

DESIGN DESIGNATION

A.D.T. (2005) = 10,300
A.D.T. (2025) = 18,300
D.H.V. = 7,000
D. = $\frac{45}{55}$
T. = 10%
DESIGN SPEED = 50 MPH
ESALS = 4.6 MIL.

2006 MARATHON COUNTY AND VILLAGE OF WESTON C.T.H. X / CAMP PHILLIPS ROAD RECONSTRUCTION PROJECT HOWLAND AVENUE - TRANSPORT DRIVE

WEA
CENTRAL
WISCONSIN
ENGINEERS &
ARCHITECTS

5707 SCHOFIELD AVENUE
WESTON, WISCONSIN
54476

PHONE: (715) 359-9400
FAX: (715) 355-4199

general@cwengineers.com
http://www.cwengineers.com

PROJECT:

TITLE SHEET
2006 MARATHON COUNTY AND
VILLAGE OF WESTON
C.T.H. X / CAMP PHILLIPS ROAD
RECONSTRUCTION PROJECT
HOWLAND AVENUE - TRANSPORT DRIVE

REVISIONS:

DRAWN BY:

A.LEE

CHECKED BY:

D.G.

APPROVED BY:

H.Z.

DATE:

FEB 2006

SHEET:

1 OF 173

OWNERS:

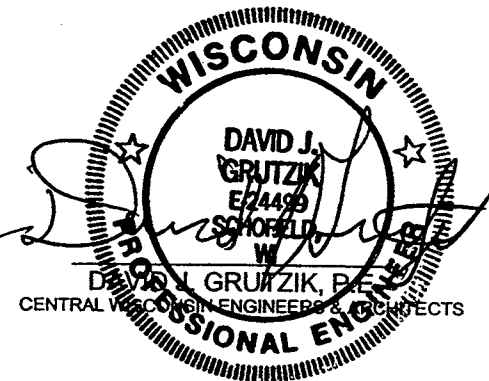
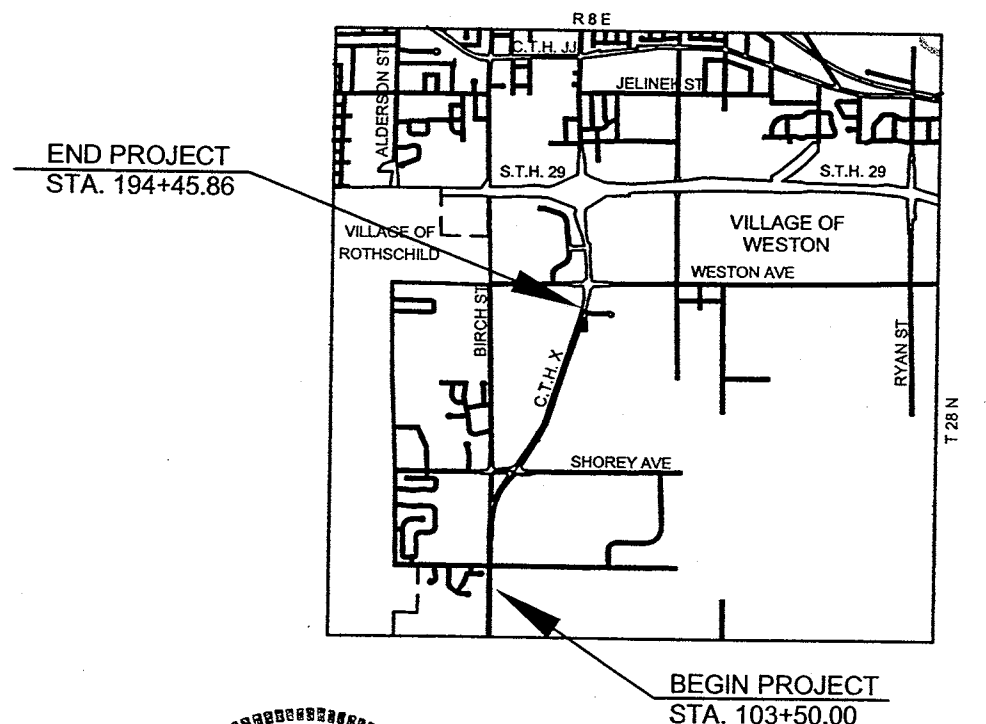
MARATHON COUNTY
JAMES GRIESBACH, HIGHWAY COMMISSIONER
1430 WEST STREET
WAUSAU, WISCONSIN 54401
PHONE: (715) 842-2205

VILLAGE OF WESTON
VILAS MACHMUELLER, PRESIDENT
5500 SCHOFIELD AVENUE
WESTON, WISCONSIN 54476
PHONE: (715) 359-6114

ENGINEERS:

LANG ASSOCIATES
510 N. 17TH AVENUE
WAUSAU, WISCONSIN 54401
PHONE: (715) 845-1333
MARK PORLIER, PROJECT MANAGER

CENTRAL WISCONSIN ENGINEERS & ARCHITECTS, INC.
5707 SCHOFIELD AVENUE
WESTON, WISCONSIN 54476
PHONE: (715) 359-9400



ACCEPTED BY:

ACCEPTED BY:

JAMES GRIESBACH
MARATHON COUNTY
HIGHWAY COMMISSIONER

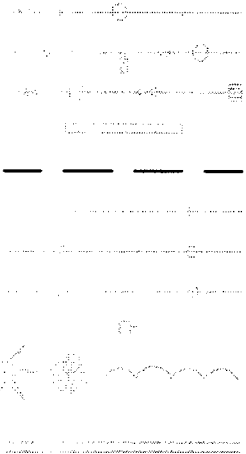
KEITH DONNER, P.E.
VILLAGE OF WESTON
DIRECTOR OF PUBLIC WORKS

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GENERAL NOTES

- 1- NO TREES (AND/OR SHRUBS) SHALL BE REMOVED WITHOUT APPROVAL OF THE ENGINEER.
- 2- DISTURBED AREAS WITHIN PROJECT LIMITS ARE TO BE RESTORED WITH 4" MIN. SALVAGED TOPSOIL OR SCREENED TOPSOIL, SEED, FERTILIZER, AND MULCH OR EROSION MAT AS DIRECTED BY THE ENGINEER. DISTURBED AREAS SHALL BE RESTORED TO A BETTER/OR EQUAL CONDITION THAT EXISTED PRIOR TO CONSTRUCTION.
- 3- ALL EXISTING UTILITIES ARE SHOWN BASED ON FIELD DATA AND INFORMATION RECEIVED FROM THE RESPECTIVE UTILITY. IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY ALL EXISTING UTILITIES PRIOR TO ANY EXCAVATION. CONTRACTOR SHALL BE RESPONSIBLE FOR RESOLVING ALL UTILITY CONFLICTS.
- 4- ALL EXISTING PAVEMENT TO BE SAWCUT PRIOR TO REPLACEMENT. STREETS REPLACED WITH MIN. 5" H.M.A. (3 LIFTS), 11" B.A.D. 1 1/4", AND 14" BREAKER MATERIAL. DRIVEWAYS REPLACED WITH MIN. 2" H.M.A. AND 6" B.A.D. 1-1/4". 5-INCH H.M.A PAVEMENT SHALL BE CONSTRUCTED WITH 1 1/2" UPPER LAYER AND TWO 1 3/4" LOWER LAYERS. 3-INCH H.M.A. PAVEMENT SHALL BE CONSTRUCTED WITH 1 1/4" UPPER LAYER AND 1 3/4" LOWER LAYER.
- 5- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EROSION CONTROL MEASURES TAKEN TO PREVENT SOIL FROM LEAVING THE PROJECT SITE, PER WDNR BEST MANAGEMNT PRACTICES. EROSION CONTROL DEVICES SHALL BE INPLACE PRIOR TO CONSTRUCTION. EROSION CONTROL DEVICES SHOWN ON THE PLAN ARE FOR GUIDANCE AND MAY NEED TO BE REVISED IN THE FIELD. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEAN-UP OF SEDIMENTATION DUE TO THE CONSTRUCTION. CONTRACTOR SHALL MAINTAIN AND INSPECT EROSION CONTROL ON A WEEKLY BASIS.
- 6-ACCESS FOR LOCAL RESIDENTS AND BUSINESSES MUST BE PROVIDED AT ALL TIMES DURING CONSTRUCTION.
- 7-EXISTING WATER MAIN CONFLICTS TO BE DETERMINED IN THE FIELD. VERIFY ELEVATION AND ADJUST PIPE AS DIRECTED BY THE ENGINEER.
- 8-ALL EXISTING DRIVEWAYS TO BE REPLACED IN KIND.
- 9-ALL HOLES OR OPENINGS BELOW SUBGRADE RESULTING FROM ABANDONMENT OR REMOVAL OF EXISTING PIPES OR FROM GRUBBING OF TREES OR STUMPS SHALL BE BACKFILLED WITH GRANULAR MATERIAL.

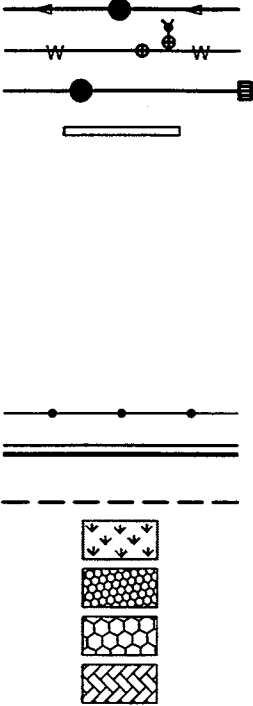
EXISTING



LEGEND

- SANITARY SEWER, MANHOLE
- WATERMAIN, VALVE, HYDRANT, VALVE MANHOLE
- STORM SEWER, MANHOLE, INLET
- CULVERT
- RIGHT-OF-WAY LINE
- UNDERGROUND TELEPHONE CABLE
- UNDERGROUND ELECTRIC CABLE
- UNDERGROUND GAS LINE
- UTILITY POLE
- TREE, WOODS LINE
- SILT FENCE
- CURB & GUTTER
- DRAINTILE
- DELINEATED WETLANDS
- RIPRAP
- HEAVY RIPRAP
- EROSION MAT

PROPOSED



MAPPING & UTILITIES

THE BASE MAPPING AND UTILITIES SHOWN ON THIS PLAN, ARE IN PART, COMPILED FROM INFORMATION FURNISHED BY OTHERS. CWEA, INC. WILL NOT BE RESPONSIBLE FOR ERRORS OR OMISSIONS WHICH HAVE BEEN INCORPORATED INTO THIS DOCUMENT AS A RESULT. ALL UTILITIES SHALL BE FIELD LOCATED PRIOR TO EXCAVATION.

HORIZONTAL & VERTICAL CONTROL

THE HORIZONTAL CONTROL FOR THIS SURVEY IS TIED TO THE MARATHON COUNTY COORDINATE SYSTEM.

THE VERTICAL CONTROL ORIGINATED FROM LHM SURVEYING COMPANY.

UTILITIES

WESTON UTILITIES AND
VILLAGE OF WESTON
5500 SCHOFIELD AVENUE
WESTON, WI. 54476
PHONE: (715) 359-6114
KEITH DONNER, P.E., PUBLIC
WORKS DIRECTOR

WISCONSIN PUBLIC SERVICE
P.O. BOX 1166
WAUSAU, WI. 54402-1166
PHONE: (715) 848-7364
BILL GRUHLKE
REGIONAL ENGINEER (NATURAL GAS)

WISCONSIN PUBLIC SERVICE
P.O. BOX 1166
WAUSAU, WI. 54402-1166
PHONE: (715) 848-7317
CLAY VIRCKS
REGIONAL ENGINEER (ELECTRIC)

VILLAGE OF KRONENWETTER
1582 KRONENWETTER DRIVE
MOSINEE, WI. 54455
PHONE: (715) 693-4200
LISA MYLES, PUBLIC WORKS DIRECTOR

VERIZON
521 4TH STREET
WAUSAU, WI. 54403
PHONE: (715) 847-1501
KEVIN SCHEDLBAUER

CHARTER COMMUNICATIONS
853 MCINTOSH STREET
WAUSAU, WI. 54403
PHONE: (715) 842-3910 EXT. 256
JEFF KULAF

AMERICAN TRANSMISSION COMPANY
N19 W23993 RIDGEVIEW PARKWAY WEST
WAUKESHA, WI 53187
ANDY EBERHARDT, REAL ESTATE
PHONE: (262) 506-6864

DIGGERS  HOTLINE

Toll Free (800) 242-8511
Milwaukee Area (414) 258-1181
Hearing Impaired TDD (800) 542-2289
www.DiggersHotline.com

REVISIONS:

DRAWN BY:
A.LEE

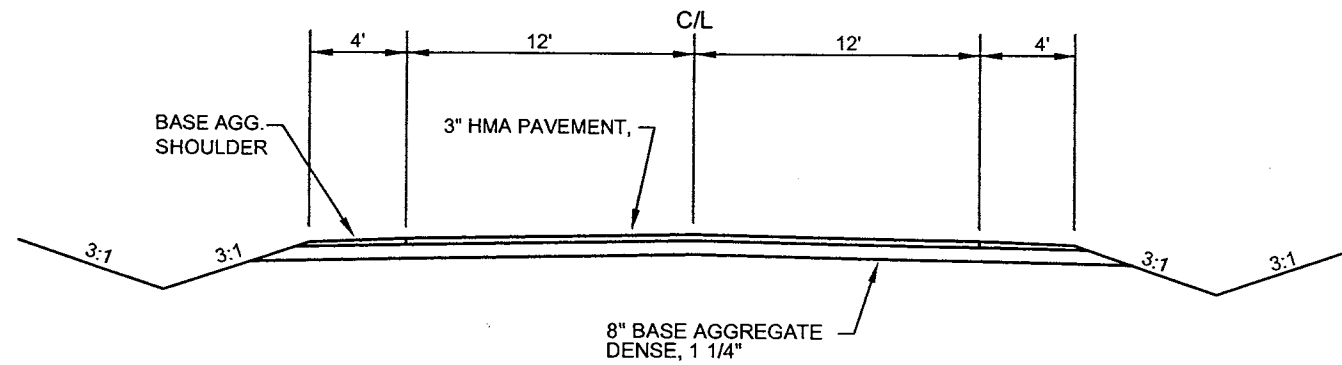
CHECKED BY:
D.G.

APPROVED BY:
H.Z.

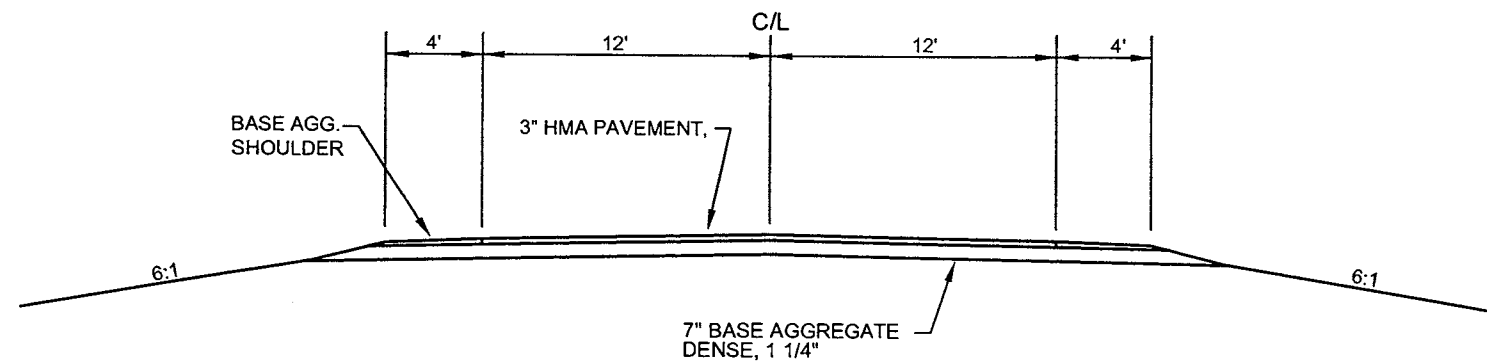
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FEB 2006

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2 OF 173

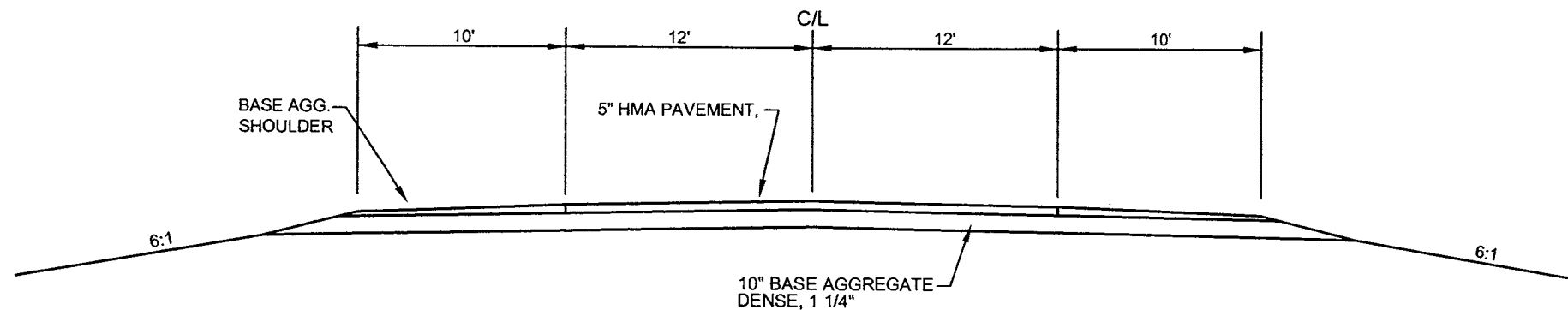
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EXISTING TYPICAL SECTION
HOWLAND AVENUE

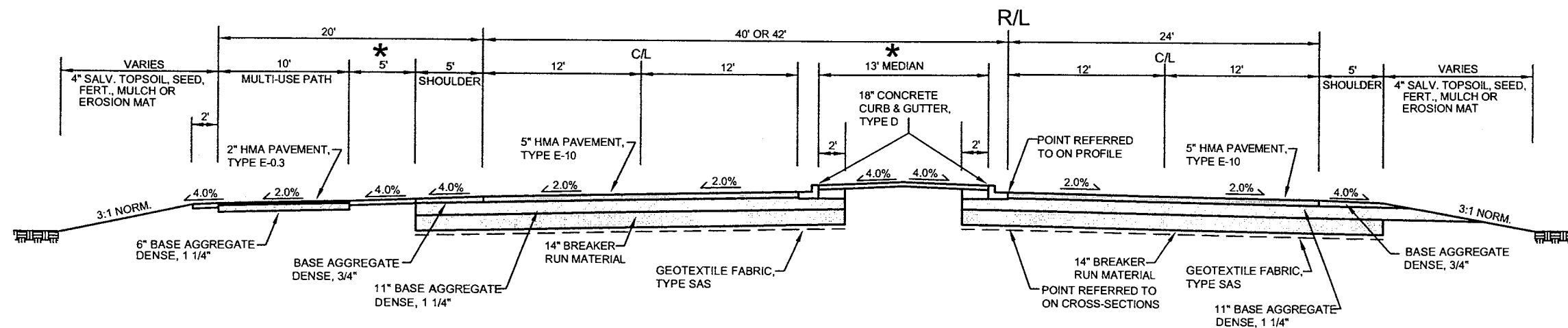


EXISTING TYPICAL SECTION
SHOREY AVENUE



EXISTING TYPICAL SECTION
C.T.H. X

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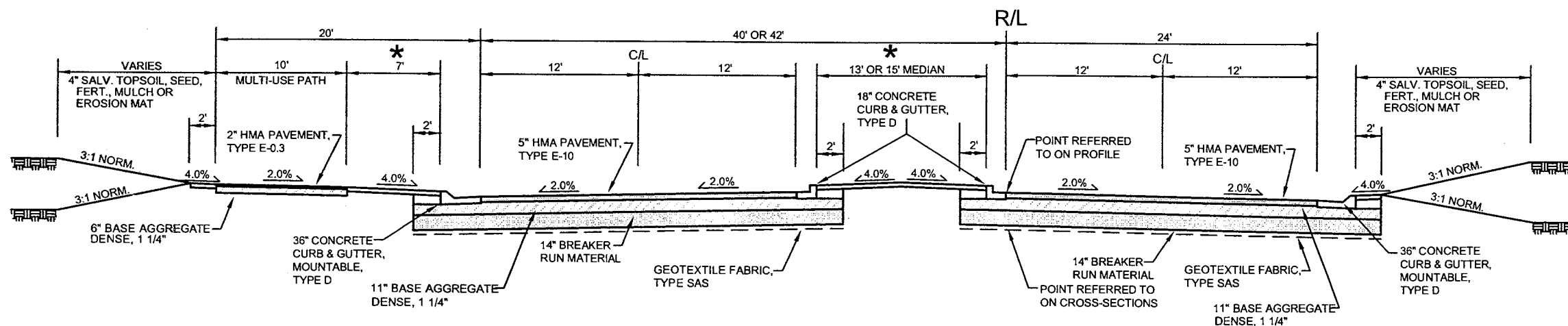


C.T.H. X TYPICAL SECTION - RURAL

STA. 131+00 - 184+74

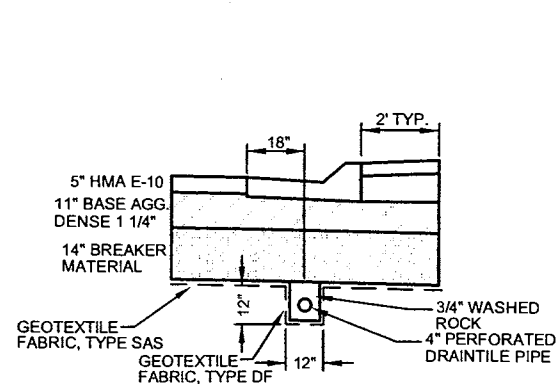
NOTE:

* = 4" SCREENED TOPSOIL, SEED, FERT., AND MULCH

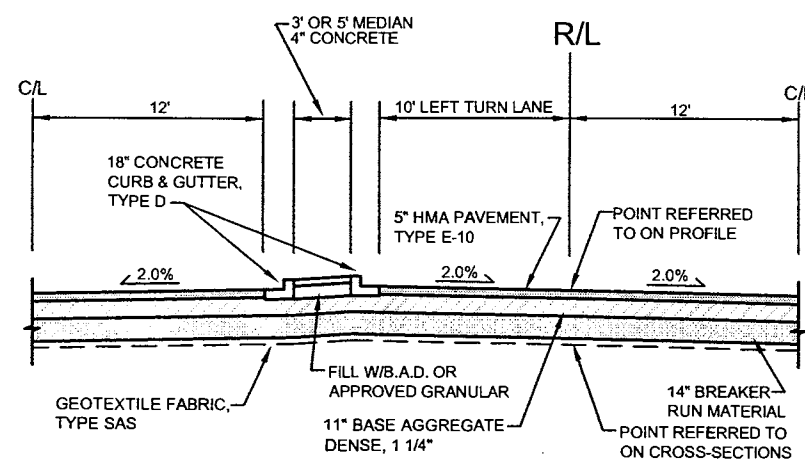


C.T.H. X TYPICAL SECTION - URBAN

STA. 111+50 - 131+00 (13' MEDIAN)
STA. 184+74 - 194+50 (15' MEDIAN)



DRAINTILE LOCATION DETAIL



C.T.H. X TYPICAL LEFT TURN LANE

STA. 111+50 - 131+00 (13' MEDIAN)
STA. 184+74 - 194+50 (15' MEDIAN)

PROJECT:

TYPICAL SECTIONS
2006 MARATHON COUNTY AND
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C.T.H. X / CAMP PHILLIPS ROAD
RECONSTRUCTION PROJECT
HOWLAND AVE. - TRANSPORT DR.

REVISIONS:

DRAWN BY:

A. LEE

CHECKED BY:

D.G.

APPROVED BY:

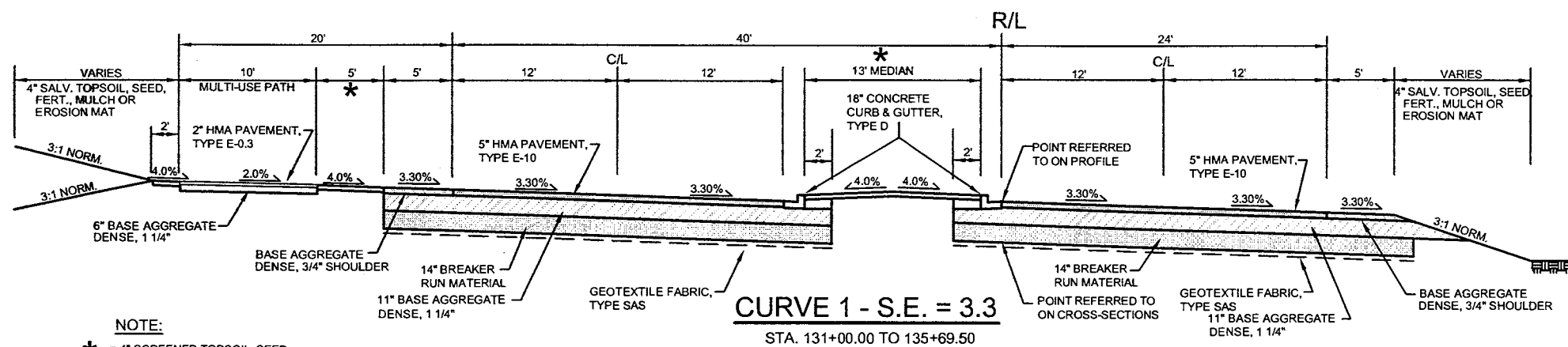
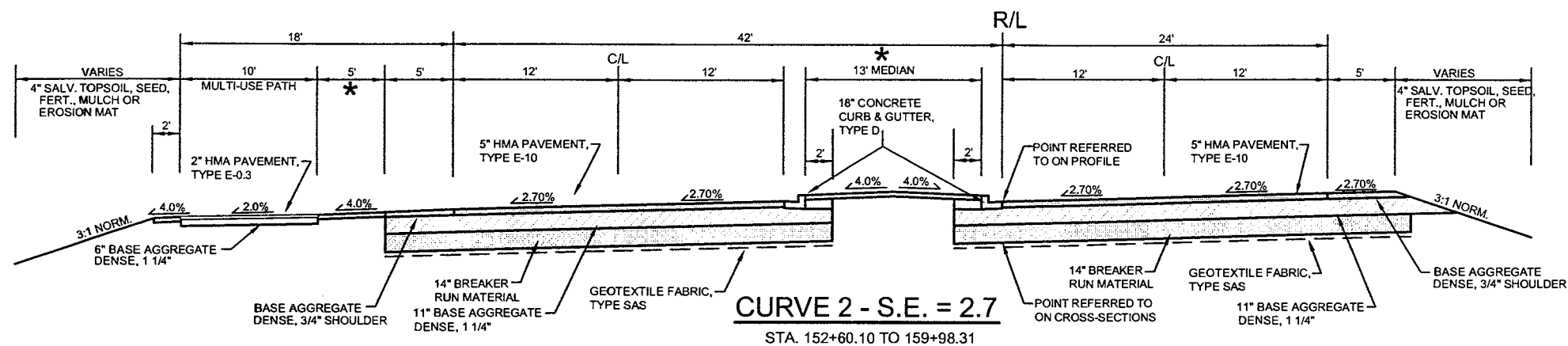
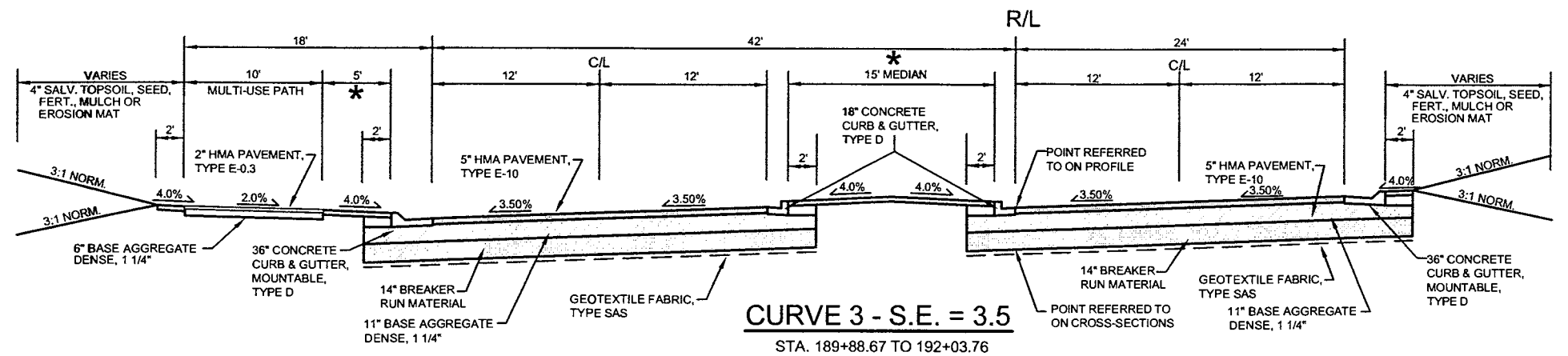
H.Z.

DATE:

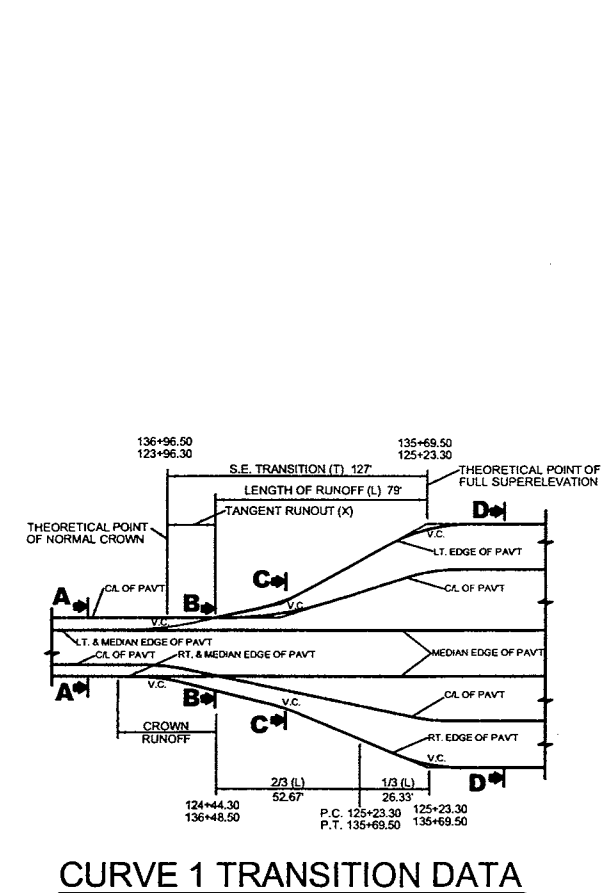
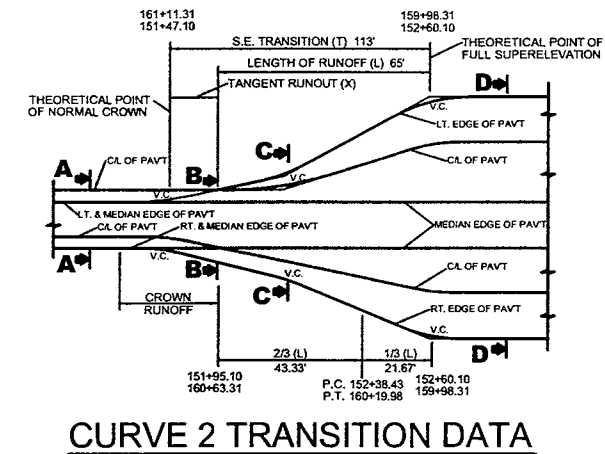
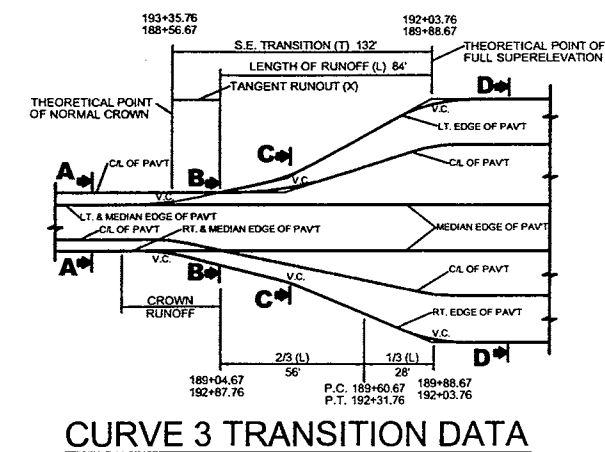
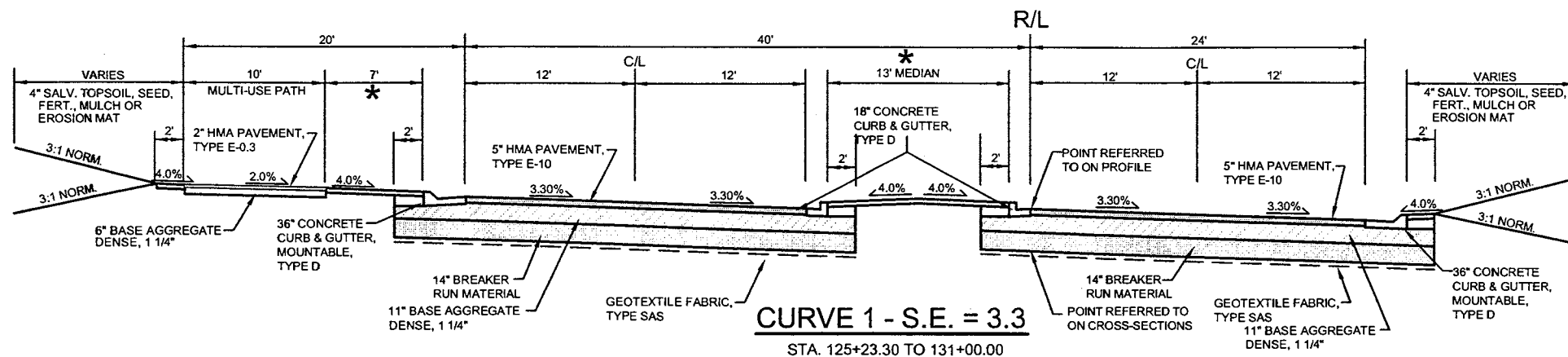
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SHEET:

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NOTE:
* = 4" SCREENED TOPSOIL, SEED, FERT., AND MULCH



CENTRAL WISCONSIN ENGINEERS & ARCHITECTS

5707 SCHOFIELD AVENUE
WESTON, WISCONSIN 54476

PHONE: (715) 359-9400
FAX: (715) 355-4199

general@cwengineers.com
http://www.cwengineers.com

PROJECT:

TYPICAL SECTIONS
2006 MARATHON COUNTY AND
VILLAGE OF WESTON
C.T.H. X / CAMP PHILLIPS ROAD
RECONSTRUCTION PROJECT
HOWLAND AVE. - TRANSPORT DR.

REVISIONS:

DRAWN BY:
ALEE

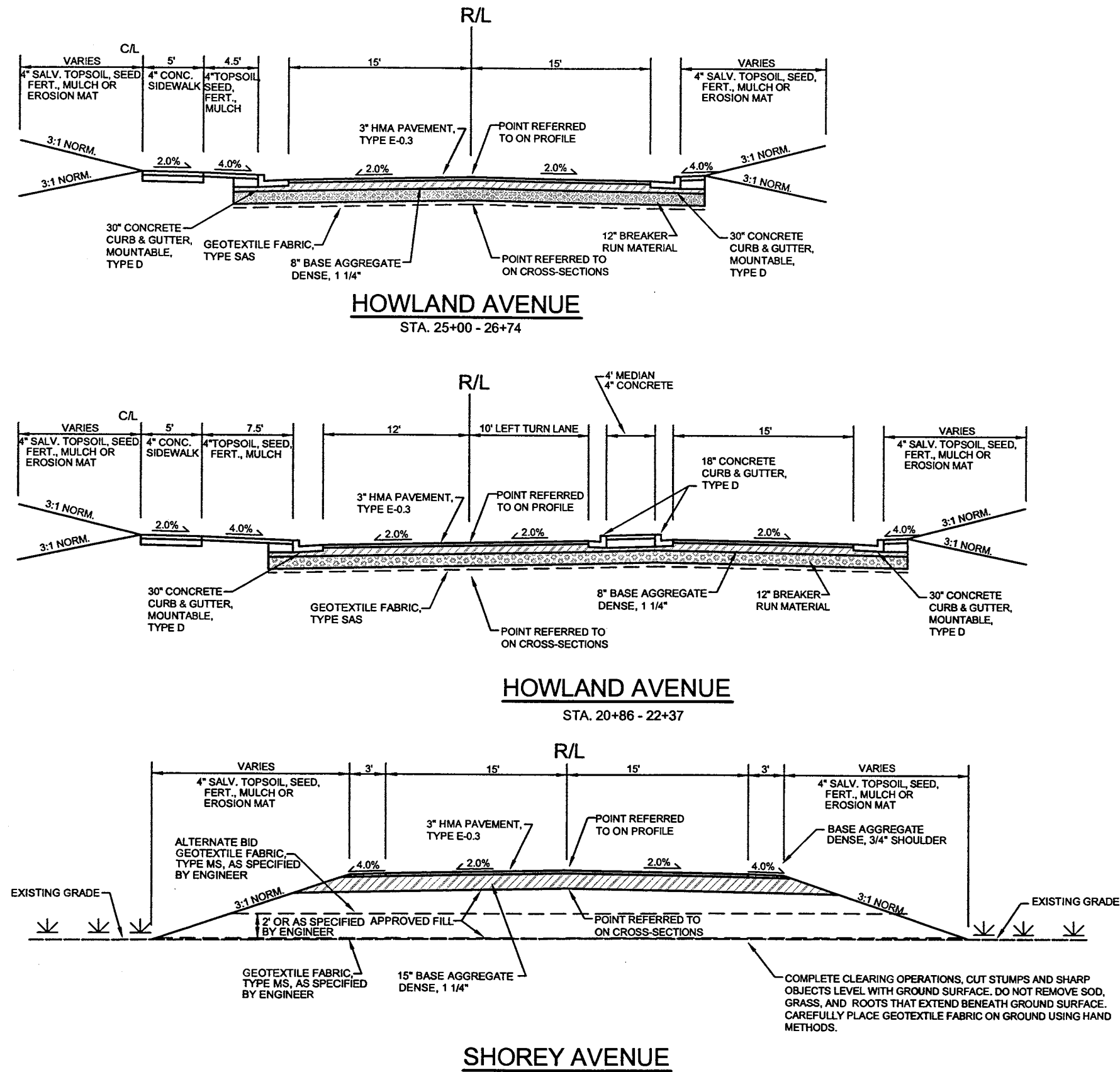
CHECKED BY:
D.G.

APPROVED BY:
H.Z.

DATE:
FEB 2006

SHEET:
5 OF 173

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PROJECT:

TYPICAL SECTIONS
2006 MARATHON COUNTY AND
VILLAGE OF WESTON
C.T.H. X / CAMP PHILLIPS ROAD
RECONSTRUCTION PROJECT
HOWLAND AVE. - TRANSPORT DR.

REVISIONS:

DRAWN BY:

A.LEE

CHECKED BY:

D.G.

APPROVED BY:

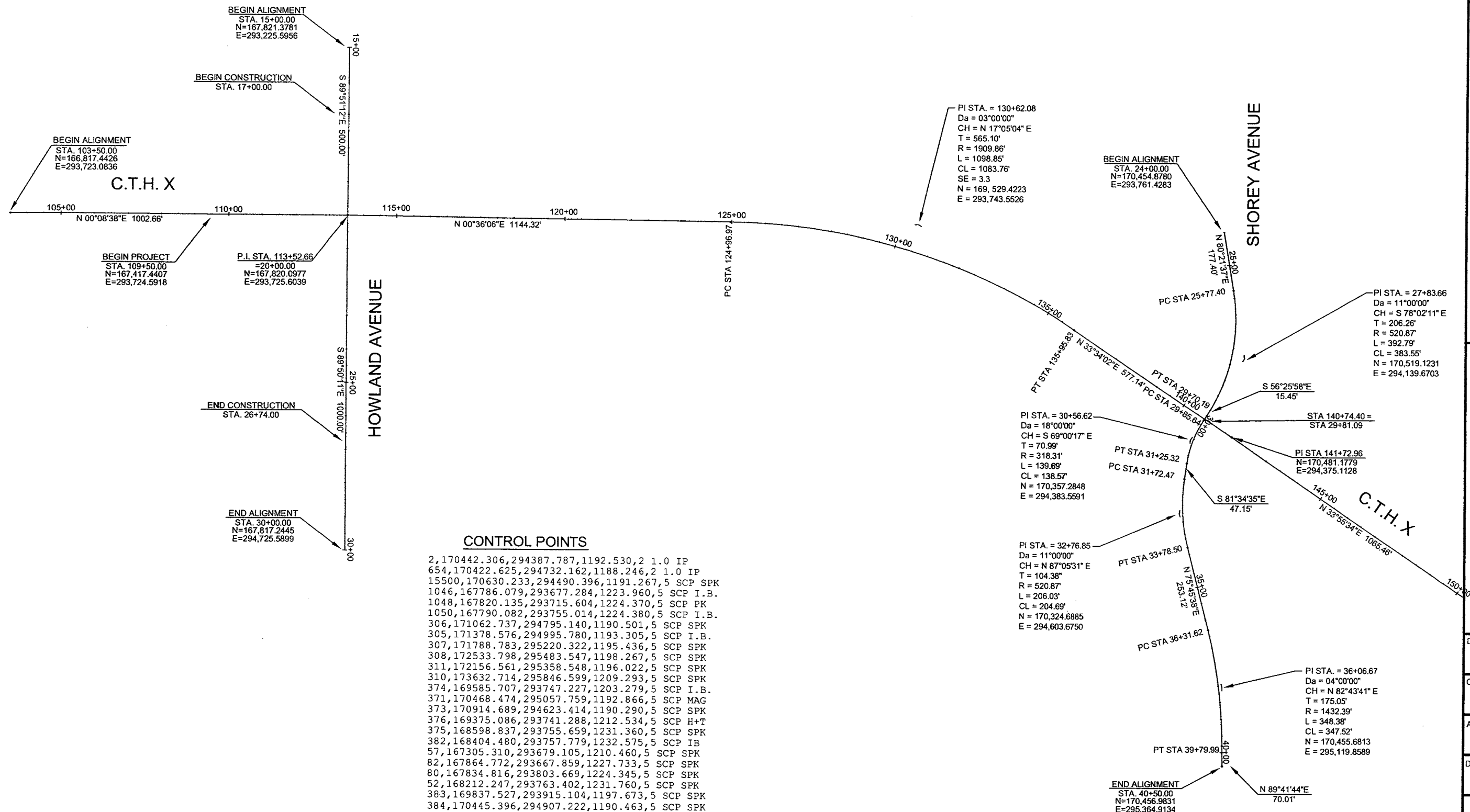
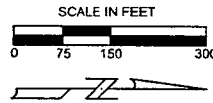
H.Z.

DATE:

FEB 2006

SHEET:

6 OF 173



5707 SCHOFIELD AVENUE
WESTON, WISCONSIN
54476

PHONE: (715) 359-9400
FAX: (715) 355-4199

general@cwengineers.com
http://www.cwengineers.com

PROJECT:

ALIGNMENT LAYOUT
2006 MARATHON COUNTY AND
VILLAGE OF WESTON
C.T.H. X / CAMP PHILLIPS ROAD
RECONSTRUCTION PROJECT
HOWLAND AVE. - TRANSPORT DR.

REVISIONS:

DRAWN BY:

A.LEE

CHECKED BY:

D.G.

APPROVED BY:

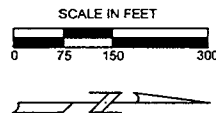
H.Z.

DATE:

FEB 2006

SHEET:

7 OF 173



CONTROL POINTS

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654,170422.625,294732.162,1188.246,2 1.0 IP
15500,170630.233,294490.396,1191.267,5 SCP SPK
1046,167786.079,293677.284,1223.960,5 SCP I.B.
1048,167820.135,293715.604,1224.370,5 SCP PK
1050,167790.082,293755.014,1224.380,5 SCP I.B.
306,171062.737,294795.140,1190.501,5 SCP SPK
305,171378.576,294995.780,1193.305,5 SCP I.B.
307,171788.783,295220.322,1195.436,5 SCP SPK
308,172533.798,295483.547,1198.267,5 SCP SPK
311,172156.561,295358.548,1196.022,5 SCP SPK
310,173632.714,295846.599,1209.293,5 SCP SPK
374,169585.707,293747.227,1203.279,5 SCP I.B.
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373,170914.689,294623.414,1190.290,5 SCP SPK
376,169375.086,293741.288,1212.534,5 SCP H+T
375,168598.837,293755.659,1231.360,5 SCP SPK
382,168404.480,293757.779,1232.575,5 SCP IB
57,167305.310,293679.105,1210.460,5 SCP SPK
82,167864.772,293667.859,1227.733,5 SCP SPK
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5707 SCHOFIELD AVENUE
WESTON, WISCONSIN
54476

PHONE: (715) 359-9400
FAX: (715) 355-4199

general@cwengineers.com
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PROJECT:

ALIGNMENT LAYOUT
2006 MARATHON COUNTY AND
VILLAGE OF WESTON
C.T.H. X / CAMP PHILLIPS ROAD
RECONSTRUCTION PROJECT
HOWLAND AVE. - TRANSPORT DR.

REVISIONS:

DRAWN BY:

A.LEE

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APPROVED BY:

H.Z.

DATE:

FEB 2006

SHEET:

8 OF 173

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C.T.H. X

N 33°55'34"E 1065.46'

PC STA 152+38.43

155+00

160+00

PT STA 160+19.98

165+00

170+00

N 18°20'58"E 2280.02'

175+00

180+00

C.T.H. X

STA 185+61.82
N=174,477.841
E=296,111.624

MEADOW ROCK
DRIVE

STA 190+64.47
N=174,956.887
E=296,263.669

PI STA = 190+96.53
Da = 03°30'00"
CH = S 13°14'24" W
T = 135.86'
R = 1637.02'
L = 271.09'
CL = 270.78'
SE = 3.5
N = 174,986.4274
E = 296,276.7174

END PROJECT
STA 194+45.86
N=175,332.5370
E=296,328.4177

PI STA 183+00.00
N=174,228.8171
E=296,030.7874

N=174,446.966
E=296,206.738

YAEGER AUTO
SALVAGE

N=174,921.073
E=296,519.169

PC STA 189+80.67

TRANSPORT WAY

PT STA 192+31.76

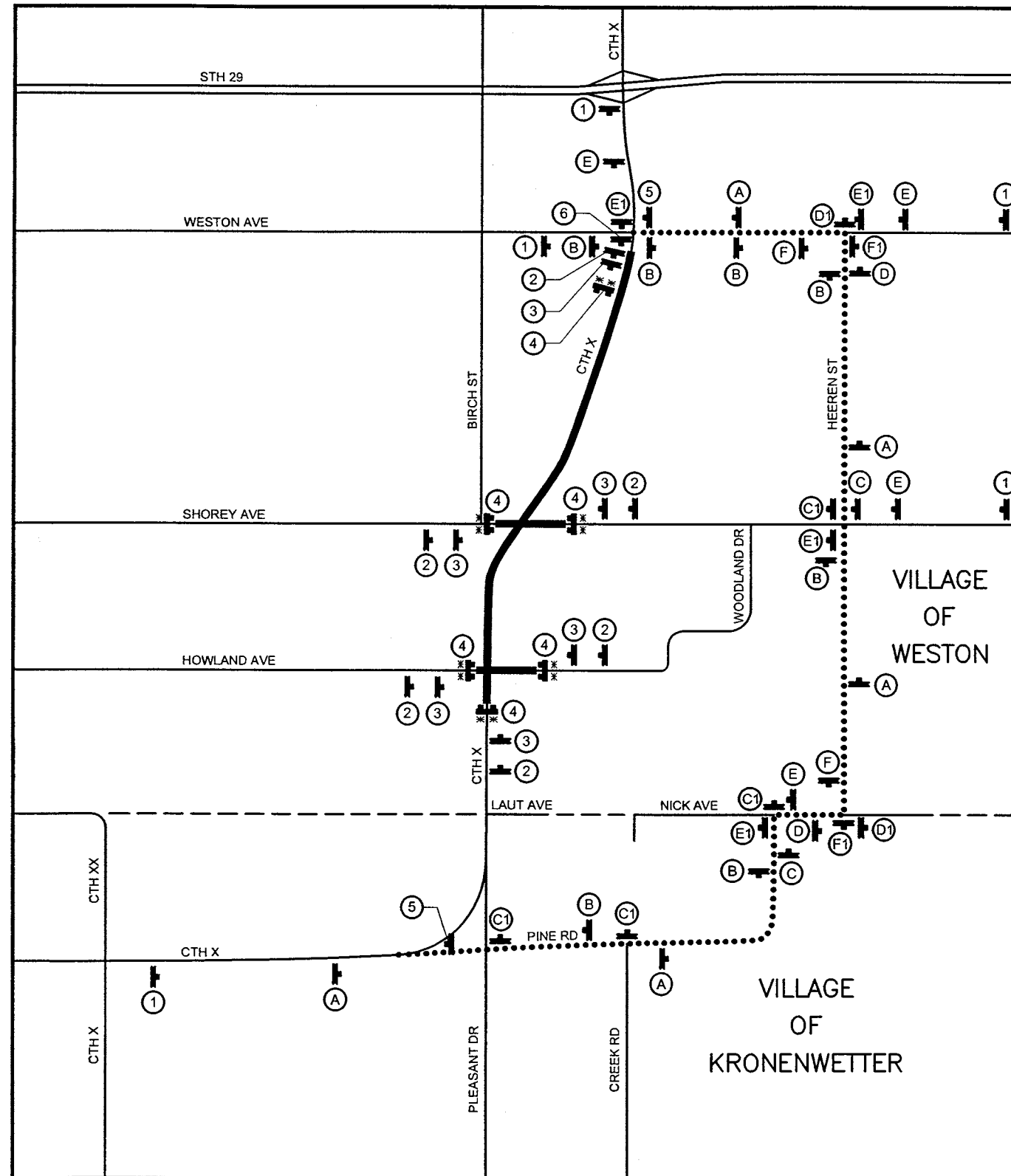
N 08°29'45"E 214.09'

P:\DRAFT\32800300 CTH X DEC 2005\CAD\DETOUR MAP.dwg, Layout 1, 2/20/2006 1:29:10 PM

SIGN DESIGNATIONS & SIZES

DETOUR M4-8 24" X 12"	 MOS-1L 21" x 21"
SOUTH M3-3 24" X 12"	 MOS-1R 21" x 21"
NORTH M3-1 24" X 12"	 MO6-1 21" x 21"
 MO6-1 21" x 21"	 MO6-1 21" x 21"

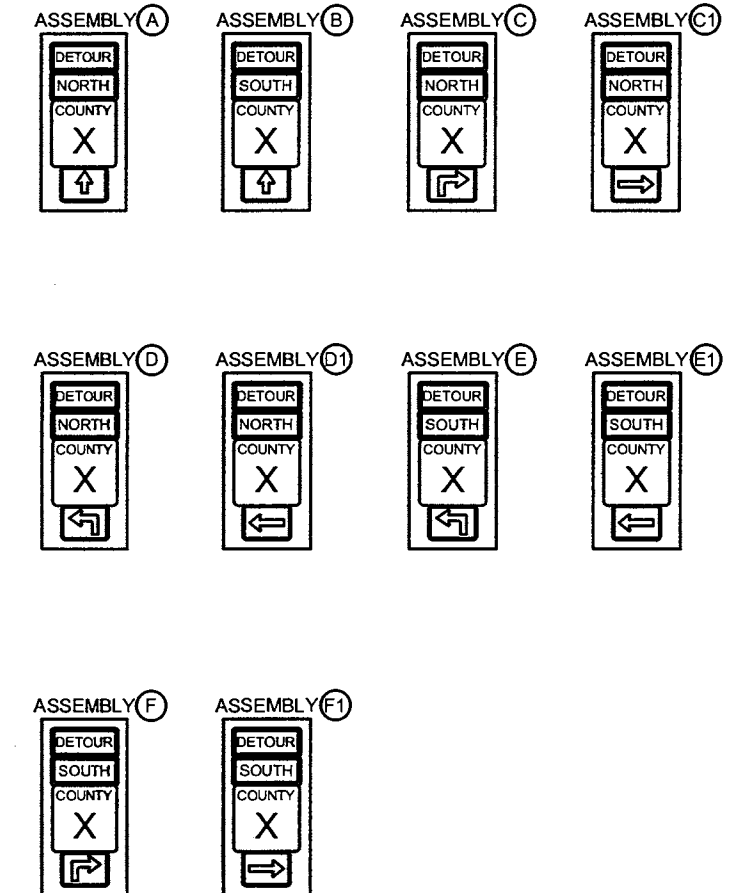
-  DETOUR AHEAD
WO20-2
36" X 36"
-  ROAD CLOSED AHEAD
WO20-3
36" X 36"
-  ROAD CLOSED 500FT
WO20-3a
36" X 36"
-  TYPE III BARRICADE
R11-2
-  END DETOUR
M4-8A
18" X 24"
-  ROAD CLOSED TO THRU TRAFFIC
R11-4
60" X 30"



MAP KEY

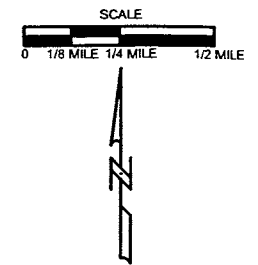
- DETOUR ROUTE
WORK AREA ———
SIGN PROPOSED 
TYPE III BARRICADES W/
WARNING LIGHTS, TYPE A 

SIGN ASSEMBLIES



GENERAL NOTES

- DETAILS OF TRAFFIC CONTROL DEVICES AND THEIR LOCATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. THE PLANS, SPECIFICATIONS, CONTRACT AND APPLICABLE STANDARD DETAIL DRAWINGS.
- EXACT LOCATIONS TO BE DETERMINED BY THE ENGINEER IN THE FIELD.
- ALL SIGNS ARE 48" x 48" UNLESS OTHERWISE NOTED.
- "WO" IS THE SAME AS "W" EXCEPT THE BACKGROUND IS ORANGE.
- SIGN SPACING IS 500 FEET UNLESS OTHERWISE NOTED.



5707 SCHOFIELD AVENUE
WESTON, WISCONSIN
54476

PHONE: (715) 359-9400
FAX: (715) 355-4199

general@cwengineers.com
http://www.cwengineers.com

PROJECT:

DETOUR PLAN
2006 MARATHON COUNTY AND
VILLAGE OF WESTON
C.T.H. X / CAMP PHILLIPS ROAD
RECONSTRUCTION PROJECT
HOWLAND AVE. - TRANSPORT DR.

REVISIONS:

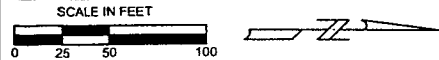
DRAWN BY:
T.P.B.

CHECKED BY:
J.D.

APPROVED BY:
H.Z.

DATE:
FEB 2006

SHEET:
9 OF 173



NOTE:
INLET PROTECTION TYPE A & TYPE C REQUIRED
AT ALL INLET LOCATION UNLESS NOTED.

LEGEND

- DRAINAGE ARROW
- SILT FENCE
- INLET PROTECTION
- SLOPE INTERCEPT
- EROSION MAT
CLASS I, TYPE A
- RIP RAP

RIPRAP W/
GEO. FABRIC
TYPE R

RIPRAP W/
GEO. FABRIC
TYPE R

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WESTON, WISCONSIN
54476

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http://www.cwengineers.com

PROJECT:

EROSION CONTROL PLAN
2006 MARATHON COUNTY AND
VILLAGE OF WESTON
C.T.H. X / CAMP PHILLIPS ROAD
RECONSTRUCTION PROJECT
HOWLAND AVE. - TRANSPORT DR.

REVISIONS:

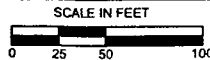
DRAWN BY:
A.LEE

CHECKED BY:
D.G.

APPROVED BY:
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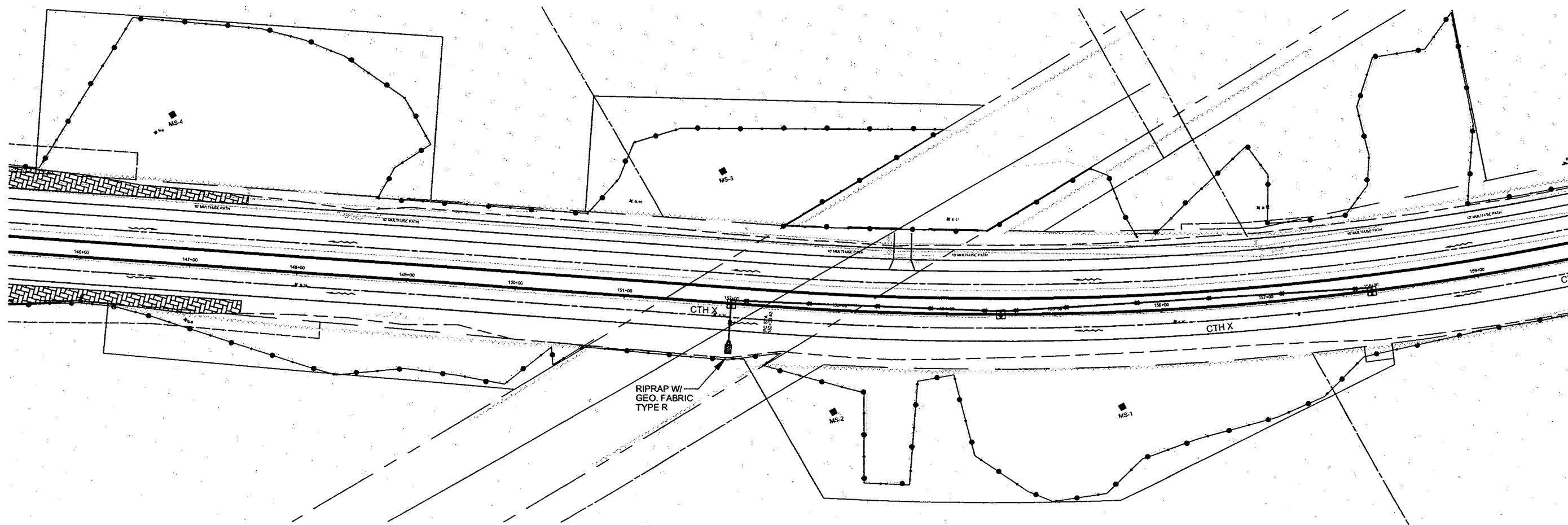
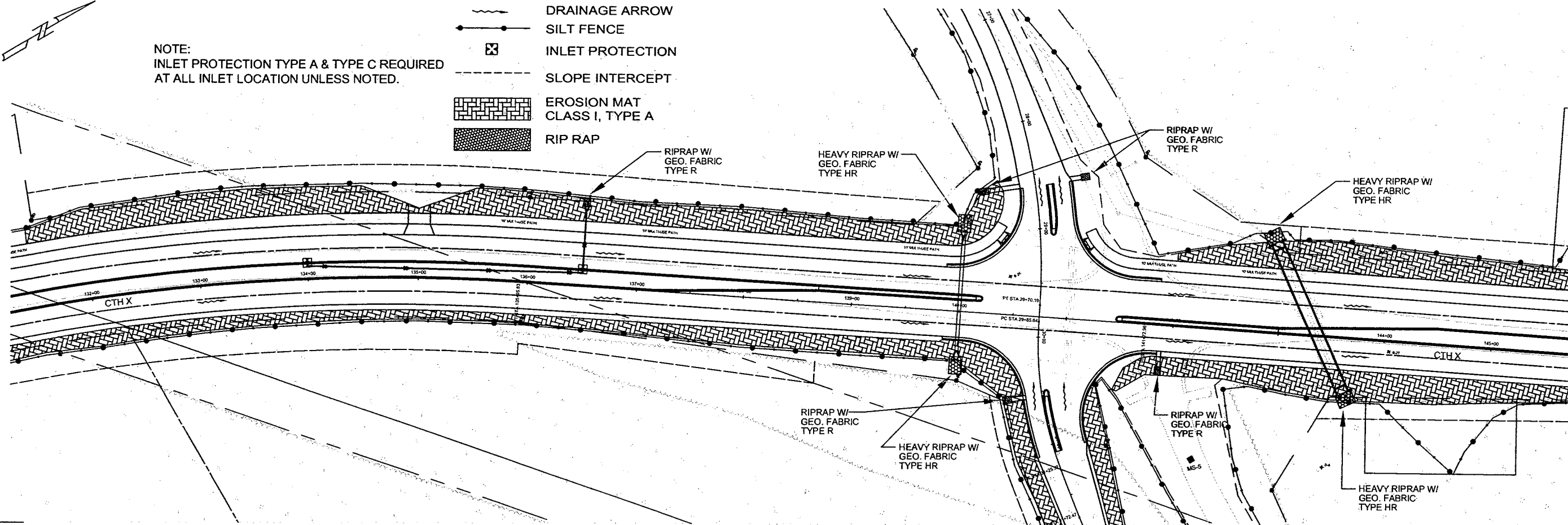
SHEET:
10 OF 173



NOTE:
INLET PROTECTION TYPE A & TYPE C REQUIRED
AT ALL INLET LOCATION UNLESS NOTED.

LEGEND

- DRAINAGE ARROW
- SILT FENCE
- INLET PROTECTION
- SLOPE INTERCEPT
- EROSION MAT CLASS I, TYPE A
- RIP RAP



5707 SCHOFIELD AVENUE
WESTON, WISCONSIN
54476

PHONE: (715) 359-9400
FAX: (715) 355-4199

general@cwengineers.com
http://www.cwengineers.com

PROJECT:

EROSION CONTROL PLAN
2006 MARATHON COUNTY AND
VILLAGE OF WESTON
C.T.H. X / CAMP PHILLIPS ROAD
RECONSTRUCTION PROJECT
HOWLAND AVE. - TRANSPORT DR.

REVISIONS:

DRAWN BY:

A.LEE

CHECKED BY:

D.G.

APPROVED BY:

H.Z.

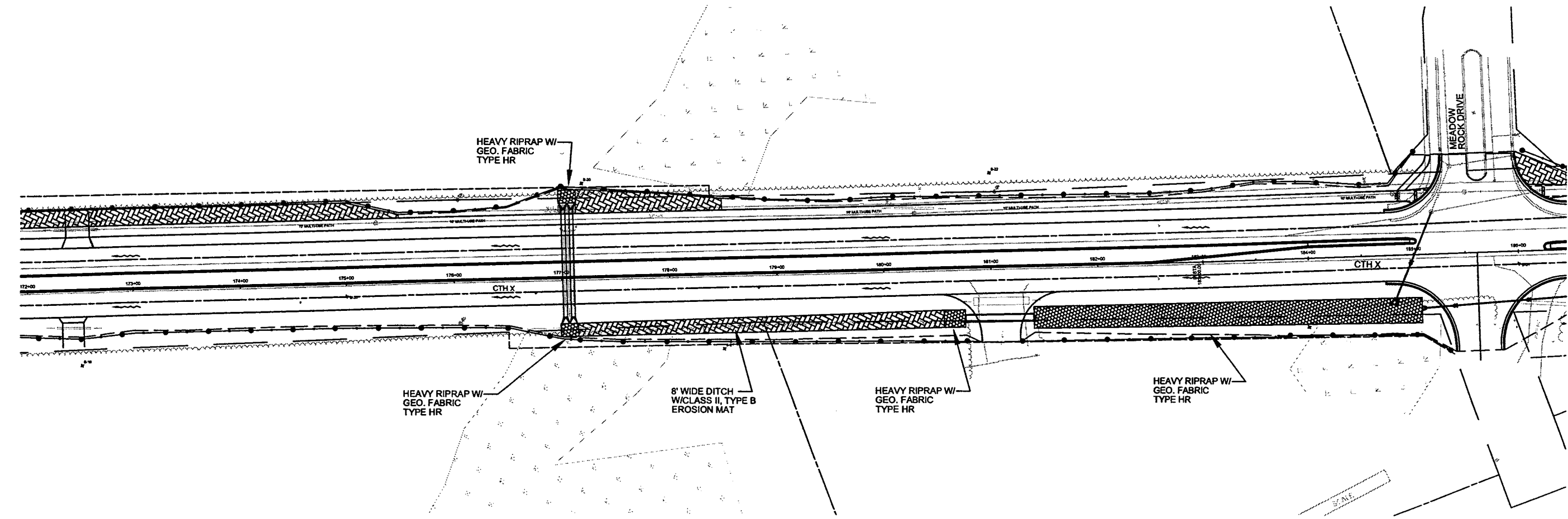
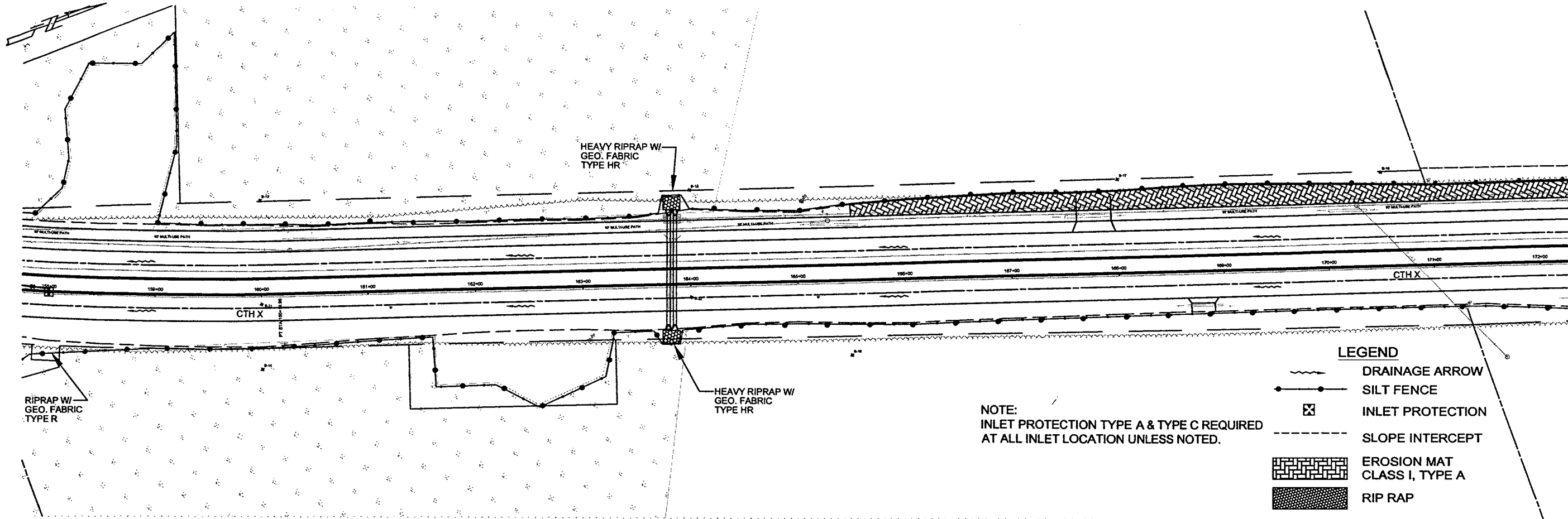
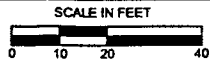
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11 OF 173

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WEA
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WISCONSIN
ENGINEERS &
ARCHITECTS

5707 SCHOFIELD AVENUE
WESTON, WISCONSIN
54476

PHONE: (715) 359-8400
FAX: (715) 355-4199

general@cwengineers.com
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REVISIONS:

ADDED SILT FENCE 166+00 TO 177+00 LT
179+00 TO 186+00 LT, 179+00 TO 184+00 RT
A.LEE 3/27/2006

DRAWN BY:
ALEE

CHECKED BY:
D.G.

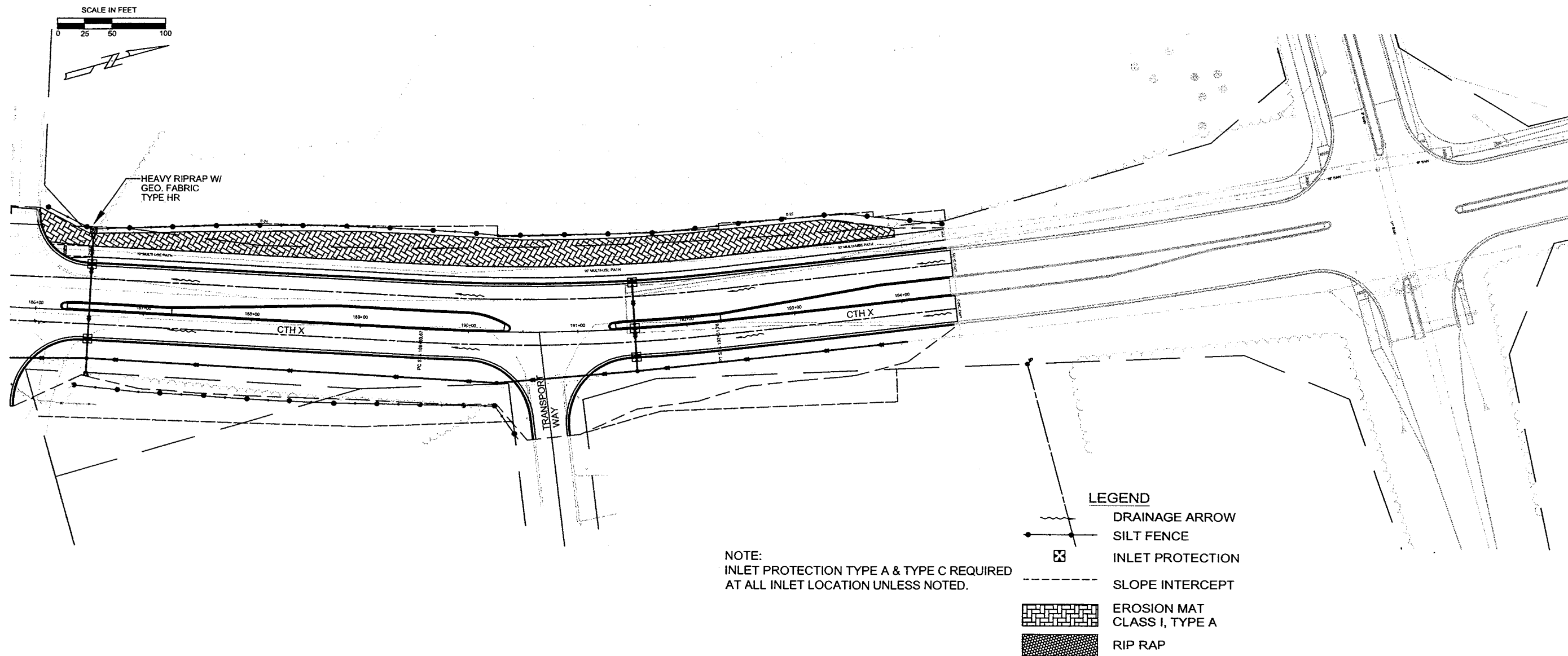
APPROVED BY:
H.Z.

DATE:
FEB 2006

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12 OF 173

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5707 SCHOFIELD AVENUE
WESTON, WISCONSIN
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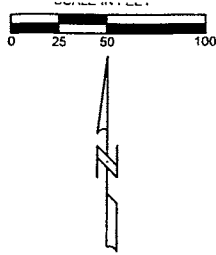
APPROVED BY:

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DATE:

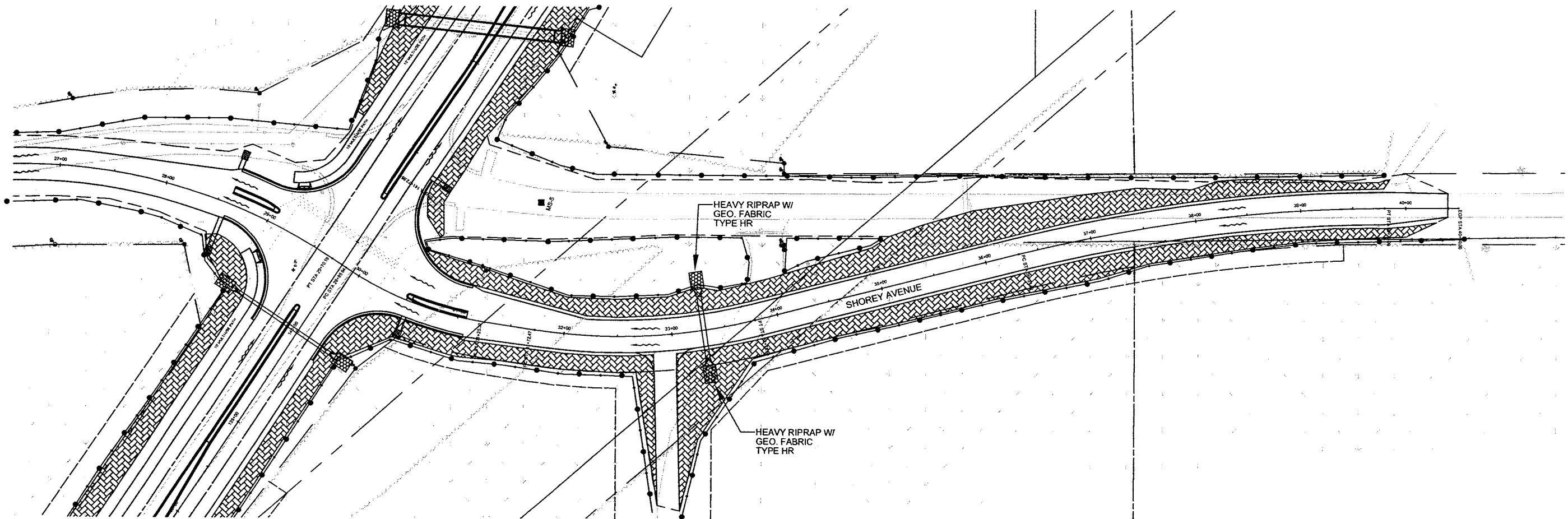
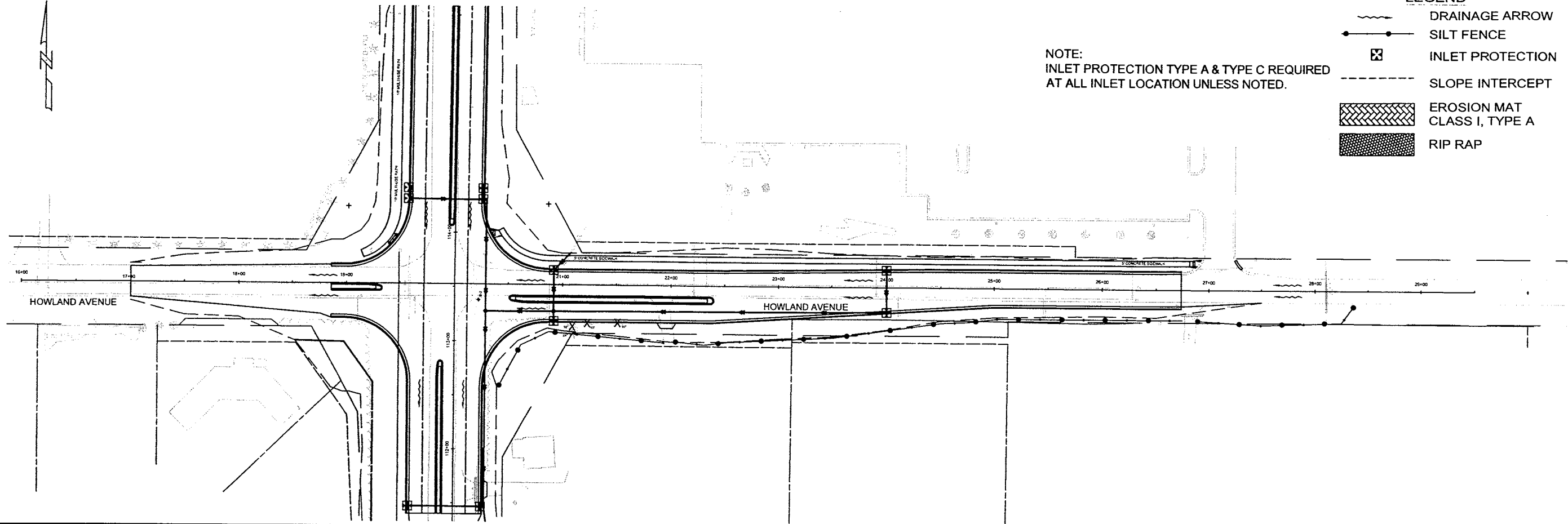
FEB 2006

SHEET:
13 OF 173



NOTE:
INLET PROTECTION TYPE A & TYPE C REQUIRED
AT ALL INLET LOCATION UNLESS NOTED.

- LEGEND**
- DRAINAGE ARROW
 - SILT FENCE
 - INLET PROTECTION
 - SLOPE INTERCEPT
 - EROSION MAT CLASS I, TYPE A
 - RIP RAP



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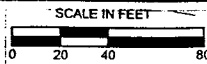
H.Z.

DATE:

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SHEET:

14 OF 173



NOTES:
WETLANDS TO BE CREATED BY EXCAVATING 6" DEEPER
THAN THE PROPOSED CONTOUR LINES AND SPOT
ELEVATIONS. THEN FILL WITH 6" OF HYDRIC SOILS.
SEED, FERTILIZE AND MULCH AS REQ'D.

JAMES & ROBERTA
McCABE

SILT
FENCE

SILT
FENCE

MS-4

WETLAND
MITIGATION AREA

WETLAND
MITIGATION AREA

10' MULTI-USE PATH

10' MULTI-USE PATH

CTH X

WETLAND
MITIGATION AREA

WETLAND
MITIGATION AREA

WETLAND
MITIGATION AREA

STATE OF WISCONSIN
DEPT. OF TRANSPORTATION

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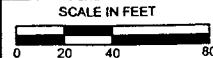
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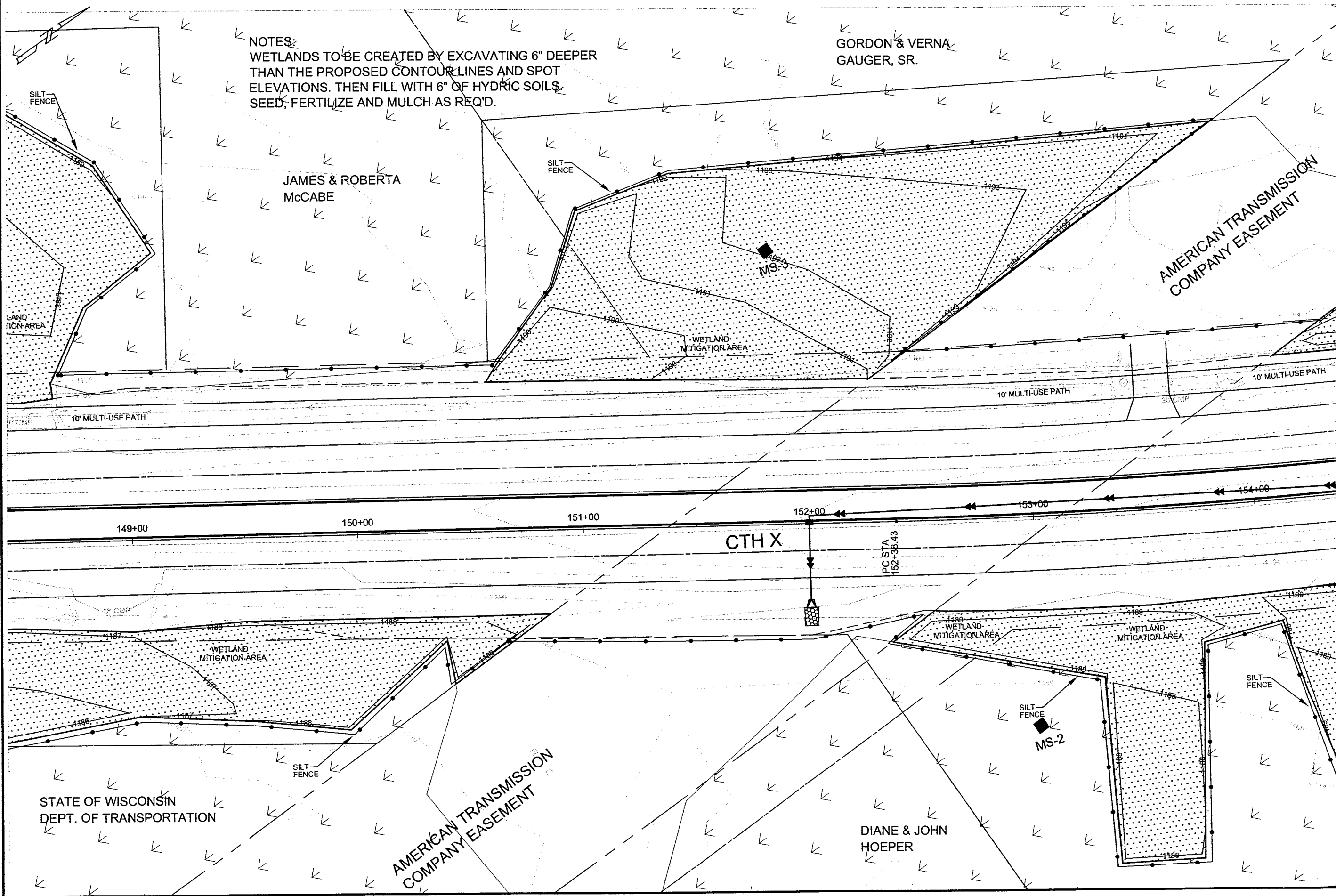
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15 OF 173

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NOTES:
WETLANDS TO BE CREATED BY EXCAVATING 6" DEEPER THAN THE PROPOSED CONTOUR LINES AND SPOT ELEVATIONS. THEN FILL WITH 6" OF HYDRIC SOILS, SEED, FERTILIZE AND MULCH AS REQ'D.

GORDON & VERA
GAUGER, SR.

JAMES & ROBERTA
McCABE

AMERICAN TRANSMISSION
COMPANY EASEMENT

CTH X

PC STA
152+38.43

DIANE & JOHN
HOEPER

STATE OF WISCONSIN
DEPT. OF TRANSPORTATION

AMERICAN TRANSMISSION
COMPANY EASEMENT

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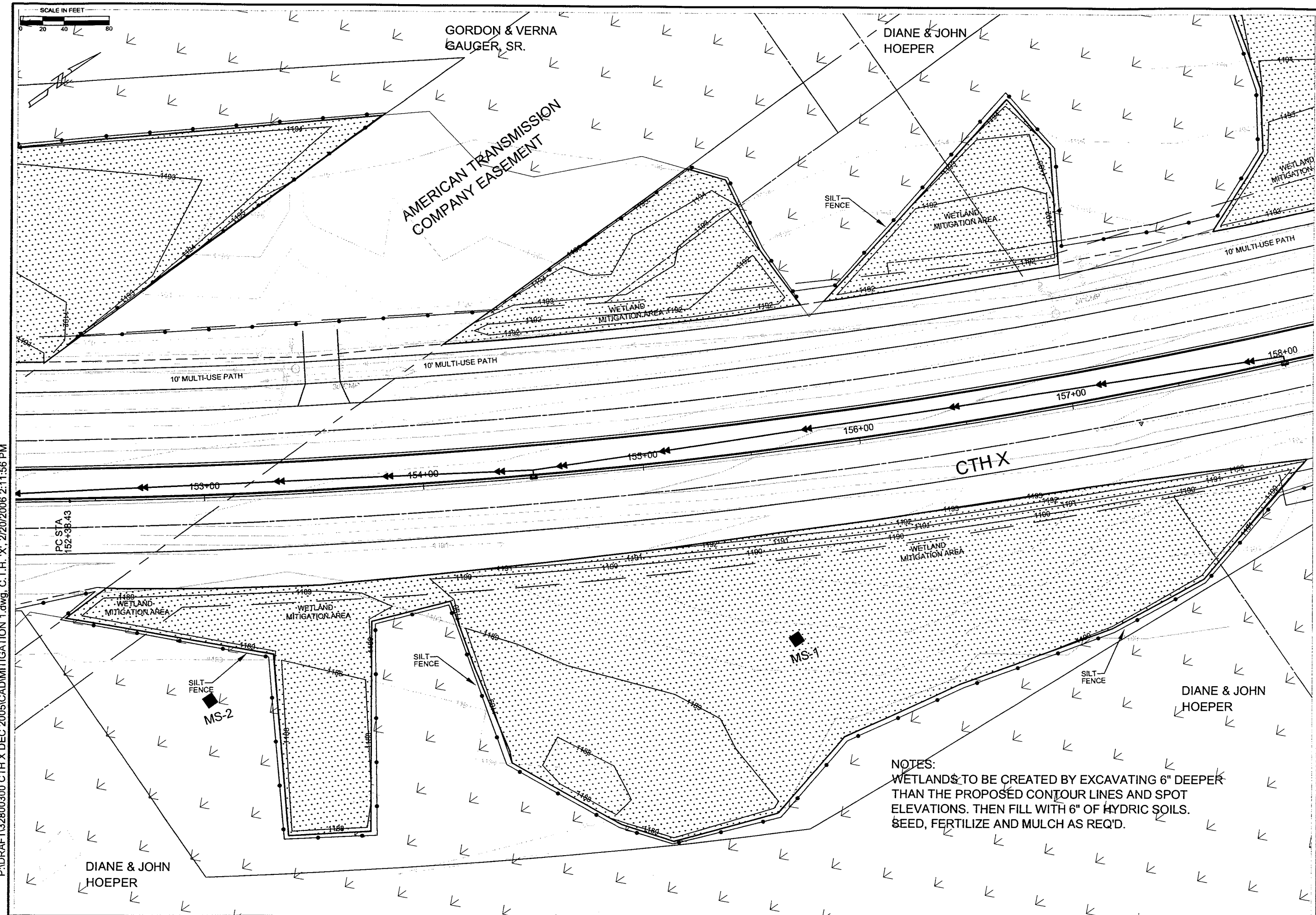
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WESTON, WISCONSIN
54476

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REVISIONS:

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A. LEE

CHECKED BY:

P.A.

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H.Z.

DATE:

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SHEET:

17 OF 173



AMERICAN TRANSMISSION
COMPANY EASEMENT

NOTES:
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SEED, FERTILIZE AND MULCH AS REQ'D.

DIANE & JOHN
HOEPER

SILT
FENCE

10' MULTI-USE PATH

163+00

162+00

161+00

160+00

159+00

158+00

CTH X

PT STA 160+00
85.63

SILT
FENCE

WETLAND
MITIGATION AREA

DIANE & JOHN
HOEPER

DIANE & JOHN
HOEPER

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WESTON, WISCONSIN
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REVISIONS:

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APPROVED BY:

H.Z.

DATE:

FEB 2006

SHEET:

18 OF 173

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0 20 40 60

AMERICAN TRANSMISSION
COMPANY EASEMENT

10' MULTI-USE PATH

SILT
FENCE

NOTES:
WETLANDS TO BE CREATED BY EXCAVATING 6" DEEPER
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SEED, FERTILIZE AND MULCH AS REQ'D.

STATE OF WISCONSIN
DEPT. OF TRANSPORTATION

WETLAND
MITIGATION AREA

MS-5

X 1488.8

X 1488.6

X 1488.4

X 1488.2

PT STA 29+70.19
PC STA 29+85.84
30+00

PT STA 31+25.32

PC STA 31+72.47

32+00

33+00

PT STA 33+18.50

34+00

35+00

SHOREY AVENUE

WILLIAM & MARY LEWIS
LEWIS REVOCABLE TRUST

WILLIAM & MARY LEWIS
LEWIS REVOCABLE TRUST

5707 SCHOFIELD AVENUE
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A.LEE

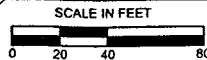
CHECKED BY:
P.A.

APPROVED BY:
H.Z.

DATE:
FEB 2006

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19 OF 173

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AMERICAN TRANSMISSION
COMPANY EASEMENT

STATE OF WISCONSIN
DEPT. OF TRANSPORTATION

NOTES:
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SEED, FERTILIZE AND MULCH AS REQ'D.

DIANE & JOHN
HOEPER

SILT
FENCE

37+00

38+00

39+00

40+00

PT STA 39+78.89

EOP STA 40+80.00

PC STA 36+31.62

36+00

AVENUE

WILLIAM & MARY LEWIS
LEWIS REVOCABLE TRUST

TERRENCE L. HINTZ

5707 SCHOFIELD AVENUE
WESTON, WISCONSIN
54476
PHONE: (715) 359-9400
FAX: (715) 355-4199
general@cwengineers.com
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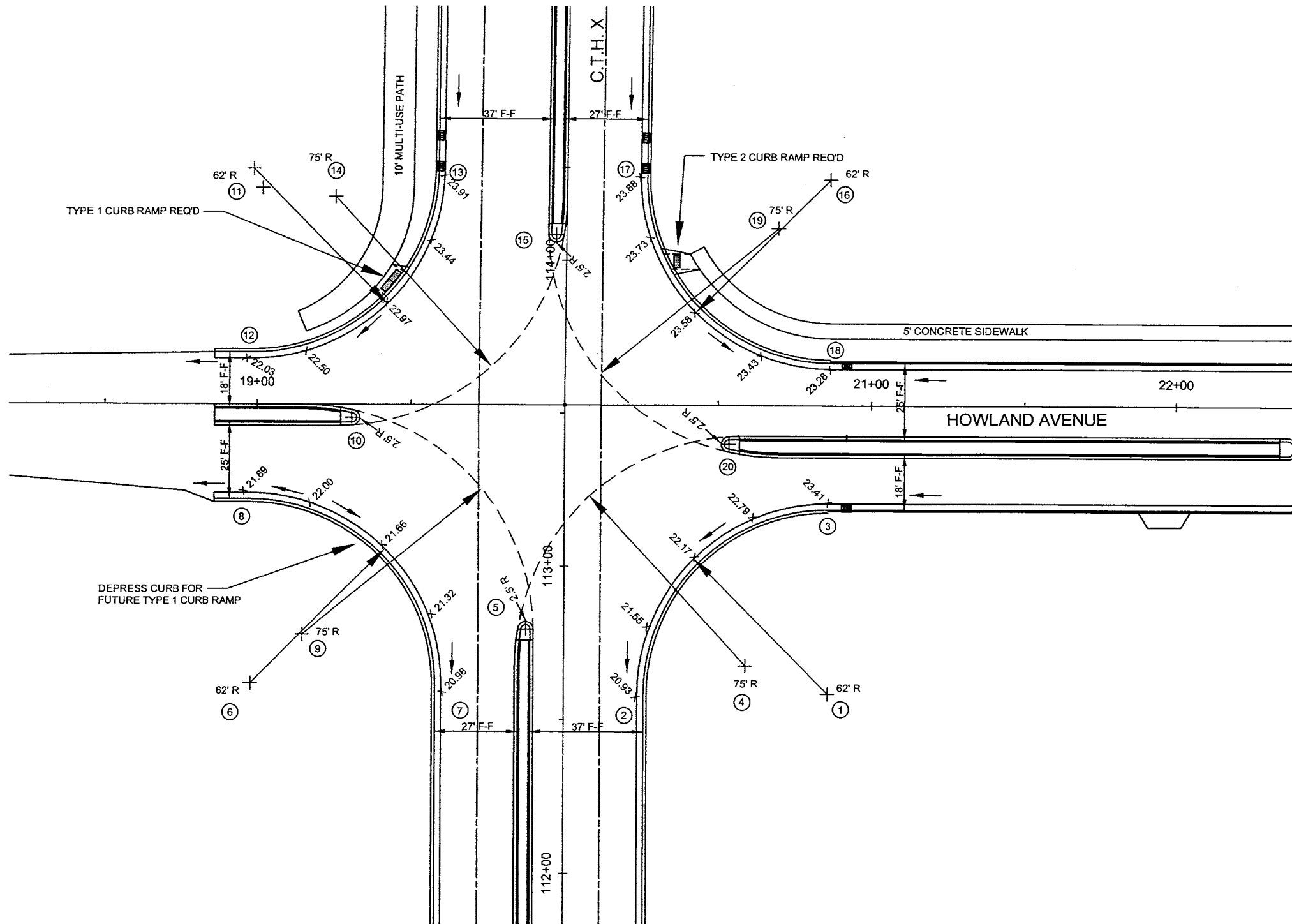
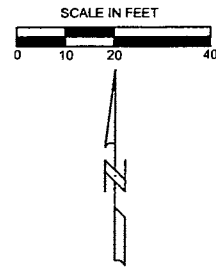
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20 OF 173

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POINT	STATION	OFFSET	NORTHING	EASTING	FLAG ELEVATION
1	112+58.629	86.00'RT	167725.853	293811.367	
2	112+58.629	24.00'RT	167726.008	293749.368	1220.93
3	113+20.629	86.02'RT	167787.852	293811.544	1223.41
4	112+67.638	58.98'RT	167734.930	293784.369	
5	112+79.491	-12.55'LT	167746.962	293712.875	
6	112+61.671	-102.02'LT	167729.367	293623.356	
7	112+61.681	-40.02'LT	167729.222	293685.356	1220.98
8	113+23.671	-102.02'LT	167791.367	293623.514	1221.89
9	112+77.670	-85.00'LT	167745.323	293640.416	
10	113+48.376	-68.99'LT	167815.989	293656.600	
11	114+28.858	-102.00'LT	167897.365	293624.410	
12	113+66.860	-101.51'LT	167835.365	293624.252	1222.03
13	114+28.858	-40.00'LT	167896.714	293686.406	1223.91
14	114+20.073	-75.00'LT	167888.296	293651.316	
15	114+08.397	-3.45'LT	167875.870	293722.743	
16	114+27.318	86.00'RT	167893.850	293812.383	
17	114+27.318	24.00'RT	167894.501	293750.387	1223.88
18	113+65.320	86.47'RT	167831.851	293812.206	1223.28
19	114+11.188	69.00'RT	167877.899	293795.215	
20	113+39.927	53.45'RT	167807.232	293779.017	

NOTE:
ALL ELEVATIONS, COORDINATES AND STATION/OFFSETS
FOR CURB & GUTTER ARE TO THE FLAG LOCATION.

5707 SCHOFIELD AVENUE
WESTON, WISCONSIN
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PROJECT:

INTERSECTION DETAIL
2006 MARATHON COUNTY AND
VILLAGE OF WESTON
C.T.H. X / CAMP PHILLIPS ROAD
RECONSTRUCTION PROJECT
HOWLAND AVE. - TRANSPORT DR.

REVISIONS:

DRAWN BY:

A.LEE

CHECKED BY:

D.G.

APPROVED BY:

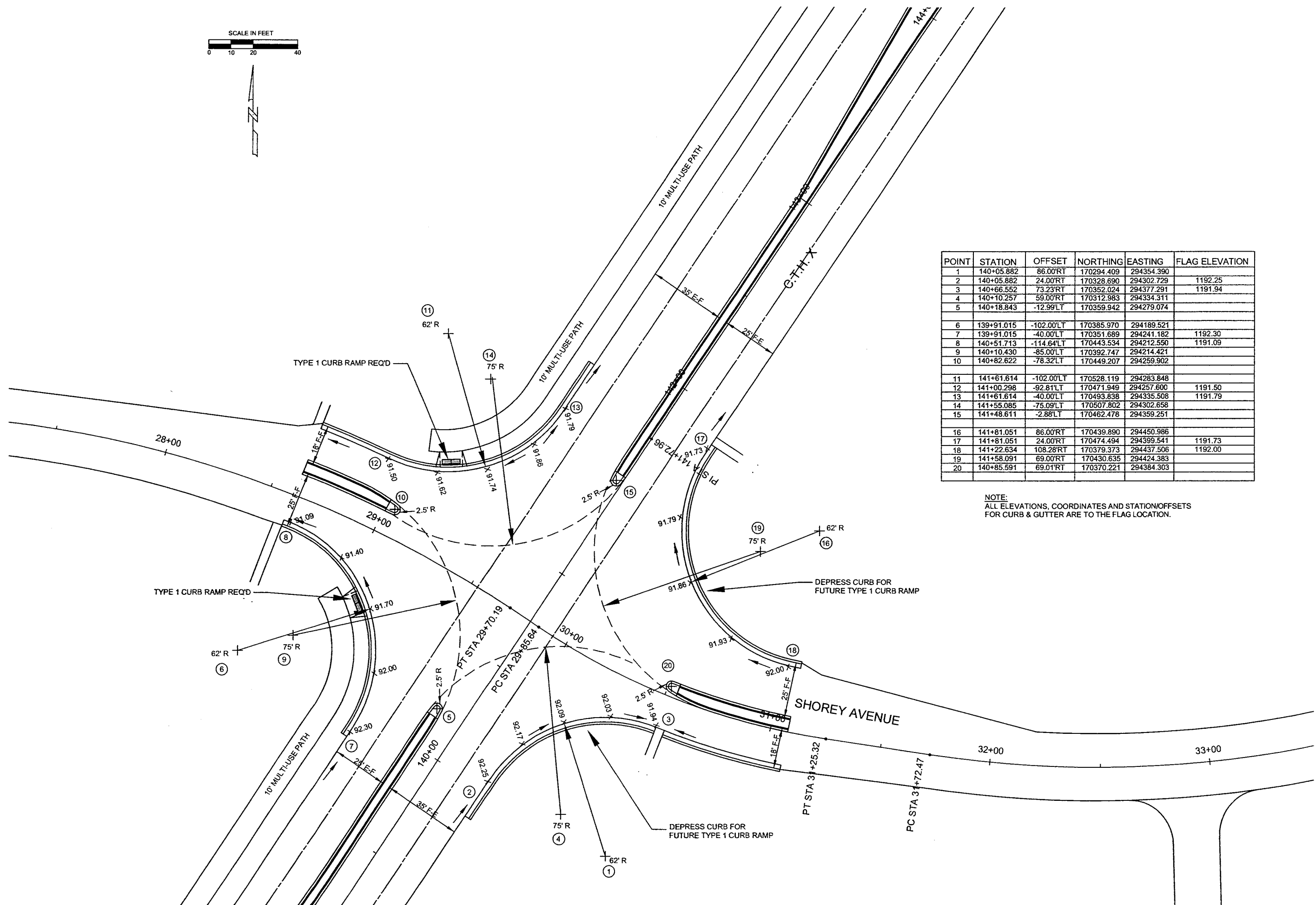
H.Z.

DATE:

FEB 2006

SHEET:

21 OF 173



POINT	STATION	OFFSET	NORTHING	EASTING	FLAG ELEVATION
1	140+05.882	86.00'RT	170294.409	294354.390	
2	140+05.882	24.00'RT	170328.690	294302.729	1192.25
3	140+66.552	73.23'RT	170352.024	294377.291	1191.94
4	140+10.257	59.00'RT	170312.983	294334.311	
5	140+18.843	-12.99'LT	170359.942	294279.074	
6	139+91.015	-102.00'LT	170385.970	294189.521	
7	139+91.015	-40.00'LT	170351.689	294241.182	1192.30
8	140+51.713	-114.64'LT	170443.534	294212.550	1191.09
9	140+10.430	-85.00'LT	170392.747	294214.421	
10	140+82.622	-78.32'LT	170449.207	294259.902	
11	141+61.614	-102.00'LT	170528.119	294283.848	
12	141+00.296	-92.81'LT	170471.949	294257.600	1191.50
13	141+61.614	-40.00'LT	170493.838	294335.508	1191.79
14	141+55.085	-75.09'LT	170507.802	294302.658	
15	141+48.611	-2.88'LT	170462.478	294359.251	
16	141+81.051	86.00'RT	170439.890	294450.986	
17	141+81.051	24.00'RT	170474.494	294399.541	1191.73
18	141+22.634	108.28'RT	170379.373	294437.506	1192.00
19	141+58.091	69.00'RT	170430.635	294424.383	
20	140+85.591	69.01'RT	170370.221	294384.303	

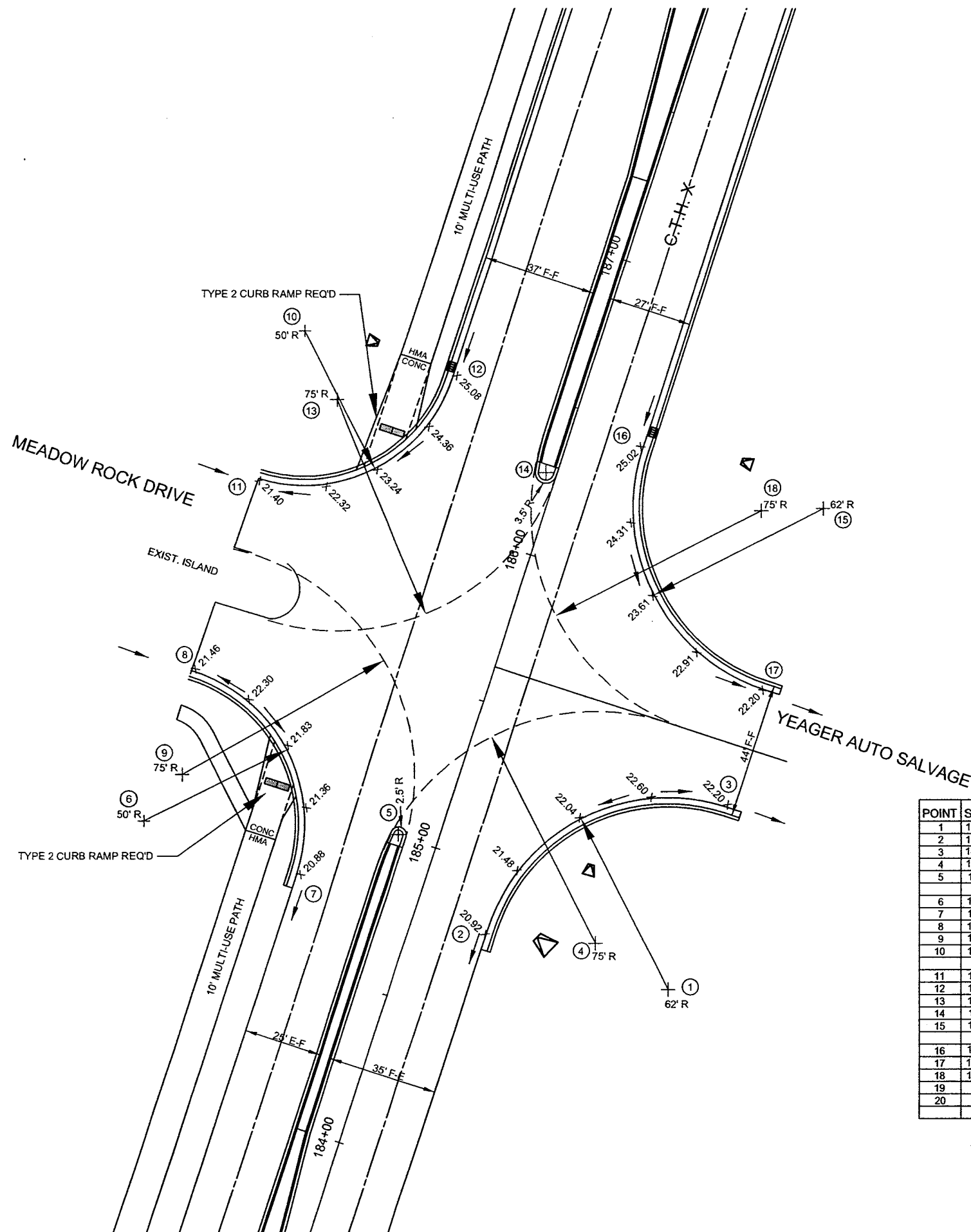
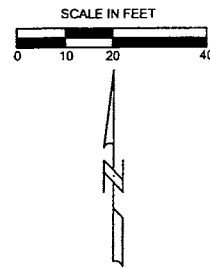
NOTE:
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INTERSECTION DETAIL
2006 MARATHON COUNTY AND
VILLAGE OF WESTON
C.T.H. X / CAMP PHILLIPS ROAD
RECONSTRUCTION PROJECT
HOWLAND AVE. - TRANSPORT DR.

REVISIONS:

SHEET:
22 OF 173

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POINT	STATION	OFFSET	NORTHING	EASTING	FLAG ELEVATION
1	184+79.816	86.00'RT	174373.295	296168.104	
2	184+79.816	24.00'RT	174392.437	296109.133	1220.92
3	185+41.816	86.00'RT	174432.265	296187.247	1221.30
4	184+86.816	59.00'RT	174388.289	296144.585	
5	185+00.505	-12.55'LT	174423.401	296080.756	
6	184+79.300	-92.00'LT	174427.762	295998.642	
7	184+78.380	-40.00'LT	174410.832	296047.817	1220.88
8	185+30.377	-92.53'LT	174476.508	296013.907	1221.46
9	184+97.378	-85.00'LT	174442.796	296010.881	
10	186+46.310	-92.00'LT	174586.613	296050.207	
11	185+96.313	-91.45'LT	174538.889	296035.292	1221.40
12	186+46.310	-42.00'LT	174571.175	296097.764	1225.08
13	186+28.496	-75.00'LT	174564.420	296060.876	
14	186+26.993	-3.52'LT	174540.920	296128.403	
15	186+43.816	86.00'RT	174529.282	296218.740	
16	186+43.816	24.00'RT	174548.425	296159.769	1225.02
17	185+81.816	86.00'RT	174470.311	296199.597	1222.20
18	186+36.816	67.00'RT	174528.490	296198.507	
19					
20					

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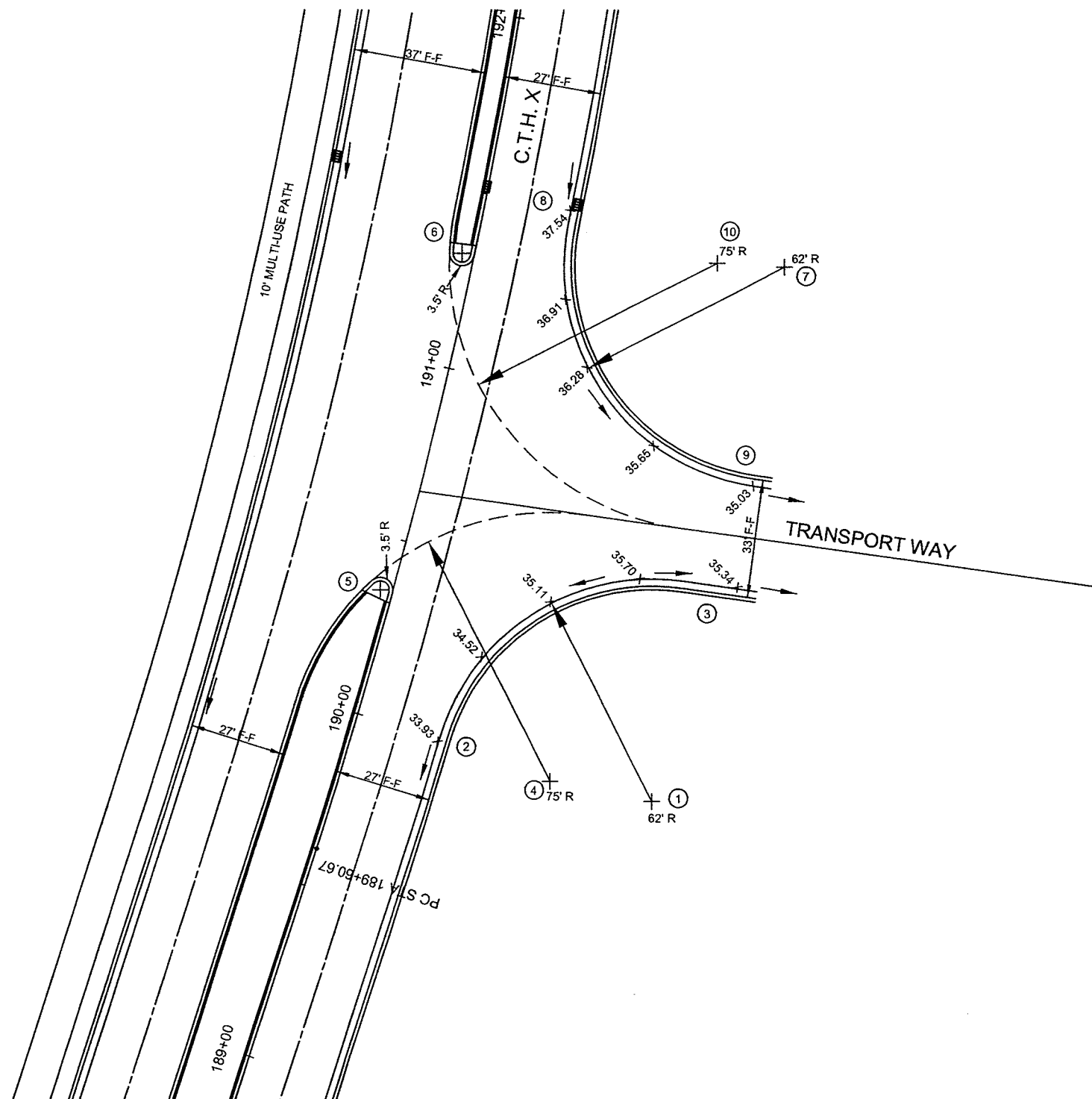
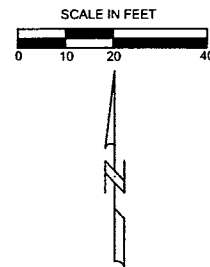
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POINT	STATION	OFFSET	NORTHING	EASTING	FLAG ELEVATION
1	190+00.265	86.00'RT	174870.446	296328.956	
2	190+00.265	24.00'RT	174888.157	296269.539	1233.93
3	190+58.819	78.02'RT	174931.815	296337.781	1235.34
4	189+97.523	57.00'RT	174876.012	296300.352	
5	190+35.023	-3.50'LT	174929.354	296252.739	
6	191+32.281	-3.50'LT	175023.637	296275.688	
7	191+46.531	86.00'RT	175019.748	296366.288	
8	191+46.531	24.00'RT	175032.086	296305.528	1237.54
9	190+87.863	90.61'RT	174958.389	296357.395	1235.03
10	191+43.973	67.01'RT	175020.920	296347.143	

NOTE:
ALL ELEVATIONS, COORDINATES AND STATION/OFFSETS
FOR CURB & GUTTER ARE TO THE FLAG LOCATION.

5707 SCHOFIELD AVENUE
WESTON, WISCONSIN
54476

PHONE: (715) 359-9400
FAX: (715) 355-4199

general@cwengineers.com
http://www.cwengineers.com

PROJECT:

INTERSECTION DETAIL
2006 MARATHON COUNTY AND
VILLAGE OF WESTON
C.T.H. X / CAMP PHILLIPS ROAD
RECONSTRUCTION PROJECT
HOWLAND AVE. - TRANSPORT DR.

REVISIONS:

DRAWN BY:

A.LEE

CHECKED BY:

D.G.

APPROVED BY:

H.Z.

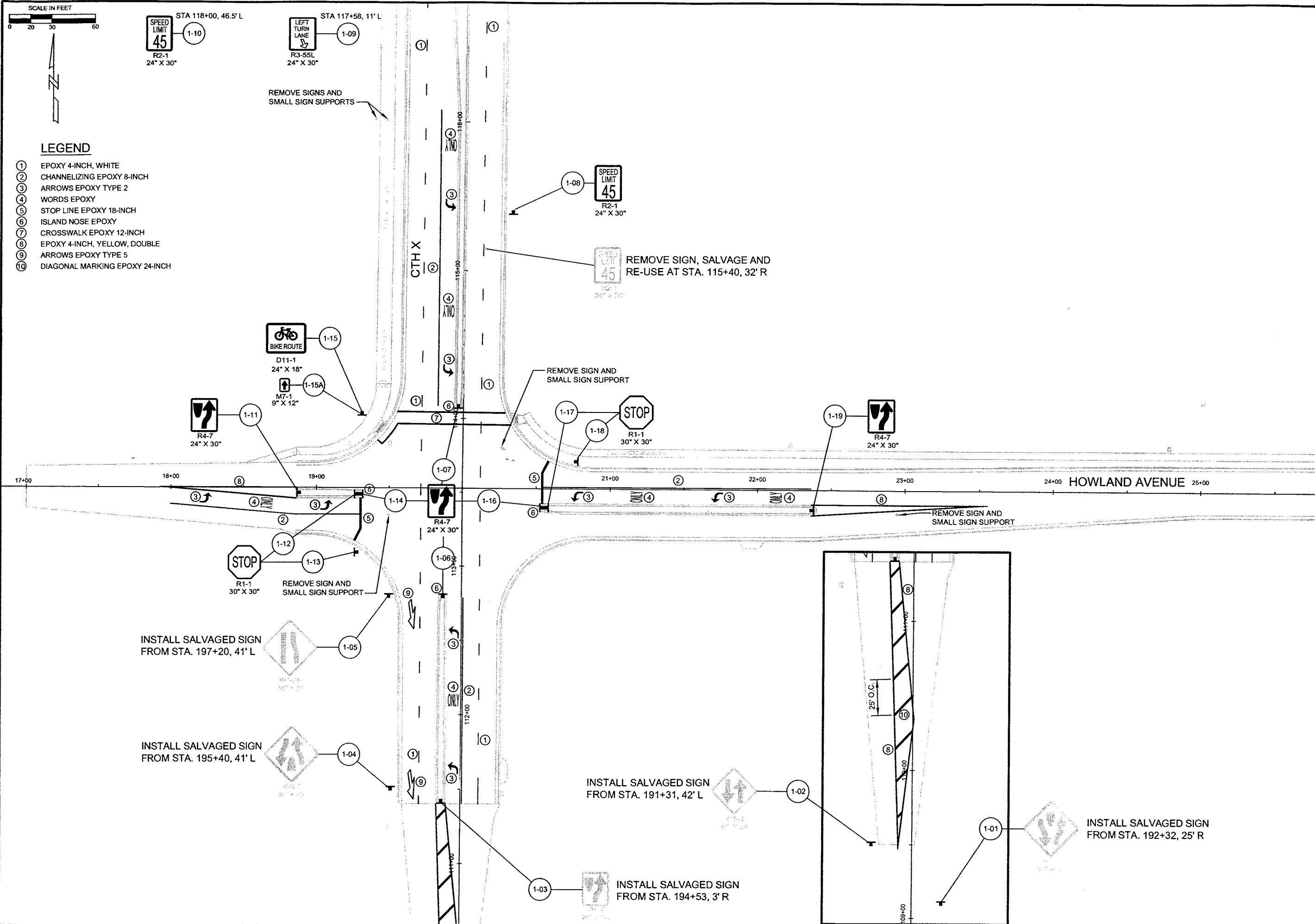
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FEB 2006

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24 OF 173

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5707 SCHOFIELD AVENUE
WESTON, WISCONSIN
54476
PHONE: (715) 359-9400
FAX: (715) 355-4199
general@cwengineers.com
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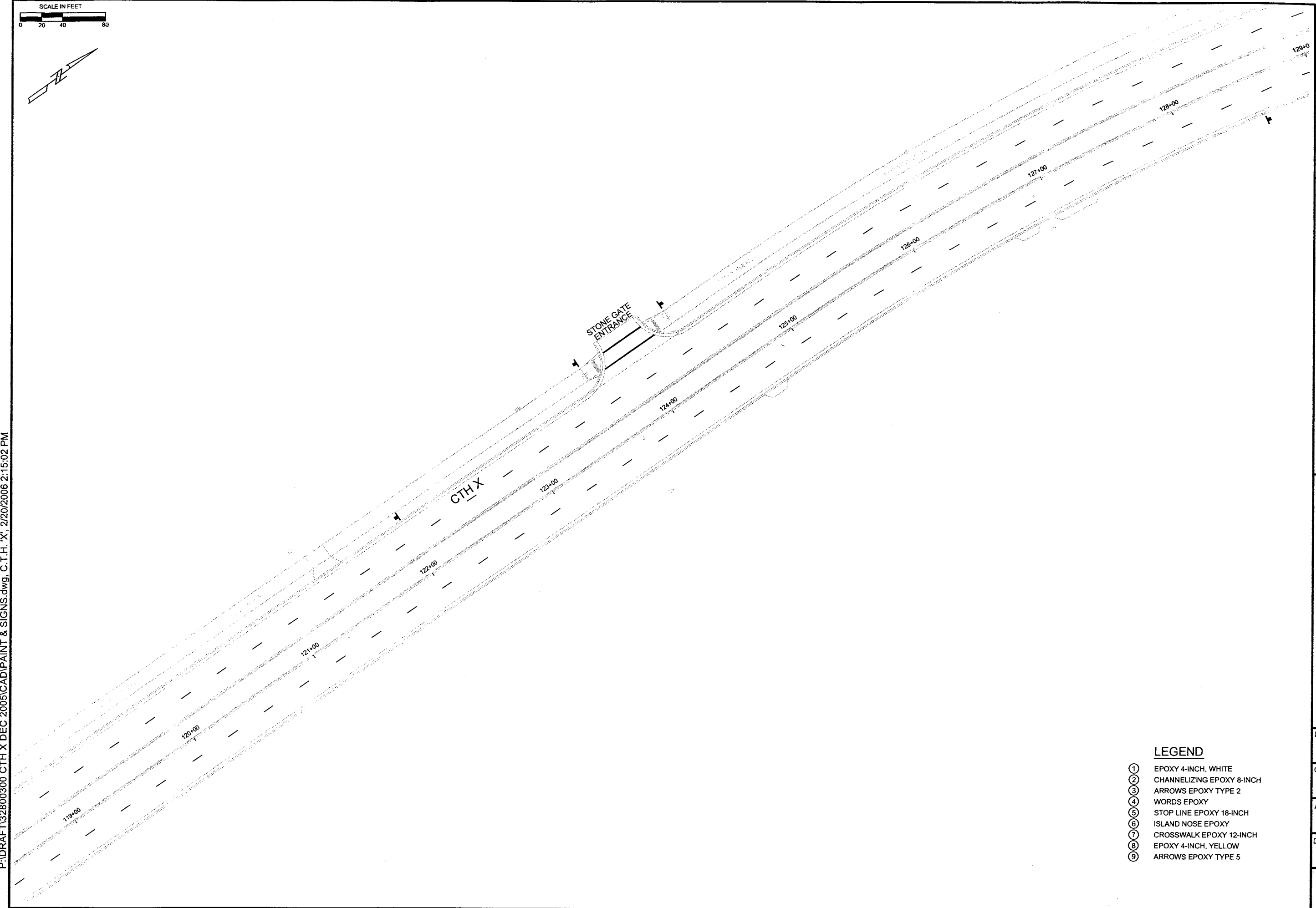
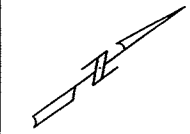
PROJECT:
SIGNING AND PAVEMENT MARKING PLAN
2006 MARATHON COUNTY AND
VILLAGE OF WESTON
C.T.H. X / CAMP PHILLIPS ROAD
RECONSTRUCTION PROJECT
HOWLAND AVE. - TRANSPORT DR.

REVISIONS:

DRAWN BY:	T.P.B.
CHECKED BY:	D.G.
APPROVED BY:	H.Z.
DATE:	FEB 2006
SHEET:	25 OF 173

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SCALE IN FEET
0 20 40 80



LEGEND

- ① EPOXY 4-INCH, WHITE
- ② CHANNELIZING EPOXY 8-INCH
- ③ ARROWS EPOXY TYPE 2
- ④ WORDS EPOXY
- ⑤ STOP LINE EPOXY 18-INCH
- ⑥ ISLAND NOSE EPOXY
- ⑦ CROSSWALK EPOXY 12-INCH
- ⑧ EPOXY 4-INCH, YELLOW
- ⑨ ARROWS EPOXY TYPE 5

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WESTON, WISCONSIN
54476

PHONE: (715) 359-9400
FAX: (715) 355-4199

general@cwengineers.com
http://www.cwengineers.com

PROJECT:

MITIGATION PLAN
2006 MARATHON COUNTY AND
VILLAGE OF WESTON
C.T.H. X / CAMP PHILLIPS ROAD
RECONSTRUCTION PROJECT
HOWLAND AVE. - TRANSPORT DR.

REVISIONS:

DRAWN BY:

T.P.B.

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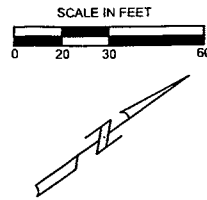
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FEB, 2005

SHEET:

26 OF 173

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SHOREY AVENUE
27+00

CTH X

LEFT
TURN
LANE
R3-55L
24" X 30"

8-01

LEGEND

- ① EPOXY 4-INCH, WHITE
- ② CHANNELIZING EPOXY 8-INCH
- ③ ARROWS EPOXY TYPE 2
- ④ WORDS EPOXY
- ⑤ STOP LINE EPOXY 18-INCH
- ⑥ ISLAND NOSE EPOXY
- ⑦ CROSSWALK EPOXY 12-INCH
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- ⑨ ARROWS EPOXY TYPE 5

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PROJECT:

MITIGATION PLAN
2006 MARATHON COUNTY AND
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RECONSTRUCTION PROJECT
HOWLAND AVE. - TRANSPORT DR.

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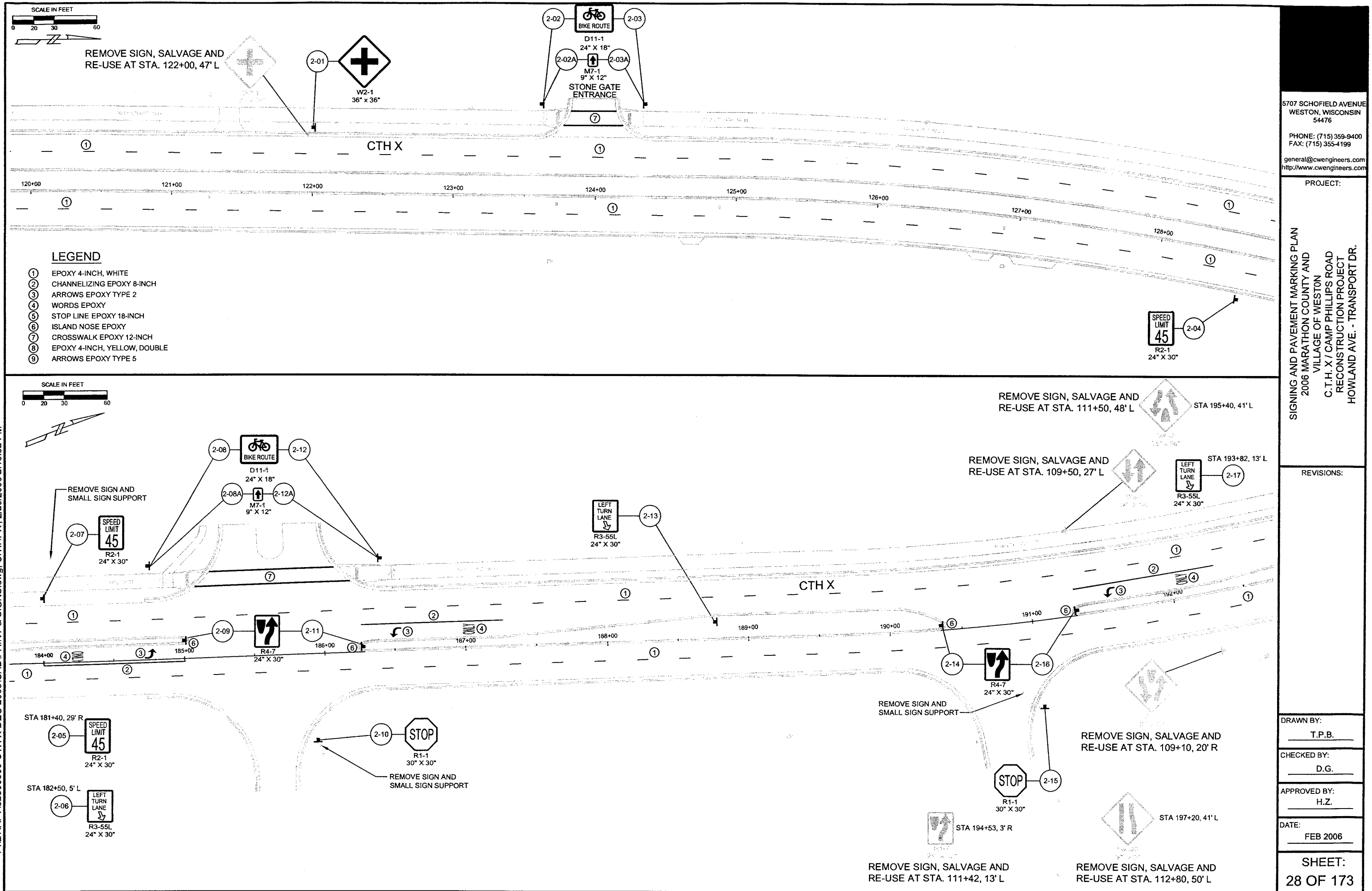
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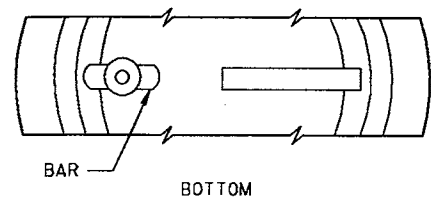
FEB 2006

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27 OF 173

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**ALTERNATE COVER (LOCKING)
TIGHTENING BAR TYPE**

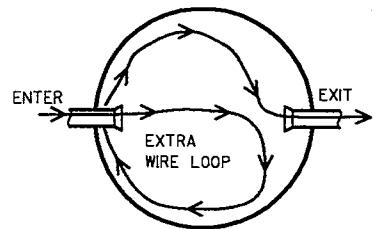
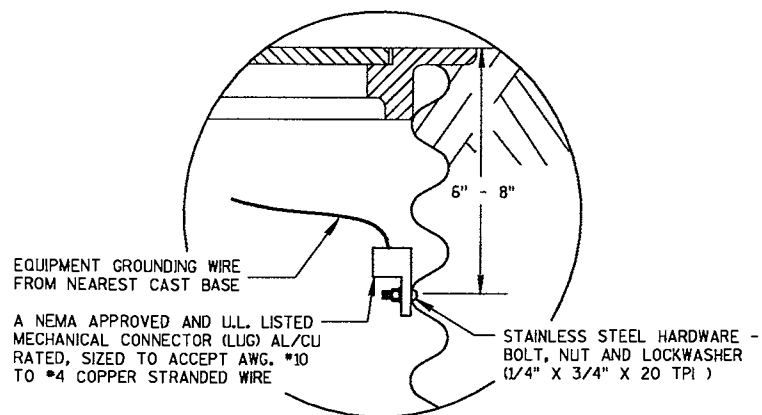
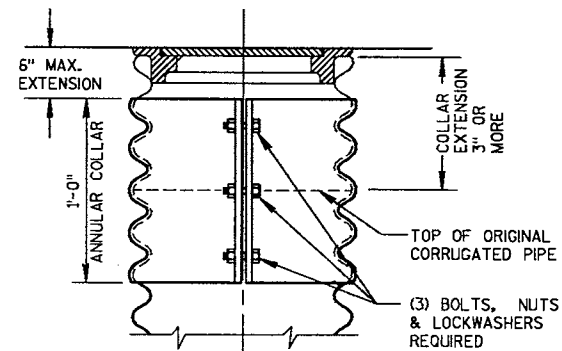


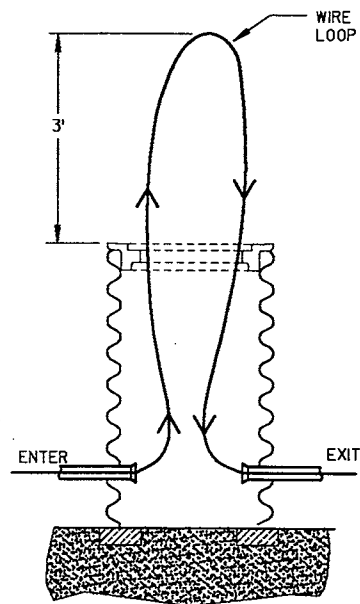
**ILLUSTRATION OF WIRE/CABLE
PLACEMENT IN PULL BOX**



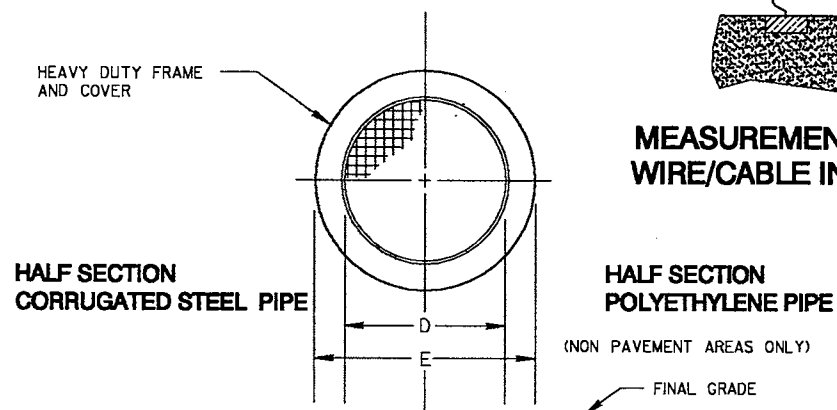
**EQUIPMENT GROUNDING LUG AND
LOCATION IN STEEL PULL BOXES**



CORRUGATED PIPE EXTENDER

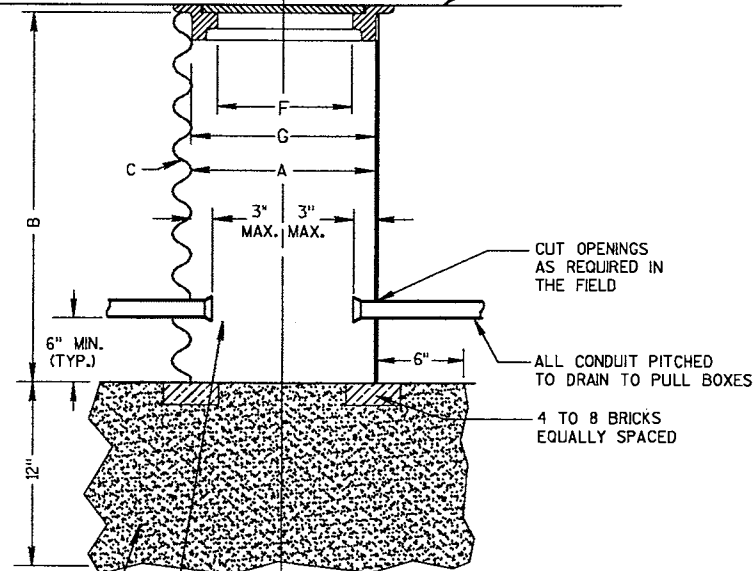


**MEASUREMENT DETAIL FOR
WIRE/CABLE IN THE PULL BOX**



**HALF SECTION
CORRUGATED STEEL PIPE**

**HALF SECTION
POLYETHYLENE PIPE**



NO. 2 COARSE AGGREGATE

INSTALL END BELLS (U.L. LISTED FOR ELECTRICAL USE) ON ALL NONMETALLIC CONDUIT BEFORE INSTALLATION OF WIRE AND/OR CABLE.

NOTE: - WHEN A PULL BOX IS INSTALLED IN CRUSHED AGGREGATE SHOULDERS, PLACE IT 2-3 INCHES BELOW GRADE AND COVER IT WITH 2-3 INCHES OF CRUSHED AGGREGATE

PULL BOX

GENERAL NOTES

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

ALL FRAMES AND COVERS SHALL BE HEAVY DUTY TYPE, SUITABLE FOR VEHICULAR TRAFFIC LOADS.

PULL BOXES LOCATED IN THE ROADWAYS SHALL HAVE LOCKING COVERS.

ENTRANCE HOLES INTO PULL BOXES SHALL BE CUT WITH A CIRCULAR HOLE SAW OR HYDRAULIC CONDUIT PUNCH. HOLE SIZE SHALL BE THE OUTSIDE DIAMETER OF THE CONDUIT THAT IS TO FIT IN THE OPENING PLUS NO MORE THAN 1/4".

THE CONTRACTOR SHALL NOT INSTALL WIRE IN ANY PULL BOX UNTIL ITS INSTALLATION HAS BEEN INSPECTED AND ACCEPTED BY THE ENGINEER.

GROUNDING LUGS (MECHANICAL CONNECTORS) SHALL BE U.L. LISTED AND APPROVED FOR USE WITH COPPER WIRE. THE MECHANICAL CONNECTION (INSIDE AND OUTSIDE) OF THE PULL BOX, SHALL BE TOTALLY AND PERMANENTLY SEALED WITH A SILICONE OR RUBBERIZED CAULKING COMPOUND AS APPROVED BY THE ENGINEER.

GROUNDING LUGS ARE NOT REQUIRED IN PULL BOXES WHEN VOLTAGES OF LESS THAN 50 VOLTS AC ARE THE ONLY VOLTAGES ENCOUNTERED IN THE BOXES.

WHEN PULL BOXES ARE INSTALLED FOR FUTURE USE, DO NOT INSTALL THE EQUIPMENT GROUNDING LUG, THE EQUIPMENT GROUNDING LUG, THE EQUIPMENT GROUNDING ELECTRODE, AND THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE REQUIRED AND INSTALLED UNDER A FUTURE WIRING CONTRACT.

IF PULL BOX EQUIPMENT GROUNDING IS REQUIRED USING AN EQUIPMENT GROUNDING ELECTRODE IN EACH PULL BOX, THE EQUIPMENT GROUNDING ELECTRODE SHALL BE 5/8" X 8'-0" COPPERCLAD AND BE EXOTHERMICALLY WELDED TO A #4 AWG, COPPER, STRANDED WIRE (BARE OR GREEN INSULATED). THE #4 AWG WIRE SHALL BE 4 FEET IN LENGTH, NEATLY COILED, TAPED, AND AVAILABLE FOR USE WHEN REQUIRED.

TABLE OF NOMINAL DIMENSIONS AND WEIGHTS

DIMENSION IN INCHES		TYPE OF PIPE								
		CORRUGATED STEEL								POLYETHYLENE SDR 32.5
PIPE DIAMETER (INSIDE)	A	12	12	12	18	18	18	24	24	24
PIPE LENGTH **	B	24	30	36	24	30	36	36	42	48
WALL THICKNESS	C	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064
COVER	D	10 1/4	10 1/4	10 1/4	16 1/4	16 1/4	16 1/4	22 1/4	22 1/4	22 1/4
FRAME	E	14 1/2	14 1/2	14 1/2	20 1/2	20 1/2	20 1/2	26 1/2	26 1/2	26 1/2
FRAME	F	8 1/2	8 1/2	8 1/2	14 1/2	14 1/2	14 1/2	20 1/2	20 1/2	20 1/2
FRAME	G	11 1/2	11 1/2	11 1/2	17 1/2	17 1/2	17 1/2	23 1/2	23 1/2	23 1/2
WEIGHT IN POUNDS *										
FRAME AND COVER		60	60	60	110	110	110	155	155	155

* THE ACTUAL WEIGHT OF THE MANHOLE FRAME AND COVER MAY VARY WITHIN 5 PERCENT PLUS OR MINUS OF THE WEIGHTS SHOWN.

** NORMALLY USED LENGTHS. THE PROJECT ENGINEER SHALL DETERMINE IF PIPE LENGTHS, OTHER THAN THOSE SPECIFIED, SHALL BE USED, TO A MAXIMUM OF 48" (CONTINUOUS LENGTH, NON-SPLICED). THE ADDITIONAL LENGTH SHALL BE INCIDENTAL TO THE PULL BOX BID PRICE.

LANG PROJECT NUMBER: 05-126

SCALE: NONE

C.T.H. X / CAMP PHILLIPS ROAD
ROADWAY LIGHTING
VILLAGE OF WESTON, WISCONSIN

LANG
Associated, Inc.
Consulting Engineers

Electrical - Mechanical - Automation - Technology
510 N. 17th Ave. - Wausau, WI 54401 - 715-945-1333 - FAX 715-948-9156
E-mail: lang@langassoc.com
1498 Bellevue St., Building E, Suite 502 - Green Bay, WI 54301 - 920-498-6800
FAX 920-498-6896 - E-mail: lang@langassoc.com
Web site: www.langassoc.com

PULL BOX DETAILS

LANG SHEET:

LD-2

WEA
CENTRAL
WISCONSIN
ENGINEERS &
ARCHITECTS

5707 SCHOFIELD AVENUE
WESTON, WISCONSIN
54476

PHONE: (715) 359-940
FAX: (715) 355-4199

general@cwengineers.com
http://www.cwengineers.com

PROJECT:

LIGHTING DETAIL SHEET
2006 MARATHON COUNTY AND
VILLAGE OF WESTON
C.T.H. X / CAMP PHILLIPS ROAD
RECONSTRUCTION PROJECT
HOWLAND AVE. - TRANSPORT DR.

REVISIONS:

DRAWN BY:

RJS

CHECKED BY:

M.P.

APPROVED BY:

M.P.

DATE:

JAN 2006

SHEET:

30 OF 173

4" MAX.

FORM

5" MAX.

FORMING SHALL BE REMOVED AFTER CONCRETE HAS SET

QUANTITY REQUIREMENTS	
APPROX. CUBIC YARDS OF CONCRETE	0.57
LBS. OF HOOP BAR STEEL	23
LBS. OF VERTICAL BAR STEEL	60

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

TOP SURFACES OF CONCRETE BASES SHALL BE TROWEL FINISHED SMOOTH AND LEVEL.

THE FINAL OR TERMINATING CONCRETE BASE IN A CONDUIT RUN SHALL HAVE A 6" EXIT STUB INSTALLED FOR FUTURE CABLING USE. THE EXIT STUB SHALL BE SIZED AS USED THROUGHOUT THE CONDUIT RUN AS SHOWN AT THE ENTRANCE OF THE BASE.

CONDUIT HEIGHT ABOVE CONCRETE BASES SHALL BE 1 INCH.

ALL NONMETALLIC CONDUIT ENDS AT THE TOP OF CONCRETE BASES SHALL BE PLUGGED IMMEDIATELY AFTER PLACEMENT AND BEFORE CONCRETE IS POURED. CONDUITS IN WHICH WIRE OR CABLE IS NOT INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

ENDS OF NONMETALLIC CONDUIT INSTALLED BELOW GRADE FOR FUTURE USE SHALL BE PLUGGED.

IF A BASE REQUIRES A DEEP FORM BECAUSE OF LOOSE DIRT OR FILL, THE FORM SHALL BE REMOVED BEFORE BACKFILLING AROUND THE BASE. BACKFILL SHALL BE TAMPED TIGHT AGAINST THE BARE CONCRETE BASE IN LAYERS OF 1 FOOT OR LESS.

A NO. 4 AWG, STRANDED COPPER EQUIPMENT GROUNDING CONDUCTOR SHALL BE EXOTHERMICALLY WELDED TO THE EQUIPMENT GROUNDING ELECTRODE (GROUND ROD) FOR TYPE 2 BASES.

THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE FURNISHED AND INSTALLED TO ENTER THE BASE OF THE TYPE 2 BASES THROUGH A 1 INCH CONDUIT INSTALLED FOR GROUNDING PURPOSES, LEAVING A 4 FOOT COIL OF WIRE ABOVE THE CONCRETE BASE. THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE NEATLY COILED AND THE COILS TIED TOGETHER.

ANCHOR RODS SHALL BE THREADED 12" IN LENGTH ON EACH END OF THE ROD.
ANCHOR RODS SHALL BE MANUFACTURED IN ACCORDANCE WITH ASTM A-449, OR
ASTM A-687 (GRADE 105).

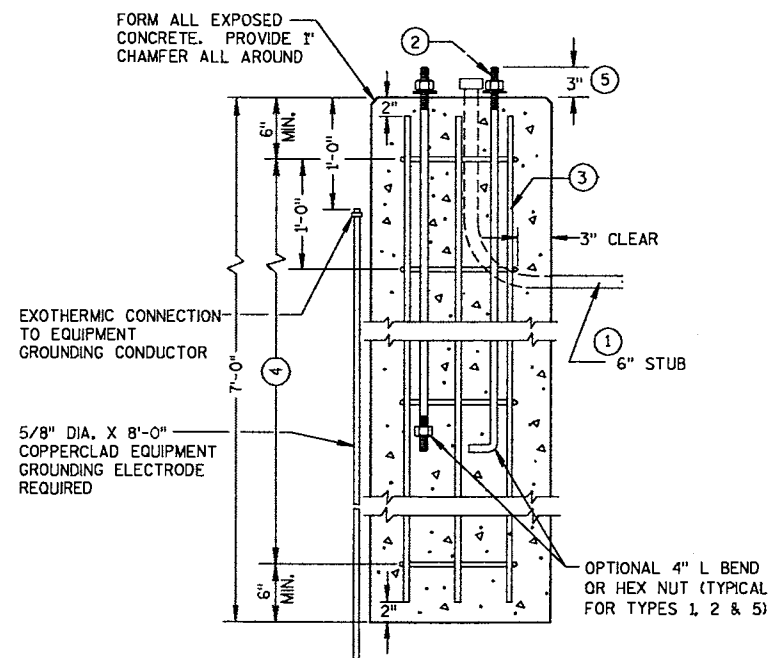
WHEN ANCHOR RODS USING THE ALTERNATE "L" BEND ARE FURNISHED, THE 4" "L" BEND SHALL BE IN ADDITION TO THE SPECIFIED ANCHOR ROD BAR LENGTH. THE "L" BEND END SHALL NOT BE THREADED.

ANCHOR RODS SHALL BE INSTALLED WITH MISALIGNMENTS OF LESS THAN 1/40 FROM VERTICAL PER SECTION 5.17.6.3, AASHTO 2001 4TH EDITION STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS.

WELDING OF THE ANCHOR RODS TO THE CAGE IS UNACCEPTABLE. TIE WIRES SHALL BE USED.

① THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE AND INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES. THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE THAT IS NOT INSTALLED BELOW THE TRAVELED WAY SHALL BE 18 INCHES. THE MAXIMUM DEPTH OF ALL CONDUIT SHALL BE 36 INCHES EXCEPT WITH WRITTEN APPROVAL BY THE ENGINEER.

- ② (4) 1" DIA. X 5'-0" ANCHOR RODS.
- ③ (6) NO. 6 X 6'-8" BAR STEEL REINFORCEMENT.
- ④ (7) NO. 4 X 5'-1" BAR STEEL REINFORCEMENT @ 1'-0" C-C.
- ⑤ ANY ANCHOR ROD PROJECTION SHORTER THAN 2-3/4" OR LONGER THAN 3-1/4" SHALL REQUIRE THE BASE TO BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE.



SCALE: NONE

LANG
Associates, Inc.
Consulting Engineers

Electrical - Mechanical - Automation - Technology

■ 510 N. 17th Ave. - Wausau, WI 54401 - 715-945-1333 - FAX 715-948-8158.
E-mail: lang@wau.langassociates.net

□ 1495 Bellevue St., Building E, Suite 502 - Green Bay, WI 54301 - 1-920-468-6808.
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LD-3

5707 SCHOFIELD AVEN
WESTON, WISCONSIN
54476

PHONE: (715) 359-9400
FAX: (715) 355-4199

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http://www.cwengineers.c

PROJECT:

LIGHTING DETAIL SHEET
2006 MARATHON COUNTY AND
VILLAGE OF WESTON
C.T.H. X / CAMP PHILLIPS ROAD
RECONSTRUCTION PROJECT
HOWLAND AVE. - TRANSPORT DR.

REVISIONS:

DRAWN BY:

RJS

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M.P.

APPROVED BY:

M.P.

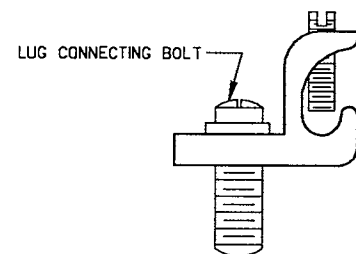
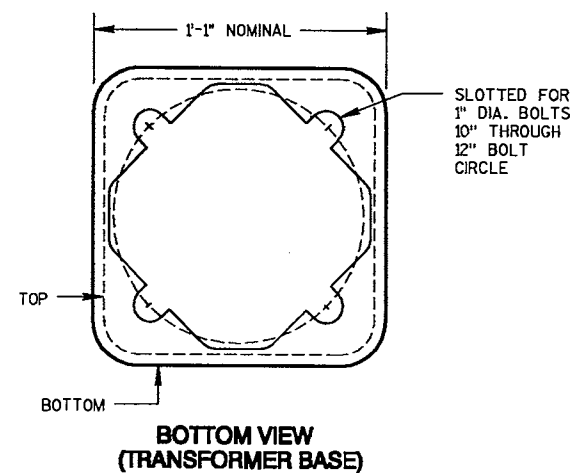
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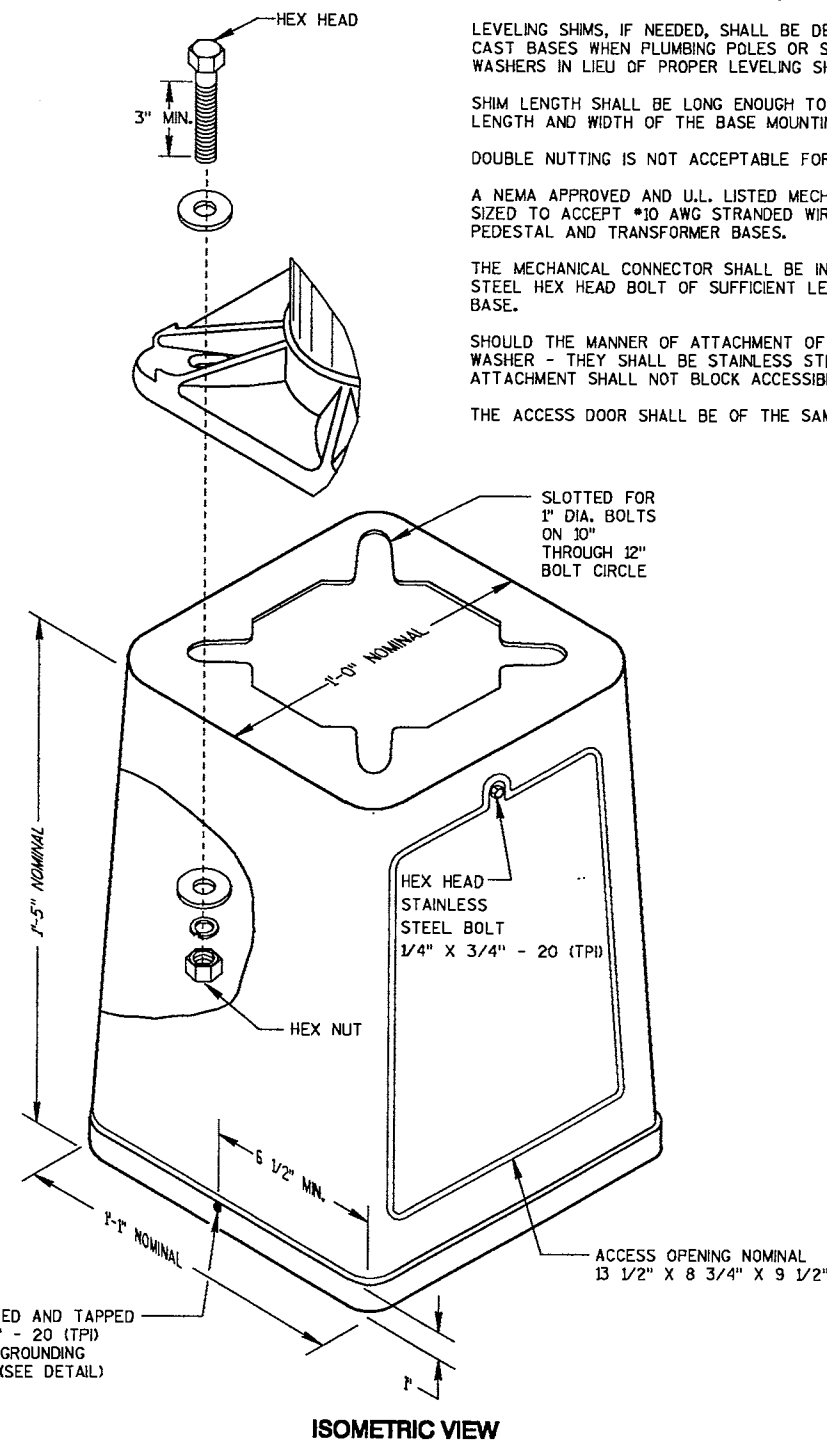
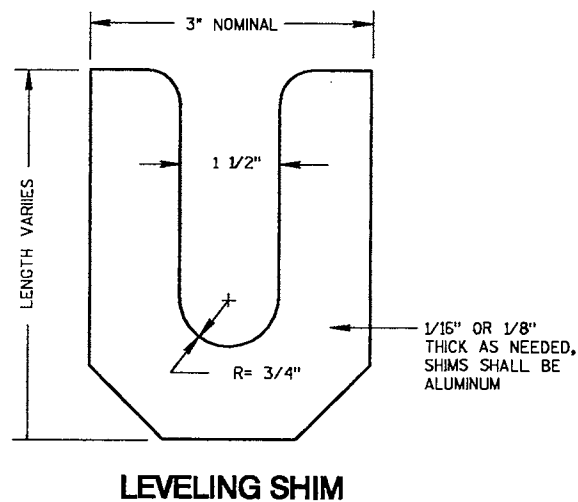
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31 OF 173

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**TYPICAL MECHANICAL
CONNECTOR LUG**
TO BE FURNISHED WITH EACH BASE



TRANSFORMER BASE
INTENDED FOR USE WITH TYPE 6M POLES

GENERAL NOTES

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

FOUR (4) BOLTS SHALL BE FURNISHED WITH EACH TRANSFORMER BASE. BOLTS SHALL BE 1" DIAMETER, 4" IN LENGTH, WITH WASHERS, LOCK WASHERS, AND NUTS. BOLTS, NUTS, AND WASHERS SHALL BE GRADE 5, ASTM A-325, (92,000 YIELD) HEAVY HEX NUT AND BE GALVANIZED IN ACCORDANCE WITH ASTM A-153, CLASS C.

LEVELING SHIMS, IF NEEDED, SHALL BE DESIGNED FOR THE PURPOSE AND USED UNDER CAST BASES WHEN PLUMBING POLES OR STANDARDS DURING INSTALLATION. THE USE OF WASHERS IN LIEU OF PROPER LEVELING SHIMS IS NOT ACCEPTABLE.

SHIM LENGTH SHALL BE LONG ENOUGH TO COMPLETELY COVER THE AREA UNDER THE LENGTH AND WIDTH OF THE BASE MOUNTING FLANGE.

DOUBLE NUTTING IS NOT ACCEPTABLE FOR LEVELING OR MOUNTING PURPOSES.

A NEMA APPROVED AND U.L. LISTED MECHANICAL CONNECTOR (LUG) AL/CU RATED AND SIZED TO ACCEPT #10 AWG STRANDED WIRE, SHALL BE FURNISHED AND INSTALLED IN THE PEDESTAL AND TRANSFORMER BASES.

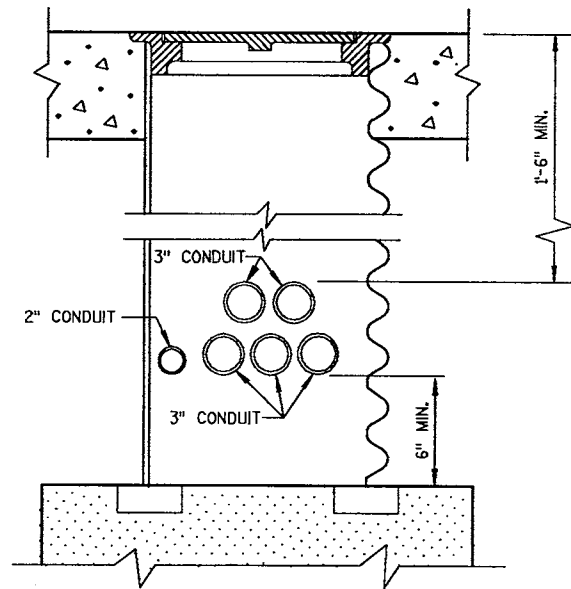
THE MECHANICAL CONNECTOR SHALL BE INSTALLED USING A 1/4" - 20 (TP) STAINLESS STEEL HEX HEAD BOLT OF SUFFICIENT LENGTH TO FIRMLY ATTACH THE LUG TO THE BASE.

SHOULD THE MANNER OF ATTACHMENT OF THE LUG REQUIRE WASHERS, HEX NUTS, LOCK WASHER - THEY SHALL BE STAINLESS STEEL AS IS THE BOLT. THE MANNER OF ATTACHMENT SHALL NOT BLOCK ACCESSIBILITY TO WIRE PLACEMENT IN THE CONNECTOR.

THE ACCESS DOOR SHALL BE OF THE SAME MATERIAL AS THE BASE.

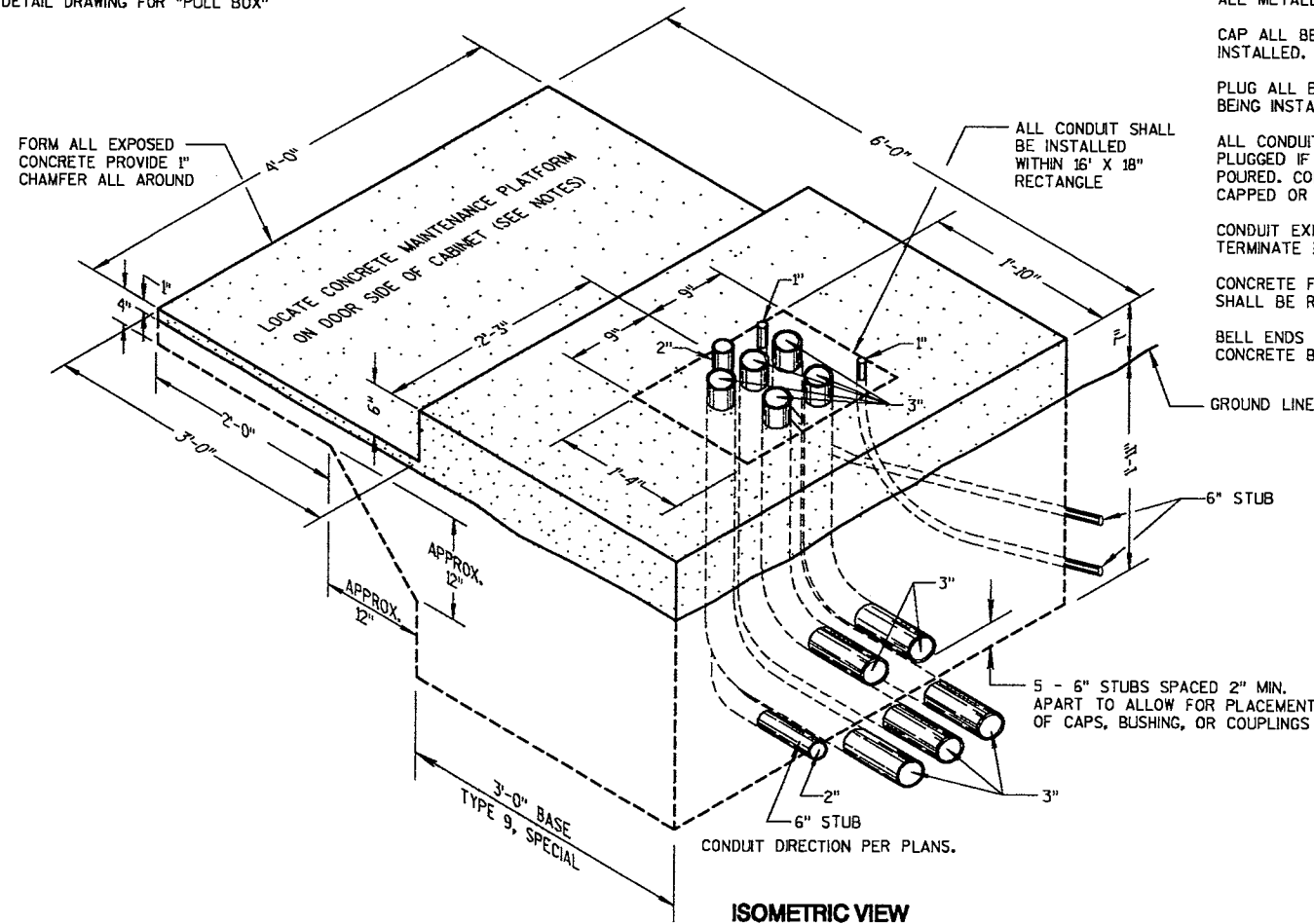
LANG PROJECT NUMBER: 05-126

C.T.H. X / CAMP PHILLIPS ROAD
ROADWAY LIGHTING
VILLAGE OF WESTON, WISCONSIN



CONDUIT LOCATIONS IN 24" X 36" PULL BOX

(LEADING TO CONTROLLER CABINET BASE TYPE 9, SPECIAL)
FOR OTHER PULL BOX INFORMATION, SEE DETAIL DRAWING FOR "PULL BOX"



CONCRETE CONTROL CABINET BASE, TYPE 9, SPECIAL (5-3\"/>

(C.Y. CONCRETE = APPROX. 1.56)

GENERAL NOTES

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

INSTALL FOUR 1/2 INCH MINIMUM DIAMETER X 4 INCH MINIMUM LENGTH APPROVED CONCRETE MASONRY ANCHORS TO ANCHOR THE CABINET TO THE BASE. THE ANCHOR STUDS SHALL BE LOCATED AS RECOMMENDED BY THE CABINET MANUFACTURER TO PROPERLY ANCHOR THE CONTROL CABINET TO THE BASE. ANY ANCHOR PROJECTION SHORTER THAN 1\"/>

WHEN REQUIRED TO CONNECT NONMETALLIC CONDUIT TO METALLIC CONDUIT, ONLY ADAPTER FITTINGS, U.L. LISTED FOR ELECTRICAL USE, SHALL BE USED.

CONDUIT HEIGHT ABOVE THE CONCRETE BASE SHALL BE 1 INCH.

DEPTH OF CONDUIT INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES MINIMUM AND 36 INCHES MAXIMUM.

DEPTH OF CONDUIT INSTALLED, THAT IS NOT BELOW THE TRAVELED WAY, SHALL BE 18 INCHES MINIMUM AND 36 INCHES MAXIMUM.

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

CONTROL CABINET BASE TOP SURFACE SHALL BE TROWEL FINISHED SMOOTH AND LEVEL.

MAINTENANCE PLATFORM SHALL BE FLOAT OR BROOM FINISHED AND BE LEVEL.

MAINTENANCE PLATFORM IS NOT REQUIRED WHEN THE SURROUNDING AREA IS PAVED.

MINIMUM BENDING RADIUS OF CONDUIT = 6 X THE DIAMETER.

ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED.

CAP ALL BELOW GRADE METALLIC CONDUIT ENDS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED.

PLUG ALL BELOW GRADE NONMETALLIC CONDUIT ENDS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED.

ALL CONDUIT ENDS AT THE TOP OF CONCRETE BASES SHALL BE CAPPED IF METALLIC OR PLUGGED IF NONMETALLIC IMMEDIATELY AFTER PLACEMENT AND BEFORE CONCRETE IS POURED. CONDUITS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

CONDUIT EXITING THE CONCRETE BASE (ONE TWO INCH, FIVE THREE INCH) SHALL TERMINATE IN PULL BOX(ES) AS SHOWN ON THE PLANS.

CONCRETE FORM DEPTH BELOW FINISHED GRADE SHALL BE 6\"/>

BELL ENDS SHALL BE INSTALLED ON ALL PVC CONDUIT EXPOSED AT THE TOP OF THE CONCRETE BASE BEFORE INSTALLATION OF CABLE OR WIRE.

GROUND LINE

6\"/>

5 - 6\"/>

CONDUIT DIRECTION PER PLANS.

ISOMETRIC VIEW

PROJECT:

LIGHTING DETAIL SHEET
2006 MARATHON COUNTY AND
VILLAGE OF WESTON
C.T.H. X / CAMP PHILLIPS ROAD
RECONSTRUCTION PROJECT
HOWLAND AVE. - TRANSPORT DR.

REVISIONS:

DRAWN BY:

RJS

CHECKED BY:

M.P.

APPROVED BY:

M.P.

DATE:

JAN 2006

LANG SHEET:

LD-5

SHEET:

33 OF 173

LANG PROJECT NUMBER: 05-126

SCALE: NONE

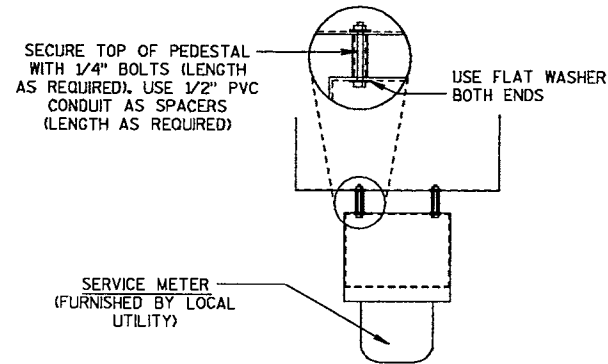
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ROADWAY LIGHTING
VILLAGE OF WESTON, WISCONSIN

LANG
Associates, Inc.
Consulting Engineers

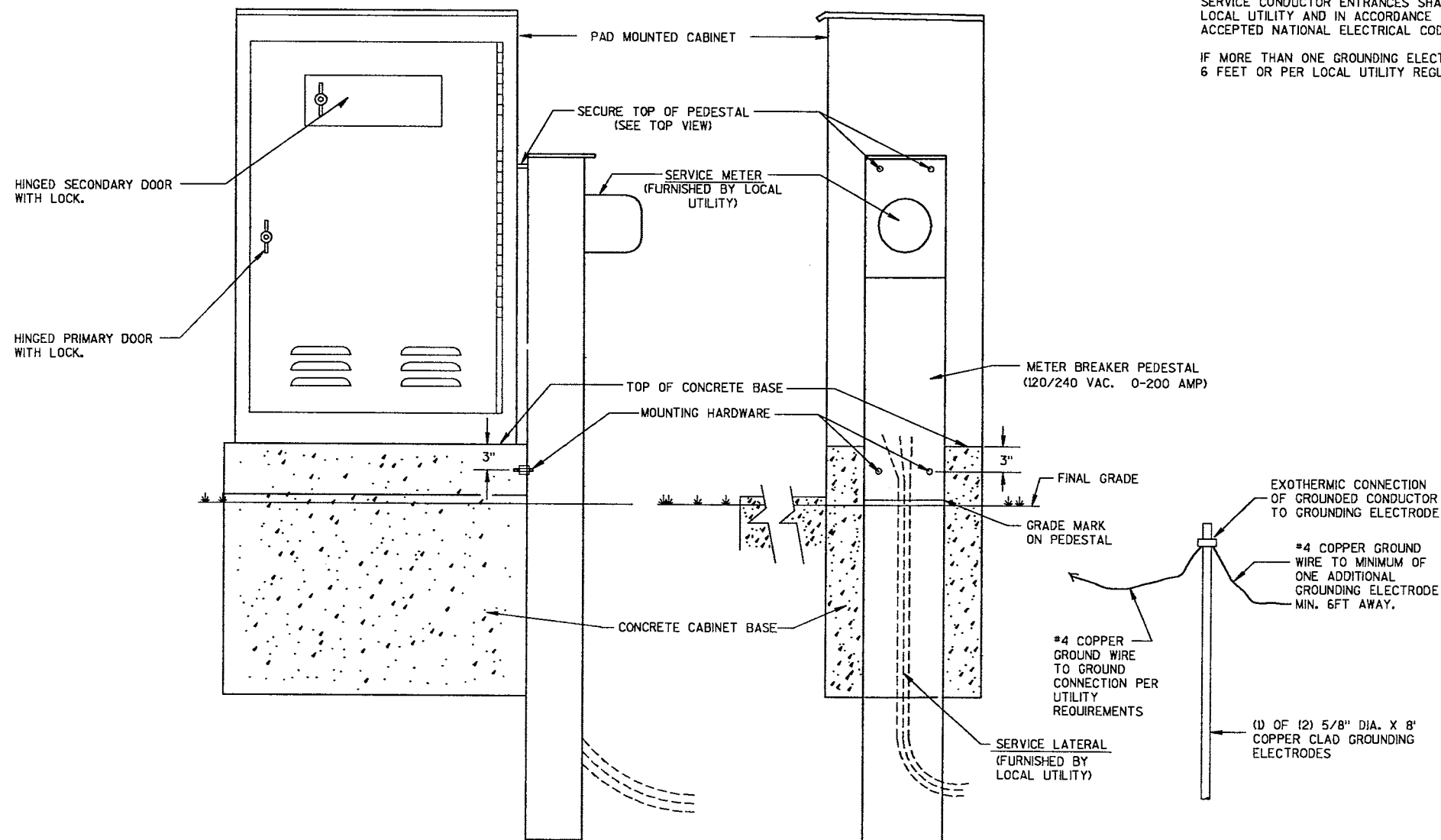
Electrical - Mechanical - Automation - Technology
510 N. 17th Ave., Wausau, WI 54401 - 715-845-1333 FAX 715-848-9156
E-mail: lang@langassociates.net
1450 Delaware St., Building E, Suite 502 - Green Bay, WI 54301 - 920-489-6938
FAX 920-489-6938 E-mail: lang@langassociates.net
Website: www.langassociates.net

CONCRETE CONTROL CABINET BASE DETAILS

05126-00-00-LD08.dwg, "Paper1" PLOTTED AT 4:09:10 PM ON 02-02-2006 BY rstewart



TOP VIEW



TYPICAL CABINET SERVICE INSTALLATION

GENERAL NOTES

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

THE EXACT LOCATION OF THE METER PEDESTAL SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.

THE TYPE OF CONCRETE CABINET BASE TO BE INSTALLED SHALL BE AS CALLED FOR IN THE PLANS.

TO FACILITATE FLUSH MOUNTING OF THE METER PEDESTAL AGAINST THE SIDE OF THE CABINET BASE, CONFER WITH THE LOCAL UTILITY TO DETERMINE WHICH SIDE OF THE CONCRETE BASE THE ELECTRIC SERVICE LATERAL WILL APPROACH. THEN FORM THAT INDICATED SIDE FOR FULL SIDE DEPTH.

SERVICE CONDUCTOR ENTRANCES SHALL BE RIGID METALLIC CONDUIT, NIPPLES AND/OR CONDULETS AS REQUIRED. CABINET PENETRATION SHALL USE UL LISTED THREADED CONDUIT FITTINGS WHICH SEAL AGAINST CABINET WALL.

SERVICE CONDUCTOR ENTRANCES SHALL BE SIZED AND LOCATED AS REQUIRED BY THE LOCAL UTILITY AND IN ACCORDANCE WITH APPROPRIATE ARTICLES OF THE LATEST ACCEPTED NATIONAL ELECTRICAL CODE.

IF MORE THAN ONE GROUNDING ELECTRODE IS REQUIRED, THE DISTANCE APART SHALL BE 6 FEET OR PER LOCAL UTILITY REGULATIONS.

LANG PROJECT NUMBER: 05-126

C.T.H. X / CAMP PHILLIPS ROAD
ROADWAY LIGHTING
VILLAGE OF WESTON, WISCONSIN

SCALE: NONE



Electrical - Mechanical - Automation - Technology
510 N. 17th Ave. - Wausau, WI 54401 - 715-945-1333 FAX 715-948-8156
E-mail: langwa@langassociates.net
1496 Bellevue St., Building E, Suite 502 - Green Bay, WI 54301 - 920-488-8808
FAX 920-488-8806 - E-mail: langgb@langassociates.net
Website: www.langassociates.net

CONTROL CABINET SERVICE INSTALLATION DETAILS

LANG SHEET:

LD-6

SHEET:
34 OF 173

05126-00-30-LD07.dwg, "Paper1" PLOTTED AT 4:11:55 PM ON 02-02-2006 BY istewart

PHOTOCELL, LOCATE UNDER DRIP LIP IF POSSIBLE.

GFI DUPLEX RECEPTACLE

SURGE SUPPRESSOR

PANELBOARD, VERIFY FAULT CURRENT WITH UTILITY. LOCATE ON SAME SIDE OF THE CABINET AS METER PEDESTAL.

LIGHTING CIRCUIT TERMINAL BLOCK

SECURE CABLES TO BACKBOARD WITH LISTED FASTENERS.

INTERIOR SIDE VIEW

(ELECTRICAL EQUIPMENT PER ONE LINE DIAGRAM)

NEMA 3 ENCLOSURE, CABINET SHALL BE 36"W X 60"H X 24"D MIN., WITH ALL REQUIRED MOUNTING HARDWARE. CABINET MUST BE FIRMLY BOLTED TO CONCRETE BASE.

PHOTOCELL PER ONE LINE DIAGRAM, LOCATE UNDER DRIP LIP IF POSSIBLE.

SPACE FOR FUTURE SHELVES AND TRAFFIC SIGNAL CONTROL EQUIPMENT.

SECURE CABLES TO DOOR WITH LISTED FASTENERS.

PANELBOARD

METER PEDESTAL FIRMLY ATTACHED TO CONTROLLER CABINET AND BASE. PROVIDE PEDESTAL PER UTILITY SERVICE RULES. MOUNT ON SIDE OF CABINET CLOSEST TO SERVICE SOURCE.

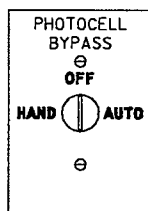
GRADE

GRADE

18"

STANDARD CONCRETE CONTROL CABINET BASE PER DETAIL SHEET LD-4.

(1) 2-INCH CONDUIT
(5) 3-INCH CONDUIT



HINGED SECONDARY DOOR WITH KEYED LOCK AND DUST CAP

FRONT VIEW

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.

PRIME WITH PHOSPHATE TREATMENT AND PRIMER.

EXTERIOR SURFACES SHALL BE FACTORY FINISHED SILVER GRAY.

INTERIOR SHALL BE FACTORY FINISHED WITH HIGH GLOSS WHITE ENAMEL.

ALL SHEET METAL PARTS SHALL BE .125 INCH THICK ALUMINUM.

ALL SEAMS SHALL BE CONTINUOUSLY WELDED.

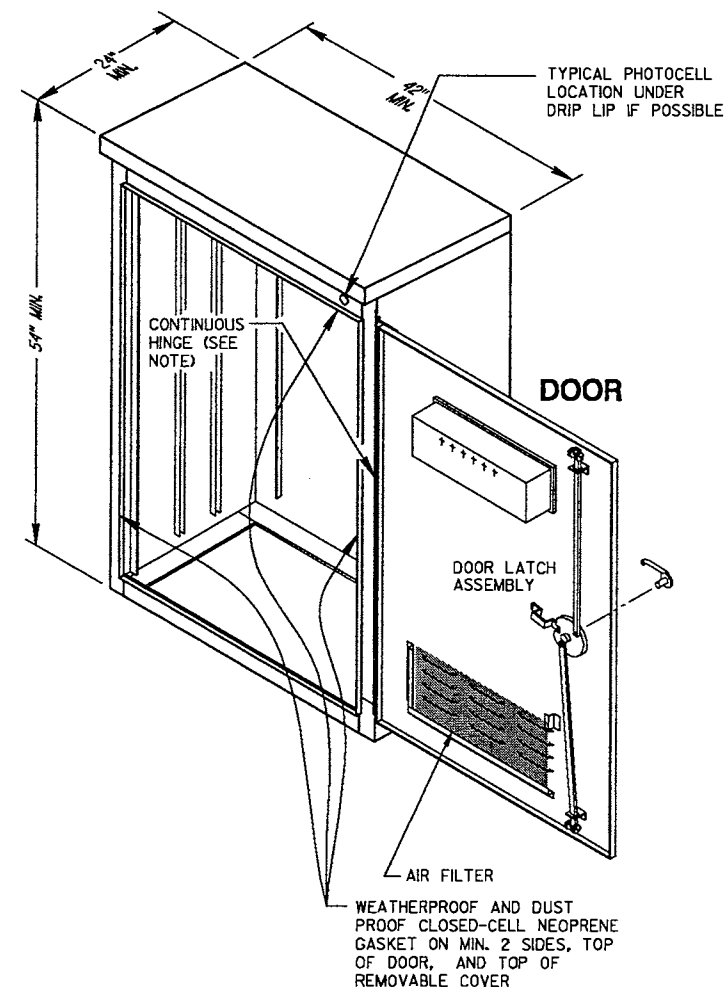
ALUMINUM SHALL BE TYPE 5052-H32.

CONTINUOUS HINGE SHALL BE HEAVY GAUGE ALUMINUM WITH 1/4" DIAMETER STAINLESS STEEL HINGE PIN. HINGE IS SECURED WITH 1/4" X 20 TPI STAINLESS STEEL CARRIAGE BOLTS AND STAINLESS STEEL NYLOCK NUTS.

PROVIDE AN ECONOLITE CABINET "P44", SIEMENS EAGLE CABINET "P" OR EQUAL WITH A SOLID BOTTOM SECTION AND AIR FILTER SLOTS IN THE DOOR.

A SINGLE PHOTOCELL SHALL BE LOCATED ON THE NORTH-NORTHEAST SIDE OF THE CABINET UNLESS OTHERWISE CALLED FOR IN THE SPECIFICATIONS. THE PHOTOCELL SHALL BE PLACED AS SHOWN AND SHALL BE AN APPROVED TYPE AS NOTED ON ONE-LINE DIAGRAM.

DOOR LATCH ASSEMBLY TO BE PROVIDED WITH THREE-POINT LOCKING MECHANISM.



CONTROL CABINET INSTALLATION

CONTROL CABINET

LANG PROJECT NUMBER: 05-126

SCALE: NONE

C.T.H. X / CAMP PHILLIPS ROAD
ROADWAY LIGHTING
VILLAGE OF WESTON, WISCONSIN



Electrical - Mechanical - Automation - Technology
510 N. 17th Ave. - Wausau, WI 54401 - 715-945-1333 FAX 715-948-8156
E-mail: lang@langassociates.net
1408 Bellevue St., Building E, Suite 502 - Green Bay, WI 54301 - 920-489-6808
FAX 920-489-6808 - E-mail: langgb@langassociates.net
Website: www.langassociates.net

CONTROL CABINET DETAILS

LANG SHEET:

LD-7

SHEET:
35 OF 173

WEA
CENTRAL
WISCONSIN
ENGINEERS &
ARCHITECTS

5707 SCHOFIELD AVENUE
WESTON, WISCONSIN 54476

PHONE: (715) 359-9400
FAX: (715) 355-4199

general@cwengineers.com
http://www.cwengineers.com

PROJECT:

LIGHTING DETAIL SHEET
2006 MARATHON COUNTY AND
VILLAGE OF WESTON
C.T.H. X / CAMP PHILLIPS ROAD
RECONSTRUCTION PROJECT
HOWLAND AVE. - TRANSPORT DR.

REVISIONS:

DRAWN BY:

RJS

CHECKED BY:

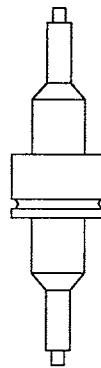
M.P.

APPROVED BY:

M.P.

DATE:

JAN 2006

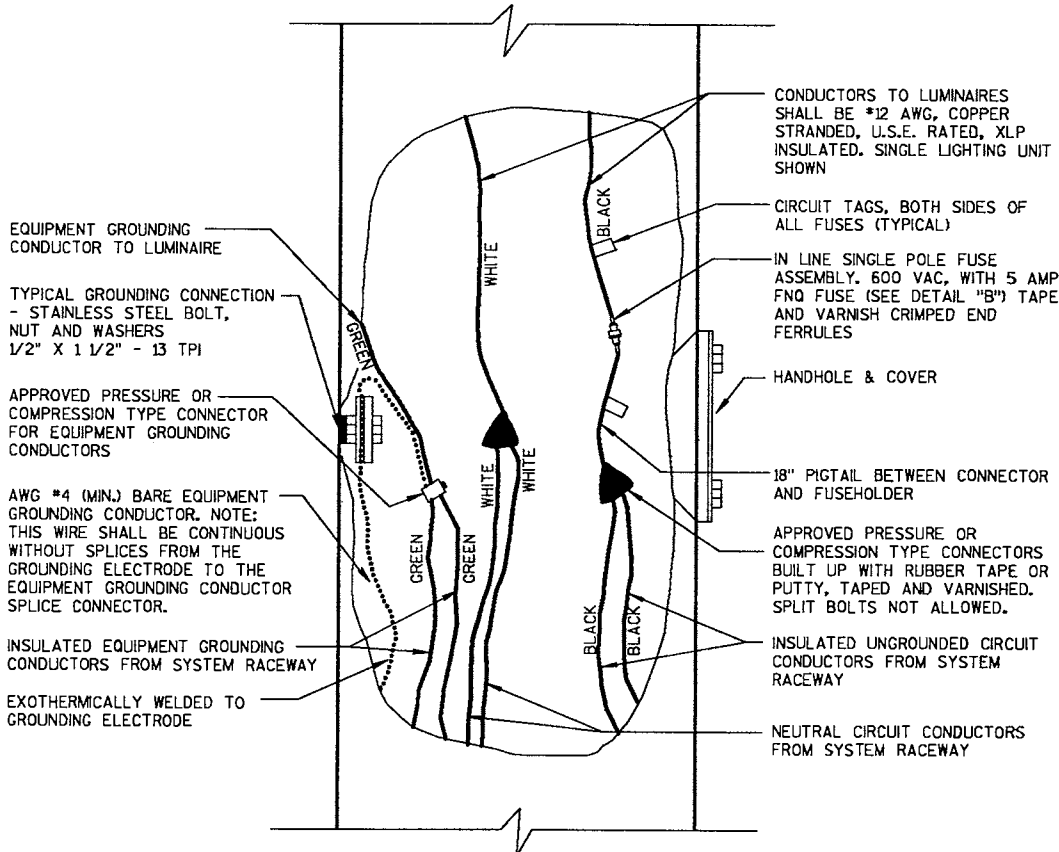


DETAIL "B"
SINGLE POLE

GENERAL NOTES

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

THE EQUIPMENT GROUND CONNECTOR SHALL BE TAPED WITH 3 WRAPS (MINIMUM) OF APPROVED RUBBER TAPE AND THEN 3 WRAPS (MINIMUM) OF APPROVED VINYL TAPE TO COVER SHARP WIRE ENDS AFTER THE CONNECTION IS COMPLETED.



3 WIRE - 120VAC (UNGROUNDING CONDUCTOR)
WITH GROUNDED CONDUCTOR AND
WITH EQUIPMENT GROUNDING CONDUCTOR

GENERAL NOTES

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

ALL TYPE 6M POLE MOUNTINGS SHALL BE DESIGNED TO ACCOMMODATE TWIN 15' ARMS WITH LUMINAIRES.

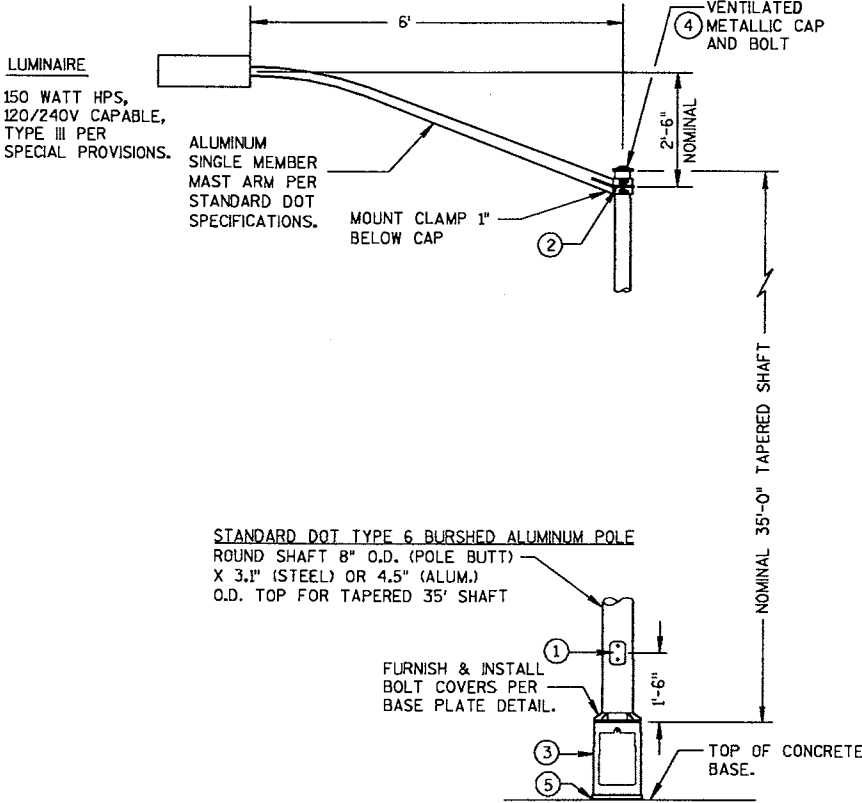
POLES SHALL BE ALUMINUM, AS CALLED FOR IN THE CONTRACT DOCUMENTS.

TYPE 6M ALUMINUM POLES SHALL BE CONSTRUCTED OF 6063-T6 ALUMINUM ALLOY. SLEEVING INSIDE THE POLE IS NOT ACCEPTABLE.

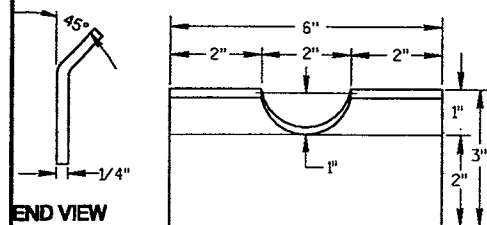
THE SLIPFITTER END OF THE LUMINAIRE MAST ARM SHALL BE A NOMINAL 2 3/8 INCHES IN OUTSIDE DIAMETER. THE STRAIGHT PORTION OF THE SLIPFITTER END OF THE LUMINAIRE ARM SHALL BE A NOMINAL 12 INCHES IN LENGTH.

WHEN TRANSFORMER BASES ARE USED, WIRE CONNECTIONS SHALL BE MADE IN THE TRANSFORMER BASE.

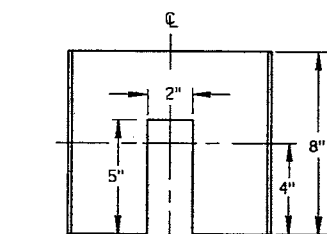
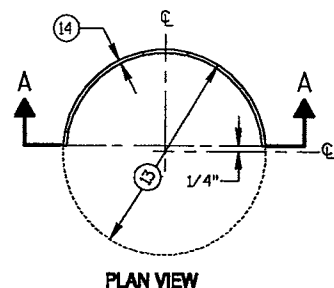
- 4" x 6" REINFORCED HANDHOLE & COVER ASSEMBLY WITH 2 (TWO) 1/4" X 3/4" - 20 TPI HEX HEAD STAINLESS STEEL BOLTS.
- GROMMETS, 1" CHASE NIPPLES, OR 1" CLOSE CONDUIT NIPPLES WITH BUSHINGS SHALL BE PROVIDED FOR 1 3/8" HOLE IN POLE SHAFT FOR WIRING.
- CAST ALUMINUM TRANSFORMER BASE.
- FURNISH AND INSTALL VENTILATED, CAST, METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) 1/4" X 3/4" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.
- SHIMMING, IF NEEDED, SHALL BE LOCATED BETWEEN THE CONCRETE FOUNDATION AND THE TRANSFORMER BASE.



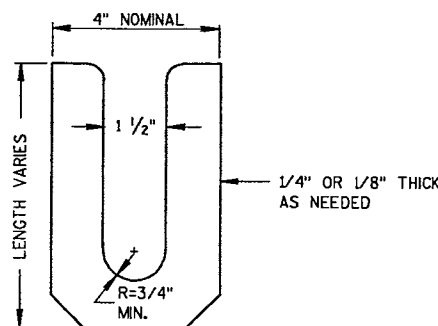
DOT TYPE 6 POLE MOUNTING CONFIGURATION
(MAXIMUM LOAD)
LIGHTING ONLY



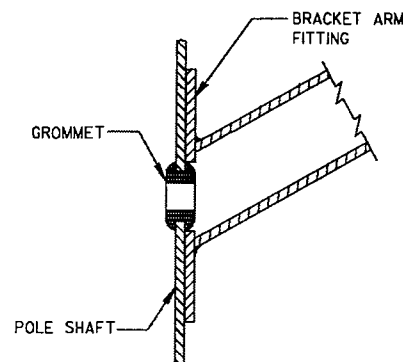
FRONT VIEW
RECTANGULAR CLAMP SHIM
(4 TO A SET)



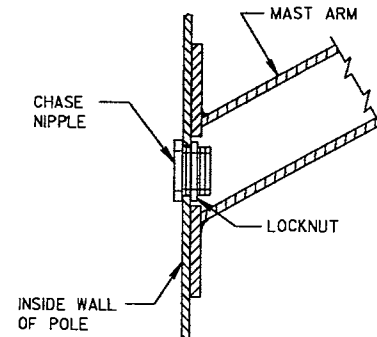
SECTION A-A
CIRCULAR CLAMP SHIM
(2 TO A SET)



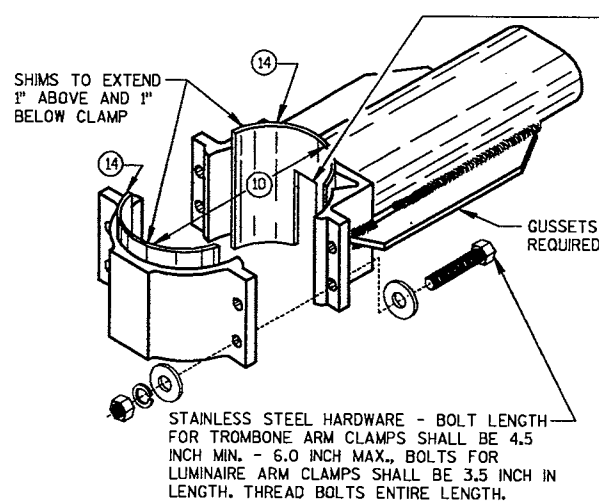
LEVELING SHIM
SHIM SHALL BE ALUMINUM



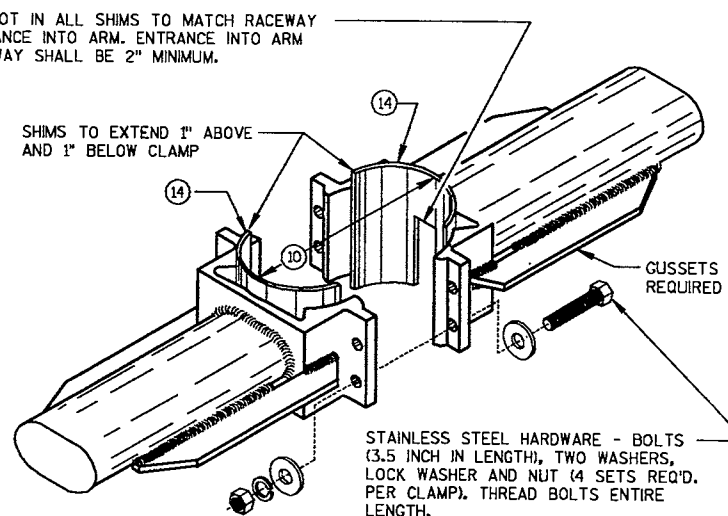
TYPICAL APPLICATION OF
GROMMET IN POLE SHAFT



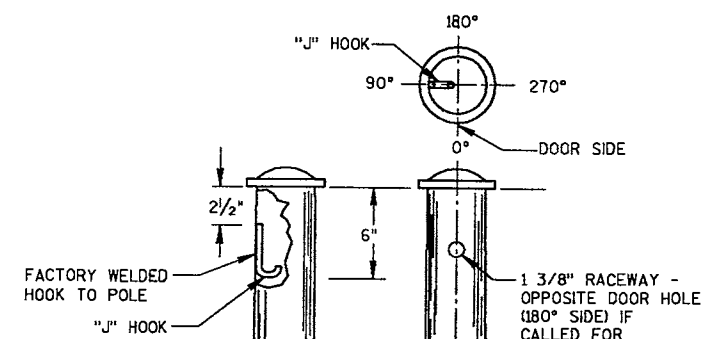
TYPICAL APPLICATION OF
CHASE NIPPLE IN POLE SHAFT



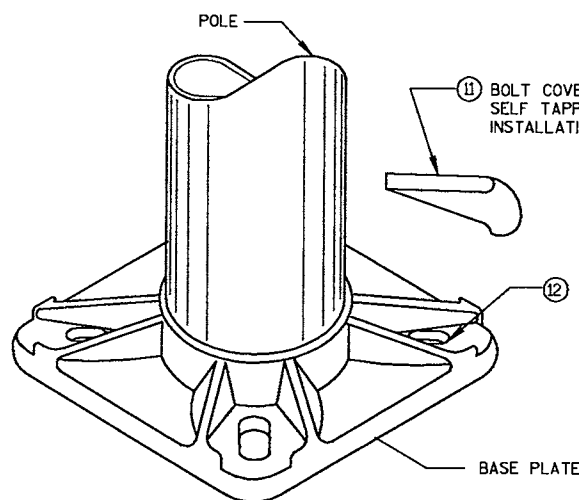
TYPICAL TROMBONE MAST ARM AND SINGLE
LUMINAIRE MAST ARM MOUNTING CLAMP



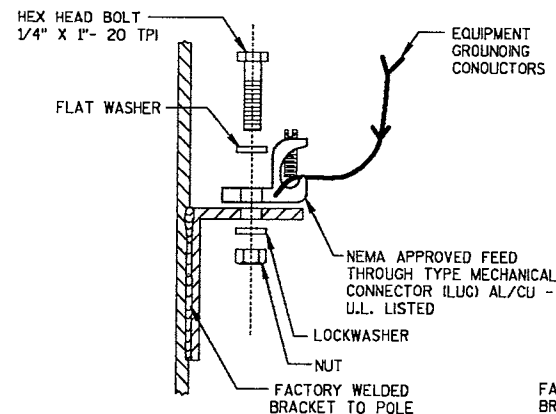
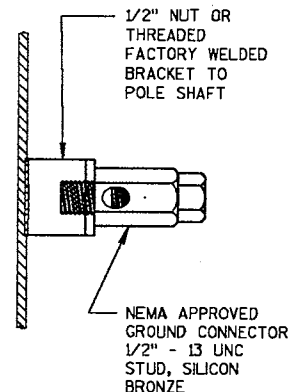
TYPICAL LUMINAIRE MAST ARM
(DOUBLE) MOUNTING BRACKETS



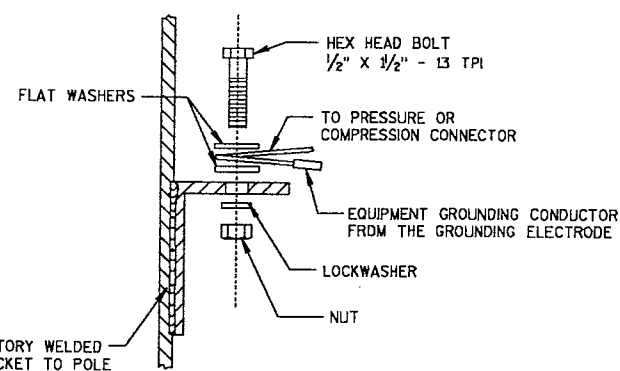
TYPICAL 'J' HOOK LOCATION



BASE PLATE



TYPICAL GROUNDING CONNECTIONS
NUT, BOLT AND WASHERS SHALL BE STAINLESS STEEL



GENERAL NOTES

CLAMP BOLT-NUT TIGHTENING TORQUE SHALL BE INDICATED BY INDENT STAMPING (1/2 INCH NUMERALS AND LETTERS) OR WEATHERPROOF PRINTING ON THE INSIDE OF THE CLAMP THAT IS WELDED TO THE ARM MEMBER.

- ⑩ 4.5" I.D. FOR LUMINAIRE MAST ARM CLAMP.
6.625" I.D. FOR TROMBONE MAST ARM CLAMP.
- ⑪ INDIVIDUAL BASE PLATE ANCHOR ROD COVERS. (4 REQUIRED)
- ⑫ BASE PLATE SLOTTED TO ACCEPT 11" THROUGH 12" BOLT CIRCLE USING 1" DIAMETER ANCHOR RODS.
- ⑬ OUTSIDE SHIM DIAMETER - (4.5" O.D. FOR LUMINAIRE MAST ARM)
- (6.625" O.D. FOR TROMBONE MAST ARM)
- ⑭ VARIABLE SHIM THICKNESS - (0.10", 0.25", 0.35", 0.53" OR 0.70")

SHIM THICKNESS FOR TROMBONE MAST ARMS MAY BE TYPICALLY 0.25", 0.35", 0.53" OR 0.70".

SHIM THICKNESS FOR LUMINAIRE MAST ARMS MAY BE TYPICALLY 0.10", 0.25" OR 0.35".

SHIM MATERIAL SHALL BE ALUMINUM ALLOY.

SHIM THICKNESS SHALL BE IMPRESSED INTO EACH SHIM. NUMERALS SHALL BE 1/4" HIGH AND LEGIBLE.

THE CONTRACTOR SHALL SUBMIT TWO COPIES OF ALL SHIM SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL.

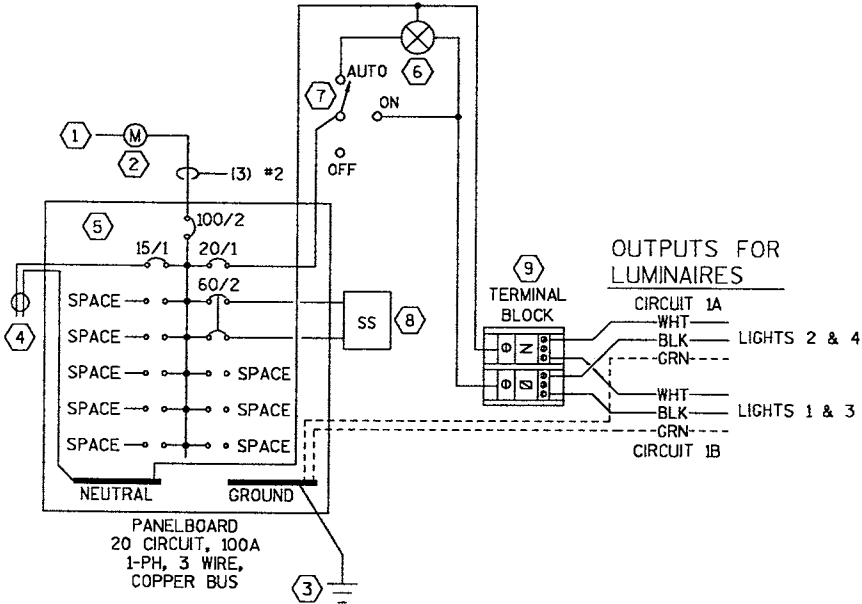
- ⑮ LEVELING SHIMS, DESIGNED FOR THE PURPOSE, SHALL BE USED WHEN PLUMBING POLES. THE USE OF WASHERS IN LIEU OF PROPER LEVELING SHIMS IS NOT ACCEPTABLE. LEVELING SHIMS SHALL BE USED ONLY BETWEEN THE TOP OF THE CONCRETE BASE AND A METALLIC BASE PLATE.

SHIMS SHALL BE LONG ENOUGH AND WIDE ENOUGH TO COMPLETELY COVER THE AREA UNDER THE LENGTH AND WIDTH OF THE BASE MOUNTING FLANGE.

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CONTROLLER #1 & #2 ONE-LINE DIAGRAM NOTES

- 1 ELECTRICAL CONTRACTOR SHALL ARRANGE FOR A 100A, 1 PHASE, 120/240V, UNDERGROUND SERVICE FROM THE UTILITY (WPS CO.). ANY UTILITY COSTS ASSOCIATED WITH THE UNDERGROUND SERVICE SHALL BE BORNE BY THE OWNER.
- 2 PROVIDE A METERING PEDESTAL PER UTILITY REQUIREMENTS. SEE SERVICE AND LIGHTING CONTROL CABINET DETAIL.
- 3 GROUND SERVICE PER CODE TO TWO DRIVEN GROUND RODS. SEE SERVICE AND LIGHTING CONTROL CABINET DETAIL.
- 4 PROVIDE A GFCI RECEPTACLE IN A WEATHERPROOF ENCLOSURE IN THE CONTROL CABINET.
- 5 PROVIDE A 100A, 1 PHASE, 120/240V, 3 WIRE PANELBOARD WITH A MINIMUM OF 20 CIRCUIT POSITIONS IN A NEMA-1 ENCLOSURE. THE PANELBOARD SHALL HAVE A COPPER BUS, A 2-POLE, 100A MAIN BREAKER AND BOLT-IN BRANCH BREAKERS. THE PANELBOARD SHALL INCLUDE A COPPER GROUND AND A NEUTRAL TERMINAL STRIP AND BE U.L. SERVICE ENTRANCE RATED. PANELBOARD ENCLOSURE SHALL BE MAX. 14" WIDE EQUAL TO SQUARE D NQ0D20L100CU. PROVIDE TYPED INDEX.
- 6 PROVIDE A PHOTOCELL IN THE CONTROLLER CABINET. THE PHOTOCELL SHALL BE RATED 120V, 1500 WATTS, AND SHALL BE THE THERMAL TYPE WITH TIME DELAY. THE PHOTOCELL SHALL TURN THE LIGHTS ON AT BETWEEN 1 TO 5 FOOT CANDLES OF DAYLIGHT AND TURN THEM OFF AT APPROXIMATELY 15 FOOT CANDLES OF DAYLIGHT. PROVIDE BUTTON TYPE PHOTOCELL EQUAL TO INTERMATIC #4021.
- 7 PROVIDE 3 POSITION SWITCH MARKED "HAND, OFF, AUTO" TO BYPASS THE PHOTOCELL AS SHOWN. LABEL SWITCH "PHOTO CONTROL BYPASS" PER DIAGRAM. MOUNT SWITCH IN THE SECONDARY DOOR COMPARTMENT PER CONTROL CABINET DETAILS.
- 8 PROVIDE SURGE SUPPRESSOR RATED FOR LINE-TO-LINE, LINE-TO-NEUTRAL, AND NEUTRAL-TO-GROUND SUPPRESSION MODES AND HAVING A MANUFACTURERS RATED WITHSTAND CAPABILITY OF 60K AMPS OR GREATER. SURGE SUPPRESSOR MAY BE EQUAL TO A LEVITON MODEL 32120-001.
- 9 PROVIDE POWER TERMINAL BLOCKS FOR CIRCUIT DISTRIBUTION AS INDICATED, EQUAL TO SQUARE D.



LIGHTING CONTROLLER #1 AND #2
ONE-LINE ELECTRICAL DIAGRAM

NTS

5707 SCHOFIELD AVEN
WESTON, WISCONSIN
54476

PHONE: (715) 359-940
FAX: (715) 355-4199

general@cwengineers.com
http://www.cwengineers.com

PROJECT:

LIGHTING DETAIL SHEET
2006 MARATHON COUNTY AND
VILLAGE OF WESTON
C.T.H. X / CAMP PHILLIPS ROAD
RECONSTRUCTION PROJECT
HOWLAND AVE. - TRANSPORT DR.

REVISIONS:

DRAWN BY:

RJS

CHECKED BY:

M.P.

APPROVED BY:

M.P.

DATE:

JAN 2006

LANG PROJECT NUMBER: 05-126

C.T.H. X / CAMP PHILLIPS ROAD
ROADWAY LIGHTING
VILLAGE OF WESTON, WISCONSIN



Electrical - Mechanical - Automation - Technology
510 N. 17th Ave. - Wausau, WI 54401 - 715-845-1333 FAX 715-848-8158
E-mail: lang@langassociates.net
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ONE LINE ELECTRICAL DIAGRAM

LANG SHEET:

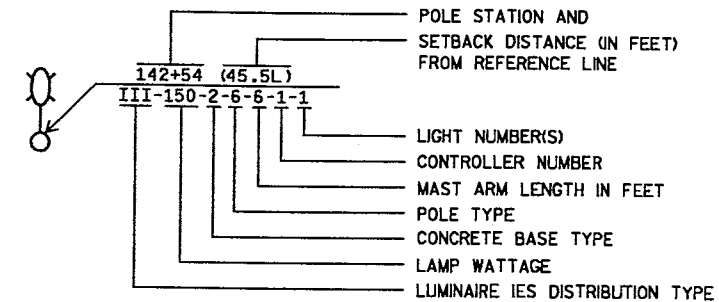
LD-10

SHEET:

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SYMBOLS	
	CONTROL CABINET
	PULL BOX STEEL 24X36-INCHES
	CONDUIT: CONDUIT SIZE = 2 INCH RIGID NONMETALLIC SCHEDULE 40 PVC UNLESS NOTED OTHERWISE.
	CONDUCTOR SYMBOL: TOP NUMBER = NO. OF CONDUCTORS BOTTOM NUMBER = CONDUCTOR SIZE FOR COPPER CONDUCTORS IN AWG
	POLE WITH ONE MAST ARM AND ONE LUMINAIRE. REFER TO FIXTURE LEGEND FOR ADDITIONAL INFORMATION.

FIXTURE LEGEND



5707 SCHOFIELD AVENUE
WESTON, WISCONSIN 54478

PHONE: (715) 359-9400
FAX: (715) 355-4199

general@cwengineers.com
http://www.cwengineers.com

PROJECT:

LIGHTING PLAN SHEET
2006 MARATHON COUNTY AND
VILLAGE OF WESTON
C.T.H. X / CAMP PHILLIPS ROAD
RECONSTRUCTION PROJECT
HOWLAND AVE. - TRANSPORT DR.

REVISIONS:

GENERAL NOTES

- REFER TO FIXTURE LEGEND FOR CONCRETE BASE TYPE.

DRAWING NOTES

- INSTALL CONDUIT FOR FUTURE USE. EXTEND TO 5' BEYOND CURB OR SIDEWALK AND CAP.

05126-00-BD-LP01.dwg, "Paper1" PLOTTED AT 3:48:04 PM ON 02-02-2008 BY ratwarr

LANG PROJECT NUMBER: 05-126

C.T.H. X / CAMP PHILLIPS ROAD
ROADWAY LIGHTING
VILLAGE OF WESTON, WISCONSIN



Electrical - Mechanical - Automation - Technology
510 N 17th Ave. - Wausau, WI 54401 - 715-945-1333 FAX 715-948-9156
E-mail: lang@langassociates.com
1496 Behrens St., Building E, Suite 502 - Green Bay, WI 54301 - 920-498-6808
FAX 920-498-6688 E-mail: langgb@langassociates.com
Web site: www.langassociates.com

ROADWAY LIGHTING PLAN 1

LANG SHEET:

LP-1

SHEET:
39 OF 173

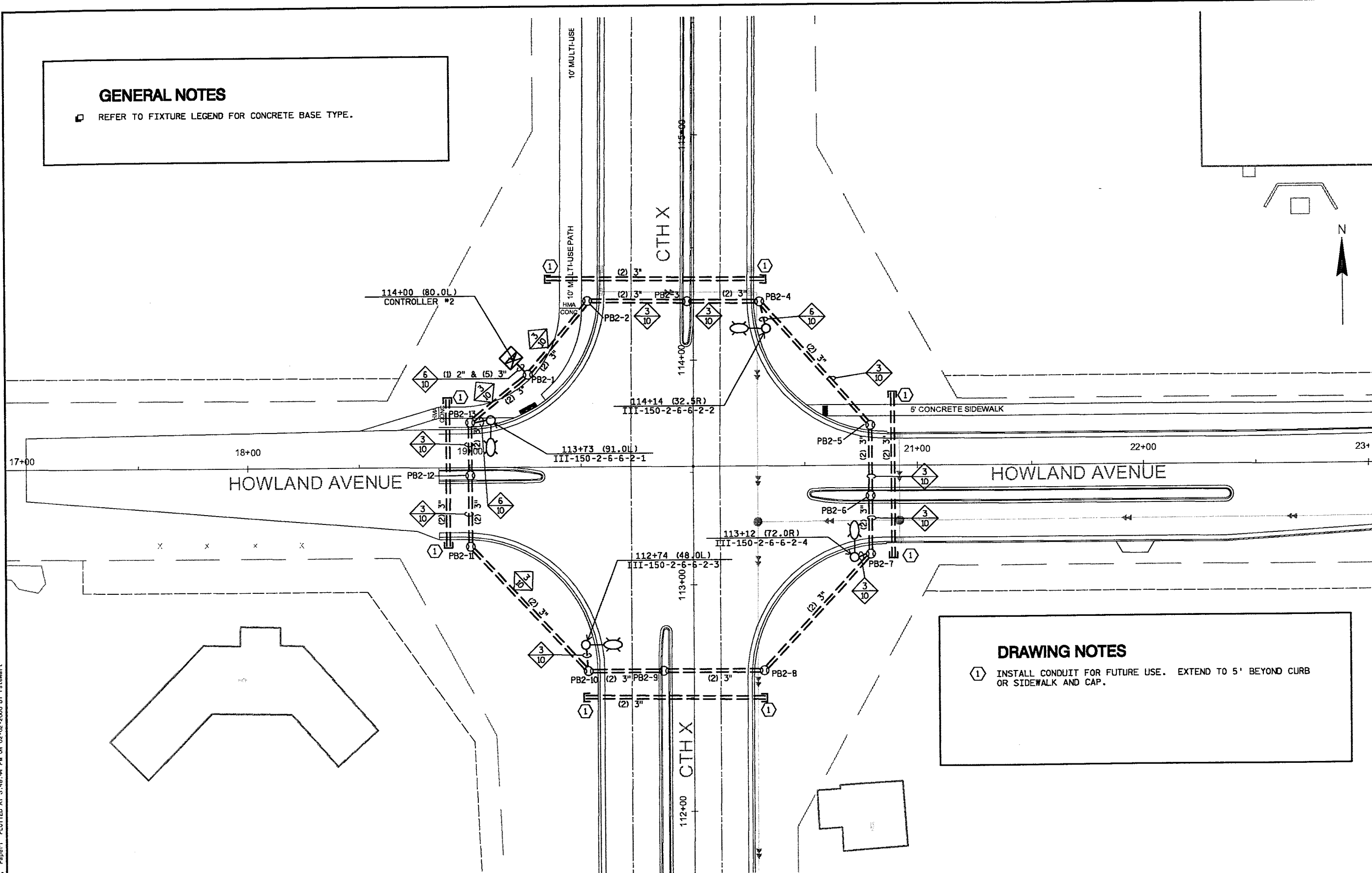
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GENERAL NOTES

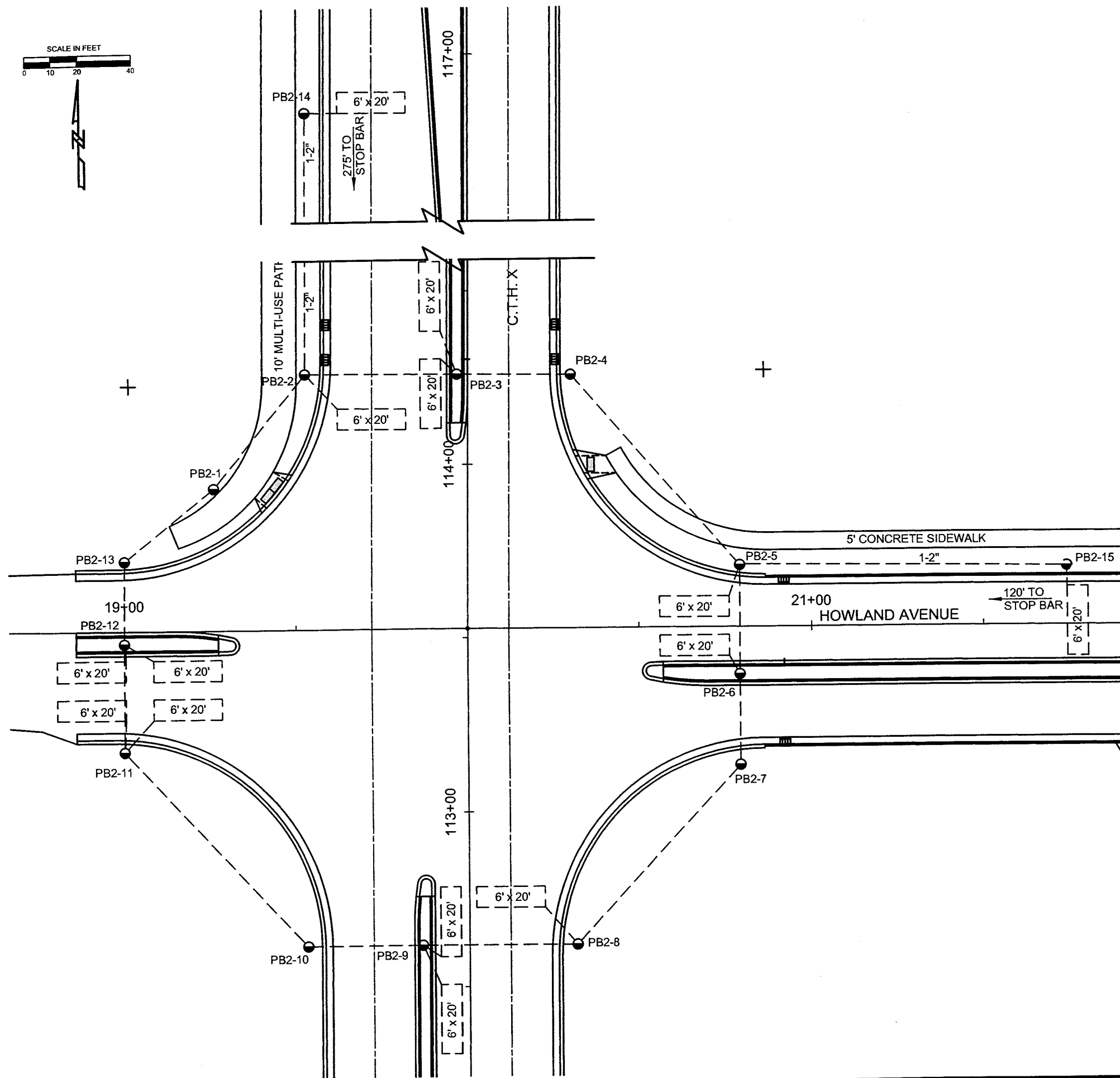
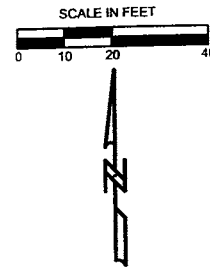
REFER TO FIXTURE LEGEND FOR CONCRETE BASE TYPE.

DRAWING NOTES

1 INSTALL CONDUIT FOR FUTURE USE. EXTEND TO 5' BEYOND CURB OR SIDEWALK AND CAP.



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05126-00-00-LS01.dwg, "Paper1" PLOTTED AT 5:34:51 PM ON 02-02-2008 BY rstewart

CONDUIT AND ELECTRICAL WIRE SCHEDULE

		CONDUIT RIGID NONMETALLIC SCHEDULE 40				ELECTRICAL WIRE LIGHTING				
ROUTE		LENGTH	2-INCH	3-INCH	LENGTH	10 AWG				
FROM	TO	(LF)	NO. TOTAL (LF)	NO. TOTAL (LF)	(LF)	655.0615	NO. TOTAL (LF)		NOTES	
CIRCUIT 1A										
CONTROLLER #1	PB1-1	10	1	10	2	20	20	3	60	
PB1-1	PB1-2	41			2	82	51	3	153	
PB1-2	PB1-3	45			2	90	55	3	165	
PB1-3	PB1-4	36			2	72	46	3	138	
PB1-4	LIGHT 1-2	13	1	13			23	3	69	
LIGHT 1-2	PB1-4	13					23	3	69	
PB1-4	PB1-5	60			2	120	70	3	210	
PB1-5	PB1-6	39			2	78	49	3	147	
PB1-6	PB1-7	26			2	52	36	3	108	
PB1-7	LIGHT 1-4	8	1	8			18	3	54	
NW QUADRANT	NE QUADRANT	97			2	194				
NE QUADRANT	SE QUADRANT	63			2	126				
CIRCUIT 1B										
CONTROLLER #1	PB1-1	10				20	3		60	
PB1-1	PB1-13	35			2	70	45	3	135	
PB1-13	LIGHT 1-1	10	1	10			20	3	60	
LIGHT 1-1	PB1-13	10					20	3	60	
PB1-13	PB1-12	26			2	52	36	3	108	
PB1-12	PB1-11	36			2	72	46	3	138	
PB1-11	PB1-10	61			2	122	71	3	213	
PB1-10	LIGHT 1-3	8	1	8			18	3	54	
PB1-10	PB1-9	36			2	72				
PB1-9	PB1-8	44			2	88				
PB1-8	PB1-7	74			2	148				
NW QUADRANT	SW QUADRANT	90			2	180				
SW QUADRANT	SE QUADRANT	94			2	188				
CIRCUIT 2A										
CONTROLLER #2	PB2-1	9	1	9	5	45	19	3	57	
PB2-1	PB2-2	42			2	84	52	3	156	
PB2-2	PB2-3	45			2	90	55	3	165	
PB2-3	PB2-4	33			2	66	43	3	129	
PB2-4	LIGHT 2-2	12	1	12			22	3	66	
LIGHT 2-2	PB2-4	12					22	3	66	
PB2-4	PB2-5	74			2	148	84	3	252	
PB2-5	PB2-6	32			2	64	42	3	126	
PB2-6	PB2-7	26			2	52	36	3	108	
PB2-7	LIGHT 2-4	8	1	8			18	3	54	
NW QUADRANT	NE QUADRANT	95			2	190				
NE QUADRANT	SE QUADRANT	75			2	150				
CIRCUIT 2B										
CONTROLLER #2	PB2-1	9					19	3	57	
PB2-1	PB2-13	34			2	68	44	3	132	
PB2-13	LIGHT 2-1	9	1	9			19	3	57	
LIGHT 2-1	PB2-13	9					19	3	57	
PB2-13	PB2-12	24			2					
PB2-12	PB2-11	32			2	64	42	3	126	
PB2-11	PB2-10	77			2	154	87	3	261	
PB2-10	LIGHT 2-3	12	1	12			22	3	66	
PB2-10	PB2-9	34			2	68				
PB2-9	PB2-8	45			2	90				
PB2-8	PB2-7	70			2	140				
NW QUADRANT	SW QUADRANT	80			2	160				
SW QUADRANT	SE QUADRANT	65			2	130				
TOTALS										
				98		3,588			3,838	
NOTES										

PULL BOXES STEEL

NO.	LOCATION	STATION	OFFSET	24X36-INCH 653.0135	NOTES
PB1-1	CTH X	141+34	72.0L	1	
PB1-2	CTH X	141+66	47.0L	1	
PB1-3	CTH X	141+66	02.5L	1	
PB1-4	CTH X	141+66	33.0R	1	
PB1-5	CTH X	141+26	78.5R	1	
PB1-6	CTH X	140+87	78.5R	1	
PB1-7	CTH X	140+61	78.5R	1	
PB1-8	CTH X	140+05	31.0R	1	
PB1-9	CTH X	140+05	13.0L	1	
PB1-10	CTH X	140+05	49.0L	1	
PB1-11	CTH X	140+46	94.0L	1	
PB1-12	CTH X	140+81	94.0L	1	
PB1-13	CTH X	141+07	94.0L	1	
PB2-1	CTH X	113+93	74.0L	1	
PB2-2	CTH X	114+26	47.5L	1	
PB2-3	CTH X	114+26	03.0L	1	
PB2-4	CTH X	114+26	30.0R	1	
PB2-5	CTH X	113+71	79.0R	1	
PB2-6	CTH X	113+39	79.0R	1	
PB2-7	CTH X	113+13	79.0R	1	
PB2-8	CTH X	112+62	31.5R	1	
PB2-9	CTH X	112+62	13.5L	1	
PB2-10	CTH X	112+62	47.0L	1	
PB2-11	CTH X	113+18	100.0L	1	
PB2-12	CTH X	113+49	100.0L	1	
PB2-13	CTH X	113+72	100.0L	1	
TOTALS				25	
NOTES					

CONTROLLERS

LIGHTING CONTROLLERS SPV.0060 ()	LOCATION		CONCRETE CONTROL CABINET BASES TYPE 9 SPECIAL 654.0217	LIGHTING CONTROLLER		SERVES	NOTES
	STATION	OFFSET		LIGHTING CONTROL CABINET	ELECTRICAL SERVICE SIZE		
CONTROLLER #1	141+38	79.0L		1 TYPE 3860	100A, 120/240 VOLTS	INTERSECTION CTH X & SHORLEY AVE.	1
CONTROLLER #2	113+89	79.0L		1 TYPE 3860	100A, 120/240 VOLTS	INTERSECTION CTH X & HOWLAND AVE.	1
TOTAL				2			
NOTES							
1 CONTRACTOR SHALL OBTAIN A 100 AMP, 1 PHASE, 120/240 VOLT UNDERGROUND SERVICE TO THE CONTROLLER FROM THE UTILITY.							

LIGHTING BASES, POLES, LUMINAIRE ARMS & LUMINAIRES

POLE NO.	LOCATION		CONCRETE BASES TYPE 2 654.0102	TRANSFORMER BASES STANDARD 11 1/2-INCH BOLT CIRCLE 657.0255	POLES TYPE 6 35-FOOT ALUMINUM 657.0325	LUMINAIRE ARMS 4 1/2-INCH CLAMP 6-FOOT 657.0610	LUMINAIRES DECORATIVE HPS 150W SPECIAL SPV.0060.02	ELECTRICAL WIRE LIGHTING 12 AWG 655.0610	NOTES
	ROADWAY	STATION							
1-1	CTH X	141+09	84.5L	1	1	1	1	1	129
1-2	CTH X	141+54	38.0R	1	1	1	1	1	129
1-3	CTH X	140+13	51.5L	1	1	1	1	1	129
1-4	CTH X	140+59	71.5R	1	1	1	1	1	129
2-1	CTH X	113+73	91.0L	1	1	1	1	1	129
2-2	CTH X	114+14	32.5R	1	1	1	1	1	129
2-3	CTH X	112+74	48.0L	1	1	1	1	1	129
2-4	CTH X	113+12	33.0R	1	1	1	1	1	129
TOTALS				8	8	8	8	8	1,032
NOTES									

RECAP OF QUANTITIES (CONTROLLERS #1 & #2)

ITEM NUMBER	DESCRIPTION	QUANTITY	UNIT
STANDARD ITEMS			
652.0225	CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH	99	LF
652.0235	CONDUIT RIGID NONMETALLIC SCHEDULE 40 3-INCH	3,589	LF
653.0135	PULL BOXES STEEL 24X36-INCH	26	EACH
654.0102	CONCRETE BASES TYPE 2	8	EACH
654.0217	CONCRETE CONTROL CABINET BASES TYPE 9 SPECIAL	2	EACH
655.0610	ELECTRICAL WIRE LIGHTING 12 AWG	1,032	LF
655.0615	ELECTRICAL WIRE LIGHTING 10 AWG	3,936	LF
657.0255	TRANSFORMER BASES STANDARD 11 1/2-INCH BOLT CIRCLE	8	EACH
657.0325	POLES TYPE 6	8	EACH
657.0610	LUMINAIRE ARMS SINGLE MEMBER 4 1/2-INCH CLAMP 6-FT	8	EACH
659.0115	LUMINAIRES UTILITY HPS 150 WATTS	8	EACH
SPECIAL ITEMS			
SPV.0105.01	LIGHTING CONTROLLER	2	LS
SPV.0060.02	LUMINAIRES DECORATIVE HPS 150 WATTS	8	EACH

DETAILED QUANTITY BREAKDOWN SHOWN ELSEWHERE.

LANG PROJECT NUMBER: 05-126

SCALE: NONE

C.T.H. X / CAMP PHILLIPS ROAD
ROADWAY LIGHTING
VILLAGE OF WESTON, WISCONSIN



Electrical - Mechanical - Automation - Technology
510 N. 17th Ave. - Wausau, WI 54401 - 715-945-1233 - FAX 715-948-8156
E-mail: lang@langassociates.net
1456 Bellevue St., Building E, Suite 502 - Green Bay, WI 54301 - 920-438-8888
FAX 920-438-8886 - E-mail: langgb@langassociates.net
Web site: www.langassociates.net

LIGHTING SCHEDULES SHEET 1

LANG SHEET:

LS-01

DRAWN BY:

RJS

CHECKED BY:

M.P.

APPROVED BY:

M.P.

DATE:

JAN 2006

SHEET:

42 OF 173



5707 SCHOFIELD AVENUE
WESTON, WISCONSIN
54476

PHONE: (715) 359-9400
FAX: (715) 355-4199

general@cwengineers.com
http://www.cwengineers.com

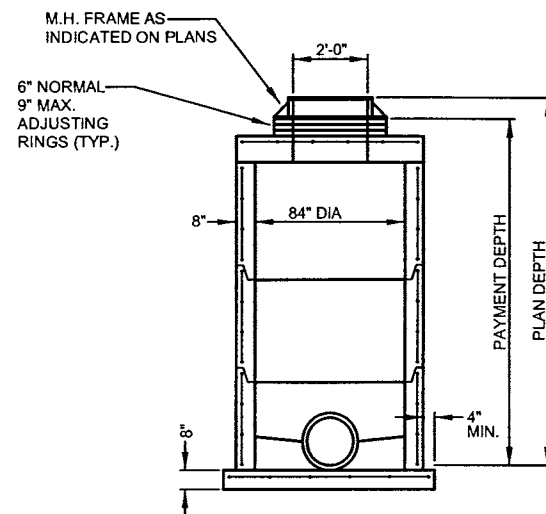
PROJECT:

LIGHTING DETAIL SHEET

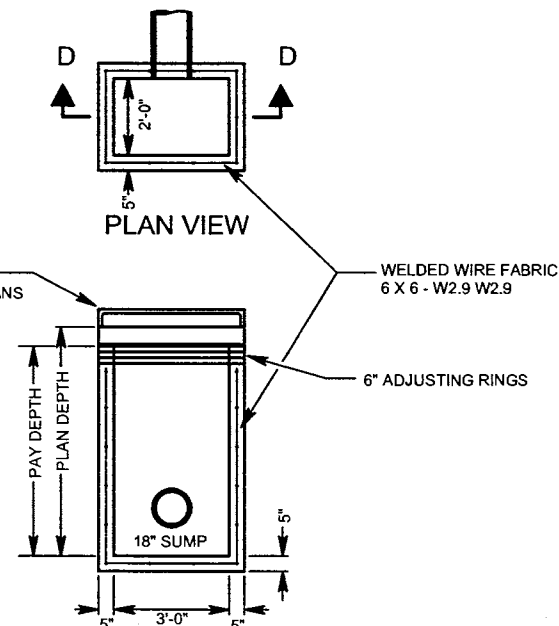
2006 MARATHON COUNTY AND
VILLAGE OF WESTON
C.T.H. X / CAMP PHILLIPS ROAD
RECONSTRUCTION PROJECT
HOWLAND AVE. - TRANSPORT DR.

REVISIONS:

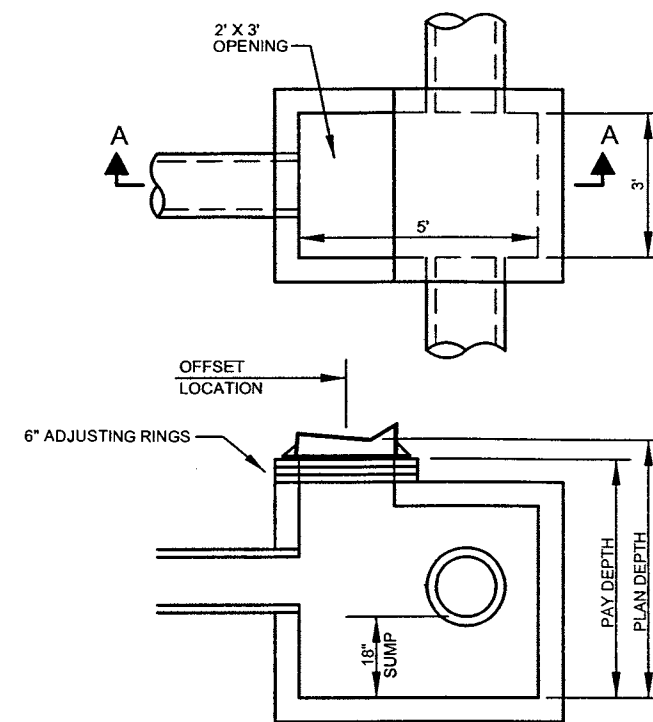
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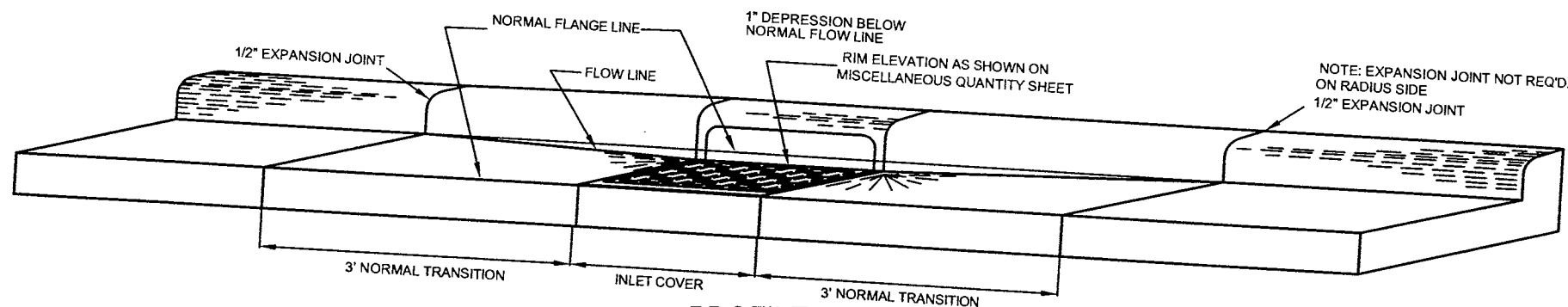
MODIFIED TYPE 3 MANHOLE
(PRECAST REINFORCED CONCRETE)



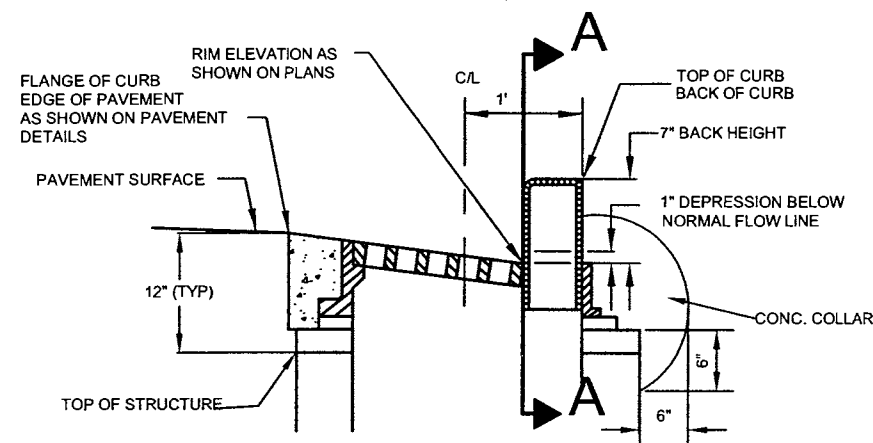
SECTION D-D
MODIFIED TYPE 3 INLET
(PRECAST REINFORCED CONCRETE)



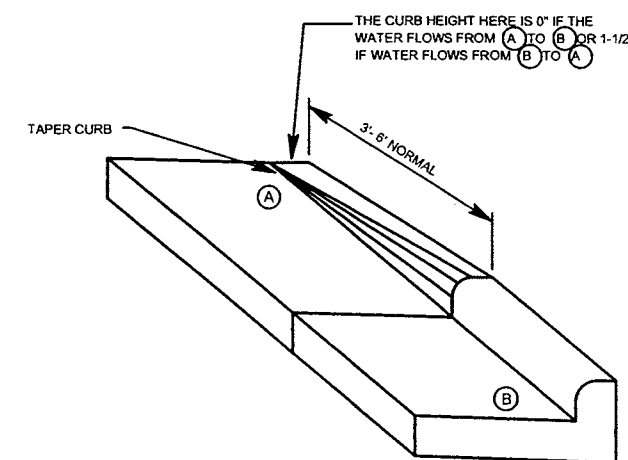
SECTION A-A
MODIFIED TYPE 3 CATCH BASIN



PROFILE
SECTION A-A

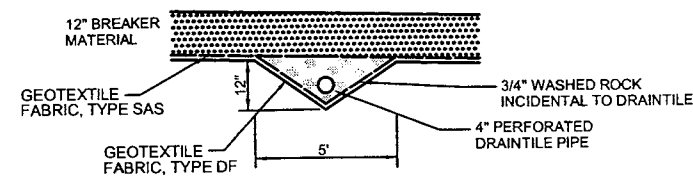


DEPRESSED GUTTER AT INLETS
NOT TO SCALE

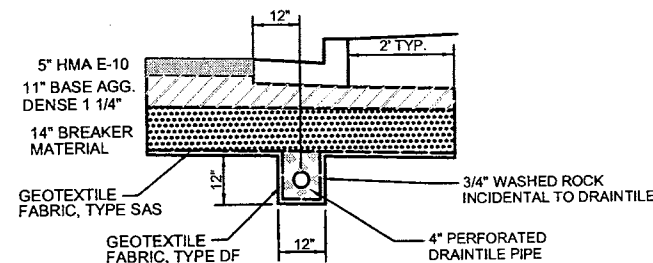


CURB TAPER DETAIL

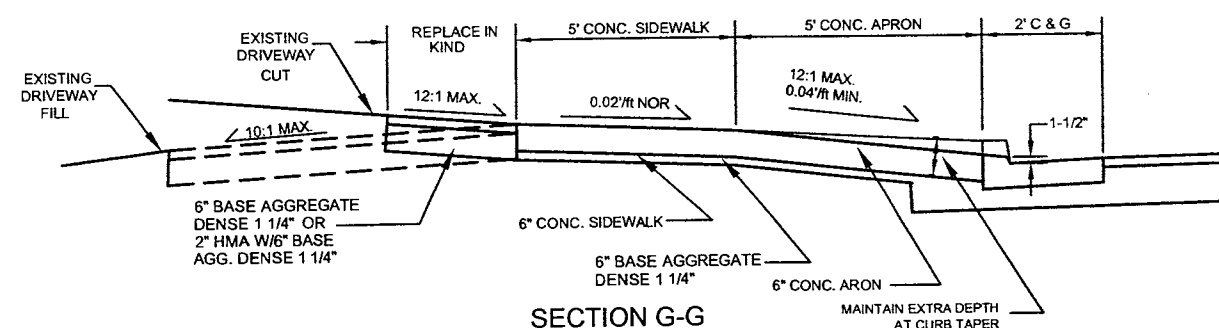
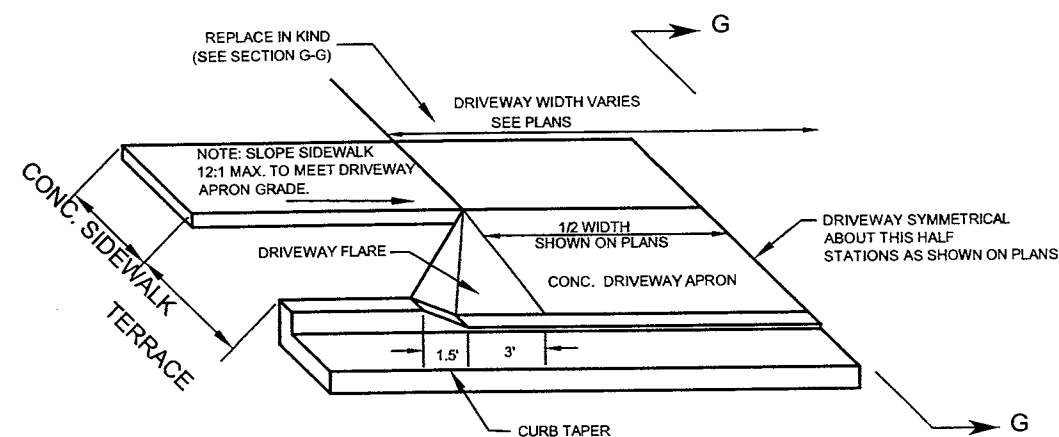
P:\DRAFT\32-300300 CTH X DEC 2005\CAD\CWEA-DETAILS.dwg, DRIVEWAY, 2/20/2006 2:26:00 PM



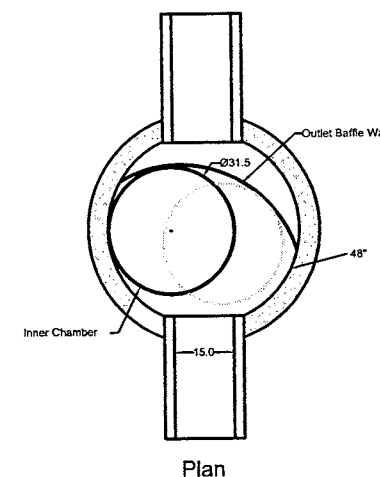
DRAINTILE DETAIL ACROSS ROAD



DRAINTILE DETAIL UNDER CURB

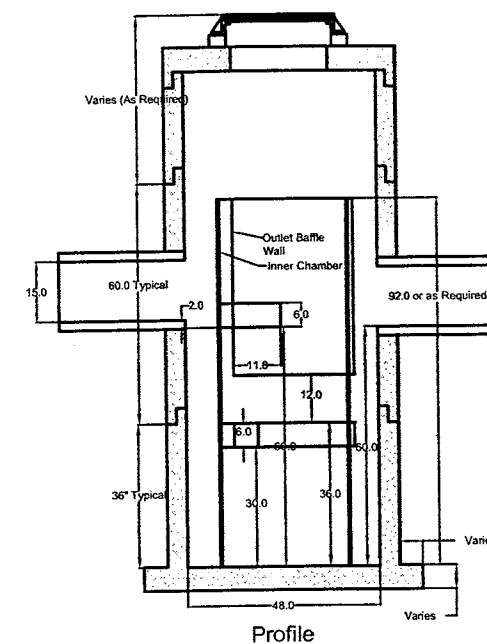


TYPICAL DRIVEWAY APRON WITH SIDEWALK

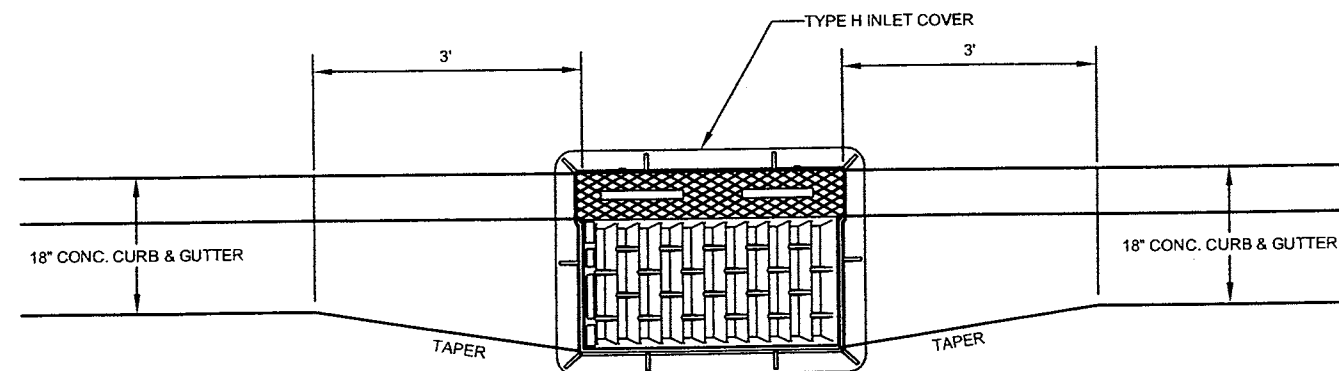


U.S. Patent No. 6,951,619

Dimensions in inches
Permanent Pool Volume = 450 US gallons
The Hydroguard must be cleaned after the construction period if it is used as a sediment and erosion control measure.
The Hydroguard should be inspected once per year for stabilized sites
Inspection will determine the maintenance frequency (annual maintenance or once every two years typical for stabilized sites)
Sites with unstable conditions (exposed soil or materials storage) will require more frequent inspection and maintenance



STORMWATER TREATMENT STRUCTURE DETAIL
(HYDROWORKS MODEL HG4 OR APPROVED EQUAL)



BACK OF CURB TAPER AT INLETS

P:\DRAFT\32800300 CTH X DEC 2005\CAD\CW\EA-DETAILS.dwg, RIPRAP, 2/20/2006 2:26:30 PM

PROJECT:

DETAIL SHEET
2006 MARATHON COUNTY AND
VILLAGE OF WESTON
C.T.H. X / CAMP PHILLIPS ROAD
RECONSTRUCTION PROJECT
HOWLAND AVE. - TRANSPORT DR.

REVISIONS:

DRAWN BY:

A.LEE

CHECKED BY:

D.G.

APPROVED BY:

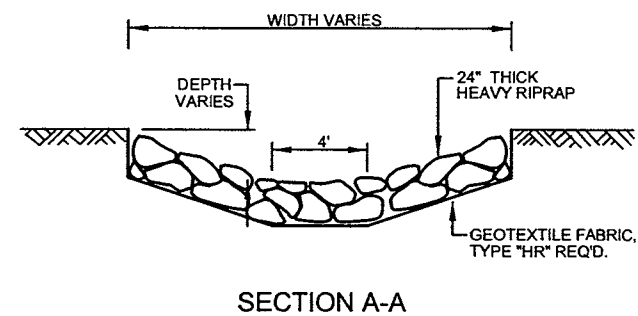
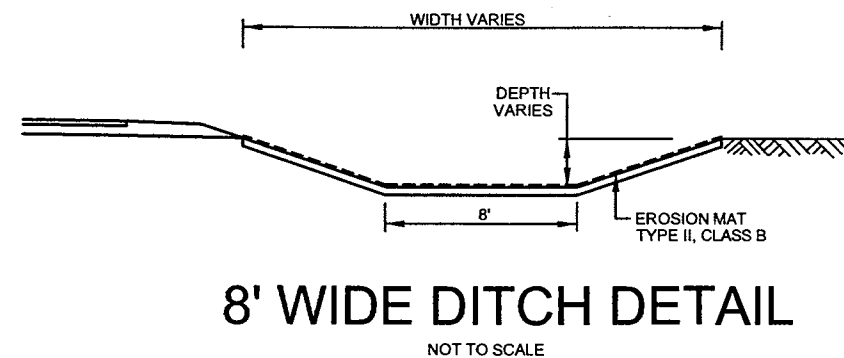
H.Z.

DATE:

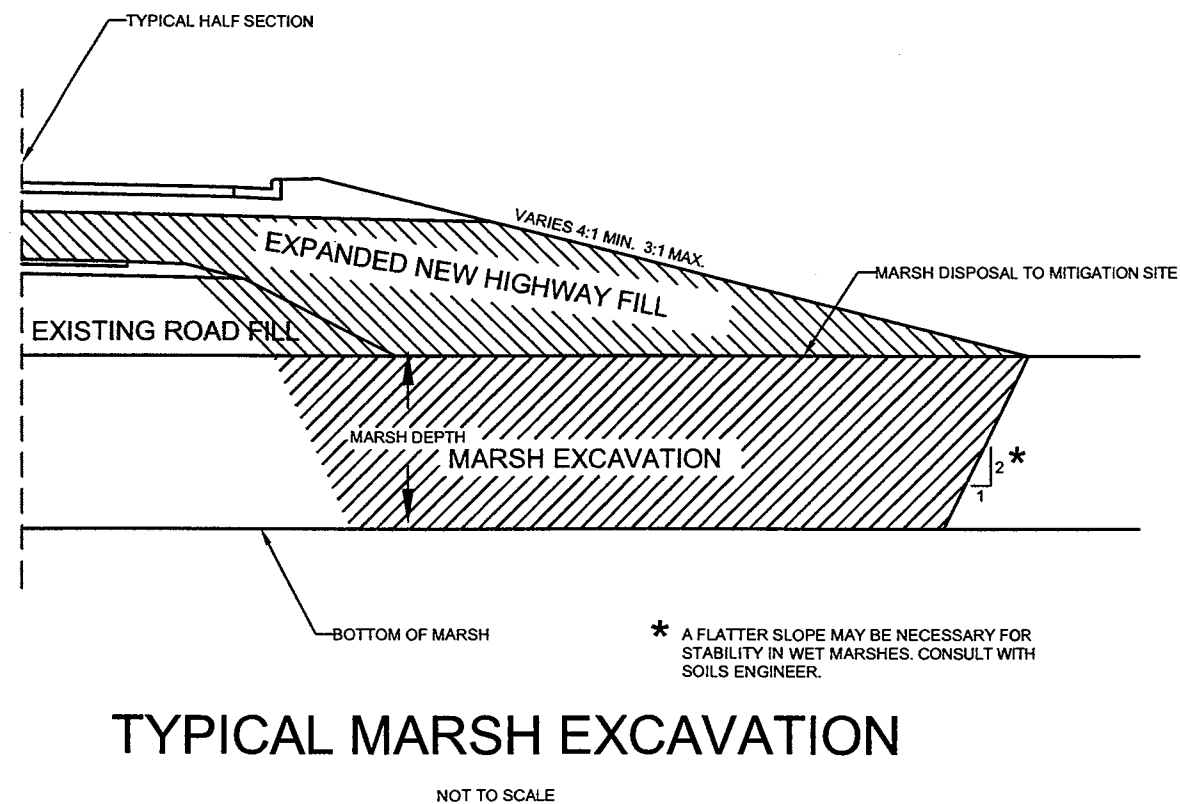
FEB 2006

SHEET:

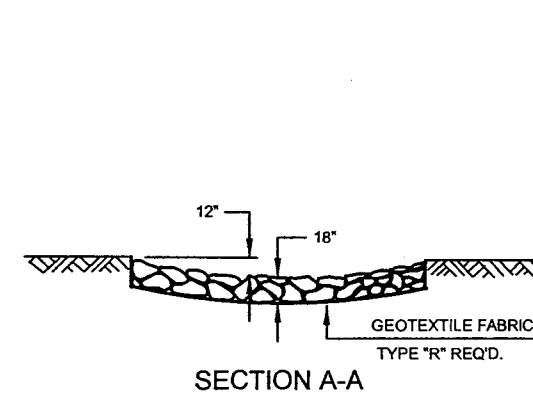
45 OF 173



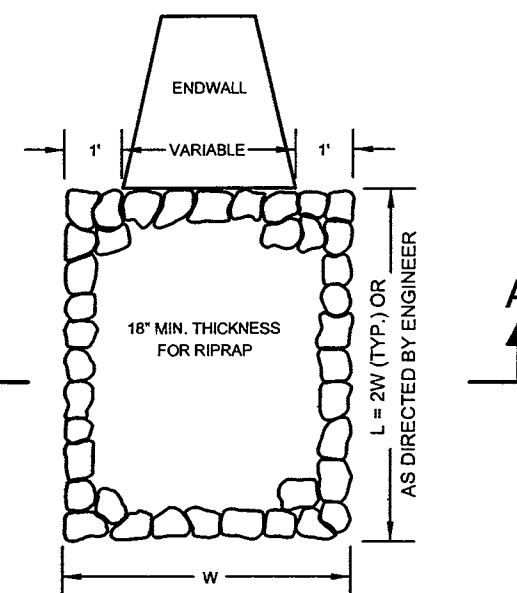
HEAVY RIPRAP DETAIL
NOT TO SCALE



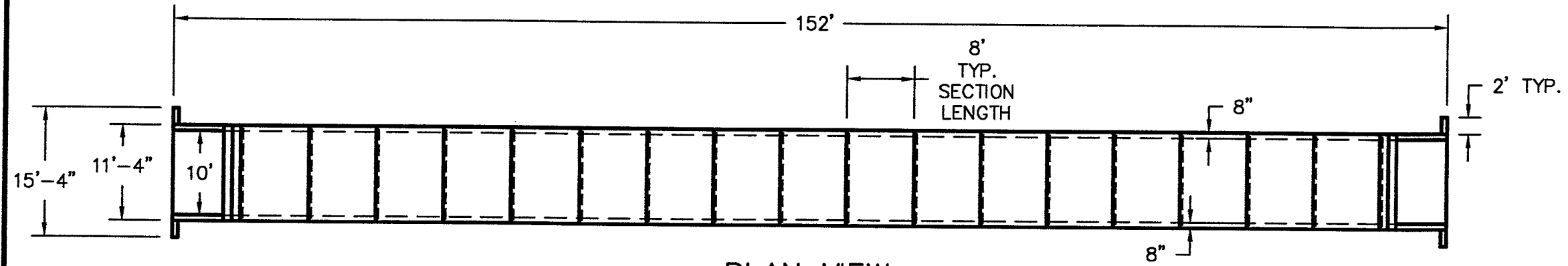
* A FLATTER SLOPE MAY BE NECESSARY FOR
STABILITY IN WET MARSHES. CONSULT WITH
SOILS ENGINEER.



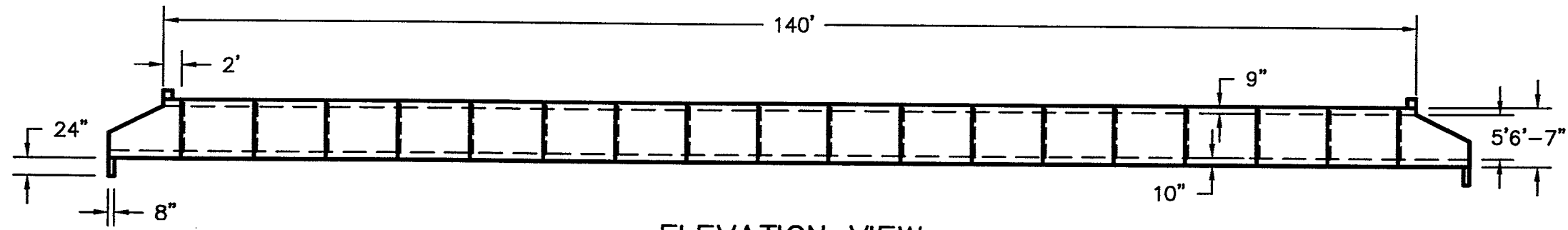
RIPRAP DETAIL
NOT TO SCALE



MARATHON COUNTY



PLAN VIEW

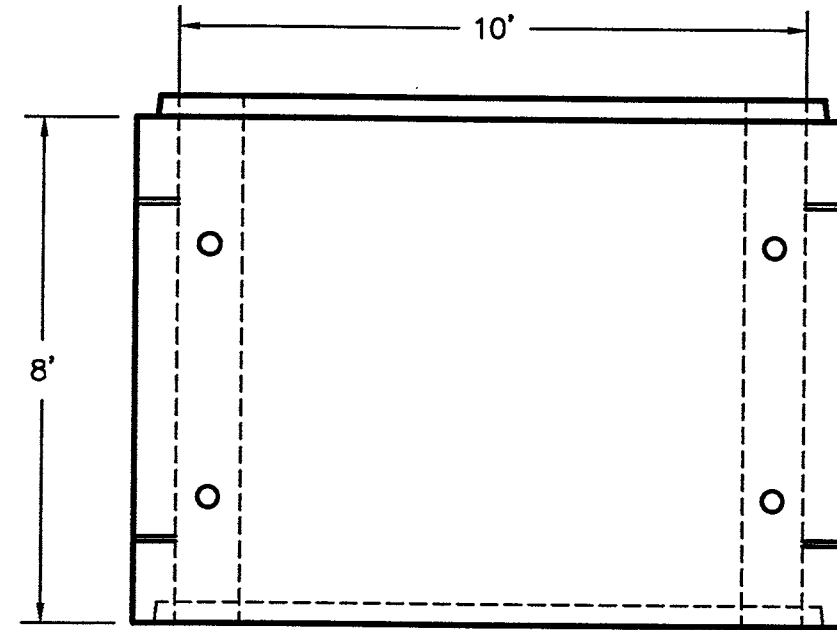


ELEVATION VIEW

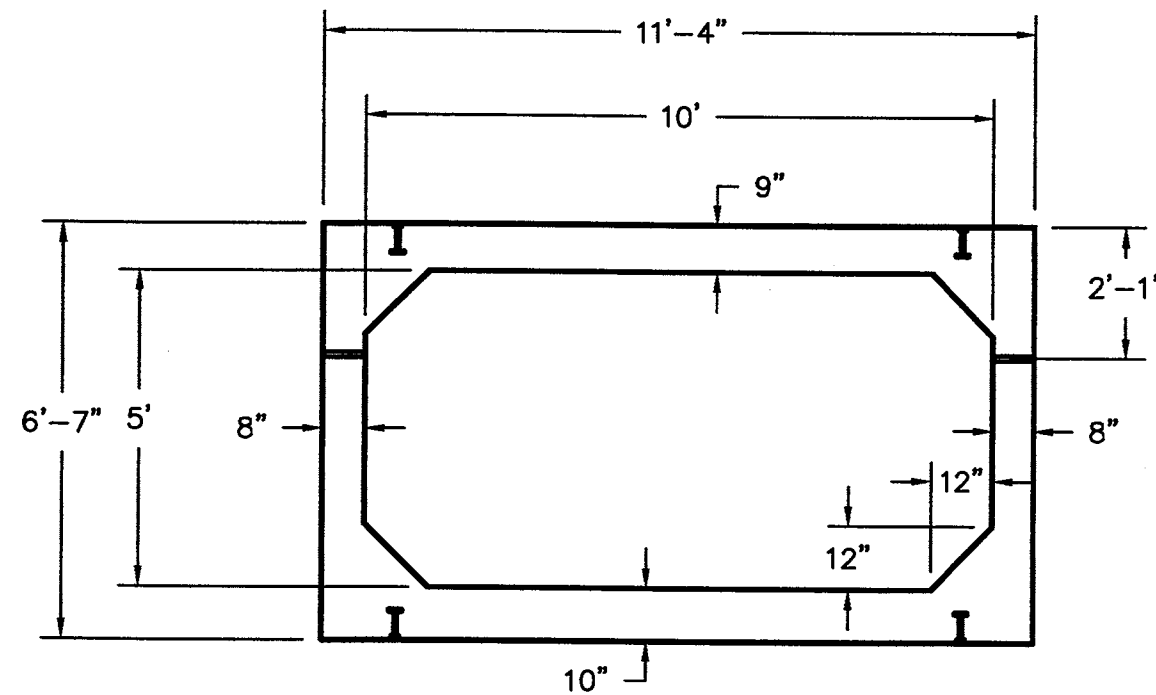
MARATHON COUNTY ESTIMATE	WIESER CONCRETE W3716 US HWY10. MAIDEN ROCK, WI 54750 800-325-8456			SCALE: 1" = 20'	REV NO.	DATE:
				DRAWN BY: SWT		
				DATE: 1/17/06		
				FILE: Box Culvert 2006\Marathon County Est.		
SHEET NO. 1 OF 5						

MARATHON COUNTY (17) EA. 8FT LONG SECTIONS

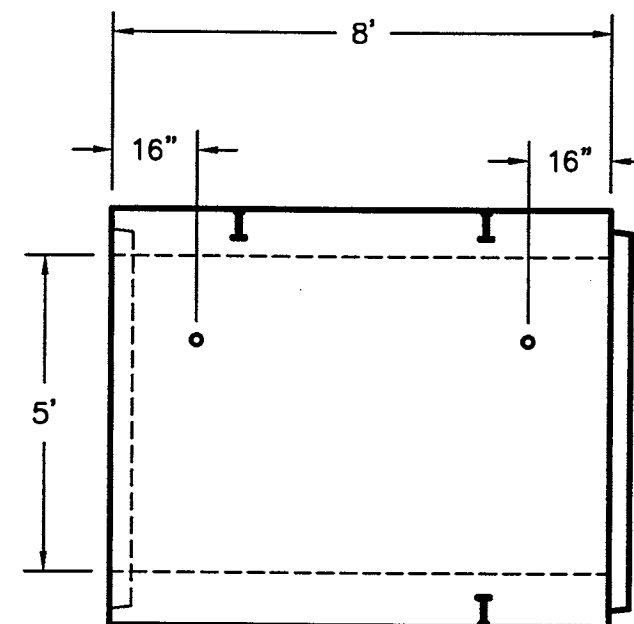
(17) REQUIRED
WEIGHT - APPROX. 30,900 LBS EACH



TOP VIEW



END VIEW



SIDE VIEW

WIESER CONCRETE
W3716 US HWY10. MAIDEN ROCK, WI 54750
800-325-8456

MARATHON COUNTY
ESTIMATE

SHEET NO.
2 OF 5

SCALE: 1/4" = 1'
DRAWN BY: SWT
DATE: 1/17/06

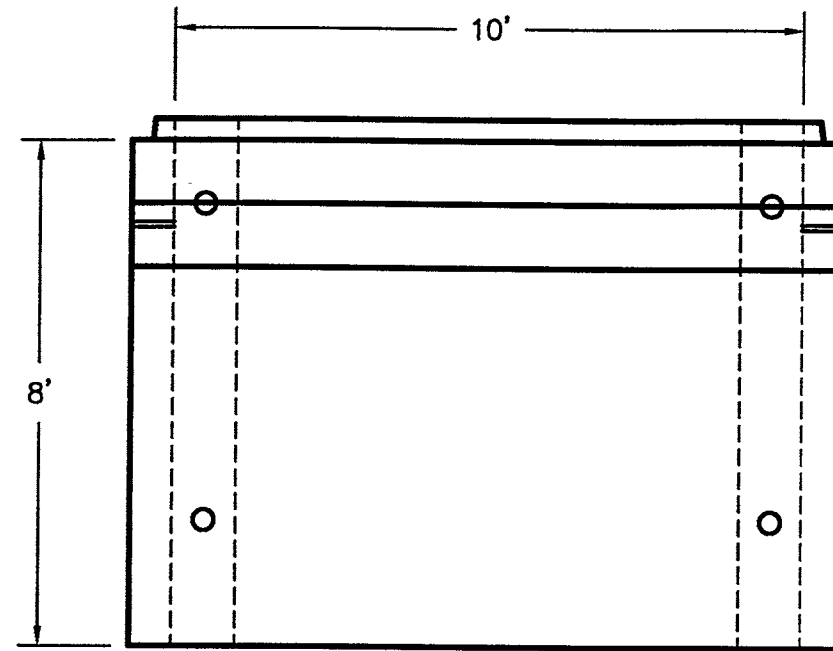
REV NO.

DATE:

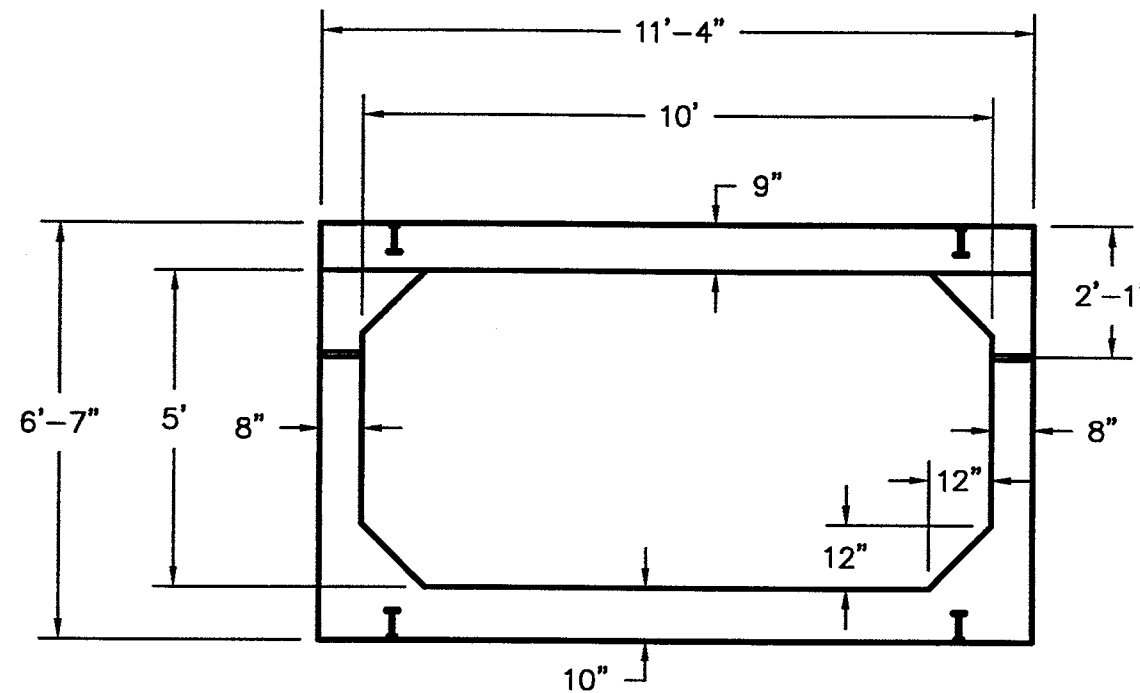
FILE: Box Culvert 2006\Marathon County Est.

MARATHON COUNTY (2) EA. 8FT LONG SECTIONS

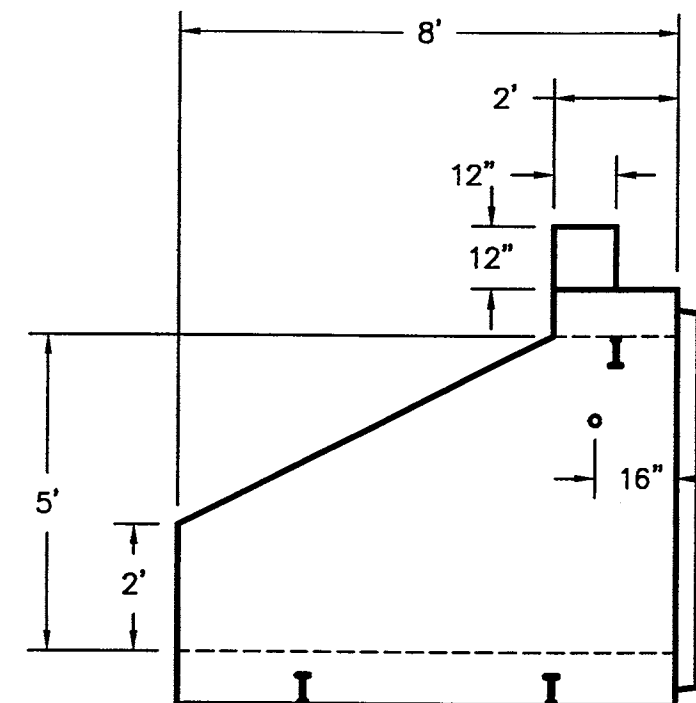
(2) REQUIRED (1-MALE, 1- FEMALE)
WEIGHT - APPROX. 26,200 LBS EACH



TOP VIEW



END VIEW



SIDE VIEW

WIESER CONCRETE
W3716 US HWY10. MAIDEN ROCK, WI 54750
800-325-8456

MARATHON COUNTY
ESTIMATE

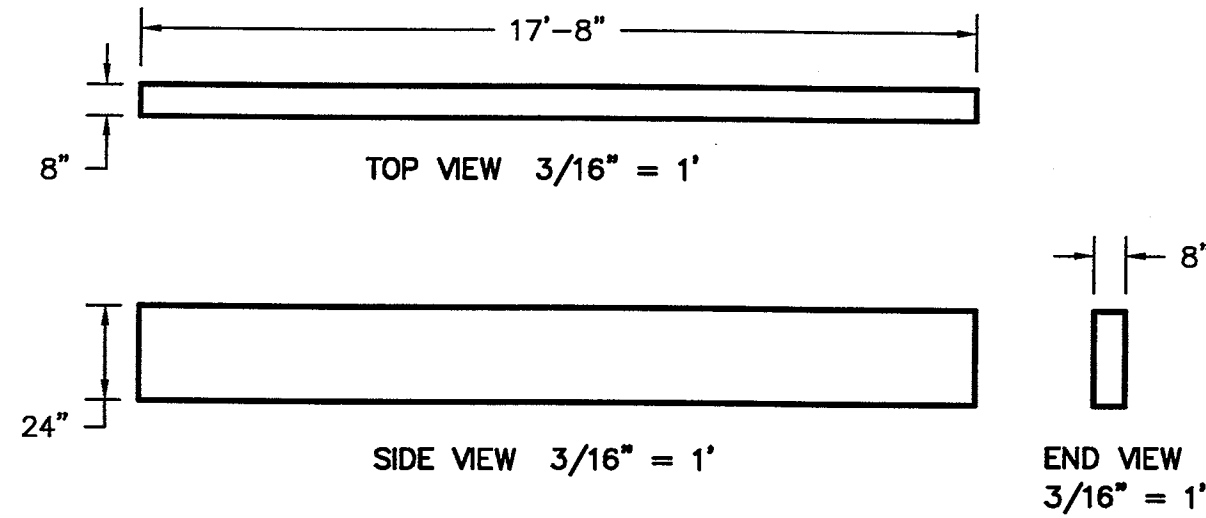
SHEET NO.
3
OF
5

SCALE: 1/4" = 1'	REV NO.	DATE:
DRAWN BY: SWT		
DATE: 1/17/06		
FILE: Box Culvert 2006\Marathon County Est.		

MARATHON COUNTY

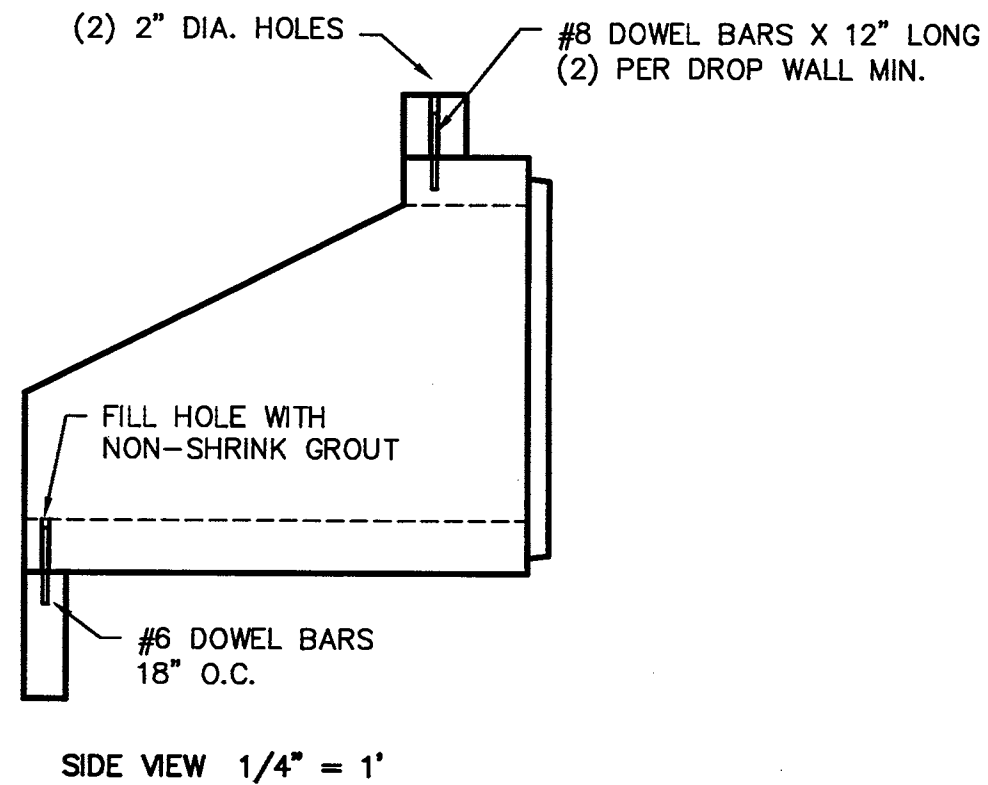
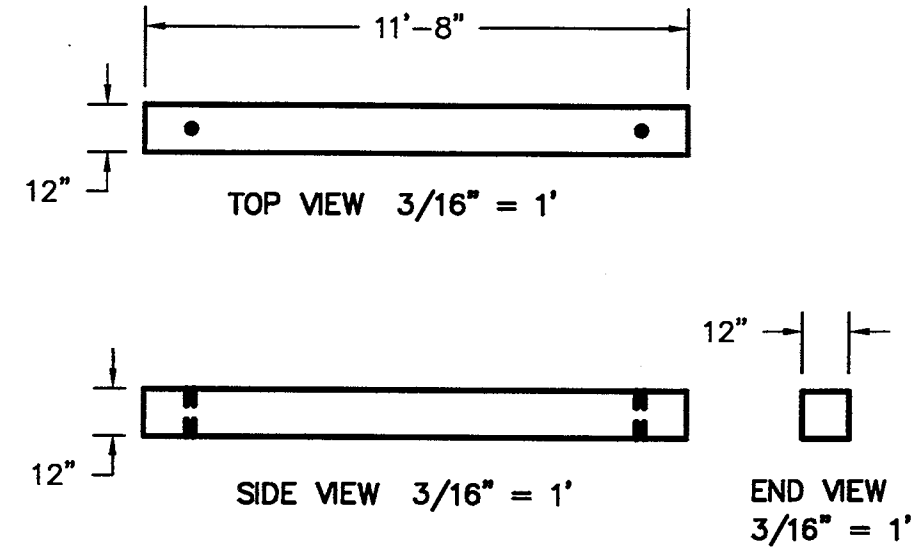
(2) EA. DROP WALLS

(2) REQUIRED
WEIGHT - APPROX. 3,550 LBS EACH



(2) EA. HEAD WALLS

(2) REQUIRED
WEIGHT - APPROX. 1,750 LBS EACH



MARATHON COUNTY
ESTIMATE

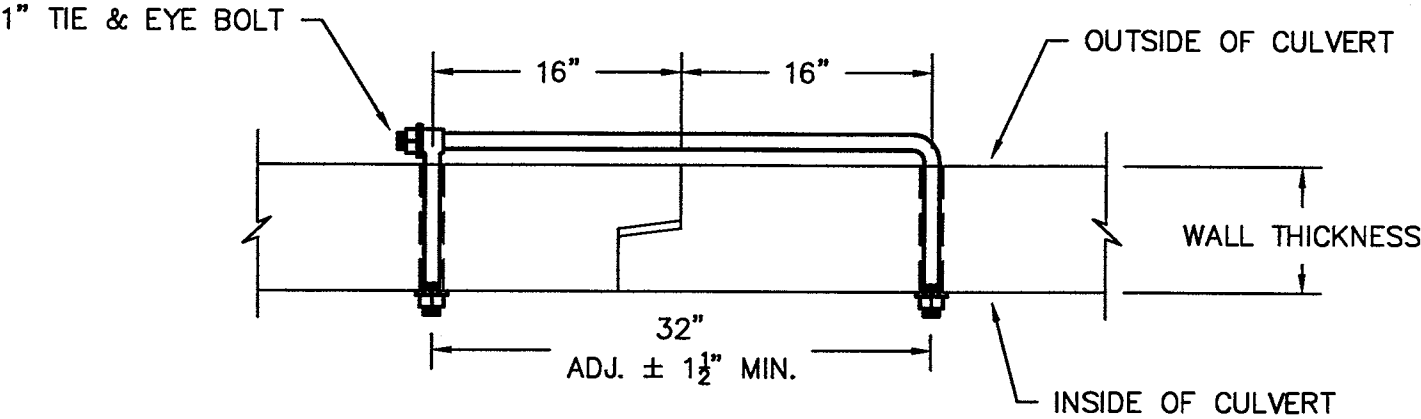
SHEET NO.
4
OF
5

WIESER CONCRETE
W3716 US HWY10. MAIDEN ROCK, WI 54750
800-325-8456

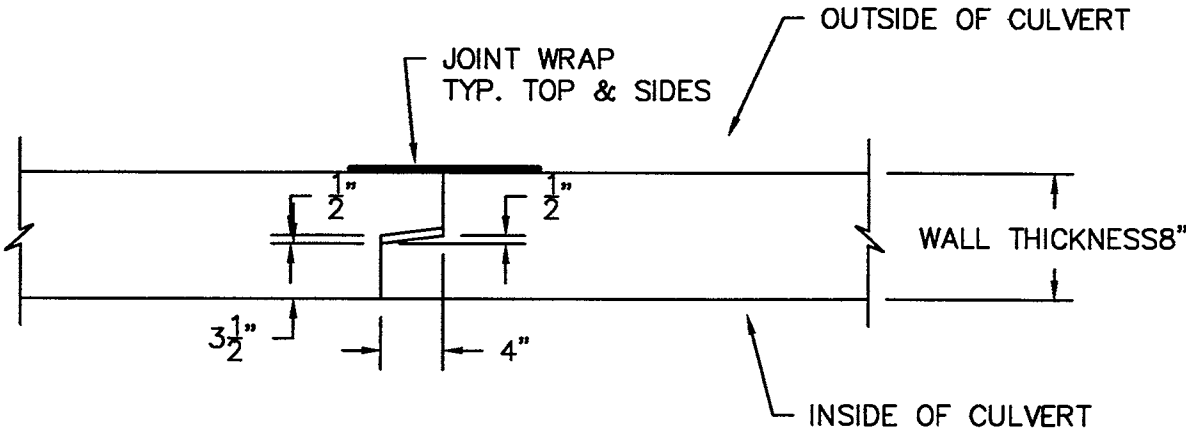
SCALE: SEE TILES	REV NO.	DATE:
DRAWN BY: SWT		
DATE: 1/17/06		

FILE: Box Culvert 2006\Marathon County Est.

MARATHON COUNTY



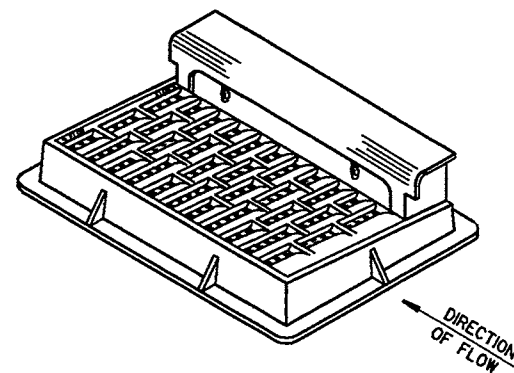
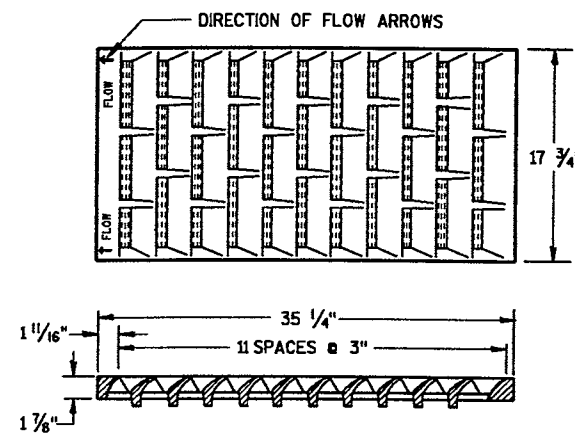
CULVERT TIE DETAIL



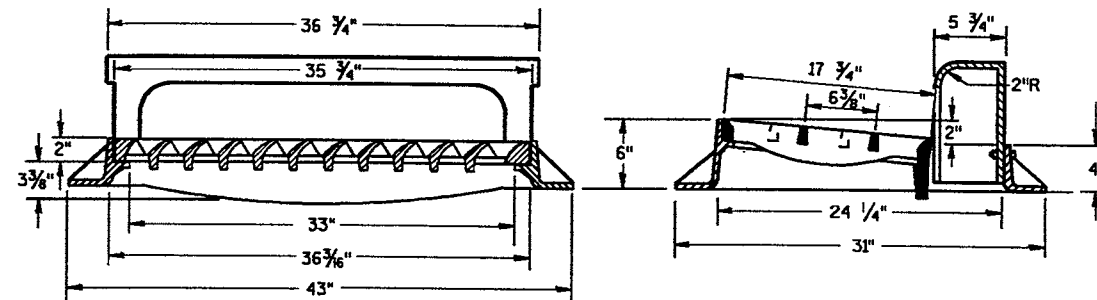
TONGUE AND GROOVE JOINT DETAIL

MARATHON COUNTY ESTIMATE	SHEET NO. 5 OF 5		
	WIESER CONCRETE W3716 US HWY10. MAIDEN ROCK, WI 54750 800-325-8456		
	SCALE: 3/4" = 1'	REV NO.	DATE:
	DRAWN BY: SWT		
	DATE: 1/17/06		
FILE: Box Culvert 2006\Marathon County Est.			

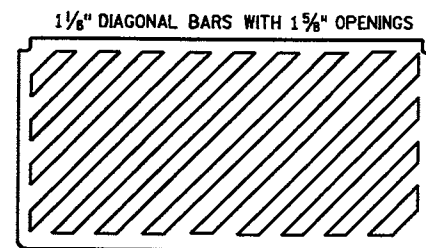
NOTE:
GRATE IS REVERSIBLE.



NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"



TYPE "H"
(APPROXIMATE WEIGHT 422 LBS.)
FRAME..... 175 LBS.
GRATE..... 138 LBS.
CURB BOX..... 109 LBS.



**SPECIAL GRATE FOR
TYPE "H" COVER**

(MEASURES 35 1/4" X 17 3/4" X 2")
(APPROXIMATE WEIGHT 172 LBS.)
GRATE..... 172 LBS.
(NOTED AS TYPE H-S ON DRAINAGE TABLE)

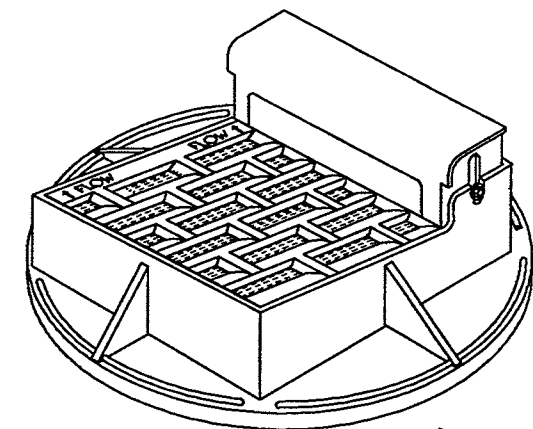
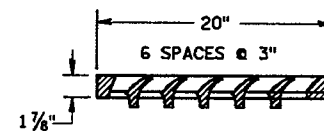
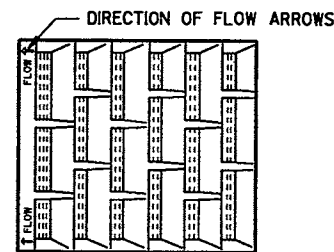
GENERAL NOTES

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.

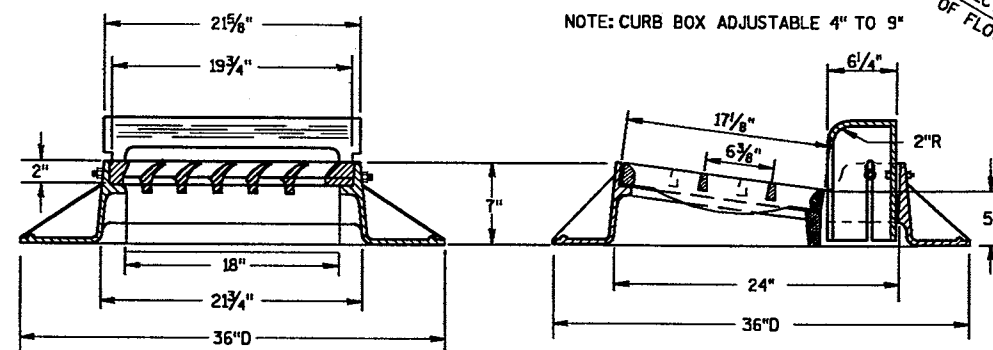
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR CATCH BASIN, MANHOLE AND INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

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

THE ACTUAL WEIGHT OF COVERS MAY VARY WITHIN 5 PERCENT, PLUS OR MINUS, OF THE APPROXIMATE WEIGHT.



NOTE: CURB BOX ADJUSTABLE 4" TO 9"

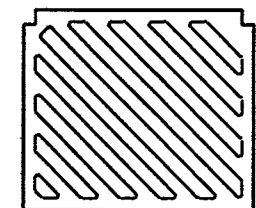


TYPE "A"

(APPROXIMATE WEIGHT 325 LBS.)
FRAME..... 157 LBS.
GRATE..... 84 LBS.
CURB BOX..... 84 LBS.

NOTE:
GRATE IS REVERSIBLE.

1" DIAGONAL BARS
WITH 1 1/2" OPENINGS



**SPECIAL GRATE FOR
TYPE "A" COVER**

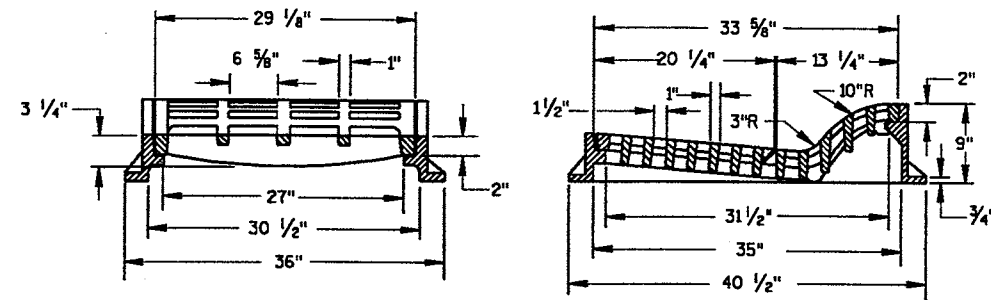
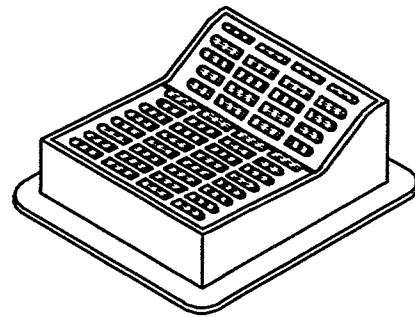
(MEASURES 19 3/4" X 17" X 1 7/8")
GRATE..... 84 LBS.
(NOTED AS TYPE A-S ON DRAINAGE TABLE)

**INLET COVERS
TYPE A, H, A-S, & H-S**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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DATE _____ CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA



TYPE "F"

(APPROXIMATE WEIGHT 645 LBS.)

FRAME.....300 LBS.

GRATE.....165 LBS.

GRATE.....180 LBS.

USE WITH CONCRETE CURB & GUTTER, 36 INCH.

ALTERNATIVE CURB BOX FOR TYPE "HM" COVER

(APPROXIMATE WEIGHT 79 LBS.)

CURB BOX.....79 LBS.

USE WITH TYPES G & J CONCRETE CURB & GUTTER, 30 INCH
NOTED AS TYPE HM-GJ ON DRAINAGE TABLE

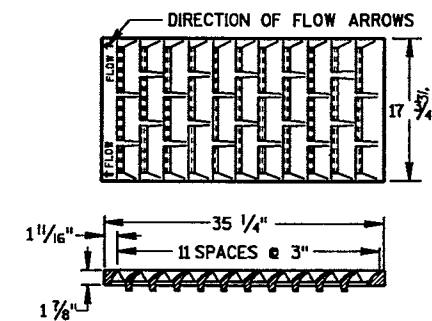
NOTE:
SPECIAL GRATE FOR THE
TYPE "H" COVER MAY ALSO BE
USED FOR THE TYPE "HM-GJ" COVER
NOTED AS TYPE HM-GJ-S ON DRAINAGE TABLE

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.

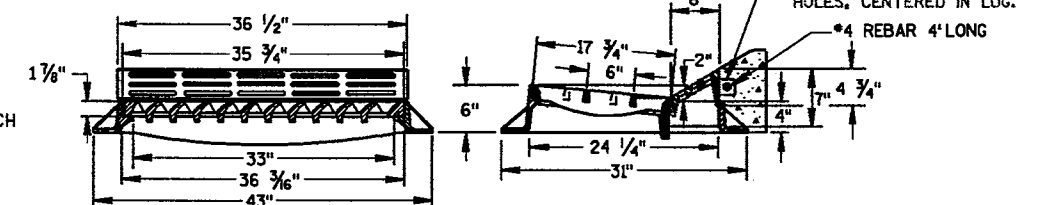
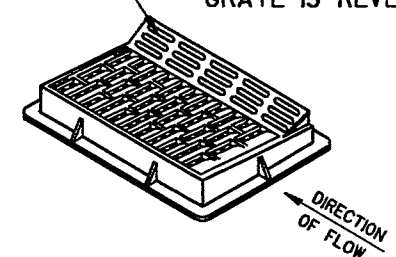
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

THE ACTUAL WEIGHT OF COVERS MAY VARY WITHIN 5 PERCENT, PLUS OR MINUS, OF THE APPROXIMATE WEIGHT.



1" X 5 7/8" SLOTS
(TYPICAL)

NOTE:
GRATE IS REVERSIBLE.



(3) 2" X 2" X 1"
ANCHORS w/ 1/2" DIA. CORED
HOLES, CENTERED IN LUG.
#4 REBAR 4' LONG

TYPE "HM"

(APPROXIMATE WEIGHT 375 LBS.)

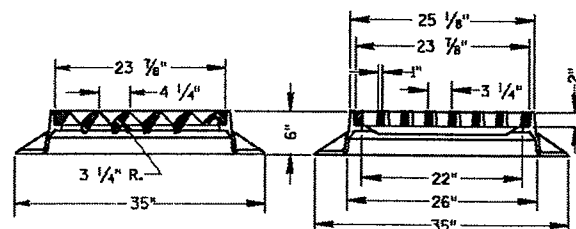
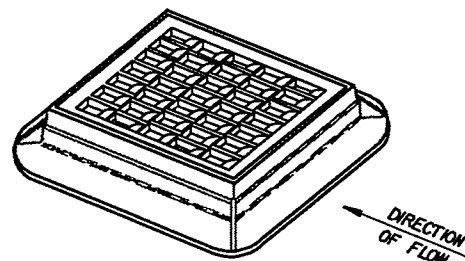
FRAME.....175 LBS.

GRATE.....138 LBS.

CURB BOX.....62 LBS.

USE WITH CONCRETE CURB & GUTTER, 36 INCH.

NOTE:
SPECIAL GRATE FOR THE
TYPE "H" COVER MAY ALSO BE
USED FOR THE TYPE "HM" COVER
NOTED AS TYPE HM-S ON DRAINAGE TABLE

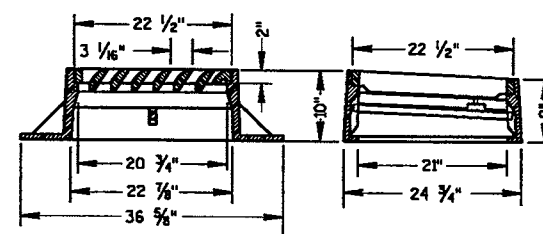
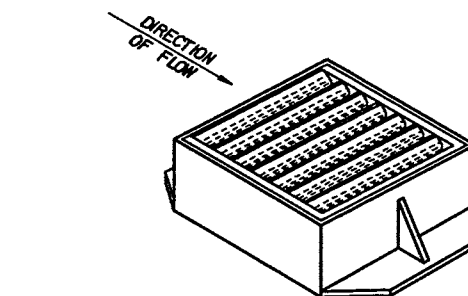


TYPE "S"

(APPROXIMATE WEIGHT 334 LBS.)

FRAME.....165 LBS.

GRATE.....169 LBS.



TYPE "V"

(APPROXIMATE WEIGHT 405 LBS.)

FRAME.....270 LBS.

GRATE.....130 LBS.

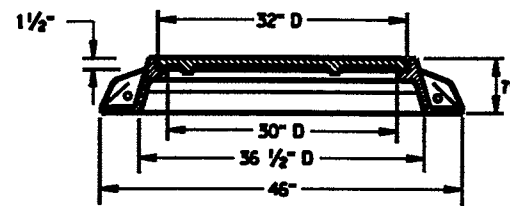
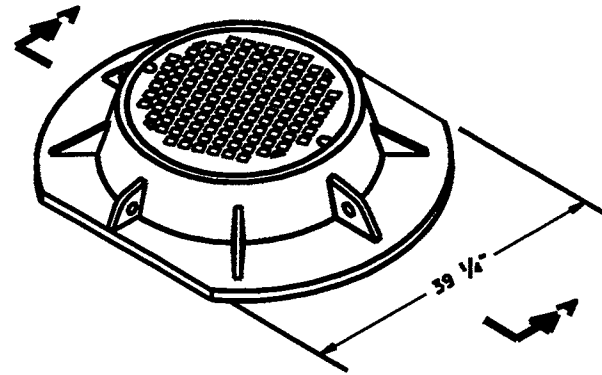
SAFETY BAR.....5 LBS.

INLET COVERS
TYPE F, HM, HM-S, S, V,
HM-GJ, & HM-GJ-S

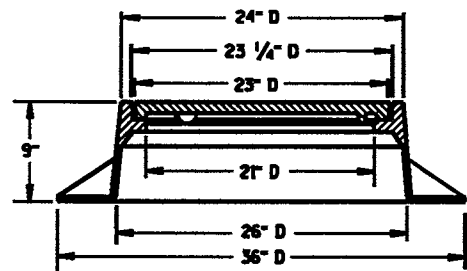
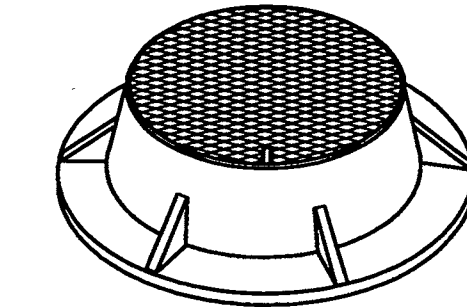
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

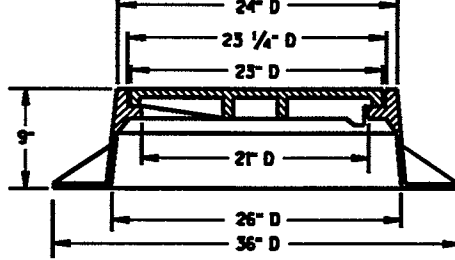
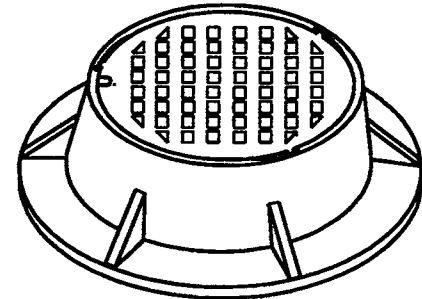
DATE _____ CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA



SECTION A-A
TYPE "K"
(APPROXIMATE WEIGHT 415 LBS.)
FRAME.....210 LBS.
LID.....205 LBS.



TYPE "J"
(APPROXIMATE WEIGHT 250 LBS.)
FRAME.....135 LBS.
LID.....115 LBS.



TYPE "J" SPECIAL
TYPE "B" NON-ROCKING SELF-SEAL LID
(APPROXIMATE WEIGHT 245 LBS.)
FRAME.....145 LBS.
LID.....100 LBS.
(NOTED AS TYPE J-5 ON THE DRAINAGE TABLE)

GENERAL NOTES

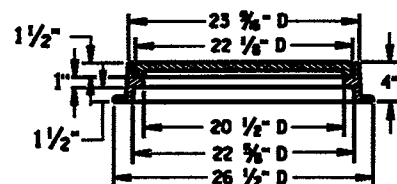
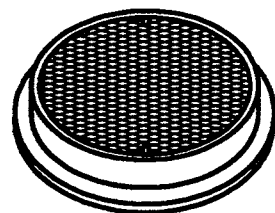
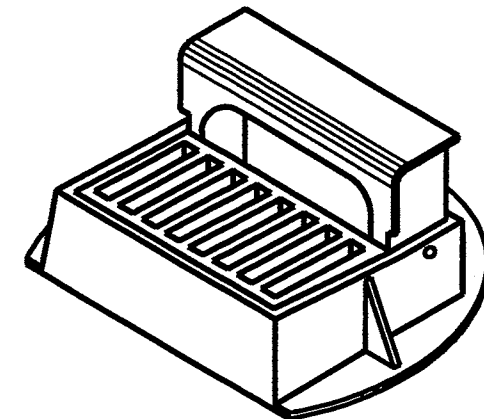
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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.

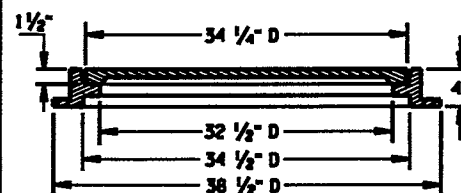
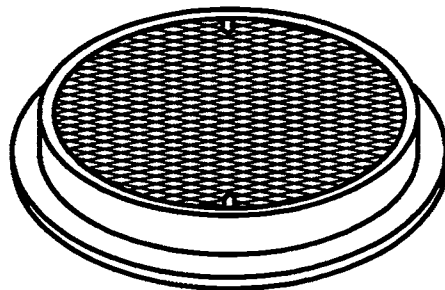
ROUND FRAMES AND COVERS SHALL HAVE CONTINUOUSLY MACHINED BEARING SURFACES TO PREVENT ROCKING AND RATTLING.

THE ACTUAL WEIGHT OF COVERS MAY VARY WITHIN 5 PERCENT, PLUS OR MINUS, OF THE APPROXIMATE WEIGHT.

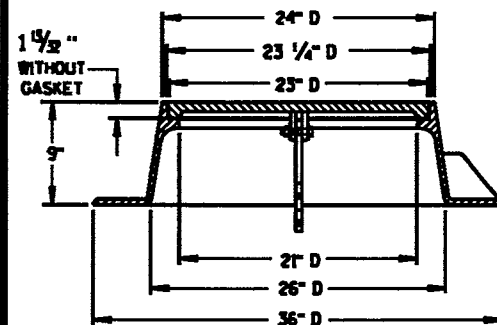
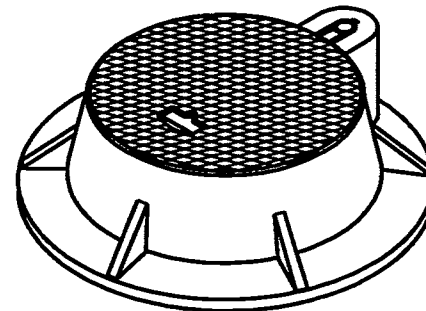
① MANUFACTURER MAY PROVIDE ADDITIONAL SEALS OR GASKETS.



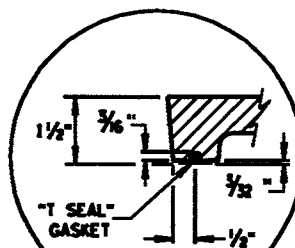
TYPE "L"
(APPROXIMATE WEIGHT 145 LBS.)
FRAME.....75"
LID.....70"



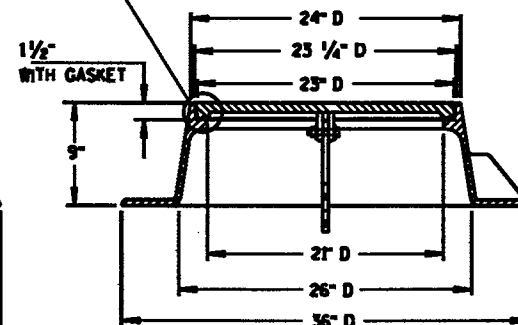
TYPE "M"
(APPROXIMATE WEIGHT 385 LBS.)
FRAME.....125"
LID.....260"



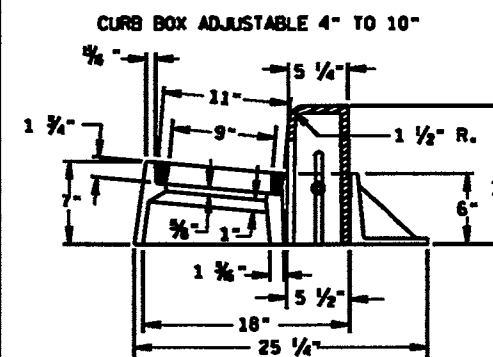
TYPE "J" HINGED
LID WITHOUT "T SEAL" GASKET
(APPROXIMATE WEIGHT 310 LBS.)
FRAME.....190 LBS.
LID.....120 LBS.
(NOTED AS TYPE J-H ON THE DRAINAGE TABLE)



"T SEAL" GASKET DETAIL

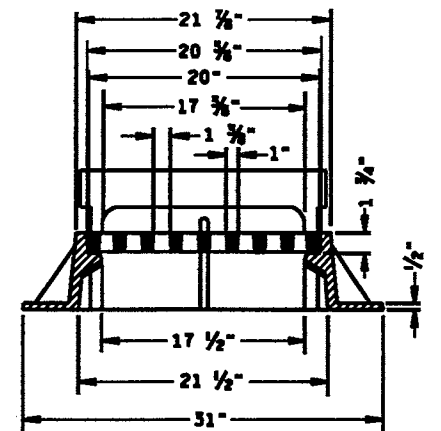


TYPE "J" HINGED-SPECIAL ①
LID WITH "T SEAL" GASKET
(APPROXIMATE WEIGHT 310 LBS.)
FRAME.....190 LBS.
LID.....120 LBS.
(NOTED AS TYPE J-S-H ON THE DRAINAGE TABLE)



INLET COVER TYPE "Z"

(APPROXIMATE WEIGHT 340 LBS.)
FRAME.....198 LBS.
GRATE.....50 LBS.
CURB BOX.....92 LBS.

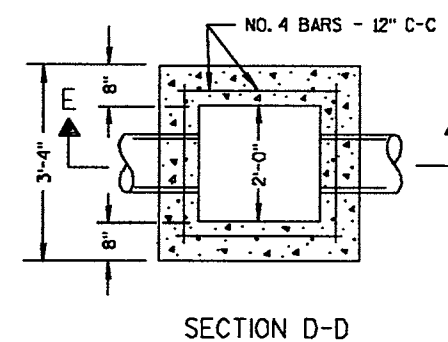
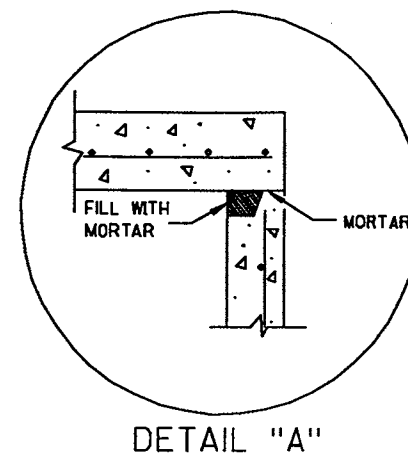
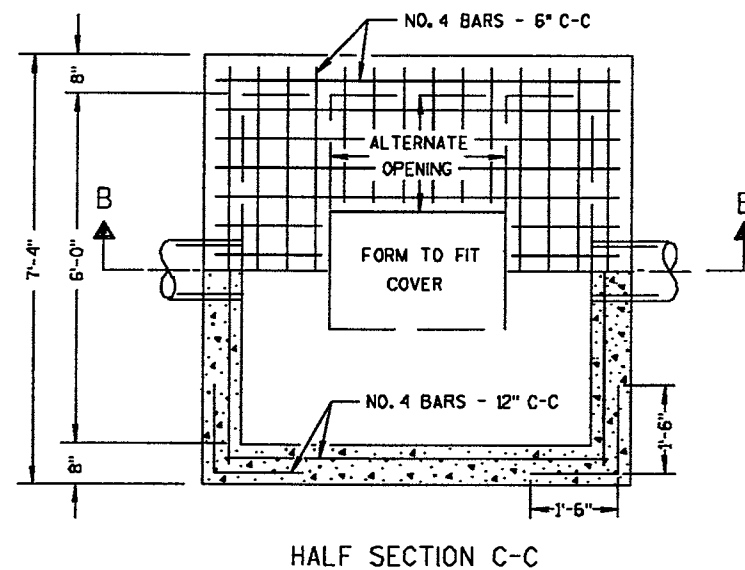
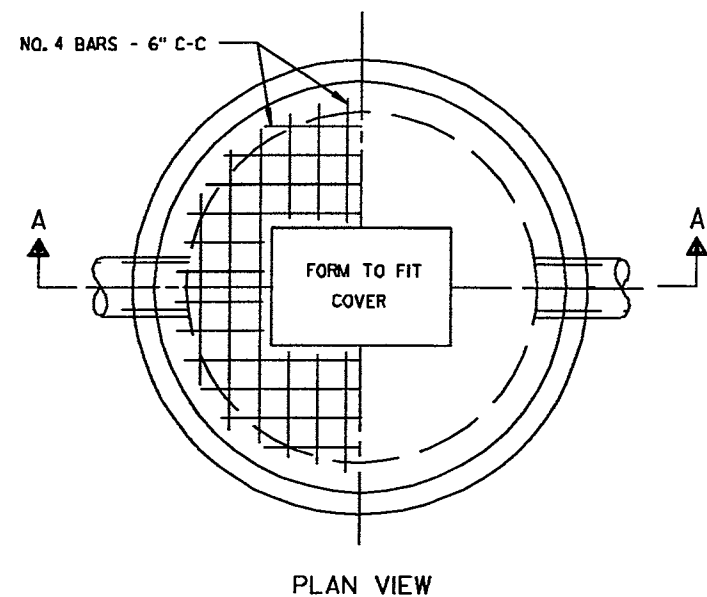


INLET COVER, TYPE Z
MANHOLE COVERS, TYPE
K, J, J-S, J-H, J-H-S, L & M

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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DATE _____ CHIEF ROADWAY DEVELOPMENT ENGINEER
FWSA



GENERAL NOTES

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

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

ALL DRAINAGE STRUCTURES ARE DESIGNATED ON THE PLANS AS "MANHOLE 1-C", "CATCH BASINS 1-B", "INLETS 3-H", ETC. THE FIRST DIGIT DESIGNATES THE MASONRY PORTION OF THE STRUCTURE, AND THE FOLLOWING LETTER DESIGNATES THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT.

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

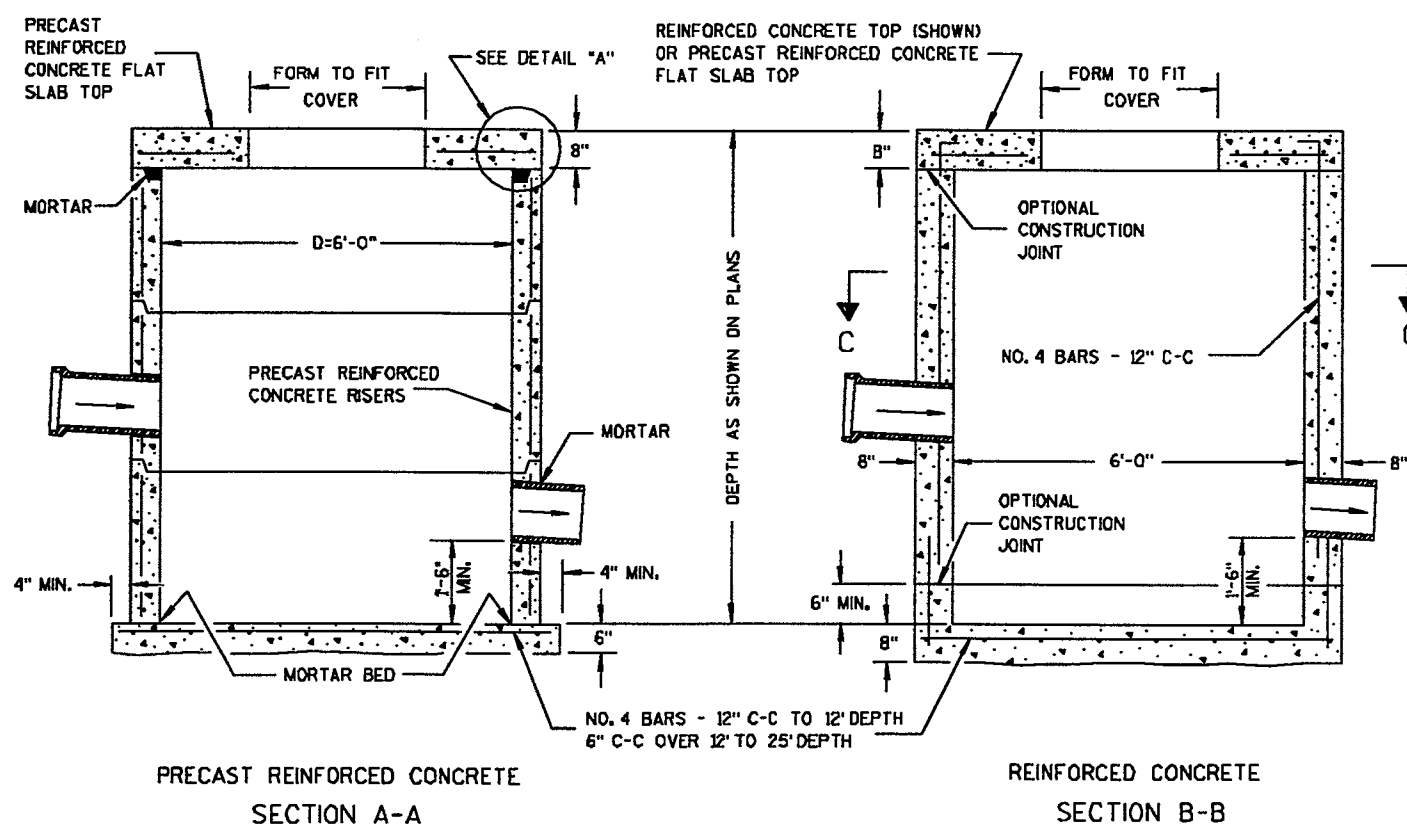
STEPS MEETING THE FOLLOWING REQUIREMENTS SHALL BE INSTALLED IN ALL STRUCTURES OVER 5 FEET IN DEPTH: 16 INCH C-C MAXIMUM SPACING; PROJECT A MINIMUM CLEAR DISTANCE OF 4 INCHES FROM THE WALL AT THE POINT OF EMBEDMENT; MINIMUM LENGTH OF 10 INCHES; MINIMUM WALL EMBEDMENT OF 3 INCHES; AND BE CAPABLE OF SUPPORTING A CONCENTRATED LOAD OF 300 LBS. FERROUS METAL STEPS NOT PAINTED OR TREATED TO RESIST CORROSION SHALL HAVE A CROSS SECTIONAL DIMENSION OF 1 INCH.

SOLID ALUMINUM STEPS SHALL HAVE A MINIMUM CROSS SECTIONAL DIMENSION OF 0.75 INCH. ALUMINUM SURFACES TO BE EMBEDDED IN CONCRETE SHALL BE GIVEN ONE COAT OF SUITABLE QUALITY PAINT, SUCH AS ZINC CHROMATE PRIMER CONFORMING TO FEDERAL SPECIFICATION TT-P-645 OR EQUIVALENT. STEPS OF APPROVED POLYPROPYLENE PLASTIC COATED REINFORCEMENT BAR WILL BE ACCEPTABLE.

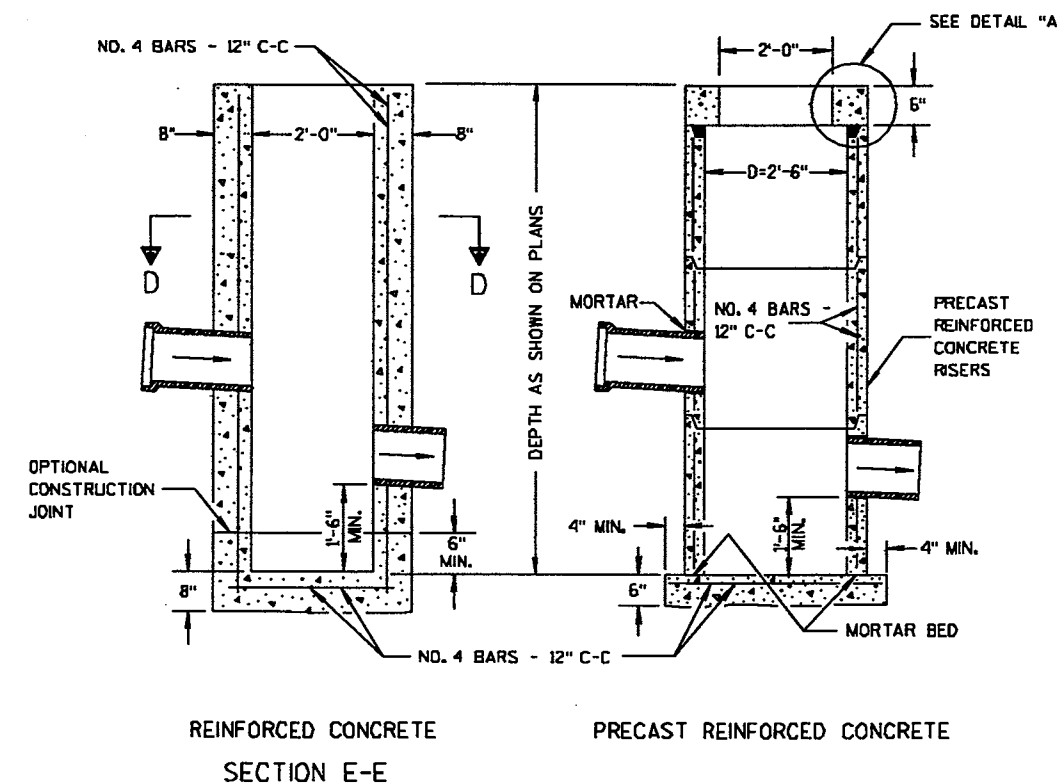
ALL BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

PRECAST REINFORCED CONCRETE RISERS SHALL BE PLACED WITH TONGUE DOWN.

ALL PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M 199.



CATCH BASINS TYPE 5



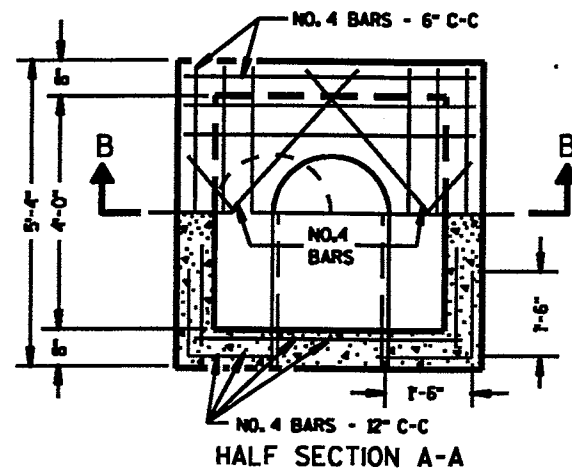
CATCH BASINS TYPE 3

CATCH BASINS TYPE 3 & 5

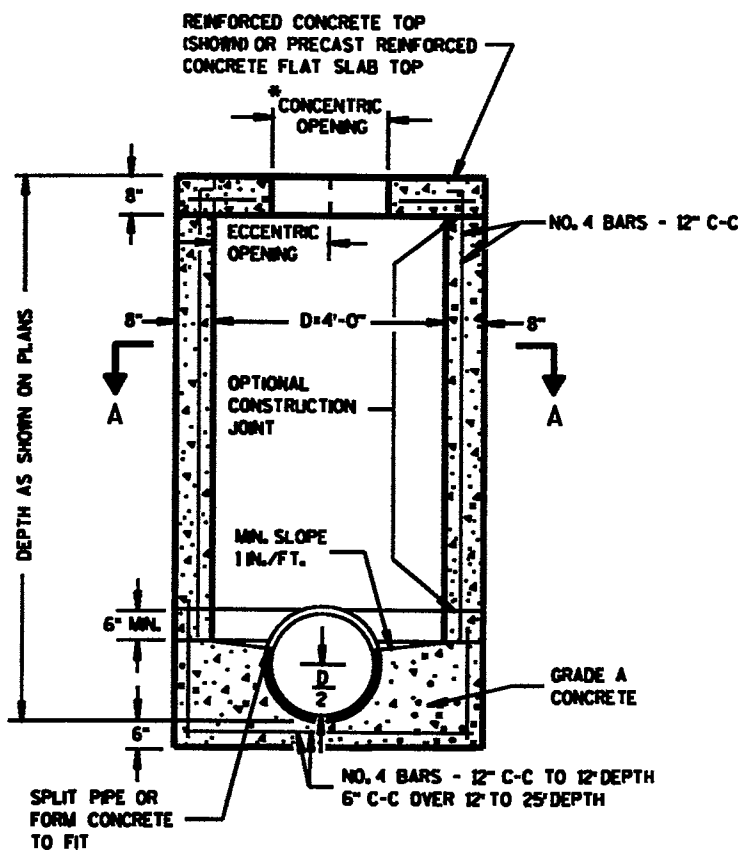
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

DATE STATE DESIGN ENGINEER FOR HWYS
FHWA

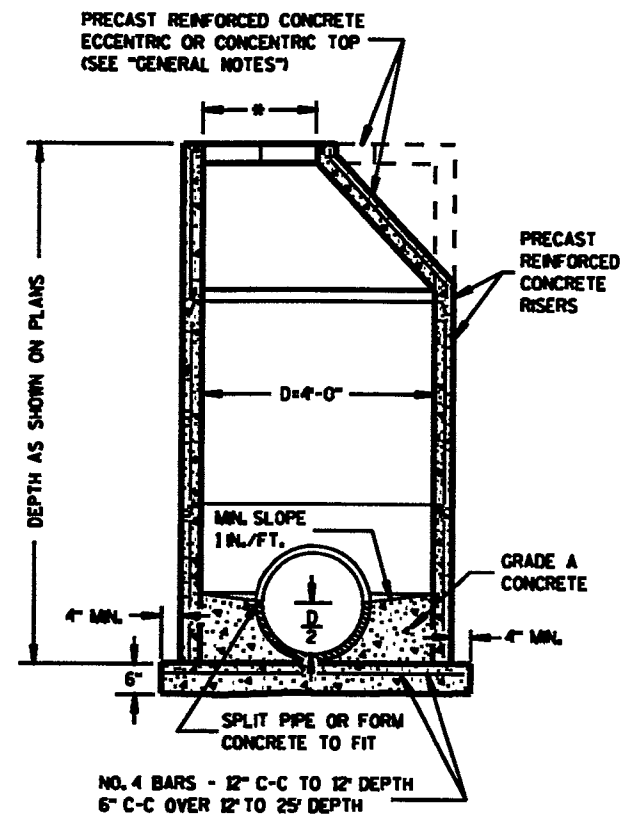


HALF SECTION A-A

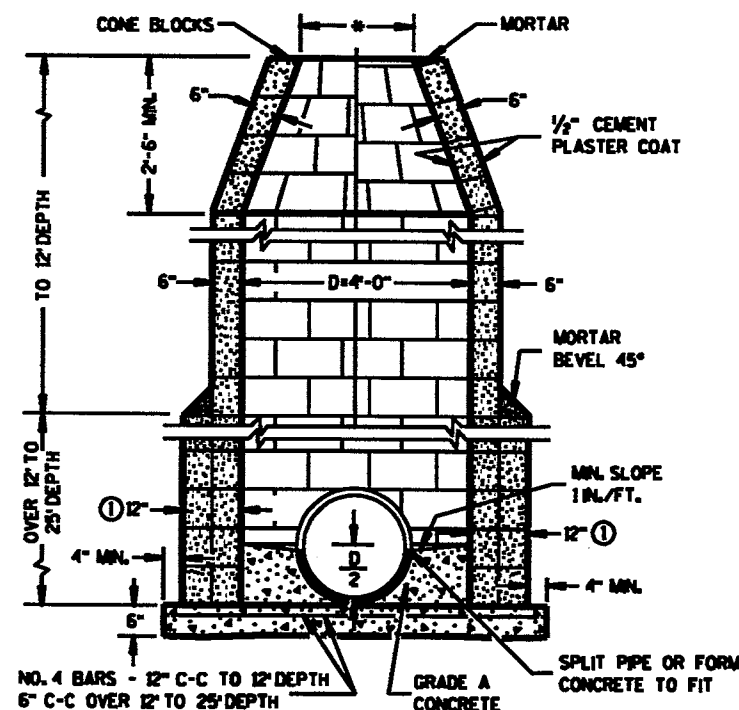


SECTION B-B
REINFORCED CONCRETE

MANHOLES TYPE 1



PRECAST REINFORCED CONCRETE



CONCRETE BLOCK

GENERAL NOTES

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

DETAILED DRAWINGS 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 1-C", "CATCH BASINS 1-B", "PILES 3-H", ETC. THE FIRST DIGIT DESIGNATES THE MASONRY PORTION OF THE STRUCTURE, AND THE FOLLOWING LETTER DESIGNATES THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT.

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

PRECAST REINFORCED CONE TOPS (ECCENTRIC OR CONCENTRIC) MAY BE USED ON CONCRETE BLOCK STRUCTURES. THE CONE TOPS SHALL BE INSTALLED ON A BED OF MORTAR.

ECCENTRIC CONE TOPS MAY BE USED ON ALL STRUCTURES, AND CONCENTRIC CONE TOPS SHALL BE USED ONLY ON STRUCTURES 5 FEET OR LESS IN DEPTH, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

STEPS CONFORMING TO AASHTO M 199 SHALL BE INSTALLED IN ALL STRUCTURES OVER 5 FEET IN DEPTH.

SOLID ALUMINUM STEPS SHALL HAVE A MINIMUM CROSS SECTIONAL DIMENSION OF 0.75 INCH. ALUMINUM SURFACES TO BE EMBEDDED IN CONCRETE SHALL BE GIVEN ONE COAT OF SUITABLE QUALITY PAINT, SUCH AS ZINC CHROMATE PRIMER CONFORMING TO FEDERAL SPECIFICATION TT-P-645 OR EQUIVALENT.

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

PRECAST REINFORCED CONCRETE RISERS MAY BE PLACED WITH TONGUE UP OR DOWN.

ALL PRECAST INLET UNITS AND MANHOLES SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M 199.

* USE 2'-0" DIAMETER OPENING WITH TYPE "C", "L" AND "J" COVERS, OR 3'-0" DIAMETER WITH TYPE "K" AND "M" COVERS.

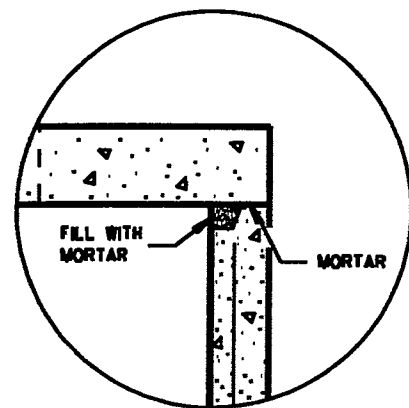
① 2 COURSES 6" BLOCK.

MANHOLES TYPE 1

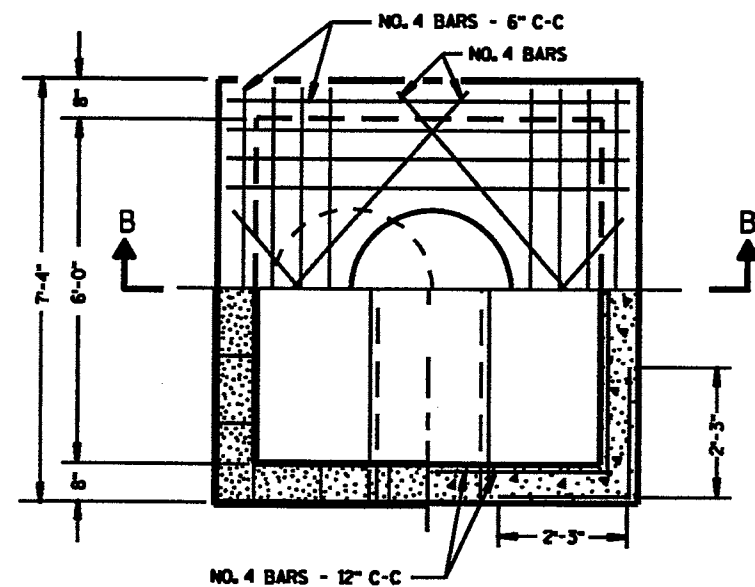
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
9/8/05
DATE
FMSA

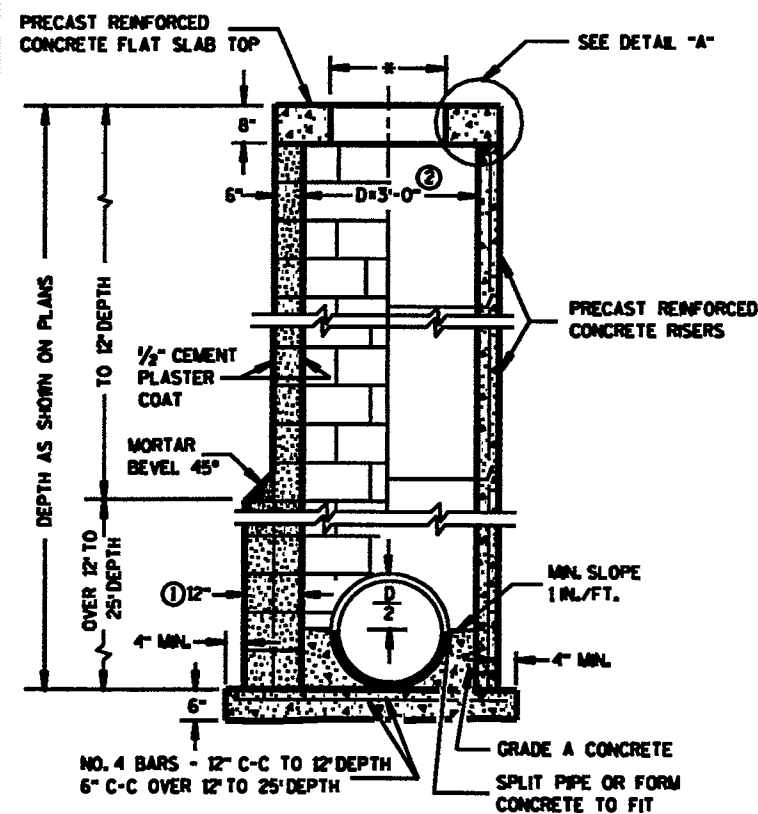
JS/ Jerry M. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER



DETAIL "A"



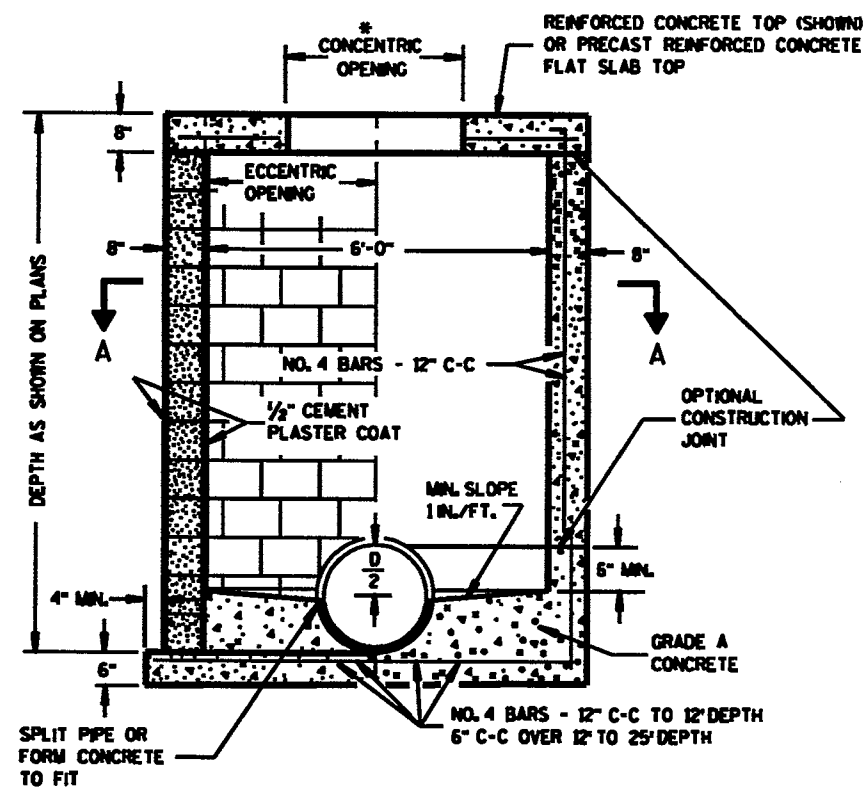
HALF SECTION A-A



CONCRETE
BLOCK

② PRECAST
REINFORCED
CONCRETE

MANHOLES TYPE 2

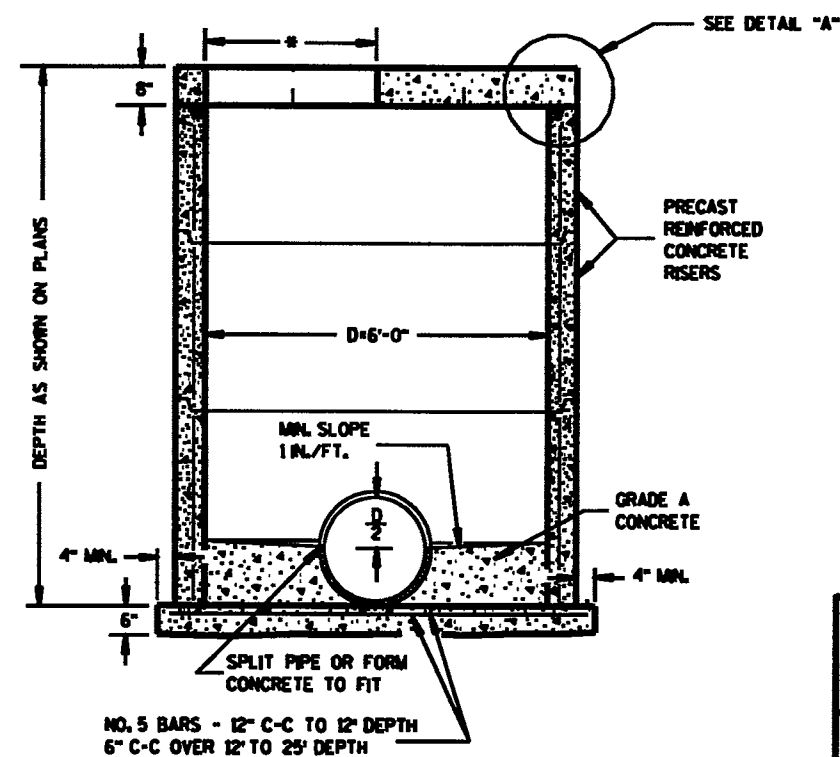


SECTION B-B

CONCRETE
BLOCK

REINFORCED
CONCRETE

MANHOLES TYPE 3



PRECAST REINFORCED CONCRETE

GENERAL NOTES

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

DETAILED DRAWINGS 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 1-C", "CATCH BASINS 1-B", "INLETS 3-H", ETC. THE FIRST DIGIT DESIGNATES THE MASONRY PORTION OF THE STRUCTURE, AND THE FOLLOWING LETTER DESIGNATES THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT.

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

STEPS CONFORMING TO AASHTO M 199 SHALL BE INSTALLED IN ALL STRUCTURES OVER 5 FEET IN DEPTH.

SOLID ALUMINUM STEPS SHALL HAVE A MINIMUM CROSS SECTIONAL DIMENSION OF 0.75 INCH. ALUMINUM SURFACES TO BE EMBEDDED IN CONCRETE SHALL BE GIVEN ONE COAT OF SUITABLE QUALITY PAINT, SUCH AS ZINC CHROMATE PRIMER CONFORMING TO FEDERAL SPECIFICATION TT-P-645 OR EQUIVALENT.

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

PRECAST REINFORCED CONCRETE RISERS MAY BE PLACED WITH TONGUE UP OR DOWN.

ALL PRECAST INLET UNITS AND MANHOLES SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M 199.

* USE 2'-0" DIAMETER OPENING WITH TYPE "C", "L" AND "J" COVERS, OR 3'-0" DIAMETER WITH TYPE "K" AND "M" COVERS.

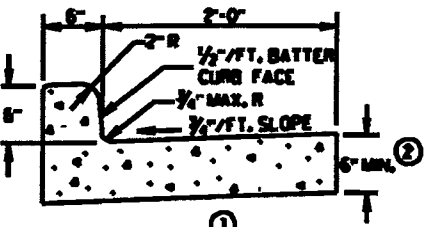
① 2 COURSES 6" BLOCK.

② WHEN CONNECTING PIPES ARE 24" OR LARGER THE PRECAST MANHOLES MAY BE INCREASED TO 42" DIAMETER.

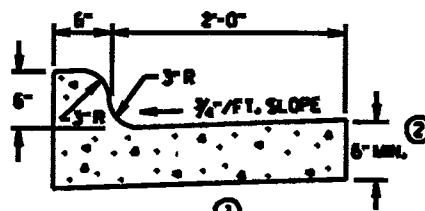
MANHOLES TYPE 2 & 3

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

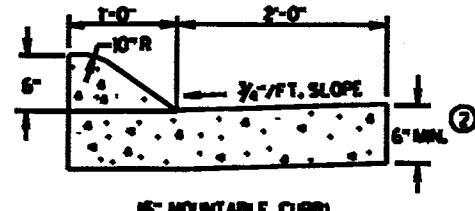
APPROVED
8/8/05
DATE
FMB
/S/ Jerry H. Zoog
ROADWAY STANDARDS DEVELOPMENT
ENGINEER



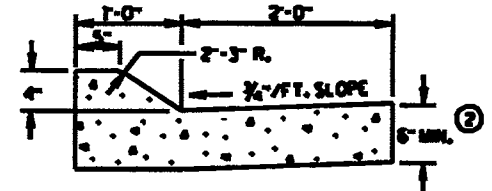
①
TYPES A & D



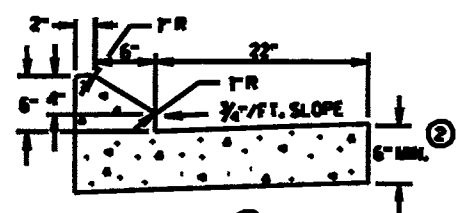
①
TYPES K & L



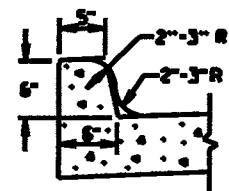
②
16" MOUNTABLE CURB



②
14" MOUNTABLE CURB



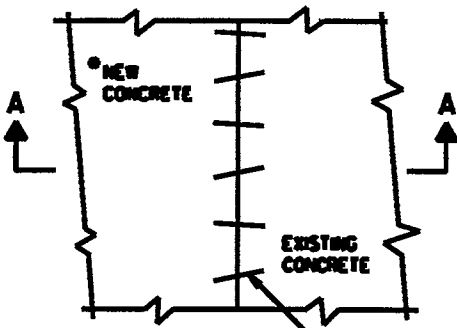
①
TYPES G & J



①
OPTIONAL CURB SHAPE
FOR TYPES K & L

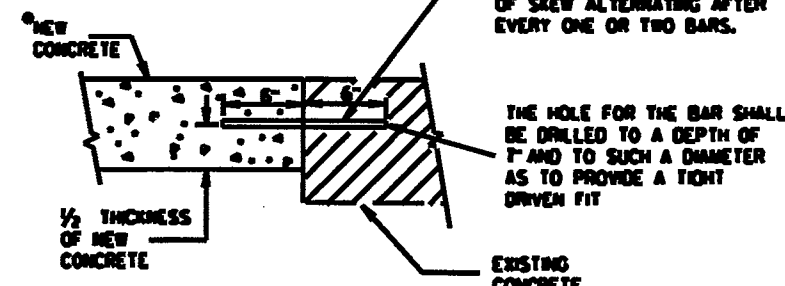
①
TYPES A & D
CONCRETE CURB & GUTTER 36"

CONCRETE CURB & GUTTER 30"

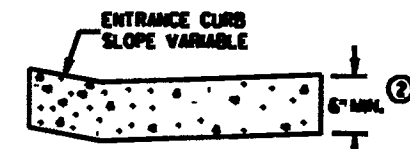


PLAN VIEW

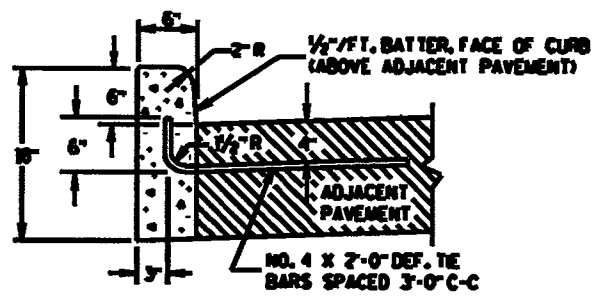
NEW CURB & GUTTER,
SURFACE DRAINS,
CONCRETE PAVEMENT
OR OTHER NEW CONCRETE.



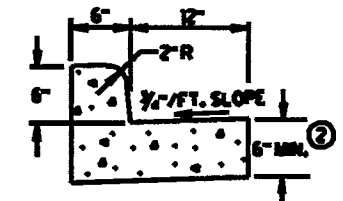
SECTION A-A
PAVEMENT TIES



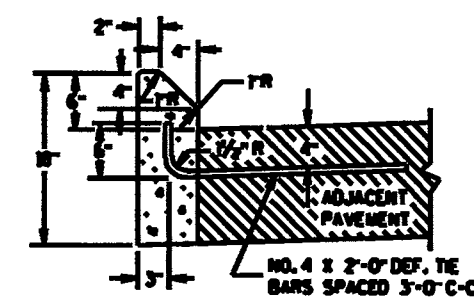
DRIVEWAY ENTRANCE CURB
(WHEN DIRECTED BY THE ENGINEER)



①
TYPES A & D



①
TYPES A & D
CONCRETE CURB & GUTTER 18"



①
TYPES G & J

CONCRETE CURB

GENERAL NOTES

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

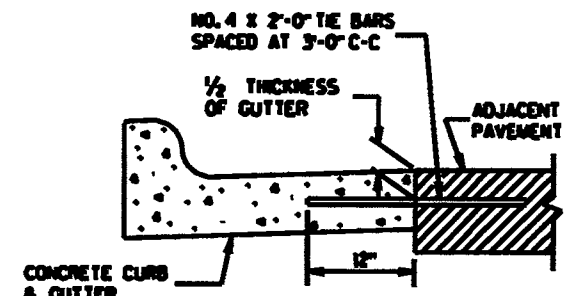
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

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

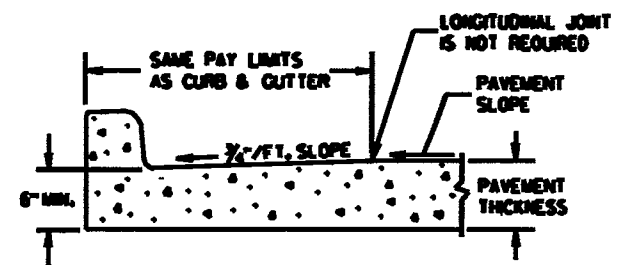
WHERE THE TRANSVERSE JOINTS IN THE PAVEMENT ARE REQUIRED TO BE SEALED, THE JOINTS IN THE INTEGRAL CURB AND GUTTER SHALL BE SEALED TO THE FACE OF CURB WITH THE SAME TYPE OF SEALANT. THE COST OF FURNISHING AND INSTALLING THIS SEALANT SHALL BE INCIDENTAL TO THE ITEM CONCRETE CURB AND GUTTER.

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

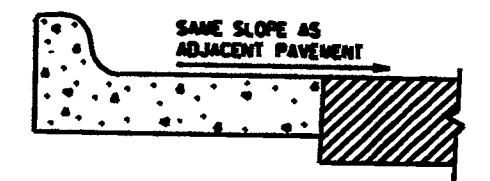
- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G AND K.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE COURSE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ③ WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.



①
TYPICAL TIE BAR LOCATION



PARTIAL SECTION OF PAVEMENT
WITH INTEGRAL CURB & GUTTER



③
REVERSE SLOPE GUTTER
(TYPICAL FOR ALL CURB & GUTTER TYPES)

CONCRETE CURB, CONCRETE CURB & GUTTER AND PAVEMENT TIES	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	DATE
CHIEF ROADWAY DEVELOPMENT ENGINEER	
PMSA	

S.D.D. 8 D 1-13

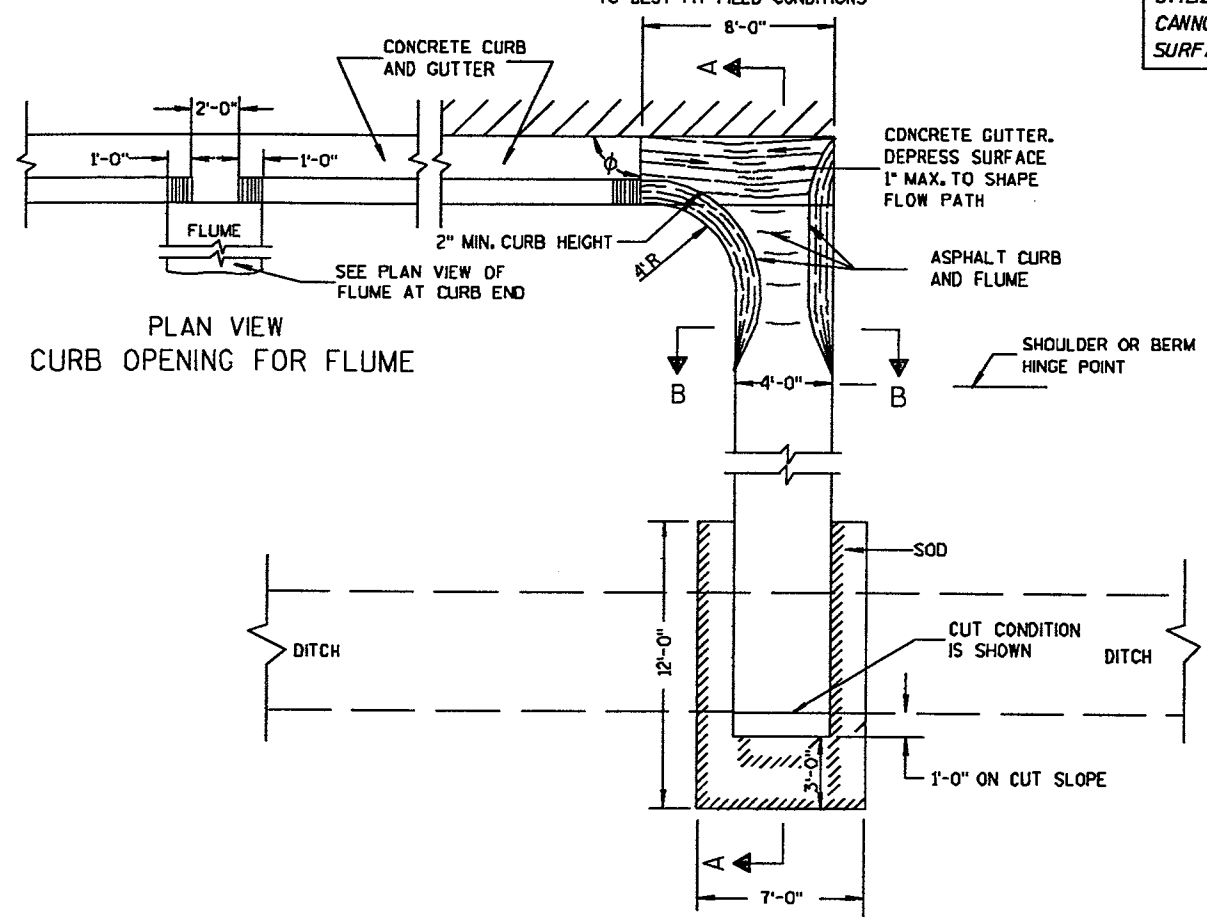
DATE STATE MAINT. ENGINEER FOR HWYS

DATE STATE CONST. ENGINEER FOR HWYS

S.D.D. 8 D 4-3

ASPHALTIC FLUME

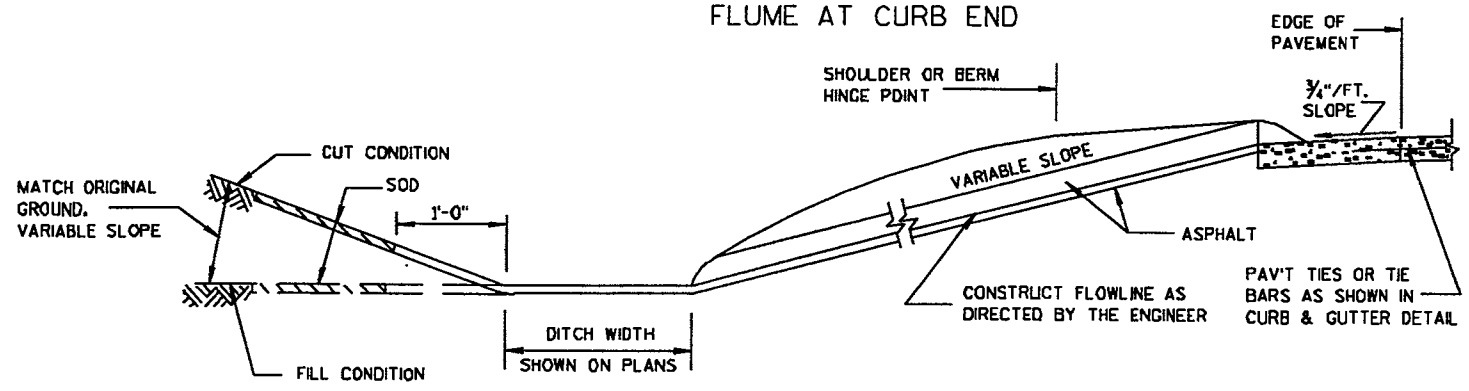
NOTE: TAPER CURB ENDS TO GUTTER IN 1'-0"



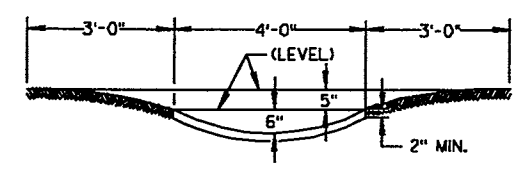
PLAN VIEW CURB OPENING FOR FLUME

PLAN VIEW FLUME AT CURB END

DESIGN NOTES: (WILL NOT APPEAR IN CONTRACT PLANS)
UTILIZE INLETS WHERE STORM WATER VOLUME AND VELOCITY CANNOT BE ACCOMMODATED EFFECTIVELY WITH A FLUME OR SURFACE DRAIN.



SECTION A-A

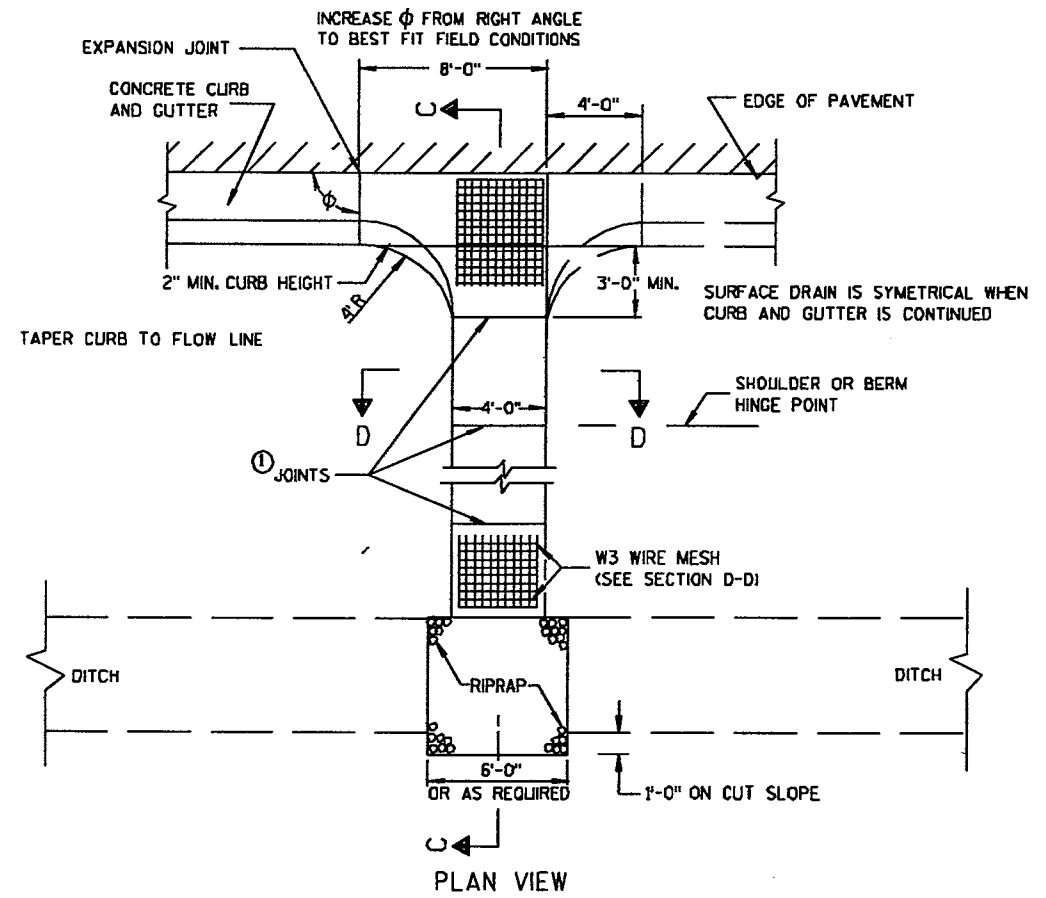


SECTION B-B

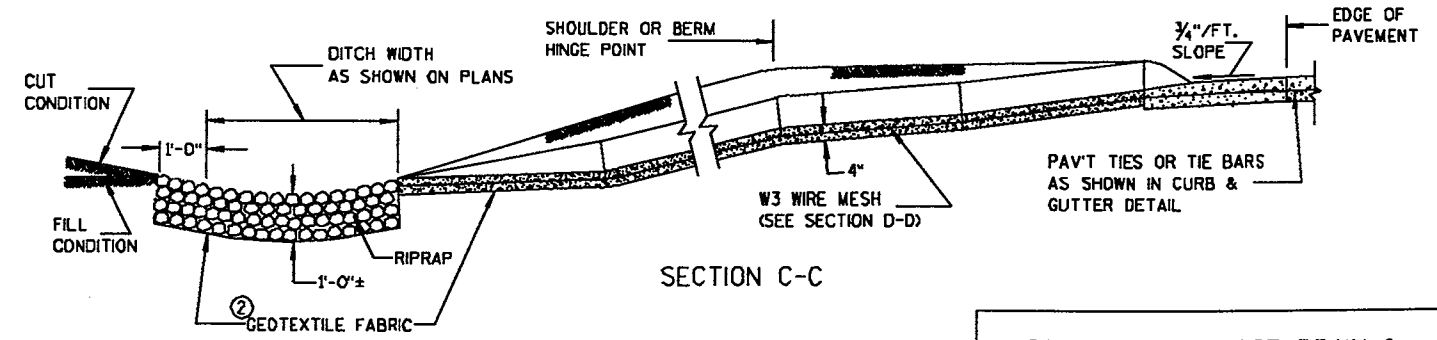
GENERAL NOTES

- DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.
- WELDED STEEL WIRE FABRIC SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.
- JOINTS SHALL BE 1/8" TO 1/4" INCH WIDE BY 1 1/2" INCHES DEEP AND SPACED AT UNIFORM INTERVALS OF APPROXIMATELY 4 FEET.
 - GEOTEXTILE FABRIC TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.
 - CONCRETE SURFACE DRAIN WITHOUT CURB AND GUTTER MAY BE USED ON BACKSLOPES WHEN SPECIFIED

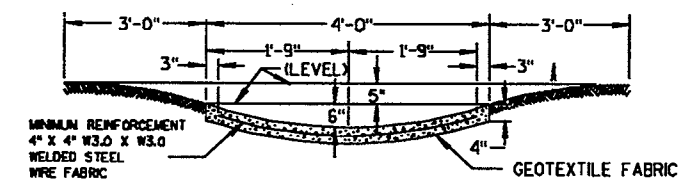
CONCRETE SURFACE DRAIN



PLAN VIEW

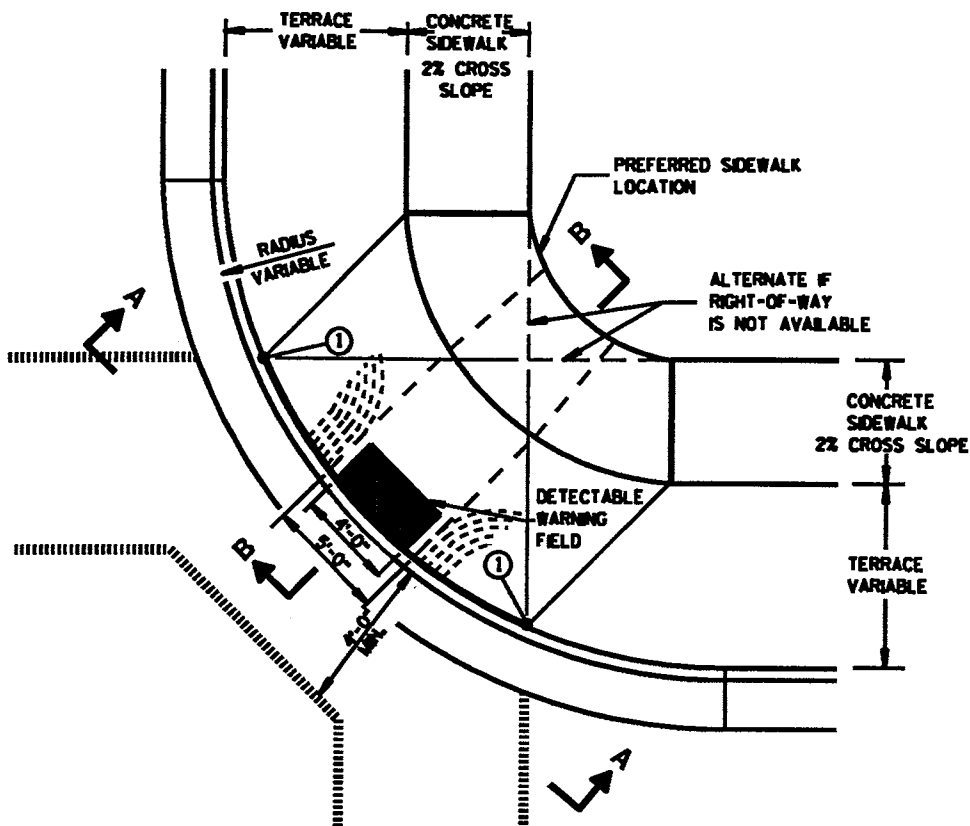


SECTION C-C

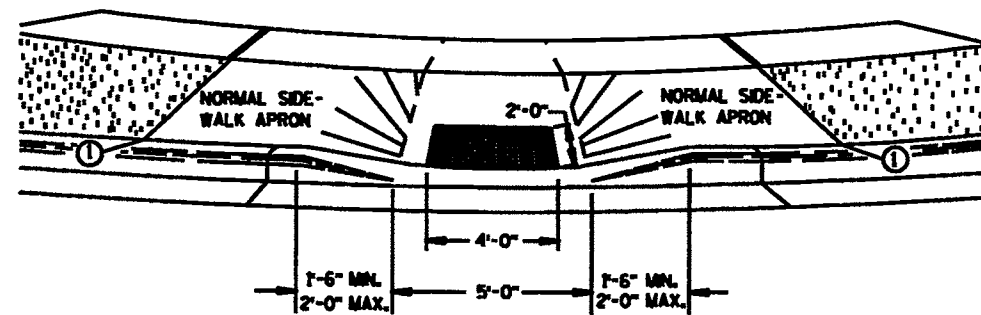


SECTION D-D

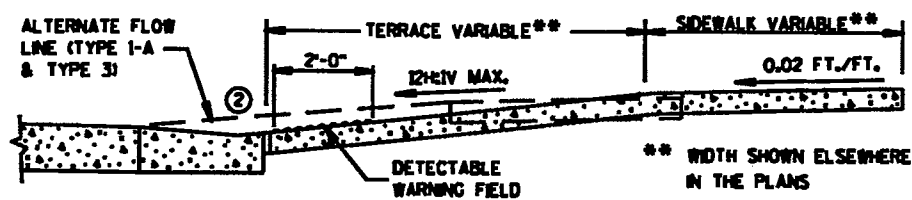
CONCRETE SURFACE DRAIN & ASPHALTIC FLUME	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
DATE	STATE DESIGN ENGINEER FOR HWYS
FHWA	



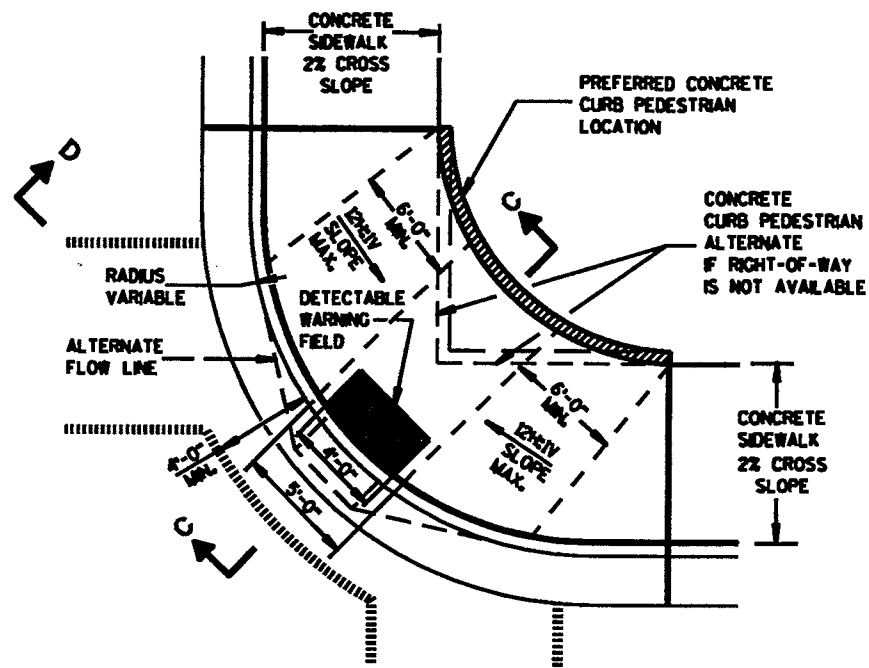
PLAN VIEW
TYPE 1 RAMP
(CENTER OF CORNER RADIUS)



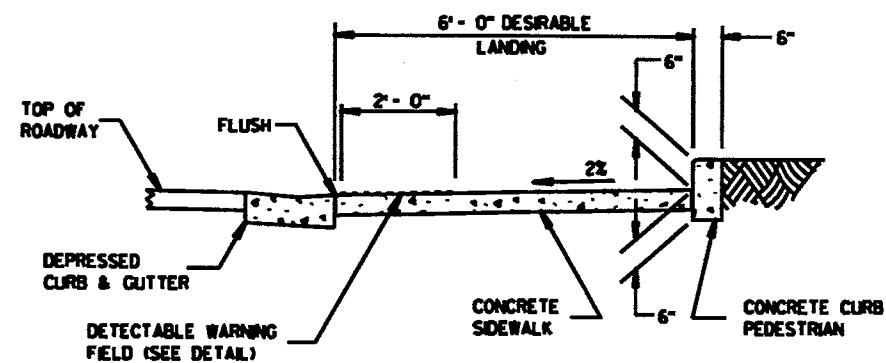
VIEW A-A



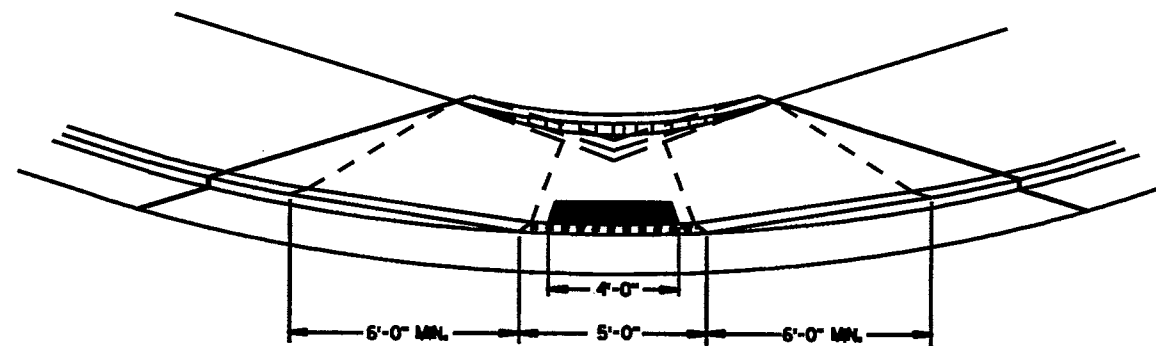
SECTION B-B



PLAN VIEW
TYPE 1-A RAMP
(NO TERRACE)



SECTION C-C



VIEW D-D

GENERAL NOTES

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

RAMPS SHALL BE BUILT AT 12% OR FLATTER. WHEN NECESSARY, THE SIDEWALK ELEVATION MAY BE LOWERED TO MEET THE HIGH POINT ON THE RAMP.

TYPE 1 RAMPS SHALL HAVE A NORMAL SIDEWALK APRON AND CURB ON BOTH SIDES OF RAMP.

DETECTABLE WARNING FIELD SHALL BE MEASURED AND PAID BY THE SQUARE FOOT AS "CURB RAMP DETECTABLE WARNING FIELD". THE CONCRETE PEDESTRIAN CURB, IF NEEDED, SHALL BE MEASURED AND PAID BY THE LINEAL FOOT AS "CONCRETE CURB PEDESTRIAN". CONCRETE SIDEWALK IN THE CURB RAMP AREA SHALL BE MEASURED AND PAID BY THE SQUARE FOOT AS CONCRETE SIDEWALK, INCLUDING THE AREA UNDER THE DETECTABLE WARNING FIELD.

SELECT CURB RAMP DETECTABLE WARNING FIELD MATERIALS AND DEVICES FROM THE DEPARTMENT'S APPROVED MATERIALS LIST. THE COLOR OF THE DETECTABLE WARNING FIELD IS SPECIFIED ELSEWHERE AND IS INCIDENTAL TO THE BID ITEM OF "CURB RAMP DETECTABLE WARNING FIELD".

SURFACE TEXTURE OF THE RAMP SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE SLOPE OF THE RAMP.

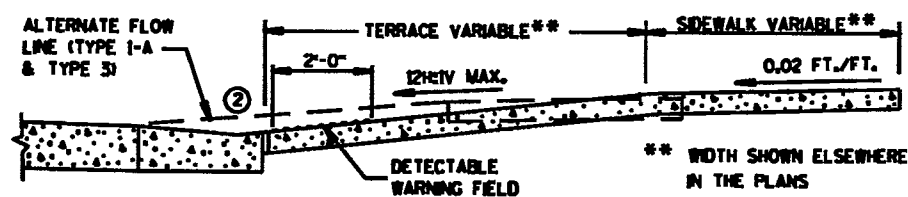
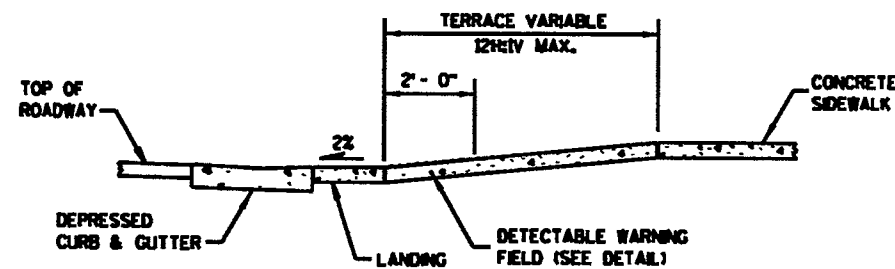
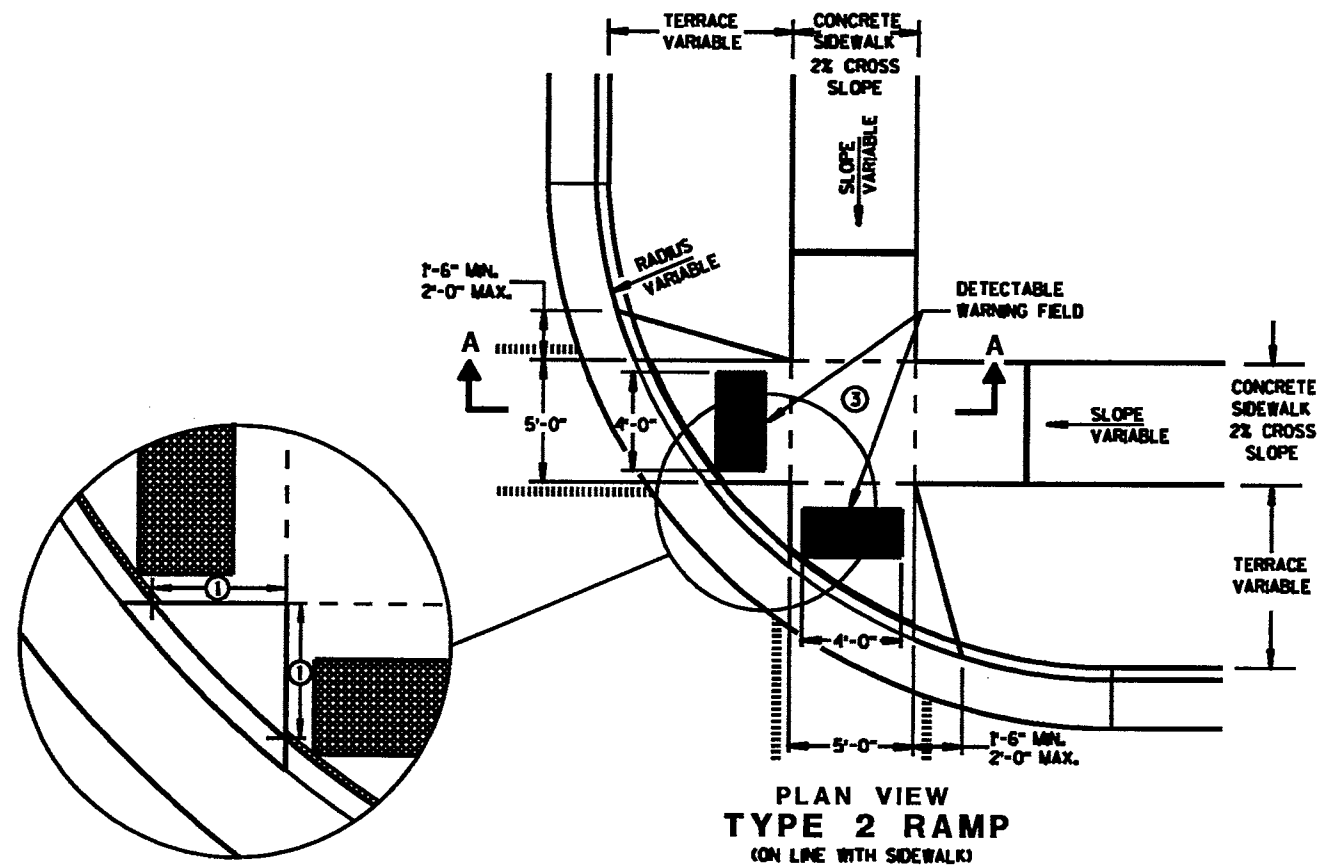
- ① THIS POINT IS AN EXTENSION OF OUTSIDE EDGE OF APPROACHING SIDEWALK WHERE IT MEETS THE BACK OF CONCRETE CURB.
- ② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 1%. PROVIDE DRAINAGE AWAY FROM CURB RAMP AT GUTTER FLAG INTERFACE.

LEGEND

- 1/2" EXPANSION JOINT-SIDEWALK
- - - CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)
- - - ALTERNATIVE LAYOUT

CURB RAMPS
TYPES 1 AND 1-A

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



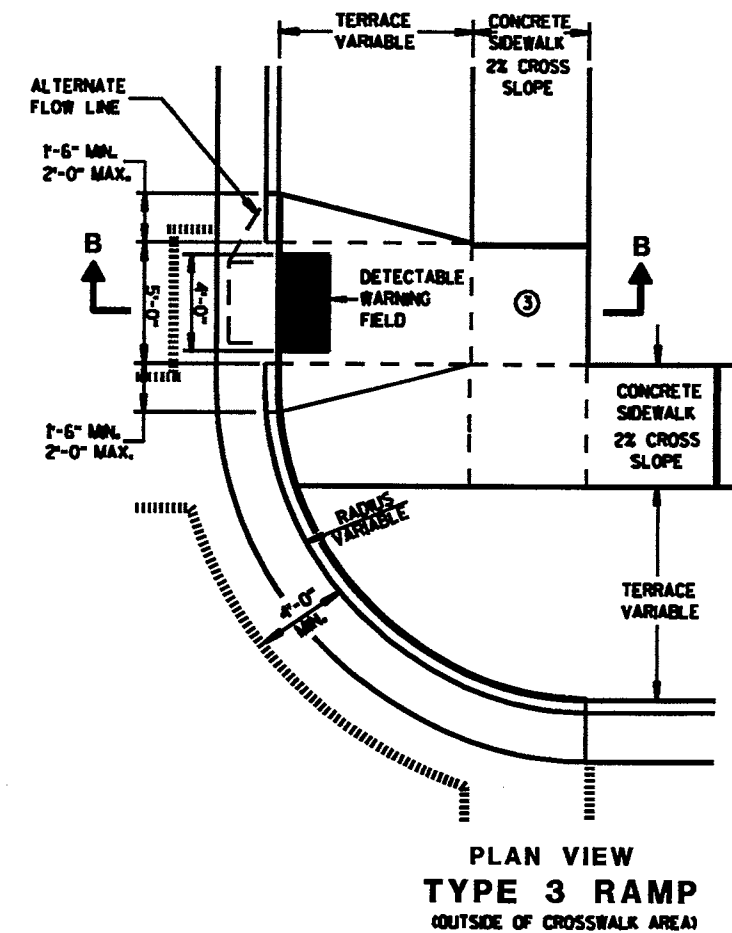
GENERAL NOTES

USE THE TYPE 3 RAMP ONLY WHEN A TYPE 1 OR TYPE 2 CANNOT BE ACHIEVED BECAUSE OF FIELD CONDITIONS.

- ① WHEN THIS DISTANCE IS LESS THAN 6'-0" IT MAY BE DIFFICULT TO ACHIEVE A 12% SLOPE, OR FLATTER, ON THE RAMP. REDUCE CURB HEIGHT IN TRIANGLE AREA TO ACHIEVE 12% SLOPE, OR FLATTER, ON RAMP. 2" MINIMUM CURB HEIGHT.
- ② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 1%. PROVIDE DRAINAGE AWAY FROM CURB RAMP AT GUTTER FLAG INTERFACE.
- ③ PROVIDE LANDING AT TOP OF RAMP WITH NO MORE THAN 2% SLOPE IN ANY DIRECTION.

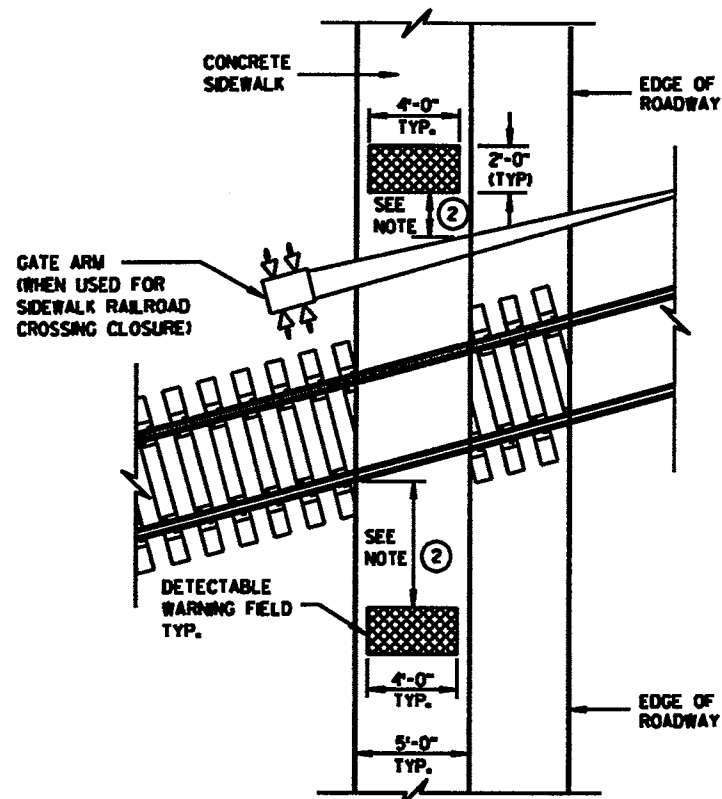
LEGEND

- 1/2" EXPANSION JOINT-SIDEWALK
- - - CONTRACTION JOINT FIELD LOCATED
- ||||| PAVEMENT MARKING CROSSWALK (WHITE)
- - - ALTERNATIVE LAYOUT

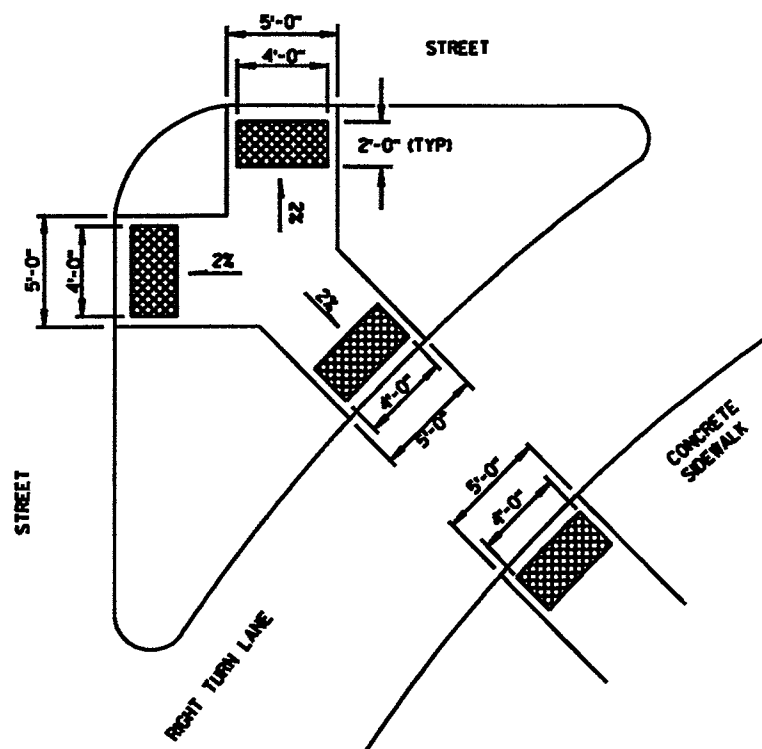


CURB RAMPS
TYPES 2 AND 3

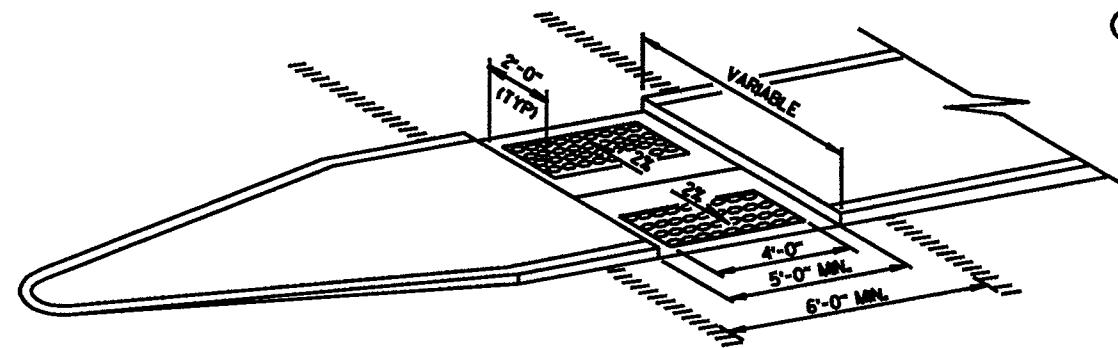
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



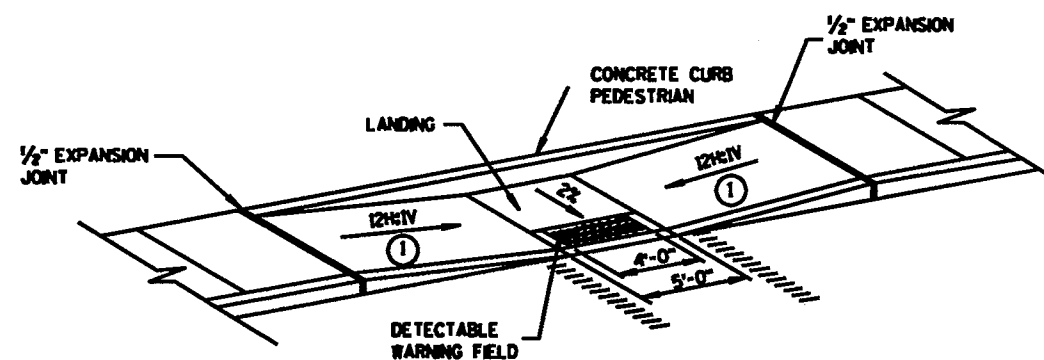
TYPE 8
DETECTABLE WARNINGS
AT RAILROAD CROSSING



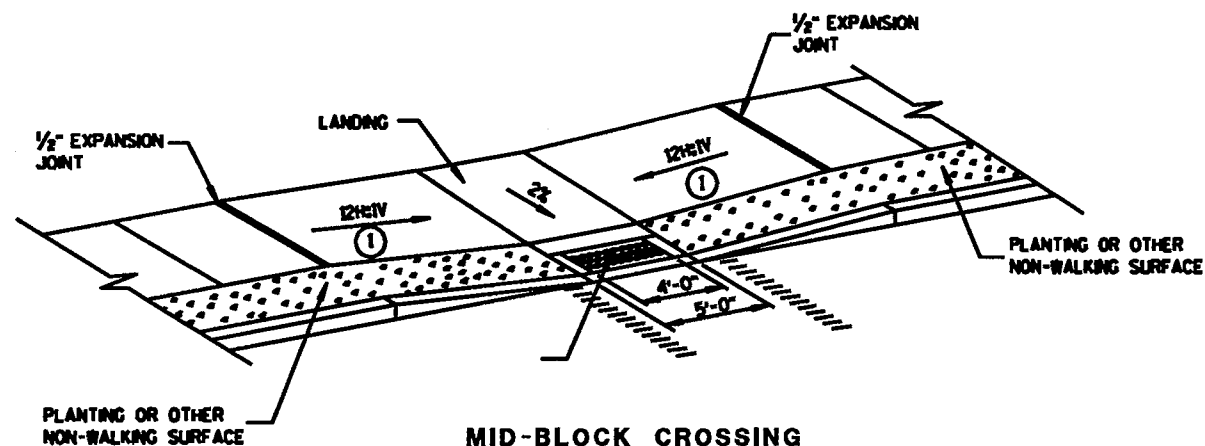
TYPE 6
DETECTABLE WARNING AT ISLANDS



**MEDIAN ISLAND
NON-ELEVATED CROSSING
TYPE 5**



**MID-BLOCK CROSSING
TYPE 7A**



**MID-BLOCK CROSSING
TYPE 7B**

NOTE: THESE PARALLEL AND PARALLEL/PERPENDICULAR CURB RAMPS
MAY BE USED AT INTERSECTIONS AND MID BLOCK LOCATIONS.

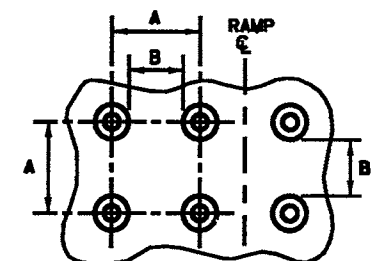
GENERAL NOTES

SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.

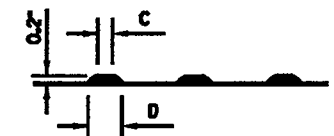
- ① SLOPE SIDEWALK TOWARD LANDING AS SHOWN WHERE THERE IS NO TERRACE OR WHERE THE TERRACE WIDTH IS LESS THAN 6 FEET WIDE.
- ② THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO A RAILROAD CROSSING SHALL BE 15 FEET ± 0.1' FROM THE FACE OF THE GATE ARM IF THE GATE ARM EXTENDS ACROSS THE SIDEWALK. WHERE THERE IS NO PEDESTRIAN GATE, THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO THE RAILROAD CROSSING SHALL BE 15 FEET FROM THE NEAREST RAIL.

LEGEND

- 1/2" EXPANSION JOINT-SIDEWALK
- - - CONTRACTION JOINT FIELD LOCATED
- ||||| PAVEMENT MARKING CROSSWALK (WHITE)



PLAN VIEW

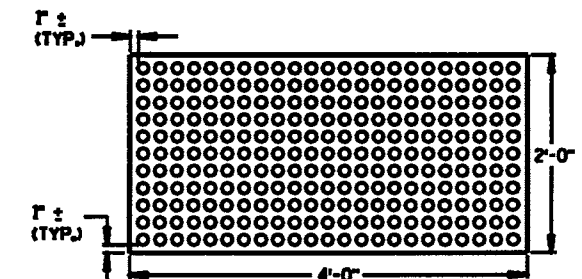


ELEVATION VIEW

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

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

TRUNCATED DOMES DETECTABLE WARNING PATTERN DETAIL



**PLAN VIEW
DETECTABLE WARNING
FIELD (TYPICAL)**

**CURB RAMPS
TYPES 5, 6, 7A, 7B & 8**

**STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION**

APPROVED

9/9/05

DATE

FWBA

/s/ Jerry H. Zogg

ROADWAY STANDARDS DEVELOPMENT

ENGINEER

GENERAL NOTES

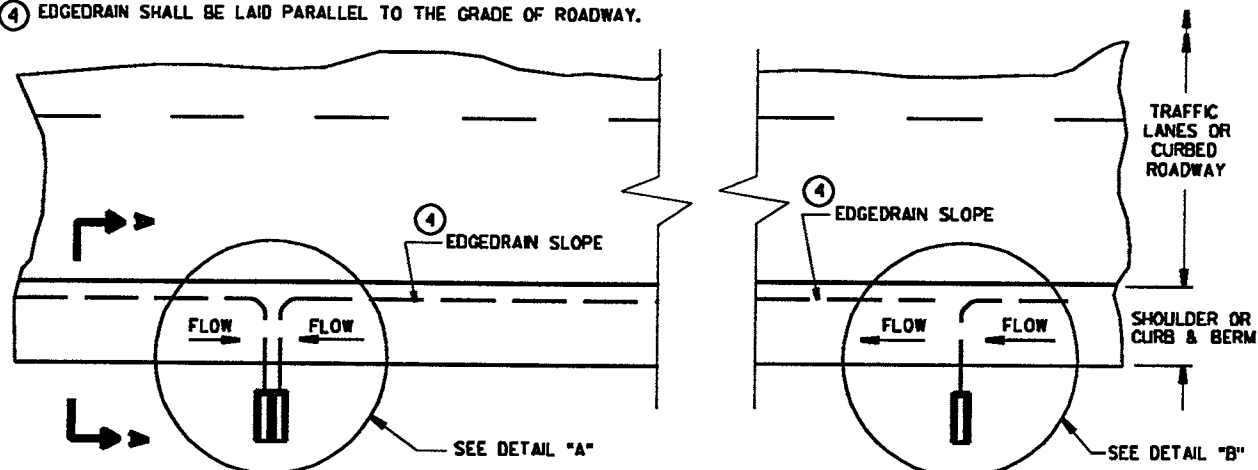
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

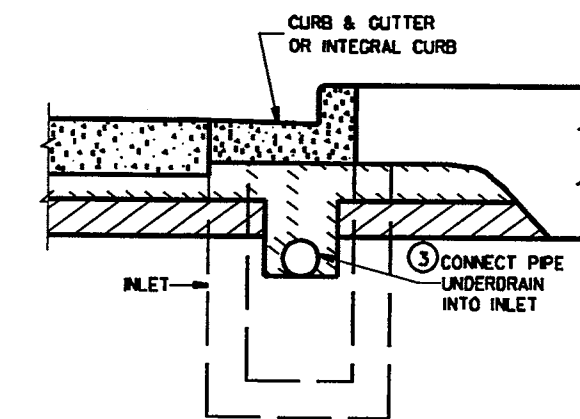
POLYVINYL CHLORIDE (PVC) PLASTIC DRAIN, WASTE, AND VENT PIPE AND FITTINGS, ASTM D 2665, SCHEDULE 40 PVC.

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

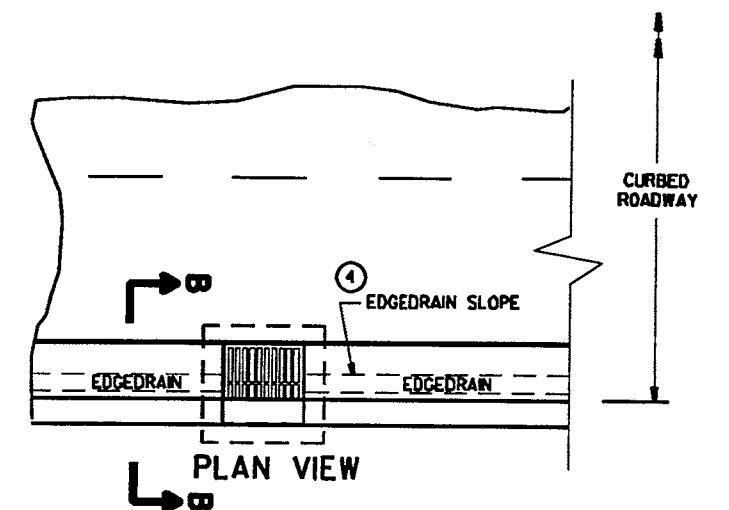
- ② MAXIMUM SPACING OF EDGEDRAIN OUTLETS SHALL BE 250 FEET UNLESS OTHERWISE SPECIFIED IN THE CONTRACT OR DIRECTED BY THE ENGINEER.
- ③ EDGEDRAIN SHALL BE CONNECTED TO INLETS REGARDLESS OF FLOW DIRECTION FOR DRAINAGE AND MAINTENANCE ACCESS.
- ④ EDGEDRAIN SHALL BE LAID PARALLEL TO THE GRADE OF ROADWAY.



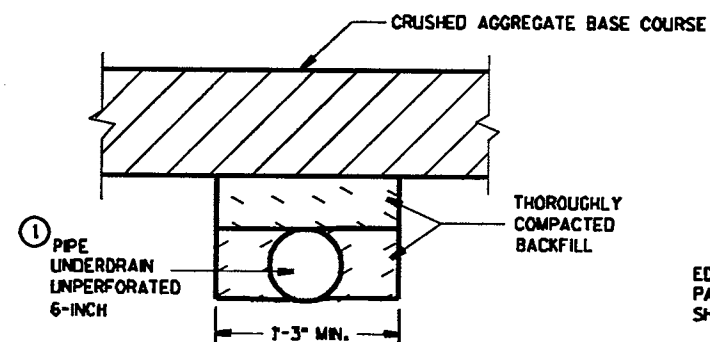
PLAN VIEW
ROADWAY WITH SHOULDERS OR CURBS
(EDGEDRAIN OUTLETS TO ROADSIDE) ②



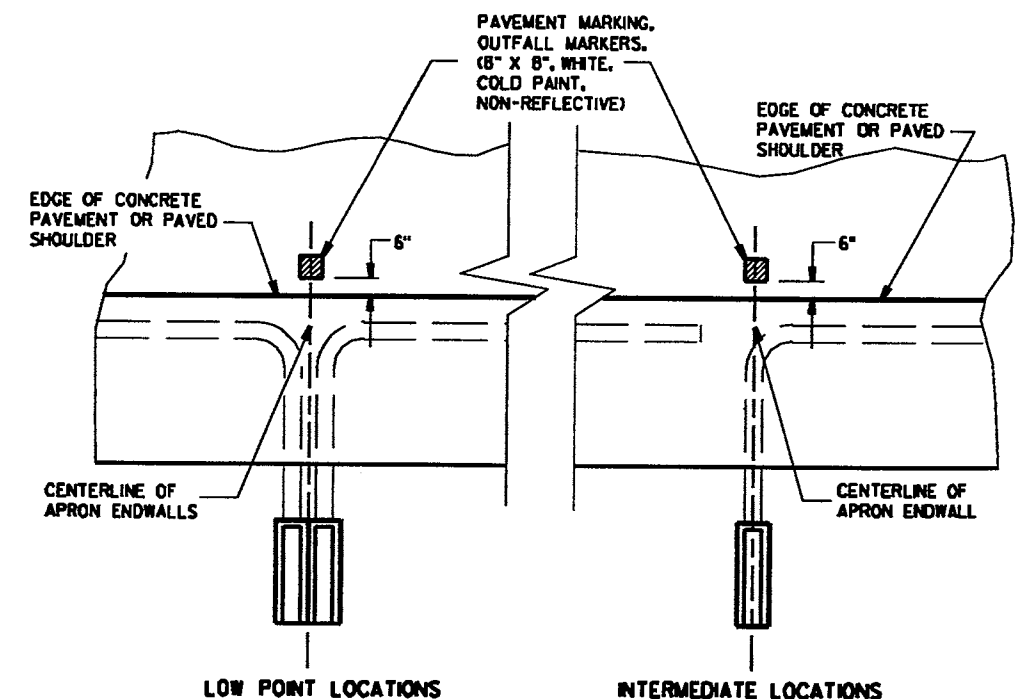
SECTION B-B
URBAN CROSS SECTION



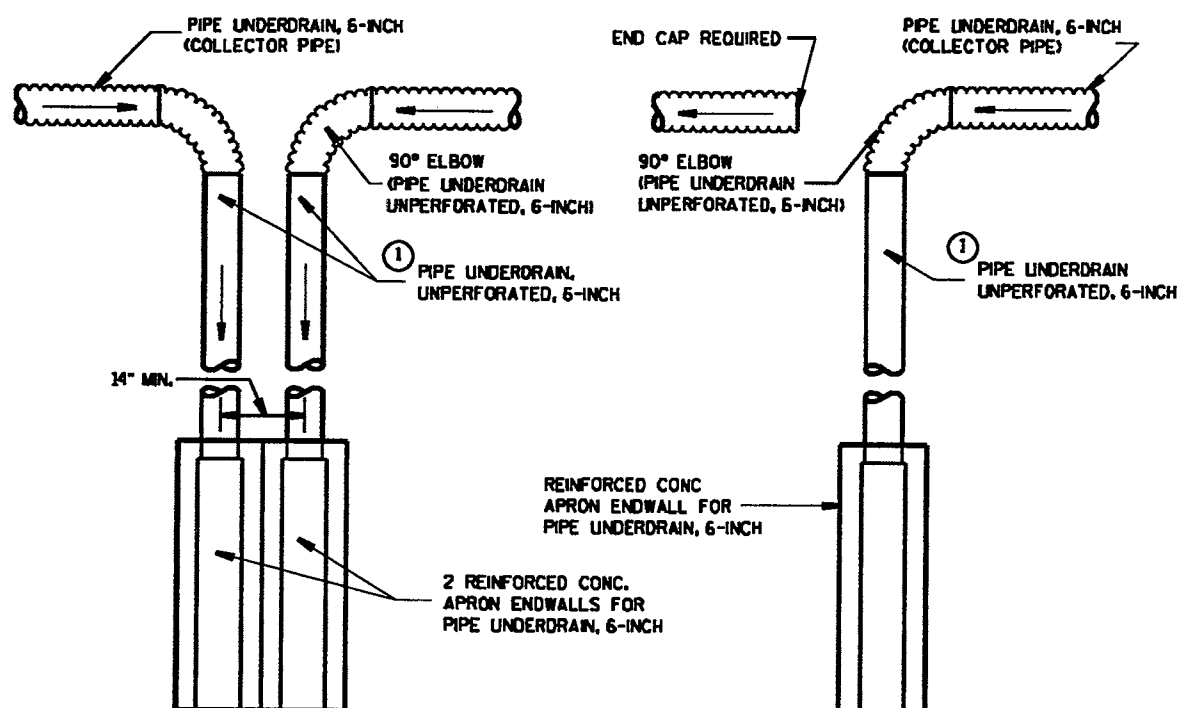
ROADWAY WITH CURBS
(EDGEDRAIN CONNECTS INTO INLET STRUCTURE)



SECTION C-C
(TRENCH FOR OUTFALL PIPE)



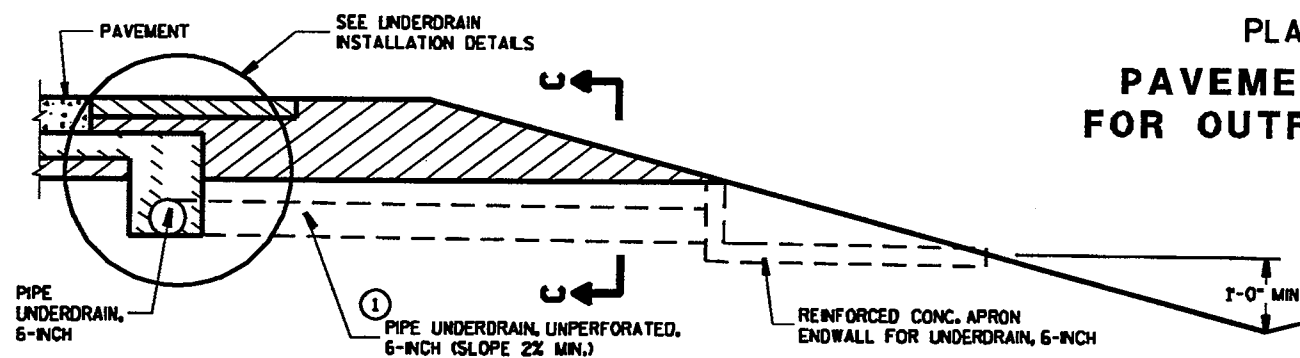
PLAN VIEW
PAVEMENT MARKING
FOR OUTFALL MARKERS



DETAIL "A"
TO BE USED AT LOW POINT LOCATIONS

DETAIL "B"
TO BE USED AT INTERMEDIATE LOCATIONS

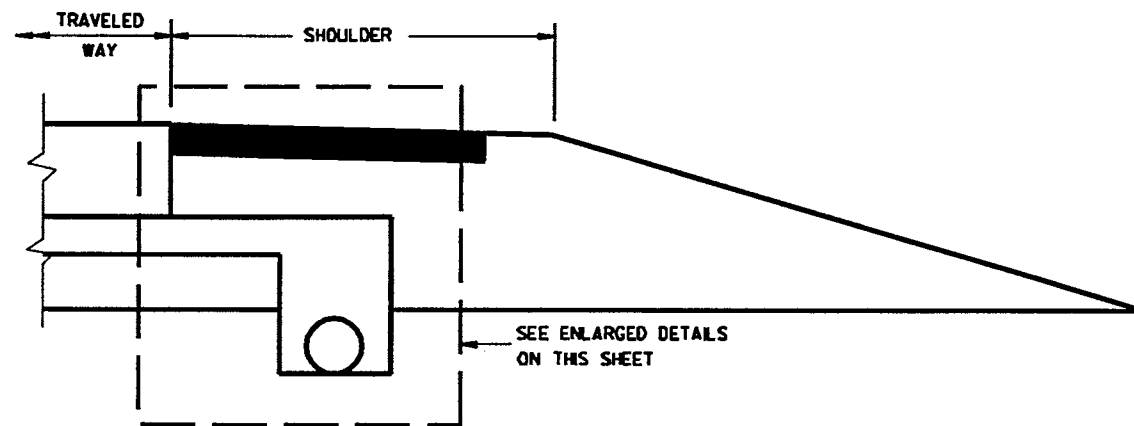
TYPICAL DRAIN OUT DETAILS



SECTION A-A
RURAL CROSS SECTION

EDGEDRAIN OUTLET
AND OUTFALL MARKERS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



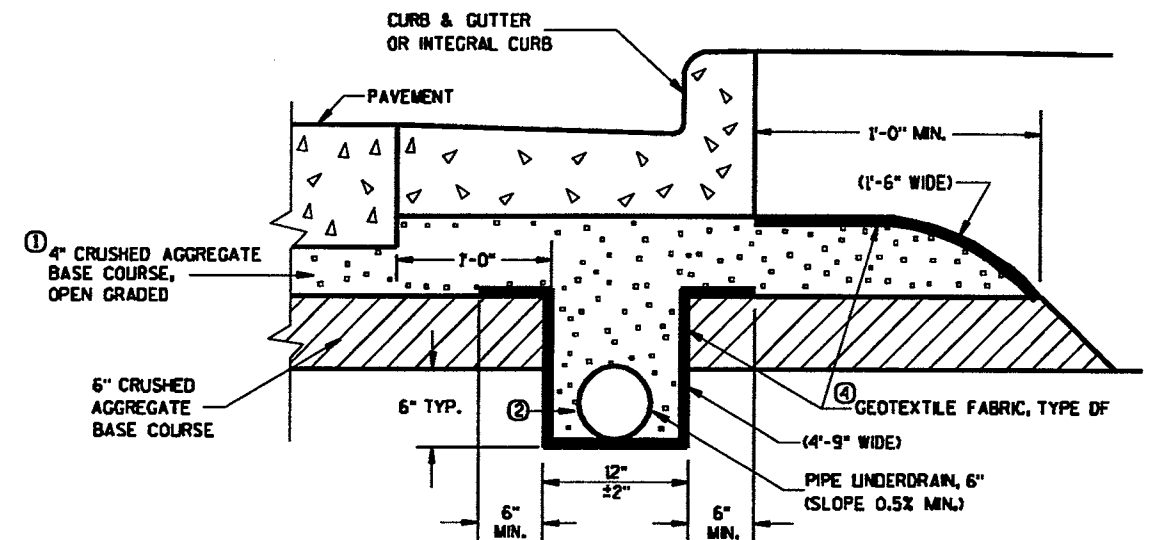
RURAL CROSS SECTION

NOTES

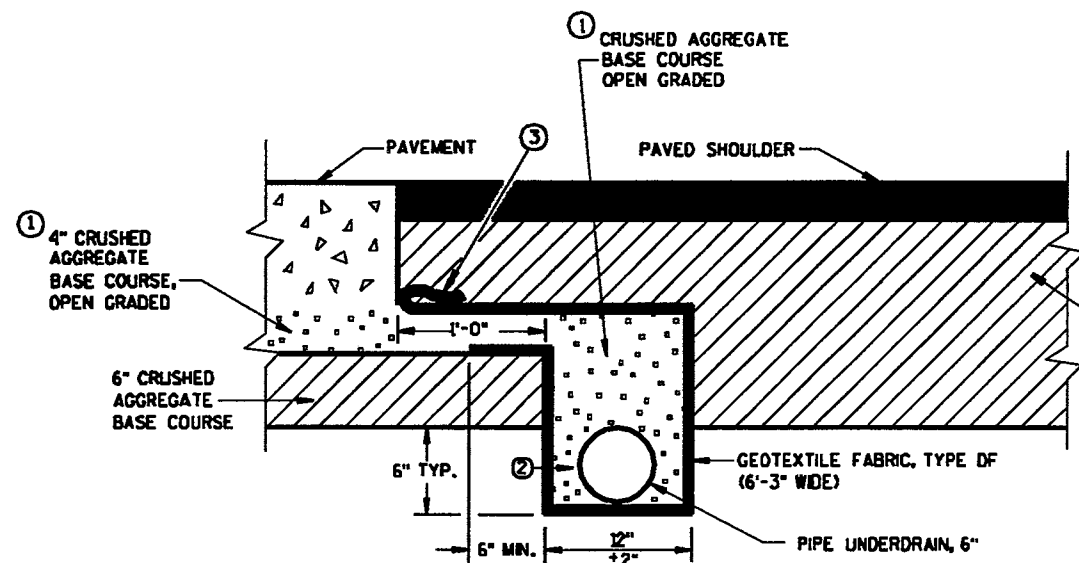
THE DIMENSIONS SHOWN ON THE TYPICAL CROSS SECTIONS WILL GOVERN IN THE EVENT THERE IS A CONFLICT WITH THE DETAILS SHOWN ON THIS DRAWING.

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

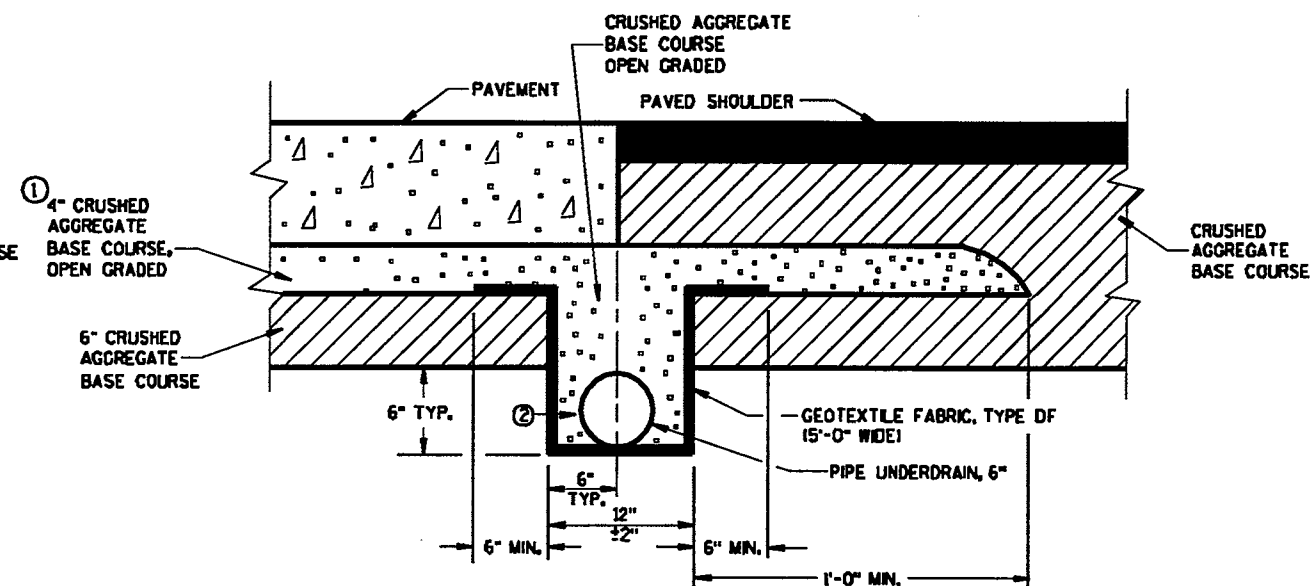
- ① THE GRADATION OF THE OPEN GRADED BASE COURSE SHALL BE EITHER NO. 1 OR NO. 2 AS SPECIFIED ELSEWHERE IN THE CONTRACT.
- ② TRENCH BACKFILL WILL BE PAID FOR AS CRUSHED AGGREGATE BASE COURSE, OPEN GRADED NO. 1 OR NO. 2 AS SPECIFIED.
- ③ FOLD OVER EXCESS GEOTEXTILE FABRIC AT THIS LOCATION.
- ④ TOTAL FABRIC 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

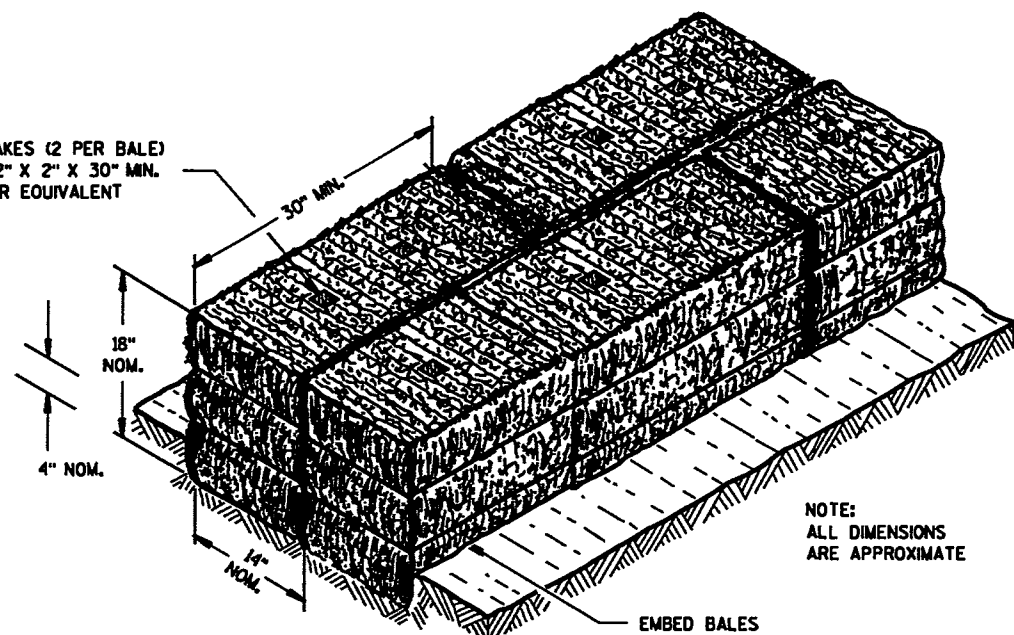
EDGEDRAIN AND CRUSHED AGGREGATE BASE COURSE, OPEN GRADED, NO. 1 OR NO. 2

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

DATE _____
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

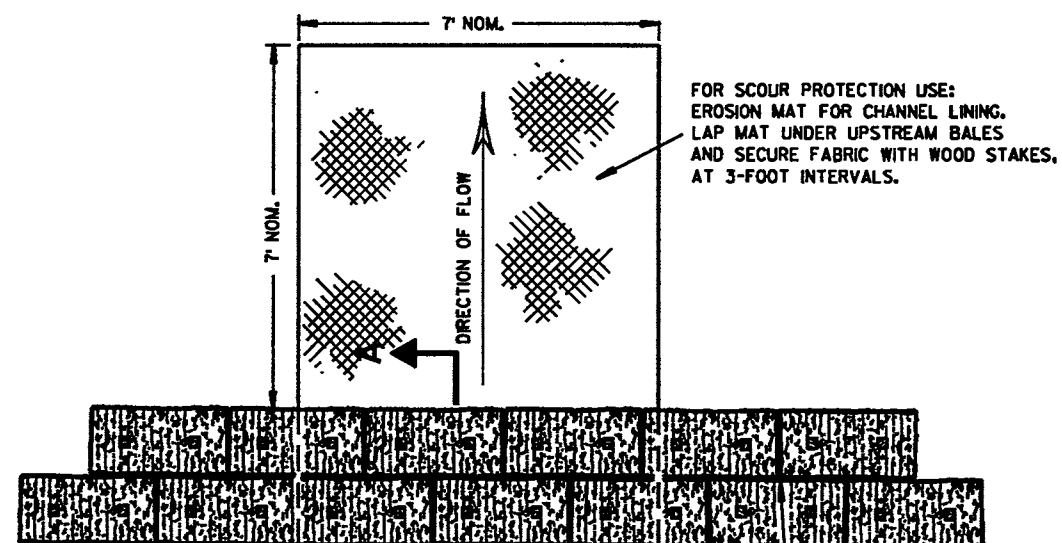
WOOD STAKES (2 PER BALE)
NOMINAL 2" X 2" X 30" MIN.
LENGTH OR EQUIVALENT



NOTE:
ALL DIMENSIONS
ARE APPROXIMATE

EMBED BALES

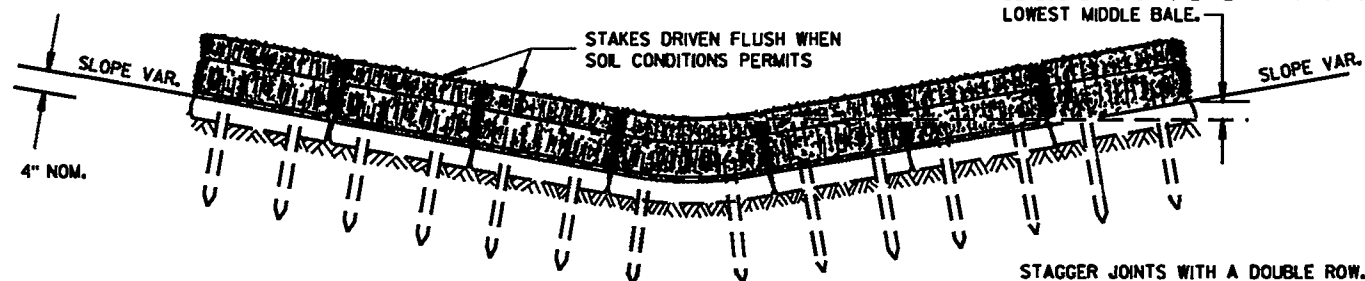
SECTION A-A



STAGGER JOINTS BETWEEN ADJACENT
ROWS OF BALES.

PLAN VIEW

BOTTOM ELEVATION OF END BALE SHALL
BE EQUAL TO OR GREATER THAN TOP OF
LOWEST MIDDLE BALE.



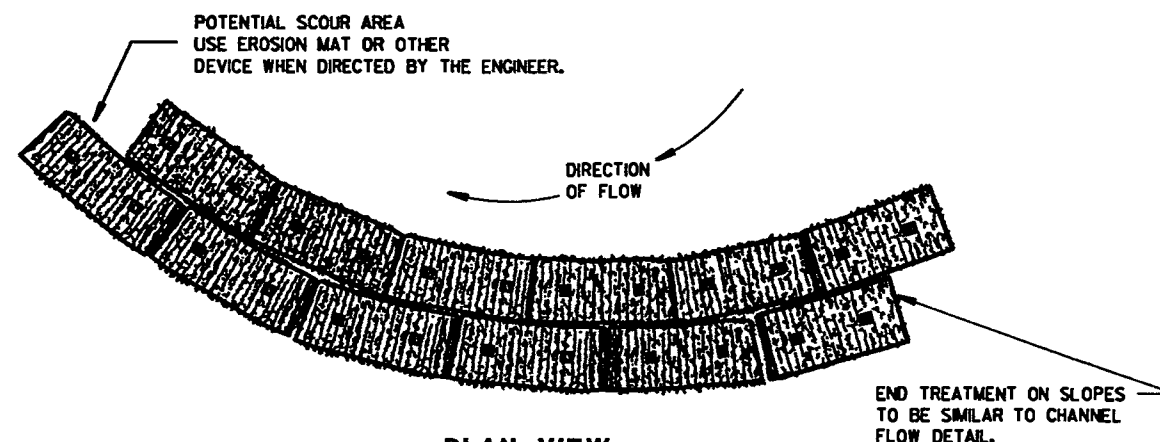
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

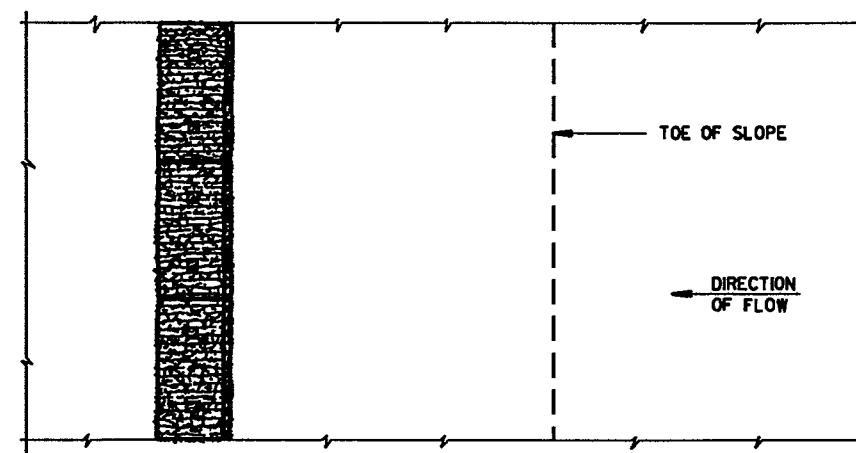
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING
SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS
AND THE APPLICABLE SPECIAL PROVISIONS.

- 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.

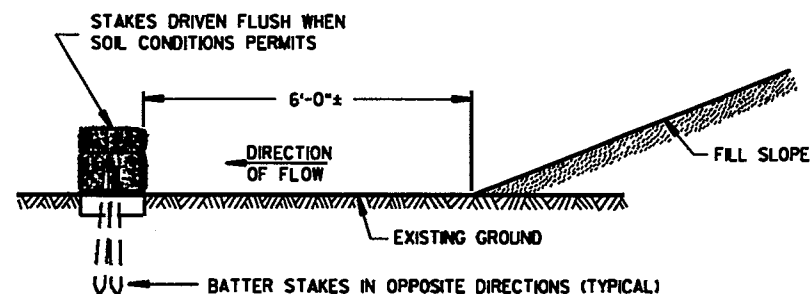


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

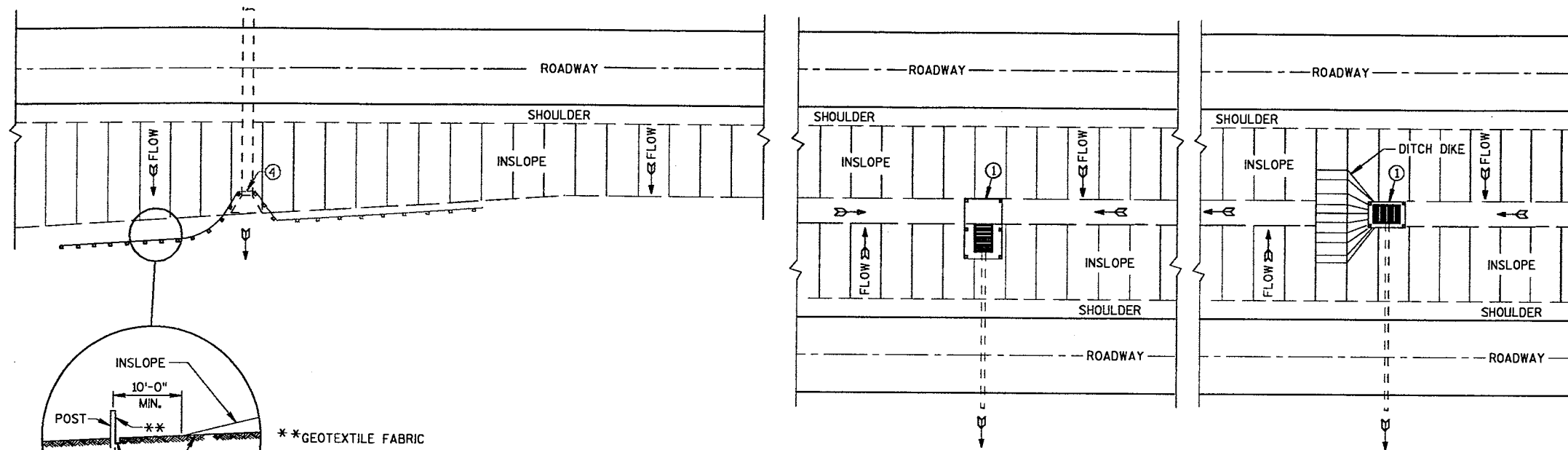
EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF
EROSION BALES / TEMPORARY
DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

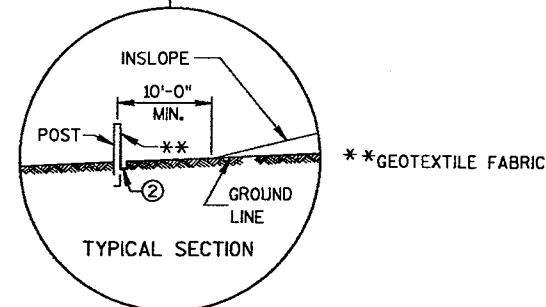
DATE _____ CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA



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 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 1 1/8" X 1 1/8" OF OAK OR HICKORY.
- ④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.



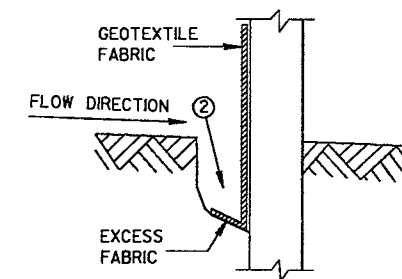
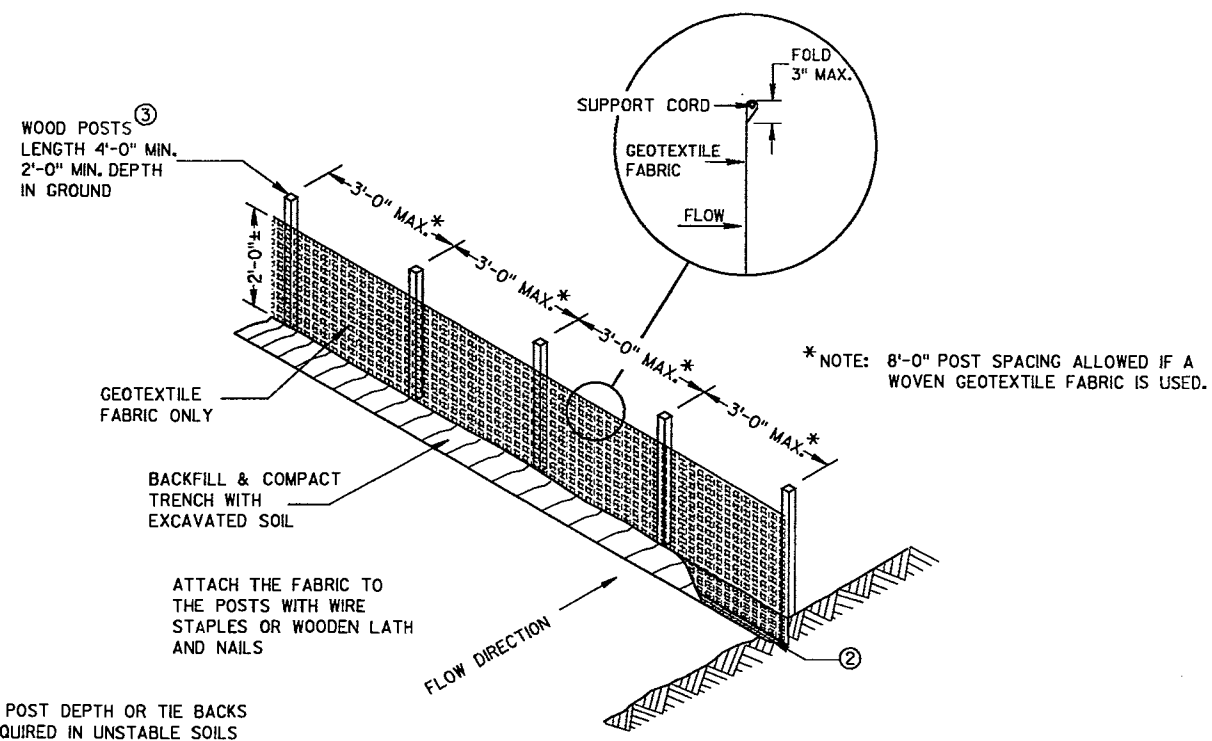
PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE

SITUATION 1

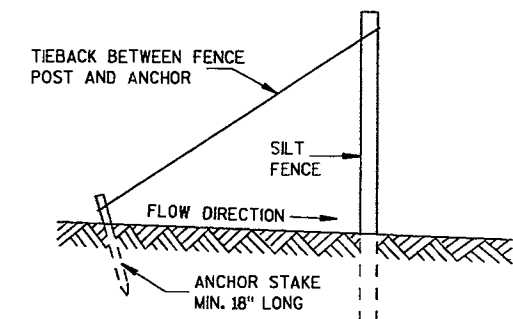
SITUATION 2

PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS



TRENCH DETAIL



SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

NOTE: ADDITIONAL POST DEPTH OR TIE BACKS MAY BE REQUIRED IN UNSTABLE SOILS

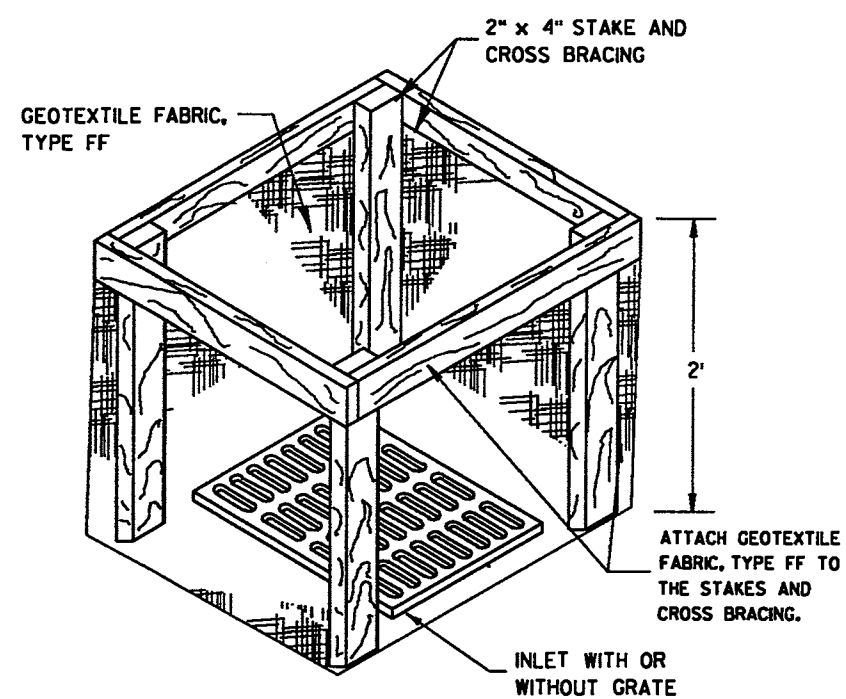
SILT FENCE

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

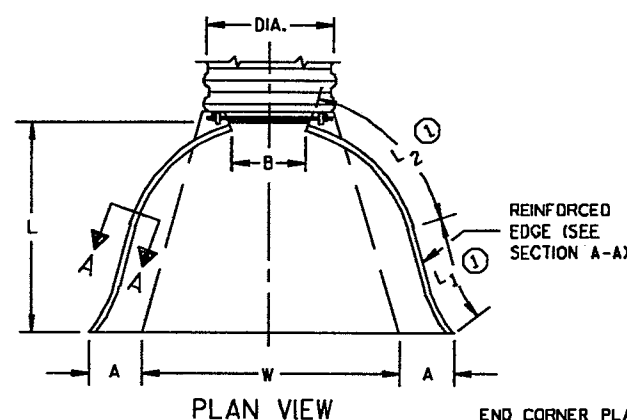
DATE _____ CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA



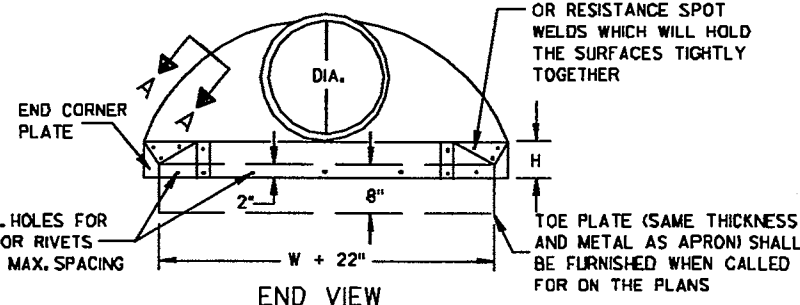
S.D.D. 8 E 10-2

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

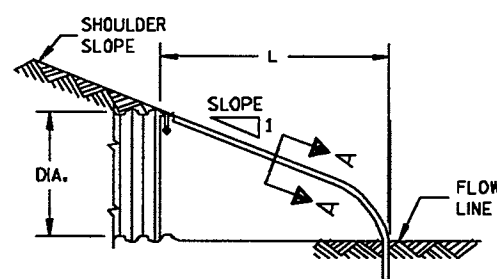
* EXCEPT CENTER PANEL
SEE GENERAL NOTES



PLAN VIEW



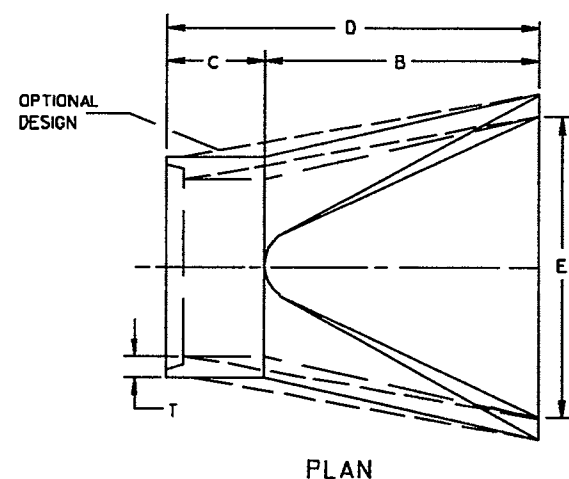
END VIEW



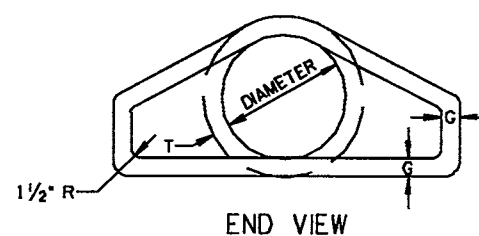
SIDE ELEVATION
METAL ENDWALLS

REINFORCED CONCRETE APRON ENDWALLS											
PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE			
	T	A	B	C	D	E	G				
12	2	4	24	48 1/8	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 1/4	73 1/2	60	3 1/2	3 to 1			
36	4	15	63	34 1/4	97 1/4	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 1/2 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			

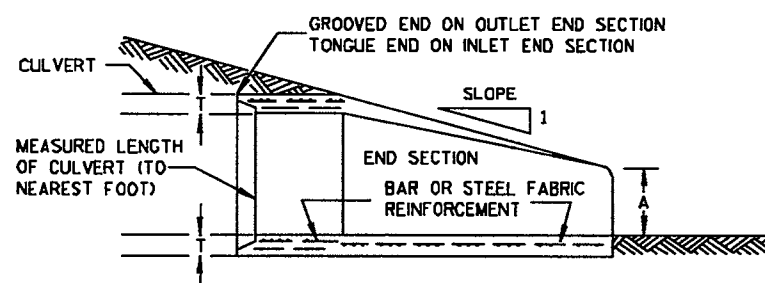
* MINIMUM
** MAXIMUM



PLAN

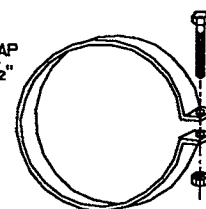


END VIEW



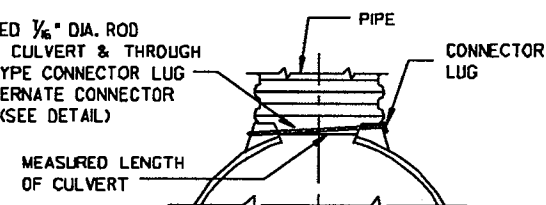
LONGITUDINAL SECTION
CONCRETE ENDWALLS

1" WIDE, 12 GA. (0.109" THICK) GALVANIZED STRAP WITH STANDARD 6" X 1/2" BAND BOLT AND NUT



ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP

THREADED 1/8" DIA. ROD AROUND CULVERT & THROUGH TANK TYPE CONNECTOR LUG OR ALTERNATE CONNECTOR STRAP (SEE DETAIL)

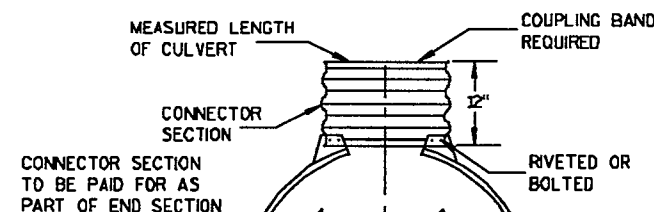


TYPE 1
FOR 12" THRU 24" CORR. PIPE

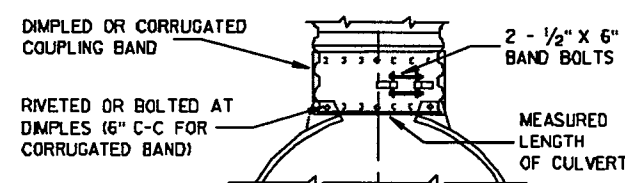
THREADED 1/8" DIA. ROD OVER TOP OF APRON SIDE LUGS TO BE RIVETED TO APRON



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

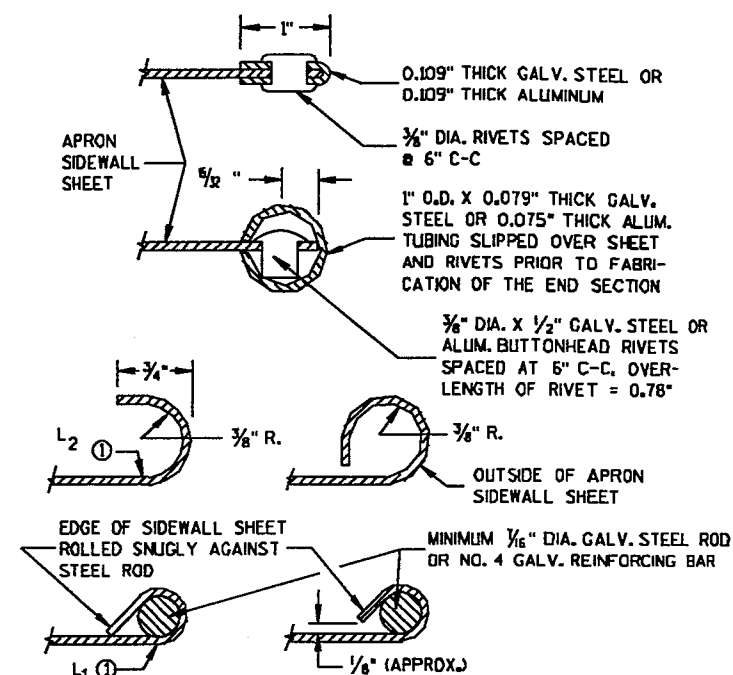
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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 VICE 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

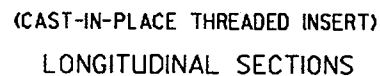
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

DATE

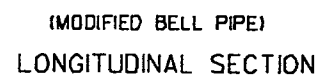
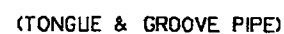
CHEF ROADWAY DEVELOPMENT ENGINEER

FHWA



CONCRETE CULVERT PIPE SHALL BE TIED TOGETHER IN THE MANNER ILLUSTRATED BY THIS DETAIL AT LOCATIONS DESIGNATED ON 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 CULVERT PIPE AS INDICED ON THE PLANS AND BY THIS DETAIL WILL BE CONSIDERED INCIDENTAL TO CULVERT PIPE, REINFORCED CONCRETE CULVERT PIPE, OR REINFORCED CONCRETE PIPE CATTLE PASS.

- ① C 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" FROM C OF TONGUE AND GROOVE.
- ④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2".
- ⑤ ROD DIAMETER + 1 INCH.
- ⑥ LENGTH ADEQUATE TO EXTEND TO WITHIN 1/2 INCH OF THE INNER SURFACE OF THE PIPE.

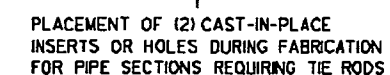


PIPE SIZE	L = LENGTH	
	TONGUE & GROOVE PIPE	MODIFIED BELL PIPE
18" TO 24"	4 1/2"	6 1/4"
30"	5"	7"
36"	5 1/2"	7"
42"	6"	
48"	6 1/2"	
60"	7 1/2"	
66"	8"	

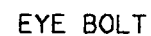
PIPE DIAMETER	TIE ROD DIAMETER	D	L ₁	N
12-60	$\frac{3}{8}$	$\frac{3}{8}$	5	$\frac{1}{2}$
66-84	$\frac{3}{4}$	$\frac{3}{4}$	5	$\frac{1}{2}$
90-108	1	1	7	$1\frac{1}{2}$

The diagrams illustrate two types of shafts. The left diagram shows a **TAPERED** shaft with a total length L_1 , a diameter D at the right end, and a distance N from the left end to the start of the tapered section. The right diagram shows a **PLAIN** shaft with a total length L_1 and a diameter D at the right end.

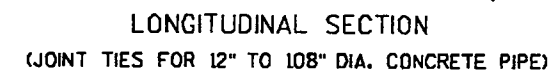
SLEEVE NUTS



TRANSVERSE SECTION



(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)
EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 2)



ADJUSTABLE TIE ROD (ALTERNATE NO. 3)

THE NUMBER OF PIPE TIES REQUIRED SHOULD BE INCLUDED ON THE MISCELLANEOUS QUANTITIES SHEET WITH THE CULVERT PIPE LISTING.

NOTE:
DESIGN NOTE WILL NOT APPEAR ON THE
CONTRACT PLAN.

JOINT TIES FOR CONCRETE PIPE

STATE OF WISCONSIN
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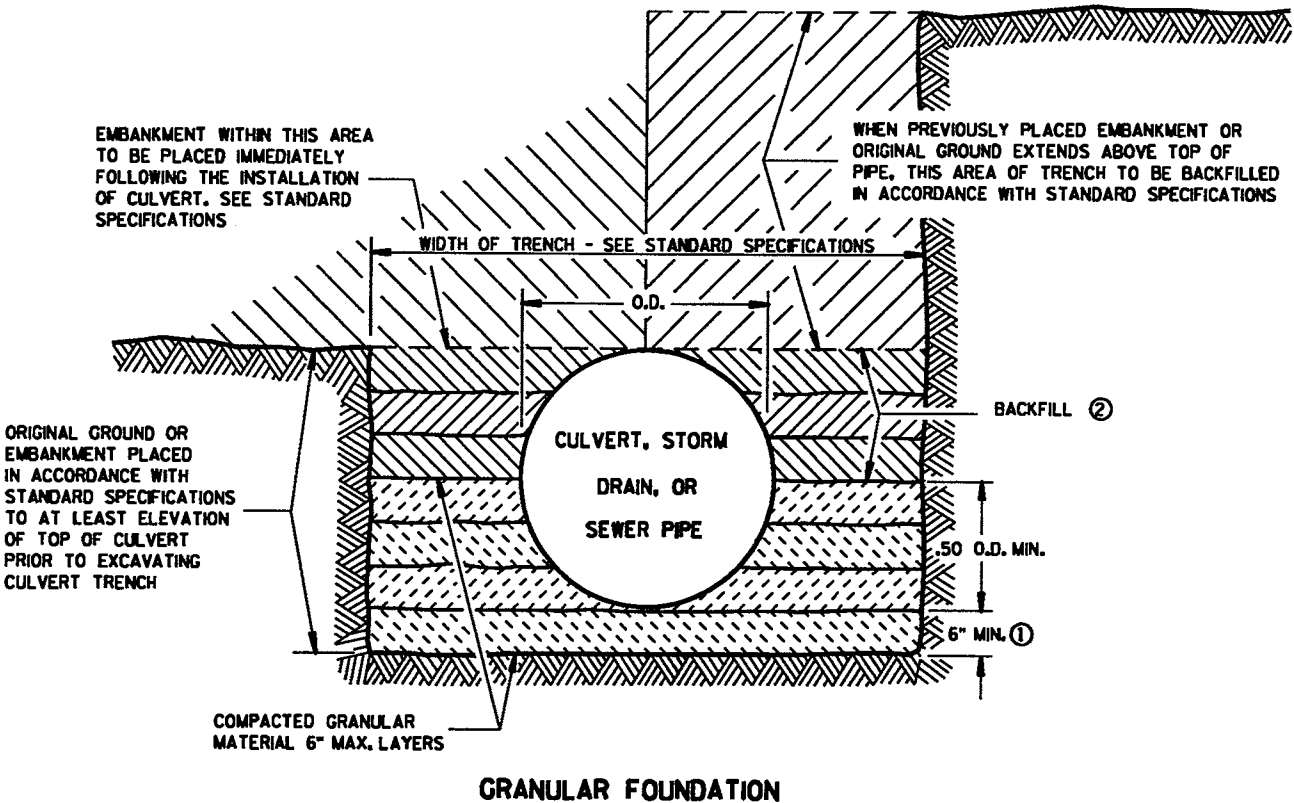
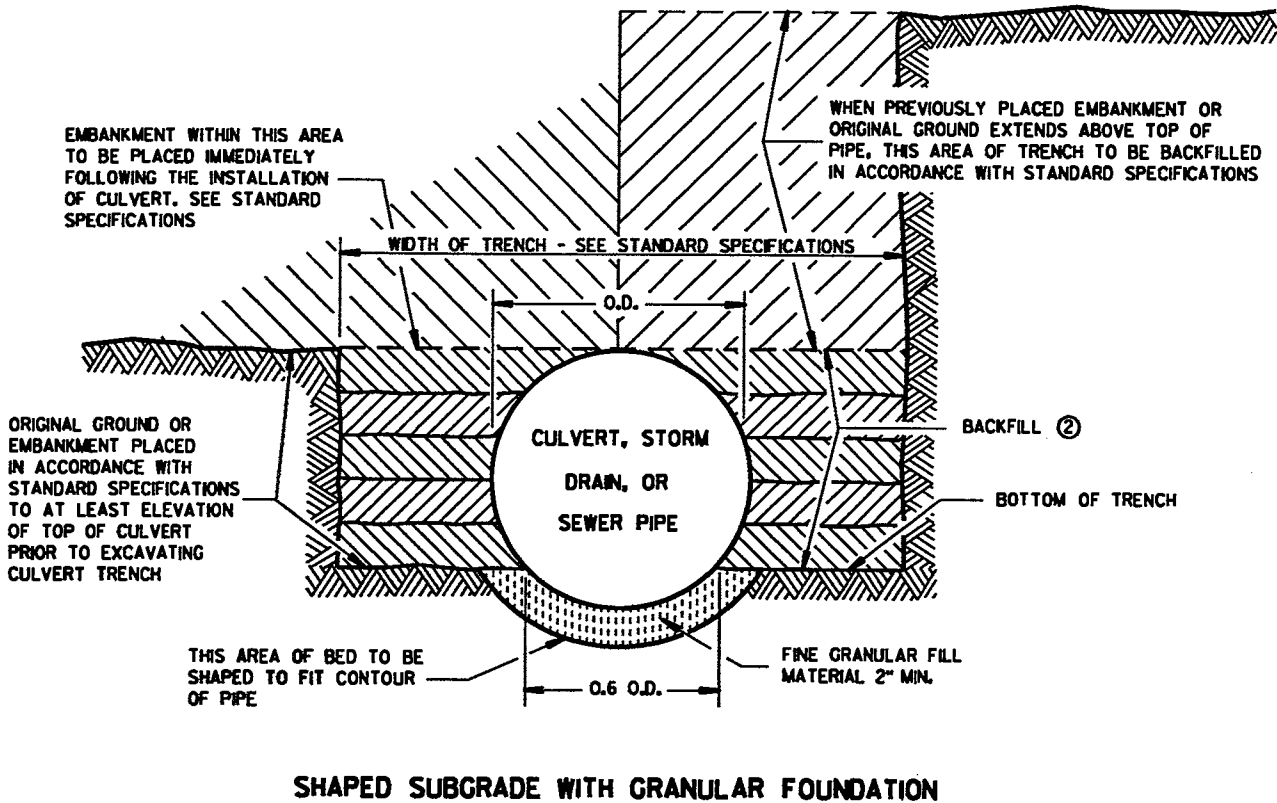
DATE _____ STATE DESIGN ENGINEER FOR HWYS _____
FHWA _____

GENERAL NOTES

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

THE SHAPED SUBGRADE WITH GRANULAR FOUNDATION IS AN EQUAL ALTERNATE TO THE GRANULAR FOUNDATION EXCEPT WHERE ROCK IS ENCOUNTERED.

- ① WHERE ROCK, HARD PAN OR FRAGMENTED MATERIAL IS ENCOUNTERED, THE TRENCH SHALL BE EXCAVATED BELOW THE BOTTOM OF THE PIPE AN AMOUNT EQUAL TO 1/2 INCH PER FOOT OF PROPOSED EMBANKMENT ABOVE THE TOP OF THE PIPE, BUT NOT LESS THAN 6 INCHES.
- ② TRENCH SHALL BE BACKFILLED AS REQUIRED BY STANDARD SPECIFICATIONS; SECTION 520 FOR PIPE CULVERTS AND SECTION 607 FOR STORM SEWERS.



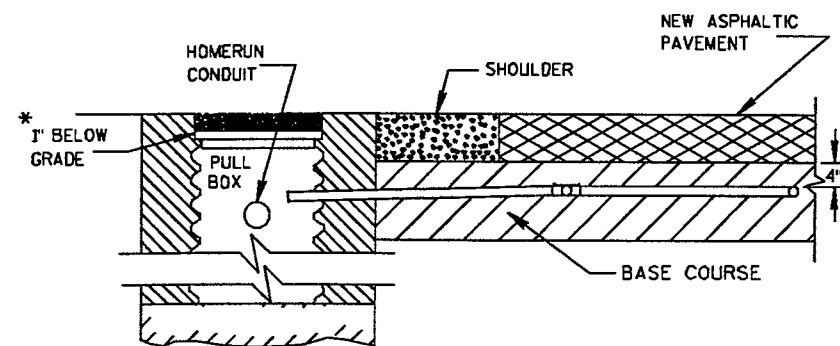
CLASS "B" BEDDING

CLASS "B" BEDDING FOR
CULVERT PIPE OR STORM SEWER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

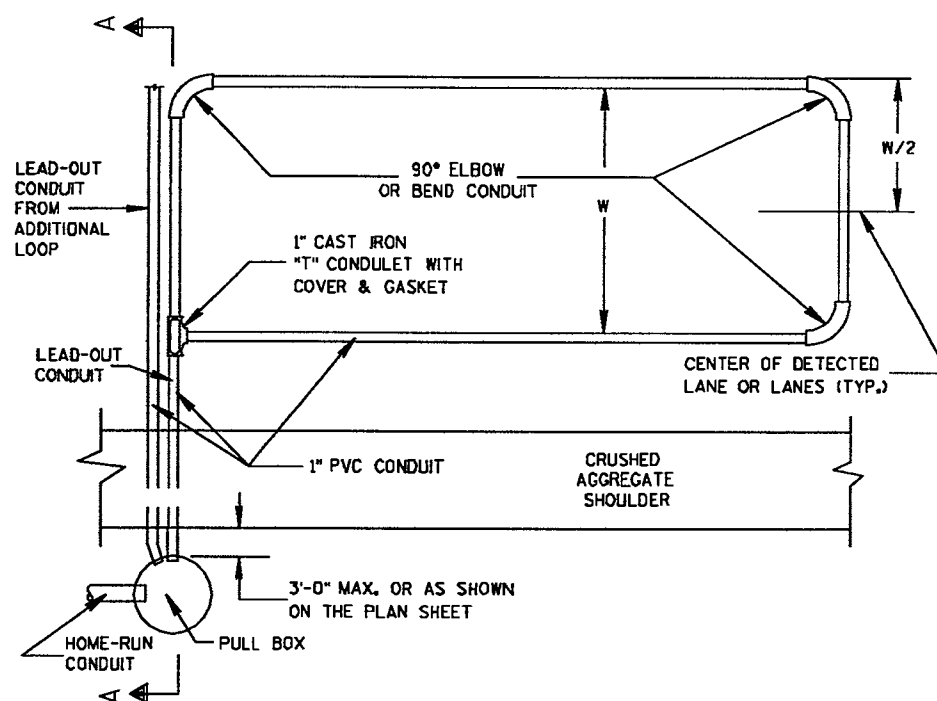
APPROVED

DATE STATE DESIGN ENGINEER FOR HWYS
FHWA



**SECTION A-A
NO CURB & GUTTER
DETECTOR LOOP INSTALLATION DETAIL**

*RECESS PULL BOX SO THAT THE COVER IS 3" BELOW GRADE IN SHOULDER AREAS OF CRUSHED AGGREGATE. BACKFILL OVER COVER WITH THE CRUSHED AGGREGATE TO BRING THE AREA TO GRADE LEVEL.



TYPICAL PLAN OF LOOP DETECTOR

GENERAL NOTES

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

LOOP SIZE, LOCATION, NUMBER OF TURNS OF WIRE AND ASSOCIATED SIGNAL PHASE SHALL BE AS SHOWN ON THE PLANS.

PITCH LEAD-OUT CONDUIT TO DRAIN TO ROADSIDE PULL BOX.

SPLICES SHALL BE INSTALLED BY USING CAST IN PLACE SPLICE KITS SUCH AS 3M TYPE 82A1 OR APPROVED EQUAL. NON-INSULATED BUTT SPLICES TO FIT #12 AWG STRANDED WIRE SHALL BE USED. SPLICES SHALL BE SOLDERED AND INSULATED FROM EACH OTHER AS PER INSTRUCTIONS INCLUDED IN THE SPLICE KIT.

THE GROUND RESISTANCE READING OF THE LOOP SHALL READ "INFINITY" TO GROUND ON AN OHMMETER USING A MULTIPLIER SCALE OF 1 MEGOHM AND AN INPUT RESISTANCE OF 11 MEGOHMS MINIMUM BEFORE SPlicing THE LOOP TO THE LEAD-IN CABLE.

AFTER SPlicing THE LOOP WIRE TO THE LOOP LEAD-IN CABLE, THE CONTRACTOR SHALL MEASURE INDUCTANCE, GROUND RESISTANCE AND WIRE RESISTANCE AT THE CABINET END OF THE LEAD-IN CABLE AND FURNISH A COPY OF THE READINGS TO THE PROJECT ENGINEER FOR EVALUATION.

ANTI-SIEZE LUBRICATING MATERIAL SHALL BE USED ON ALL THREADS OF THREADED ASSEMBLIES BEFORE INSTALLATION.

LOOP DETECTOR LEADS SHALL BE IDENTIFIED WITH THEIR ASSOCIATED LOOP BY USE OF WATERPROOF TAGS AT BOTH ENDS OF THE CABLE. A LISTING OF THE CABLE IDENTIFICATION PER INDIVIDUAL LOOP LEAD-IN SHALL BE PLACED IN THE CABINET.

THE #12 AWG LOOP WIRE FROM THE LOOP TO THE ROADSIDE PULL BOX, SHALL BE HAND TWISTED AT LEAST 3 TWISTS PER FOOT BEFORE INSTALLATION.

SPLICES OF LOOP WIRE TO LEAD-IN CABLE SHALL BE MADE ONLY IN PULL BOXES AT THE SIDE OF THE ROAD.

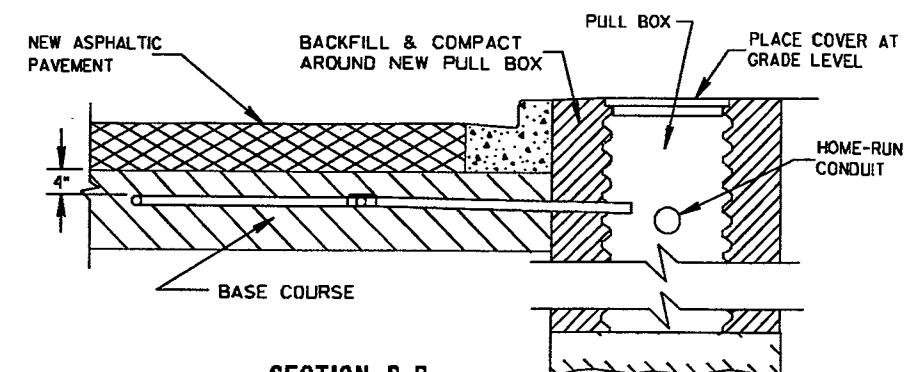
THE #12 AWG LOOP WIRE SHALL BE INSTALLED FROM THE ROADSIDE PULL BOX, THROUGH THE LOOP DUCT, BACK TO THE ROADSIDE PULL BOX, AND BE INSTALLED IN ONE, NON-SPLICED, CONTINUOUS LENGTH.

PROTECTION OF THE CONDUIT AND CONDULET SHALL BE REQUIRED AFTER INSTALLATION AND BEFORE THE ASPHALTIC PAVEMENT IS PLACED.

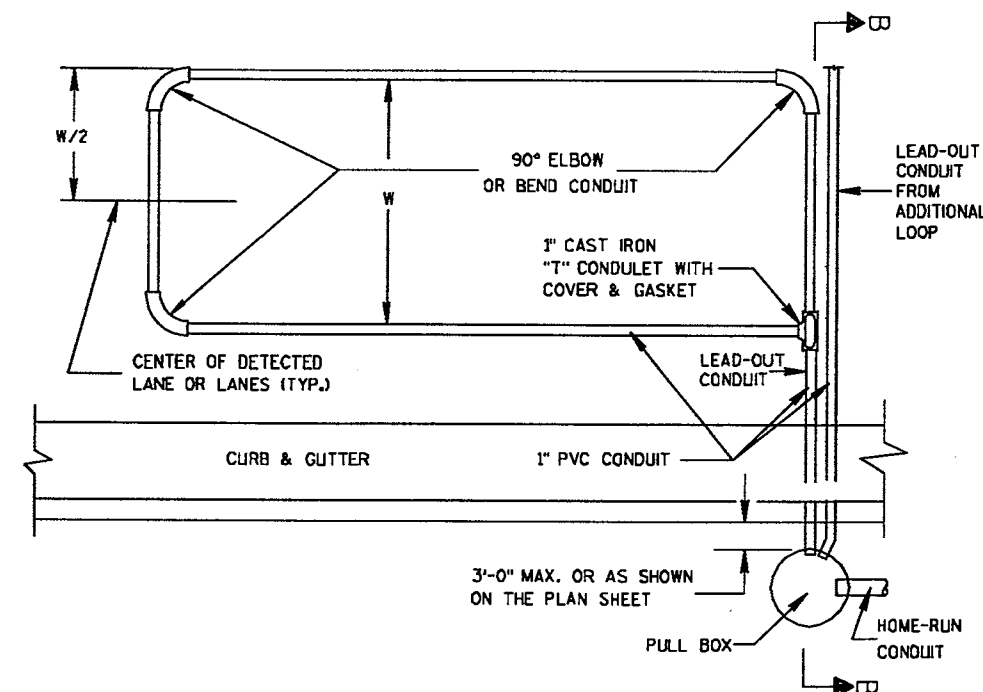
WHEN MULTIPLE LAYERS OF ASPHALTIC PAVEMENT ARE TO BE PLACED, LOOPS MAY BE INSTALLED BY SAWING A TWO INCH WIDE SLOT IN THE FIRST LAYER, DIG OUT THE ASPHALTIC MATERIAL AND BASE COURSE, PLACE THE LOOP, FILL THE SLOT WITH BASE COURSE MATERIAL AND NEW ASPHALTIC MATERIAL AND TAMP THE ASPHALTIC MATERIAL IN PLACE.

SHOULD TRAFFIC BE ALLOWED TO USE THE AREA OF ROADWAY WITH THE NEWLY INSTALLED LOOP BEFORE THE PLACEMENT OF THE NEXT LAYER OF ASPHALTIC PAVEMENT, THE SLOT/PAVEMENT OPENING SHALL BE SEALED WITH HOT POURED ELASTIC TYPE MATERIAL CONFORMING TO THE REQUIREMENTS OF THE "SPECIFICATION FOR JOINT SEALANTS, HOT POURED, FOR CONCRETE AND ASPHALT PAVEMENTS, ASTM DESIGNATION: D3405".

DRIVE A 1 1/2" MAX. PK NAIL INTO THE NEW ASPHALTIC PAVEMENT AND DIRECTLY ABOVE THE CONDULET AFTER THE FINAL LAYER OF NEW ASPHALTIC PAVEMENT IS COMPLETELY INSTALLED, IF REQUIRED BY THE DISTRICT TRAFFIC SECTION.



**SECTION B-B
CURB & GUTTER
LOOP DETECTOR INSTALLATION DETAIL**



TYPICAL PLAN OF LOOP DETECTOR

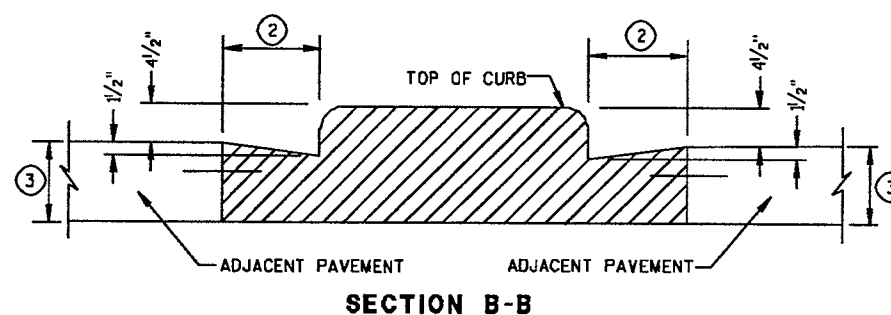
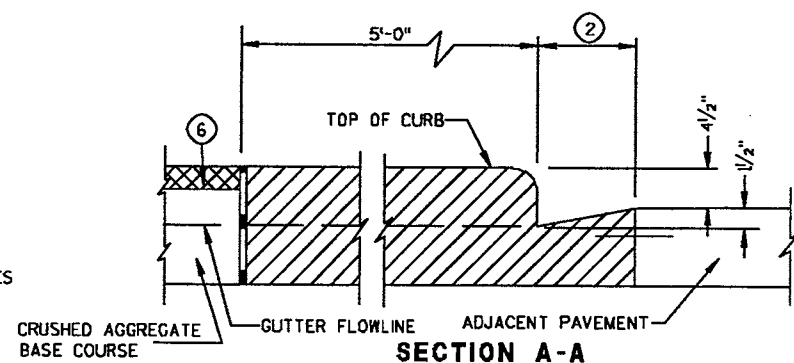
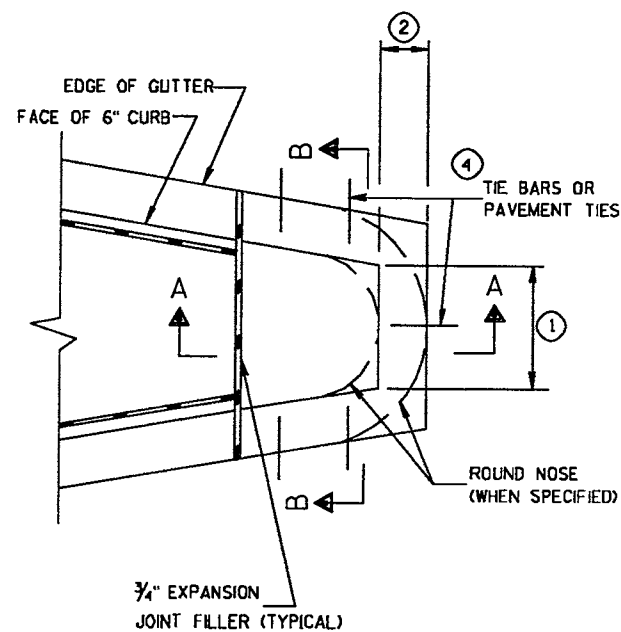
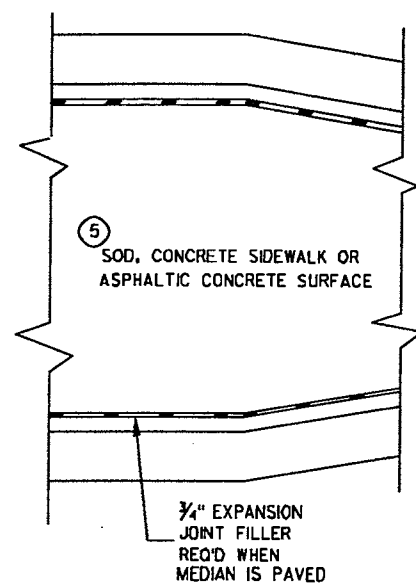
LOOP DETECTOR PLACED
IN CRUSHED AGGREGATE BASE
(NEW ASPHALTIC PAVEMENT)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

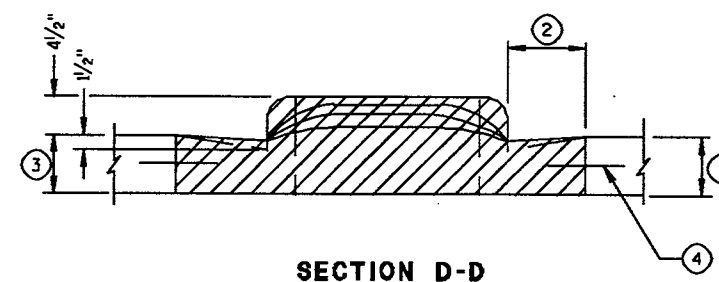
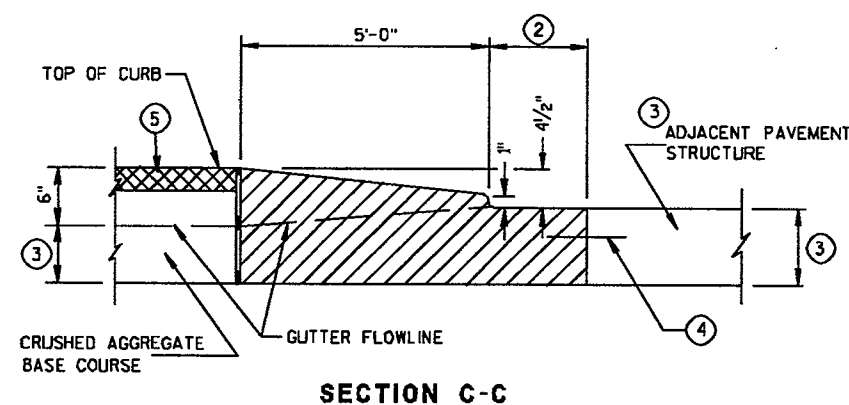
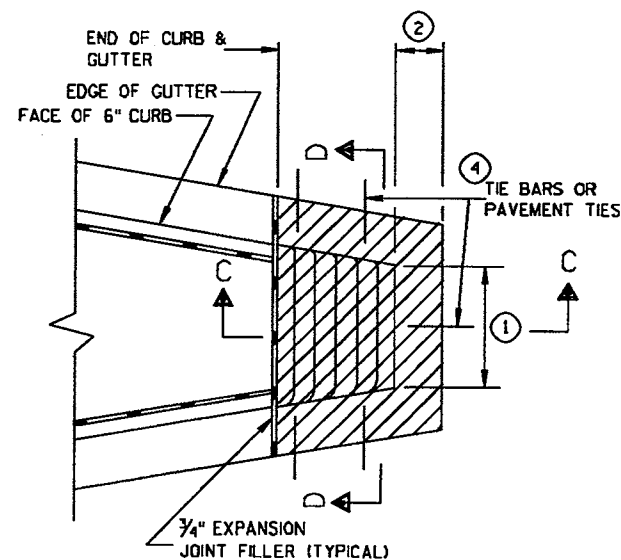
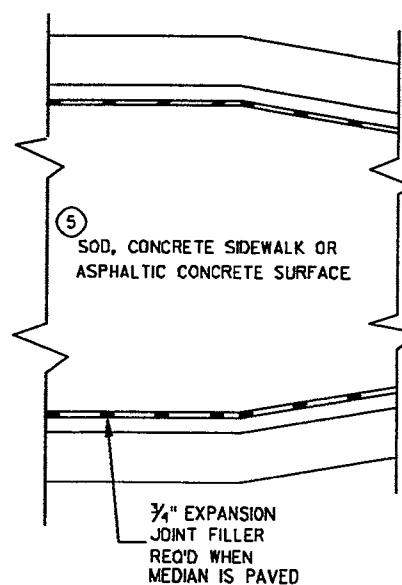
APPROVED

DATE
FWHA

STATE ELECTRICAL ENGINEER FOR
HIGHWAYS



CONCRETE MEDIAN BLUNT NOSE DETAIL



CONCRETE MEDIAN SLOPED NOSE DETAIL

GENERAL NOTES

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

- ① SEE PLAN FOR MEDIAN NOSE WIDTH AND RADIUS (FOR ROUND NOSE ALTERNATE).
- ② WIDTH OF GUTTER TO MATCH EXISTING ADJACENT GUTTER OR AS SPECIFIED ELSEWHERE IN THE PLAN.
- ③ DEPTH EQUAL TO ADJACENT PAVEMENT. ADJACENT PAVEMENT STRUCTURE DETAILS ARE SHOWN ON THE PLAN. TYPICAL OPTIONS ARE:
 - (1) NEW OR EXISTING CONCRETE PAVEMENT.
 - (2) ASPHALTIC CONCRETE PAVEMENT OVER NEW OR EXISTING CONCRETE BASE COURSE.
 - (3) ASPHALTIC CONCRETE PAVEMENT OVER CRUSHED AGGREGATE BASE COURSE.
- ④ TIE BARS OR PAVEMENT TIES REQUIRED IN NEW CONCRETE PAVEMENT OR CONCRETE BASE COURSE. TIE BARS SHALL BE NO. 4 X 2'-0" SPACED AT 2'-0" C-C.
- PAVEMENT TIES REQUIRED IN EXISTING CONCRETE BASE COURSE. PAVEMENT TIES SHALL BE NO. 6 X 1'-0" SPACED AT 3'-0" C-C INSTALLED ON A HORIZONTAL SKEW OF 6:1 THE DIRECTION OF SKEW SHALL ALTERNATE AFTER EVERY ONE OR TWO BARS.
- ⑤ SURFACE TYPE AND DETAILS ARE SHOWN ELSEWHERE IN THE PLAN.

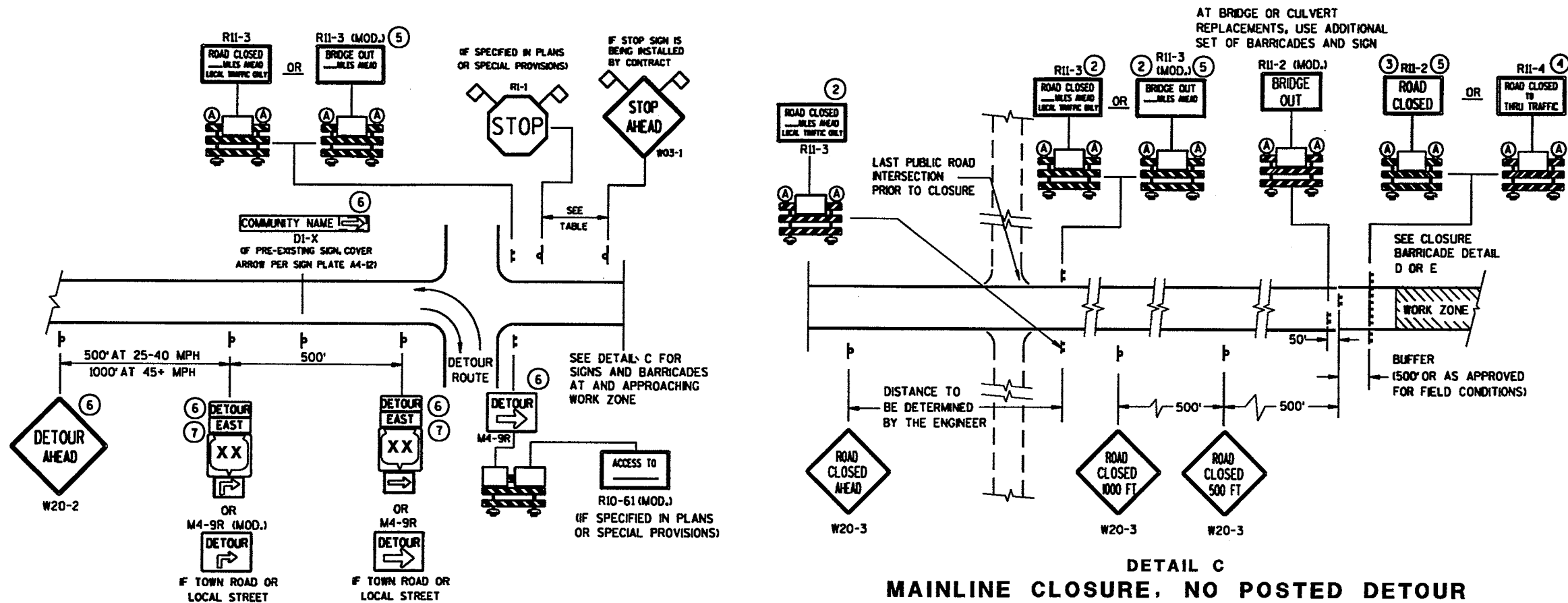
CONCRETE MEDIAN NOSE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

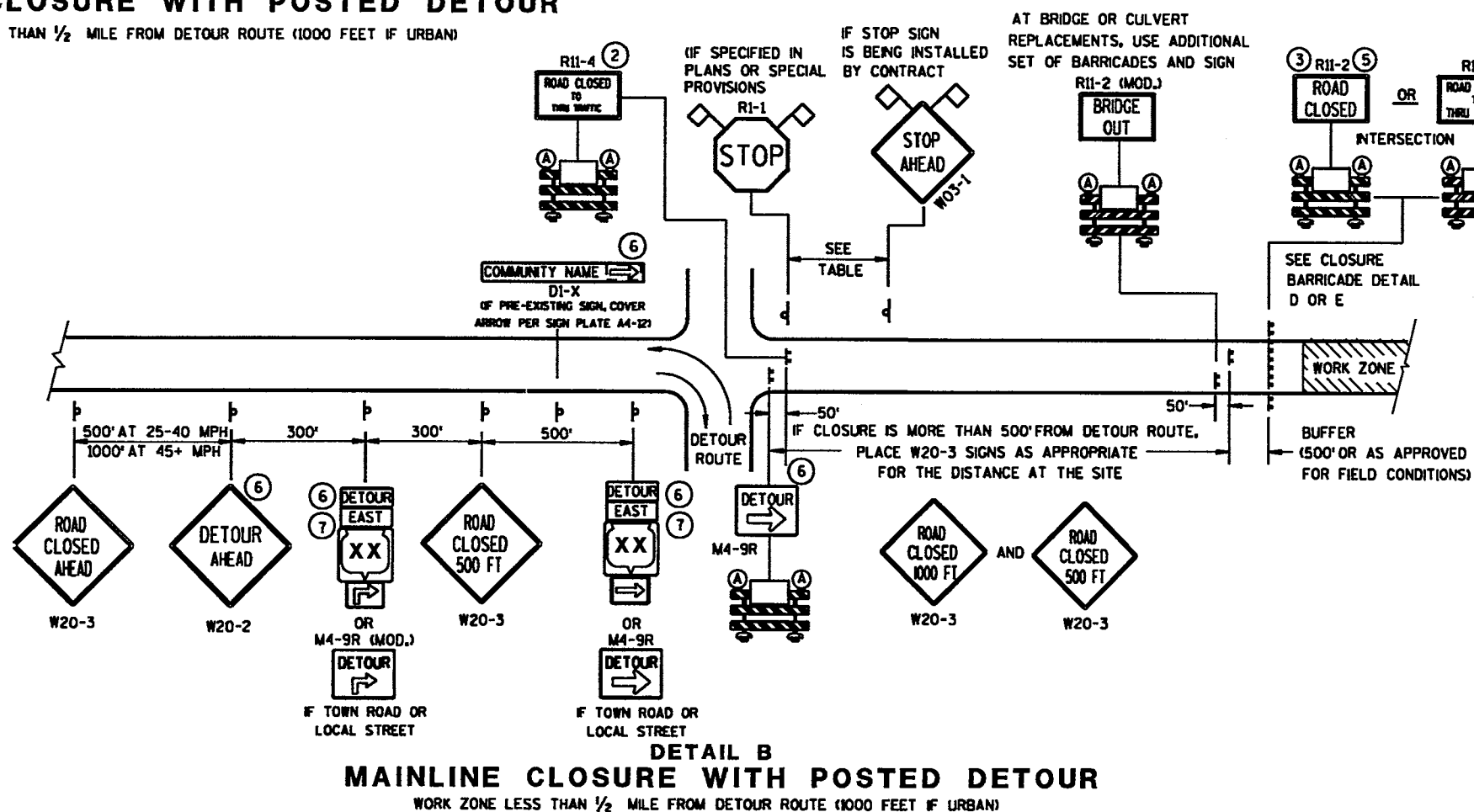
APPROVED

DATE _____ CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR



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

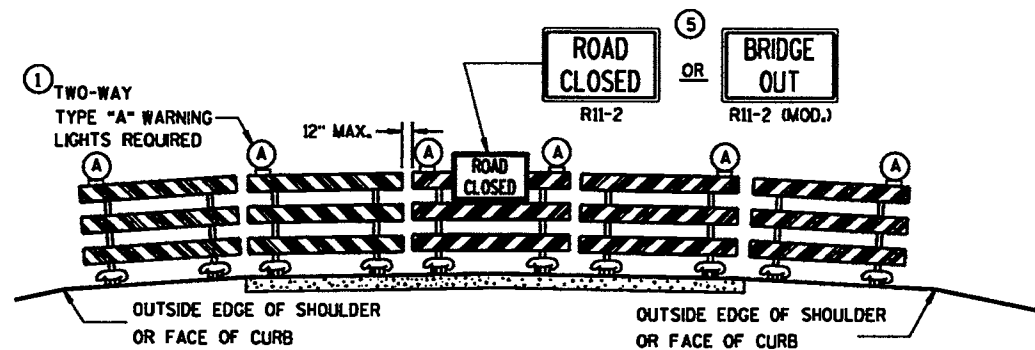
SEE SDD 15C2-4b
FOR GENERAL NOTES
AND FOOTNOTES ① THROUGH ⑦

LEGEND

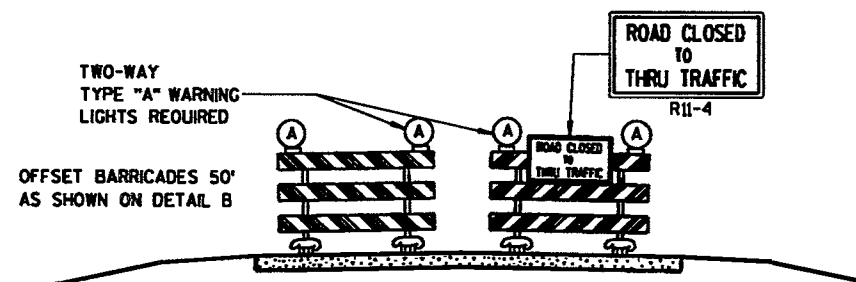
- POST MOUNTED SIGN
- TYPE III BARRICADES
- TYPE "A" LOW INTENSITY FLASHING WARNING LIGHT (FOR NIGHT USE)
- WORK ZONE
- DETOUR EAST M4-8 M3-X
- MI-4 OR MI-5A OR MI-6
- MI-5-1 OR MI-6-1
- FLAGS, 16" X 16" MIN., (ORANGE)

BARRICADES AND SIGNS
FOR
MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW



DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW

SEE SDD 15C2-4a FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

THE REFLECTIVE SHEETING USED ON R11-2, R11-3, R11-4, R10-61 AND R1-1 SIGNS SHALL COMPLY WITH SUBSECTION 637.22.2 OF THE STANDARD SPECIFICATIONS.

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

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:

R11-2 SHALL BE 48" X 30".

R11-3, R11-4 AND R10-61 SHALL BE 60" X 30".

M4-9 SHALL BE 30" X 24".

M3-X AND M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)

M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)

M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)

D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

R1-1 SHALL BE 36" X 36".

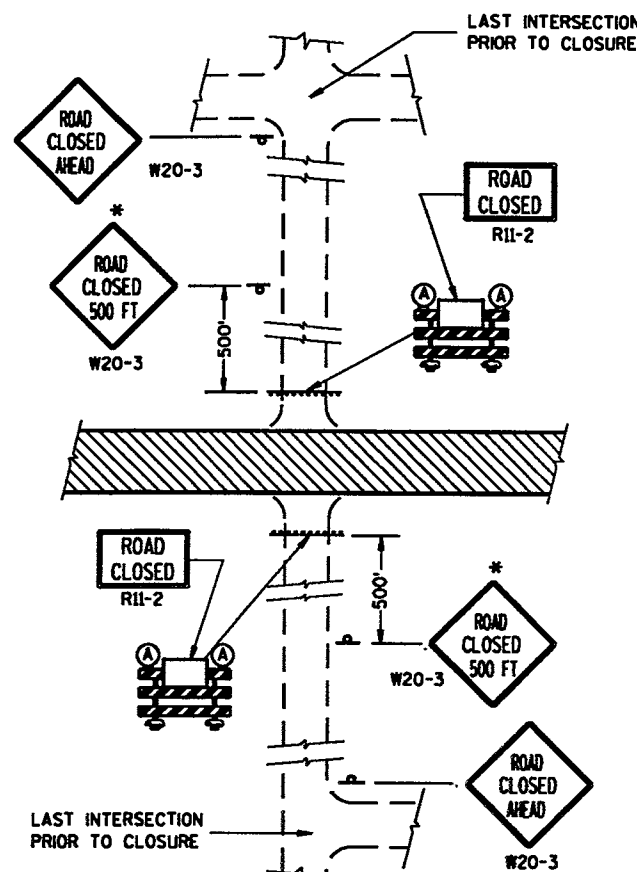
- ① TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8-FOOT LIGHT SPACING).
- ② THESE SIGNS AND BARRICADES ARE NOT REQUIRED IF ROAD CLOSURE BEGINS AT INTERSECTION.
- ③ FOR ROAD CLOSURE WITHOUT LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL D.
- ④ FOR ROAD CLOSURE WITH LOCAL ACCESS TO PROJECT, SEE LANE CLOSURE BARRICADE DETAIL E.
- ⑤ FOR BRIDGE OR CULVERT REPLACEMENTS, SUBSTITUTE "BRIDGE OUT" INSTEAD OF "ROAD CLOSED" ON R11-2 AND R11-3 SIGNS.
- ⑥ INSTALL DETOUR AND COMMUNITY GUIDE SIGNS AND ARROWS ONLY IF SPECIFIED IN THE CONTRACT. IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. MODIFY EXISTING SIGNS WHERE POSSIBLE. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. IF DETOUR SIGNS ARE BEING INSTALLED BY OTHERS, PLACE THE CONTRACTED TRAFFIC CONTROL SIGNS TO ALLOW FOR PLACEMENT OF ALL WARNING, DETOUR AND GUIDE SIGNS AS SHOWN.
- ⑦ "EAST" CARDINAL DIRECTION MARKERS AND RIGHT TURN ARROWS ARE SHOWN. USE OTHER CARDINAL DIRECTIONS AND ARROWS AS APPROPRIATE.

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

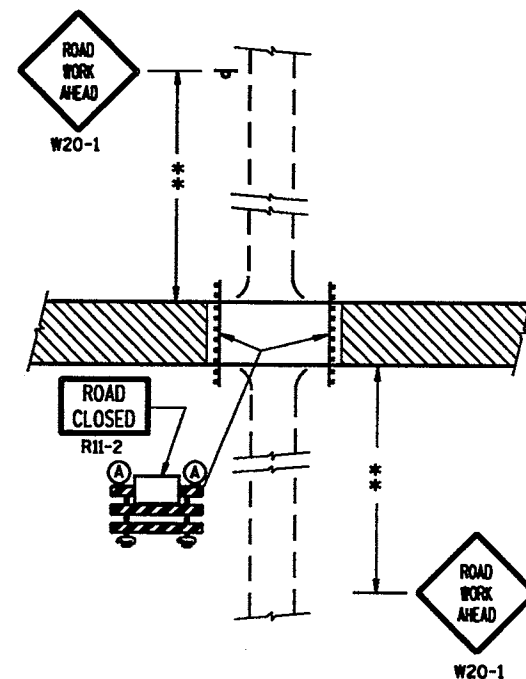
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

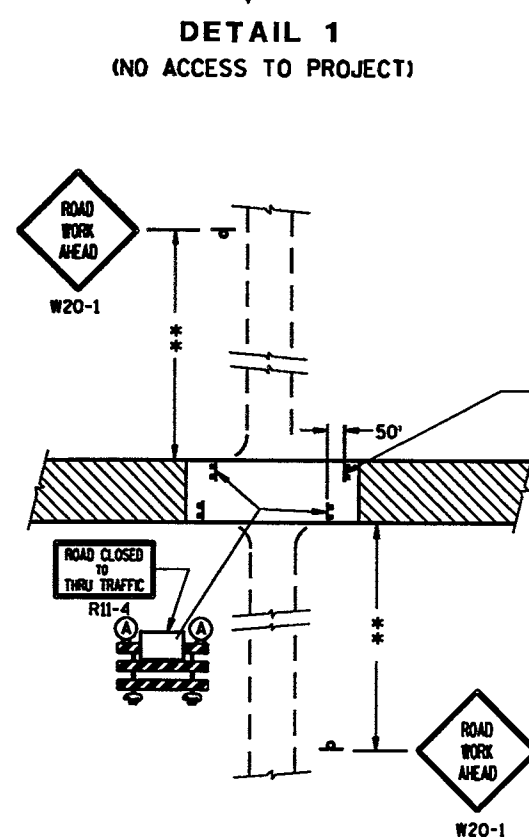
DATE _____ CHIEF SIGNS AND MARKING ENGINEER
FWHA



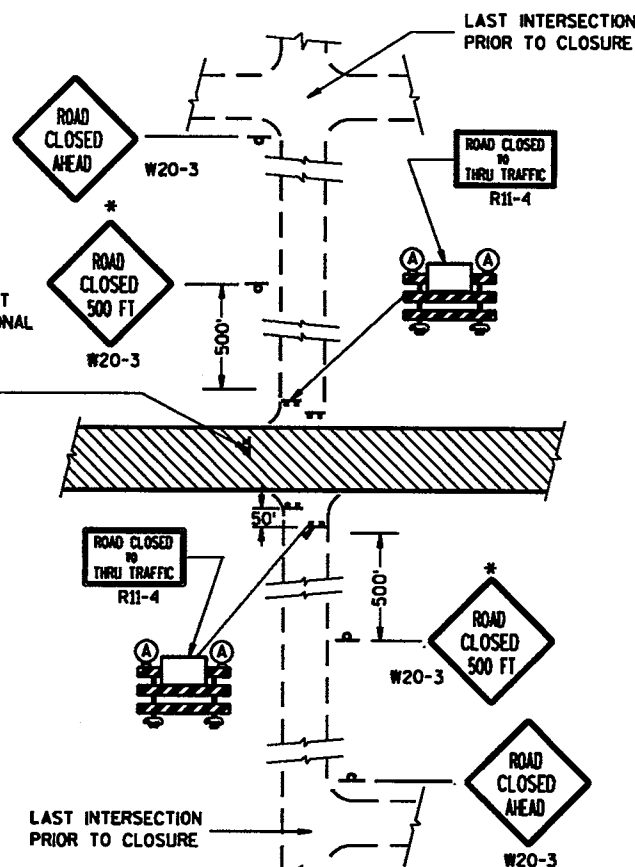
DETAIL 1
(NO ACCESS TO PROJECT)



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



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



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

GENERAL NOTES

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

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

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

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

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

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

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

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

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

THE REFLECTIVE SHEETING USED ON R11-2, R11-3 AND R11-4 SIGNS SHALL COMPLY WITH SUBSECTION 637.2.2.2 OF THE STANDARD SPECIFICATIONS.

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:

R11-2 SHALL BE 48" X 30".

R11-4 AND R11-3 SHALL BE 60" X 30".

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

**500' MAX. OR AT LAST INTERSECTION WHICHEVER IS CLOSER.

LEGEND

⌋ POST MOUNTED WARNING SIGN

⌋ TYPE III BARRICADES

Ⓐ TYPE "A" LOW INTENSITY FLASHING WARNING LIGHT (FOR NIGHT USE)

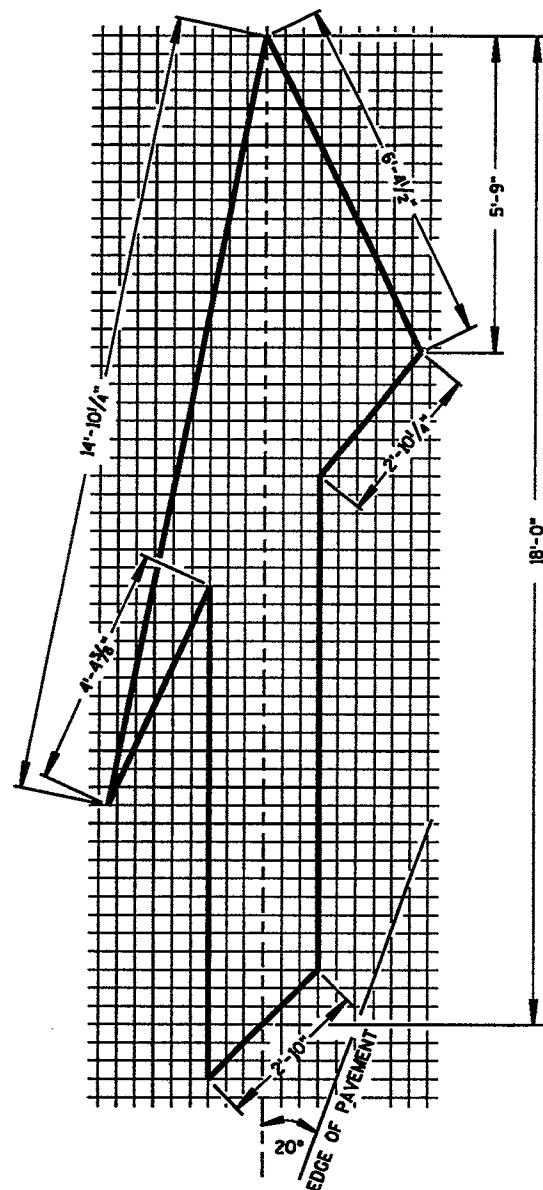
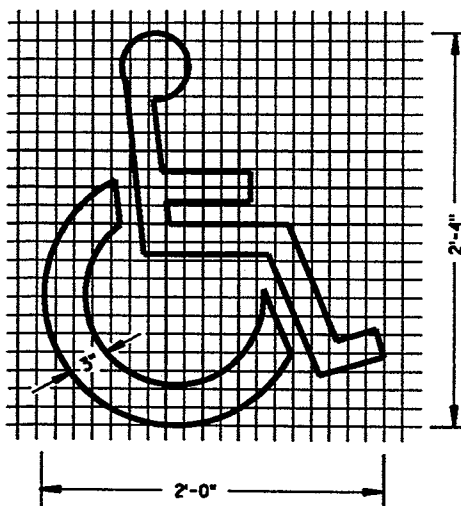
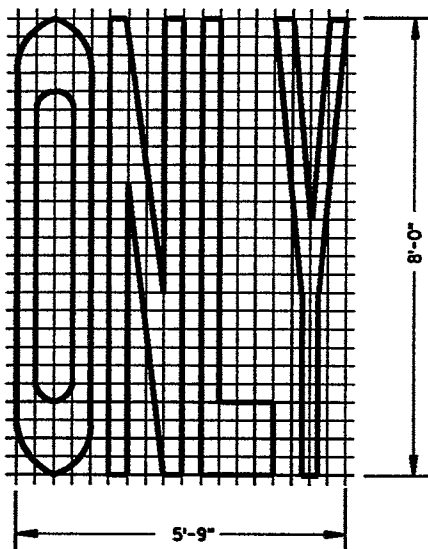
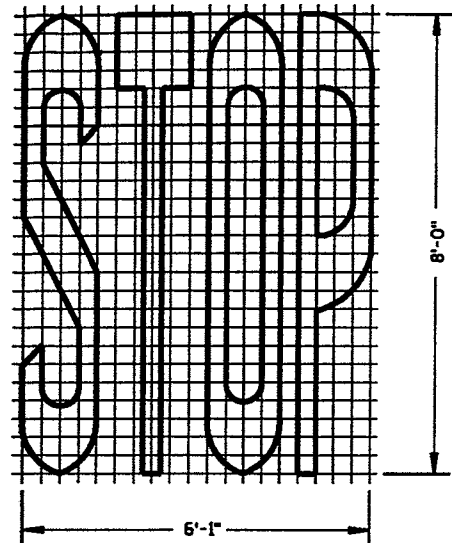
▨ WORK AREA

**BARRICADES AND SIGNS
FOR
SIDEROAD CLOSURES**

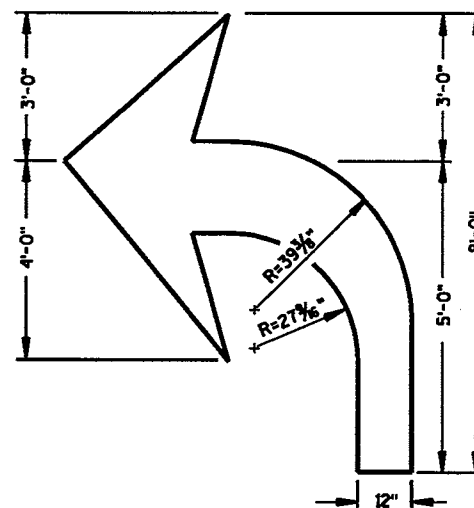
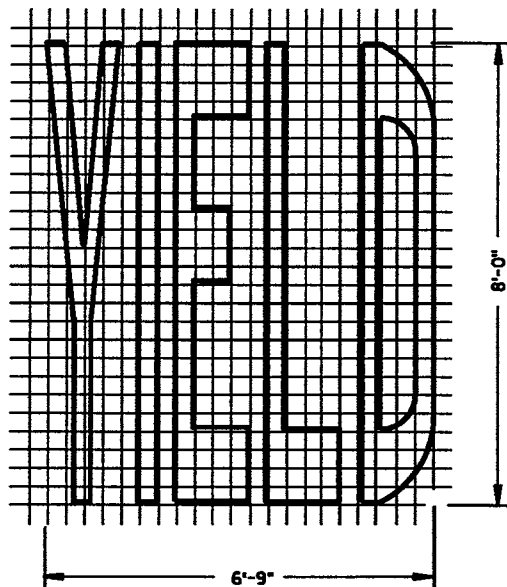
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

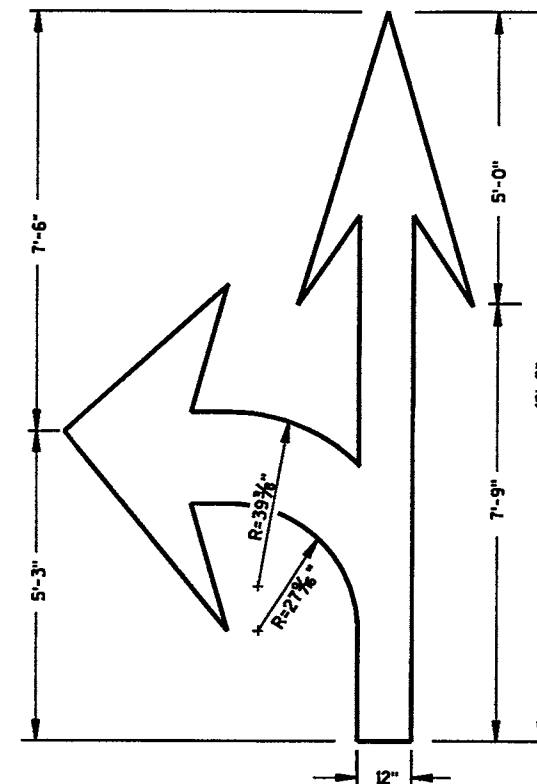
DATE _____ CHIEF SIGNS AND MARKING ENGINEER
FHWA



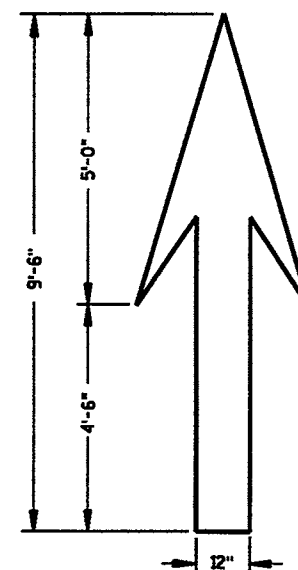
TYPE 5 LANE DROP ARROW



TYPE 2



TYPE 3



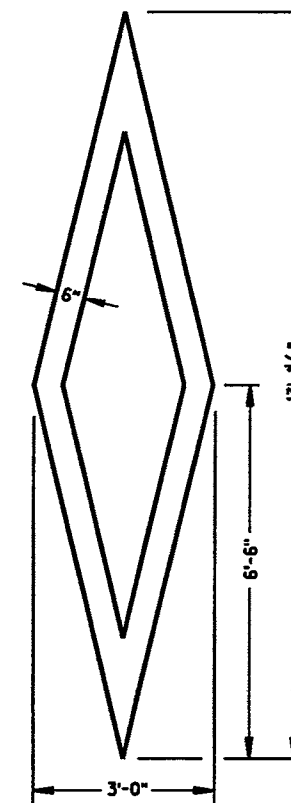
TYPE 1

GENERAL NOTES

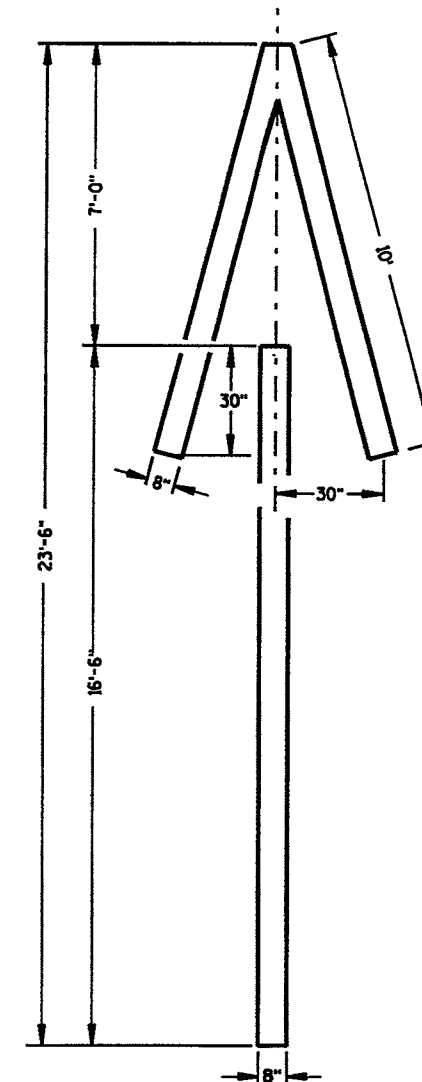
DETAILS OF INSTALLATION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

ALL LETTERS AND SYMBOLS SHALL BE IN CONFORMANCE WITH REQUIREMENTS INCLUDED IN "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKING" BY THE FEDERAL HIGHWAY ADMINISTRATION. ALL LETTERS, ARROWS AND SYMBOLS SHALL BE WHITE AND REFLECTORIZED.

A DETAILED DRAWING OF THE HANDICAPPED PARKING SYMBOL IS ILLUSTRATED IN THE "STANDARD HIGHWAY SIGNS MANUAL" BY THE FEDERAL HIGHWAY ADMINISTRATION.



PREFERENTIAL LANE SYMBOL



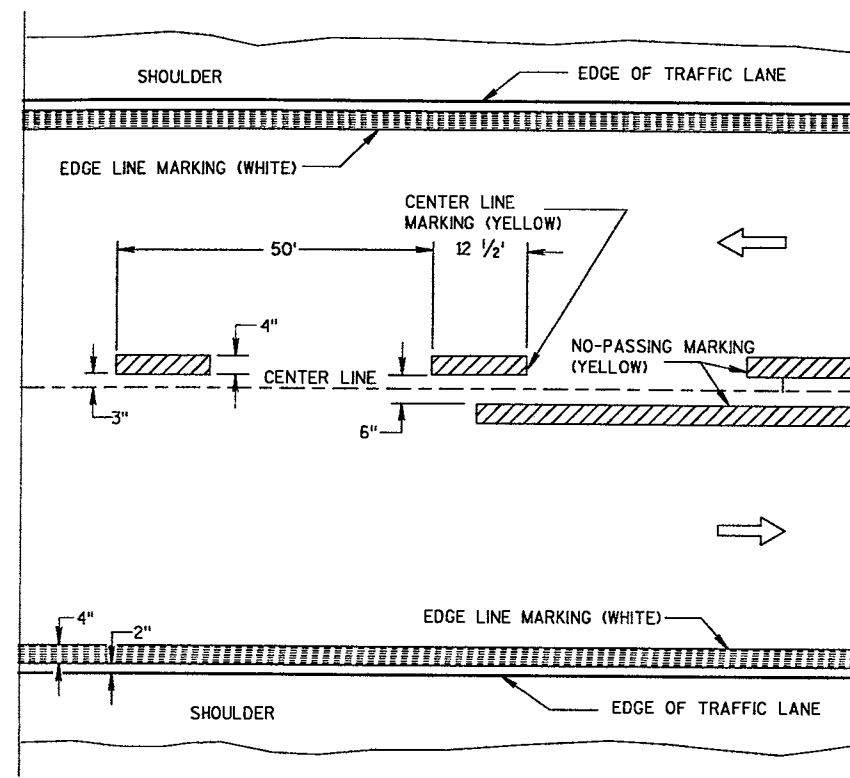
TYPE 4

PAVEMENT MARKING SYMBOLS

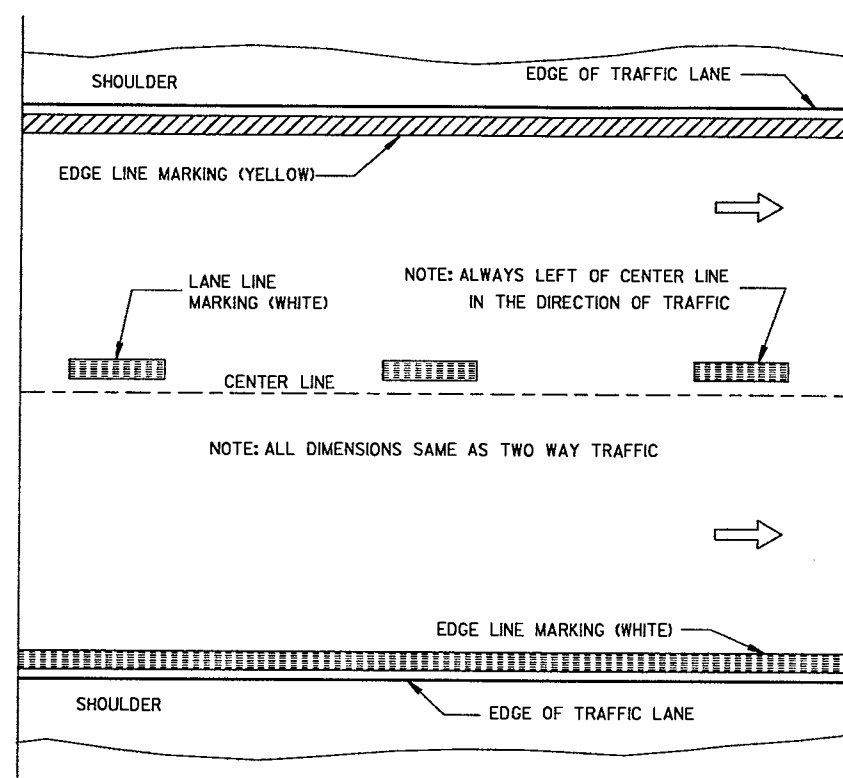
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

DATE _____ CHIEF SIGNS AND MARKING ENGINEER
FHWA



TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING

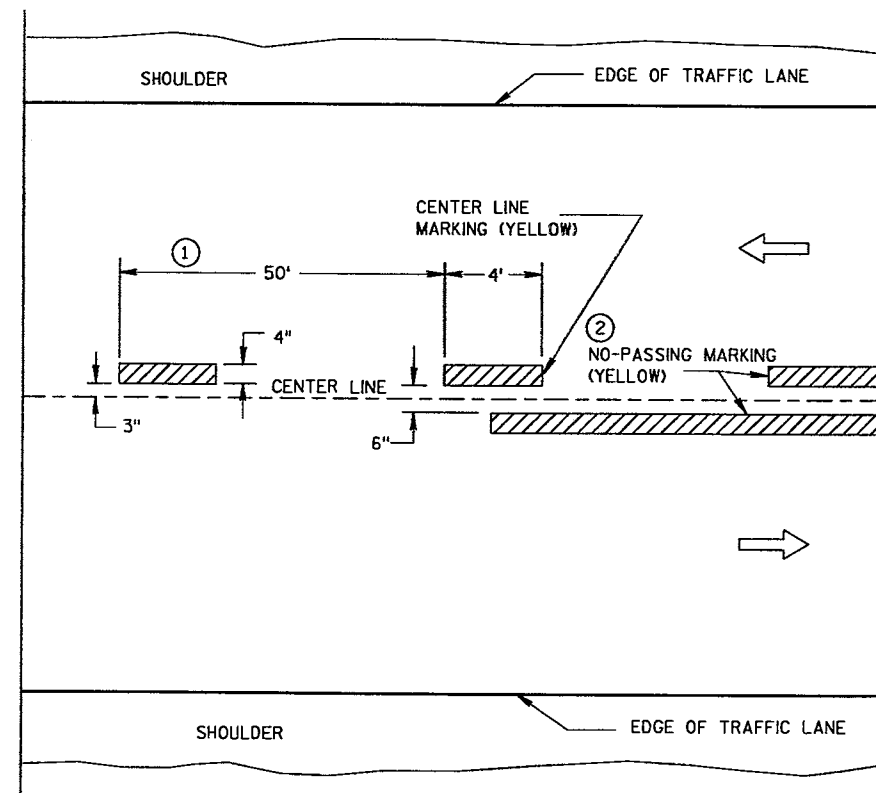
GENERAL NOTES

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

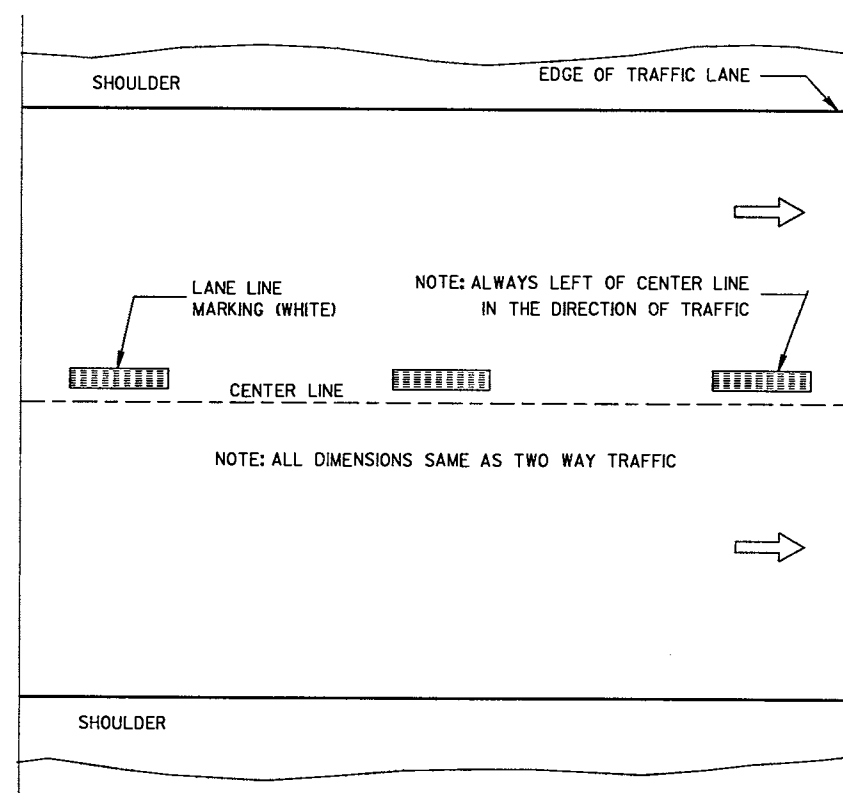
- ① HALF CYCLE LENGTHS (25'±) WITH 2' MINIMUM STRIPE LENGTHS SHALL BE PROVIDED ON ROADWAYS (INCLUDING TEMPORARY TRAVELED WAYS) WITH REVERSE CURVATURE, CURVATURE OF OVER 5 DEGREES OR WHEN DIRECTED BY THE ENGINEER TO MARK UNUSUAL ALIGNMENT OF THE TRAVELED WAY.
- ② NO PASSING ZONE TEMPORARY PAVEMENT MARKING IS REQUIRED TO BE PLACED, WHERE APPROPRIATE, ALONG WITH CENTERLINE TEMPORARY PAVEMENT MARKING WHEN A SAME DAY PERMANENT PAVEMENT MARKING ITEM IS INCLUDED IN THE CONTRACT.

NOTE

ARROW SYMBOL (→) SHOWS DIRECTION OF TRAVEL



TWO WAY TRAFFIC



ONE WAY TRAFFIC

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

PAVEMENT MARKING
(MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

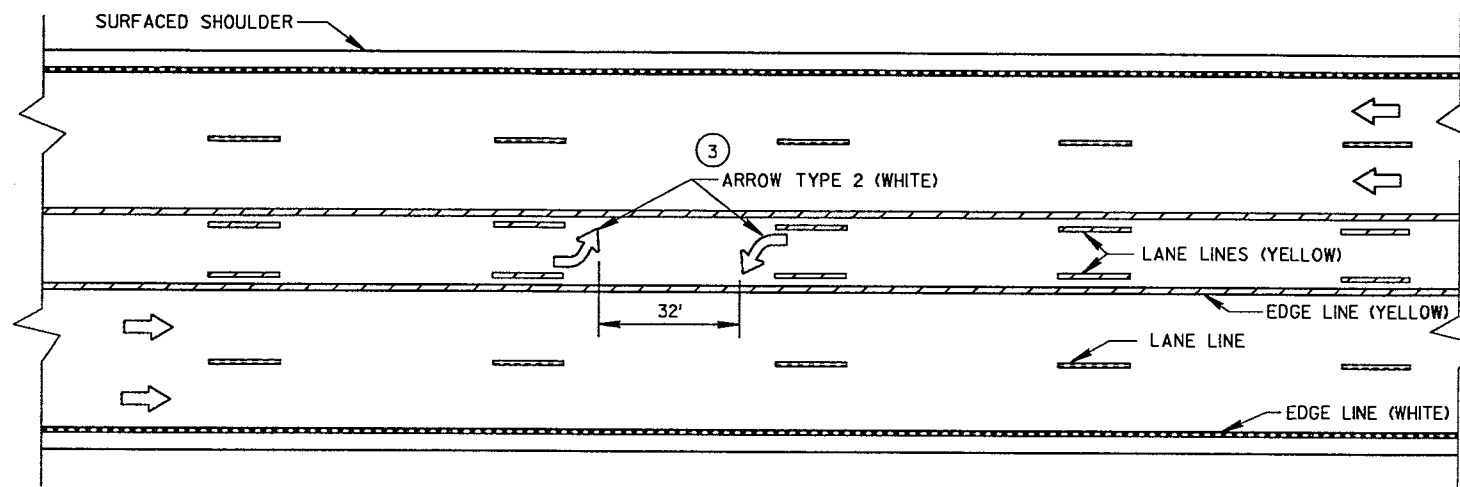
APPROVED

DATE

CHIEF SIGNS AND MARKING ENGINEER

FHWA

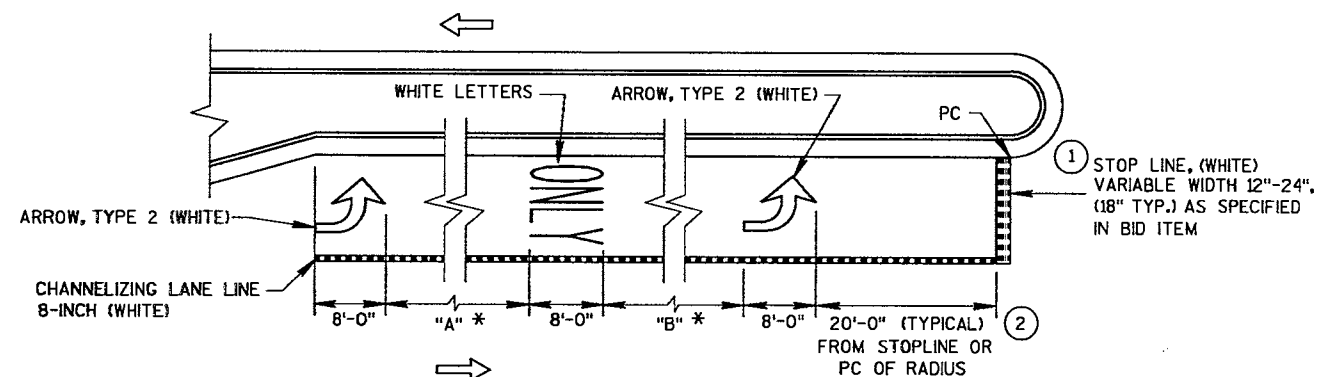
NOTE:
ARROW SYMBOL (→)
SHOWS DIRECTION OF TRAVEL



TWO WAY LEFT TURN LANE

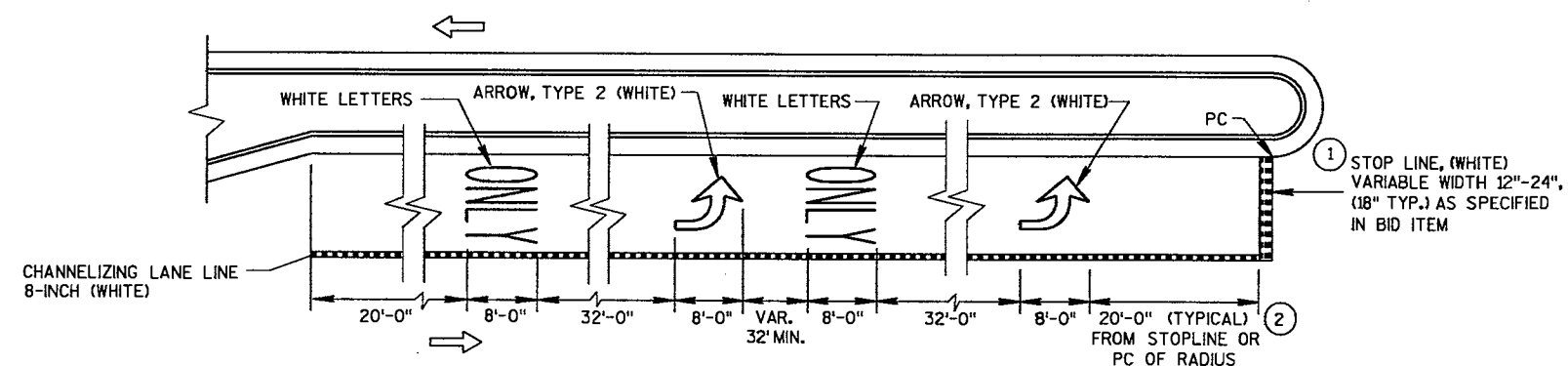
NOTES:

- ① STOP BAR IS REQUIRED ONLY WHEN SPECIFIED IN THE CONTRACT.
- ② DISTANCE MAY BE ADJUSTED TO ACCOMMODATE SHORT LEFT TURN LANES. AS APPROVED BY THE ENGINEER.
- ③ A SET OF ARROWS IS REQUIRED EVERY 400' OR NEAR INTERSECTIONS OR DRIVEWAYS WITH TURNING TRAFFIC.

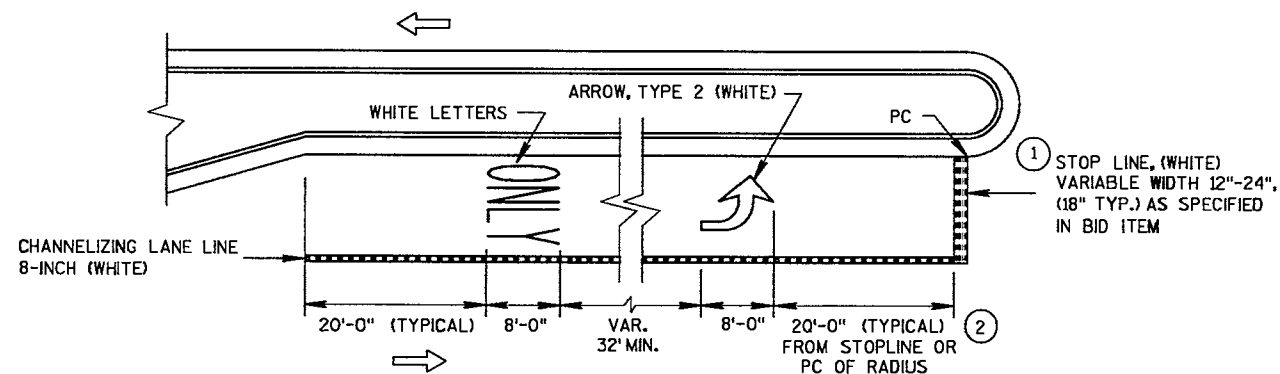


* VARIABLE, 32' MIN.
"A" = "B" (TYPICAL)

LEFT TURN LANE
(LENGTH 108' TO 167')



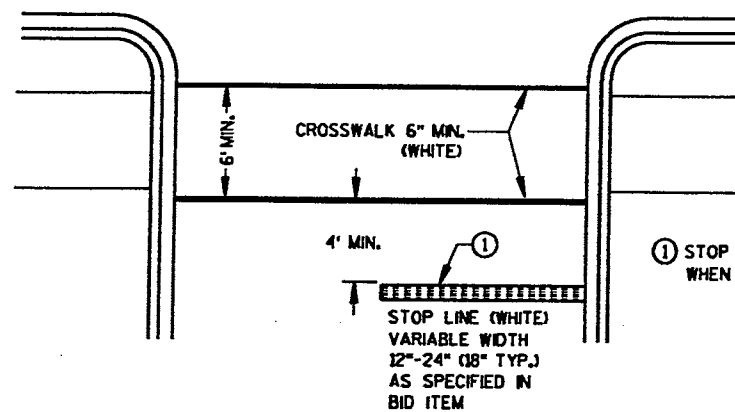
LEFT TURN LANE
(LENGTH OVER 167')



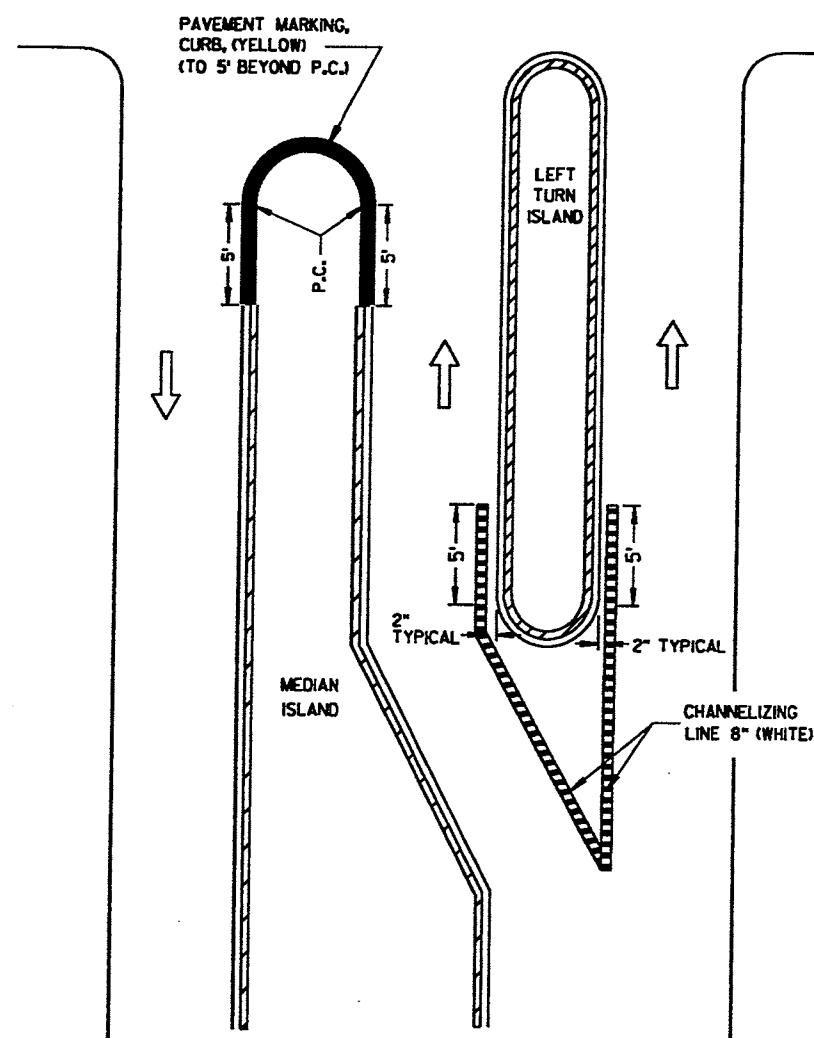
LEFT TURN LANE
(LENGTH UNDER 108')

PAVEMENT MARKING
(LEFT TURN LANE)

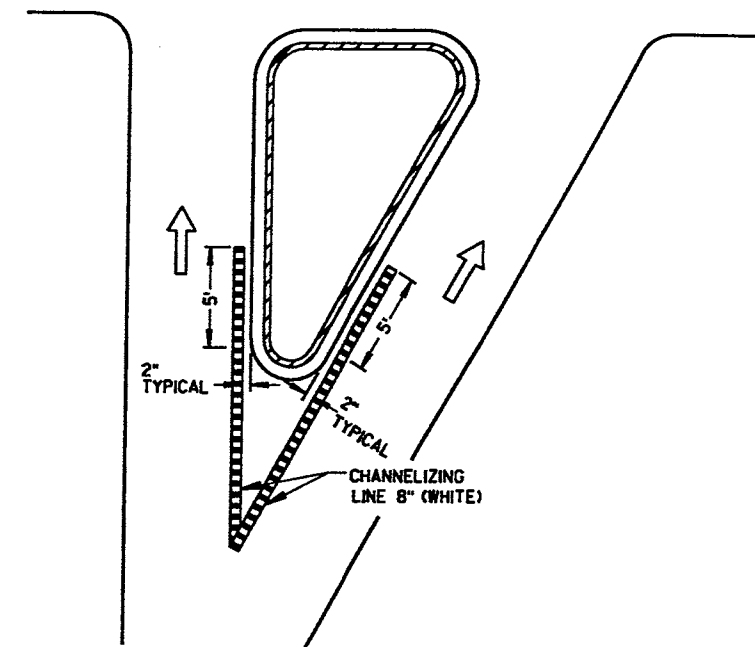
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



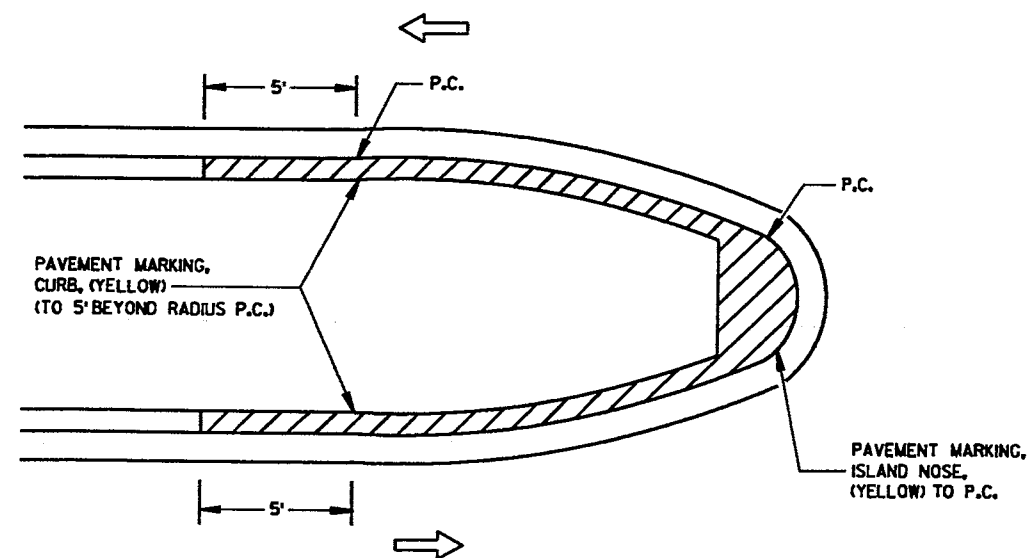
STOP LINE AND CROSSWALK



LEFT TURN & MEDIAN ISLAND



RIGHT TURN ISLAND



MEDIAN ISLAND WITH SLOPED NOSE

NOTE:
ARROW SYMBOL (→)
SHOWS DIRECTION OF TRAVEL

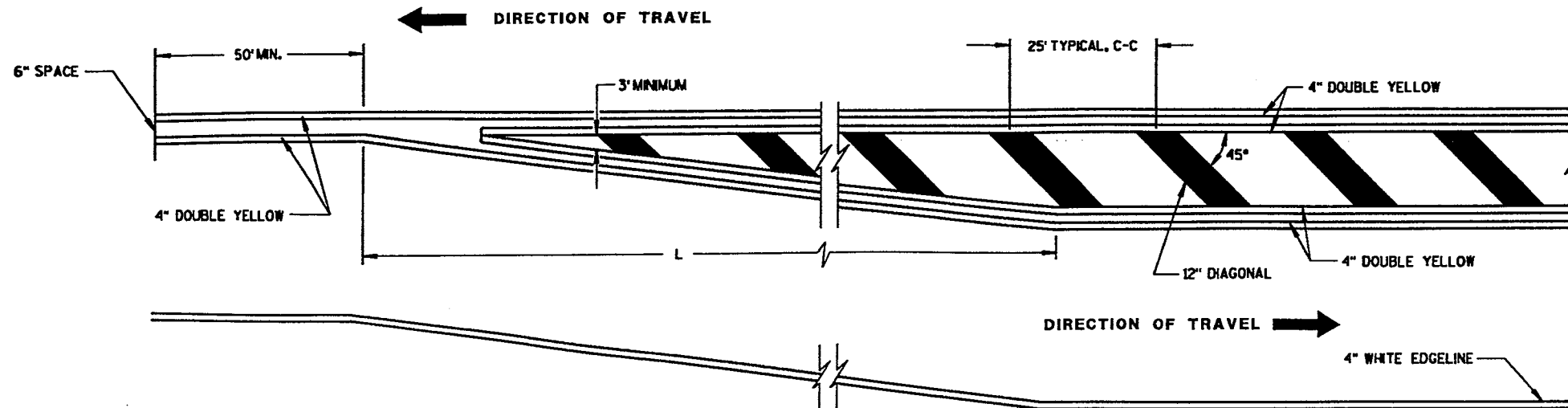
PAVEMENT MARKING
(ISLANDS, STOP LINE &
CROSS WALK)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

DATE CHIEF SIGNS AND MARKING ENGINEER

FHWA



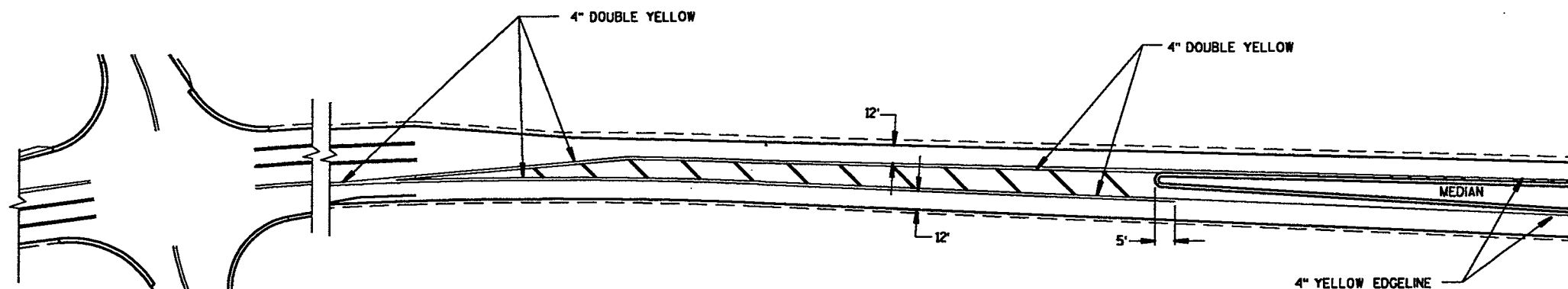
MEDIAN ISLAND DETAIL

GENERAL NOTE

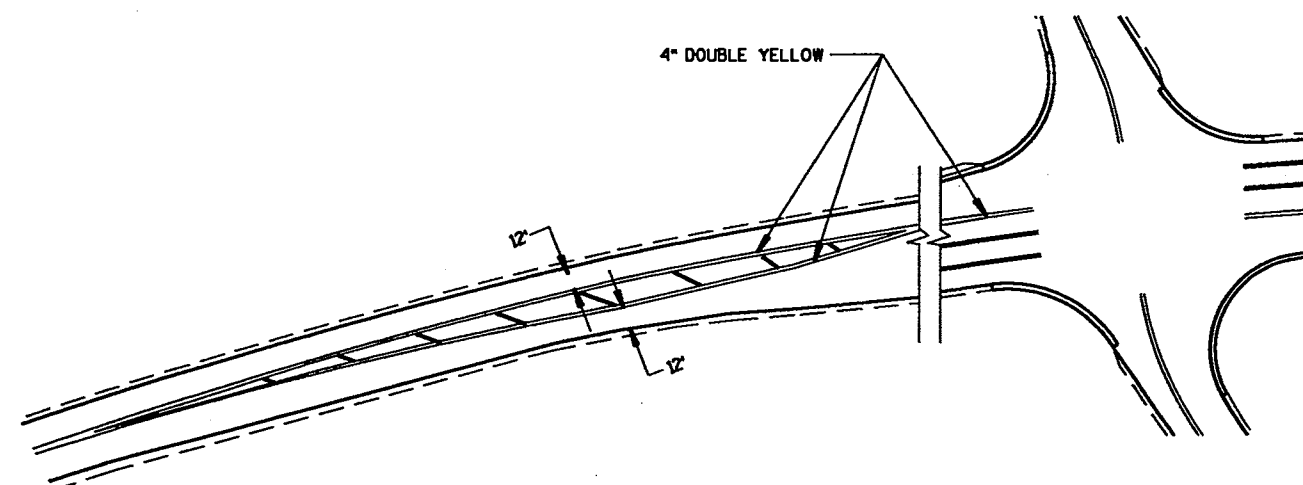
DIAGONALS ARE OPTIONAL WHEN PAINTED ISLAND IS LESS THAN 6 FEET AT WIDEST POINT.

MINIMUM SHIFTING TAPER LENGTH TABLE

POSTED SPEED (S)	TAPER LENGTH (L)
25	100'
30	100'
35	125'
40	165'
45	270'
50	300'
55	330'
65	390'



APPROACH MARKINGS FOR OTHER MEDIAN TYPES



NON APPROACH MARKINGS

MEDIAN ISLAND MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

DATE CHIEF SIGNS AND MARKING ENGINEER
FHWA

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201.0105 CLEARING				
STREET	STATION	TO	STATION	STATIONS
C.T.H. X	110+00	-	113+00	LT 3
C.T.H. X	110+00	-	111+00	RT 1
C.T.H. X	111+70	-	113+20	RT 1.5
C.T.H. X	121+70	-	122+50	LT 0.8
C.T.H. X	126+60	-	127+30	LT 0.7
C.T.H. X	130+60	-	131+50	RT 0.9
C.T.H. X	133+50	-	137+00	LT 3.5
C.T.H. X	142+90	-	145+20	RT 2.3
C.T.H. X	143+00	-	148+60	LT 5.6
C.T.H. X	146+50	-	150+80	RT 4.3
C.T.H. X	150+50	-	152+30	LT 1.8
C.T.H. X	152+50	-	158+00	RT 5.5
C.T.H. X	154+10	-	157+00	LT 2.9
C.T.H. X	157+90	-	159+00	LT 1.1
C.T.H. X	161+60		163+20	RT 1.6
C.T.H. X	176+70		177+70	LT 1
C.T.H. X	177+00		180+80	RT 3.8
C.T.H. X	181+40		185+80	RT 4.4
C.T.H. X	186+40		189+00	RT 2.6
C.T.H. X	186+50		194+00	LT 7.5
HOWLAND AVE.	18+50		19+20	RT 0.7
HOWLAND AVE.	20+30		21+50	RT 1.2
SHOREY AVE.	30+70		32+00	LT 1.3
SHOREY AVE.	34+60		38+60	RT 4
TOTAL				63

204.0150 REMOVING CURB AND GUTTER		
STREET	STATION	L.F.
C.T.H. X	141+30 LT	70
C.T.H. X	141+50 RT	85
C.T.H. X	142+00 LT	85
C.T.H. X	142+20 RT	70
C.T.H. X	185+00 LT	95
C.T.H. X	186+25 LT	95
C.T.H. X	190+50 RT	50
C.T.H. X	190+80 RT	50
TOTAL		600

204.0155 REMOVING CONCRETE SIDEWALK		
STREET	STATION, LOCATION	S.Y.
C.T.H. X	185+00 LT	45
TOTAL		45

204.0170 REMOVING FENCE			
STREET	STATION	TO	STATION L.F.
C.T.H. X	185+50	-	186+60 RT 105
HOWLAND AVE.	22+90	-	25+00 RT 210
SHOREY AVE	36+40	-	40+40 RT 440
TOTAL			755

201.0205 GRUBBING				
STREET	STATION	TO	STATION	STATIONS
C.T.H. X	110+00	-	113+00	LT 3
C.T.H. X	110+00	-	111+00	RT 1
C.T.H. X	111+70	-	113+20	RT 1.5
C.T.H. X	121+70	-	122+50	LT 0.8
C.T.H. X	126+60	-	127+30	LT 0.7
C.T.H. X	130+60	-	131+50	RT 0.9
C.T.H. X	133+50	-	137+00	LT 3.5
C.T.H. X	142+90	-	145+20	RT 2.3
C.T.H. X	143+00	-	148+60	LT 5.6
C.T.H. X	146+50	-	150+80	RT 4.3
C.T.H. X	150+50	-	152+30	LT 1.8
C.T.H. X	152+50	-	158+00	RT 5.5
C.T.H. X	154+10	-	157+00	LT 2.9
C.T.H. X	157+90	-	159+00	LT 1.1
C.T.H. X	161+60		163+20	RT 1.6
C.T.H. X	176+70		177+70	LT 1
C.T.H. X	177+00		180+80	RT 3.8
C.T.H. X	181+40		185+80	RT 4.4
C.T.H. X	186+40		189+00	RT 2.6
C.T.H. X	186+50		194+00	LT 7.5
HOWLAND AVE.	18+50		19+20	RT 0.7
HOWLAND AVE.	20+30		21+50	RT 1.2
SHOREY AVE.	30+70		32+00	LT 1.3
SHOREY AVE.	34+60		38+60	RT 4
TOTAL				63

203.0100 REMOVING SMALL PIPE CULVERTS			
STREET	STATION	LOCATION	EACH
C.T.H. X	111+60	24' RT	1
C.T.H. X	113+50	44' RT	1
C.T.H. X	113+50	46' LT	1
C.T.H. X	116+20	24' LT	1
C.T.H. X	124+00	52' LT	1
C.T.H. X	124+65	50' RT	1
C.T.H. X	127+00	98' RT	1
C.T.H. X	130+65	56' LT	1
C.T.H. X	141+00	109' CL	1
C.T.H. X	141+05	109' CL	1
C.T.H. X	143+30	100' CL	1
C.T.H. X	143+37	100' CL	1
C.T.H. X	148+50	34' LT	1
C.T.H. X	149+00	34' LT	1
C.T.H. X	153+50	48' LT	1
C.T.H. X	157+10	36' LT	1
C.T.H. X	160+50	36' LT	1
C.T.H. X	163+80	118' CL	1
C.T.H. X	163+85	118' CL	1
C.T.H. X	165+30	44' LT	1
C.T.H. X	167+80	44' LT	1
C.T.H. X	168+80	34' RT	1
C.T.H. X	170+20	36' LT	1
C.T.H. X	172+40	32' RT	1
C.T.H. X	172+50	42' LT	1
C.T.H. X	177+00	118' CL	1
C.T.H. X	177+06	118' CL	1
C.T.H. X	180+40	36' LT	1
C.T.H. X	181+10	52' RT	1
C.T.H. X	185+00	186' LT	1
C.T.H. X	186+20	48' RT	1
C.T.H. X	190+60	85' RT	1
SHOREY AVE	36+00	48' LT	1
TOTAL			33

EXCAVATION							
STREET	STATION	TO	STATION	205.01	205.04	FILL	EBS
				COMMON	MARSH		
				C.Y.	C.Y.	C.Y.	C.Y.
C.T.H. X	109+50	-	194+50	49,010	2,479	31,375	2,500
SHOREY AVE				1,704	122	10,603	0
HOWLAND AVE				5,783	0	637	0
WETLAND MITIGATION				11,682	0	0	0
TOTAL				68,179	2,601	42,615	2,500
NOTES							
1 - FILL INCLUDES 20% EXPANSION FACTOR							
2 - EBS TO BE DETERMINED BY THE ENGINEER IN THE FIELD							



CENTRAL
WISCONSIN
ENGINEERS &
ARCHITECTS

5707 SCHOFIELD AVENUE
WESTON, WISCONSIN
54476

PHONE: (715) 358-9400
FAX: (715) 355-4199

general@cwengineers.com
http://www.cwengineers.com

PROJECT:

MISCELLANEOUS QUANTITIES
2006 MARATHON COUNTY AND
VILLAGE OF WESTON
C.T.H. X / CAMP PHILLIPS ROAD
RECONSTRUCTION PROJECT
HOWLAND AVE. - TRANSPORT DR.

REVISIONS:

DRAWN BY:

T.P.B.

CHECKED BY:

D.G.

APPROVED BY:

H.Z.

DATE:

JAN 2006

SHEET:

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CONCRETE CURB & GUTTER TYPE D

602.2400 CONCRETE SAFETY ISLANDS			
STREET	STA. TO STA.	LOCATION	S.F.
C.T.H. X	111+40 - 112+80	LT	386
C.T.H. X	114+10 - 116+07	LT	597
C.T.H. X	138+69 - 140+15	LT	448
C.T.H. X	141+52 - 143+00	LT	453
C.T.H. X	184+00 - 184+97	LT	300
C.T.H. X	186+30 - 187+26	LT	500
C.T.H. X	191+35 - 192+32	LT	500
HOWLAND AVE	18+86 - 19+28	RT	172
HOWLAND AVE	20+56 - 22+34	RT	730
SHOREY AVE	28+62 - 29+00	LT	167
SHOREY AVE	30+50 - 31+07	LT	212
TOTALS			4,465

STREET	STATION	611.0101	611.0107	611.0201	611.0210	
		CATCH BASINS	CATCH BASINS	MANHOLES	MANHOLES	MANHOLES
		TO TYPE 1 (MOD.) EACH	TO TYPE 5 (MOD.) EACH	TYPE 1 EACH	TYPE 3 EACH	TYPE 3 (MOD.) EACH
C.T.H. X	111+47 - 191+52	9	2	1	2	1
HOWLAND AVE	20+92 - 24+00			1		
		9	2	2	2	1

STREET	STATION TO S	C.Y.
C.T.H. X	111+00, RT	2
C.T.H. X	131+00, RT	2
C.T.H. X	134+00, RT	2
C.T.H. X	136+50, RT	2
C.T.H. X	152+00, RT	2
C.T.H. X	154+50, RT	2
C.T.H. X	158+00, RT	2
TOTAL		14

STREET	STATION TO STATION	C.Y.
C.T.H. X	140+00, LT	12
C.T.H. X	140+00, RT	12
C.T.H. X	143+00, LT	18
C.T.H. X	143+50, RT	18
C.T.H. X	163+82, LT	18
C.T.H. X	163+82, LT	18
C.T.H. X	177+00, LT	18
C.T.H. X	177+00, RT	18
C.T.H. X	181+40 - 185+07. RT	680
C.T.H. X	186+50, LT	18
C.T.H. X	33+30 - 203+14	12
C.T.H. X	33+30 - 269+29	12
TOTAL		854

STREET	STA. TO STA.	LOCATION	S.F.
C.T.H. X	113+75 - 113+87	LT	110
C.T.H. X	123+64 - 123+80	LT	160
C.T.H. X	124+19 - 124+35	LT	165
C.T.H. X	140+25 - 140+45	LT	175
C.T.H. X	141+08 - 141+28	LT	165
C.T.H. X	184+87 - 185+20	LT	480
C.T.H. X	186+13 - 186+50	LT	370
HOWLAND AVE	20+50 - 26+90	LT	3178
TOTALS			4,803

STREET	STA. LOCATION	SF
HOWLAND AVE	19+26, 26' L	16
HOWLAND AVE	20+59, 24.5' L	8
HOWLAND AVE	26+86, 24.5' L	8
C.T.H. X	123+73, 55' LT	16
C.T.H. X	124+24, 55' LT	16
C.T.H. X	185+04, 55' LT	16
C.T.H. X	186+25, 55' LT	16
SHOREY AVE	29+08, 33' L	16
SHOREY AVE	29+16, 43' L	16
TOTAL		128

	608.0324	608.0342	608.0354	608.0412	608.0415	SPV.009.01	SPV.009.02	SPV.009.03	SPV.009.04
	24-INCH	42-INCH	54-INCH	12-INCH	15-INCH	SPECIAL 03.	SPECIAL 04.	SPECIAL 05.	SPECIAL 06.
	RCP	RCP	RCP	RCP	RCP	12-INCH	15-INCH	36-INCH	42-INCH
	CLASS III	CLASS III	CLASS III	CLASS IV	CLASS IV	HDPE	HDPE	HDPE	HDPE
	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TOTALS	85	192	135	626	654	850	786	24	639

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PROJECT:

REVISIONS:

T.P.B.

D.G.

JAN 200

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P:\DRAFT\32800300 CTH X DEC 2005\misc quantities\MQ1.dwg, Layout1 (4), 3/27/2006 3:25:58 PM

612.0104 PIPE UNDERDRAIN, 4-INCH

STREET	STATION	TO	STATION	L.F.
C.T.H. X	111+47	-	194+45, LT	8300
C.T.H. X	111+47	-	194+45, RT	8300
HOWLAND AVE.	18+86	-	19+60, LT	75
HOWLAND AVE.	18+86	-	19+60, RT	75
HOWLAND AVE.	20+25	-	26+74, LT	650
HOWLAND AVE.	20+25	-	26+74, RT	650
SHOREY AVE.	28+60	-	29+40, LT	80
SHOREY AVE.	28+60	-	29+40, RT	80
SHOREY AVE.	30+05	-	31+05, LT	100
SHOREY AVE.	30+05	-	31+05, RT	100
TOTAL				18410

612.0806 APRON ENDWALLS FOR UNDERDRAIN, REINFORCED CONCRETE

STREET	STATION	LOCATION	EACH
C.T.H. X	147+30	70' LT	1
C.T.H. X	147+30	42' RT	1
TOTALS			2

620.0300 CONC. MEDIAN SLOPED NOSE

STREET	STATION	S.F.
C.T.H. X	112+80	29
C.T.H. X	114+10	29
C.T.H. X	140+20	29
C.T.H. X	141+50	29
C.T.H. X	185+00	29
C.T.H. X	186+25	38
C.T.H. X	190+35	38
C.T.H. X	191+30	38
HOWLAND	19+30	30
HOWLAND	20+55	29
HOWLAND	22+35	37
HOWLAND	29+05	29
C.T.H. X	30+50	29
TOTALS		413

LAWN AREAS

	625.0100	625.0500	627.0200	629.0210	629.0130	630.0160
	TOPSOIL	SALVAGED		FERTILIZER	SEEDING	SEEDING
STREET / STA. TO STA.	S.Y.	TOPSOIL	MULCHING	TYPE B	MIXTURE 30	MIXTURE 60
		S.Y.	S.Y.	CWT.	LB.	LB.
C.T.H. X						
109+50 - 113+00	-	1783	1783	1.1	32	-
114+00 - 140+50	5247	7846	9568	8.3	236	-
141+00 - 185+25	10686	10899	17115	13.6	389	-
186+00 - 194+45	1164	5522	4736	4.2	120	-
HOWLAND AVE.						
17+00 - 19+40	-	1092	1092	0.7	20	-
20+40 - 26+74	-	1336	1336	0.8	24	-
SHOREY AVE.						
25+00 - 29+00	-	928	928	0.6	17	-
30+50 - 40+40	-	3975	-	2.5	72	-
MITIGATION AREAS	-	-	-	-	-	270
TOTALS	17097	33381	36558	32	910	270

EROSION MAT

	628.2005	628.3005	628.2030	628.3030
	EROSION MAT	EROSION MAT	EROSION MAT	EROSION MAT
	DELIVERED	INSTALLED	DELIVERED	INSTALLED
STREET	CLASS I TYPE A	CLASS I TYPE A	CLASS II TYPE B	CLASS II TYPE B
	S.Y.	S.Y.	S.Y.	S.Y.
C.T.H. X				
131+00 - 140+30, RT	1375	1375		
C.T.H. X				
131+57 - 140+30, LT	2150	2150		
C.T.H. X				
141+30 - 147+50, RT	1270	1270		
C.T.H. X				
142+00 - 147+50, LT	1150	1150		
C.T.H. X				
165+50 - 175+50, LT	1780	1780		
C.T.H. X				
177+15 - 180+50, RT			800	800
C.T.H. X				
177+20 - 178+50, LT	270	270		
C.T.H. X				
186+00 - 194+00, LT	1950	1950		
SHOREY AVE.				
30+50 - 40+30, RT	2115	2115		
SHOREY AVE.				
30+50 - 39+80, LT	1870	1870		
TOTALS	13930	13930	800	800

SILT FENCE

	628.1505	628.1510	628.1520
	SILT FENCE	SILT FENCE	SILT FENCE
	DELIVERED	INSTALLED	MAINTENANCE
STREET	L.F.	L.F.	L.F.
STATION - STATION			
C.T.H. X			
109+50 - 110+00, RT	75	75	75
C.T.H. X			
109+50 - 110+00, LT	110	110	110
C.T.H. X			
130+00 - 140+00, RT	1000	1000	1000
C.T.H. X			
131+50 - 140+00, LT	850	850	850
C.T.H. X			
141+80 - 185+00, LT	5160	5160	5160
C.T.H. X			
142+50 - 185+20, RT	4810	4810	4810
C.T.H. X			
186+10 - 194+40, LT	830	830	830
C.T.H. X			
186+30 - 190+30, RT	430	430	430
HOWLAND AVE.			
20+50 - 26+70, RT	660	660	660
SHOREY AVE.			
25+00 - 29+00, LT	490	490	490
SHOREY AVE.			
25+00 - 29+00, RT	400	400	400
SHOREY AVE.			
30+20 - 40+40, RT	1250	1250	1250
SHOREY AVE.			
30+20 - 40+40, LT	1700	1700	1700
TOTALS	17765	17765	17765

INLET PROTECTION

	628.7005	628.7015
	TYPE A	TYPE C
STREET	EACH	EACH
STATION TO STATION		
C.T.H. X		
111+47 - 191+52	25	25
HOWLAND AVE		
20+92 - 24+00	4	4
TOTALS	29	29

PROJECT:

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C.T.H. X / CAMP PHILLIPS ROAD
RECONSTRUCTION PROJECT
HOWLAND AVE. - TRANSPORT DR.

REVISIONS:

ADDED SILT FENCE 166+00 TO 177+00 LT
179+00 TO 185+00 LT, 179+00 TO 184+00 RT
A.L.E.E 3/27/2006

DRAWN BY:

T.P.B.

CHECKED BY:

D.G.

APPROVED BY:

H.Z.

DATE:

JAN 2006

SHEET:

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645.0120 GEOTEXTILE FABRIC, TYPE HR		
STREET	STATION TO STATION	S.Y.
C.T.H. X	140+00, LT	18.0
C.T.H. X	140+00, RT	18.0
C.T.H. X	143+00, LT	27.0
C.T.H. X	143+50, RT	27.0
C.T.H. X	163+82, LT	27.0
C.T.H. X	163+82, RT	27.0
C.T.H. X	177+00, LT	27.0
C.T.H. X	177+00, RT	27.0
C.T.H. X	181+40 - 185+07, RT	1020.0
C.T.H. X	186+50, RT	27.0
SHOREY AVE.	33+30, RT	18.0
SHOREY AVE.	33+30, LT	18.0
TOTAL		1281.0

645.0125 GEOTEXTILE FABRIC, TYPE MS		
STREET	STATION TO STATION	S.Y.
C.T.H. X	30+50 - 40+00	5640.0
TOTAL		5640.0

645.0130 GEOTEXTILE FABRIC, TYPE R		
STREET	STATION TO STATION	S.Y.
C.T.H. X	111+00, RT	4.0
C.T.H. X	131+00, RT	4.0
C.T.H. X	134+00, RT	4.0
C.T.H. X	136+50, RT	4.0
C.T.H. X	152+00, RT	4.0
C.T.H. X	154+50, RT	4.0
C.T.H. X	158+00, RT	4.0
TOTAL		28.0

645.0140 GEOTEXTILE FABRIC, TYPE SAS			
STREET	STATION	TO	STATION S.Y.
C.T.H. X	109+50	-	194+45 67500.00
HOWLAND AVE.	20+86	-	26+74 3600.00
TOTAL			71100

CONDUIT RIGID NONMETALLIC SCHEDULE 40	
	652.0225
	2-INCH
INTERSECTION	L.F.
C.T.H. X & HOWLAND AVE	352
TOTALS	352
ADDITIONAL QUANTITIES SHOWN ON LIGHTING PLANS	

TRAFFIC DETECTOR LOOPS					
					652.0800
					CONDUIT
					LOOP
					DETECTOR
STREET	STATION	LOCATION	SIZE	DIST. FROM PULL BOX	L.F.
C.T.H. X	112+50	5.0' LT	6x20	13	78
C.T.H. X	112+78	5.0' LT	6x20	6	64
C.T.H. X	112+78	12.0' RT	6x20	14	80
C.T.H. X	114+10	28.0' LT	6x20	14	80
C.T.H. X	114+10	11.0' LT	6x20	7	66
C.T.H. X	114+38	11.0' LT	6x20	14	80
C.T.H. X	116+83	28.0' LT	6x20	10	72
HOWLAND AVE	19+00	12.0' RT	6x20	5	62
HOWLAND AVE	19+00	23.0' RT	6x20	9	70
HOWLAND AVE	19+28	12.0' RT	6x20	10	72
HOWLAND AVE	19+28	23.0' RT	6x20	13	78
HOWLAND AVE	20+56	6.0' LT	6x20	10	72
HOWLAND AVE	20+56	5.0' RT	6x20	6	64
HOWLAND AVE	21+74	1.0' LT	6x20	6	64
TOTAL					1002
ADDITIONAL QUANTITIES SHOWN ON LIGHTING PLANS					

PULL BOXES			
			653.0135
			PULL BOXES
			STEEL
			24X36
STREET	STATION	LOCATION	EACH
C.T.H. X	116+83	48' LT	1
HOWLAND AVE	21+74	17' LT	1
TOTAL			2
ADDITIONAL QUANTITIES SHOWN ON LIGHTING PLANS			

5707 SCHOFIELD AVENUE
WESTON, WISCONSIN
54476

PHONE: (715) 359-9400
FAX: (715) 355-4199

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PERMANENT SIGNS									
SIGN NO.	SIGN CODE	MESSAGE	SIZE	637.0202 SIGNS REFLECTIVE TYPE II S.F.	634.0616 WOOD POSTS 4" X 6" 16-FT	634.0618 WOOD POSTS 4" X 6" 18-FT	REMARKS	LOCATION	
								STATION	OFFSET
ROAD SIGNS									
1-01	W6-1	DIVDED HIGHWAY	36 X 36	9.00	-	1	RE-USE. FROM STA 192+32	109+10	20' R
1-02	W6-3	TWO-WAY TRAFFIC	36 X 36	9.00	-	1	RE-USE FROM STA 191+31	109+50	27' L
1-03	R4-7	KEEP RIGHT	24 X 30	5.00	1	-	RE-USE FROM STA 194+53	111+41	13' L
1-04	W6-2	DIVDED HIGHWAY ENDS	36 X 36	9.00	-	1	RE-USE FROM STA 195+40	111+50	48' L
1-05	W4-2R	LANE REDUCTION TRANSITION	36 X 36	9.00	-	1	RE-USE FROM STA 197+20	112+79	50' L
1-06	R4-7	KEEP RIGHT	24 X 30	5.00	1	-		112+79	13' L
1-07	R4-7	KEEP RIGHT	24 X 30	5.00	1	-		114+09	3' L
1-08	R2-1	SPEED LIMIT 45 MPH	24 X 30	5.00	1	-	RE-USE FROM STA 115+15	115+40	32' R
1-09	R3-55L	LEFT TURN LANE	24 X 30	5.00	1	-		117+58	11' L
1-10	R2-1	SPEED LIMIT 45 MPH	24 X 30	5.00	1	-		118+00	47' L
1-11	R4-7	KEEP RIGHT	24 X 30	5.00	1	-		18+88	3'R
1-12	R1-1	STOP	30 X 30	4.86	1	-		19+30	4' R
1-13	R1-1	STOP	30 X 30	4.86	1	-		19+28	43' R
1-14	R4-7	KEEP RIGHT	24 X 30	5.00	-	-	WITH 1-12	-	-
1-15	D11-1	BIKE ROUTE & SYMBOL	24 X 18	3.00	1	-		19+32	50' L
1-15A	M7-1	ARROW (UP)	9 X 12	0.75	-	-	WITH 1-15	-	-
1-16	R4-7	KEEP RIGHT	24 X 30	5.00	-	-	WITH 1-17	-	-
1-17	R1-1	STOP	30 X 30	4.86	1	-		20+54	13' R
1-18	R1-1	STOP	30 X 30	4.86	1	-	WITH 1-14	20+77	18' L
1-19	R4-7	KEEP RIGHT	24 X 30	5.00	1	-		22+36	14' R
2-01	W2-1	CROSSROADS	36 X 36	9.00	-	1	RE-USE FROM STA 121+97	122+00	47' R
2-02	D11-1	BIKE ROUTE & SYMBOL	24 X 18	3.00	1	-		123+61	65' L
2-02A	M7-1	ARROW (UP)	9 X 12	0.75	-	-	WITH 2-02	-	-
2-03	D11-1	BIKE ROUTE & SYMBOL	24 X 18	3.00	1	-		124+35	65' L
2-03A	M7-1	ARROW (UP)	9 X 12	0.75	-	-	WITH 2-03	-	-
2-04	R2-1	SPEED LIMIT 45 MPH	24 X 30	5.00	1	-		128+60	32' R
2-05	R2-1	SPEED LIMIT 45 MPH	24 X 30	5.00	1	-		181+40	29' R
2-06	R3-55L	LEFT TURN LANE	24 X 30	5.00	1	-		182+50	5' L
2-07	R2-1	SPEED LIMIT 45 MPH	24 X 30	5.00	1	-		184+00	45' L
2-08	D11-1	BIKE ROUTE & SYMBOL	24 X 30	5.00	1	-		184+76	66' R
2-08A	M7-1	ARROW (UP)	9 X 12	0.75	-	-	WITH 2-08	-	-
2-09	R4-7	KEEP RIGHT	24 X 30	5.00	1	-		185+00	12' L
2-10	R1-1	STOP	30 X 30	4.86	1	-		185+93	60' R
2-11	R4-7	KEEP RIGHT	24 X 30	5.00	1	-		186+27	4' L
2-12	D11-1	BIKE ROUTE & SYMBOL	24 X 18	3.00	1	-		186+41	66' L
2-12A	M7-1	ARROW (UP)	9 X 12	0.75	-	-	WITH 2-12	-	-
2-13	R3-55L	LEFT TURN LANE	24 X 30	5.00	1	-		188+76	13' L
2-14	R4-7	KEEP RIGHT	24 X 30	5.00	1	-		190+35	4' L
2-15	R1-1	STOP	30 X 30	4.86	1	-		191+02	60' R
2-16	R4-7	KEEP RIGHT	24 X 30	5.00	1	-		191+32	4' L
2-17	R3-55L	LEFT TURN LANE	24 X 30	5.00	1	-		193+82	13' L
SUBTOTALS OF SHEET 1				194.91	29	5			

5707 SCHOFIELD AVENUE
WESTON, WISCONSIN
54476

PHONE: (715) 359-9400
FAX: (715) 355-4199
general@cwengineers.com
http://www.cwengineers.com

PROJECT:

MISCELLANEOUS QUANTITIES
2006 MARATHON COUNTY AND
VILLAGE OF WESTON
C.T.H. X / CAMP PHILLIPS ROAD
RECONSTRUCTION PROJECT
HOWLAND AVE. - TRANSPORT DR.

REVISIONS:

DRAWN BY:
T.P.B.

CHECKED BY:
D.G.

APPROVED BY:
H.Z.

DATE:
JAN 2006

SHEET:
85 OF 173

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PERMANENT SIGNS									
SIGN NO.	SIGN CODE	MESSAGE	SIZE	637.0202 SIGNS REFLECTIVE TYPE II S.F.	634.0616 WOOD POSTS 4" X 6" 16-FT	634.0618 WOOD POSTS 4" X 6" 18-FT	REMARKS	LOCATION	
								STATION	OFFSET
ROAD SIGNS									
3-01	R2-1	SPEED LIMIT 45 MPH	24 X 30	5.00	1	-		128+60	42' L
3-02	R2-1	SPEED LIMIT 45 MPH	24 X 30	5.00	1	-		131+20	42' L
3-03	R3-55L	LEFT TURN LANE	24 X 30	5.00	1	-		137+20	59' L
3-04	D11-1	BIKE ROUTE & SYMBOL	24 X 18	3.00	1	-		140+05	2' L
3-04A	M7-1	ARROW (UP)	9 X 12	0.75	-	-	WITH 3-04	-	-
3-05	R4-7	KEEP RIGHT	24 X 30	5.00	1	-		140+18	-
3-06	D11-1	BIKE ROUTE & SYMBOL	24 X 18	3.00	1	-		141+49	-
3-06A	M7-1	ARROW (UP)	9 X 12	0.75	-	-	WITH 3-06	-	61' R
3-07	R4-7	KEEP RIGHT	24 X 30	5.00	1	-		141+49	60' R
3-08	R2-1	SPEED LIMIT 45 MPH	24 X 30	5.00	1	-		141+81	2' R
3-09	R2-1	SPEED LIMIT 45 MPH	24 X 30	5.00	1	-		144+40	38' R
3-10	R3-55L	LEFT TURN LANE	24 X 30	5.00	1	-		144+50	38' R
3-11	R2-1	SPEED LIMIT 45 MPH	24 X 30	5.00	1	-		155+00	38' R
3-12	R2-1	SPEED LIMIT 45 MPH	24 X 30	5.00	1	-		157+60	3' R
3-13	R2-1	SPEED LIMIT 45 MPH	24 X 30	5.00	1	-		168+20	40' L
3-14	R2-1	SPEED LIMIT 45 MPH	24 X 30	5.00	1	-		170+80	40' L
3-15	R4-7	KEEP RIGHT	24 X 30	5.00	1	-		28+62	-
3-16	R1-1	STOP	30 X 30	4.86	1	-		28+93	25' R
3-17	R1-1	STOP	30 X 30	4.86	1	-		29+03	13' L
3-18	R4-7	KEEP RIGHT	24 X 30	5.00	-	-	WITH 3-17	-	-
3-19	R4-7	KEEP RIGHT	24 X 30	5.00	-	-	WITH 3-20	-	-
3-20	R1-1	STOP	30 X 30	4.86	1	-		30+52	5' L
3-21	R1-1	STOP	30 X 30	4.86	1	-		30+56	50' R
3-22	R4-7	KEEP RIGHT	24 X 30	5.00	1	-		31+07	4' L
SUBTOTALS OF SHEET 2				106.94	20	0			
SUBTOTALS OF SHEET 1				194.91	29	5			
SUBTOTALS OF SHEET 2				106.94	20	0			
PROJECT TOTALS				301.85	49	5			

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86 OF 173

PAVEMENT MARKINGS EPOXY

STREET	FROM - TO	646.0106	646.0106	646.0226	647.0166	647.0196	647.0356	647.0566	647.0606	647.0746	647.0776
		4-INCH EPOXY WHITE	4-INCH EPOXY YELLOW DOUBLE	CHANNELIZING 8-INCH WHITE	ARROWS EPOXY TYPE 2	ARROWS EPOXY TYPE 5	WORDS EPOXY	STOP LINE 18 INCH WHITE	ISLAND NOSE EPOXY	DIAGONAL 24 INCH YELLOW	CROSSWALK 12 INCH WHITE
		L.F.	L.F.	L.F.	EACH	EACH	EACH	L.F.	EACH	L.F.	L.F.
C.T.H. X	109+51 - 111+40	-	379	-	-	-	-	-	-	95	-
C.T.H. X	111+40 - 112+82	75	-	139	2	2	1	-	1	-	-
C.T.H. X	112+82 - 116+08	163	-	200	2	-	2	-	1	-	173
C.T.H. X	116+08 - 140+21	1213	-	150	2	-	1	-	1	-	73
C.T.H. X	140+21 - 143+00	150	-	152	2	-	1	-	1	-	-
C.T.H. X	143+00 - 185+03	2102	-	101	1	-	1	-	1	-	-
C.T.H. X	185+03 - 190+38	268	-	100	1	-	1	-	2	-	199
C.T.H. X	190+38 - 194+46	204	-	100	1	-	1	-	1	-	-
HOWLAND AVE.	18+00 - 19+34	-	171	131	2	-	1	30	1	-	-
HOWLAND AVE.	19+34 - 23+45	-	217	182	2	-	2	30	1	-	-
SHOREY AVE.	27+36 - 29+07	-	255	41	1	-	1	31	1	-	-
SHOREY AVE.	29+07 - 31+77	-	139	123	2	-	1	34	1	-	136
TOTALS		4,175	1,161	1,419	18	2	13	125	12	95	581
		5,336									

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305.0120 BASE AGGREGATE DENSE, 1 1/4 INCH					
STREET	STATION	TO	STATION	C.Y.	TONS
C.T.H. X	190+00	-	194+50	20,698	41,396
C.T.H. X (MULTI-USE PATH)				1,596	3,192
C.T.H. X (SHOULDERS)				834	2,085
C.T.H. X (DRIVEWAYS)				139	278
HOWLAND AVE				998	1,996
HOWLAND AVE (SHOULDERS)				10	25
HOWLAND AVE (DRIVEWAYS)				5	10
SHOREY AVE				2,573	5,146
SHOREY AVE (SHOULDERS)				72	180
SHOREY AVE (DRIVEWAYS)				67	134
TOTAL				26,992	54,442

311.0110 BREAKER RUN		
STREET	C.Y.	TONS
C.T.H. X	26,097	46,975
HOWLAND AVE	1,489	2,680
TOTAL	27,586	49,655

NOTE: CUBIC YARDS X 1.8 = TONS

416.0160 CONCRETE DRIVEWAY 6-INCH			
STREET	STATION	LOCATION	S.Y.
C.T.H. X	111+62	RT	8.9
C.T.H. X	121+40	LT	15.6
C.T.H. X	124+70	RT	8.3
C.T.H. X	126+75	RT	8.3
C.T.H. X	127+15	RT	17.2
C.T.H. X	130+60	LT	16.3
C.T.H. X	135+00	LT	27.8
C.T.H. X	153+50	LT	22.2
C.T.H. X	167+80	LT	38.9
C.T.H. X	168+80	RT	13.9
C.T.H. X	172+40	RT	12.2
C.T.H. X	172+50	LT	28.9
HOWLAND AVE	21+95	RT	7.8
TOTAL			226.3

ASPHALTIC PAVEMENT									
STREET	STATION	TO	STATION	460.1100	460.1110	465.0120	465.0315	455.0105	455.0605
				HMA PAVEMENT TYPE E-0.3 TON	HMA PAVEMENT TYPE E-10 TON	ASPHALTIC DRIVEWAY & FIELD ENT. TON	ASPHALTIC FLUMES S.Y.	ASPHALTIC MATERIAL PG58-28 TON	TACK COAT GAL
CTH X	109+50	-	194+50	-	14422	34	23	865	2508
CTH X	MULTI-USE		PATH	977	-	-	-	59	-
HOWLAND AVE	17+00	-	18+86	133	-	-	-	8	19
HOWLAND AVE	20+87	-	26+74	472	-	-	-	28	68
SHOREY AVE	25+00	-	28+62	222	-	-	-	13	32
SHOREY AVE	31+07	-	40+40	549	-	-	-	33	80
TOTALS				2353	14422	34	23	1006	2707

504.2000 BOX CULVERT			
STREET	STATION, LOCATION	SIZE, TYPE	L.F.
C.T.H. X	143+37.50, SKEW 28 DEGREES R.H.F.	10'x5' PRECAST BOX	152
TOTAL			152

CULVERTS AND APRON ENDWALLS											
STREET	STA. LOCATION	522.0136	522.0142	522.0148	522.1012	522.1024	522.1036	522.1042	522.1048	522.1054	
		RCCP CLASS III 36-INCH L.F.	RCCP CLASS III 42-INCH L.F.	RCCP CLASS III 48-INCH L.F.	SALVAGED CMP 48X72-INCH EACH	APRON ENDWALL FOR CULVERT PIPE 12-INCH EACH	APRON ENDWALL FOR CULVERT PIPE 24-INCH EACH	APRON ENDWALL FOR CULVERT PIPE 36-INCH EACH	APRON ENDWALL FOR CULVERT PIPE 42-INCH EACH	APRON ENDWALL FOR CULVERT PIPE 48-INCH EACH	APRON ENDWALL FOR CULVERT PIPE 54-INCH EACH
C.T.H. X	136+50, 59' LT	-	-	-	-	1	-	-	-	-	-
C.T.H. X	140+00, C/L	-	99	-	-	-	-	-	-	-	-
C.T.H. X	152+00, 39' RT	-	-	-	-	1	-	-	-	-	-
C.T.H. X	163+79, C/L	96	-	-	-	-	-	2	-	-	-
C.T.H. X	163+85, C/L	96	-	-	-	-	-	2	-	-	-
C.T.H. X	177+03, C/L	-	96	-	-	-	-	-	-	-	-
C.T.H. X	177+10, C/L	-	96	-	-	-	-	-	2	-	-
C.T.H. X	181+07, 47' RT	-	-	-	1	-	-	-	2	-	-
C.T.H. X	184+80, 46' RT	-	-	-	-	-	1	-	-	-	-
C.T.H. X	185+07, 50' RT	-	-	-	-	-	-	-	-	-	-
C.T.H. X	186+50, 59.5' RT	-	-	-	-	1	-	-	-	-	1
SHOREY AVE.	33+30, C/L	-	-	48	-	-	-	-	-	-	-
TOTALS		192	291	48	1	3	1	4	6	2	1



CENTRAL
WISCONSIN
ENGINEERS &
ARCHITECTS

5707 SCHOFIELD AVENUE
WESTON, WISCONSIN
54476

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FAX: (715) 355-4199

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STORM SEWER SCHEDULE

STRUCT. NO.	STATION	OFFSET	TO STRUCT.	STRUCT. TYPE	RIM GRATE ELEVATION	DEPTH FEET	DISCHARGE PIPE INFORMATION					REMARKS
							SIZE INCHES	SUMP ELEVATION	OUTLET ELEVATION	LENGTH FEET	% SLOPE	
1	111+00	35' RT	—	15" APRON ENDWALL	—	—	—	—	1213.14	—	—	INV. ELEV 1213.14 (15" S) TRASH GUARD REQ'D
2	111+47	25.5' RT	1	MOD 1 C.B.	1218.17	5.59	15	1212.58	1214.08	47	2.00%	INV. ELEV 1214.08 (15" N-S) 1214.33 (12" W)
2-A	111+47	41.5' LT	2	MOD 3 INLET	1218.17	5.00	12	1213.17	1214.67	67	0.50%	INV. ELEV 1214.67 (12" E)
3	113+28	29' RT	2	1 M.H.	1222.65	4.79	15	—	1217.86	181	2.09%	INV. ELEV 1217.86 (15" N-S-E)
4	20+92	24.5' RT	3	1 M.H.	1223.96	4.76	15	—	1219.20	63	2.13%	INV. ELEV 1219.20 (15" E-W) 1219.49 (15" N & 12" S)
4-A	20+92	33.5' RT	4	MOD 3 INLET	1223.61	5.50	12	1218.11	1219.61	9	1.33%	INV. ELEV. 1219.61 (12" N)
4-B	20+92	13.5' LT	4	MOD 3 INLET	1223.37	5.00	12	1218.37	1219.87	38	1.00%	INV. ELEV. 1219.87 (15" NE-S)
5	24+00	22.96' RT	4	MOD 3 INLET	1228.86	5.61	15	1223.25	1224.75	308	1.80%	INV. ELEV. 1224.75 (15" W) 1225.00 (12" N)
5-A	24+00	15.79' LT	5	MOD 3 INLET	1228.86	4.96	12	1223.90	1225.40	39	1.03%	INV. ELEV. 1225.40 (12" S)
6	114+30	25.5' RT	3	MOD 1 C.B.	1223.73	5.59	15	1218.14	1219.64	102	1.75%	INV. ELEV. 1219.64 (15" S) 1219.89 (12" N-W)
6-A	114+40	25.5' RT	6	MOD 3 INLET	1223.90	5.00	12	1218.90	1220.40	10	5.10%	INV. ELEV. 1220.40 (12" S)
6-B	114+30	41.5' LT	6	MOD 3 INLET	1223.73	5.00	12	1218.73	1220.23	67	0.50%	INV. ELEV. 1220.23 (12" E-N)
6-C	114+40	41.5' LT	6-B	MOD 3 INLET	1223.90	5.00	12	1218.90	1220.40	10	1.70%	INV. ELEV. 1220.40 (12" S)
7	123+50	25.5' RT	8	MOD 1 C.B.	1226.90	5.59	15	1221.31	1222.81	337	2.81%	INV. ELEV. 1222.81 (15" N) 1223.06 (12" W)
7-A	123+50	41.5' LT	7	MOD 3 INLET	1226.90	5.00	12	1221.90	1223.40	67	0.50%	INV. ELEV. 1223.40 (12" E)
8	126+90	25.5' RT	9	MOD 1 C.B.	1217.10	5.25	15	1211.85	1213.35	207	3.57%	INV. ELEV. 1213.35 (15" N-S) 1213.60 (12" W)
8-A	126+90	15.5' LT	8	MOD 3 INLET	1217.90	5.00	12	1212.90	1214.40	41	1.95%	INV. ELEV. 1214.40 (12" E)
9	129+00	25.5' RT	10-A	MOD 1 C.B.	1209.70	5.25	15	1204.45	1205.95	187	3.58%	INV. ELEV. 1205.95 (15" N-S) 1206.20 (12" W)
9-A	129+00	15.5 LT	9	MOD 3 INLET	1210.50	5.00	12	1205.50	1207.00	41	1.95%	INV. ELEV. 1207.00 (12" E)
10	130+95	37.2' RT	—	15" APRON ENDWALL	—	—	—	—	1198.94	—	—	INV. ELEV. 1198.94 (15" W) TRASH GUARD REQ'D
10-A	130+90	25.5' RT	10	TREATMENT STRUCT.	1203.01	8.75	15	1194.26	1199.26	16	2.00%	INV. ELEV. 1199.26 (15" N-E) 1199.51 (12" W)
10-B	130+90	15.5' LT	10-A	MOD 3 INLET	1203.80	5.00	12	1198.80	1200.30	41	1.93%	INV. ELEV. 1200.30 (12" E-W)
10-C	130+90	41.5' LT	10-B	MOD 3 INLET	1204.46	5.00	12	1199.46	1200.96	26	2.54%	INV. ELEV. 1199.46 (12" E)
11	134+00	15.5' LT	20-A	MOD 1 C.B.	1195.65	5.00	12	1190.65	1192.15	250	0.77%	INV. ELEV. 1192.15 (12" N)
12	154+50	0.5' LT	21-A	MOD 1 C.B.	1193.92	4.50	12	1189.42	1190.92	250	0.50%	INV. ELEV. 1190.92 (12" N-S)
13	158+00	0.5' LT	12	MOD 1 C.B.	1195.67	4.50	12	1191.17	1192.67	350	0.50%	INV. ELEV. 1192.67 (12" S)
14	184+80	46' RT	—	24" APRON ENDWALL	—	—	—	—	1214.55	—	—	INV. ELEV. 1214.55 (24" W) TRASH GUARD REQ'D
14-A	185+18	39' LT	14	EXIST.	1221.28	6.29	24	—	1214.99	93	0.47%	INV. ELEV. 1214.99 (24" E-W)
15	185+07	50' RT	—	54" APRON ENDWALL	—	—	—	—	1214.00	—	—	INV. ELEV. 1214.00 (54" N) TRASH GUARD REQ'D
16	186+50	43.5' RT	15	MOD. TYPE 3 M.H.	1225.00	9.30	54	—	1215.70	143	1.19%	INV. ELEV. 1215.70(54"S) 1216.50(42"N-W) 1219.84(12"E)
16-A	186+50	25.5' RT	16	TYPE 5 C.B.	1224.97	9.48	42	1215.49	1216.99	18	2.72%	INV. ELEV. 1216.99 (42" E-W)
16-B	186+50	43.5' LT	16-A	TYPE 5 C.B.	1224.97	7.62	42	1217.35	1218.85	69	2.70%	INV. ELEV. 1218.85 (42" E-W) 1219.50 (36"W)
16-C	186+50	71.5' LT	16-B	36" APRON ENDWALL	—	—	36	—	1222.00	28	—	INV. ELEV. 1222.00 (36" E) TRASH GUARD REQ'D
16-D	186+50	59.5' RT	16	12" APRON ENDWALL	—	—	12	—	1220.00	16	—	INV. ELEV. 1220.00 (12" W) TRASH GUARD REQ'D
17	190+27	47' RT	16	TYPE 3 M.H.	1235.00	10.70	42	—	1224.30	375	2.08%	INV. ELEV. 1224.30 (42" N-S)
18	191+52	39' RT	17	TYPE 3 M.H.	1239.00	11.20	42	—	1227.80	123	2.85%	INV. ELEV. 1227.80 (42" N-S) 1232.78 (12" W)
18-A	191+52	25.5' RT	18	MOD 3 INLET	1238.79	7.37	12	1231.42	1232.92	14	1.00%	INV. ELEV. 1232.92 (12" E-W)
18-B	191+52	0.5' LT	18-A	MOD 3 INLET	1237.57	5.89	12	1231.68	1233.18	26	1.00%	INV. ELEV. 1233.18 (12" E-W)
18-C	191+52	43.5' LT	18-B	MOD 3 INLET	1237.11	5.00	12	1232.11	1233.61	43	1.00%	INV. ELEV. 1233.61 (12" E)
19	194+00	37' RT	18	SALV. EXIST.	—	—	42	—	1236.21	246	3.42%	INV. ELEV. 1236.21 (42" N)
20	136+50	59' LT	—	12" APRON ENDWALL	—	—	—	—	1189.64	—	—	INV. ELEV. 1189.64 (12" W) TRASH GUARD REQ'D
20-A	136+50	15.5' LT	20	TREATMENT STRUCT.	1193.72	8.50	12	1185.22	1190.22	58	1.00%	INV. ELEV. 1190.22 (12" S-W)
21	152+00	39' RT	—	12" APRON ENDWALL	—	—	—	—	1189.30	—	—	INV. ELEV. 1189.30 (12" W) TRASH GUARD REQ'D
21-A	152+00	0.5' LT	21	MOD 1 C.B.	1192.67	4.50	12	1188.17	1189.67	37	1.00%	INV. ELEV. 1189.67 (12" N-E)

NOTES: OFFSET TO CENTER OF STRUCTURE

DEPTH = RIM ELEV. TO LOWEST INVERT OR SUMP ELEV.

ALL PIPE LENGTHS ARE CENTER OF STRUCTURE TO CENTER OF STRUCTURE



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ENGINEERS &
ARCHITECTS

5707 SCHOFIELD AVENUE
WESTON, WISCONSIN
54476

PHONE: (715) 359-9400
FAX: (715) 355-4199

general@cwengineers.com
http://www.cwengineers.com

PROJECT:

MISCELLANEOUS QUANTITIES
2006 MARATHON COUNTY AND
VILLAGE OF WESTON
C.T.H. X / CAMP PHILLIPS ROAD
RECONSTRUCTION PROJECT
HOWLAND AVE. - TRANSPORT DR.

REVISIONS:

DRAWN BY:

T.P.B.

CHECKED BY:

D.G.

APPROVED BY:

H.Z.

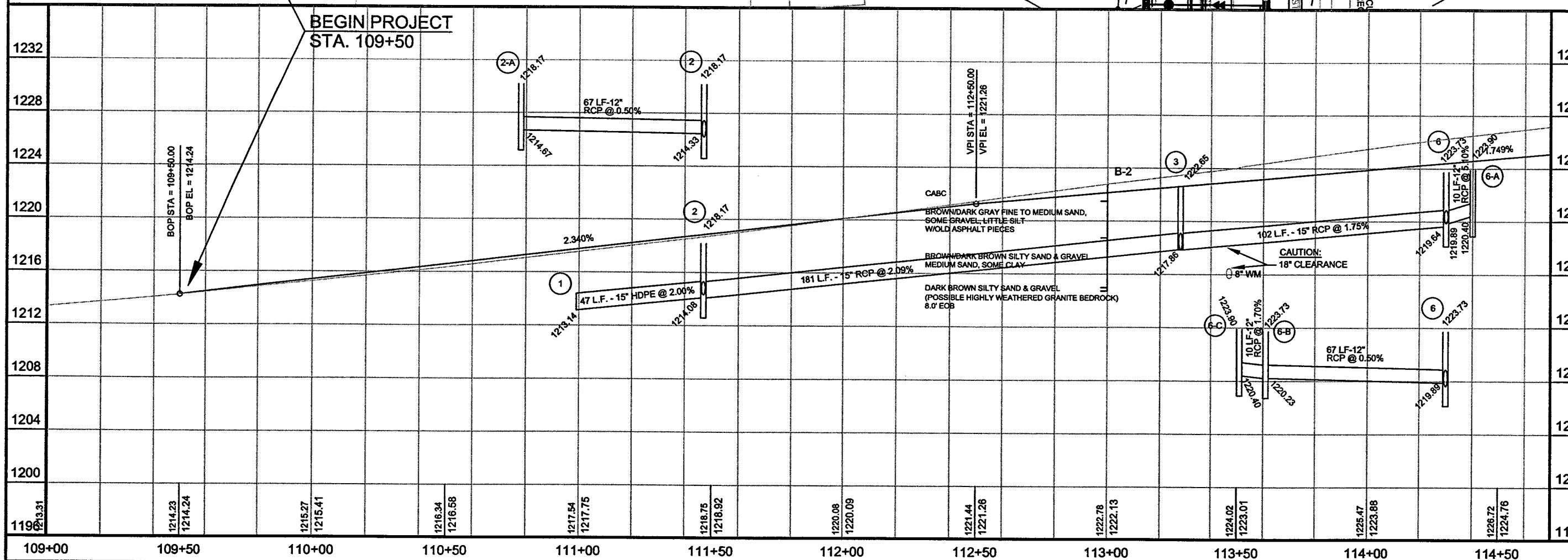
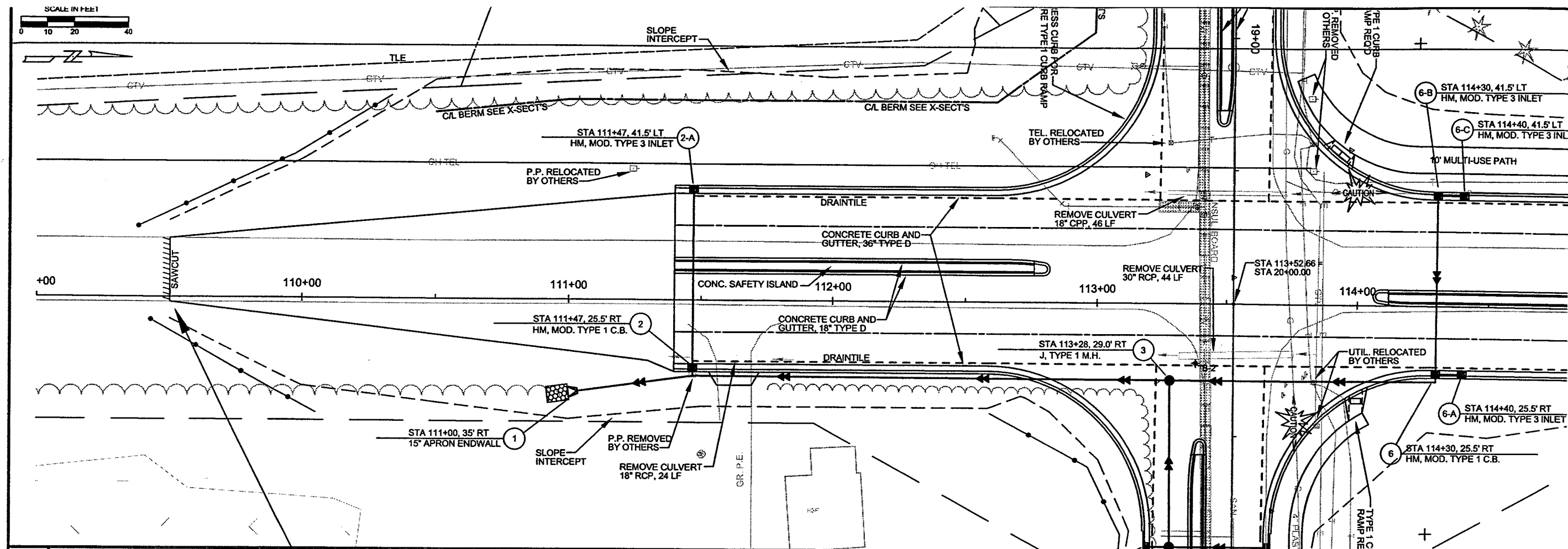
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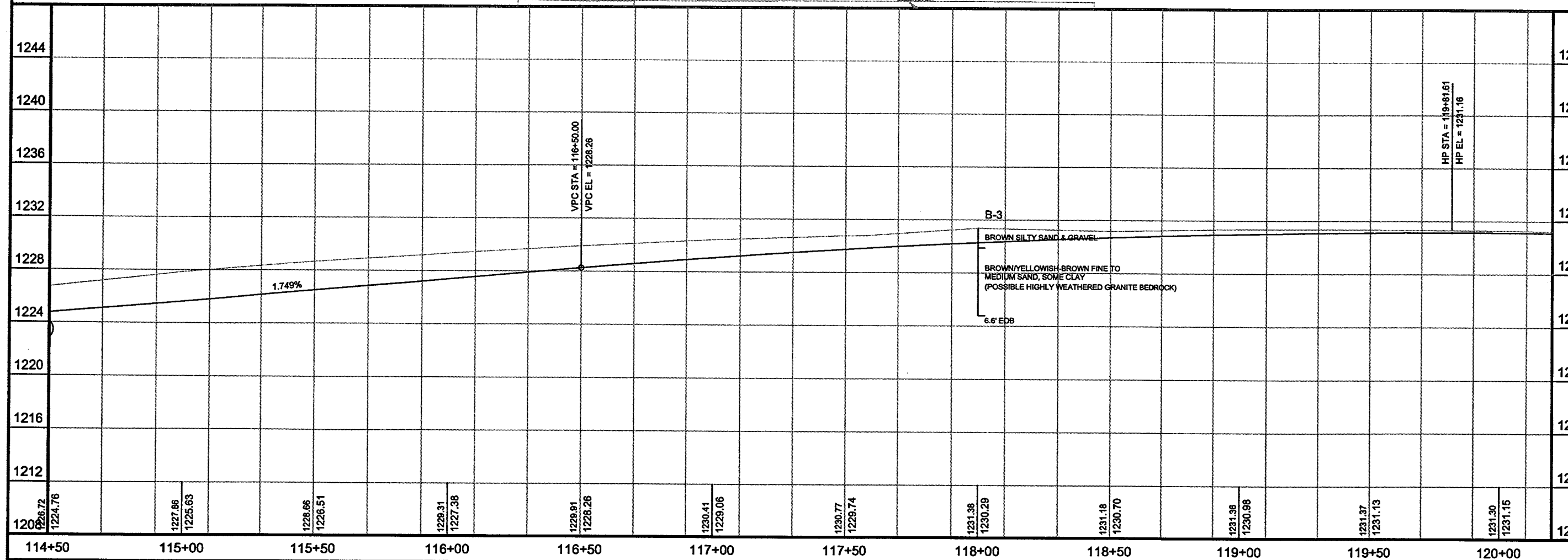
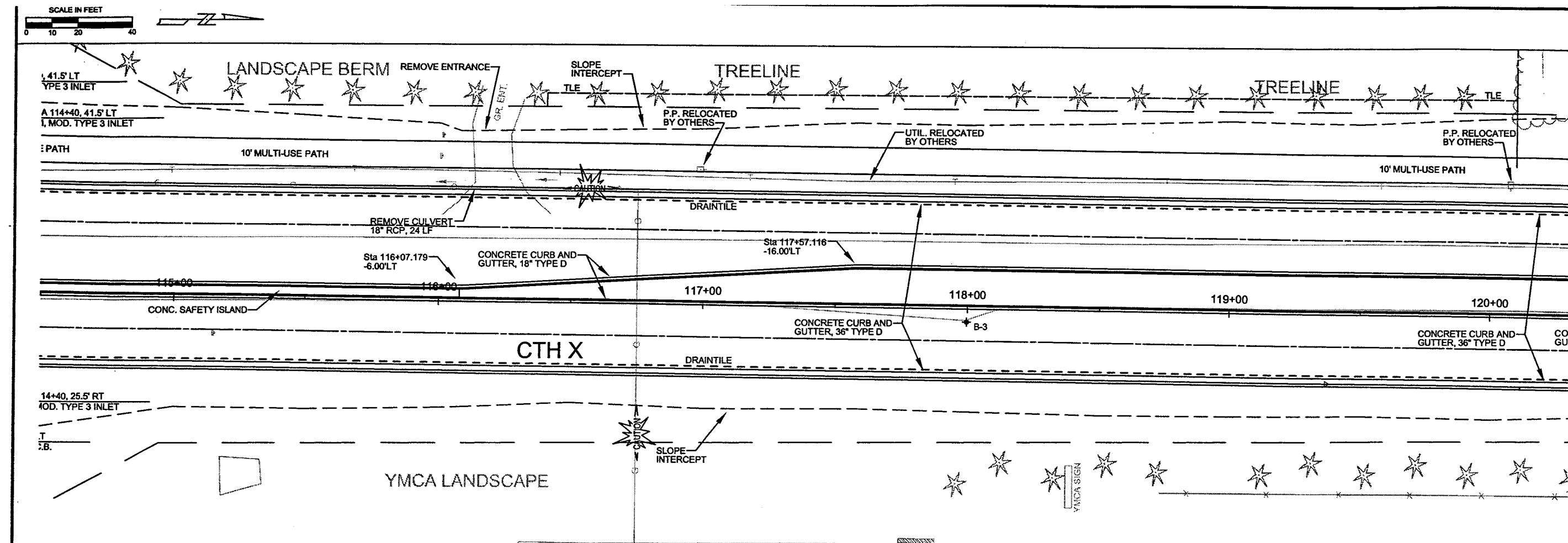
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ENGINEERS &
ARCHITECTS

5707 SCHOFIELD AVENUE
WESTON, WISCONSIN
54476

PHONE: (715) 359-9400
FAX: (715) 355-4199

general@cwengineers.com
http://www.cwengineers.com

PROJECT:

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2006 MARATHON COUNTY AND
VILLAGE OF WESTON
C.T.H. X / CAMP PHILLIPS ROAD
RECONSTRUCTION PROJECT
HOWLAND AVE. - TRANSPORT DR.

REVISIONS:

DRAWN BY:

ALEE

CHECKED BY:

D.G.

APPROVED BY:

H.Z.

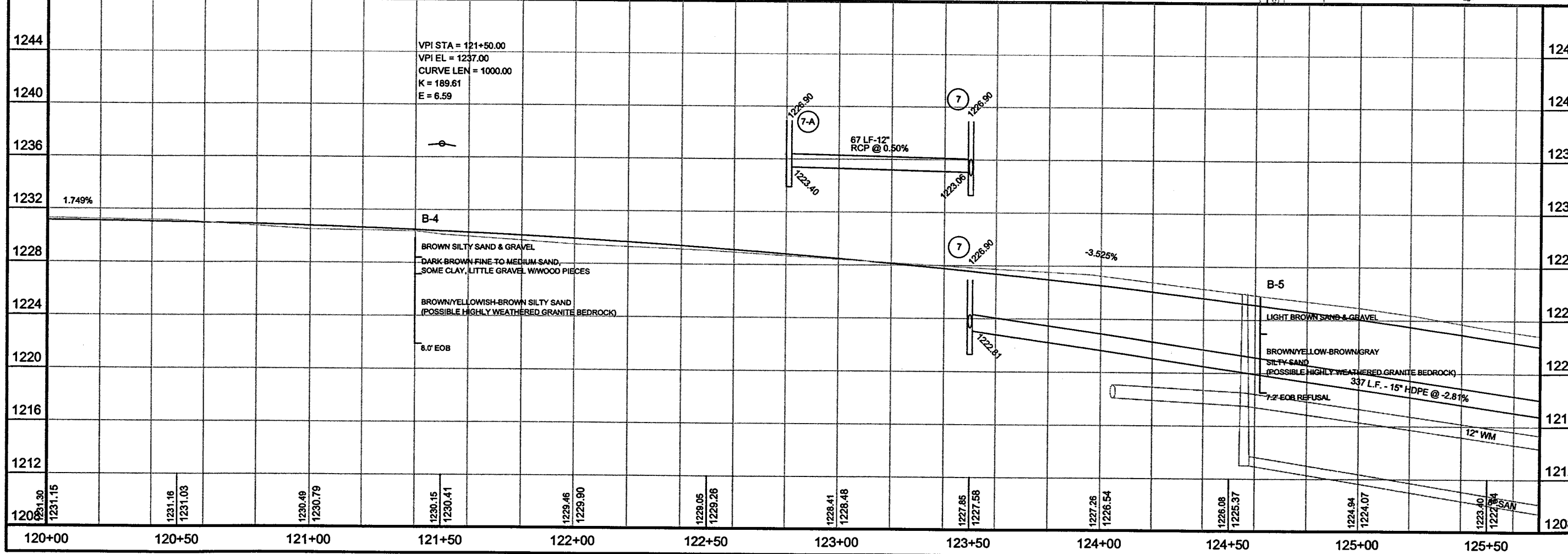
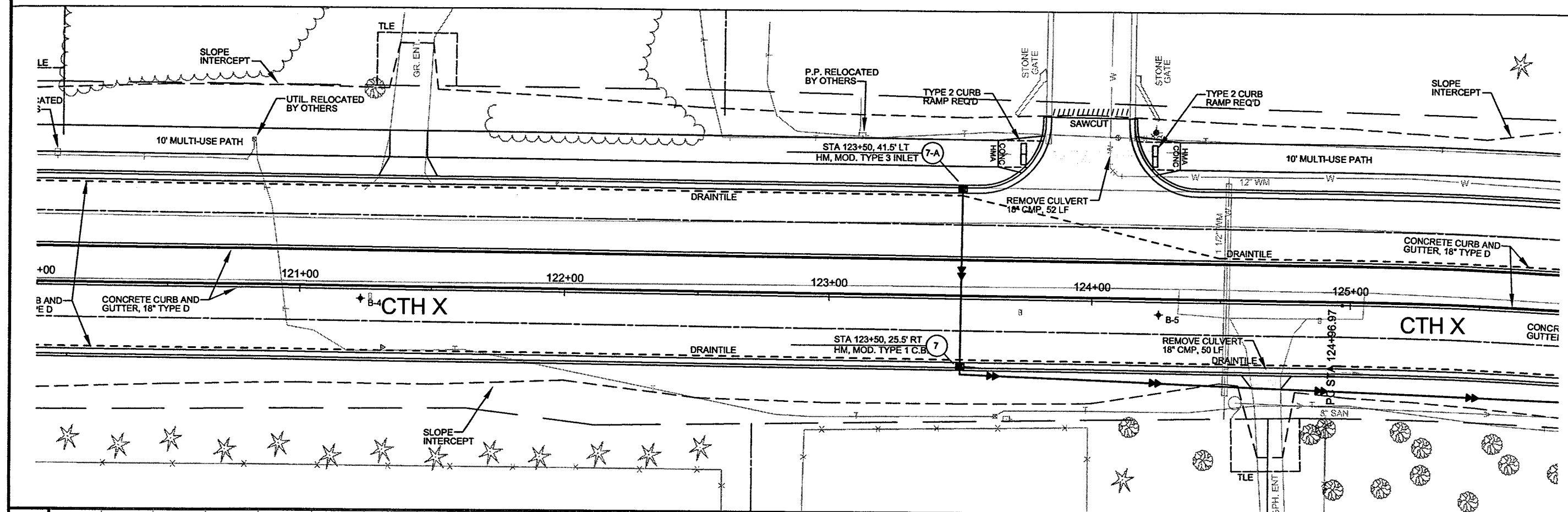
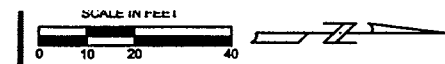
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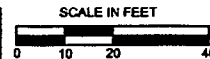
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ENGINEERS &
ARCHITECTS

5707 SCHOFIELD AVENUE
WESTON, WISCONSIN
54476

PHONE: (715) 359-9400
FAX: (715) 355-4199

general@cwengineers.com
http://www.cwengineers.com

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HOWLAND AVE. - TRANSPORT DR.

REVISIONS:

DRAWN BY:
ALEE

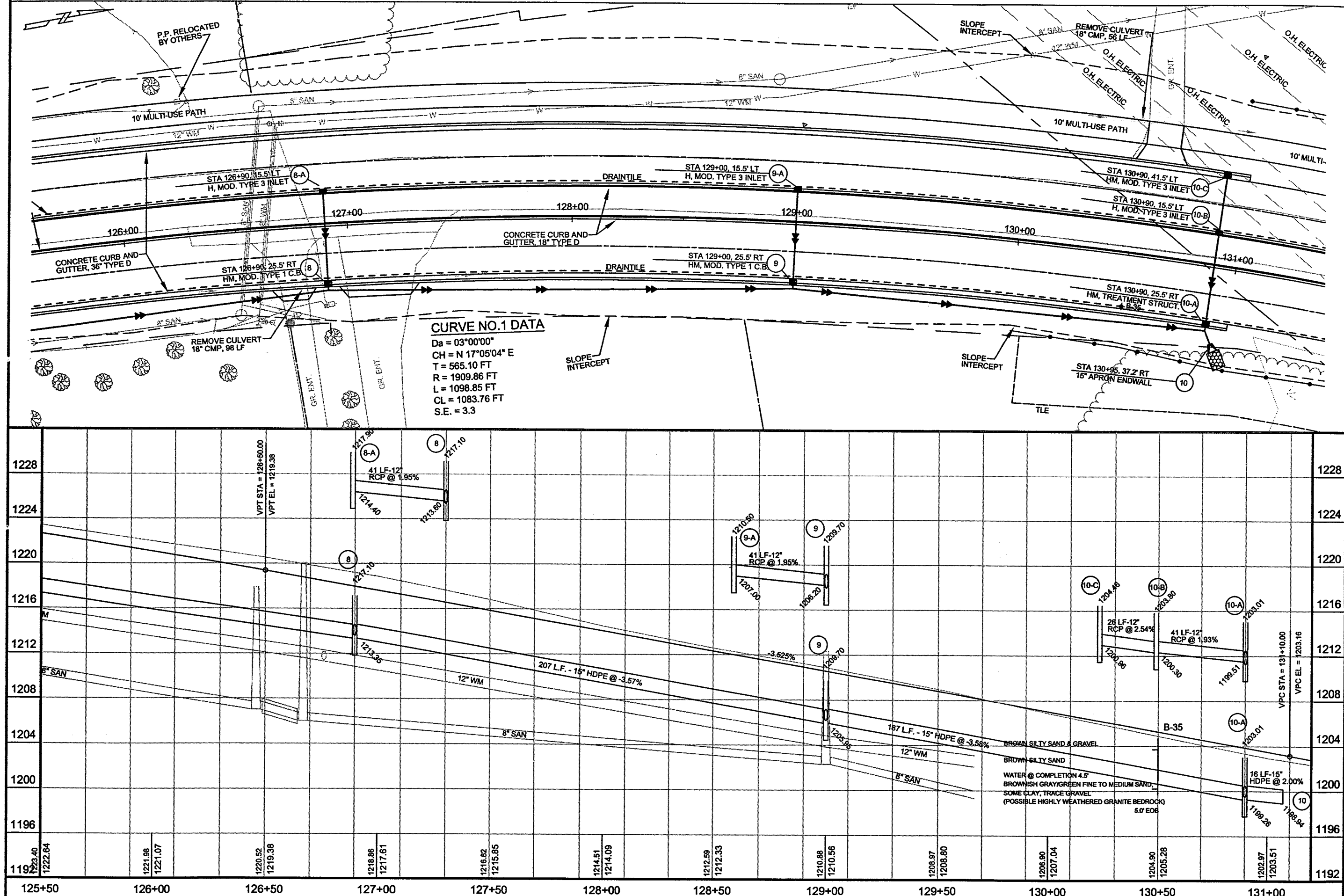
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D.G.

APPROVED BY:
H.Z.

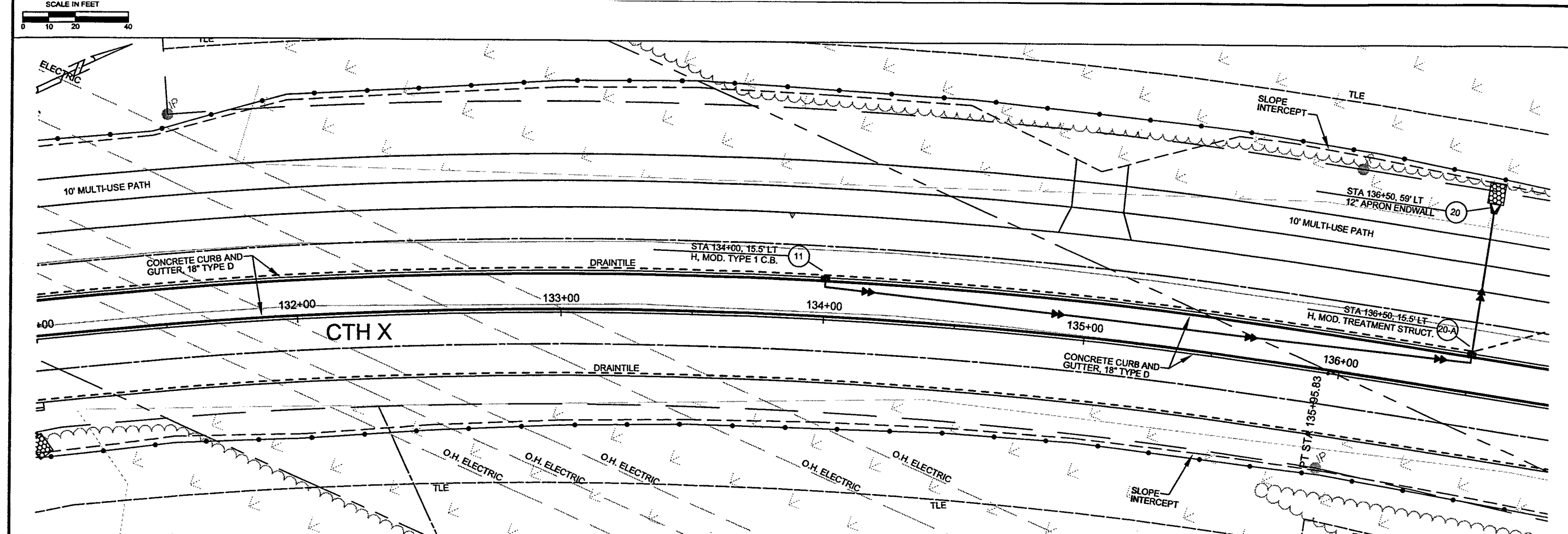
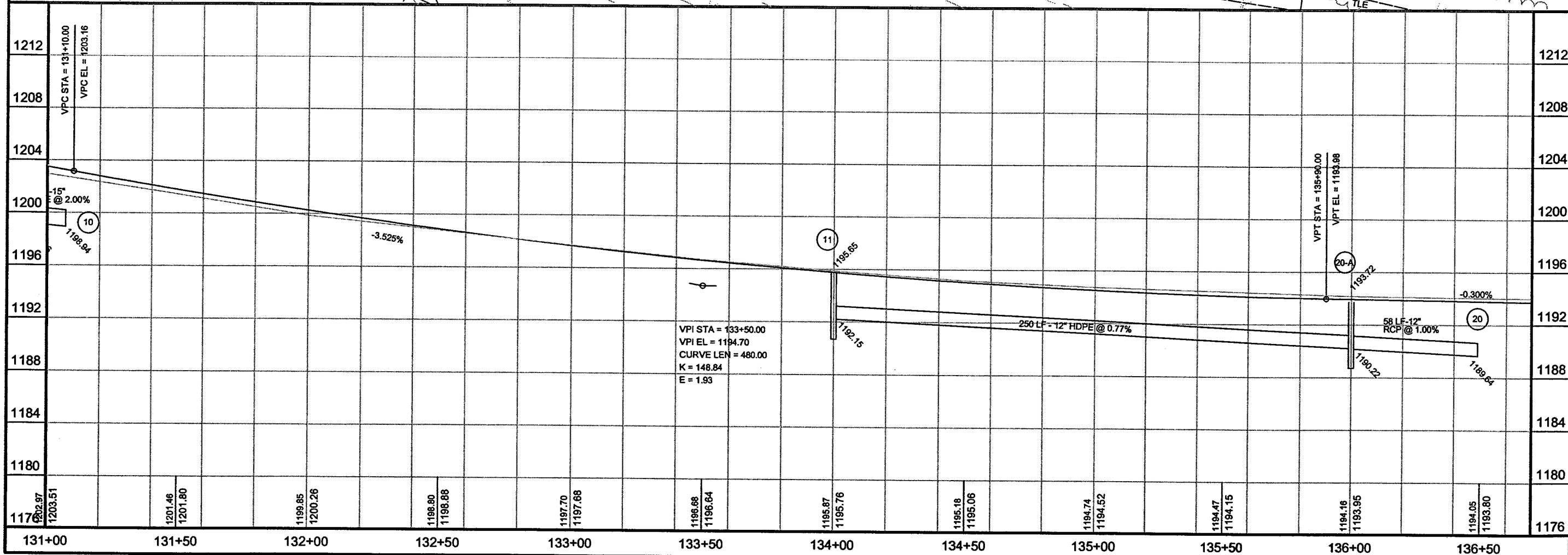
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WISCONSIN
ENGINEERS &
ARCHITECTS

5707 SCHOFIELD AVENUE
WESTON, WISCONSIN
54776

PHONE: (715) 359-9400
FAX: (715) 355-4199

general@cwengineers.com
http://www.cwengineers.com

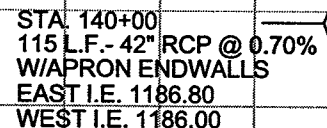
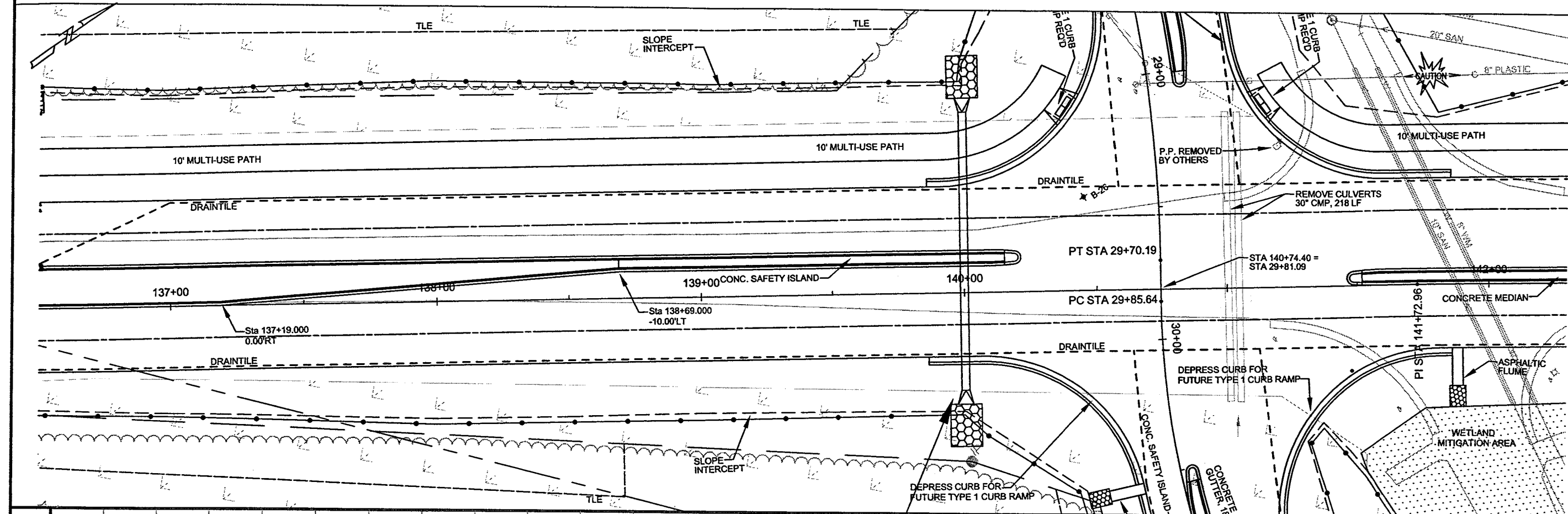
PROJECT:

C.T.H. X
2006 MARATHON COUNTY AND
VILLAGE OF WESTON
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REVISIONS:

DRAWN BY:	A.LEE
CHECKED BY:	D.G.
APPROVED BY:	H.Z.
DATE:	FEB 2006

SHEET:
93 OF 173



B-26

-0.300%

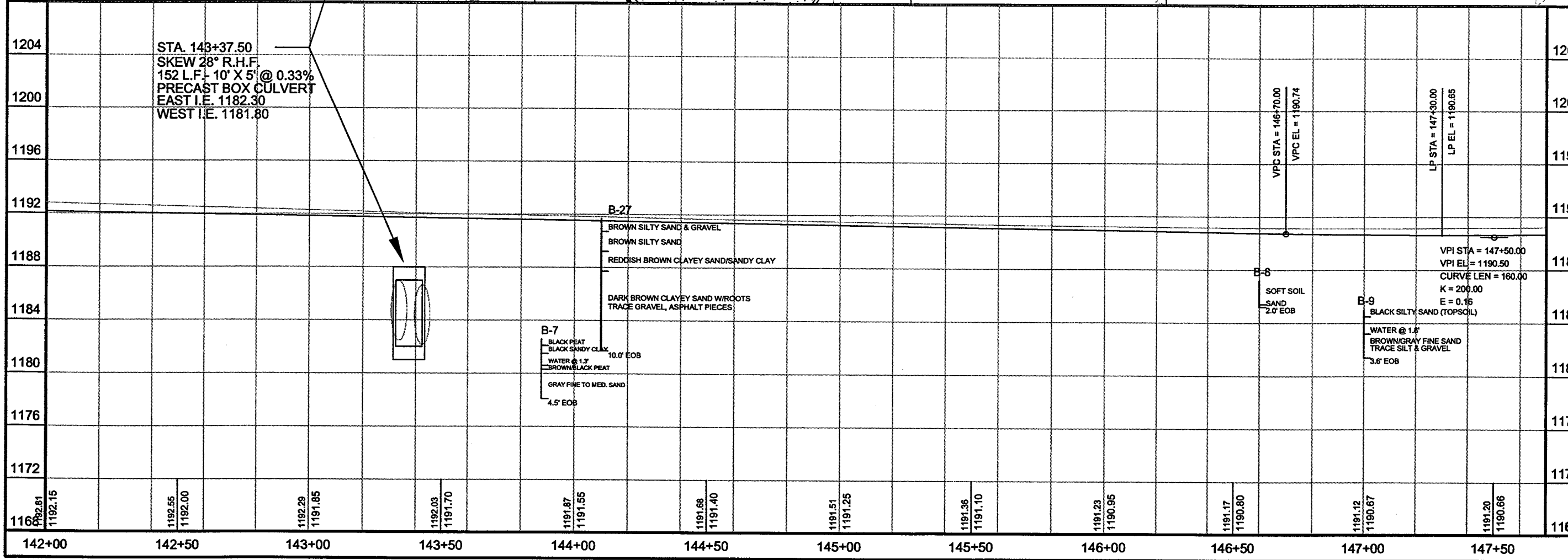
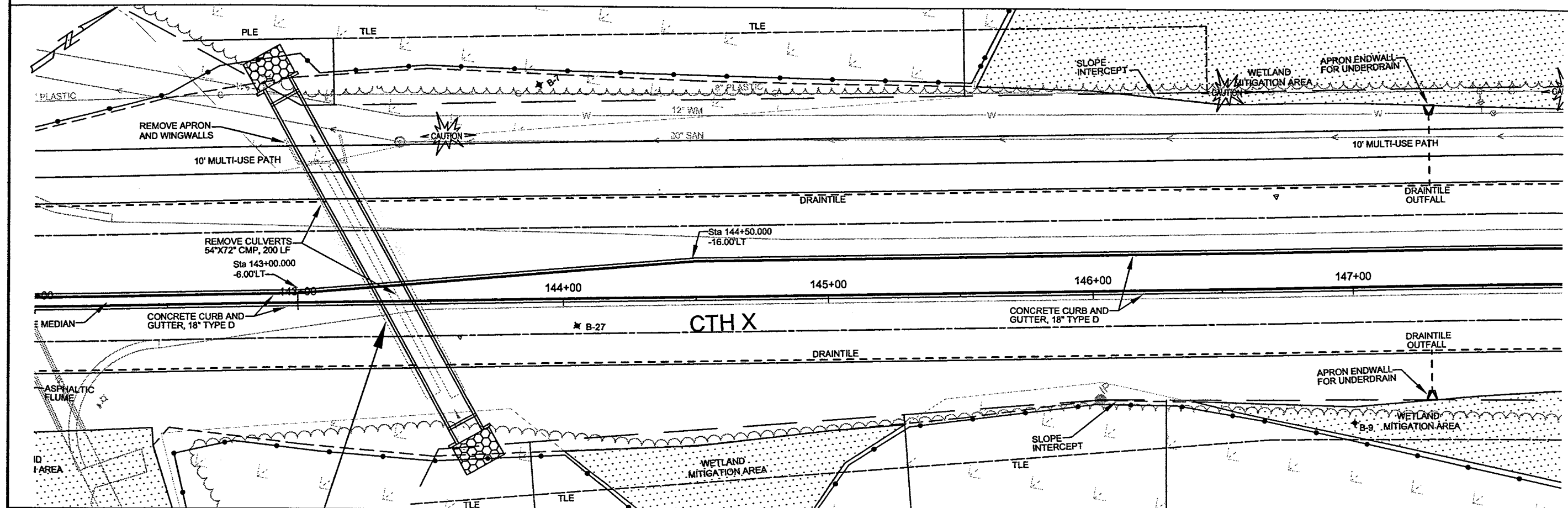
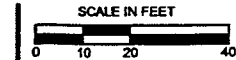
BROWN SILTY SAND & GRAVEL

BROWN FINE TO MEDIUM SAND,
SOME SILT, TRACE GRAVEL

BLACK SANDY CLAY W/ROOTS
BROWN SILTY SAND MOSTLY FINE
WATER @ COMPLETION 8.0'

10.0' EOB

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5707 SCHOFIELD AVENUE
WESTON, WISCONSIN
54476

PHONE: (715) 359-9400
FAX: (715) 355-4199

general@cwengineers.com
http://www.cwengineers.com

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REVISIONS:

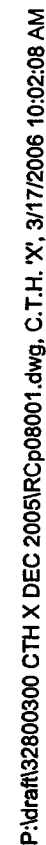
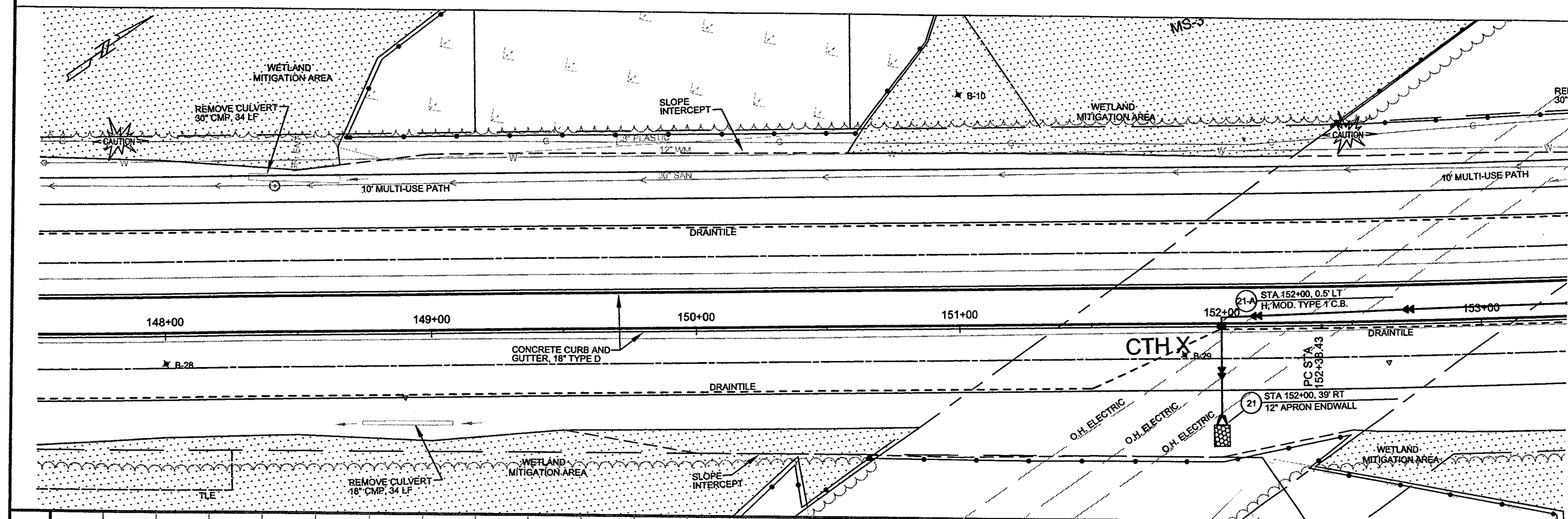
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A.LEE

CHECKED BY:
D.G.

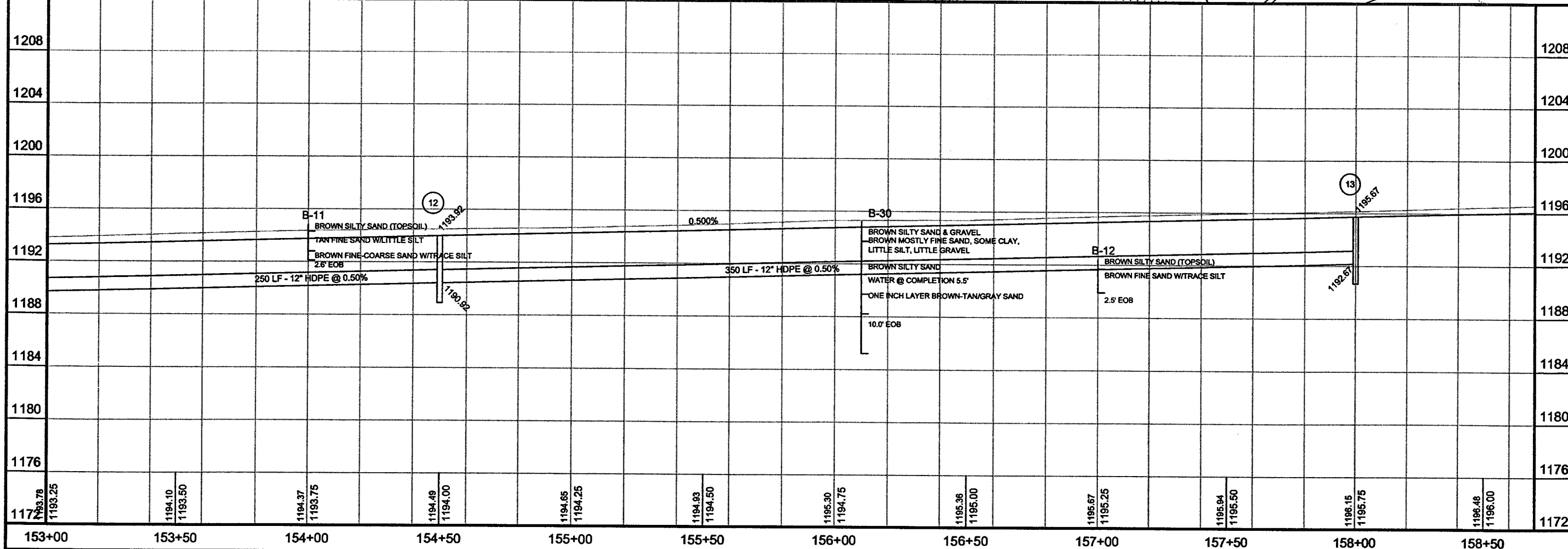
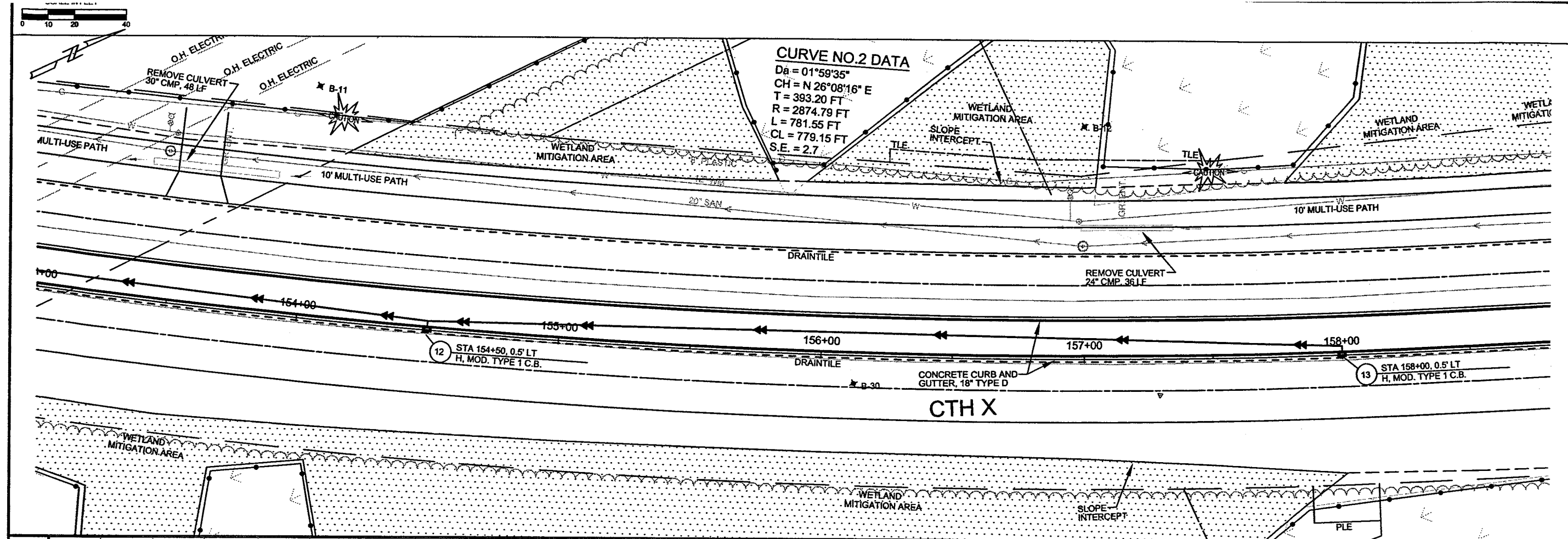
APPROVED BY:
H.Z.

DATE:
FEB 2006

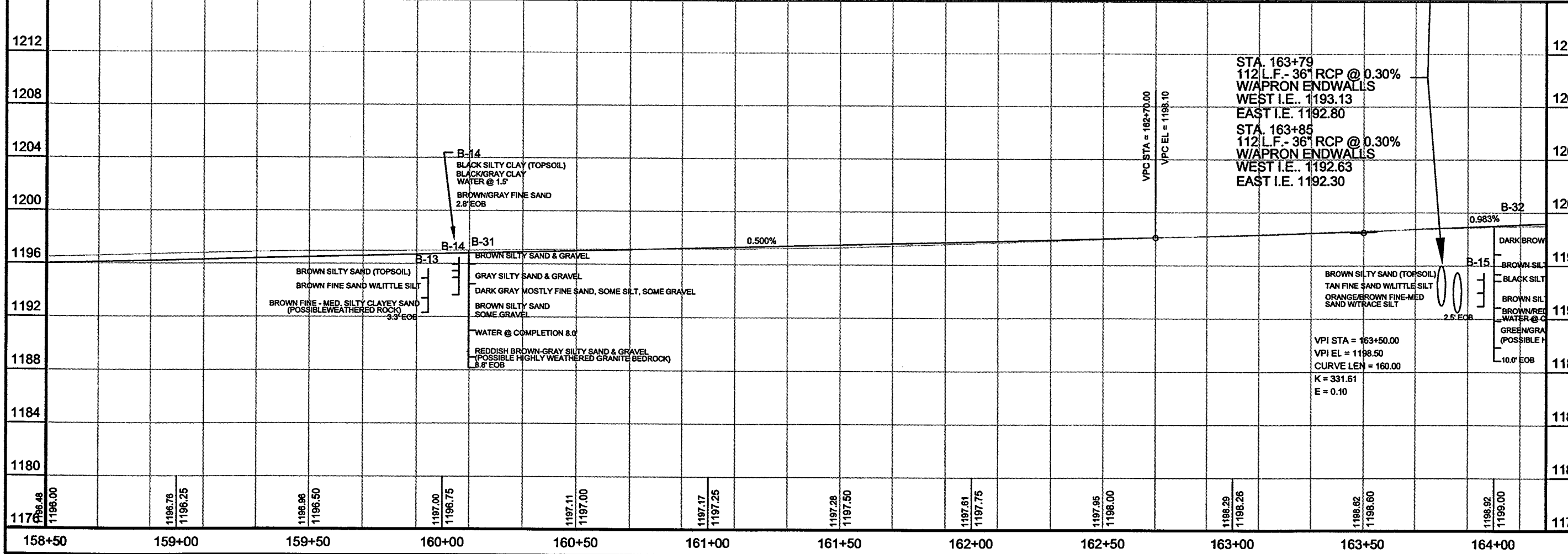
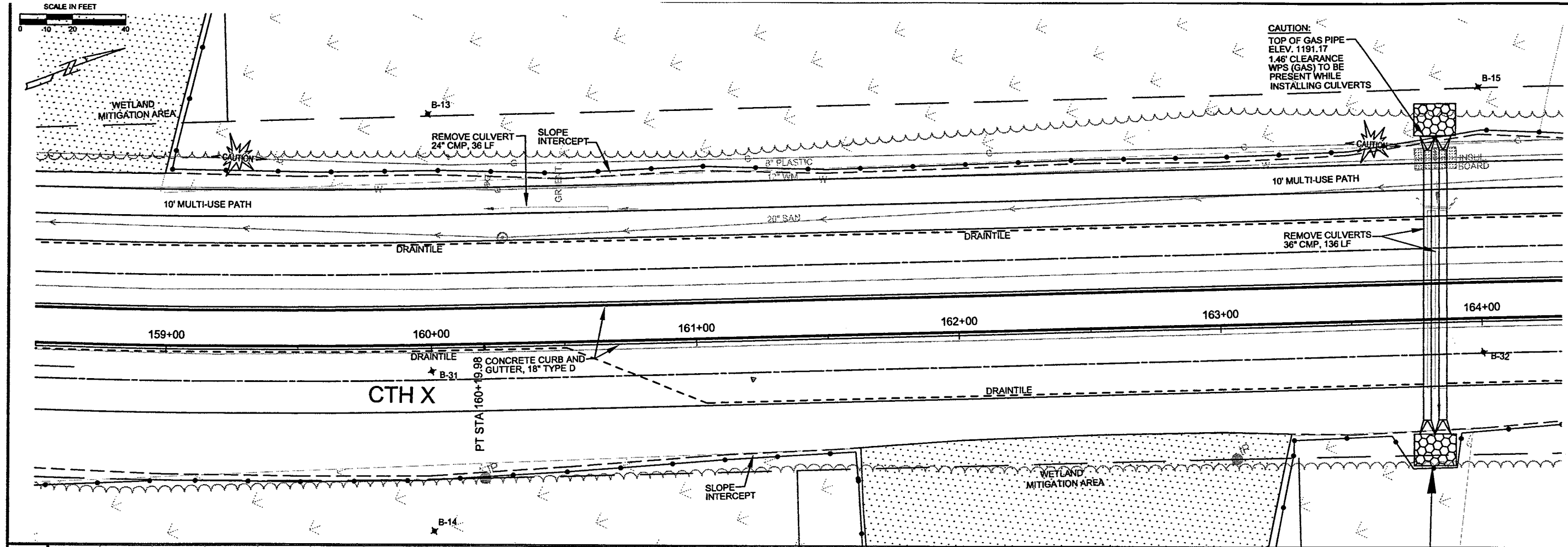
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WISCONSIN
ENGINEERS &
ARCHITECTS

5707 SCHOFIELD AVENUE
WESTON, WISCONSIN
54476

PHONE: (715) 359-9400
FAX: (715) 355-4199

general@cwengineers.com
http://www.cwengineers.com

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REVISIONS:

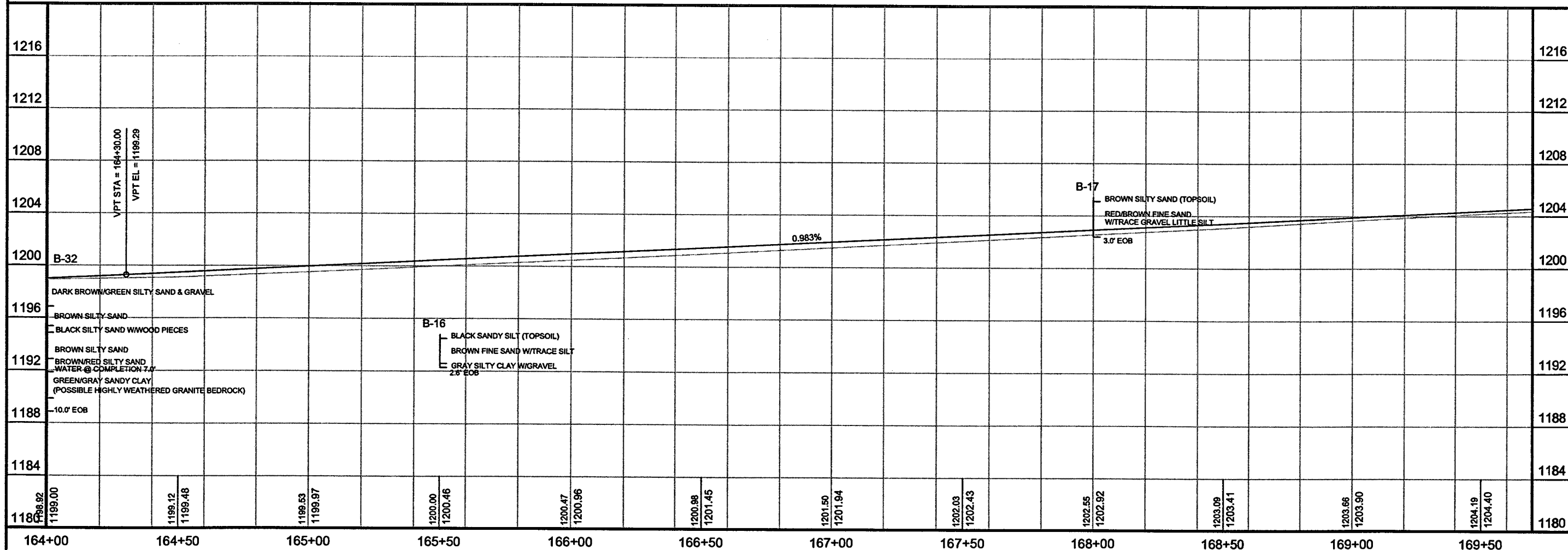
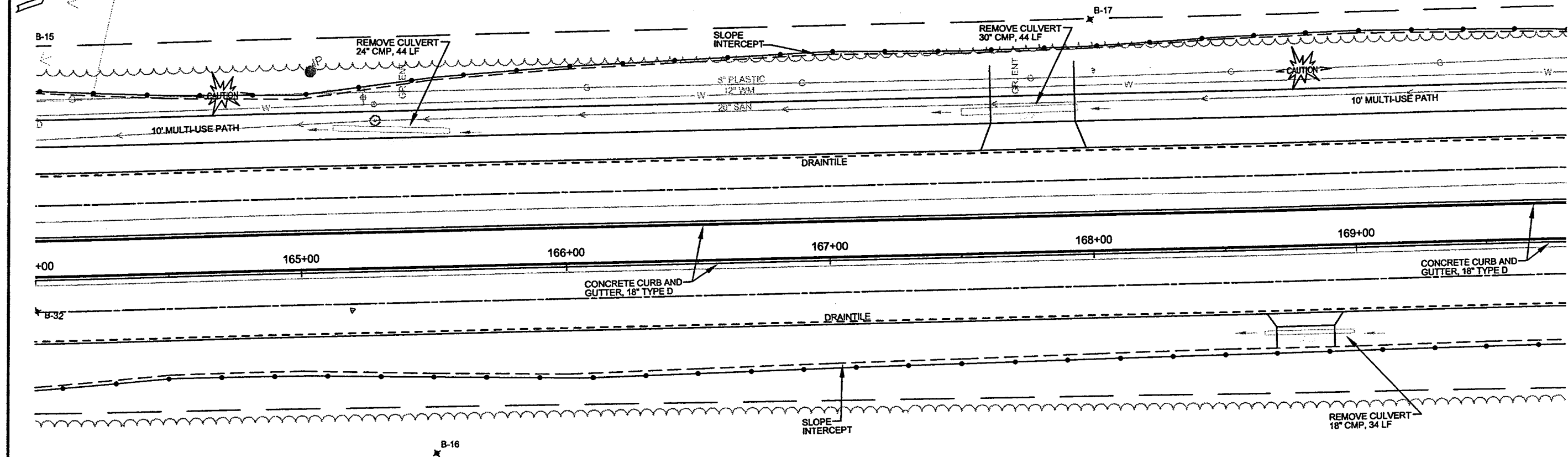
DRAWN BY:	ALEE
CHECKED BY:	D.G.
APPROVED BY:	H.Z.
DATE:	FEB 2006

SHEET:

98 OF 173

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SCALE IN FEET
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ENGINEERS &
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5707 SCHOFIELD AVENUE
WESTON, WISCONSIN
54476
PHONE: (715) 359-9400
FAX: (715) 355-4199
general@cwengineers.com
http://www.cwengineers.com

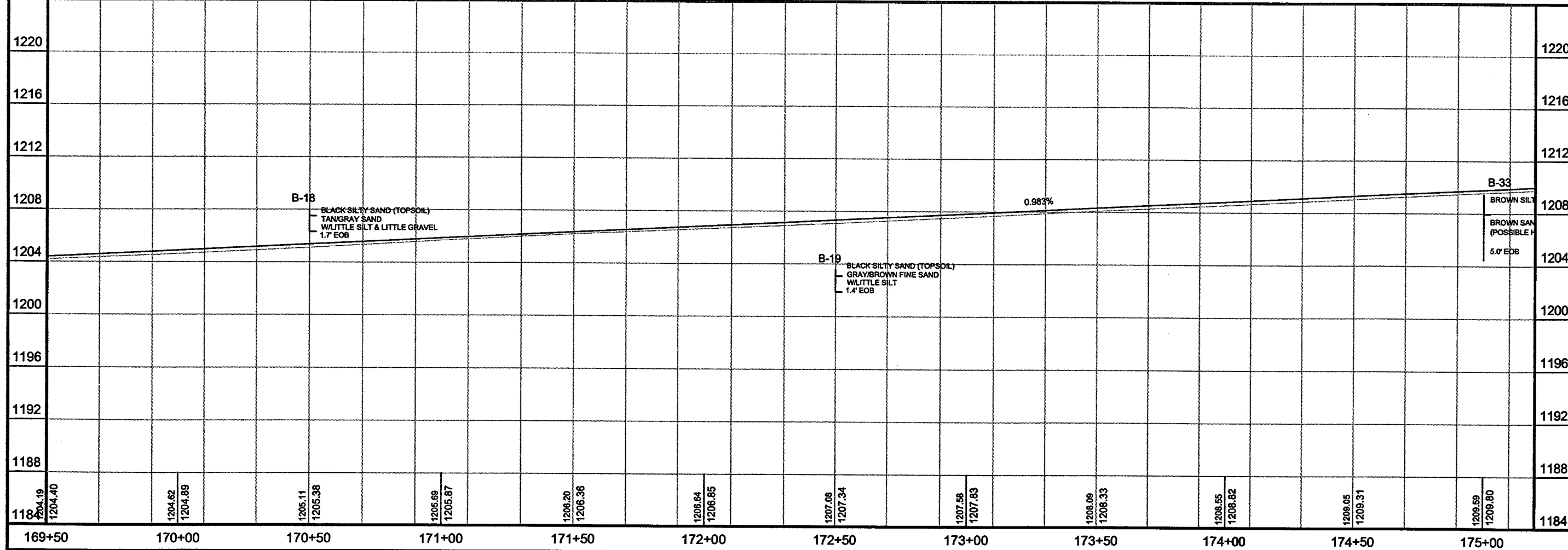
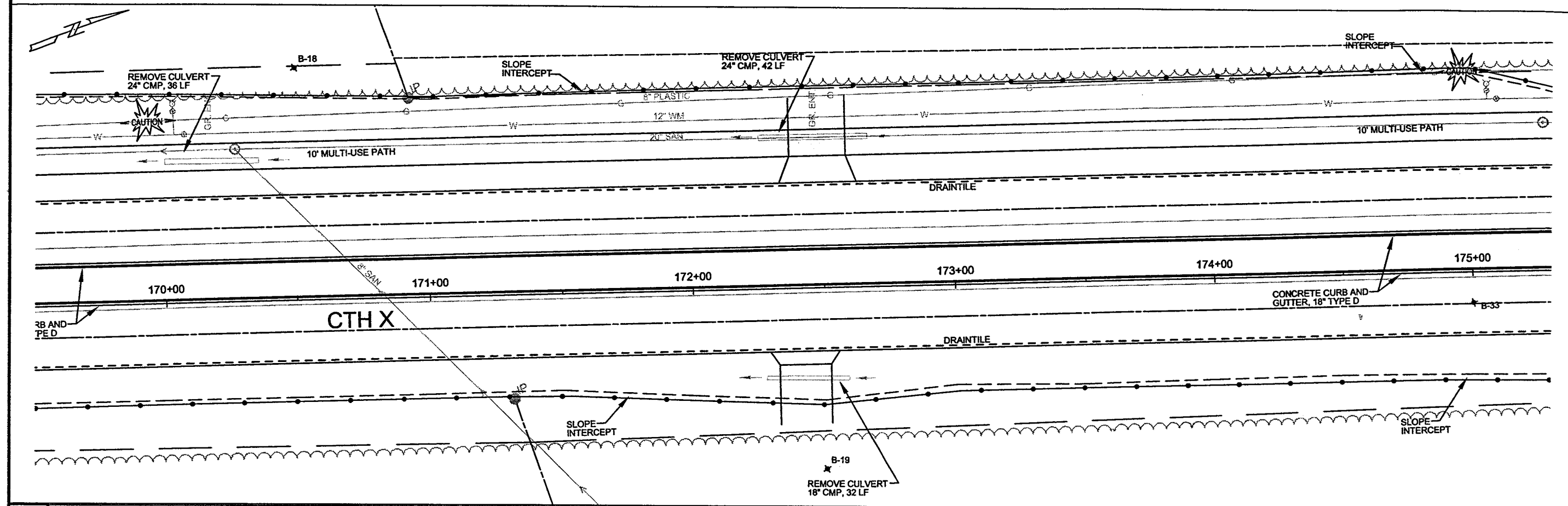
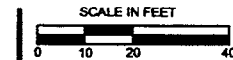
PROJECT:

C.T.H. X
2006 MARATHON COUNTY AND
VILLAGE OF WESTON
C.T.H. X / CAMP PHILLIPS ROAD
RECONSTRUCTION PROJECT
HOWLAND AVE. - TRANSPORT DR.

REVISIONS:

DRAWN BY:
A.L.E.E.
CHECKED BY:
D.G.
APPROVED BY:
H.Z.
DATE:
FEB 2006
SHEET:
99 OF 173

P:\draft\32800300 CTH X DEC 2005\RCp12001.dwg, C.T.H. 'X', 3/27/2006 2:40:59 PM



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54476

PHONE: (715) 359-9400
FAX: (715) 355-4199

general@cwengineers.com
http://www.cwengineers.com

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REVISIONS:

DRAWN BY:

A.LEE

CHECKED BY:

D.G.

APPROVED BY:

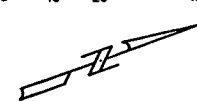
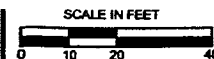
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DATE:

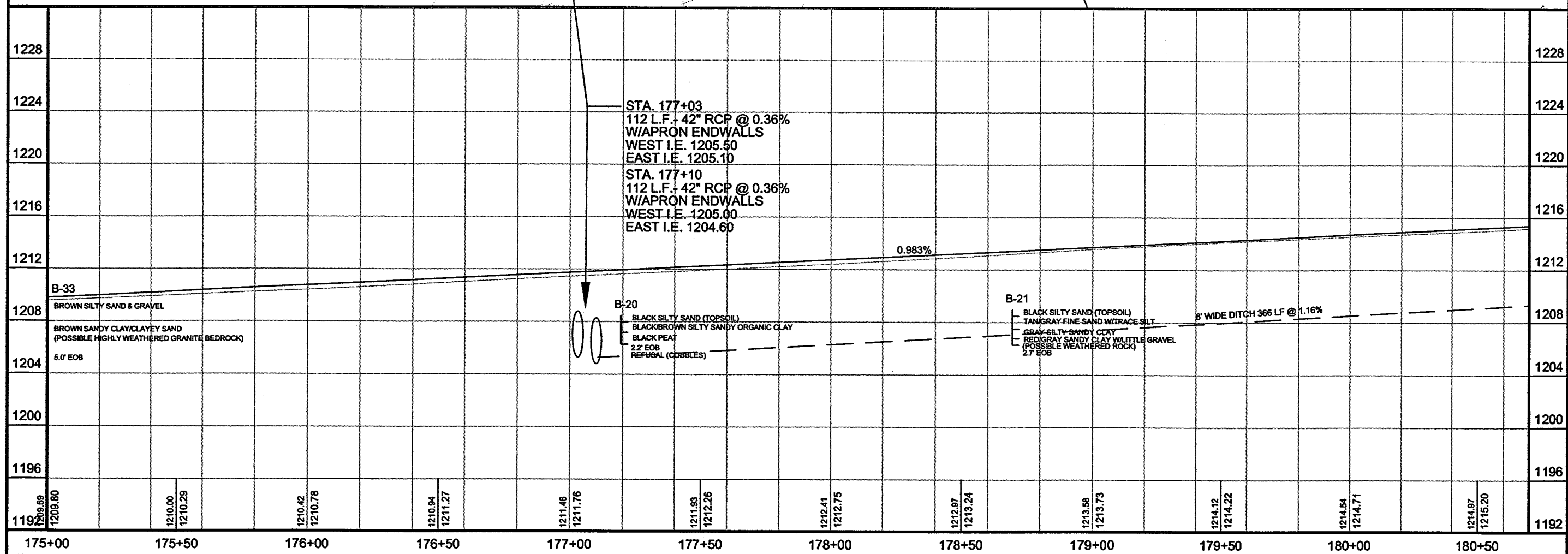
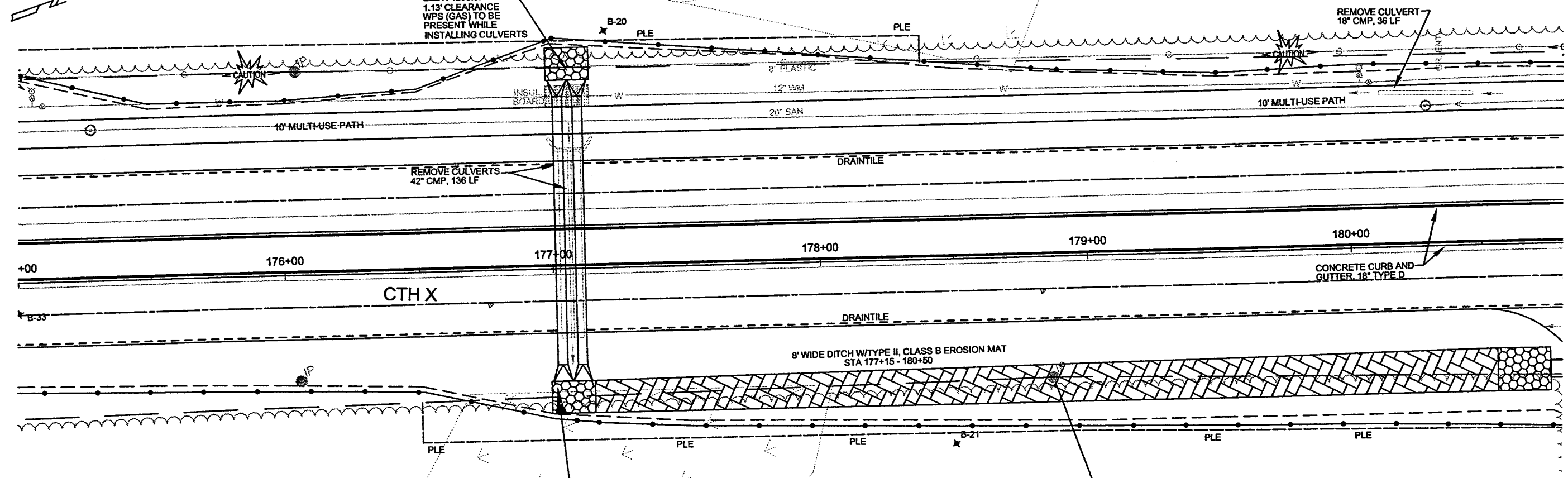
FEB 2006

SHEET:

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CAUTION:
TOP OF GAS PIPE
ELEV. 1203.87
1.13' CLEARANCE
WPS (GAS) TO BE
PRESENT WHILE
INSTALLING CULVERTS



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WESTON, WISCONSIN
54476

PHONE: (715) 359-9400
FAX: (715) 355-4199

general@cweengineers.com
http://www.cweengineers.com

PROJECT:

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RECONSTRUCTION PROJECT
HOWLAND AVE. - TRANSPORT DR.

REVISIONS:

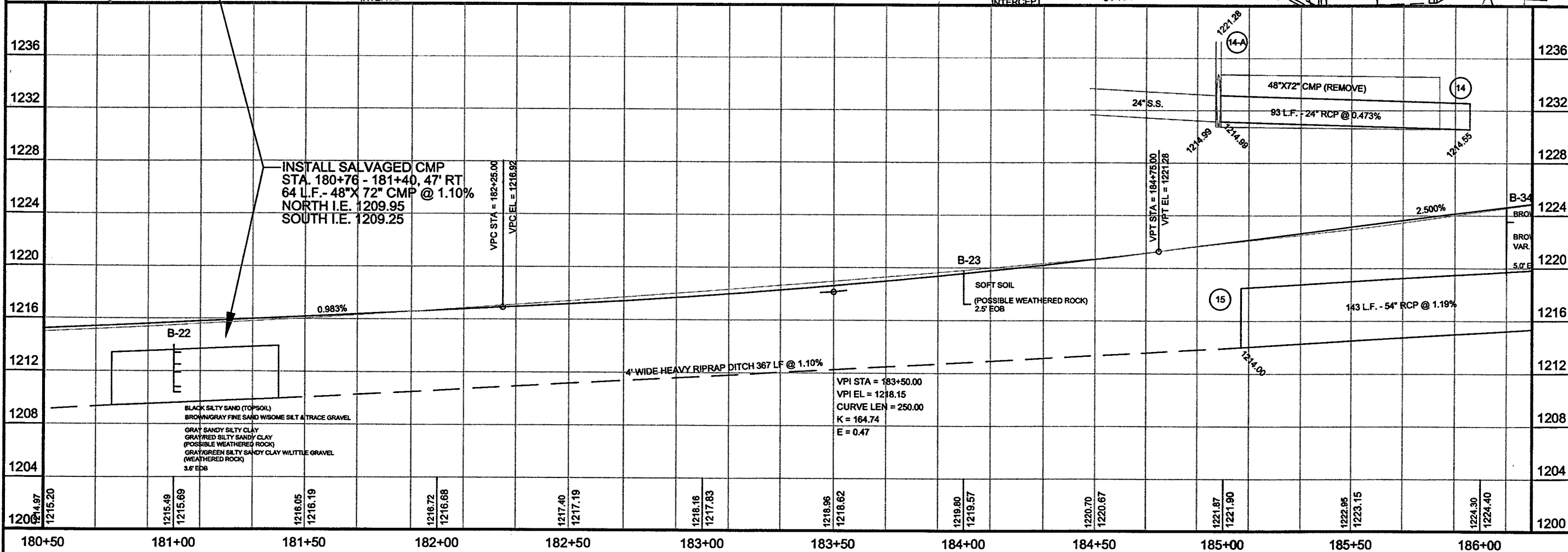
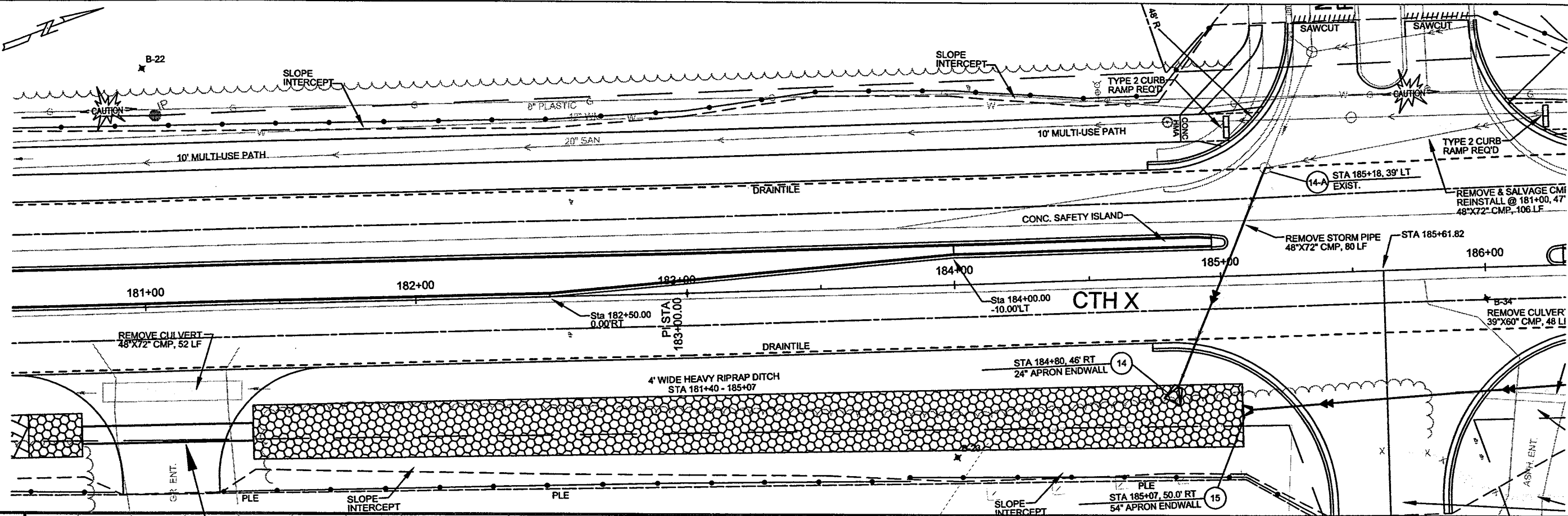
DRAWN BY:
A. LEE

CHECKED BY:
D.G.

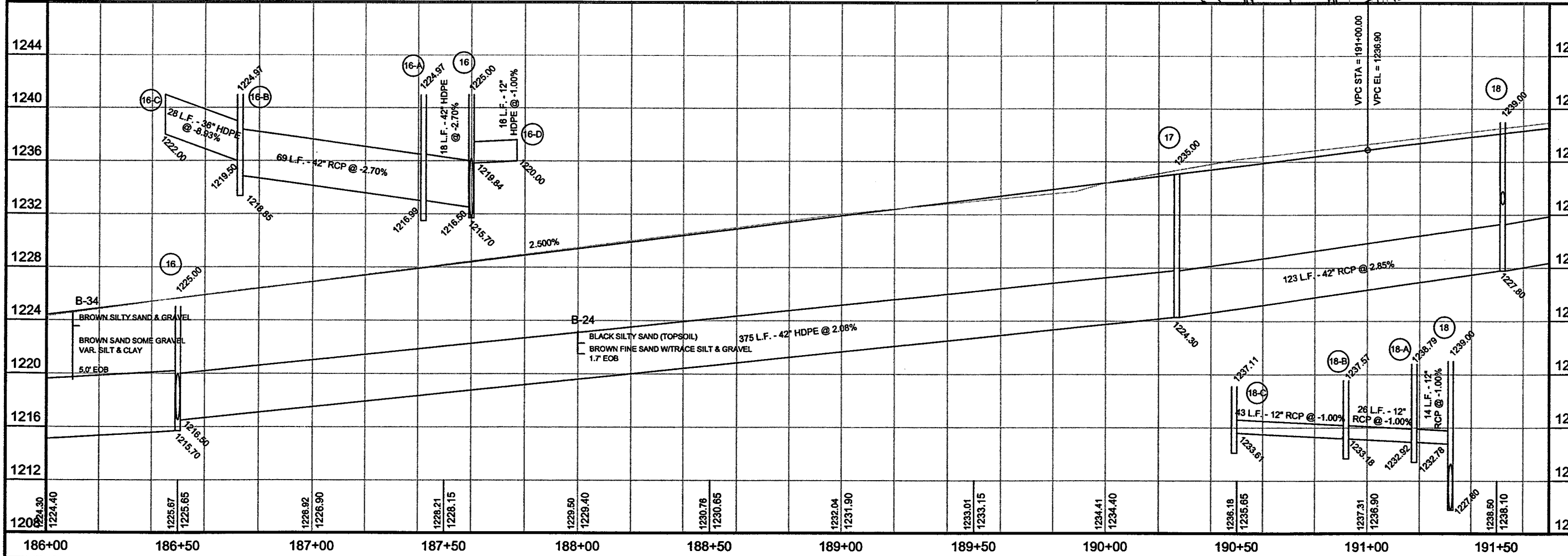
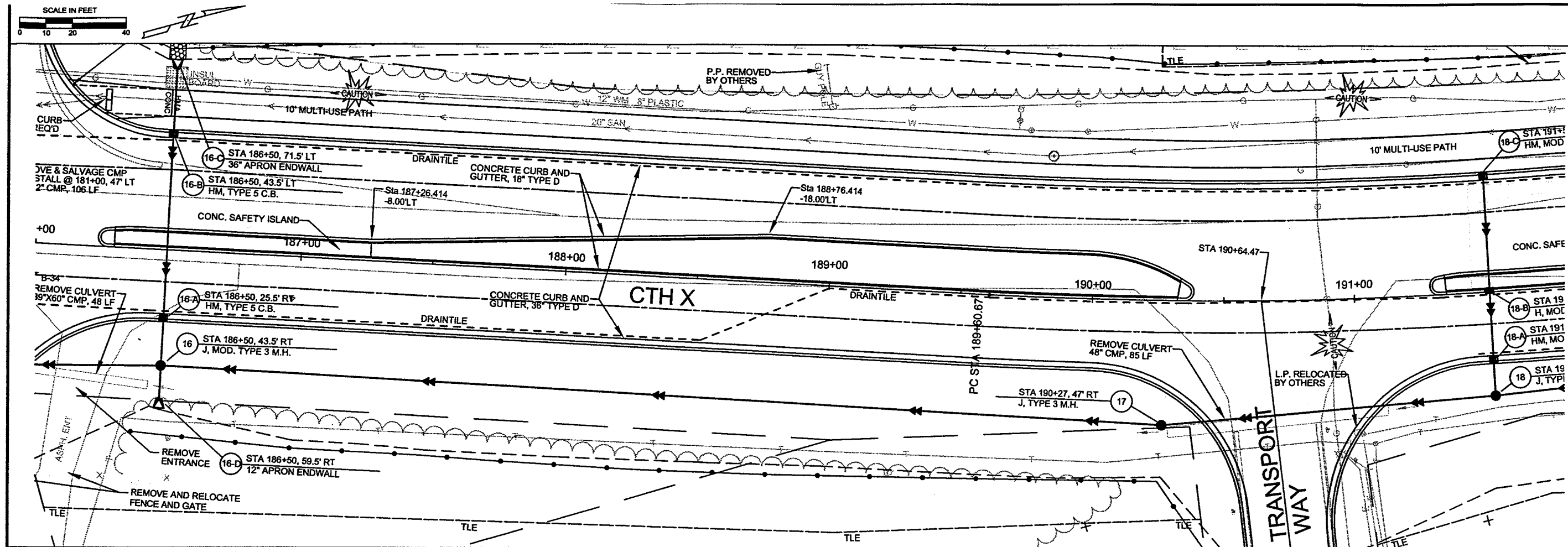
APPROVED BY:
H.Z.

DATE:
FEB 2006

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101 OF 173



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WESTON, WISCONSIN
54476

PHONE: (715) 359-9400
FAX: (715) 355-4199

general@cwengineers.com
http://www.cwengineers.com

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REVISIONS:

DRAWN BY:
A.LEE

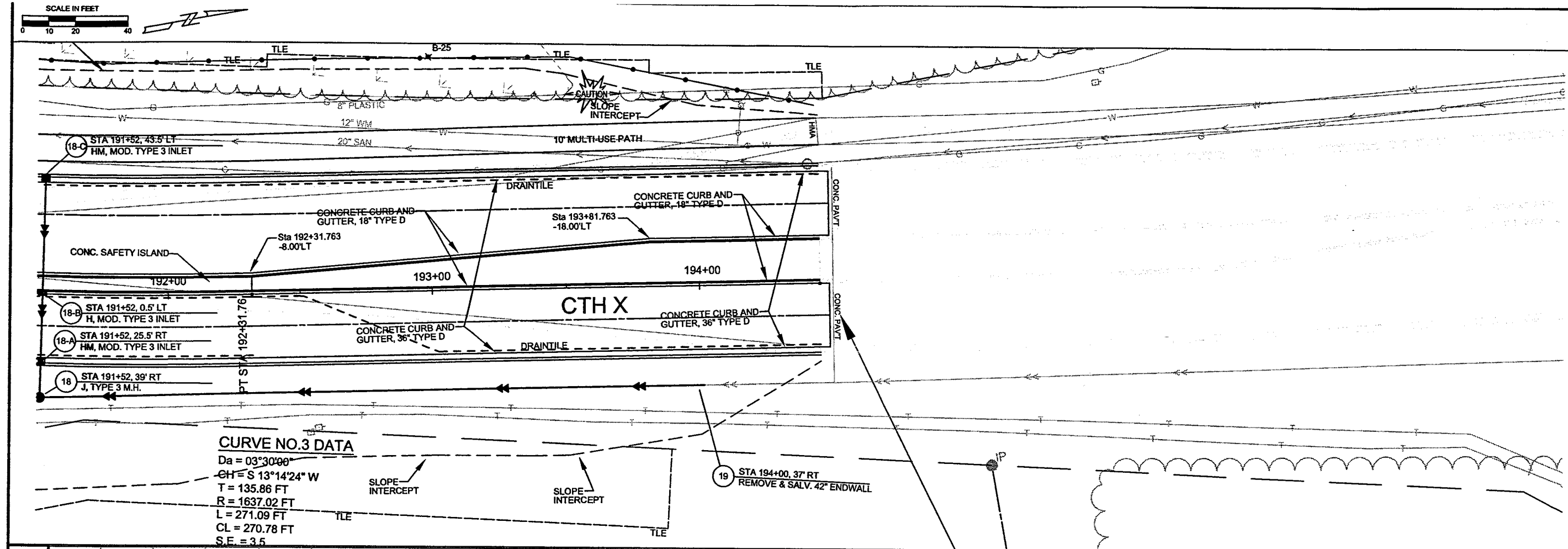
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APPROVED BY:
H.Z.

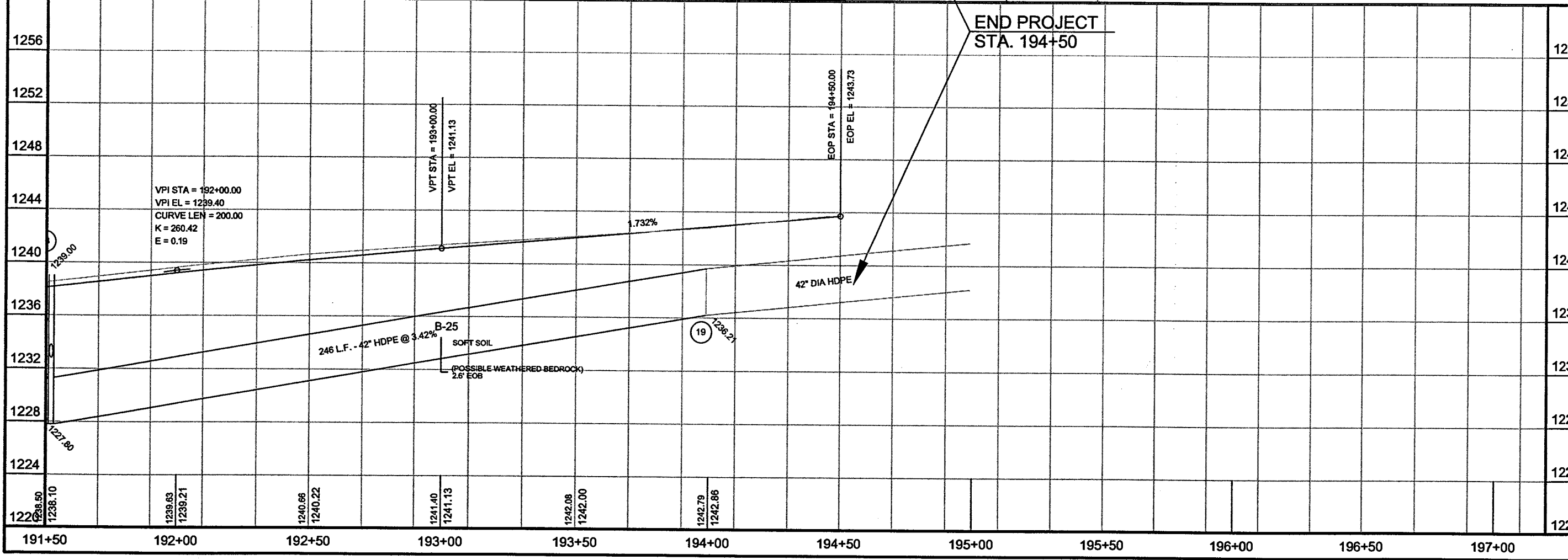
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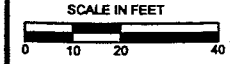
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103 OF 173

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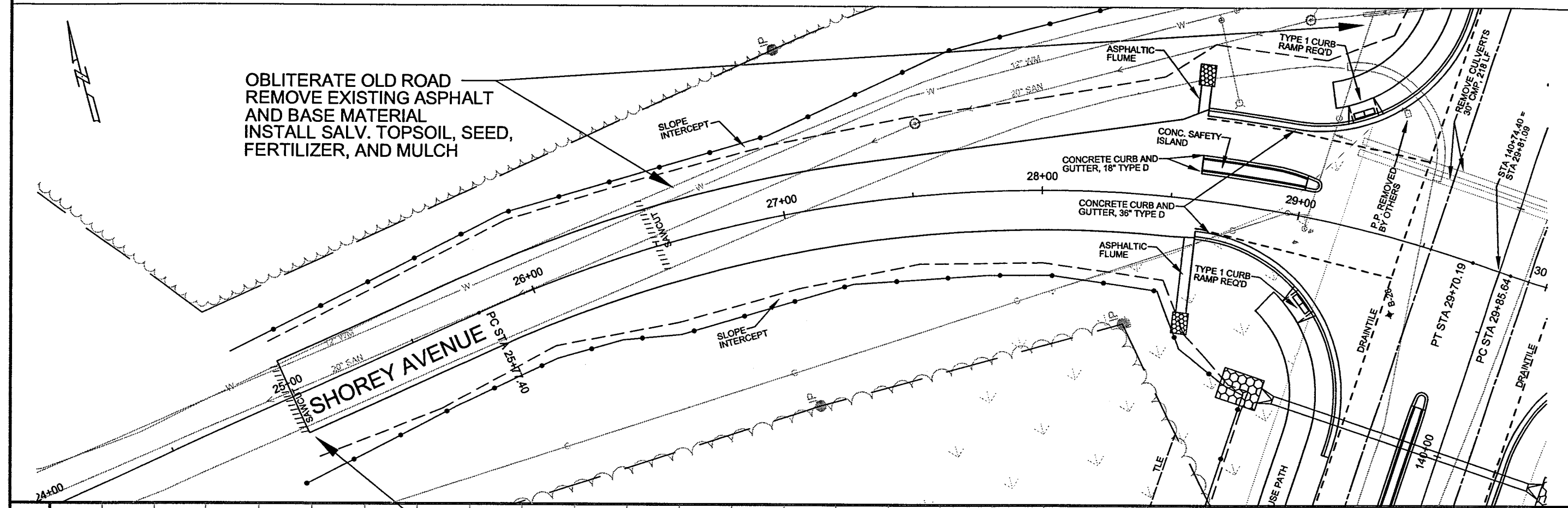


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R = 1637.02 FT
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S.E. = 3.5

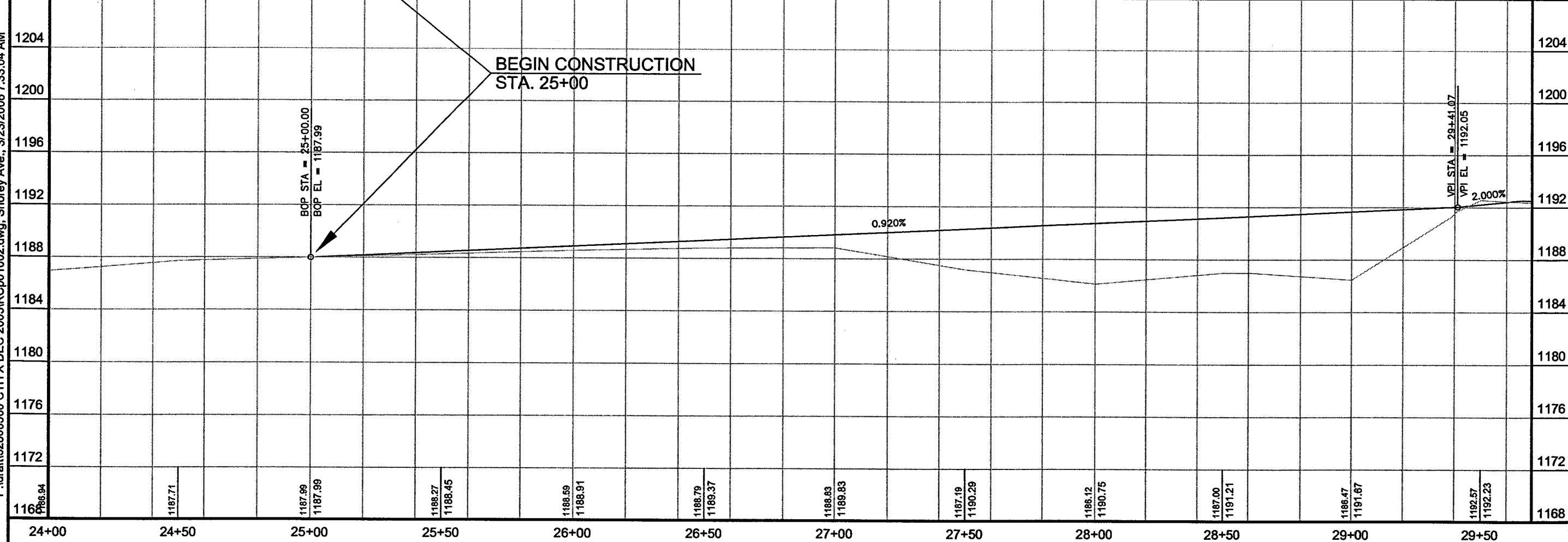




OBLITERATE OLD ROAD
REMOVE EXISTING ASPHALT
AND BASE MATERIAL
INSTALL SALV. TOPSOIL, SEED,
FERTILIZER, AND MULCH

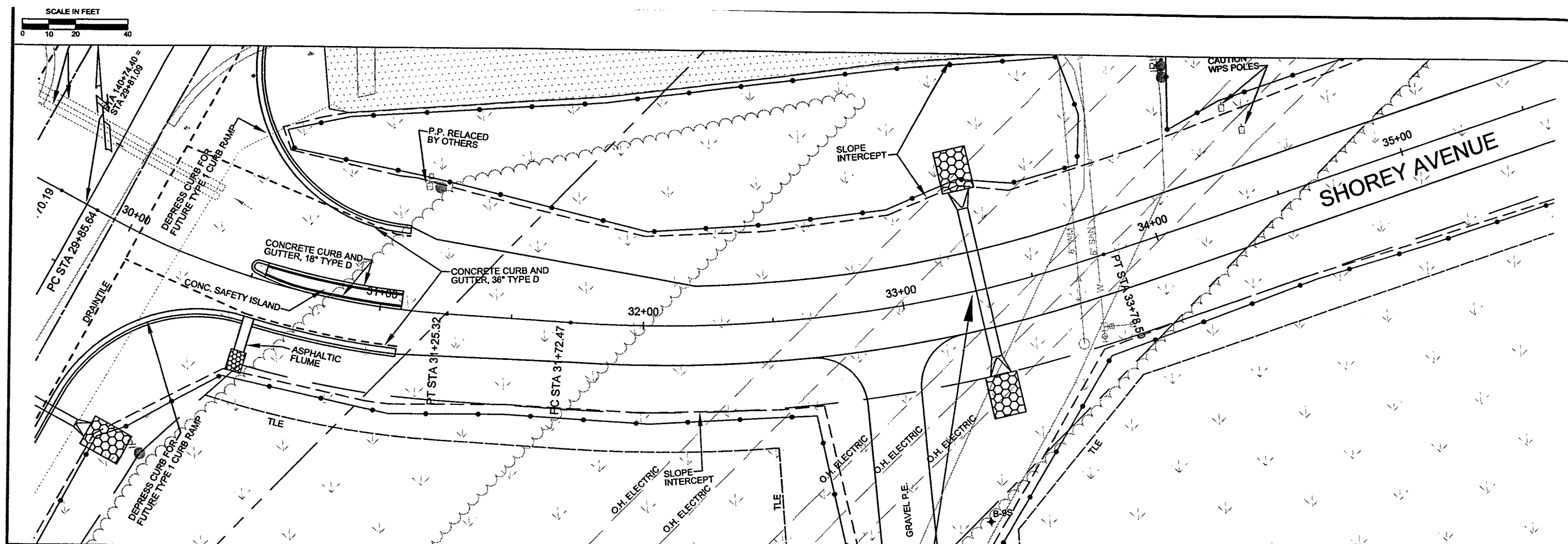
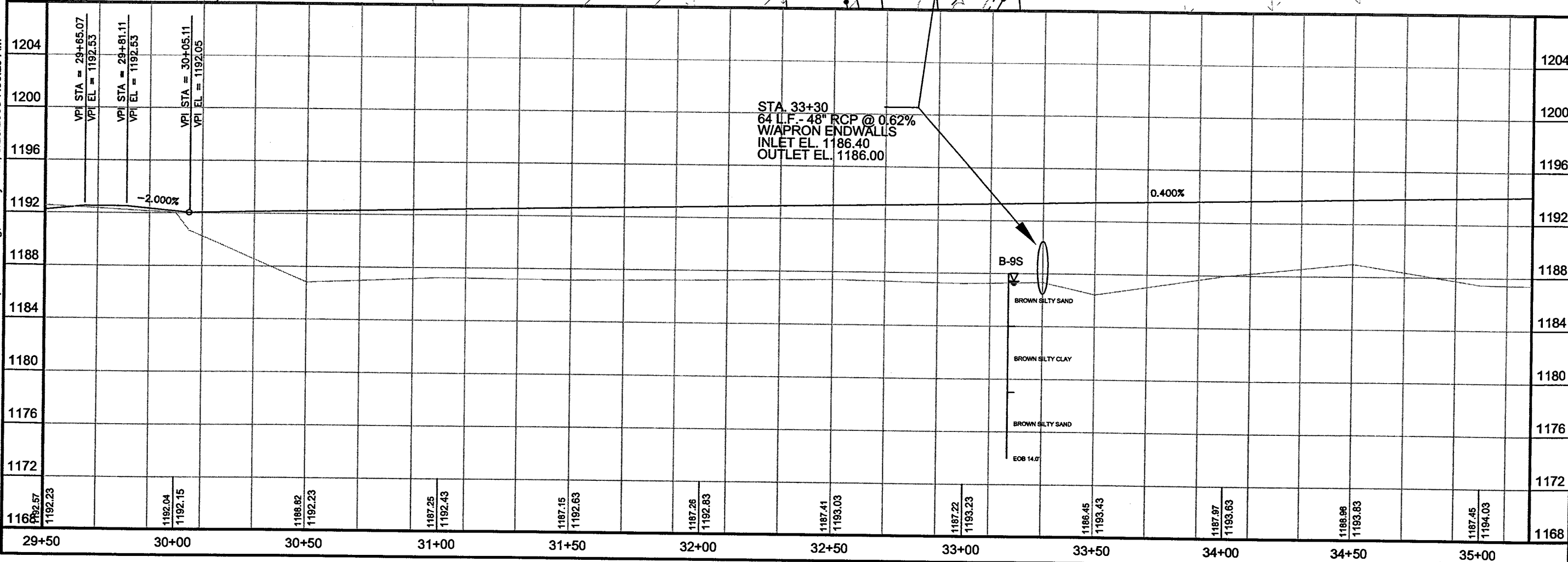


BEGIN CONSTRUCTION
STA. 25+00



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ENGINEERS &
ARCHITECTS

5707 SCHOFIELD AVENUE
WESTON, WISCONSIN
54476

PHONE: (715) 359-9400
FAX: (715) 355-4199

general@cwengineers.com
http://www.cwengineers.com

PROJECT:

SHOREY AVENUE
2006 MARATHON COUNTY AND
VILLAGE OF WESTON
C.T.H. X / CAMP PHILLIPS ROAD
RECONSTRUCTION PROJECT
HOWLAND AVE. - TRANSPORT DR.

REVISIONS:

DRAWN BY:
A.LEE

CHECKED BY:
D.G.

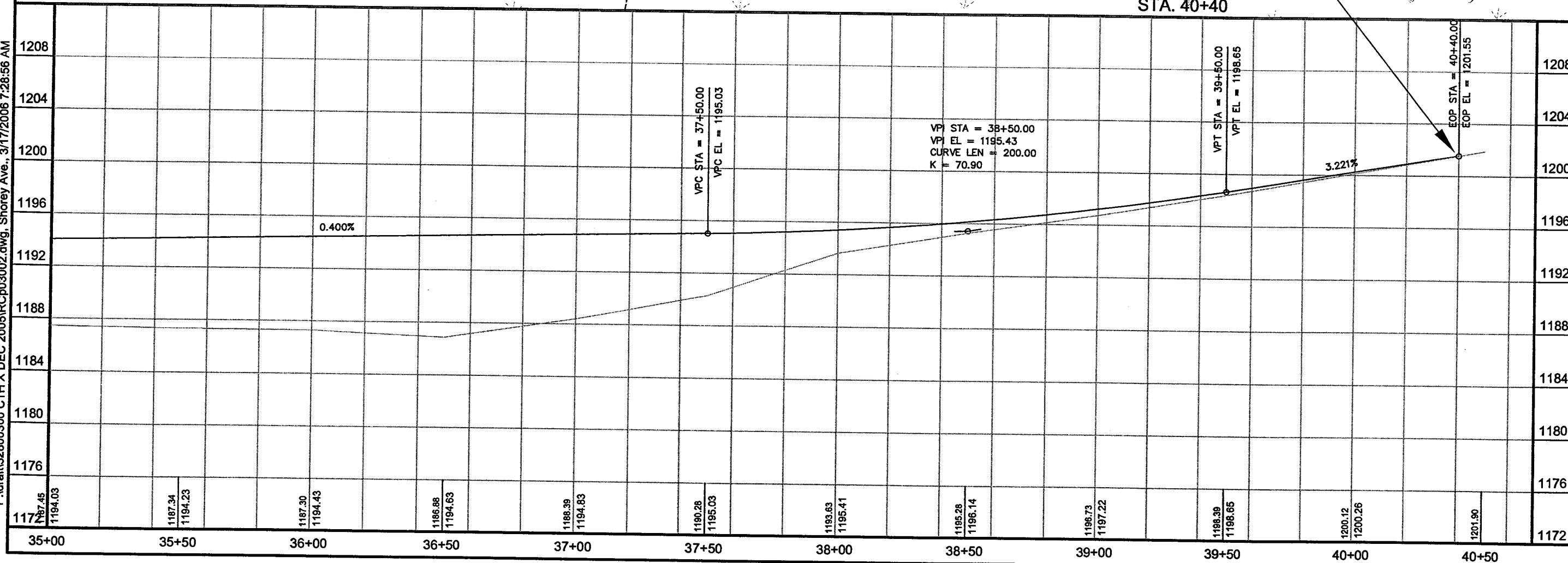
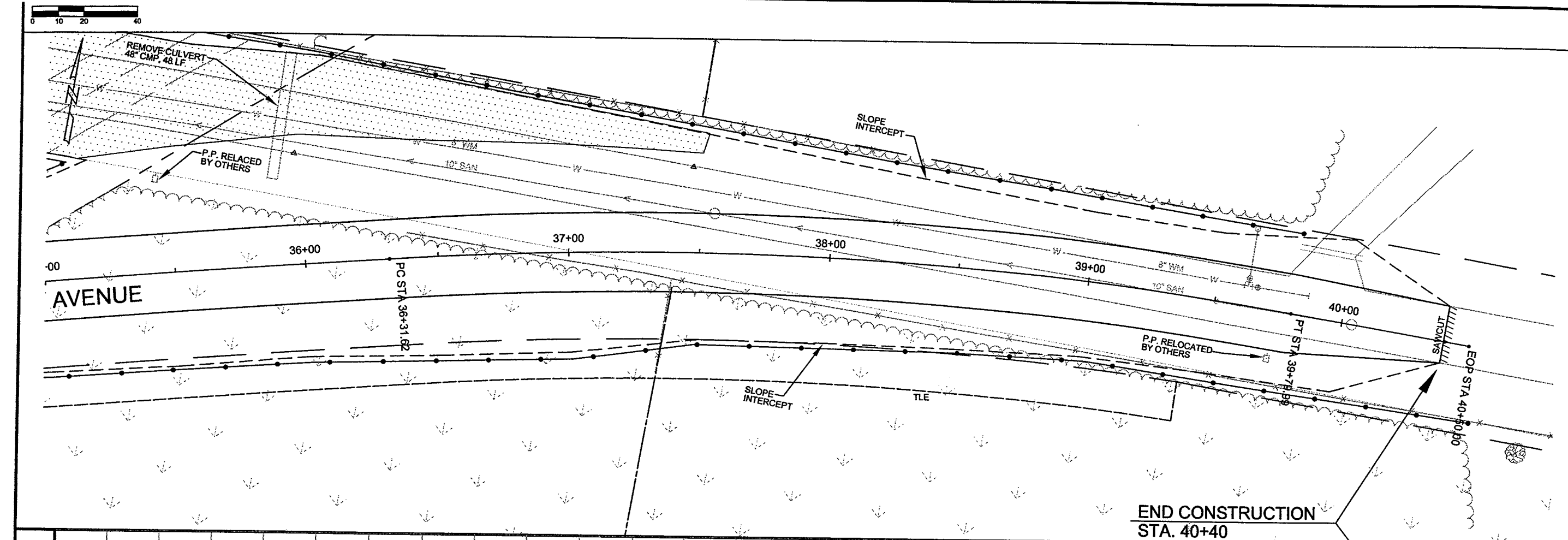
APPROVED BY:
H.Z.

DATE:
FEB 2006

SHEET:

108 OF 173

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5707 SCHOFIELD AVENUE
WESTON, WISCONSIN
54776

PHONE: (715) 359-9400
FAX: (715) 355-4199

general@cweengineers.com
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PROJECT:

SHOREY AVENUE
2006 MARATHON COUNTY AND
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REVISIONS:

DRAWN BY:
A.LEE

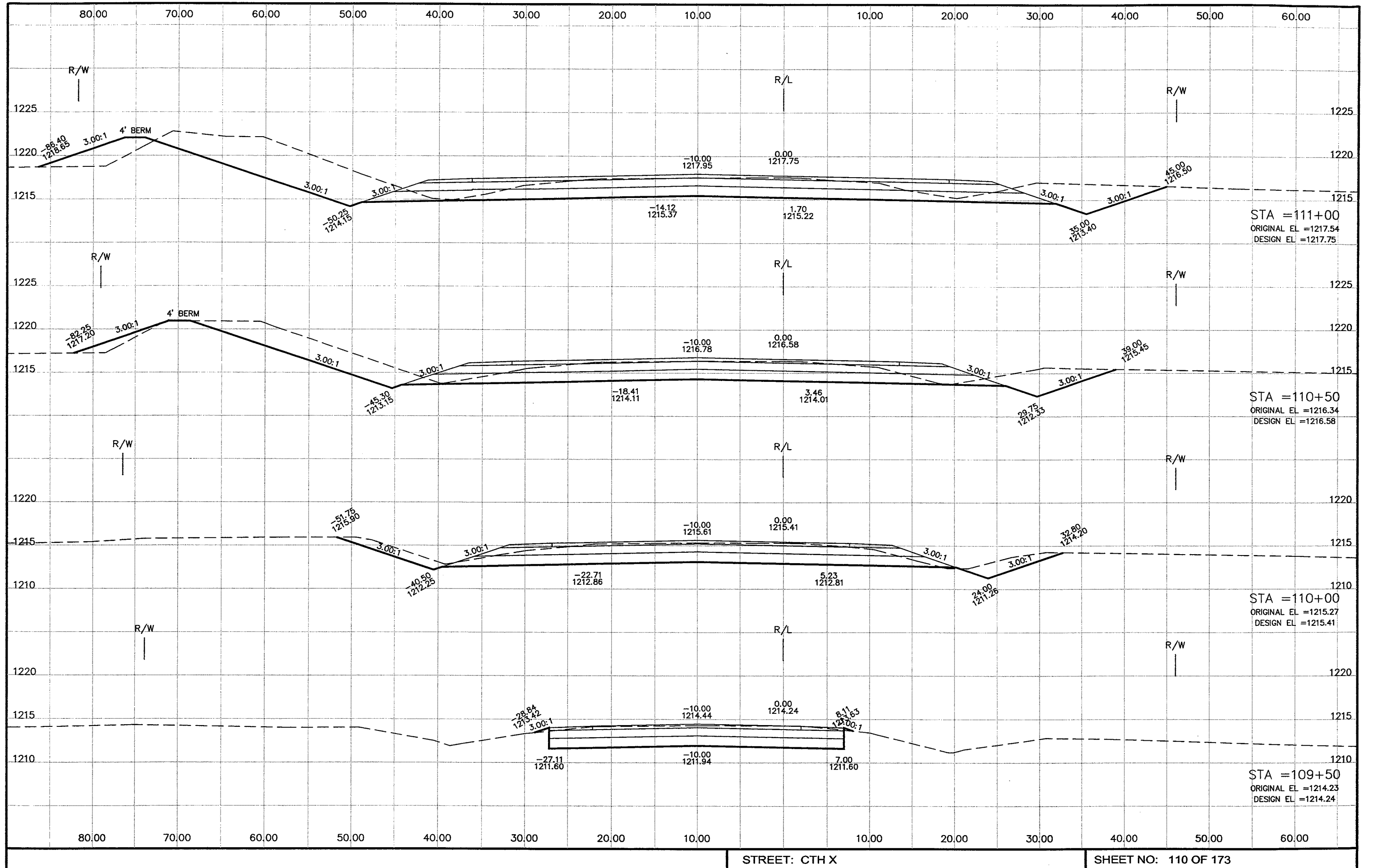
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H.Z.

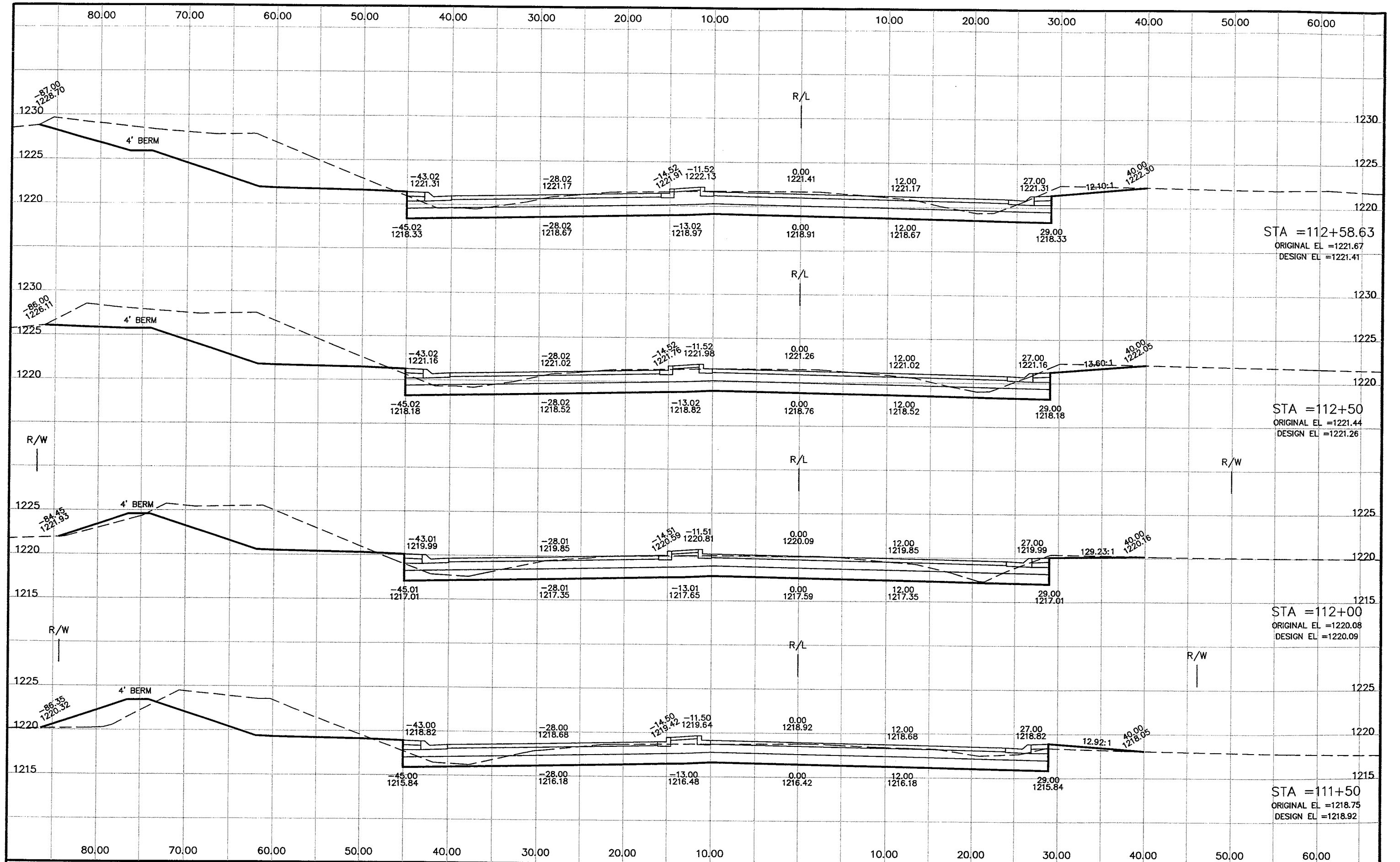
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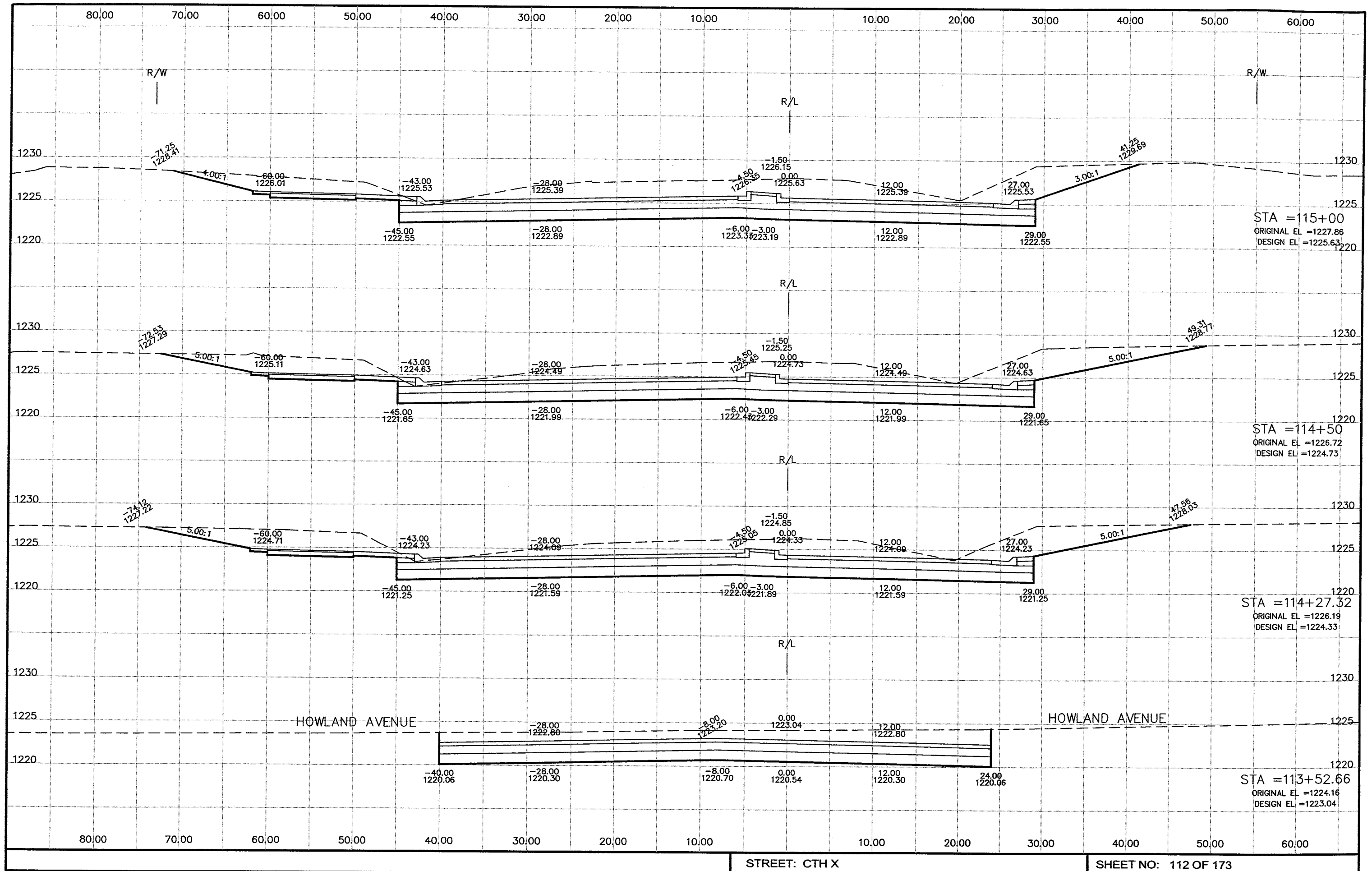
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STREET: CTH X

SHEET NO: 111 OF 173

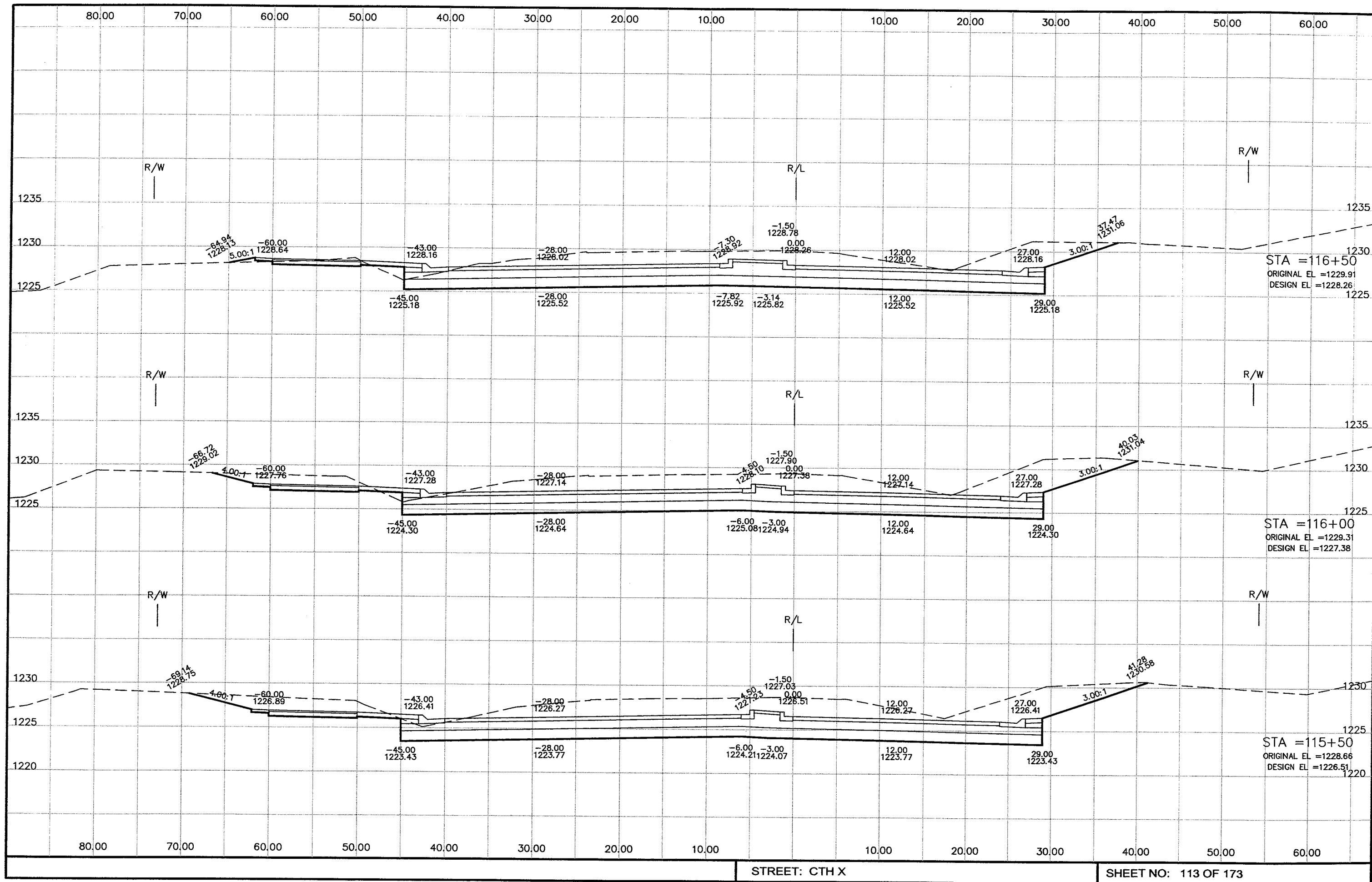
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SHEET NO: 112 OF 173

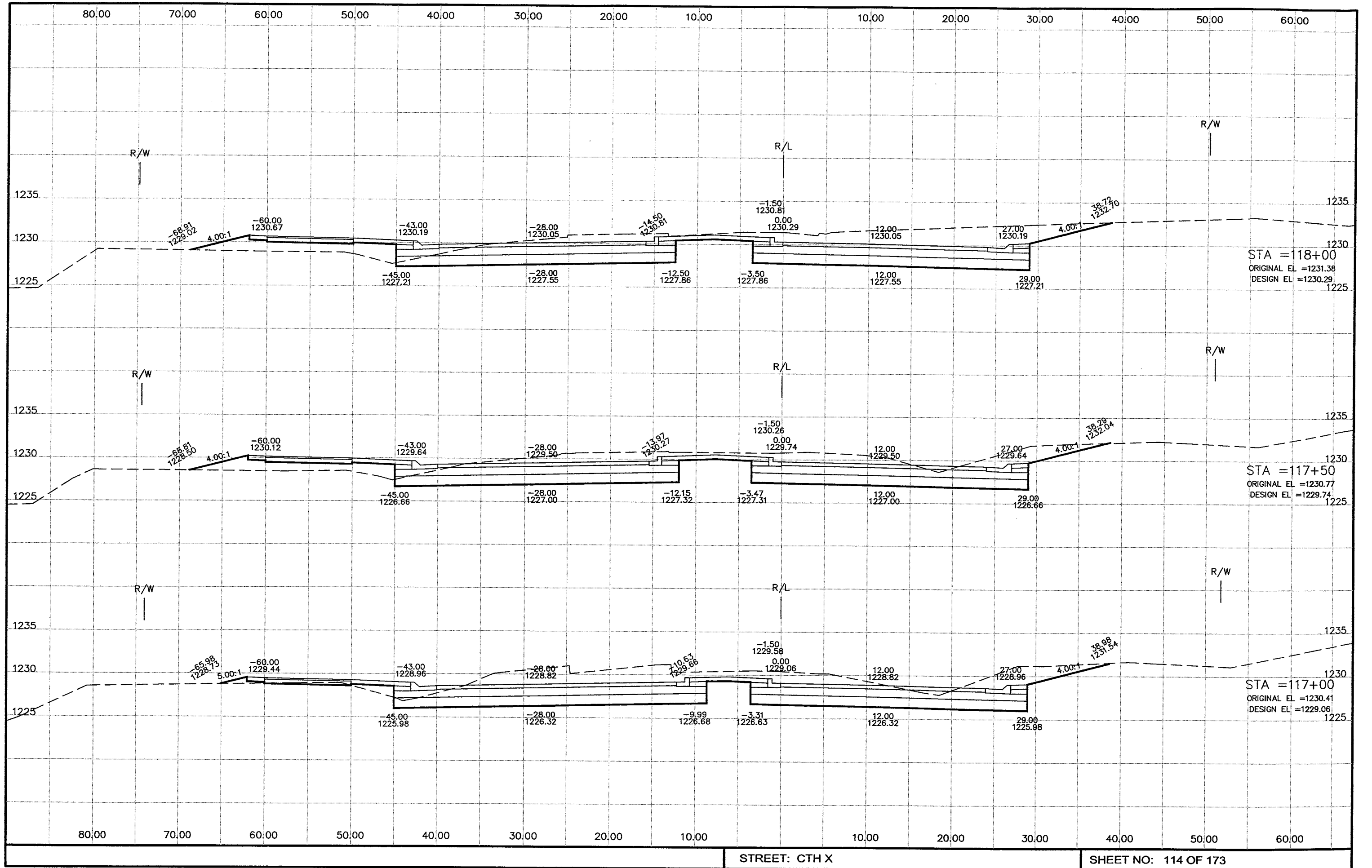
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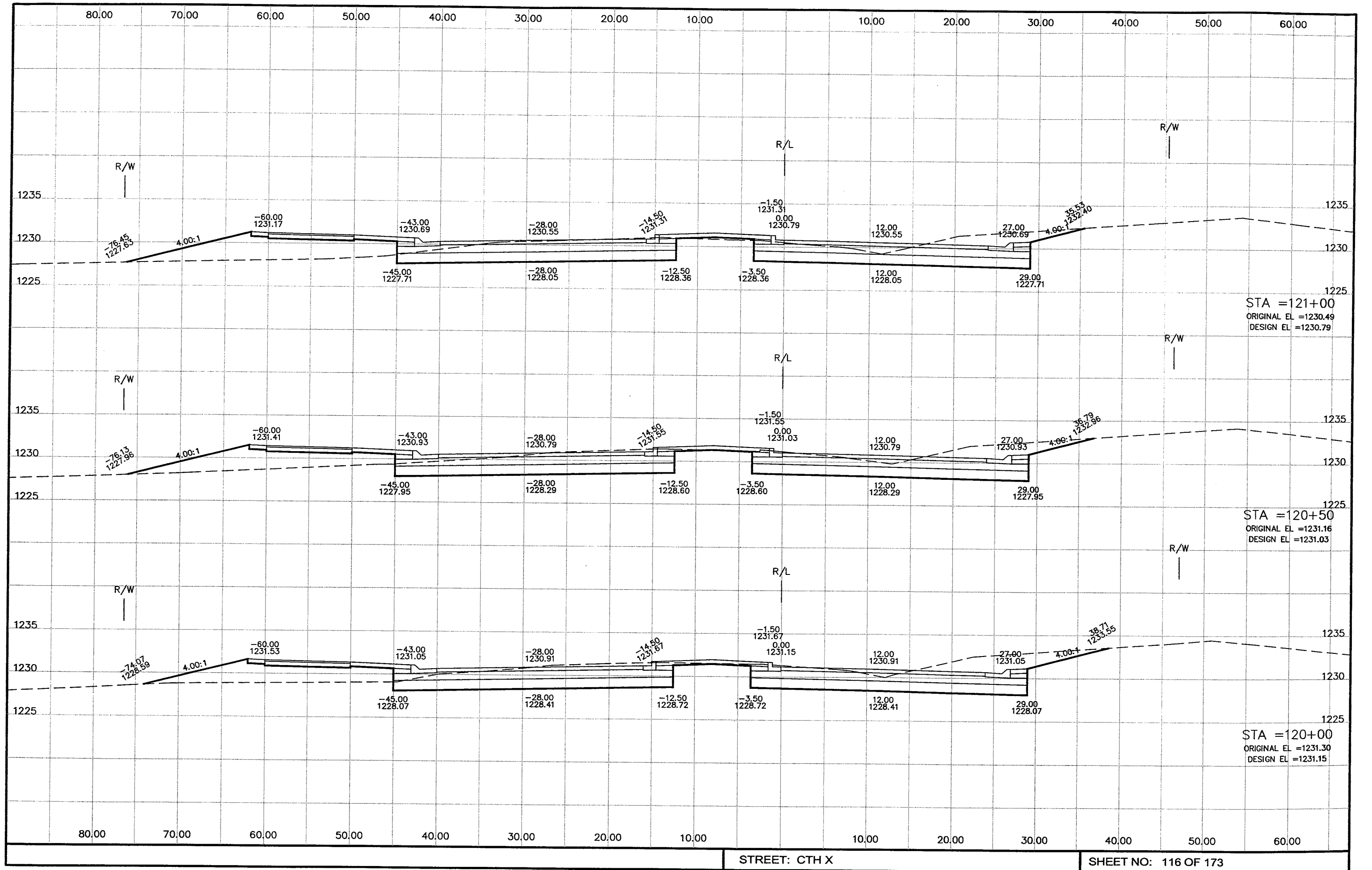
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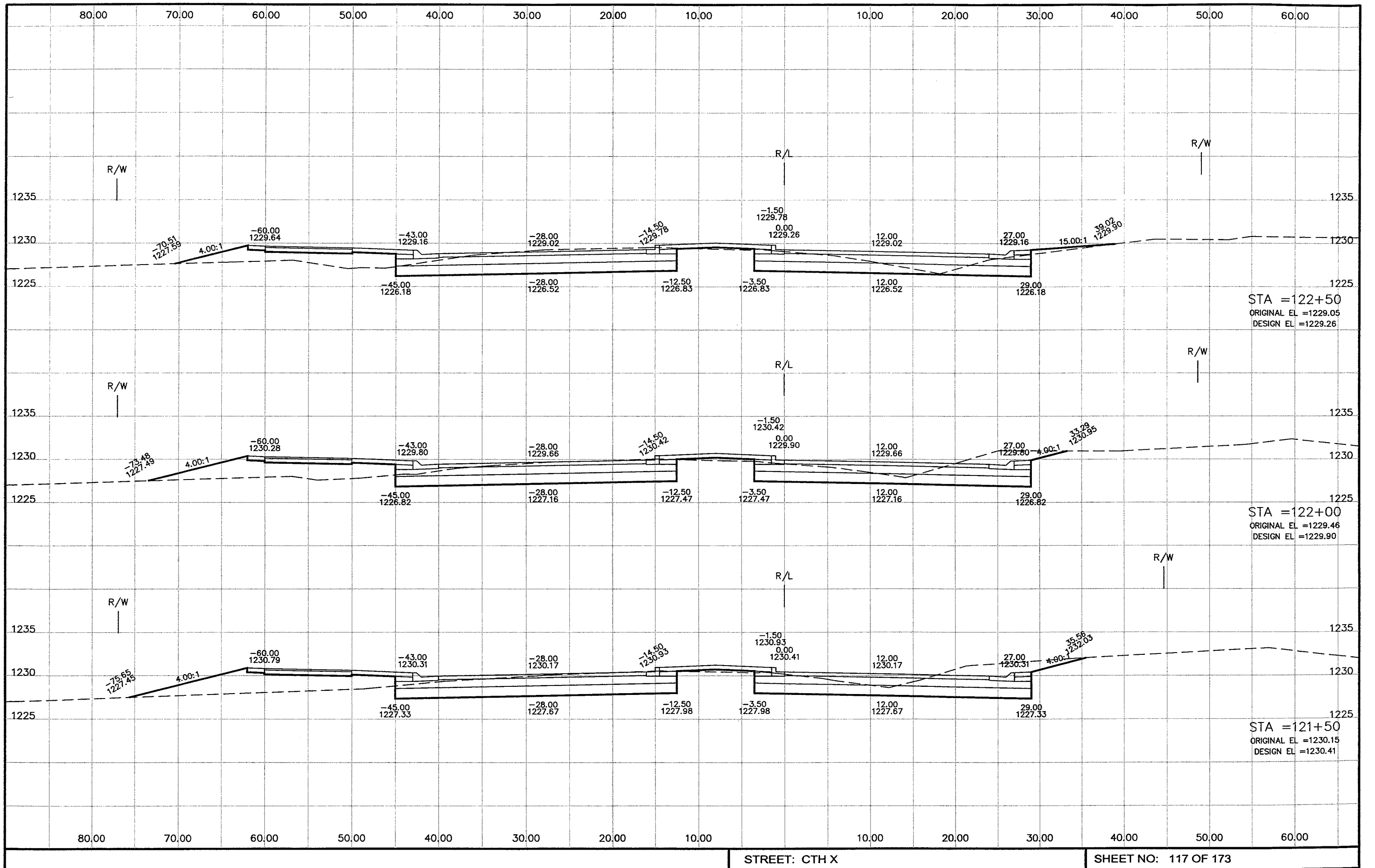
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SHEET NO: 114 OF 173

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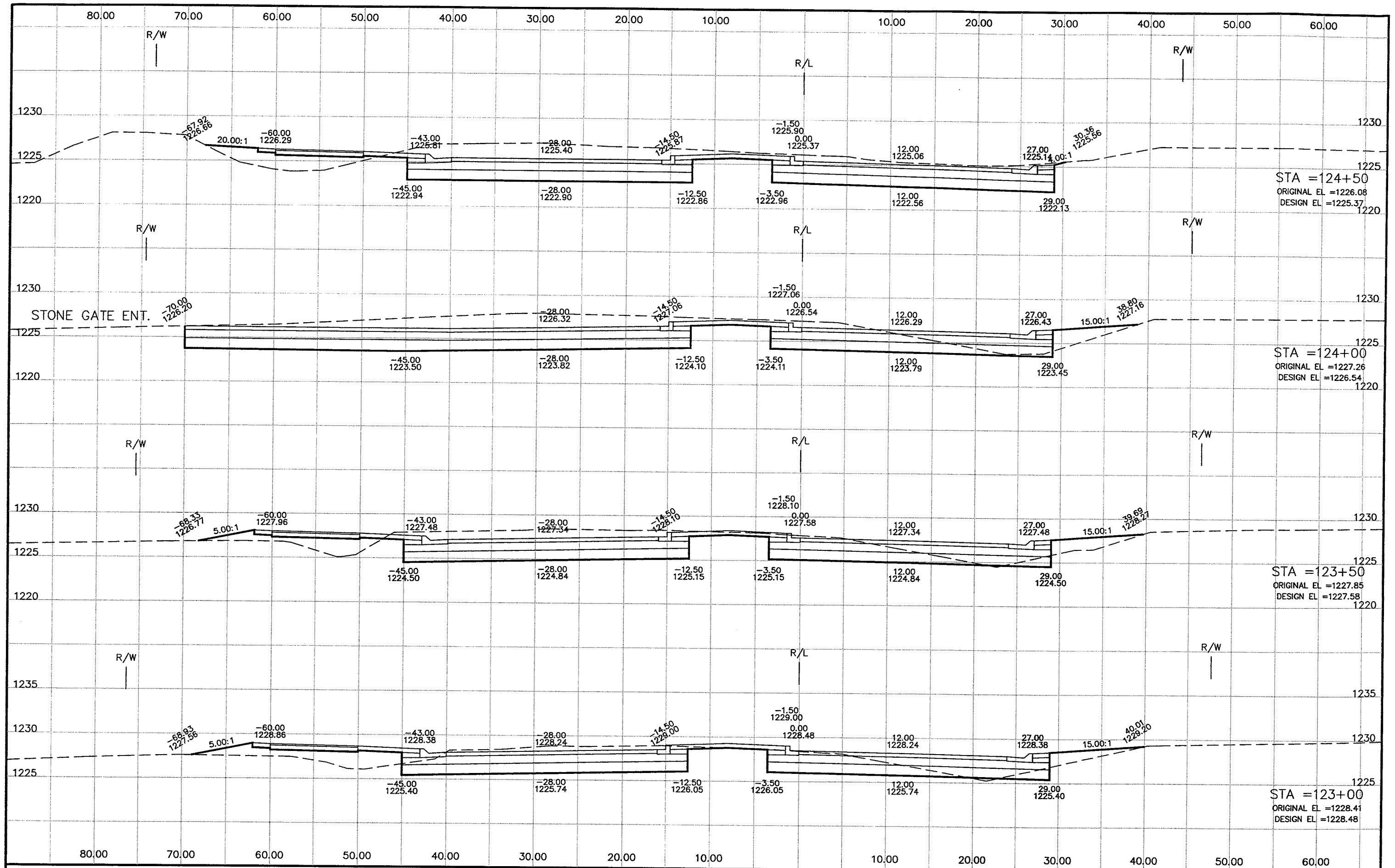
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STREET: CTH X

SHEET NO: 117 OF 173

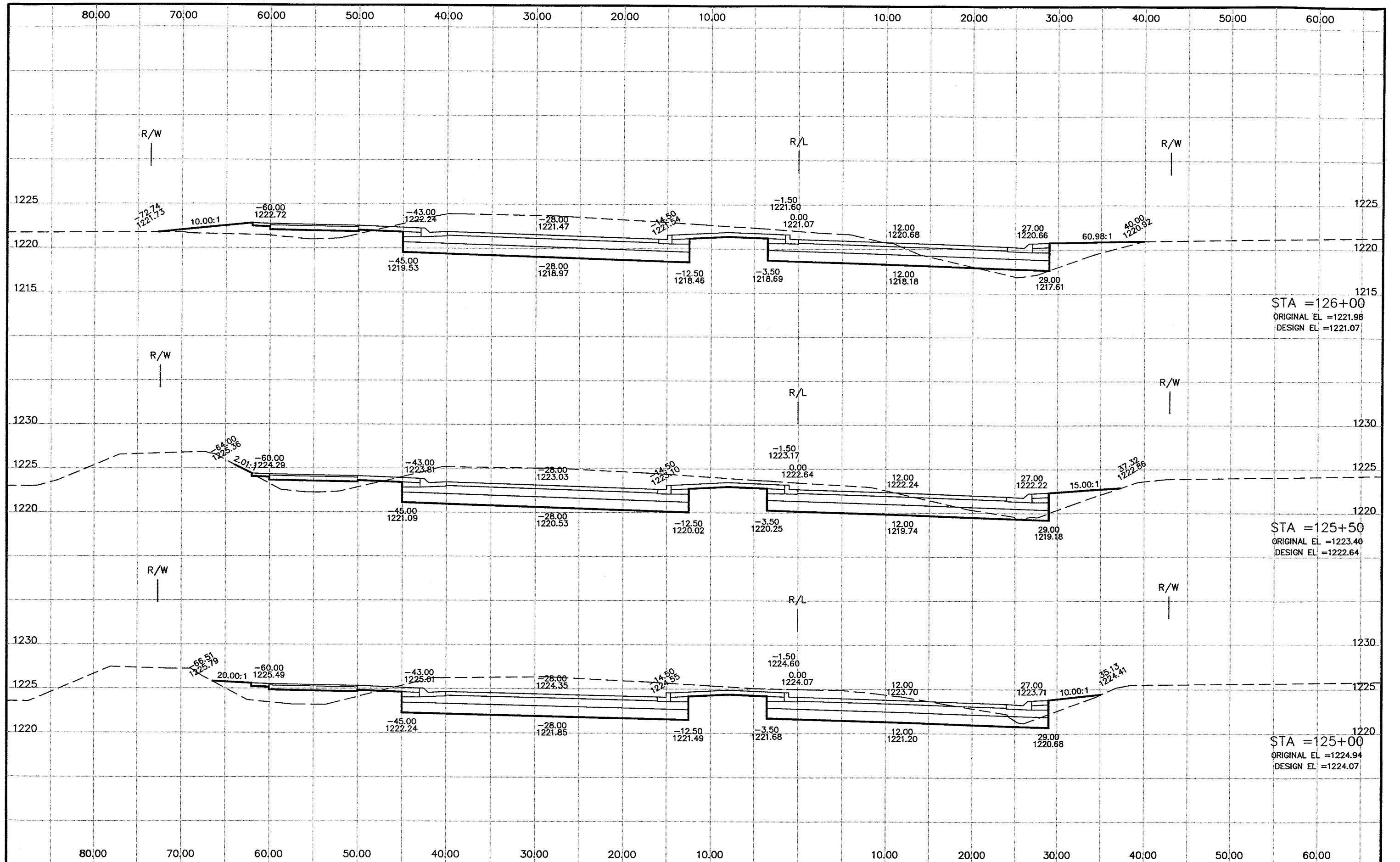
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STREET: CTH X

SHEET NO: 118 OF 173

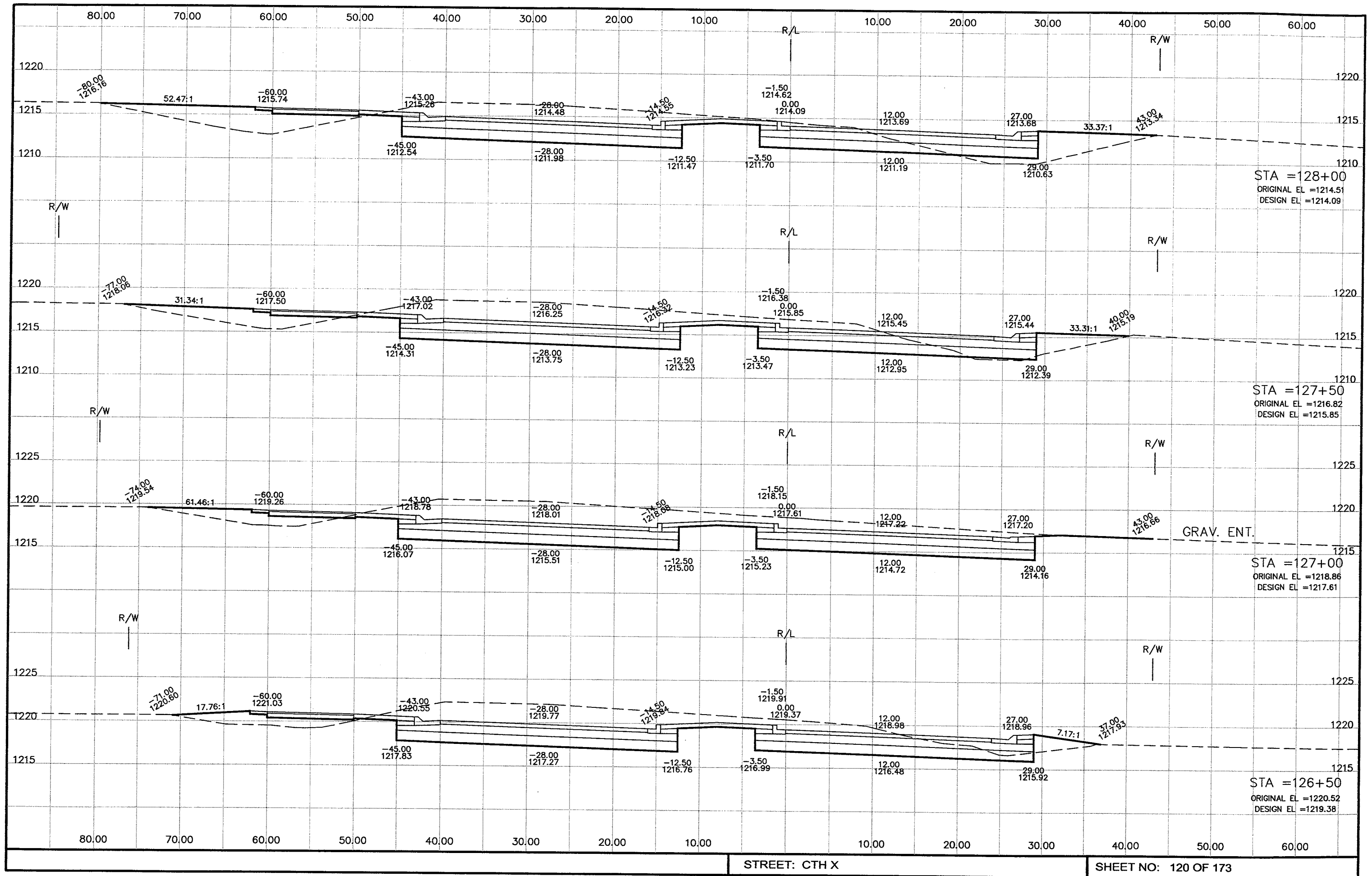
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STREET: CTH X

SHEET NO: 119 OF 173

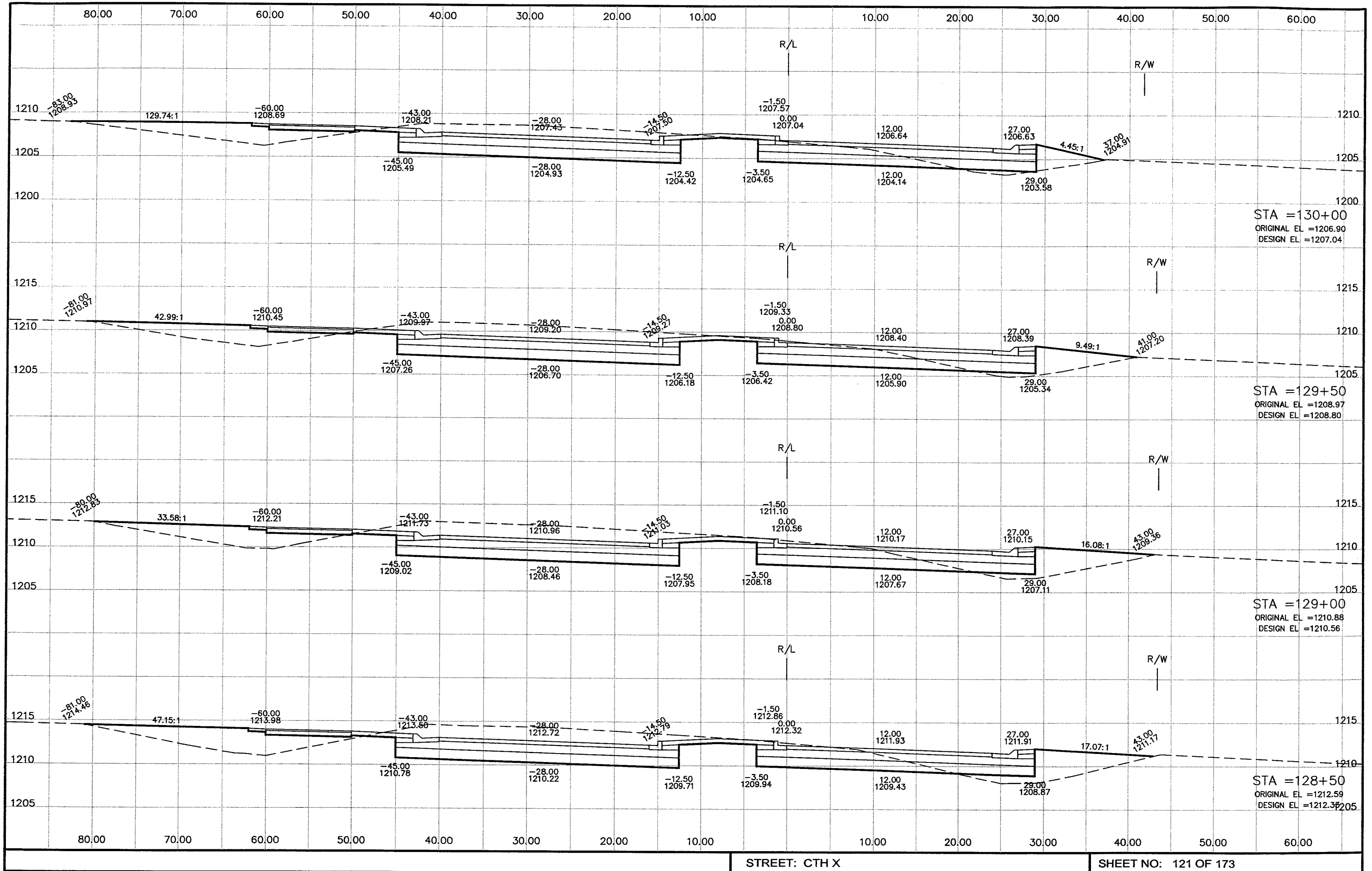
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SHEET NO: 120 OF 173

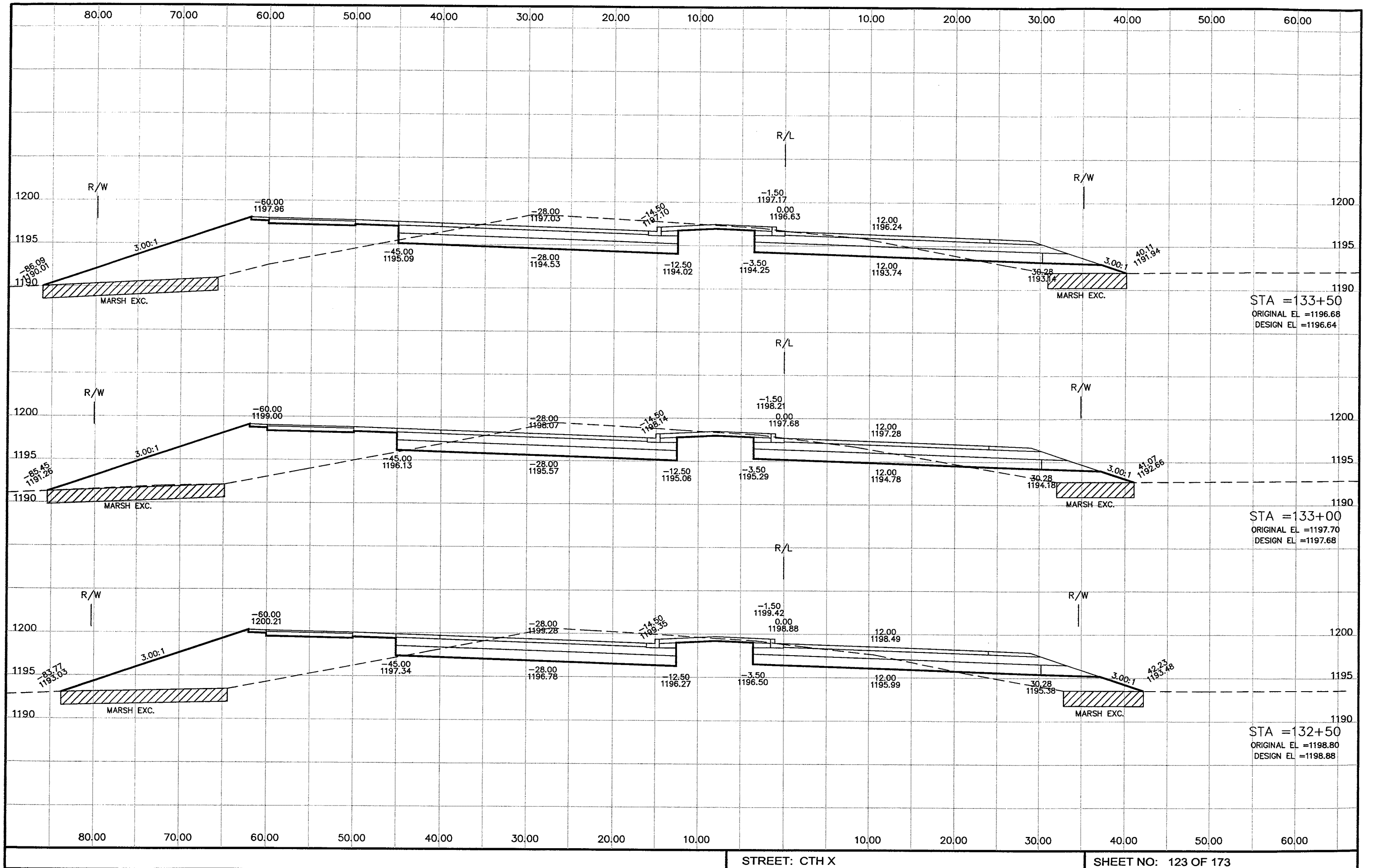
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STREET: CTH X

SHEET NO: 121 OF 173

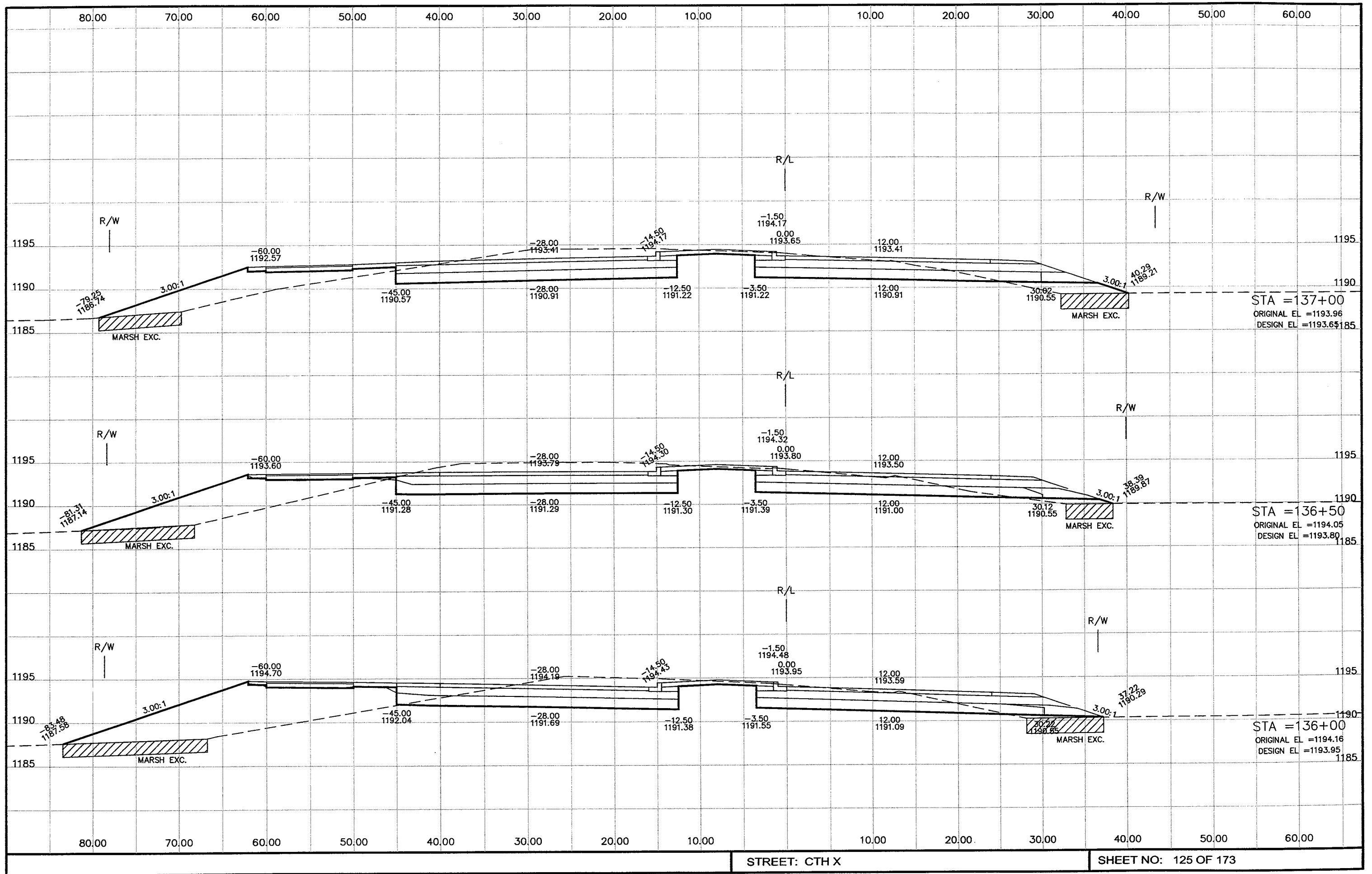
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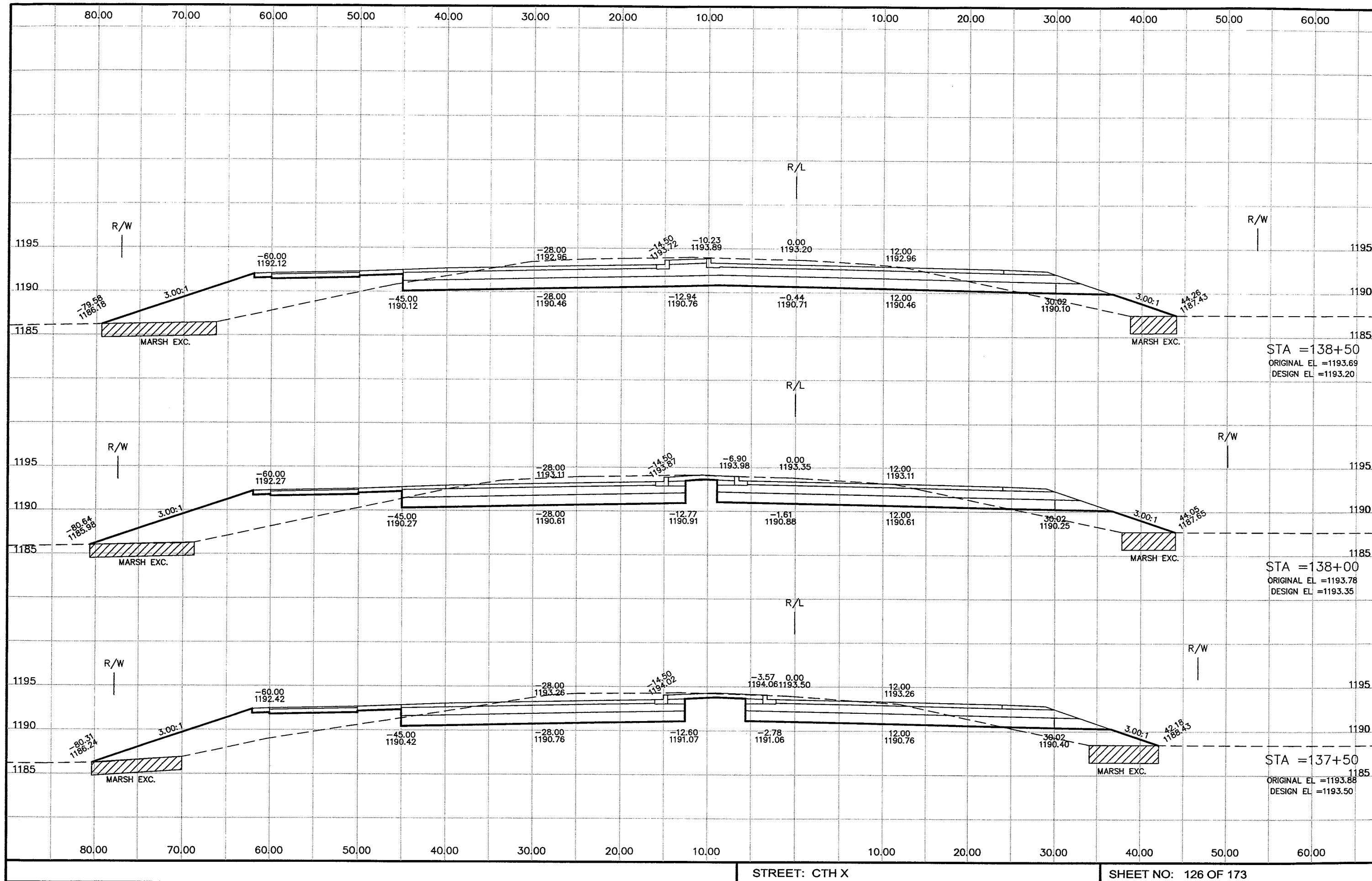
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SHEET NO: 123 OF 173

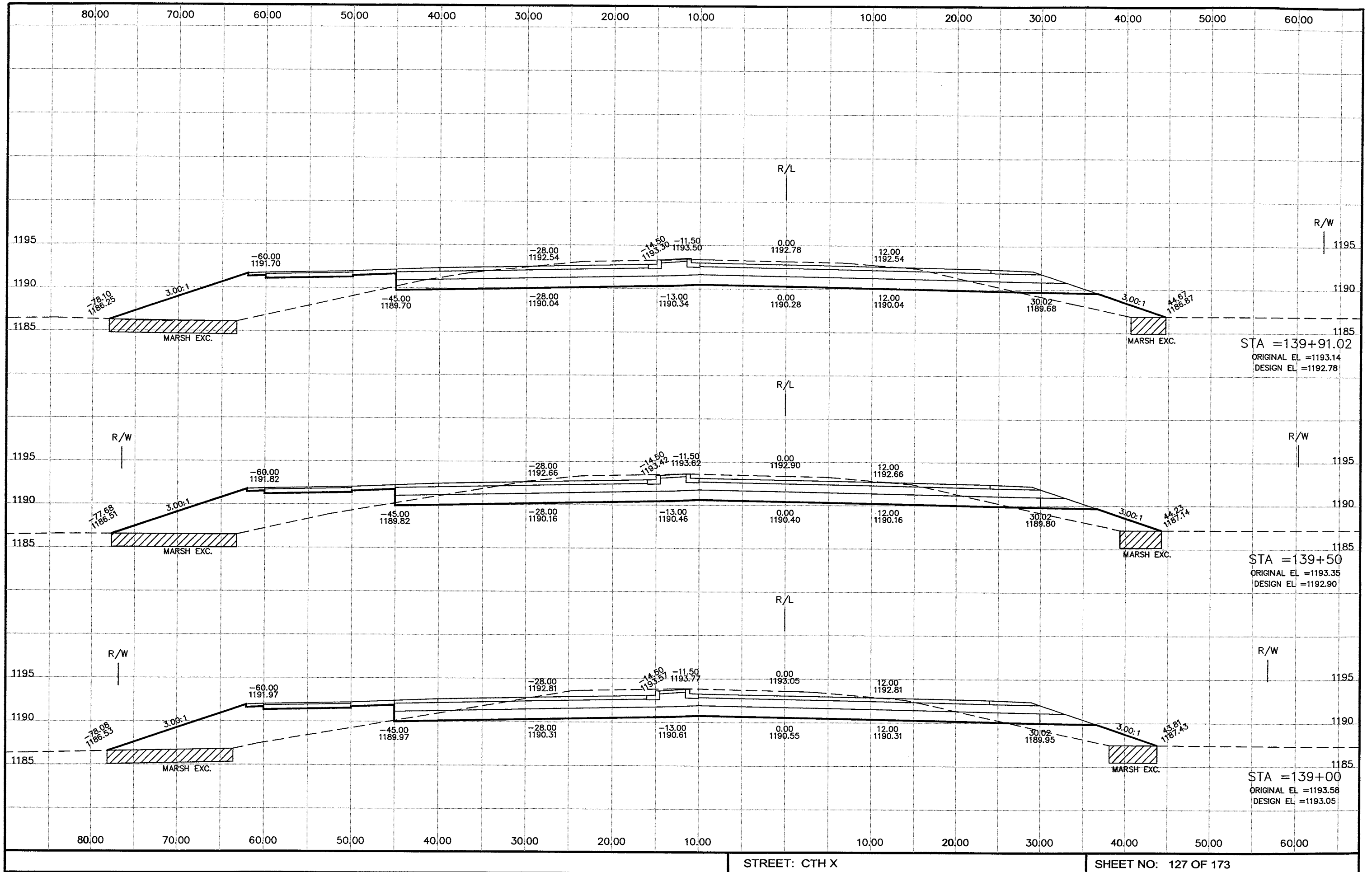
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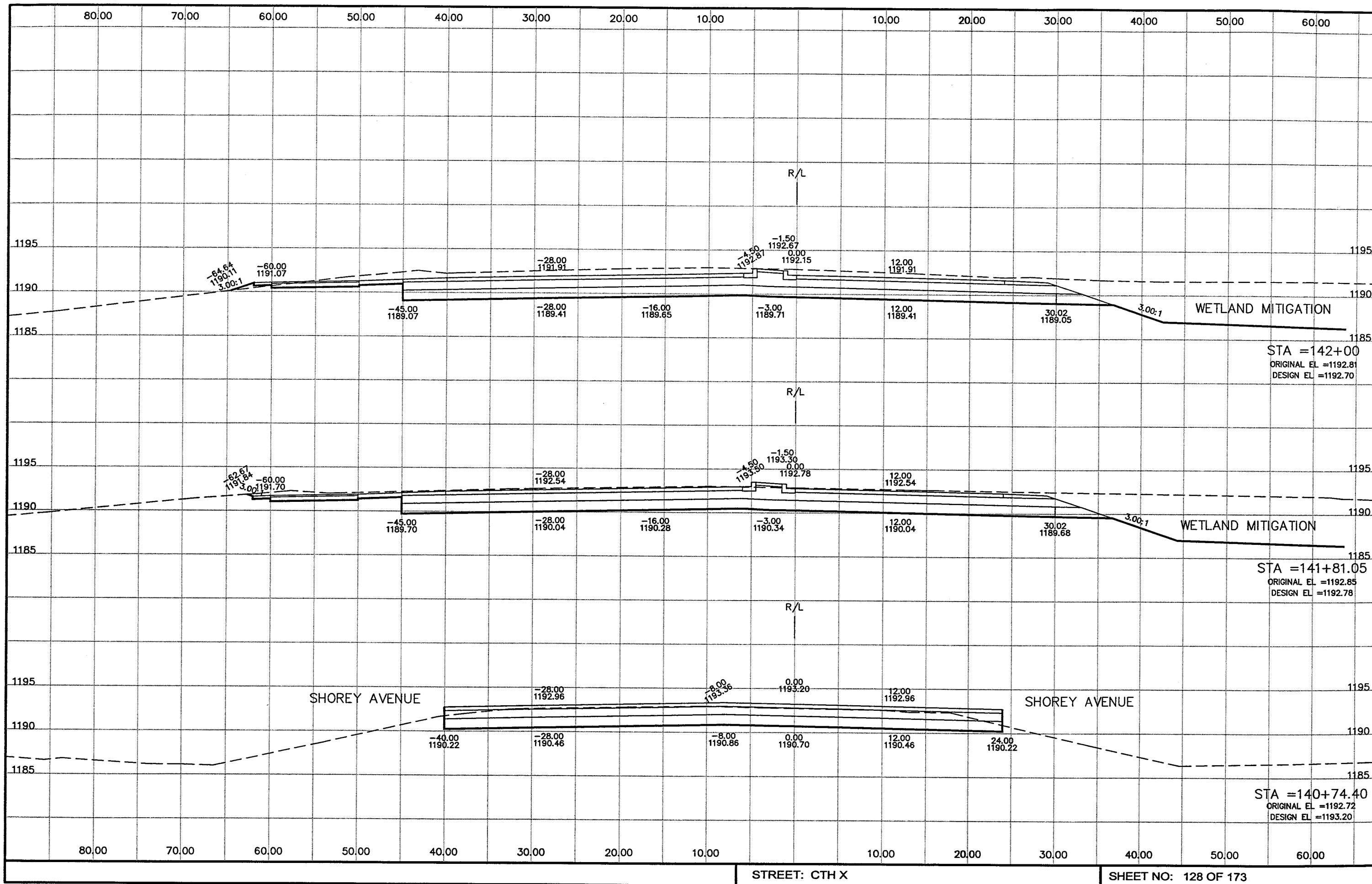
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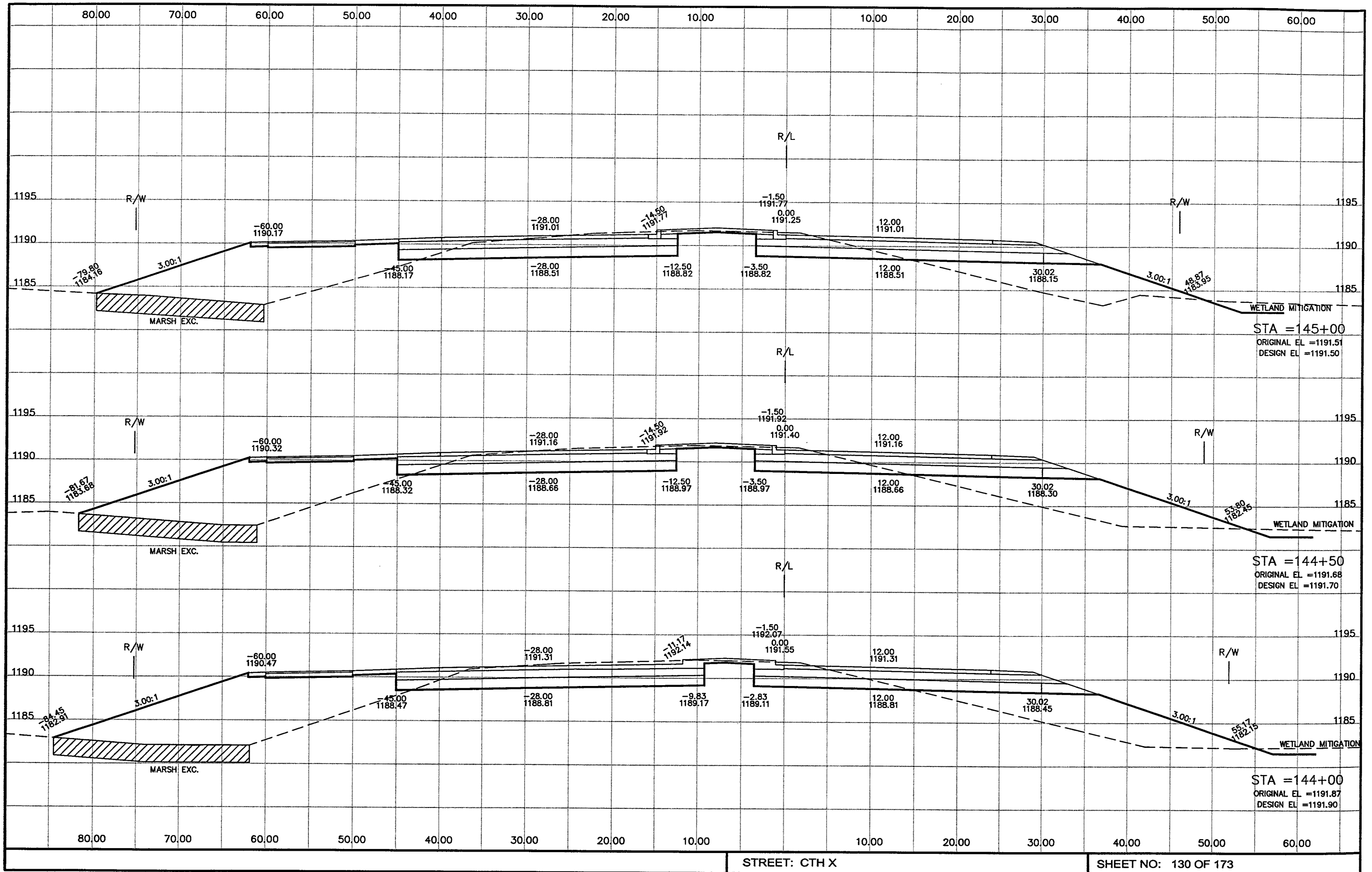
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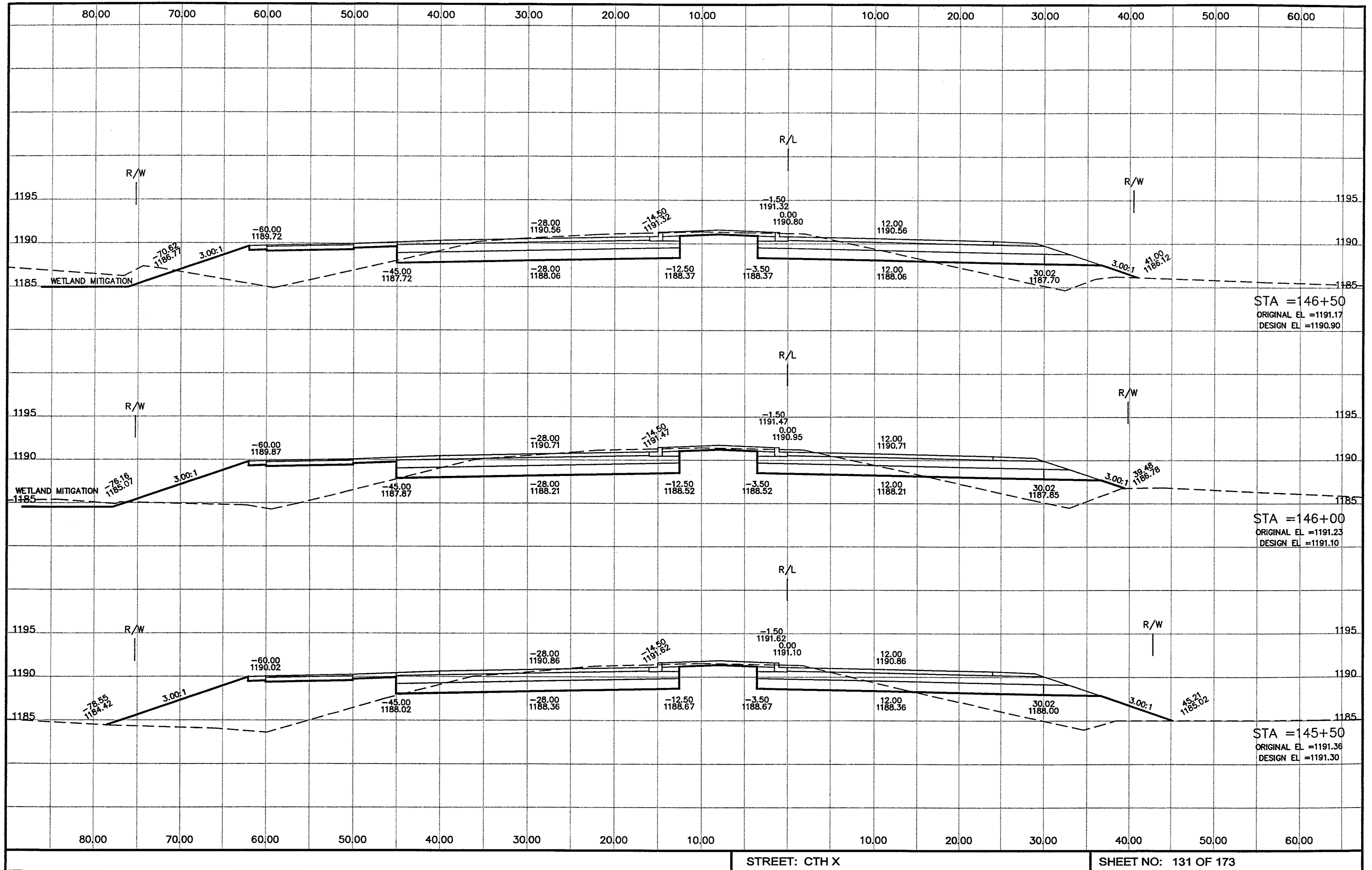
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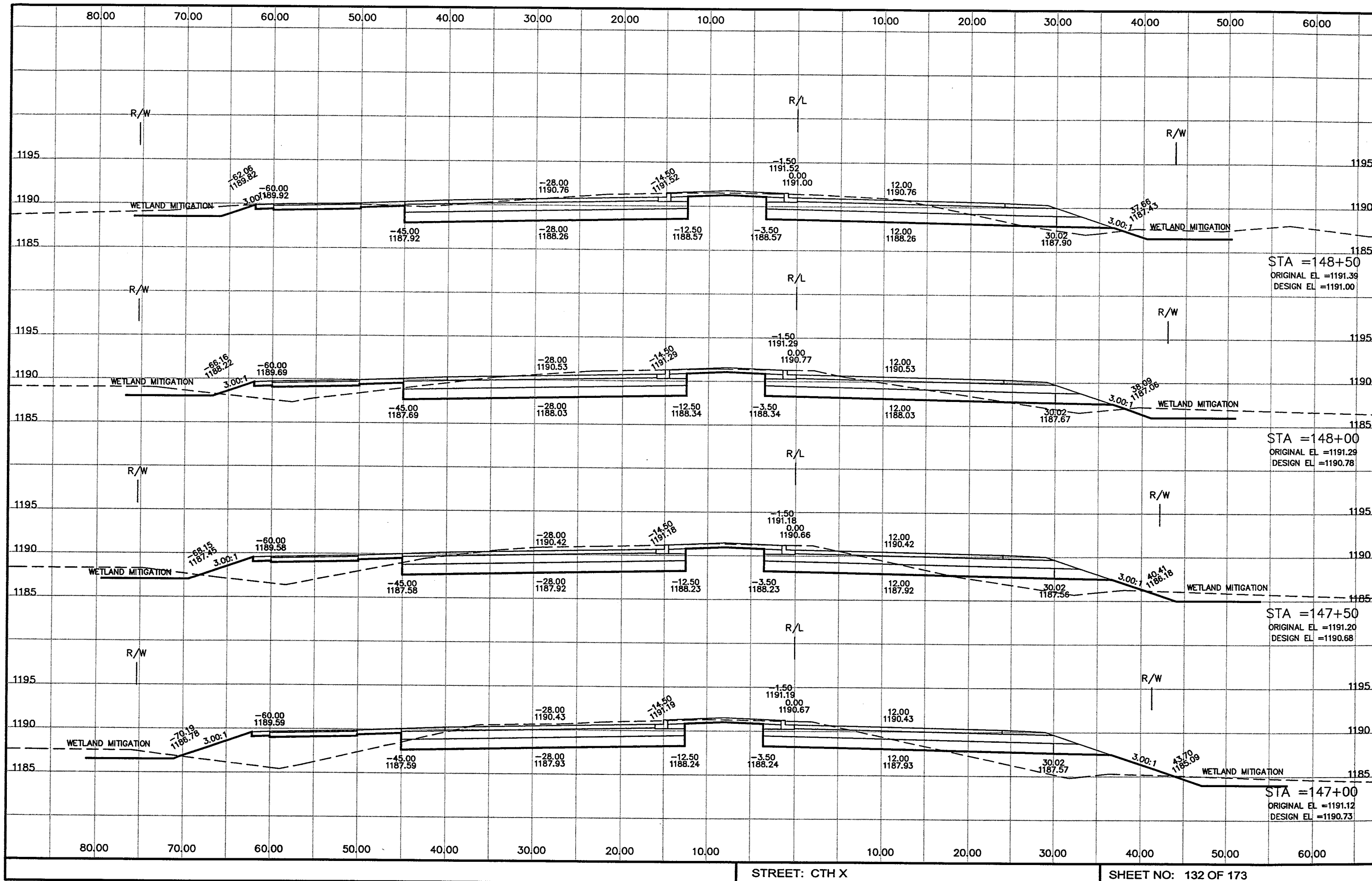
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SHEET NO: 130 OF 173

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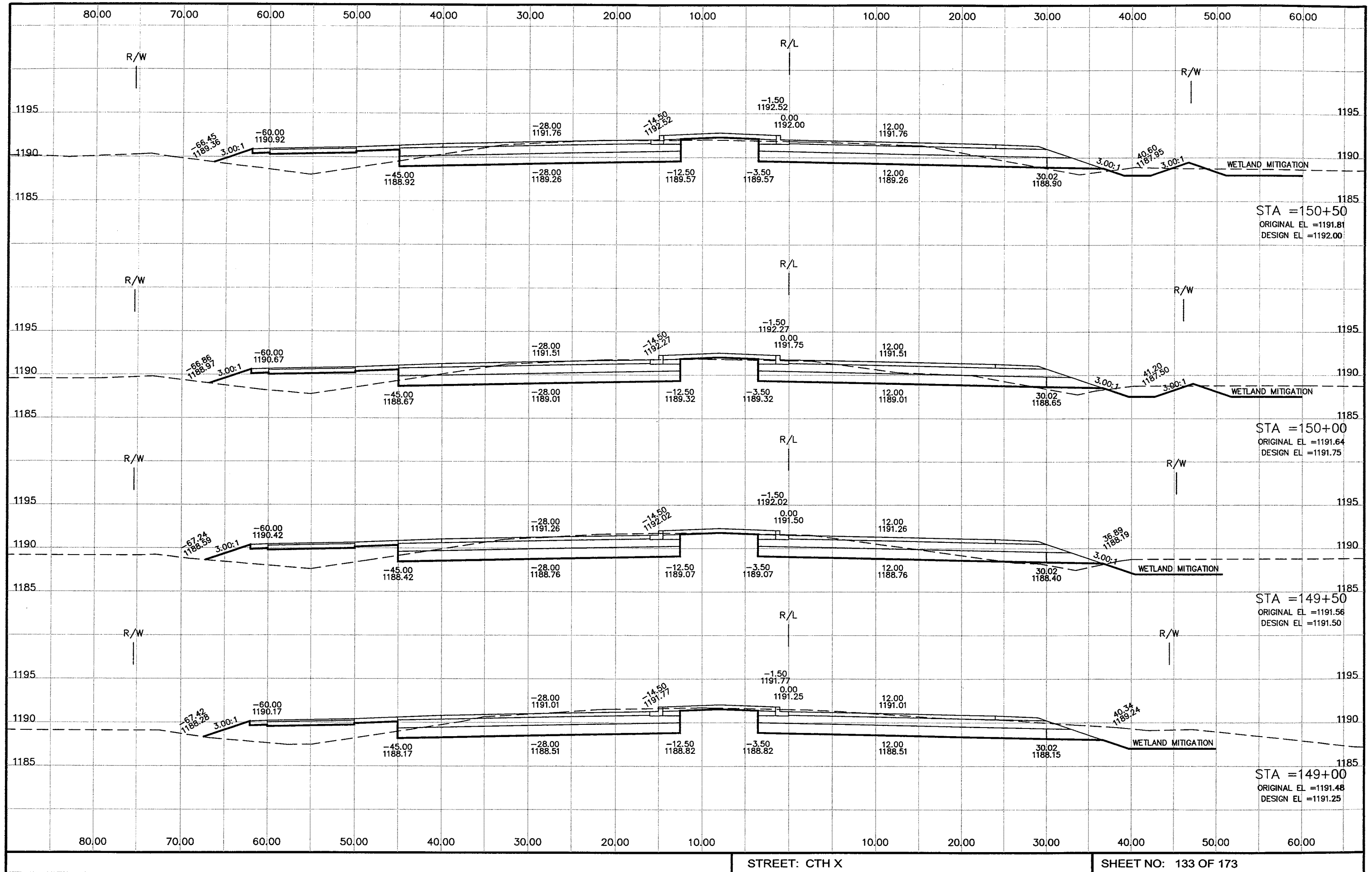
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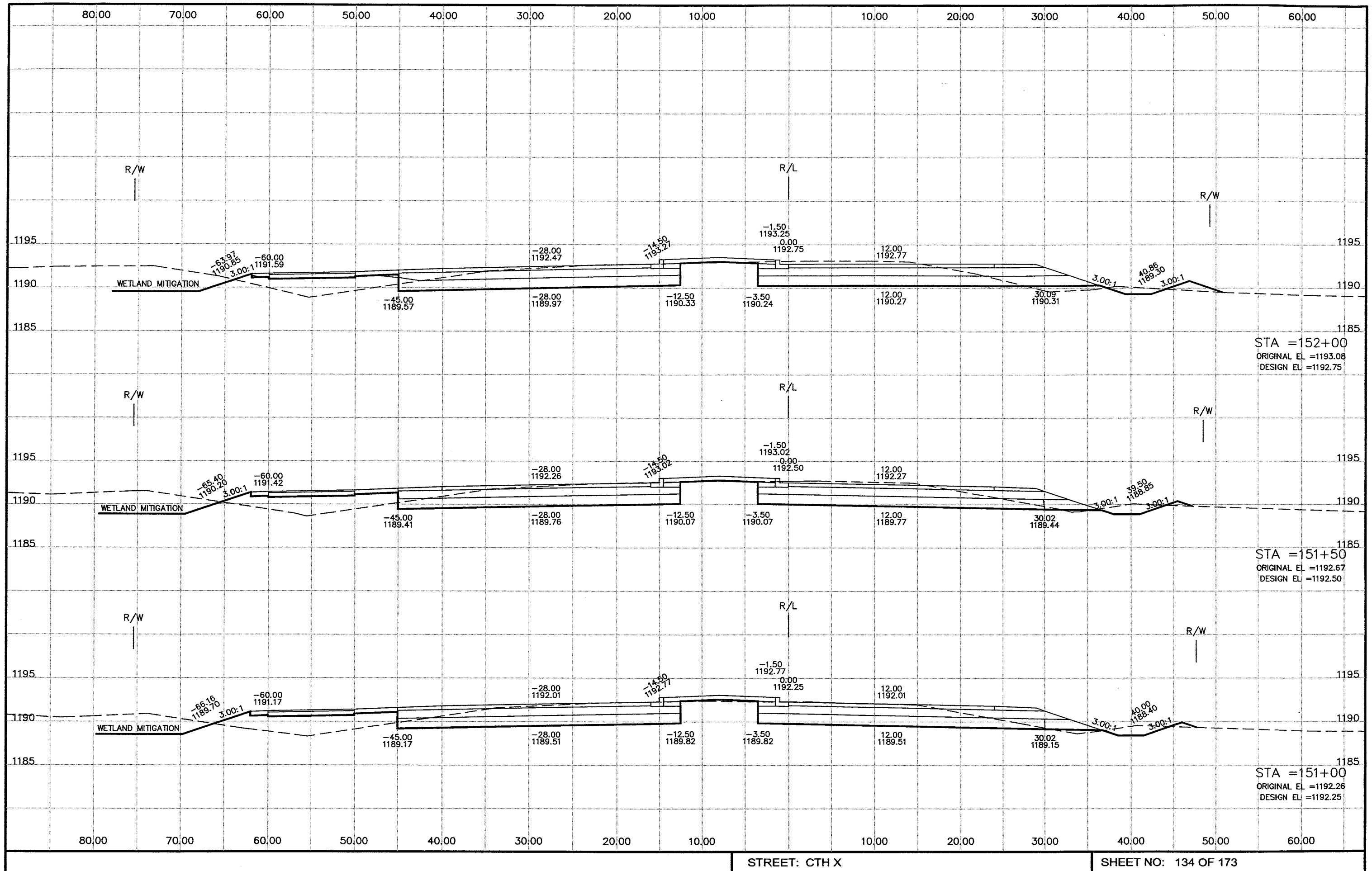
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SHEET NO: 132 OF 173

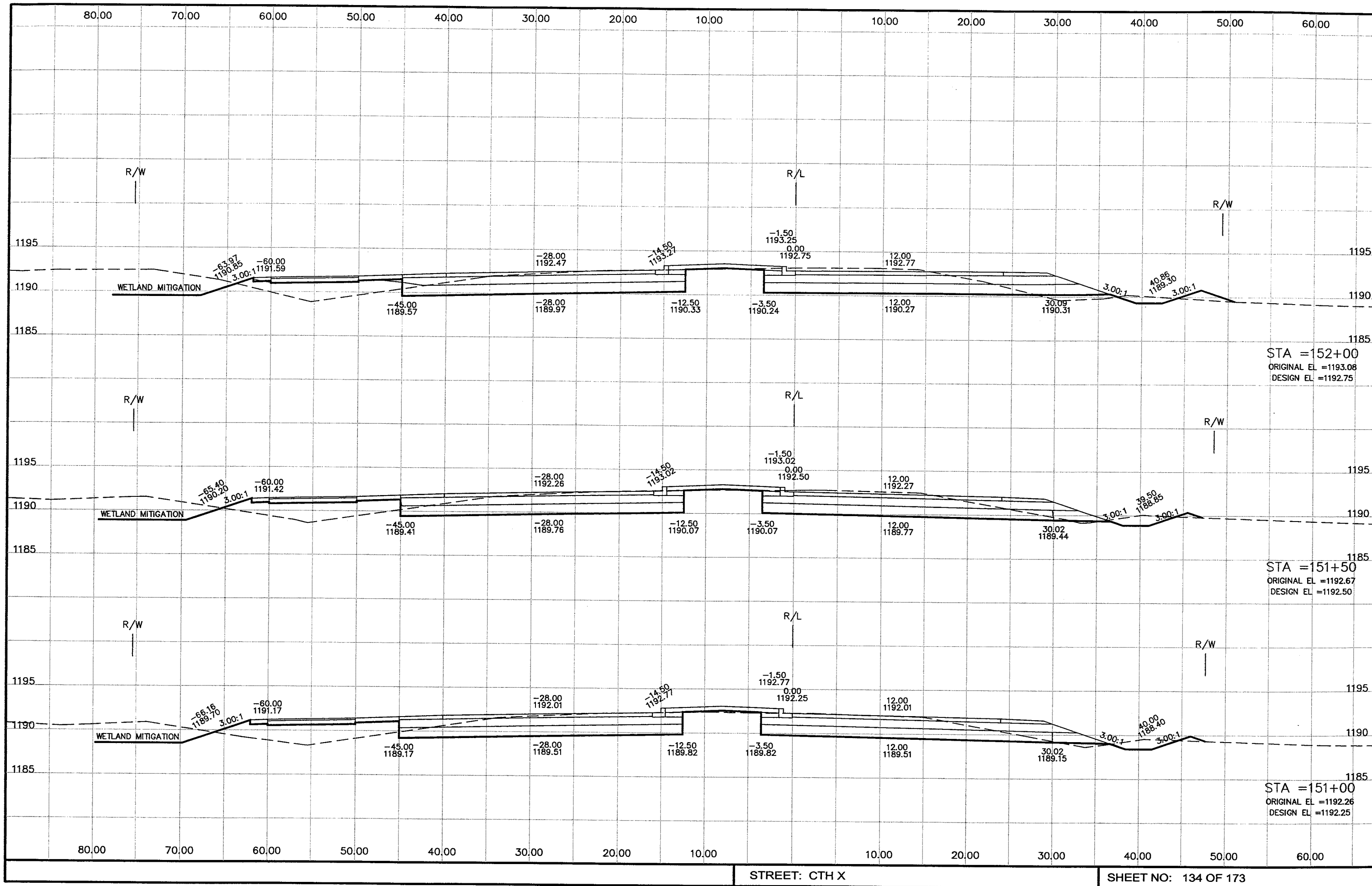
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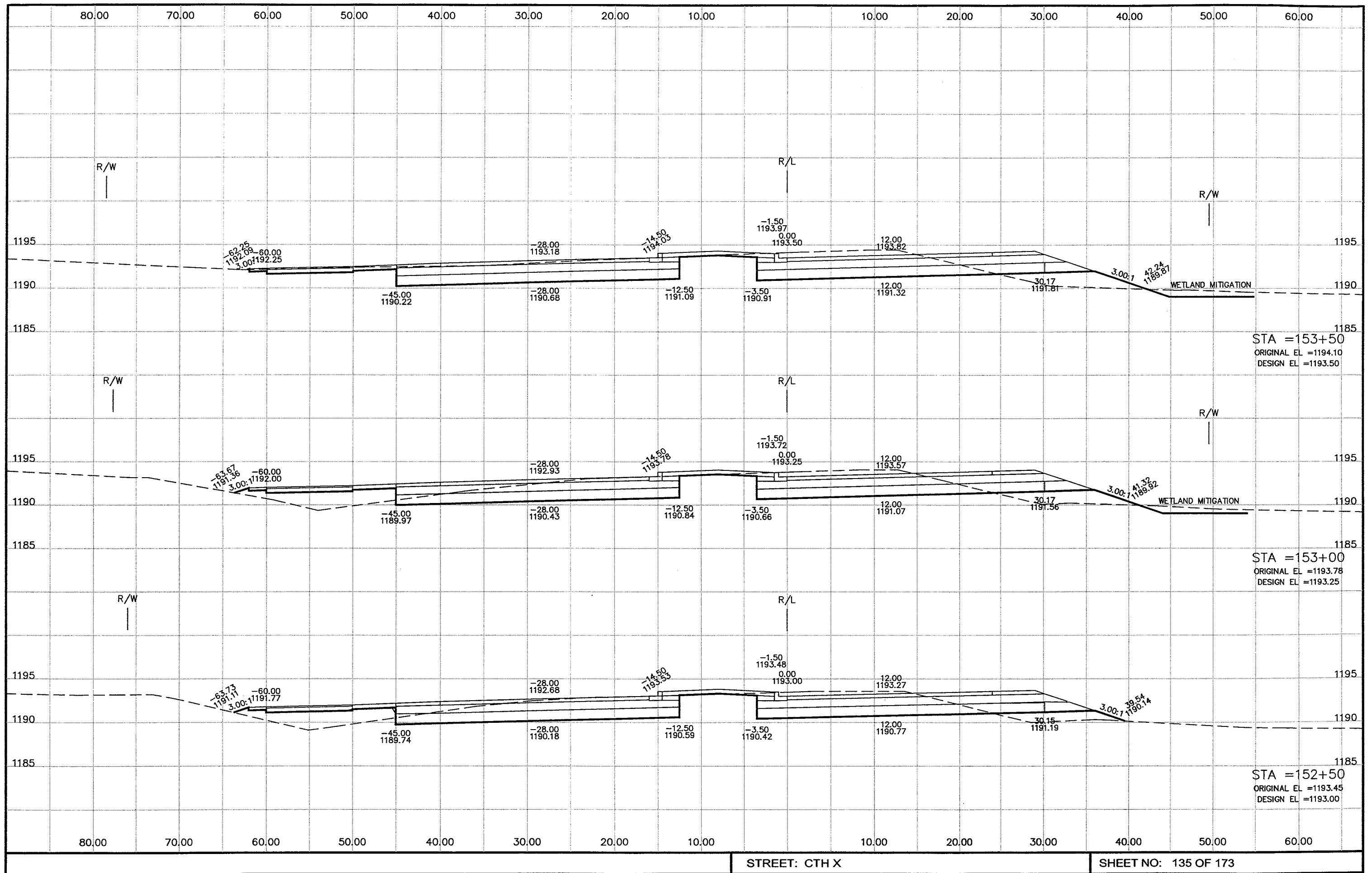
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SHEET NO: 134 OF 173

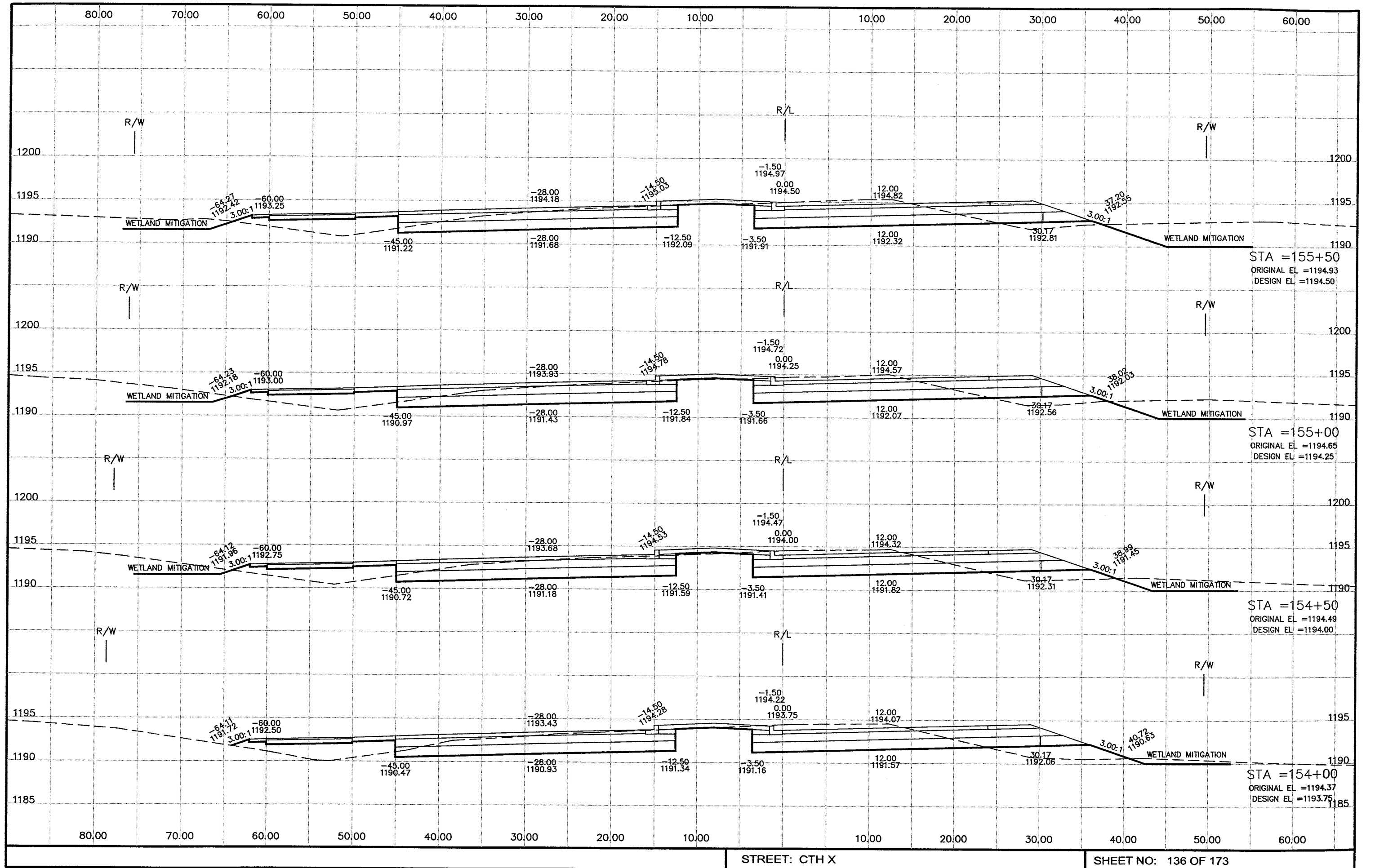
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STREET: CTH X

SHEET NO: 135 OF 173

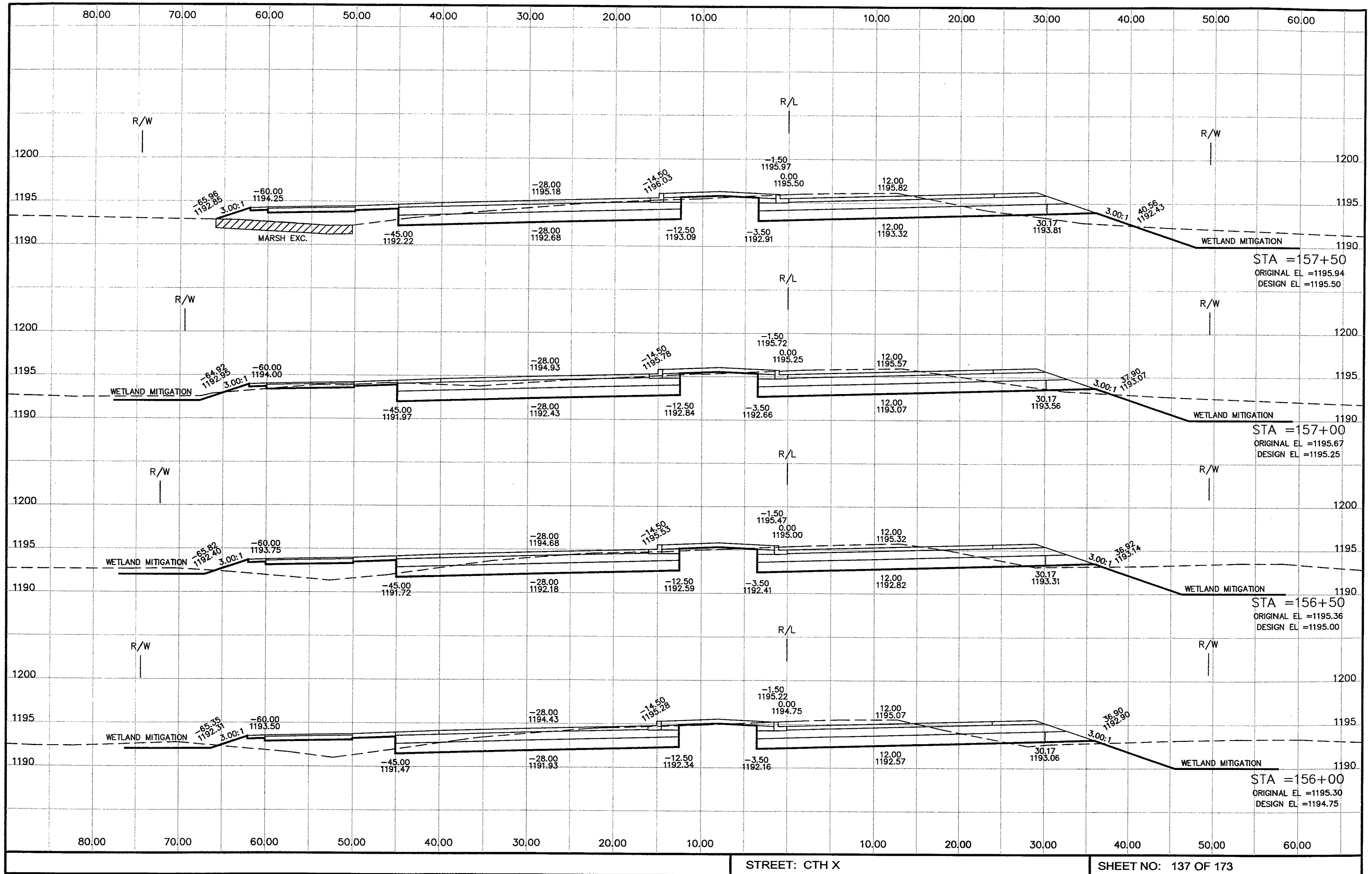
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STREET: CTH X

SHEET NO: 136 OF 173

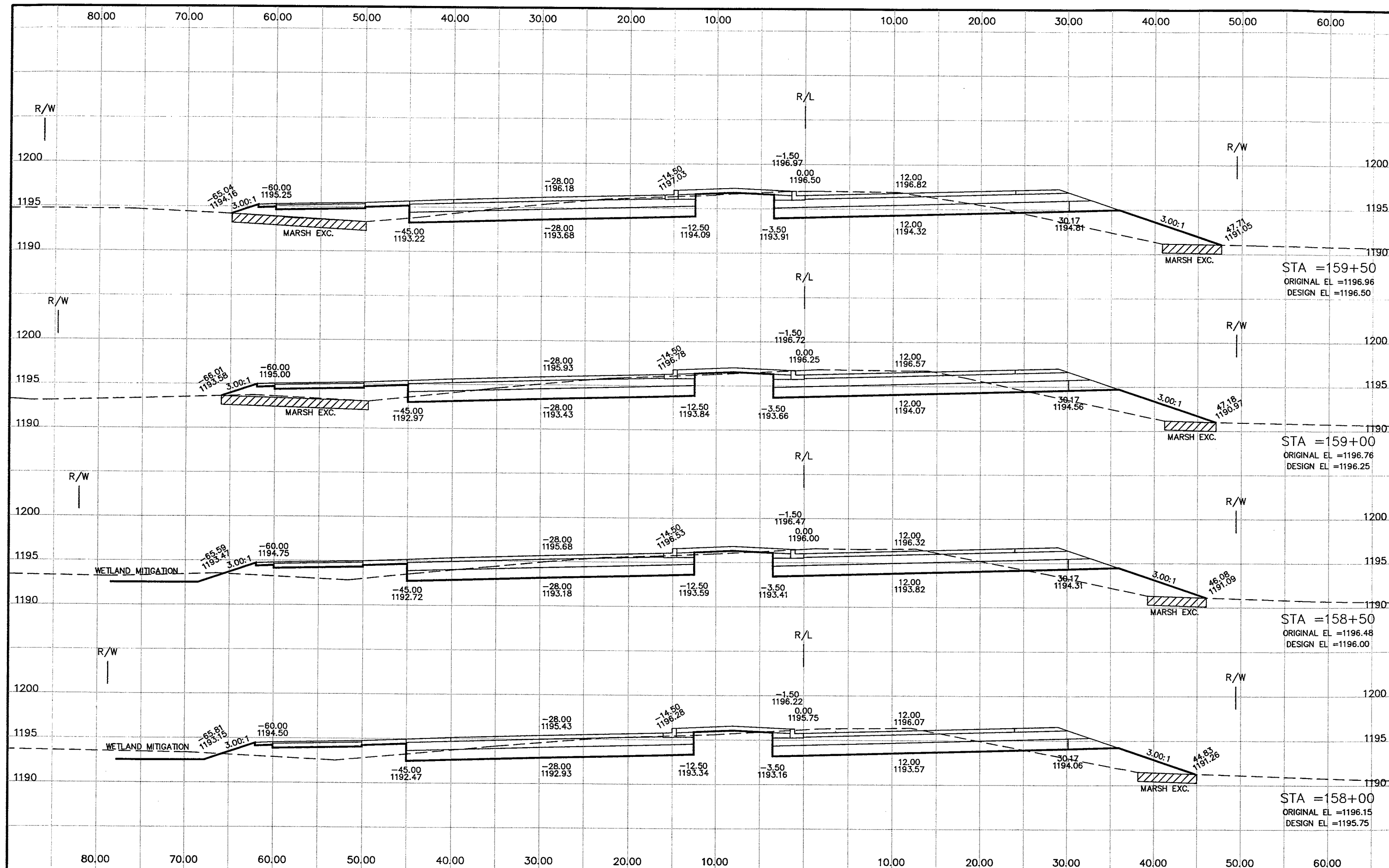
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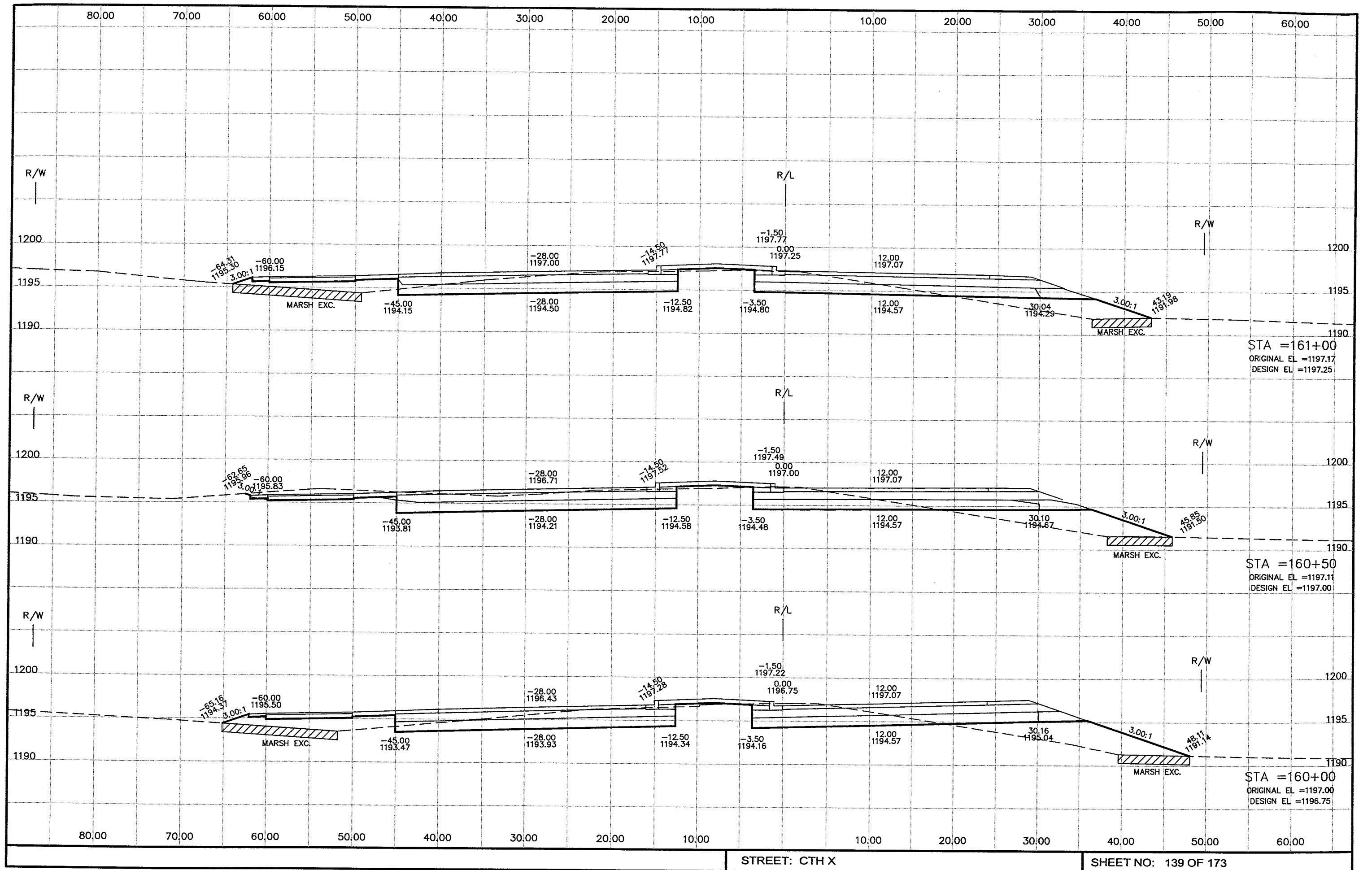
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SHEET NO: 137 OF 173

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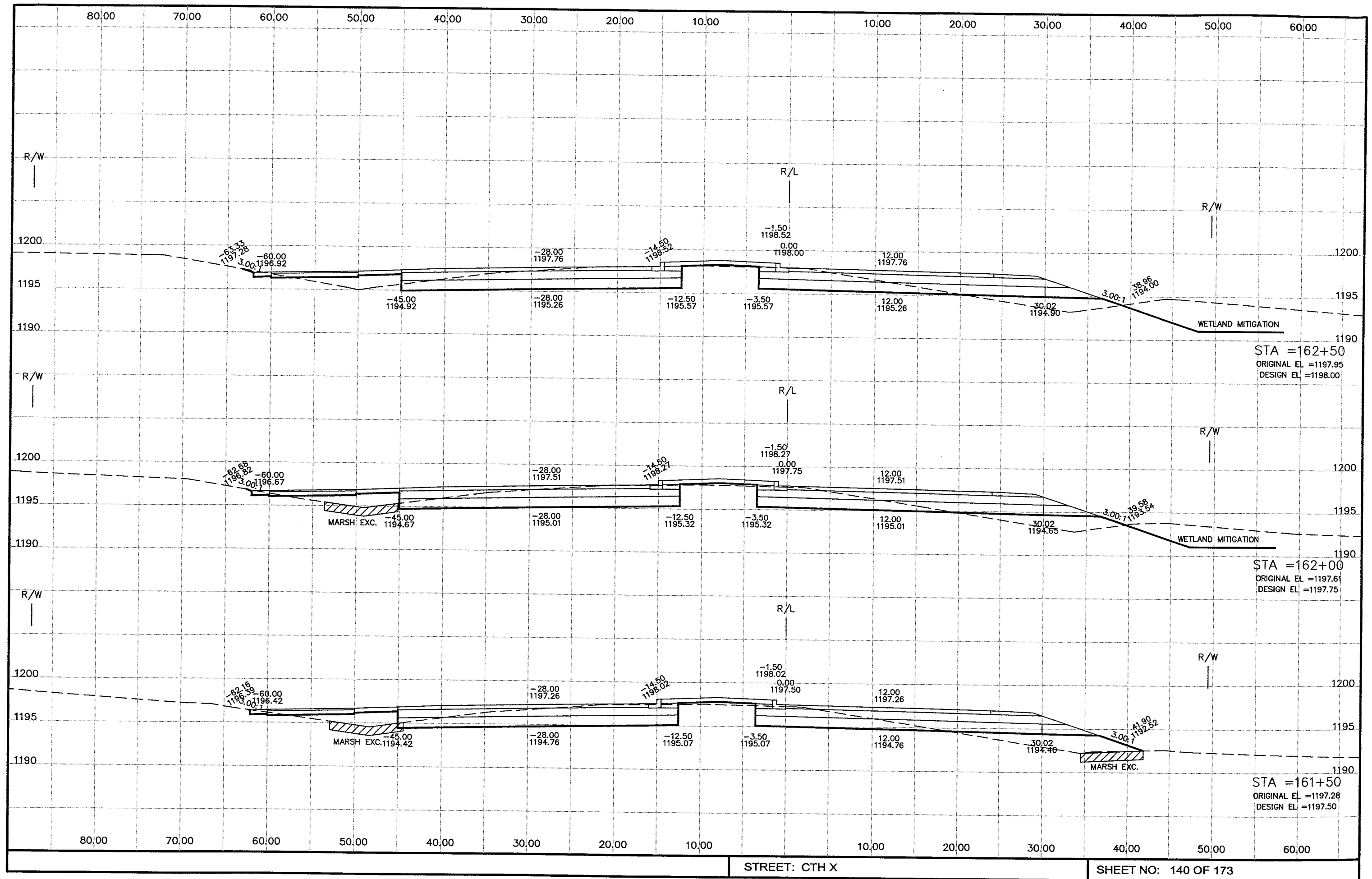
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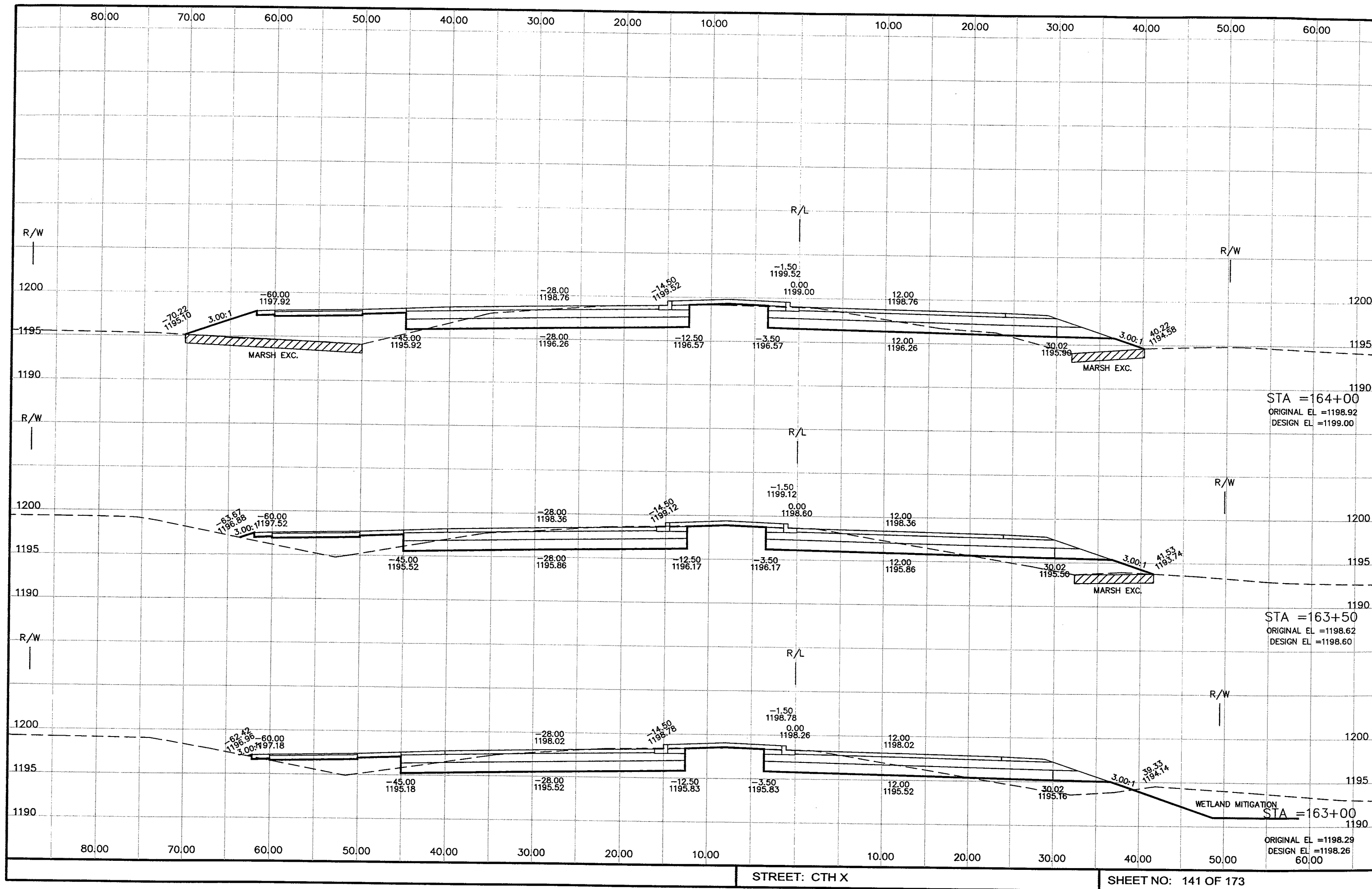
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SHEET NO: 139 OF 173

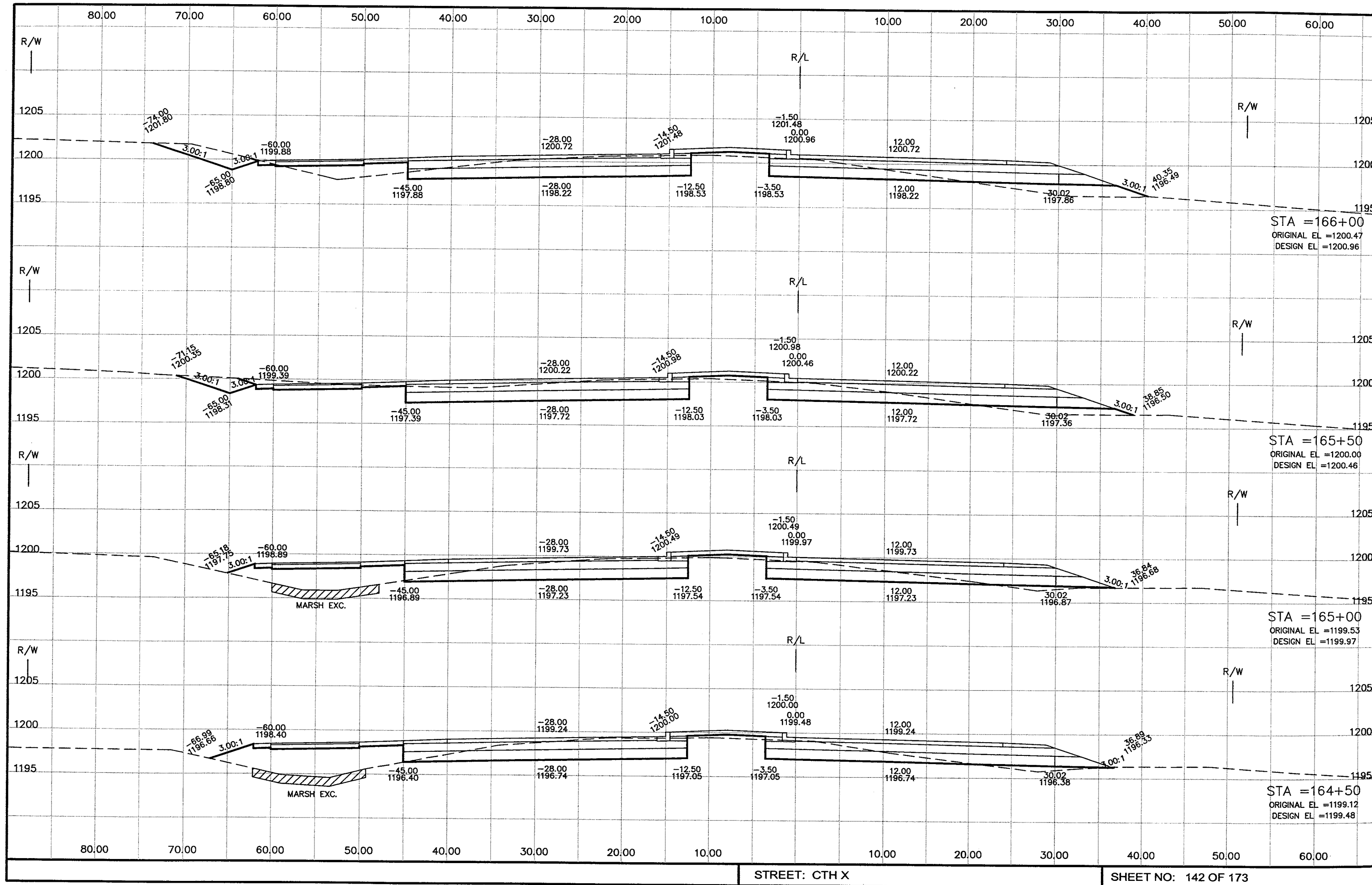
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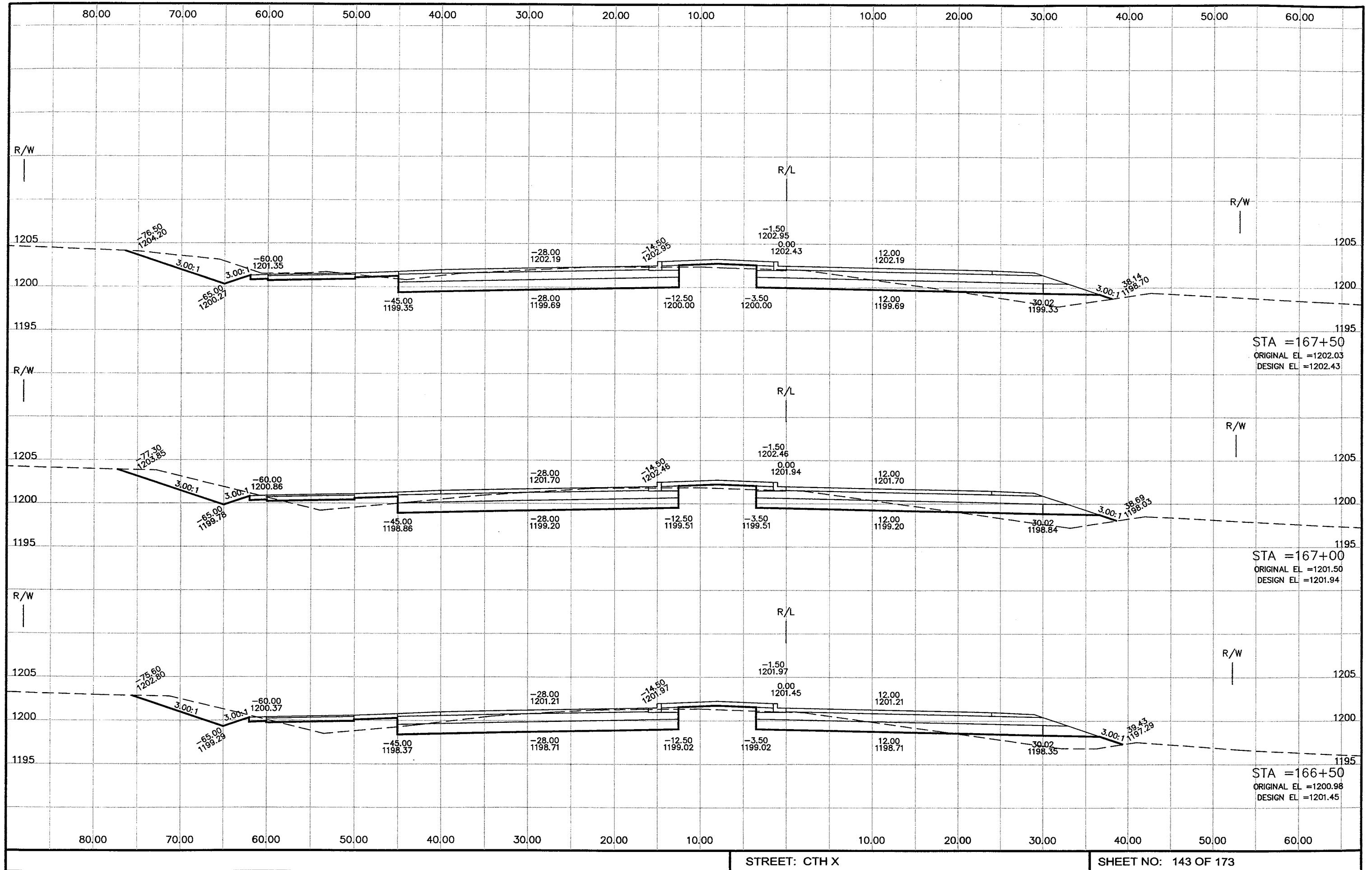
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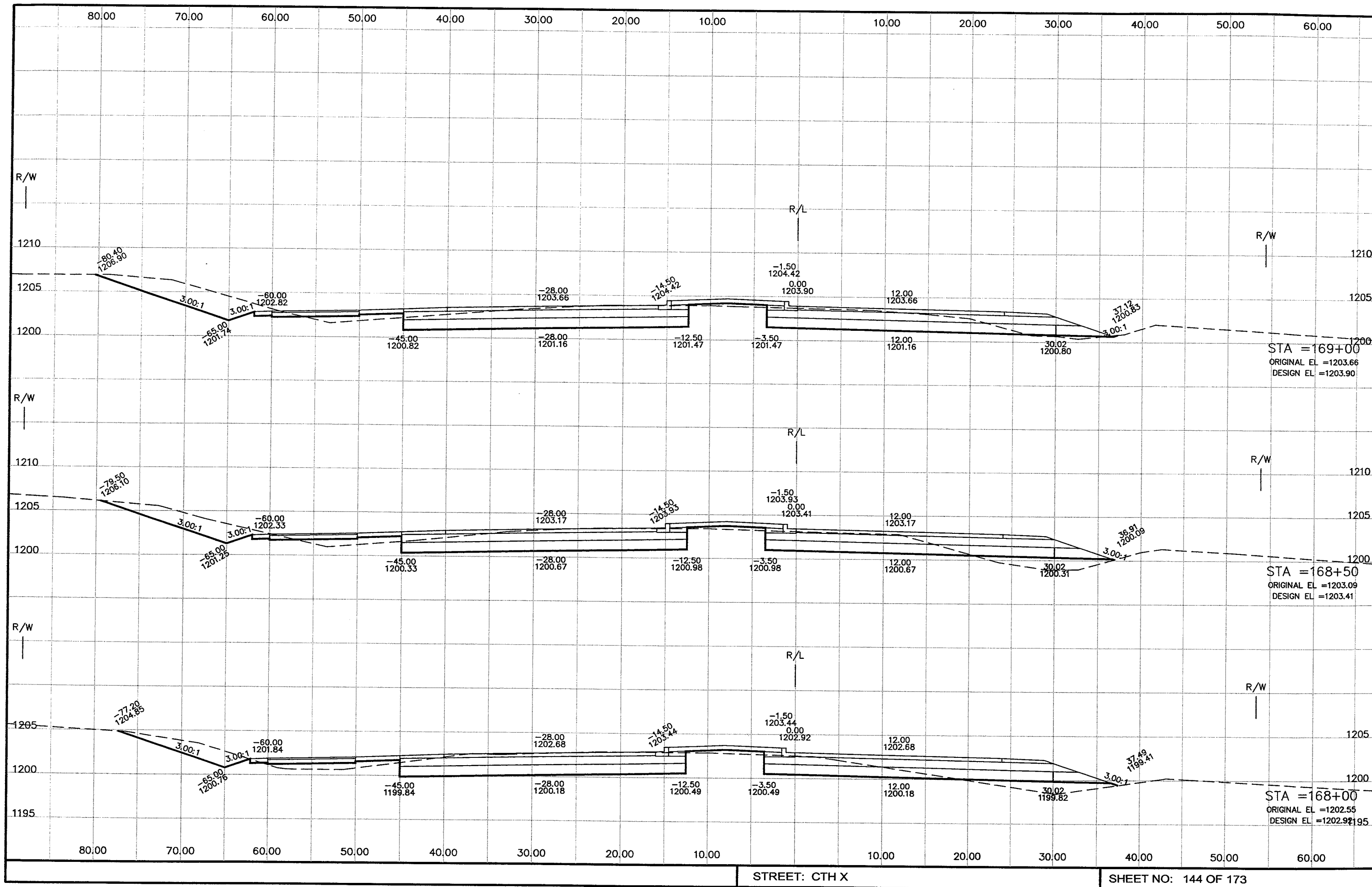
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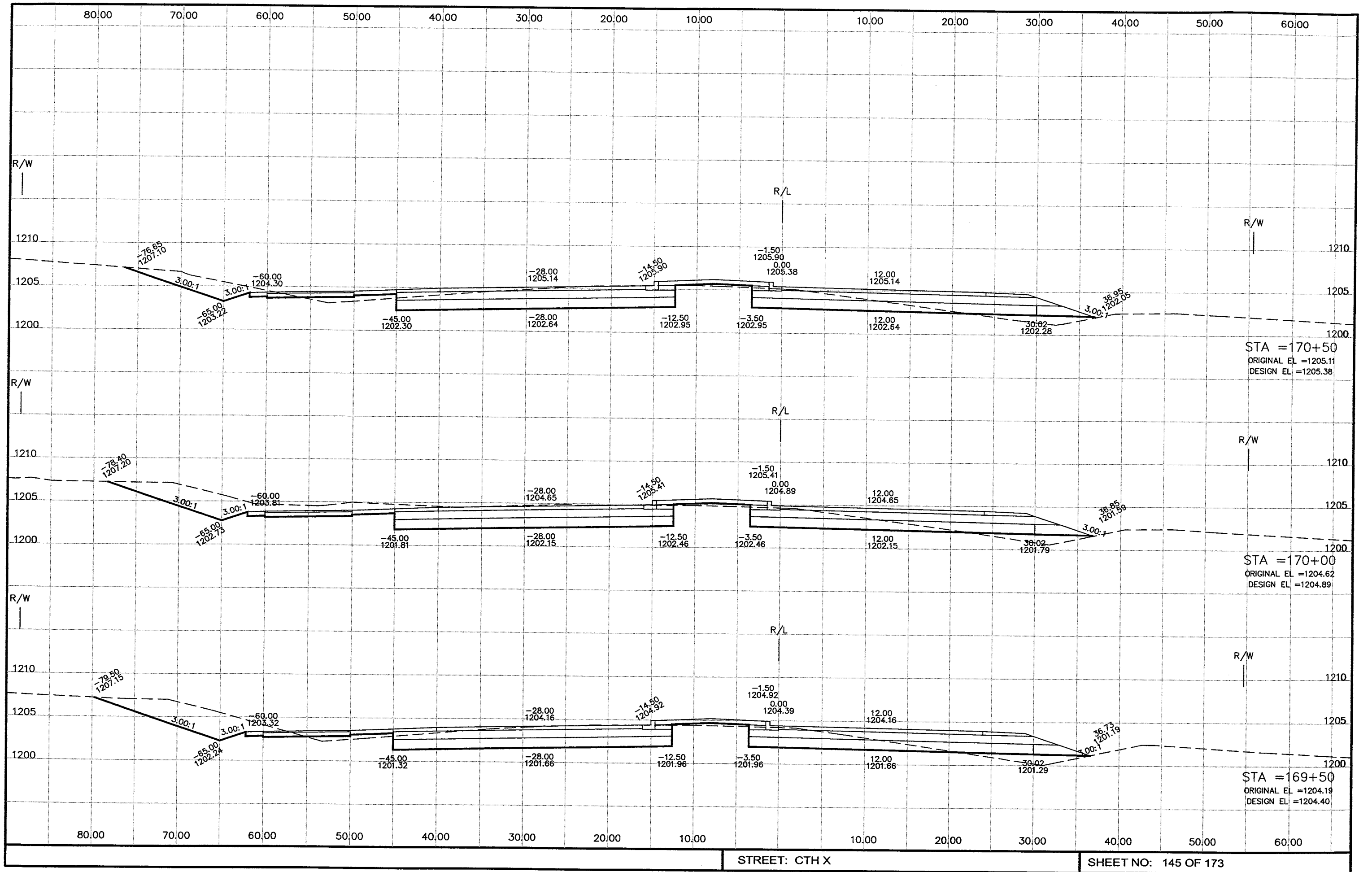
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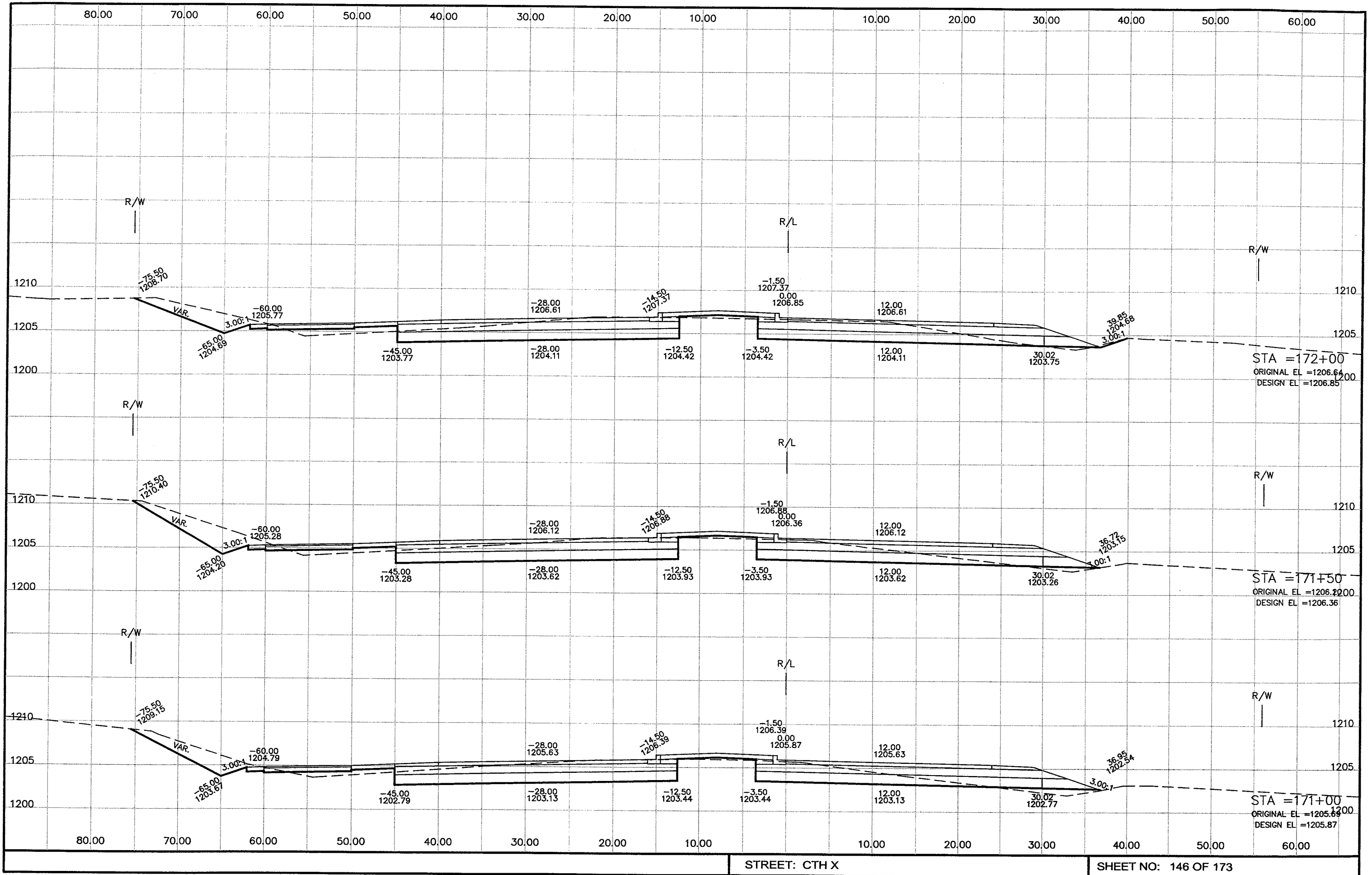
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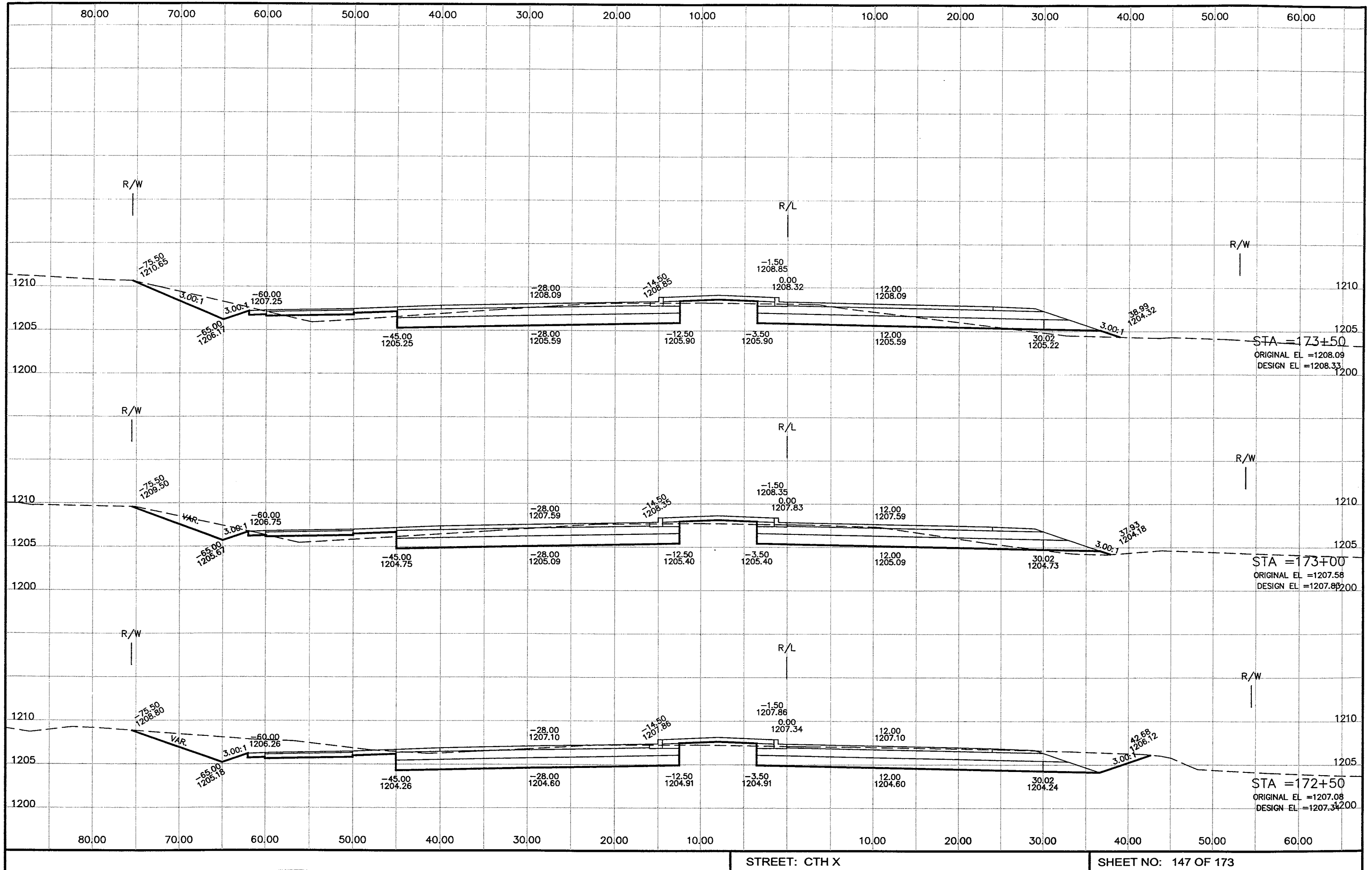
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STREET: CTH X

SHEET NO: 146 OF 173

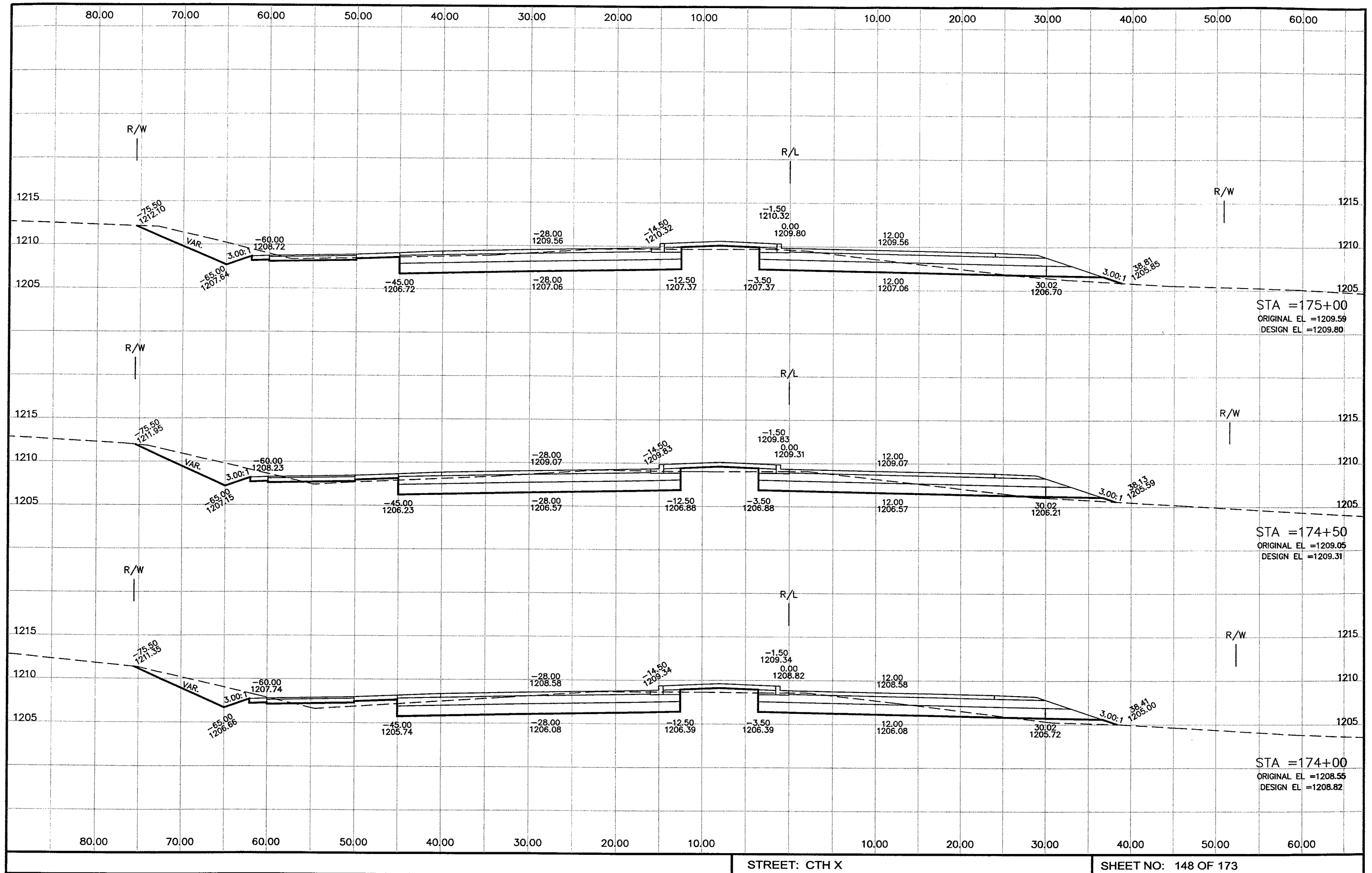
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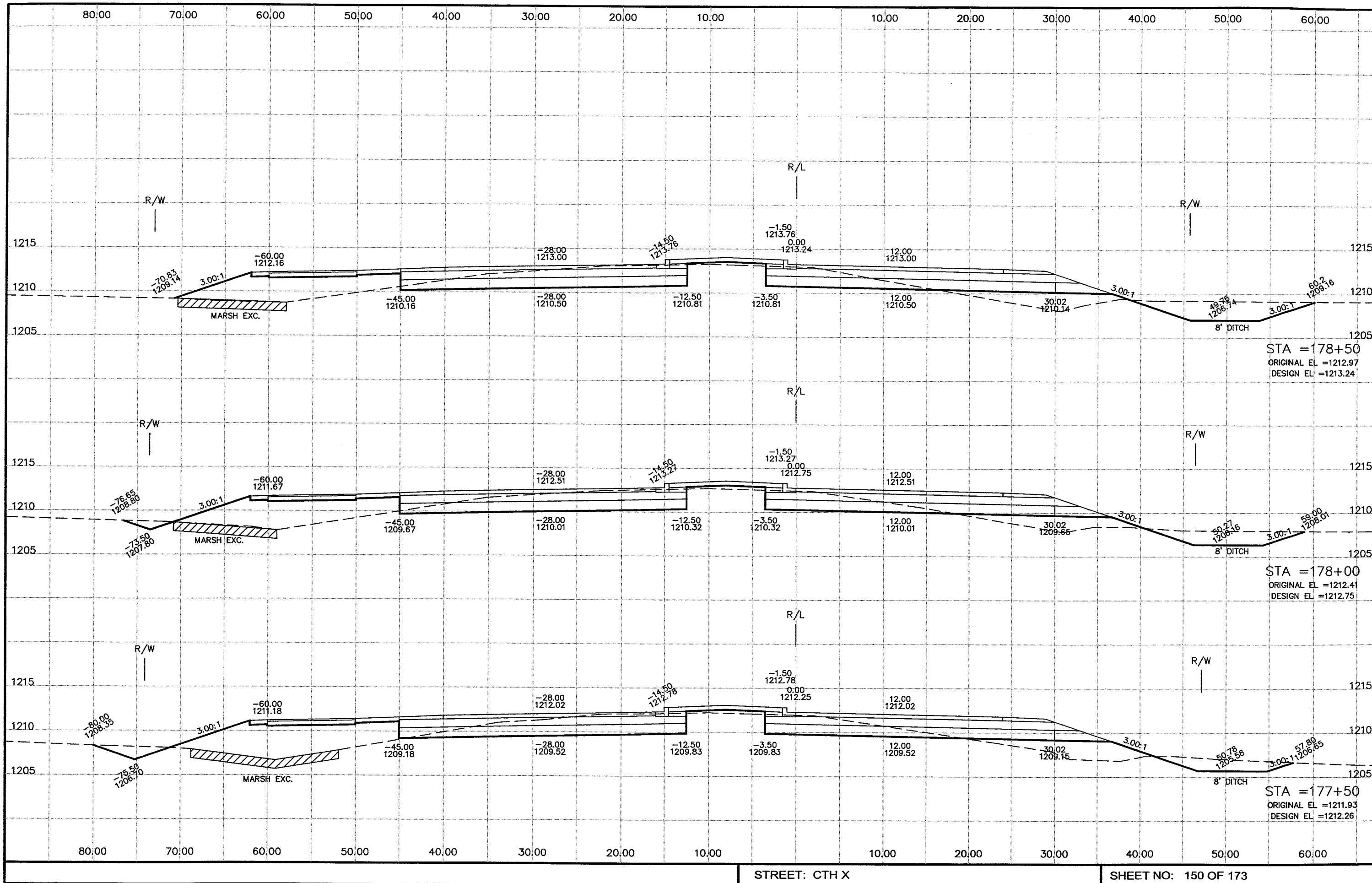
STREET: CTH X

SHEET NO: 147 OF 173

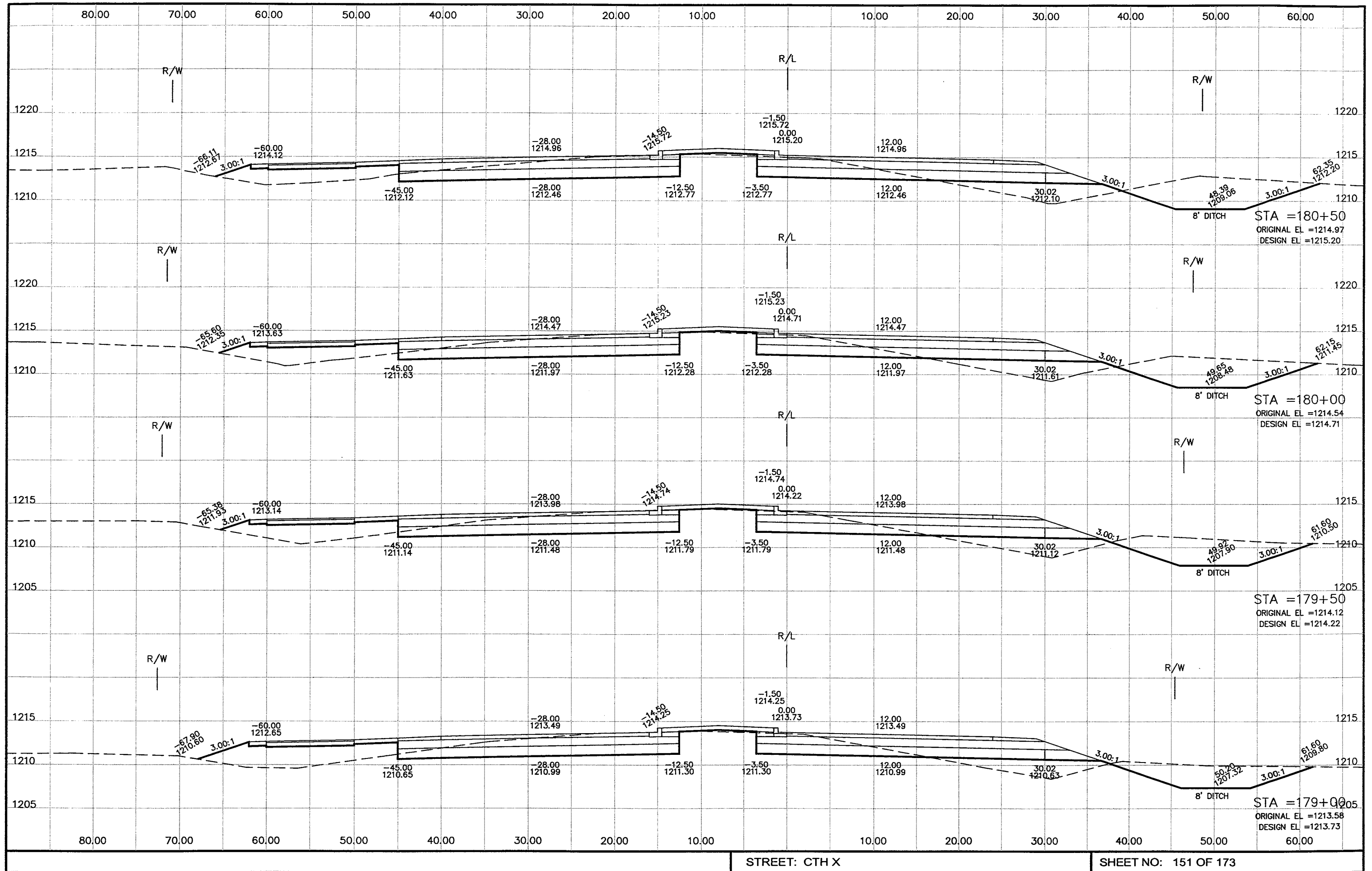
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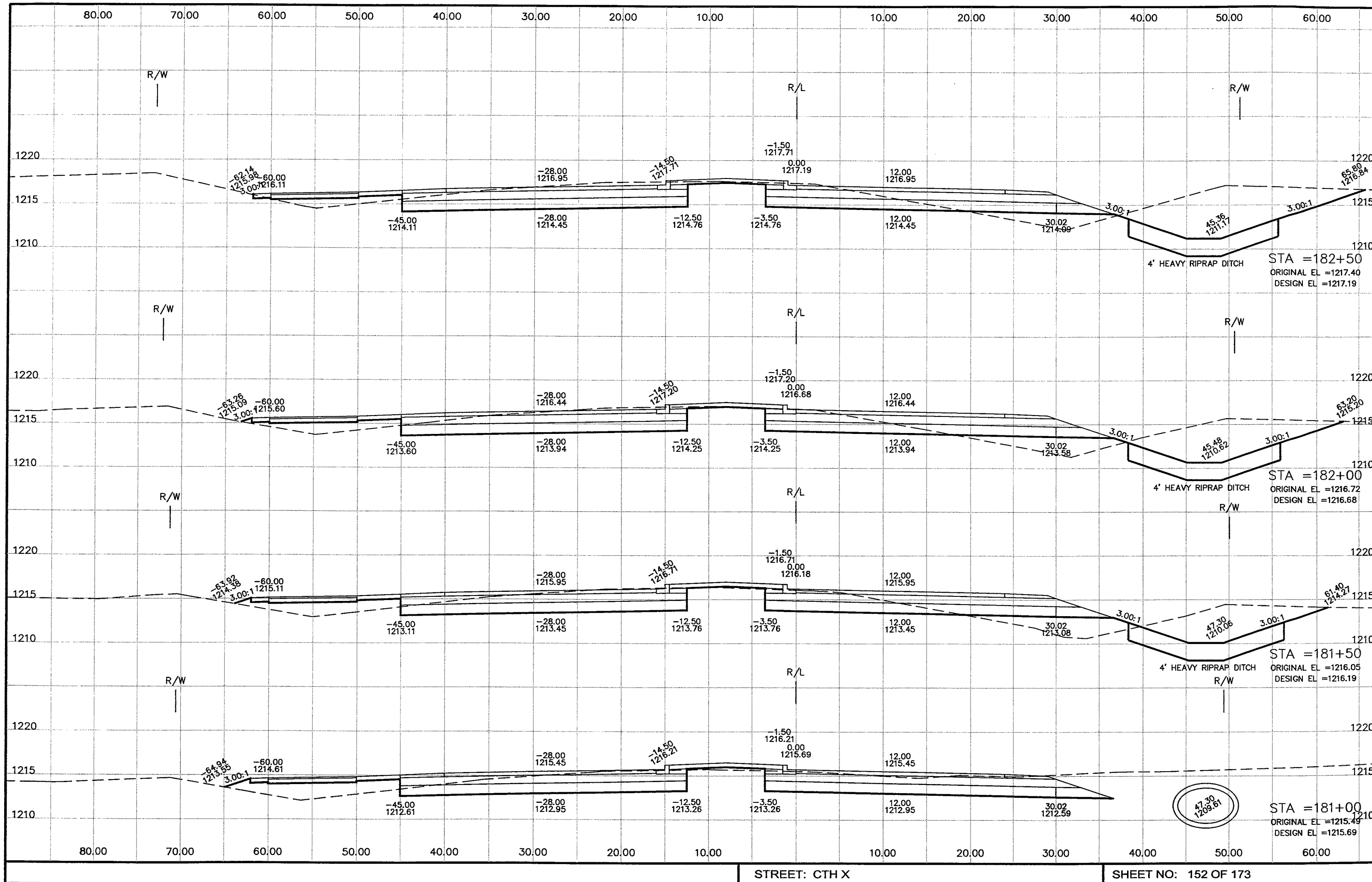
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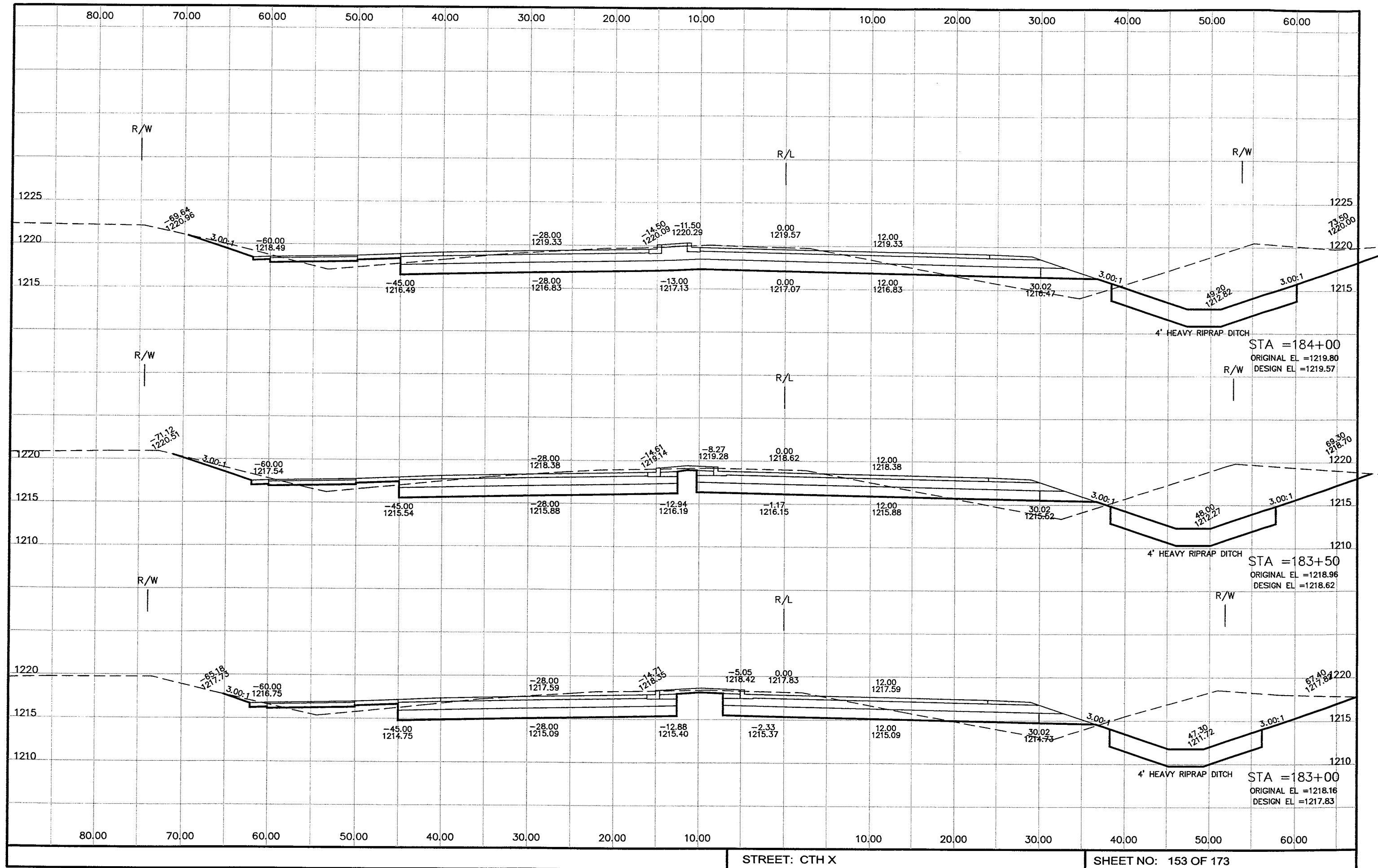
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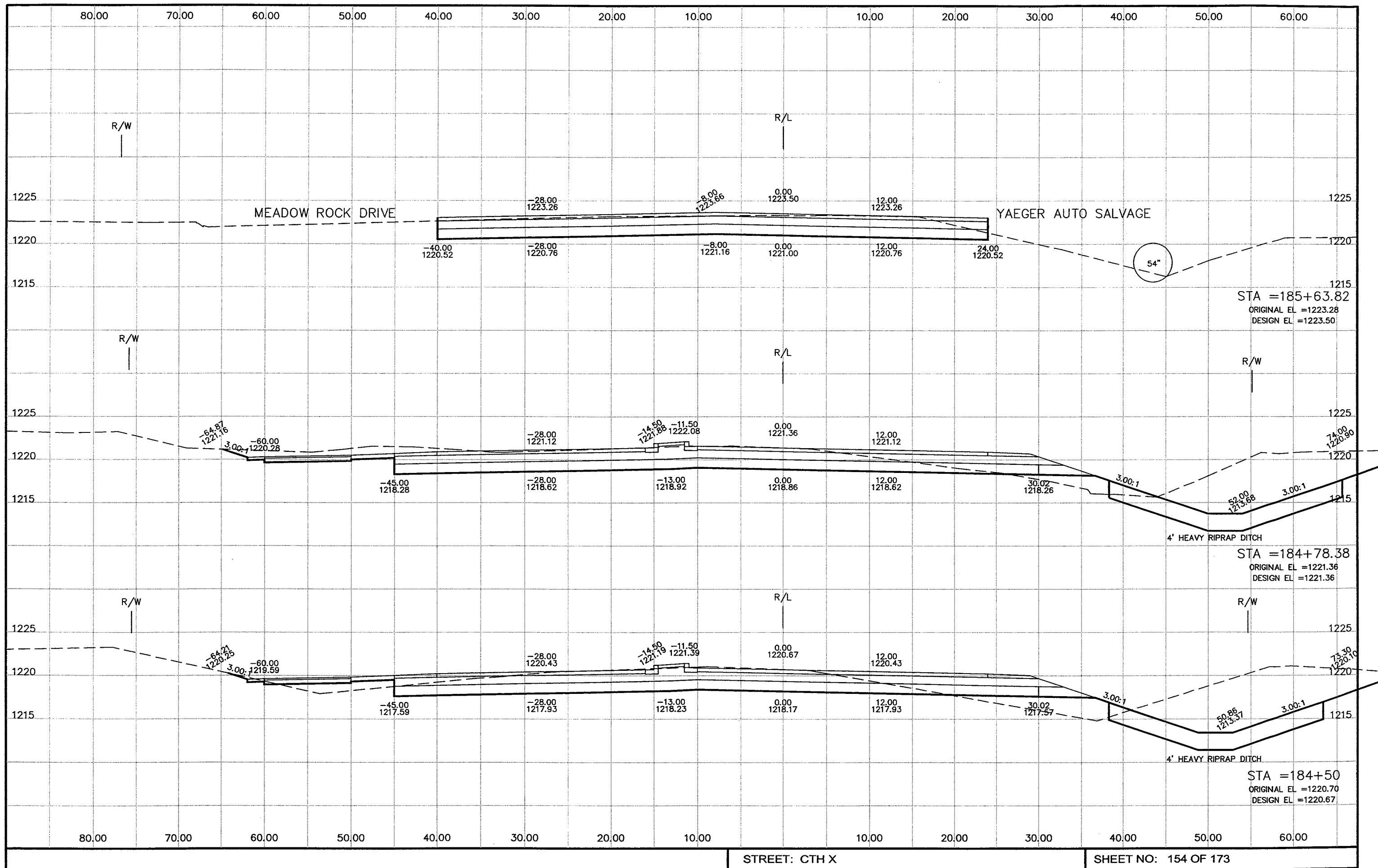
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SHEET NO: 152 OF 173

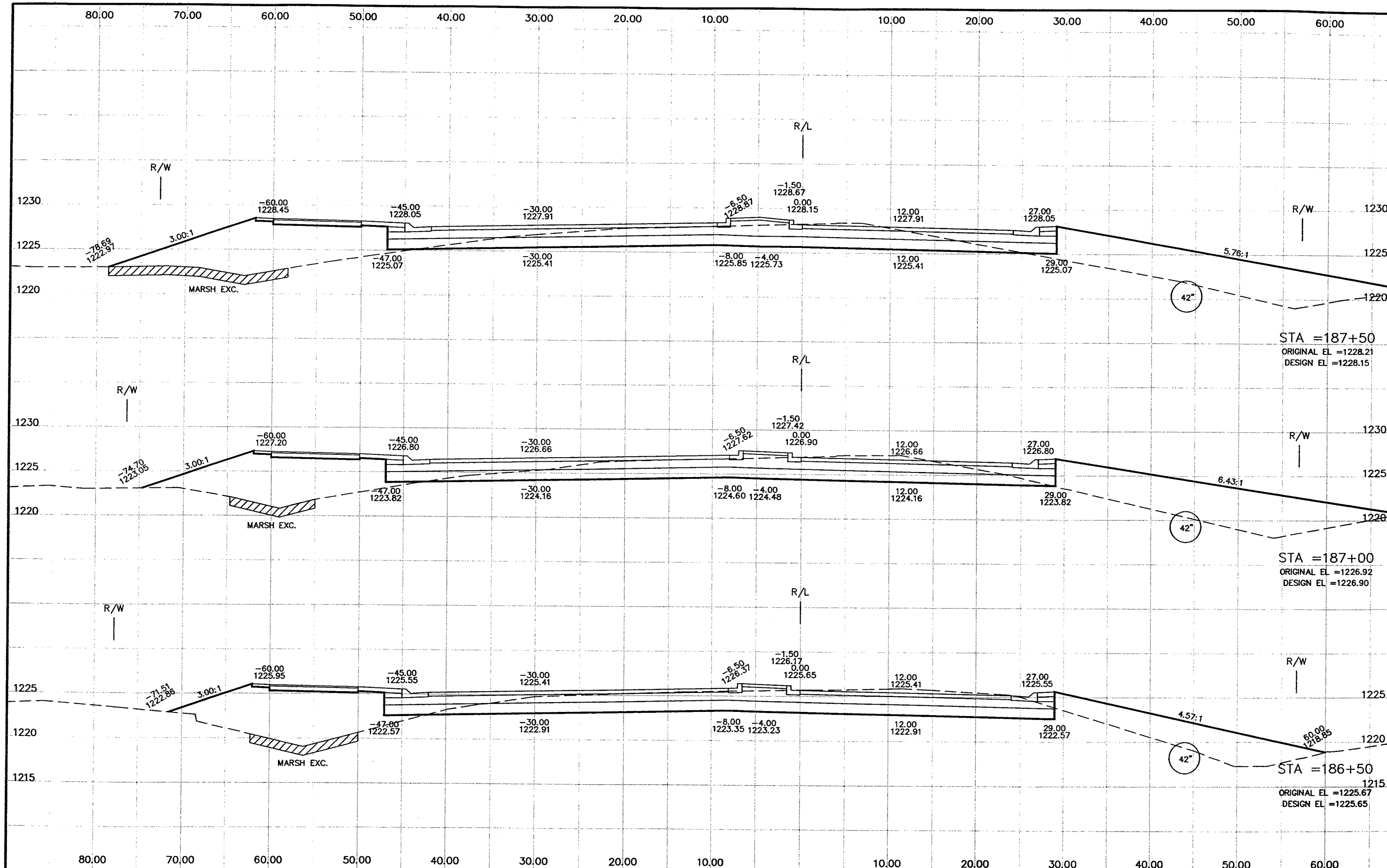
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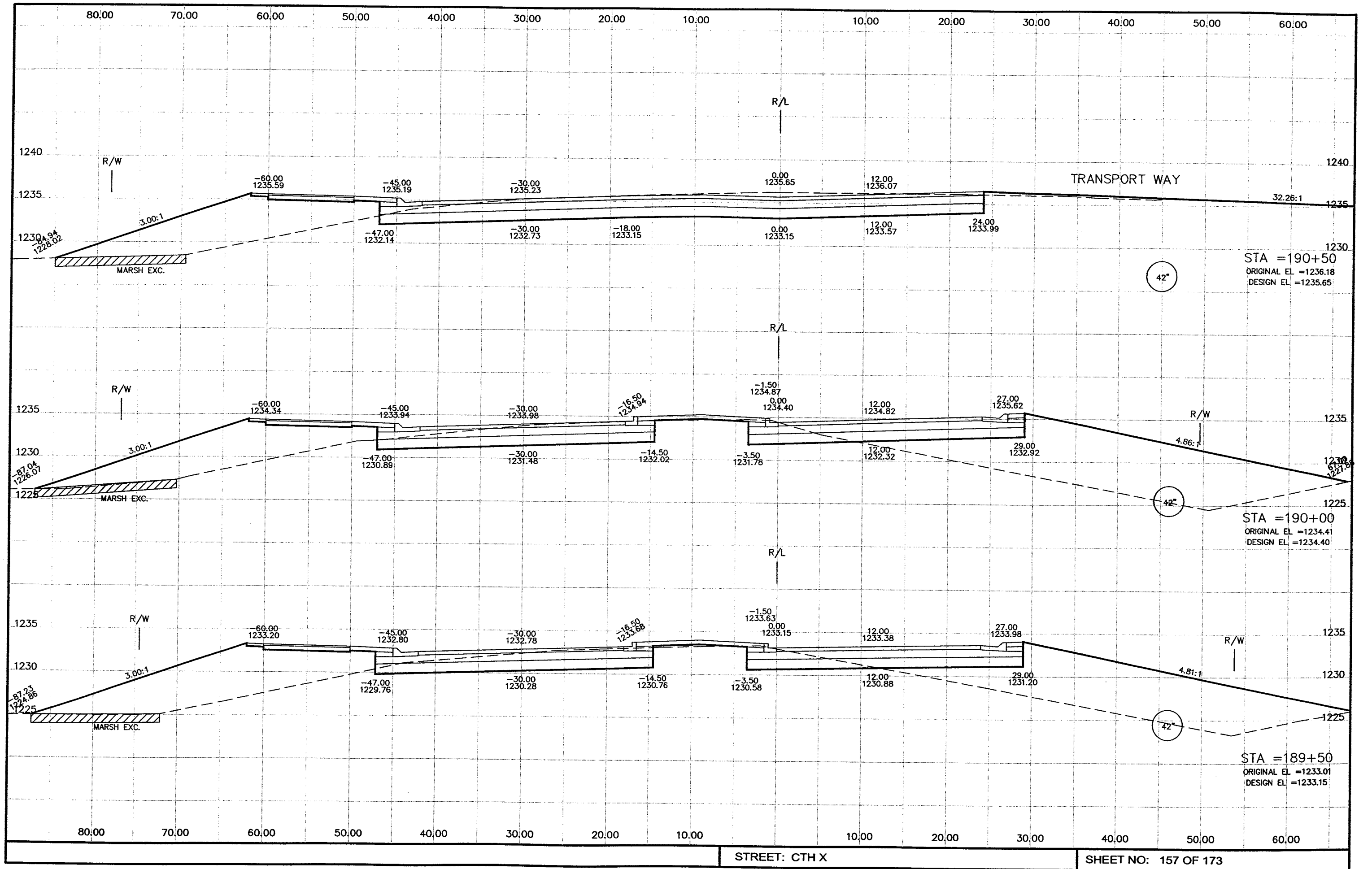
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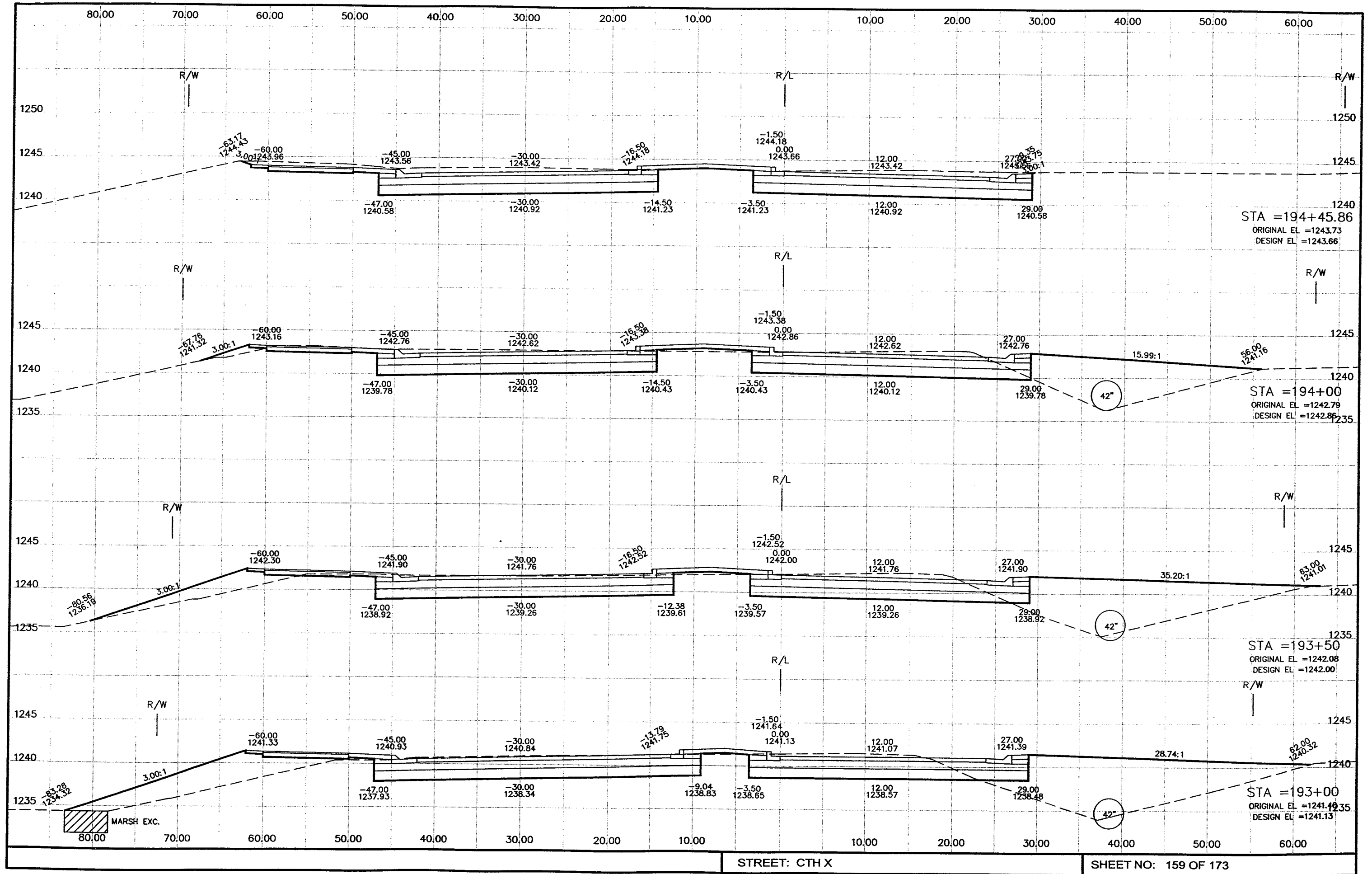
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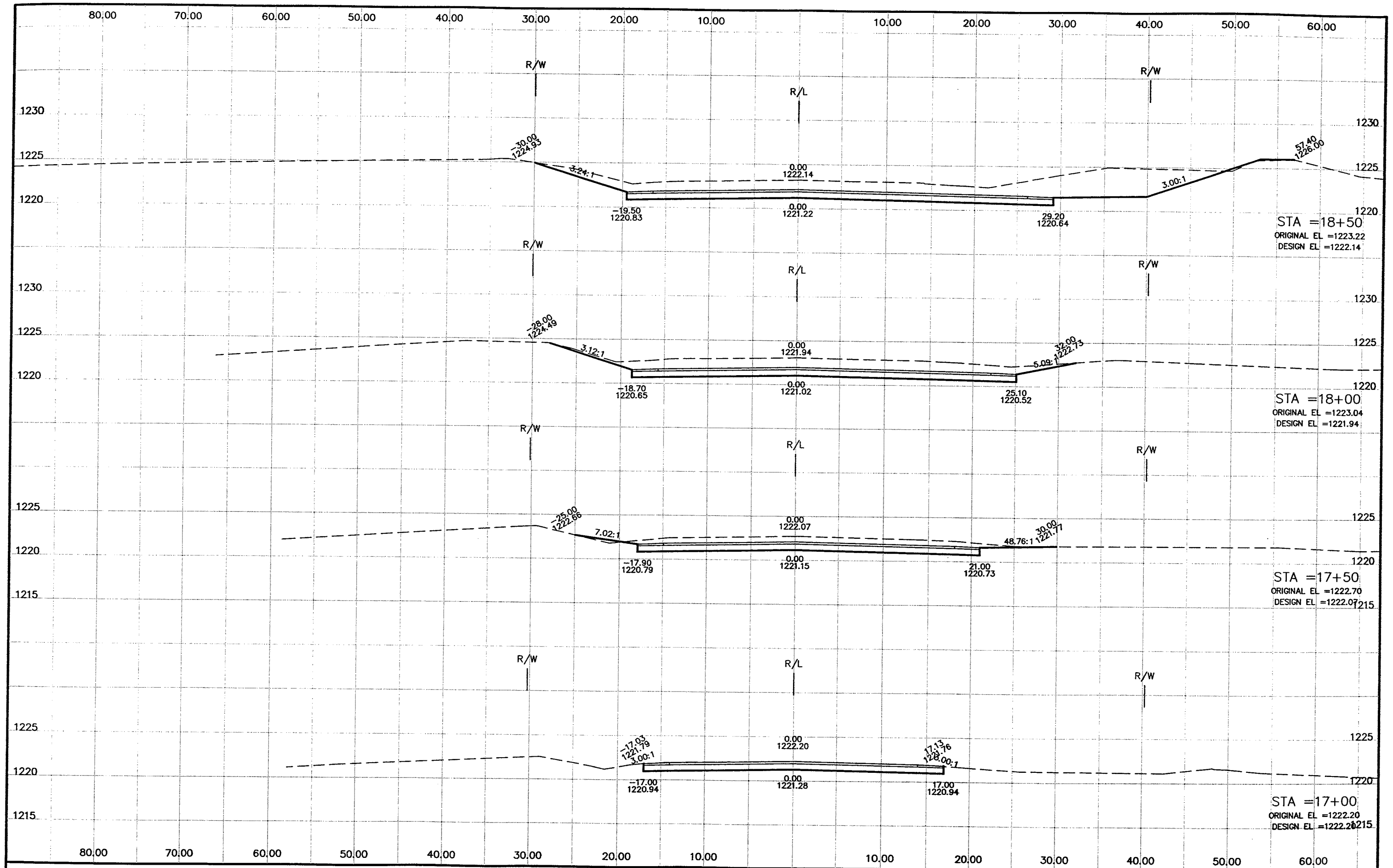
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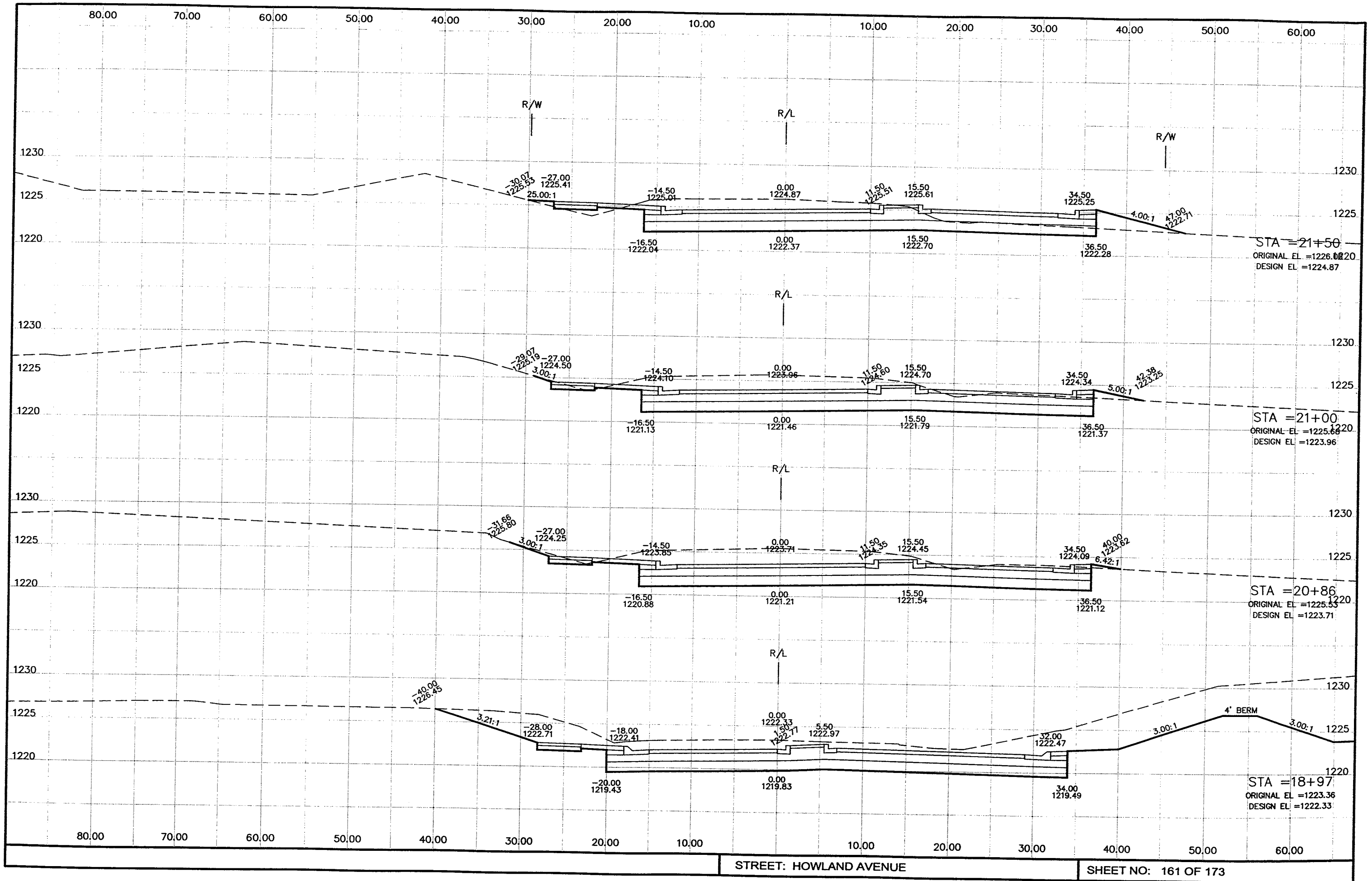
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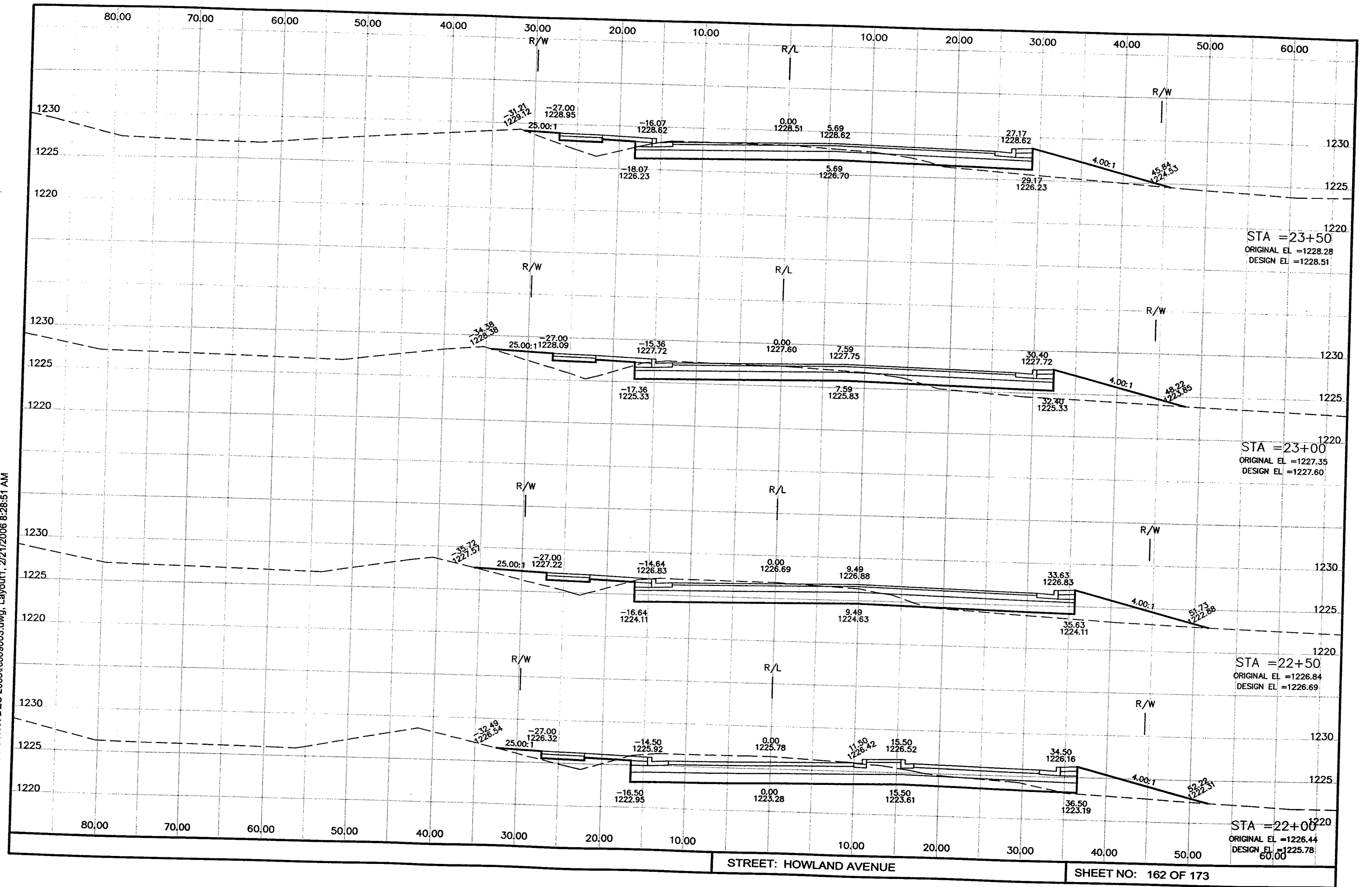
STREET: HOWLAND AVENUE

SHEET NO: 160 OF 173

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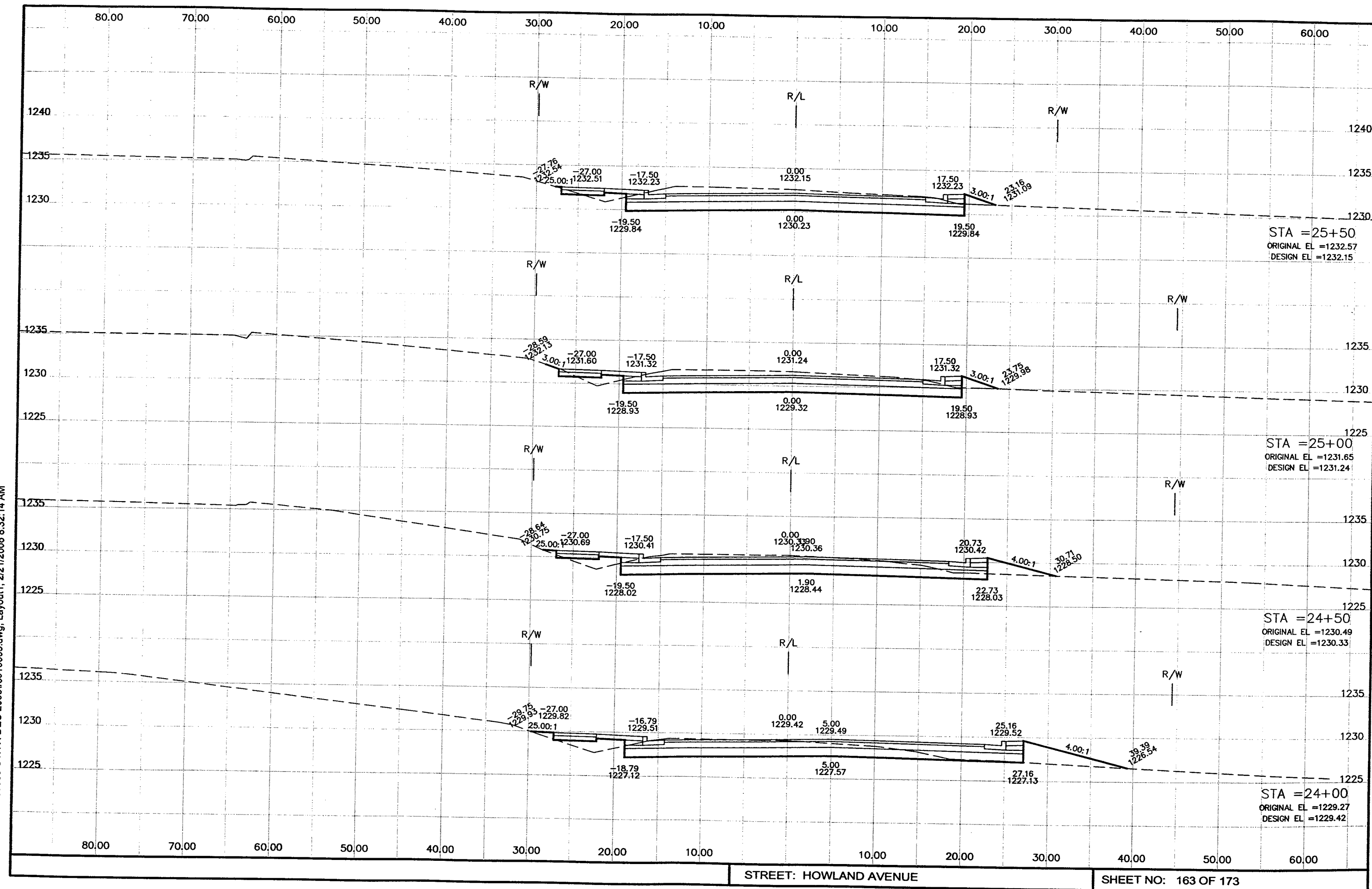
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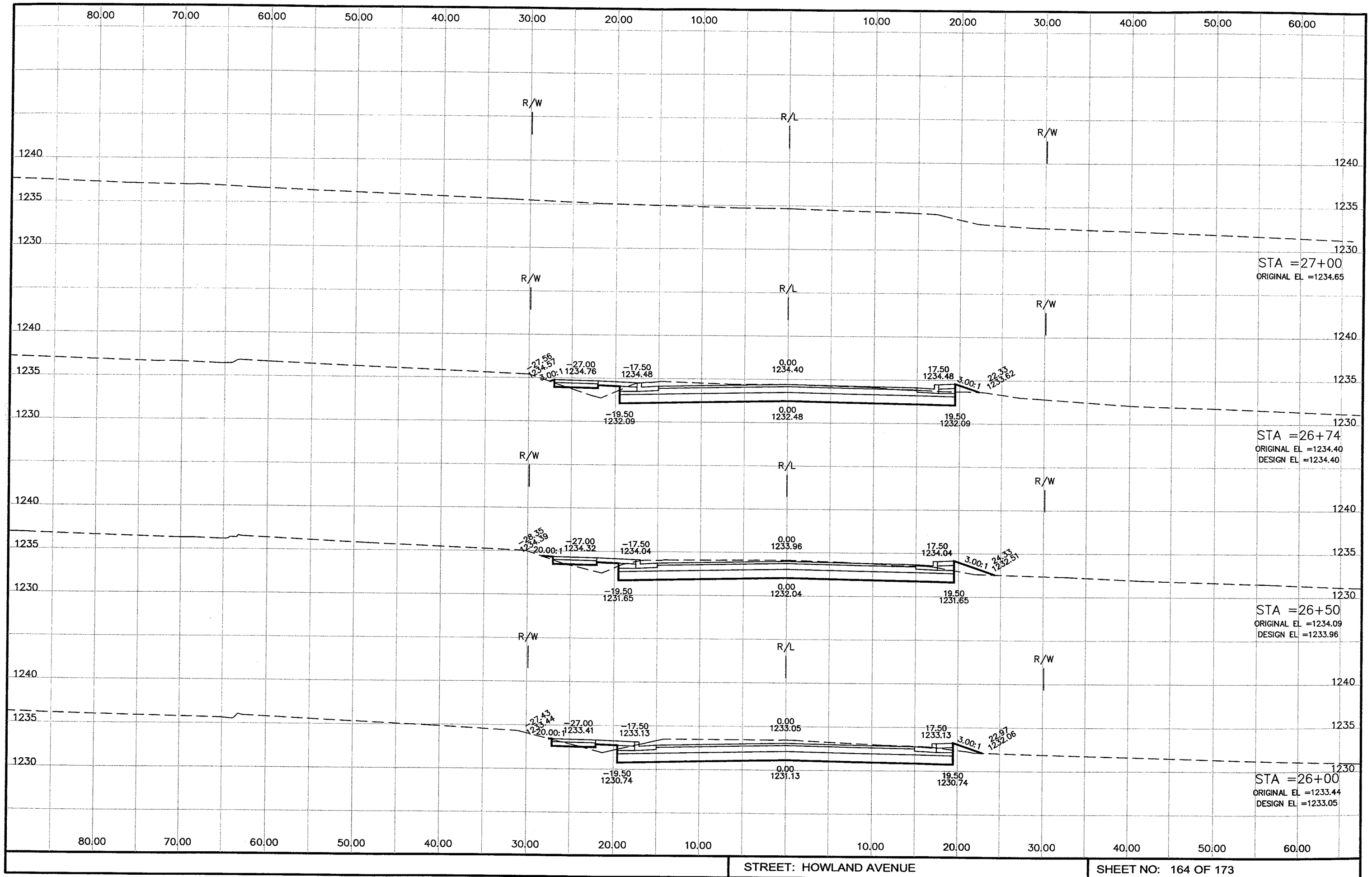
STREET: HOWLAND AVENUE

SHEET NO: 162 OF 173

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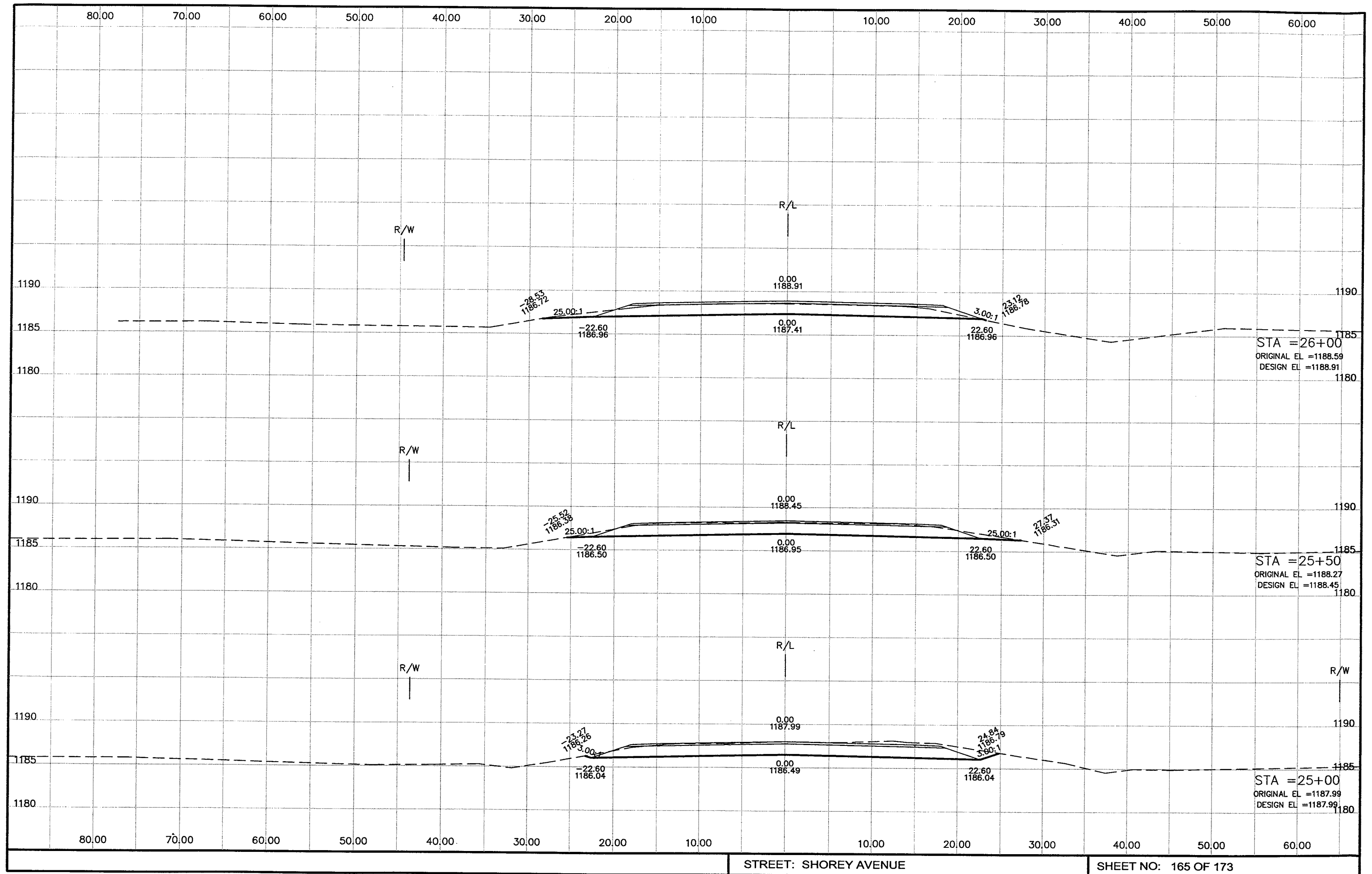
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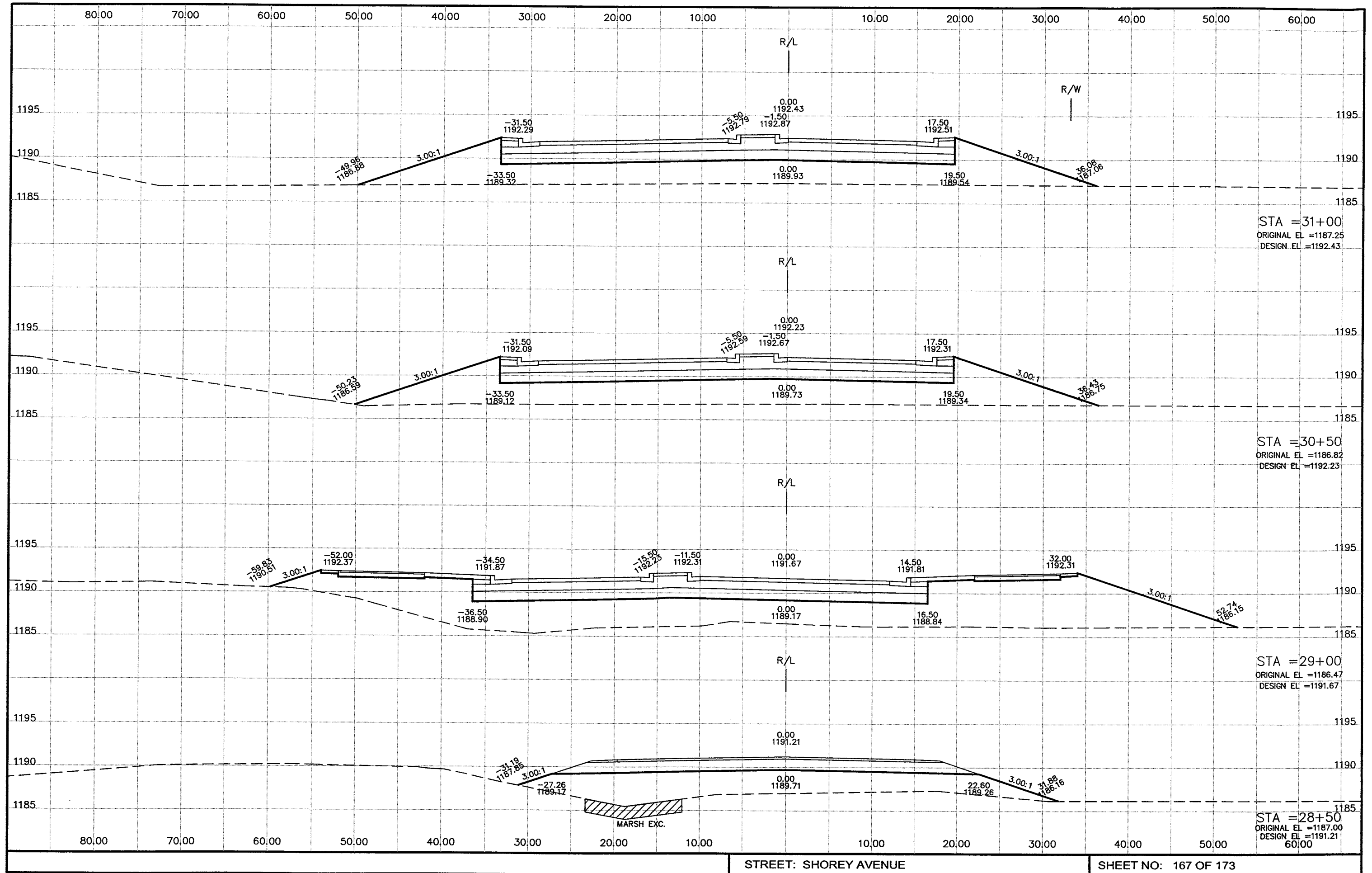
STREET: HOWLAND AVENUE

SHEET NO: 164 OF 173

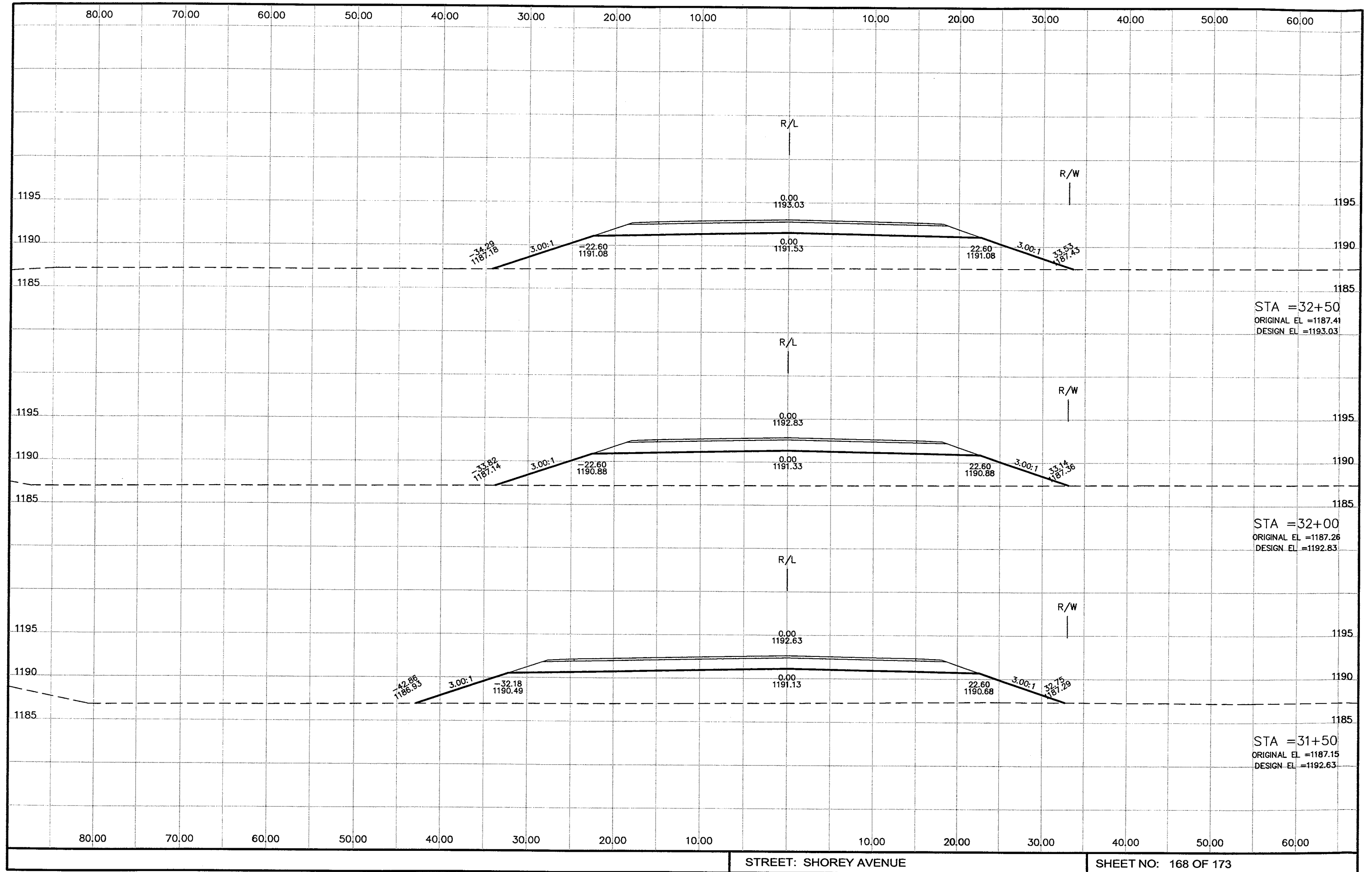
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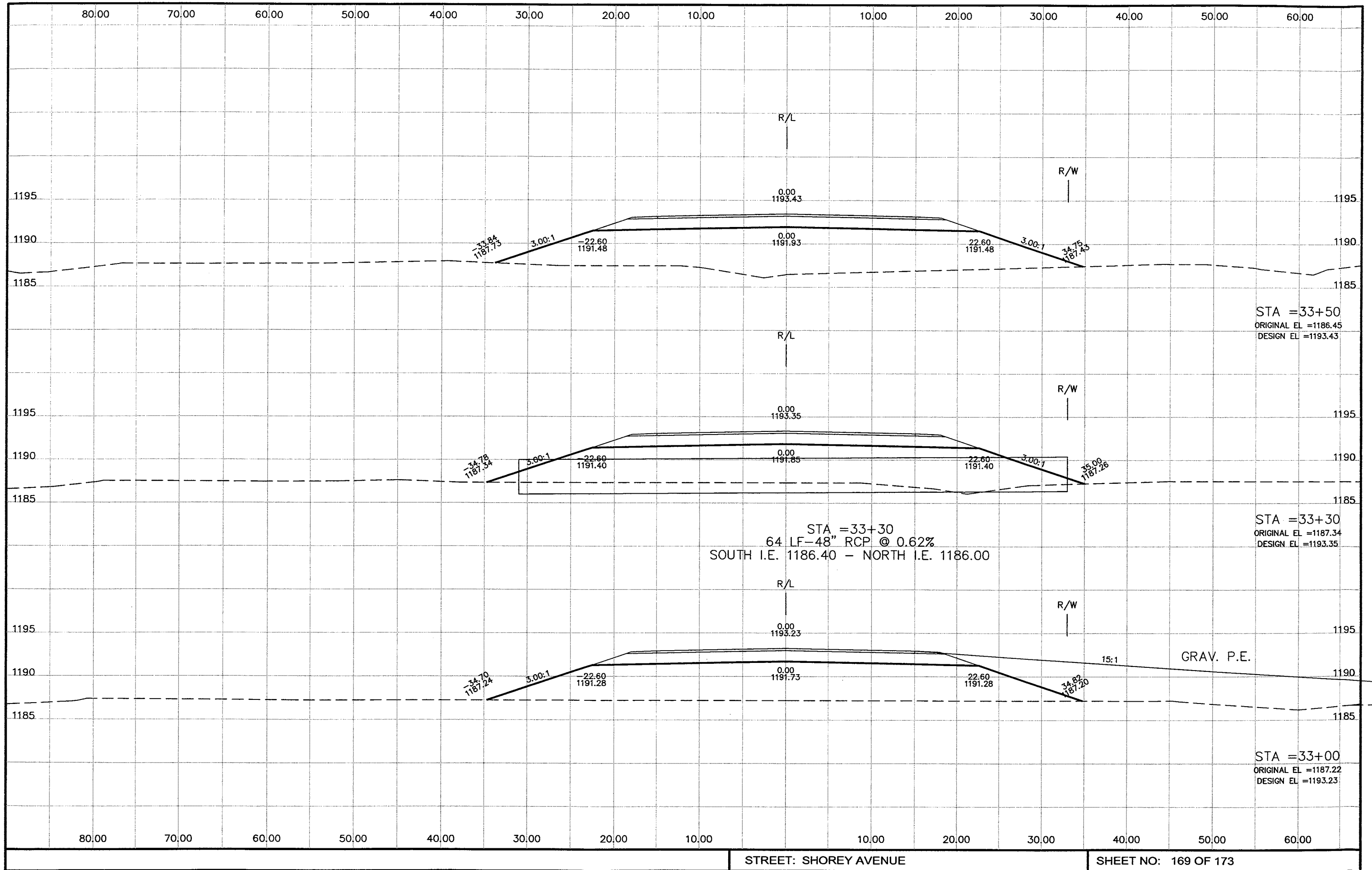
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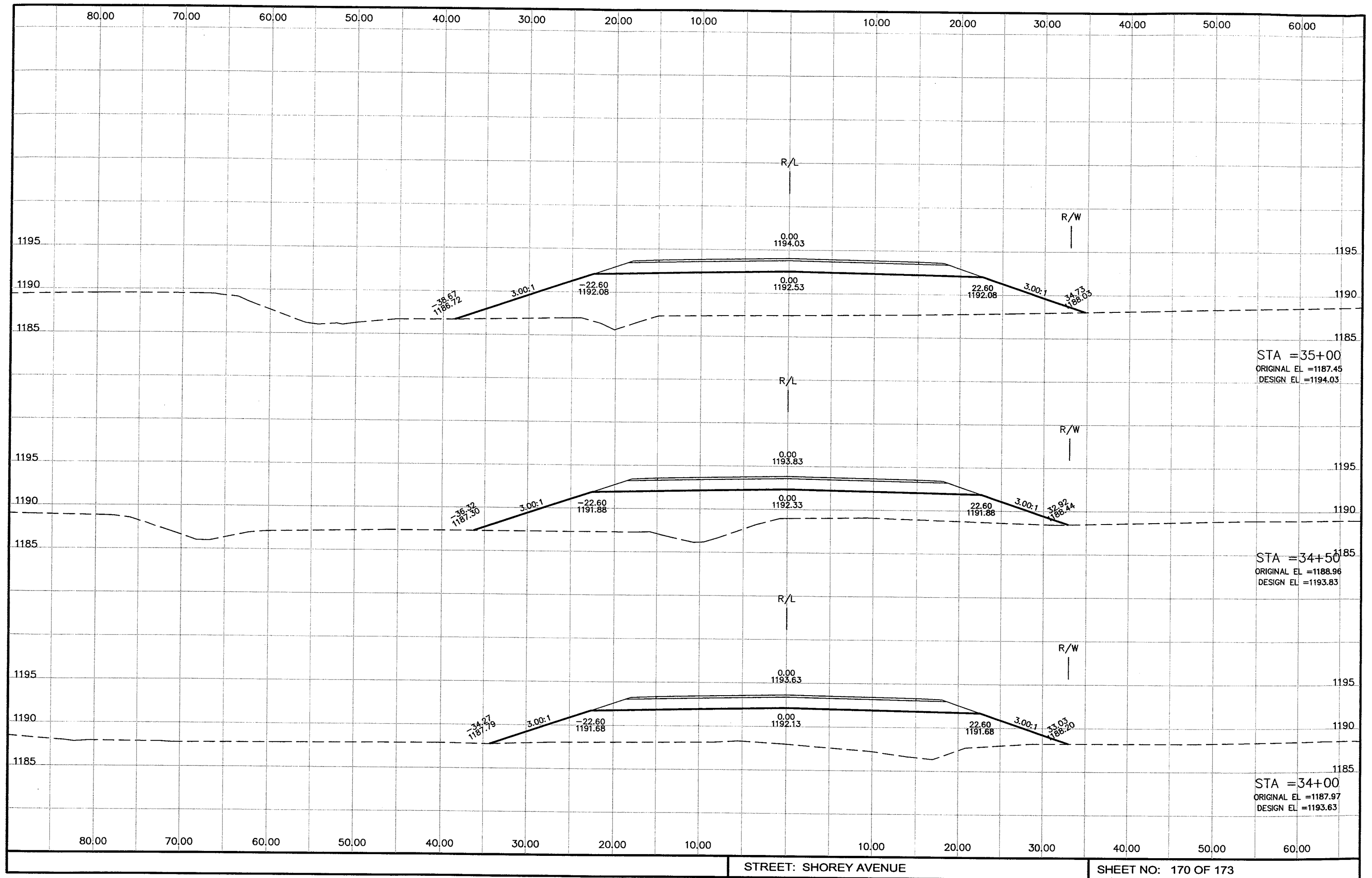
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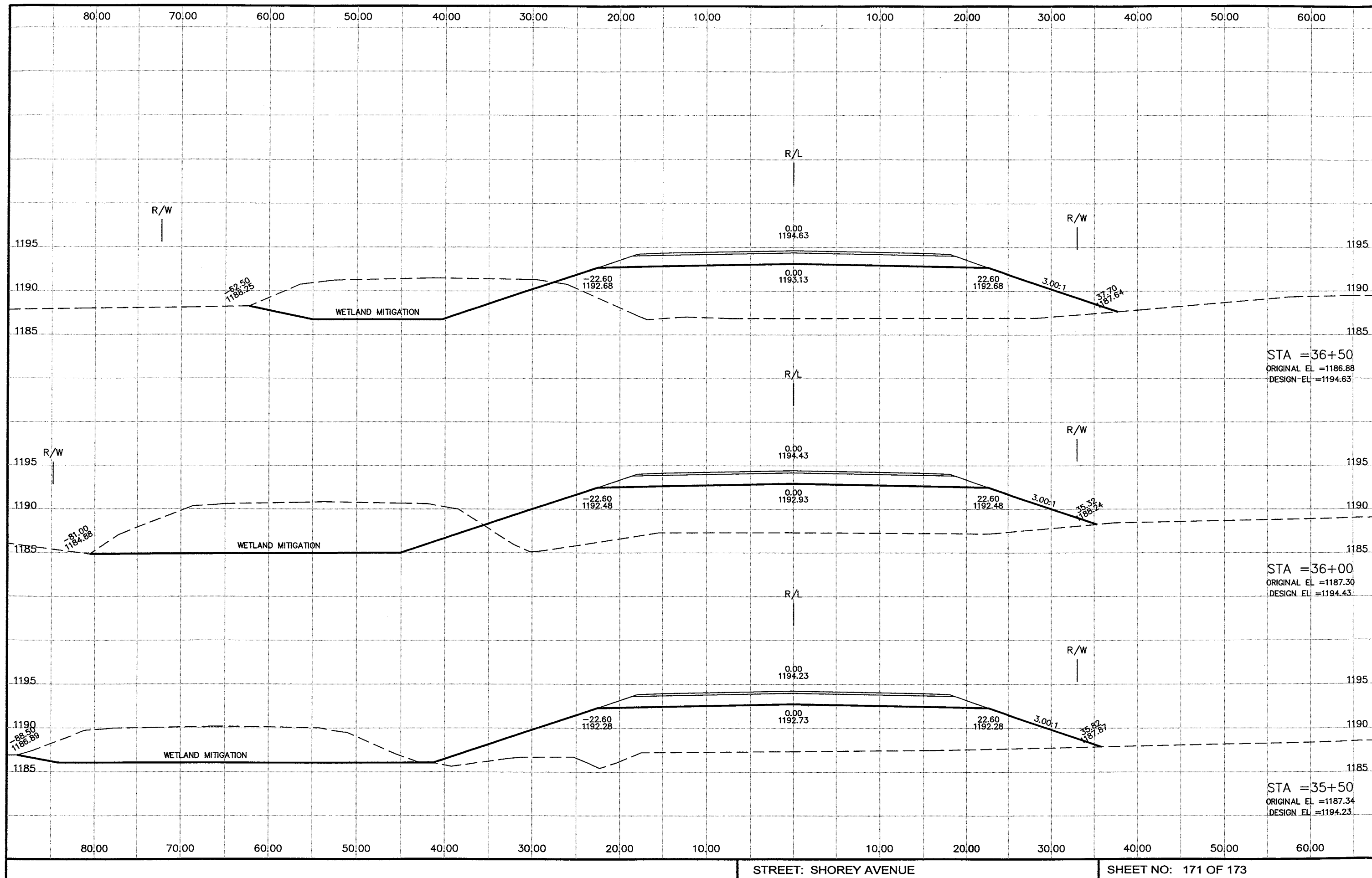
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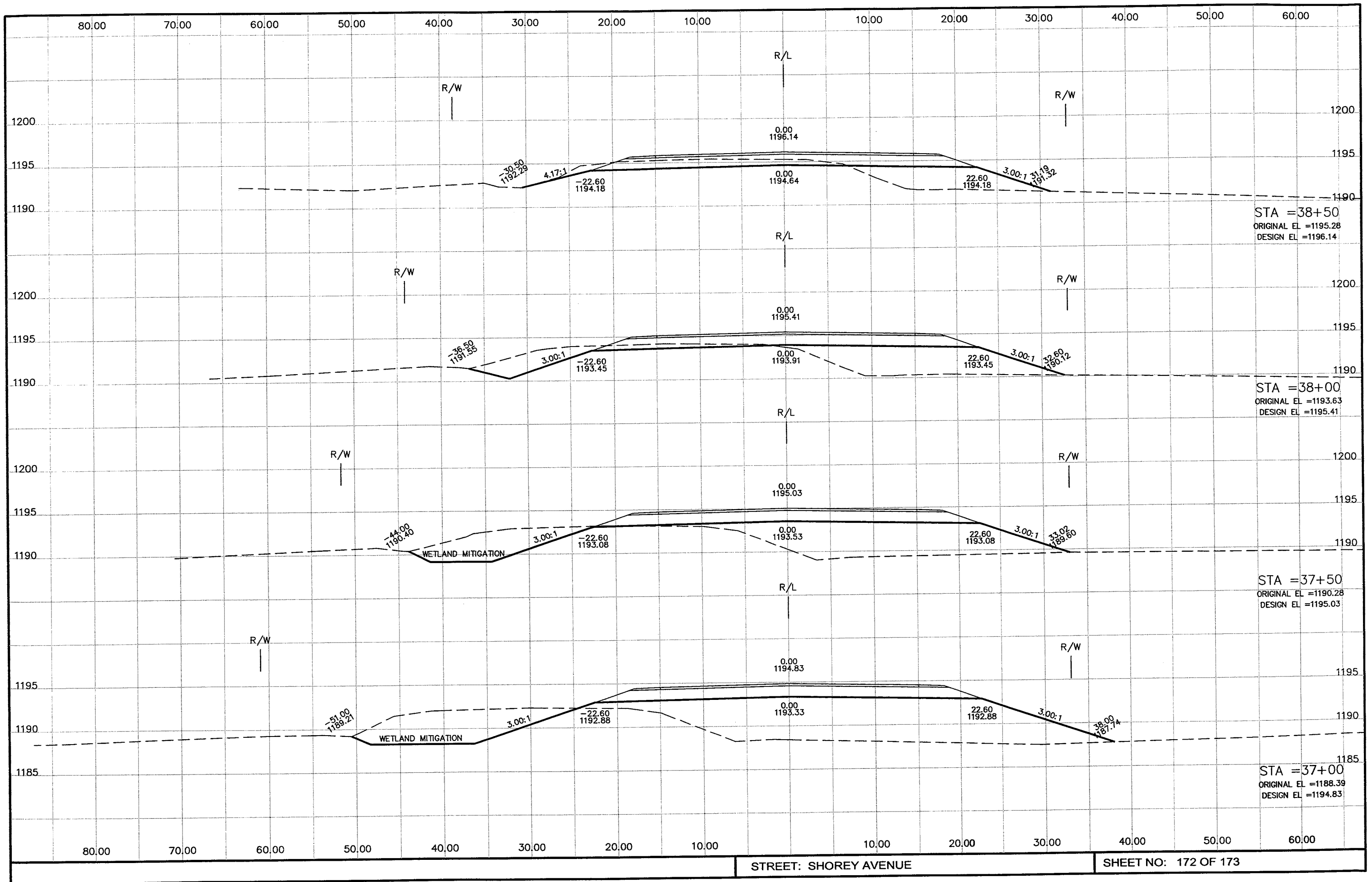
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