WKE

MARCH 2019

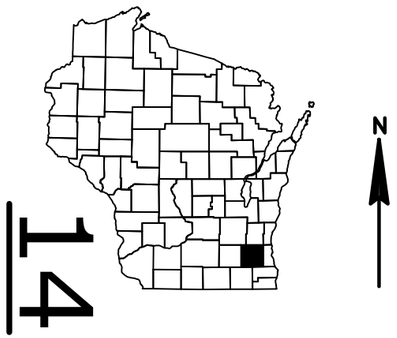
PROJECT ID: 1060-62-70

COUNTY: WAUKESHA

ORDER OF SHEETS



TOTAL SHEETS = 108



N

14

DESIGN DESIGNATION

| | | |
|---|---|---|
| A.A.D.T. | N/A | = N/A |
| A.A.D.T. | N/A | = N/A |
| D.H.V. | | = N/A |
| D.D. | | = N/A |
| T. | | = N/A |
| DESIGN SPEED | | = N/A |
| ESALS | | = N/A |

CONVENTIONAL SYMBOLS

PLAN

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

PROFILE

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

# STATE OF WISCONSIN
# DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

# EAST WEST FREEWAY

**GRANDVIEW BOULEVARD SALT SHED**

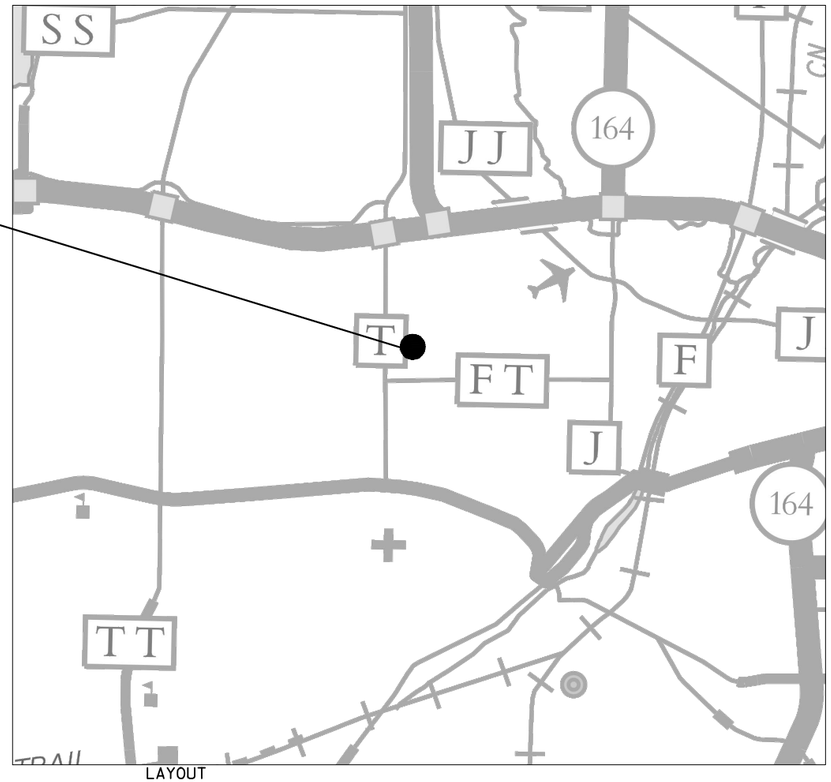
## IH-94

WAUKESHA COUNTY

| STATE PROJECT NUMBER |
|---|
| 1060-62-70 |

| STATE PROJECT | FEDERAL PROJECT | |
|---|---|---|
| | PROJECT | CONTRACT |
| 1060-62-70 | ——— | ——— |
| | | |
| | | |
| | | |

BEGIN PROJECT 1060-62-70
END PROJECT
X = 677,002.80
Y = 169,193.86




LAYOUT

SCALE 0 1 MILE

TOTAL NET LENGTH OF CENTERLINE = 0.000

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, WAUKESHA COUNTY, NAD83(2011), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES. ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO THE NAVD 88(2012)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

| | |
|---|---|
| Surveyor | KAPUR & ASSOC. |
| Designer | GARY STARK |
| Project Manager | NGUYEN LY |
| Regional Examiner | STEVE CHOJNACKI |
| Regional Supervisor | BENEDICT ERUCHALU |

APPROVED FOR THE DEPARTMENT

DATE: January 31, 2018 (Signature)

E

2

## GENERAL NOTES

NO TREES OR SHRUBS ARE TO BE REMOVED WITHOUT APPROVAL OF THE ENGINEER.

ALL LAYOUT DATA IS REFERENCED TO THE R/L UNLESS OTHERWISE NOTED.

THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.

THE CONTRACTOR WILL COORDINATE CONSTRUCTION ACTIVITIES WITH A CALL TO DIGGERS HOTLINE AND/OR A CALL TO THE UTILITIES THAT HAVE INSTALLATIONS WITHIN THE PROJECT AREA.

EROSION CONTROL DEVICES ARE AT SUGGESTED LOCATIONS AS SHOWN ON PLAN DETAILS. ACTUAL LOCATIONS WILL BE DETERMINED BY THE CONTRACTORS ECIP AND BY THE ENGINEER. EROSION CONTROL DEVICES SHALL BE MAINTAINED UNTIL PERMANENT VEGETATION IS ESTABLISHED OR UNTIL THE ENGINEER DETERMINES THAT THE DEVICE IS NO LONGER REQUIRED.

RE-TOPSOILING OF ALL DISTURBED AREAS SHALL BE DONE IMMEDIATELY AFTER GRADING IS COMPLETED WITHIN THOSE AREAS. FERTILIZE, SEED AND MULCH ALL TOPSOILED AREAS WITHIN 5 WORKING DAYS AFTER PLACEMENT OF THE TOPSOIL. ANY OR ALL AREAS LEFT EXPOSED FOR MORE THAN 24 HOURS, REQUIRE, TEMPORARY SEED AND MULCH.

STOCKPILE EXCESS MATERIAL OR SPOILS ON UPLAND AREAS AWAY FROM WETLANDS, FLOODPLAINS, AND WATERWAYS. STOCKPILED SOIL SHALL BE PROTECTED AGAINST EROSION. IF STOCKPILED MATERIAL IS LEFT FOR MORE THAN 7 CALENDAR DAYS, SEED THE STOCKPILE WITH TEMPORARY SEED AND MULCH AT CONTRACTORS COST.

A SAWED JOINT IS REQUIRED WHERE NEW HMA PAVEMENT MEETS EXISTING HMA PAVEMENT.

THE CONTRACTOR IS RESPONSIBLE FOR RESHAPING AND FINISHING ANY PREVISOULSY GRASSED AREAS WHICH ARE DISTURBED BY THEIR OPERATION OUTISDE THE NORMAL CONSTRUCTION LIMITS.

WHEN PERFORMING ROADWAY CLEANING, THE CONTRACTOR SHALL USE EQUIPMENT HAVING VACUUM OR WATER SPRAY MECHANISM TO ELIMINATE THE DISPERSION OF DUST. IF VACUUM IS UTILIZED, IT SHALL HAVE SUITABLE SELF-CONTAINED PARTICULATE COLLECTORS TO PREVENT DISCHARGE FROM THE COLLECTION BIN INTO ATMOSPHERE.

## ORDER OF SECTION 2 DETAIL SHEETS



## HMA PAVING LAYER DEPTHS

DRIVEWAY LIMITS -

UPPER LAYER - 2 INCHES OF HMA PAVEMENT 4 MT 58-28 S

LOWER LAYER - 4 INCHES OF HMA PAVEMENT 3 MT 58-28 S

SALT SHED FLOOR LIMITS -

4 INCHES OF ASPHALTIC SURFACE

2

## UTILITY CONTACTS

DAN SANDE
WE ENERGIES - ELECTRIC
333 W. EVERETT ST - A299
MILWAUKEE, WI 53203
(414) 221-5617
DAN.SANDE@WE-ENERGIES.COM

KELLY ZYLSTRA
WAUKESHA WATER UTILITY
PO BOX 1648
WAUKESHA , WI 53187-1648
(262) 521-5272 EXT 536
CONTACTUS@WAUKESHA-WATER.COM

STEVE CRAMER
TW CABLE ENGINEERING
1320 N MARTIN LUTHER KING DR
MILWAUKEE, WI 53212
(414) 277-4045
WIS.ENGINEERING@TWCABLE.COM

NETWORK RELOCATIONS
LEVEL 3 COMMUNICATIONS
1025 ELDORADO BLVD
BROOMFIELD, CO 80021
(720) 888-0336
LEVEL3.NETWORKRELOCATIONS@LEVEL3.COM

ALPER KOLCU
AT&T WISCONSIN
2005 PEWAUKEE ROAD
WAUKESHA, WI 53188
(262) 970-8494
AK308@ATT.COM

DAN SANDE
WE ENERGIES - GAS
333 W. EVERETT ST - A299
MILWAUKEE, WI 53203
(414) 221-5617
DAN.SANDE@WE-ENERGIES.COM

MIKE OLSEN
ATC MANAGEMENT INC
801 O'KEEFE ROAD
PO BOX 6113
DEPERE, WI 53188
(920) 338-6582
MOLSEN@ATCLLC.COM

## AGENCY CONTACTS

CRAIG WEBSTER
WDNR
1471 NW BARSTOW ST
WAUKESHA, WI 53187-0798
(262) 574-2141
CRAIG.WEBSTER@WI.GOV

NGUYEN LY
WISDOT - PROJECT MANAGER
141 NW BARSTOW ST
PO BOX 798
WAUKESHA, WI 53187-0798
(262) 548-8739
NGUYEN.LY@DOT.WI.GOV

GARY STARK
WISDOT - DESIGNER
141 NW BARSTOW ST
PO BOX 798
WAUKESHA, WI 53187-0798
(262) 548-8761
GARY.STARK@DOT.WI.GOV

GARY EVANS
WAUKESHA COUNTY DPW - ENGINEERING
1320 PEWAUKEE ROAD ROOM 220
WAUKESHA, WI 53188
(262) 548-7740
GEVANS@WAUKESHACOUNTY.GOV

ALLISON BUSSLER
WAUKESHA COUNTY DPW DIRECTOR
515 W MORELAND ROAD
WAUKESHA, WI 53188
(262) 548-7740
ABUSSLER@WAUKESHACOUNTY.GOV

BOB RAUCHLE
WAUKESHA COUNTY - HIGHWAY OPERATIONS
1641 WOODBURN ROAD
WAUKESHA, WI 53188
(262) 896-8000
BRAUCHLE@WAUKESHACOUNTY.GOV

KURT STANICH
WAUKESHA COUNTY AIRPORT
2525 AVIATION DRIVE
WAUKESHA, WI 53188
(262) 521-5249
KSTANICH@WAUKESHACOUNTY.GOV

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

2

2

N

IH-94

GOLF RD

IH-94

SILVERNAIL RD

BLUEMOUND RD / CTH JJ

CTH TT

WOODBURN RD

PROJECT LOCATION

CTH J

NORTHVIEW RD

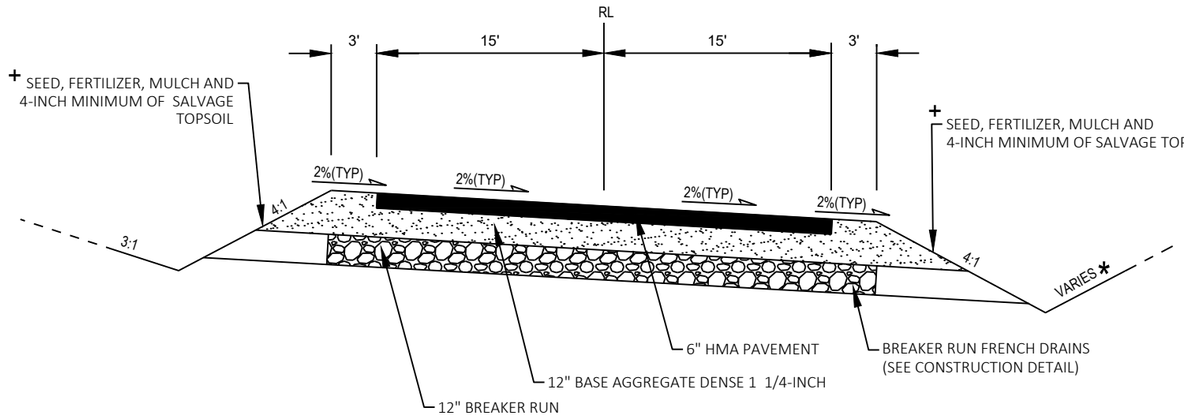
CTH FT

N GRANDVIEW BLVD / CTH T

DELAFIELD ST

| PROJECT NO: 1060-62-70 | HWY: IH-94 | COUNTY: WAUKESHA | PROJECT OVERVIEW | SHEET 4 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\10606200\SHEETSPLAN\020201_PO.DWG
LAYOUT NAME - 01_po
PLOT DATE : 9/14/2017 2:52 PM
PLOT BY : SCHMIDT, JUDENE M
PLOT NAME :
PLOT SCALE : Custom
WISDOT/CADDS SHEET 42

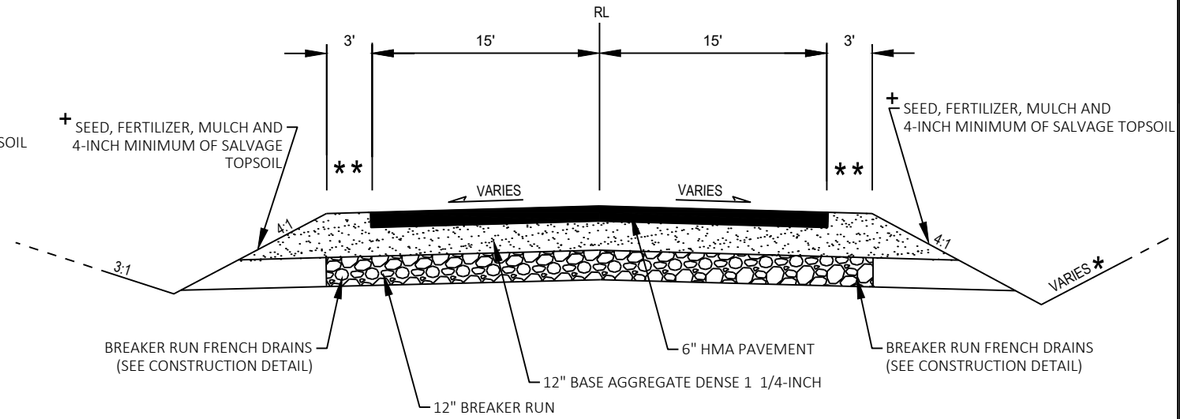



## FINISHED TYPICAL SECTION
## ASPHALT DRIVEWAY RL

STA 4+31 TO STA 7+77

* SEE DETENTION POND DETAILS - STA 4+54 TO STA 6+60 RT

\+ USE EROSION MAT CLASS II TYPE B FOR SLOPES GREATER THAN 4:1



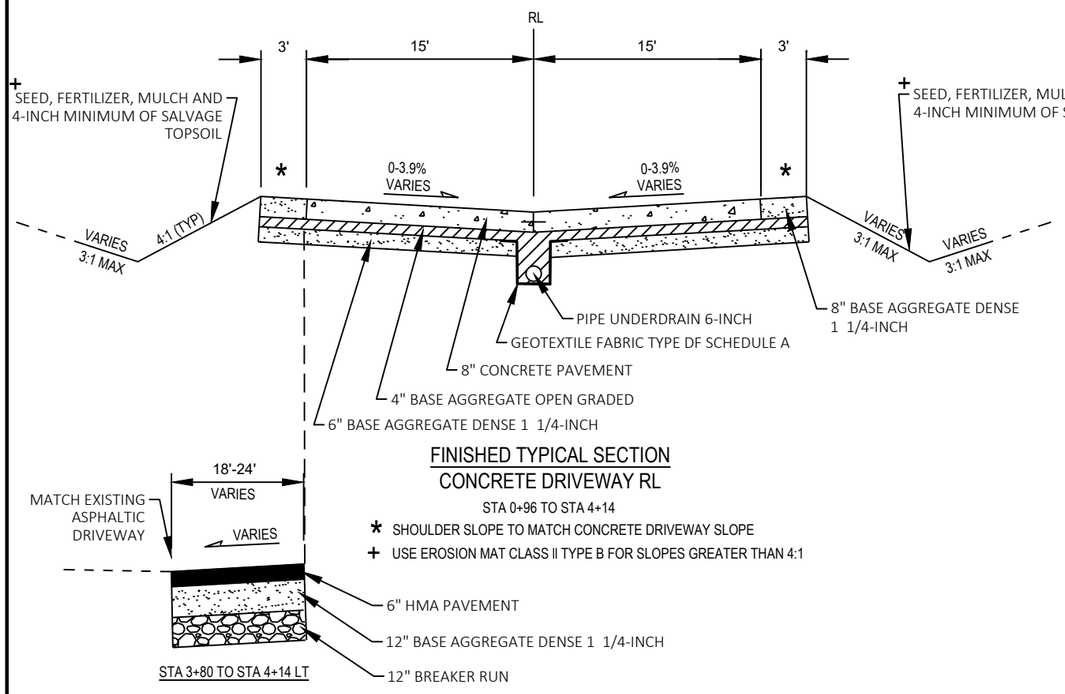

## FINISHED TYPICAL SECTION
## ASPHALT EAST DRIVEWAY RL

STA 0+15 TO STA 0+65

* SEE DETENTION POND DETAILS

** SHOULDER SLOPE TO MATCH HMA PAVEMENT SLOPE

\+ USE EROSION MAT CLASS II TYPE B FOR SLOPES GREATER THAN 4:1

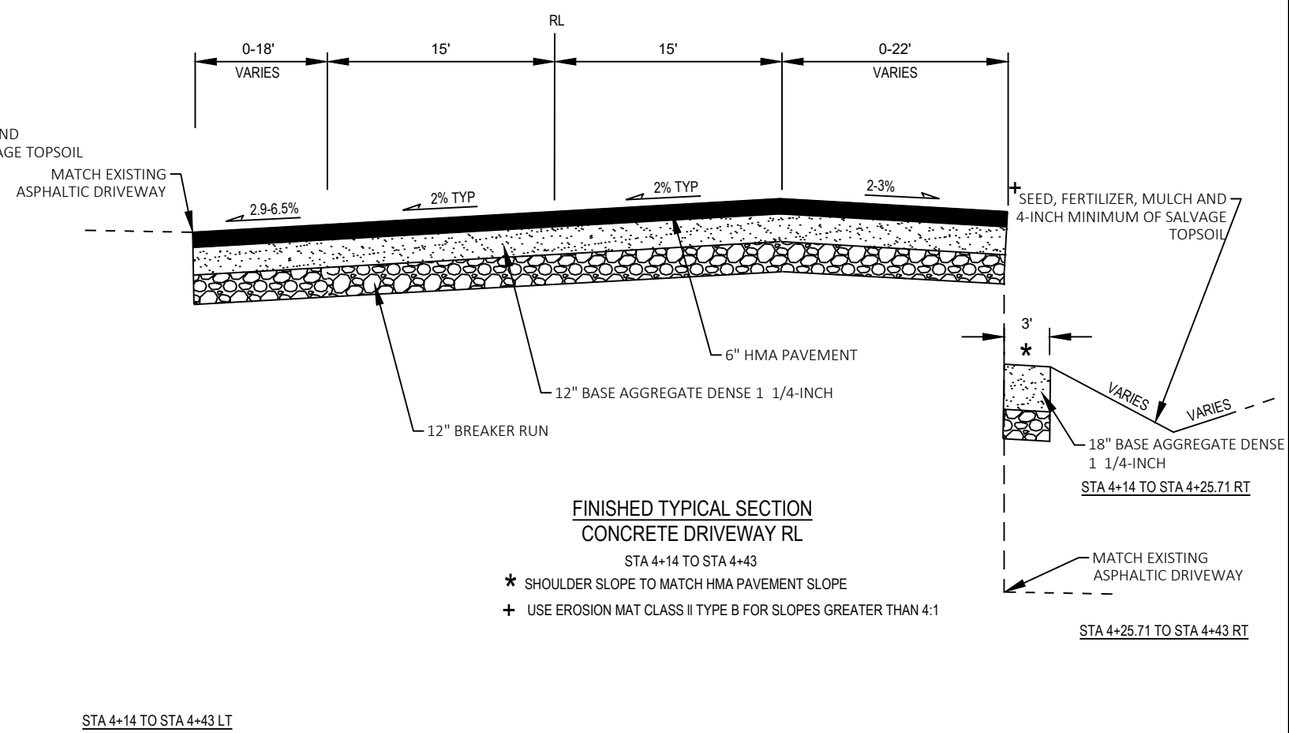



## FINISHED TYPICAL SECTION
## CONCRETE DRIVEWAY RL

STA 0+96 TO STA 4+14

* SHOULDER SLOPE TO MATCH CONCRETE DRIVEWAY SLOPE

\+ USE EROSION MAT CLASS II TYPE B FOR SLOPES GREATER THAN 4:1



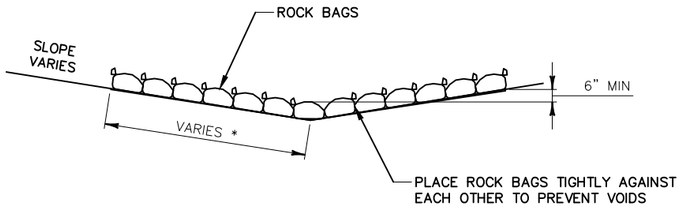

## FINISHED TYPICAL SECTION
## CONCRETE DRIVEWAY RL

STA 4+14 TO STA 4+43

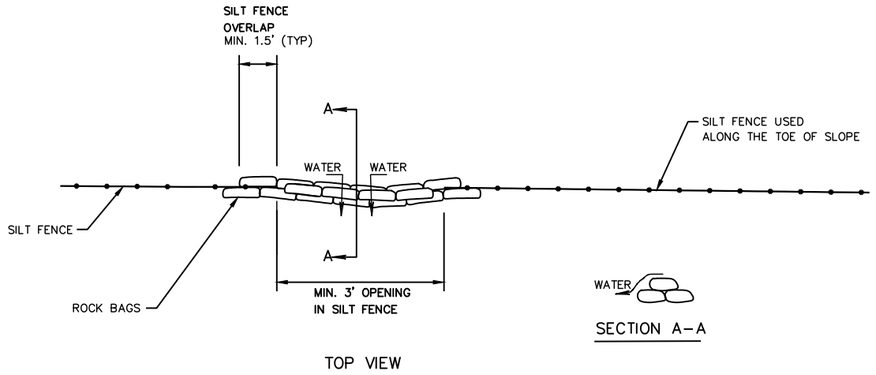
* SHOULDER SLOPE TO MATCH HMA PAVEMENT SLOPE

\+ USE EROSION MAT CLASS II TYPE B FOR SLOPES GREATER THAN 4:1

| PROJECT NO: 1060-62-70 | HWY: IH-94 | COUNTY: WAUKESHA | TYPICAL SECTION | SHEET 5 | E |
|---|---|---|---|---|---|

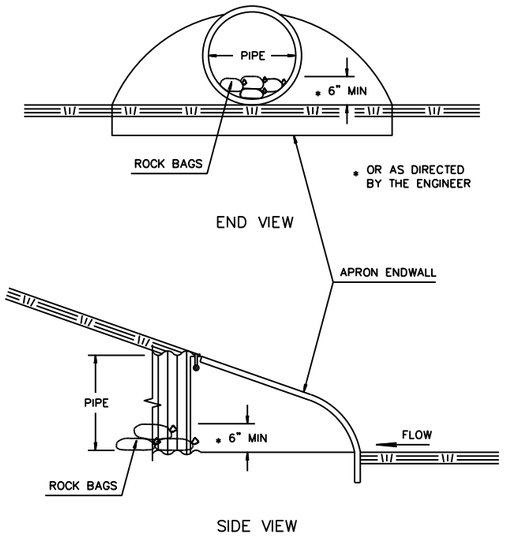



SIDE VIEW (SINGLE LAYER)

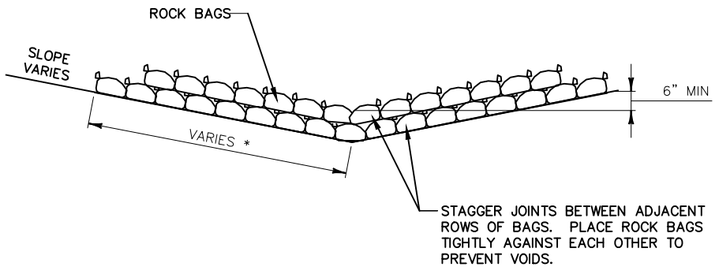



TOP VIEW

ROCK BAGS USED FOR SILT FENCE RELIEF POINT




ROCK BAGS USED FOR CULVERT PIPE CHECKS,

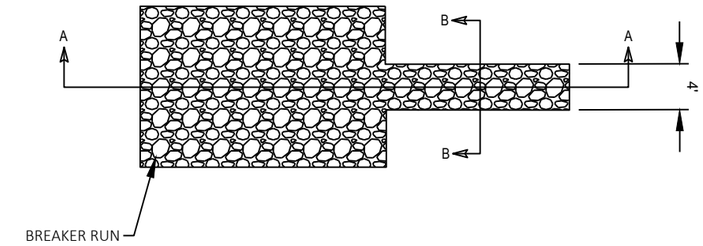



* LENGTH AND NUMBER OF BAGS MAY VARY DEPENDING ON DESIRED DEPTH OF WATER POOL.

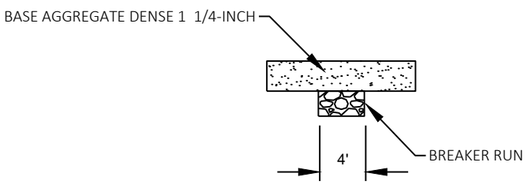
SIDE VIEW (DOUBLE LAYER)

ROCK BAGS USED FOR DITCH CHECKS,

| ESTIMATED BAG SIZE =18" X 12" X 6" | |
|---|---|
| PIPE SIZE | ESTIMATED NUMBER OF BAGS |
| 12" | 1 |
| 15" | 2 |
| 18" | 2 |
| 24" | 3 |
| 30" | 5 |
| 36" | 7 |
| 42" | 7 |
| 48" | 10 |
| 54" | 10 |
| 60" | 13 |
| 66" | 14 |
| 72" | 16 |
| 17"X13" | 2 |
| 30"X19" | 5 |
| 38"X24" | 7 |
| 45"X29" | 10 |
| 53"X34" | 10 |
| 60"X38" | 13 |
| 76"X48" | 18 |
| 27' WIDE BOX CULVERT | 36 |




SECTION A-A

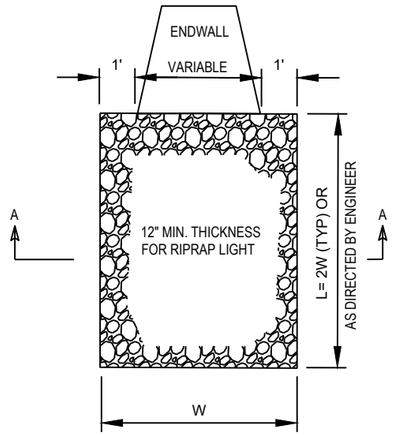


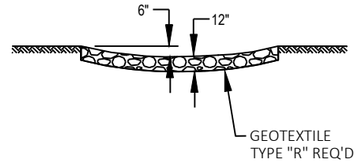

SECTION B-B

## FRENCH DRAIN DETAIL

CONSTRUCT ALONG ASPHALT DRIVEWAY STA 4+31 TO STA 7+77 RT AND AT 7+75 LT.
ASPHALT EAST DRIVEWAY STA 0+15 TO 0+65 RT
LOCATIONS DETERMINED IN THE FIELD BY THE ENGINEER (200' TYPICAL)

EXCAVATION REQUIRED TO CONSTRUCT FRENCH DRAINS SHALL BE CONSIDERED INCIDENTAL TO THE ITEM BREAKER RUN.




SECTION A-A

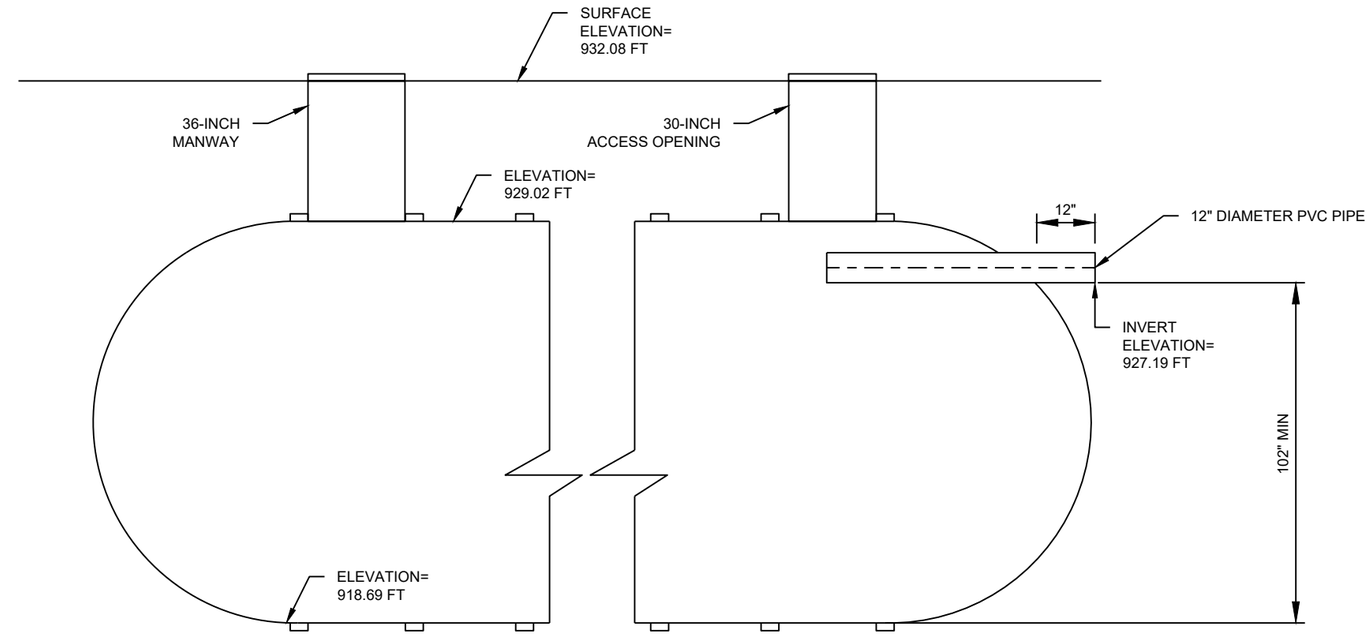
## RIPRAP LIGHT TREATMENT AT CULVERTS

SEE EROSION CONTROL PLAN FOR LOCATIONS

RIPRAP ELEVATION TO BE LOWER THAN PIPE OUTFALL FLOWLINE

2

N

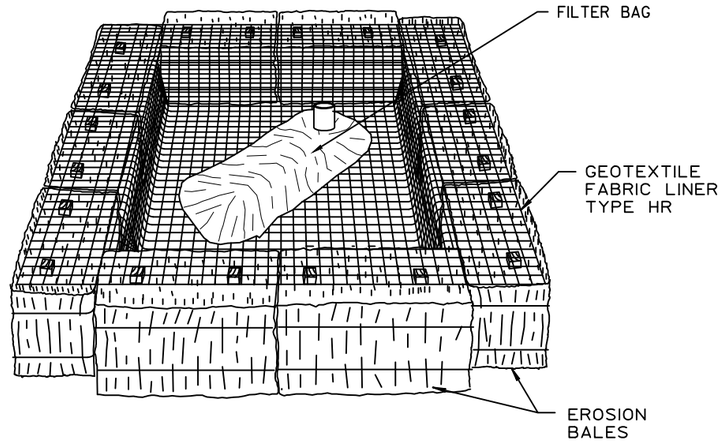



## UNDERGROUND DETENTION WASTEWATER TANK

ELEVATION DETAIL

NOTE

COORDINATE AND INSTALL BRINE FACILITY
DRAIN OUTFALL INTO TANK.




NOTES

ALL REQUIRED ITEMS ARE INCIDENTAL TO CONTRACT

## TEMPORARY SETTLING BASIN

(SIZE TO BE DETERMINED IN FIELD AS INDICATED BELOW:)

STORAGE VOLUME ( C.F.) = 16 X GPM (PUMP RATE)

EXAMPLE:

CONTRACTOR INDICATES PUMP CAPABLE OF 50 GPM
HEIGHT OF BALES = 1.5 FT.

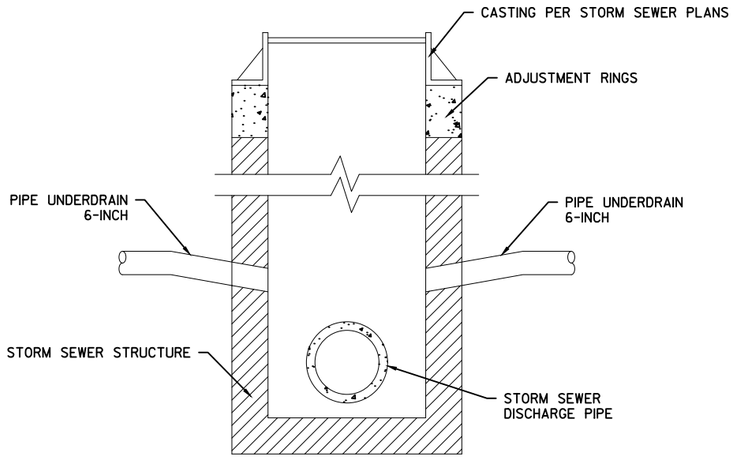
SOLUTION:

SV ( C.F.) = 16 X 50

SV = 800 C.F.

$\frac{800 \text{ C.F.}}{1.5 \text{ FT.}} = 533$ S.F.

USE A 20 FT. X 27 FT. BASIN

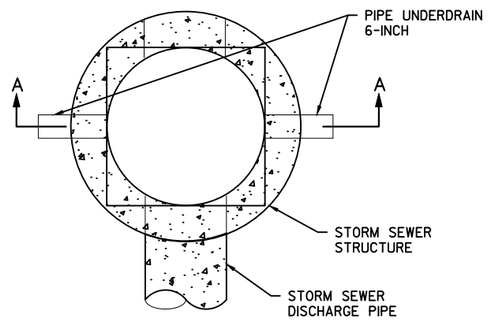



SECTION A-A

TYPICAL INLET CONFIGURATION
WITH UNDERDRDAIN CORED INTO WALL

NOTES

(1) TYPICAL ELEVATION OF PIPE UNDERDRAIN 6-INCH SHALL BE PLACED BELOW THE BASE AGGREGATE OPEN GRADED MATERIAL.




PLAN VIEW

PIPE UNDERDRAIN 6-INCH OUTFALL AT INLET/MANHOLE

STRUCTURE: STA 2+88, 0' LT/RT

NOTES

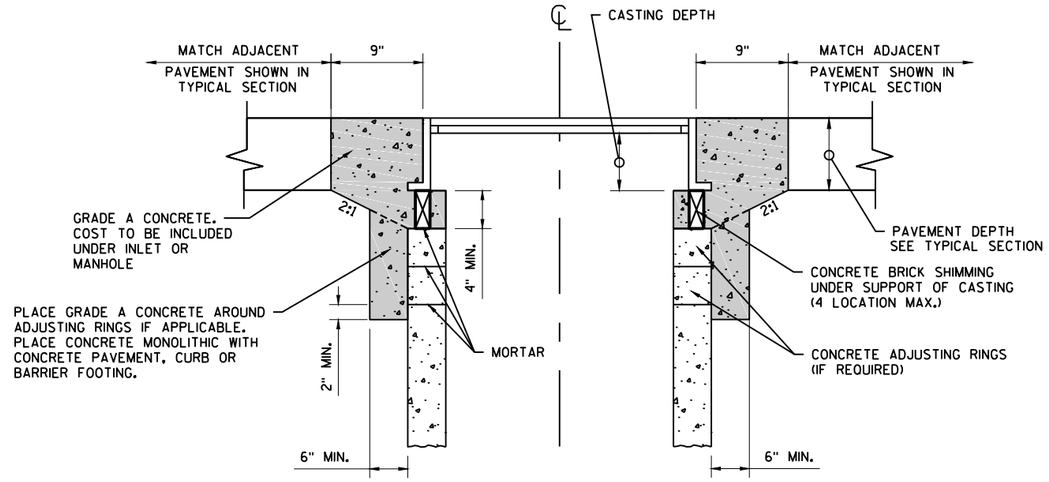
CONNECTIONS TO INLETS OR MANHOLES SHALL EXTEND PIPE UNDERDRAIN 6-INCH TO THE INSIDE WALL OF STORM SEWER STRUCTURE.

PROVIDE POSITIVE DRAINAGE (0.5% MINIMUM GRADE) THROUGH PIPE UNDERDRAIN 6-INCH AND CORE INTO STORM SEWER STRUCTURE.

WHEN INLET DEPTH IS SHALLOW, PIPE UNDERDRAIN 6-INCH MAY BE PLACED AT A DEPTH TO PROVIDE POSITIVE DRAINAGE TO BE COORDINATED WITH THE ENGINEER IN THE FIELD.

ATTACHMENT OF PIPE UNDERDRAIN 6-INCH TO REAR INLET IS SATISFACTORY IF REINFORCED CONCRETE STORM SEWER PIPE SIZE RESTRICTS SPACE FOR UNDERDRAIN CORE.

ALL WORK REQUIRED IS INCIDENTAL TO PIPE UNDERDRAIN 6-INCH ITEM.




NOTES

PROVIDE MONOLITHIC CONCRETE SHIMMING FOR FINAL ADJUSTMENT OF DRAINAGE STRUCTURES LOCATED WITHIN THE ROADWAY CONCRETE OR ASPHALIC PAVEMENT.

MONOLITHIC CONCRETE

MONOLITHIC CONCRETE SHIMMING DETAIL

STRUCTURE

STA 2+88, 0' LT
STA 3+00, 0' LT
*STA 3+94.66, 23.5' LT

* TEMPORARY COVER PLATE REQUIRED, ADJUST TO FINAL ELEVATION AFTER ASPHALT PAVING

18-IN RCCP
100' @ 0.3%
(INVERT EL. 925.45')

12-IN RCCP
112' @ 0.3%
(INVERT EL. 923.66')

18-IN RCCP
100' @ 0.3%
(INVERT EL. 925.75')

12-IN RCCP
112' @ 0.3%
(INVERT EL. 924.00')

FILTER STRIP

52'

SAND FOREBAY

13'

TOP OF BERM
(EL. 928.50')

DRY DETENTION BASIN

PIPE OUTLET
(INVERT EL. 924.53')

12-IN PIPE UNDERDRAIN UNPERFORATED
22' @ 0.3%

12-IN SSPRC
37' @ 1.0%
(INVERT EL. 928.35')

12-IN PIPE UNDERDRAIN
UNWRAPPED PERFORATED
48' @ 0.5%

EXISTING
DRIVEWAY EDGE

BP: 0+00.00

EP: 1+25.90

103'

127'

62'

96'

-0.50%

924.571
924.598
924.419
924.266
924.080
924.000
924.531
924.625
924.655
924.514
924.374
924.258
924.129

1+00
2+00
5+00
6+00
7+00

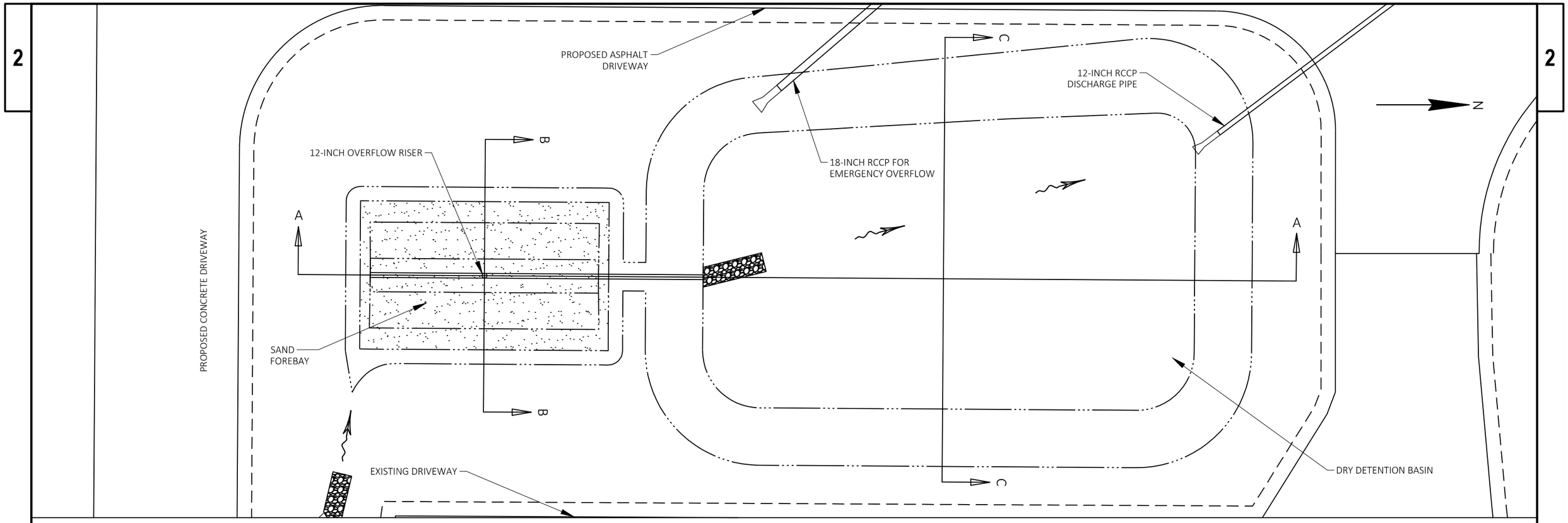
N

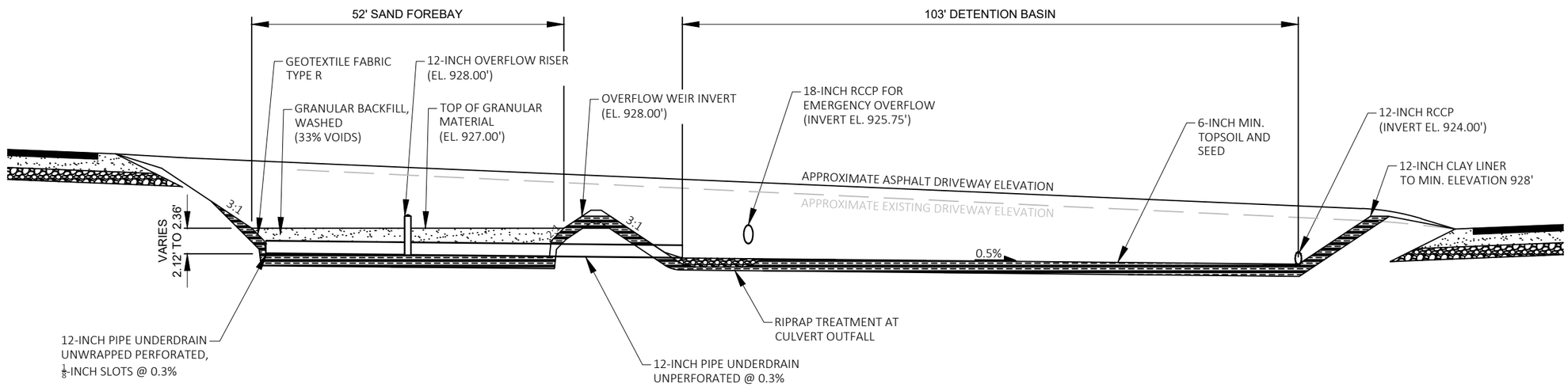
| PROJECT NO: 1060-62-70 | HWY: GRANDVIEW BLVD SALT SHED | COUNTY: WAUKESHA | PLAN: DETENTION POND DETAILS | SHEET 11 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\10606200\DESIGN\SW\10606200_POND.DWG
LAYOUT NAME - 01

PLOT DATE : 1/31/2018 3:42 PM PLOT BY : SAUNDERSON, ELIZABET PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 42




SECTION A-A: SAND FOREBAY AND DRY DETENTION BASIN

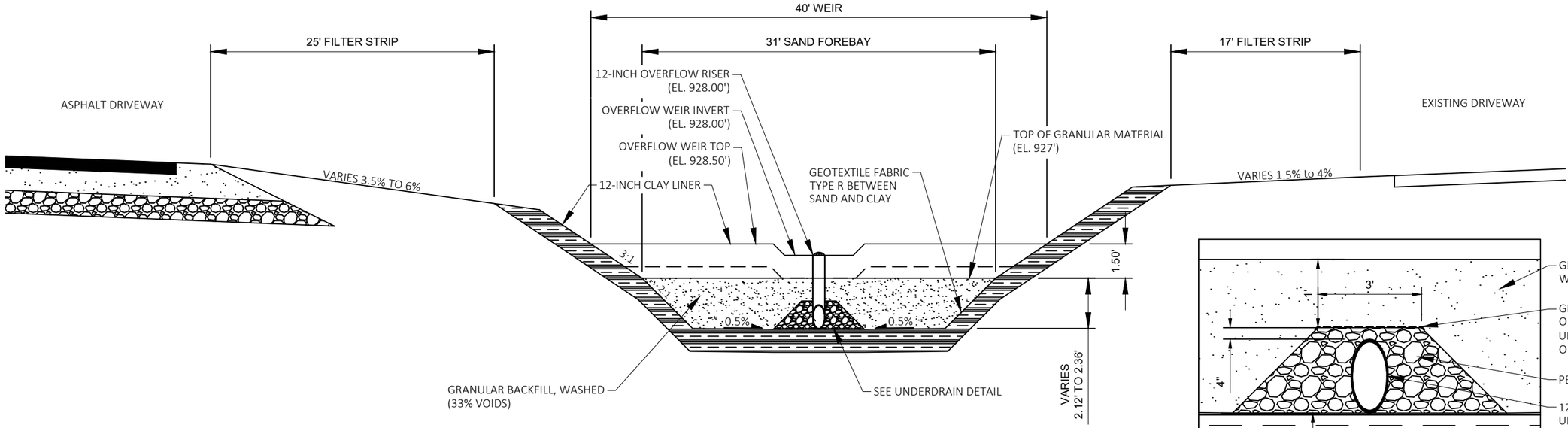
| PROJECT NO: 1060-62-70 | HWY: GRANDVIEW BLVD SALT SHED | COUNTY: WAUKESHA | PLAN: DETENTION POND DETAILS | SHEET 12 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\10606200\DESIGN\SW\10606200_PONDSHEETS.DWG
LAYOUT NAME - 01

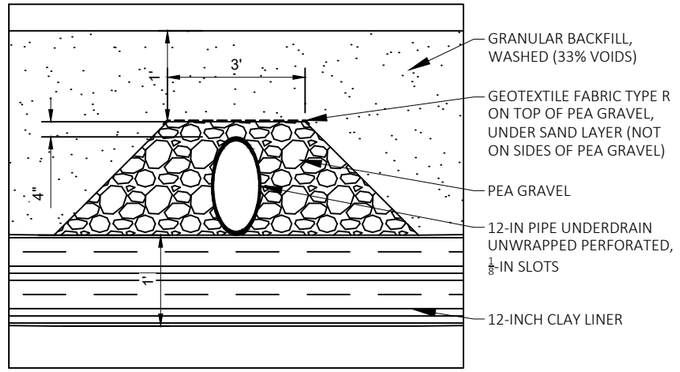
PLOT DATE : 3/19/2018 4:23 PM PLOT BY : SAUNDERSON, ELIZABET PLOT NAME : PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 42

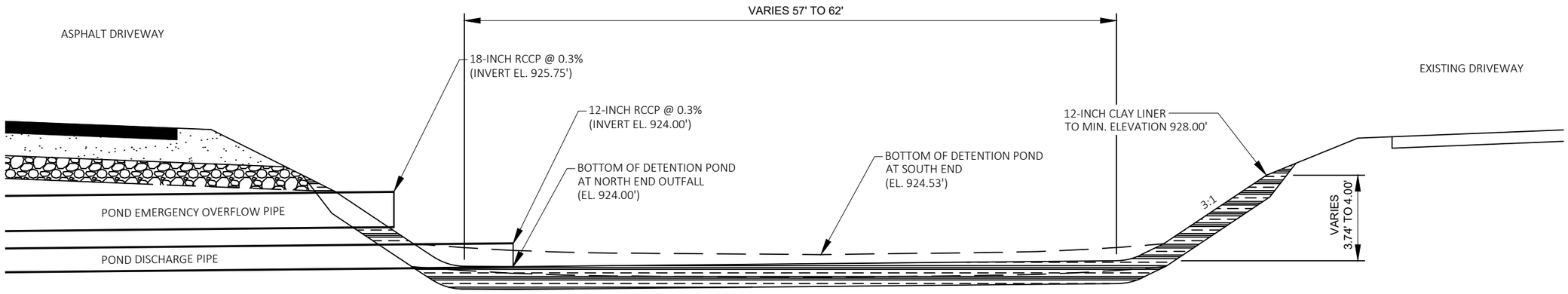
2




SECTION B-B: SAND FOREBAY




UNDERDRAIN DETAIL




SECTION C-C: DRY DETENTION BASIN

| PROJECT NO: 1060-62-70 | HWY: GRANDVIEW BLVD SALT SHED | COUNTY: WAUKESHA | PLAN: DETENTION POND DETAILS | SHEET 13 | E |
|---|---|---|---|---|---|

2

N

BP:
STA 0+39.67

SI

937.00

931.75

STA 0+96

929.00

928.03

928.27

OUTFALL=
925.45

1-18-INCH RCCP

12-INCH RCCP

OUTFALL=
923.66

922.27

STA 7+77

ASPHALTIC
DRIVEWAY RL

DETAIL
A

1+00

2+00

3+00

4+00

5+00

6+00

7+00

8+00

15'

15'

SALT SHED

CONCRETE
DRIVEWAY RL

BP:
STA 0+94

DETAIL
B

INVERT=
925.75

INVERT=
924.00

EP:
STA 8+49.64

922.53

922.75

923.00

936.85

ASPHALTIC SURFACE

2+00

15'

15'

XSECTION
MATCH LINE

SEE
DETENTION
POND
DETAIL
SHEETS

STA 0+65

923.80

935.55

BRINE
FACILITY

DETAIL
C

1+00

925.90

EP:
STA 1+12

ASPHALTIC EAST
DRIVEWAY RL

P-2

OUTFALL=
928.35

SI

931.75

STORAGE TANK

P-1

3+00

CONCRETE DRIVEWAY UNDERDRAIN
TO OUTFALL INTO INLET

3 FT
DIAMETER
INLETS

REMOVING SMALL
CULVERT PIPE

OUTFALL=
929.06

18-INCH RCCP

929.50

931.50

INVERT=
929.50

EXISTING CULVERT PIPE TO REMAIN

P-4

4FT
DIAMETER
INLET

4+00

INVERT=
930.00

P-3

XSECTION
MATCH LINE

18" SSPRC
CLASS IV

5+00

EP:
STA 4+43

SCALE

930.75

REMOVE 3 CONCRETE WALLS
BY WAUKESHA COUNTY
PRIOR TO CONSTRUCTION

STA 1+06.50,
16' RT

DETAIL A

STA 1+86.50,
16' RT

DETAIL B

STA 2+59.50,
15' RT

DETAIL C

LEGEND

XXX XXX SAW CUT

X CLEARING AND GRUBBING

FLOW ARROW

NOTE:

SAW CUT LOCATIONS TO BE VERIFIED
BY ENGINEER IN FIELD.

SALT SHED AND BRINE BUILDING
FLOOR ELEVATION =933.00

| PROJECT NO: 1060-62-70 | HWY: IH-94 | COUNTY: WAUKESHA | PLAN DETAIL | SHEET 14 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\10606200\SHEETSPLAN\021201_PD.DWG
LAYOUT NAME - 01_PD

PLOT DATE : 1/31/2018 11:06 AM PLOT BY : STARK, GARY W PLOT NAME : PLOT SCALE : 1 IN:50 FT

WISDOT/CADDS SHEET 42

2

N

BP:
STA 0+39.67

SI

STA 0+96
933.00

ASPHALTIC
DRIVEWAY RL

1+00 2+00 3+00 4+00

SALT SHED

BP:
STA 0+94

CONCRETE
DRIVEWAY RL

933.00 933.00 933.00 933.00 933.00 933.00 933.00 933.00 933.00 933.00

932.81 932.63 932.45 932.59 932.75 932.45 932.37 932.63 932.37 932.71

935.67

932.50 932.50 932.50

932.57 933.00 933.00 933.00 932.75

BRINE
FACILITY

932.60 932.73

STORAGE TANK

932.53
(LP)

SI

XSECTION
MATCH LINE

932.21

932.42

1+00 2+00 3+00 4+00 5+00

933.00 932.21 929.31 926.55 925.79 STA 7+77

2% 2%

932.41 931.61 928.71 925.95 925.32

EP:
STA 8+49.64

927.44 927.01

926.76 926.63

STA 0+65

XSECTION
MATCH LINE

SEE
DETENTION
POND
DETAIL
SHEETS

1+00

EP:
STA 1+12

ASPHALTIC EAST
DRIVEWAY RL

931.50

MATCH EXISTING ASPHALT

932.47

5+00

EP:
STA 4+43
932.78

932.93

932.85

SCALE

MH MH MH VLV

LEGEND

XXX XXX SAW CUT

NOTE

SALT SHED AND BRINE BUILDING
FLOOR ELEVATION =933.00

| PROJECT NO: 1060-62-70 | HWY: IH-94 | COUNTY: WAUKESHA | PAVEMENT GRADES | SHEET 15 | E |
|---|---|---|---|---|---|

2

N

ASPHALTIC DRIVEWAY RL

SALT SHED

CONCRETE DRIVEWAY RL

BRINE FACILITY

STORAGE TANK

SI

SI

SEE DETENTION POND DETAIL SHEETS

ASPHALTIC EAST DRIVEWAY RL

EXISTING CULVERT PIPE TO REMAIN

1+00

2+00

3+00

4+00

5+00

6+00

7+00

8+00

8+49.64

SCALE

LEGEND

- RIPRAP LIGHT (SEE CONSTRUCTION DETAIL)
- WETLAND BOUNDARY
- FLOW ARROW
- CULVERT PIPE CHECK
- INLET PROTECTION, TYPE B
- SILT FENCE
- TEMPORARY DITCH CHECK
- EROSION MAT CLASS II TYPE B
- NORWAY SPRUCE, B & B, 6'-8' HT - 25' SPACING, LOCATION TO BE COORDINATED WITH WAUKESHA COUNTY

| PROJECT NO: 1060-62-70 | HWY: IH-94 | COUNTY: WAUKESHA | EROSION CONTROL | SHEET 16 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\10606200\SHEETSPLAN\022002_EC.DWG
LAYOUT NAME - 01_ec

PLOT DATE : 10/11/2018 3:23 PM PLOT BY : SCHMIDT, JUDENE M PLOT NAME : PLOT SCALE : 1 IN:50 FT

2

MON FENO
ELEV= 917.720
X= 676837.0520
Y= 170309.2070

N

BP: STA 0+39.67
X= 676916.2947
Y= 169559.4881

CONCRETE DWY RL

ASPHALT DWY, STA 4+16.00 =
CONCRETE DWY, STA 1+46.49
X= 677023.1162
Y= 169558.7714

ASPHALT DWY, STA 6+75.00 =
ASPHALT EAST DWY, STA 0+00.00
X= 677024.8306
Y= 169817.7654

2 N0° 22' 45"E 4 6 8

BP:STA 0+94.00
X= 677020.9847
Y= 169236.7781

ASPHALT DWY RL

EP:STA 8+14.50
X= 677025.9866
Y= 169992.4016

N90° 00' 00"E

ASPHALT EAST DWY RL

EP:STA 1+12.00
X= 677136.8306
Y= 169817.7654

2 S89° 36' 56"E

BM 603
X ON N HEX BOLT
UPPER FLANGE
ELEV= 933.34
X= 677278.1840
Y= 169639.1730

CURVE 1

4

6

EP:STA 4+43.00
X= 677310.5220
Y= 169584.8118

BM
X ON HEX BOLT
UPPER FLANGE
ELEV= 919.970
X= 677274.2090
Y= 170381.0850

CURVE 1

PI STA= 4+45.74
X= 677322.3520
Y= 169556.7640
DELTA= 90°23'03.61"
D= 88°08'50.47"
T= 65.437'
L= 102.538'
R= 65.00'
PC STA= 3+80.30
X= 677256.9160
Y= 169557.2030
PT STA= 4+82.84
X= 677322.3520
Y= 169622.2010
BK= S89°36'56.39" E
AH= N 0°00'00" W

BM 602
X ON HEX BOLT
UPPER FLANGE
ELEV= 936.130
X= 677353.4780
Y= 169861.8740

BM 604
X ON HEX BOLT
UPPER FLANGE
ELEV= 936.350
X= 677601.8960
Y= 169522.0860

MON FENO
ELEV= 926.130
X= 677781.2400
Y= 170298.2710

| PROJECT NO: 1060-62-70 | HWY: IH-94 | COUNTY: WAUKESHA | ALIGNMENT LAYOUT | SHEET 17 | E |
|---|---|---|---|---|---|

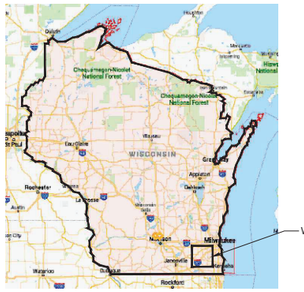
2

# WISCONSIN DEPARTMENT OF TRANSPORTATION

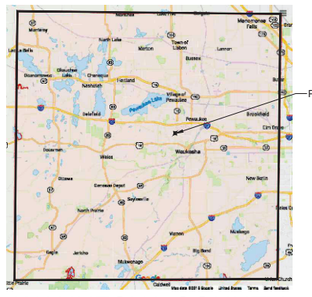
## GRANDVIEW BOULEVARD SALT SHED

### WAUKESHA, WISCONSIN

Project Location




STATE OF WISCONSIN




WAUKESHA COUNTY


WAUKESHA, WI

GRANDVIEW BOULEVARD

SALT SHED

IH-94

WAUKESHA COUNTY

| STATE PROJECT NUMBER |
|---|
| 1060-62-70 |

## SHEET INDEX



WISCONSIN
SCOTT J. GINAL
E-36680
PORT WASHINGTON, WI
PROFESSIONAL ENGINEER
10/24/2018

WISCONSIN
MIKE R. ROLLER
E-24989
HARTLAND, WI
PROFESSIONAL ENGINEER
10/24/2018

WISCONSIN
JOHN S. FRY
D101SE
DESIGNER
10/24/2018

SHEET
G0.00

| PROJECT NO: 1060-62-70 | HWY: GRANDVIEW BOULEVARD | COUNTY: WAUKESHA | COVER SHEET | SHEET 18 | E |
|---|---|---|---|---|---|

FILE NAME : J:\1142720.14\DWG\ARCHITECTURAL-STRUCTURAL\1142720.14-G0.00.DWG PLOT DATE : 10/25/2018 3:40 PM PLOT BY : MCELVAIN, RICK PLOT NAME :

WISDOT/CADDS SHEET 42

GENERAL NOTES:

1. CONTRACTOR SHALL PROVIDE EROSION CONTROL FACILITIES IN ACCORDANCE WITH THE MUNICIPALITY EROSION CONTROL ORDINANCE AND THE WISCONSIN DEPARTMENT OF NATURAL RESOURCES TECHNICAL STANDARDS.

2. THE LOCATIONS OF EXISTING UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UNDERGROUND UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE EXISTENCE AND LOCATION OF ALL UNDERGROUND UTILITIES.

3. R.A. SMITH, INC. ASSUMES NO RESPONSIBILITY FOR DAMAGES, LIABILITY OR COSTS RESULTING FROM CHANGES OR ALTERATIONS MADE TO THIS PLAN WITHOUT THE EXPRESSED WRITTEN CONSENT OF R.A. SMITH, INC.

WATER MAIN NOTES:

1. WATER MAIN SHALL BE PVC DR-14 C-900.

2. WATER MAIN SHALL HAVE GRANULAR BACKFILL WITH MECHANICAL COMPACTION UNLESS OTHERWISE NOTED.

3. WATER MAIN CONSTRUCTION MUST COMPLY WITH THE "SPECIFICATIONS FOR WATER MAIN & SERVICE LATERAL MATERIALS AND THE INSTALLATION OF WATER MAIN & APPURTENANCES FOR WAUKESHA WATER UTILITY, CITY OF WAUKESHA" DATED AUGUST 29, 2014 (REFERRED TO AS "WAUKESHA WATER UTILITY SPECIFICATIONS"). THE WISCONSIN ADMINISTRATIVE CODE AND THE STANDARD SPECIFICATIONS FOR SEWER & WATER CONSTRUCTION IN WISCONSIN ARE INCORPORATED BY REFERENCE.

4. WAUKESHA WATER UTILITY SHALL OPERATE ALL EXISTING VALVES FOR WATER SHUT DOWNS.

5. THE CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF ALL EXISTING UTILITY LOCATIONS. AT A MINIMUM, THE CONTRACTOR IS REQUIRED TO POTHOLE EXISTING UTILITIES AS SHOWN ON THESE PLANS FOR LOCATION & ELEVATION VERIFICATION. ALL POTHOLING SHALL BE COMPLETED AND INFORMATION GIVEN TO THE ENGINEER A MINIMUM OF TWO (2) WEEKS PRIOR TO CONSTRUCTION OF WATER MAIN AT THAT LOCATION, IN CASE WATER MAIN REDESIGN IS NECESSARY.

6. EXCAVATE TRENCHES IN CONFORMITY WITH THE REQUIRED ALIGNMENT AND GRADES AS SHOWN ON THESE PLANS AND AS LAID OUT IN THE FIELD BY THE ENGINEER. IT SHALL BE UNDERSTOOD THAT THE ELEVATIONS FOR WATER MAINS AS SHOWN ON THESE PLANS ARE SUBJECT TO REVISIONS AS MAY BE NECESSARY TO FIT FIELD CONDITIONS. THE ENGINEER RESERVES THE RIGHT TO ADJUST THE GRADES FROM THOSE SHOWN ON THESE PLANS. NO ADJUSTMENT IN COMPENSATION WILL BE MADE FOR GRADE ADJUSTMENTS OF TWO (2) FEET OR LESS ABOVE OR BELOW THE ELEVATIONS SHOWN ON THESE PLANS.

7. PROVIDE ALL SHEETING OR BRACING NEEDED TO PROTECT THE WORK, EXISTING PROPERTY, UTILITIES, PAVEMENT, ETC., AND PROVIDE SAFE WORKING CONDITIONS IN THE TRENCH.

8. WHEN A CONTRACTOR IS WORKING IN AN AREA WHERE EXISTING WATER MAINS OR OTHER UTILITIES ARE PRESENT, ADDITIONAL CARE MUST BE TAKEN TO ENSURE THAT THE EXISTING MAINS ARE PROPERLY AND ADEQUATELY SUPPORTED DURING CONSTRUCTION TO AVOID DAMAGE OR BREAKAGE.

9. A MINIMUM VERTICAL SEPARATION DISTANCE (EDGE TO EDGE) WHERE WATER MAINS CROSS OVER SEWERS SHALL BE 6" AND WHERE WATER MAINS CROSS UNDER SEWERS THE DISTANCE SHALL BE 18". THE MINIMUM HORIZONTAL SEPARATION (CENTER TO CENTER) SHALL BE 8' BETWEEN WATER MAIN AND SANITARY/STORM SEWERS.

10. ALL FITTINGS SHALL BE MECHANICAL JOINT. ALL VALVE JOINTS AND FITTINGS SHALL BE MADE WITH AN APPROVED MEGALUG PER THE WAUKESHA WATER UTILITY SPECIFICATIONS.

11. IN ADDITION TO MECHANICAL JOINT RESTRAINTS, THRUST BLOCKING SHALL BE CONSTRUCTED TO PREVENT MOVEMENT OF LINES UNDER PRESSURE BEHIND ALL BENDS, HYDRANTS, TEES, CAPS, PLUGS AND FITTINGS. THRUST BLOCKING SHALL BE PORTLAND CEMENT CONCRETE, A MINIMUM OF 12" THICK, OR SOLID CONCRETE BLOCKING PLACED BETWEEN THE APPURTENANCE AND THE UNDISTURBED WALL OF THE TRENCH.

12. ANY VALVE NUT THAT NEEDS TO BE PLACED DEEPER THAN SEVEN FEET (7.0') BELOW FINISHED GRADE, THE CONTRACTOR SHALL INSTALL A VALVE EXTENSION ON THE NUT. THE TOP OF THE VALVE NUT EXTENSION SHALL BE BETWEEN 4' AND 6' FROM FINISHED GRADE.

13. A CONTINUOUS TRACER WIRE SHALL BE INSTALLED WITH ALL WATER MAINS AND SERVICES. THE TRACER WIRE SYSTEM MUST PASS A CONDUCTIVITY TEST BEFORE THE WATER MAIN INSTALLATION IS ACCEPTED BY WAUKESHA WATER UTILITY. ALL TRACER WIRE MUST BE GROUNDED.

SHEET
C0.00

| PROJECT NO:1060-62-70 | HWY: GRANDVIEW BOULEVARD | COUNTY: WAUKESHA | UTILITY SITE PLAN-GENERAL NOTES | SHEET 19 | E |
|---|---|---|---|---|---|

2

PROPOSED GAS SERVICE
BY WE ENERGIES

ASPHALTIC DRIVEWAY R/L

0+50.00 1+00.00 1+50.00 2+00.00 2+50.00 3+00.00 3+20.27

1+00 2+00 3+00 4+00 5+00 6+00 7+00 8+00

SALT SHED

CONCRETE
DRIVEWAY R/L

0+50.00 1+00.00 1+50.00 2+00.00 2+50.00 3+00.00 3+25.73

F.F.
933.00

PROPOSED DETENTION POND

12.2'–4" PVC
WATER SERVICE @ 1.85%
(SAND BEDDING UNDER BUILDING FOOTER)

W–4
90° BEND &
GRADE BREAK
INV. 926.19

42.8'–4" PVC
WATER SERVICE @ 1.85%

W–3
GRADE BREAK
INV. 925.40

85.9'–4" PVC
WATER SERVICE @ 0.71%

ASPHALTIC EAST
DRIVEWAY R/L

PROPOSED ELECTRIC SERVICE
(SEE ELECTRICAL SITE PLAN)

W–5
STUB 4" PVC WATER SERVICE
THROUGH FLOOR & TIGHT
TO INSIDE BUILDING CORNER.
INCLUDE TRACER WIRE ACCESS BOX.
INV. 926.41

BRINE
FACILITY

4" I.E.=926.50

4" RECLAIMED WATER DRAIN PIPE

4" I.E.=925.73

STORAGE TANK

PROP'D 12"
STORM CROSSING
INV 927.56

PROP'D 18"
STORM CROSSING
INV 929.52

PROP'D 18"
STORM CROSSING
INV 929.53

W–2
6"x4" REDUCER
INV. 924.78 4" W
INV. 924.70 6" E

20.0'–6" PVC
WATER SERVICE @ 0.71%

2.9'–6" PVC
WATER SERVICE @ 0.00%

W–1
8x6" TAPPING SLEEVE W/
6" GATE VALVE & BOX TO BE
PROVIDED AND INSTALLED BY THE
WAUKESHA WATER UTILITY – CONTRACTOR
TO PROVIDE TRENCH, SHIELD, AND MEANS FOR LOWERING
TAPPING MACHINE.
INV. 924.56 6" W
INV. 924.48 8" N
INV. 924.48 8" S

EXIST. 8" PVC
WATER MAIN
(2010)

CONTRACTOR TO VERIFY LOCATION & ELEVATION
OF EXISTING 8" PVC WATER MAIN PRIOR
TO CONNECTION

SCALE

EMPTY
CONDUIT

MH

EAST 3" PVC 921.24
EAST 3" PVC 921.24
SOUTH 3" PVC 921.24
WEST 3" PVC 921.64

TOP DOME
EL. 983.90

SSMH RIM 926.94
24"N I.E. 921.29 RCP
24"S I.E. 921.34 RCP
1 ADJ RING

WEST 3" PVC 922.34
EXISTING RINGS

TOP BLDG
EL. 960.00

N

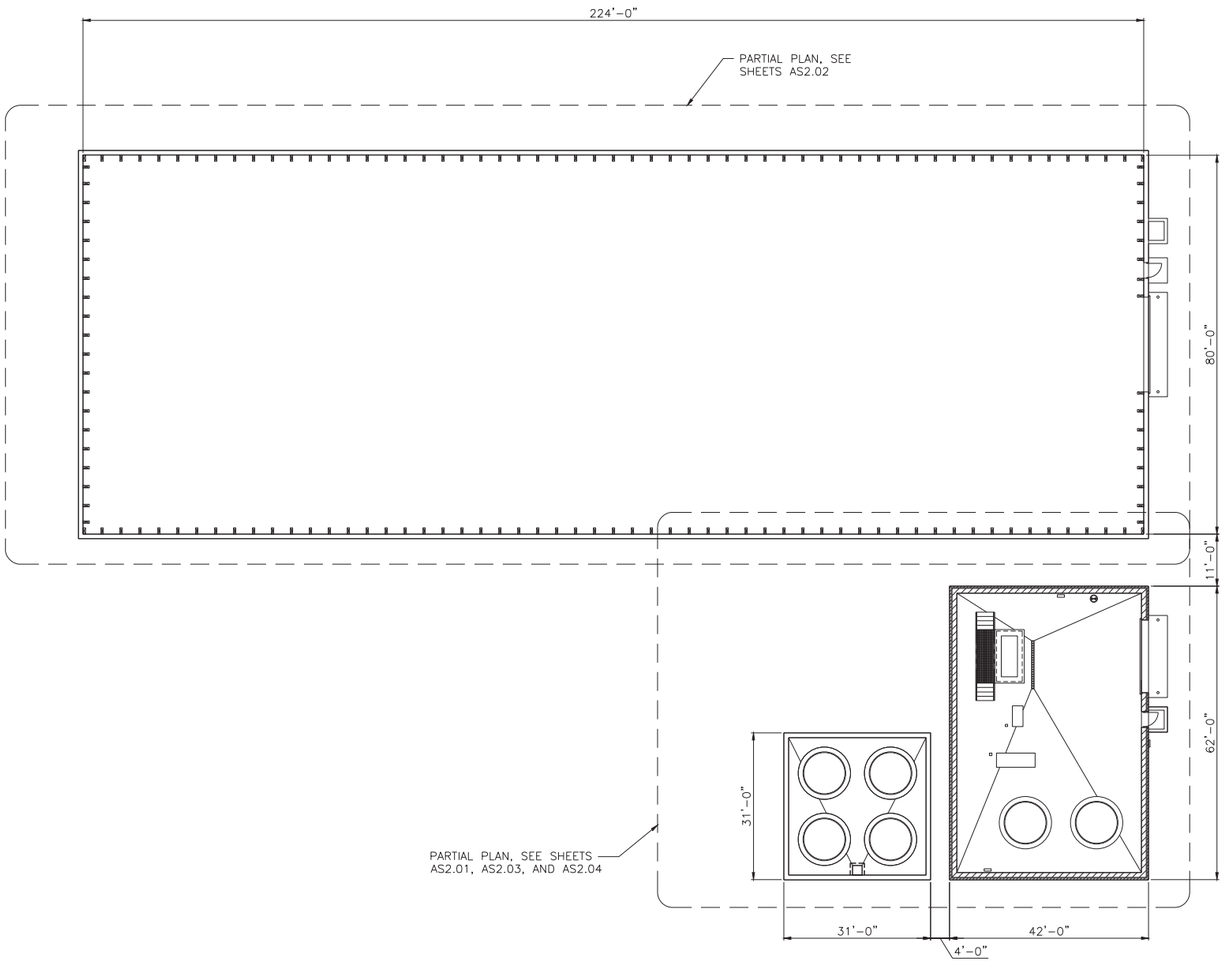
GRAPHIC SCALE
12.5 0 12.5 25 50
( IN FEET )

DIGGERS HOTLINE
Toll Free (800) 242-8511
Milwaukee Area (262) 432-7910
Hearing Impaired TDD (800) 542-2289
www.DiggersHotline.com

SHEET
C1.00

| PROJECT NO:1060-62-70 | HWY: GRANDVIEW BOULEVARD | COUNTY: WAUKESHA | UTILITY SITE PLAN | SHEET 20 | E |
|---|---|---|---|---|---|

2




**OVERALL PLAN**

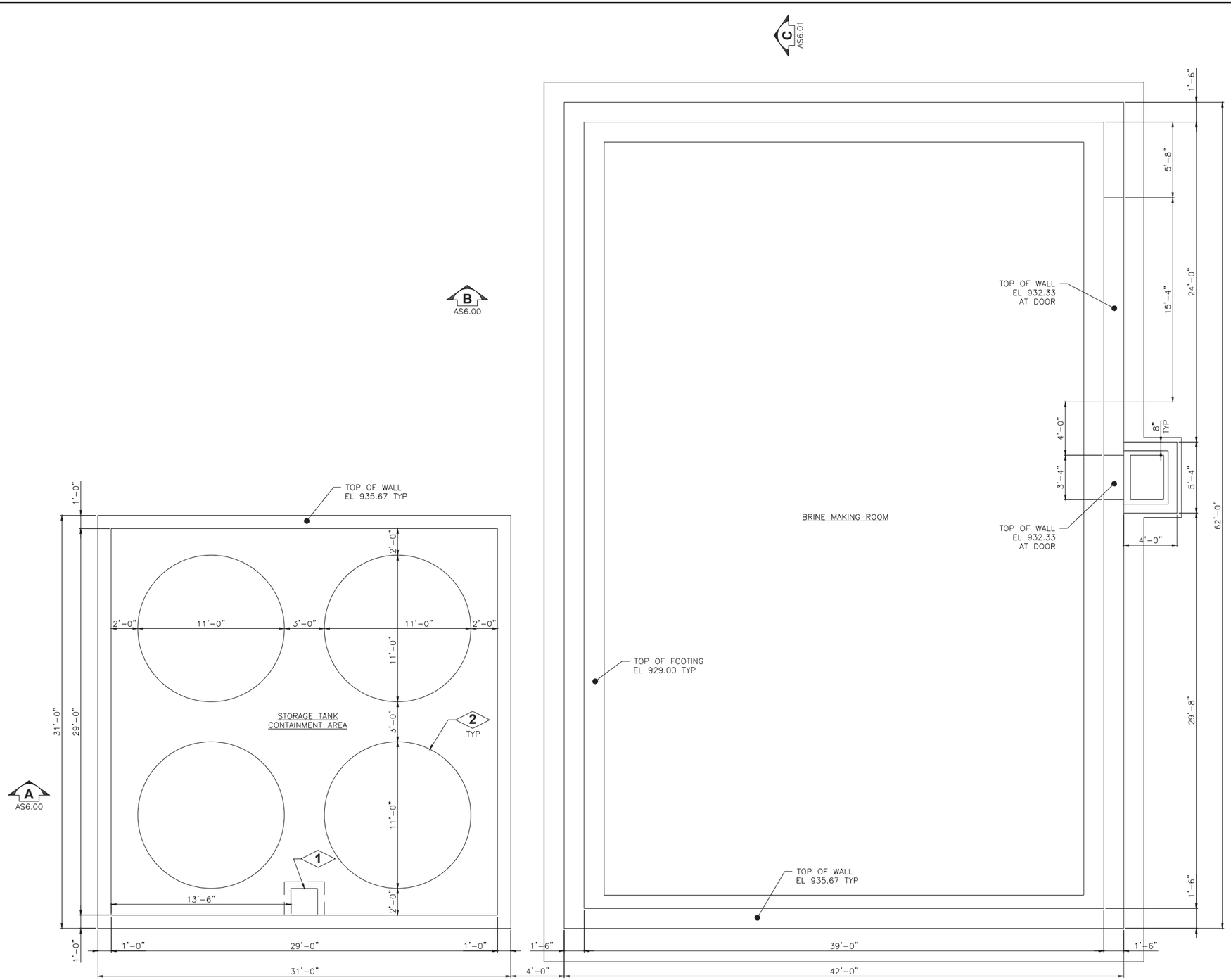
0' 4' 8' 16' 24'

N

SHEET AS2.00

| PROJECT NO: 1060-62-70 | HWY: GRANDVIEW BOULEVARD | COUNTY: WAUKESHA | SALT STORAGE: OVERALL FLOOR PLAN | SHEET 21 | E |
|---|---|---|---|---|---|

2




**PLAN NOTES:** ◇

1. 2'-0" SQ. x 2'-0" DEEP SUMP, SEE (S339).
2. EQUIPMENT PAD, SEE (S342).

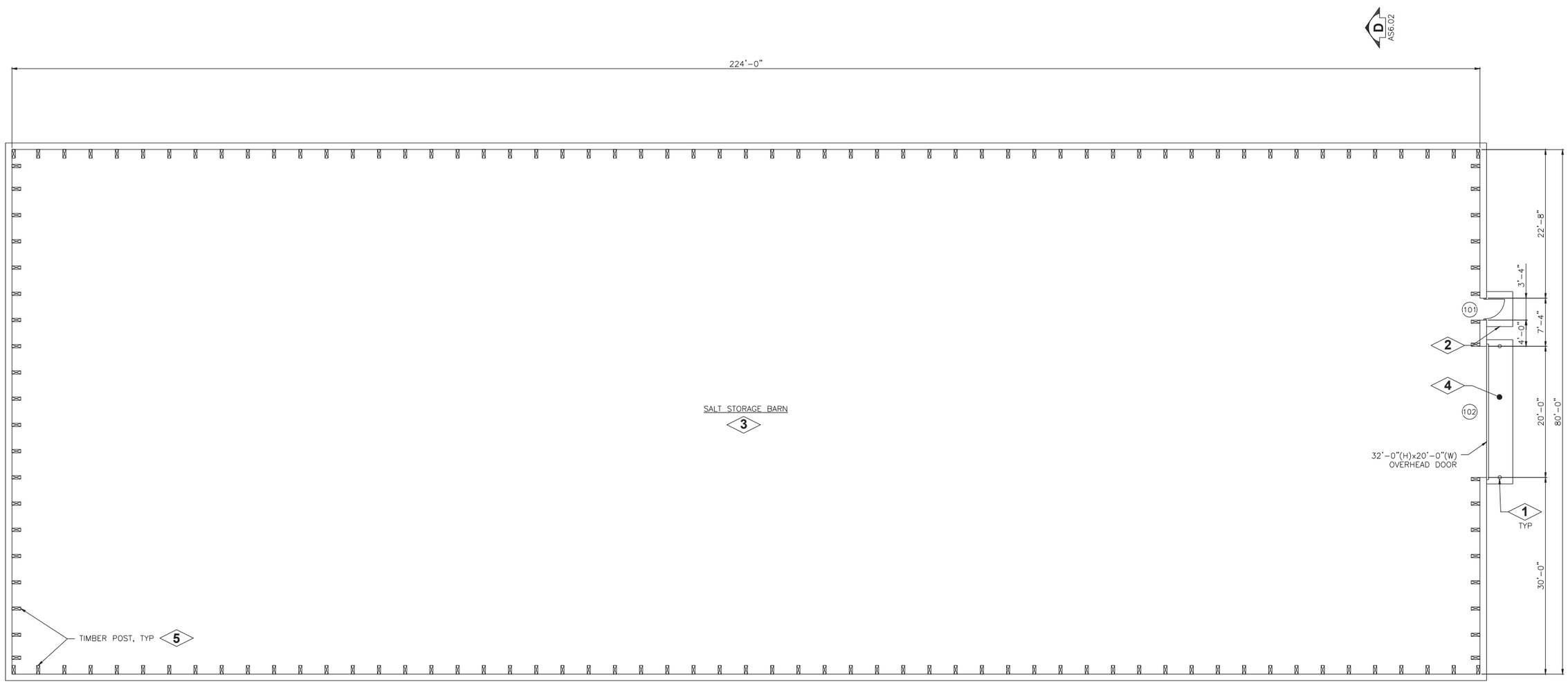
## FOUNDATION PLAN

0' 1' 2' 4' 6'

SHEET
AS2.01

| PROJECT NO: 1060-62-70 | HWY: GRANDVIEW BOULEVARD | COUNTY: WAUKESHA | BRINING BUILDING: FOUNDATION PLAN | SHEET 22 | E |
|---|---|---|---|---|---|

2




## FLOOR PLAN

0' 2' 4' 8' 12'

N

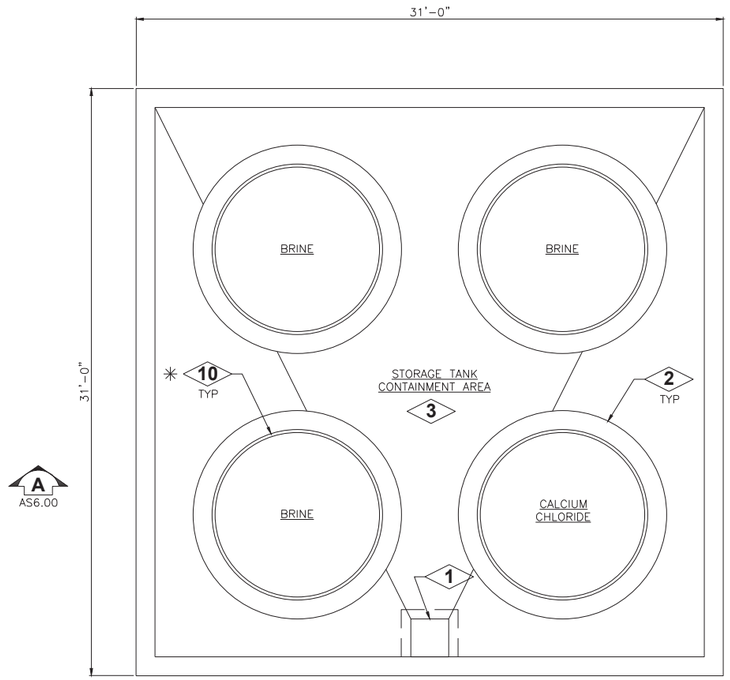
**PLAN NOTES:**

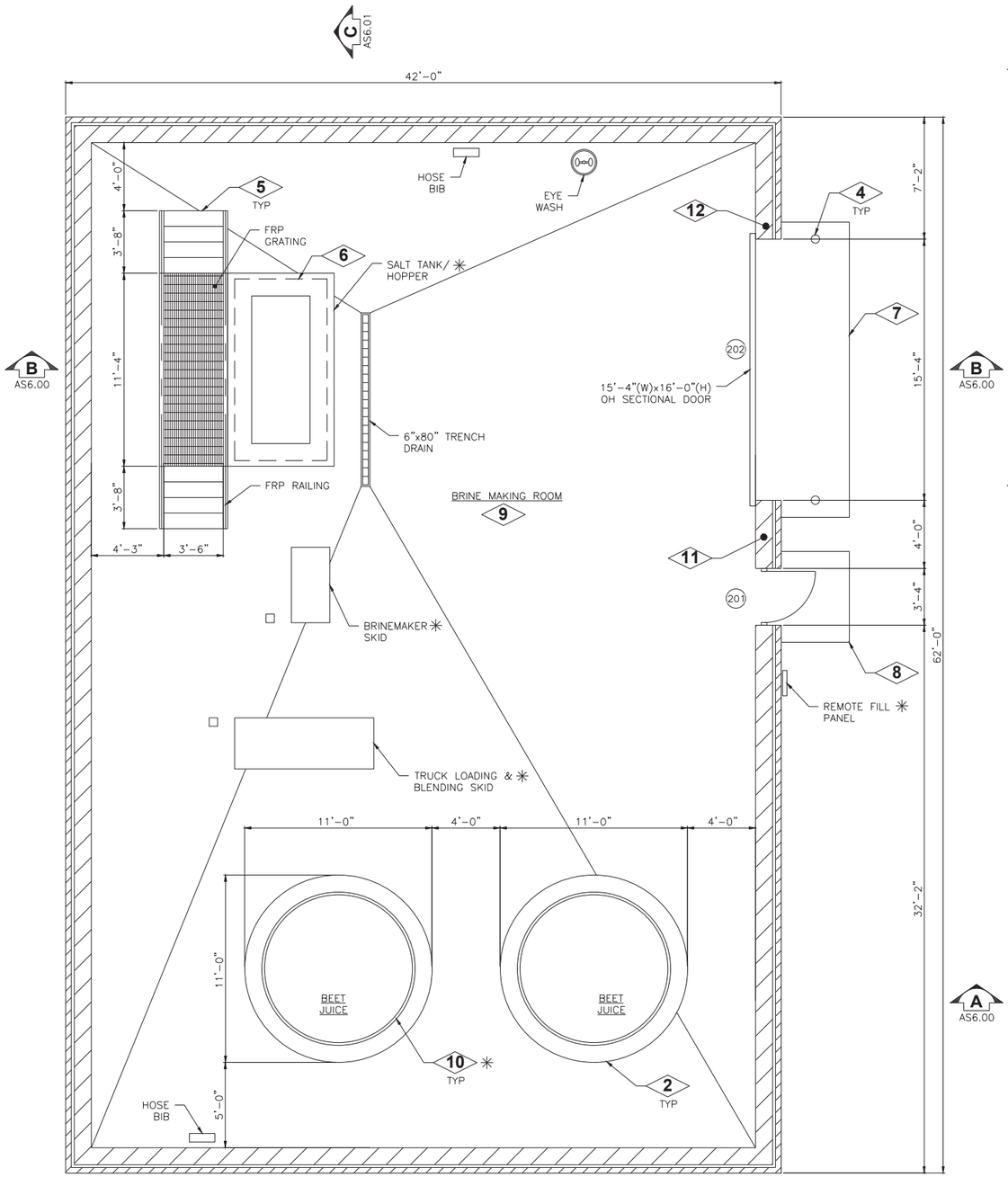
1. GUARD POST, SEE (S100).
2. 5'-4"x4'-0" DOOR STOOP, SEE (S362).
3. FLOOR SLAB TO BE 4" ASPHALT OVER 12" OF 1-1/4" DENSE BASE AGGREGATE.
4. 22'-0"x4'-0" APPROACH SLAB, SEE (S365).
5. TIMBER POSTS SHOWN CONCEPTUALLY. ACTUAL POST SIZES AND SPACING TO BE DESIGNED BY MANUFACTURER. REFER TO SPECIFICATIONS FOR DESIGN REQUIREMENTS.

SHEET
AS2.02

| PROJECT NO: 1060-62-70 | HWY: GRANDVIEW BOULEVARD | COUNTY: WAUKESHA | SALT STORAGE SHED: FLOOR PLAN | SHEET 23 | E |
|---|---|---|---|---|---|

2




## GENERAL NOTES:

1. WALL CONSTRUCTION: 12" CMU, 2" RIGID INSULATION, 4" DECORATIVE BRICK. REINFORCE WITH #5@32" OC, SEE (S451).
2. ✳ = EQUIPMENT AND PIPING PROVIDED AND INSTALLED BY OTHERS AND IS NOT INCLUDED IN THE SCOPE OF WORK.

## PLAN NOTES:

1. 2'-0" SQ. x 2'-0" DEEP SUMP, SEE (S339).
2. EQUIPMENT PAD, SEE (S342).
3. SLOPE CONTAINMENT AREA SLAB TO SUMP 1/4"/FT.
4. GUARD POST, SEE (S100).
5. FRP STAIRS: 5R@7" = 2'-11", 4T@11" = 3'-8", SEE (S575).
6. CONCRETE PEDESTAL: 10'-8"(L) x 5'-5"(W) x 2'-0"(H).
7. 17'-4"x4'-0" APPROACH SLAB, SEE (S365).
8. 5'-4"x4'-0" DOOR STOOP, SEE (S362).
9. SLOPE FLOOR SLAB TO TRENCH DRAIN 1/8"/FT MIN.
10. EXISTING 6,000 GALLON STORAGE TANK.
11. GROUT CMU WALL SOLID BETWEEN DOORS AND REINFORCE WITH (1) #5 BAR CENTERED IN EACH CORE.
12. GROUT FIRST (3) CORES OF CMU WALL SOLID ADJACENT TO OVERHEAD DOOR OPENING AND REINFORCE WITH (1) #5 BAR CENTERED IN EACH CORE.

**FLOOR PLAN**

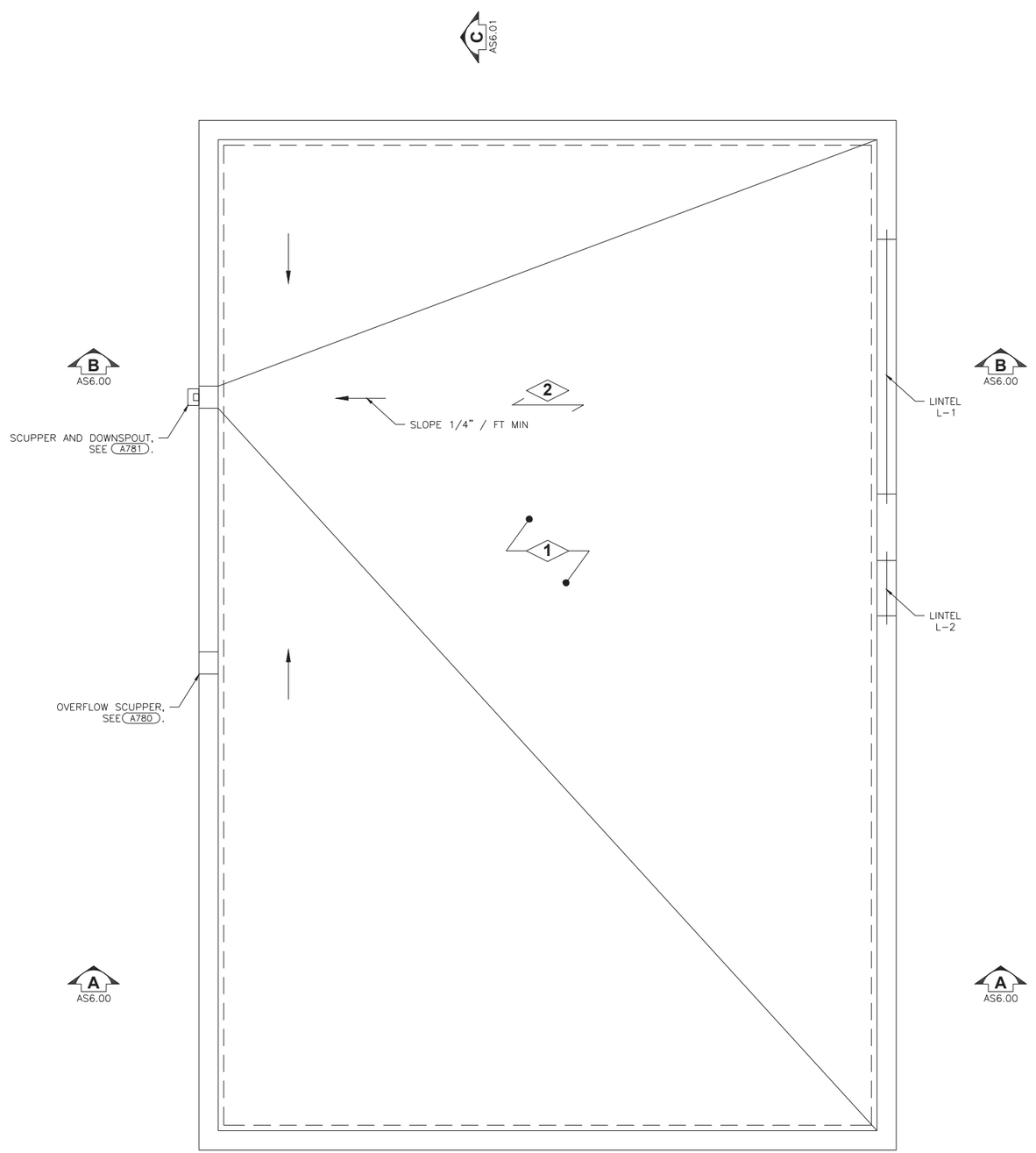
0' 1' 2' 4' 6'

C AS6.01

SHEET AS2.03

| PROJECT NO: 1060-62-70 | HWY: GRANDVIEW BOULEVARD | COUNTY: WAUKESHA | BRINING BUILDING: FLOOR PLAN | SHEET 24 | E |
|---|---|---|---|---|---|

2




**PLAN NOTES:** ◇

1. FULLY ADHERED EPDM MEMBRANE ROOFING OVER TAPERED INSULATION. PROVIDE SADDLES AND CRICKETS AS REQUIRED AT ROOF OPENINGS. MINIMUM INSULATION THICKNESS IS 2".
2. 12" PRECAST CONCRETE HOLLOW CORE ROOF PLANK SPAN DIRECTION.

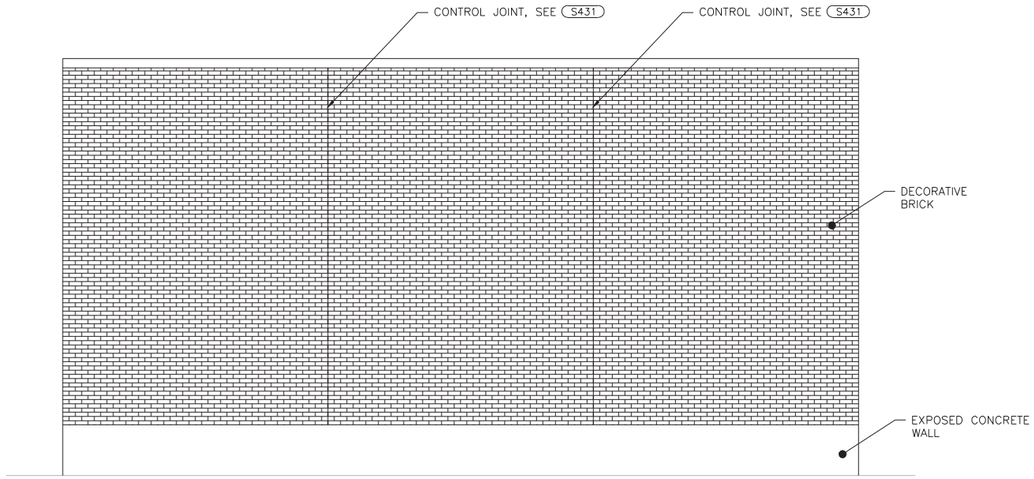
**ROOF PLAN**

0' 1' 2' 4' 6'

SHEET
AS2.04

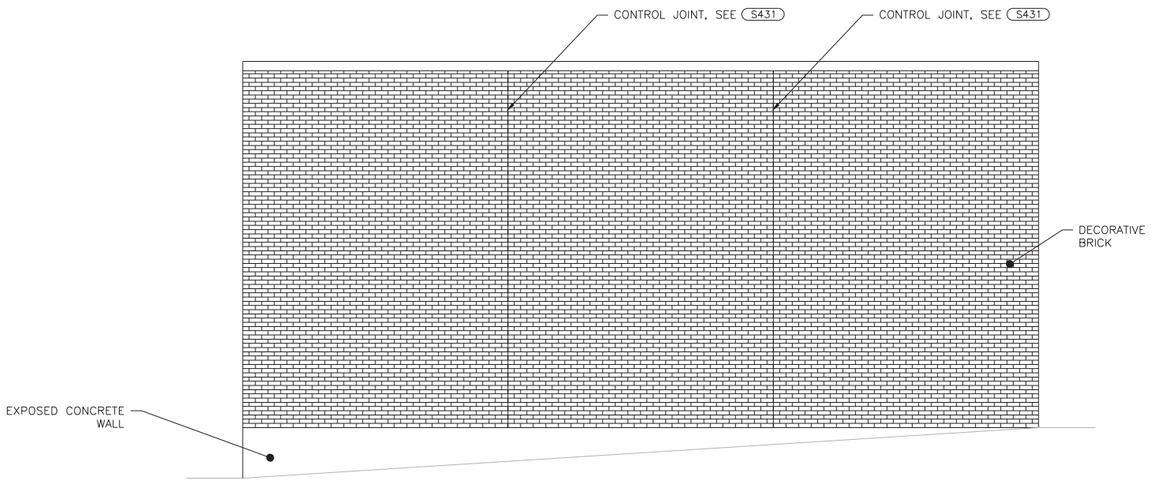
| PROJECT NO: 1060-62-70 | HWY: GRANDVIEW BOULEVARD | COUNTY: WAUKESHA | BRINING BUILDING: ROOF PLAN | SHEET 25 | E |
|---|---|---|---|---|---|

2




**EAST ELEVATION**

0' 1' 2' 4' 6'




**WEST ELEVATION**

0' 1' 2' 4' 6'

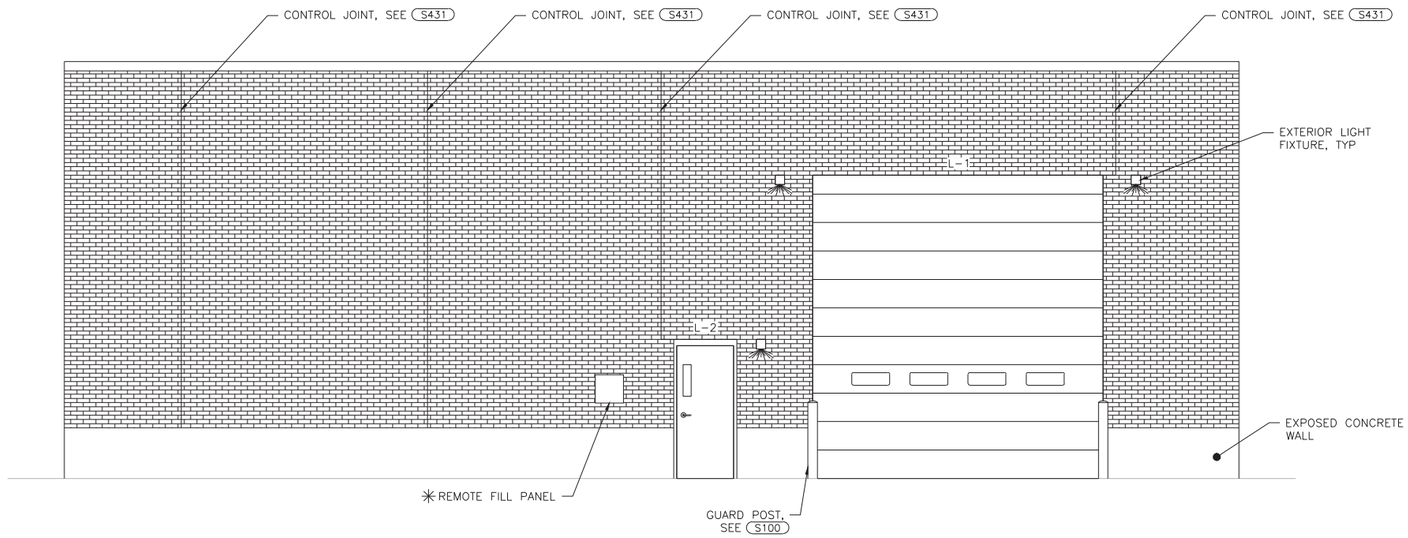
SHEET
AS5.00

| PROJECT NO: 1060-62-70 | HWY: GRANDVIEW BOULEVARD | COUNTY: WAUKESHA | BRINING BUILDING: ELEVATIONS - 1 | SHEET 26 | E |
|---|---|---|---|---|---|

2

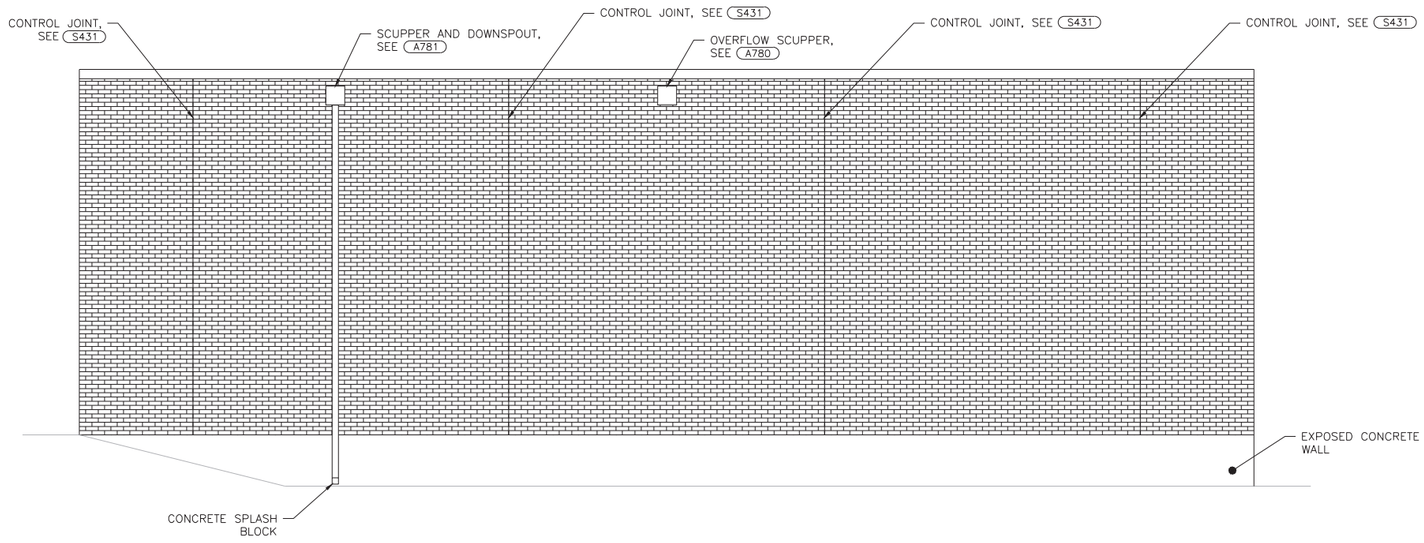
## GENERAL NOTES:

1. ✳ = EQUIPMENT AND PIPING PROVIDED AND INSTALLED BY OTHERS AND IS NOT INCLUDED IN THE SCOPE OF WORK.




**NORTH ELEVATION**

0' 1' 2' 4' 6'



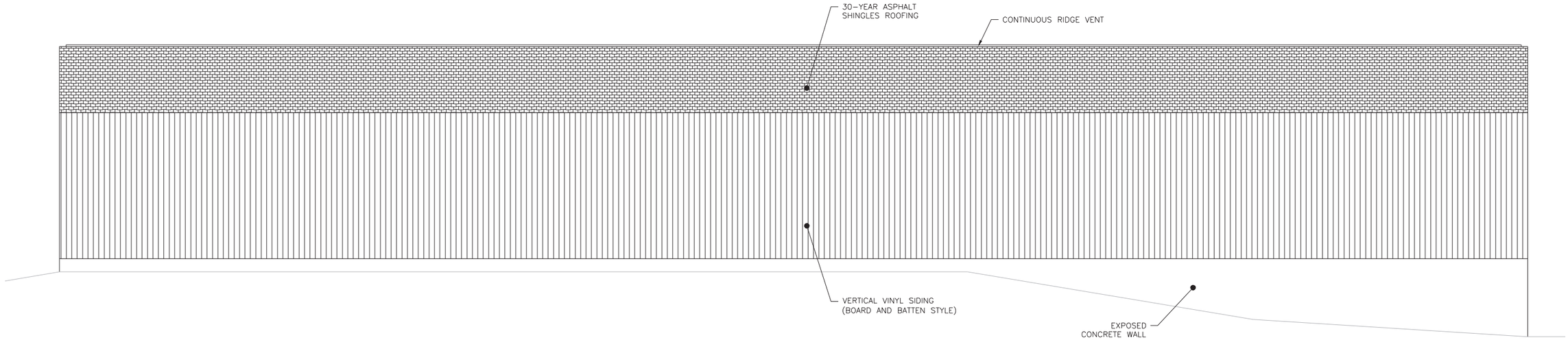

**SOUTH ELEVATION**

0' 1' 2' 4' 6'

SHEET
AS5.01

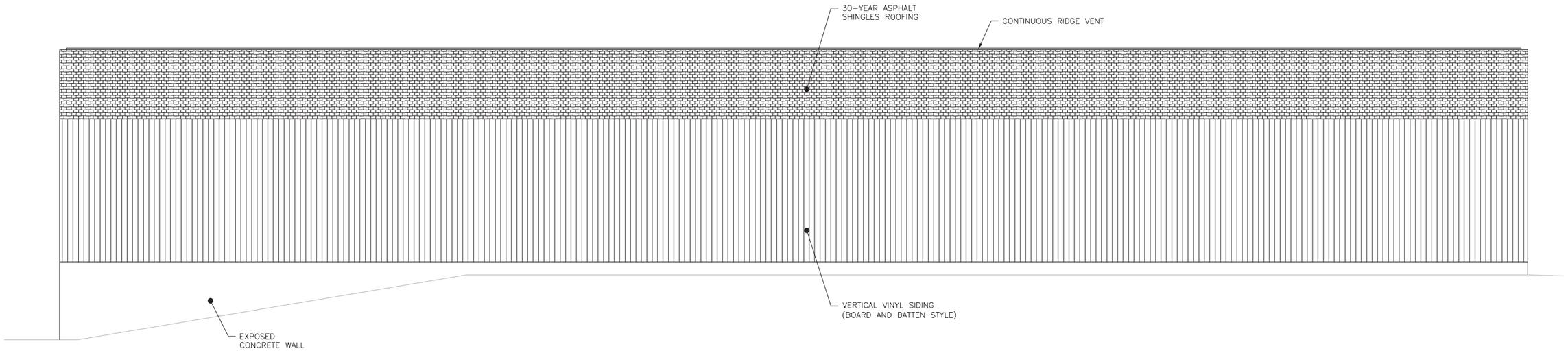
| PROJECT NO: 1060-62-70 | HWY: GRANDVIEW BOULEVARD | COUNTY: WAUKESHA | BRINING BUILDING: ELEVATIONS – 2 | SHEET 27 | E |
|---|---|---|---|---|---|

2




**EAST ELEVATION**

0' 2' 4' 8' 12'



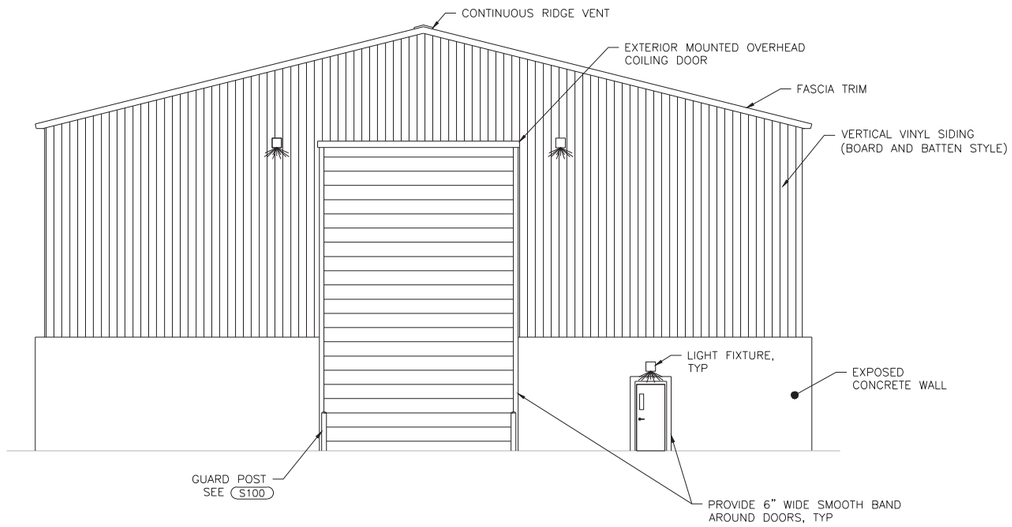

**WEST ELEVATION**

0' 2' 4' 8' 12'

SHEET
AS5.02

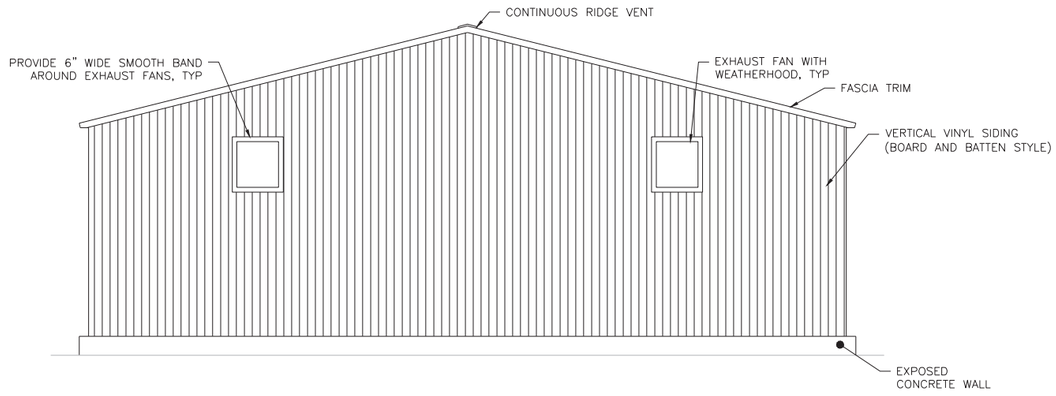
| PROJECT NO: 1060-62-70 | HWY: GRANDVIEW BOULEVARD | COUNTY: WAUKESHA | SALT STORAGE SHED: ELEVATIONS – 1 | SHEET 28 | E |
|---|---|---|---|---|---|

2




**NORTH ELEVATION**

0' 2' 4' 8' 12'

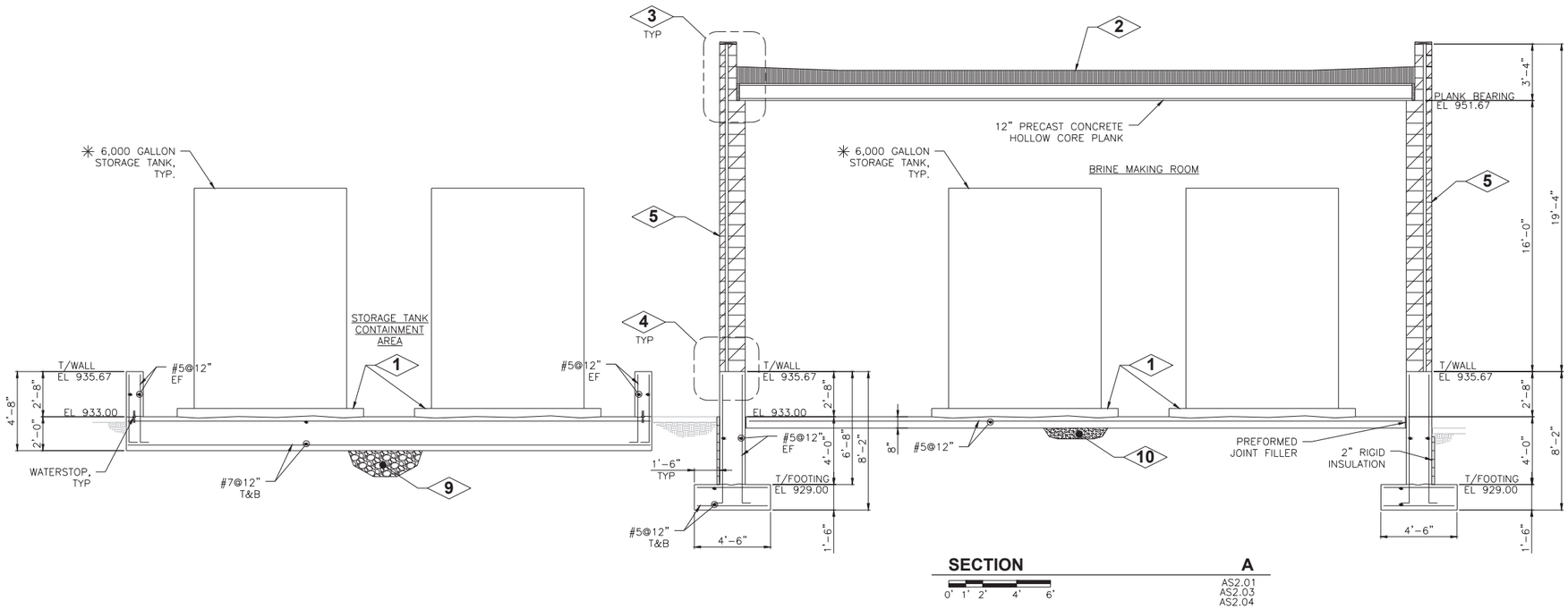



**SOUTH ELEVATION**

0' 2' 4' 8' 12'

SHEET
AS5.03

| PROJECT NO: 1060-62-70 | HWY: GRANDVIEW BOULEVARD | COUNTY: WAUKESHA | SALT STORAGE SHED: ELEVATIONS – 2 | SHEET 29 | E |
|---|---|---|---|---|---|




**SECTION A**

0' 1' 2' 4' 6'

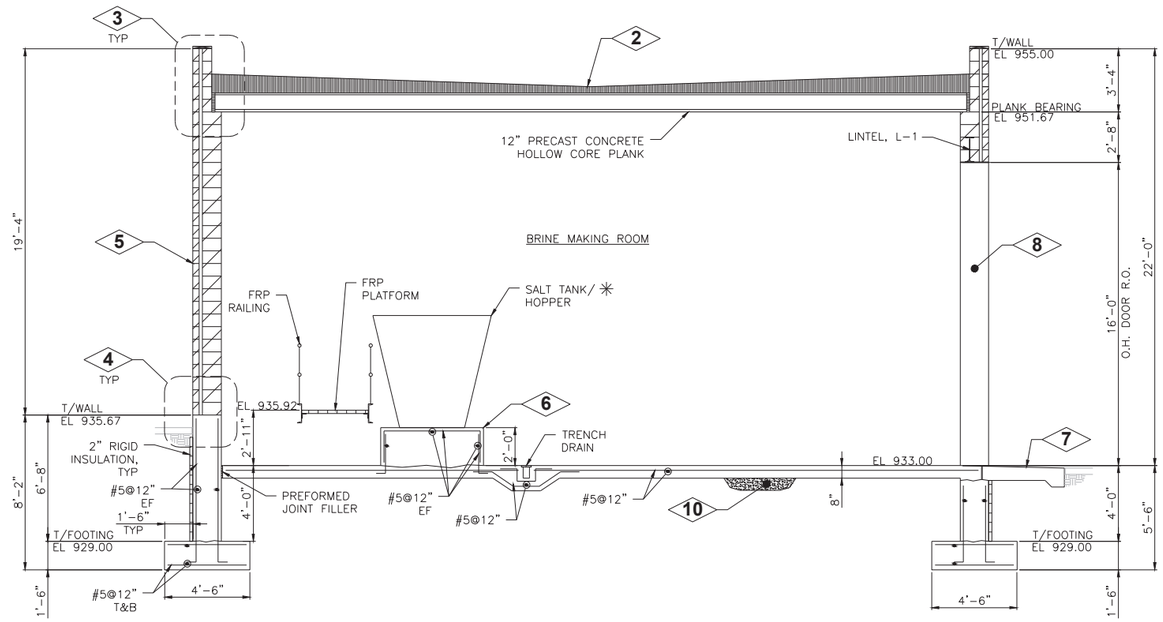
AS2.01
AS2.03
AS2.04

## GENERAL NOTES:

1. ✳ = EQUIPMENT AND PIPING PROVIDED AND INSTALLED BY OTHERS AND IS NOT INCLUDED IN THE SCOPE OF WORK.

## PLAN NOTES:

1. EQUIPMENT PAD, SEE (S342).
2. FULLY ADHERED EPDM MEMBRANE ROOFING OVER TAPERED INSULATION. PROVIDE SADDLES AND CRICKETS AS REQUIRED AT ROOF OPENINGS. MINIMUM INSULATION THICKNESS IS 2".
3. ROOF EDGE DETAIL, SEE (A432).
4. WALL BASE DETAIL, SEE (A402).
5. 12" CMU, 2" RIGID INSULATION, 4" DECORATIVE BRICK. SEE PLAN FOR REINFORCEMENT.
6. CONCRETE PEDESTAL: 10'-8"(L) x 5'-5"(W) x 2'-0"(H).
7. 17'-4"x4'-0" APPROACH SLAB, SEE (S365).
8. DOOR JAMB PLATE, SEE (A804).
9. PROVIDE 14" THICK BASE COURSE OF AGGREGATE DENSE 3/4" PER WISDOT SPECIFICATION SECTION 305. PROVIDE FILTER FABRIC BELOW BASE AGGREGATE.
10. PLACE SLAB-ON-GRADE OVER A 15 MIL POLY VAPOR RETARDER OVER A MINIMUM 4" THICK FREE DRAINING AGGREGATE BASE COURSE.

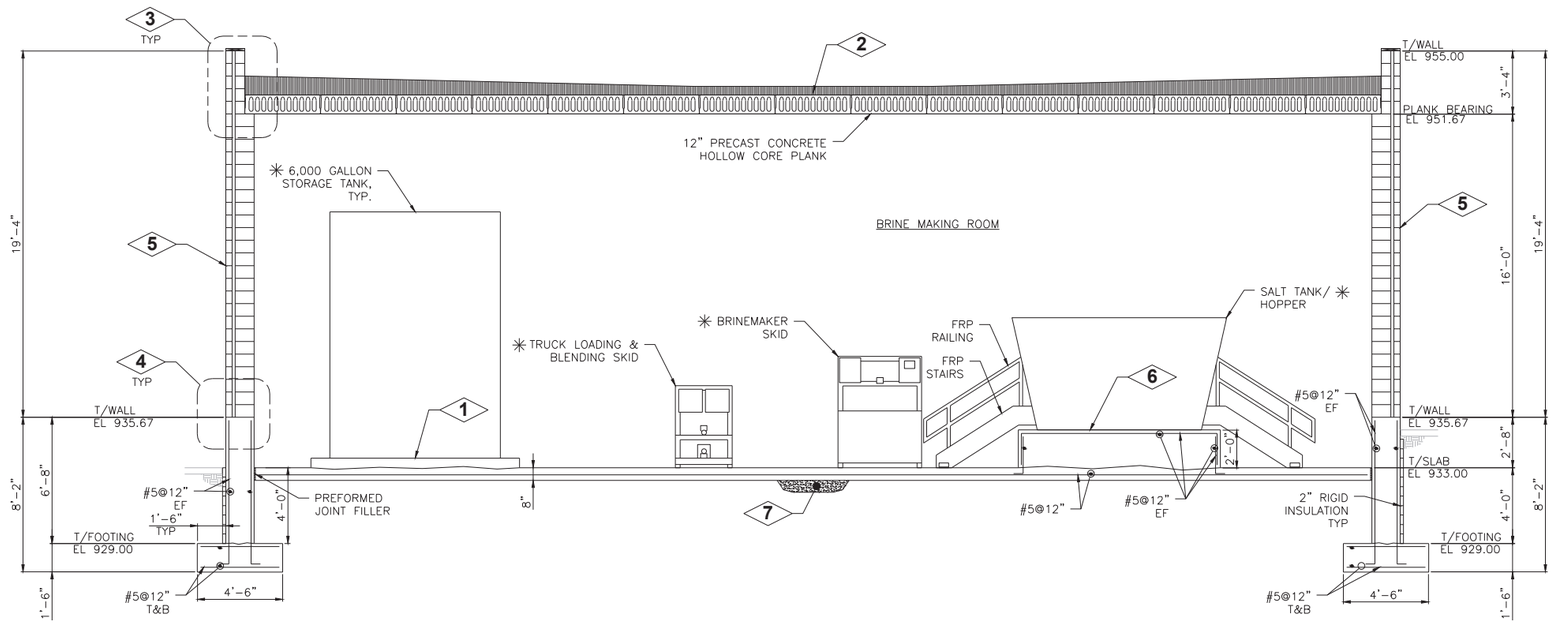



**SECTION B**

0' 1' 2' 4' 6'

AS2.01
AS2.03
AS2.04

SHEET
AS6.00




**SECTION** **C**

0' 1' 2' 4' 6'

AS2.01
AS2.03
AS2.04

## GENERAL NOTES:

1. ✳ = EQUIPMENT AND PIPING PROVIDED AND INSTALLED BY OTHERS AND IS NOT INCLUDED IN THE SCOPE OF WORK.

## PLAN NOTES:

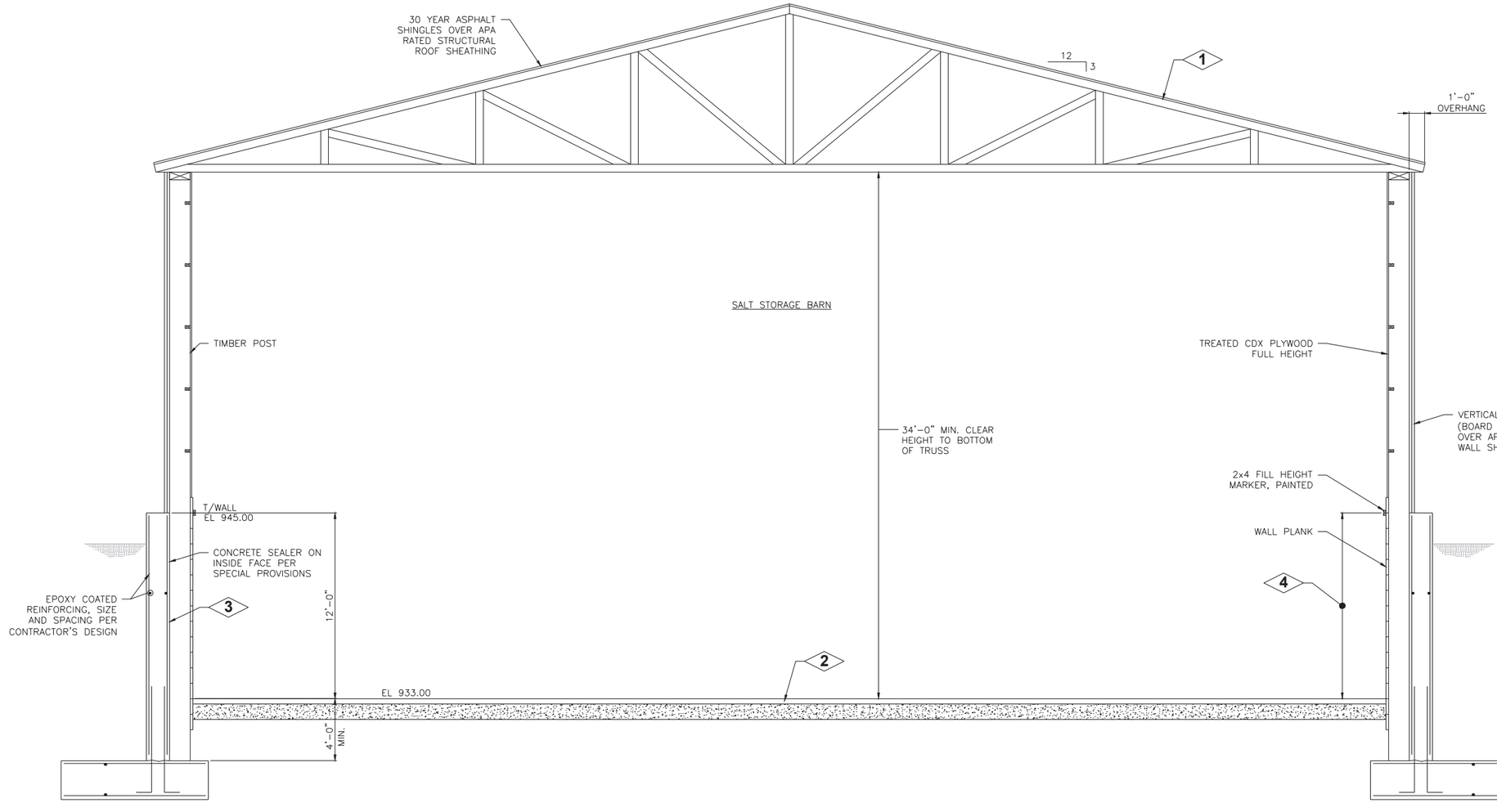
1. EQUIPMENT PAD, SEE (S342).
2. FULLY ADHERED EPDM MEMBRANE ROOFING OVER TAPERED INSULATION. PROVIDE SADDLES AND CRICKETS AS REQUIRED AT ROOF OPENINGS. MINIMUM INSULATION THICKNESS IS 2".
3. ROOF EDGE DETAIL, SEE (A432).
4. WALL BASE DETAIL, SEE (A402).
5. 12" CMU, 2" RIGID INSULATION, 4" DECORATIVE BRICK. SEE PLAN FOR REINFORCEMENT.
6. CONCRETE PEDESTAL: 10'-8"(L) x 5'-5"(W) x 2'-0"(H).
7. PLACE SLAB-ON-GRADE OVER A 15 MIL POLY VAPOR RETARDER OVER A MINIMUM 4" THICK FREE DRAINING AGGREGATE BASE COURSE.

2

SHEET
AS6.01

| PROJECT NO: 1060-62-70 | HWY: GRANDVIEW BOULEVARD | COUNTY: WAUKESHA | BRINING BUILDING: BUILDING SECTIONS - 2 | SHEET 31 | E |
|---|---|---|---|---|---|

2




## PLAN NOTES:

1. GABLE ROOF TRUSSES SHOWN CONCEPTUALLY. ACTUAL DIMENSIONS AND PROFILE TO BE DESIGNED BY MANUFACTURER. REFER TO SPECIFICATIONS FOR DESIGN REQUIREMENTS.
2. FLOOR SLAB TO BE 4" ASPHALT OVER 12" OF 1-1/4" DENSE BASE COURSE.
3. WALL AND FOOTING SIZE AND THICKNESS SHOWN CONCEPTUALLY. ACTUAL DIMENSIONS TO BE SIZED IN ACCORDANCE WITH THE CONTRACTOR'S BUILDING DESIGN. SEE SPECIAL PROVISIONS FOR DESIGN CRITERIA.
4. 12'-0" TO MAX. FILL HEIGHT MARKER. MARKER TO BE PAINTED AND INSTALLED ON FILL WALLS.

**SECTION D**

AS2.02

0' 1' 2' 4' 6'

SHEET
AS6.02

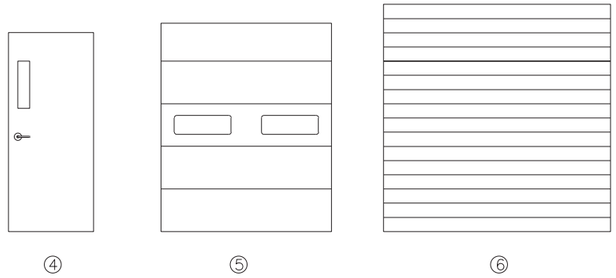
| PROJECT NO: 1060-62-70 | HWY: GRANDVIEW BOULEVARD | COUNTY: WAUKESHA | SHALT STORAGE SHED: BUILDING SECTION | SHEET 32 | E |
|---|---|---|---|---|---|

## DOOR SCHEDULE A020

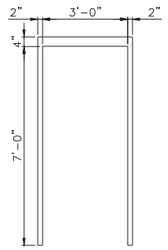
| DOOR NO. | DOOR * TYPE | DOOR * LINTEL | DOOR * SIZE WIDTH X HEIGHT | DOOR * SIZE THK | DOOR * MAT'L. | DOOR * FINISH | DOOR * H.W.SET | FRAME TYPE | FRAME MAT'L. | FRAME FINISH | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 101 | 4 | – | 3'–0"X7'–0" | 1–3/4" | FRP | – | 5 | 1 | FRP | – | |
| 102 | 6 | – | 20'–0"X32'–0" | – | GST | PNT | – | – | – | – | |
| 201 | 4 | L–2 | 3'–0"X7'–0" | 1–3/4" | FRP | – | 5 | 1 | FRP | – | |
| 202 | 5 | L–1 | 15'–4"X16'–0" | – | GST | PNT | – | – | – | – | |

KEY

AL = ALUMINUM
GHM = GALVANIZED HOLLOW METAL
GST = GALVANIZED STEEL
FRP = FIBERGLASS REINFORCED PLASTIC
PNT = PAINT
* ALL DOORS ARE TO BE INSULATED

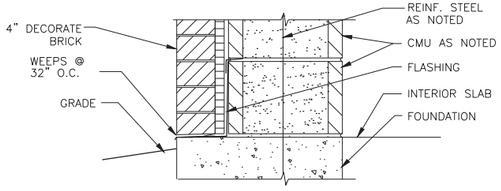



DOOR TYPE = ⓧ

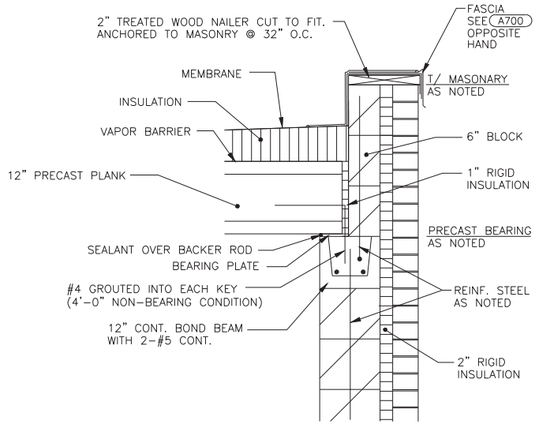



1

FRAME TYPE = X

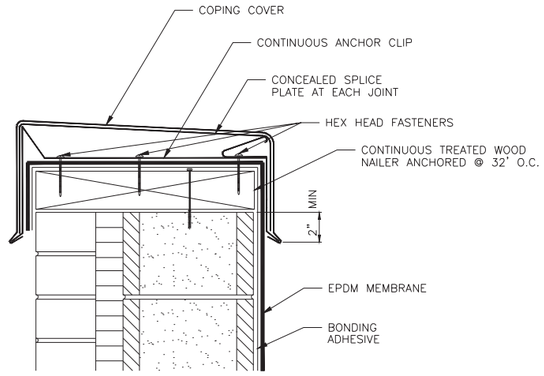



**WALL BASE DETAIL A402**
NTS




NOTE: BEARING CONDITION SHOWN, NONBEARING CONDITION SIMILAR.

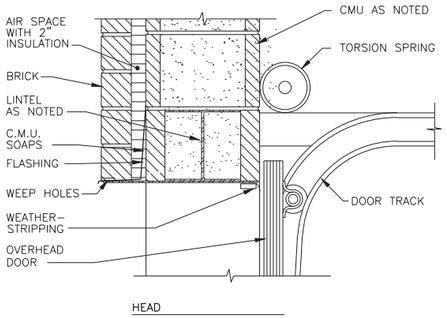
**ROOF EDGE DETAIL A432**
NTS




**METAL COPING DETAIL A700**
NTS

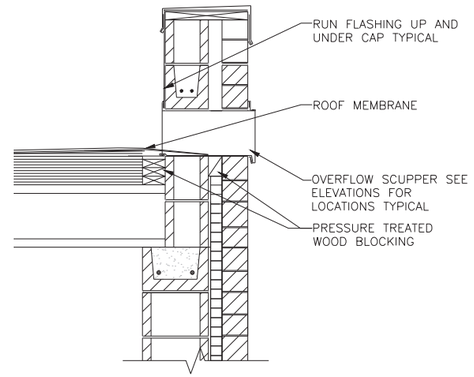
SHEET
A9.00

2



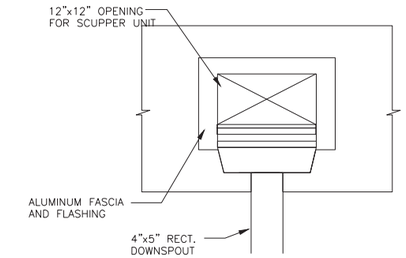

**OVERHEAD DOOR A804**

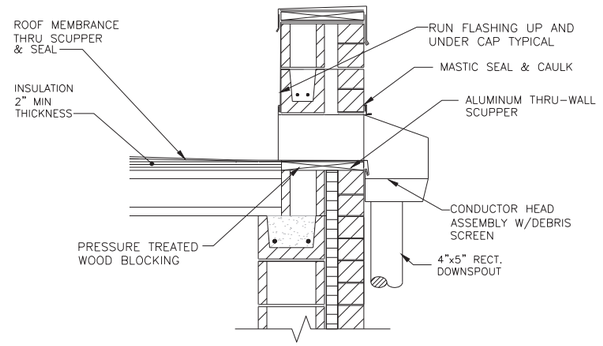
NTS




**OVERFLOW SCUPPER DETAIL A780**

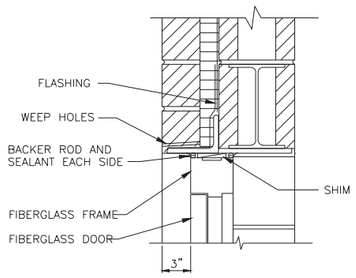
NTS



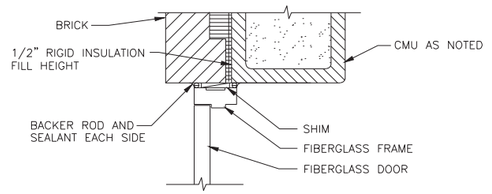

**SCUPPER DETAIL A781**

NTS



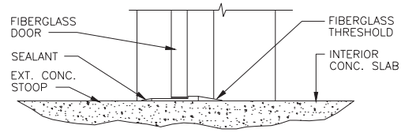

**EXTERIOR FIBERGLASS DOOR HEAD A833**

NTS




**EXTERIOR FIBERGLASS DOOR JAMB A834**

NTS




**EXTERIOR FIBERGLASS DOOR SILL A835**

NTS

SHEET
A9.01

# GENERAL STRUCTURAL NOTES

GENERAL

1. THE GENERAL STRUCTURAL NOTES AND STANDARD STRUCTURAL DETAILS APPLY TO THE ENTIRE PROJECT UNLESS SPECIFICALLY NOTED OTHERWISE.

DESIGN CRITERIA

1. DESIGN AND CONSTRUCTION SHALL BE IN CONFORMANCE WITH THE PROVISIONS OF THE WISCONSIN COMMERCIAL BUILDING CODE AND THE INTERNATIONAL BUILDING CODE BY REFERENCE.

2. SUPERIMPOSED DESIGN LOADS

| | |
|---|---|
| A. WIND LOAD | PER ASCE 7 |
| B. FLAT ROOF SNOW LOAD: | 21 PSF |
| C. ROOFING DEAD LOAD: | 25 PSF |
| D. MECHANICAL EQUIPMENT: | VERIFY WITH EQUIPMENT SUPPLIER |
| E. STAIRS AND WALKWAYS: | 100 PSF OR 1000 LBS CONCENTRATED |
| F. FLOOR SLABS | |
| 1. BRINING BUILDING: | 150 PSF OR 10,000 LBS VEHICLE LOAD |

FOUNDATIONS

1. GEOTECHNICAL INVESTIGATION BY PROFESSIONAL SERVICE INDUSTRIES, INC.
2. NET SOIL BEARING CAPACITIES PER GEOTECHNICAL INVESTIGATION:
   - A. BRINING BUILDING 4000 PSF
   - B. SALT SHED 4000 PSF
3. PLACE FOOTINGS ON NATURAL UNDISTURBED EARTH OR STRUCTURAL FILL
4. PLACE FILL AGAINST FOUNDATION WALLS ENCLOSING INTERIOR SPACES AFTER CONSTRUCTION SUCH AS CROSS WALLS, BEAMS OR SLABS ARE IN PLACE TO BRACE WALL AND SUCH CONSTRUCTION HAS REACHED ITS DESIGN STRENGTH.
5. TO MINIMIZE LATERAL FORCES AGAINST THE STRUCTURE DUE TO WEDGING ACTION OF THE SOIL, BEGIN COMPACTION OF EACH LAYER AT THE STRUCTURE WALL.

REINFORCEMENT

1. REINFORCEMENT STEEL
   - A. DEFORMED BARS: ASTM A615 – GRADE 60
   - B. WELDED WIRE FABRIC (WWF): ASTM A185
2. UNLESS NOTED OTHERWISE PROVIDE CLEAR COVER FOR REINFORCEMENT AS FOLLOWS:
   - A. CAST AGAINST:
     - 1. EARTH: 3 INCHES
     - 2. MUD SLAB: 2 INCHES
   - B. EXPOSED TO EARTH, WEATHER, OR WATER
     - 1. SLABS
       - A. #5 BARS OR SMALLER: 1 1/2 INCHES
       - B. #6 THROUGH #11 BARS: 2 INCHES
     - 2. WALLS, BEAMS, AND COLUMNS: 2 INCHES
   - C. NOT EXPOSED TO EARTH, WEATHER, OR WATER
     - 1. SLABS AND WALLS
       - A. #3 THROUGH #7 BARS: 1 INCH
       - B. #8 THROUGH #11 BARS: 1 1/2 INCHES
     - 2. BEAMS AND COLUMNS: 1 1/2 INCHES
3. PLACE DOWELS BEFORE PLACING CONCRETE.
4. DO NOT FIELD WELD OR FIELD BEND REINFORCING BARS.

CONCRETE

1. DESIGN STRENGTH
   - A. INTERIOR EQUIPMENT BASES AND WHERE SPECIFICALLY NOTED CLASS B: F'C = 3000 PSI
   - B. ALL LOCATIONS, EXCEPT WHERE CLASS B SPECIFIED CLASS A: F'C = 4000 PSI
   - C. STRUCTURAL PRECAST CONCRETE F'C = 4000 PSI
2. PROVIDE WATERSTOP IN CONSTRUCTION JOINTS WHERE SHOWN.
3. UNLESS NOTED OTHERWISE, CONSTRUCTION JOINTS SHOWN ARE OPTIONAL CONSTRUCTION JOINTS NOT SHOWN SHALL BE APPROVED BY ENGINEER.
4. LIMIT SIZE OF CONCRETE POURS. MAXIMUM LENGTH OF WALL AND SLAB POURS SHALL NOT EXCEED 60 FT.
5. BEFORE CONCRETE IS PLACED, CONSTRUCTION JOINTS SHALL BE CLEANED, LAITANCE REMOVED, AND SURFACE WETTED. REMOVE STANDING WATER.
6. LOCATE CONSTRUCTION JOINTS IN FLOORS WITHIN MIDDLE THIRD OF SPAN. CONSTRUCTION JOINTS IN FLOORS SUPPORTED BY WALLS MAY BE LOCATED AT CENTER OF WALL.
7. LOCATE VERTICAL JOINTS IN WALL A MIN OF ONE–HALF WALL HEIGHT FROM CORNERS OR OTHER INTERSECTING WALLS. LOCATE HORIZONTAL JOINTS IN WALLS WITHIN THE MIDDLE THIRD OF WALL HEIGHT.
8. CONSTRUCTION JOINTS SHALL HAVE KEYS OR ROUGHENED SURFACES. WHERE ROUGHENED SURFACE IS USED, SURFACE SHALL HAVE AMPLITUDE OF 1/4 IN. MIN.
9. PROVIDE 3/4 IN. CHAMFER ON EXTERNAL CORNERS OF EXPOSED EDGES OF CONSTRUCTION JOINTS.
10. VERIFY EQUIPMENT PAD AND CURB LOCATIONS, DIMENSIONS, AND ELEVATIONS WITH EQUIPMENT MANUFACTURERS.

MASONRY

1. MASONRY OPENINGS LESS THAN 4 FT IN WIDTH THAT DO NOT HAVE A LINTEL SCHEDULED SHALL HAVE AN 8 IN. HIGH REINFORCED MASONRY LINTEL WITH 2–#5 BARS OR DOUBLE ANGLE STEEL ANGLE LINTEL.
2. UNLESS NOTED OTHERWISE, PROVIDE A CONTINUOUS BOND BEAM REINFORCED WITH 2–#5 AROUND THE TOP OF BUILDINGS.
3. UNLESS NOTED OTHERWISE, PROVIDE HORIZONTAL MASONRY REINFORCING IN WALLS AT 16 IN. ON CENTER.
4. FILL JAMB CORES OR OPENINGS OVER 3 FT IN WIDTH WITH MASONRY GROUT FROM BOTTOM OF LINTEL TO BOTTOM OF WALL. REINFORCE CORES WHERE NOTED.
5. BRACE MASONRY WALLS UNTIL ROOF OR FLOOR SYSTEM IS IN PLACE.
6. DESIGN STRENGTH (TYPICAL): F'M = 1500 PSI (MIN.)

METALS

1. STEEL
   - A. STRUCTURAL STEEL:
     - WF, WT SECTIONS ASTM A992
     - ALL OTHER SECTIONS AND PLATES ASTM A36
   - B. SQUARE OR RECTANGULAR TUBE: ASTM A500
   - C. PIPE: ASTM A53
   - D. BOLTED CONNECTIONS: ASTM A325
2. ALUMINUM
   - A. SHAPES AND PLATES: ALLOY 6061–T6 OR 6063–T6
3. WELD STRUCTURAL STEEL WITH E70XX ELECTRODES IN ACCORDANCE WITH AWS REQUIREMENTS.
4. WELD ALUMINUM IN ACCORDANCE WITH AWS AND AA REQUIREMENTS.
5. COAT ALUMINUM SURFACES IN CONTACT WITH CONCRETE IN ACCORDANCE WITH AA REQUIREMENTS. UNDER NO CIRCUMSTANCES SHALL ALUMINUM CONTACT DISSIMILAR METALS.

MISCELLANEOUS

1. VERIFY PERTINENT EXISTING CONDITIONS AND DIMENSIONS BEFORE STARTING CONSTRUCTION AND/OR FABRICATION.
2. DO NOT FIELD CUT PRESTRESSING STRANDS IN PRECAST PRESTRESSED CONCRETE MEMBERS WITHOUT WRITTEN APPROVAL OF FABRICATOR AND ENGINEER.
3. FOR ADDITIONAL OPENINGS, ANCHORS, AND EMBEDDED ITEMS SEE ARCHITECTURAL, PROCESS, PLUMBING, MECHANICAL, AND ELECTRICAL DRAWINGS.

## MINIMUM REINFORCEMENT BAR SPLICE AND ANCHORAGE LENGTH (INCHES) S010

| BAR SIZE | LAPPED SPLICE LENGTH | | EMBEDMENT LENGTH | | COMPRESSION LAP LENGTH |
|---|---|---|---|---|---|
| | TOP BARS | OTHERS | TOP BARS | OTHERS | |
| 3 | 18 | 16 | 14 | 12 | 12 |
| 4 | 24 | 19 | 19 | 15 | 15 |
| 5 | 30 | 23 | 23 | 18 | 19 |
| 6 | 36 | 28 | 28 | 22 | 23 |
| 7 | 43 | 33 | 33 | 26 | 26 |
| 8 | 57 | 44 | 44 | 34 | 30 |
| 9 | 72 | 56 | 56 | 43 | 34 |
| 10 | 92 | 70 | 70 | 54 | 38 |
| 11 | 112 | 86 | 86 | 67 | 42 |

NOTES:

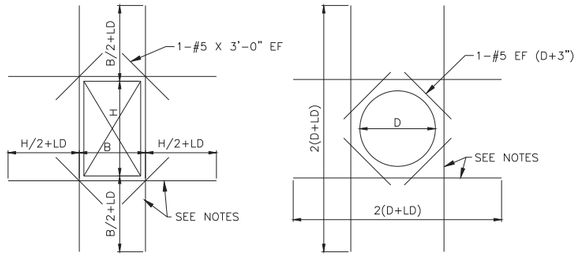
1. TOP BARS ARE HORIZONTAL BARS SO PLACED THAT MORE THAN 12" OF CONCRETE IS CAST IN THE MEMBER BELOW THE BAR.
2. FOR BARS SPACED LESS THAN 6 BAR DIAMETER OC INCREASE LENGTH BY 25%.
3. WHEN LAPPING TWO DIFFERENT SIZE BARS USE THE LAP LENGTH OF THE SMALLER BAR UNLESS NOTED OTHERWISE.
4. EMBEDMENT LENGTH IS MINIMUM LENGTH OF EMBEDMENT FOR STRAIGHT DOWELS WHERE END HOOK IS NOT SHOWN, UNLESS OTHERWISE NOTED.
5. COMPRESSION LAP LENGTH FOR VERICAL COLUMN BARS ONLY.
6. HOOKS SHALL BE ACI STANDARD UNLESS OTHERWISE NOTED.
7. FOR EPOXY COATED REINFORCEMENT, INCREASE LENGTH BY 20% FOR TOP BARS AND 50% FOR OTHERS.

2

SHEET
S9.00



FILE NAME : J:\1142720.14\DWG\ARCHITECTURAL–STRUCTURAL\1142720.14–S9.00.DWG PLOT DATE : 2/1/2018 9:30 AM PLOT BY : GINAL, SCOTT PLOT NAME :
WISDOT/CADDS SHEET 42



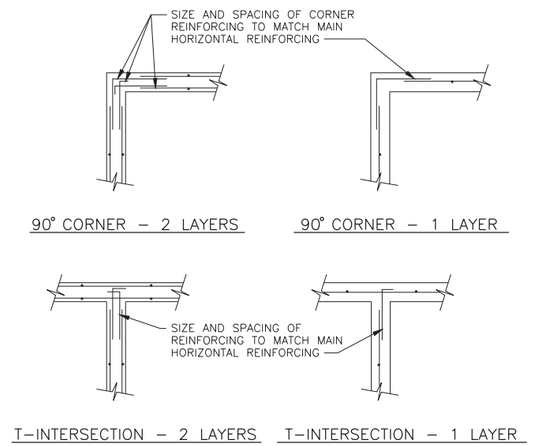

RECTANGULAR OPENING CIRCULAR OPENING

NOTES:

1. THESE DETAILS APPLY TO ALL OPENINGS IN CONCRETE WALLS AND SLABS WHEN THE LARGEST OPENING DIMENSION IS GREATER THAN TWO TIMES SECTION THICKNESS OR GREATER THAN REINFORCING SPACING IN THE SECTION, UNLESS OTHERWISE INDICATED IN THE DRAWINGS.
2. THE AREA OF ADDITIONAL REINFORCING REQUIRED IN EACH FACE ON EACH SIDE OF AN OPENING SHALL EQUAL OR EXCEED ONE-HALF OF THE AREA OF THE INTERCEPTED BARS IN EACH FACE, IN EACH DIRECTION, RESPECTIVELY WITH A MINIMUM OF 1-#5 BAR EACH FACE.
3. PLACE THE ADDED BARS IN THE SAME LAYERS AS THE WALL OR SLAB REINFORCING.
4. LD = EMBEDMENT LENGTH. SEE (S010)

**ADDITIONAL REINFORCEMENT AT OPENINGS IN WALLS AND SLABS DETAIL S020**

NTS

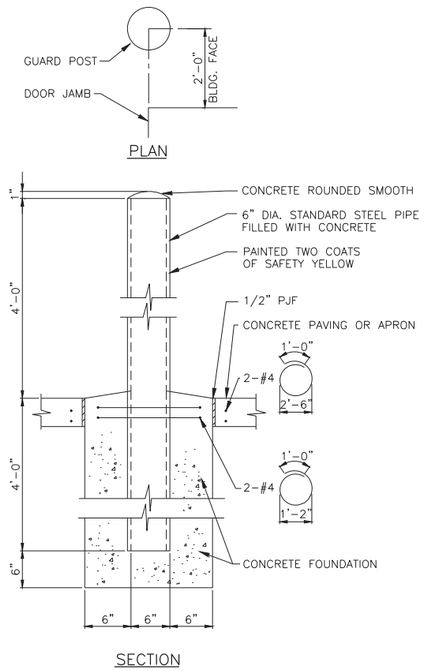



90° CORNER – 2 LAYERS 90° CORNER – 1 LAYER

T-INTERSECTION – 2 LAYERS T-INTERSECTION – 1 LAYER

**HORIZONTAL REINFORCEMENT DETAIL S030**

NTS

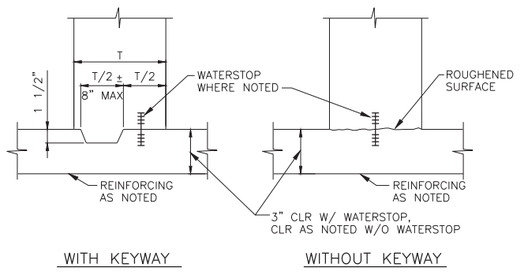



PLAN

SECTION

**GUARD POST DETAIL S100**

NTS

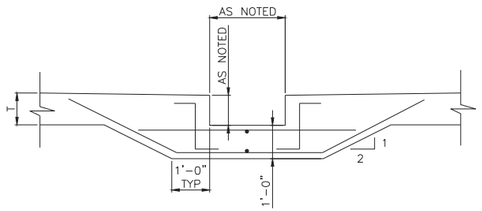



WITH KEYWAY WITHOUT KEYWAY

**BASE OF WALL**

**CONSTRUCTION JOINT DETAILS S300**

NTS

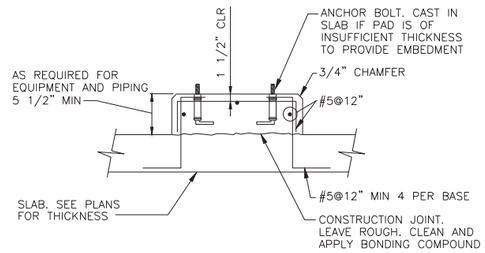



NOTES:

1. REINFORCEMENT #5@ 12" AS SHOWN.
1. T = SLAB THICKNESS, SEE PLAN.

**SUMP DETAIL S339**

NTS

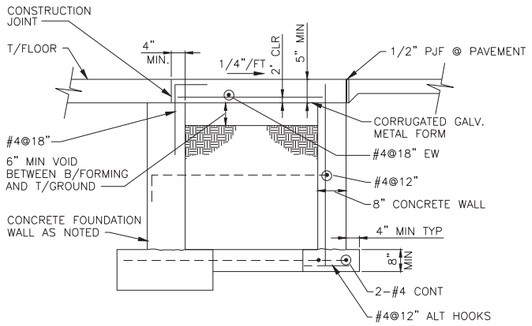



**EQUIPMENT PAD DETAIL S342**

NTS

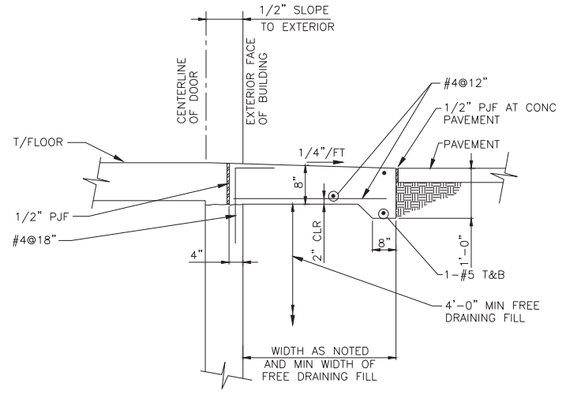
SHEET S9.01

| PROJECT NO: 1060-62-70 | HWY: GRANDVIEW BOULEVARD | COUNTY: WAUKESHA | STRUCTURAL DETAILS – 1 | SHEET 36 | E |
|---|---|---|---|---|---|




**DOOR STOOP DETAIL S362**

NTS

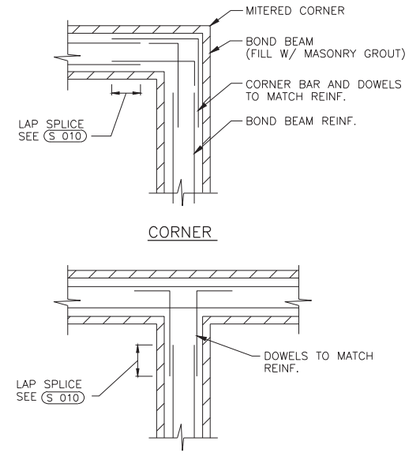



NOTES:

1. FREE DRAINING FILL MUST BE KEPT CLEAN UNTIL SLAB IS POURED.

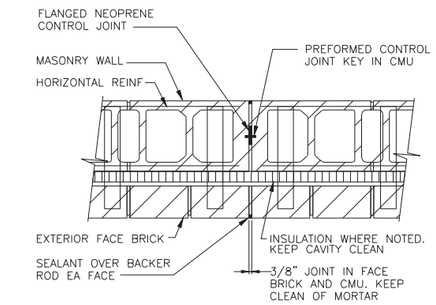
**APPROACH SLAB DETAIL S365**

NTS




**BOND BEAM REINFORCEMENT DETAIL S400**

NTS

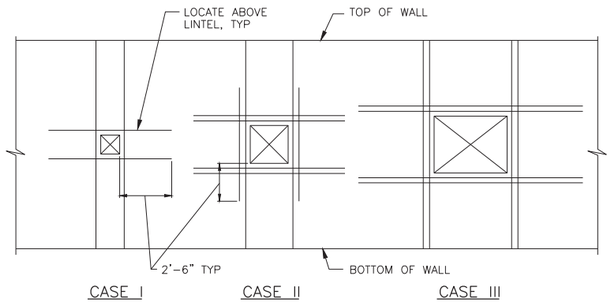



NOTES:

1. DISCONTINUE HORIZONTAL REINFORCING AT CONTROL JOINT.

**BRICK AND CMU CONTROL JOINT DETAIL S431**

NTS

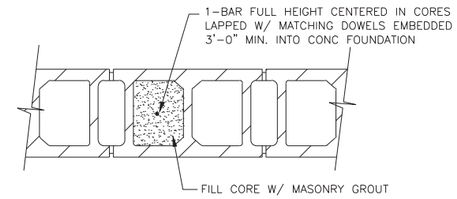



NOTES:

1. ALL REINFORCING SHOWN TO BE #4 BARS. SEE S451.
2. CASE I APPLIES TO ALL OPENINGS GREATER THAN 100 SQ INCHES WITH LARGEST DIMENSION LESS THAN 2'-0".
3. CASE II APPLIES TO ALL OPENINGS WITH ANY DIMENSION GREATER THAN OR EQUAL TO 2'-0" BUT LESS THAN 4'-0".
4. CASE III APPLIES TO ALL OPENINGS WITH ANY DIMENSION GREATER THAN OR EQUAL TO 4'-0".

**ADDITIONAL MASONRY REINF AT OPENINGS DETAIL S440**

NTS




NOTES:

1. REINFORCING SIZE AND SPACING AS NOTED.
2. LAP LENGTHS: #4 BAR = 1'-8", #5 BAR = 2'-2"

**REINFORCED MASONRY DETAIL S451**

NTS

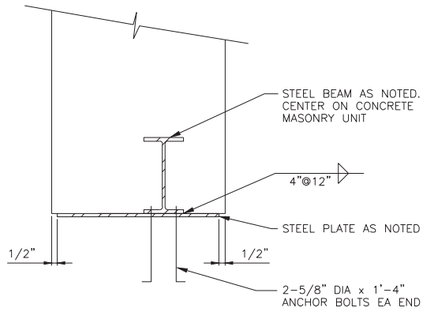
SHEET
S9.02

## LINTEL SCHEDULE S510

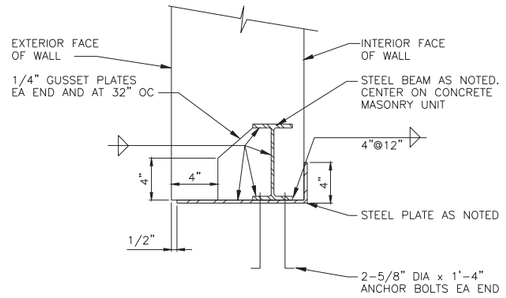
| MARK | DESCRIPTION | TYPE | REMARKS |
|---|---|---|---|
| L-1 | W16x26 W/ 5/16" PL | I | 8" BEARING EACH END. SEE (S514) |
| L-2 | W8x18 W/ 5/16" PL | I | 8" BEARING EACH END. SEE (S513) |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

NOTES:

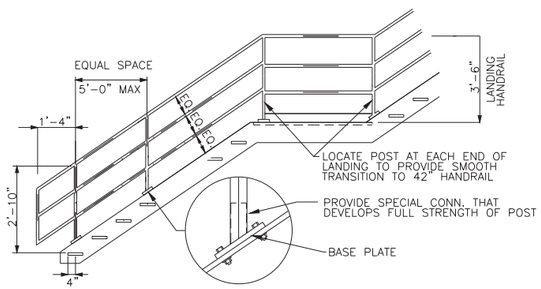
1. MASONRY OPENINGS LESS THAN 4'-0" IN WIDTH THAT DO NOT HAVE A LINTEL SCHEDULED SHALL HAVE A BOND BEAM WITH 2-#5 BARS OR STEEL ANGLE LINTEL WITH A TOTAL WIDTH OF HORIZONTAL LEGS APPROXIMATELY 1" LESS THAN WALL THICKNESS.
2. PROVIDE A MINIMUM OF 8" BEARING AT EACH END FOR STEEL BEAM LINTELS AND BOND BEAM LINTELS AND 6" BEARING AT EACH END FOR ANGLE LINTELS UNLESS NOTED OTHERWISE.
3. HOT DIP GALVANIZE LINTELS AFTER FABRICATION.




**STEEL LINTEL DETAIL S513**
NTS

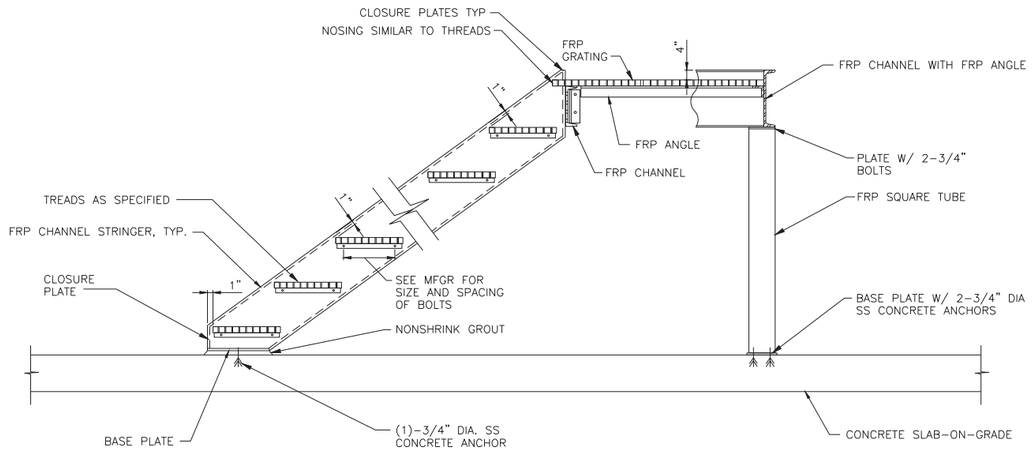



**STEEL LINTEL DETAIL S514**
NTS




STAIR DETAIL

**RAILING DETAIL S530**
NTS

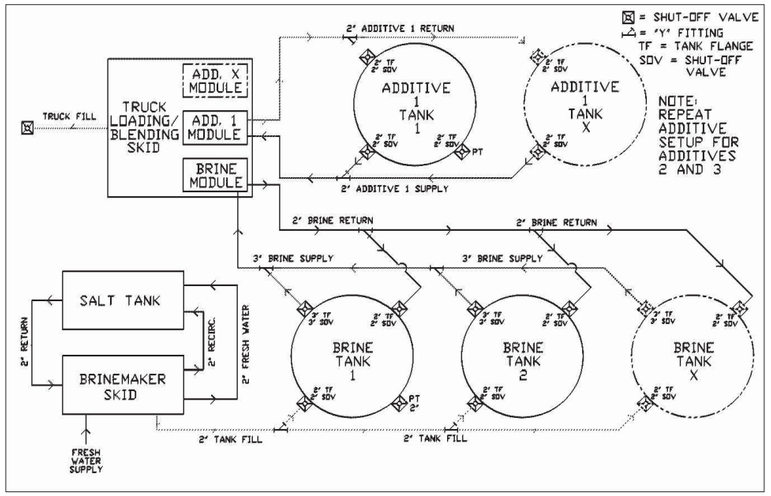



NOTES:

1. SPACE STRINGERS 3'-0" CLEAR MIN.
2. SEE DRAWINGS FOR SIZE AND NUMBER OF RISERS AND TREADS.
3. HANDRAIL NOT SHOWN FOR CLARITY.

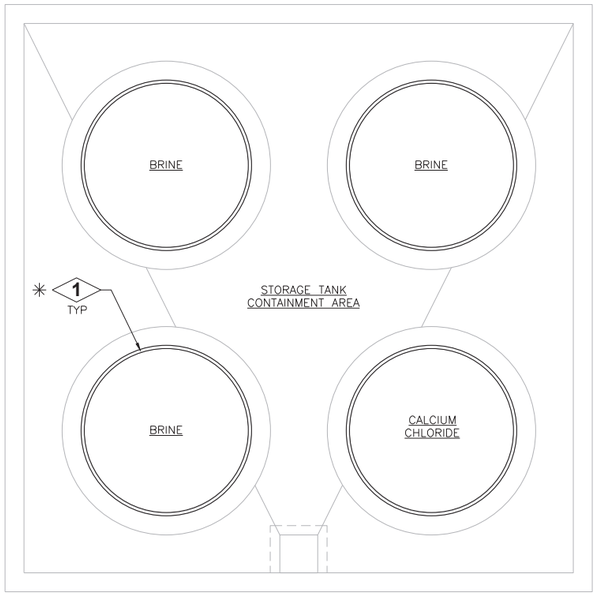
**FRP STAIR DETAIL S575**
NTS

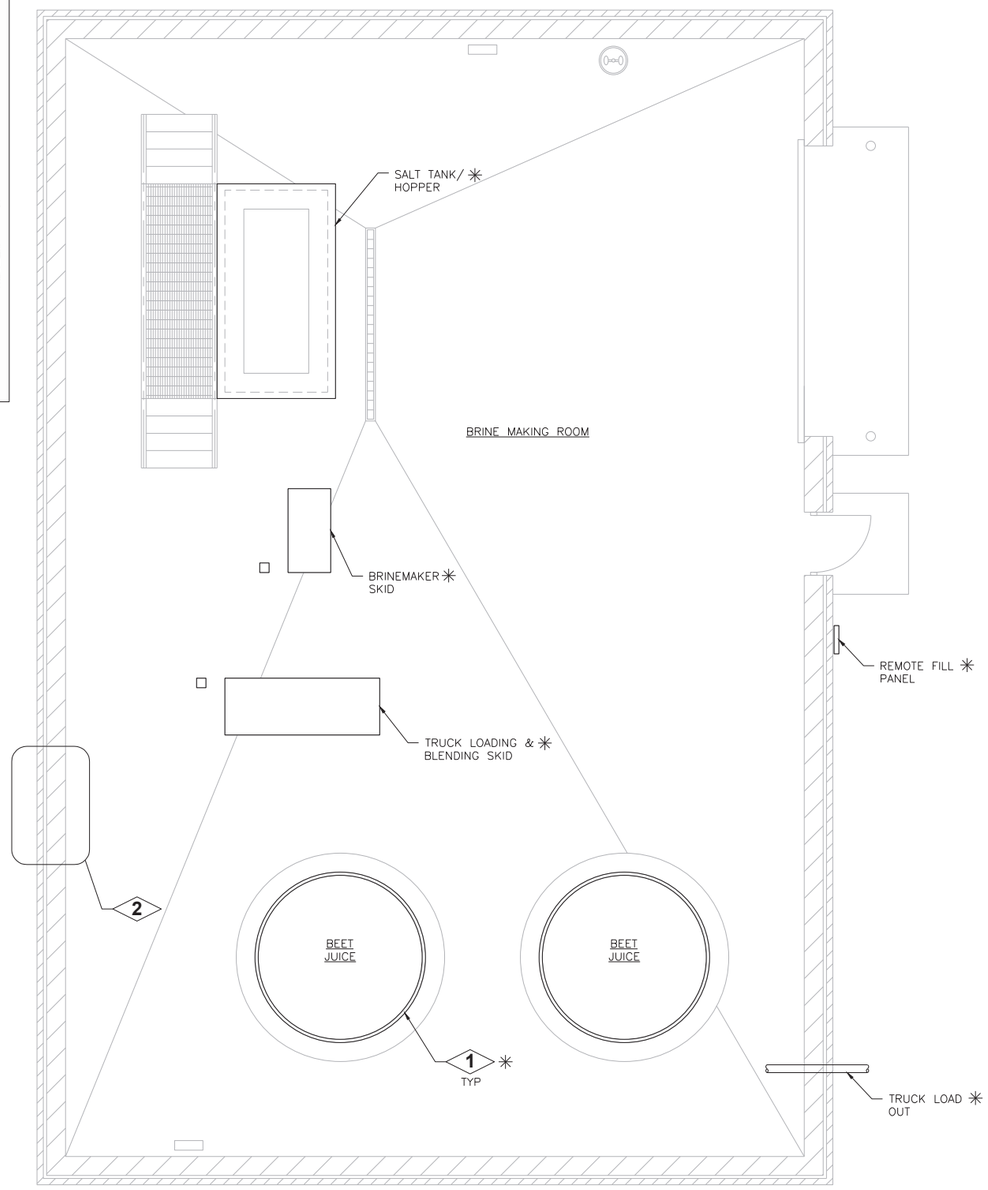
SHEET
S9.03




## PLUMBING SCHEMATIC FOR STORAGE TANKS

EQUIPMENT AND PIPING IS SUPPLIED AND INSTALLED BY OTHERS. SCHEMATIC IS PRELIMINARY IN NATURE AND SHOWS THE GENERAL LAYOUT FOR THE BRINING PROCESS. ACTUAL LAYOUT AND ARRANGEMENT WILL BE DETERMINED BY THE EQUIPMENT SUPPLIER.




## FLOOR PLAN

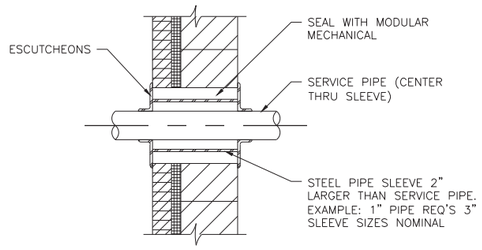
0' 1' 2' 4' 6'

## GENERAL NOTES:

1. ✳ = EQUIPMENT AND PIPING PROVIDED AND INSTALLED BY OTHERS AND IS NOT INCLUDED IN THE SCOPE OF WORK.

## PLAN NOTES:

1. EXISTING 6,000 GALLON STORAGE TANK.
2. REFER TO DETAIL 1 THIS SHEET FOR PROCESS PIPE/HOSING WALL PENETRATION DETAIL. PROCESS PIPE AND HOSING IS PROVIDED AND INSTALLED BY OTHERS AND IS NOT INCLUDED IN THIS SCOPE OF WORK.

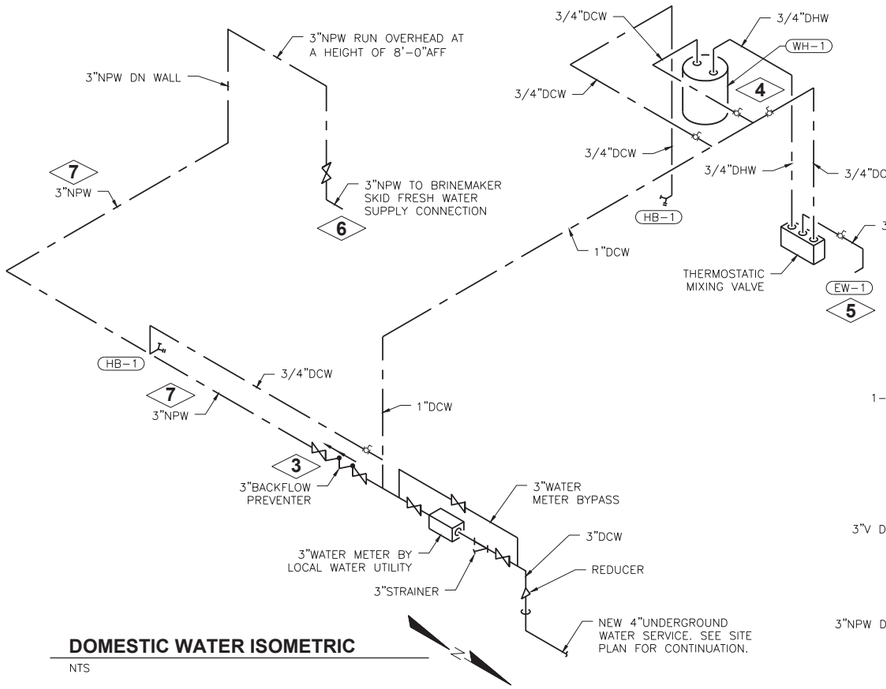



## PIPE PENETRATION THRU MASONRY WALL 1

NTS

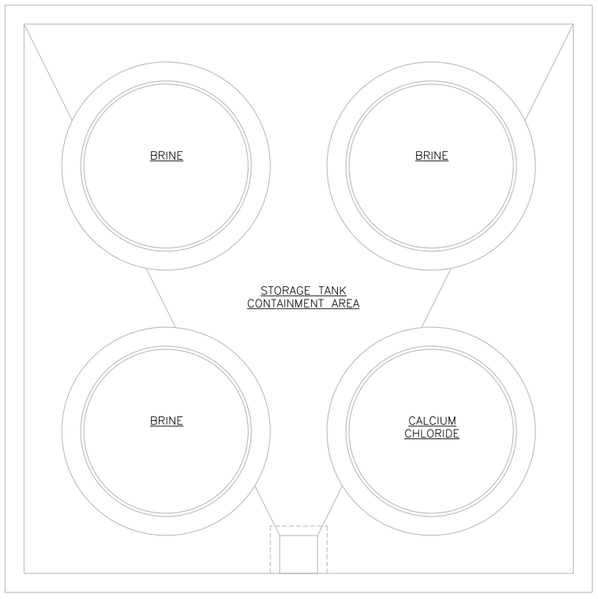
SHEET M2.00

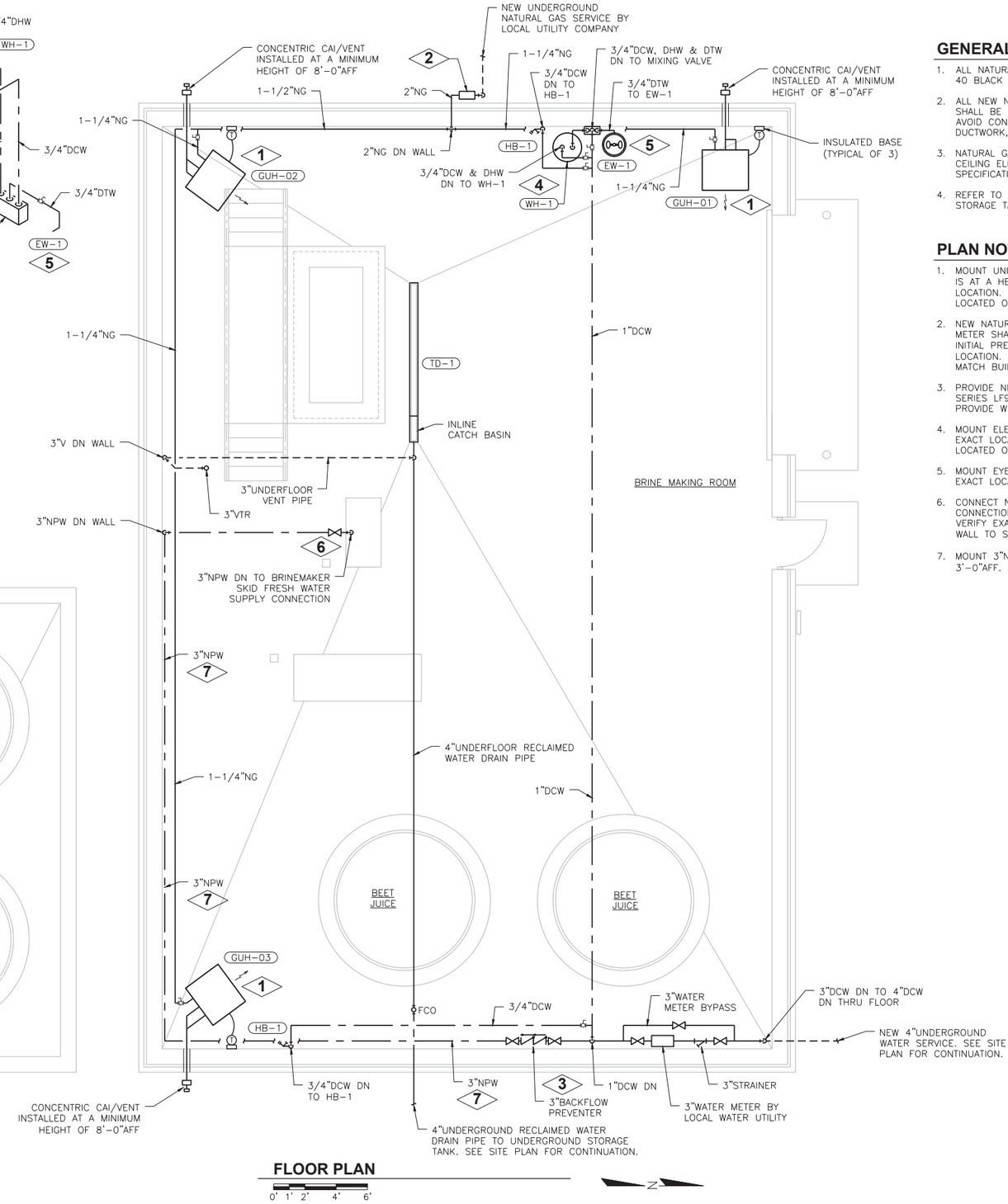
| PROJECT NO: 1060-62-70 | HWY: GRANDVIEW BOULEVARD | COUNTY: WAUKESHA | BRINING BUILDING: BRINING PROCESS PLAN | SHEET 39 | E |
|---|---|---|---|---|---|




## DOMESTIC WATER ISOMETRIC

NTS




## FLOOR PLAN

0' 1' 2' 4' 6'

## GENERAL NOTES:

1. ALL NATURAL GAS PIPING SHALL BE THREADED, SCHEDULE 40 BLACK STEEL PIPE.
2. ALL NEW NATURAL GAS PIPING SHOWN IS SCHEMATIC AND SHALL BE FIELD VERIFIED PRIOR TO CONSTRUCTION TO AVOID CONFLICTS WITH EQUIPMENT, CONDUIT, PIPING, DUCTWORK, AND LIGHT FIXTURES.
3. NATURAL GAS PIPING SHALL LOCATED JUST BELOW THE CEILING ELEVATION AND SUPPORT PER THE SPECIFICATIONS.
4. REFER TO SHEET M2.00 FOR PLUMBING SCHEMATIC FOR STORAGE TANKS.

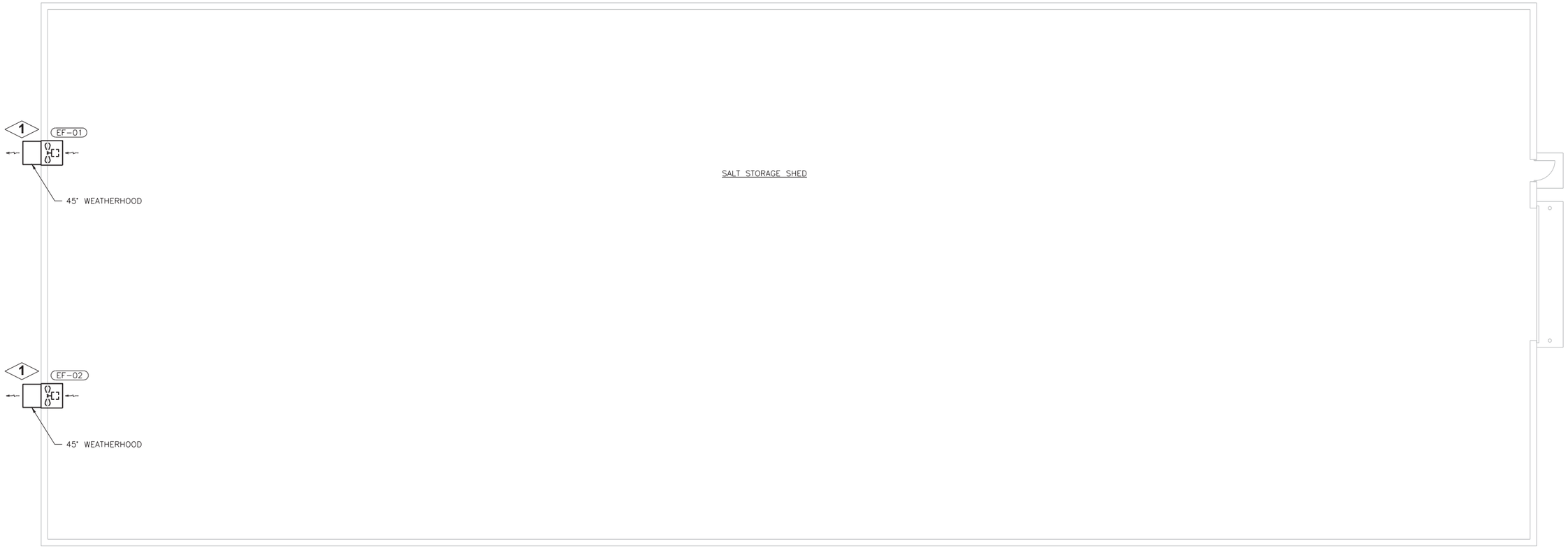
## PLAN NOTES:

1. MOUNT UNIT HEATER SUCH THAT THE BOTTOM OF THE UNIT IS AT A HEIGHT OF 8'-0"AFF. FIELD VERIFY EXACT LOCATION. SEE THE GAS FIRED UNIT HEATER DETAIL LOCATED ON SHEET HP2.20.
2. NEW NATURAL GAS METER BY LOCAL UTILITY COMPANY. METER SHALL BE CAPABLE OF SUPPLYING 375 MBH AT AN INITIAL PRESSURE OF 7"-11"WC. FIELD VERIFY EXACT LOCATION. ALL EXTERIOR NG PIPING SHALL BE PAINTED TO MATCH BUILDING COLOR.
3. PROVIDE NEW BACKFLOW PREVENTER EQUAL TO WATTS SERIES LF909 WITH RESILIENT SEATED GATE VALVES. PROVIDE WITH AIR GAP AND DRAIN LINE. PIPE TO FLOOR.
4. MOUNT ELECTRIC WATER HEATER ON WALL. FIELD VERIFY EXACT LOCATION. SEE THE ELECTRIC WATER HEATER DETAIL LOCATED ON SHEET HP2.20.
5. MOUNT EYEWASH AND MIXING VALVE TO WALL. FIELD VERIFY EXACT LOCATION. PIPE EYEWASH DRAIN TO FLOOR.
6. CONNECT NPW TO BRINEMAKER SKID FRESH WATER CONNECTION PER MANUFACTURERS RECOMMENDATIONS. FIELD VERIFY EXACT SIZE AND LOCATION. ROUTE PIPING FROM WALL TO SKID OVERHEAD AT A HEIGHT OF 8'-0"AFF.
7. MOUNT 3"NPW TO WALL AT AN APPROXIMATE HEIGHT OF 3'-0"AFF. FIELD VERIFY.

SHEET HP2.00

## PLAN NOTES:

1. FAN SHALL BE MOUNTED ON TOP OF 12'-0" HIGH CONCRETE WALL. FIELD VERIFY EXACT LOCATION. SEE ELECTRICAL DRAWINGS FOR FAN CONTROL.



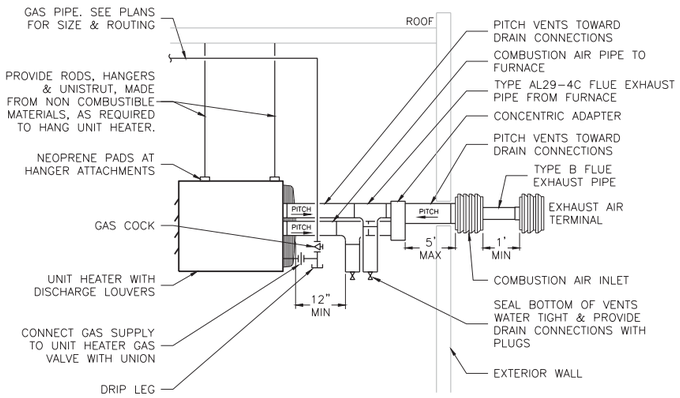

**SALT STORAGE SHED FLOOR PLAN**

0' 2' 4' 8' 12'

N

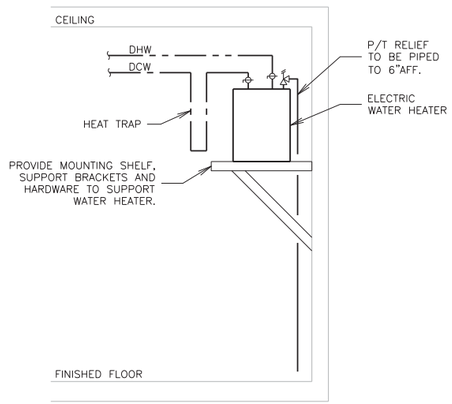
SHEET HP2.10

| PROJECT NO: 1060-62-70 | HWY: GRANDVIEW BOULEVARD | COUNTY: WAUKESHA | SALT STORAGE SHED: HVAC PLAN | SHEET 41 | E |
|---|---|---|---|---|---|




**GAS FIRED UNIT HEATER DETAIL**

NTS




**ELECTRIC WATER HEATER DETAIL**

NTS

## EXHAUST FANS

| | | | | | | |
|---|---|---|---|---|---|---|
| PLAN DESIGNATION | | | EF-01 | EF-02 | | |
| MANUFACTURER | | | GREENHECK | GREENHECK | | |
| MODEL | | | SE2-36-607-C | SE2-36-607-C | | |
| SERVICE | | | SALT STORAGE | SALT STORAGE | | |
| LOCATION | | | SALT STORAGE | SALT STORAGE | | |
| CONSTRUCTION | TYPE | | SIDEWALL PROP | SIDEWALL PROP | | |
| | CASING MATERIAL | | GALV. STEEL | GALV. STEEL | | |
| | FAN MATERIAL | | ALUMINUM | ALUMINUM | | |
| | DRIVE | | DIRECT | DIRECT | | |
| AIR | CFM | | 7,000 | 7,000 | | |
| | ESP - IN WC | | 0.25 | 0.25 | | |
| | FAN RPM | | 860 | 860 | | |
| ELECTRICAL | FAN MOTOR HP | | 1 | 1 | | |
| | FAN MOTOR BHP | | 0.8 | 0.8 | | |
| | VOLTS/PHASE | | 460V / 3Ø | 460V / 3Ø | | |
| | THER OVERLOAD PROTECTION | | BY DIV. 16 | BY DIV. 16 | | |
| INLET dBA | | | 78 | 78 | | |
| INLET SONES | | | 28 | 28 | | |
| REMARKS | | | 1, 2, 3 | 1, 2, 3 | | |

1. PROVIDE FACTORY MOUNTED AND WIRED DISCONNECT SWITCH.
2. PROVIDE WALL HOUSING, OSHA FAN GUARD AND ALUMINUM WEATHERHOOD.
3. PROVIDE HI-PRO POLYESTER COATING ON ALL FAN PARTS AND FAN ACCESSORIES. COLOR TO BE EITHER GREY OR IVORY. FINAL SELECTION BY OWNER/ARCHITECT.

## GAS FIRED UNIT HEATERS

| | | | | | |
|---|---|---|---|---|---|
| PLAN DESIGNATION | | GUH-01 | GUH-02 | GUH-03 | |
| MANUFACTURER | | MODINE | MODINE | MODINE | |
| MODEL | | HDS-125 | HDS-125 | HDS-125 | |
| NATURAL GAS INPUT - MBH | | 125 | 125 | 125 | |
| MIN EFFICIENCY | | 80% | 80% | 80% | |
| CFM | | 1,980 | 1,980 | 1,980 | |
| MOTOR | HP | 1/8 | 1/8 | 1/8 | |
| | RPM | 1,625 | 1,625 | 1,625 | |
| ELECTRICAL | AMPS | 4.75 | 4.75 | 4.75 | |
| | VOLTS/PHASE | 115V / 1Ø | 115V / 1Ø | 115V / 1Ø | |
| OPERATING WEIGHT | | 125 LBS | 125 LBS | 125 LBS | |
| REMARKS | | 1, 2, 3, 4 | 1, 2, 3, 4 | 1, 2, 3, 4 | |

1. PROVIDE DISCONNECT.
2. PROVIDE WITH CONCENTRIC COMBUSTION AIR INTAKE/VENT KIT.
3. MOUNT HEATER SUCH THAT THE BOTTOM OF UNIT IS AT A HEIGHT OF 8'-0" AFF.
4. PROVIDE STAINLESS STEEL HEAT EXCHANGER & FLUE COLLECTOR BOX.

## PLUMBING GEN NOTES

1. THESE DRAWINGS DO NOT ATTEMPT TO SHOW THE COMPLETE DETAILS OF BUILDING CONSTRUCTION, WHICH AFFECT THE PLUMBING INSTALLATION. THE CONTRACTOR SHALL REFER TO OTHER TRADES DRAWINGS FOR ADDITIONAL DETAILS WHICH AFFECT THE PROPER INSTALLATION OF THIS WORK. NO EXTRA PAYMENT WILL BE ALLOWED FOR THE FAILURE TO OBTAIN THIS INFORMATION.
2. PLUMBING CONTRACTOR SHALL COORDINATE HIS WORK WITH THE WORK OF OTHER TRADES. RESOLVE ALL CONFLICTS AT NO ADDITIONAL COST TO THE OWNER OR ARCHITECT.
3. THESE DRAWINGS ARE A DIAGRAMMATIC REPRESENTATION OF WORK TO BE ACCOMPLISHED AND AS SUCH DO NOT SHOW ALL REQUIRED OFFSETS OF PIPING. PLUMBING CONTRACTOR SHALL INSTALL MATERIAL AND EQUIPMENT AS TO CONFORM TO THE STRUCTURE, EQUIPMENT CONNECTIONS AND MAINTAIN HEADROOM AND PASSAGEWAY.
4. PLAN NOTES PERTAIN ONLY TO THE DRAWING THEY ARE LOCATED ON.
5. ALL NON-POTABLE WATER PIPING AND FIXTURES SHALL CLEARLY BE LABELED AS SUCH.

## PLUMBING LEGEND

- — PLUMBING EQUIPMENT
- DCW — DOMESTIC COLD WATER
- DHW — DOMESTIC HOT WATER
- DTW — DOMESTIC TEMPERED WATER
- NPW — NON-POTABLE WATER
- DRAIN — RECLAIMED WATER DRAIN PIPE
- V — VENT PIPE
- — BALL VALVE
- — GATE VALVE
- — CHECK VALVE
- — STRAINER
- — HOSE BIB
- — PIPE ELBOW/TEE DOWN
- — PIPE ELBOW/TEE UP
- — CAPPED PIPE END

## PLUMBING ABBREV'S

- BFP — BACKFLOW PREVENTER
- DN — DOWN
- EW — EYE WASH
- FCO — FLOOR CLEANOUT
- HB — HOSE BIB
- TD — TRENCH DRAIN
- UG — UNDERGROUND
- WH — WATER HEATER
- VTR — VENT THRU ROOF

## HVAC GENERAL NOTES

1. THESE DRAWINGS DO NOT ATTEMPT TO SHOW THE COMPLETE DETAILS OF BUILDING CONSTRUCTION, WHICH AFFECT THE MECHANICAL INSTALLATION. THE CONTRACTOR SHALL REFER TO OTHER TRADES DRAWINGS FOR ADDITIONAL DETAILS WHICH AFFECT THE PROPER INSTALLATION OF THIS WORK. NO EXTRA PAYMENT WILL BE ALLOWED FOR THE FAILURE TO OBTAIN THIS INFORMATION.
2. MECHANICAL CONTRACTOR SHALL COORDINATE HIS WORK WITH THE WORK OF OTHER TRADES. RESOLVE ALL CONFLICTS AT NO ADDITIONAL COST TO THE OWNER OR ARCHITECT.
3. THESE DRAWINGS ARE A DIAGRAMMATIC REPRESENTATION OF WORK TO BE ACCOMPLISHED AND AS SUCH DO NOT SHOW ALL REQUIRED OFFSETS OF DUCTWORK AND PIPING. MECHANICAL CONTRACTOR SHALL INSTALL MATERIAL AND EQUIPMENT AS TO CONFORM TO THE STRUCTURE, EQUIPMENT CONNECTIONS AND MAINTAIN HEADROOM AND PASSAGEWAY.
4. PLAN NOTES PERTAIN ONLY TO THE DRAWING THEY ARE LOCATED ON.
5. DUCT SIZES ARE CLEAR INSIDE DIMENSIONS.
6. ALL CONTROL WIRING SHALL BE RUN IN CONDUIT.
7. MAINTAIN 10' MINIMUM DISTANCE FROM OUTSIDE AIR INTAKE TO ANY EXHAUST OR TOILET VENTS.

## HVAC LEGEND

- — HVAC EQUIPMENT
- T — THERMOSTAT
- — AIR FLOW INDICATOR
- NG — NATURAL GAS PIPING
- — BALL VALVE
- — GAS PRESSURE REGULATOR
- — PIPE ELBOW/TEE DOWN
- — PIPE ELBOW/TEE UP
- — CAPPED PIPE END

## HVAC ABBREVIATIONS

- AFF — ABOVE FINISHED FLOOR
- CAI — COMBUSTION AIR INTAKE
- CFM — CUBIC FEET PER MINUTE
- DN — DOWN
- EA — EXHAUST AIR
- MIN — MINIMUM
- MAX — MAXIMUM
- NG — NATURAL GAS

## PLUMBING FIXTURE SCHEDULE

| MARK | MANUFACTURER | MODEL | DESCRIPTION | WSFU HW | WSFU CW | WSFU TOTAL | DFU VALUE |
|---|---|---|---|---|---|---|---|
| EW-1 | BRADLEY | S19224EW | WALL MOUNT, BARRIER FREE, EYE WASH UNIT TO INCLUDE AN ABS PLASTIC HALO EYEWASH SYSTEM WITH INTEGRAL FLOW CONTROL AND FLIP TOP DUST COVERS, A 1/2"CHROME PLATED BRASS STAY-OPEN BALL VALVE ACTIVATED BY A STAINLESS STEEL PUSH HANDLE, HEAVY-GAUGE CAST ALUMINUM WALL BRACKET, 1/2" WATER SUPPLY INLET, 1-1/4"DRAIN OUTLET AND ABS PLASTIC BOWL. PROVIDE WITH NAVIGATOR S19-2000 EFX8 THERMOSTATIC MIXING VALVE IN SURFACE MOUNTED STAINLESS STEEL CABINET. | -- | -- | -- | -- |
| HB-1 | WOODFORD | 24 | NON-FREEZE AREA, ANTI-SIPHON VACUUM BREAKER PROTECTED WALL FAUCET, 3/4" MALE HOSE THREAD NOZZLE, BRASS VALVE BODY, ONE PIECE VALVE PLUNGER, HARDENED STAINLESS STEEL OPERATING STEM, AND POLYCARBONATE WHEEL HANDLE. PROVIDE WITH POLISHED CHROME FINISH. | -- | 4.0 | 4.0 | -- |
| TD-1 | ACO | KS200 | 8"WIDE PRE-SLOPED, MODULAR TRENCH DRAINAGE SYSTEM, POLYMER CONCRETE DRAIN CHANNEL BODY WITH STAINLESS STEEL EDGE RAIL AND LOAD CLASS E SLOTTED IRON GRATES. PROVIDE WITH TYPE 900 IN-LINE CATCH BASIN WITH PLASTIC TRASH BUCKET AND FOUL AIR TRAP. | -- | -- | -- | 6.0 |
| WH-1 | A.O. SMITH | DEL-20 | ELECTRIC WATER HEATER WITH 20 GALLON GLASS LINED STORAGE TANK, A SINGLE 2500 WATT, 277V/1P HEATING ELEMENT CONTROLLED BY AN INTEGRALLY MOUNTED THERMOSTAT WITH HIGH TEMPERATURE CUTOFF SWITCH, TEMPERATURE/PRESSURE RELIEF VALVE AND DRAIN VALVE. | -- | -- | -- | -- |

SHEET HP2.20

2

## LEGEND:

```
X-XX ——— LIGHTING UNIT NUMBER
XXXX+XX.XX'XX' X' XX—LOCATION
XXX-XXX-XX-XX-XX-X-XX
                   | CIRCUIT
                   | PANEL
                   MAST ARM LENGTH IN FEET
                   POLE SHAFT LENGTH IN FEET
                   FIXTURE VERTICAL TILT ANGLE
                   LAMP WATTAGE
                   FIXTURE IES DISTRIBUTION TYPE
```

## DESIGN CRITERIA:

| | |
|---|---|
| ROADWAY CLASSIFICATION: | LOCAL |
| AREA CLASSIFICATION: | LOW |
| PAVEMENT CLASSIFICATION: | R1 |

## SHEET NOTES:

1. FOR ROADWAYS, CONDUIT SHALL NOT BE PLACED WITHIN FIVE (5) FEET OF ASPHALTIC CONCRETE SHOULDER.
2. INDICATED DIMENSIONS ARE NOMINAL, MINOR VARIATIONS BEING PERMITTED.
3. SHARE TRENCHES AND PULL BOX SYSTEM WITH POWER WHERE PRACTICAL.
4. CONDUIT SHALL BE 2-INCH UNLESS OTHERWISE SHOWN OR INDICATED.
5. ALL WIRING INSTALLED WITHIN LIGHT POLE AND MOUNTING ARM WHERE APPLICABLE TO THE LIGHTING FIXTURE SHALL BE #12 AWG UNLESS OTHERWISE NOTED.
6. ISOLATED-NEUTRAL WIRING SYSTEM SHALL BE UTILIZED FOR 277V LIGHT POLE HANDHOLE WIRING.

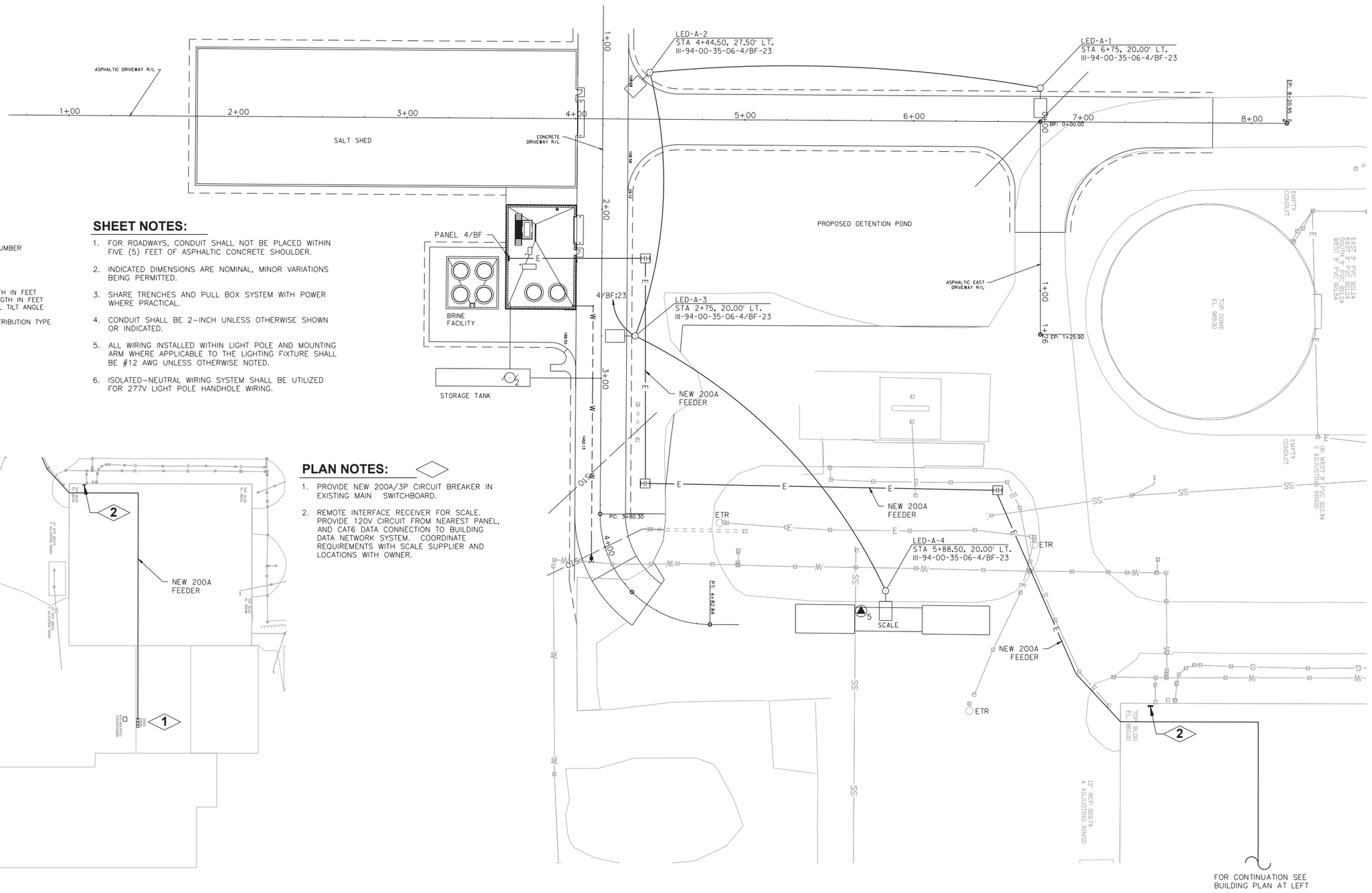



## PLAN NOTES:

1. PROVIDE NEW 200A/3P CIRCUIT BREAKER IN EXISTING MAIN SWITCHBOARD.
2. REMOTE INTERFACE RECEIVER FOR SCALE. PROVIDE 120V CIRCUIT FROM NEAREST PANEL, AND CAT6 DATA CONNECTION TO BUILDING DATA NETWORK SYSTEM. COORDINATE REQUIREMENTS WITH SCALE SUPPLIER AND LOCATIONS WITH OWNER.

## HIGHWAY OPERATIONS BUILDING PLAN

0' 15' 30' 60' 120'




## SITE PLAN

0' 7'6"15' 30' 60'

SHEET
CE1.00

| PROJECT NO: 1060-62-70 | HWY: GRANDVIEW BOULEVARD | COUNTY: WAUKESHA | BRINING FACILITY: ELECTRICAL SITE PLAN | SHEET 43 | E |
|---|---|---|---|---|---|

## LIGHTING FIXTURE SCHEDULE

| FIXT. | DESCRIPTION | LAMPING | | | VOLT | MANUFACTURER | CATALOG NUMBER | MOUNTING | SEE NOTE |
|---|---|---|---|---|---|---|---|---|---|
| | | NO. | TYPE | INPUT | | | | | |
| A | 2' PENDANT MOUNT FIXTURE | - | 4,000 LUMEN, 4000K LED | 40W | 277V | LITHONIA | DMW2-L24-400LM-ACL-MD-277-40K-PMP4X-STSL | PENDANT MOUNTED 15' AFF | 4 |
| B | 4' PENDANT MOUNT FIXTURE | - | 12,000 LUMEN, 4000K LED | 107W | 277V | LITHONIA | VAP-12000LM-PCL-MD-277-40K-STSL-CMB | PENDANT MOUNTED - SEE PLAN | 4 |
| EX1 | EXTERIOR WALL MOUNT FIXTURE | - | 7,924 LUMEN, 4000K LED | 69W | 277V | LITHONIA | CSXW-LED-30C-700-40K-T4M-MVOLT-DDBXD | WALL AT ELEVATION NOTED ON PLAN | |
| EX2 | EXTERIOR WALL MOUNT FIXTURE | - | 11,735 LUMEN, 4000K LED | 104W | 277V | LITHONIA | CSXW-LED-30C-1000-40K-T4M-MVOLT-DDBXD | WALL AT ELEVATION NOTED ON PLAN | |
| LED-A | DOT STANDARD UTILITY LED-A FIXTURE DISTRIBUTION TYPE III ROADWAY | - | 4000K LED | 72 - 113W | 277V | COOPER LIGHTING (STREETWORKS)<br>CREE<br>LEOTEK | NVN-AE-02-D-VOLT-T3R-700-10K-4N7-AP-WISD<br>STR-LWY-3M-HT-05-E-UL-SV-700-40K-7PIN-UTL<br>GC1-40F-MV-NW-3-GY-700-PCR7-WL-WISDOT-A-SC | 35' POLE WITH 6' MAST ARM AND TRANSFORMER BASE, MOUNTED ON CONCRETE BASE | 6, 7 |
| EBU-1 | EMERGENCY BATTERY UNIT | 2 | 1.9W, 9.6V LED LAMP HEADS | 2.7W | 277V | LITHONIA | WLTU-LED / ELA-T-QWP-L0309 | WALL MOUNTED 7'-6" AFF | 5 |
| X1 | NEMA 4X EXIT SIGN | - | LED | 3.3W | 277V | LITHONIA | LV-S-W-1-R-120/277-EL N-4X | WALL MOUNTED ABOVE DOOR | 1,2,3 |

**REMARKS:**

A. CONTRACTOR SHALL CONFIRM CEILING TYPE REQUIREMENTS PRIOR TO THE RELEASE OF THE ORDER.
B. CATALOG NUMBERS ARE TO PROVIDE GUIDANCE ONLY AND MAY NOT BE COMPLETE.
C. FIXTURES SPECIFIED TO MEET DESIGN INTENT. EQUALS MAY BE SUBSTITUTED SUBJECT TO DESIGN TEAM'S APPROVAL.
D. PROVIDE ALL PARTS AND PIECES NECESSARY FOR A COMPLETE AND FUNCTIONAL INSTALLATION.
E. ARCHITECT TO DETERMINE ALL FINISHES.

**NOTES:**

1. FIELD SELECTABLE CHEVRONS SHALL BE APPLIED OR INSTALLED/REMOVED AS INDICATED ON PLANS AND AS REQUIRED BY ALL GOVERNING CODES.
2. PROVIDE NUMBER OF FACES AS INDICATED ON PLANS AND AS REQUIRED BY ALL GOVERNING CODES.
3. ALL EXIT SIGNS MUST MEET ALL CITY, STATE, AND NATIONAL CODES INCLUDING BUT NOT LIMITED TO IBC 1011 AND ANSI-A117.1 SEC 703.
4. PROVIDE CHAIN ACCESSORY OR STEMS IN LENGTH NECESSARY TO ACCOMMODATE MOUNTING HEIGHTS AS INDICATED.
5. TWIN LED WEATHER-PROOF REMOTE HEAD.
6. INCLUDE WisDOT CATEGORY LABEL.
7. FIXTURE EQUALS ALSO INCLUDE AMERICAN ELECTRIC LIGHTING (AEL) AND PHILLIPS.

## SPECIAL PURPOSE OUTLET SCHEDULE

| MARK | TO FEED | LOCATION | KW | FLA | VOLT | PH | FEED FROM | | BREAKER | | TYPE | | | SEE NOTE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | PANEL | CKT | SIZE | POLE | RECPT | DIRECT | OTHER | |
| 1 | BRINEMAKER SKID | BRINE MAKING RM. | | 24 | 208 | 3 | 2/BF | 2,4,6 | 30 | 3 | X | | | 1,3,5,6,7,8,10,11 |
| 2 | TRUCK LOADING & BLENDING SKID | BRINE MAKING RM. | | 48 | 208 | 3 | 2/BF | 8,10,12 | 60 | 3 | X | | | 2,3,7,8,9 |
| 3 | REMOTE TRUCK LOADING STATION (HMI) | OUTSIDE | - | - | 24 | - | - | - | - | - | | X | | 4 |
| 4 | ELECTRIC WATER HEATER WH-1 | BRINE MAKING RM. | 2.5 | 9.0 | 277 | 1 | 4/BF | 14 | 15 | 1 | | X | | |
| 5 | REMOTE TRUCK SCALE | OUTSIDE | - | - | 120 | 1 | 2/BF | 11 | 20 | 1 | | X | | |

**NOTES:**

1. 30A, 3 PHASE RECEPTACLE FURNISHED BY CARGILL, INSTALLED AND WIRED BY E.C. PROVIDE 6"X6"X4" JUNCTION BOX.
2. 100A, 3 PHASE RECEPTACLE FURNISHED BY CARGILL, INSTALLED AND WIRED BY E.C. PROVIDE 6"X6"X4" JUNCTION BOX.
3. LOCATE WITHIN 5 FT. OF THE CONTROL PANEL ELECTRICAL ENCLOSURE LOCATION.
4. PROVIDE 3/4" CONDUIT FROM REMOTE TRUCK FILL STATION TO THE TRUCK LOADING & BLENDING SKID. WIRING BY CARGILL.
5. PROVIDE 3/4" CONDUIT FROM BRINEMAKER SKID CONTROL PANEL TO SALT TANK PRESSURE TRANSMITTER (PT). WIRING BY GCARGILL.
6. PROVIDE 3/4" CONDUIT FROM BRINEMAKER SKID CONTROL PANEL TO EACH BRINE STORAGE TANK PRESSURE TRANSMITTER (PT). WIRING BY CARGILL.
7. PROVIDE 3/4" CONDUIT FROM TRUCK FILL SKID BRINE FLOWMETER TO BRINEMAKER SKID - PLC/HMI PANEL. WIRING BY CARGILL.
8. PROVIDE 3/4" CONDUIT FROM TRUCK FILL SKID BLENDING SKID TO BRINEMAKER SKID. WIRING BY CARGILL.
9. PROVIDE 3/4" CONDUIT FROM TRUCK LOADING/BLENDING SKID JUNCTION PANEL TO EACH ADDITIVE STORAGE TANK PRESSURE TRANSMITTER (PT). WIRING BY CARGILL.
10. PROVIDE 1" CONDUIT FROM BRINEMAKER SKID CONTROL PANEL TO RECYCLE WATER STORAGE TANK PRESSURE TRANSMITTER. WIRING BY CARGILL.
11. PROVIDE 3/4" CONDUIT FROM BRINEMAKER SKID TO RECYCLE WATER CONTROL PANEL. WIRING BY CARGILL.

## MOTOR WIRING SCHEDULE

| NO. | DRIVING | LOC. | HP | FLA | VOLT | PH. | FEED FROM | | BREAKER | | STARTER | | DISCONNECT | | SEE NOTE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | PANEL | CIRCUIT | SIZE | POLE | TYPE | LOC. | TYPE | LOC. | |
| 1 | RECYCLE WATER PUMP | BRINE RM. | 5 | 17.5 | 208 | 3 | 2/BF | 14,16,18 | 30 | 3 | COMB. MAG | BRINE RM. | FUSIBLE | IN STR. | |
| 2 | SUBMERSIBLE PUMP | STORAGE TANK | 7 1/2 | 25.3 | 208 | 3 | 2/BF | 20,22,24 | 50 | 3 | COMB. MAG | BRINE RM. | FUSIBLE | IN STR. | |
| 3 | OVERHEAD DOOR MOTOR | BRINE RM. | 1 1/2 | 3 | 480 | 3 | 4/BF | 1,3,5 | 15 | 3 | COMB. MAG | BRINE RM. | FUSIBLE | IN STR. | |
| 4 | OVERHEAD DOOR MOTOR | SALT STORAGE | 1 1/2 | 3 | 480 | 3 | 4/BF | 7,9,11 | 15 | 3 | COMB. MAG | SALT BARN | FUSIBLE | IN STR. | |
| 5 | EXHAUST FAN EF-01 | SALT STORAGE | 1 | 2.1 | 480 | 3 | 4/BF | 2,4,6 | 15 | 3 | COMB. MAG | SALT BARN | FUSIBLE | IN STR. | |
| 6 | EXHAUST FAN EF-02 | SALT STORAGE | 1 | 2.1 | 480 | 3 | 4/BF | 8,10,12 | 15 | 3 | COMB. MAG | SALT BARN | FUSIBLE | IN STR. | |
| 7 | GAS FIRED UNIT HEATER GUH-01 | BRINE RM. | 1/8 | 3.8 | 120 | 1 | 2/BF | 13 | 15 | 1 | | BRINE RM. | TOGGLE | N.U. | |
| 8 | GAS FIRED UNIT HEATER GUH-02 | BRINE RM. | 1/8 | 3.8 | 120 | 1 | 2/BF | 15 | 15 | 1 | | BRINE RM. | TOGGLE | N.U. | |
| 9 | GAS FIRED UNIT HEATER GUH-03 | BRINE RM. | 1/8 | 3.8 | 120 | 1 | 2/BF | 17 | 15 | 1 | | BRINE RM. | TOGGLE | N.U. | |

**REMARKS:**

A.

**NOTES:**

## GENERAL NOTES

1. DRAWINGS ARE DIAGRAMMATIC AND DO NOT SHOW ALL REQUIRED COMPONENTS FOR A COMPLETE INSTALLATION. CONTRACTOR SHALL FURNISH AND INSTALL MATERIAL,EQUIPMENT, DEVICES, FIXTURES, SERVICE REQUIREMENTS NECESSARY TO CONFORM TO THE STRUCTURE, EQUIPMENT CONNECTIONS, FOR A COMPLETE AND FUNCTIONAL INSTALLATION AND SHALL MAINTAIN APPROPRIATE CLEARANCES.
2. ALL WORK SHALL COMPLY WITH APPLICABLE NATIONAL, STATE, LOCAL CODES, FEDERAL AND STATE REGULATIONS, AND ALL REQUIREMENTS OF THE LOCAL AUTHORITIES HAVING JURISDICTION.
3. CONTRACTOR SHALL COORDINATE WORK WITH ALL OTHER TRADES PRIOR TO INSTALLATION.
4. THE CONTRACTOR SHALL VISIT THE SITE TO DETERMINE THE FULL EXTENT OF WORK AND PROJECT CONDITIONS. FAILURE TO DO SO WILL NOT RELIEVE THE CONTRACTOR OF THE OBLIGATIONS OF THE CONTRACT.
5. THE CONTRACTOR SHALL CHECK ALL DRAWINGS AND SPECIFICATIONS OF OTHER TRADES AND INCLUDE IN THEIR BID ANY ADDITIONAL WORK REQUIRED BY THIS TRADE.
6. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS AND MOUNTING HEIGHTS OF ALL LIGHT SWITCHES, POWER, AND COMMUNICATIONS OUTLETS. ALL OUTLETS SHALL BE MOUNTED VERTICALLY UNLESS OTHERWISE NOTED. COORDINATE ALL FINAL DEVICE REQUIREMENTS WITH ARCHITECT PRIOR TO INSTALLATION.
7. ALL CONDUITS SHOULD BE SUPPORTED IN COMPLIANCE WITH CODE REQUIREMENTS AND INSTALLED IN A MANNER AS TO AFFORD MINIMUM INTERFERENCE WITH OTHER TRADES. ALL CONDUITS ABOVE CEILING SHALL BE RIGIDLY SUPPORTED BY SUITABLE HANGERS FROM THE STRUCTURAL SLAB DECK OR FRAMING ABOVE INDEPENDENT OF THE CEILING, CEILING SUPPORT SYSTEM AND OTHER TRADE COMPONENTS. ALL CONDUITS SHALL BE CONCEALED UNLESS OTHERWISE NOTED ON DRAWINGS.
8. FIRE RATED SEALS SHALL BE PROVIDED FOR ALL CONDUIT PENETRATIONS THROUGH FIRE RATED FLOORS, WALLS, AND CEILINGS.
9. CONTRACTOR SHALL VERIFY ALL EQUIPMENT CONNECTION CONFIGURATIONS BEFORE PURCHASE. ALL DEVICES SHOWN ARE FOR REFERENCE ONLY, TO COMMUNICATE DESIGN INTENT. FINAL LOCATIONS SHALL BE VERIFIED PRIOR TO INSTALLATION. THIS NOTE SHALL APPLY TO, BUT NOT BE LIMITED TO, RECEPTACLES, SWITCHES, DATA PORTS, AUDIO/VIDEO DEVICES, AND TELEPHONE JACKS.
10. THE CONTRACTOR SHALL COORDINATE AND VERIFY ALL ABOVE CEILING REQUIREMENTS (PLENUM, NON-PLENUM, AIR HANDLING, ETC.) AS REQUIRED BY LOCAL AUTHORITY BEFORE THE INSTALLATION AND PURCHASE OF ELECTRICAL EQUIPMENT, MATERIALS AND DEVICES, WIRING, CABLING, AND THE ORDERING OF LIGHTING FIXTURES.
11. CONDUCTOR SIZES INDICATED ARE MINIMUM SIZES BASED ON 75°C COPPER CONDUCTOR. AMPACITIES OF CONDUCTORS DO NOT TAKE VOLTAGE DROP INTO CONSIDERATION. CONTRACTOR SHALL SIZE CONDUCTORS FOR FEEDERS AND BRANCH CIRCUITS TO PREVENT A VOLTAGE DROP EXCEEDING 3 PERCENT AT THE FARTHEST OUTLET OF POWER, HEATING, AND LIGHTING LOADS, OR COMBINATION OF SUCH LOADS, AND WHERE THE MAXIMUM TOTAL VOLTAGE DROP ON BOTH FEEDERS AND BRANCH CIRCUITS TO THE FARTHEST OUTLET DOES NOT EXCEED 5 PERCENT, TO PROVIDE REASONABLE EFFICIENCY OF OPERATION.

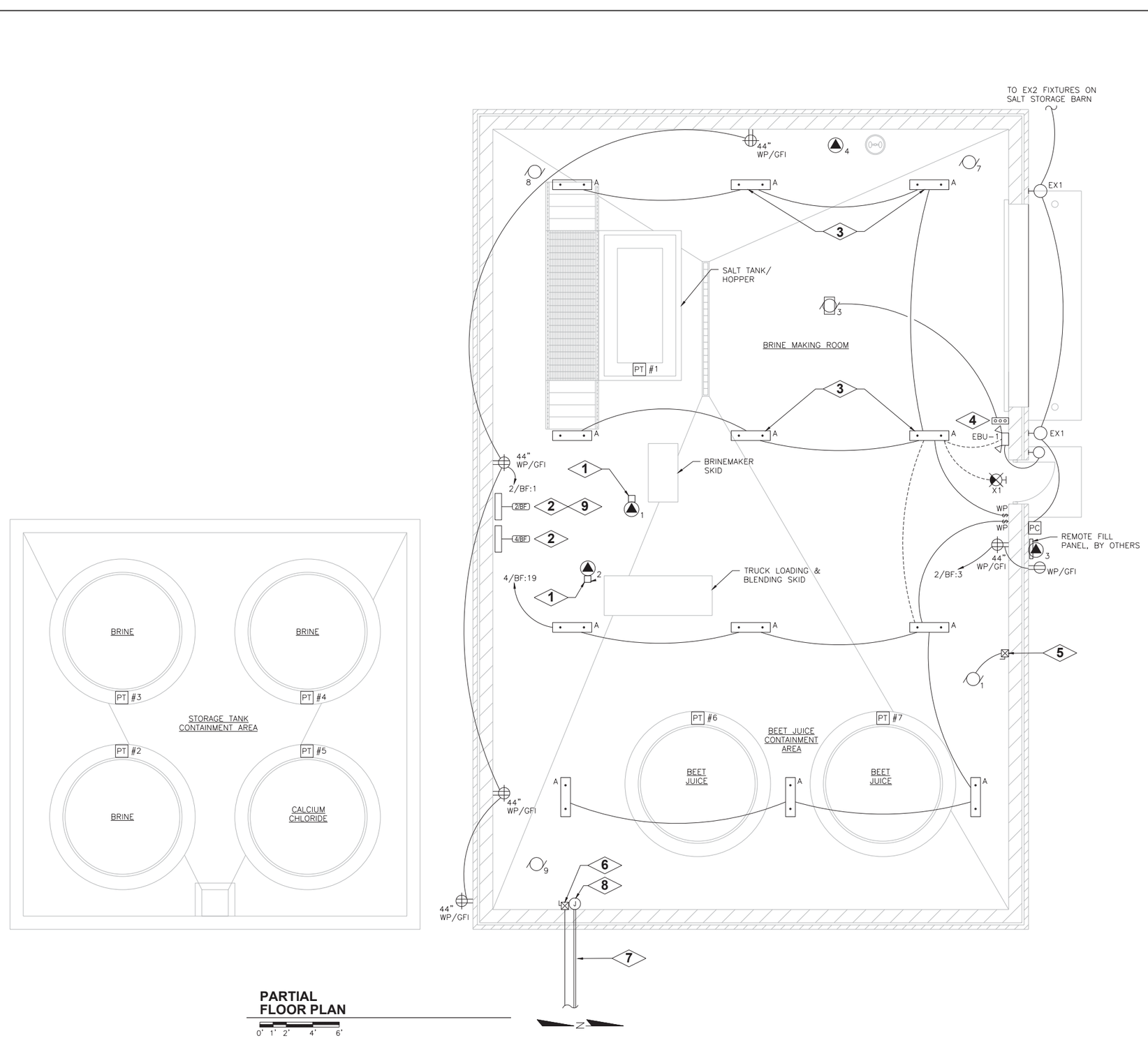
## LEGEND

- DUPLEX RECEPTACLE
- DUPLEX RECEPTACLE AT HEIGHT INDICATED
- DOUBLE DUPLEX RECEPTACLE
- SPECIAL PURPOSE OUTLET
- SURFACE MOUNT PANEL
- COMBINATION STARTER
- MOTOR
- SWITCH
- PC — EXTERIOR MOUNTED PHOTOELECTRIC SWITCH
- 2' PENDANT FIXTURE
- 4' PENDANT FIXTURE
- WALL MOUNTED FIXTURE
- SINGLE FACE EXIT SIGN
- EMERGENCY BATTERY UNIT
- PT — PRESSURE TRANSMITTER
- SINGLE HEAD POLE MOUNT LUMINAIRE
- HH — HAND HOLE

## ABBREVIATIONS

| | |
|---|---|
| AFF | ABOVE FINISHED FLOOR |
| CKT | CIRCUIT |
| COMB | COMBINATION |
| EC | ELECTRICAL CONTRACTOR |
| FLA | FULL LOAD AMPS |
| FVNR | FULL VOLTAGE NON-REVERSING |
| GA | GUAGE |
| HP | HORSEPOWER |
| K | KILOWATT |
| MAG | MAGNETIC |
| MTR | MOTOR |
| NU | NEAR UNIT |
| PC | PHOTOCELL |
| PH | PHASE |
| RECEPT | RECEPTACLE |
| SPO | SPECIAL PURPOSE OUTLET |
| STR | STARTER |
| PT | PRESSURE TRANSMITTER |
| WH | WATER HEATER |

SHEET
E1.00




## SHEET NOTES:

1. ALL CONDUIT AND BOXES INSTALLED IN THE BRINING FACILITY TO BE PVC.
2. ALL MOUNTING HARDWARE TO BE STAINLESS STEEL.
3. ALL TYPE A LIGHT FIXTURES INSTALLED IN THE BRINING FACILITY TO BE PENDANT MOUNTED 15'AFF.
4. TYPE EX1 FIXTURE TO BE MOUNTED 12' ABOVE FINISHED GRADE.
5. PROVIDE EMPTY CONDUITS AND BOXES TO PRESSURE TRANSDUCERS, BRINEMAKER SKID CONTROL PANEL, TRUCK LOADING/BLENDING SKID CONTROL PANEL, REMOTE TRUCK FILL PANEL, RECYCLE WATER CONTROL PANEL, RECYCLE WATER PLUMBING MODULE, AND RECYCLE WATER PUMP FOR WIRING BY OTHERS (CARGILL). SEE WIRING SCHEMATICS 2 AND 3 ON SHEET E3.00 FOR MORE INFORMATION.

## PLAN NOTES:

1. OUTLET STANCHIONS FOR BRINEMAKER SKID AND TRUCK LOADING & BLENDING SKID.
2. ELECTRICAL PANELS TO BE FASTENED TO WALL WITH STAINLESS STEEL UNISTRUT AND STAINLESS STEEL CONCRETE ANCHORS. CENTER OF PANEL TO BE 4'-6" ABOVE FINISHED FLOOR. PANEL ENCLOSURE TO BE NEMA 4X.
3. LOCATE LIGHTS ADJACENT TO OVERHEAD DOOR SO AS NOT TO INTERFERE WITH DOOR OPERATION.
4. OPEN/CLOSE/STOP PUSHBUTTON FOR DOOR OOPERATOR.
5. CARGILL SUPPLIED MOTOR DISCONNET/CONTROL ENCLOSURE FOR RECYCLE WATER PUMP, INSTALLED AND WIRED BY E.C.
6. COMBINATION MOTOR STARTER FOR SUBMERSIBLE PUMP LOCATED IN THE RECYCLE WATER UNDERGROUND STORAGE TANK.
7. PROVIDE (3)-1" CONDUITS FROM THE BUILDING TO THE ACCESS MANWAY ON TOP OF THE RECYCLE WATER UNDERGROUND STORAGE TANK:
   a. (1)-1" C. FOR POWER
   b. (1)-1" C. FOR LEVEL CONTROLS
   c. (1)-1" C. SPARE
8. PROVIDE 1" C. TO BRINEMAKER SKID CONTROL PANEL.
9. PROVIDE 45KVA, 3 PHASE TRANSFORMER TO SERVE PANEL 2/BF. WALL MOUNT ABOVE PANEL.

**PARTIAL FLOOR PLAN**

0' 1' 2' 4' 6'

SHEET E2.00

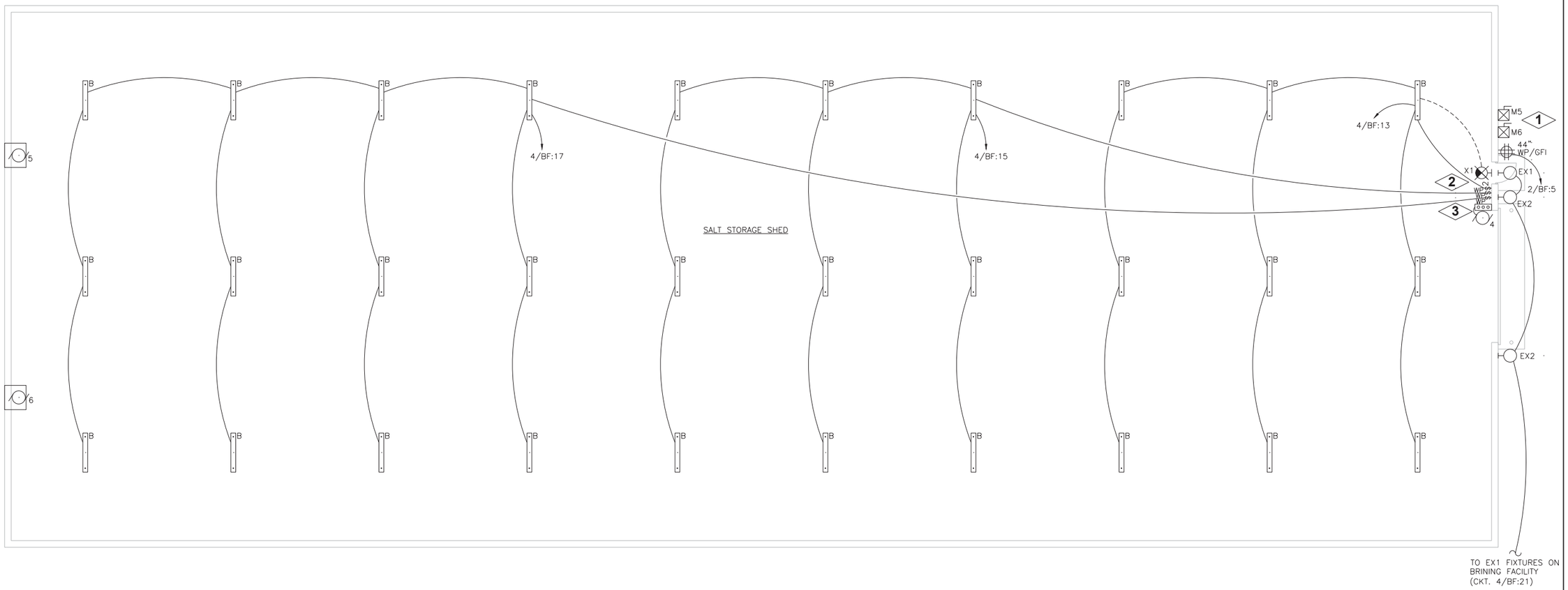
| PROJECT NO: 1060-62-70 | HWY: GRANDVIEW BOULEVARD | COUNTY: WAUKESHA | BRINING FACILITY: ELECTRICAL FLOOR PLAN | SHEET 45 | E |
|---|---|---|---|---|---|

## SHEET NOTES:

1. ALL CONDUIT AND BOXES INSTALLED IN THE SALT STORAGE SHED TO BE PVC.
2. ALL MOUNTING HARDWARE TO BE STAINLESS STEEL.
3. ALL TYPE B LIGHT FIXTURES INSTALLED IN THE SALT STORAGE SHED TO BE PENDANT MOUNTED. EAST AND WEST ROWS TO BE 30' AFF;. CENTER ROW TO BE 38' AFF.
4. TYPE EX1 FIXTURE TO BE MOUNTED 10' ABOVE FINISHED GRADE.
5. TYPE EX2 FIXTURES TO BE MOUNTED 24' ABOVE FINISHED GRADE.

## PLAN NOTES:

1. EXHAUST FAN MOTOR STARTERS TO BE FVNR, NEMA SIZE 1, COMBINATION TYPE WITH FUSIBLE DISCONNECT SWITCH IN A NEMA 4X ENCLOSURE. STARTER SHALL HAVE 120V FUSED CONTROL TRANSFORMER, GREEN "RUN" AND RED "STARTER OVERLOAD" PILOT LIGHTS, AND H-O-A SELECTOR SWITCH ON THE ENCLOSURE DOOR. H-O-A SWITCH IN "HAND" POSITION THE FAN SHALL RUN CONTINUOUSLY. H-O-A SWITCH IN "OFF" POSITION THE FAN SHALL BE OFF. H-O-A SWITCH IN THE "AUTO" POSITION THE FAN SHALL BE CONTROLLED BY THE LIGHT SWITCH CONTROLLING LIGHTS CLOSEST TO THE OVERHEAD DOOR (CIRCUIT 4/BF:13).
2. LIGHT SWITCH FOR CIRCUIT 4/BF:13 TO BE A 2-POLE SWITCH. SECOND POLE OF SWITCH TO CONTROL THE EXHAUST FANS.
3. OPEN/CLOSE/STOP PUSHBUTTON FOR DOOR OPERATOR.



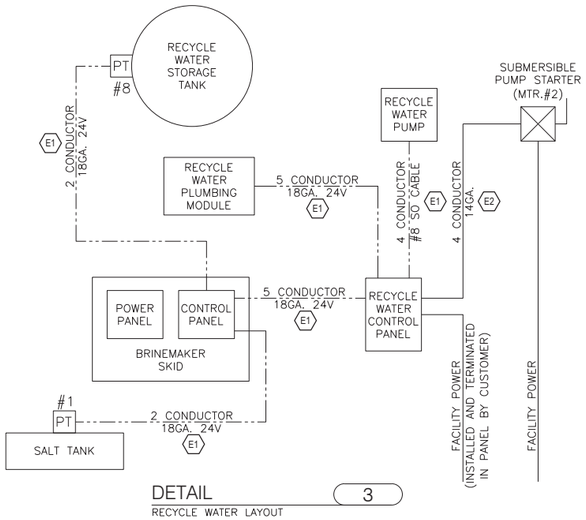

## SALT STORAGE SHED FLOOR PLAN

0' 2' 4' 8' 12'

N

SHEET
E2.10

| PROJECT NO: 1060-62-70 | HWY: GRANDVIEW BOULEVARD | COUNTY: WAUKESHA | SALT STORAGE SHED: ELECTRICAL PLAN | SHEET 46 | E |
|---|---|---|---|---|---|




DETAIL 3
RECYCLE WATER LAYOUT

## PANEL 2/BF

| MOUNT | SPACES | LOCATION | VOLTAGE | PH | WIRE | MAIN BUS RATING | MCB | MLO | WIRE | CONDUIT |
|---|---|---|---|---|---|---|---|---|---|---|
| SURFACE | 42 | BRINE MAKING RM. | 120/208V | 3 | 4 | 225A | 150A | - | - | - |

| POLE NO. | BREAKER POLE | BREAKER AMP | OUTLET LGT | OUTLET REC | OUTLET MIS | DESCRIPTION | VA | PHASE LOAD VA A | PHASE LOAD VA B | PHASE LOAD VA C | VA | DESCRIPTION | OUTLET LGT | OUTLET REC | OUTLET MIS | BREAKER POLE | BREAKER AMP | POLE NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 20 | | X | | RECEPT'S - BRINE MAKING ROOM | 720 | 3602 | | | 2882 | | | | | | | 2 |
| 3 | 1 | 20 | | X | | RECEPT'S - BRINE MAKING ROOM | 360 | | 3242 | | 2882 | BRINEMAKER SKID (SPO #1) | | | X | 3 | 30 | 4 |
| 5 | 1 | 20 | | X | | RECEPT'S - SALT STORAGE BARN | 360 | | | 3242 | 2882 | | | | | | | 6 |
| 7 | 1 | 20 | | | | SPARE | | 5764 | | | 5764 | | | | | | | 8 |
| 9 | 1 | 20 | | | | SPARE | | | 5764 | | 5764 | TRUCK LOADING & BLENDING SKID (SPO #2) | | | X | 3 | 60 | 10 |
| 11 | 1 | 20 | | | X | REMOTE TRUCK SCALE (SPO #5) | 500 | | | 6264 | 5764 | | | | | | | 12 |
| 13 | 1 | 15 | | | X | GAS FIRED UNIT HEATER GUH-01 (MTR. #7) | 456 | 2558 | | | 2102 | | | | | | | 14 |
| 15 | 1 | 15 | | | X | GAS FIRED UNIT HEATER GUH-02 (MTR. #8) | 456 | | 2558 | | 2102 | RECYCLE WATER PUMP (MTR. #1) | | | X | 3 | 30 | 16 |
| 17 | 1 | 15 | | | X | GAS FIRED UNIT HEATER GUH-03 (MTR. #9) | 456 | | | 2558 | 2102 | | | | | | | 18 |
| 19 | | | | | | | | 3038 | | | 3038 | | | | | | | 20 |
| 21 | | | | | | | | | 3038 | | 3038 | SUBMERSIBLE PUMP (MTR. #2) | | | X | 3 | 50 | 22 |
| 23 | | | | | | | | | | 3038 | 3038 | | | | | | | 24 |
| 25 | | | | | | | | | | | | | | | | | | 26 |
| 27 | | | | | | | | | | | | | | | | | | 28 |
| 29 | | | | | | | | | | | | | | | | | | 30 |
| 31 | | | | | | | | | | | | | | | | | | 32 |
| 33 | | | | | | | | | | | | | | | | | | 34 |
| 35 | | | | | | | | | | | | | | | | | | 36 |
| 37 | | | | | | | | | | | | | | | | | | 38 |
| 39 | | | | | | | | | | | | | | | | | | 40 |
| 41 | | | | | | | | | | | | | | | | | | 42 |

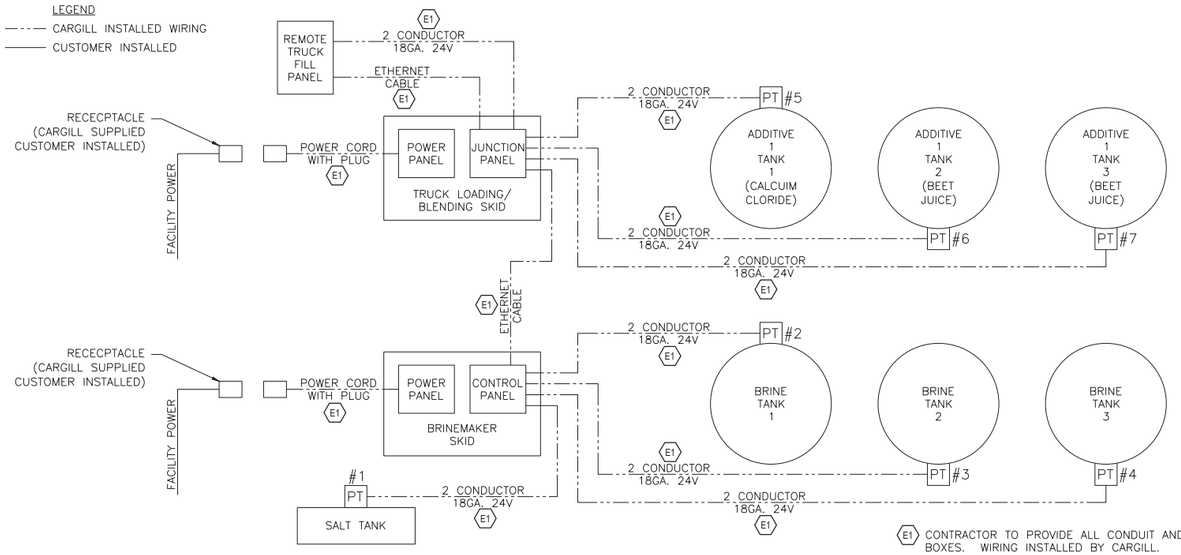
| | | | | | |
|---|---|---|---|---|---|
| SQUARE D TYPE NF WITH NEMA 4X ENCLOSURE. | PHASE TOTALS: | | 14962 | 14602 | 15102 | | :PHASE TOTALS |
| | TOTAL VA: | 3,308 | | | | 41,359 | :TOTAL VA |

## PANEL 4/BF

| MOUNT | SPACES | LOCATION | VOLTAGE | PH | WIRE | MAIN BUS RATING | MCB | MLO | WIRE | CONDUIT |
|---|---|---|---|---|---|---|---|---|---|---|
| SURFACE | 30 | BRINE MAKING RM. | 277/480V | 3 | 4 | 250A | 200A | - | - | - |

| POLE NO. | BREAKER POLE | BREAKER AMP | OUTLET LGT | OUTLET REC | OUTLET MIS | DESCRIPTION | VA | PHASE LOAD VA A | PHASE LOAD VA B | PHASE LOAD VA C | VA | DESCRIPTION | OUTLET LGT | OUTLET REC | OUTLET MIS | BREAKER POLE | BREAKER AMP | POLE NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | 831 | 1413 | | | 582 | | | | | | | 2 |
| 3 | 3 | 15 | | | X | OVERHEAD DOOR - BRINE RM. (MTR. #3) | 831 | | 1413 | | 582 | EXHAUST FAN EF-01 (MTR. #5) | | | X | 3 | 15 | 4 |
| 5 | | | | | | | 831 | | | 1413 | 582 | | | | | | | 6 |
| 7 | | | | | | | 831 | 1413 | | | 582 | | | | | | | 8 |
| 9 | 3 | 15 | | | X | OVERHEAD DOOR - SALT STORAGE BARN (MTR. #4) | 831 | | 1413 | | 582 | EXHAUST FAN EF-02 (MTR. #6) | | | X | 3 | 15 | 10 |
| 11 | | | | | | | 831 | | | 1413 | 582 | | | | | | | 12 |
| 13 | 1 | 20 | X | | | LIGHTS - SALT STORAGE BARN (NORTH) | 963 | 3463 | | | 2500 | ELECTRUIC WATER HEATER WH-1 (SPO #4) | | | X | 1 | 15 | 14 |
| 15 | 1 | 20 | X | | | LIGHTS - SALT STORAGE BARN (CENTER) | 963 | | 963 | | | SPARE | | | | 1 | 20 | 16 |
| 17 | 1 | 20 | X | | | LIGHTS - SALT STORAGE BARN (SOUTH) | 1284 | | | 1284 | | SPARE | | | | 1 | 20 | 18 |
| 19 | 1 | 20 | X | | | LIGHTS - BRINING FACILITY | 480 | 480 | | | | SPACE | | | | | | 20 |
| 21 | 1 | 20 | X | | | LIGHTS - EXTERIOR | 415 | | 415 | | | SPACE | | | | | | 22 |
| 23 | 1 | 20 | X | | | LIGHTS - ROADWAY | 376 | | | 376 | | SPACE | | | | | | 24 |
| 25 | | | | | | | | 14962 | | | 14962 | | | | | | | 26 |
| 27 | | | | | | | | | 14602 | | 14602 | TRANSFORMER - PANEL 2/BF | | | X | 3 | 90 | 28 |
| 29 | | | | | | | | | | 15102 | 15102 | | | | | | | 30 |

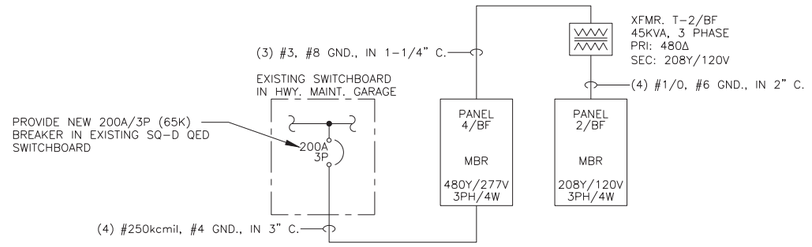
| | | | | | |
|---|---|---|---|---|---|
| SQUARE D TYPE NF WITH NEMA 4X ENCLOSURE. | PHASE TOTALS: | | 21731 | 18806 | 19588 | | :PHASE TOTALS |
| | TOTAL VA: | 9,467 | | | | 50,658 | :TOTAL VA |




DETAIL 2
ELECTRICAL LAYOUT FOR ACCUBRINE SYSTEM

E1 CONTRACTOR TO PROVIDE ALL CONDUIT AND BOXES. WIRING INSTALLED BY CARGILL.

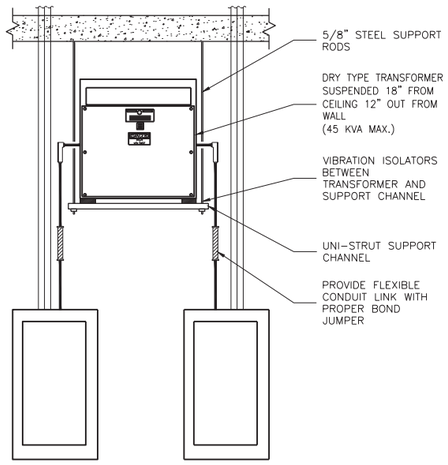
E2 PROVIDE CONDUIT AND CONTROL WIRING FROM SUBMERSIBLE PUMP STARTER TO RECYCLE WATER CONTROL PANEL. FINAL TERMINATION AT CONTROL PANEL BY CARGILL.



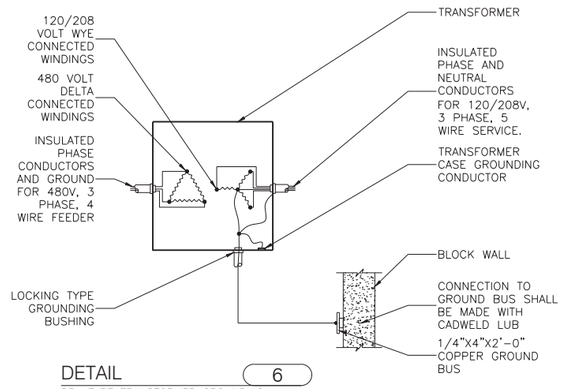

ONE LINE DIAGRAM 1
N.T.S.

SHEET E3.00

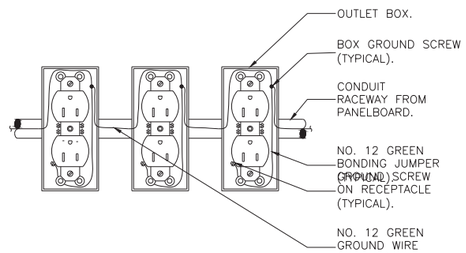
| PROJECT NO: 1060-62-70 | HWY: GRANDVIEW BOULEVARD | COUNTY: WAUKESHA | BRINING FACILITY: ELECTRICAL SCHEDULES | SHEET 47 | E |
|---|---|---|---|---|---|



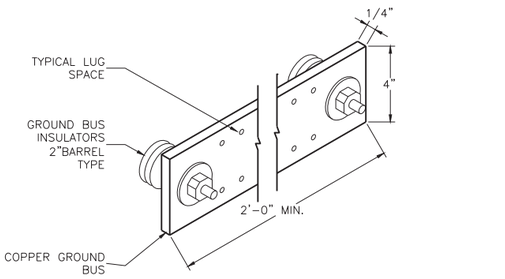

DETAIL 8
PANEL AND TRANSFORMER MOUNTING DETAIL




DETAIL 6
DRY TYPE TRANSFORMER GROUNDING

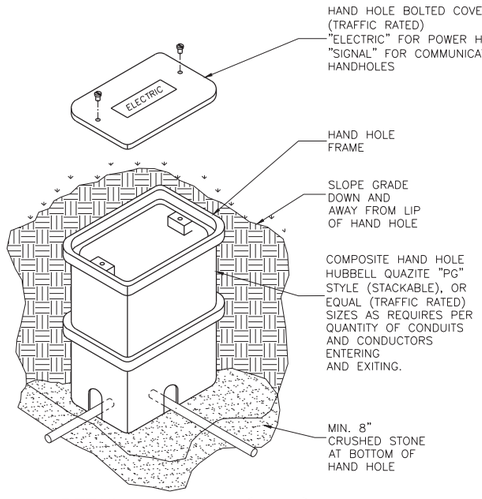



DETAIL 4
TYPICAL RECEPTACLE GROUNDING

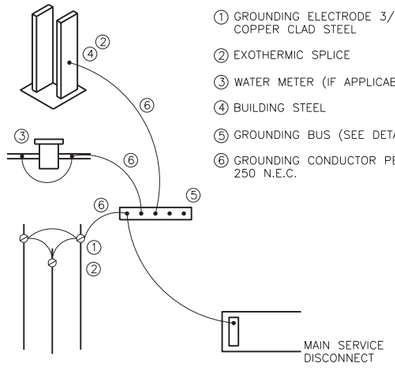



NOTE(S):
1. SIZE SHOWN IS A MINIMUM.
2. THE CONTRACTOR SHALL PROVIDE 20% SPARE LUG LOCATIONS.

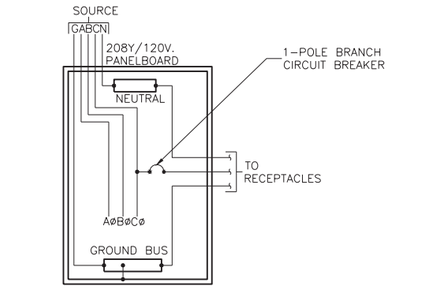
DETAIL 1
TYPICAL GROUND BUS




DETAIL 7
TYPICAL BRANCH CIRCUIT HANDHOLE

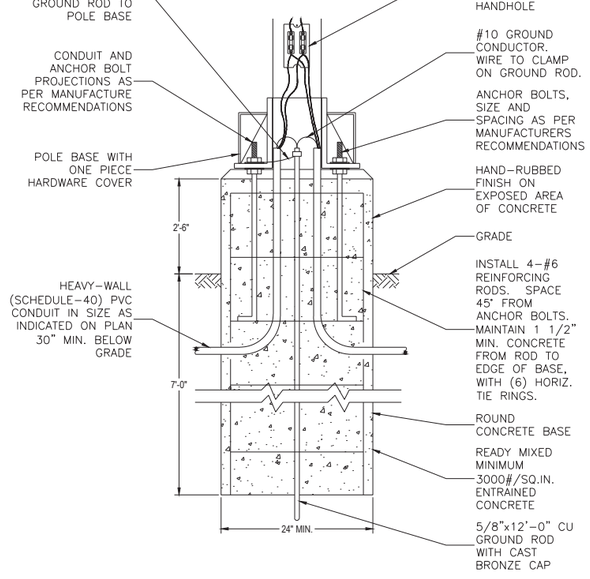



DETAIL 5
GROUNDING RISER DIAGRAM

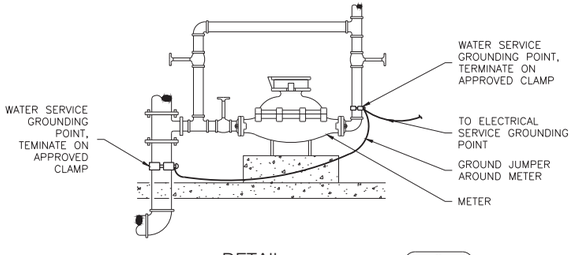



NOTE:
1. GREEN GROUNDING CONDUCTORS REQUIRED FOR ALL 120V. RECEPTACLES.
2. WIRE SHALL BE CONTINUOUSLY COLOR CODED.

DETAIL 2
TYPICAL EQUIPMENT GROUNDING




DETAIL 9
PARKING LOT FIXTURE BASE AND POLE MOUNTING




DETAIL 3
TYPICAL WATER METER GROUNDING JUMPER

SHEET
E4.00

| PROJECT NO: 1060-62-70 | HWY: GRANDVIEW BOULEVARD | COUNTY: WAUKESHA | BRINING FACILITY: ELECTRICAL DETAILS | SHEET 48 | E |
|---|---|---|---|---|---|

1060-62-70

| Line | Item | Item Description | Unit | Total | Qty |
|---|---|---|---|---|---|
| 0002 | 201.0105 | Clearing | STA | 5.000 | 5.000 |
| 0004 | 201.0205 | Grubbing | STA | 5.000 | 5.000 |
| 0006 | 203.0100 | Removing Small Pipe Culverts | EACH | 1.000 | 1.000 |
| 0008 | 204.0110 | Removing Asphaltic Surface | SY | 861.000 | 861.000 |
| 0010 | 205.0100 | Excavation Common | CY | 37,210.000 | 37,210.000 |
| 0012 | 208.0100 | Borrow | CY | 2,561.000 | 2,561.000 |
| 0014 | 209.1100 | Backfill Granular Grade 1 | CY | 119.000 | 119.000 |
| 0016 | 305.0120 | Base Aggregate Dense 1 1/4-Inch | TON | 3,506.000 | 3,506.000 |
| 0018 | 310.0110 | Base Aggregate Open-Graded | TON | 246.000 | 246.000 |
| 0020 | 311.0110 | Breaker Run | TON | 1,568.000 | 1,568.000 |
| 0022 | 415.0080 | Concrete Pavement 8-Inch | SY | 1,130.000 | 1,130.000 |
| 0024 | 455.0605 | Tack Coat | GAL | 388.100 | 388.100 |
| 0026 | 460.2000 | Incentive Density HMA Pavement | DOL | 410.000 | 410.000 |
| 0028 | 460.6223 | HMA Pavement 3 MT 58-28 S | TON | 418.800 | 418.800 |
| 0030 | 460.6224 | HMA Pavement 4 MT 58-28 S | TON | 209.400 | 209.400 |
| 0032 | 465.0105 | Asphaltic Surface | TON | 487.400 | 487.400 |
| 0034 | 522.0412 | Culvert Pipe Reinforced Concrete Class IV 12-Inch | LF | 112.000 | 112.000 |
| 0036 | 522.0418 | Culvert Pipe Reinforced Concrete Class IV 18-Inch | LF | 184.000 | 184.000 |
| 0038 | 522.1012 | Apron Endwalls for Culvert Pipe Reinforced Concrete 12-Inch | EACH | 3.000 | 3.000 |
| 0040 | 522.1018 | Apron Endwalls for Culvert Pipe Reinforced Concrete 18-Inch | EACH | 5.000 | 5.000 |
| 0042 | 606.0100 | Riprap Light | CY | 6.940 | 6.940 |
| 0044 | 608.0412 | Storm Sewer Pipe Reinforced Concrete Class IV 12-Inch | LF | 37.000 | 37.000 |
| 0046 | 608.0418 | Storm Sewer Pipe Reinforced Concrete Class IV 18-Inch | LF | 71.000 | 71.000 |
| 0048 | 611.0545 | Manhole Covers Type L | EACH | 2.000 | 2.000 |
| 0050 | 611.0612 | Inlet Covers Type C | EACH | 1.000 | 1.000 |
| 0052 | 611.3003 | Inlets 3-FT Diameter | EACH | 2.000 | 2.000 |
| 0054 | 611.3004 | Inlets 4-FT Diameter | EACH | 1.000 | 1.000 |
| 0056 | 611.8120.S | Cover Plates Temporary | EACH | 1.000 | 1.000 |
| 0058 | 612.0106 | Pipe Underdrain 6-Inch | LF | 334.000 | 334.000 |
| 0060 | 612.0112 | Pipe Underdrain 12-Inch | LF | 50.000 | 50.000 |
| 0062 | 612.0212 | Pipe Underdrain Unperforated 12-Inch | LF | 65.000 | 65.000 |
| 0064 | 619.1000 | Mobilization | EACH | 1.000 | 1.000 |
| 0066 | 624.0100 | Water | MGAL | 53.190 | 53.190 |
| 0068 | 625.0100 | Topsoil | SY | 2,654.000 | 2,654.000 |
| 0070 | 625.0500 | Salvaged Topsoil | SY | 9,890.000 | 9,890.000 |
| 0072 | 627.0200 | Mulching | SY | 12,462.000 | 12,462.000 |
| 0074 | 628.1504 | Silt Fence | LF | 1,402.000 | 1,402.000 |

1060-62-70

| Line | Item | Item Description | Unit | Total | Qty |
|---|---|---|---|---|---|
| 0076 | 628.1520 | Silt Fence Maintenance | LF | 701.000 | 701.000 |
| 0078 | 628.1905 | Mobilizations Erosion Control | EACH | 2.000 | 2.000 |
| 0080 | 628.1910 | Mobilizations Emergency Erosion Control | EACH | 4.000 | 4.000 |
| 0082 | 628.2023 | Erosion Mat Class II Type B | SY | 12,544.000 | 12,544.000 |
| 0084 | 628.6510 | Soil Stabilizer Type B | ACRE | 2.570 | 2.570 |
| 0086 | 628.7010 | Inlet Protection Type B | EACH | 1.000 | 1.000 |
| 0088 | 628.7504 | Temporary Ditch Checks | LF | 167.000 | 167.000 |
| 0090 | 628.7555 | Culvert Pipe Checks | EACH | 6.000 | 6.000 |
| 0092 | 628.7570 | Rock Bags | EACH | 35.000 | 35.000 |
| 0094 | 629.0210 | Fertilizer Type B | CWT | 7.890 | 7.890 |
| 0096 | 630.0160 | Seeding Mixture No. 60 | LB | 169.100 | 169.100 |
| 0098 | 630.0200 | Seeding Temporary | LB | 336.500 | 336.500 |
| 0100 | 632.0101 | Trees (species) (size) (root) 01. Norway Spruce 6-8' Ht B+B | EACH | 12.000 | 12.000 |
| 0102 | 633.5200 | Markers Culvert End | EACH | 8.000 | 8.000 |
| 0104 | 640.1303.S | Pond Liner Clay | CY | 639.000 | 639.000 |
| 0106 | 642.5401 | Field Office Type D | EACH | 1.000 | 1.000 |
| 0108 | 645.0111 | Geotextile Type DF Schedule A | SY | 148.000 | 148.000 |
| 0110 | 645.0130 | Geotextile Type R | SY | 848.800 | 848.800 |
| 0112 | 650.4000 | Construction Staking Storm Sewer | EACH | 7.000 | 7.000 |
| 0114 | 650.4500 | Construction Staking Subgrade | LF | 1,038.000 | 1,038.000 |
| 0116 | 650.5000 | Construction Staking Base | LF | 1,038.000 | 1,038.000 |
| 0118 | 650.6000 | Construction Staking Pipe Culverts | EACH | 4.000 | 4.000 |
| 0120 | 650.7000 | Construction Staking Concrete Pavement | LF | 334.000 | 334.000 |
| 0122 | 650.9910 | Construction Staking Supplemental Control (project) 01. 1060-62-70 | LS | 1.000 | 1.000 |
| 0124 | 650.9920 | Construction Staking Slope Stakes | LF | 1,336.000 | 1,336.000 |
| 0126 | 690.0150 | Sawing Asphalt | LF | 431.000 | 431.000 |
| 0128 | 715.0415 | Incentive Strength Concrete Pavement | DOL | 500.000 | 500.000 |
| 0130 | SPV.0035 | Special 01. Pea Gravel | CY | 16.000 | 16.000 |
| 0132 | SPV.0055 | Special 01. Natural Gas Service | DOL | 5,000.000 | 5,000.000 |
| 0134 | SPV.0060 | Special 01. Outlet Control Structure | EACH | 1.000 | 1.000 |
| 0136 | SPV.0060 | Special 02. Beehive Inlet Cover | EACH | 1.000 | 1.000 |
| 0138 | SPV.0105 | Special 01. Static Scale System | LS | 1.000 | 1.000 |
| 0140 | SPV.0105 | Special 02. Underground Detention Wastewater Tank, 10-FT Diameter | LS | 1.000 | 1.000 |
| 0142 | SPV.0105 | Special 03. Brining Building General Construction | LS | 1.000 | 1.000 |
| 0144 | SPV.0105 | Special 04. Brining Building Plumbing | LS | 1.000 | 1.000 |
| 0146 | SPV.0105 | Special 05. Brining Building Heating and Ventilation | LS | 1.000 | 1.000 |
| 0148 | SPV.0105 | Special 06. Brining Building Electrical | LS | 1.000 | 1.000 |

1060-62-70

| Line | Item | Item Description | Unit | Total | Qty |
|---|---|---|---|---|---|
| 0150 | SPV.0105 | Special 07. Salt Storage Shed | LS | 1.000 | 1.000 |
| 0152 | SPV.0105 | Special 08. Water Service | LS | 1.000 | 1.000 |
| 0154 | SPV.0105 | Special 09. Electrical Service | LS | 1.000 | 1.000 |
| 0156 | SPV.0105 | Special 10. Site Lighting | LS | 1.000 | 1.000 |
| 0158 | SPV.0105 | Special 11. Salt Storage Shed Concrete | LS | 1.000 | 1.000 |

| LOCATION | SAWING ASPHALT 690.0150 LF | REMOVING ASPHALTIC SURFACE 204.0110 SY | REMOVING SMALL PIPE CULVERTS 203.0100 EACH |
|---|---|---|---|
| ASPHALT DRIVEWAY RL | | | |
| STA 6+60 - 7+77 | 30 | 460 | -- |
| STA 4+52.5 - 6+45 RT | 197 | 209 | -- |
| ASPHALT EAST DRIVEWAY RL | | | |
| STA 0+65 | 30 | -- | -- |
| CONCRETE DRIVEWAY RL | | | |
| STA 3+20 - 3+65 LT | 45 | 11 | 1 |
| STA 3+80 - 4+43 RT & LT | 108 | 140 | -- |
| UNDISTRIBUTED | 21 | 41 | -- |
| **TOTAL** | **431** | **861** | **1** |

| LOCATION | CLEARING 201.0105 STA | GRUBBING 201.0205 STA |
|---|---|---|
| ASPHALTIC DRIVEWAY RL | | |
| STA 3+00 - 6+00 LT | 3 | 3 |
| CONCRETE DRIVEWAY RL | | |
| STA 3+00 - 4+00 RT | 1 | 1 |
| UNDISTRIBUTED | 1 | 1 |
| **TOTAL** | **5** | **5** |

| **LOCATION** | CONCRETE PAVEMENT 8-INCH 415.0080 SY |
|---|---|
| CONCRETE DRIVEWAY RL | |
| STA 0+96 TO STA 4+14 | 1,076 |
| UNDISTRIBUTED | 54 |
| **TOTAL** | **1,130** |

| LOCATION | BASE AGGREGATE DENSE 1 1/4-INCH 305.0120* TON | BASE AGGREGATE OPEN-GRADED 310.0110 TON | BREAKER RUN 311.0110 TON | WATER 624.0100* MGAL |
|---|---|---|---|---|
| ASPHALT DRIVEWAY RL | | | | |
| STA 4+31 TO STA 7+77 | 1,209 | -- | 1,128 | 23.37 |
| ASPHALT EAST DRIVEWAY RL | | | | |
| STA 0+15 TO STA 0+65 | 251 | -- | 232 | 4.83 |
| CONCRETE DRIVEWAY RL | | | | |
| STA 0+96 TO STA 4+14 | 458 | 234 | -- | 6.92 |
| STA 3+80 TO STA 4+37 LT | 41 | -- | 36 | 0.77 |
| STA 4+14 TO STA 4+43 | 111 | -- | 97 | 2.08 |
| UNDISTRIBUTED | 104 | 12 | 75 | 1.90 |
| **TOTAL** | **2,174** | **246** | **1,568** | **39.87** |

*ADDITIONAL QUANTITIES SHOWN ELSEWHERE IN PLAN

| **LOCATION** | TACK COAT 455.0605* GAL | HMA PAVEMENT 3 MT58-28S 460.6223* TON | HMA PAVEMENT 4 MT58-28S 460.6224* TON | ASPHALTIC SURFACE 465.0105* TON |
|---|---|---|---|---|
| ASPHALT DRIVEWAY RL | | | | |
| STA 4+31 TO STA 7+77 | 167.0 | 286.9 | 143.5 | -- |
| ASPHALT EAST DRIVEWAY RL | | | | |
| STA 0+15 TO STA 0+65 | 34.0 | 58.5 | 29.2 | -- |
| CONCRETE DRIVEWAY RL | | | | |
| STA 1+87 - 1+97 RT | 3.3 | -- | -- | 8.4 |
| STA 3+80 TO STA 4+37 LT | 9.0 | 14.9 | 7.4 | -- |
| STA 4+14 TO STA 4+43 | 23.0 | 38.6 | 19.3 | -- |
| UNDISTRIBUTED | 11.8 | 19.9 | 10.0 | -- |
| **TOTAL** | **248.1** | **418.8** | **209.4** | **8.4** |

*ADDITIONAL QUANTITIES SHOWN ELSEWHERE IN PLAN

| LOCATION | FROM INVERT | TO OUTFALL | INLET ELEV. | DISCH. ELEV. | CULVERT PIPE REINFORCED CONCRETE CLASS IV 12-INCH 522.0412 LF | CULVERT PIPE REINFORCED CONCRETE CLASS IV 18-INCH 522.0418 LF | APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 12-INCH 522.1012* EACH | APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 18-INCH 522.1018* EACH | MARKERS CULVERT END 633.5200* EACH |
|---|---|---|---|---|---|---|---|---|---|
| ASPHALT DRIVEWAY RL | STA 5+44, 31.9' RT | STA 6+16, 31.1' LT | 925.75 | 925.45 | -- | 96 | -- | 2 | 2 |
| ASPHALT DRIVEWAY RL | STA 6+36, 40.7' RT | STA 7+25, 27.7' LT | 924.00 | 923.66 | 112 | -- | 2 | -- | 2 |
| CONCRETE DRIVEWAY RL | STA 3+80, 31' RT | STA 3+20, 33' LT | 929.65 | 928.80 | -- | 88 | -- | 2 | 2 |
| **TOTALS** | | | | | **112** | **184** | **2** | **4** | **6** |

*ADDITIONAL QUANTITIES SHOWN ELSEWHERE IN PLAN

| PIPE | FROM INLET | TO OUTFALL | INVERT ELEV. | DISCH. ELEV. | PIPE UNDERDRAIN UNPERFORATED NON-CORRUGATED 12-INCH 612.0212* LF | STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 12-INCH 608.0412 LF | STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 18-INCH 608.0418 LF | APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 12-INCH 522.1012* EACH | APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 18-INCH 522.1018* LF | MARKERS CULVERT END 633.5200* EACH |
|---|---|---|---|---|---|---|---|---|---|---|
| CONCRETE DRIVEWAY RL | | | | | | | | | | |
| P-1 | STA 3+00, 0.0' LT | STORAGE TANK | 927.61 | 927.19 | 42 | -- | -- | -- | -- | -- |
| P-2 | STA 2+88, 0.0' LT | STA 2+69, 32' LT | 928.72 | 928.35 | -- | 37 | -- | 1 | -- | 1 |
| P-3 | STA 4+04, 38' RT | STA 3+94, 24' LT | 930.00 | 929.00 | -- | -- | 63 | -- | 1 | 1 |
| P-4 | STA 3+94, 24' LT | MATCH EXISTING PIPE | 928.60 | EXISTING | -- | -- | 8 | -- | -- | -- |
| **TOTALS** | | | | | **42** | **37** | **71** | **1** | **1** | **2** |

*ADDITIONAL QUANTITIES SHOWN ELSEWHERE IN PLAN

| STRUCTURE NO. | LOCATION | GRATE ELEVATION | DEPTH* (FT.) | MANHOLE COVERS TYPE L 611.0545 EACH | INLET COVERS TYPE C 611.0612 EACH | INLETS 3-FT DIAMETER 611.3003 EACH | INLETS 4-FT DIAMETER 611.3004 EACH | COVER PLATES TEMPORARY 611.8120.S EACH | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| CONCRETE DRIVEWAY RL | | | | | | | | | |
| 1 | STA 3+00, 0.0' LT | 932.28 | 4.16 | 1 | -- | 1 | -- | -- | -- |
| 2 | STA 2+88, 0.0' LT | 932.32 | 3.60 | -- | 1 | 1 | -- | -- | -- |
| 3 | STA 3+94.66, 23.5' LT | 932.00 | 3.40 | 1 | -- | -- | 1 | 1 | -- |
| | | | **TOTALS** | **2** | **1** | **2** | **1** | **1** | |

* DEPTH OF STRUCTURE IS MEASURED FROM RIM ELEVATION TO LOWEST PIPE INVERT ELEVATION

| LOCATION | MULCHING 627.0200 SY | SILT FENCE 628.1504 LF | SILT FENCE MAINTENANCE 628.1520 LF | MOBILIZATION EROSION CONTROL 628.1905 EACH | MOBILIZATION EMERGENCY EROSION CONTROL 628.1910 EACH | SOIL STABILIZER TYPE B 628.6510 ACRE | INLET PROTECTION TYPE B 628.701 EACH | TEMPORARY DITCH CHECK 628.7504 LF | CULVERT PIPE CHECK 628.7555 EACH | ROCK BAGS 628.7570 EACH | SEEDING TEMPORARY 630.0200 LB |
|---|---|---|---|---|---|---|---|---|---|---|---|
| STAGE 1 | | | | | | | | | | | |
| ASPHALT DRIVEWAY RL | | | | | | | | | | | |
| STA 0+94 - 8+49.64 | -- | 555 | 278 | 2 | 4 | -- | -- | 80 | -- | -- | -- |
| STA 6+90 - 8+14.5 RT | -- | -- | -- | -- | -- | -- | -- | 20 | -- | -- | -- |
| DETENTION POND | -- | 620 | 310 | -- | -- | -- | -- | -- | 3 | -- | -- |
| CONCRETE DRIVEWAY RL | | | | | | | | | | | |
| STA 0+39.67 - 4+43 RT | -- | -- | -- | -- | -- | -- | 1 | 40 | 2 | -- | -- |
| STA 0+39.67 - 4+43 LT | -- | -- | -- | -- | -- | -- | -- | 20 | 1 | -- | -- |
| STATIC SCALE SYSTEM | -- | 160 | 80 | -- | -- | -- | -- | -- | -- | -- | -- |
| UNDISTRIBUTED | 2,374 | 67 | 33 | -- | -- | 0.49 | -- | 7 | -- | 35 | 64.1 |
| **TOTALS** | **2,374** | **1,402** | **701** | **2** | **4** | **0.49** | **1** | **167** | **6** | **35** | **64.1** |

*ADDITIONAL QUANTITIES SHOWN ELSEWHERE IN PLAN

| LOCATION | TOPSOIL 625.0100 SY | SALVAGED TOPSOIL 625.0500 SY | EROSION MAT CLASS II TYPE B 628.2023 SY | FERTILIZER TYPE B 629.0210 CWT | SEEDING MIXTURE NO. 60 630.0160 LB | TREES (NORWAY SPRUCE) (B&B, 6-8' HT) 632.0101 EACH | RIPRAP LIGHT 606.0100* CY | GEOTEXTILE TYPE R 645.0130* SY |
|---|---|---|---|---|---|---|---|---|
| ASPHALT DRIVEWAY RL | | | | | | | | |
| STA 0+94 - 8+49.64 LT | -- | 3,388 | 3,388 | 2.13 | 45.7 | 12 | 3.04 | 16.00 |
| STA 6+90 - 8+14.5 RT | -- | 323 | 323 | 0.20 | 4.4 | -- | -- | -- |
| DETENTION POND LIMITS | 2,528 | --- | 2,528 | 1.59 | 34.1 | -- | -- | -- |
| CONCRETE DRIVEWAY RL | | | | | | | | |
| STA 1+46.50- 4+43 RT | -- | 5,318 | 5,318 | 3.35 | 71.8 | -- | -- | -- |
| STA 2+68 - 3+80 LT | -- | 390 | 390 | 0.25 | 5.3 | -- | 3.04 | 16.00 |
| UNDISTRIBUTED | 126 | 471 | 597 | 0.36 | 7.8 | -- | 0.15 | 0.80 |
| **TOTALS** | **2,654** | **9,890** | **12,544** | **7.89** | **169.1** | **12** | **6.23** | **32.80** |

*ADDITIONAL QUANTITIES SHOWN ELSEWHERE IN PLAN

3

| | CONSTRUCTION STAKING | | | | | | |
|---|---|---|---|---|---|---|---|
| LOCATION | SUBGRADE 650.4500 LF | BASE 650.5000 LF | STORM SEWER 650.4000 EACH | PIPE CULVERTS 650.6000 EACH | CONCRETE PAVEMENT 650.7000 LF | SLOPE STAKES 650.9920 LF | SUPPLEMENTAL CONTROL (1060-62-70) 650.9910 LS |
| ASPHALT DRIVEWAY RL | | | | | | | |
| STA 0+94.5 - 8+50 | 605 | 605 | -- | 3 | -- | 756 | -- |
| ASPHALT EAST DRIVEWAY RL | | | | | | | |
| STA 0+00 - 1+12 | 66 | 66 | -- | -- | -- | 112 | -- |
| CONCRETE DRIVEWAY RL | | | | | | | |
| STA 0+39 - 4+43 | 318 | 318 | 7 | 1 | 318 | 404 | -- |
| UNDISTRUBTED | 49 | 49 | -- | -- | 16 | 64 | 1 |
| **TOTAL** | **1,038** | **1,038** | **7** | **4** | **334** | **1,336** | 1 |

| **LOCATION** | PIPE UNDERDRAIN 6-INCH 612.0106 LF | GEOTEXTILE FABRIC TYPE DF SCHEDULE A 645.0111 SY |
|---|---|---|
| CONCRETE DRIVEWAY RL | | |
| STA 0+96 TO STA 4+14 | 318 | 141 |
| UNDISTRIBUTED | 16 | 7 |
| **TOTALS** | **334** | **148** |

| LOCATION | FIELD OFFICE TYPE B 642.5001 EACH |
|---|---|
| PROJECT | 1 |
| **TOTAL** | **1** |

| LOCATION | MOBILIZATION 619.1000 EACH |
|---|---|
| PROJECT | 1 |
| **TOTAL** | **1** |

| DETENTION POND | BACKFILL GRANULAR GRADE 1 209.1100 CY | GEOTEXTILE TYPE R 645.0130* SY | POND LINER CLAY 640.1303.S CY | PIPE UNDERDRAIN 12-INCH 612.0112 LF | PIPE UNDERDRAIN UNPERFORATED 12-INCH, 1/8-INCH SLOTS 612.0212* LF | RIPRAP LIGHT 606.0100* CY | PEA GRAVEL SPV.0035.01 CY |
|---|---|---|---|---|---|---|---|
| DETENTION POND | | | | | | | |
| SAND FOREBAY | 106 | 349.00 | 181 | 48 | -- | -- | 15 |
| OVERFLOW WEIR | -- | 8.00 | 8 | -- | 22 | -- | -- |
| DRY DETENTION BASIN | -- | 420.00 | 420 | -- | -- | 0.67 | -- |
| UNDISTRIBUTED | 13 | 39.00 | 30 | 2 | 1 | 0.04 | 1 |
| **TOTALS** | **119** | **816.00** | **639** | **50** | **23** | **0.71** | **16** |

*ADDITIONAL QUANTITIES SHOWN ELSEWHERE IN PLAN

| LOCATION | SITE LIGHTING SPV.0105.10 LS |
|---|---|
| PROJECT | 1 |
| **TOTAL** | **1** |

| LOCATION | WATER SERVICE SPV.0105.08 LS |
|---|---|
| PROJECT | 1 |
| **TOTAL** | **1** |

| LOCATION | STATIC SCALE SYSTEM SPV.0105.01 LS |
|---|---|
| CONCRETE DRIVEWAY RL STA 6+00 LT | 1 |
| **TOTAL** | **1** |

| LOCATION | ELECTRICAL SERVICE SPV.0105.09 LS |
|---|---|
| PROJECT | 1 |
| **TOTAL** | **1** |

| LOCATION | NATURAL GAS SERVICE SPV.0055.01 DOL |
|---|---|
| PROJECT | 5000 |
| **TOTAL** | **5000** |

| LOCATION | UNDERGROUND DETENTION WASTEWATER TANK, 10-FT DIAMETER SPV.0105.02 LS |
|---|---|
| CONCRETE DRIVEWAY RL STA 3+00 RT | 1 |
| **TOTAL** | **1** |

| | BRINE BUILDING | | | |
|---|---|---|---|---|
| LOCATION | GENERAL CONSTRUCTION SPV.0105.03 LS | PLUMBING SPV.0105.04 LS | HEATING AND VENTILATION SPV.0105.05 LS | ELECTRICAL SPV.0105.06 LS |
| CONCRETE DRIVEWAY RL STA 2+25 RT | 1 | 1 | 1 | 1 |
| **TOTAL** | **1** | **1** | **1** | **1** |

| | SALT STORAGE SHED | | | | |
|---|---|---|---|---|---|
| | | FLOOR SLAB | | | |
| LOCATION | SPV.0105.07 LS | BASE AGGREGATE DENSE 1 1/4-INCH 305.0120* TON | TACK COAT 455.0605* GAL | ASPHALTIC SURFACE 465.0105* TON | WATER 624.0100* MGAL |
| CONCRETE DRIVEWAY RL STA 2+25 RT | 1 | 1,265 | 135 | 455 | 13.00 |
| UNDISTRIBUTED | -- | 67 | 5 | 24 | 0.32 |
| **TOTAL** | **1** | **1,332** | **140** | **479** | **13.32** |

*ADDITIONAL QUANTITIES SHOWN ELSEWHERE IN PLAN

| Division | From/To Station | Location | 205.0100 Common Excavation (1) | | Salvaged/Unusable Pavement Material (4) | Available Material (5) | Expanded EBS Backfill (6) | Unexpanded Fill | Expanded Fill (7) | Waste (5) | 208.0100 Borrow (8) | Comment: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Cut (2) | EBS Excavation (3) | | | Factor 1.10 | | Factor 1.00 | | | |
| Division 1 | | | | | | | | | | | | |
| Asphalt_DWY_XML.xm | 00+94.54/08+14.58 | | 20,219 | 0 | 0 | 0 | 0 | 280 | 280 | 20,219 | 280 | |
| phalt East_DWY_XML. | 00+00/01+12.07 | | 250 | 0 | 0 | 0 | 0 | 0 | 0 | 250 | 0 | |
| Concrete_DWY_XML.xn | 00+39.67/04+43 | | 12,060 | 0 | 0 | 0 | 0 | 81 | 81 | 12,060 | 81 | |
| UNDISTRIBUTED | | | 0 | 2,000 | 0 | 0 | 2,200 | 0 | 0 | 2,000 | 2,200 | |
| Division 1 Subtotal | | | 32,529 | 2,000 | 0 | 0 | 2,200 | 361 | 361 | 34,529 | 2,561 | |
| Grand Total | | | 32,529 | 2,000 | 0 | 0 | 2,200 | 361 | 361 | 34,529 | 2,561 | |
| Total Common Exc | | | 34,529 | | **Plus Detention Pond Excavation (2,681 CY) = 37,210 CY** | | | | | | | |

Notes:

(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) Salvaged/Unusable Pavement Material

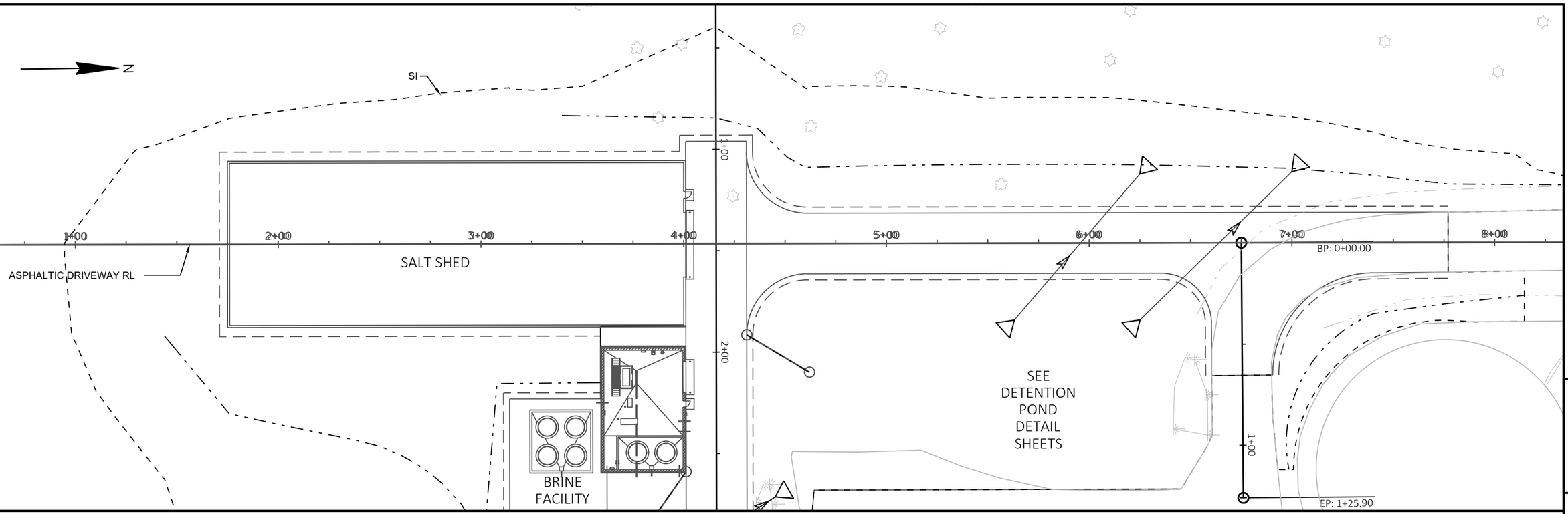
(4) Available Material = Cut - Salvaged/Unusuable Pavement Material

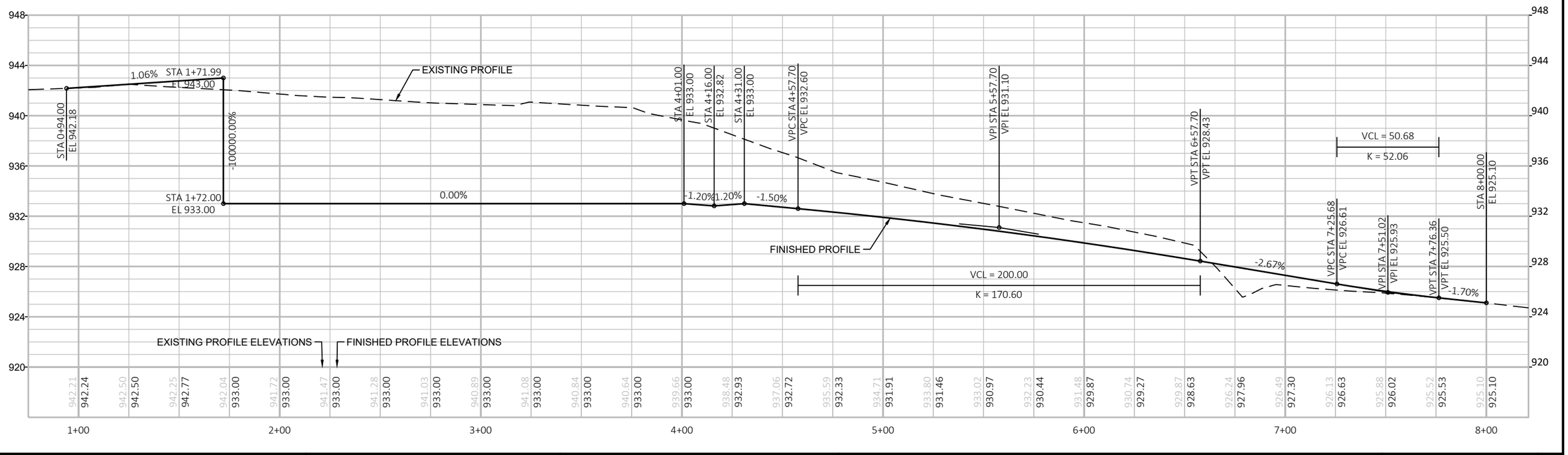
(5) Common Excavation not to be used as fill material.

(6) Expanded EBS Backfill - This is to be filled with Borrow material. EBS Backfill Factor = 1.1. Item number 208.0100

(7) Expanded Fill Factor = 1

(8) Borrow is required in all fill areas.

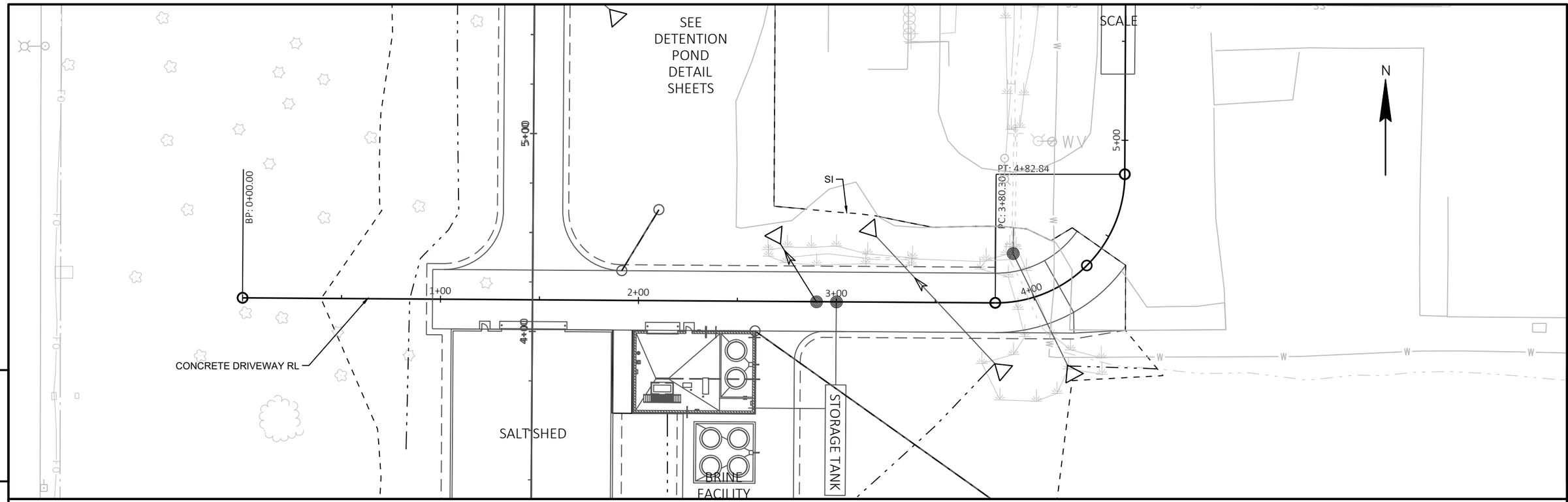


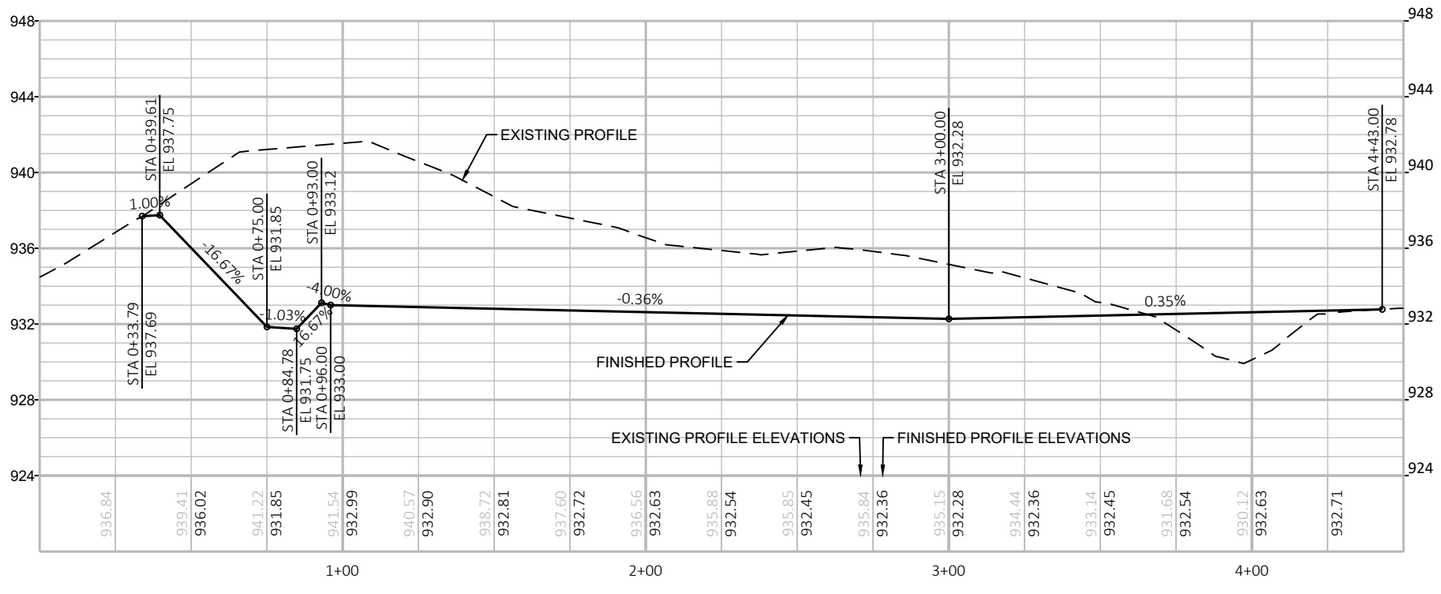




| PROJECT NO: 1060-62-70 | HWY: IH-94 | COUNTY: WAUKESHA | PLAN AND PROFILE: ASPHALTIC DRIVEWAY | SHEET 59 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\10606200\SHEETSPLAN\050101_PP.DWG
LAYOUT NAME - 01_pp

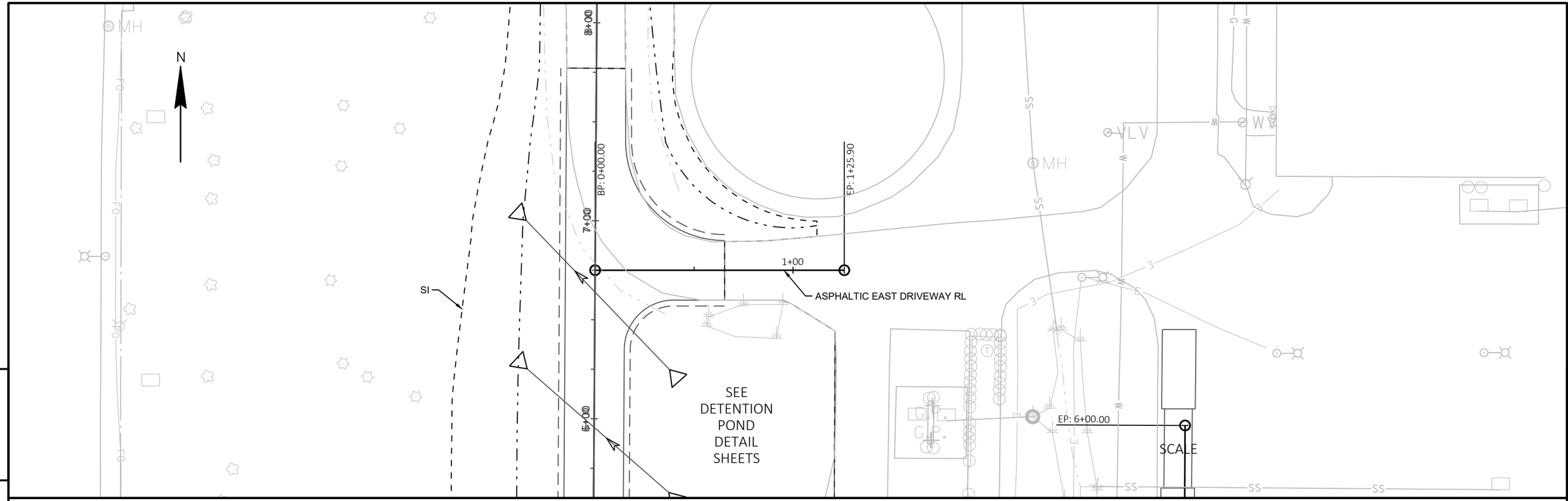
PLOT DATE : 1/30/2018 4:22 PM PLOT BY : SCHMIDT, JUDENE M PLOT NAME : PLOT SCALE : 1 IN:50 FT

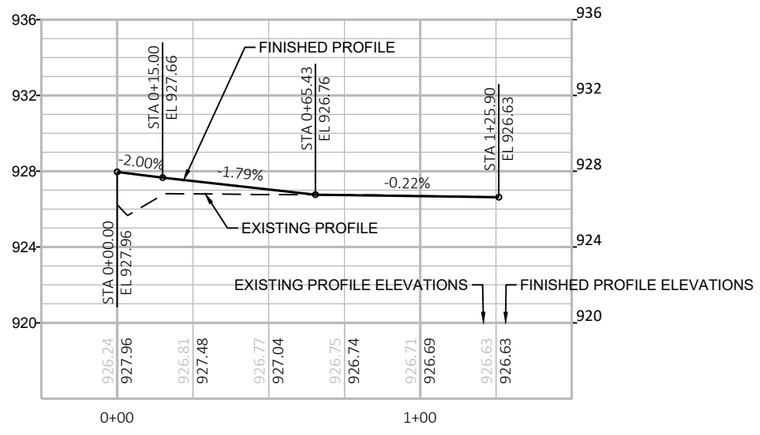



| PROJECT NO: 1060-62-70 | HWY: IH-94 | COUNTY: WAUKESHA | PLAN AND PROFILE: CONCRETE DRIVEWAY | SHEET 60 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\10606200\SHEETSPLAN\050101_PP.DWG
LAYOUT NAME - 02_pp
PLOT DATE : 1/30/2018 4:22 PM
PLOT BY : SCHMIDT, JUDENE M
PLOT NAME :
PLOT SCALE : 1 IN:50 FT



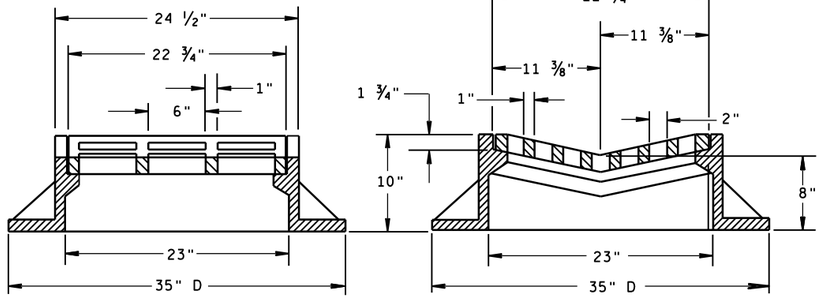

| PROJECT NO: 1060-62-70 | HWY: IH-94 | COUNTY: WAUKESHA | PLAN AND PROFILE: ASPHALTIC EAST DRIVEWAY | SHEET 61 | E |
|---|---|---|---|---|---|

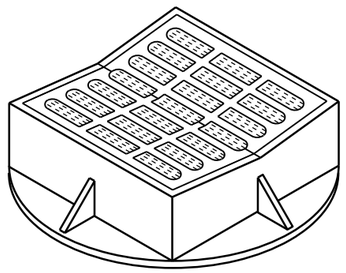
FILE NAME : N:\PDS\C3D\10606200\SHEETSPLAN\050101_PP.DWG
LAYOUT NAME - 03_pp

PLOT DATE : 1/30/2018 4:22 PM PLOT BY : SCHMIDT, JUDENE M PLOT NAME : PLOT SCALE : 1 IN:50 FT

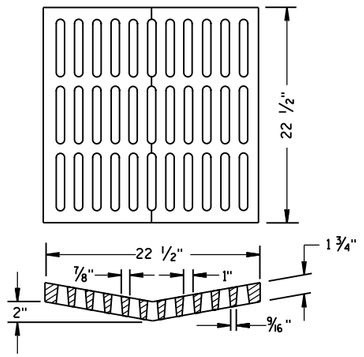
# Standard Detail Drawing List

| | |
|---|---|
| 08A05-19B | INLET COVERS TYPE B, B-A, C, MS, MS-A, & WM |
| 08A05-19D | INLET COVER TYPE BW, MANHOLE COVERS, TYPE K, J, J-S, L & M |
| 08C06-02 | INLETS 3-FT AND 4-FT DIAMETER |
| 08D15-05B | EDGEDRAIN AND BASE AGGREGATE OPEN  GRADED |
| 08E08-03 | TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS |
| 08E09-06 | SILT FENCE |
| 08E10-02 | INLET PROTECTION TYPE A, B, C AND D |
| 08F01-11 | APRON ENDWALLS FOR CULVERT PIPE |
| 08F04-07 | JOINT TIES FOR CONCRETE PIPE  AND CONCRETE COLLAR DETAIL |
| 13C01-18 | CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES |
| 13C11-11A | RURAL DOWELED CONCRETE PAVEMENT |
| 13C11-11B | RURAL DOWELED CONCRETE PAVEMENT |
| 13C18-05A | CONCRETE PAVEMENT JOINTING |
| 13C18-05B | CONCRETE PAVEMENT STEEL REINFORCEMENT |
| 13C18-05C | CONCRETE PAVEMENT JOINT TYPES |
| 13C18-05D | CONCRETE PAVEMENT JOINTING AT UTILITY FIXTURES |
| 14A02-01 | TREE PLANTING DETAIL |
| 15A03-02A | FLEXIBLE MARKER POST FOR CULVERT END |
| 15A03-02B | FLEXIBLE MARKER POST FOR CULVERT END |



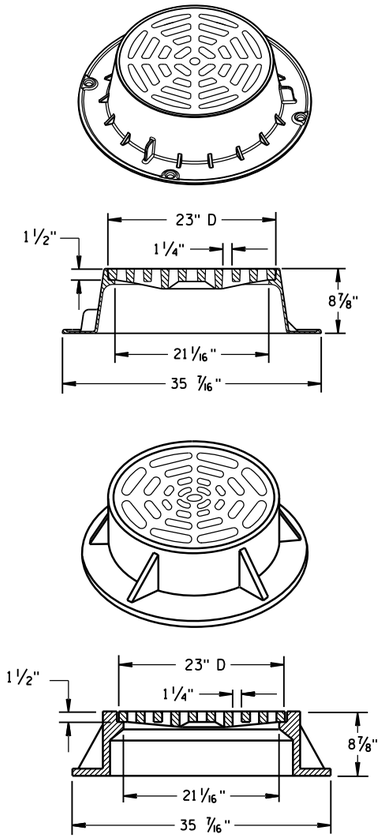



TYPE "B"




ALTERNATIVE GRATE FOR TYPE "B" COVER

USE WHERE PEDESTRIAN OR BICYCLE TRAFFIC IS POSSIBLE.
NOTED AS TYPE B-A ON THE DRAINAGE TABLE




TYPE "C"

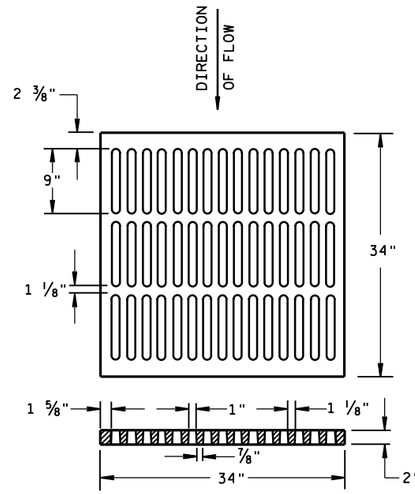
NOTE: EITHER CASTING IS ACCEPTABLE

## GENERAL NOTES

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

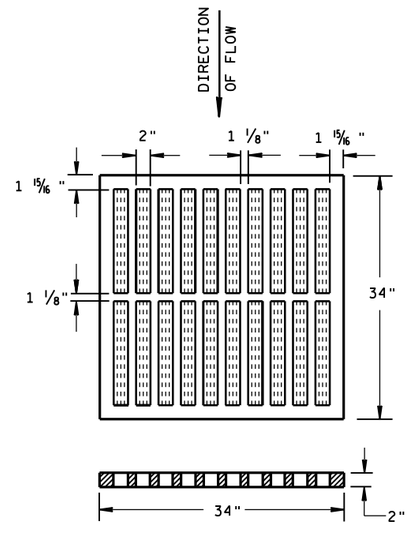
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR CATCH BASIN, MANHOLE AND INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

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



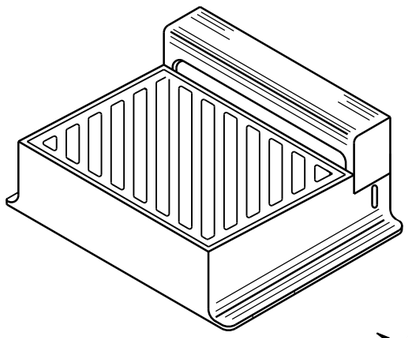

ALTERNATIVE TYPE "MS"

USE WHERE PEDESTRIAN OR BICYCLE TRAFFIC IS PERMITTED
NOTED AS TYPE MS-A ON THE DRAINAGE TABLE



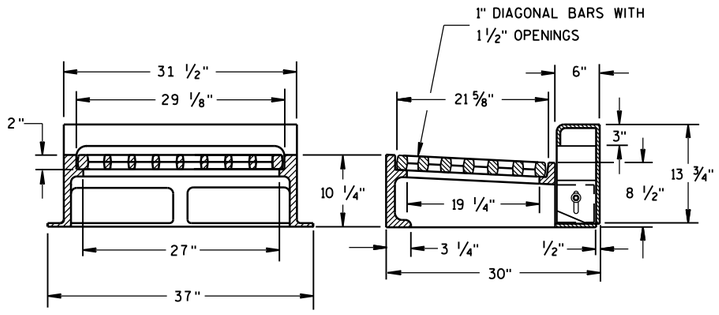

TYPE "MS"

USE ON FREEWAYS AND EXPRESSWAYS
NOTED AS TYPE MS ON DRAINAGE TABLE






DIAGONAL SLOTS, SHALL BE ORIENTED TO THE DIRECTION OF FLOW AS ILLUSTRATED. GRATES ARE MANUFACTURED TO BE REVERSIBLE.




NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"

TYPE "WM"

INLET COVERS
TYPE B, B-A, C,
MS, MS-A, & WM

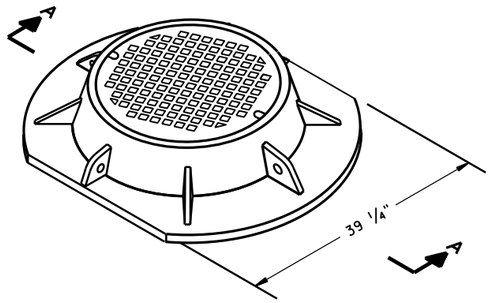
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

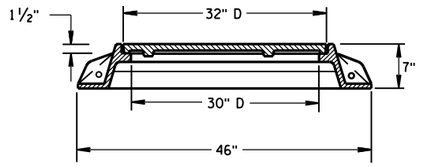
APPROVED
11/27/2013 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA



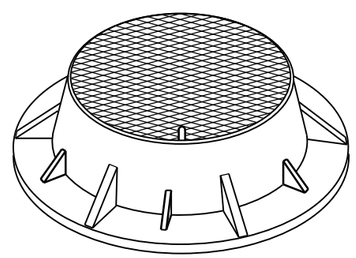
6

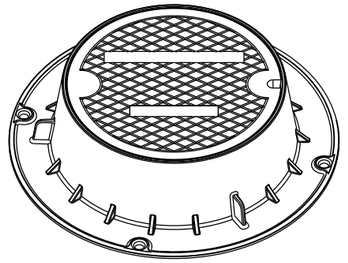
S.D.D. 8 A 5-19b

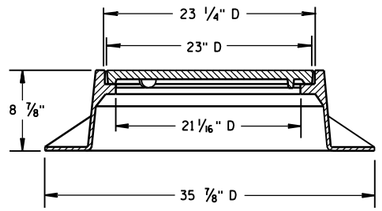


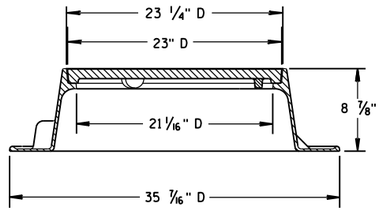




SECTION A-A
**TYPE "K"**







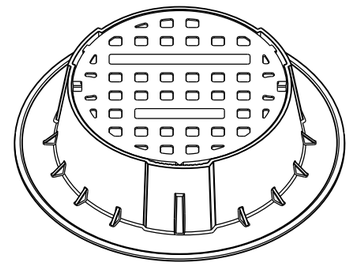

**TYPE "J"**
**NOTE: EITHER CASTING IS ACCEPTABLE**

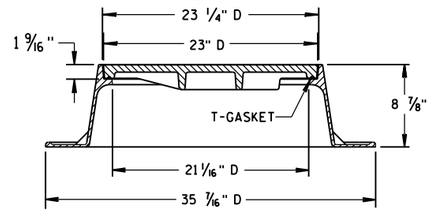
## GENERAL NOTES

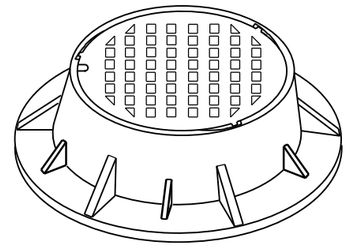
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

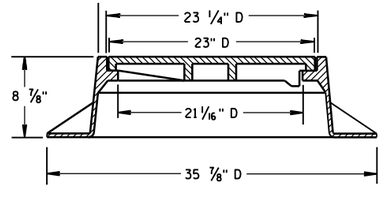
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR MANHOLE COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

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

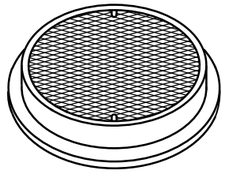


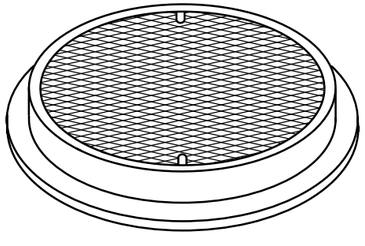


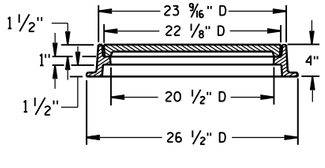





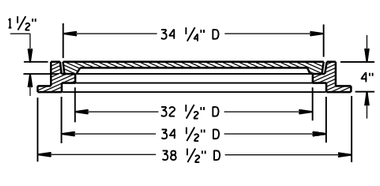

**TYPE "J" SPECIAL**
TYPE "B" NON-ROCKING SELF-SEAL LID
(NOTED AS TYPE J-S ON THE DRAINAGE TABLE)
**NOTE: EITHER CASTING IS ACCEPTABLE**








**TYPE "L"**

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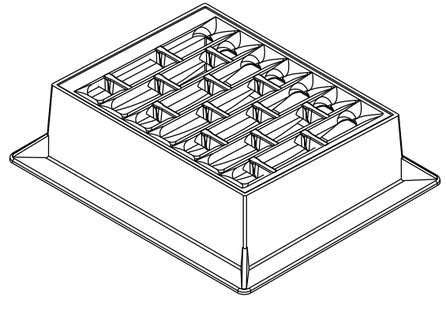

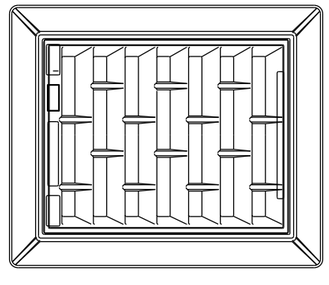

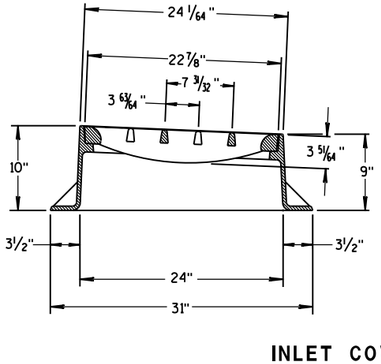


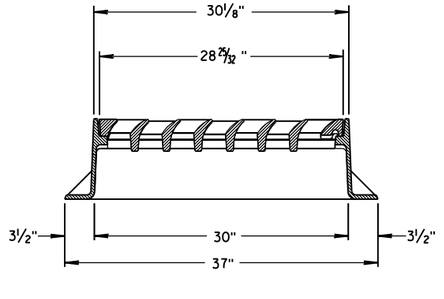


**INLET COVER TYPE "BW"**

**INLET COVER TYPE BW**
**MANHOLE COVERS, TYPE K, J, J-S, L & M**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/27/2013
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA





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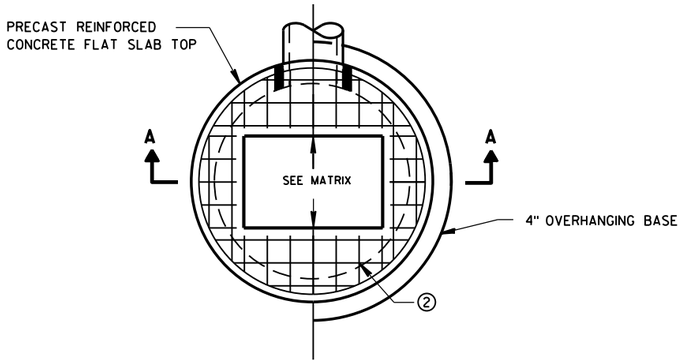
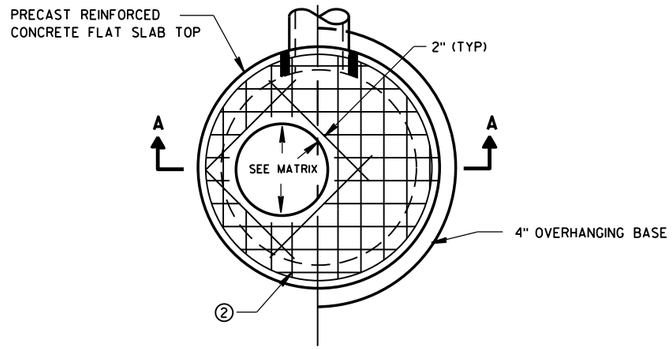
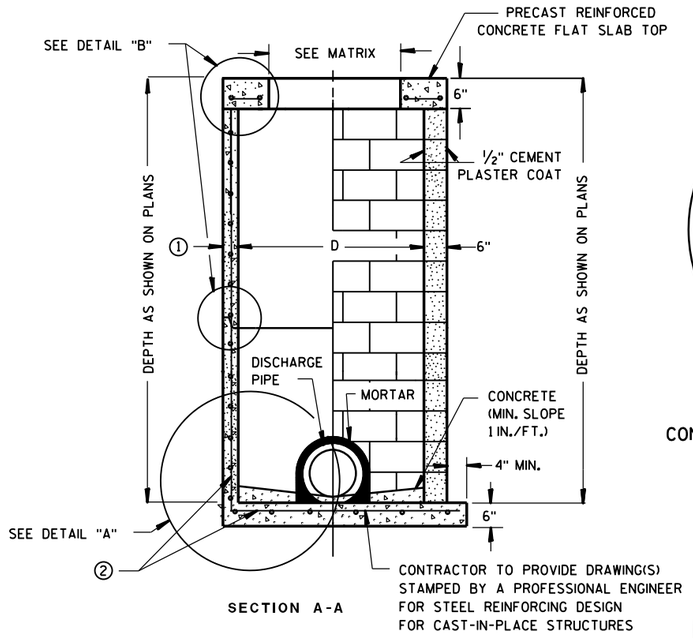
S.D.D. 8 A 5-19d




PLAN VIEW RECTANGULAR OPENING




PLAN VIEW CIRCULAR OPENING

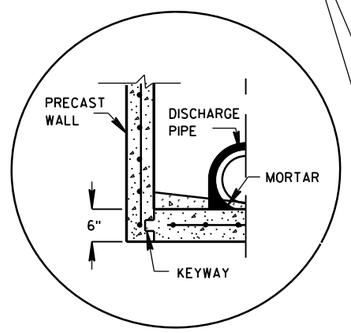



SECTION A-A

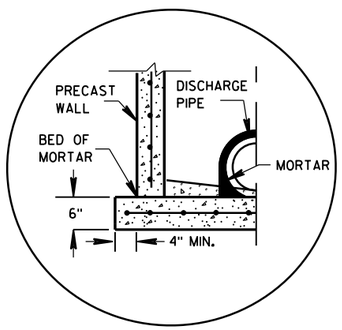
PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE

CONCRETE BLOCK WITH CAST-IN-PLACE OR PRECAST REINFORCED CONCRETE BASE ②

CIRCULAR INLETS W/ FLAT TOP

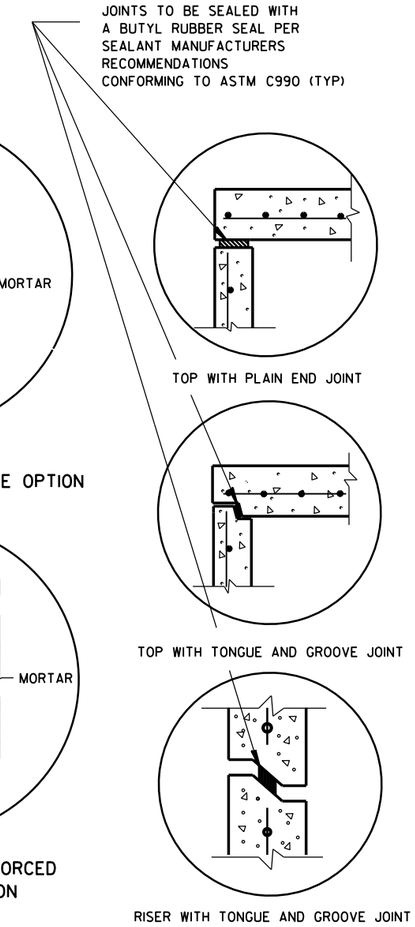



PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE OPTION




SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

DETAIL "A"




DETAIL "B"

## GENERAL NOTES

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

UNLESS OTHERWISE AUTHORIZED IN WRITING BY THE ENGINEER, THE CONTRACTOR SHALL NOT ORDER AND DELIVER PRECAST INLET UNITS REQUIRED FOR THE PROJECT UNTIL A LIST OF SIZES IS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR UNDERGROUND DRAINAGE STRUCTURES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ALL DRAINAGE STRUCTURES ARE DESIGNATED ON THE PLANS AS "MANHOLES 3X3-L", "CATCH BASINS 4-B", "INLETS 2X3-H", ETC. THE FIRST NUMBERS DESIGNATE THE SIZE OF THE STRUCTURE, AND THE FOLLOWING LETTER DESIGNATES THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT.

BASES SHALL BE PLACED ON A BED OF MATERIAL AT LEAST 6 INCHES IN DEPTH, WHICH MEETS THE REQUIREMENTS OF FOUNDATION BACKFILL. THIS BEDDING SHALL BE COMPACTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.

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

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

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

4" OVERHANGING BASES ARE REQUIRED FOR ALL CONCRETE BLOCK INSTALLATIONS. 4" OVERHANG IS REQUIRED WHEN SEPARATE PRECAST BASE IS PROVIDED. OVERHANG IS NOT REQUIRED ON PRECAST STRUCTURES WITH AN INTEGRAL OR MONOLITHIC BASE.

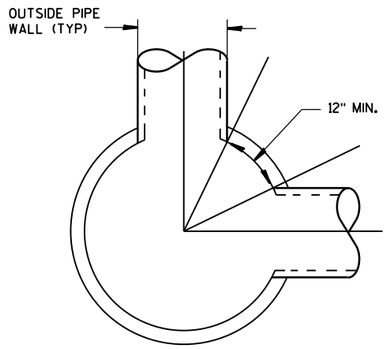
FOR ADDITIONAL CONFIGURATIONS, MAINTAIN A MINIMUM OF 12 INCHES AS MEASURED FROM THE INSIDE OF THE STRUCTURE WALL BETWEEN THE OUTSIDE PIPE WALLS OF ADJACENT PIPES. SEE DETAIL "C".

① MINIMUM WALL THICKNESS SHALL BE 4-IN FOR 3-FT DIAMETER AND 5-IN FOR 4-FT DIAMETER PRECAST INLETS.

② FOR PRECAST CATCH BASINS PROVIDE REINFORCING STEEL IN ACCORDANCE TO AASHTO M199.

## INLET COVER OPENING MATRIX

| | INLET COVER TYPE | ALL A'S | ALL B'S | BW | C | F | ALL H'S | S | T | V | WM | Z |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INLET SIZE | OPENING SIZE (FT) | | | | | | | | | | | |
| 3-FT | 2 DIA. | | | | X | | | | | | | X |
| | 2X2 | X | X | | | | | X | | X | | |
| 4-FT | 2 DIA. | | | | X | | | | | | | X |
| | 2X2 | X | X | | | | | X | | X | | |
| | 2X2.5 | | | X | | | | X | X | X | X | |
| | 2X3 | | | | | | X | | | | | |
| | 2.5X3 | | | | | X | | | | | | |




DETAIL "C"

## PIPE MATRIX

| INLET SIZE | MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES | |
|---|---|---|
| | 180° SEPARATION (IN) | 90° SEPARATION (IN) |
| 3-FT | 15 | 12 |
| 4-FT | 24 | 18 |

INLETS 3-FT AND 4-FT DIAMETER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept.. 2016 — /S/ Rodney Taylor
DATE — ROADWAY STANDARDS | UNIT SUPERVI ENT
FHWA



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S.D.D. 8 C 6-2

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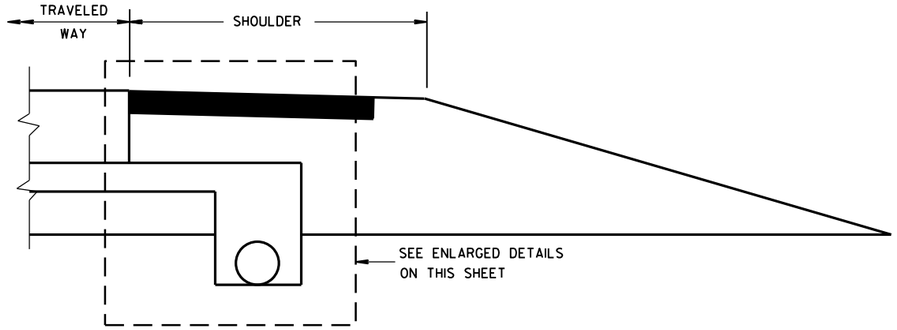
S.D.D. 8 C 6-2

INLETS 3-FT AND 4-FT DIAMETER




## RURAL CROSS SECTION

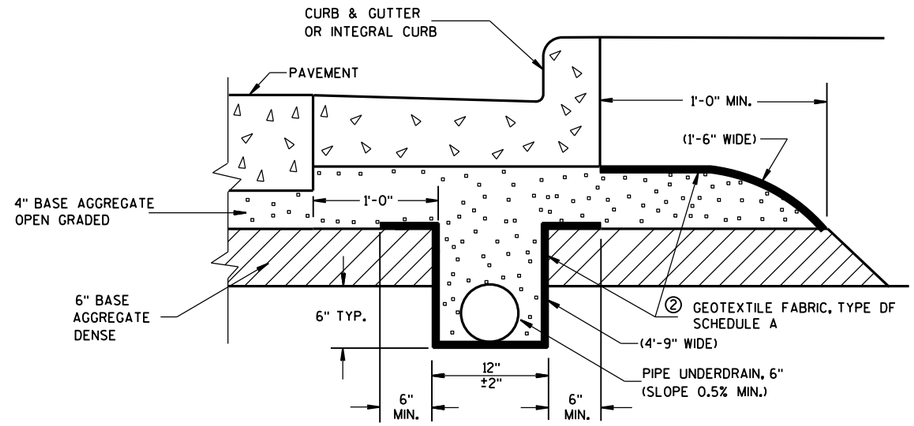
## GENERAL NOTES

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

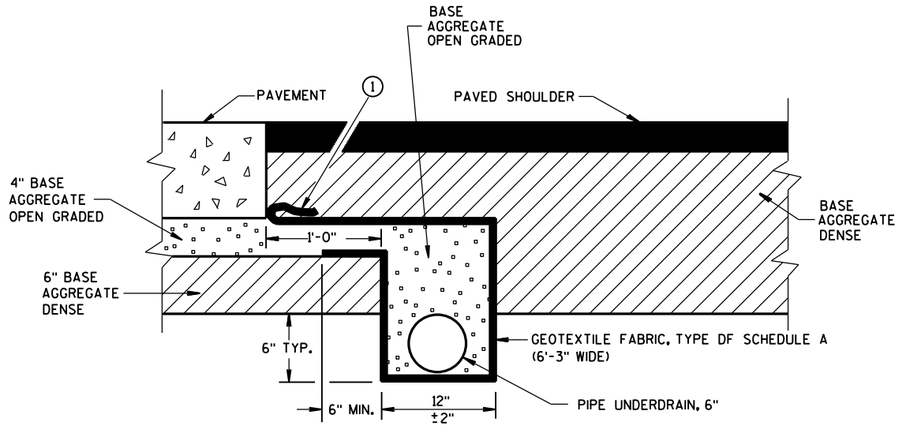
PIPE UNDERDRAIN SHALL BE LAID PARALLEL TO THE GRADE OF THE ROADWAY.

① FOLD OVER EXCESS GEOTEXTILE FABRIC AT THIS LOCATION.

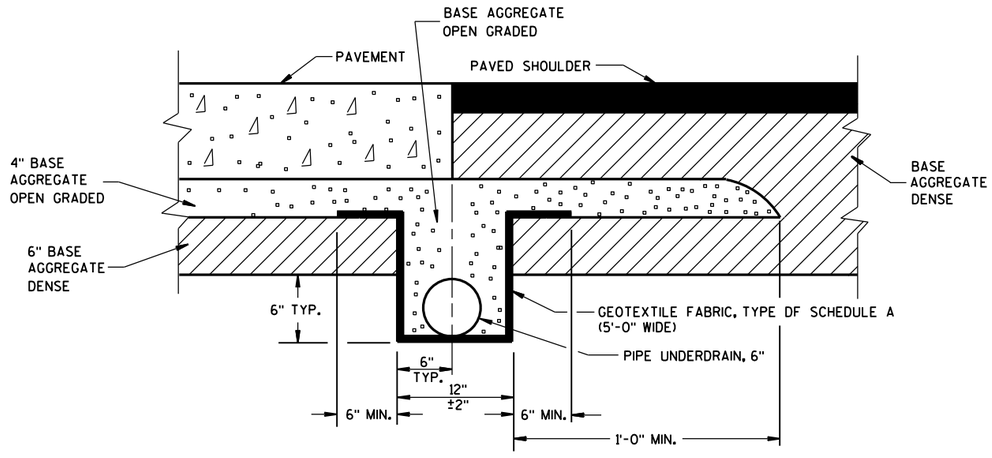
② TOTAL FABRIC WIDTH IS 6'-3" FOR PAYMENT.




## EDGEDRAIN IN URBAN ROADWAY




**POST PAVING INSTALLATION**
(QUANTITIES ARE BASED ON THIS DETAIL)




**PRE-PAVING INSTALLATION ALTERNATE**

## EDGEDRAIN IN RURAL ROADWAY

**EDGEDRAIN AND BASE AGGREGATE OPEN GRADED**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2015 — DATE
/S/ Peter Kemp, P.E. — PAVEMENT SUPE
FHWA

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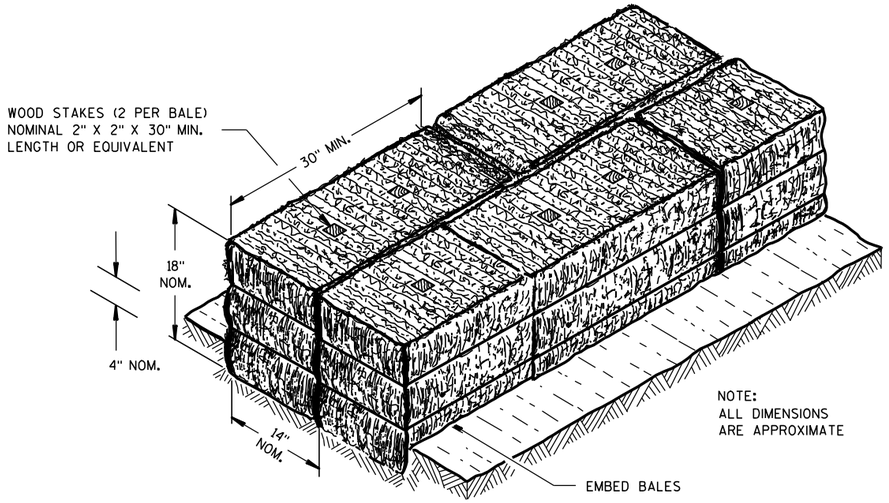
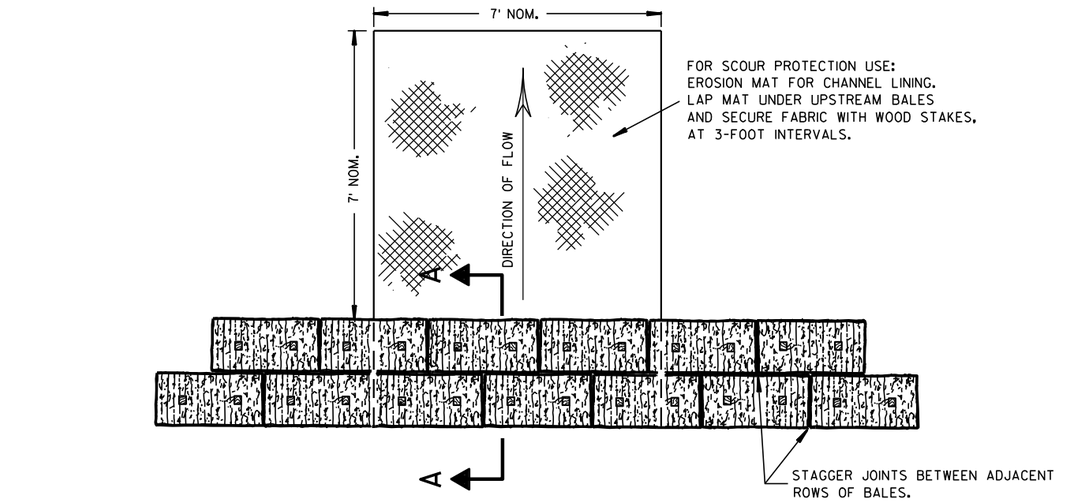
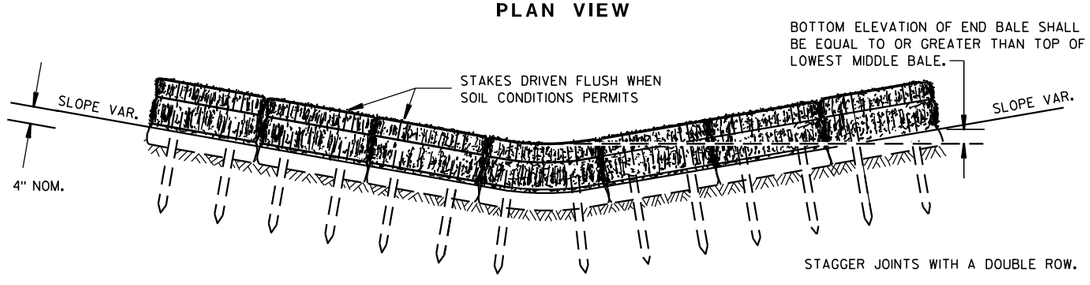



**SECTION A-A**




**PLAN VIEW**



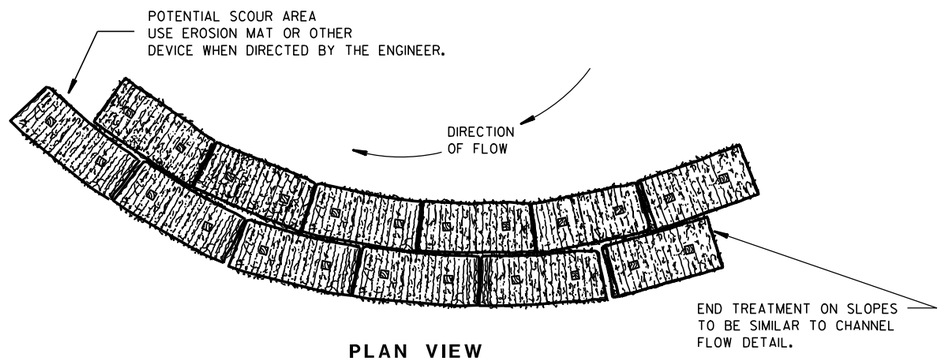

**FRONT ELEVATION**

## TEMPORARY DITCH CHECK USING EROSION BALES ①

## GENERAL NOTES

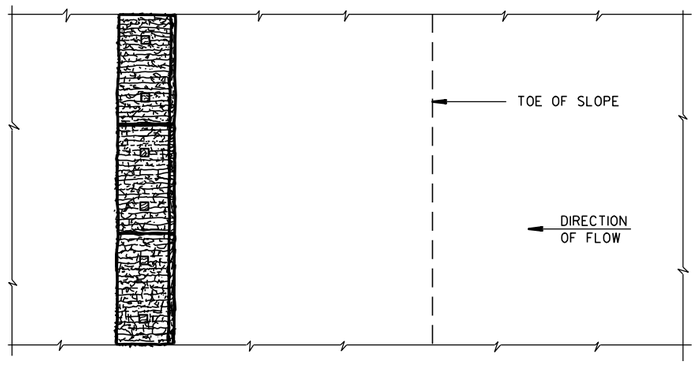
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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.

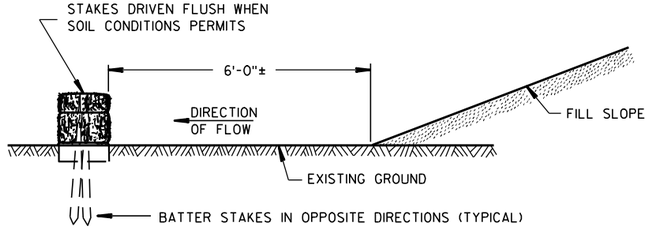



**PLAN VIEW**

WHEN ALTERING THE DIRECTION OF FLOW




**PLAN VIEW**




**FRONT ELEVATION**

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

## EROSION BALES FOR SHEET FLOW

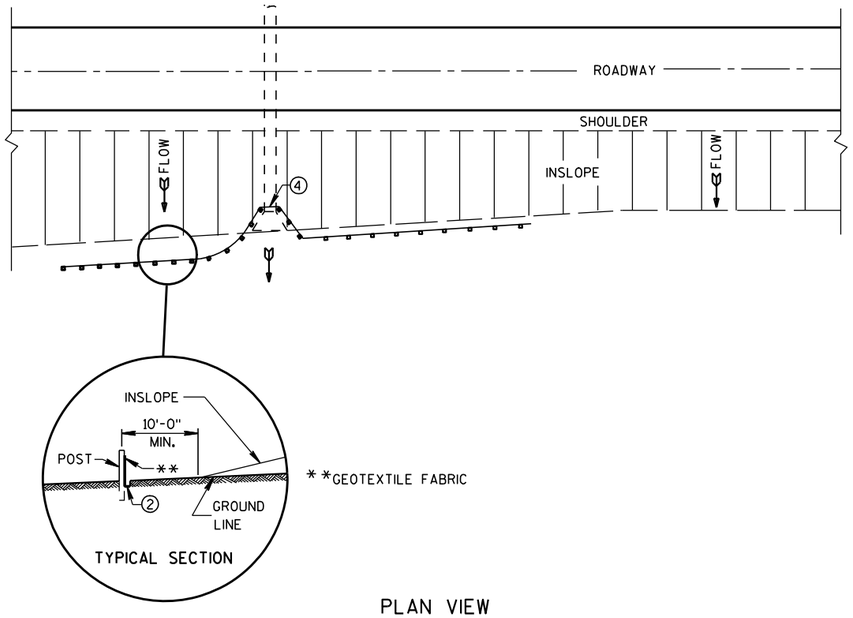
**TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

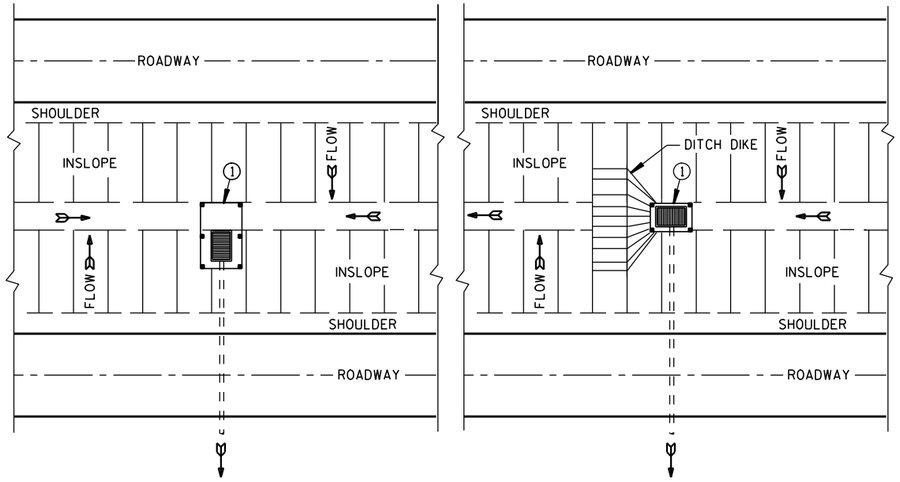
6/04/02 DATE — /S/ Beth Cannestra — CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA




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.

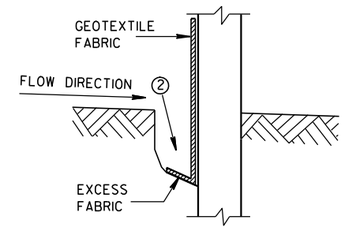
① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.

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.

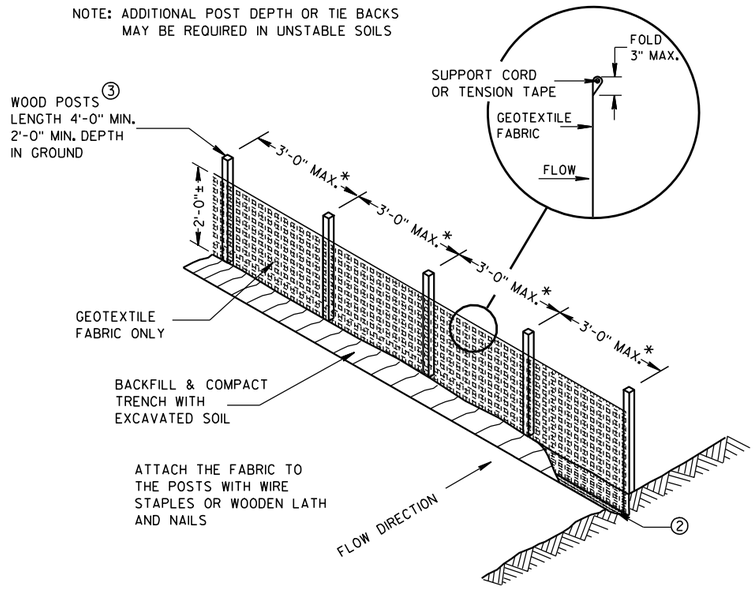
③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.

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.

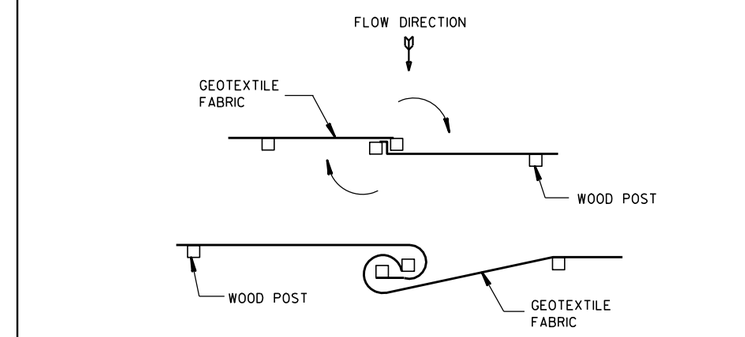



## TRENCH DETAIL

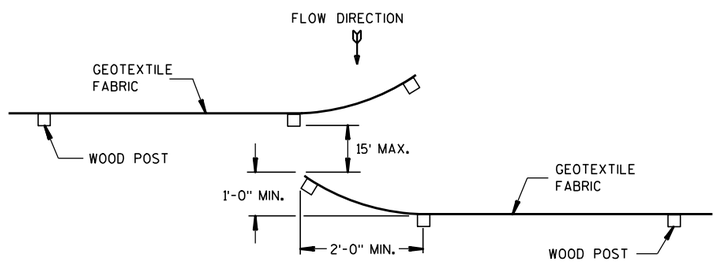



*NOTE: 8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.

## SILT FENCE

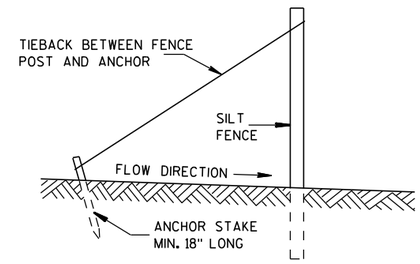



TWIST METHOD




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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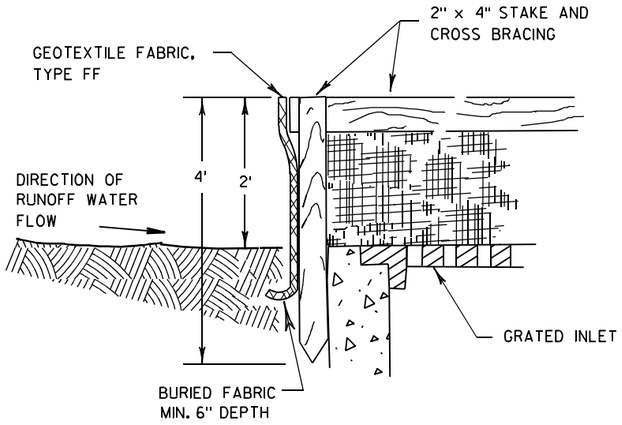
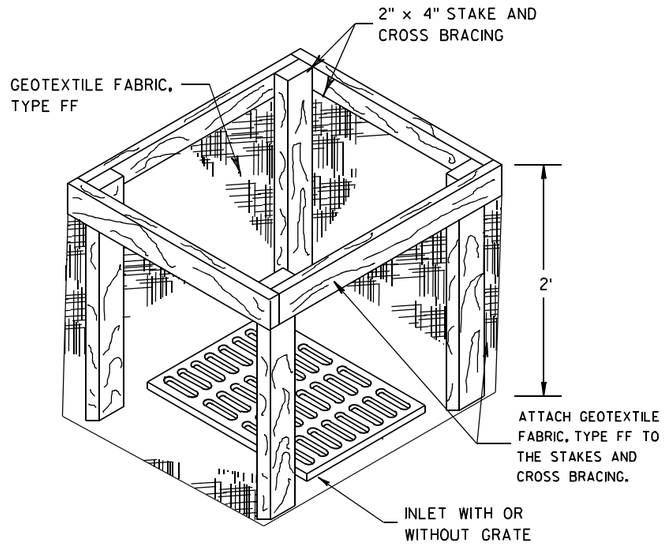
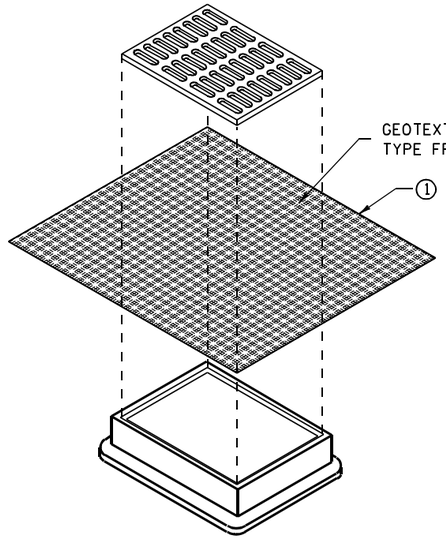
S.D.D. 8 E 9-6



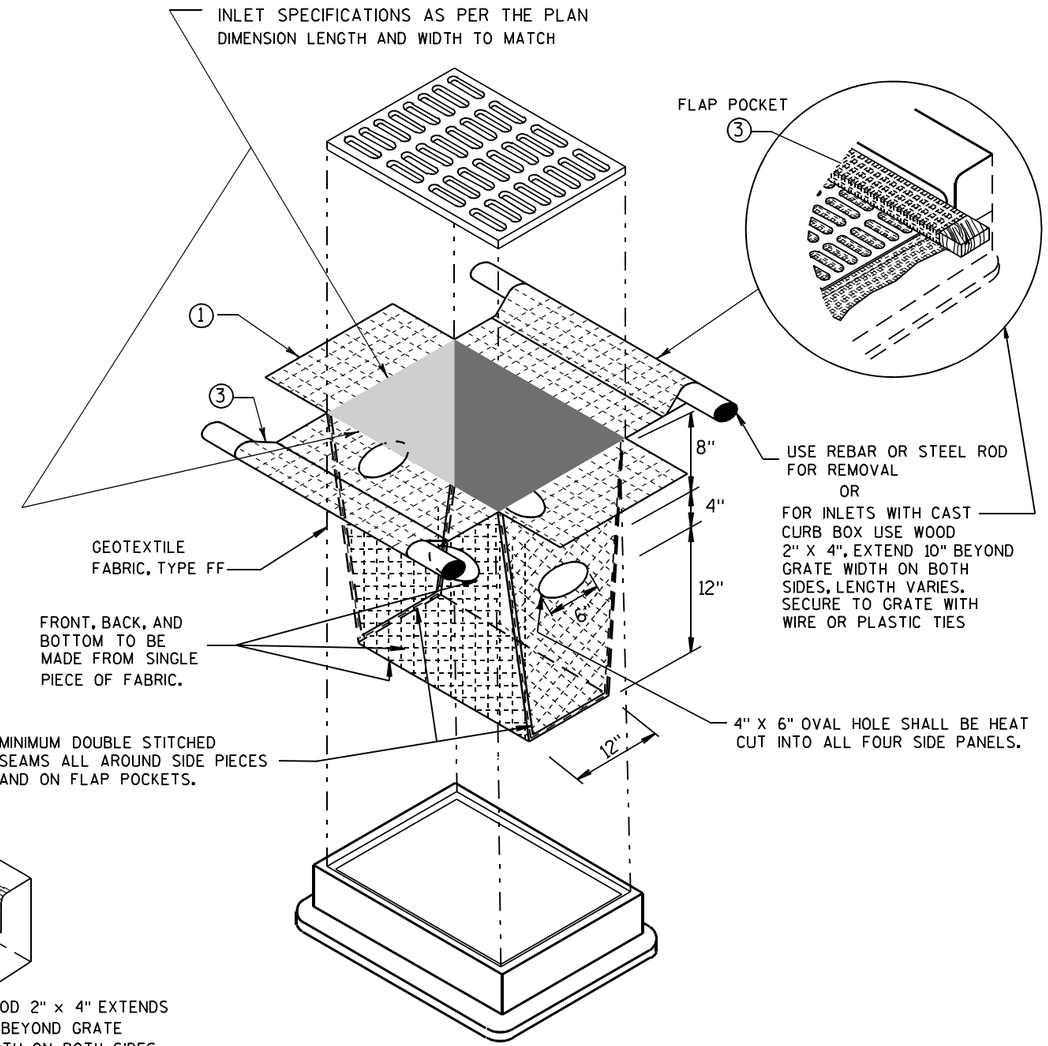




## INLET PROTECTION, TYPE A



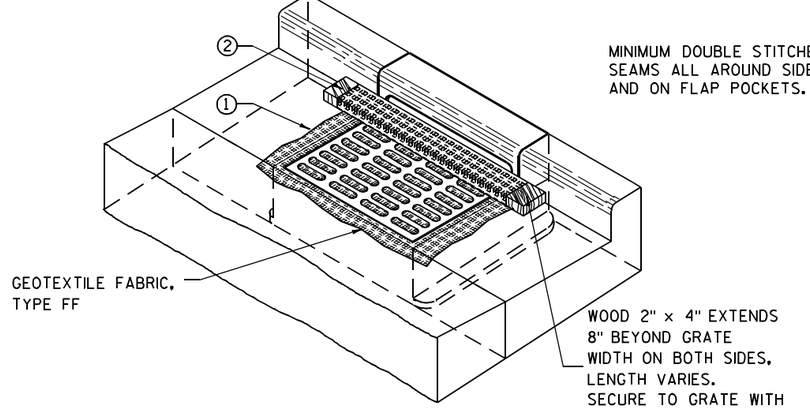

## INLET PROTECTION, TYPE B
## (WITHOUT CURB BOX)

(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

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S.D.D. 8 E 10-2

## METAL APRON ENDWALLS

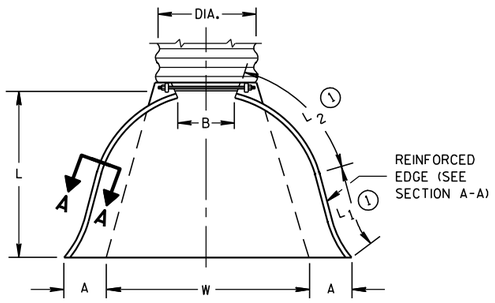
| PIPE DIA. (IN.) | MIN. THICK. (Inches) STEEL | MIN. THICK. (Inches) ALUM. | DIMENSIONS (Inches) A (±1") | B (MAX.) | H (±1") | L (±1 1/2") | L1 ① | L2 ① | W (±2") | APPROX. SLOPE | BODY |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 12 | .064 | .060 | 6 | 6 | 6 | 21 | 12 | 17 1/2 | 24 | 2 1/2 to 1 | 1 Pc. |
| 15 | .064 | .060 | 7 | 8 | 6 | 26 | 14 | 21 3/4 | 30 | 2 1/2 to 1 | 1 Pc. |
| 18 | .064 | .060 | 8 | 10 | 6 | 31 | 15 | 28 1/4 | 36 | 2 1/2 to 1 | 1 Pc. |
| 21 | .064 | .060 | 9 | 12 | 6 | 36 | 18 | 29 5/8 | 42 | 2 1/2 to 1 | 1 Pc. |
| 24 | .064 | .075 | 10 | 13 | 6 | 41 | 18 | 37 1/4 | 48 | 2 1/2 to 1 | 1 Pc. |
| 30 | .079 | .075 | 12 | 16 | 8 | 51 | 18 | 52 1/4 | 60 | 2 1/2 to 1 | 1 Pc. |
| 36 | .079 | .105 | 14 | 19 | 9 | 60 | 24 | 59 3/4 | 72 | 2 1/2 to 1 | 2 Pc. |
| 42 | .109 | .105 | 16 | 22 | 11 | 69 | 24 | 75 5/8 | 84 | 2 1/2 to 1 | 2 Pc. |
| 48 | .109 | .105 | 18 | 27 | 12 | 78 | 24 | 81 | 90 | 2 1/4 to 1 | 3 Pc. |
| 54 | .109 | .105 | 18 | 30 | 12 | 84 | 30 | 85 1/2 | 102 | 2 1/4 to 1 | 3 Pc. |
| 60 | .109× | .105× | 18 | 33 | 12 | 87 | — | — | 114 | 2 to 1 | 3 Pc. |
| 66 | .109× | .105× | 18 | 36 | 12 | 87 | — | — | 120 | 2 to 1 | 3 Pc. |
| 72 | .109× | .105× | 18 | 39 | 12 | 87 | — | — | 126 | 2 to 1 | 3 Pc. |
| 78 | .109× | .105× | 18 | 42 | 12 | 87 | — | — | 132 | 1 1/2 to 1 | 3 Pc. |
| 84 | .109× | .105× | 18 | 45 | 12 | 87 | — | — | 138 | 1 1/2 to 1 | 3 Pc. |
| 90 | .109× | .105× | 18 | 37 | 12 | 87 | — | — | 144 | 1 1/2 to 1 | 3 Pc. |
| 96 | .109× | .105× | 18 | 35 | 12 | 87 | — | — | 150 | 1 1/2 to 1 | 3 Pc. |

× EXCEPT CENTER PANEL SEE GENERAL NOTES

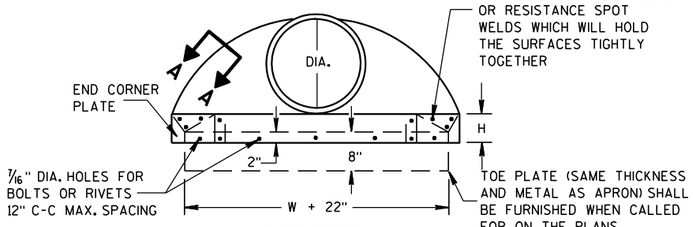
## REINFORCED CONCRETE APRON ENDWALLS

| PIPE DIA. (IN.) | DIMENSIONS (Inches) T | A | B | C | D | E | G | APPROX. SLOPE |
|---|---|---|---|---|---|---|---|---|
| 12 | 2 | 4 | 24 | 48 7/8 | 72 1/8 | 24 | 2 | 3 to 1 |
| 15 | 2 1/4 | 6 | 27 | 46 | 73 | 30 | 2 1/4 | 3 to 1 |
| 18 | 2 1/2 | 9 | 27 | 46 | 73 | 36 | 2 1/2 | 3 to 1 |
| 21 | 2 3/4 | 9 | 36 | 37 1/2 | 73 1/2 | 42 | 2 3/4 | 3 to 1 |
| 24 | 3 | 9 1/2 | 43 1/2 | 30 | 73 1/2 | 48 | 3 | 3 to 1 |
| 27 | 3 1/4 | 10 1/2 | 49 1/2 | 24 | 73 1/2 | 54 | 3 1/4 | 3 to 1 |
| 30 | 3 1/2 | 12 | 54 | 19 3/4 | 73 1/2 | 60 | 3 1/2 | 3 to 1 |
| 36 | 4 | 15 | 63 | 34 3/4 | 97 3/4 | 72 | 4 | 3 to 1 |
| 42 | 4 1/2 | 21 | 63 | 35 | 98 | 78 | 4 1/2 | 3 to 1 |
| 48 | 5 | 24 | 72 | 26 | 98 | 84 | 5 | 3 to 1 |
| 54 | 5 1/2 | 27 | 65 | * 33 1/4 - ** 35 | * 98 1/4 - ** 100 | 90 | 5 1/2 | 2 2/5 to 1 |
| 60 | 6 | * 30 - ** 35 | 60 | 39 | 99 | 96 | 5 | 2 to 1 |
| 66 | 6 1/2 | * 24 - ** 30 | * 72 - ** 78 | * 21 - ** 27 | 99 | 102 | 5 1/2 | 2 to 1 |
| 72 | 7 | * 24 - ** 36 | 78 | 21 | 99 | 108 | 6 | 2 to 1 |
| 78 | 7 1/2 | * 24 - ** 36 | 78 | 21 | 99 | 114 | 6 1/2 | 2 to 1 |
| 84 | 8 | 36 | 90 1/2 | 21 | 111 1/2 | 120 | 6 1/2 | 1 1/2 to 1 |
| 90 | 8 1/2 | 41 | 87 1/2 | 24 | 111 1/2 | 132 | 6 1/2 | 1 1/2 to 1 |

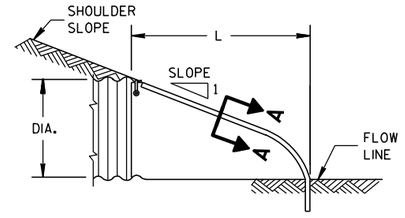
*MINIMUM
**MAXIMUM




PLAN VIEW

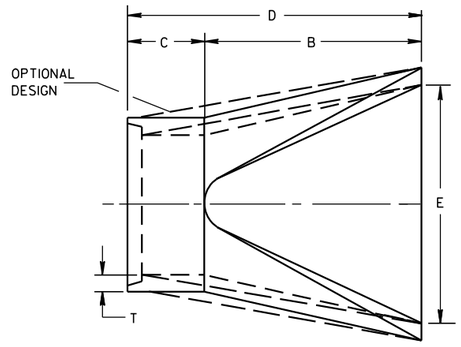



END VIEW

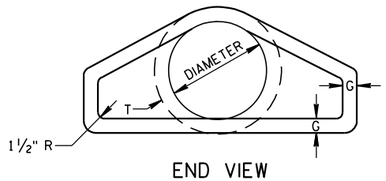



SIDE ELEVATION

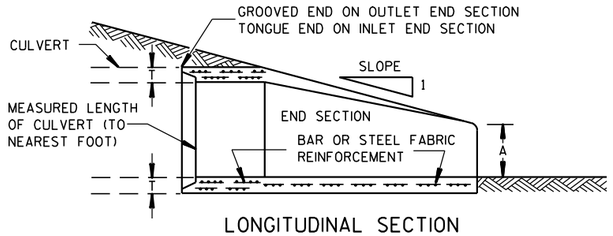
## METAL ENDWALLS




PLAN

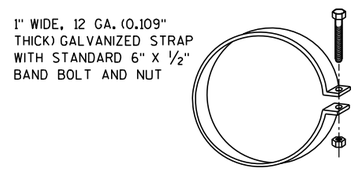



END VIEW



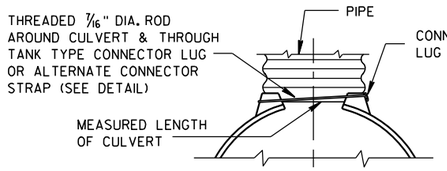

LONGITUDINAL SECTION

## CONCRETE ENDWALLS

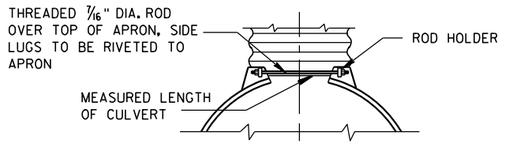



ALTERNATE FOR TYPE 1 CONNECTION

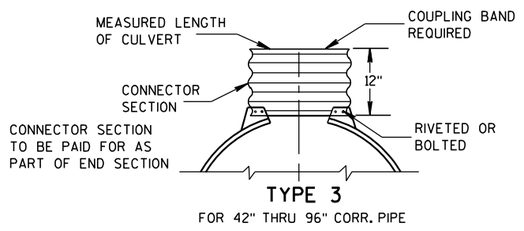
## END SECTION CONNECTOR STRAP



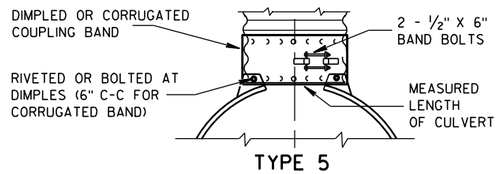

TYPE 1
FOR 12" THRU 24" CORR. PIPE




TYPE 2
FOR 30" THRU 96" CORR. PIPE




TYPE 3
FOR 42" THRU 96" CORR. PIPE




TYPE 5
ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

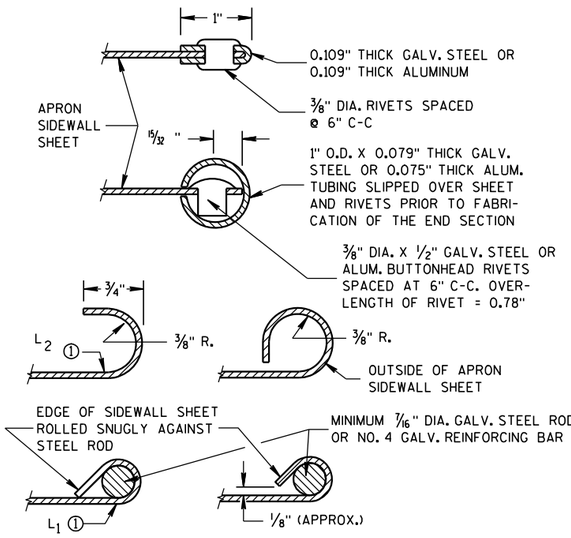
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

FOR CIRCUMFERENTIALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2, 3 OR 5 AS APPLICABLE.

FOR HELICALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2 OR 5.

FOR HELICALLY CORRUGATED PIPES WITH TWO CIRCUMFERENTIAL CORRUGATIONS AT EACH END USE ENDWALL CONNECTION DETAILS 1, 2 OR 3.

## CONNECTION DETAILS




## SECTION A-A

## 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.

CONCRETE CULVERT ENDWALLS MAY NOT BE USED WITH GALVANIZED STEEL OR ALUMINUM CULVERT PIPE OR VISE VERSA. GALVANIZED STEEL OR ALUMINUM ENDWALLS SHALL NORMALLY BE INSTALLED ON CULVERT PIPE OF THE SAME METAL.

ALL THREE PIECE STEEL APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT OF THE PIPE PERIMETER.

LAP SEAMS SHALL BE TIGHTLY JOINED BY GALVANIZED RIVETS OR BOLTS FOR STEEL UNITS AND ALUMINUM RIVETS AND BOLTS FOR ALUMINUM UNITS. FOR THE 60" THROUGH 96" DIAMETER APRON ENDWALL SIZES, THE REINFORCED EDGES AND CENTER PANEL SEAMS SHALL BE FURTHER REINFORCED WITH GALVANIZED STEEL OR ALUMINUM STIFFENER ANGLES. THE ANGLES SHALL BE ATTACHED BY GALVANIZED NUTS AND BOLTS FOR STEEL UNITS AND ALUMINUM NUTS AND BOLTS FOR ALUMINUM UNITS.

WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

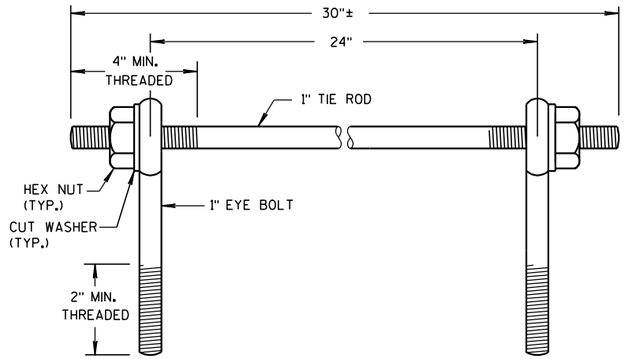
① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

# APRON ENDWALLS FOR CULVERT PIPE

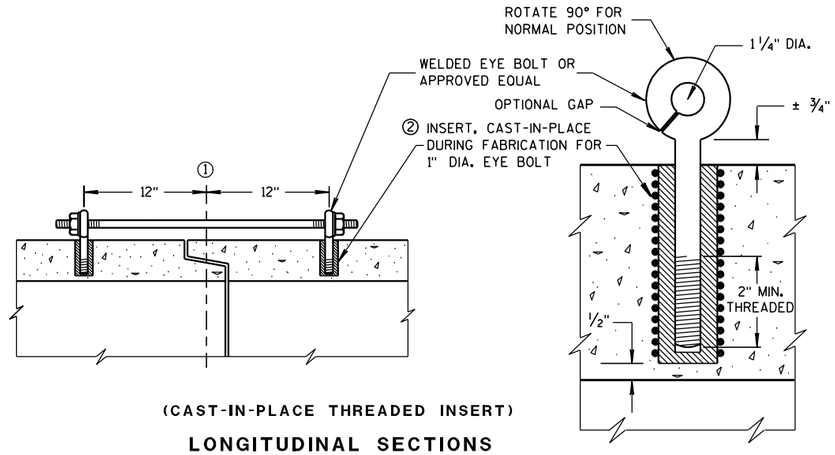
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/30/94 DATE
/S/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA


6
S.D.D. 8 F 1-11




EYE BOLTS AND TIE ROD




(CAST-IN-PLACE THREADED INSERT)

LONGITUDINAL SECTIONS

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

## GENERAL NOTES

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

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

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

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

① ℄ OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINTS.

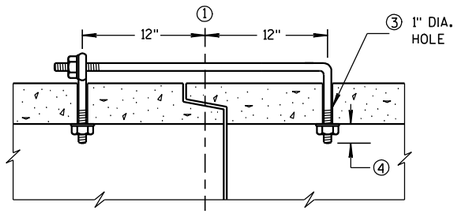
② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.

③ HOLES SHALL BE CAST-IN-PLACE OR DRILLED 12 INCHES FROM ℄ OF TONGUE AND GROOVE.

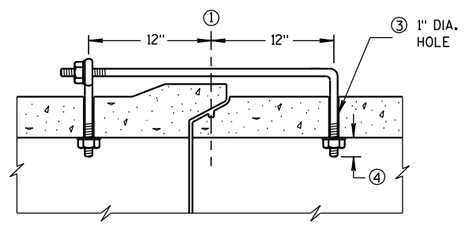
④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.

⑤ OPENING TO BE ROD DIAMETER PLUS 1 INCH.

⑥ LENGTH ADEQUATE TO EXTEND TO WITHIN 1/2 INCH OF THE INNER SURFACE OF THE PIPE.




(TONGUE & GROOVE PIPE)

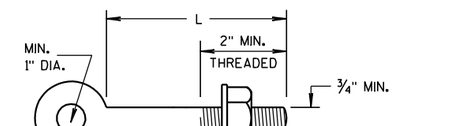



(MODIFIED BELL PIPE)

LONGITUDINAL SECTION

**EYE BOLT DIMENSION TABLE**

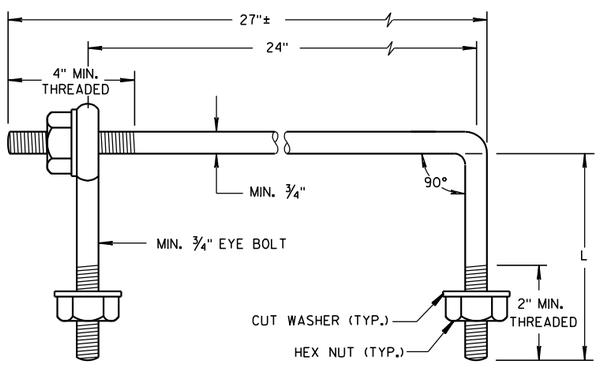
| PIPE SIZE | L = LENGTH | |
|---|---|---|
| | TONGUE & GROOVE PIPE | MODIFIED BELL PIPE |
| 18" TO 24" | 4 1/2" | 6 1/4" |
| 30" | 5" | 7" |
| 36" | 5 1/2" | 7" |
| 42" | 6" | |
| 48" | 6 1/2" | |
| 60" | 7 1/2" | |
| 66" | 8" | |




NOTE:

EYE BOLT

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




EYE BOLT AND TIE ROD

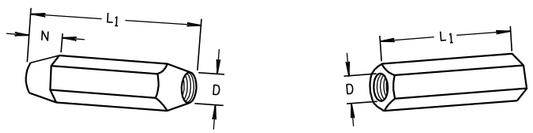
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

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

**ADJUSTABLE TIE ROD TABLE**

| PIPE DIAMETER | TIE ROD DIAMETER | D | $L_1$ | N |
|---|---|---|---|---|
| 12-60 | 5/8 | 5/8 | 5 | 1/2 |
| 66-84 | 3/4 | 3/4 | 5 | 1/2 |
| 90-108 | 1 | 1 | 7 | 1 1/16 |

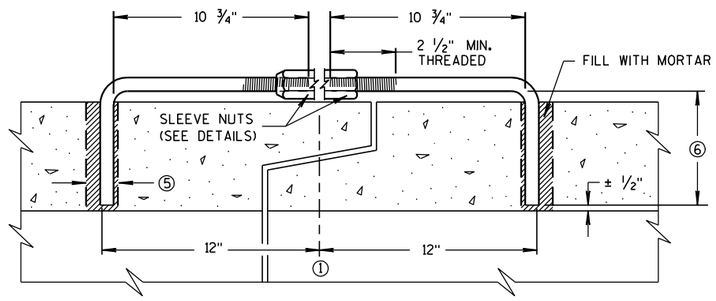
DIMENSIONS SHOWN ARE IN INCHES




TAPERED PLAIN

RIGHT AND LEFT THREADS

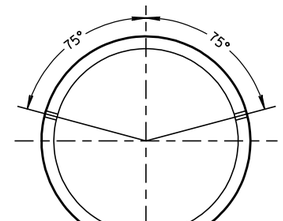
SLEEVE NUTS




LONGITUDINAL SECTION

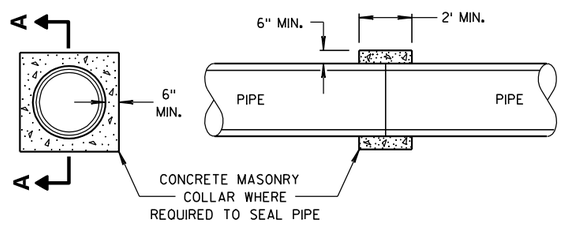
(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)

# ADJUSTABLE TIE ROD (ALTERNATE NO. 3)




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

TRANSVERSE SECTION




SECTION A-A

# CONCRETE COLLAR DETAIL

JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/5/2012 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA

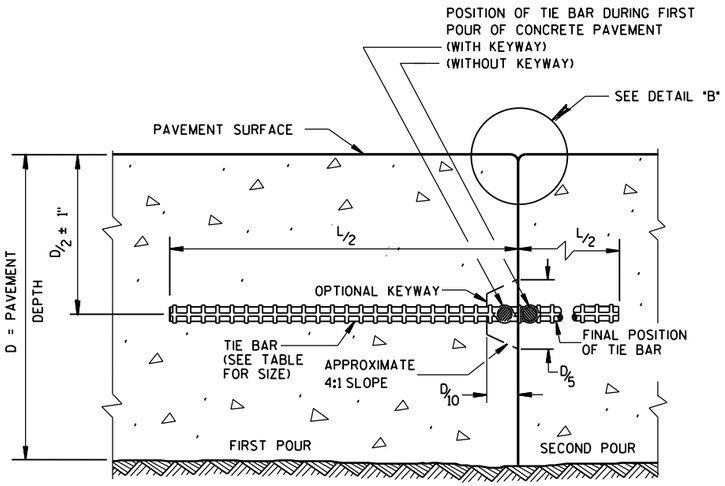


6

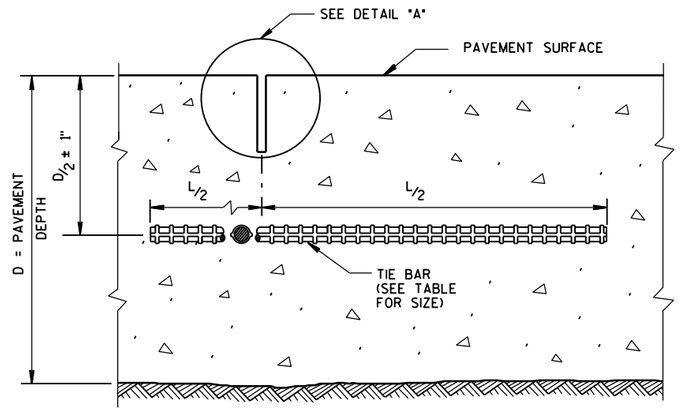
S.D.D. 8 F 4-7

6

S.D.D. 8 F 4-7




## CONSTRUCTION JOINT




## SAWED JOINT

## GENERAL NOTES

DO NOT SEAL OR FILL LONGITUDINAL JOINTS.

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

CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

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

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

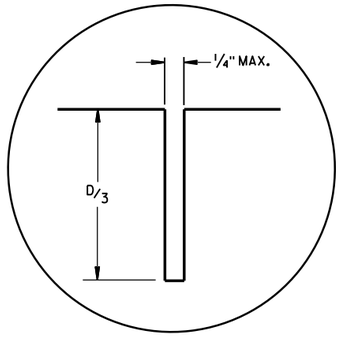



PLAN VIEW

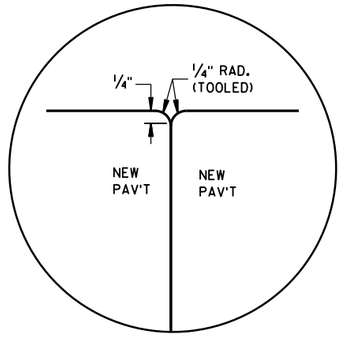



SECTION A-A

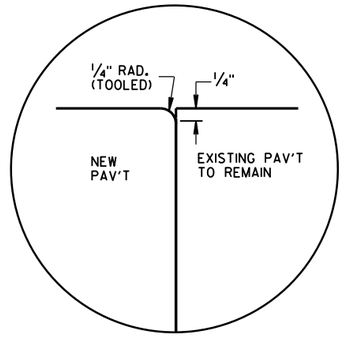
## LONGITUDINAL CONSTRUCTION JOINT TIE BARS ANCHORED INTO EXISTING PAVEMENT




DETAIL "A"




DETAIL "B"



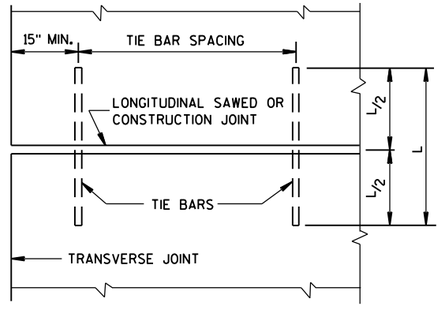

DETAIL "C"

### TIE BAR TABLE

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

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

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




PLAN VIEW
SHOWING LOCATION OF TIE BARS

# CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES

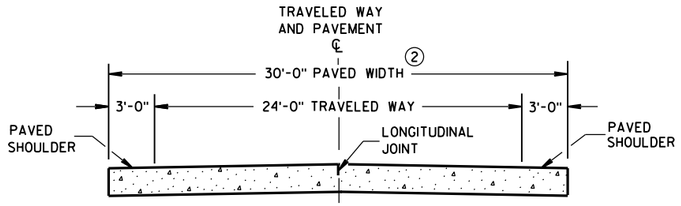
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015 — DATE
/S/ Peter Kemp, P.E. — PAVEMENT SUPER
FHWA



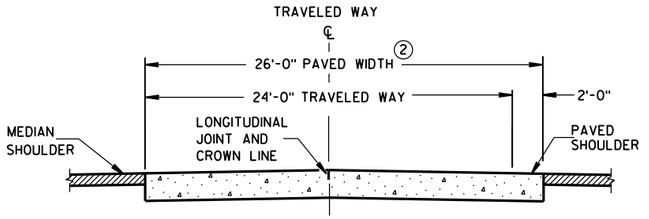

6

S.D.D. 13 C 1-18

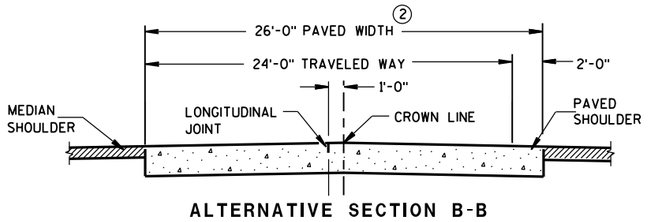



SECTION A-A ①

TWO-LANE TWO-WAY HIGHWAY




SECTION B-B




ALTERNATIVE SECTION B-B ①

DIVIDED HIGHWAY

## GENERAL NOTES

CONTRACTION JOINTS

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

DO NOT SEAL OR FILL CONTRACTION JOINTS.

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

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

CONSTRUCTION JOINTS

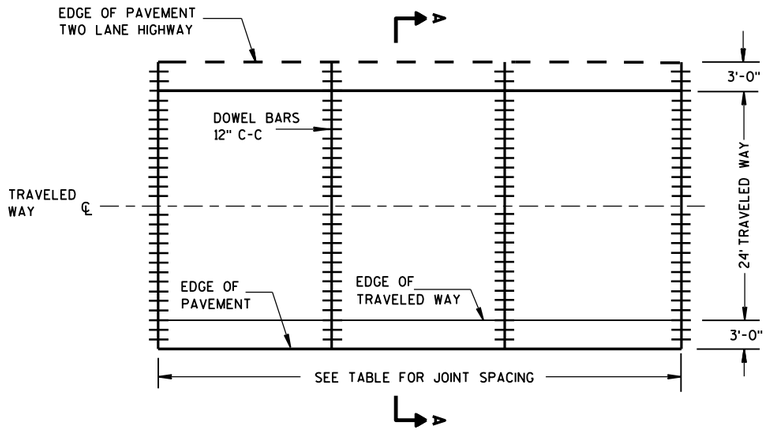
LOCATE CONSTRUCTION JOINTS A MINIMUM OF 6 FEET FROM THE NEAREST CONTRACTION JOINT AND ALIGN PARALLEL TO CONTRACTION JOINTS.

① REFER TO TYPICAL CROSS SECTIONS FOR ADDITIONAL DETAILS.

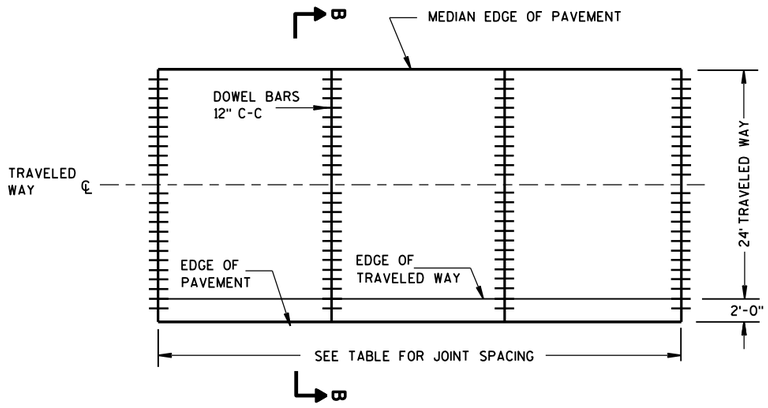
② MEASURE THE ENTIRE PAVED WIDTH INCLUDING THE PORTION(S) LABELED PAVED SHOULDER AS CONCRETE PAVEMENT.

### PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

| PAVEMENT DEPTH (D) | DOWEL BAR DIAMETER | CONTRACTION JOINT SPACING |
|---|---|---|
| 5 ½", 6", 6 ½" | NONE | 12' |
| 7", 7 ½" | 1" | 14' |
| 8", 8 ½" | 1 ¼" | 15' |
| 9", 9 ½" | 1 ¼" | 15' |
| 10" & ABOVE | 1 ½" | 15' |




CONTRACTION JOINT LAYOUT
FOR TWO-LANE TWO-WAY HIGHWAY




CONTRACTION JOINT LAYOUT
FOR DIVIDED HIGHWAY

RURAL DOWELED
CONCRETE PAVEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI





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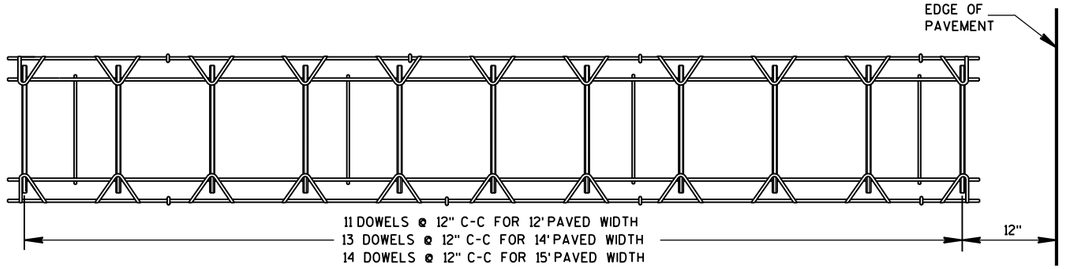
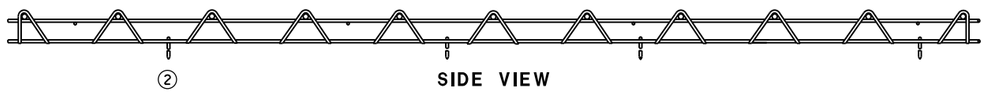
S.D.D. 13 C 11-11a



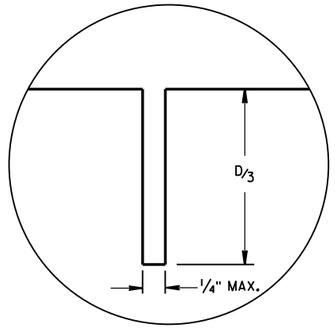

PLAN VIEW




SIDE VIEW

(NORMAL TO CENTERLINE)

## CONTRACTION JOINT DOWEL ASSEMBLY ①




JOINT DETAIL

## GENERAL NOTES

① OBTAIN THE ENGINEER'S APPROVAL FOR THE USE OF ALTERNATIVE DESIGNS OF THE DOWEL ASSEMBLY. USE MECHANICAL DOWEL BAR INSERTERS OR DOWEL ASSEMBLIES WHEN CONSTRUCTING CONTRACTION JOINTS.

② SECURE BASKETS WITH ANCHORS TO HOLD DOWEL BARS IN THE CORRECT POSITION AND ALIGNMENT. TYPE, LOCATION, NUMBER AND LENGTH OF ANCHORS ARE DEPENDENT UPON FIELD CONDITIONS.

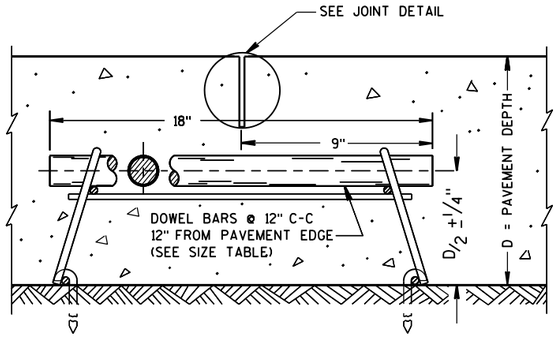
③ FORM OR SAW CONSTRUCTION JOINTS. PROVIDE A 1/4-INCH RADIUS AT FORMED JOINTS.

④ PROVIDE A SMOOTH VERTICAL FACE FOR THE ENTIRE DEPTH OF THE PAVEMENT WHEN FORMING CONSTRUCTION JOINTS.

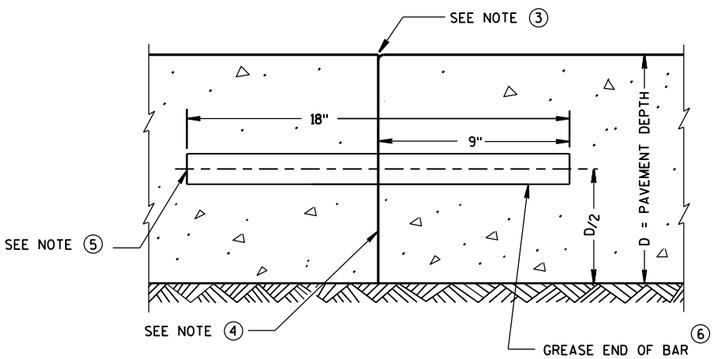
⑤ INSTALL DOWEL BARS AT CONSTRUCTION JOINTS BY FORMING OR DRILLING. INSTALL FORMED DOWEL BARS 12 INCHES C-C AND 12 INCHES FROM PAVEMENT EDGE. REMOVE EXCESS CONCRETE FROM THE FREE END OF THE DOWEL BAR IF DOWEL BARS ARE FORMED THROUGH A HEADER BOARD. INSTALL DRILLED DOWEL BARS ACCORDING TO *DRILLED DOWEL BAR CONSTRUCTION JOINT* DETAIL.

⑥ APPLY A THIN UNIFORM COATING OF SURFACE TREATMENT TO THE FREE END OF DOWEL BARS TO PREVENT BONDING.

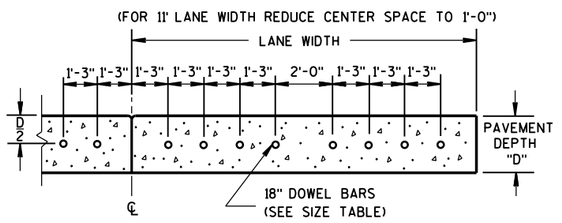
⑦ ANCHOR DOWEL BARS INTO DRILLED HOLES WITH AN EPOXY. MAXIMUM DRILLED HOLE SIZE IS 1/8-INCH GREATER THAN DOWEL BAR DIAMETER, 9 INCHES IN LENGTH.




DOWELED CONTRACTION JOINT




TRANSVERSE CONSTRUCTION JOINT




DRILLED DOWEL BAR CONSTRUCTION JOINT ⑦

RURAL DOWELED CONCRETE PAVEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5/3/2013 DATE
/S/ Deb Bischoff PAVEMENT POLICY & DE ENGINEER
FHWA



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S.D.D. 13 C 11-11b

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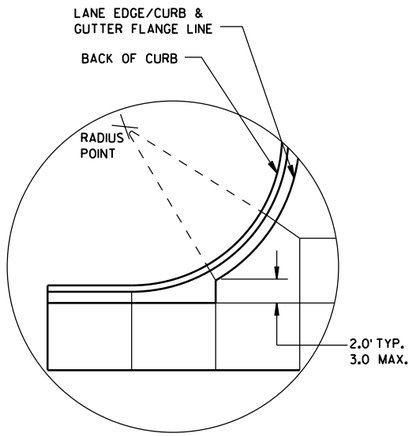
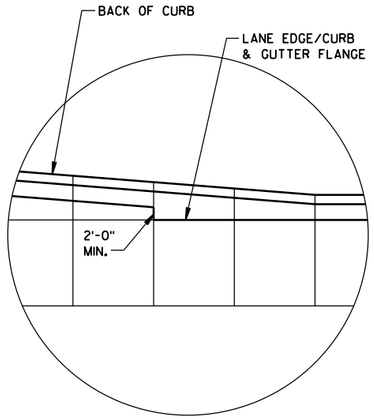
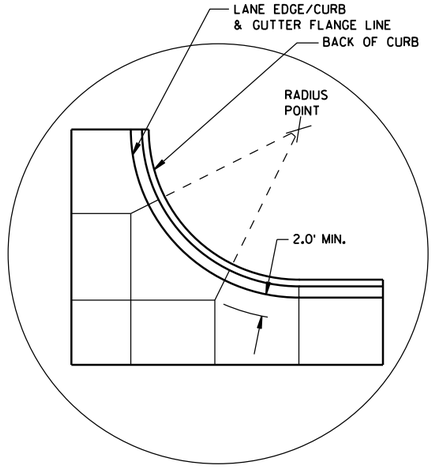
S.D.D. 13 C 11-11b



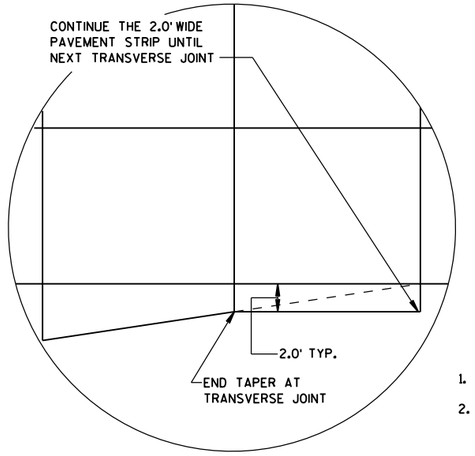

DETAIL "A"




DETAIL "B"




DETAIL "C"




DETAIL "D"

## GENERAL NOTES

THE PRIMARY ROADWAY CONTROLS THE TRANSVERSE JOINT PATTERN.

ALIGN NEW JOINTS WITH EXISTING JOINTS OR CRACKS.

CONSTRUCT TRANSVERSE JOINTS PERPENDICULAR TO THE ROADWAY.

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

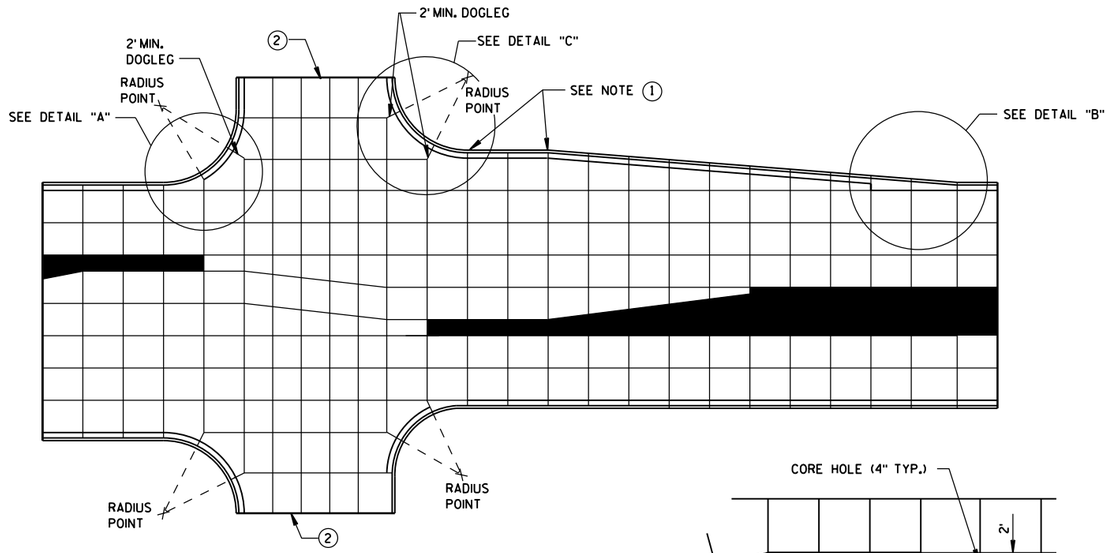
AVOID SLABS LESS THAN 2 FEET WIDE OR GREATER THAN 15 FEET WIDE.

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

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

CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

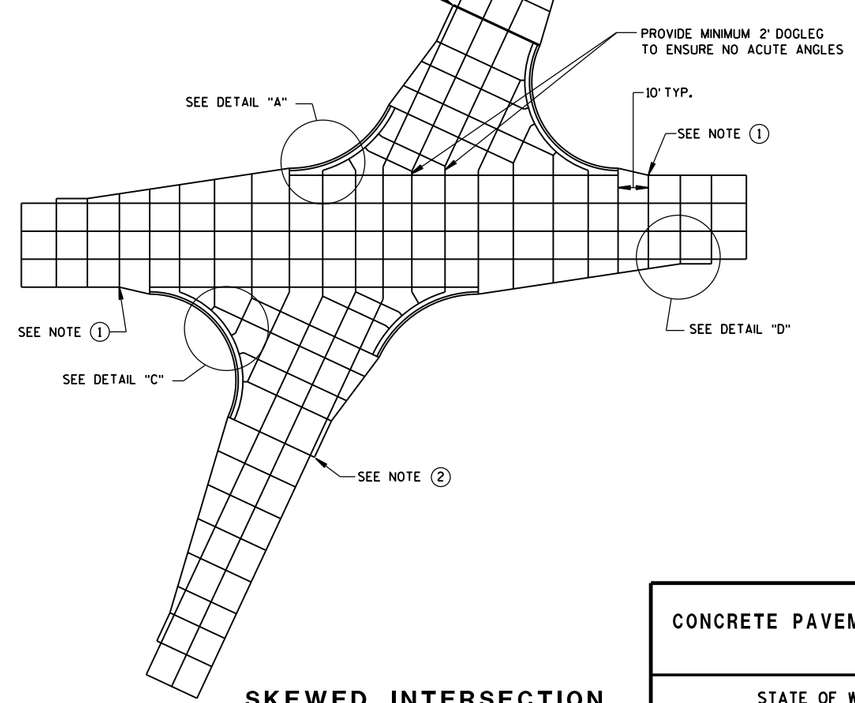
1. PROVIDE TRANSVERSE JOINTS AT ALL PAVEMENT WIDTH CHANGES.
2. CONSTRUCT DOWELED EXPANSION JOINT ON THE SIDE ROAD OF AN INTERSECTION IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH. ALIGN EXPANSION JOINT WITH EDGE OF RADIUS.
3. THE ENGINEER MAY APPROVE SLIGHT VARIATIONS FROM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



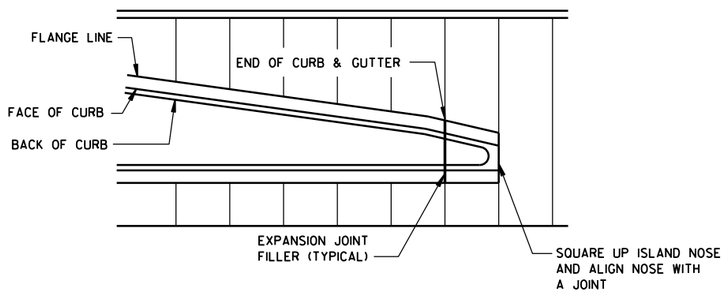

STANDARD INTERSECTION

PAVEMENT DEPTH AND JOINT SPACING TABLE

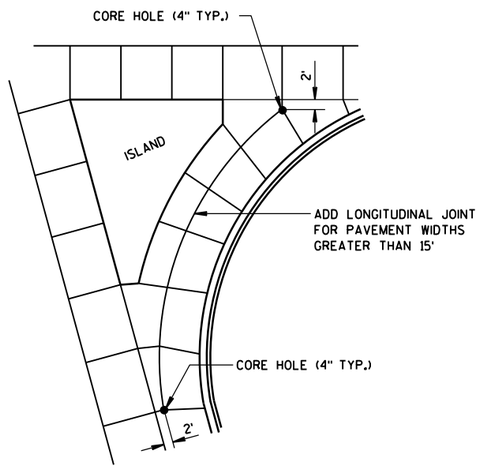
| PAVEMENT DEPTH (D) | CONTRACTION JOINT SPACING |
|---|---|
| 6", 6½" | 12' |
| 7", 7½" | 14' |
| 8" & ABOVE | 15' |




SKEWED INTERSECTION




APPROACH TO MEDIAN




LARGE RIGHT TURN

CONCRETE PAVEMENT JOINTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR







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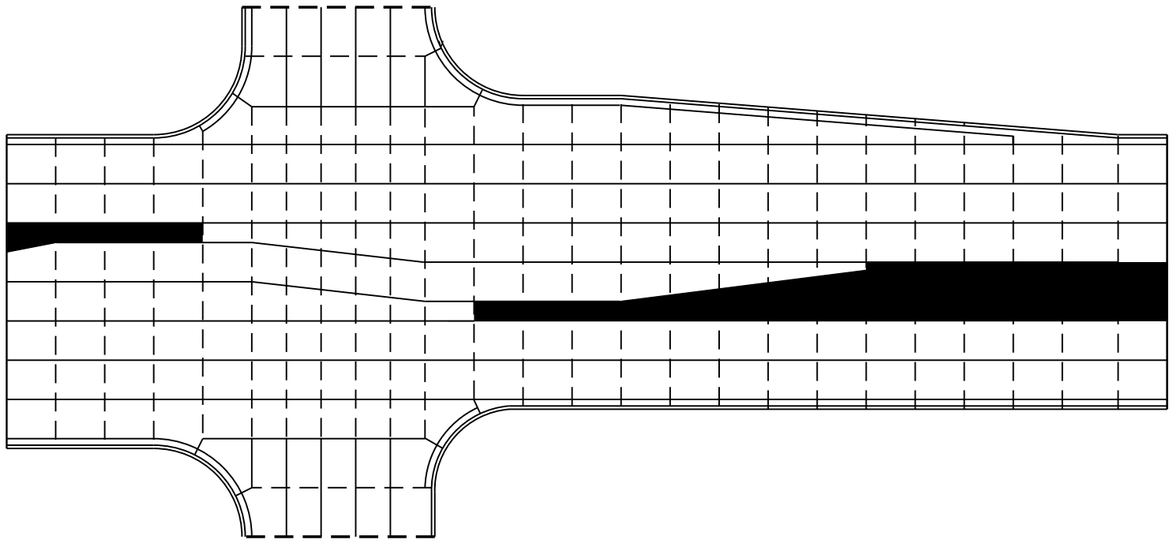
S.D.D. 13 C 18-5a

## LEGEND

POTENTIAL DOWELED EXPANSION JOINT

DOWELED JOINT

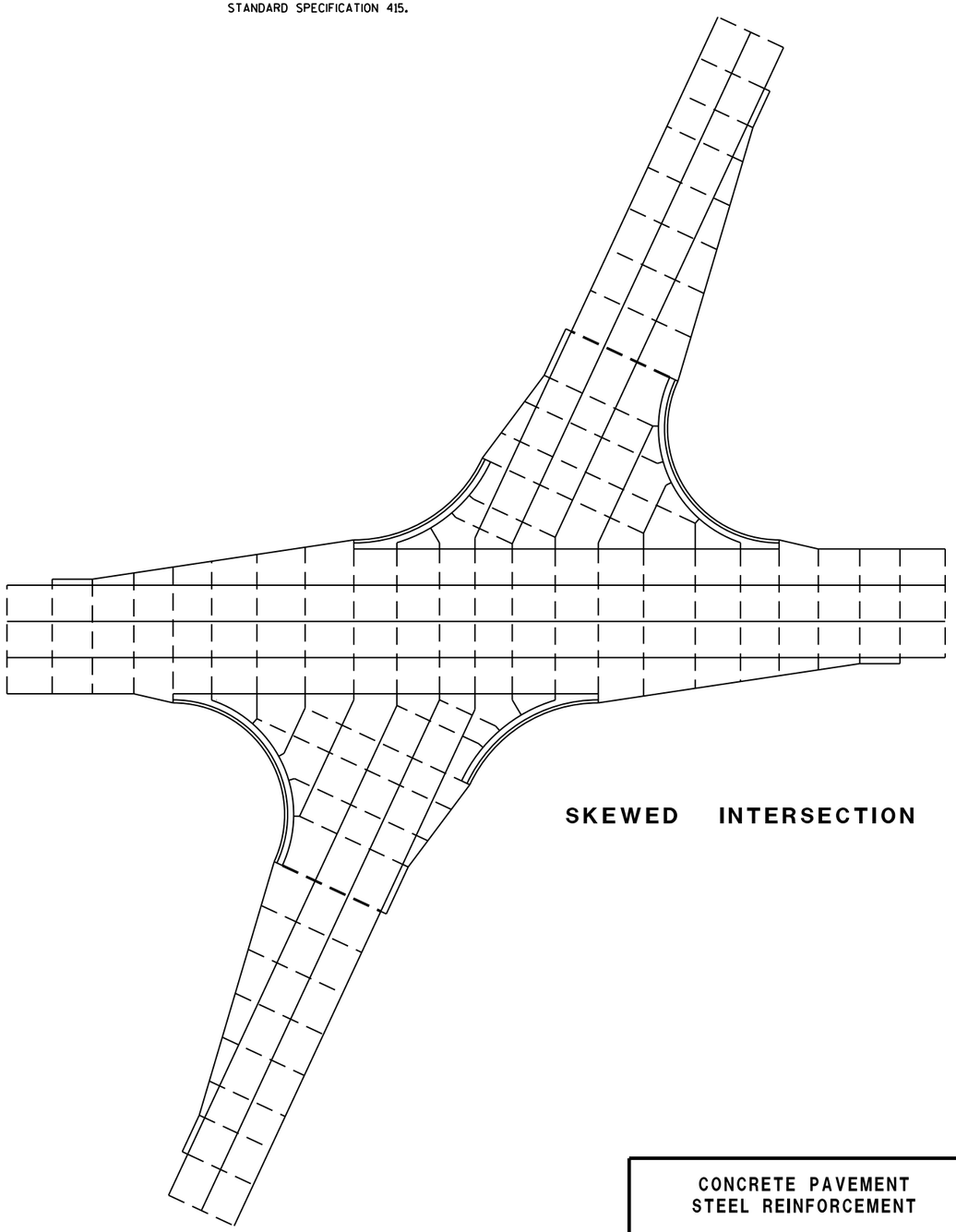
TIED JOINT



STANDARD INTERSECTION

## GENERAL NOTES

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



SKEWED INTERSECTION

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S.D.D. 13 C 18-5b

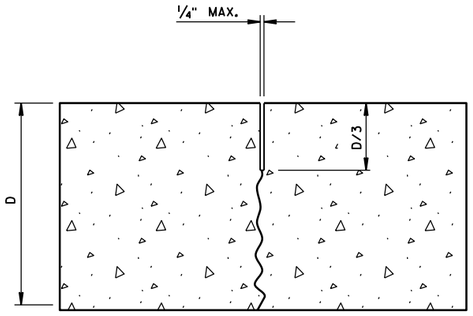
CONCRETE PAVEMENT
STEEL REINFORCEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

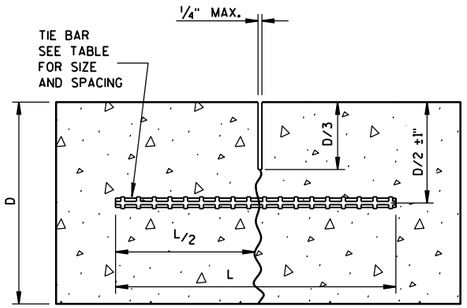


6

S.D.D. 13 C 18-5b




UNDOWELED-TRANSVERSE




TIED LONGITUDINAL

## TIE BAR TABLE

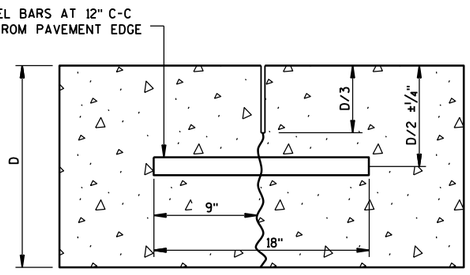
| PAVEMENT DEPTH (D) | TIE BAR SIZE | TIE BAR LENGTH (L) | MAX. TIE BAR SPACING |
|---|---|---|---|
| < 10 1/2" | NO. 4 | 30" | 36" |
| ≥ 10 1/2" | NO. 5 | 36" | 36" |
| | NO. 4* | 30" | 24"** |

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

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

## GENERAL NOTES

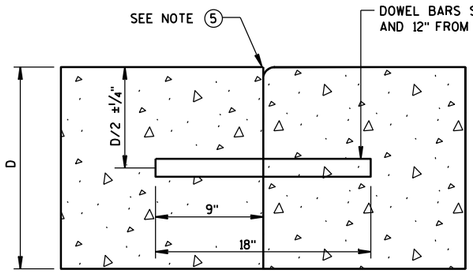
1. USE DOWELED EXPANSION JOINTS ON SIDE ROADS AT INTERSECTIONS (TO ISOLATE THE SIDE ROAD FROM THE THROUGH STREET) IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH.
2. SPACE CONTRACTION JOINTS IN ACCORDANCE WITH 13C4, 13C11 OR 13C13.
3. LOCATE CONSTRUCTION JOINTS A MINIMUM OF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



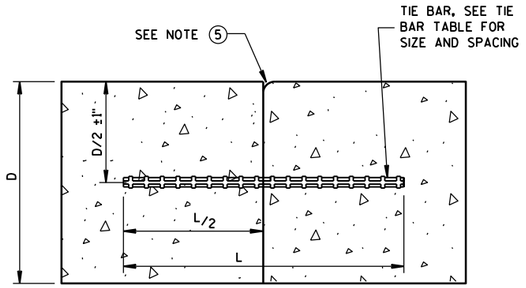

DOWELED-TRANSVERSE

## CONTRACTION JOINTS

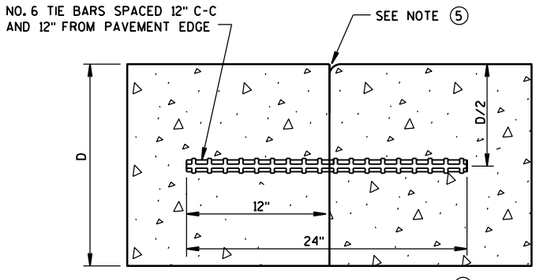
SEE NOTE (2)




DOWELED TRANSVERSE (3)

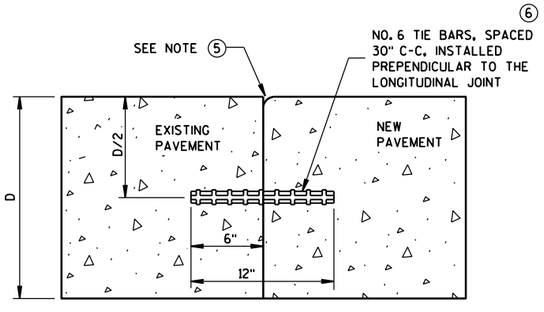



TIED LONGITUDINAL




TIED TRANSVERSE (3)

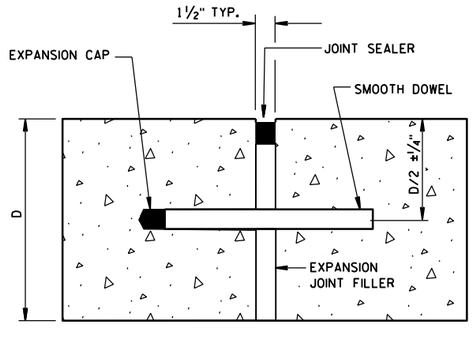
(FOR USE ON NON-DOWELED PAVEMENTS ONLY)




TIED LONGITUDINAL TO EXISTING

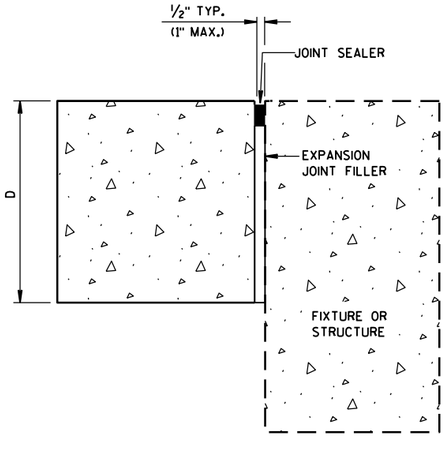
## CONSTRUCTION JOINTS

SEE NOTE (4)




DOWELED-TRANSVERSE

SEE NOTE (1)




UNTIED-LONGITUDINAL

## EXPANSION JOINTS

CONCRETE PAVEMENT
JOINT TYPES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR





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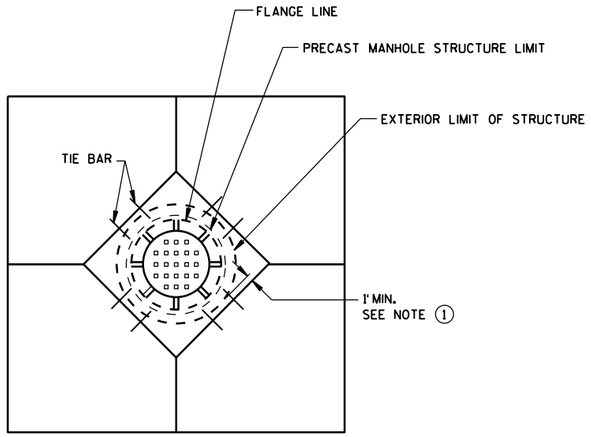
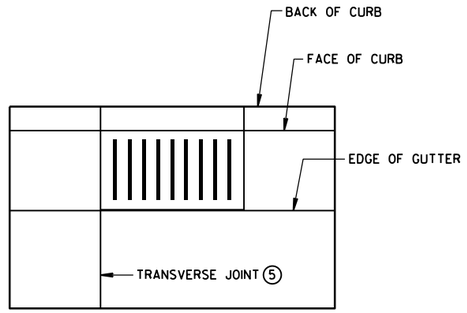
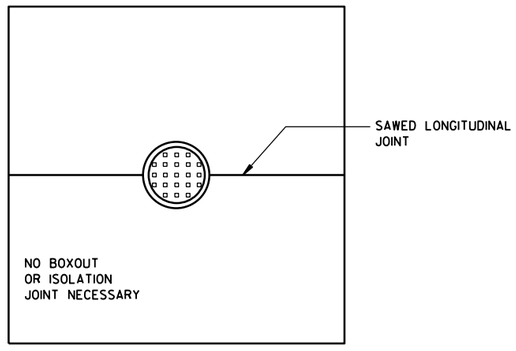
S.D.D. 13 C 18-5c



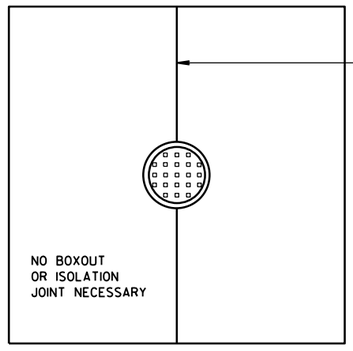

## DIAGONAL MANHOLE BOXOUT FOR CONSTRUCTION JOINTS



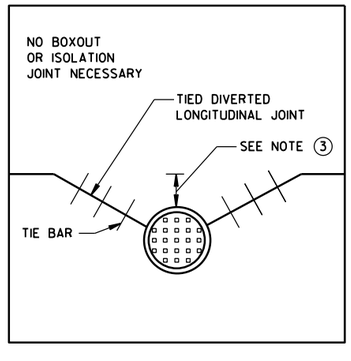

## INLET WITH TRANSVERSE JOINT



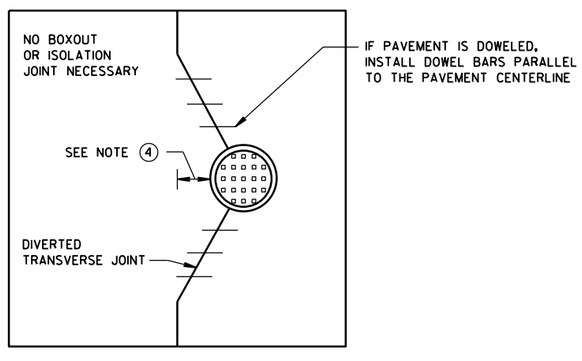

## MANHOLE WITH LONGITUDINAL JOINT




## MANHOLE WITH TRANSVERSE JOINT




## MANHOLE WITH DIVERTED LONGITUDINAL CONTRACTION JOINT




## MANHOLE WITH DIVERTED TRANSVERSE CONTRACTION JOINT

## GENERAL NOTES

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

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

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

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

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

# CONCRETE PAVEMENT JOINTING AT UTILITY FIXTURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
December, 2016 — /S/ Peter Kemp, P.E.
DATE — PAVEMENT SUPEF
FHWA

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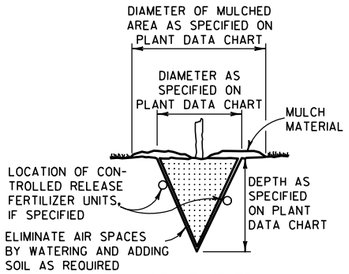
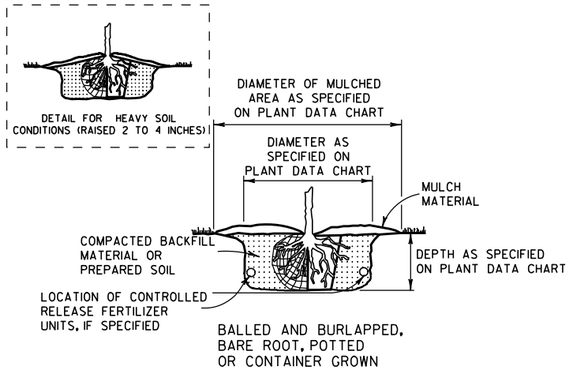
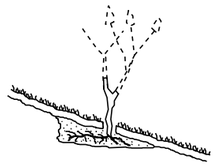
S.D.D. 13 C 18-5d




MACHINE MOVED

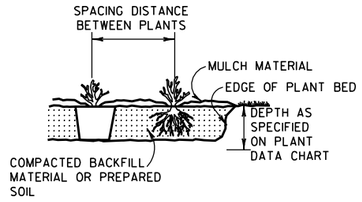



BALLED AND BURLAPPED, BARE ROOT, POTTED OR CONTAINER GROWN



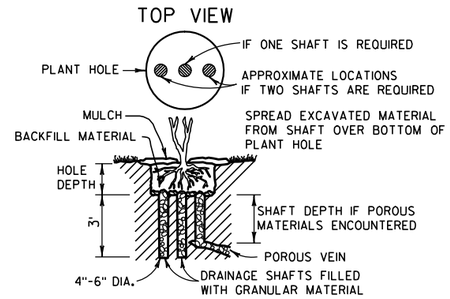
ACCOMMODATE ROOTS (SMOOTH AND STAGHORN SUMAC)

NOTE:
1) ENGINEER SHALL REQUIRE 3 SLITS IN POT TO SPEED DETERIORATION
2) METAL, PLASTIC OR OTHER NONDEGRADABLE POTS SHALL BE REMOVED PRIOR TO PLANTING



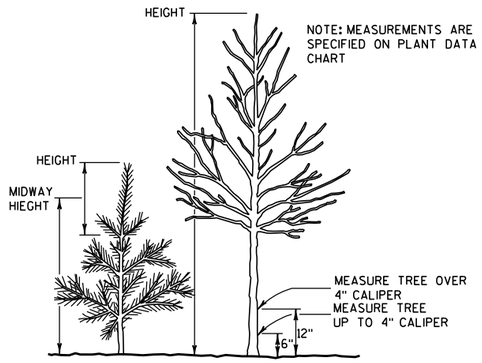

PREPARED BED (BARE ROOT AND POTTED)

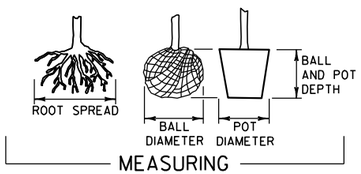
## PLANTING



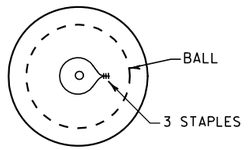

NOTE:
DRAINAGE SHAFT AS SPECIFIED ON PLANT DATA CHART

## DRAINING

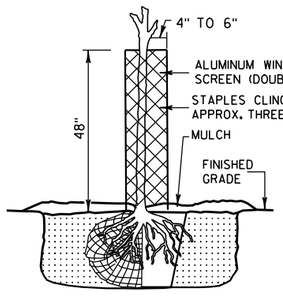


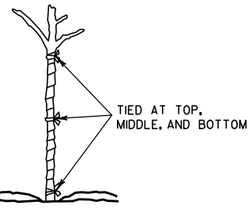

## MEASURING



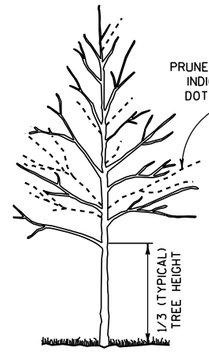

TOP VIEW



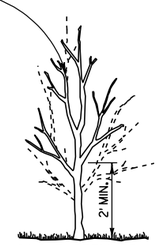

## RODENT PROTECTION




## WRAPPING




TALL DECIDUOUS TREES (ASH, MAPLE, LINDEN, OAK)



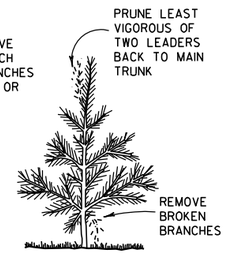

SINGLE STEMMED LOW DECIDUOUS TREES (CRABS AND OTHER SINGLE STEM TYPE)

MULTI-STEMMED LOW DECIDUOUS TREES OR LARGE SHRUBS (HAWTHORN, SERVICEBERRY)

NOTE: WHEN PRUNING, PRESERVE CHARACTER AND SHAPE OF TREE. AVOID LEAVING STUBS - REMOVE BRANCH OR TWIG BACK TO THE NEAREST CROTCH
1) PRUNE TO REMOVE DEAD AND BROKEN BRANCHES
2) PRUNE TO REMOVE BRANCHES THAT TOUCH OR ARE TOO CLOSE TO OTHER BRANCHES

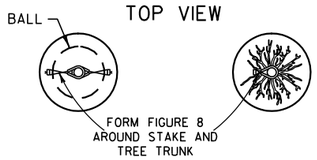
SHRUBS (GRAY DOGWOOD ARROWWOOD VIBURNUM)

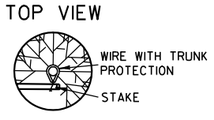
SUMAC

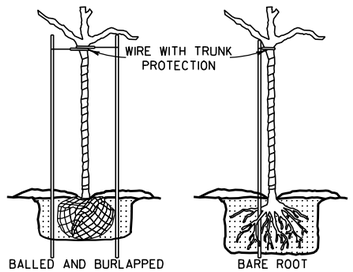


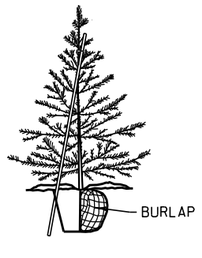

TREE TYPE EVERGREENS (PINE, SPRUCE, FIR) EVERGREENS USUALLY ARE NOT PRUNED

## PRUNING



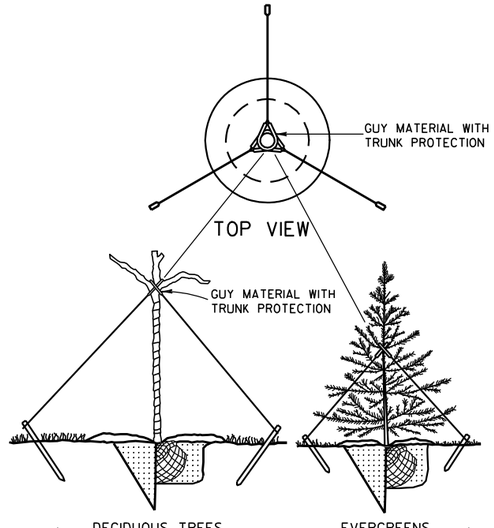



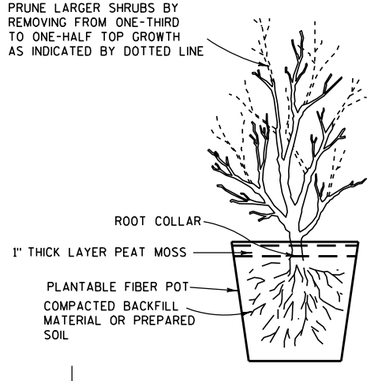

NOTE: BRACING STAKE
1) SHALL BE DRIVEN INTO THE GROUND AS CLOSE TO THE TREE AS POSSIBLE WITHOUT DAMAGING THE BRANCHES.
2) MAY BE DRIVEN AT SUCH AN ANGLE THAT IT DOES NOT PENETRATE THE BALL OR POT.
3) SHALL NOT PROTRUDE ABOVE THE TOP OF THE TREE; AND
4) SHALL HAVE A HOLE NEAR THE TOP TO HOLD THE WIRE IN PLACE.

## BRACING




## GUYING

PRUNE LARGER SHRUBS BY REMOVING FROM ONE-THIRD TO ONE-HALF TOP GROWTH AS INDICATED BY DOTTED LINE




## POTTING

## NOTES

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

BRACING, WRAPPING, GUYING, RODENT PROTECTION, FERTILIZER AND MULCH SHALL BE USED ONLY WHEN SPECIFIED ON THE PLANT DATA CHART (PART OF PLAN) OR SPECIAL PROVISIONS.

# TREE PLANTING DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

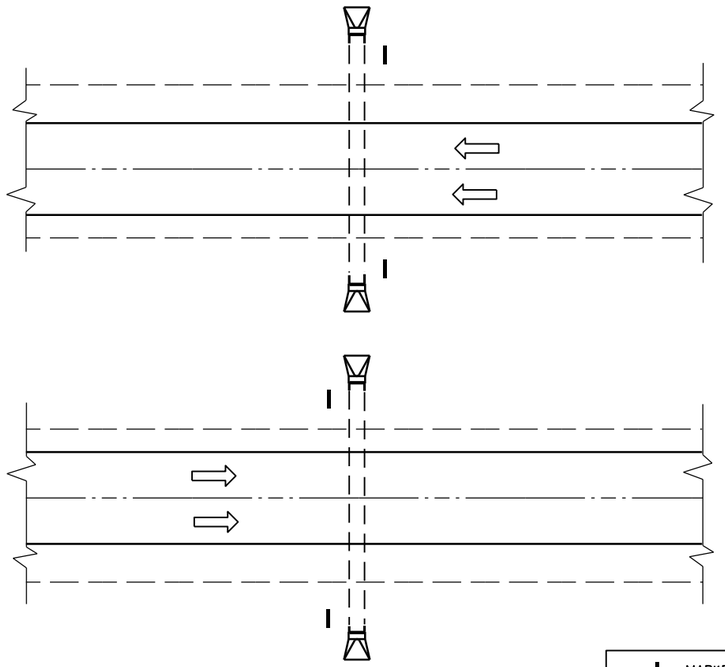
APPROVED
4/11/94
DATE
/S/ Rory L. Rhinesmith
CHIEF METHODS DEVELOPMENT ENGINEER
FHWA





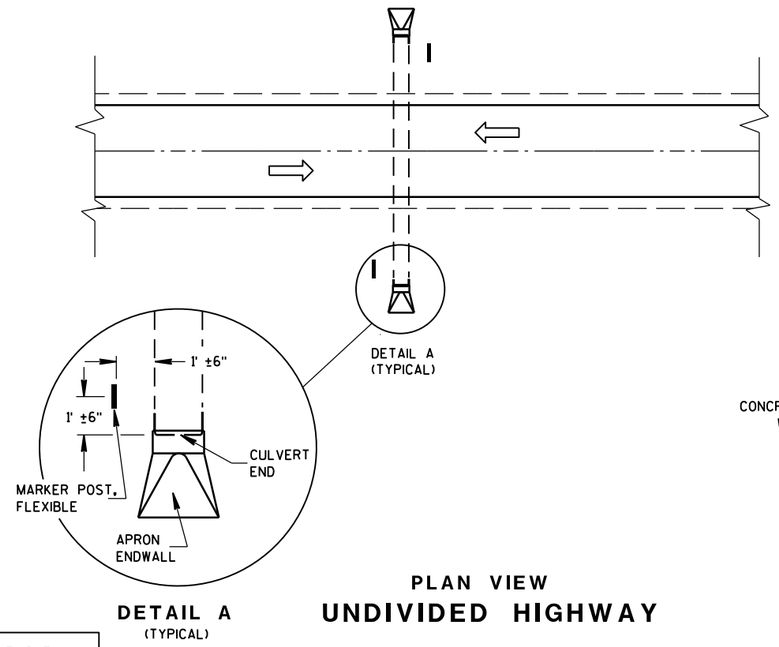
6

S.D.D. 14 A 2-1



PLAN VIEW

**DIVIDED HIGHWAY**




**DETAIL A**
(TYPICAL)

PLAN VIEW

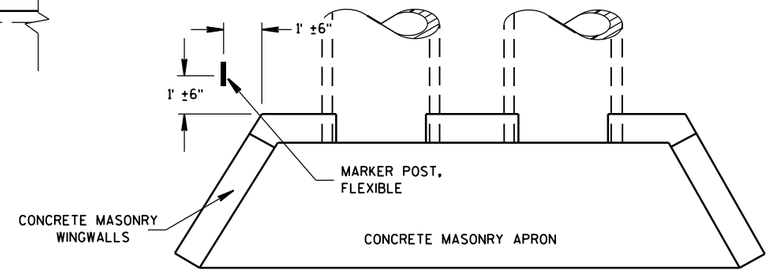
**UNDIVIDED HIGHWAY**

MARKER POST, FLEXIBLE

DIRECTION OF TRAFFIC FLOW

## GENERAL NOTES

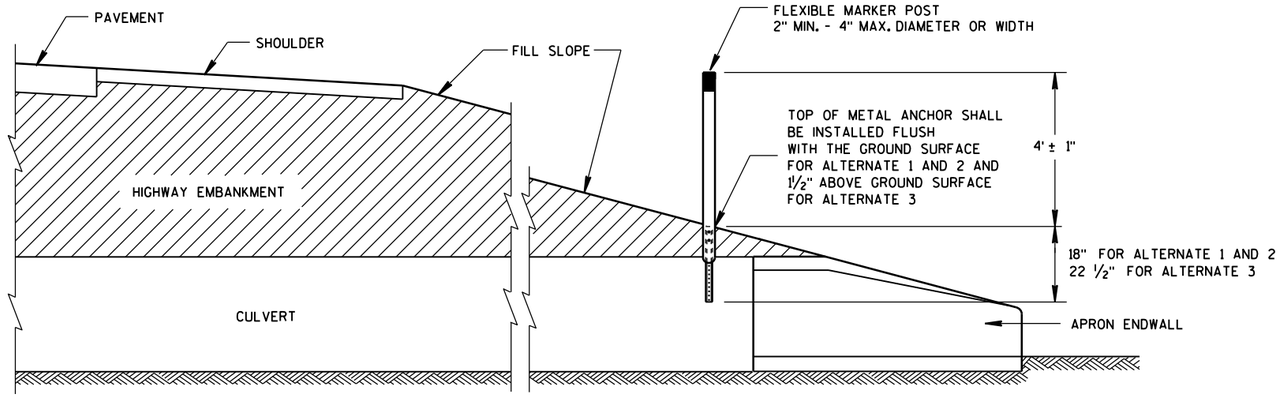
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.




PLAN VIEW

**CONCRETE MASONRY ENDWALLS FOR CULVERT PIPE AND PIPE ARCH**

## FLEXIBLE MARKER POST LOCATION




CROSS SECTION

**FLEXIBLE MARKER POST**

**FLEXIBLE MARKER POST FOR CULVERT END**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

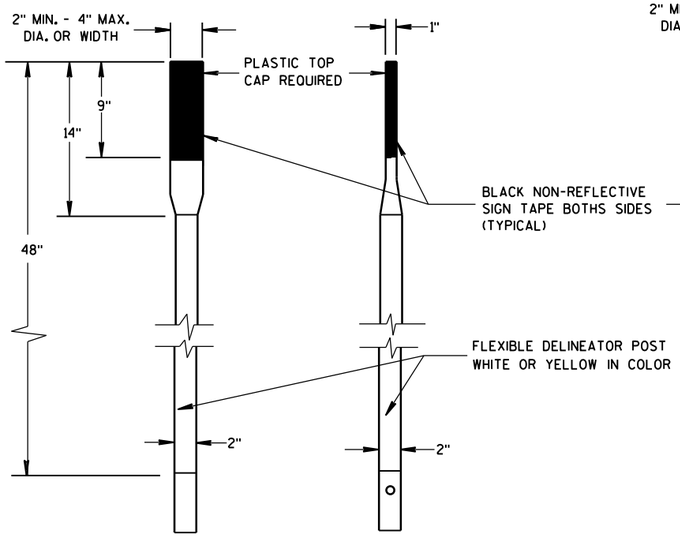


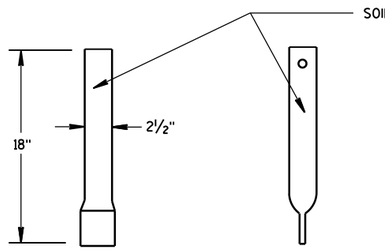
6

S.D.D. 15 A 3-2a

6

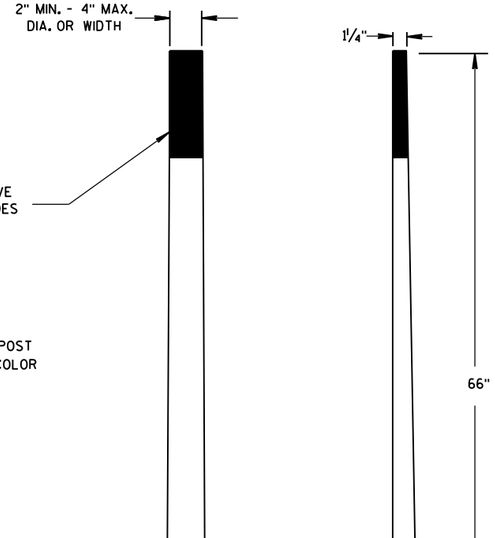
S.D.D. 15 A 3-2a



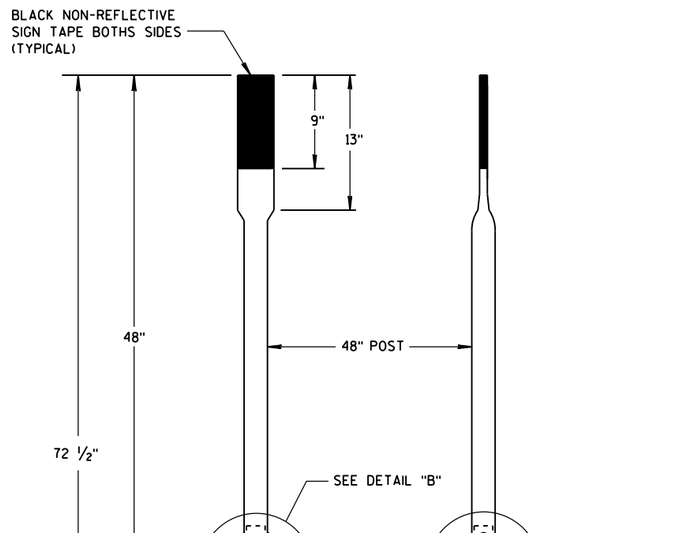

FRONT VIEW SIDE VIEW

ALTERNATE 1




FRONT VIEW SIDE VIEW

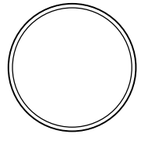
ALTERNATE 2



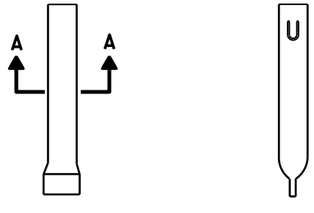

FRONT VIEW SIDE VIEW

ALTERNATE 3

## FLEXIBLE MARKER POSTS

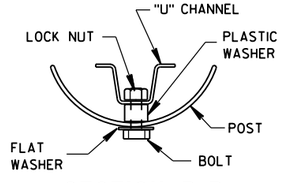


SECTION A-A

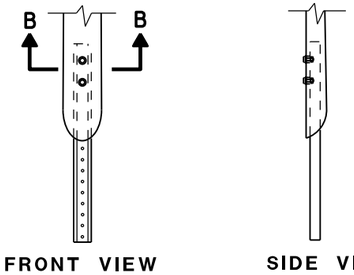



FRONT VIEW SIDE VIEW

ALTERNATE 1

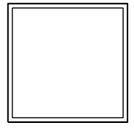



SECTION B-B

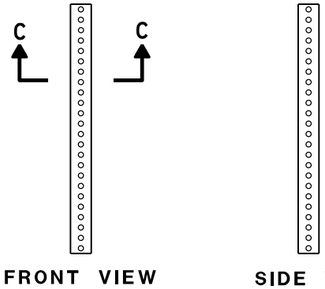



FRONT VIEW SIDE VIEW

ALTERNATE 2



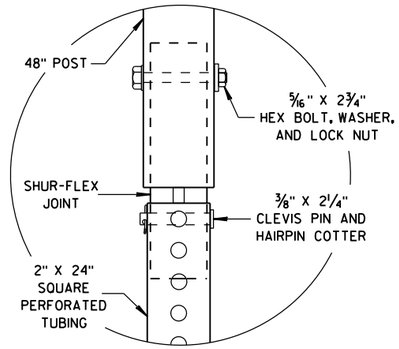
SECTION C-C



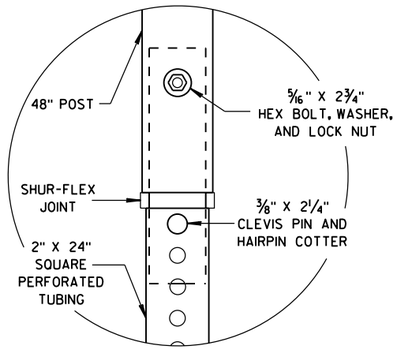

FRONT VIEW SIDE VIEW

ALTERNATE 3

## FLEXIBLE MARKER POST ANCHORS




DETAIL B




DETAIL C

FLEXIBLE MARKER POST
FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/1/2012 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA



6

S.D.D. 15 A 3-2b

6

S.D.D. 15 A 3-2b

ASPHALT DWY

| STATION | Distance | AREA (SF) Cut | Salvaged/Unusable Pavement Material | AREA (SF) Fill | Incremental Vol (CY) (Unadjusted) Cut | Incremental Vol (CY) (Unadjusted) Fill | Cumulative Vol (CY) Cut 1.30 | Cumulative Vol (CY) Expanded Fill 1.00 | Mass Ordinate |
|---|---|---|---|---|---|---|---|---|---|
| 00+94.54 | 0.00 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 | 0 | 0 |
| 00+98.14 | 3.60 | 6.03 | 0.00 | 2.78 | 0 | 0 | 1 | 0 | 0 |
| 01+00 | 1.86 | 17.95 | 0.00 | 0.00 | 1 | 0 | 2 | 0 | 1 |
| 01+10 | 10.00 | 123.52 | 0.00 | 0.00 | 26 | 0 | 36 | 0 | 27 |
| 01+20 | 10.00 | 258.29 | 0.00 | 0.00 | 71 | 0 | 128 | 0 | 98 |
| 01+30 | 10.00 | 393.60 | 0.00 | 0.75 | 121 | 0 | 285 | 0 | 218 |
| 01+40 | 10.00 | 567.44 | 0.00 | 4.65 | 178 | 1 | 516 | 1 | 395 |
| 01+43.31 | 3.31 | 653.21 | 0.00 | 6.70 | 75 | 1 | 613 | 2 | 470 |
| 01+50 | 6.69 | 771.12 | 0.00 | 9.56 | 176 | 2 | 843 | 4 | 644 |
| 01+60 | 10.00 | 950.86 | 0.00 | 22.46 | 319 | 6 | 1,257 | 10 | 957 |
| 01+70 | 10.00 | 1190.31 | 0.00 | 46.41 | 397 | 13 | 1,773 | 23 | 1,341 |
| 01+73.36 | 3.36 | 2175.18 | 0.00 | 15.99 | 210 | 4 | 2,045 | 27 | 1,546 |
| 01+76.48 | 3.12 | 2259.83 | 0.00 | 18.09 | 256 | 2 | 2,378 | 29 | 1,801 |
| 01+80 | 3.52 | 2261.42 | 0.00 | 19.23 | 294 | 2 | 2,761 | 31 | 2,093 |
| 01+90 | 10.00 | 2263.39 | 0.00 | 22.70 | 838 | 8 | 3,850 | 39 | 2,923 |
| 02+00 | 10.00 | 2275.39 | 0.00 | 26.40 | 841 | 9 | 4,943 | 48 | 3,754 |
| 02+10 | 10.00 | 2287.29 | 0.00 | 30.32 | 845 | 11 | 6,041 | 58 | 4,589 |
| 02+20 | 10.00 | 2248.78 | 0.00 | 34.40 | 840 | 12 | 7,133 | 70 | 5,417 |
| 02+30 | 10.00 | 2206.64 | 0.00 | 38.20 | 825 | 13 | 8,206 | 84 | 6,228 |
| 02+40 | 10.00 | 2178.05 | 0.00 | 40.32 | 812 | 15 | 9,262 | 98 | 7,026 |
| 02+50 | 10.00 | 2145.73 | 0.00 | 42.48 | 801 | 15 | 10,302 | 114 | 7,811 |
| 02+51.5 | 1.50 | 2140.98 | 0.00 | 42.80 | 119 | 2 | 10,458 | 116 | 7,928 |
| 02+60 | 8.50 | 2099.42 | 0.00 | 44.68 | 667 | 14 | 11,325 | 130 | 8,582 |
| 02+70 | 10.00 | 2037.60 | 0.00 | 47.84 | 766 | 17 | 12,321 | 147 | 9,331 |
| 02+80 | 10.00 | 1984.34 | 0.00 | 51.75 | 745 | 18 | 13,289 | 165 | 10,057 |
| 02+90 | 10.00 | 1868.92 | 0.00 | 53.82 | 714 | 20 | 14,217 | 185 | 10,751 |
| 03+00 | 10.00 | 1707.14 | 0.00 | 55.93 | 662 | 20 | 15,078 | 205 | 11,393 |
| 03+10 | 10.00 | 1525.23 | 0.00 | 57.96 | 599 | 21 | 15,856 | 226 | 11,970 |
| 03+20 | 10.00 | 1369.64 | 0.00 | 57.36 | 536 | 21 | 16,553 | 248 | 12,485 |
| 03+30 | 10.00 | 1232.73 | 0.00 | 37.35 | 482 | 18 | 17,179 | 265 | 12,949 |
| 03+40 | 10.00 | 1132.28 | 0.00 | 17.36 | 438 | 10 | 17,749 | 275 | 13,377 |
| 03+50 | 10.00 | 1047.48 | 0.00 | 0.76 | 404 | 3 | 18,273 | 279 | 13,778 |
| 03+60 | 10.00 | 974.62 | 0.00 | 0.00 | 374 | 0 | 18,760 | 279 | 14,152 |
| 03+70 | 10.00 | 843.29 | 0.00 | 0.00 | 337 | 0 | 19,198 | 279 | 14,489 |
| 03+80 | 10.00 | 642.54 | 0.00 | 0.00 | 275 | 0 | 19,556 | 279 | 14,764 |
| 03+90 | 10.00 | 447.90 | 0.00 | 0.00 | 202 | 0 | 19,818 | 279 | 14,966 |
| 04+00 | 10.00 | 257.49 | 0.00 | 0.00 | 131 | 0 | 19,988 | 279 | 15,096 |
| 04+01 | 1.00 | 245.42 | 0.00 | 0.00 | 9 | 0 | 20,000 | 279 | 15,106 |
| 04+05 | 4.00 | 176.78 | 0.00 | 0.00 | 31 | 0 | 20,041 | 279 | 15,137 |
| 04+10 | 5.00 | 95.13 | 0.00 | 0.00 | 25 | 0 | 20,073 | 279 | 15,162 |
| 04+15 | 5.00 | 15.46 | 0.00 | 0.00 | 10 | 0 | 20,087 | 279 | 15,172 |
| 04+18.02 | 3.02 | 30.52 | 0.00 | 0.00 | 3 | 0 | 20,090 | 279 | 15,175 |
| 04+20 | 1.98 | 59.30 | 0.00 | 0.00 | 3 | 0 | 20,094 | 279 | 15,178 |
| 04+25 | 5.00 | 127.07 | 0.00 | 0.00 | 17 | 0 | 20,117 | 279 | 15,195 |
| 04+30 | 5.00 | 187.83 | 0.00 | 0.00 | 29 | 0 | 20,155 | 279 | 15,225 |
| 04+31 | 1.00 | 199.21 | 0.00 | 0.00 | 7 | 0 | 20,164 | 279 | 15,232 |
| 04+35 | 4.00 | 265.35 | 0.00 | 0.00 | 34 | 0 | 20,209 | 279 | 15,266 |
| 04+40 | 5.00 | 351.75 | 0.00 | 0.00 | 57 | 0 | 20,283 | 279 | 15,323 |
| 04+45 | 5.00 | 416.55 | 0.00 | 0.00 | 71 | 0 | 20,375 | 279 | 15,394 |
| 04+50 | 5.00 | 478.56 | 0.00 | 0.00 | 83 | 0 | 20,483 | 279 | 15,477 |
| 04+60 | 10.00 | 609.46 | 0.00 | 0.00 | 201 | 0 | 20,745 | 279 | 15,679 |
| 04+70 | 10.00 | 675.56 | 0.00 | 0.00 | 238 | 0 | 21,054 | 279 | 15,917 |
| 04+80 | 10.00 | 661.14 | 0.00 | 0.00 | 248 | 0 | 21,376 | 279 | 16,164 |
| 04+90 | 10.00 | 637.79 | 0.00 | 0.00 | 241 | 0 | 21,689 | 279 | 16,405 |
| 04+99.43 | 9.43 | 607.77 | 0.00 | 0.00 | 218 | 0 | 21,972 | 279 | 16,622 |
| 05+00 | 0.57 | 606.45 | 0.00 | 0.00 | 13 | 0 | 21,988 | 279 | 16,635 |
| 05+10 | 10.00 | 583.50 | 0.00 | 0.00 | 220 | 0 | 22,275 | 279 | 16,856 |
| 05+20 | 10.00 | 561.17 | 0.00 | 0.00 | 212 | 0 | 22,550 | 279 | 17,068 |
| 05+30 | 10.00 | 539.46 | 0.00 | 0.00 | 204 | 0 | 22,815 | 279 | 17,271 |
| 05+40 | 10.00 | 518.11 | 0.00 | 0.00 | 196 | 0 | 23,070 | 279 | 17,467 |
| 05+50 | 10.00 | 497.18 | 0.00 | 0.00 | 188 | 0 | 23,314 | 279 | 17,655 |
| 05+60 | 10.00 | 477.24 | 0.00 | 0.00 | 180 | 0 | 23,549 | 279 | 17,836 |
| 05+62.76 | 2.76 | 473.27 | 0.00 | 0.00 | 49 | 0 | 23,612 | 279 | 17,884 |
| 05+70 | 7.24 | 462.77 | 0.00 | 0.00 | 126 | 0 | 23,775 | 279 | 18,010 |
| 05+80 | 10.00 | 448.46 | 0.00 | 0.00 | 169 | 0 | 23,995 | 279 | 18,178 |
| 05+90 | 10.00 | 434.38 | 0.00 | 0.00 | 163 | 0 | 24,207 | 279 | 18,342 |
| 06+00 | 10.00 | 420.46 | 0.00 | 0.00 | 158 | 0 | 24,413 | 279 | 18,500 |
| 06+10 | 10.00 | 407.23 | 0.00 | 0.00 | 153 | 0 | 24,612 | 279 | 18,654 |
| 06+20 | 10.00 | 392.86 | 0.00 | 0.00 | 148 | 0 | 24,805 | 279 | 18,802 |
| 06+30 | 10.00 | 377.75 | 0.00 | 0.00 | 143 | 0 | 24,990 | 279 | 18,944 |
| 06+40 | 10.00 | 342.95 | 0.00 | 0.00 | 133 | 0 | 25,164 | 279 | 19,078 |
| 06+50 | 10.00 | 288.77 | 0.00 | 0.00 | 117 | 0 | 25,316 | 279 | 19,195 |
| 06+60 | 10.00 | 232.12 | 0.00 | 0.07 | 96 | 0 | 25,441 | 279 | 19,291 |
| 06+70 | 10.00 | 181.68 | 0.00 | 0.00 | 77 | 0 | 25,541 | 279 | 19,368 |
| 06+75 | 5.00 | 158.12 | 0.00 | 0.00 | 31 | 0 | 25,582 | 279 | 19,399 |
| 06+80 | 5.00 | 142.67 | 0.00 | 0.00 | 28 | 0 | 25,618 | 279 | 19,427 |
| 06+90 | 10.00 | 138.88 | 0.00 | 0.00 | 52 | 0 | 25,686 | 279 | 19,479 |
| 07+00 | 10.00 | 141.46 | 0.00 | 0.01 | 52 | 0 | 25,753 | 279 | 19,531 |
| 07+10 | 10.00 | 147.00 | 0.00 | 0.05 | 53 | 0 | 25,823 | 279 | 19,585 |
| 07+20 | 10.00 | 148.52 | 0.00 | 0.09 | 55 | 0 | 25,894 | 279 | 19,639 |
| 07+30 | 10.00 | 149.12 | 0.00 | 0.02 | 55 | 0 | 25,966 | 279 | 19,695 |
| 07+40 | 10.00 | 137.83 | 0.00 | 0.00 | 53 | 0 | 26,035 | 279 | 19,748 |
| 07+50 | 10.00 | 130.54 | 0.00 | 0.00 | 50 | 0 | 26,099 | 279 | 19,797 |
| 07+60 | 10.00 | 132.31 | 0.00 | 0.00 | 49 | 0 | 26,163 | 279 | 19,846 |
| 07+70 | 10.00 | 133.51 | 0.00 | 0.00 | 49 | 0 | 26,227 | 279 | 19,895 |
| 07+77 | 7.00 | 112.33 | 0.00 | 0.00 | 32 | 0 | 26,268 | 279 | 19,927 |
| 07+80 | 3.00 | 7.59 | 0.00 | 0.59 | 7 | 0 | 26,277 | 279 | 19,934 |
| 07+87.07 | 7.07 | 7.59 | 0.00 | 1.12 | 2 | 0 | 26,279 | 279 | 19,936 |
| 07+90 | 2.93 | 6.16 | 0.00 | 1.09 | 1 | 0 | 26,280 | 279 | 19,936 |
| 08+00 | 10.00 | 4.68 | 0.00 | 0.46 | 2 | 0 | 26,283 | 280 | 19,938 |
| 08+10 | 10.00 | 2.02 | 0.00 | 0.12 | 1 | 0 | 26,284 | 280 | 19,939 |
| 08+14.58 | 4.58 | 0.34 | 0.00 | 0.12 | 0 | 0 | 26,285 | 279 | 19,939 |
| | | | COLUMN TOTALS | | 20,219 | 280 | | | |

Notes:

(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) Salvaged/Unusable Pavement Material

(4) Available Material = Cut - Salvaged/Unusuable Pavement Material

(5) Reduced EBS in Fill - Excavated EBS material is usuable in Fills outside the 1:1 slope. EBS in Fill Reduction factor = 1

(6) Expanded EBS Backfill - This is to be filled with Select Borrow material. EBS Backfill Factor = 1.1. Item number 208.1100

(7) Expanded Fill Factor = 1

(9) 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.

(10) Common Excavation not to be used as fill material. Borrow is required in all fill areas.

9

9

| PROJECT NO: 1060-62-70 | HWY: IH-94 | COUNTY: WAUKESHA | EARTHWORK DATA | SHEET: | E |
|---|---|---|---|---|---|

FILE NAME : _____ PLOT DATE : _____ PLOT BY : _____ PLOT NAME : _____ PLOT SCALE : 1:1

CONCRETE DWY

| STATION | Distance | AREA (SF) Cut | AREA (SF) Fill | Incremental Vol (CY) (Unadjusted) Cut | Incremental Vol (CY) (Unadjusted) Fill | Cumulative Vol (CY) Cut | Cumulative Vol (CY) Expanded Fill | Mass Ordinate |
|---|---|---|---|---|---|---|---|---|
| | | | | | | 1.30 | 1.00 | |
| | | | | Note 1 | Note 3 | Note 1 | | Note 8 |
| 00+39.67 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 | 0 | 0 |
| 00+40 | 0.33 | 0.05 | 0.00 | 0 | 0 | 0 | 0 | 0 |
| 00+50 | 10.00 | 52.32 | 0.00 | 10 | 0 | 13 | 0 | 10 |
| 00+60 | 10.00 | 215.30 | 0.00 | 50 | 0 | 77 | 0 | 59 |
| 00+63.06 | 3.06 | 284.86 | 0.00 | 28 | 0 | 114 | 0 | 88 |
| 00+68.72 | 5.66 | 437.41 | 0.00 | 76 | 0 | 212 | 0 | 163 |
| 00+70 | 1.28 | 478.47 | 0.00 | 22 | 0 | 241 | 0 | 185 |
| 00+70.85 | 0.85 | 506.44 | 0.00 | 15 | 0 | 261 | 0 | 200 |
| 00+71.4 | 0.56 | 527.42 | 0.00 | 11 | 0 | 274 | 0 | 211 |
| 00+72.53 | 1.13 | 575.06 | 0.00 | 23 | 0 | 304 | 0 | 234 |
| 00+80 | 7.47 | 853.93 | 0.00 | 198 | 0 | 561 | 0 | 432 |
| 00+90 | 10.00 | 938.04 | 0.00 | 332 | 0 | 993 | 0 | 764 |
| 01+00 | 10.00 | 851.28 | 0.00 | 331 | 0 | 1,423 | 0 | 1,095 |
| 01+10 | 10.00 | 732.98 | 0.00 | 293 | 0 | 1,805 | 0 | 1,388 |
| 01+20 | 10.00 | 507.07 | 0.00 | 230 | 0 | 2,103 | 0 | 1,618 |
| 01+30 | 10.00 | 291.25 | 0.00 | 148 | 0 | 2,296 | 0 | 1,766 |
| 01+40 | 10.00 | 107.05 | 0.00 | 74 | 0 | 2,391 | 0 | 1,840 |
| 01+44.24 | 4.24 | 2208.62 | 0.00 | 182 | 0 | 2,628 | 0 | 2,022 |
| 01+46.49 | 2.25 | 2192.49 | 0.00 | 184 | 0 | 2,867 | 0 | 2,205 |
| 01+50 | 3.51 | 51.32 | 0.00 | 146 | 0 | 3,056 | 0 | 2,351 |
| 01+60 | 10.00 | 179.34 | 0.00 | 43 | 0 | 3,111 | 0 | 2,393 |
| 01+70 | 10.00 | 300.55 | 0.00 | 89 | 0 | 3,227 | 0 | 2,482 |
| 01+80 | 10.00 | 423.14 | 0.00 | 134 | 0 | 3,401 | 0 | 2,616 |
| 01+90 | 10.00 | 531.31 | 0.00 | 177 | 0 | 3,631 | 0 | 2,793 |
| 02+00 | 10.00 | 616.72 | 0.00 | 213 | 0 | 3,907 | 0 | 3,006 |
| 02+10 | 10.00 | 686.46 | 0.00 | 241 | 0 | 4,221 | 0 | 3,247 |
| 02+20 | 10.00 | 765.82 | 0.00 | 269 | 0 | 4,571 | 0 | 3,516 |
| 02+30 | 10.00 | 883.05 | 0.00 | 305 | 0 | 4,968 | 0 | 3,821 |
| 02+31.05 | 1.05 | 897.45 | 0.00 | 34 | 0 | 5,013 | 0 | 3,856 |
| 02+40 | 8.95 | 1036.28 | 0.00 | 321 | 0 | 5,429 | 0 | 4,176 |
| 02+50 | 10.00 | 1223.72 | 0.12 | 419 | 0 | 5,973 | 0 | 4,595 |
| 02+59.1 | 9.10 | 1422.09 | 0.83 | 446 | 0 | 6,553 | 0 | 5,041 |
| 02+60 | 0.90 | 1436.62 | 0.89 | 48 | 0 | 6,615 | 0 | 5,088 |
| 02+70 | 10.00 | 1578.89 | 1.92 | 558 | 1 | 7,341 | 1 | 5,646 |
| 02+80 | 10.00 | 1707.17 | 2.72 | 609 | 1 | 8,132 | 2 | 6,254 |
| 02+90 | 10.00 | 1809.43 | 3.26 | 651 | 1 | 8,979 | 3 | 6,904 |
| 03+00 | 10.00 | 1901.48 | 3.73 | 687 | 1 | 9,872 | 4 | 7,590 |
| 03+10 | 10.00 | 1914.62 | 4.36 | 707 | 1 | 10,791 | 5 | 8,295 |
| 03+20 | 10.00 | 1844.78 | 0.00 | 696 | 1 | 11,696 | 6 | 8,990 |
| 03+30 | 10.00 | 1716.72 | 0.00 | 660 | 0 | 12,553 | 6 | 9,650 |
| 03+40 | 10.00 | 1533.98 | 5.19 | 602 | 1 | 13,336 | 7 | 10,251 |
| 03+50 | 10.00 | 1311.38 | 8.99 | 527 | 3 | 14,021 | 10 | 10,775 |
| 03+57.23 | 7.23 | 1121.78 | 11.63 | 326 | 3 | 14,444 | 13 | 11,098 |
| 03+60 | 2.77 | 1053.27 | 12.61 | 111 | 1 | 14,589 | 14 | 11,209 |
| 03+65.2 | 5.20 | 913.43 | 14.47 | 189 | 3 | 14,835 | 16 | 11,395 |
| 03+70 | 4.80 | 795.96 | 16.18 | 152 | 3 | 15,033 | 19 | 11,545 |
| 03+80 | 10.00 | 577.63 | 22.20 | 254 | 7 | 15,364 | 26 | 11,792 |
| 03+83.14 | 3.14 | 461.28 | 26.31 | 60 | 3 | 15,442 | 29 | 11,849 |
| 03+85.05 | 1.92 | 388.60 | 29.78 | 30 | 2 | 15,481 | 31 | 11,878 |
| 03+90 | 4.95 | 181.26 | 43.72 | 52 | 7 | 15,549 | 38 | 11,923 |
| 03+90.51 | 0.51 | 161.28 | 46.10 | 3 | 1 | 15,553 | 39 | 11,925 |
| 03+95.5 | 4.99 | 33.81 | 70.02 | 18 | 11 | 15,577 | 49 | 11,933 |
| 04+00 | 4.50 | 13.47 | 70.37 | 4 | 12 | 15,582 | 61 | 11,925 |
| 04+03.67 | 3.67 | 4.99 | 54.91 | 1 | 9 | 15,584 | 70 | 11,918 |
| 04+10 | 6.33 | 19.13 | 14.93 | 3 | 8 | 15,587 | 78 | 11,912 |
| 04+14.1 | 4.10 | 39.15 | 5.88 | 4 | 2 | 15,593 | 79 | 11,915 |
| 04+20 | 5.90 | 59.86 | 1.97 | 11 | 1 | 15,607 | 80 | 11,925 |
| 04+25.71 | 5.71 | 75.37 | 0.64 | 14 | 0 | 15,626 | 81 | 11,939 |
| 04+25.75 | 0.04 | 74.64 | 0.25 | 0 | 0 | 15,626 | 81 | 11,939 |
| 04+30 | 4.25 | 70.39 | 0.00 | 11 | 0 | 15,641 | 81 | 11,951 |
| 04+40 | 10.00 | 54.52 | 0.00 | 23 | 0 | 15,671 | 81 | 11,974 |
| 04+43 | 3.00 | 48.79 | 0.00 | 6 | 0 | 15,678 | 81 | 11,980 |
| **CUMULATIVE TOTALS** | | | | **12,060** | **81** | | | |

Notes:
(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) Salvaged/Unusable Pavement Material
(4) Available Material = Cut - Salvaged/Unusable Pavement Material
(5) Reduced EBS in Fill - Excavated EBS material is usuable in Fills outside the 1:1 slope. EBS in Fill Reduction factor = 1
(6) Expanded EBS Backfill - This is to be filled with Select Borrow material. EBS Backfill Factor = 1.1. Item number 208.1100
(7) Expanded Fill Factor = 1
(9) 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.
(10) Common Excavation not to be used as fill material. Borrow is required in all fill areas.

9

9

| PROJECT NO: 1060-62-70 | HWY: IH-94 | COUNTY: WAUKESHA | EARTHWORK DATA | SHEET: | E |
|---|---|---|---|---|---|

FILE NAME : _____ PLOT DATE : _____ PLOT BY : _____ PLOT NAME : _____ PLOT SCALE : 1:1

ASPHALT EAST DWY

| STATION | Distance | AREA (SF) | | Incremental Vol (CY) (Unadjusted) | | Cumulative Vol (CY) | | |
|---|---|---|---|---|---|---|---|---|
| | | Cut | Fill | Cut | Fill | Cut | Expanded Fill | Mass Ordinate |
| | | | | | | 1.30 | 1.00 | |
| 00+10 | 0.00 | 21.39 | 0.00 | 0 | 0 | 0 | 0 | 0 |
| 00+20 | 10.00 | 58.13 | 0.00 | 15 | 0 | 19 | 0 | 15 |
| 00+30 | 10.00 | 104.85 | 0.00 | 30 | 0 | 58 | 0 | 45 |
| 00+38.43 | 8.43 | 155.93 | 0.00 | 41 | 0 | 111 | 0 | 86 |
| 00+40 | 1.57 | 145.22 | 0.00 | 9 | 0 | 123 | 0 | 94 |
| 00+43.46 | 3.46 | 148.87 | 0.00 | 19 | 0 | 147 | 0 | 113 |
| 00+50 | 6.54 | 168.68 | 0.00 | 38 | 0 | 197 | 0 | 152 |
| 00+60 | 10.00 | 152.07 | 0.00 | 59 | 0 | 274 | 0 | 211 |
| 00+65.18 | 5.18 | 131.91 | 0.00 | 27 | 0 | 310 | 0 | 238 |
| 00+65.24 | 0.06 | 32.15 | 0.00 | 0 | 0 | 310 | 0 | 239 |
| 00+65.43 | 0.19 | 11.81 | 0.37 | 0 | 0 | 310 | 0 | 239 |
| 00+70 | 4.57 | 13.65 | 0.02 | 2 | 0 | 313 | 0 | 241 |
| 00+80 | 10.00 | 8.96 | 0.00 | 4 | 0 | 319 | 0 | 245 |
| 00+90 | 10.00 | 7.05 | 0.01 | 3 | 0 | 322 | 0 | 248 |
| 01+00 | 10.00 | 1.44 | 0.24 | 2 | 0 | 324 | 0 | 249 |
| 01+10 | 10.00 | 0.43 | 0.21 | 0 | 0 | 325 | 0 | 250 |
| 01+12.07 | 2.07 | 0.22 | 0.17 | 0 | 0 | 325 | 0 | 250 |
| | CUMULATIVE TOTALS | | | 250 | 0 | | | |

Notes:

(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) Salvaged/Unusable Pavement Material

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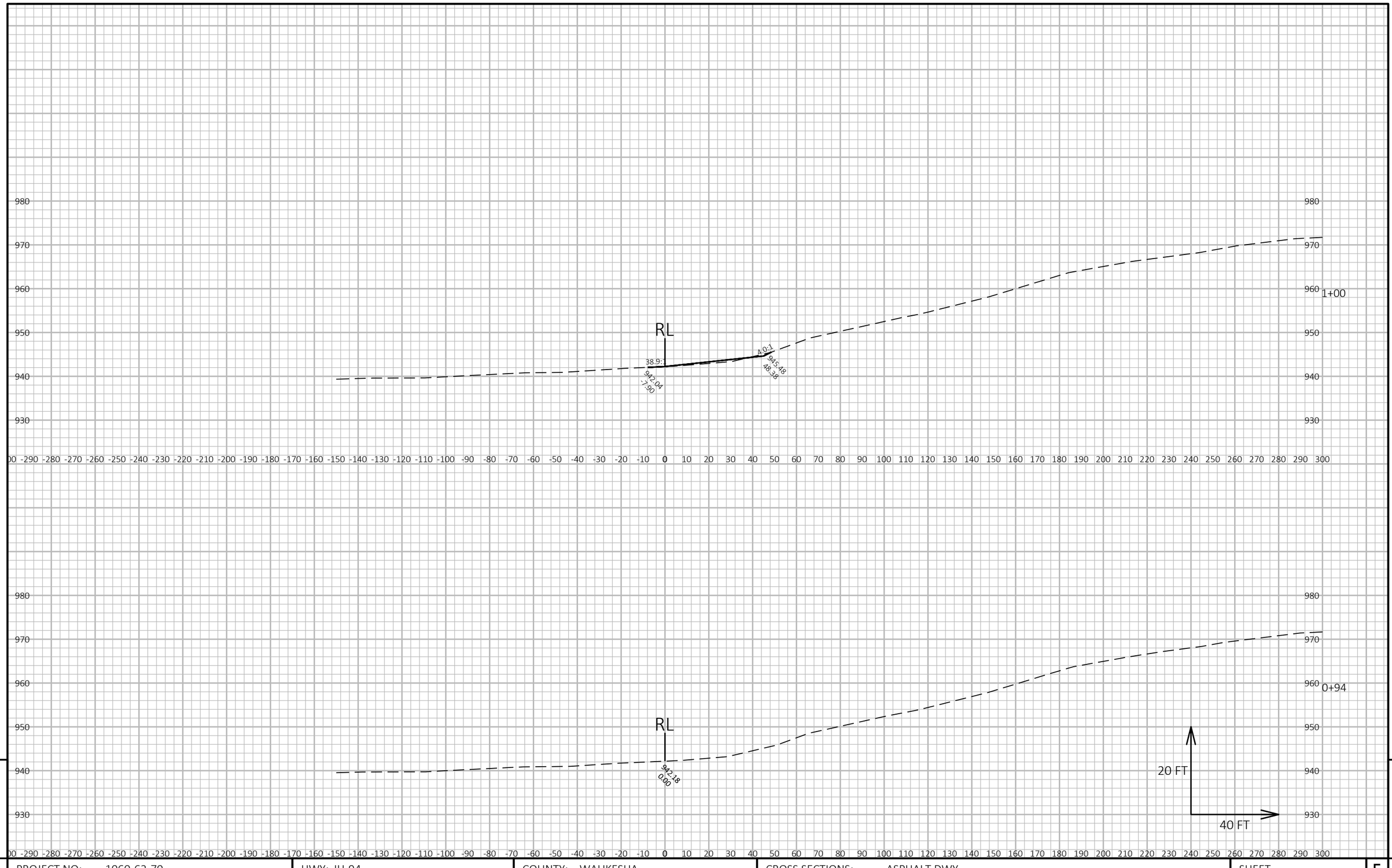
(10) Common Excavation not to be used as fill material. Borrow is required in all fill areas.

9

9

| PROJECT NO: 1060-62-70 | HWY: IH-94 | COUNTY: WAUKESHA | EARTHWORK DATA | SHEET: | E |
|---|---|---|---|---|---|

FILE NAME : _____ PLOT DATE : _____ PLOT BY : _____ PLOT NAME : _____ PLOT SCALE : 1:1




9

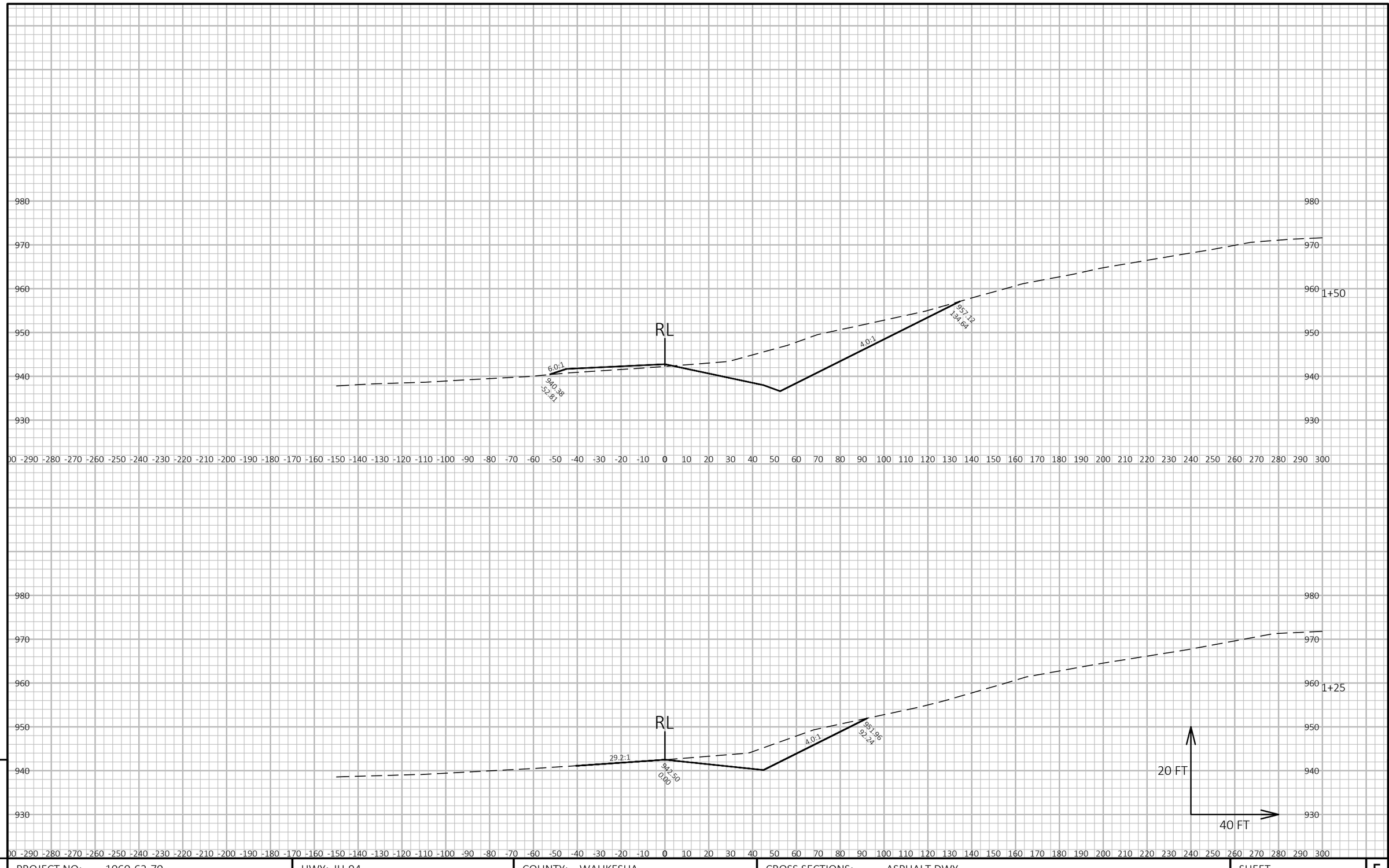
9

| PROJECT NO: 1060-62-70 | HWY: IH-94 | COUNTY: WAUKESHA | CROSS SECTIONS: ASPHALT DWY | SHEET | E |
|---|---|---|---|---|---|



FILE NAME : N:\PDS\C3D\10606200\X-SECTIONS\XSECTIONS.DWG
LAYOUT NAME - Section Sheet - (90)

PLOT DATE : 11/8/2017 11:40 AM PLOT BY : STARK, GARY W PLOT NAME : PLOT SCALE : 1 IN:40 FT HORZ. / 1 IN:20 FT VERT.




9

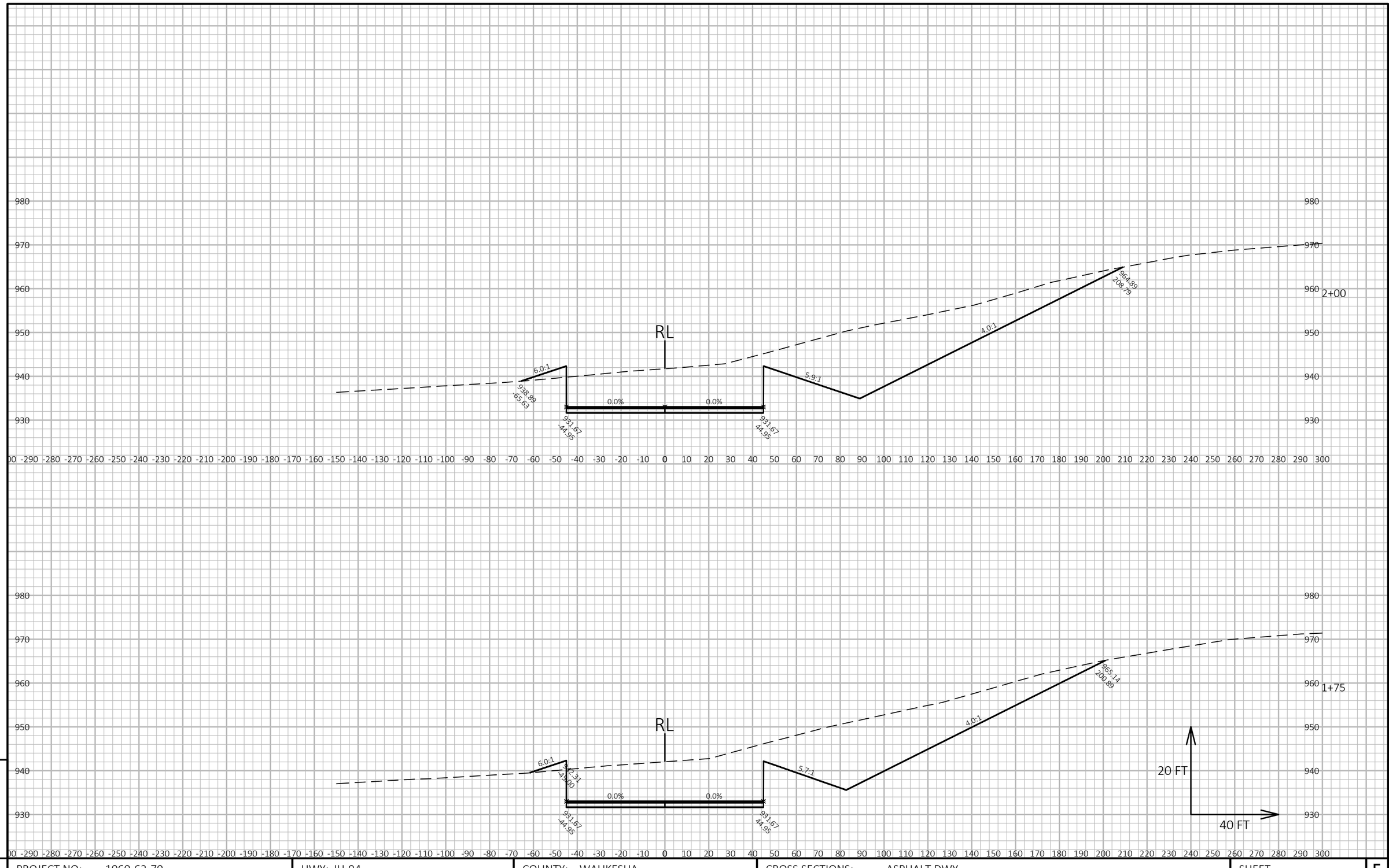
9

| PROJECT NO: 1060-62-70 | HWY: IH-94 | COUNTY: WAUKESHA | CROSS SECTIONS: ASPHALT DWY | SHEET | E |
|---|---|---|---|---|---|



FILE NAME : N:\PDS\C3D\10606200\X-SECTIONS\XSECTIONS.DWG
LAYOUT NAME - Section Sheet - (91)

PLOT DATE : 11/8/2017 11:40 AM PLOT BY : STARK, GARY W PLOT NAME : PLOT SCALE : 1 IN:40 FT HORZ. / 1 IN:20 FT VERT.




9

9

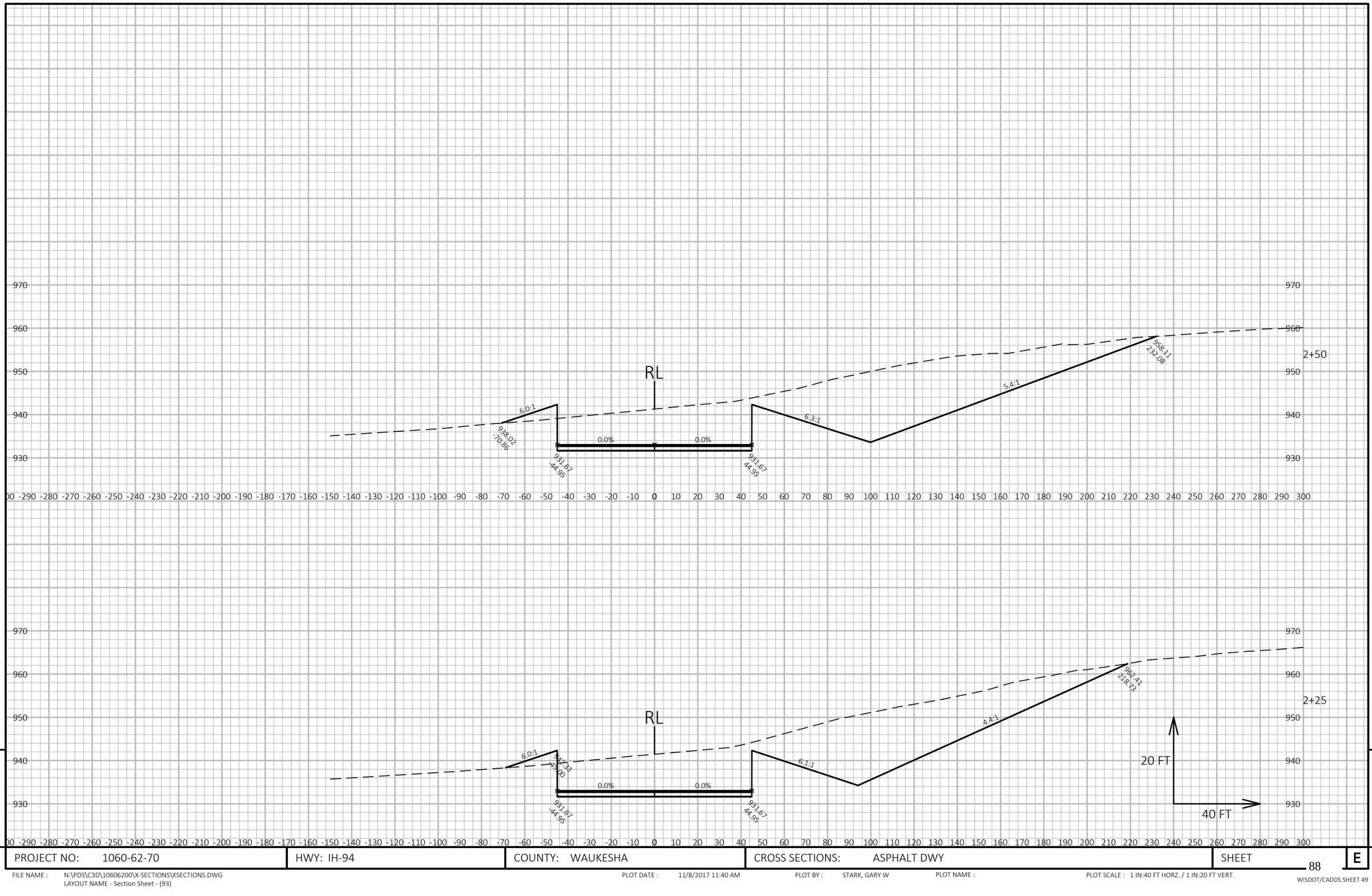
| PROJECT NO: 1060-62-70 | HWY: IH-94 | COUNTY: WAUKESHA | CROSS SECTIONS: ASPHALT DWY | SHEET | E |
|---|---|---|---|---|---|



FILE NAME : N:\PDS\C3D\10606200\X-SECTIONS\XSECTIONS.DWG
LAYOUT NAME - Section Sheet - (92)

PLOT DATE : 11/8/2017 11:40 AM PLOT BY : STARK, GARY W PLOT NAME : PLOT SCALE : 1 IN:40 FT HORZ. / 1 IN:20 FT VERT.

WISDOT/CADDS SHEET 49




9

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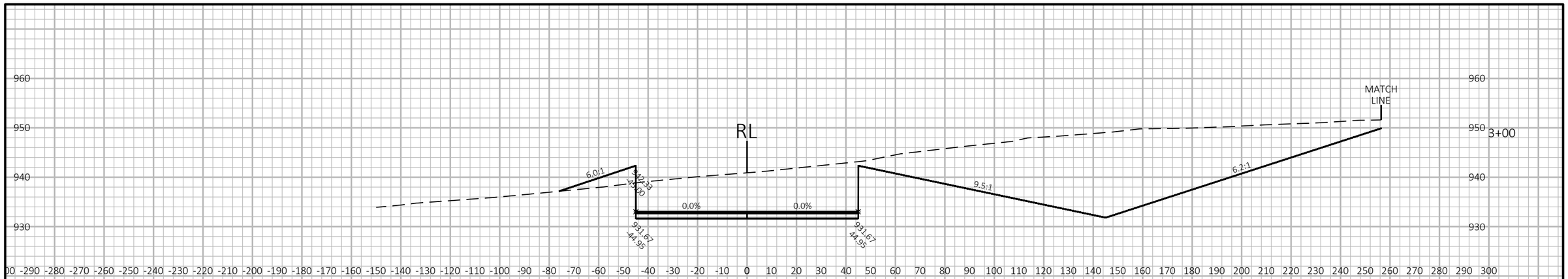
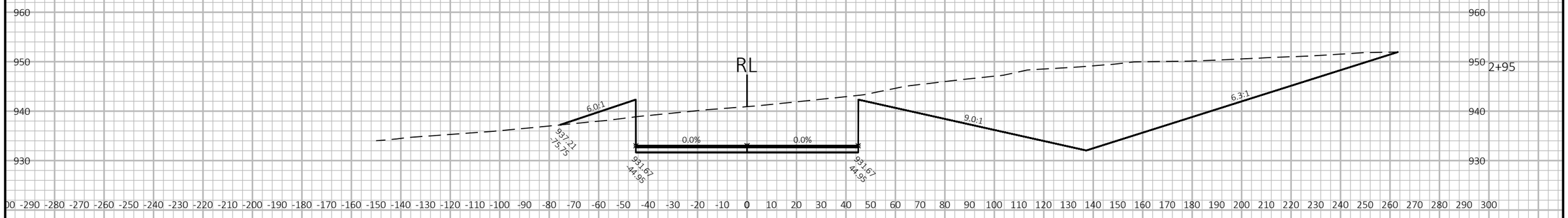
| PROJECT NO: 1060-62-70 | HWY: IH-94 | COUNTY: WAUKESHA | CROSS SECTIONS: ASPHALT DWY | SHEET 88 | E |
|---|---|---|---|---|---|

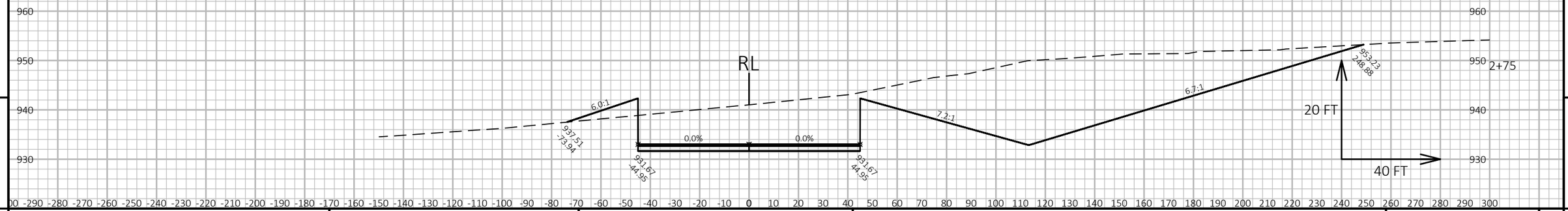
FILE NAME : N:\PDS\C3D\10606200\X-SECTIONS\XSECTIONS.DWG
LAYOUT NAME - Section Sheet - (93)

PLOT DATE : 11/8/2017 11:40 AM PLOT BY : STARK, GARY W PLOT NAME : PLOT SCALE : 1 IN:40 FT HORZ. / 1 IN:20 FT VERT.

WISDOT/CADDS SHEET 49




9

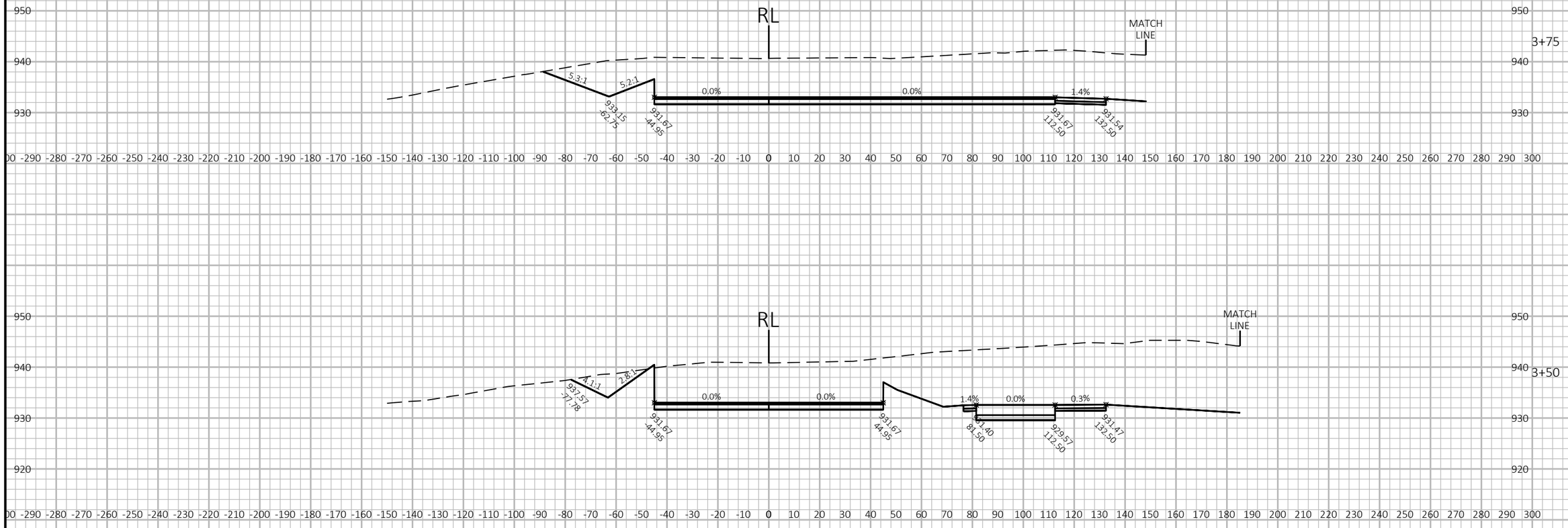
9

| PROJECT NO: 1060-62-70 | HWY: IH-94 | COUNTY: WAUKESHA | CROSS SECTIONS: ASPHALT DWY | SHEET | E |
|---|---|---|---|---|---|



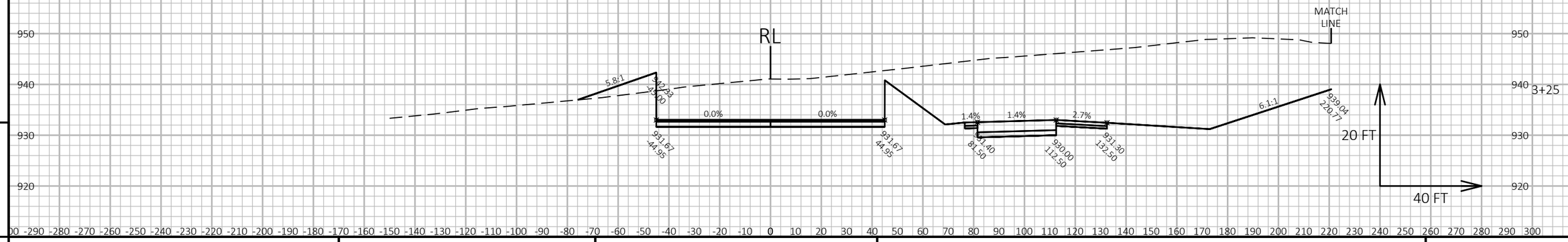
FILE NAME : N:\PDS\C3D\10606200\X-SECTIONS\XSECTIONS.DWG
LAYOUT NAME - Section Sheet - (94)

PLOT DATE : 11/8/2017 11:40 AM PLOT BY : STARK, GARY W PLOT NAME : PLOT SCALE : 1 IN:40 FT HORZ. / 1 IN:20 FT VERT.










9

9

| PROJECT NO: 1060-62-70 | HWY: IH-94 | COUNTY: WAUKESHA | CROSS SECTIONS: ASPHALT DWY | SHEET 90 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\10606200\X-SECTIONS\XSECTIONS.DWG
LAYOUT NAME - Section Sheet - (95)

PLOT DATE : 11/8/2017 11:40 AM PLOT BY : STARK, GARY W PLOT NAME : PLOT SCALE : 1 IN:40 FT HORZ. / 1 IN:20 FT VERT.

9

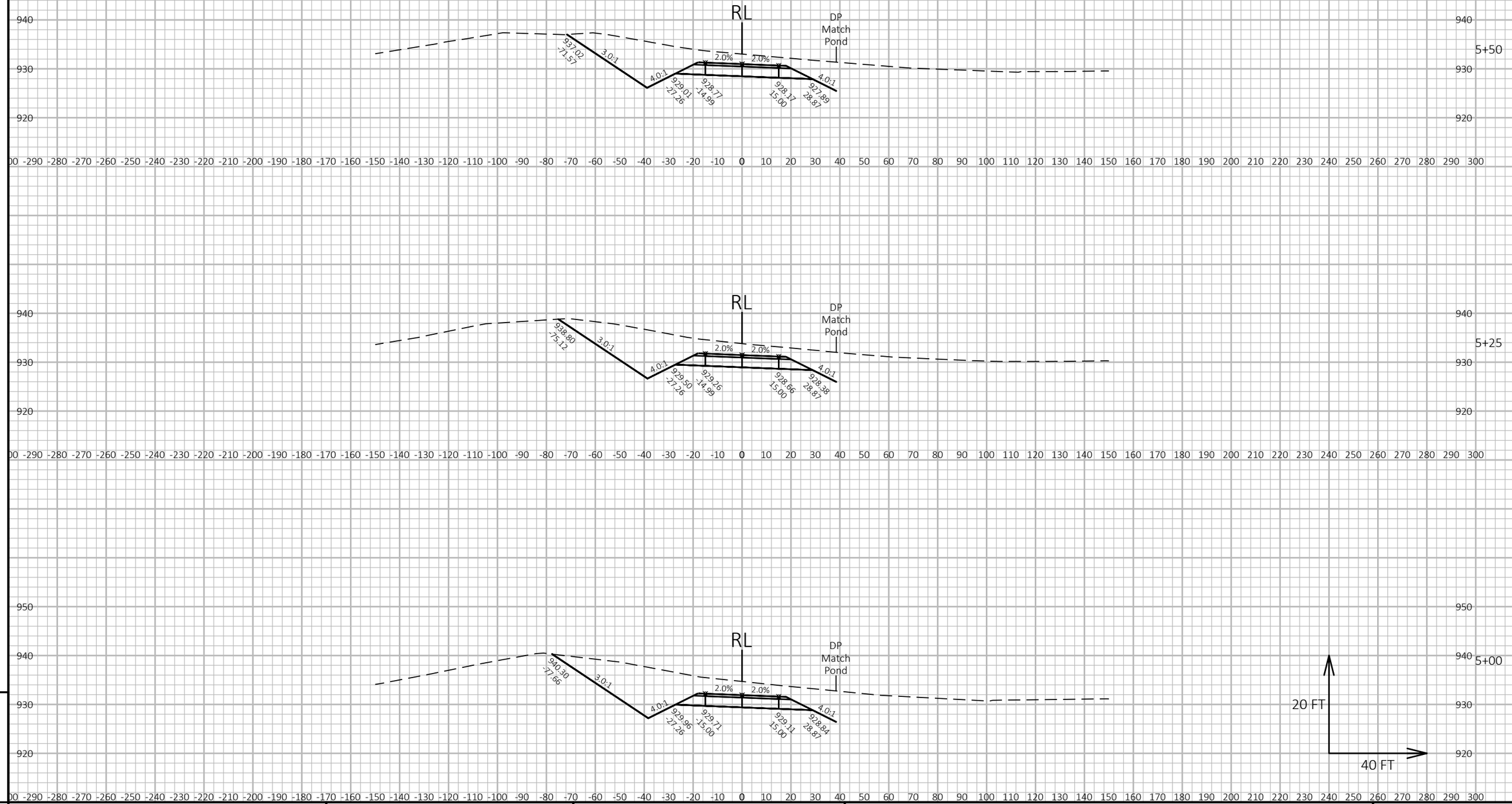
9

| PROJECT NO: 1060-62-70 | HWY: IH-94 | COUNTY: WAUKESHA | CROSS SECTIONS: ASPHALT DWY | SHEET 91 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\10606200\X-SECTIONS\XSECTIONS.DWG
LAYOUT NAME - Section Sheet - (96)

PLOT DATE : 11/8/2017 11:40 AM PLOT BY : STARK, GARY W PLOT NAME : PLOT SCALE : 1 IN:40 FT HORZ. / 1 IN:20 FT VERT.

WISDOT/CADDS SHEET 49




9

9

| PROJECT NO: 1060-62-70 | HWY: IH-94 | COUNTY: WAUKESHA | CROSS SECTIONS: ASPHALT DWY | SHEET 92 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\10606200\X-SECTIONS\XSECTIONS.DWG
LAYOUT NAME - Section Sheet - (97)

PLOT DATE : 11/8/2017 11:40 AM PLOT BY : STARK, GARY W PLOT NAME : PLOT SCALE : 1 IN:40 FT HORZ. / 1 IN:20 FT VERT.

WISDOT/CADDS SHEET 49

9

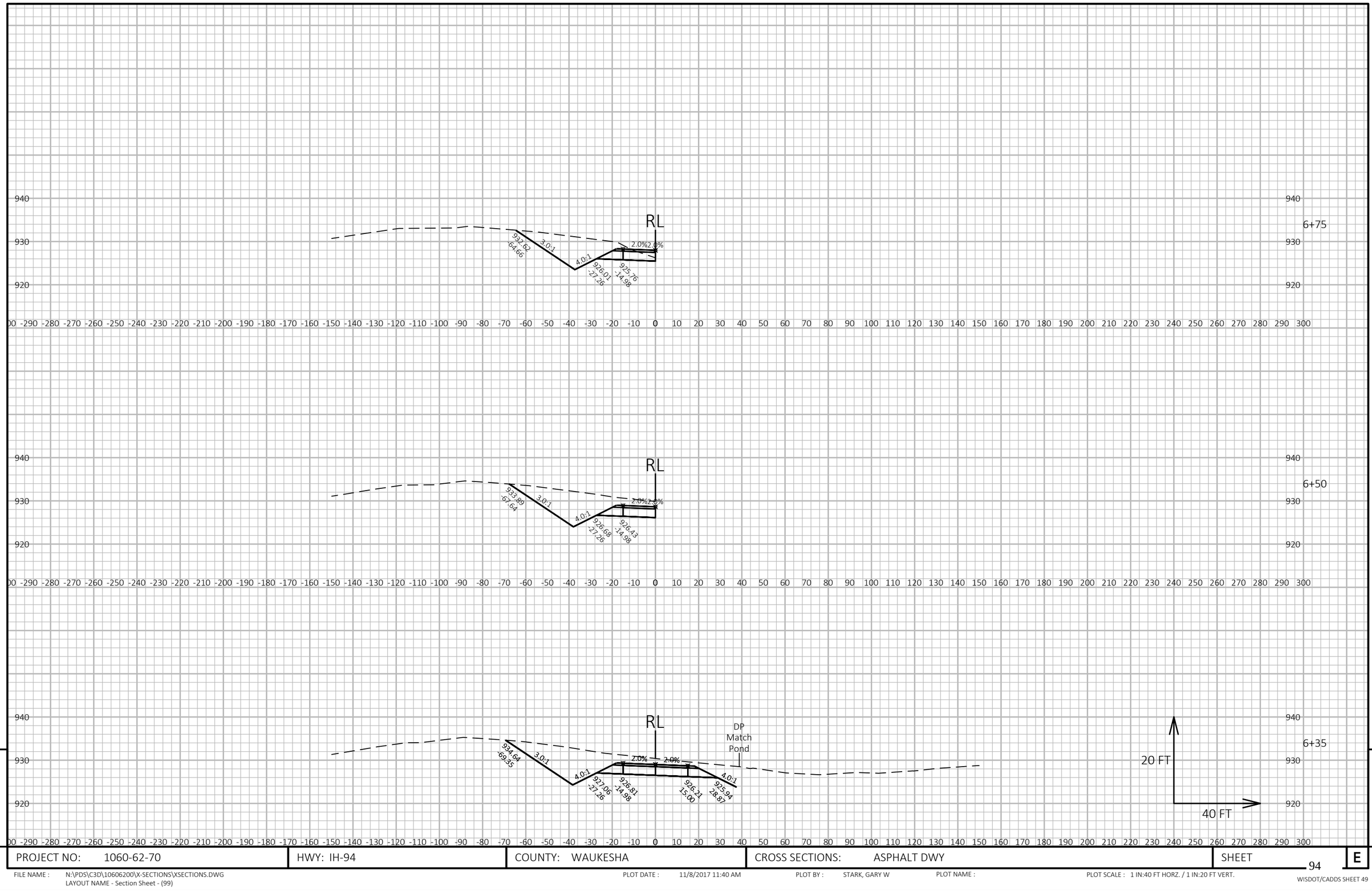
9

| PROJECT NO: 1060-62-70 | HWY: IH-94 | COUNTY: WAUKESHA | CROSS SECTIONS: ASPHALT DWY | SHEET 93 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\10606200\X-SECTIONS\XSECTIONS.DWG
LAYOUT NAME - Section Sheet - (98)

PLOT DATE : 11/8/2017 11:40 AM PLOT BY : STARK, GARY W PLOT NAME : PLOT SCALE : 1 IN:40 FT HORZ. / 1 IN:20 FT VERT.

WISDOT/CADDS SHEET 49




9

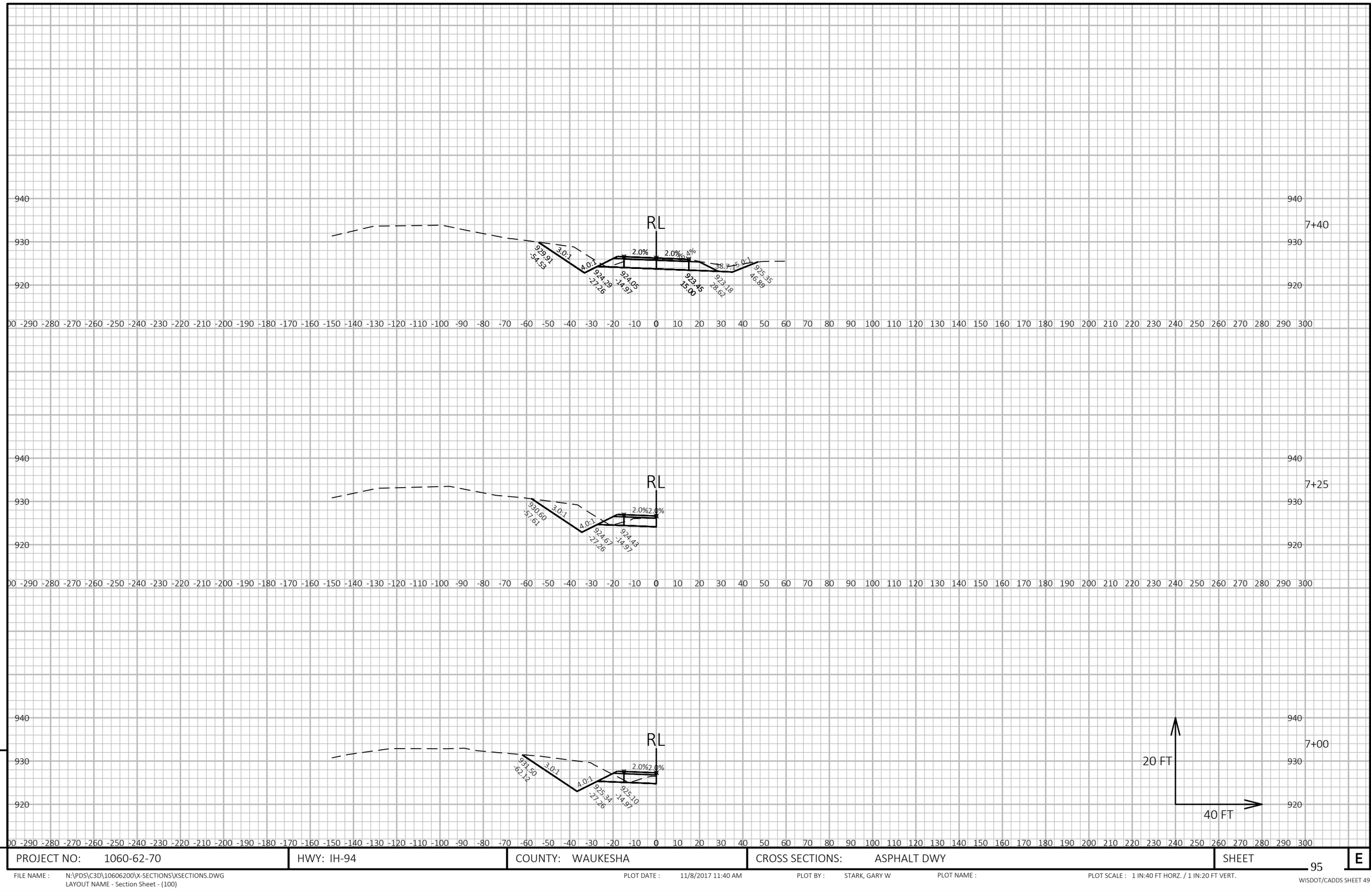
9

| PROJECT NO: 1060-62-70 | HWY: IH-94 | COUNTY: WAUKESHA | CROSS SECTIONS: ASPHALT DWY | SHEET 94 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\10606200\X-SECTIONS\XSECTIONS.DWG
LAYOUT NAME - Section Sheet - (99)

PLOT DATE : 11/8/2017 11:40 AM PLOT BY : STARK, GARY W PLOT NAME : PLOT SCALE : 1 IN:40 FT HORZ. / 1 IN:20 FT VERT.

WISDOT/CADDS SHEET 49




9

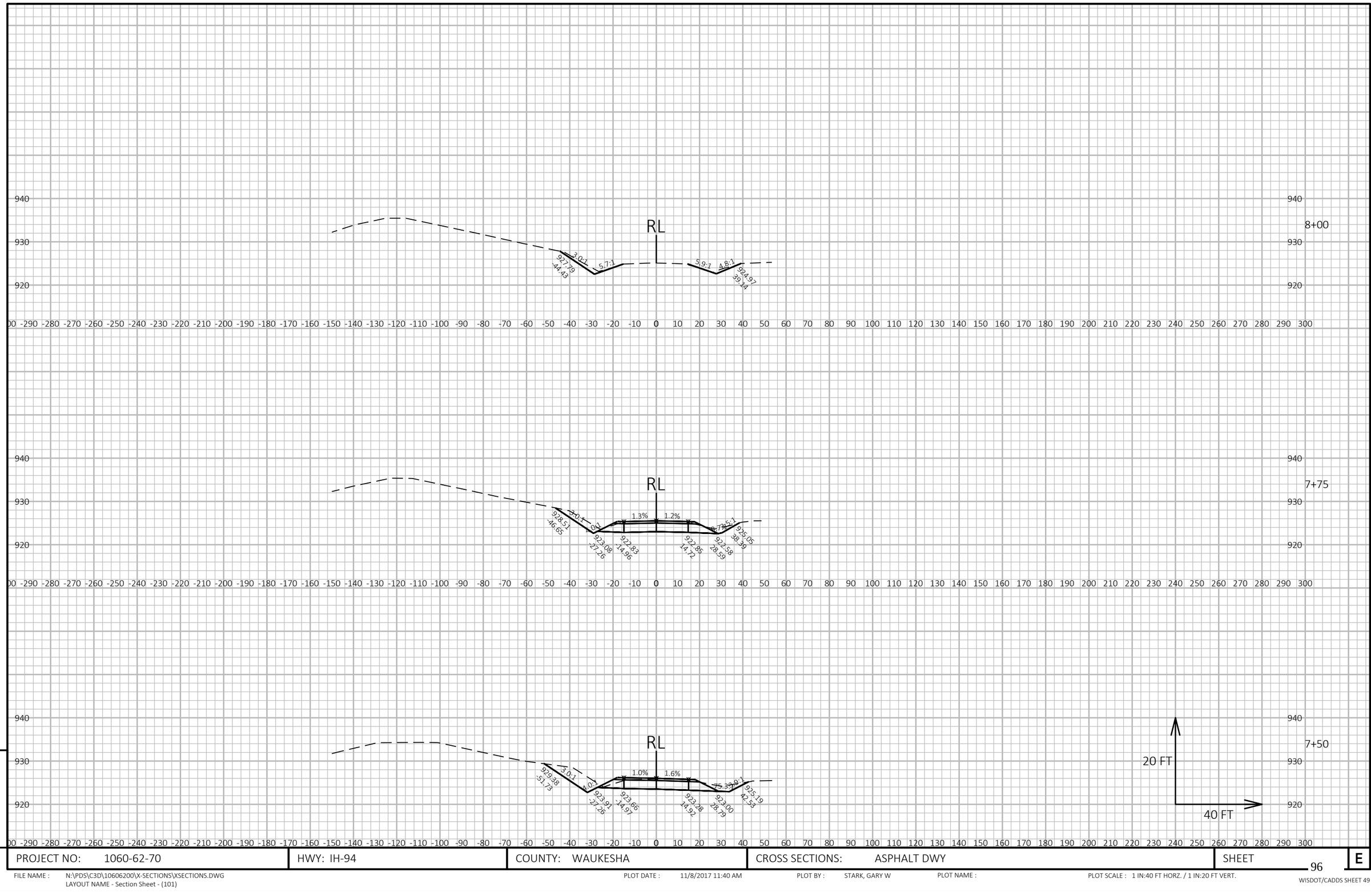
9

| PROJECT NO: 1060-62-70 | HWY: IH-94 | COUNTY: WAUKESHA | CROSS SECTIONS: ASPHALT DWY | SHEET | E |
|---|---|---|---|---|---|



FILE NAME : N:\PDS\C3D\10606200\X-SECTIONS\XSECTIONS.DWG
LAYOUT NAME - Section Sheet - (100)

PLOT DATE : 11/8/2017 11:40 AM PLOT BY : STARK, GARY W PLOT NAME : PLOT SCALE : 1 IN:40 FT HORZ. / 1 IN:20 FT VERT.




9

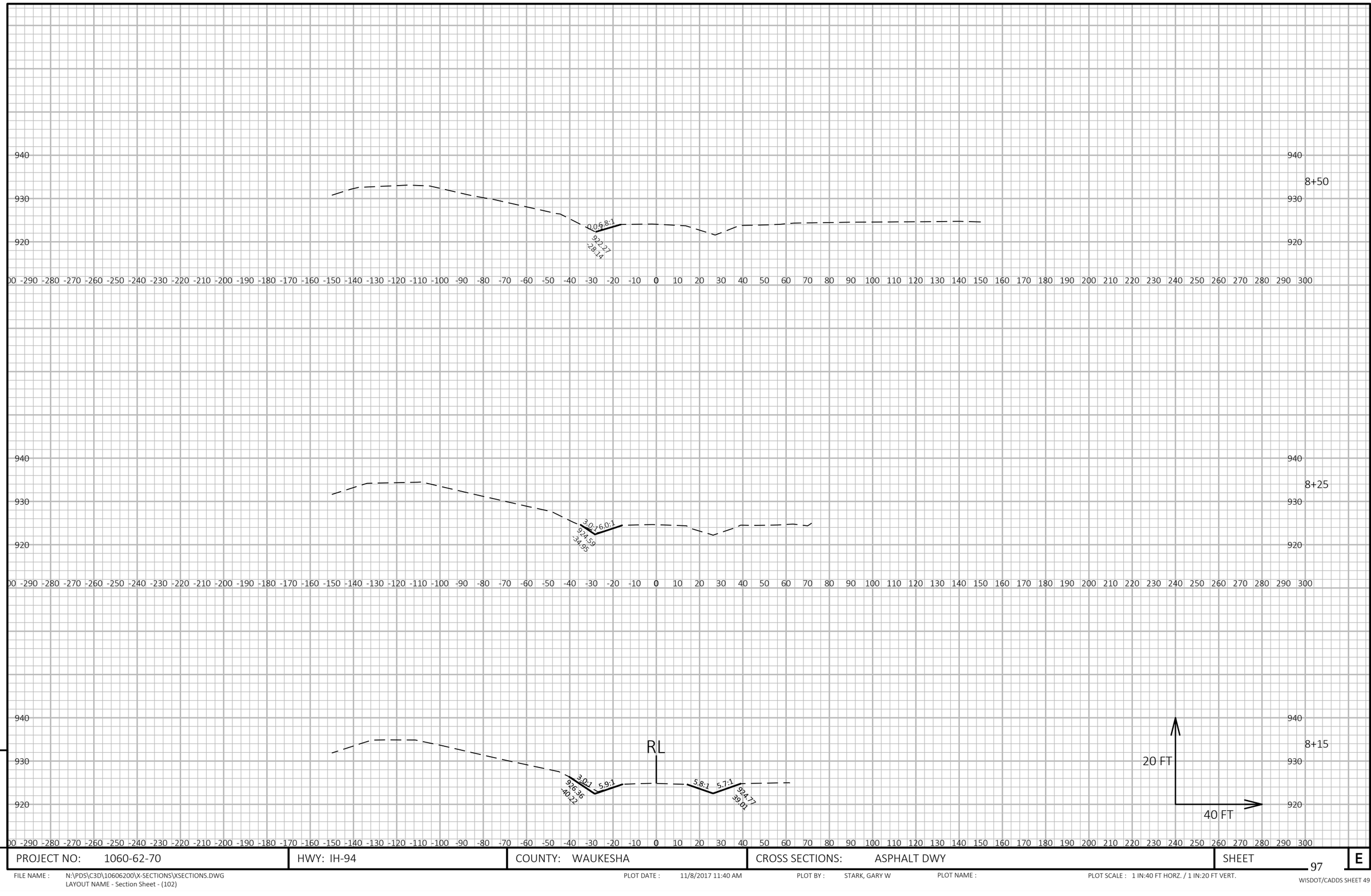
9

| PROJECT NO: 1060-62-70 | HWY: IH-94 | COUNTY: WAUKESHA | CROSS SECTIONS: ASPHALT DWY | SHEET 96 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\10606200\X-SECTIONS\XSECTIONS.DWG
LAYOUT NAME - Section Sheet - (101)

PLOT DATE : 11/8/2017 11:40 AM PLOT BY : STARK, GARY W PLOT NAME : PLOT SCALE : 1 IN:40 FT HORZ. / 1 IN:20 FT VERT.

WISDOT/CADDS SHEET 49

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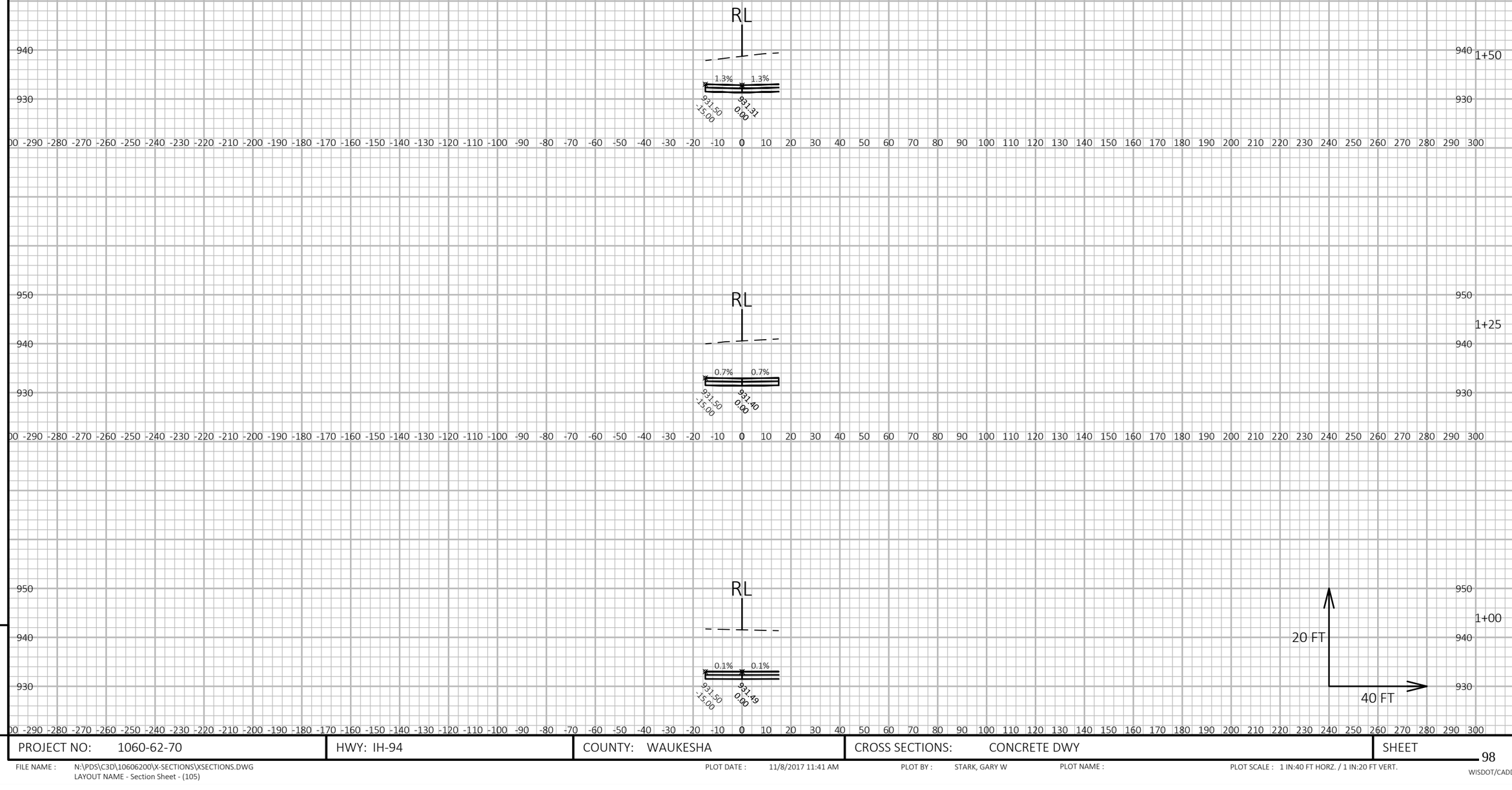
| PROJECT NO: 1060-62-70 | HWY: IH-94 | COUNTY: WAUKESHA | CROSS SECTIONS: ASPHALT DWY | SHEET 97 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\10606200\X-SECTIONS\XSECTIONS.DWG
LAYOUT NAME - Section Sheet - (102)

PLOT DATE : 11/8/2017 11:40 AM PLOT BY : STARK, GARY W PLOT NAME : PLOT SCALE : 1 IN:40 FT HORZ. / 1 IN:20 FT VERT.

WISDOT/CADDS SHEET 49

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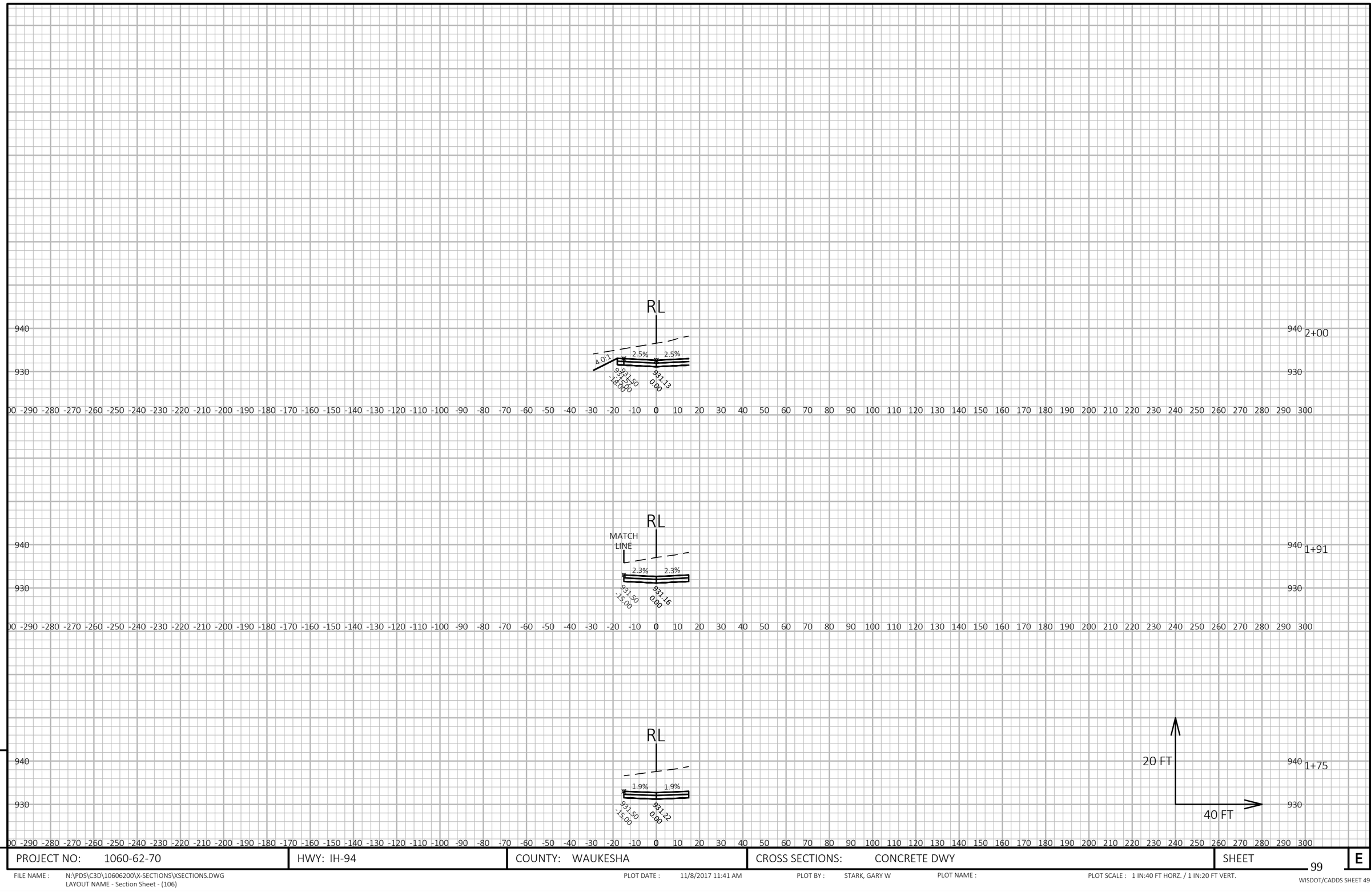
| PROJECT NO: 1060-62-70 | HWY: IH-94 | COUNTY: WAUKESHA | CROSS SECTIONS: CONCRETE DWY | SHEET 98 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\10606200\X-SECTIONS\XSECTIONS.DWG
LAYOUT NAME - Section Sheet - (105)

PLOT DATE : 11/8/2017 11:41 AM PLOT BY : STARK, GARY W PLOT NAME : PLOT SCALE : 1 IN:40 FT HORZ. / 1 IN:20 FT VERT.

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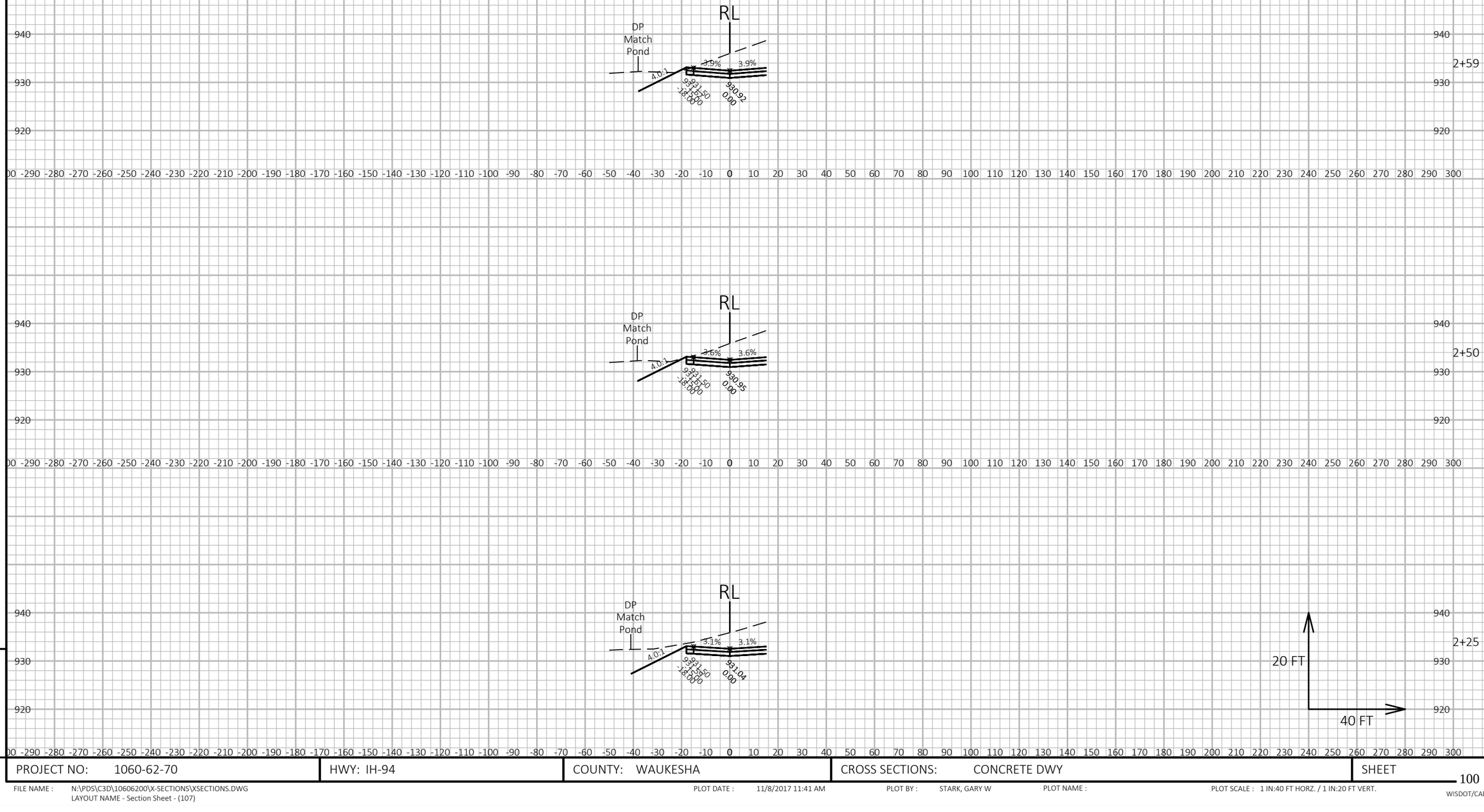
| PROJECT NO: 1060-62-70 | HWY: IH-94 | COUNTY: WAUKESHA | CROSS SECTIONS: CONCRETE DWY | SHEET 99 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\10606200\X-SECTIONS\XSECTIONS.DWG
LAYOUT NAME - Section Sheet - (106)

PLOT DATE : 11/8/2017 11:41 AM PLOT BY : STARK, GARY W PLOT NAME : PLOT SCALE : 1 IN:40 FT HORZ. / 1 IN:20 FT VERT.

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| PROJECT NO: 1060-62-70 | HWY: IH-94 | COUNTY: WAUKESHA | CROSS SECTIONS: CONCRETE DWY | SHEET 100 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\10606200\X-SECTIONS\XSECTIONS.DWG
LAYOUT NAME - Section Sheet - (107)

PLOT DATE : 11/8/2017 11:41 AM PLOT BY : STARK, GARY W PLOT NAME : PLOT SCALE : 1 IN:40 FT HORZ. / 1 IN:20 FT VERT.

WISDOT/CADDS SHEET 49

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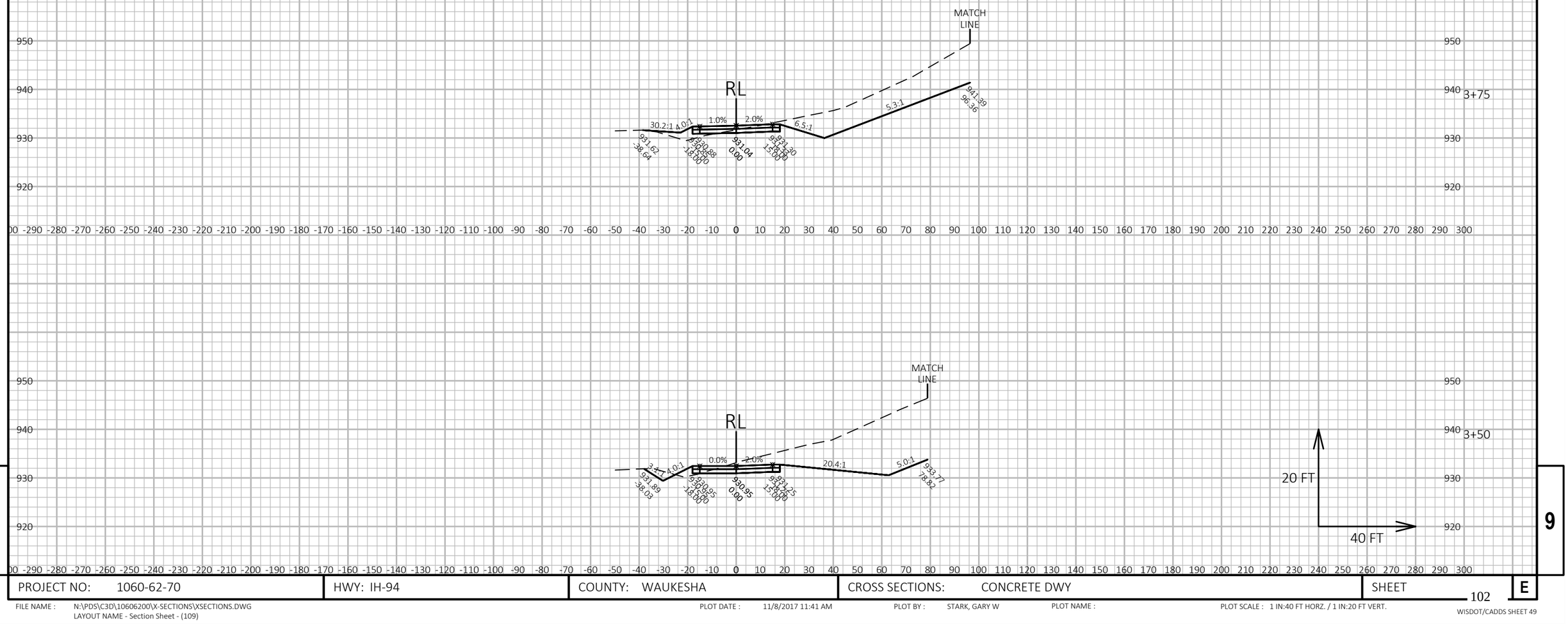
| PROJECT NO: 1060-62-70 | HWY: IH-94 | COUNTY: WAUKESHA | CROSS SECTIONS: CONCRETE DWY | SHEET 101 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\10606200\X-SECTIONS\XSECTIONS.DWG
LAYOUT NAME - Section Sheet - (108)

PLOT DATE : 11/8/2017 11:41 AM PLOT BY : STARK, GARY W PLOT NAME : PLOT SCALE : 1 IN:40 FT HORZ. / 1 IN:20 FT VERT.

WISDOT/CADDS SHEET 49

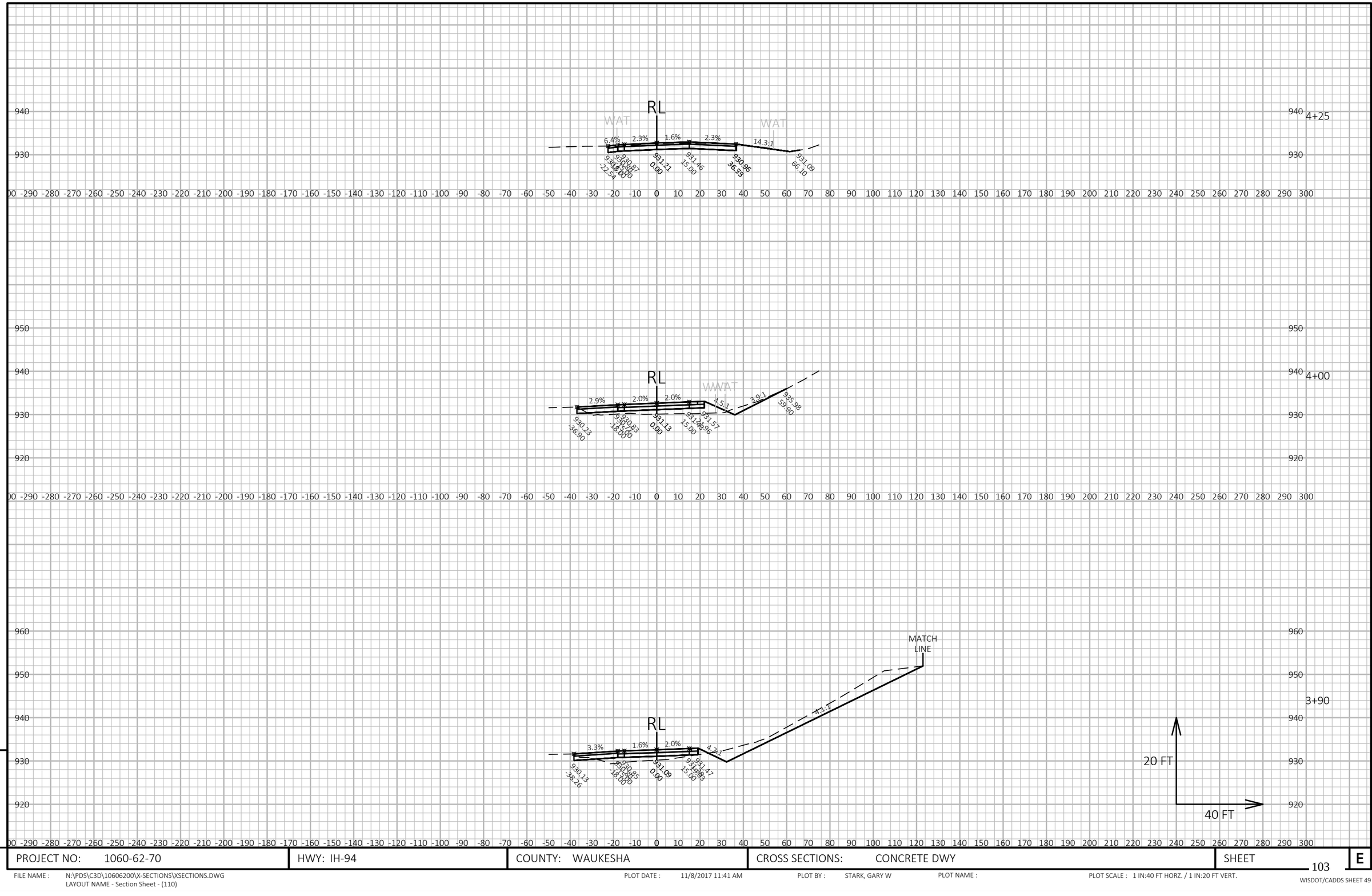



| PROJECT NO: 1060-62-70 | HWY: IH-94 | COUNTY: WAUKESHA | CROSS SECTIONS: CONCRETE DWY | SHEET 102 E |
|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\10606200\X-SECTIONS\XSECTIONS.DWG
LAYOUT NAME - Section Sheet - (109)

PLOT DATE : 11/8/2017 11:41 AM PLOT BY : STARK, GARY W PLOT NAME : PLOT SCALE : 1 IN:40 FT HORZ. / 1 IN:20 FT VERT.

WISDOT/CADDS SHEET 49

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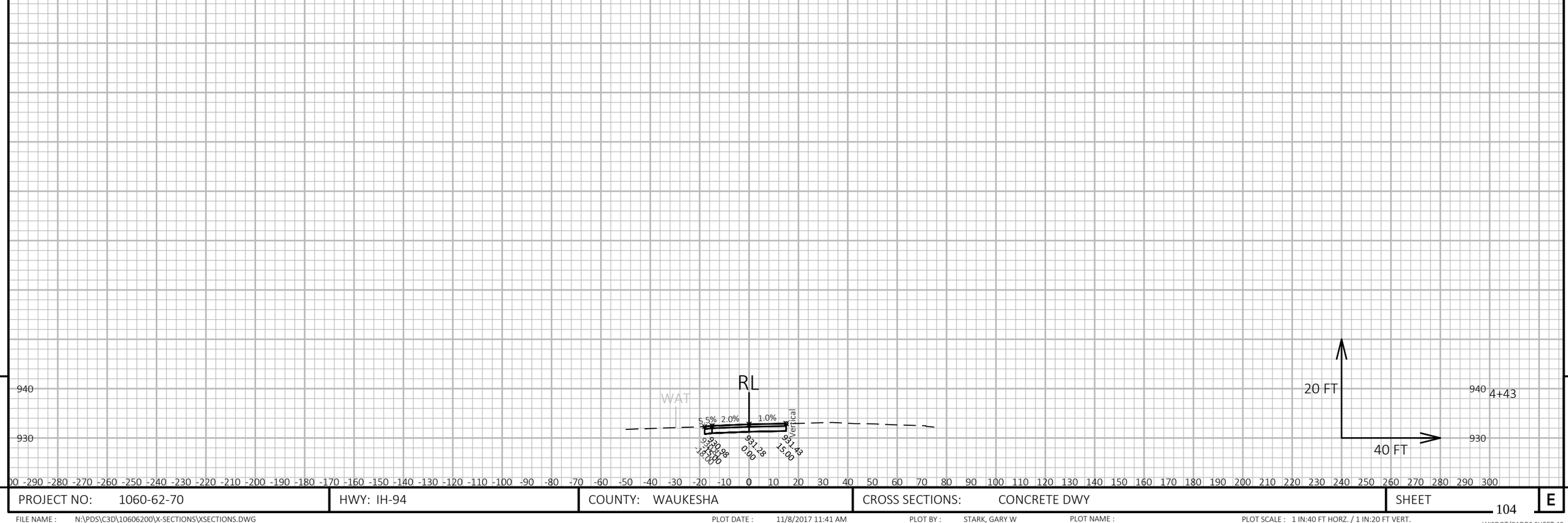
| PROJECT NO: 1060-62-70 | HWY: IH-94 | COUNTY: WAUKESHA | CROSS SECTIONS: CONCRETE DWY | SHEET 103 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\10606200\X-SECTIONS\XSECTIONS.DWG
LAYOUT NAME - Section Sheet - (110)

PLOT DATE : 11/8/2017 11:41 AM PLOT BY : STARK, GARY W PLOT NAME : PLOT SCALE : 1 IN:40 FT HORZ. / 1 IN:20 FT VERT.

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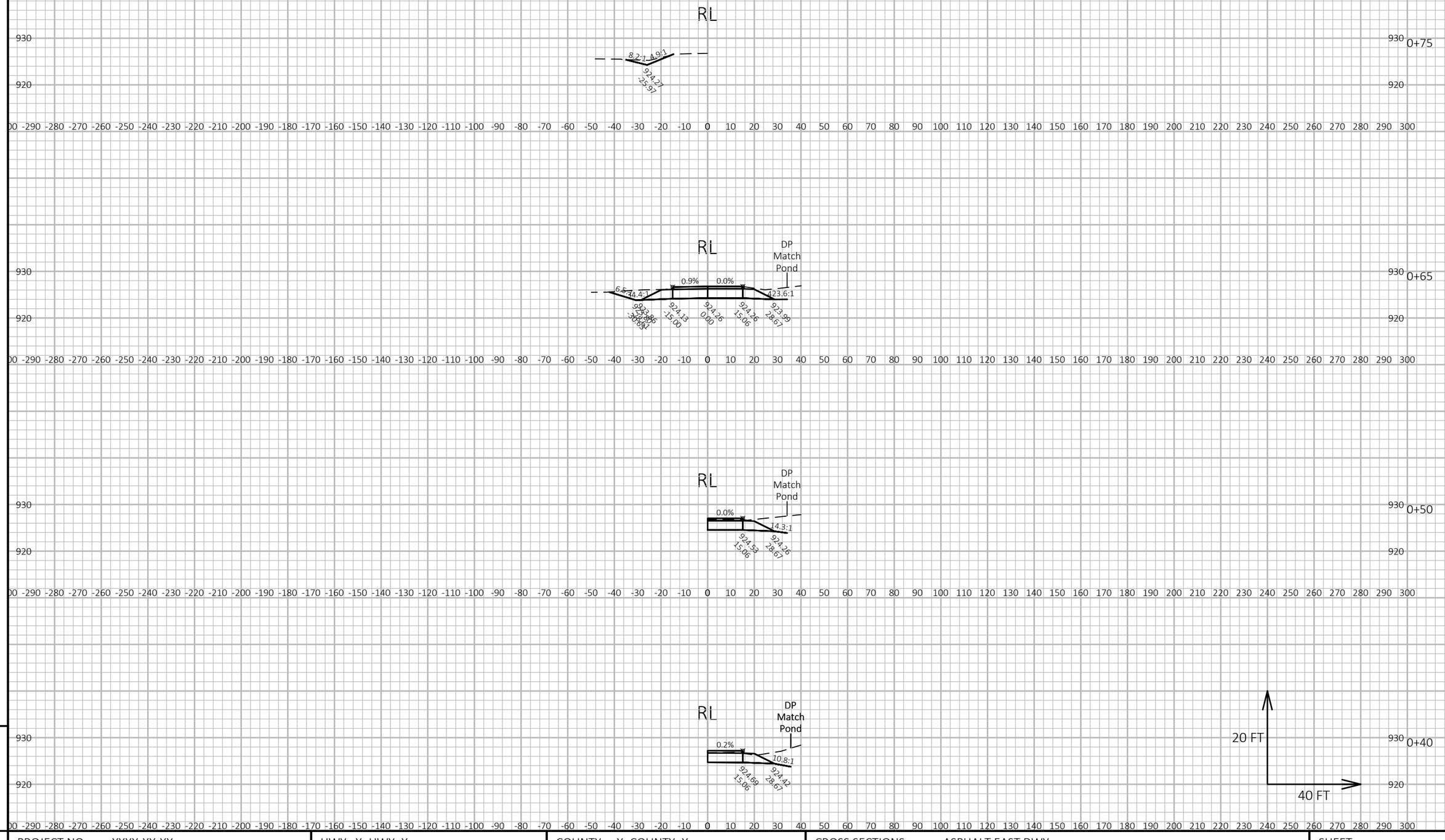
| PROJECT NO: 1060-62-70 | HWY: IH-94 | COUNTY: WAUKESHA | CROSS SECTIONS: CONCRETE DWY | SHEET 104 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\10606200\X-SECTIONS\XSECTIONS.DWG
LAYOUT NAME - Section Sheet - (111)

PLOT DATE : 11/8/2017 11:41 AM PLOT BY : STARK, GARY W PLOT NAME : PLOT SCALE : 1 IN:40 FT HORZ. / 1 IN:20 FT VERT.

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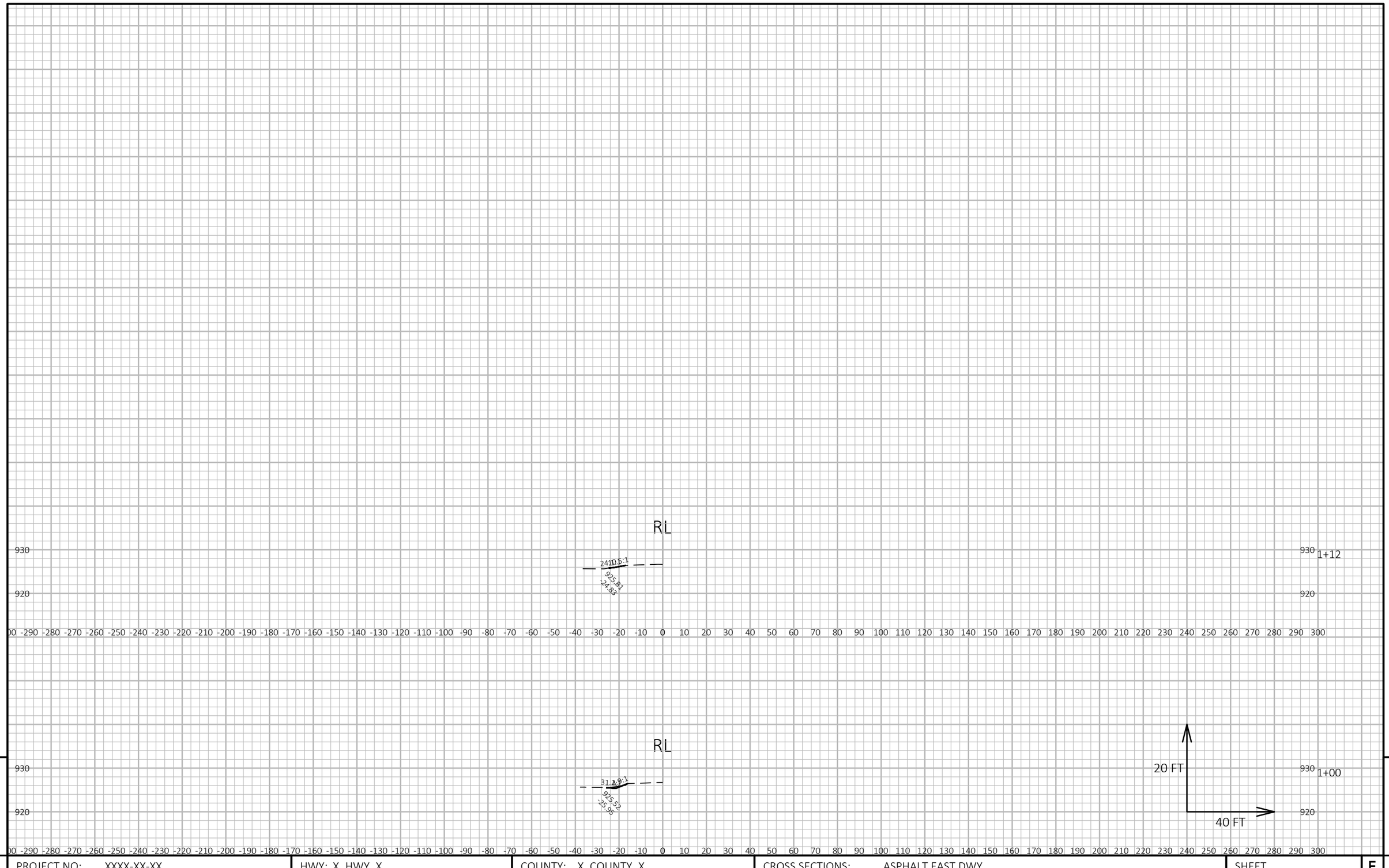
| PROJECT NO: XXXX-XX-XX | HWY: X_HWY_X | COUNTY: X_COUNTY_X | CROSS SECTIONS: ASPHALT EAST DWY | SHEET 105 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\10606200\X-SECTIONS\XSECTIONS.DWG
LAYOUT NAME - Section Sheet - (103)

PLOT DATE : 11/8/2017 11:42 AM PLOT BY : STARK, GARY W PLOT NAME : PLOT SCALE : 1 IN:40 FT HORZ. / 1 IN:20 FT VERT.

WISDOT/CADDS SHEET 49

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| PROJECT NO: XXXX-XX-XX | HWY: X_HWY_X | COUNTY: X_COUNTY_X | CROSS SECTIONS: ASPHALT EAST DWY | SHEET 106 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\10606200\X-SECTIONS\XSECTIONS.DWG
LAYOUT NAME - Section Sheet - (104)

PLOT DATE : 11/8/2017 11:42 AM PLOT BY : STARK, GARY W PLOT NAME : PLOT SCALE : 1 IN:40 FT HORZ. / 1 IN:20 FT VERT.

Notes

**Wisconsin Department of Transportation**

Dedicated people creating transportation solutions
through innovation and exceptional service.

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