SEL

PROJECT ID: 2660-04-70
WITH: 2981-00-72

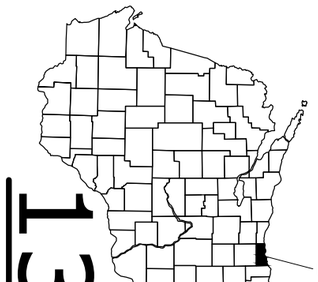
COUNTY: MILWAUKEE

MAR 2016

ORDER OF SHEETS



TOTAL SHEETS = 50




# STATE OF WISCONSIN
# DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

# WHITNALL PARK DRIVE

BRIDGE OVER TESS CORNERS CREEK

## LOCAL STREET

## MILWAUKEE COUNTY

STATE PROJECT NUMBER

**2660-04-70**

| STATE PROJECT | FEDERAL PROJECT | |
|---|---|---|
| | PROJECT | CONTRACT |
| 2660-04-70 | WISC 2016055 | 1 |
| | | |
| | | |
| | | |

MILWAUKEE COUNTY
DEPARTMENT OF TRANSPORTATION
TRANSPORTATION SERVICES

PROJECT MANAGER
DATE: 10/28/15

RECOMMENDED FOR APPROVAL:
DATE: 10/28/2015
Manager Transportation Services

APPROVED:
DATE: 10/3/15
Director of Milwaukee County Department of Transportation

ORIGINAL PLANS PREPARED BY

K. SINGH & ASSOCIATES, INC.
Engineers, Scientists and Environmental Consultants

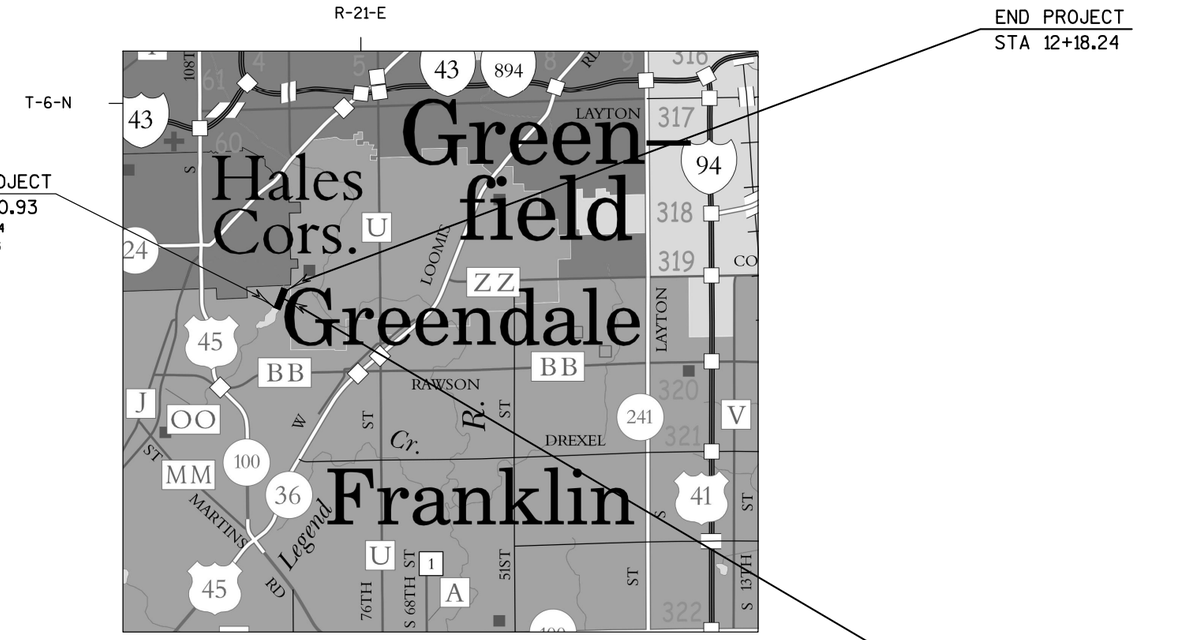
JEREMY L. HINDS E-38775 MILWAUKEE WI
WISCONSIN PROFESSIONAL ENGINEER
10/28/15 (Date) (Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY
Surveyor: KSA
Designer: KSA
Management Consultant: DAAR
C.O. Examiner:

APPROVED FOR THE DEPARTMENT
DATE: 11/2/15
(Management Consultant Signature)

E




N

LAYOUT
SCALE 0 0.5 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.032 MI.

- "COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), 'MILWAUKEE' COUNTY." NAD83(CORS 96)
- "ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO THE NAVD (1929)

## DESIGN DESIGNATION

| | | | |
|---|---|---|---|
| A.A.D.T. | 2015 | = | 470 |
| A.A.D.T. | 2035 | = | 550 |
| D.H.V. | | = | 6.1 |
| D.D. | | = | 59/41 |
| T. | | = | 6.0% |
| DESIGN SPEED | | = | 30 MPH |
| ESALS | | = | 21,900 |

## CONVENTIONAL SYMBOLS

### PLAN

- CORPORATE LIMITS
- PROPERTY LINE (PL + 58.1)
- LOT LINE
- LIMITED HIGHWAY EASEMENT
- EXISTING RIGHT OF WAY
- PROPOSED OR NEW R/W LINE
- SLOPE INTERCEPT
- REFERENCE LINE
- 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 (95.36)
- 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

2

## GENERAL NOTES

1. THE LOCATIONS OF EXISTING UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.
2. THE CONTRACTOR SHALL NOTIFY DIGGERS HOTLINE AND AFFECTED UTILITIES PRIOR TO THE START OF WORK. ANY LOCAL MUNICIPALITY WHICH IS NOT A MEMBER OF THE DIGGERS HOTLINE MUST BE CONTACTED SEPARATELY.
3. WHEN THE QUANTITY OF HMA PAVEMENT OR BASE AGGREGATE IS MEASURED FOR PAYMENT BY THE TON, THE DEPTH OR THICKNESS OF THE LAYER SHOWN ON THE PLAN IS APPROXIMATE AND THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER.
4. INLET PROTECTION IS REQUIRED AT ALL INLETS AS PER DETAIL OR AS DIRECTED BY THE ENGINEER.
5. THE EROSION CONTROL FEATURES AS SHOWN IN THE PLANS ARE AT SUGGESTED LOCATIONS. EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.
6. DISTURBED AREAS WITHIN THE RIGHT OF WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, SHALL BE SALVAGED TOPSOILED, FERTILIZED, SEEDED, AND INSTALL EROSION CONTROL MAT AND SOIL STABILIZER AS DIRECTED BY THE ENGINEER.
7. SEED, INSTALL EROSION MAT AND SOIL STABILIZER, AND FERTILIZE ALL SALVAGED TOPSOILED AREAS WITHIN 7 WORKING DAYS AFTER GRADING WORK IS COMPLETED.
8. STATIONING, DISTANCES AND OFFSETS FOR SIGNS SHOWN ON THE PLANS ARE APPROXIMATE AND THE FINAL LOCATION OF THE SIGNS ARE TO BE DETERMINED BY THE ENGINEER.
9. SIGNS IN CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE COVERED AS DIRECTED BY THE ENGINEER AND PAID FOR UNDER ITEMS TRAFFIC CONTROL COVERING SIGNS TYPE I OR TRAFFIC CONTROL COVERING SIGNS TYPE II.
10. EXCAVATION BELOW SUBGRADE (EBS) IS NOT SHOWN ON THE PLANS YARDAGE BUT IS MEASURED AND PAID FOR AS EXCAVATION COMMON. THE LOCATION, DEPTH AND BACKFILL MATERIAL FOR EBS WILL BE DETERMINED BY THE ENGINEER.
11. TRAFFIC CONTROL DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.
12. CONCRETE JOINTS SHALL MATCH ABUTTING PAVEMENT AND CURB AND GUTTER JOINTS UNLESS OTHERWISE DESIGNATED BY THE ENGINEER.
13. THE LOCATIONS OF LONGITUDINAL JOINTS IN HMA PAVEMENT SHALL BE APPROVED BY THE ENGINEER.
14. NO TREES OR SHRUBS ARE TO BE REMOVED WITHOUT PRIOR APPROVAL OF THE ENGINEER.
15. SMOOTH AND EVEN JOINTS SHALL BE PROVIDED WHERE MATCHING EXISTING SAWCUTTING.
16. THE HMA PAVEMENT WEIGHT CALCULATIONS ARE BASED ON A UNIT WEIGHT OF 112LBS/SY/IN.
17. 4-INCH HMA PAVEMENT TYPE E-3 SHALL BE CONSTRUCTED IN TWO (2) LAYERS AS FOLLOWS:

| LAYER | DEPTH (INCHES) | AGGREGATE SIZE (mm) | ASPHALTIC MATERIAL |
|---|---|---|---|
| UPPER | 2.00-INCH | 12.50 mm NOMINAL SIZE AGGREGATE | PG64-28 @ 5.5% |
| LOWER | 2.00-INCH | 12.50 mm NOMINAL SIZE AGGREGATE | PG64-28 @ 5.5% |

18. RADII, ELEVATIONS, AND DIMENSIONS ARE GIVEN AT THE PAVEMENT EDGES, UNLESS OTHERWISE NOTED IN THE PLANS.
19. REFER TO ROADWAY PLANS FOR PROJECT I.D. 2981-00-72 FOR DETOUR PLAN.

## OTHER AGENCIES

WISCONSIN DEPARTMENT OF NATURAL RESOURCES

WEBSTER, CRAIG
141 BARSTOW ROOM 180
WAUKESHA, WI 53188
(262) 574-2141
Craig.Webster@wisconsin.gov

MILWAUKEE COUNTY DOT

ALEIOW, AZIZ
2711 W. WELLS ST.
MILWAUKEE, WI 53208
(414) 278-4911
Aziz.Aleiow@milwcnty.com

CONSULTANT CONTACT

K. SINGH & ASSOCIATES, INC.
HINDS, JEREMY
3636 NORTH 124TH STREET
WAUWATOSA, WI 53222
(262) 821-1171
jhinds@ksaconsultants.com

WISCONSIN DEPARTMENT OF TRANSPORTATION

BONACK, JOAN
141 NORTHWEST BARSTOW STREET
WAUKESHA, WI 53187
(262) 521-5361
Joan.Bonack@dot.wi.gov

CITY OF FRANKLIN

MORROW, GLEN
9229 W. LOOMIS ROAD
FRANKLIN, WI 53132
(414) 425-7510
gmorrow@franklinwi.gov

MILWAUKEE COUNTY SURVEYOR

BAUER, KURT
W239 N1812 ROCKWOOD DRIVE
P.O. BOX 1607
WAUKESHA, WI 53187
(262) 547-6721
kbauer@sewrpc.org

MILWAUKEE COUNTY PARKS

HALEY, KEVIN
9480 WATERTOWN PLANK RD.
WAUWATOSA, WI 53226
(414) 257-7275
kevin.haley@milwcnty.com

## UTILITY CONTACTS

WE ENERGIES

BRUMFIELD, LaTROY
333 W. EVERETT STREET
MILWAUKEE, WI 53203
(414) 221-5617
latroy.brumfield@we-energies.com

MMSD

JENSEN, DEBRA
260W. SEEBOTH ST.
MILWAUKEE, WI 53204
djensen@mmsd.com

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

FAX-A-LOCATE 1-800-338-3860

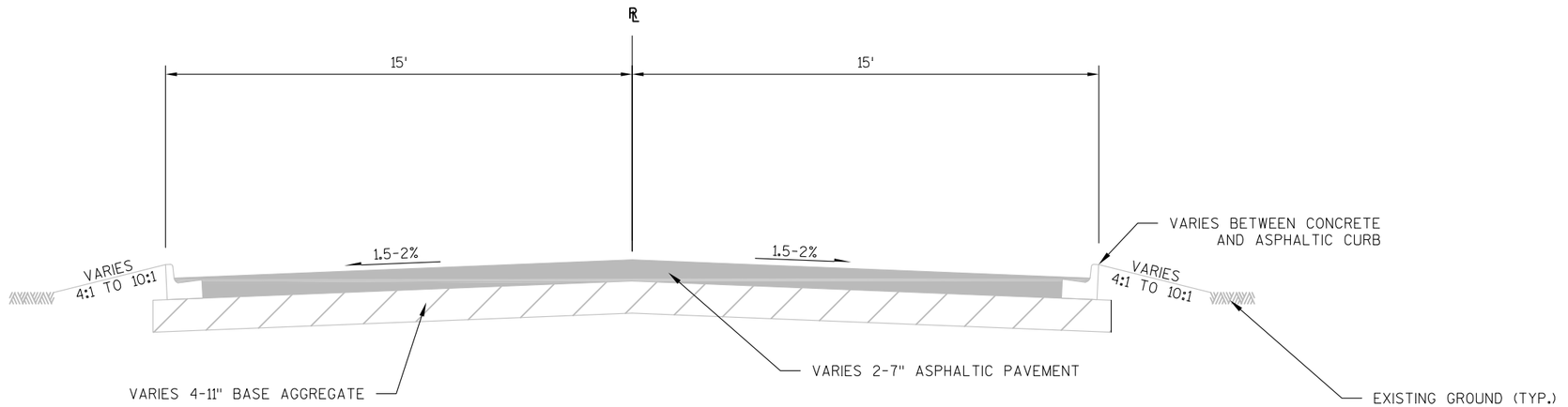
WISCONSIN STATUTE 182.0175 (1974) REQUIRES MINIMUM OF 3 WORKING DAYS NOTICE BEFORE YOU EXCAVATE IN WISCONSIN



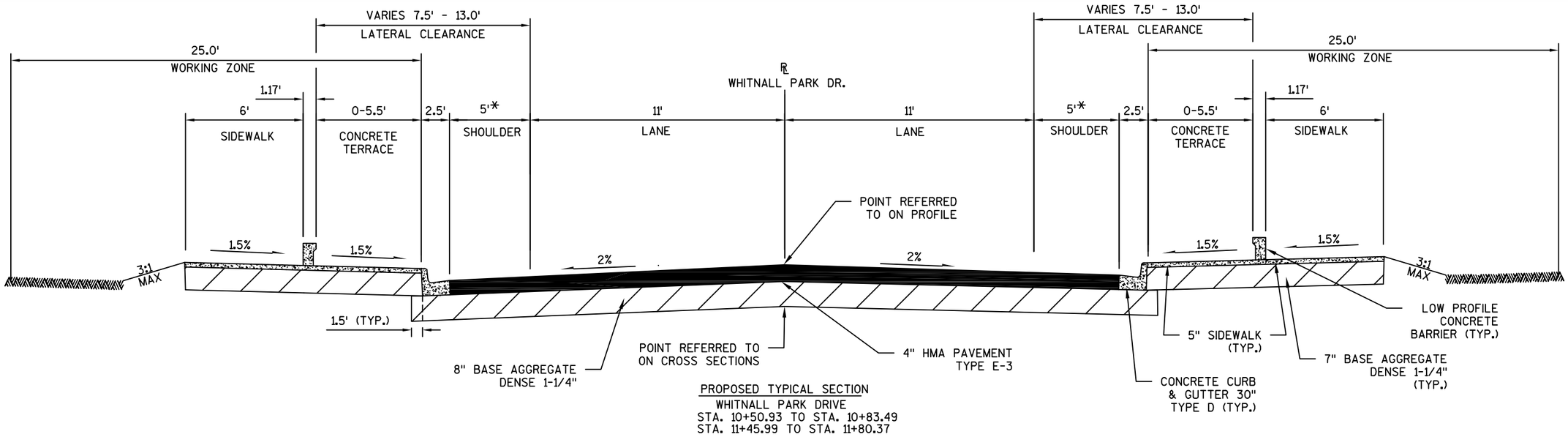
## ABBREVIATIONS

| | |
|---|---|
| ADT | AVERAGE DAILY TRAFFIC |
| AGG | AGGREGATE |
| BAD | BASE AGGREGATE DENSE |
| BM | BENCH MARK |
| CB | CATCH BASIN |
| C&G | CURB AND GUTTER |
| C-C | CENTER TO CENTER |
| CONC | CONCRETE |
| CSD | CONCRETE SURFACE DRAIN |
| CTR | CENTER |
| CWT | HUNDREDWEIGHT |
| CY | CUBIC YARD |
| D | DEGREE OF CURVE |
| Δ | DELTA |
| DD | DIRECTIONAL DISTRIBUTION |
| DHV | DESIGN HOUR VOLUME |
| DIA | DIAMETER |
| E | EAST |
| EB | EASTBOUND |
| EL OR ELEV | ELEVATION |
| EXIST | EXISTING |
| FS | FULL SUPERELEVATION |
| FT | FOOT |
| HE | HIGHWAY EASEMENT |
| HMA | HOT MIX ASPHALT |
| INCID | INCIDENTAL |
| INL | INLET |
| L | LENGTH OF CURVE |
| LF | LINEAR FOOT |
| LONG | LONGITUDINAL |
| LT | LEFT |
| MH | MANHOLE |
| MIN | MINIMUM |
| ML OR M/L | MATCH LINE |
| N | NORTH |
| NB | NORTHBOUND |
| NC | NORMAL CROWN |
| NTS | NOT TO SCALE |
| PAVT | PAVEMENT |
| PC | POINT OF CURVATURE |
| PCC | POINT OF COMPOUND CURVATURE |
| PI | POINT OF INTERSECTION |
| PLE | PERMANENT LIMITED EASEMENT |
| PT | POINT OF TANGENCY |
| PVC | POINT OF VERTICAL CURVATURE |
| PVI | POINT OF VERTICAL INTERSECTION |
| PVT | POINT OF VERTICAL TANGENCY |
| R | RADIUS |
| RCPSS | REINFORCED CONCRETE PIPE STORM SEWER |
| REQD | REQUIRED |
| R/L | REFERENCE LINE |
| RO | RUN OFF LENGTH |
| RT | RIGHT |
| RW OR R/W | RIGHT-OF-WAY |
| S | SOUTH |
| SB | SOUTHBOUND |
| SDD | STANDARD DETAIL DRAWINGS |
| SHT | SHEET |
| SI | SLOPE INTERCEPT |
| SS | STORM SEWER |
| STA | STATION |
| SY | SQUARE YARD |
| SYM | SYMMETRICAL |
| T | TANGENT LENGTH |
| TEMP | TEMPORARY |
| TYP | TYPICAL |
| V | VELOCITY OR DESIGN SPEED |
| VAR | VARIABLE OR VARIES |
| W | WEST |
| WB | WESTBOUND |
| YD | YARD |

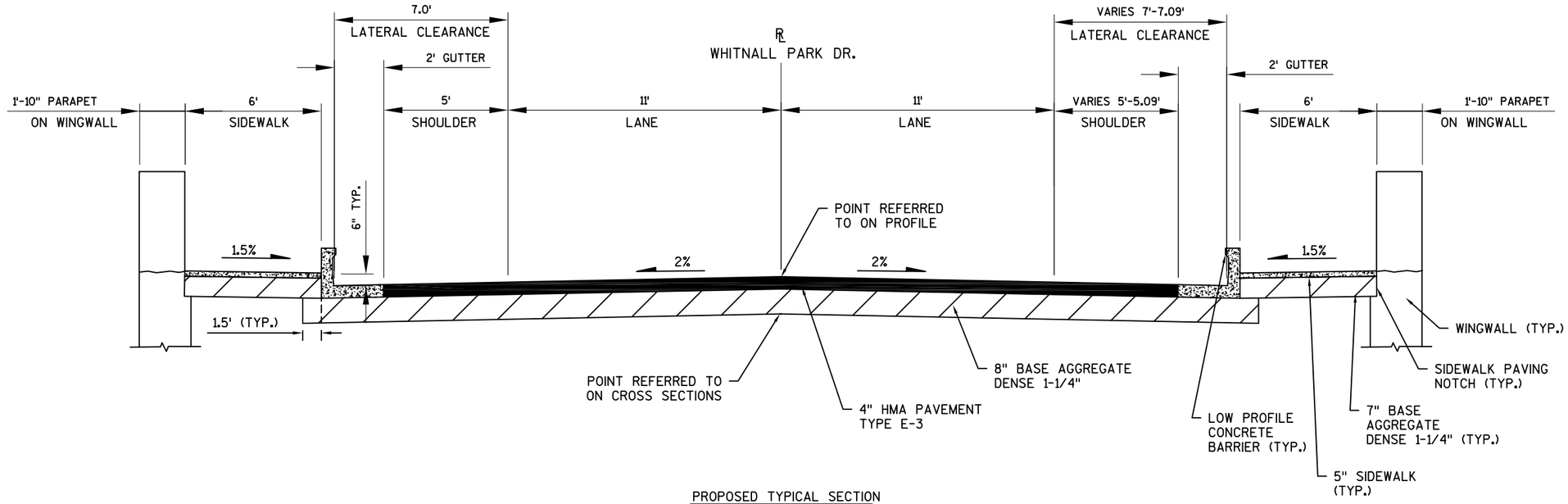
2




EXISTING TYPICAL SECTION
WHITNALL PARK DRIVE
STA. 10+50.93 TO STA. 11+01
STA. 11+29 TO STA. 12+22




PROPOSED TYPICAL SECTION
WHITNALL PARK DRIVE
STA. 10+50.93 TO STA. 10+83.49
STA. 11+45.99 TO STA. 11+80.37

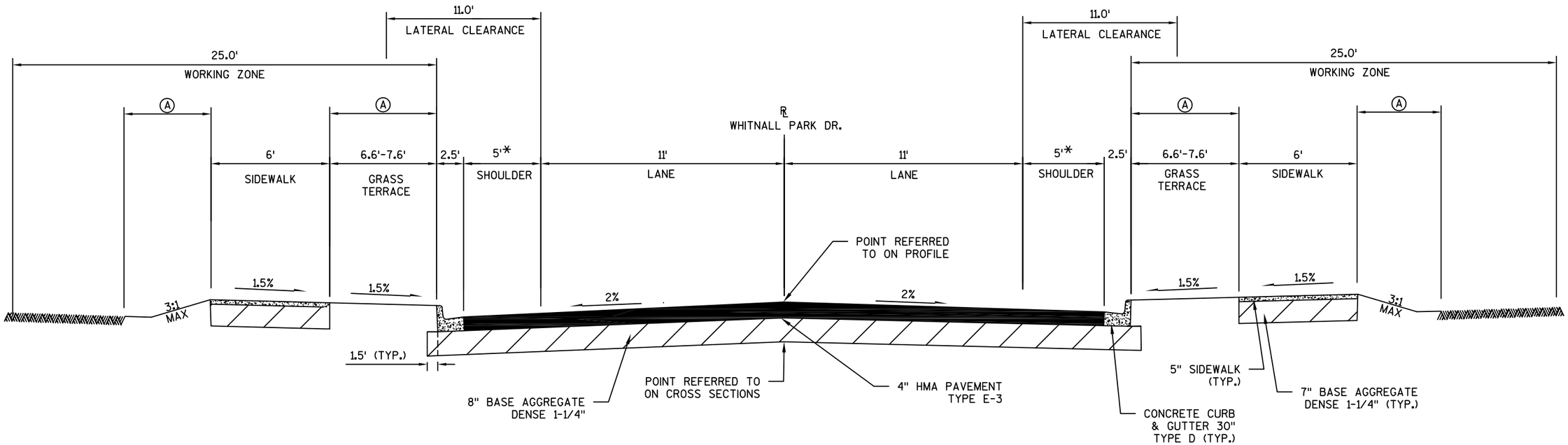



PROPOSED TYPICAL SECTION
WHITNALL PARK DRIVE
STA 10+83.49 TO STA 10+93.49
STA 11+35.99 TO STA 11+45.99

* SHOULDER VARIES (SEE PLAN VIEW)

| PROJECT NO: 2660-04-70 | HWY: WHITNALL PARK DRIVE | COUNTY: MILWAUKEE COUNTY | TYPICAL SECTIONS | SHEET 4 | E |
|---|---|---|---|---|---|

2




PROPOSED TYPICAL SECTION
WHITNALL PARK DRIVE
STA. 11+80.37 TO STA. 12+18.24

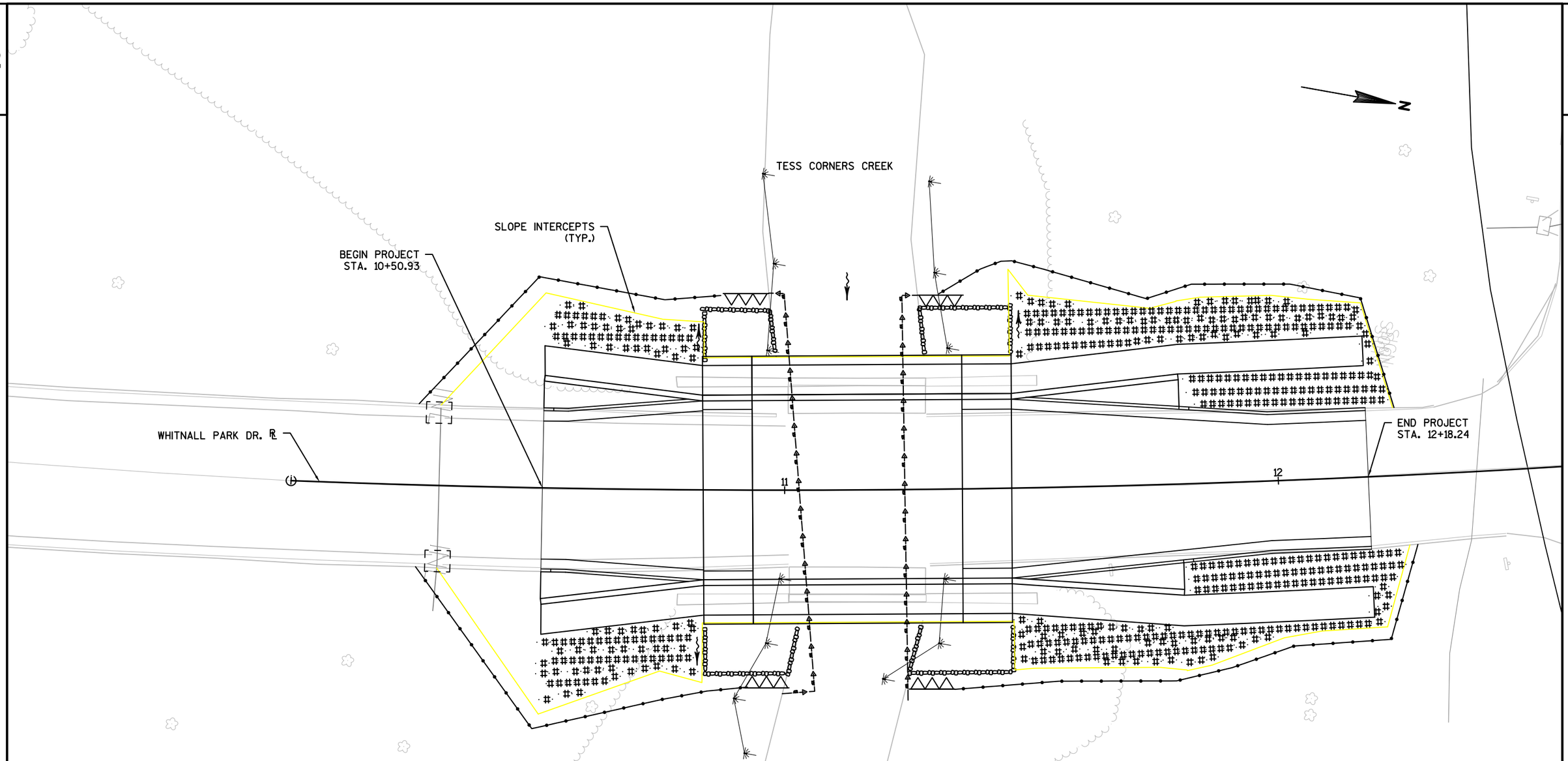
LEGEND

* SHOULDER VARIES (SEE PLAN VIEW)

Ⓐ SALVAGED TOPSOIL, SEED, FERTILIZE, AND E-MAT.

| PROJECT NO:2660-04-70 | HWY: WHITNALL PARK DRIVE | COUNTY: MILWAUKEE COUNTY | TYPICAL SECTIONS | SHEET 5 | E |
|---|---|---|---|---|---|

2




LEGEND

- EROSION MAT CLASS I TYPE A
- SILT FENCE
- TURBIDITY BARRIER
- RIPRAP MEDIUM
- SURFACE WATER FLOW
- DITCH CHECK
- INLET PROTECTION COVER TYPE C

| PROJECT NO: 2660-04-70 | HWY: WHITNALL PARK DRIVE | COUNTY: MILWAUKEE | EROSION CONTROL | SHEET 6 | E |
|---|---|---|---|---|---|

FILE NAME : P:\8461 WHITNALL PARK DRIVE BRIDGE P-40-0721\TRANSPORTATION\CADD\WHITNALL PARK\SHEETSPLAN\022001_EC.DWG
LAYOUT NAME - 022001_EC
PLOT DATE : 11/2/2015 9:15 AM PLOT BY : NICHOLAS DECENT PLOT NAME : PLOT SCALE : 1 IN:20 FT
WISDOT/CADDS SHEET 42

2

2

LEGEND

1 PAVEMENT MARKING 4-INCH EPOXY, WHITE

2 PAVEMENT MARKING 4-INCH EPOXY, DOUBLE YELLOW

SIGN ON PERMANENT SUPPORT

N

TESS CONNERS CREEK

OBJECT MARKER
STA. 10+50.93
22.19', LT

W5-52L
12"X36"

SLOPE INTERCEPTS
(TYP.)

W5-52R
12"X36"

BEGIN TAPER
STA. 10+50.93

OBJECT MARKER
STA. 11+80.34
21.43', LT

WHITNALL PARK DR. ℄

BEGIN PROJECT
STA. 10+50.93

END TAPER
STA. 10+83.30

BEGIN TAPER
STA. 11+46.18

END TAPER
STA. 11+98.24

END PROJECT
STA. 12+18.24

END TAPER
STA. 11+98.33

BEGIN TAPER
STA. 11+45.80

BEGIN TAPER
STA. 10+50.93

END TAPER
STA. 10+83.68

OBJECT MARKER
STA. 10+50.93
23.00', RT

W5-52R
12"X36"

OBJECT MARKER
STA. 11+80.31
21.93', RT

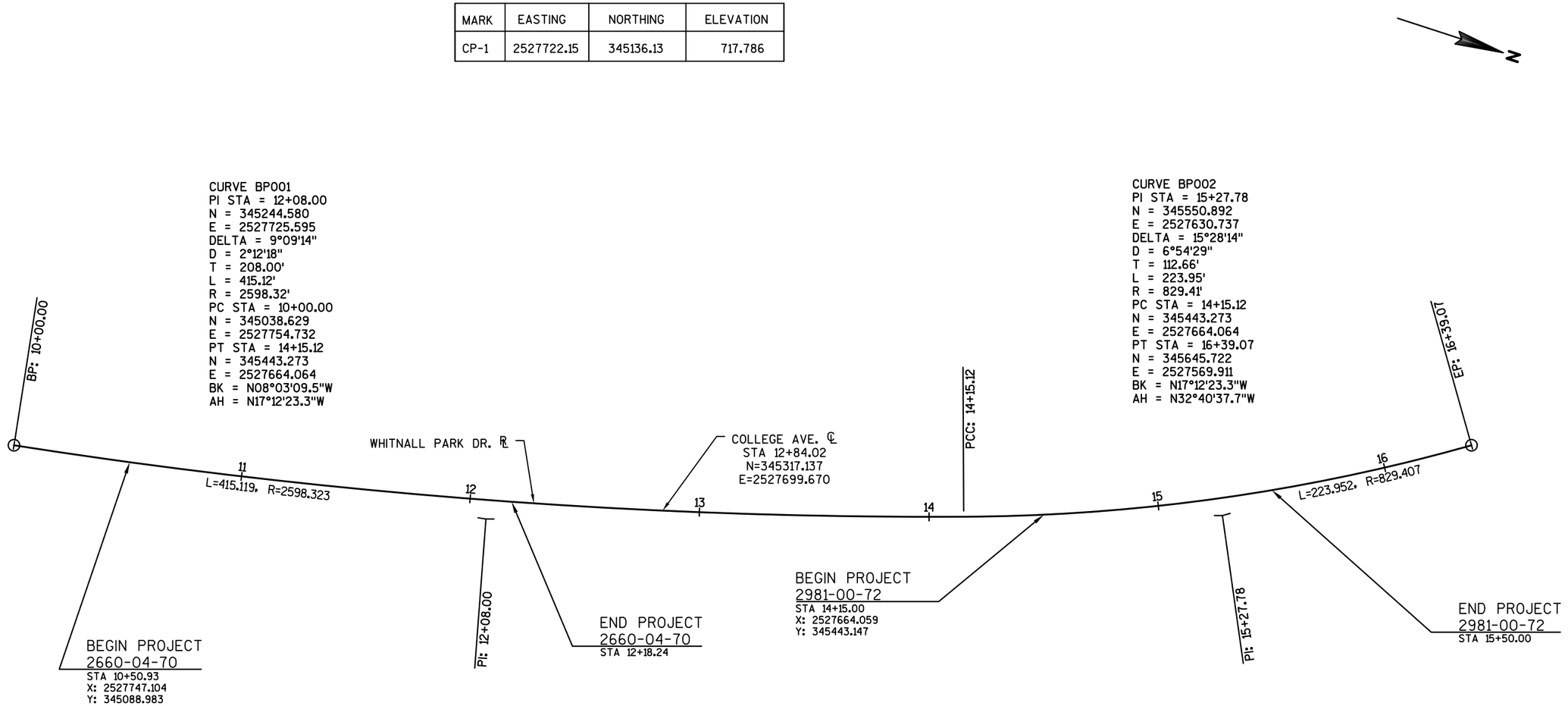
W5-52L
12"X36"

| PROJECT NO: 2660-04-70 | HWY: WHITNALL PARK DRIVE | COUNTY: MILWAUKEE | PAVEMENT MARKING AND SIGNING | SHEET 7 | E |
|---|---|---|---|---|---|

2

CONTROL POINT TABLE

| MARK | EASTING | NORTHING | ELEVATION |
|---|---|---|---|
| CP-1 | 2527722.15 | 345136.13 | 717.786 |




| PROJECT NO: 2660-04-70 | HWY: WHITNALL PARK DRIVE | COUNTY: MILWAUKEE | ALIGNMENT DIAGRAM | SHEET 8 | E |
|---|---|---|---|---|---|

FILE NAME : P:\8461 WHITNALL PARK DRIVE BRIDGE P-40-0721\TRANSPORTATION\CADD\WHITNALL PARK\SHEETSPLAN\027201_AD.DWG
LAYOUT NAME - SHEET - (2)
PLOT DATE : 11/2/2015 9:16 AM PLOT BY : NICHOLAS DECENT PLOT NAME : PLOT SCALE : 1 IN:50 FT
WISDOT/CADDS SHEET 42

DATE 04JAN16 E S T I M A T E O F Q U A N T I T I E S

| LINE NUMBER | ITEM | ITEM DESCRIPTION | UNIT | TOTAL | 2660-04-70 QUANTITY |
|---|---|---|---|---|---|
| 0010 | 201.0105 | Clearing | STA | 3.000 | 3.000 |
| 0020 | 201.0205 | Grubbing | STA | 3.000 | 3.000 |
| 0030 | 203.0600.S | Removing Old Structure Over Waterway With Minimal Debris (station) 01. 11+14. 74 | LS | 1.000 | 1.000 |
| 0050 | 204.0150 | Removing Curb & Gutter | LF | 250.000 | 250.000 |
| 0060 | 205.0100 | Excavation Common | CY | 150.000 | 150.000 |
| 0070 | 206.1000 | Excavation for Structures Bridges (structure) 01. B-40-539 | LS | 1.000 | 1.000 |
| 0090 | 208.0100 | Borrow | CY | 75.000 | 75.000 |
| 0100 | 210.0100 | Backfill Structure | CY | 372.000 | 372.000 |
| 0110 | 213.0100 | Finishing Roadway (project) 01. 2660-04-70 | EACH | 1.000 | 1.000 |
| 0130 | 305.0120 | Base Aggregate Dense 1 1/4-Inch | TON | 175.000 | 175.000 |
| 0140 | 455.0120 | Asphaltic Material PG64-28 | TON | 7.000 | 7.000 |
| 0150 | 455.0605 | Tack Coat | GAL | 10.000 | 10.000 |
| 0160 | 460.1103 | HMA Pavement Type E-3 | TON | 126.000 | 126.000 |
| 0170 | 502.0100 | Concrete Masonry Bridges | CY | 254.000 | 254.000 |
| 0180 | 502.3200 | Protective Surface Treatment | SY | 226.000 | 226.000 |
| 0190 | 502.3210 | Pigmented Surface Sealer | SY | 143.000 | 143.000 |
| 0200 | 505.0400 | Bar Steel Reinforcement HS Structures | LB | 7,220.000 | 7,220.000 |
| 0210 | 505.0600 | Bar Steel Reinforcement HS Coated Structures | LB | 35,430.000 | 35,430.000 |
| 0220 | 516.0500 | Rubberized Membrane Waterproofing | SY | 26.000 | 26.000 |
| 0230 | 516.0610.S | Sheet Membrane Waterproofing for Top Slab (structure) 01. B-40-539 | SY | 168.000 | 168.000 |
| 0250 | 550.1120 | Piling Steel HP 12-Inch X 53 Lb | LF | 640.000 | 640.000 |
| 0260 | 601.0411 | Concrete Curb & Gutter 30-Inch Type D | LF | 250.000 | 250.000 |
| 0270 | 602.0415 | Concrete Sidewalk 6-Inch | SF | 1,846.000 | 1,846.000 |
| 0340 | 612.0406 | Pipe Underdrain Wrapped 6-Inch | LF | 210.000 | 210.000 |
| 0350 | 619.1000 | Mobilization | EACH | 0.500 | 0.500 |
| 0360 | 624.0100 | Water | MGAL | 3.000 | 3.000 |
| 0370 | 625.0500 | Salvaged Topsoil | SY | 443.000 | 443.000 |
| 0380 | 628.1504 | Silt Fence | LF | 474.000 | 474.000 |
| 0390 | 628.1520 | Silt Fence Maintenance | LF | 474.000 | 474.000 |
| 0400 | 628.1905 | Mobilizations Erosion Control | EACH | 5.000 | 5.000 |
| 0410 | 628.1910 | Mobilizations Emergency Erosion Control | EACH | 2.000 | 2.000 |
| 0420 | 628.2002 | Erosion Mat Class I Type A | SY | 276.000 | 276.000 |
| 0430 | 628.6005 | Turbidity Barriers | SY | 118.000 | 118.000 |
| 0440 | 628.7015 | Inlet Protection Type C | EACH | 2.000 | 2.000 |
| 0450 | 628.7504 | Temporary Ditch Checks | LF | 25.000 | 25.000 |
| 0460 | 629.0205 | Fertilizer Type A | CWT | 0.400 | 0.400 |
| 0470 | 630.0110 | Seeding Mixture No. 10 | LB | 9.000 | 9.000 |
| 0480 | 630.0200 | Seeding Temporary | LB | 7.000 | 7.000 |
| 0490 | 633.0100 | Delineator Posts Steel | EACH | 4.000 | 4.000 |
| 0500 | 637.2230 | Signs Type II Reflective F | SF | 12.000 | 12.000 |
| 0510 | 642.5001 | Field Office Type B | EACH | 1.000 | 1.000 |
| 0590 | 645.0120 | Geotextile Fabric Type HR | SY | 284.000 | 284.000 |
| 0600 | 646.0106 | Pavement Marking Epoxy 4-Inch | LF | 668.000 | 668.000 |
| 0620 | 650.5000 | Construction Staking Base | LF | 125.000 | 125.000 |
| 0630 | 650.5500 | Construction Staking Curb Gutter and Curb & Gutter | LF | 250.000 | 250.000 |
| 0640 | 650.6500 | Construction Staking Structure Layout (structure) 01. B-40-539 | LS | 1.000 | 1.000 |

3

DATE 04JAN16 E S T I M A T E O F Q U A N T I T I E S

| LINE NUMBER | ITEM | ITEM DESCRIPTION | UNIT | TOTAL | 2660-04-70 QUANTITY |
|---|---|---|---|---|---|
| 0660 | 650.9910 | Construction Staking Supplemental Control (project) 01. 2660-04-70 | LS | 1.000 | 1.000 |
| 0680 | 650.9920 | Construction Staking Slope Stakes | LF | 125.000 | 125.000 |
| 0690 | 690.0150 | Sawing Asphalt | LF | 56.000 | 56.000 |
| 0700 | 715.0502 | Incentive Strength Concrete Structures | DOL | 2,540.000 | 2,540.000 |
| 0710 | ASP.1T0A | On-the-Job Training Apprentice at $5. 00/HR | HRS | 900.000 | 900.000 |
| 0720 | ASP.1T0G | On-the-Job Training Graduate at $5.00/HR | HRS | 800.000 | 800.000 |
| 0730 | SPV.0035 | Special 01. Field Stone Riprap Heavy | CY | 162.000 | 162.000 |
| 0740 | SPV.0090 | Special 01. Low Profile Concrete Barrier | LF | 221.000 | 221.000 |
| 0750 | SPV.0090 | Special 02. Railing Tubular Steel Pedestrian Type F-4 Modified B-40-539 | LF | 85.000 | 85.000 |
| 0770 | SPV.0090 | Special 04. Construction Staking Concrete Sidewalk | LF | 250.000 | 250.000 |
| 0780 | SPV.0165 | Special 01. Stone Facing Field Stone | SF | 570.000 | 570.000 |
| 0790 | SPV.0165 | Special 02. Anti-Graffiti Shield For Stone Facing Field Stone Surfaces | SF | 570.000 | 570.000 |

3

**CLEARING AND GRUBBING**

| CATEGORY | STATION | LOCATION | 201.0105 CLEARING STA | 201.0205 GRUBBING STA |
|---|---|---|---|---|
| 0010 | WHITNALL PARK DR. | | | |
| | 10+51 - 10+94 | LT & RT | 1 | 1 |
| | 11+36 - 12+18 | LT & RT | 2 | 2 |
| | TOTAL | | 3 | 3 |

**CURB & GUTTER REMOVAL**

| CATEGORY | STATION | LOCATION | 204.0150 REMOVING CURB & GUTTER LF |
|---|---|---|---|
| 0010 | WHITNALL PARK DR. | | |
| | 10+51 - 10+94 | LT & RT | 86 |
| | 11+36 - 12+18 | LT & RT | 164 |
| | TOTAL | | 250 |

3

**EARTH WORK SUMMARY**

| Division | From / To Station | Location | Common Excavation (1) (item # 205.0100) | | Salvaged / Un-usable Pavement Material (4) | Available Material (5) | Unexpanded Fill (8) | Expanded Fill (13) | Mass Ordinate + / - (14) | Waste | Borrow (item #208.0100) | Comment: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Cut (2) | EBS Excavation (3) | | | | Factor 1.25 | | | | |
| 1 | 10+51 - 10+94 | Whitnall Park Dr. | 63 | 0 | 17 | 46 | 22 | 27 | 19 | 17 | 22 | Existing Material to be Trucked Away |
| | 11+36 - 12+18 | Whitnall Park Dr. | 87 | 0 | 32 | 55 | 51 | 63 | -8 | 32 | 54 | Existing Material to be Trucked Away |
| Whitnall Park Dr. Subtotal | | | 150 | 0 | 49 | 101 | 72 | 90 | 11 | 49 | 75 | |
| Grand Total | | | 150 | 0 | 49 | 101 | 72 | 90 | 11 | 49 | 75 | |
| | | Total Common Exc | | 150 | | | | | | | | |

1) Common Excavation is the sum of the Cut and EBS Excavation columns. Item number 205.0100
2) Salvaged/Unsuable Pavement Material is included in Cut.
3) EBS Excavation to be backfilled with Select Borrow material. Note: this is designers choice, can be backfilled with Borrow, or Cut as well.
4) Salvaged/Unusuable Pavement Material
5) Available Material = Cut - Salvaged/Unusable Pavement Material
8) Unexpanded Fill is Fill from the End Area Earthwork Volumes
14) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material within the Division.

NOTE: ALL ITEMS ON PAGE ARE CATEGORY 0010 UNLESS OTHERWISE NOTED ON PAGE.

## FINISHING ROADWAY

| CATEGORY | STATION | 213.0100 FINISHING ROADWAY EACH |
|---|---|---|
| 0010 | WHITNALL PARK DR. | |
| | 10+51 - 12+18 | 1 |
| | TOTAL | 1 |

## BASE AGGREGATE ITEMS

| CATEGORY | STATION | LOCATION | 305.0120 BASE AGGREGATE DENSE 1-1/4 INCH TON | 624.0100 WATER MGAL |
|---|---|---|---|---|
| 0010 | WHITNALL PARK DRIVE | | | |
| | 10+50.93 - 10+83.49 | RT&LT | 48 | 1 |
| | 10+83.49 - 10+93.49 | RT&LT | 16 | 0.5 |
| | 11+35.99 - 11+45.99 | RT&LT | 16 | 0.5 |
| | 11+45.99 - 11+80.37 | RT&LT | 95 | 1 |
| | TOTAL | | 175 | 3 |

## CONCRETE ITEMS

| CATEGORY | STATION | LOCATION | 601.0411 CONCRETE CURB & GUTTER 30-INCH TYPE D LF | 602.0415 CONCRETE SIDEWALK 6-INCH SF |
|---|---|---|---|---|
| 0010 | WHITNALL PARK DRIVE | | | |
| | 10+50.93 - 10+93.49 | LT & RT | 85 | 680 |
| | 11+35.99 - 12+18.24 | LT & RT | 165 | 1,166 |
| | TOTAL | | 250 | 1,846 |

NOTE: ALL ITEMS ON PAGE ARE CATEGORY 0010 UNLESS OTHERWISE NOTED ON PAGE.

## ASPHALTIC ITEMS

| CATEGORY | STATION | LOCATION | Area (S.Y.) | 455.0120 ASPHALTIC MATERIAL PG64-28 TON | 455.0605 TACK COAT GAL | 460.1103 HMA PAVEMENT TYPE E-3 TON |
|---|---|---|---|---|---|---|
| 0010 | WHITNALL PARK DRIVE | | | | | |
| | 10+50.93 - 10+93.49 | LT & RT | 144 | 2 | 4 | 32 |
| | 11+35.99 - 12+18.24 | LT&RT | 250 | 3 | 6 | 56 |
| | TOTAL | | | 5 | 10 | 88 |

3

## MOBILIZATION

| CATEGORY | LOCATION | 619.1000 MOBILIZATION EACH |
|---|---|---|
| 0010 | WHITNALL PARK DR. | 0.5 |
| | TOTAL | 0.5 |

## EROSION MATERIALS

| CATEGORY | STATION | LOCATION | 628.2002 EROSION MAT CLASS 1 TYPE A SY | 628.1504 SILT FENCE LF | 628.1520 SILT FENCE MAINTENANCE LF | 628.6005 TURBIDITY BARRIERS SY | 628.7015 INLET PROTECTION TYPE C EACH | 628.7504 TEMPORARY DITCH CHECK LF | 630.0200 SEEDING TEMPORARY LB |
|---|---|---|---|---|---|---|---|---|---|
| 0010 | WHITNALL PARK DR. | | | | | | | | |
| | 10+51 - 12+18 | LT & RT | 221 | 379 | 379 | - | - | 20 | 6 |
| | 10+30 | LT & RT | - | - | - | - | 2 | - | - |
| | 11+03 | LT & RT | - | - | - | 57 | - | - | - |
| | 11+024 | LT & RT | - | - | - | 61 | - | - | - |
| | SUB-TOTAL | | 221 | 379 | 379 | - | - | 20 | 6 |
| | 25% UNDISTRIBUTED QUANTITY | | 55 | 95 | 95 | - | - | 5 | 1 |
| | TOTAL | | 276 | 474 | 474 | 118 | 2 | 25 | 7 |

NOTE: ALL ITEMS ON PAGE ARE CATEGORY 0010 UNLESS OTHERWISE NOTED ON PAGE.



FILE NAME : P:\8461 Whitnall Park Drive Bridge P-40-0721\Transportation\CADD\Whitnall Park\SheetsPlan\030201_mq PLOT DATE : 12/18/2015 2:54:49 PM PLOT BY : JUSTIN FLICKINGER PLOT NAME : 030201_mq PLOT SCALE : 1:1

## FINISHING ITEMS

| CATEGORY | STATION | LOCATION | 625.0500 SALVAGED TOPSOIL SY | 629.0205 FERTILIZER TYPE A CWT | 630.0110 SEEDING MIXTURE NO. 10 LB |
|---|---|---|---|---|---|
| 0010 | WHITNALL PARK DR. | | | | |
| | 10+51 - 12+18 | RT & LT | 354 | 0.3 | 7 |
| | SUB-TOTAL | | 354 | 0.3 | 7 |
| | 25% UNDISTRIBUTED QUANTITIES | | 89 | 0.1 | 2 |
| | TOTAL | | 443 | 0.4 | 9 |

## MOBILIZATION EROSION CONTROL

| CATEGORY | LOCATION | 628.1905 MOBILIZATIONS EROSION CONTROL EACH |
|---|---|---|
| 0010 | WHITNALL PARK DR. | 5 |
| | TOTAL | 5 |

## EMERGENCY MOBILIZATION EROSION CONTROL

| CATEGORY | LOCATION | 628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH |
|---|---|---|
| 0010 | WHTNALL PARK DR. | 2 |
| | TOTAL | 2 |

## FIELD OFFICE

| CATEGORY | LOCATION | 642.5001 FIELD OFFICE TYPE B EACH |
|---|---|---|
| 0010 | WHTNALL PARK DR. | 1 |
| | TOTAL | 1 |

NOTE: ALL ITEMS ON PAGE ARE CATEGORY 0010 UNLESS OTHERWISE NOTED ON PAGE.



FILE NAME : P:\8461 Whitnall Park Drive Bridge P-40-0721\Transportation\CADD\Whitnall Park\SheetsPlan\030201_mq PLOT DATE : 12/18/2015 2:54:49 PM PLOT BY : JUSTIN FLICKINGER PLOT NAME : 030201_mq PLOT SCALE : 1:1

3

## PERMANENT SIGNING

| CATEGORY | STATION | LOCATION | 637.2230 SIGNS TYPE II REFLECTIVE F SF | 633.0100 DELINEATOR POSTS STEEL EACH |
|---|---|---|---|---|
| 0010 | WHITNALL PARK DR. | | | |
| | 10+51 | LT&RT | 6 | 2 |
| | 11+80 | LT&RT | 6 | 2 |
| | | | 12 | 4 |

## PAVEMENT MARKING

| CATEGORY | STATION | | | LOCATION | 646.0106 PAVEMENT MARKING EPOXY 4-INCH WHITE LF | 646.0106 PAVEMENT MARKING EPOXY 4-INCH YELLOW LF | REMARKS |
|---|---|---|---|---|---|---|---|
| 0010 | WHITNALL PARK DR. | | | | | | |
| | 10+51 | - | 12+18 | LT&RT | 334 | - | SOLID WHITE |
| | 10+51 | - | 12+18 | CENTER | - | 334 | DOUBLE SOLID YELLOW |
| | SUB-TOTAL | | | | 334 | 334 | |
| | TOTAL | | | | 668 | | |

3

## CONSTRUCTION STAKING

| CATEGORY | LOCATION | 650.5000 CONSTRUCTION STAKING BASE LF | 650.5500 CONSTRUCTION STAKING CURB GUTTER AND CURB AND GUTTER LF | 650.9910.01 CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (2660-04-70) LS | 650.9920 CONSTRUCTION STAKING SLOPE STAKES LF | SPV.0090.04 CONSTRUCTION STAKING CONCRETE SIDEWALK LF |
|---|---|---|---|---|---|---|
| 0010 | WHTNALL PARK DR. | 125 | 250 | 1 | 125 | 250 |
| | TOTAL | 125 | 250 | 1 | 125 | 250 |

## SAWCUTTING ITEMS

| CATEGORY | STATION | LOCATION | 690.0150 SAWING ASPHALT LF |
|---|---|---|---|
| 0010 | WHITNALL PARK DR. | | |
| | 10+51 | LT&RT | 28 |
| | 12+18 | LT&RT | 28 |
| | TOTAL | | 56 |

NOTE: ALL ITEMS ON PAGE ARE CATEGORY 0010 UNLESS OTHERWISE NOTED ON PAGE.

CURVE BP001
PI STA = 12+08.00
N = 345244.580
E = 2527725.595
DELTA = 9°09'14"
D = 2°12'18"
T = 208.00'
L = 415.12'
R = 2598.32'
PC STA = 10+00.00
N = 345038.629
E = 2527754.732
PT STA = 14+15.12
N = 345443.273
E = 2527664.064
BK = N08°03'09.5"W
AH = N17°12'23.3"W

BEGIN PROJECT
STA 10+50.93
X: 2527747.104
Y: 345088.983

END PROJECT
STA 12+18.24

WHITNALL PARK DR.

SAWCUT STA. 10+50.93
MATCH EXISTING

B-40-539 REPLACES
P-40-0721

TESS CORNERS CREEK

CLEAR ROADWAY
WIDTH

CONCRETE CURB & GUTTER
30" TYPE D (TYP.)

CONCRETE SIDEWALK
5-INCH SPECIAL, TYP.

6.0' SIDEWALK

SAWCUT STA. 12+18.24
MATCH EXISTING

10+00
PCC:
STA. 10+00.00

13.53'
14.42'
XXXX
XXXX

11+00
42.50'
36.19'

12+00
11.44'
12.08'

13+00
14+00
PT:
STA. 14+15.12

WHITNALL PARK DR. ℄

SLOPE INTERCEPTS (TYP.)

6.0' SIDEWALK

BM-1

LOW PROFILE
CONCRETE BARRIER

PI: 12+08.00

W. COLLEGE AVENUE

BENCHMARK TABLE

| NO. | STA./OFFSET | DESCRIPTION | ELEV. |
|---|---|---|---|
| BM-1 | 11+28.14, 15.71' RT | CHISELED "□" AT NORTHEAST CORNER OF EXISTING STRUCTURE | 717.83' |

EXISTING PROFILE
PVI STA 10+50.93
PVI EL 717.64
STA 11+43.82
EL 717.14
PVI STA 12+18.24
PVI EL 716.54
-0.46%
-0.54%
-0.81%
-1.16%
MATCH EXISTING GRADE
PROPOSED PROFILE
MATCH EXISTING GRADE

STA 11+14.74
STRUCTURE B-40-539 REQUIRED
SINGLE SPAN-FLAT CONCRETE SLAB
42'-6" OVERALL LENGTH
36'-2 ¼" CLEAR ROADWAY WIDTH
0°0'0" SKEW

PROPOSED GRADE
EXISTING GRADE

725
720
715
710

717.91
717.63
717.64
717.64
717.52
717.38
717.15
717.09
716.78
716.69
716.54
716.54
716.37
716.56
716.25
716.28
716.27

8+50 9+00 9+50 10+00 10+50 11+00 11+50 12+00 12+50 13+00 13+50 14+00 14+50

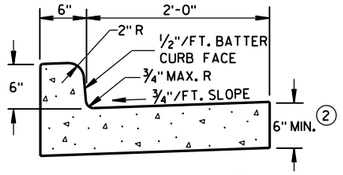
| PROJECT NO: 2660-04-70 | HWY: WHITNALL PARK DRIVE | COUNTY: MILWAUKEE | PLAN AND PROFILE: WHITNALL PARK DR. | SHEET 16 | E |
|---|---|---|---|---|---|

# Standard Detail Drawing List

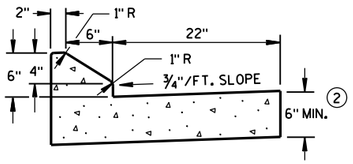
| | |
|---|---|
| 08D01-18 | CONCRETE CURB, CONCRETE CURB AND GUTTER AND TIES |
| 08E08-03 | TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS |
| 08E09-06 | SILT FENCE |
| 08E10-02 | INLET PROTECTION TYPE A, B, C AND D |
| 08E11-02 | TURBIDITY BARRIER |
| 12A03-10 | NAME PLATE (STRUCTURES) |
| 15C02-05A | BARRICADES AND SIGNS FOR MAINLINE CLOSURES |
| 15C02-05B | BARRICADES AND SIGNS FOR MAINLINE CLOSURES |
| 15C06-07 | SIGNING & MARKING FOR TWO LANE BRIDGES |
| 15C08-16A | PAVEMENT MARKING (MAINLINE) |



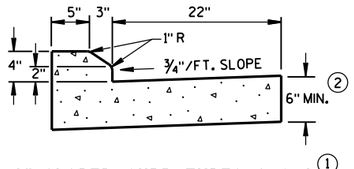
6




TYPES A & D ①

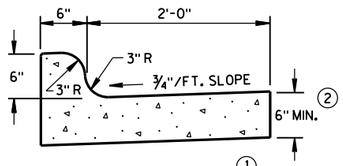



6" SLOPED CURB TYPES G & J ①

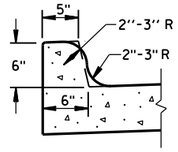



4" SLOPED CURB TYPES G & J ①

**CONCRETE CURB & GUTTER 30"**

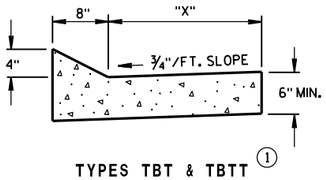



TYPES K & L ①




OPTIONAL CURB SHAPE FOR TYPES K & L ①

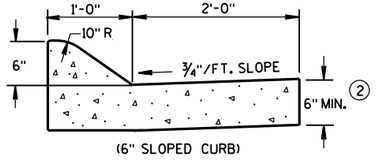
**CONCRETE CURB & GUTTER 30"**



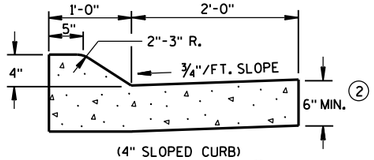

TYPES TBT & TBTT ①

**CONCRETE CURB & GUTTER**

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

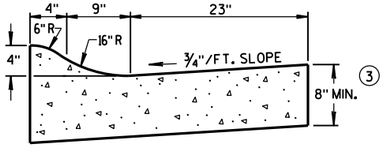



(6" SLOPED CURB)




(4" SLOPED CURB)

TYPES A & D ①




4" SLOPED CURB TYPES R & T ① ④

**CONCRETE CURB & GUTTER 36"**

## GENERAL NOTES

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

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

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

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

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

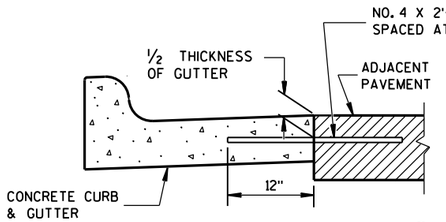
① TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K, R AND TBTT.

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.

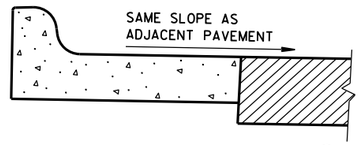
③ THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.

④ THE FACE OF CURB IS 6" FROM THE BACK OF CURB.

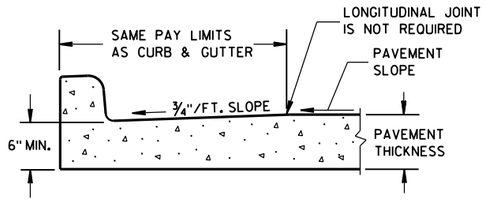
⑤ WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.



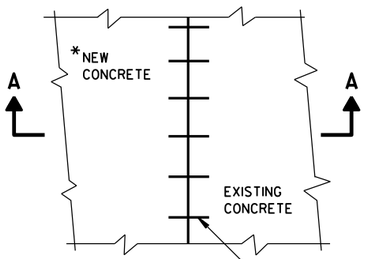

TYPICAL TIE BAR LOCATION ①




REVERSE SLOPE GUTTER ⑤
(TYPICAL FOR ALL CURB & GUTTER TYPES)

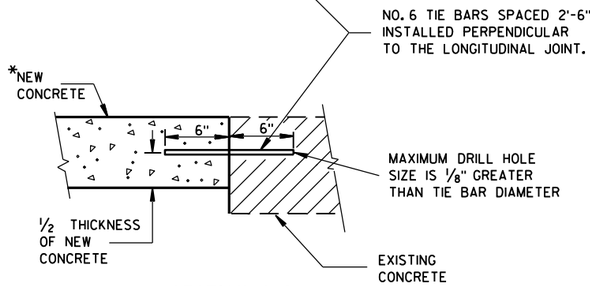



PARTIAL SECTION OF PAVEMENT
WITH INTEGRAL CURB & GUTTER



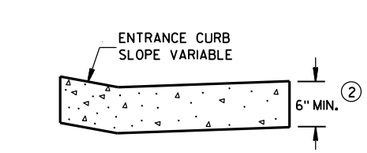

PLAN VIEW

*NEW CURB & GUTTER, SURFACE DRAINS, CONCRETE PAVEMENT OR OTHER NEW CONCRETE.

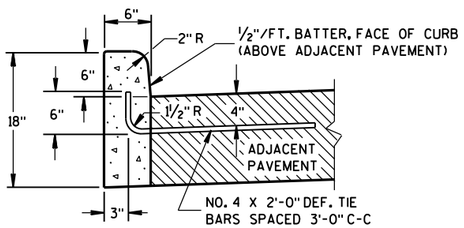



SECTION A-A

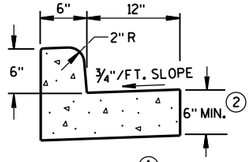
TIE BARS DRILLED
INTO EXISTING PAVEMENT



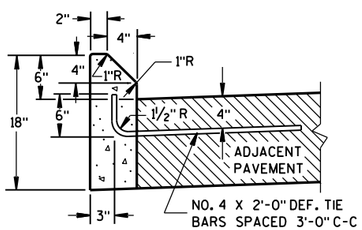

DRIVEWAY ENTRANCE CURB
(WHEN DIRECTED BY THE ENGINEER)



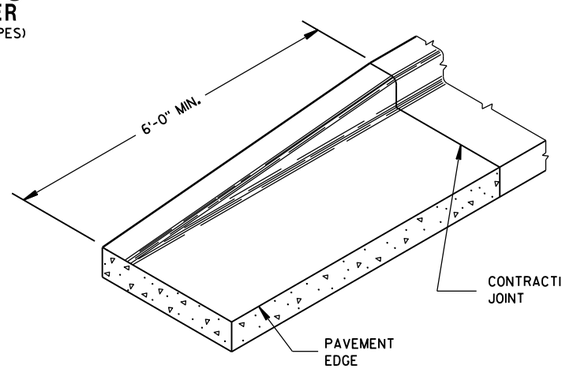

① TYPES A & D




① TYPES A & D
CONCRETE CURB & GUTTER 18"




① TYPES G & J




END SECTION CURB & GUTTER

CONCRETE CURB

CONCRETE CURB, CONCRETE CURB & GUTTER AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015 — DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

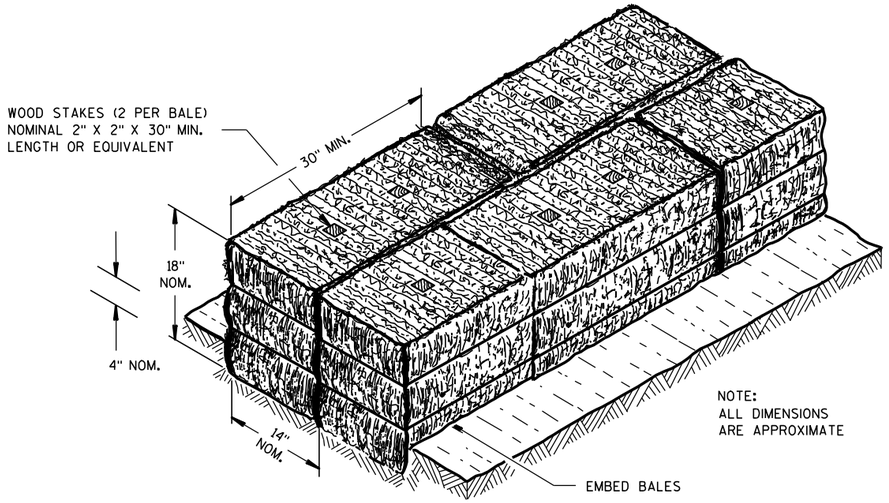


6

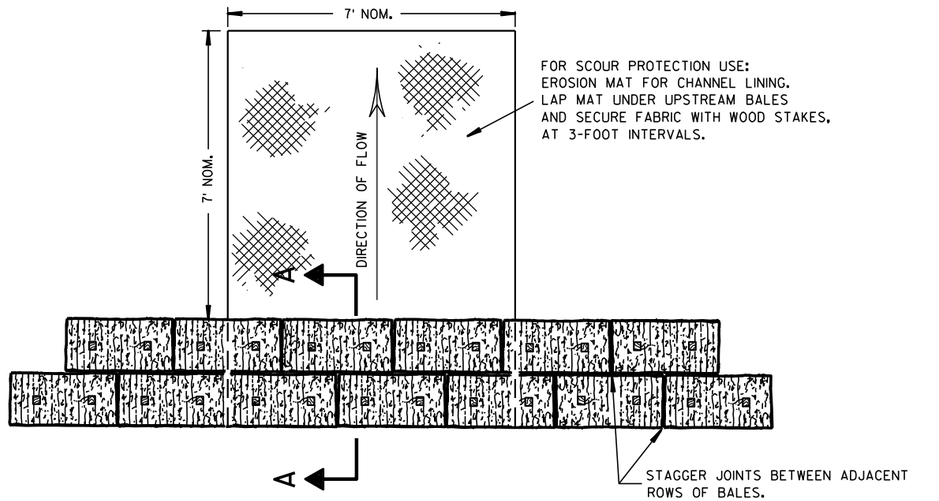
S.D.D. 8 D 1-18

6

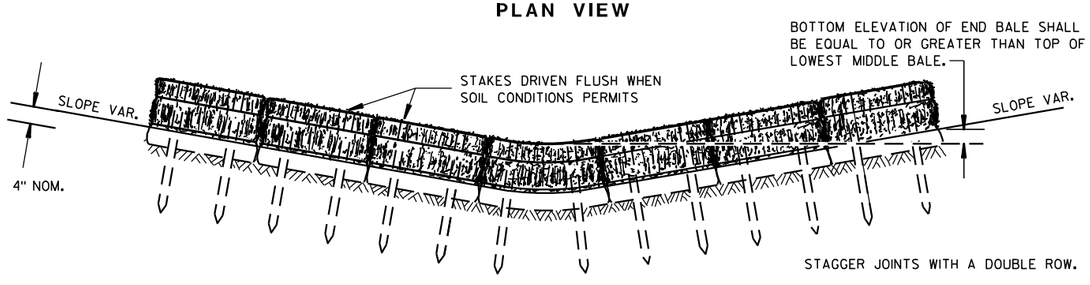
S.D.D. 8 D 1-18




SECTION A-A




PLAN VIEW



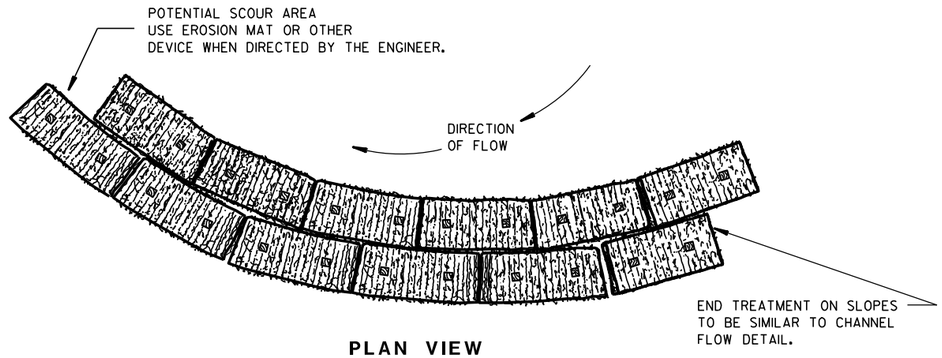

FRONT ELEVATION

## TEMPORARY DITCH CHECK USING EROSION BALES (1)

## GENERAL NOTES

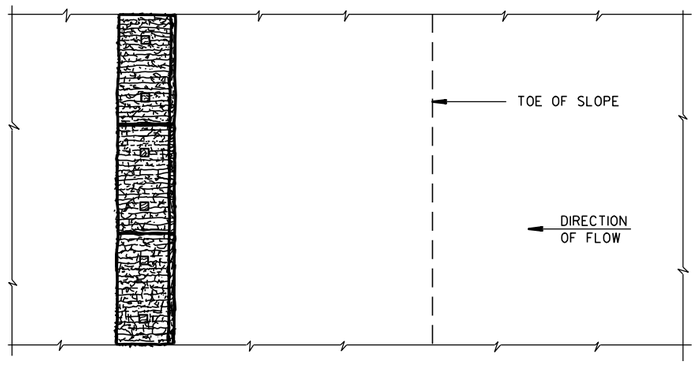
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

(1) TEMPORARY DITCH CHECKS EITHER EROSION BALES OR MANUFACTURED SHALL BE PAID FOR UNDER THE BID ITEM OF TEMPORARY DITCH CHECK. THE DEPARTMENT WILL NOT PAY FOR TEMPORARY DITCH CHECKS CONSTRUCTED OF A SINGLE ROW OF EROSION BALES.

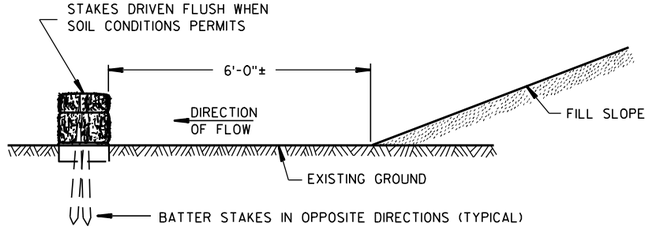



PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW




PLAN VIEW




FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

## EROSION BALES FOR SHEET FLOW

**TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS**

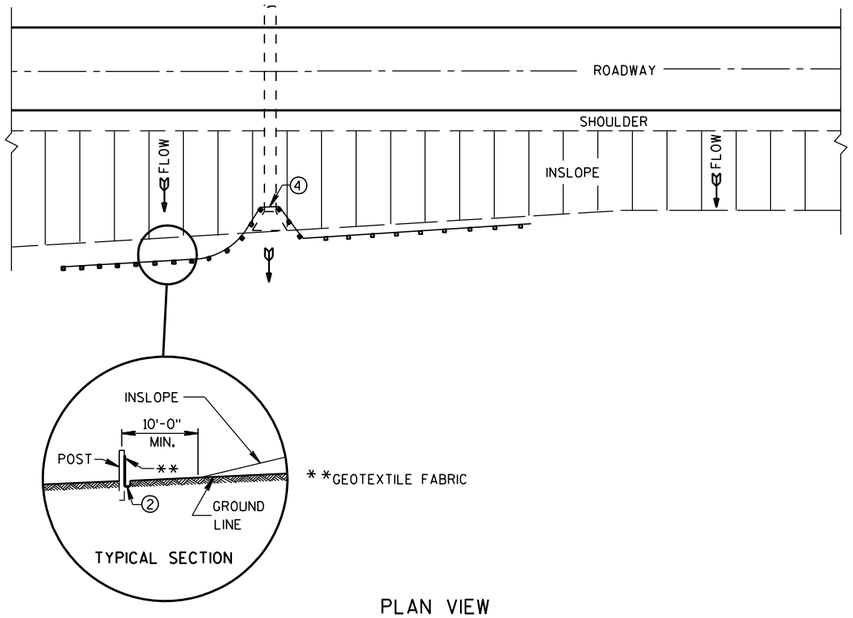
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6/04/02 DATE — /S/ Beth Cannestra — CHIEF ROADWAY DEVELOPMENT ENGINEER

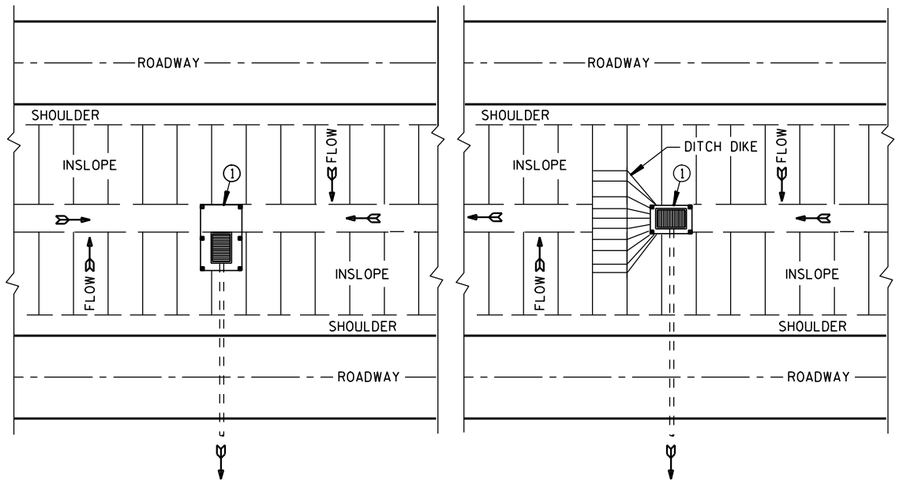
FHWA


6
S.D.D. 8 E 8-3




PLAN VIEW

## TYPICAL APPLICATION OF SILT FENCE



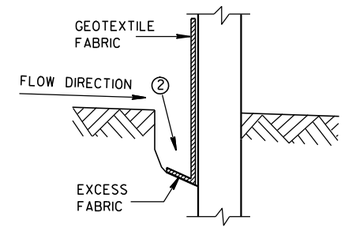

PLAN VIEW

## SILT FENCE AT MEDIAN SURFACE DRAINS

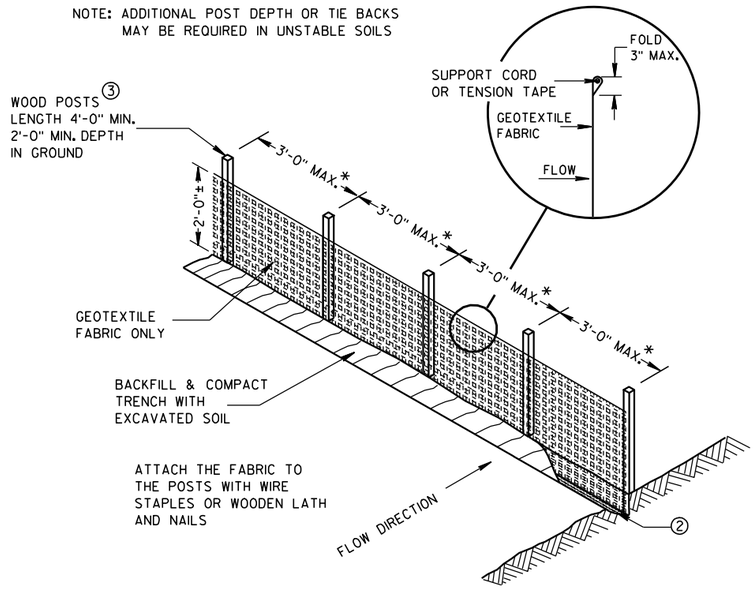
## GENERAL NOTES

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

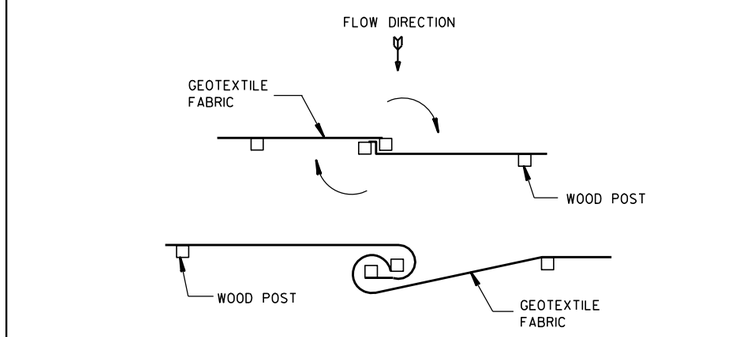
1. HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
2. FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.
4. SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
5. CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



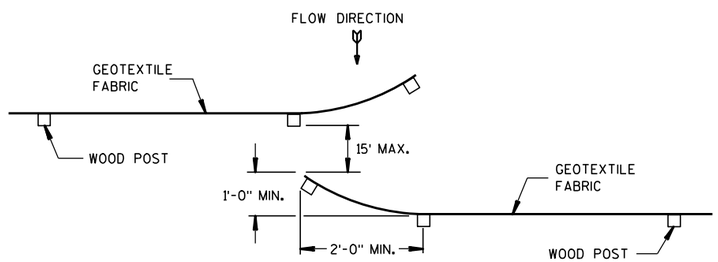

## TRENCH DETAIL




## SILT FENCE

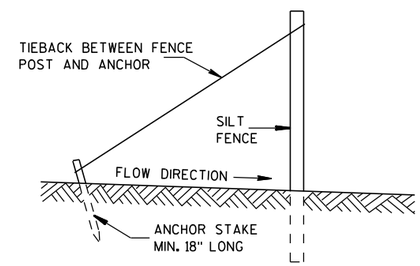



TWIST METHOD




HOOK METHOD

## JOINING TWO LENGTHS OF SILT FENCE 5




## SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

**SILT FENCE**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

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S.D.D. 8 E 9-6

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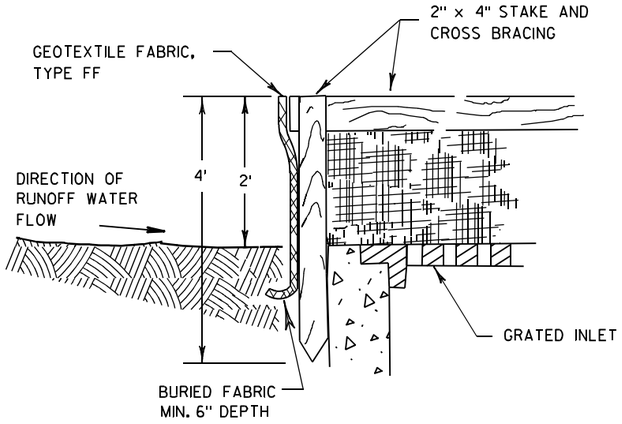
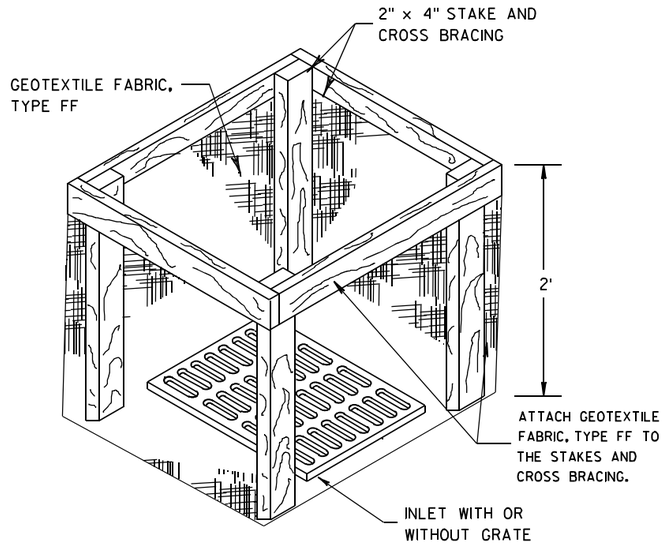
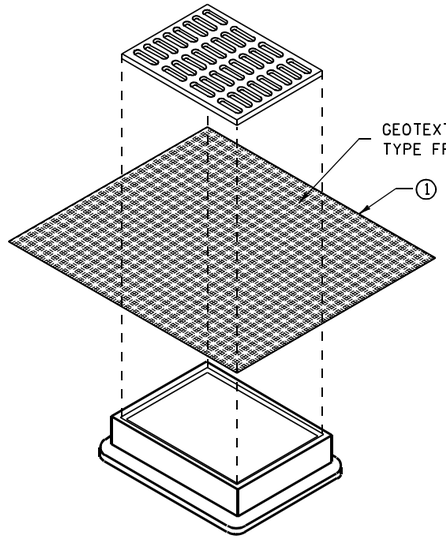


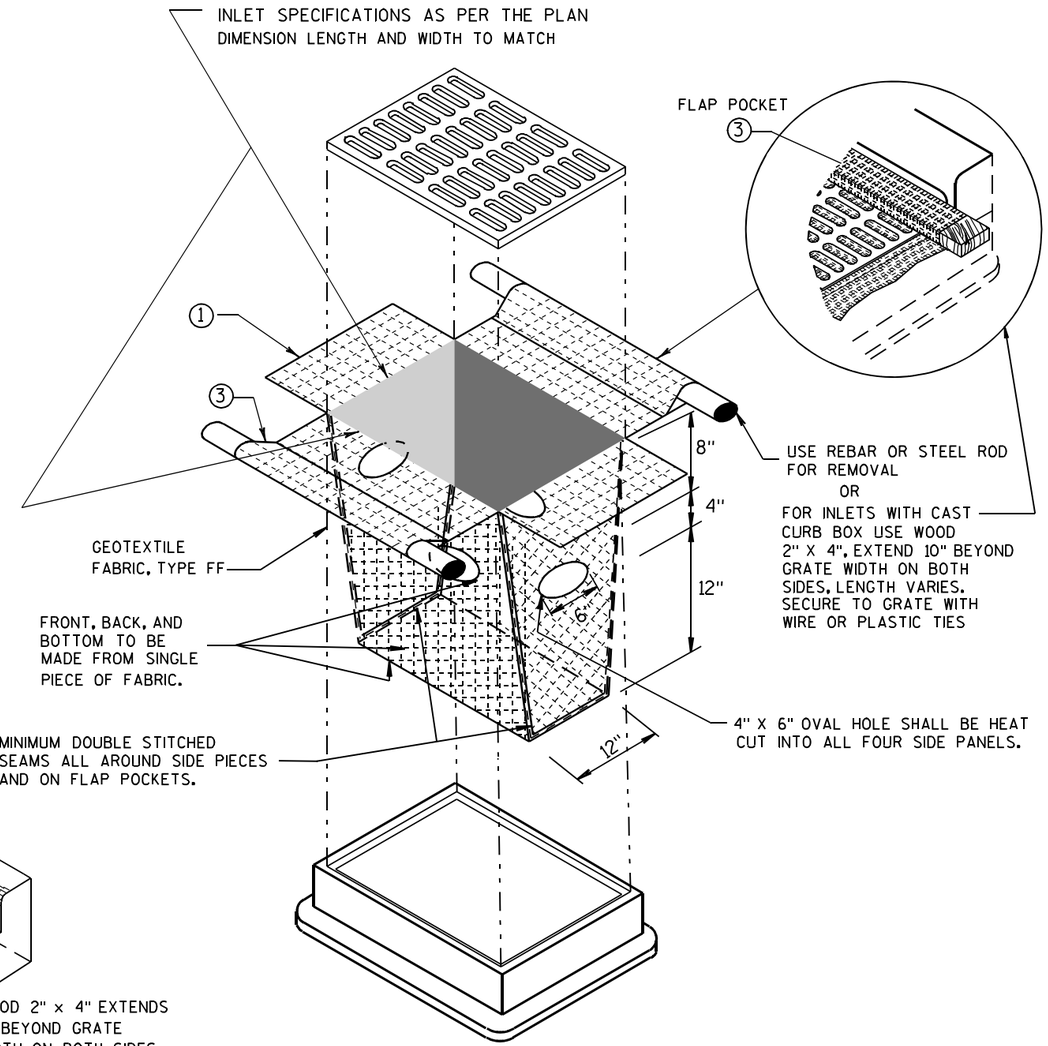



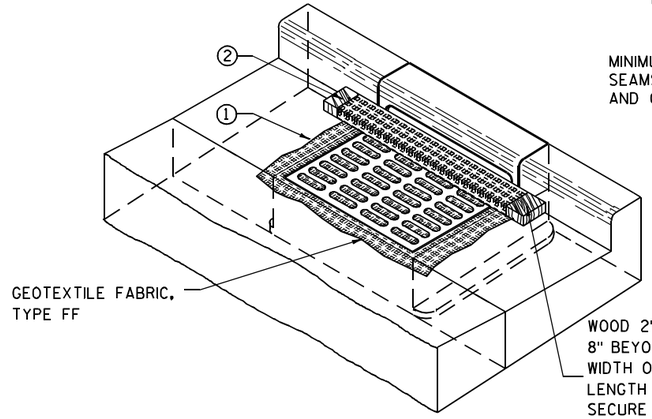

## INLET PROTECTION, TYPE A




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

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




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

## INLET PROTECTION, TYPE D

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

## GENERAL NOTES

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

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

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

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

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

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

## INSTALLATION NOTES

### TYPE B & C

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

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

### TYPE D

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

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

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

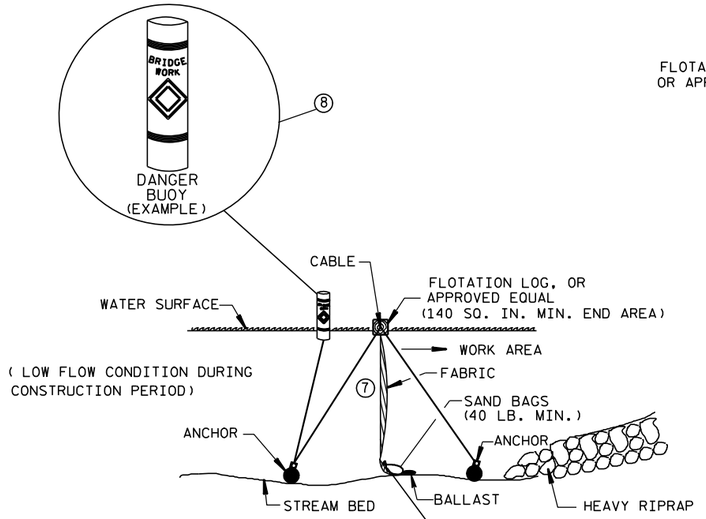
10/16/02
DATE

/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

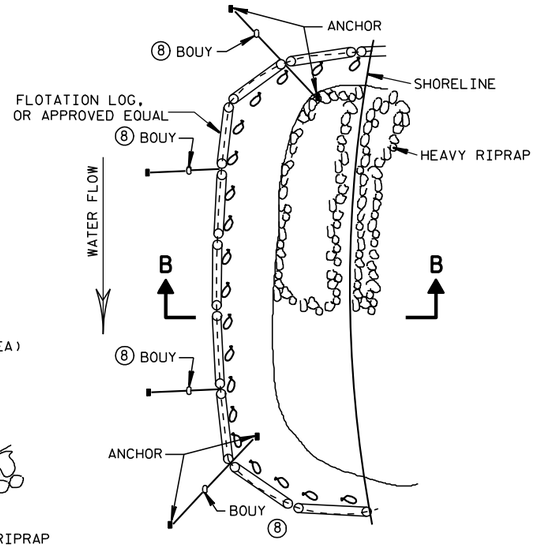
FHWA

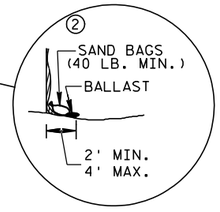



6
S.D.D. 8 E 10-2

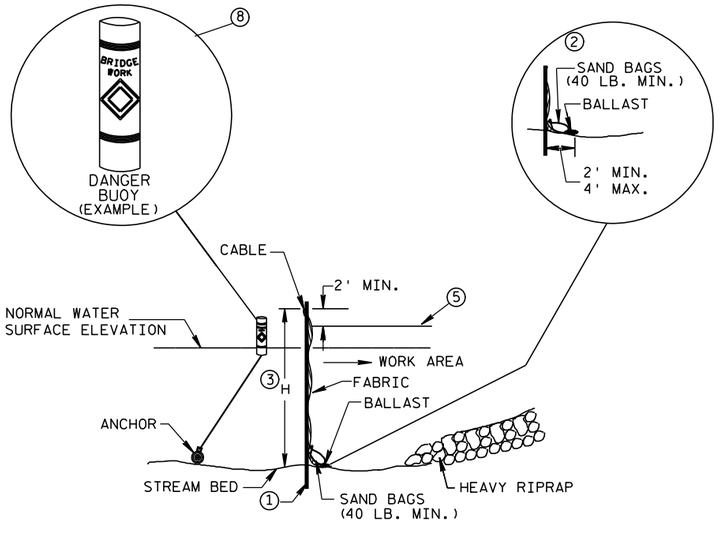



**SECTION B-B**



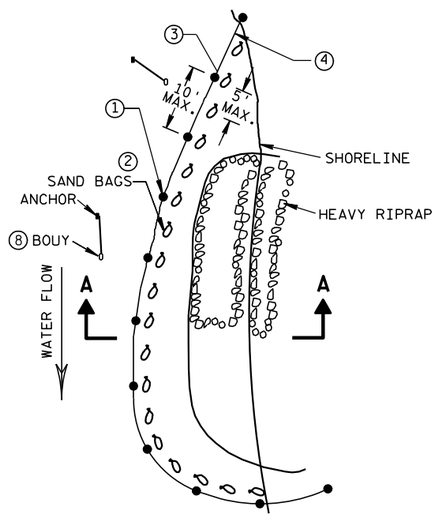




**TURBIDITY BARRIER FLOAT ALTERNATIVE**
**CAUTION - SEE NOTE 6**




**SECTION A-A**




**PLAN VIEW**

**TURBIDITY BARRIER STANDARD POST INSTALLATION**

**TURBIDITY BARRIER PLACEMENT DETAILS**

## 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.

TURBIDITY BARRIER MAY BE REMOVED AT THE ENGINEERS DISCRETION, WHEN PERMANENT EROSION CONTROL MEASURES HAVE BEEN ESTABLISHED.

① DRIVEN STEEL POSTS, PIPES, OR CHANNELS. LENGTH SHALL BE SUFFICIENT TO SECURELY SUPPORT BARRIER AT HIGH WATER ELEVATIONS.

② SANDBAGS TO BE USED AS ADDITIONAL BALLAST WHEN ORDERED BY THE ENGINEER TO MEET ADVERSE FIELD CONDITIONS. SPACE AS APPROPRIATE FOR SITE CONDITIONS.

③ WHEN BARRIER HEIGHT, H, EXCEEDS 8 FT., POST SPACING MAY NEED TO BE DECREASED.

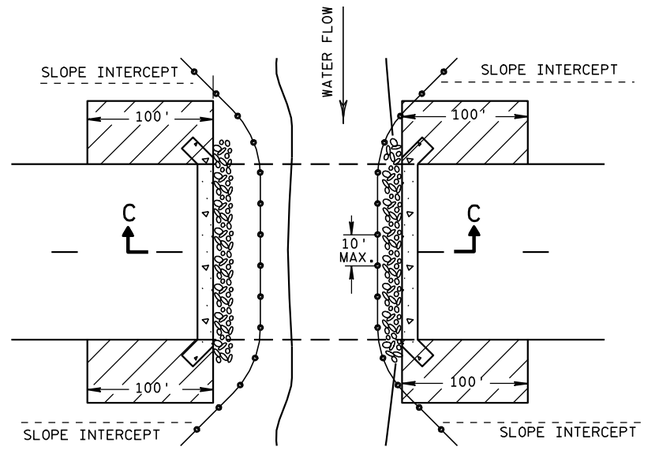
④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.

⑤ ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION PERIOD. MIMIMUM BARRIER HEIGHT SHALL BE 2'GREATER THAN EITHER THE O2 ELEVATION OR THE ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION, WICHEVER IS GREATER.

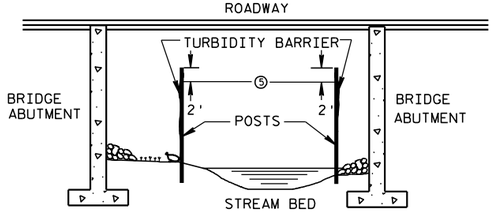
⑥ FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BED ROCK PREVENTS THE INSTALLATION OF POSTS.

⑦ ALLOW SUFFICIENT SLACK VERTICALLY AND HORIZONTALLY SO THAT SEDIMENT BUILD UP WILL NOT SEPARATE OR LOWER THE TURBIDITY BARRIER.

⑧ USE AS DIRECTED BY COAST GUARD OR DNR PERMIT WHEN WORKING IN NAVIGABLE WATERWAYS.




**PLAN VIEW**




**SECTION C-C**

**TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES**

**TURBIDITY BARRIER**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/04/02 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

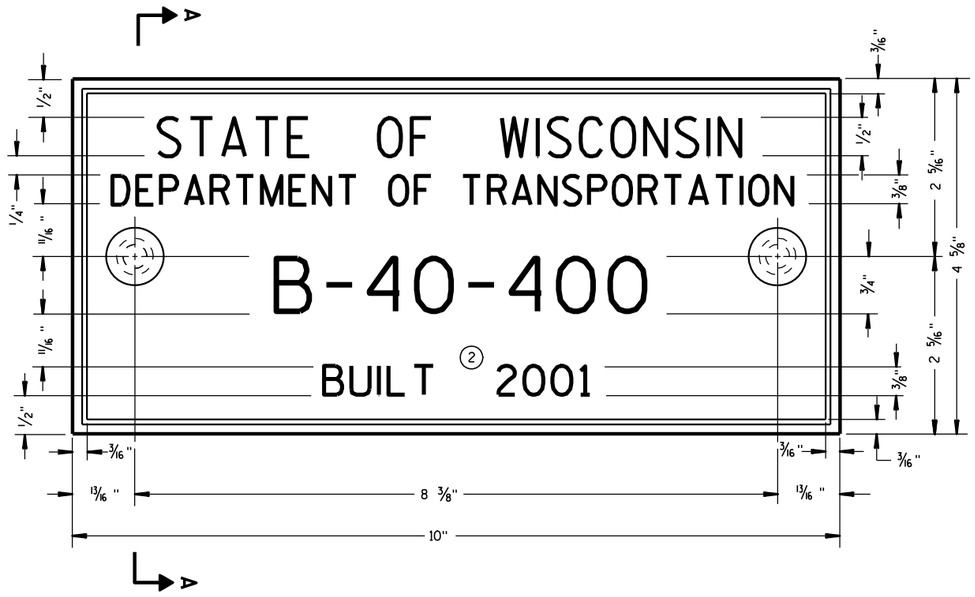


6

S.D.D. 8 E 11-2

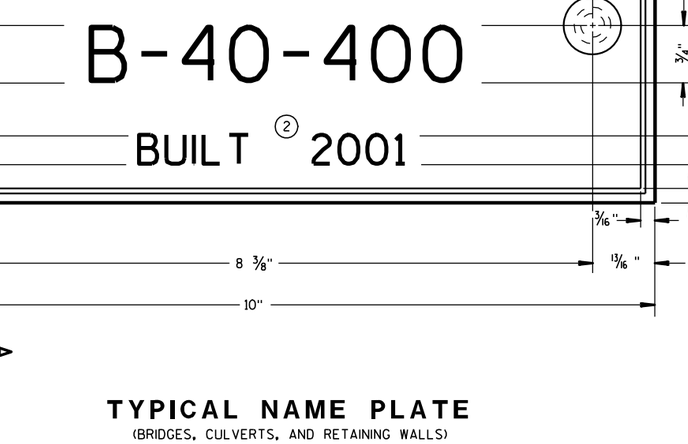
6

S.D.D. 8 E 11-2




## TYPICAL NAME PLATE

(BRIDGES, CULVERTS, AND RETAINING WALLS)




## NUMBERING DESIGNATION
## MULTI-UNIT STRUCTURES

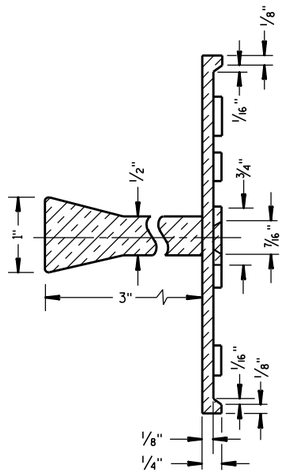
## GENERAL NOTES

NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

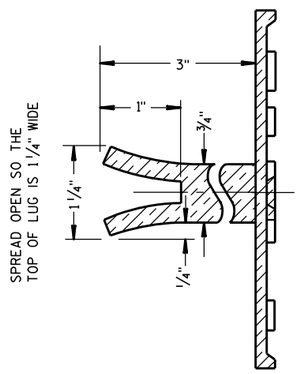
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

(1) EPOXY RESIN SHALL BE FROM AN APPROVED MANUFACTURER AND USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

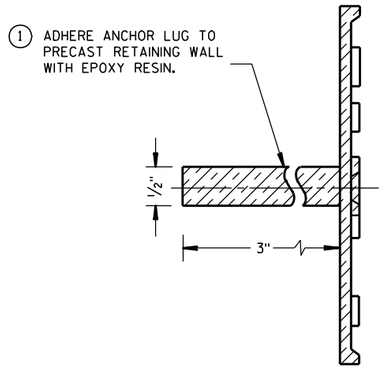
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.




SECTION A-A




ALTERNATE LUG




## ALTERNATE LUG

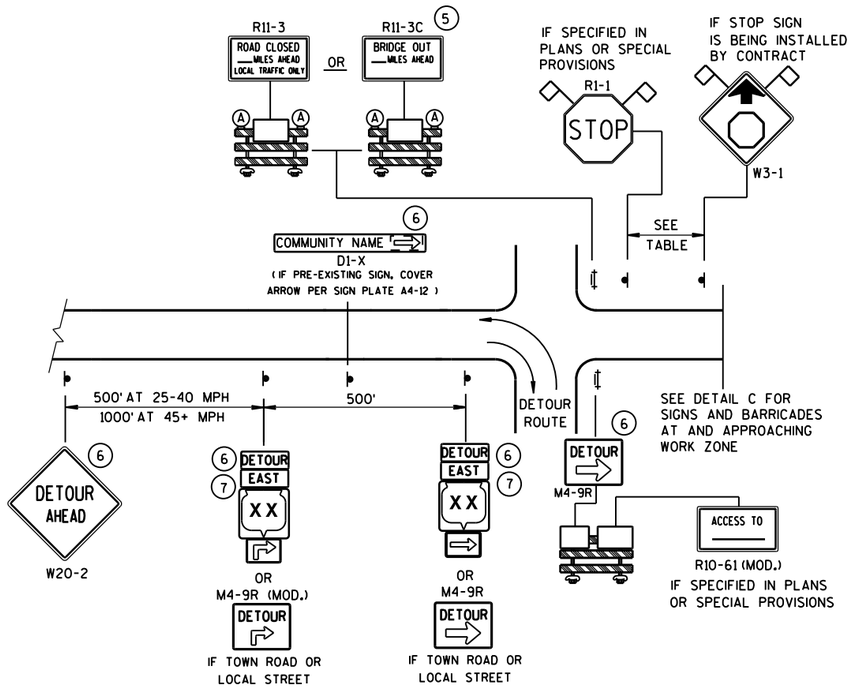
(FOR ATTACHMENT TO PRECAST STRUCTURES)

| NAME PLATE (STRUCTURES) | |
|---|---|
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | |
| APPROVED | |
| 3/26/10 DATE | /S/ Scot Beck -- CHIEF STRUCTURAL DEVELOP ENGINEER |
| FHWA | |



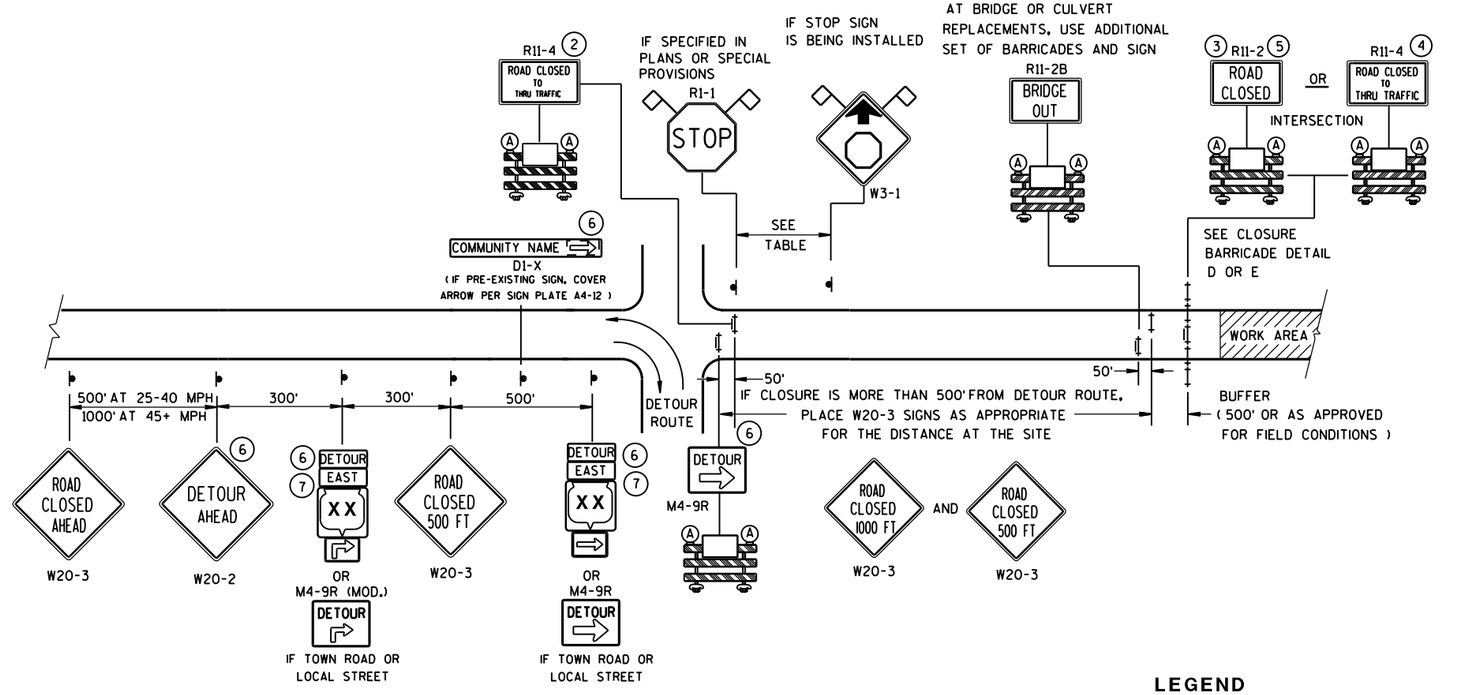
6

S.D.D. 12 A 3-10



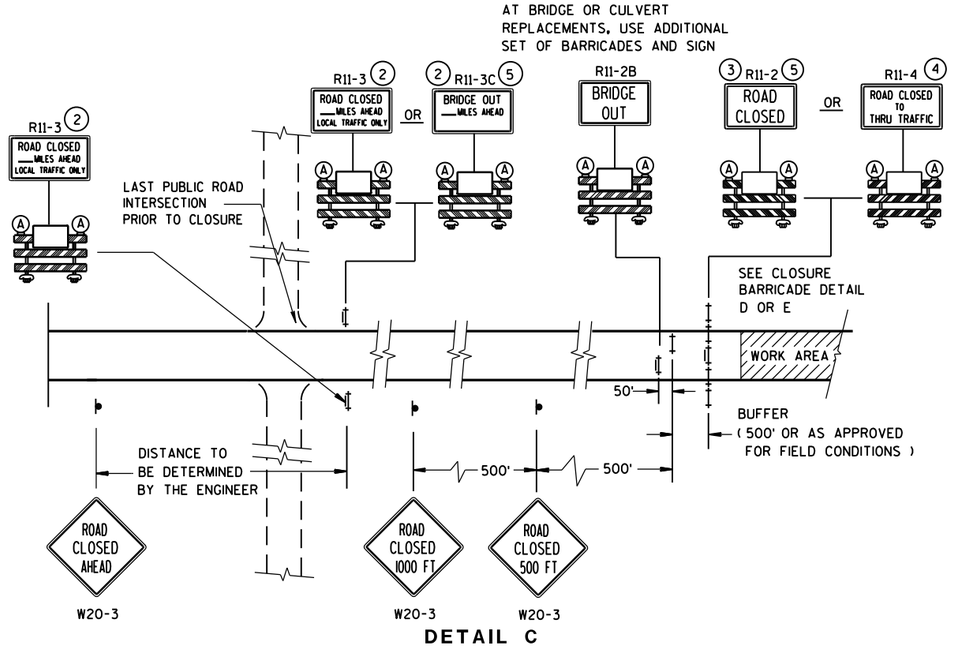

## DETAIL A
## MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE GREATER THAN ½ MILE FROM DETOUR ROUTE ( 1000 FEET IF URBAN )




## DETAIL B
## MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE LESS THAN ½ MILE FROM DETOUR ROUTE ( 1000 FEET IF URBAN )




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

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

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

### LEGEND

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

**BARRICADES AND SIGNS FOR MAINLINE CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

8/2013 DATE

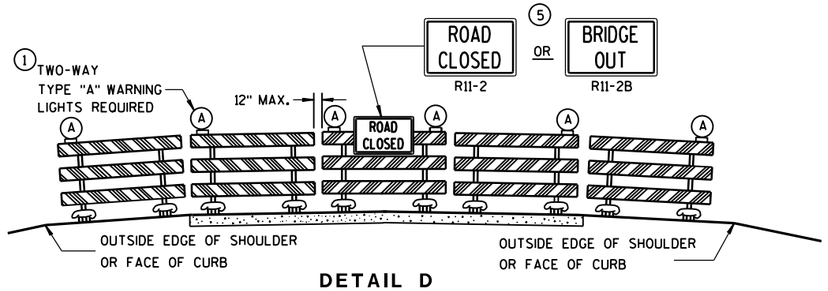
/S/ Travis Feltes
STATE TRAFFIC ENGINEER

FHWA




6

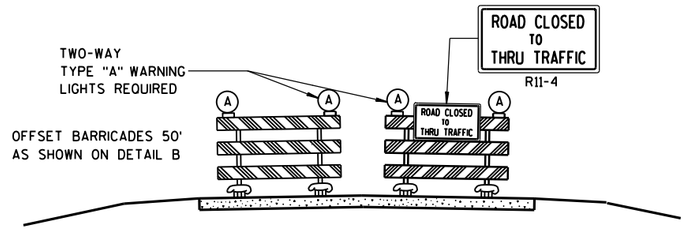
S.D.D. 15 C 2-5a




**DETAIL D**

## ROAD CLOSURE BARRICADE DETAIL

APPROACH VIEW




**DETAIL E**

## LANE CLOSURE BARRICADE DETAIL

APPROACH VIEW

SEE SDD 15C2-SHEET "**a**" FOR LEGEND

## GENERAL NOTES

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

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

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

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

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

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

THE R11-2, R11-3, M4-9, R11-4 AND R10-61 SIGNS PLACED ON BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE OR BOTTOM RAILS.

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

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
- R11-2 SHALL BE 48" X 30".
- R11-3, R11-4 AND R10-61 SHALL BE 60" X 30".
- M4-9 SHALL BE 30" X 24".
- M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
- M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)
- M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.
- R1-1 SHALL BE 36" X 36".

(1) TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8-FOOT LIGHT SPACING).

(2) THESE SIGNS AND BARRICADES ARE NOT REQUIRED IF ROAD CLOSURE BEGINS AT INTERSECTION.

(3) FOR ROAD CLOSURE WITHOUT LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL D.

(4) FOR ROAD CLOSURE WITH LOCAL ACCESS TO PROJECT, SEE LANE CLOSURE BARRICADE DETAIL E.

(5) FOR BRIDGE OR CULVERT REPLACEMENTS, SUBSTITUTE "BRIDGE OUT" INSTEAD OF "ROAD CLOSED" ON R11-2 AND R11-3 SIGNS.

(6) INSTALL DETOUR AND COMMUNITY GUIDE SIGNS AND ARROWS ONLY IF SPECIFIED IN THE CONTRACT. IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. MODIFY EXISTING SIGNS WHERE POSSIBLE. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. IF DETOUR SIGNS ARE BEING INSTALLED BY OTHERS, PLACE THE CONTRACTED TRAFFIC CONTROL SIGNS TO ALLOW FOR PLACEMENT OF ALL WARNING, DETOUR AND GUIDE SIGNS AS SHOWN.

(7) "EAST" CARDINAL DIRECTION MARKERS AND RIGHT TURN ARROWS ARE SHOWN. USE OTHER CARDINAL DIRECTIONS AND ARROWS AS APPROPRIATE.

**BARRICADES AND SIGNS FOR MAINLINE CLOSURES**

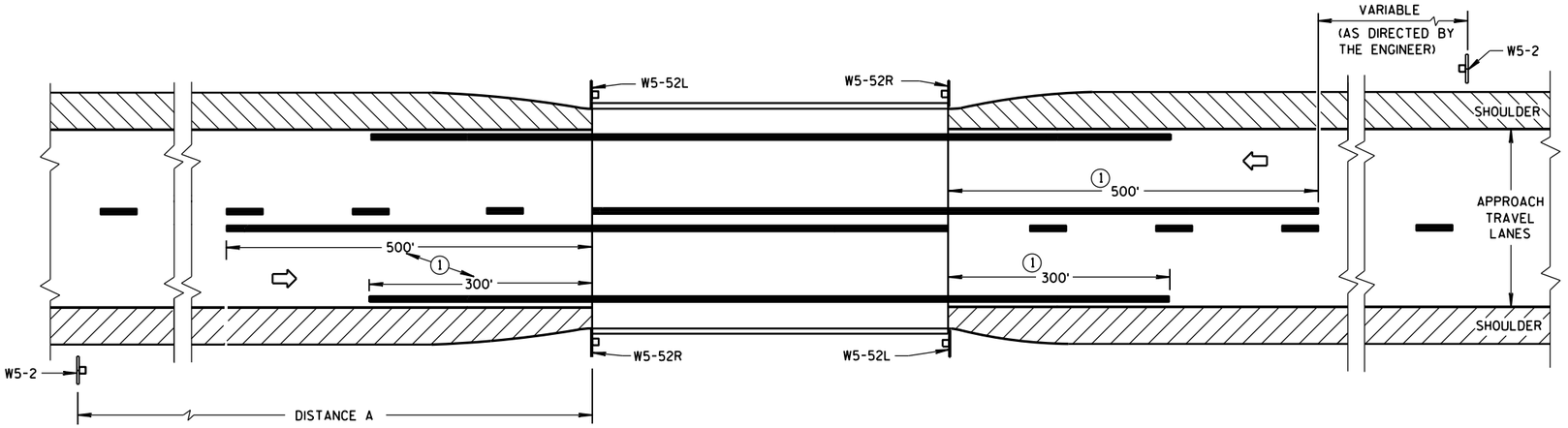
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

8/2013 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA




6


S.D.D. 15 C 2-5b




## 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.

PAVEMENT MARKING SHOWN ON THIS DRAWING IS NOT REQUIRED UNLESS OTHERWISE SPECIFIED IN THE CONTRACT. WHEN SPECIFIED, PAVEMENT MARKING SHALL CONFORM TO THIS DRAWING AND OTHER CONTRACT REQUIREMENTS.

(1) MINIMUM DISTANCE UNLESS OTHERWISE SHOWN ON THE PLAN.

(2) FACE OF OBJECT MARKERS W5-52R, AND W5-52L SHALL BE COVERED WITH TYPE F REFLECTIVE SHEETING.

(3) LOCATE OBJECT MARKER POST(S) BEHIND GUARDRAIL WHEN PRESENT.

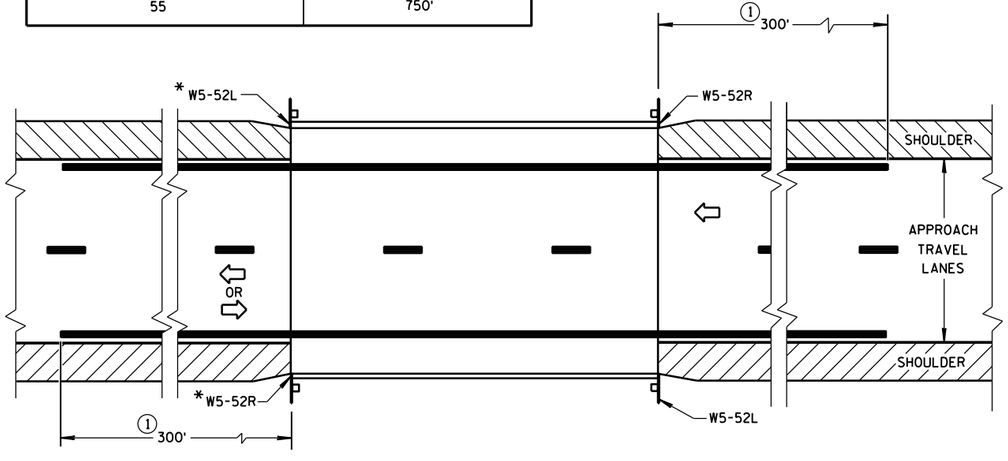
### DISTANCE TABLE

| POSTED OR 85th PERCENTILE SPEED | DISTANCE "A" |
|---|---|
| 25 | 150' |
| 30 | 200' |
| 35 | 250' |
| 40 | 300' |
| 45 | 400' |
| 50 | 550' |
| 55 | 750' |

## SITUATION 1

WARRANTING CRITERIA:

BRIDGE WIDTH IS AT LEAST 16 FEET BUT LESS THAN 24 FEET

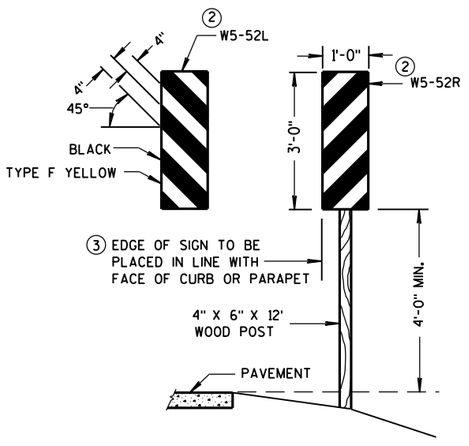



*OMIT ON ONE-WAY TRAVELLED WAYS

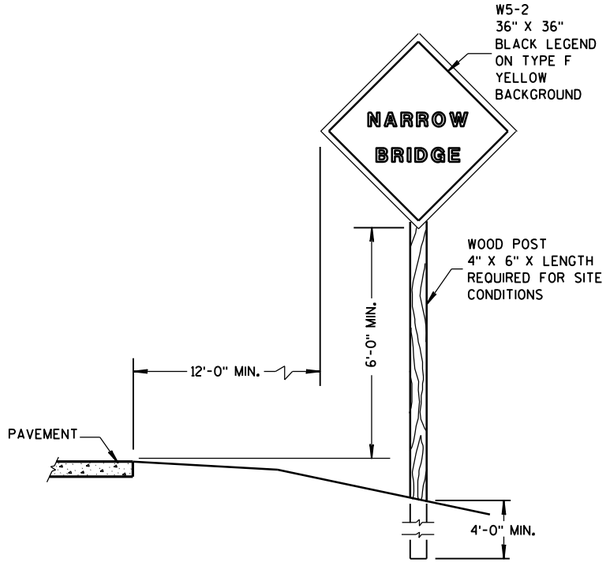
## SITUATION 2

WARRANTING CRITERIA:

1. BRIDGE WIDTH IS AT LEAST 24 FEET AND
2. BRIDGE IS LESS THAN 6 FEET WIDER (ON EACH SIDE) THAN APPROACH TRAVEL LANES.




OBJECT MARKER PLACEMENT




SIGN PLACEMENT

SIGNING & MARKING
FOR TWO LANE BRIDGES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3-2014 DATE

/S/ Travis Feltes STATE TRAFFIC ENGINEER

FHWA

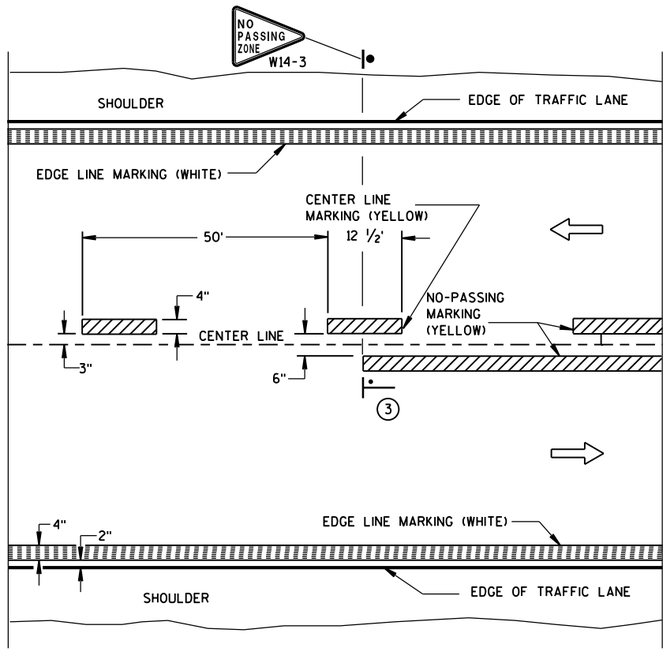




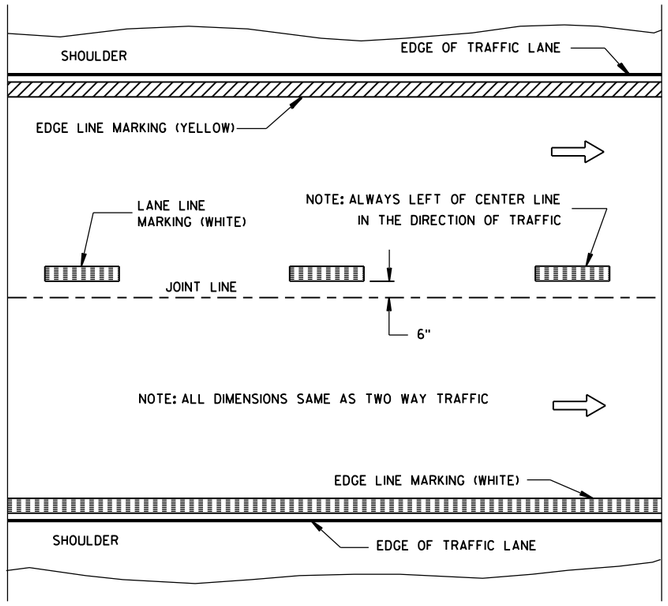
6



S.D.D. 15 C 6-7

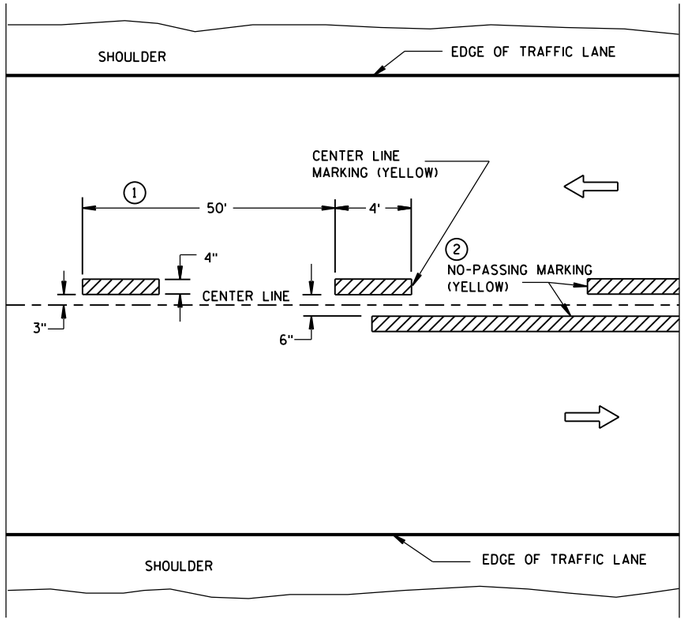



TWO WAY TRAFFIC

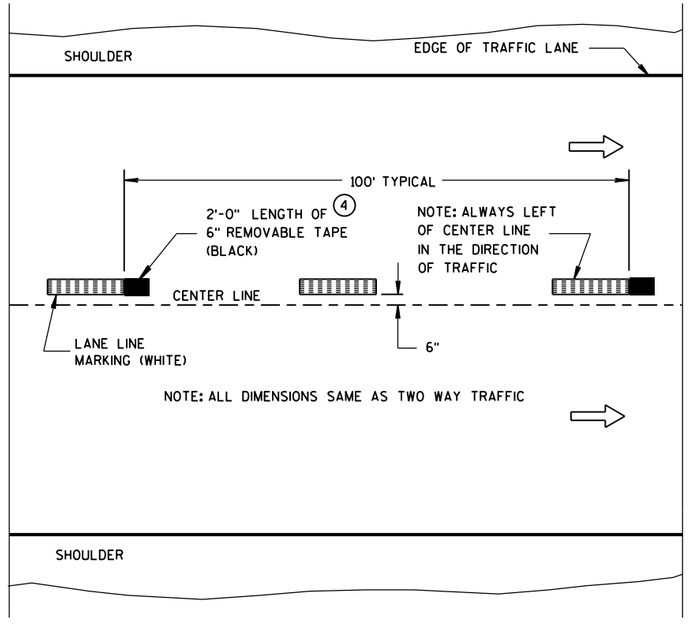



ONE WAY TRAFFIC

## PERMANENT PAVEMENT MARKING




TWO WAY TRAFFIC




ONE WAY TRAFFIC

## TEMPORARY (INTERMEDIATE) PAVEMENT MARKING

(SHOWS CYCLE FOR TEMPORARY CENTER LINE OR TEMPORARY LANE LINE MARKING)

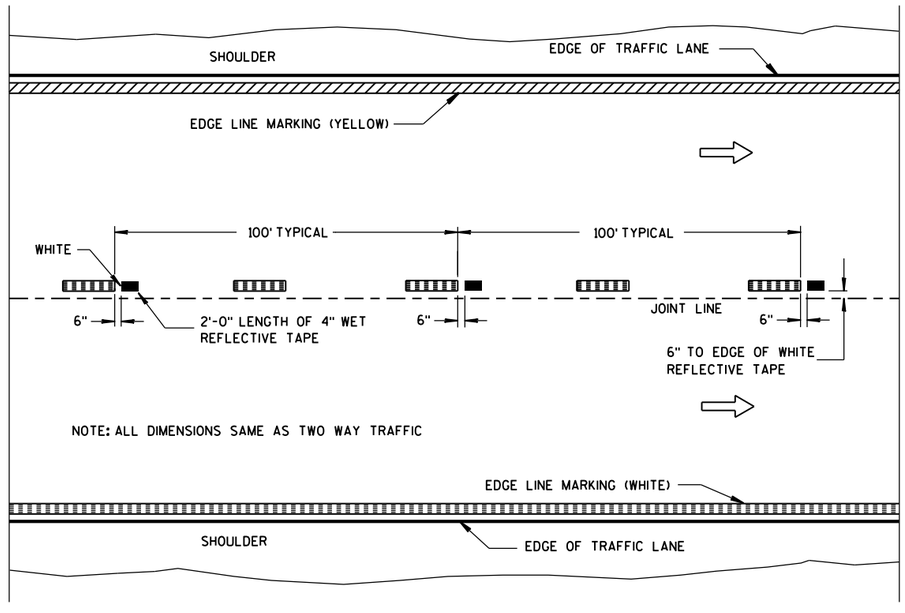
## GENERAL NOTES

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

1. HALF CYCLE LENGTHS (25'±) WITH 2' MINIMUM STRIPE LENGTHS SHALL BE PROVIDED ON ROADWAYS (INCLUDING TEMPORARY TRAVELED WAYS) WITH REVERSE CURVATURE, CURVATURE OF OVER 5 DEGREES OR WHEN DIRECTED BY THE ENGINEER TO MARK UNUSUAL ALIGNMENT OF THE TRAVELED WAY.
2. NO PASSING ZONE TEMPORARY PAVEMENT MARKING IS REQUIRED TO BE PLACED, WHERE APPROPRIATE, ALONG WITH CENTERLINE TEMPORARY PAVEMENT MARKING WHEN A SAME DAY PERMANENT PAVEMENT MARKING ITEM IS INCLUDED IN THE CONTRACT.
3. NO PASSING ZONE MARKINGS ARE PLACED ACCORDING TO "T" MARKINGS. IF EXISTING NO PASSING ZONE W14-3 SIGNS ARE BEYOND 50 FEET IN EITHER DIRECTION, THE SIGNS SHALL BE MOVED TO THE "T" MARKINGS.
4. CONCRETE ONLY.

## NOTE

ARROW SYMBOL ( ⇨ ) SHOWS DIRECTION OF TRAVEL




WET REFLECTIVE TAPE SUPPLEMENT TO
SPRAYED OR NON WET REFLECTIVE TAPE LANE LINE

**LEGEND**

"T" MARKING

POST MOUNTED SIGN

**PAVEMENT MARKING (MAINLINE)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5-13-2013 DATE
/S/ Travis Feltes STATE TRAFFIC E
FHWA

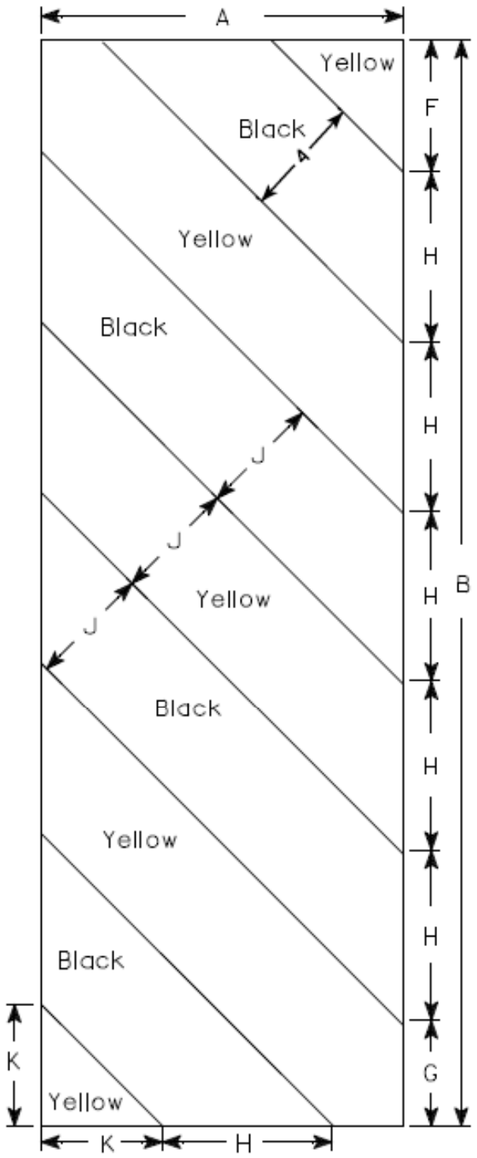


6

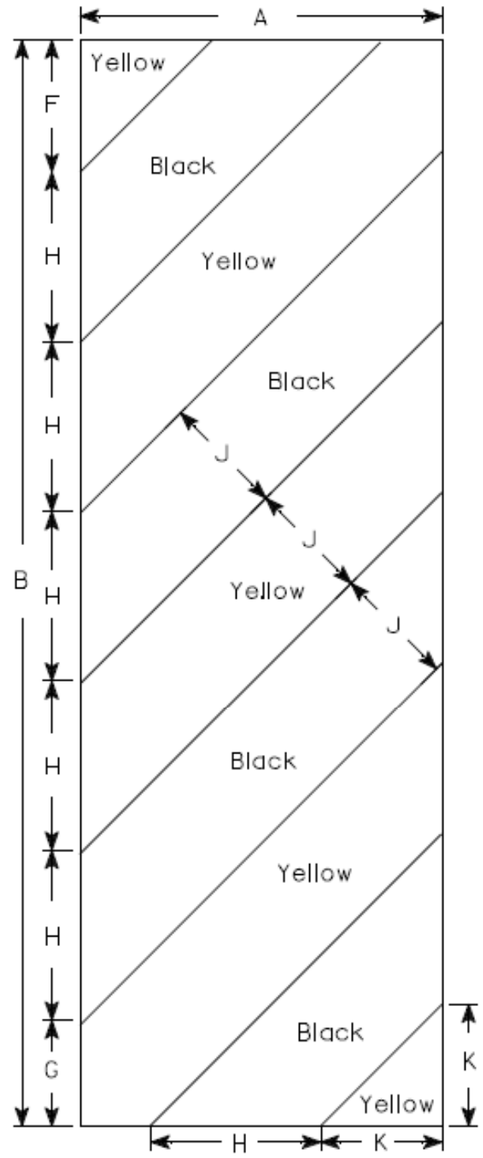
S.D.D. 15 C 8-16a

6

S.D.D. 15 C 8-16a




W5-52L




W5-52R

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. Alternate colors of stripes as shown.

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2S | 12 | 36 | | | | 4 3/8 | 3 1/2 | 5 5/8 | 45° | 4 | 4 | | | | | | | | | | | | | | | | 3.0 |
| 2M | 12 | 36 | | | | 4 3/8 | 3 1/2 | 5 5/8 | 45° | 4 | 4 | | | | | | | | | | | | | | | | 3.0 |
| 3 | 18 | 54 | | | | 6 | 5 1/2 | 8 1/2 | 45° | 6 | 6 9/16 | | | | | | | | | | | | | | | | 6.75 |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

STANDARD SIGN

W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

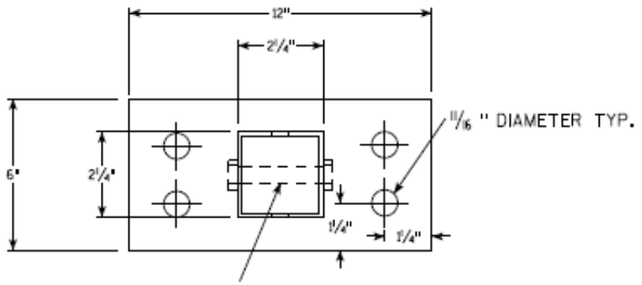
DATE 5/29/12 PLATE NO. W5-52.9

PROJECT NO: 2660-04-70 | HWY: WHITNALL PARK DRIVE | COUNTY: MILWAUKEE | SIGN PLATES | SHEET NO: 28 | E

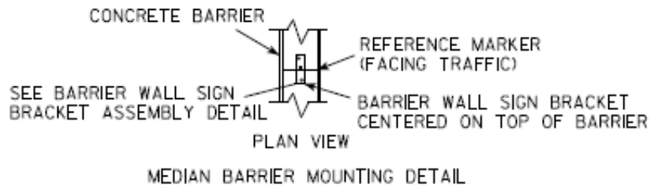
# TYPICAL BARRIER WALL SIGN PLACEMENT DETAILS

TYPICAL REFERENCE MARKER MOUNTING DETAILS

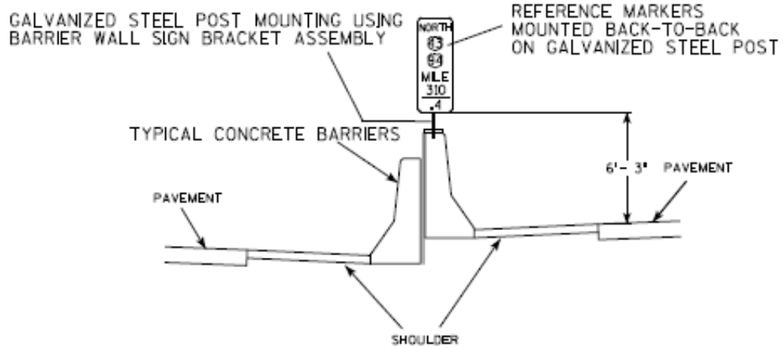
BARRIER WALL SIGN BRACKET ASSEMBLY
NOT TO SCALE



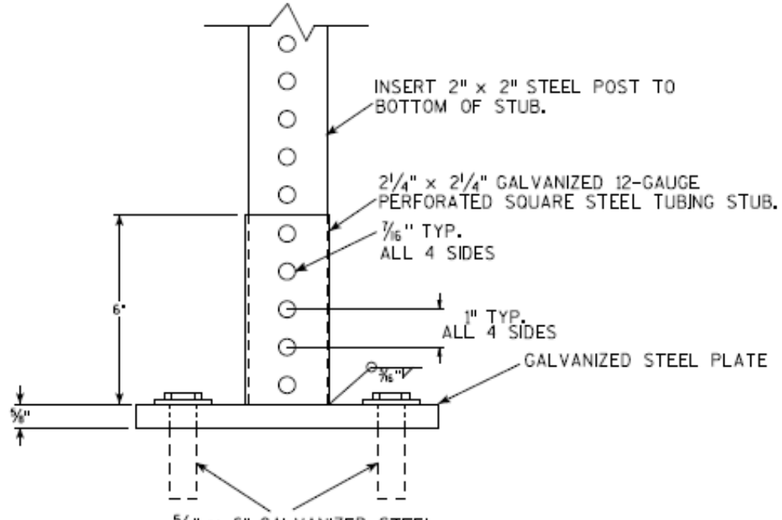

PLAN VIEW



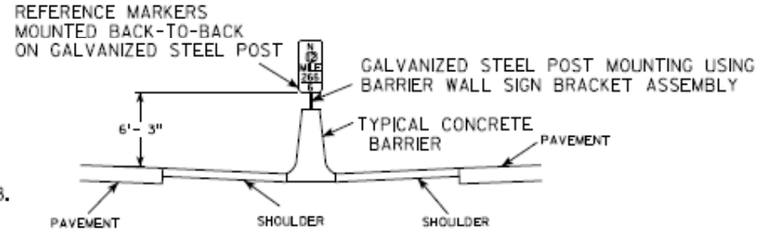

MEDIAN BARRIER MOUNTING DETAIL



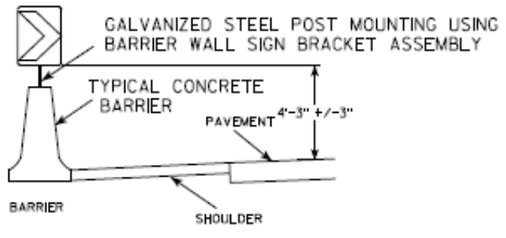

TYPICAL ENHANCED REFERENCE
MARKER PLACEMENT ON DOUBLE MEDIAN BARRIER




SIDE VIEW




TYPICAL ENHANCED REFERENCE
MARKER PLACEMENT ON SINGLE MEDIAN BARRIER




TYPICAL CHEVRON MARKER PLACEMENT

NOTES

1) ALL MATERIAL TO BE APPROVED BY ENGINEER BEFORE INSTALLATION
2) SEE SIGN PLATE A4-8 FOR SIGN HARDWARE REQUIREMENTS.

7

7

## SIGN MOUNTING ON BARRIER WALL

WISCONSIN DEPT OF TRANSPORTATION

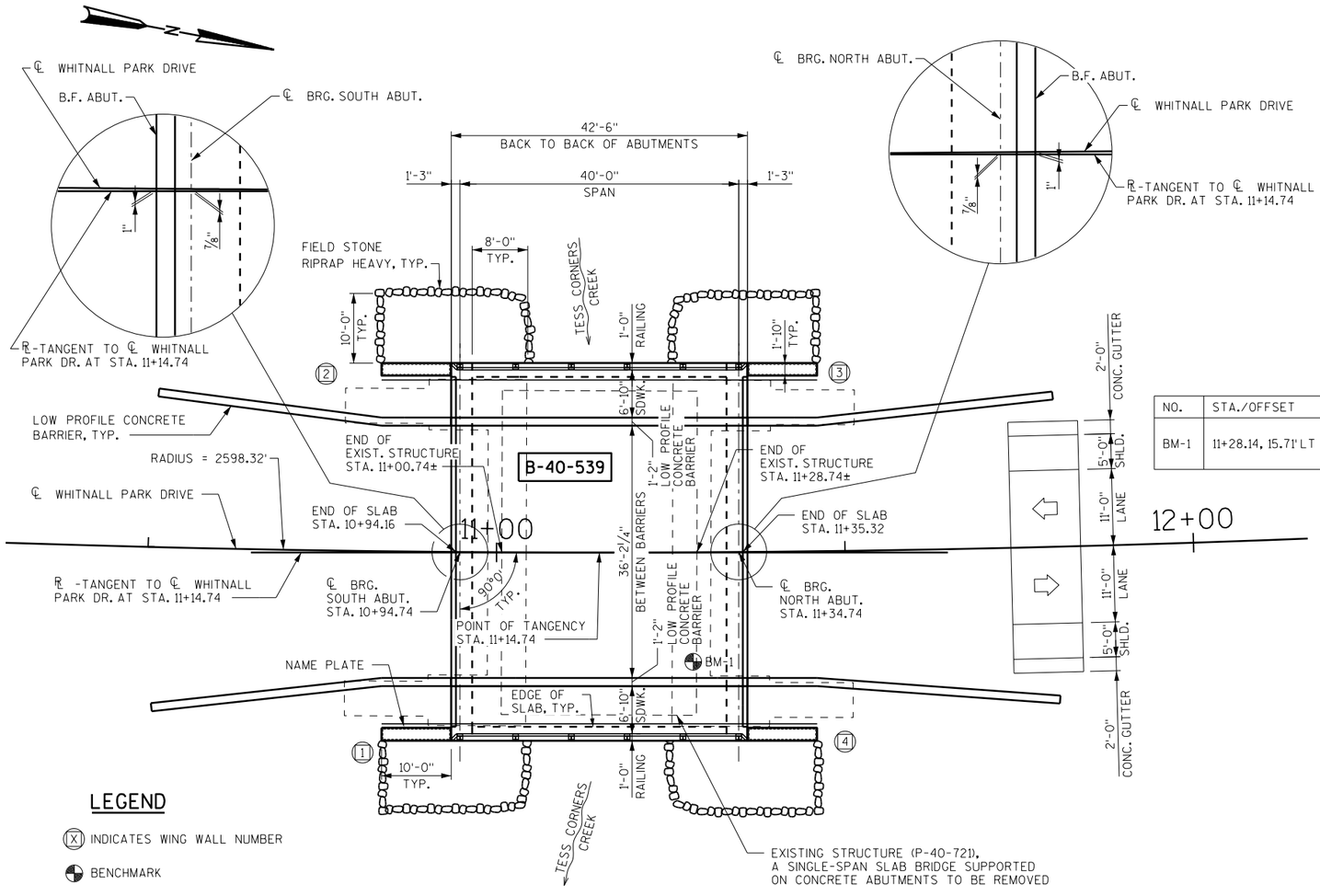
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 9/30/13 PLATE NO. A4-10.3

| PROJECT NO: 2660-04-70 | HWY: WHITNALL PARK DRIVE | COUNTY: MILWAUKEE | SIGN PLATES | SHEET NO: 29 | E |
|---|---|---|---|---|---|

STATE PROJECT NUMBER

2660-04-70



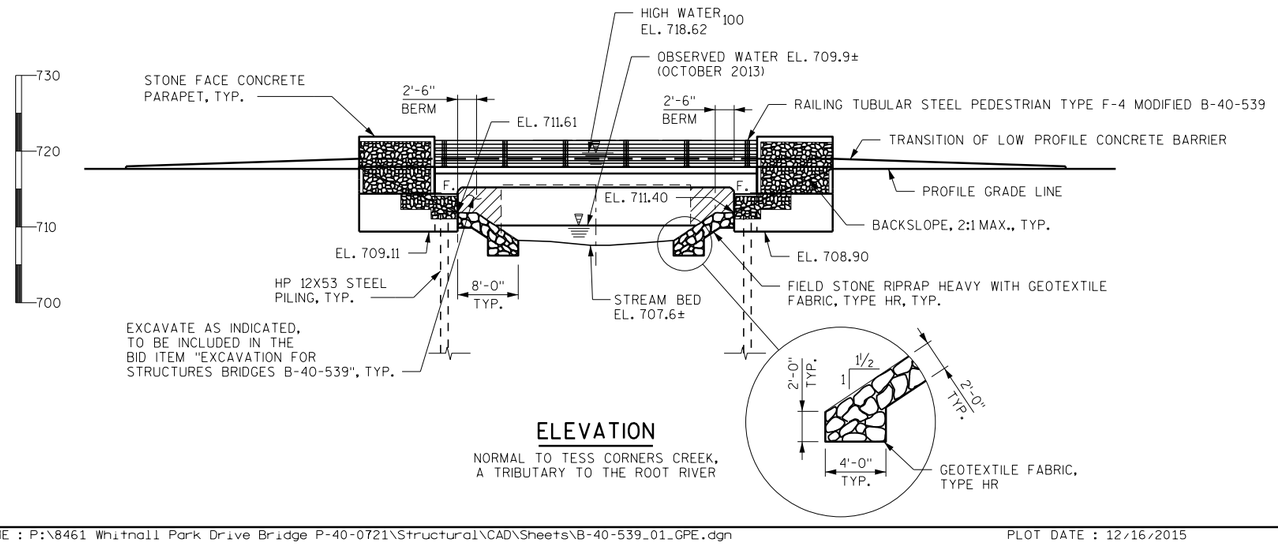

## LEGEND

(X) INDICATES WING WALL NUMBER

BENCHMARK

## PLAN

SINGLE SPAN - FLAT CONCRETE SLAB




## ELEVATION

NORMAL TO TESS CORNERS CREEK, A TRIBUTARY TO THE ROOT RIVER

## DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: RF = 1.02
OPERATING RATING FACTOR: RF = 1.32
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 250 KIPS

STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 PSF IN ADDITION TO THE 2" ASPHALT OVERLAY.

MATERIAL PROPERTIES:

CONCRETE MASONRY, SUPERSTRUCTURE.....f'c = 4,000 P.S.I.
CONCRETE MASONRY, SUBSTRUCTURE.....f'c = 3,500 P.S.I.
CONCRETE MASONRY, ALL OTHER.....f'c = 3,500 P.S.I.

HIGH STRENGTH BAR STEEL REINFORCEMENT GRADE 60.....fy = 60,000 P.S.I.

## BENCHMARK

| NO. | STA./OFFSET | DESCRIPTION | ELEV. |
|---|---|---|---|
| BM-1 | 11+28.14, 15.71' LT | CHISELED "□" AT NORTHEAST CORNER OF EXISTING STRUCTURE | 716.46 |

## FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON HP 12 X 53 STEEL PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 220 TONS** PER PILE AS DETERMINED BY THE MODIFIED GATES FORMULA.
ESTIMATED 40'-0" LONG (S. ABUT.)
ESTIMATED 40'-0" LONG (N. ABUT.)

** THE FACTORED AXIAL RESISTANCE OF PILES IN COMPRESSION USED FOR DESIGN IS THE REQUIRED DRIVING RESISTANCE MULTIPLIED BY A RESISTANCE FACTOR OF 0.5 USING MODIFIED GATES TO DETERMINE DRIVEN PILE CAPACITY.

## HYDRAULIC DATA

100 YEAR FREQUENCY

$Q_{100}$ = 3,000 C.F.S.
$Q_{BRIDGE}$ = 961 C.F.S.
$Q_{ROADWAY}$ = 2,039 C.F.S.
VEL. = 10.67 F.P.S.
HW. = EL. 718.62
WATERWAY AREA = 200 SQ. FT.
DRAINAGE AREA = 10.2 SQ. MI.
SCOUR CRITICAL CODE = 8

ROAD OVERTOPPING FREQUENCY

FREQUENCY = 17 YEARS
$Q_{12}$ = 1525 C.F.S.

2 YEAR FREQUENCY

$Q_2$ = 460 C.F.S.
$HW_2$ = EL. 712.64

## TRAFFIC VOLUME

WHITNALL PARK DRIVE

A.D.T. = 470 (2015)
A.D.T. = 550 (2035)
R.D.S. = 30 MPH

## CURVE DATA

℞ WHITNALL PARK DRIVE

P.I. = STA. 12+08.00
△ = 9°-9'-14"
D = 2°-12'-18"
T = 208.00'
L = 415.12'
R = 2598.32
P.C. = STA. 10+00.00
P.T. = STA. 14+15.12

WISCONSIN PROFESSIONAL ENGINEER
SURENDRA K. GUPTA
E-41327
AMES, IA

12-16-2015

## LIST OF DRAWINGS




STRUCTURES DESIGN CONTACTS

BRIDGE OFFICE:
WILLIAM DREHER, P.E. (608) 266-8489
CONSULTANT:
SUREN GUPTA, P.E. (262) 821-1171


| NO. | DATE | REVISION | BY |
|---|---|---|---|

KSA K. Singh & Associates, Inc.
*Engineers, Scientists and Environmental Consultants*

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher SDR 12/21/15
CHIEF STRUCTURES DESIGN ENGINEER DATE

# STRUCTURE B-40-539

WHITNALL PARK DRIVE
OVER TESS CORNERS CREEK

| COUNTY | CITY |
|---|---|
| MILWAUKEE | FRANKLIN |

DESIGN SPEC.
AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

| DESIGNED BY | DESIGN CK'D. | DRAWN BY | PLANS CK'D. |
|---|---|---|---|
| NLD | VJD | NLD | SKG |

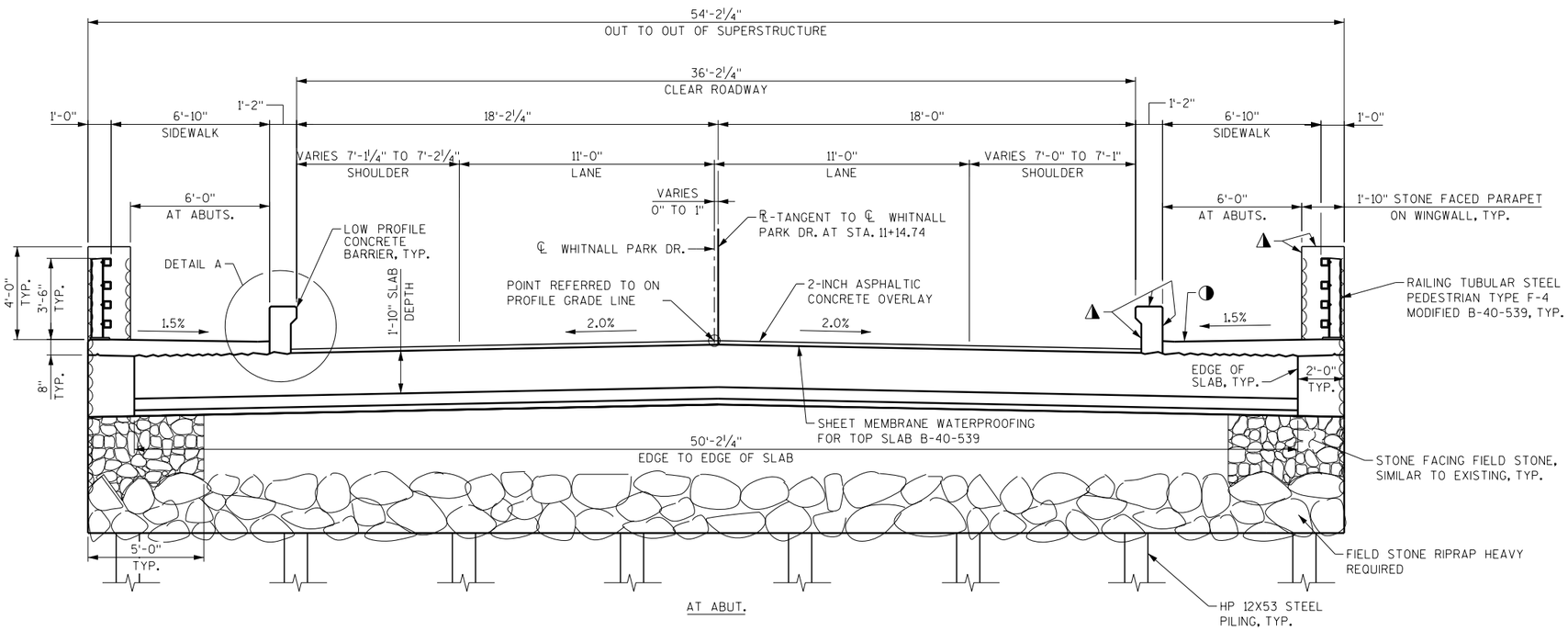
GENERAL PLAN AND ELEVATION

SHEET 1 OF 16
30

8

8

| STATE PROJECT NUMBER |
|---|
| 2660-04-70 |



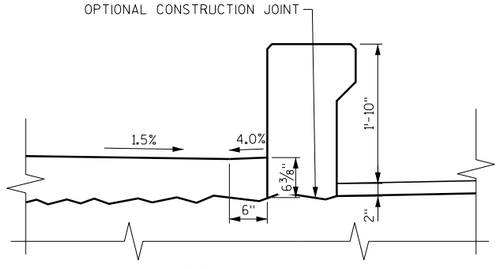

## CROSS SECTION THRU BRIDGE

LOOKING NORTH

## TOTAL ESTIMATED QUANTITIES

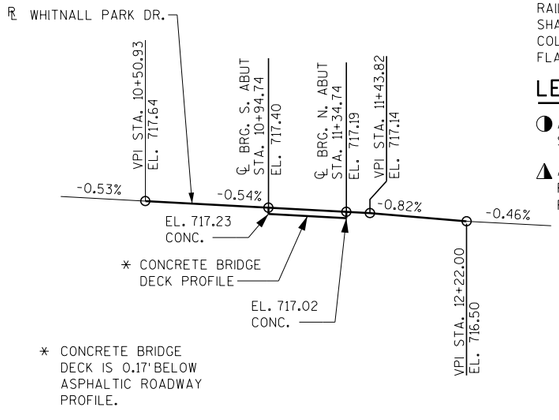
| BID ITEM NUMBER | BID ITEM | UNIT | SOUTH ABUTMENT | SUPER-STRUCTURE | NORTH ABUTMENT | TOTAL |
|---|---|---|---|---|---|---|
| 203.0600.S.01 | REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STATION 11+14.74 | LS | - | - | - | 1 |
| 206.1000.01 | EXCAVATION FOR STRUCTURES BRIDGES B-40-539 | LS | - | - | - | 1 |
| 210.0100 | BACKFILL STRUCTURE | CY | 186 | - | 186 | 372 |
| 455.0120 | ASPHALTIC MATERIAL PG64-28 | TON | - | 2 | - | 2 |
| 460.1103 | HMA PAVEMENT TYPE E-3 | TON | - | 38 | - | 38 |
| 502.0100 | CONCRETE MASONRY BRIDGES | CY | 51 | 152 | 51 | 254 |
| 502.3200 | PROTECTIVE SURFACE TREATMENT | SY | 76 | 74 | 76 | 226 |
| 502.3210 | PIGMENTED SURFACE SEALER | SY | 50 | 43 | 50 | 143 |
| 505.0400 | BAR STEEL REINFORCEMENT HS STRUCTURES | LB | 3,610 | 0 | 3,610 | 7,220 |
| 505.0600 | BAR STEEL REINFORCEMENT HS COATED STRUCTURES | LB | 2,210 | 31,010 | 2,210 | 35,430 |
| 516.0500 | RUBBERIZED MEMBRANE WATERPROOFING | SY | 13 | - | 13 | 26 |
| 516.0610.S | SHEET MEMBRANE WATERPROOFING FOR TOP SLAB B-40-539 | SY | - | 168 | - | 168 |
| 550.1120 | PILING STEEL HP 12-INCH X 53 LB | LF | 320 | - | 320 | 640 |
| 612.0406 | PIPE UNDERDRAIN WRAPPED 6-INCH | LF | 105 | - | 105 | 210 |
| 645.0120 | GEOTEXTILE FABRIC TYPE HR | SY | 142 | - | 142 | 284 |
| SPV.0035.01 | FIELD STONE RIPRAP HEAVY | CY | 81 | - | 81 | 162 |
| SPV.0090.01 | LOW PROFILE CONCRETE BARRIER | LF | 68 | 85 | 68 | 221 |
| SPV.0090.02 | RAILING TUBULAR STEEL PEDESTRIAN TYPE F-4 MODIFIED B-40-539 | LF | - | 85 | - | 85 |
| SPV.0165.01 | STONE FACING FIELD STONE | SF | 285 | - | 285 | 570 |
| SPV.0165.02 | ANTI-GRAFFITI SHIELD FOR STONE FACING FIELD STONE SURFACES | SF | 285 | - | 285 | 570 |
| | | | | | | |
| | NON BID ITEMS | | | | | |
| | FILLER | SIZE | - | - | - | 1/2" & 3/4" |

ALL BID ITEMS ARE CATEGORY 0020




## DETAIL A

(TYP. BOTH SIDEWALKS)




* CONCRETE BRIDGE DECK IS 0.17' BELOW ASPHALTIC ROADWAY PROFILE.

## PROFILE GRADE LINE - WHITNALL PARK DRIVE

## GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

BEVEL ALL EXPOSED EDGES ¾" UNLESS NOTED OTHERWISE.

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

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

SLAB FALSEWORK SHALL BE SUPPORTED ON PILES OR THE SUBSTRUCTURE UNLESS AN ALTERNATE METHOD IS APPROVED BY THE ENGINEER.

THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH FIELD STONE RIPRAP HEAVY AND GEOTEXTILE FABRIC TYPE 'HR' TO THE EXTENT SHOWN ON SHEET 1 AND IN THE ABUTMENT DETAILS.

THE STREAM BED IN FRONT OF THE ABUTMENT SHALL BE COVERED WITH FIELD STONE RIPRAP HEAVY AS SHOWN ON THIS SHEET AND IN THE ABUTMENT DETAILS.

THE EXISTING GROUNDLINE SHALL BE THE UPPER LIMITS OF EXCAVATION FOR STRUCTURES.

AT THE BACKFACE OF ABUTMENT ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH "BACKFILL STRUCTURE".

THE QUANTITY FOR "BACKFILL STRUCTURE", BID ITEM 210.0100, IS CALCULATED BASED ON THE APPLICABLE FIGURES 12.6-1 AND 12.6-2 IN THE WISCONSIN DEPARTMENT OF TRANSPORTATION BRIDGE MANUAL.

AT ABUTMENTS, CONCRETE POURED UNDER WATER WILL BE ALLOWED AND SHALL BE DONE IN ACCORDANCE WITH SECTION 502.3.5.3 OF THE STANDARD SPECIFICATIONS.

EXISTING BRIDGE P-40-721 TO BE REMOVED. IT IS A SINGLE-SPAN REINFORCED CONCRETE SLAB STRUCTURE 28' LONG, 46.5' WIDE.

STONE FACING FIELD STONE SHALL BE PLACED ON EXPOSED VERTICAL FACES OF THE WINGWALLS, ABUTMENT, AND CONCRETE PARAPET AS SHOWN ON THE PLANS. THE NEW STONE FACING FIELD STONE SHALL REPLICATE THE MATERIAL, VARIATION OF SIZE, AND MIXTURE OF COLOR OF THE EXISTING STONE. THE STONE FACING FIELD STONE ON THE OUTSIDE OF ABUTMENT AND WINGS SHALL EXTEND TO A MINIMUM OF 1'-0" BELOW FINISH GROUND LINE. STONE FACING FIELD STONE ON INSIDE FACE OF UPPER WINGWALLS SHALL BE AS DETAILED.

EXISTING STONES MAY BE EXAMINED FOR SOUNDNESS AND INTEGRITY, CLEANED OF EXPOSED MORTAR AND REUSED WHEREVER FEASIBLE. IF THE EXISTING STONES ARE REUSED, THEY SHALL BE INTERMIXED WITHIN NEW STONES.

RAILING TUBULAR STEEL PEDESTRIAN TYPE F-4 MODIFIED B-40-539 SHALL BE FINISHED ACCORDING TO THE SPECIAL PROVISION. PAINT COLOR SHALL MATCH FEDERAL STANDARD 595B COLOR 30070 FLAT BROWN.

## LEGEND

◑ APPLY "PROTECTIVE SURFACE TREATMENT" TO TOP FACE OF SIDEWALK.

◭ APPLY "PIGMENTED SURFACE SEALER" TO ALL FACES OF LOW PROFILE CONCRETE BARRIER, AND EXPOSED INSIDE AND TOP FACES OF CONCRETE PARAPET AT ABUTMENTS.

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-539

DRAWN BY NLD | PLANS CK'D. SKG

CROSS SECTION, QUANTITIES, AND GENERAL NOTES

SHEET 2 OF 16

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8

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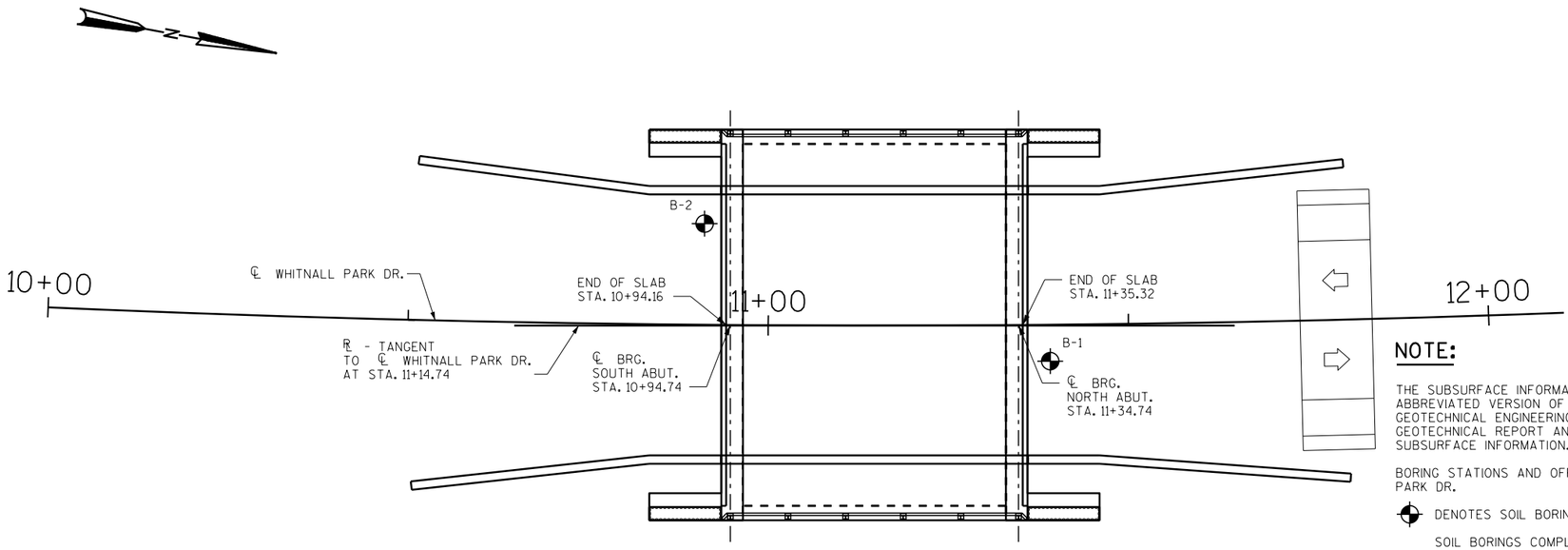



## NOTE:

THE SUBSURFACE INFORMATION PRESENTED HEREIN IS AN ABBREVIATED VERSION OF THE INFORMATION PRESENTED IN THE GEOTECHNICAL ENGINEERING REPORT. REVIEW THE APPROPRIATE GEOTECHNICAL REPORT AND SOIL BORING LOGS FOR ADDITIONAL SUBSURFACE INFORMATION.

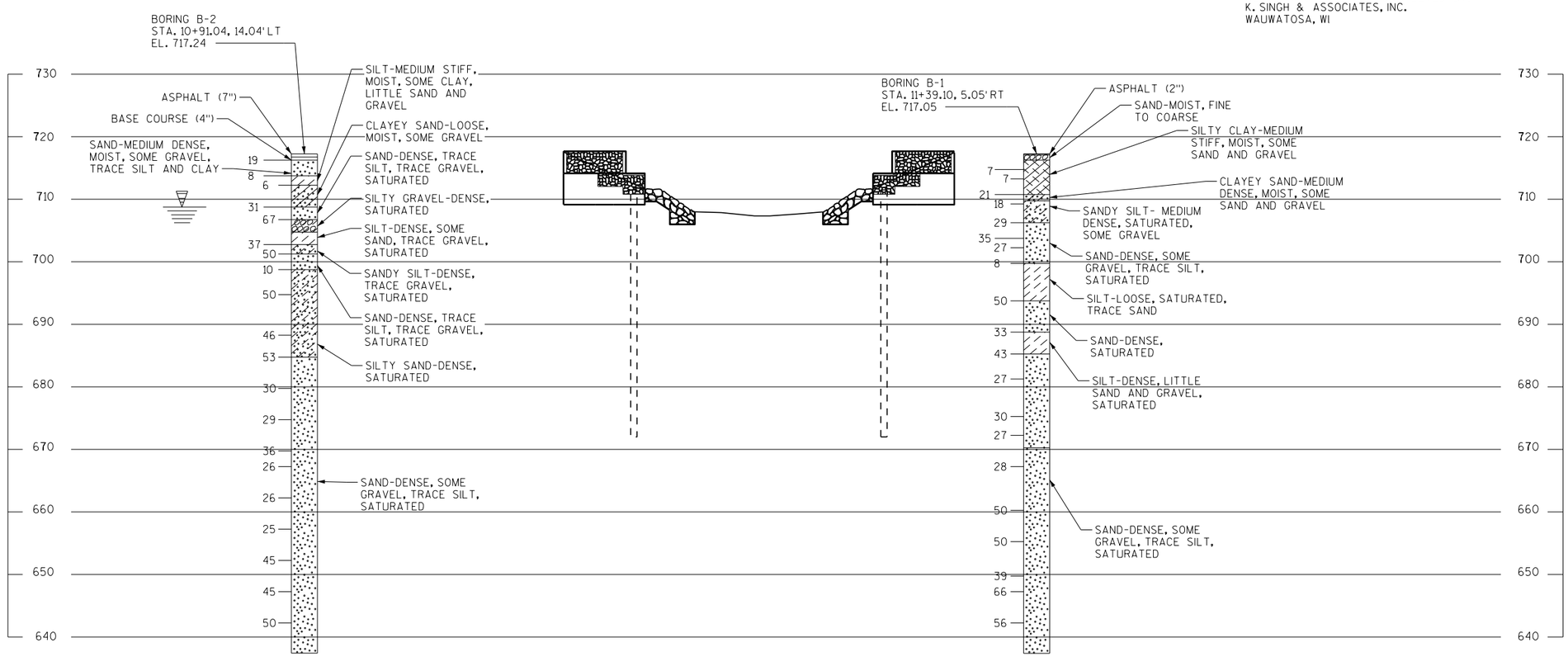
BORING STATIONS AND OFFSETS ARE BASED ON ℞ WHITNALL PARK DR.

DENOTES SOIL BORING LOCATION

SOIL BORINGS COMPLETED BY:
BADGER STATE DRILLING
STOUGHTON, WISCONSIN

SOIL BORINGS TAKEN:
OCTOBER 15, 2013 - BORING B-1
OCTOBER 14, 2013 - BORING B-2

GEOTECHNICAL REPORT COMPLETED BY:
K. SINGH & ASSOCIATES, INC.
WAUWATOSA, WI




STATE PROJECT NUMBER

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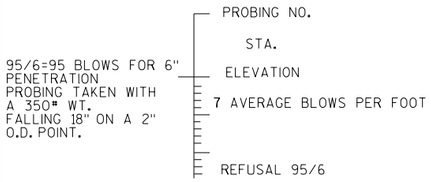
ABBREVIATIONS

F — FINE  M — MEDIUM  C — COARSE
WS — WEATHERED  SO — SOUND

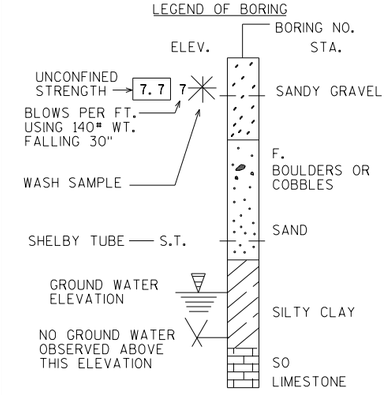
MATERIAL SYMBOLS

TOPSOIL, SILT, SANDSTONE
SAND, PEAT, LIMESTONE
GRAVEL, CLAY, IGNEOUS ROCK

LEGEND OF PROBING




LEGEND OF BORING




UNLESS OTHERWISE SPECIFIED, THE BLOWS PER FOOT AT THE LOCATIONS INDICATED ARE BASED ON DRIVING A 2" O.D. X 1.4" I.D. SPLIT SPOON SAMPLER WITH A 140# HAMMER HAVING A FREE FALL OF 30". THE BLOW COUNT IS TAKEN IN UNDISTURBED SOIL IMMEDIATELY BELOW A CASED OR OPEN HOLE ELIMINATING SIDE FRICTION ON THE DRIVE PIPE.

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

TO OBTAIN RELATIVE DATA CONCERNING THE CHARACTER OF MATERIAL IN AND UPON WHICH THE FOUNDATION MIGHT BE BUILT, BORINGS AND/OR SOUNDINGS WERE MADE AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING. THE DATA PRESENTED HEREIN REPRESENTS THE FINDINGS OF THE SUBSURFACE EXPLORATIONS MADE. HOWEVER, BECAUSE THE DEPTHS INVESTIGATED ARE LIMITED AND THE AREA OF THE BORINGS AND/OR SOUNDINGS IS VERY SMALL IN RELATION TO THE ENTIRE AREA, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT CONDITIONS BELOW THE DEPTHS INVESTIGATED OR THAT THE CLASSIFICATION OF MATERIAL ENCOUNTERED IN THESE INVESTIGATIONS IS NECESSARILY TYPICAL OF THE ENTIRE SITE.

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|---|---|---|---|

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-539

DRAWN BY VJD | PLANS CK'D. SKG

SUBSURFACE EXPLORATION

SHEET 3 OF 16
32

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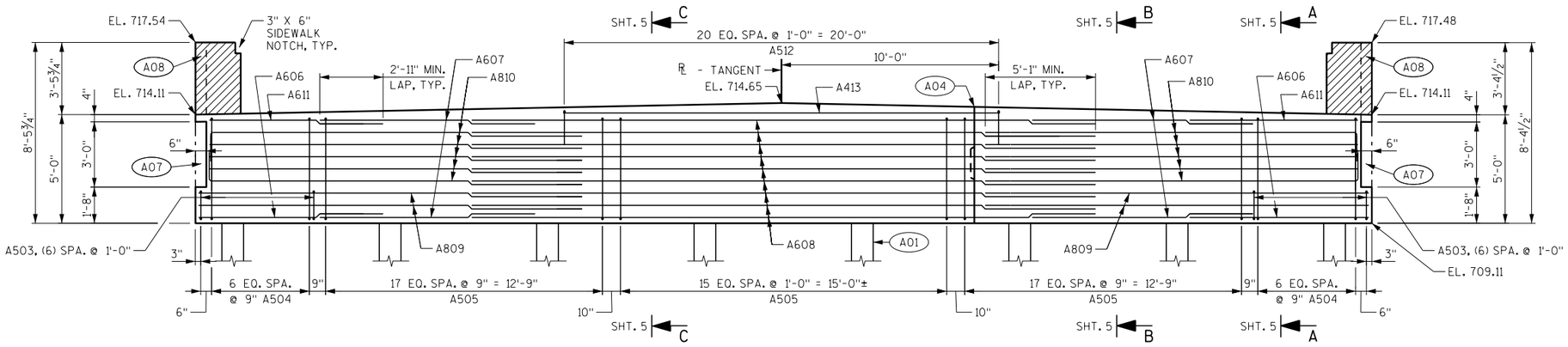
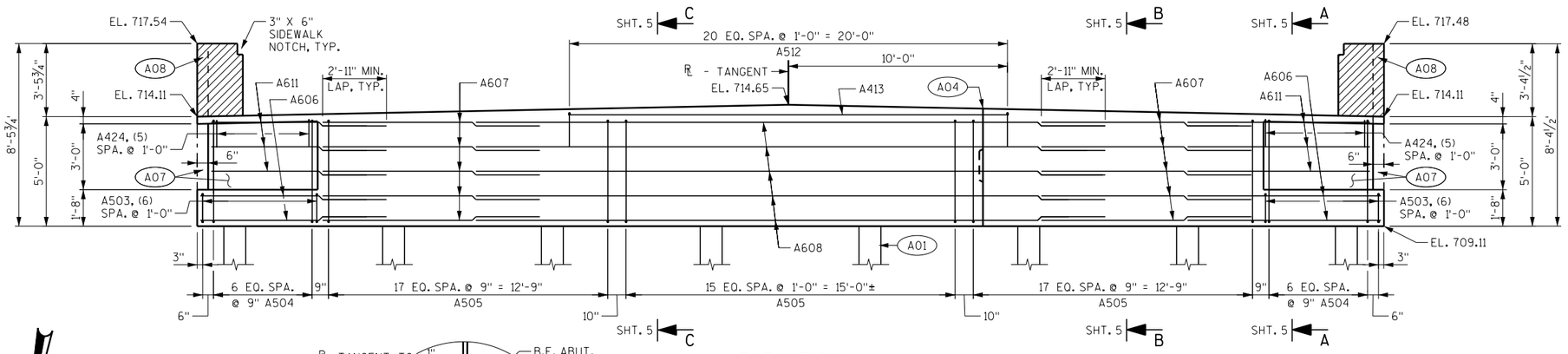


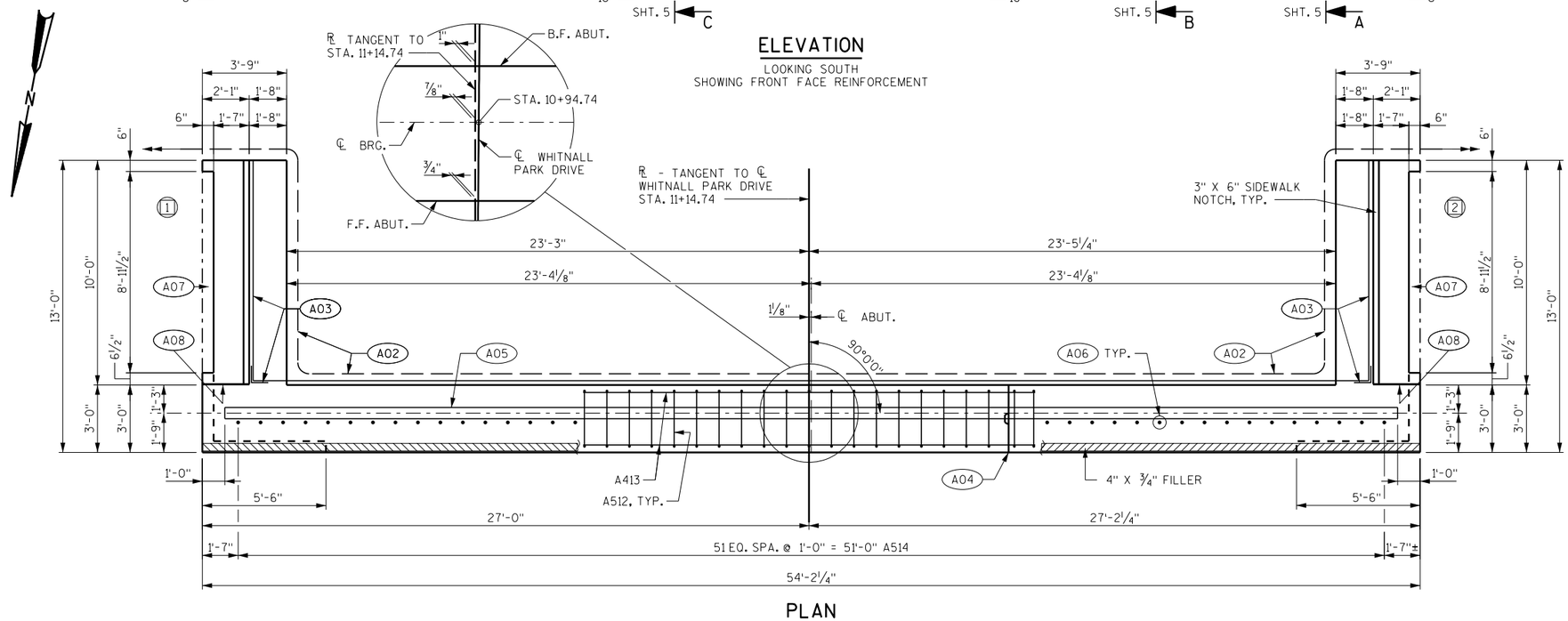

## ELEVATION

LOOKING SOUTH
SHOWING BACK FACE REINFORCEMENT

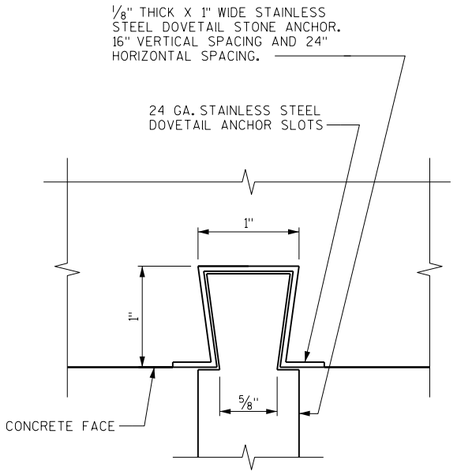



## ELEVATION

LOOKING SOUTH
SHOWING FRONT FACE REINFORCEMENT




## PLAN




## DOVETAIL ANCHOR SLOT

FOR ATTACHING STONE MASONRY TO CONCRETE
(SEE SPECIAL PROVISIONS FOR SPACING)

## NOTES

FOR PILE SPLICE DETAIL, REFER TO SHEET 10.

## LEGEND

(A01) SUPPORT ABUTMENT ON HP 12 X 53 STEEL PILING. ESTIMATED 40'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 220 TONS PER PILE.

(A02) PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MINIMUM TO SUITABLE DRAINAGE. PLACE ABOVE OBSERVED WATER EL. RODENT SCREEN REQUIRED. SEE SHEET 10 FOR DETAILS.

(A03) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS AT BACK FACE.

(A04) VERT. CONST. JOINT KEYWAY FORMED BY BEVELED 2" X 8" X 1'-6". CLEAR BRG. SEAT BY 3" MIN. CLEAR PILES BY 9" MIN. RUN BAR STEEL THROUGH JOINT AND SEAL WITH 18" RUBBERIZED MEMBRANE WATERPROOFING.

(A05) KEYED CONST. JOINT FORMED BY BEVELED 2" X 6".

(A06) BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. EMBED BARS 1'-0".

(A07) STONE MASONRY FACING AND ANTI-GRAFFITI SHIELD FOR STONE MASONRY SURFACES.

(A08) ½" FILLER - TO EXTEND FROM BEAM SEAT TO TOP OF CONCRETE PARAPET ON WING. FILLER INCLUDED IN WING LENGTH.

(X) INDICATES WINGWALL NUMBER

F.F. = FRONT FACE B.F. = BACK FACE

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STATE OF WISCONSIN
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STRUCTURE B-40-539

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SOUTH ABUTMENT

SHEET 4 OF 16
33

8

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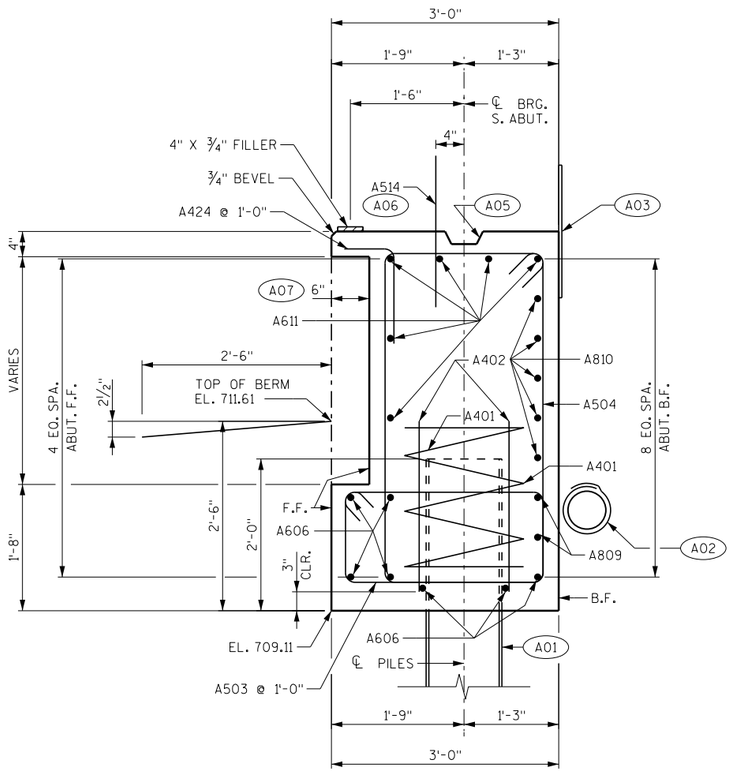
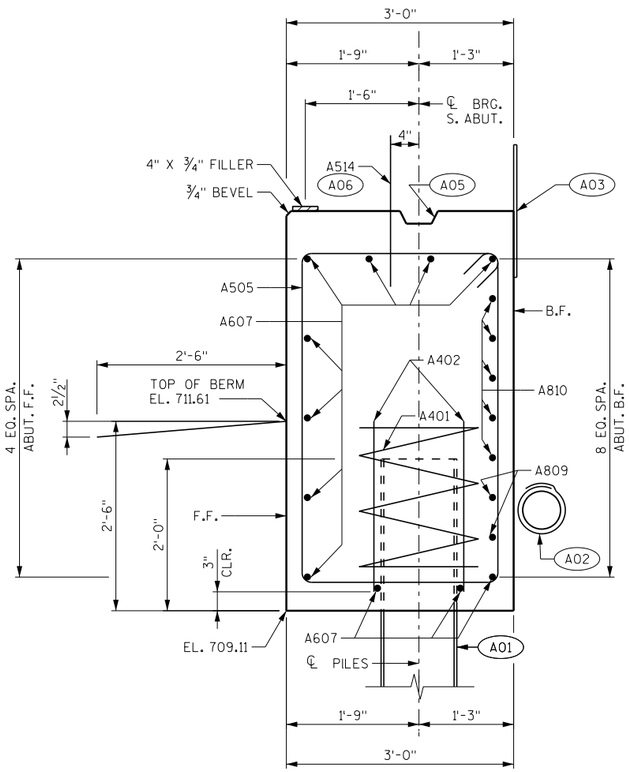
2660-04-70



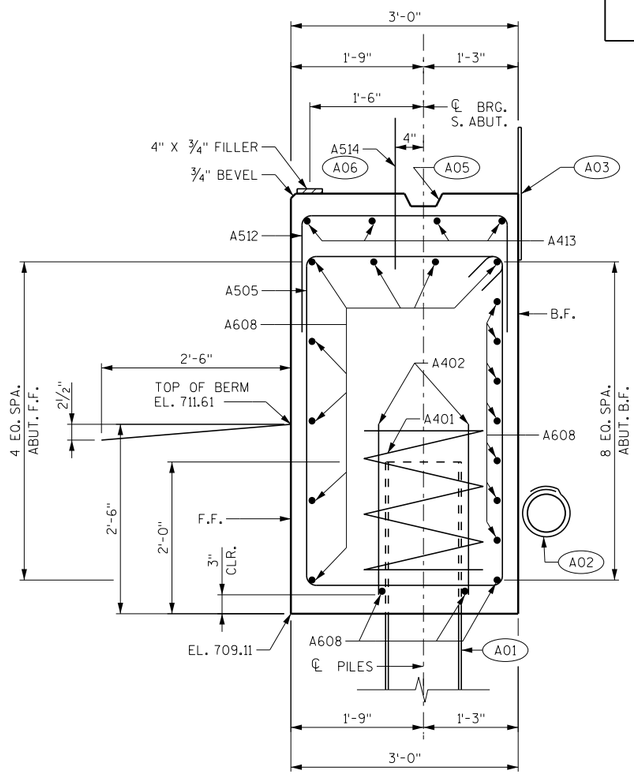

SECTION A-A

SEE SHEET 4




SECTION B-B

SEE SHEET 4



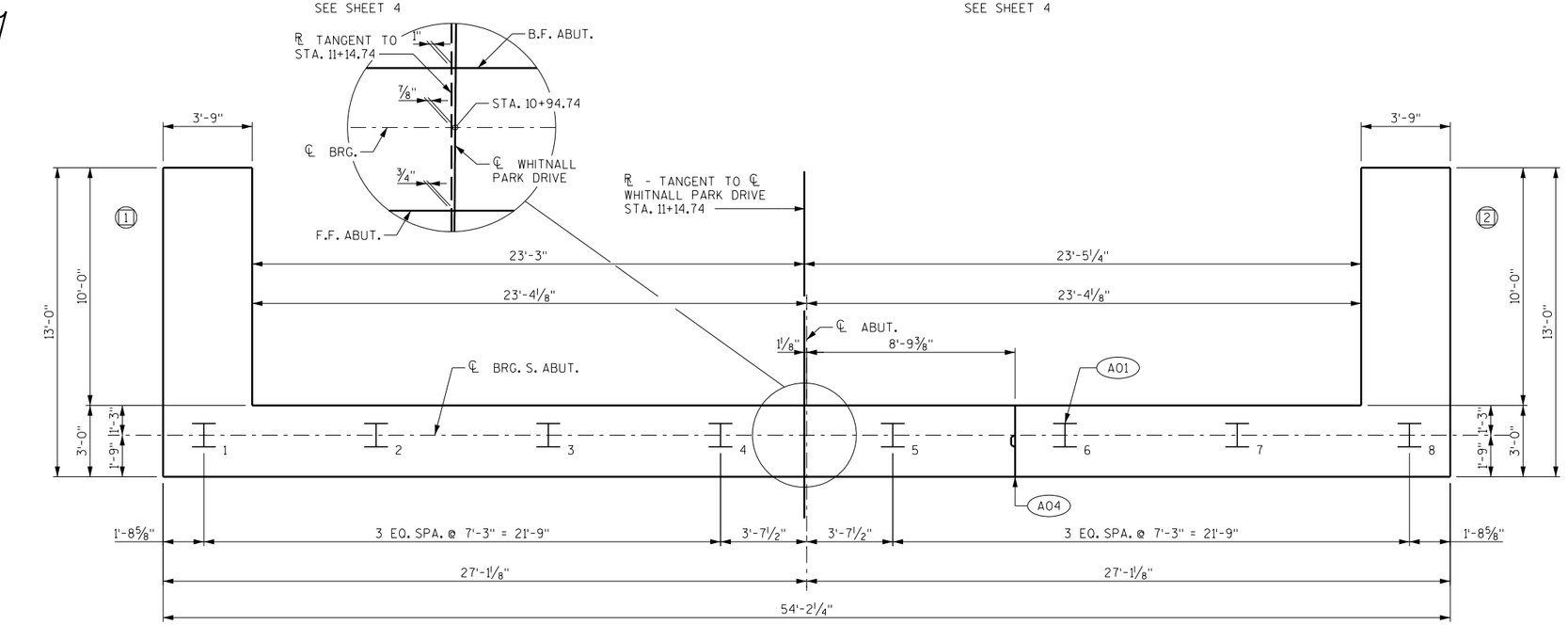

SECTION C-C

SEE SHEET 4

## LEGEND

- (A01) SUPPORT ABUTMENT ON HP 12 X 53 STEEL PILING. ESTIMATED 40'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 220 TONS PER PILE.
- (A02) PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MINIMUM TO SUITABLE DRAINAGE. PLACE ABOVE OBSERVED WATER EL. RODENT SCREEN REQUIRED. SEE SHEET 10 FOR DETAILS.
- (A03) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS AT BACK FACE.
- (A04) VERT. CONST. JOINT KEYWAY FORMED BY BEVELED 2" X 8" X 1'-6". CLEAR BRG. SEAT BY 3" MIN. CLEAR PILES BY 9" MIN. RUN BAR STEEL THROUGH JOINT AND SEAL WITH 18" RUBBERIZED MEMBRANE WATERPROOFING.
- (A05) KEYED CONST. JOINT FORMED BY BEVELED 2" X 6".
- (A06) BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. EMBED BARS 1'-0".
- (A07) STONE MASONRY FACING AND ANTI-GRAFFITI SHIELD FOR STONE MASONRY SURFACES.
- (X) INDICATES WINGWALL NUMBER

F.F. = FRONT FACE  B.F. = BACK FACE




PILE LAYOUT

| NO. | DATE | REVISION | BY |
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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-539

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SOUTH ABUTMENT DETAILS 1

SHEET 5 OF 16

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8

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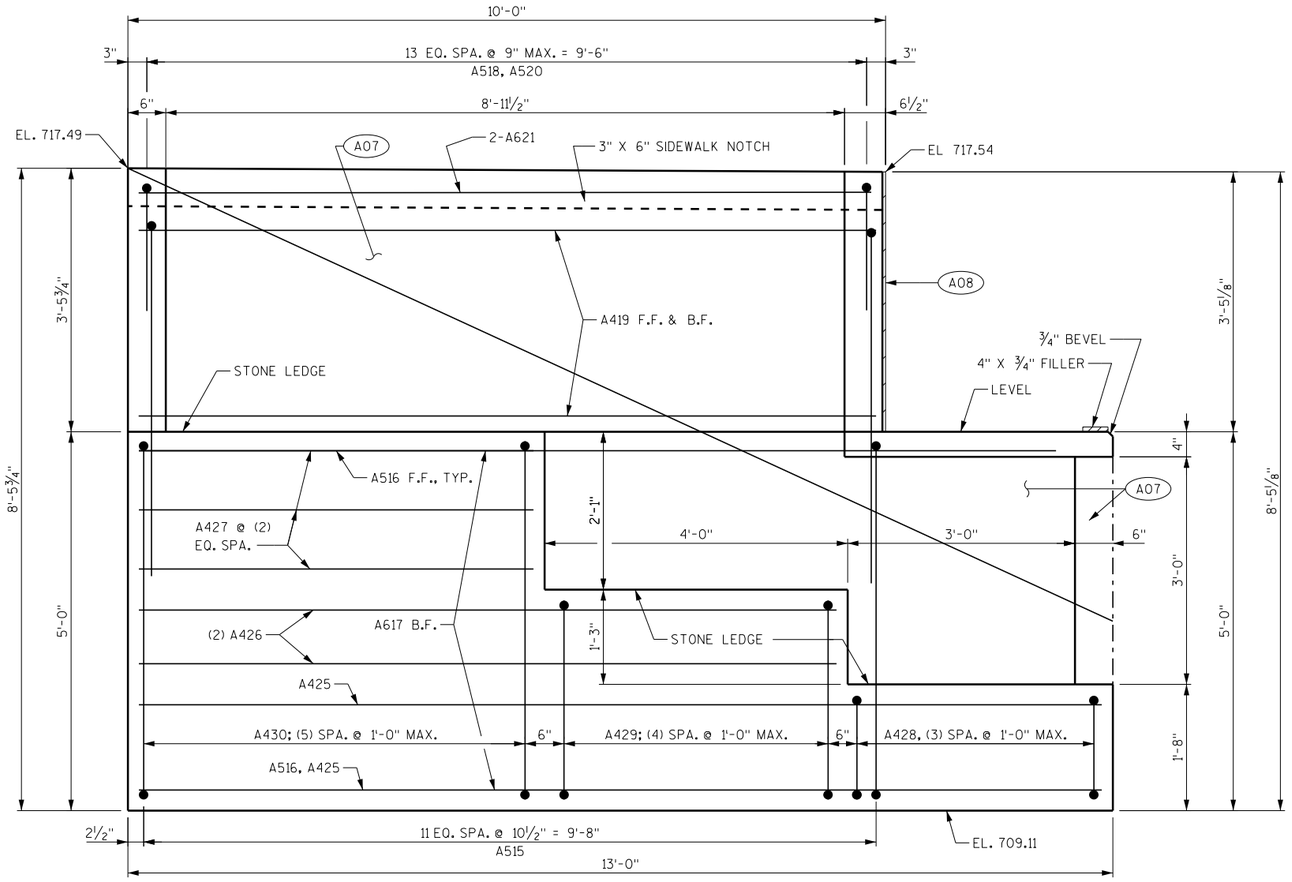
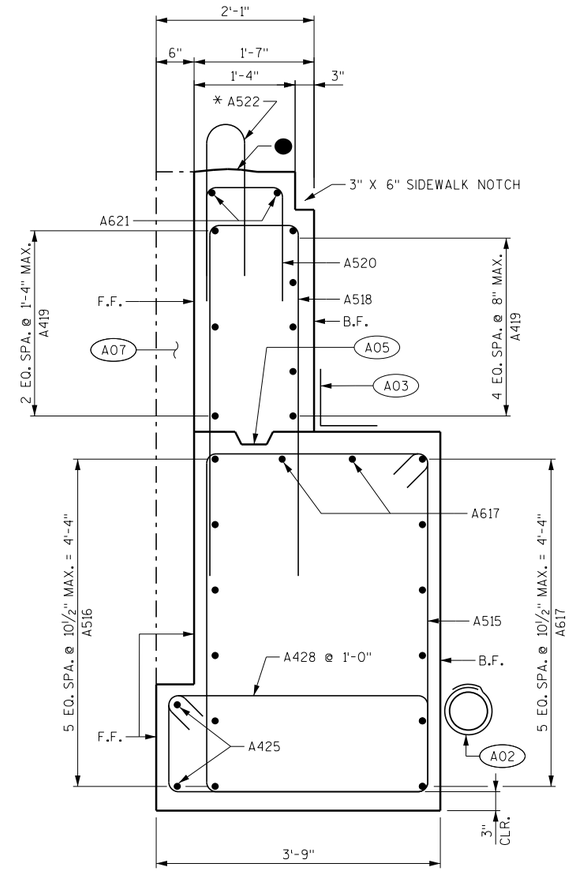



## WING ELEVATION

WING 1 SHOWN, WING 2 SIMILAR




## SECTION THRU WING

*SEE SHEET 10

## LEGEND

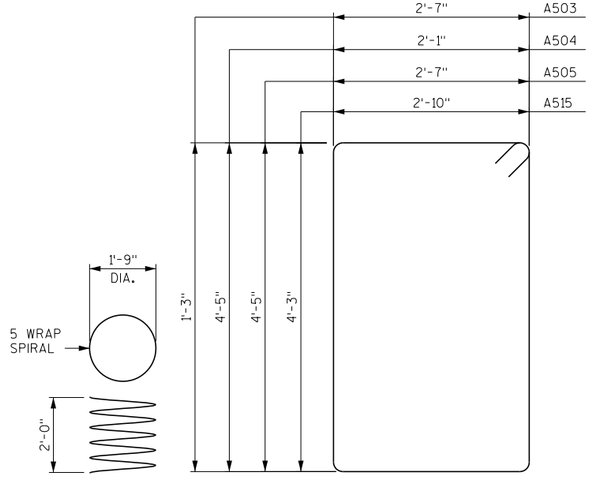
- (A02) PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MINIMUM TO SUITABLE DRAINAGE. PLACE ABOVE OBSERVED WATER EL. RODENT SCREEN REQUIRED. SEE SHEET 10 FOR DETAILS.
- (A03) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS AT BACK FACE.
- (A05) KEYED CONST. JOINT FORMED BY BEVELED 2" X 6".
- (A07) STONE MASONRY FACING AND ANTI-GRAFFITI SHIELD FOR STONE MASONRY SURFACES.
- (A08) ½" FILLER - TO EXTEND FROM BEAM SEAT TO TOP OF CONCRETE PARAPET ON WING. FILLER INCLUDED IN WING LENGTH.
- ● STRIKE OFF AS SHOWN AND LEAVE ROUGH.

F.F. = FRONT FACE B.F. = BACK FACE

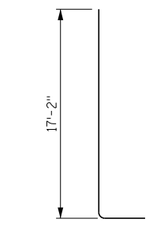
## BILL OF BARS

THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE. BAR DIMENSIONS ARE OUT TO OUT OF BAR.

| S. ABUT. - BILL OF BARS | | | | | | UNCOATED = 3610 LBS |
|---|---|---|---|---|---|---|
| MARK | COATED | NO. REQ'D | LENGTH | BAR SERIES | BENT | COATED = 2210 LBS<br>LOCATION |
| A401 | | 16 | 2'-3" | | | BODY - PILES VERT. |
| A402 | | 8 | 28'-0" | | X | BODY - PILES SPIRAL |
| A503 | | 14 | 8'-0" | | X | BODY - STIRRUPS - ENDS |
| A504 | | 14 | 13'-8" | | X | BODY - STIRRUPS |
| A505 | | 52 | 14'-8" | | X | BODY - STIRRUPS |
| A606 | | 14 | 8'-8" | | | BODY - HORIZ. |
| A607 | | 22 | 10'-2" | | | BODY - HORIZ. |
| A608 | | 18 | 29'-2" | | | BODY - HORIZ. |
| A809 | | 4 | 17'-8" | | | BODY - HORIZ. - B.F. |
| A810 | | 10 | 18'-4" | | X | BODY - HORIZ. - B.F. |
| A611 | | 12 | 8'-0" | | | BODY - HORIZ. |
| A512 | | 21 | 5'-10" | | X | BODY - VERT. - MID SLAB SEAT |
| A413 | | 4 | 20'-0" | | | BODY - HORIZ. - MID SLAB SEAT |
| A514 | X | 52 | 2'-0" | | | BODY - VERT. DOWELS |
| A515 | X | 24 | 14'-10" | | X | WINGS 1 & 2 - BODY STIRRUPS |
| A516 | X | 12 | 12'-1" | | | WINGS 1 & 2 - BODY - HORIZ. - F.F. |
| A617 | X | 16 | 12'-1" | | | WINGS 1 & 2 - BODY - HORIZ. - B.F. |
| A518 | X | 28 | 10'-3" | | X | WINGS 1 & 2 - STEM - VERT. |
| A419 | X | 16 | 9'-6" | | | WINGS 1 & 2 - STEM - HORIZ. - F.F. & B.F. |
| A520 | X | 28 | 3'-6" | | X | WINGS 1 & 2 - STEM - VERT. - SIDEWALK NOTCH |
| A621 | X | 4 | 9'-6" | | | WINGS 1 & 2 - STEM - HORIZ. - SIDEWALK NOTCH |
| A522 | X | 20 | 11'-5" | | X | PARAPET WALL - VERT |
| A523 | X | 20 | 9'-0" | | | PARAPET WALL - HORIZ. |
| A424 | | 12 | 1'-10" | | X | BODY - VERTICAL F.F. AT STONE FACING |
| A425 | X | 8 | 12'-8" | | | WINGS 1 & 2 - HORIZ. AT STONE LEDGE |
| A426 | X | 8 | 9'-2" | | | WINGS 1 & 2 - HORIZ. AT STONE LEDGE |
| A427 | X | 8 | 5'-2" | | | WINGS 1 & 2 - HORIZ. AT STONE LEDGE |
| A428 | X | 8 | 14'-0" | | X | WINGS 1 & 2 - VERT. AT STONE LEDGE |
| A429 | X | 10 | 12'-2" | | X | WINGS 1 & 2 - VERT. AT STONE LEDGE |
| A430 | X | 12 | 9'-8" | | X | WINGS 1 & 2 - VERT. AT STONE LEDGE |




A402 — A503, A504, A505, A515

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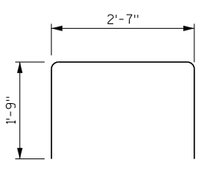


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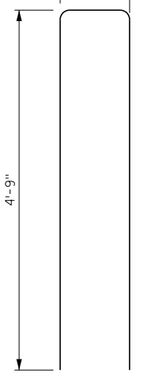


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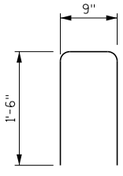


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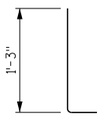


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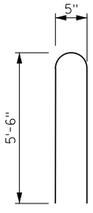


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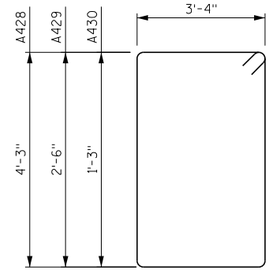


A427, A428, A429

| NO. | DATE | REVISION | BY |
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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-539

DRAWN BY VJD | PLANS CK'D. SKG

SOUTH ABUTMENT DETAILS 2

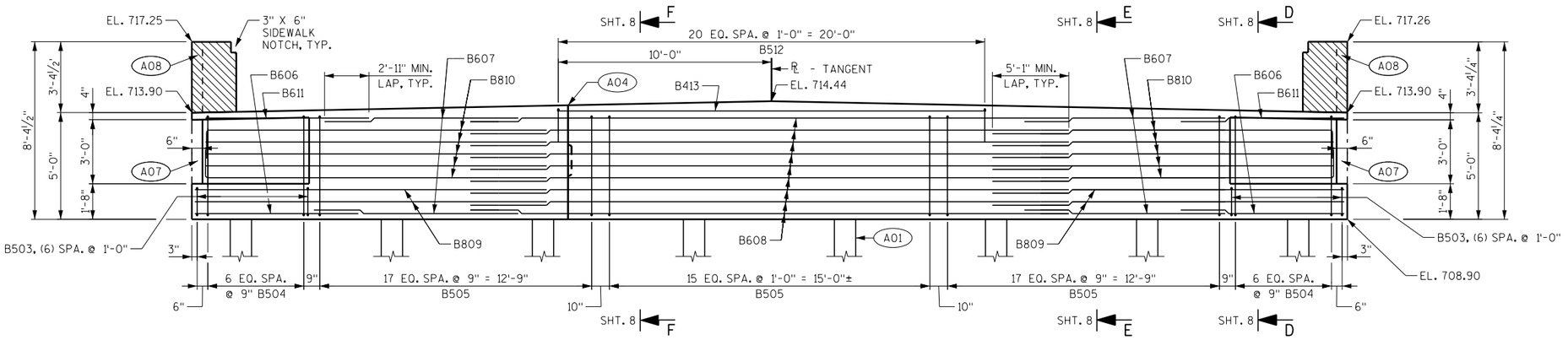
SHEET 6 OF 16
35

8

8

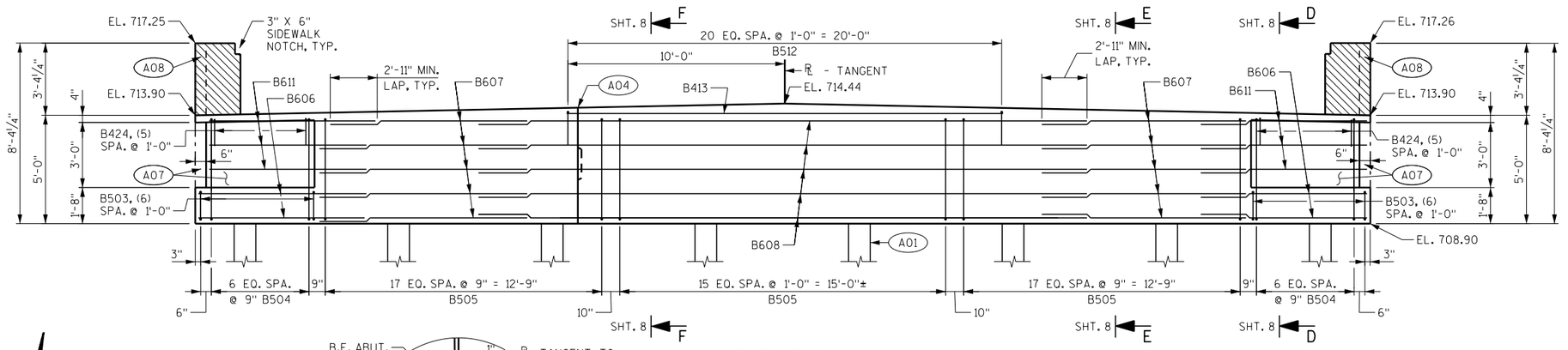
STATE PROJECT NUMBER

2660-04-70



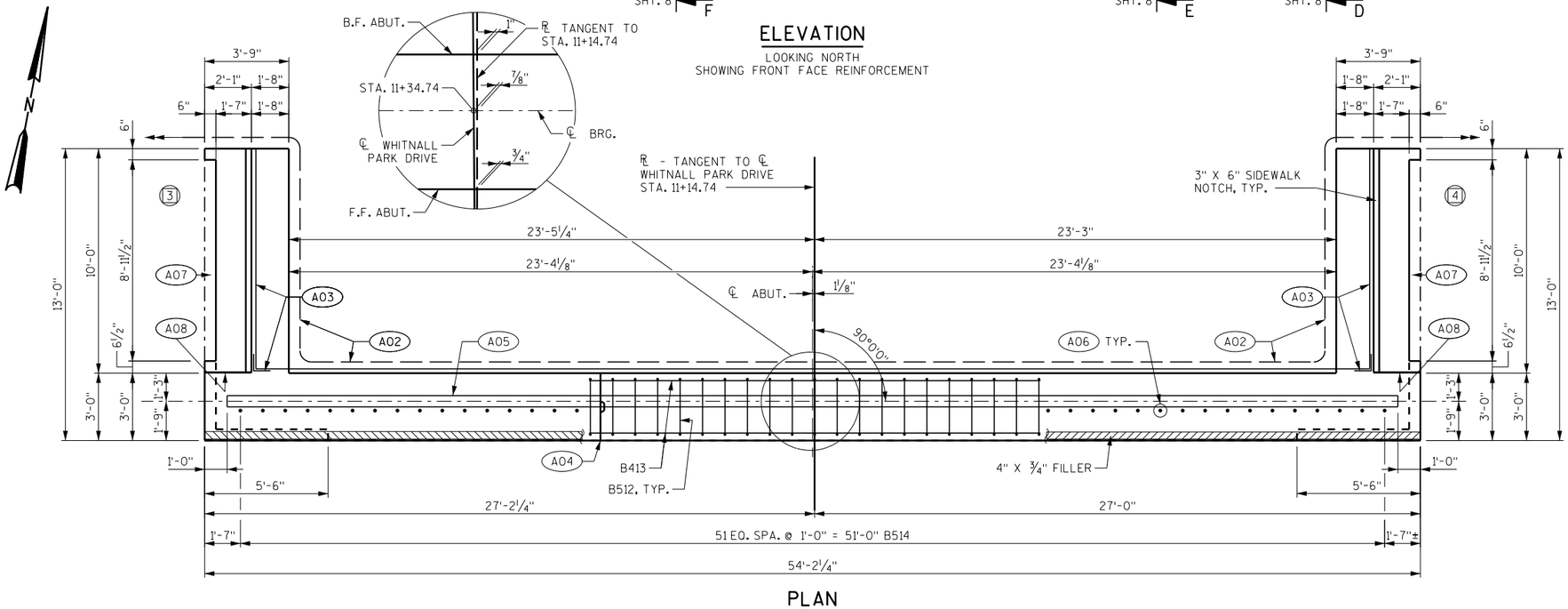

## ELEVATION

LOOKING NORTH
SHOWING BACK FACE REINFORCEMENT

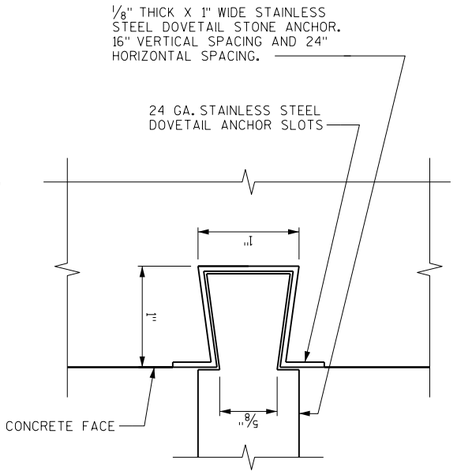



## ELEVATION

LOOKING NORTH
SHOWING FRONT FACE REINFORCEMENT




## PLAN




## DOVETAIL ANCHOR SLOT

FOR ATTACHING STONE MASONRY TO CONCRETE
(SEE SPECIAL PROVISIONS FOR SPACING)

## NOTES

FOR PILE SPLICE DETAIL, REFER TO SHEET 10.

## LEGEND

(A01) SUPPORT ABUTMENT ON HP 12 X 53 STEEL PILING. ESTIMATED 40'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 220 TONS PER PILE.

(A02) PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MINIMUM TO SUITABLE DRAINAGE. PLACE ABOVE OBSERVED WATER EL. RODENT SCREEN REQUIRED. SEE SHEET 10 FOR DETAILS.

(A03) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS AT BACK FACE.

(A04) VERT. CONST. JOINT KEYWAY FORMED BY BEVELED 2" X 8" X 1'-6". CLEAR BRG. SEAT BY 3" MIN. CLEAR PILES BY 9" MIN. RUN BAR STEEL THROUGH JOINT AND SEAL WITH 18" RUBBERIZED MEMBRANE WATERPROOFING.

(A05) KEYED CONST. JOINT FORMED BY BEVELED 2" X 6".

(A06) BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. EMBED BARS 1'-0".

(A07) STONE MASONRY FACING AND ANTI-GRAFFITI SHIELD FOR STONE MASONRY SURFACES.

(A08) ½" FILLER - TO EXTEND FROM BEAM SEAT TO TOP OF CONCRETE PARAPET ON WING. FILLER INCLUDED IN WING LENGTH.

(X) INDICATES WINGWALL NUMBER

F.F. = FRONT FACE B.F. = BACK FACE

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DRAWN BY VJD | PLANS CK'D. SKG

NORTH ABUTMENT

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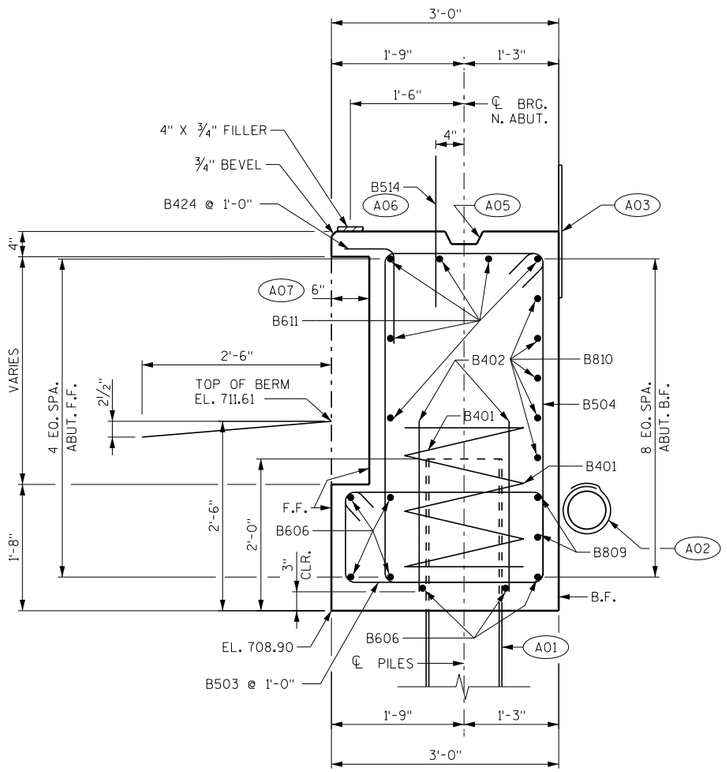
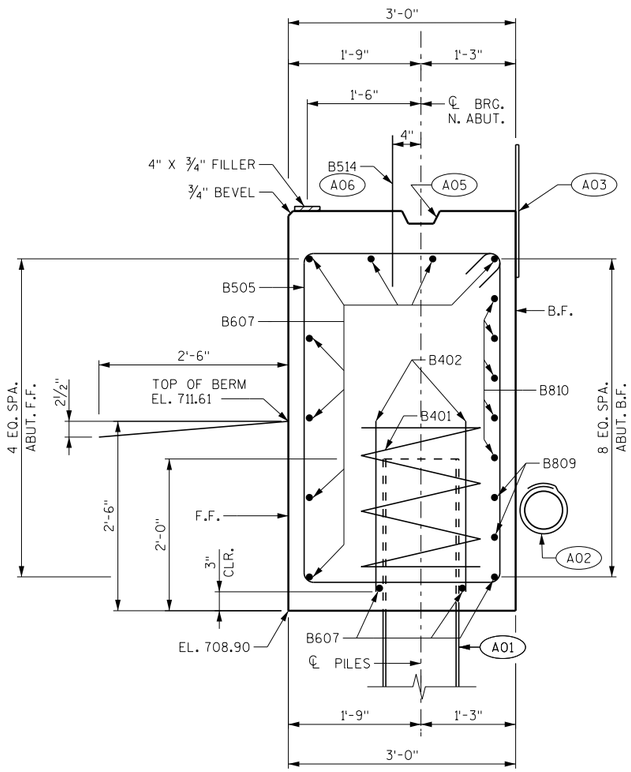


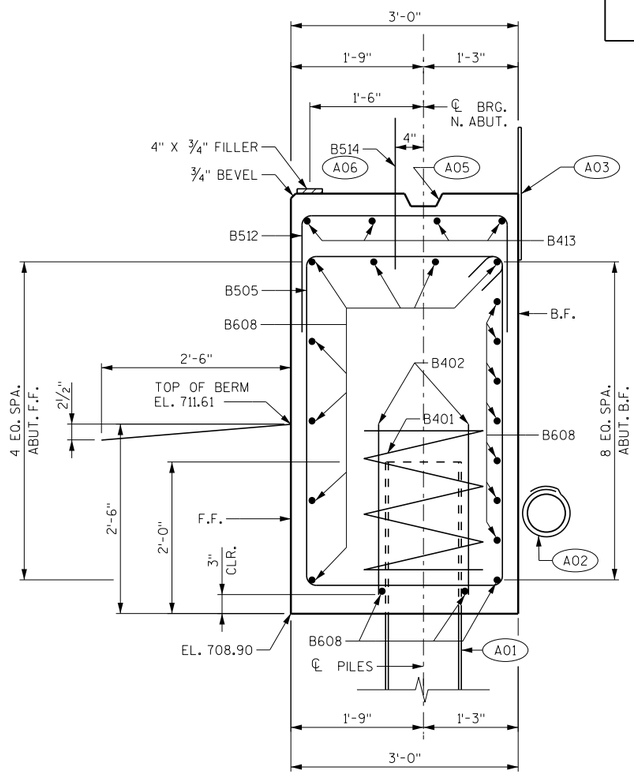

## SECTION D-D

SEE SHEET 7



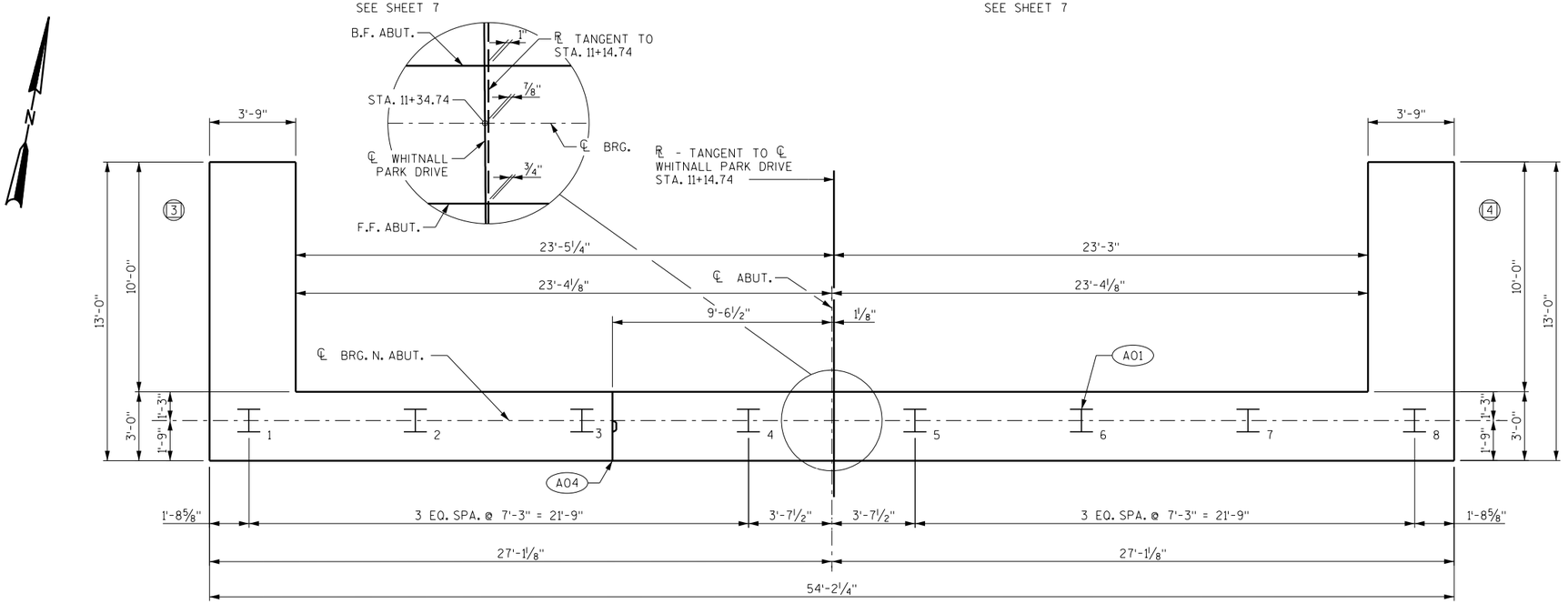

## SECTION E-E

SEE SHEET 7




## SECTION F-F

SEE SHEET 7




## LEGEND

- (A01) SUPPORT ABUTMENT ON HP 12 X 53 STEEL PILING. ESTIMATED 40'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 220 TONS PER PILE.
- (A02) PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MINIMUM TO SUITABLE DRAINAGE. PLACE ABOVE ORDINARY HIGH WATER EL. RODENT SCREEN REQUIRED. SEE SHEET 10 FOR DETAILS.
- (A03) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS AT BACK FACE.
- (A04) VERT. CONST. JOINT KEYWAY FORMED BY BEVELED 2" X 8" X 1'-6". CLEAR BRG. SEAT BY 3" MIN. CLEAR PILES BY 9" MIN. RUN BAR STEEL THROUGH JOINT AND SEAL WITH 18" RUBBERIZED MEMBRANE WATERPROOFING.
- (A05) KEYED CONST. JOINT FORMED BY BEVELED 2" X 6".
- (A06) BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. EMBED BARS 1'-0".
- (A07) STONE MASONRY FACING AND ANTI-GRAFFITI SHIELD FOR STONE MASONRY SURFACES.
- (X) INDICATES WINGWALL NUMBER

F.F. = FRONT FACE  B.F. = BACK FACE

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NORTH ABUTMENT DETAILS 1

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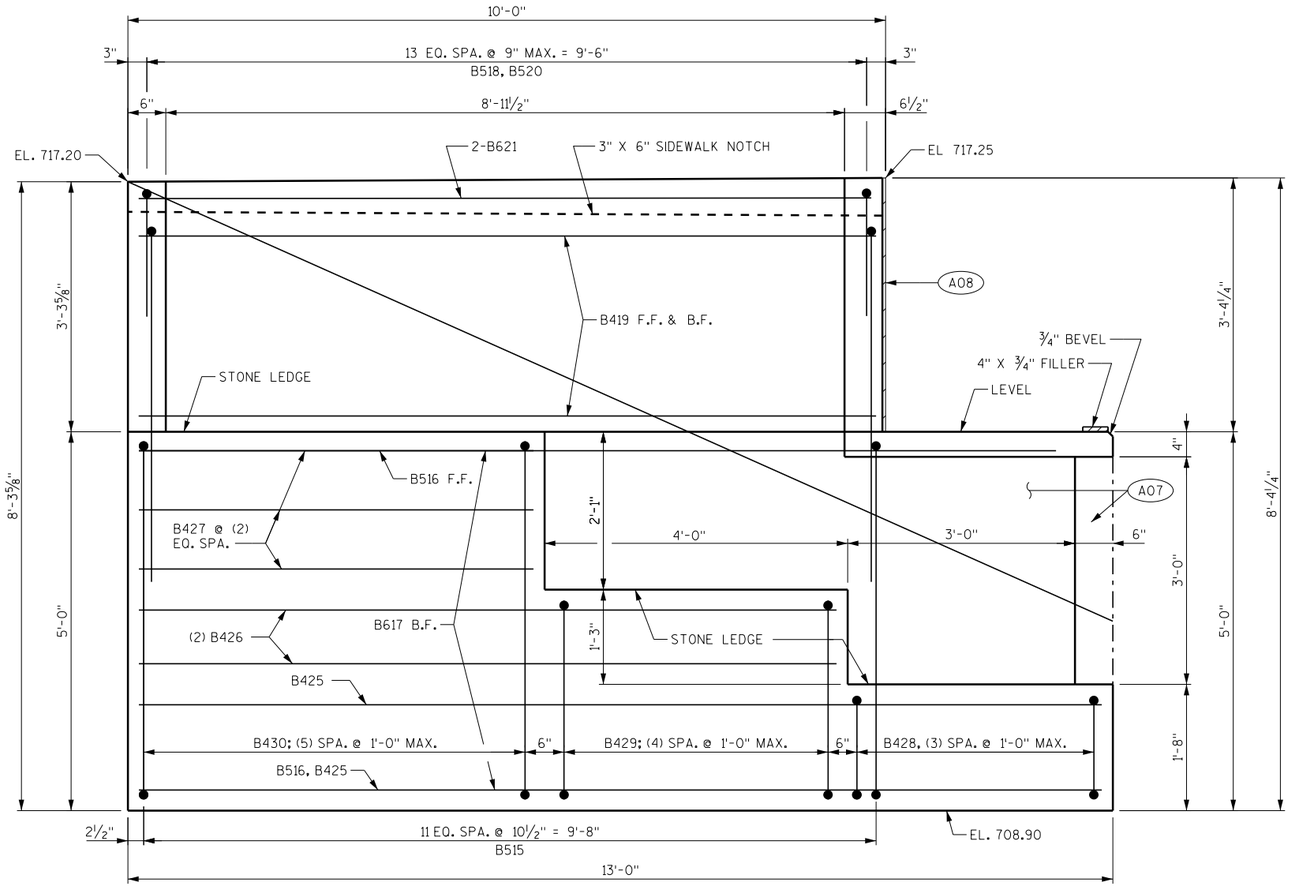
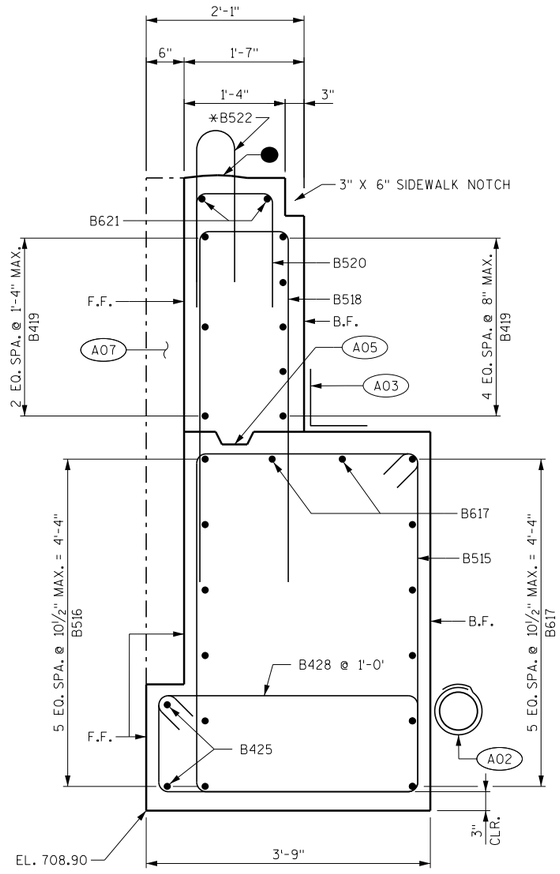



## WING ELEVATION

WING 3 SHOWN, WING 4 SIMILAR




## SECTION THRU WING

*SEE SHEET 10

## LEGEND

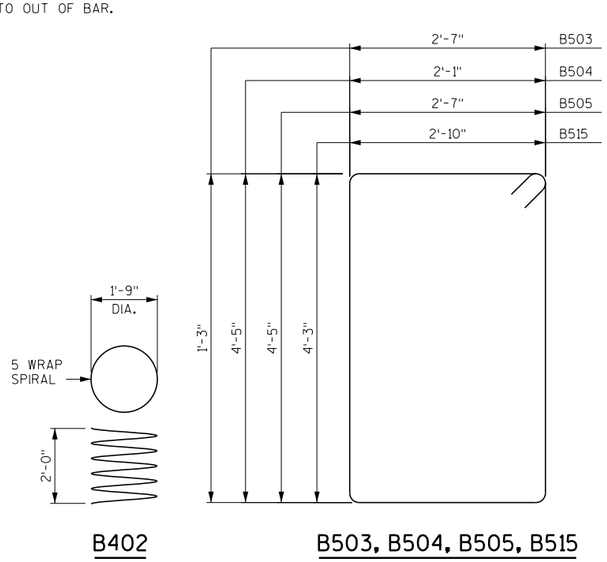
- (A02) PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MINIMUM TO SUITABLE DRAINAGE. PLACE ABOVE ORDINARY HIGH WATER EL. RODENT SCREEN REQUIRED. SEE SHEET 10 FOR DETAILS.
- (A03) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS AT BACK FACE.
- (A05) KEYED CONST. JOINT FORMED BY BEVELED 2" X 6".
- (A07) STONE MASONRY FACING AND ANTI-GRAFFITI SHIELD FOR STONE MASONRY SURFACES.
- (A08) ½" FILLER - TO EXTEND FROM BEAM SEAT TO TOP OF CONCRETE PARAPET ON WING. FILLER INCLUDED IN WING LENGTH.
- ● STRIKE OFF AS SHOWN AND LEAVE ROUGH.

F.F. = FRONT FACE  B.F. = BACK FACE

## BILL OF BARS

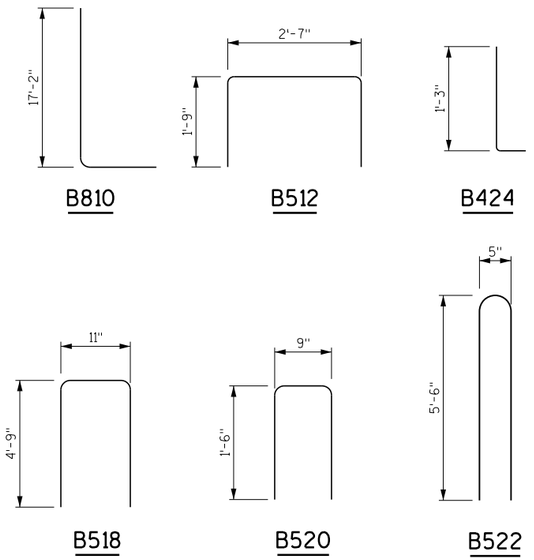
THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE. BAR DIMENSIONS ARE OUT TO OUT OF BAR.

| N. ABUT. - BILL OF BARS | | | | | | UNCOATED = 3610 LBS |
|---|---|---|---|---|---|---|
| MARK | COATED | NO. REQ'D | LENGTH | BAR SERIES | BENT | COATED = 2210 LBS<br>LOCATION |
| B401 | | 16 | 2'-3" | | | BODY - PILES VERT. |
| B402 | | 8 | 28'-0" | | X | BODY - PILES SPIRAL |
| B503 | | 14 | 8'-0" | | X | BODY - STIRRUPS - ENDS |
| B504 | | 14 | 13'-8" | | X | BODY - STIRRUPS |
| B505 | | 52 | 14'-8" | | X | BODY - STIRRUPS |
| B606 | | 14 | 8'-8" | | | BODY - HORIZ. |
| B607 | | 22 | 10'-2" | | | BODY - HORIZ. |
| B608 | | 18 | 29'-2" | | | BODY - HORIZ. |
| B809 | | 4 | 17'-8" | | | BODY - HORIZ. - B.F. |
| B810 | | 10 | 18'-4" | | X | BODY - HORIZ. - B.F. |
| B611 | | 12 | 8'-0" | | | BODY - HORIZ. |
| B512 | | 21 | 5'-10" | | X | BODY - VERT. - MID SLAB SEAT |
| B413 | | 4 | 20'-0" | | | BODY - HORIZ. - MID SLAB SEAT |
| B514 | X | 52 | 2'-0" | | | BODY - VERT. DOWELS |
| B515 | X | 24 | 14'-10" | | X | WINGS 1 & 2 - BODY STIRRUPS |
| B516 | X | 12 | 12'-1" | | | WINGS 1 & 2 - BODY - HORIZ. - F.F. |
| B617 | X | 16 | 12'-1" | | | WINGS 1 & 2 - BODY - HORIZ. - B.F. |
| B518 | X | 28 | 10'-3" | | X | WINGS 1 & 2 - STEM - VERT. |
| B419 | X | 16 | 9'-6" | | | WINGS 1 & 2 - STEM - HORIZ. - F.F. & B.F. |
| B520 | X | 28 | 3'-6" | | X | WINGS 1 & 2 - STEM - VERT. - SIDEWALK NOTCH |
| B621 | X | 4 | 9'-6" | | | WINGS 1 & 2 - STEM - HORIZ. - SIDEWALK NOTCH |
| B522 | X | 20 | 11'-5" | | X | PARAPET WALL - VERT |
| B523 | X | 20 | 9'-0" | | | PARAPET WALL - HORIZ. |
| B424 | | 12 | 1'-10" | | X | BODY - VERTICAL F.F. AT STONE FACING |
| B425 | X | 8 | 12'-8" | | | WINGS 3 & 4 - HORIZ. AT STONE LEDGE |
| B426 | X | 8 | 9'-2" | | | WINGS 3 & 4 - HORIZ. AT STONE LEDGE |
| B427 | X | 8 | 5'-2" | | | WINGS 3 & 4 - HORIZ. AT STONE LEDGE |
| B428 | X | 8 | 14'-0" | | X | WINGS 3 & 4 - VERT. AT STONE LEDGE |
| B429 | X | 10 | 12'-2" | | X | WINGS 3 & 4 - VERT. AT STONE LEDGE |
| B430 | X | 12 | 9'-8" | | X | WINGS 3 & 4 - VERT. AT STONE LEDGE |

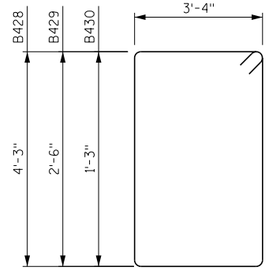



B402

B503, B504, B505, B515




B810  B512  B424  B518  B520  B522




B428, B429, B430

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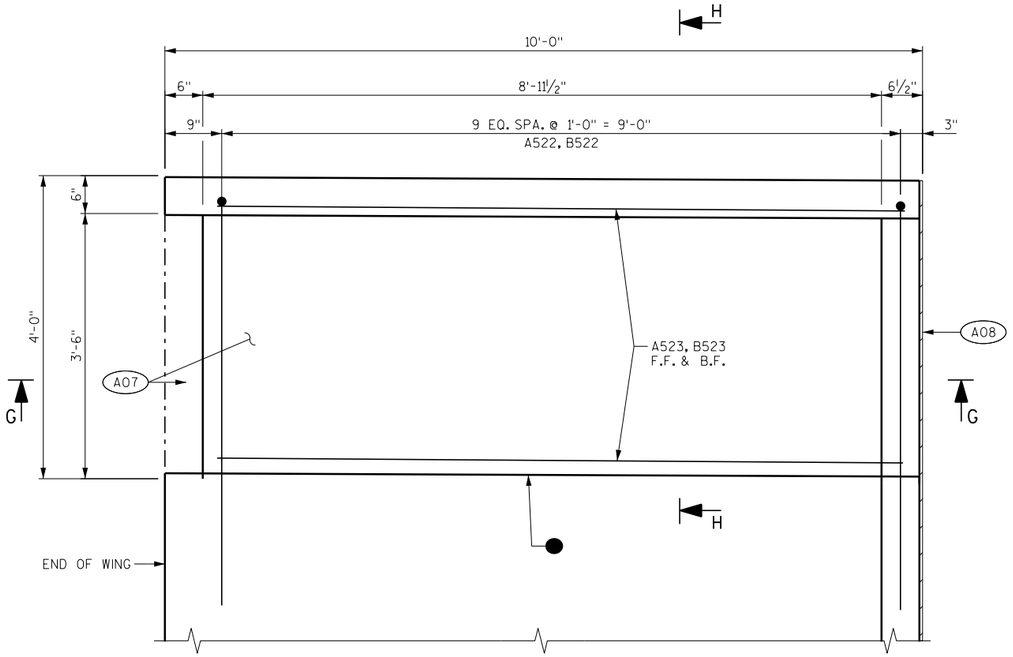
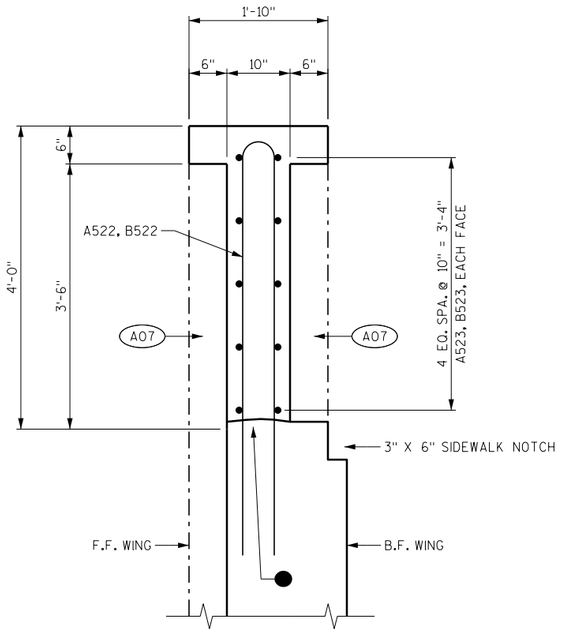


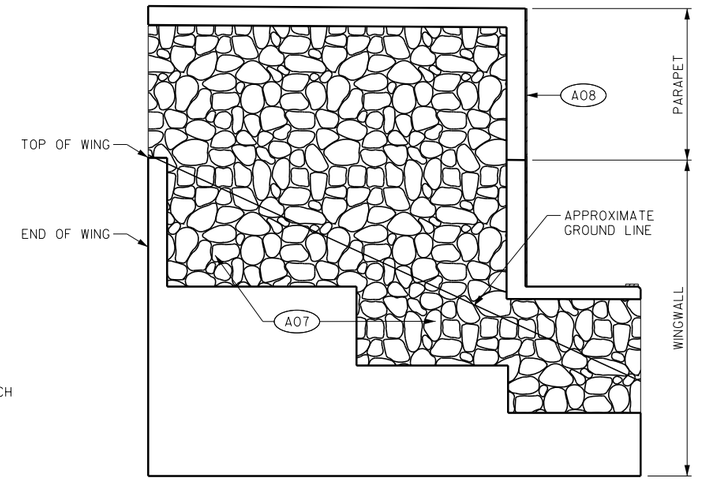

## WINGWALL PARAPET ELEVATION

ALL WINGS SIMILAR



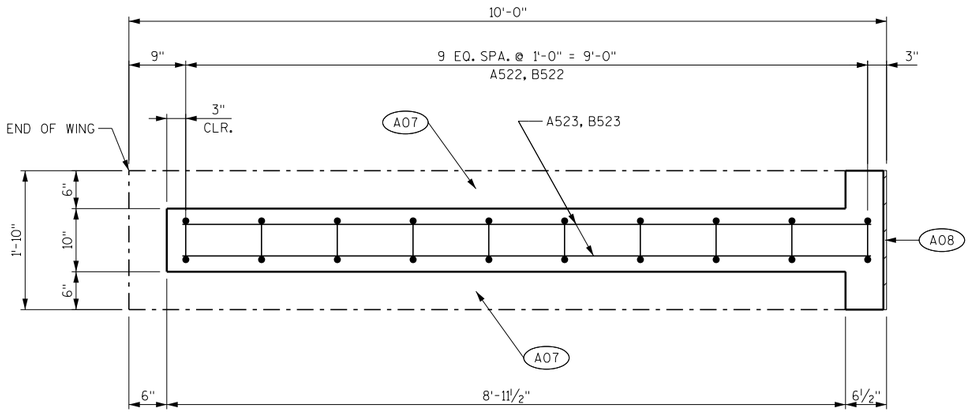

## SECTION H-H

ALL WINGS SIMILAR



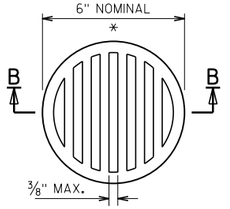

## WINGWALL ELEVATION

SHOWING STONE MASONRY
(ALL WINGS SIMILAR)




## SECTION G-G

ALL WINGS SIMILAR




SECTION B-B

## RODENT SHIELD DETAIL

* DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SO SLOTS ARE VERTICAL.

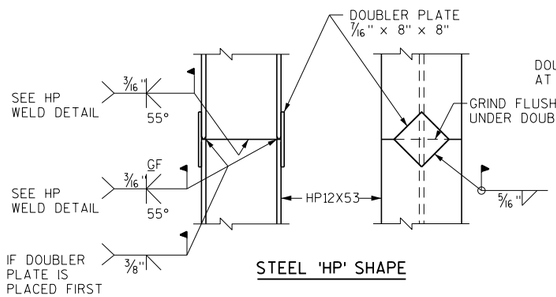
THE RODENT SHIELD, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL WITH THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALLY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SHIELD TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 × 1-INCH STAINLESS STEEL SHEET METAL SCREWS.

## LEGEND

- (A07) STONE MASONRY FACING AND ANTI-GRAFFITI SHIELD FOR STONE MASONRY SURFACES.
- (A08) ½" FILLER - TO EXTEND FROM BEAM SEAT TO TOP OF CONCRETE PARAPET ON WING. FILLER INCLUDED IN WING LENGTH.
- ● STRIKE OFF AS SHOWN AND LEAVE ROUGH.

F.F. = FRONT FACE  B.F. = BACK FACE




STEEL 'HP' SHAPE

HP WELD DETAIL

FLANGE SHOWN, WEB SIMILAR

## PILE SPLICE DETAIL

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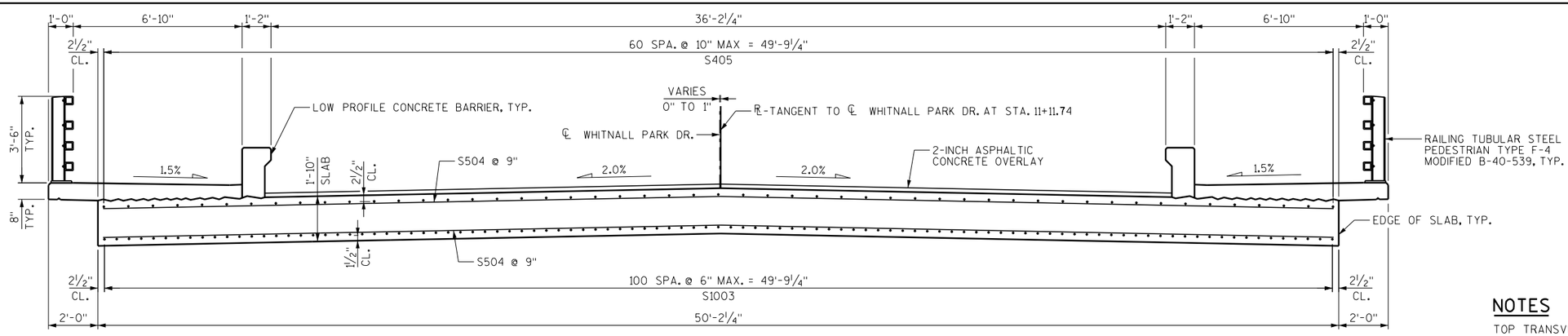
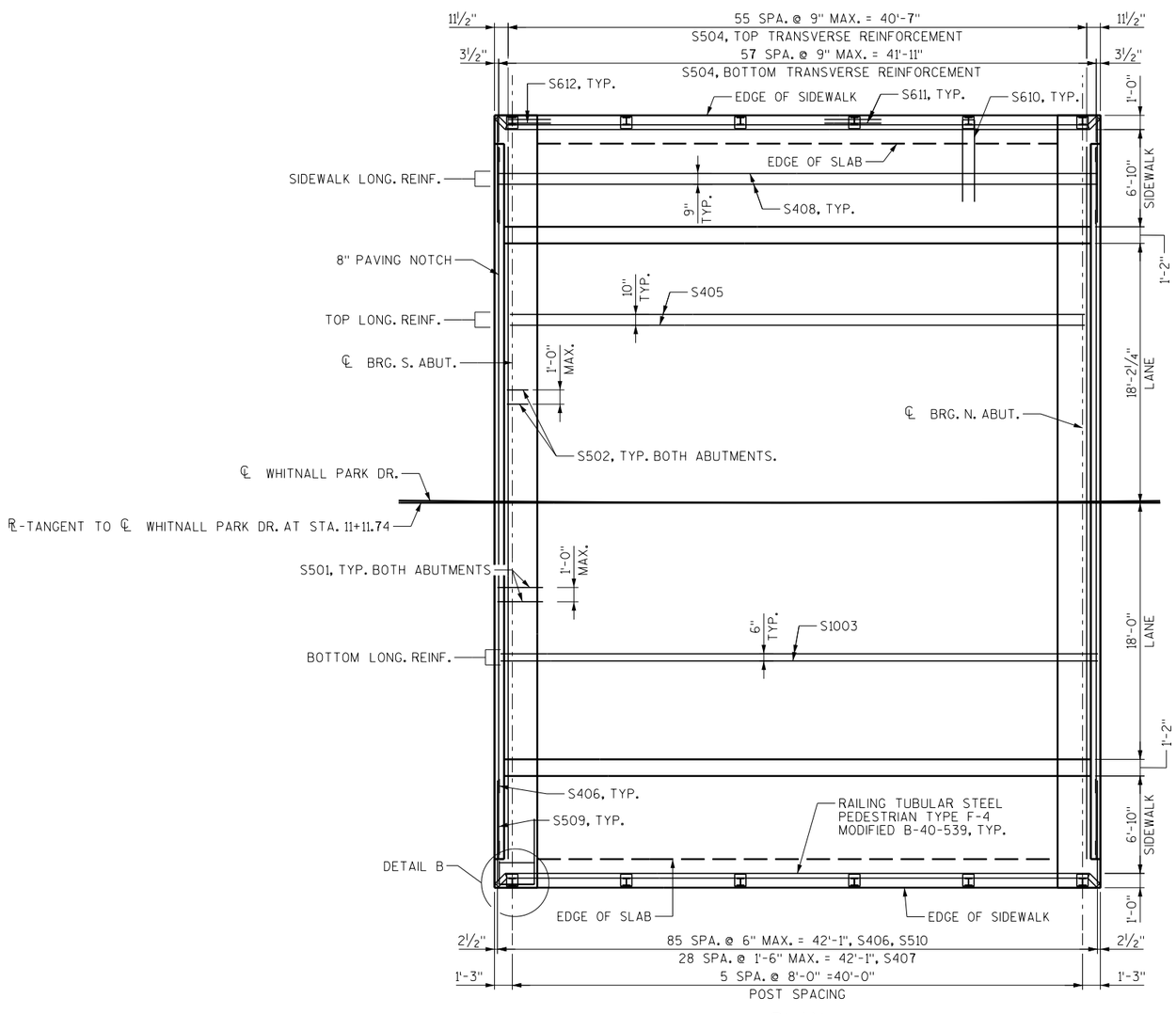



## CROSS SECTION THRU ROADWAY

(SIDWALK REINFORCEMENT NOT SHOWN. REFER TO DETAIL A.)




## PLAN

## NOTES

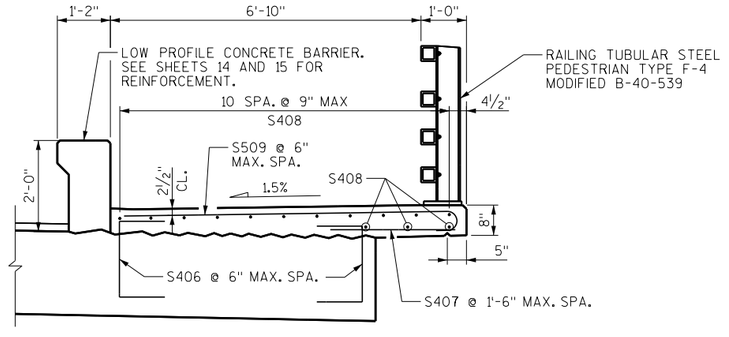
TOP TRANSVERSE BARS IN SLAB SHALL BE SUPPORTED BY INDIVIDUAL BAR CHAIRS AT APPROXIMATELY 3'-0" CENTERS EACH WAY. BOTTOM LONGITUDINAL BARS SHALL BE SUPPORTED BY CONTINUOUS BAR CHAIRS AT APPROXIMATELY 4'-0" CENTERS.

ALL SLAB THICKNESS DIMENSIONS ARE MINIMUM. ANY TOLERANCES NECESSARY TO CORRECT CONSTRUCTION DISCREPANCIES ARE TO BE PLUS (+).

SIDEWALKS PLACED ON TOP OF THE SLAB SHALL BE POURED AFTER FALSEWORK HAS BEEN RELEASED, EXCEPT FOR STAGED CONSTRUCTION.

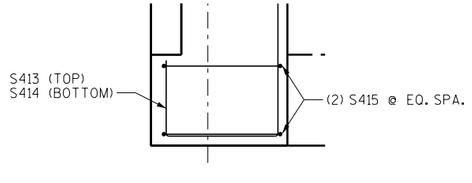
CAMBER SPANS AS SHOWN TO PROVIDE FOR DEAD LOAD DEFLECTION AND FUTURE CREEP. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT.

PRIOR TO RELEASING SLAB FALSEWORK, TAKE TOP OF SLAB ELEVATIONS AT THE ℄ OF ABUTMENTS AND AT 5/10 PTS. TO VERIFY CAMBER. TAKE ELEVATIONS ALONG GUTTER LINES AND CROWN ℄.




## DETAIL A

(SLAB AND LOW PROFILE CONCRETE BARRIER REINFORCEMENT NOT SHOWN)




## DETAIL B

(ABUTMENT DIAPHRAGM END REINFORCEMENT)

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SUPERSTRUCTURE

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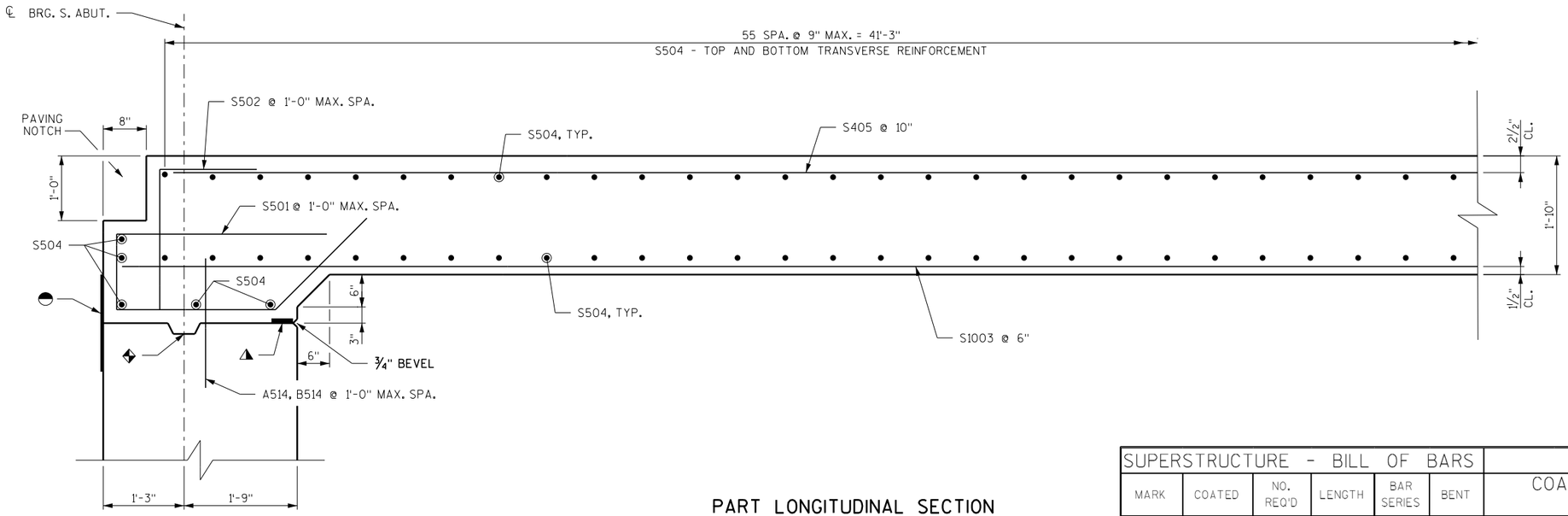



PART LONGITUDINAL SECTION

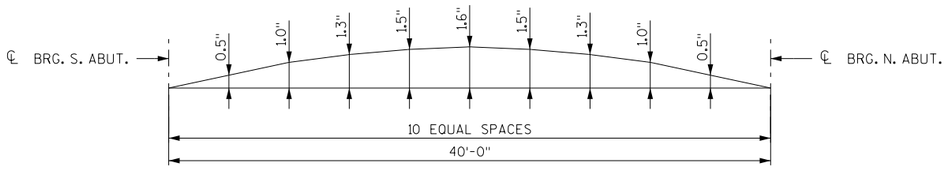
## LEGEND

- 18" RUBBERIZED MEMBRANE WATERPROOFING
- 4" X ¾" FILLER (LENGTH OF ABUTMENT)
- CONST. JOINT KEYWAY FORMED BY A BEVELED 2" X 6"

## TOP OF DECK ELEVATIONS

| LOCATION | C/L BRG. S. ABUT. | 0.1L | 0.2L | 0.3L | 0.4L | 0.5L | 0.6L | 0.7L | 0.8L | 0.9L | C/L BRG. N. ABUT. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| STATION | 10+94.74 | 10+98.74 | 11+02.74 | 11+06.74 | 11+10.74 | 11+14.74 | 11+18.74 | 11+22.74 | 11+26.74 | 11+30.74 | 11+34.74 |
| W. EDGE OF SLAB | 716.73 | 716.71 | 716.69 | 716.67 | 716.65 | 716.63 | 716.60 | 716.58 | 716.56 | 716.54 | 716.52 |
| CROWN (R/L) | 717.24 | 717.22 | 717.19 | 717.17 | 717.15 | 717.13 | 717.11 | 717.09 | 717.06 | 717.04 | 717.02 |
| E. EDGE OF SLAB | 716.74 | 716.72 | 716.69 | 716.67 | 716.65 | 716.63 | 716.61 | 716.59 | 716.56 | 716.54 | 716.52 |

ELEVATIONS SHOWN ARE FOR THE FINISHED CONCRETE DECK AND DO NOT INCLUDE THE 2" ASPHALTIC OVERLAY OR ALLOWANCES OF DEAD LOAD DEFLECTION AND FUTURE CREEP.




## CAMBER

NOTES:

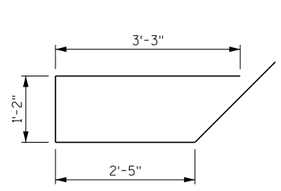
CAMBER SPAN AS SHOWN TO PROVIDE FOR DEAD LOAD DEFLECTION AND FUTURE CREEP. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT.

PRIOR TO RELEASING SLAB FALSEWORK, TAKE TOP OF SLAB ELEVATIONS AT THE CENTERLINE OF ABUTMENTS AND AT ½ POINTS TO VERIFY CAMBER. TAKE ELEVATIONS AT EDGES OF SLAB AND AT CENTERLINE OF ROAD.

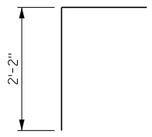
## SUPERSTRUCTURE - BILL OF BARS

COATED = 31010 LBS

| MARK | COATED | NO. REQ'D | LENGTH | BAR SERIES | BENT | LOCATION |
|---|---|---|---|---|---|---|
| S501 | X | 102 | 8'-6" | | X | SLAB AT ABUTMENT |
| S502 | X | 102 | 3'-6" | | X | SLAB AT ABUTMENT |
| S1003 | X | 101 | 41'-9" | | | SLAB LONG. BOTTOM |
| S504 | X | 122 | 49'-11" | | | SLAB TRANS. TOP AND BOTTOM |
| S405 | X | 61 | 40'-3" | | | SLAB LONG. TOP |
| S406 | X | 344 | 3'-6" | | X | DOWEL AT SIDEWALK |
| S407 | X | 58 | 2'-9" | | | SIDEWALK TRANS. BOTTOM |
| S408 | X | 28 | 42'-1" | | | SIDEWALK LONG. TOP AND BOTTOM |
| S509 | X | 172 | 8'-0" | | X | SIDEWALK TRANS. TOP |
| S610 | X | 12 | 12'-0" | | X | SLAB AT RAIL POSTS |
| S611 | X | 16 | 4'-0" | | | SLAB AT INTERIOR RAIL POSTS |
| S612 | X | 8 | 3'-10" | | X | SLAB AT END RAIL POSTS |
| S413 | X | 4 | 8'-4" | | X | ABUTMENT DIAPHRAGM CORNER HORIZ. |
| S414 | X | 4 | 11'-1" | | X | ABUTMENT DIAPHRAGM CORNER HORIZ. |
| S415 | X | 8 | 9'-10" | | X | ABUTMENT DIAPHRAGM CORNER VERT. |




S501

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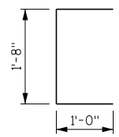


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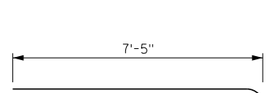
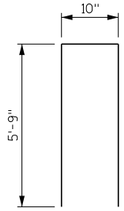
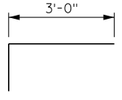



S510




S611

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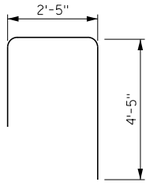


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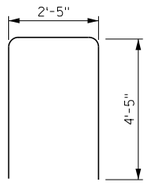


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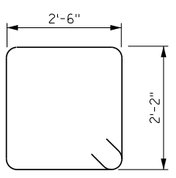


S415

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SUPERSTRUCTURE DETAILS

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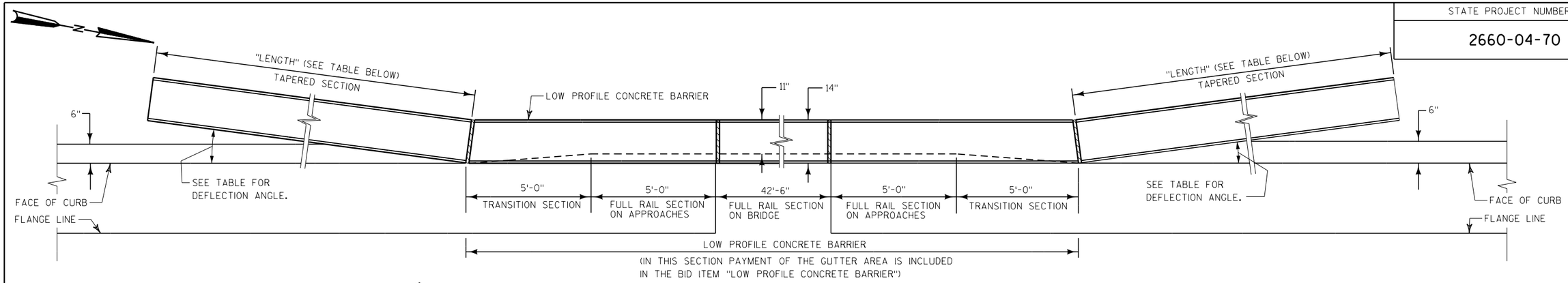


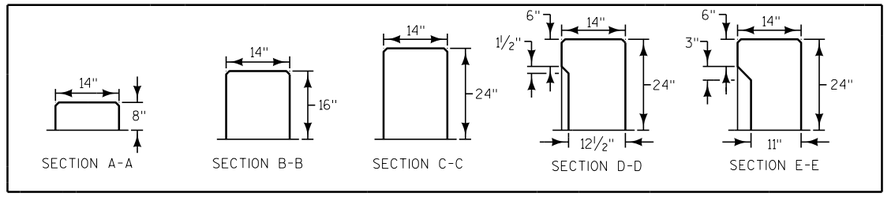

## PLAN VIEW

(LOW PROFILE CONCRETE BARRIER ON WEST SIDE OF STRUCTURE SHOWN. LOW PROFILE BARRIER ON EAST SIDE OF STRUCTURE SIMILAR)

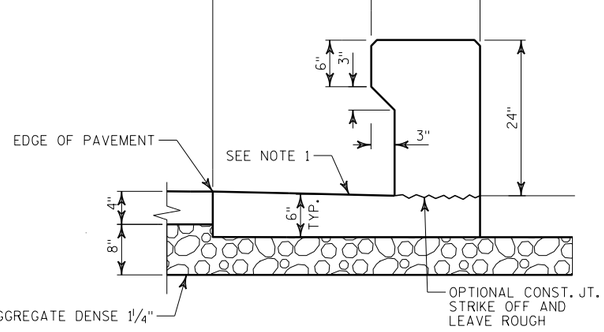



## ELEVATION VIEW

(LOW PROFILE CONCRETE BARRIER ON WEST SIDE OF STRUCTURE SHOWN. LOW PROFILE BARRIER ON EAST SIDE OF STRUCTURE SIMILAR)




## SECTIONS




## TYPICAL LOW PROFILE CONCRETE BARRIER SECTION

(TYPICAL FULL RAIL SECTION AT APPROACHES)

## NOTES

1) PAYMENT OF THE GUTTER AREA, AS NOTED ON THE PLAN VIEW, IS INCLUDED IN THE BID ITEM "LOW PROFILE CONCRETE BARRIER".

## DEFLECTION ANGLE TABLE

| LOCATION | DEFLECTION ANGLE |
|---|---|
| SOUTHEAST | 6.25° |
| SOUTHWEST | 7.49° |
| NORTHEAST | 4.12° |
| NORTHWEST | 6.33° |

NOTE: ANGLE IS MEASURED FROM A LINE PARALLEL TO THE FRONT FACE OF THE FULL BARRIER SECTION TO THE FRONT FACE OF THE TAPERED SECTION.

## TAPERED SECTION LENGTH TABLE

| LOCATION | LENGTH |
|---|---|
| SOUTHEAST | 33'-2" |
| SOUTHWEST | 32'-2" |
| NORTHEAST | 34'-11" |
| NORTHWEST | 33'-11" |

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LOW PROFILE CONCRETE BARRIER 1

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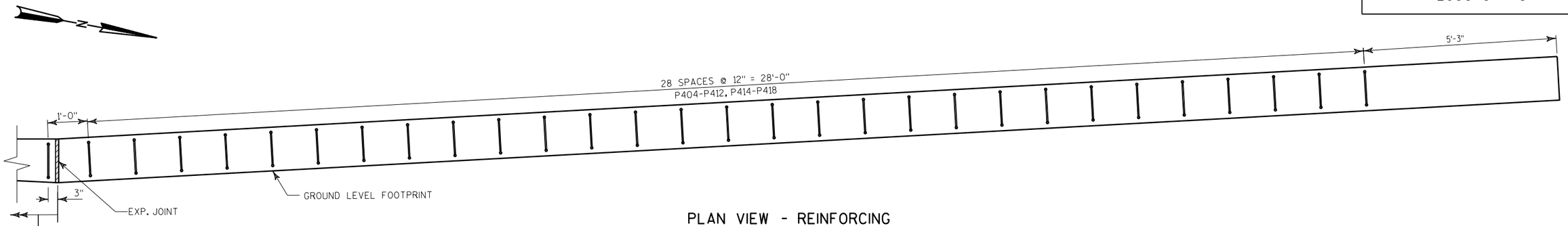
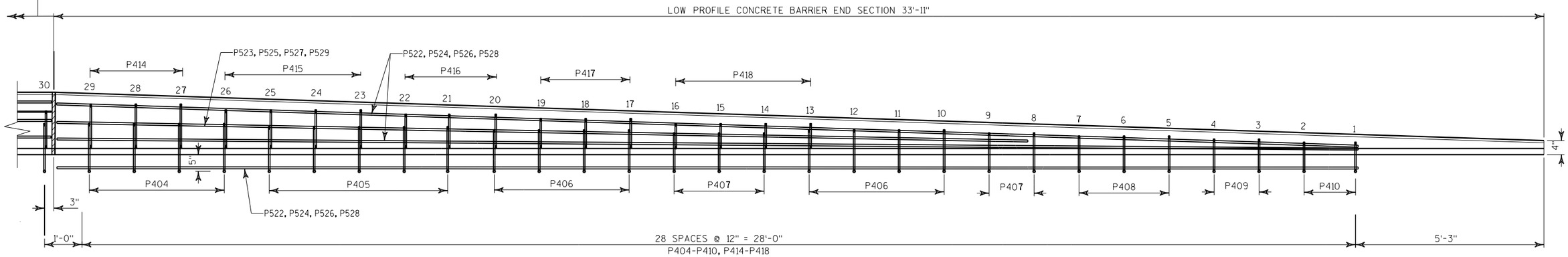
| 2660-04-70 |




## PLAN VIEW - REINFORCING

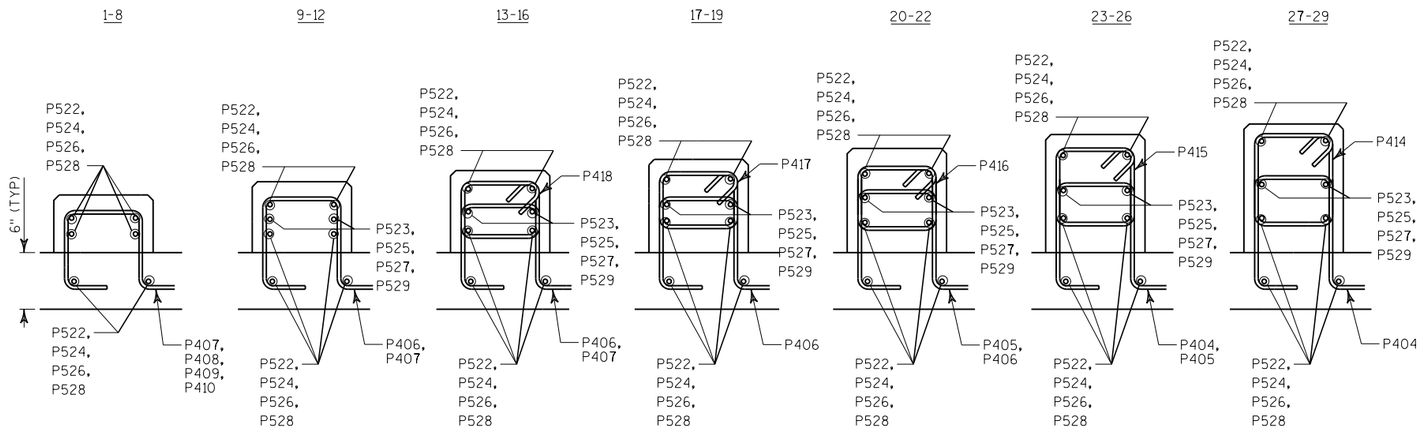
(LOW PROFILE CONCRETE BARRIER AT NORTHWEST QUADRANT OF STRUCTURE SHOWN. OTHER TAPERED END SECTIONS SIMIILAR)

SEE NEXT SHEET FOR CONTINUATION




## PROFILE VIEW - REINFORCING

(LOW PROFILE CONCRETE BARRIER AT NORTHWEST QUADRANT OF STRUCTURE SHOWN. OTHER TAPERED END SECTIONS SIMIILAR)




## REBAR PLACEMENT - TAPERED END CROSS SECTIONS

8

8

| NO. | DATE | REVISION | BY |
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LOW PROFILE CONCRETE BARRIER 2

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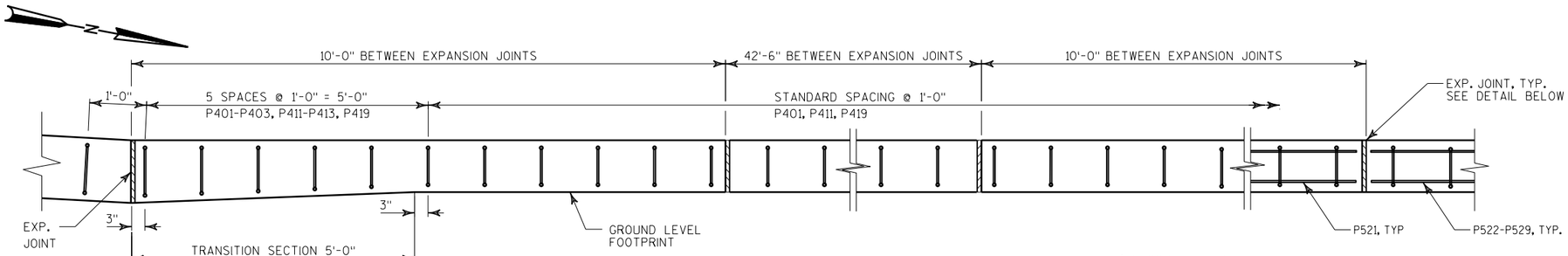
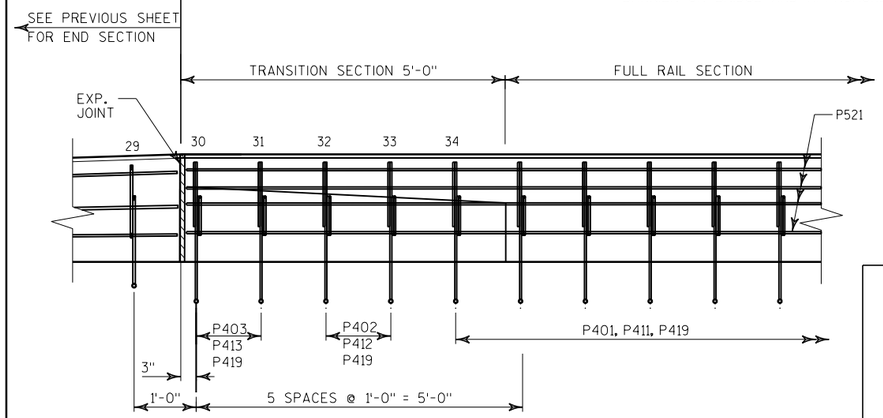
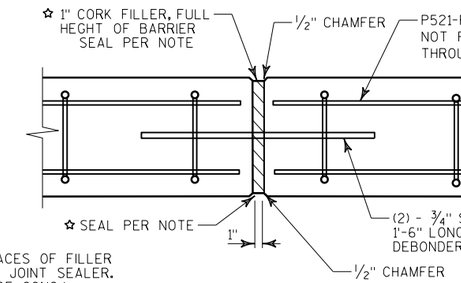



## PLAN VIEW - REINFORCING

TYPICAL AT LOW PROFILE CONCRETE BARRIER ON BRIDGE AND APPROACHES



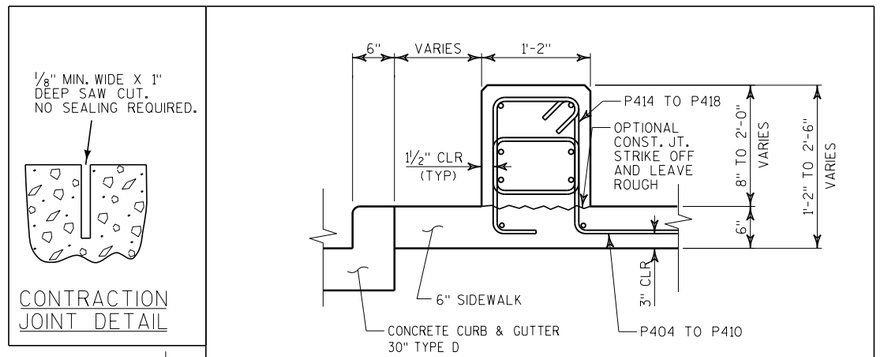

## PROFILE VIEW - REINFORCING




☆ SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONC.)

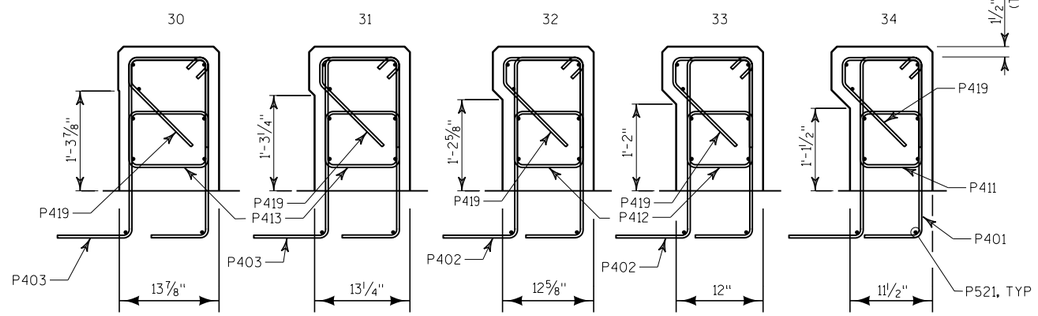
## EXPANSION JOINT DETAIL

(JOINT TO EXTEND FULL DEPTH OF BARRIER)

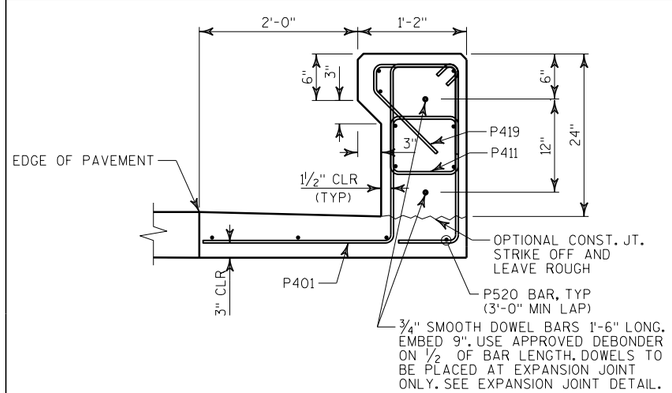



## LOW PROFILE CONCRETE BARRIER SECTION AT TAPER

(FOR HORIZONTAL REINFORCEMENT, SEE SHEET 14)

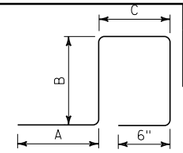



## REBAR PLACEMENT - TRANSITION CROSS SECTIONS



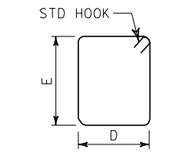

## TYPICAL LOW PROFILE CONCRETE BARRIER SECTION

(FULL RAIL SECTION REINFORCING)



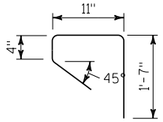

P401-P410

| BAR MARK | DIMENSIONS | | |
|---|---|---|---|
| | A | B | C |
| P401 | 2'-3" | 1'-7" | 8" |
| P402 | 2'-2" | 1'-7" | 9" |
| P403 | 2'-1" | 1'-7" | 10" |
| P404 | 2'-0" | 1'-3" | 11" |
| P405 | 2'-0" | 1'-2" | 11" |
| P406 | 2'-0" | 1'-1" | 11" |
| P407 | 2'-0" | 1'-0" | 11" |
| P408 | 2'-0" | 11" | 11" |
| P409 | 2'-0" | 10" | 11" |
| P410 | 2'-0" | 9" | 11" |




P411-P418

| BAR MARK | DIMENSIONS | |
|---|---|---|
| | D | E |
| P411 | 8" | 1'-4" |
| P412 | 8" | 1'-4" |
| P413 | 8" | 1'-4" |
| P414 | 9" | 1'-1" |
| P415 | 10" | 11" |
| P416 | 11" | 10" |
| P417 | 11" | 9" |
| P418 | 11" | 8" |




P419

## LOW PROFILE CONCRETE BARRIER - BILL OF BARS

| MARK | COATED | NO. REQ'D | LENGTH | BAR SERIES | BENT | COATED = 4020 LBS LOCATION |
|---|---|---|---|---|---|---|
| P401 | X | 100 | 6'-3" | | X | VERTICAL AT FULL SECTION |
| P402 | X | 100 | 6'-3" | | X | VERTICAL AT TRANSITION SECTION |
| P403 | X | 8 | 6'-3" | | X | VERTICAL AT TRANSITION SECTION |
| P404 | X | 16 | 5'-7" | | X | VERTICAL AT TAPERED SECTION |
| P405 | X | 20 | 5'-5" | | X | VERTICAL AT TAPERED SECTION |
| P406 | X | 32 | 5'-3" | | X | VERTICAL AT TAPERED SECTION |
| P407 | X | 20 | 5'-1" | | X | VERTICAL AT TAPERED SECTION |
| P408 | X | 12 | 4'-11" | | X | VERTICAL AT TAPERED SECTION |
| P409 | X | 8 | 4'-9" | | X | VERTICAL AT TAPERED SECTION |
| P410 | X | 8 | 4'-7" | | X | VERTICAL AT TAPERED SECTION |
| P411 | X | 108 | 4'-6" | | X | VERTICAL AT FULL SECTION |
| P412 | X | 8 | 4'-6" | | X | VERTICAL AT TRANSITION SECTION |
| P413 | X | 8 | 4'-6" | | X | VERTICAL AT TRANSITION SECTION |
| P414 | X | 12 | 4'-2" | | X | VERTICAL AT TAPERED SECTION |
| P415 | X | 16 | 4'-0" | | X | VERTICAL AT TAPERED SECTION |
| P416 | X | 12 | 4'-0" | | X | VERTICAL AT TAPERED SECTION |
| P417 | X | 12 | 3'-10" | | X | VERTICAL AT TAPERED SECTION |
| P418 | X | 16 | 3'-8" | | X | VERTICAL AT TAPERED SECTION |
| P419 | X | 124 | 4'-1" | | X | VERTICAL AT FULL AND TRANSITION SECTION |
| P520 | X | 22 | 42'-1" | | | HORIZONTAL AT FULL SECTION |
| P521 | X | 36 | 9'-7" | | | HORIZONTAL AT TRANSITION SECTION |
| P522 | X | 6 | 27'-11" | | | HORIZONTAL AT SOUTHEAST TAPERED SECTION |
| P523 | X | 2 | 20'-11" | | | HORIZONTAL AT SOUTHEAST TAPERED SECTION |
| P524 | X | 6 | 26'-11" | | | HORIZONTAL AT SOUTHWEST TAPERED SECTION |
| P525 | X | 2 | 19'-11" | | | HORIZONTAL AT SOUTHWEST TAPERED SECTION |
| P526 | X | 6 | 29'-8" | | | HORIZONTAL AT NORTHEAST TAPERED SECTION |
| P527 | X | 2 | 22'-8" | | | HORIZONTAL AT NORTHEAST TAPERED SECTION |
| P528 | X | 6 | 28'-8" | | | HORIZONTAL AT NORTHWEST TAPERED SECTION |
| P529 | X | 2 | 21'-8" | | | HORIZONTAL AT NORTHWEST TAPERED SECTION |

## NOTES

1. USE 1½" CLEAR CONCRETE COVER FOR REBAR IN BARRIER, AND 3" CLEAR FOR CONCRETE CAST AGAINST EARTH.
2. THE FIRST DIGIT OF THE BAR MARK SIGNIFIES THE BAR SIZE. BAR DIMENSIONS ARE OUT-TO-OUT OF BAR.
3. ALL BAR STEEL REINFORCEMENT SHALL BE ASTM A615 GRADE 60, EPOXY COATED. EPOXY SHALL BE APPLIED TO REINFORCEMENT AFTER THE BARS ARE BENT TO FINAL CONDITION.
4. DO NOT WELD EPOXY COATED REINFORCEMENT BARS.
5. USE ¾" CHAMFER ON TOP CORNERS.
6. CONTRACTION JOINTS SHALL BE SAWED, AS INDICATED. SPACING SHALL MATCH PAVEMENT JOINTS.
7. ALL REINFORCEMENT TO BE INCIDENTAL TO "LOW PROFILE CONCRETE BARRIER".

| NO. | DATE | REVISION | BY |
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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-539

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LOW PROFILE CONCRETE BARRIER 3

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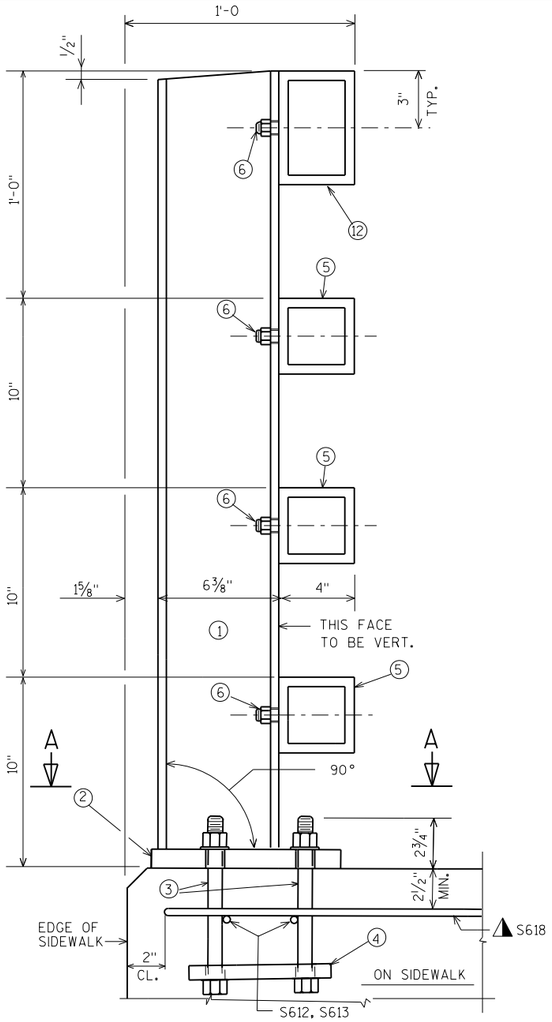
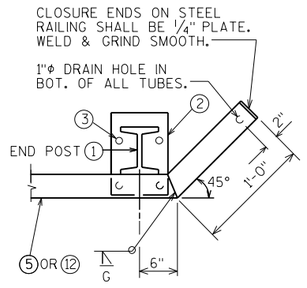
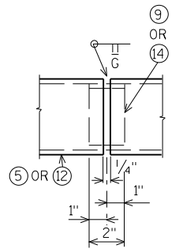



SECTION THRU RAILING ON SIDEWALK



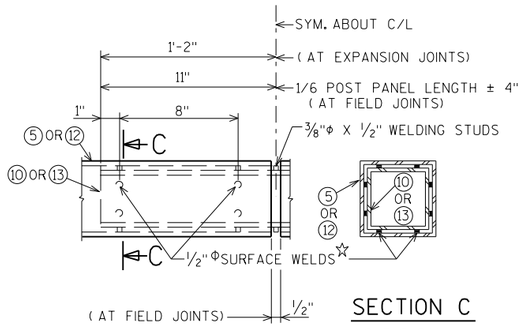

DETAIL FOR END POSTS




SHOP RAIL SPLICE DETAIL

(NO. 5 SHOWN, NO. 12 SIMILAR)

(LOCATION MUST BE SHOWN ON SHOP DRAWINGS.)




FIELD ERECTION JOINT DETAIL

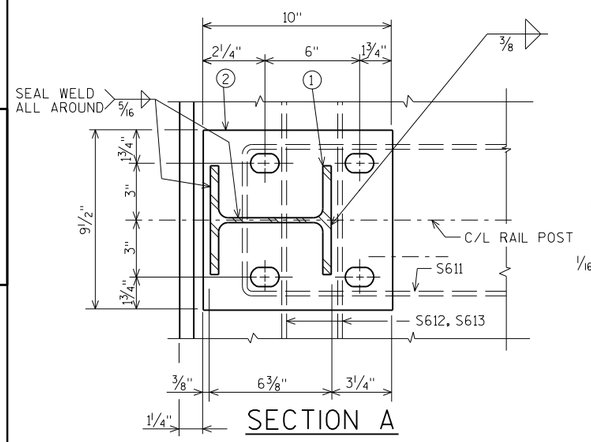
(NO. 5 SHOWN, NO. 12 SIMILAR)

☆ MIN. 5/8" FLAT SURFACE DIA. PUNCHINGS OR STUDS MAY BE USED AS AN ALTERNATE.

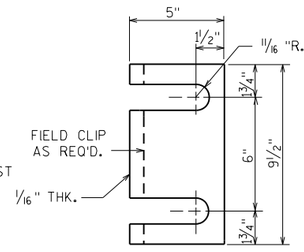



SECTION C

(NO. 5 SHOWN, NO. 12 SIMILAR)

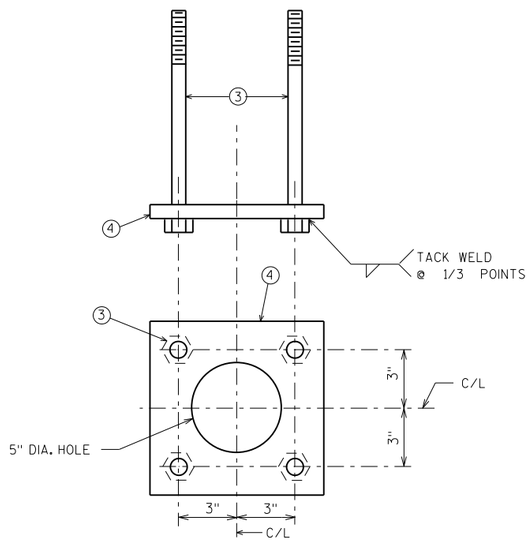



SECTION A




POST SHIM DETAIL

4 PER POST




ANCHORAGE DETAIL

## LEGEND

1. W6X25 WITH 1 1/4" DIA. HOLES ON EACH SIDE OF POST FOR STUD NO. 6. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF SIDEWALK. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.
2. PLATE 1" X 9 1/2" X 10", WITH 1 1/16" X 1 1/2" SLOTTED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN.
3. A325 - 7/8" DIA. HEX BOLTS (GALVANIZED), 8" LONG, WITH A325 NUT & WASHER. 4 REQ'D. PER POST. THREAD 3" AND PLACE NORMAL TO PLATE NO. 2. CHAMFER TOP OF BOLTS BEFORE THREADING.
4. 1/4" X 8" X 8" FLAT BAR, WITH 15/16 " DIA. HOLES FOR ANCHOR BOLTS NO.3.
5. TS 4 X 4 X 0.25 STRUCTURAL TUBING, CONFORMING TO ASTM DESIGNATION A501 OR A500 GRADE B. ATTACH TO NO. 1 WITH TWO NO. 6 STUDS.
6. 1" DIA. HOLES IN PLATE NO. 7 & TUBES NO. 5 FOR 7/8" DIA. A325 BOLTS W/HEX NUTS AND WASHERS.
9. SQUARE SLEEVE FABRICATED FROM 1/4" PLATE. PROVIDE "SLIDING FIT" WITH A MINIMUM OUT TO OUT DIMENSION OF 3 13/32 ".
10. TS 3 X 3 X 0.25 X (2'-4" AT EXPANSION JOINTS) & (1'-10" AT FIELD JOINTS) LONG. PROVIDE 1/2" DIA. SURFACE WELDS ON ALL SIDES AS SHOWN. GRIND WELDS TO FIT FREE INTO I.D. OF NO. 5. PROVIDE 3/8" DIA. X 1/2" WELDING STUDS ON TOP AND BOTTOM SURFACES AT CENTERLINE.
12. TS 6 X 4 X 0.25 STRUCTURAL TUBING, CONFORMING TO ASTM DESIGNATION A501 OR A500 GRADE B. ATTACH TO NO. 1 WITH TWO NO. 6 STUDS.
13. TS 5 X 3 X 0.25 X (2'-4" AT EXPANSION JOINTS) & (1'-10" AT FIELD JOINTS) LONG. PROVIDE 1/2" DIA. SURFACE WELDS ON ALL SIDES AS SHOWN. GRIND WELDS TO FIT FREE INTO I.D. OF NO. 5. PROVIDE 3/8" DIA. X 1/2" WELDING STUDS ON TOP AND BOTTOM SURFACES AT CENTERLINE.
14. RECTANGULAR SLEEVE FABRICATED FROM 1/4" PLATE. PROVIDE "SLIDING FIT" WITH MINIMUM OUT TO OUT DIMENSIONS OF 5 13/32 " X 3 13/32 ".

▲ TIE TO TOP MAT OF STEEL.

## GENERAL NOTES

BID ITEM SHALL BE "RAILING TUBULAR STEEL PEDESTRIAN TYPE F-4 MODIFIED B-40-539", WHICH INCLUDES ALL ITEMS SHOWN.

RAILING SHALL BE FABRICATED IN LENGTHS THAT INCLUDE 3 OR 4 POSTS.

POST BASE PLATES, NO. 2, SHALL BE FLAT WITH ALL SURFACES SMOOTH, STRAIGHT AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.

ALL MATERIAL, EXCEPT ANCHORAGE DETAIL NO. 4 SHALL BE GALVANIZED AFTER FABRICATION.

FILL BOLT SLOT OPENINGS IN POST SHIMS AND PLATE NO. 2 WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

ALL MATERIALS USED IN FABRICATION SHALL BE MADE FROM MATERIALS CONFORMING TO ASTM DESIGNATION A709 GRADE 36 UNLESS NOTED OTHERWISE.

STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQ'D. FOR ALIGNMENT.

PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS & STEEL TUBING SHALL BE GIVEN A NO. 6 BLAST CLEANING BY SSPC SPECIFICATIONS.

PLACE FIRST BOTTOM LONGITUDINAL BAR CLEAR OF DRIP GROOVE.

RAILING SHALL BE PAINTED TO MATCH FEDERAL STANDARD 595B COLOR 30070 FLAT BROWN.

STATE PROJECT NUMBER

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-539

DRAWN BY NLD | PLANS CK'D. SKG

RAILING TUBULAR STEEL PEDESTRIAN TYPE F-4 MODIFIED B-40-539

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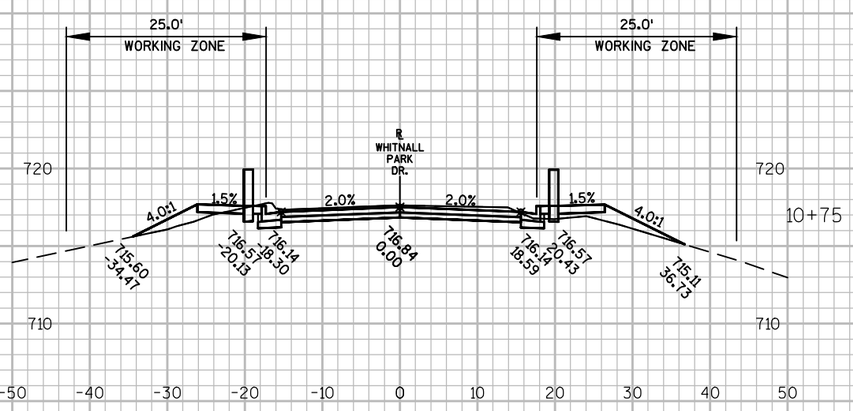
| STATION | Distance | AREA (SF) Cut | AREA (SF) Fill | Incremental Vol (CY) (Unadjusted) Cut | Incremental Vol (CY) (Unadjusted) Fill | Cumulative Vol (CY) Cut 1.00 | Cumulative Vol (CY) Fill 1.00 | Mass Ordinate |
|---|---|---|---|---|---|---|---|---|
| 10+51 | 0 | 31.7 | 21.9 | 0 | 0 | 0 | 0 | 0 |
| 10+75 | 24 | 34.0 | 12.8 | 29 | 15 | 29 | 15 | 14 |
| 10+84 | 9 | 49.5 | 7.7 | 14 | 3 | 43 | 19 | 24 |
| 10+94 | 10 | 55.7 | 7.9 | 19 | 3 | 63 | 22 | 41 |
| Bridge Gap | | | | | | | | |
| 11+36 | 42 | 0.4 | 10.0 | 0 | 0 | 63 | 22 | 41 |
| 11+46 | 10 | 28.0 | 30.7 | 5 | 8 | 68 | 29 | 39 |
| 11+70 | 24 | 36.7 | 12.8 | 29 | 19 | 97 | 49 | 48 |
| 12+00 | 30 | 26.2 | 14.7 | 35 | 15 | 132 | 64 | 68 |
| 12+18 | 18 | 22.9 | 10.7 | 18 | 8 | 150 | 72 | 78 |
| **Whitnall Park Drive** | | | | **150** | **72** | **150** | **72** | **78** |

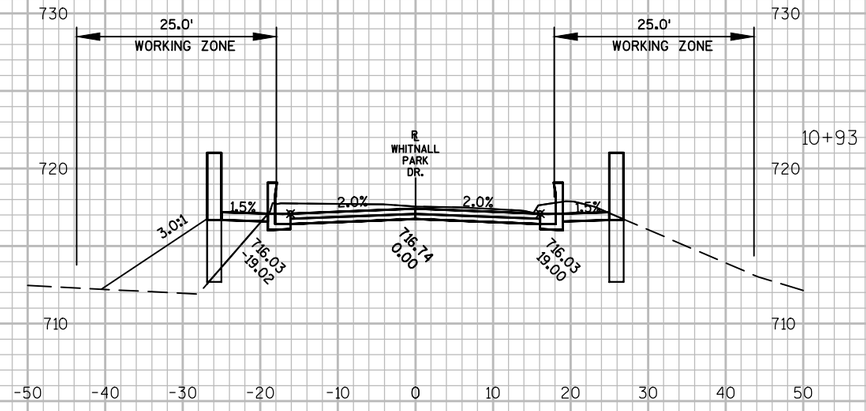
9

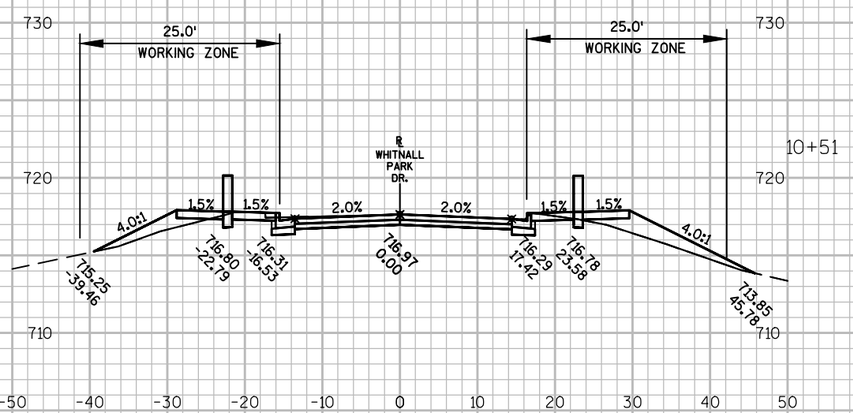
9

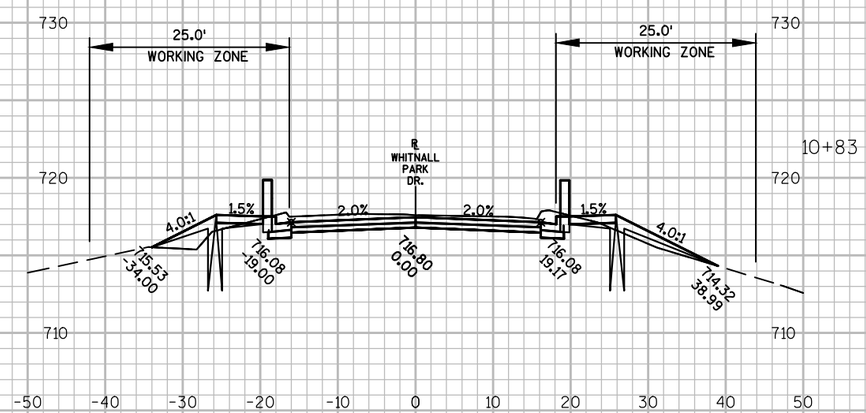
| PROJECT NO: 2660-04-70 | HWY: WHITNALL PARK DRIVE | COUNTY: MILWAUKEE COUNTY | EARTHWORK DATA: WHITNALL PARK DR. | SHEET 46 | E |
|---|---|---|---|---|---|

STRUCTURE B-40-539
STA 10+93.49 - 11+35.99

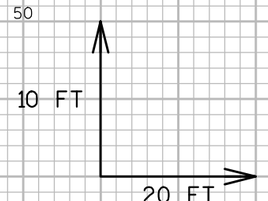



BEGIN PROJECT
STA 10+50.93




9

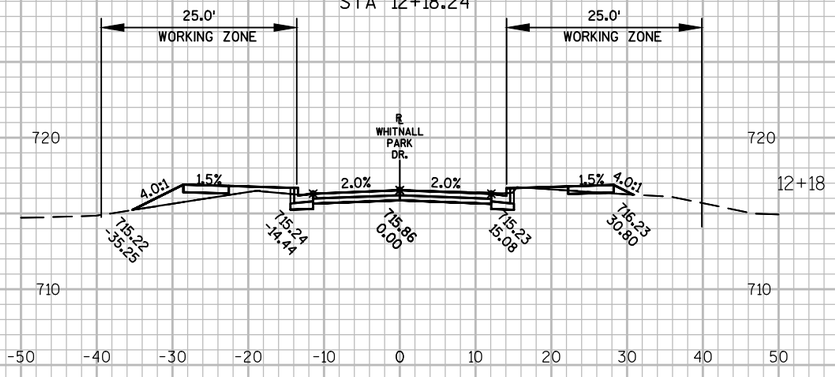
9

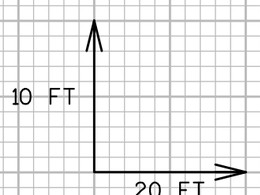
| PROJECT NO: 2660-04-70 | HWY: WHITNALL PARK DRIVE | COUNTY: MILWAUKEE COUNTY | CROSS SECTIONS: WHITNALL PARK DR. | SHEET | E |
|---|---|---|---|---|---|



FILE NAME : P:\8461 WHITNALL PARK DRIVE BRIDGE P-40-0721\TRANSPORTATION\CADD\WHITNALL PARK\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - SECTION SHEET - (14)
PLOT DATE : 11/2/2015 9:18 AM PLOT BY : NICHOLAS DECENT PLOT NAME : PLOT SCALE : 1 IN:20 FT
WISDOT/CADDS SHEET 49

END PROJECT
MATCH EXISTING
STA 12+18.24




9

9

| PROJECT NO: 2660-04-70 | HWY: WHITNALL PARK DRIVE | COUNTY: MILWAUKEE COUNTY | CROSS SECTIONS: WHITNALL PARK DR. | SHEET 48 | E |
|---|---|---|---|---|---|

FILE NAME : P:\8461 WHITNALL PARK DRIVE BRIDGE P-40-0721\TRANSPORTATION\CADD\WHITNALL PARK\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - SECTION SHEET - (16)
PLOT DATE : 11/2/2015 9:18 AM PLOT BY : NICHOLAS DECENT PLOT NAME : PLOT SCALE : 1 IN:20 FT

Notes

**Wisconsin Department of Transportation**

Dedicated people creating transportation solutions
through innovation and exceptional service.

http://www.dot.wisconsin.gov

SEL

PROJECT ID: 2981-00-72
WITH: 2660-04-70

COUNTY: MILWAUKEE

MAR 2016

ORDER OF SHEETS



TOTAL SHEETS = 54

# STATE OF WISCONSIN
# DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

# WHITNALL PARK DRIVE

BRIDGE OVER WHITNALL PARK CREEK

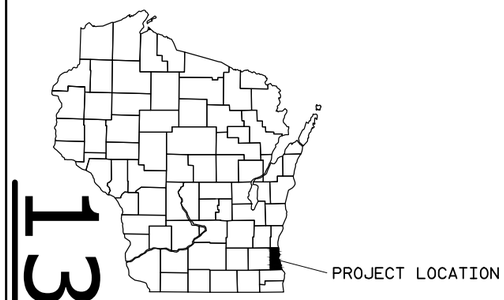
## LOCAL STREET

## MILWAUKEE COUNTY

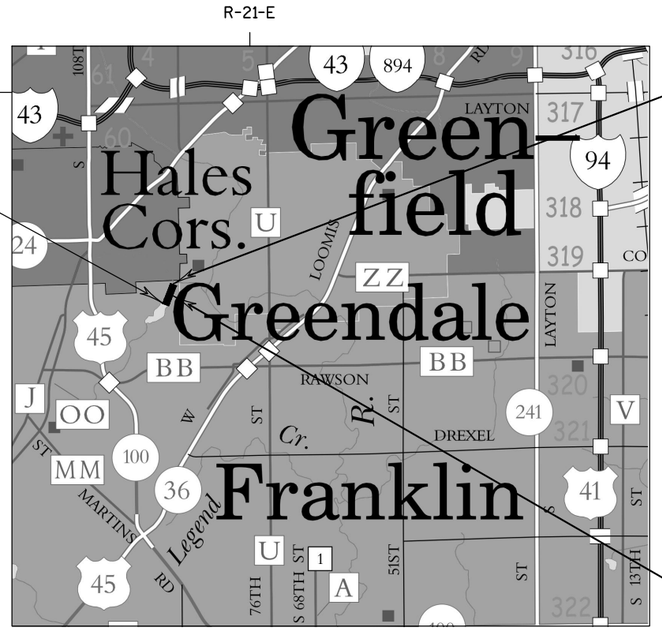
| STATE PROJECT | FEDERAL PROJECT | |
|---|---|---|
| | PROJECT | CONTRACT |
| 2981-00-72 | WISC 2016057 | 1 |
| | | |
| | | |
| | | |

STATE PROJECT NUMBER

**2981-00-72**




13




LAYOUT
SCALE 0 0.5 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.026 MI.

- "COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), 'MILWAUKEE' COUNTY." NAD83(CORS 96)
- "ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO THE NAVD (1929)

### DESIGN DESIGNATION

| | | | |
|---|---|---|---|
| A.A.D.T. | 2015 | = | 790 |
| A.A.D.T. | 2035 | = | 920 |
| D.H.V. | | = | 6.1 |
| D.D. | | = | 59/41 |
| T. | | = | 6.0% |
| DESIGN SPEED | | = | 30 MPH |
| ESALS | | = | 160,600 |

### CONVENTIONAL SYMBOLS

**PLAN**

- CORPORATE LIMITS
- PROPERTY LINE (PL + 58.1)
- LOT LINE
- LIMITED HIGHWAY EASEMENT
- EXISTING RIGHT OF WAY
- PROPOSED OR NEW R/W LINE
- SLOPE INTERCEPT
- REFERENCE LINE
- 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 (95.36)
- 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

MILWAUKEE COUNTY
DEPARTMENT OF TRANSPORTATION
TRANSPORTATION SERVICES

PROJECT MANAGER
DATE: 10/28/15

RECOMMENDED FOR APPROVAL:
DATE: 10/28/2015
Manager Transportation Services

APPROVED:
DATE: 10/31/15
Director of Milwaukee County Department of Transportation

ORIGINAL PLANS PREPARED BY
KSA K. SINGH & ASSOCIATES, INC.
Engineers, Scientists and Environmental Consultants

WISCONSIN
JEREMY L. HINDS
E-38775
MILWAUKEE
WI
PROFESSIONAL ENGINEER

10/28/15 (Date) (Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

| | |
|---|---|
| Surveyor | KSA |
| Designer | KSA |
| Management Consultant | DAAR |
| C.O. Examiner | |

APPROVED FOR THE DEPARTMENT
DATE: 11/2/15
(Management Consultant Signature)

E

2

## GENERAL NOTES

1. THE LOCATIONS OF EXISTING UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.
2. THE CONTRACTOR SHALL NOTIFY DIGGERS HOTLINE AND AFFECTED UTILITIES PRIOR TO THE START OF WORK. ANY LOCAL MUNICIPALITY WHICH IS NOT A MEMBER OF THE DIGGERS HOTLINE MUST BE CONTACTED SEPARATELY.
3. WHEN THE QUANTITY OF HMA PAVEMENT OR BASE AGGREGATE IS MEASURED FOR PAYMENT BY THE TON, THE DEPTH OR THICKNESS OF THE LAYER SHOWN ON THE PLAN IS APPROXIMATE AND THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER.
4. INLET PROTECTION IS REQUIRED AT ALL INLETS AS PER DETAIL OR AS DIRECTED BY THE ENGINEER.
5. THE EROSION CONTROL FEATURES AS SHOWN IN THE PLANS ARE AT SUGGESTED LOCATIONS. EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.
6. DISTURBED AREAS WITHIN THE RIGHT OF WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, SHALL BE SALVAGED TOPSOILED, FERTILIZED, SEEDED AND INSTALL EROSION CONTROL MAT AND SOIL STABILIZER AS DIRECTED BY THE ENGINEER.
7. SEED, INSTALL EROSION MAT AND SOIL STABILIZER, AND FERTILIZE ALL SALVAGED TOPSOILED AREAS WITHIN 7 WORKING DAYS AFTER GRADING WORK IS COMPLETED.
8. STATIONING, DISTANCES AND OFFSETS FOR SIGNS SHOWN ON THE PLANS ARE APPROXIMATE AND THE FINAL LOCATION OF THE SIGNS ARE TO BE DETERMINED BY THE ENGINEER.
9. SIGNS IN CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE COVERED AS DIRECTED BY THE ENGINEER AND PAID FOR UNDER ITEMS TRAFFIC CONTROL COVERING SIGNS TYPE I OR TRAFFIC CONTROL COVERING SIGNS TYPE II.
10. EXCAVATION BELOW SUBGRADE (EBS) IS NOT SHOWN ON THE PLANS YARDAGE BUT IS MEASURED AND PAID FOR AS EXCAVATION COMMON. THE LOCATION, DEPTH AND BACKFILL MATERIAL FOR EBS WILL BE DETERMINED BY THE ENGINEER.
11. TRAFFIC CONTROL DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.
12. CONCRETE JOINTS SHALL MATCH ABUTTING PAVEMENT AND CURB AND GUTTER JOINTS UNLESS OTHERWISE DESIGNATED BY THE ENGINEER.
13. THE LOCATIONS OF LONGITUDINAL JOINTS IN HMA PAVEMENT SHALL BE APPROVED BY THE ENGINEER.
14. NO TREES OR SHRUBS ARE TO BE REMOVED WITHOUT PRIOR APPROVAL OF THE ENGINEER.
15. SMOOTH AND EVEN JOINTS SHALL BE PROVIDED WHERE MATCHING EXISTING SAWCUTTING.
16. THE HMA PAVEMENT WEIGHT CALCULATIONS ARE BASED ON A UNIT WEIGHT OF 112LBS/SY/IN.
17. 4.5-INCH PAVEMENT TYPE E-3 SHALL BE CONSTRUCTED IN TWO (2) LAYERS AS FOLLOWS:

| LAYER | DEPTH (INCHES) | AGGREGATE SIZE (mm) | ASPHALTIC MATERIAL |
|---|---|---|---|
| UPPER | 2.00-INCH | 12.50 mm NOMINAL SIZE AGGREGATE | PG64-28 @ 5.5% |
| LOWER | 2.50-INCH | 19.0 mm NOMINAL SIZE AGGREGATE | PG64-28 @ 5.5% |

18. RADII, ELEVATIONS, AND DIMENSIONS ARE GIVEN AT THE PAVEMENT EDGES, UNLESS OTHERWISE NOTED IN THE PLANS.

## OTHER AGENCIES

WISCONSIN DEPARTMENT OF NATURAL RESOURCES

WEBSTER, CRAIG
141 BARSTOW ROOM 180
WAUKESHA, WI 53188
(262) 574-2141
Craig.Webster@wisconsin.gov

MILWAUKEE COUNTY DOT

ALEIOW, AZIZ
2711 W. WELLS ST.
MILWAUKEE, WI 53208
(414) 278-4911
Aziz.Alelow@milwcnty.com

CONSULTANT CONTACT

K. SINGH & ASSOCIATES, INC.
HAIDAR, MUNZER
3636 NORTH 124TH STREET
WAUWATOSA, WI 53222
(262) 821-1171
mhaidar@ksaconsultants.com

WISCONSIN DEPARTMENT OF TRANSPORTATION

BONACK, JOAN
141 NORTHWEST BARSTOW STREET
WAUKESHA, WI 53187
(262) 521-5361
Joan.Bonack@dot.wi.gov

VILLAGE OF HALES CORNERS

MARTIN, MICHAEL
5635 S. NEW BERLIN RD.
HALES CORNERS, WI 53130
(414) 529-6161
mjmartin@halescorners.org

MILWAUKEE COUNTY SURVEYOR

BAUER, KURT
W239 N1812 ROCKWOOD DRIVE
P.O. BOX 1607
WAUKESHA, WI 53187
(262) 547-6721
kbauer@sewrpc.org

MILWAUKEE COUNTY PARKS

HALEY, KEVIN
9480 WATERTOWN PLANK RD.
WAUWATOSA, WI 53226
(414) 257-7275
kevin.haley@milwcnty.com

## UTILITY CONTACTS

WE ENERGIES

BRUMFIELD, LaTROY
333 W. EVERETT STREET
MILWAUKEE, WI 53203
(414) 221-5617
latroy.brumfield@we-energies.com

MMSD

JENSEN, DEBRA
260W. SEEBOTH ST.
MILWAUKEE, WI 53204
djensen@mmsd.com

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

FAX-A-LOCATE 1-800-338-3860

WISCONSIN STATUTE 182.0175 (1974) REQUIRES MINIMUM OF 3 WORKING DAYS NOTICE BEFORE YOU EXCAVATE IN WISCONSIN

DIGGERS HOTLINE

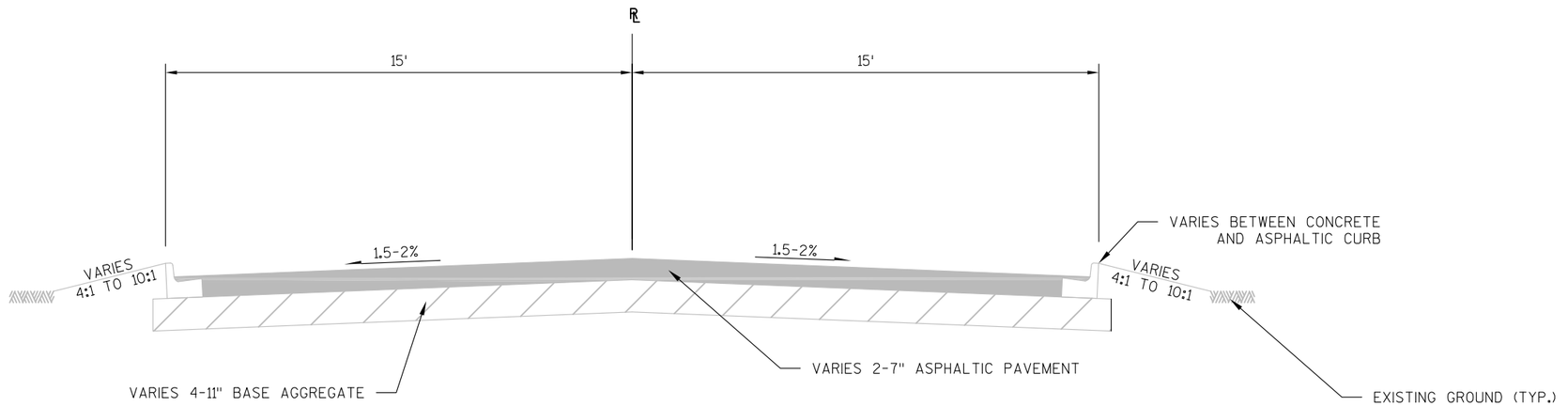
Dial 811 or (800) 242-8511

www.DiggersHotline.com

## ABBREVIATIONS

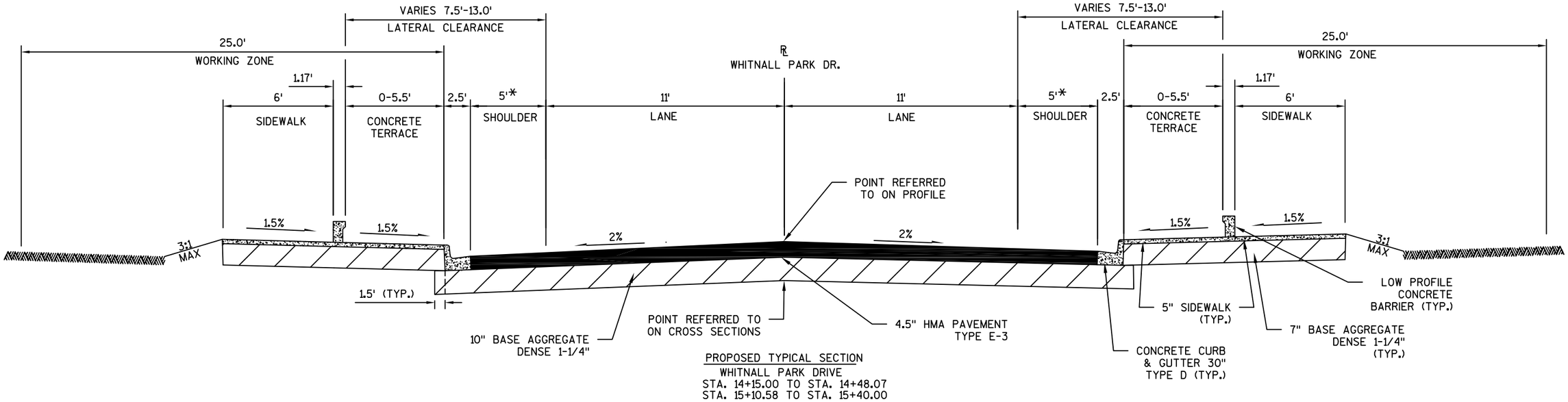
| | |
|---|---|
| ADT | AVERAGE DAILY TRAFFIC |
| AGG | AGGREGATE |
| BAD | BASE AGGREGATE DENSE |
| BM | BENCH MARK |
| CB | CATCH BASIN |
| C&G | CURB AND GUTTER |
| C-C | CENTER TO CENTER |
| CONC | CONCRETE |
| CSD | CONCRETE SURFACE DRAIN |
| CTR | CENTER |
| CWT | HUNDREDWEIGHT |
| CY | CUBIC YARD |
| D | DEGREE OF CURVE |
| Δ | DELTA |
| DD | DIRECTIONAL DISTRIBUTION |
| DHV | DESIGN HOUR VOLUME |
| DIA | DIAMETER |
| E | EAST |
| EB | EASTBOUND |
| EL OR ELEV | ELEVATION |
| EXIST | EXISTING |
| FS | FULL SUPERELEVATION |
| FT | FOOT |
| HE | HIGHWAY EASEMENT |
| HMA | HOT MIX ASPHALT |
| INCID | INCIDENTAL |
| INL | INLET |
| L | LENGTH OF CURVE |
| LF | LINEAR FOOT |
| LONG | LONGITUDINAL |
| LT | LEFT |
| MH | MANHOLE |
| MIN | MINIMUM |
| ML OR M/L | MATCH LINE |
| N | NORTH |
| NB | NORTHBOUND |
| NC | NORMAL CROWN |
| NTS | NOT TO SCALE |
| PAVT | PAVEMENT |
| PC | POINT OF CURVATURE |
| PCC | POINT OF COMPOUND CURVATURE |
| PI | POINT OF INTERSECTION |
| PLE | PERMANENT LIMITED EASEMENT |
| PT | POINT OF TANGENCY |
| PVC | POINT OF VERTICAL CURVATURE |
| PVI | POINT OF VERTICAL INTERSECTION |
| PVT | POINT OF VERTICAL TANGENCY |
| R | RADIUS |
| RCPSS | REINFORCED CONCRETE PIPE STORM SEWER |
| REQD | REQUIRED |
| R/L | REFERENCE LINE |
| RO | RUN OFF LENGTH |
| RT | RIGHT |
| RW OR R/W | RIGHT-OF-WAY |
| S | SOUTH |
| SB | SOUTHBOUND |
| SDD | STANDARD DETAIL DRAWINGS |
| SHT | SHEET |
| SI | SLOPE INTERCEPT |
| SS | STORM SEWER |
| STA | STATION |
| SY | SQUARE YARD |
| SYM | SYMMETRICAL |
| T | TANGENT LENGTH |
| TEMP | TEMPORARY |
| TYP | TYPICAL |
| V | VELOCITY OR DESIGN SPEED |
| VAR | VARIABLE OR VARIES |
| W | WEST |
| WB | WESTBOUND |
| YD | YARD |

2

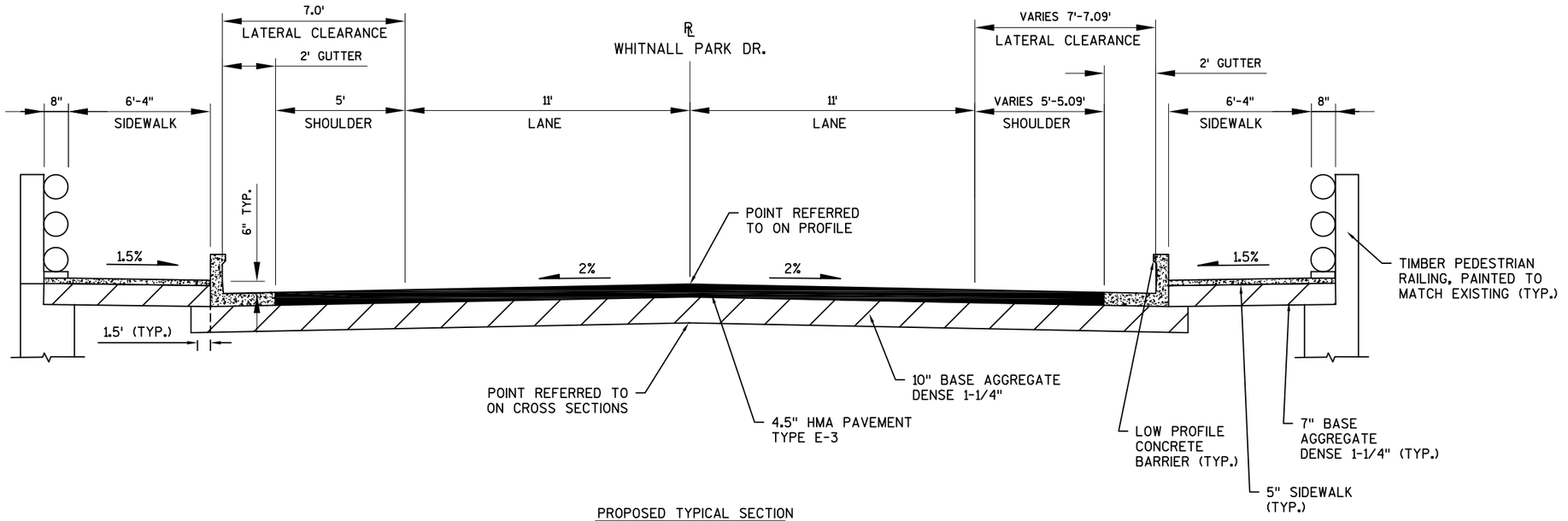



EXISTING TYPICAL SECTION
WHITNALL PARK DRIVE
STA. 14+15 TO STA. 14+54
STA. 15+05 TO STA. 15+50

| PROJECT NO: 2981-00-72 | HWY: WHITNALL PARK DRIVE | COUNTY: MILWAUKEE COUNTY | TYPICAL SECTIONS | SHEET 3 | E |
|---|---|---|---|---|---|




PROPOSED TYPICAL SECTION
WHITNALL PARK DRIVE
STA. 14+15.00 TO STA. 14+48.07
STA. 15+10.58 TO STA. 15+40.00

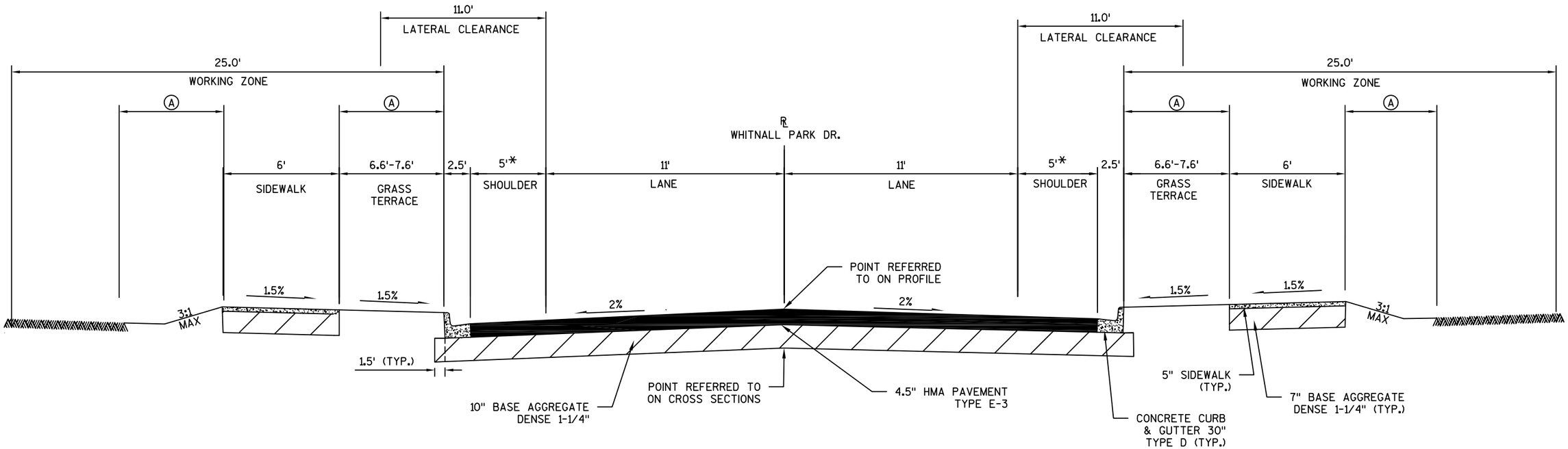



PROPOSED TYPICAL SECTION
WHITNALL PARK DRIVE
STA 14+48.07 TO STA 14.58.07
STA 15+00.58 TO STA 15+10.58

* SHOULDER VARIES (SEE PLAN VIEW)

| PROJECT NO: 2981-00-72 | HWY: WHITNALL PARK DRIVE | COUNTY: MILWAUKEE COUNTY | TYPICAL SECTIONS | SHEET 4 | E |
|---|---|---|---|---|---|

2




PROPOSED TYPICAL SECTION
WHITNALL PARK DRIVE
STA. 15+40.00 TO STA. 15+50.00

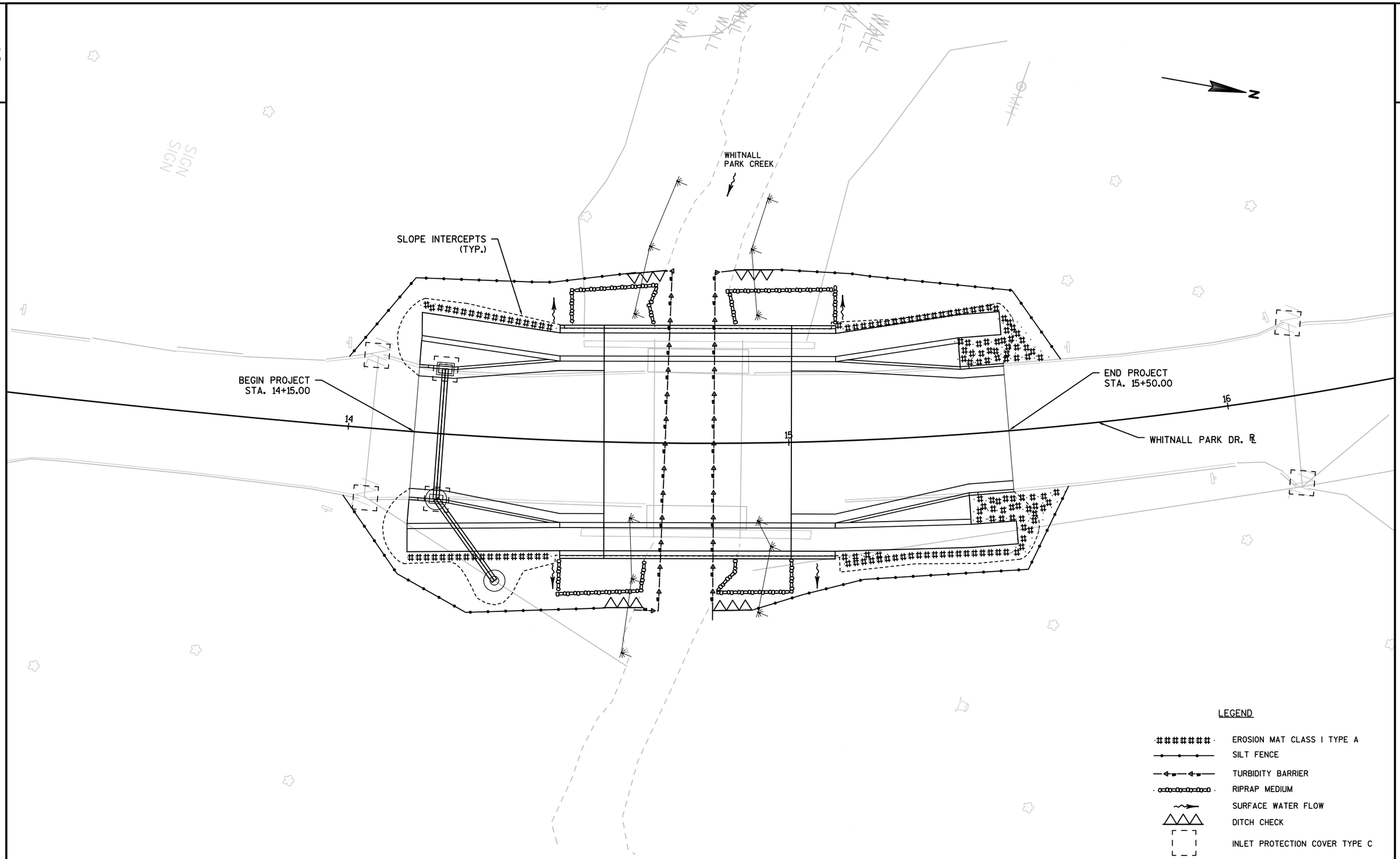
LEGEND

* SHOULDER VARIES (SEE PLAN VIEW)

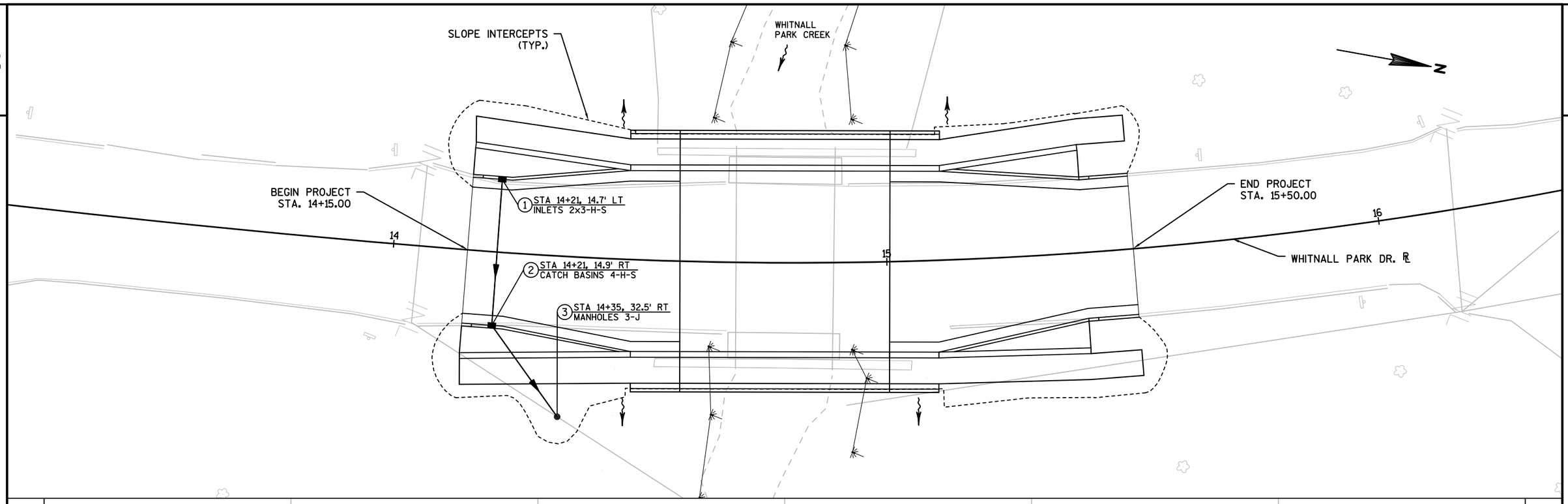
Ⓐ SALVAGED TOPSOIL, FERTILIZER, SEED, AND E-MAT.

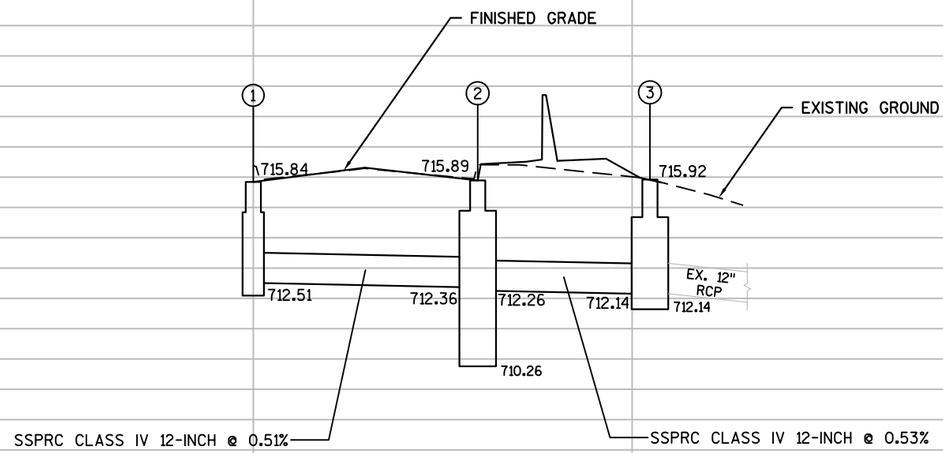
| PROJECT NO: 2981-00-72 | HWY: WHITNALL PARK DRIVE | COUNTY: MILWAUKEE COUNTY | TYPICAL SECTIONS | SHEET 5 | E |
|---|---|---|---|---|---|

2




| PROJECT NO: 2981-00-72 | HWY: WHITNALL PARK DRIVE | COUNTY: MILWAUKEE COUNTY | EROSION CONTROL | SHEET 6 | E |
|---|---|---|---|---|---|




720 715 710 705 700

| PROJECT NO: 2981-00-72 | HWY: WHITNALL PARK DRIVE | COUNTY: MILWAUKEE COUNTY | STORM SEWER | SHEET 7 | E |
|---|---|---|---|---|---|

FILE NAME : P:\8462 WHITNALL PARK DRIVE BRIDGE P-40-0713\TRANSPORTATION\CADD\SHEETS\022501_SS_NORTH.DWG
LAYOUT NAME - SHEET - (1)
PLOT DATE : 12/18/2015 3:05 PM PLOT BY : MOAZ KHAN PLOT NAME : PLOT SCALE : 1 IN:20 FT
WISDOT/CADDS SHEET 42

2

2

LEGEND

1. PAVEMENT MARKING 4-INCH EPOXY, WHITE
2. PAVEMENT MARKING 4-INCH EPOXY, DOUBLE YELLOW
- SIGN ON PERMANENT SUPPORT

N

WHITNALL PARK CREEK

OBJECT MARKER
STA. 14+15.00
21.32', LT

W5-52L
12"X36"

SLOPE INTERCEPTS
(TYP.)

BEGIN TAPER
STA. 14+23.12

BEGIN PROJECT
STA. 14+15.00

END TAPER
STA. 14+47.46

W5-52R
12"X36"

OBJECT MARKER
STA. 15+39.96
21.33', LT

END TAPER
STA. 15+40.00

BEGIN TAPER
STA. 15+11.20

END PROJECT
STA. 15+50.00

WHITNALL PARK DR. ℄

BEGIN TAPER
STA. 15+09.98

END TAPER
STA. 15+40.29

BEGIN TAPER
STA. 14+23.12

OBJECT MARKER
STA. 14+15.00
21.46', RT

W5-52R
12"X36"

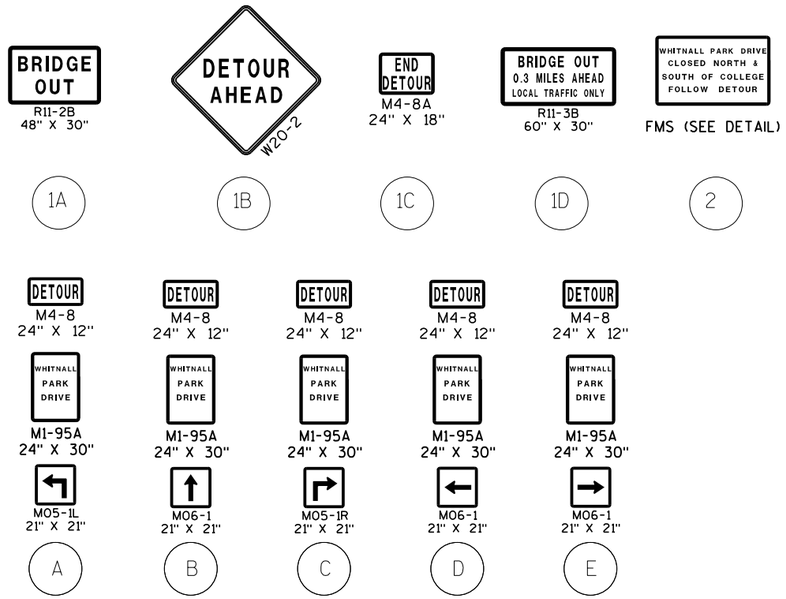
END TAPER
STA. 14+48.08

OBJECT MARKER
STA. 15+39.96
19.92', RT

W5-52L
12"X36"

| PROJECT NO: 2981-00-72 | HWY: WHITNALL PARK DRIVE | COUNTY: MILWAUKEE COUNTY | PAVEMENT MARKING AND SIGNING | SHEET 8 | E |
|---|---|---|---|---|---|

2





## NOTES

1. CONTRACTOR SHALL PROVIDE ACCESS WITHIN WORK AREA TO LOCAL TRAFFIC AND EMERGENCY VEHICLES AT ALL TIMES.
2. THE ERECTION AND PLACEMENT OF SIGNS SHALL BE IN ACCORDANCE WITH SDD AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
3. REMOVE OR COVER EXISTING SIGNS THAT CONFLICT WITH DETOUR ROUTE.
4. SEE STANDARD DETAIL DRAWINGS FOR LOCAL ROAD AND ADDITIONAL TRAFFIC CONTROL REQUIREMENTS.

## LEGEND

= DETOUR ROUTE

= BRIDGE LOCATION

| PROJECT NO: 2981-00-72 | HWY: WHITNALL PARK DRIVE | COUNTY: MILWAUKEE | DETOUR PLAN: WHITNALL PARK DRIVE | SHEET 9 | E |
|---|---|---|---|---|---|

2

NOTES

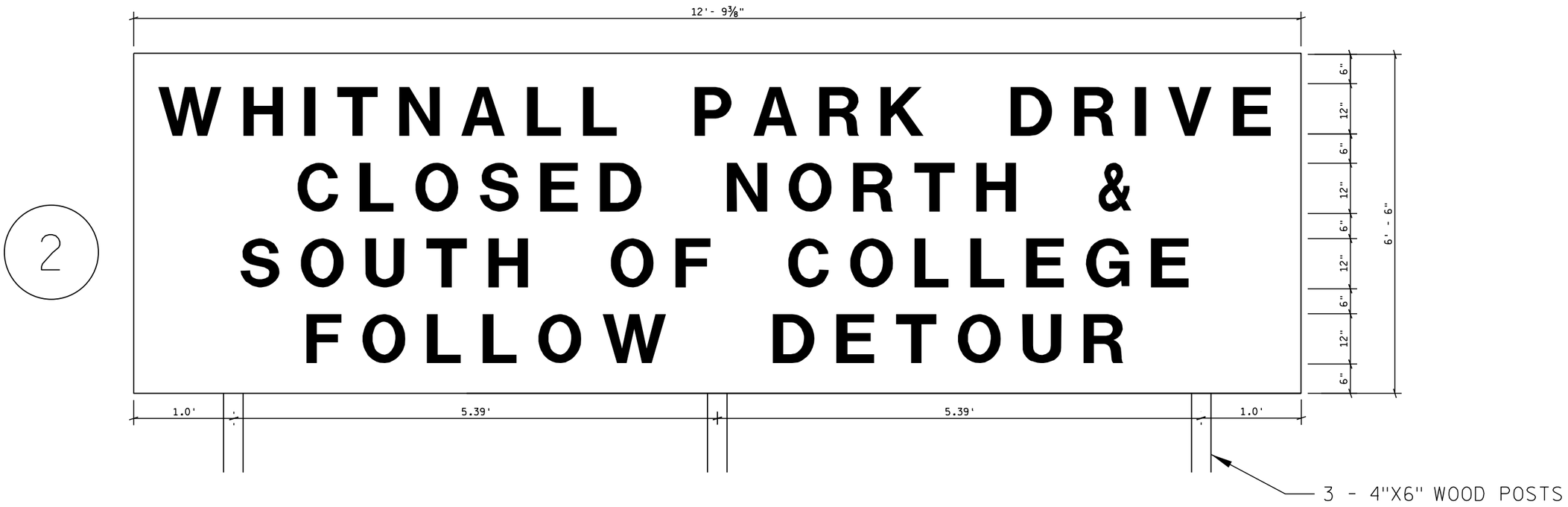
1. ALL SIGNS TO HAVE STANDARD REFLECTIVE SHEETING - REFERENCE: "WISDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION," LATEST EDITION.
2. AFTER SIGNS HAVE BEEN LOCATED IN THE FIELD, BUT BEFORE INSTALLATION, THE SIGNING AND MARKING SUPERVISOR SHALL VERIFY EACH SIGN LOCATION.
3. ALL SIGNS TO BE MOUNTED ON WOODEN POST SUPPORTS (4"x6"). THE NUMBER OF POSTS REQUIRED FOR EACH LAYOUT IS SHOWN. STEEL POSTS (2"X2") MAY BE USED FOR SIGNS ON SURFACE STREETS. SIGNS WHERE NO POSTS ARE SHOWN TO BE MOUNTED ON EXISTING SIGNS.
4. POSTS SHALL MEET THE BREAKAWAY REQUIREMENTS OF SECTION 643.2.9.1 OF THE STANDARD SPECIFICATIONS AND SIGN PLATE A4-11.
5. SIGNS ON THIS SHEET TO BE PAID UNDER THE ITEM "TRAFFIC CONTROL SIGNS FIXED MESSAGE".
6. SIGNS SHALL BE BLACK NON-REFLECTIVE MESSAGE ON ORANGE REFLECTIVE BACKGROUND UNLESS OTHERWISE NOTED.
7. ALL SIGNS SHALL HAVE CAPITAL LETTERS AND NUMERALS:
   12" CAPS SHALL BE SERIES "D"
   10" CAPS SHALL BE SERIES "EM"
   8" CAPS SHALL BE SERIES "EM"
   6" CAPS SHALL BE SERIES "C"

NOTES

8. BEGIN XXX XX SIGNS SHALL BE SEPARATE PANELS, BUT SHALL BE CONSIDERED AS PART OF THE SIGN AND SHOULD BE REMOVED OR COVERED AFTER THEIR EFFECTIVE DATE. THE MONTH AND DAY SHALL BE AS DIRECTED BY THE ENGINEER IN THE FIELD.
9. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO ENGINEER FOR REVIEW PRIOR TO MANUFACTURING.
10. SIGN BASE MATERIAL SHALL BE ACCORDING TO SECTION 637.2.1.2.
11. BEGIN XXX XX SIGNS TO BE IN PLACE 14 DAYS PRIOR TO CONSTRUCTION.
12. DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED.

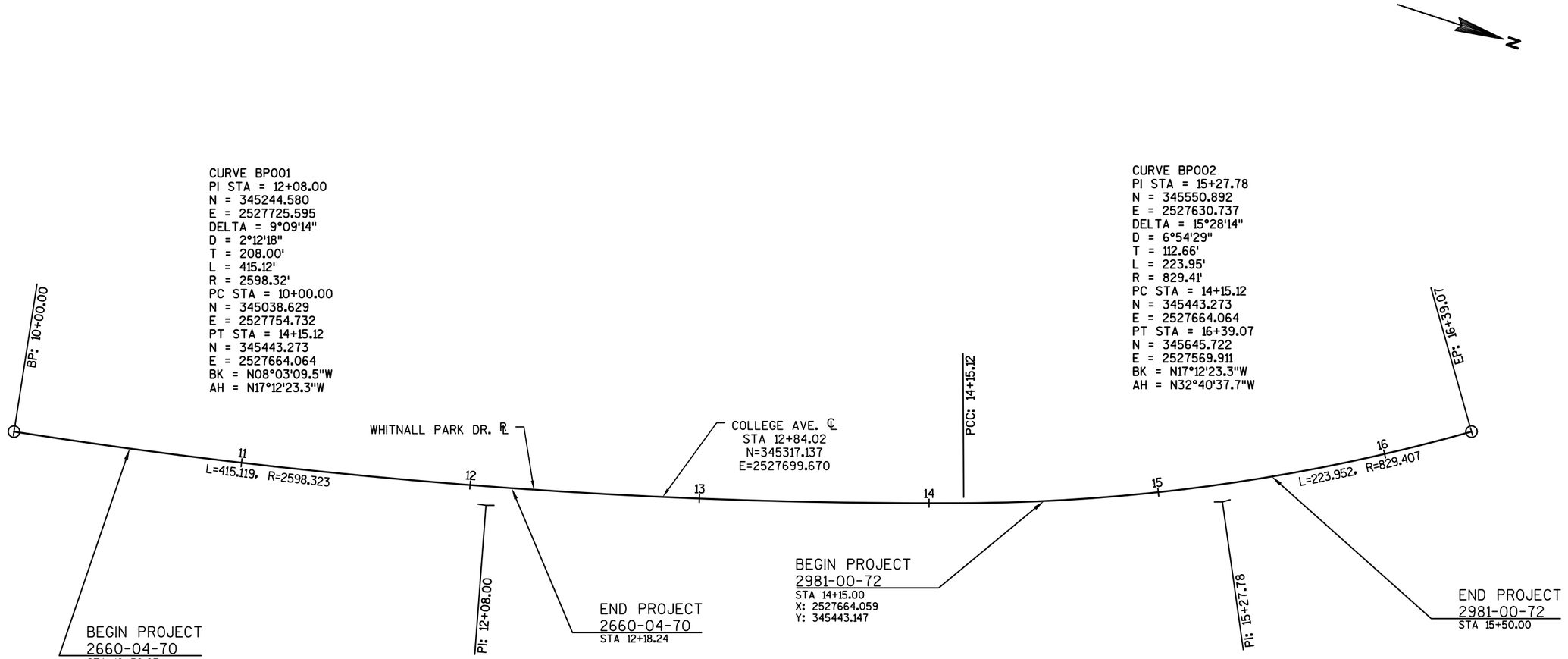
(XXX) = SIGN NUMBER

2




| PROJECT NO: 2981-00-72 | HWY: WHITNALL PARK DRIVE | COUNTY: MILWAUKEE | TRAFFIC CONTROL DETAIL: FIXED MESSAGE SIGN | SHEET 10 | E |
|---|---|---|---|---|---|

2




| PROJECT NO: 2981-00-72 | HWY: WHITNALL PARK DRIVE | COUNTY: MILWAUKEE | ALIGNMENT DIAGRAM | SHEET 9 OF 11 | E |
|---|---|---|---|---|---|

**CLEARING AND GRUBBING**

| CATEGORY | STATION | LOCATION | 201.0105 CLEARING STA | 202.0205 GRUBBING STA |
|---|---|---|---|---|
| 0010 | WHITNALL PARK DR. | | | |
| | 14+15 - 14+58 | LT & RT | 1 | 1 |
| | 15+00 - 15+50 | LT & RT | 1 | 1 |
| | TOTAL | | 2 | 2 |

**CURB & GUTTER REMOVAL**

| CATEGORY | STATION | LOCATION | 204.0150 REMOVING CURB & GUTTER LF |
|---|---|---|---|
| 0010 | WHITNALL PARK DR. | | |
| | 14+15 - 14+58 | LT & RT | 86 |
| | 15+00 - 15+50 | LT & RT | 100 |
| | TOTAL | | 186 |

3

**EARTH WORK SUMMARY**

| Division | From / To Station | Location | Common Excavation (1) (item # 205.0100) Cut (2) | Common Excavation (1) (item # 205.0100) EBS Excavation (3) | Salvaged / Unusable Pavement Material (4) | Available Material (5) | Unexpanded Fill (8) | Expanded Fill (13) Factor 1.25 | Mass Ordinate + / - (14) | Waste | Borrow (item #208.0100) | Comment: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 14+15 - 14+58 | Whitnall Park Dr. | 68 | 0 | 17 | 51 | 4 | 5 | 46 | 17 | 4 | Existing Material to be tr ucked away |
| | 15+01 - 15+50 | Whitnall Park Dr. | 78 | 0 | 19 | 59 | 4 | 5 | 54 | 19 | 4 | Existing Material to be tr ucked away |
| Whitnall Park Dr. Subtotal | | | 146 | 0 | 36 | 110 | 8 | 10 | 100 | 36 | 8 | |
| Grand Total | | | 146 | 0 | 36 | 110 | 8 | 10 | 100 | 36 | 8 | |
| | | Total Common Exc | | 146 | | | | | | | | |

1) Common Excavation is the sum of the Cut and EBS Excavation columns. Item number 205.0100
2) Salvaged/Unsuable Pavement Material is included in Cut.
3) EBS Excavation to be backfilled with Select Borrow material. Note: this is designers choice, can be backfilled with Borrow, or Cut as well.
4) Salvaged/Unusable Pavement Material
5) Available Material = Cut - Salvaged/Unusuable Pavement Material
8) Unexpanded Fill is Fill from the End Area Earthwork Volumes
14) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material within the Division.

NOTE: ALL ITEMS ON PAGE ARE CATEGORY 0010 UNLESS OTHERWISE NOTED ON PAGE.

DATE 04JAN16 E S T I M A T E O F Q U A N T I T I E S

| LINE NUMBER | ITEM | ITEM DESCRIPTION | UNIT | TOTAL | 2981-00-72 QUANTITY |
|---|---|---|---|---|---|
| 0010 | 201.0105 | Clearing | STA | 2.000 | 2.000 |
| 0020 | 201.0205 | Grubbing | STA | 2.000 | 2.000 |
| 0040 | 203.0600.S | Removing Old Structure Over Waterway With Minimal Debris (station) 02. 14+79. 33 | LS | 1.000 | 1.000 |
| 0050 | 204.0150 | Removing Curb & Gutter | LF | 186.000 | 186.000 |
| 0060 | 205.0100 | Excavation Common | CY | 146.000 | 146.000 |
| 0080 | 206.1000 | Excavation for Structures Bridges (structure) 02. B-40-540 | LS | 1.000 | 1.000 |
| 0090 | 208.0100 | Borrow | CY | 8.000 | 8.000 |
| 0100 | 210.0100 | Backfill Structure | CY | 394.000 | 394.000 |
| 0120 | 213.0100 | Finishing Roadway (project) 02. 2981-00-72 | EACH | 1.000 | 1.000 |
| 0130 | 305.0120 | Base Aggregate Dense 1 1/4-Inch | TON | 164.000 | 164.000 |
| 0140 | 455.0120 | Asphaltic Material PG64-28 | TON | 7.000 | 7.000 |
| 0150 | 455.0605 | Tack Coat | GAL | 7.000 | 7.000 |
| 0160 | 460.1103 | HMA Pavement Type E-3 | TON | 117.000 | 117.000 |
| 0170 | 502.0100 | Concrete Masonry Bridges | CY | 244.000 | 244.000 |
| 0180 | 502.3200 | Protective Surface Treatment | SY | 197.000 | 197.000 |
| 0190 | 502.3210 | Pigmented Surface Sealer | SY | 127.000 | 127.000 |
| 0200 | 505.0400 | Bar Steel Reinforcement HS Structures | LB | 7,010.000 | 7,010.000 |
| 0210 | 505.0600 | Bar Steel Reinforcement HS Coated Structures | LB | 34,610.000 | 34,610.000 |
| 0220 | 516.0500 | Rubberized Membrane Waterproofing | SY | 26.000 | 26.000 |
| 0240 | 516.0610.S | Sheet Membrane Waterproofing for Top Slab (structure) 02. B-40-540 | SY | 170.000 | 170.000 |
| 0250 | 550.1120 | Piling Steel HP 12-Inch X 53 Lb | LF | 560.000 | 560.000 |
| 0260 | 601.0411 | Concrete Curb & Gutter 30-Inch Type D | LF | 186.000 | 186.000 |
| 0270 | 602.0415 | Concrete Sidewalk 6-Inch | SF | 1,301.000 | 1,301.000 |
| 0280 | 608.0412 | Storm Sewer Pipe Reinforced Concrete Class IV 12-Inch | LF | 54.000 | 54.000 |
| 0290 | 611.0530 | Manhole Covers Type J | EACH | 1.000 | 1.000 |
| 0300 | 611.0639 | Inlet Covers Type H-S | EACH | 2.000 | 2.000 |
| 0310 | 611.1004 | Catch Basins 4-FT Diameter | EACH | 1.000 | 1.000 |
| 0320 | 611.2004 | Manholes 4-FT Diameter | EACH | 1.000 | 1.000 |
| 0330 | 611.3230 | Inlets 2x3-FT | EACH | 1.000 | 1.000 |
| 0340 | 612.0406 | Pipe Underdrain Wrapped 6-Inch | LF | 206.000 | 206.000 |
| 0350 | 619.1000 | Mobilization | EACH | 0.500 | 0.500 |
| 0360 | 624.0100 | Water | MGAL | 2.000 | 2.000 |
| 0370 | 625.0500 | Salvaged Topsoil | SY | 149.000 | 149.000 |
| 0380 | 628.1504 | Silt Fence | LF | 375.000 | 375.000 |
| 0390 | 628.1520 | Silt Fence Maintenance | LF | 375.000 | 375.000 |
| 0400 | 628.1905 | Mobilizations Erosion Control | EACH | 5.000 | 5.000 |
| 0410 | 628.1910 | Mobilizations Emergency Erosion Control | EACH | 2.000 | 2.000 |
| 0420 | 628.2002 | Erosion Mat Class I Type A | SY | 54.000 | 54.000 |
| 0430 | 628.6005 | Turbidity Barriers | SY | 111.000 | 111.000 |
| 0440 | 628.7015 | Inlet Protection Type C | EACH | 6.000 | 6.000 |
| 0450 | 628.7504 | Temporary Ditch Checks | LF | 25.000 | 25.000 |
| 0460 | 629.0205 | Fertilizer Type A | CWT | 1.000 | 1.000 |
| 0470 | 630.0110 | Seeding Mixture No. 10 | LB | 4.000 | 4.000 |
| 0480 | 630.0200 | Seeding Temporary | LB | 1.500 | 1.500 |
| 0490 | 633.0100 | Delineator Posts Steel | EACH | 4.000 | 4.000 |
| 0500 | 637.2230 | Signs Type II Reflective F | SF | 12.000 | 12.000 |
| 0520 | 643.0100 | Traffic Control (project) 01. 2981-00-72 | EACH | 1.000 | 1.000 |
| 0530 | 643.0420 | Traffic Control Barricades Type III | DAY | 1,360.000 | 1,360.000 |

3

DATE 04JAN16 E S T I M A T E O F Q U A N T I T I E S

| LINE NUMBER | ITEM | ITEM DESCRIPTION | UNIT | TOTAL | 2981-00-72 QUANTITY |
|---|---|---|---|---|---|
| 0540 | 643.0705 | Traffic Control Warning Lights Type A | DAY | 2,720.000 | 2,720.000 |
| 0550 | 643.0900 | Traffic Control Signs | DAY | 680.000 | 680.000 |
| 0560 | 643.1000 | Traffic Control Signs Fixed Message | SF | 332.000 | 332.000 |
| 0570 | 643.2000 | Traffic Control Detour (project) 02. 2981-00-72 | EACH | 1.000 | 1.000 |
| 0580 | 643.3000 | Traffic Control Detour Signs | DAY | 14,790.000 | 14,790.000 |
| 0590 | 645.0120 | Geotextile Fabric Type HR | SY | 282.000 | 282.000 |
| 0600 | 646.0106 | Pavement Marking Epoxy 4-Inch | LF | 540.000 | 540.000 |
| 0610 | 650.4000 | Construction Staking Storm Sewer | EACH | 3.000 | 3.000 |
| 0620 | 650.5000 | Construction Staking Base | LF | 93.000 | 93.000 |
| 0630 | 650.5500 | Construction Staking Curb Gutter and Curb & Gutter | LF | 186.000 | 186.000 |
| 0650 | 650.6500 | Construction Staking Structure Layout (structure) 01. B-40-540 | LS | 1.000 | 1.000 |
| 0670 | 650.9910 | Construction Staking Supplemental Control (project) 02. 2981-00-72 | LS | 1.000 | 1.000 |
| 0680 | 650.9920 | Construction Staking Slope Stakes | LF | 93.000 | 93.000 |
| 0690 | 690.0150 | Sawing Asphalt | LF | 58.000 | 58.000 |
| 0700 | 715.0502 | Incentive Strength Concrete Structures | DOL | 2,440.000 | 2,440.000 |
| 0730 | SPV.0035 | Special 01. Field Stone Riprap Heavy | CY | 158.000 | 158.000 |
| 0740 | SPV.0090 | Special 01. Low Profile Concrete Barrier | LF | 251.000 | 251.000 |
| 0760 | SPV.0090 | Special 03. Timber Pedestrian Railing | LF | 134.000 | 134.000 |
| 0770 | SPV.0090 | Special 04. Construction Staking Concrete Sidewalk | LF | 186.000 | 186.000 |
| 0780 | SPV.0165 | Special 01. Stone Facing Field Stone | SF | 240.000 | 240.000 |
| 0790 | SPV.0165 | Special 02. Anti-Graffiti Shield For Stone Facing Field Stone Surfaces | SF | 240.000 | 240.000 |

## FINISHING ROADWAY

| CATEGORY | STATION | 213.0100 FINISHING ROADWAY EACH |
|---|---|---|
| 0010 | WHITNALL PARK DR. | |
| | 14+15 -15+50 | 1 |
| | TOTAL | 1 |

## BASE AGGREGATE ITEMS

| CATEGORY | STATION | LOCATION | 305.0120 BASE AGGREGATE DENSE 1-1/4 INCH TON | 624.0100 WATER MGAL |
|---|---|---|---|---|
| 0010 | WHITNALL PARK DRIVE | | | |
| | 14+15.00 - 14+48.07 | RT&LT | 58 | 1 |
| | 14+48.07 - 14+58.07 | RT&LT | 20 | 0 |
| | 15+00.58 - 15+10.58 | RT&LT | 20 | 0 |
| | 15+10.58 - 15+50.00 | RT&LT | 66 | 1 |
| | TOTAL | | 164 | 2 |

## CONCRETE ITEMS

| CATEGORY | STATION | LOCATION | 601.0411 CONCRETE CURB & GUTTER 30-INCH TYPE D LF | 602.0415 CONCRETE SIDEWALK 6-INCH SF |
|---|---|---|---|---|
| 0010 | WHITNALL PARK DRIVE | | | |
| | 14+15.00 - 14+58.07 | LT & RT | 87 | 643 |
| | 15+00.48 - 15+50.00 | LT & RT | 99 | 658 |
| | TOTAL | | 186 | 1,301 |

NOTE: ALL ITEMS ON PAGE ARE CATEGORY 0010 UNLESS OTHERWISE NOTED ON PAGE.

## ASPHALTIC ITEMS

| CATEGORY | STATION | LOCATION | 455.0120 ASPHALTIC MATERIAL PG64-28 TON | 455.0605 TACK COAT GAL | 460.1103 HMA PAVEMENT TYPE E-3 TON |
|---|---|---|---|---|---|
| 0010 | WHITNALL PARK DRIVE | | | | |
| | 14+15.00 - 14+58.07 | LT & RT | 2 | 3 | 35 |
| | 15+00.48 - 15+50.00 | LT & RT | 2 | 4 | 39 |
| | TOTAL | | 4 | 7 | 74 |

## STORM SEWER STRUCTURE ITEMS

| CATEGORY | STRUCTURE NUMBER | STATION | OFFSET TO CENTER FT | | 611.0530 MANHOLE COVERS TYPE J EACH | 611.0639 INLET COVERS TYPE H-S EACH | 611.2004 MANHOLES 4-FT DIAMETER EACH | 611.3230 INLETS 2x3-FT EACH | 611.1004 CATCH BASINS 4-FT DIAMETER EACH | RIM OR FLANGE ELEV | STRUCTURE DEPTH FT | INVERT ELEV | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0010 | | | | | | | | | | | | | |
| | 1 | 14+21 | 14.7 | LT | -- | 1 | -- | 1 | -- | 715.84 | 1.84 | 712.51 | |
| | 2 | 14+21 | 14.9 | RT | -- | 1 | -- | -- | 1 | 715.89 | 2.14 | 712.26 | OUTGOING INV. |
| | | | | | | | | | | | 4.14 | 710.26 | SUMP |
| | 3 | 14+35 | 32.5 | RT | 1 | -- | 1 | -- | -- | 715.92 | 3.62 | 712.14 | |
| | TOTAL | | | | 1 | 2 | 1 | 1 | 1 | | | | |

NOTES

1) STATIONS AND OFFSETS ARE TO THE CENTER OF STRUCTURES
2) RIM ELEVATIONS ARE GIVEN AT THE FLANGE LINE FOR INLET GRATES OR THE CENTER OF THE MANHOLE COVER FOR MANHOLES.
3) STRUCTURE DEPTH = RIM ELEV - INVERT ELEV - CASTING HEIGHT - ADJUSTMENT - TOP SLAB THICKNESS
   CASTING HEIGHT = 0.75 FT FOR J COVERS; 0.50 FT FOR H-S COVERS
   ADJUSTMENT (RINGS) = 0.32 FT FOR J; 0.32 FOR H-S COVERS

## MOBILIZATION EROSION CONTROL

| CATEGORY | LOCATION | 628.1905 MOBILIZATIONS EROSION CONTROL EACH |
|---|---|---|
| 0010 | WHITNALL PARK DR. | 5 |
| | TOTAL | 5 |

## STORM SEWER PIPE ITEMS

| CATEGORY | PIPE/ STR. NUMBER | 608.0412 STORM SEWER PIPE REINFORCED CONCRETE CLASS-IV 12-INCH LF | FROM STR | TO STR | INLET ELEV | DISCH ELEV |
|---|---|---|---|---|---|---|
| 0010 | P-1 | 30 | 1 | 2 | 712.51 | 712.36 |
| | P-2 | 24 | 2 | 3 | 712.26 | 712.14 |
| | TOTAL | 54 | | | | |

NOTES

4) PIPE LENGTHS ARE MEASURED TO THE CENTER OF STRUCTURES

## EMERGENCY MOBILIZATION EROSION CONTROL

| CATEGORY | LOCATION | 628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH |
|---|---|---|
| 0010 | WHTNALL PARK DR. | 2 |
| | TOTAL | 2 |

## MOBILIZATION

| CATEGORY | LOCATION | 619.1000 MOBILIZATION EACH |
|---|---|---|
| 0010 | WHITNALL PARK DR. | 0.5 |
| | TOTAL | 0.5 |

NOTE: ALL ITEMS ON PAGE ARE CATEGORY 0010 UNLESS OTHERWISE NOTED ON PAGE.

## EROSION MATERIALS

| CATEGORY | STATION | LOCATION | 628.2002 EROSION MAT CLASS 1 TYPE A SY | 628.1504 SILT FENCE LF | 628.1520 SILT FENCE MAINTENANCE LF | 628.6005 TURBIDITY BARRIERS SY | 628.7015 INLET PROTECTION TYPE C EACH | 628.7504 TEMPORARY DITCH CHECK LF | 630.0200 SEEDING TEMPORARY LB |
|---|---|---|---|---|---|---|---|---|---|
| 0010 | WHITNALL PARK DR. | | | | | | | | |
| | 14+15 -15+50 | LT & RT | 43 | 300 | 300 | - | 4 | 20 | 1 |
| | 16+15 | LT & RT | - | - | - | - | 2 | - | - |
| | 14+72 | LT & RT | - | - | - | 55 | - | - | - |
| | 14+83 | LT & RT | - | - | - | 56 | - | - | - |
| | SUB-TOTAL | | 43 | 300 | 300 | - | - | 20 | 1 |
| | 25% UNDISTRIBUTED QUANTITY | | 11 | 75 | 75 | - | - | 5 | .5 |
| | TOTAL | | 54 | 375 | 375 | 111 | 6 | 25 | 1.5 |



FILE NAME : P:\8462 Whitnall Park Drive Bridge P-40-0713\Transportation\CADD\Sheets/030201_mq.ppt PLOT DATE : 12/18/2015 3:18:54 PM PLOT BY : JUSTIN FLICKINGER PLOT NAME : 030201_mq PLOT SCALE : 1:1

3

3

## FINISHING ITEMS

| CATEGORY | STATION | LOCATION | 625.0500 SALVAGED TOPSOIL SY | 629.0205 FERTILIZER TYPE A CWT | 630.0110 SEEDING MIXTURE NO. 10 LB |
|---|---|---|---|---|---|
| 0010 | WHITNALL PARK DR. | | | | |
| | 14+15 - 15+50 | RT & LT | 119 | 0.1 | 3 |
| | SUB-TOTAL | | 119 | 0.1 | 3 |
| | 25% UNDISTRIBUTED QUANTITIES | | 30 | 0.0 | 1 |
| | TOTAL | | 149 | 1 | 4 |

## TRAFFIC CONTROL ITEMS

| CATEGORY | STAGE | LOCATION | DURATION DAYS | 643.0100 TRAFFIC CONTROL (2981-00-72) EACH | 643.0420 TRAFFIC CONTROL BARRICADES TYPE III EACH | 643.0420 DAYS | 643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A EACH | 643.0705 DAYS | 643.0900 TRAFFIC CONTROL SIGNS EACH | 643.0900 DAYS | 643.1000 TRAFFIC CONTROL SIGNS FIXED MESSAGE EACH | 643.1000 SF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0010 | | WHITNALL PARK DR. | | | | | | | | | | |
| | | 10+50 - 12+19 | 170 | 1 | 4 | 680 | 8 | 1,360 | 2 | 340 | 2 | 83 |
| 0010 | | WHITNALL PARK DR. | | | | | | | | | | |
| | | 14+15 - 15+50 | 170 | | 4 | 680 | 8 | 1,360 | 2 | 340 | 2 | 83 |
| | | TOTAL | | 1 | | 1,360 | | 2,720 | | 680 | | 332 |

## TRAFFIC DETOUR ITEMS

| CATEGORY | STAGE DURATION DAYS | 643.2000 TRAFFIC CONTROL DETOUR 2981-00-72 EACH | 643.3000 TRAFFIC CONTROL DETOUR SIGNS EACH | 643.3000 DAYS |
|---|---|---|---|---|
| 0010 | 170 | 1 | 87 | 14,790 |
| | TOTAL | 1 | 87 | 14,790 |

NOTE: ALL ITEMS ON PAGE ARE CATEGORY 0010 UNLESS OTHERWISE NOTED ON PAGE.

## PERMANENT SIGNING

| CATEGORY | STATION | LOCATION | 637.2230 SIGNS TYPE II REFLECTIVE F SF | 633.0100 DELINEATOR POSTS STEEL EACH |
|---|---|---|---|---|
| 0010 | WHITNALL PARK DR. | | | |
| | 14+15 | LT&RT | 6 | 2 |
| | 15+40 | LT&RT | 6 | 2 |
| | | | 12 | 4 |

## SAWCUTTING ITEMS

| CATEGORY | STATION | LOCATION | 690.0150 SAWING ASPHALT LF |
|---|---|---|---|
| 0010 | WHITNALL PARK DR. | | |
| | 14+15 | LT&RT | 30 |
| | 15+50 | LT&RT | 28 |
| | TOTAL | | 58 |

## PAVEMENT MARKING

| CATEGORY | STATION | | | LOCATION | 646.0106 PAVEMENT MARKING EPOXY 4-INCH WHITE LF | 646.0106 PAVEMENT MARKING EPOXY 4-INCH YELLOW LF | REMARKS |
|---|---|---|---|---|---|---|---|
| 0010 | WHITNALL PARK DR. | | | | | | |
| | 14+15 | - | 15+50 | LT&RT | 270 | - | SOLID WHITE |
| | 14+15 | - | 15+50 | CENTER | - | 270 | DOUBLE SOLID YELLOW |
| | SUB-TOTAL | | | | 270 | 270 | |
| | TOTAL | | | | 540 | | |

## CONSTRUCTION STAKING

| CATEGORY | LOCATION | 650.4000 CONSTRUCTION STAKING STORM SEWER EACH | 650.5000 CONSTRUCTION STAKING BASE LF | 650.5500 CONSTRUCTION STAKING CURB GUTTER AND CURB AND GUTTER LF | 650.9910.02 CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (2981-00-72) LS | 650.9920 CONSTRUCTION STAKING SLOPE STAKES LF | SPV.0090.04 CONSTRUCTION STAKING CONCRETE SIDEWALK LF |
|---|---|---|---|---|---|---|---|
| 0010 | WHTNALL PARK DR. | 3 | 93 | 186 | 1 | 93 | 186 |
| | TOTAL | 3 | 93 | 186 | 1 | 93 | 186 |

NOTE: ALL ITEMS ON PAGE ARE CATEGORY 0010 UNLESS OTHERWISE NOTED ON PAGE.



FILE NAME : P:\8462 Whitnall Park Drive Bridge P-40-0713\Transportation\CADD\Sheets/030201_mq.ppt PLOT DATE : 12/18/2015 3:18:54 PM PLOT BY : JUSTIN FLICKINGER PLOT NAME : 030201_mq PLOT SCALE : 1:1

BENCHMARK TABLE

| NO. | STA./OFFSET | DESCRIPTION | ELEV. |
|---|---|---|---|
| BM-2 | 14+67.77, 16.13' LT | CHISELED "□" AT SOUTHWEST CORNER OF EXISTING STRUCTURE | 716.46' |

CURVE BP002
PI STA = 15+27.78
N = 345550.892
E = 2527630.737
DELTA = 15°28'14"
D = 6°54'29"
T = 112.66'
L = 223.95'
R = 829.41'
PC STA = 14+15.12
N = 345443.273
E = 2527664.064
PT STA = 16+39.07
N = 345645.722
E = 2527569.911
BK = N17°12'23.3"W
AH = N32°40'37.7"W

BEGIN PROJECT
STA 14+15.00
X: 2527664.059
Y: 345443.147

END PROJECT
STA 15+50.00

B-40-540 REPLACES P-40-713
SAWCUT STA. 14+15.00 MATCH EXISTING
SAWCUT STA. 15+50.00 MATCH EXISTING
CONCRETE CURB & GUTTER 30" TYPE D (TYP.)
CONCRETE SIDEWALK 6-INCH, TYP.
CLEAR ROADWAY WIDTH
SIDEWALK 6.0'
WHITNALL PARK DR. ℄
WHITNALL PARK CREEK
WHITNALL PARK DRIVE
W. COLLEGE AVE.
BM-2
PCC: STA. 14+15.12
PT: STA. 16+39.07
PI: 15+27.78
42.50
36.90
12.74'
12.88'
12.56'
12.59'
SLOPE INTERCEPTS (TYP.)
LOW PROFILE CONCRETE BARRIER

FLANGE LINE PROFILE LT. & RT.
FINISHED PROFILE
EXISTING PROFILE
MATCH EXISTING GRADE
PVI STA 14+15.00 PVI EL 716.29
PVI STA 14+15.00 PVI EL 715.93
PVI STA 14+21.00 PVI EL 715.89
PVI STA 14+58.08 PVI EL 716.15
PVI STA 15+50.00 PVI EL 716.87
-0.71%
0.43%
0.71%
0.03%
0.35%
STA 14+79.33
STRUCTURE B-40-540 REQUIRED
SINGLE SPAN-FLAT CONCRETE SLAB
42'-6" OVERALL LENGTH
36'-7 ¼" CLEAR ROADWAY WIDTH
0°0'0" SKEW
EXISTING GRADE
PROPOSED GRADE

725 720 715 710

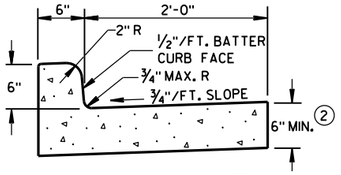
717.52 717.45 716.78 716.37 716.56 716.25 716.28 716.29 716.29 716.27 716.44 716.34 716.66 716.84 716.87 716.83

11+00 11+50 12+00 12+50 13+00 13+50 14+00 14+50 15+00 15+50 16+00 16+50 17+00

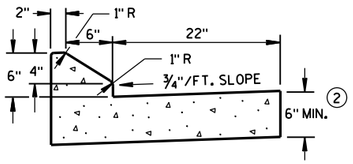
| PROJECT NO: 2981-00-72 | HWY: WHITNALL PARK DRIVE | COUNTY: MILWAUKEE | PLAN AND PROFILE: WHITNALL PARK DR. | SHEET 19 | E |
|---|---|---|---|---|---|

# Standard Detail Drawing List

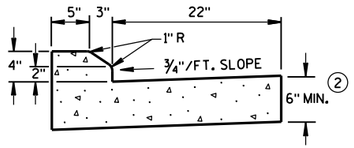
| | |
|---|---|
| 08D01-18 | CONCRETE CURB, CONCRETE CURB AND GUTTER AND TIES |
| 08E08-03 | TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS |
| 08E09-06 | SILT FENCE |
| 08E10-02 | INLET PROTECTION TYPE A, B, C AND D |
| 08E11-02 | TURBIDITY BARRIER |
| 12A03-10 | NAME PLATE (STRUCTURES) |
| 15C02-05A | BARRICADES AND SIGNS FOR MAINLINE CLOSURES |
| 15C02-05B | BARRICADES AND SIGNS FOR MAINLINE CLOSURES |
| 15C02-05C | DETOUR SIGNING FOR MAINLINE CLOSURES |
| 15C06-07 | SIGNING & MARKING FOR TWO LANE BRIDGES |
| 15C08-16A | PAVEMENT MARKING (MAINLINE) |




TYPES A & D ①

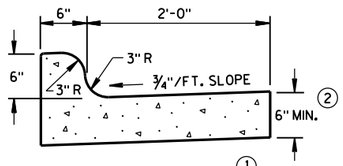



6" SLOPED CURB TYPES G & J ①

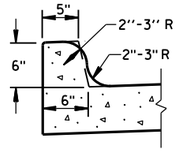



4" SLOPED CURB TYPES G & J ①

**CONCRETE CURB & GUTTER 30"**

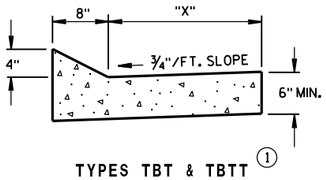



TYPES K & L ①




OPTIONAL CURB SHAPE FOR TYPES K & L ①

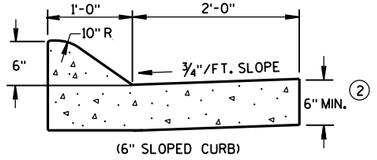
**CONCRETE CURB & GUTTER 30"**



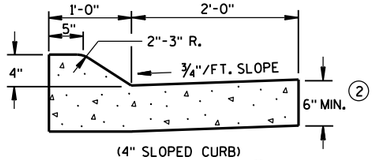

TYPES TBT & TBTT ①

**CONCRETE CURB & GUTTER**

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

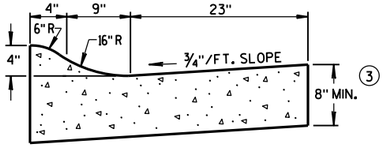



(6" SLOPED CURB)




(4" SLOPED CURB)

TYPES A & D ①




4" SLOPED CURB TYPES R & T ① ④

**CONCRETE CURB & GUTTER 36"**

## GENERAL NOTES

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

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

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

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

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

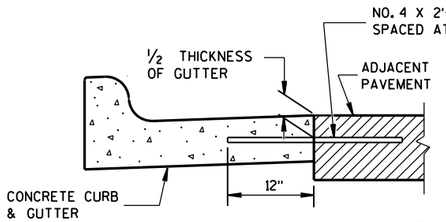
① TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K, R AND TBTT.

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.

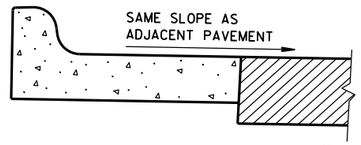
③ THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.

④ THE FACE OF CURB IS 6" FROM THE BACK OF CURB.

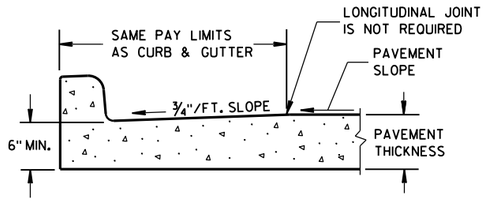
⑤ WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.



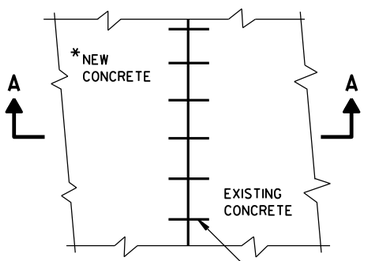

TYPICAL TIE BAR LOCATION ①




REVERSE SLOPE GUTTER ⑤
(TYPICAL FOR ALL CURB & GUTTER TYPES)

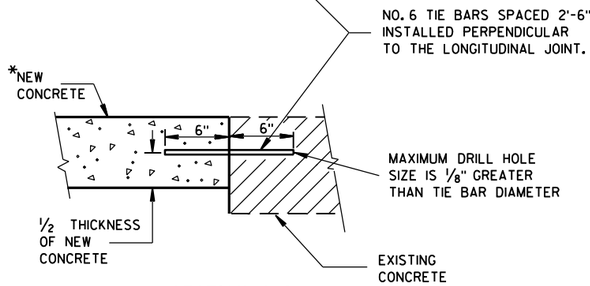



PARTIAL SECTION OF PAVEMENT
WITH INTEGRAL CURB & GUTTER



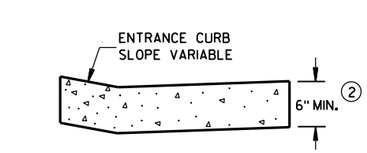

PLAN VIEW

*NEW CURB & GUTTER, SURFACE DRAINS, CONCRETE PAVEMENT OR OTHER NEW CONCRETE.

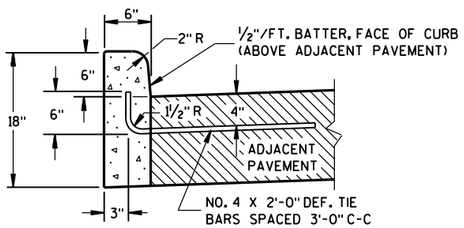



SECTION A-A

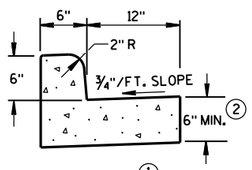
TIE BARS DRILLED
INTO EXISTING PAVEMENT




DRIVEWAY ENTRANCE CURB
(WHEN DIRECTED BY THE ENGINEER)

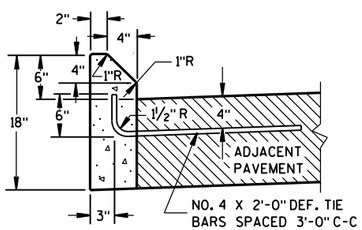



① TYPES A & D

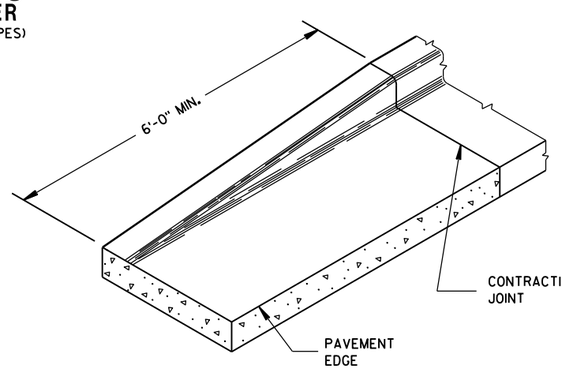



① TYPES A & D

CONCRETE CURB & GUTTER 18"




① TYPES G & J




END SECTION CURB & GUTTER

CONCRETE CURB

CONCRETE CURB, CONCRETE CURB & GUTTER AND TIES

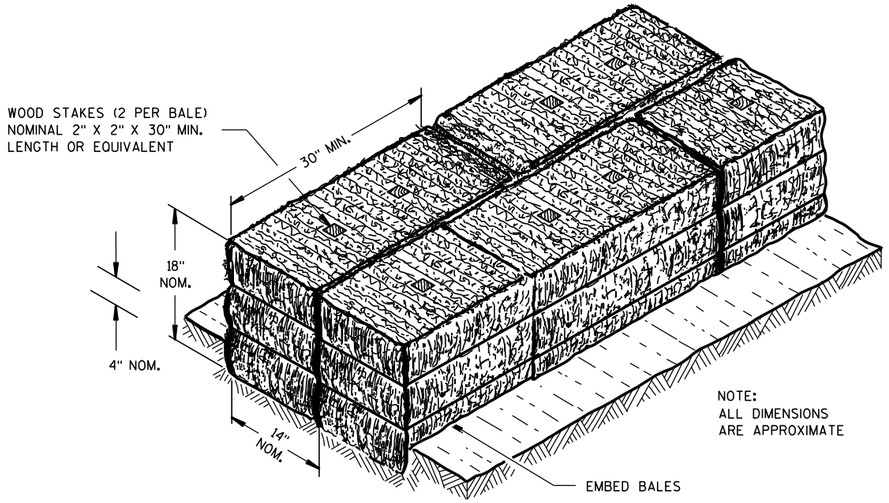
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

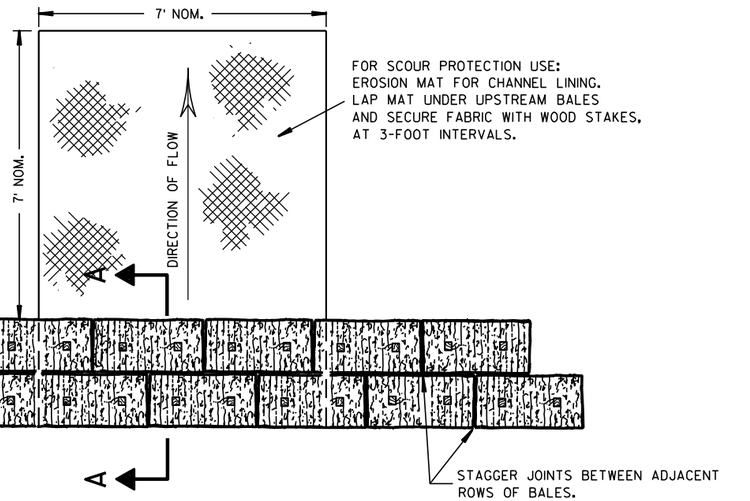


6

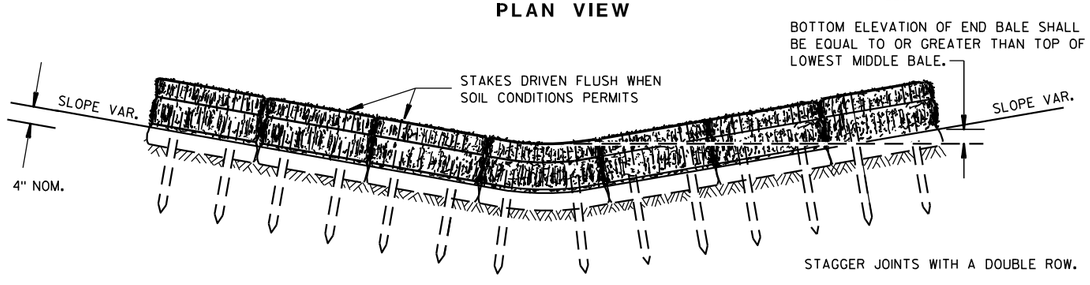
S.D.D. 8 D 1-18




**SECTION A-A**




**PLAN VIEW**



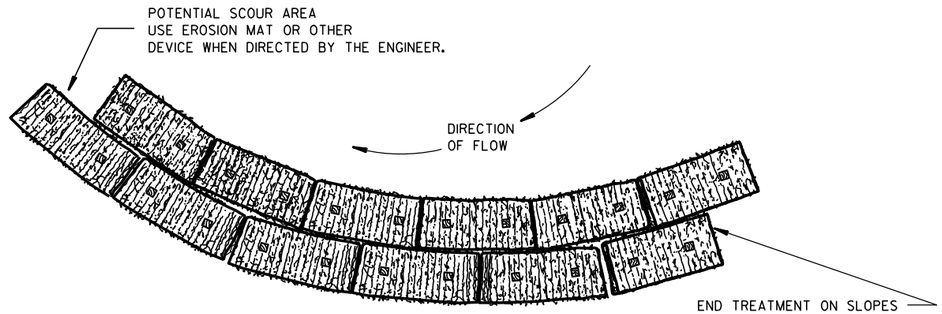

**FRONT ELEVATION**

## TEMPORARY DITCH CHECK USING EROSION BALES ①

## GENERAL NOTES

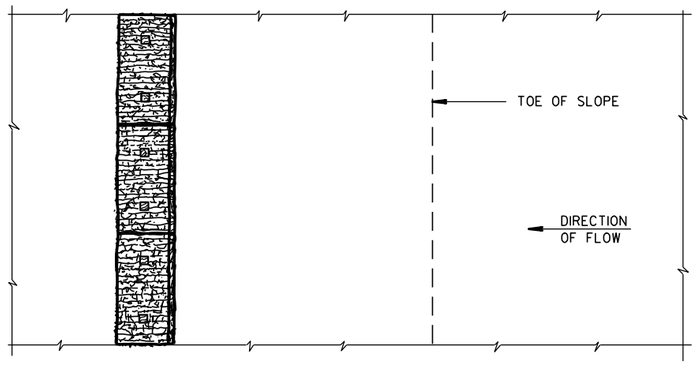
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

① TEMPORARY DITCH CHECKS EITHER EROSION BALES OR MANUFACTURED SHALL BE PAID FOR UNDER THE BID ITEM OF TEMPORARY DITCH CHECK. THE DEPARTMENT WILL NOT PAY FOR TEMPORARY DITCH CHECKS CONSTRUCTED OF A SINGLE ROW OF EROSION BALES.

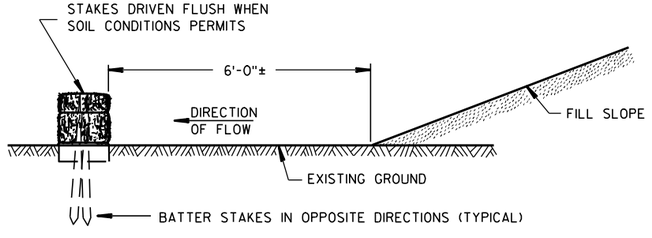



**PLAN VIEW**

WHEN ALTERING THE DIRECTION OF FLOW




**PLAN VIEW**




**FRONT ELEVATION**

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

## EROSION BALES FOR SHEET FLOW

**TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/04/02 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

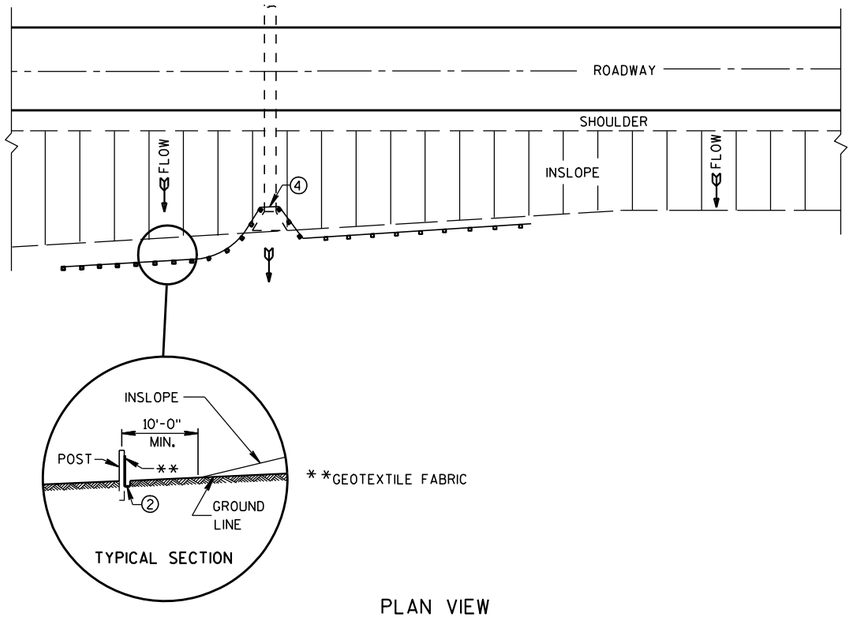


6

S.D.D. 8 E 8-3

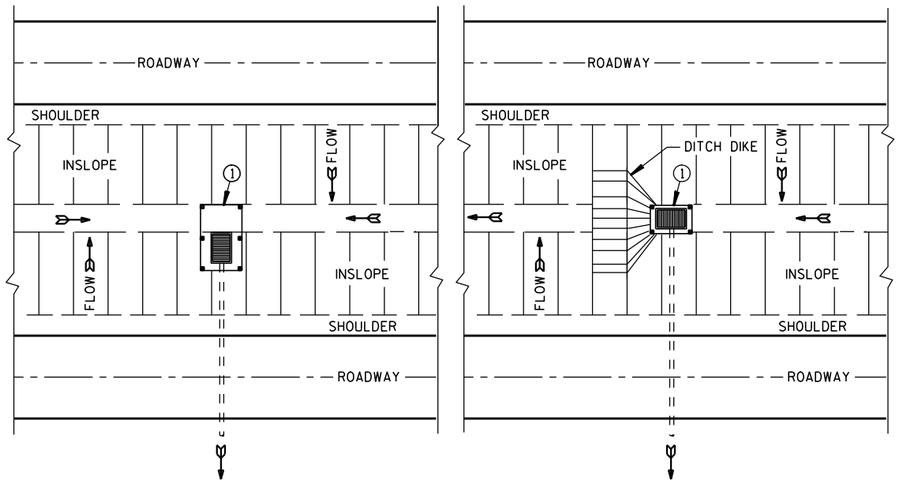
6

S.D.D. 8 E 8-3




PLAN VIEW

## TYPICAL APPLICATION OF SILT FENCE



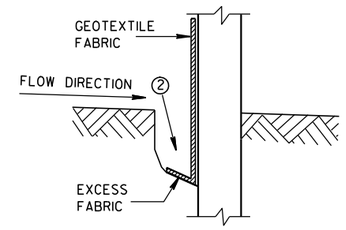

PLAN VIEW

## SILT FENCE AT MEDIAN SURFACE DRAINS

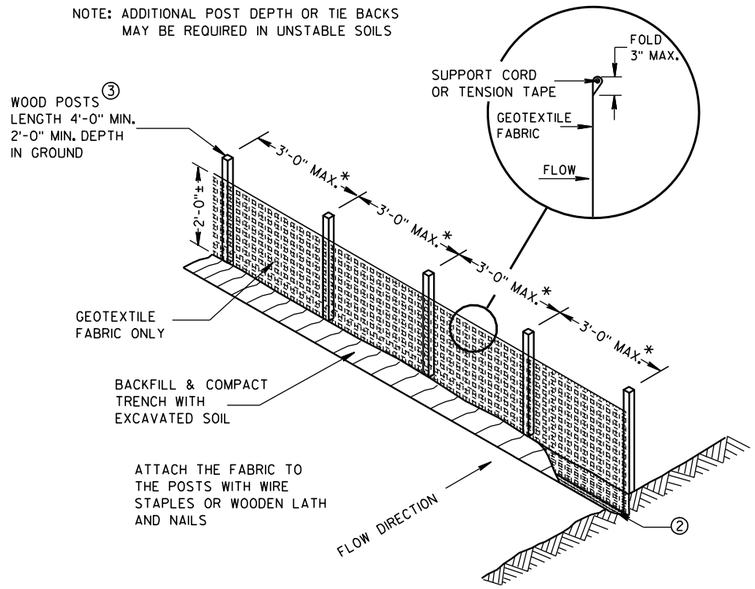
## GENERAL NOTES

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

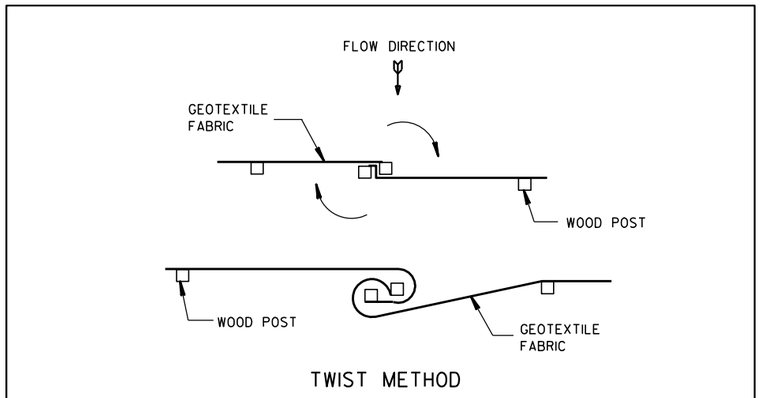
1. HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
2. FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.
4. SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
5. CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



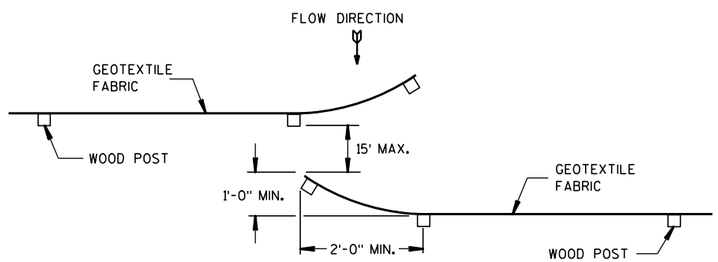

## TRENCH DETAIL




## SILT FENCE

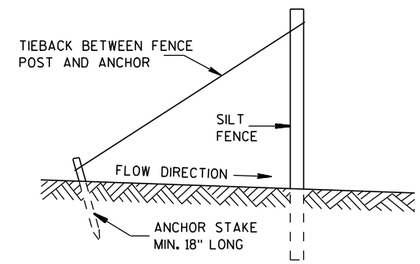



TWIST METHOD




HOOK METHOD

## JOINING TWO LENGTHS OF SILT FENCE 5




## SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

**SILT FENCE**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

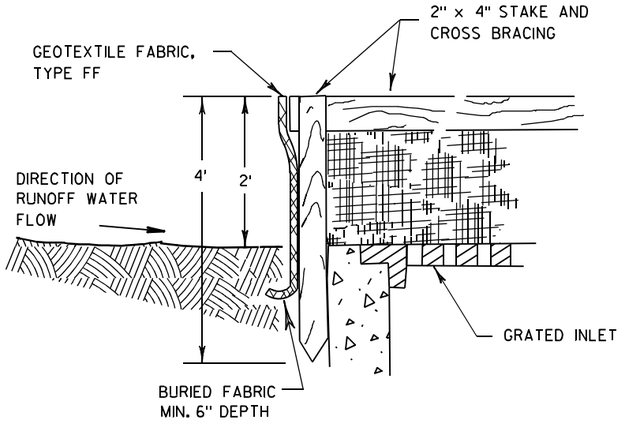


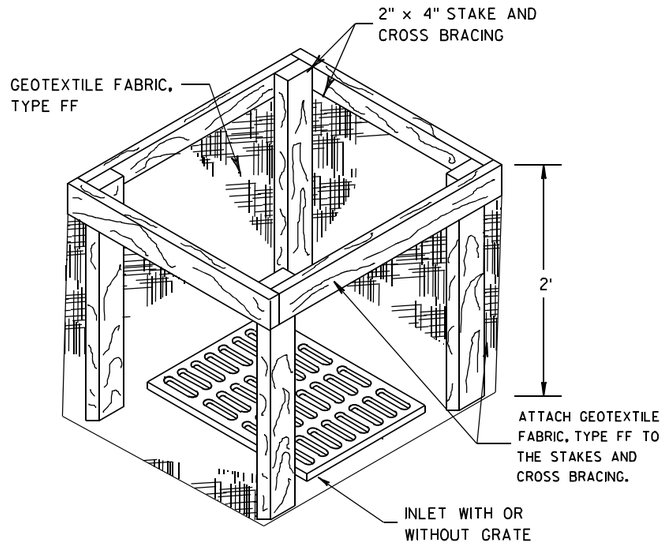
6

S.D.D. 8 E 9-6

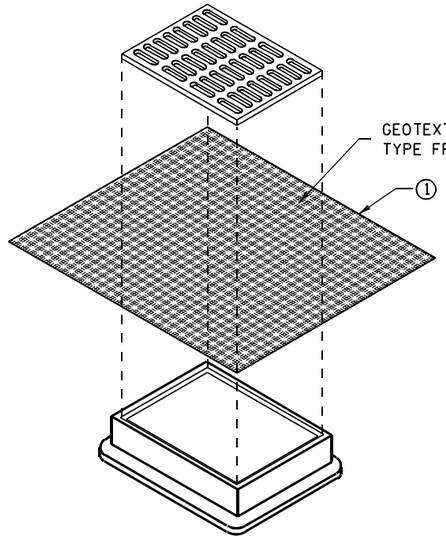
6

S.D.D. 8 E 9-6



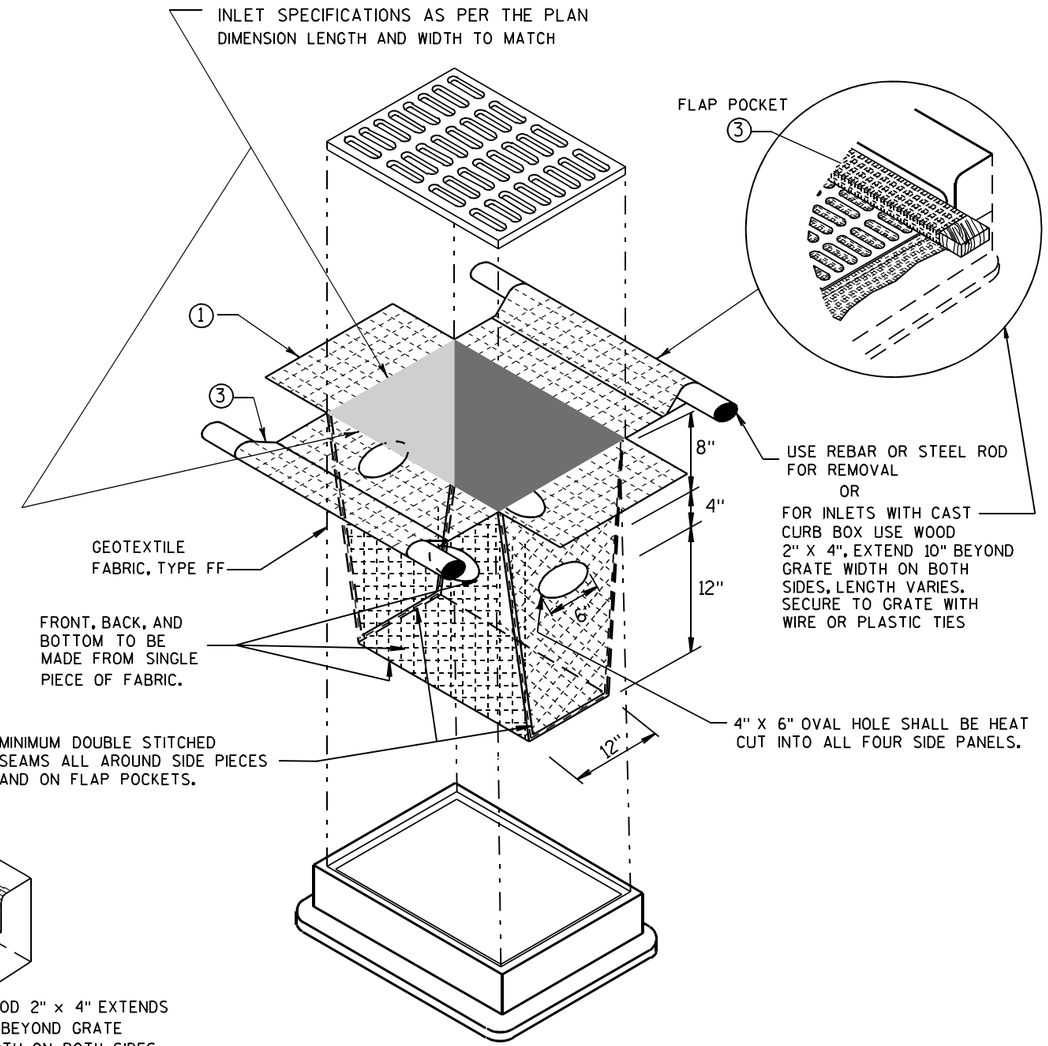




## INLET PROTECTION, TYPE A



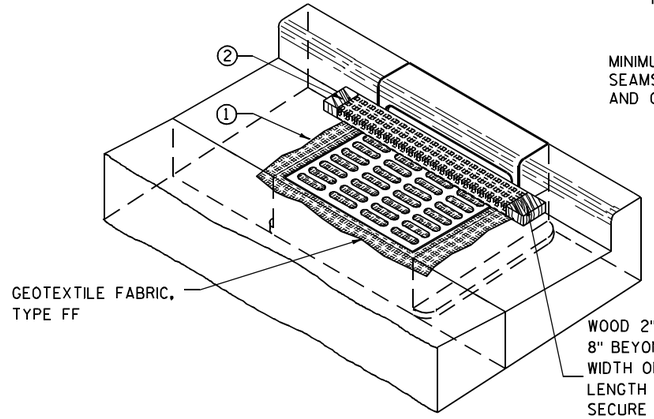

## INLET PROTECTION, TYPE B
## (WITHOUT CURB BOX)

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




## INLET PROTECTION, TYPE D

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




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

## GENERAL NOTES

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

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

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

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

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

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

## INSTALLATION NOTES

### TYPE B & C

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

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

### TYPE D

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

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

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

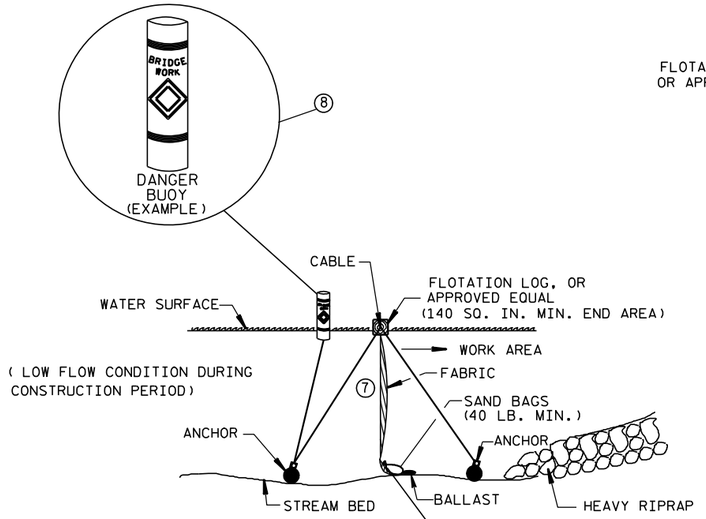
10/16/02
DATE

/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

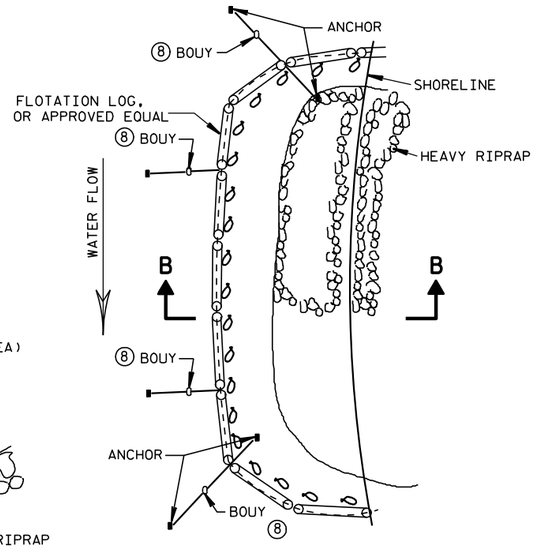
FHWA

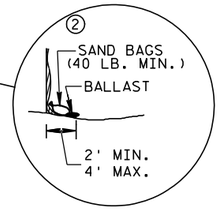



6
S.D.D. 8 E 10-2

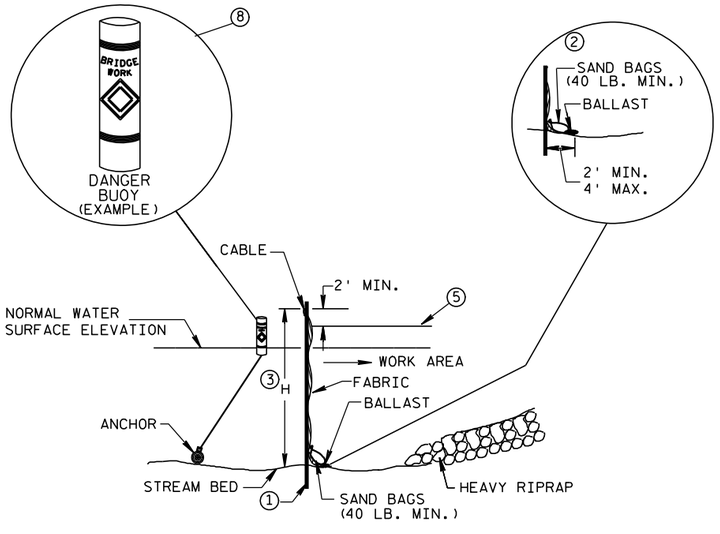



**SECTION B-B**



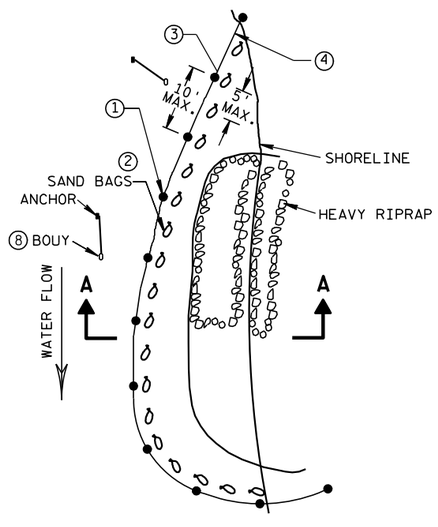




**TURBIDITY BARRIER FLOAT ALTERNATIVE**
**CAUTION - SEE NOTE 6**




**SECTION A-A**




**PLAN VIEW**

**TURBIDITY BARRIER STANDARD POST INSTALLATION**

**TURBIDITY BARRIER PLACEMENT DETAILS**

## 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.

TURBIDITY BARRIER MAY BE REMOVED AT THE ENGINEERS DISCRETION, WHEN PERMANENT EROSION CONTROL MEASURES HAVE BEEN ESTABLISHED.

① DRIVEN STEEL POSTS, PIPES, OR CHANNELS. LENGTH SHALL BE SUFFICIENT TO SECURELY SUPPORT BARRIER AT HIGH WATER ELEVATIONS.

② SANDBAGS TO BE USED AS ADDITIONAL BALLAST WHEN ORDERED BY THE ENGINEER TO MEET ADVERSE FIELD CONDITIONS. SPACE AS APPROPRIATE FOR SITE CONDITIONS.

③ WHEN BARRIER HEIGHT, H, EXCEEDS 8 FT., POST SPACING MAY NEED TO BE DECREASED.

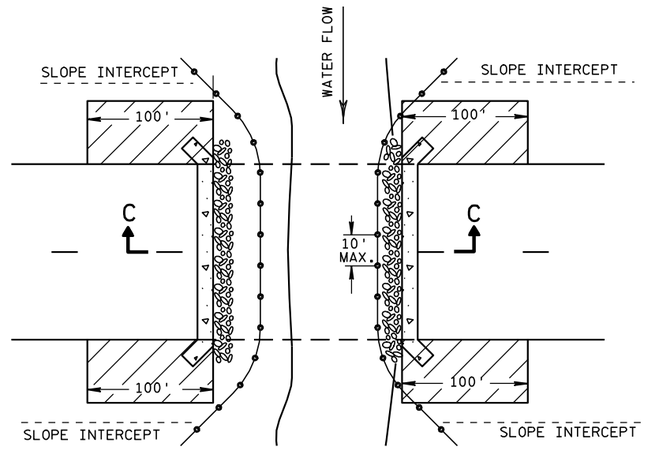
④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.

⑤ ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION PERIOD. MIMIMUM BARRIER HEIGHT SHALL BE 2'GREATER THAN EITHER THE O2 ELEVATION OR THE ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION, WICHEVER IS GREATER.

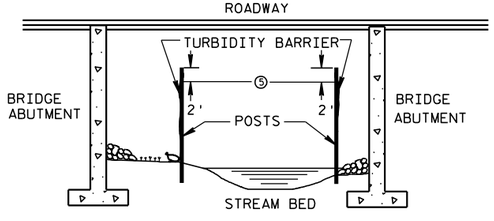
⑥ FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BED ROCK PREVENTS THE INSTALLATION OF POSTS.

⑦ ALLOW SUFFICIENT SLACK VERTICALLY AND HORIZONTALLY SO THAT SEDIMENT BUILD UP WILL NOT SEPARATE OR LOWER THE TURBIDITY BARRIER.

⑧ USE AS DIRECTED BY COAST GUARD OR DNR PERMIT WHEN WORKING IN NAVIGABLE WATERWAYS.




**PLAN VIEW**




**SECTION C-C**

**TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES**

**TURBIDITY BARRIER**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/04/02 DATE
/S/ Beth Cannestra CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

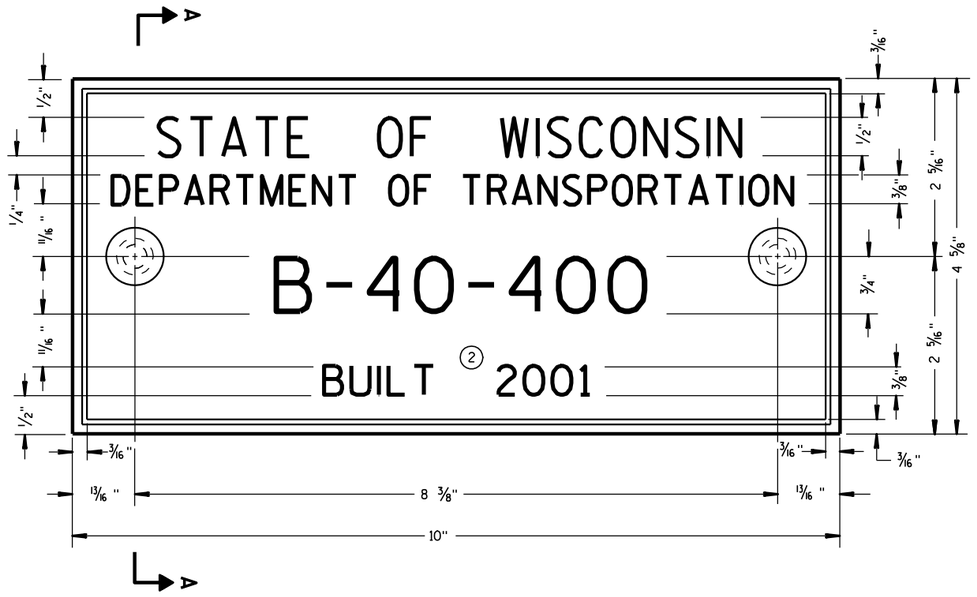


6

S.D.D. 8 E 11-2

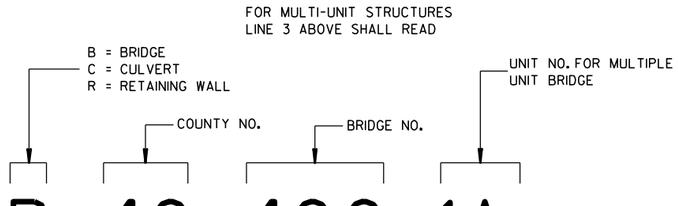
6

S.D.D. 8 E 11-2




## TYPICAL NAME PLATE

(BRIDGES, CULVERTS, AND RETAINING WALLS)




## NUMBERING DESIGNATION
## MULTI-UNIT STRUCTURES

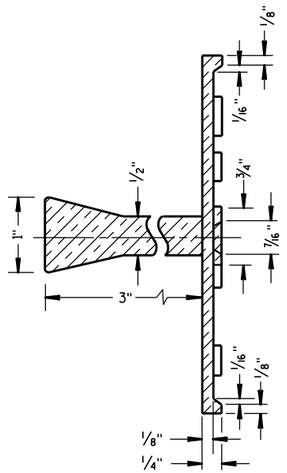
## GENERAL NOTES

NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

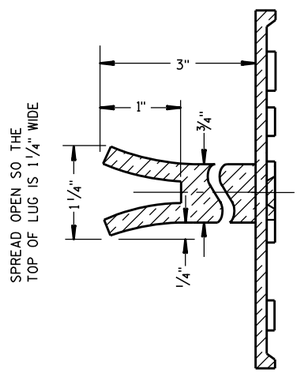
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

(1) EPOXY RESIN SHALL BE FROM AN APPROVED MANUFACTURER AND USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

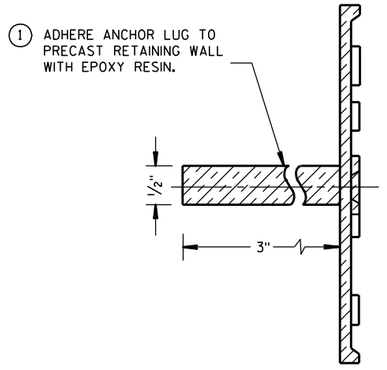
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.




SECTION A-A




ALTERNATE LUG




## ALTERNATE LUG

(FOR ATTACHMENT TO PRECAST STRUCTURES)

| NAME PLATE (STRUCTURES) | |
|---|---|
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | |
| APPROVED | |
| 3/26/10 DATE | /S/ Scot Beck -- CHIEF STRUCTURAL DEVELOP ENGINEER |
| FHWA | |

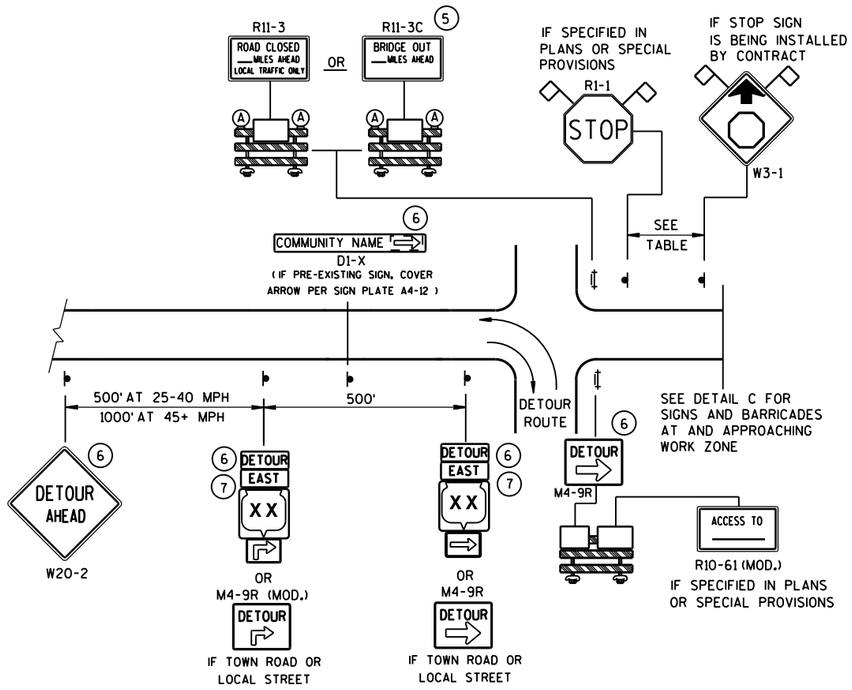


6

S.D.D. 12 A 3-10

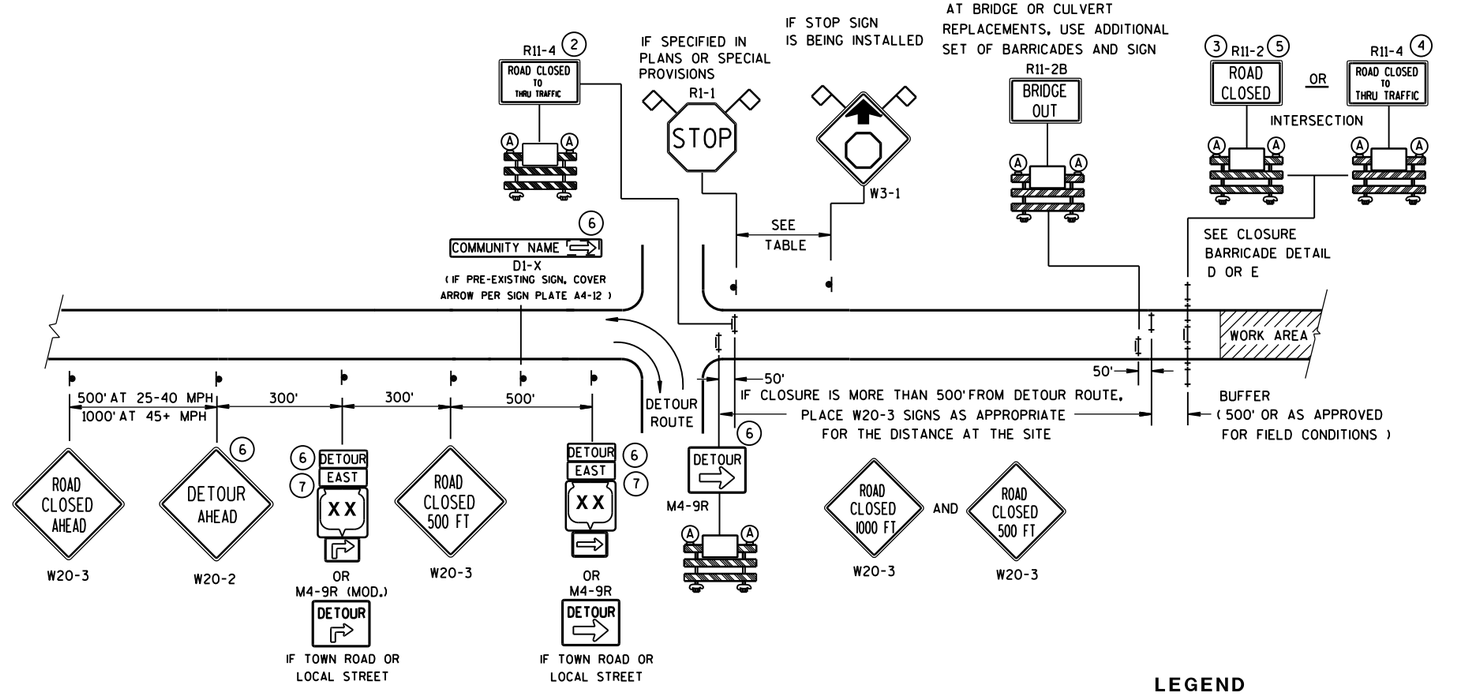
6

S.D.D. 12 A 3-10



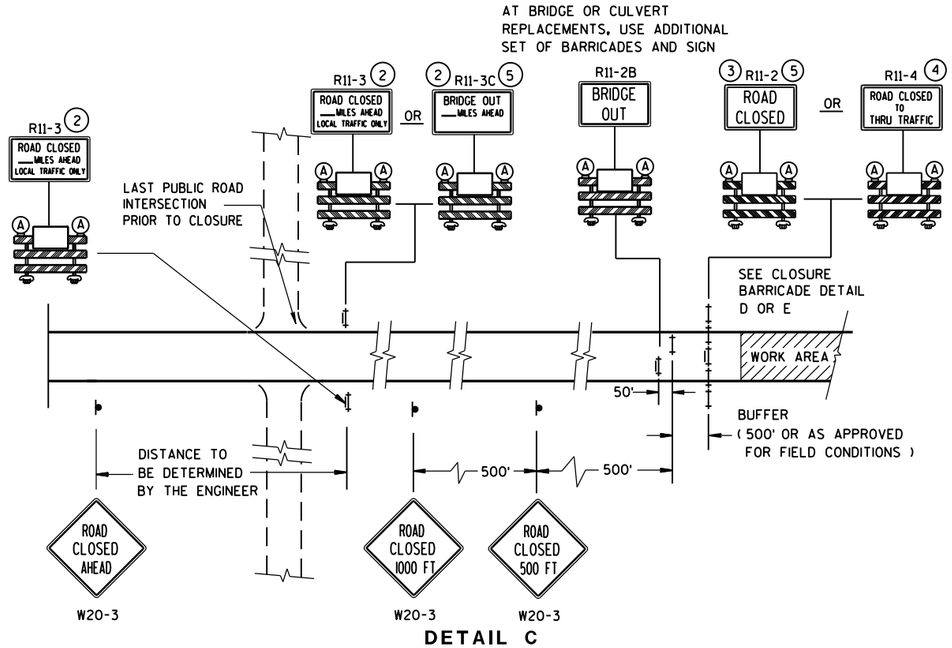

## DETAIL A
## MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE GREATER THAN ½ MILE FROM DETOUR ROUTE ( 1000 FEET IF URBAN )




## DETAIL B
## MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE LESS THAN ½ MILE FROM DETOUR ROUTE ( 1000 FEET IF URBAN )




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

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

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

### LEGEND

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

**BARRICADES AND SIGNS FOR MAINLINE CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

8/2013 DATE

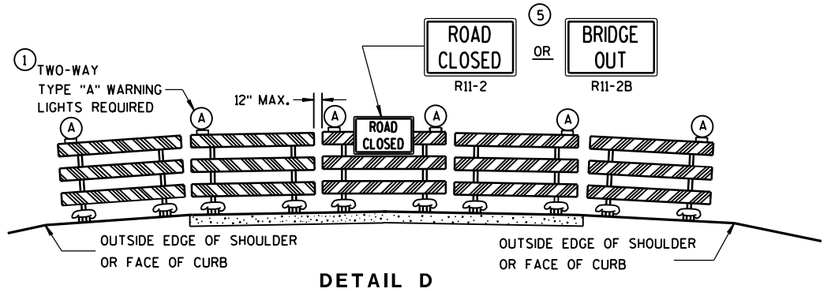
/S/ Travis Feltes
STATE TRAFFIC ENGINEER

FHWA




6

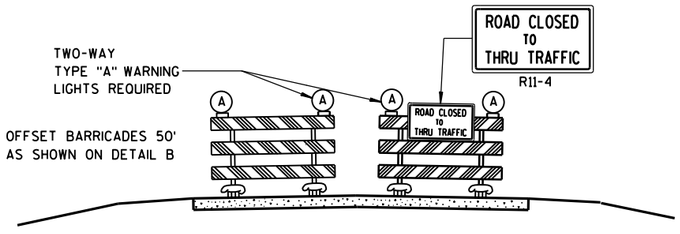
S.D.D. 15 C 2-5a




**DETAIL D**

## ROAD CLOSURE BARRICADE DETAIL

APPROACH VIEW




**DETAIL E**

## LANE CLOSURE BARRICADE DETAIL

APPROACH VIEW

SEE SDD 15C2-SHEET "**a**" FOR LEGEND

## GENERAL NOTES

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

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

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

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

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

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

THE R11-2, R11-3, M4-9, R11-4 AND R10-61 SIGNS PLACED ON BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE OR BOTTOM RAILS.

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

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
- R11-2 SHALL BE 48" X 30".
- R11-3, R11-4 AND R10-61 SHALL BE 60" X 30".
- M4-9 SHALL BE 30" X 24".
- M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
- M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)
- M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.
- R1-1 SHALL BE 36" X 36".

(1) TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8-FOOT LIGHT SPACING).

(2) THESE SIGNS AND BARRICADES ARE NOT REQUIRED IF ROAD CLOSURE BEGINS AT INTERSECTION.

(3) FOR ROAD CLOSURE WITHOUT LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL D.

(4) FOR ROAD CLOSURE WITH LOCAL ACCESS TO PROJECT, SEE LANE CLOSURE BARRICADE DETAIL E.

(5) FOR BRIDGE OR CULVERT REPLACEMENTS, SUBSTITUTE "BRIDGE OUT" INSTEAD OF "ROAD CLOSED" ON R11-2 AND R11-3 SIGNS.

(6) INSTALL DETOUR AND COMMUNITY GUIDE SIGNS AND ARROWS ONLY IF SPECIFIED IN THE CONTRACT. IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. MODIFY EXISTING SIGNS WHERE POSSIBLE. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. IF DETOUR SIGNS ARE BEING INSTALLED BY OTHERS, PLACE THE CONTRACTED TRAFFIC CONTROL SIGNS TO ALLOW FOR PLACEMENT OF ALL WARNING, DETOUR AND GUIDE SIGNS AS SHOWN.

(7) "EAST" CARDINAL DIRECTION MARKERS AND RIGHT TURN ARROWS ARE SHOWN. USE OTHER CARDINAL DIRECTIONS AND ARROWS AS APPROPRIATE.

**BARRICADES AND SIGNS FOR MAINLINE CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

8/2013 DATE

/S/ Travis Feltes
STATE TRAFFIC ENGINEER

DESIGN

FHWA







6

S.D.D. 15 C 2-5b

**THIS DRAWING PROVIDES GENERAL GUIDANCE ON TYPICAL DETOUR SIGN LAYOUT AND SPACING. SEE PROJECT DETOUR SIGNING SHEETS FOR SPECIFIC DETAILS FOR EACH PROJECT.**

## GENERAL NOTES

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

IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. MODIFY EXISTING SIGNS WHERE POSSIBLE.

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

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.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

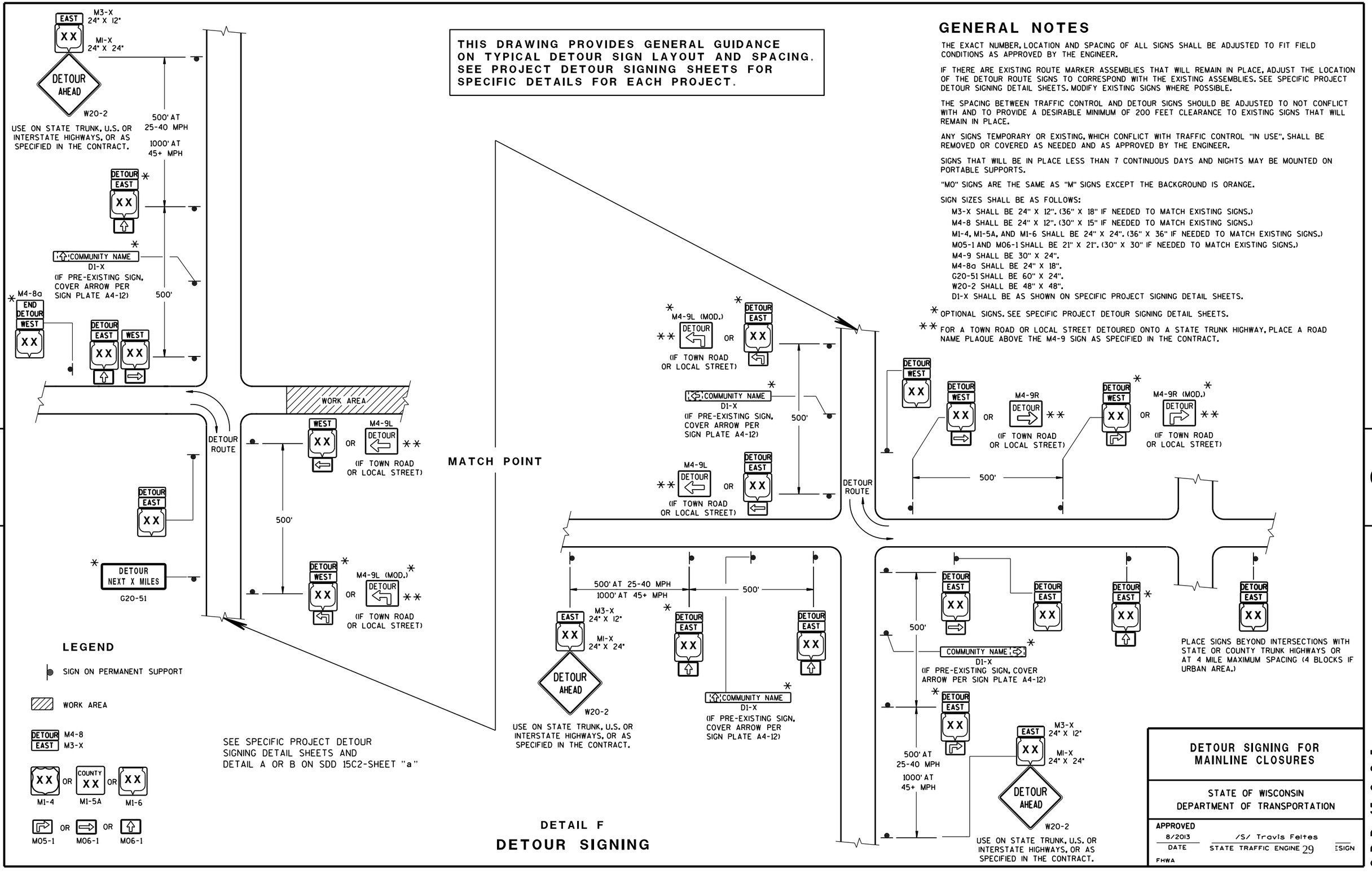
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

SIGN SIZES SHALL BE AS FOLLOWS:

- M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
- M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)
- MO5-1 AND MO6-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-9 SHALL BE 30" X 24".
- M4-8a SHALL BE 24" X 18".
- G20-51 SHALL BE 60" X 24".
- W20-2 SHALL BE 48" X 48".
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

* OPTIONAL SIGNS. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS.

** FOR A TOWN ROAD OR LOCAL STREET DETOURED ONTO A STATE TRUNK HIGHWAY, PLACE A ROAD NAME PLAQUE ABOVE THE M4-9 SIGN AS SPECIFIED IN THE CONTRACT.




### LEGEND

- SIGN ON PERMANENT SUPPORT
- WORK AREA
- DETOUR EAST — M4-8 / M3-X
- XX OR COUNTY XX OR XX — M1-4 / M1-5A / M1-6
- MO5-1 OR MO6-1 OR MO6-1

SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS AND DETAIL A OR B ON SDD 15C2-SHEET "a"

**DETAIL F**

**DETOUR SIGNING**

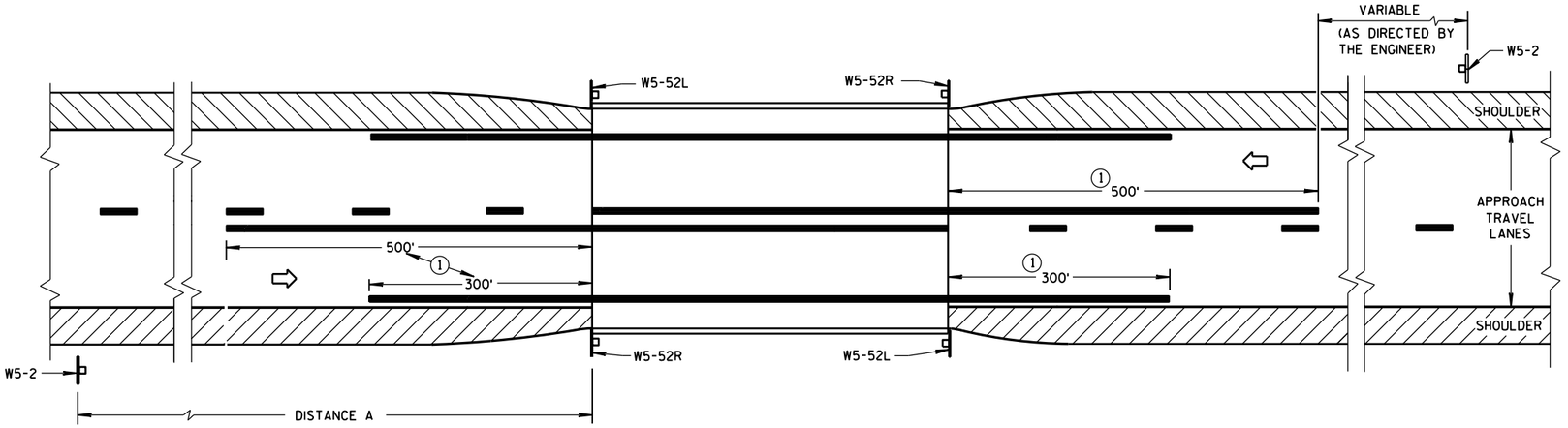
**DETOUR SIGNING FOR MAINLINE CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



S.D.D. 15 C 2-5c




## 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.

PAVEMENT MARKING SHOWN ON THIS DRAWING IS NOT REQUIRED UNLESS OTHERWISE SPECIFIED IN THE CONTRACT. WHEN SPECIFIED, PAVEMENT MARKING SHALL CONFORM TO THIS DRAWING AND OTHER CONTRACT REQUIREMENTS.

(1) MINIMUM DISTANCE UNLESS OTHERWISE SHOWN ON THE PLAN.

(2) FACE OF OBJECT MARKERS W5-52R, AND W5-52L SHALL BE COVERED WITH TYPE F REFLECTIVE SHEETING.

(3) LOCATE OBJECT MARKER POST(S) BEHIND GUARDRAIL WHEN PRESENT.

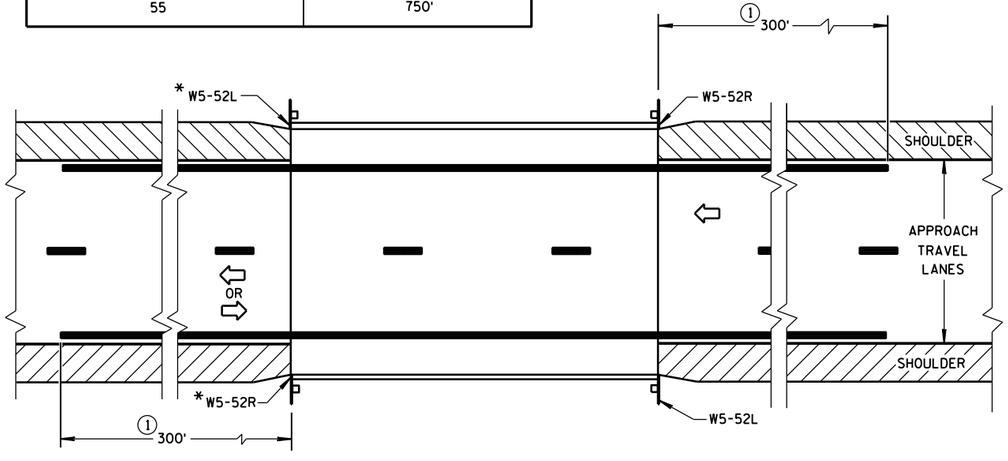
### DISTANCE TABLE

| POSTED OR 85th PERCENTILE SPEED | DISTANCE "A" |
|---|---|
| 25 | 150' |
| 30 | 200' |
| 35 | 250' |
| 40 | 300' |
| 45 | 400' |
| 50 | 550' |
| 55 | 750' |

## SITUATION 1

WARRANTING CRITERIA:

BRIDGE WIDTH IS AT LEAST 16 FEET BUT LESS THAN 24 FEET

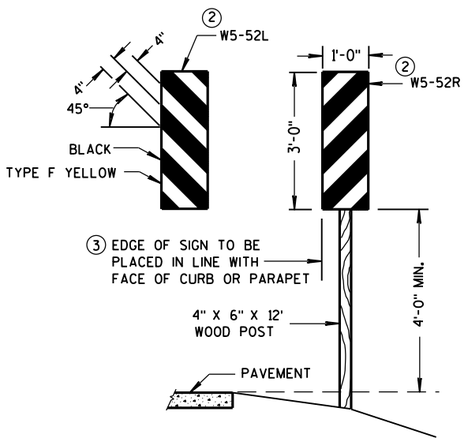



*OMIT ON ONE-WAY TRAVELLED WAYS

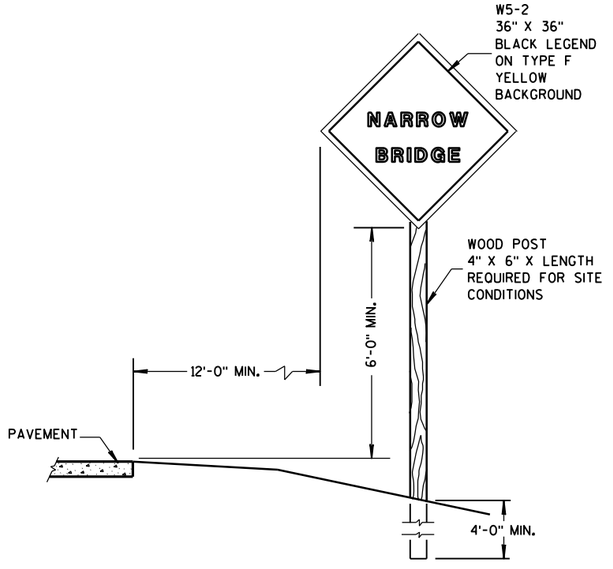
## SITUATION 2

WARRANTING CRITERIA:

1. BRIDGE WIDTH IS AT LEAST 24 FEET AND
2. BRIDGE IS LESS THAN 6 FEET WIDER (ON EACH SIDE) THAN APPROACH TRAVEL LANES.




OBJECT MARKER PLACEMENT




SIGN PLACEMENT

SIGNING & MARKING
FOR TWO LANE BRIDGES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3-2014 DATE

/S/ Travis Feltes STATE TRAFFIC ENGINEER

FHWA

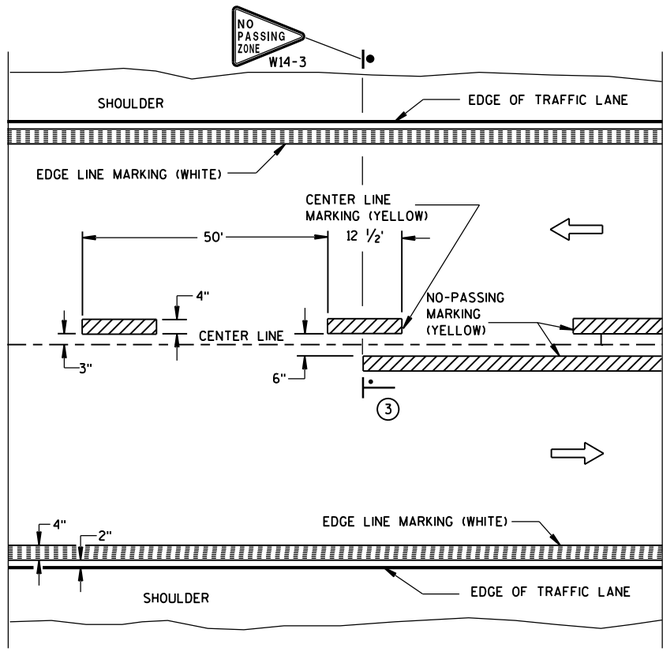




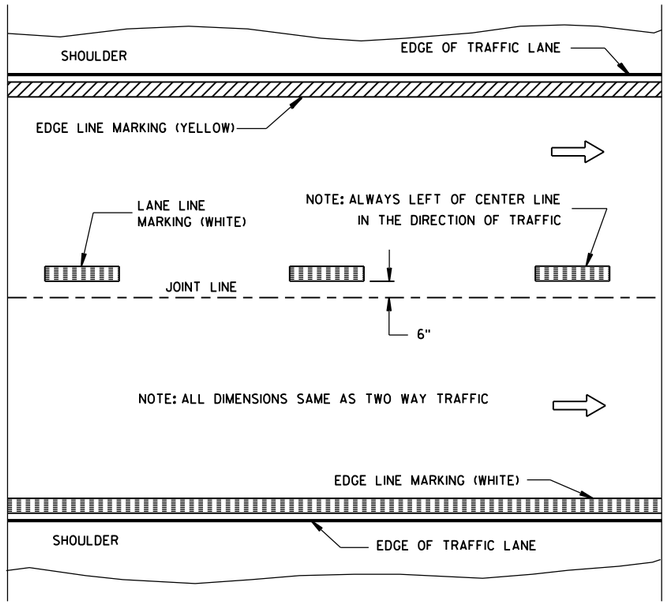
6



S.D.D. 15 C 6-7

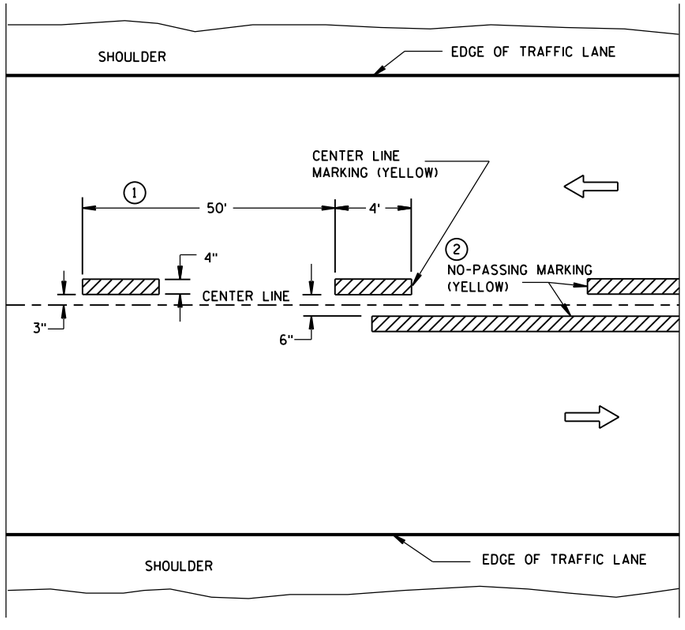



TWO WAY TRAFFIC

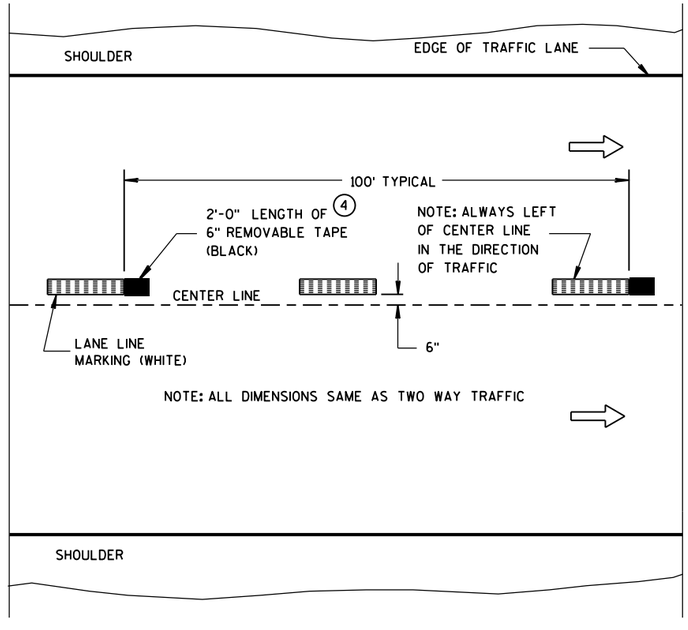



ONE WAY TRAFFIC

## PERMANENT PAVEMENT MARKING




TWO WAY TRAFFIC




ONE WAY TRAFFIC

## TEMPORARY (INTERMEDIATE) PAVEMENT MARKING

(SHOWS CYCLE FOR TEMPORARY CENTER LINE OR TEMPORARY LANE LINE MARKING)

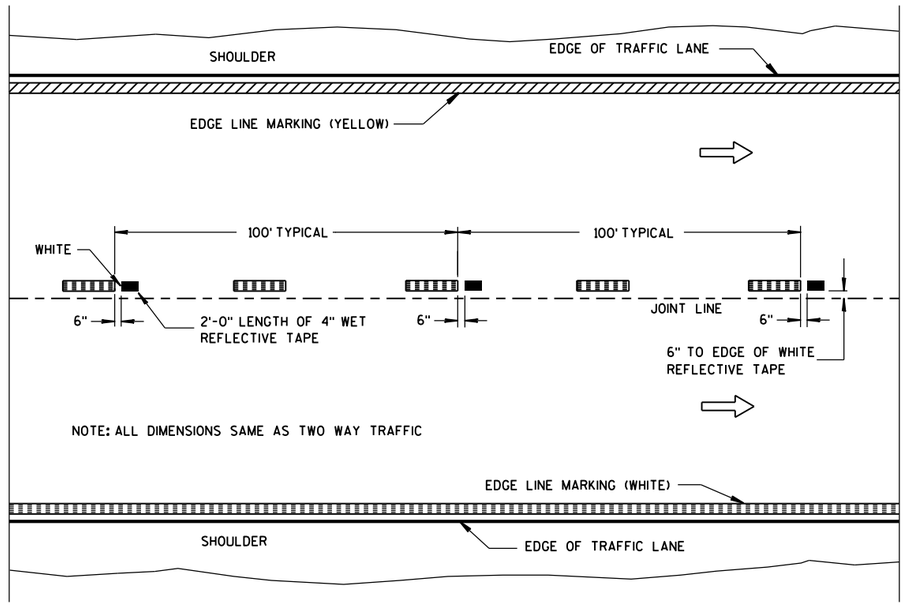
## GENERAL NOTES

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

1. HALF CYCLE LENGTHS (25'±) WITH 2' MINIMUM STRIPE LENGTHS SHALL BE PROVIDED ON ROADWAYS (INCLUDING TEMPORARY TRAVELED WAYS) WITH REVERSE CURVATURE, CURVATURE OF OVER 5 DEGREES OR WHEN DIRECTED BY THE ENGINEER TO MARK UNUSUAL ALIGNMENT OF THE TRAVELED WAY.
2. NO PASSING ZONE TEMPORARY PAVEMENT MARKING IS REQUIRED TO BE PLACED, WHERE APPROPRIATE, ALONG WITH CENTERLINE TEMPORARY PAVEMENT MARKING WHEN A SAME DAY PERMANENT PAVEMENT MARKING ITEM IS INCLUDED IN THE CONTRACT.
3. NO PASSING ZONE MARKINGS ARE PLACED ACCORDING TO "T" MARKINGS. IF EXISTING NO PASSING ZONE W14-3 SIGNS ARE BEYOND 50 FEET IN EITHER DIRECTION, THE SIGNS SHALL BE MOVED TO THE "T" MARKINGS.
4. CONCRETE ONLY.

## NOTE

ARROW SYMBOL ( ⇨ ) SHOWS DIRECTION OF TRAVEL




WET REFLECTIVE TAPE SUPPLEMENT TO
SPRAYED OR NON WET REFLECTIVE TAPE LANE LINE

**LEGEND**

"T" MARKING

POST MOUNTED SIGN

**PAVEMENT MARKING (MAINLINE)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5-13-2013 DATE
/S/ Travis Feltes STATE TRAFFIC E
FHWA

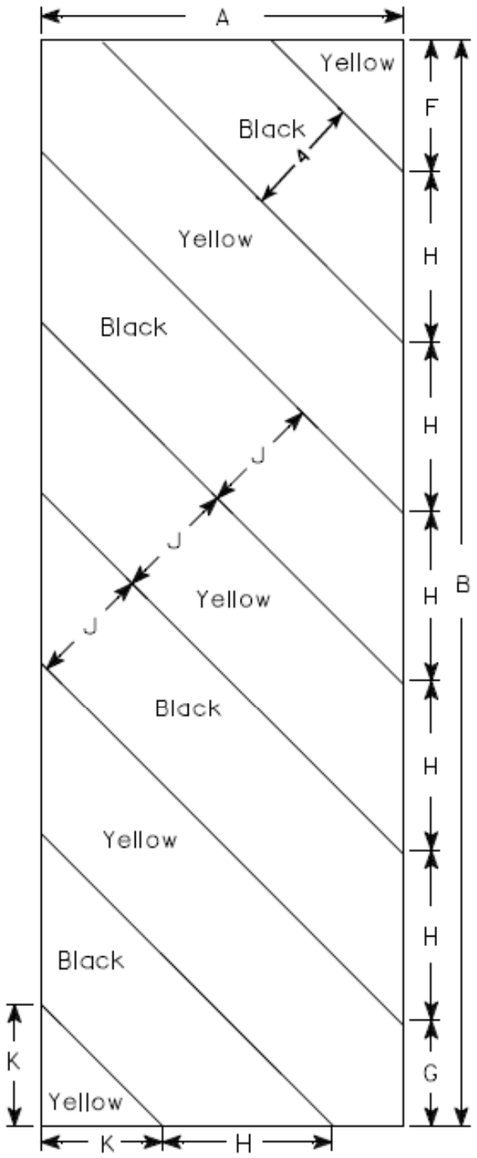


6

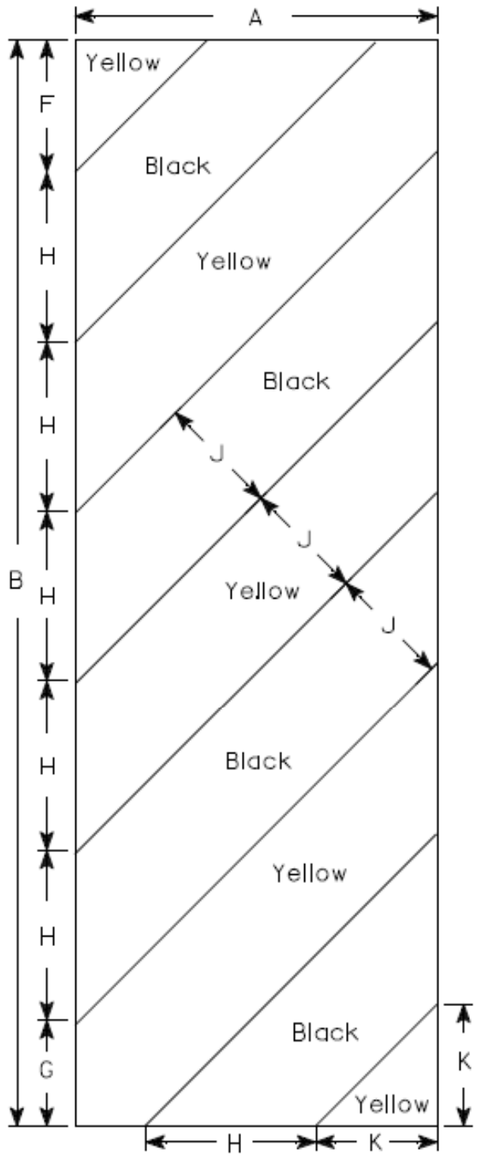
S.D.D. 15 C 8-16a

6

S.D.D. 15 C 8-16a




W5-52L




W5-52R

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. Alternate colors of stripes as shown.

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2S | 12 | 36 | | | | 4 3/8 | 3 1/2 | 5 5/8 | 45° | 4 | 4 | | | | | | | | | | | | | | | | 3.0 |
| 2M | 12 | 36 | | | | 4 3/8 | 3 1/2 | 5 5/8 | 45° | 4 | 4 | | | | | | | | | | | | | | | | 3.0 |
| 3 | 18 | 54 | | | | 6 | 5 1/2 | 8 1/2 | 45° | 6 | 6 9/16 | | | | | | | | | | | | | | | | 6.75 |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

STANDARD SIGN

W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

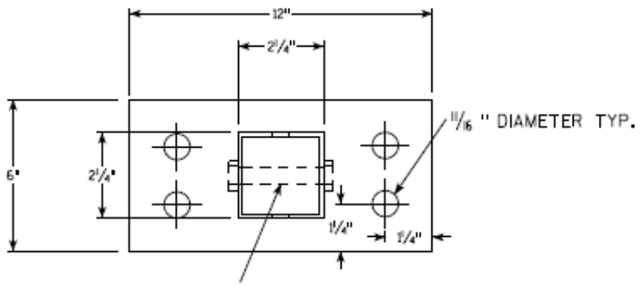
DATE 5/29/12 PLATE NO. W5-52.9

PROJECT NO: 2981-00-72 | HWY: WHITNALL PARK DRIVE | COUNTY: MILWAUKEE | SIGN PLATES | SHEET NO: 32 | E

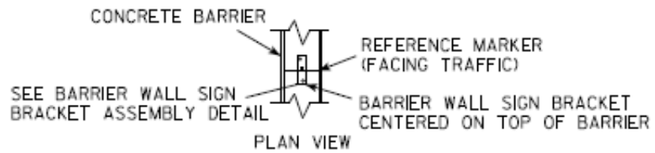
# TYPICAL BARRIER WALL SIGN PLACEMENT DETAILS

TYPICAL REFERENCE MARKER MOUNTING DETAILS

BARRIER WALL SIGN BRACKET ASSEMBLY
NOT TO SCALE

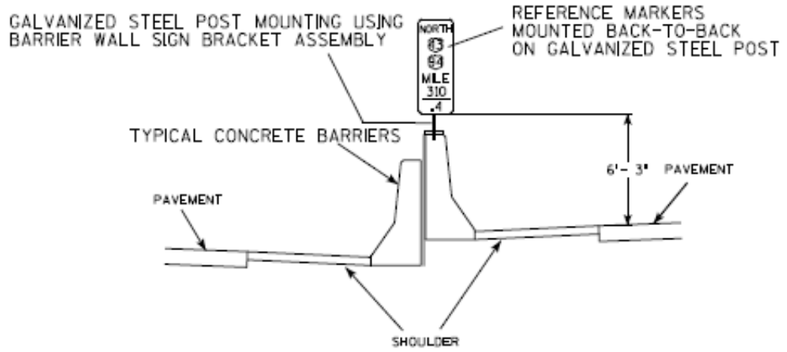



PLAN VIEW

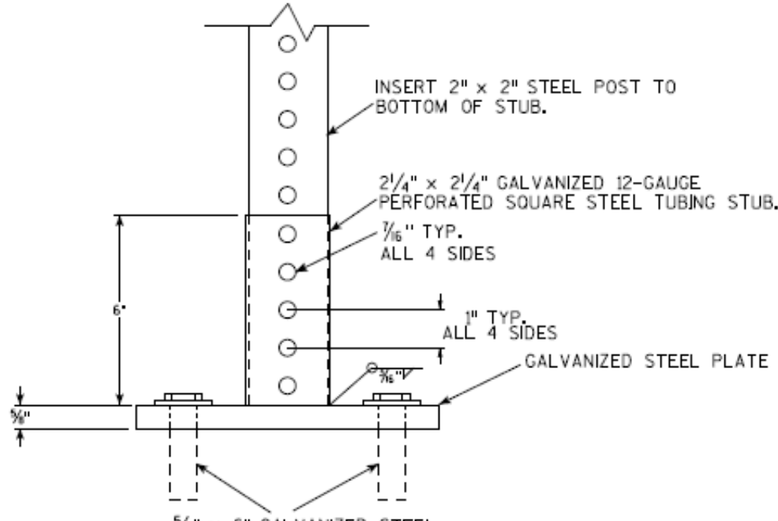



PLAN VIEW

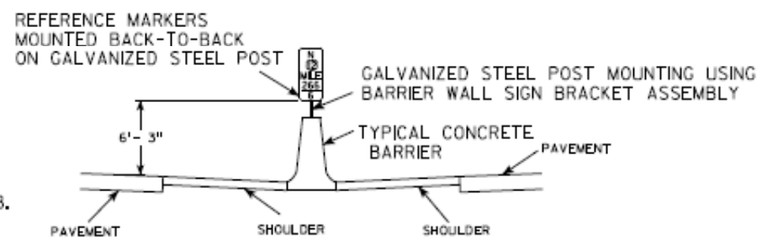
MEDIAN BARRIER MOUNTING DETAIL



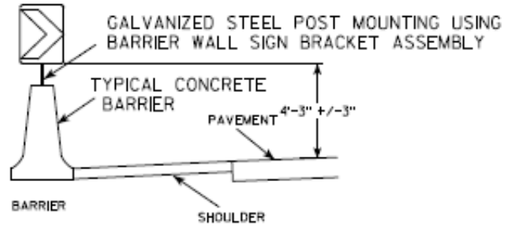

TYPICAL ENHANCED REFERENCE
MARKER PLACEMENT ON DOUBLE MEDIAN BARRIER




SIDE VIEW




TYPICAL ENHANCED REFERENCE
MARKER PLACEMENT ON SINGLE MEDIAN BARRIER




TYPICAL CHEVRON MARKER PLACEMENT

NOTES

1) ALL MATERIAL TO BE APPROVED BY ENGINEER BEFORE INSTALLATION
2) SEE SIGN PLATE A4-8 FOR SIGN HARDWARE REQUIREMENTS.

## SIGN MOUNTING ON BARRIER WALL

WISCONSIN DEPT OF TRANSPORTATION

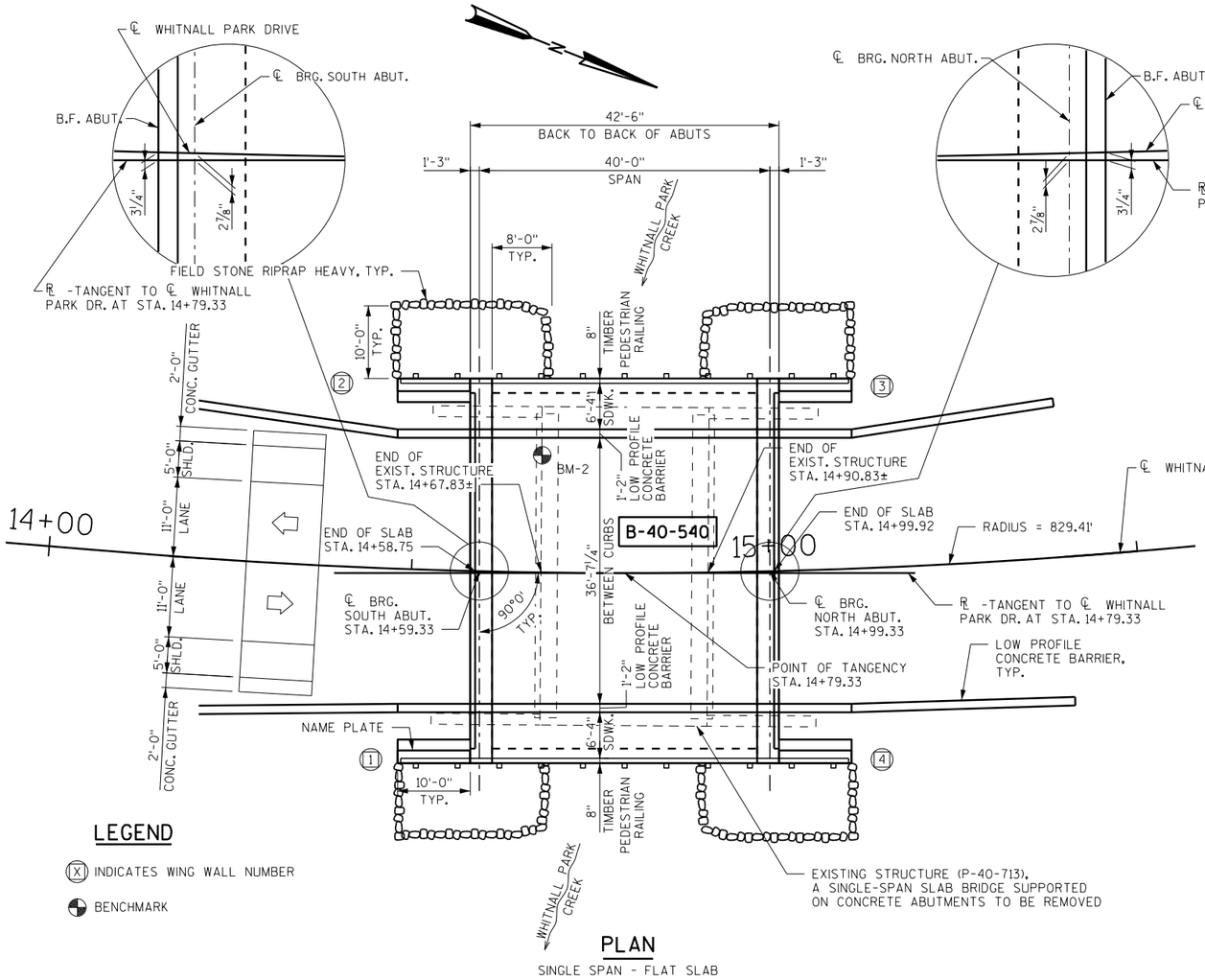
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 9/30/13 PLATE NO. A4-10.3

| PROJECT NO: 2981-00-72 | HWY: WHITNALL PARK DRIVE | COUNTY: MILWAUKEE | SIGN PLATES | SHEET NO: 33 | E |
|---|---|---|---|---|---|

STATE PROJECT NUMBER

2981-00-72



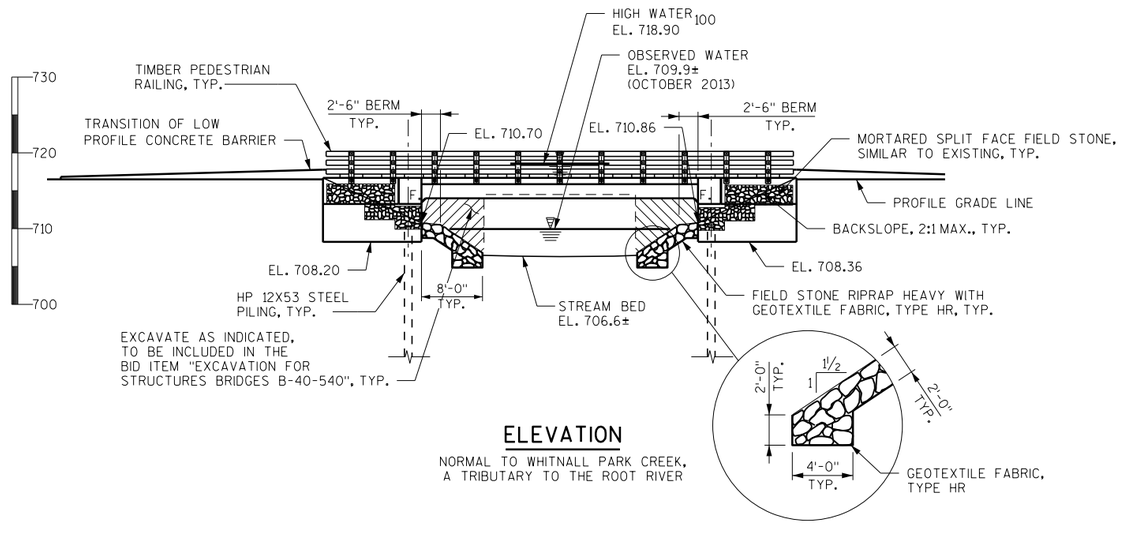

## LEGEND

(X) INDICATES WING WALL NUMBER

BENCHMARK

## PLAN

SINGLE SPAN - FLAT SLAB




## ELEVATION

NORMAL TO WHITNALL PARK CREEK, A TRIBUTARY TO THE ROOT RIVER

## BENCHMARK

| NO. | STA./OFFSET | DESCRIPTION | ELEV. |
|---|---|---|---|
| BM-2 | 14+67.77, 16.13' LT | CHISELED "□" AT SOUTHWEST CORNER OF EXISTING STRUCTURE | 716.46 |

## DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: RF = 1.02
OPERATING RATING FACTOR: RF = 1.32
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 250 KIPS

STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 PSF IN ADDITION TO THE 2" ASPHALT OVERLAY.

MATERIAL PROPERTIES:

CONCRETE MASONRY, SUPERSTRUCTURE.....f'c = 4,000 P.S.I.
CONCRETE MASONRY, SUBSTRUCTURE.....f'c = 3,500 P.S.I.
CONCRETE MASONRY, ALL OTHER.....f'c = 3,500 P.S.I.

HIGH STRENGTH BAR STEEL REINFORCEMENT GRADE 60.....fy = 60,000 P.S.I.

## FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON HP 12 X 53 STEEL PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 220 TONS** PER PILE AS DETERMINED BY THE MODIFIED GATES FORMULA.
ESTIMATED 35'-0" LONG (S. ABUT.)
ESTIMATED 35'-0" LONG (N. ABUT.)

** THE FACTORED AXIAL RESISTANCE OF PILES IN COMPRESSION USED FOR DESIGN IS THE REQUIRED DRIVING RESISTANCE MULTIPLIED BY A RESISTANCE FACTOR OF 0.5 USING MODIFIED GATES TO DETERMINE DRIVEN PILE CAPACITY.

## HYDRAULIC DATA

100 YEAR FREQUENCY

$Q_{100}$ = 2,000 C.F.S.
$Q_{BRIDGE}$ = 1,498 C.F.S.
$Q_{ROADWAY}$ = 602 C.F.S.
VEL. = 7.87 F.P.S.
HW. = EL. 718.90
WATERWAY AREA = 190 SQ. FT.
DRAINAGE AREA = 5.0 SQ. MI.
SCOUR CRITICAL CODE = 8

ROAD OVERTOPPING FREQUENCY

FREQUENCY = 37 YEARS
$Q_{37}$ = 1,350 C.F.S.

2 YEAR FREQUENCY

$Q_2$ = 330 C.F.S.
$HW_2$ = 713.19

## TRAFFIC VOLUME

WHITNALL PARK DRIVE

A.D.T. = 790 (2015)
A.D.T. = 920 (2035)
R.D.S. = 30 MPH

## CURVE DATA

℞ WHITNALL PARK DRIVE

P.I. = STA. 15+27.78
△ = 15°-28'-14"
D = 6°-54'-29"
T = 112.66'
L = 223.95'
R = 829.41'
P.C. = STA. 14+15.12
P.T. = STA. 16+39.07

## LIST OF DRAWINGS



WISCONSIN
SURENDRA K. GUPTA
E-41327
AMES, IA
PROFESSIONAL ENGINEER
12-16-2015


STRUCTURES DESIGN CONTACTS

BRIDGE OFFICE:
WILLIAM DREHER, P.E. (608) 266-8489
CONSULTANT:
SUREN GUPTA, P.E. (262) 821-1171


| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

KSA K. Singh & Associates, Inc.
*Engineers, Scientists and Environmental Consultants*

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher SDR 12/21/15
CHIEF STRUCTURES DESIGN ENGINEER — DATE

# STRUCTURE B-40-540

WHITNALL PARK DRIVE
OVER WHITNALL PARK CREEK

| COUNTY | VILLAGE |
|---|---|
| MILWAUKEE | HALES CORNERS |

DESIGN SPEC.
AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

| DESIGNED BY | DESIGN CK'D. | DRAWN BY | PLANS CK'D. |
|---|---|---|---|
| NLD | SKG | NLD | SKG |

GENERAL PLAN AND ELEVATION

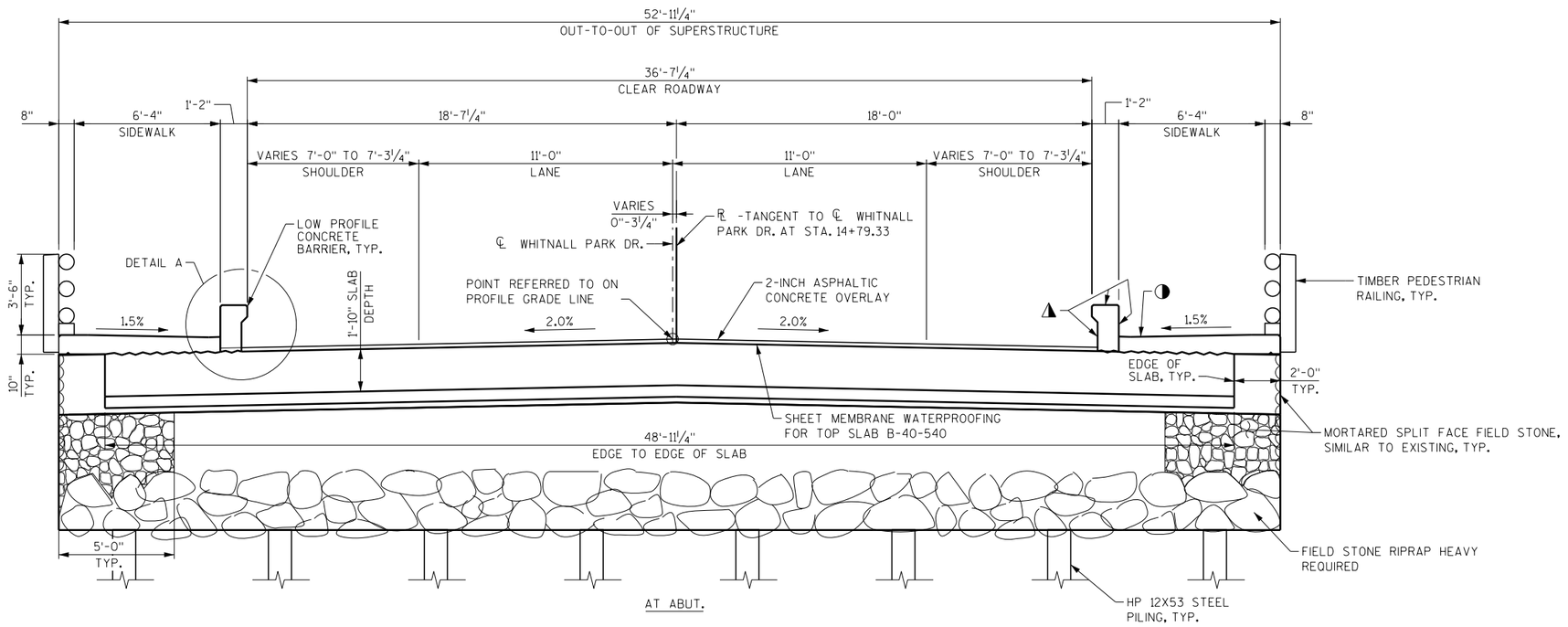
SHEET 1 OF 16
34

8

8

STATE PROJECT NUMBER

2981-00-72




AT ABUT.

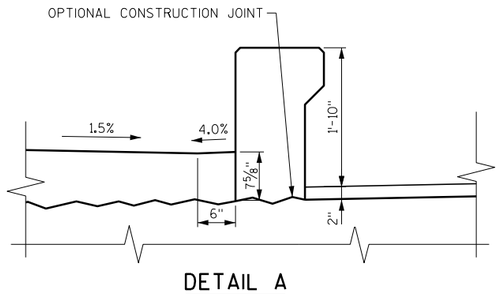
## CROSS SECTION THRU BRIDGE

(LOOKING NORTH)

## TOTAL ESTIMATED QUANTITIES

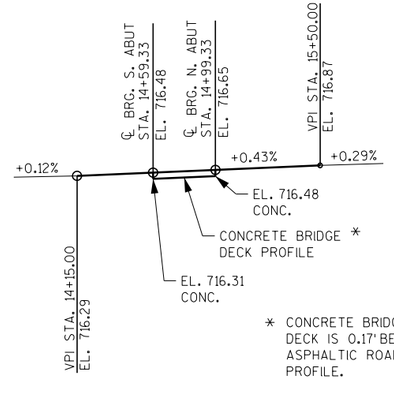
| BID ITEM NUMBER | BID ITEM | UNIT | SOUTH ABUTMENT | SUPER-STRUCTURE | NORTH ABUTMENT | TOTAL |
|---|---|---|---|---|---|---|
| 203.0600.S.02 | REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STATION 14+79.33 | LS | - | - | - | 1 |
| 206.1000.02 | EXCAVATION FOR STRUCTURES BRIDGES B-40-540 | LS | - | - | - | 1 |
| 210.0100 | BACKFILL STRUCTURE | CY | 197 | - | 197 | 394 |
| 455.0120 | ASPHALTIC MATERIAL PG64-28 | TON | - | 3 | - | 3 |
| 460.1103 | HMA PAVEMENT TYPE E-3 | TON | - | 43 | - | 43 |
| 502.0100 | CONCRETE MASONRY BRIDGES | CY | 48 | 148 | 48 | 244 |
| 502.3200 | PROTECTIVE SURFACE TREATMENT | SY | 68 | 67 | 62 | 197 |
| 502.3210 | PIGMENTED SURFACE SEALER | SY | 44 | 43 | 40 | 127 |
| 505.0400 | BAR STEEL REINFORCEMENT HS STRUCTURES | LB | 3,510 | 0 | 3,500 | 7,010 |
| 505.0600 | BAR STEEL REINFORCEMENT HS COATED STRUCTURES | LB | 2,010 | 30,590 | 2,010 | 34,610 |
| 516.0500 | RUBBERIZED MEMBRANE WATERPROOFING | SY | 13 | - | 13 | 26 |
| 516.0610.S | SHEET MEMBRANE WATERPROOFING FOR TOP SLAB B-40-540 | SY | - | 170 | - | 170 |
| 550.1120 | PILING STEEL HP 12-INCH X 53 LB | LF | 280 | - | 280 | 560 |
| 612.0406 | PIPE UNDERDRAIN WRAPPED 6-INCH | LF | 103 | - | 103 | 206 |
| 645.0120 | GEOTEXTILE FABRIC TYPE HR | SY | 141 | - | 141 | 282 |
| SPV.0035.01 | FIELD STONE RIPRAP HEAVY | CY | 79 | - | 79 | 158 |
| SPV.0090.01 | LOW PROFILE CONCRETE BARRIER | LF | 87 | 85 | 79 | 251 |
| SPV.0090.03 | TIMBER PEDESTRIAN RAILING | LF | - | 134 | - | 134 |
| SPV.0165.01 | STONE FACING FIELD STONE | SF | 120 | - | 120 | 240 |
| SPV.0165.02 | ANTI-GRAFFITI SHIELD FOR STONE FACING FIELD STONE SURFACES | SF | 120 | - | 120 | 240 |
| | | | | | | |
| | NON BID ITEMS | | | | | |
| | FILLER | SIZE | - | - | - | 1/2" & 3/4" |

ALL BID ITEMS ARE CATEGORY 0020




## DETAIL A

(TYP. BOTH SIDEWALKS)




## PROFILE GRADE LINE - WHITNALL PARK DRIVE

## GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

BEVEL ALL EXPOSED EDGES ¾" UNLESS NOTED OTHERWISE.

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

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

SLAB FALSEWORK SHALL BE SUPPORTED ON PILES OR THE SUBSTRUCTURE UNLESS AN ALTERNATE METHOD IS APPROVED BY THE ENGINEER.

THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH FIELD STONE RIPRAP HEAVY AND GEOTEXTILE FABRIC TYPE 'HR' TO THE EXTENT SHOWN ON SHEET 1 AND IN THE ABUTMENT DETAILS.

THE STREAM BED IN FRONT OF THE ABUTMENT SHALL BE COVERED WITH FIELD STONE RIPRAP HEAVY AS SHOWN ON THIS SHEET AND IN THE ABUTMENT DETAILS.

THE EXISTING GROUNDLINE SHALL BE THE UPPER LIMITS OF EXCAVATION FOR STRUCTURES.

AT THE BACKFACE OF ABUTMENT ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH "BACKFILL STRUCTURE".

THE QUANTITY FOR "BACKFILL STRUCTURE", BID ITEM 210.0100, IS CALCULATED BASED ON THE APPLICABLE FIGURES 12.6-1 AND 12.6-2 IN THE WISCONSIN DEPARTMENT OF TRANSPORTATION BRIDGE MANUAL.

AT ABUTMENTS, CONCRETE POURED UNDER WATER WILL BE ALLOWED AND SHALL BE DONE IN ACCORDANCE WITH SECTION 502.3.5.3 OF THE STANDARD SPECIFICATIONS.

EXISTING BRIDGE P-40-713 TO BE REMOVED. IT IS A SINGLE-SPAN REINFORCED CONCRETE SLAB STRUCTURE 23' LONG, 43.8' WIDE.

STONE MASONRY SHALL BE PLACED ON EXPOSED VERTICAL FACES OF THE ABUTMENT AND WINGWALLS AS SHOWN ON THE PLANS. THE NEW STONE MASONRY SHALL REPLICATE THE MATERIAL, VARIATION OF SIZE, AND MIXTURE OF COLOR OF THE EXISTING STONE. THE STONE MASONRY ON THE OUTSIDE OF ABUTMENT AND WINGWALLS SHALL EXTEND TO A MINIMUM OF 1'-0" BELOW FINISH GROUND LINE.

EXISTING STONES MAY BE EXAMINED FOR SOUNDNESS AND INTEGRITY, CLEANED OF EXPOSED MORTAR AND REUSED WHEREVER FEASIBLE. IF THE EXISTING STONES ARE REUSED, THEY SHALL BE INTERMIXED WITHIN NEW STONES.

TIMBER PEDESTRIAN RAILING SHALL BE FINISHED ACCORDING TO THE SPECIAL PROVISION. PAINT COLOR SHALL MATCH FEDERAL STANDARD 595B COLOR 30070 FLAT BROWN.

## LEGEND

◑ APPLY "PROTECTIVE SURFACE TREATMENT" TO TOP FACE OF SIDEWALK.

◭ APPLY "PIGMENTED SURFACE SEALER" TO ALL FACES OF LOW PROFILE CONCRETE BARRIER.

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-540

DRAWN BY NLD | PLANS CK'D. SKG

CROSS SECTION, QUANTITIES, AND GENERAL NOTES

SHEET 2 OF 16
35

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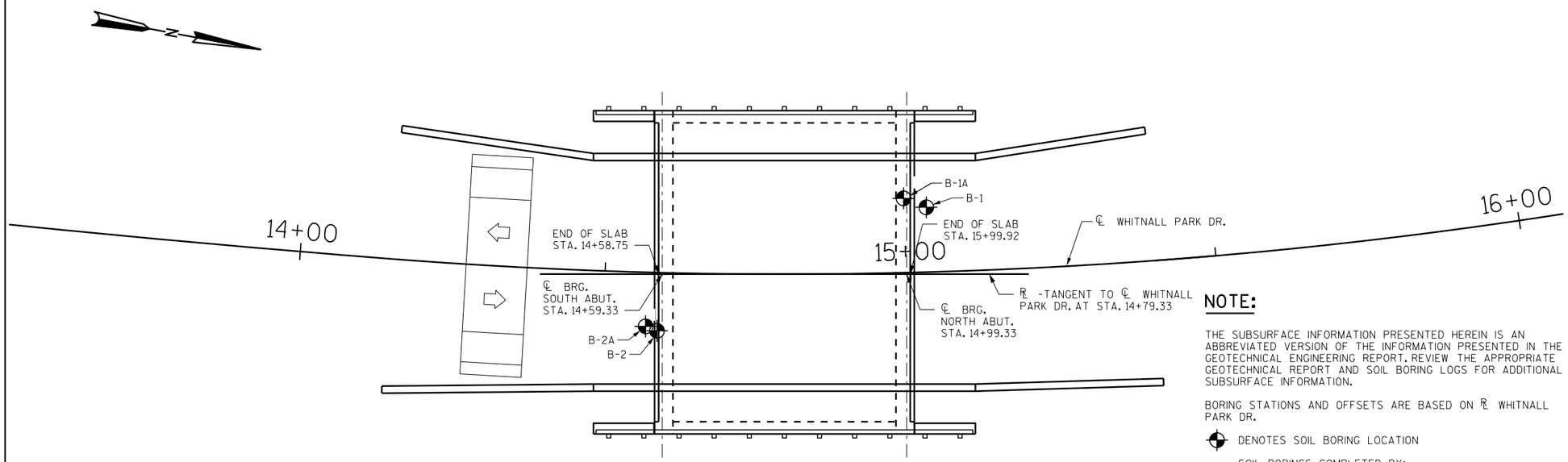



## NOTE:

THE SUBSURFACE INFORMATION PRESENTED HEREIN IS AN ABBREVIATED VERSION OF THE INFORMATION PRESENTED IN THE GEOTECHNICAL ENGINEERING REPORT. REVIEW THE APPROPRIATE GEOTECHNICAL REPORT AND SOIL BORING LOGS FOR ADDITIONAL SUBSURFACE INFORMATION.

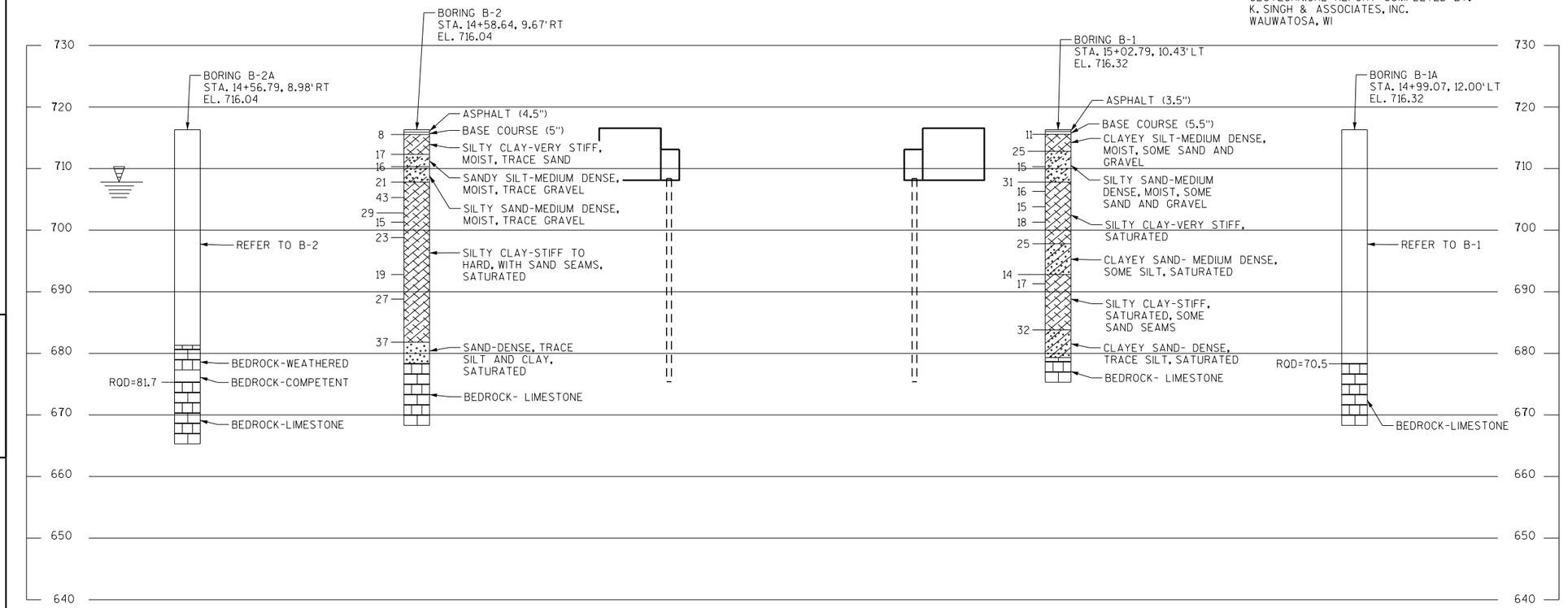
BORING STATIONS AND OFFSETS ARE BASED ON ℄ WHITNALL PARK DR.

⊕ DENOTES SOIL BORING LOCATION

SOIL BORINGS COMPLETED BY:
BADGER STATE DRILLING
STOUGHTON, WISCONSIN

SOIL BORING TAKEN:
OCTOBER 16, 2013 - BORING B-1
DECEMBER 30, 2013 - BORING B-1A
OCTOBER 16, 2013 - BORING B-2
DECEMBER 30, 2013 - BORING B-2A

GEOTECHNICAL REPORT COMPLETED BY:
K. SINGH & ASSOCIATES, INC.
WAUWATOSA, WI




STATE PROJECT NUMBER

2981-00-72

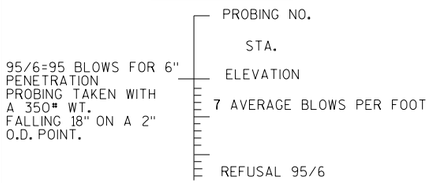
ABBREVIATIONS

F — FINE M — MEDIUM C — COARSE
WS — WEATHERED SO — SOUND

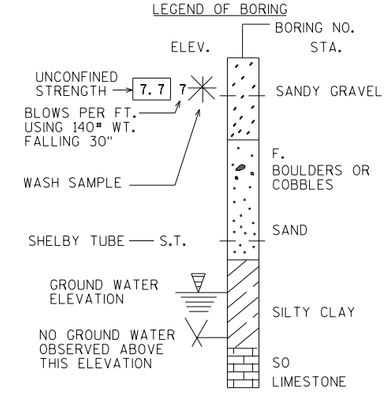
MATERIAL SYMBOLS

TOPSOIL, SILT, SANDSTONE
SAND, PEAT, LIMESTONE
GRAVEL, CLAY, IGNEOUS ROCK

LEGEND OF PROBING




LEGEND OF BORING




UNLESS OTHERWISE SPECIFIED, THE BLOWS PER FOOT AT THE LOCATIONS INDICATED ARE BASED ON DRIVING A 2" O.D. X 1.4" I.D. SPLIT SPOON SAMPLER WITH A 140# HAMMER HAVING A FREE FALL OF 30". THE BLOW COUNT IS TAKEN IN UNDISTURBED SOIL IMMEDIATELY BELOW A CASED OR OPEN HOLE ELIMINATING SIDE FRICTION ON THE DRIVE PIPE.

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

TO OBTAIN RELATIVE DATA CONCERNING THE CHARACTER OF MATERIAL IN AND UPON WHICH THE FOUNDATION MIGHT BE BUILT, BORINGS AND/OR SOUNDINGS WERE MADE AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING. THE DATA PRESENTED HEREIN REPRESENTS THE FINDINGS OF THE SUBSURFACE EXPLORATIONS MADE. HOWEVER, BECAUSE THE DEPTHS INVESTIGATED ARE LIMITED AND THE AREA OF THE BORINGS AND/OR SOUNDINGS IS VERY SMALL IN RELATION TO THE ENTIRE AREA, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT CONDITIONS BELOW THE DEPTHS INVESTIGATED OR THAT THE CLASSIFICATION OF MATERIAL ENCOUNTERED IN THESE INVESTIGATIONS IS NECESSARILY TYPICAL OF THE ENTIRE SITE.

| NO. | DATE | REVISION | BY |
|---|---|---|---|

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-540

DRAWN BY VJD | PLANS CK'D. SKG

SUBSURFACE EXPLORATION

SHEET 3 OF 16
36

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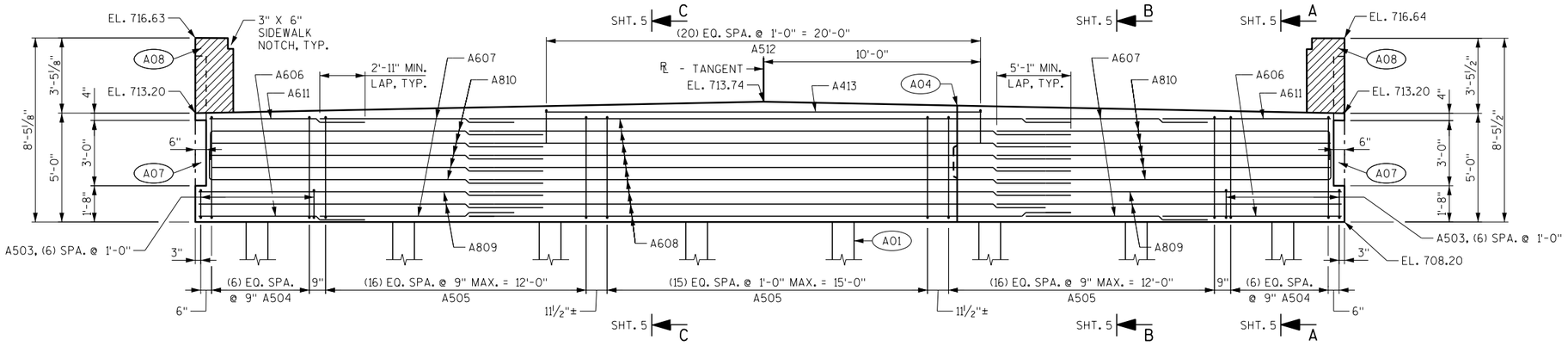
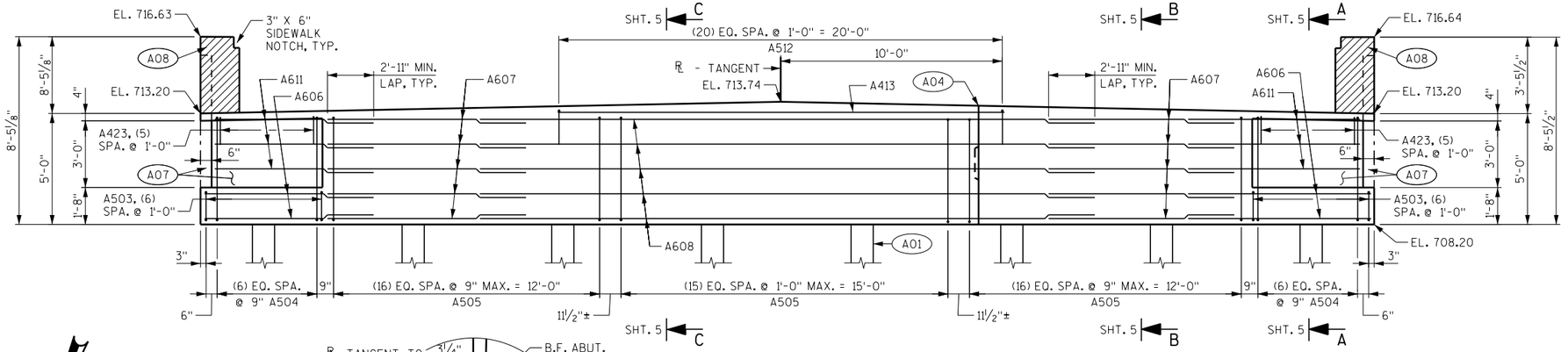


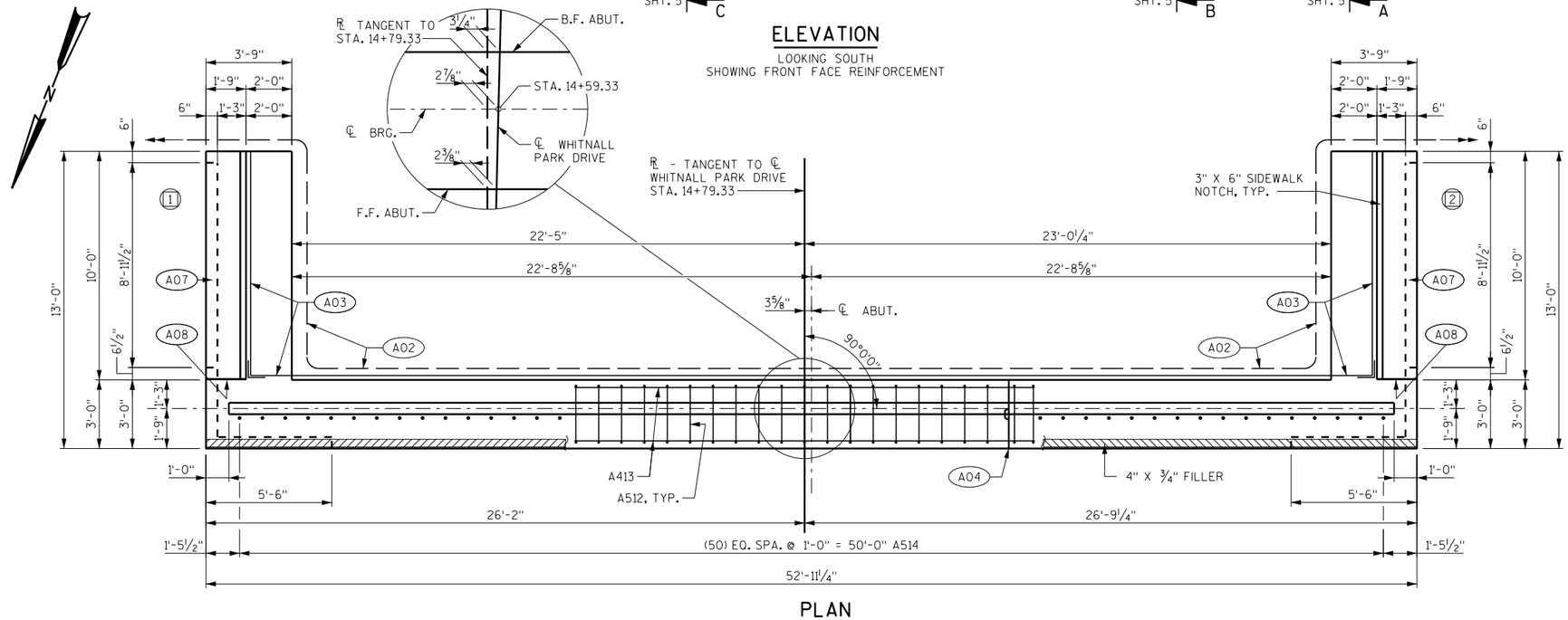

## ELEVATION

LOOKING SOUTH
SHOWING BACK FACE REINFORCEMENT

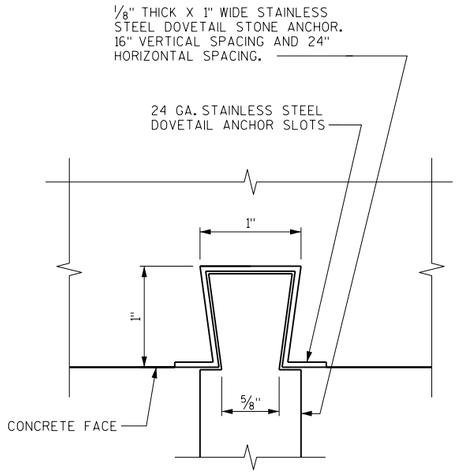



## ELEVATION

LOOKING SOUTH
SHOWING FRONT FACE REINFORCEMENT




## PLAN




## DOVETAIL ANCHOR SLOT

FOR ATTACHING STONE MASONRY TO CONCRETE
(SEE SPECIAL PROVISIONS FOR SPACING)

## NOTES

FOR PILE SPLICE DETAIL, REFER TO SHEET 10.

## LEGEND

- (A01) SUPPORT ABUTMENT ON HP 12 X 53 STEEL PILING. ESTIMATED 35'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 220 TONS PER PILE.
- (A02) PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MINIMUM TO SUITABLE DRAINAGE. PLACE ABOVE OBSERVED WATER EL. RODENT SCREEN REQUIRED. SEE SHEET 10 FOR DETAILS.
- (A03) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS AT BACK FACE.
- (A04) VERT. CONST. JOINT KEYWAY FORMED BY BEVELED 2" X 8" X 1'-6". CLEAR BRG. SEAT BY 3" MIN. CLEAR PILES BY 9" MIN. RUN BAR STEEL THROUGH JOINT AND SEAL WITH 18" RUBBERIZED MEMBRANE WATERPROOFING.
- (A05) KEYED CONST. JOINT FORMED BY BEVELED 2" X 6".
- (A06) BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. EMBED BARS 1'-0".
- (A07) STONE MASONRY FACING AND ANTI-GRAFFITI SHIELD FOR STONE MASONRY SURFACES.
- (A08) ½" FILLER - TO EXTEND FROM BEAM SEAT TO TOP OF WING. FILLER INCLUDED IN WING LENGTH.
- (X) INDICATES WINGWALL NUMBER

F.F. = FRONT FACE  B.F. = BACK FACE

| NO. | DATE | REVISION | BY |
|---|---|---|---|

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STATE PROJECT NUMBER
2981-00-72

STRUCTURE B-40-540

DRAWN BY VJD | PLANS CK'D. SKG

SOUTH ABUTMENT

SHEET 4 OF 16
37

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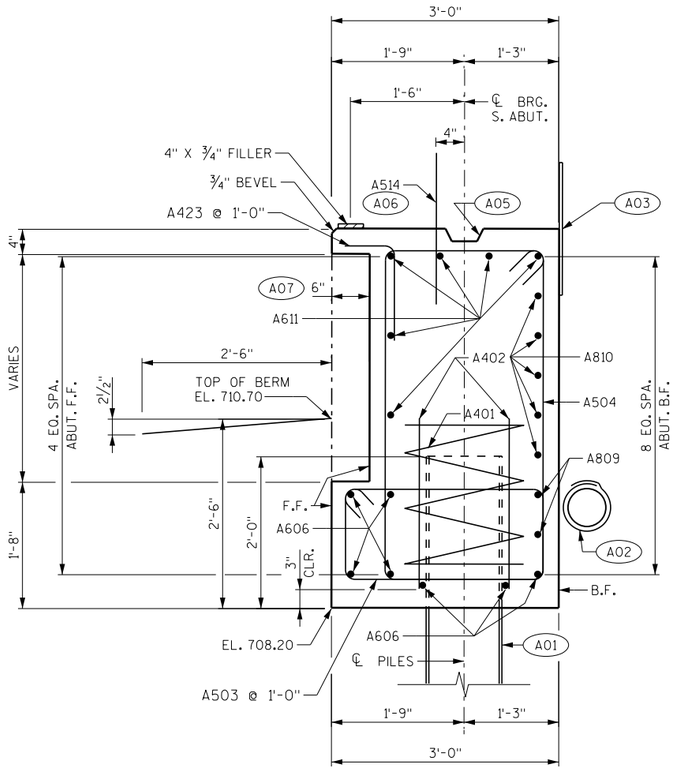
8

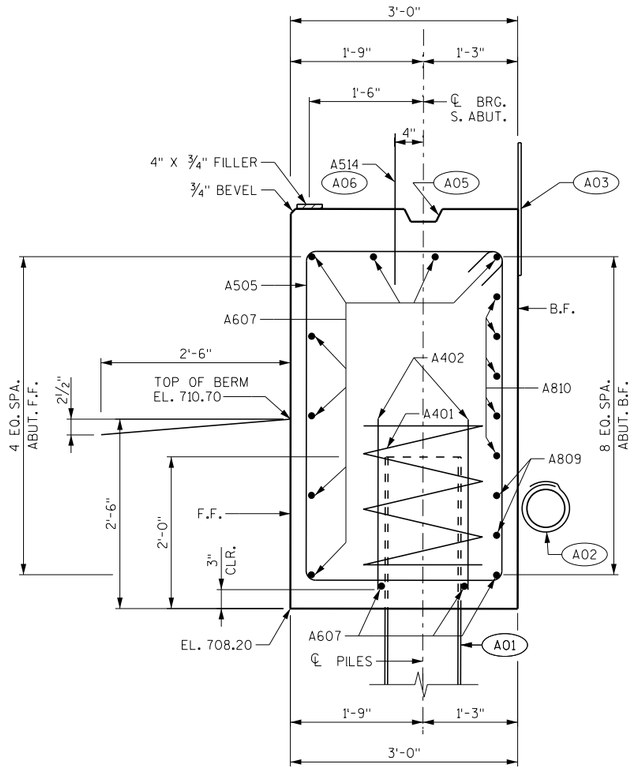
STATE PROJECT NUMBER

2981-00-72



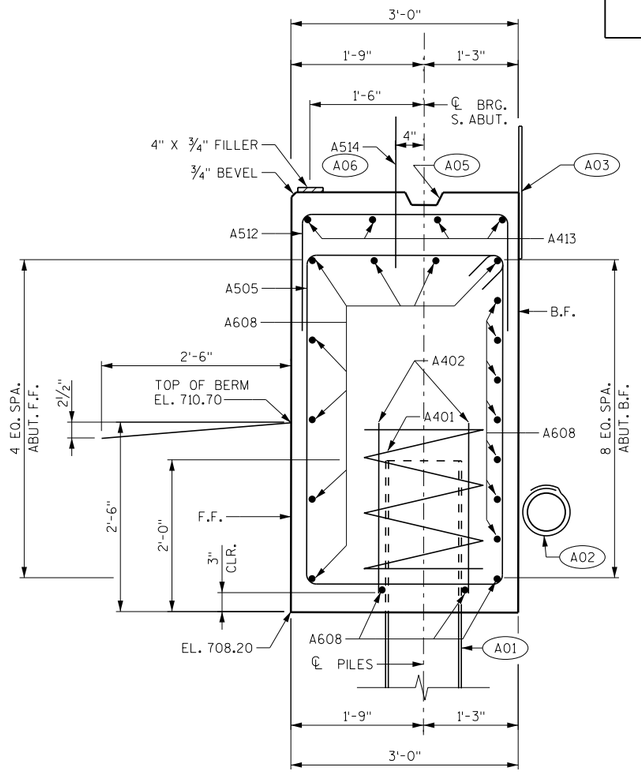

SECTION A-A

SEE SHEET 4




SECTION B-B

SEE SHEET 4



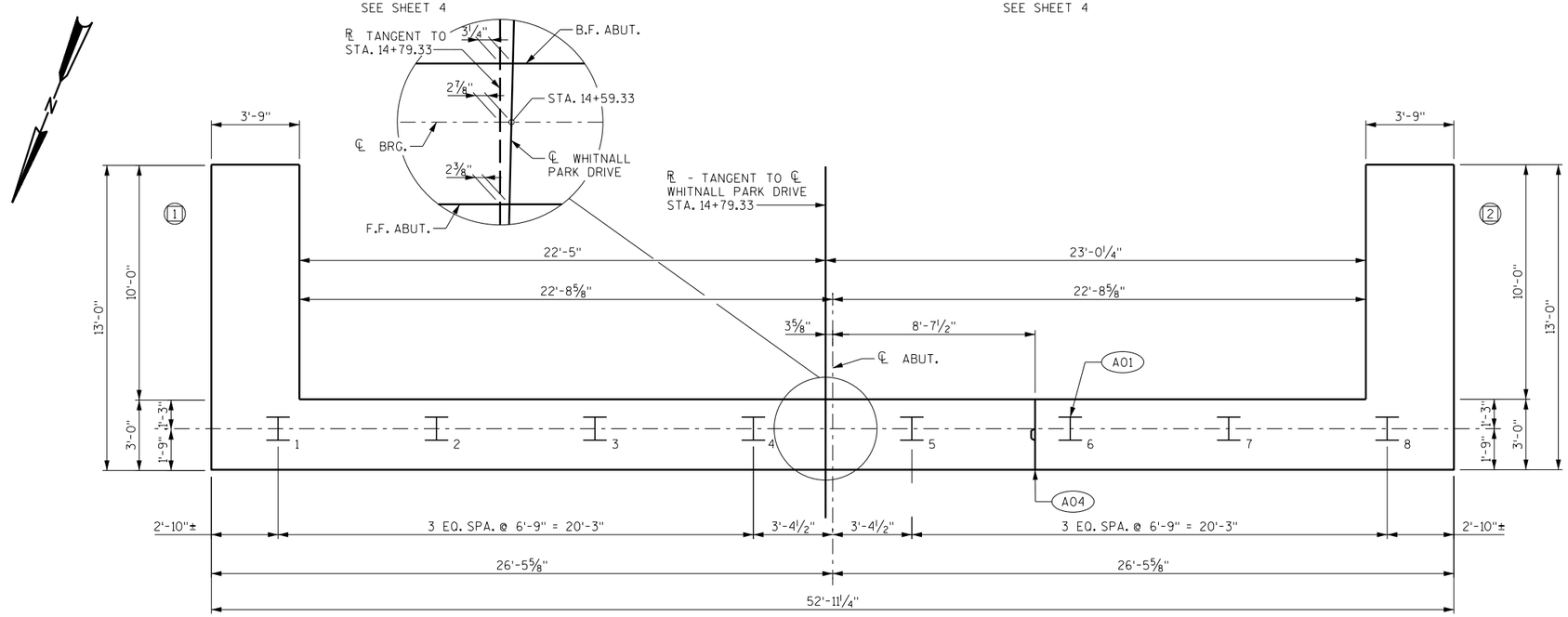

SECTION C-C

SEE SHEET 4

## LEGEND

- (A01) SUPPORT ABUTMENT ON HP 12 X 53 STEEL PILING. ESTIMATED 35'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 220 TONS PER PILE.
- (A02) PIPE UNDERDRAIN WRAPPED 6-INCH, SLOPE 0.5% MINIMUM TO SUITABLE DRAINAGE. PLACE ABOVE OBSERVED WATER EL. RODENT SCREEN REQUIRED. SEE SHEET 10 FOR DETAILS.
- (A03) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS AT BACK FACE.
- (A04) VERT. CONST. JOINT KEYWAY FORMED BY BEVELED 2" X 8" X 1'-6". CLEAR BRG. SEAT BY 3" MIN. CLEAR PILES BY 9" MIN. RUN BAR STEEL THROUGH JOINT AND SEAL WITH 18" RUBBERIZED MEMBRANE WATERPROOFING.
- (A05) KEYED CONST. JOINT FORMED BY BEVELED 2" X 6".
- (A06) BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. EMBED BARS 1'-0".
- (A07) STONE MASONRY FACING AND ANTI-GRAFFITI SHIELD FOR STONE MASONRY SURFACES.
- (X) INDICATES WINGWALL NUMBER

F.F. = FRONT FACE  B.F. = BACK FACE




PILE LAYOUT

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-540

DRAWN BY VJD | PLANS CK'D. SKG

SOUTH ABUTMENT DETAILS 1

SHEET 5 OF 16
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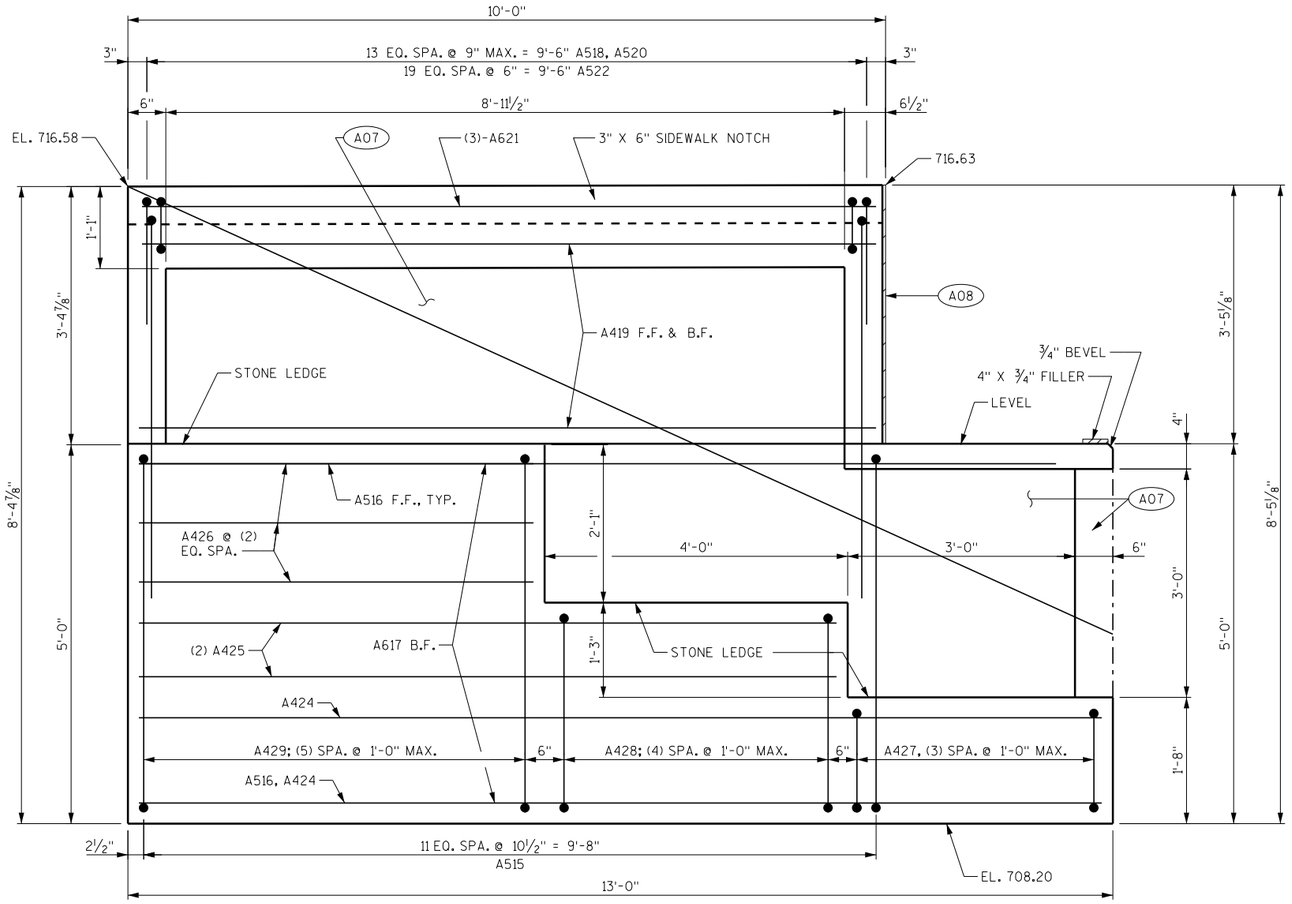
8

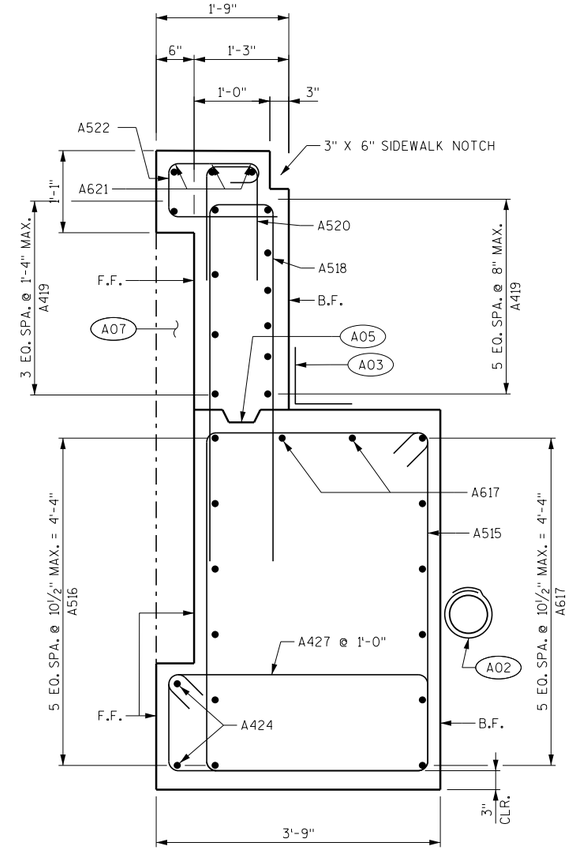
STATE PROJECT NUMBER

2981-00-72




## WING ELEVATION

WING 1 SHOWN, WING 2 SIMILAR




## SECTION THRU WING

SEE SHEET 10

## LEGEND

- A02 — PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MINIMUM TO SUITABLE DRAINAGE. PLACE ABOVE OBSERVED WATER EL. RODENT SCREEN REQUIRED. SEE SHEET 10 FOR DETAILS.
- A03 — 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS AT BACK FACE.
- A05 — KEYED CONST. JOINT FORMED BY BEVELED 2" X 6".
- A07 — STONE MASONRY FACING AND ANTI-GRAFFITI SHIELD FOR STONE MASONRY SURFACES.
- A08 — ½" FILLER - TO EXTEND FROM BEAM SEAT TO TOP OF WING. FILLER INCLUDED IN WING LENGTH.

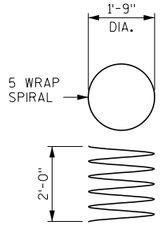
F.F. = FRONT FACE  B.F. = BACK FACE

## BILL OF BARS

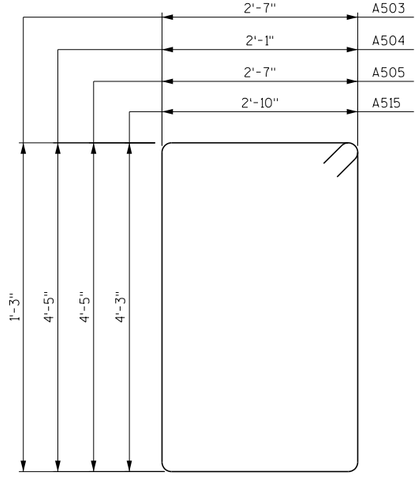
THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE. BAR DIMENSIONS ARE OUT TO OUT OF BAR.

S. ABUT. - BILL OF BARS — UNCOATED = 3510 LBS — COATED = 2010 LBS

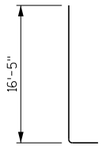
| MARK | COATED | NO. REQ'D | LENGTH | BAR SERIES | BENT | LOCATION |
|---|---|---|---|---|---|---|
| A401 | | 16 | 2'-3" | | | BODY - PILES VERT. |
| A402 | | 8 | 28'-0" | | X | BODY - PILES SPIRAL |
| A503 | | 14 | 8'-0" | | X | BODY - STIRRUPS - ENDS |
| A504 | | 14 | 13'-8" | | X | BODY - STIRRUPS |
| A505 | | 50 | 14'-8" | | X | BODY - STIRRUPS |
| A606 | | 14 | 8'-8" | | | BODY - HORIZ. |
| A607 | | 22 | 9'-0" | | | BODY - HORIZ. |
| A608 | | 18 | 29'-2" | | | BODY - HORIZ. |
| A809 | | 4 | 17'-1" | | | BODY - HORIZ. - B.F. |
| A810 | | 10 | 17'-6" | | X | BODY - HORIZ. - B.F. |
| A611 | | 12 | 8'-0" | | | BODY - HORIZ. |
| A512 | | 21 | 5'-10" | | X | BODY - VERT. - MID SLAB SEAT |
| A413 | | 4 | 20'-0" | | | BODY - HORIZ. - MID SLAB SEAT |
| A514 | X | 51 | 2'-0" | | | BODY - VERT. DOWELS |
| A515 | X | 24 | 14'-10" | | X | WINGS 1 & 2 - BODY STIRRUPS |
| A516 | X | 12 | 12'-1" | | | WINGS 1 & 2 - BODY - HORIZ. - F.F. |
| A617 | X | 16 | 12'-1" | | | WINGS 1 & 2 - BODY - HORIZ. - B.F. |
| A518 | X | 28 | 10'-3" | | X | WINGS 1 & 2 - STEM - VERT. |
| A419 | X | 16 | 9'-6" | | | WINGS 1 & 2 - STEM - HORIZ. - F.F. & B.F. |
| A520 | X | 28 | 3'-6" | | X | WINGS 1 & 2 - STEM - VERT. - SIDEWALK NOTCH |
| A621 | X | 4 | 9'-6" | | | WINGS 1 & 2 - STEM - HORIZ. - SIDEWALK NOTCH |
| A522 | X | 40 | 3'-9" | | X | WINGS 1 &2 - STEM - VERT. - RAILING CONNECTION |
| A423 | | 12 | 1'-10" | | X | BODY - VERTICAL F.F. AT STONE FACING |
| A424 | X | 8 | 12'-8" | | | WINGS 1 & 2 - HORIZ. AT STONE LEDGE |
| A425 | X | 8 | 9'-2" | | | WINGS 1 & 2 - HORIZ. AT STONE LEDGE |
| A426 | X | 8 | 5'-2" | | | WINGS 1 & 2 - HORIZ. AT STONE LEDGE |
| A427 | X | 8 | 14'-0" | | X | WINGS 1 & 2 - VERT. AT STONE LEDGE |
| A428 | X | 10 | 12'-2" | | X | WINGS 1 & 2 - VERT. AT STONE LEDGE |
| A429 | X | 12 | 9'-8" | | X | WINGS 1 & 2 - VERT. AT STONE LEDGE |



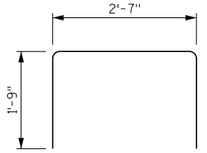

A402




A503, A504, A505, A515




A810

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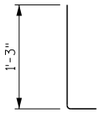
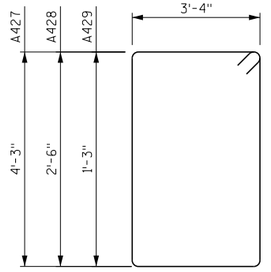
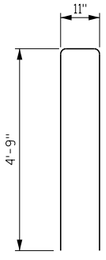


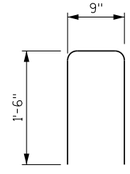

A423



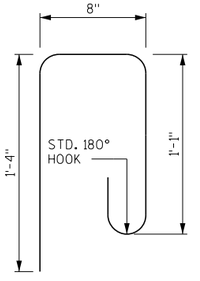

A427, A428, A429




A518




A520




A522

| NO. | DATE | REVISION | BY |
|---|---|---|---|
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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-540

DRAWN BY VJD  PLANS CK'D. SKG

SOUTH ABUTMENT DETAILS 2

SHEET 6 OF 16
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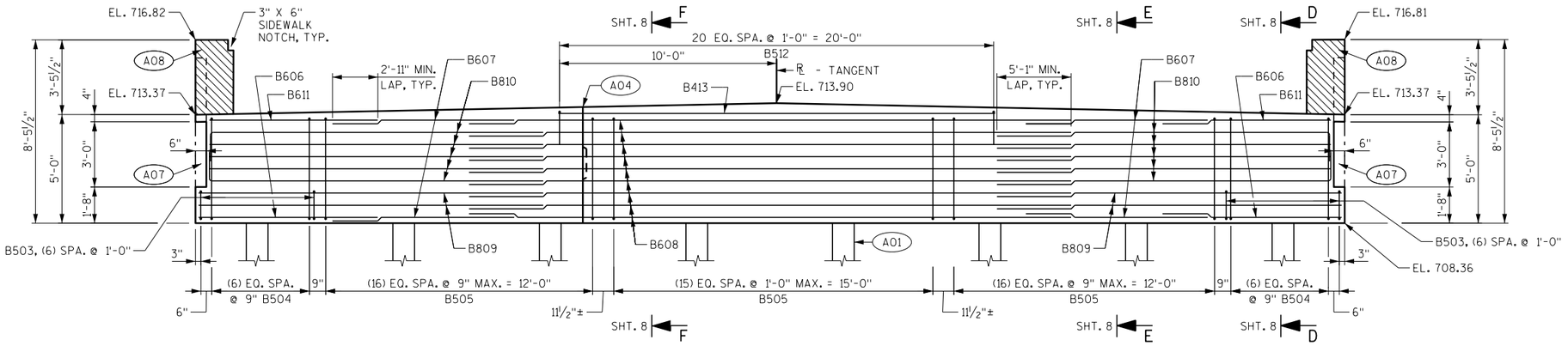
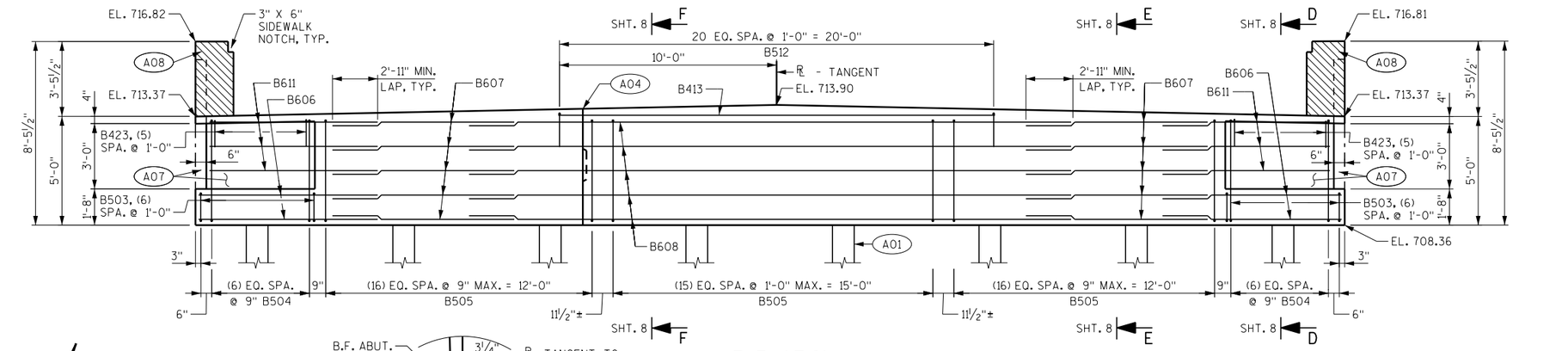


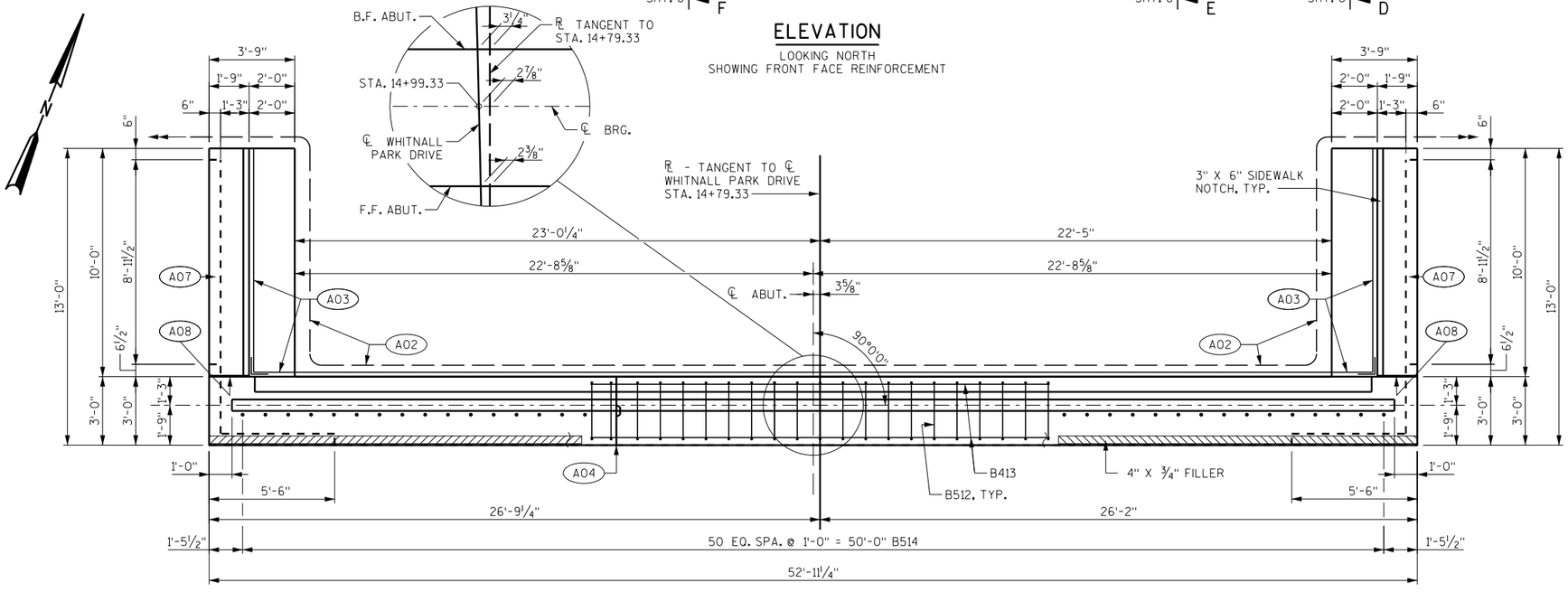

## ELEVATION

LOOKING NORTH
SHOWING BACK FACE REINFORCEMENT




## ELEVATION

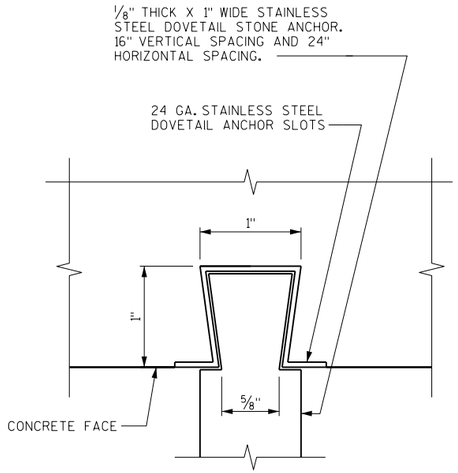
LOOKING NORTH
SHOWING FRONT FACE REINFORCEMENT




## PLAN

STATE PROJECT NUMBER

2981-00-72




## DOVETAIL ANCHOR SLOT

FOR ATTACHING STONE MASONRY TO CONCRETE
(SEE SPECIAL PROVISIONS FOR SPACING)

## NOTES

FOR PILE SPLICE DETAIL, REFER TO SHEET 10.

## LEGEND

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-540

DRAWN BY VJD | PLANS CK'D. SKG

NORTH ABUTMENT

SHEET 7 OF 16
40

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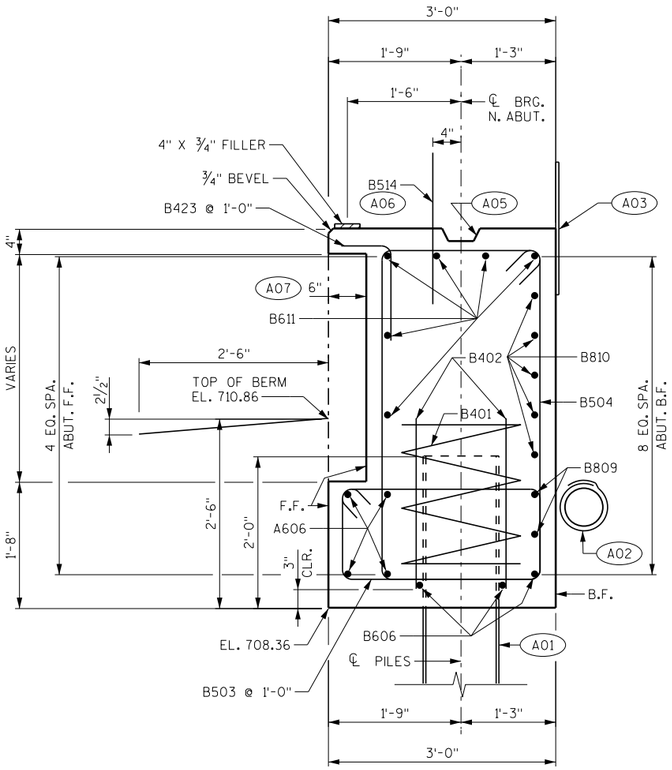
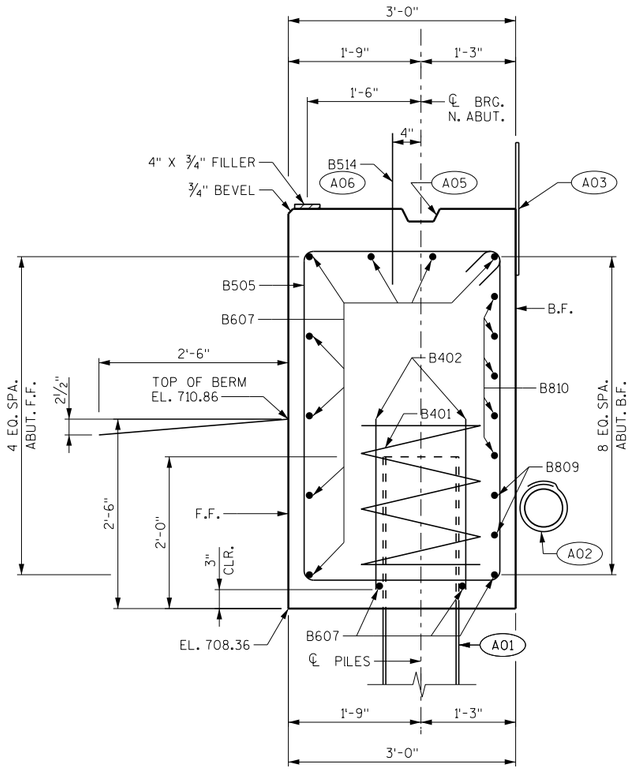
STATE PROJECT NUMBER

2981-00-72



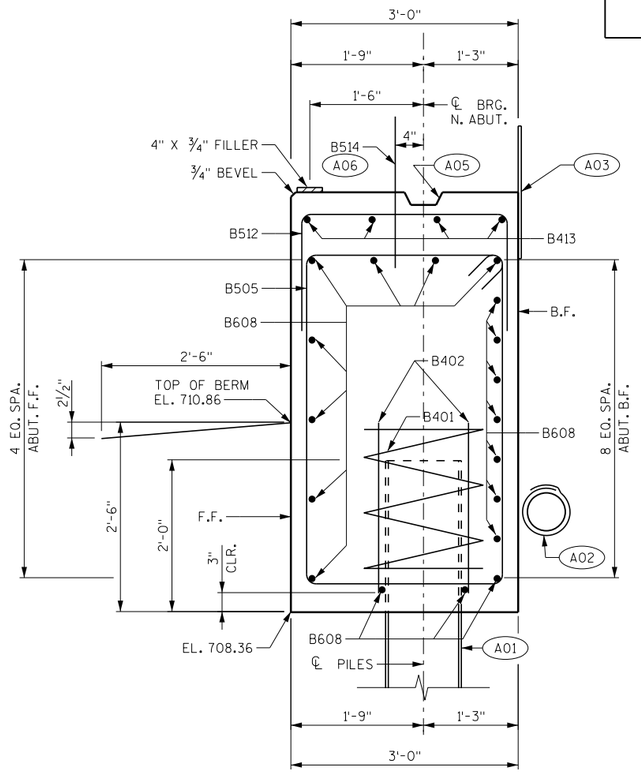

SECTION D-D

SEE SHEET 7



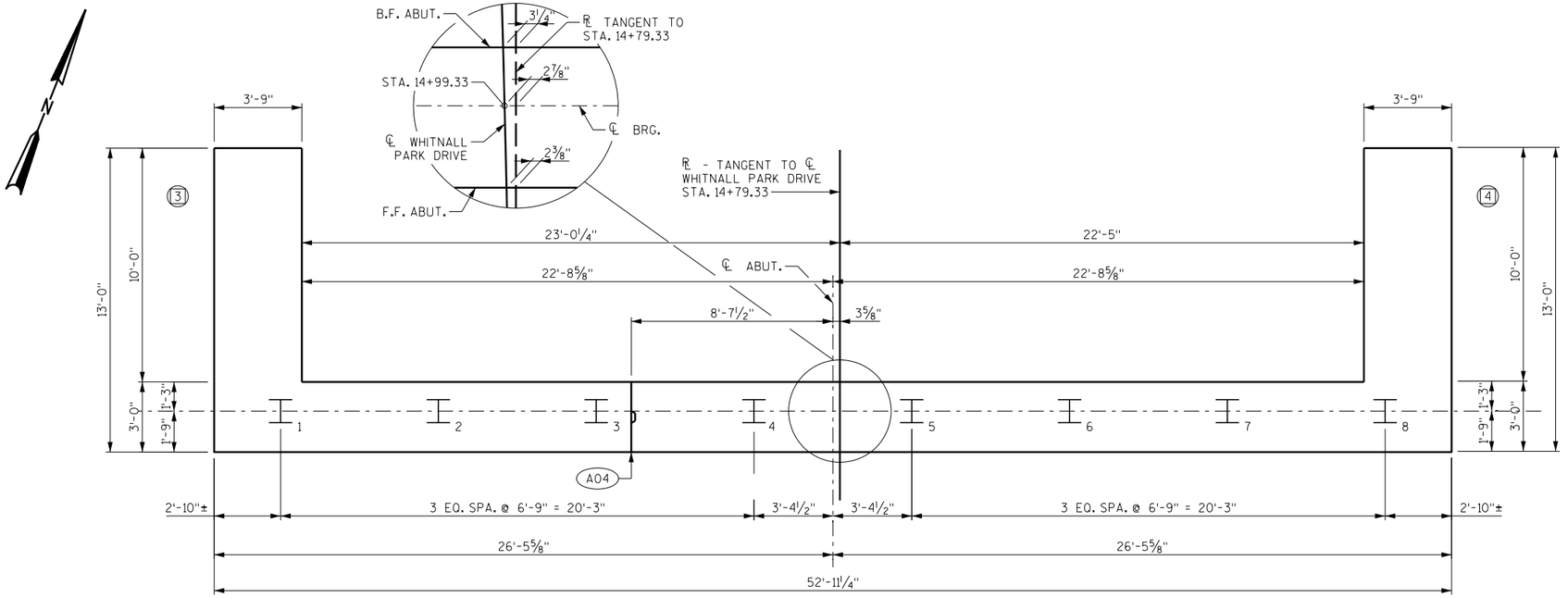

SECTION E-E

SEE SHEET 7




SECTION F-F

SEE SHEET 7




PLAN

## LEGEND

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| NO. | DATE | REVISION | BY |
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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-540

DRAWN BY VJD | PLANS CK'D. SKG

NORTH ABUTMENT DETAILS 1

SHEET 8 OF 16

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STATE PROJECT NUMBER

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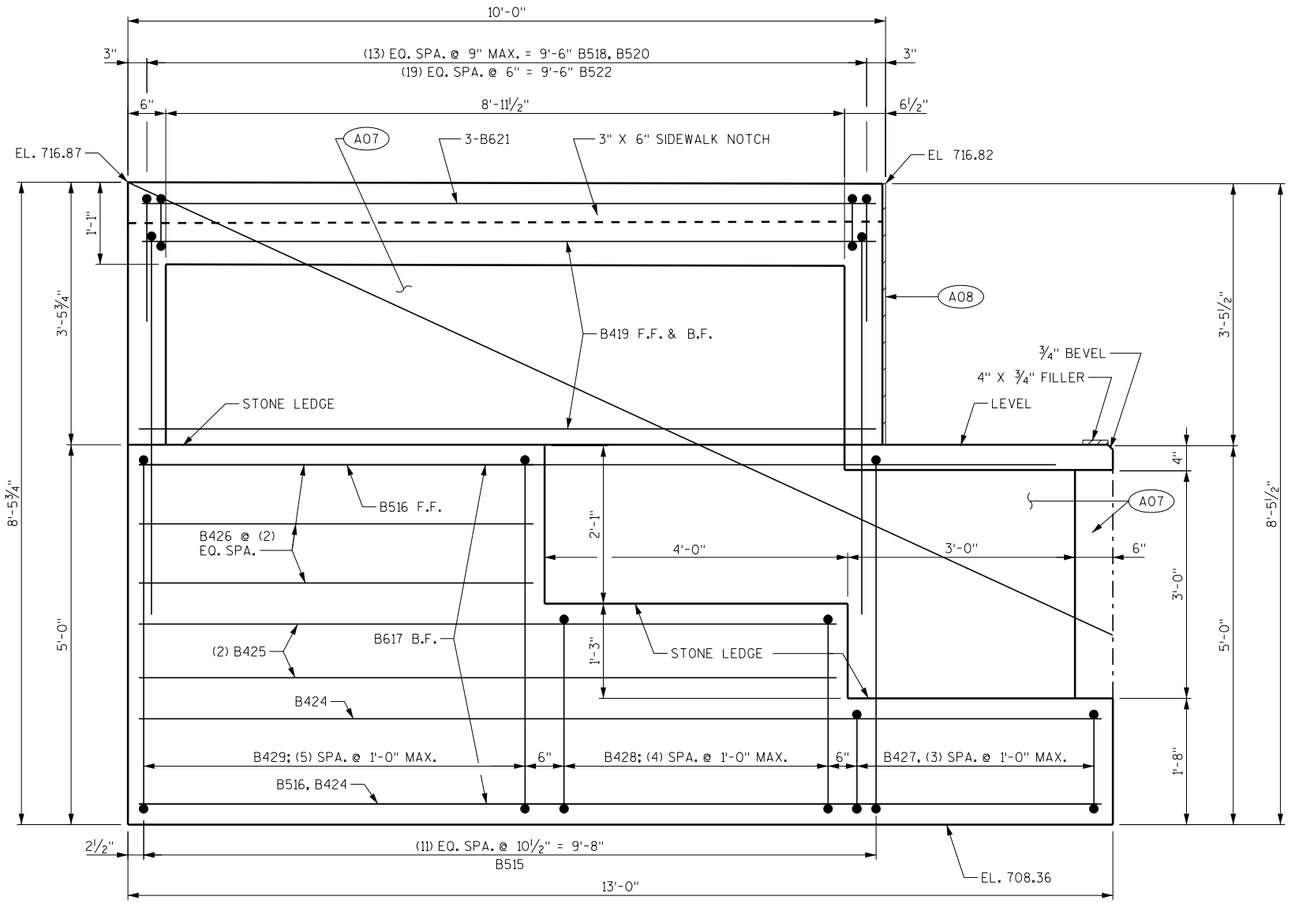
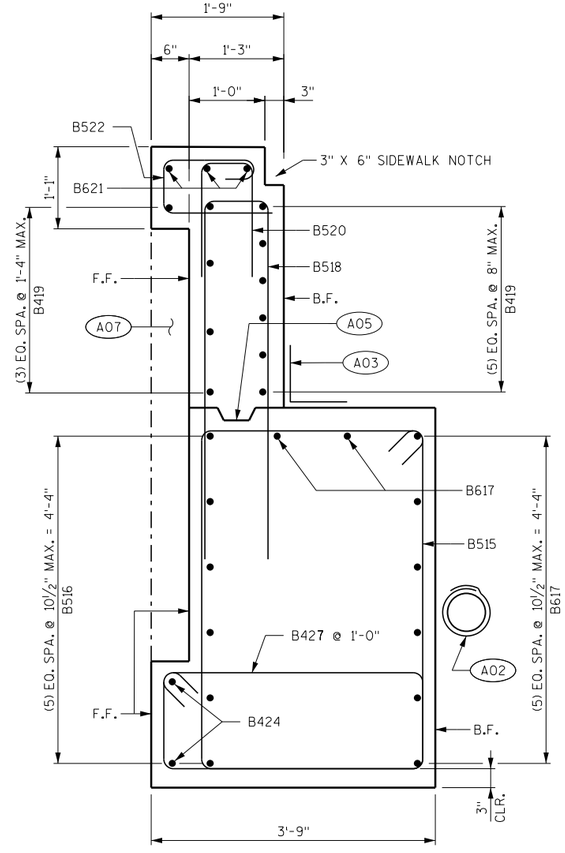



## WING ELEVATION

WING 3 SHOWN, WING 4 SIMILAR




## SECTION THRU WING

SEE SHEET 10

## LEGEND

- (A02) PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MINIMUM TO SUITABLE DRAINAGE. PLACE ABOVE OBSERVED WATER EL. RODENT SCREEN REQUIRED. SEE SHEET 10 FOR DETAILS.
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F.F. = FRONT FACE B.F. = BACK FACE

## BILL OF BARS

THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE. BAR DIMENSIONS ARE OUT TO OUT OF BAR.

N. ABUT. - BILL OF BARS — UNCOATED = 3500 LBS — COATED = 2010 LBS

| MARK | COATED | NO. REQ'D | LENGTH | BAR SERIES | BENT | LOCATION |
|---|---|---|---|---|---|---|
| B401 | | 16 | 2'-3" | | | BODY - PILES VERT. |
| B402 | | 8 | 28'-0" | | X | BODY - PILES SPIRAL |
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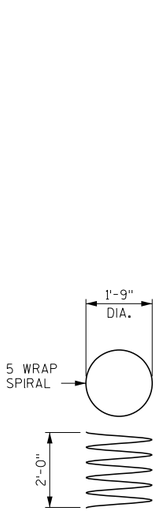
| B504 | | 14 | 13'-8" | | X | BODY - STIRRUPS |
| B505 | | 50 | 14'-8" | | X | BODY - STIRRUPS |
| B606 | | 14 | 8'-8" | | | BODY - HORIZ. |
| B607 | | 22 | 8'-9" | | | BODY - HORIZ. |
| B608 | | 18 | 29'-2" | | | BODY - HORIZ. |
| B809 | | 4 | 17'-1" | | | BODY - HORIZ. - B.F. |
| B810 | | 10 | 17'-6" | | X | BODY - HORIZ. - B.F. |
| B611 | | 12 | 8'-0" | | | BODY - HORIZ. |
| B512 | | 21 | 5'-10" | | X | BODY - VERT. - MID SLAB SEAT |
| B413 | | 4 | 20'-0" | | | BODY - HORIZ. - MID SLAB SEAT |
| B514 | X | 51 | 2'-0" | | | BODY - VERT. DOWELS |
| B515 | X | 24 | 14'-10" | | X | WINGS 1 & 2 - BODY STIRRUPS |
| B516 | X | 12 | 12'-1" | | | WINGS 1 & 2 - BODY - HORIZ. - F.F. |
| B617 | X | 16 | 12'-1" | | | WINGS 1 & 2 - BODY - HORIZ. - B.F. |
| B518 | X | 28 | 10'-3" | | X | WINGS 1 & 2 - STEM - VERT. |
| B419 | X | 16 | 9'-6" | | | WINGS 1 & 2 - STEM - HORIZ. - F.F. & B.F. |
| B520 | X | 28 | 3'-6" | | X | WINGS 1 & 2 - STEM - VERT. - SIDEWALK NOTCH |
| B621 | X | 4 | 9'-6" | | | WINGS 1 & 2 - STEM - HORIZ. - SIDEWALK NOTCH |
| B522 | X | 40 | 3'-9" | | X | WINGS 1 &2 - STEM - VERT. - RAILING CONNECTION |
| B423 | | 12 | 1'-10" | | X | BODY - VERTICAL F.F. AT STONE FACING |
| B424 | X | 8 | 12'-8" | | | WINGS 3 & 4 - HORIZ. AT STONE LEDGE |
| B425 | X | 8 | 9'-2" | | | WINGS 3 & 4 - HORIZ. AT STONE LEDGE |
| B426 | X | 8 | 5'-2" | | | WINGS 3 & 4 - HORIZ. AT STONE LEDGE |
| B427 | X | 8 | 14'-0" | | X | WINGS 3 & 4 - VERT. AT STONE LEDGE |
| B428 | X | 10 | 12'-2" | | X | WINGS 3 & 4 - VERT. AT STONE LEDGE |
| B429 | X | 12 | 9'-8" | | X | WINGS 3 & 4 - VERT. AT STONE LEDGE |

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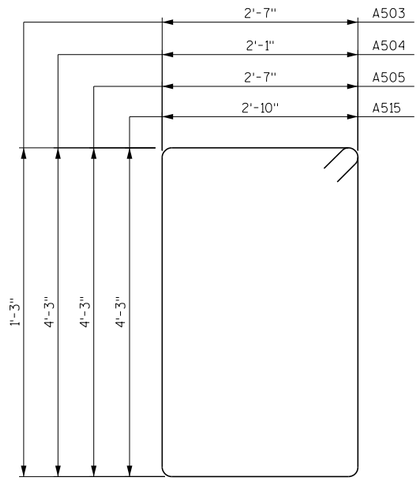
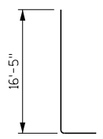



B503, B504, B505, B515

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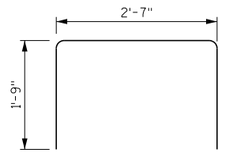


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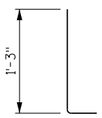


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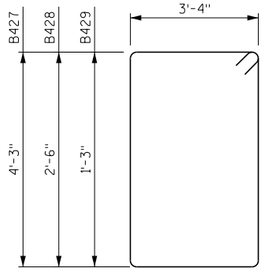


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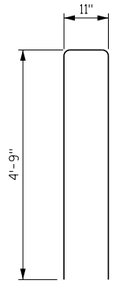


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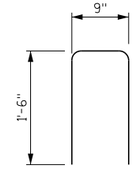


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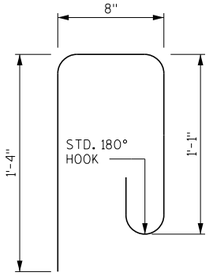


B522

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NORTH ABUTMENT DETAILS 2

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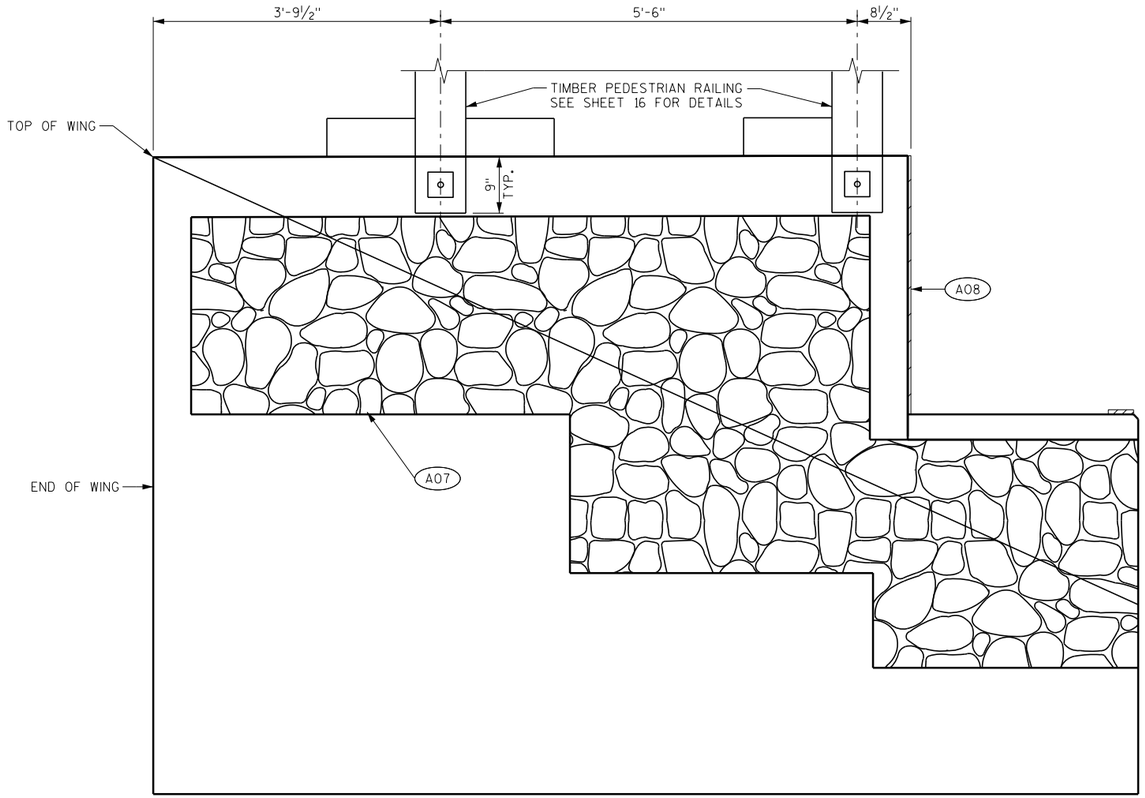
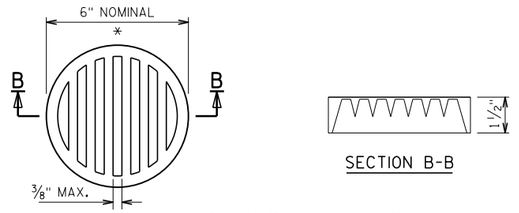



## WINGWALL ELEVATION

SHOWING STONE MASONRY
(ALL WINGS SIMILAR)



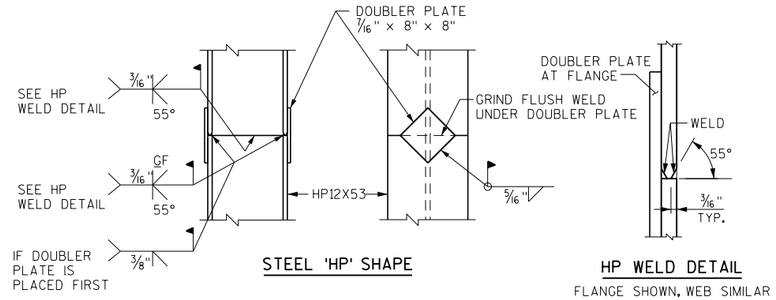

SECTION B-B

## RODENT SHIELD DETAIL

* DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SO SLOTS ARE VERTICAL.

THE RODENT SHIELD, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL WITH THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALLY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SHIELD TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 x 1-INCH STAINLESS STEEL SHEET METAL SCREWS.




STEEL 'HP' SHAPE

HP WELD DETAIL

FLANGE SHOWN, WEB SIMILAR

## PILE SPLICE DETAIL

## LEGEND

(A07) STONE MASONRY FACING AND ANTI-GRAFFITI SHIELD FOR STONE MASONRY SURFACES.

(A08) ½" FILLER - TO EXTEND FROM BEAM SEAT TO TOP OF WING. FILLER INCLUDED IN WING LENGTH.

F.F. = FRONT FACE B.F. = BACK FACE

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ABUTMENT DETAILS

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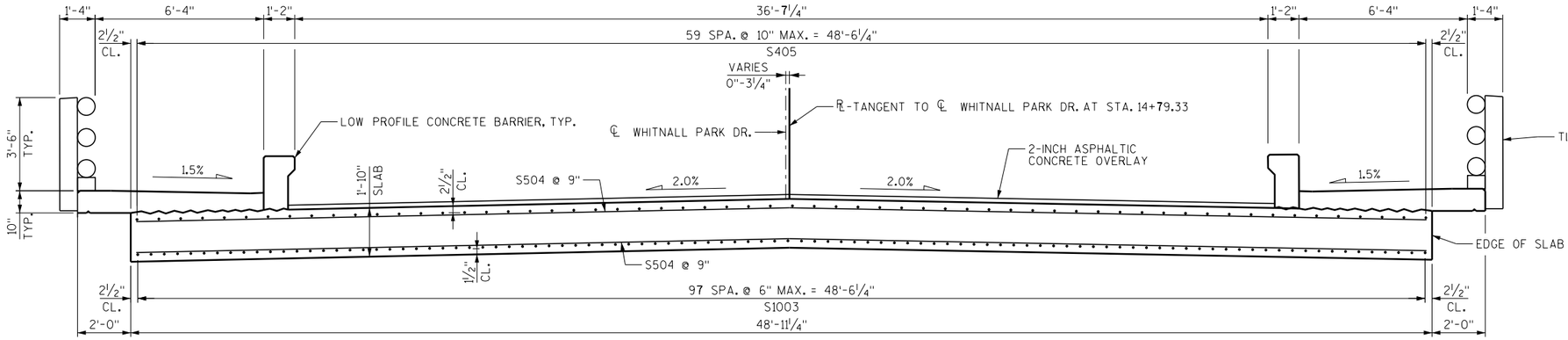
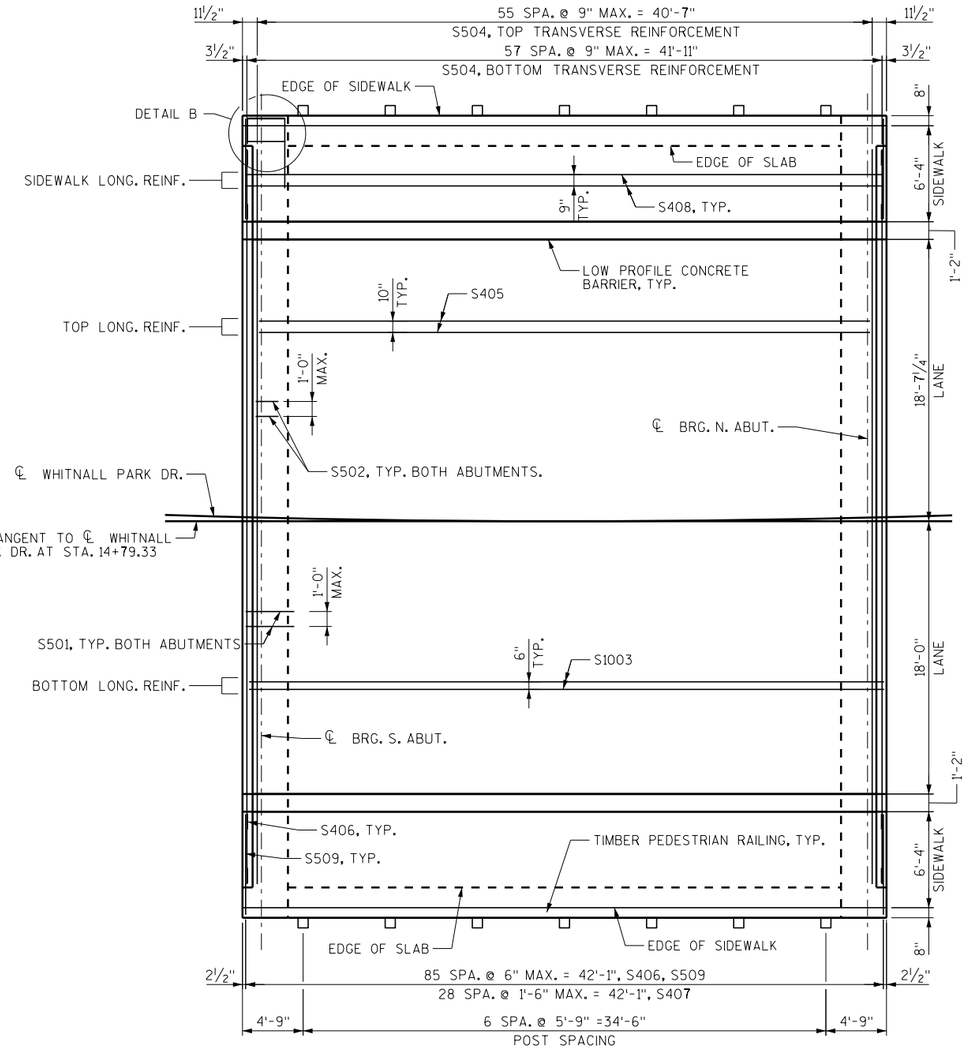



## CROSS SECTION THRU ROADWAY

(SIDWALK REINFORCEMENT NOT SHOWN. REFER TO DETAIL A.)




## PLAN

## NOTES

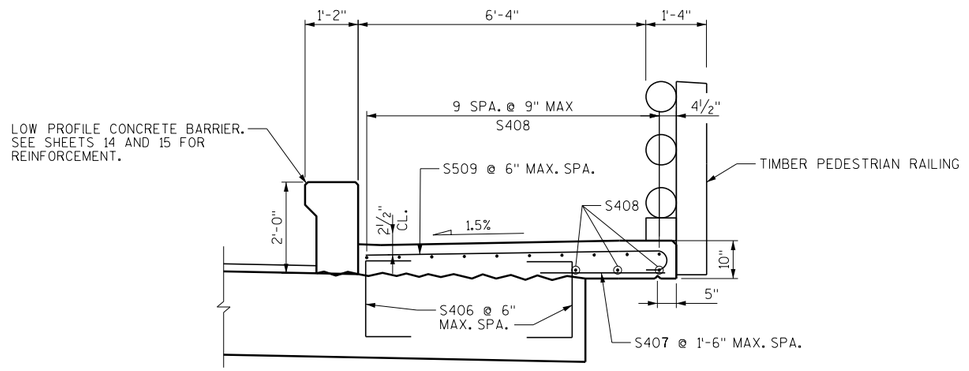
TOP TRANSVERSE BARS IN SLAB SHALL BE SUPPORTED BY INDIVIDUAL BAR CHAIRS AT APPROXIMATELY 3'-0" CENTERS EACH WAY. BOTTOM LONGITUDINAL BARS SHALL BE SUPPORTED BY CONTINUOUS BAR CHAIRS AT APPROXIMATELY 4'-0" CENTERS.

ALL SLAB THICKNESS DIMENSIONS ARE MINIMUM. ANY TOLERANCES NECESSARY TO CORRECT CONSTRUCTION DISCREPANCIES ARE TO BE PLUS (+).

SIDEWALKS PLACED ON TOP OF THE SLAB SHALL BE POURED AFTER FALSEWORK HAS BEEN RELEASED, EXCEPT FOR STAGED CONSTRUCTION.

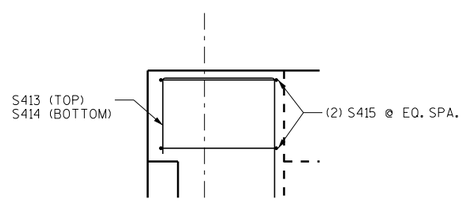
CAMBER SPANS AS SHOWN TO PROVIDE FOR DEAD LOAD DEFLECTION AND FUTURE CREEP. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT.

PRIOR TO RELEASING SLAB FALSEWORK, TAKE TOP OF SLAB ELEVATIONS AT THE ℄ OF ABUTMENTS AND AT 5/10 PTS. TO VERIFY CAMBER. TAKE ELEVATIONS ALONG GUTTER LINES AND CROWN ℄.




## DETAIL A

(SLAB REINFORCEMENT NOT SHOWN)




## DETAIL B

(ABUTMENT DIAPHRAGM END REINFORCEMENT)

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| | | | |

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SUPERSTRUCTURE

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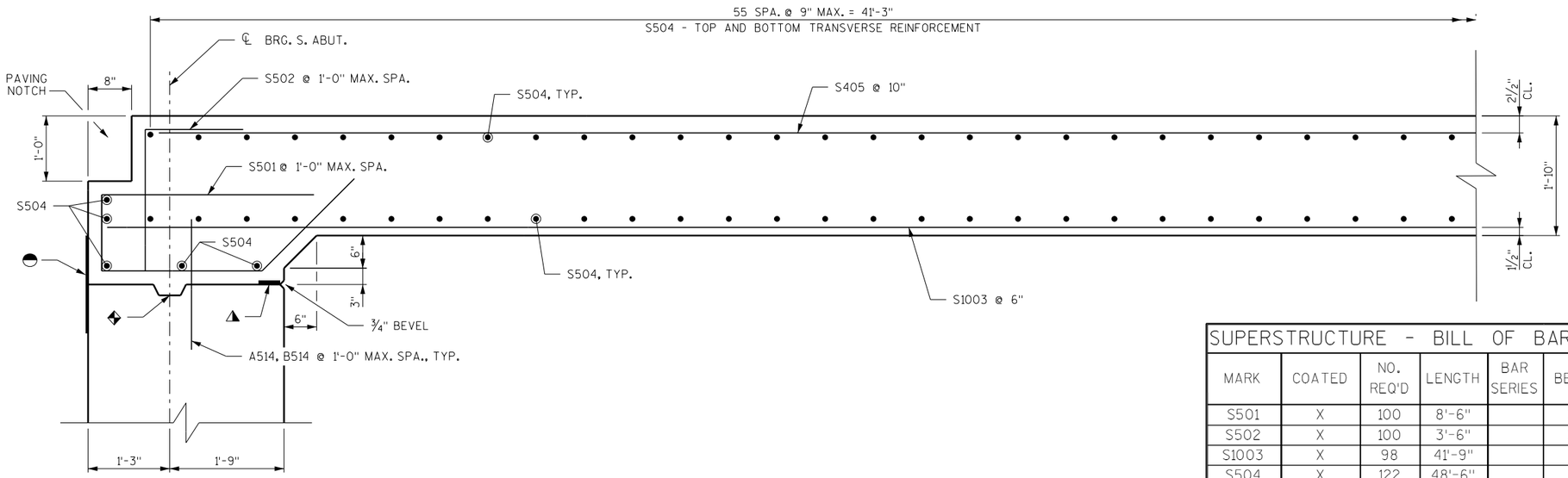



## PART LONGITUDINAL SECTION

## LEGEND

- 18" RUBBERIZED MEMBRANE WATERPROOFING
- 4" X ¾" FILLER (LENGTH OF ABUTMENT)
- CONST. JOINT KEYWAY FORMED BY A BEVELED 2" X 6"

## TOP OF DECK ELEVATIONS

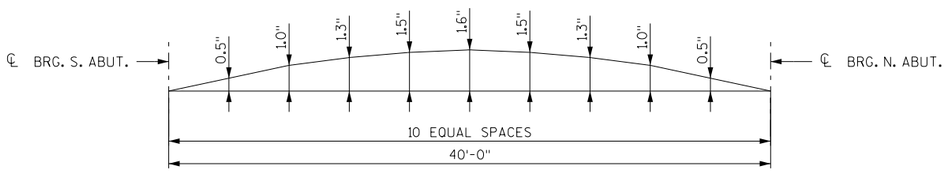
| LOCATION | C/L BRG. S. ABUT. | 0.1L | 0.2L | 0.3L | 0.4L | 0.5L | 0.6L | 0.7L | 0.8L | 0.9L | C/L BRG. N. ABUT. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| STATION | 14+59.33 | 14+63.33 | 14+67.33 | 14+71.33 | 14+75.33 | 14+79.33 | 14+83.33 | 14+87.33 | 14+91.33 | 14+95.33 | 14+99.33 |
| W. EDGE OF SLAB | 715.82 | 715.84 | 715.85 | 715.87 | 715.89 | 715.90 | 715.92 | 715.94 | 715.96 | 715.97 | 715.99 |
| CROWN (R/L) | 716.31 | 716.33 | 716.35 | 716.37 | 716.38 | 716.40 | 716.42 | 716.43 | 716.45 | 716.47 | 716.49 |
| E. EDGE OF SLAB | 715.83 | 715.85 | 715.87 | 715.88 | 715.90 | 715.92 | 715.93 | 715.95 | 715.97 | 715.99 | 716.00 |

ELEVATIONS SHOWN ARE FOR THE FINISHED CONCRETE DECK AND DO NOT INCLUDE THE 2" ASPHALTIC OVERLAY OR ALLOWANCES OF DEAD LOAD DEFLECTION AND FUTURE CREEP.

## SUPERSTRUCTURE - BILL OF BARS

COATED = 30590 LBS

| MARK | COATED | NO. REQ'D | LENGTH | BAR SERIES | BENT | LOCATION |
|---|---|---|---|---|---|---|
| S501 | X | 100 | 8'-6" | | X | SLAB AT ABUTMENT |
| S502 | X | 100 | 3'-6" | | X | SLAB AT ABUTMENT |
| S1003 | X | 98 | 41'-9" | | | SLAB LONG. BOTTOM |
| S504 | X | 122 | 48'-6" | | | SLAB TRANS. TOP AND BOTTOM |
| S405 | X | 60 | 40'-3" | | | SLAB LONG. TOP |
| S406 | X | 344 | 3'-6" | | X | DOWEL AT SIDEWALK |
| S407 | X | 58 | 2'-9" | | | SIDEWALK TRANS. BOTTOM |
| S408 | X | 26 | 42'-1" | | | SIDEWALK LONG. TOP AND BOTTOM |
| S509 | X | 172 | 7'-2" | | X | SIDEWALK TRANS. TOP |
| S510 | X | 108 | 2'-2" | | X | RAIL POST VERTICAL |
| S511 | X | 84 | 1'-7" | | X | RAIL POST VERTICAL |
| S612 | X | 28 | 12'-9" | | X | RAIL POST HORIZONTAL |
| S413 | X | 4 | 8'-4" | | X | ABUTMENT DIAPHRAGM CORNER HORIZ. |
| S414 | X | 4 | 11'-1" | | X | ABUTMENT DIAPHRAGM CORNER HORIZ. |
| S415 | X | 8 | 9'-10" | | X | ABUTMENT DIAPHRAGM CORNER VERT. |

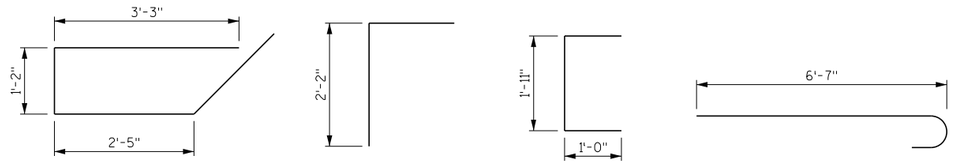



## CAMBER

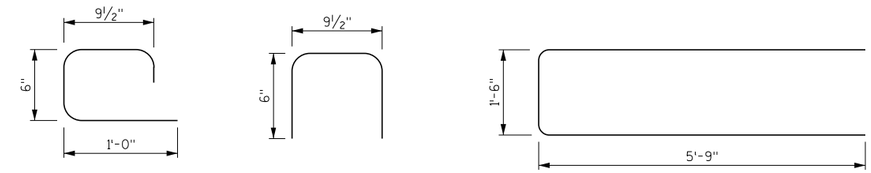
NOTES:

CAMBER SPAN AS SHOWN TO PROVIDE FOR DEAD LOAD DEFLECTION AND FUTURE CREEP. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT.

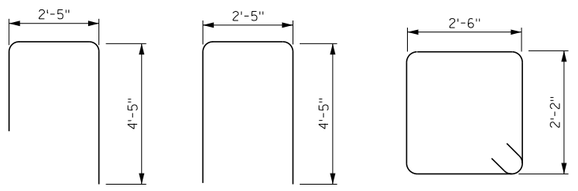
PRIOR TO RELEASING SLAB FALSEWORK, TAKE TOP OF SLAB ELEVATIONS AT THE CENTERLINE OF ABUTMENTS AND AT ½ POINTS TO VERIFY CAMBER. TAKE ELEVATIONS AT EDGES OF SLAB AND AT CENTERLINE OF ROAD.




S501 S502 S406 S509




S510 S511 S612




S413 S414 S415

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SUPERSTRUCTURE DETAILS

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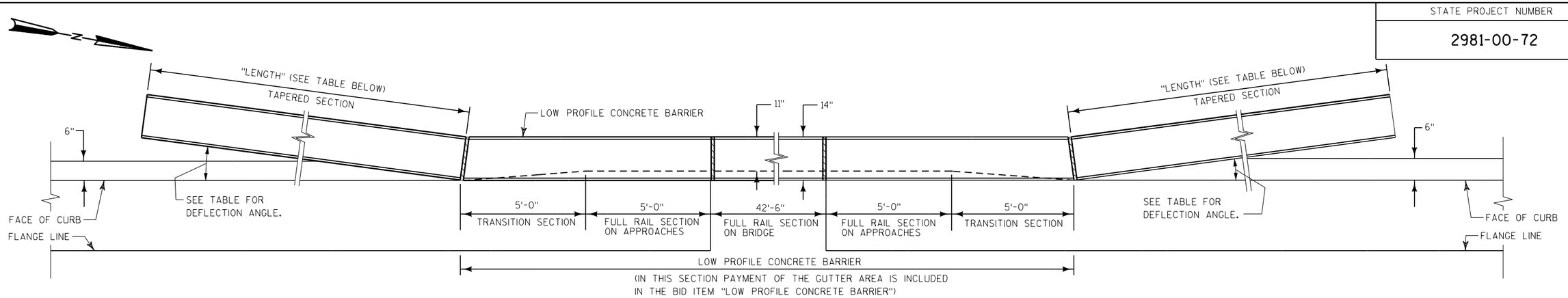
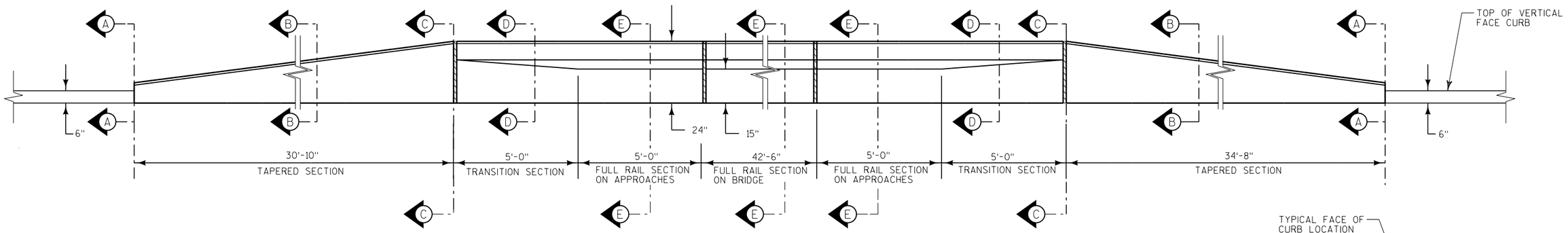


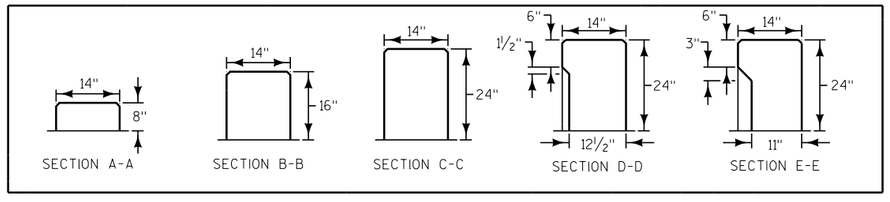

## PLAN VIEW

(LOW PROFILE CONCRETE BARRIER ON WEST SIDE OF STRUCTURE SHOWN. LOW PROFILE BARRIER ON EAST SIDE OF STRUCTURE SIMILAR)




## ELEVATION VIEW

(LOW PROFILE CONCRETE BARRIER ON EAST SIDE OF STRUCTURE SHOWN. LOW PROFILE BARRIER ON WEST SIDE OF STRUCTURE SIMILAR)




## SECTIONS

## NOTES

1) PAYMENT OF THE GUTTER AREA, AS NOTED ON THE PLAN VIEW, IS INCLUDED IN THE BID ITEM "LOW PROFILE CONCRETE BARRIER".

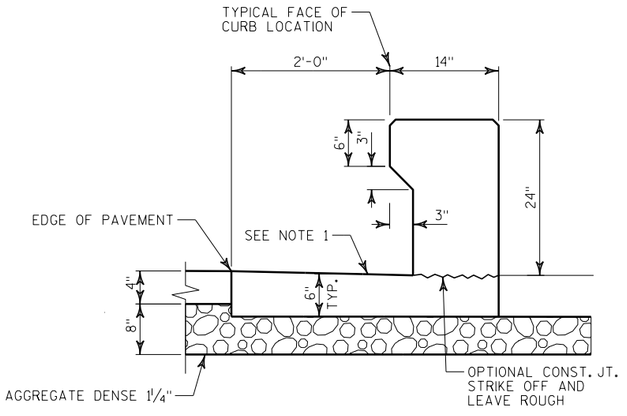
## DEFLECTION ANGLE TABLE

| LOCATION | DEFLECTION ANGLE |
|---|---|
| SOUTHEAST | 1.0° |
| SOUTHWEST | 8.28° |
| NORTHEAST | 0.0° |
| NORTHWEST | 8.82° |

NOTE: ANGLE IS MEASURED FROM A LINE PARALLEL TO THE FRONT FACE OF THE FULL BARRIER SECTION TO THE FRONT FACE OF THE TAPERED SECTION.

## TAPERED SECTION LENGTH TABLE

| LOCATION | LENGTH |
|---|---|
| SOUTHEAST | 34'-8" |
| SOUTHWEST | 31'-7" |
| NORTHEAST | 30'-10" |
| NORTHWEST | 28'-1" |




## TYPICAL LOW PROFILE CONCRETE BARRIER SECTION

(FULL RAIL SECTION AT APPROACHES)

| NO. | DATE | REVISION | BY |
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LOW PROFILE CONCRETE BARRIER 1

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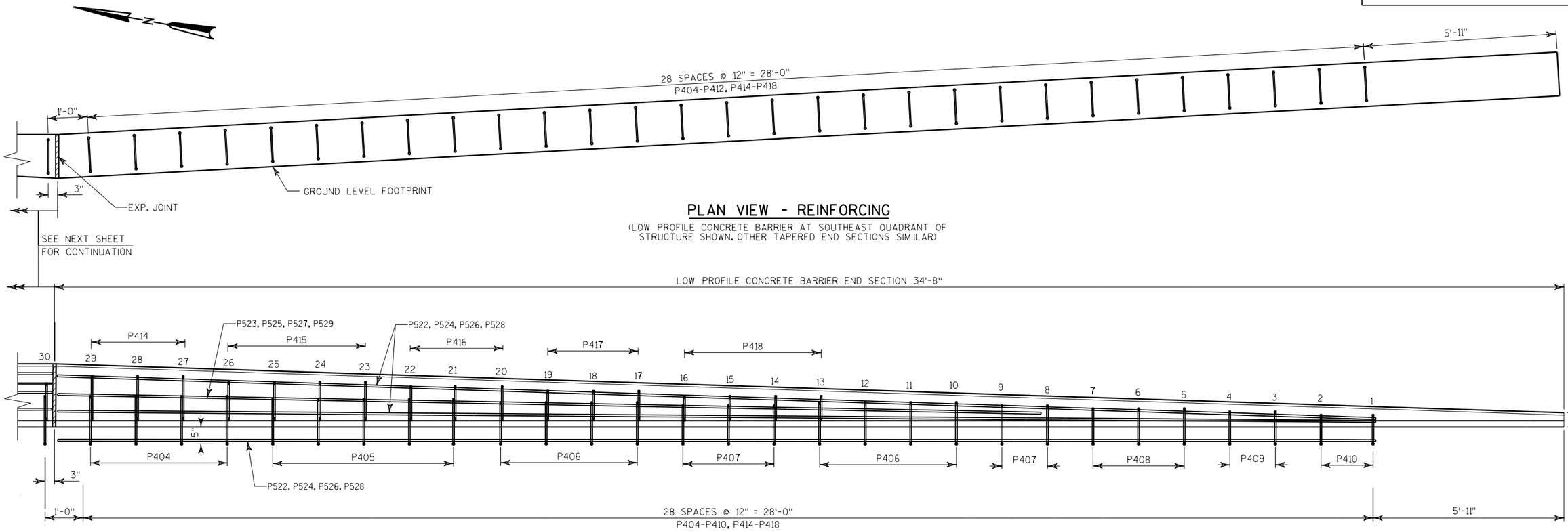
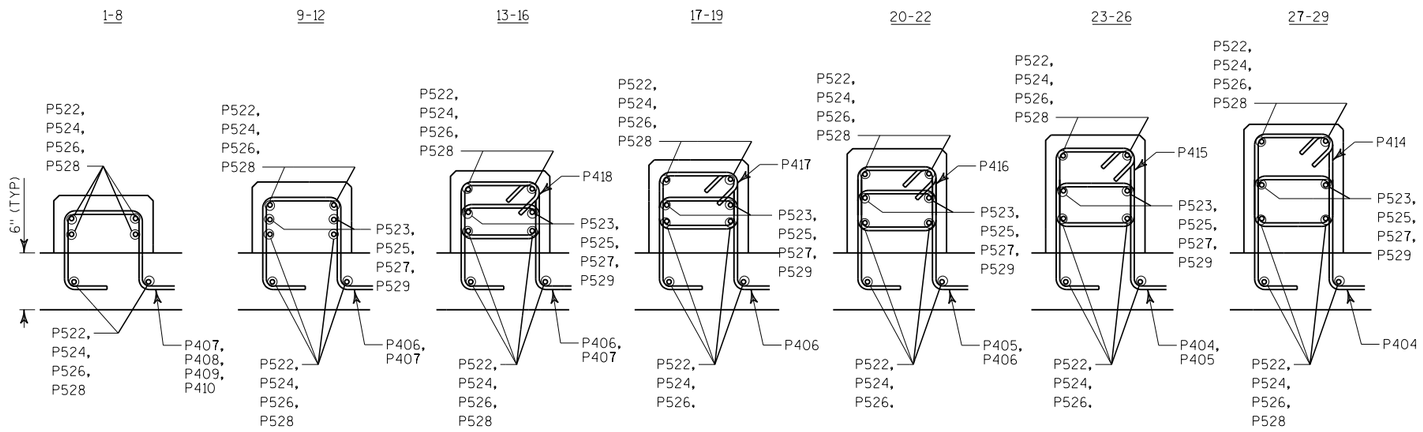



## PLAN VIEW - REINFORCING

(LOW PROFILE CONCRETE BARRIER AT SOUTHEAST QUADRANT OF STRUCTURE SHOWN. OTHER TAPERED END SECTIONS SIMIILAR)

## PROFILE VIEW - REINFORCING

(LOW PROFILE CONCRETE BARRIER AT SOUTHEAST QUADRANT OF STRUCTURE SHOWN. OTHER TAPERED END SECTIONS SIMIILAR)




## REBAR REBAR PLACEMENT - TAPERED END CROSS SECTIONS

| NO. | DATE | REVISION | BY |
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| | | | |

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LOW PROFILE CONCRETE BARRIER 2

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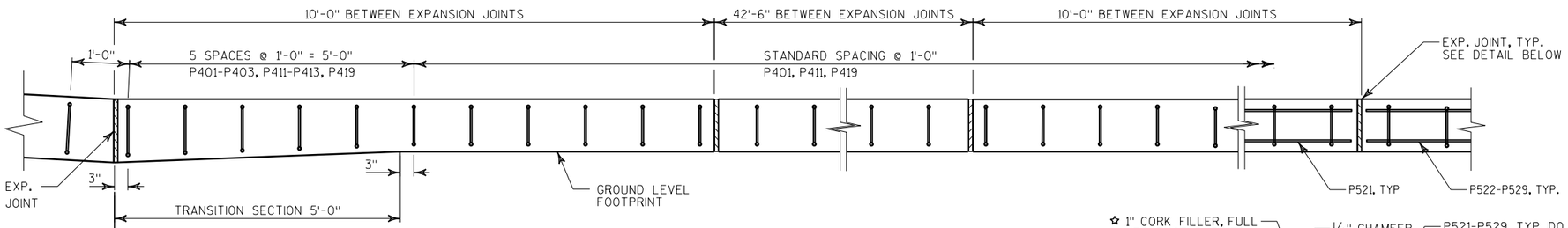
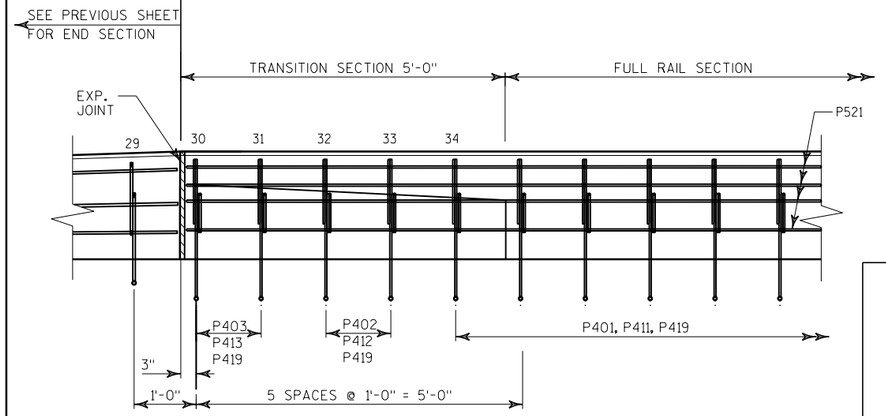
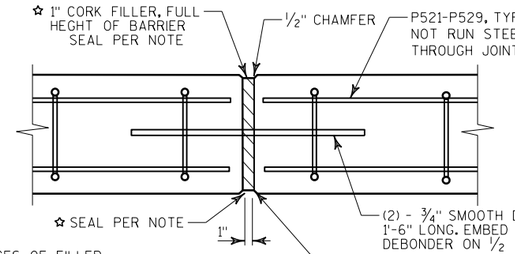



PLAN VIEW - REINFORCING



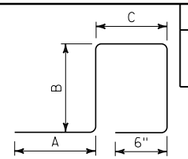

PROFILE VIEW - REINFORCING




☆ SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONC.)

EXPANSION JOINT DETAIL

(JOINT TO EXTEND FULL DEPTH OF BARRIER)

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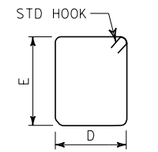
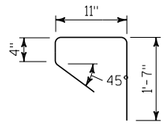


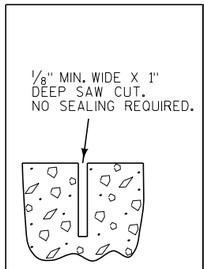

P411-P418



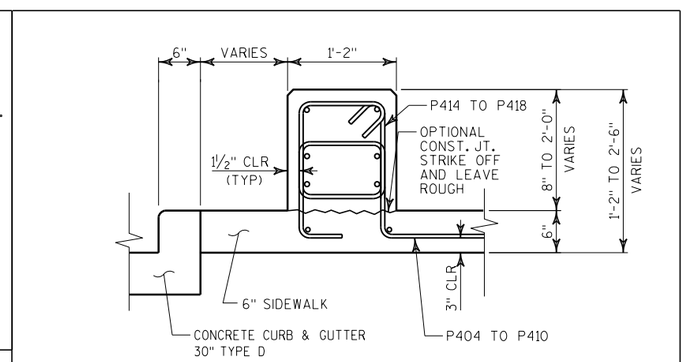

P419

| BAR MARK | DIMENSIONS | | |
|---|---|---|---|
| | A | B | C |
| P401 | 2'-3" | 1'-7" | 8" |
| P402 | 2'-2" | 1'-7" | 9" |
| P403 | 2'-1" | 1'-7" | 10" |
| P404 | 2'-0" | 1'-3" | 11" |
| P405 | 2'-0" | 1'-2" | 11" |
| P406 | 2'-0" | 1'-1" | 11" |
| P407 | 2'-0" | 1'-0" | 11" |
| P408 | 2'-0" | 11" | 11" |
| P409 | 2'-0" | 10" | 11" |
| P410 | 2'-0" | 9" | 11" |

| BAR MARK | DIMENSIONS | |
|---|---|---|
| | D | E |
| P411 | 8" | 1'-4" |
| P412 | 8" | 1'-4" |
| P413 | 8" | 1'-4" |
| P414 | 9" | 1'-1" |
| P415 | 10" | 11" |
| P416 | 11" | 10" |
| P417 | 11" | 9" |
| P418 | 11" | 8" |

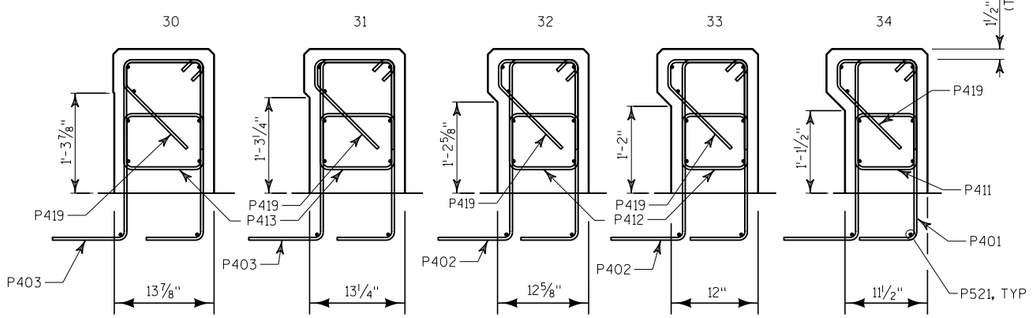



CONTRACTION JOINT DETAIL

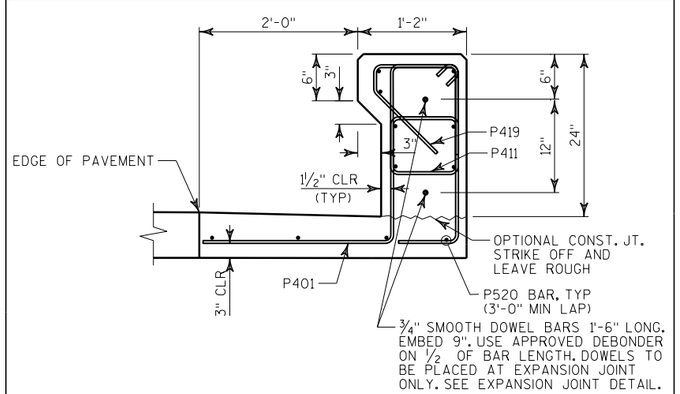



LOW PROFILE CONCRETE BARRIER SECTION AT TAPER

(FOR HORIZONTAL REINFORCEMENT, SEE SHEET 14)




REBAR PLACEMENT - TRANSITION CROSS SECTIONS




TYPICAL LOW PROFILE CONCRETE BARRIER SECTION

(FULL RAIL SECTION REINFORCING)

LOW PROFILE CONCRETE BARRIER - BILL OF BARS

| MARK | COATED | NO. REQ'D | LENGTH | BAR SERIES | BENT | COATED = 3960 LBS LOCATION |
|---|---|---|---|---|---|---|
| P401 | X | 100 | 6'-3" | | X | VERTICAL AT FULL SECTION |
| P402 | X | 100 | 6'-3" | | X | VERTICAL AT TRANSITION SECTION |
| P403 | X | 8 | 6'-3" | | X | VERTICAL AT TRANSITION SECTION |
| P404 | X | 16 | 5'-7" | | X | VERTICAL AT TAPERED SECTION |
| P405 | X | 20 | 5'-5" | | X | VERTICAL AT TAPERED SECTION |
| P406 | X | 32 | 5'-3" | | X | VERTICAL AT TAPERED SECTION |
| P407 | X | 20 | 5'-1" | | X | VERTICAL AT TAPERED SECTION |
| P408 | X | 12 | 4'-11" | | X | VERTICAL AT TAPERED SECTION |
| P409 | X | 8 | 4'-9" | | X | VERTICAL AT TAPERED SECTION |
| P410 | X | 8 | 4'-7" | | X | VERTICAL AT TAPERED SECTION |
| P411 | X | 108 | 4'-6" | | X | VERTICAL AT FULL SECTION |
| P412 | X | 8 | 4'-6" | | X | VERTICAL AT TRANSITION SECTION |
| P413 | X | 8 | 4'-6" | | X | VERTICAL AT TRANSITION SECTION |
| P414 | X | 12 | 4'-2" | | X | VERTICAL AT TAPERED SECTION |
| P415 | X | 16 | 4'-0" | | X | VERTICAL AT TAPERED SECTION |
| P416 | X | 12 | 4'-0" | | X | VERTICAL AT TAPERED SECTION |
| P417 | X | 12 | 3'-10" | | X | VERTICAL AT TAPERED SECTION |
| P418 | X | 16 | 3'-8" | | X | VERTICAL AT TAPERED SECTION |
| P419 | X | 124 | 4'-1" | | X | VERTICAL AT FULL AND TRANSITION SECTION |
| P520 | X | 22 | 42'-1" | | | HORIZONTAL AT FULL SECTION |
| P521 | X | 36 | 9'-7" | | | HORIZONTAL AT TRANSITION SECTION |
| P522 | X | 6 | 28'-3" | | | HORIZONTAL AT SOUTHEAST TAPERED SECTION |
| P523 | X | 2 | 21'-3" | | | HORIZONTAL AT SOUTHEAST TAPERED SECTION |
| P524 | X | 6 | 25'-2" | | | HORIZONTAL AT SOUTHWEST TAPERED SECTION |
| P525 | X | 2 | 18'-2" | | | HORIZONTAL AT SOUTHWEST TAPERED SECTION |
| P526 | X | 6 | 24'-5" | | | HORIZONTAL AT NORTHEAST TAPERED SECTION |
| P527 | X | 2 | 17'-5" | | | HORIZONTAL AT NORTHEAST TAPERED SECTION |
| P528 | X | 6 | 27'-8" | | | HORIZONTAL AT NORTHWEST TAPERED SECTION |
| P529 | X | 2 | 20'-8" | | | HORIZONTAL AT NORTHWEST TAPERED SECTION |

## NOTES

1. USE 1 1/2" CLEAR CONCRETE COVER FOR REBAR IN BARRIER, AND 3" CLEAR FOR CONCRETE CAST AGAINST EARTH.
2. THE FIRST DIGIT OF THE BAR MARK SIGNIFIES THE BAR SIZE. BAR DIMENSIONS ARE OUT-TO-OUT OF BAR.
3. ALL BAR STEEL REINFORCEMENT SHALL BE ASTM A615 GRADE 60, EPOXY COATED. EPOXY SHALL BE APPLIED TO REINFORCEMENT AFTER THE BARS ARE BENT TO FINAL CONDITION.
4. DO NOT WELD EPOXY COATED REINFORCEMENT BARS.
5. USE 3/4" CHAMFER ON TOP CORNERS.
6. CONTRACTION JOINTS SHALL BE SAWED, AS INDICATED. SPACING SHALL MATCH PAVEMENT JOINTS.
7. ALL REINFORCEMENT TO BE INCIDENTAL TO "LOW PROFILE CONCRETE BARRIER".

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-540

DRAWN BY NLD | PLANS CK'D. SKG

LOW PROFILE CONCRETE BARRIER 3

SHEET 15 OF 16

48

8

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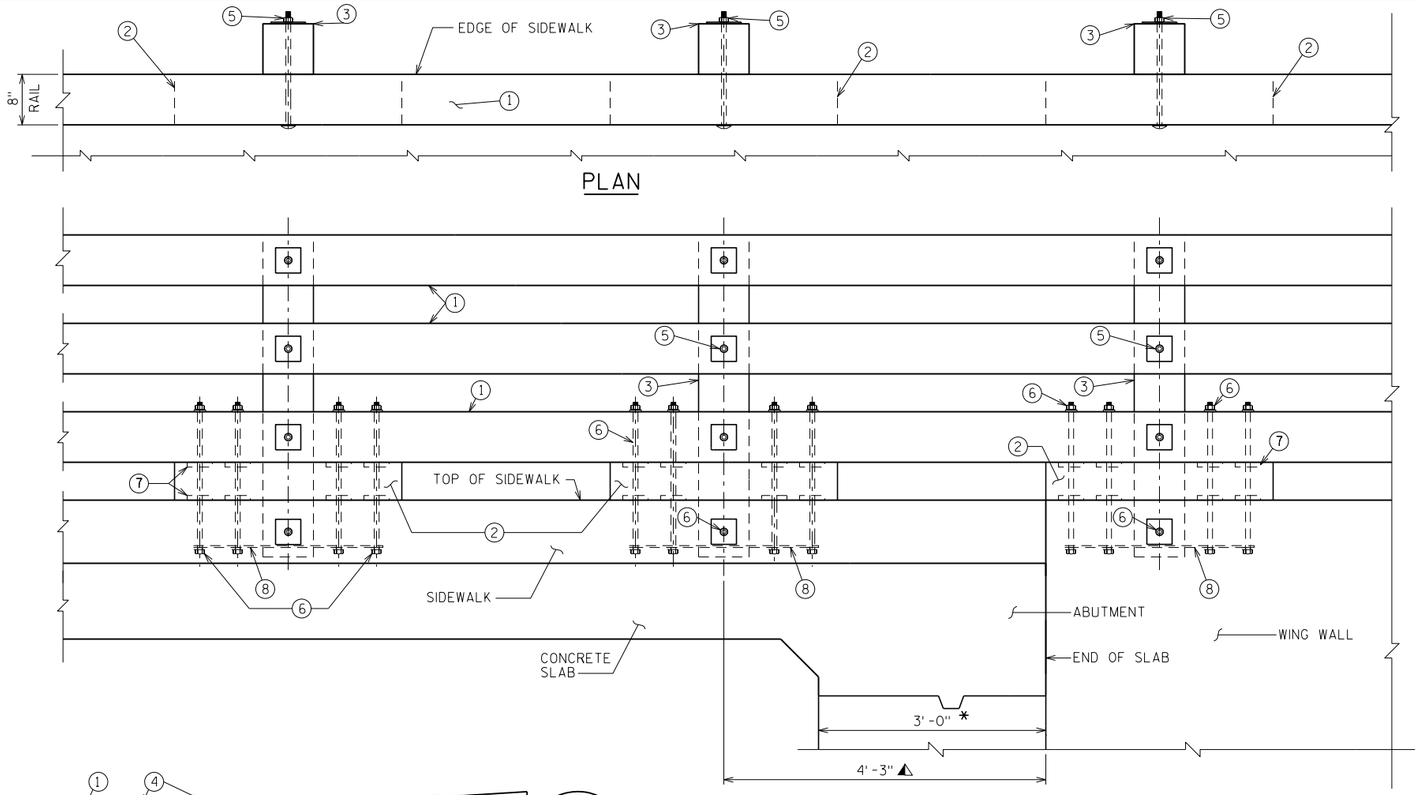
STATE PROJECT NUMBER

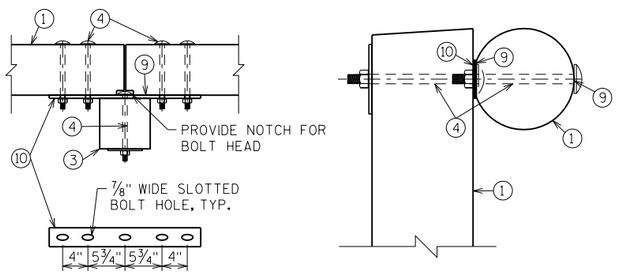
2981-00-72



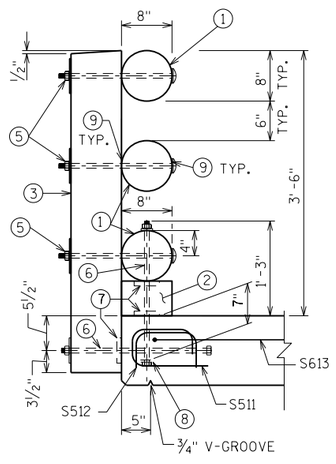

PLAN



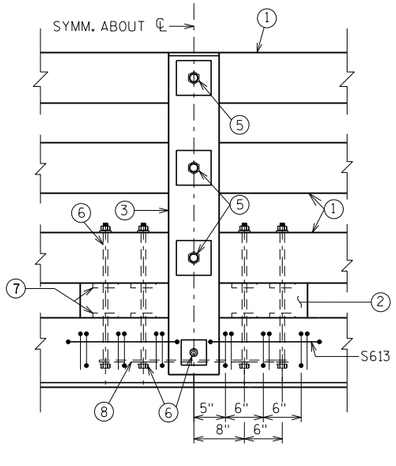

ELEVATION



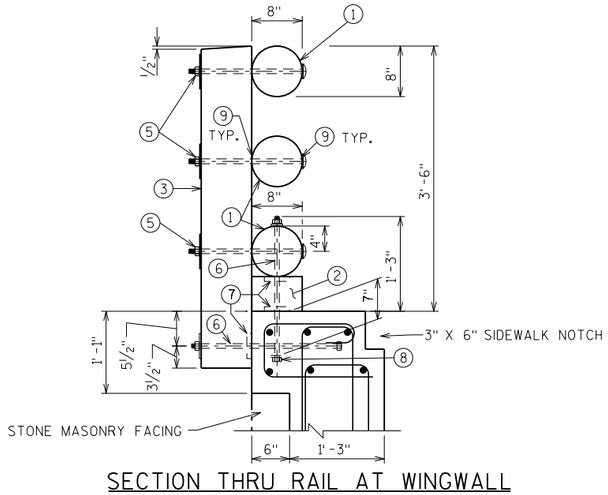

SPLICE DETAIL




SECTION THRU RAIL IN SPAN




BACK ELEVATION




SECTION THRU RAIL AT WINGWALL

REFER TO SHEETS 6 AND 9 FOR REINFORCEMENT AT WINGWALL

## LEGEND

* DIMENSION IS TAKEN NORMAL TO ℄ SUBSTRUCTURE

▲ DIMENSION IS TAKEN ALONG EDGE OF SLAB

① TIMBER RAIL, 8" DIA.

② SCUPPER BLOCK 6" X 8" X 3'-0"

③ RAIL POST @ STRUCTURE 8" X 8" X 4'-3"

④ 3/4" DIA. X 11" LONG ASTM A325, DOME-HEAD BOLT W/ (1) 2" X 2" X 1/4" PLATE WASHER PER BOLT. (5 REQ'D. @ EACH RAIL SPLICE LOCATION)

⑤ 3/4" DIA. X 1'-5" LONG ASTM A325, DOME-HEAD BOLT W/ (1) 4" X 4" X 5/16" PLATE WASHER PER BOLT. (1 REQ'D. @ EACH RAIL TO POST CONNECTION, EXCEPT AT SPLICE LOCATIONS)

⑥ 3/4" DIA. X 1'-10" LONG ASTM A325 BOLT. (1) 2" X 4" X 5/16" PLATE WASHER REQ'D. AT SCUPPER TO SIDEWALK CONNECTION. (1) 4" X 4" X 5/16" PLATE WASHER REQ'D. AT POST TO SIDEWALK CONNECTION.

⑦ 4" DIA. ASTM A709 GRADE 36 SHEAR PLATE (8 REQ'D. @ EACH RAIL TO SCUPPER CONNECTION, 4 REQ'D. @ EACH SCUPPER TO SIDEWALK CONNECTION, AND 1 REQ'D @ EACH POST TO SIDEWALK CONNECTION). MALLEABLE IRON MEETING REQUIREMENTS OF ASTM A47, GRADE 32510.

⑧ 2" X 2'-6" X 5/16" ASTM A709 GRADE 36 ANCHOR PLATE WITH (4) 13/16 " DIA. HOLES FOR ANCHOR BOLTS NO. 14 (SCUPPER TO SIDEWALK CONNECTION)

⑨ PROVIDE FLAT SURFACE FOR RAIL-SPLICE PLATE BEARING LOCATIONS, BOLT CONNECTION LOCATIONS, AND RAIL-TO-POST INTERFACE.

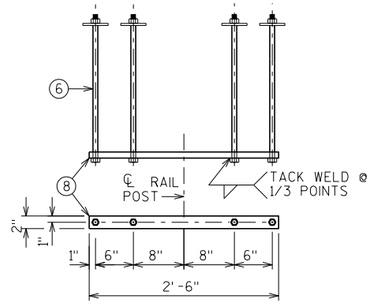
⑩ 3" X 2'-0" X 1/4" ASTM A709 GRADE 36 SPLICE PLATE WITH 7/8" WIDE SLOTTED BOLT HOLES FOR EXPANSION.

## NOTES

1. BID ITEM SHALL BE "TIMBER PEDESTRAN RAILING" WHICH INCLUDES ALL ITEMS SHOWN.
2. DIMENSIONS FOR WOOD POSTS, RAILS, AND SCUPPERS ARE GIVEN AS NOMINAL DIMENSIONS. ACTUAL DIMENSIONS MAY BE A MAXIMUM OF 1/2" LESS THAN THE STATED NOMINAL DIMENSIONS.
3. RAIL SPLICES SHALL BE LOCATED AT POST LOCATIONS. RAIL MEMBERS SHALL BE CONTINUOUS OVER NOT LESS THAN TWO POSTS.
4. SAWN AND TRIMMED LUMBER SHALL COMPLY WITH THE REQUIREMENTS OF AASHTO M168 AND SHALL BE PRESSURE TREATED WITH WOOD PRESERVATIVES IN ACCORDANCE WITH AASHTO M133 AND STANDARD SPECIFICATIONS.
5. PEDESTRIAN RAILS, POSTS, AND SCUPPER BLOCKS SHALL BE VISUALLY GRADED NO. 1 SOUTHERN PINE OR VISUALLY GRADED NO. 1 DOUGLAS FIR LARCH. OTHER SPECIES MAY BE USED, PROVIDED THE MINIMUM TABULATED VALUES ARE NTO LESS THAN THE FOLLOWING:

$F_b$ = 1450 LB/IN$^2$ $F_c$ = 725 LB/IN$^2$ $F_v$ = 85 LB/IN$^2$ E = 1280 KIP/IN$^2$

6. ALL STEEL COMPONENTS AND FASTENERS SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M111 OR M232.
7. TO THE EXTENT POSSIBLE, ALL WOOD SHALL BE CUT, DRILLED, AND COMPLETELY FABRICATED PRIOR TO PRESSURE TREATMENT WITH PRESERVATIVES. WHEN FIELD FABRICATION OF WOOD IS REQUIRED OR IF WOOD IS DAMAGED, ALL CUTS, BORE HOLES, AND DAMAGE SHALL BE IMMEDIATELY TREATED WITH WOOD PRESERVATIVE IN ACCORDANCE WITH AASHTO M133 AND STANDARD SPECIFICATIONS.
8. UNLESS NOTED, MALLEABLE IRON WASHERS SHALL BE PROVIDED UNDER BOLT HEADS AND UNDER NUTS THAT ARE IN CONTACT WITH WOOD. WHEN THE SIZE AND STRENGTH OF THE HEAD ARE SUFFICIENT TO DEVELOP CONNECTION STRENGTH WITHOUT WOOD CRUSHING, WASHERS MAY BE OMITTED UNDER HEADS OF DOME-HEAD TIMBER BOLTS.
9. TOPS OF RAIL POSTS SHALL BE SEALED WITH ROOFING CEMENT OR OTHERWISE PROTECTED FROM DIRECT EXPOSURE TO WEATHER.
10. DESTROY THREADS ON ALL BOLTS WITH A CENTER PUNCH AFTER TIGHTENING NUT. EXPOSED BOLT PROJECTION OVER 1" SHALL BE CUT OFF. REPAIR END OF BOLT BY PAINTING WITH ZINC RICH PRIMER.
11. THIS PEDESTRIAN RAILING IS DESIGNED IN ACCORDANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS SECTION 13.8.
12. PLACE FIRST SIDEWALK BOTTOM LONGITUDINAL BAR CLEAR OF DRIP GROOVE.




ANCHORAGE DETAIL

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-40-540

DRAWN BY NLD | PLANS CK'D. SKG

TIMBER PEDESTRIAN RAILING

SHEET 16 OF 16

49

8

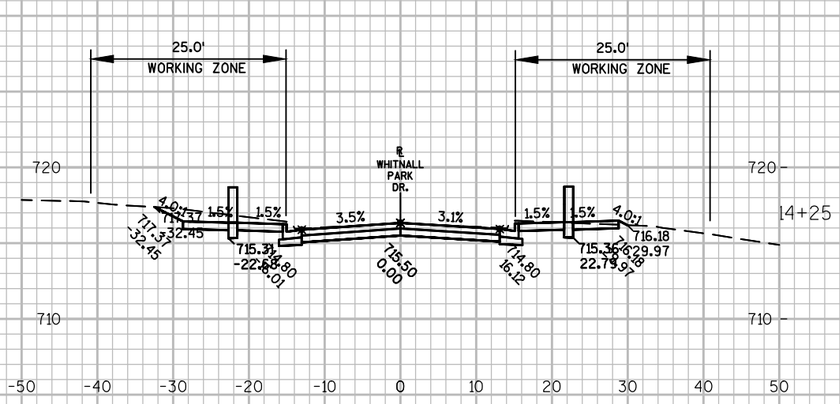
8

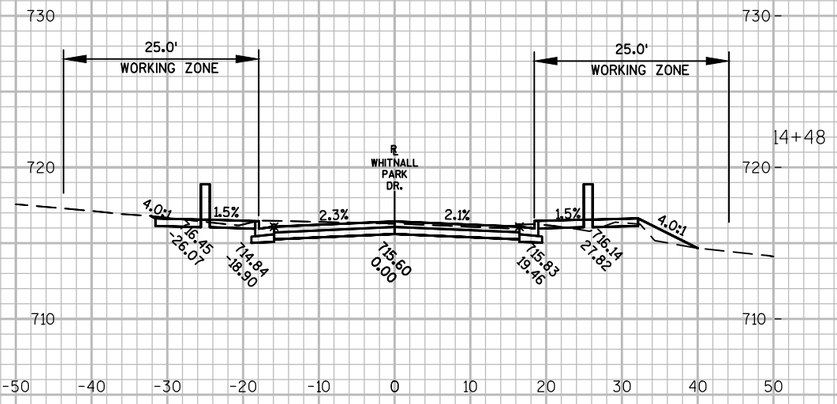
| STATION | Distance | AREA (SF) | | Incremental Vol (CY) (Unadjusted) | | Cumulative Vol (CY) | | Mass Ordinate |
|---|---|---|---|---|---|---|---|---|
| | | Cut | Fill | Cut | Fill | Cut<br>**1.00** | Expanded Fill<br>1.00 | |
| 14+15 | 0 | 38.44 | 0.49 | 0 | 0 | 0 | 0 | 0 |
| 14+25 | 10 | 43.55 | 0.39 | 16 | 1 | 16 | 1 | 15 |
| 14+40 | 15 | 49.05 | 2.01 | 26 | 1 | 42 | 2 | 40 |
| 14+48 | 8 | 5.66 | 4.45 | 9 | 1 | 51 | 3 | 48 |
| 14+58 | 10 | 82.94 | 0 | 17 | 1 | 68 | 4 | 64 |
| Bridge Gap | | | | | | | | 0 |
| 15+00 | 43 | 71.69 | 0 | 0 | 0 | 68 | 4 | 64 |
| 15+11 | 10 | 39.7 | 0.18 | 21 | 1 | 89 | 5 | 84 |
| 15+25 | 14 | 42.37 | 2.06 | 22 | 1 | 111 | 6 | 105 |
| 15+40 | 15 | 34.8 | 1.17 | 22 | 1 | 133 | 7 | 126 |
| 15+50 | 10 | 30.97 | 2.56 | 13 | 1 | 146 | 8 | 138 |
| **Whitnall Park Drive** | | | | 146 | 8 | 146 | 8 | 138 |

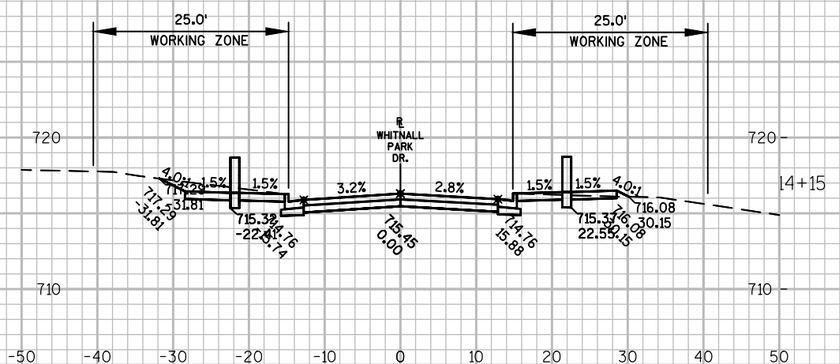
9

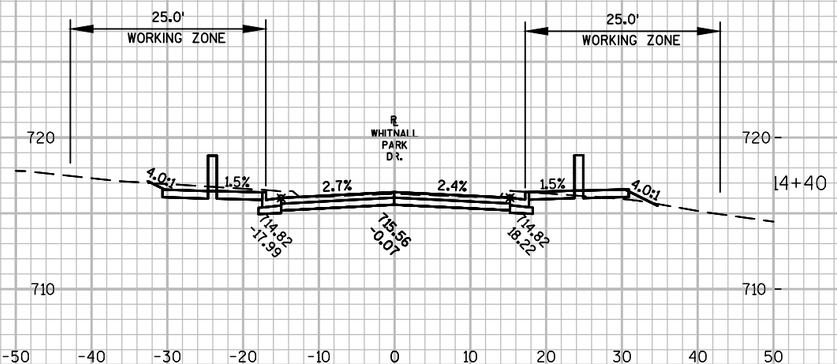
9

| PROJECT NO: 2981-00-72 | HWY: WHITNALL PARK DRIVE | COUNTY: MILWAUKEE COUNTY | EARTHWORK DATA: WHITNALL PARK DR. | SHEET 50 | E |
|---|---|---|---|---|---|



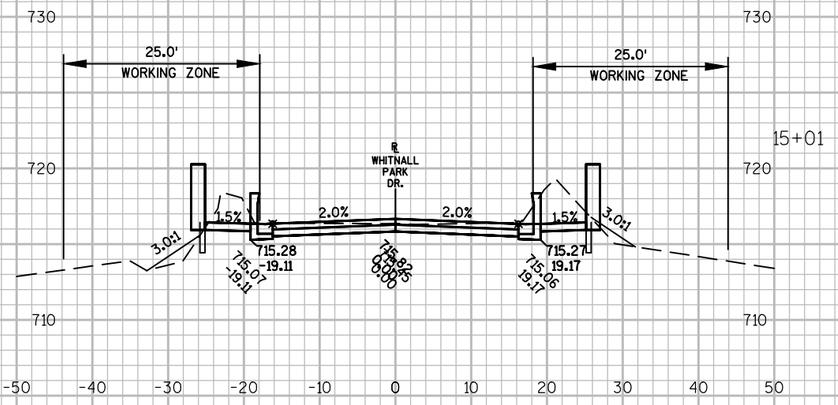



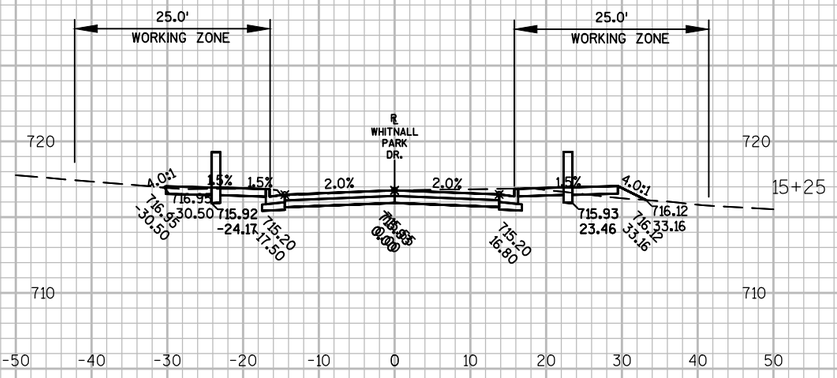

BEGIN PROJECT
STA 14+15.00

10 FT
20 FT

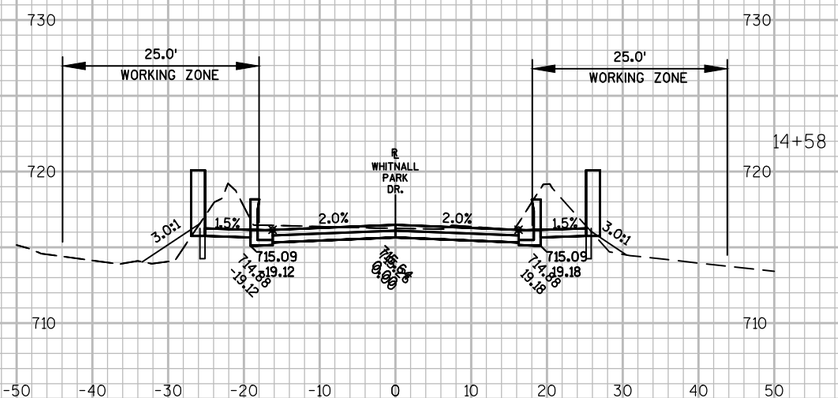
| PROJECT NO: 2981-00-72 | HWY: WHITNALL PARK DRIVE | COUNTY: MILWAUKEE COUNTY | CROSS SECTIONS: WHITNALL PARK DR. | SHEET 51 | E |
|---|---|---|---|---|---|

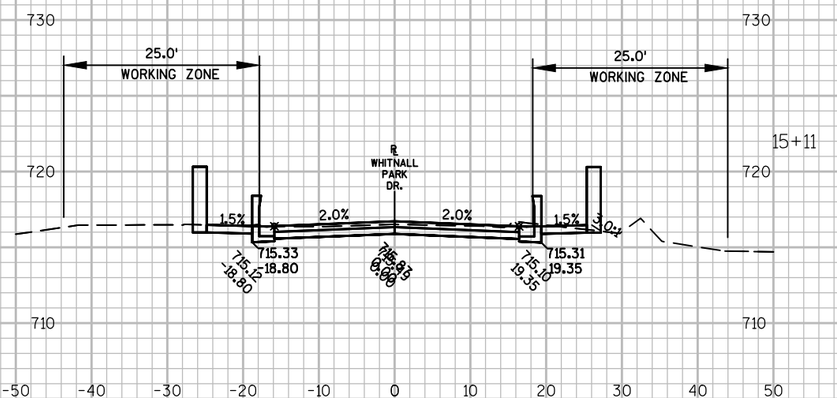
FILE NAME : P:\8461 WHITNALL PARK DRIVE BRIDGE P-40-0721\TRANSPORTATION\CADD\WHITNALL PARK\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - SECTION SHEET - (17)
PLOT DATE : 12/18/2015 4:27 PM PLOT BY : MOAZ KHAN PLOT NAME : PLOT SCALE : 1 IN:20 FT

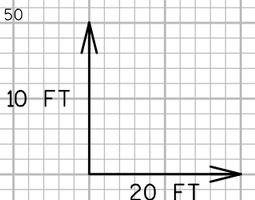


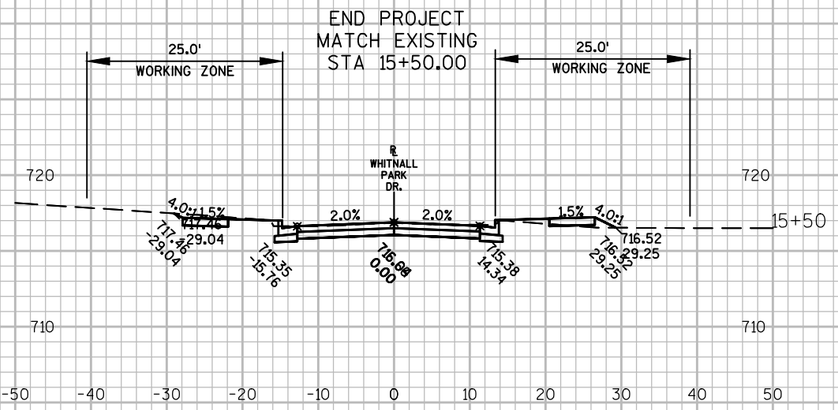

STRUCTURE B-40-540
STA 14+58.07 - 15+00.58

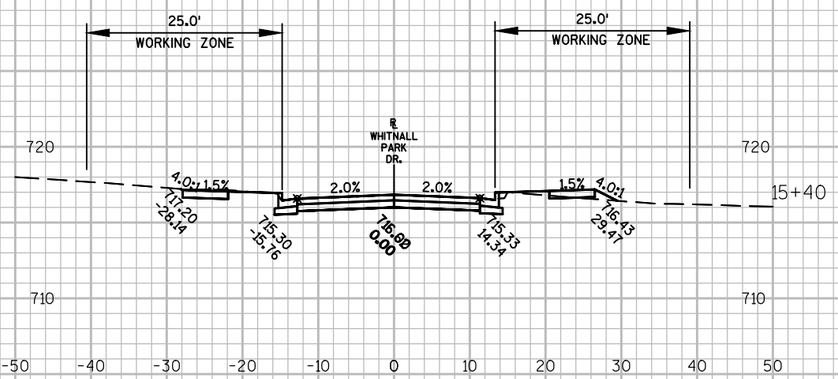


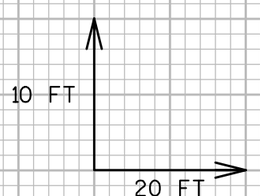




| PROJECT NO: 2981-00-72 | HWY: WHITNALL PARK DRIVE | COUNTY: MILWAUKEE COUNTY | CROSS SECTIONS: WHITNALL PARK DR. | SHEET 52 | E |
|---|---|---|---|---|---|




9

9

| PROJECT NO: 2981-00-72 | HWY: WHITNALL PARK DRIVE | COUNTY: MILWAUKEE COUNTY | CROSS SECTIONS: WHITNALL PARK DR. | SHEET 53 | E |
|---|---|---|---|---|---|

FILE NAME : P:\8461 WHITNALL PARK DRIVE BRIDGE P-40-0721\TRANSPORTATION\CADD\WHITNALL PARK\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - SECTION SHEET - (19)

PLOT DATE : 11/2/2015 10:37 AM PLOT BY : NICHOLAS DECENT PLOT NAME : PLOT SCALE : 1 IN:20 FT

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