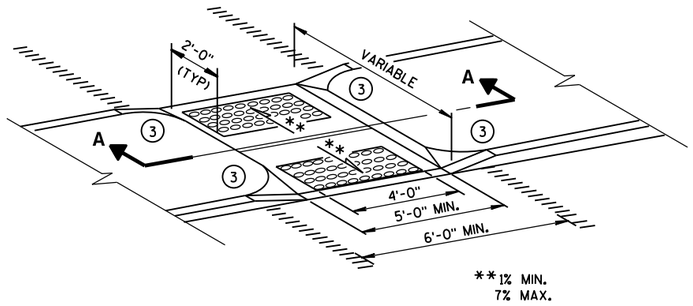
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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S.D.D. 8 D 5-15d



TYPE 8
DETECTABLE WARNINGS AT RAILROAD CROSSING



MEDIAN ISLAND
NON-ELEVATED CROSSING
TYPE 5

GENERAL NOTES

SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.

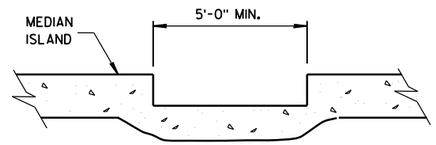
DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

(1) SLOPE SIDEWALK TOWARD LANDING AS SHOWN WHERE THERE IS NO TERRACE OR WHERE THE TERRACE WIDTH IS LESS THAN 6 FEET WIDE.

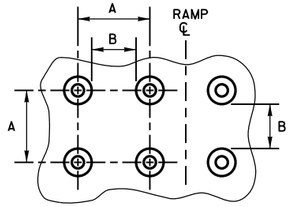
(2) THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO A RAILROAD CROSSING SHALL BE 1.5 FEET ± 0.1' FROM THE FACE OF THE GATE ARM IF THE GATE ARM EXTENDS ACROSS THE SIDEWALK. WHERE THERE IS NO PEDESTRIAN GATE, THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO THE RAILROAD CROSSING SHALL BE 15 FEET FROM THE NEAREST RAIL.

(3) INSTALL TRANSITION NOSE. (INCIDENTAL TO OTHER PAY ITEMS.) DO NOT MARK TRANSITION NOSE.

(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.



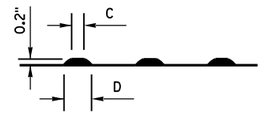
SECTION A-A



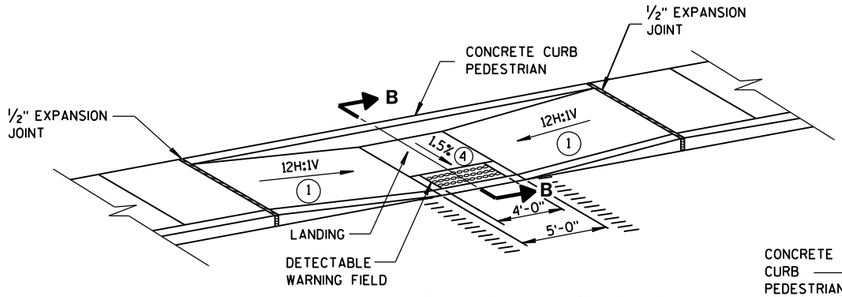
PLAN VIEW

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

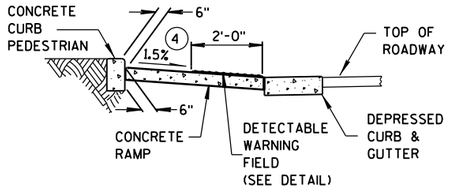
* THE C DIMENSION IS 50% TO 65% OF THE D DIMENSION.



ELEVATION VIEW

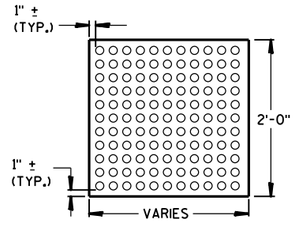


MID-BLOCK CROSSING
TYPE 7A



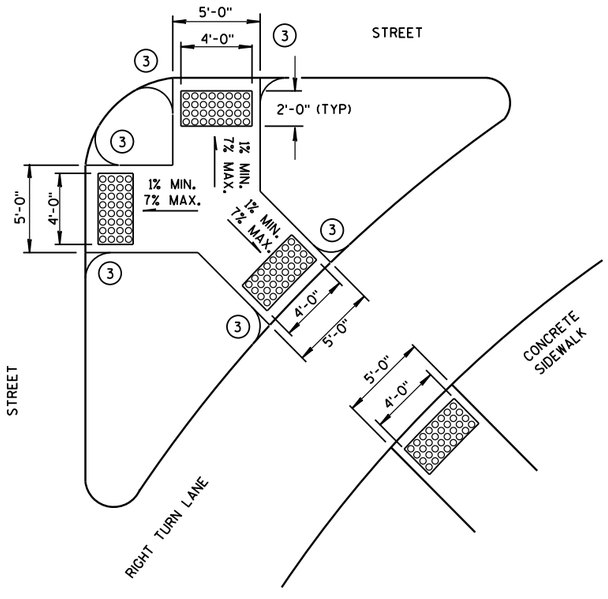
SECTION B-B

TRUNCATED DOMES
DETECTABLE WARNING PATTERN DETAIL

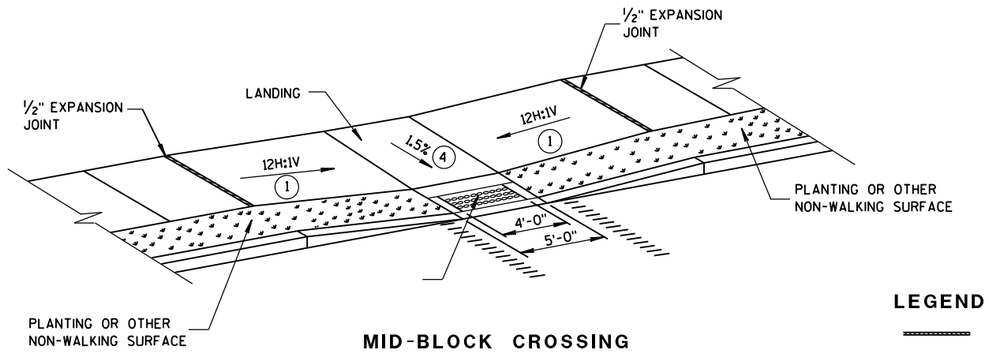


PLAN VIEW

DETECTABLE WARNING FIELD (TYPICAL)



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

- ½" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)

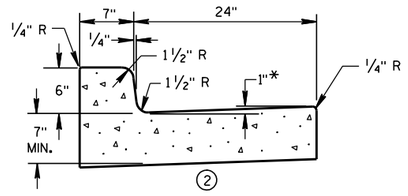
CURB RAMPS
TYPES 5, 6, 7A, 7B & 8

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

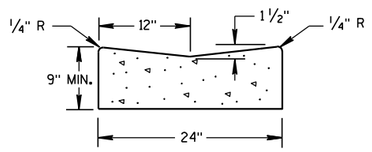
APPROVED
2-6-2013 DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

6

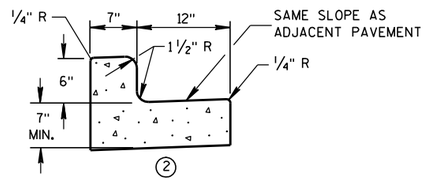
S.D.D. 8 D 5-15e



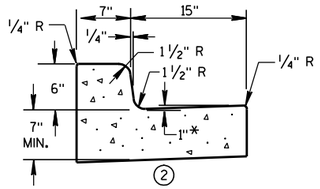
① CONCRETE CURB & GUTTER 31"



① CONCRETE GUTTER 24"

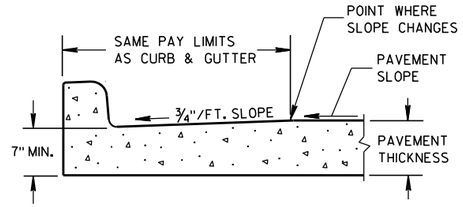


① CONCRETE CURB & GUTTER 19"



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.

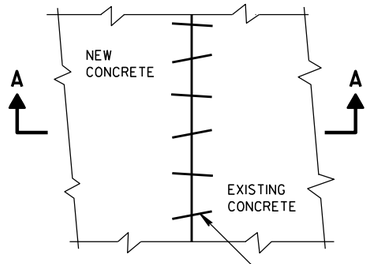
WHERE THE TRANSVERSE JOINTS IN THE PAVEMENT ARE REQUIRED TO BE SEALED, THE JOINTS IN THE INTEGRAL CURB AND GUTTER SHALL BE SEALED TO THE FACE OF CURB WITH THE SAME TYPE OF SEALANT. THE COST OF FURNISHING AND INSTALLING THIS SEALANT SHALL BE INCIDENTAL TO THE ITEM CONCRETE CURB AND GUTTER.

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.

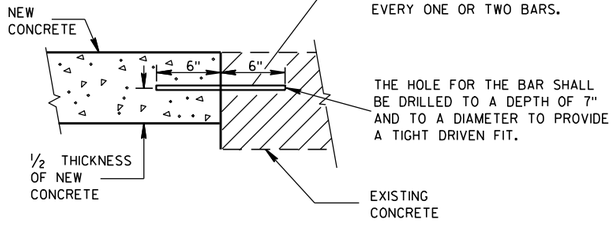
③ WHEN HIGH SIDE CURB SECTION IS REQUIRED, THE LOCATION(S) WILL BE NOTED ON THE PLAN.



PLAN VIEW

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

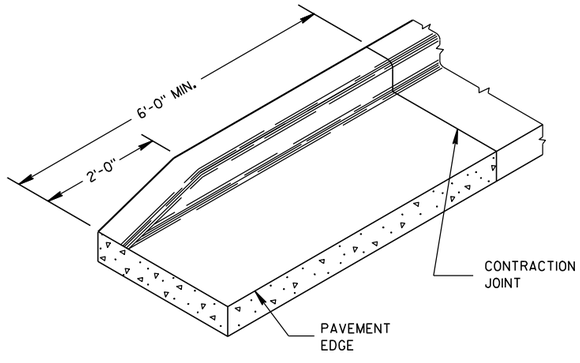
NO. 6 X 12" DEF. BARS SPACED 3'-0" C-C, INSTALLED ON 6:1 SKEW HORIZONTALLY. DIRECTION OF SKEW ALTERNATING AFTER EVERY ONE OR TWO BARS.



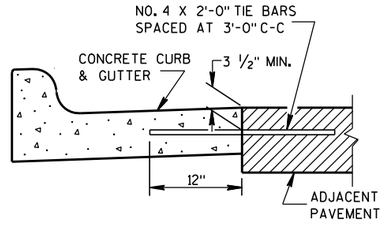
THE HOLE FOR THE BAR SHALL BE DRILLED TO A DEPTH OF 7" AND TO A DIAMETER TO PROVIDE A TIGHT DRIVEN FIT.

SECTION A-A

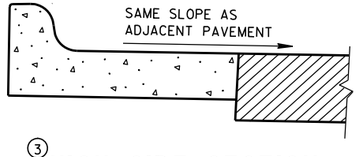
PAVEMENT TIES



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

230 — ENT

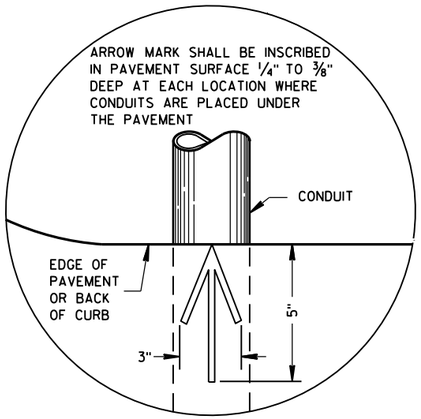
FHWA

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S.D.D. 8 D 16-10

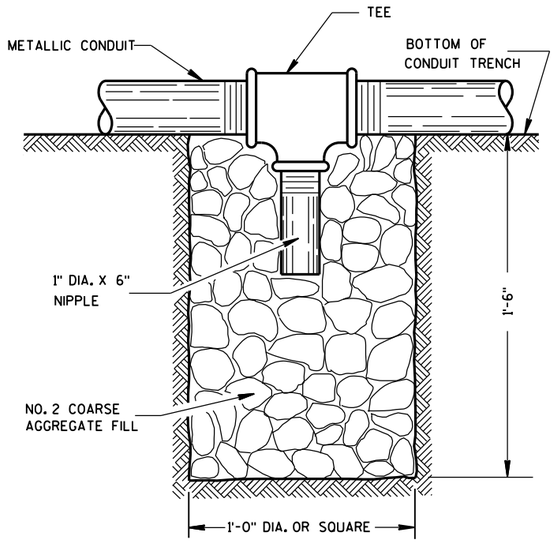
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S.D.D. 8 D 16-10



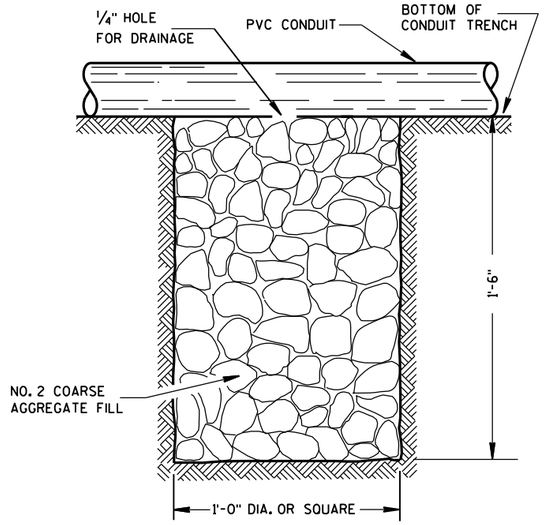
PLAN VIEW

ARROW MARK



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

DRAIN SUMP FOR METALLIC CONDUIT



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

DRAIN SUMP FOR PVC CONDUIT

GENERAL NOTES

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

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

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

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

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

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

ALL METALLIC CONDUIT RACEWAY ENDS SHALL BE REAMED AND THREADED.

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

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

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

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

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

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

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

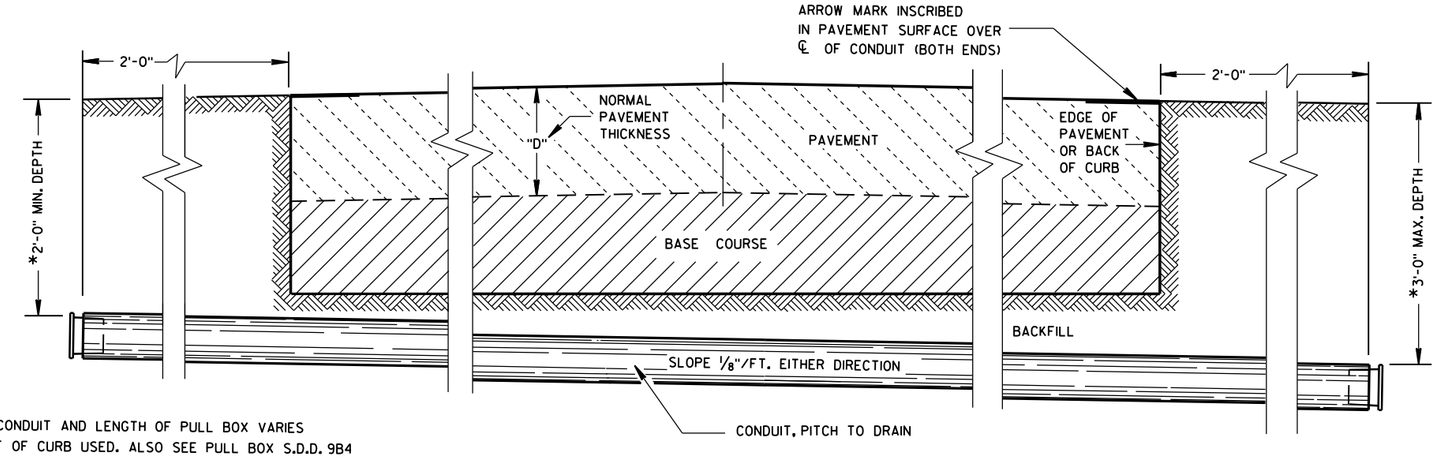
PRIOR TO CONDUIT ACCEPTANCE, CONDUIT CAPS OR PLUGS SHALL BE REMOVED, AND THE CAPS, PLUGS AND CONDUIT ENDS SHALL BE THOROUGHLY CLEANED AND THEN THE CAPS OR PLUGS REINSTALLED TO ENSURE THAT THE CAPS OR PLUGS CAN BE EASILY REMOVED IN THE FUTURE.

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

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

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

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



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

SIDE ELEVATION

DETAIL FOR CONDUIT UNDER PAVED HIGHWAYS

CONDUIT UNDER PAVED HIGHWAYS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

Sept. 2014 (DATE) — /S/ Ahmet Demirbilek (STATE ELECTRICAL)

FHWA

6

S.D.D. 9 B 2-8

6

S.D.D. 9 B 2-8

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).

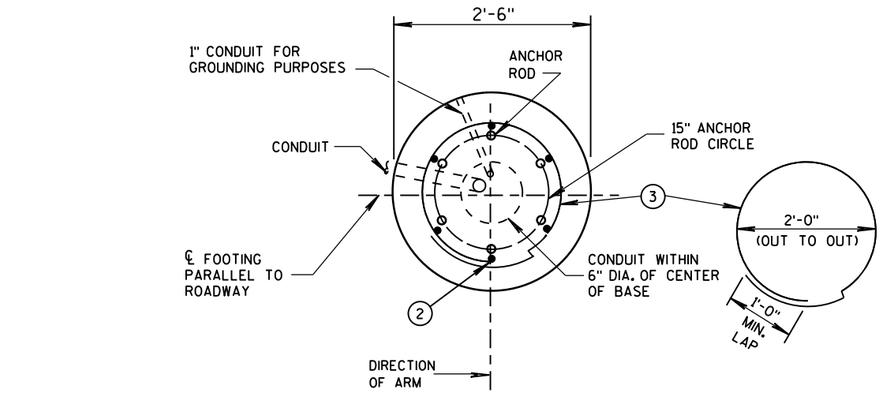
ANCHOR RODS SHALL BE INSTALLED WITH MISALIGNMENTS OF LESS THAN 1:40 FROM VERTICAL.

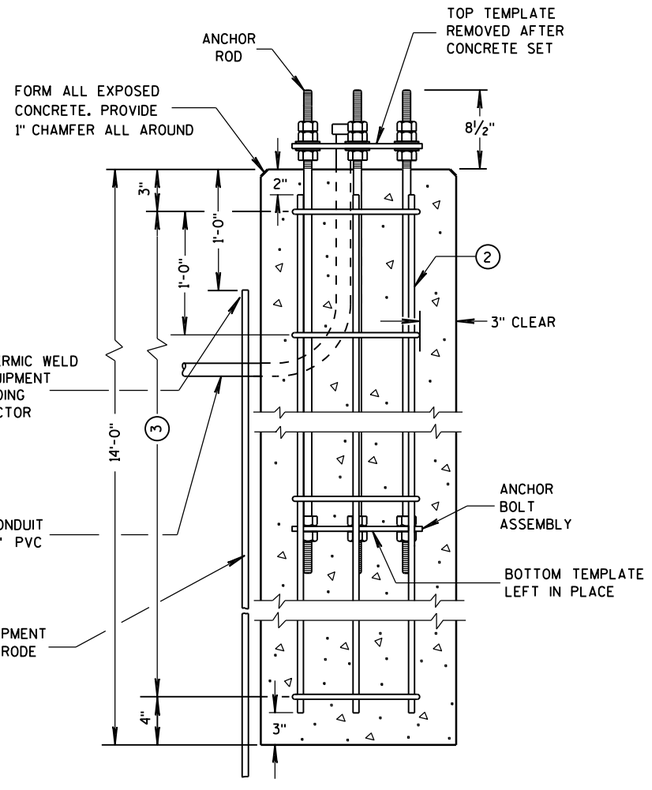
(1) THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE AND INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES. THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE THAT IS NOT INSTALLED BELOW THE TRAVELED WAY SHALL BE 18 INCHES. THE MAXIMUM DEPTH OF ALL CONDUIT SHALL BE 36 INCHES, (GREATER THAN 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" C-C.

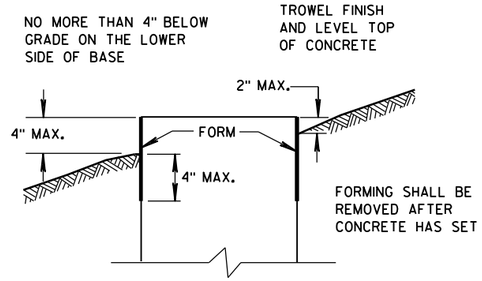
CONCRETE MASONRY	fc=3,500 p.s.i.
HIGH STRENGTH BAR STEEL REINFORCEMENT, GRADE 60	fy=60,000 p.s.i.
ANCHOR RODS, AASHTO M314 GRADE 55	fy=55,000 p.s.i.
TEMPLATES, ASTM, A709 GRADE 36	fy=36,000 p.s.i.



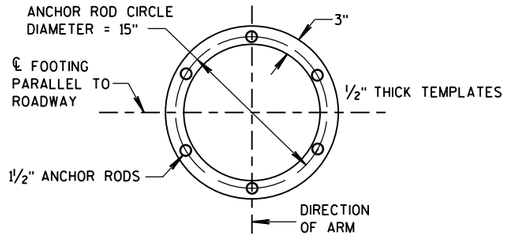


CONCRETE BASE TYPE 10
(FOR TYPE 9 & 10 POLES)

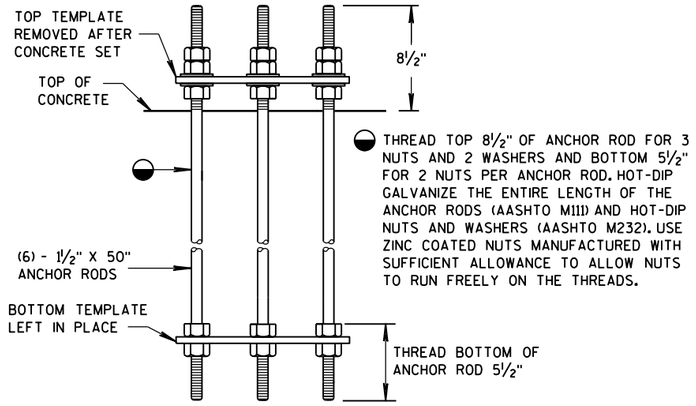
TO BE USED WHEN GROUND ELEVATION AT BASE EQUALS OR IS GREATER THAN HIGH POINT OF ROADWAY ELEVATION. SEE S.D.D. 9C13-2 WHEN GROUND ELEVATION AT BASE IS LOWER THAN HIGH POINT OF ROADWAY ELEVATION.



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

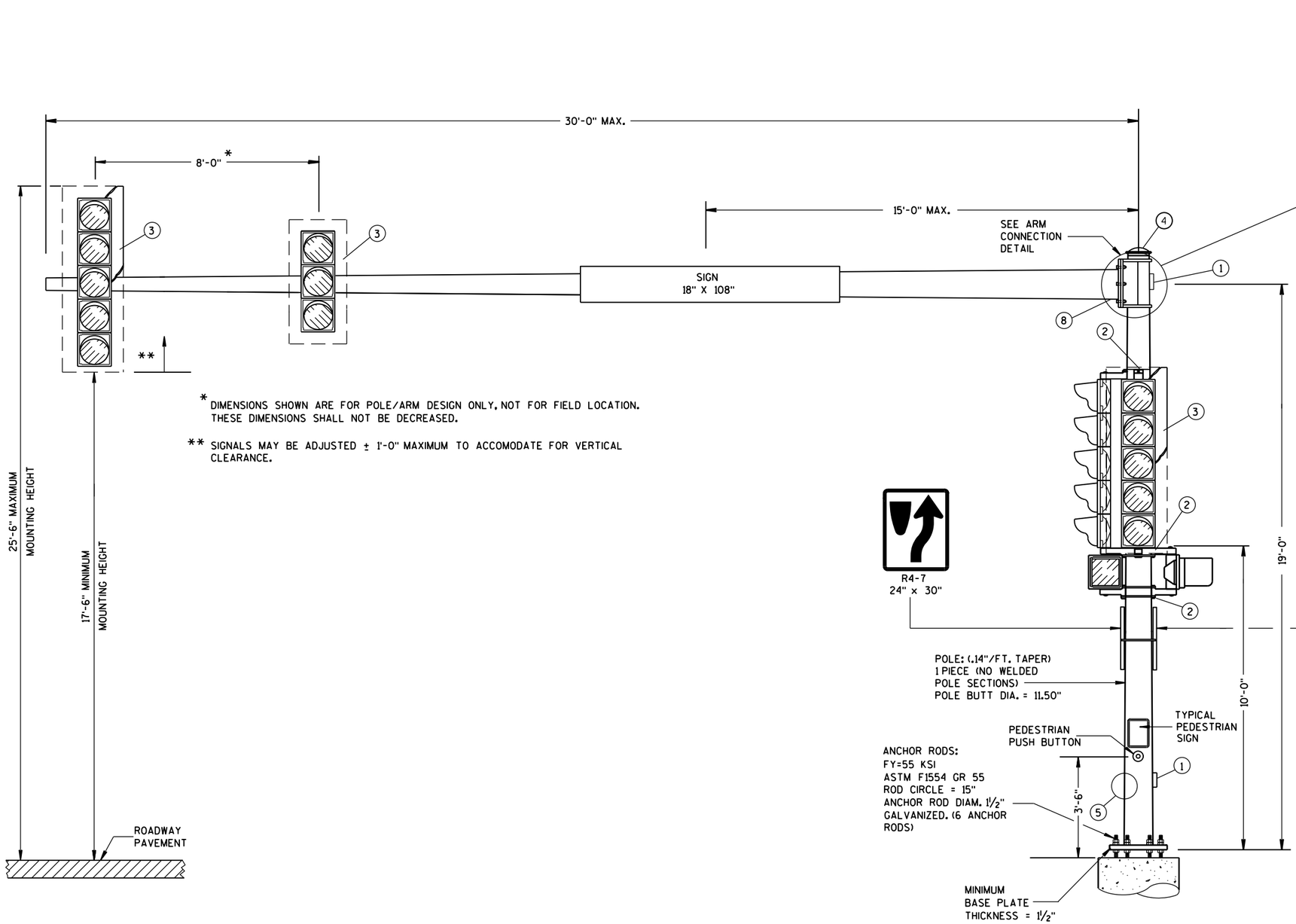
CONCRETE BASE TYPE 10

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

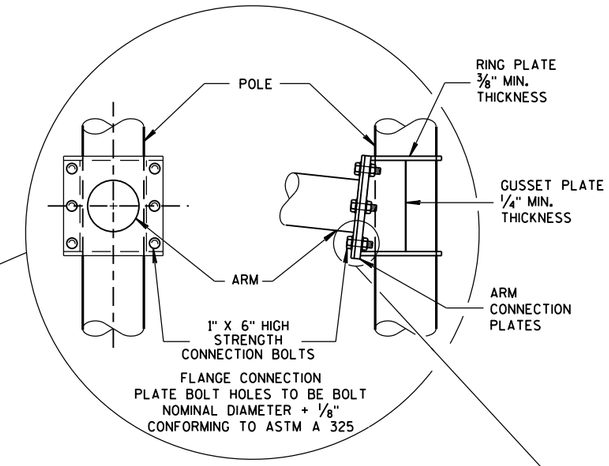
6

S.D.D. 9 C 11-5

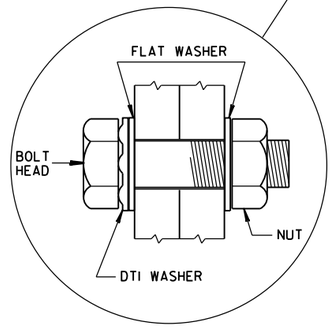


* DIMENSIONS SHOWN ARE FOR POLE/ARM DESIGN ONLY, NOT FOR FIELD LOCATION. THESE DIMENSIONS SHALL NOT BE DECREASED.

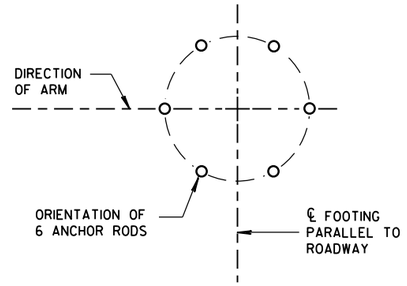
** SIGNALS MAY BE ADJUSTED ± 1'-0" MAXIMUM TO ACCOMODATE FOR VERTICAL CLEARANCE.



6 BOLT ARM CONNECTION DETAIL



RECOMMENDED BOLT ASSEMBLY DETAIL



ANCHOR ROD LOCATION

(MAXIMUM LOAD)

TYPE 9 POLE 15'- 30' MONOTUBE ARM

TYPE 9 POLE 15' - 30' MONOTUBE ARM

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June 2014
DATE

/S/ Ahmet Demirbilek
STATE ELECTRICAL

FHWA

6

S.D.D. 9 E 8-5a

GENERAL NOTES

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

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

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

MONOTUBE POLE AND ARM SHALL BE GALVANIZED STEEL.

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

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

STANDARD STRAIGHT ARM DESIGN (3 % ± RISE).

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

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

MANUFACTURER'S SUBMITTED POLE DESIGNS AND DRAWINGS SHALL BE SIGNED AND STAMPED BY A REGISTERED PROFESSIONAL ENGINEER AND CERTIFIED AS BEING IN COMPLIANCE WITH THE AASHTO 2013 6TH EDITION AND ALL PERTINENT WISDOT SPECIFICATIONS AND DRAWINGS FOR TRAFFIC AND LIGHTING STRUCTURES AND AS FOLLOWS:

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

SECURE THE OPENING BELOW THE BASE PLATE WITH STAINLESS STEEL OR GALVANIZED STEEL MESH AND SECURE THE MESH WITH ¾" S.S. BANDING AROUND THE LEVELING NUTS.

INDENT PRINT (NOMINAL ½" HIGH) THE POLE LENGTH AND FIRST TWO LETTERS OF THE MANUFACTURERS NAME ON TWO SIDES OF THE BASE PLATE 180 DEGREES APART, BEFORE GALVANIZING. THE ARM SHALL BE IDENTIFIED WITH THE SAME INFORMATION BY INDENT PRINT.

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

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

(1) DESIGN FOR MAXIMUM ALLOWABLE HANDHOLE WITH COVER ASSEMBLY WITH TWO ¼" X ¾" - 20 TPI STAINLESS STEEL HEX HEAD BOLTS.

(2) SIGNAL MOUNTING BRACKETS FOR POLE MOUNTING, MOUNT WITH CAP SCREW AND BANDING, (SEE SPECIFICATIONS SEC. 658).

(3) SECURELY MOUNT BACKPLATES, PROJECTING 5" BEYOND ALL SIDES OF THE SIGNAL FACE HOUSING, PER MANUFACTURERS RECOMMENDATIONS.

(4) THE TOP OF THE POLE SHAFT AND THE END OF THE MONOTUBE ARM SHALL BE EQUIPPED WITH A REMOVABLE, VENTILATED CAP HELD SECURELY IN PLACE WITH SET SCREWS.

(5) FACTORY-WELDED BRACKET FOR GROUNDING LUG, OPPOSITE HANDHOLE, (LUG AND HARDWARE PAID UNDER SEPARATE ITEM). PROVIDE HOLE IN BRACKET FOR ¼" X ¾" - 20 TPI STAINLESS STEEL HEX HEAD BOLT.

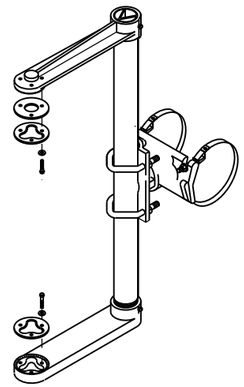
(6) FACTORY-WELDED "J" HOOK FOR STRAIN RELIEF FOR POLE LUMINAIRE WIRE.

(7) INSTALL DEPARTMENT PROVIDED STRUCTURAL IDENTIFICATION PLAQUES.

STRUCTURAL IDENTIFICATION PLAQUES SHALL BE PLACED ON THE POLES IN THE SAME DIRECTION AS THE ARM.

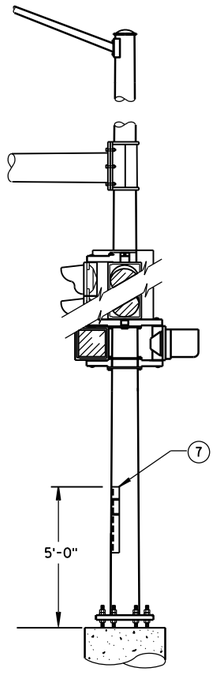
MOUNTING HEIGHT SHALL BE 5'-0" ABOVE THE CURB OR SHOULDER . ADJUST IF IT IS KNOWN THAT REQUIRED TRAFFIC SIGNS WILL BE OBSTRUCTED.

(8) FACTORY DRILLED ½" DRAIN HOLE 2" FROM FLANGE CONNECTION PLATE.

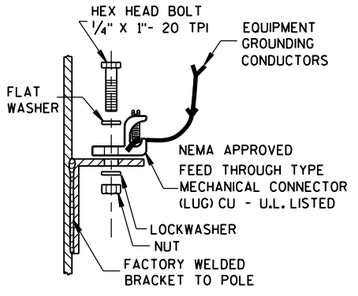


SIGNAL FACE MOUNTING BRACKET DETAIL FOR MONOTUBE ARM

(MOUNT PER MANUFACTURER'S RECOMMENDATION)

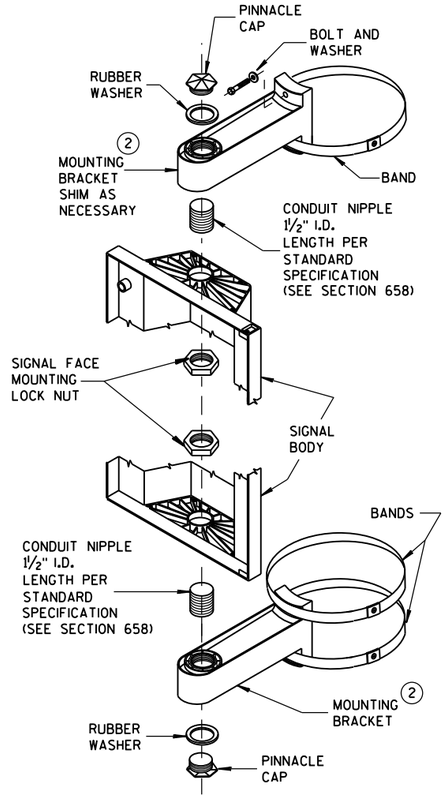


STRUCTURAL IDENTIFICATION PLAQUE PLACEMENT

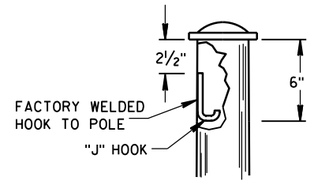


TYPICAL GROUNDING CONNECTIONS (5)

NUT, BOLT AND WASHERS SHALL BE STAINLESS STEEL



SIGNAL FACE VERTICAL MOUNTING DETAIL



"J" HOOK WIRE SUPPORT (6)

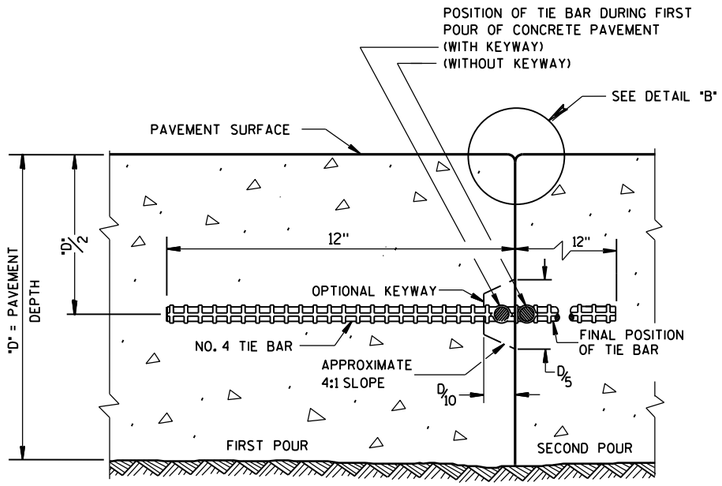
GENERAL NOTES AND HARDWARE DETAILS FOR TYPE 9, 10, 12 & 13 POLES WITH MONOTUBE ARMS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

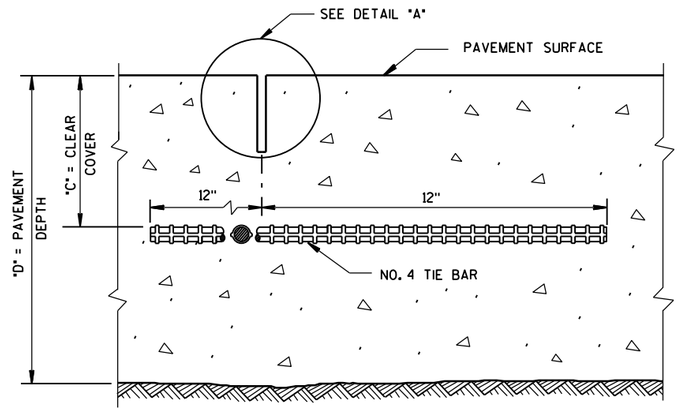
APPROVED
June 2014 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL
FHWA

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S.D.D. 9 E 8-5e



CONSTRUCTION JOINT



SAWED JOINT

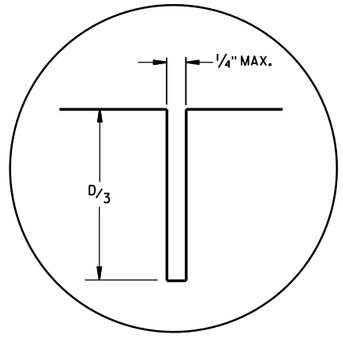
GENERAL NOTES

DO NOT SEAL OR FILL LONGITUDINAL JOINTS.

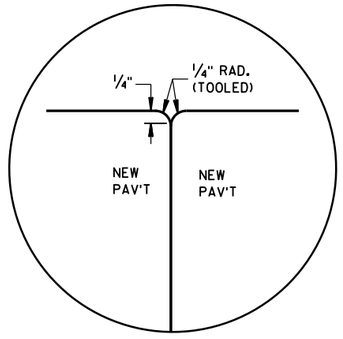
CREATE A LONGITUDINAL JOINT FOR PAVEMENT WIDTHS GREATER THAN 15 FEET.

CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

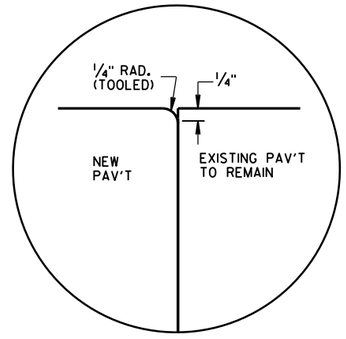
(1) ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.



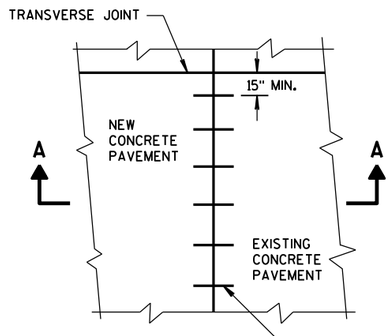
DETAIL "A"



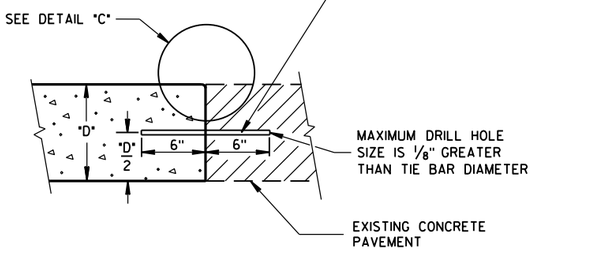
DETAIL "B"



DETAIL "C"



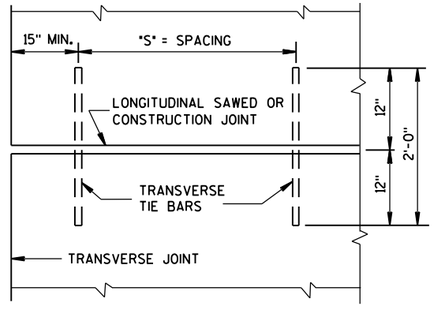
PLAN VIEW



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

TIE BAR TABLE

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



PLAN VIEW
SHOWING LOCATION OF TIE BARS

CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

9/2014 DATE

/S/ Deb Bischoff
PAVEMENT POLICY & DE ...NEER

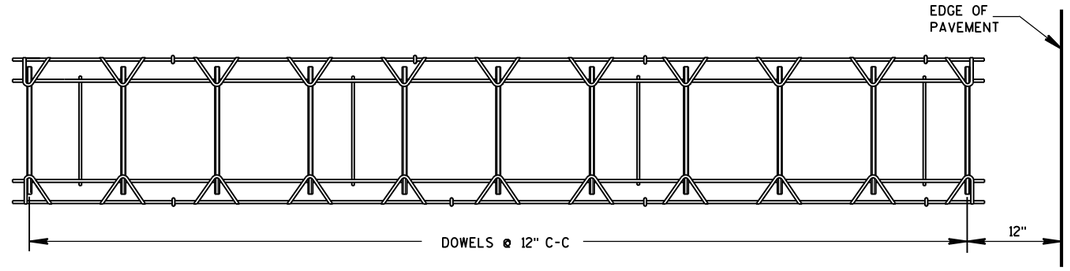
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S.D.D. 13 C 1-17

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S.D.D. 13 C 1-17

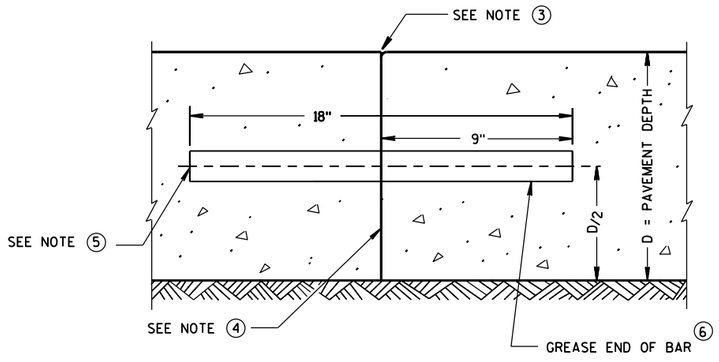


PLAN VIEW

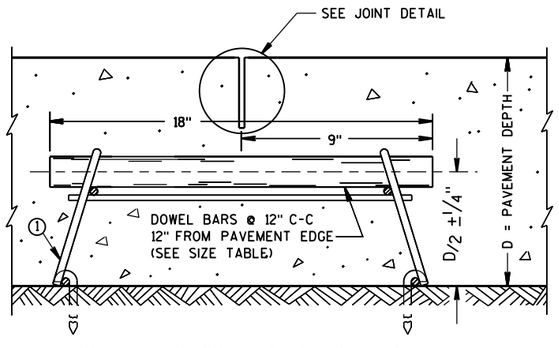


SIDE VIEW

CONTRACTION JOINT DOWEL ASSEMBLY ①



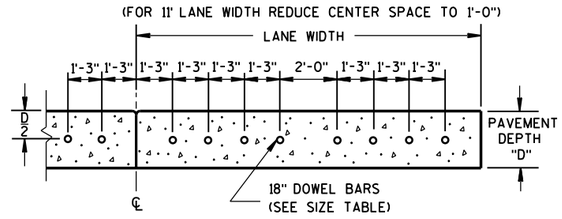
TRANSVERSE CONSTRUCTION JOINT



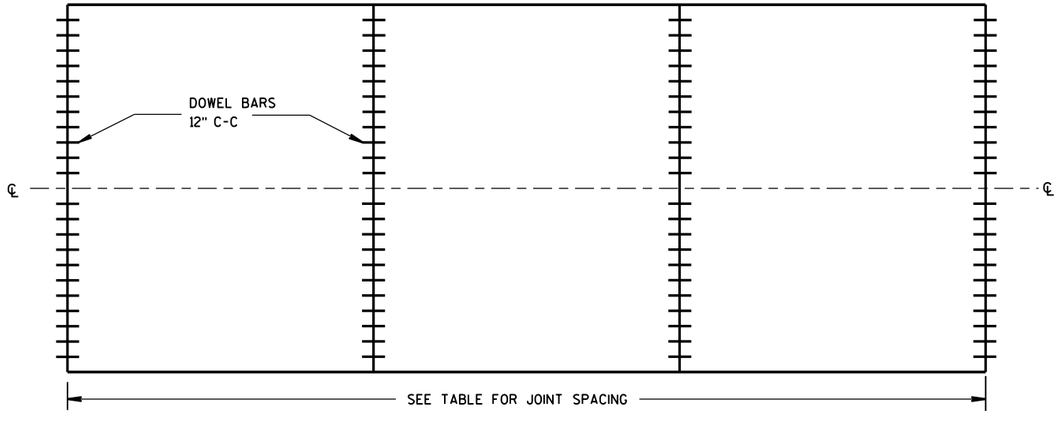
DOWELED CONTRACTION JOINT

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.

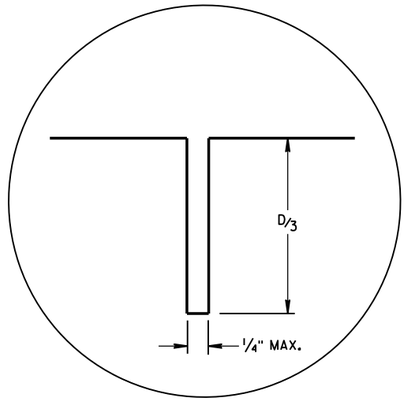
③ FORM OR SAW CONSTRUCTION JOINTS. PROVIDE A ¼-INCH RADIUS AT FORMED JOINTS.

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

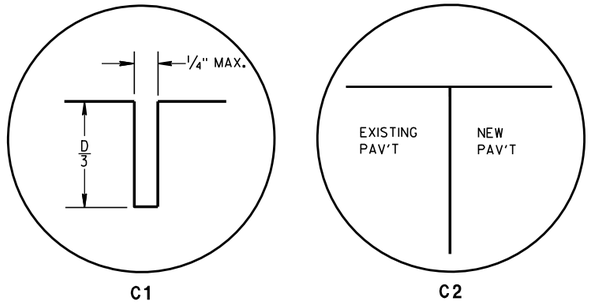
URBAN DOWELED CONCRETE PAVEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

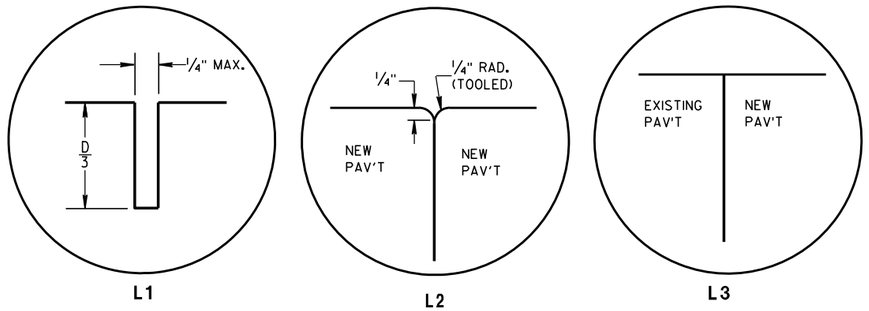
APPROVED
5/3/2013 DATE
/S/ Deb Bischoff
PAVEMENT POLICY & DE ENGINEER
FHWA

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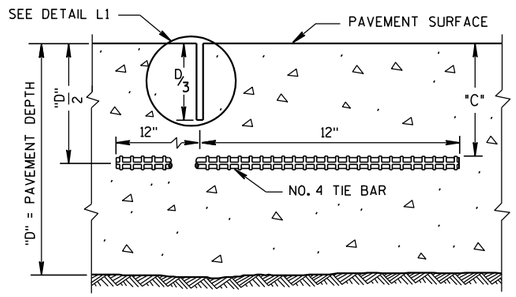
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TRANSVERSE JOINTS

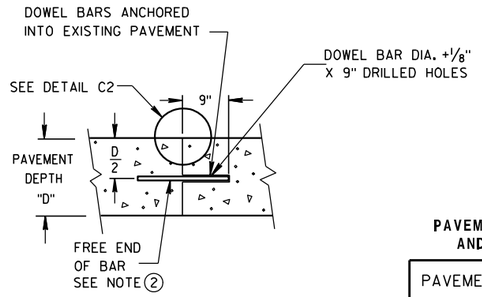


LONGITUDINAL JOINTS



SECTION C-C

SAWED JOINT



SECTION D-D

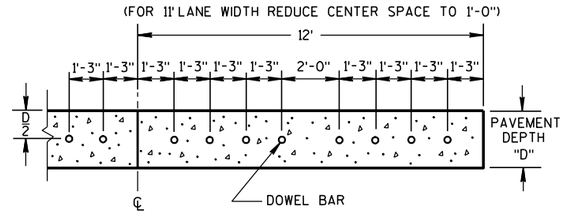
GENERAL NOTES

ANCHOR TIE BARS AND DOWEL BARS INTO DRILLED HOLES WITH AN EPOXY.

PROVIDE A MINIMUM DISTANCE OF 24 INCHES FROM AN EXISTING TRANSVERSE JOINT OR THE EDGE OF REPLACEMENT TO THE CENTER OF THE TIE BAR NEAREST THAT JOINT OR EDGE.

(1) INSTALL DOWEL BARS PARALLEL TO THE PAVEMENT CENTERLINE AND PAVEMENT SURFACE.

(2) APPLY A THIN UNIFORM COATING OF SURFACE TREATMENT TO THE FREE END OF DOWEL BARS TO PREVENT BONDING.



SECTION E-E

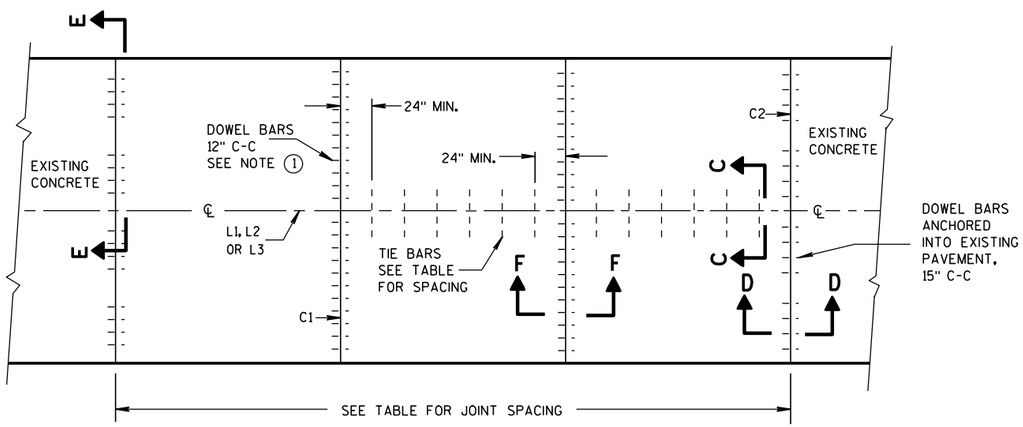
SPACING OF DOWEL BARS ANCHORED INTO EXISTING PAVEMENT

PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

PAVEMENT DEPTH "D"	DOWEL BAR DIAMETER	CONTRACTION JOINT SPACING
5½", 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'

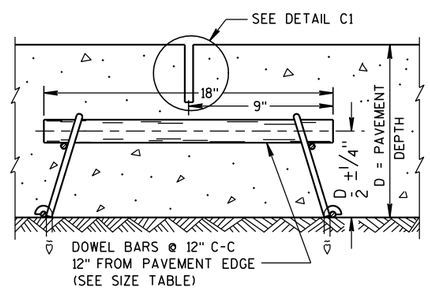
TIE BAR LOCATION TABLE

PAVEMENT DEPTH "D"	CLEAR COVER "C"	MAXIMUM TIE BAR SPACING C-C	
		PAVEMENT WIDTH	
		24' OR 26'	≥ 30'
6, 6 ½"	3"±½"	48"	42"
7, 7 ½"	3 ¼"±1"	45"	36"
8, 8 ½"	3 ¾"±1"	39"	30"
9, 9 ½"	4 ¼"±1"	33"	27"
10, 10 ½"	4 ¾"±1"	30"	24"
11, 11 ½"	5 ¼"±1"	27"	21"
12"	5 ¾"±1"	24"	21"



PLAN VIEW

CONCRETE BASE CONTRACTION JOINT LOCATIONS



SECTION F-F

CONTRACTION JOINT

CONCRETE BASE

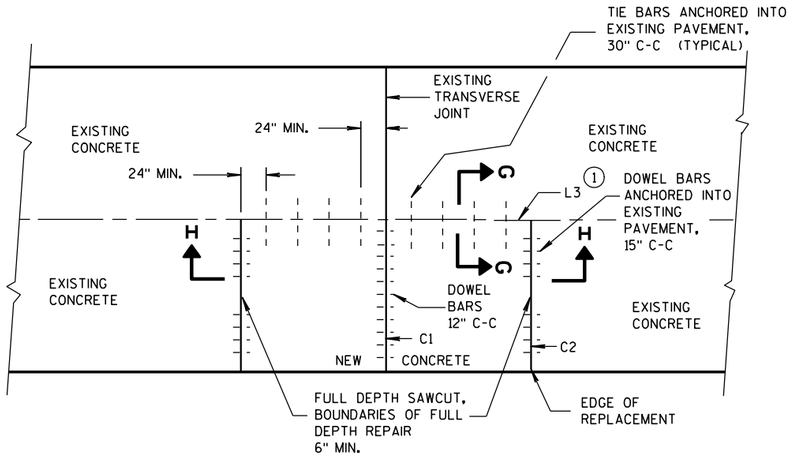
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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S.D.D. 13 C 15-5a

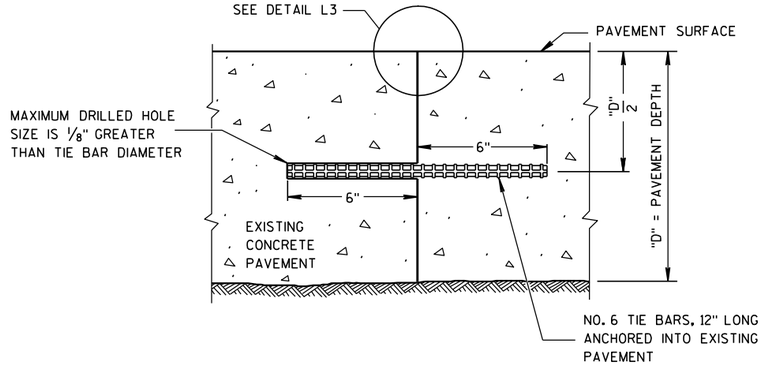
GENERAL NOTES

(1) USE AN ENGINEER-APPROVED BOND BREAKER AT THE LONGITUDINAL JOINT IN LIEU OF TIE BARS FOR SINGLE LANE CONCRETE BASE REPAIRS UP TO 15 FEET IN LENGTH.



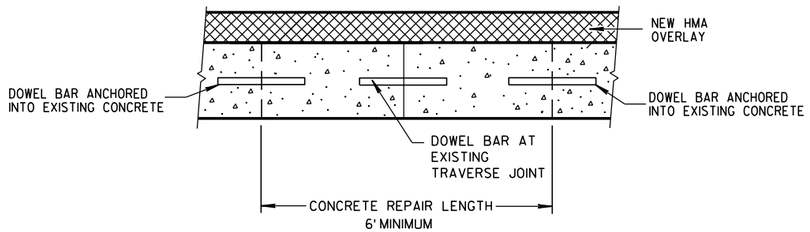
PLAN VIEW

SINGLE LANE CONCRETE BASE REPAIR



SECTION G-G

TIE BARS ANCHORED INTO EXISTING PAVEMENT



SECTION H-H

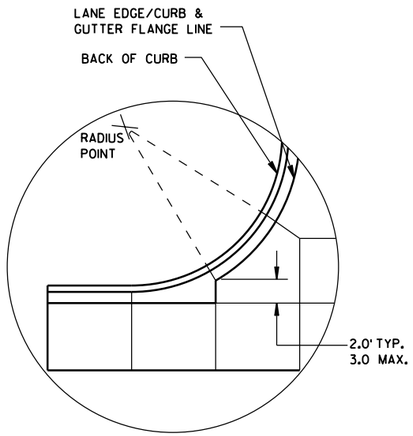
CONCRETE BASE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

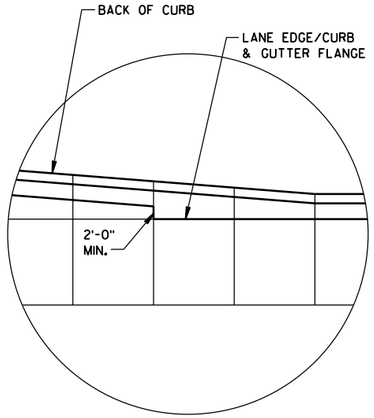
APPROVED
12-11-2009 DATE
/S/ Deb Bischoff PAVEMENT POLICY & D ENGINEER
FHWA

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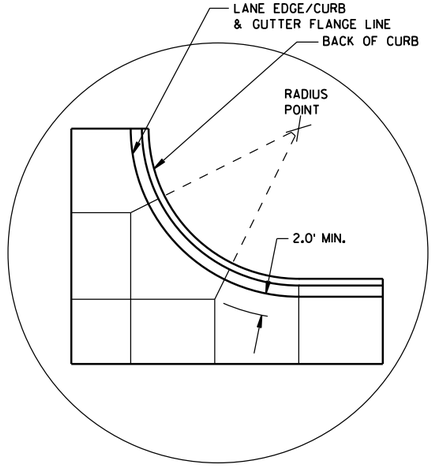
S.D.D. 13 C 15-5b



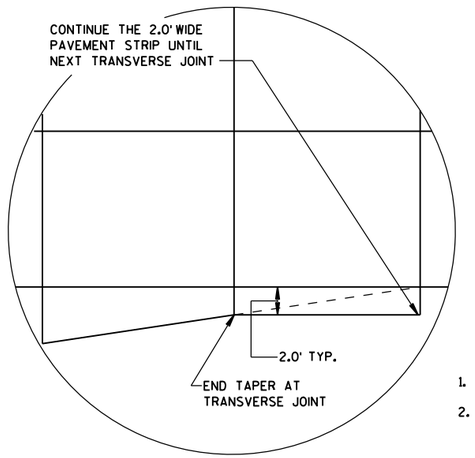
DETAIL "A"



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.

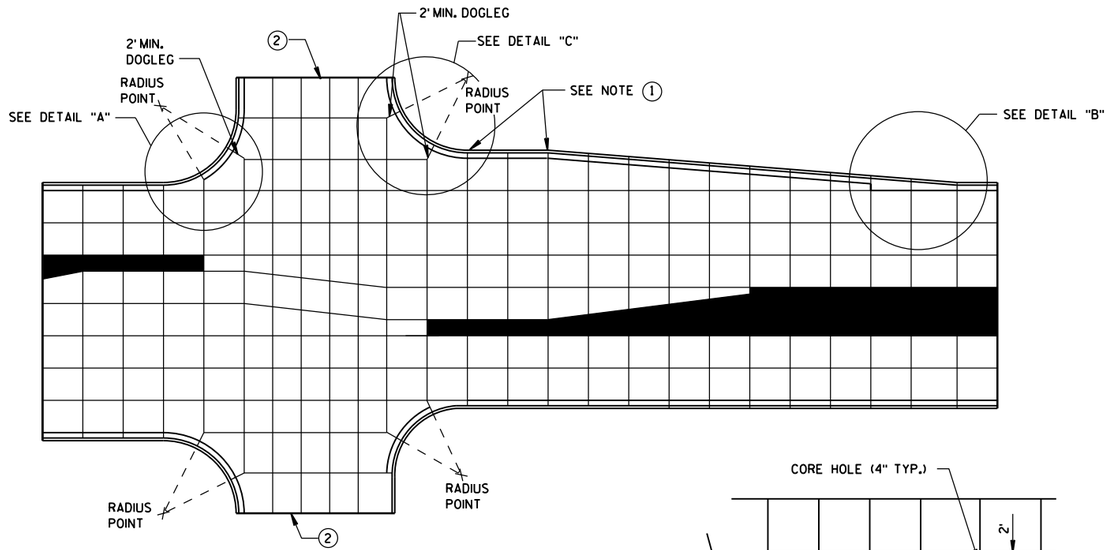
AVOID SLABS LESS THAN 2 FEET WIDE OR GREATER THAN 15 FEET WIDE.

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.

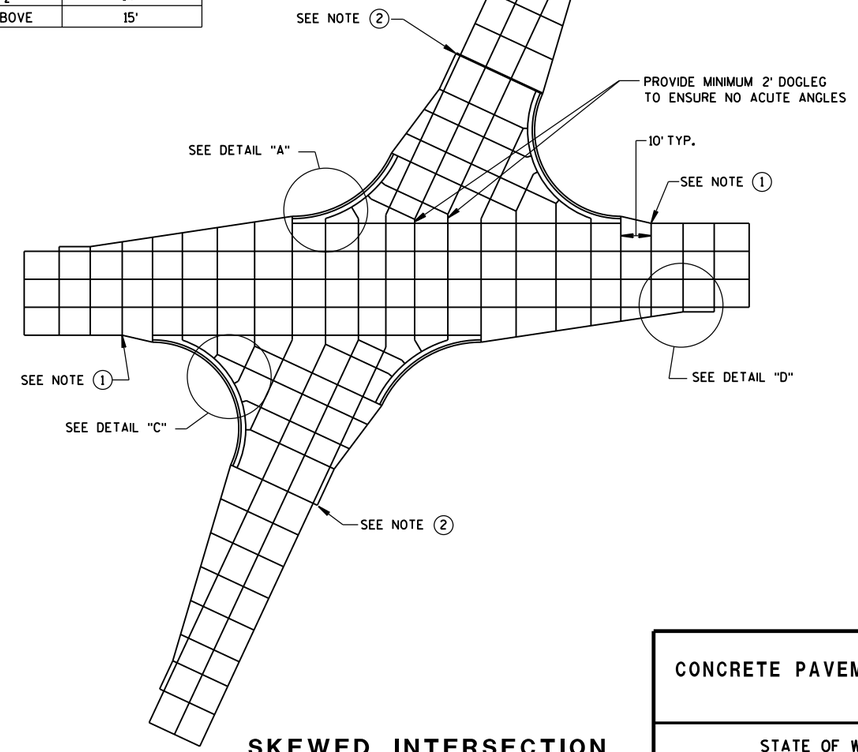
1. PROVIDE TRANSVERSE JOINTS AT ALL PAVEMENT WIDTH CHANGES.
2. CONSTRUCT DOWELED EXPANSION JOINT ON THE SIDE ROAD OF AN INTERSECTION IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH. ALIGN EXPANSION JOINT WITH EDGE OF RADIUS.
3. THE ENGINEER MAY APPROVE SLIGHT VARIATIONS FROM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



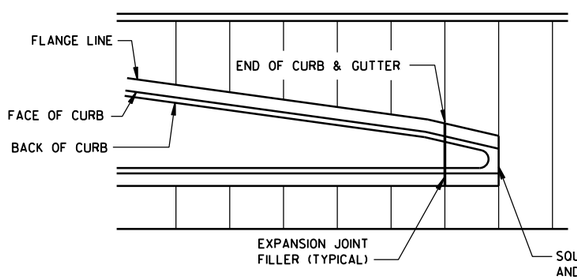
STANDARD INTERSECTION

PAVEMENT DEPTH AND JOINT SPACING TABLE

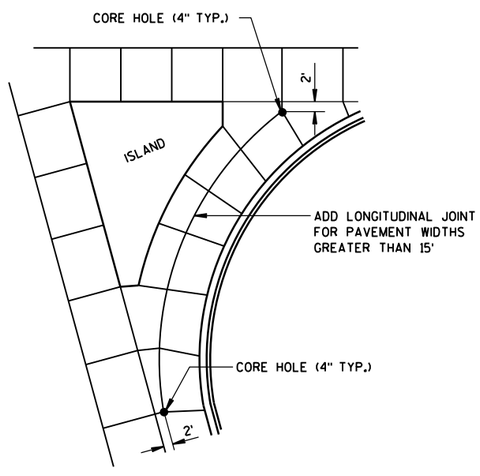
PAVEMENT DEPTH (D)	CONTRACTION JOINT SPACING
6", 6½"	12'
7", 7½"	14'
8" & ABOVE	15'



SKEWED INTERSECTION



APPROACH TO MEDIAN



LARGE RIGHT TURN

CONCRETE PAVEMENT JOINTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

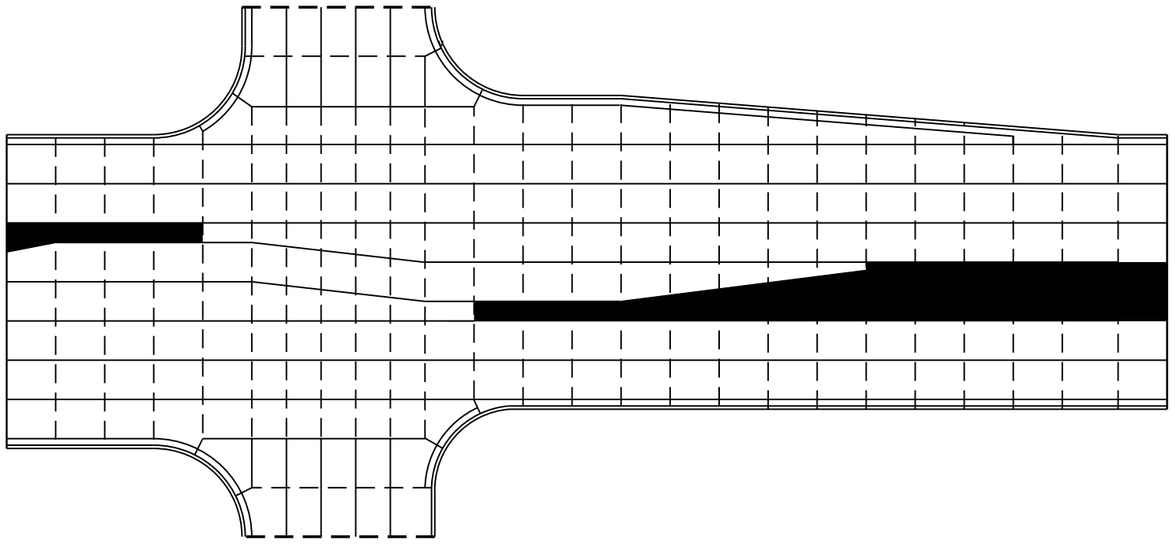
6
S.D.D. 13 C 18-2a

LEGEND

POTENTIAL DOWELED EXPANSION JOINT

DOWELED JOINT

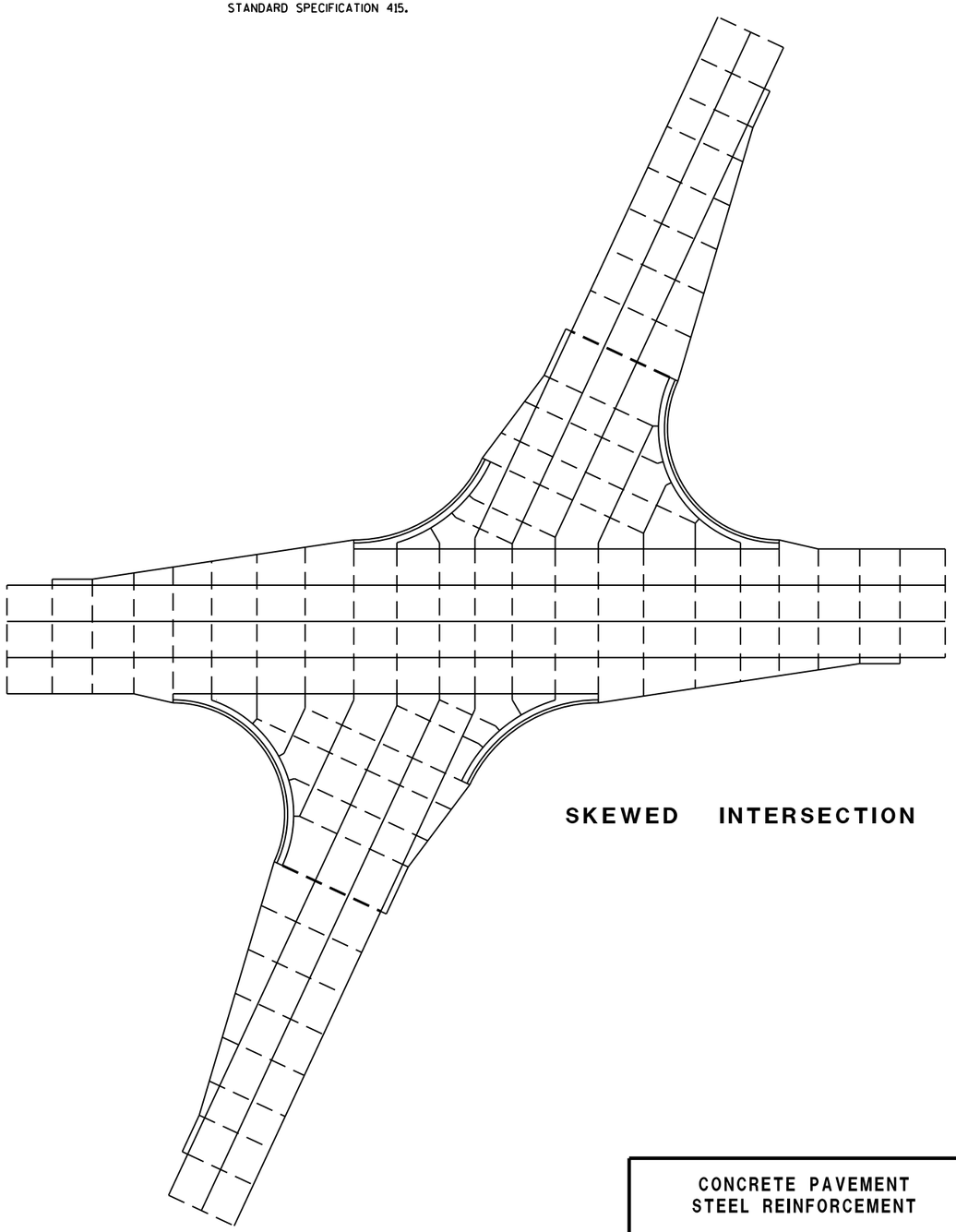
TIED JOINT



STANDARD INTERSECTION

GENERAL NOTES

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



SKEWED INTERSECTION

CONCRETE PAVEMENT
STEEL REINFORCEMENT

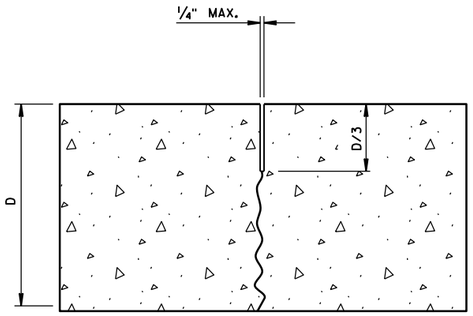
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

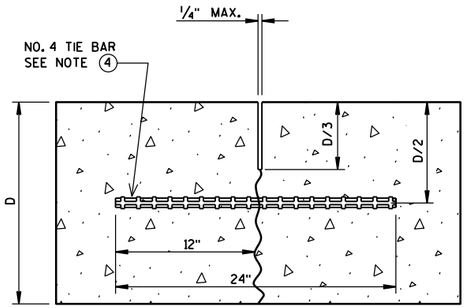
S.D.D. 13 C 18-2b

6

S.D.D. 13 C 18-2b



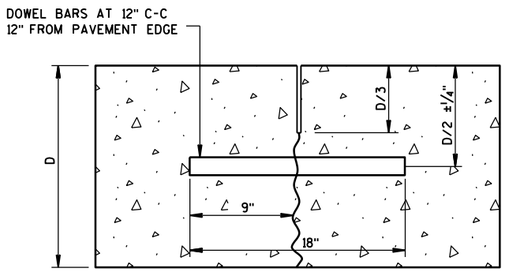
UNDOWELED-TRANSVERSE



TIED LONGITUDINAL

GENERAL NOTES

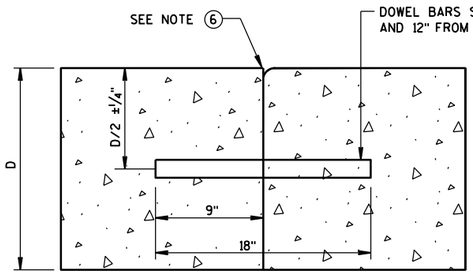
1. USE DOWELED EXPANSION JOINTS ON SIDE ROADS AT INTERSECTIONS (TO ISOLATE THE SIDE ROAD FROM THE THROUGH STREET) IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH.
2. SPACE CONTRACTION JOINTS IN ACCORDANCE WITH 13C4, 13C11 OR 13C13.
3. LOCATE CONSTRUCTION JOINTS A MINIMUM OF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



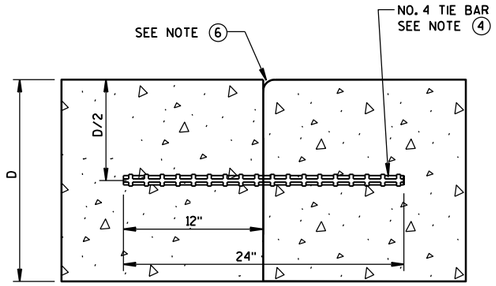
DOWELED-TRANSVERSE

CONTRACTION JOINTS

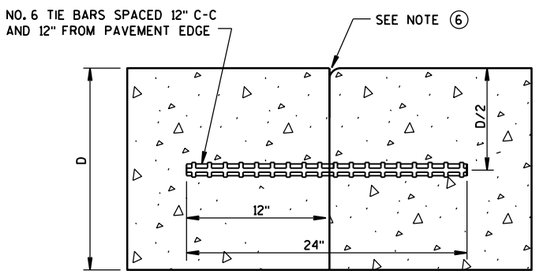
SEE NOTE (2)



DOWELED TRANSVERSE

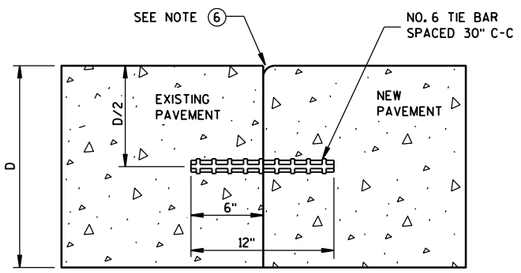


TIED LONGITUDINAL



TIED TRANSVERSE

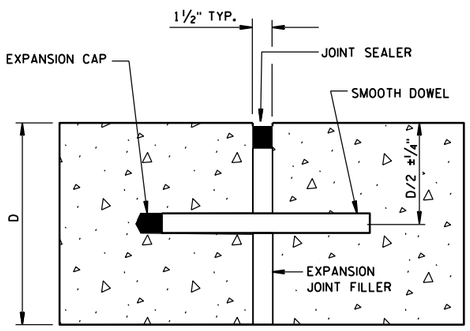
(FOR USE ON NON-DOWELED PAVEMENTS ONLY)



TIED LONGITUDINAL TO EXISTING

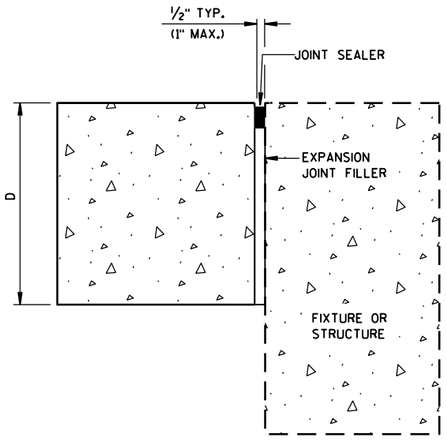
CONSTRUCTION JOINTS

SEE NOTE (5)



DOWELED-TRANSVERSE

SEE NOTE (1)



UNTIED-LONGITUDINAL

EXPANSION JOINTS

CONCRETE PAVEMENT
JOINT TYPES

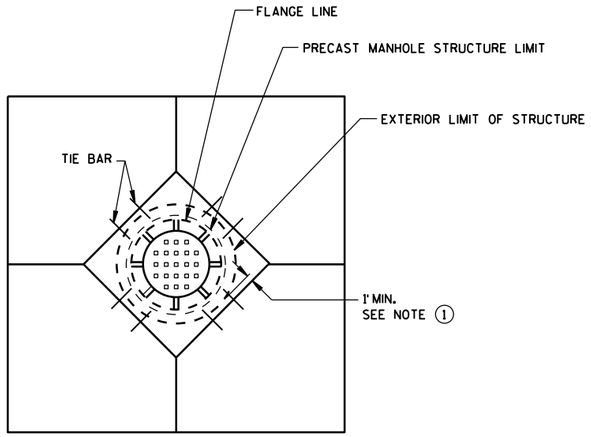
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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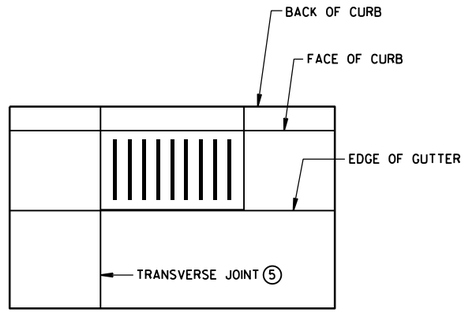
S.D.D. 13 C 18-2c

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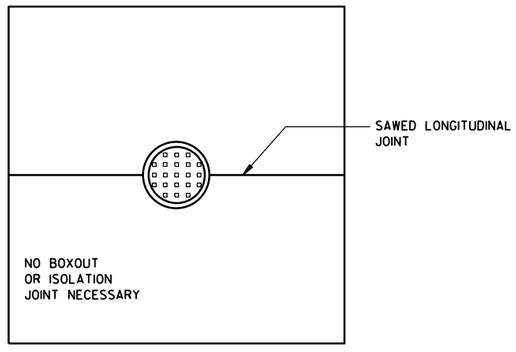
S.D.D. 13 C 18-2c



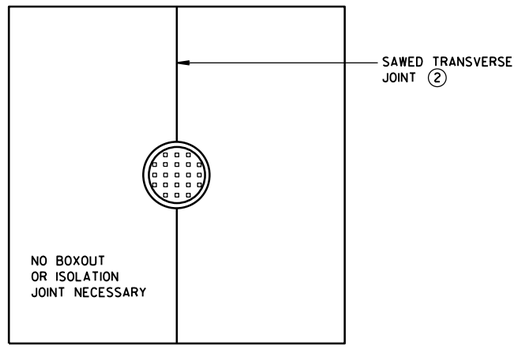
DIAGONAL MANHOLE BOXOUT FOR CONSTRUCTION JOINTS



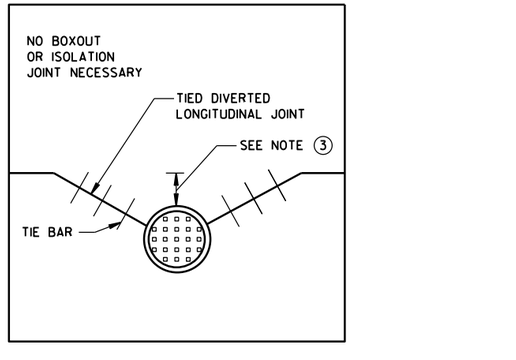
INLET WITH TRANSVERSE JOINT



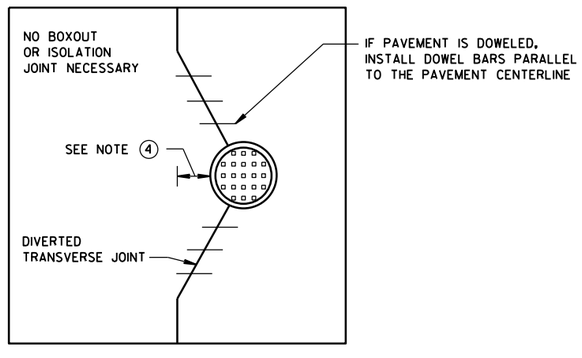
MANHOLE WITH LONGITUDINAL JOINT



MANHOLE WITH TRANSVERSE JOINT



MANHOLE WITH DIVERTED LONGITUDINAL CONTRACTION JOINT



MANHOLE WITH DIVERTED TRANSVERSE CONTRACTION JOINT

GENERAL NOTES

(1) USE BOXOUTS WHEN UTILITY STRUCTURE IS IN THE PATH OF CONSTRUCTION JOINTS. PROVIDE A 1-FOOT MINIMUM CLEARANCE BETWEEN THE EXTERIOR LIMIT OF THE STRUCTURE TO THE DIAMOND BOXOUT.

(2) ADJUST TRANSVERSE JOINT TO INTERSECT MANHOLE IF POSSIBLE.

(3) IF DISTANCE BETWEEN THE LONGITUDINAL JOINT AND THE EDGE OF MANHOLE IS 2 FEET OR LESS, DIVERT THE LONGITUDIAL JOINT AT A 2:1 TAPER RATE TO THE CENTER OF THE MANHOLE. IF THE DISTANCE IS GREATER THAN 2 FEET, DO NOT DIVERT THE JOINT AND SAW AS NORMAL. PLACE REBAR REINFORCEMENT AROUND THE MANHOLE.

(4) IF DISTANCE FROM THE EDGE OF THE MANHOLE TO THE NEAREST TRANSVERSE JOINT IS 4 FEET OR LESS, REDIRECT JOINT TO INTERSECT THE CENTER OF THE MANHOLE. IF DISTANCE IS GREATER THAN 4 FEET, DO NOT DIVERT THE JOINT AND SAW AS NORMAL. PLACE REBAR REINFORCEMENT AROUND THE MANHOLE.

(5) ALIGN TRANSVERSE JOINT WITH ONE EDGE OF INLET WHEN PRACTICAL.

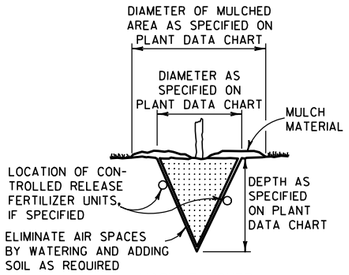
CONCRETE PAVEMENT JOINTING AT UTILITY FIXTURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

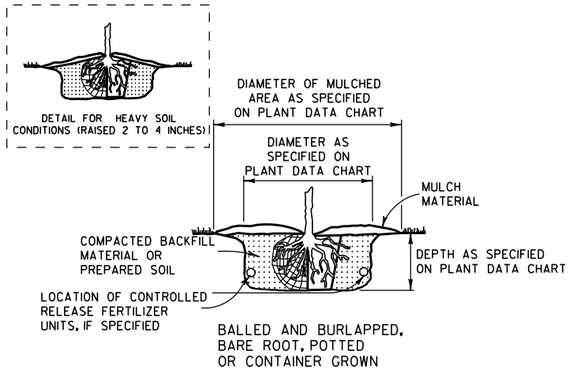
APPROVED
5-3-2013 DATE
/S/ Deb Bischoff PAVEMENT POLICY & DE
NEER
FHWA

6

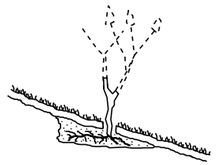
S.D.D. 13 C 18-2d



MACHINE MOVED

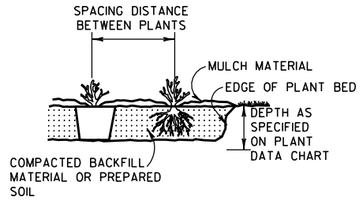


BALLED AND BURLAPPED, BARE ROOT, POTTED OR CONTAINER GROWN



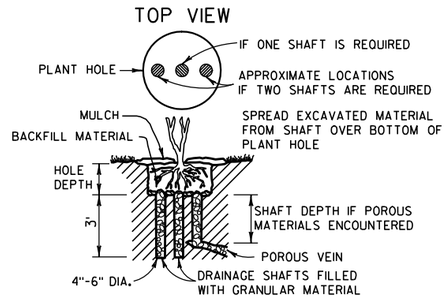
ACCOMMODATE ROOTS (SMOOTH AND STAGHORN SUMAC)

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



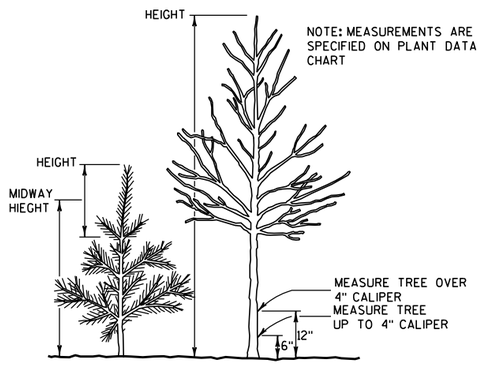
PREPARED BED (BARE ROOT AND POTTED)

PLANTING

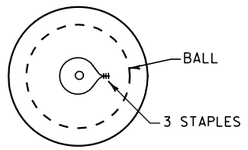


NOTE:
DRAINAGE SHAFT AS SPECIFIED ON PLANT DATA CHART

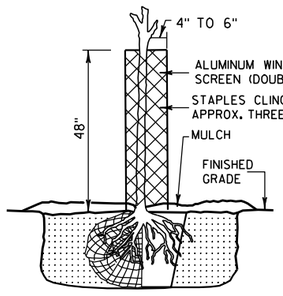
DRAINING



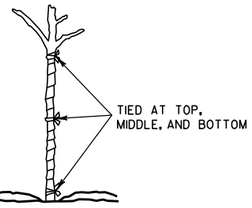
MEASURING



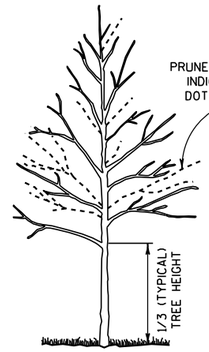
TOP VIEW



RODENT PROTECTION



WRAPPING

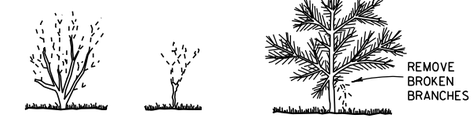


TALL DECIDUOUS TREES (ASH, MAPLE, LINDEN, OAK)

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

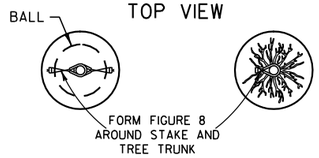


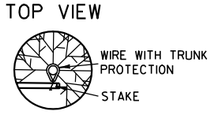
SHRUBS (GRAY DOGWOOD ARROWWOOD VIBURNUM)

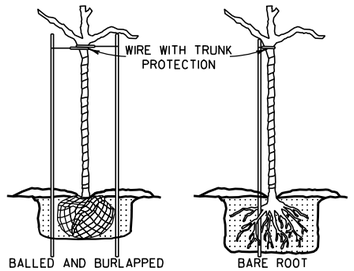
SUMAC

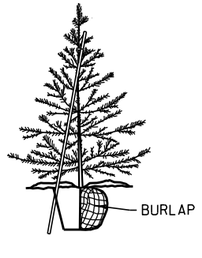
TREE TYPE EVERGREENS (PINE, SPRUCE, FIR) EVERGREENS USUALLY ARE NOT PRUNED

PRUNING



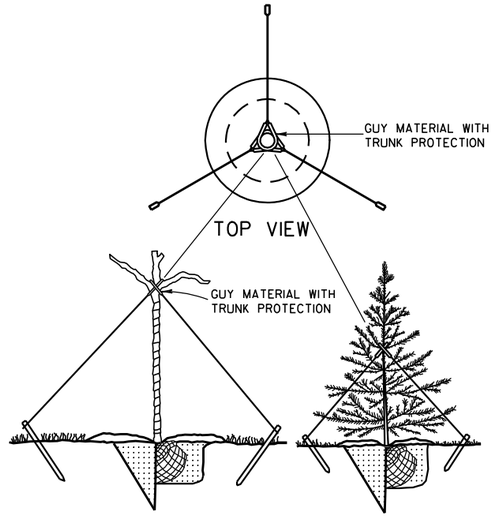






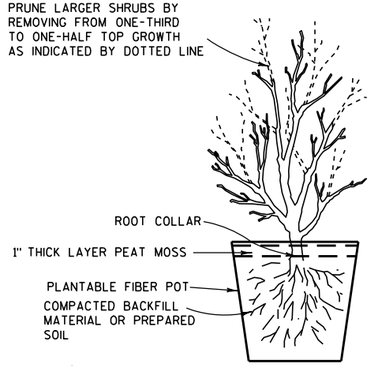
NOTE: BRACING STAKE
1) SHALL BE DRIVEN INTO THE GROUND AS CLOSE TO THE TREE AS POSSIBLE WITHOUT DAMAGING THE BRANCHES.
2) MAY BE DRIVEN AT SUCH AN ANGLE THAT IT DOES NOT PENETRATE THE BALL OR POT.
3) SHALL NOT PROTRUDE ABOVE THE TOP OF THE TREE; AND
4) SHALL HAVE A HOLE NEAR THE TOP TO HOLD THE WIRE 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

S.D.D. 14 A 2-1

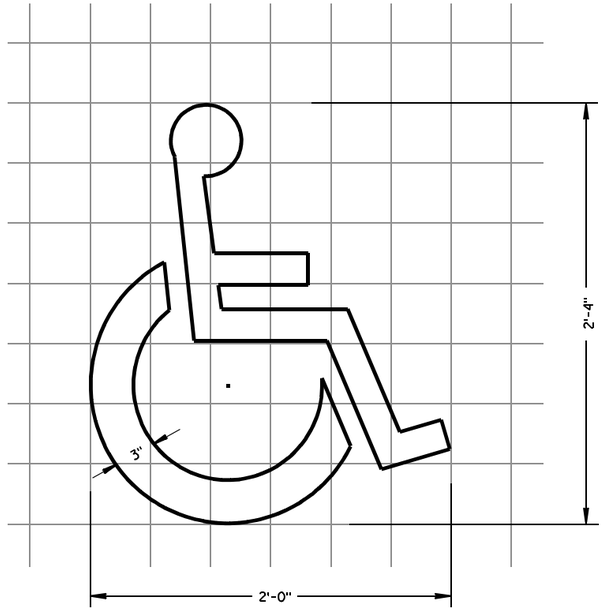
S.D.D. 14 A 2-1

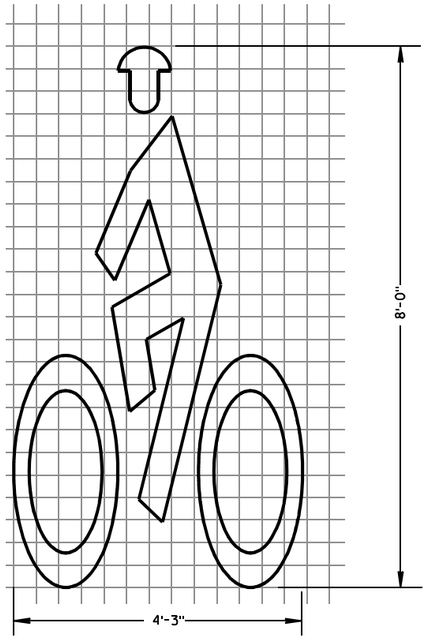
GENERAL NOTES

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

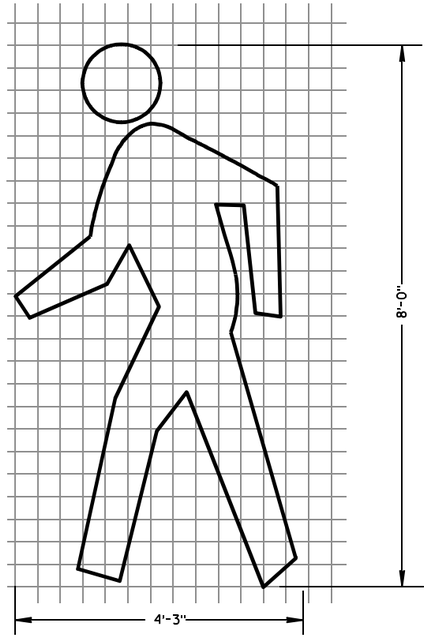
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A DETAILED DRAWING OF THE HANDICAPPED PARKING SYMBOL IS ILLUSTRATED IN THE "STANDARD HIGHWAY SIGNS MANUAL" BY THE FEDERAL HIGHWAY ADMINISTRATION.

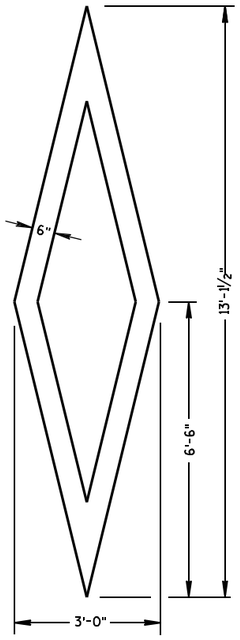




BIKE CROSSING SYMBOL



PEDESTRIAN SYMBOL



PREFERENTIAL LANE SYMBOL

6

6

PAVEMENT MARKING SYMBOLS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

7/1/11 — DATE

/S/ Thomas N Nathan — STATE TRAFFIC ENGINEER

FHWA

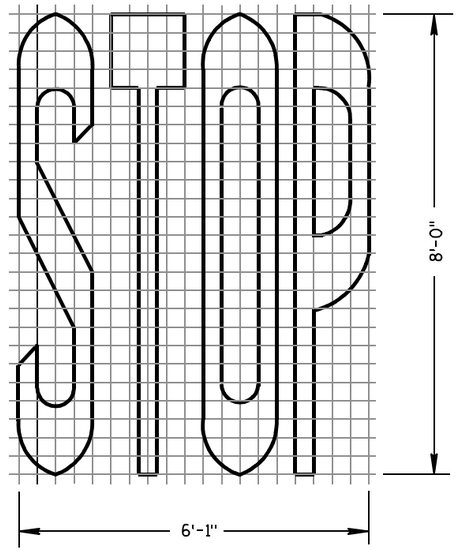
S.D.D. 15 C 7-12a

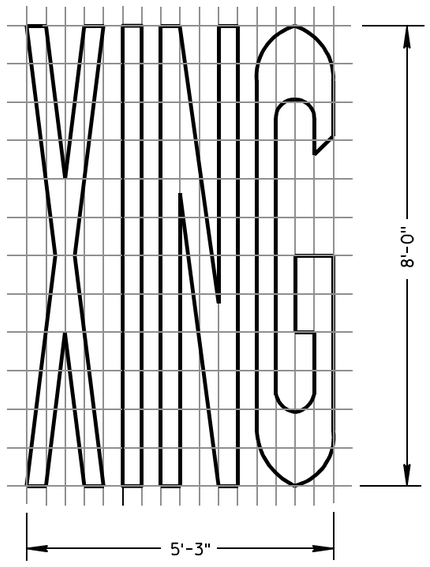
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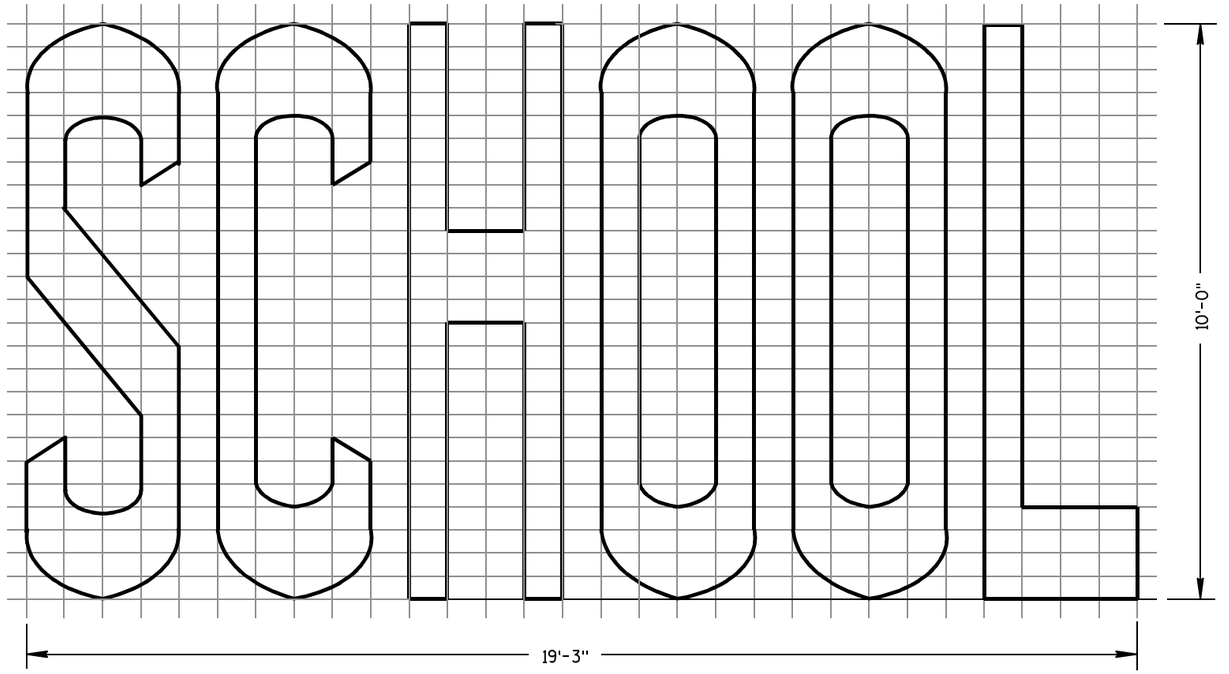
GENERAL NOTES

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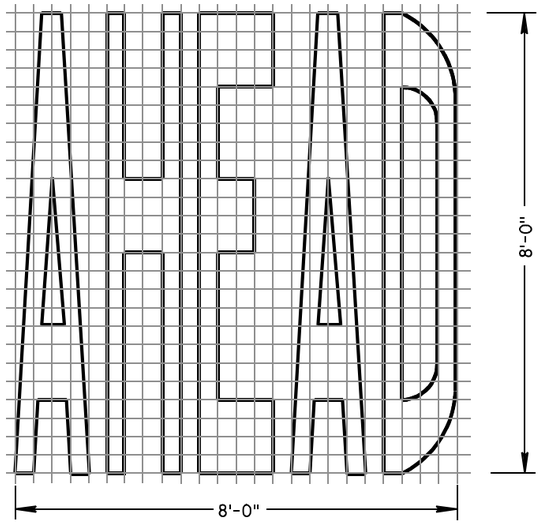
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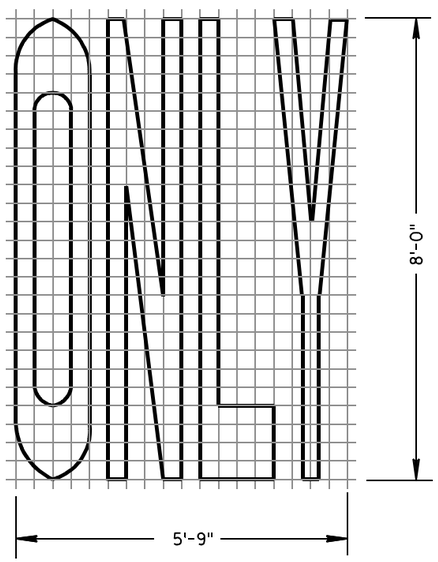


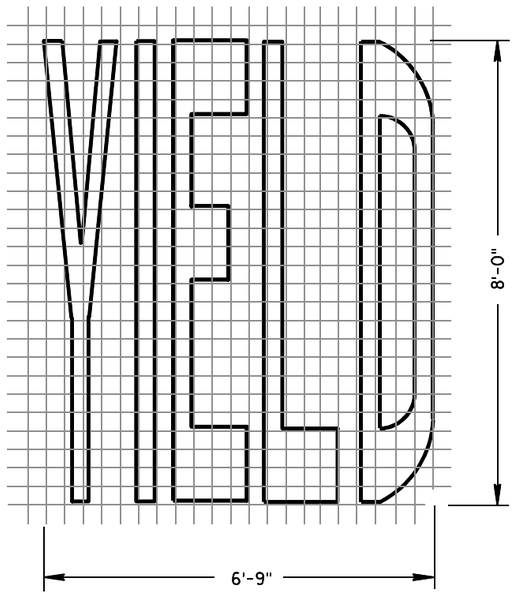


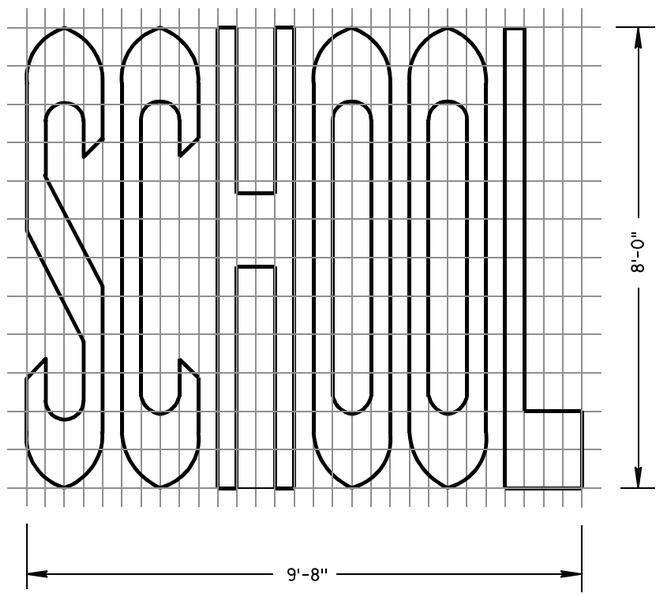


TWO-LANE









SINGLE-LANE

PAVEMENT MARKING WORDS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

7-1-11 DATE — /S/ Thomas N. Nothohm STATE TRAFFIC ENGINEER

FHWA

6

S.D.D. 15 C 7-12b

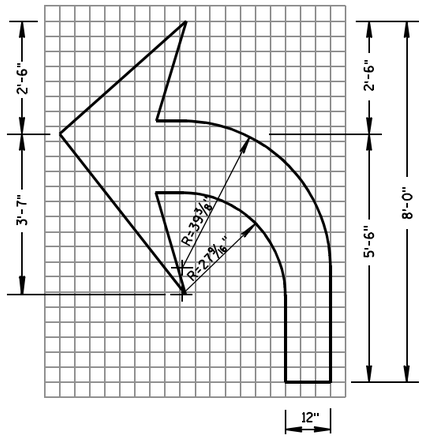
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S.D.D. 15 C 7-12b

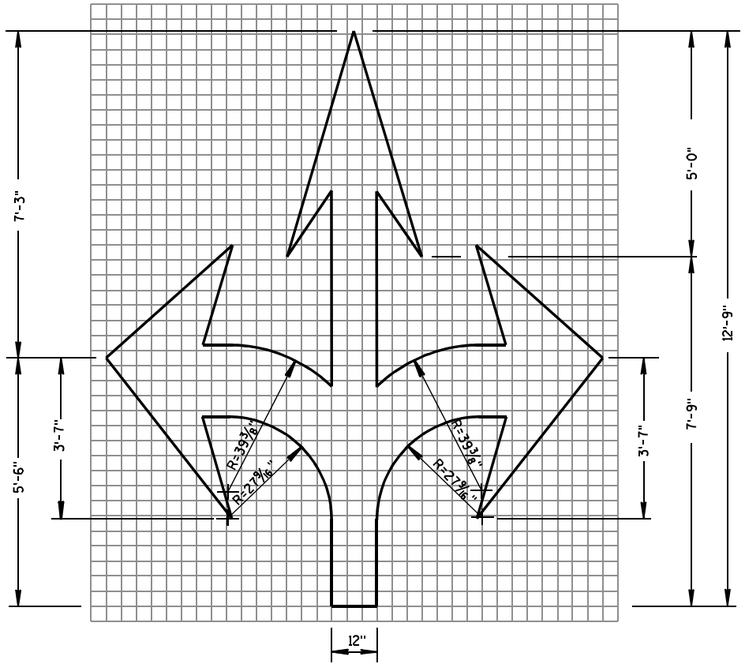
GENERAL NOTES

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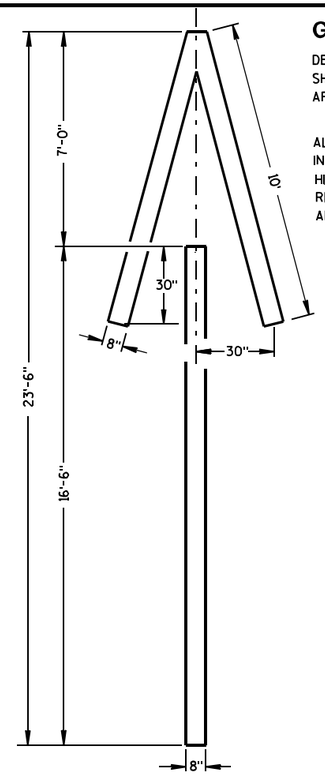
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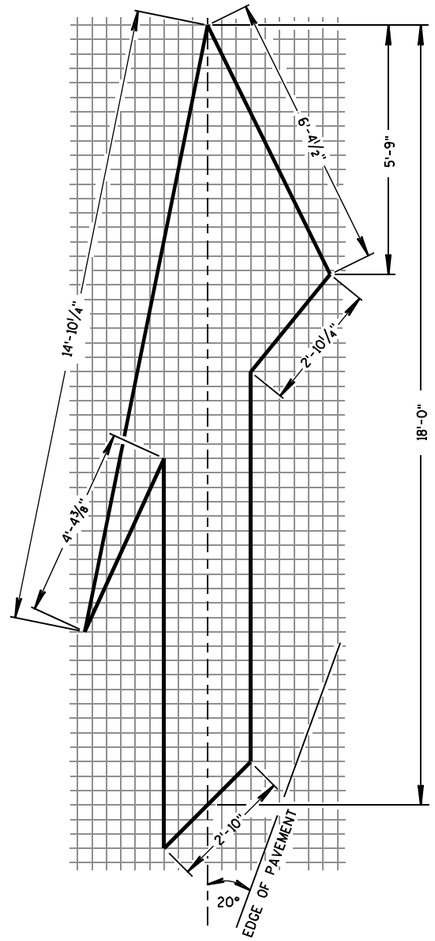
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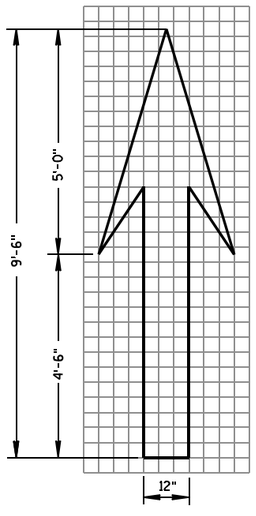
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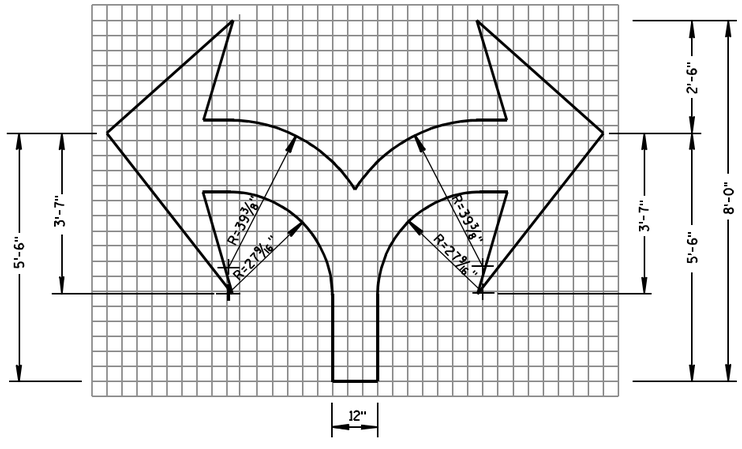
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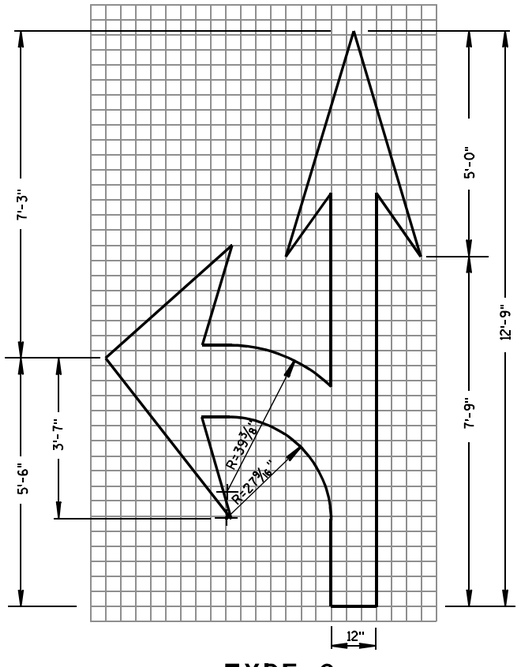
TYPE 5 LANE DROP ARROW



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

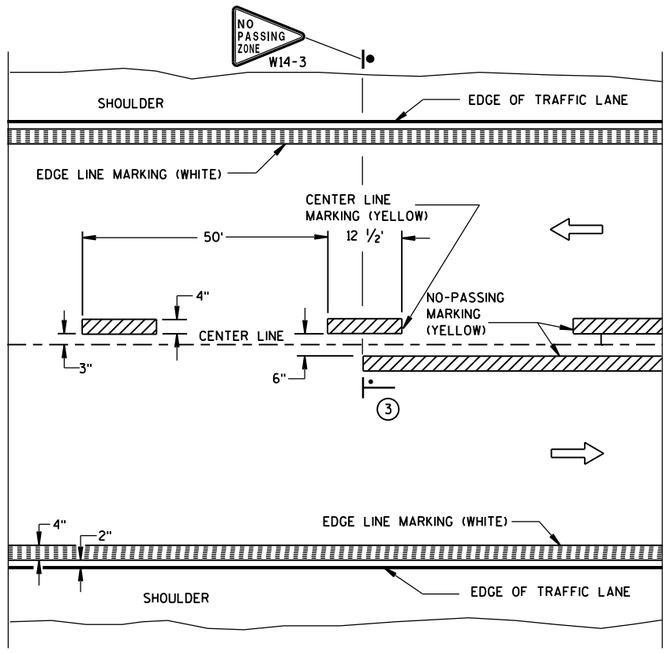
FHWA

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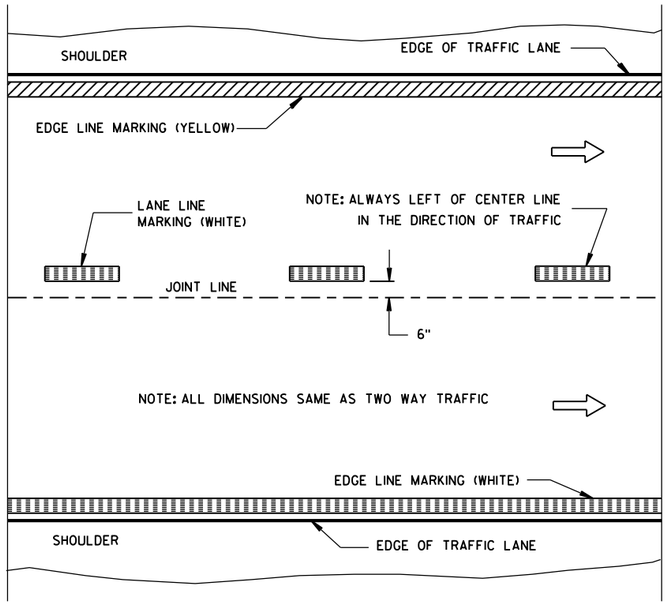
S.D.D. 15 C 7-12c

6

S.D.D. 15 C 7-12c

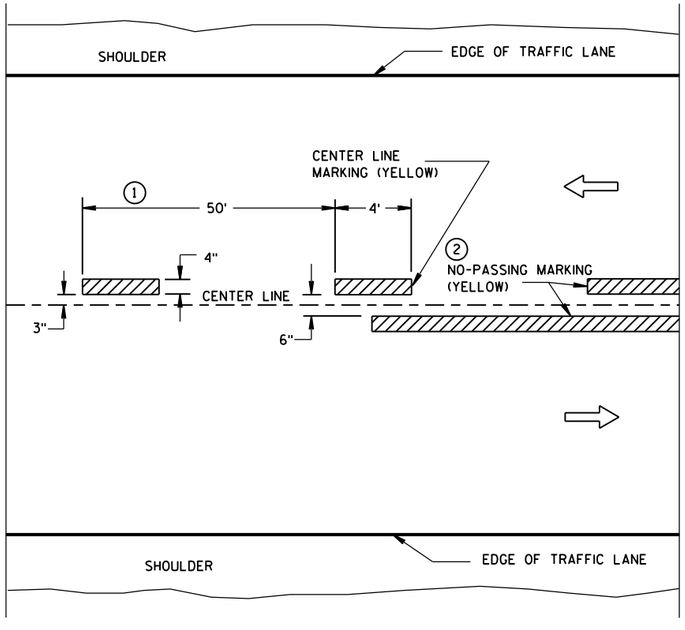


TWO WAY TRAFFIC

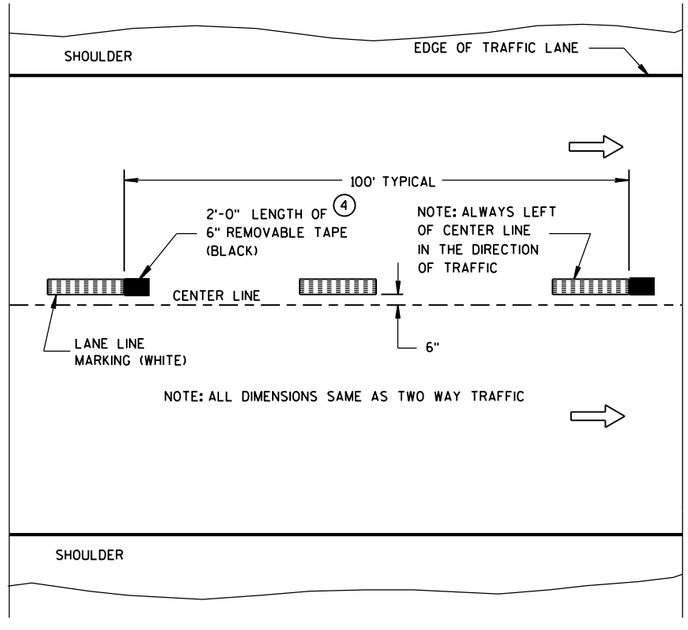


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY (INTERMEDIATE) PAVEMENT MARKING

(SHOWS CYCLE FOR TEMPORARY CENTER LINE OR TEMPORARY LANE LINE MARKING)

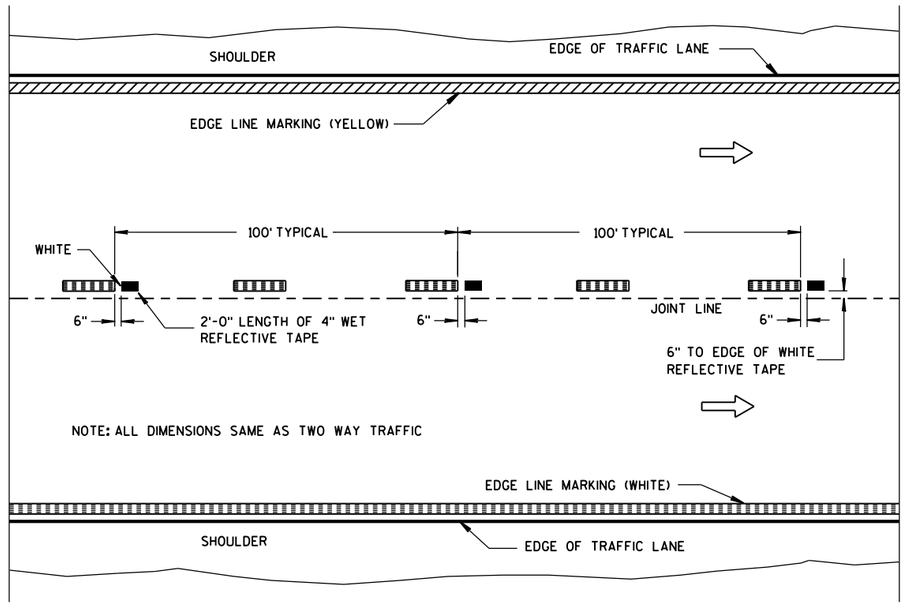
GENERAL NOTES

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

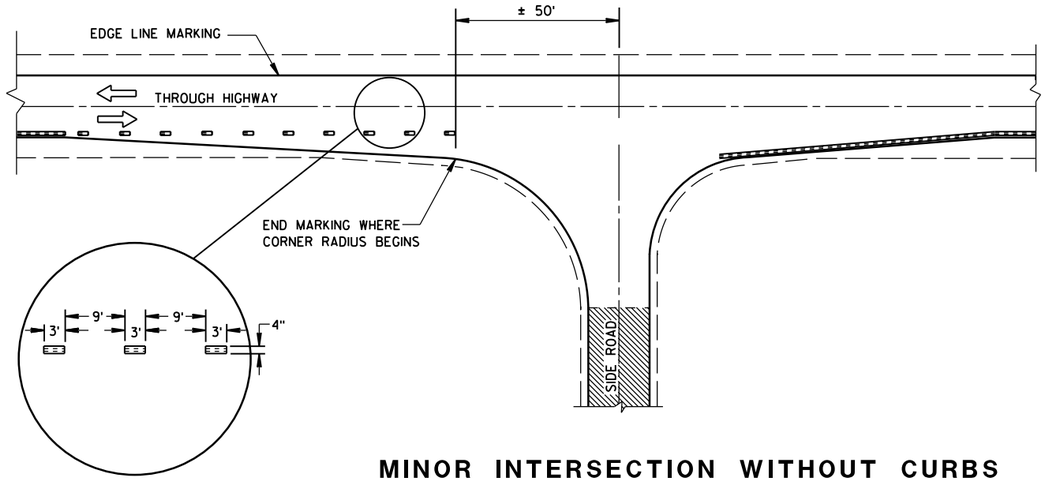
APPROVED
5-13-2013 DATE
/S/ Travis Feltes STATE TRAFFIC E
FHWA

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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.

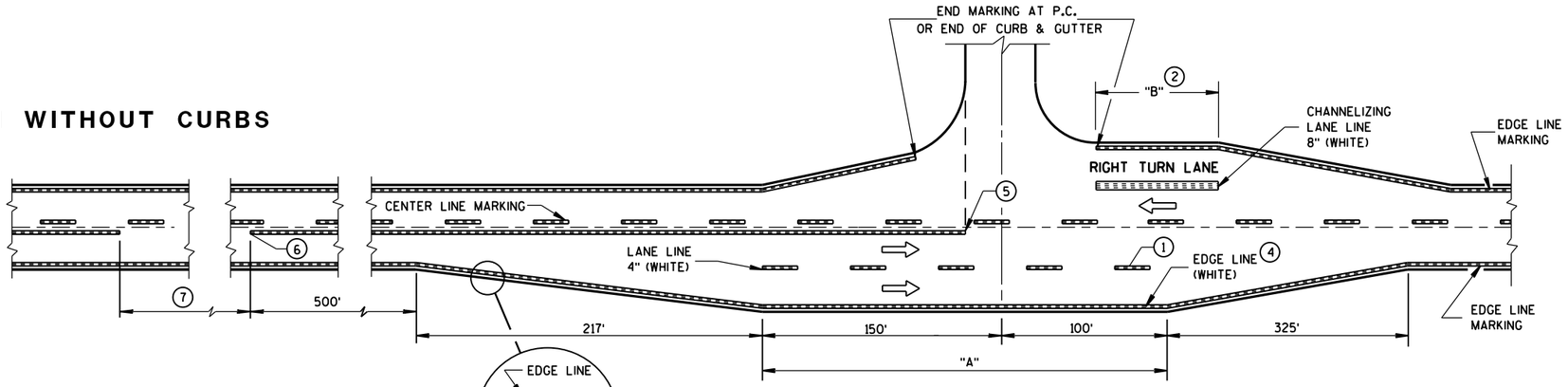
(7) IF THE DISTANCE BETWEEN 2 SUCCESSIVE NO-PASSING ZONES IS LESS THAN THE MINIMUM DISTANCE BETWEEN ZONES, CONNECT THE 2 ZONES.

(8) 3' LINE 9' GAP, EXCEPT RETRACE THE EXISTING LINE - GAP PATTERN WHERE EXISTING MARKINGS ARE IN PLACE.

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL

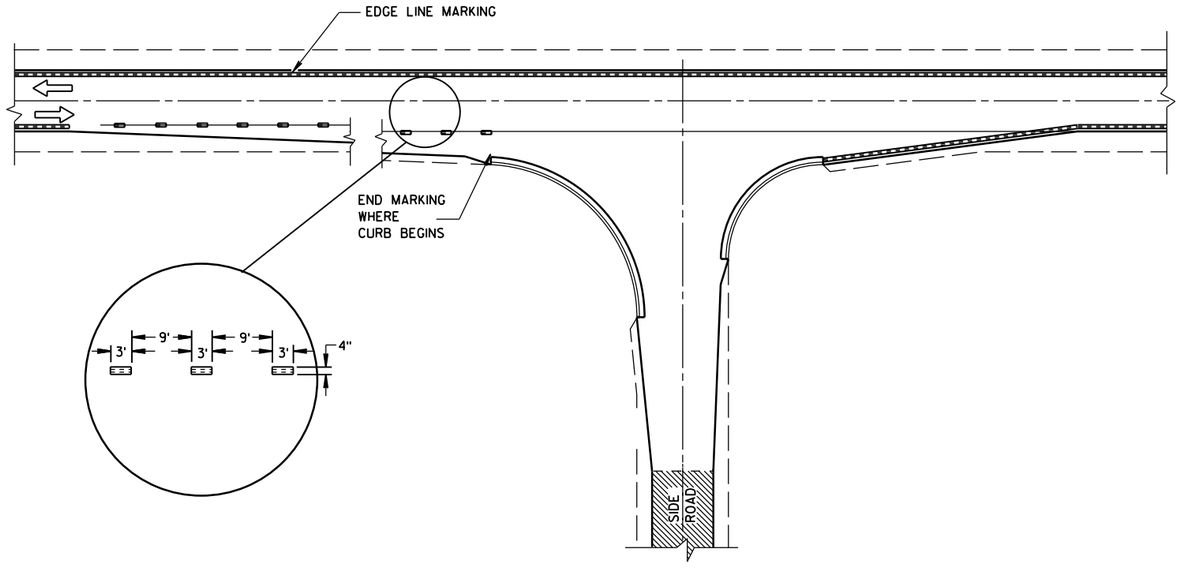
(7)

POSTED SPEED (MPH)	MINIMUM DISTANCE BETWEEN ZONES (FEET)
25 - 30	528
35 - 40	528
45 - 50	686
55	792



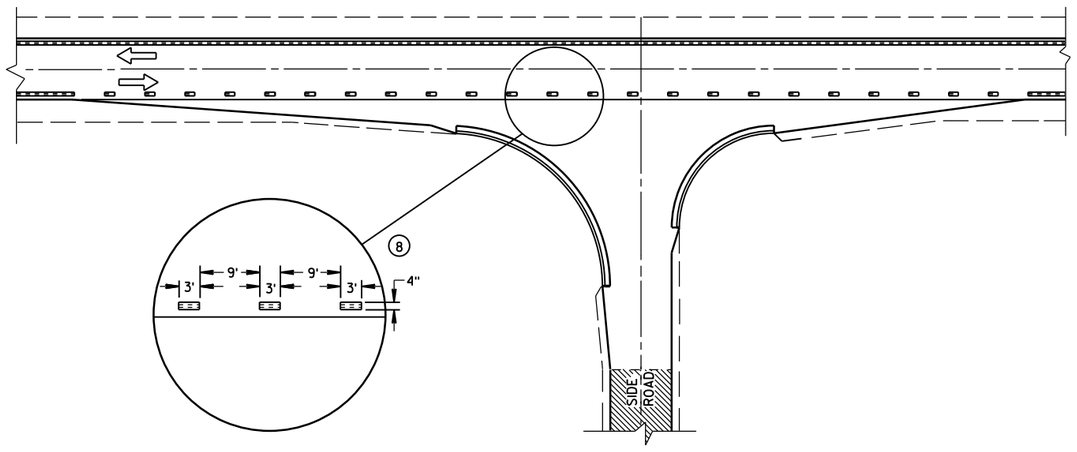
MAJOR INTERSECTIONS

(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)

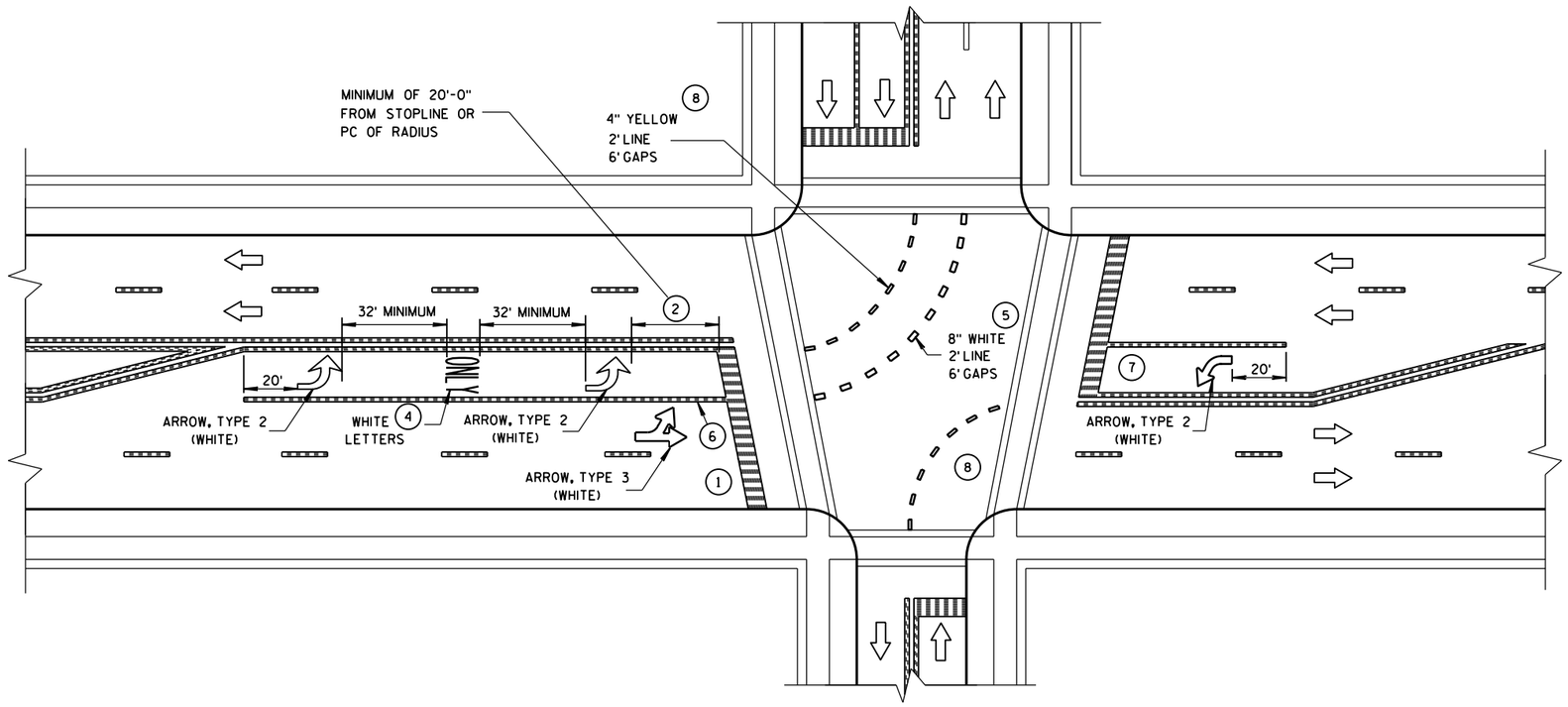
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

S.D.D. 15 C 8-16b

6

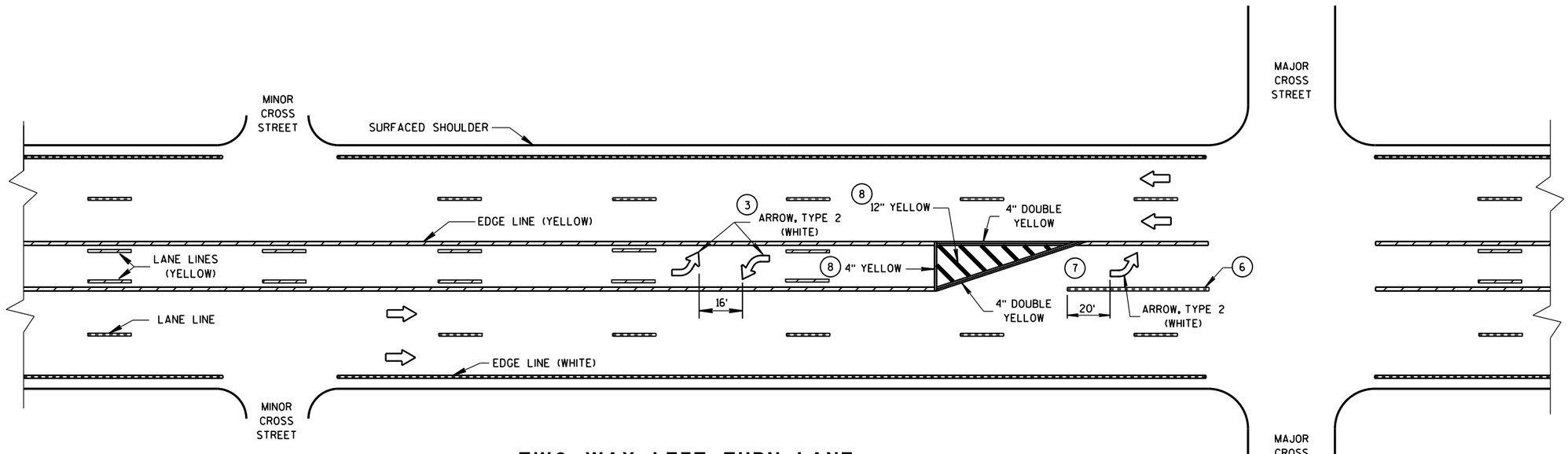
S.D.D. 15 C 8-16b



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)

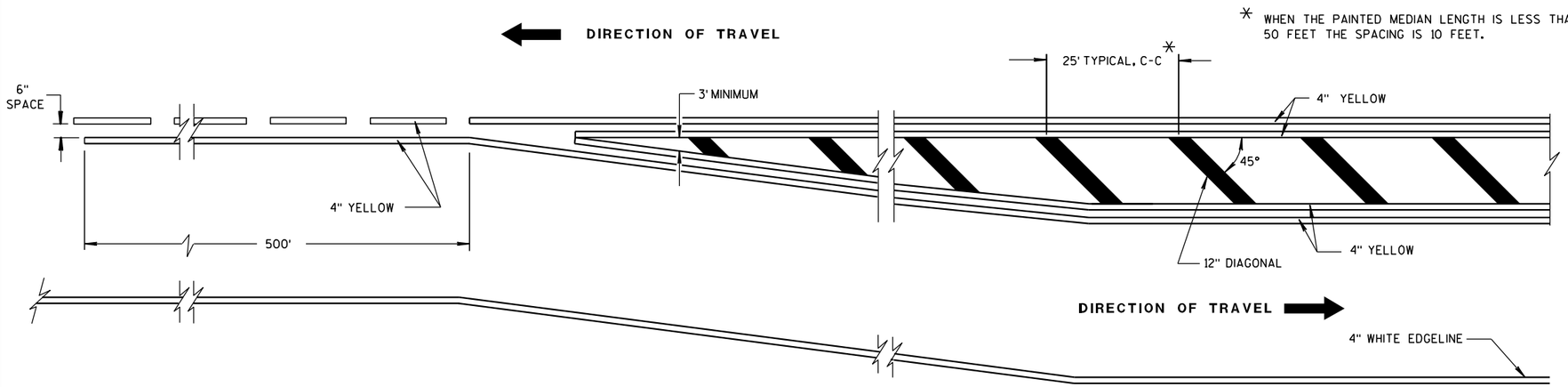
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

S.D.D. 15 C 8-16e

6

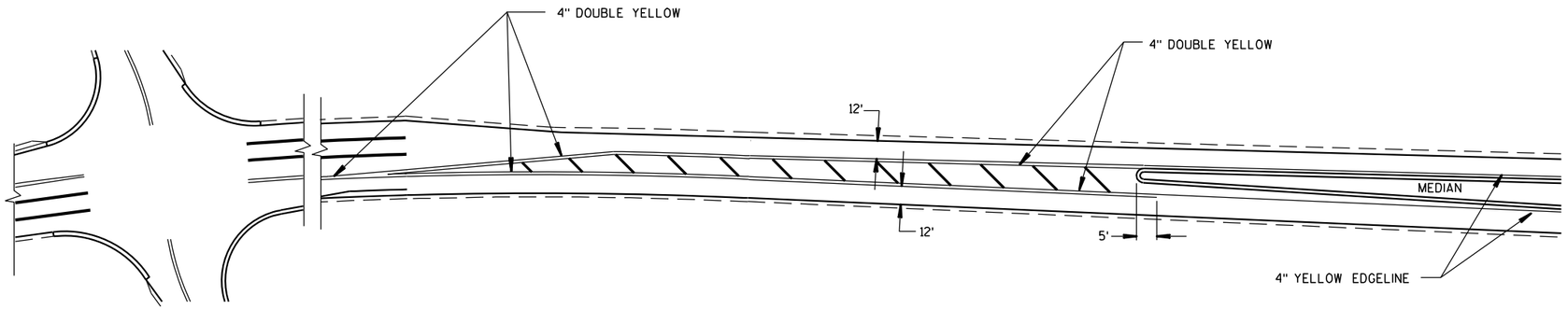
S.D.D. 15 C 8-16e



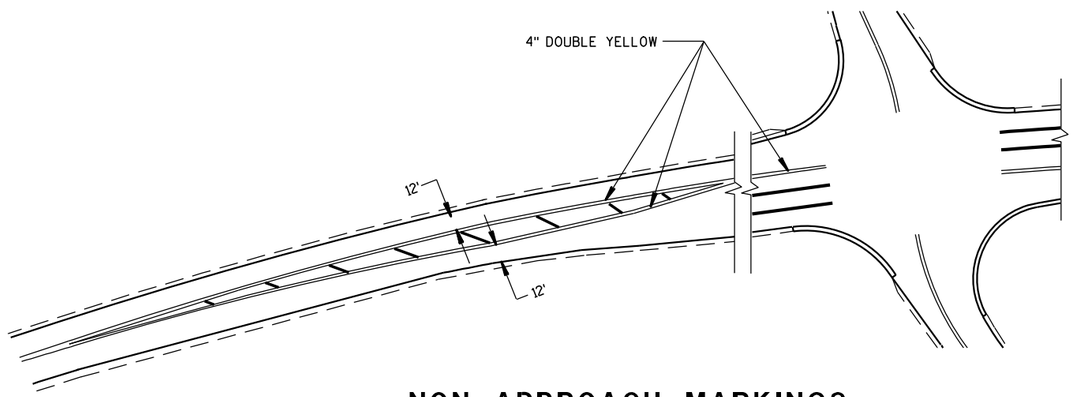
MEDIAN ISLAND DETAIL

GENERAL NOTE

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



APPROACH MARKINGS FOR OTHER MEDIAN TYPES



NON APPROACH MARKINGS

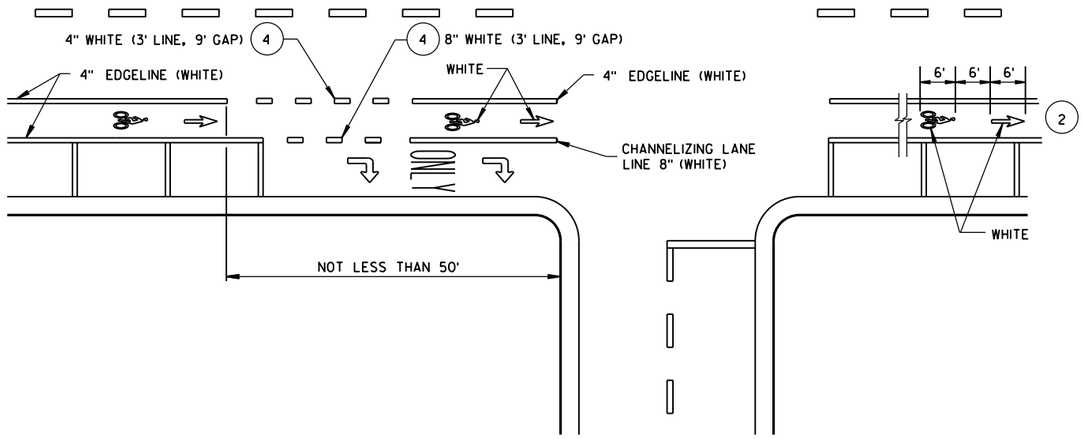
MEDIAN ISLAND MARKING	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 2-5-09 DATE	/S/ Thomas N. Nothohm STATE TRAFFIC ENGINEER 250 IGN
FHWA	

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S.D.D. 15 C 18-3

6

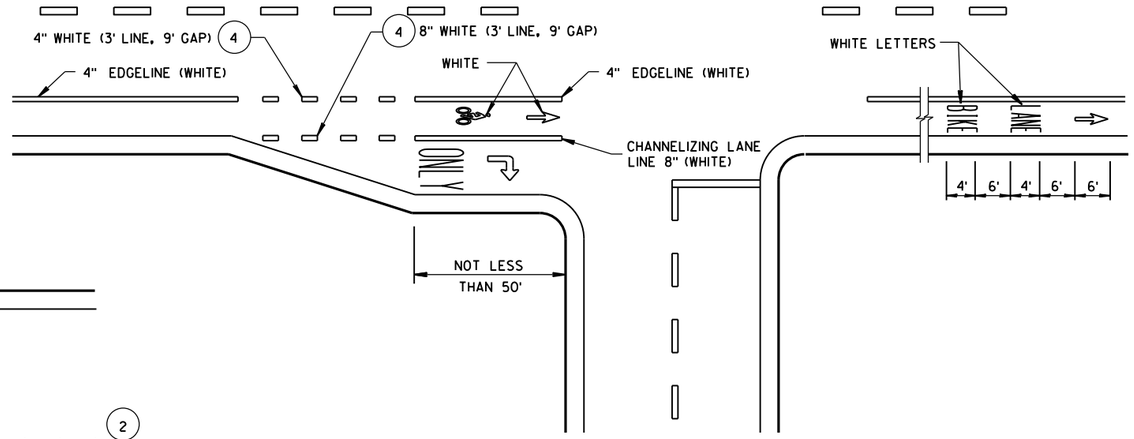
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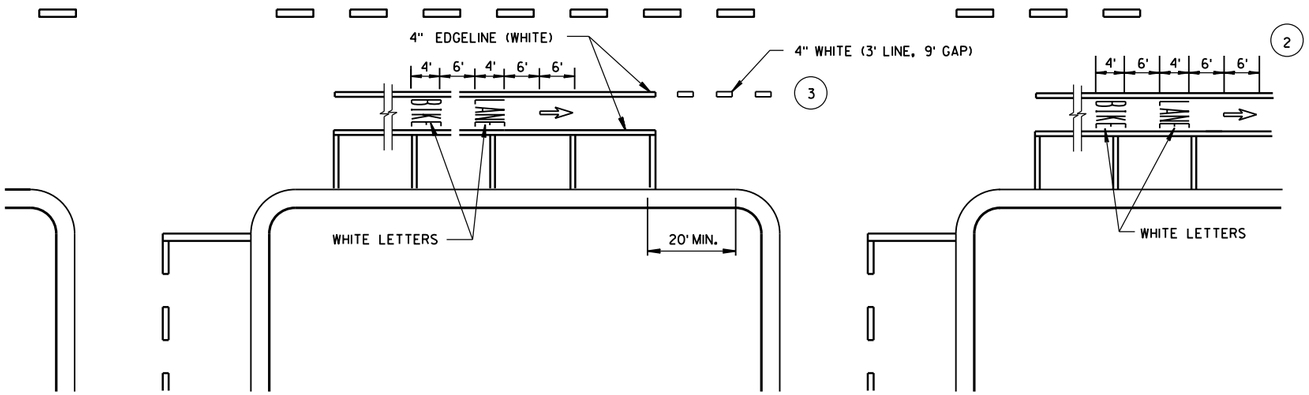
DESIGNATED BICYCLE LANE

GENERAL NOTES

1. DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.
2. THE SERIES OF PAVEMENT MARKING SYMBOLS SHALL BE REPEATED AFTER INTERSECTIONS AND SPACED A MAXIMUM OF 250'. NO PAVEMENT MARKING WILL TAKE PLACE IN THE CROSSWALK.
3. DOTTED LINES SHOULD BE USED 50' TO 200' IN ADVANCE OF AN INTERSECTION WHERE THERE IS NO RIGHT TURN ONLY LANE AND THERE IS HEAVY RIGHT TURN TRAFFIC OR THERE IS A NEAR-SIDE BUS STOP. AT OTHER INTERSECTIONS WHERE RIGHT TURN TRAFFIC IS LIGHT TO MODERATE, A SOLID LINE CAN BE USED UP TO THE INTERSECTION.
4. WHEN SPECIFIED IN THE CONTRACT.



DESIGNATED BICYCLE LANE
NO PARKING, RIGHT TURN LANE



DESIGNATED BICYCLE LANE
WITH PARKING, NO RIGHT TURN LANE

URBAN 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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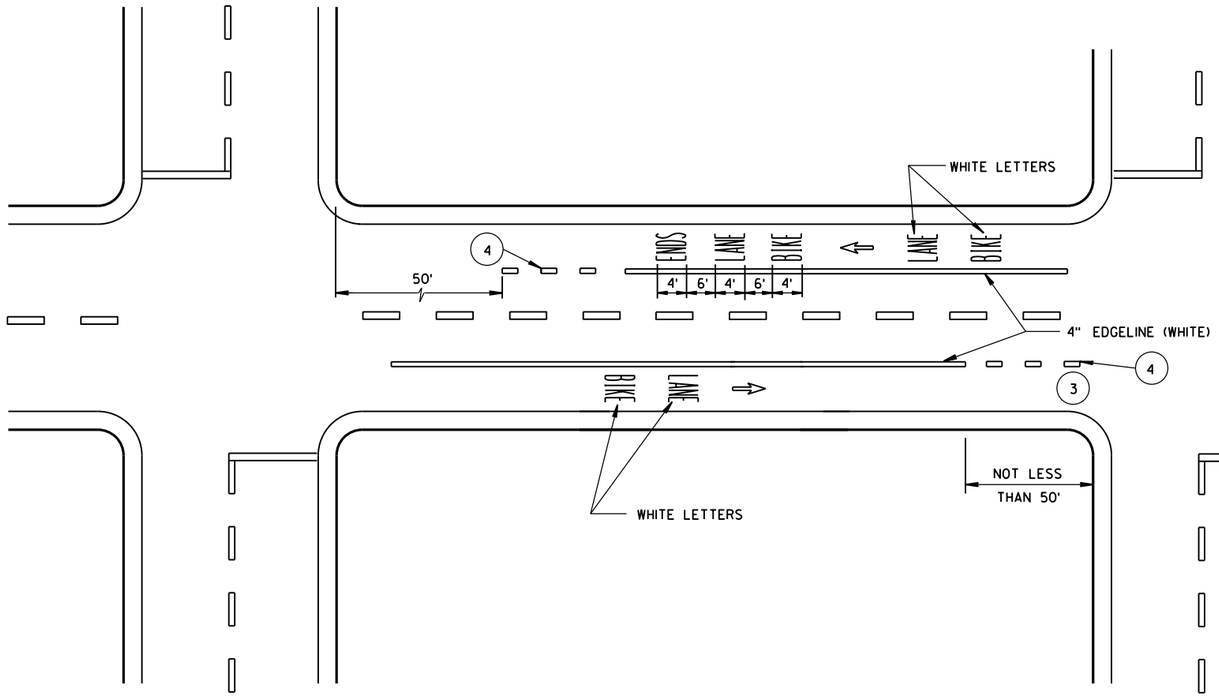
S.D.D. 15 C 29-3c

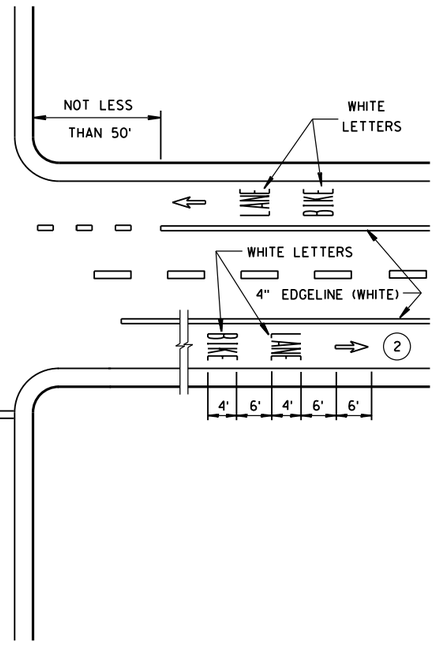
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S.D.D. 15 C 29-3c

GENERAL NOTES

1. DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.
2. THE SERIES OF PAVEMENT MARKING SYMBOLS SHALL BE REPEATED AFTER INTERSECTIONS AND SPACED A MAXIMUM OF 250'. NO PAVEMENT MARKING WILL TAKE PLACE IN THE CROSSWALK.
3. DOTTED LINES SHOULD BE USED 50' TO 200' IN ADVANCE OF AN INTERSECTION WHERE THERE IS NO RIGHT TURN ONLY LANE AND THERE IS HEAVY RIGHT TURN TRAFFIC OR THERE IS A NEAR-SIDE BUS STOP. AT OTHER INTERSECTIONS WHERE RIGHT TURN TRAFFIC IS LIGHT TO MODERATE, A SOLID LINE CAN BE USED UP TO THE INTERSECTION.
4. 3' LINE, 9' GAP - 4" WIDE, WHITE.





DESIGNATED BICYCLE LANE
NO PARKING

URBAN BICYCLE LANE MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4/30/2013
DATE

/S/ Travis Feltes
STATE TRAFFIC EN 252

FHWA

6

S.D.D. 15 C 29-3d

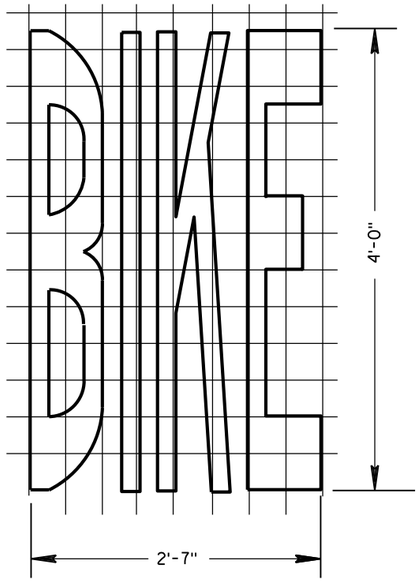
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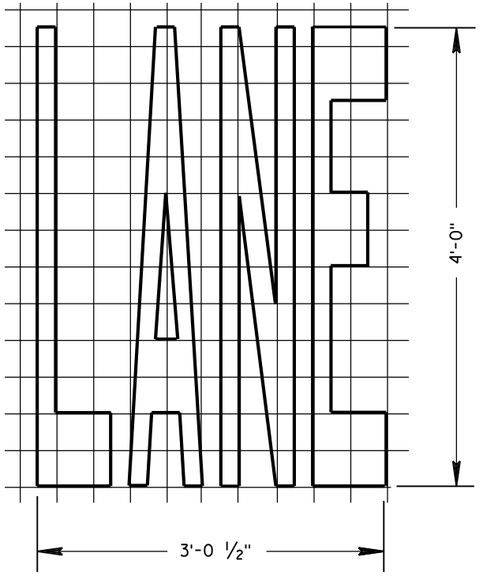
S.D.D. 15 C 29-3d

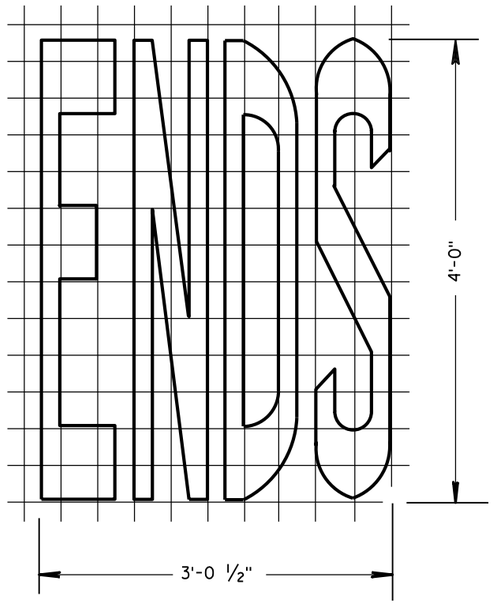
GENERAL NOTES

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.

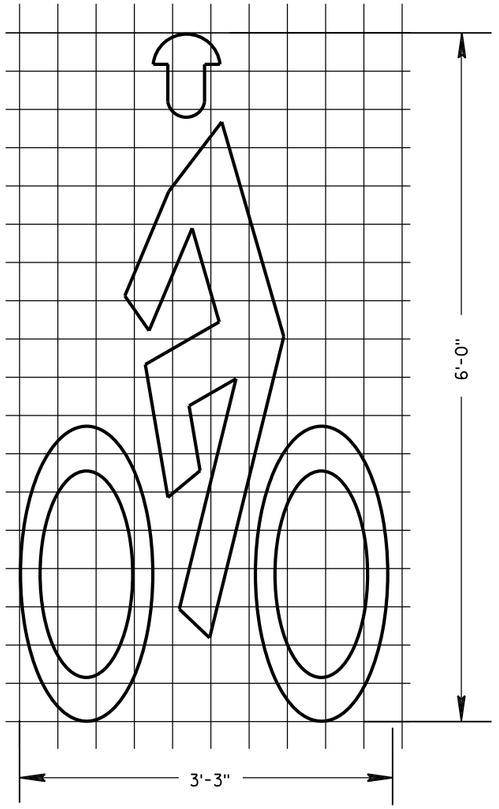
ALL LETTERS, ARROWS AND SYMBOLS SHALL BE IN CONFORMANCE WITH REQUIREMENTS INCLUDED IN "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKING" BOOK BY THE FEDERAL HIGHWAY ADMINISTRATION. ALL LETTERS, ARROWS AND SYMBOLS SHALL BE WHITE AND REFLECTORIZED. SMALL DIFFERENCES IN DIMENSIONS WITHIN THE TOLERANCES OF THAT BOOK ARE ACCEPTABLE.



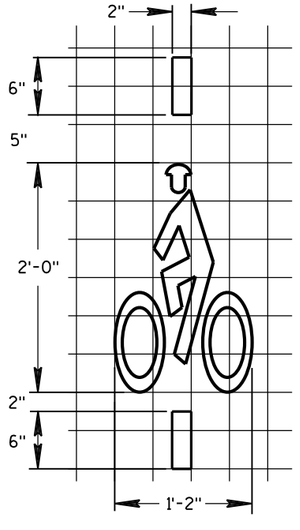




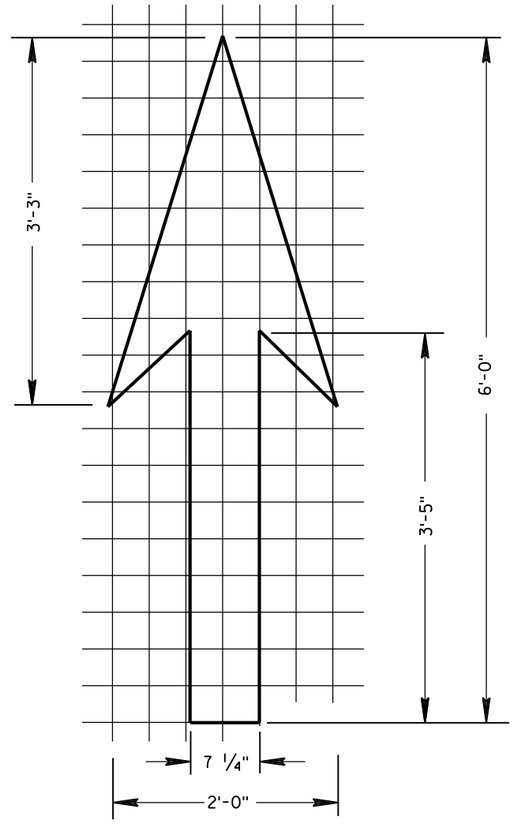
BIKE LANE WORDS



BIKE LANE SYMBOL



BICYCLE DETECTOR PAVEMENT MARKING



BIKE LANE ARROW

PAVEMENT MARKING FOR BIKE LANES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4-30-2013
DATE

/S/ Travis Feltes
STATE TRAFFIC EN

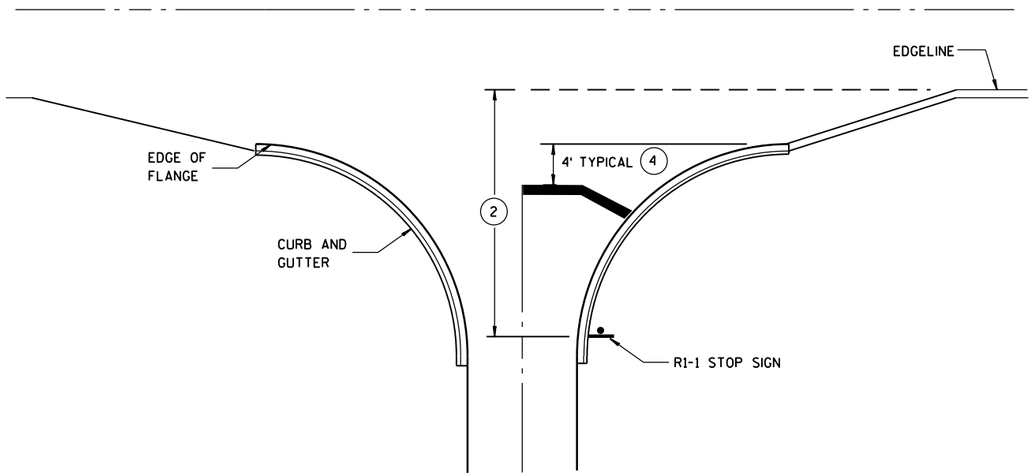
FHWA

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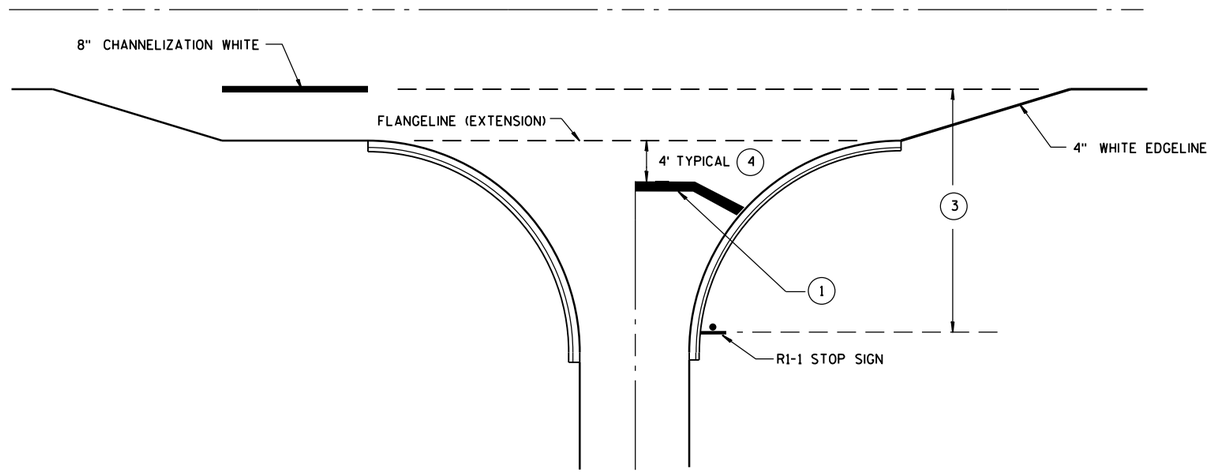
S.D.D. 15 C 29-3e

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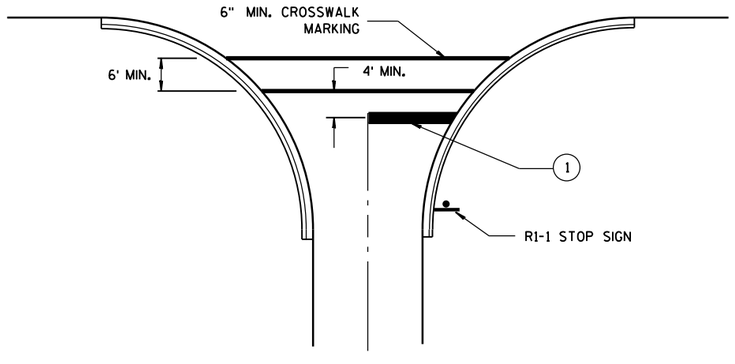
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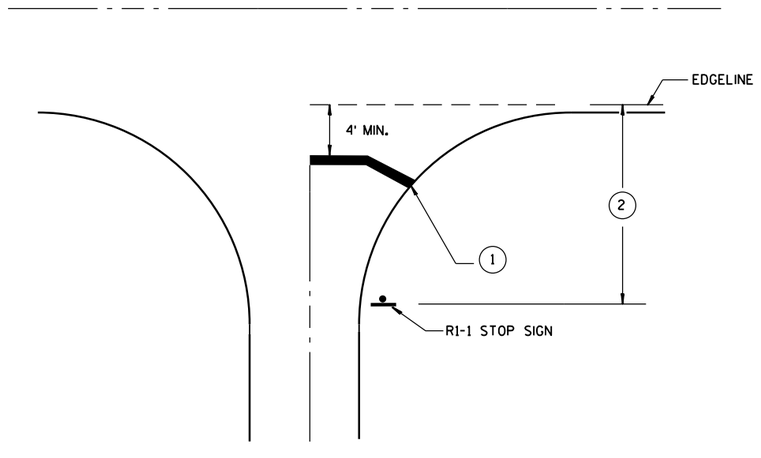
TYPICAL STOP LINE PAVEMENT MARKING WITH CURB AND GUTTER



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

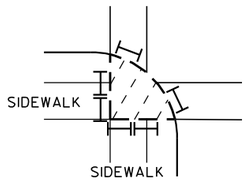
/S/ Travis Feltes
STATE TRAFFIC E

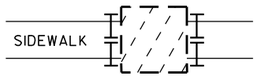
FHWA

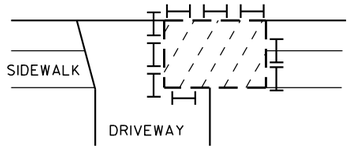
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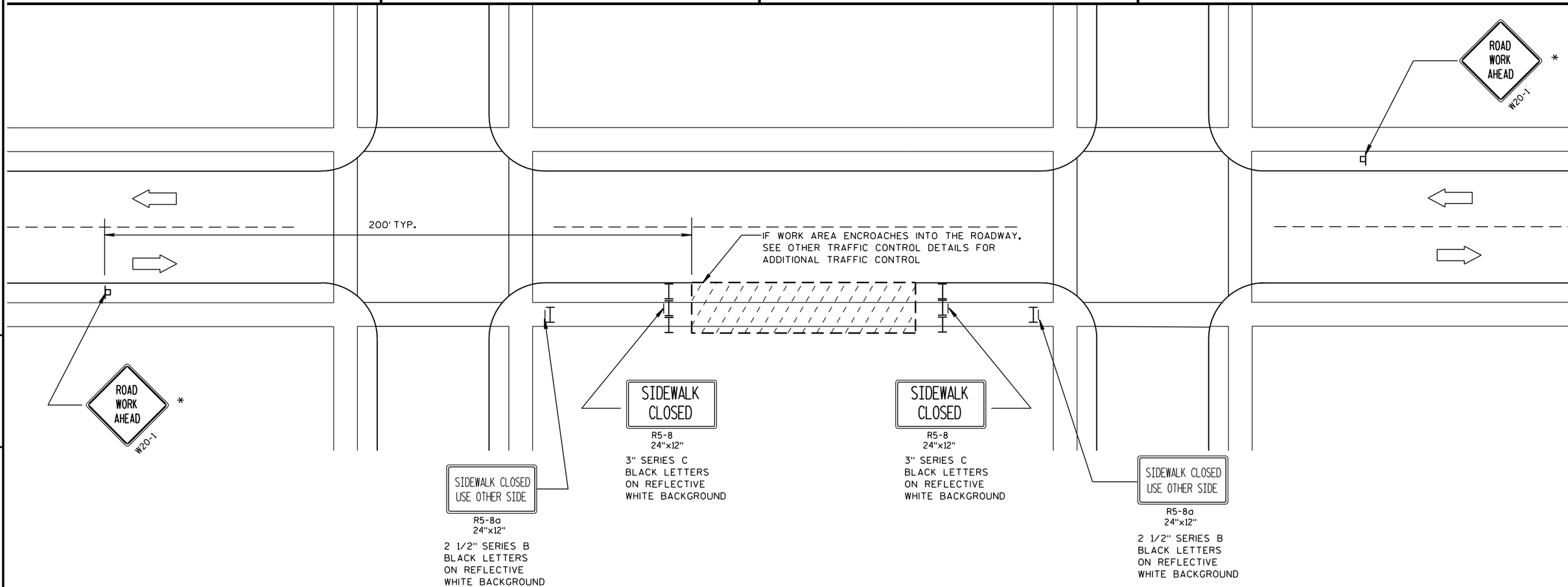
S.D.D. 15 C 33-1

WARNING OF LOCALIZED SIDEWALK WORK AREAS









LEGEND

- POST MOUNTED SIGN
- TYPE II BARRICADE WITH/WITHOUT SIGN (ALL WITH ONE WARNING LIGHT, TYPE A, LOW-INTENSITY FLASHING)
- WORK AREA
- DIRECTION OF TRAFFIC FLOW

GENERAL NOTES :

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, IF APPROVED BY DISTRICT TRAFFIC UNIT.

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

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

* "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.

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

TRAFFIC CONTROL, SIDEWALK CLOSURE

TRAFFIC CONTROL, SIDEWALK CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

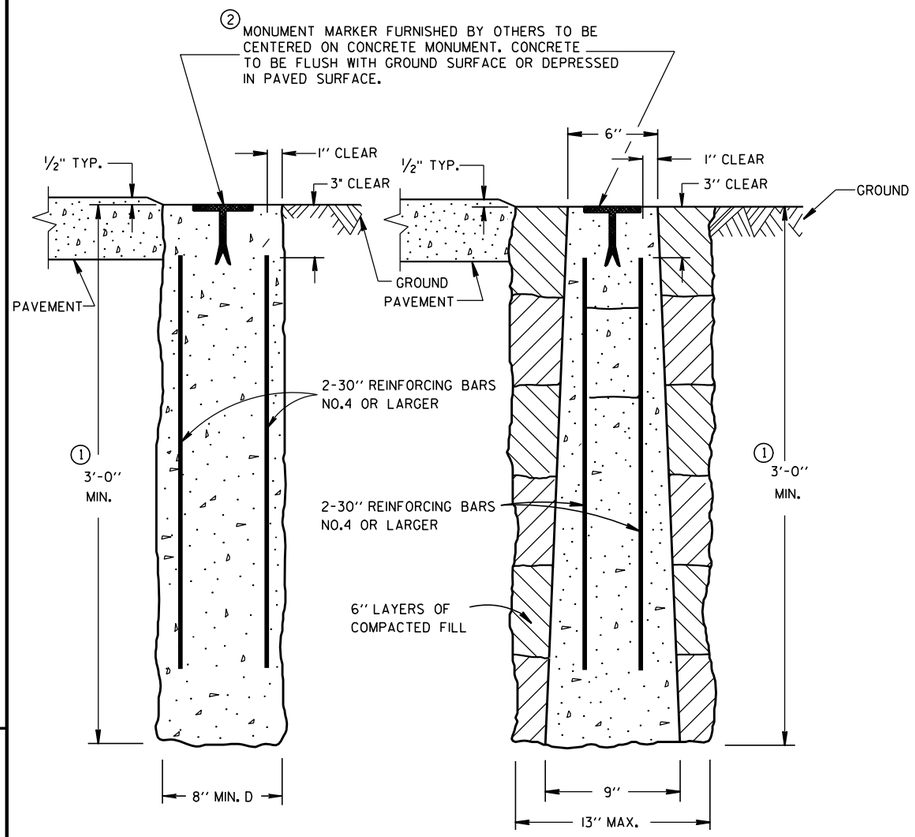
APPROVED
5/23/2000 DATE
/S/ Chester J. [illegible]
CHIEF SIGNS AND MARK 255 NEER
FHWA

6

S.D.D. 15 D 30-1

6

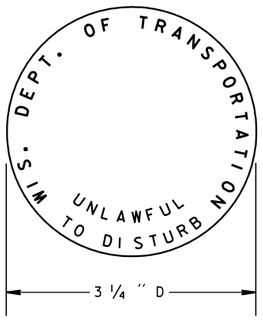
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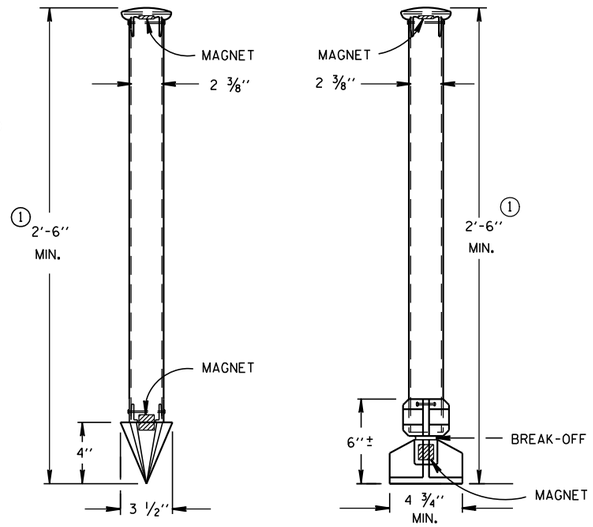
CAST-IN-PLACE PRECAST

CONCRETE MONUMENTS

TYPE A



② WIS DOT MONUMENT MARKER LOGO FOR TYPES "A", "C" & "D"



ALUMINUM MONUMENTS

(INCLUDES MARKER)

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.

DETAILED DRAWINGS OF PROPOSED ALTERNATE DESIGNS FOR METAL MONUMENTS OR MONUMENT COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

INSTALLED METAL MONUMENTS MUST BE EASILY DETECTED WITH A DIP NEEDLE. INSERT PERMANENT MAGNETS SHALL BE ATTACHED NEAR THE TOP AND BOTTOM OF THOSE MONUMENTS CONSTRUCTED OF A METAL ALLOY WHICH IS NOT ATTRACTIVE TO A DIP NEEDLE.

THE CAST IRON MONUMENT COVER SHALL BE A "NON-ROCKING" TYPE. ADJUSTMENT OF THE COVER TO GRADE MAY BE ACCOMPLISHED BY THE USE OF MORTAR AND BRICK, OR BY EITHER PRECAST OR CAST-IN-PLACE REINFORCED CONCRETE GRADE RINGS.

MONUMENTS SHALL BE LOCATED AND PLACED AT THE DIRECTION OF THE ENGINEER.

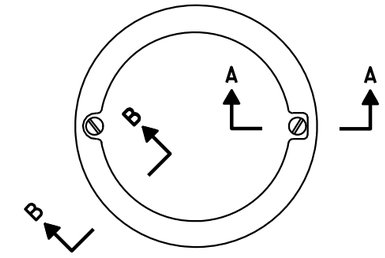
ALUMINUM MONUMENTS AND MONUMENT COVERS SHALL BE MADE FROM AN ALUMINUM AND MAGNESIUM ALLOY AS DETERMINED BY THE MANUFACTURER.

THE MONUMENT COVERS DETAILED ON THIS DRAWING ARE NOT EQUAL ALTERNATES. MONUMENT COVERS SHALL BE CAST IRON UNLESS ALUMINUM IS SPECIFIED ELSEWHERE IN THE CONTRACT.

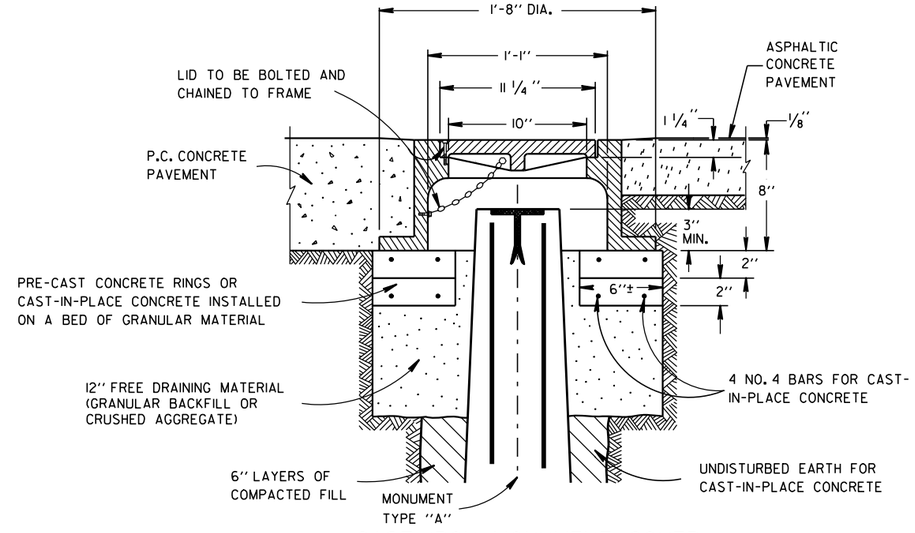
MONUMENT SHALL BE CAST-IN-PLACE CONCRETE UNLESS PRECAST CONCRETE OR ALUMINUM MONUMENTS ARE SPECIFIED IN THE CONTRACT OR PERMITTED BY THE ENGINEER.

① MINIMUM LENGTH SHALL BE 4'-0" FOR MONUMENTS INSTALLED IN PAVED AREAS.

② AN OFFICIAL COUNTY MONUMENT MARKER SUPPLIED BY A COUNTY MAY BE REQUIRED FOR SOME SECTION CORNERS AND WITNESS MONUMENTS INSTEAD OF THIS WIS DOT MARKER.

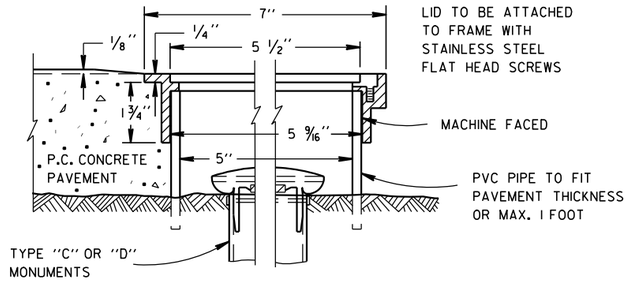


TOP VIEW



CAST IRON MONUMENT COVER

(APPROXIMATE WEIGHT - 95 LBS.)



SECTION B-B SECTION A-A

ALUMINUM MONUMENT COVER

(APPROXIMATE WEIGHT 2 LBS)

(FOR CONCRETE PAVEMENT ONLY)

LANDMARK REFERENCE MOUNMENTS AND COVERS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

9/22/1999
DATE

/S/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA

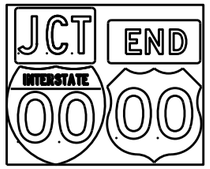
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S.D.D. 16 A 1-6

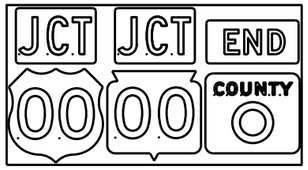
TYPICAL ASSEMBLIES



J1-1



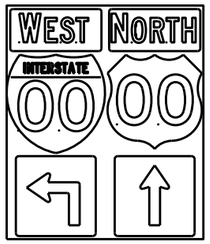
J1-2



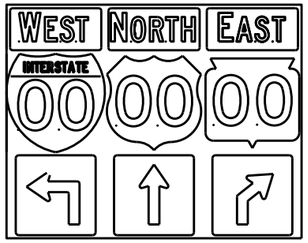
J1-3



J2-1



J2-2

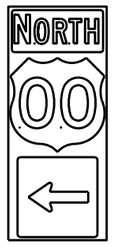


J2-3

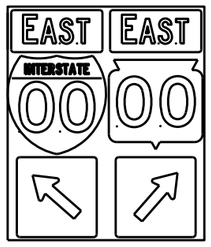


JV

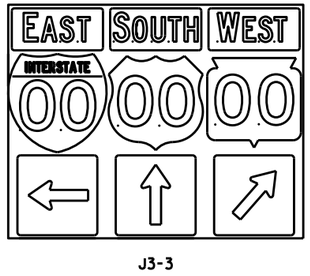
(Typical Vertical J-Assembly
See Note 10 and 11)



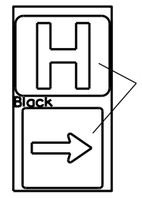
J3-1



J3-2



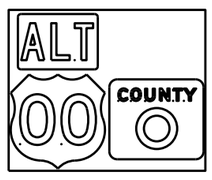
J3-3



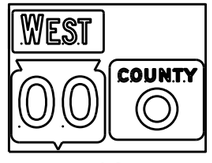
JH-1



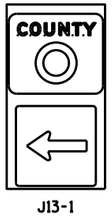
J4-1



J4-2



J4-2



J13-1



J12-1



J32-1



J33-1

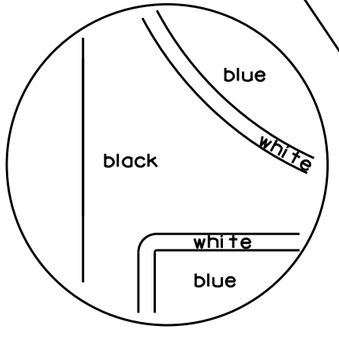


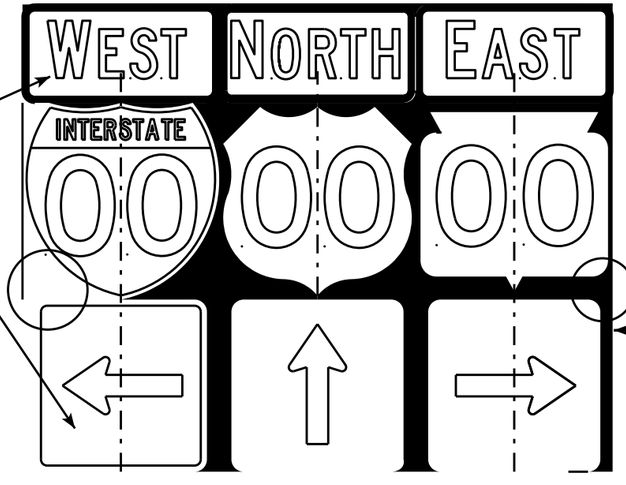
J23-1

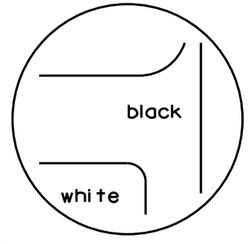


J22-1

[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

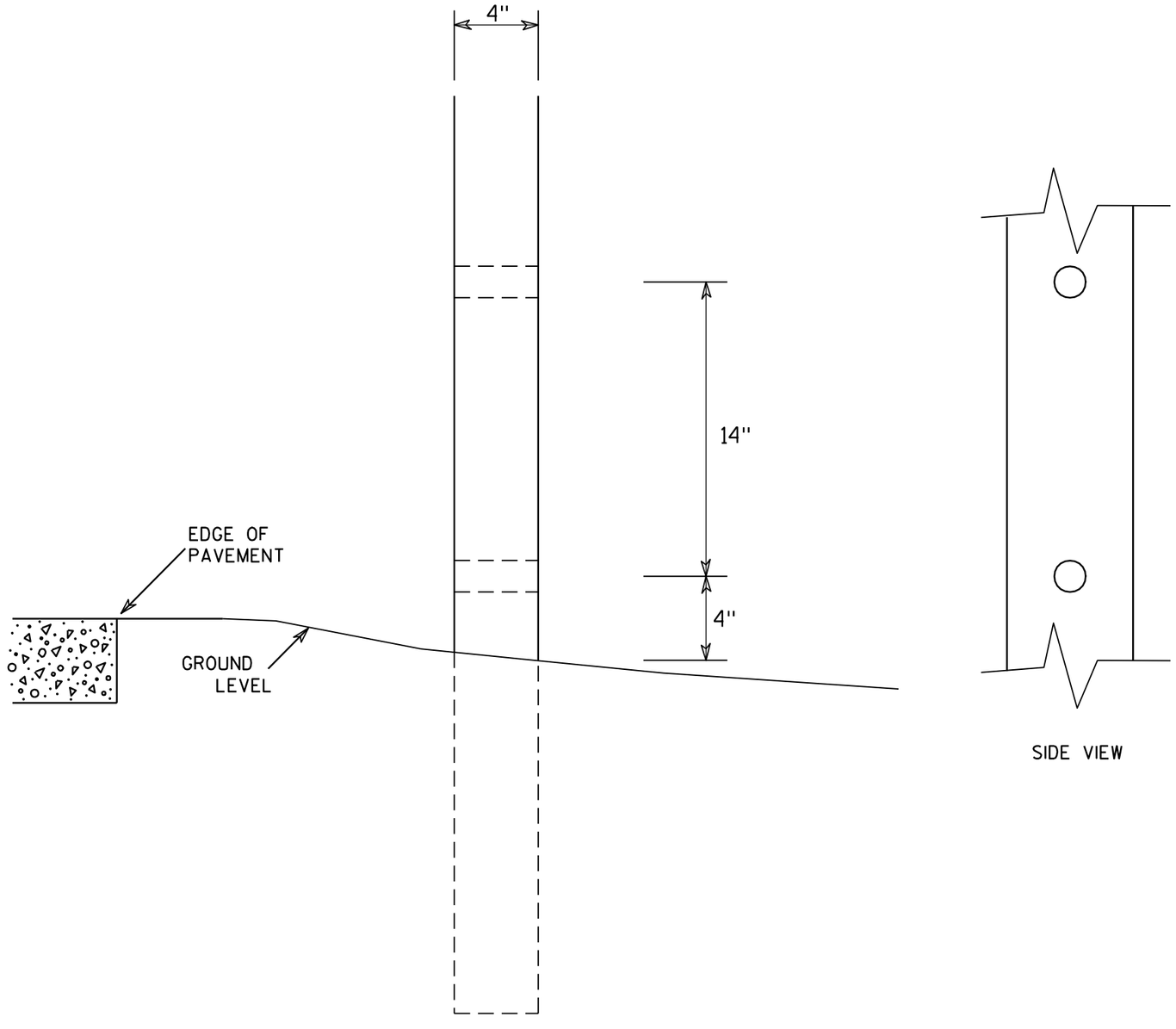
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/06/14 PL... A2-1S.8

PROJECT NO: | SHEET NO: E

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A21S.DGN PLOT DATE : 06-FEB-2014 14:10 PLOT BY : mscsja PLOT NAME :
WISDOT/CADDS SHEET 42



SIDE VIEW

GENERAL NOTES

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

4 X 6 WOOD POST MODIFICATIONS

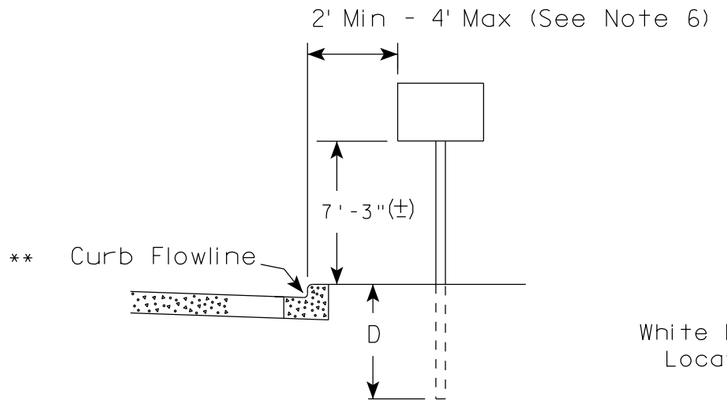
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spang for State Traffic Engineer

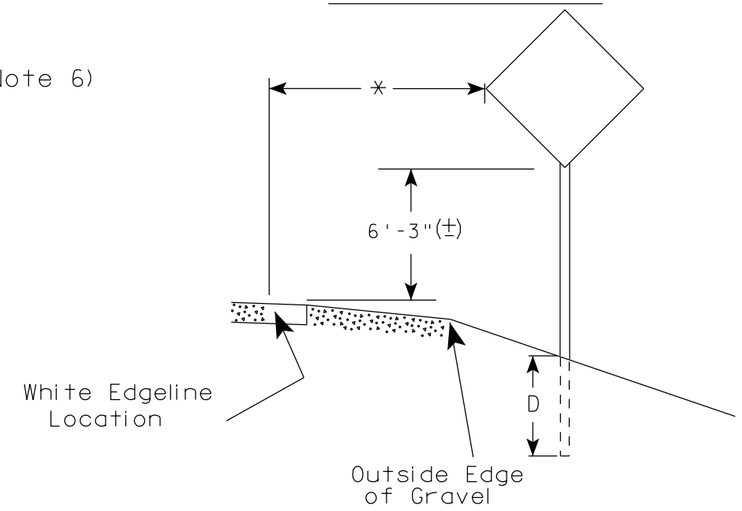
DATE 3/27/97 PLATE NO. A4-11.2

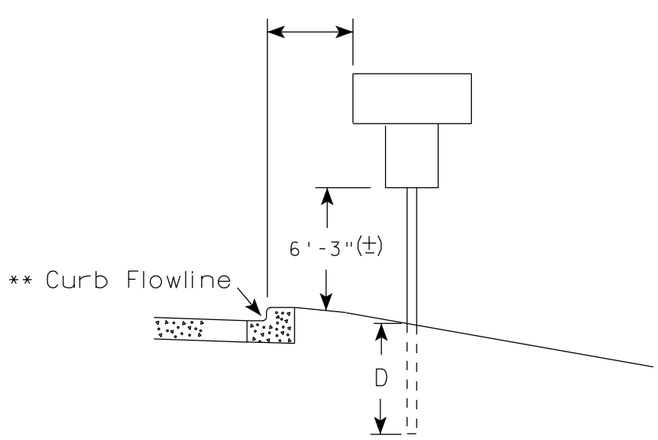
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 258	E

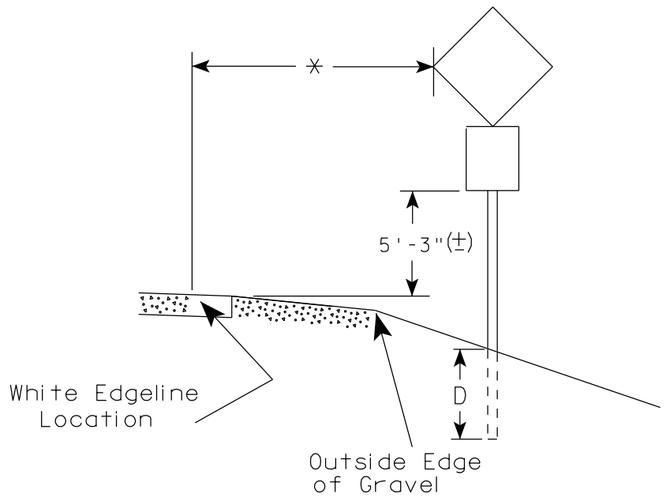
URBAN AREA



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.

GENERAL NOTES

1. Signs wider than 4 feet, 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 (A4-5) 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 stop signs (R1-1F) shall be mounted at a height of 5'-3" (±) or as directed 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) & End of Rod Markers (W5-56 & W5-56A) shall be mounted at a height of 4'-3" (+).

POST EMBEDMENT DEPTH

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

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

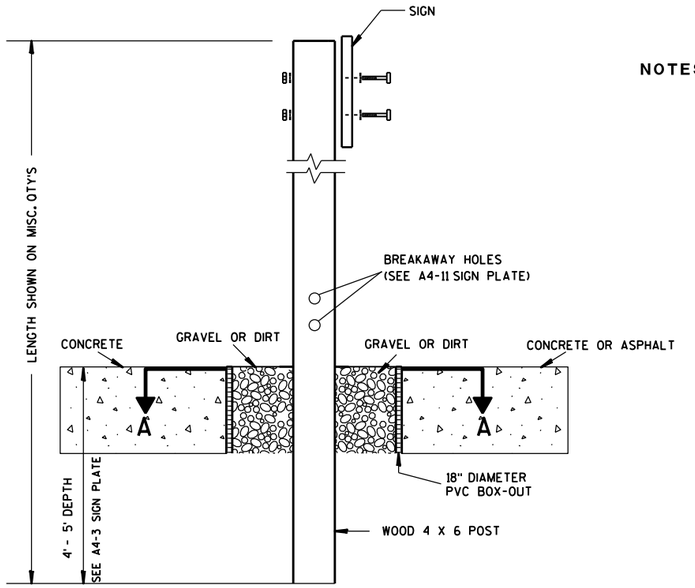
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 9/30/13 PLATE NO. A4-3.18

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

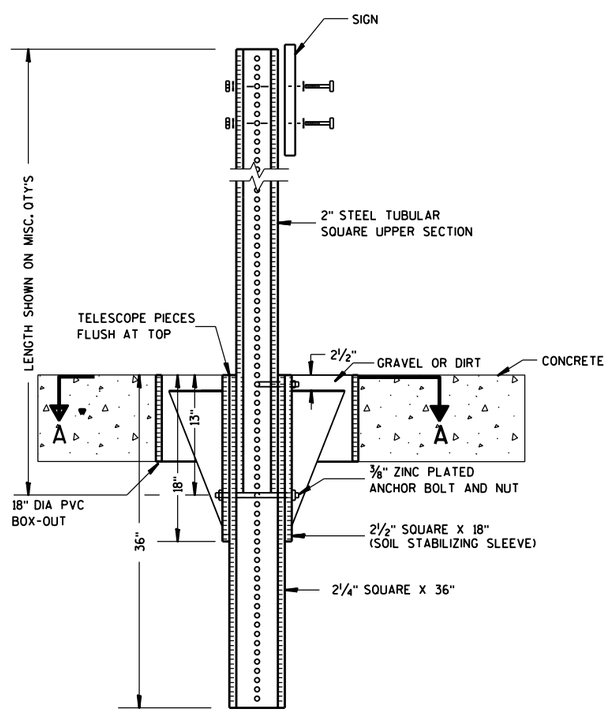
FILE NAME : C:\CAEfiles\Projects\tr_stdplate\A43.DGN PLOT DATE : 30-SEP-2013 13:25 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 99.237937:1.000000 WISDOT/CADDS SHEET 42



ELEVATION VIEW

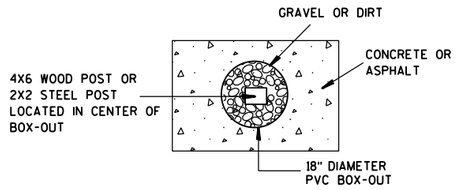
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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

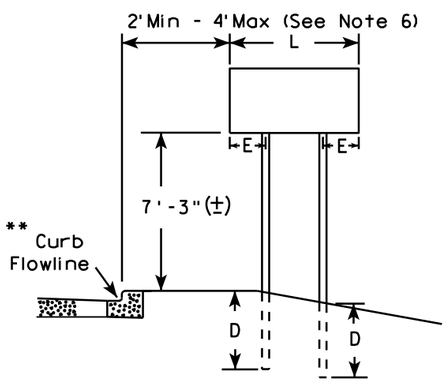
APPROVED Matthew R Rauch
for State Traffic Engineer

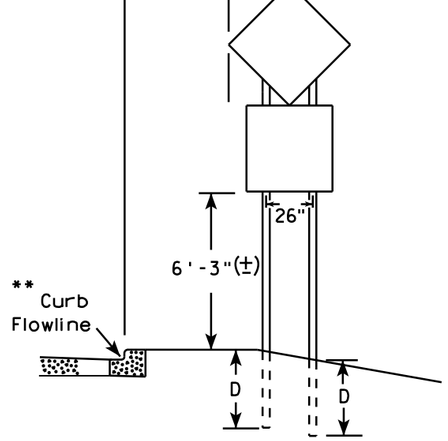
DATE 1/27/14 PLATE NO. A4-3B.1

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A43B.DGN PLOT DATE : 27-JAN-2014 09:48 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 13.659812:1.000000 WISDOT/CADDS SHEET 42

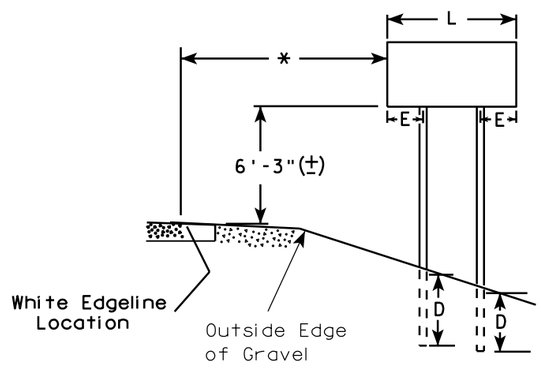
URBAN AREA

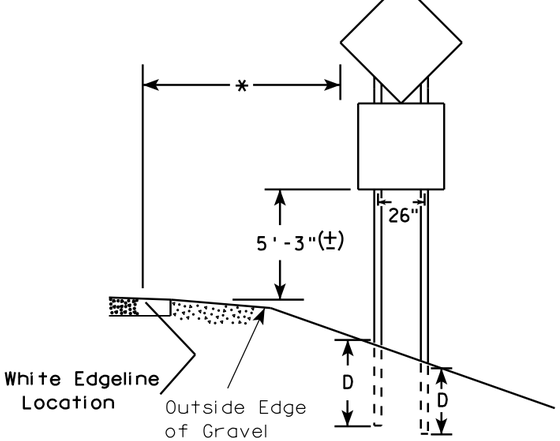




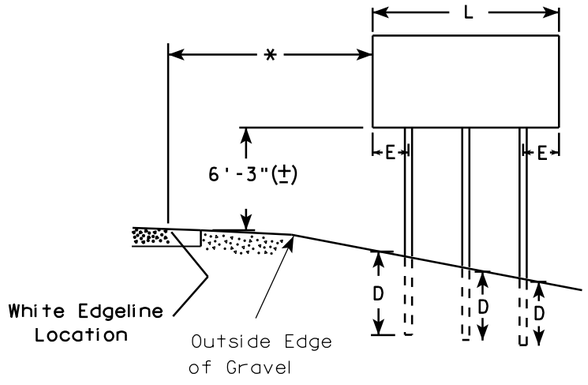
48" DIAMOND WARNING SIGN

RURAL AREA (See Note 3)





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 (A4-5) 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 stop signs (R1-1F) 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) & End of Road Markers (W5-56 & W5-56A) 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 or 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'

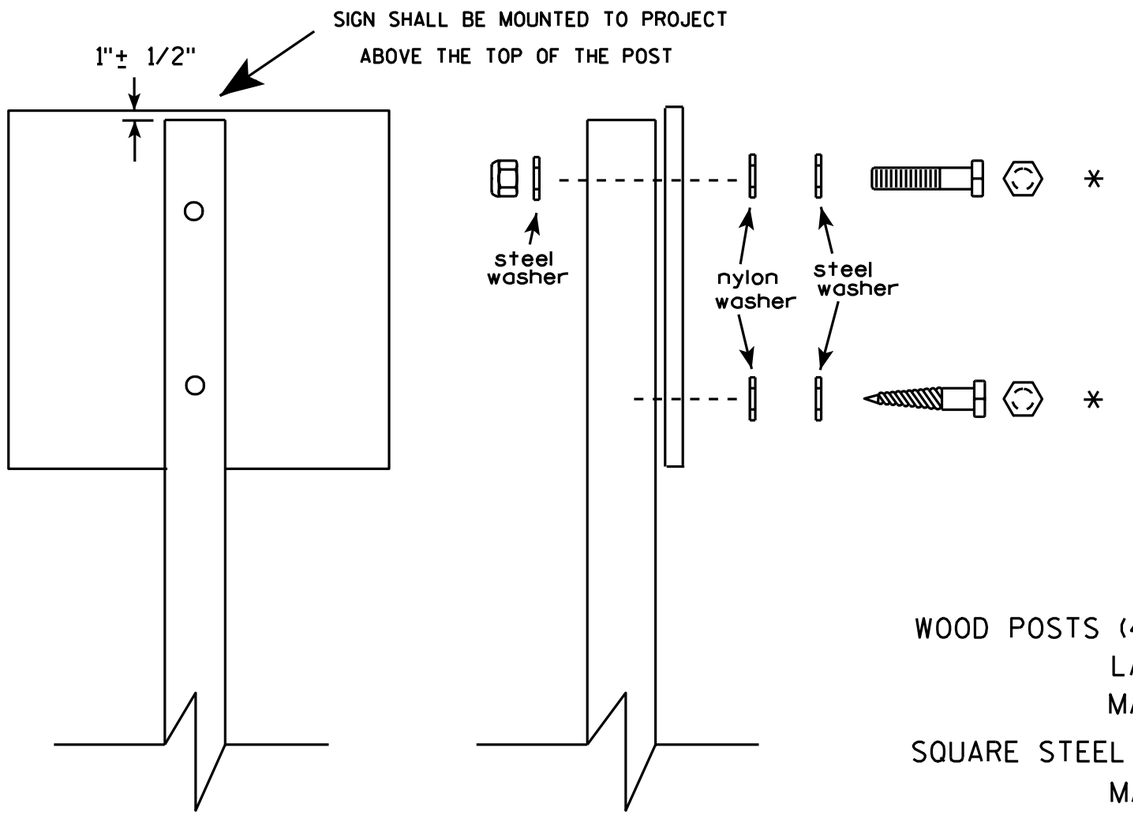
TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 4/29/14 PLATE NO. A4-4 13

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

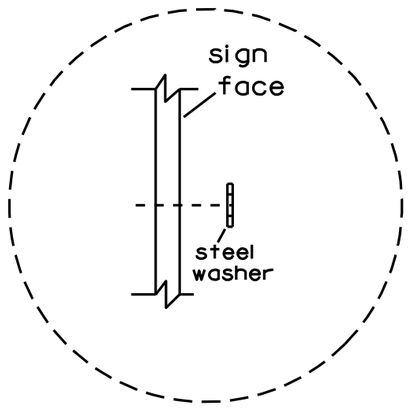
b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

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.

WOOD POSTS (4" x 4" or 4" x 6")
LAG SCREWS - 3/8" X 3"
MACHINE BOLTS - 5/16" X 6-1/2" or 7" Length w/ nuts

SQUARE STEEL POSTS (2" x 2")
MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts
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 for all Type H signs.



Washer Placement when Sign Has Other Than Type H or Type F Face

* 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 3/23/10 PLATE NO. A4-8.7

7

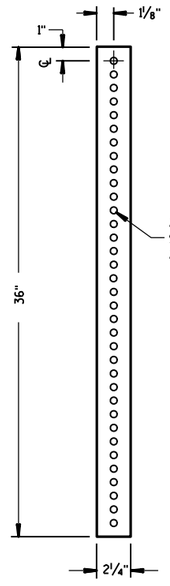
7

PROJECT NO:

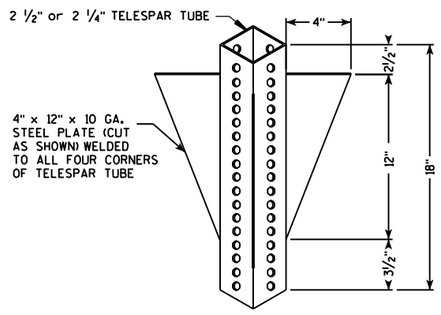
SHEET NO: 262 E

TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM

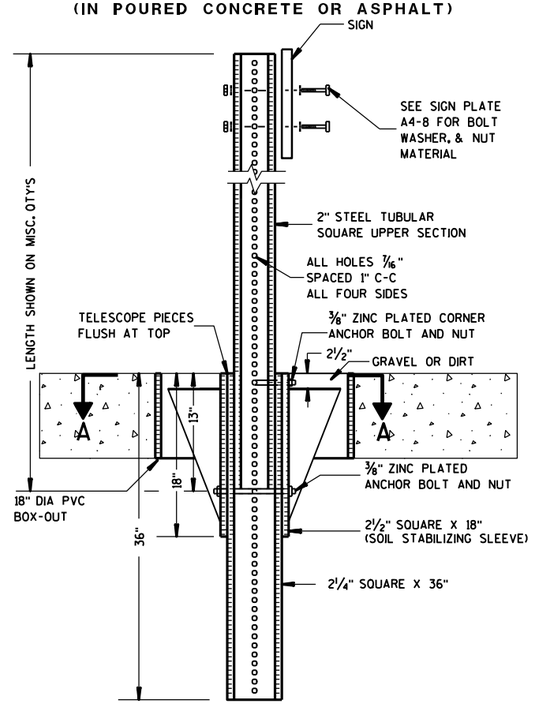
2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



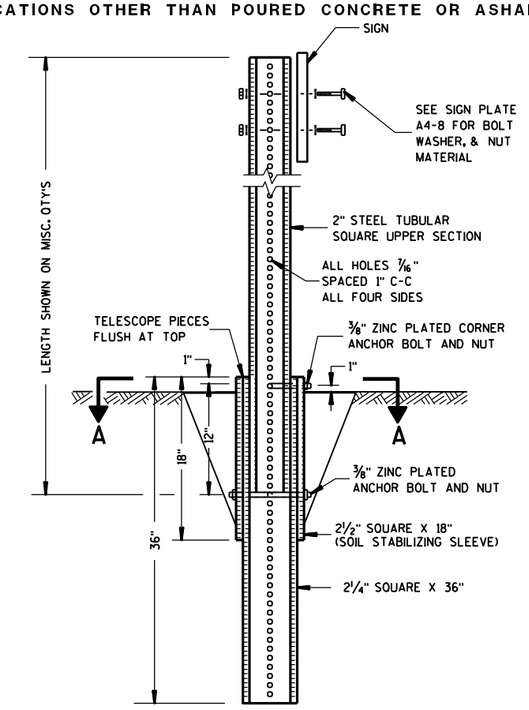
2 1/2 " SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH

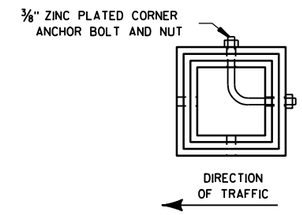


DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)



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





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).

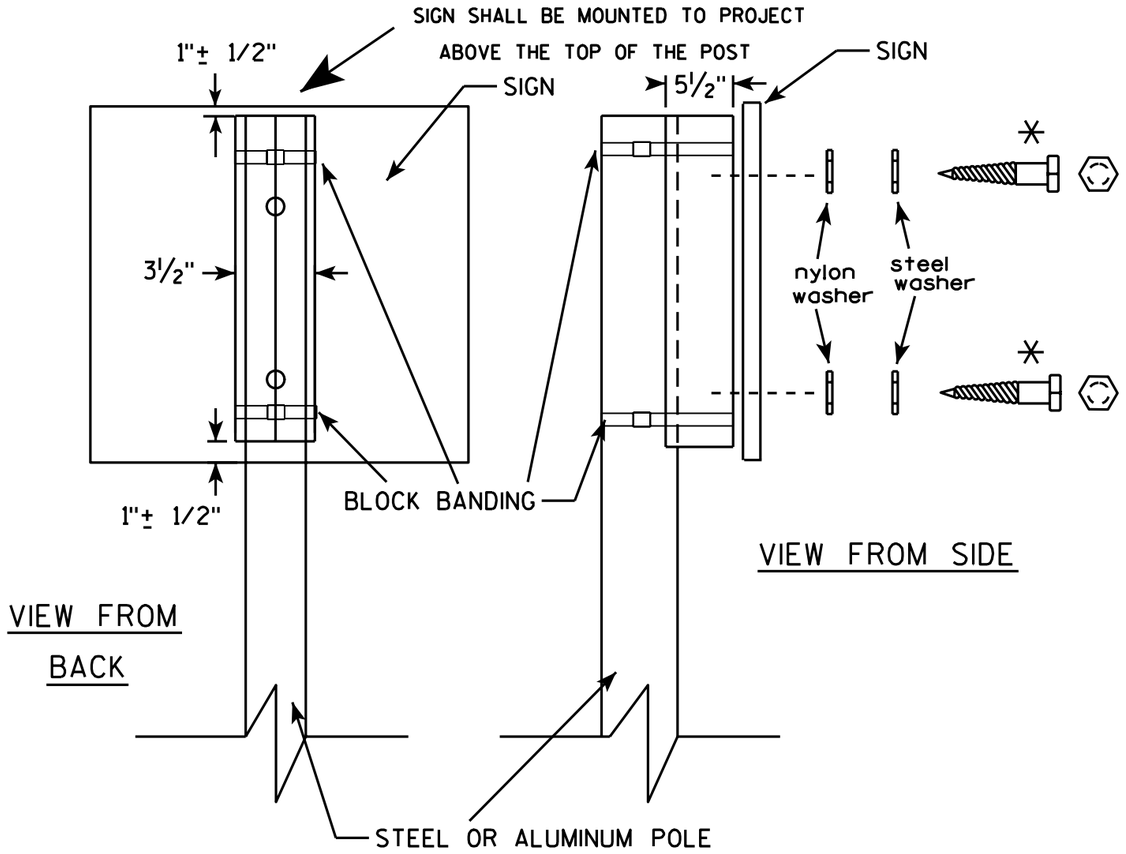
TUBULAR STEEL SIGN POST A4-9

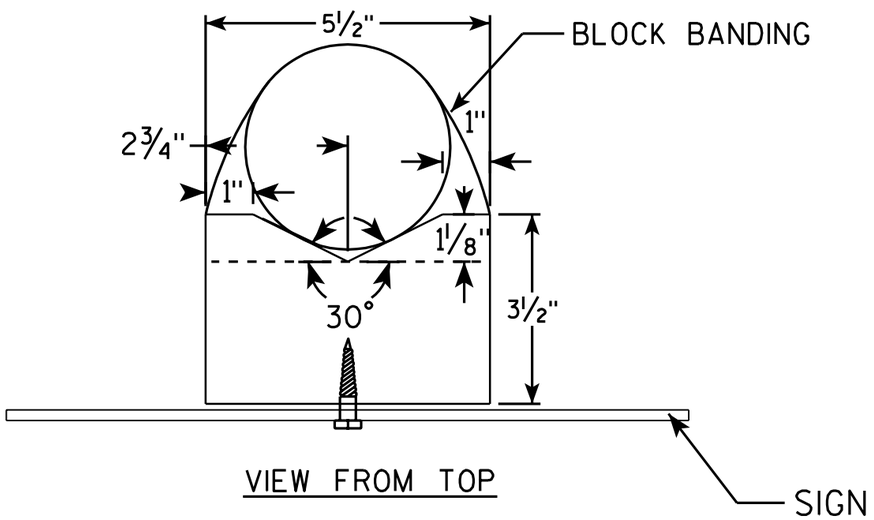
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/30/12 PLATE NO. A4-9.7

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 263	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:

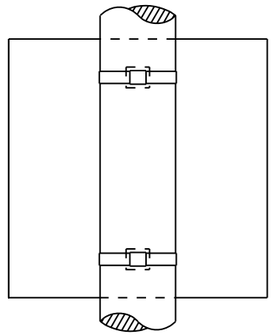
SHEET NO: 264 E

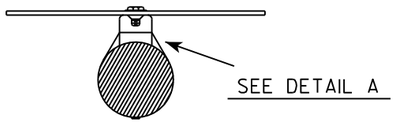
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WISDOT/CADDS SHEET 42

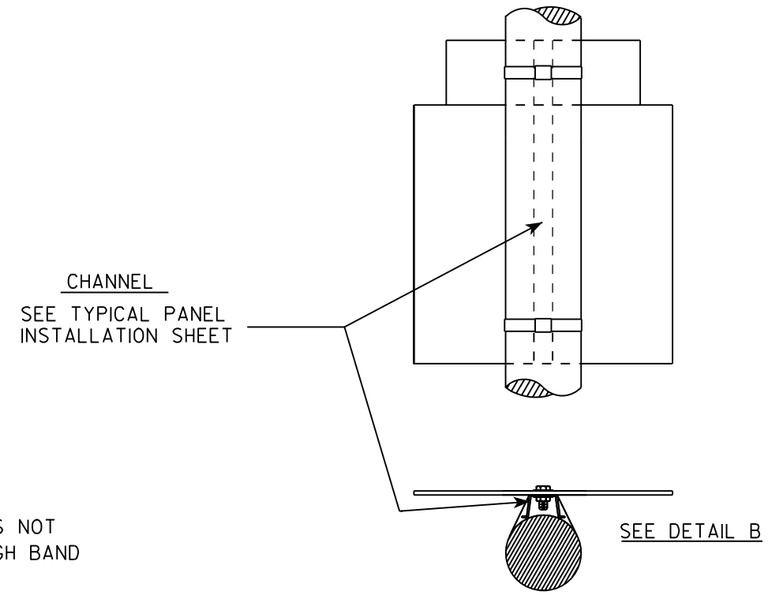
BANDING

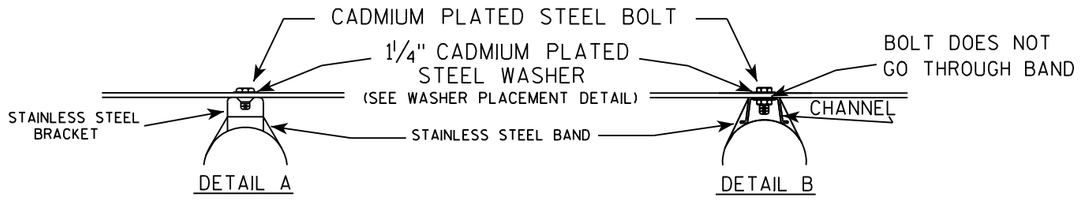
SINGLE SIGN



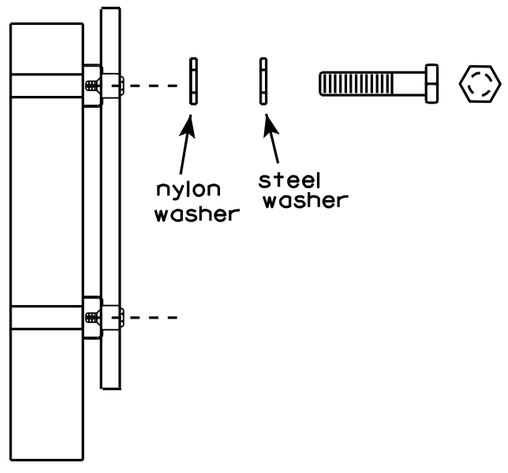


"J" ASSEMBLY





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.

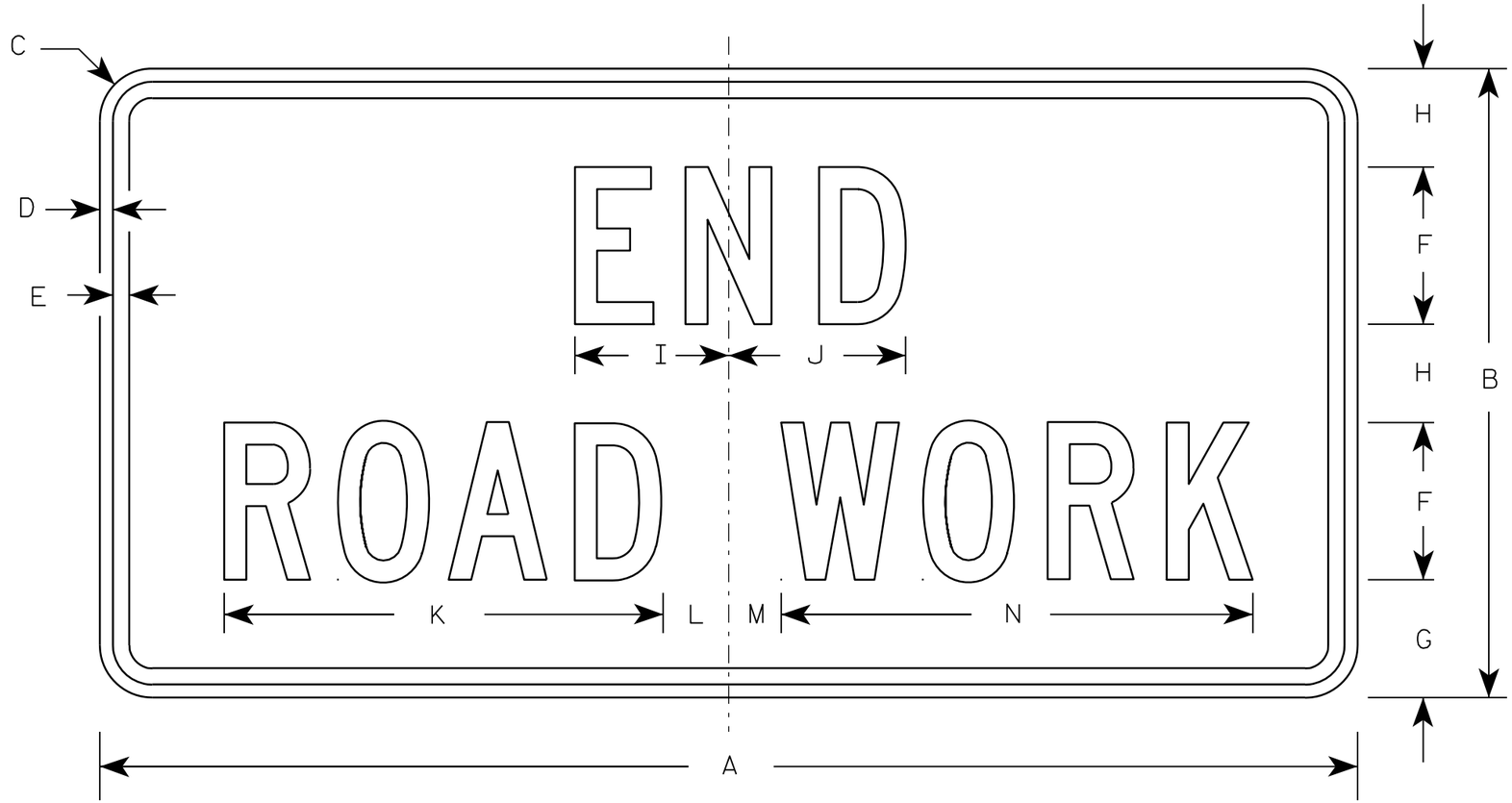
STANDARD SIGN
SIGN BANDING DETAILS

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: 265	E



G20-2A

NOTES

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

Metric equivalent for this sign is:

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area m2
1	36	18	1 1/8	3/8	1/2	4	3 3/4	2 1/2	4 1/8	4 1/8	11 1/8	2	1	12 1/8													4.5	0.41
2	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
3	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
4	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
5	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72

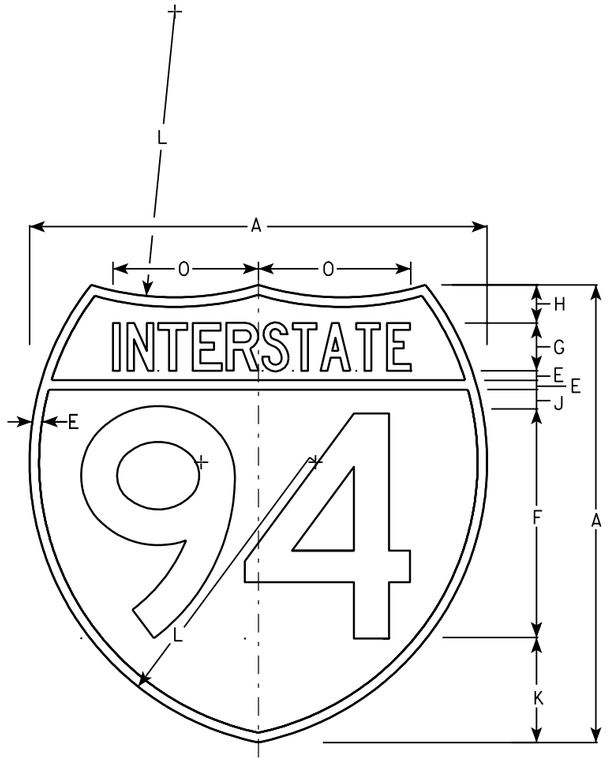
STANDARD SIGN
G20-2A

WISCONSIN DEPT OF TRANSPORTATION

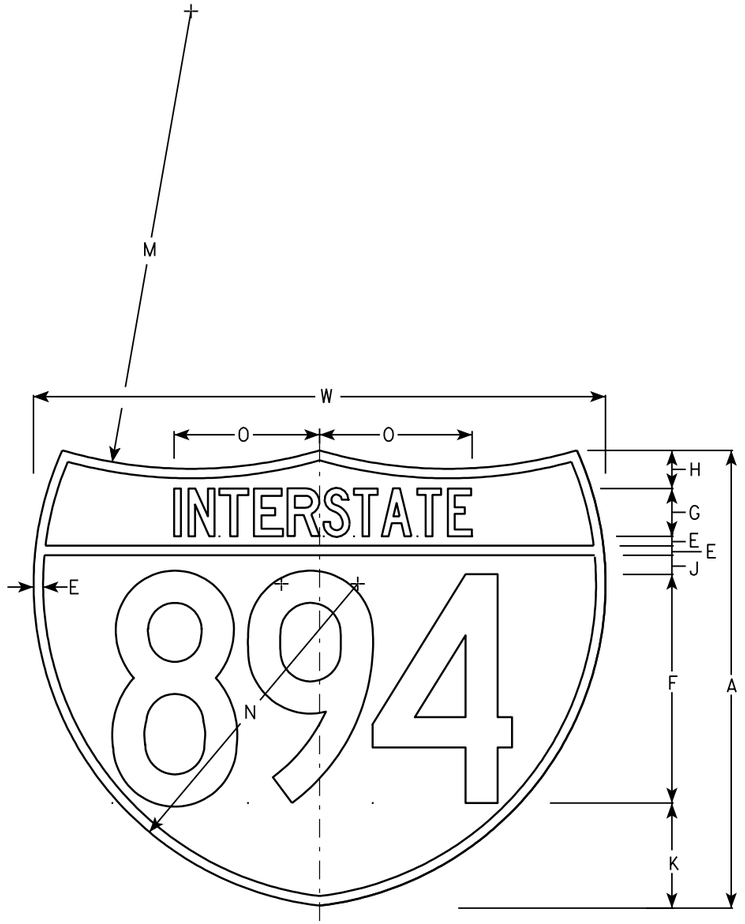
APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 266	E



M1-1



M1-1A

NOTES

1. Sign is Type II - See Note 6 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Top Red - Bottom Blue (See Note 6)
   Message - White - See Note 6
3. Message Series - See note 5
4. Substitute appropriate numerals & ajust spacing as per plate A10-1.
5. M1-1 - Numerals - D
   Interstate - C
   M1-1A - All copy - C
6. Permanent Signs
   Message - Type H Reflective
   Detour or other temporary signs
   Background - Reflective
   Message - Reflective

Metric equivalent for these signs are:

SIZE	M1-1	SIZE	M1-1A
1			
2	600 mm X 600 mm	2	600 mm X 750 mm
3	900 mm X 900 mm	3	900 mm X 1125 mm
4	900 mm X 900 mm	4	900 mm X 1125 mm
5	900 mm X 900 mm	5	900 mm X 1125 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	M1-1 Area sq. ft.	M1-1A Area sq. ft.	M1-1 Area m2	M1-1A Area m2
1																													
2	24				1/2	12	2 1/2	2		1	5 1/2	15	24	17	7 7/8								30			3.13	3.91	.36	.46
3	36				3/4	18	3 3/4	3		1 1/2	8 1/4	22 1/2	36	25 1/2	11 3/4								45			7.03	8.79	.81	1.05
4	36				3/4	18	3 3/4	3		1 1/2	8 1/4	22 1/2	36	25 1/2	11 3/4								45			7.03	8.79	.81	1.05
5	36				3/4	18	3 3/4	3		1 1/2	8 1/4	22 1/2	36	25 1/2	11 3/4								45			7.03	8.79	.81	1.05

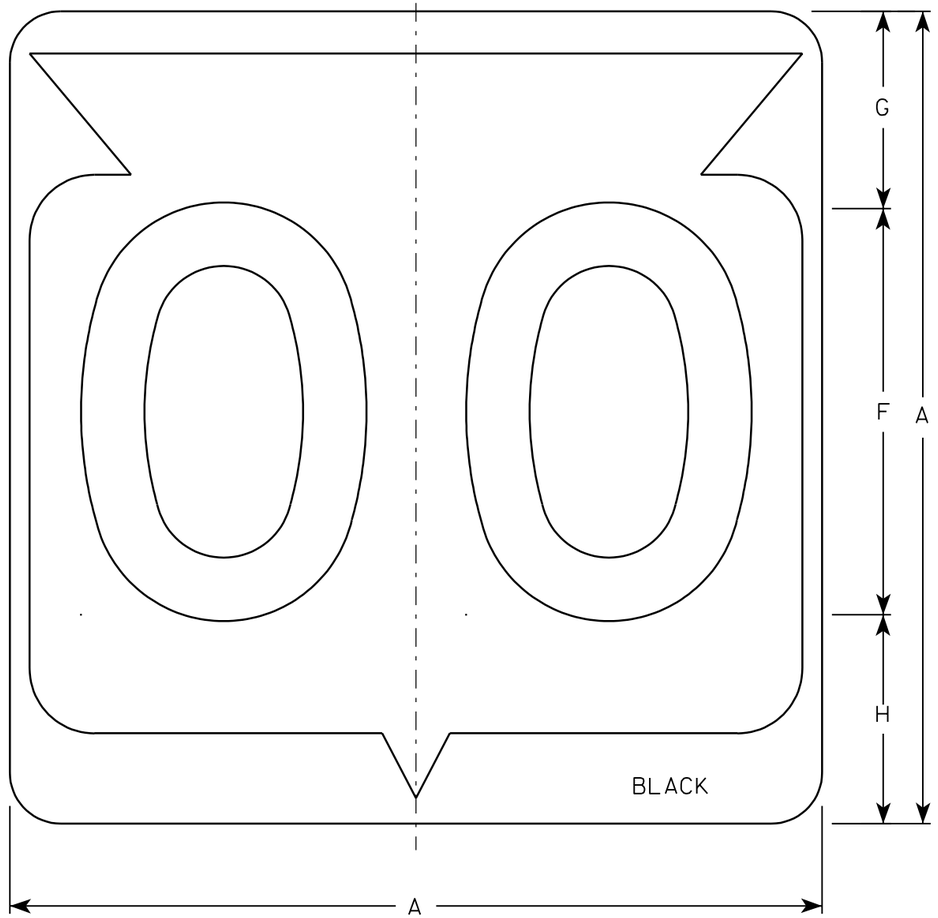
INTERSTATE ROUTE MARKER
M1-1 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 08/23/05 PLATE NO. M1-1.8

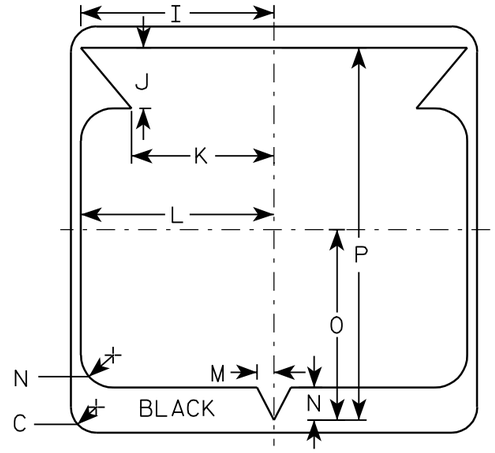
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 267	E



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

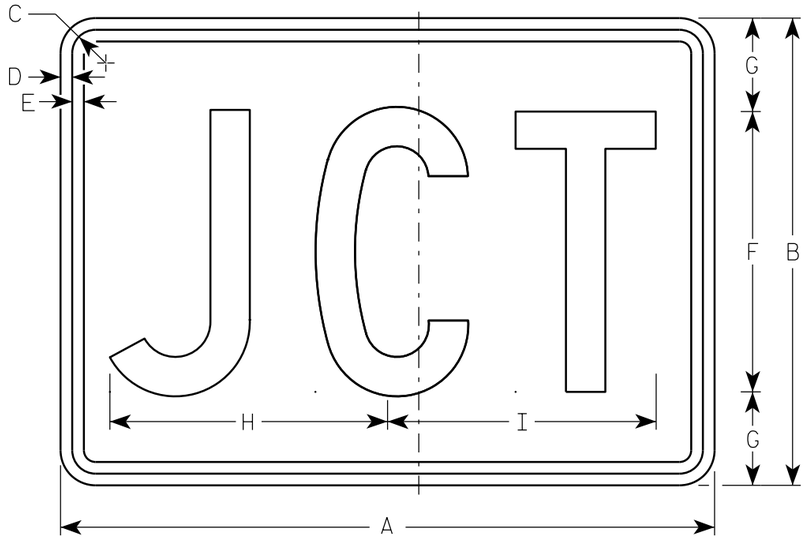
STATE ROUTE MARKER M1-6 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

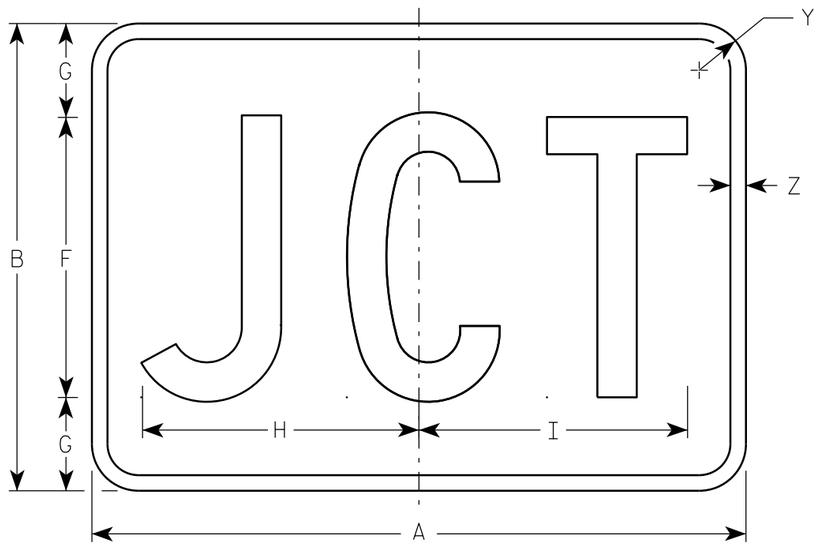
APPROVED Chester J Spang for State Traffic Engineer

DATE 3/20/02 PLATE NO. M1-6.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 268	E



M2-1
MK2-1
MM2-1
MN2-1
MR2-1



MB2-1

NOTES

1. Sign is 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. M2-1 Background - White
   Message - Black
   MB2-1 Background - Blue
   Message - White
   MK2-1 Background - Green
   Message - White
   MM2-1 Background - White
   Message - Green
   MN2-1 Background - Brown
   Message - White
   MR2-1 Background - Brown
   Message - Yellow

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	15	1 1/8	3/8	3/8	9	3	8 7/8	8 5/8																1 1/2	1/2	2.20
3	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40
4	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40
5	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40

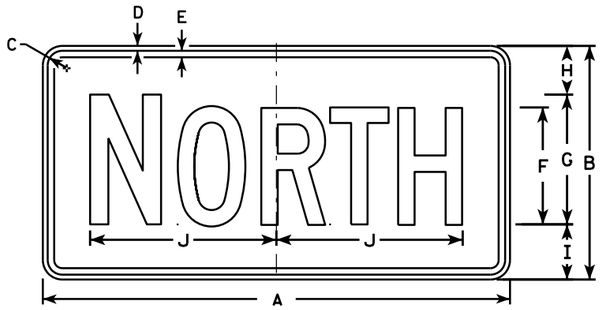
STANDARD SIGN
M2-1

WISCONSIN DEPT OF TRANSPORTATION

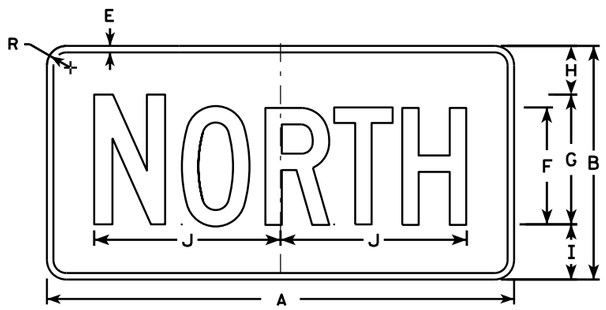
APPROVED Matthew R Rauch
For State Traffic Engineer

DATE 6/30/14 PLATE 269 12-1.11

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E



M3-1
MK3-1
MM3-1
MN3-1



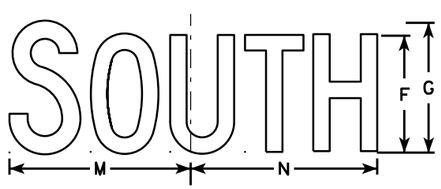
MB3-1



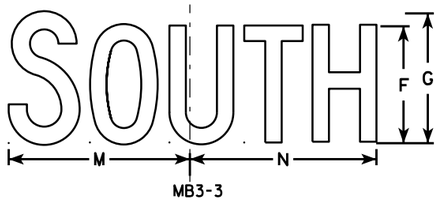
M3-2
MK3-2
MM3-2
MN3-2



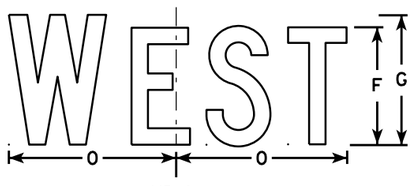
MB3-2



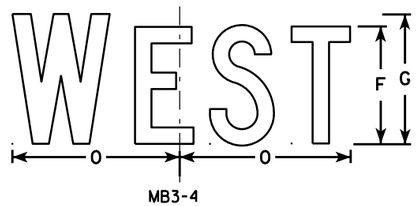
M3-3
MK3-3
MM3-3
MN3-3



MB3-3



M3-4
MK3-4
MM3-4
MN3-4



MB3-4

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
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

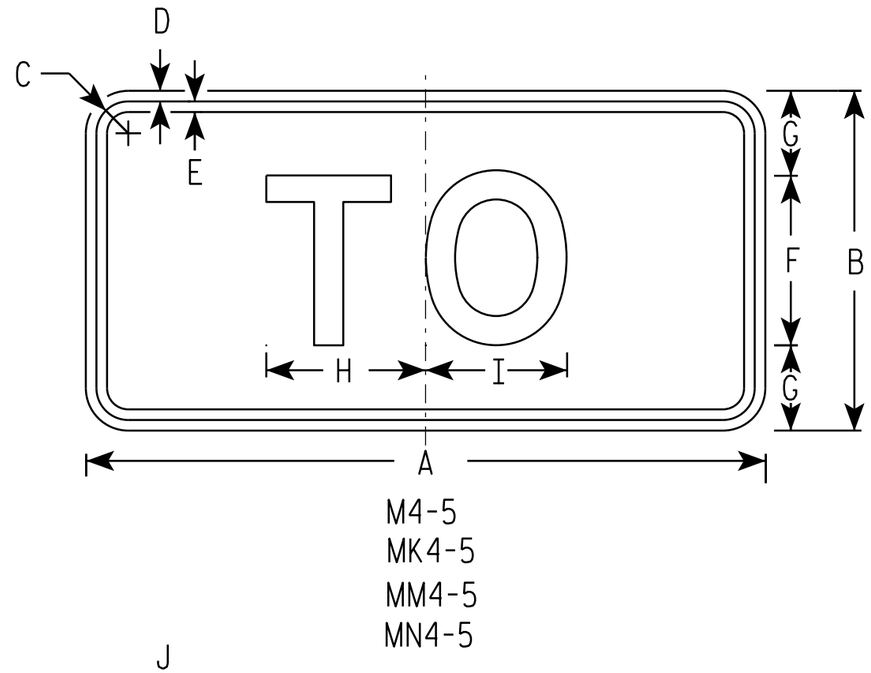
STANDARD SIGNS
M3-1 thur M3-4
SERIES

WISCONSIN DEPT OF TRANSPORTATION

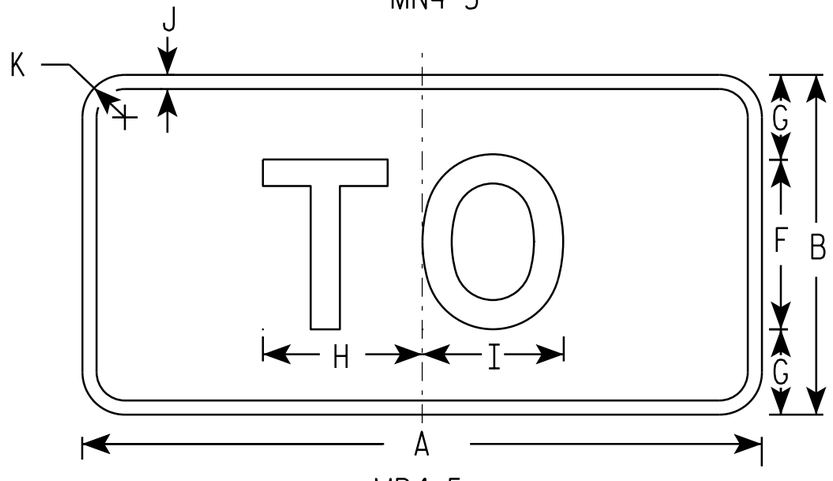
APPROVED Matthew R Rauch for State Traffic Engineer

DATE 6/30/14 PLATE NO M3-1.13

PROJECT NO: | HWY: | COUNTY: | | SHEET NO: E



M4-5
MK4-5
MM4-5
MN4-5



MB4-5

NOTES

1. Sign is Type II - Type H
2. Color:
   Background - See note 5
   Message - See note 5
3. Message Series - E
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M4-5 Background - White
   Message - Black

   MB4-5 Background - Blue
   Message - White

   MK4-5 Background - Green
   Message - White

   MM4-5 Background - White
   Message - Green

   MN4-5 Background - Brown
   Message - White

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	3	5 3/8	5 1/4	1/2	1 1/2																2.00
3	36	18	1 3/8	3/8	1/2	9	4 1/2	8 1/4	8 3/8	1/2	1 1/2																4.5
4	36	18	1 3/8	3/8	1/2	9	4 1/2	8 1/4	8 3/8	1/2	1 1/2																4.5
5	36	18	1 3/8	3/8	1/2	9	4 1/2	8 1/4	8 3/8	1/2	1 1/2																4.5

STANDARD SIGN
M4-5

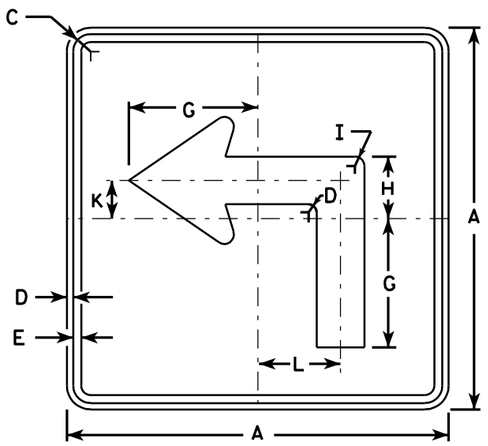
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

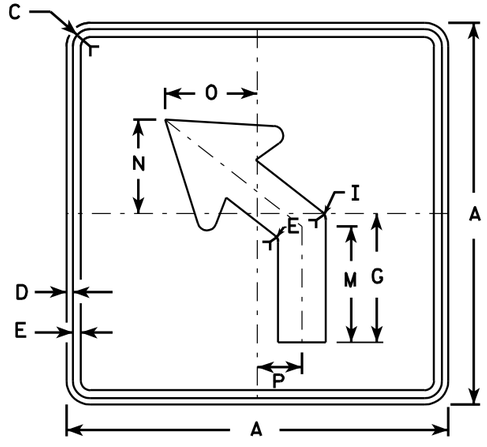
DATE 6/30/14 PLATE M4-5.7

PROJECT NO: | HWY: | COUNTY: | SHEET NO: E

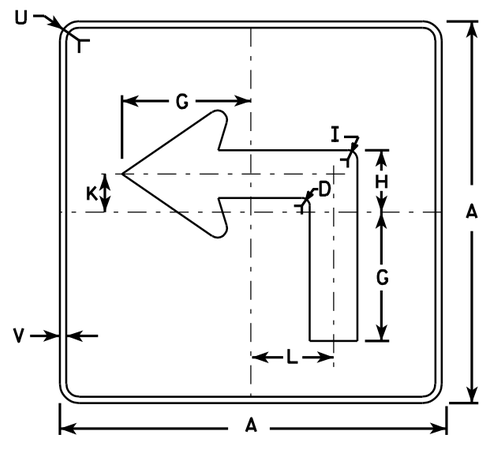
FILE NAME : C:\CAEFiles\Projects\tr_stdplate\M45.DGN PLOT DATE : 30-JUN-2014 12:48 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 5.351066:1.000000
WISDOT/CADDS SHEET 42



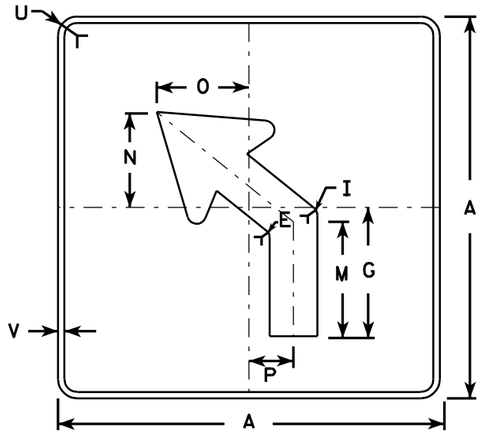
M5-1L
MK5-1L
MM5-1L
MO5-1L
MP5-1L
MR5-1L



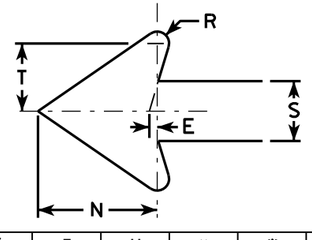
M5-2L
MK5-2L
MM5-2L
MO5-2L
MP5-2L
MR5-2L



MB5-1L
MG5-1L
MN5-1L



MB5-2L
MG5-2L
MN5-2L



NOTES

1. Signs are Type II - See Note 4 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
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 - Type H Reflective
   Message - Black
   MB5-1 and MB5-2 Background - Blue
   Message - White - Type H Reflective
   MG5-1 and MG5-2 Background - Green
   Message - White - Type H Reflective
   MK5-1 and MK5-2 Background - Green
   Message - White Type H Reflective
   MM5-1 and MM5-2 Background - White - Type H Reflective
   Message - Green
   MN5-1 and MN5-2 Background - Brown
   Message - White - Type H Reflective
   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 - Type H Reflective
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 1/8	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 1/8	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 1/8	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

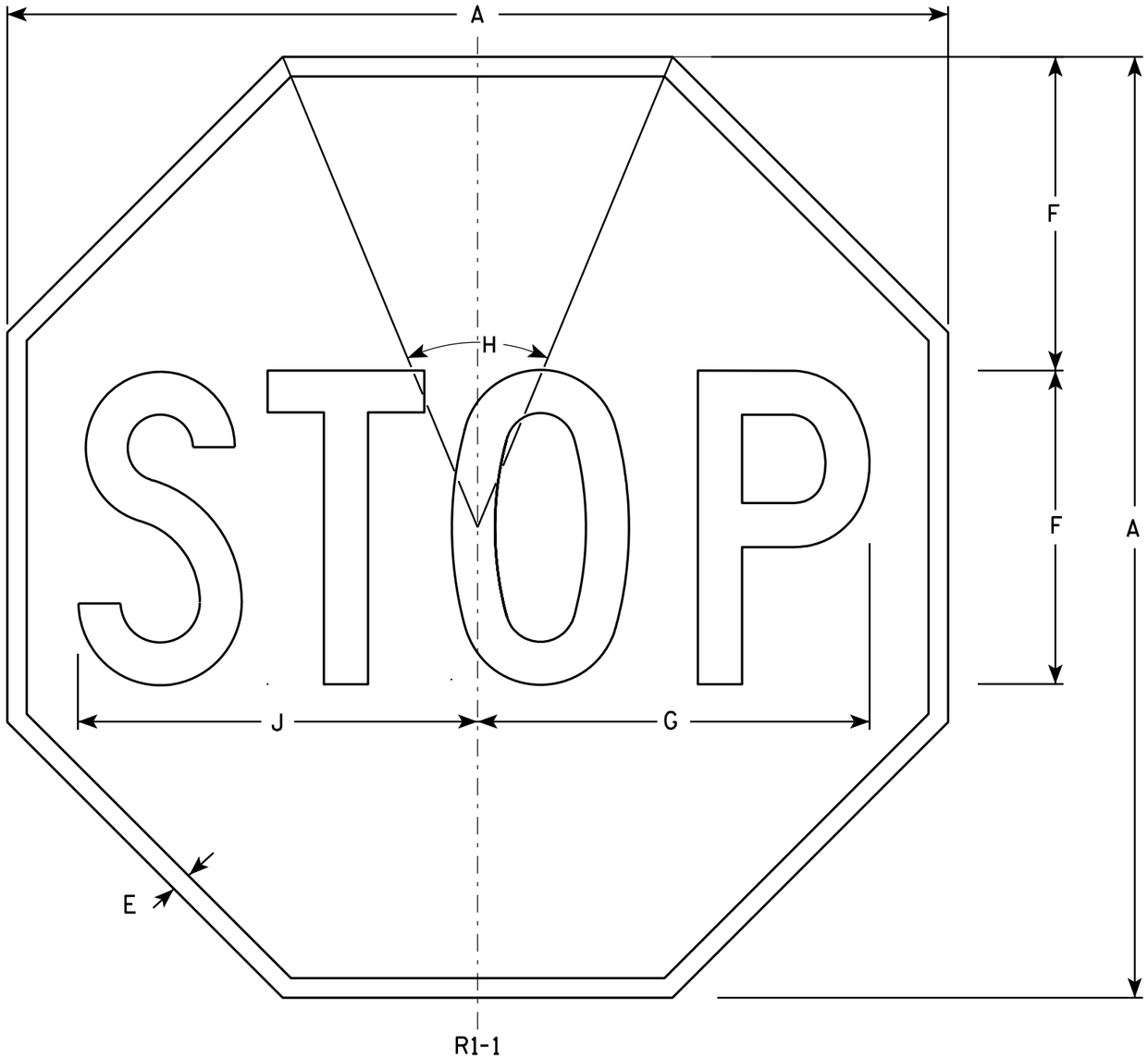
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 7/29/13 PLATE NO. M5-1.12

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 272	E

7

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\M51.DGN PLOT DATE : 29-JUL-2013 13:34 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 11.908552:1.000000
WISDOT/CADDS SHEET 42



NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24				3/8	8	10	45°		10 1/4																	3.31
2S	30				5/8	10	12 1/2	45°		12 3/4																	5.18
2M	36				3/4	12	15	45°		15 3/8																	7.46
3	36				3/4	12	15	45°		15 3/8																	7.46
4	48				1	16	20	45°		20 1/2																	13.25
5	48				1	16	20	45°		20 1/2																	13.25
6	18				3/8	6	7 3/4	45°		7 3/4																	1.86
7	12				1/4	4	5	45°		5 1/8																	0.78

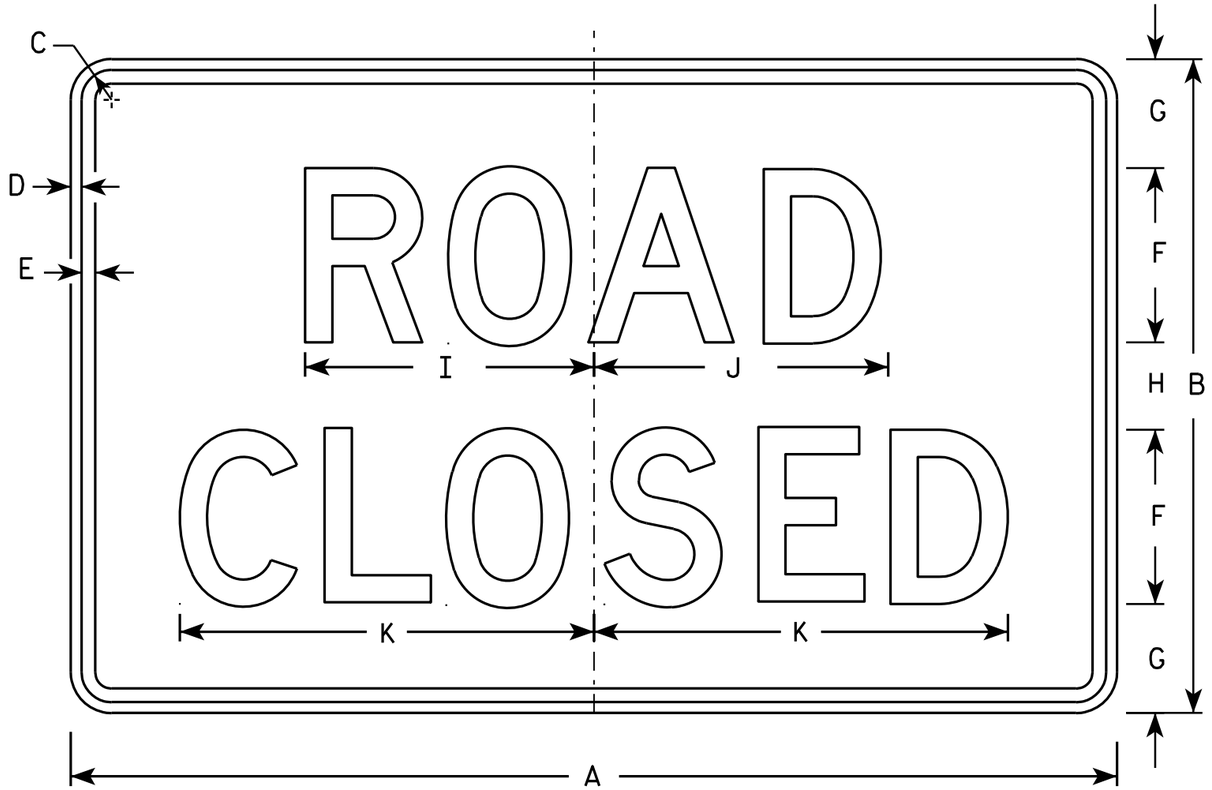
STANDARD SIGN
R1-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/03/10 PLATE NO. R1-1.12

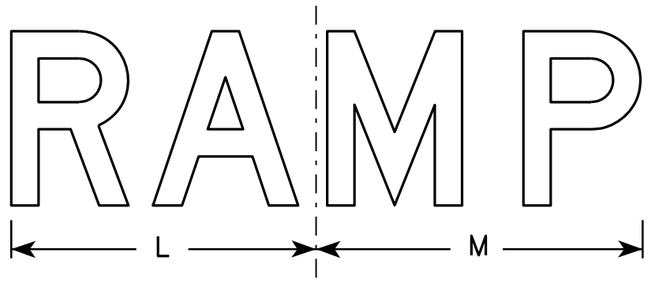
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 273	E



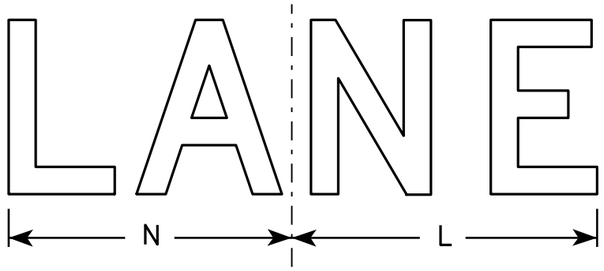
R11-2

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

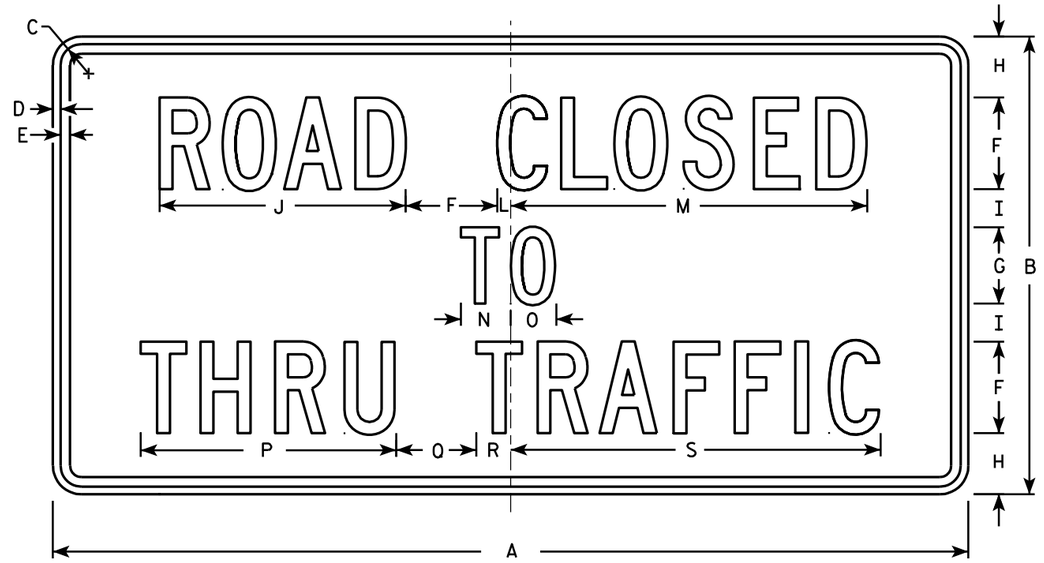
STANDARD SIGN
R11-2

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: 274	E



R11-4

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	60	30	1 3/8	1/2	5/8	6	5	4	2 1/2	16 1/8		7/8	23 3/8	3 1/4	3	16 3/4	5 1/4	2 1/4	24 1/4								12.5
2M	60	30	1 3/8	1/2	5/8	6	5	4	2 1/2	16 1/8		7/8	23 3/8	3 1/4	3	16 3/4	5 1/4	2 1/4	24 1/4								12.5
3																											
4																											
5																											

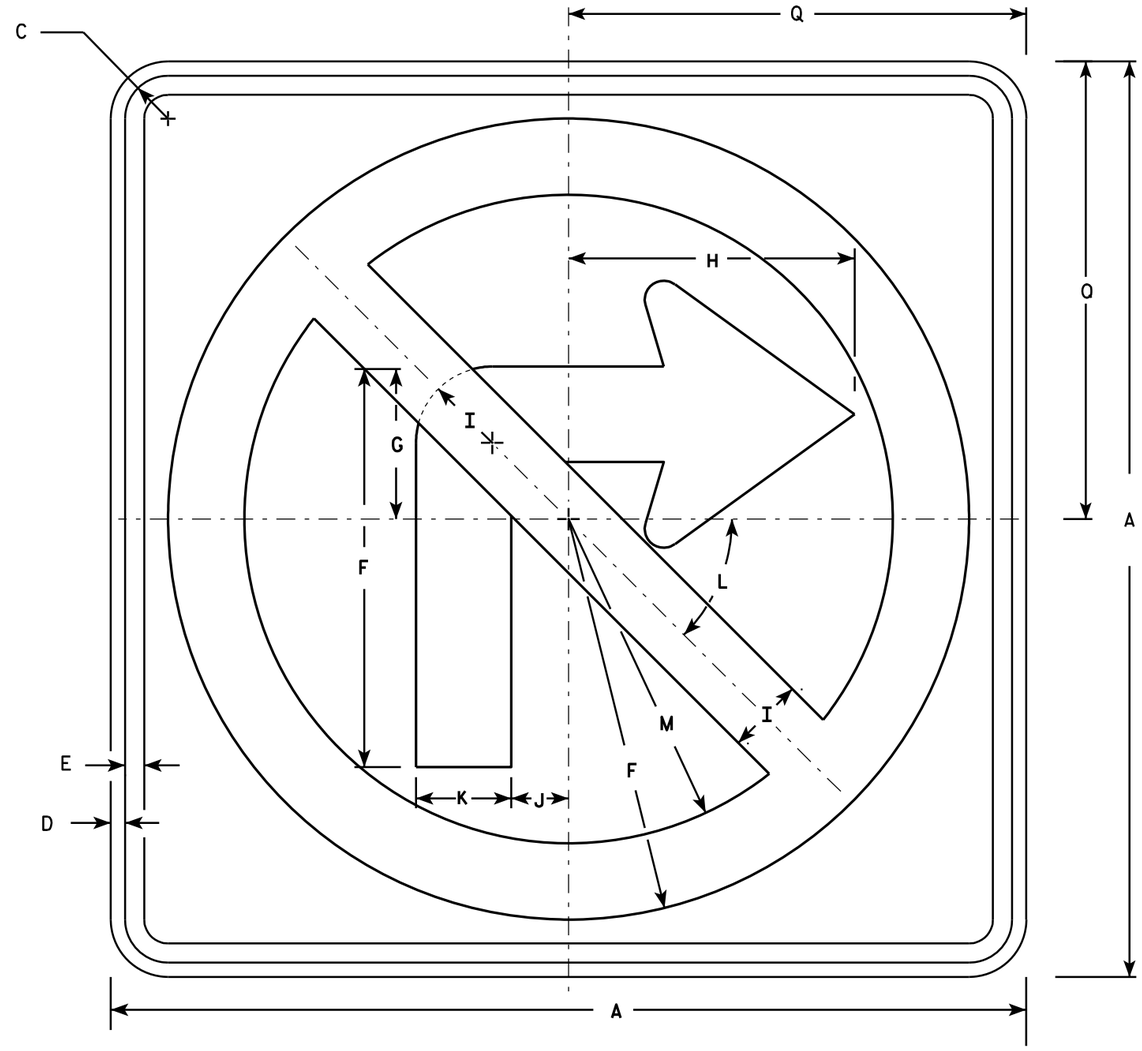
STANDARD SIGN
R11 - 4

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

DATE 4/1/11 PLATE NO. R11-4.3

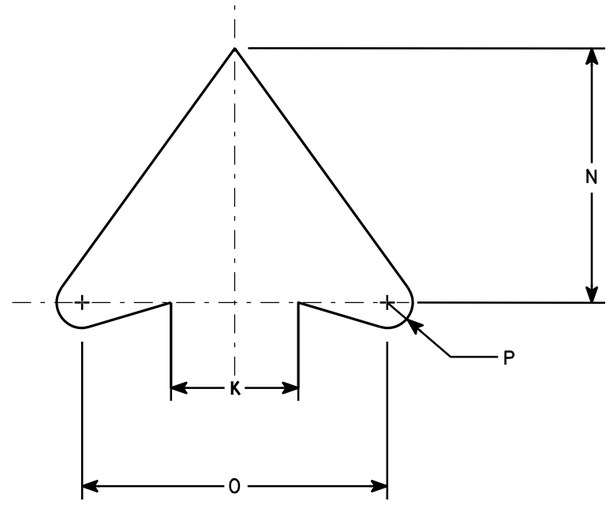
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 275 | E



R3-1

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. Border & Arrow are non reflective black, the circle with diagonal bar is reflective red.



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/8	3/8	1/2	10 1/2	4	7 1/2	2	1 1/2	2 1/2	45	8 1/2	5	6	1/2	12										4.0
2S	24		1 1/8	3/8	1/2	10 1/2	4	7 1/2	2	1 1/2	2 1/2	45°	8 1/2	5	6	1/2	12										4.0
2M	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45	12 3/4	7 1/2	9	3/4	18										9.0
3	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45	12 3/4	7 1/2	9	3/4	18										9.0
4	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45°	12 3/4	7 1/2	9	3/4	18										9.0
5	48		2 1/4	3/4	1	21	8	15	4	3	5	45°	17	10	12	1	24										16.0

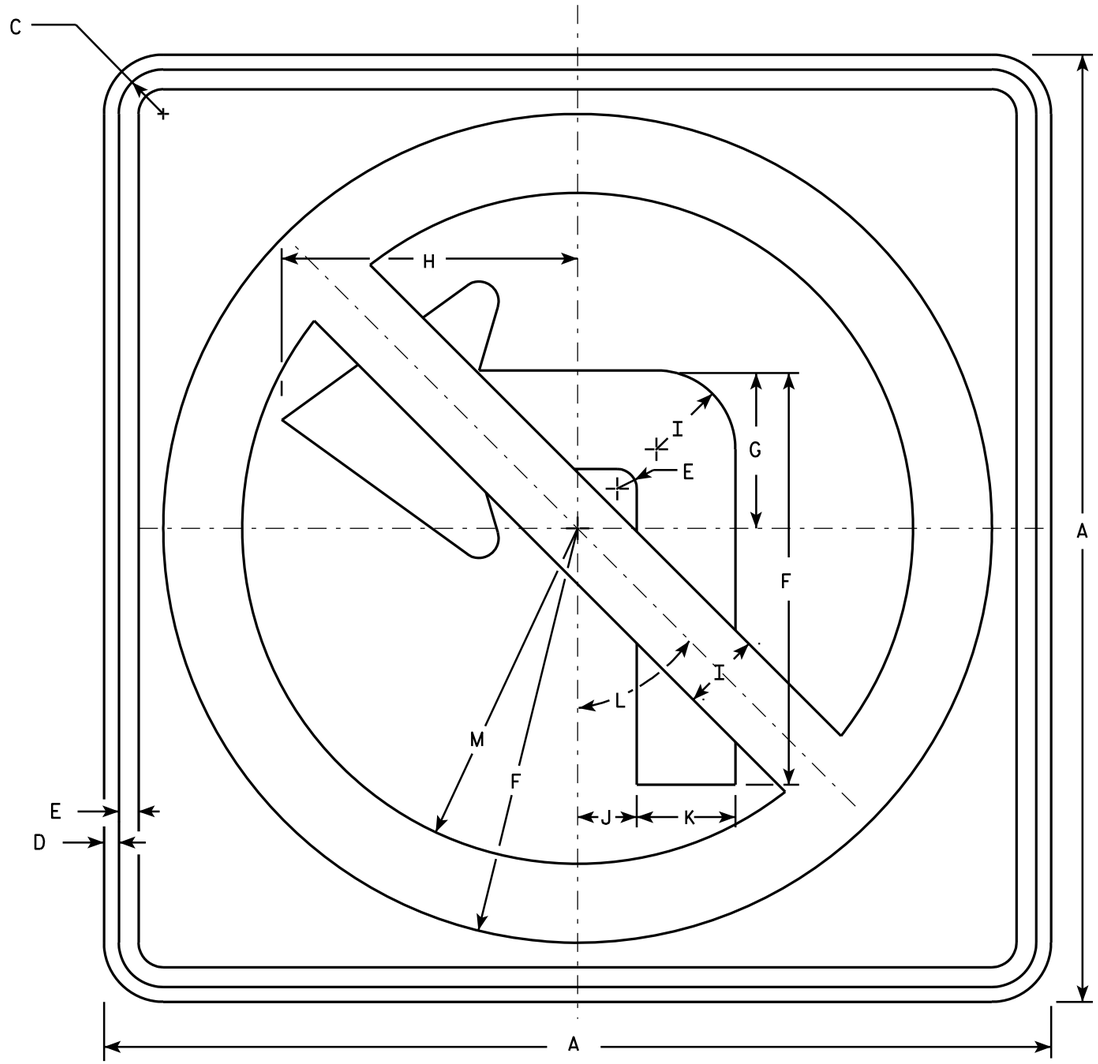
STANDARD SIGN
R3-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/08/10 PLATE NO. R3-1.5

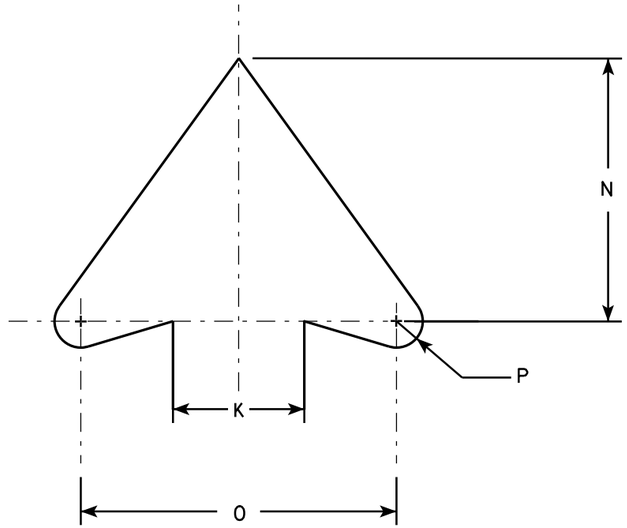
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 276	E



R3-2

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. Border & Arrow are non reflective black, the circle with diagonal bar is reflective red.



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/8	3/8	1/2	10 1/2	4	7 1/2	2	1 1/2	2 1/2	45°	8 1/2	5	6	1/2											4.0
2S	24		1 1/8	3/8	1/2	10 1/2	4	7 1/2	2	1 1/2	2 1/2	45°	8 1/2	5	6	1/2											4.0
2M	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45°	12 3/4	7 1/2	9	3/4											9.0
3	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45°	12 3/4	7 1/2	9	3/4											9.0
4	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45°	12 3/4	7 1/2	9	3/4											9.0
5	48		2 1/4	3/4	1	21	8	15	4	3	5	45°	17	10	12	1											16.0

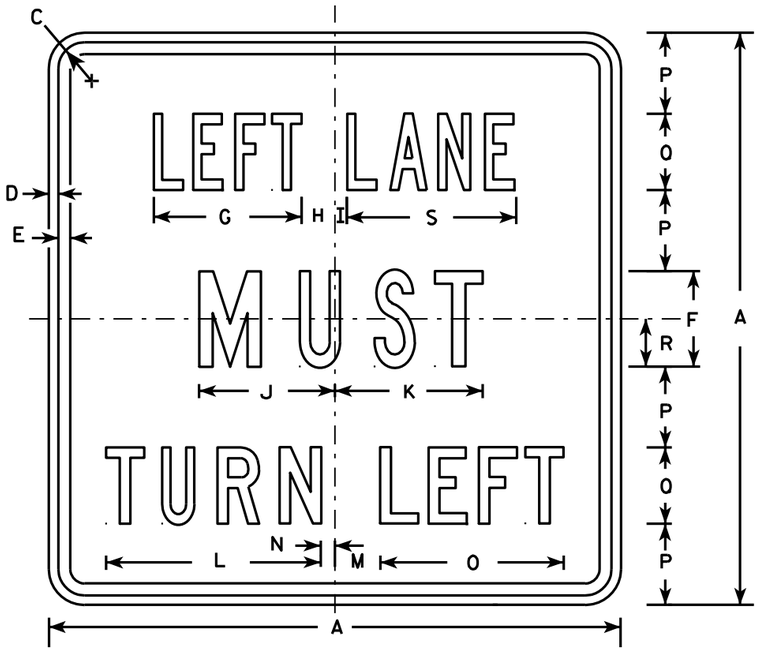
STANDARD SIGN
R3-2

WISCONSIN DEPT OF TRANSPORTATION

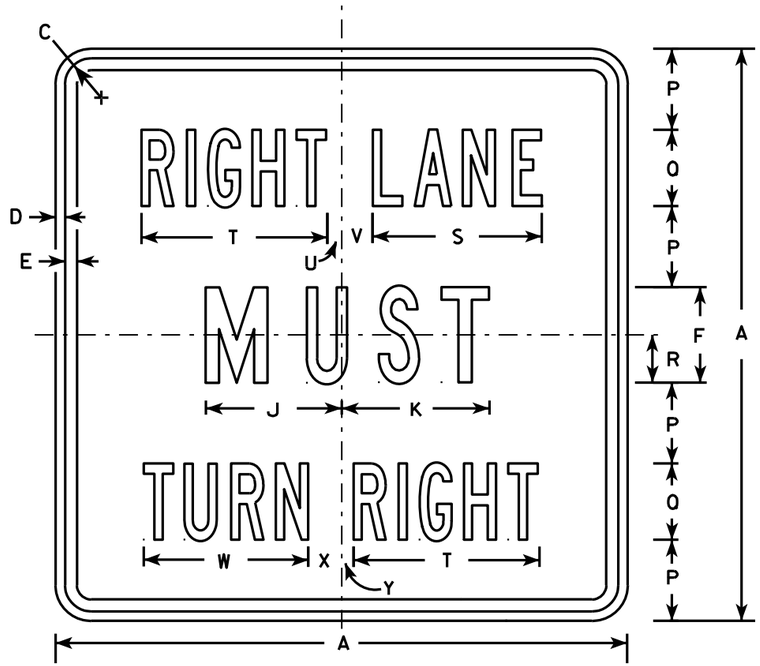
APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 277	E



R3-7L



R3-7R

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - Line 1 is Series B.
   Line 2 is Series C.
   Line 3 on plate R3-7R is Series B and Series C on plate R3-7L.
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30		1 3/8	1/2	5/8	5	7 3/4	1 3/4	5/8	7 1/8	7 3/4	11 1/4	2 3/8	3/4	9 5/8	4 1/4	4	2 1/2	8 7/8	9 3/4	3/4	1 5/8	8 5/8	1 5/8	5/8		6.25
2S	30		1 3/8	1/2	5/8	5	7 3/4	1 3/4	5/8	7 1/8	7 3/4	11 1/4	2 3/8	3/4	9 5/8	4 1/4	4	2 1/2	8 7/8	9 3/4	3/4	1 5/8	8 5/8	1 5/8	5/8		6.25
2M	30		1 3/8	1/2	5/8	5	7 3/4	1 3/4	5/8	7 1/8	7 3/4	11 1/4	2 3/8	3/4	9 5/8	4 1/4	4	2 1/2	8 7/8	9 3/4	3/4	1 5/8	8 5/8	1 5/8	5/8		6.25
3	36		1 5/8	5/8	3/4	6	9 5/8	2	1 1/8	8 3/4	9	13 1/2	3 7/8	1 1/2	12 1/2	5	5	3	10 5/8	12	7/8	2 1/4	10 5/8	2 1/8	1		9.00
4	48		2 1/4	3/4	1	8	13 1/2	2 3/8	1 1/2	11 1/2	11 7/8	17 3/4	3 5/8	2 1/2	16 3/8	6 1/2	7	4	14 3/8	16 7/8	5/8	3 1/4	15 1/8	2 3/4	1 1/8		16.00
5																											

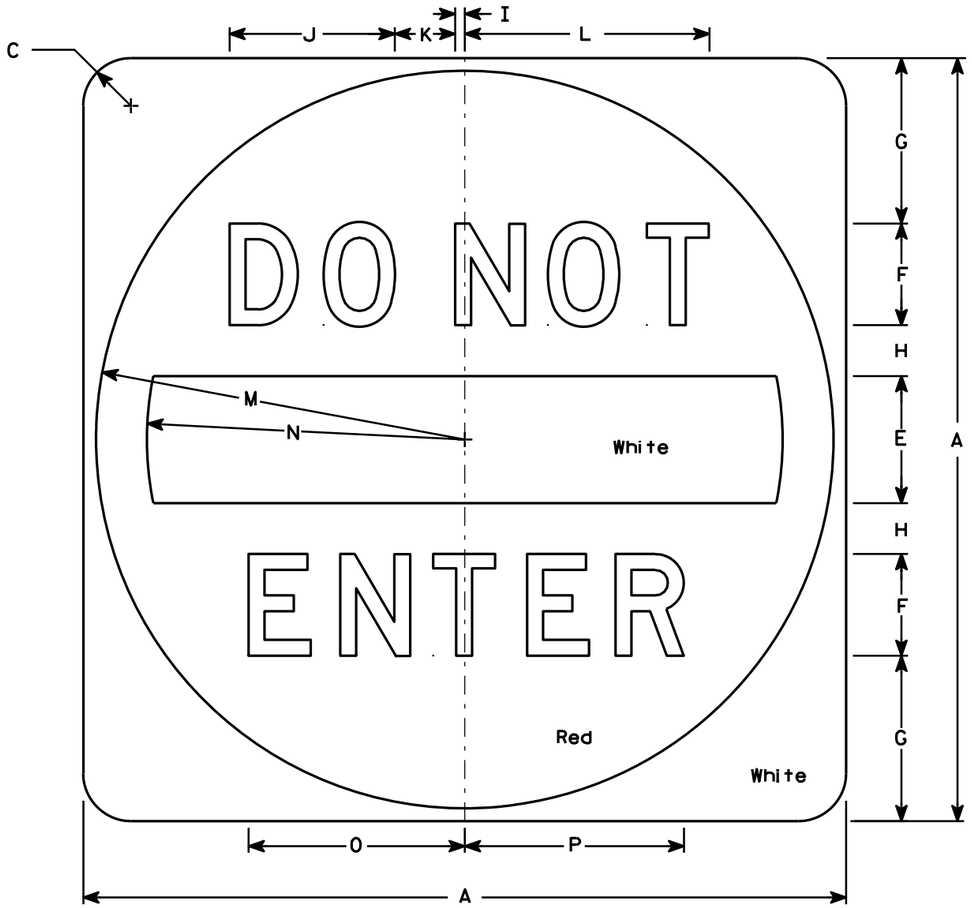
STANDARD SIGN
R3-7L & R3-7R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 278 | E



R5-1

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - See detail
   Message - White - Type H Reflective
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but when base material is metal, the cornors 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	30		1 7/8		5	4	6 1/2	2	3/8	6 1/2	2 3/8	9 5/8	14 1/2	12 1/2	8 1/2	8 5/8											6.26
2M	36		2 1/4		6	5	7 1/2	2 1/2	1/2	8 1/8	3	12 1/8	17 1/2	15	10 5/8	10 3/4											9.0
3	36		2 1/4		6	5	7 1/2	2 1/2	1/2	8 1/8	3	12 1/8	17 1/2	15	10 5/8	10 3/4											9.0
4	36		2 1/4		6	5	7 1/2	2 1/2	1/2	8 1/8	3	12 1/8	17 1/2	15	10 5/8	10 3/4											9.0
5	48		3		8	6	11	3	5/8	9 3/4	3 5/8	14 1/2	23 1/2	20	12 3/4	12 7/8											16.0

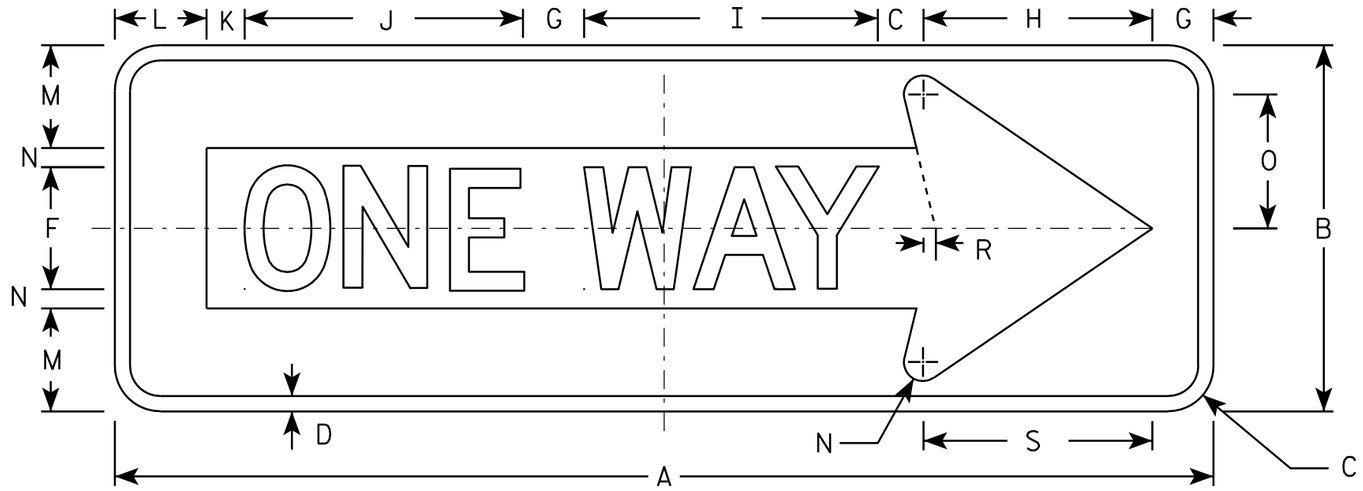
STANDARD SIGN
R5-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/17/10 PLATE NO. R5-1.15

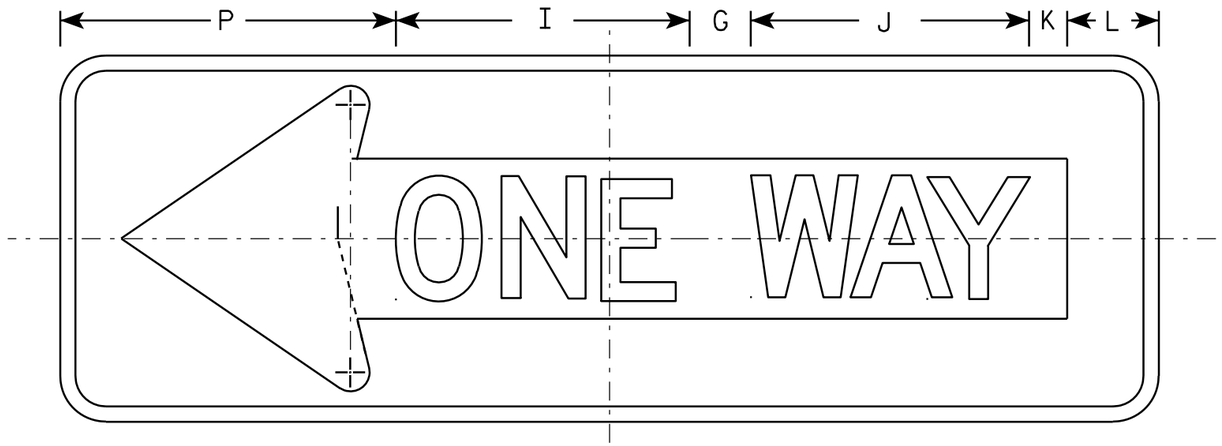
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 279 | E



R6-1R

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - BLACK
   Message - BLACK LEGEND & WHITE ARROW & BORDER
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.



R6-1L

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	36	12	1 ½	½		4	2	7 ½	9 ⅝	9 ⅛	1 ¼	3	3 ⅜	⅝	4 ⅜	11		⅜	7 ½								3.0
2M	54	18	2 ¼	¾		6	3	11 ¼	14 ½	13 ⅝	1 ⅞	4 ½	5	1	6 ½	16 ½		⅝	11 ¼								6.75
3	54	18	2 ¼	¾		6	3	11 ¼	14 ½	13 ⅝	1 ⅞	4 ½	5	1	6 ½	16 ½		⅝	11 ¼								6.75
4	54	18	2 ¼	¾		6	3	11 ¼	14 ½	13 ⅝	1 ⅞	4 ½	5	1	6 ½	16 ½		⅝	11 ¼								6.75
5																											

STANDARD SIGN
R6-1 L & R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/17/10 PLATE NO. R6-1.2

PROJECT NO:

SHEET NO: 280 E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\R61.DGN PLOT DATE : 17-DEC-2010 14:11 PLOT BY : dotsja

WISDOT/CADDS SHEET 42



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

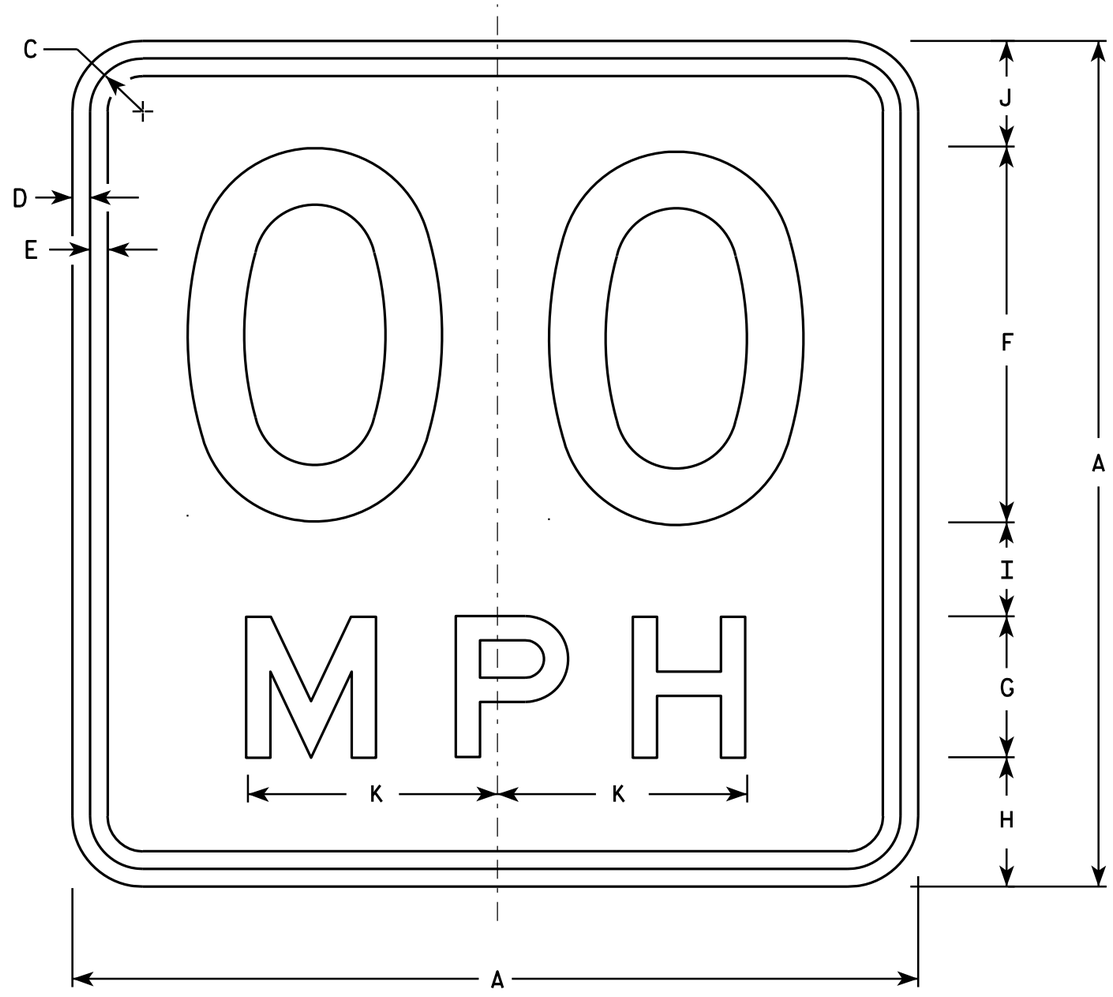
STANDARD SIGN
R9-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 4/1/2011 PLATE NO. R9-9.5

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 281	E



W13-1

* For 30" x 30" Warning Signs, use 18" x 18" W13-1 signs.
For 36" x 36" Warning Signs, use 24" x 24" W13-1 signs.

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - Black
3. Message Series - See Note 6
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 optically space about centerline to achieve proper balance.
6. Line 1 is Series D
   Line 2 is Series E

	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	18		1 1/8	3/8	3/8	8	3	2 3/4	2	2 1/4	5 3/8																2.25
*	2S	18		1 1/8	3/8	3/8	8	3	2 3/4	2	2 1/4	5 3/8																2.25
*	2M	18		1 1/8	3/8	3/8	8	3	2 3/4	2	2 1/4	5 3/8																2.25
	3	24		1 1/8	3/8	1/2	10	4	4	2 3/4	3 1/4	6 5/8																4.00
	4	36		1 5/8	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.00
	5	36		1 5/8	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.00

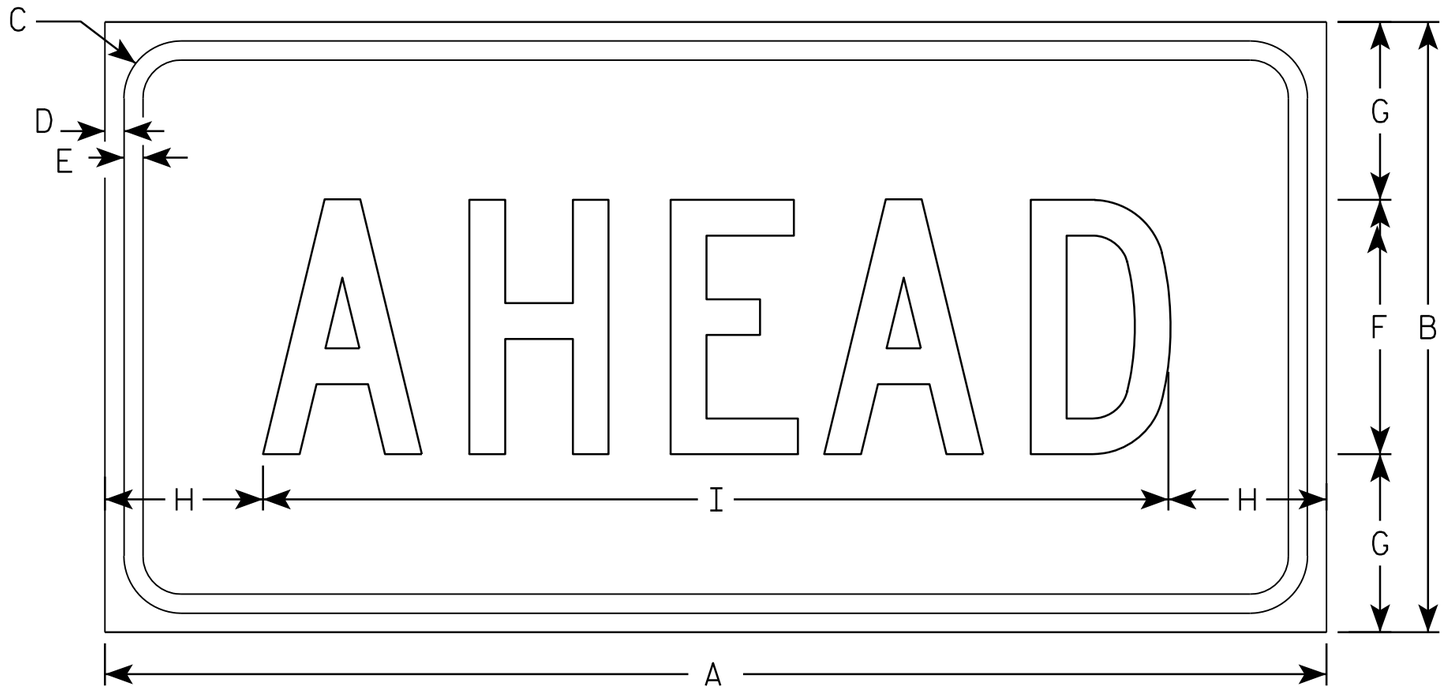
STANDARD SIGN
W13-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

DATE 5/31/12 PLATE NO. W13-1.16

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 282 | E



W16-9P

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	12	1 1/8	3/8	3/8	5	3 1/2	3 1/8	17 3/4																		2.0
2M	30	18	1 1/8	3/8	1/2	7	5 1/2	2 3/4	24 1/2																		3.75
3	30	18	1 1/8	3/8	1/2	7	3 1/2	2 3/4	24 1/2																		3.75
4	48	24	1 3/8	1/2	5/8	10	7	6 1/8	35 3/4																		8.0
5																											

STANDARD SIGN
W16-9P

WISCONSIN DEPT OF TRANSPORTATION

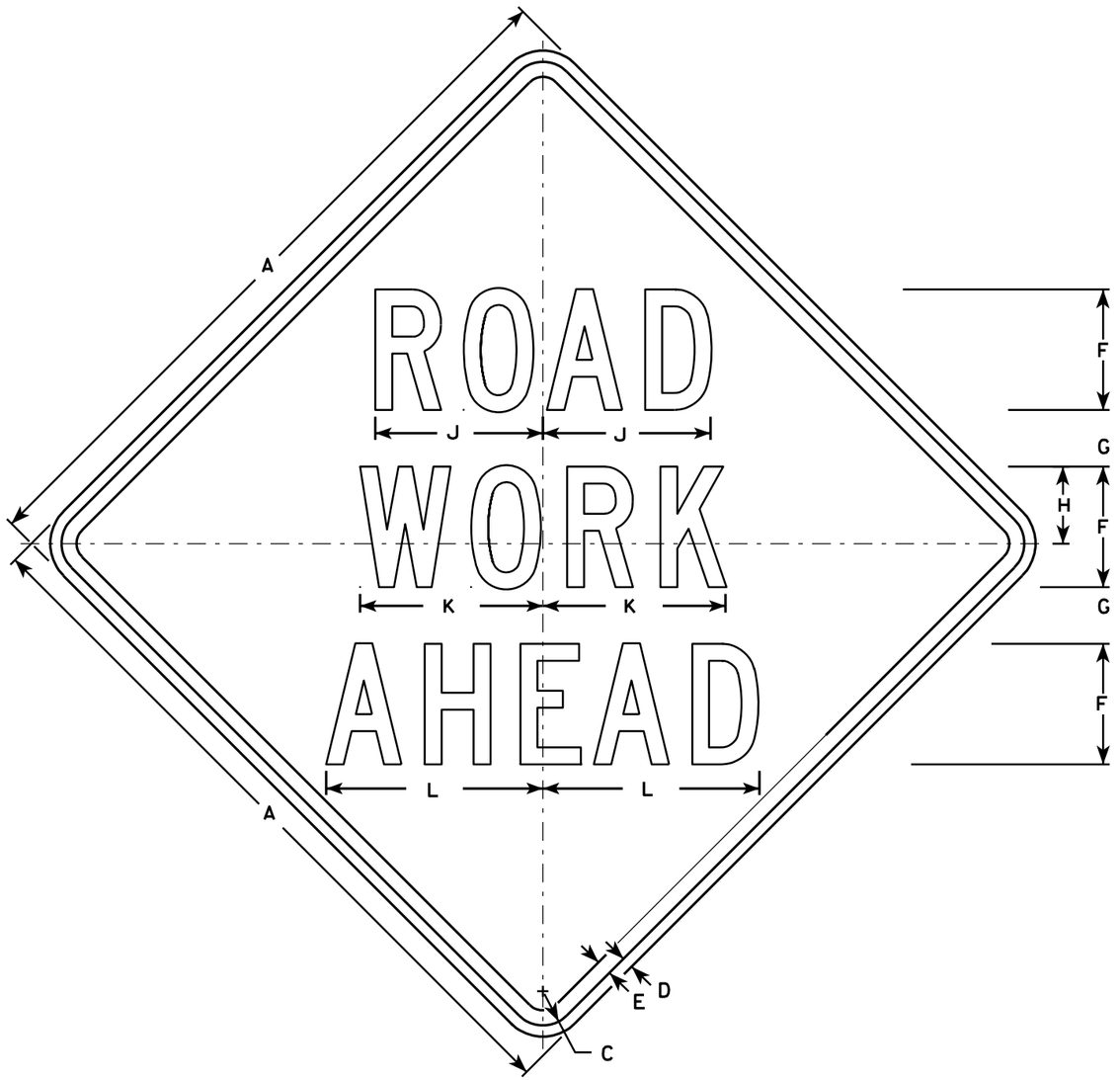
APPROVED Matthew R Rauch
for State Traffic Engineer

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

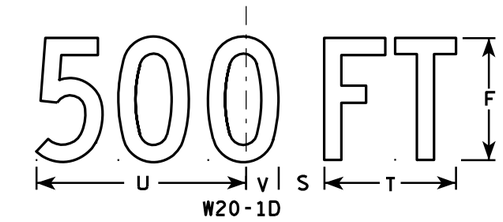
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 283 | E

7

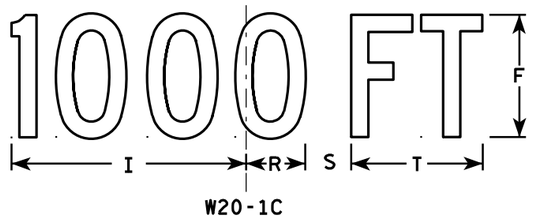
FILE NAME : C:\Users\PROJECTS\tr_stdplate\W169P.DGN PLOT DATE : 28-DEC-2010 13:39 PLOT BY : dotsja PLOT NAME : PLOT SCALE : 2.979524:1.000000
WISDOT/CADDS SHEET 42



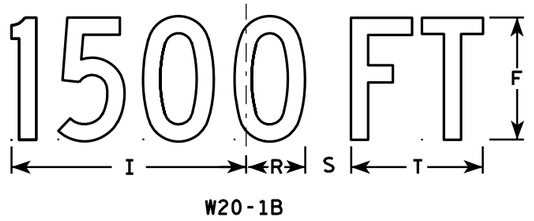
W20-1A



W20-1D



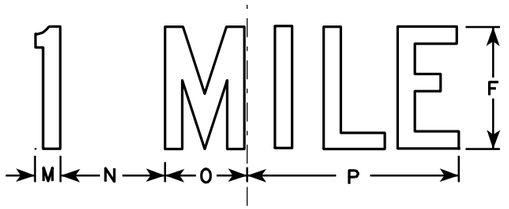
W20-1C



W20-1B



W20-1G



W20-1F

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 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	1 7/8	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		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		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		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		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		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 3/18/11 PLATE NO. W20-1.9

PROJECT NO:

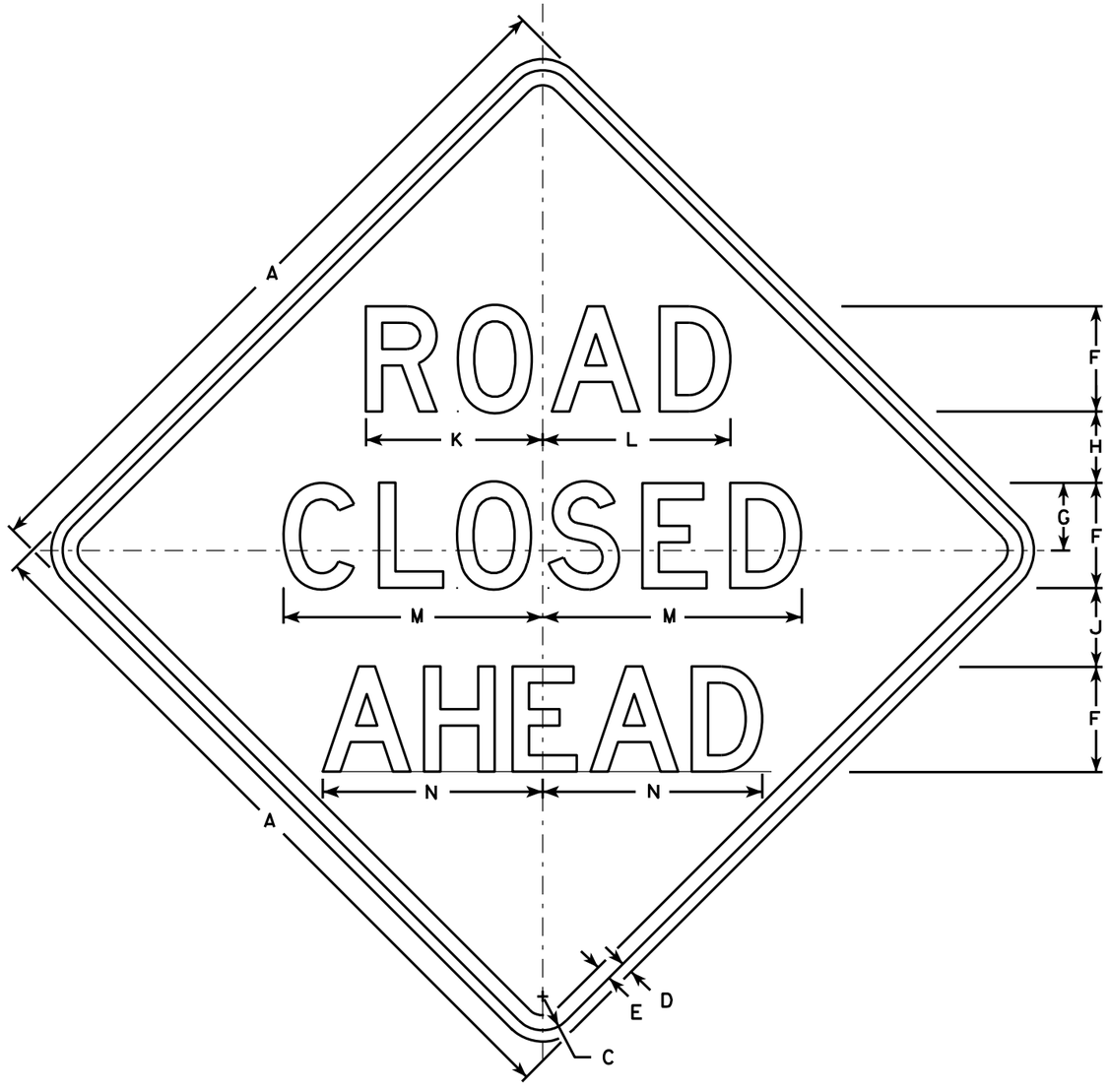
SHEET NO: 284 E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\W201.DGN PLOT DATE : 18-MAR-2011 09:56 PLOT BY : mscj9h

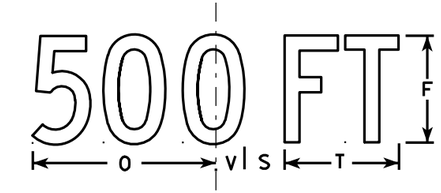
WISDOT/CADDS SHEET 42

7

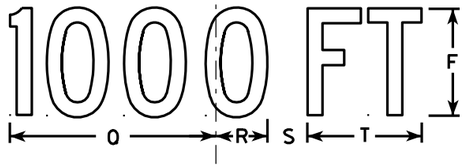
7



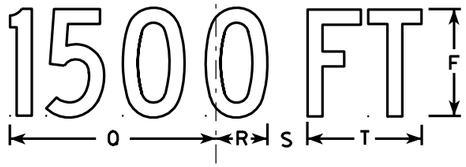
W20-3A



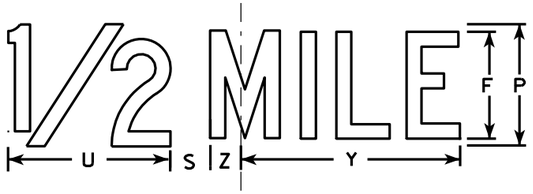
W20-3D



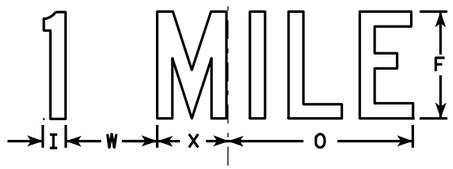
W20-3C



W20-3B



W20-3G



W20-3F

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. Lines 1 and 2 are Series D.
   Line 3 is Series D for AHEAD and Series C for all other distances.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	5	3 3/8	3 1/2	1 1/8	4	8 3/8	8 7/8	12 1/2	11	9	6	10 1/8	2 1/2	1 7/8	5 5/8	8	1 3/8	4 1/2	3 1/2	10 3/4	1 3/4	9.0
2S	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
2M	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
3	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
4	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
5	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0

STANDARD SIGN
W20-3A, B, C, D, F & G

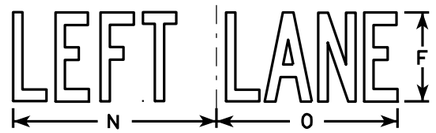
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer
DATE 3/18/11 PLATE NO. W20-3.7

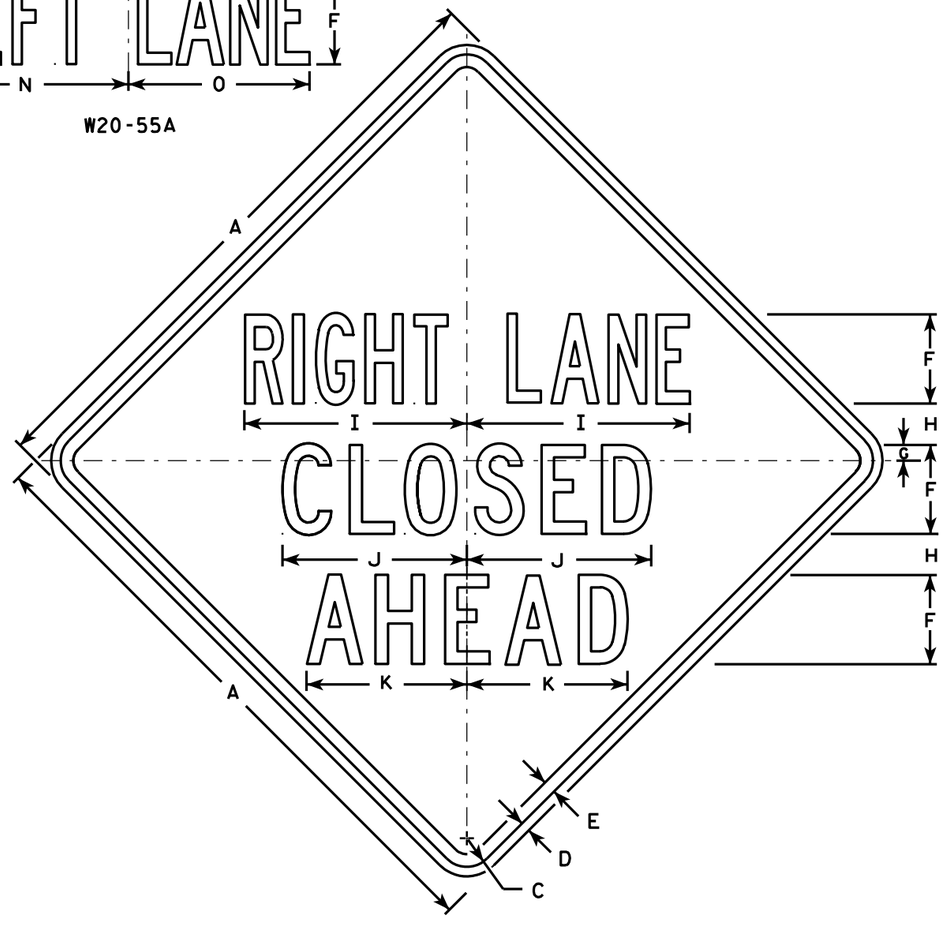
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 285 | E



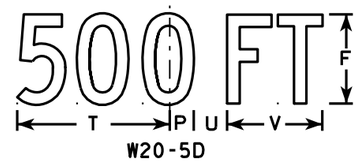
W20-56A



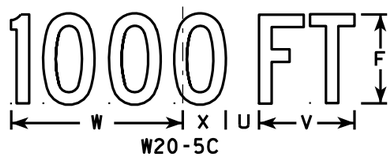
W20-55A



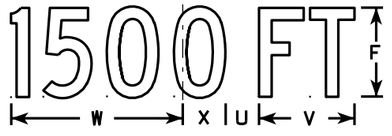
W20-5A



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

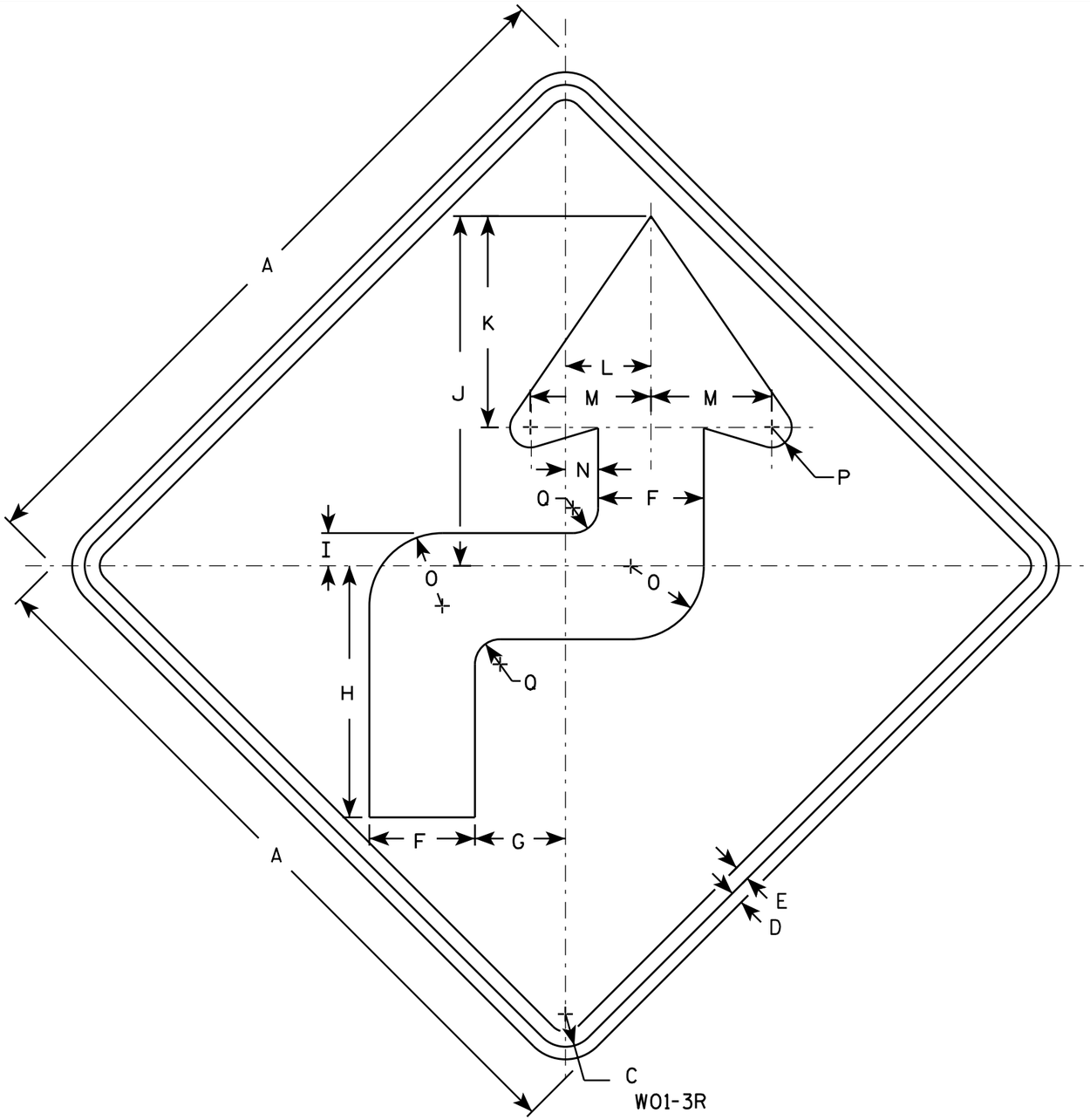
APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 286	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



W01-3R

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W01-3L is the same as W01-3R except the arrow 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	5 1/4	4 1/2	12 1/2	1 5/8	17 3/8	10 1/2	4 1/4	6	1 5/8	3 5/8	1	1 1/4										9.0
2S	48		2 1/4	3/4	1	7	6	16 5/8	2 1/4	23 1/4	14	5 5/8	8	2 1/8	4 7/8	1 1/4	1 5/8										16.0
2M	48		2 1/4	3/4	1	7	6	16 5/8	2 1/4	23 1/4	14	5 5/8	8	2 1/8	4 7/8	1 1/4	1 5/8										16.0
3	48		2 1/4	3/4	1	7	6	16 5/8	2 1/4	23 1/4	14	5 5/8	8	2 1/8	4 7/8	1 1/4	1 5/8										16.0
4	48		2 1/4	3/4	1	7	6	16 5/8	2 1/4	23 1/4	14	5 5/8	8	2 1/8	4 7/8	1 1/4	1 5/8										16.0
5	48		2 1/4	3/4	1	7	6	16 5/8	2 1/4	23 1/4	14	5 5/8	8	2 1/8	4 7/8	1 1/4	1 5/8										16.0

STANDARD SIGN
W01-3

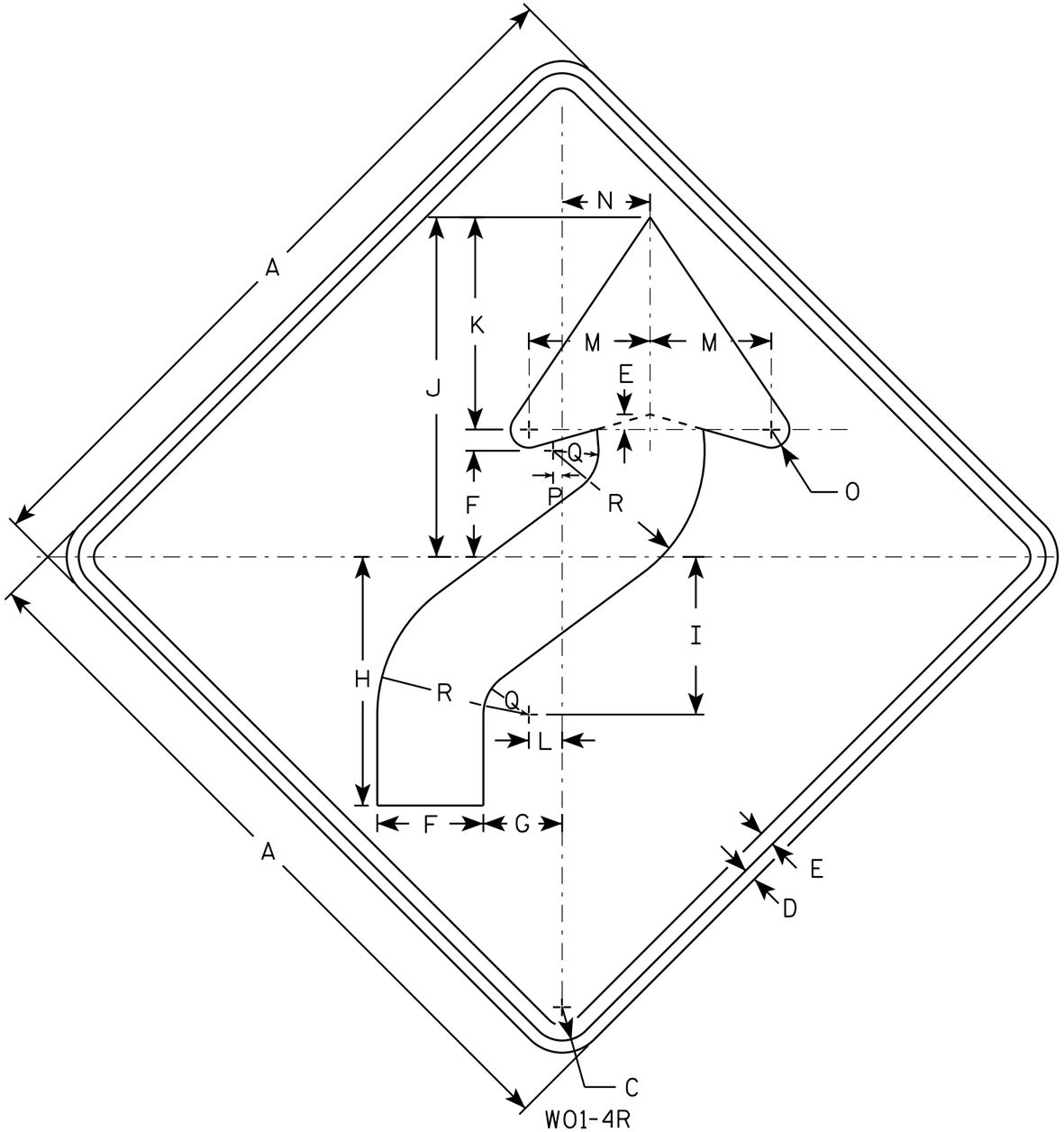
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/18/13 PLATE W01-3.1

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\W013.DGN PLOT DATE : 28-FEB-2014 11:35 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 6.567217:1.000000
WISDOT/CADDS SHEET 42



W01-4R

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W01-4L is the same as W01-4R except the arrow is reversed along the vertical centerline.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	5 1/4	4	12 3/8	7 7/8	16 7/8	10 1/2	1 5/8	6	4 1/2	1	1/2	2 1/4	7 1/2									9.0
2S	48		2 1/4	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
2M	48		2 1/4	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
3	48		2 1/4	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
4	48		2 1/4	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
5	48		2 1/4	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0

STANDARD SIGN
W01-4

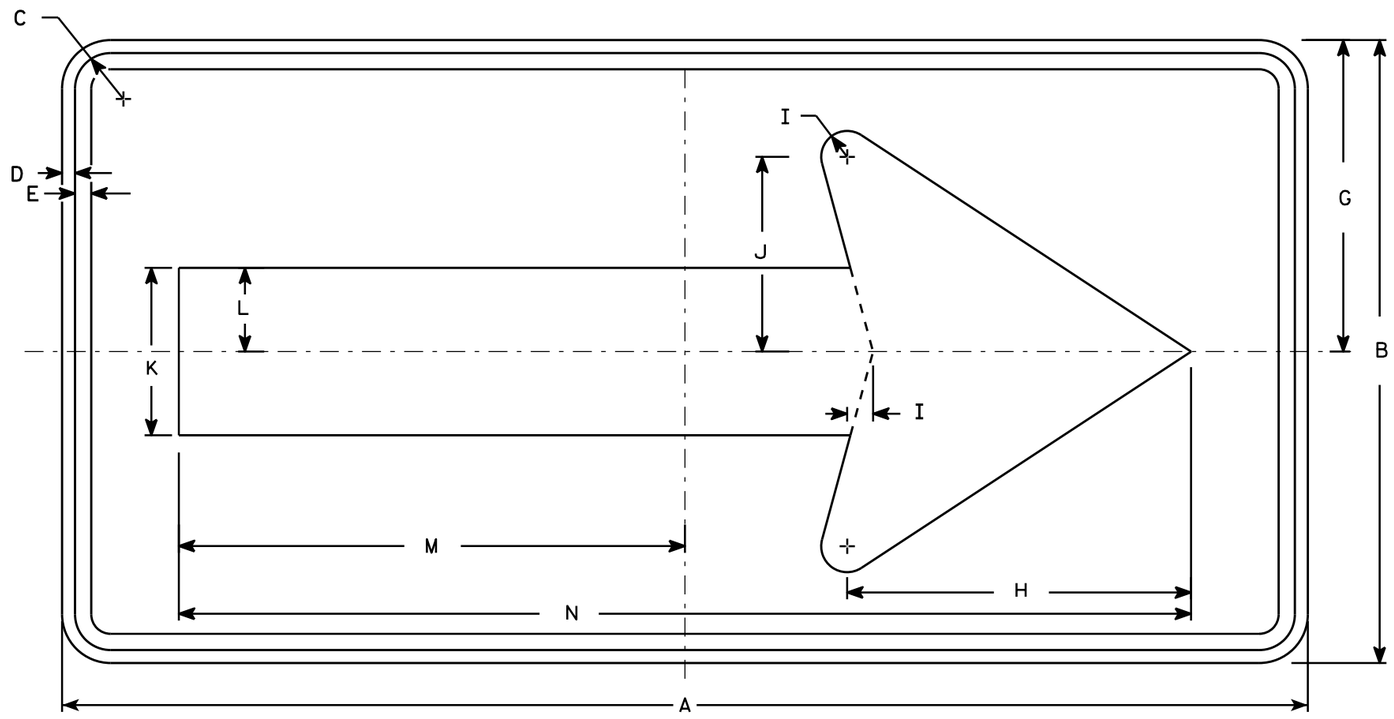
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/18/13 PLATE NO W01-4.1

PROJECT NO: | HWY: | COUNTY: | SHEET NO: E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\W014.DGN PLOT DATE : 28-FEB-2014 11:35 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 6.755110:1.000000 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

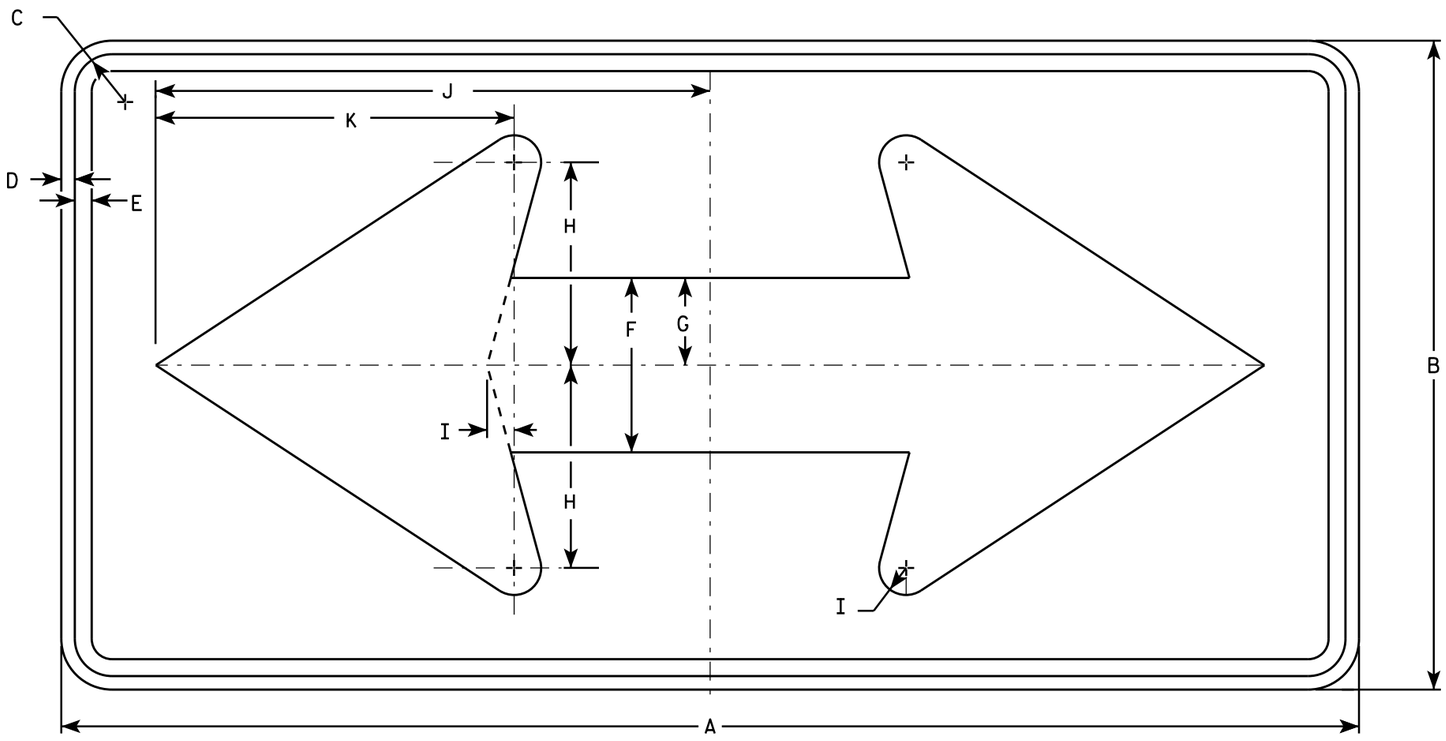
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/18/13 PLATE 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



W01-7

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - 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	6 1/2	3 1/4	7 1/2	1	20 1/2	13 1/4																8.0
2M	48	24	1 3/8	1/2	5/8	6 1/2	3 1/4	7 1/2	1	20 1/2	13 1/4																8.0
3	60	30	1 3/8	1/2	5/8	8	4	9 1/4	1 1/4	25 3/8	16 1/4																12.5
4	60	30	1 3/8	1/2	5/8	8	4	9 1/4	1 1/4	25 3/8	16 1/4																12.5
5	60	30	1 3/8	1/2	5/8	8	4	9 1/4	1 1/4	25 3/8	16 1/4																12.5

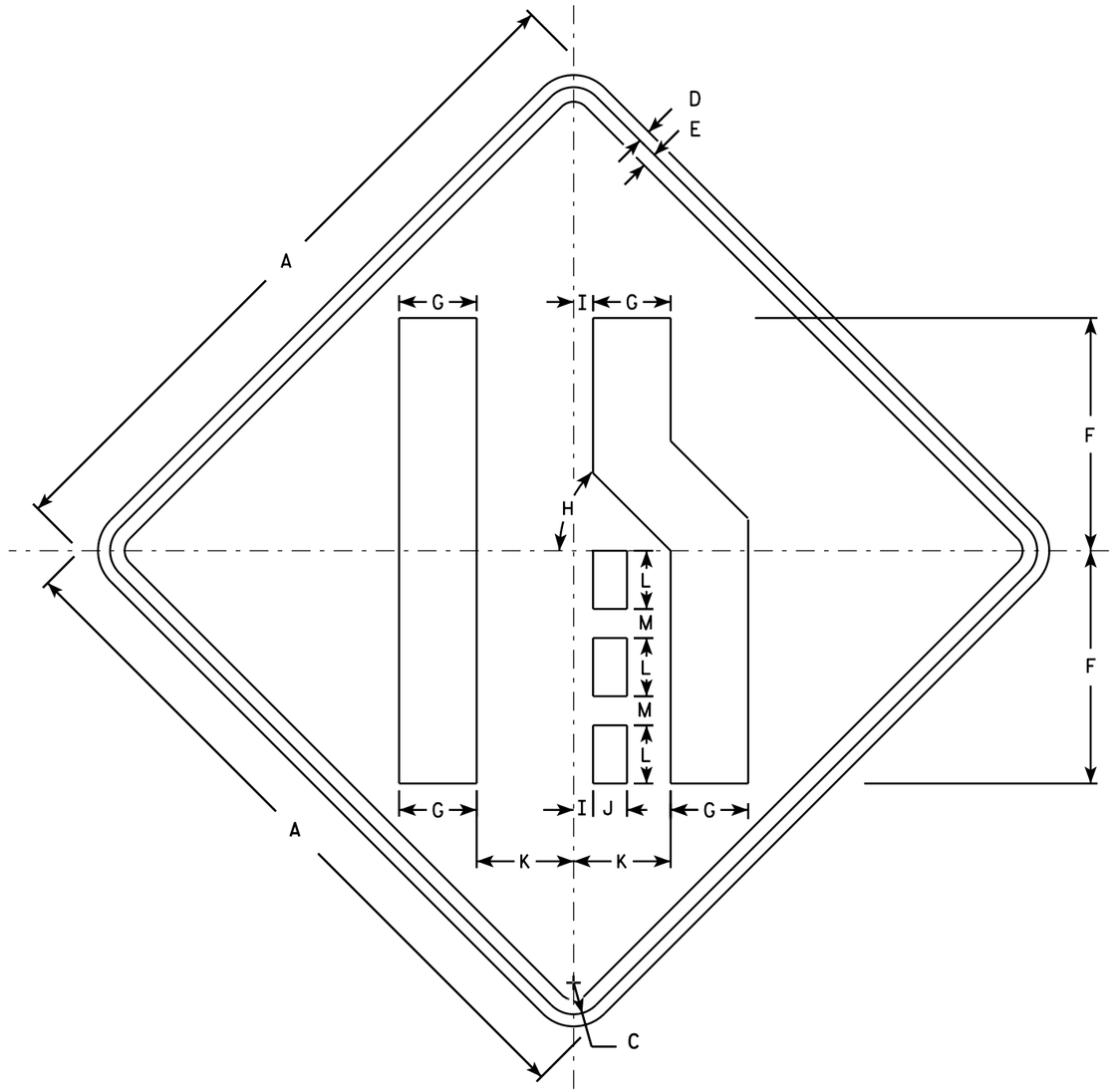
STANDARD SIGN
W01-7

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/18/13 PLATE 1290 W01-7.1

PROJECT NO: | HWY: | COUNTY: | SHEET NO: E



W04-2R

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W04-2L is the same as W04-2R except the symbol is reversed along the vertical centerline.

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

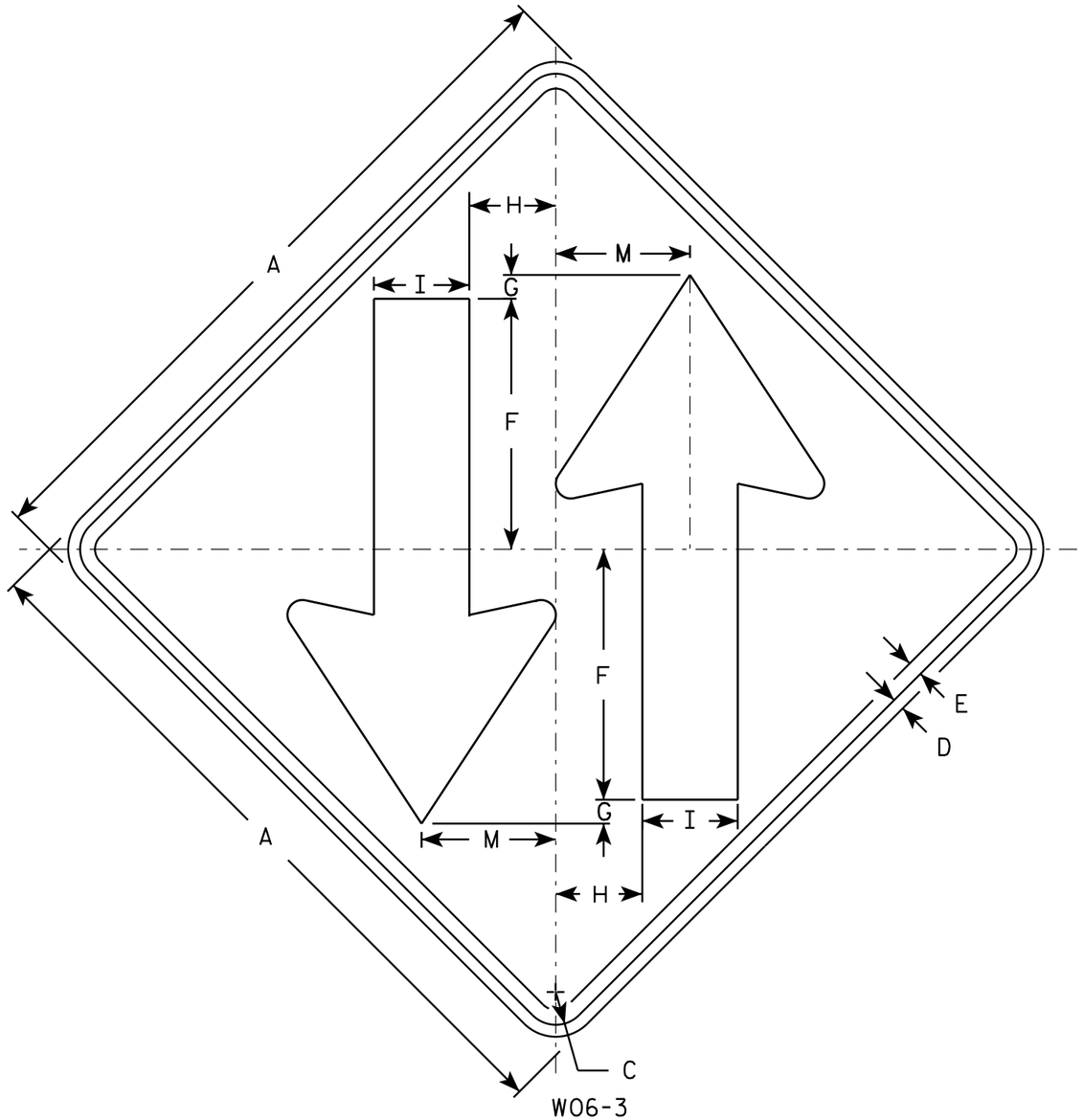
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/20/13 PLATE 291 W04-2.1

PROJECT NO:

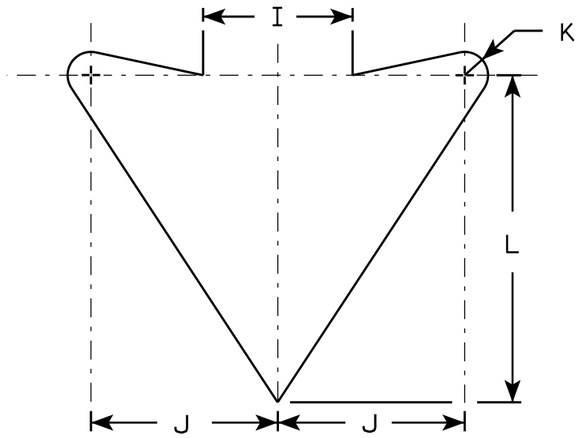
SHEET NO: E



W06-3

NOTES

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



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	12	1	4 1/4	5	6	3/4	10 1/2	6 3/4														9.0
2S	48		2 1/4	3/4	1	15 1/2	1	6	6	8	1	14	9														16.0
2M	48		2 1/4	3/4	1	15 1/2	1	6	6	8	1	14	9														16.0
3	48		2 1/4	3/4	1	15 1/2	1	6	6	8	1	14	9														16.0
4	48		2 1/4	3/4	1	15 1/2	1	6	6	8	1	14	9														16.0
5	48		2 1/4	3/4	1	15 1/2	1	6	6	8	1	14	9														16.0

STANDARD SIGN
W06-3

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/20/13 PLATE 292 W06-3.1

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

STATION	CUT C.Y.	FILL (-) C.Y.	LARGEST CUT IN FEET	LARGEST FILL IN FEET
68+17	0	0		
68+50	0	0		
69+00	78	0	2.28	
69+50	122	0	2.30	
70+00	126	0	2.22	
70+50	122	0	2.10	
71+00	123	0	2.18	
71+50	127	0	2.20	
72+00	101	0	2.35	
72+50	163	0	2.23	
73+00	146	0	2.32	
73+50	115	0	2.61	
74+00	106	0	2.23	
74+50	118	0	2.34	
75+00	125	0	2.38	
75+50	139	0	2.33	
76+00	108	0	2.04	
76+50	79	0	1.45	
77+00	89	0	2.20	
77+50	114	0	2.42	
78+00	119	0	2.31	
78+50	110	0	1.82	
79+00	68	0	1.45	
79+50	52	3	1.47	
80+00	71	0	2.09	
80+50	109	0	2.12	
81+00	93	0	1.80	
81+50	80	0	1.84	
82+00	77	0	1.90	
82+50	75	0	1.96	
83+00	74	0	1.97	
83+50	69	0	1.95	
84+00	66	0	1.99	
84+50	82	0	2.11	
85+00	145	0	2.01	
85+50	114	0	0.65	
86+00	100	0	1.94	
86+50	84	0	1.75	
87+00	70	0	1.95	
87+50	94	0	2.11	
88+00	117	0	2.25	
88+50	123	0	2.15	
89+00	98	0	2.00	
89+50	85	0	2.03	
90+00	117	0	2.20	
90+50	116	0	2.39	
TOTAL	4509	3		

SUB-TOTAL	4509	3		
91+00	95	0	2.43	
91+50	111	0	2.48	
92+00	124	0	2.43	
92+50	137	0	2.07	
93+00	167	0	1.99	
93+50	163	0	2.03	
94+00	103	0	1.82	
94+50	95	3	2.09	
95+00	120	2	2.11	
95+50	100	0	2.26	
96+00	90	0	2.17	
96+50	127	0	2.21	
97+00	116	0	2.06	
97+50	112	0	2.21	
98+00	121	0	2.24	
98+50	119	0	2.14	
99+00	129	0	2.00	
99+50	81	4	0.54	0.56
100+00	89	4	0.54	0.56
100+50	116	7	1.02	0.41
101+00	96	3	2.13	0.50
101+50	100	2	2.09	0.70
102+00	107	2	1.87	0.70
102+50	106	0	2.08	
103+00	89	0	1.85	
103+50	79	0	2.02	
104+00	87	0	2.15	
104+50	84	0	2.09	
105+00	82	0	1.96	
105+50	95	0	2.03	
106+00	108	0	0.81	
106+50	102	0	0.85	
107+00	88	0	2.27	
107+50	68	0	1.98	
108+00	70	0	1.86	
108+50	74	4	2.11	0.76
109+00	76	2	2.03	0.70
109+50	81	2	2.20	0.44
110+00	85	2	1.93	0.27
110+50	87	0	2.08	
111+00	76	3	1.97	0.73
111+50	57	3	1.74	0.70
112+00	48	0	1.96	
SUB-TOTAL	8769	46		

SUB-TOTAL	8769	46		
112+50	62	0	2.03	
113+00	104	0	0.79	
113+50	77	1	1.15	0.11
114+00	70	1	1.93	0.20
114+50	82	0	2.41	
115+00	95	0	2.50	
115+50	87	0	2.50	
116+00	85	0	2.21	
116+50	62	0	1.81	
117+00	43	0	2.01	
117+50	33	0	1.62	
118+00	34	0	1.63	
118+50	34	0	1.75	
119+00	37	0	2.00	
119+50	53	0	1.85	
120+00	53	0	1.75	
120+18	17	0	1.30	
TOTAL	9797	48		

EARTHWORK SUMMARY

Common Excavation (205.0100)	24,500 CY
(Includes 14,703 CY Pav't Removal)	
Fill (includes 20% Shrinkage)	48 CY
Waste	24,452 CY

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PROJECT NO: 2060-11-70	HWY: LOCAL STREET	COUNTY: MILWAUKEE	CUT AND FILL QUANTITIES	SHEET: 293	E

PLOT DATE : _____ PLOT BY : _____ PLOT NAME : _____ PLOT SCALE : 1:1

Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

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