City of Milwaukee

Department of Public Works
Infrastructure Services Division

Ghassan Korban
Commissioner of Public Works

Preston Cole
Director of Operations

Jeffrey S. Polenske
City Engineer

March 10, 2014

NOTICE TO ALL CONTRACTORS:

Official Notice 20-1-2014: West Lisbon Avenue Bridge, Retaining Walls and Approaches Over Canadian Pacific Railway

Bid Opening on Wednesday, March 19, 2014, at 10:30 a.m.

ADDENDUM #1

Addendum #1 has been posted to the City of Milwaukee DPW Website for Official Notice 20 for West Lisbon Avenue Bridge, Retaining Walls, and Approaches over Canadian Pacific Railway, located in Milwaukee, WI 53208.

The Addendum Documents, which include drawings, can be downloaded from the City's website via http://mpw.milwaukee.gov/bids/docs/20-2014.

If preferred, paper copies of the addendum can be picked up from the following address, Room 506, Frank P. Zeidler Municipal Building, 841 North Broadway, Milwaukee, Wisconsin 53202.

For general questions call (414) 286-3314.

The responsibility for notifying potential subcontractors and suppliers of these changes remains with the prime contractor.

NOTE: Each contractor shall acknowledge receipt of Addendum Number 1 on page 23 (Acknowledgements Page) in the bid documents.

Very truly yours,

Craig S. Liberto

Craig Liberto
Structural Design Manager
City of Milwaukee – Structural Design Section

CSL:HR/clm

Attachments

City of Milwaukee

Department of Public Works
Infrastructure Services Division

Ghassan Korban
Commissioner of Public Works

Preston Cole
Director of Operations

Jeffrey S. Polenske
City Engineer

March 10, 2014

OFFICIAL NOTICE NUMBER 20-1-2014
PROJECT NO. BR100140105
ADDENDUM NUMBER 1

NOTICE TO CONTRACTORS intending to bid on Official Notice 20-1-2014, which appeared in the *Daily Reporter*, with a Bid Opening date of Wednesday, March 19, 2014 at 10:30 a.m.

CHANGES TO INVITATION TO BID AND SPECIFICATIONS:

Replace all references to SBE percentage requirements to 15%.

Replace all references to Residency percentage requirements to 20%.

Replace page 9 of the Invitation to Bid documents with the attached page 9: Addendum 1, with updated Bid Item Quantity for 506.0615 Bar Steel Reinforcement HS Coated Retaining Wall.

Add the following to Special Provisions section *25. Wall Concrete Panel Mechanically Stabilized Earth LRFD, Item 532.0500.S.01, 532.0500.S.02, 532.0500.S.03, 532.0500.S.04* under subsection B.1: Desired panel sizes are 4'x8' panels to be aligned vertically, with custom panel sizes to be located near new proposed column. Custom panel widths over 4'x8' will be considered for full final design, but layout shall closely mimic design as shown on rendering on sheet 1 of 19 of structure B-40-899. Submit panel size layout to engineer for approval prior to final design.

CHANGES TO PLANS:

Bridge B-40-899 Plans:

- **Clouded pile spacing dimensions have been updated on sheet 6 of 19.**
- **Horizontal rustication detail for abutment end faces has been modified on sheet 7 of 19.**
- **Horizontal rustication detail for abutment end faces has been modified on sheet 9 of 19.**
- **Clouded railing detail on sheet 15 of 19 has been updated to remove 4" vertical brick terminations adjacent to lighting support.**

Northeast Retaining Wall R-40-606 Plans:

- **Estimate of Quantities table on sheet NE3 of NE7 was updated.**
- **Added butt joint detail on sheet NE3 of NE7.**
- **Modified butt joint detail at abutment on sheet NE3 of NE7.**
- **Concrete column plan view and elevation view has been updated on sheet NE4 of NE7 to show MSE wall framing into the new column. Note added.**
- **Bill of Bars-Column table was modified and additional bars added on sheet NE4 of NE7.**

Southeast Retaining Wall R-40-607 Plans:

- **Estimate of Quantities table on sheet SE3 of SE7 was updated.**
- **Added butt joint detail on sheet SE3 of SE7.**
- **Modified butt joint detail at abutment on sheet SE3 of SE7.**
- **Concrete column plan view and elevation view has been updated on sheet SE4 of SE7 to show MSE wall framing into the new column. Note added.**
- **Bill of Bars-Column table was modified and additional bars added on sheet SE4 of SE7.**

Northwest Retaining Wall R-40-608 Plans:

- **Estimate of Quantities table on sheet NW3 of NW7 was updated.**
- **Added butt joint detail on sheet NW3 of NW7.**
- **Modified butt joint detail at abutment on sheet NW3 of NW7.**
- **Column plan view and elevation view has been updated on sheet NW4 of NW7 to show MSE wall framing into the new column. Note added.**
- **Bill of Bars-Column table was modified and additional bars added on sheet NW4 of NW7.**

Southwest Retaining Wall R-40-609 Plans:

- **Proposed slope on elevation view on sheet SW1 of SW7 has been deleted. See paving plans for grading.**
- **Estimate of Quantities table on sheet SW3 of SW7 was updated.**
- **Added butt joint detail on sheet SW3 of SW7.**
- **Modified butt joint detail at abutment on sheet SW3 of SW7.**
- **Concrete column plan view and elevation view has been updated on sheet SW4 of SW7 to show MSE wall framing into the new column. Note added.**
- **Bill of Bars-Column table was modified and additional bars added on sheet SW4 of SW7.**

All other bid conditions remain unchanged.

NOTE: Each contractor shall acknowledge receipt of Addendum Number 1 on page 23 (Acknowledgements Page) in the Invitation to Bid.

502.0100 CONCRETE MASONRY BRIDGES 1,006 CY

(Bid in figures) $ _____ per CY

(Bid in words) $ _____ per CY

502.3200 PROTECTIVE SURFACE TREATMENT 483 SY

(Bid in figures) $ _____ per SY

(Bid in words) $ _____ per SY

504.0500 CONCRETE MASONRY RETAINING WALLS 54 CY

(Bid in figures) $ _____ per CY

(Bid in words) $ _____ per CY

505.0405 BAR STEEL REINFORCMENT HS BRIDGES 41,348 LB

(Bid in figures) $ _____ per LB

(Bid in words) $ _____ per LB

505.0605 BAR STEEL REINFORCEMENT HS COATED BRIDGES 72,786 LB

(Bid in figures) $ _____ per LB

(Bid in words) $ _____ per LB

506.0615 BAR STEEL REINFORCEMENT HS COATED RETAINING WALL 4,602 LB

(Bid in figures) $ _____ per LB

(Bid in words) $ _____ per LB

516.0100 DAMPPROOFING 433 SY

(Bid in figures) $ _____ per SY

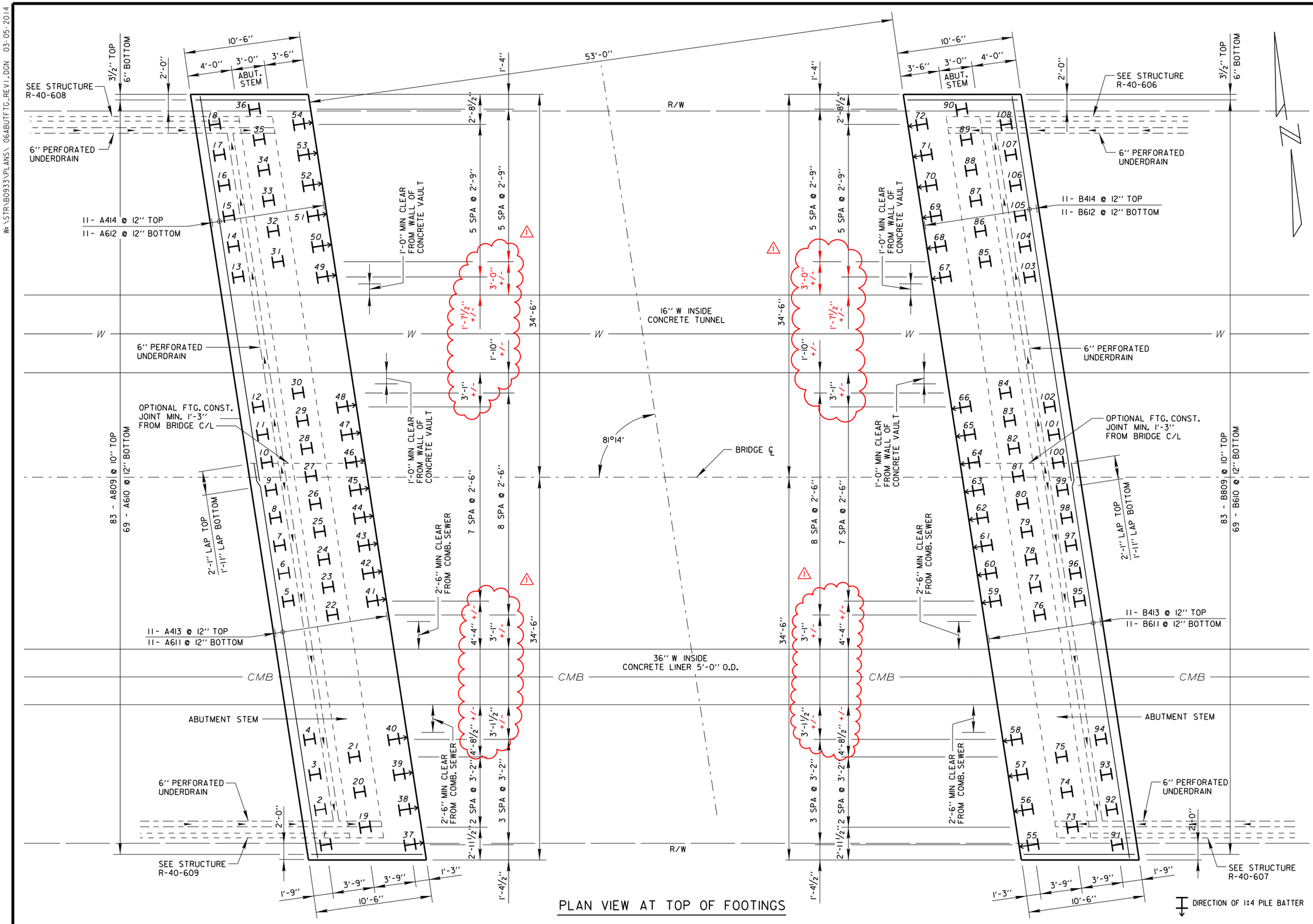
(Bid in words) $ _____ per SY

516.0500 RUBBERIZED MEMBRANE WATERPROOFING 32 SY

(Bid in figures) $ _____ per SY

(Bid in words) $ _____ per SY

W:\STRVB0933\PLANS\06ABUTFTG_REV1.DGN 03-05-2014



PLAN VIEW AT TOP OF FOOTINGS

City of Milwaukee

Department of Public Works

Infrastructure Services Division

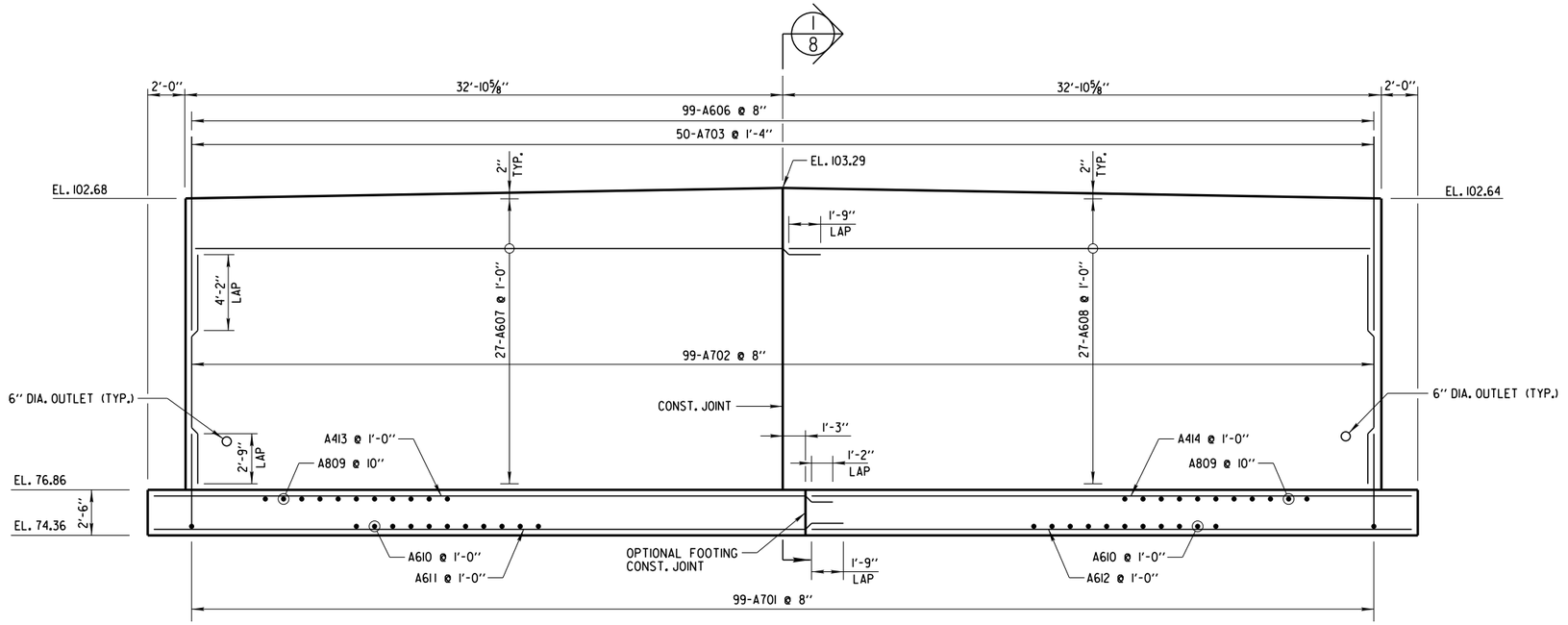
WEST LISBON AVENUE BRIDGE OVER CANADIAN PACIFIC RAILWAY B-40-899 ABUTMENT FOOTING PLAN

REVISIONS

⚠1 03/05/2014
DIMENSION CHANGES
J.J.K.

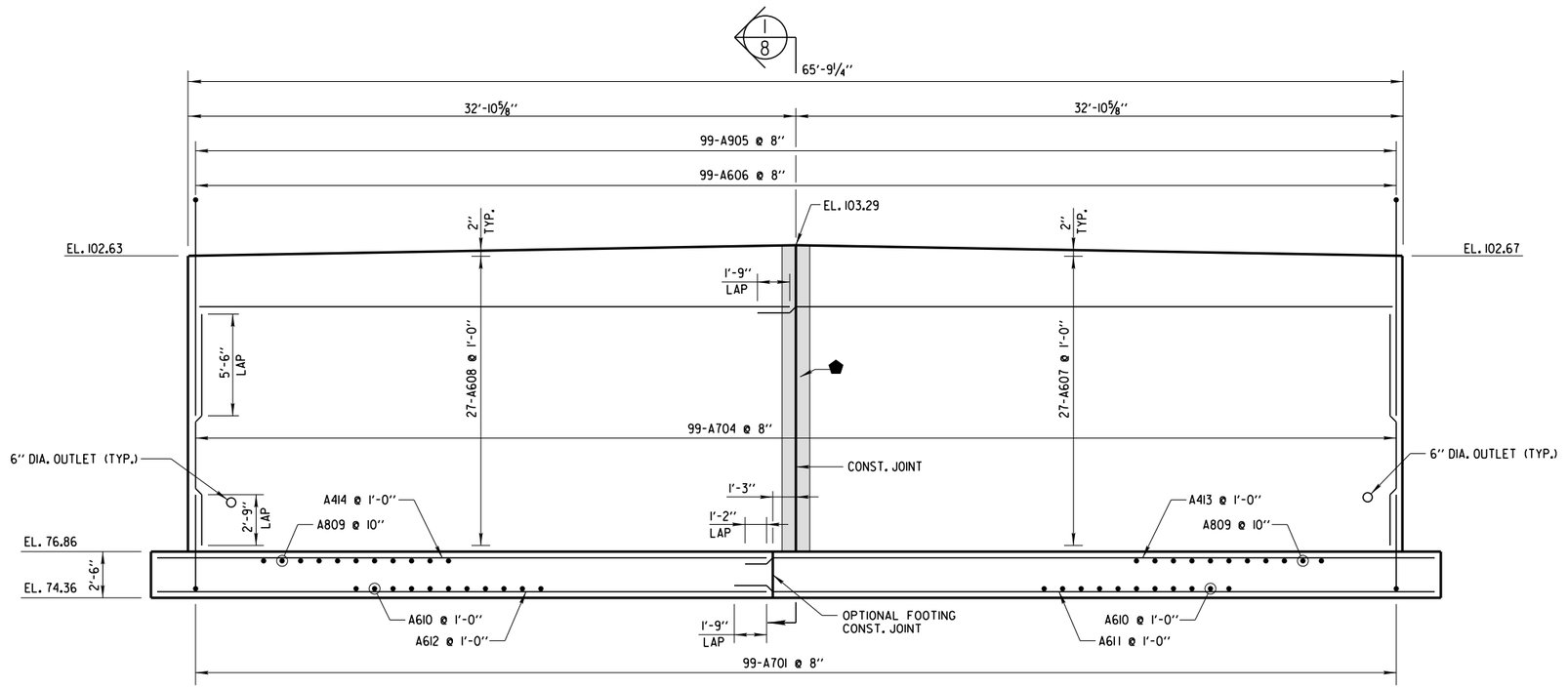
DESIGNED BY	H.J.R.
DRAWN BY	R.B.M.
CHECKED BY	A.R.
DATE	02-2014
SCALE	NONE
JOB NUMBER	BRIOO-14-0105
SHEET NUMBER	6 OF 19
OF	58

W:\STRX80933\PLANS\ OTEABUT_REV1.DGN 03-06-2014



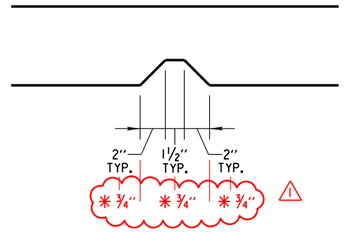
EAST ABUTMENT

FRONT FACE
LOOKING UPSTATION (EAST)



EAST ABUTMENT

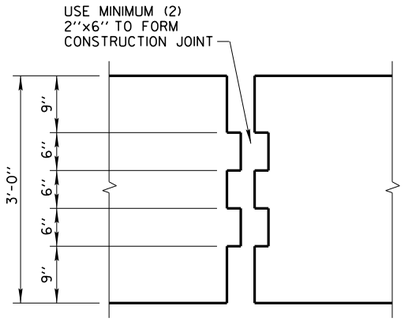
BACK FACE
LOOKING DOWNSTATION (WEST)



RUSTICATION DETAIL

NOTES: PLACE FULL HEIGHT VERTICAL RUSTICATION JOINT EVERY 4'-0" ALONG LENGTH OF FRONT FACE OF ABUTMENT.

PLACE FULL WIDTH HORIZONTAL RUSTICATION AT END FACE OF ABUTMENT TO MATCH MSE WALL PATTERN



DETAIL PLAN VIEW ABUTMENT WALL CONSTRUCTION JOINT

LEGEND:

⬟ - 18" RUBBERIZED MEMBRANE WATERPROOFING

City of Milwaukee

Department of Public Works

Infrastructure Services Division

WEST LISBON AVENUE BRIDGE OVER CANADIAN PACIFIC RAILWAY B-40-899

EAST ABUTMENT ELEVATION

REVISIONS
⚠ 03/06/2014
DIMENSION MODIFICATION
H.J.R.

DESIGNED BY	J.J.K.
DRAWN BY	R.B.M.
CHECKED BY	A.R.
DATE	02-2014
SCALE	NONE
JOB NUMBER	BR100-14-0105
SHEET NUMBER	7 OF 19
OF	58

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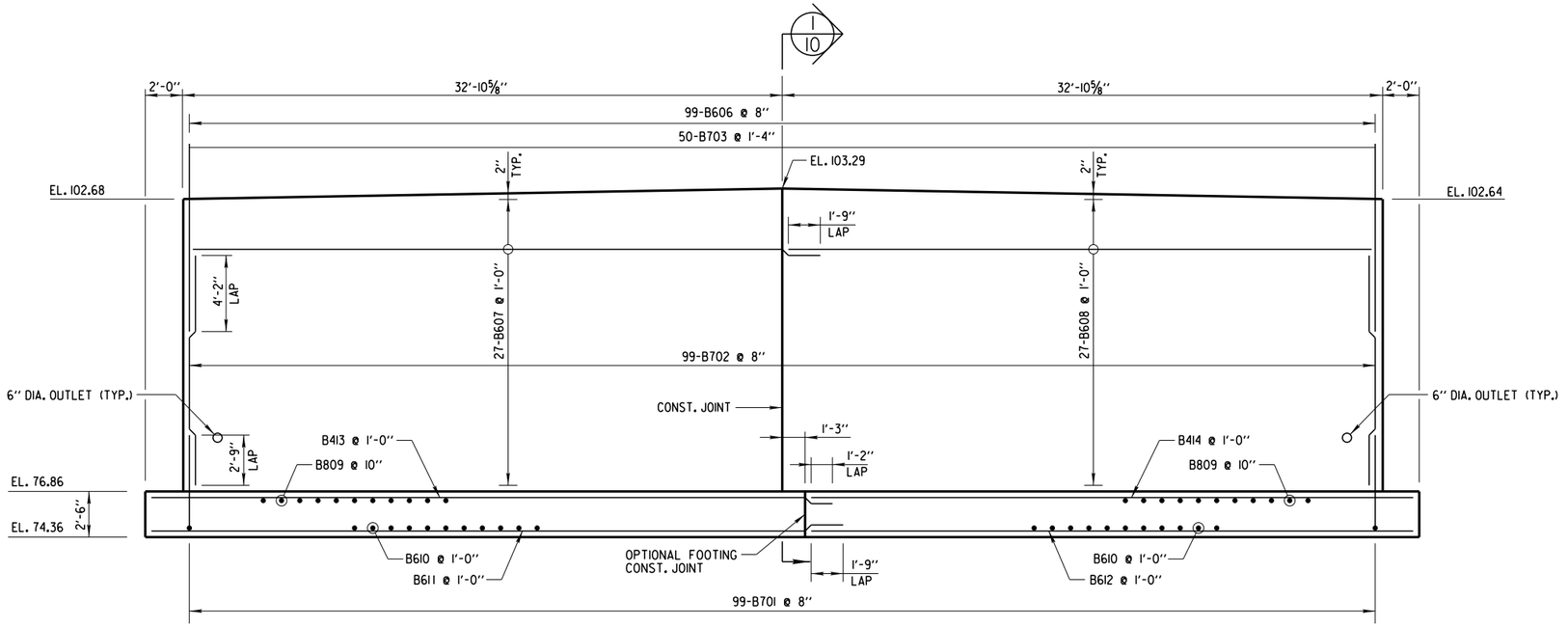
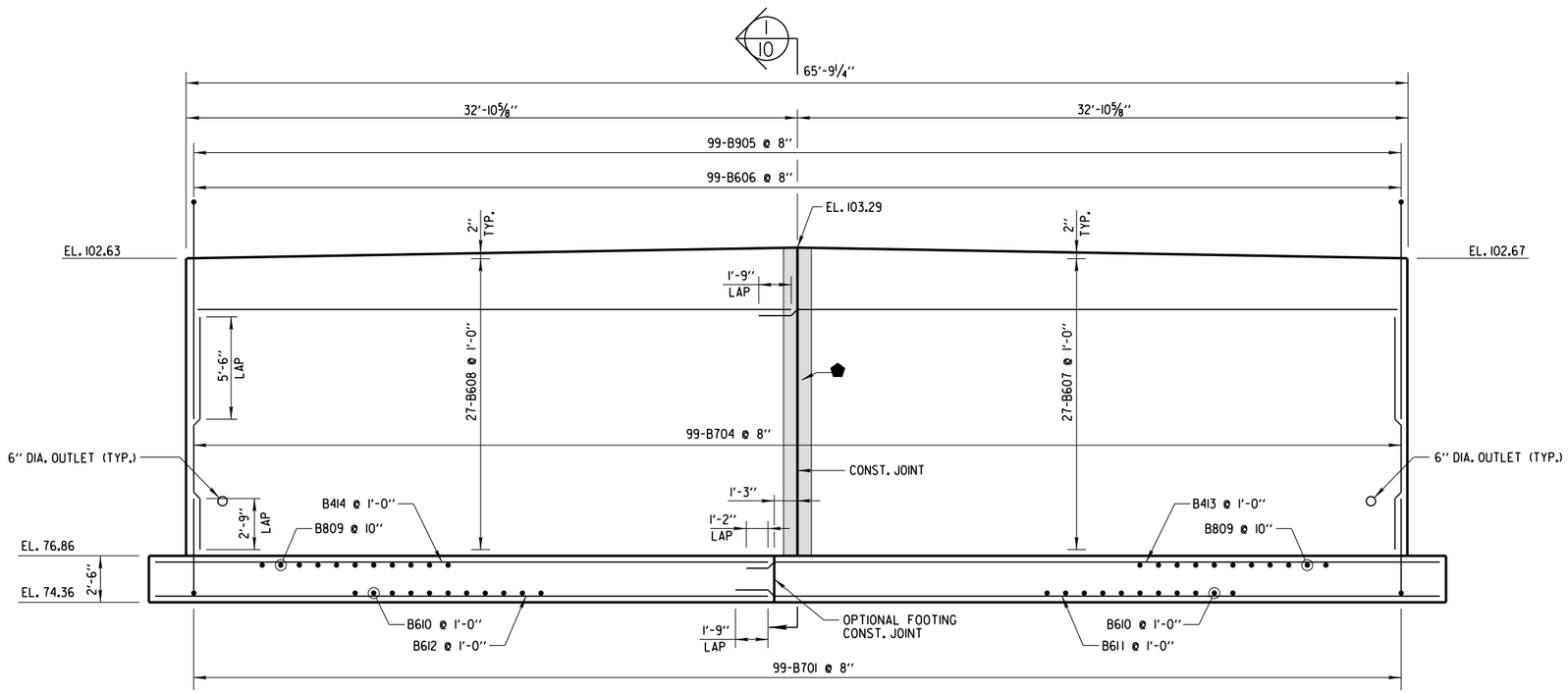


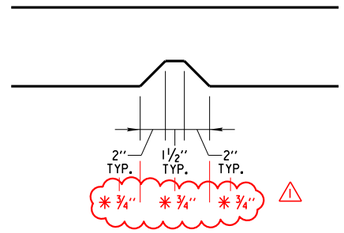
WEST ABUTMENT

FRONT FACE
LOOKING DOWNSTATION (WEST)



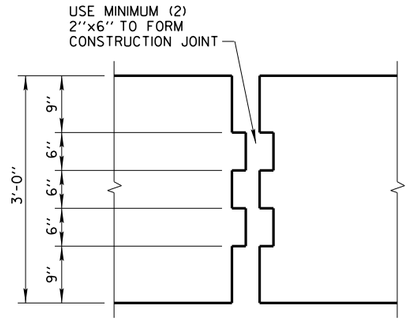
WEST ABUTMENT

BACK FACE
LOOKING UPSTATION (EAST)



RUSTICATION DETAIL

NOTES:
1. PLACE FULL HEIGHT VERTICAL RUSTICATION JOINT EVERY 4'-0" ALONG LENGTH OF FRONT FACE OF ABUTMENT.
2. PLACE FULL WIDTH HORIZONTAL RUSTICATION AT END FACE OF ABUTMENT TO MATCH MSE WALL PATTERN



DETAIL PLAN VIEW ABUTMENT WALL CONSTRUCTION JOINT

LEGEND:

⬟ - 18" RUBBERIZED MEMBRANE WATERPROOFING

City of Milwaukee

Department of Public Works

Infrastructure Services Division

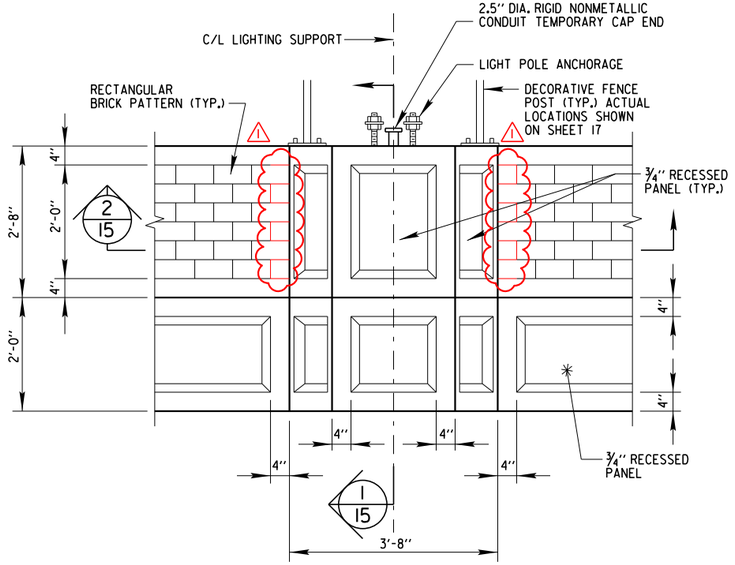
WEST LISBON AVENUE BRIDGE OVER CANADIAN PACIFIC RAILWAY B-40-899

WEST ABUTMENT ELEVATION

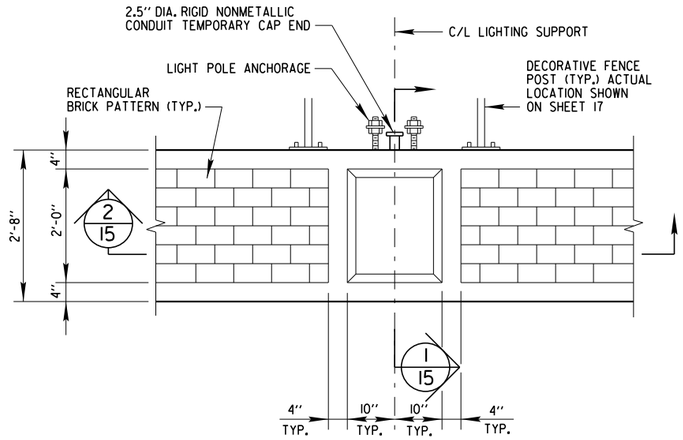
REVISIONS
1 03/06/2014
DIMENSION MODIFICATION H.J.R.

DESIGNED BY J.J.K.	
DRAWN BY R.B.M.	
CHECKED BY A.R.	
DATE 02-2014	SCALE NONE
JOB NUMBER BR100-14-0105	
SHEET NUMBER 9 OF 19	
OF 58	

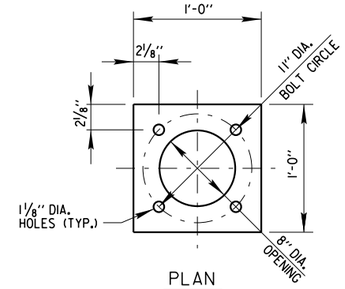
W:\STRVB0933\PLANS\ 15 LIGHTINGDETAIL_REV1.DGN 03-06-2014



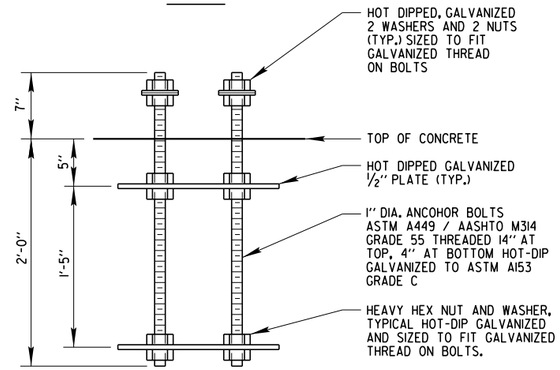
OUTSIDE ELEVATION AT LIGHT SUPPORT



INSIDE ELEVATION AT LIGHT SUPPORT



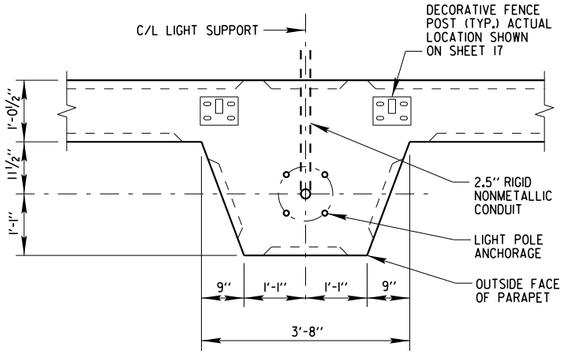
PLAN



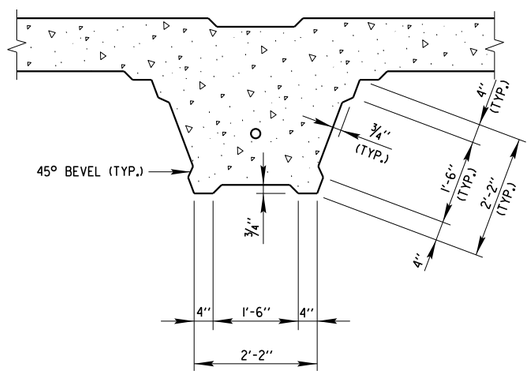
ELEVATION

ANCHOR ASSEMBLY LIGHT POLE STRUCTURES

1 / 15 SECTION



PLAN AT LIGHT SUPPORT



2 / 15 SECTION

NOTE:

- CONTRACTOR TO PROVIDE 3/8" PULL ROPE IN ALL CONDUITS.
- INSTALL BOLTS PERPENDICULAR TO THE HORIZON.

City of Milwaukee

Department of Public Works

Infrastructure Services Division

WEST LISBON AVENUE BRIDGE
OVER CANADIAN PACIFIC RAILWAY
B-40-899
LIGHTING DETAILS

REVISIONS
1 03/06/2014
TERMINATION UPDATE
H.J.R.

DESIGNED BY
J.J.K.

DRAWN BY
K.P.S.

CHECKED BY
H.J.R.

DATE
02-2014

SCALE
NONE

JOB NUMBER
BRI00-14-0105

SHEET NUMBER
15 OF 19

OF
58

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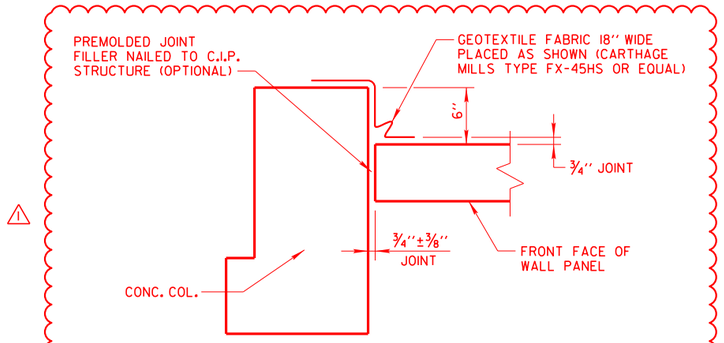
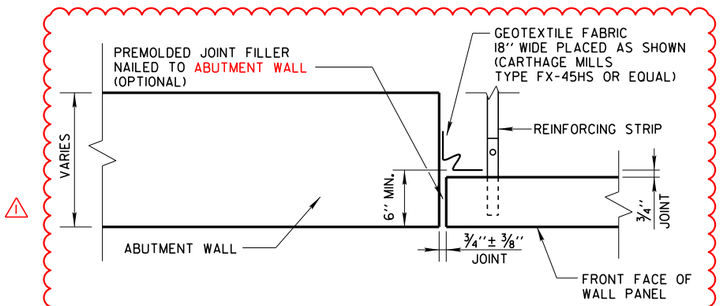
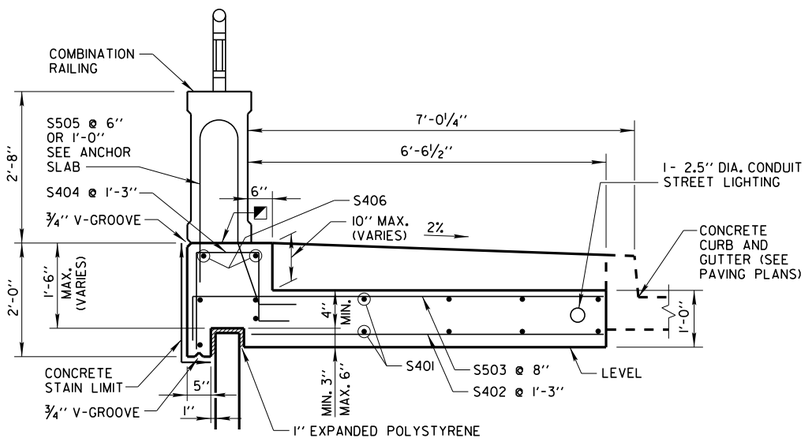


BUTT JOINT DETAIL AT CONCRETE COLUMN



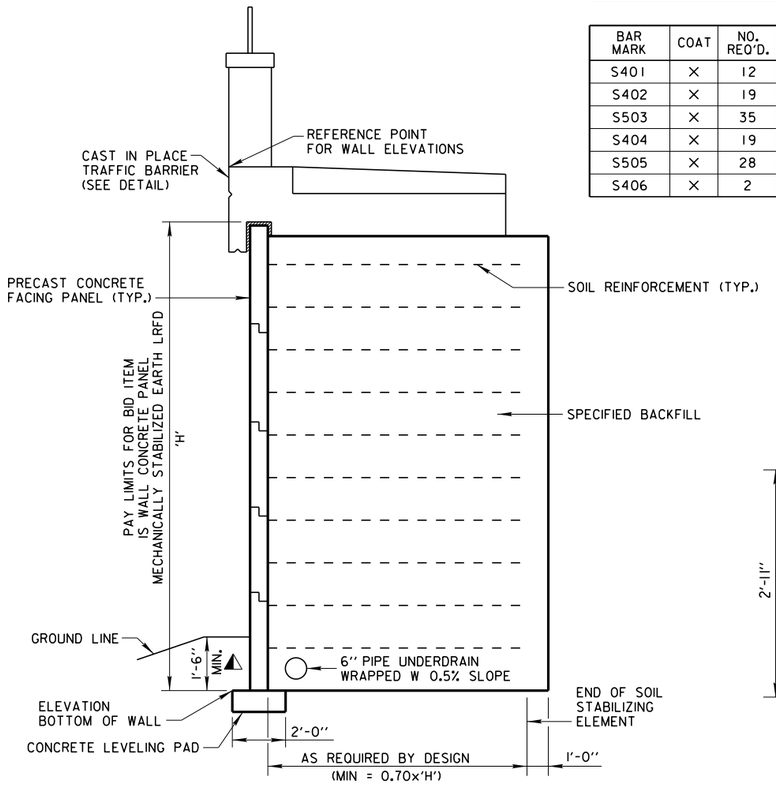
BUTT JOINT DETAIL AT ABUTMENT WALL

(WITH LIP OR NOTCH)



HORIZ. CONST. JOINT-STRIKE OFF AS SHOWN & LEAVE ROUGH.

CAST IN PLACE CONCRETE BARRIER DETAIL (1/4)



TYPICAL CROSS SECTION

MINIMUM EMBEDMENT BASED ON SITE SPECIFIC PARAMETERS (1'-6" MINIMUM FOR ALL WALLS ON LEVEL GROUND), FIELD EMBEDMENTS SHALL MEET OR EXCEED THE MINIMUM EMBEDMENT, FIELD EMBEDMENTS BELOW MINIMUM EMBEDMENT SHALL NOT BE INCLUDED IN THE PAY LIMITS.

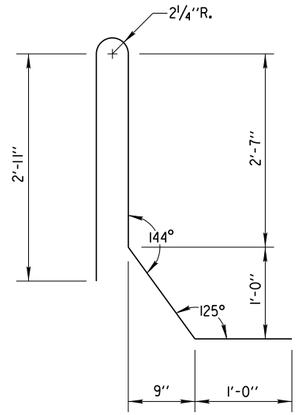
NOTE:
TOP OF CONCRETE LEVELING PAD BETWEEN STATIONS SHALL BE SET AT SAME ELEVATION AS TOP OF BRIDGE FOOTING.

BILL OF BARS - N.E. RETAINING WALL

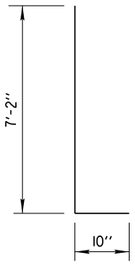
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
S401	X	12	22'-4"		▲	LONGITUDINAL
S402	X	19	6'-0"			TRANSVERSE - BOTTOM
S503	X	35	7'-11"	X		TRANSVERSE - TOP
S404	X	19	4'-3"	X		EDGE CAP
S505	X	28	7'-2"	X		RAILING DOWEL
S406	X	2	22'-9"			EDGE CAP - LONGITUDINAL

BAR MARK	NO. REQUIRED	LENGTH
S401	2 SERIES OF 6	21'-9" TO 22'-11"

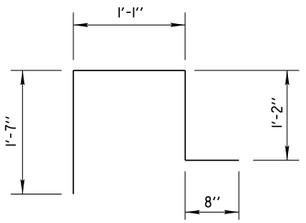
▲ LENGTH SHOWN FOR BARS IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTH.



S505



S503



S404

ESTIMATE OF QUANTITIES

ITEM NO.	BID ITEMS	UNIT	TOTAL
205.0501.S.02	EXCAVATION, HAULING AND DISPOSAL OF PETROLEUM CONTAMINATED SOIL	TON	16
504.0500	CONCRETE MASONRY RETAINING WALLS	CY	14
505.0615	BAR STEEL REINFORCEMENT HS COATED RETAINING WALLS	LB	1,187
517.1010.S.02	CONCRETE STAINING (R-40-606)	SF	130
517.1015.S.02	CONCRETE STAINING MULTI COLOR STRUCTURE (R-40-606)	SF	76
517.1050.S.02	ARCHITECTURAL SURFACE TREATMENT	SF	76
532.0500.S.01	WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH LRFD	SF	456
SPV.0105.02	RAILING STEEL TYPE C2 GALVANIZED R-40-606	LS	1

City of Milwaukee

Department of Public Works

Infrastructure Services Division

WEST LISBON AVENUE NORTHEAST RET. WALL OVER CANADIAN PACIFIC RAILWAY R-40-606 WALL DETAIL DETAILS AND QUANTITIES

REVISIONS
⚠ 03/06/2014
REVISED AND ADDITIONAL BUTT JOINT DETAILS
A.R.

DESIGNED BY H.J.R.
DRAWN BY R.B.M.
CHECKED BY A.R.
DATE 02-2014
SCALE NONE
JOB NUMBER BR100-14-0105
SHEET NUMBER NE3 OF NE7
OF 58

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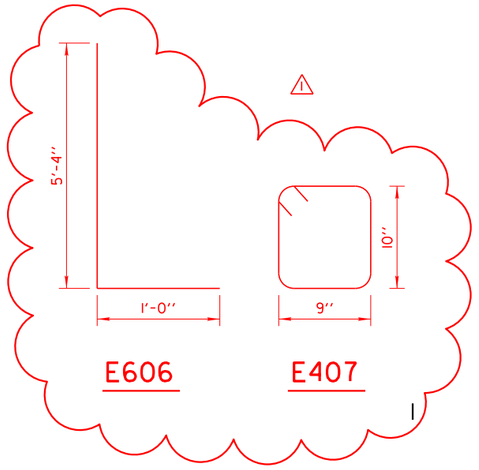
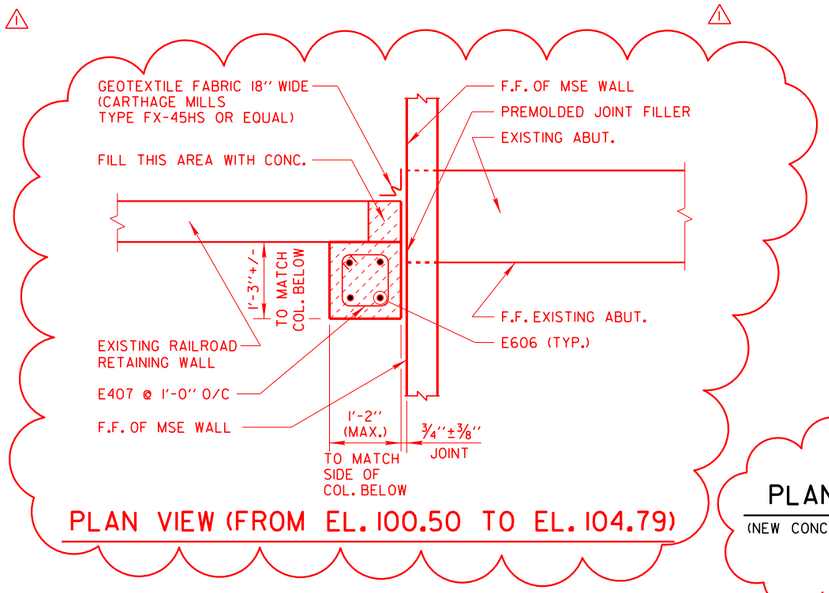
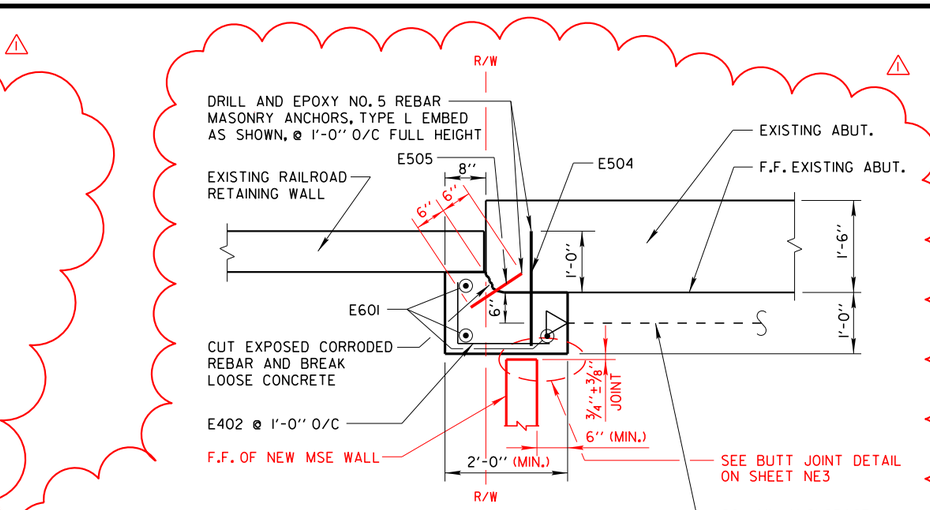
BILL OF BARS - COLUMN

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
E601	X	3	22'-8"			VERT. COL.
E402	X	23	2'-7"	X		STIRRUP
E503	X	2	1'-4"			DOWELS
E504	X	23	1'-10"			DOWELS
E505	X	23	1'-0"			DOWELS
E606	X	4	6'-2"	X		DOWELS
E407	X	4	3'-8"	X		STIRRUP



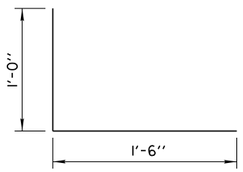


PLAN VIEW (FROM EL. 100.50 TO EL. 104.79)

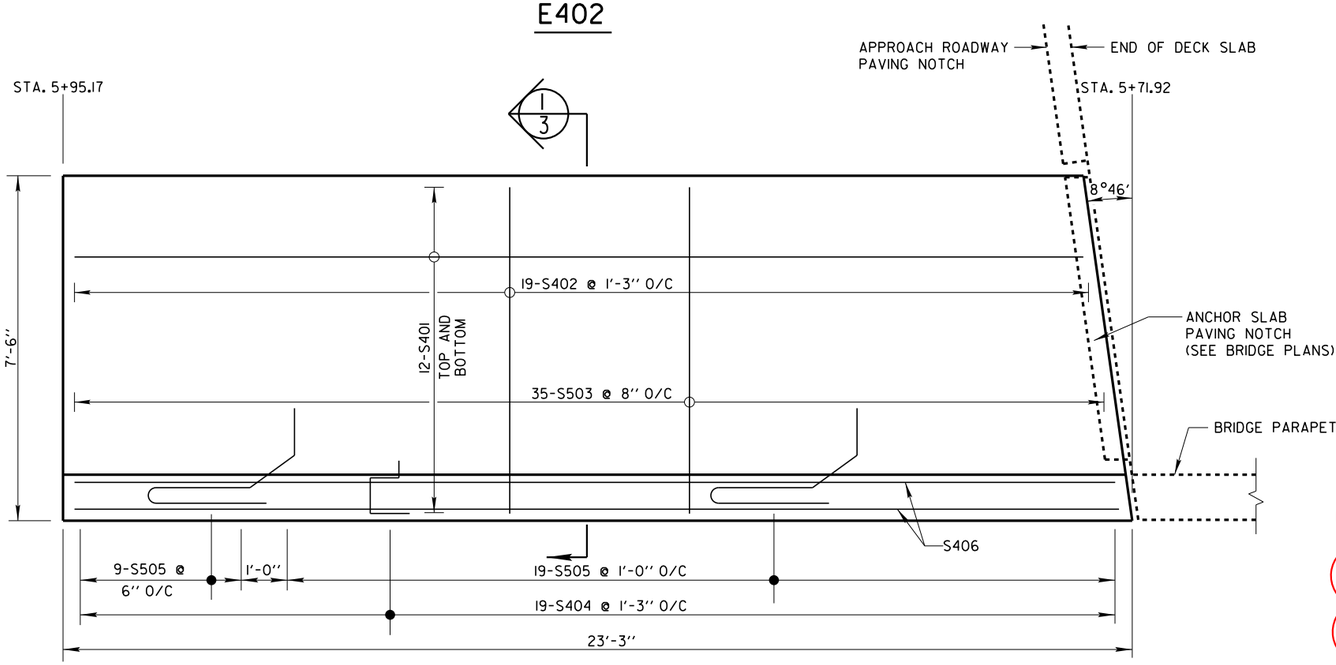


PLAN VIEW (FROM EL. 77.46 TO EL. 100.50)

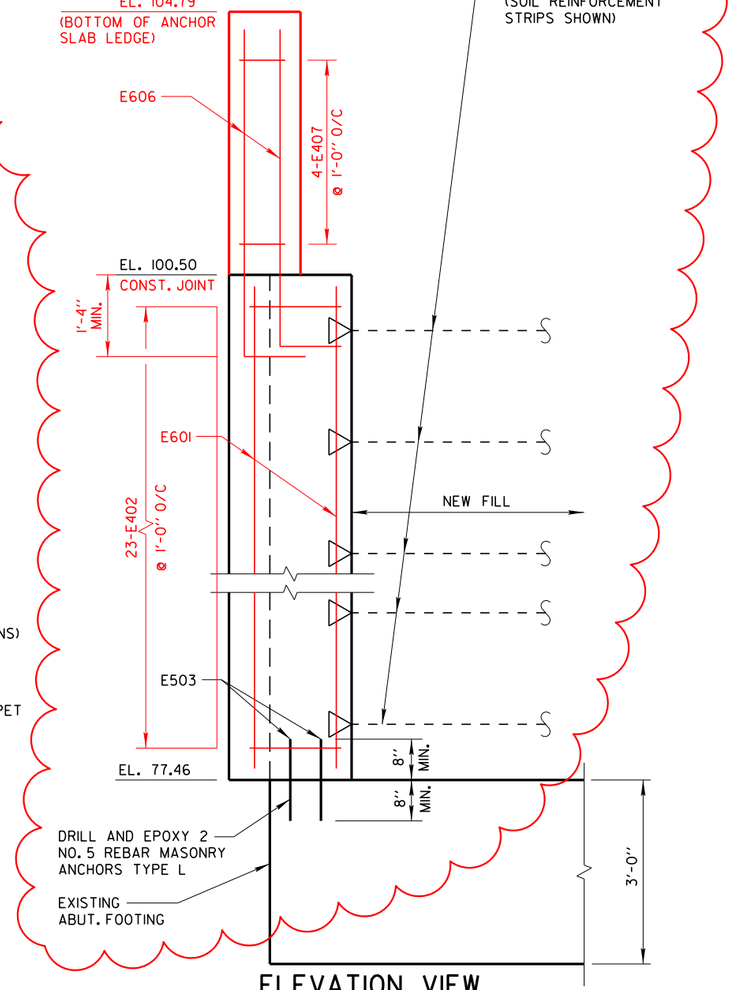
(NEW CONCRETE COLUMN)



E402



ANCHOR SLAB PLAN AT NORTHEAST RETAINING WALL



ELEVATION VIEW

(NEW CONCRETE COLUMN)

NOTE:
COLUMN THICKNESS MAY VARY AT TOP TO CREATE PLUMBNESS FOR THE BUTTING MSE WALL

City of Milwaukee

Department of Public Works

Infrastructure Services Division

WEST LISBON AVENUE NORTHEAST RET. WALL OVER CANADIAN PACIFIC RAILWAY R-40-606 ANCHOR SLAB PLAN

REVISIONS

1 03/06/2014
ADDITIONAL PLAN VIEW AND MSE WALL SHOWN IN PLAN VIEW
A.R.

DESIGNED BY	H.J.R.
DRAWN BY	R.B.M.
CHECKED BY	A.R.
DATE	02-2014
SCALE	NONE
JOB NUMBER	BR100-14-0105
SHEET NUMBER	NE4 OF NE7
OF	58

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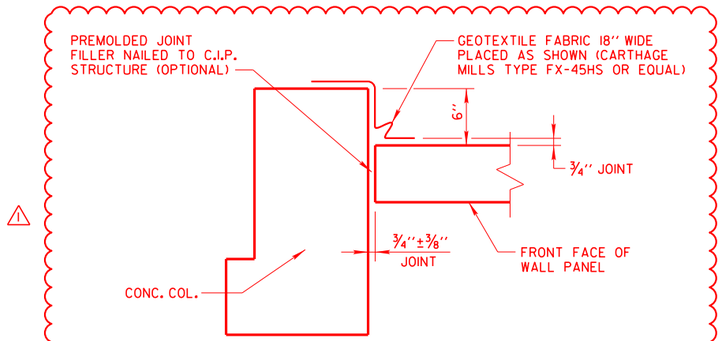
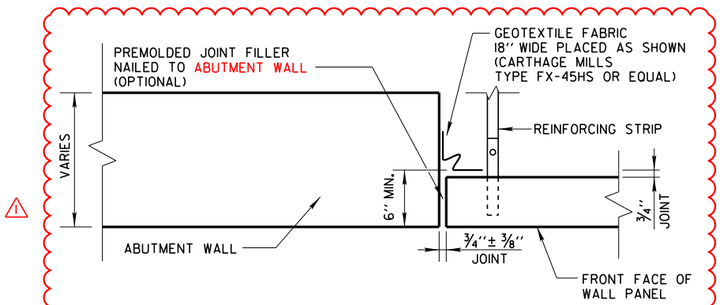
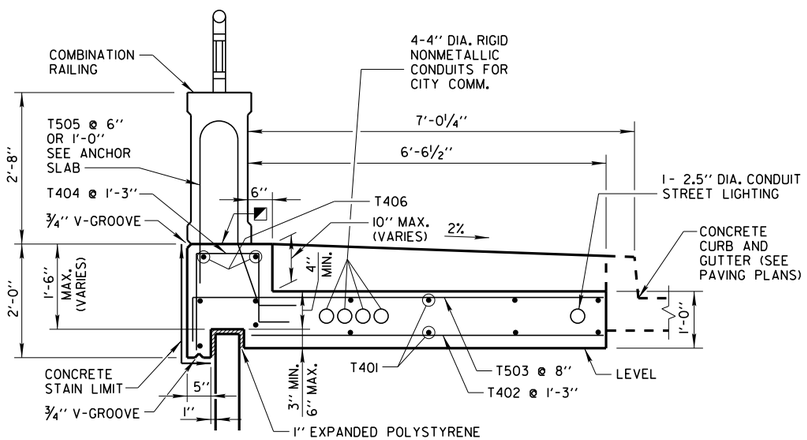


BUTT JOINT DETAIL AT CONCRETE COLUMN



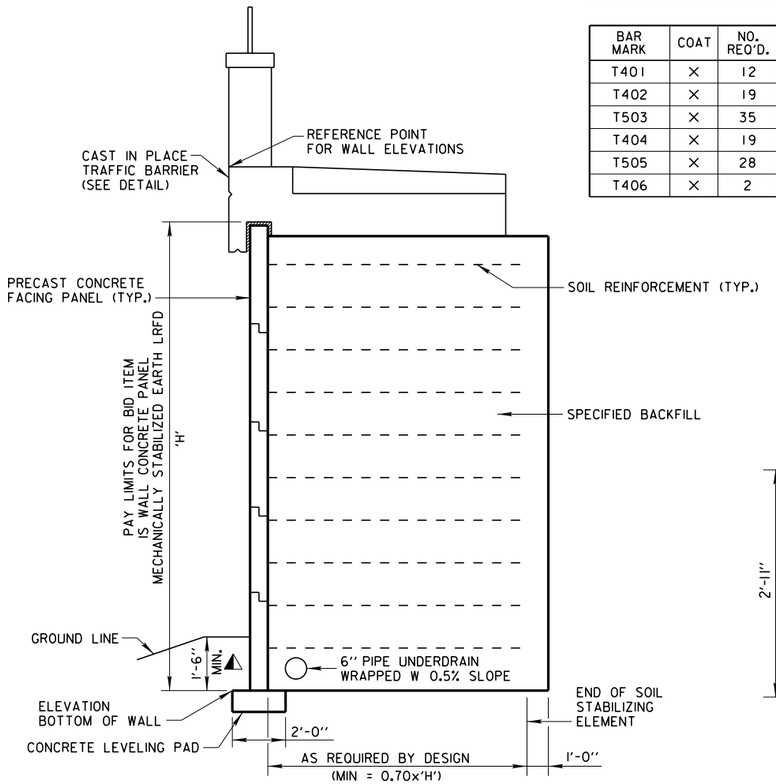
BUTT JOINT DETAIL AT ABUTMENT WALL

(WITH LIP OR NOTCH)



HORIZ. CONST. JOINT-STRIKE OFF AS SHOWN & LEAVE ROUGH.

CAST IN PLACE CONCRETE BARRIER DETAIL (1/4)



TYPICAL CROSS SECTION

⚠ MINIMUM EMBEDMENT BASED ON SITE SPECIFIC PARAMETERS (1'-6" MINIMUM FOR ALL WALLS ON LEVEL GROUND), FIELD EMBEDMENTS SHALL MEET OR EXCEED THE MINIMUM EMBEDMENT. FIELD EMBEDMENTS BELOW MINIMUM EMBEDMENT SHALL NOT BE INCLUDED IN THE PAY LIMITS.

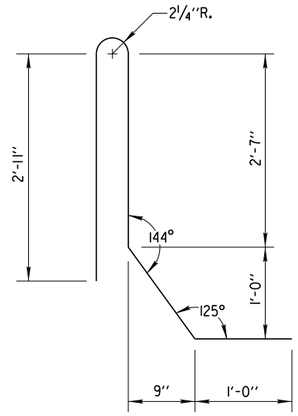
NOTE:
TOP OF CONCRETE LEVELING PAD BETWEEN STATIONS SHALL BE SET AT SAME ELEVATION AS TOP OF BRIDGE FOOTING.

BILL OF BARS - S.E. RETAINING WALL

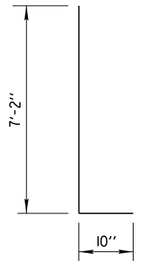
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
T401	×	12	22'-4"		▲	LONGITUDINAL
T402	×	19	6'-0"			TRANSVERSE - BOTTOM
T503	×	35	7'-11"	×		TRANSVERSE - TOP
T404	×	19	4'-3"	×		EDGE CAP
T505	×	28	7'-2"	×		RAILING DOWEL
T406	×	2	22'-9"			EDGE CAP - LONGITUDINAL

BAR MARK	NO. REQUIRED	LENGTH
T401	2 SERIES OF 6	21'-9" TO 22'-11"

▲ LENGTH SHOWN FOR BARS IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTH.



T505



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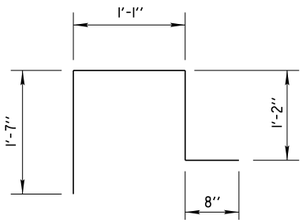

T404

ESTIMATE OF QUANTITIES

ITEM NO.	BID ITEMS	UNIT	TOTAL
205.0501.S.03	EXCAVATION, HAULING AND DISPOSAL OF PETROLEUM CONTAMINATED SOIL	TON	16
504.0500	CONCRETE MASONRY RETAINING WALLS	CY	14
505.0615	BAR STEEL REINFORCEMENT HS COATED RETAINING WALLS	LB	1,186 ⚠1
517.1010.S.03	CONCRETE STAINING (R-40-607)	SF	130
517.1015.S.03	CONCRETE STAINING MULTI COLOR STRUCTURE (R-40-607)	SF	76
517.1050.S.03	ARCHITECTURAL SURFACE TREATMENT	SF	76
532.0500.S.02	WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH LRFD	SF	470
SPV.0105.03	RAILING STEEL TYPE C2 GALVANIZED R-40-607	LS	1

City of Milwaukee

Department of Public Works

Infrastructure Services Division

WEST LISBON AVENUE SOUTHEAST RET. WALL OVER CANADIAN PACIFIC RAILWAY R-40-607 WALL DETAIL DETAILS AND QUANTITIES

REVISIONS
⚠1 03/06/2014
REVISED AND ADDITIONAL BUTT JOINT DETAILS
A.R.

DESIGNED BY H.J.R.
DRAWN BY R.B.M.
CHECKED BY A.R.
DATE 02-2014
SCALE NONE
JOB NUMBER BR100-14-0105
SHEET NUMBER SE3 OF SE7
OF 58

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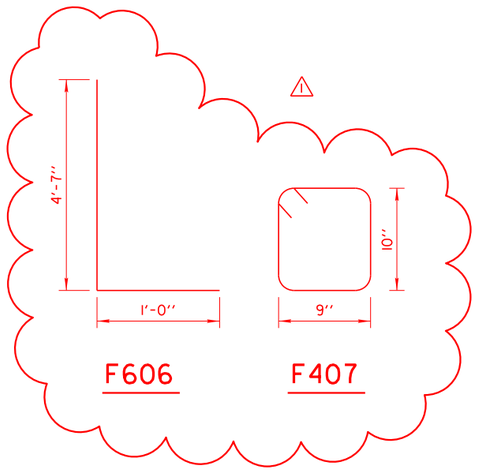
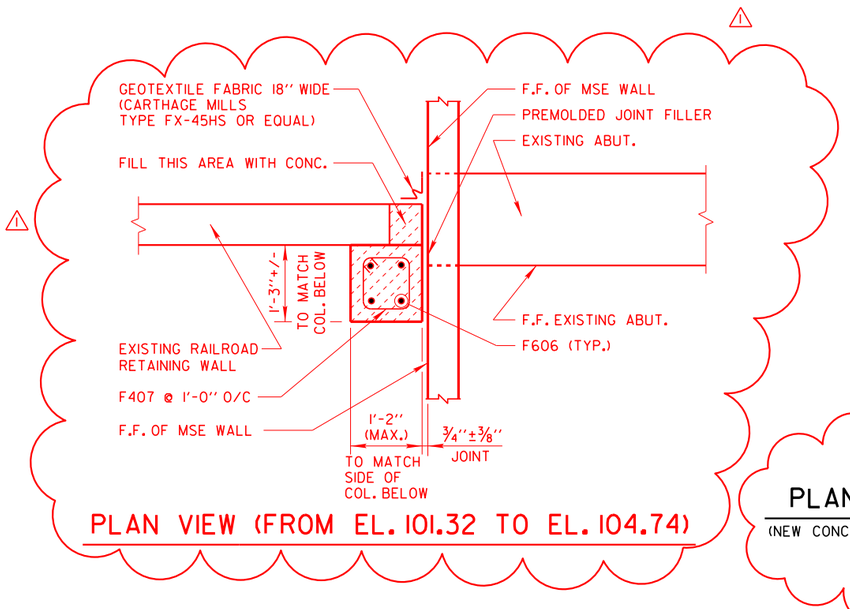
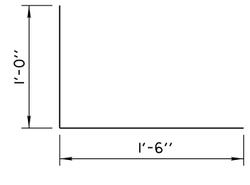
BILL OF BARS - COLUMN

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
F601	X	3	23'-6"			VERT. COL.
F402	X	24	2'-7"	X		STIRRUP
F503	X	2	1'-4"			DOWELS
F504	X	24	1'-10"			DOWELS
F505	X	24	1'-0"			DOWELS
F606	X	4	5'-5"	X		DOWELS
F407	X	4	3'-8"	X		STIRRUP

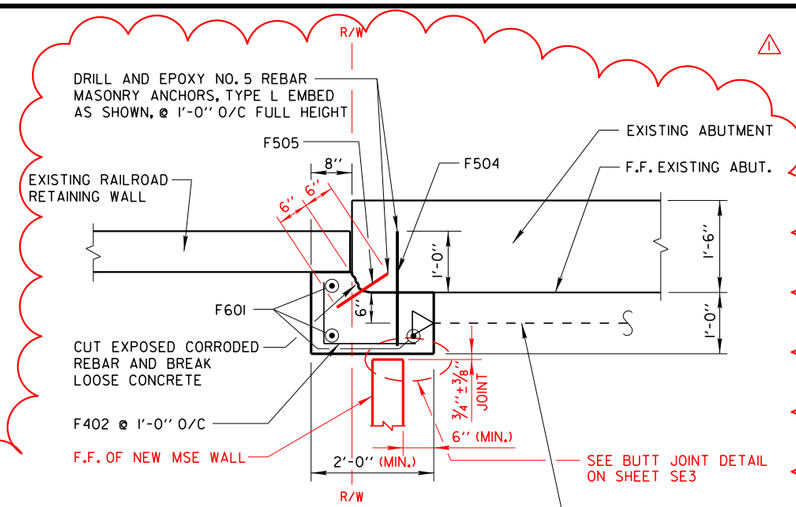




PLAN VIEW (FROM EL. 101.32 TO EL. 104.74)

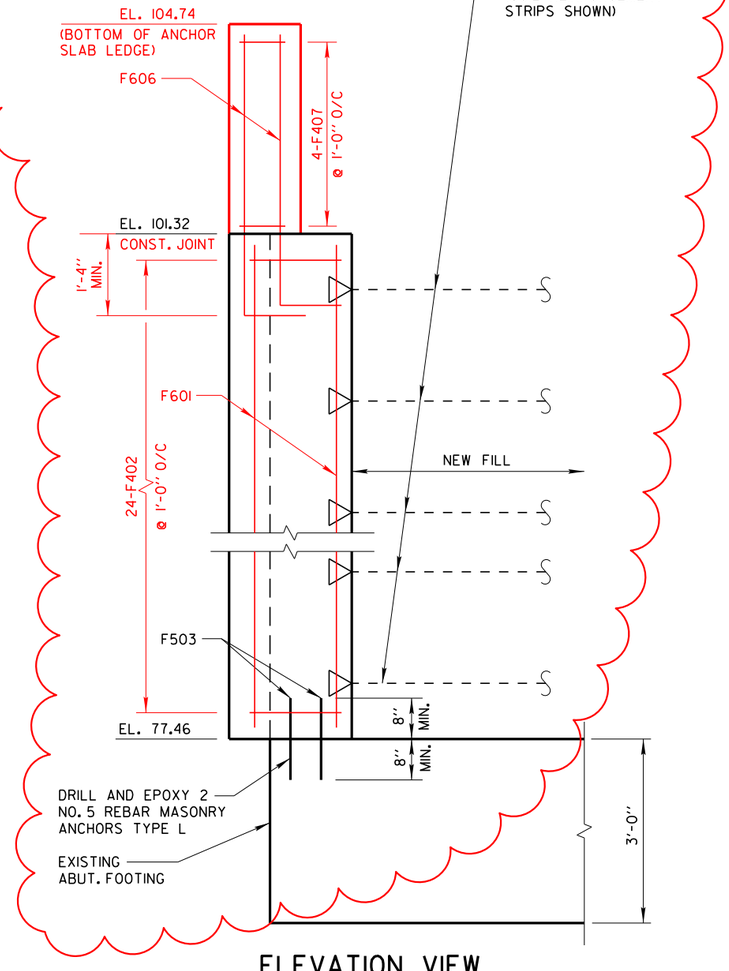


F402



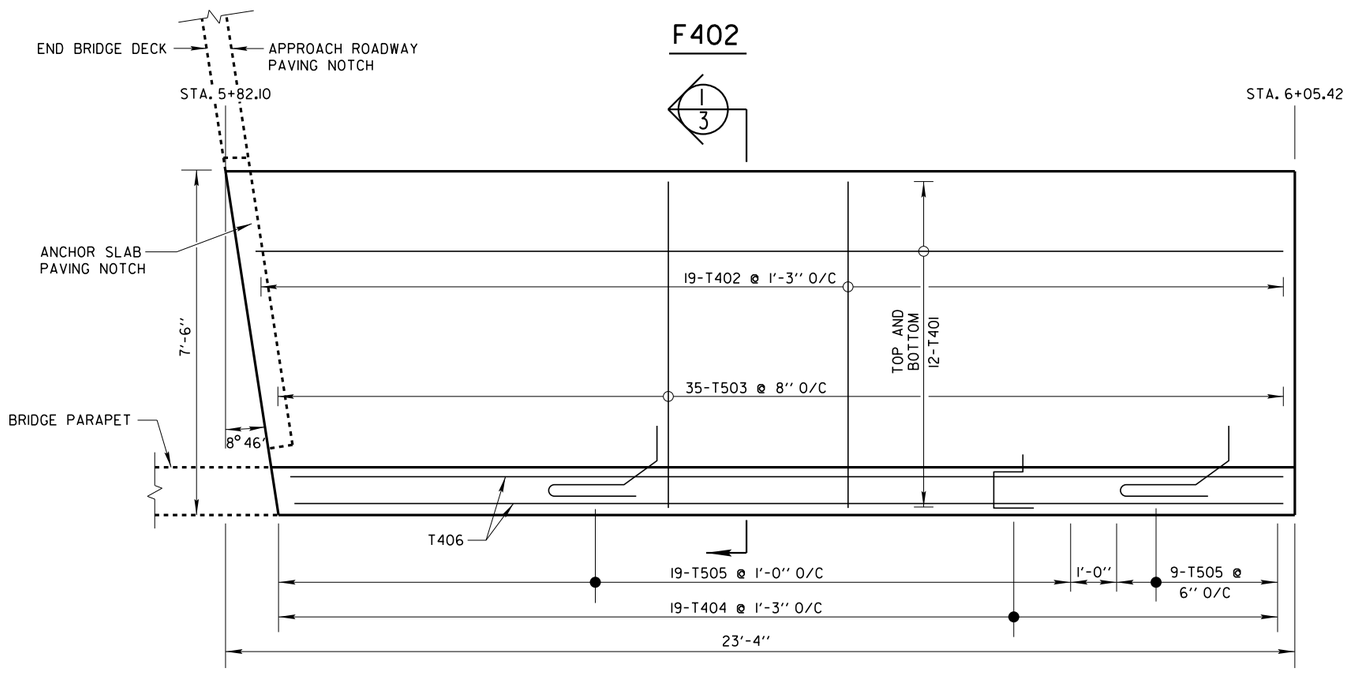
PLAN VIEW (FROM EL. 77.46 TO EL. 101.32)

(NEW CONCRETE COLUMN)



ELEVATION VIEW

(NEW CONCRETE COLUMN)



ANCHOR SLAB PLAN AT SOUTHEAST RETAINING WALL

NOTE:
COLUMN THICKNESS MAY VARY AT TOP TO CREATE PLUMBNESS FOR THE BUTTING MSE WALL

City of Milwaukee

Department of Public Works

Infrastructure Services Division

WEST LISBON AVENUE SOUTHEAST RETAINING WALL OVER CANADIAN PACIFIC RAILWAY R-40-607 ANCHOR SLAB PLAN

REVISIONS

1 03/06/2014
ADDITIONAL PLAN VIEW AND MSE WALL SHOWN IN PLAN VIEW
A.R.

DESIGNED BY	H.J.R.
DRAWN BY	R.B.M.
CHECKED BY	A.R.
DATE	02-2014
SCALE	NONE
JOB NUMBER	BR100-14-0105
SHEET NUMBER	SE4 OF SE7
OF	58

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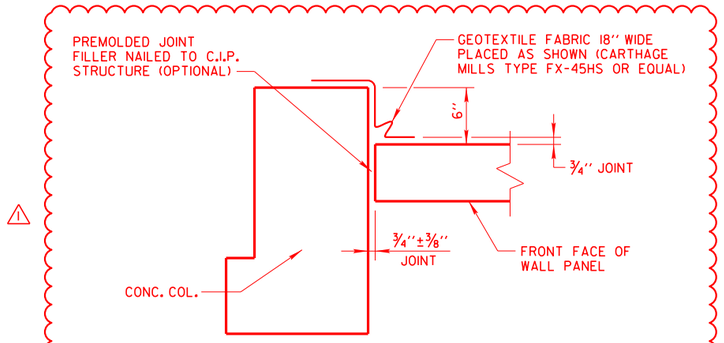
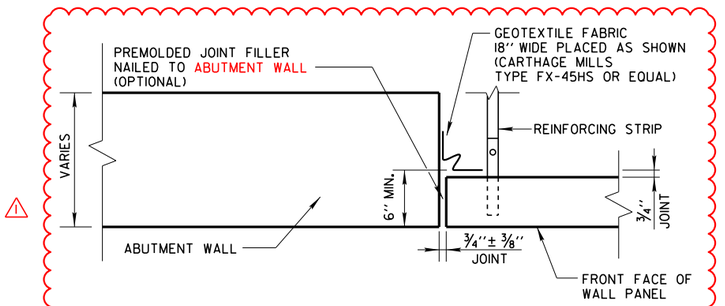
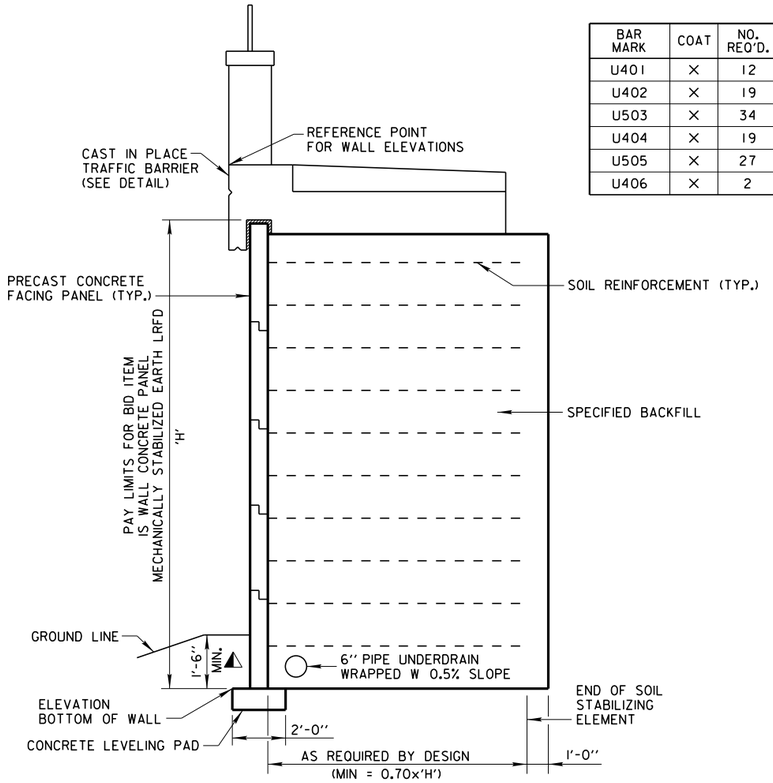


BUTT JOINT DETAIL AT CONCRETE COLUMN



BUTT JOINT DETAIL AT ABUTMENT WALL

(WITH LIP OR NOTCH)



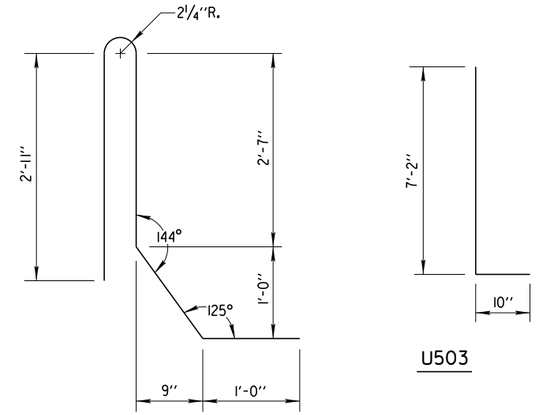
TYPICAL CROSS SECTION

BILL OF BARS - N.W. RETAINING WALL

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
U401	×	12	22'-3"		▲	LONGITUDINAL
U402	×	19	6'-0"			TRANSVERSE - BOTTOM
U503	×	34	7'-11"	×		TRANSVERSE - TOP
U404	×	19	4'-3"	×		EDGE CAP
U505	×	27	7'-2"	×		RAILING DOWEL
U406	×	2	22'-8"			EDGE CAP - LONGITUDINAL

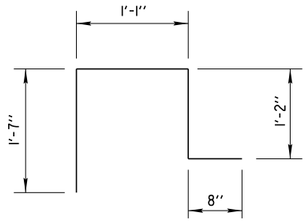
BAR MARK	NO. REQUIRED	LENGTH
U401	2 SERIES OF 6	21'-8" TO 22'-9"

▲ LENGTH SHOWN FOR BARS IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTH.



U503

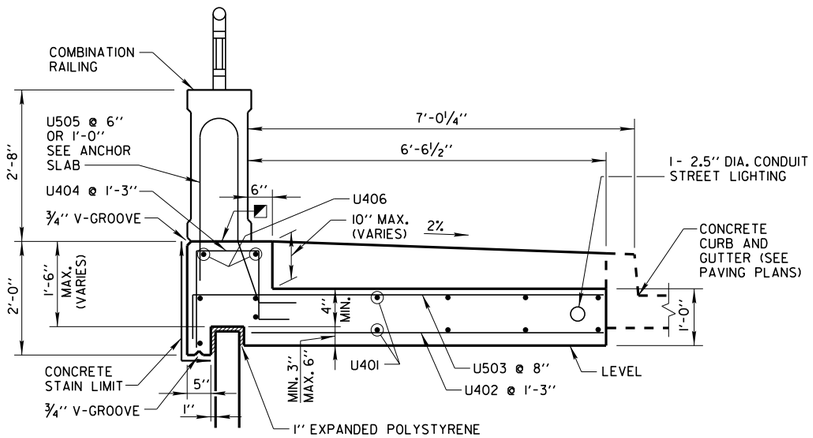
U505



U404

⚠ MINIMUM EMBEDMENT BASED ON SITE SPECIFIC PARAMETERS (1'-6" MINIMUM FOR ALL WALLS ON LEVEL GROUND), FIELD EMBEDMENTS SHALL MEET OR EXCEED THE MINIMUM EMBEDMENT. FIELD EMBEDMENTS BELOW MINIMUM EMBEDMENT SHALL NOT BE INCLUDED IN THE PAY LIMITS.

NOTE:
TOP OF CONCRETE LEVELING PAD BETWEEN STATIONS SHALL BE SET AT SAME ELEVATION AS TOP OF BRIDGE FOOTING.



◩ HORIZ. CONST. JOINT-STRIKE OFF AS SHOWN & LEAVE ROUGH.

CAST IN PLACE CONCRETE BARRIER DETAIL (1/4)

ESTIMATE OF QUANTITIES

ITEM NO.	BID ITEMS	UNIT	TOTAL
205.0501.S.04	EXCAVATION, HAULING AND DISPOSAL OF PETROLEUM CONTAMINATED SOIL	TON	16
504.0500	CONCRETE MASONRY RETAINING WALLS	CY	13
505.0615	BAR STEEL REINFORCEMENT HS COATED RETAINING WALLS	LB	1,148 ⚠1
517.1010.S.04	CONCRETE STAINING (R-40-608)	SF	124
517.1015.S.04	CONCRETE STAINING MULTI COLOR STRUCTURE (R-40-608)	SF	71
517.1050.S.04	ARCHITECTURAL SURFACE TREATMENT	SF	71
532.0500.S.03	WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH LRFD	SF	434
SPV.0105.04	RAILING STEEL TYPE C2 GALVANIZED R-40-608	LS	1

City of Milwaukee

Department of Public Works

Infrastructure Services Division

WEST LISBON AVENUE NORTHWEST RET. WALL OVER CANADIAN PACIFIC RAILWAY R-40-608 WALL DETAIL DETAILS AND QUANTITIES

REVISIONS
⚠1 03/06/2014
REVISED AND ADDITIONAL BUTT JOINT DETAILS
A.R.

DESIGNED BY H.J.R.
DRAWN BY R.B.M.
CHECKED BY A.R.
DATE 02-2014
SCALE NONE
JOB NUMBER BR100-14-0105
SHEET NUMBER NW3 OF NW7
OF 58

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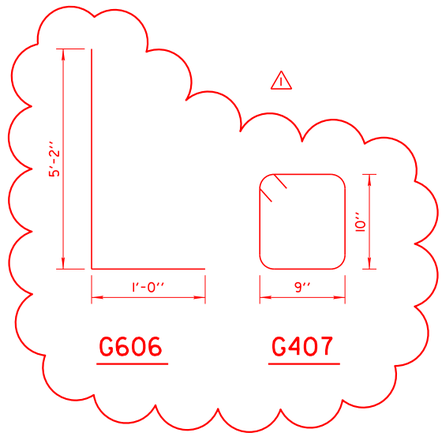
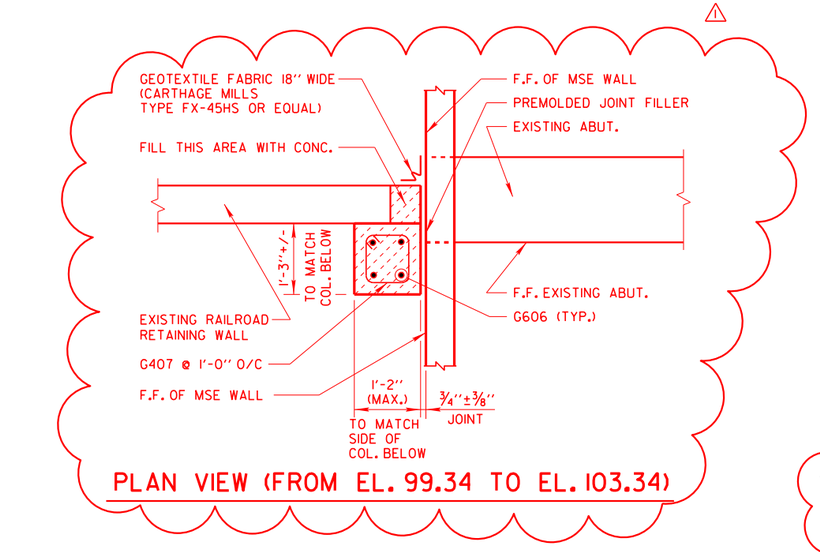
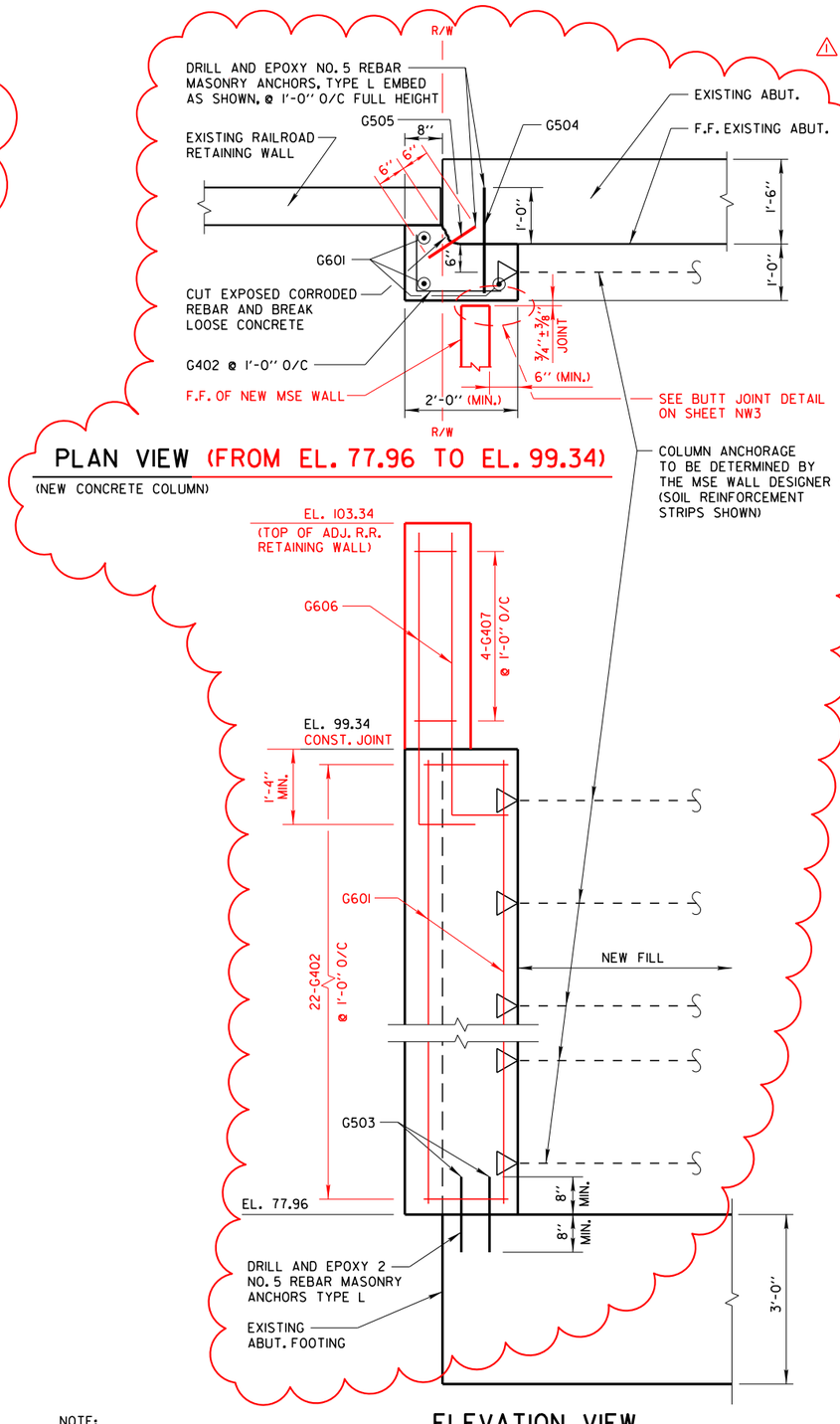
BILL OF BARS - COLUMN

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
G601	X	3	21'-0"			VERT. COL.
G402	X	22	2'-7"	X		STIRRUP
G503	X	2	1'-4"			DOWELS
G504	X	22	1'-10"			DOWELS
G505	X	22	1'-0"			DOWELS
G606	X	4	6'-0"	X		DOWELS
G407	X	4	3'-8"	X		STIRRUP



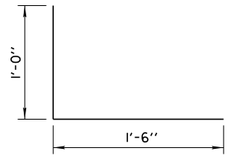


PLAN VIEW (FROM EL. 99.34 TO EL. 103.34)

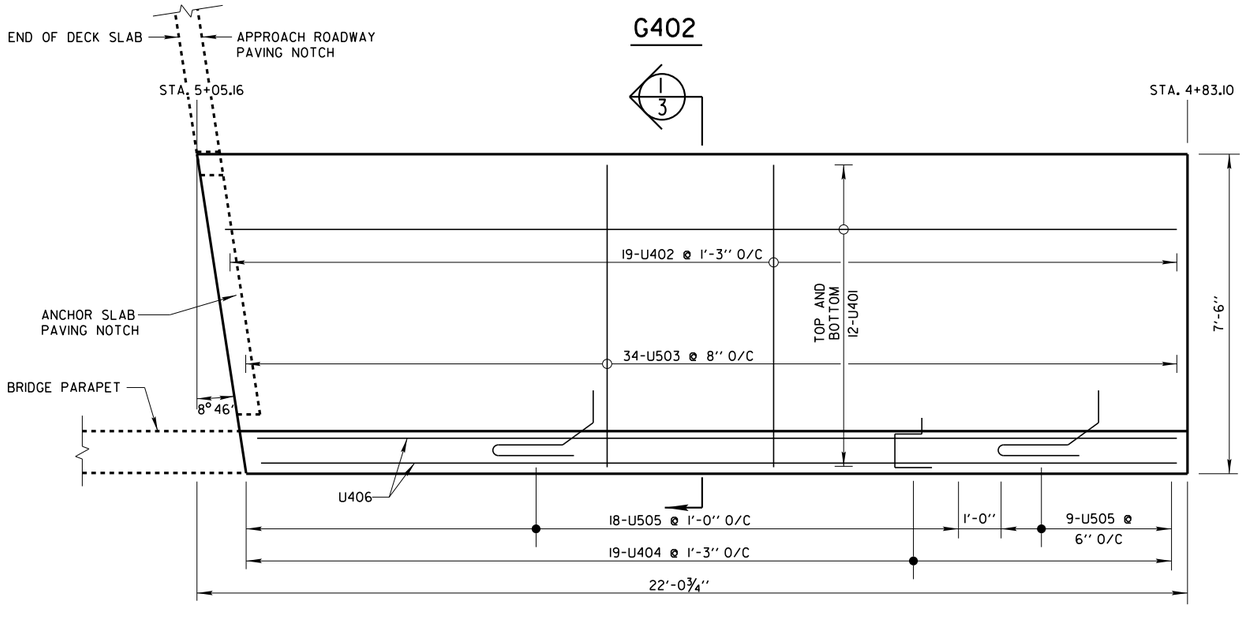


PLAN VIEW (FROM EL. 77.96 TO EL. 99.34)

(NEW CONCRETE COLUMN)



G402



ANCHOR SLAB PLAN AT NORTHWEST RETAINING WALL

NOTE:
COLUMN THICKNESS MAY VARY AT TOP TO CREATE PLUMBNESS FOR THE BUTTING MSE WALL

ELEVATION VIEW

(NEW CONCRETE COLUMN)

City of Milwaukee

Department of Public Works

Infrastructure Services Division

WEST LISBON AVENUE NORTHWEST RET. WALL OVER CANADIAN PACIFIC RAILWAY R-40-608 ANCHOR SLAB PLAN

REVISIONS

1 03/06/2014
ADDITIONAL PLAN VIEW AND MSE WALL SHOWN IN PLAN VIEW
A.R.

DESIGNED BY H.J.R.

DRAWN BY R.B.M.

CHECKED BY A.R.

DATE 02-2014

SCALE NONE

JOB NUMBER BR100-14-0105

SHEET NUMBER NW4 OF NW7

OF 58

W:\STR\B0933\PLANS\SWRETWALL\ ISW_ELEVATION_REV1.DGN 03-10-2014

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

ALL STATIONS AND ALL ELEVATIONS ARE IN FEET.
ALL ELEVATIONS ARE REFERRED TO CITY OF MILWAUKEE DATUM.
CITY OF MILWAUKEE DATUM = (NGVD29) -580.60

ALL DIMENSIONS ALONG THE FRONT FACE OF WALL UNLESS OTHERWISE SHOWN.

BAR REINFORCEMENT SHALL HAVE 2" CLEAR COVER UNLESS SHOWN OTHERWISE.

THESE PLANS ARE FOR A PRECAST CONCRETE PANEL MECHANICALLY STABILIZED EARTH (MSE) RETAINING WALL LRFD.

THE CONTRACTOR MUST COORDINATE THE CONSTRUCTION OF WALLS R-40-606, R-40-607, R-40-608, R-40-609, AND BRIDGE B-40-899.

THE CONTRACTOR SHALL PROVIDE COMPLETE DESIGN, PLANS, DETAILS, SPECIFICATIONS, AND SHOP DRAWINGS FOR THE RETAINING WALLS IN ACCORDANCE WITH THE SPECIAL PROVISIONS. THE RETAINING WALL MANUFACTURER SHALL PROVIDE TECHNICAL ASSISTANCE TO THE CONTRACTOR DURING CONSTRUCTION. THE COST OF FURNISHING THESE ITEMS SHALL BE INCLUDED IN THE BID ITEM, "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH LRFD".

THE COST OF FURNISHING AND PLACING BACKFILL WITHIN THE REINFORCED SOIL ZONES, UNREINFORCED CONCRETE LEVELING PAD UNDER THE MSE PRECAST WALL PANELS, AND REINFORCEMENT, GEOTEXTILE FABRIC, ENGINEERED BACKFILL, JOINT MATERIAL, AND OTHER MISCELLANEOUS ITEMS IS INCLUDED IN THE COST OF BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH LRFD".

ALL BAR STEEL REINFORCEMENT IS TO BE EPOXY COATED.

BEVEL ALL EXPOSED EDGES OF CONCRETE ¾" UNLESS NOTED OTHERWISE.

THE PLAN QUANTITY FOR THE ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH LRFD" IS BASED ON A WALL HEIGHT MEASURED FROM THE TOP OF THE LEVELING PAD TO THE TOP OF WALL AS SHOWN IN THE PLANS.

PLANS, ELEVATIONS AND DETAILS SHOWN ON THESE DRAWINGS ARE INTENDED TO INDICATE WALL LOCATIONS, LENGTHS HEIGHTS, AND DETAILS COMMON TO THE WALL SYSTEM SELECTED. THE CONTRACTOR SHALL VERIFY THAT THE WALL SYSTEM SELECTED WILL CONFORM TO THE REQUIRED ALIGNMENTS AND DETAILS.

THE MAXIMUM VALUE OF THE ANGLE OF INTERNAL FRICTION OF THE WALL BACKFILL MATERIAL IN THE REINFORCED ZONE SHALL BE ASSUMED TO BE 30° WITHOUT CERTIFIED TEST VALUES.

PLACE BACKFILL IN SPECIFIED LAYER THICKNESS STARTING AT BACK FACE OF WALL AND WORKING AWAY FROM WALL.

UTILITY LOCATIONS SHOWN ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION OF ALL UTILIES PRIOR TO EXCAVATING. DAMAGE TO EXISTING UTILITES SHALL BE REPAIRED OR REPLACED AT THE CONTRACTORS EXPENSE.

THE RETAINING WALL IS TO BE DESIGNED USING THE ELEVATIONS GIVEN ON THIS SHEET.

SEE SPECIAL PROVISIONS FOR AESTHETIC TREATMENT TO WALL.

▪ THE LENGTHS PROVIDED IN THE TABLE ARE THE MINIMUM REQUIRED REINFORCEMENT LENGTHS BASED UPON THE MINIMUM DESCRIBED IN THE WALL SYSTEM SPECIAL PROVISIONS OR EXTERNAL AND OVERALL STABILITY AT THE DESIGNATED LOCATIONS. THESE DESIGNATED LOCATIONS REPRESENT TYPICAL AND CRITICAL WALL LOCATIONS, BUT SHALL NOT BE CONSIDERED ALL INCLUSIVE. THE CONTRACTOR DESIGN LENGTHS SHALL MEET OR EXCEED THE MINIMUM VALUES REPRESENTED IN THE TABLE AT THESE DESIGNATED LOCATIONS.

DESIGN DATA

MATERIAL PROPERTIES:

CONCRETE MASONRY	f'c = 4,000 PSI
PRECAST CONCRETE WALL PANEL	f'c = 4,000 PSI
BAR STEEL REINFORCEMENT	Fy = 60,000 PSI

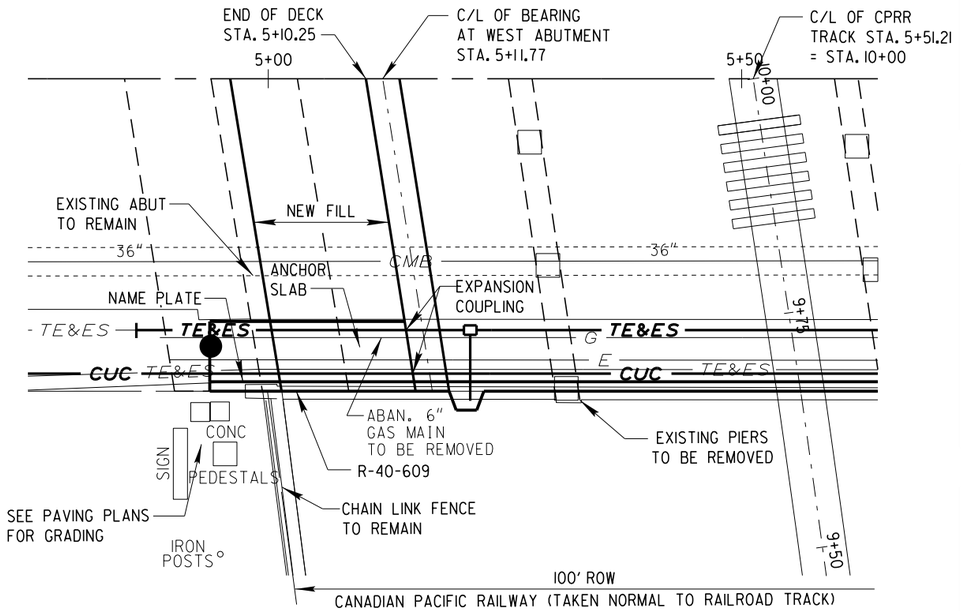
LIVE LOAD:

LIVE LOAD SURCHARGE	240 PSF

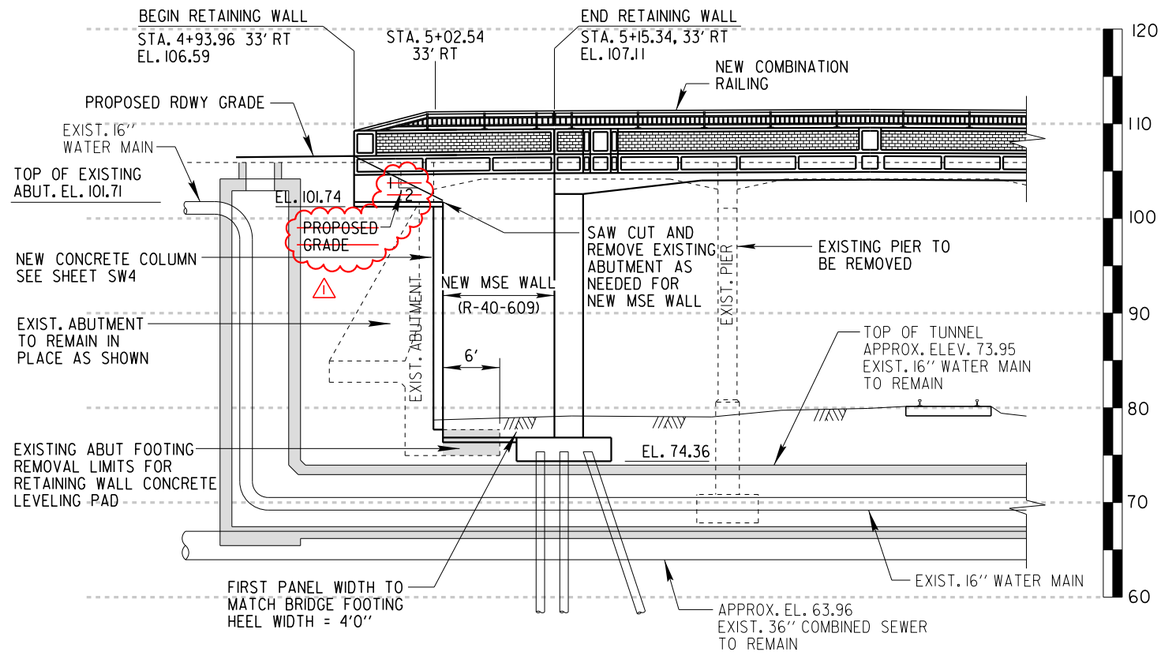
B.M. N/S HYD. (NNW BOLT)
WEST OF W. LISBON AVE. BRIDGE
ELEV. = 108.107

N

WEST LISBON AVENUE OVER CANADIAN PACIFIC RAILWAY



PLAN VIEW



SOUTH ELEVATION

LOOKING NORTH

NOTE:
THIS REMOVAL OF THE EXISTING ABUTMENT AS SHOWN WILL BE PAID AS PART OF BRIDGE REMOVAL.

WALL EXTERNAL STABILITY EVALUATION

WALL HEIGHT (FEET)	28'-9"
EXPOSED WALL HEIGHT (FEET)	27'-3"
MINIMUM LENGTH OF REINFORCEMENT (FEET) ▪	20'-2"
LENGTH OF REINFORCEMENT / WALL HEIGHT	0.70
WALL STATION	4+93.96
TEST BORING USED	BOR-4

SOIL PARAMETERS

STRATUM LOCATION & SOIL DESCRIPTION	UNIT DENSITY (PCF)	FRICTION ANGLE (DEGREES)	COHESION (PSF)
EXISTING CLAYEY FILL	125	28	1500
GRANULAR BACKFILL (REINFORCING ZONE OR BACKFILL)	120	30	0
(LEAN CLAY) EL. 67.0 TO EL. 74.00	130	30	2500
(CLAY WITH SAND AND GRAVEL) EL. 53.0 TO EL. 67.00	130	31	3000
(SILTY SAND) EL. 42.0 TO EL. 53.00	125	30	0

CAPACITY TO DEMAND RATIO (CDR)

	DRAINED	UNDRAINED
SLIDING (CDR ≥ 1.0)	1.5	1.1
ECCENTRICITY (CDR > 1.0)	1.4	1.4
BEARING (CDR > 1.0)	1.8	1.0
GLOBAL STABILITY (CDR > 1.0)	1.3	1.7

GEOMETRY TABLE

STATION	OFFSET TO F.F. WALL	TOP OF WALL ELEV.	FINISHED GRADE ELEV.
5+15.26	32.5'LT.	107.11	78.36
5+02.54	32.5' LT.	106.80	78.46
4+93.96	32.5' LT.	106.59	107.01

SOUTHWEST RETAINING WALL LIST OF DRAWINGS

SW1. GENERAL PLAN AND ELEVATION
SW2. SUBSURFACE EXPLORATION
SW3. WALL DETAILS AND QUANTITIES
SW4. ANCHOR SLAB PLAN
SW5. RAILING ELEVATIONS, BAR DETAILS & PLAN
SW6. PARAPET DETAILS AND BILL OF BARS
SW7. STEEL RAILING DETAILS

City of Milwaukee
Department of Public Works
Infrastructure Services Division

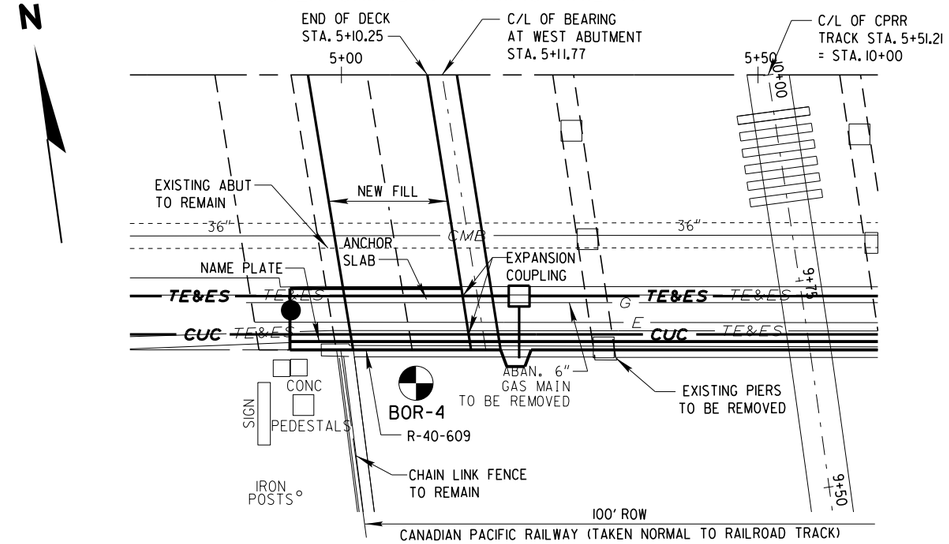
WEST LISBON AVENUE SOUTHWEST RET. WALL
OVER CANADIAN PACIFIC RAILWAY
R-40-609
GENERAL PLAN AND ELEVATION

REVISIONS
⚠ 03/10/2014
REMOVED NOTE FOR PROPOSED GRADE
H.J.R.

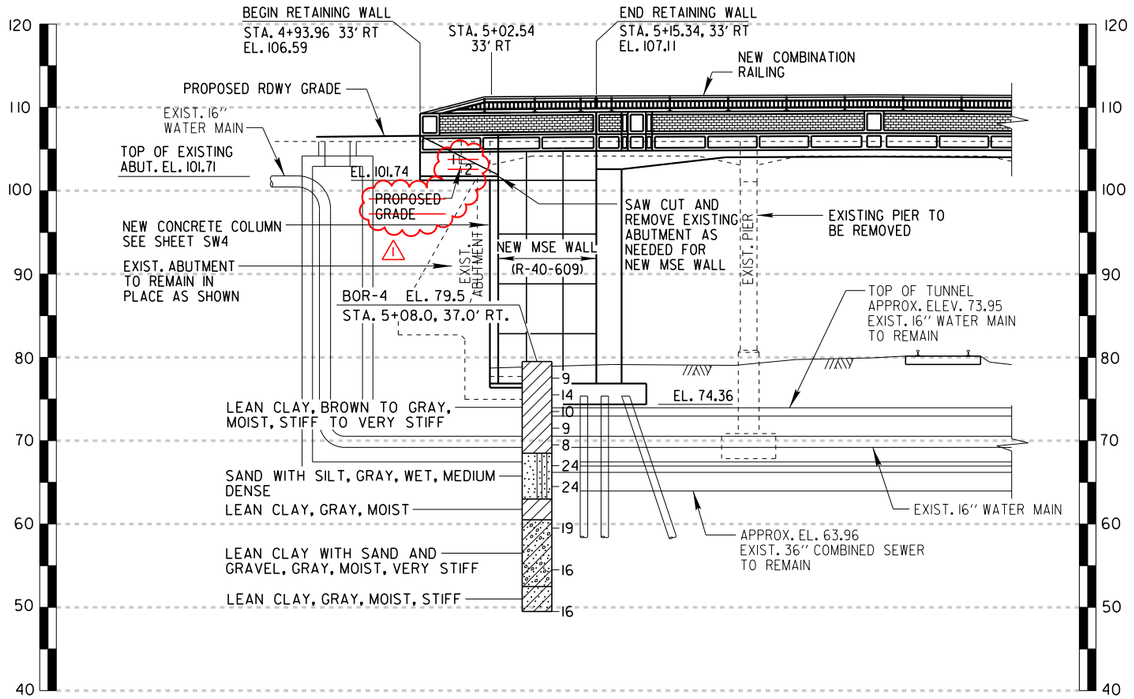
DESIGNED BY
H.J.R.
DRAWN BY
R.B.M.
CHECKED BY
A.R.
DATE
02-2014
SCALE
NONE
JOB NUMBER
BRI00-14-0105
SHEET NUMBER
SWI OF SW7
OF
58

W:\STR\B0933\PLANS\SWRETWALL\ 2SW_RWSUBSURFACE_REV1.DGN 03-10-2014

WEST LISBON AVENUE OVER CANADIAN PACIFIC RAILWAY



PLAN VIEW



SOUTH ELEVATION

LOOKING NORTH

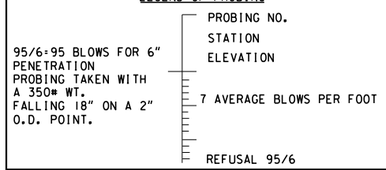
ABBREVIATIONS

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

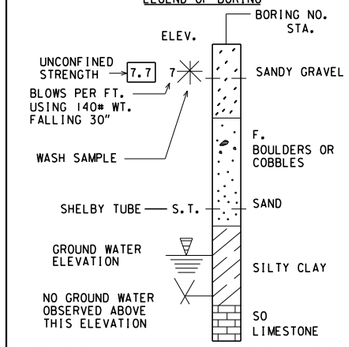
MATERIAL SYMBOLS

TOPSOIL SILT SANDSTONE
SAND PEAT LIMESTONE
GRAVEL CLAY IGNEOUS ROCK

LEGEND OF PROBING



LEGEND OF BORING



CONTRACTOR SHALL REFERENCE GESTRA GEOTECHNICAL REPORT AND ALL SUBSEQUENT ADDENDA DATED 12-24-2013. UNLESS OTHERWISE SPECIFIED, THE BLOWS PER FOOT AT THE LOCATIONS INDICATED ARE BASED ON DRIVING A 2" O.D. X 1.4" I.D. SPLIT SPOON SAMPLER WITH A 140# HAMMER HAVING A FREE FALL OF 30". THE BLOW COUNT IS TAKEN IN UNDISTURBED SOIL IMMEDIATELY BELOW A CASED OR OPEN HOLE ELIMINATING SIDE FRICTION ON THE DRIVE PIPE.

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

TO OBTAIN RELATIVE DATA CONCERNING THE CHARACTER OF MATERIAL IN AND UPON WHICH THE FOUNDATION MIGHT BE BUILT, BORINGS AND/OR SOUNDINGS WERE MADE AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING. THE DATA PRESENTED HEREIN REPRESENTS THE FINDINGS OF THE SUBSURFACE EXPLORATIONS MADE. HOWEVER, BECAUSE THE DEPTHS INVESTIGATED ARE LIMITED AND THE AREA OF THE BORINGS AND/OR SOUNDINGS IS VERY SMALL IN RELATION TO THE ENTIRE AREA, THE CITY OF MILWAUKEE DOES NOT WARRANT CONDITIONS BELOW THE DEPTHS INVESTIGATED OR THAT THE CLASSIFICATION OF MATERIAL ENCOUNTERED IN THESE INVESTIGATIONS IS NECESSARILY TYPICAL OF THE ENTIRE SITE. CONTACT MR. CRAIG LIBERTO AT (414) 286-0451 TO GET A COPY AND TO REVIEW THE GEOTECHNICAL REPORT.

City of Milwaukee
Department of Public Works
Infrastructure Services Division

WEST LISBON AVENUE SOUTHWEST RET. WALL OVER CANADIAN PACIFIC RAILWAY R-40-609 SUBSURFACE EXPLORATION

REVISIONS
⚠ 03/10/2014
REMOVED NOTE FOR PROPOSED GRADE H.J.R.

DESIGNED BY H.J.R.	
DRAWN BY R.B.M.	
CHECKED BY A.R.	
DATE 02-2014	SCALE NONE
JOB NUMBER BR100-14-0105	
SHEET NUMBER SW2 OF SW7	
OF 58	

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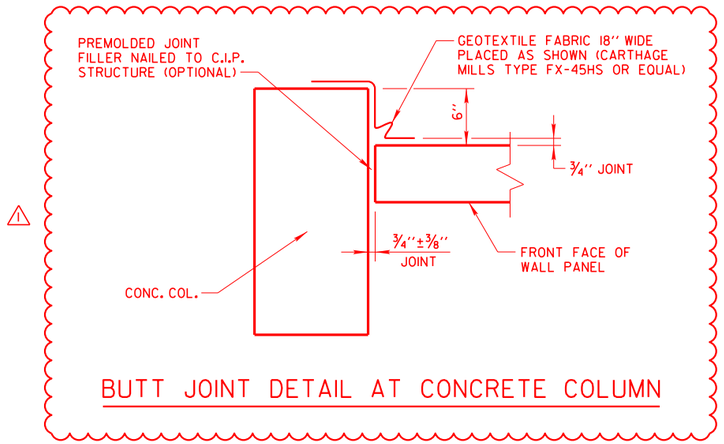
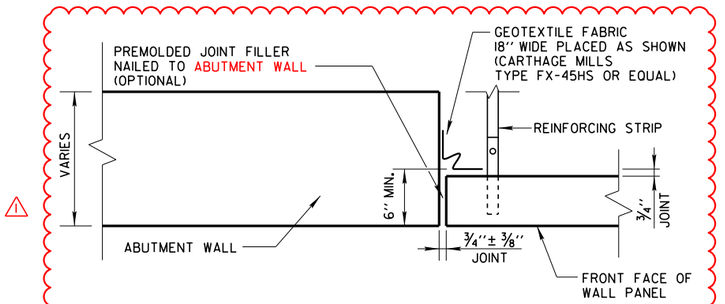
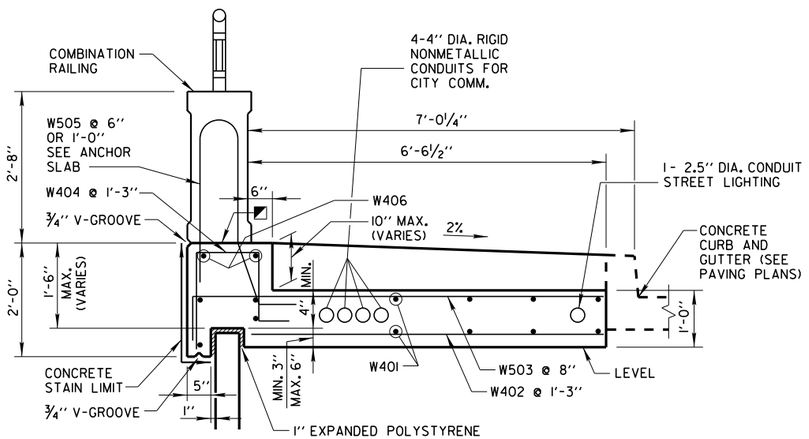


BUTT JOINT DETAIL AT CONCRETE COLUMN



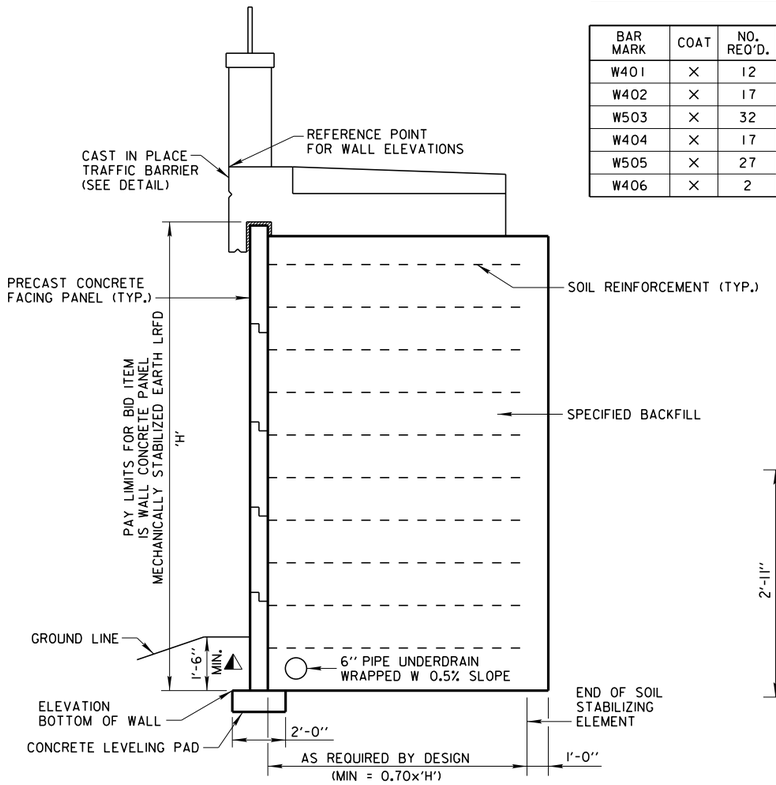
BUTT JOINT DETAIL AT ABUTMENT WALL

(WITH LIP OR NOTCH)



HORIZ. CONST. JOINT-STRIKE OFF AS SHOWN & LEAVE ROUGH.

CAST IN PLACE CONCRETE BARRIER DETAIL 1/4



TYPICAL CROSS SECTION

MINIMUM EMBEDMENT BASED ON SITE SPECIFIC PARAMETERS (1'-6" MINIMUM FOR ALL WALLS ON LEVEL GROUND), FIELD EMBEDMENTS SHALL MEET OR EXCEED THE MINIMUM EMBEDMENT. FIELD EMBEDMENTS BELOW MINIMUM EMBEDMENT SHALL NOT BE INCLUDED IN THE PAY LIMITS.

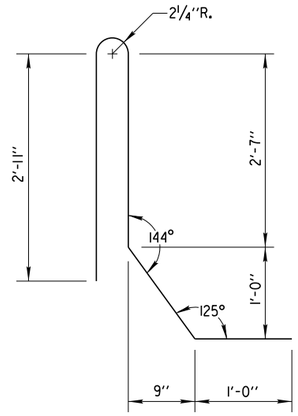
NOTE:
TOP OF CONCRETE LEVELING PAD BETWEEN STATIONS SHALL BE SET AT SAME ELEVATION AS TOP OF BRIDGE FOOTING.

BILL OF BARS - S.W. RETAINING WALL

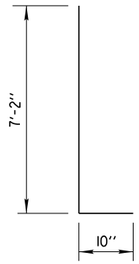
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
W401	×	12	20'-6"		▲	LONGITUDINAL
W402	×	17	6'-0"			TRANSVERSE - BOTTOM
W503	×	32	7'-11"	×		TRANSVERSE - TOP
W404	×	17	4'-3"	×		EDGE CAP
W505	×	27	7'-2"	×		RAILING DOWEL
W406	×	2	21'-0"			EDGE CAP - LONGITUDINAL

BAR MARK	NO. REQUIRED	LENGTH
W401	2 SERIES OF 6	20'-0" TO 21'-0"

▲ LENGTH SHOWN FOR BARS IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTH.



W505



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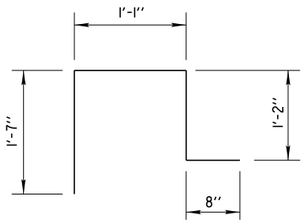

W404

ESTIMATE OF QUANTITIES

ITEM NO.	BID ITEMS	UNIT	TOTAL
205.0501.S.05	EXCAVATION, HAULING AND DISPOSAL OF PETROLEUM CONTAMINATED SOIL	TON	16
504.0500	CONCRETE MASONRY RETAINING WALLS	CY	13
505.0615	BAR STEEL REINFORCEMENT HS COATED RETAINING WALLS	LB	1,081
517.1010.S.05	CONCRETE STAINING (R-40-609)	SF	120
517.1015.S.05	CONCRETE STAINING MULTI COLOR STRUCTURE (R-40-609)	SF	68
517.1050.S.05	ARCHITECTURAL SURFACE TREATMENT	SF	68
532.0500.S.04	WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH LRFD	SF	395
SPV.0105.05	RAILING STEEL TYPE C2 GALVANIZED R-40-609	LS	1

City of Milwaukee

Department of Public Works

Infrastructure Services Division

WEST LISBON AVENUE SOUTHWEST RET. WALL OVER CANADIAN PACIFIC RAILWAY R-40-609 WALL DETAILS AND QUANTITIES

REVISIONS
⚠ 03/06/2014
REVISED AND ADDITIONAL BUTT JOINT DETAILS
A.R.

DESIGNED BY H.J.R.
DRAWN BY R.B.M.
CHECKED BY A.R.
DATE 02-2014
SCALE NONE
JOB NUMBER BR100-14-0105
SHEET NUMBER SW3 OF SW7
OF 58

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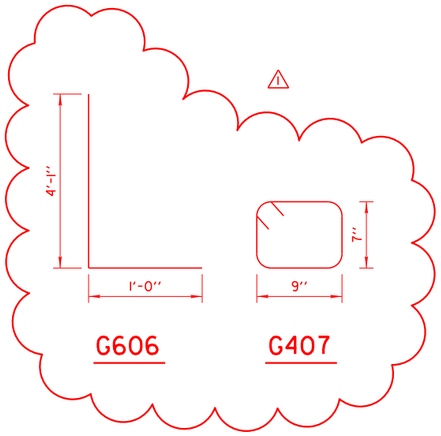
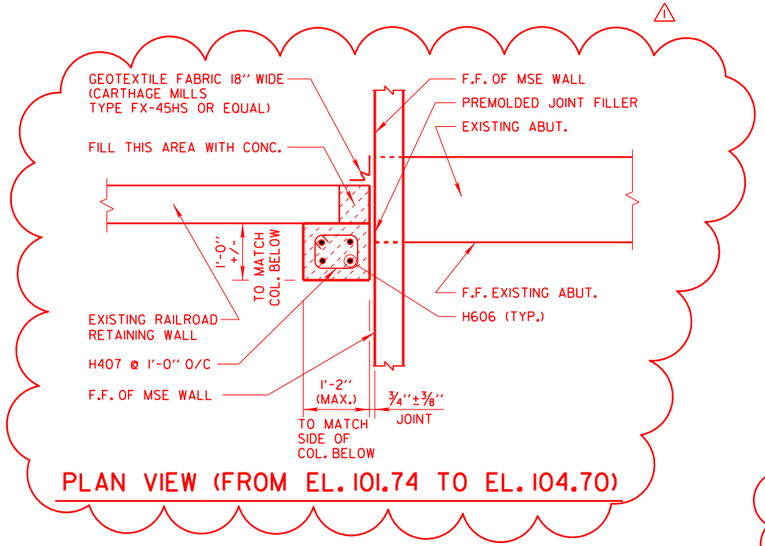
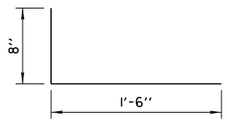
BILL OF BARS - COLUMN

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
H601	X	2	23'-5"			VERT. COL.
H402	X	24	2'-1"	X		STIRRUP
H503	X	2	1'-4"			DOWELS
H504	X	24	1'-10"			DOWELS
H606	X	4	4'-11"	X		DOWELS
H407	X	3	3'-2"	X		STIRRUP

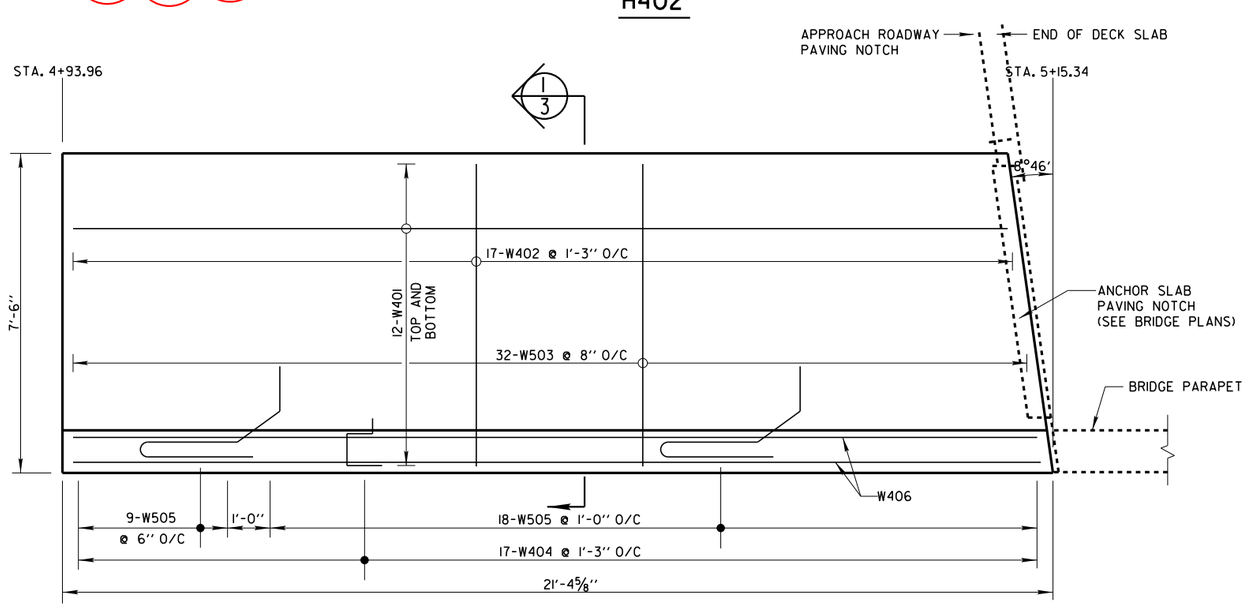




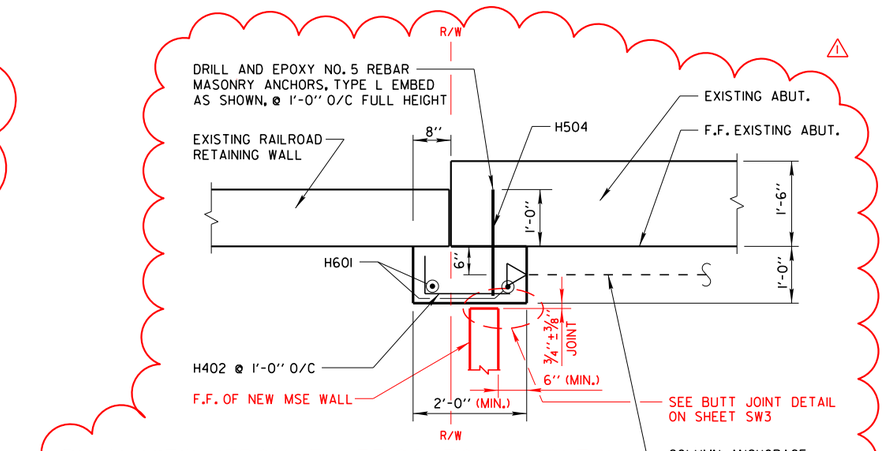
PLAN VIEW (FROM EL. 101.74 TO EL. 104.70)



H402

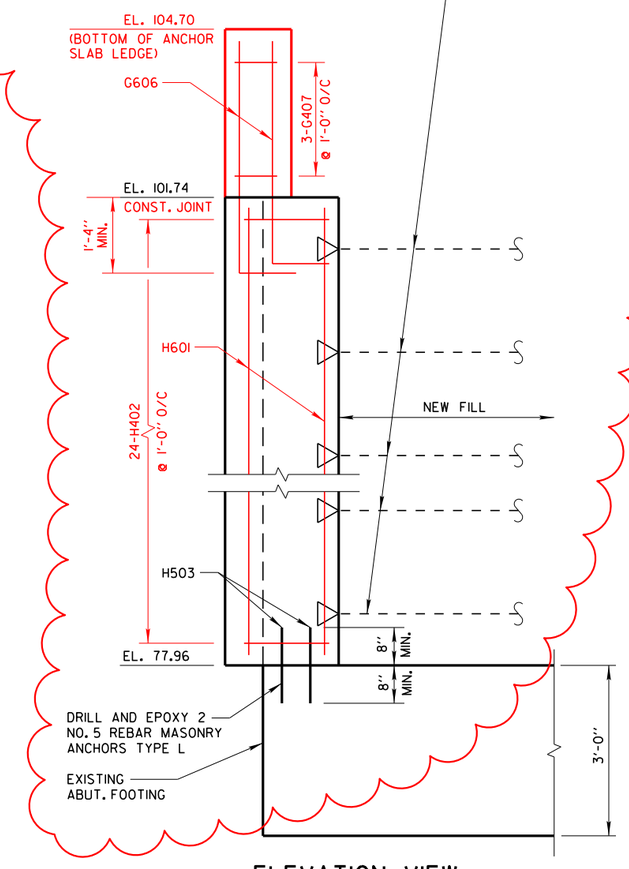


ANCHOR SLAB PLAN AT SOUTHWEST RETAINING WALL



PLAN VIEW (FROM EL. 77.96 TO EL. 101.74)

(NEW CONCRETE COLUMN)



ELEVATION VIEW

(NEW CONCRETE COLUMN)

NOTE:
COLUMN THICKNESS MAY VARY AT TOP TO CREATE PLUMBNESS FOR THE BUTTING MSE WALL

City of Milwaukee

Department of Public Works

Infrastructure Services Division

WEST LISBON AVENUE SOUTHWEST RET. WALL
OVER CANADIAN PACIFIC RAILWAY
R-40-609
ANCHOR SLAB PLAN

REVISIONS

1 03/06/2014
ADDITIONAL PLAN VIEW AND MSE WALL SHOWN IN PLAN VIEW
A.R.

DESIGNED BY	H.J.R.
DRAWN BY	R.B.M.
CHECKED BY	A.R.
DATE	02-2014
SCALE	NONE
JOB NUMBER	BRIOO-14-0105
SHEET NUMBER	SW4 OF SW7
OF	58