PROJECT ID:

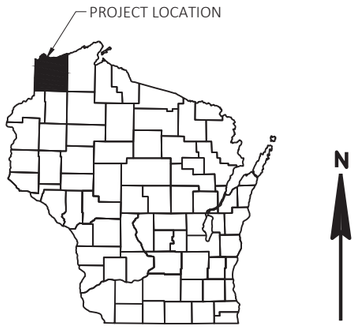
WITH:

COUNTY: DOUGLAS

ORDER OF SHEETS

Section No.	1	Title
Section No.	2	Typical Sections and Details
Section No.	3	Estimate of Quantities
Section No.	3	Miscellaneous Quantities
Section No.	4	Right of Way Plat
Section No.	5	Plan and Profile
Section No.	6	Standard Detail Drawings
Section No.	7	Sign Plates
Section No.	8	Structure Plans
Section No.	9	Computer Earthwork Data
Section No.	9	Cross Sections

TOTAL SHEETS =



DESIGN DESIGNATION

A.A.D.T.	2019	=	15,800
A.A.D.T.	2046	=	16,300
D.H.V.		=	
D.D.		=	50/50
T.		=	9 %
DESIGN SPEED		=	30 MPH
ESALS		=	4,422,979

CONVENTIONAL SYMBOLS

PLAN

- CORPORATE LIMITS
- PROPERTY LINE
- LOT LINE
- LIMITED HIGHWAY EASEMENT
- EXISTING RIGHT OF WAY
- PROPOSED OR NEW R/W LINE
- SLOPE INTERCEPT
- REFERENCE LINE (300'EB')
- EXISTING CULVERT
- PROPOSED CULVERT (Box or Pipe)
- COMBUSTIBLE FLUIDS (CAUTION)
- MARSH AREA
- WOODED OR SHRUB AREA

PROFILE

- GRADE LINE
- ORIGINAL GROUND
- MARSH OR ROCK PROFILE (To be noted as such) (ROCK)
- SPECIAL DITCH (LABEL)
- GRADE ELEVATION (955.36)
- CULVERT (Profile View)

UTILITIES

- ELECTRIC (E)
- FIBER OPTIC (FO)
- GAS (G)
- SANITARY SEWER (SAN)
- STORM SEWER (SS)
- TELEPHONE (T)
- WATER (W)
- UTILITY PEDESTAL
- POWER POLE
- TELEPHONE POLE

CITY OF SUPERIOR

PUBLIC WORKS

PLAN OF PROPOSED IMPROVEMENT

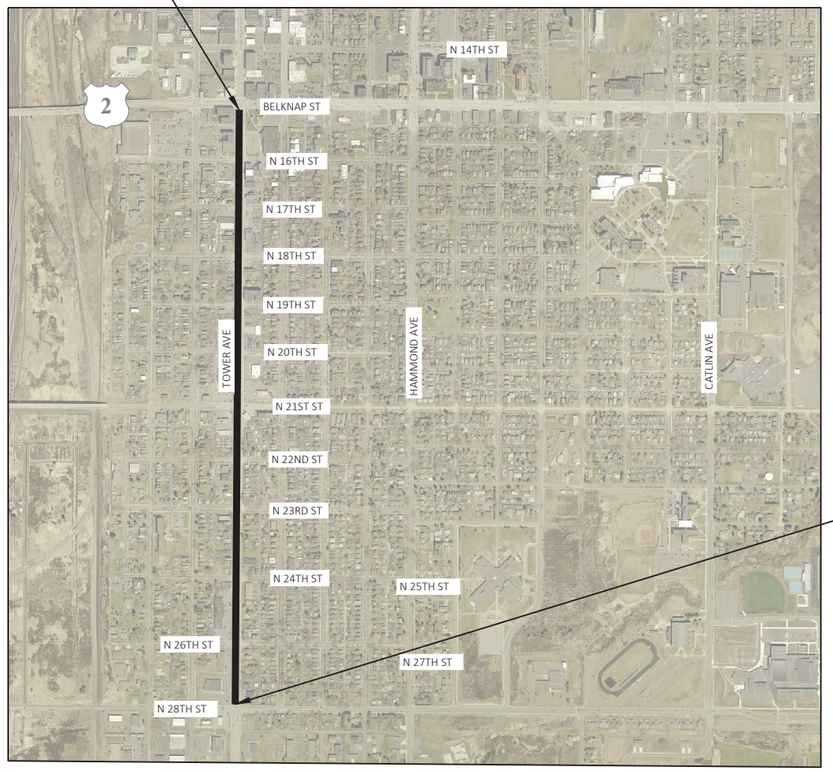
CITY OF SUPERIOR, TOWER AVENUE (STH 35)

N 28TH STREET - BELKNAP STREET

TOWER AVENUE (STH 35)

DOUGLAS COUNTY

END PROJECT
STA 693+92
MATCH EXISTING
SAWCUT REQ'D



BEGIN PROJECT
STA 642+18.5
MATCH EXISTING
SAWCUT REQ'D

LAYOUT

SCALE 0 0.25 MI

TOTAL NET LENGTH OF CENTERLINE = 0.91 MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), DOUGLAS COUNTY, NAD83 (YEAR), IN U.S. SURVEY FEET. POSITIONS SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES ARE THE SAME AS GROUND DISTANCES.

ELEVATIONS ARE REFERENCED TO NAVD 88 (YEAR). GPS DERIVED ELEVATIONS ARE BASED ON GEOID 12A.

WISCONSIN
JARROD S. STARREN
38465
EAU CLAIRE, WI
PROFESSIONAL ENGINEER

4/30/2025

Plans Prepared by

SEH
Building a Better World for All ø Us

Short Elliott Hendrickson Inc.
10 North Bridge Street
Chippewa Falls, WI 54729
715.720.6200 | Main
www.sehinc.com

E

STANDARD ABBREVIATIONS

ABUT	ABUTMENT
AC	ACRE
AGG	AGGREGATE
AECPRC	APRON ENDWALL FOR CULVERT PIPE REINFORCED CONCRETE
AECPCS	APRON ENDWALL FOR CULVERT PIPE CORRUGATED STEEL
ASPH	ASPHALTIC
AVG	AVERAGE
ADT	AVERAGE DAILY TRAFFIC
BF	BACK FACE
BM	BENCH MARK
BR	BRIDGE
CE	COMMERCIAL ENTRANCE
C/L	CENTER LINE
Δ	CENTRAL ANGLE OR DELTA
COB	CENTER OF BARRIER
CONC	CONCRETE
CPRC	CULVERT PIPE REINFORCED CONCRETE
CPRCHE	CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL
CR	CREEK
CY	CUBIC YARD
C&G	CURB AND GUTTER
D	DEGREE OF CURVE
DHV	DESIGN HOUR VOLUME
DISCH	DISCHARGE
DG	DITCH GRADE
DWY	DRIVEWAY
X	EAST GRID COORDINATE
EAT	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
EOR	END POINT OF RADIUS
EL	ELEVATION
ENT	ENTRANCE
ESALS	EQUIVALENT SINGLE AXLE LOADS
EXC	EXCAVATION
EBS	EXCAVATION BELOW SUBGRADE
EXIST	EXISTING
FC	FACE OF CURB
FF	FACE TO FACE
FERT	FERTILIZE
FE	FIELD ENTRANCE
FL	FLOW LINE
FO	FIBER OPTIC
CWT	HUNDREDWEIGHT
HYD	HYDRANT
ID	INSIDE DIAMETER
INV	INVERT
IP	IRON PIPE ON PIN
LHF	LEFT-HAND FORWARD
L	LENGTH OF CURVE
LF	LINEAR FOOT
LC	LONG CHORD OF CURVE
LS	LUMP SUM
MH	MANHOLE
MOR	MID POINT OF RADIUS
NC	NORMAL CROWN
NO	NUMBER
OBLIT	OBLITERATE
PAVT	PAVEMENT
PE	PRIVATE ENTRANCE
PVRC	POINT OF VERTICAL REVERSE CURVE
QOR	QUARTER POINT OF RADIUS
R	RADIUS
REQ'D	REQUIRED
RES	RESIDENCE OR RESIDENTIAL
RHF	RIGHT-HAND FORWARD
R/W	RIGHT-OF-WAY
R	RIVER
RDWY	ROADWAY
R/L	REFERENCE LINE
SALV	SALVAGED
SAN	SANITARY SEWER
SF	SQUARE FEET
SY	SQUARE YARD
SDD	STANDARD DETAIL DRAWINGS
STA	STATION
SS	STORM SEWER
SSPRC	STORM SEWER PIPE REINFORCED CONCRETE
SE	SUPERELEVATION RATE
TC	TOP OF CURB
T OR TN	TOWN
T	TRUCKS (PERCENT OF)
TYP	TYPICAL
VAR	VARIABLE
VC	VERTICAL CURVE
Y	NORTH GRID COORDINATE
YD	YARD

DNR AREA LIAISON:

DNR NORTHERN REGION HEADQUARTERS
810 W. MAPLE STREET
SPOONER, WI 54801
TELEPHONE: 715.520.3976
ATTENTION: AMY CRONK
EMAIL: AMY.CRONK@WISCONSIN.GOV

DESIGN CONTACT:

CITY OF SUPERIOR PUBLIC WORKS
1316 N 14TH STREET
SUPERIOR WISCONSIN 54880
TELEPHONE: 715.395.7334
ATTENTION: TODD JANIGO
EMAIL: JANIGOT@CI.SUPERIOR.WI.US

DESIGN CONTACT:

SEH INC.
10 NORTH BRIDGE STREET
CHIPPEWA FALLS WI 54729
TELEPHONE: 715.271.1213
ATTENTION: JARROD STARREN
EMAIL: JSTARREN@SEHINC.COM

UTILITY CONTACT LIST:

ASTREA F/K/A PACKERLAND - FIBER OPTIC
105 KENT STREET
PO BOX 190
IRON MOUNTAIN MI 49801
TELEPHONE: 906.776.2609
ATTENTION: ANDY HEIGL
EMAIL: ANDY.HEIGL@ASTREACONNECT.COM

LUMEN (AKA-CENTURYLINK)
2426 75TH. AVE
OSCEOLA, WI 54020
TELEPHONE: 715.392.0048
ATTENTION: MICHAEL VANDEN BOS
EMAIL: MIKE.VANDENBOS@LUMEN.COM

SUPERIOR WATER, LIGHT & POWER CO.
2915 HILL AVENUE
P.O. BOX 519
SUPERIOR WISCONSIN 54880
TELEPHONE: 715.395.6315

GAS/PETROLEUM & WATER
TELEPHONE: 218.355.2440
ATTENTION: KEVIN DOUVILLE
EMAIL: KDOUVILLE@SWLP.COM

CITY OF SUPERIOR PUBLIC WORKS
1316 N 14TH STREET
SUPERIOR WISCONSIN 54880
TELEPHONE: 715.395.7334
ATTENTION: TODD JANIGO
EMAIL: JANIGOT@SUPERIORWI.GOV

SPECTRUM F/K/A CHARTER COMMUNICATIONS - COMMUNICATION LINE
640 GARFIELD AVENUE
DULUTH MN 55802
TELEPHONE: 218.529.8042
TELEPHONE SECONDARY: 218.260.6984
ATTENTION: CHAD LAWRENCE
EMAIL: CHAD.LAWRENCE@CHARTER.COM

NORVADO - FIBER OPTIC
43705 US HIGHWAY 63
CABLE, WI 54821
TELEPHONE: 715.798.7123
ATTENTION: GUY FOLSOM
EMAIL: GFOLSOM@NORVADO.COM

GENERAL NOTES:

1. NO TREES OR SHRUBS SHALL BE REMOVED WITHOUT APPROVAL OF THE ENGINEER.
2. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.
3. THE CONTRACTOR SHALL NOTIFY DIGGERS HOTLINE AND AFFECTED UTILITIES PRIOR TO THE START OF WORK. ANY LOCAL MUNICIPAL UTILITY WHICH IS NOT A MEMBER OF THE DIGGERS HOTLINE MUST BE CONTACTED SEPARATELY.
4. PRIOR TO ORDERING DRAINAGE PIPES AND STRUCTURES, THE CONTRACTOR SHALL VERIFY RELATED DRAINAGE INFORMATION IN THE PLANS WITH THE ENGINEER.
5. CONCRETE COLLAR REQUIRED AT JOINTS BETWEEN EXISTING AND NEW STORM SEWER PIPE.
6. INLET AND DISCHARGE ELEVATIONS FOR DRAINAGE STRUCTURES SHOWN ON THE PLAN MAY BE ADJUSTED BY THE ENGINEER TO FIT FIELD CONDITIONS.
7. WETLANDS, WATERWAYS, AND OTHER ENVIRONMENTALLY SENSITIVE AREAS SHALL BE PROTECTED AT ALL TIMES. DO NOT STORE EQUIPMENT OR MATERIALS NEAR THESE SITES UNLES APPROVED BY THE ENGINEER.
8. CROSS SECTIONS SHOWN INCLUDE THE THICKNESS OF TOPSOIL WHERE REQUIRED. TOPSOIL SHALL BE REPLACED WITH 4-INCH TYPICAL DEPTH.
9. TRAFFIC CONTROL DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.
10. REMOVAL OF EROSION CONTROL DEVICES IS INCLUDED IN THE COST OF THEIR RESPECTIVE BID ITEMS.
11. THE EROSION CONTROL FEATURES AS SHOWN IN THE PLANS ARE AT SUGGESTED LOCATIONS. EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.
12. ASPHALTIC AND CONCRETE SURFACES SHALL BE SAWCUT AT THE MATCH LINE AS SHOWN ON THE PLAN OR AS DIRECTED BY THE ENGINEER.
13. DISTURBED AREAS WITHIN THE RIGHT OF WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, SHALL BE TOPSOILED, FERTILIZED AND SEEDED.
14. A CONVERSION FACTOR OF 2.0 TONS/CY IS USED TO ESTIMATE QUANTITIES FOR BASE AGGREGATE DENSE.

ORDER OF SHEETS - SECTION 2:

TO OBTAIN LOCATION OF PARTICIPANTS' UNDERGROUND FACILITIES BEFORE YOU DIG IN WISCONSIN

DIGGERS HOTLINE

Dial 811 or (800)242-8511

www.DiggersHotline.com

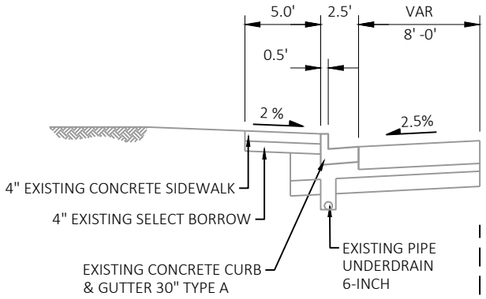
NOTE: WIS. STATUTE 182.0175 (1974) REQUIRES MIN. OF 3 WORK DAYS NOTICE BEFORE YOU EXCAVATE.

2

PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	PROJECT OVERVIEW	SHEET	E

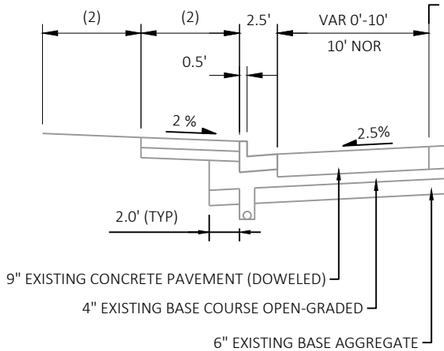
FILE NAME : X:\PT\S\SUPER\181558\5-FINAL-DSGN\C3D- TOWER AVE\SHEETS\020201_PO.DWG
LAYOUT NAME - 01

PLOT DATE : 4/30/2025 10:47 AM PLOT BY : ANNIE JEROME PLOT NAME : PLOT SCALE : 1 IN:200 FT



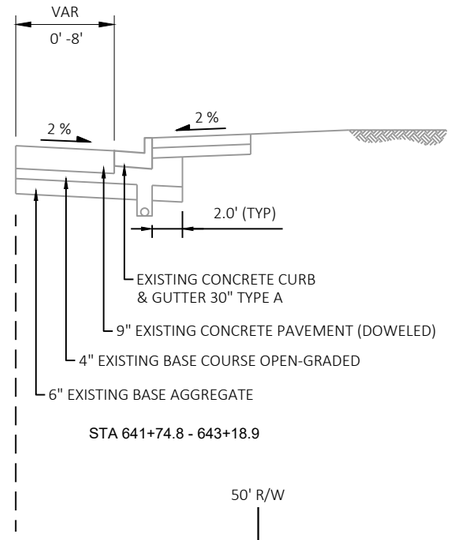
TYPICAL RIGHT TURN LANE

STA 641+74.8 - 644+43.8

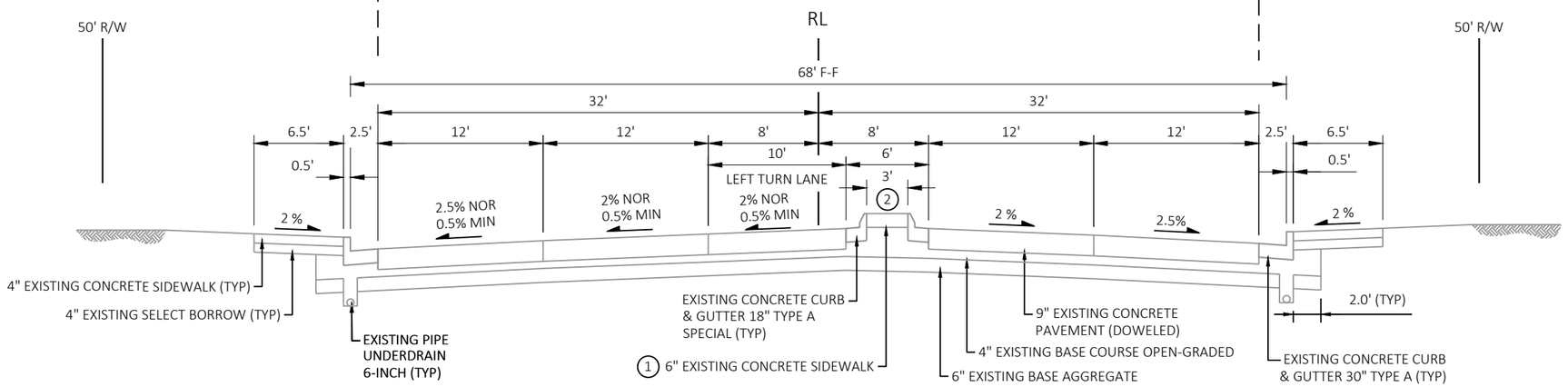


TYPICAL BUS TURNOUT

STA 665+08.5 - 666+83.5



STA 641+74.8 - 643+18.9



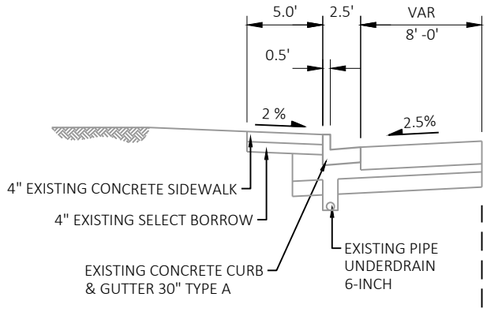
EXISTING TYPICAL SECTION

STA 642+18.5 (N 28TH ST) - 647+44.5 (N 26TH ST)
STA 663+37.5 (N 22ND ST) - 668+07.5 (N 21ST ST)

NOTES:

1. EXISTING MEDIAN TRANSITIONS TO THE SB INSIDE LANE EDGE TO ACCOMMODATE NB LEFT TURN LANE.
2. EXISTING MEDIAN WIDTH VARIES 5'-8' FROM N 28TH ST TO N 26TH STREET.

PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	TYPICAL SECTIONS	SHEET	E

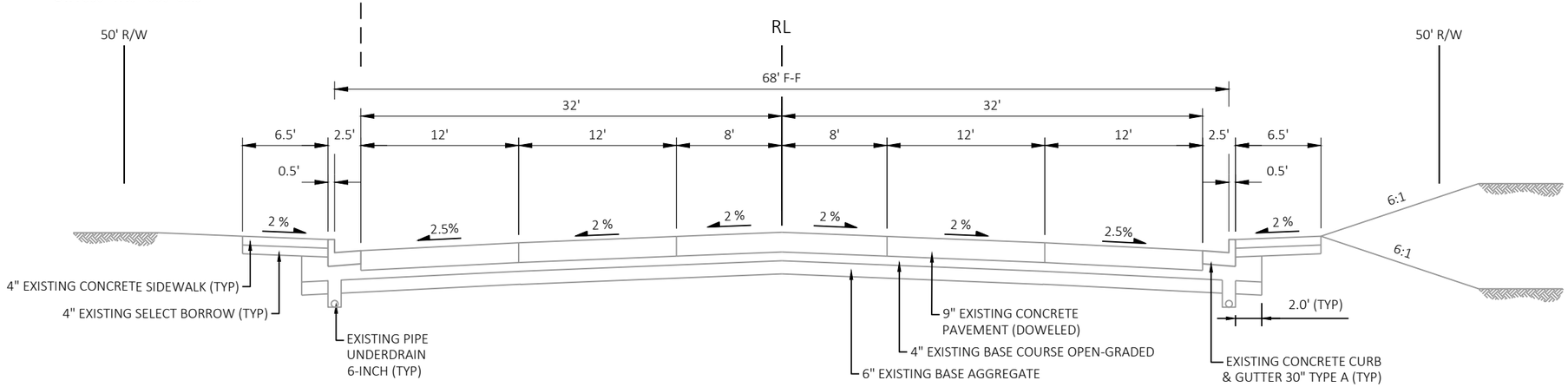


RIGHT TURN LANE

STA 653+13.5 - 654+73.5
STA 659+17.5 - 660+63.5

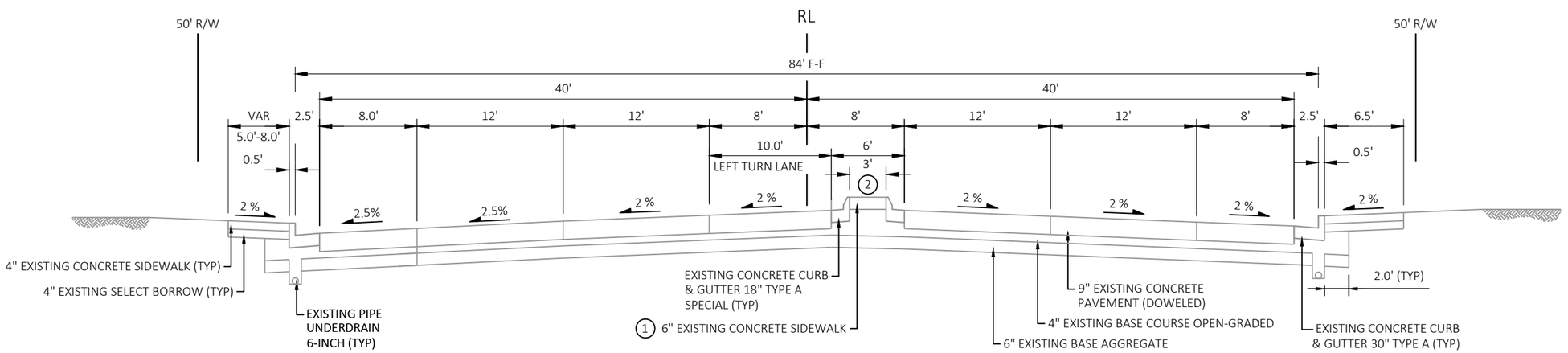
NOTES:

1. EXISTING MEDIAN TRANSITIONS TO THE SB INSIDE LANE EDGE TO ACCOMMODATE NB LEFT TURN LANE.
2. EXISTING MEDIAN WIDTH VARIES 5'-8' FROM N 28TH ST TO N 26TH STREET.



EXISTING TYPICAL SECTION

STA 647+44.5 (N 26TH ST) - 663+37.5 (N 22ND ST)

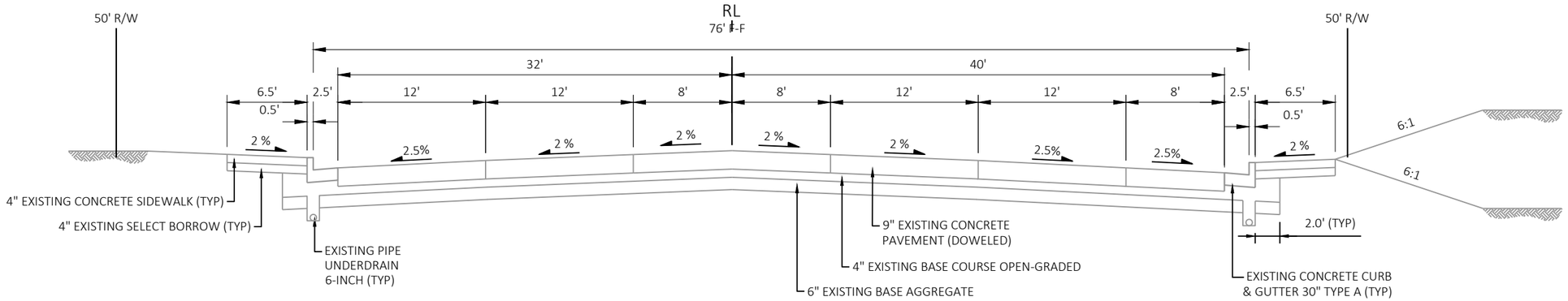


EXISTING TYPICAL SECTION

STA 668+07.5 (N 21ST ST) - 672+79.5 (N 20TH ST)
STA 689+58.0 (N 16TH ST) - 690+35.5

PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	TYPICAL SECTIONS	SHEET	E

FILE NAME : X:\PT\S\SUPER\181558\5-FINAL-DSGN\C3D- TOWER AVE\SHEETS\020301_TS.DWG
LAYOUT NAME - 02
PLOT DATE : 4/30/2025 9:20 AM
PLOT BY : ANNIE JEROME
PLOT NAME :
PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 42

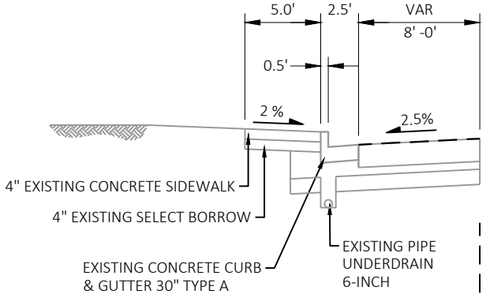


EXISTING TYPICAL SECTION

STA 672+79.5 (N 20TH ST) - 689+58.0 (N 16TH ST)

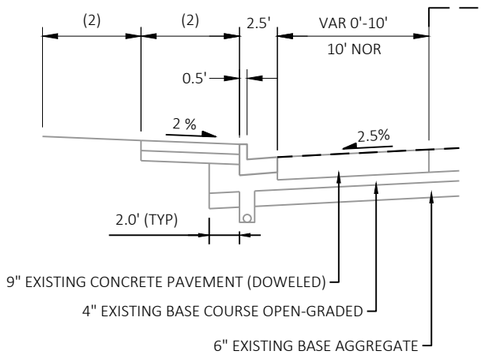
PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	TYPICAL SECTIONS	SHEET	E

FILE NAME : X:\PT\S\SUPER\181558\5-FINAL-DSGN\C3D- TOWER AVE\SHEETS\020301_TS.DWG
LAYOUT NAME - 03
PLOT DATE : 4/30/2025 9:20 AM
PLOT BY : ANNIE JEROME
PLOT NAME :
PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 42



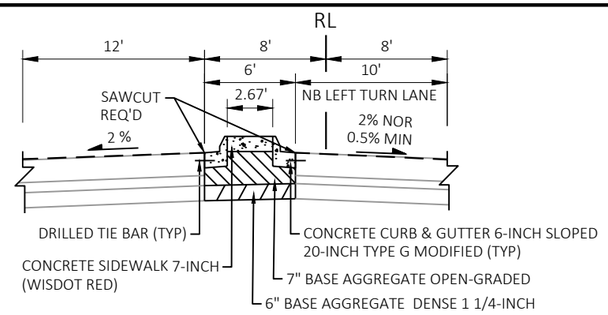
TYPICAL RIGHT TURN LANE

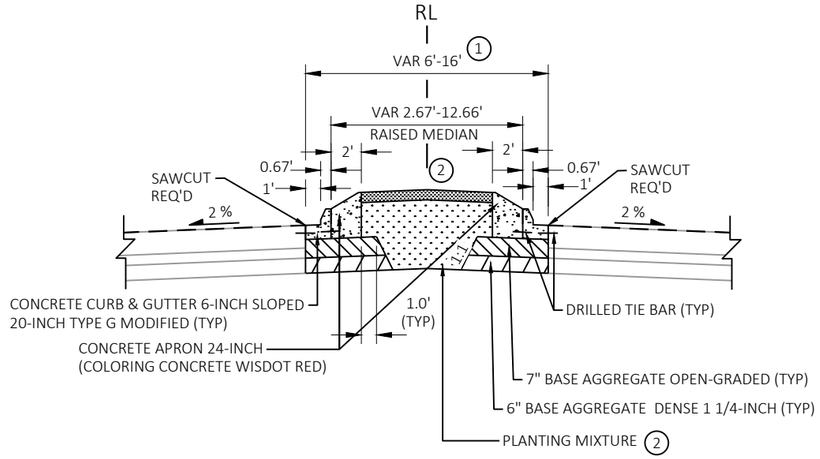
STA 641+74.8 - 644+43.8



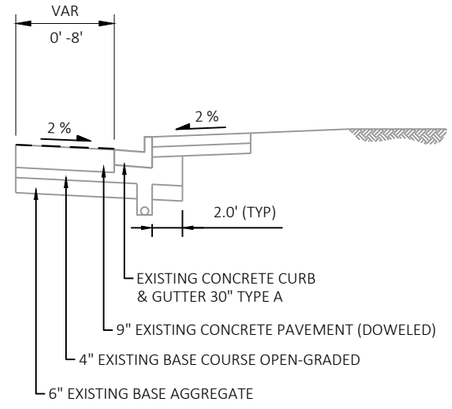
TYPICAL BUS TURNOUT

STA 665+08.5 - 666+83.5

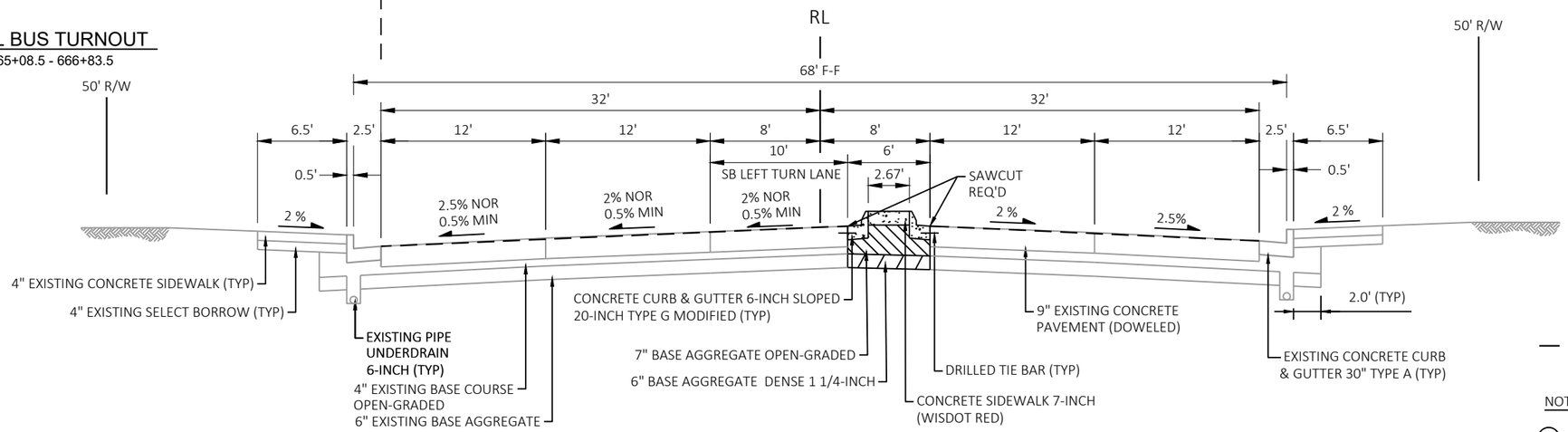




FULL WIDTH MEDIAN SECTION



STA 641+74.8 - 643+18.9



FINISHED TYPICAL SECTION

STA 642+18.5 (N 28TH ST) - 647+04.6 (N 26TH ST)
STA 663+74.2 (N 22ND ST) - 667+69.4 (N 21ST ST)

LEGEND

— — — CONTINUOUS DIAMOND GRINDING CONCRETE PAVEMENT

NOTES:

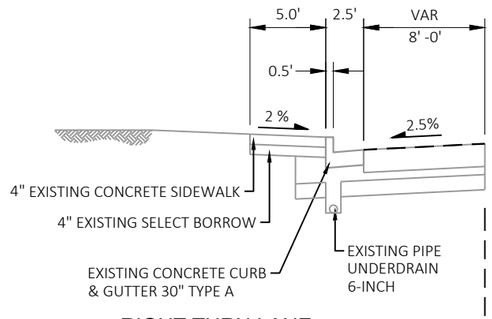
1. MEDIAN WIDTH VARIES 6.0' TO 16.0' SEE PLAN SHEETS FOR LOCATIONS.
2. SEE LANDSCAPING PLANS FOR MEDIAN TREATMENTS.

PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	TYPICAL SECTIONS	SHEET	E

FILE NAME : X:\PT\S\SUPER\181558\5-FINAL-DSGN\C3D- TOWER AVE\SHEETS\020301_TS.DWG
LAYOUT NAME - 04

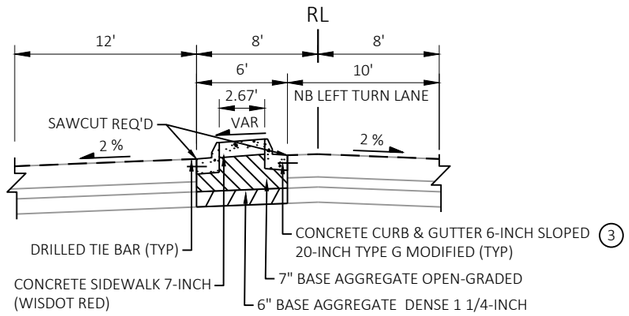
PLOT DATE : 4/30/2025 9:20 AM PLOT BY : ANNIE JEROME PLOT NAME : PLOT SCALE : 1 IN:10 FT

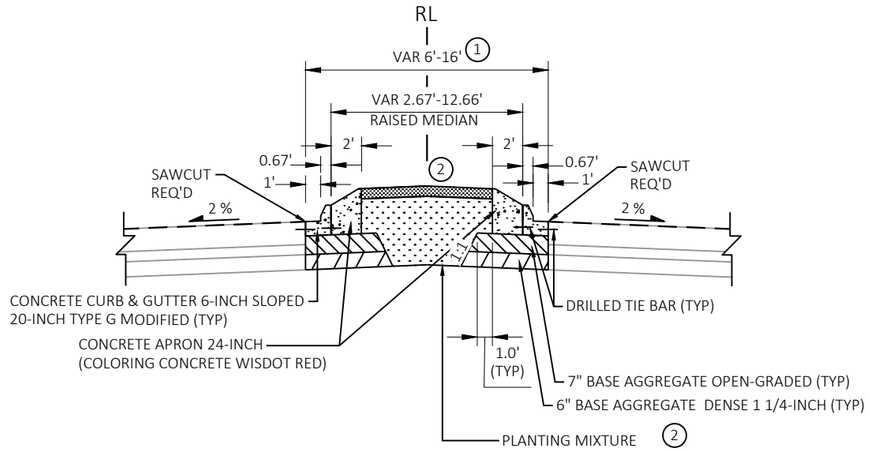
2



RIGHT TURN LANE

STA 653+13.5 - 654+73.5
STA 659+17.5 - 660+63.5





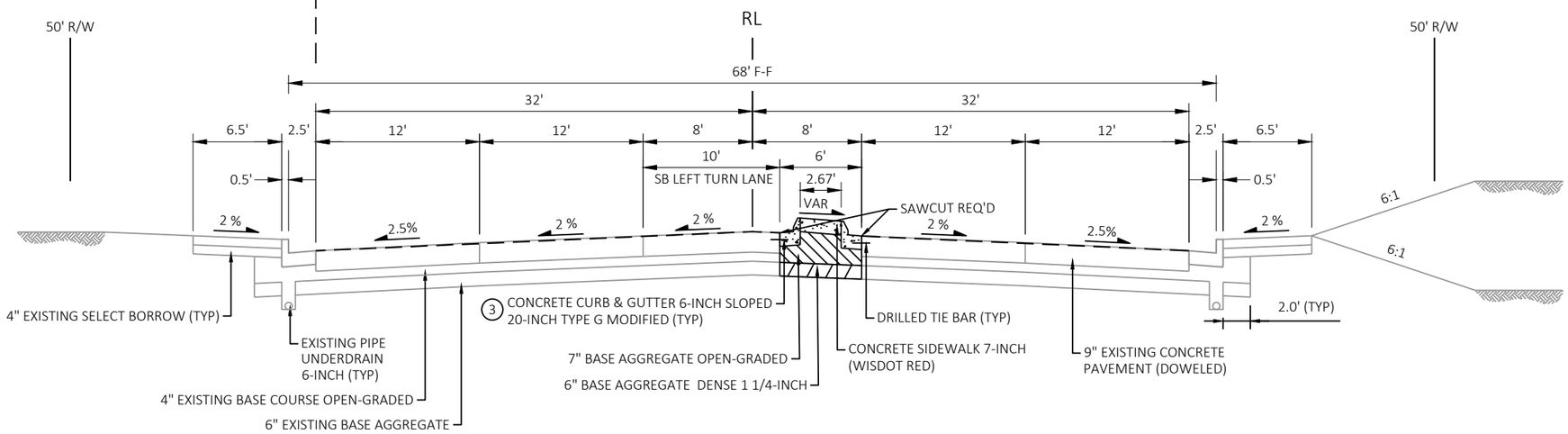
FULL WIDTH MEDIAN SECTION

LEGEND

— — — CONTINUOUS DIAMOND GRINDING CONCRETE PAVEMENT

NOTES:

1. MEDIAN WIDTH VARIES 6.0' TO 16.0' SEE PLAN SHEETS FOR LOCATIONS.
2. SEE LANDSCAPING PLANS FOR MEDIAN TREATMENTS.
3. SEE PLAN SHEETS FOR LOCATIONS OF CONCRETE CURB & GUTTER 6-INCH SLOPED 44-INCH TYPE G MODIFIED.

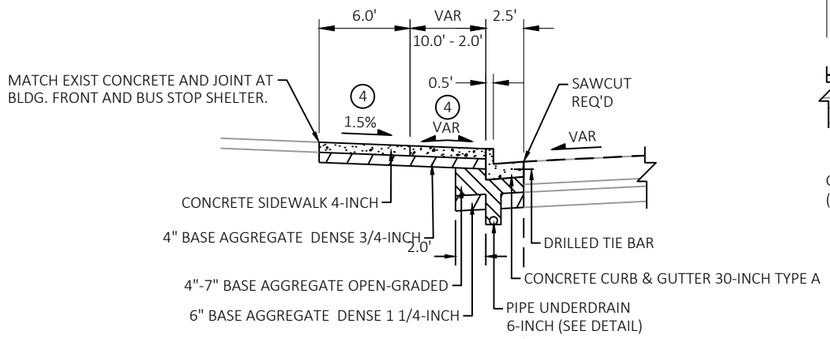


FINISHED TYPICAL SECTION

STA 647+84.8 (N 26TH ST) - 652+79.8 (N 24TH ST)
STA 653+51.2 (N 24TH ST) - 658+84.2 (N 23RD ST)
STA 659+52.6 (N 23RD ST) - 663+77.2 (N 22ND ST)

PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	TYPICAL SECTIONS	SHEET	E

FILE NAME : X:\PT\S\SUPER\181558\5-FINAL-DSGN\C3D- TOWER AVE\SHEETS\020301_TS.DWG
LAYOUT NAME - 05
PLOT DATE : 4/30/2025 9:20 AM
PLOT BY : ANNIE JEROME
PLOT NAME :
PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 42



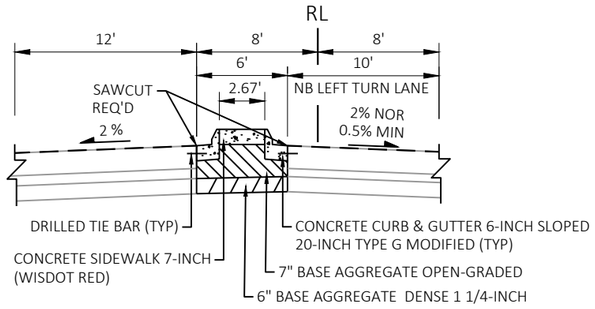
BUMP OUT
N 16TH ST - NW

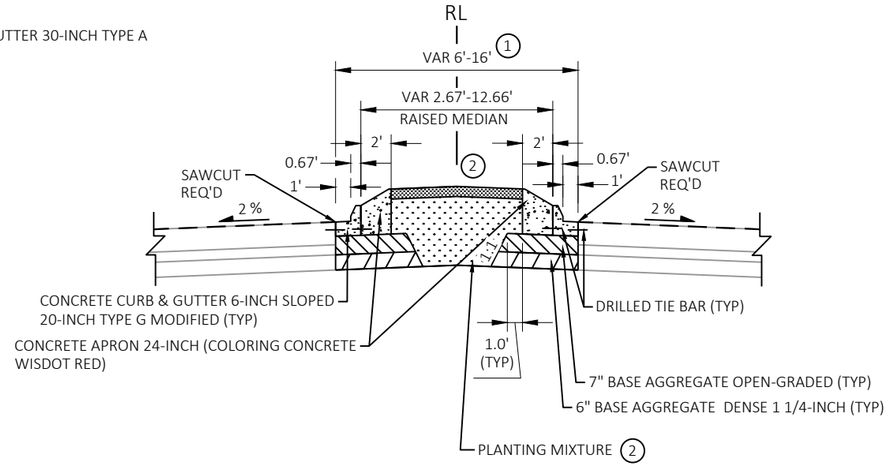
LEGEND

— — — CONTINUOUS DIAMOND GRINDING CONCRETE PAVEMENT

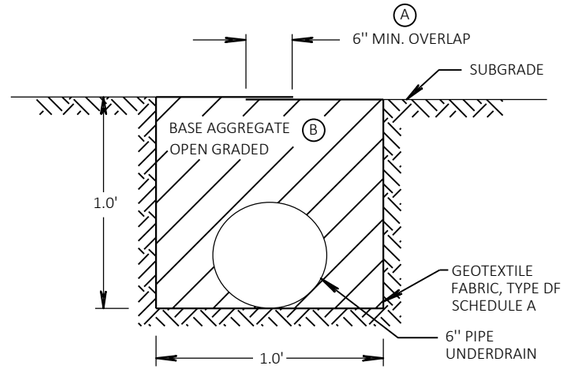
NOTES:

1. MEDIAN WIDTH VARIES 6.0' TO 16.0' SEE PLAN SHEETS FOR LOCATIONS.
2. SEE LANDSCAPING PLANS FOR MEDIAN TREATMENTS.
3. SEE PLAN SHEETS FOR LOCATIONS OF CONCRETE CURB & GUTTER 6-INCH SLOPED 44-INCH TYPE G MODIFIED.
4. SEE CURB RAMP DETAIL SHEETS FOR GRADES, SLOPES AND SIDEWALK LOCATIONS.





FULL WIDTH MEDIAN SECTION



NOTES:

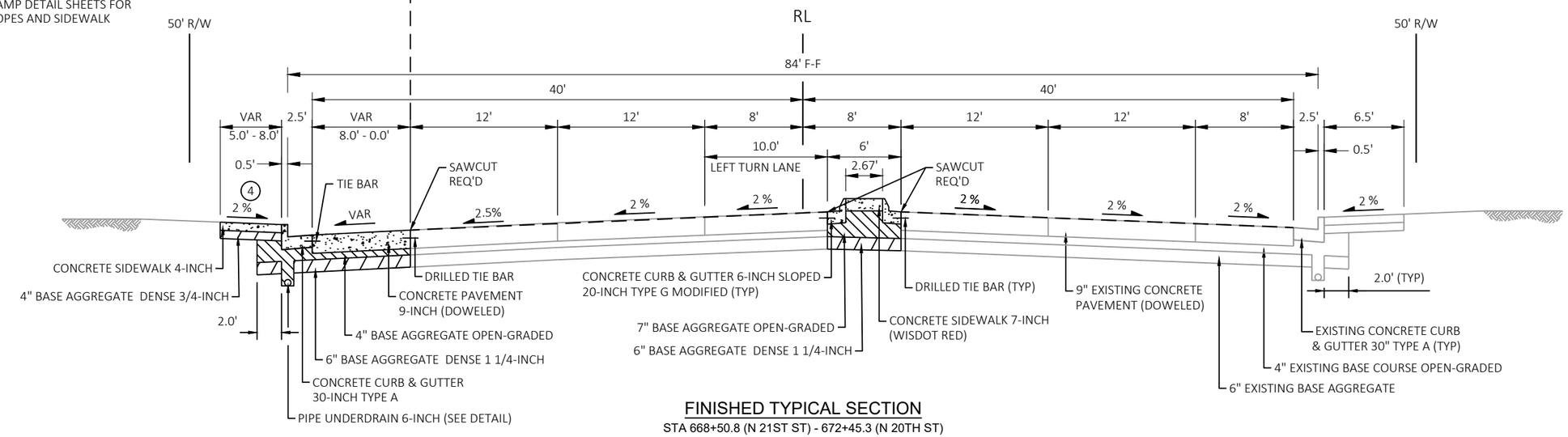
A. FABRIC SHALL OVERLAP AT TOP OF SUBGRADE. 6-INCH MINIMUM OVERLAP

PIPE UNDERDRAIN SHALL BE LAID PARALLEL TO THE GRADE OF THE ROADWAY.

PLACE UNDERDRAIN AFTER EXCAVATION OF SUBGRADE AND PRIOR TO THE PLACEMENT OF BASE LAYERS.

B. TRENCH BACKFILL WILL BE PAID FOR AS BASE AGGREGATE OPEN GRADED.

DETAIL A
PIPE UNDERDRAIN 6-INCH



FINISHED TYPICAL SECTION
STA 668+50.8 (N 21ST ST) - 672+45.3 (N 20TH ST)
STA 689+58.0 (N 16TH ST) - 690+35.5

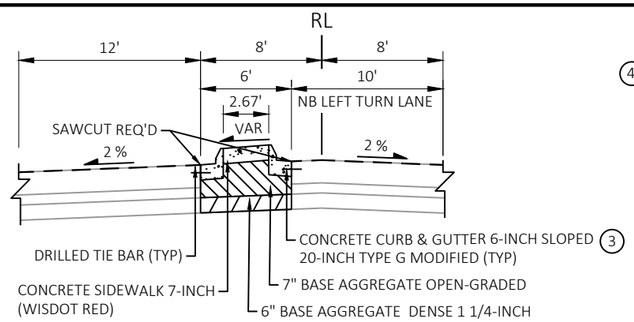
PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	TYPICAL SECTIONS	SHEET	E

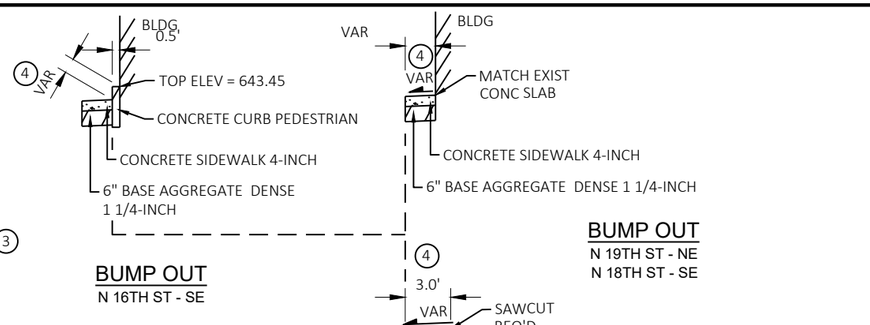
LEGEND

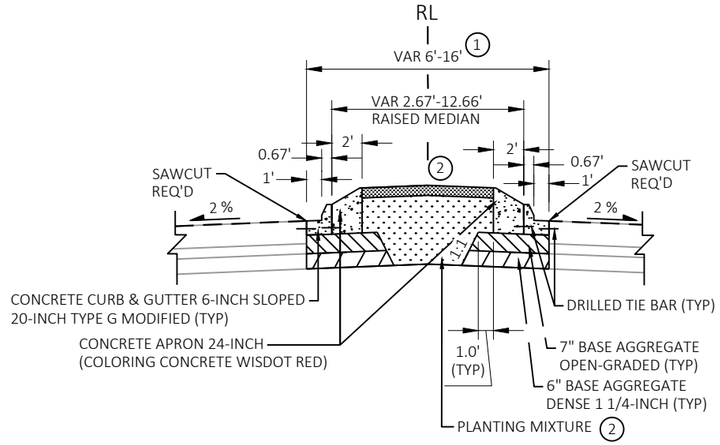
— — — CONTINUOUS DIAMOND GRINDING CONCRETE PAVEMENT

NOTES:

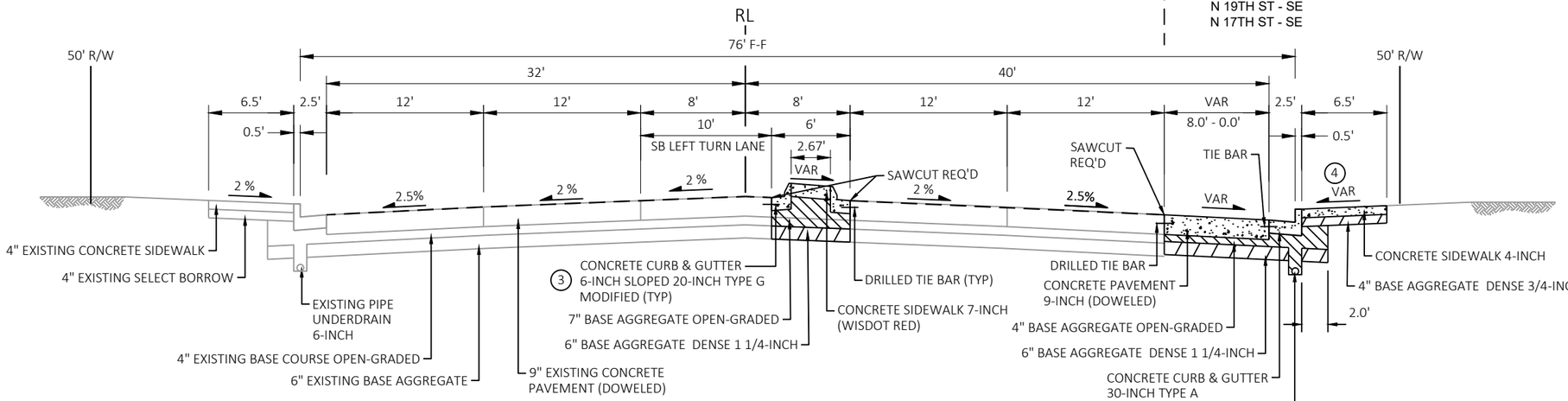
1. MEDIAN WIDTH VARIES 6.0' TO 16.0' SEE PLAN SHEETS FOR LOCATIONS.
2. SEE LANDSCAPING PLANS FOR MEDIAN TREATMENTS.
3. SEE PLAN SHEETS FOR LOCATIONS OF CONCRETE CURB & GUTTER 6-INCH SLOPED 44-INCH TYPE G MODIFIED.
4. SEE CURB RAMP DETAIL SHEETS FOR GRADES, SLOPES AND SIDEWALK LOCATIONS.







FULL WIDTH MEDIAN SECTION

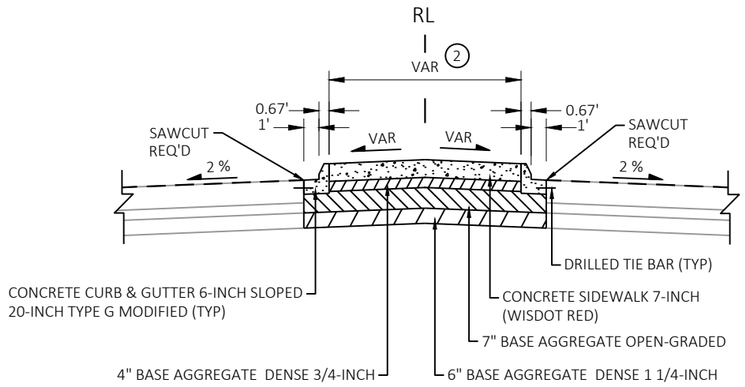


FINISHED TYPICAL SECTION

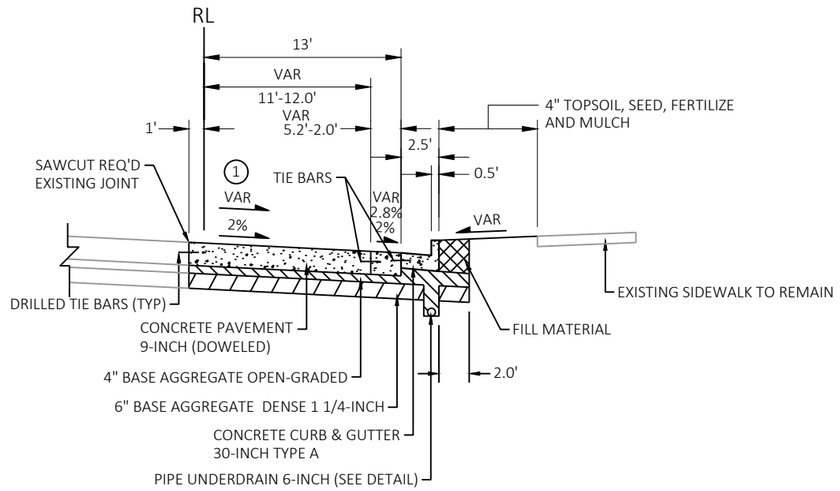
STA 673+18.1 (N 20TH ST) - 676+62.7 (N 19TH ST)
STA 677+34.9 (N 19TH ST) - 680+85.2 (N 18TH ST)
STA 681+52.2 (N 18TH ST) - 685+04.6 (N 17TH ST)
STA 685+75.5 (N 17TH ST) - 688+76.5 (N 16TH ST)

PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	TYPICAL SECTIONS	SHEET	E

2



MEDIAN ISLAND - N 16TH ST



FINISHED TYPICAL SECTION

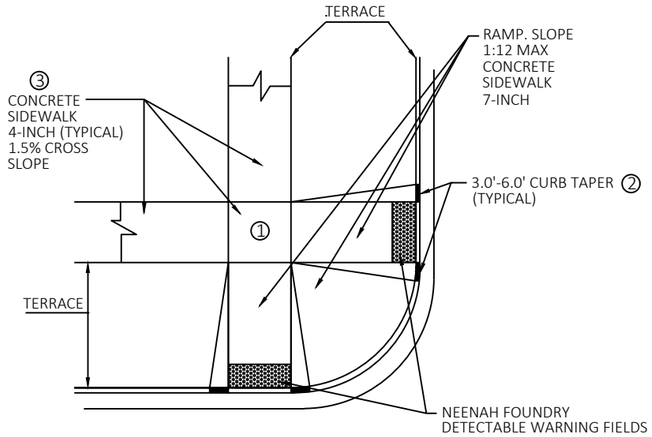
N 18TH STREET

STA 180+27.5 - 182+19.9

NOTES:

1. PAVEMENT SLOPE VARIES 2% - 2.8% FROM STA 181+90.0 TO STA 182+09.48.
2. REFER TO PLAN SHEETS FOR MEDIAN LAYOUT.

PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	TYPICAL SECTIONS	SHEET	E



NOTES:

① PROVIDE LANDING AT TOP OF RAMP WITH NO MORE THAN 2% SLOPE IN ANY DIRECTION. MINIMUM LANDING SIZE 5'x5', CONCRETE DEPTH SHALL BE 4 INCHES.

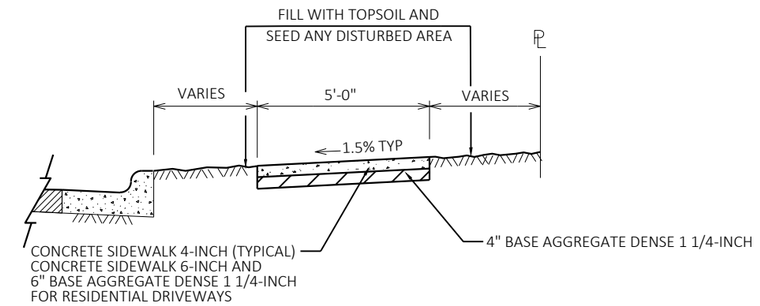
② PROVIDE 3.0' TAPER (6:1 MAX) ADJACENT TO NON-TRAVERSABLE SURFACES AND 6.0' TAPER (10:1 MAX) ADJACENT TO TRAVERSABLE SURFACES.

③ SEE INTERSECTION DETAIL SHEETS FOR SIDEWALK WIDTHS AND CURB RAMP DETAILS.

PEDESTRIAN RAMP REPLACEMENT NOTES:

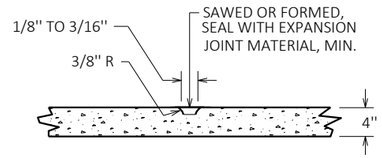
ALL PEDESTRIAN RAMPS ON PROJECT WILL BE REPLACED TO BRING THEM TO ADA SPECIFICATIONS.

PED-RAMP OVERHEAD DETAIL
(NO SCALE)

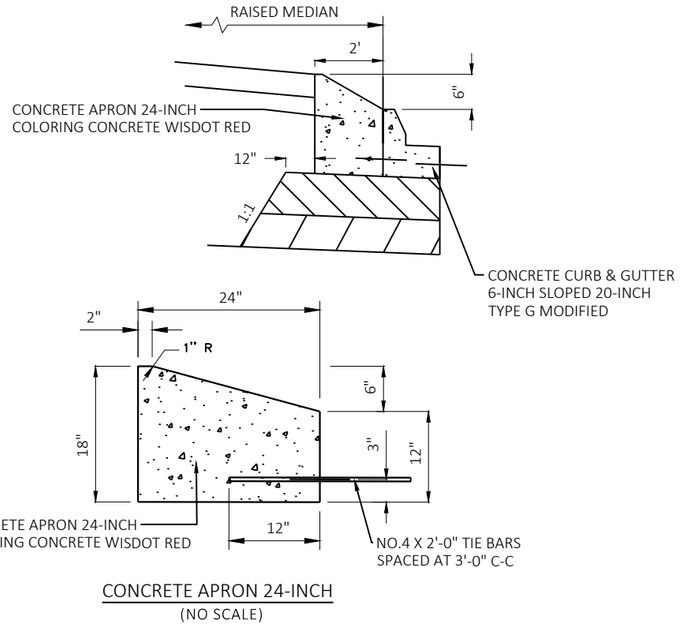


TYPICAL CONCRETE SIDEWALK SECTION

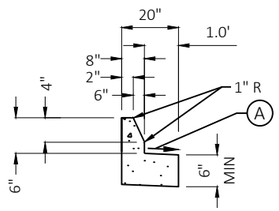
* SIDEWALK PROFILE MAY BE ADJUSTED BY THE ENGINEER TO A MAX. 1:12 SLOPE TO AVOID TREE ROOTS AND MAY BE NARROWED TO MIN. 4' WIDTH, MAINTAINING A MIN. 1.5% CROSS SLOPE.



SIDEWALK CONTRACTION JOINT
(NO SCALE)

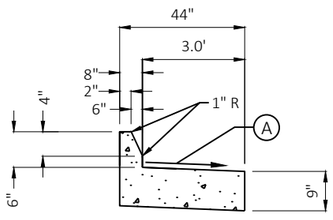


CONCRETE APRON 24-INCH
(NO SCALE)



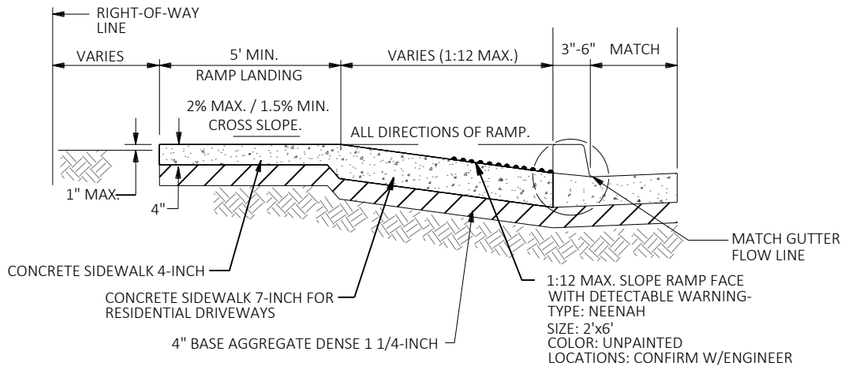
CONCRETE CURB & GUTTER 6-INCH SLOPED 20-INCH TYPE G MODIFIED
(NO SCALE)

Ⓐ SAME SLOPE AS ADJACENT PAVEMENT



CONCRETE CURB & GUTTER 6-INCH SLOPED 44-INCH TYPE G INTEGRAL
(NO SCALE)

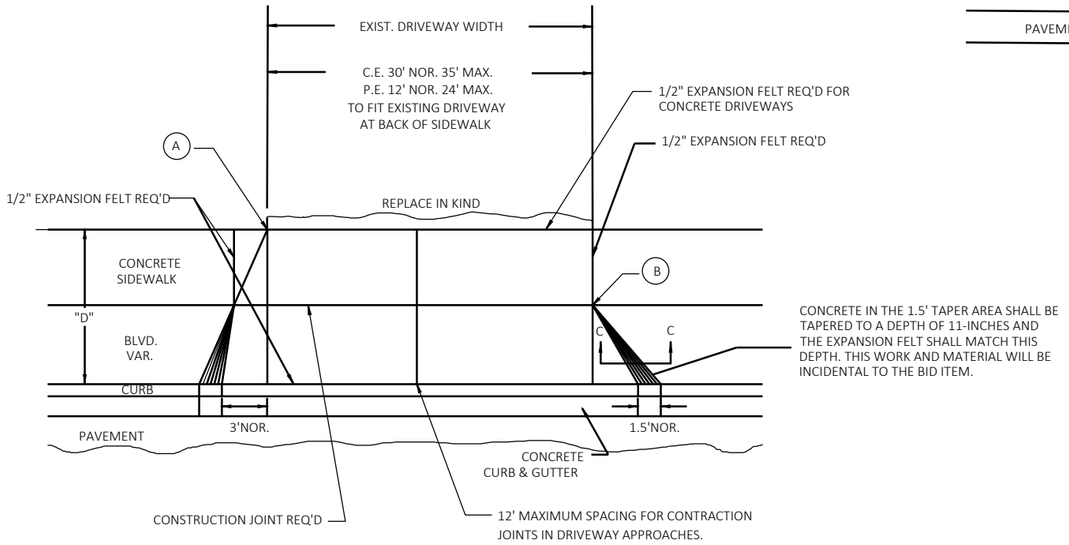
Ⓐ SAME SLOPE AS ADJACENT PAVEMENT



PED-RAMP CROSS-SECTION
(NO SCALE)

PROJECT NO:	HWY: TOWER AVENUE	COUNTY: DOUGLAS	CONSTRUCTION DETAILS	SHEET	E

2

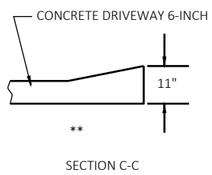


CONCRETE IN THE 1.5' TAPER AREA SHALL BE TAPERED TO A DEPTH OF 11-INCHES AND THE EXPANSION FELT SHALL MATCH THIS DEPTH. THIS WORK AND MATERIAL WILL BE INCIDENTAL TO THE BID ITEM.

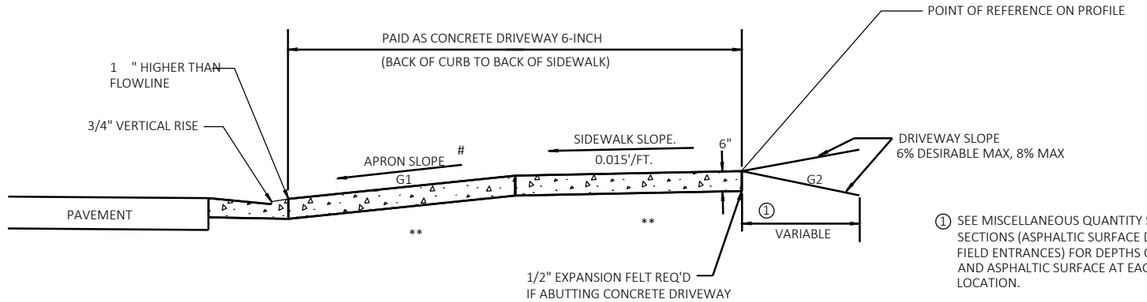
PLAN VIEW

(A) WHEN "D" IS 13' OR LESS, ALIGN TAPER WITH BACK OF SIDEWALK

(B) WHEN "D" IS GREATER THAN 13', ALIGN TAPER WITH FRONT OF SIDEWALK



SECTION C-C



(1) SEE MISCELLANEOUS QUANTITY SHEET AND TYPICAL SECTIONS (ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES) FOR DEPTHS OF BASE AGGREGATE AND ASPHALTIC SURFACE AT EACH DRIVEWAY LOCATION.

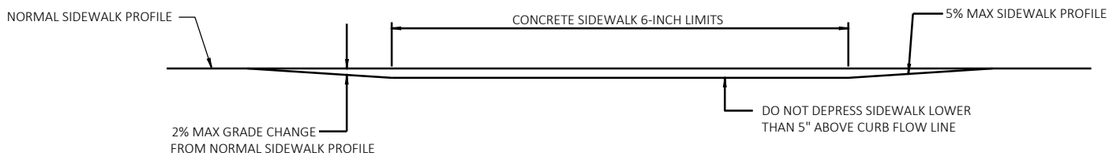
TYPICAL SIDEWALK SECTION

\#

TERRACE WIDTH	APRON SLOPE (G1) MIN %	DESIRABLE %	MAX %
3 FT	7.0	8.5	9.0
4 FT	5.0	7.0	9.0
5 FT	4.0	7.0	9.0
6 FT	4.0	7.0	9.0
7 FT	3.5	7.0	9.0
8 FT	3.0	7.0	9.0

NOTE: ALGEBRAIC DIFFERENCE BETWEEN TANGENT GRADES G1 & G2 TO NOT EXCEED 15%

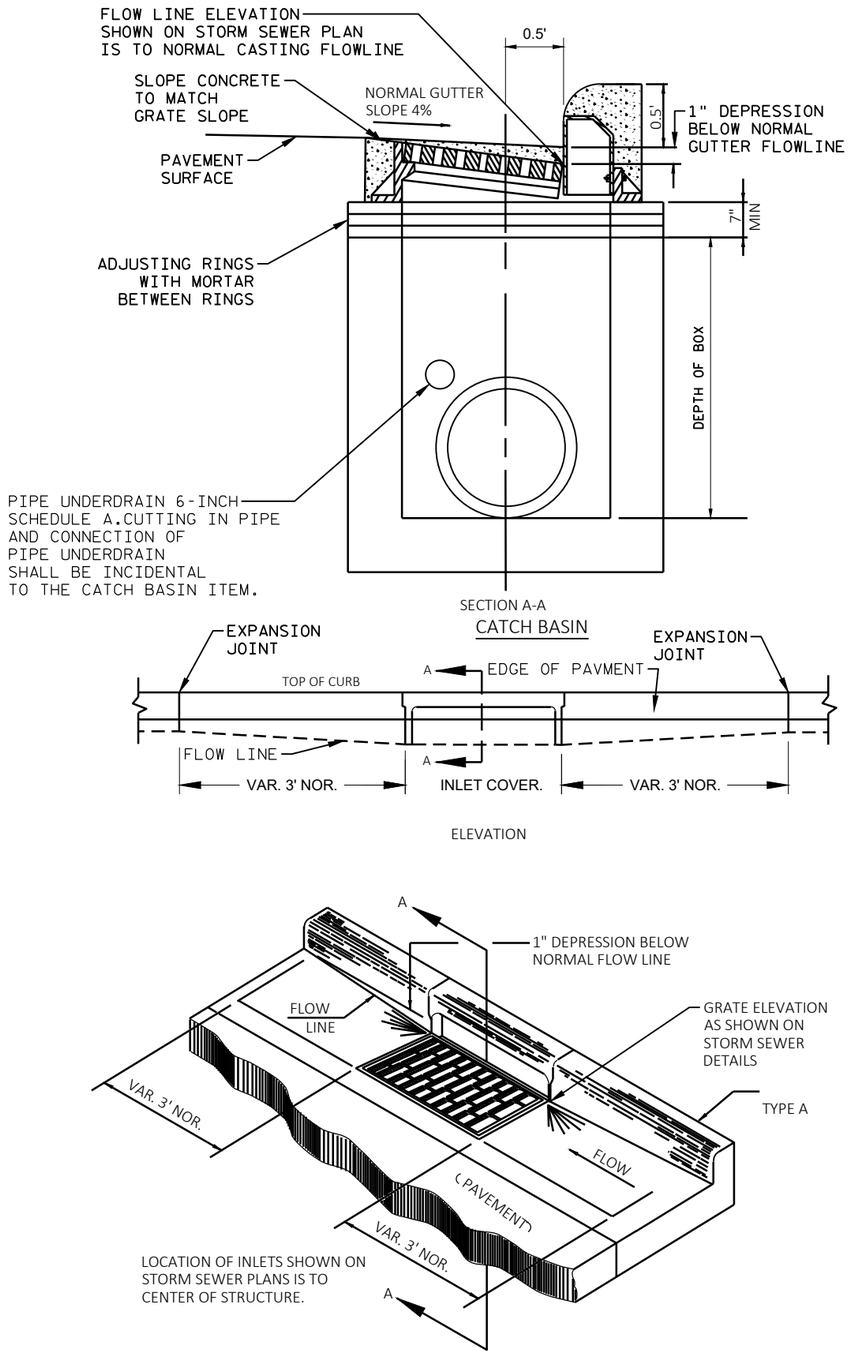
DEPRESS SIDEWALK PROFILE IF DRIVEWAY APRON EXCEEDS MAX SLOPE



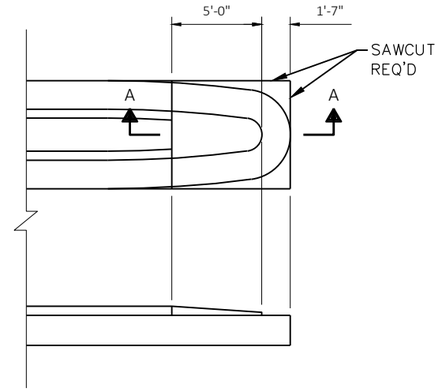
DEPRESSED SIDEWALK PROFILE DETAIL

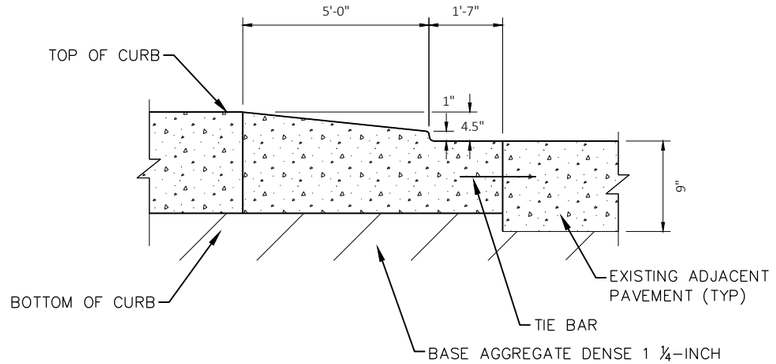
DRIVEWAY ENTRANCE DETAIL WITH SIDEWALK, CURB & GUTTER

PROJECT NO:	HWY: TOWER AVENUE	COUNTY: DOUGLAS	CONSTRUCTION DETAILS	SHEET	E



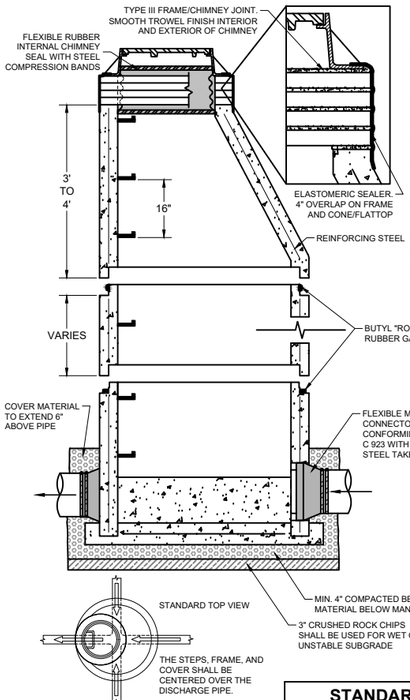
DETAIL OF CURB AND GUTTER AT INLETS

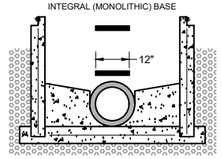


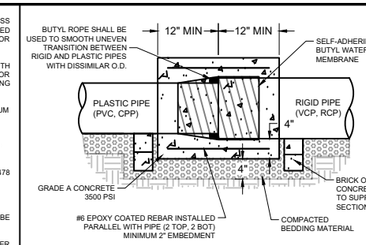


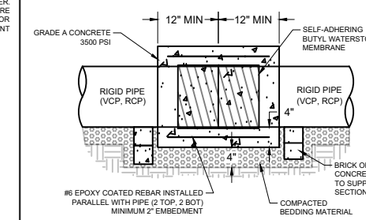
SECTION A-A

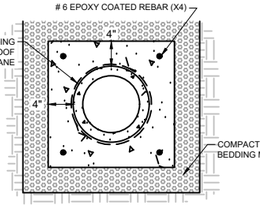
CONCRETE MEDIAN SLOPED NOSE

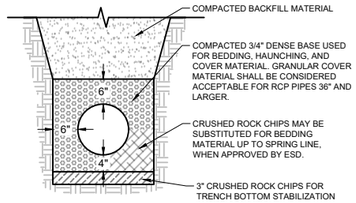


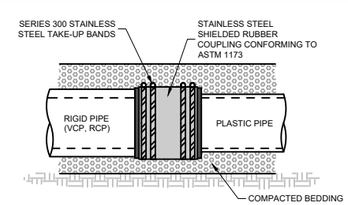


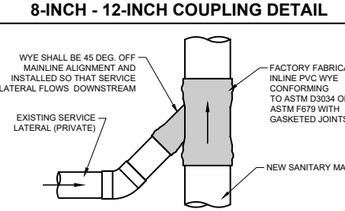


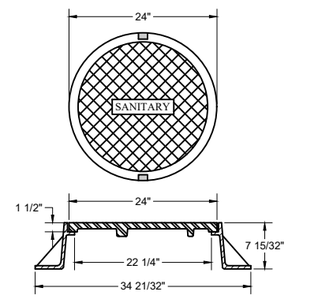


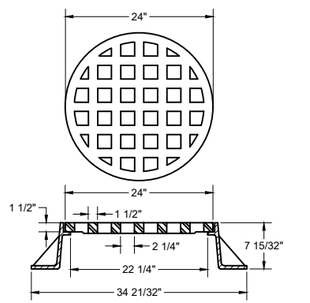


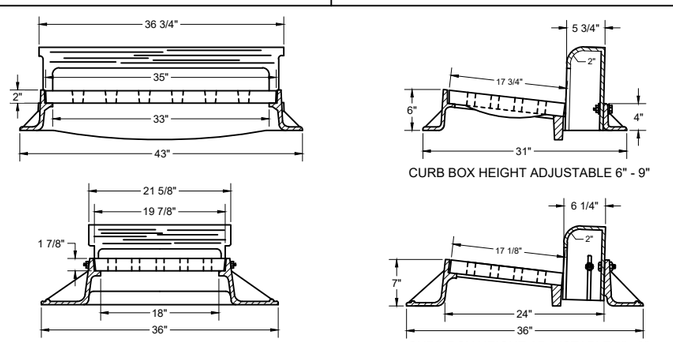












TYPE III FRAME/CHIMNEY JOINT REQUIRED ON ALL SANITARY MANHOLES UNLESS OTHERWISE SPECIFIED. ELASTOMERIC WATERPROOFING SEALER SHALL BE APPLIED TO EXTERIOR OF CHIMNEY, OVERLAPPING FRAME FLANGE AND PRECAST SECTION OR FLATTOP.

FLAT TOP SLAB MAY ONLY BE USED FOR 5'-0" AND 6'-0" DIA. MANHOLES AND WITH PERMISSION OF THE ENVIRONMENTAL SERVICES DIVISION OF PUBLIC WORKS OR WHERE SHOWN ON THE PLANS. FLAT TOP SLAB MUST HAVE A MINIMUM 6" ADJUSTING RING (1 FULL RING) INSTALLED.

ADJUST FRAME TO GRADE WITH CONCRETE RINGS OF VARIABLE THICKNESS, MAXIMUM RING HEIGHT = 6", MINIMUM RING HEIGHT = 2". CONCRETE RINGS SHALL BE REINFORCED WITH ONE LINE OF STEEL CENTERED WITHIN THE RING. WHERE NECESSARY, RINGS SHALL BE GROOVED TO RECEIVE STEP. THE CHIMNEY SHALL BE CONSTRUCTED SO THAT AS FEW ADJUSTING RINGS AS POSSIBLE SHALL BE USED TO BRING MANHOLE TO GRADE.

CONCRETE AND STEEL REINFORCEMENT SHALL CONFORM TO DESIGNATION C-478 REQUIREMENTS OF ASTM SPECIFICATIONS.

4" MIN. 3/4" DENSE GRADED BASE UNDER CONCRETE BASE.

PRECAST BASE RISER SECTION WITH A SEPARATE PRECAST BASE SLAB SHALL NOT BE CONSIDERED GENERALLY ACCEPTABLE UNDER THIS SPECIFICATION.

ALL JOINTS SHALL BE WATERTIGHT AND SEALED USING BUTYL RUBBER, RUBBER GASKETS CONFORMING TO ASTM-C443, OR OTHER MATERIAL APPROVED BY ENGINEER. ALL SEALS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURE RECOMMENDATION. VARIATIONS IN DIAMETER, DEFECTIVE OR DAMAGED ENDS, OR OTHER CONDITIONS WHICH, IN THE OPINION OF THE PROJECT ENGINEER, PREVENT MAKING A SATISFACTORY JOINT SHALL BE CONSIDERED CAUSE FOR REJECTION.

AREA OF CIRCUMFERENTIAL STEEL = 0.12 SQ INCH PER LINEAL FOOT.

STANDARD PRECAST CONCRETE MANHOLE

SOLID CIRCULAR COVER

VENTED CIRCULAR COVER

CURB BOX HEIGHT ADJUSTABLE 6" - 9"

CURB BOX HEIGHT ADJUSTABLE 6" - 9"

ALL MANHOLE CASTINGS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A-48, CLASS NO. 30-B AND SHALL BE FREE FROM CRACKS, HOLES, SWELLS, AND COLD SHUTS.

NON-VENTED COVERS SHALL BE "SELF-SEALING", "T-SEAL" OR "GASKET SEALED" COVERS. COVERS SHALL HAVE "SANITARY" OR "STORM" LABELS AS APPLICABLE, OR OTHER LABELS APPROVED AS EQUAL BY THE ENVIRONMENTAL SERVICES DIVISION.

STANDARD STORM AND SANITARY FRAME DETAILS

CONCRETE COLLAR DETAIL

CONCRETE COLLAR SECTION DETAIL

PIPE TRENCH DETAIL

8-INCH - 12-INCH COUPLING DETAIL

FACTORY FABRICATED PVC WYE - LATERAL

GENERAL
THE CONTRACTOR SHALL COMPLY WITH THE FOLLOWING. IN CASE OF CONFLICT, THE FIRST LISTED STANDARD SHALL TAKE PRECEDENCE.
1. COMPLY WITH ALL APPLICABLE SECTIONS OF "STANDARD SPECIFICATIONS FOR SEWER & WATER CONSTRUCTION IN WISCONSIN, SIXTH EDITION WITH ADDENDUM NO.1 AND NO.2". REQUESTS FOR COPIES OF THE "STANDARD SPECIFICATIONS" SHOULD BE FORWARDED TO: PUBLIC WORKS INDUSTRY IMPROVEMENT PROGRAM, 2835 NORTH MAYFAIR ROAD, MILWAUKEE, WISCONSIN 53222 OR REQUESTED BY TELEPHONE AT (414) 778-1050.
2. COMPLY WITH ALL APPLICABLE SECTIONS OF "STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION".
3. COMPLY WITH ALL APPLICABLE SECTIONS OF WISCONSIN ADMINISTRATIVE CODE.
4. COMPLY WITH ALL APPLICABLE SECTIONS OF CITY OF SUPERIOR ADMINISTRATIVE CODE.

SEWER DIAMETER
SEWERS SHALL BE SIZED SUFFICIENT FOR FUTURE EXTENSION IN ACCORDANCE WITH CITY OF SUPERIOR SEWER SERVICE AREA PLANNING AND SHALL NOT BE LESS THAN 8 INCHES IN DIAMETER.

MANHOLE DIAMETER
THE MINIMUM DIAMETER OF MANHOLES SHALL BE 48 INCHES. LARGER DIAMETER MANHOLES SHALL BE USED AS INDICATED ON THE PLAN AND PROFILE DRAWINGS.

DEPTH
SEWERS SHALL BE LAID AT A DEPTH SUFFICIENT FOR FUTURE EXTENSION IN ACCORDANCE WITH CITY OF SUPERIOR SEWER SERVICE AREA PLANNING. SEWERS SHALL BE LAID AT A DEPTH TO PREVENT FREEZING AND TO PROVIDE GRAVITY BASEMENT DRAINAGE FOR SANITARY WASTE.

SLOPE
SEWERS SHALL BE LAID WITH UNIFORM SLOPE BETWEEN MANHOLES. ALL SEWERS SHALL BE DESIGNED AND CONSTRUCTED TO GIVE AVERAGE VELOCITIES OF NOT LESS THAN 2 FEET PER SECOND. MINIMUM DESIGN SLOPE SHALL BE AS SHOWN BELOW. SEWERS ON SLOPES OF 20% OR GREATER SHALL BE APPROVED ON A CASE BY CASE BASIS BY THE ENVIRONMENTAL SERVICES DIVISION OF PUBLIC WORKS (ESD) AND SHALL BE ANCHORED SECURELY WITH CONCRETE ANCHORS.

SEWER SIZE	MINIMUM SLOPE %
8"	0.45
10"	0.32
12"	0.25
15"	0.17
18"	0.14
21"	0.11
24"	0.09

LINE AND GRADE
LINE AND GRADE SHALL BE CONTROLLED AND MAINTAINED BY USE OF A LASER BEAM. GRADE BOARDS AND BANJO STRINGS ARE NOT ACCEPTABLE UNDER THIS SPECIFICATION.

SANITARY PIPE AND JOINT MATERIALS
MATERIALS USED IN OPEN TRENCH CONSTRUCTION OF NONPRESSURE SANITARY SEWERS SHALL BE RESTRICTED TO THE FOLLOWING: REINFORCED CONCRETE PIPE (RCP), DUCTILE IRON PIPE (DI), AND POLYVINYL CHLORIDE PIPE (PVC). ALL MATERIAL USED FOR SANITARY SEWER CONSTRUCTION SHALL BE FREE FROM DEFECTS THAT IMPAIR SERVICE. EACH LENGTH OF PIPE AND FITTING USED IN A SANITARY SEWER SHALL BE STAMPED OR INDELIBLY MARKED WITH THE MANUFACTURER'S NAME OR MARK. THE SUBSTITUTION OF ANY OTHER TYPE OF PIPE, OR MONOLITHIC SECTION, MAY ONLY BE USED WITH THE APPROVAL OF THE ESD.

STORM PIPE AND JOINT MATERIALS
MATERIALS USED IN OPEN TRENCH CONSTRUCTION OF STORM SEWERS SHALL BE RESTRICTED TO THE FOLLOWING: RCP, POLYETHYLENE PIPE WITH A SMOOTH LINER AND CORRUGATED EXTERIOR (PE). ALL MATERIAL USED FOR STORM SEWER CONSTRUCTION SHALL BE FREE FROM DEFECTS THAT IMPAIR SERVICE. EACH LENGTH OF PIPE AND FITTING USED IN A STORM SEWER SHALL BE STAMPED OR INDELIBLY MARKED WITH THE MANUFACTURER'S NAME OR MARK. THE SUBSTITUTION OF ANY OTHER TYPE OF PIPE, OR MONOLITHIC SECTION, MAY ONLY BE USED WITH THE APPROVAL OF THE ESD.

FITTINGS FOR ALL BUILDING SEWER (LATERAL) CONNECTIONS
FITTINGS FOR ALL BUILDING SEWERS SHALL BE FACTORY-FABRICATED WYES, UNLESS OTHERWISE SPECIFIED ON THE PLANS. THESE FITTINGS SHALL BE PLACED AT AN ANGLE OF 45 DEGREES ABOVE THE HORIZONTAL UNLESS OTHERWISE SPECIFIED. ON SEWERS 12 INCHES OR LARGER IN DIAMETER, TEES MAY BE SUBSTITUTED FOR WYES. THE WYE OR TEE SHALL HAVE A DIAMETER OF 6 INCHES UNLESS OTHERWISE SPECIFIED. FITTINGS ON THE MAIN SEWER FOR THE CONSTRUCTION OF RISERS SHALL BE IN-LINE, FACTORY FABRICATED TEES PLACED WITH THE BRANCH VERTICAL. THE CONTRACTOR SHALL NOT CONNECT ANY BUILDING SEWERS OR DRAINS TO NEW SEWERS OR MANHOLES PRIOR TO THEIR ACCEPTANCE BY THE ESD, EXCEPT IN RELAY WORK.

PIPE & FITTING MATERIALS
THE FOLLOWING ARE MINIMUM STANDARDS FOR NONPRESSURE PIPE:
3. POLYVINYL CHLORIDE (PVC) BELL AND SPIGOT SEWER PIPE SHALL MEET THE REQUIREMENTS OF ASTM D3034 (1981). PVC SHALL BE TYPE PSM SDR-35 UNLESS OTHERWISE SPECIFIED. JOINTS SHALL BE RUBBER GASKET BELL AND SPIGOT JOINTS UNLESS OTHERWISE SPECIFIED.
4. REINFORCED CONCRETE PIPE (RCP) BELL AND SPIGOT SEWER PIPE SHALL MEET THE REQUIREMENTS OF C76 (1982). RCP SHALL BE CLASS III UNLESS OTHERWISE SPECIFIED. JOINTS SHALL BE RUBBER GASKET BELL AND SPIGOT JOINTS CONFORMING TO ASTM C443 (1979) UNLESS OTHERWISE SPECIFIED.
5. STEEL PIPE SHALL BE WELDED FROM STEEL PLATE OR SPIRAL WELDED FROM STEEL COIL. THE MINIMUM YIELD STRENGTH SHALL BE 36,000 PSI. FOR CASING PIPE THE MINIMUM WALL THICKNESS SHALL BE 0.625 INCHES. THE MINIMUM INSIDE DIAMETER OF THE STEEL CASING SHALL BE NOT LESS THAN 8 INCHES GREATER THAN THE MAXIMUM OUTSIDE DIAMETER OF THE CARRIER PIPE. THE STEEL CASING PIPE SHALL BE EPOXY COATED ON INSIDE AND OUTSIDE SURFACES.
6. DUCTILE IRON (DI) BELL AND SPIGOT SEWER PIPE, FITTINGS, AND JOINTS SHALL MEET THE REQUIREMENTS OF AWWA C100 (1977).
7. CORRUGATED POLYETHYLENE PIPE (PE) WITH A SMOOTH LINER SHALL CONFORM TO ASTM F894 OR AASHTO M294, TYPE S. PE PIPE CONFORMING TO ASTM F894 SHALL BE NOT LESS THAN CLASS 100 (RING STIFFNESS CONSTANT = 100) AND CARRIER PIPE SHALL BE NOT LESS THAN CLASS 160. JOINTS SHALL BE WATERTIGHT, BELL AND SPIGOT TYPE WITH RUBBER GASKETS CONFORMING TO ASTM F477. SOIL-TIGHT JOINTS WHICH ARE NOT WATERTIGHT ARE NOT ADEQUATE UNDER THESE SPECIFICATIONS. PIPEFITTINGS SHALL CONFORM TO AASHTO M294 OR ASTM F894. FITTINGS SHALL BE SUITABLE FOR SPECIFIED PIPE JOINTS. PE PIPE SHALL CONFORM TO ASTM F894 (E.G. SPIROLITE AS MANUFACTURED BY CHEVRON) OR AASHTO M294, TYPE S (E.G. HANCOR BLUE SEAL AS MANUFACTURED BY HANCOR CORPORATION).
8. CORRUGATED STEEL CULVERT PIPE (CSCP) SHALL BE INDUSTRY STANDARD GALVANIZED CORRUGATED STEEL CULVERT PIPE. CORRUGATIONS SHALL BE 2 2/3 INCHES BY 1/2-INCH. STEEL THICKNESS SHALL BE 0.052-INCH FOR 8-INCH DIAMETER PIPE AND 0.064-INCH FOR DIAMETERS FROM 10 TO 48 INCHES. JOINTS SHALL BE INDUSTRY STANDARD CONNECTING BANDS SUBJECT TO THE APPROVAL OF THE ESD.

JOINT ASSEMBLY OF POLYETHYLENE AND POLYVINYL CHLORIDE PIPING
LUBRICATED SPIGOT END SHALL BE INSERTED INTO RECEIVING PIPE BELL UNTIL MARKED LINE IS EVEN WITH EDGE OF BELL. ASSEMBLY RESULTING IN OVER-INSERTION, ROLLED GASKETS, SPLIT BELLS, FAILURE TO PASS ACCEPTANCE TESTING OR DAMAGE TO PREVIOUSLY ASSEMBLED JOINTS WILL BE CONSIDERED SUFFICIENT CAUSE FOR REJECTION OF THE WORK.

ALIGNMENT
ALL PIPES SHALL BE LAID UNIFORMLY TO LINE AND GRADE SO THAT THE FINISHED SEWER WILL PRESENT A UNIFORM BORE. NOTICEABLE VARIATIONS FROM TRUE ALIGNMENT AND GRADE WILL BE CONSIDERED SUFFICIENT CAUSE FOR REJECTION OF THE WORK.

PHASING & CONSTRUCTION SCHEDULE
A PHASING & CONSTRUCTION SCHEDULE SHALL BE SUBMITTED TO THE ESD UPON REQUEST. THE PHASING & CONSTRUCTION SCHEDULE SHALL INDICATE THE CONTRACTOR'S PLAN FOR PROGRESSION OF THE WORK.

REJECTION OF PIPE MATERIALS
PIPE SHALL BE SUBJECT TO REJECTION FOR FAILURE TO CONFORM TO ANY REQUIREMENT OF THE SPECIFICATIONS OR FOR ANY OF THE FOLLOWING REASONS:
1. FRACTURES OR CRACKS PASSING THROUGH THE PIPE WALL OR SOCKET, EXCEPT THAT A SINGLE CRACK NOT EXCEEDING 2 INCHES IN LENGTH AT EITHER END OF THE PIPE OR A SINGLE FRACTURE IN THE SOCKET NOT EXCEEDING 3 INCHES IN WIDTH NOR 2 INCHES IN LENGTH SHALL NOT BE CONSIDERED CAUSE FOR REJECTION UNLESS THESE DEFECTS EXIST IN MORE THAN 5% OF THE ENTIRE SHIPMENT OR DELIVERY.
2. CHIPS OR FRACTURES ON THE INTERIOR OF THE PIPE EXCEEDING 2 INCHES IN LENGTH, 1 INCH IN WIDTH, OR A DEPTH MORE THAN 1/4 THE BARREL THICKNESS.
3. CRACKS SUFFICIENT TO IMPAIR THE STRENGTH, DURABILITY, OR SERVICEABILITY OF THE PIPE.
4. DEFECTS THAT INDICATE IMPERFECT PROPORTIONING, MIXING, AND MOLDING.
5. VARIATIONS OF MORE THAN 1/8 INCH PER LINEAR FOOT IN ALIGNMENT OF A PIPE INTENDED TO BE STRAIGHT.
6. INSECURE ATTACHMENT OF SPURS.
7. DAMAGED ENDS, WHERE SUCH DAMAGE WOULD PREVENT MAKING A SATISFACTORY JOINT.
8. CRACKS, SPLITS, OR DAMAGE OF ANY KIND WHICH MAY IMPAIR THE WATERTIGHT INTEGRITY OF PLASTIC PIPE.

COUPLINGS
WHERE PIPE COUPLINGS ARE REQUIRED TO JOIN PIPES OF DISSIMILAR MATERIAL, THEY SHALL BE FULLY STAINLESS STEEL SHIELDED RUBBER COUPLINGS INTENDED FOR UNDERGROUND USE. COUPLINGS SHALL BE RUBBER UNDERGROUND SEWER COUPLING WITH RUBBER CONFORMING TO ASTM C 425, ASTM C 1173 AND 316 SERIES STAINLESS STEEL CLAMPS WITH NUT AND BOLT OR WORM DRIVE TAKE-UP.

BEDDING MATERIAL
BEDDING MATERIAL SHALL CONSIST OF DURABLE PARTICLES RANGING IN SIZE FROM FINE TO COURSE IN SUBSTANTIALLY UNIFORM COMBINATION. WISDOT 3/4 INCH DENSE GRADED BASE COURSE SUBSECTION 305.2.2.1 IS GENERALLY ACCEPTABLE UNDER THIS SPECIFICATION. SAND DOES NOT MEET THE GRADATION REQUIREMENTS UNDER THIS SPECIFICATION.

SIEVE	PERCENT PASSING
1-INCH	100
3/4-INCH	95-100
3/8-INCH	50-90
NO. 4	35-70
NO. 10	15-55
NO. 40	10-35
NO. 200	5-15

LIFT THICKNESS FOR BEDDING MATERIALS SHALL NOT EXCEED 12 INCHES. BEDDING SHALL BE COMPACTED BY HAND, OR MECHANICALLY COMPACTED BY EQUALLY CAREFUL MEANS, TO A MINIMUM OF 90% OF STANDARD PROCTOR DENSITY. PIPE BEDDING SHALL BE AS FOLLOWS:
1. PLASTIC PIPE PLASTIC PIPE, INCLUDING BUT NOT LIMITED TO PVC AND PE, SHALL BE LAID WITH BEDDING MATERIAL OF ¾" DENSE GRADED BASE PLACED BELOW AND AROUND THE PIPE UP TO THE SPRING LINE IN SUCH A MANNER AS TO PROVIDE ADEQUATE SIDE SUPPORT AND TO PREVENT LATERAL MOVEMENT OF THE PIPE. A LAYER OF ¾" DENSE GRADED BASE SHALL BE SPREAD OVER THE BOTTOM OF THE TRENCH SO THAT AFTER THE PIPE HAS BEEN PLACED THEREON, EMBEDDED TO GRADE, AND ALIGNED, THERE REMAINS A 4 INCH MINIMUM DEPTH OF ¾" DENSE GRADED BASE BELOW THE PIPE BARREL AND A MINIMUM OF 3 INCHES BELOW THE BELL FOR PIPE 36 INCHES IN DIAMETER OR SMALLER AND A MINIMUM OF 6 INCHES BELOW THE PIPE FOR DIAMETERS 36 INCHES OR LARGER. IF EXCAVATION HAS BEEN CARRIED DEEPER THAN 6 INCHES BELOW THE PIPE BARREL, THE EXCESS DEPTH SHALL BE FILLED WITH AGGREGATE. CARE SHALL BE TAKEN TO INSURE THAT THE PIPE DOES NOT REST DIRECTLY ON THE BELL BUT IS UNIFORMLY SUPPORTED THROUGH ITS ENTIRE LENGTH. WOOD FOOT BLOCKS OF 2-INCH MINIMUM THICKNESS MAY BE USED AT JOINTS OF PIPE 36 INCHES IN DIAMETER AND LARGER PROVIDED THAT THE BEDDING MATERIAL IS MECHANICALLY COMPACTED UNDER THE LOWER 90 DEGREE QUADRANT OF THE PIPE. SUPPORTING BLOCKS ARE NOT PERMITTED UNDER PIPE LESS THAN 36 INCHES IN DIAMETER.
2. RCP RCP PIPE SHALL BE BEDDED ACCORDING TO THE SPECIFICATIONS FOR PLASTIC PIPE.
3. DI DI SEWER PIPE SHALL BE BEDDED ACCORDING TO THE SPECIFICATIONS FOR PLASTIC PIPE, EXCEPT THAT BEDDING MATERIAL MAY BE ¾" DENSE GRADED BASE OR COVER MATERIAL.
4. CSCP CSCP SHALL BE BEDDED ACCORDING TO THE SPECIFICATIONS FOR PLASTIC PIPE.

COVER MATERIAL
COVER MATERIAL SHALL CONSIST OF DURABLE PARTICLES RANGING IN SIZE FROM FINE TO COURSE IN SUBSTANTIALLY UNIFORM COMBINATION. WISDOT 3/4 INCH DENSE GRADED BASE COURSE SUBSECTION 305.2.2.1 IS GENERALLY ACCEPTABLE UNDER THIS SPECIFICATION. SAND DOES NOT MEET THE GRADATION REQUIREMENTS UNDER THIS SPECIFICATION.

SIEVE	PERCENT PASSING
1-INCH	100
3/4-INCH	95-100
3/8-INCH	50-90
NO. 4	35-70
NO. 10	15-55
NO. 40	10-35
NO. 200	5-15

LIFT THICKNESS FOR PIPE COVER SHALL NOT EXCEED 12 INCHES. COVER SHALL BE MECHANICALLY TAMPED TO A MINIMUM OF 90% OF STANDARD PROCTOR DENSITY.
1. PLASTIC PIPE PLASTIC PIPE, INCLUDING BUT NOT LIMITED TO PVC AND PE, SHALL BE LAID WITH COVER MATERIAL OR ¾" DENSE GRADED BASE PLACED IN NOT LESS THAN TWO STAGES, ONE TO THE TOP OF THE PIPE AND THE OTHER TO A LEVEL AT LEAST 6 INCHES ABOVE THE PIPE FOR SIZES 36 INCHES IN DIAMETER OR SMALLER AND TO A LEVEL AT LEAST 12 INCHES ABOVE THE PIPE WHERE THE PIPE IS LARGER THAN 36 INCHES IN DIAMETER. MATERIAL SHALL BE PLACED BY HAND OR EQUALLY CAREFUL MEANS. IN ORDER TO PROVIDE LATERAL SUPPORT FOR THE PIPE, EACH STAGE OF COVER SHALL BE COMPACTED BY HAND OR MECHANICAL TAMPING TO A MINIMUM OF 90% STANDARD PROCTOR DENSITY. IF THE REMAINING BACKFILL MATERIAL CONTAINS LARGE ROCKS OR BOULDERS, THE SECOND STAGE OF COVER SHALL BE INCREASED TO A LEVEL 12 INCHES ABOVE THE PIPE.
2. RCP RCP SHALL BE COVERED ACCORDING TO THE SPECIFICATIONS FOR PLASTIC PIPE, EXCEPT WHERE PIPE 36 INCHES IN DIAMETER OR LARGER IS INSTALLED, GRANULAR BACKFILL MAY BE USED AS COVER.
3. DI DI SEWER PIPE SHALL BE COVERED ACCORDING TO THE SPECIFICATIONS FOR PLASTIC PIPE, EXCEPT THAT THE COVER MATERIAL SHALL THE SAME MATERIAL USED FOR BEDDING MATERIAL.
4. CSCP CSCP SHALL BE COVERED ACCORDING TO THE SPECIFICATIONS FOR PLASTIC PIPE.

PREPARATION OF SUBGRADE
ALL UNDESIRABLE MATERIAL SUCH AS ORGANIC SOILS, ETC., WHICH CANNOT ADEQUATELY SUPPORT THE MANHOLE SHALL BE REMOVED BELOW THE NORMAL MANHOLE BOTTOM AND REPLACED WITH CRUSHED STONE.WHERE DISTANCE TO STABLE GROUND IS EXCESSIVE, THE ESD RESERVES THE RIGHT TO ORDER OTHER TYPES OF FOUNDATION SUCH AS AN ADDITIONAL POURED BASE AS DEEMED NECESSARY.

MANHOLE BASES
CONCRETE MANHOLE BASES SHALL BE AS FOLLOWS:
1. PRECAST MANHOLE WITH INTEGRAL BASE THE EXCAVATION SHALL BE MADE DEEP ENOUGH SO THAT AFTER THE BOTTOM MANHOLE BARREL SECTION WITH THE INTEGRAL BASE HAS BEEN PLACED THEREON, SET TO GRADE, AND PLUMBED, THERE REMAINS A MINIMUM DEPTH OF BEDDING MATERIAL BELOW THE BOTTOM OF THE BASE EQUAL TO THE DEPTH OF BEDDING MATERIAL OF THE ADJACENT SEWERS. THE ANNULAR SPACE BETWEEN THE MANHOLE EXCAVATION AND THE OUTSIDE MANHOLE WALL SHALL BE BACKFILLED WITH BEDDING MATERIAL UP TO THE SPRING LINE OF THE INCOMING PIPE.
2. FIELD POURED BASE FOR PRECAST MANHOLE THE PRECAST MANHOLE BOTTOM BARREL SHALL BE SET ON CONCRETE BRICK OR SOLID BLOCK SO THAT THE BOTTOM OF THIS SECTION IS BELOW THE SPRING LINE OF THE OUTLET PIPE, SET FOR PROPER LOCATION AND PLUMBED. THE CONCRETE BASE OF CLASS D CONCRETE SHALL HAVE A MINIMUM THICKNESS OF 12 INCHES BELOW THE INVERT OF THE OUTLET SEWER. THE MANHOLE BASE SHALL SUBSTANTIALLY CONFORM TO THE REQUIRED SHAPE AND DIMENSIONS; THE EXCAVATION SHALL BE BACK FORMED, IF NECESSARY, TO ACHIEVE THIS END. IF EXCAVATION IN STABLE SOIL HAS BEEN CARRIED BELOW THE REQUIRED DEPTH, SUCH EXCESS DEPTH SHALL BE FILLED WITH CONCRETE. EXCESS CONCRETE SHALL NOT BE DEPOSITED AROUND THE MANHOLE IN SUCH A MANNER THAT WILL INTERFERE WITH POSSIBLE FUTURE CONNECTIONS. THE PIPE SHALL BE SUPPORTED ON BRICK OR SOLID CONCRETE BLOCKS FOR THE POURING OF THE CONCRETE BASE. THE CONCRETE SUPPORT FOR RIGID PIPE SHALL END IN A VERTICAL PLANE FLUSH WITH THE FACE OF THE PIPE BELL.
3. SEPARATE CONCRETE BASE SLAB SEPARATE CONCRETE BASE SLABS SHALL NOT GENERALLY BE ACCEPTABLE UNDER THESE SPECIFICATIONS.

FLOW CHANNEL
THE FLOW CHANNEL THROUGH MANHOLES SHALL BE MADE TO CONFORM TO THE SHAPE OF THE CONNECTING SEWERS AND SHALL EXTEND VERTICALLY FROM THE SPRINGLINE TO THE CROWN OF THE DISCHARGE PIPE. A MINIMUM UNIFORM DROP OF 0.10 FEET SHALL BE PROVIDED IN THE FLOW CHANNEL BETWEEN THE ENTERING SEWER AND THE DISCHARGE SEWER. THE THROUGH MANHOLE FLOW CHANNEL SHALL BE THE SAME DIAMETER AS THE LARGER OF THE ADJOINING SEWERS.

DROP PIPE
AN OUTSIDE DROP PIPE SHALL BE PROVIDED FOR A SEWER ENTERING A MANHOLE WHERE THE INVERT ELEVATION OF THE ENTERING SEWER IS 2 FEET OR MORE ABOVE THE SPRINGLINE OF THE OUTGOING SEWER. THE ENTIRE DROP PIPE CONNECTION SHALL BE ENCASED IN CONCRETE. THE DROP PIPE SHALL BE THE SAME DIAMETER AS THE INCOMING SEWER UNLESS OTHERWISE SPECIFIED. AN INSIDE DROP PIPE SHALL NOT BE USED WITHOUT THE APPROVAL OF THE ESD.

PIPE TO MANHOLE CONNECTION
CONNECTION SHALL BE WATER TIGHT IN ALL MANHOLES. PENETRATIONS IN MANHOLES SHALL BE CORED OR PREFORMED.

THE MANHOLE CONNECTION OF PIPE SEWERS SHALL BE ACCOMPLISHED BY ONE OF THE FOLLOWING:
1. NONFLEXIBLE CONNECTIONS OF RIGID PIPE WHEN RIGID PIPE IS CONNECTED TO A CONCRETE BRICK, BLOCK, OR PRECAST MANHOLE WITHIN THE MANHOLE BASE, IT SHALL BE SUPPORTED ON BRICK OR SOLID CONCRETE BLOCKS FOR THE POURING OF THE CONCRETE BASE. THE CONCRETE OF THE BASE SHALL BE EXTENDED UNDER THE PIPE AND END IN A VERTICAL PLANE FLUSH WITH THE FACE OF THE PIPE BELL. WHERE PIPE ENTERS THE MANHOLE ABOVE THE MANHOLE BASE, IT SHALL BE SUPPORTED FROM THE WALL OF THE MANHOLE TO THE FACE OF THE FIRST PIPE JOINT BELL WITH A WALL OF BACKFILL, CONCRETE, BRICK, OR SOLID CONCRETE BLOCK COLUMNS. CONNECTIONS SHALL BE AS FOLLOWS:
    a. SANITARY WHEN CONNECTING RIGID PIPE TO A PRECAST MANHOLE THE CONNECTION SHALL BE BY MEANS OF AN APPROVED FLEXIBLE WATERTIGHT PIPE TO MANHOLE SEAL FOR PIPE DIAMETERS UP TO 24 INCHES IN 48-INCH MANHOLES. THIS SEAL SHALL MEET THE PHYSICAL REQUIREMENTS OF ASTM C923. LARGER DIAMETER PIPE CONNECTIONS SHALL BE AS SHOWN ON THE CONTRACT DRAWINGS.
    CONNECTIONS OF RIGID PIPE TO BRICK OR BLOCK MANHOLES SHALL BE BY MEANS OF BRICK AND MORTAR. A MINIMUM OF WATER SHALL BE ADDED TO THE MORTAR TO PRODUCE A LUMPY TEXTURE. MORTAR SHALL BE PACKED IN AND TROWELED OFF.
    b. STORM WHEN CONNECTING RIGID PIPE TO STORM MANHOLES, THE CONNECTION SHALL BE BY MEANS OF BRICK AND MORTAR.
2. FLEXIBLE CONNECTION OF PIPE ALL PLASTIC PIPE SHALL BE CONNECTED TO PRECAST MANHOLES BY MEANS OF AN APPROVED FLEXIBLE WATERTIGHT PIPE TO MANHOLE SEAL. THIS SEAL SHALL MEET THE PHYSICAL REQUIREMENTS OF ASTM C-443 AND THE PERFORMANCE REQUIREMENTS OF ASTM C-425 AND C-433. PIPE ENTERING A MANHOLE THROUGH THIS SEAL SHALL BE LAID IN ACCORDANCE WITH THE BEDDING SECTION REQUIREMENTS AND SHALL NOT BE RIGIDLY SUPPORTED AS REQUIRED FOR NONFLEXIBLE CONNECTIONS. TO MAINTAIN THE SEAL FLEXIBILITY THAT PORTION OF THE ANNULAR SPACE BETWEEN THE PIPE AND THE MANHOLE WALL BELOW THE SPRINGLINE OF THE PIPE SHALL BE PLUGGED WITH BUTYL RUBBER GASKET MATERIAL PRIOR TO THE PLACING OF CONCRETE IN THE MANHOLE (FOR FIELD POURED BASE OR INVERTS).

BULKHEAD
UNLESS OTHERWISE SPECIFIED, BULKHEADS SHALL BE CONSTRUCTED TO FORM A WATERTIGHT 8-INCH THICK WALL OF MORTAR AND OF EITHER CLAY BRICK OR CONCRETE BRICK.

REJECTION MANHOLE RISERS AND TOPS
PRECAST MANHOLE RISERS AND TOPS SHALL BE SUBJECT TO REJECTION FOR FAILURE TO CONFORM TO ANY OF THE SPECIFICATION REQUIREMENTS. IN ADDITION, INDIVIDUAL SECTIONS OF MANHOLE RISERS AND TOPS MAY BE REJECTED BECAUSE OF ANY OF THE FOLLOWING REASONS:
1. FRACTURE OR CRACKS PASSING THROUGH THE WALL, EXCEPT FOR A SINGLE END CRACK THAT DOES NOT EXCEED THE DEPTH OF THE JOINT.
2. DEFECTS THAT INDICATE IMPERFECT PROPORTIONING, MIXING, AND MOLDING.
3. SURFACE DEFECTS INDICATING HONEYCOMBED OR OPEN TEXTURE.
4. DEFECTIVE OR DAMAGED ENDS, WHERE SUCH DEFECT OR DAMAGE WOULD PREVENT MAKING A SATISFACTORY JOINT.
5. MANHOLE STEPS OUT OF LINE OR NOT PROPERLY SPACED.
6. DEFECTS ALLOWING INFILTRATION.
7. THE INTERNAL DIAMETER OF THE MANHOLE SECTION SHALL NOT VARY MORE THAN ONE PERCENT FROM THE NOMINAL DIAMETER. ANY VARIATION IN DIAMETER WHICH WOULD PREVENT MAKING A SATISFACTORY JOINT SHALL BE CONSIDERED CAUSE FOR REJECTION.
8. ANY CONTINUOUS CRACK HAVING SURFACE WIDTH OF 0.01-INCH OR MORE AND EXTENDING FOR A LENGTH OF 12 INCHES OR MORE REGARDLESS OF POSITION IN THE SECTION WALL.

MANHOLE STEP ALIGNMENT, SPACING, AND PROJECTION
MANHOLE STEPS SHALL BE INSTALLED IN ALL MANHOLES AND STRUCTURES IN EXCESS OF 4 FEET DEEP, AND BE ALIGNED SO AS TO FORM A CONTINUOUS LADDER WITH THE MANHOLE STEPS EQUALLY SPACED VERTICALLY IN THE COMPLETED MANHOLE AT A DESIGN DISTANCE OF 16 INCHES ON CENTER AND SHALL BE CENTERED OVER THE DISCHARGE PIPE.
THE STEPS SHALL PROJECT A MINIMUM CLEAR DISTANCE OF 4 INCHES FROM THE WALL OF THE RISER OR CONE SECTION MEASURED FROM THE POINT OF EMBEDMENT.

MANHOLE STEPS
STEPS SHALL BE STEEL REINFORCED PLASTIC MANHOLE STEPS OR GRAY CAST IRON MANHOLE STEPS.
1. STEEL REINFORCED PLASTIC MANHOLE STEPS SHALL BE MADE WITH AN APPROVED PLASTIC SUCH AS COPOLYMER POLYPROPYLENE REINFORCED WITH A 1/2-INCH DIAMETER DEFORMED REINFORCING BAR.
2. GRAY CAST IRON MANHOLE STEPS SHALL BE MADE OF GRAY CAST IRON AND SHALL HAVE MINIMUM CROSS SECTIONAL DIMENSION (DIAMETER) OF 1 INCH IN ANY DIRECTION.

GRADES FOR SETTING MANHOLE FRAMES
THE MANHOLE FRAME SHALL BE SET AT THE ELEVATION GIVEN ON THE PLAN OR, WHEN NO SUCH ELEVATION IS GIVEN, THEY SHALL BE SET AS FOLLOWS:
1. WITHIN A TRAVELED ROADWAY WITHIN A TRAVELED ROADWAY OR IN THE SHOULDERS OF A HIGHWAY, THE TOP OF THE MANHOLE FRAME SHALL BE SET 3/8-INCH BELOW THE SHOULDER OR PAVEMENT SURFACE.
2. IN OTHER LOCATIONS IN OTHER LOCATIONS, THE TOP OF THE FRAME SHALL BE SET AT THE PROPOSED OR ESTABLISHED GRADE, WHICHEVER IS HIGHER.

CHIMNEY
A CHIMNEY HAVING A MINIMUM HEIGHT OF 6 INCHES AND A MAXIMUM HEIGHT OF 16 INCHES, CONSTRUCTED OF PRECAST CONCRETE ADJUSTING RINGS SHALL BE BUILT ON TOP OF THE CORBEL SECTION OR FLAT SLAB UP TO THE ELEVATION AT WHICH THE FRAME IS SET. THE CHIMNEY SHALL BE CONSTRUCTED SO THAT AS FEW ADJUSTING RINGS AS POSSIBLE SHALL BE USED TO BRING THE MANHOLE TO GRADE.

ADJUSTING RINGS
CONCRETE ADJUSTING RINGS SHALL SUBSTANTIALLY CONFORM TO THE DIAMETER DIMENSIONS OF THE RESPECTIVE MANHOLE CORBEL AND SHALL HAVE HEIGHT OF 2 TO 6 INCHES. CONCRETE ADJUSTING RINGS SHALL BE REINFORCED WITH NO. 2 REINFORCING ROD CENTERED WITHIN THE RING. CRACKS, EXPOSED BAR, OR OTHER DAMAGE OR DEFECT; SHALL BE CONSIDERED CAUSE FOR REJECTION OF ADJUSTING RINGS. THE CONTRACTOR SHALL WIRE BRUSH AND WIPE CLEAN ADJUSTING RINGS TO REMOVE SURFACE CONTAMINANTS PRIOR TO PLACEMENT AND SHALL MOISTEN THE ADJUSTING RINGS TO RECEIVE MORTAR.

CASTINGS
CONFORM TO REQUIREMENTS OF ASTM A48, CLASS 30-B, AND BE FREE FROM CRACKS, HOLES, SWELLS, AND COLD SHUTS.
THE MANHOLE CASTING SHALL CONFORM TO CHAPTER 3.5.4(E) OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, SIXTH EDITION WITH ADDENDUM NO. 1 AND NO. 2
ASSEMBLY, DIMENSIONS, DETAILS, WEIGHT, AND CLASS: AS INDICATED IN THE PLAN DETAIL DRAWINGS.
THE CASTING COVER TO FRAME SURFACES SHALL BE MACHINE MILLED TO PROVIDE TRUE BEARING AROUND THE ENTIRE CIRCUMFERENCE. THE CASTING SHALL BE "SELF-SEALING," STAMPED "SANITARY SEWER" WITH TWO (2) INCH LETTERS, CONTAIN TWO (2) CONCEALED PICK HOLES, AND BE NON-ROCKING.

FRAME / CHIMNEY JOINTS
ALL FRAME/CHIMNEY JOINTS FOR STORM SEWER STRUCTURES SHALL BE A TYPE III FRAME/CHIMNEY JOINT. ALL FRAME/CHIMNEY JOINTS FOR SANITARY SEWER MANHOLES SHALL BE TYPE III FRAME/CHIMNEY JOINT WITH AN APPROVED MANUFACTURED INTERNAL CHIMNEY SEAL.
1. TYPE III THE FRAME SHALL BE SET IN A BED OF FRESH MORTAR COVERING FULL WIDTH AND CIRCUMFERENCE OF THE CHIMNEY MATING SURFACE. MORTAR SHALL BE IN CONFORMANCE AS DETAILED ON THIS PAGE. AN ELASTOMERIC WATERPROOF SEAL SHALL BE APPLIED TO THE EXTERIOR OF THE CHIMNEY.

INTERNAL CHIMNEY SEAL
CHIMNEY SEALS SHALL BE MANUFACTURED SEALS INSTALLED ON NEW OR EXISTING SANITARY MANHOLES. THE FLEXIBLE PORTION OF THE SEAL SHALL BE NATURAL OR SYNTHETIC RUBBER CONFORMING TO APPLICABLE REQUIREMENTS OF ASTM C-923. ALL METAL PARTS SHALL BE TYPE 304 STAINLESS STEEL. THE SEAL SHALL PREVENT LEAKAGE OF WATER INTO THE MANHOLE AT THE AREA OF THE JOINT BETWEEN THE MANHOLE FRAME, CHIMNEY, AND CORBEL CONTINUOUSLY THROUGHOUT A 20-YEAR DESIGN LIFE. THE SEAL SHALL REMAIN FLEXIBLE WHILE ALLOWING REPEATED VERTICAL MOVEMENTS OF THE FRAME OF UP TO TWO INCHES OCCURRING AT RATES NOT LESS THAN 0.10 INCHES PER MINUTE.

ELASTOMERIC WATERPROOFING SEAL
ALL MASONRY WORK SHALL BE CURED A MINIMUM OF 24 HOURS PRIOR TO APPLYING AN ELASTOMERIC WATERPROOFING SEAL. ALL SURFACES SHALL BE CLEANED AND PRIMED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION. ELASTOMERIC WATERPROOFING SEALER SHALL BE APPLIED SO THAT IT FORMS A CONTINUOUS MEMBRANE, 100-MIL THICK, EXTENDING FROM A POINT 4 INCHES BELOW THE CHIMNEY TO A POINT 2 INCHES ABOVE THE FRAME FLANGE. THE ESD RESERVES THE RIGHT TO REQUIRE BOND BREAKER (DUCT TAPE) BE PLACED COMPLETELY AROUND THE MANHOLE CIRCUMFERENCE AND CENTERED OVER THE MORTAR JOINT BETWEEN THE FRAME AND CHIMNEY OR CONE. ADJACENT BACKFILL SHALL NOT BE PLACED WITHIN 24 HOURS OF APPLYING THE SEALER.

MORTAR
MORTAR SHALL BE "TYPE S" OR MORTAR DESIGNED FOR BELOW GRADE UTILITY OR SEWER APPLICATIONS. TO BE USED IN CONNECTION OF RIGID PIPE TO MANHOLES NOT IN ACTIVE SERVICE, FOR CONSTRUCTION OF CHIMNEY JOINTS, AND FOR BACK PLASTERING. MORTAR SHALL BE TWO (2) PARTS SAND AND ONE PART OF EITHER A MIXTURE OF 50 PERCENT PORTLAND CEMENT/ 50 PERCENT MASONRY CEMENT OR A MIXTURE OF 75 PERCENT PORTLAND CEMENT/ 25 PERCENT HYDRATED LIME AND SHALL BE CAREFULLY PROPORTIONED BY VOLUME. PREPACKAGED COMPLETELY BLENDED MORTAR MEETING ASTM C-270 PROPERTY TYPE M MAY BE SUBSTITUTED FOR SITE MIXED COMPONENT MORTAR. MORTAR SHALL BE MACHINE MIXED FOR THREE (3) TO FIVE (5) MINUTES, EXCEPT THAT MANUFACTURERS MIXING INSTRUCTIONS SHALL SUPERCEDE THIS SPECIFICATION. ABOVE GRADE MASONRY MORTAR SHALL NOT BE CONSIDERED GENERALLY ACCEPTABLE UNDER THIS DEFINITION.

SPEED CRETE BLUE LINE, OR APPROVED EQUAL "WATERSTOP" OR HYDRAULIC CEMENT MATERIAL INTENDED FOR UNDERWATER USE, SHALL BE USED FOR NON-FLEXIBLE CONNECTION OF RIGID PIPE TO MANHOLES IN SERVICE. ALL MORTAR SHALL BE SMOOTH TROWEL FINISHED.

CONCRETE
PORTLAND CEMENT CONCRETE SHALL BE COMPOSED OF A MIXTURE OF PORTLAND CEMENT, FINE AND COURSE AGGREGATES, AND WATER. THE AIR CONTENT SHALL BE BETWEEN 4.5% AND 7.5%. AGGREGATE GRADATIONS SHALL MEET ASTM C-33 SIZE 67 OR SIZE 467.
1. GRADE A CONCRETE GRADE A CONCRETE SHALL CONTAIN A MINIMUM OF 7.0 BAGS OF CEMENT PER CUBIC YARD. SLUMP SHALL BE 3"-4". MINIMUM OF 3 CYLINDERS SHALL BE MADE BY THE CONTRACTOR IN ACCORDANCE WITH ASTM C-31 FOR EACH POUR. NOT LESS THAN 2 CYLINDERS SHALL BE TESTED FOR 28-DAY COMPRESSIVE STRENGTH IN ACCORDANCE WITH ASTM C-39 FOR EACH POUR. GRADE A CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4,000 PSI.

CONSTRUCTION QUALITY TESTING
PROJECT ACCEPTANCE SHALL NOT OCCUR UNTIL ALL OF THE CONSTRUCTION QUALITY TESTING REPORTS HAVE BEEN DELIVERED AND APPROVED BY THE ESD. PERSONNEL CERTIFIED FOR THE APPLICABLE CLASS OF TESTING SHALL PERFORM CONSTRUCTION QUALITY TESTING. ALL CONSTRUCTION QUALITY TESTING MUST BE PERFORMED UNDER THE OBSERVATION OF THE ESD (THIS REQUIREMENT DOES NOT APPLY TO MATERIALS TESTING SUCH AS GRADATION TESTING, CONCRETE COMPRESSIVE STRENGTH TESTING, AND OTHER LABORATORY TESTING) AND WRITTEN NOTICE MUST BE PROVIDED TO THE ESD 3 BUSINESS DAYS PRIOR TO TESTING. ALL CONSTRUCTION QUALITY TESTING REPORTS SHALL INCLUDE TESTING METHODS AND RESULTS OF THE TESTING. THE REPORTS SHALL CLEARLY INDICATE ANY DEFICIENCIES OBSERVED.

1. DEFLECTION TESTING DEFLECTION TESTS SHALL BE PERFORMED FOR FLEXIBLE PIPE INSTALLATIONS. THE DEFLECTION TEST SHALL BE PERFORMED USING A RIGID BALL OR A MANDREL AND SHALL BE PERFORMED WITHOUT MECHANICAL PULLING DEVICES. IF DEFLECTION TESTING OCCURS WITHIN 30 DAYS OF PLACEMENT OF THE FINAL BACKFILL, DEFLECTION MAY NOT EXCEED 5%. MAXIMUM DEFLECTION MAY NOT EXCEED 7.5% WHEN TESTING OCCURS MORE THAN 30 DAYS AFTER PLACEMENT OF THE FINAL BACKFILL.
2. TELEVISING TELEVISING INSPECTION SHALL BE PERFORMED FOR ALL SEWER INSTALLATIONS. DIGITAL VIDEO AND A TELEVISING REPORT SHALL BE SUBMITTED FOR EACH INSPECTION. ANALOG VIDEO IS GENERALLY NOT ACCEPTABLE UNDER THIS SPECIFICATION. THE VIDEO SHALL BE PRODUCED SUCH THAT THE DISPLAY INDICATES THE DATE OF TELEVISING, LINE NUMBER, DIRECTION OF TRAVEL, AND RELATIVE POSITION (FOOTAGE COUNT) OF THE CAMERA FOR THE DURATION OF TELEVISING. THE VIDEO SHALL BE PRODUCED WITH A "CRAWLER" OR "TRACTOR" TYPE CAMERA, OR OTHER DEVICE APPROVED BY THE ESD, SO THAT THE CAMERA RETAINS A GENERALLY VERTICAL ALIGNMENT. THE DEVICE SHALL MAINTAIN THE CAMERA NEAR THE CENTER OF THE PIPE BEING INSPECTED. THE RESOLUTION, LIGHTING, AND CONTRAST SHALL BE ADEQUATE TO CAPTURE DETAILS WITHIN THE PIPE. THE USE OF "PAN AND TILT" IS REQUIRED FOR ALL INSPECTIONS. BLACK AND WHITE VIDEO DOES NOT MEET THE REQUIREMENTS OF THIS SPECIFICATION.
3. LEAKAGE TESTING GROUNDWATER INFILTRATION INTO GRAVITY SEWER SYSTEMS SHALL BE MINIMIZED. ALL SANITARY SEWERS, EXCEPT RELAYS WITH ACTIVE CONNECTED BUILDING SEWERS, SHALL BE LEAKAGE TESTED IN ACCORDANCE WITH CHAPTER 3.7.0 OF THE MOST CURRENT EDITION OF STANDARD SPECIFICATIONS FOR SEWER & WATER CONSTRUCTION IN WISCONSIN.

CITY OF SUPERIOR, WI – ENVIRONMENTAL SERVICES DIVISION OF PUBLIC WORKS

MINIMUM STANDARDS FOR GRAVITY SEWER CONSTRUCTION

DRAWN:
PLOT: 6/21/2023
APPROVED: EA

2

2

N

BP: 199+20.91

CONCRETE APRON 24-INCH
COLORING CONCRETE
WISDOT RED

CONCRETE CURB & GUTTER
6-INCH SLOPED 20-INCH
TYPE G MODIFIED

STA 672+79.53 R/L Tower Ave =
STA 200+00.63 R/L 20th St
Y=303,261.705
X=147,012.064

CONCRETE CURB & GUTTER
6-INCH SLOPED 20-INCH
TYPE G MODIFIED

CONCRETE SIDEWALK 7-INCH
COLORING CONCRETE
WISDOT RED

CONCRETE SIDEWALK 7-INCH
COLORING CONCRETE
WISDOT RED

CONCRETE APRON 24-INCH
COLORING CONCRETE
WISDOT RED

672+00

673+00

674+00

N0°25'27"E

S89°56'56"E

200+00

TOWER AVE

32.0'

+70.9

+93.7

+61.7

+98.0

8.0'

8.2'

6.2'

5.0'

6.0'

8.8'

+32.6

14.0'

+32.7

8.7'

6.7'

7.5'

+60.0

SAWCUT REQ'D

ASPHALT PARKING LOT

STA 200+53.06, -41.88' LT

STA 200+60.01, -35.00' LT

6.0'

6.5'

7.2'

+64.2

+75.6

2.0'

CONCRETE CURB & GUTTER
30-INCH TYPE A

N 20TH ST

201+00

MWEL

SSS

LEGEND

SEE LANDSCAPING PLAN

COLORING CONCRETE WISDOT RED

CONCRETE CURB & GUTTER 6-INCH
SLOPED 44-INCH TYPE G MODIFIED

PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	INTERSECTION DETAILS - N 20TH STREET	SHEET E

FILE NAME : X:\PT\S\SUPER\181558\5-FINAL-DSGN\C3D- TOWER AVE\SHEETS\021101_ID.DWG
LAYOUT NAME - 01

PLOT DATE : 4/30/2025 9:22 AM PLOT BY : ANNIE JEROME PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 42

2

N

2

STA 676+98.93 R/L Tower Ave =
STA 190+24.36 R/L 19th St
Y=303,681.097
X=147,014.720

190+00

CONCRETE SIDEWALK 7-INCH
COLORING CONCRETE
WISDOT RED

676+00

N0°21'46"E

677+00

678+00

CONCRETE APRON 24-INCH
COLORING CONCRETE
WISDOT RED

CONCRETE CURB & GUTTER
6-INCH SLOPED 20-INCH
TYPE G MODIFIED

TOWER AVE

CONCRETE CURB & GUTTER
6-INCH SLOPED 20-INCH
TYPE G MODIFIED

CONCRETE APRON 24-INCH
COLORING CONCRETE
WISDOT RED

CONCRETE SIDEWALK 7-INCH
COLORING CONCRETE
WISDOT RED

S89°38'14"E

32.0'
+89.2

32.0'
+12.9

32.0'
+77.9

9.7'
+56.4

14.0'
+56.4

+17.0

8.0'

8.7'

6.5'

6.7'

5.0'

6.0'

8.0'

7.3'

7.5'

6.0'

+88.8

2.0'
+94.8

6.0'

5.5'

+98.4

+99.4

11.4'

13.3'
+99.9

CONCRETE CURB & GUTTER
30-INCH TYPE A

191+00

N 19TH ST

PI: 191+20.41

N87°30'01"E

PI: 191+40.43

SSS

WVS

MH

LEGEND

SEE LANDSCAPING PLAN

COLORING CONCRETE WISDOT RED

CONCRETE CURB & GUTTER 6-INCH
SLOPED 44-INCH TYPE G MODIFIED

PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	INTERSECTION DETAILS - N 19TH STREET	SHEET	E

FILE NAME : X:\PT\S\SUPER\181558\5-FINAL-DSGN\C3D- TOWER AVE\SHEETS\021101_ID.DWG
LAYOUT NAME - 02

PLOT DATE : 4/30/2025 9:22 AM

PLOT BY : ANNIE JEROME

PLOT NAME :

PLOT SCALE : 1 IN:20 FT

2

CONCRETE SIDEWALK 7-INCH
COLORING CONCRETE
WISDOT RED

CONCRETE CURB & GUTTER
6-INCH SLOPED 20-INCH
TYPE G MODIFIED

682+00

32.0'
+01.0

8.0'

7.5'

7.4'

ASPHALT PARKING LOT

SAWCUT REQ'D

5.0'

STA 681+53.80, 52.91' RT

8.9'

6.5'

CONCRETE CURB & GUTTER
30-INCH TYPE A

6.0'

+52.4

7.2'

7.5'

END CONSTRUCTION
STA 182+12.91
MATCH EXISTING
SAWCUT REQ'D

32.0'
+32.1

12.9'
+19.7

12.0'

3.0'

11.9'
+60.6

N 18TH ST

S89°34'36"E

180+00

181+00

EP: 10+00.00

182+00

N0°25'24"E

STA 681+19.15 R/L Tower Ave =
STA 179+87.66 R/L 18th St
Y=304,101.306
X=147,017.810

31.9'
+08.3

681+00

10.8'

+27.5

16.0'
+60.6

11.0'
+05.6

13.0'

5.5'

6.0'

+60.6

133

134

CAUTION

TOWER AVE

8.7'

6.0'

STA 680+83.45, 50.90' RT

STA 680+82.25, 50.51' RT

EXISTING
CONCRETE

5.0'

MATCH EXISTING CONCRETE

STA 680+56.10, 50.90' RT

6.6'

STA 680+52.25, 51.42' RT

SAWCUT REQ'D

ASPHALT PARKING LOT

8.0'

6.5'

32.0'
+37.3

BEGIN CONSTRUCTION
STA 9+76.00
MATCH EXISTING
SAWCUT REQ'D

BP: 9+50.00

N0°25'24"E

CONCRETE CURB & GUTTER
6-INCH SLOPED 20-INCH
TYPE G MODIFIED

CONCRETE SIDEWALK 7-INCH
COLORING CONCRETE
WISDOT RED

N

MWEL

MH

SSS

G

STATION & OFFSET TABLE

POINT	STATION	OFFSET	Y COORDS	X COORDS	RADIUS
133	181+70.39	23.00 RT	304076.956	147200.367	10.0'
134	182+07.48	23.00 RT	304076.682	147237.455	10.0'

LEGEND

SEE LANDSCAPING PLAN

COLORING CONCRETE WISDOT RED

CONCRETE CURB & GUTTER 6-INCH
SLOPED 44-INCH TYPE G MODIFIED

PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	INTERSECTION DETAILS - N 18TH STREET	SHEET E

FILE NAME : X:\PT\S\SUPER\181558\5-FINAL-DSGN\C3D- TOWER AVE\SHEETS\021101_ID.DWG
LAYOUT NAME - 03

PLOT DATE : 4/30/2025 9:22 AM PLOT BY : ANNIE JEROME PLOT NAME : PLOT SCALE : 1 IN:20 FT

2

2

N

S89°33'36"E

170+00

SSS

CONCRETE APRON 24-INCH
COLORING CONCRETE
WISDOT RED

CONCRETE CURB & GUTTER
6-INCH SLOPED 20-INCH
TYPE G MODIFIED

685+00

STA 685+39.03 R/L Tower Ave =
STA 170+32.36 R/L 17th St
Y=304,521.177
X=147,020.661

N0°23'17"E

686+00

CONCRETE SIDEWALK 7-INCH
COLORING CONCRETE
WISDOT RED

687+00

CONCRETE CURB & GUTTER
6-INCH SLOPED 20-INCH
TYPE G MODIFIED

CONCRETE SIDEWALK 7-INCH
COLORING CONCRETE
WISDOT RED

TOWER AVE

32.0'

32.0'
+29.0

32.0'
+53.0

32.0'
+20.8

CONCRETE APRON 24-INCH
COLORING CONCRETE
WISDOT RED

+57.1

8.0'

8.7'

6.7'

6.0'

5.0'

10.0'
+64.4

14.0'
+64.4

SAWCUT REQ'D

6.0'

5.7'

6.0'

2.0'

7.4'

6.0'

+01.4

+96.6

171+00

STA 170+84.61, -36.72' LT

STA 170+91.95, -34.93' LT

SAWCUT REQ'D

10.0'
+09.2

14.0'
+09.7

CONCRETE CURB & GUTTER
30-INCH TYPE A

PI: 171+09.43

N 17TH ST

N88°43'58"E

LEGEND

SEE LANDSCAPING PLAN

COLORING CONCRETE WISDOT RED

CONCRETE CURB & GUTTER 6-INCH
SLOPED 44-INCH TYPE G MODIFIED

PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	INTERSECTION DETAILS - N 17TH STREET	SHEET	E

FILE NAME : X:\PT\S\SUPER\181558\5-FINAL-DSGN\C3D- TOWER AVE\SHEETS\021101_ID.DWG
LAYOUT NAME - 04

PLOT DATE : 4/30/2025 9:22 AM PLOT BY : ANNIE JEROME PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 42

2

N

13.3'
+36.2

+39.4

2.8'

8.7'

6.0'

CONCRETE CURB & GUTTER
30-INCH TYPE A

N89°56'19"E

6.0'

5.0'

8.1'

10.1'

8.0'

13.0'
+72.9

CONCRETE CURB & GUTTER
6-INCH SLOPED 20-INCH
TYPE G MODIFIED

CONCRETE SIDEWALK 7-INCH
COLORING CONCRETE
WISDOT RED

STA 689+58.08 R/L Tower Ave =
STA 160+02.79 R/L 16th St
Y=304,940.211
X=147,023.860

30.0'
+70.8

30.0'
+35.5

688+00

689+00

690+00

N0°25'17"E

CONCRETE APRON 24-INCH
COLORING CONCRETE
WISDOT RED

32.0'

TOWER AVE

32.0'
+47.0

CONCRETE SIDEWALK 7-INCH
COLORING CONCRETE
WISDOT RED

11.4'
+34.7

+76.7

8.0'

8.0'

6.2'

5.0'

6.5'

MATCH EXISTING CONCRETE JOINT
SAWCUT REQ'D

CONCRETE CURB PEDESTRIAN
TOP ELEV = 643.45

3.0'

6.0

4.9'

4.6'

+66.7

11.4'

+79.1

PI: 160+79.13

CONCRETE CURB & GUTTER
30-INCH TYPE A

N 16TH ST

N88°46'20"E

161+00

LEGEND

SEE LANDSCAPING PLAN

COLORING CONCRETE WISDOT RED

CONCRETE CURB & GUTTER 6-INCH
SLOPED 44-INCH TYPE G MODIFIED

PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	INTERSECTION DETAILS - N 16TH STREET	SHEET	E

FILE NAME : X:\PT\S\SUPER\181558\5-FINAL-DSGN\C3D- TOWER AVE\SHEETS\021101_ID.DWG
LAYOUT NAME - 05

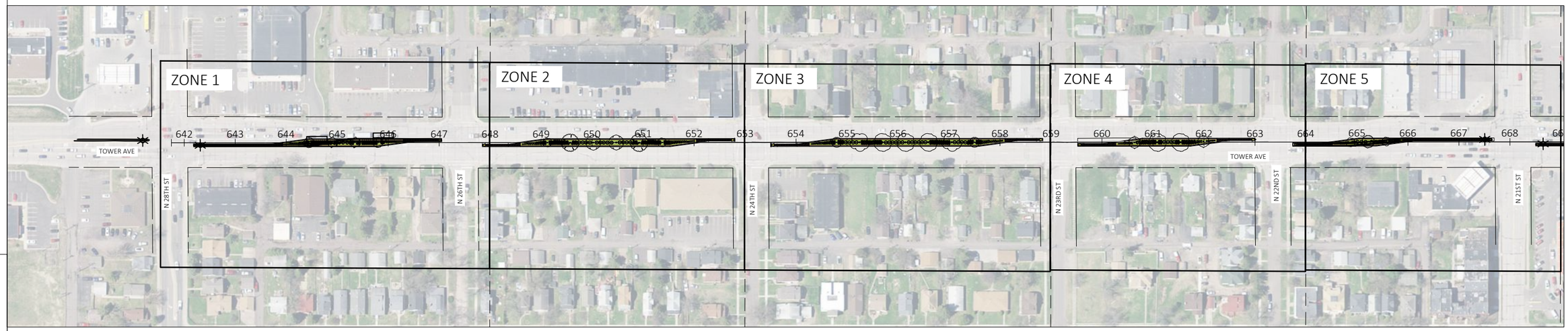
PLOT DATE : 4/30/2025 9:22 AM

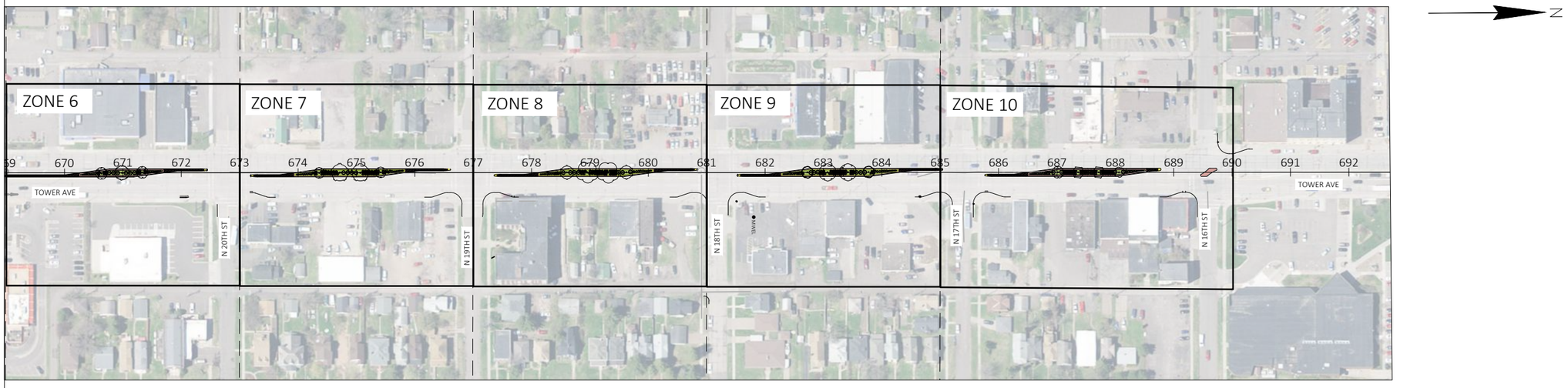
PLOT BY : ANNIE JEROME

PLOT NAME :

PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 42





PROJECT NO:	HWY: TOWER AVENUE	COUNTY: DOUGLAS	LANDSCAPING PLANS	SHEET	E

FILE NAME : X:\PT\S\SUPER\181558\5-FINAL-DSGN\51-DRAWINGS\25-PLANLA\CAD\181558_LANDSCAPEPLAN_3.11.25.DWG
LAYOUT NAME - BasePlan

PLOT DATE : 4/30/2025 2:50 PM PLOT BY : MOLLY WAGNER PLOT NAME : PLOT SCALE : 1IN:200FT

ZONE 1

0 30 60 Feet

N

PLANT SCHEDULE 1

SYMBOL	CODE	BOTANICAL / COMMON NAME
TREES		
	GK	GYMNOCLADUS DIOICUS / KENTUCKY COFFEETREE
ORNAMENTAL TREES		
	AL	AMELANCHIER LAEVIS / ALLEGHENY SERVICEBERRY
SHRUBS		
	AM	ARONIA MELANOCARPA 'MORTON' / IROQUOIS BEAUTY™ BLACK CHOKEBERRY
	CA2	CEANOTHUS AMERICANUS / NEW JERSEY TEA
	DL	DIERVILLA LONICERA / DWARF BUSH HONEYSUCKLE
	RG	RHUS AROMATICA 'GRO-LOW' / GRO-LOW FRAGRANT SUMAC
ORNAMENTAL GRASSES		
	PS	PANICUM VIRGATUM 'SHENANDOAH' / SHENANDOAH SWITCH GRASS
	SL	SCHIZACHYRIUM SCOPARIUM / LITTLE BLUESTEM

R/W

5

(12) AM
(9) SL
(12) CA2
(8) PS
(5) SL
(8) DL
(3) RG
(8) DL
(10) AM
(12) CA2
(5) SL
(7) PS
644
645
645
647
TOWER AVE
Concrete Sidewalk 7-inch
Coloring Concrete
WisDOT Red
(1) AL
(2) GK
(1) AL
Concrete Sidewalk 7-inch
Coloring Concrete
WisDOT Red
Concrete Apron 24-inch
Coloring Concrete
WisDOT Red

R/W

N 26TH ST

PROJECT NO:	HWY: TOWER AVENUE	COUNTY: DOUGLAS	LANDSCAPING PLANS	SHEET	E

FILE NAME : X:\PT\S\SUPER\181558\5-FINAL-DSGN\51-DRAWINGS\25-PLANLA\CAD\181558_LANDSCAPEPLAN_3.11.25.DWG
LAYOUT NAME - 01

PLOT DATE : 4/30/2025 2:50 PM PLOT BY : MOLLY WAGNER PLOT NAME : PLOT SCALE : 1 In=30FT

ZONE 2

0 30 60 Feet

N

PLANT SCHEDULE 2

SYMBOL	CODE	BOTANICAL / COMMON NAME
TREES		
	AF	ACER X FREEMANII 'AF#1' / FIREFALL™ FREEMAN MAPLE
	UA	ULMUS X 'MORTON' / ACCOLADE™ ELM
ORNAMENTAL TREES		
	MA	MALUS X 'JARMIN' / MARILEE® CRABAPPLE
SHRUBS		
	AM	ARONIA MELANOCARPA 'MORTON' / IROQUOIS BEAUTY™ BLACK CHOKEBERRY
	CA2	CEANOTHUS AMERICANUS / NEW JERSEY TEA
	DL	DIERVILLA LONICERA / DWARF BUSH HONEYSUCKLE
	RG	RHUS AROMATICA 'GRO-LOW' / GRO-LOW FRAGRANT SUMAC
ORNAMENTAL GRASSES		
	PS	PANICUM VIRGATUM 'SHENANDOAH' / SHENANDOAH SWITCH GRASS
	SL	SCHIZACHYRIUM SCOPARIUM / LITTLE BLUESTEM

5

5

R/W

N 28TH ST

(4) SL
(7) PS
(6) SL
(8) AM
(18) CA2
(10) DL
(13) RG
(10) DL
(17) CA2
(10) AM
(10) PS
(6) SL

645
650

(1) MA
(1) AF
(2) UA
(1) AF
(1) MA
(6) SL

TOWER AVE

PI: 652+81.51

Concrete Sidewalk 7-inch Coloring Concrete WisDOT Red

Concrete Sidewalk 7-inch Coloring Concrete WisDOT Red

Concrete Apron 24-inch Coloring Concrete WisDOT Red

N 24TH

PROJECT NO:	HWY: TOWER AVENUE	COUNTY: DOUGLAS	LANDSCAPING PLANS	SHEET	E

FILE NAME : X:\PT\S\SUPER\181558\5-FINAL-DSGN\51-DRAWINGS\25-PLANLA\CAD\181558_LANDSCAPEPLAN_3.11.25.DWG
LAYOUT NAME - 02

PLOT DATE : 4/30/2025 2:50 PM PLOT BY : MOLLY WAGNER PLOT NAME : PLOT SCALE : 1 In=30FT

ZONE 3

0 30 60 Feet

N

PLANT SCHEDULE 3

SYMBOL	CODE	BOTANICAL / COMMON NAME
TREES		
	AA	ACER X FREEMANII 'JEFFERSRED' / AUTUMN BLAZE® FREEMAN MAPLE
	CO	CELTIS OCCIDENTALIS / COMMON HACKBERRY
ORNAMENTAL TREES		
	BO	BETULA PLATYPHYLLA 'DAKOTA' / ASIAN WHITE BIRCH
SHRUBS		
	AM	ARONIA MELANOCARPA 'MORTON' / IROQUOIS BEAUTY™ BLACK CHOKEBERRY
	CA2	CEANOTHUS AMERICANUS / NEW JERSEY TEA
	PC	PINUS MUGO 'COMPACTA' / DWARF MUGO PINE
	RG	RHUS AROMATICA 'GRO-LOW' / GRO-LOW FRAGRANT SUMAC
ORNAMENTAL GRASSES		
	PS	PANICUM VIRGATUM 'SHENANDOAH' / SHENANDOAH SWITCH GRASS
	SL	SCHIZACHYRIUM SCOPARIUM / LITTLE BLUESTEM

R/W

(6) PS
(12) SL
(4) RG
(6) PC
(12) AM
(14) CA2
(12) RG
(15) CA2
(12) AM
(4) RG
(12) PC
(5) SL
(8) PS
(5) SL

654
655
656
N0°24'30"E

Concrete Sidewalk 7-inch Coloring Concrete WisDOT Red

(1) BO
(5) PC
(1) AA
(3) CO
(1) AA
(1) BO

TOWER AVE

Concrete Sidewalk 7-inch Coloring Concrete WisDOT Red

Concrete Apron 24-inch Coloring Concrete WisDOT Red

PROJECT NO:	HWY: TOWER AVENUE	COUNTY: DOUGLAS	LANDSCAPING PLANS	SHEET	E

FILE NAME : X:\PT\S\SUPER\181558\5-FINAL-DSGN\51-DRAWINGS\25-PLANLA\CAD\181558_LANDSCAPEPLAN_3.11.25.DWG
LAYOUT NAME - 03

PLOT DATE : 4/30/2025 2:50 PM PLOT BY : MOLLY WAGNER PLOT NAME : PLOT SCALE : 1 In=30FT

ZONE 4

0 30 60 Feet

N

PLANT SCHEDULE 4

SYMBOL	CODE	BOTANICAL / COMMON NAME
TREES		
	CO	CELTIS OCCIDENTALIS / COMMON HACKBERRY
ORNAMENTAL TREES		
	OV	OSTRYA VIRGINIANA / AMERICAN HOPHORNBEAM
SHRUBS		
	DL	DIERVILLA LONICERA / DWARF BUSH HONEYSUCKLE
	PC	PINUS MUGO 'COMPACTA' / DWARF MUGO PINE
	RG	RHUS AROMATICA 'GRO-LOW' / GRO-LOW FRAGRANT SUMAC
ORNAMENTAL GRASSES		
	PS	PANICUM VIRGATUM 'SHENANDOAH' / SHENANDOAH SWITCH GRASS
	SL	SCHIZACHYRIUM SCOPARIUM / LITTLE BLUESTEM

5

5

R/W

PI: 659+53.80

(3) SL
(3) SL
(4) PS
(4) SL
(3) PS
(10) DL
(8) PC
(4) RG
(8) PC
(9) DL
(7) SL
(7) SL

TOWER AVE

59 N0°26'48"E N0°22'39"E 660 N0°22'39"E 662 663

(1) OV
(2) CO
(1) OV

Concrete Sidewalk 7-inch
Coloring Concrete
WisDOT Red

Concrete Sidewalk 7-inch
Coloring Concrete
WisDOT Red

Concrete Apron 24-inch
Coloring Concrete
WisDOT Red

R/W

N 22ND ST

PROJECT NO:	HWY: TOWER AVENUE	COUNTY: DOUGLAS	LANDSCAPING PLANS	SHEET	E

ZONE 5

0 30 60 Feet

N

PLANT SCHEDULE 5

SYMBOL	CODE	BOTANICAL / COMMON NAME
TREES		
	TB	TILIA AMERICANA 'BOULEVARD' / BOULEVARD AMERICAN LINDEN
ORNAMENTAL TREES		
	MA	MALUS X 'JARMIN' / MARILEE® CRABAPPLE
SHRUBS		
	CA2	CEANOTHUS AMERICANUS / NEW JERSEY TEA
	RG	RHUS AROMATICA 'GRO-LOW' / GRO-LOW FRAGRANT SUMAC
ORNAMENTAL GRASSES		
	PS	PANICUM VIRGATUM 'SHENANDOAH' / SHENANDOAH SWITCH GRASS
	SL	SCHIZACHYRIUM SCOPARIUM / LITTLE BLUESTEM

5

5

R/W

(5) PS
(4) SL
(5) RG
(6) SL
(3) CA2
(7) PS
(5) SL
(1) MA
(1) TB
(1) MA

Concrete Sidewalk 7-inch
Coloring Concrete
WisDOT Red

Concrete Sidewalk 7-inch
Coloring Concrete
WisDOT Red

Concrete Apron 24-inch
Coloring Concrete
WisDOT Red

665
666
667
668

TOWER AVE

R/W

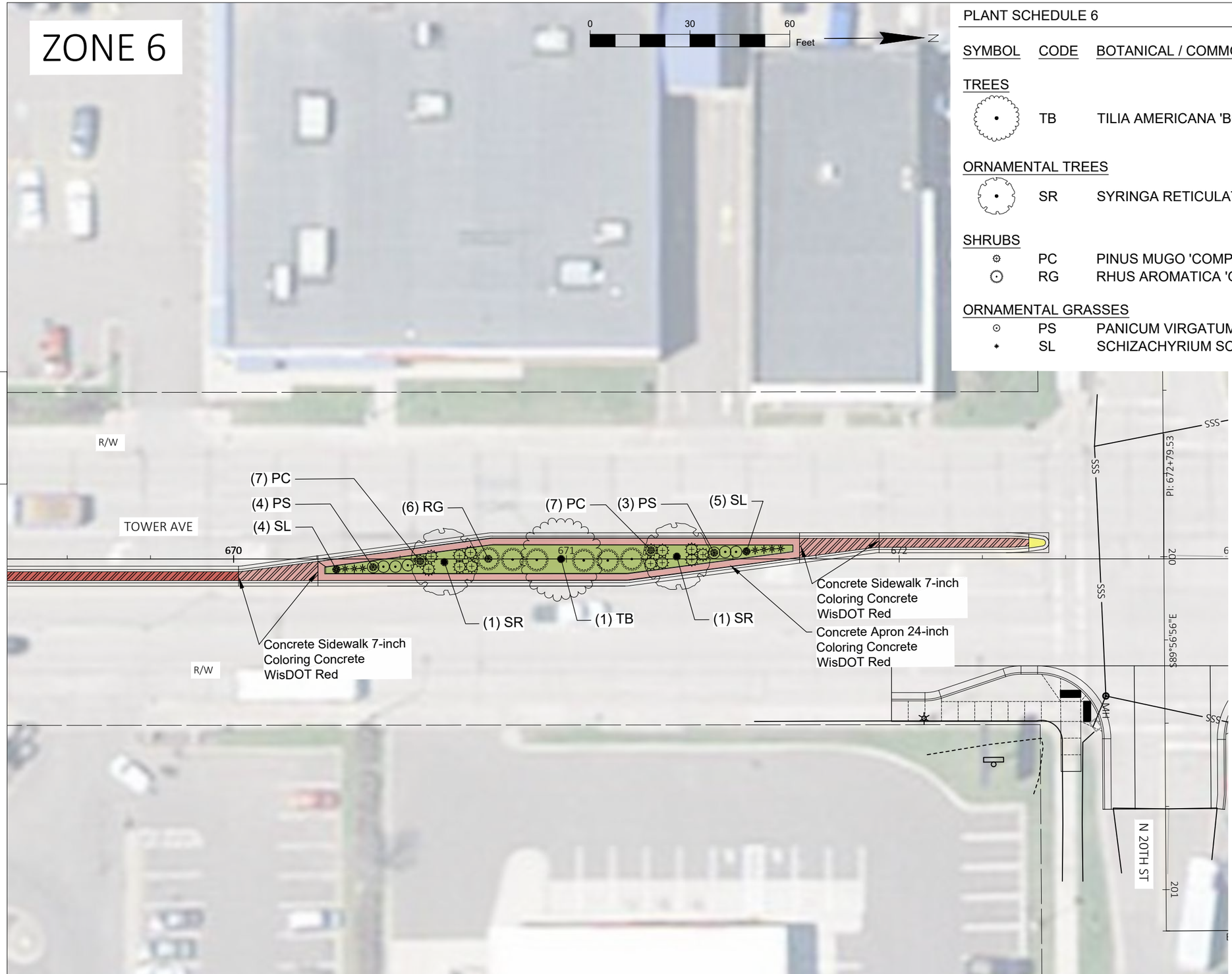
N 21ST ST

PROJECT NO:	HWY: TOWER AVENUE	COUNTY: DOUGLAS	LANDSCAPING PLANS	SHEET	E

FILE NAME : X:\PT\S\SUPER\181558\5-FINAL-DSGN\51-DRAWINGS\25-PLANLA\CAD\181558_LANDSCAPEPLAN_3.11.25.DWG
LAYOUT NAME - 05

PLOT DATE : 4/30/2025 2:51 PM PLOT BY : MOLLY WAGNER PLOT NAME : PLOT SCALE : 1 In=30FT

ZONE 6



PLANT SCHEDULE 6

SYMBOL	CODE	BOTANICAL / COMMON NAME
TREES		
	TB	TILIA AMERICANA 'BOULEVARD' / BOULEVARD AMERICAN LINDEN
ORNAMENTAL TREES		
	SR	SYRINGA RETICULATA / JAPANESE TREE LILAC
SHRUBS		
	PC	PINUS MUGO 'COMPACTA' / DWARF MUGO PINE
	RG	RHUS AROMATICA 'GRO-LOW' / GRO-LOW FRAGRANT SUMAC
ORNAMENTAL GRASSES		
	PS	PANICUM VIRGATUM 'SHENANDOAH' / SHENANDOAH SWITCH GRASS
	SL	SCHIZACHYRIUM SCOPARIUM / LITTLE BLUESTEM

5

5

PROJECT NO:	HWY: TOWER AVENUE	COUNTY: DOUGLAS	LANDSCAPING PLANS	SHEET	E

FILE NAME : X:\PT\S\SUPER\181558\5-FINAL-DSGN\51-DRAWINGS\25-PLANLA\CAD\181558_LANDSCAPEPLAN_3.11.25.DWG
LAYOUT NAME - 06

PLOT DATE : 4/30/2025 2:51 PM PLOT BY : MOLLY WAGNER PLOT NAME : PLOT SCALE : 1 In=30FT

ZONE 7

PLANT SCHEDULE 7

SYMBOL	CODE	BOTANICAL / COMMON NAME
TREES		
	GI	GLEDITSIA TRIACANTHOS INERMIS 'HARVE' / NORTHERN ACCLAIM® HONEY LOCUST
ORNAMENTAL TREES		
	MS	MALUS X 'SPRING SNOW' / SPRING SNOW CRABAPPLE
SHRUBS		
	AM	ARONIA MELANOCARPA 'MORTON' / IROQUOIS BEAUTY™ BLACK CHOKEBERRY
	DL	DIERVILLA LONICERA / DWARF BUSH HONEYSUCKLE
	PC	PINUS MUGO 'COMPACTA' / DWARF MUGO PINE
	RG	RHUS AROMATICA 'GRO-LOW' / GRO-LOW FRAGRANT SUMAC
ORNAMENTAL GRASSES		
	PS	PANICUM VIRGATUM 'SHENANDOAH' / SHENANDOAH SWITCH GRASS
	SL	SCHIZACHYRIUM SCOPARIUM / LITTLE BLUESTEM

5

5

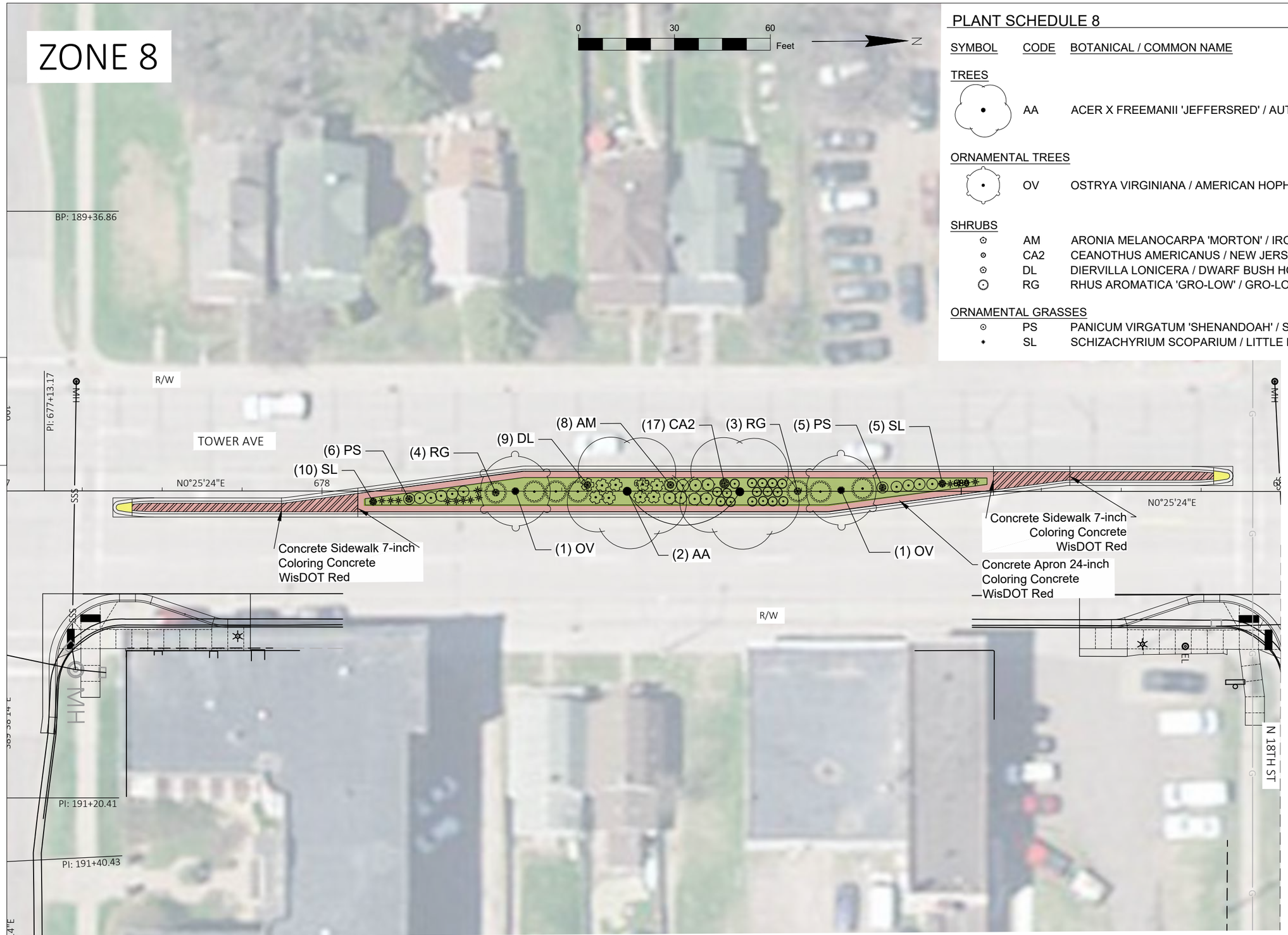
(7) PC
(6) PS
(4) SL
(7) DL
(4) AM
(6) AM
(6) DL
(4) RG
(7) PC
(4) PS
(7) SL
TOWER AVE
674
675
676
677
190
PI: 677+13.17
HWY
SSS
Concrete Sidewalk 7-inch Coloring Concrete WisDOT Red
Concrete Sidewalk 7-inch Coloring Concrete WisDOT Red
(1) MS
(2) GI
(1) MS
Concrete Apron 24-inch Coloring Concrete WisDOT Red
SSS
SSS
SSS
SSS
IMWEL
HWY
S89°38'14"E
N87°30'01"E
N 19TH ST
PI: 19
PI: 1
14"E
P: 201+12.43

PROJECT NO:	HWY: TOWER AVENUE	COUNTY: DOUGLAS	LANDSCAPING PLANS	SHEET	E

FILE NAME : X:\PT\S\SUPER\181558\5-FINAL-DSGN\51-DRAWINGS\25-PLANLA\CAD\181558_LANDSCAPEPLAN_3.11.25.DWG
LAYOUT NAME - 07

PLOT DATE : 4/30/2025 2:51 PM PLOT BY : MOLLY WAGNER PLOT NAME : PLOT SCALE : 1 In=30FT

ZONE 8



PLANT SCHEDULE 8

SYMBOL	CODE	BOTANICAL / COMMON NAME
TREES		
	AA	ACER X FREEMANII 'JEFFERSRED' / AUTUMN BLAZE® FREEMAN MAPLE
ORNAMENTAL TREES		
	OV	OSTRYA VIRGINIANA / AMERICAN HOPHORNBEAM
SHRUBS		
	AM	ARONIA MELANOCARPA 'MORTON' / IROQUOIS BEAUTY™ BLACK CHOKEBERRY
	CA2	CEANOTHUS AMERICANUS / NEW JERSEY TEA
	DL	DIERVILLA LONICERA / DWARF BUSH HONEYSUCKLE
	RG	RHUS AROMATICA 'GRO-LOW' / GRO-LOW FRAGRANT SUMAC
ORNAMENTAL GRASSES		
	PS	PANICUM VIRGATUM 'SHENANDOAH' / SHENANDOAH SWITCH GRASS
	SL	SCHIZACHYRIUM SCOPARIUM / LITTLE BLUESTEM

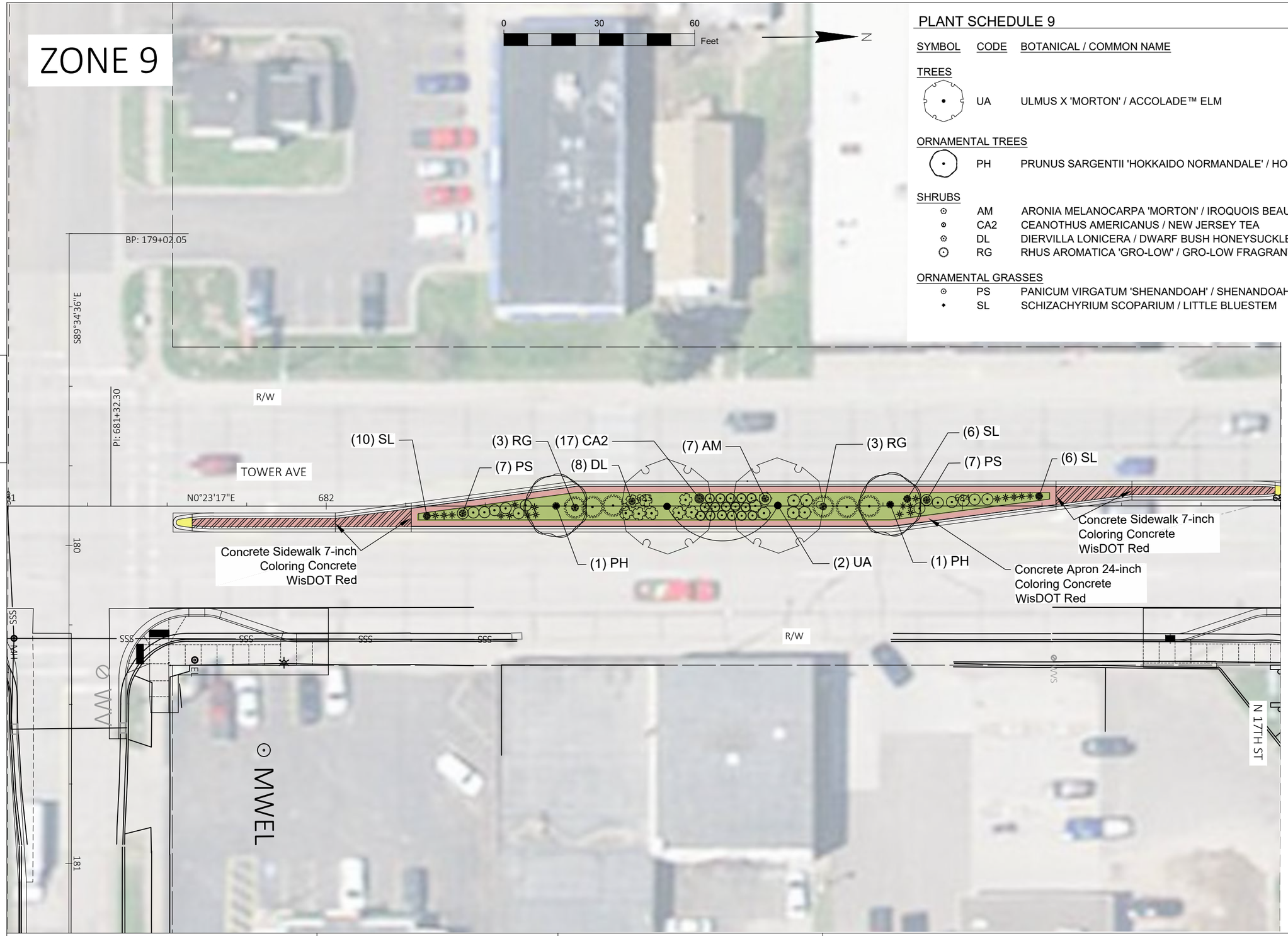
PROJECT NO:	HWY: TOWER AVENUE	COUNTY: DOUGLAS	LANDSCAPING PLANS	SHEET	E

FILE NAME : X:\PT\S\SUPER\181558\5-FINAL-DSGN\51-DRAWINGS\25-PLANLA\CAD\181558_LANDSCAPEPLAN_3.11.25.DWG
LAYOUT NAME - 08

PLOT DATE : 4/30/2025 2:51 PM PLOT BY : MOLLY WAGNER PLOT NAME : PLOT SCALE : 1 In=30FT

WISDOT/CADDS SHEET 44

ZONE 9



PLANT SCHEDULE 9

SYMBOL	CODE	BOTANICAL / COMMON NAME
TREES		
	UA	ULMUS X 'MORTON' / ACCOLADE™ ELM
ORNAMENTAL TREES		
	PH	PRUNUS SARGENTII 'HOKKAIDO NORMANDALE' / HOKKAIDO NORMANDALE SARGENT CHERRY
SHRUBS		
	AM	ARONIA MELANOCARPA 'MORTON' / IROQUOIS BEAUTY™ BLACK CHOKEBERRY
	CA2	CEANOTHUS AMERICANUS / NEW JERSEY TEA
	DL	DIERVILLA LONICERA / DWARF BUSH HONEYSUCKLE
	RG	RHUS AROMATICA 'GRO-LOW' / GRO-LOW FRAGRANT SUMAC
ORNAMENTAL GRASSES		
	PS	PANICUM VIRGATUM 'SHENANDOAH' / SHENANDOAH SWITCH GRASS
	SL	SCHIZACHYRIUM SCOPARIUM / LITTLE BLUESTEM

5

5

PROJECT NO:	HWY: TOWER AVENUE	COUNTY: DOUGLAS	LANDSCAPING PLANS	SHEET	E

ZONE 10

0 30 60 Feet

N

BP: 169+34.71

R/W

PLANT SCHEDULE 10

SYMBOL	CODE	BOTANICAL / COMMON NAME
TREES		
	GK	GYMNOCLADUS DIOICUS / KENTUCKY COFFEETREE
ORNAMENTAL TREES		
	MA	MALUS X 'JARMIN' / MARILEE® CRABAPPLE
	SR	SYRINGA RETICULATA / JAPANESE TREE LILAC
SHRUBS		
	AM	ARONIA MELANOCARPA 'MORTON' / IROQUOIS BEAUTY™ BLACK CHOKEBERRY
	CA2	CEANOTHUS AMERICANUS / NEW JERSEY TEA
	PC	PINUS MUGO 'COMPACTA' / DWARF MUGO PINE
	RG	RHUS AROMATICA 'GRO-LOW' / GRO-LOW FRAGRANT SUMAC
ORNAMENTAL GRASSES		
	PS	PANICUM VIRGATUM 'SHENANDOAH' / SHENANDOAH SWITCH GRASS
	SL	SCHIZACHYRIUM SCOPARIUM / LITTLE BLUESTEM

5

5

PI: 685+43.05

TOWER AVE

(7) PS
(9) SL
(2) RG
(11) CA2
(8) PC
(6) AM
(8) PC
(12) CA2
(2) RG
(6) PS
(5) SL

TOWER AVE

PI: 689+12...

'17"E 686 N0°26'24"E 687 688 689

Concrete Sidewalk 7-inch Coloring Concrete WisDOT Red

(1) SR

(2) GK

(1) MA

Concrete Apron 24-inch Coloring Concrete WisDOT Red

Concrete Sidewalk 7-inch Coloring Concrete WisDOT Red

S89°33'36"E

R/W

MH

N 17TH ST

171

PI: 171+09.43

N88°43'58"E

PI: 171+49.71

S89°33'36"E

EP: 171+68.07

N 16TH ST

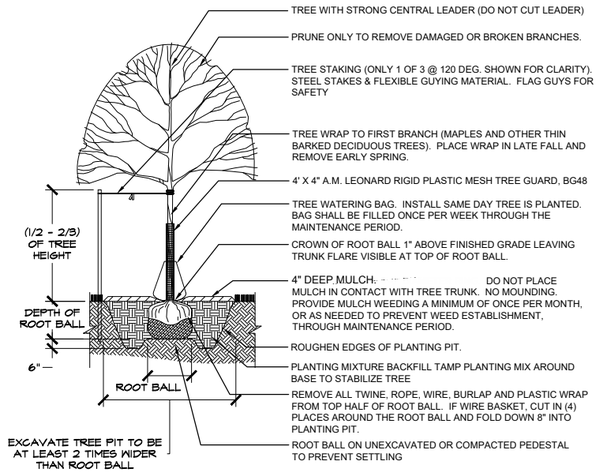
PROJECT NO:	HWY: TOWER AVENUE	COUNTY: DOUGLAS	LANDSCAPING PLANS	SHEET	E

FILE NAME : X:\PT\S\SUPER\181558\5-FINAL-DSGN\51-DRAWINGS\25-PLANLA\CAD\181558_LANDSCAPEPLAN_3.11.25.DWG
LAYOUT NAME - 10

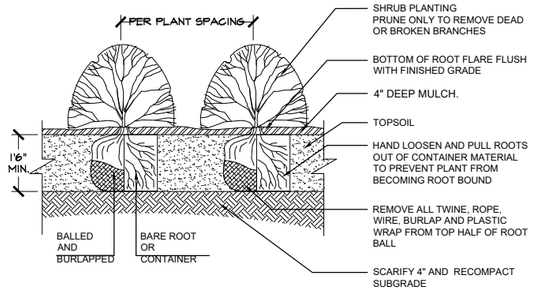
PLOT DATE : 4/30/2025 2:51 PM PLOT BY : MOLLY WAGNER PLOT NAME : PLOT SCALE : 1 In=30FT

PLANT SCHEDULE

SYMBOL	CODE	BOTANICAL / COMMON NAME	SIZE	ROOT CONDITION	QTY
TREES					
	AF	ACER X FREEMANII 'AF#1' / FIREFALL™ FREEMAN MAPLE	3" CAL	B & B	2
	AA	ACER X FREEMANII 'JEFFERSRED' / AUTUMN BLAZE® FREEMAN MAPLE	3" CAL	B & B	4
	CO	CELTIS OCCIDENTALIS / COMMON HACKBERRY	3" CAL	B & B	5
	GI	GLEDITSIA TRIACANTHOS INERMIS 'HARVE' / NORTHERN ACCLAIM® HONEY LOCUST	3" CAL	B & B	2
	GK	GYMNOCLADUS DIOICUS / KENTUCKY COFFEETREE	3" CAL	B & B	4
	TB	TILIA AMERICANA 'BOULEVARD' / BOULEVARD AMERICAN LINDEN	3" CAL	B & B	2
	UA	ULMUS X 'MORTON' / ACCOLADE™ ELM	3" CAL	B & B	4
ORNAMENTAL TREES					
	AL	AMELANCHIER LAEVIS / ALLEGHENY SERVICEBERRY	2.5" CAL	B & B	2
	BO	BETULA PLATYPHYLLA 'DAKOTA' / ASIAN WHITE BIRCH	2.5" CAL	B & B	2
	MA	MALUS X 'JARMIN' / MARILEE® CRABAPPLE	2.5" CAL	B & B	5
	MS	MALUS X 'SPRING SNOW' / SPRING SNOW CRABAPPLE	2.5" CAL	B & B	2
	OV	OSTRYA VIRGINIANA / AMERICAN HOPHORNBEAM	2.5" CAL	B & B	4
	PH	PRUNUS SARGENTII 'HOKKAIDO NORMANDALE' / HOKKAIDO NORMANDALE SARGENT CHERRY	2.5" CAL	B & B	2
	SR	SYRINGA RETICULATA / JAPANESE TREE LILAC	2.5" CAL	B & B	3
SHRUBS					
	AM	ARONIA MELANOCARPA 'MORTON' / IROQUOIS BEAUTY™ BLACK CHOKEBERRY	2 GAL	CONTAINER	95
	CA2	CEANOTHUS AMERICANUS / NEW JERSEY TEA	2 GAL	CONTAINER	148
	DL	DIERVILLA LONICERA / DWARF BUSH HONEYSUCKLE	2 GAL	CONTAINER	85
	PC	PINUS MUGO 'COMPACTA' / DWARF MUGO PINE	3 GAL.	CONTAINER	83
	RG	RHUS AROMATICA 'GRO-LOW' / GRO-LOW FRAGRANT SUMAC	2 GAL	CONTAINER	72
ORNAMENTAL GRASSES					
	PS	PANICUM VIRGATUM 'SHENANDOAH' / SHENANDOAH SWITCH GRASS	1 GAL.	CONTAINER	126
	SL	SCHIZACHYRIUM SCOPARIUM / LITTLE BLUESTEM	1 GAL.	CONTAINER	179

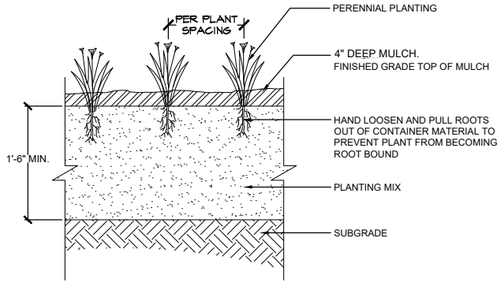


1 TREE PLANTING
1/4" = 1'-0" 32 9343-01

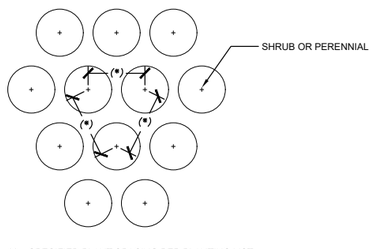


BAREROOT PLANTING NOTES:
1. SOAK ROOTS IN WATER FOR AT LEAST ONE HOUR BUT NOT MORE THAN 24 HOURS PRIOR TO PLANTING.
2. SCARIFY SIDES AND BOTTOMS OF HOLE.
3. PROCEED WITH CORRECTIVE PRUNING OF THE TOP AND BOTTOM ROOTS.
4. TRANSFER PLANT DIRECTLY FROM WATER TO HOLE. SET PLANT SO THE ROOT FLARE IS APPROXIMATELY AT THE FINISHED SOIL ELEVATION. SPREAD ROOTS OUT EVENLY. PLUMB AND IMMEDIATELY BACKFILL WITH PLANTING SOIL MIX.
5. WATER THOROUGHLY WITHIN 2 HOURS TO SETTLE PLANTS AND FILL VOIDS.
6. BACKFILL VOIDS AND WATER SECOND TIME.
7. PLACE MULCH WITHIN 48 HOURS OF THE SECOND WATERING UNLESS SOIL MOISTURE IS EXCESSIVE.

2 SHRUB PLANTING
1/2" = 1'-0" 32 9333-02

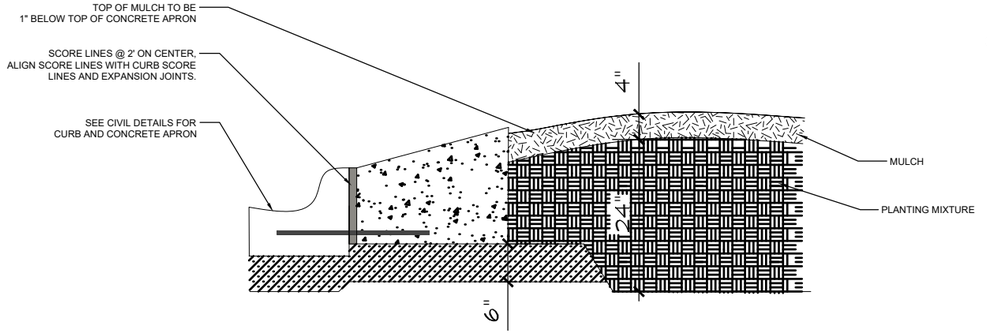


3 PERENNIAL PLANTING DETAIL
1" = 1'-0" 32 93-01



(*) = SPECIFIED PLANT SPACING PER PLANTING LIST

4 PLANT SPACING DETAIL
1/2" = 1'-0" 32 93-02



5 LANDSCAPE MEDIAN SECTION
1" = 1'-0" 321613-01

LANDSCAPE SPECIFICATIONS

TREES, SHRUBS, AND PERENNIALS
1. REFERENCES
   A. WISDOT - WISCONSIN DEPARTMENT OF TRANSPORTATION, 2023 EDITION.
   B. AMERICAN STANDARD FOR NURSERY STOCK, ANSI Z60.1-2014.
2. QUALITY ASSURANCE
   A. WORK SHALL BE PERFORMED BY A LANDSCAPE CONTRACTOR WITH EXTENSIVE HORTICULTURE KNOWLEDGE, AND A MIN. OF 3 YEARS EXPERIENCE.
   B. HANDLE PLANTS IN SUCH A WAY AS TO PROTECTFROM DAMAGE EITHER PHYSICAL OR BY EXPOSURE TO SUN AND WIND. MISHANDLED PLANTS ARE SUBJECT TO REJECTION BY LANDSCAPE ARCHITECT.
   C. PLANTS USED ON THIS PROJECT SHALL MEET THE GRADING STANDARDS RECOMMENDED BY THE ANSIZ60.1-2014.
3. PRODUCTS
   A.MULCH: SHREDDED HARDWOOD MULCH, COLOR BROWN.
   B.WATER: CONTRACTOR TO PROVIDE.
   C.PLANTING SOIL MIX: RICH SANDY LOAM, FREE OF DEBRIS AND SEEDS, AND CONFORMING TO WISDOT 630-632 (SEEDING, SODDING, PLANTING).
   D.SOIL AMENDMENTS: CONFORMING TO WISOT 630-632 (SEEDING, SODDING, PLANTING) AND ALL OTHER APPLICABLE WISDOT MATERIALS AND CONSTRUCTION REQUIREMENTS.
   E. TREE WRAP: TWO-PLY WEATHER RESISTANT PAPER PRODUCT.
4. PLANTING DATES: SPRING PLANTING: APR. 1- JUNE 15. THESE DATES MAY BE EXTENDED IF DAYTIME TEMPS. REMAIN BELOW 80 DEGREES. FALL: SEPT . 30 - OCT. 30TH.
   6.DAYTIME TEMPS. NEED TO DROP BELOW 80 DEGREES BEFORE PLANTING BEGINS, AND MAY CONTINUE UNTIL FREEZE UP. CONIFEROUS TREES AUG.15- OCT. 1ST. PLANT UNDER FAVORABLE WEATHER CONDITIONS, DO NO PLANT DURING DAYS OF EXTREME HEAT.
5. EXECUTION
   A. PLANT INTO PREPARED PLANTING BEDS.
   B. PRIOR TO DIGGING, CONTRACTOR TO HAVE UTILITIES LOCATED AND MARKED.
   C. CONTRACTOR TO NOTIFY LANDSCAPE ARCHITECT 3 DAYS IN ADVANCE OF WHEN PLANTING WORK WILL OCCUR.
   D. INSTALL TREES, SHRUBS, AND PERENNIALS PER PLANTING DETAILS, ADJUST LOCATION IF IN CONFLICT WITH UTILITIES.VERIFY NEW LOCATION WITH LANDSCAPE ARCHITECT PRIOR TO PLANTING.
6. ACCEPTANCE OF PLANTING WORK
   A. CONTRACTOR TO NOTIFY OWNER WHEN PLANTING WORK IS COMPLETE FOR REVIEW AND PUNCH LIST.
   B. CONTRACTOR TO WATER AND MAINTAIN THE TREES, SHRUBS, AND PERENNIALS UNTIL OWNER ACCEPTANCE.
   C. OWNER WILL GIVE ACCEPTANCE OF WORK, FOLLOWING SATISFACTORY CORRECTION OF PUNCH LIST ITEMS.
   D.WATERING AND REGULAR LANDSCAPE MAINTENANCE OF TREES, SHRUBS, AND PERENNIALS WILL BE OWNERS RESPONSIBILITY FOLLOWING OWNER ACCEPTANCE OF WORK..
7. GUARANTEE PERIOD
   A. CONTRACTOR TO WARRANTY TREES, SHRUBS, AND PERENNIALS FOR TWO YEARS FOLLOWING ACCEPTANCE OF WORK BY OWNER.
   B. CONTRACTOR TO MAINTAIN THE TREES IN A PLUMB POSITION THROUGHOUT THE GUARANTEE PERIOD.
   C. CONTRACTOR TO REMOVE ALL STAKING/ WIRING/ STRAPS FROM TREES AT THE END OF THE GUARANTEE PERIOD.
   D. REPLACEMENTS: AT THE END OF THE GUARANTEE PERIOD, ALL PLANTS WHICH ARE UNHEALTHY, DEAD, NOT HAVING A NORMAL DENSITY, SIZE, SHAPE OR COLOR SHALL BE REPLACED. REPLACEMENTS SHALL MATCH CALIPER AND/OR HEIGHT OF THE OTHER. PLANTS AT TIME OF REPLACEMENT. SELECTION OF REPLACEMENT MATERIAL AND INSTALLATION PRACTICES SHALL FOLLOW THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS.

MATCHLINE 685+00

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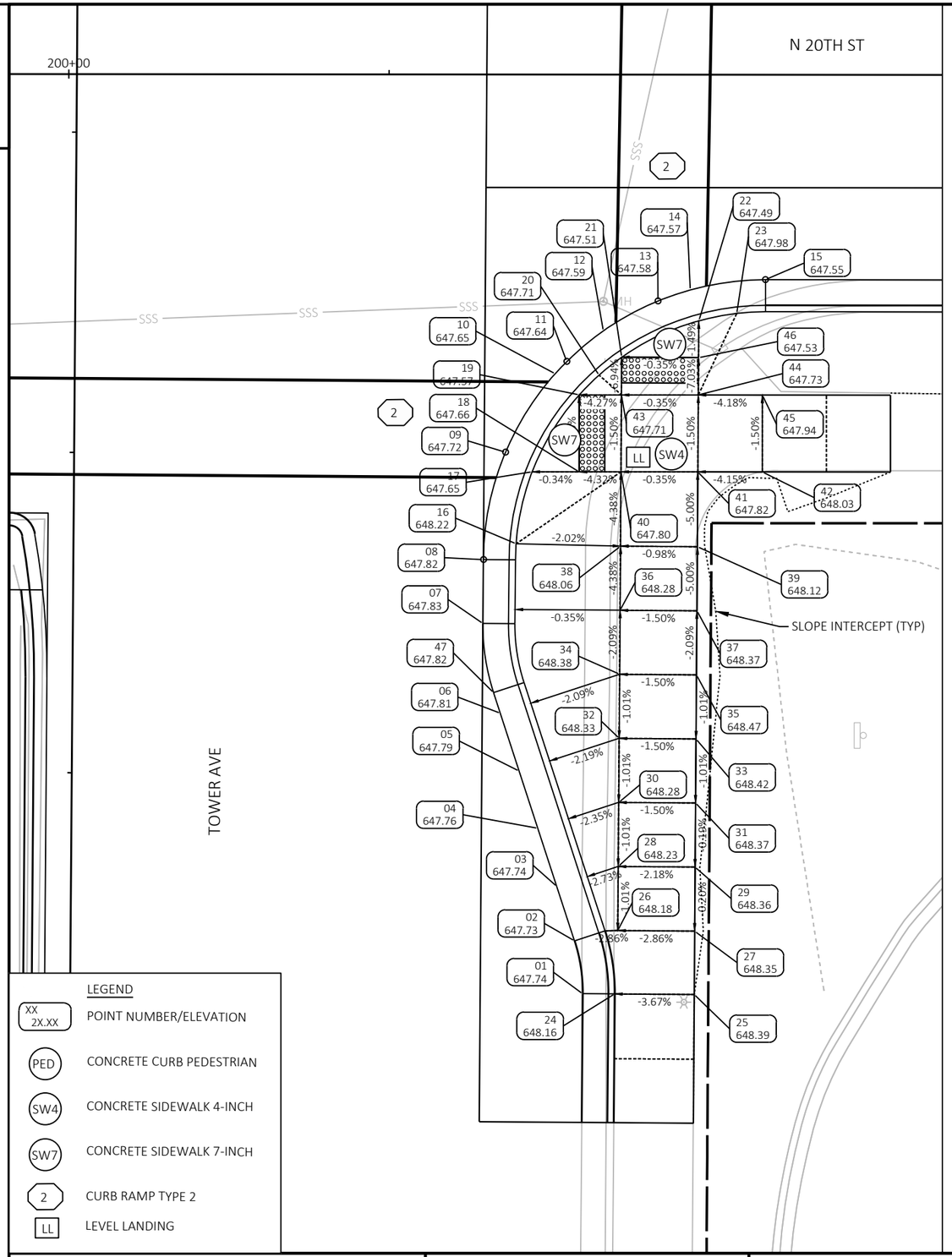
PROJECT NO:	HWY: TOWER AVENUE	COUNTY: DOUGLAS	LANDSCAPING PLANS	SHEET	E

FILE NAME : X:\PT\S\SUPER\181558\5-FINAL-DSGN\51-DRAWINGS\25-PLANLA\CAD\181558_LANDSCAPEPLAN_3.11.25.DWG
LAYOUT NAME - DETAILS
PLOT DATE : 4/30/2025 2:51 PM PLOT BY : MOLLY WAGNER PLOT NAME : PLOT SCALE : N/A



LEGEND

XX 2X.XX	POINT NUMBER/ELEVATION
PED	CONCRETE CURB PEDESTRIAN
SW4	CONCRETE SIDEWALK 4-INCH
SW7	CONCRETE SIDEWALK 7-INCH
2	CURB RAMP TYPE 2
LL	LEVEL LANDING

N 20TH STREET SE					
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING
01	672+08.06	40.00' RT	647.74	303189.94	147051.53
02	672+12.17	39.33' RT	647.73	303194.06	147050.90
03	672+16.41	37.92' RT	647.74	303198.30	147049.51
04	672+20.94	36.40' RT	647.76	303202.84	147048.03
05	672+25.40	34.91' RT	647.79	303207.32	147046.58
06	672+29.90	33.41' RT	647.81	303211.83	147045.11
07	672+36.89	32.00' RT	647.83	303218.83	147043.75
08	672+41.88	32.00' RT	647.82	303223.82	147043.78
09	672+50.27	33.66' RT	647.72	303232.19	147045.51
10	672+56.42	37.49' RT	647.65	303238.32	147049.38
11	672+57.39	38.39' RT	647.64	303239.28	147050.29
12	672+59.79	41.23' RT	647.59	303241.66	147053.14
13	672+62.16	45.48' RT	647.58	303244.00	147057.41
14	672+63.04	47.99' RT	647.57	303244.87	147059.93
15	672+63.88	53.84' RT	647.55	303245.66	147065.79
16	672+43.13	34.54' RT	648.22	303225.05	147046.33
17	672+48.76	35.75' RT	647.65	303230.67	147047.59
18	672+48.79	39.42' RT	647.66	303230.67	147051.26
19	672+54.78	39.38' RT	647.57	303236.67	147051.26
20	672+56.34	40.92' RT	647.71	303238.22	147052.81
21	672+57.76	42.68' RT	647.51	303239.62	147054.58
22	672+60.64	48.68' RT	647.49	303242.46	147060.60
23	672+61.23	51.63' RT	647.98	303243.03	147063.55
24	672+08.06	42.50' RT	648.16	303189.92	147054.03
25	672+08.05	48.71' RT	648.39	303189.87	147060.24
26	672+13.00	42.70' RT	648.18	303194.87	147054.27
27	672+13.00	48.70' RT	648.35	303194.82	147060.27
28	672+18.00	42.70' RT	648.23	303199.87	147054.31
29	672+18.00	48.70' RT	648.36	303199.82	147060.31
30	672+23.00	42.70' RT	648.28	303204.87	147054.35
31	672+23.00	48.70' RT	648.37	303204.82	147060.34
32	672+28.00	42.70' RT	648.33	303209.87	147054.38
33	672+28.00	48.70' RT	648.42	303209.82	147060.38
34	672+33.00	42.70' RT	648.38	303214.87	147054.42
35	672+33.00	48.70' RT	648.47	303214.82	147060.42

N 20TH STREET SE					
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING
36	672+38.00	42.70' RT	648.28	303219.86	147054.46
37	672+38.00	48.70' RT	648.37	303219.82	147060.45
38	672+43.00	42.70' RT	648.06	303224.86	147054.49
39	672+43.00	48.70' RT	648.12	303224.82	147060.49
40	672+48.81	42.68' RT	647.80	303230.67	147054.52
41	672+48.85	48.68' RT	647.82	303230.66	147060.52
42	672+48.88	53.72' RT	648.03	303230.66	147065.56
43	672+54.81	42.68' RT	647.71	303236.67	147054.56
44	672+54.85	48.68' RT	647.73	303236.66	147060.56
45	672+54.88	53.68' RT	647.94	303236.66	147065.56
46	672+57.76	48.68' RT	647.53	303239.58	147060.58
47	672+31.50	32.88' RT	647.82	303213.44	147044.58

GENERAL CONSTRUCTION NOTES:

SLOPE ARROWS DO NOT DENOTE THE DIRECTION OF WATER FLOW RATHER THEY SHOW THE DIRECTION THAT THE ARROWS WERE DRAWN. NEGATIVE (-) VALUES DENOTE DOWNWARD SLOPE, POSITIVE (+) VALUES DENOTE UPWARD SLOPES.

DETECTABLE WARNING ARE 2 FT WIDE AND 6 FT LONG.

CONTRACTOR TO FIELD VERIFY ELEVATIONS, GRADES, SLOPES, LENGTHS AND MATCH POINTS PRIOR TO CURB RAMP AND SIDEWALK CONSTRUCTION.

THE ENGINEER MUST ADJUST CURB RAMP ELEVATIONS TO FIT FIELD CONDITIONS WITHIN THE REQUIREMENTS OF THE STANDARD DETAILS.

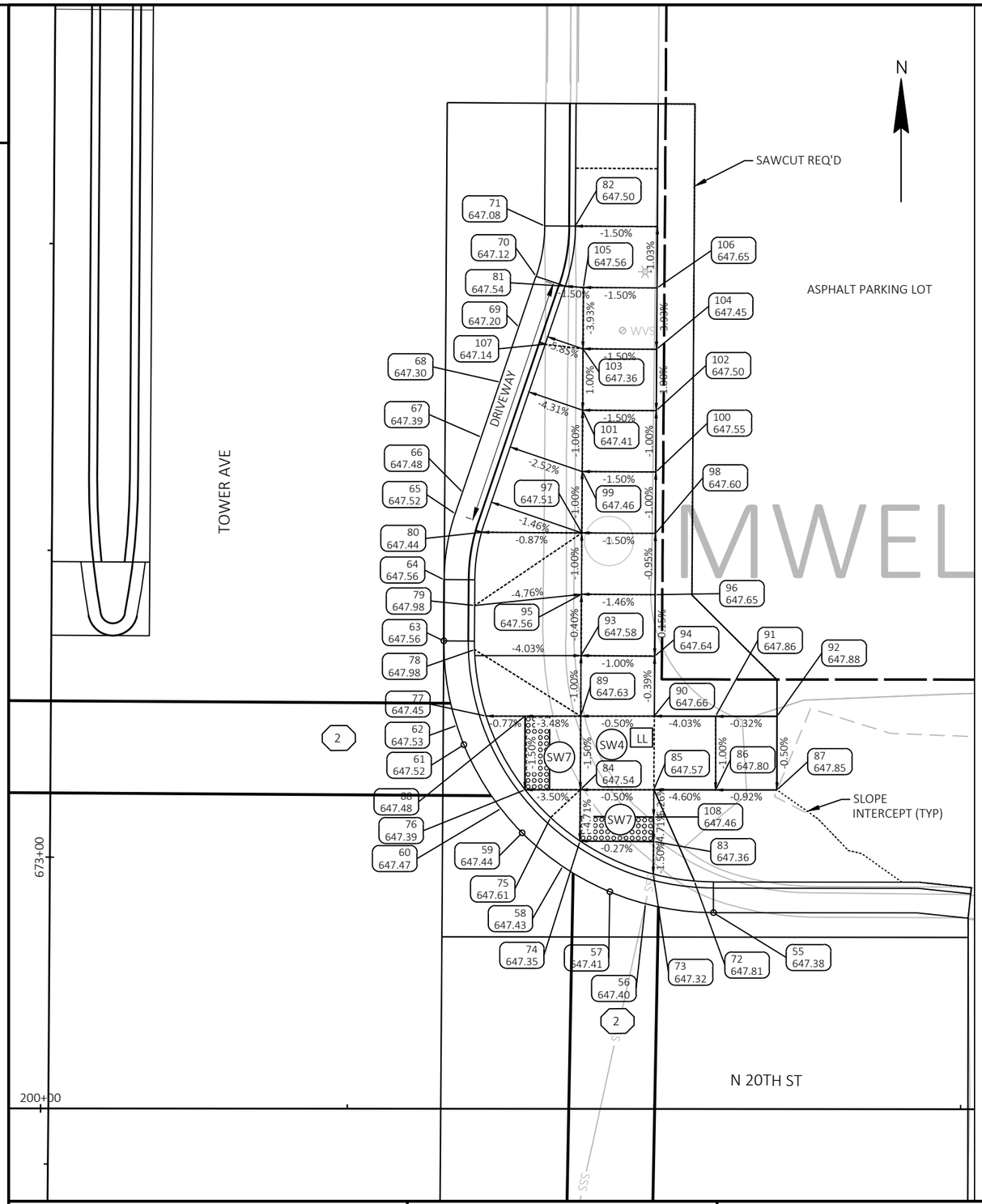
SEE THE STANDARD DETAIL DRAWINGS FOR COMPLETE CURB RAMP REQUIREMENTS.

ALL STATION AND OFFSET INFORMATION REFERENCE TOWER AVENUE R/L.

DASHED LINES REPRESENT JOINT LOCATIONS. THE ENGINEER MAY ADJUST LOCATIONS TO FIT FIELD CONDITIONS WITHIN THE REQUIREMENTS OF THE STANDARD DETAILS.

PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	CURB RAMPS - N 20TH STREET SE	SHEET	E

FILE NAME : X:\PT\S\SUPER\181558\5-FINAL-DSGN\C3D- TOWER AVE\SHEETS\021301_CR.DWG
LAYOUT NAME - 01 - N 20TH ST SE
PLOT DATE : 4/30/2025 9:27 AM PLOT BY : ANNIE JEROME PLOT NAME : PLOT SCALE : 1 IN:10 FT



MWEL

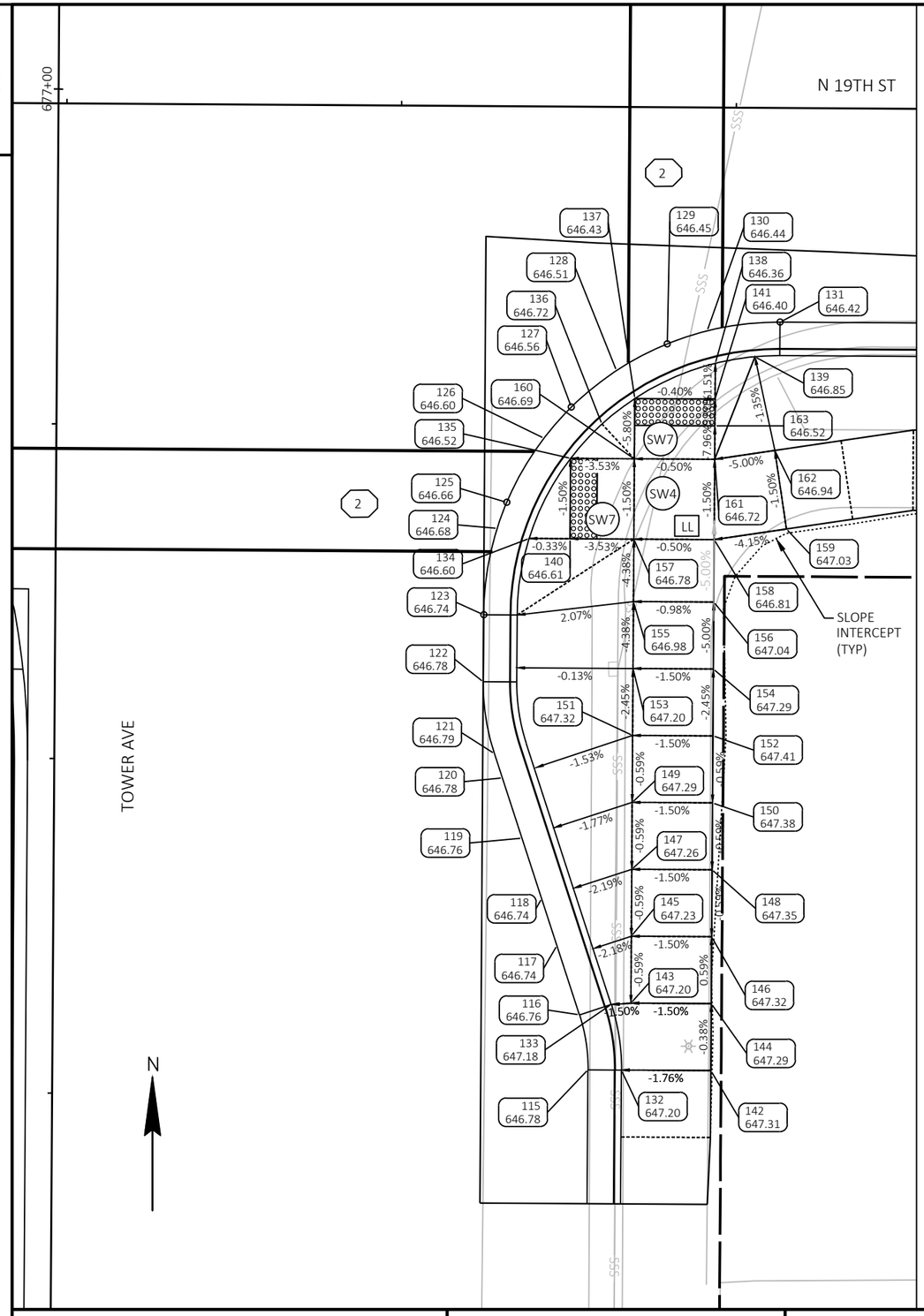
N 20TH STREET NE					
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING
55	672+95.82	54.12' RT	647.38	303277.66	147066.29
56	672+96.50	48.58' RT	647.40	303278.37	147060.75
57	672+97.46	45.66' RT	647.41	303279.35	147057.84
58	672+99.51	41.81' RT	647.43	303281.42	147054.00
59	673+02.22	38.49' RT	647.44	303284.16	147050.69
60	673+04.19	36.73' RT	647.47	303286.13	147048.95
61	673+09.38	33.69' RT	647.52	303291.34	147045.94
62	673+10.94	33.10' RT	647.53	303292.91	147045.37
63	673+17.82	32.00' RT	647.56	303299.80	147044.31
64	673+22.80	32.00' RT	647.56	303304.77	147044.34
65	673+28.20	32.87' RT	647.52	303310.17	147045.24
66	673+29.94	33.45' RT	647.48	303311.90	147045.84
67	673+34.44	34.95' RT	647.39	303316.39	147047.36
68	673+38.94	36.45' RT	647.30	303320.88	147048.89
69	673+43.44	37.95' RT	647.20	303325.37	147050.42
70	673+47.58	39.33' RT	647.12	303329.51	147051.83
71	673+51.69	40.00' RT	647.08	303333.61	147052.52
72	672+98.38	52.54' RT	647.81	303280.22	147064.72
73	672+98.92	49.20' RT	647.32	303280.79	147061.39
74	673+01.59	43.20' RT	647.35	303283.49	147055.40
75	673+03.48	40.79' RT	647.61	303285.40	147053.01
76	673+05.74	38.70' RT	647.39	303287.67	147050.92
77	673+11.72	35.48' RT	647.45	303293.67	147047.75
78	673+17.14	34.51' RT	647.98	303299.09	147046.81
79	673+20.72	34.50' RT	647.98	303302.68	147046.82
80	673+26.69	35.03' RT	647.44	303308.64	147047.39
81	673+46.79	41.70' RT	647.54	303328.70	147054.19
82	673+51.69	42.50' RT	647.50	303333.60	147055.02
83	673+01.59	49.20' RT	647.36	303283.45	147061.40
84	673+05.76	43.20' RT	647.54	303287.67	147055.43
85	673+05.80	49.20' RT	647.57	303287.66	147061.43
86	673+05.82	54.23' RT	647.80	303287.66	147066.46
87	673+05.85	59.23' RT	647.85	303287.65	147071.46
88	673+11.74	38.66' RT	647.48	303293.67	147050.93
89	673+11.76	43.20' RT	647.63	303293.67	147055.47

N 20TH STREET NE					
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING
90	673+11.80	49.20' RT	647.66	303293.66	147061.47
91	673+11.82	54.20' RT	647.86	303293.65	147066.47
92	673+11.85	59.20' RT	647.88	303293.65	147071.47
93	673+16.69	43.20' RT	647.58	303298.59	147055.50
94	673+16.69	49.20' RT	647.64	303298.56	147061.50
95	673+21.69	43.20' RT	647.56	303303.59	147055.53
96	673+21.69	49.20' RT	647.65	303303.56	147061.53
97	673+26.69	43.20' RT	647.51	303308.59	147055.56
98	673+26.69	49.20' RT	647.60	303308.56	147061.56
99	673+31.69	43.20' RT	647.46	303313.59	147055.59
100	673+31.69	49.20' RT	647.55	303313.56	147061.59
101	673+36.69	43.20' RT	647.41	303318.59	147055.62
102	673+36.69	49.20' RT	647.50	303318.55	147061.62
103	673+41.69	43.20' RT	647.36	303323.59	147055.66
104	673+41.69	49.20' RT	647.45	303323.55	147061.66
105	673+46.69	43.20' RT	647.56	303328.59	147055.69
106	673+46.69	49.20' RT	647.65	303328.55	147061.69
107	673+42.05	40.12' RT	647.14	303323.97	147052.58
108	673+03.59	49.20' RT	647.46	303285.45	147061.42

LEGEND

- XX 2X.XX — POINT NUMBER/ELEVATION
- PED — CONCRETE CURB PEDESTRIAN
- SW4 — CONCRETE SIDEWALK 4-INCH
- SW7 — CONCRETE SIDEWALK 7-INCH
- 2 — CURB RAMP TYPE 2
- LL — LEVEL LANDING

PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	CURB RAMPS - N 20TH STREET NE	SHEET	E



N 19TH STREET SE					
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING
115	676+26.99	40.00' RT	646.78	303608.91	147054.26
116	676+31.09	39.34' RT	646.76	303613.01	147053.63
117	676+36.24	37.63' RT	646.74	303618.17	147051.95
118	676+39.76	36.46' RT	646.74	303621.70	147050.80
119	676+44.26	34.96' RT	646.76	303626.21	147049.34
120	676+48.76	33.47' RT	646.78	303630.72	147047.87
121	676+50.57	32.87' RT	646.79	303632.53	147047.28
122	676+55.93	32.00' RT	646.78	303637.89	147046.45
123	676+60.93	32.00' RT	646.74	303642.89	147046.48
124	676+67.39	32.97' RT	646.68	303649.35	147047.49
125	676+69.35	33.67' RT	646.66	303651.30	147048.21
126	676+74.16	36.42' RT	646.60	303656.09	147050.98
127	676+76.48	38.44' RT	646.56	303658.41	147053.02
128	676+79.23	41.80' RT	646.51	303661.14	147056.39
129	676+81.25	45.58' RT	646.45	303663.13	147060.19
130	676+82.25	48.57' RT	646.44	303664.11	147063.18
131	676+82.93	54.00' RT	646.42	303664.76	147068.61
132	676+26.99	42.50' RT	647.20	303608.89	147056.76
133	676+31.88	41.71' RT	647.18	303613.78	147056.00
134	676+66.65	35.36' RT	646.60	303648.60	147049.87
135	676+72.65	38.42' RT	646.52	303654.58	147052.97
136	676+75.23	40.75' RT	646.72	303657.14	147055.32
137	676+77.15	43.18' RT	646.43	303659.05	147057.76
138	676+79.82	49.18' RT	646.36	303661.68	147063.78
139	676+80.34	52.14' RT	646.85	303662.18	147066.74
140	676+66.65	38.42' RT	646.61	303648.58	147052.93
141	676+77.15	49.18' RT	646.40	303659.01	147063.76
142	676+26.99	49.18' RT	647.31	303608.85	147063.45
143	676+31.99	43.18' RT	647.20	303613.89	147057.48
144	676+31.99	49.18' RT	647.29	303613.85	147063.48
145	676+36.99	43.18' RT	647.23	303618.89	147057.51
146	676+36.99	49.18' RT	647.32	303618.85	147063.51
147	676+41.99	43.18' RT	647.26	303623.89	147057.54
148	676+41.99	49.18' RT	647.35	303623.85	147063.54
149	676+46.99	43.18' RT	647.29	303628.89	147057.57

N 19TH STREET SE					
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING
150	676+46.99	49.18' RT	647.38	303628.85	147063.57
151	676+51.99	43.18' RT	647.32	303633.89	147057.61
152	676+51.99	49.18' RT	647.41	303633.85	147063.61
153	676+56.99	43.18' RT	647.20	303638.89	147057.64
154	676+56.99	49.18' RT	647.29	303638.85	147063.64
155	676+61.99	43.18' RT	646.98	303643.89	147057.67
156	676+61.99	49.18' RT	647.04	303643.85	147063.67
157	676+66.65	43.18' RT	646.78	303648.55	147057.70
158	676+66.65	49.18' RT	646.81	303648.51	147063.70
159	676+67.48	54.58' RT	647.03	303649.30	147069.10
160	676+72.65	43.18' RT	646.69	303654.55	147057.74
161	676+72.65	49.18' RT	646.72	303654.51	147063.74
162	676+73.34	53.68' RT	646.94	303655.17	147068.23
163	676+75.15	49.18' RT	646.52	303657.01	147063.75

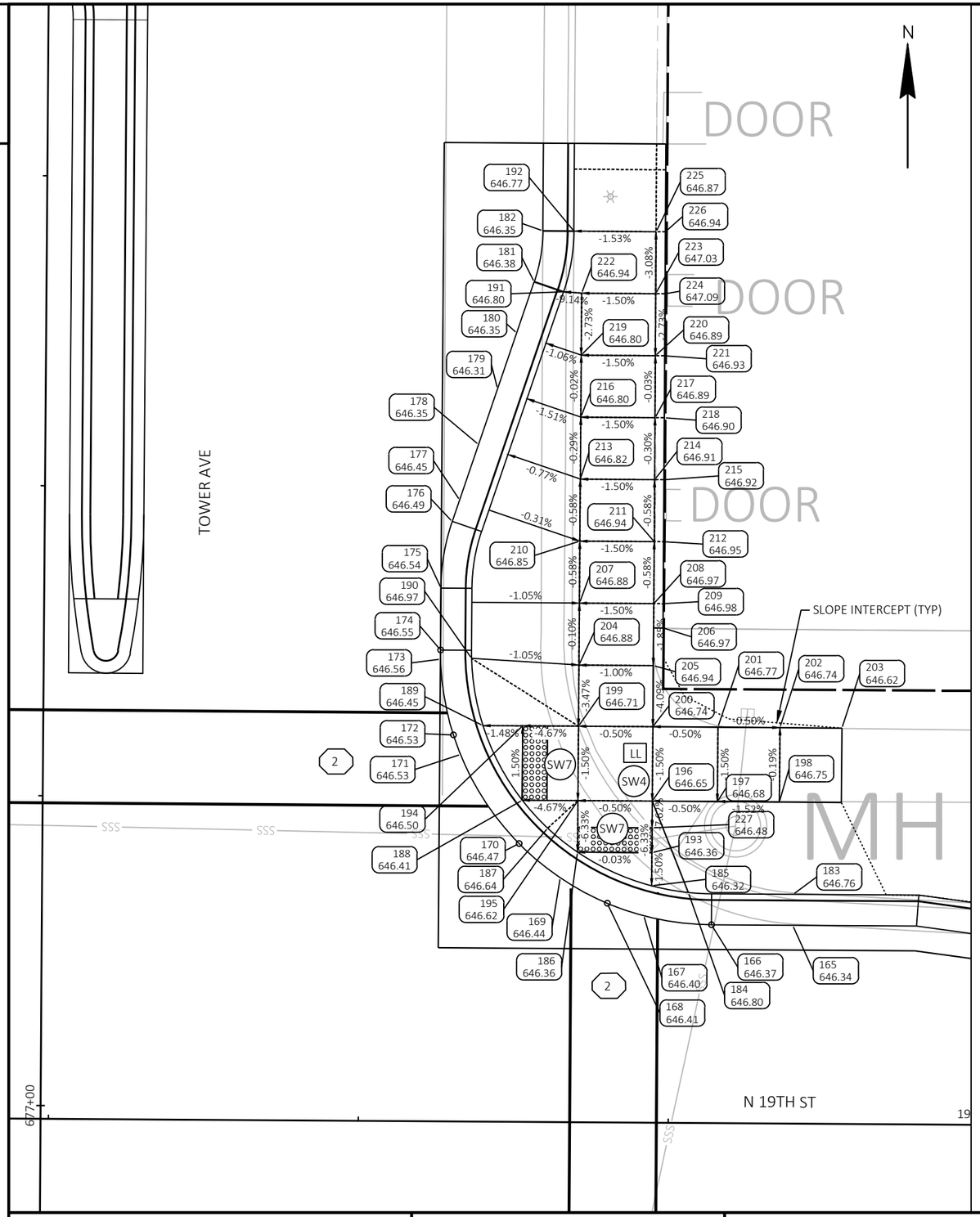
LEGEND

- XX / 2X.XX — POINT NUMBER/ELEVATION
- PED — CONCRETE CURB PEDESTRIAN
- SW4 — CONCRETE SIDEWALK 4-INCH
- SW7 — CONCRETE SIDEWALK 7-INCH
- 2 — CURB RAMP TYPE 2
- LL — LEVEL LANDING

PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	CURB RAMPS - N 19TH STREET SE	SHEET	E

FILE NAME : X:\PT\S\SUPER\181558\5-FINAL-DSGN\C3D- TOWER AVE\SHEETS\021301_CR.DWG
LAYOUT NAME - 03 - N 19TH ST SE

PLOT DATE : 4/30/2025 9:27 AM PLOT BY : ANNIE JEROME PLOT NAME : PLOT SCALE : 1 IN:10 FT



N 19TH STREET NE					
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING
165	677+14.98	60.57' RT	646.34	303696.70	147075.40
166	677+14.99	54.02' RT	646.37	303696.75	147068.84
167	677+15.67	48.56' RT	646.40	303697.48	147063.39
168	677+16.65	45.60' RT	646.41	303698.48	147060.43
169	677+18.68	41.79' RT	646.44	303700.54	147056.64
170	677+21.42	38.45' RT	646.47	303703.30	147053.32
171	677+28.56	33.68' RT	646.53	303710.48	147048.60
172	677+30.14	33.09' RT	646.53	303712.06	147048.03
173	677+36.24	32.00' RT	646.56	303718.17	147046.98
174	677+36.99	32.00' RT	646.55	303718.92	147046.99
175	677+41.99	32.00' RT	646.54	303723.92	147047.02
176	677+47.36	32.87' RT	646.49	303729.29	147047.93
177	677+49.10	33.45' RT	646.45	303731.02	147048.53
178	677+53.59	34.95' RT	646.35	303735.50	147050.06
179	677+58.10	36.45' RT	646.31	303740.00	147051.59
180	677+62.60	37.95' RT	646.35	303744.48	147053.13
181	677+66.74	39.33' RT	646.38	303748.62	147054.54
182	677+70.85	40.00' RT	646.35	303752.72	147055.24
183	677+17.49	60.60' RT	646.76	303699.21	147075.44
184	677+17.58	52.13' RT	646.80	303699.36	147066.98
185	677+18.09	49.18' RT	646.32	303699.90	147064.02
186	677+20.76	43.18' RT	646.36	303702.61	147058.04
187	677+22.68	40.75' RT	646.64	303704.54	147055.63
188	677+24.92	38.68' RT	646.41	303706.80	147053.58
189	677+30.92	35.47' RT	646.45	303712.82	147050.41
190	677+36.33	34.51' RT	646.97	303718.24	147049.49
191	677+65.95	41.70' RT	646.80	303747.81	147056.90
192	677+70.86	42.52' RT	646.77	303752.71	147057.75
193	677+20.76	49.18' RT	646.36	303702.57	147064.04
194	677+30.92	38.68' RT	646.50	303712.80	147053.62
195	677+24.92	43.18' RT	646.62	303706.77	147058.07
196	677+24.93	49.18' RT	646.65	303706.74	147064.07
197	677+24.93	54.43' RT	646.68	303706.70	147069.32
198	677+24.93	59.43' RT	646.75	303706.66	147074.32
199	677+30.92	43.18' RT	646.71	303712.77	147058.12
200	677+30.93	49.18' RT	646.74	303712.73	147064.12
201	677+30.93	54.43' RT	646.77	303712.69	147069.37
202	677+30.93	59.43' RT	646.74	303712.66	147074.37
203	677+30.93	64.43' RT	646.62	303712.62	147079.37
204	677+35.85	43.18' RT	646.88	303717.70	147058.16

N 19TH STREET NE					
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING
205	677+35.85	49.18' RT	646.94	303717.66	147064.16
206	677+38.90	49.94' RT	646.97	303720.70	147064.94
207	677+40.85	43.18' RT	646.88	303722.70	147058.19
208	677+40.85	49.18' RT	646.97	303722.66	147064.19
209	677+40.85	49.94' RT	646.98	303722.65	147064.95
210	677+45.85	43.18' RT	646.85	303727.70	147058.23
211	677+45.85	49.18' RT	646.94	303727.66	147064.23
212	677+45.85	49.93' RT	646.95	303727.65	147064.98
213	677+50.85	43.18' RT	646.82	303732.70	147058.27
214	677+50.85	49.17' RT	646.91	303732.66	147064.26
215	677+50.85	49.92' RT	646.92	303732.65	147065.01
216	677+55.85	43.18' RT	646.80	303737.70	147058.30
217	677+55.85	49.17' RT	646.89	303737.66	147064.29
218	677+55.85	49.92' RT	646.90	303737.65	147065.04
219	677+60.85	43.18' RT	646.80	303742.70	147058.34
220	677+60.85	49.16' RT	646.89	303742.66	147064.32
221	677+60.85	49.91' RT	646.93	303742.65	147065.07
222	677+65.85	43.18' RT	646.94	303747.70	147058.38
223	677+65.85	49.15' RT	647.03	303747.66	147064.35
224	677+65.85	49.90' RT	647.09	303747.65	147065.10
225	677+70.85	49.14' RT	646.87	303752.66	147064.38
226	677+70.85	49.89' RT	646.94	303752.65	147065.13
227	677+22.76	49.18' RT	646.48	303704.57	147064.06

LEGEND

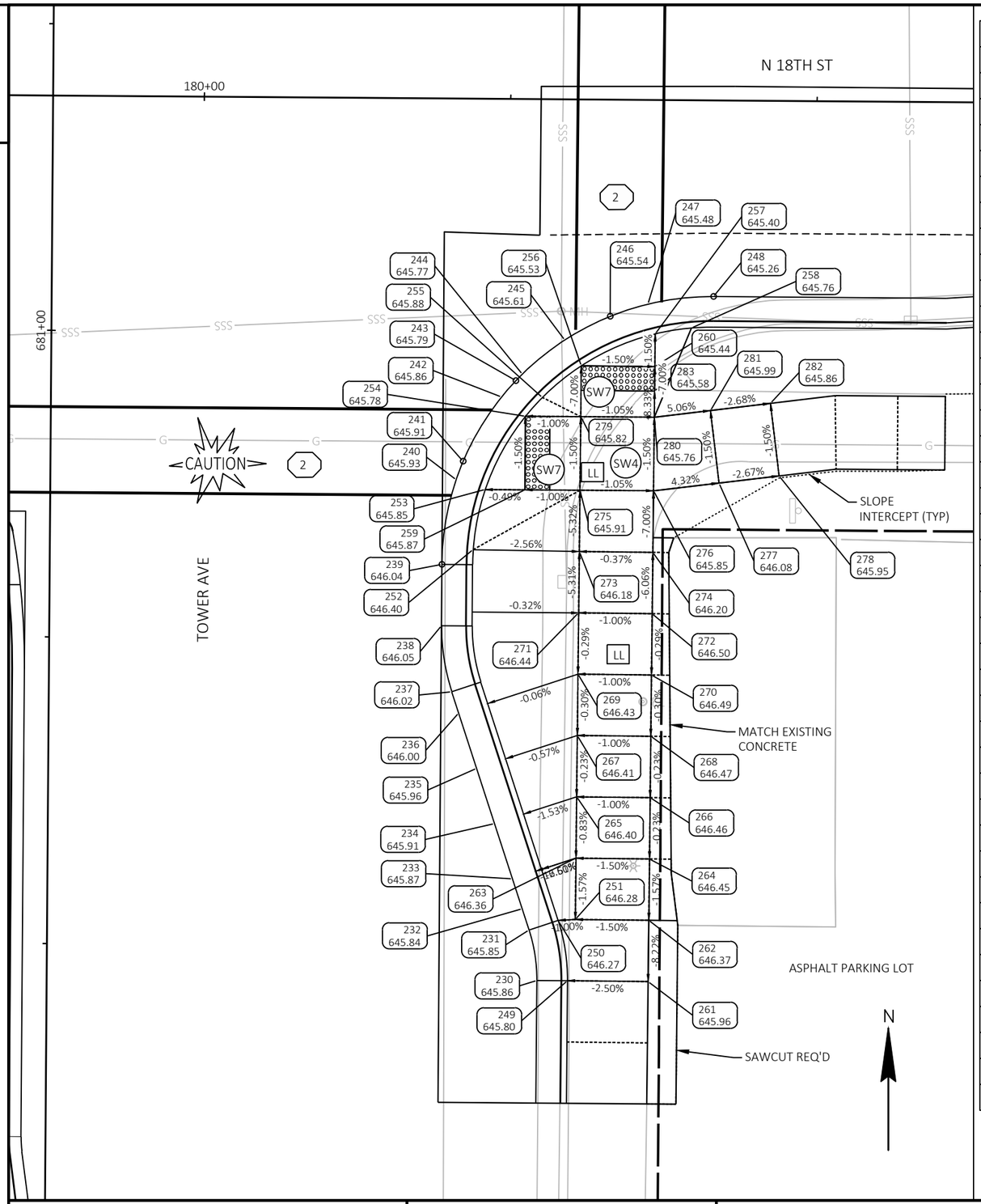
- XX / 2X.XX — POINT NUMBER/ELEVATION
- PED — CONCRETE CURB PEDESTRIAN
- SW4 — CONCRETE SIDEWALK 4-INCH
- SW7 — CONCRETE SIDEWALK 7-INCH
- 2 — CURB RAMP TYPE 2
- LL — LEVEL LANDING

PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	CURB RAMPS - N 19TH STREET NE	SHEET E

FILE NAME : X:\PT\S\SUPER\181558\5-FINAL-DSGN\C3D- TOWER AVE\SHEETS\021301_CR.DWG
LAYOUT NAME - 04 - N 19TH ST NE

PLOT DATE : 4/30/2025 9:27 AM PLOT BY : ANNIE JEROME PLOT NAME : PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 42



N 18TH STREET SE					
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING
230	680+47.28	40.00' RT	645.86	304029.14	147057.28
231	680+51.39	39.33' RT	645.85	304033.26	147056.64
232	680+53.12	38.76' RT	645.84	304034.99	147056.08
233	680+55.55	37.95' RT	645.87	304037.43	147055.28
234	680+60.05	36.45' RT	645.91	304041.94	147053.82
235	680+64.54	34.95' RT	645.96	304046.44	147052.35
236	680+69.04	33.45' RT	646.00	304050.95	147050.89
237	680+70.77	32.87' RT	646.02	304052.69	147050.32
238	680+76.15	32.00' RT	646.05	304058.07	147049.49
239	680+81.15	32.00' RT	646.04	304063.07	147049.53
240	680+88.06	33.12' RT	645.93	304069.98	147050.69
241	680+89.57	33.67' RT	645.91	304071.48	147051.26
242	680+94.83	36.77' RT	645.86	304076.72	147054.40
243	680+96.17	37.92' RT	645.79	304078.05	147055.56
244	680+96.71	38.44' RT	645.77	304078.58	147056.09
245	680+99.51	41.88' RT	645.61	304081.36	147059.55
246	681+01.47	45.58' RT	645.54	304083.29	147063.26
247	681+02.49	48.66' RT	645.48	304084.29	147066.35
248	681+03.15	54.00' RT	645.26	304084.91	147071.69
249	680+47.28	42.50' RT	645.80	304029.13	147059.78
250	680+52.18	41.70' RT	646.27	304034.03	147059.02
251	680+52.28	43.10' RT	646.28	304034.12	147060.42
252	680+82.37	34.54' RT	646.40	304064.27	147052.08
253	680+87.28	35.49' RT	645.85	304069.17	147053.06
254	680+93.28	38.73' RT	645.78	304075.15	147056.35
255	680+94.82	40.10' RT	645.88	304076.68	147057.73
256	680+97.43	43.26' RT	645.53	304079.26	147060.91
257	681+00.07	49.27' RT	645.40	304081.86	147066.94
258	681+00.57	52.23' RT	645.76	304082.34	147069.90
259	680+87.28	38.73' RT	645.87	304069.15	147056.30
260	680+97.41	49.26' RT	645.44	304079.20	147066.91
261	680+47.26	49.08' RT	645.96	304029.05	147066.36
262	680+52.26	49.10' RT	646.37	304034.05	147066.42
263	680+57.28	43.12' RT	646.36	304039.12	147060.47
264	680+57.26	49.12' RT	646.45	304039.05	147066.47
265	680+62.28	43.14' RT	646.40	304044.12	147060.53
266	680+62.26	49.14' RT	646.46	304044.05	147066.53
267	680+67.28	43.16' RT	646.41	304049.12	147060.58
268	680+67.26	49.16' RT	646.47	304049.05	147066.58
269	680+72.28	43.17' RT	646.43	304054.12	147060.64

N 18TH STREET SE					
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING
270	680+72.26	49.17' RT	646.49	304054.05	147066.63
271	680+77.28	43.19' RT	646.44	304059.12	147060.69
272	680+77.26	49.19' RT	646.50	304059.05	147066.69
273	680+82.28	43.21' RT	646.18	304064.12	147060.74
274	680+82.26	49.21' RT	646.20	304064.05	147066.74
275	680+87.28	43.23' RT	645.91	304069.12	147060.80
276	680+87.28	49.23' RT	645.85	304069.07	147066.80
277	680+87.95	54.57' RT	646.08	304069.70	147072.15
278	680+88.56	59.47' RT	645.95	304070.28	147077.05
279	680+93.28	43.25' RT	645.82	304075.12	147060.86
280	680+93.28	49.25' RT	645.76	304075.07	147066.86
281	680+93.85	53.83' RT	645.99	304075.61	147071.45
282	680+94.48	58.72' RT	645.86	304076.20	147076.34
283	680+95.41	49.25' RT	645.58	304077.20	147066.89

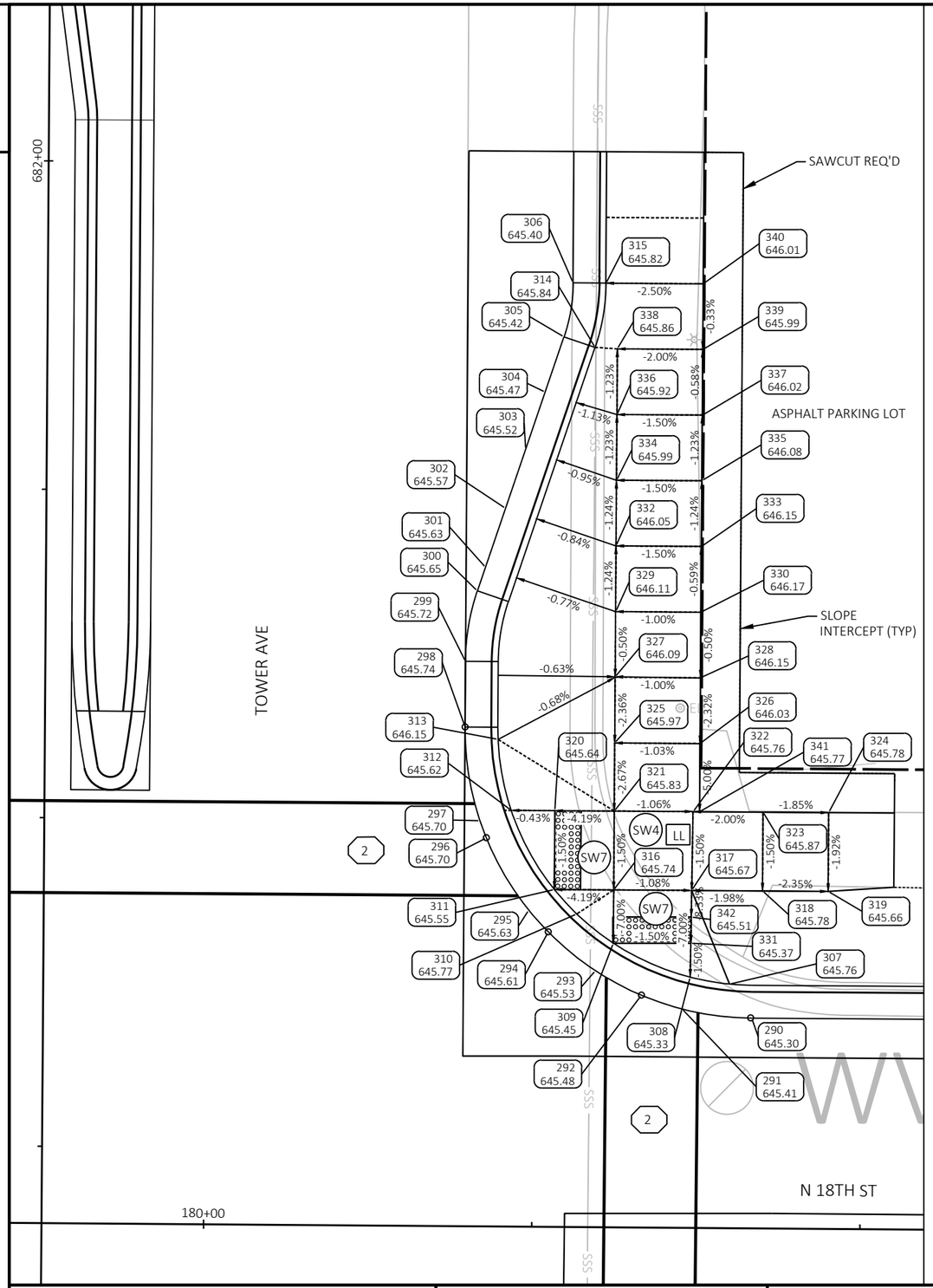
LEGEND

- XX / 2X.XX — POINT NUMBER/ELEVATION
- PED — CONCRETE CURB PEDESTRIAN
- SW4 — CONCRETE SIDEWALK 4-INCH
- SW7 — CONCRETE SIDEWALK 7-INCH
- 2 — CURB RAMP TYPE 2
- LL — LEVEL LANDING

PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	CURB RAMPS - N 18TH STREET SE	SHEET	E

FILE NAME : X:\PT\S\SUPER\181558\5-FINAL-DSGN\C3D- TOWER AVE\SHEETS\021301_CR.DWG
LAYOUT NAME - 05 - N 18TH ST SE

PLOT DATE : 4/30/2025 9:27 AM PLOT BY : ANNIE JEROME PLOT NAME : PLOT SCALE : 1 IN:10 FT



N 18TH STREET NE					
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING
290	681+35.12	53.99' RT	645.30	304116.91	147071.91
291	681+35.77	48.67' RT	645.41	304117.60	147066.60
292	681+36.79	45.57' RT	645.48	304118.64	147063.51
293	681+38.65	42.05' RT	645.53	304120.52	147060.00
294	681+41.56	38.44' RT	645.61	304123.46	147056.41
295	681+43.22	36.94' RT	645.63	304125.13	147054.92
296	681+48.70	33.67' RT	645.70	304130.63	147051.69
297	681+49.99	33.19' RT	645.70	304131.92	147051.21
298	681+57.12	32.00' RT	645.74	304139.05	147050.07
299	681+62.12	32.00' RT	645.72	304144.05	147050.11
300	681+67.49	32.87' RT	645.65	304149.42	147051.02
301	681+69.30	33.47' RT	645.63	304151.22	147051.63
302	681+73.80	34.97' RT	645.57	304155.71	147053.16
303	681+78.30	36.47' RT	645.52	304160.20	147054.69
304	681+82.66	37.93' RT	645.47	304164.56	147056.18
305	681+86.87	39.33' RT	645.42	304168.76	147057.61
306	681+90.98	40.00' RT	645.40	304172.87	147058.30
307	681+37.69	52.28' RT	645.76	304119.49	147070.22
308	681+38.20	49.27' RT	645.33	304120.02	147067.22
309	681+40.74	43.41' RT	645.45	304122.61	147061.37
310	681+42.95	40.60' RT	645.77	304124.83	147058.58
311	681+44.80	38.88' RT	645.55	304126.69	147056.87
312	681+50.80	35.55' RT	645.62	304132.71	147053.58
313	681+56.19	34.52' RT	646.15	304138.12	147052.59
314	681+86.08	41.70' RT	645.84	304167.95	147059.97
315	681+90.98	42.50' RT	645.82	304172.85	147060.80
316	681+44.80	43.41' RT	645.74	304126.66	147061.40
317	681+44.80	49.34' RT	645.67	304126.62	147067.33
318	681+44.80	54.74' RT	645.78	304126.58	147072.73
319	681+44.80	59.74' RT	645.66	304126.55	147077.73
320	681+50.80	38.88' RT	645.64	304132.69	147056.91
321	681+50.80	43.41' RT	645.83	304132.66	147061.44
322	681+50.80	49.41' RT	645.76	304132.62	147067.44
323	681+50.80	54.74' RT	645.87	304132.58	147072.77
324	681+50.80	59.74' RT	645.78	304132.55	147077.77
325	681+55.98	43.41' RT	645.97	304137.85	147061.47
326	681+55.98	49.91' RT	646.03	304137.80	147067.97
327	681+61.02	43.41' RT	646.09	304142.88	147061.51
328	681+60.98	49.91' RT	646.15	304142.80	147068.01
329	681+65.98	43.41' RT	646.11	304147.85	147061.54

N 18TH STREET NE					
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING
330	681+65.98	49.91' RT	646.17	304147.80	147068.04
331	681+40.78	49.30' RT	645.37	304122.60	147067.26
332	681+70.98	43.41' RT	646.05	304152.85	147061.57
333	681+70.98	49.91' RT	646.15	304152.80	147068.07
334	681+75.98	43.41' RT	645.99	304157.85	147061.61
335	681+75.99	49.91' RT	646.08	304157.80	147068.11
336	681+80.98	43.41' RT	645.92	304162.85	147061.64
337	681+80.98	49.91' RT	646.02	304162.80	147068.14
338	681+85.98	43.41' RT	645.86	304167.85	147061.68
339	681+85.98	49.91' RT	645.99	304167.80	147068.18
340	681+90.98	49.91' RT	646.01	304172.80	147068.21
341	681+50.80	49.91' RT	645.77	304132.62	147067.94
342	681+42.78	49.32' RT	645.51	304124.60	147067.30

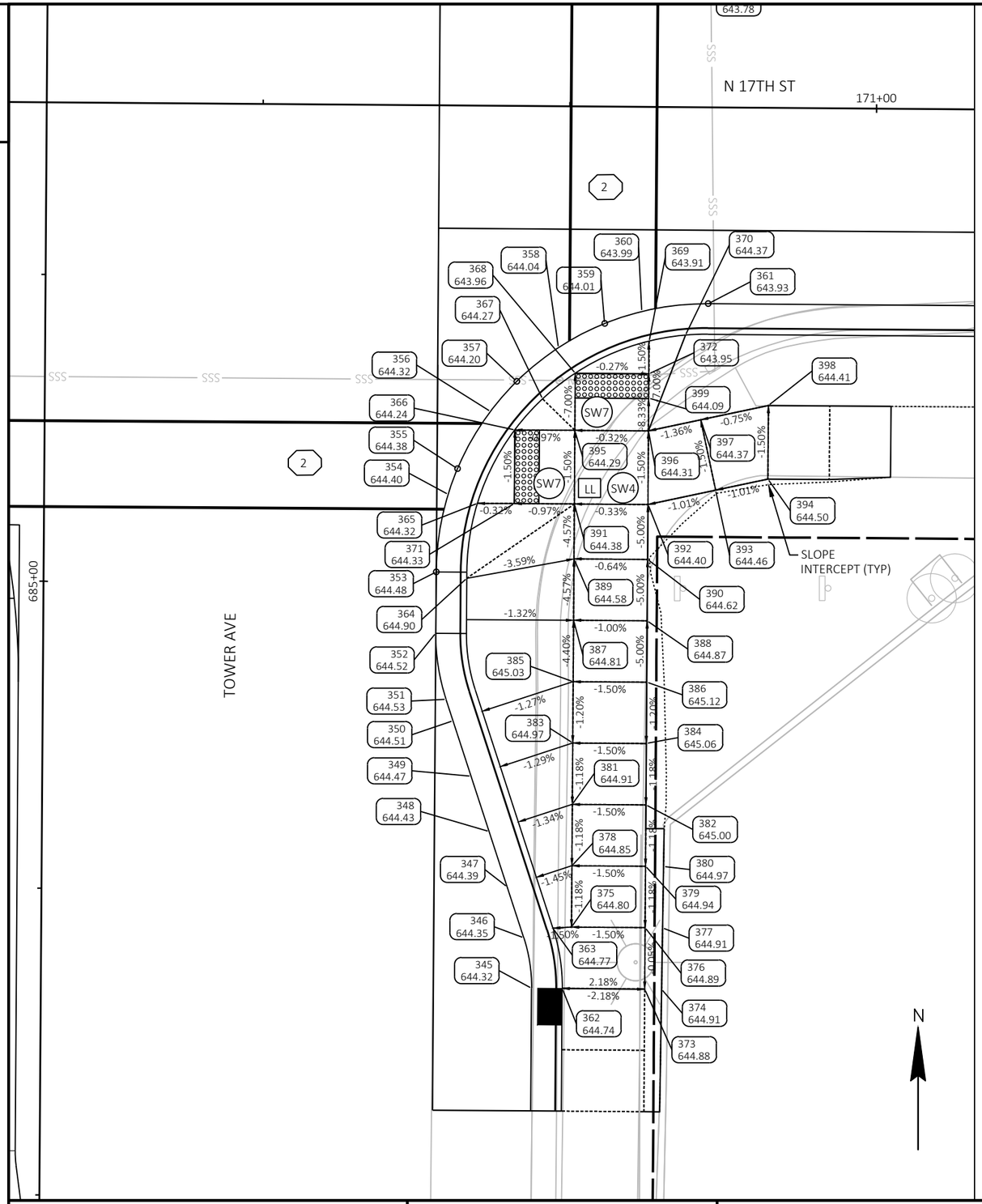
LEGEND

- XX / 2X.XX — POINT NUMBER/ELEVATION
- PED — CONCRETE CURB PEDESTRIAN
- SW4 — CONCRETE SIDEWALK 4-INCH
- SW7 — CONCRETE SIDEWALK 7-INCH
- 2 — CURB RAMP TYPE 2
- LL — LEVEL LANDING

PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	CURB RAMPS - N 18TH STREET NE	SHEET E

FILE NAME : X:\PT\S\SUPER\181558\5-FINAL-DSGN\C3D- TOWER AVE\SHEETS\021301_CR.DWG
LAYOUT NAME - 06 - N 18TH ST NE

PLOT DATE : 4/30/2025 9:27 AM PLOT BY : ANNIE JEROME PLOT NAME : PLOT SCALE : 1 IN:10 FT



N 17TH STREET SE					
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING
345	684+67.11	40.00' RT	644.32	304448.99	147060.17
346	684+71.22	39.33' RT	644.35	304453.10	147059.53
347	684+75.36	37.96' RT	644.39	304457.25	147058.18
348	684+79.86	36.46' RT	644.43	304461.76	147056.71
349	684+84.36	34.96' RT	644.47	304466.27	147055.24
350	684+88.86	33.46' RT	644.51	304470.78	147053.78
351	684+90.61	32.87' RT	644.53	304472.53	147053.20
352	684+95.98	32.00' RT	644.52	304477.91	147052.37
353	685+00.98	32.00' RT	644.48	304482.91	147052.40
354	685+07.31	32.93' RT	644.40	304489.24	147053.38
355	685+09.41	33.68' RT	644.38	304491.32	147054.14
356	685+14.08	36.32' RT	644.32	304495.98	147056.82
357	685+16.54	38.45' RT	644.20	304498.43	147058.96
358	685+19.32	41.85' RT	644.04	304501.18	147062.37
359	685+21.31	45.59' RT	644.01	304503.15	147066.13
360	685+22.31	48.62' RT	643.99	304504.13	147069.16
361	685+22.98	54.02' RT	643.93	304504.76	147074.57
362	684+67.11	42.50' RT	644.74	304448.97	147062.67
363	684+72.01	41.71' RT	644.77	304453.88	147061.91
364	685+00.48	34.50' RT	644.90	304482.40	147054.90
365	685+06.59	35.32' RT	644.32	304488.50	147055.76
366	685+12.59	38.33' RT	644.24	304494.48	147058.81
367	685+15.13	40.58' RT	644.27	304497.00	147061.08
368	685+17.24	43.23' RT	643.96	304499.09	147063.74
369	685+19.89	49.23' RT	643.91	304501.70	147069.76
370	685+20.40	52.19' RT	644.37	304502.19	147072.72
371	685+06.59	38.33' RT	644.33	304488.48	147058.77
372	685+17.23	49.23' RT	643.95	304499.04	147069.74
373	684+67.09	49.22' RT	644.88	304448.91	147069.40
374	684+67.10	50.60' RT	644.91	304448.91	147070.77
375	684+72.11	43.22' RT	644.80	304453.97	147063.43
376	684+72.11	49.22' RT	644.89	304453.93	147069.43
377	684+72.10	50.65' RT	644.91	304453.90	147070.86
378	684+77.11	43.22' RT	644.85	304458.97	147063.46
379	684+77.11	49.22' RT	644.94	304458.93	147069.46
380	684+77.10	50.70' RT	644.97	304458.90	147070.94
381	684+82.11	43.22' RT	644.91	304463.97	147063.50
382	684+82.11	49.22' RT	645.00	304463.93	147069.50
383	684+87.11	43.22' RT	644.97	304468.97	147063.53
384	684+87.11	49.22' RT	645.06	304468.93	147069.53

N 17TH STREET SE					
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING
385	684+92.11	43.22' RT	645.03	304473.97	147063.56
386	684+92.11	49.22' RT	645.12	304473.93	147069.56
387	684+97.11	43.22' RT	644.81	304478.97	147063.60
388	684+97.11	49.22' RT	644.87	304478.93	147069.60
389	685+02.11	43.22' RT	644.58	304483.97	147063.63
390	685+02.11	49.22' RT	644.62	304483.93	147069.63
391	685+06.59	43.22' RT	644.38	304488.45	147063.66
392	685+06.59	49.22' RT	644.40	304488.40	147069.66
393	685+07.79	54.73' RT	644.46	304489.57	147075.18
394	685+08.73	58.99' RT	644.50	304490.47	147079.44
395	685+12.59	43.22' RT	644.29	304494.45	147063.70
396	685+12.59	49.22' RT	644.31	304494.40	147069.70
397	685+13.52	53.48' RT	644.37	304495.30	147073.96
398	685+14.73	58.99' RT	644.41	304496.47	147079.49
399	685+15.23	49.22' RT	644.09	304497.04	147069.72

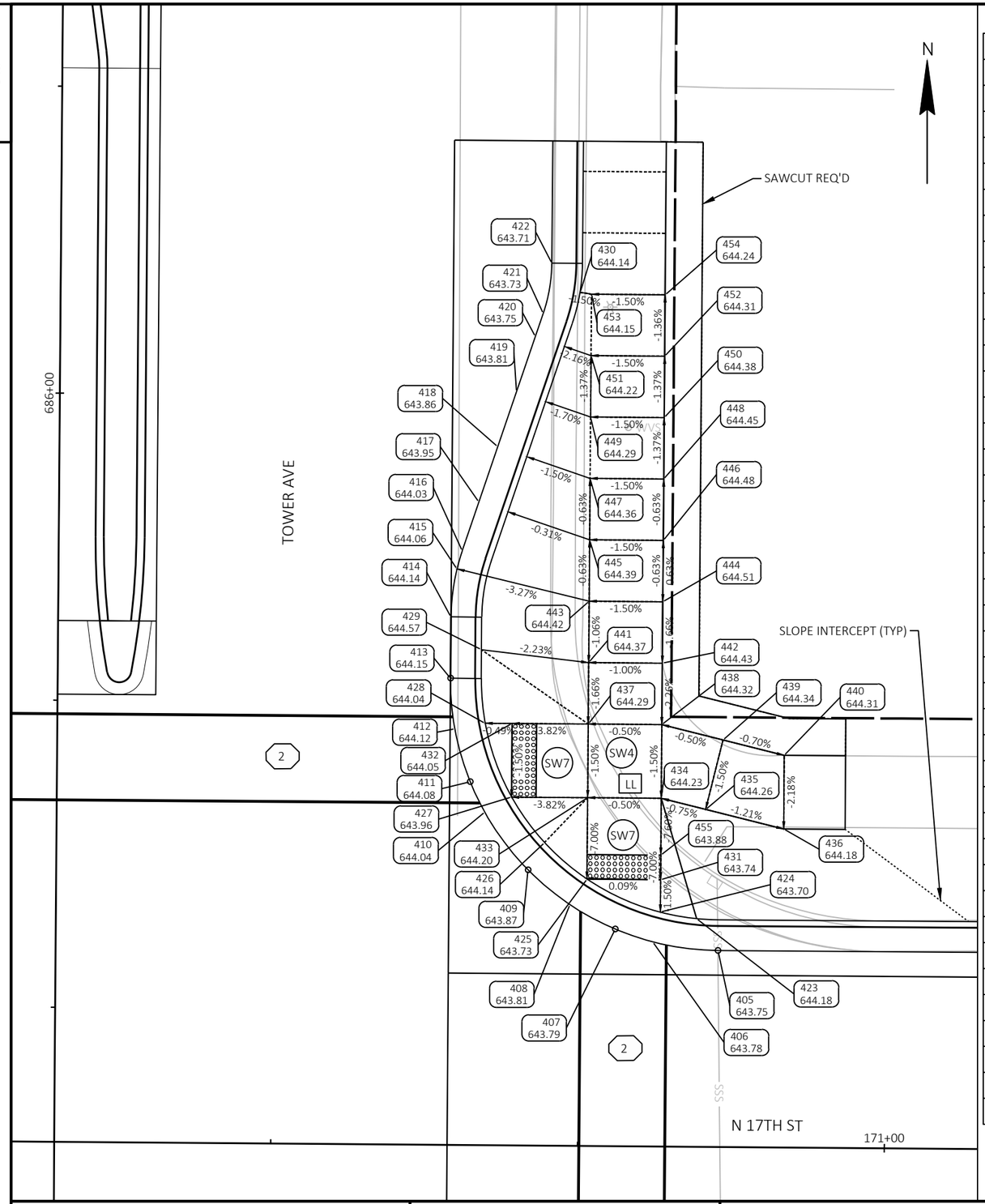
LEGEND

- XX / 2X.XX — POINT NUMBER/ELEVATION
- PED — CONCRETE CURB PEDESTRIAN
- SW4 — CONCRETE SIDEWALK 4-INCH
- SW7 — CONCRETE SIDEWALK 7-INCH
- 2 — CURB RAMP TYPE 2
- LL — LEVEL LANDING

PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	CURB RAMPS - N 17TH STREET SE	SHEET	E

FILE NAME : X:\PT\S\SUPER\181558\5-FINAL-DSGN\C3D- TOWER AVE\SHEETS\021301_CR.DWG
LAYOUT NAME - 07 - N 17TH ST SE

PLOT DATE : 4/30/2025 9:27 AM PLOT BY : ANNIE JEROME PLOT NAME : PLOT SCALE : 1 IN:10 FT



N 17TH STREET NE					
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING
405	685+55.03	53.96' RT	643.75	304536.76	147074.74
406	685+55.69	48.64' RT	643.78	304537.47	147069.42
407	685+56.71	45.58' RT	643.79	304538.50	147066.37
408	685+58.68	41.87' RT	643.81	304540.50	147062.68
409	685+61.47	38.44' RT	643.87	304543.32	147059.27
410	685+66.15	34.88' RT	644.04	304548.03	147055.74
411	685+68.61	33.67' RT	644.08	304550.50	147054.56
412	685+72.92	32.39' RT	644.12	304554.82	147053.30
413	685+77.03	32.00' RT	644.15	304558.93	147052.95
414	685+82.03	32.00' RT	644.14	304563.93	147052.99
415	685+85.94	32.46' RT	644.06	304567.84	147053.47
416	685+87.41	32.87' RT	644.03	304569.30	147053.90
417	685+91.40	34.20' RT	643.95	304573.29	147055.26
418	685+95.91	35.71' RT	643.86	304577.78	147056.80
419	686+00.40	37.21' RT	643.81	304582.26	147058.33
420	686+04.90	38.71' RT	643.75	304586.75	147059.87
421	686+06.79	39.33' RT	643.73	304588.63	147060.51
422	686+10.88	40.00' RT	643.71	304592.72	147061.21
423	685+57.61	52.21' RT	644.18	304539.36	147073.01
424	685+58.12	49.25' RT	643.70	304539.89	147070.05
425	685+60.76	43.25' RT	643.73	304542.58	147064.07
426	685+63.71	39.76' RT	644.14	304545.55	147060.60
427	685+67.39	37.05' RT	643.96	304549.25	147057.92
428	685+73.39	34.84' RT	644.04	304555.27	147055.76
429	685+79.38	34.50' RT	644.57	304561.26	147055.47
430	686+08.53	42.32' RT	644.14	304590.35	147063.51
431	685+60.76	49.25' RT	643.74	304542.53	147070.07
432	685+73.39	37.05' RT	644.05	304555.25	147057.97
433	685+67.39	43.25' RT	644.20	304549.20	147064.12
434	685+67.39	49.25' RT	644.23	304549.16	147070.12
435	685+66.51	52.87' RT	644.26	304548.25	147073.73
436	685+64.96	59.25' RT	644.18	304546.65	147080.10
437	685+73.39	43.25' RT	644.29	304555.20	147064.17
438	685+73.39	49.25' RT	644.32	304555.16	147070.17
439	685+72.17	54.24' RT	644.34	304553.90	147075.15
440	685+70.96	59.24' RT	644.31	304552.65	147080.14
441	685+78.39	43.25' RT	644.37	304560.20	147064.21
442	685+78.39	49.25' RT	644.43	304560.16	147070.21
443	685+83.39	43.25' RT	644.42	304565.20	147064.25
444	685+83.39	49.25' RT	644.51	304565.16	147070.25

N 17TH STREET NE					
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING
445	685+88.39	43.25' RT	644.39	304570.20	147064.28
446	685+88.39	49.25' RT	644.48	304570.16	147070.28
447	685+93.39	43.25' RT	644.36	304575.20	147064.32
448	685+93.39	49.25' RT	644.45	304575.16	147070.32
449	685+98.39	43.25' RT	644.29	304580.20	147064.36
450	685+98.39	49.25' RT	644.38	304580.16	147070.36
451	686+03.39	43.25' RT	644.22	304585.20	147064.40
452	686+03.39	49.25' RT	644.31	304585.16	147070.40
453	686+08.39	43.25' RT	644.15	304590.20	147064.44
454	686+08.39	49.25' RT	644.24	304590.16	147070.44
455	685+62.76	49.25' RT	643.88	304544.53	147070.09

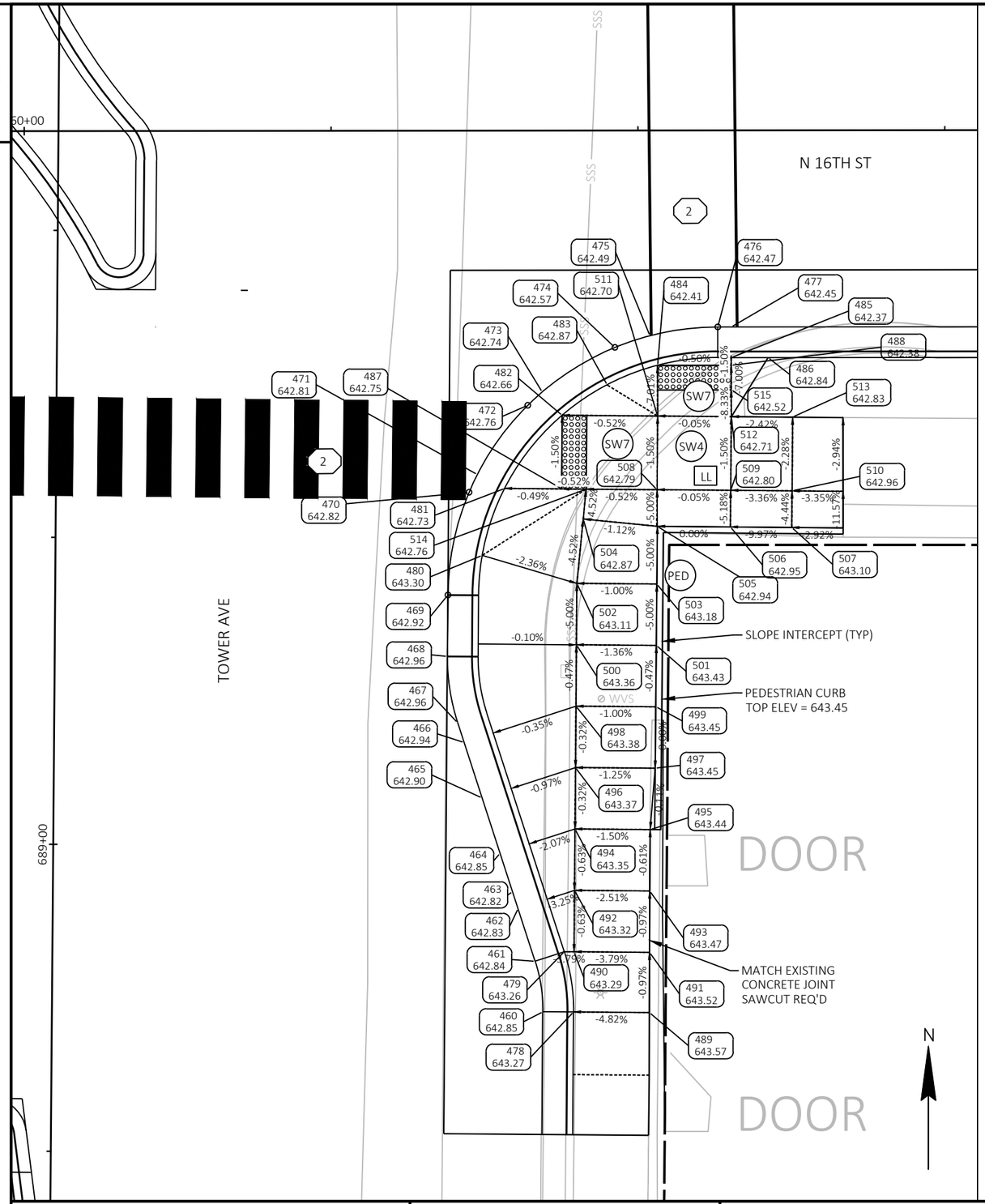
LEGEND

- XX / 2X.XX — POINT NUMBER/ELEVATION
- PED — CONCRETE CURB PEDESTRIAN
- SW4 — CONCRETE SIDEWALK 4-INCH
- SW7 — CONCRETE SIDEWALK 7-INCH
- 2 — CURB RAMP TYPE 2
- LL — LEVEL LANDING

PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	CURB RAMPS - N 17TH STREET NE	SHEET E

FILE NAME : X:\PT\S\SUPER\181558\5-FINAL-DSGN\C3D- TOWER AVE\SHEETS\021301_CR.DWG
LAYOUT NAME - 08 - N 17TH ST NE

PLOT DATE : 4/30/2025 9:27 AM PLOT BY : ANNIE JEROME PLOT NAME : PLOT SCALE : 1 IN:10 FT



N 16TH STREET SE					
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING
460	688+86.68	40.00' RT	642.85	304868.51	147063.33
461	688+90.79	39.33' RT	642.84	304872.62	147062.69
462	688+95.05	37.91' RT	642.83	304876.90	147061.30
463	688+96.42	37.46' RT	642.82	304878.27	147060.86
464	688+99.55	36.41' RT	642.85	304881.41	147059.84
465	689+04.05	34.91' RT	642.90	304885.92	147058.37
466	689+08.55	33.41' RT	642.94	304890.43	147056.91
467	689+10.17	32.87' RT	642.96	304892.05	147056.38
468	689+15.54	32.00' RT	642.96	304897.44	147055.55
469	689+20.54	32.00' RT	642.92	304902.44	147055.59
470	689+28.91	33.66' RT	642.82	304910.80	147057.31
471	689+30.37	34.32' RT	642.81	304912.25	147057.98
472	689+36.02	38.38' RT	642.76	304917.88	147062.08
473	689+37.13	39.57' RT	642.74	304918.98	147063.27
474	689+40.80	45.46' RT	642.57	304922.60	147069.19
475	689+41.78	48.30' RT	642.49	304923.56	147072.04
476	689+42.53	53.82' RT	642.47	304924.27	147077.56
477	689+42.54	54.92' RT	642.45	304924.27	147078.67
478	688+86.68	42.50' RT	643.27	304868.49	147065.83
479	688+91.58	41.70' RT	643.26	304873.40	147065.07
480	689+23.79	34.78' RT	643.30	304905.67	147058.38
481	689+29.25	36.56' RT	642.73	304911.12	147060.21
482	689+35.25	41.21' RT	642.66	304917.08	147064.90
483	689+37.75	44.85' RT	642.87	304919.55	147068.55
484	689+39.36	48.95' RT	642.41	304921.14	147072.67
485	689+40.04	54.95' RT	642.37	304921.77	147078.67
486	689+40.06	57.95' RT	642.84	304921.77	147081.67
487	689+29.25	41.20' RT	642.75	304911.08	147064.85
488	689+39.41	54.95' RT	642.38	304921.15	147078.67
489	688+86.68	48.67' RT	643.57	304868.44	147072.00
490	688+91.58	42.50' RT	643.29	304873.39	147065.86
491	688+91.58	48.65' RT	643.52	304873.34	147072.01
492	688+96.58	42.50' RT	643.32	304878.39	147065.90
493	688+96.58	48.63' RT	643.47	304878.34	147072.03
494	689+01.58	42.50' RT	643.35	304883.39	147065.94
495	689+01.58	48.63' RT	643.44	304883.34	147072.06
496	689+06.58	42.50' RT	643.37	304888.39	147065.98
497	689+06.58	49.00' RT	643.45	304888.34	147072.47
498	689+11.58	42.50' RT	643.38	304893.39	147066.02
499	689+11.58	49.00' RT	643.45	304893.34	147072.52

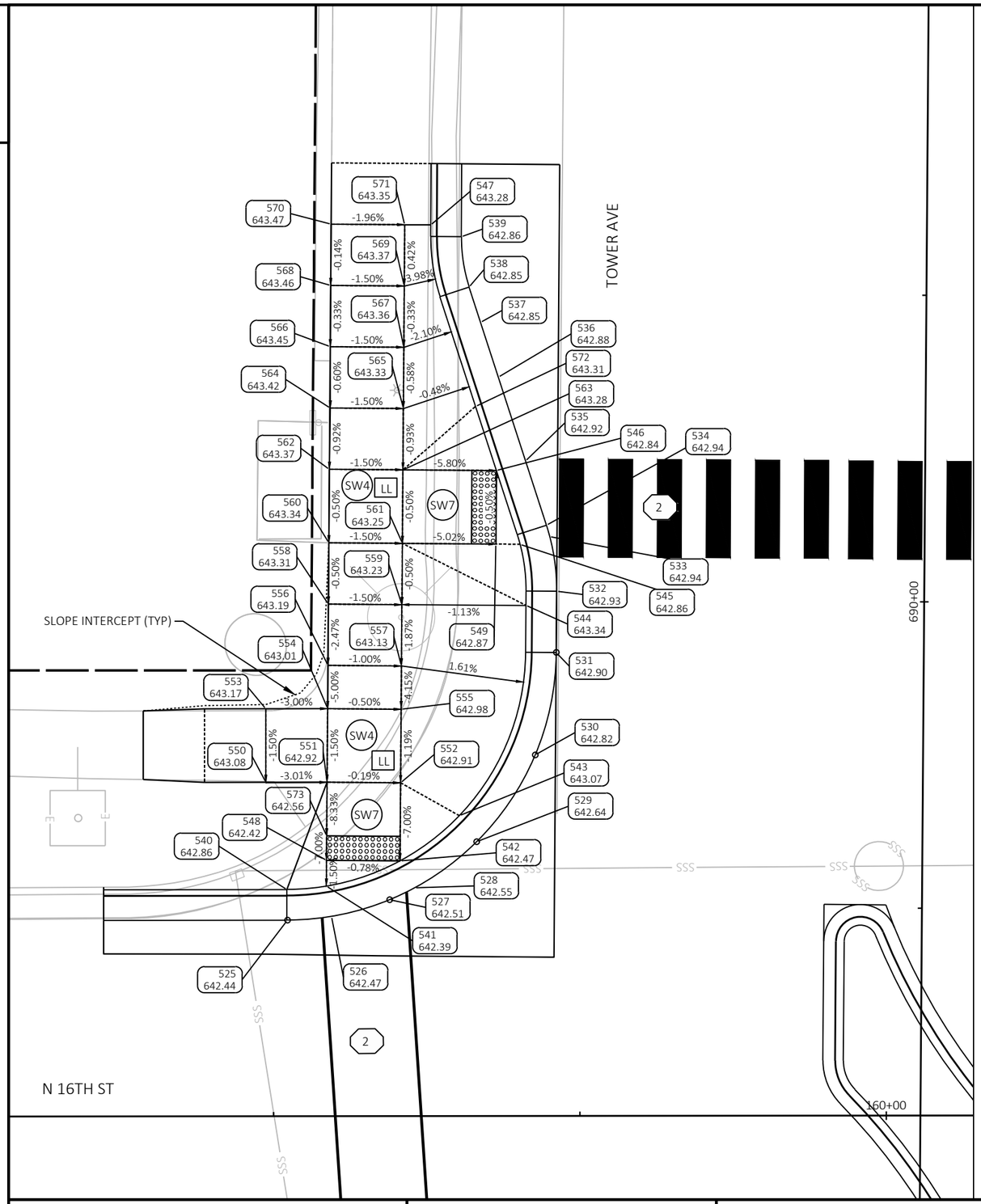
N 16TH STREET SE					
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING
500	689+16.57	42.50' RT	643.36	304898.39	147066.05
501	689+16.56	49.01' RT	643.43	304898.34	147072.57
502	689+21.57	42.50' RT	643.11	304903.39	147066.09
503	689+21.56	49.02' RT	643.18	304903.34	147072.61
504	689+26.82	42.98' RT	642.87	304908.64	147066.61
505	689+26.27	49.03' RT	642.94	304908.04	147072.66
506	689+26.26	54.98' RT	642.95	304907.99	147078.60
507	689+26.25	59.98' RT	643.10	304907.94	147083.60
508	689+29.24	48.98' RT	642.79	304911.02	147072.63
509	689+29.24	54.98' RT	642.80	304910.97	147078.63
510	689+29.23	59.98' RT	642.96	304910.93	147083.63
511	689+35.24	48.99' RT	642.70	304917.01	147072.68
512	689+35.24	54.99' RT	642.71	304916.97	147078.68
513	689+35.23	59.99' RT	642.83	304916.93	147083.68
514	689+29.24	43.20' RT	642.76	304911.06	147066.85
515	689+37.41	54.97' RT	642.52	304919.15	147078.67

LEGEND

- XX / 2X.XX — POINT NUMBER/ELEVATION
- PED — CONCRETE CURB PEDESTRIAN
- SW4 — CONCRETE SIDEWALK 4-INCH
- SW7 — CONCRETE SIDEWALK 7-INCH
- 2 — CURB RAMP TYPE 2
- LL — LEVEL LANDING

PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	CURB RAMPS - N 16TH STREET SE	SHEET	E

FILE NAME : X:\PT\S\SUPER\181558\5-FINAL-DSGN\C3D- TOWER AVE\SHEETS\021301_CR.DWG
LAYOUT NAME - 09 - N 16TH ST SE
PLOT DATE : 4/30/2025 9:45 AM PLOT BY : ANNIE JEROME PLOT NAME : PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 42



N 16TH STREET NW					
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING
525	689+73.64	51.77' LT	642.44	304956.16	146972.20
526	689+73.97	48.19' LT	642.47	304956.46	146975.79
527	689+75.37	43.45' LT	642.51	304957.82	146980.54
528	689+76.35	41.42' LT	642.55	304958.79	146982.58
529	689+80.15	36.38' LT	642.64	304962.55	146987.64
530	689+87.26	31.66' LT	642.82	304969.63	146992.42
531	689+95.64	30.00' LT	642.90	304977.99	146994.14
532	690+00.64	30.00' LT	642.93	304982.99	146994.17
533	690+05.11	30.60' LT	642.94	304987.47	146993.61
534	690+06.02	30.87' LT	642.94	304988.38	146993.34
535	690+11.24	32.61' LT	642.92	304993.61	146991.64
536	690+18.06	34.89' LT	642.88	305000.45	146989.41
537	690+22.53	36.38' LT	642.85	305004.93	146987.96
538	690+25.40	37.33' LT	642.85	305007.80	146987.02
539	690+29.51	38.00' LT	642.86	305011.92	146986.39
540	689+76.14	51.84' LT	642.86	304958.66	146972.16
541	689+76.44	48.62' LT	642.39	304958.93	146975.38
542	689+78.54	42.62' LT	642.47	304960.99	146981.39
543	689+82.27	37.81' LT	643.07	304964.68	146986.23
544	689+99.48	32.50' LT	643.34	304981.85	146991.67
545	690+04.45	33.01' LT	642.86	304986.83	146991.19
546	690+10.45	34.99' LT	642.84	304992.84	146989.26
547	690+30.45	40.50' LT	643.28	305012.88	146983.89
548	689+78.54	48.62' LT	642.42	304961.04	146975.39
549	690+04.45	34.99' LT	642.87	304986.84	146989.22
550	689+84.88	53.62' LT	643.08	304967.40	146970.44
551	689+84.92	48.62' LT	642.92	304967.41	146975.44
552	689+84.92	42.62' LT	642.91	304967.36	146981.44
553	689+90.88	53.67' LT	643.17	304973.40	146970.43
554	689+90.92	48.62' LT	643.01	304973.41	146975.48
555	689+90.92	42.62' LT	642.98	304973.36	146981.48
556	689+94.45	48.62' LT	643.19	304976.94	146975.51
557	689+94.45	42.62' LT	643.13	304976.90	146981.51
558	689+99.45	48.62' LT	643.31	304981.94	146975.55
559	689+99.45	42.62' LT	643.23	304981.90	146981.55
560	690+04.45	48.62' LT	643.34	304986.94	146975.58
561	690+04.45	42.62' LT	643.25	304986.90	146981.58
562	690+10.45	48.62' LT	643.37	304992.94	146975.63
563	690+10.45	42.62' LT	643.28	304992.90	146981.63
564	690+15.45	48.58' LT	643.42	304997.94	146975.70

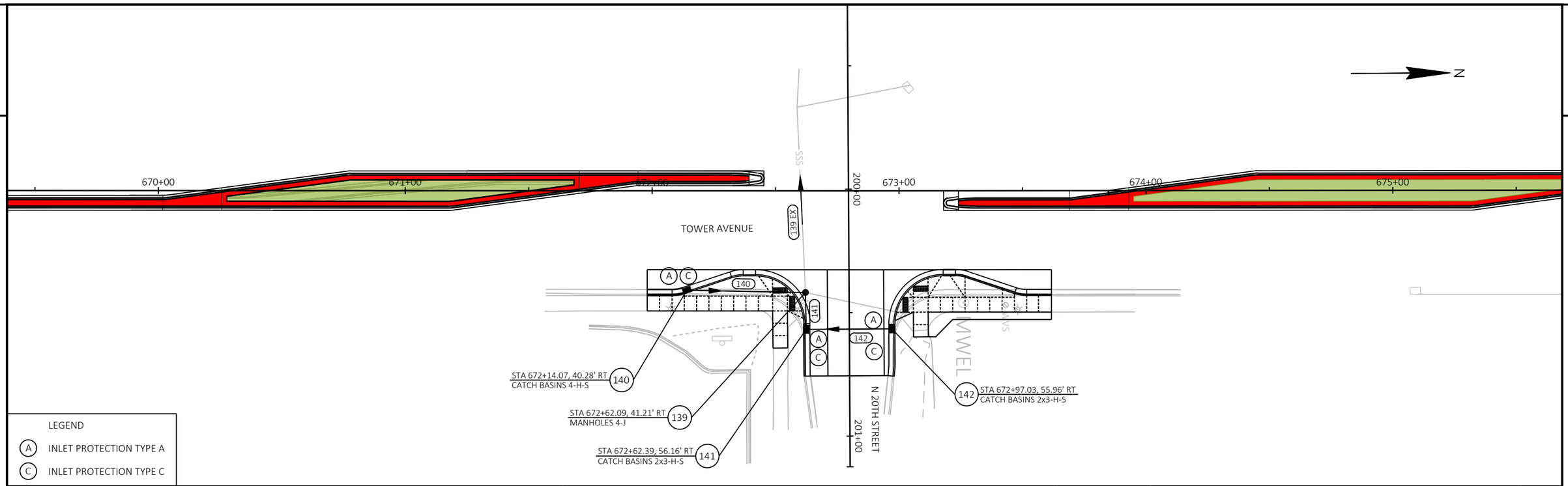
N 16TH STREET NW					
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING
565	690+15.45	42.62' LT	643.33	304997.90	146981.66
566	690+20.45	48.62' LT	643.45	305002.94	146975.70
567	690+20.45	42.62' LT	643.36	305002.90	146981.70
568	690+25.45	48.62' LT	643.46	305007.94	146975.74
569	690+25.45	42.62' LT	643.37	305007.90	146981.74
570	690+30.45	48.62' LT	643.47	305012.94	146975.77
571	690+30.44	42.62' LT	643.35	305012.88	146981.77
572	690+15.67	36.73' LT	643.31	304998.07	146987.56
573	689+80.54	48.62' LT	642.56	304963.04	146975.41

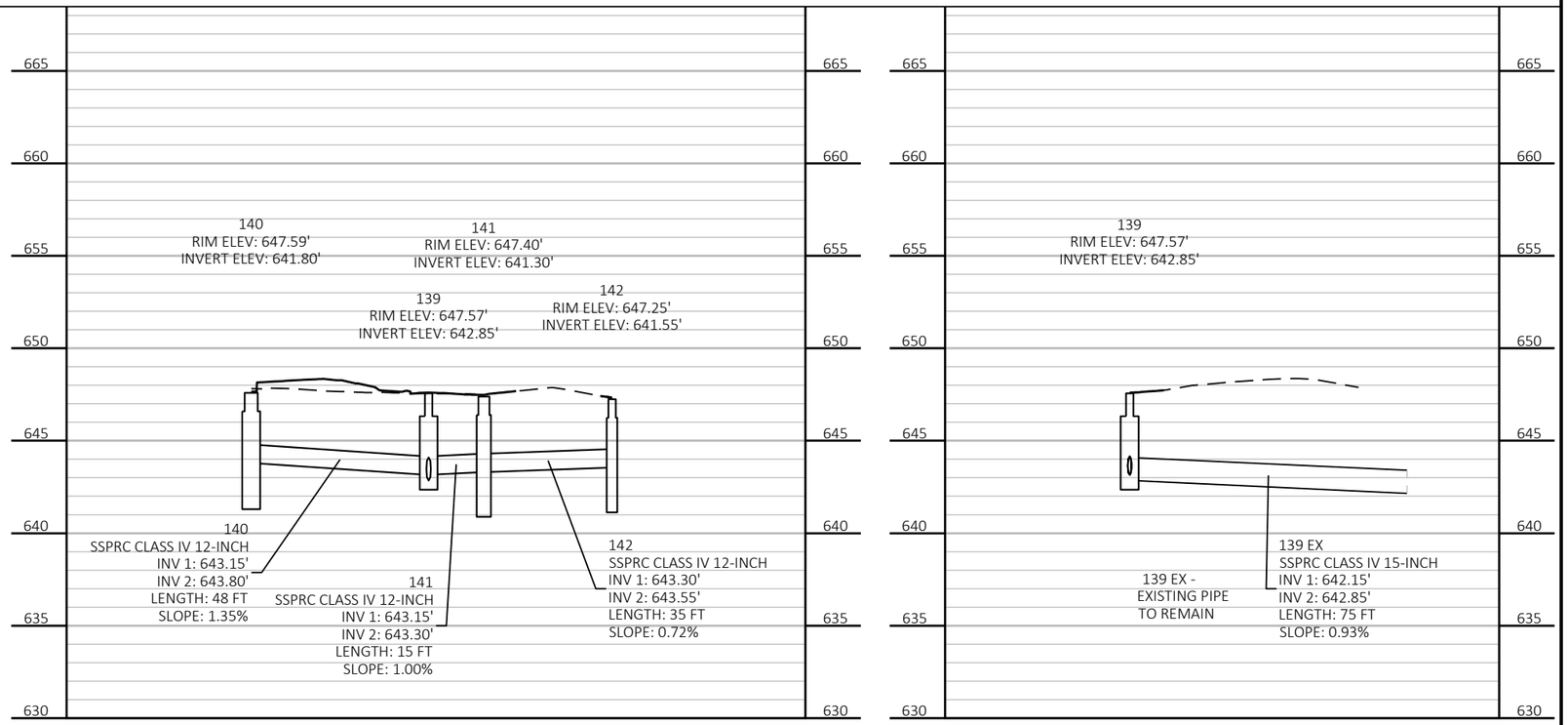
LEGEND

- XX / 2X.XX — POINT NUMBER/ELEVATION
- PED — CONCRETE CURB PEDESTRIAN
- SW4 — CONCRETE SIDEWALK 4-INCH
- SW7 — CONCRETE SIDEWALK 7-INCH
- 2 — CURB RAMP TYPE 2
- LL — LEVEL LANDING

PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	CURB RAMPS - N 16TH STREET NW	SHEET	E

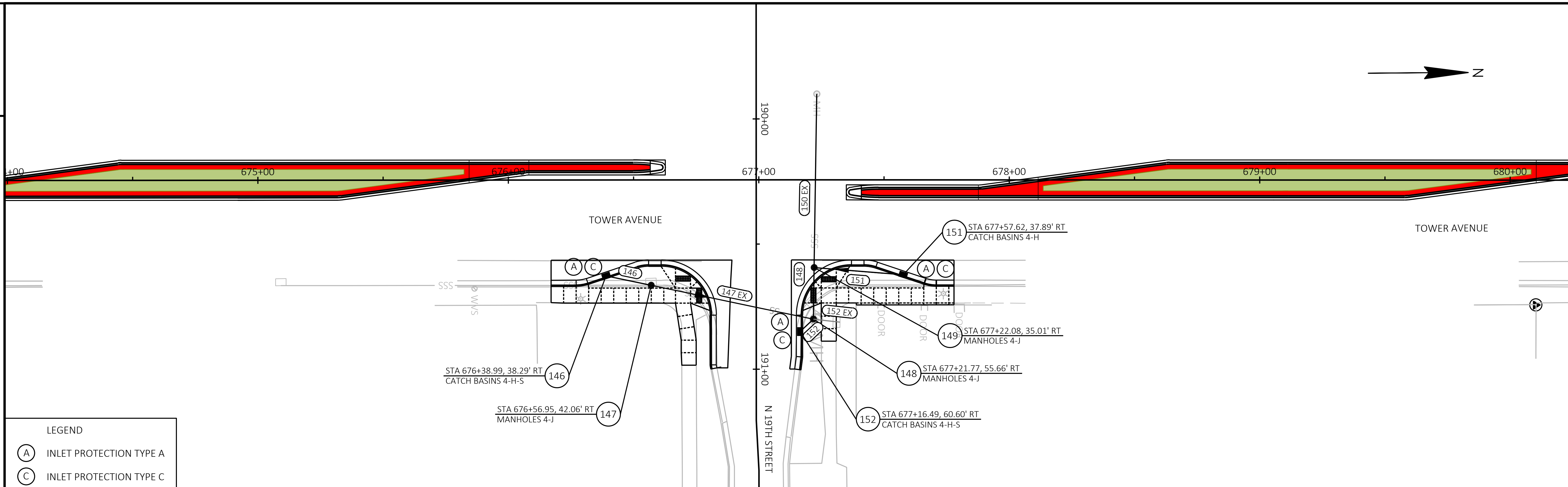
2

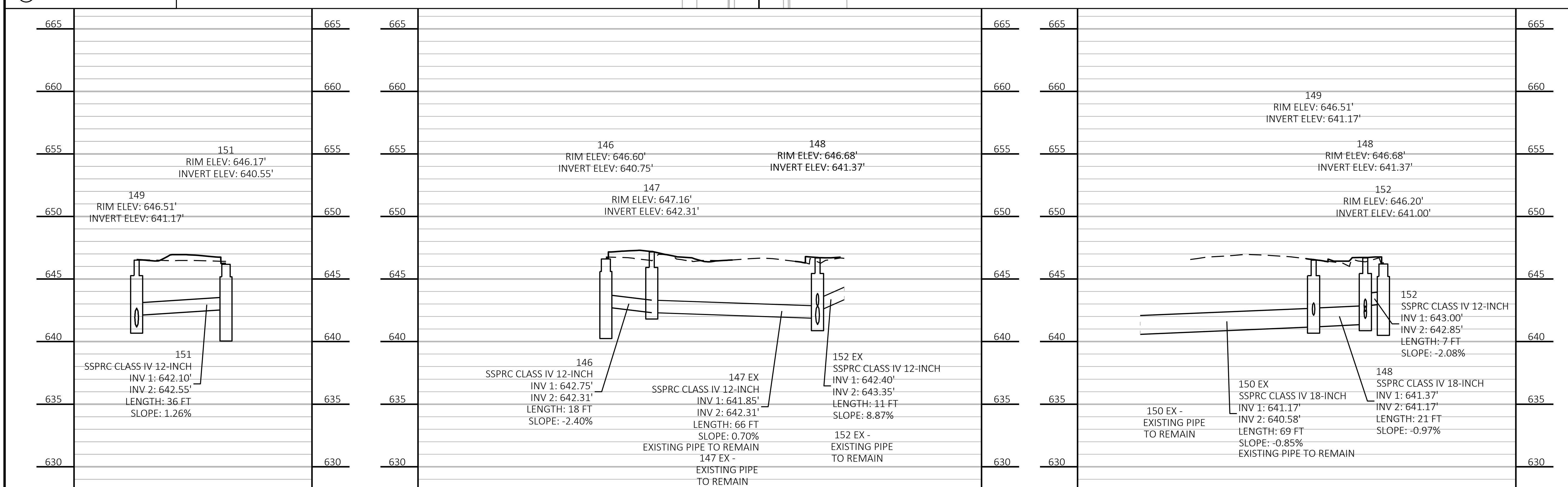




PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	STORM SEWER	SHEET E

FILE NAME : X:\PT\S\SUPER\181558\5-FINAL-DSGN\C3D- TOWER AVE\SHEETS\022501_SS.DWG
LAYOUT NAME - 01
PLOT DATE : 4/30/2025 9:29 AM
PLOT BY : ANNIE JEROME
PLOT NAME :
PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 41

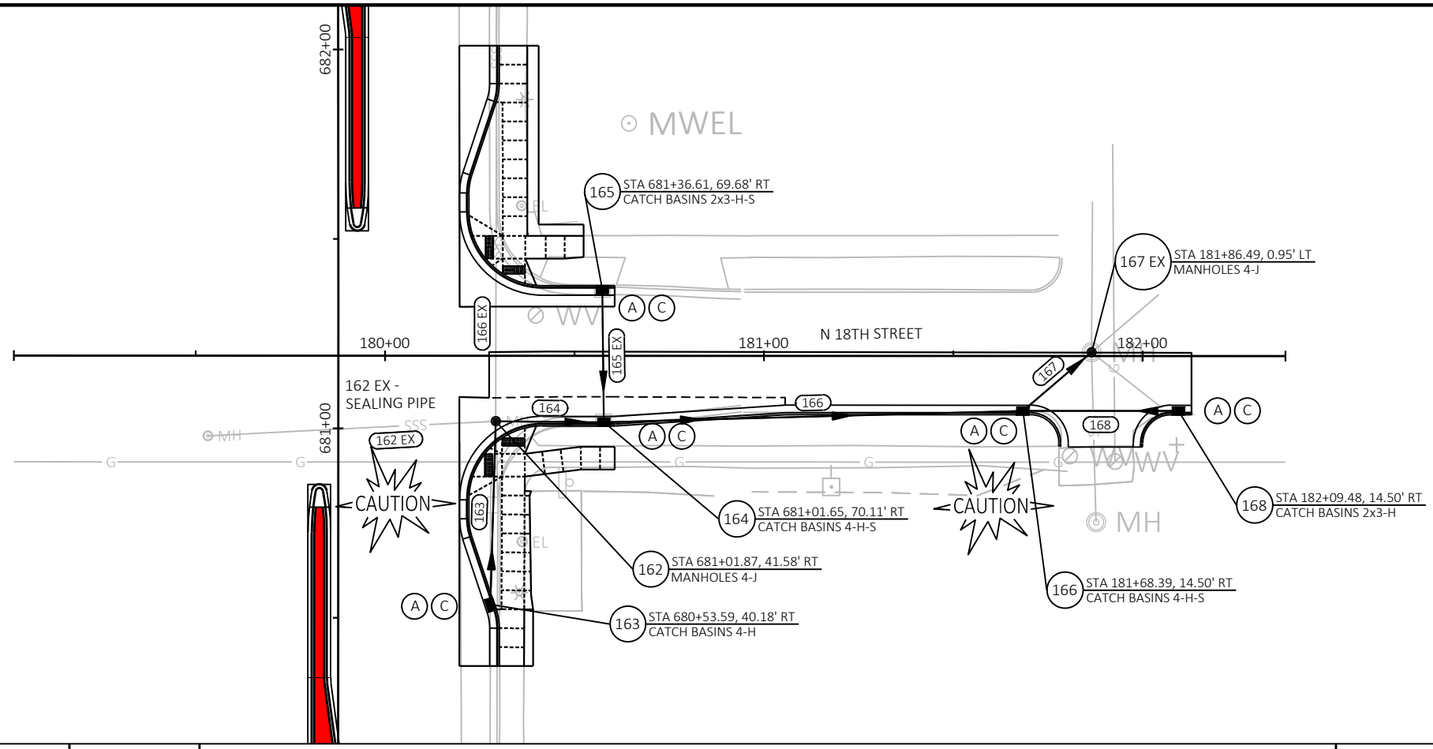

N
675+00
676+00
677+00
678+00
679+00
680+00
190+00
191+00
TOWER AVENUE
TOWER AVENUE
N 19TH STREET
150 EX
147 EX
152 EX
146
151
148
152
A
C
STA 677+57.62, 37.89' RT
CATCH BASINS 4-H
151
STA 677+22.08, 35.01' RT
MANHOLES 4-J
149
STA 677+21.77, 55.66' RT
MANHOLES 4-J
148
STA 677+16.49, 60.60' RT
CATCH BASINS 4-H-S
152
STA 676+38.99, 38.29' RT
CATCH BASINS 4-H-S
146
STA 676+56.95, 42.06' RT
MANHOLES 4-J
147
LEGEND
A INLET PROTECTION TYPE A
C INLET PROTECTION TYPE C


665
660
655
650
645
640
635
630
151
RIM ELEV: 646.17'
INVERT ELEV: 640.55'
149
RIM ELEV: 646.51'
INVERT ELEV: 641.17'
151
SSPRC CLASS IV 12-INCH
INV 1: 642.10'
INV 2: 642.55'
LENGTH: 36 FT
SLOPE: 1.26%
146
RIM ELEV: 646.60'
INVERT ELEV: 640.75'
148
RIM ELEV: 646.68'
INVERT ELEV: 641.37'
147
RIM ELEV: 647.16'
INVERT ELEV: 642.31'
146
SSPRC CLASS IV 12-INCH
INV 1: 642.75'
INV 2: 642.31'
LENGTH: 18 FT
SLOPE: -2.40%
147 EX
SSPRC CLASS IV 12-INCH
INV 1: 641.85'
INV 2: 642.31'
LENGTH: 66 FT
SLOPE: 0.70%
EXISTING PIPE TO REMAIN
147 EX -
EXISTING PIPE
TO REMAIN
152 EX
SSPRC CLASS IV 12-INCH
INV 1: 642.40'
INV 2: 643.35'
LENGTH: 11 FT
SLOPE: 8.87%
152 EX -
EXISTING PIPE
TO REMAIN
149
RIM ELEV: 646.51'
INVERT ELEV: 641.17'
148
RIM ELEV: 646.68'
INVERT ELEV: 641.37'
152
RIM ELEV: 646.20'
INVERT ELEV: 641.00'
152
SSPRC CLASS IV 12-INCH
INV 1: 643.00'
INV 2: 642.85'
LENGTH: 7 FT
SLOPE: -2.08%
148
SSPRC CLASS IV 18-INCH
INV 1: 641.37'
INV 2: 641.17'
LENGTH: 21 FT
SLOPE: -0.97%
150 EX
SSPRC CLASS IV 18-INCH
INV 1: 641.17'
INV 2: 640.58'
LENGTH: 69 FT
SLOPE: -0.85%
EXISTING PIPE TO REMAIN
150 EX -
EXISTING PIPE
TO REMAIN

PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	STORM SEWER	SHEET	E

FILE NAME : X:\PT\S\SUPER\181558\5-FINAL-DSGN\C3D- TOWER AVE\SHEETS\022501_SS.DWG
LAYOUT NAME - 02
PLOT DATE : 4/30/2025 9:29 AM
PLOT BY : ANNIE JEROME
PLOT NAME :
PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 41

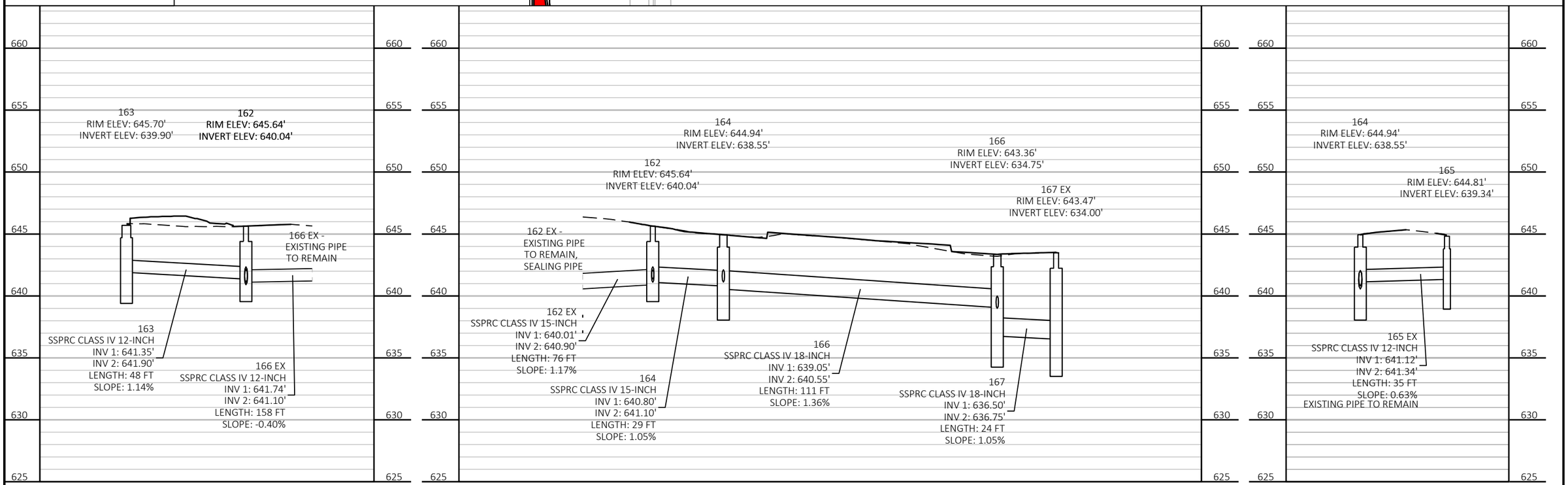
2



LEGEND

(A) INLET PROTECTION TYPE A

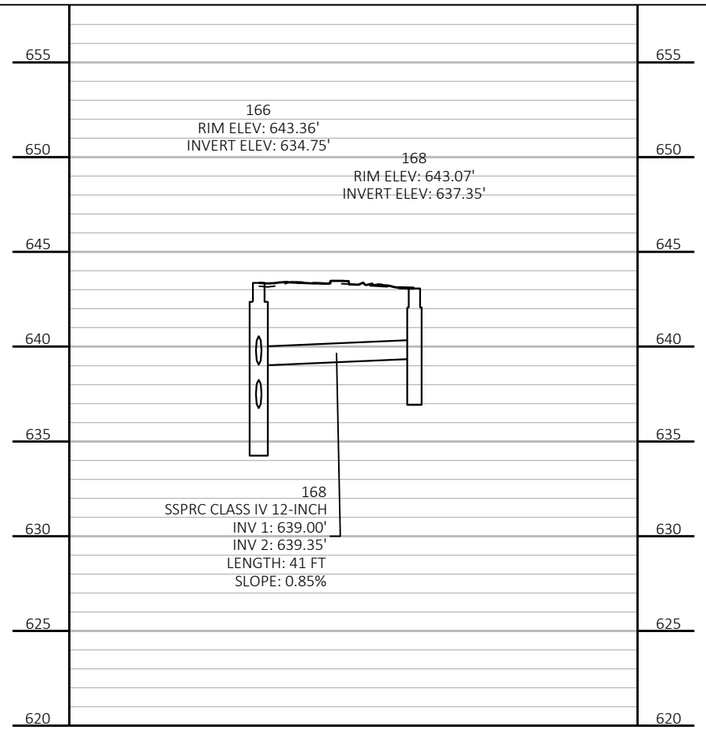
(C) INLET PROTECTION TYPE C



PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	STORM SEWER	SHEET E

FILE NAME : X:\PT\S\SUPER\181558\5-FINAL-DSGN\C3D- TOWER AVE\SHEETS\022501_SS.DWG
LAYOUT NAME - 03
PLOT DATE : 4/30/2025 9:29 AM
PLOT BY : ANNIE JEROME
PLOT NAME :
PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 41

2



PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	STORM SEWER	SHEET	E

2

N

683+00 684+00 686+00 687+00 688+00

170+00 171+00

TOWER AVENUE

171 EX

N 17TH STREET

STA 684+65.61, 41.50' RT
CATCH BASINS 2x3-H-S
172

STA 685+16.64, 36.03' RT
MANHOLES 4-J
171

STA 685+21.47, 54.63' RT
CATCH BASINS 2x3-H-S
173

STA 685+56.53, 66.38' RT
CATCH BASINS 2x3-H-S
174

STA 688+96
CATCH BAS

STA 68
MANH

LEGEND

(A) INLET PROTECTION TYPE A

(C) INLET PROTECTION TYPE C

173
RIM ELEV: 643.79'
INVERT ELEV: 638.96'

171
RIM ELEV: 644.24'
INVERT ELEV: 640.58'

172
RIM ELEV: 644.16'
INVERT ELEV: 639.10'

174
RIM ELEV: 643.48'
INVERT ELEV: 639.05'

172
SSPRC CLASS IV 12-INCH
INV 1: 640.92'
INV 2: 641.10'
LENGTH: 51 FT
SLOPE: 0.35%

173
SSPRC CLASS IV 12-INCH
INV 1: 640.92'
INV 2: 640.96'
LENGTH: 19 FT
SLOPE: 0.21%

174
SSPRC CLASS IV 12-INCH
INV 1: 640.96'
INV 2: 641.05'
LENGTH: 37 FT
SLOPE: 0.24%

655 650 645 640 635 630 625 620

171
RIM ELEV: 644.24'
INVERT ELEV: 640.58'

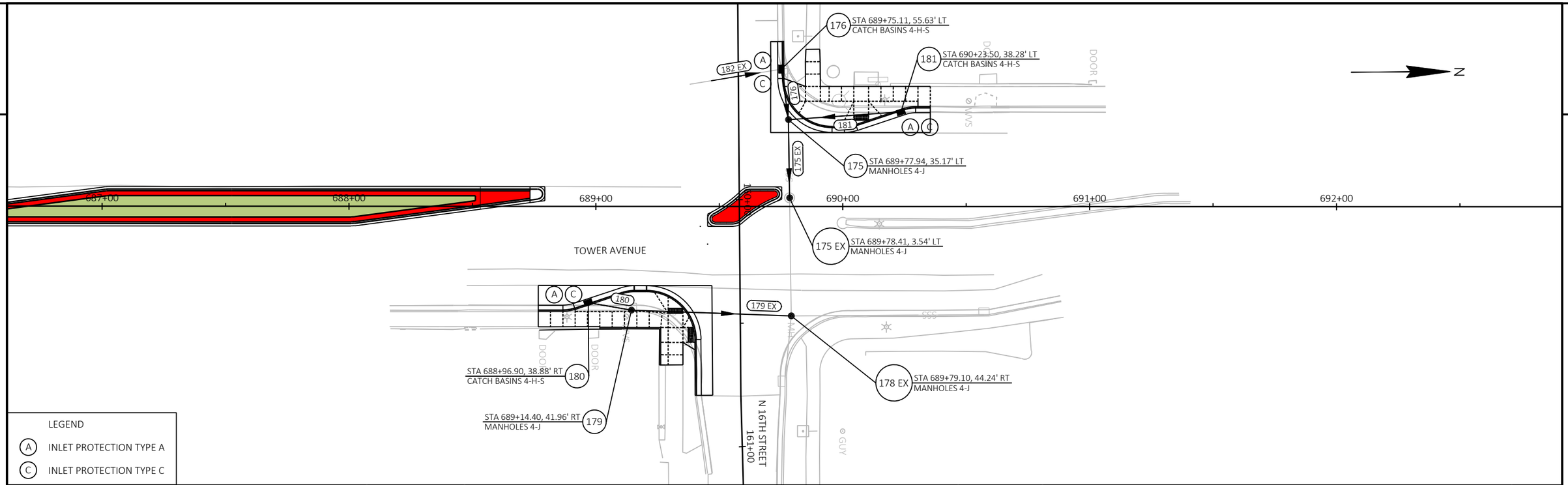
171 EX
SSPRC CLASS IV 15-INCH
INV 1: 640.78'
INV 2: 640.92'
LENGTH: 84 FT
SLOPE: 0.17%
EXISTING PIPE TO REMAIN

PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	STORM SEWER	SHEET	E

FILE NAME : X:\PT\S\SUPER\181558\5-FINAL-DSGN\C3D- TOWER AVE\SHEETS\022501_SS.DWG
LAYOUT NAME - 05

PLOT DATE : 4/30/2025 9:29 AM PLOT BY : ANNIE JEROME PLOT NAME : PLOT SCALE : 1 IN:40 FT

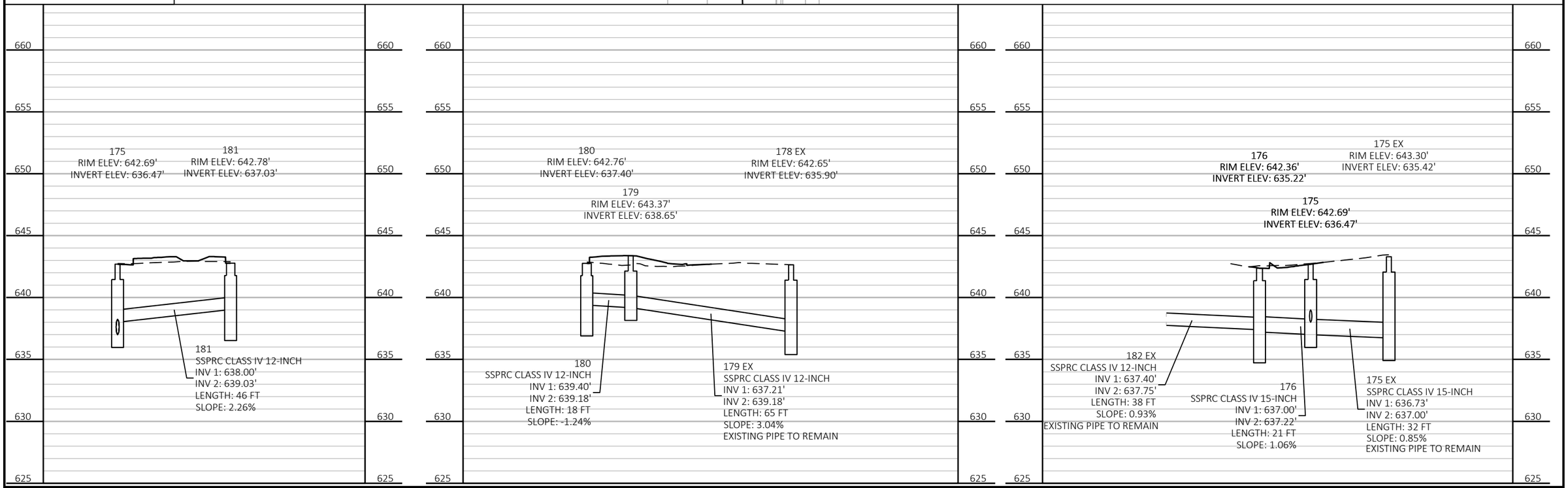
2



LEGEND

(A) INLET PROTECTION TYPE A

(C) INLET PROTECTION TYPE C



PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	STORM SEWER	SHEET E

FILE NAME : X:\PT\S\SUPER\181558\5-FINAL-DSGN\C3D- TOWER AVE\SHEETS\022501_SS.DWG
LAYOUT NAME - 06
PLOT DATE : 4/30/2025 9:29 AM
PLOT BY : ANNIE JEROME
PLOT NAME :
PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 41

2

2

TOWER AVE

N 28TH ST

N 26TH ST

MOVE

N

642+00

643+00

644+00

645

MATCH LINE 645+00.01

INSTALL

1-1

R4-7
24"X30"

MOVE

1-2

ONE WAY

MOVE

1-3

ONE WAY

INSTALL

1-5

R4-7
24"X30"

N

MATCH LINE 645+00.01

+00

646+00

647+00

648+00

649+00

650

MATCH LINE 650+00.01

TOWER AVE

MOVE

1-4

ONE WAY

INSTALL

1-6

R4-7
24"X30"

SIGNING LEGEND

PROPOSED SIGN MOUNTED ON POSTS TUBULAR STEEL 2X2-INCH

X-X DENOTES SIGN NUMBER

(X) INDICATES SIGN SIZE

PAVEMENT MARKING LEGEND

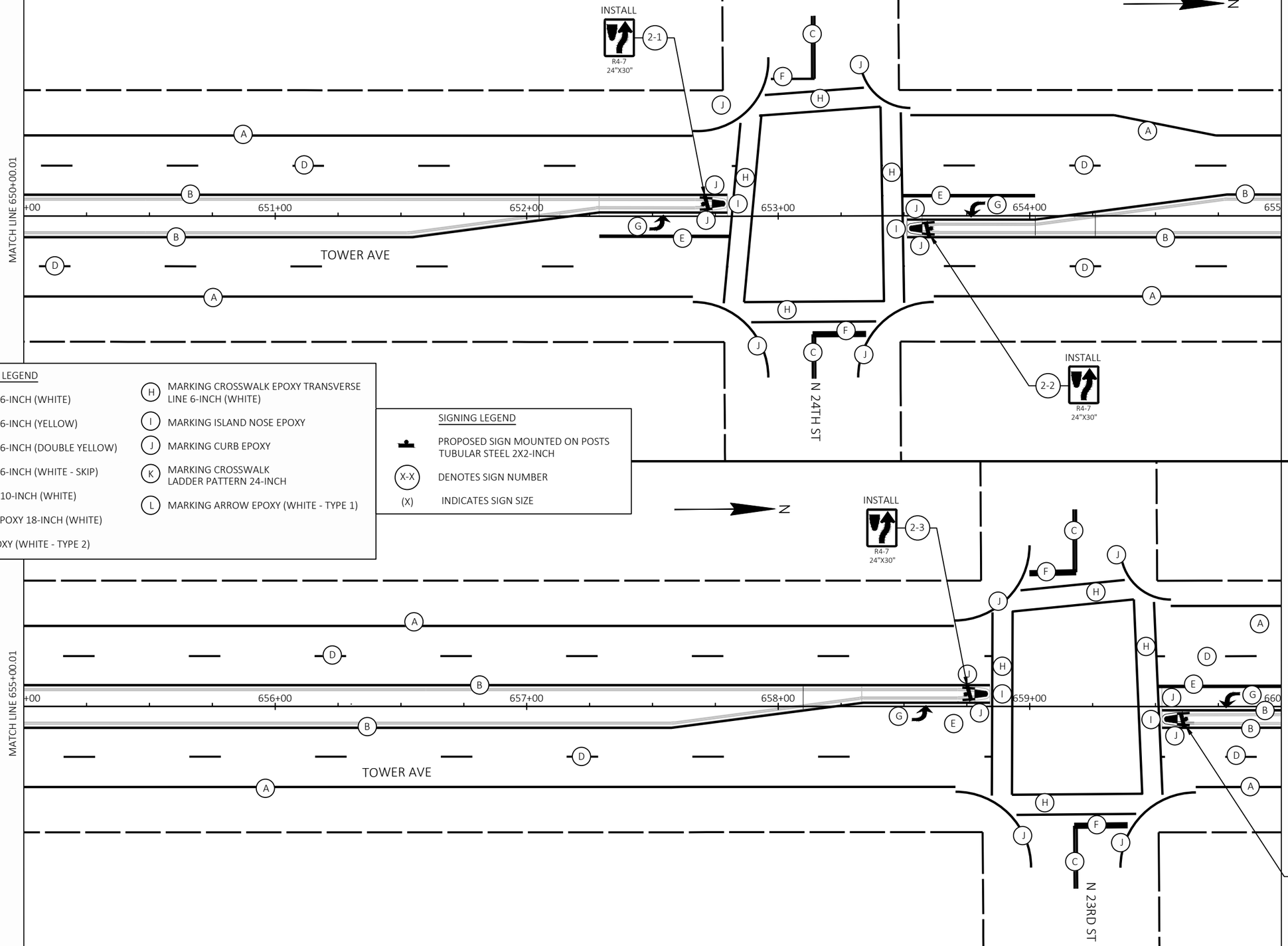
- A MARKING LINE EPOXY 6-INCH (WHITE)
- B MARKING LINE EPOXY 6-INCH (YELLOW)
- C MARKING LINE EPOXY 6-INCH (DOUBLE YELLOW)
- D MARKING LINE EPOXY 6-INCH (WHITE - SKIP)
- E MARKING LINE EPOXY 10-INCH (WHITE)
- F MARKING STOP LINE EPOXY 18-INCH (WHITE)
- G MARKING ARROW EPOXY (WHITE - TYPE 2)
- H MARKING CROSSWALK EPOXY TRANSVERSE LINE 6-INCH (WHITE)
- I MARKING ISLAND NOSE EPOXY
- J MARKING CURB EPOXY
- K MARKING CROSSWALK LADDER PATTERN 24-INCH
- L MARKING ARROW EPOXY (WHITE - TYPE 1)

PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	PERMANENT SIGNING & PAVEMENT MARKING	SHEET	E

FILE NAME : X:\PT\S\SUPER\181558\5-FINAL-DSGN\C3D- TOWER AVE\SHEETS\024501_PM.DWG
LAYOUT NAME - 01

PLOT DATE : 4/30/2025 9:30 AM PLOT BY : ANNIE JEROME PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 44



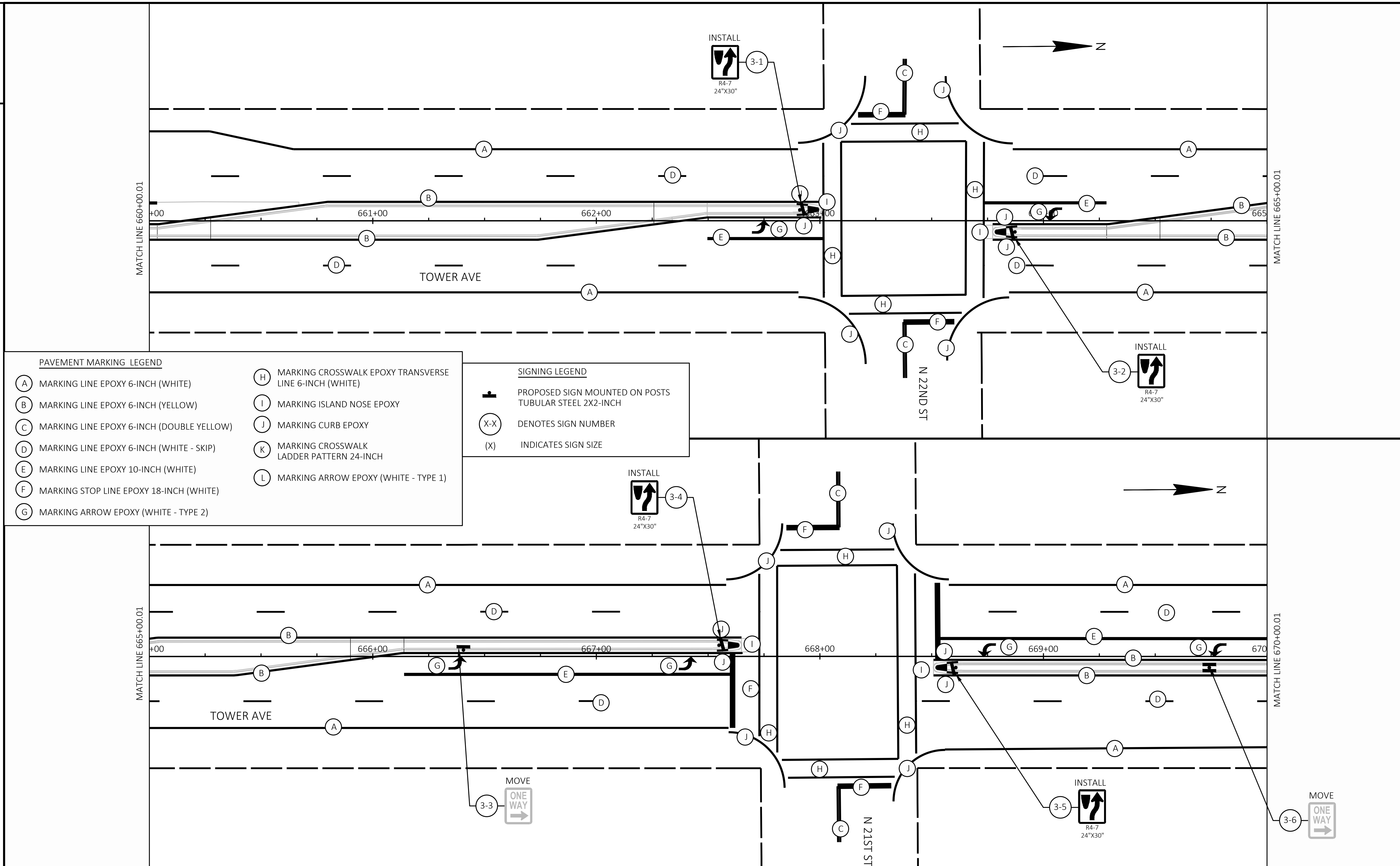
PAVEMENT MARKING LEGEND

- (A) MARKING LINE EPOXY 6-INCH (WHITE)
- (B) MARKING LINE EPOXY 6-INCH (YELLOW)
- (C) MARKING LINE EPOXY 6-INCH (DOUBLE YELLOW)
- (D) MARKING LINE EPOXY 6-INCH (WHITE - SKIP)
- (E) MARKING LINE EPOXY 10-INCH (WHITE)
- (F) MARKING STOP LINE EPOXY 18-INCH (WHITE)
- (G) MARKING ARROW EPOXY (WHITE - TYPE 2)
- (H) MARKING CROSSWALK EPOXY TRANSVERSE LINE 6-INCH (WHITE)
- (I) MARKING ISLAND NOSE EPOXY
- (J) MARKING CURB EPOXY
- (K) MARKING CROSSWALK LADDER PATTERN 24-INCH
- (L) MARKING ARROW EPOXY (WHITE - TYPE 1)

SIGNING LEGEND

- PROPOSED SIGN MOUNTED ON POSTS TUBULAR STEEL 2X2-INCH
- (X-X) DENOTES SIGN NUMBER
- (X) INDICATES SIGN SIZE

PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	PERMANENT SIGNING & PAVEMENT MARKING	SHEET E



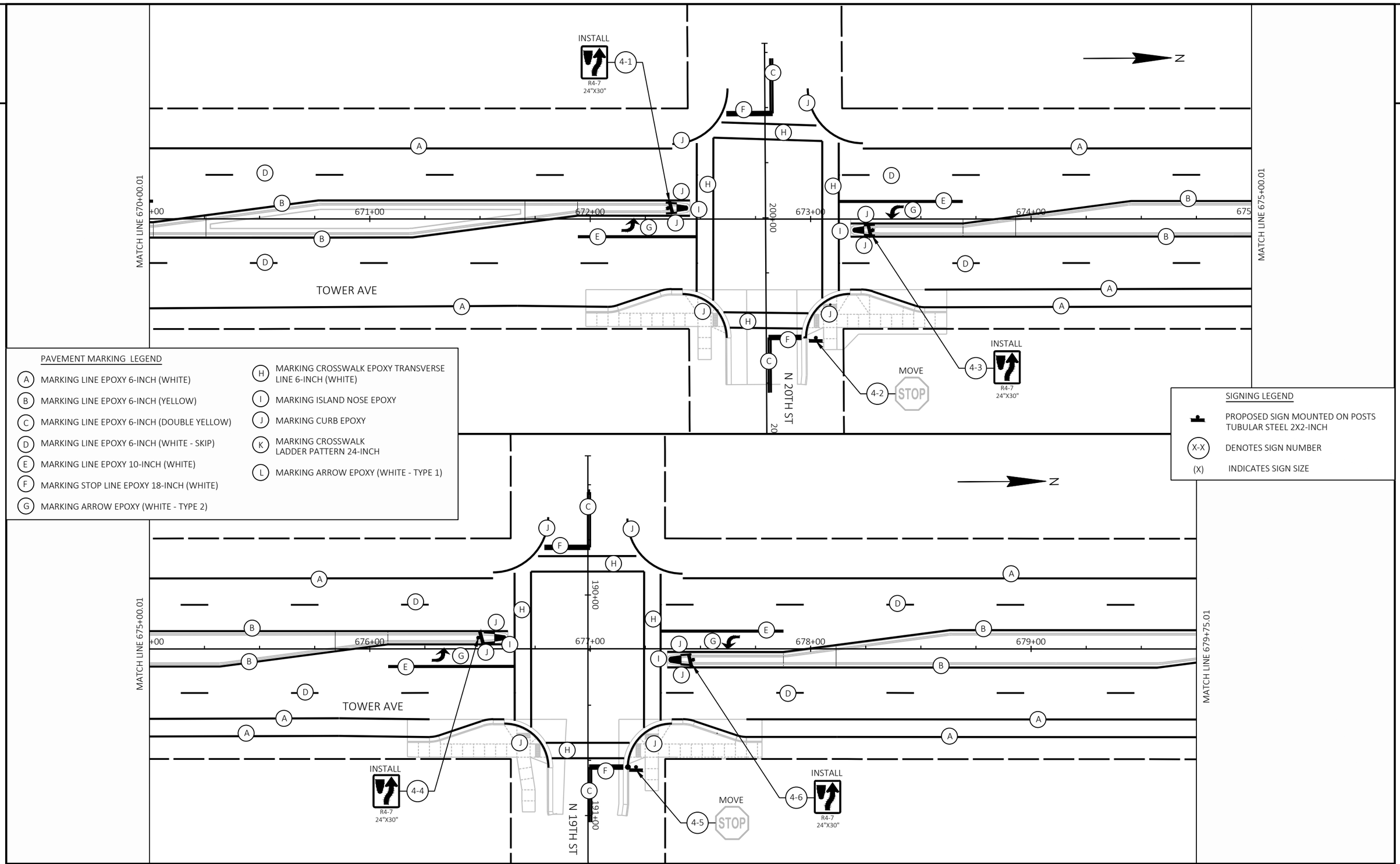
PAVEMENT MARKING LEGEND

- (A) MARKING LINE EPOXY 6-INCH (WHITE)
- (B) MARKING LINE EPOXY 6-INCH (YELLOW)
- (C) MARKING LINE EPOXY 6-INCH (DOUBLE YELLOW)
- (D) MARKING LINE EPOXY 6-INCH (WHITE - SKIP)
- (E) MARKING LINE EPOXY 10-INCH (WHITE)
- (F) MARKING STOP LINE EPOXY 18-INCH (WHITE)
- (G) MARKING ARROW EPOXY (WHITE - TYPE 2)
- (H) MARKING CROSSWALK EPOXY TRANSVERSE LINE 6-INCH (WHITE)
- (I) MARKING ISLAND NOSE EPOXY
- (J) MARKING CURB EPOXY
- (K) MARKING CROSSWALK LADDER PATTERN 24-INCH
- (L) MARKING ARROW EPOXY (WHITE - TYPE 1)

SIGNING LEGEND

- PROPOSED SIGN MOUNTED ON POSTS TUBULAR STEEL 2X2-INCH
- (X-X) DENOTES SIGN NUMBER
- (X) INDICATES SIGN SIZE

PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	PERMANENT SIGNING & PAVEMENT MARKING	SHEET	E



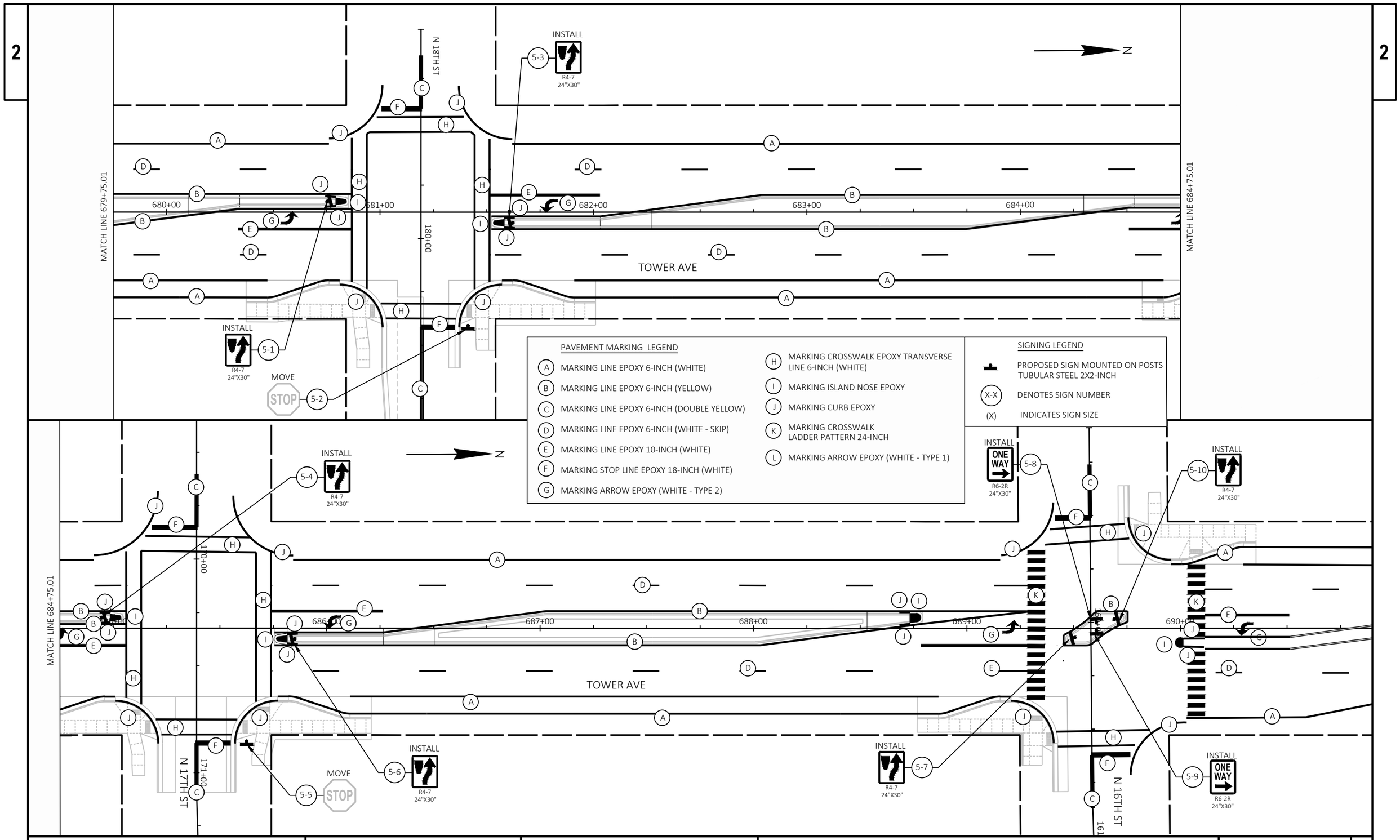
PAVEMENT MARKING LEGEND

- (A) MARKING LINE EPOXY 6-INCH (WHITE)
- (B) MARKING LINE EPOXY 6-INCH (YELLOW)
- (C) MARKING LINE EPOXY 6-INCH (DOUBLE YELLOW)
- (D) MARKING LINE EPOXY 6-INCH (WHITE - SKIP)
- (E) MARKING LINE EPOXY 10-INCH (WHITE)
- (F) MARKING STOP LINE EPOXY 18-INCH (WHITE)
- (G) MARKING ARROW EPOXY (WHITE - TYPE 2)
- (H) MARKING CROSSWALK EPOXY TRANSVERSE LINE 6-INCH (WHITE)
- (I) MARKING ISLAND NOSE EPOXY
- (J) MARKING CURB EPOXY
- (K) MARKING CROSSWALK LADDER PATTERN 24-INCH
- (L) MARKING ARROW EPOXY (WHITE - TYPE 1)

SIGNING LEGEND

- PROPOSED SIGN MOUNTED ON POSTS TUBULAR STEEL 2X2-INCH
- (X-X) DENOTES SIGN NUMBER
- (X) INDICATES SIGN SIZE

PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	PERMANENT SIGNING & PAVEMENT MARKING	SHEET E



PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	PERMANENT SIGNING & PAVEMENT MARKING	SHEET	E

FILE NAME : X:\PT\S\SUPER\181558\5-FINAL-DSGN\C3D- TOWER AVE\SHEETS\024501_PM.DWG
LAYOUT NAME - 05
PLOT DATE : 4/30/2025 10:58 AM
PLOT BY : ANNIE JEROME
PLOT NAME :
PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 44

2

N

N 16TH ST

161+00

689+00

690+00

691+00

692+00

693+00

694+00

N 18TH ST

180+00

181+00

182+00

682+00

681+00

TOWER AVE

SIGNING LEGEND

PROPOSED SIGN MOUNTED ON POSTS TUBULAR STEEL 2X2-INCH

(X-X) DENOTES SIGN NUMBER

(X) INDICATES SIGN SIZE

PAVEMENT MARKING LEGEND

- (A) MARKING LINE EPOXY 6-INCH (WHITE)
- (B) MARKING LINE EPOXY 6-INCH (YELLOW)
- (C) MARKING LINE EPOXY 6-INCH (DOUBLE YELLOW)
- (D) MARKING LINE EPOXY 6-INCH (WHITE - SKIP)
- (E) MARKING LINE EPOXY 10-INCH (WHITE)
- (F) MARKING STOP LINE EPOXY 18-INCH (WHITE)
- (G) MARKING ARROW EPOXY (WHITE - TYPE 2)
- (H) MARKING CROSSWALK EPOXY TRANSVERSE LINE 6-INCH (WHITE)
- (I) MARKING ISLAND NOSE EPOXY
- (J) MARKING CURB EPOXY
- (K) MARKING CROSSWALK LADDER PATTERN 24-INCH
- (L) MARKING ARROW EPOXY (WHITE - TYPE 1)

PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	PERMANENT SIGNING & PAVEMENT MARKING	SHEET	E

FILE NAME : X:\PT\S\SUPER\181558\5-FINAL-DSGN\C3D- TOWER AVE\SHEETS\024501_PM.DWG
LAYOUT NAME - 06

PLOT DATE : 4/30/2025 10:59 AM PLOT BY : ANNIE JEROME PLOT NAME : PLOT SCALE : ##########

WISDOT/CADDS SHEET 44

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REMOVING CONCRETE PAVEMENT

CATEGORY	STATION	TO	STATION	LOCATION	204.0100 REMOVING CONCRETE PAVEMENT SY	REMARKS
0010	642+18	-	647+05	CL	555	28TH - 26TH
0010	647+85	-	652+80	CL	710	26TH - 24TH
0010	653+51	-	658+84	CL	779	24TH - 23RD
0010	659+53	-	663+00	CL	534	23RD - 22ND
0010	663+77	-	667+65	CL	385	22ND - 21ST
0010	668+51	-	672+45	CL	393	21ST - 20TH
0010	673+18	-	676+59	CL	437	20TH - 19TH
0010	677+37	-	680+85	CL	423	19TH - 18TH
0010	681+52	-	685+05	CL	429	18TH - 17TH
0010	686+75	-	689+75	CL	516	17TH - 16TH
0010	671+98	-	672+71	RT	130	20TH
0010	672+94	-	673+62	RT	104	20TH
0010	676+17	-	676+83	RT	121	19TH
0010	677+15	-	677+78	RT	102	19TH
0010	680+37	-	681+06	RT	470	18TH
0010	681+35	-	682+01	RT	108	18TH
0010	684+57	-	685+23	RT	132	17TH
0010	685+55	-	686+21	RT	112	17TH
0010	688+77	-	689+43	RT	123	16TH
0010	689+74	-	690+36	LT	107	16TH
0010	689+45	-	689+75		30	16TH CL MEDIAN
				TOTAL 0010	6,702	

REMOVING CONCRETE SIDEWALK

CATEGORY	STATION	TO	STATION	LOCATION	204.0155 REMOVING CONCRETE SIDEWALK SY	REMARKS
0010	642+18	-	647+05	CL	163	28TH - 26TH
0010	663+79	-	667+65	CL	130	22ND - 21ST
0010	668+52	-	672+45	CL	132	21ST - 20TH
0010	671+98	-	672+91	RT	50	20TH
0010	672+94	-	673+62	RT	50	20TH
0010	676+17	-	676+83	RT	60	19TH
0010	677+15	-	677+78	RT	55	19TH
0010	680+37	-	681+06	RT	56	18TH
0010	681+35	-	682+01	RT	60	18TH
0010	684+57	-	685+23	RT	56	17TH
0010	685+55	-	686+21	RT	50	17TH
0010	688+77	-	689+43	RT	53	16TH
0010	689+74	-	690+36	LT	55	16TH
				TOTAL 0010	970	

STORM SEWER

CATEGORY	STATION	TO	STATION	LOCATION	204.0210 REMOVING MANHOLES EACH	204.0215 REMOVING CATCH BASINS EACH	204.0280 SEALING PIPES EACH	204.0245.01 6-INCH LF	204.0245.02 REMOVING STORM SEWER 12-INCH LF	204.0245.03 REMOVING STORM SEWER 15-INCH LF	204.0245.04 REMOVING STORM SEWER 18-INCH LF	REMARKS
0030	672+58	-		50.5' RT		1			10			20TH STREET
0030	672+62	-		41.2' RT	1							20TH STREET
0030	673+02	-		49.7' RT		1			41			20TH STREET
0030	676+57	-		42' RT		1						19TH STREET
0030	677+22	-		49.4' RT		1					15	19TH STREET
0030	677+23	-		55.9' RT	1					6		19TH STREET
0030	680+80	-		42.2' RT		1			20			18TH STREET
0030	681+02	-		41.6' RT	1		1		28			18TH STREET
0030	681+02	-		70.1' RT		1						18TH STREET
0030	182+05	-		13.8' RT		1		24				18TH STREET
0030	685+17	-		42' RT	1					19		17TH STREET
0030	685+18	-		54.5' RT		1						17TH STREET
0030	685+61	-		53.8' RT		1			44			17TH STREET
0030	689+14	-		42' RT		1						16TH STREET
0030	689+78	-		56' LT		1				21		
				TOTAL 0030	4	11	1	24	143	46	15	

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PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	MISCELLANEOUS QUANTITIES	SHEET	E

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EARTHWORK SUMMARY

(1) (2)

205.0100

STATION			LOCATION	EXCAVATION COMMON CY	WASTE CY	COMMENTS
642+18	-	647+05	CL	330	330	28TH - 26TH
647+85	-	652+80	CL	376	376	26TH - 24TH
653+51	-	658+84	CL	428	428	24TH - 23RD
659+53	-	663+00	CL	290	290	23RD - 22ND
663+74	-	667+69	CL	240	240	22ND - 21ST
668+51	-	672+45	CL	240	240	21ST - 20TH
673+18	-	676+62	CL	228	228	20TH - 19TH
677+35	-	680+85	CL	230	230	19TH - 18TH
681+52	-	685+05	CL	230	230	18TH - 17TH
685+75	-	688+79	CL	218	218	17TH - 16TH
689+45	-	689+75	CL	20	20	16TH CL
671+98	-	672+71	LT	85	85	20TH-SE
672+94	-	673+62	LT	70	70	20TH-NE
676+17	-	676+89	LT	80	80	19TH-SE
677+13	-	677+78	LT	70	70	19TH-NE
680+32	-	681+08	LT	285	285	18TH-SE (INCLUDES N 18TH ST)
681+35	-	682+01	LT	80	80	18TH-NE
684+57	-	685+29	LT	80	80	17TH-SE
685+53	-	686+21	LT	80	80	17TH-NE
688+77	-	689+47	LT	80	80	16TH-SE
689+71	-	690+36	RT	70	70	16TH-NW
TOTAL				3810	3810	

(1) EXCAVATION COMMON IS THE TOTAL VOLUME OF CUT. ITEM NUMBER 205.0100

(2) UNUSABLE PAVEMENT MATERIALS ARE INCLUDED IN THE QUANTITY OF EXCAVATION COMMON.

FINISHING ROADWAY

CATEGORY	STATION	TO	STATION	LOCATION	213.0100 FINISHING ROADWAY EACH	REMARKS
0010	642+18	-	693+92	LT & RT	1	
				TOTAL 0010	1	

PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	MISCELLANEOUS QUANTITIES	SHEET	E

BASE AGGREGATE ITEMS

CATEGORY	STATION	TO	STATION	LOCATION	305.0110 BASE AGGREGATE DENSE 3/4-INCH TON	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON	310.0110 BASE AGGREGATE OPEN-GRADED TON	REMARKS
0010	642+18	-	647+05	CL	0	107	255	28TH - 26TH
0010	647+85	-	652+80	CL	0	127	269	26TH - 24TH
0010	653+51	-	658+84	CL	0	135	291	24TH - 23RD
0010	659+53	-	663+00	CL	0	152	187	23RD - 22ND
0010	663+77	-	667+65	CL	0	87	202	22ND - 21ST
0010	668+51	-	672+45	CL	0	87	203	21ST - 20TH
2285	673+18	-	676+59	CL	0	85	184	20TH - 19TH
0010	677+37	-	680+85	CL	0	77	189	19TH - 18TH
0010	681+52	-	685+05	CL	0	77	189	18TH - 17TH
0010	686+75	-	689+75	CL	0	76	191	17TH - 16TH
0010	671+98	-	672+71	RT	19	68	33	20TH
0010	672+94	-	673+62	RT	19	67	27	20TH
0010	676+17	-	676+83	RT	22	65	32	19TH
0010	677+15	-	677+78	RT	20	60	27	19TH
0010	680+37	-	681+06	RT	23	235	122	18TH
0010	681+35	-	682+01	RT	21	68	28	18TH
0010	684+57	-	685+23	RT	22	68	33	17TH
0010	685+55	-	686+21	RT	20	68	29	17TH
0010	688+77	-	689+43	RT	21	66	31	16TH
0010	689+74	-	690+36	LT	22	55	26	16TH
0010	689+45	-	689+75	CL	5	11	7	16TH CL MEDIAN
				TOTAL 0010	214	1,841	2,554	

CONCRETE PAVEMENT 9-INCH

CATEGORY	STATION	TO	STATION	LOCATION	415.0090 CONCRETE PAVEMENT 9-INCH SY	REMARKS
0010	659+53	-	660+67	LT	99	23 RD ST - 22ND ST
0010	671+98	-	672+91	RT	68	20TH
0010	672+94	-	673+62	RT	45	20TH
0010	676+17	-	676+83	RT	60	19TH
0010	677+15	-	677+78	RT	40	19TH
0010	680+37	-	681+06	RT	370	18TH
0010	681+35	-	682+01	RT	48	18TH
0010	684+57	-	685+23	RT	63	17TH
0010	685+55	-	686+21	RT	43	17TH
0010	688+77	-	689+43	RT	56	16TH
0010	689+74	-	690+36	LT	42	16TH
				TOTAL 0010	934	

TIE BARS

CATEGORY	STATION	TO	STATION	LOCATION	416.0610 DRILLED TIE BARS EACH	416.0620 DRILLED DOWEL BARS EACH	REMARKS
0010	642+18	-	690+35	LT & RT	4,200	3,700	
				TOTAL 0010	4,200	3,700	

CONCRETE PAVEMENT JOINT REPAIRS

CATEGORY	STATION	TO	STATION	LOCATION	416.0750.S CONCRETE PAVEMENT PARTIAL DEPTH REPAIR JOINT REPAIR LF	416.0752.S CONCRETE PAVEMENT PARTIAL DEPTH REPAIR CRACK REPAIR LF	416.0754.S CONCRETE PAVEMENT PARTIAL DEPTH REPAIR SURFACE REPAIR SF	416.0756.S CONCRETE PAVEMENT PARTIAL DEPTH REPAIR EDGE REPAIR LF	416.1710 CONCRETE PAVEMENT REPAIR SY	416.1720 CONCRETE PAVEMENT REPLACEMENT SY	420.1000 CONTINUOUS DIAMOND GRINDING CONCRETE PAVEMENT SY	REMARKS
0010	642+18	-	693+92	LT & RT	50	50	100	100	1,710	100	34,200	
				TOTAL 0010	50	50	100	100	1,710	100	34,200	

THESE QUANTITIES ARE APPROXIMATE AND NEED TO BE VERFIED IN THE FIELD

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ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES

CATEGORY	STATION	TO	STATION	LOCATION	465.0120 ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES TON
0010	673+12	-	673+62	LT	4
0010	680+37	-	680+52	LT	1
0010	681+51	-	682+00	LT	4
0010	685+71	-	686+21	LT	4
				TOTAL 0010	13

CONCRETE CURB & GUTTER ITEMS

CATEGORY	STATION	TO	STATION	LOCATION	601.0409 CONCRETE CURB & GUTTER 30-INCH TYPE A LF	601.0600 CONCRETE CURB PEDESTRIAN LF	620.0300 CONCRETE MEDIAN SLOPED NOSE SF	SPV.0090.01 CONCRETE CURB & GUTTER 6-INCH SLOPED 20-INCH TYPE G MODIFIED LF	SPV.0090.02 CONCRETE CURB & GUTTER 6-INCH SLOPED 44-INCH TYPE G INTEGRAL LF	SPV.0090.03 CURE AND SEAL TREATMENT, CONCRETE CURB AND GUTTER LF	SPV.0165.02 CURE AND SEAL TREATMENT, CONCRETE MEDIAN SLOPED NOSE SF	REMARKS
0010	642+18	-	647+05	CL			72	950		950	72	28TH - 26TH
0010	647+85	-	652+80	CL			96	845	122	967	96	26TH - 24TH
0010	653+51	-	658+84	CL			96	921	122	1043	96	24TH - 23RD
0010	659+53	-	663+00	CL			84	612	61	673	84	23RD - 22ND
0010	663+77	-	667+65	CL			72	753		753	72	22ND - 21ST
0010	668+51	-	672+45	CL			72	766		766	72	21ST - 20TH
0010	673+18	-	676+59	CL			84	606	61	667	84	20TH - 19TH
0010	677+37	-	680+85	CL			72	678		678	72	19TH - 18TH
0010	681+52	-	685+05	CL			72	682		682	72	18TH - 17TH
0010	686+75	-	689+75	CL			48	538	61	599	48	17TH - 16TH
0010	671+98	-	672+71	RT	98					98		20TH
0010	672+94	-	673+62	RT	97					97		20TH
0010	676+17	-	676+83	RT	98					98		19TH
0010	677+15	-	677+78	RT	95					95		19TH
0010	680+37	-	681+06	RT	238					238		18TH
0010	681+35	-	682+01	RT	95					95		18TH
0010	684+57	-	685+23	RT	99					99		17TH
0010	685+55	-	686+21	RT	99					99		17TH
0010	688+77	-	689+43	RT	99	40				139		16TH
0010	689+74	-	690+36	LT	87					87		16TH
0010	689+45	-	689+75	CL				67		67		16TH CL MEDIAN
				TOTAL 0010	1,105	40	768	7,418	427	8990	768	

PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	MISCELLANEOUS QUANTITIES	SHEET	E

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CONCRETE SIDEWALK ITEMS

CATEGORY	STATION	TO	STATION	LOCATION	405.0100 COLORING CONCRETE WISDOT RED CY	602.0405 CONCRETE SIDEWALK 4-INCH SF	602.0420 CONCRETE SIDEWALK 7-INCH SF	650.9500 CONSTRUCTION STAKING SIDEWALK EACH	SPV.0165.01 CURE AND SEAL TREATMENT, CONCRETE SIDEWALK SF	SPV.0165.03 CONCRETE APRON 24-INCH SF	REMARKS
0010	642+18	-	647+05	CL	59		685	1	1,640	955	28TH - 26TH
0010	647+85	-	652+80	CL	74		435		1,825	1,390	26TH - 24TH
0010	653+51	-	658+84	CL	81		433		1,978	1,545	24TH - 23RD
0010	659+53	-	663+00	CL	46		435		1,237	802	23RD - 22ND
0010	663+77	-	667+65	CL	41		701		1,262	561	22ND - 21ST
0010	668+51	-	672+45	CL	42		701		1,290	589	21ST - 20TH
0010	673+18	-	676+59	CL	46		444		1,219	775	20TH - 19TH
0010	677+37	-	680+85	CL	46		439		1,244	805	19TH - 18TH
0010	681+52	-	685+05	CL	47		435		1,255	820	18TH - 17TH
0010	686+75	-	689+75	CL	45		306		1,127	821	17TH - 16TH
0010	671+98	-	672+71	RT		630	94		724		20TH
0010	672+94	-	673+62	RT		611	116		727		20TH
0010	676+17	-	676+83	RT		692	121		813		19TH
0010	677+15	-	677+78	RT		650	114		764		19TH
0010	680+37	-	681+06	RT		745	112		857		18TH
0010	681+35	-	682+01	RT		680	113		793		18TH
0010	684+57	-	685+23	RT		696	125		821		17TH
0010	685+55	-	686+21	RT		604	157		761		17TH
0010	688+77	-	689+43	RT		770	135		905		16TH
0010	689+74	-	690+36	LT		642	173		815		16TH
0010	689+45	-	689+75	CL			155		155		16TH CL MEDIAN
					527	6,720	6,429	1	22,212	9,063	

CURB RAMP ITEMS

CATEGORY	STATION	TO	STATION	LOCATION	602.0515 CURB RAMP DETECTABLE WARNING FIELD NATURAL PATINA SF	650.9000 CONSTRUCTION STAKING CURB RAMPS EACH	REMARKS
0010	671+98	-	672+64	RT	24	2	20TH
0010	672+94	-	673+62	RT	24	2	20TH
0010	676+17	-	676+83	RT	24	2	19TH
0010	677+15	-	677+78	RT	24	2	19TH
0010	680+37	-	681+06	RT	24	2	18TH
0010	681+35	-	682+01	RT	24	2	18TH
0010	684+57	-	685+23	RT	24	2	17TH
0010	685+55	-	686+21	RT	24	2	17TH
0010	688+77	-	689+43	RT	24	2	16TH
0010	689+74	-	690+36	LT	24	2	16TH
				TOTAL 0010	240	20	

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CONCRETE DRIVEWAY 6-INCH

CATEGORY	STATION	TO	STATION	LOCATION	602.0810 CONCRETE DRIVEWAY 6-INCH SY	REMARKS
0010	680+37	-	680+47	RT	8	
0010	681+64	-	681+84	RT	23	
				TOTAL 0010	31	

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STORM SEWER PIPES

CATEGORY	PIPE NUMBER	FROM	- TO	LOCATION	608.0412 STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 12-INCH LF	608.0415 STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 15-INCH LF	608.0418 STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 18-INCH LF	SPV.0060.01 CONNECT TO EXISTING STORM SEWER EACH	SPV.0090.04 SEWER FIELD QUALITY CONTROL - TELEVISING LF	INLET ELEVATION	DISCHARGE ELEVATION	SLOPE FT/FT
0030	139 EX		- 139	TOWER AVE / 20TH		EX PIPE TO REMAIN		1		642.85	642.15	0.0093
0030	140	139	- 140	TOWER AVE / 20TH	48				48	643.80	643.15	0.0135
0030	141	139	- 141	TOWER AVE / 20TH	15				15	643.30	643.15	0.0100
0030	142	141	- 142	TOWER AVE / 20TH	35				35	643.55	643.30	0.0072
0030	146	146	- 147	TOWER AVE / 19TH	18				18	642.75	642.31	-0.0240
0030	148	148	- 147	TOWER AVE / 19TH	EX PIPE TO REMAIN			1		642.31	641.85	0.0070
0030	148	148	- 149	TOWER AVE / 19TH			21		21	641.37	641.17	-0.0097
0030	150 EX	149	-	TOWER AVE / 19TH			EX PIPE TO REMAIN	1		641.17	640.58	-0.0085
0030	151	149	- 151	TOWER AVE / 19TH	36				36	642.55	642.10	0.0126
0030	152	152	- 148	TOWER AVE / 19TH	7				7	643.00	642.85	-0.0208
0030	164	164	- 162	TOWER AVE / 18TH		29			29	641.10	640.80	0.0105
0030	163	162	- 163	TOWER AVE / 18TH	48				48	641.90	641.35	0.0114
0030	166	166	- 164	TOWER AVE / 18TH			111		111	640.55	639.05	0.0136
0030	165 EX	164	- 165	TOWER AVE / 18TH	EX PIPE TO REMAIN			1		641.34	641.12	0.0063
0030	167	167 EX	- 166	TOWER AVE / 18TH			24		24	636.75	636.50	0.0105
0030	168	166	- 168	TOWER AVE / 18TH	41				41	639.35	639.00	0.0085
0030	171 EX		- 171	TOWER AVE / 17TH		EX PIPE TO REMAIN		1		640.92	640.78	0.0017
0030	172	171	- 172	TOWER AVE / 17TH	51				51	641.10	640.92	0.0035
0030	173	171	- 173	TOWER AVE / 17TH	19				19	640.96	640.92	0.0021
0030	174	173	- 174	TOWER AVE / 17TH	37				37	641.05	640.96	0.0024
0030	175 EX	175 EX	- 175	TOWER AVE / 16TH		EX PIPE TO REMAIN		1		637.00	636.73	0.0085
0030	176	175	- 176	TOWER AVE / 16TH		21			21	637.22	637.00	0.0106
0030	179 EX	178 EX	- 179	TOWER AVE / 16TH	EX PIPE TO REMAIN			1		639.18	637.21	0.0304
0030	180	180	- 179	TOWER AVE / 16TH	18				18	639.40	639.18	-0.0124
0030	181	175	- 181	TOWER AVE / 16TH	46				46	639.03	638.00	0.0226
0030	182 EX		- 176	TOWER AVE / 16TH	EX PIPE TO REMAIN			1		637.75	637.40	-0.0093
				TOTAL 0030	419	50	156	8	625			

PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	MISCELLANEOUS QUANTITIES	SHEET	E

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STORM SEWER STRUCTURES

CATEGORY	STRUCTURE	STATION	OFFSET*	LOCATION	611.0420 RECONSTRUCTING MANHOLES EACH	611.0530 MANHOLE COVERS TYPE J EACH	611.0624 INLET COVERS TYPE H EACH	611.0639 INLET COVERS TYPE H-S EACH	611.1004 CATCH BASINS 4-FT DIAMETER EACH	611.1230 CATCH BASINS 2X3-FT EACH	611.2004 MANHOLES 4-FT DIAMETER EACH	611.8105 ADJUSTING CATCH BASIN COVERS EACH	650.4000 CONSTRUCTION STAKING STORM SEWER EACH	RIM** ELEVATION	INVERT*** ELEVATION	DEPTH**** FT
0030	139	672+62.09	41.21' RT	TOWER AVE / 20TH		1					1		1	647.57	642.85	3.66
0030	140	672+14.07	40.28' RT	TOWER AVE / 20TH				1	1				1	647.59	641.80	4.79
0030	141	672+62.39	56.16' RT	TOWER AVE / 20TH				1		1			1	647.40	641.30	5.10
0030	142	672+97.03	55.96' RT	TOWER AVE / 20TH				1		1			1	647.25	641.55	4.70
0030	146	676+38.99	38.29' RT	TOWER AVE / 19TH				1	1				1	646.60	640.75	4.85
0030	147	676+56.95	42.06' RT	TOWER AVE / 19TH		1					1		1	647.16	642.31	3.78
0030	148	677+21.77	55.66' RT	TOWER AVE / 19TH		1					1		1	646.68	641.37	4.28
0030	149	677+22.08	35.01' RT	TOWER AVE / 19TH		1					1		1	646.51	641.17	4.30
0030	151	677+57.62	37.89' RT	TOWER AVE / 19TH			1		1				1	646.17	640.55	4.62
0030	152	677+16.49	60.60' RT	TOWER AVE / 19TH				1	1				1	646.20	641.00	4.20
0030	162	681+01.87	41.58' RT	TOWER AVE / 18TH		1					1		1	645.64	640.04	4.36
0030	163	680+53.59	40.18' RT	TOWER AVE / 18TH			1		1				1	645.70	639.90	4.80
0030	164	681+01.65	70.11' RT	TOWER AVE / 18TH				1	1				1	644.94	638.55	5.39
0030	165	681+36.61	69.68' RT	TOWER AVE / 18TH								1	1	644.81	639.34	4.47
0030	166	181+68.39	14.50' RT	TOWER AVE / 18TH				1	1				1	643.36	634.75	7.61
0030	167 EX	181+86.49	0.95' LT	TOWER AVE / 18TH	1	CONNECT NEW PIPE SW, REMOVE SE, ADJUST COVER								643.47	634.00	8.23
0030	168	182+09.48	14.50' RT	TOWER AVE / 18TH			1			1			1	643.07	637.35	4.72
0030	171	685+16.64	36.03' RT	TOWER AVE / 17TH		1					1		1	644.24	640.58	2.42
0030	172	684+65.61	41.50' RT	TOWER AVE / 17TH				1		1			1	644.16	639.10	4.06
0030	173	685+21.47	54.63' RT	TOWER AVE / 17TH				1		1			1	643.79	638.96	3.83
0030	174	685+56.53	66.38' RT	TOWER AVE / 17TH				1		1			1	643.48	639.05	3.43
0030	175	689+77.94	35.17' LT	TOWER AVE / 16TH		1					1		1	642.69	636.47	4.98
0030	175 EX	689+78.41	3.54' LT	TOWER AVE / 16TH		EXISTING MH TO REMAIN								643.30	635.42	6.64
0030	176	689+75.11	55.63' LT	TOWER AVE / 16TH				1	1				1	642.36	635.22	6.14
0030	178 EX	689+79.10	44.24' RT	TOWER AVE / 16TH		EXISTING MH TO REMAIN								642.65	635.90	5.51
0030	179	689+14.40	41.96' RT	TOWER AVE / 16TH		1					1		1	643.37	638.65	3.48
0030	180	688+96.90	38.88' RT	TOWER AVE / 16TH				1	1				1	642.76	637.40	4.36
0030	181	690+23.50	38.28' LT	TOWER AVE / 16TH				1	1				1	642.78	637.03	4.75
				TOTAL 0030	1	8	3	13	10	6	8	1	25			

REMARKS:
*STATIONS AND OFFSETS ARE TO CENTER OF STRUCTURE
**RIM ELEV IS AT THE INLET COVER FLANGE LOCATION
***FOR STRUCTURES WITH SUMPS, THE INVERT ELEVATION IS THE ELEVATION OF THE SUMP. FOR STRUCTURES WITHOUT SUMPS, THE INVERT ELEVATION IS THE ELEVATION OF THE LOWEST PIPE FLOW LINE
****DEPTH = RIM ELEV - TOP OF STRUCTURE BASE ELEV - COVER HEIGHT - 6-INCH ADJUSTMENT RING HEIGHT

ADJUSTING PULL BOXES

CATEGORY	STATION	LOCATION	653.0900 ADJUSTING PULL BOXES EACH	REMARKS
0010	642+43	5' RT	1	N 28TH STREET
0010	667+37	5' LT	1	N 21ST STREET
0010	668+83	5' RT	1	N 21ST STREET
		TOTAL 0010	3	

3

UNDERDRAIN ITEMS

CATEGORY	STATION	TO	STATION	LOCATION	612.0106 PIPE UNDERDRAIN 6-INCH LF	645.0111 GEOTEXTILE TYPE DF SCHEDULE A SY	REMARKS
0010	671+98	-	672+71	RT	98	45	
0010	672+94	-	673+62	RT	97	43	
0010	676+17	-	676+83	RT	98	45	
0010	677+15	-	677+78	RT	95	42	
0010	680+37	-	681+06	RT	238	108	
0010	681+35	-	682+01	RT	95	42	
0010	684+57	-	685+23	RT	99	45	
0010	685+55	-	686+21	RT	99	45	
0010	688+77	-	689+43	RT	99	45	
0010	689+74	-	690+36	LT	87	40	
					1,105	500	

MAINTENANCE AND REPAIR HAUL ROADS

CATEGORY	STATION	TO	STATION	LOCATION	618.0100 MAINTENANCE AND REPAIR OF HAUL ROADS EACH	REMARKS
0010	642+18	-	693+92	LT & RT	1	
				TOTAL 0010	1	

MOBILIZATION

CATEGORY	STATION	TO	STATION	LOCATION	619.1000 MOBILIZATION EACH	REMARKS
0010	642+18	-	693+92	LT & RT	1	
				TOTAL 0010	1	

TURF ITEMS

CATEGORY	STATION	TO	STATION	LOCATION	625.0100 TOPSOIL SY	627.0200 * MULCHING SY		629.0210 FERTILIZER TYPE B CWT	630.0140 SEEDING MIXTURE NO. 40 LB	630.0200 SEEDING TEMPORARY LB	630.0500 SEED WATER MGAL	SPV.0035.01 PLANTING MIXTURE CY	REMARKS
0020	642+18	-	647+05	CL			187					156	28TH - 26TH
0020	647+85	-	652+80	CL			292					243	26TH - 24TH
0020	653+51	-	658+84	CL			329					279	24TH - 23RD
0020	659+53	-	663+00	CL			150					130	23RD - 22ND
0020	663+77	-	667+65	CL			98					82	22ND - 21ST
0020	668+51	-	672+45	CL, RT	35	35	190	1	1	1	0.26	87	21ST - 20TH
0020	673+18	-	676+59	CL, RT	19	19	145	1	1	1	0.14	124	20TH - 19TH
0020	677+37	-	680+85	CL, RT	145	145	150	4	3	3	1.05	131	19TH - 18TH
0020	681+52	-	685+05	CL, RT	39	39	154	1	1	1	0.28	134	18TH - 17TH
0020	686+75	-	689+75	CL, LT	2	2	155	1	1	1	0.02	134	17TH - 16TH
SUBTOTAL					240	240	1,850						
				TOTAL 0020	240	2,090		8	7	7	1.75	1,500	

*4" MULCHING IN MEDIAN ISLANDS AS SHOWN ON LANDSCAPING PLANS

PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	MISCELLANEOUS QUANTITIES	SHEET	E

3

MOBILIZATION EROSION CONTROL

CATEGORY	STATION	TO	STATION	LOCATION	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH	REMARKS
0010	642+18	-	690+35	LT & RT	2	4	
				TOTAL 0010	2	4	

INLET PROTECTION

CATEGORY	STATION	LOCATION	628.7005 INLET PROTECTION TYPE A EACH	628.7015 INLET PROTECTION TYPE C EACH
0030	672+14.07	40.28' RT	1	1
0030	672+62.39	56.16' RT	1	1
0030	672+97.03	55.96' RT	1	1
0030	676+38.99	38.29' RT	1	1
0030	677+57.62	37.89' RT	1	1
0030	677+16.49	60.60' RT	1	1
0030	680+53.59	40.18' RT	1	1
0030	681+01.65	70.11' RT	1	1
0030	181+68.39	14.50' RT	1	1
0030	182+09.48	14.50' RT	1	1
0030	684+65.61	41.50' RT	1	1
0030	685+56.53	66.38' RT	1	1
0030	685+21.47	54.63' RT	1	1
0030	689+75.11	55.63' LT	1	1
0030	688+96.90	38.88' RT	1	1
0030	690+23.50	38.28' LT	1	1
		TOTAL 0030	16	16

SIGNING ITEMS

CATEGORY	SIGN NO	SIGN MESSAGE	SIGN COADE	SIGN SIZE W X H INCHES	634.0814 POSTS TUBULAR STEEL 2X2-INCH X 14-FT EACH	637.2210 SIGNS TYPE II REFLECTIVE H SF	638.2102 MOVING SIGNS TYPE II EACH
0010	1-1	ISLAND SYMBOL W/ARROW	R4-7	24 X 30	1	5	
0010	1-2	ONE WAY					1
0010	1-3	ONE WAY					1
0010	1-4	ONE WAY					1
0010	1-5	ISLAND SYMBOL W/ARROW	R4-7	24 X 30	1	5	
0010	1-6	ISLAND SYMBOL W/ARROW	R4-7	24 X 30	1	5	
0010	2-1	ISLAND SYMBOL W/ARROW	R4-7	24 X 30	1	5	
0010	2-2	ISLAND SYMBOL W/ARROW	R4-7	24 X 30	1	5	
0010	2-3	ISLAND SYMBOL W/ARROW	R4-7	24 X 30	1	5	
0010	2-4	ISLAND SYMBOL W/ARROW	R4-7	24 X 30	1	5	
0010	3-1	ISLAND SYMBOL W/ARROW	R4-7	24 X 30	1	5	
0010	3-2	ISLAND SYMBOL W/ARROW	R4-7	24 X 30	1	5	
0010	3-3	ONE WAY					1
0010	3-4	ISLAND SYMBOL W/ARROW	R4-7	24 X 30	1	5	
0010	3-5	ISLAND SYMBOL W/ARROW	R4-7	24 X 30	1	5	
0010	3-6	ONE WAY					1
0010	4-1	ISLAND SYMBOL W/ARROW	R4-7	24 X 30	1	5	
0010	4-2	STOP					1
0010	4-3	ISLAND SYMBOL W/ARROW	R4-7	24 X 30	1	5	
0010	4-4	ISLAND SYMBOL W/ARROW	R4-7	24 X 30	1	5	
0010	4-5	STOP					1
0010	4-6	ISLAND SYMBOL W/ARROW	R4-7	24 X 30	1	5	
0010	5-1	ISLAND SYMBOL W/ARROW	R4-7	24 X 30	1	5	
0010	5-2	STOP					1
0010	5-3	ISLAND SYMBOL W/ARROW	R4-7	24 X 30	1	5	
0010	5-4	ISLAND SYMBOL W/ARROW	R4-7	24 X 30	1	5	
0010	5-5	STOP					1
0010	5-6	ISLAND SYMBOL W/ARROW	R4-7	24 X 30	1	5	
0010	5-7	ISLAND SYMBOL W/ARROW	R4-7	24 X 30	1	5	
0010	5-8	ONE WAY	R6-2R	24 X 30	1	5	
0010	5-9	ONE WAY	R6-2R	24 X 30	1	5	
0010	5-10	ISLAND SYMBOL W/ARROW	R4-7	24 X 30	1	5	
				TOTAL 0010	23	115	9

3

FIELD OFFICE TYPE B

CATEGORY	STATION	TO	STATION	LOCATION	642.5001 FIELD OFFICE TYPE B EACH	REMARKS
0010	642+18	-	693+92	LT & RT	1	
				TOTAL 0010	1	

MARKING ITEMS

CATEGORY	STATION	TO	STATION	LOCATION	646.2020 MARKING LINE EPOXY 6-INCH (WHITE) LF	(YELLOW) LF	(DOUBLE YELLOW) LF	(WHITE SKIP) LF	646.4020 MARKING LINE EPOXY 10-INCH LF	646.5020 MARKING ARROW EPOXY EACH	646.6120 MARKING STOP LINE EPOXY 18-INCH LF	646.7420 MARKING CROSSWALK EPOXY TRANSVERSE 6-INCH LF	646.7520 MARKING CROSSWALK EPOXY LADDER 24-INCH LF	646.8120 MARKING CURB EPOXY LF	646.8220 MARKING ISLAND EPOXY EACH	REMARKS
0010	642+18	-	647+05	CL	920	975	100	75	315	5	90	650		205	2	INCLUDES N 26TH STREET
0010	647+85	-	652+80	CL	960	992	100	80	105	2	40	495		195	2	INCLUDES N 24TH STREET
0010	653+51	-	658+84	CL	1030	1,070	100	85	55	2	40	490		195	2	INCLUDES N 23RD STREET
0010	659+53	-	663+00	CL	660	700	100	60	105	2	45	490		205	2	INCLUDES N 22ND STREET
0010	663+77	-	667+65	CL	750	780	100	65	205	3	85	530		175	2	INCLUDES N 21ST STREET
0010	668+51	-	672+45	CL	770	790	100	65	205	3	70	445		130	2	INCLUDES N 20TH STREET
0010	673+18	-	676+59	CL	955	685	100	60	115	2	40	445		165	2	INCLUDES N 19TH STREET
0010	677+37	-	680+85	CL	960	705	310	60	110	2	35	800		165	2	INCLUDES N 18TH STREET
0010	681+52	-	685+05	CL	955	710	100	60	110	2	40	455		175	2	INCLUDES N 17TH STREET
0010	686+75	-	690+15	CL	680	710	100	60	55	2	35	155	280	160	2	INCLUDES N 16TH STREET
0010	690+15	-	693+92	CL	1035	765		50	365	7	35			20	2	
SUBTOTAL					9,675	8,882	1,210	720								
				TOTAL 0010		20,487			1,745	32	555	4,955	280	1,790	22	

PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	MISCELLANEOUS QUANTITIES	SHEET	E

STAKING ITEMS

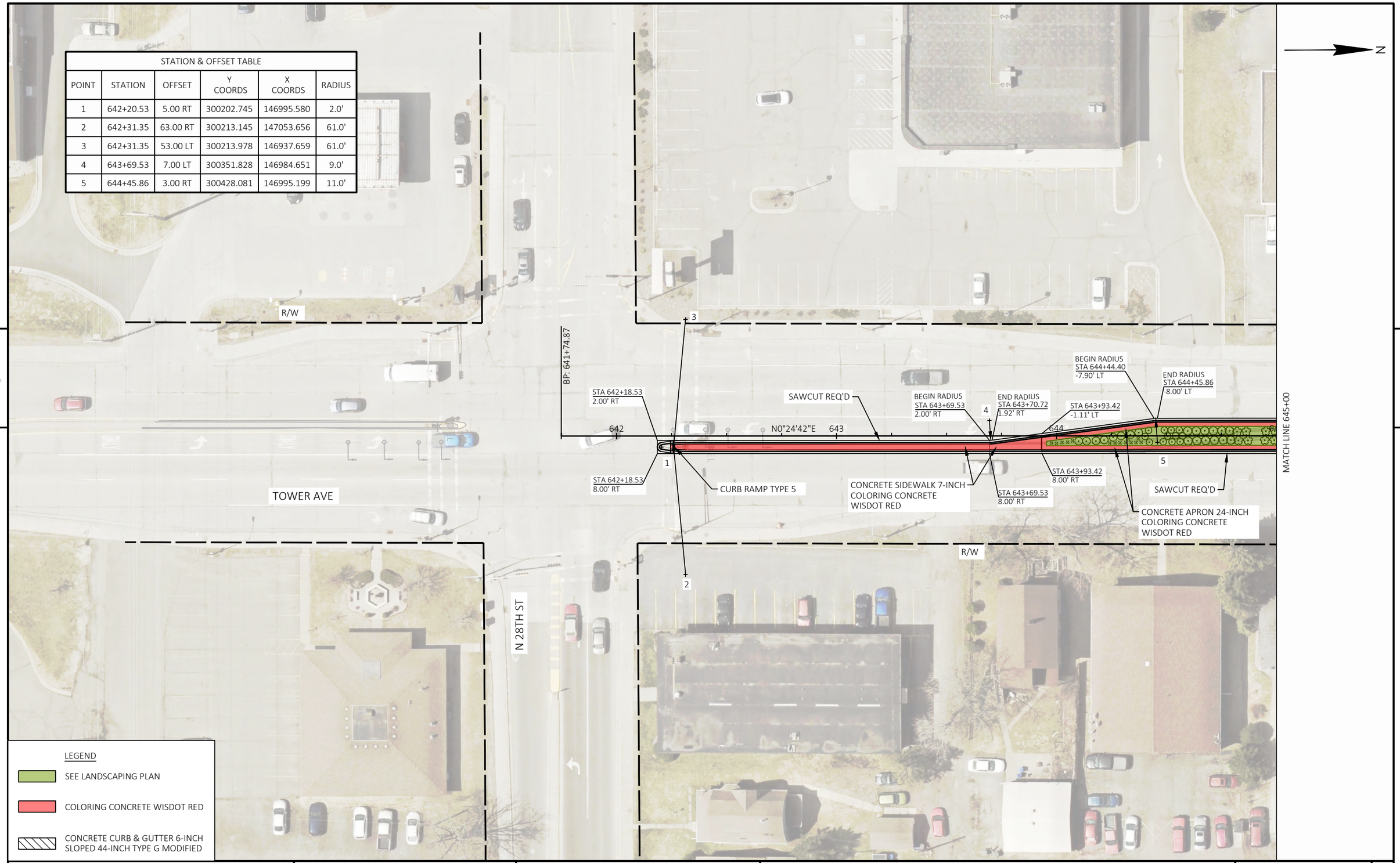
CATEGORY	STATION	TO	STATION	LOCATION	650.4500 CONSTRUCTION STAKING SUBGRADE LF	650.7000 CONSTRUCTION STAKING CONCRETE PAVEMENT LF	650.9911.01 CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) (01. TBD) EACH	REMARKS
0010	671+98	-	672+91	RT	116	116		20TH
0010	672+94	-	673+62	RT	111	111		20TH
0010	676+17	-	676+83	RT	111	111		19TH
0010	677+15	-	677+78	RT	109	109		19TH
0010	680+37	-	681+06	RT	270	270		18TH
0010	681+35	-	682+01	RT	110	110		18TH
0010	684+57	-	685+23	RT	117	117		17TH
0010	685+55	-	686+21	RT	113	113		17TH
0010	688+77	-	689+43	RT	116	116	1	16TH
0010	689+74	-	690+36	LT	102	102		16TH
				TOTAL 0010	1,275	1,275	1	

SAWING

CATEGORY	STATION	TO	STATION	LOCATION	690.0150 SAWING ASPHALT LF	690.0250 SAWING CONCRETE LF	REMARKS
0010	642+18	-	647+05	CL		987	28TH - 26TH
0010	647+85	-	652+80	CL		1003	26TH - 24TH
0010	653+51	-	658+84	CL		1080	24TH - 23RD
0010	659+53	-	663+00	CL		710	23RD - 22ND
0010	663+77	-	667+65	CL		804	22ND - 21ST
0010	668+51	-	672+45	CL		802	21ST - 20TH
0010	673+18	-	676+59	CL		703	20TH - 19TH
0010	677+37	-	680+85	CL		714	19TH - 18TH
0010	681+52	-	685+05	CL		718	18TH - 17TH
0010	686+75	-	689+75	CL		619	17TH - 16TH
0010	671+98	-	672+71	RT		150	20TH
0010	672+94	-	673+62	RT	57	132	20TH
0010	676+17	-	676+83	RT		145	19TH
0010	677+15	-	677+78	RT		174	19TH
0010	680+37	-	681+06	RT	18	316	18TH
0010	681+35	-	682+01	RT	65	139	18TH
0010	684+57	-	685+23	RT		140	17TH
0010	685+55	-	686+21	RT		135	17TH
0010	688+77	-	689+43	RT		146	16TH
0010	689+74	-	690+36	LT		131	16TH
0010	689+45	-	689+75	CL		77	16TH CL MEDIAN
				TOTAL 0010	140	9,825	

3

STATION & OFFSET TABLE					
POINT	STATION	OFFSET	Y COORDS	X COORDS	RADIUS
1	642+20.53	5.00 RT	300202.745	146995.580	2.0'
2	642+31.35	63.00 RT	300213.145	147053.656	61.0'
3	642+31.35	53.00 LT	300213.978	146937.659	61.0'
4	643+69.53	7.00 LT	300351.828	146984.651	9.0'
5	644+45.86	3.00 RT	300428.081	146995.199	11.0'



PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	PLAN	SHEET	E

FILE NAME : X:\PT\S\SUPER\181558\5-FINAL-DSGN\C3D- TOWER AVE\SHEETS\050201-PN.DWG
LAYOUT NAME - 01

PLOT DATE : 4/30/2025 9:01 AM PLOT BY : ANNIE JEROME PLOT NAME : PLOT SCALE : 1 IN:40 FT

STATION & OFFSET TABLE					
POINT	STATION	OFFSET	Y COORDS	X COORDS	RADIUS
6	645+77.31	3.00 LT	300559.571	146990.143	11.0'
7	646+53.63	7.00 RT	300635.825	147000.692	9.0'
8	646+91.82	53.00 RT	300673.677	147046.965	61.0'
9	646+91.82	63.00 LT	300674.510	146930.968	61.0'
10	647+02.63	5.00 LT	300684.910	146989.044	2.0'
11	647+86.76	5.00 RT	300768.971	146999.648	2.0'
12	647+97.58	63.00 RT	300779.370	147057.725	61.0'
13	647+97.58	53.00 LT	300780.204	146941.728	61.0'
14	648+35.76	7.00 LT	300818.055	146988.001	10.0'
15	649+12.09	3.00 RT	300894.309	146998.549	11.0'

N

MATCH LINE 645+00

MATCH LINE 650+00

R/W

CONCRETE APRON 24-INCH COLORING CONCRETE WISDOT RED

SAWCUT REQ'D

STA 646+29.74 1.11' RT

STA 646+29.74 -8.00' LT

STA 646+53.63 -8.00' LT

STA 647+04.63 -8.00' LT

STA 647+84.77 0.00'

BEGIN RADIUS STA 648+35.77 3.00' RT

STA 648+37.09 2.91' RT

BEGIN RADIUS STA 649+10.64 -7.90' LT

END RADIUS STA 649+11.83 -7.98' LT

STA 648+59.66 -1.11' LT

N0°24'42"E

BEGIN RADIUS STA 646+52.44 -1.92' LT

END RADIUS STA 646+53.63 -2.00' LT

STA 647+04.63 -2.00' LT

SAWCUT REQ'D

STA 647+84.78 8.00' RT

BEGIN RADIUS STA 645+77.31 8.00' RT

END RADIUS STA 645+78.76 7.90' RT

STA 648+35.78 8.00' RT

STA 648+59.66 8.00' RT

SAWCUT REQ'D

TOWER AVE

CONCRETE SIDEWALK 7-INCH COLORING CONCRETE WISDOT RED

CONCRETE SIDEWALK 7-INCH COLORING CONCRETE WISDOT RED

CONCRETE APRON 24-INCH COLORING CONCRETE WISDOT RED

R/W

N 26TH ST

LEGEND

SEE LANDSCAPING PLAN

COLORING CONCRETE WISDOT RED

CONCRETE CURB & GUTTER 6-INCH SLOPED 44-INCH TYPE G MODIFIED

PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	PLAN	SHEET	E

FILE NAME : X:\PT\S\SUPER\181558\5-FINAL-DSGN\C3D- TOWER AVE\SHEETS\050201-PN.DWG
LAYOUT NAME - 02

PLOT DATE : 4/30/2025 9:01 AM PLOT BY : ANNIE JEROME PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 44

STATION & OFFSET TABLE					
POINT	STATION	OFFSET	Y COORDS	X COORDS	RADIUS
16	651+52.45	3.00 LT	301134.707	146994.276	11.0'
17	652+28.76	7.00 RT	301210.945	147004.825	10.0'
18	652+66.95	53.00 RT	301248.797	147051.098	61.0'
19	652+66.95	63.00 LT	301249.630	146935.101	61.0'
20	652+77.76	5.00 LT	301260.030	146993.177	2.0'
21	653+53.16	5.00 RT	301335.355	147003.520	2.0'
22	654+02.16	7.00 LT	301384.439	146991.870	10.0'
23	654+78.49	3.00 RT	301460.694	147002.413	11.0'
131	653+63.98	63.00 RT	301345.758	147061.596	61.0'
132	653+64.03	52.99 LT	301346.633	146945.610	61.0'

N

MATCH LINE 650+00

MATCH LINE 655+00

R/W

TOWER AVE

N 24TH ST

SAWCUT REQ'D

CONCRETE APRON 24-INCH COLORING CONCRETE WISDOT RED

BEGIN RADIUS STA 652+27.45 -2.91' LT

STA 652+04.88 -8.00' LT

STA 652+28.77 -8.00' LT

STA 652+79.77 -8.00' LT

PI: 652+81.51

N0°24'42"E

N0°14'41"E

N0°24'30"E

STA 653+51.17 0.00'

PI: 653+49.42

BEGIN RADIUS STA 654+02.17 3.00' RT

END RADIUS STA 654+03.49 2.91' RT

CONCRETE SIDEWALK 7-INCH COLORING CONCRETE WISDOT RED

END RADIUS STA 654+78.23 -7.98' LT

BEGIN RADIUS STA 654+77.04 -7.90' LT

STA 654+26.07 -1.11' LT

STA 652+04.88 1.11' RT

END RADIUS STA 652+28.77 -3.00' LT

STA 652+79.77 0.00'

SAWCUT REQ'D

STA 653+51.18 8.00' RT

SAWCUT REQ'D

STA 654+02.18 8.00' RT

STA 654+26.07 8.00' RT

SAWCUT REQ'D

BEGIN RADIUS STA 651+52.46 8.00' RT

END RADIUS STA 651+53.91 7.90' RT

CONCRETE SIDEWALK 7-INCH COLORING CONCRETE WISDOT RED

CONCRETE APRON 24-INCH COLORING CONCRETE WISDOT RED

16 17 18 19 20 21 22 23 131 132

651 652 653 654

LEGEND

SEE LANDSCAPING PLAN

COLORING CONCRETE WISDOT RED

CONCRETE CURB & GUTTER 6-INCH SLOPED 44-INCH TYPE G MODIFIED

PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	PLAN	SHEET E

FILE NAME : X:\PT\S\SUPER\181558\5-FINAL-DSGN\C3D- TOWER AVE\SHEETS\050201-PN.DWG
LAYOUT NAME - 03

PLOT DATE : 4/30/2025 9:01 AM

PLOT BY : ANNIE JEROME

PLOT NAME :

PLOT SCALE : 1 IN:40 FT

STATION & OFFSET TABLE					
POINT	STATION	OFFSET	Y COORDS	X COORDS	RADIUS
24	657+57.46	3.00 LT	301739.697	146998.401	11.0'
25	658+33.77	7.00 RT	301815.936	147008.945	10.0'
26	658+71.44	52.07 RT	301853.281	147054.280	61.0'
27	658+71.34	63.00 LT	301854.010	146939.214	61.0'
28	658+82.16	5.00 LT	301864.413	146997.290	2.0'
29	659+54.56	5.00 RT	301936.738	147007.853	2.0'
30	659+65.18	60.94 RT	301946.995	147063.864	61.0'
31	659+65.26	51.82 LT	301947.813	146951.107	61.0'

N

5

5

MATCH LINE 655+00

MATCH LINE 660+00

R/W

SAWCUT REQ'D

CONCRETE APRON 24-INCH
COLORING CONCRETE
WISDOT RED

TOWER AVE

CONCRETE SIDEWALK 7-INCH
COLORING CONCRETE
WISDOT RED

CONCRETE PAVEMENT 9-INCH
W/ NORMAL GUTTER PAN

656

N0°24'30"E

657

658

659

N0°26'48"E

N0°22'39"E

24

25

26

27

28

29

30

31

STA 658+09.89
-8.00' LT

STA 658+09.89
1.11' RT

STA 658+33.17
-8.00' LT

STA 658+84.16
-8.00' LT

STA 659+52.48
-7.83' LT

STA 659+52.56
2.00' RT

PI: 658+81.96

PI: 659+53.80

BEGIN RADIUS
STA 657+57.46
8.00' RT

END RADIUS
STA 657+58.92
7.90' RT

BEGIN RADIUS
STA 658+32.45
-2.91' LT

END RADIUS
STA 658+33.77
-3.00' LT

STA 658+84.17
0.00'

STA 659+52.58
8.00' RT

SAWCUT
REQ'D

SAWCUT
REQ'D

CONCRETE SIDEWALK 7-INCH
COLORING CONCRETE
WISDOT RED

R/W

N 23RD ST

LEGEND

SEE LANDSCAPING PLAN

COLORING CONCRETE WISDOT RED

CONCRETE CURB & GUTTER 6-INCH
SLOPED 44-INCH TYPE G MODIFIED

PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	PLAN	SHEET	E

FILE NAME : X:\PT\S\SUPER\181558\5-FINAL-DSGN\C3D- TOWER AVE\SHEETS\050201-PN.DWG
LAYOUT NAME - 04

PLOT DATE : 4/30/2025 9:01 AM

PLOT BY : ANNIE JEROME

PLOT NAME :

PLOT SCALE : 1 IN:40 FT

STATION & OFFSET TABLE					
POINT	STATION	OFFSET	Y COORDS	X COORDS	RADIUS
32	660+03.56	7.00 LT	301985.816	146996.176	9.0'
33	660+79.88	3.00 RT	302062.076	147006.679	11.0'
34	661+73.25	3.00 LT	302155.477	147001.294	11.0'
35	662+49.56	7.00 RT	302231.721	147011.797	10.0'
36	662+87.74	53.00 RT	302269.600	147058.047	61.0'
37	662+87.74	63.00 LT	302270.364	146942.050	61.0'
38	662+98.56	5.00 LT	302280.799	147000.120	2.0'
39	663+79.24	5.00 RT	302361.407	147010.654	2.0'
41	663+90.05	53.00 LT	302372.617	146952.728	61.0'
42	664+28.23	7.00 LT	302410.486	146998.987	9.0'

N

MATCH LINE 660+00

MATCH LINE 665+00

R/W

CONCRETE PAVEMENT 9-INCH
W/ NORMAL GUTTER PAN

BEGIN RADIUS
STA 660+03.56
2.00' RT

BEGIN RADIUS
STA 660+78.44
-7.90' LT

END RADIUS
STA 660+79.63
-7.98' LT

STA 660+27.45
-1.11' LT

SAWCUT REQ'D

STA 662+25.68
-8.00' LT

STA 662+25.68
1.11' RT

STA 662+49.57
-8.00' LT

STA 663+00.57
-8.00' LT

N0°22'39"E

PI: 663+73.26

BEGIN RADIUS
STA 664+28.24
2.00' RT

END RADIUS
STA 664+29.43
1.92' RT

664 N0°23'25"E

CONCRETE APRON 24-INCH
COLORING CONCRETE
WISDOT RED

STA 660+27.45
8.00' RT

STA 660+66.91
-8.37' LT

BEGIN RADIUS
STA 661+73.25
8.00' RT

END RADIUS
STA 661+74.71
7.90' RT

BEGIN RADIUS
STA 662+48.24
-2.91' LT

END RADIUS
STA 662+49.57
-3.00' LT

STA 663+00.57
0.00'

STA 663+77.24
2.00' RT

STA 663+77.25
8.00' RT

STA 664+28.25
8.00' RT

SAWCUT
REQ'D

SAWCUT
REQ'D

SAWCUT
REQ'D

END RADIUS
STA 660+04.75
1.92' RT

TOWER AVE

CONCRETE APRON 24-INCH
COLORING CONCRETE
WISDOT RED

CONCRETE SIDEWALK 7-INCH
COLORING CONCRETE
WISDOT RED

CONCRETE SIDEWALK 7-INCH
COLORING CONCRETE
WISDOT RED

CONCRETE SIDEWALK 7-INCH
COLORING CONCRETE
WISDOT RED

N 22ND ST

32 33 34 35 36 37 38 39 40 41 42

661 662 663

LEGEND

SEE LANDSCAPING PLAN

COLORING CONCRETE WISDOT RED

CONCRETE CURB & GUTTER 6-INCH
SLOPED 44-INCH TYPE G MODIFIED

PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	PLAN	SHEET	E

FILE NAME : X:\PT\S\SUPER\181558\5-FINAL-DSGN\C3D- TOWER AVE\SHEETS\050201-PN.DWG
LAYOUT NAME - 05

PLOT DATE : 4/30/2025 9:02 AM PLOT BY : ANNIE JEROME PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 44

STATION & OFFSET TABLE					
POINT	STATION	OFFSET	Y COORDS	X COORDS	RADIUS
43	665+04.56	3.00 RT	302486.743	147009.506	11.0'
44	665+37.55	3.00 LT	302519.767	147003.731	11.0'
45	666+13.87	7.00 RT	302596.025	147014.251	9.0'
46	667+52.06	53.00 RT	302733.891	147061.191	61.0'
47	667+52.06	63.00 LT	302734.682	146945.193	61.0'
48	667+62.87	5.00 LT	302745.103	147003.266	2.0'
49	668+52.76	5.00 RT	302834.912	147013.905	2.0'
50	668+63.57	63.00 RT	302845.299	147071.983	61.0'
51	668+63.57	53.00 LT	302846.158	146955.986	61.0'

N

5

5

MATCH LINE 665+00

MATCH LINE 670+00

CONCRETE APRON 24-INCH COLORING CONCRETE WISDOT RED

R/W

BEGIN RADIUS STA 665+03.11 7.90' LT

END RADIUS STA 665+04.30 7.98' LT

STA 665+89.99 8.00' LT

CONCRETE SIDEWALK 7-INCH COLORING CONCRETE WISDOT RED

STA 665+89.99 1.13' RT

STA 666+13.88 8.00' LT

TOWER AVE

PI: 668+07.17

STA 667+64.88 8.00' LT

STA 668+50.76 2.00' RT

CONCRETE SIDEWALK 7-INCH COLORING CONCRETE WISDOT RED

N0°23'25"E

N0°25'27"E

BEGIN RADIUS STA 665+37.55 8.00' RT

END RADIUS STA 665+39.01 7.90' RT

BEGIN RADIUS STA 666+12.69 1.92' LT

END RADIUS STA 666+14.14 2.02' LT

STA 667+64.89 2.00' LT

STA 668+50.77 8.00' RT

SAWCUT REQ'D

SAWCUT REQ'D

43 44 45 46 47 48 49 50 51

665 666 667 668 669

N 21ST ST

R/W

LEGEND

SEE LANDSCAPING PLAN

COLORING CONCRETE WISDOT RED

CONCRETE CURB & GUTTER 6-INCH SLOPED 44-INCH TYPE G MODIFIED

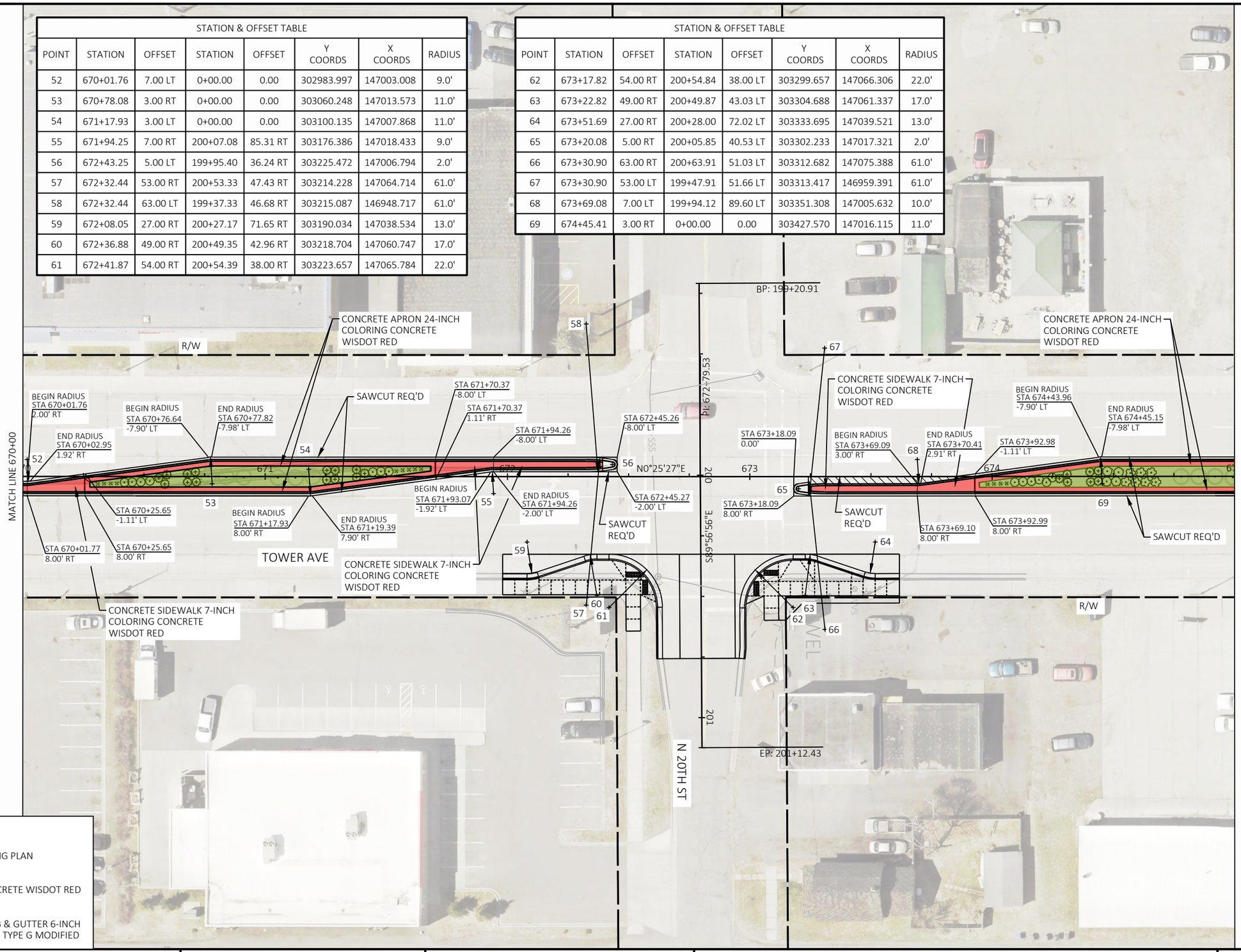
PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	PLAN	SHEET	E

FILE NAME : X:\PT\S\SUPER\181558\5-FINAL-DSGN\C3D- TOWER AVE\SHEETS\050201-PN.DWG
LAYOUT NAME - 06

PLOT DATE : 4/30/2025 9:02 AM PLOT BY : ANNIE JEROME PLOT NAME : PLOT SCALE : 1 IN:40 FT

STATION & OFFSET TABLE							
POINT	STATION	OFFSET	STATION	OFFSET	Y COORDS	X COORDS	RADIUS
52	670+01.76	7.00 LT	0+00.00	0.00	302983.997	147003.008	9.0'
53	670+78.08	3.00 RT	0+00.00	0.00	303060.248	147013.573	11.0'
54	671+17.93	3.00 LT	0+00.00	0.00	303100.135	147007.868	11.0'
55	671+94.25	7.00 RT	200+07.08	85.31 RT	303176.386	147018.433	9.0'
56	672+43.25	5.00 LT	199+95.40	36.24 RT	303225.472	147006.794	2.0'
57	672+32.44	53.00 RT	200+53.33	47.43 RT	303214.228	147064.714	61.0'
58	672+32.44	63.00 LT	199+37.33	46.68 RT	303215.087	146948.717	61.0'
59	672+08.05	27.00 RT	200+27.17	71.65 RT	303190.034	147038.534	13.0'
60	672+36.88	49.00 RT	200+49.35	42.96 RT	303218.704	147060.747	17.0'
61	672+41.87	54.00 RT	200+54.39	38.00 RT	303223.657	147065.784	22.0'

STATION & OFFSET TABLE							
POINT	STATION	OFFSET	STATION	OFFSET	Y COORDS	X COORDS	RADIUS
62	673+17.82	54.00 RT	200+54.84	38.00 LT	303299.657	147066.306	22.0'
63	673+22.82	49.00 RT	200+49.87	43.03 LT	303304.688	147061.337	17.0'
64	673+51.69	27.00 RT	200+28.00	72.02 LT	303333.695	147039.521	13.0'
65	673+20.08	5.00 RT	200+05.85	40.53 LT	303302.233	147017.321	2.0'
66	673+30.90	63.00 RT	200+63.91	51.03 LT	303312.682	147075.388	61.0'
67	673+30.90	53.00 LT	199+47.91	51.66 LT	303313.417	146959.391	61.0'
68	673+69.08	7.00 LT	199+94.12	89.60 LT	303351.308	147005.632	10.0'
69	674+45.41	3.00 RT	0+00.00	0.00	303427.570	147016.115	11.0'



LEGEND

- SEE LANDSCAPING PLAN
- COLORING CONCRETE WISDOT RED
- CONCRETE CURB & GUTTER 6-INCH SLOPED 44-INCH TYPE G MODIFIED

PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	PLAN	SHEET	E

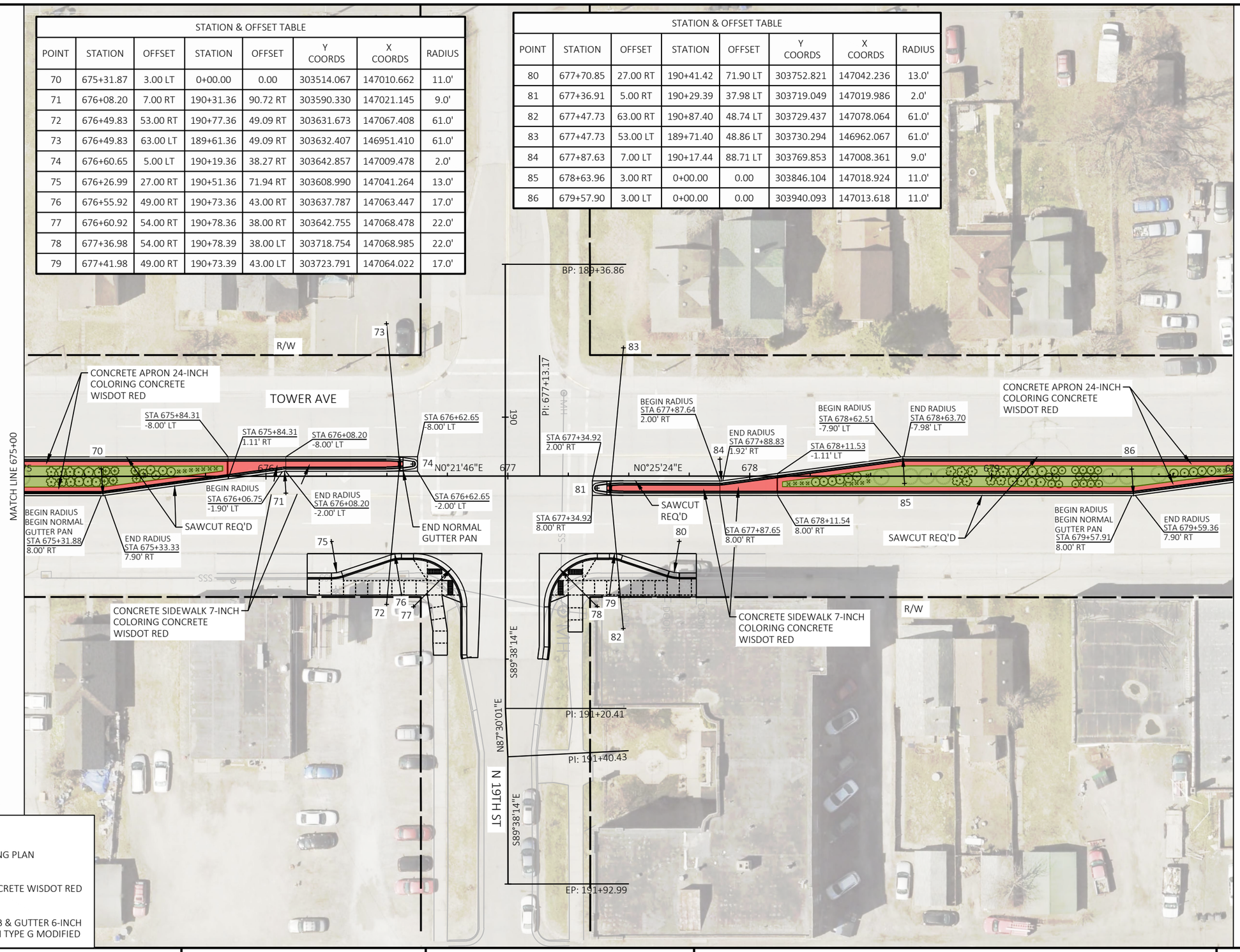
FILE NAME : X:\PT\S\SUPER\181558\5-FINAL-DSGN\C3D- TOWER AVE\SHEETS\050201-PN.DWG
LAYOUT NAME - 07

PLOT DATE : 4/30/2025 9:02 AM PLOT BY : ANNIE JEROME PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 44

STATION & OFFSET TABLE							
POINT	STATION	OFFSET	STATION	OFFSET	Y COORDS	X COORDS	RADIUS
70	675+31.87	3.00 LT	0+00.00	0.00	303514.067	147010.662	11.0'
71	676+08.20	7.00 RT	190+31.36	90.72 RT	303590.330	147021.145	9.0'
72	676+49.83	53.00 RT	190+77.36	49.09 RT	303631.673	147067.408	61.0'
73	676+49.83	63.00 LT	189+61.36	49.09 RT	303632.407	146951.410	61.0'
74	676+60.65	5.00 LT	190+19.36	38.27 RT	303642.857	147009.478	2.0'
75	676+26.99	27.00 RT	190+51.36	71.94 RT	303608.990	147041.264	13.0'
76	676+55.92	49.00 RT	190+73.36	43.00 RT	303637.787	147063.447	17.0'
77	676+60.92	54.00 RT	190+78.36	38.00 RT	303642.755	147068.478	22.0'
78	677+36.98	54.00 RT	190+78.39	38.00 LT	303718.754	147068.985	22.0'
79	677+41.98	49.00 RT	190+73.39	43.00 LT	303723.791	147064.022	17.0'

STATION & OFFSET TABLE							
POINT	STATION	OFFSET	STATION	OFFSET	Y COORDS	X COORDS	RADIUS
80	677+70.85	27.00 RT	190+41.42	71.90 LT	303752.821	147042.236	13.0'
81	677+36.91	5.00 RT	190+29.39	37.98 LT	303719.049	147019.986	2.0'
82	677+47.73	63.00 RT	190+87.40	48.74 LT	303729.437	147078.064	61.0'
83	677+47.73	53.00 LT	189+71.40	48.86 LT	303730.294	146962.067	61.0'
84	677+87.63	7.00 LT	190+17.44	88.71 LT	303769.853	147008.361	9.0'
85	678+63.96	3.00 RT	0+00.00	0.00	303846.104	147018.924	11.0'
86	679+57.90	3.00 LT	0+00.00	0.00	303940.093	147013.618	11.0'



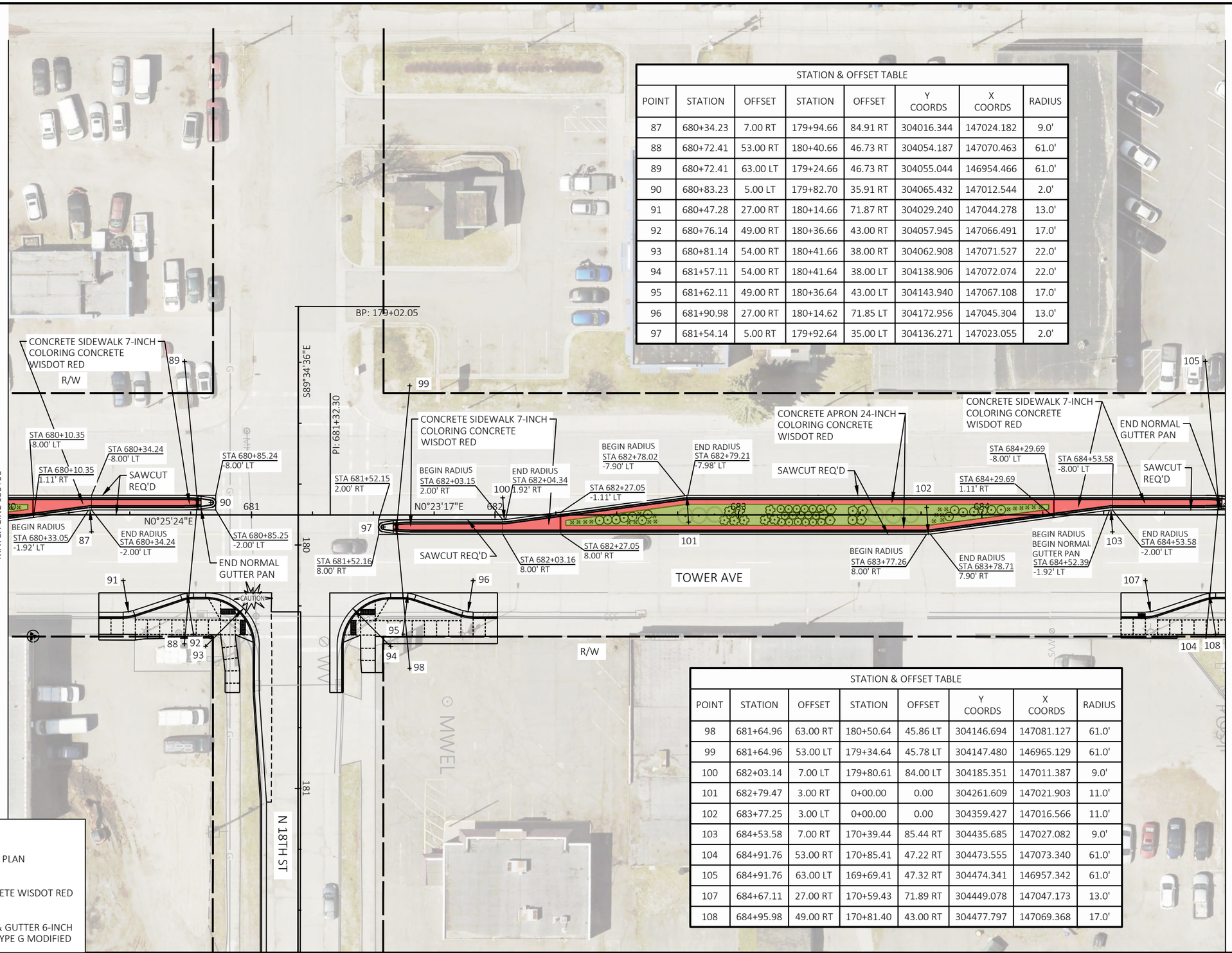
LEGEND

- SEE LANDSCAPING PLAN
- COLORING CONCRETE WISDOT RED
- CONCRETE CURB & GUTTER 6-INCH SLOPED 44-INCH TYPE G MODIFIED

PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	PLAN	SHEET	E

FILE NAME : X:\PT\S\SUPER\181558\5-FINAL-DSGN\C3D- TOWER AVE\SHEETS\050201-PN.DWG
LAYOUT NAME - 08

PLOT DATE : 4/30/2025 9:03 AM PLOT BY : ANNIE JEROME PLOT NAME : PLOT SCALE : 1 IN:40 FT



STATION & OFFSET TABLE							
POINT	STATION	OFFSET	STATION	OFFSET	Y COORDS	X COORDS	RADIUS
87	680+34.23	7.00 RT	179+94.66	84.91 RT	304016.344	147024.182	9.0'
88	680+72.41	53.00 RT	180+40.66	46.73 RT	304054.187	147070.463	61.0'
89	680+72.41	63.00 LT	179+24.66	46.73 RT	304055.044	146954.466	61.0'
90	680+83.23	5.00 LT	179+82.70	35.91 RT	304065.432	147012.544	2.0'
91	680+47.28	27.00 RT	180+14.66	71.87 RT	304029.240	147044.278	13.0'
92	680+76.14	49.00 RT	180+36.66	43.00 RT	304057.945	147066.491	17.0'
93	680+81.14	54.00 RT	180+41.66	38.00 RT	304062.908	147071.527	22.0'
94	681+57.11	54.00 RT	180+41.64	38.00 LT	304138.906	147072.074	22.0'
95	681+62.11	49.00 RT	180+36.64	43.00 LT	304143.940	147067.108	17.0'
96	681+90.98	27.00 RT	180+14.62	71.85 LT	304172.956	147045.304	13.0'
97	681+54.14	5.00 RT	179+92.64	35.00 LT	304136.271	147023.055	2.0'

STATION & OFFSET TABLE							
POINT	STATION	OFFSET	STATION	OFFSET	Y COORDS	X COORDS	RADIUS
98	681+64.96	63.00 RT	180+50.64	45.86 LT	304146.694	147081.127	61.0'
99	681+64.96	53.00 LT	179+34.64	45.78 LT	304147.480	146965.129	61.0'
100	682+03.14	7.00 LT	179+80.61	84.00 LT	304185.351	147011.387	9.0'
101	682+79.47	3.00 RT	0+00.00	0.00	304261.609	147021.903	11.0'
102	683+77.25	3.00 LT	0+00.00	0.00	304359.427	147016.566	11.0'
103	684+53.58	7.00 RT	170+39.44	85.44 RT	304435.685	147027.082	9.0'
104	684+91.76	53.00 RT	170+85.41	47.22 RT	304473.555	147073.340	61.0'
105	684+91.76	63.00 LT	169+69.41	47.32 RT	304474.341	146957.342	61.0'
107	684+67.11	27.00 RT	170+59.43	71.89 RT	304449.078	147047.173	13.0'
108	684+95.98	49.00 RT	170+81.40	43.00 RT	304477.797	147069.368	17.0'

LEGEND

- SEE LANDSCAPING PLAN
- COLORING CONCRETE WISDOT RED
- CONCRETE CURB & GUTTER 6-INCH SLOPED 44-INCH TYPE G MODIFIED

PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	PLAN	SHEET E

FILE NAME : X:\PT\S\SUPER\181558\5-FINAL-DSGN\C3D- TOWER AVE\SHEETS\050201-PN.DWG
LAYOUT NAME - 09

PLOT DATE : 4/30/2025 9:03 AM PLOT BY : ANNIE JEROME PLOT NAME : PLOT SCALE : 1 IN:40 FT

STATION & OFFSET TABLE							
POINT	STATION	OFFSET	STATION	OFFSET	Y COORDS	X COORDS	RADIUS
106	685+02.58	5.00 LT	170+27.40	36.45 RT	304484.765	147015.414	2.0'
109	685+00.98	54.00 RT	170+86.40	38.00 RT	304482.763	147074.402	22.0'
110	685+77.02	54.00 RT	170+86.36	38.00 LT	304558.761	147074.947	22.0'
111	685+82.02	49.00 RT	170+81.36	43.00 LT	304563.799	147069.986	17.0'
112	686+10.89	27.00 RT	170+59.36	71.87 LT	304592.836	147048.208	13.0'
113	685+77.49	5.00 RT	170+37.36	38.47 LT	304559.606	147025.952	2.0'
114	685+88.31	63.00 RT	170+95.36	49.28 LT	304569.977	147084.034	61.0'
116	686+26.49	7.00 LT	170+25.36	87.47 LT	304608.697	147014.329	10.0'
117	687+02.82	3.00 RT	0+00.00	0.00	304684.945	147024.915	11.0'
118	688+00.76	3.00 LT	0+00.00	0.00	304782.925	147019.667	11.0'
119	688+86.67	27.00 RT	160+29.18	71.63 RT	304868.608	147050.326	13.0'
120	689+15.53	49.00 RT	160+51.43	42.96 RT	304897.307	147072.547	17.0'
121	689+20.52	54.00 RT	160+56.48	38.00 RT	304902.268	147077.585	22.0'

STATION & OFFSET TABLE							
POINT	STATION	OFFSET	STATION	OFFSET	Y COORDS	X COORDS	RADIUS
122	689+48.22	5.00 RT	160+07.71	9.90 RT	304930.321	147028.787	3.0'
123	689+55.78	3.00 RT	160+05.77	2.31 RT	304937.900	147026.843	5.0'
124	689+92.44	44.00 RT	160+47.08	34.00 LT	304974.258	147068.112	50.0'
125	689+72.24	5.00 LT	159+97.91	14.21 LT	304954.420	147018.964	3.0'
126	689+62.50	3.00 LT	159+99.83	4.46 LT	304944.663	147020.893	5.0'
127	689+23.72	42.00 LT	159+60.51	34.00 RT	304906.166	146981.612	50.0'
128	689+95.63	52.00 LT	159+51.11	38.00 LT	304978.156	146972.138	22.0
129	690+00.63	47.00 LT	159+56.15	42.96 LT	304983.119	146977.174	17.0'
130	690+29.50	25.00 LT	159+78.40	71.64 LT	305011.824	146999.386	13.0'
133	688+76.28	5.00 LT	159+97.09	81.75 RT	304858.453	147018.247	3.0'

BP: 160+34.71
BP: 159+08.84
PI: 685+43.05
PI: 689+12.73
PI: 171+09.43
PI: 171+49.71
EP: 171+68.07
PI: 160+79.13
EP: 161+35.78
MATCH LINE 685+00
S89°33'36"E
N0°23'17"E
N0°26'24"E
N89°56'19"E
N88°43'58"E
N88°46'20"E
TOWER AVE
N 17TH ST
N 16TH ST
R/W
STA 685+04.58 -8.00' LT
STA 685+04.59 -2.00' LT
STA 685+75.50 0.00'
STA 685+75.51 8.00' RT
BEGIN RADIUS STA 686+26.50 3.00' RT
END RADIUS STA 686+27.82 2.91' RT
STA 686+26.51 8.00' RT
STA 686+50.40 -1.11' LT
STA 686+50.40 8.00' RT
BEGIN RADIUS STA 687+01.37 -7.90' LT
END RADIUS STA 687+02.56 -7.98' LT
BEGIN RADIUS STA 688+00.76 8.00' RT
END RADIUS STA 688+02.22 7.90' RT
STA 688+53.19 -8.00' LT
STA 688+53.19 1.11' RT
STA 688+79.28 -8.00' LT
STA 688+79.28 -2.37' LT
CONCRETE APRON 24-INCH COLORING CONCRETE WISDOT RED
SAWCUT REQ'D
CONCRETE SIDEWALK 7-INCH COLORING CONCRETE WISDOT RED
CONCRETE CURB & GUTTER 6-INCH SLOPED 44-INCH TYPE G MODIFIED
106 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 133
686 687 688 689 690 691

LEGEND
SEE LANDSCAPING PLAN
COLORING CONCRETE WISDOT RED
CONCRETE CURB & GUTTER 6-INCH SLOPED 44-INCH TYPE G MODIFIED

PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	PLAN	SHEET E

FILE NAME : X:\PT\S\SUPER\181558\5-FINAL-DSGN\C3D- TOWER AVE\SHEETS\050201-PN.DWG
LAYOUT NAME - 10
PLOT DATE : 4/30/2025 9:03 AM
PLOT BY : ANNIE JEROME
PLOT NAME :
PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 44

STA 681+19.14 TOWER AVENUE =
STA 179+87.66 N 18TH STREET
(SEE INTERSECTION DETAIL SHEET)

682+00

N0°23'17"E

BP: 176+02.05

PI: 681+32.30

S89°34'36"E

180+00

181+00

182+00

N 18TH STREET

681+00

N0°25'24"E

TOWER AVENUE

CAUTION

EP: 182+37.69

CONCRETE SIDEWALK 7-INCH
COLORING CONCRETE
WISDOT RED

CONCRETE SIDEWALK 7-INCH
COLORING CONCRETE
WISDOT RED

END CONSTRUCTION
STA 182+13.00
MATCH EXISTING
SAWCUT REQ'D

N

MWEL

WV

MH

G

EL

LEGEND

SEE LANDSCAPING PLAN

COLORING CONCRETE WISDOT RED

5

5

650

645

640

635

STA 180+27.47
EL 645.79

STA 180+43.25
EL 645.55

STA 180+55.57
EL 645.35

STA 180+75.03
EL 645.07

STA 180+94.15
EL 644.72

STA 181+18.80
EL 644.30

STA 181+42.20
EL 644.03

STA 181+70.73
EL 643.65

STA 181+88.96
EL 643.49

STA 182+13.00
EL 643.49

-1.54%

-1.58%

-1.47%

-1.83%

-1.69%

-1.16%

-1.33%

-0.99%

-0.55%

0.00%

-0.00%

FINISHED R/L PROFILE

EXISTING R/L PROFILE

STA 181+84.51
EL 643.51

STA 182+05.00
EL 643.49

EXISTING R/L ELEVATION

FINISHED R/L ELEVATION

645.44

645.44

644.63

644.62

643.93

643.93

643.48

643.49

178

179

180

181

182

183

183

PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	PLAN AND PROFILE: N 18TH STREET	SHEET	E

NOTE:
AREAS MARKED FOR CONCRETE REPAIRS ARE APPROXIMATE AND ACTUAL REPAIRS AND LOCATIONS OF THOSE REPAIRS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER DURING CONSTRUCTION.

N

R/W

TOWER AVE

BP: 641+74.87

642

643

644

STA 642+18.52
2.44' RT

STA 643+69.52
2.20' RT

STA 644+45.83
-7.93' LT

STA 642+18.53
8.44' RT

STA 643+69.53
8.20' RT

MATCH LINE 645+00.01

N 28TH ST

R/W

LEGEND

CONTINUOUS DIAMOND GRINDING CONCRETE PAVEMENT

CONCRETE REPAIR

PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	CONCRETE REPAIR	SHEET E

FILE NAME : X:\PT\S\SUPER\181558\5-FINAL-DSGN\C3D- TOWER AVE\SHEETS\CONCRETE PAVMENT REPAIR.DWG
LAYOUT NAME - 01

PLOT DATE : 4/30/2025 9:05 AM PLOT BY : ANNIE JEROME PLOT NAME : PLOT SCALE : 1 IN:40 FT

NOTE:
AREAS MARKED FOR CONCRETE REPAIRS ARE APPROXIMATE AND ACTUAL REPAIRS AND LOCATIONS OF THOSE REPAIRS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER DURING CONSTRUCTION.

N

R/W

MATCH LINE 645+00.01

TOWER AVE

STA 647+04.61
-8.35' LT

STA 646+53.62
-2.27' LT

STA 647+04.62
-2.35' LT

STA 645+77.31
7.86' RT

646

648

649

MATCH LINE 650+00.01

N 26TH ST

R/W

LEGEND

CONTINUOUS DIAMOND GRINDING CONCRETE PAVEMENT

CONCRETE REPAIR

PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	CONCRETE REPAIR	SHEET	E

FILE NAME : X:\PT\S\SUPER\181558\5-FINAL-DSGN\C3D- TOWER AVE\SHEETS\CONCRETE PAVMENT REPAIR.DWG
LAYOUT NAME - 02

PLOT DATE : 4/30/2025 9:05 AM PLOT BY : ANNIE JEROME PLOT NAME : PLOT SCALE : 1 IN:40 FT

NOTE:
AREAS MARKED FOR CONCRETE REPAIRS ARE APPROXIMATE AND ACTUAL REPAIRS AND LOCATIONS OF THOSE REPAIRS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER DURING CONSTRUCTION.

N

R/W

PI: 652+81.51

PI: 653+49.42

MATCH LINE 650+00.01

650 651 652 653 N0°14'41"E N0°24'30"E 654 655

MATCH LINE 655+00.01

TOWER AVE

N 24TH ST

R/W

LEGEND

CONTINUOUS DIAMOND GRINDING CONCRETE PAVEMENT

CONCRETE REPAIR

PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	CONCRETE REPAIR	SHEET	E

FILE NAME : X:\PT\S\SUPER\181558\5-FINAL-DSGN\C3D- TOWER AVE\SHEETS\CONCRETE PAVMENT REPAIR.DWG
LAYOUT NAME - 03

PLOT DATE : 4/30/2025 9:05 AM PLOT BY : ANNIE JEROME PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 44

NOTE:
AREAS MARKED FOR CONCRETE REPAIRS ARE APPROXIMATE AND ACTUAL REPAIRS AND LOCATIONS OF THOSE REPAIRS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER DURING CONSTRUCTION.

N

R/W

TOWER AVE

PI: 658+81.96

PI: 659+53.80

MATCH LINE 655+00.01

656

N0°24'30"E

657

658

659

N0°26'48"E

N0°22'39"E

MATCH LINE 660+00.01

R/W

N 23RD ST

LEGEND

CONTINUOUS DIAMOND GRINDING CONCRETE PAVEMENT

CONCRETE REPAIR

PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	CONCRETE REPAIR	SHEET E

FILE NAME : X:\PT\S\SUPER\181558\5-FINAL-DSGN\C3D- TOWER AVE\SHEETS\CONCRETE PAVMENT REPAIR.DWG
LAYOUT NAME - 04

PLOT DATE : 4/30/2025 9:05 AM PLOT BY : ANNIE JEROME PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 44

NOTE:
AREAS MARKED FOR CONCRETE REPAIRS ARE APPROXIMATE AND ACTUAL REPAIRS AND LOCATIONS OF THOSE REPAIRS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER DURING CONSTRUCTION.

N

R/W

TOWER AVE

MATCH LINE 660+00.01

660

661

N0°22'39"E

662

663

PI: 663+73.26

664

665

MATCH LINE 665+00.01

N 22ND ST

R/W

LEGEND

CONTINUOUS DIAMOND GRINDING CONCRETE PAVEMENT

CONCRETE REPAIR

PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	CONCRETE REPAIR	SHEET	E

FILE NAME : X:\PT\S\SUPER\181558\5-FINAL-DSGN\C3D- TOWER AVE\SHEETS\CONCRETE PAVMENT REPAIR.DWG
LAYOUT NAME - 05

PLOT DATE : 4/30/2025 11:24 PM PLOT BY : JARROD STARREN PLOT NAME : PLOT SCALE : 1 IN:40 FT

NOTE:
AREAS MARKED FOR CONCRETE REPAIRS ARE APPROXIMATE AND ACTUAL REPAIRS AND LOCATIONS OF THOSE REPAIRS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER DURING CONSTRUCTION.

N

R/W

TOWER AVE

MATCH LINE 665+00.01

665 666 667 668 669

MATCH LINE 670+00.01

N 21ST ST

R/W

LEGEND

CONTINUOUS DIAMOND GRINDING CONCRETE PAVEMENT

CONCRETE REPAIR

PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	CONCRETE REPAIR	SHEET	E

FILE NAME : X:\PT\S\SUPER\181558\5-FINAL-DSGN\C3D- TOWER AVE\SHEETS\CONCRETE PAVMENT REPAIR.DWG
LAYOUT NAME - 06

PLOT DATE : 4/30/2025 9:06 AM PLOT BY : ANNIE JEROME PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 44

NOTE:
AREAS MARKED FOR CONCRETE REPAIRS ARE APPROXIMATE AND ACTUAL REPAIRS AND LOCATIONS OF THOSE REPAIRS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER DURING CONSTRUCTION.

N

BP: 199+20.91

R/W

TOWER AVE

MATCH LINE 670+00.01

670 671 672 673 674 675

PI: 672+79.53

S89°56'56"E

200

N 20TH ST

201

EP: 201+12.43

MATCH LINE 675+00.01

LEGEND

CONTINUOUS DIAMOND GRINDING CONCRETE PAVEMENT

CONCRETE REPAIR

PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	CONCRETE REPAIR	SHEET E

FILE NAME : X:\PT\S\SUPER\181558\5-FINAL-DSGN\C3D- TOWER AVE\SHEETS\CONCRETE PAVMENT REPAIR.DWG
LAYOUT NAME - 07

PLOT DATE : 4/30/2025 9:06 AM PLOT BY : ANNIE JEROME PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 44

NOTE:
AREAS MARKED FOR CONCRETE REPAIRS ARE APPROXIMATE AND ACTUAL REPAIRS AND LOCATIONS OF THOSE REPAIRS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER DURING CONSTRUCTION.

N

R/W

BP: 189+36.86

PI: 677+13.17

190

TOWER AVE

MATCH LINE 675+00.01

675

676

677

N0°25'24"E

678

679

MATCH LINE 680+00.01

R/W

S89°38'14"E

N87°30'01"E

PI: 191+20.41

PI: 191+40.43

N 19TH ST

S89°38'14"E

EP: 191+92.99

LEGEND

CONTINUOUS DIAMOND GRINDING CONCRETE PAVEMENT

CONCRETE REPAIR

PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	CONCRETE REPAIR	SHEET	E

FILE NAME : X:\PT\S\SUPER\181558\5-FINAL-DSGN\C3D- TOWER AVE\SHEETS\CONCRETE PAVMENT REPAIR.DWG
LAYOUT NAME - 08

PLOT DATE : 4/30/2025 9:06 AM PLOT BY : ANNIE JEROME PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 44

NOTE:
AREAS MARKED FOR CONCRETE REPAIRS ARE APPROXIMATE AND ACTUAL REPAIRS AND LOCATIONS OF THOSE REPAIRS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER DURING CONSTRUCTION.

N

BP: 179+02.05

S89°34'36"E

PI: 681+32.30

R/W

TOWER AVE

MATCH LINE 680+00.01

680

681

N0°25'24"E

N0°23'17"E

682

683

684

MATCH LINE 685+00.01

N 18TH ST

181

R/W

LEGEND

CONTINUOUS DIAMOND GRINDING CONCRETE PAVEMENT

CONCRETE REPAIR

PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	CONCRETE REPAIR	SHEET	E

FILE NAME : X:\PT\S\SUPER\181558\5-FINAL-DSGN\C3D- TOWER AVE\SHEETS\CONCRETE PAVMENT REPAIR.DWG
LAYOUT NAME - 09

PLOT DATE : 4/30/2025 9:06 AM PLOT BY : ANNIE JEROME PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 44

NOTE:
AREAS MARKED FOR CONCRETE REPAIRS ARE APPROXIMATE AND ACTUAL REPAIRS AND LOCATIONS OF THOSE REPAIRS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER DURING CONSTRUCTION.

N

BP: 160+34.71

BP: 159+08.84

R/W

PI: 689+12.73

TOWER AVE

686 N0°26'24"E 687 688 689 690 691 N0°25'17"E

PI: 171+09.43

PI: 171+49.71

EP: 171+68.07

N 16TH ST

PI: 160+79.13

EP: 161+35.78

R/W

LEGEND

CONTINUOUS DIAMOND GRINDING CONCRETE PAVEMENT

CONCRETE REPAIR

PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	CONCRETE REPAIR	SHEET	E

FILE NAME : X:\PT\S\SUPER\181558\5-FINAL-DSGN\C3D- TOWER AVE\SHEETS\CONCRETE PAVMENT REPAIR.DWG
LAYOUT NAME - 10

PLOT DATE : 4/30/2025 9:06 AM PLOT BY : ANNIE JEROME PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 44

NOTE:
AREAS MARKED FOR CONCRETE REPAIRS ARE APPROXIMATE AND ACTUAL REPAIRS AND LOCATIONS OF THOSE REPAIRS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER DURING CONSTRUCTION.

N

BP: 159+08.84

R/W

PI: 689+12.73

TOWER AVE

EP: 694+45.42

690 691 N0°25'17"E 692 693 694

N 16TH ST

PI: 160+79.13

160 161

EP: 161+35.78

BELKNAP ST

R/W

LEGEND

CONTINUOUS DIAMOND GRINDING CONCRETE PAVEMENT

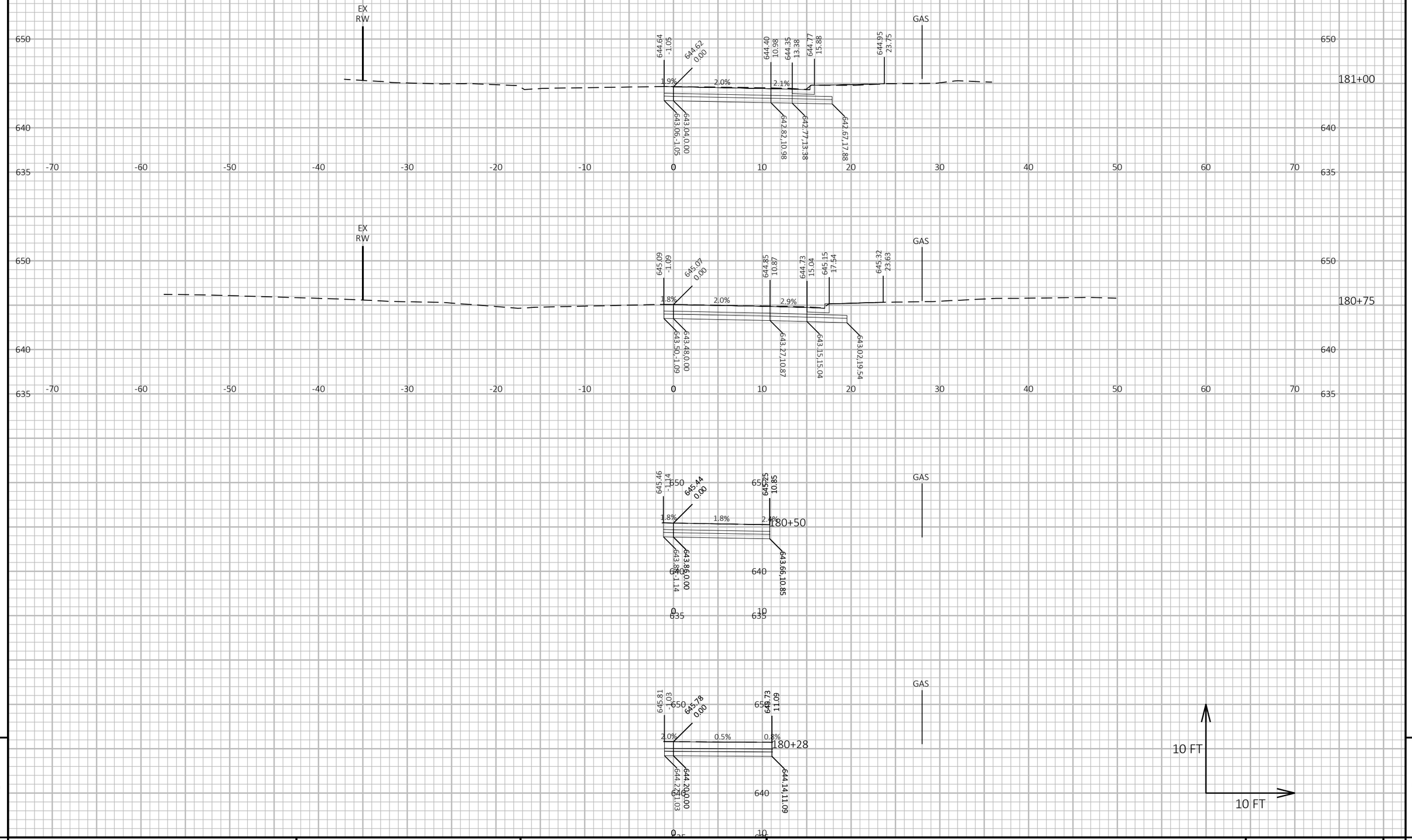
CONCRETE REPAIR

PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	CONCRETE REPAIR	SHEET E

FILE NAME : X:\PT\S\SUPER\181558\5-FINAL-DSGN\C3D- TOWER AVE\SHEETS\CONCRETE PAVMENT REPAIR.DWG
LAYOUT NAME - 11

PLOT DATE : 4/30/2025 9:06 AM PLOT BY : ANNIE JEROME PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 44



9

9

PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	CROSS SECTIONS: N 18TH STREET	SHEET	E

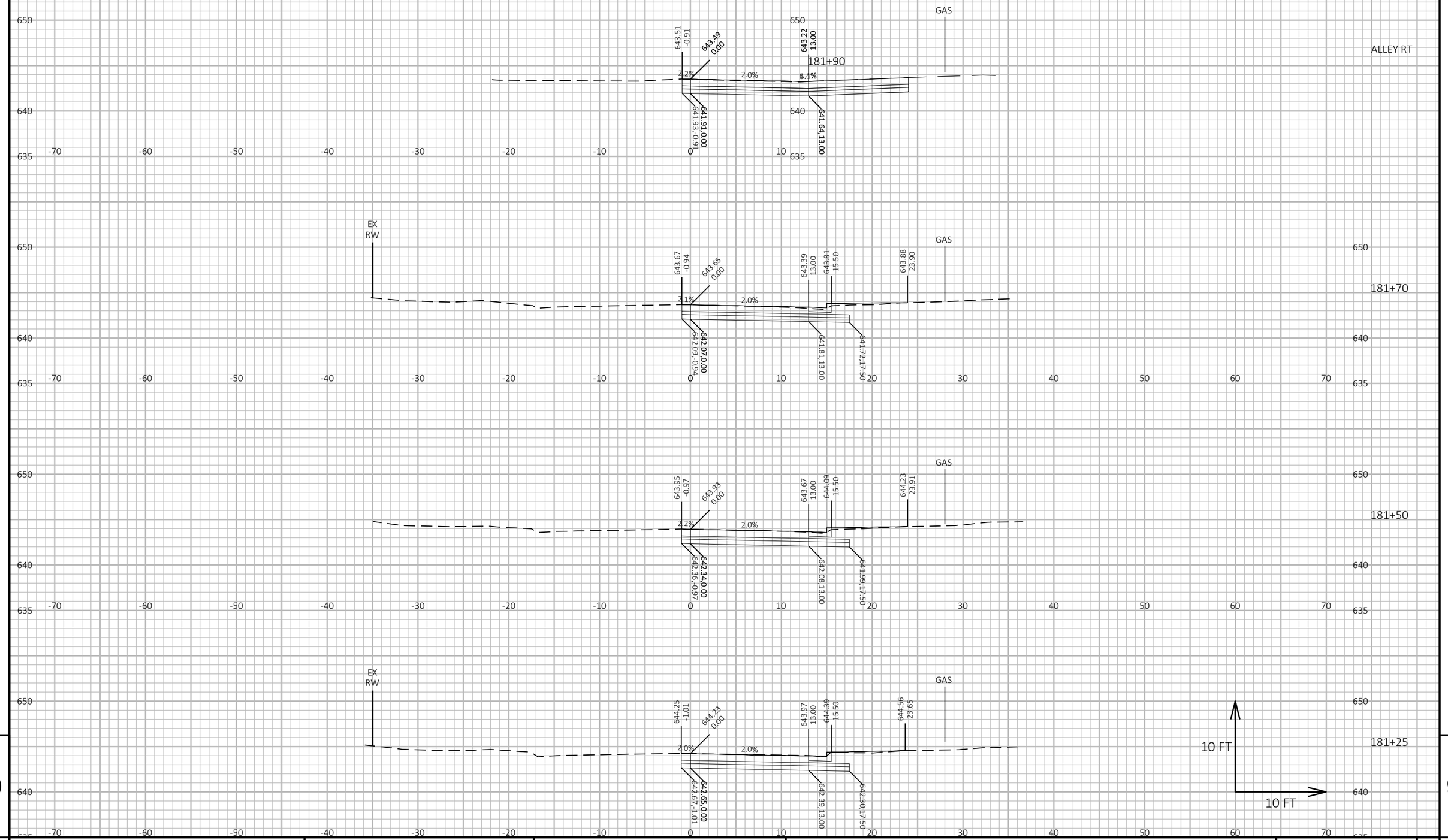
FILE NAME : X:\PT\S\SUPER\181558\5-FINAL-DSGN\C3D- TOWER AVE\SHEETS\090201_XS.DWG
LAYOUT NAME - 01

PLOT DATE : 4/30/2025 9:38 AM

PLOT BY : ANNIE JEROME

PLOT NAME :

PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.



9

9

PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	CROSS SECTIONS: N 18TH STREET	SHEET	E

FILE NAME : X:\PT\S\SUPER\181558\5-FINAL-DSGN\C3D- TOWER AVE\SHEETS\090201_XS.DWG
LAYOUT NAME - 02

PLOT DATE : 4/30/2025 9:38 AM

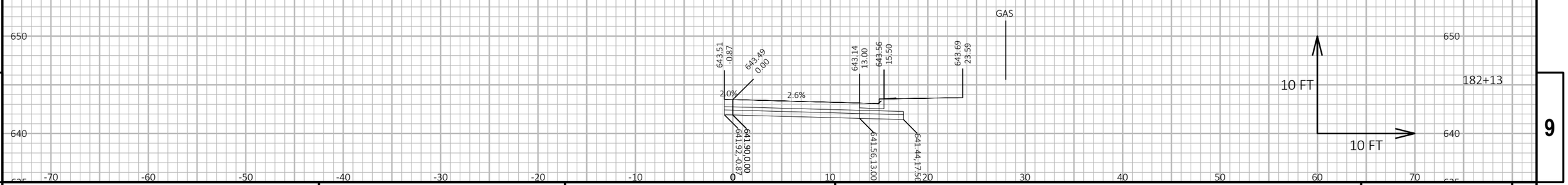
PLOT BY : ANNIE JEROME

PLOT NAME :

PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

END CONSTRUCTION
STA 182+13.00

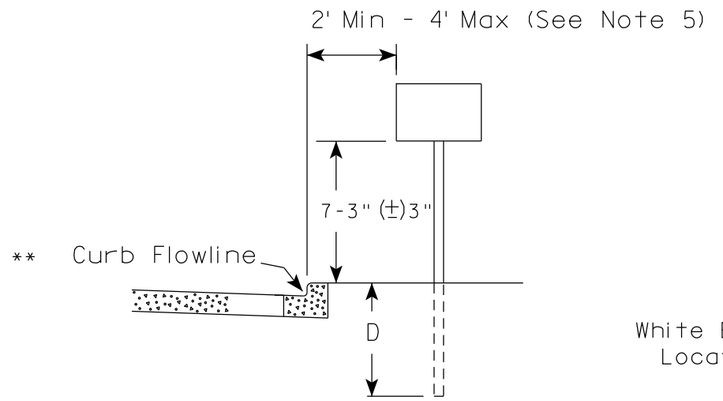


PROJECT NO: ----	HWY: TOWER AVENUE	COUNTY: DOUGLAS	CROSS SECTIONS: N 18TH STREET	SHEET	E

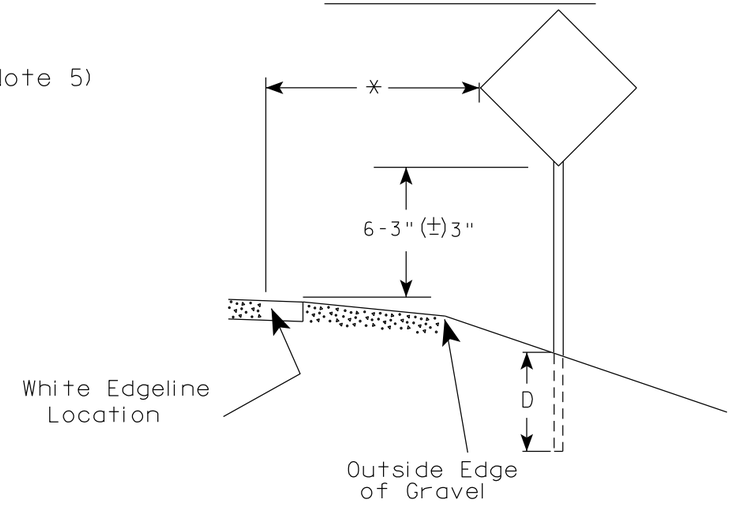
FILE NAME : X:\PT\S\SUPER\181558\5-FINAL-DSGN\C3D- TOWER AVE\SHEETS\090201_XS.DWG
LAYOUT NAME - 03

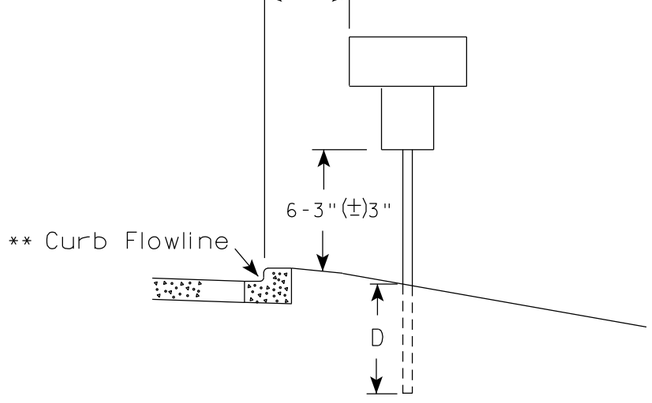
PLOT DATE : 4/30/2025 9:38 AM PLOT BY : ANNIE JEROME PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

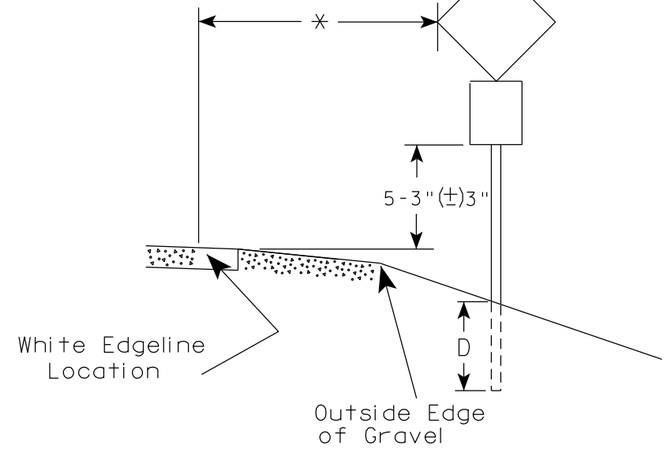
URBAN AREA



RURAL AREA (See Note 2)







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

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

POST EMBEDMENT DEPTH

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

GENERAL NOTES

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

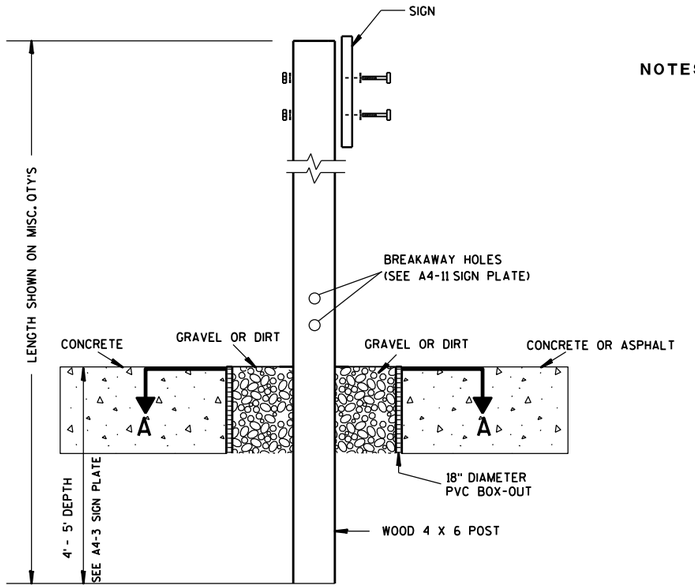
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/6/23 PLATE NO. A4-3.23

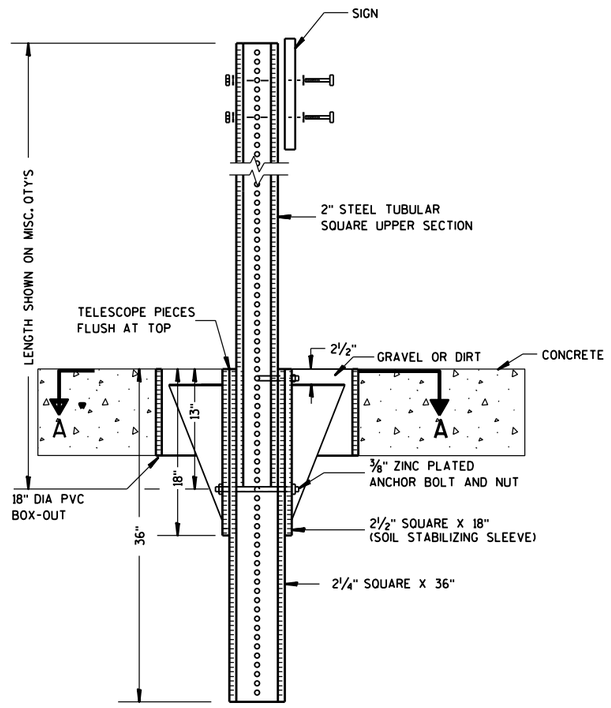
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E



ELEVATION VIEW

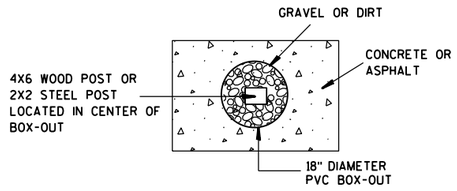
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST BOX-OUTS A4-3B

WISCONSIN DEPT OF TRANSPORTATION

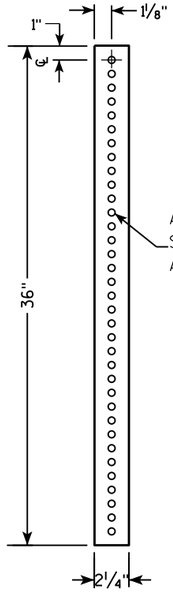
APPROVED Matthew R Rauch
for State Traffic Engineer

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

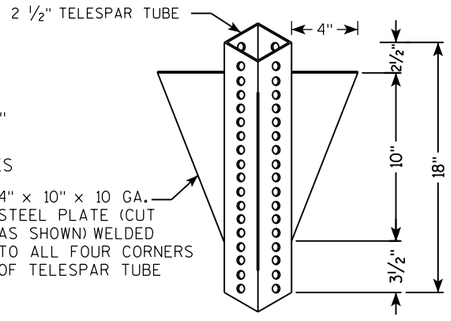
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM

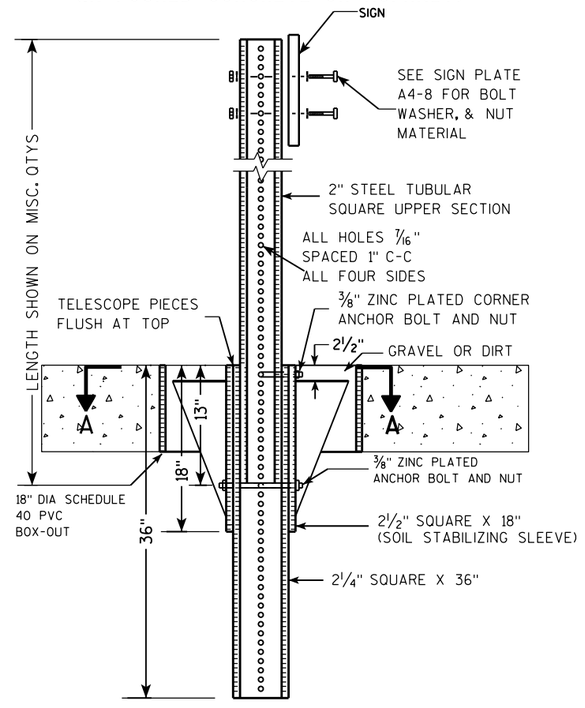
2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



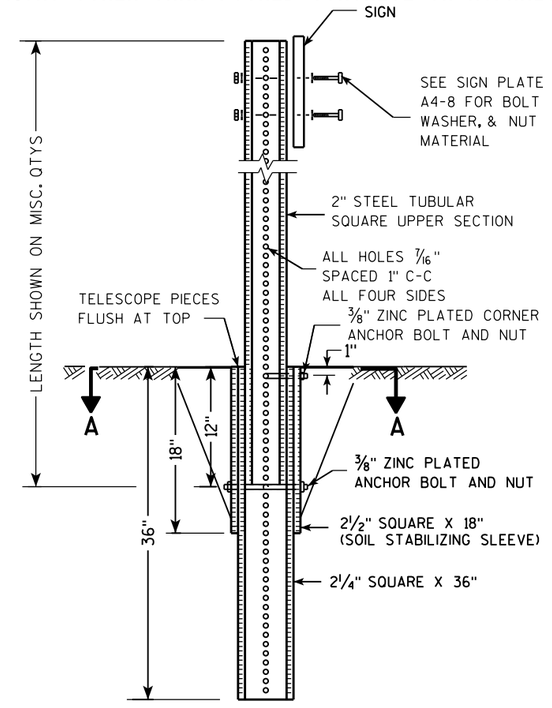
2 1/2 " SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH

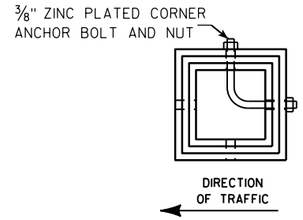


DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)



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





SECTION A-A

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

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

TUBULAR STEEL
SIGN POST
A4-9

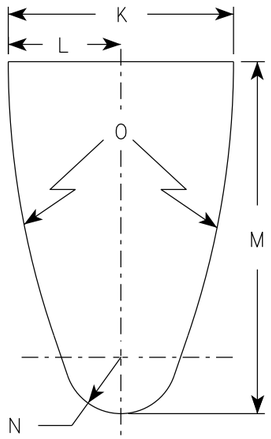
WISCONSIN DEPT OF TRANSPORTATION

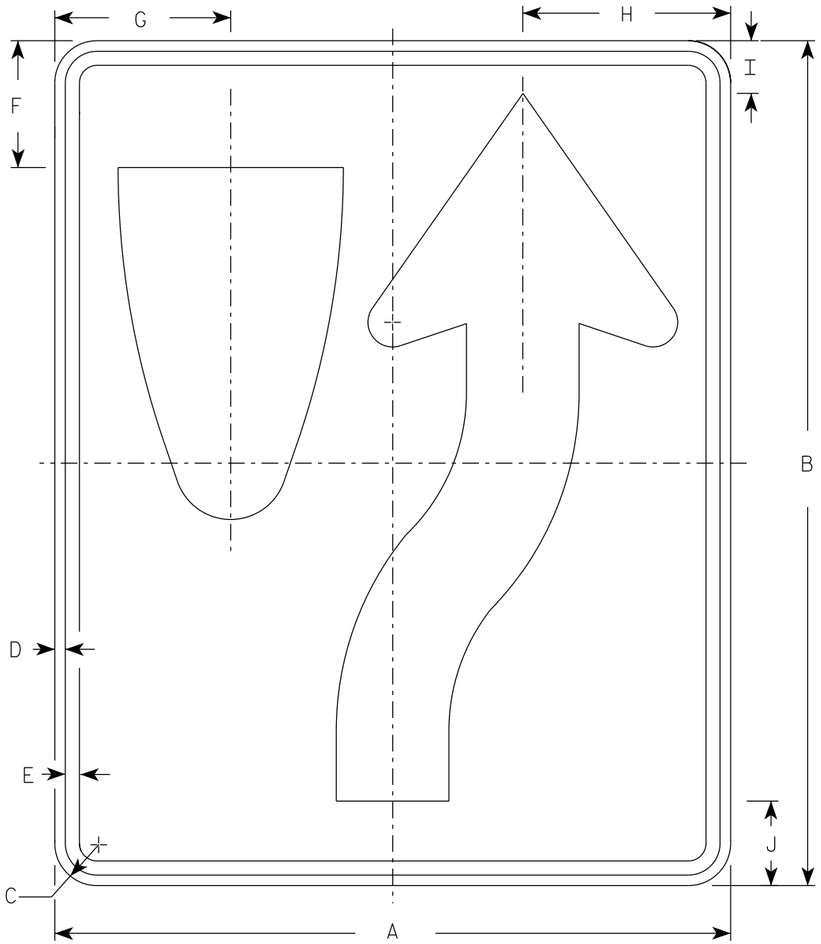
APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

DIVIDER DETAIL



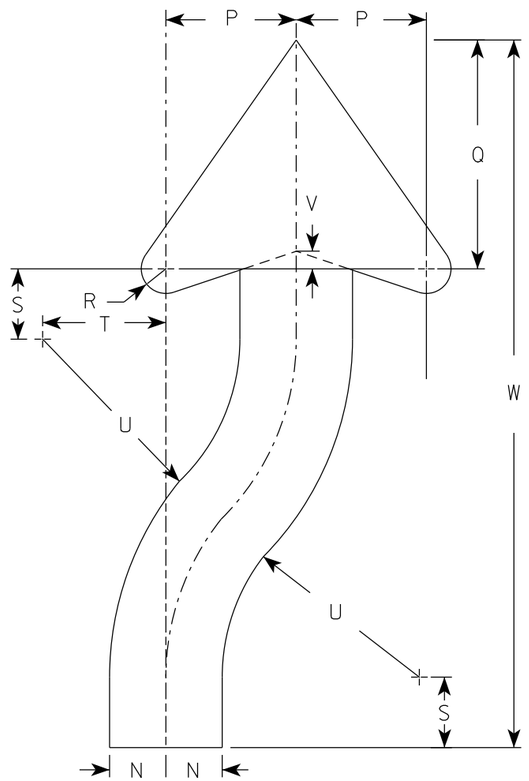


R4-7

NOTES

1. Sign is Type II - Type H Reflective
2. Color:
   Background - White
   Message - Black
3. R4-8 is the same as R4-7 except Legend is reversed.

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	18	24	1 1/2	3/8	1/2	3 3/8	4 3/4	5 1/2	1 3/8	2 1/4	6	3	9 3/8	1 1/2	22 1/2	3 1/2	6 1/8	5/8	1 7/8	3 1/4	6 3/4	1/2	20 3/8				3.0
2S	24	30	1 1/2	3/8	1/2	4 1/2	6 1/4	7 3/8	1 7/8	3	8	4	12 1/2	2	30	4 5/8	8 1/8	7/8	2 1/2	4 3/8	9	5/8	25 1/8				5.0
2M	24	30	1 1/2	3/8	1/2	4 1/2	6 1/4	7 3/8	1 7/8	3	8	4	12 1/2	2	30	4 5/8	8 1/8	7/8	2 1/2	4 3/8	9	5/8	25 1/8				5.0
3	36	48	1 7/8	1/2	5/8	6 3/4	9 3/8	11 1/8	2 7/8	4 1/2	12	6	18 3/4	3	45	6 7/8	12 1/4	1 1/4	3 3/4	6 5/8	13 1/2	1	40 3/4				12.0
4	36	48	1 7/8	1/2	5/8	6 3/4	9 3/8	11 1/8	2 7/8	4 1/2	12	6	18 3/4	3	45	6 7/8	12 1/4	1 1/4	3 3/4	6 5/8	13 1/2	1	40 3/4				12.0
5	48	60	3	3/4	1	9	12 1/2	14 3/4	3 3/4	6	16	8	25	4	60	9 1/4	16 1/4	1 5/8	5	8 3/4	18	1 1/4	50 1/4				20.0

STANDARD SIGN
R4-7 & R4-8

WISCONSIN DEPT OF TRANSPORTATION

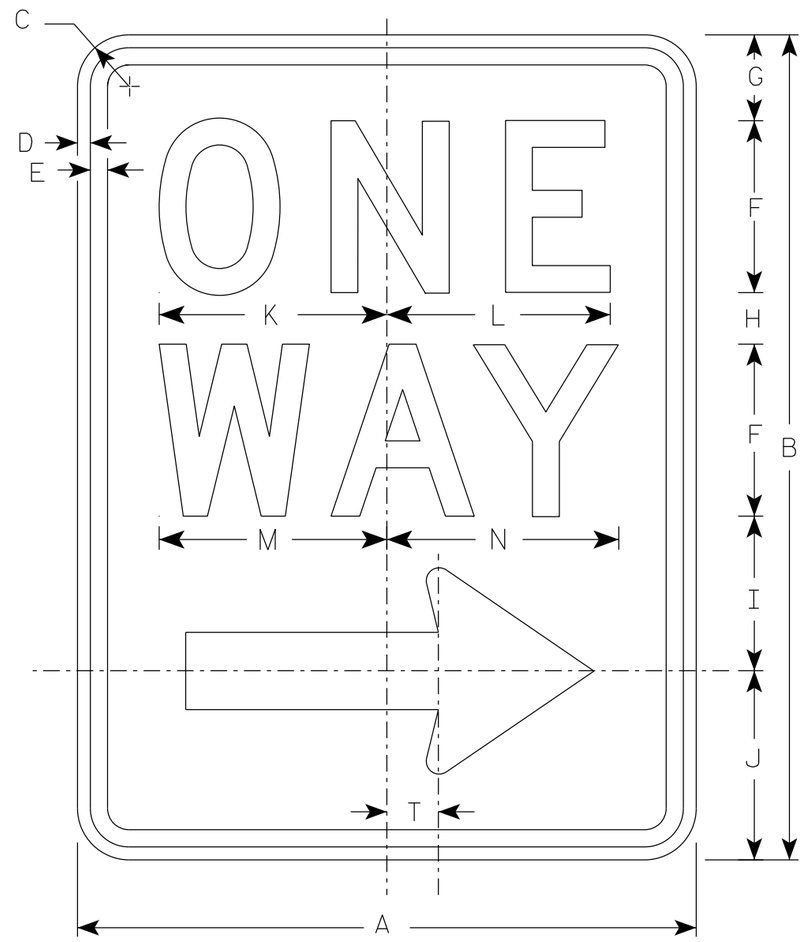
APPROVED Matthew R Rauch for State Traffic Engineer

DATE 8/17/23 PLATE NO. R4-7.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

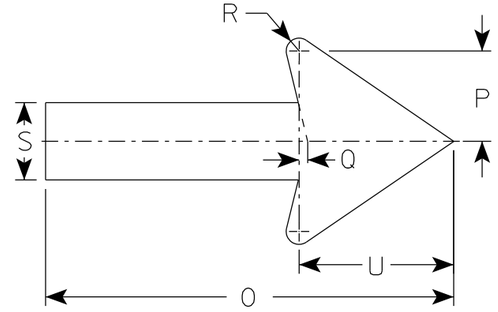
NOTES

1. Sign is Type II - Type H Reflective
2. Color:
   Background - White
   Message - Black
3. Message Series - D
4. R6-2L same as R6-2R except arrow points to the left.



R6-2R

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
1	18	24	1 1/2	3/8	1/2	5	2 1/2	1 1/2	4 1/2	5 1/2	6 5/8	6 1/2	6 5/8	6 3/4	11 7/8	2 5/8	1/4	3/8	2 1/4	1 1/2	4 1/2					
2S	24	1 1/2	1 1/2	3/8	1/2	6	3	2 1/2	5 1/2	7	8 1/8	8 1/8	8 1/2	8 5/8	16	3 1/2	3/8	1/2	3	2	6					
2M	30	36	1 7/8	1/2	5/8	8	2 1/2	2 5/8	6 7/8	8	10 1/2	10 1/2	11 1/4	11 1/4	20	4 3/8	1/2	5/8	3 3/4	2 1/2	7 1/2					
3	36	48	1 7/8	1/2	5/8	10	5 1/4	3 1/4	9	10 1/2	12 3/4	12 3/4	13 1/4	13 1/2	24	5 5/8	1/2	3/4	4 3/4	3	9					
4	36	48	1 7/8	1/2	5/8	10	5 1/4	3 1/4	9	10 1/2	12 3/4	12 3/4	13 1/4	13 1/2	24	5 5/8	1/2	3/4	4 3/4	3	9					
5																										

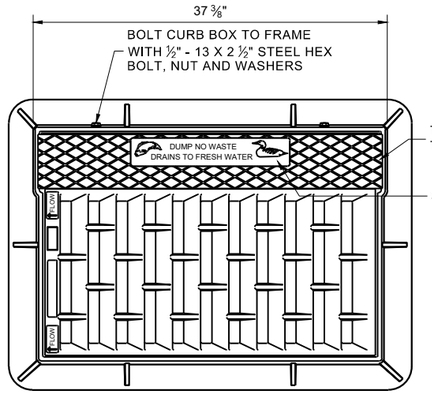
STANDARD SIGN
R6-2 R&L

WISCONSIN DEPT OF TRANSPORTATION

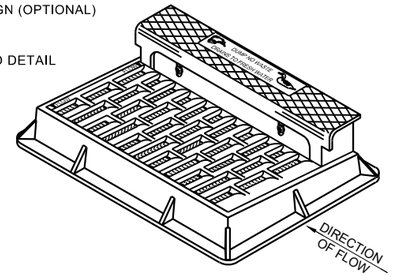
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/2/10 PLATE NO. R6-2.8

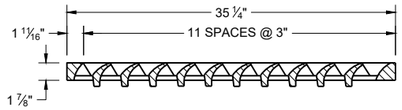
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

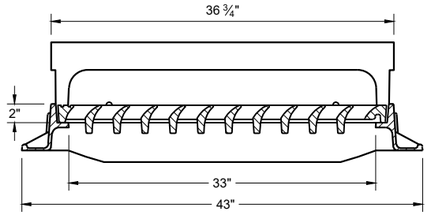


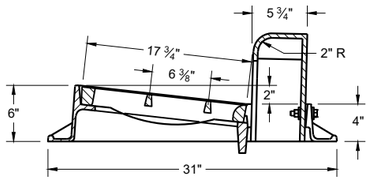
NOTE: EITHER CASTING IS ACCEPTABLE

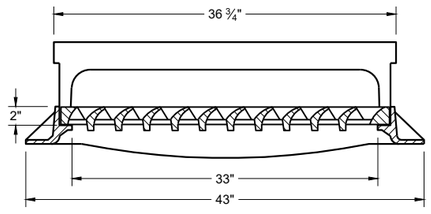


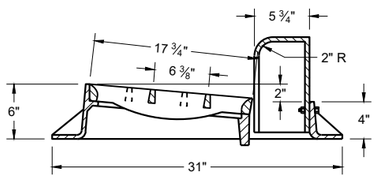
NOTE: CURB BOX HEIGHT ADJUSTABLE 6" - 9"







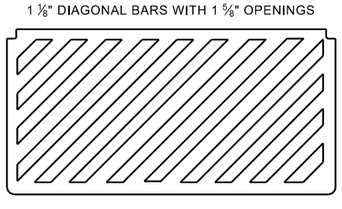




TYPE "H"

NOTE: EITHER CASTING IS ACCEPTABLE

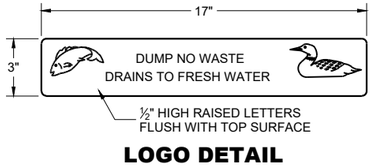
1 1/8" DIAGONAL BARS WITH 1 5/8" OPENINGS



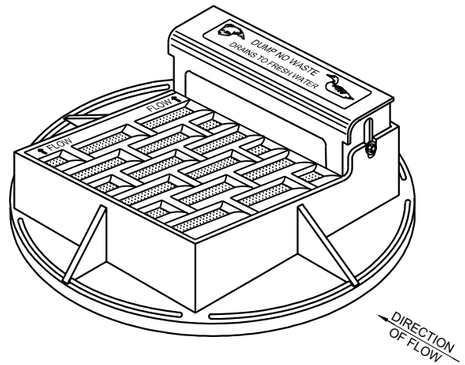
SPECIAL GRATE FOR TYPE "H" COVER

(MEASURES 35" X 17 3/4" X 2")

(NOTED AS TYPE H-S ON DRAINAGE TABLE)

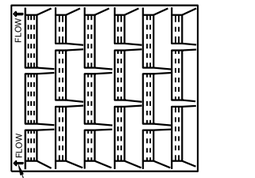


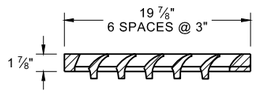
LOGO DETAIL

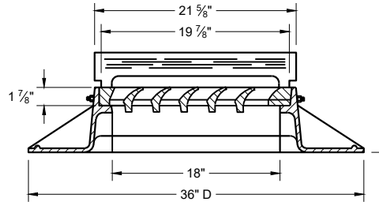


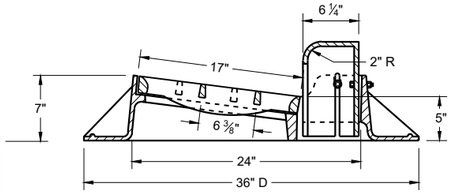
NOTE: CURB BOX HEIGHT ADJUSTABLE 6" - 9"

NOTE: EITHER CASTING IS ACCEPTABLE



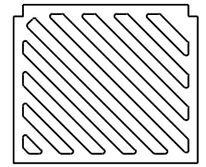






TYPE "A"

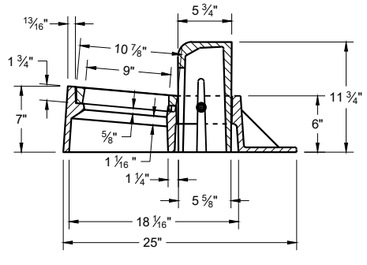
1" DIAGONAL BARS WITH 1 1/2" OPENINGS

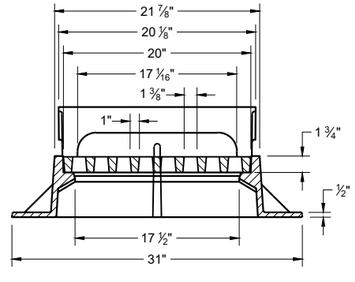


SPECIAL GRATE FOR TYPE "A" COVER

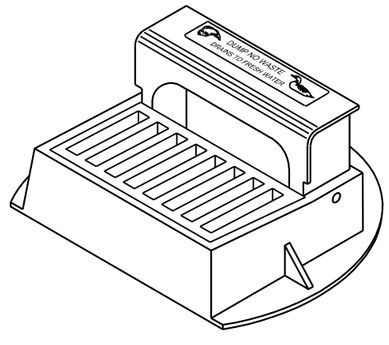
(MEASURES 19 3/4" X 17" X 1 7/8")

(NOTED AS TYPE A-S ON DRAINAGE TABLE)





TYPE "Z"



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.

DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR CATCH BASIN, MANHOLE AND INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ROUND FRAMES AND COVERS SHALL HAVE CONTINUOUSLY MACHINED BEARING SURFACES TO PREVENT ROCKING AND RATTLING.

INLET COVERS
TYPES A, H, A-S, H-S AND Z

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
December 2023 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA

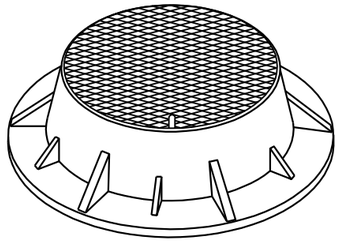
6
SDD 08A05-21a

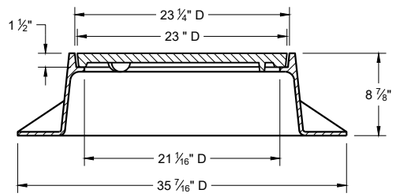
GENERAL NOTES

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.

DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR MANHOLE COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

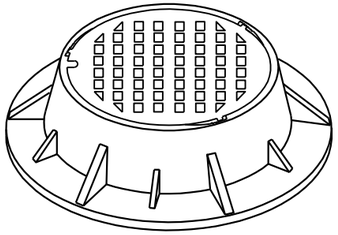
ROUND FRAMES AND COVERS SHALL HAVE CONTINUOUSLY MACHINED BEARING SURFACES TO PREVENT ROCKING AND RATTLING.

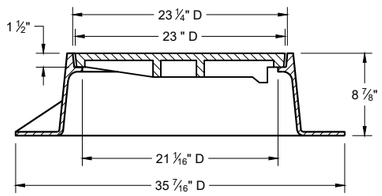




TYPE "J"

NOTE: EITHER CASTING IS ACCEPTABLE

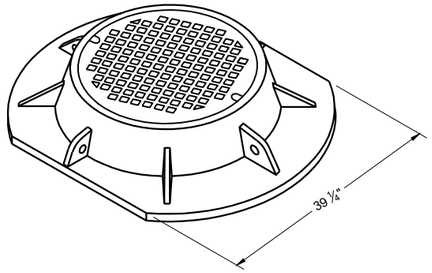


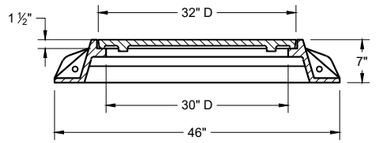


TYPE "J" SPECIAL

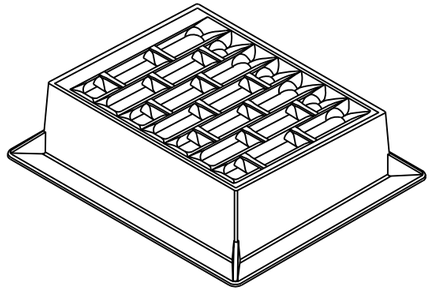
TYPE "B" NON-ROCKING SELF-SEAL LID
(NOTED AS TYPE J-S ON THE DRAINAGE TABLE)

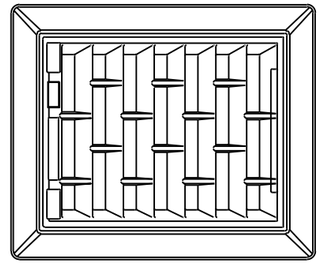
NOTE: EITHER CASTING IS ACCEPTABLE

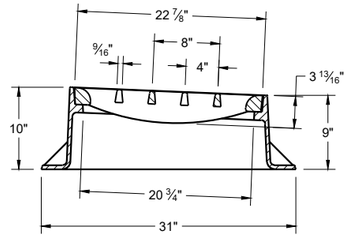


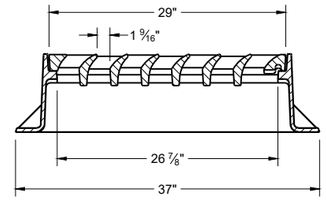


TYPE "K"

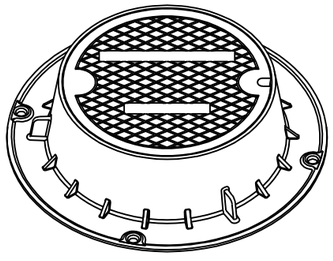


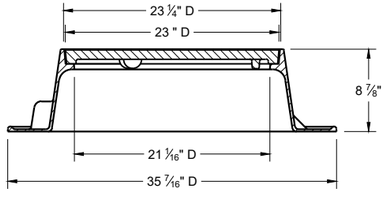






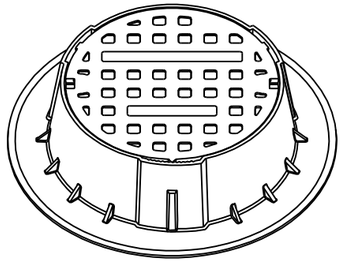
INLET COVER TYPE "BW"

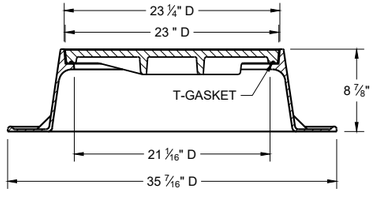




TYPE "J"

NOTE: EITHER CASTING IS ACCEPTABLE

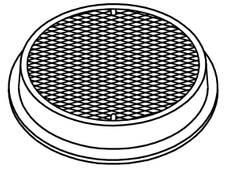


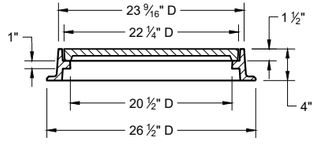


TYPE "J" SPECIAL

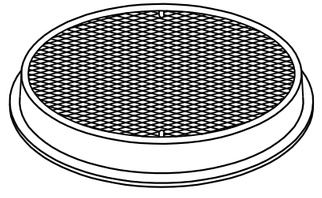
TYPE "B" NON-ROCKING SELF-SEAL LID
(NOTED AS TYPE J-S ON THE DRAINAGE TABLE)

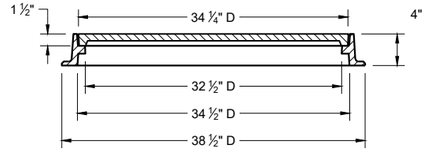
NOTE: EITHER CASTING IS ACCEPTABLE





TYPE "L"





TYPE "M"

INLET COVERS TYPES BW
MANHOLE COVERS TYPES K, J, J-S, L, AND M

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
December 2023 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR

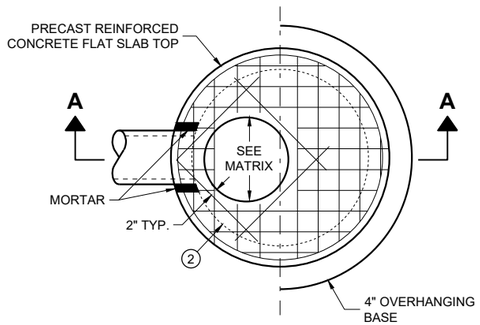
FHWA

6

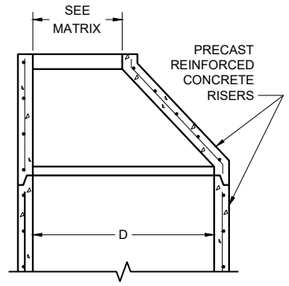
SDD 08A05-21e

6

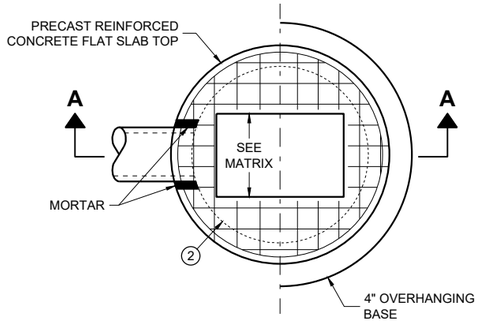
SDD 08A05-21e



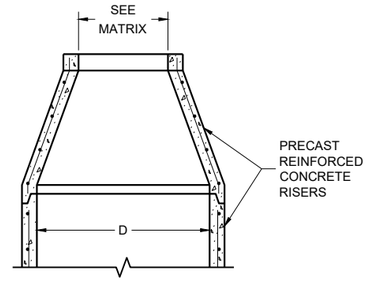
PLAN VIEW CIRCULAR OPENING



OPTIONAL PRECAST REINFORCED CONCRETE ECCENTRIC TOP



PLAN VIEW RECTANGULAR OPENING



OPTIONAL PRECAST REINFORCED CONCRETE CONCENTRIC TOP

COVER MATRIX

CATCH BASIN SIZE	INLET COVER TYPE	ALL A'S	ALL B'S	BW	C	F	ALL H'S	S	T	V V-B	VV-B	WM	Z
	OPENING SIZE (FT.)												
3-FT	2 X 2	X	X					X		X			
	2 DIA.				X								X
4-FT TO 6-FT	2 X 2	X	X					X		X			
	2 X 2.5			X				X	X	X		X	
	2 DIA.				X								X
	2 X 3						X						
	2.5 X 3					X							
	2 X 3.5*										X*		

* REQUIRES 5-FT DIAMETER OR LARGER STRUCTURE

PIPE MATRIX

CATCH BASIN 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	30

CATCH BASINS 3-FT, 4-FT, 5-FT AND 6-FT DIAMETER

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 CATCH BASIN 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 FOUNDATION BACKFILL. THIS BEDDING SHALL BE COMPACTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.

PRECAST REINFORCED CONCRETE CONE TOPS (ECCENTRIC OR CONCENTRIC) OR PRECAST REINFORCED CONCRETE FLAT SLAB TOPS MAY BE USED ON CONCRETE BLOCK STRUCTURES.

ECCENTRIC CONE TOPS MAY BE USED ON ALL STRUCTURES. CONCENTRIC CONE TOPS SHALL BE USE 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 INCH 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.

ALL PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M199.

PRECAST REINFORCED RISERS SHALL HAVE A TONGUE AND GROOVE JOINT WITH TONGUE UP OR DOWN.

CONCRETE BLOCK WILL NOT BE PERMITTED FOR STRUCTURES GREATER THAN 4 FEET IN DIAMETER.

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 "D".

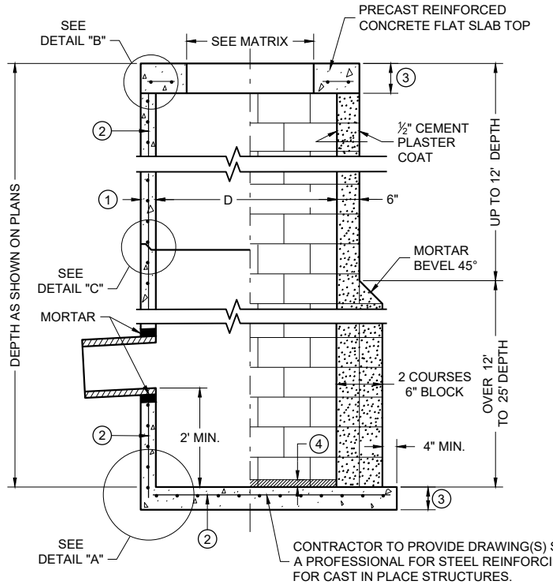
(1) MINIMUM WALL THICKNESS SHALL BE 4 INCHES FOR 3-FT, 5 INCHES FOR 4-FT, 6 INCHES FOR 5-FT AND 7 INCHES FOR 6-FT DIAMETER PRECAST CATCH BASINS.

(2) FOR PRECAST CATCH BASINS AND REINFORCED CONCRETE BASES 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".

(4) 1" CONCRETE KEY POURED AFTER INSTALLATION. 2' SUMP MEASURED FROM TOP OF KEY.

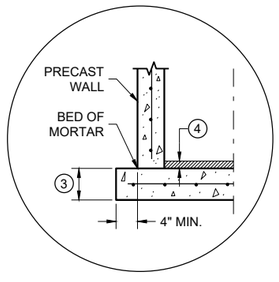
(5) JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C 990 OR RUBBER GASKETS CONFROMING TO ASTM C443.



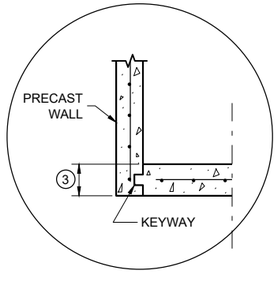
SECTION A - A

PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE

CONCRETE BLOCK WITH CAST IN PLACE OR PRECAST REINFORCED CONCRETE BASE (2)

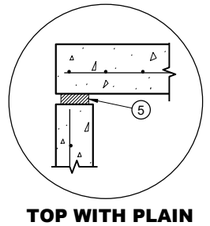


SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

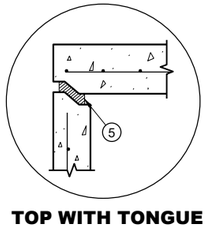


PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE OPTION

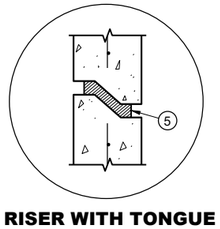
DETAIL "A"



TOP WITH PLAIN END JOINT

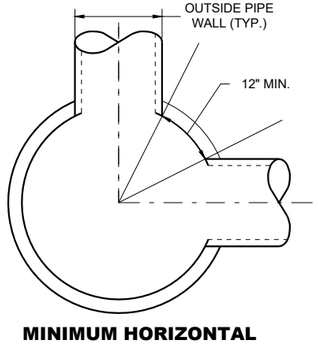


TOP WITH TONGUE AND GROOVE JOINT



RISER WITH TONGUE AND GROOVE JOINT

DETAIL "B" **DETAIL "C"**



MINIMUM HORIZONTAL PIPE SEPARATION

DETAIL "D"

CATCH BASINS, 3-FT. 4-FT., 5 FT., AND 6-FT. DIAMETER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
December 2023 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA

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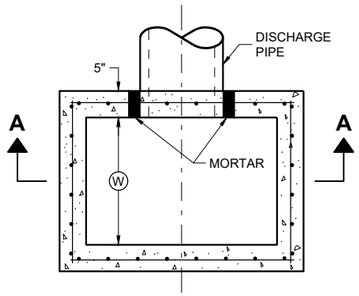
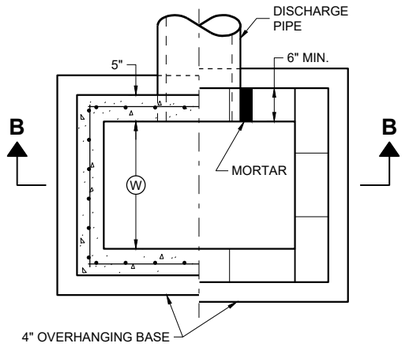


PLAN VIEW



PLAN VIEW

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP N0T 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 CATCH BASIN 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 PRECAST CATCH BASIN UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF ASTM C 913.

ALL DRAINAGE STRUCTURES ARE DESIGNATED ON THE PLANS AS "MANHOLES 3X3-L", "CATCH BASINS 4-B", "INLETS 2X3-H", ETC. THE FIRST NUMBERS DESIGNATES 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 FOUNDATION BACKFILL. THIS BEDDING SHALL BE COMPACTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.

ALL BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

PRECAST REINFORCED RISERS SHALL HAVE A TONGUE AND GROOVE JOINT WITH TONGUE UP OR DOWN.

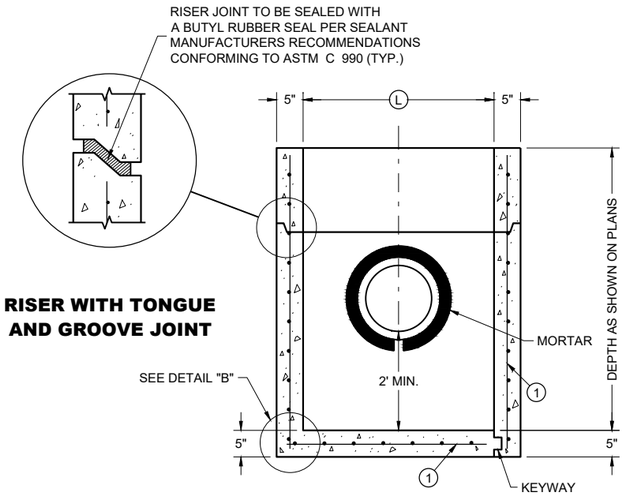
4" OVERHANGING BASES ARE REQUIRED FOR CAST-IN-PLACE REINFORCED CONCRETE AND CONCRETE BLOCK INSTALLATIONS. 4" OVERHANG IS REQUIRED WHEN SEPARATE PRECAST BASE IS PROVIDED. OVERHANG IS NOT REQUIRED ON PRECAST STRUCTURES WITH AN INTEGRAL OR MONOLITHIC BASE.

MAXIMUM INSIDE PIPE DIAMETER DETERMINED BY 3" CLEARANCE ON EACH SIDE OF THE OUTSIDE WALL OF THE PIPE. SEE DETAIL "A". ASSUMES PIPE ENTERS PERPENDICULAR TO THE STRUCTURE.

(1) FOR PRECAST CATCH BASINS AND REINFORCED CONCRETE BASES PROVIDE REINFORCING STEEL IN ACCORDANCE TO ASTM C 913.

(2) CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

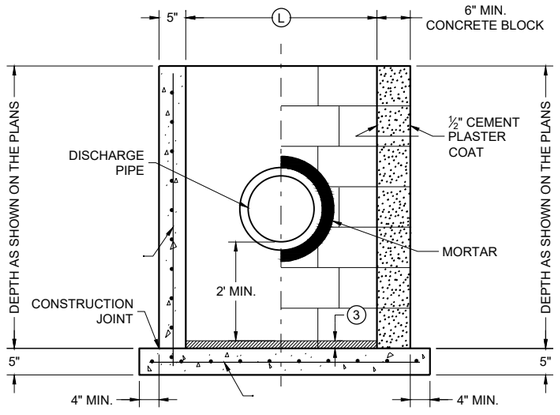
(3) 1" CONCRETE KEY POURED AFTER INSTALLATION. 2' SUMP MEASURED FROM TOP OF KEY.



PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE

PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE

SECTION A - A



CAST IN PLACE REINFORCED CONCRETE

CONCRETE BLOCK ON CAST IN PLACE OR PRECAST REINFORCED CONCRETE BASE (1)

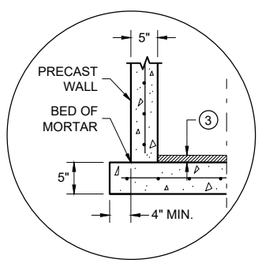
SECTION B - B

CATCH BASIN COVER MATRIX

CATCH BASIN SIZE	WIDTH (W) (FT.)	LENGTH (L) (FT.)	INLET COVER TYPE	
			F	ALL H'S
2 X 3-FT	2	3		X
2.5 X 3-FT	2.5	3	X	

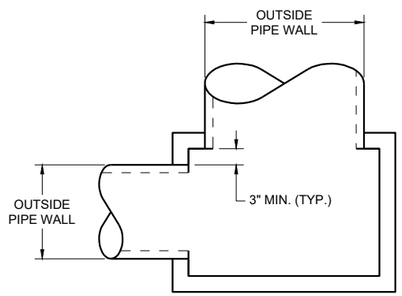
PIPE MATRIX

CATCH BASIN SIZE	MAXIMUM INSIDE PIPE DIAMETER (IN)	
	WIDTH (W)(IN)	LENGTH (L)(IN)
2 X 3-FT	12	24
2.5 X 3-FT	18	24



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

DETAIL "B"



DETAIL "A"

CATCH BASINS 2X3-FT AND 2.5X3-FT

CATCH BASINS
2 X 3-FT AND 2.5 X 3-FT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
December 2023
DATE

/S/ RODNEY TAYLOR
ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR

FHWA

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SDD 08A09-03

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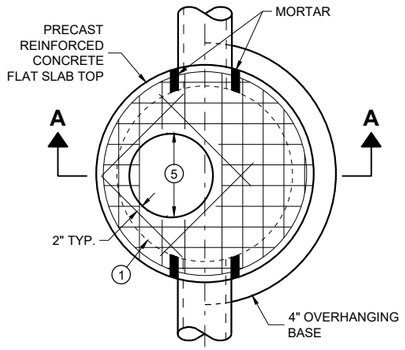
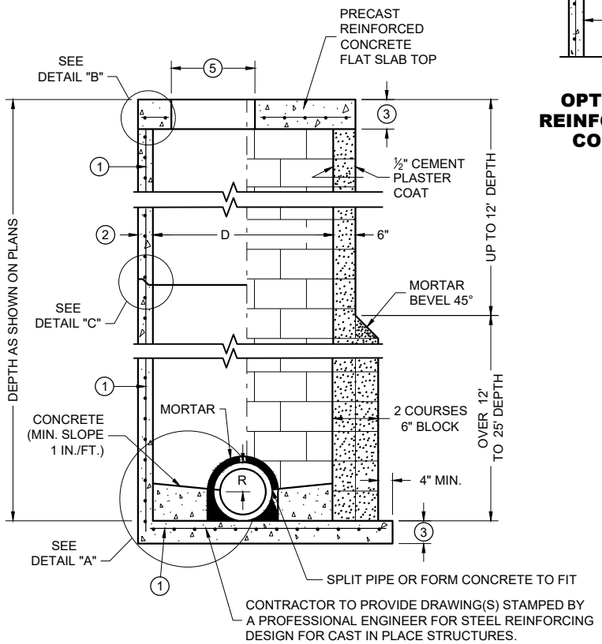


PLAN VIEW

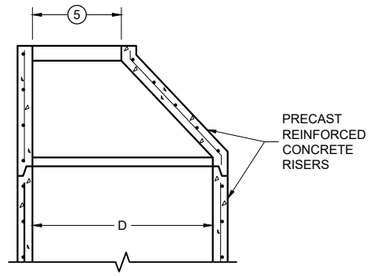
CIRCULAR OPENING



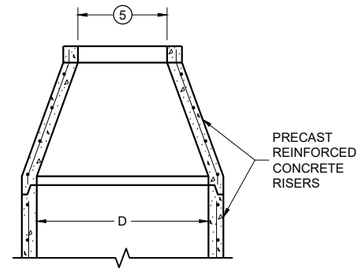
SECTION A - A

PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE

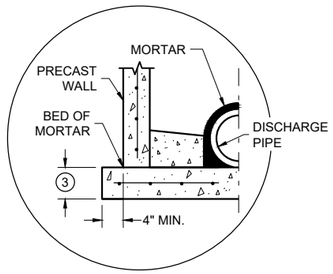
CONCRETE BLOCK WITH CAST IN PLACE OR PRECAST REINFORCED CONCRETE BASE (1)



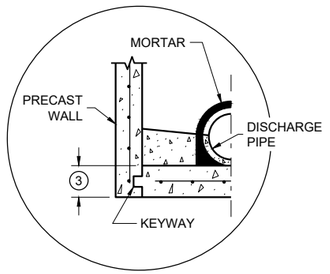
OPTIONAL PRECAST REINFORCED CONCRETE ECCENTRIC TOP



OPTIONAL PRECAST REINFORCED CONCRETE CONCENTRIC TOP

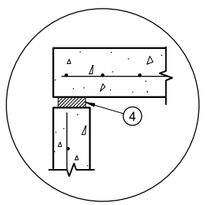


SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

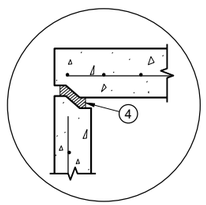


PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE OPTION

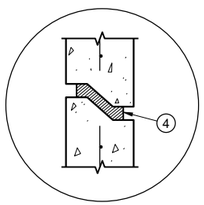
DETAIL "A"



TOP WITH PLAIN END JOINT



TOP WITH TONGUE AND GROOVE JOINT



RISER WITH TONGUE AND GROOVE JOINT

DETAIL "B" **DETAIL "C"**

MANHOLE COVER OPENING MATRIX

OPENING SIZE (FT.) (5) \ MANHOLE COVER TYPE	C	ALL J'S	K	L	M
2 DIA.	X	X		X	
3 DIA.			X		X

PIPE MATRIX

MANHOLE SIZE (DIA.)	MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES		MINIMUM WALL THICKNESS (IN)	MINIMUM PRECAST FLAT SLAB TOP AND BASE THICKNESS
	180° SEPARATION (IN)	90° SEPARATION (IN)		
3-FT	15	12	4	6
4-FT	24	18	4	6
5-FT	36	24	5	8
6-FT	42	36	6	8
7-FT	48	36/42 *	7	8
8-FT	60	42	8	8
9-FT	66	54	9	10
10-FT	72	60	10	10

*A 36" PIPE AND A 42" PIPE CAN BE PLACED WITHIN 90 DEGREES. SEE MINIMUM HORIZONTAL PIPE SEPARATION DETAIL.

GENERAL NOTES

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

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 FOUNDATION BACKFILL. THIS BEDDING SHALL BE COMPACTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.

PRECAST REINFORCED CONCRETE CONE TOPS (ECCENTRIC OR CONCENTRIC) OR PRECAST REINFORCED CONCRETE FLAT SLAB TOPS MAY BE USED ON CONCRETE BLOCK STRUCTURES.

ECCENTRIC CONE TOPS MAY BE USED ON ALL STRUCTURES. 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 IMENSION OF 1 INCH.

STEPS OF APPROVED POLYPROPYLENE PLASTIC COATED REINFORCEMENT BAR ARE ACCEPTABLE. REINFORCING BAR MUST BE A MINIMUM OF ½ INCH 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.

ALL PRECAST MANHOLE UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M199.

PRECAST REINFORCED RISERS SHALL HAVE A TONGUE AND GROOVE JOINT WITH TONGUE UP OR DOWN.

CONCRETE BLOCK WILL NOT BE PERMITTED FOR STRUCTURES GREATER THAN 4 FEET IN DIAMETER.

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 "D".

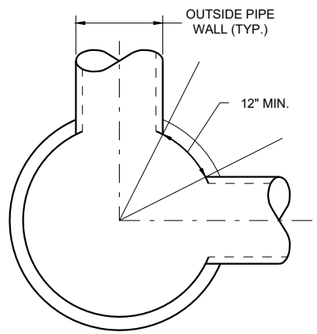
(1) FOR PRECAST MANHOLES AND REINFORCED CONCRETE BASES PROVIDE REINFORCING STEEL IN ACCORDANCE TO AASHTO M199.

(2) SEE PIPE MATRIX TABLE FOR MINIMUM WALL THICKNESS FOR PRECAST MANHOLES

(3) SEE PIPE MATRIX TABLE FOR MINIMUM THICKNESS OF PRECAST FLAT SLAB TOPS AND BASES.

(4) JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C 990 OR RUBBER GASKETS CONFORMING TO ASTM C443.

(5) SEE MANHOLE COVER OPENING MATRIX.



MINIMUM HORIZONTAL PIPE SEPARATION

DETAIL "D"

MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT, 8-FT, 9-FT AND 10-FT DIAMETER

MANHOLES, 3-FT, 4-FT 5-FT, 6-FT, 7-FT, 8-FT, 9-FT AND 10-FT DIAMETER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
December 2023 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR

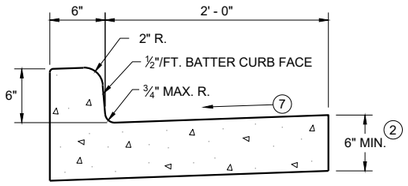
FHWA

6

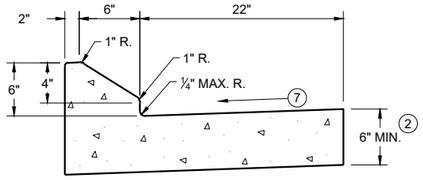
SDD 08B09-04

6

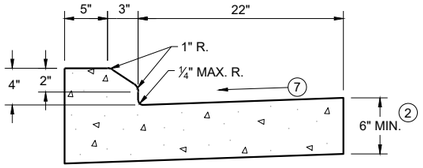
SDD 08B09-04



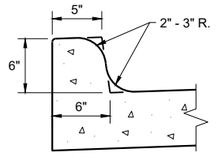
TYPES A (1) & D



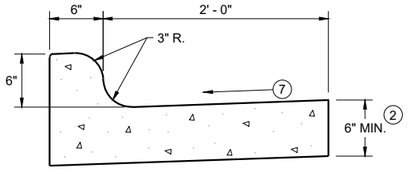
6" SLOPED CURB TYPES G (1) & J



4" SLOPED CURB TYPES G (1) & J

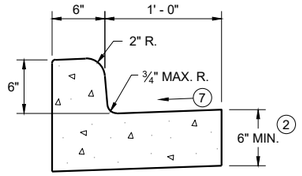


TYPES K (1) & L
(OPTIONAL CURB SHAPE)



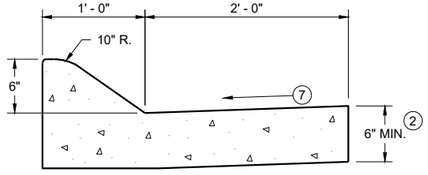
TYPES K (1) & L

CONCRETE CURB AND GUTTER 30"

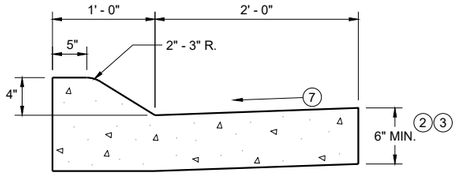


TYPES A (1) & D

CONCRETE CURB AND GUTTER 18"

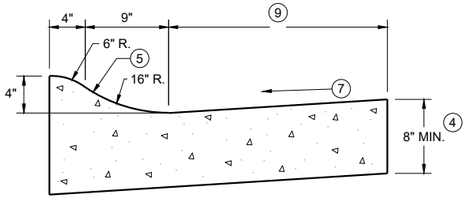


6" SLOPED CURB TYPES A (1) & D



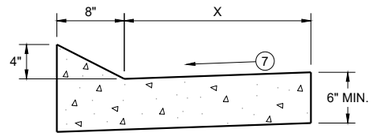
4" SLOPED CURB TYPES A (1) & D

CONCRETE CURB AND GUTTER 36"



4" SLOPED CURB TYPES R (1) & T

TBT & TBTT	X
30"	22"
36"	28"

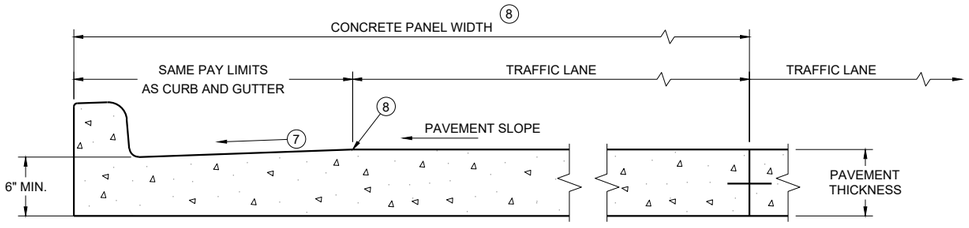


TYPES TBT & TBTT (1)

CONCRETE CURB AND GUTTER

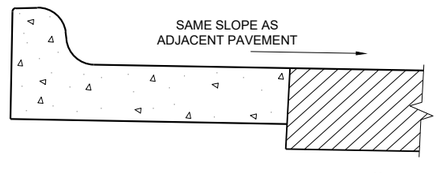
PAVEMENT THICKNESS AND MAXIMUM CONCRETE PANEL WIDTH TABLE

PAVEMENT THICKNESS	MAXIMUM PANEL WIDTH
LESS THAN 10"	12'
10" & ABOVE	15'



PARTIAL SECTION OF PAVEMENT * WITH INTEGRAL CURB AND GUTTER

* BIKE LANE IS NOT SHOWN



REVERSE SLOPE GUTTER (6)
(TYPICAL FOR ALL CURB & GUTTER TYPES)

GENERAL NOTES

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

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

INTEGRAL CURB AND GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB AND GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE.

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

(1) TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.

(2) THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.

(3) USE 8" MINIMUM GUTTER THICKNESS WHEN USED WITH AN ADJACENT CONCRETE TRUCK APRON PLACED BEHIND BACK OF CURB.

(4) THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.

(5) UNLESS OTHERWISE NOTED, FOR STAKING PURPOSES THE FACE OF CURB IS 6" FROM THE BACK OF CURB.

(6) WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.

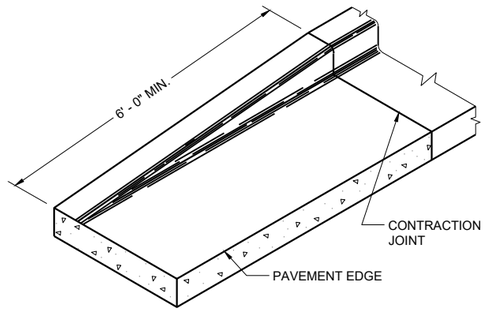
(7) USE 4% GUTTER CROSS SLOPE UNLESS OTHERWISE NOTED IN THE PLANS.

(8) INCLUDE LONGITUDINAL JOINT AND TIE BARS ALONG LANE EDGE WHEN CONCRETE PANEL WIDTH EXCEEDS THE MAXIMUM WIDTH PER TABLE BELOW. LONGITUDINAL JOINT(S) ARE NOT ALLOWED WITHIN TRAFFIC LANES AND BIKE LANES. LONGITUDINAL JOINT MAY BE SAWED.

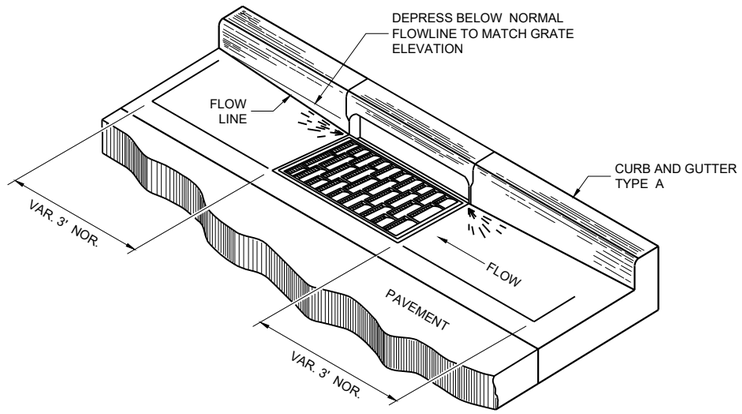
(9) CONCRETE CURB AND GUTTER 4-INCH SLOPED 30-INCH TYPE "R" AND "T" = 17 INCHES
CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE "R" AND "T" = 23 INCHES

CONCRETE CURB AND GUTTER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



END SECTION CURB AND GUTTER



DETAIL OF CURB AND GUTTER AT INLETS

(TYPICAL H INLET COVER SHOWN)

GENERAL NOTES

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

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

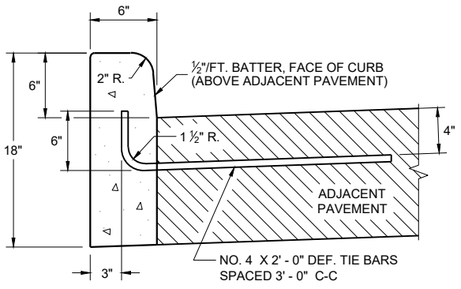
UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2' - 0" BEHIND THE BACK OF CURBS.

(1) TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.

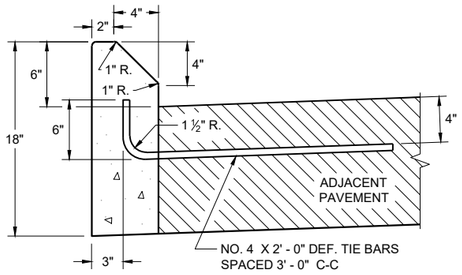
(2) THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.

(10) REFER TO SDD 08D18 AND 08D19 FOR ADDITIONAL DRIVEWAY ENTRANCE CURB DETAILS.

(11) PLACE 1" THICK EXPANSION JOINT MATERIAL BETWEEN VERTICAL FACE CURB TYPES EXTENDING FROM THE TOP OF CURB TO 1 INCH BELOW THE ADJOINING CONCRETE SURFACE. RIGID CONCRETE STRUCTURES INCLUDE RAISED CONCRETE MEDIANS, CONCRETE SAFETY ISLANDS, SPLITTER ISLANDS, OR LOCATIONS IDENTIFIED ON THE PLANS.

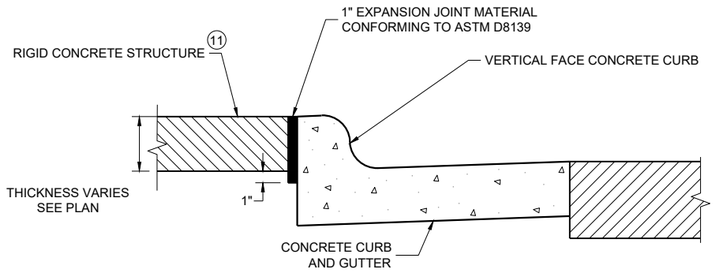


TYPES A (1) & D

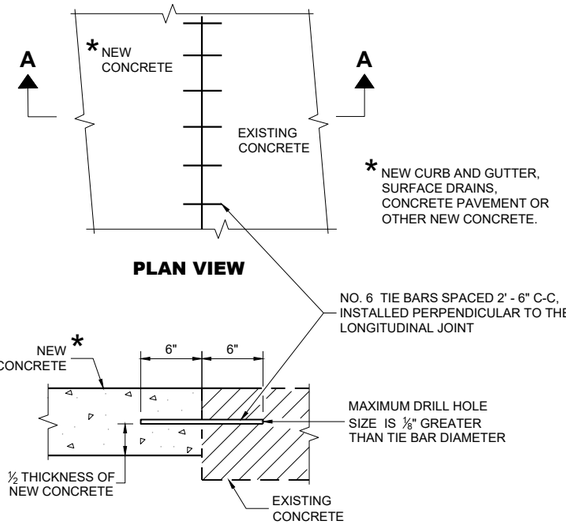


TYPES G (1) & J

CONCRETE CURB



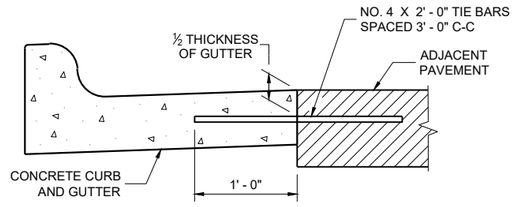
EXPANSION JOINT DETAIL FOR VERTICAL CURB ABUTTING A RIGID STRUCTURE (11)



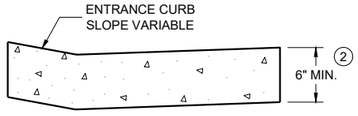
PLAN VIEW

SECTION A - A

TIE BARS DRILLED INTO EXISTING PAVEMENT



TYPICAL TIE BAR LOCATION (1)



DRIVEWAY ENTRANCE CURB (10)

(WHEN DIRECTED BY THE ENGINEER)

CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 — DATE
/S/ Rodnery Taylor — ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR

FHWA

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SDD 08D01-23b

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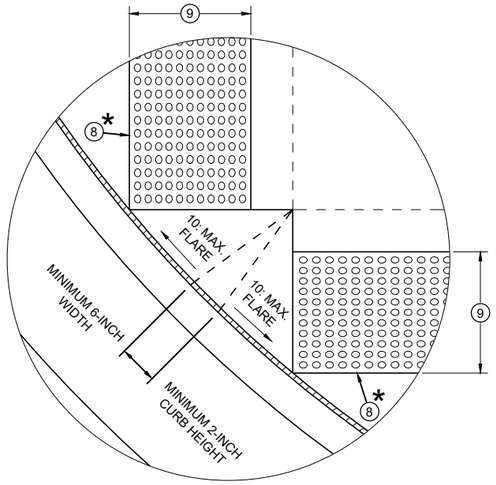
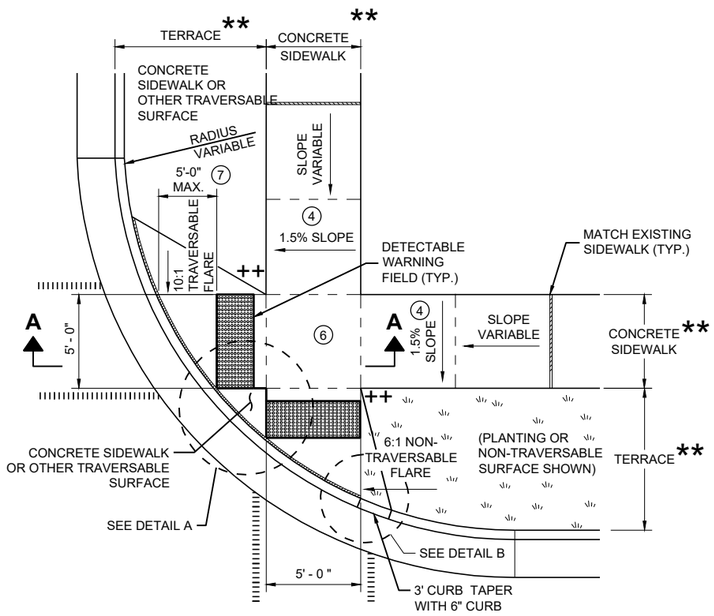
SDD 08D01-23b



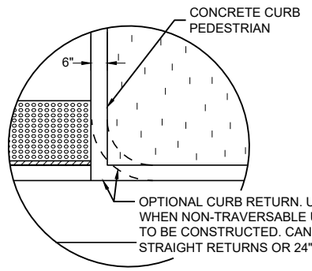
DETAIL A



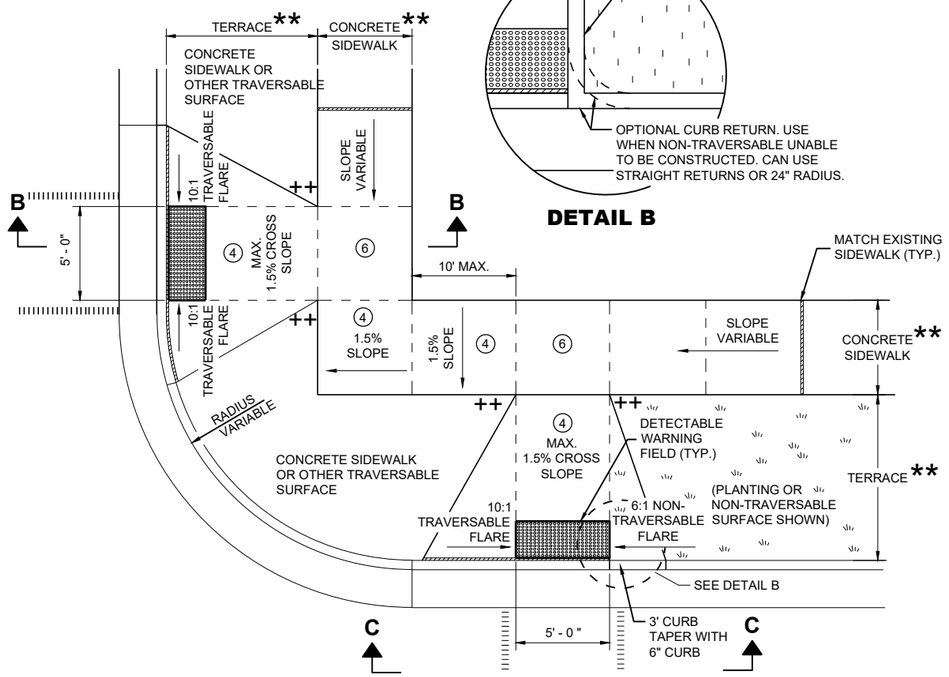
PLAN VIEW

CURB RAMP TYPE 2

(CENTER OF CORNER RADIUS)



DETAIL B



PLAN VIEW

CURB RAMP TYPE 3

(OUTSIDE OF CROSSWALK AREA)

GENERAL NOTES

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

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

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

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN ¼ - INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.

(3) AN 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE (2.67% OR LESS) AND NOT TO EXCEED 11% GRADE CHANGE.

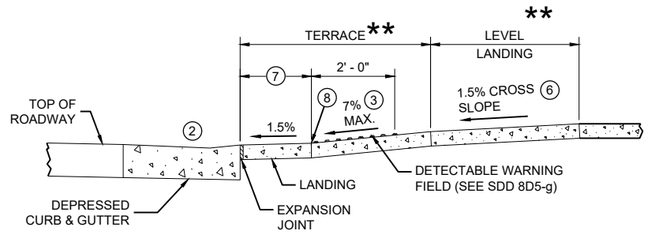
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LEVEL LANDING SIZE IS 5 FEET X 5 FEET.

(7) WHEN GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.

(8) PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

(9) WHEN DISTANCE IS LESS THAN 6' - 0", IT MAY BE DIFFICULT TO ACHIEVE A 7% SLOPE OR FLATTER ALONG THE RAMP. REDUCE CURB HEIGHT IN TRIANGLE AREA TO ACHIEVE 7% SLOPE OR FLATTER ON RAMP. CONSTRUCT 2-INCH MINIMUM CURB HEIGHT BETWEEN 10:1 FLARES.

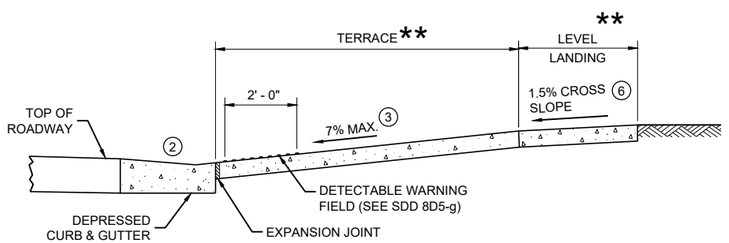


SECTION A - A FOR TYPE 2

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

** WIDTH SHOWN ELSEWHERE IN THE PLANS

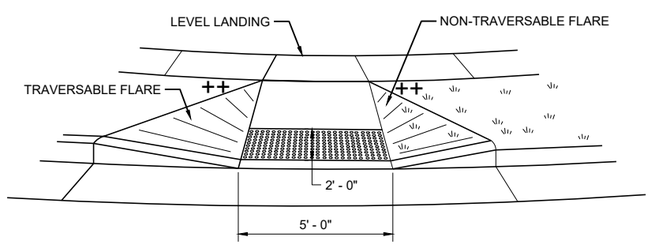
++ CONSTRUCT 6" WEDGE TO AVOID CONCRETE BREAKAGE



SECTION B - B FOR TYPE 3

LEGEND

- ½" EXPANSION JOINT SIDEWALK
- CONTRACTION JOINT SIDEWALK
- PAVEMENT MARKING CROSSWALK (WHITE)



VIEW C - C FOR TYPE 3

CURB RAMPS TYPE 2 AND 3

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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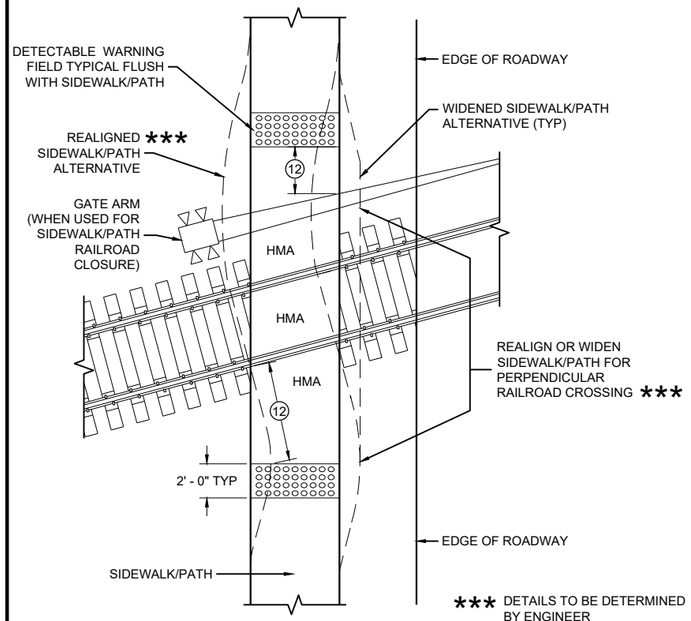
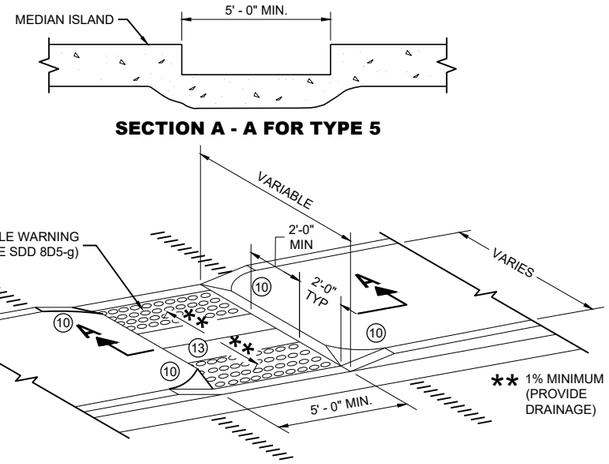
SDD 08D05-21b



CURB RAMP TYPE 8

DETECTABLE WARNINGS FOR SIDEWALKS OR SHARED USE PATHS AT RAILROAD CROSSINGS



SECTION A - A FOR TYPE 5

CURB RAMP TYPE 5

MEDIAN ISLAND NON-ELEVATED PEDESTRIAN CROSSING

GENERAL NOTES

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

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

SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.

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

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN ¼ - INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.

(3) AN 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LEVEL LANDING SIZE IS 5 FEET BY 5 FEET.

(10) INSTALL TRANSITION NOSE (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.

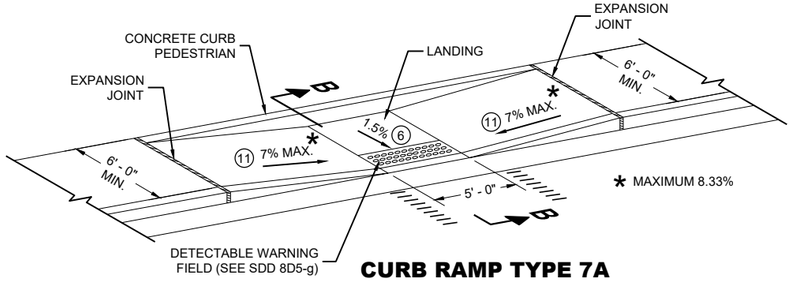
(11) SLOPE SIDEWALK TOWARD LANDING AS SHOWN WHERE THERE IS NO TERRACE OR WHERE THE TERRACE WIDTH IS LESS THAN 6 FEET WIDE.

(12) THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO A RAILROAD CROSSING SHALL BE 1.5 FEET ±0.1' FROM THE FACE OF THE GATE ARM IF THE GATE ARM EXTENDS ACROSS THE SIDEWALK/PATH. WHERE THERE IS NO PEDESTRIAN GATE, THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO THE RAILROAD TRACK IS 15 FEET MAXIMUM AND 12 FEET MINIMUM, 15 FEET TYPICAL FROM THE NEAREST RAIL.

(13) DO NOT INSTALL DETECTABLE WARNING FIELDS AT THE EDGES OF STEET-LEVEL PEDESTRIAN REFUGE ISLANDS IF A MINIMUM 2 FOOT CONCRETE SURFACE WITHOUT DETECTABLE WARNINGS (MEASURED IN THE DIRECTION OF PEDESTRIAN TRAVEL) CANNOT BE ACHIEVED.

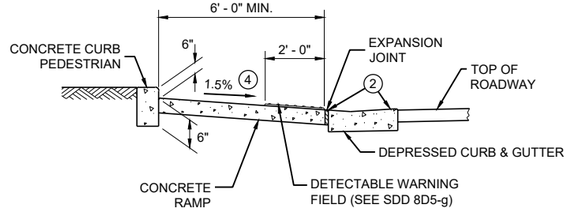
LEGEND

- ½" EXPANSION JOINT SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)

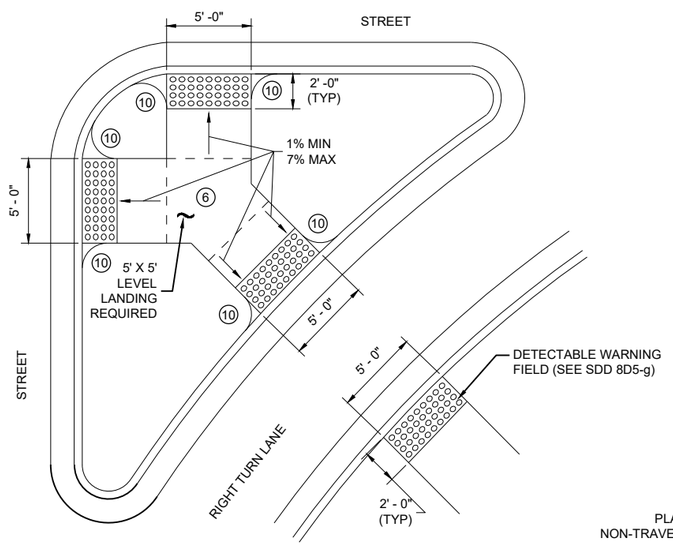


CURB RAMP TYPE 7A

FOR INTERSECTIONS AND MID BLOCK CROSSINGS



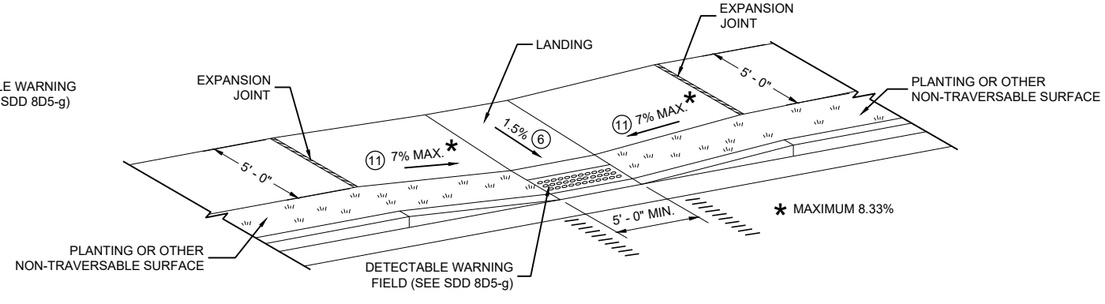
SECTION B - B FOR TYPE 7A



CURB RAMP TYPE 6

DETECTABLE WARNING AT ISLANDS

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



CURB RAMP TYPE 7B

FOR INTERSECTIONS AND MID BLOCK CROSSINGS

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

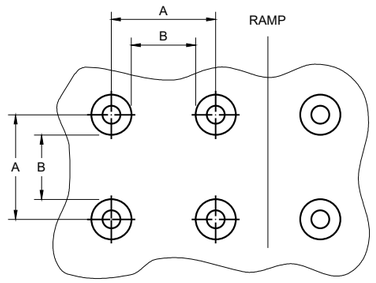
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

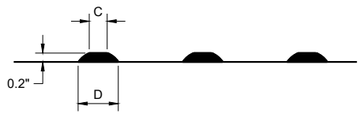
SDD 08D05-21e

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

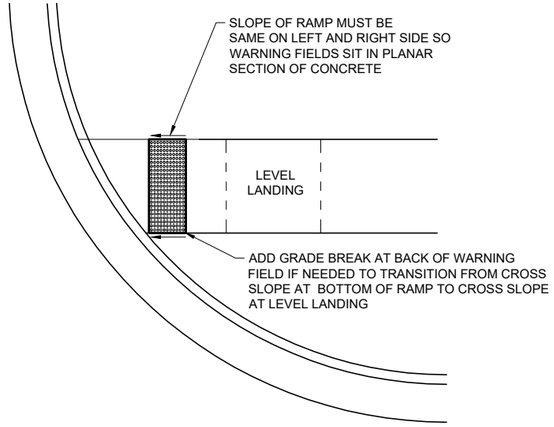
* THE C DIMENSION IS 50% TO 65% OF THE D DIMENSION.



PLAN VIEW



ELEVATION VIEW



DETECTABLE WARNING FIELD

PLANAR INSTALLATION

GENERAL NOTES

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AT A CURB RAMP SHALL BE FROM THE SAME MANUFACTURER.

PLACE ALL DETECTABLE WARNING FIELD SYSTEMS IN ACCORDANCE TO THE MANUFACTURER'S RECOMMENDATION.

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

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

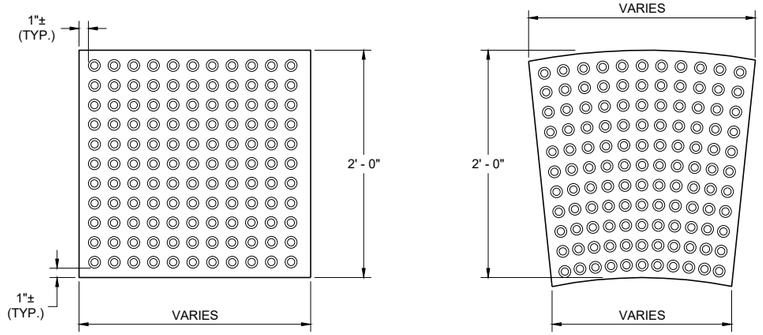
FOR RADIAL DETECTABLE WARNING FIELD APPLICATIONS WHERE STANDARD RADIAL PLATES ARE NOT AVAILABLE AT AN INTERSECTION CURB RADIUS, A COMBINATION OF SQUARE OR RECTANGULAR PLATES AND RADIAL PLATES MAY BE USED TO FORM RADIAL CONFIGURATION. RADIAL WEDGE PLATES IN COMBINATION WITH SQUARE PLATES ARE ALSO ACCEPTABLE. FOLLOW MANUFACTURER'S RECOMMENDATIONS.

REFER TO CONTRACT AND STANDARD SPECIFICATIONS FOR FIELD CUTTING REQUIREMENTS.

DO NOT EMBED IN CONCRETE ANY FIELD-CUT PLATES WITH CUT EDGES SHORTER THAN 6 INCHES. CONSULT WITH MANUFACTURER FOR RE-DRILLING AND ANCHORING REQUIREMENTS OF FIELD-CUT PLATES.

(15) FIELD SAW CUTS ALONG RADIAL DETECTABLE WARNING PLATES WILL BE NECESSARY TO MATCH EACH CURB RAMP EDGE. AVOID CUTTING THROUGH DOMES WHENEVER POSSIBLE. MAKE FIELD CUTS TRUE TO LINE AND WITHIN ⅛" DEVIATION. SMOOTH EDGES OF FIELD CUT PLATES.

TRUNCATED DOMES
DETECTABLE WARNING PATTERN DETAIL

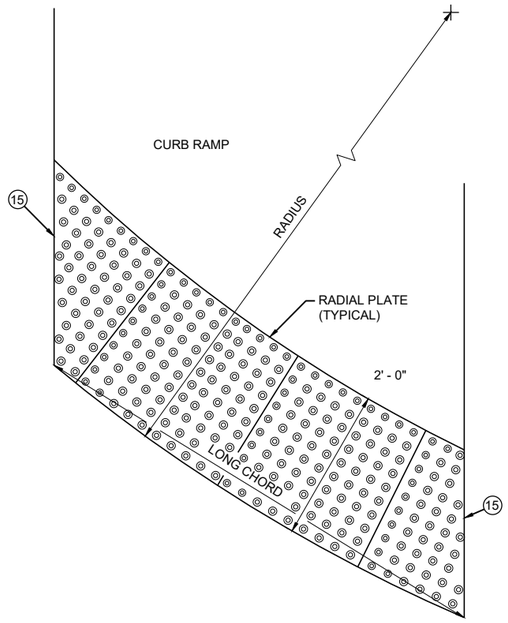


RECTANGULAR PLATES

RADIAL PLATES

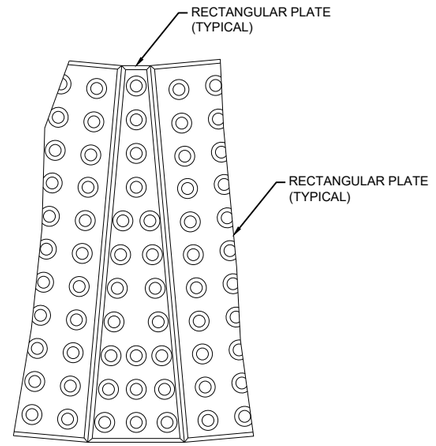
PLAN VIEW

DETECTABLE WARNING FIELDS (TYPICAL)



PLAN VIEW

RADIAL DETECTABLE WARNING FIELD ATTRIBUTES



PLAN VIEW

RADIAL WEDGE PLATE CONNECTION DETAIL

CURB RAMPS
RECTANGULAR AND RADIAL DETECTABLE WARNING PLATES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
July 2023 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA

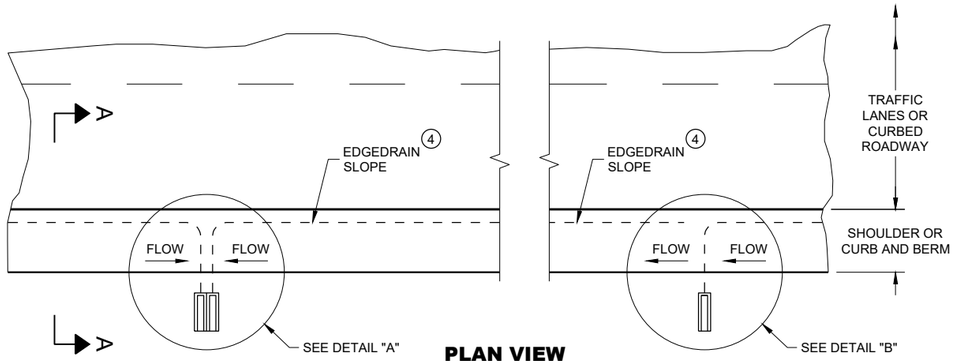
6

SDD 08D05-21g

6

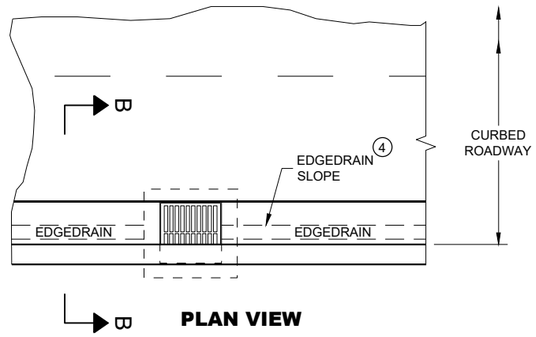
SDD 08D05-21g

SDD 08D15-a Edgedrain Outlet and Outfall Markers



PLAN VIEW

ROADWAY WITH SHOULDERS OR CURBS
(EDGEDRAIN CONNECTS TO ROADSIDE) (2)



PLAN VIEW

ROADWAY WITH CURBS
(EDGEDRAIN CONNECTS INTO INLET STRUCTURE)

GENERAL NOTES

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

(1) UNPERFORATED PIPE UNDERDRAIN AND FITTINGS FURNISHED FOR OUTFALL PIPE SHALL MEET THE REQUIREMENTS OF ONE OF THE FOLLOWING SPECIFICATIONS:

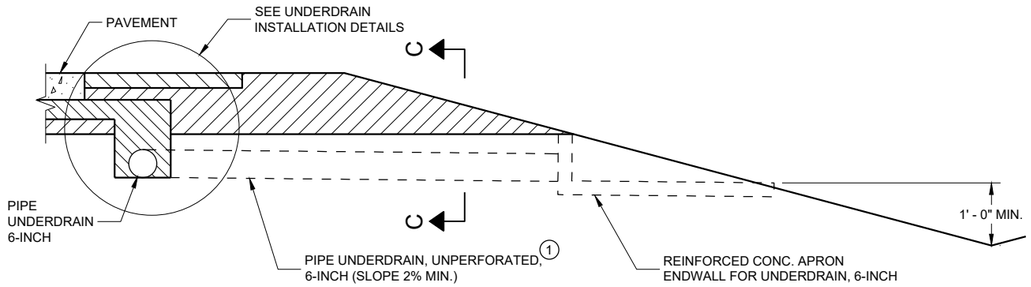
POLYVINYL CHLORIDE (PVC) PLASTIC DRAIN, WASTE, AND VENT PIPE AND FITTINGS, ASTM D 2665, SCHEDULE 40 PVC.

TYPE PSM POLYVINYL CHLORIDE (PVC) SEWER PIPE AND FITTINGS, ASTM D 3034, SDR 23.5 PVC SEWER PIPE.

(2) MAXIMUM SPACING OF EDGEDRAIN OUTLETS SHALL BE 250 FEET UNLESS OTHERWISE SPECIFIED IN THE CONTRACT OR DIRECTED BY THE ENGINEER.

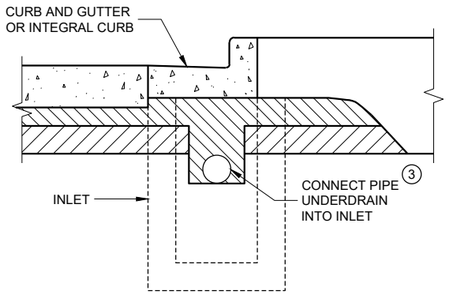
(3) EDGEDRAIN SHALL BE CONNECTED TO INLETS REGARDLESS OF FLOW DIRECTION FOR DRAINAGE AND MAINTENANCE ACCESS.

(4) EDGEDRAIN SHALL BE LAID PARALLEL TO THE GRADE OF ROADWAY.



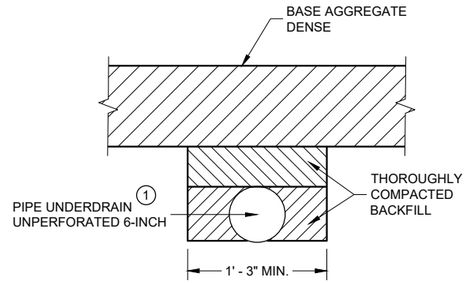
SECTION A - A

RURAL CROSS SECTION



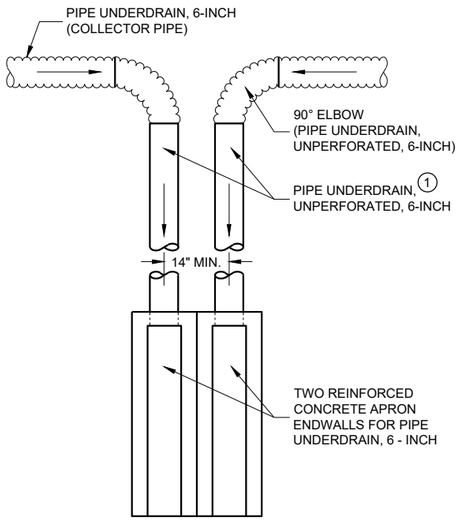
SECTION B - B

URBAN CROSS SECTION

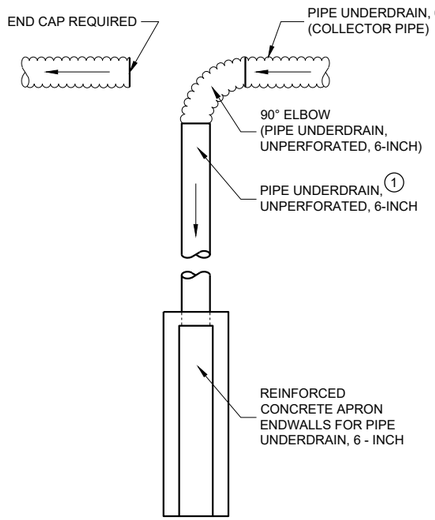


SECTION C - C

TRENCH FOR OUTFALL PIPE

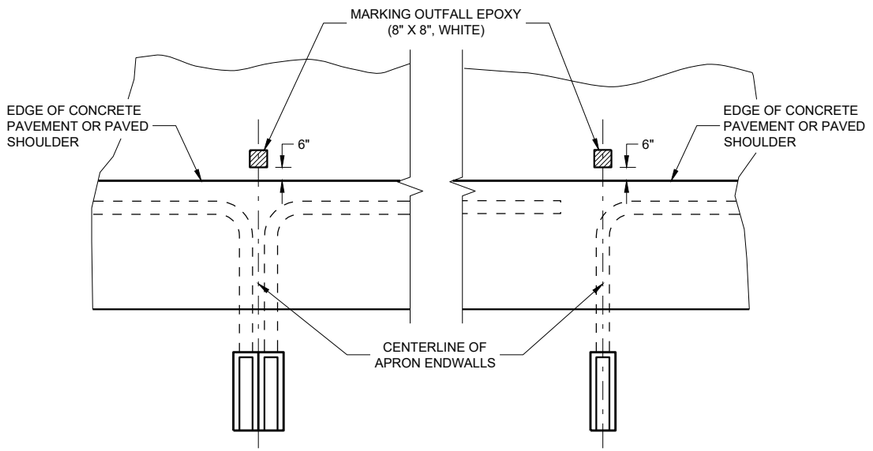


DETAIL "A"
TO BE USED AT LOW POINT LOCATIONS



DETAIL "B"
TO BE USED AT INTERMEDIATE LOCATIONS

TYPICAL DRAIN OUT DETAILS



LOW POINT LOCATIONS — INTERMEDIATE LOCATIONS

PAVEMENT MARKINGS FOR OUTFALL MARKERS

EDGEDRAIN OUTLET AND OUTFALL MARKERS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

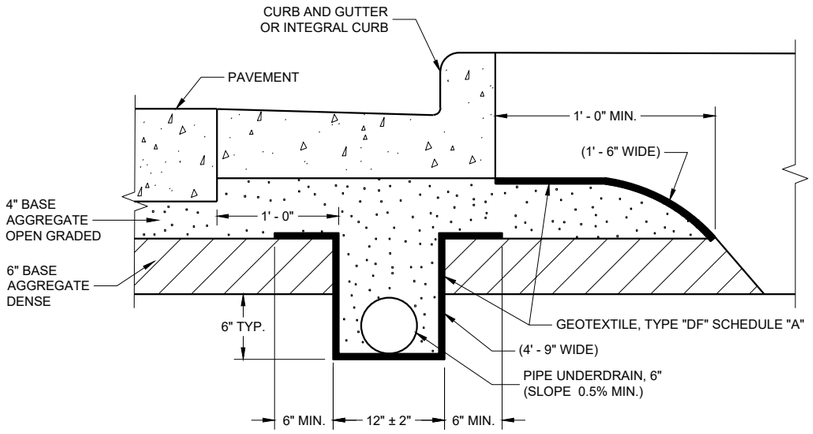
6

SDD08D15 - 05a

6

SDD08D15 - 05a

SDD 08D15-b Edgedrain and Base Aggregate Open Graded



EDGEDRAIN IN URBAN ROADWAY

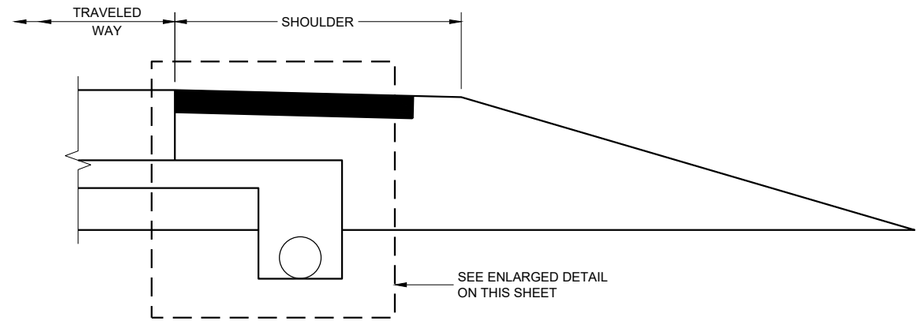
GENERAL NOTES

THE DIMENSIONS SHOWN ON THE TYPICAL CROSS SECTIONS WILL GOVERN IN THE EVENT THERE IS A CONFLICT WITH THE DETAILS SHOWN ON THIS DRAWING.

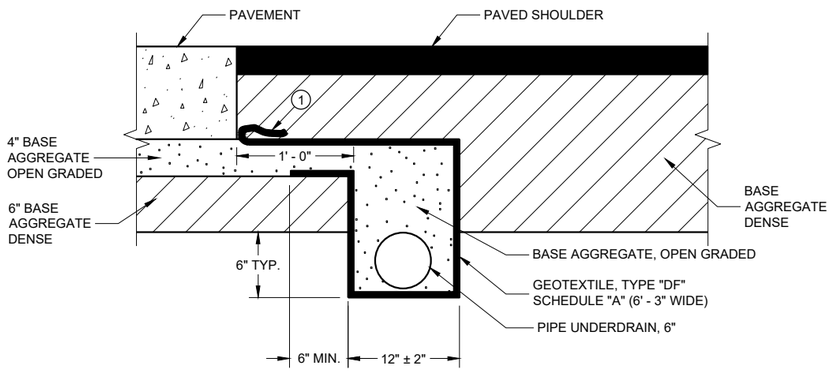
PIPE UNDERDRAIN SHALL BE LAID PARALLEL TO THE GRADE OF THE ROADWAY.

(1) FOLD OVER EXCESS GEOTEXTILE AT THIS LOCATION.

(2) TOTAL GEOTEXTILE WIDTH IS 6'-3" FOR PAYMENT.

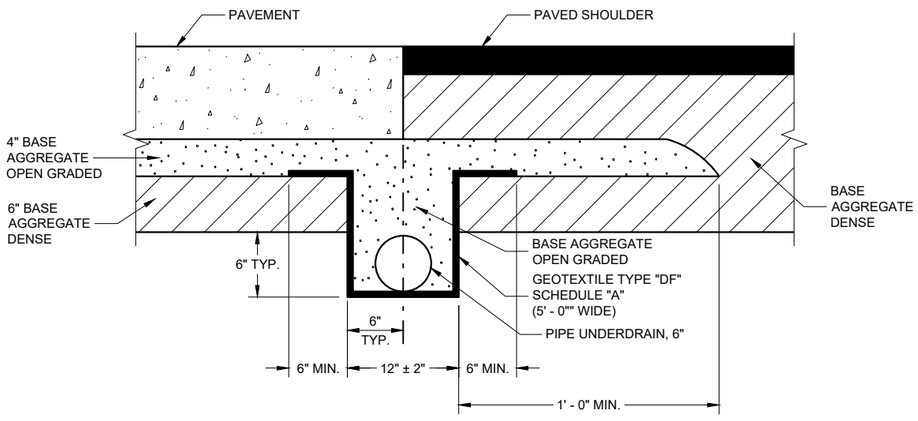


RURAL CROSS SECTION



POST PAVING INSTALLATION

(QUANTITIES ARE BASED ON THIS DETAIL)



PRE-PAVING INSTALLATION ALTERNATIVE

EDGEDRAIN IN RURAL ROADWAY

EGEDRAIN AND BASE AGGREGATE OPEN GRADED

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

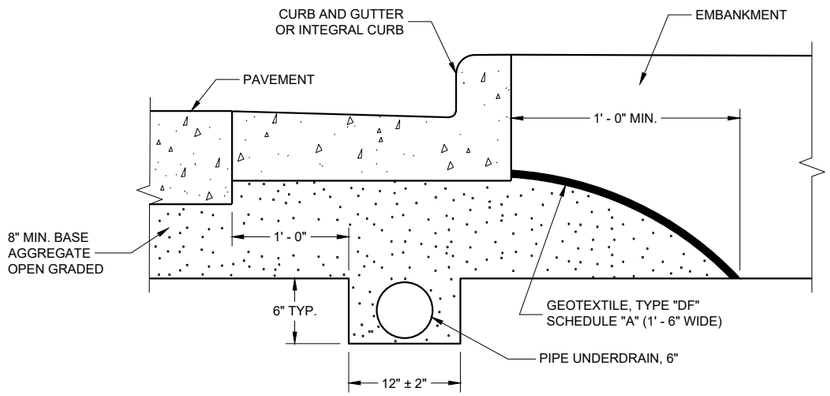
6

SDD 08D15 - 05b

6

SDD 08D15 - 05b

SDD 08D15-c Edgedrain and Base Aggregate Open Graded

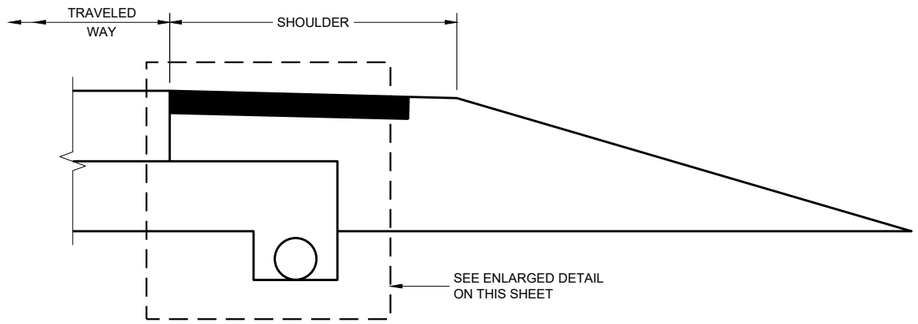


EDGEDRAIN IN URBAN ROADWAY

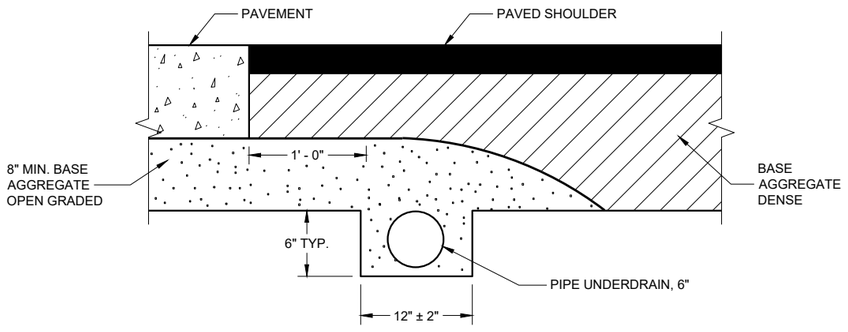
GENERAL NOTES

THE DIMENSIONS SHOWN ON THE TYPICAL CROSS SECTIONS WILL GOVERN IN THE EVENT THERE IS A CONFLICT WITH THE DETAILS SHOWN ON THIS DRAWING.

PIPE UNDERDRAIN SHALL BE LAID PARALLEL TO THE GRADE OF THE ROADWAY.

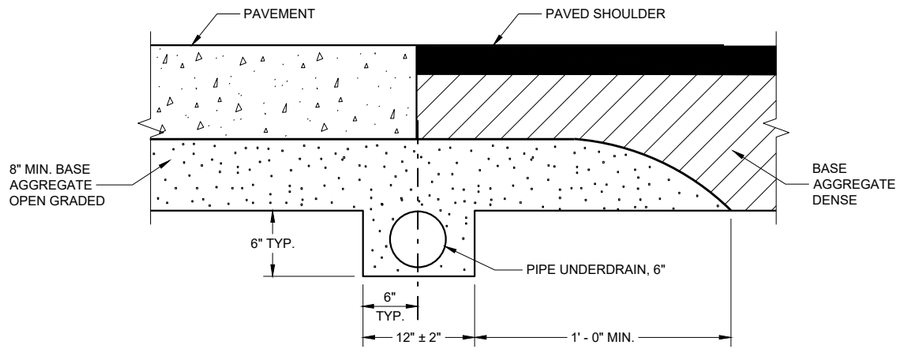


RURAL CROSS SECTION



POST PAVING INSTALLATION

(QUANTITIES ARE BASED ON THIS DETAIL)



PRE-PAVING INSTALLATION ALTERNATIVE

EDGEDRAIN IN RURAL ROADWAY

EDGEDRAIN AND BASE AGGREGATE OPEN GRADED

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
September 2015
DATE

/S/ Peter Kemp. P.E.
PAVEMENT SUPERVISOR

FHWA

6

SDD 08D15 - 05c

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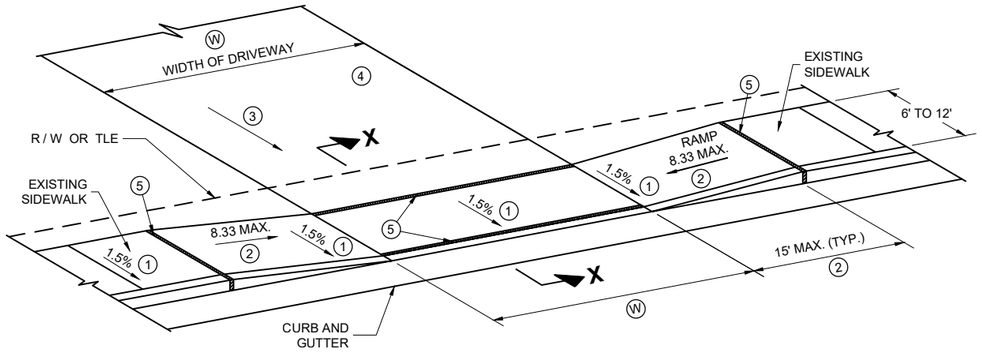
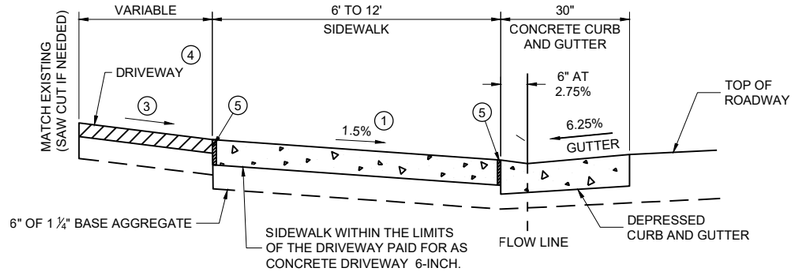
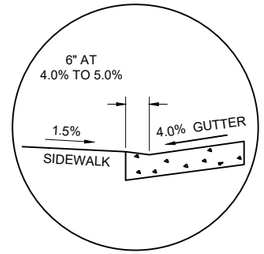
SDD 08D15 - 05c



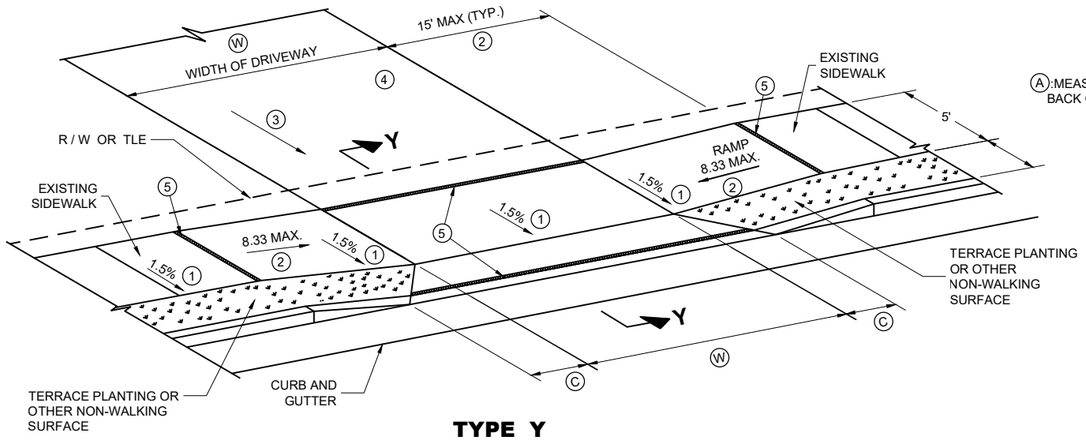
TYPE X
SIDEWALK ABUTS CURB AND GUTTER
TERRACE VARIES 0 TO 3 FEET



SECTION X - X



SECTION X - X
4% GUTTER SLOPE



TYPE Y
SIDEWALK WITH NARROWER TERRACE
TERRACE VARIES 4 TO 6 FEET

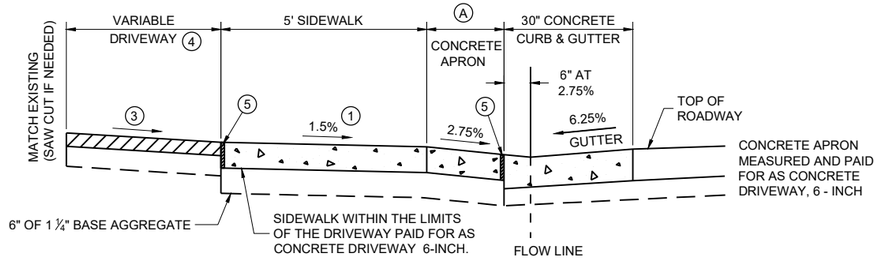
Ⓦ: 12' MIN. - 24' MAX. RESIDENTIAL AND NON-COMMERCIAL (PE & FE)

16' MIN. - 35' MAX. COMMERCIAL (CE)

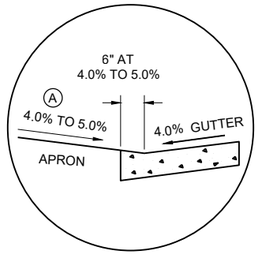
Ⓐ:MEASURE FROM BACK OF CURB

TABLE Y

Ⓐ FEET	Ⓒ FEET
3.5'	2.0'
4.5'	3.0'
5.5'	3.5'



NOTE: SIDEWALK MY BE DEPRESSED IN DRIVEWAY AREAS



SECTION Y - Y
4% GUTTER SLOPE

SECTION Y - Y

DRIVEWAY DETAIL WITH CONCRETE CURB AND GUTTER

(URBAN AND SUBURBAN)

GENERAL NOTES

PROVIDE CONSTRUCTION JOINTS ALONG THE CENTER OF THE CONCRETE FOR DRIVEWAYS UNDER 20 FEET IN WIDTH AND AT THE THIRD POINTS OVER 20 FEET IN WIDTH.

Ⓦ IS SHOWN ON PLAN AND PROFILE SHEETS.

OFFSETS, ELEVATIONS, AND PERCENT GRADE ARE SHOWN ON THE CROSS SECTIONS.

① CONSTRUCTION TOLERANCE OF 0.5%± FOR SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.

② THE SIDEWALK RAMP MAXIMUM RUNNING SLOPE SHALL NOT REQUIRE THE RAMP LENGTH TO EXCEED 15 FEET TO AVOID CHASING THE SLOPE INDEFINITELY WHEN CONNECTING TO STEEP GRADES. WHEN APPLYING THE 15 FOOT MAXIMUM LENGTH, THE RUNNING SLOPE OF THE SIDEWALK SHALL BE AS FLAT AS FEASIBLE AND NOT EXCEED THE LONGITUDINAL GRADE OF THE ROADWAY. SLOPE SIDEWALK RAMP TOWARD APRON AS SHOWN WHERE THERE IS NO TERRACE OR WHERE THE TERRACE WIDTH IS LESS THAN 6 FEET WIDE.

③ DRIVEWAY SLOPES: DESIRABLE MAXIMUM
- 10.5% UP AWAY FROM SIDEWALK (SAG)
- 8.5% DOWN AWAY FROM SIDEWALK (CREST)
- ABSOLUTE MAXIMUM 15% FOR BOTH CREST AND SAG

④ DRIVEWAY TYPES
- 6-INCH CONCRETE DRIVEWAY PAVEMENT OVER 6-INCH BASE AGGREGATE
- 2-INCH TO 3-INCH ASPHALTIC SURFACE OVER 6-INCH BASE AGGREGATE
- 6-INCH BASE AGGREGATE (MAY BE INCREASED FOR CLAY SUBGRADES.)

⑤ ½" EXPANSION JOINT FILLER

DRIVEWAY AND SIDEWALK RAMPS TYPES X AND Y

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
July 2023 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR

FHWA

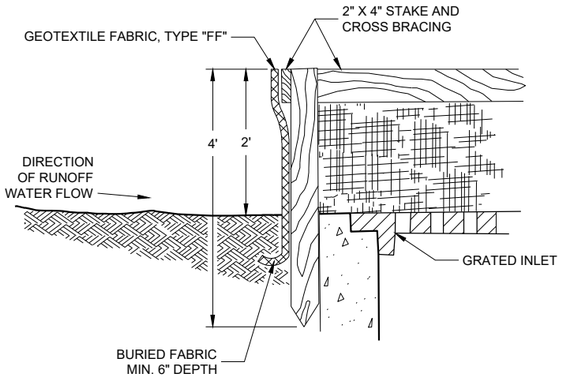
6

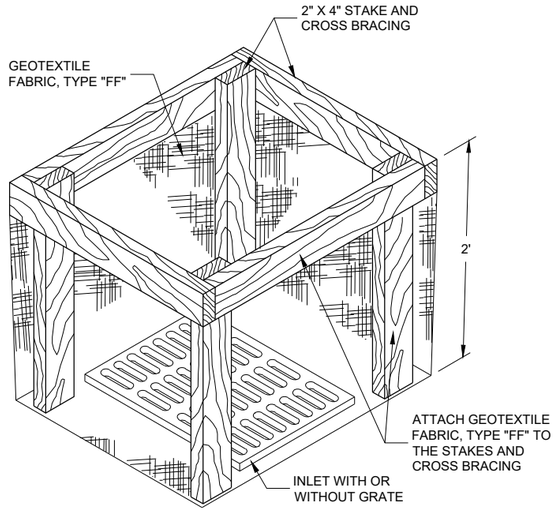
SDD 08D18-04

6

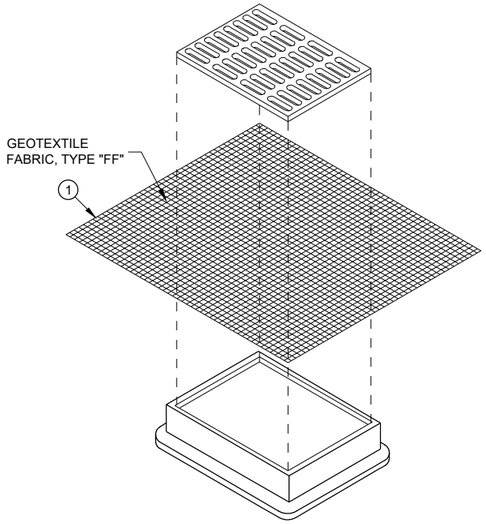
SDD 08D18-04

SDD 08E10 Inlet Protection, Types A, B, C and D



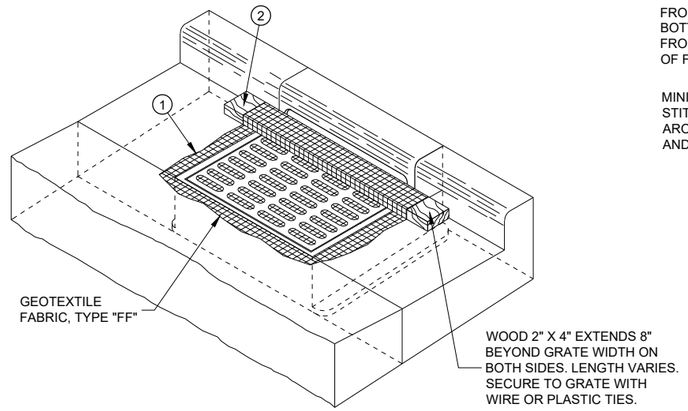


INLET PROTECTION, TYPE "A"

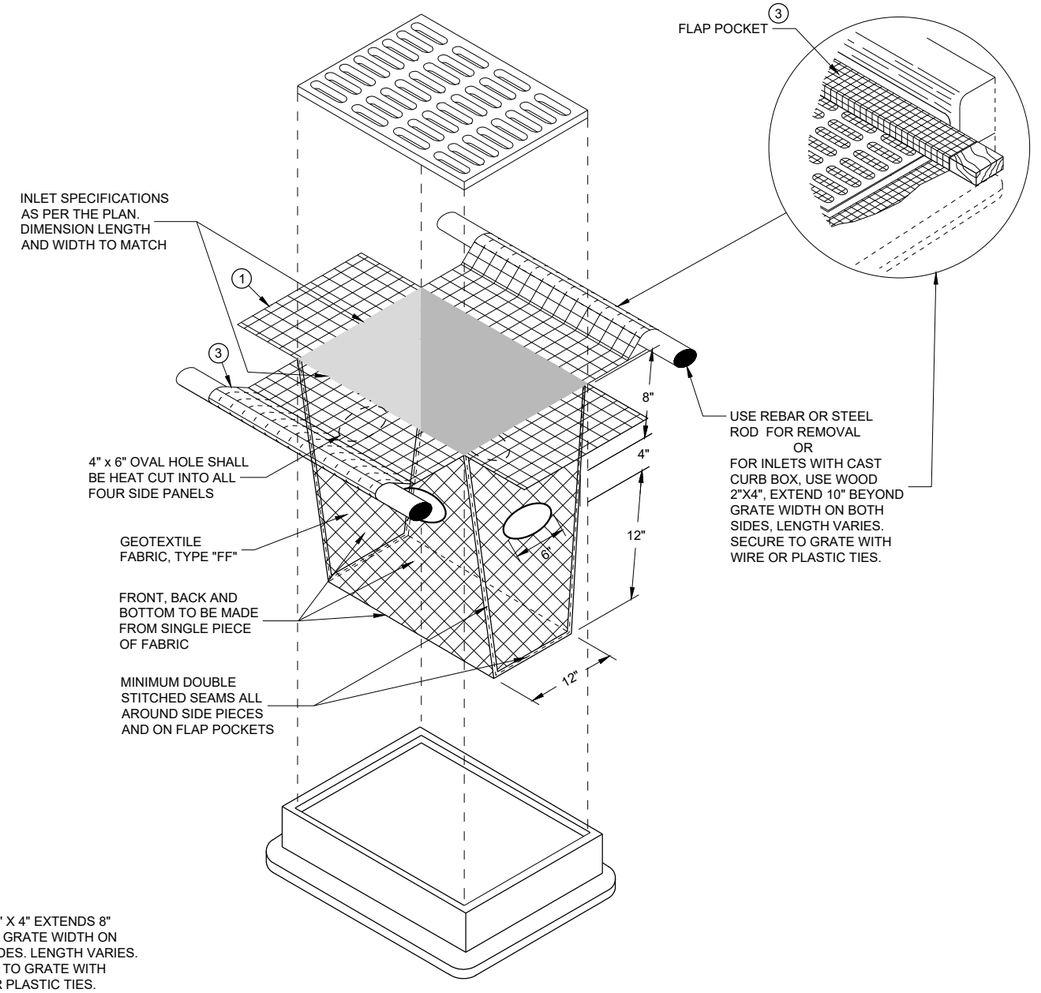


INLET PROTECTION, TYPE "B" (WITHOUT CURB BOX)

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



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



INLET PROTECTION, TYPE "D"

(CAN BE INSTALLED IN ANY INLET WITH OR WITHOUTA CURB BOX AS PER NOTE (2))

GENERAL NOTES

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

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

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

(1) FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.

(2) FOR INLET PROTECTION, TYPE C (WITH CURB BOX), AN ADDITIONAL 18" OF FABRIC IS WRAPPED AROUND THE WOOD AND SECURED WITH STAPLES. THE WOOD SHALL NOT BLOCK THE ENTIRE HEIGHT OF THE CURB BOX OPENING.

(3) FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2X4.

INSTALLATION NOTES

TYPES B & C

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

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

TYPE D

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

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

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

INLET PROTECTION TYPES A, B, C AND D

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/16/02 — DATE
/S/ Beth Cannestra — ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA

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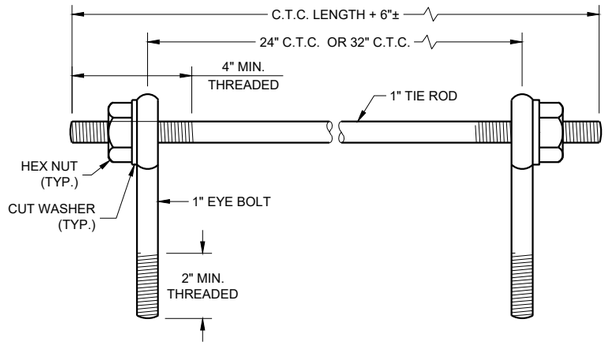
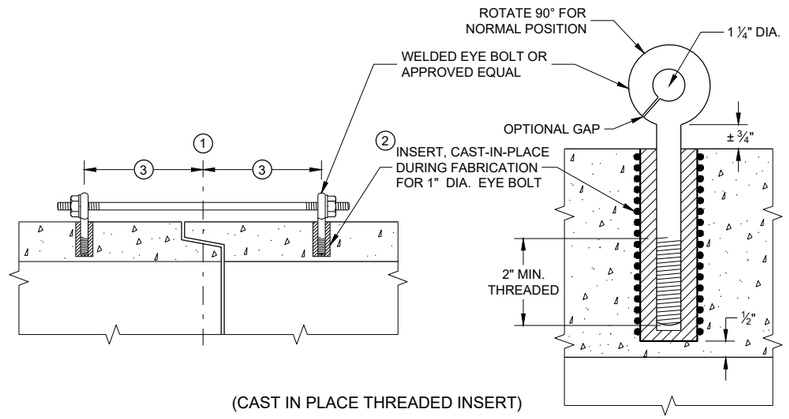
SDD 08E10 - 02

SDD 08F04 Joint Ties for Concrete Pipe and Concrete Collar Detail



EYE BOLTS AND TIE ROD



(CAST IN PLACE THREADED INSERT)

LONGITUDINAL SECTIONS

EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 1)

GENERAL NOTES

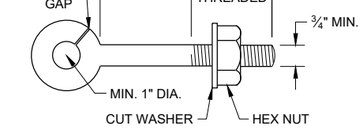
DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

CONCRETE CULVERT AND STORM SEWER PIPE SHALL BE TIED TOGETHER IN THE MANNER ILLUSTRATED BY THIS DETAIL AT LOCATIONS DESIGNATED IN THE STANDARD SPECIFICATIONS AND THE PLAN. THE CONTRACTOR MAY USE EITHER ALTERNATE 1, 2 OR 3 FOR DRAINAGE STRUCTURES. ONLY ALTERNATE 1 AND 3 MAY BE USED FOR CATTLE PASSES, UNLESS OTHERWISE STATED IN THE CONTRACT. THE MATERIALS, FABRICATION AND WORK NECESSARY TO TIE THE PIPE BY THIS DETAIL WILL BE CONSIDERED INCIDENTAL TO THE PIPE AND APRON ENDWALLS IF REQUIRED.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR JOINT TIES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

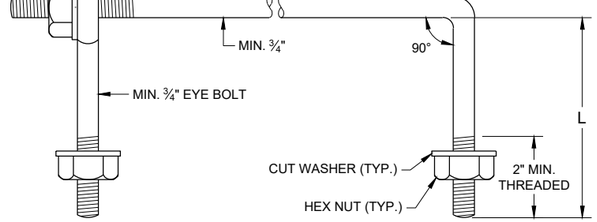
JOINT TIES TO BE HOT-DIP GALVANIZED PER ASTM A 153.

1. CENTER LINE OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINTS.
2. THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.
3. HOLES SHALL BE CAST-IN-PLACE OR DRILLED PER THE APPLICABLE DETAIL, AND EQUAL DISTANCE FROM THE CENTERLINE OF THE JOINT.
4. BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.
5. OPENING TO BE ROD DIAMETER PLUS 1 INCH.
6. LENGTH ADEQUATE TO EXTEND TO WITHIN ½ INCH OF THE INNER SURFACE OF THE PIPE.
7. EYE BOLT LENGTH DETERMINED BY WALL THICKNESS, BELL THICKNESS AND BOLT PROJECTION INSIDE PIPE.

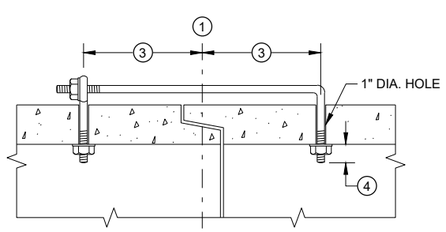


EYE BOLT 7

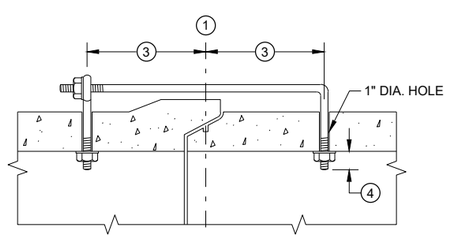
NOTE: TWO EYE BOLTS MAY BE USED WITH A 30" OR 38" LONG THREADED ROD IN LIEU OF THE 90° BENT TIE ROD.



EYE BOLT AND TIE ROD



(TONGUE AND GROOVE PIPE)



(MODIFIED BELL PIPE)

LONGITUDINAL SECTION

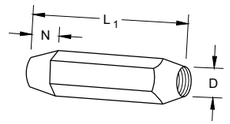
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 2)

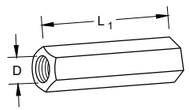
ADJUSTABLE TIE ROD TABLE

PIPE DIAMETER	TIE ROD DIAMETER	D	L_1	N
12 - 60	⅝	⅝	5	½
66 - 84	¾	¾	5	½
90 - 144	1	1	7	1 7/16

DIMENSIONS SHOWN ARE IN INCHES



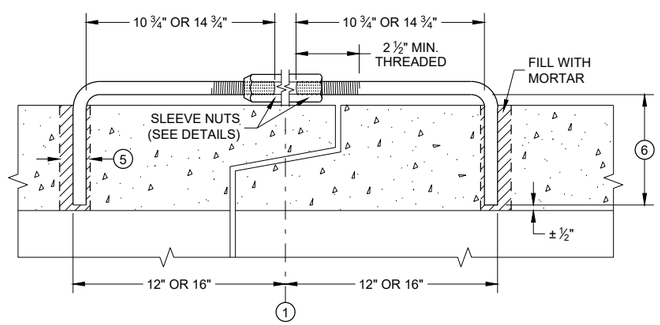
TAPERED



PLAIN

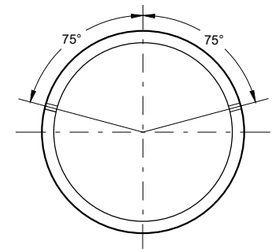
RIGHT AND LEFT THREADS

SLEEVE NUTS



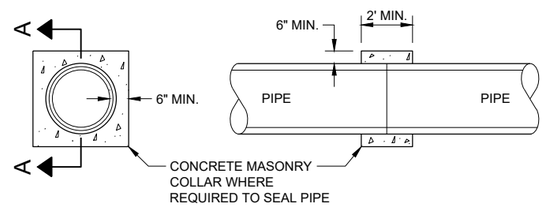
LONGITUDINAL SECTION

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



PLACEMENT OF (2) CAST-IN-PLACE INSERTS OR HOLES DURING FABRICATION FOR PIPE SECTIONS REQUIRING TIE RODS

TRANSVERSE SECTION



SECTION A - A

CONCRETE COLLAR DETAIL

JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2021
DATE

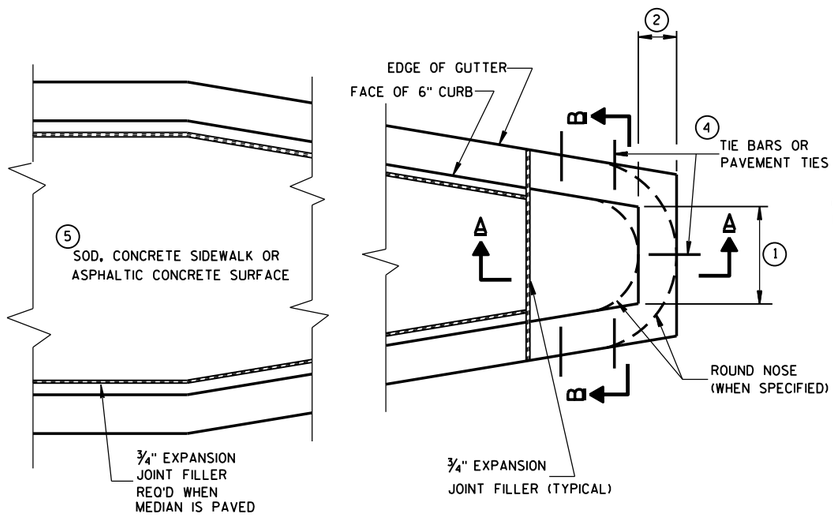
/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT ENGINEER

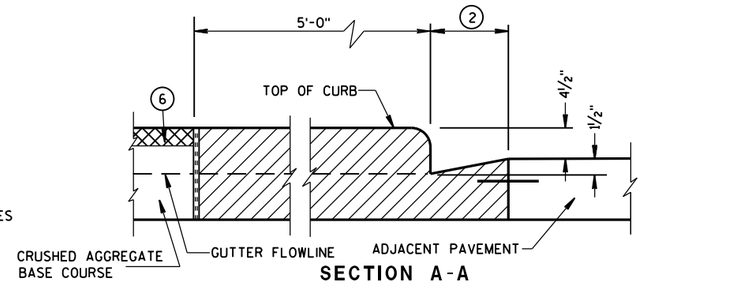
FHWA

6

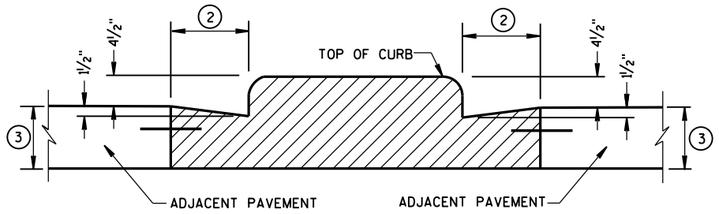
SDD 08F04 - 08

SDD 11B2 Concrete Median Nose





SECTION A-A



SECTION B-B

CONCRETE MEDIAN BLUNT NOSE DETAIL

GENERAL NOTES

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

(1) SEE PLAN FOR MEDIAN NOSE WIDTH AND RADIUS (FOR ROUND NOSE ALTERNATE).

(2) WIDTH OF GUTTER TO MATCH EXISTING ADJACENT GUTTER OR AS SPECIFIED ELSEWHERE IN THE PLAN.

(3) DEPTH EQUAL TO ADJACENT PAVEMENT. ADJACENT PAVEMENT STRUCTURE DETAILS ARE SHOWN ON THE PLAN. TYPICAL OPTIONS ARE:

(1) NEW OR EXISTING CONCRETE PAVEMENT.

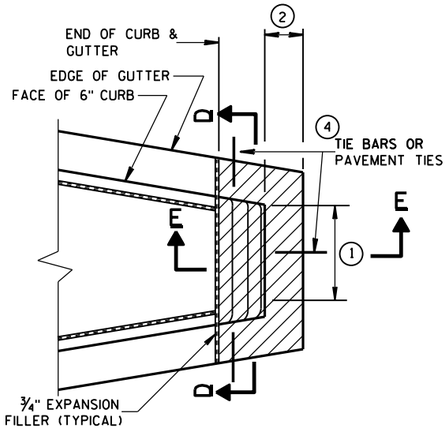
(2) ASPHALTIC CONCRETE PAVEMENT OVER NEW OR EXISTING CONCRETE BASE COURSE.

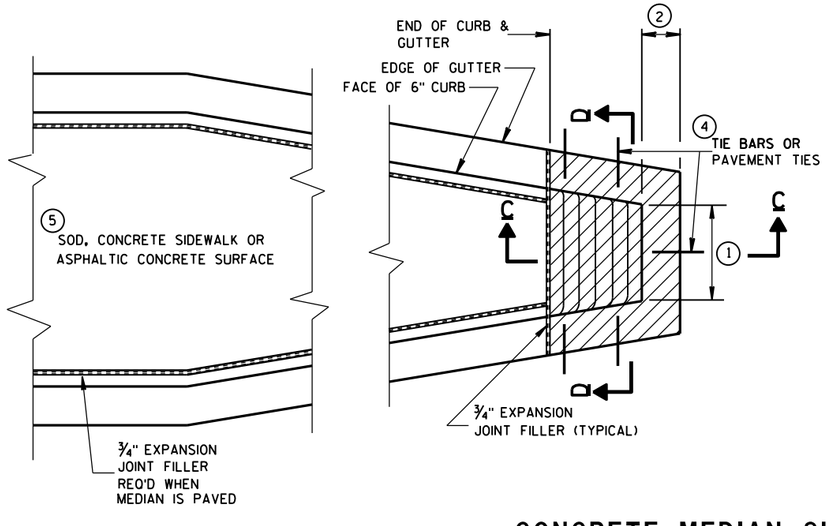
(3) ASPHALTIC CONCRETE PAVEMENT OVER CRUSHED AGGREGATE BASE COURSE.

(4) TIE BARS OR PAVEMENT TIES REQUIRED IN NEW CONCRETE PAVEMENT OR CONCRETE BASE COURSE. TIE BARS SHALL BE NO. 4 X 2'-0" SPACED AT 2'-0" C-C.

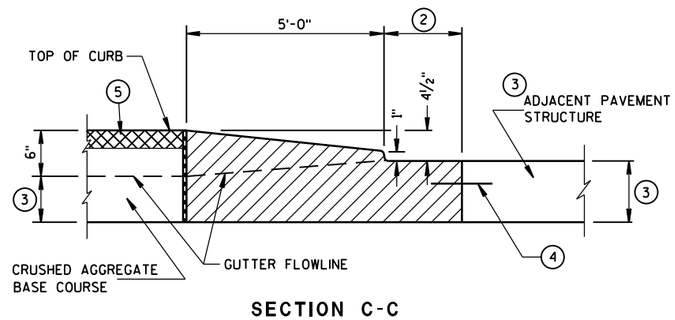
PAVEMENT TIES REQUIRED IN EXISTING CONCRETE BASE COURSE. PAVEMENT TIES SHALL BE NO. 6 X 1'-0" SPACED AT 3'-0" C-C INSTALLED ON A HORIZONTAL SKEW OF 6:1. THE DIRECTION OF SKEW SHALL ALTERNATE AFTER EVERY ONE OR TWO BARS.

(5) SURFACE TYPE AND DETAILS ARE SHOWN ELSEWHERE IN THE PLAN.

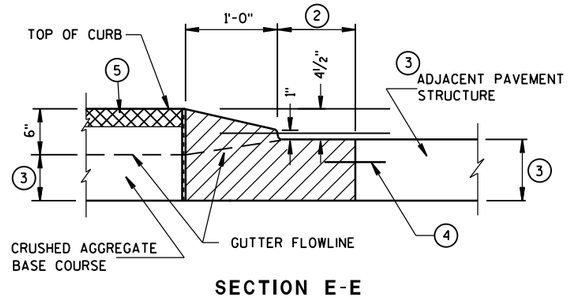




CONCRETE MEDIAN SLOPED NOSE TYPE 1

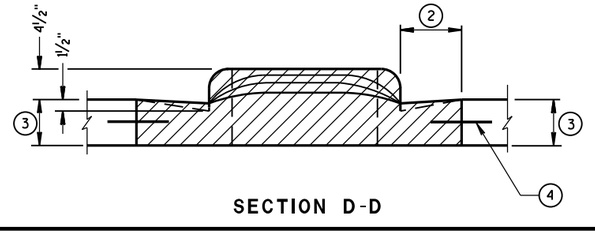


SECTION C-C



SECTION E-E

CONCRETE MEDIAN SLOPED NOSE TYPE 2



SECTION D-D

CONCRETE MEDIAN NOSE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 6-8-2006 DATE FHWA	/S/ Jerry H. Zogg ROADWAY STANDARDS DEVELOPMENT ENGINEER

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S.D.D. 11 B 2-2

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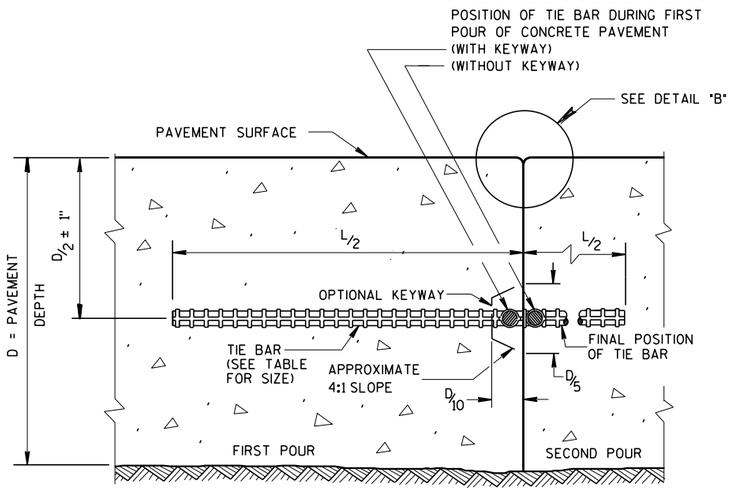
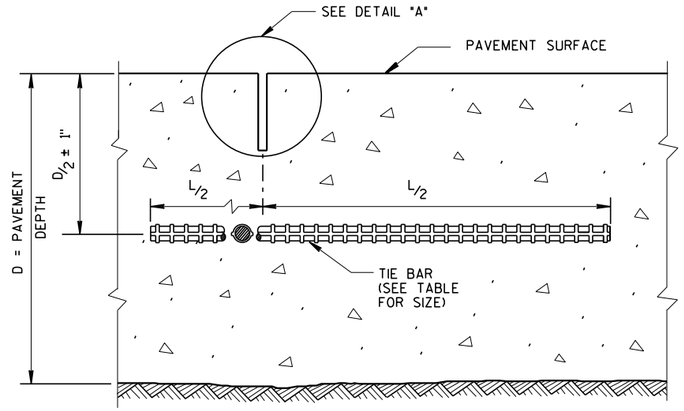
S.D.D. 11 B 2-2

SDD 13C1 Concrete Pavement Longitudinal Joints and Ties



CONSTRUCTION JOINT



SAWED JOINT

GENERAL NOTES

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

CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

(1) ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

(2) PAVEMENT THAT WAS IN PLACE PRIOR TO THE CONTRACT.

PLAN VIEW

SECTION A-A

LONGITUDINAL CONSTRUCTION JOINT TIE BARS ANCHORED INTO EXISTING PAVEMENT

DETAIL "A"

DETAIL "B"

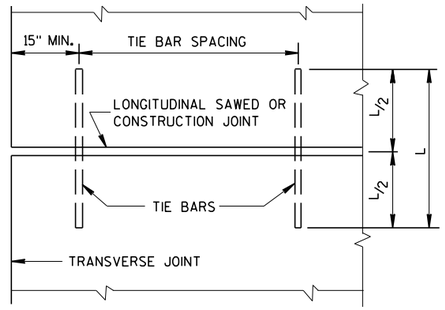
DETAIL "C"

TIE BAR TABLE

PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 1/2"	NO. 4	30"	36"
≥ 10 1/2"	NO. 5	36"	36"
	NO. 4 *	30"	24" **

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

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



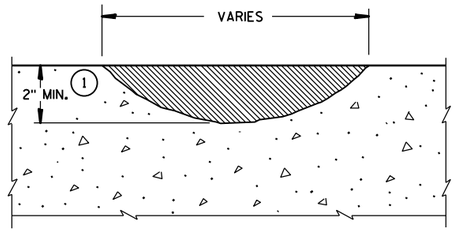
PLAN VIEW
SHOWING LOCATION OF TIE BARS

CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES

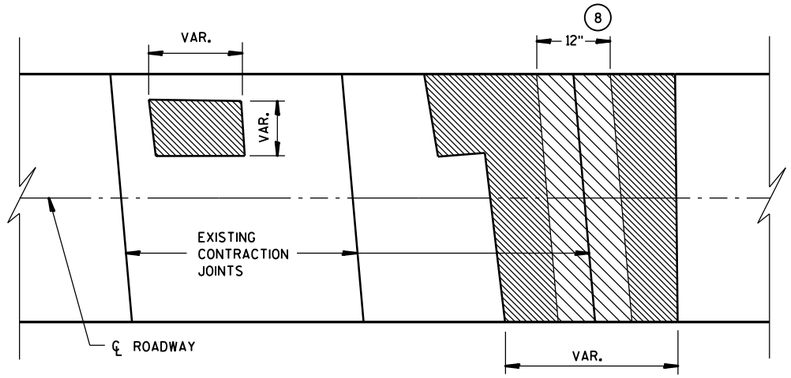
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

SDD 13C8 Concrete Pavement Partial Depth Repair

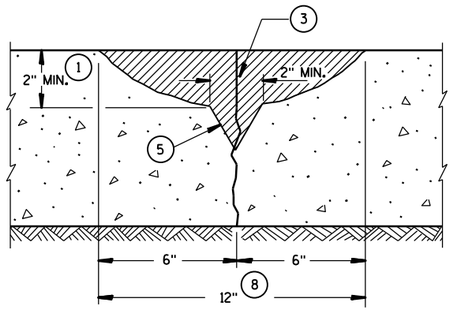


PROFILE VIEW

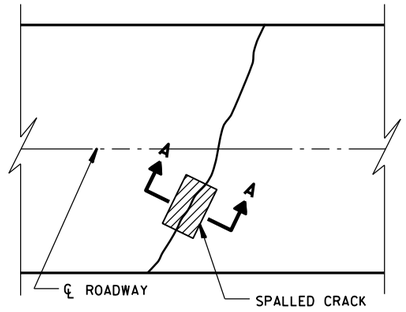


PLAN VIEW

SURFACE REPAIR



SECTION A-A

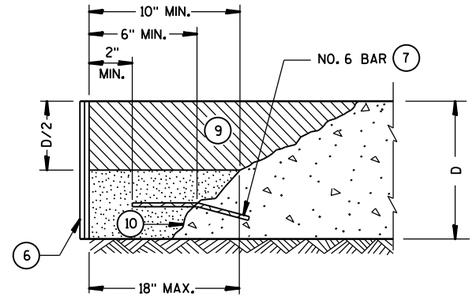


PLAN VIEW

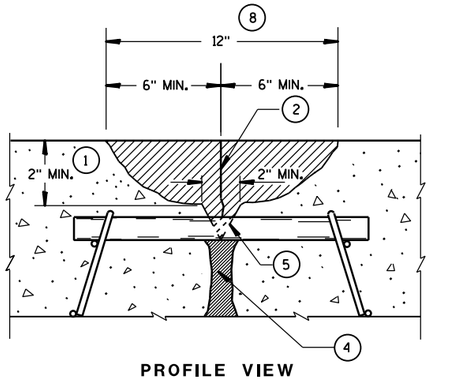
CRACK REPAIR

GENERAL NOTES

1. REMOVE ALL CONCRETE, TO LIMITS SHOWN, TO A MAXIMUM OF ½ THE PAVEMENT DEPTH OR TOP OF DOWELS.
2. IF REPAIR IS DEEPER THAN ANTICIPATED SAWCUT, COMPRESSION RELIEF MATERIAL MUST BE USED. THE THICKNESS OF COMPRESSION RELIEF MATERIAL MUST BE EQUAL TO OR GREATER THAN THE WIDTH OF THE JOINT OR CRACK (1/4"). THIS MATERIAL SHOULD EXTEND FULL DEPTH OF THE REPAIR.
3. COMPRESSION RELIEF MATERIAL MUST BE USED. THE THICKNESS OF COMPRESSION RELIEF MATERIAL MUST BE EQUAL TO OR GREATER THAN THE WIDTH OF THE JOINT OR CRACK (1/4"). THIS MATERIAL SHOULD EXTEND FULL DEPTH OF THE REPAIR.
4. CLEAN, DRY SAND WHEN NECESSARY.
5. REMOVE UNSOUND MATERIAL BY CHIPPING AT 1:1 SLOPE.
6. ¼" MINIMUM PREFORMED JOINT FILLER IF ADJACENT TO CONCRETE. EDGING REQUIRED. FULLY FORMED EDGE IF ADJACENT TO SHOULDER.
7. PAVEMENT TIES AS SHOWN. ALL EMBEDMENTS 6" MINIMUM AND INSTALLED WITH GROUT.
8. OVER 12" (NOMINAL WIDTH) WILL BE PAID AS SURFACE REPAIR.
9. PAID AS JOINT OR CRACK REPAIR.
10. FULL-DEPTH ADJUSTMENT SHALL BE CHIPPED TO BOTTOM OF PCC PAVEMENT AT 1:1 SLOPE.
11. BEYOND 18" WILL BE PAID AS SURFACE REPAIR.

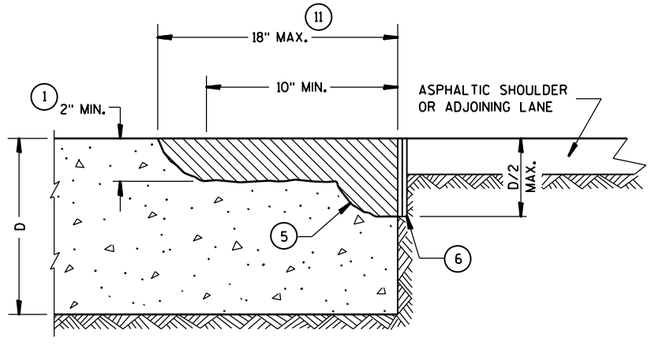


PROFILE VIEW

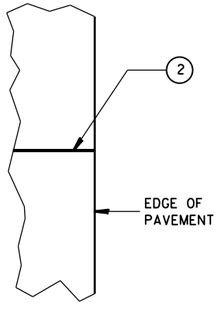


PROFILE VIEW

JOINT REPAIR

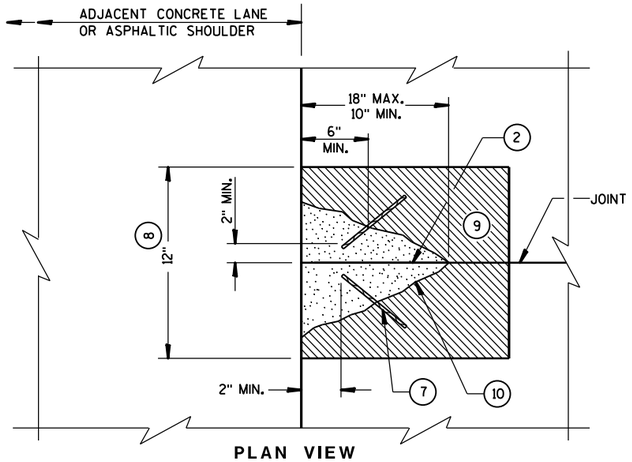


PROFILE VIEW



PLAN VIEW

EDGE REPAIR



PLAN VIEW

FULL DEPTH REPAIR ADJUSTMENT

CONCRETE PAVEMENT
PARTIAL DEPTH REPAIR

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
3-21-2003
DATE

/S/ Bill Duckert
PAVEMENT ENGINEER

FHWA

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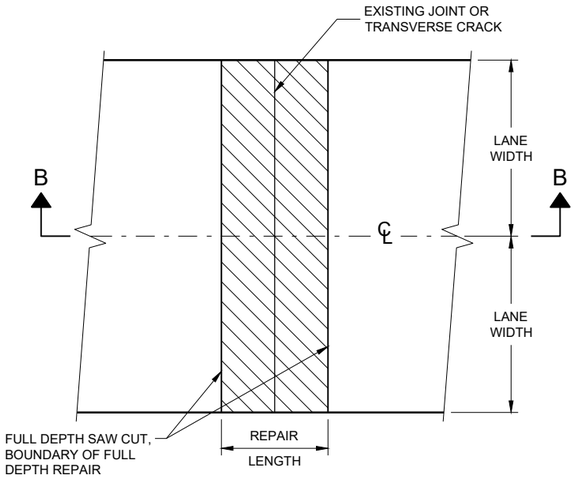
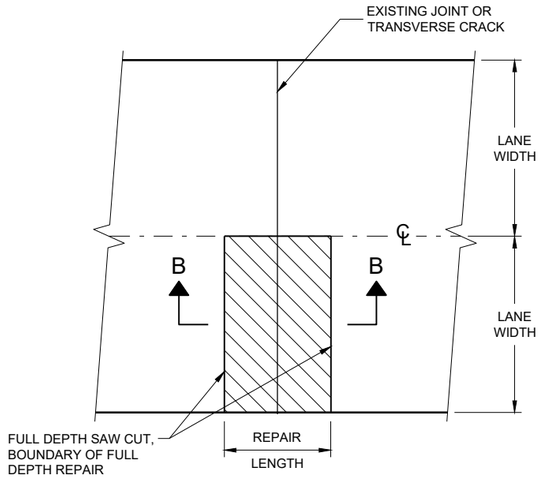
S.D.D. 13 C 8-2



PLAN VIEW
(DOUBLE LANE REPAIR)



PLAN VIEW
(SINGLE LANE REPAIR)

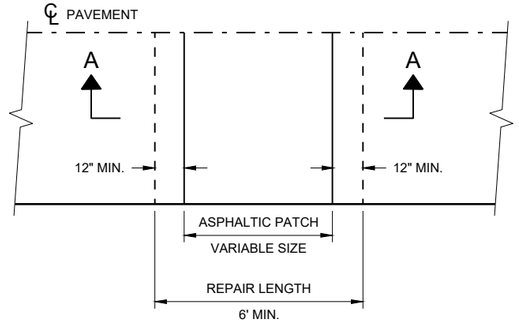
GENERAL NOTES

SAW CUT, DRILL, AND LIFT OUT EXISTING CONCRETE PAVEMENT WITHIN THE BOUNDARIES OF CONCRETE REPAIR AREAS. THE CONTRACTOR MAY MAKE ADDITIONAL SAW CUTS INSIDE THE REPAIR LIMITS TO REDUCE WEIGHT AND SIZE OF CONCRETE PIECES.

PROVIDE A 6 FOOT MINIMUM DISTANCE FROM BOUNDARIES OF CONCRETE REPAIR AREA TO ADJACENT TRANSVERSE JOINT OR CRACK.

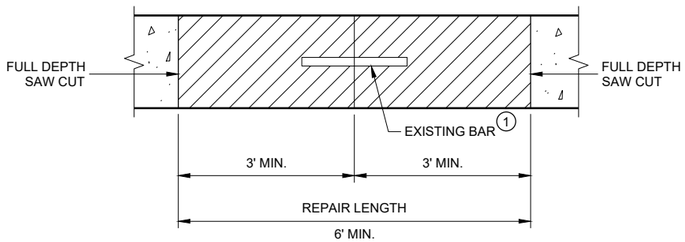
THE LENGTH OF THE REPAIRS MAY VARY FROM THE DIMENSIONS SHOWN IF THE EXISTING CONCRETE PAVEMENT IS NON-DOWELED AND THE PAVEMENT IS TO BE OVERLAID AFTER REPAIRING.

(1) DOWEL BARS MAY NOT BE PRESENT.



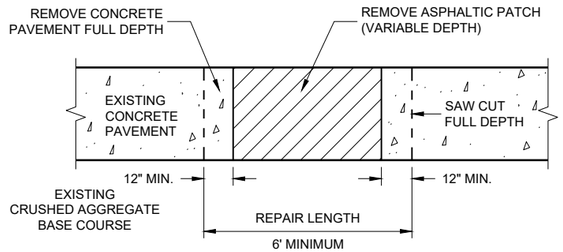
PLAN VIEW

FULL DEPTH CONCRETE PAVEMENT REMOVAL



SECTION B - B

CONCRETE REMOVAL

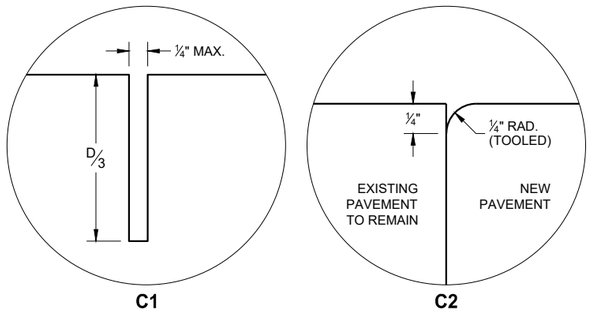


SECTION A - A

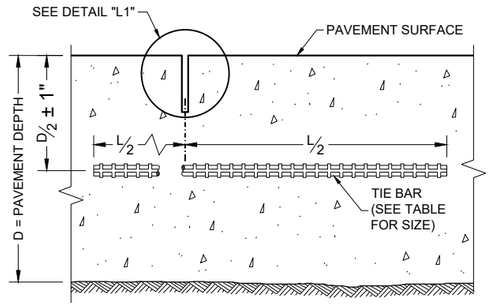
HMA PATCH REMOVAL

CONCRETE PAVEMENT REPAIR AND REPLACEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

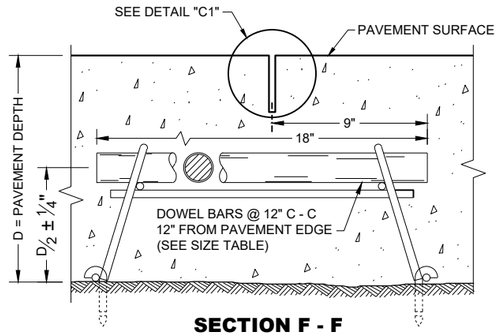


TRANSVERSE JOINTS



SECTION C - C

SAWED LONGITUDINAL JOINT



SECTION F - F

DOWELED CONTRACTION JOINT

GENERAL NOTES

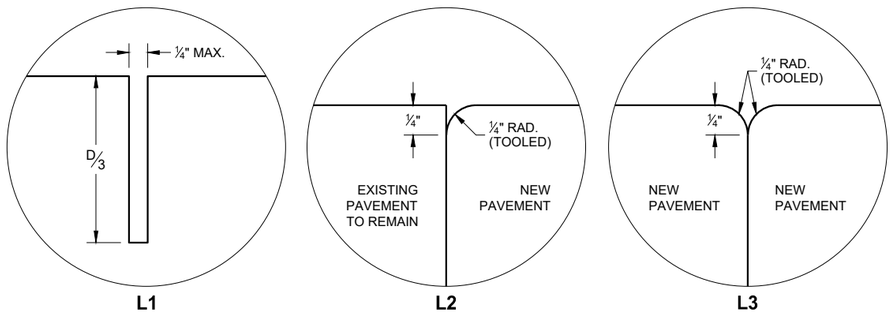
INSTALL DOWEL BARS PARALLEL TO THE PAVEMENT CENTERLINE AND PAVEMENT SURFACE.

CONCRETE PAVEMENT REPAIRS OF EXISTING NON-DOWELED CONCRETE PAVEMENTS DO NOT NEED TO BE DOWELED.

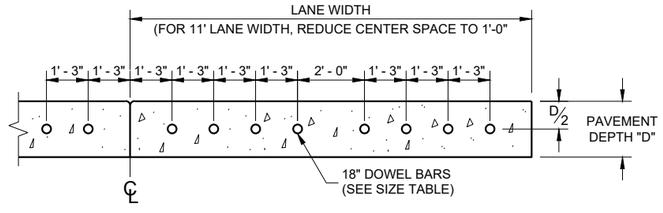
ANCHOR DOWEL BARS AND TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

FOR MULTI-LANE CONCRETE PAVEMENT REPLACEMENTS, PROVIDE A MINIMUM DISTANCE OF 15 INCHES FROM ALL TRANSVERSE JOINTS OR EDGES OF REPLACEMENT TO THE CENTER OF THE TIE BAR NEAREST THAT JOINT OR EDGE.

(1) APPLY A THIN UNIFORM COATING OF SURFACE TREATMENT TO THE FREE END OF DOWEL BARS TO PREVENT BONDING.

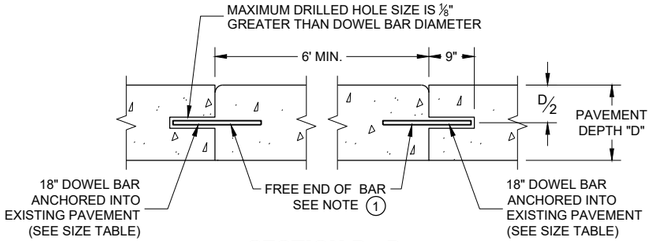


LONGITUDINAL JOINTS



SECTION E - E

DRILLED DOWEL BAR CONSTRUCTION JOINT



SECTION D - D

TIE BAR TABLE

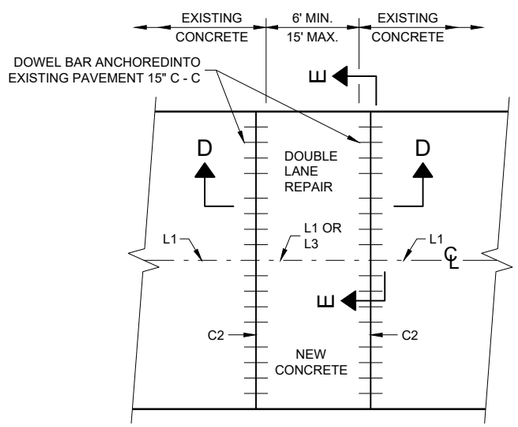
PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 ½"	NO. 4	30"	36"
≥ 10 ½"	NO. 5	36"	36"
	NO. 4 *	30"	24" **

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

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

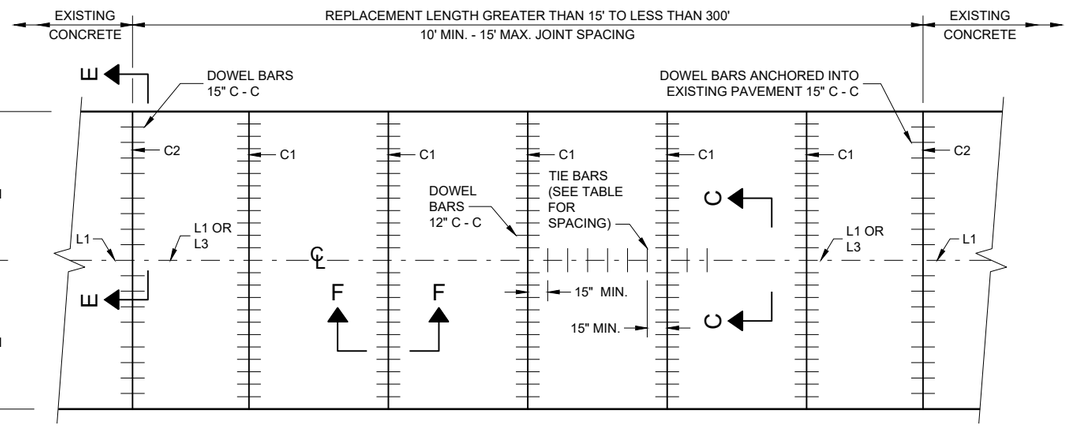
PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER	DRILLED DOWEL BAR DIAMETER	CONTRACTION JOINT SPACING
6", 6 ½"	NONE	NONE	12'
7", 7 ½"	1"	1"	14'
8" & ABOVE	1 ¼"	1 ¼"	15'



PLAN VIEW

MULTILANE CONCRETE PAVEMENT REPAIR



PLAN VIEW

MULTILANE CONCRETE PAVEMENT REPLACEMENT

CONCRETE PAVEMENT REPAIR AND REPLACEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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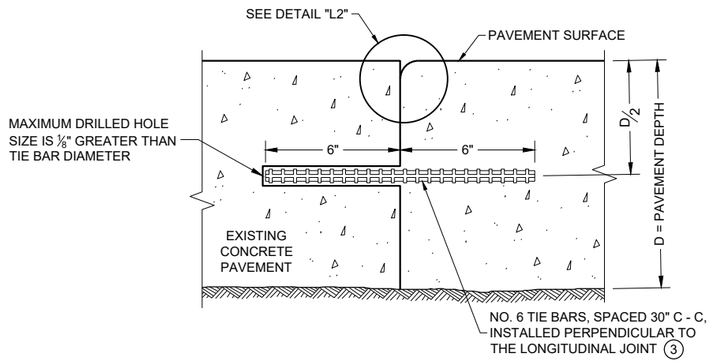
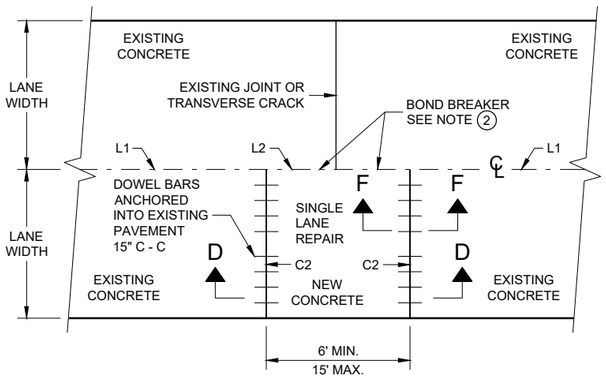


SECTION G - G

TIE BARS ANCHORED INTO EXISTING PAVEMENT

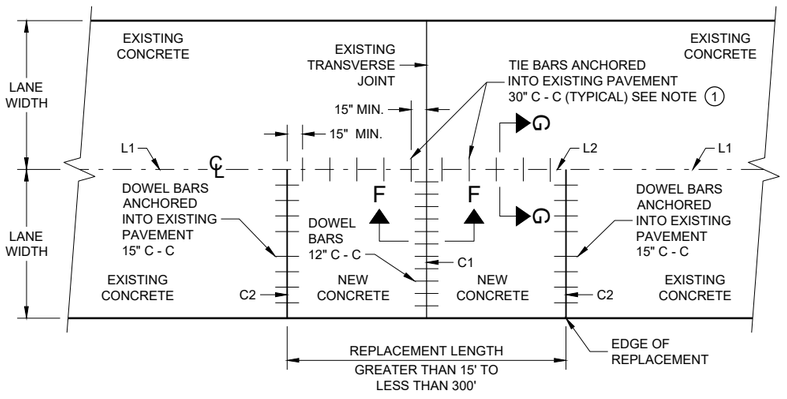
GENERAL NOTES

1. WITH THE APPROVAL OF THE ENGINEER, FOR SINGLE LANE PAVEMENT REPLACEMENTS LESS THAN 30 FEET IN LENGTH, THE CONTRACTOR MAY INSTALL DRILLED TIE BARS ON 6:1 SKEW HORIZONTALLY, DIRECTION OF SKEW ALTERNATING WITH EACH SUCCESSIVE BAR. DRIVE SKEWED TIE BARS TO A DEPTH OF 6 INCHES IN A HOLE OF SUCH A DIAMETER AS TO PROVIDE A TIGHT DRIVEN FIT.
2. USE AN ENGINEER APPROVED BOND BREAKER (E.G. RELEASE AGENT, CURING COMPOUND) FOR SINGLE LANE REPAIRS UP TO 15 FEET IN LENGTH.
3. ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.



PLAN VIEW

SINGLE LANE CONCRETE PAVEMENT REPAIR



PLAN VIEW

SINGLE LANE CONCRETE PAVEMENT REPLACEMENT

CONCRETE REPAIR AND REPLACEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2022
DATE

/S/ Peter Kemp P.E.
PAVEMENT SUPERVISOR

FHWA

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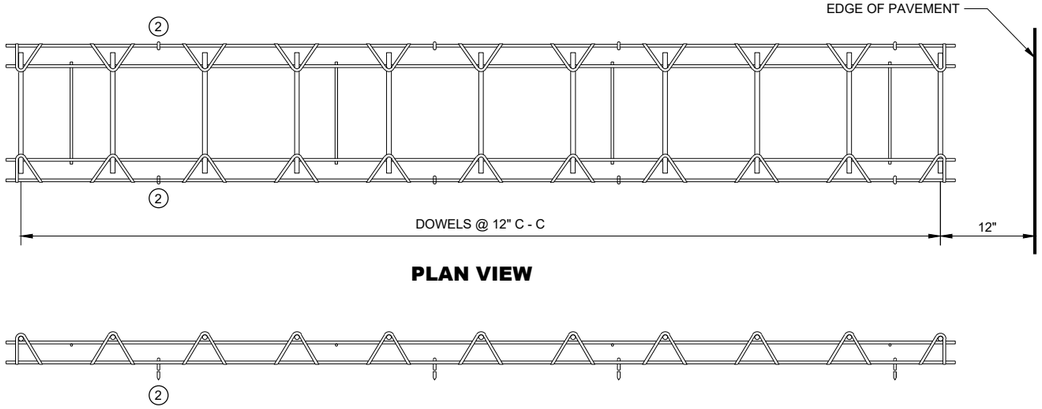
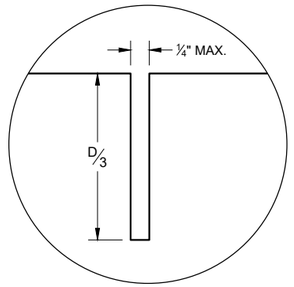


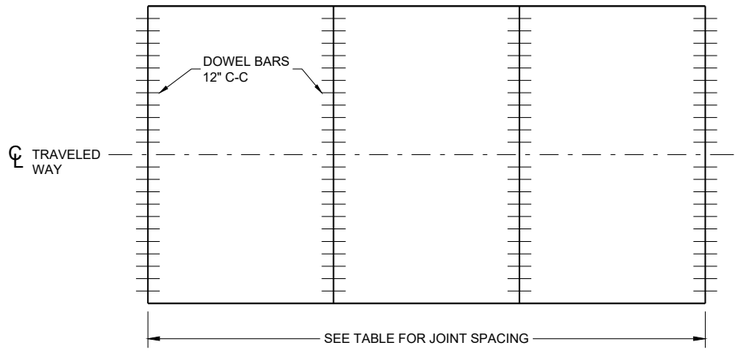
PLAN VIEW

SIDE VIEW

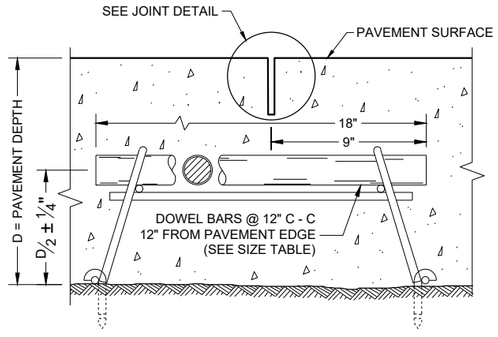
CONTRACTION JOINT DOWEL ASSEMBLY (1)



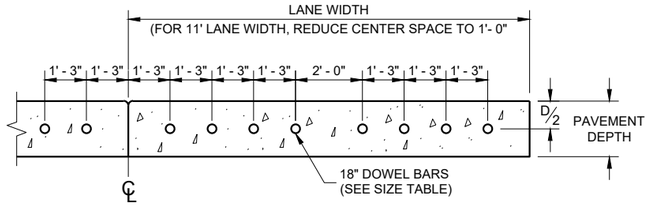
JOINT DETAIL



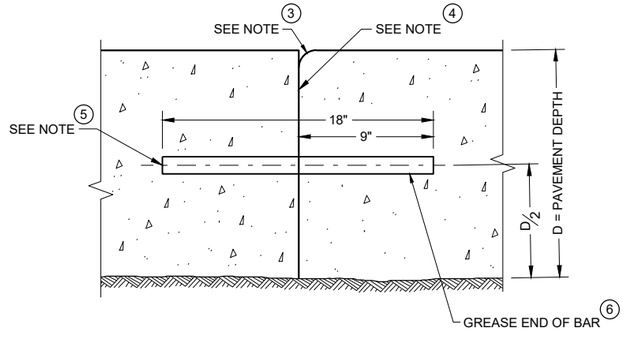
CONTRACTION JOINT LOCATIONS



DOWELED CONTRACTION JOINT



DRILLED DOWEL BAR CONSTRUCTION JOINT (7)



TRANSVERSE CONSTRUCTION JOINT

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.

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 FROM AND A MAXIMUM OF 18 INCHES FROM THE FREE EDGE OF PAVEMENT.

CONSTRUCTION JOINTS

LOCATE CONSTRUCTION JOINTS A MINIMUM OF 6 FEET FROM THE NEAREST CONTRACTION JOINT AND ALIGN PARALLEL TO THE 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 CONSTRUCTION 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" 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 THE "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 AND TIE BARS INTO DRILLED HOLES WITH AN EPOXY. MAXIMUM DRILLED HOLE SIZE IS ⅛" GREATER THAN DOWEL BAR DIAMETER, 9 INCHES IN LENGTH.

PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER	CONTRACTION JOINT SPACING
6", 6 ½"	NONE	12'
7", 7 ½"	1"	14'
8" & ABOVE	1 ¼"	15'

URBAN DOWELED CONCRETE PAVEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2022
DATE

/S/ Peter Kemp P.E.
PAVEMENT SUPERVISOR

FHWA

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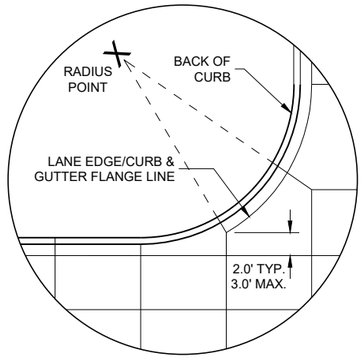
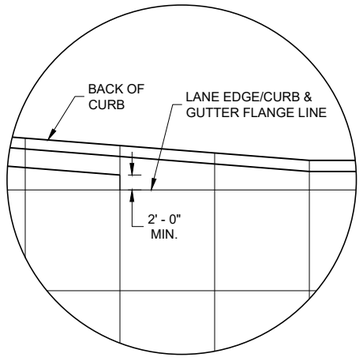


DETAIL "A"



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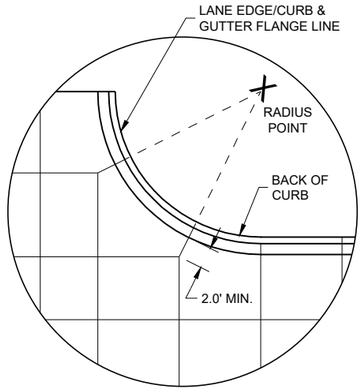
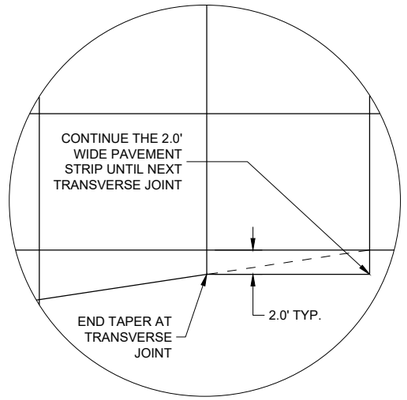


DETAIL "C"



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.

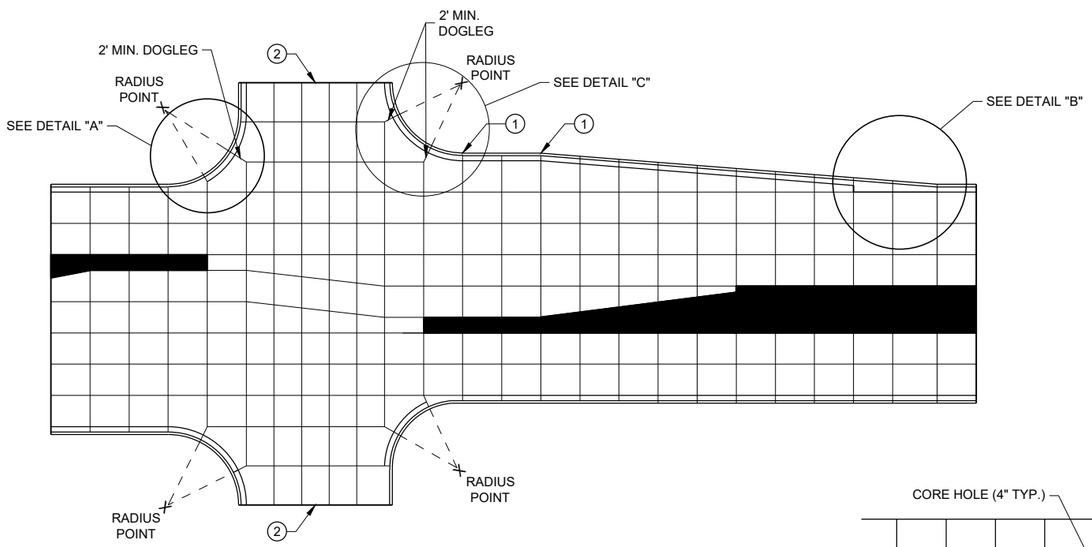
AVOID SLABS LESS THAN 2 FEET WIDE OR GREATER THAN 15 FEET WIDE.

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.

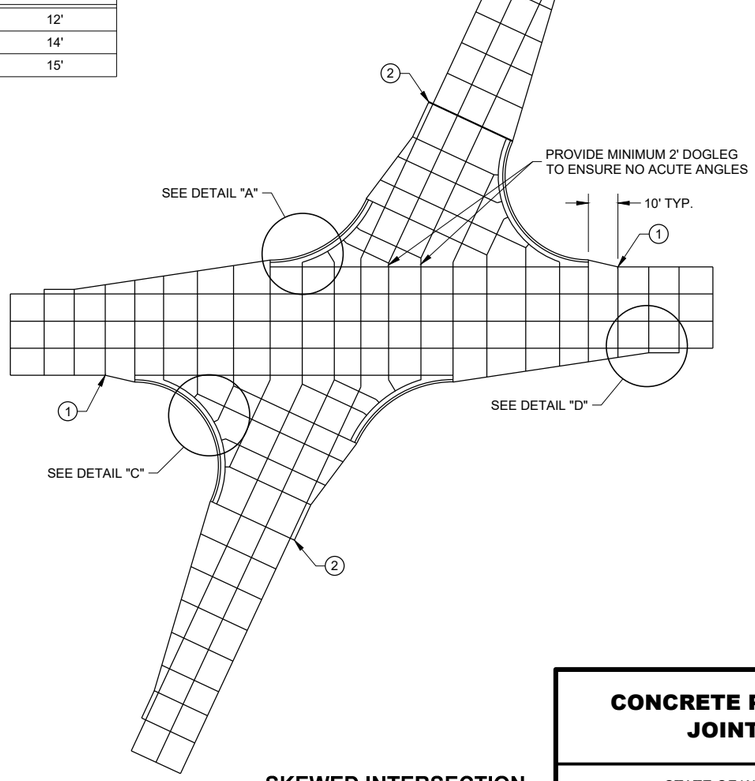
1. PROVIDE TRANSVERSE JOINTS AT ALL PAVEMENT WIDTH CHANGES.
2. CONSTRUCT DOWELED EXPANSION JOINT ON THE SIDE ROAD OF AN INTERSECTION IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH. ALIGN EXPANSION JOINT WITH EDGE OF RADIUS.
3. THE ENGINEER MAY APPROVE SLIGHT VARIATIONS FROM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



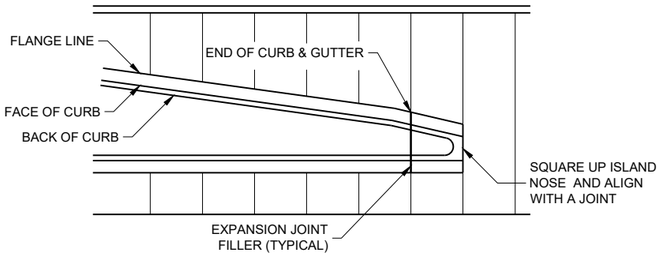
STANDARD INTERSECTION

PAVEMENT DEPTH AND JOINT SPACING TABLE

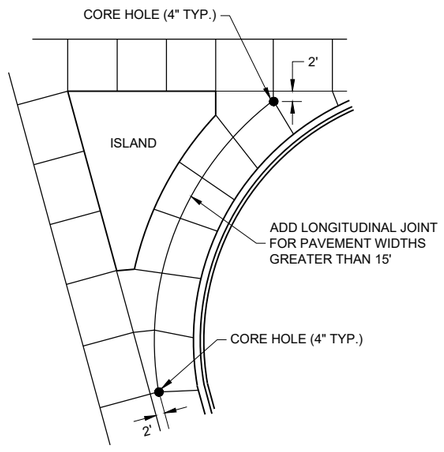
PAVEMENT DEPTH (D)	CONTRACTION JOINT SPACING
6", 6 ½"	12'
7", 7 ½"	14'
8" & ABOVE	15'



SKEWED INTERSECTION



APPROACH TO MEDIAN



LARGE RIGHT TURN

CONCRETE PAVEMENT JOINTING

STATE OF WISCONSIN
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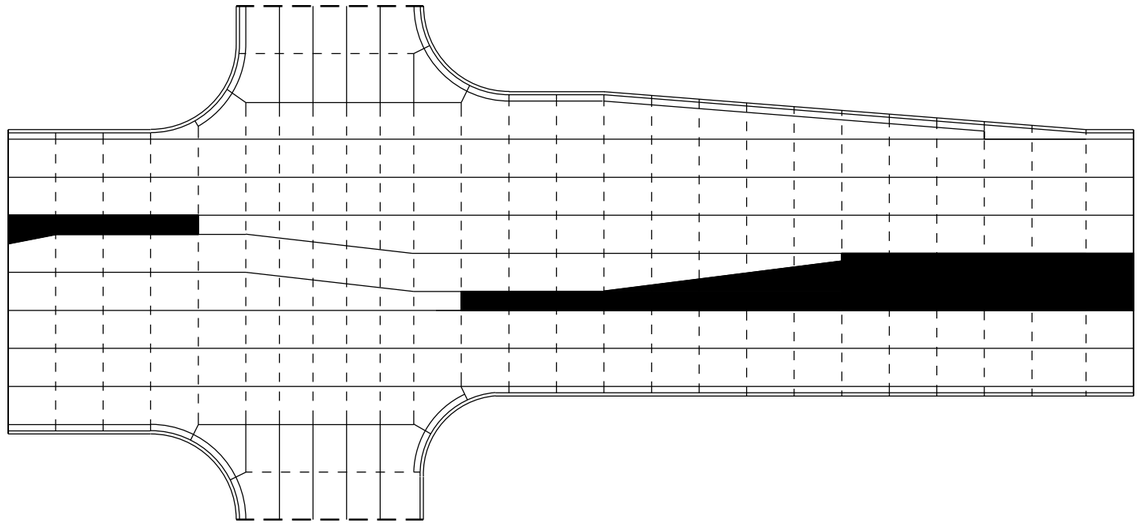
LEGEND

POTENTIAL DOWELED EXPANSION JOINT

DOWELED JOINT

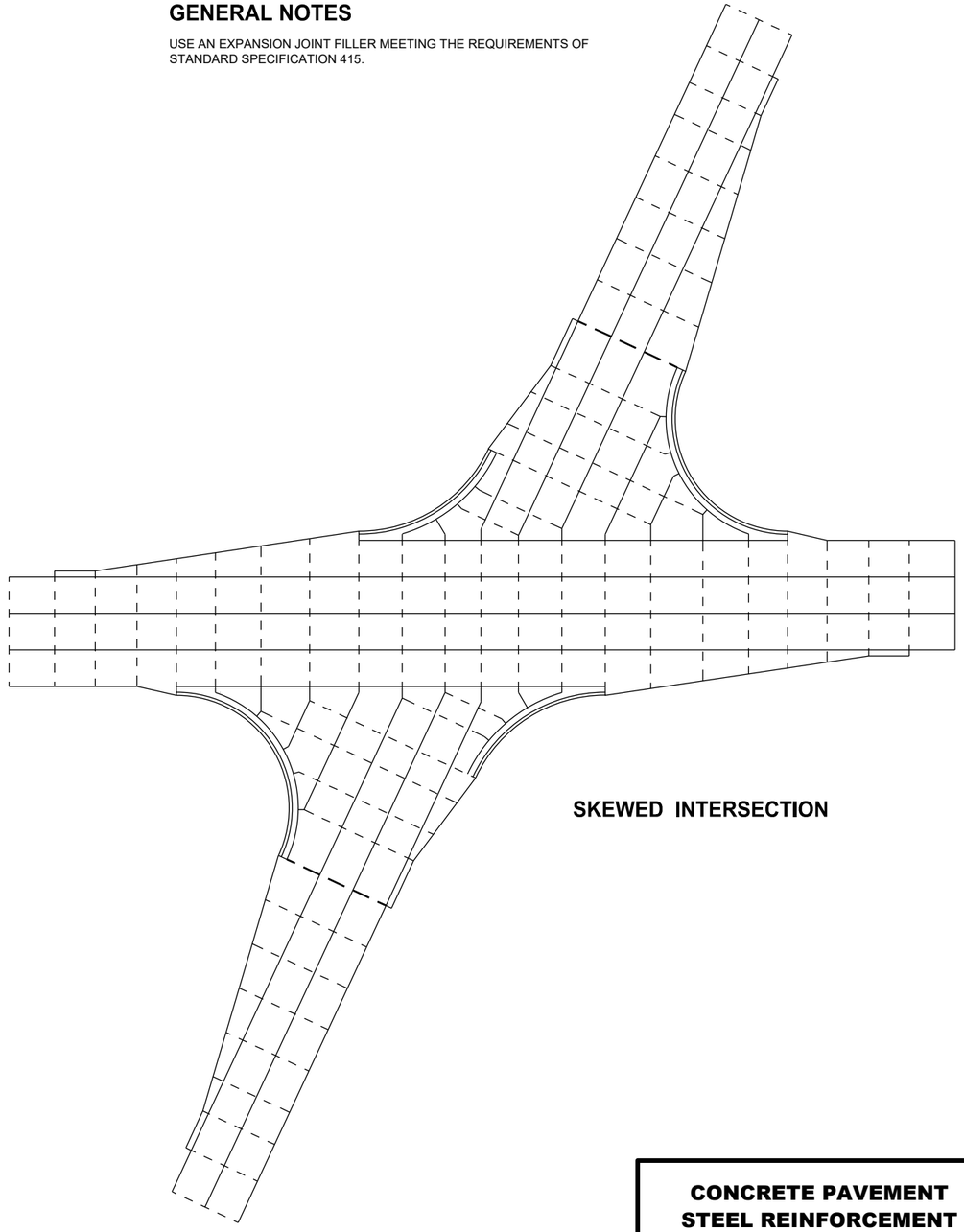
TIED JOINT



STANDARD INTERSECTION

GENERAL NOTES

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



SKEWED INTERSECTION

6

SDD 13C18 - 08b

CONCRETE PAVEMENT
STEEL REINFORCEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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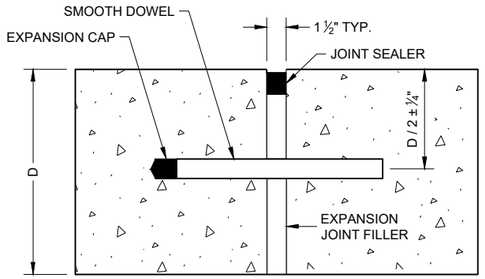
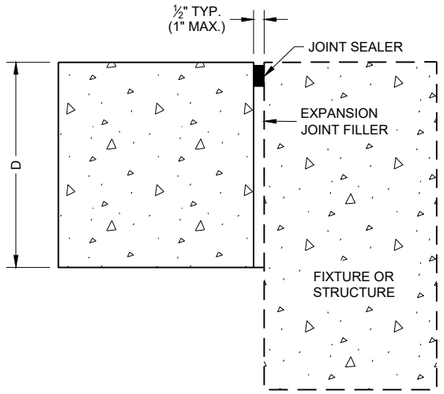
SDD 13C18 - 08b



DOWELED TRANSVERSE (1)



UNTIED - LONGITUDINAL

EXPANSION JOINTS

TIE BAR TABLE

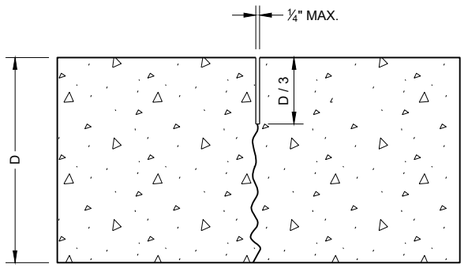
PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 ½"	NO. 4	30"	36"
≥ 10 ½"	NO. 5	36"	36"
	NO. 4 *	30"	24" **

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

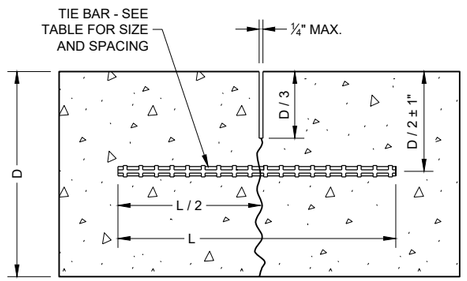
** CONFORM TO 15" MINIMUM SPACING FROM TRANSVERSE JOINTS; SPACING BETWEEN TIE BARS WILL BE 30" AT TRANSVERSE JOINTS.

GENERAL NOTES

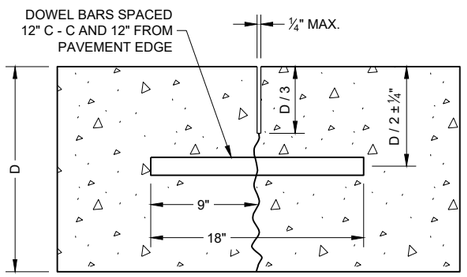
1. USE DOWELED EXPANSION JOINTS ON SIDE ROADS AT INTERSECTIONS (TO ISOLATETHE SIDE ROAD FROM THE THROUGH STREET) IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH.
2. SPACE CONTRACTION JOINTS IN ACCORDANCE WITH SDD 13C4, 13C11 OR 13C13.
3. LOCATE CONSTRUCTION JOINTS A MINIMUM OF 6 FEET FROM THE NEAREST CONTRACTION JOINT AND ALIGN PARALLEL TO CONTRACTION JOINTS.
4. CONSTRUCTION JOINTS CAN BE FORMED OR SAWED.
5. IF JOINT IS FORMED, PROVIDE A ¼" RADIUS.
6. ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.



UNDOWELED TRANSVERSE

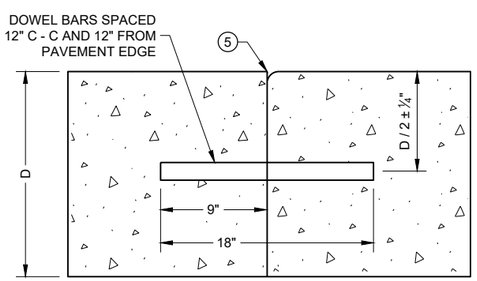


TIED LONGITUDINAL

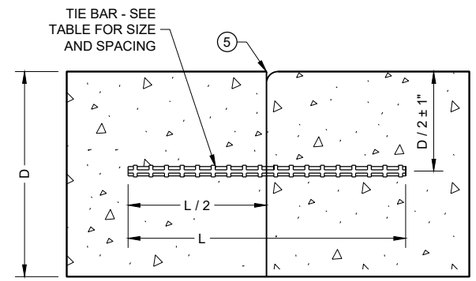


DOWELED TRANSVERSE

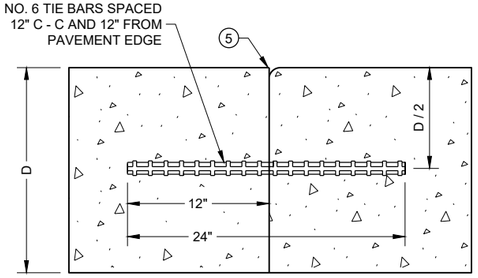
CONTRACTION JOINTS (2)



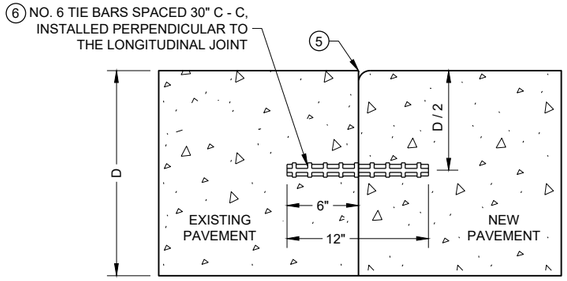
DOWELED TRANSVERSE (3)



TIED LONGITUDINAL



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



TIED LONGITUDINAL TO EXISTING

CONSTRUCTION JOINTS (4)

CONCRETE PAVEMENT JOINT TYPES

STATE OF WISCONSIN
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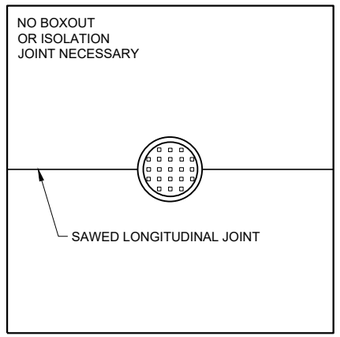
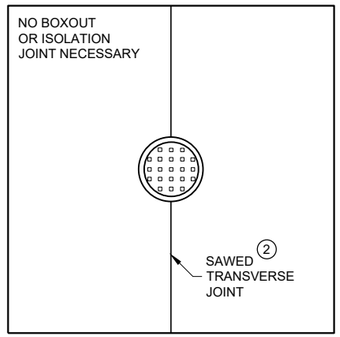
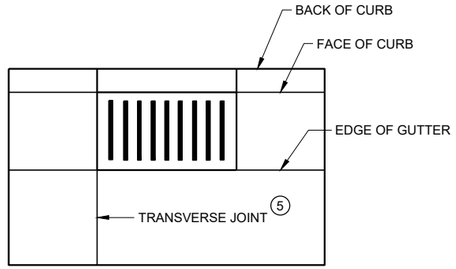


MANHOLE WITH LONGITUDINAL JOINT



MANHOLE WITH TRANSVERSE JOINT



INLET WITH TRANSVERSE JOINT

GENERAL NOTES

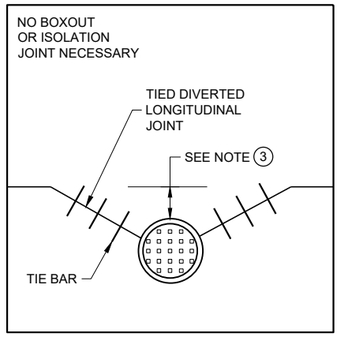
(1) USE BOXOUTS WHEN UTILITY STRUCTURE IS IN THE PATH OF CONSTRUCTION JOINTS. PROVIDE A 1 FOOT MINIMUM CLEARANCE BETWEEN THE EXTERIOR LIMIT OF THE STRUCTURE TO THE DIAMOND BOXOUT.

(2) ADJUST TRANSVERSE JOINT TO INTERSECT MANHOLE IF POSSIBLE.

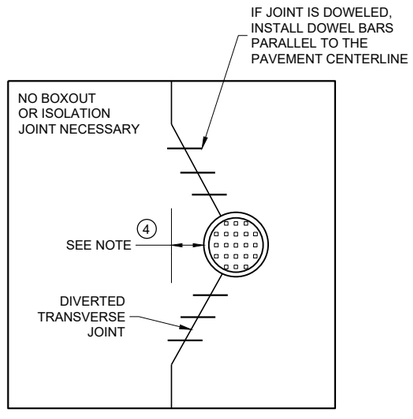
(3) IF DISTANCE BETWEEN THE LONGITUDINAL JOINT AND THE EDGE OF MANHOLE IS 2 FEET OR LESS, DIVERT THE LONGITUDINAL JOINT AT A 2:1 TAPER RATE TO THE CENTER OF THE MANHOLE. IF THE DISTANCE IS GREATER THAN 2 FEET, DO NOT DIVERT THE JOINT AND SAW AS NORMAL. PLACE REINFORCEMENT REBAR AROUND THE MANHOLE.

(4) IF THE DISTANCE FROM THE EDGE OF THE MANHOLE TO THE NEAREST TRANSVERSE JOINT IS LESS 4 FEET OR LESS, REDIRECT JOINT TO INTERSECT THE CENTER OF THE MANHOLE. IF DISTANCE IS GREATER THAN 4 FEET, DO NOT DIVERT THE JOINT AND SAW AS NORMAL. PLACE REINFORCEMENT REBAR AROUND THE MANHOLE.

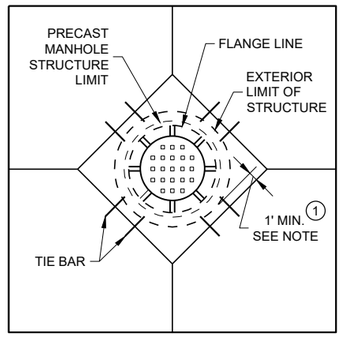
(5) ALIGN TRANSVERSE JOINT WITH ONE EDGE OF INLET WHEN PRACTICAL.



MANHOLE WITH DIVERTED LONGITUDINAL CONTRACTION JOINT



MANHOLE WITH DIVERTED TRANSVERSE CONTRACTION JOINT



DIAGONAL MANHOLE BOXOUT FOR CONSTRUCTION JOINTS

CONCRETE PAVEMENT JOINTING AT UTILITY FIXTURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023
DATE

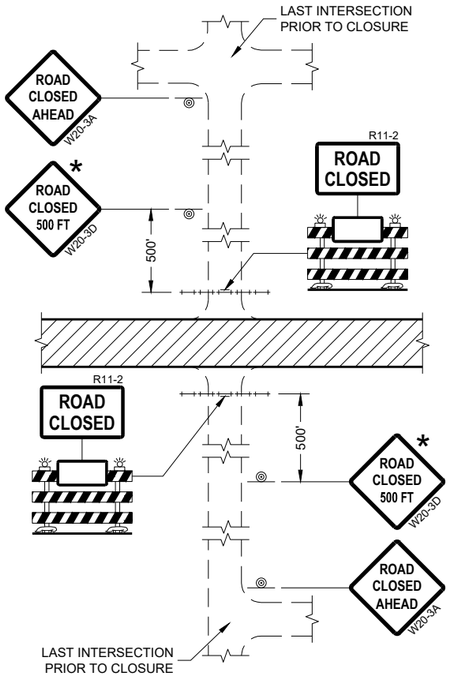
/S/ Peter Kemp P.E.
PAVEMENT SUPERVISOR

FHWA

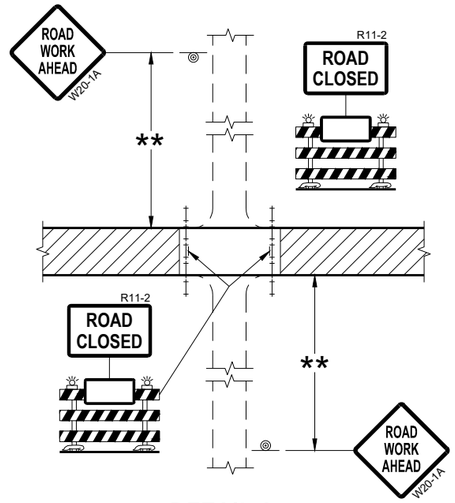
6

SDD13C18 - 08d

SDD 15C03 Barricades and Signs for Sideroad Closures



DETAIL 1
(NO ACCESS TO PROJECT)



DETAIL 2
(PUBLIC CROSS-TRAFFIC MAINTAINED.
NO ACCESS TO PROJECT)

GENERAL NOTES

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

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

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

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

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

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

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

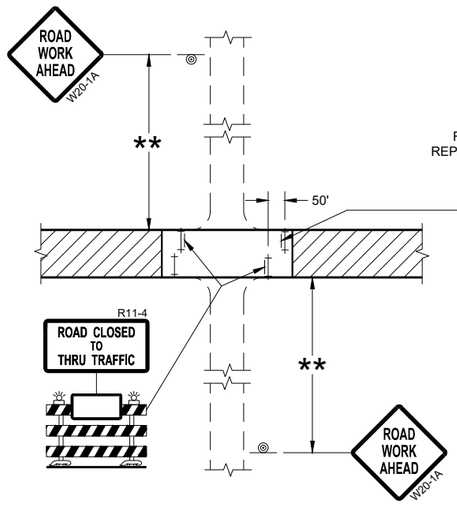
TYPE "A" LOW-INTENSITY FLASHING WARNING LIGHTS SHALL BE VISIBLE ON BOTH SIDES OF THE BARRICADE.

THE R11-2, R11-3, AND R11-4 SIGNS PLACED ON BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE OR BOTTOM RAILS.

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
R11-2 SHALL BE 48" X 30".
R11-4 AND R11-3 SHALL BE 60" X 30".

* OMIT THE "ROAD CLOSED 500 FT." SIGN IF THE LAST INTERSECTION IS 500 FEET OR LESS FROM THE WORK ZONE.

** 500' MAX. OR AT LAST INTERSECTION, WHICHEVER IS CLOSEST.



DETAIL 3
(PUBLIC CROSS-TRAFFIC MAINTAINED.
CONTRACTOR, LOCAL BUSINESS AND
RESIDENT ACCESS TO PROJECT)

DETAIL 4
(CONTRACTOR, LOCAL BUSINESS AND
RESIDENT ACCESS TO PROJECT)

LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA

BARRICADES AND SIGNS FOR SIDEROAD CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
July 2018
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

6
SDD 15C03 - 05

SDD 15C05 Traffic Control, Advance Warning Signs 40 MPH or Less Two Way Undivided Road Open to Traffic

GENERAL NOTES

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

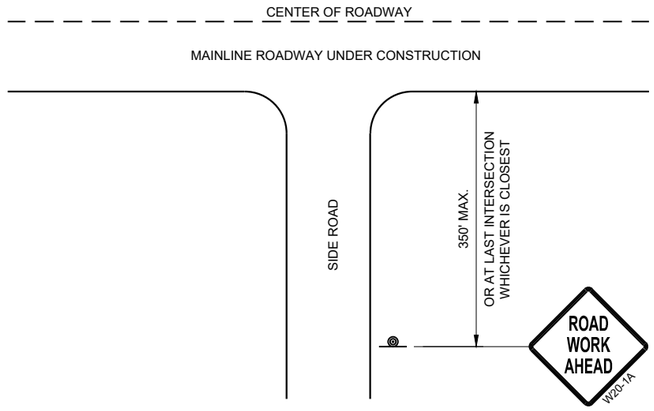
THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

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

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

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

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



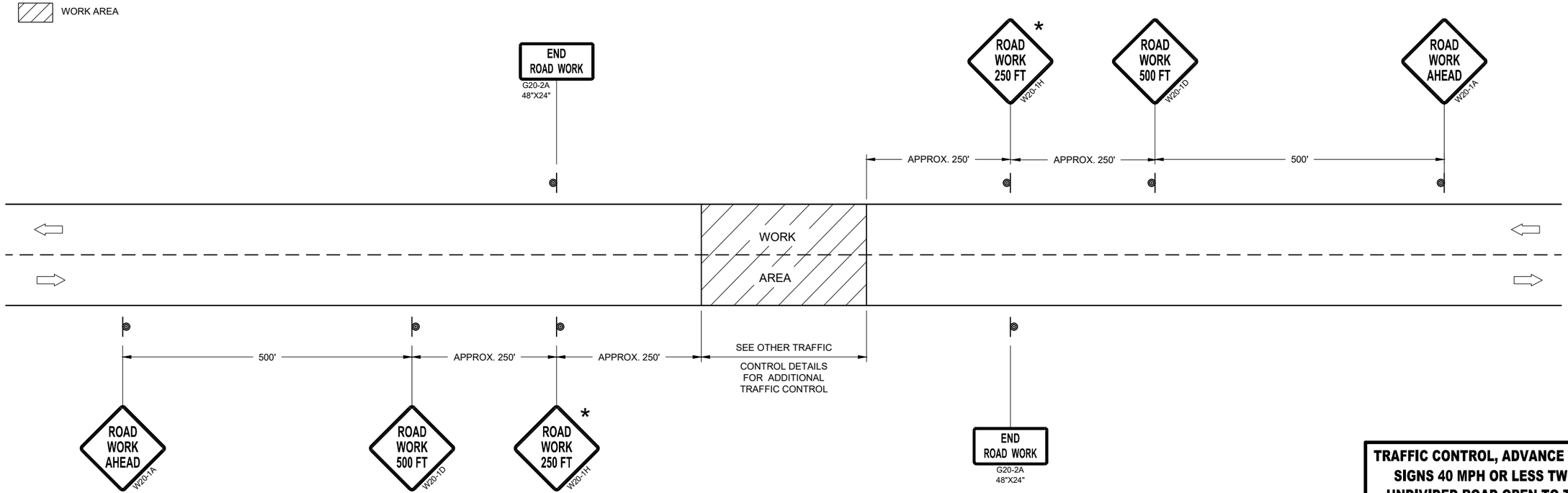
TYPICAL SIDE ROAD APPROACH WARNING SIGN DETAIL

LEGEND

SIGN ON PERMANENT SUPPORT

DIRECTION OF TRAFFIC

WORK AREA



TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40MPH OR LESS

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
July 2018
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

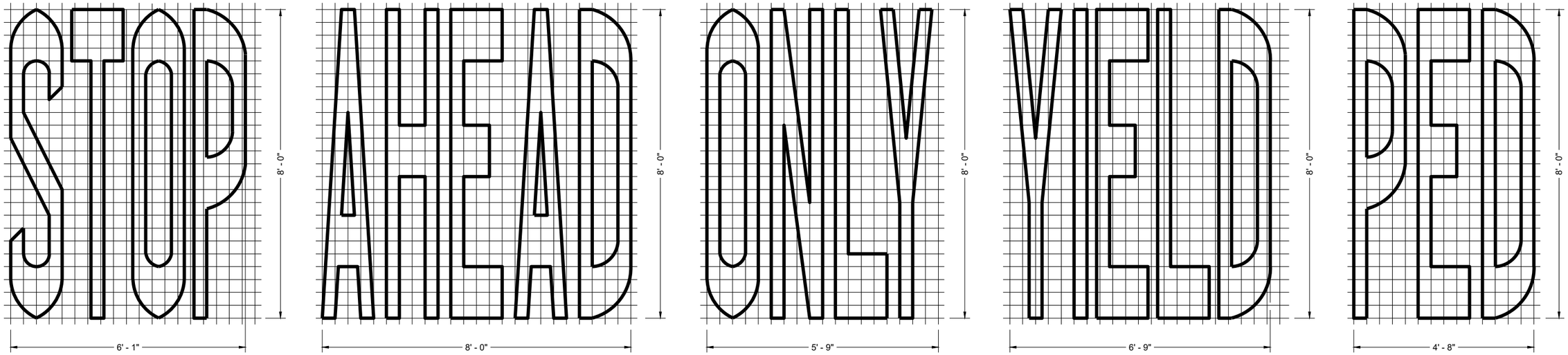
FHWA

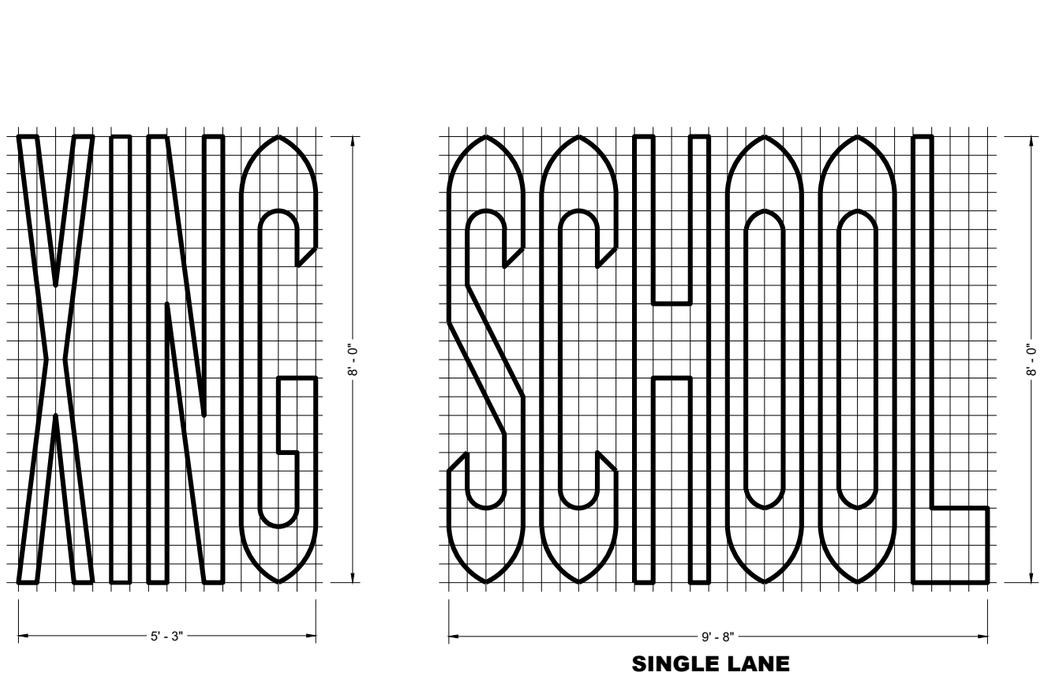
6

SDD 15C05 - 05

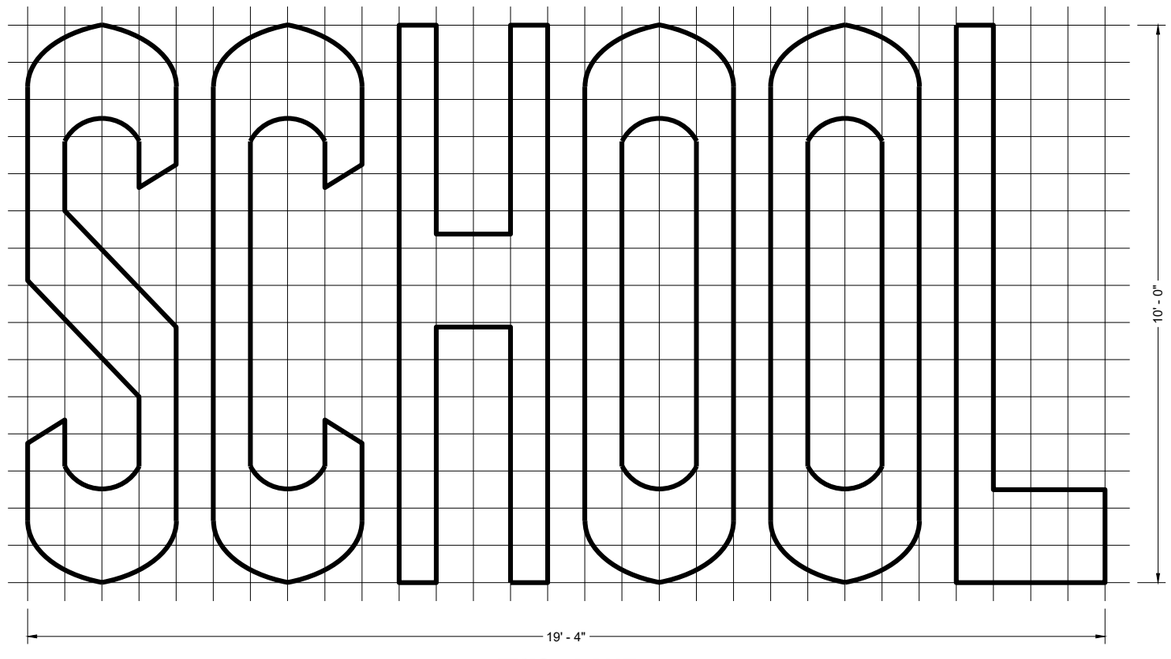
6

SDD 15C05 - 05





SINGLE LANE



TWO - LANE

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.

PAVEMENT MARKING WORDS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2024 — DATE
/S/ Jeannie Silver — STATE SIGNING AND MARKING ENGINEER
FHWA

6

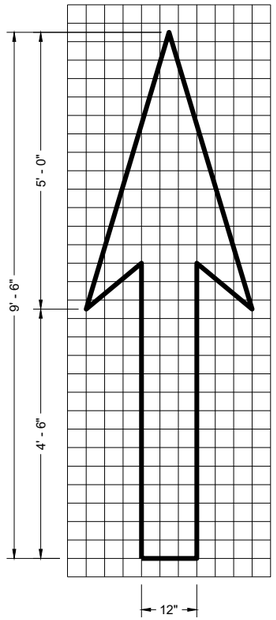
SDD 15C07-16b

6

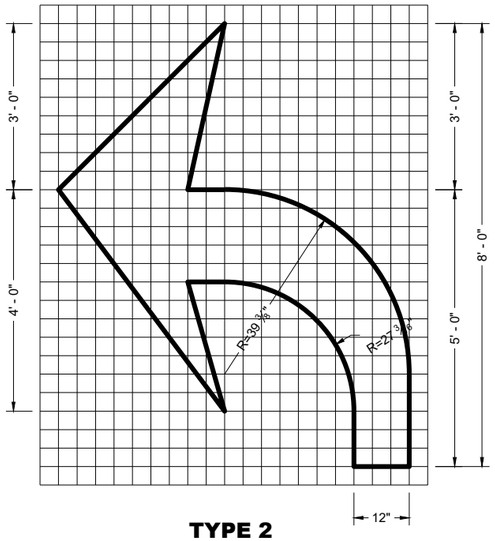
SDD 15C07-16b

GENERAL NOTES

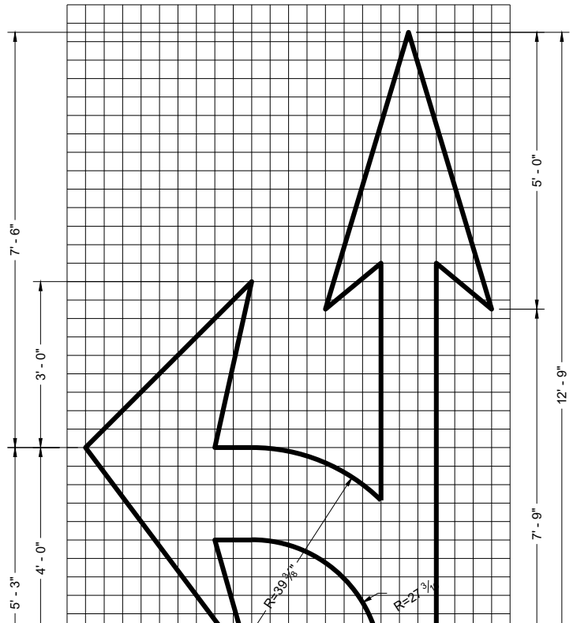
DETAILS OF INSTALLATION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.



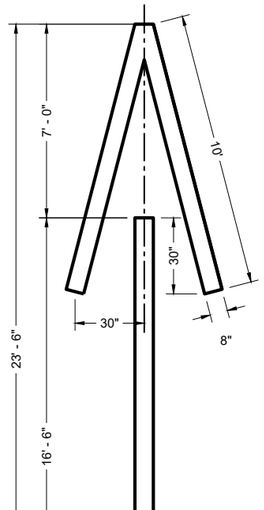
TYPE 1



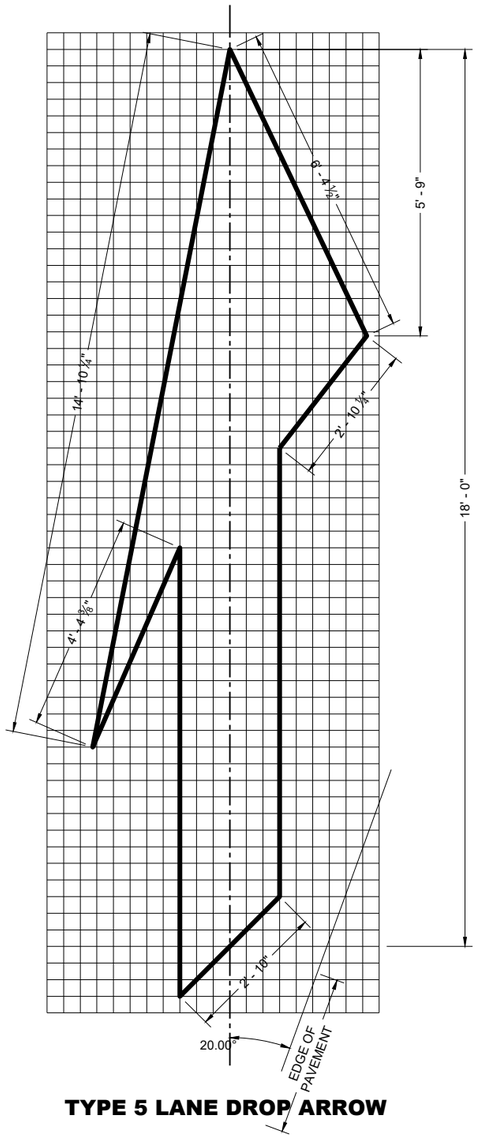
TYPE 2



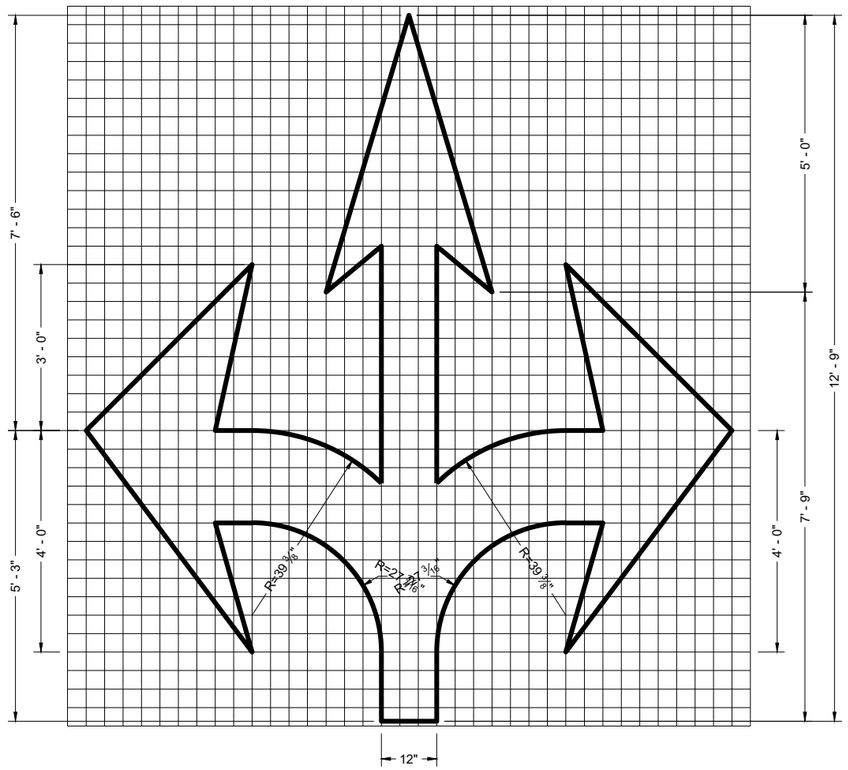
TYPE 3



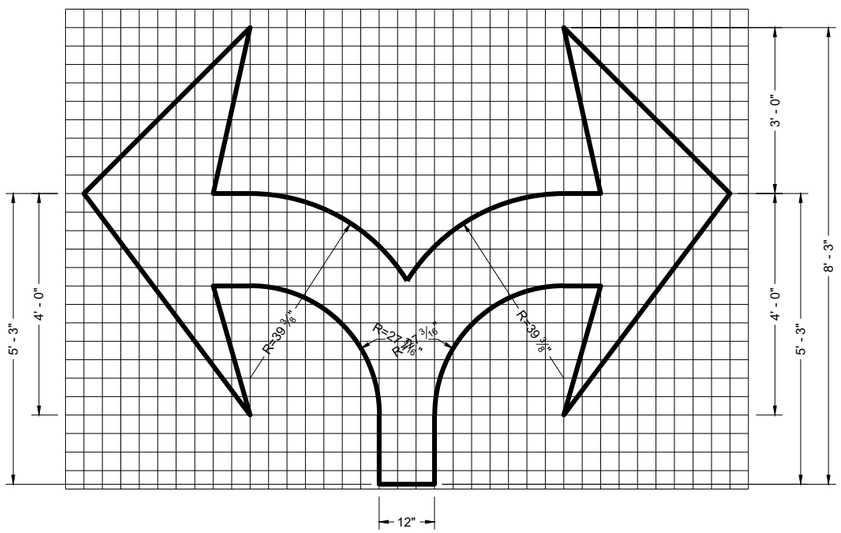
TYPE 4



TYPE 5 LANE DROP ARROW



TYPE 6



TYPE 7

6

SDD 15C07-16c

PAVEMENT MARKING ARROWS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2024 — DATE
/S/ Jeannie Silver — STATE SIGNING AND MARKING ENGINEER

FHWA

6

SDD 15C07-16c

*CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

GENERAL NOTES

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

(1) LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING

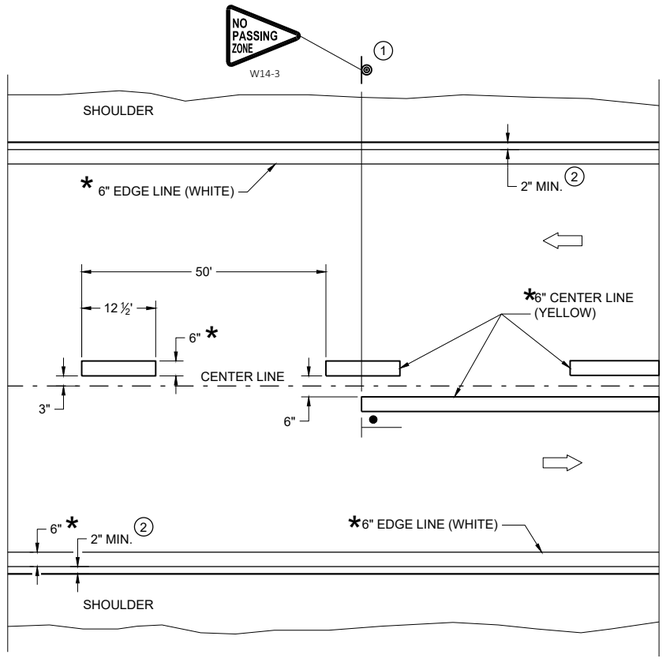
(2) MEASURE FROM EDGE OF MARKING TO JOINT LINE. THIS DOES NOT INCLUDE SPACE NEEDED FOR GROOVING OPERATIONS.

LEGEND

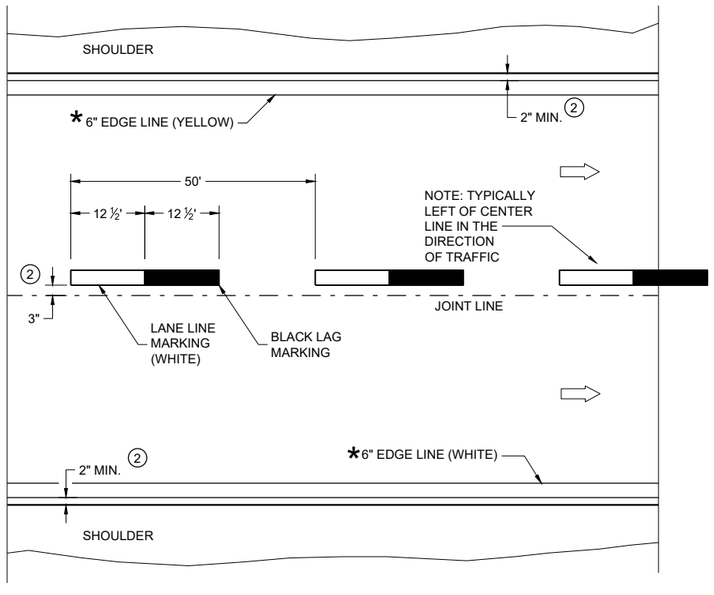
"T" MARKING

SIGN ON PERMANENT SUPPORT

DIRECTION OF TRAFFIC



TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING

6

PERMANENT LONGITUDINAL PAVEMENT MARKINGS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

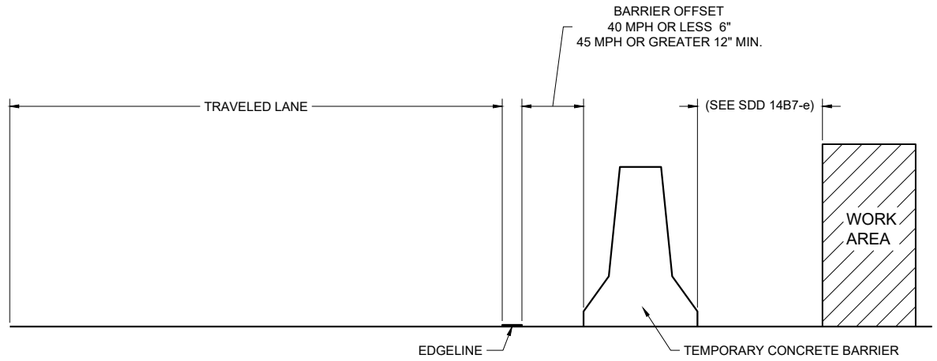
APPROVED

May 2023 — DATE

/S/ Jeannie Silver — ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR

FHWA

SDD 15C08-23a



TEMPORARY BARRIER OFFSET FROM EDGELINE

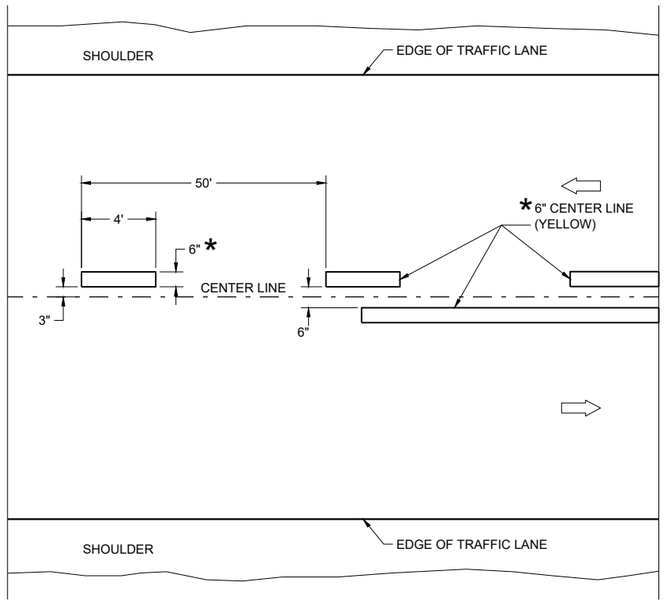
GENERAL NOTES

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

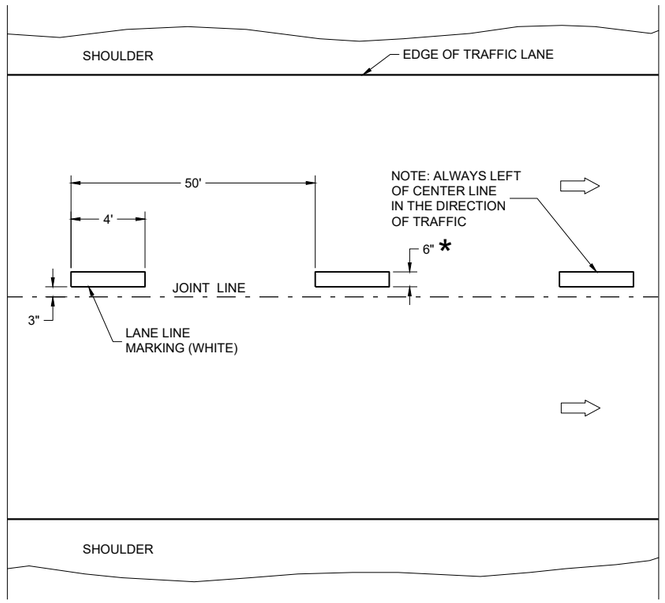
LEGEND

DIRECTION OF TRAFFIC

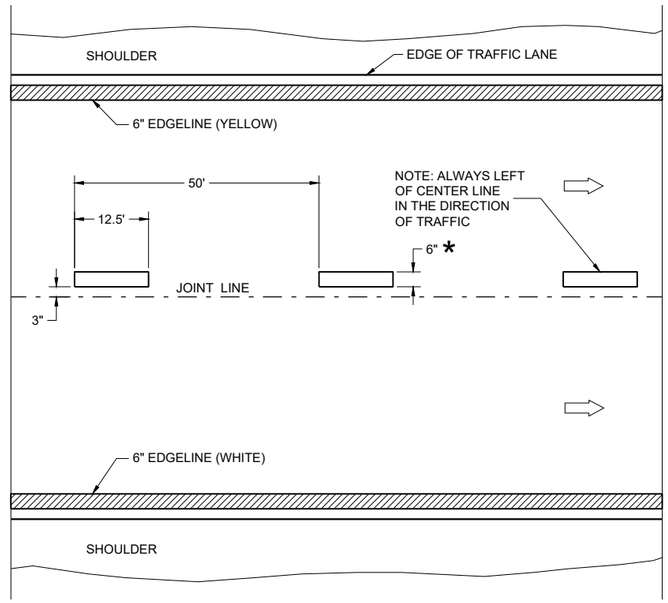
*CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES



TWO WAY TRAFFIC



ONE WAY TRAFFIC



FREEWAYS AND EXPRESSWAYS

TEMPORARY PAVEMENT MARKING

TEMPORARY LONGITUDINAL PAVEMENT MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

May 2023
DATE

/S/ Jeannie Silver
ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR

FHWA

6

SDD 15C08-23b

6

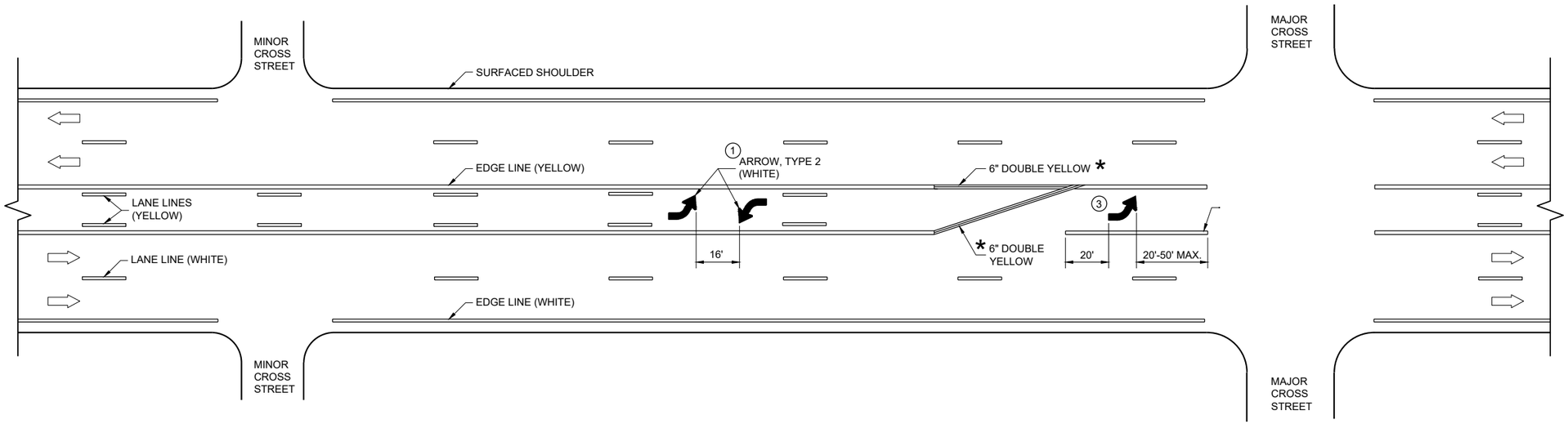
SDD 15C08-23b

GENERAL NOTES

1. A SET OF ARROWS IS REQUIRED EVERY 400 FEET OR NEAR INTERSECTIONS OR DRIVEWAYS WITH TURNING TRAFFIC.
2. 10" WHITE
3. TURN BAY LENGTH OF LESS THAN 48' DOES NOT REQUIRE PAVEMENT ARROWS OR TEXT.

⇨ DIRECTION OF TRAFFIC

*CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES



TWO WAY LEFT TURN LANE

6

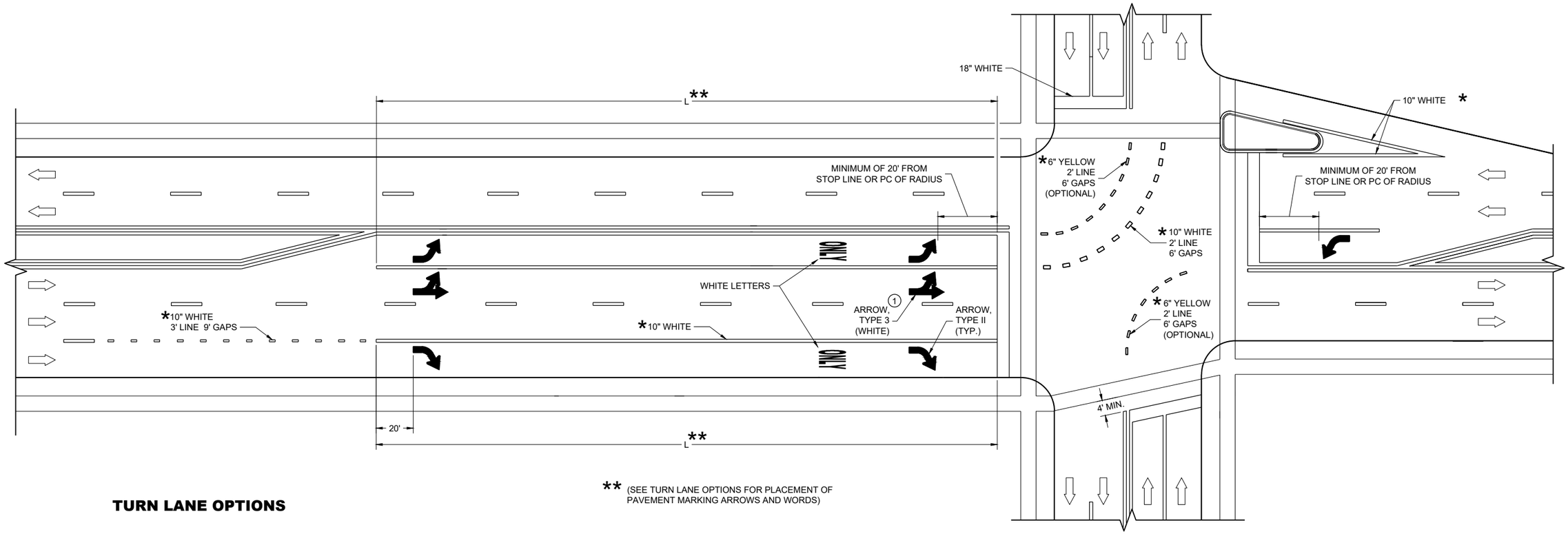
SDD 15C08-23c

PAVEMENT MARKING (TURN LANES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

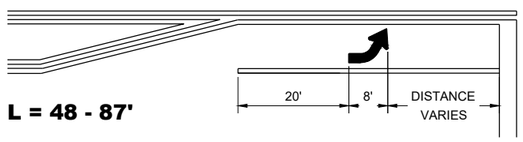
SDD 15C08-23c



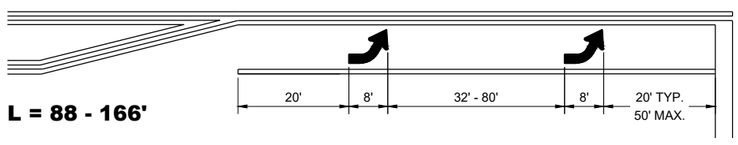
** (SEE TURN LANE OPTIONS FOR PLACEMENT OF PAVEMENT MARKING ARROWS AND WORDS)

TURN LANE OPTIONS

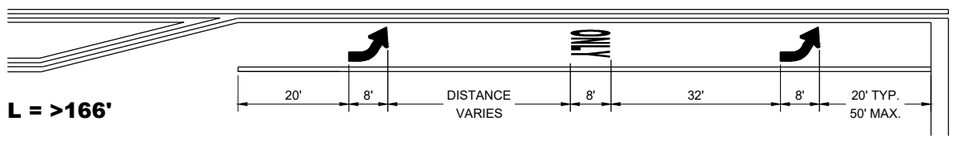
LENGTH OF TURN BAY (**L**) OF 0 - 47' DOES NOT REQUIRE PAVEMENT MARKING ARROWS OR WORDS



L = 48 - 87'



L = 88 - 166'



L = >166'

GENERAL NOTES

1. QUANTITY AND LOCATION OF TYPE 3 ARROWS ARE THE SAME AS THE TYPE II ARROWS IN THE ADJACENT TURN LANE. FOR TURN LANES WITH A PHYSICAL SEPARATION IN THE SAME DIRECTION OF TRAVEL, THE ARROWS AND "ONLY" MARKING MAY BE ELIMINATED.

DIRECTION OF TRAFFIC

L = LENGTH OF TURN BAY

*CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

PAVEMENT MARKING (TURN LANES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
6
SDD 15C08-23d

SDD 15C12-a Traffic Control for Lane Closure With Flagging Operation

LEGEND

- SIGN ON PORTABLE OR PERMANENT SUPPORT
- TEMPORARY PORTABLE RUMBLE STRIP ARRAY
- DIRECTION OF TRAFFIC
- WORK AREA
- FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

GENERAL NOTES

DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

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

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

THE FIRST ADVANCE WARNING SIGN SHOULD TYPICALLY BE LOCATED IN ADVANCE OF THE ANTICIPATED TRAFFIC BACKUP OR QUEUE.

WHEN A SIDE ROAD OR RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, ADDITIONAL TRAFFIC CONTROLS SHALL BE PROVIDED AS SPECIFIED IN THE PLANS AND/OR THE SPECIAL PROVISIONS OR AS APPROVED BY THE ENGINEER.

FLAGGING

FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT REMOVE TEMPORARY PORTABLE RUMBLE STRIPS PRIOR TO COVERING OR REMOVING ALL ADVANCE SIGNING.

(1) FOR MOVING WORK OPERATIONS, POST ADDITIONAL W20-7A FLAGGER SIGNS AT APPROXIMATELY 3,500' INTERVALS IN THE MOVING WORK OPERATION OR AS APPROVED BY THE ENGINEER.

(2) SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.

WHEN THE DISTANCE BETWEEN FLAGGERS EXCEEDS 2 MILES, A PILOT CAR IS REQUIRED. WHEN CURVES REDUCE SIGHT DISTANCE BELOW 400', A PILOT CAR IS REQUIRED.

TEMPORARY PORTABLE RUMBLE STRIPS

UTILIZE TEMPORARY PORTABLE RUMBLE STRIPS ON ALL FLAGGING OPERATIONS.

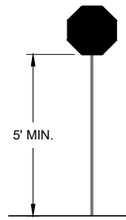
(3) EACH TEMPORARY PORTABLE RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS PLACED TRANSVERSE ACROSS THE LANE AT THE LOCATIONS SHOWN. WITHIN EACH ARRAY, SPACING BETWEEN RUMBLE STRIPS SHALL BE 15 FEET ON CENTER

ONLY USE TEMPORARY PORTABLE RUMBLE STRIPS FROM THE APPROVED PRODUCTS LIST.

INSTALL TEMPORARY RUMBLE STRIPS PER MANUFACTURER'S RECOMMENDATIONS.

PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.

DO NOT INSTALL TEMPORARY PORTABLE RUMBLE STRIPS ON GRAVEL, MILLED SURFACES, OR ASPHALT THAT HAS BEEN PAVED LESS THAN 12 HOURS.



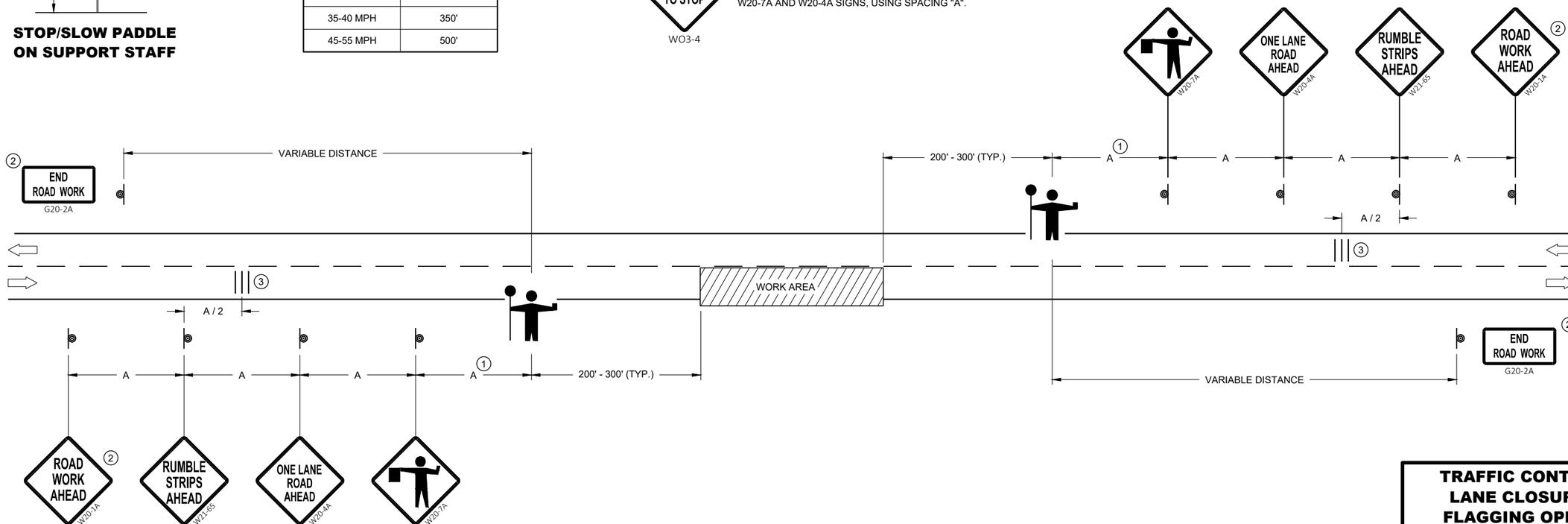
STOP/SLOW PADDLE ON SUPPORT STAFF

SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

SPEED LIMIT	SPACING "A"
25-30 MPH	200'
35-40 MPH	350'
45-55 MPH	500'

WO3-4

USE OF WO3-4 SIGN IS OPTIONAL. WHEN USED, THIS SIGN SHALL BE LOCATED BETWEEN THE W20-7A AND W20-4A SIGNS, USING SPACING "A".



TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2022
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

15C12-b Traffic Control, Lane Closure with Automated Flagger Assistance Device

GENERAL NOTES

- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL CONE 42-INCH
- TRAFFIC CONTROL DRUM
- TEMPORARY PORTABLE RUMBLE STRIP ARRAY
- DIRECTION OF TRAFFIC
- WORK AREA
- AFAD — AUTOMATED FLAGGER ASSISTANCE DEVICE (AFAD)

GENERAL NOTES

DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

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

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

THE FIRST ADVANCE WARNING SIGN SHOULD TYPICALLY BE LOCATED IN ADVANCE OF THE ANTICIPATED TRAFFIC BACKUP OR QUEUE.

WHEN A SIDE ROAD OR RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, ADDITIONAL TRAFFIC CONTROLS SHALL BE PROVIDED AS SPECIFIED IN THE PLANS AND/OR THE SPECIAL PROVISIONS OR AS APPROVED BY THE ENGINEER.

FLAGGING

IF THE AUTOMATED FLAGGER ASSISTANCE DEVICE (AFAD) STOPS WORKING, FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT REMOVE TEMPORARY PORTABLE RUMBLE STRIPS PRIOR TO COVERING OR REMOVING ALL ADVANCE SIGNING.

WHEN THE DISTANCE BETWEEN FLAGGERS EXCEEDS 2 MILES, A PILOT CAR IS REQUIRED. WHEN CURVES REDUCE SIGHT DISTANCE BELOW 400', A PILOT CAR IS REQUIRED.

(1) SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.

(2) IF FLAGGERS ARE PHYSICALLY NEEDED TO FLAG, REPLACE WO3-4 SIGNS WITH W20-7A SIGNS.

TEMPORARY PORTABLE RUMBLE STRIPS

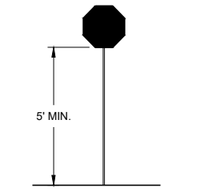
UTILIZE TEMPORARY PORTABLE RUMBLE STRIPS ON ALL FLAGGING OPERATIONS.

ONLY USE TEMPORARY PORTABLE RUMBLE STRIPS FROM THE APPROVED PRODUCTS LIST.

PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.

DO NOT INSTALL TEMPORARY PORTABLE RUMBLE STRIPS ON GRAVEL, MILLED SURFACES, OR ASPHALT THAT HAS BEEN PAVED LESS THAN 12 HOURS.

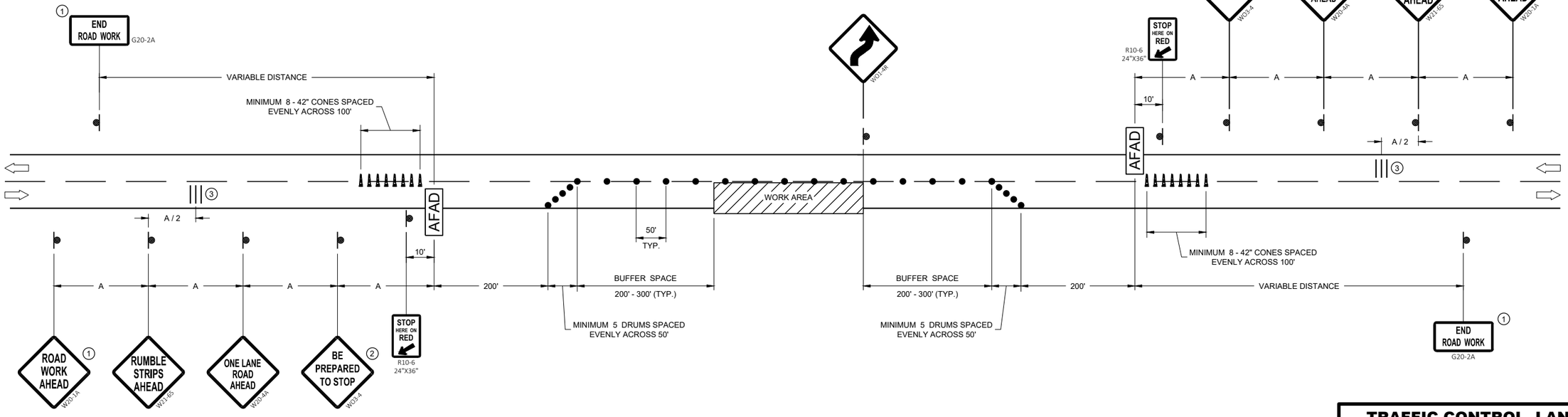
(3) EACH TEMPORARY PORTABLE RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS PLACED TRANSVERSELY AT THE LOCATIONS SHOWN. WITHIN EACH ARRAY, SPACING BETWEEN RUMBLE STRIPS SHALL BE 15 FEET ON CENTER.



STOP/SLOW PADDLE ON SUPPORT STAFF

SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

SPEED LIMIT	SPACING "A"
25-30 MPH	200'
35-40 MPH	350'
45-55 MPH	500'

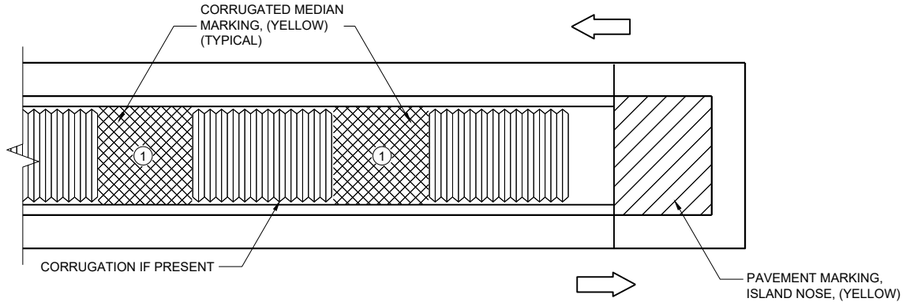


TRAFFIC CONTROL, LANE CLOSURE WITH AUTOMATED FLAGGER ASSISTANCE DEVICE

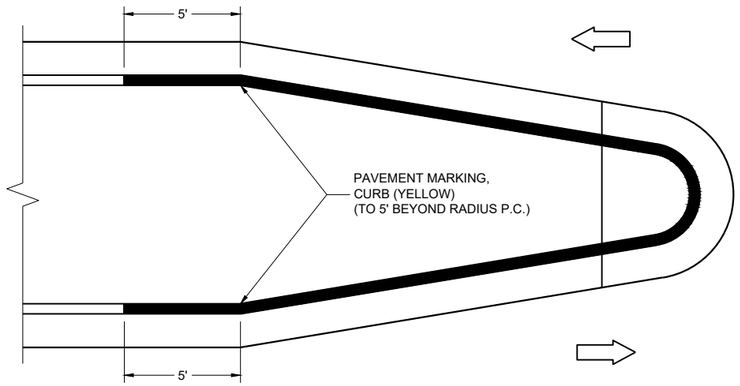
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2022 — DATE
/S/ Andrew Heidtke — WORK ZONE ENGINEER
FHWA

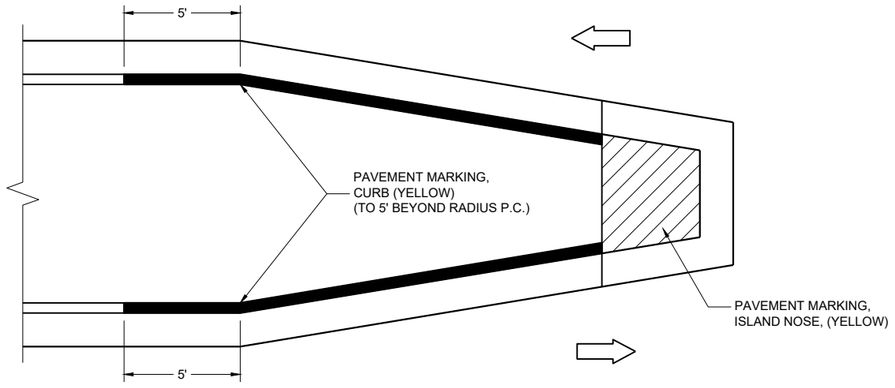
6
SDD 15C12 - 09b



MEDIAN ISLAND WITH SQUARE BLUNT NOSE



MEDIAN ISLAND WITH ROUND BLUNT NOSE



MEDIAN ISLAND WITH SLOPED NOSE

**TYPICAL PLACEMENT OF
PAVEMENT MARKING ON MEDIAN ISLANDS**

GENERAL NOTES

WHEN CONCRETE CORRUGATED MEDIAN IS CONSTRUCTED TO SEPARATE TRAFFIC OPERATING IN THE OPPOSING DIRECTION, YELLOW PAVEMENT MARKING SHALL BE APPLIED TO THE FLAT PORTION OF THE CONCRETE CORRUGATED MEDIAN. THE ITEM OF PAVEMENT MARKING, CONCRETE CORRUGATED MEDIAN, WILL BE MEASURED IN PLACE AND ACCEPTED IN ACCORDANCE WITH THE CONTRACT AND PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE FOOT.

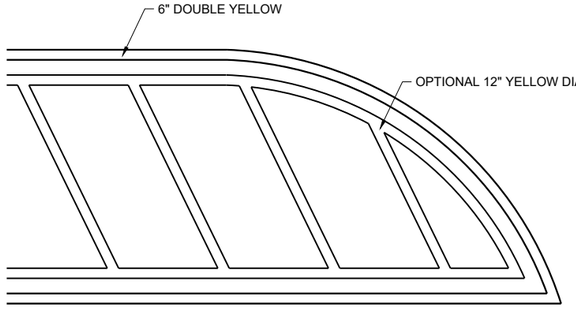
(1) APPLY PAVEMENT MARKING TO THE FLAT PORTION OF CORRUGATED MEDIAN.

ISLAND NOSE MARKING

CURB MARKING

CORRUGATED MEDIAN MARKING

DIRECTION OF TRAVEL



FLUSH MEDIAN ISLAND NOSE

**PAVEMENT MARKINGS,
MEDIAN ISLAND NOSE**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
August 2024
DATE

/S/ Jeannie Silver
Statewide Pavement Marking Engineer

FHWA

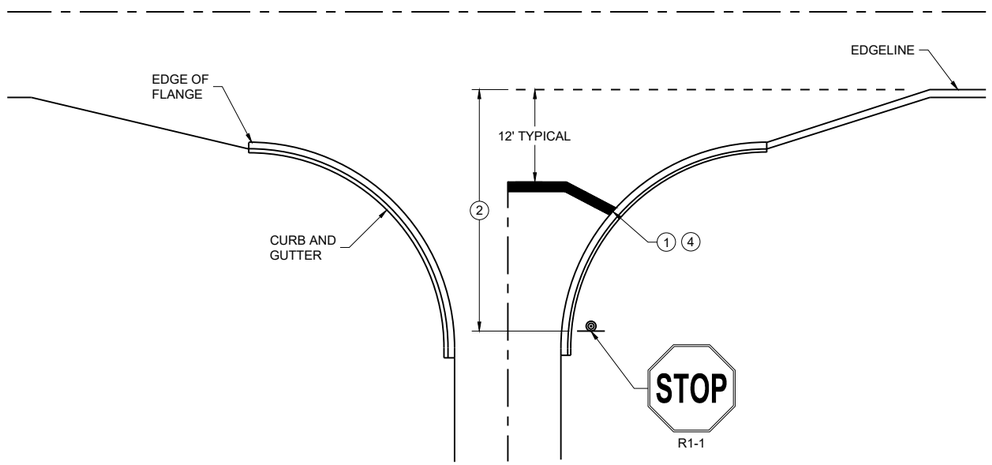
6

SDD 15C18-09b

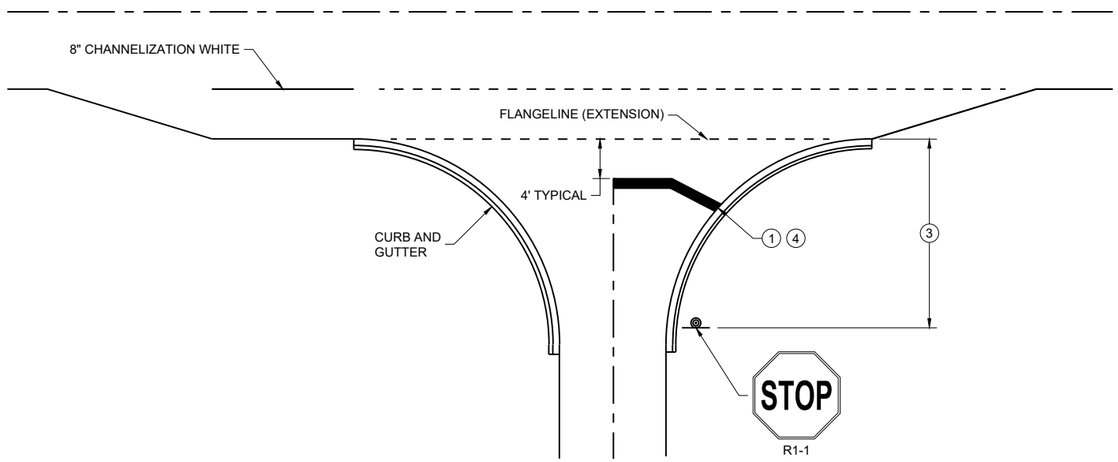
GENERAL NOTES

STOP SIGN SHALL BE PLACED A MINIMUM OF 6 FEET TO A MAXIMUM OF 50 FEET FROM THE EDGELINE LOCATION.

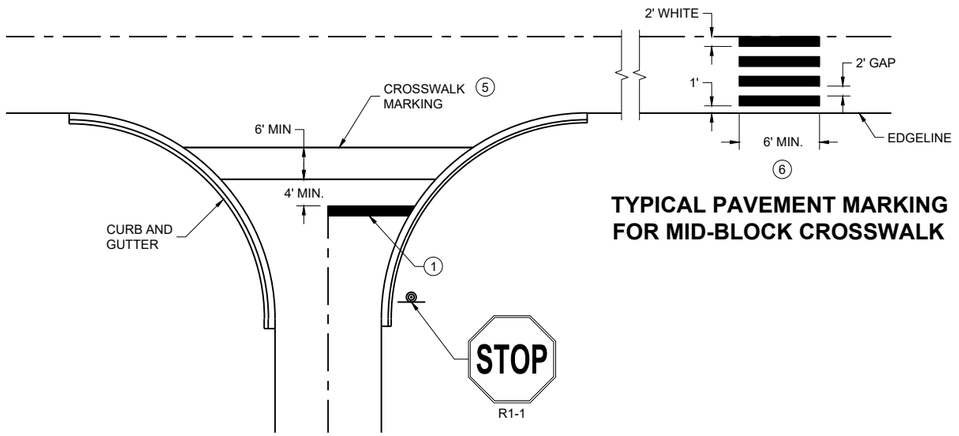
1. 18-INCH STOP LINES MAY BE DELETED OR ADDED BY THE REGION MARKING ENGINEER BASED ON VISIBILITY AND SIGHT LINES.
2. NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 40 FEET FROM THE EDGELINE.
3. NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 30 FEET FROM THE FLANGE LINE EXTENSION.
4. MOVE CLOSER TO THE EDGE OF TRAVEL LINE AS NEEDED FOR VISIBILITY AND SIGHT LINES (NO CLOSER THAN 4 FEET).
5. LADDER BAR CROSSWALKS SHOULD ONLY BE USED FOR MID BLOCK CROSSINGS. USE 2 - 6" TRANSVERSE LINES.
6. POSTED SPEED LIMITS OF 40 MPH OR GREATER USE A MINIMUM WIDTH OF 8' FOR MIDBLOCK CROSSWALKS



TYPICAL STOP LINE PAVEMENT MARKING WITH CURB AND GUTTER

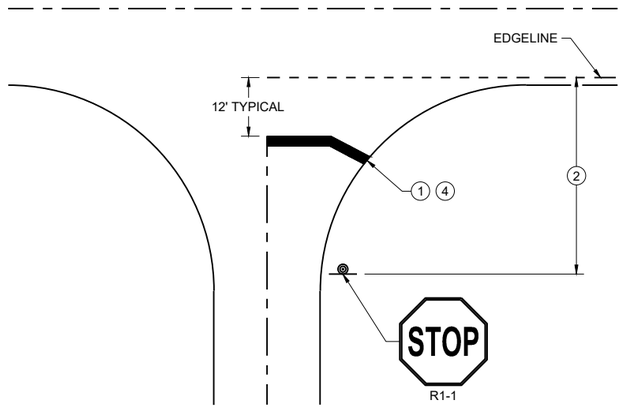


TYPICAL STOP LINE PAVEMENT MARKING FOR SIDE ROADS WITH RIGHT TURN LANE



TYPICAL PAVEMENT MARKING FOR MID-BLOCK CROSSWALK (5)

TYPICAL STOP LINE PAVEMENT MARKING FOR SIDE ROADS WITH CROSSWALK MARKING



TYPICAL STOP LINE PAVEMENT MARKING WITHOUT CURB AND GUTTER

STOP LINE AND CROSSWALK PAVEMENT MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

March 2024 — DATE

/S/ Matthew Rauch — STATE SIGNING AND MARKING ENGINEER

FHWA

6

SDD 15C33-05

GENERAL NOTES

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

THE SPACING BETWEEN SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS.

THIS LANE CLOSURE IS TYPICAL FOR CLOSING RIGHT LANE - REVERSE FOR CLOSING LEFT LANE.

ALL SIGNS ARE 48" x 48" UNLESS OTHERWISE NOTED.

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

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

FOR A LANE CLOSURE THAT IS IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, THE ADVANCED WARNING SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS.

REMOVE PAVEMENT MARKINGS AND PLACE TEMPORARY PAVEMENT MARKING LINE IF LANE CLOSURE IS TO BE IN PLACE 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.

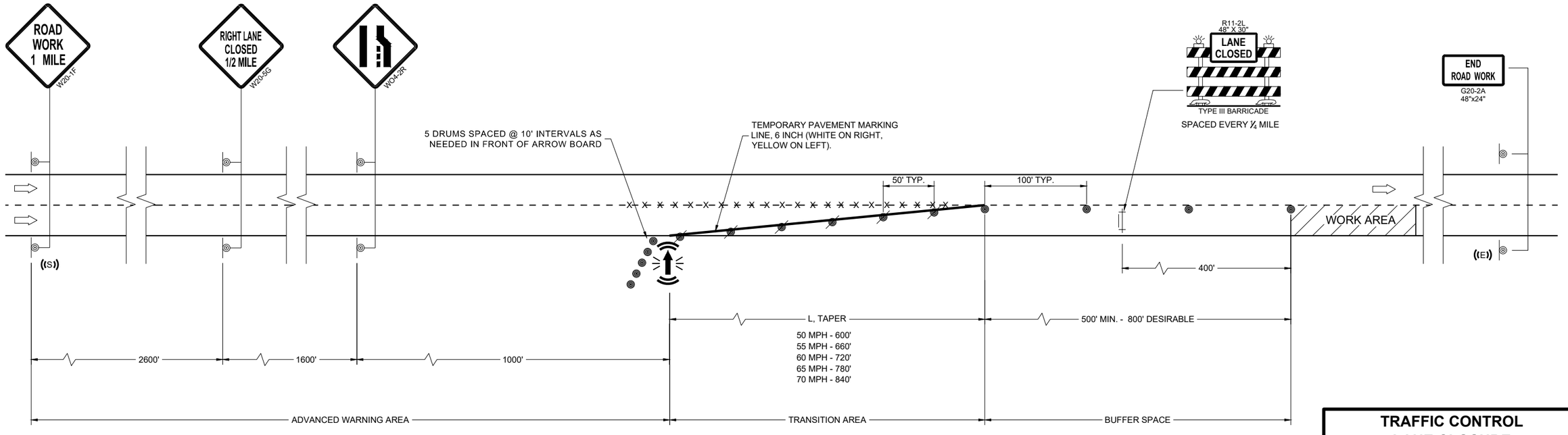
WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP OR INTERSECTION. THE LANE CLOSURE MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE ONE HALF THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.

CONSIDER ROADWAY GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS.

LEGEND

- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- REMOVING PAVEMENT MARKINGS
- DIRECTION OF TRAFFIC
- WORK AREA
- CONNECTED ARROW BOARD
- (S) WZ START LOCATION MARKER
- (E) WZ END LOCATION MARKER



TRAFFIC CONTROL LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2024 — DATE
/S/ Andrew Heidtke — ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR

FHWA

6

SDD 15D12-14a

6

SDD 15D12-14a

GENERAL NOTES

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

THE SPACING BETWEEN SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS.

THIS LANE CLOSURE IS TYPICAL FOR CLOSING RIGHT LANE - REVERSE FOR CLOSING LEFT LANE.

ALL SIGNS ARE 48" x 48" UNLESS OTHERWISE NOTED.

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

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

CONSIDER ROADWAY GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS.

FOR A LANE CLOSURE THAT IS IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, THE ADVANCED WARNING SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS.

REMOVE PAVEMENT MARKINGS AND PLACE TEMPORARY PAVEMENT MARKING LINE IF LANE CLOSURE IS TO BE IN PLACE 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

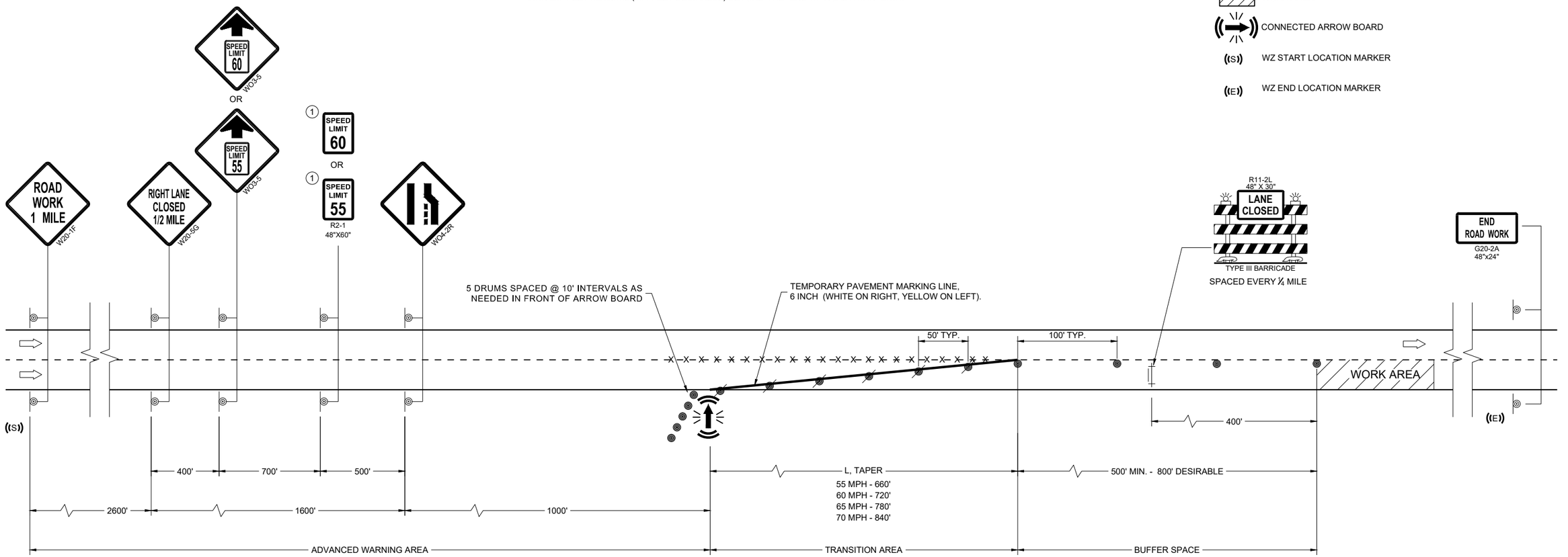
IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP OR INTERSECTION. THE LANE CLOSURE MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE ONE HALF THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.

(1) A SPEED LIMIT SIGN SHALL BE LOCATED 1500 FEET BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP. PLACE A SPEED LIMIT SIGN A MINIMUM OF EVERY 3 MILES. INCLUDE A RESUME SPEED LIMIT SIGN 200 FEET MINIMUM (500 FEET DESIRABLE) BEYOND THE "END OF ROADWORK" SIGN.

LEGEND

- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- REMOVING PAVEMENT MARKINGS
- DIRECTION OF TRAFFIC
- WORK AREA
- CONNECTED ARROW BOARD
- (S) WZ START LOCATION MARKER
- (E) WZ END LOCATION MARKER



TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2024 — DATE
/S/ Andrew Heidtke — ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR

FHWA

6
SDD 15D12-14b

LEGEND

- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- REMOVING PAVEMENT MARKINGS
- DIRECTION OF TRAFFIC
- WORK AREA
- (S) WZ START LOCATION MARKER
- (E) WZ END LOCATION MARKER
- CONNECTED ARROW BOARD
- PCMS — PORTABLE CHANGEABLE MESSAGE SIGN
- (S) PORTABLE TRAFFIC SENSOR (PTS)
- FBS — FLASHING BEACON SIGNS

STOPPED OR SLOW TRAFFIC WHEN FLASHING
WO8-76
96" x 48"

GENERAL NOTES

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

THE SPACING BETWEEN SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS.

ALL SIGNS ARE 48" x 48" UNLESS OTHERWISE NOTED.

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

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

FOR A LANE CLOSURE THAT IS IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, THE ADVANCED WARNING SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS.

REMOVE PAVEMENT MARKINGS AND PLACE TEMPORARY PAVEMENT MARKING LINE IF LANE CLOSURE IS TO BE IN PLACE 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

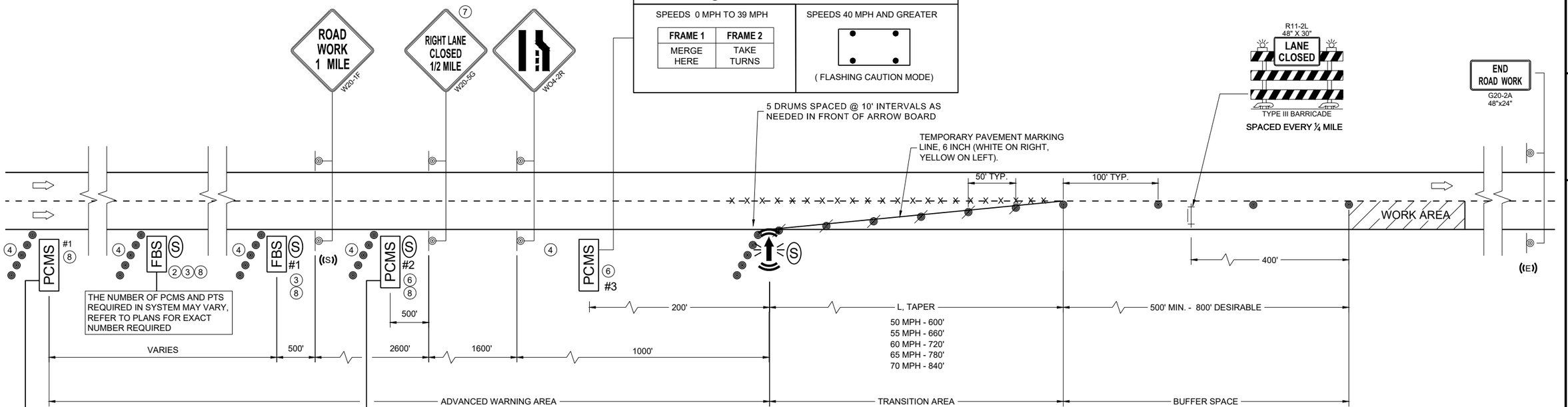
IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.

WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION. ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP OR INTERSECTION. THE LANE CLOSURE MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE ONE HALF THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.

CONSIDER ROADWAY GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS.

PORTABLE TRAFFIC SENSOR (PTS) MAY BE MOUNTED ON PCMS, FBS, ARROW BOARD OR OTHER TRAILER DEVICES.

1. IF THERE ARE MORE THAN TWO LANES, CHANGE FRAME 2 OF THE PCMS TO STATE "USE ALL LANES".
2. PLACE FLASHING BEACON SIGNS EVERY ONE MILE BETWEEN PCMS #1 AND FBS #1. THE NUMBER OF FBS MAY BE MORE THAN SHOWN ON THIS DETAIL.
3. FOR THREE LANE CONFIGURATION, PLACE FBS ON BOTH SIDES OF ROADWAY. CHANGE PCMS #1 FRAME 2 MESSAGE TO "USE ALL LANES".
4. 5 DRUMS SPACED @ 10' INTERVALS AS NEEDED.
5. PCMS SHALL FOLLOW ARROW BOARD STANDARDS WHEN DISPLAYING FLASHING FOUR CORNER CAUTION MODE.
6. TO REMOVE OBSTRUCTION OF THE ARROW BOARD BY THE PCMS, OFFSET THE PCMS AS NEEDED FROM THE EDGE LINE
7. IF THERE IS AN APPROVED TEMPORARY SPEED DECLARATION, ADD WO-3-5 SIGNS 400 FEET AFTER THE W20-5G SIGNS AND ADD R2-1 SIGNS (48"x60") 700 FEET AFTER THE WO3-5 SIGNS. A SPEED LIMIT SIGN SHALL BE LOCATED 1500 FEET BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP. PLACE A SPEED LIMIT SIGN A MINIMUM OF EVERY 3 MILES. INCLUDE A "RESUME SPEED LIMIT" SIGN 200 FEET MINIMUM (800 FEET DESIRABLE) BEYOND THE G30-3A "END ROAD WORK" SIGN.
8. IF THERE ARE MORE THAN TWO LANES OR IF SPECIFIED IN THE PLANS, PLACE PCMS AND FBS ON THE SAME SIDE OF THE ROADWAY.



TRAFFIC CONTROL, DYNAMIC LATE MERGE SYSTEM

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2024 — DATE
/S/ Erin Schwark — ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR

FHWA

6
SDD 15D12-14c

LEGEND

- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- REMOVING PAVEMENT MARKINGS
- DIRECTION OF TRAFFIC
- WORK AREA
- (S) WZ START LOCATION MARKER
- (E) WZ END LOCATION MARKER
- CONNECTED ARROW BOARD
- PCMS — PORTABLE CHANGEABLE MESSAGE SIGN
- (S) — PORTABLE TRAFFIC SENSOR (PTS)
- FBS — FLASHING BEACON SIGNS

STOPPED OR SLOW TRAFFIC WHEN FLASHING
WO8-76
96" x 48"

GENERAL NOTES

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

THE SPACING BETWEEN SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS.

THIS LANE CLOSURE IS TYPICAL FOR CLOSING RIGHT LANE - REVERSE FOR CLOSING LEFT LANE.

ALL SIGNS ARE 48" x 48" UNLESS OTHERWISE NOTED.

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

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED OR AS APPROVED BY THE ENGINEER. NO WARNING LIGHTS SHALL BE WORKING ON "COVERED" OR "DOWNED SIGNS.

FOR A LANE CLOSURE THAT IS IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, THE ADVANCED WARNING SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS.

REMOVE PAVEMENT MARKINGS AND PLACE TEMPORARY PAVEMENT MARKING LINE IF LANE CLOSURE IS TO BE IN PLACE 4 OR MORE CONTINUOUS DAYS AND NIGHTS. WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP OR INTERSECTION. THE LANE CLOSURE MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE ONE HALF THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.

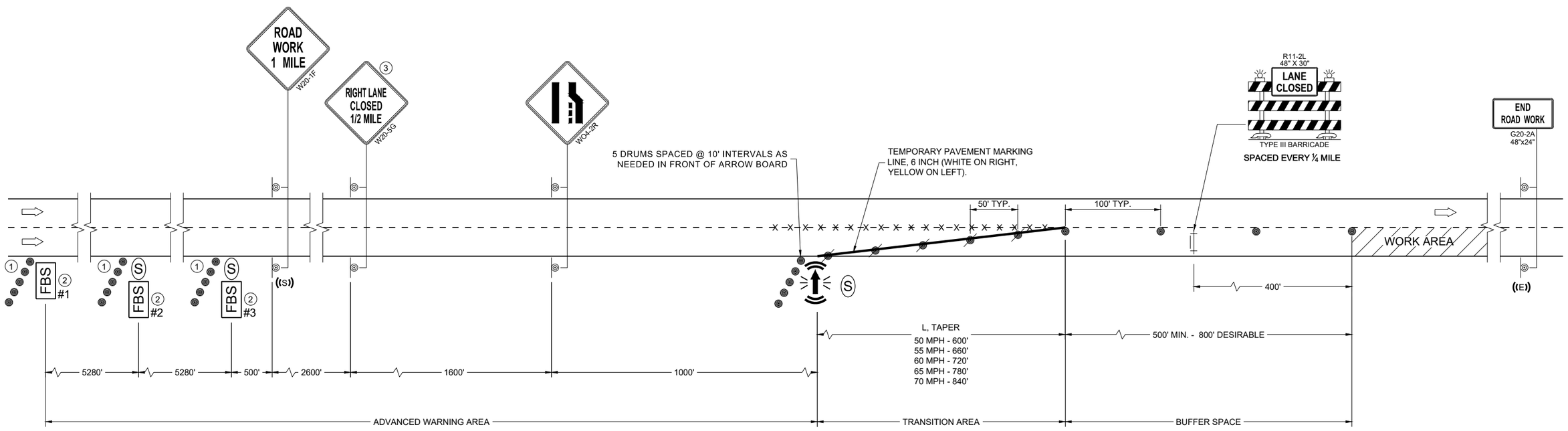
CONSIDER ROADWAY GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS.

PORTABLE TRAFFIC SENSOR (PTS) MAY BE MOUNTED ON THE FBS, ARROW BOARD OR OTHER TRAILER DEVICES.

(1) 5 DRUMS SPACED AT 10 FOOT INTERVALS AS NEEDED.

(2) IF THERE ARE MORE THAN TWO LANES OR IF SPECIFIED IN THE PLANS, PLACE FBS ON BOTH SIDES OF THE ROADWAY.

(3) IF THERE IS AN APPROVED TEMPORARY SPEED DECLARATION, ADD WO-3-5 SIGNS 400 FEET AFTER THE W20-5G SIGNS AND ADD R2-1 SIGNS (48"x60") 700 FEET AFTER THE WO3-5 SIGNS. A SPEED LIMIT SIGN SHALL BE LOCATED 1500 FEET BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP. PLACE A SPEED LIMIT SIGN A MINIMUM OF EVERY 3 MILES. INCLUDE A "RESUME SPEED LIMIT" SIGN 200 FEET MINIMUM (800 FEET DESIRABLE) BEYOND THE G30-3A "END ROAD WORK" SIGN.



TRAFFIC CONTROL, LANE CLOSURE, BASIC TRAFFIC QUEUE WARNING SYSTEM

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2024 — DATE
/S/ Erin Schwark — ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR

FHWA

6
SDD 15D12-14d

LEGEND

- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- REMOVING PAVEMENT MARKINGS
- DIRECTION OF TRAFFIC
- WORK AREA
- CONNECTED ARROW BOARD
- PCMS — PORTABLE CHANGEABLE MESSAGE SIGN
- (S) — PORTABLE TRAFFIC SENSOR (PTS)
- (TS) — WZ START LOCATION MARKER
- (E) — WZ END LOCATION MARKER

GENERAL NOTES

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

THE SPACING BETWEEN SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS.

THIS LANE CLOSURE IS TYPICAL FOR CLOSING RIGHT LANE - REVERSE FOR CLOSING LEFT LANE.

ALL SIGNS ARE 48" x 48" UNLESS OTHERWISE NOTED.

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

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED OR AS APPROVED BY THE ENGINEER. NO WARNING LIGHTS SHALL BE WORKING ON "COVERED" OR "DOWNED SIGNS.

FOR A LANE CLOSURE THAT IS IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, THE ADVANCED WARNING SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS.

REMOVE PAVEMENT MARKINGS AND PLACE TEMPORARY PAVEMENT MARKING LINE IF LANE CLOSURE IS TO BE IN PLACE 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

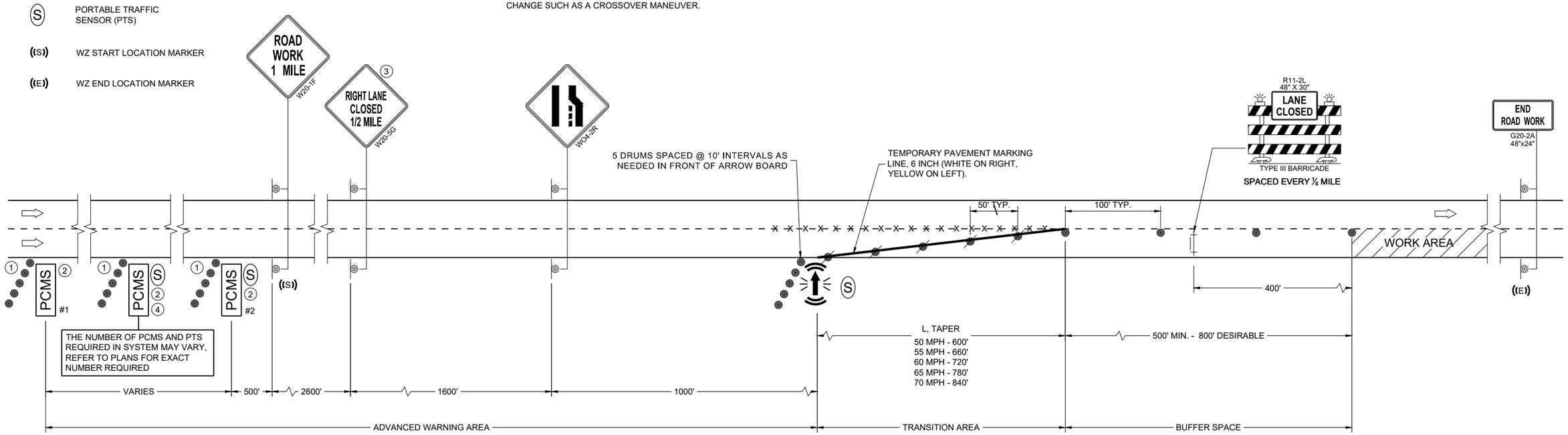
IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP OR INTERSECTION. THE LANE CLOSURE MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE ONE HALF THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.

CONSIDER ROADWAY GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS.

PORTABLE TRAFFIC SENSOR (PTS) MAY BE MOUNTED ON PCMS, ARROW BOARD OR OTHER TRAILER DEVICES.

1. 5 DRUMS SPACED AT 10 FOOT INTERVALS AS NEEDED.
2. IF THERE ARE MORE THAN TWO LANES OR IF SPECIFIED IN THE PLANS, PLACE PCMS ON BOTH SIDES OF THE ROADWAY.
3. IF THERE IS AN APPROVED TEMPORARY SPEED DECLARATION, ADD WO-3-5 SIGNS 400 FEET AFTER THE W20-5G SIGNS AND ADD R2-1 SIGNS (48"x60") 700 FEET AFTER THE WO3-5 SIGNS. A SPEED LIMIT SIGN SHALL BE LOCATED 1500 FEET BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP. PLACE A SPEED LIMIT SIGN A MINIMUM OF EVERY 3 MILES. INCLUDE A "RESUME SPEED LIMIT" SIGN 200 FEET MINIMUM (800 FEET DESIRABLE) BEYOND THE G30-3A "END ROAD WORK" SIGN.
4. PLACE PCMS EVERY ONE MILE BETWEEN PCMS #1 AND PCMS #2, OR AS THE ENGINEER DIRECTS. THE NUMBER OF PCMS MAY BE MORE THAN SHOWN ON THIS DETAIL.
5. PCMS SHALL FOLLOW ARROW BOARD STANDARDS WHEN DISPLAYING FLASHING FOUR CORNER CAUTION MODE OR ARROW MERGE MODE.



⑤ PCMS MESSAGING

SPEEDS 0 MPH TO 19 MPH		SPEEDS 20 MPH TO 39 MPH		SPEEDS 40 MPH AND GREATER
FRAME 1	FRAME 2	FRAME 1	FRAME 2	
STOPPED TRAFFIC AHEAD	EXPECT DELAYS	SLOW TRAFFIC AHEAD	PREPARE TO STOP	(FLASHING CAUTION MODE)

TRAFFIC CONTROL, LANE CLOSURE, TRAFFIC QUEUE WARNING SYSTEM

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2024 — DATE
/S/ Erin Schwark — ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR

FHWA

6

SDD 15D12-14e

LEGEND

- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- REMOVING PAVEMENT MARKINGS
- DIRECTION OF TRAFFIC
- WORK AREA
- CONNECTED ARROW BOARD
- WZ START LOCATION MARKER
- WZ END LOCATION MARKER
- TEMPORARY TAPE RUMBLE STRIPS (VARIABLE SPACING)
- PORTABLE TRAFFIC SENSOR (PTS)

GENERAL NOTES

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

THE SPACING BETWEEN SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS.

THIS LANE CLOSURE IS TYPICAL FOR CLOSING RIGHT LANE - REVERSE FOR CLOSING LEFT LANE.

ALL SIGNS ARE 48" x 48" UNLESS OTHERWISE NOTED.

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

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED OR AS APPROVED BY THE ENGINEER. NO WARNING LIGHTS

FOR A LANE CLOSURE THAT IS IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, THE ADVANCE WARNING SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS.

REMOVE PAVEMENT MARKINGS AND PLACE TEMPORARY PAVEMENT MARKING LINE IF LANE CLOSURE IS TO BE IN PLACE 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

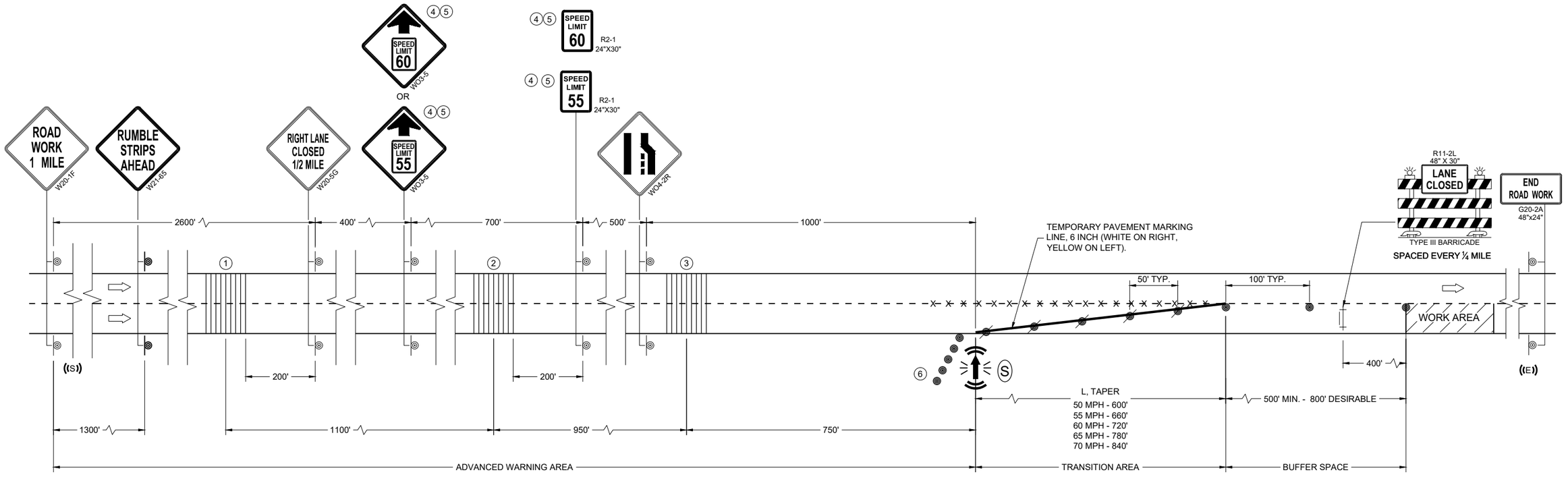
IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP OR INTERSECTION. THE LANE CLOSURE MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE ONE HALF THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.

CONSIDER ROADWAY GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS.

USE THIS DETAIL FOR PLACEMENT OF TEMPORARY TAPE RUMBLE STRIPS AND W21-65 SIGNS. SEE APPROPRIATE LANE CLOSURE SDD FOR DETAILS OF OTHER TRAFFIC CONTROL DEVICES AND SIGNS.

1. NINE RUMBLE STRIPS WITH 10 FOOT SPACING BETWEEN EACH INDIVIDUAL STRIP.
2. NINE RUMBLE STRIPS WITH 5 FOOT SPACING BETWEEN EACH INDIVIDUAL STRIP.
3. NINE RUMBLE STRIPS WITH 1.5 FOOT SPACING BETWEEN EACH INDIVIDUAL STRIP.
4. COVER OR REMOVE PER APPROVED TEMPORARY SPEED DECLARATION.
5. IF NO APPROVED SPEED DECLARATION, OMIT SIGNS.
6. 5 DRUMS SPACED AT 10 FOOT INTERVALS AS NEEDED.



TRAFFIC CONTROL, LANE CLOSURE, WITH TEMPORARY TAPE RUMBLE STRIPS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2024 — DATE
/S/ Andrew Heidtke — ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR

FHWA

6
SDD 15D12-14f

GENERAL NOTES

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

THE SPACING BETWEEN SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS.

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

CONSIDER ROADWAY GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS.

FOR A LANE CLOSURE THAT IS IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, THE ADVANCED WARNING SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS.

REMOVE PAVEMENT MARKINGS AND PLACE TEMPORARY PAVEMENT MARKING LINE IF LANE CLOSURE IS TO BE IN PLACE 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP OR INTERSECTION. THE LANE CLOSURE MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE ONE HALF THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.

IF THE SPEED LIMIT WILL CHANGE BASED ON THE PRESENCE OF WORKERS, USE THE TAPER LENGTH THAT MATCHES THE HIGHER OF THE TWO SPEEDS FOR A CONTINUOUS LANE CLOSURE.

(1) EXISTING POST MOUNTED SPEED LIMIT SIGNS SHOULD BE COVERED OR REMOVED.

(2) PLACE DSLT IN ADVANCE WARNING AREA AND THROUGHOUT PROJECT LIMITS. IF THE LANE CLOSURE MOVES DOWNSTREAM, LEAVE DSLT IN PLACE.

(3) AT EXISTING POST MOUNTED SPEED LIMIT SIGN AFTER THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP. IF THERE IS NOT AN EXISTING SIGN, PLACE 1,500 FEET BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP

(4) IF WORK AREA STARTS LESS THAN 1,000 FEET FROM END OF LANE CLOSURE TAPER, OMIT DIGITAL SPEED LIMIT TRAILER AT THAT LOCATION.

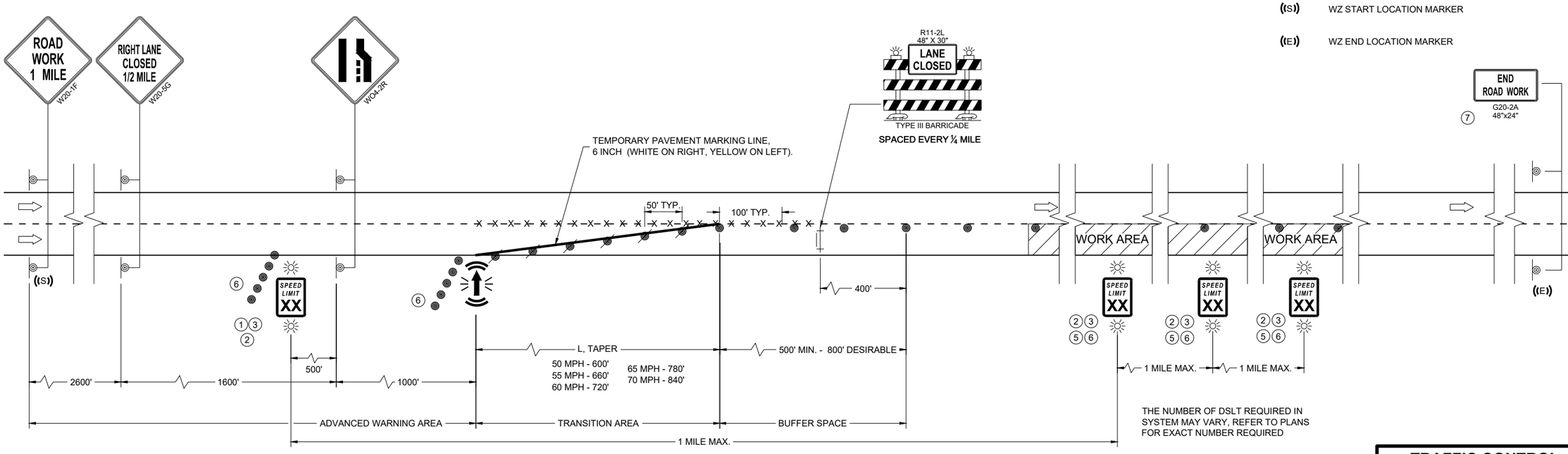
(5) PLACE A DIGITAL SPEED LIMIT TRAILER A MINIMUM OF EVERY ONE MILE. MODIFY PLACEMENT AS DIRECTED BY ENGINEER WHEN DIGITAL SPEED LIMIT TRAILER IS LOCATED IN CLOSE PROXIMITY TO AN ACCELERATION LANE OF AN ENTRANCE RAMP.

(6) 5 DRUMS SPACED @ 10' INTERVALS AS NEEDED.

(7) INCLUDE NON-DIGITAL R2-1 RESUME SPEED LIMIT SIGNS 200 FEET MINIMUM (500 FEET DESIRABLE) BEYOND THE "END ROAD WORK" SIGN.

LEGEND

- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- REMOVING PAVEMENT MARKINGS
- DIRECTION OF TRAFFIC
- WORK AREA
- CONNECTED ARROW BOARD
- DIGITAL SPEED LIMIT TRAILER (DSLT)
- WZ START LOCATION MARKER
- WZ END LOCATION MARKER



TRAFFIC CONTROL, LANE CLOSURE, DIGITAL SPEED REDUCTION SYSTEM

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

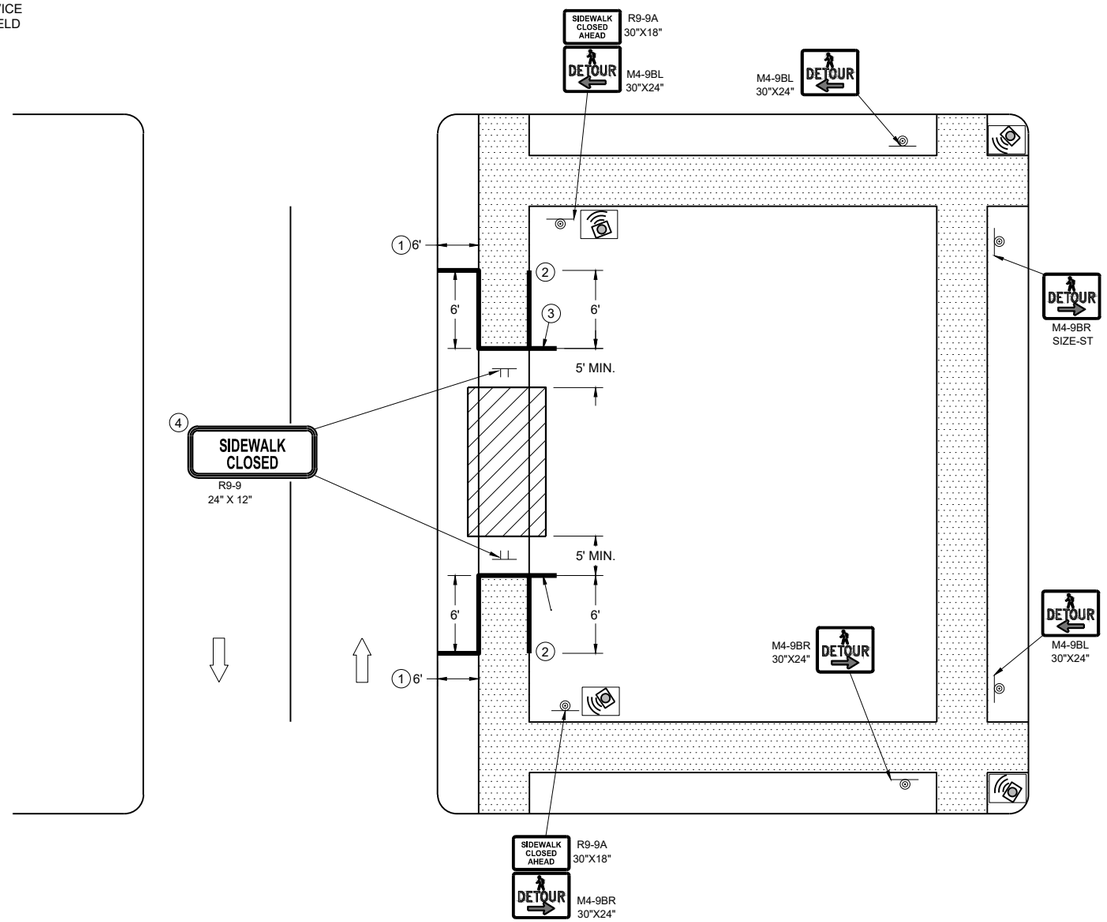
APPROVED
November 2024 — DATE
/S/ Andrew Heidtke — ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR

FHWA

6
SDD 15D12-14g

LEGEND

- SIGN ON PERMANENT SUPPORT
- SIGN ON TEMPORARY SUPPORT
- UNDER PEDESTRIAN TRAFFIC
- WORK AREA
- TEMPORARY PEDESTRIAN BARRICADE
- DIRECTION OF TRAFFIC
- TEMPORARY AUDIBLE MESSAGE DEVICE (EXACT PLACEMENT BASED UPON FIELD CONDITIONS)



SIDEWALK DETOUR, SIDEWALK ONLY ON ONE SIDE

GENERAL NOTES

WHERE TEMPORARY BARRICADE RUNS PARALLEL ALONG SIDEWALK, PLACE THE FACE OF THE BARRICADE AT THE EDGE OF THE SIDEWALK.

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

PLACE TEMPORARY PEDESTRIAN BARRICADE TO FIT FIELD CONDITIONS, AVOIDING CONFLICTS WITH DRIVEWAYS AND OTHER EXISTING FEATURES.

1. IF TERRACE IS LESS THAN 6 FEET WIDE, OMIT TEMPORARY PEDESTRIAN BARRICADE FROM THE SIDEWALK TO THE CURB.
2. PLACE BARRICADE CLOSURE SO THAT THE TEMPORARY PEDESTRIAN BARRICADE END IS AT THE LAST OPEN SIDEWALK ACCESS TO RESIDENCES OR BUSINESSES BEFORE THE SIDEWALK CLOSURE.
3. IF TEMPORARY PEDESTRIAN BARRICADE PANEL IS WIDER THAN THE SIDEWALK WIDTH, THE PORTION OF EXCESS PANEL SHOULD EXTEND INTO THE TERRACE.
4. MOUNTING HEIGHT OF 5 FEET FROM THE SURFACE TO THE BOTTOM OF SIGN.

TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION

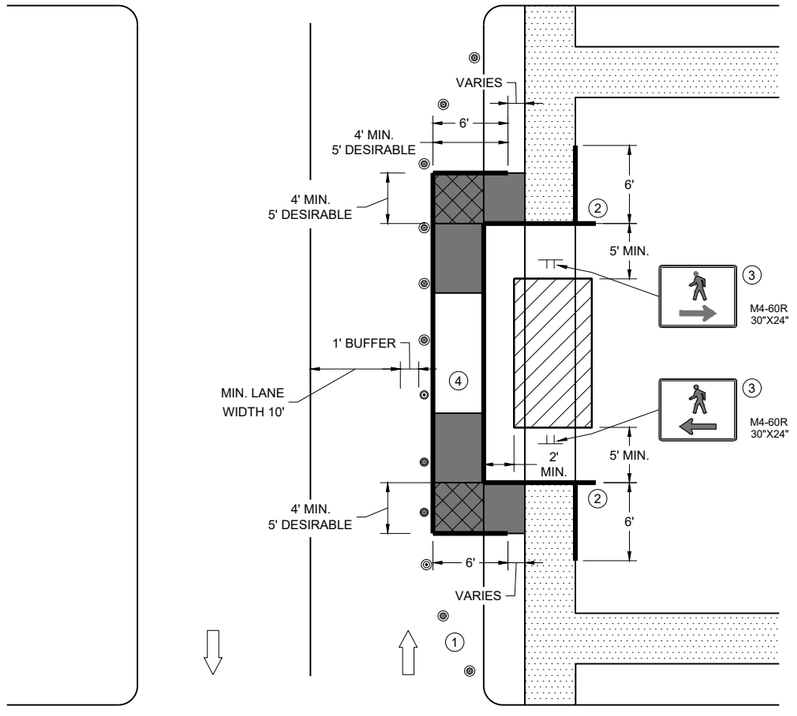
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

SDD 15D30-10f

LEGEND

- SIGN ON TEMPORARY SUPPORT
- TRAFFIC CONTROL DRUM
- WORK AREA
- UNDER PEDESTRIAN TRAFFIC
- TEMPORARY CURB RAMP
- TEMPORARY PEDESTRIAN SURFACE "A"
- TEMPORARY PEDESTRIAN SURFACE "B"
- TEMPORARY PEDESTRIAN BARRICADE
- DIRECTION OF TRAFFIC



SIDEWALK BYPASS, SINGLE SIDE

GENERAL NOTES

TYPICAL TEMPORARY PEDESTRIAN BARRICADE PANEL IS 6 FEET LONG.

WHERE TEMPORARY BARRICADE RUNS PARALLEL ALONG SIDEWALK, PLACE THE FACE OF THE BARRICADE AT THE EDGE OF THE SIDEWALK.

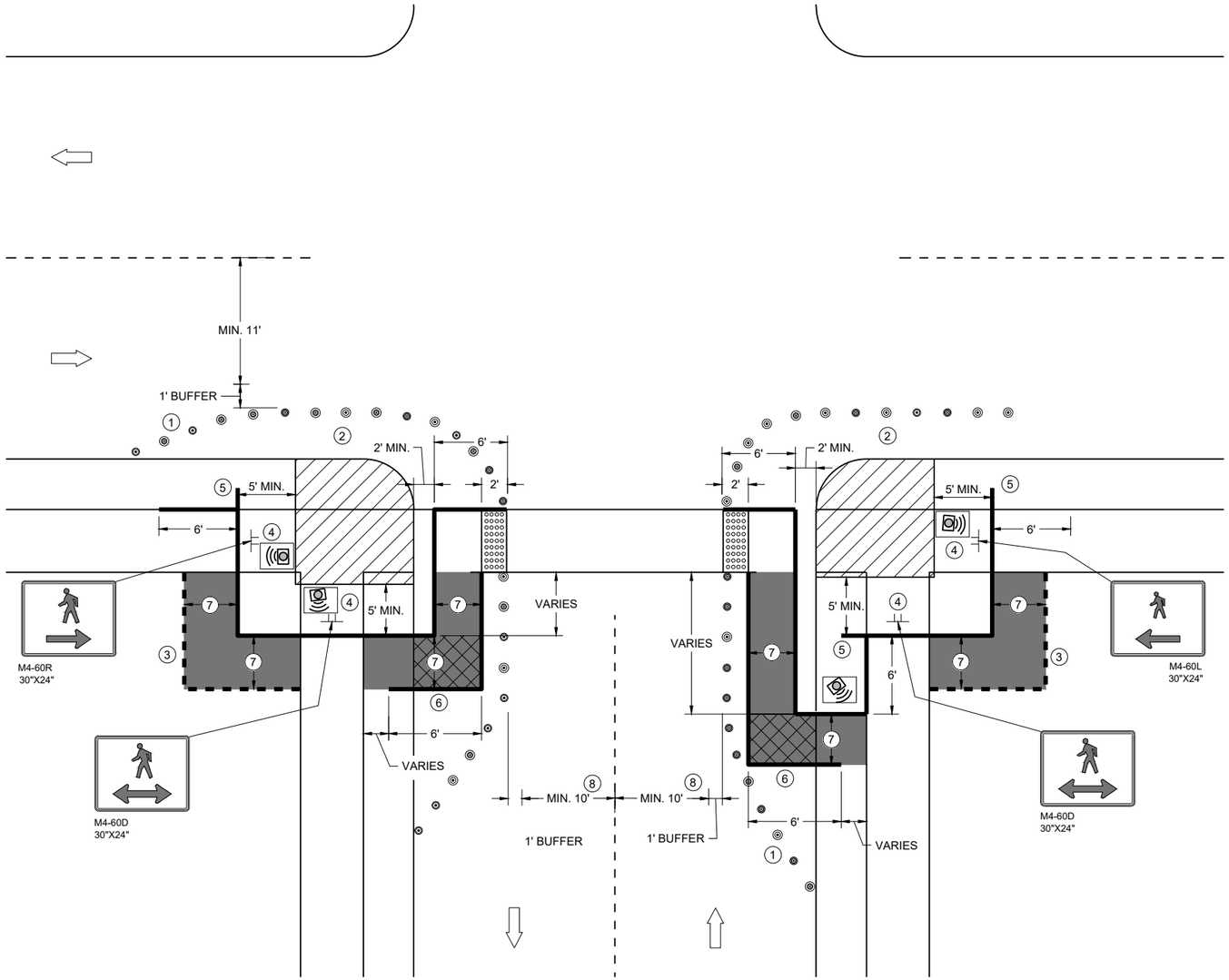
1. SHOULDER OR LANE CLOSURE ADVANCE WARNING AND BUFFER SPACE REQUIRED.
2. PLACE EXCESS PORTION OF TEMPORARY PEDESTRIAN BARRICADE PANEL PAST THE SIDEWALK ON THE SIDE AWAY FROM THE ROAD.
3. MOUNTING HEIGHT OF 5 FEET FROM THE SURFACE TO THE BOTTOM OF SIGN.
4. USE EXISTING PAVEMENT SURFACE. IF EXISTING PAVEMENT SURFACE HAS BEEN REMOVED, USE A TEMPORARY PEDESTRIAN SURFACE. WHEN THE TEMPORARY PEDESTRIAN ACCESS ROUTE RUNS PARALLEL ON THE ROADWAY SURFACE, THE MAXIMUM CROSS SLOPE WILL MATCH THE EXISTING ROADWAY CROSS SLOPE.

6

SDD 15D30-10h

TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



CURB RAMP PEDESTRIAN TRAFFIC CONTROL
SIDEWALK ON SINGLE SIDE

GENERAL NOTES

IF PEDESTRIAN PUSH BUTTONS ARE PRESENT ON THE EXISTING FACILITY, ENSURE THEY ARE MAINTAINED/ACCESSIBLE FOR PEDESTRIAN USE THROUGHOUT THE TEMPORARY PEDESTRIAN ACCOMMODATIONS.

TYPICAL TEMPORARY PEDESTRIAN BARRICADE PANEL IS 6 FEET LONG

WHEN TEMPORARY PEDESTRIAN BARRICADE RUNS PARALLEL ALONG THE SIDEWALK, PLACE THE FACE OF THE BARRICADE AT THE EDGE OF THE SIDEWALK.

WHEN THE TEMPORARY PEDESTRIAN ACCESS ROUTE RUNS PARALLEL ON THE ROADWAY SURFACE, THE MAXIMUM CROSS SLOPE WILL MATCH THE EXISTING ROADWAY CROSS SLOPE.

1. SHOULDER OR LANE CLOSURE ADVANCE WARNING AND PROPER BUFFER SPACE REQUIRED.
2. PROVIDE ADEQUATE SPACE FOR CONTRACTOR OPERATIONS
3. USE TEMPORARY PEDESTRIAN BARRICADE TO SEPARATE PEDESTRIANS FROM DROP OFFS OR FOR ADDITIONAL PEDESTRIAN CHANNELIZATION.
4. MOUNTING HEIGHT OF 5 FEET FROM SIDEWALK SURFACE TO BOTTOM OF SIGN.
5. PLACE EXCESS PORTION OF TEMPORARY PEDESTRIAN BARRICADE PANEL IN THE SIDEWALK TERRACE.
6. IF TEMPORARY PEDESTRIAN BARRICADE DOES NOT REACH THE FACE OF THE CURB, USE AN ADDITIONAL PANEL AND EXTEND INTO THE TERRACE.
7. 4 FEET MINIMUM, 5 FEET DESIRABLE
8. IF MINIMUM LANE WIDTHS CAN'T BE ATTAINED, CURB RAMPS MAY NEED TO BE CONSTRUCTED AT SEPARATE TIMES.

LEGEND

- SIGN ON TEMPORARY SUPPORT
- TRAFFIC CONTROL DRUM
- WORK AREA
- TEMPORARY CURB RAMP
- TEMPORARY PEDESTRIAN SURFACE "A"
- TEMPORARY PEDESTRIAN SURFACE "B"
- TEMPORARY DETECTABLE WARNING FIELD
- TEMPORARY PEDESTRIAN BARRICADE
- OPTIONAL TEMPORARY PEDESTRIAN BARRICADE
- DIRECTION OF TRAFFIC
- TEMPORARY AUDIBLE MESSAGE DEVICE (EXACT PLACEMENT BASED UPON FIELD CONDITIONS)

TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
SDD 15D30-10i