

STATE PROJECT NUMBER

2788-00-71

▲ CORNER DETAILS (SEE SHT. 7 & 9)

■ NAME PLATE LOCATION (SEE SHT. 9)

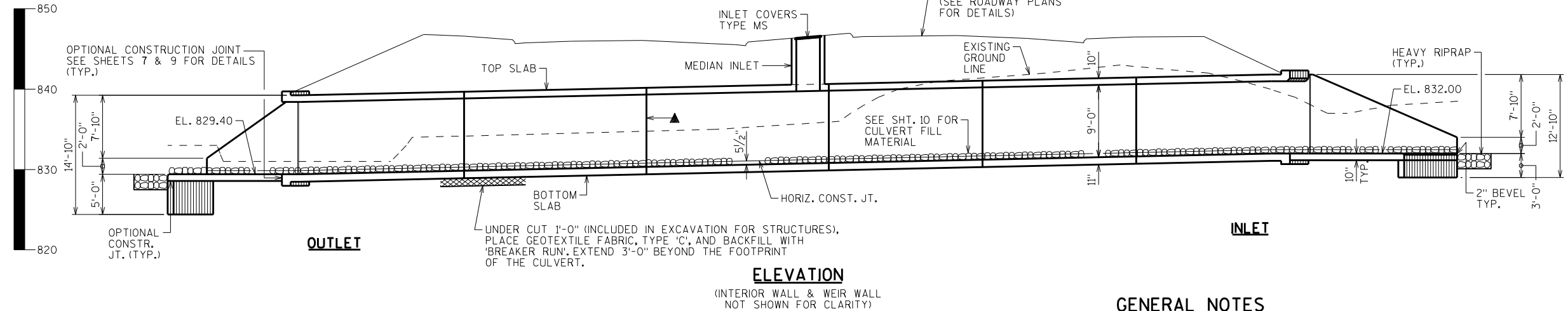
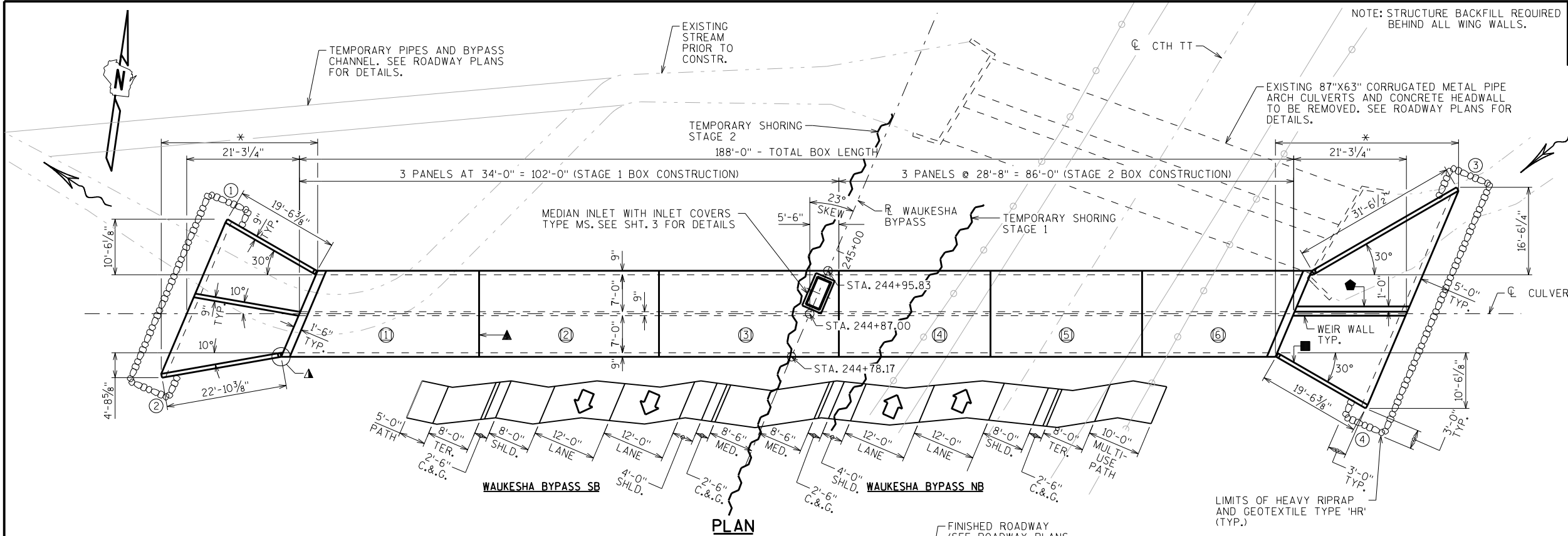
* BUILD APRON AND END OF BOX LEVEL

▲ VERT. CONST. JOINT (TYP.)

○ INDICATES WING NUMBER

◆ LONGITUDINAL CONSTRUCTION JOINT IN APRON SLAB (SEE SHT. 8)

○ INDICATES BOX CULVERT PANEL NUMBER



DESIGN DATA

LIVE LOAD:
DESIGN LOADING; HL-93
INVENTORY RATING FACTOR; RF=1.05
OPERATING RATING FACTOR; RF=1.35
WISCONSIN STANDARD PERMIT VEHICLE (WIS.-SPV): 255 (KIPS)
EARTHLOAD: DESIGNED FOR 4.0 FT. - 8.0 FT. OF FILL.
MATERIAL PROPERTIES:
CONCRETE MASONRY, GRADE A-FA ————— $f'_c = 3500$ P.S.I.
HIGH STRENGTH BAR STEEL REINFORCEMENT — $f_y = 60000$ P.S.I.

TRAFFIC VOLUME

WAUKESHA BYPASS
A.D.T. = 21,100 (2037)
R.D.S. = 50 M.P.H.
HYDRAULIC DATA
100 YEAR FREQUENCY
 $Q_{100} = 1000$ C.F.S.
VEL. = 5.0 F.P.S.
HW. = EL. 842.92
DRAINAGE AREA = 2.15 SQ. MI.
OVERTOPPING RDWY. = N/A
2 YEAR FREQUENCY
 $Q_2 = 90$ C.F.S.
HW. = EL. 835.78

TOTAL ESTIMATED QUANTITIES

BID ITEMS			
203.0200	REMOVING OLD STRUCTURE STA. 245+25	1	LS
206.2000	EXCAVATION FOR STRUCTURES CULVERTS C-67-91	1	LS
210.2500	BACKFILL STRUCTURE TYPE B	1133	TON
311.0115	BREAKER RUN	220	CY
501.1000.S	ICE HOT WEATHER CONCRETING	3050	LB
504.0100	CONCRETE MASONRY CULVERTS	407	CY
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	41840	LB
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	7900	LB
511.1200	TEMPORARY SHORING C-67-91	1130	SF
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	55	SY
606.0100	RIPRAP LIGHT	192	CY
606.0300	RIPRAP HEAVY	37	CY
611.0642	INLET COVERS TYPE MS	2	EACH
645.0105	GEOTEXTILE TYPE C	715	SY
645.0120	GEOTEXTILE TYPE HR	106	SY
SPV.0195	SELECT CRUSHED MATERIAL FOR TRAVEL CORRIDOR	40	TON
NON-BID ITEMS			
	FILLER	3/4"	SIZE
	BRIDGE SEAT PROTECTION	1	LS

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.
BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS SHOWN OR NOTED OTHERWISE.
THE UPPER LIMITS OF EXCAVATION FOR STRUCTURES SHALL BE THE EXISTING GROUNDLINE.
ALL SPACES EXCAVATED AND NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL TO THE TOP OF THE BOX WITHIN THE LENGTH OF THE CULVERT.
THE CONCRETE IN THE CUTOFF WALLS MAY BE PLACED UNDERWATER IF THE EXCAVATION CANNOT BE DEWATERED.
PLACE A 18" (MIN.) WIDE SHEET OF 'RUBBERIZED MEMBRANE WATERPROOFING' ON TOP SLAB OVER ALL CONSTRUCTION JOINTS AND EXTEND DOWN TO BOTTOM OF OUTSIDE WALLS.
THE CONTRACTOR MAY FURNISH A PRECAST CONCRETE BOX CULVERT IN LIEU OF THE CAST-IN-PLACE BOX CULVERT WITH THE ACCEPTANCE OF THE SHOP DRAWINGS BY THE STRUCTURES DESIGN SECTION. THE PRECAST CONCRETE BOX CULVERT SHALL CONFORM TO PRECAST DETAILS ON CHAPTER 36 STANDARDS OF THE CURRENT WISC. DOT BRIDGE MANUAL. PAYMENT FOR THE PRECAST CULVERT SHALL BE BASED ON THE QUANTITIES AND PRICES BID FOR THE ITEMS LISTED IN THE "TOTAL ESTIMATED QUANTITIES".
CONTRACTOR MAY ELECT TO SUBSTITUTE #1 OR #2 CONCRETE COARSE AGGREGATE, SELECT CRUSHED MATERIAL OR OTHER GRANULAR MATERIAL AS APPROVED BY THE FIELD ENGINEER, IN LIEU OF THE BREAKER RUN, TO BE UTILIZED AS A CONSTRUCTION PLATFORM FOR THE BOX. THE CONTRACTOR IS RESPONSIBLE FOR BASE STABILITY WITH ANY SUBSTITUTED MATERIAL.
APPLY BRIDGE SEAT PROTECTION TO ALL INSIDE FACES OF THE MEDIAN INLET AND TO THE BOTTOM OF THE TOP SLAB AS SHOWN ON SHEET 3.

LIST OF DRAWINGS

- LAYOUT
- PANEL 1 BOX DETAILS
- PANEL 2-3 BOX DETAILS
- PANEL 4-5 BOX DETAILS
- PANEL 6 BOX DETAILS
- OUTLET APRON DETAILS 1
- OUTLET APRON DETAILS 2
- INLET APRON DETAILS 1
- INLET APRON DETAILS 2
- BACKFILL DETAILS
- SUBSURFACE EXPLORATION

STRUCTURE DESIGN CONTACTS:
NICK RICE (608) 266-5092
AARON BONK (608) 261-0261

NO.

DATE

REVISION

BY

BUREAU OF STRUCTURES

ACCEPTED *William C. Decker* **6/23/17**
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE C-67-91

WAUKESHA BYPASS OVER UNNAMED CREEK

COUNTY WAUKESHA CITY WAUKESHA

DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY NAR DESIGNED CKD. SAD DRAWN BY NAR PLANS CKD. SAD

LAYOUT

SHEET 1 OF 11

BILL OF BARS

NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
B401		270	9'-6"	X		CORNERS
B502		82	2'-6"			EXTERIOR WALL DOWELS - VERT.
B503		82	9'-2"			EXTERIOR WALL - VERT.
B404		68	2'-3"			INTERIOR WALL DOWELS - VERT.
B405		68	10'-1"	X		INTERIOR WALL - VERT.
B506		74	15'-11"			TOP & BOT. SLAB - TRANS.
B507		12	9'-11"			TOP & BOT. SLAB - TRANS.
B508		51	6'-4"			BOTTOM SLAB - TRANS.
B509		41	6'-4"			TOP SLAB - TRANS.
B410		64	19'-8"			WALLS & SLABS - LONGIT.
B411		64	19'-8"			WALLS & SLABS - LONGIT.
B712		12	17'-4"			HEADERS - HORIZ.
B313		24	4'-5"	X		BOTTOM HEADER - VERT.
B314		24	4'-9"	X		TOP HEADER - VERT.
B515		335	4'-0"			LONGIT. CONST. JOINT

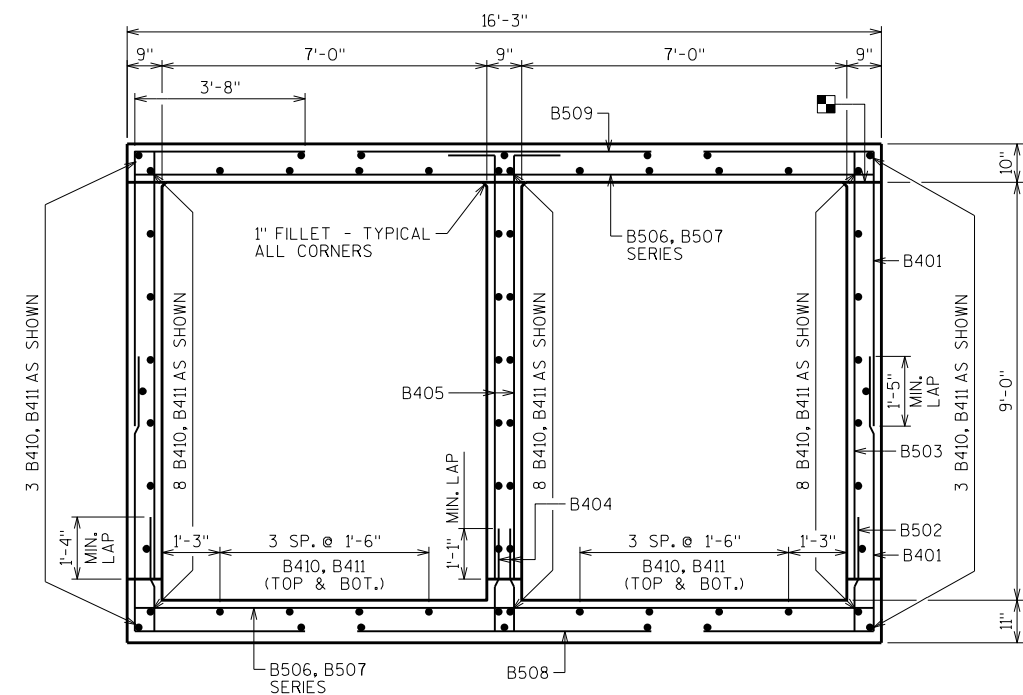
▲ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

BAR SERIES TABLE

BAR MARK	NO. REQ'D.	LENGTH
B507	2 SERIES OF 6	5'-0" TO 14'-10"

◆ NO. REQ'D INCLUDES BAR STEEL QUANTITY FOR ALL VERTICAL CONSTRUCTION JOINTS

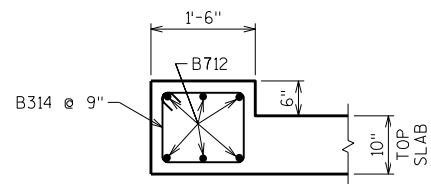
BUNDLE AND TAG EACH SERIES SEPARATELY.



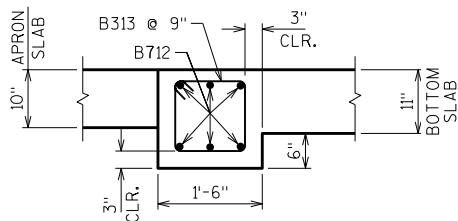
SECTION THRU BOX - PANEL 1

ALL LONGITUDINAL BAR STEEL NOT IDENTIFIED ARE B410, B411 BARS

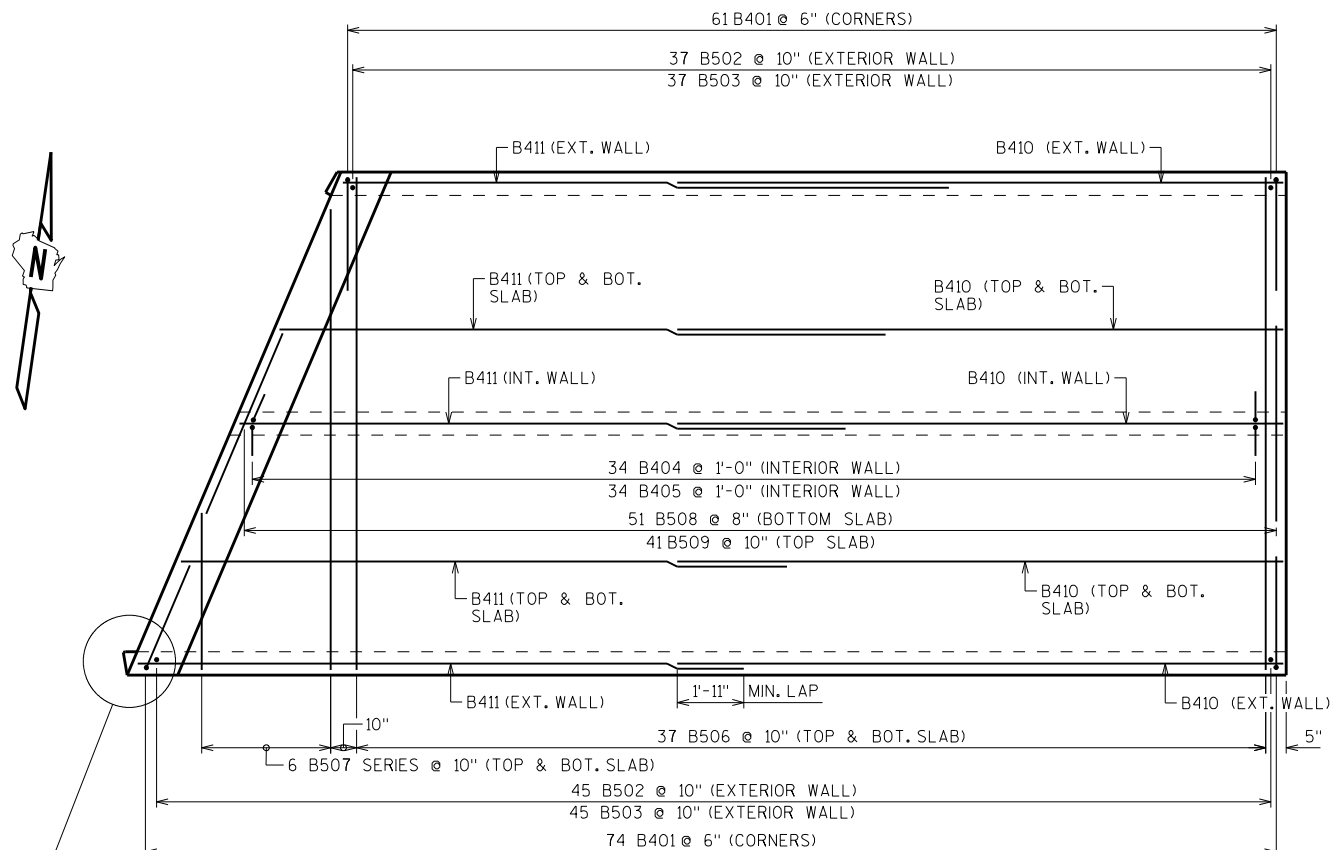
■ OPTIONAL CONST. JOINT. OMIT 1" FILLET IF OPTIONAL CONST. JOINT IS USED.



SECTION THRU TOP SLAB HEADER

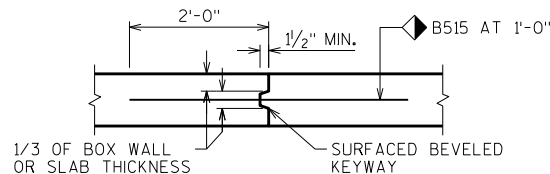


SECTION THRU BOTTOM SLAB HEADER



PLAN

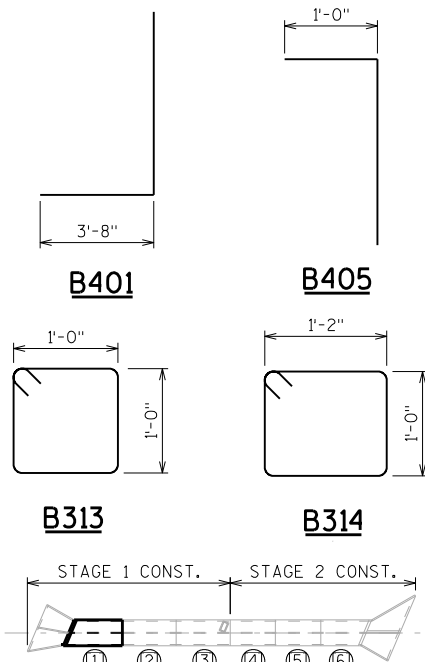
(HEADER REINFORCEMENT NOT SHOWN FOR CLARITY)



VERTICAL CONSTRUCTION JOINT

2" DEEP SAW CUT WITHIN 12 HOURS AFTER POURING MAY BE USED IN LIEU OF CONST. JT. IN BOTTOM SLAB.

◆ CONTRACTOR MAY UTILIZE ADHESIVE ANCHORS NO. 5 BAR, EMBED 6" IN CONCRETE, NO. 5 BAR AND MASONRY ANCHOR INCIDENTAL TO "BAR STEEL REINFORCEMENT HS STRUCTURES"



BOX PANEL KEY

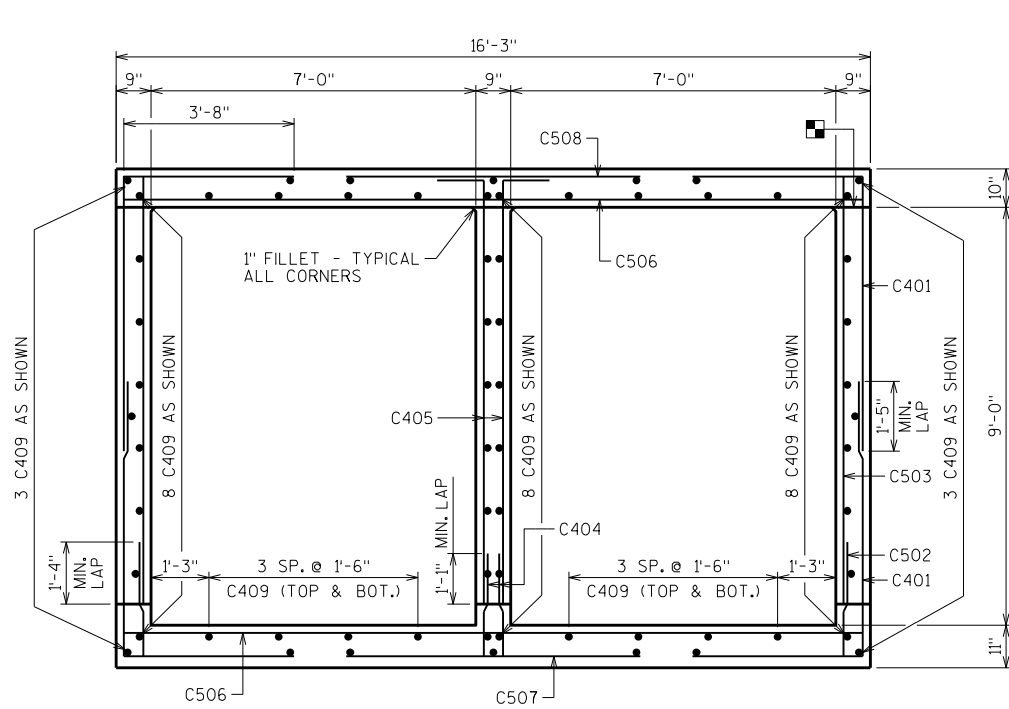
③ INDICATES PANEL NUMBER

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE C-67-91			
DRAWN BY		NAR	PLANS CK'D. SAD
PANEL 1 BOX DETAILS		SHEET 2	

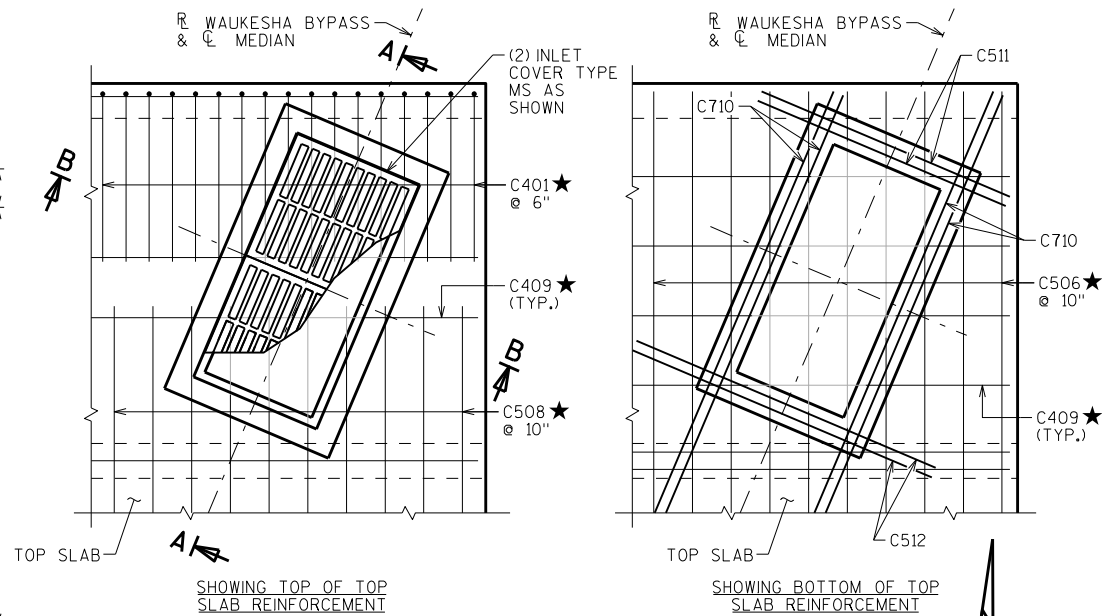
NOTE: THE FIRST OR FIRST TWO DIGITS OF THE
BAR MARK SIGNIFIES THE BAR SIZE

BILL OF BARS

BAR MARK	QTY	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
C401	544	9'-6"	X			CORNERS
C502	164	2'-6"				EXTERIOR WALL DOWELS - VERT.
C503	164	9'-2"				EXTERIOR WALL - VERT.
C404	136	2'-3"				INTERIOR WALL DOWELS - VERT.
C405	136	10'-1"	X			INTERIOR WALL - VERT.
C506	164	15'-11"				TOP & BOT. SLAB - TRANS.
C507	102	9'-11"				BOTTOM SLAB - TRANS.
C508	82	6'-4"				TOP SLAB - TRANS.
C409	128	33'-8"				WALLS & SLABS - LONGIT.
C710	4	10'-6"				TOP SLAB - HORIZ. @ INLET
C511	2	5'-9"				TOP SLAB - HORIZ. @ INLET
C512	2	7'-0"				TOP SLAB - HORIZ. @ INLET
C413	32	4'-0"	X			MEDIAN INLET - VERT.
C414	32	4'-10"				MEDIAN INLET - VERT.
C415	10	11'-8"	X			MEDIAN INLET - HORIZ.
C416	10	3'-6"				MEDIAN INLET - HORIZ.
C417	10	6'-4"				MEDIAN INLET - HORIZ.

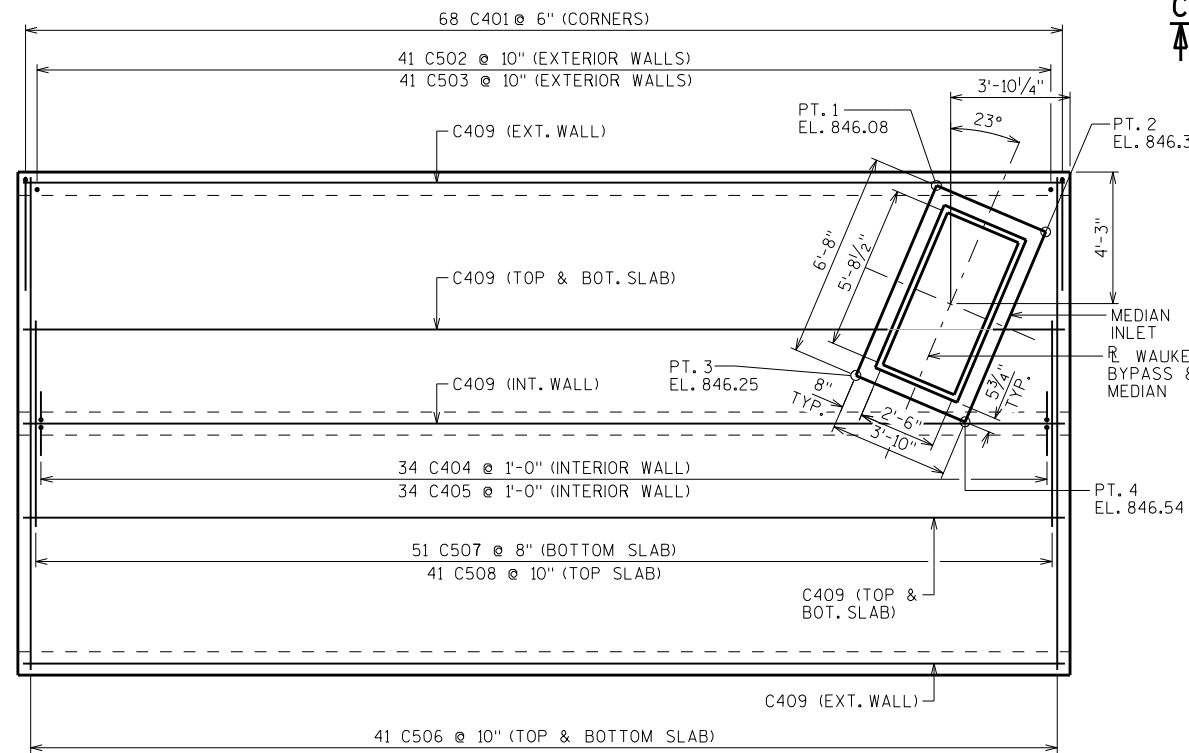


SECTION THRU BOX - PANEL 2 & 3

ALL LONGITUDINAL BAR STEEL NOT IDENTIFIED ARE
C409 BARSOPTIONAL CONST. JOINT. OMIT 1" FILLET
IF OPTIONAL CONST. JOINT IS USED.

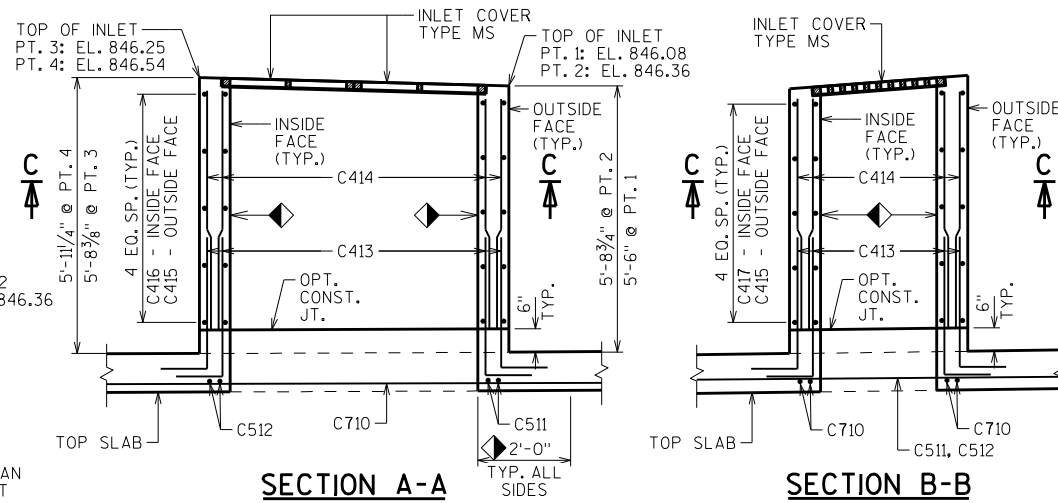
MEDIAN INLET PLAN

(SEE "PLAN" DETAIL AND SHT. 1 FOR LOCATION)

★ FIELD CUT BAR STEEL REINFORCEMENT IN TOP SLAB 2" CLEAR
OF THE OPENING PROVIDED FOR THE MEDIAN INLETADJUSTMENT OF THE COVER TO GRADE MAY BE
ACCOMPLISHED BY THE USE OF MORTAR AND BRICK.
MAXIMUM ADJUSTMENT SHALL BE 8".

PLAN

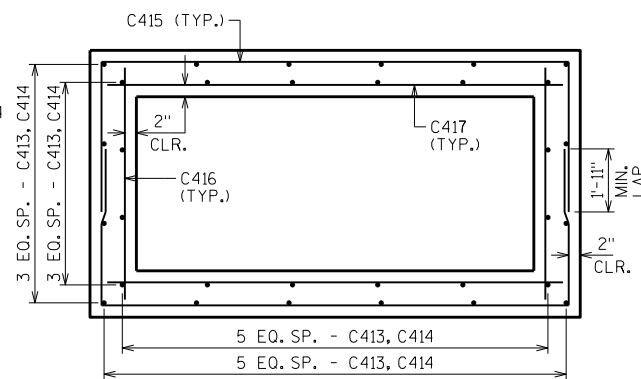
PANEL 3 SHOWN, PANEL 2 IS SIMILAR



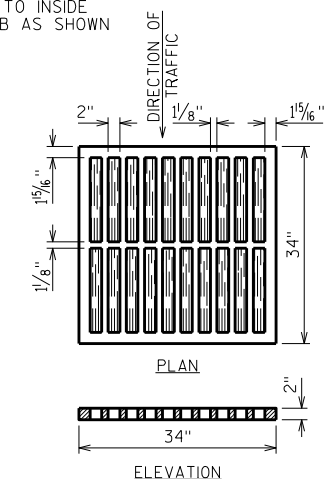
SECTION A-A

APPLY BRIDGE SEAT PROTECTION TO INSIDE
FACES AND BOTTOM OF TOP SLAB AS SHOWN

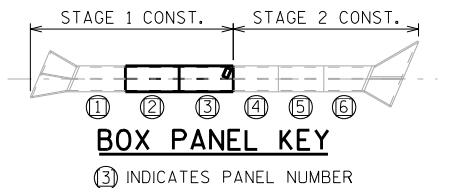
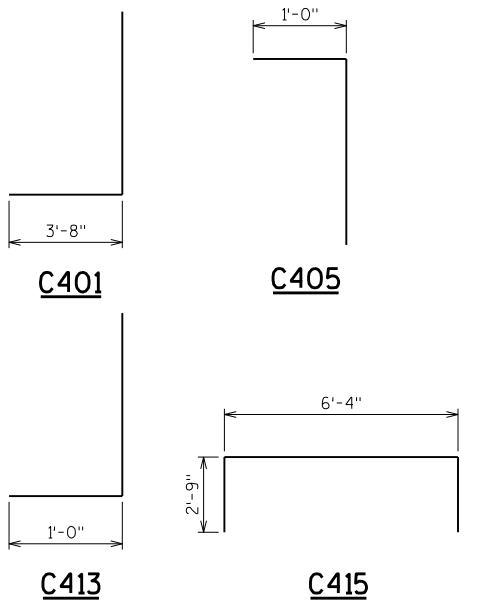
SECTION B-B



SECTION C-C



INLET COVER TYPE MS

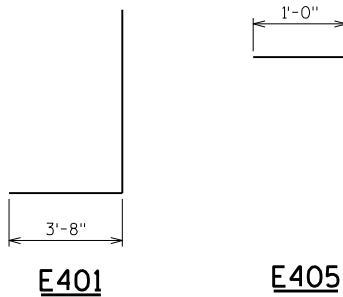


NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE C-67-91			
DRAWN BY		NAR	PLANS CK'D. SAD
PANELS 2-3 BOX DETAILS		SHEET 3	

BILL OF BARS

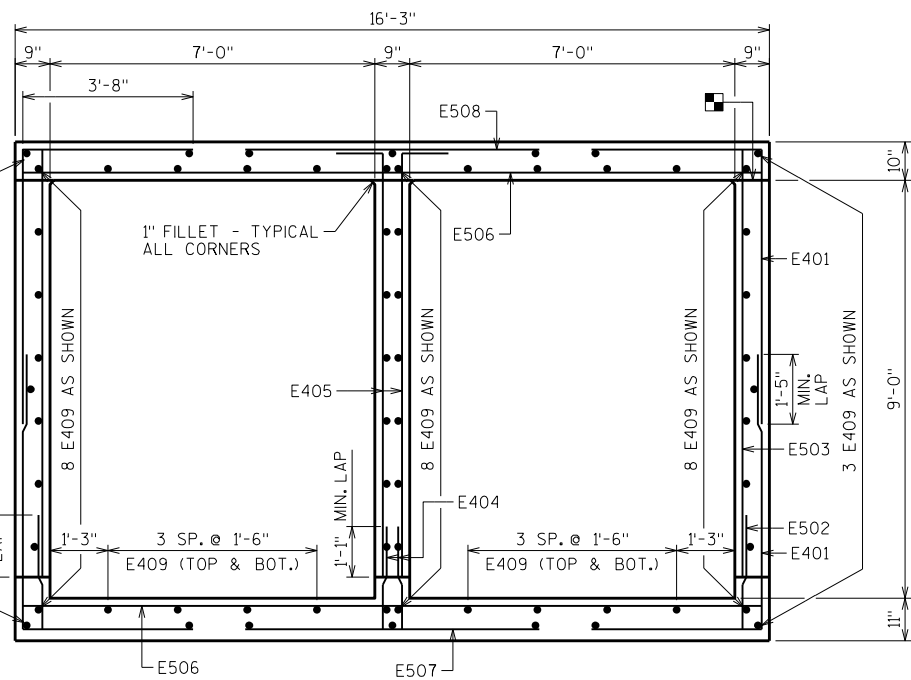
NOTE: THE FIRST OR FIRST TWO DIGITS OF THE
BAR MARK SIGNIFIES THE BAR SIZE

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
E401		464	9'-6"	X		CORNERS
E502		140	2'-6"			EXTERIOR WALL DOWELS - VERT.
E503		140	9'-2"			EXTERIOR WALL - VERT.
E404		116	2'-3"			INTERIOR WALL DOWELS - VERT.
E405		116	10'-1"	X		INTERIOR WALL - VERT.
E506		70	15'-11"			TOP & BOT. SLAB - TRANS.
E507		86	9'-11"			BOTTOM SLAB - TRANS.
E508		70	6'-4"			TOP SLAB - TRANS.
E409		128	28'-4"			WALLS & SLABS - LONGIT.

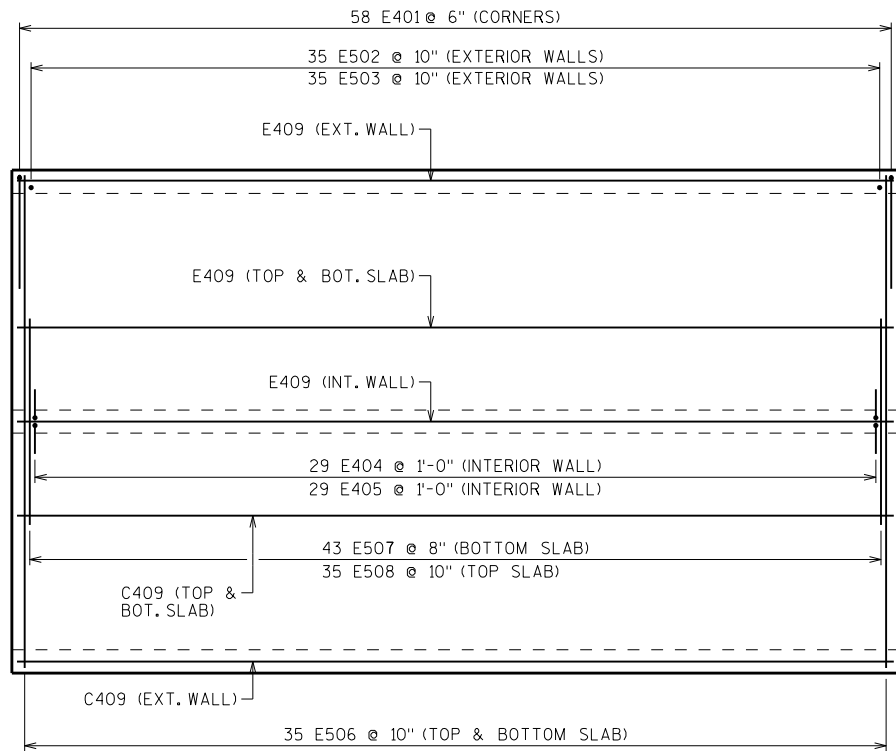


E401

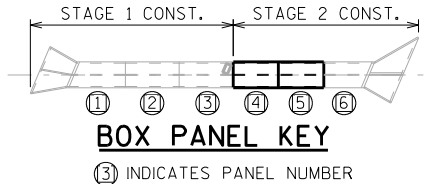
E405



SECTION THRU BOX - PANEL 4 & 5

ALL LONGITUDINAL BAR STEEL NOT IDENTIFIED ARE
E409 BARSOPTIONAL CONST. JOINT, OMIT 1" FILLET
IF OPTIONAL CONST. JOINT IS USED.

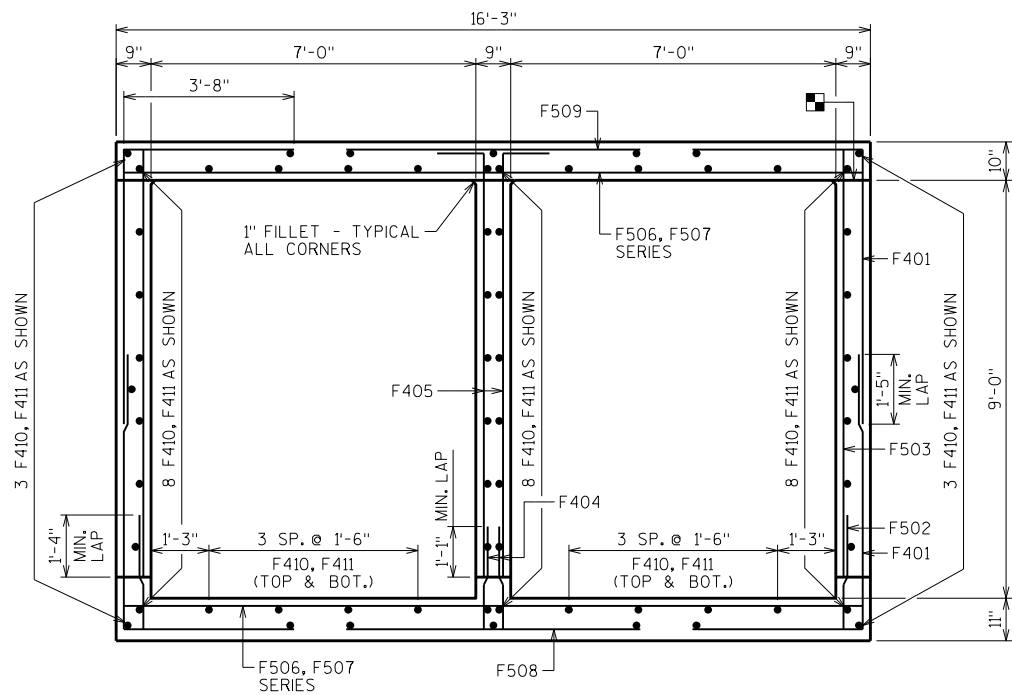
PLAN



BOX PANEL KEY

(3) INDICATES PANEL NUMBER

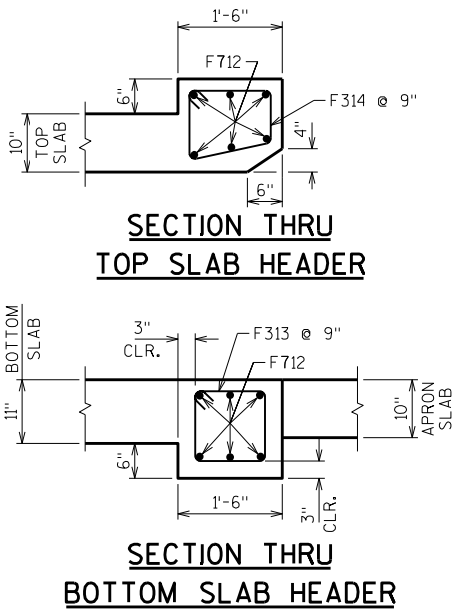
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE C-67-91			
DRAWN BY		NAR	PLANS CK'D. SAD
PANELS 4-5 BOX DETAILS			SHEET 4



SECTION THRU BOX - PANEL 6

ALL LONGITUDINAL BAR STEEL NOT IDENTIFIED ARE B410, B411 BARS

OPTIONAL CONST. JOINT. OMIT 1" FILLET IF OPTIONAL CONST. JOINT IS USED.



BILL OF BARS

NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE

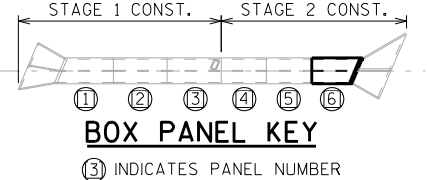
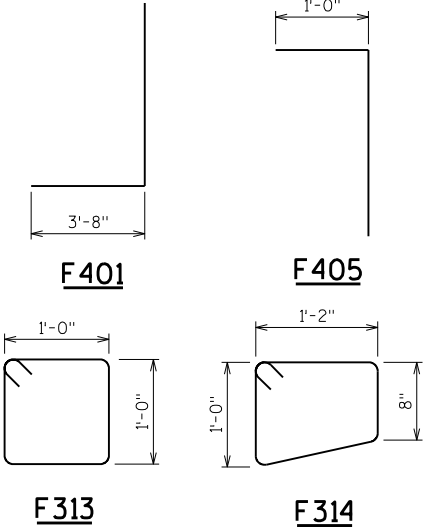
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
F401		232	9'-6"	X		CORNERS
F502		70	2'-6"			EXTERIOR WALL DOWELS - VERT.
F503		70	9'-2"			EXTERIOR WALL - VERT.
F404		58	2'-3"			INTERIOR WALL DOWELS - VERT.
F405		58	10'-1"	X		INTERIOR WALL - VERT.
F506		60	15'-11"			TOP & BOT. SLAB - TRANS.
F507		12	10'-3"			TOP & BOT. SLAB - TRANS.
F508		43	6'-4"			BOTTOM SLAB - TRANS.
F509		35	6'-4"			TOP SLAB - TRANS.
F410		64	17'-0"			WALLS & SLABS - LONGIT.
F411		64	17'-0"			WALLS & SLABS - LONGIT.
F712		12	17'-4"			HEADERS - HORIZ.
F313		24	4'-5"	X		BOTTOM HEADER - VERT.
F314		24	4'-5"	X		TOP HEADER - VERT.

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

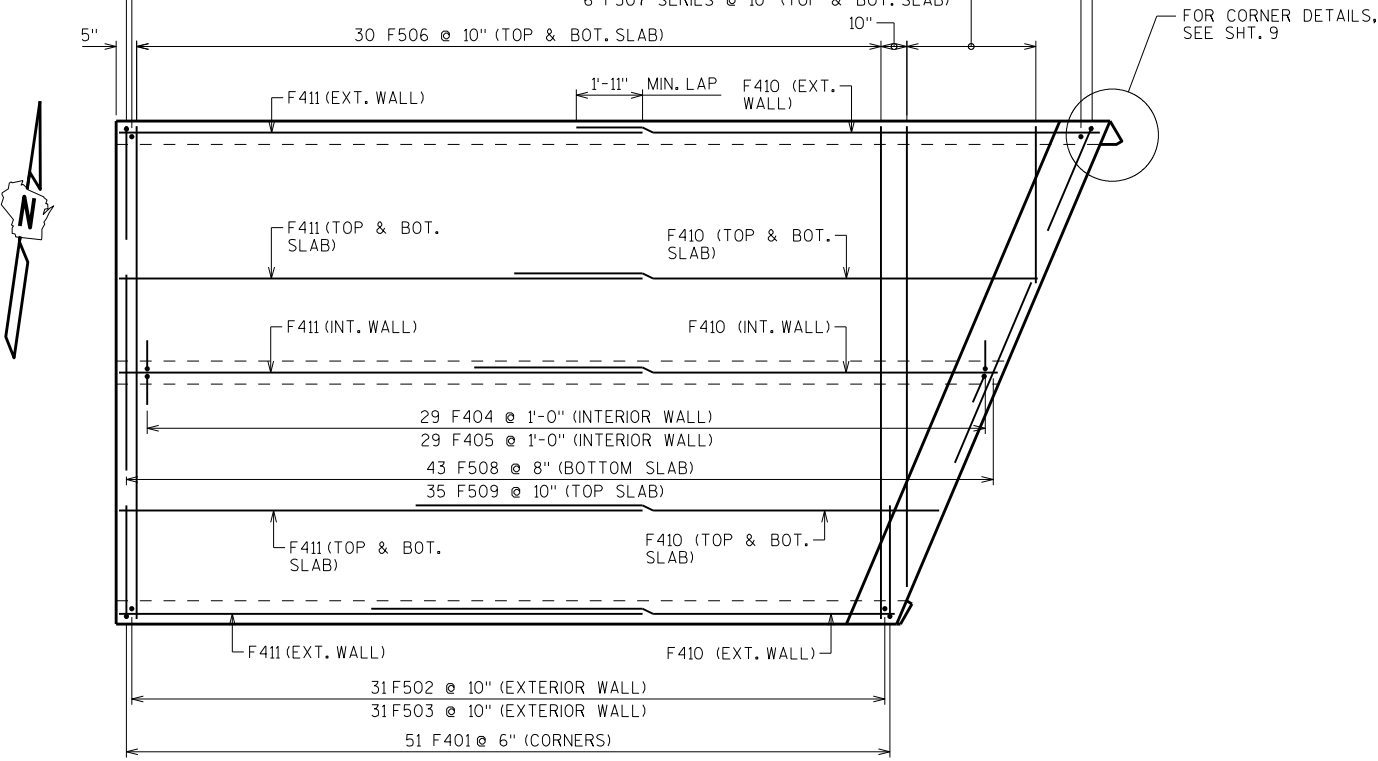
BAR SERIES TABLE

BAR MARK	NO. REQ'D.	LENGTH
F507	2 SERIES OF 6	5'-4" TO 15'-2"

BUNDLE AND TAG EACH SERIES SEPARATELY.



NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE C-67-91			
DRAWN BY		NAR	PLANS CK'D. SAD
PANEL 6 BOX DETAILS		SHEET 5	



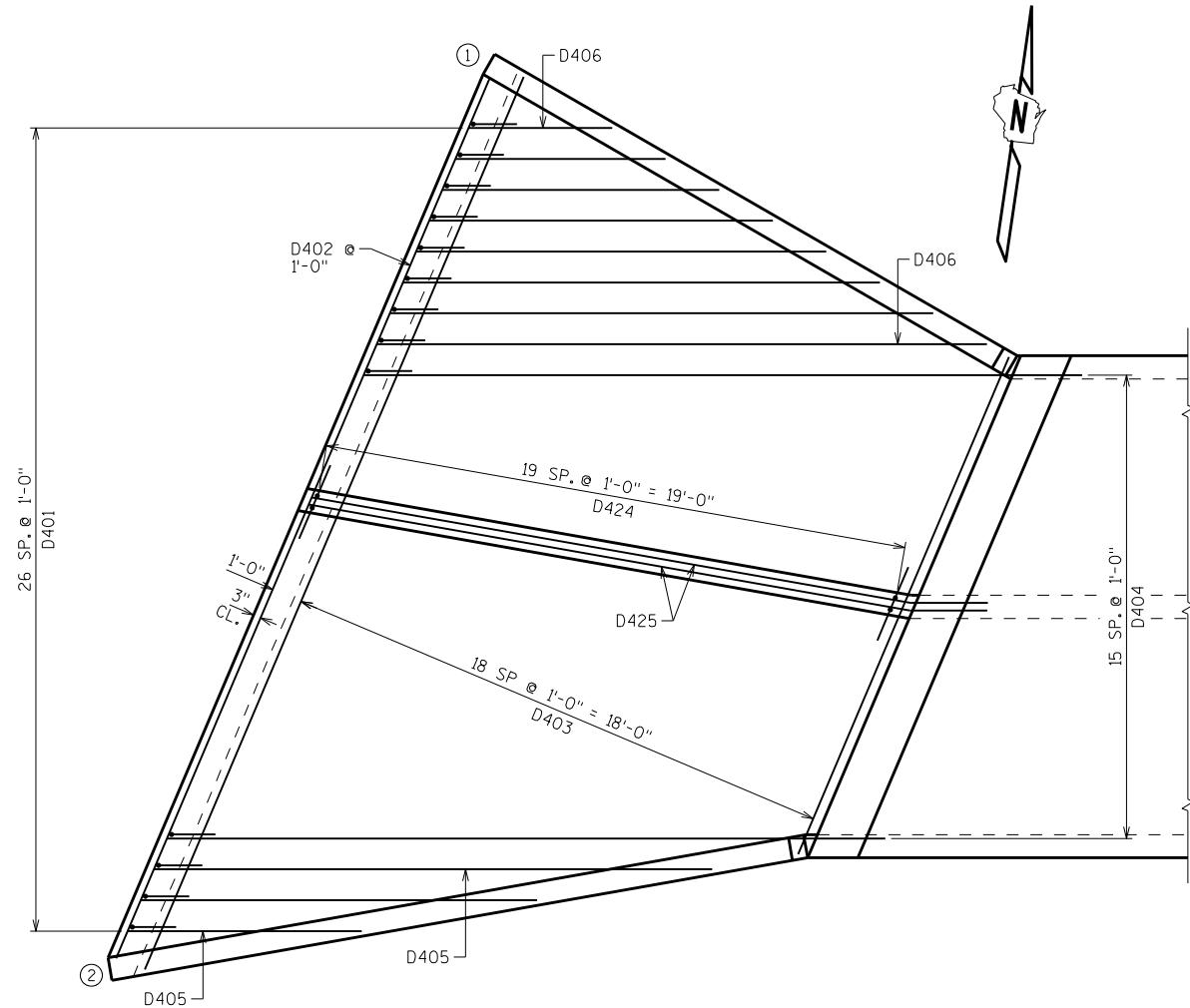
PLAN
(HEADER REINFORCEMENT NOT SHOWN FOR CLARITY)

SCALE = 2:00

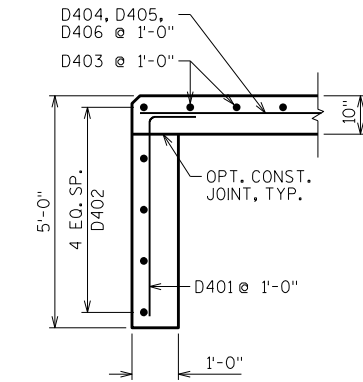
○ INDICATES WING NUMBER

STATE PROJECT NUMBER

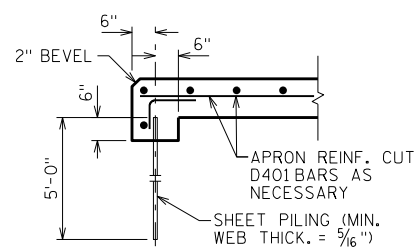
2788-00-71



OUTLET APRON REINF.

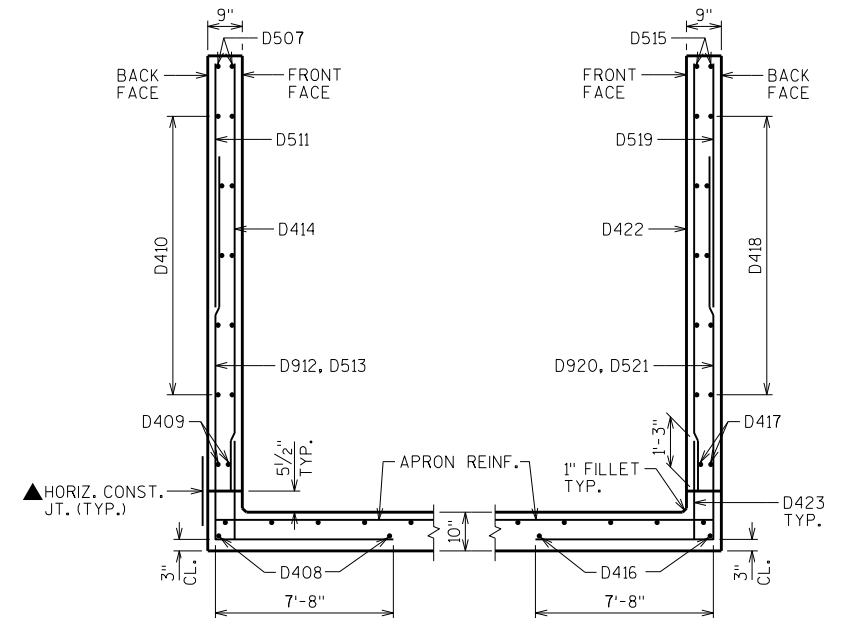


OUTLET CUT-OFF WALL



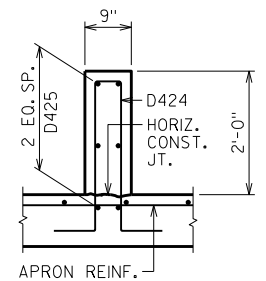
ALTERNATE CUT-OFF WALL

THE ABOVE ALTERNATIVE MAY BE USED IN LIEU OF CAST-IN-PLACE CONCRETE CUT-OFF WALL. PAYMENT WILL BE BASED ON THE CONCRETE CUT-OFF WALL.

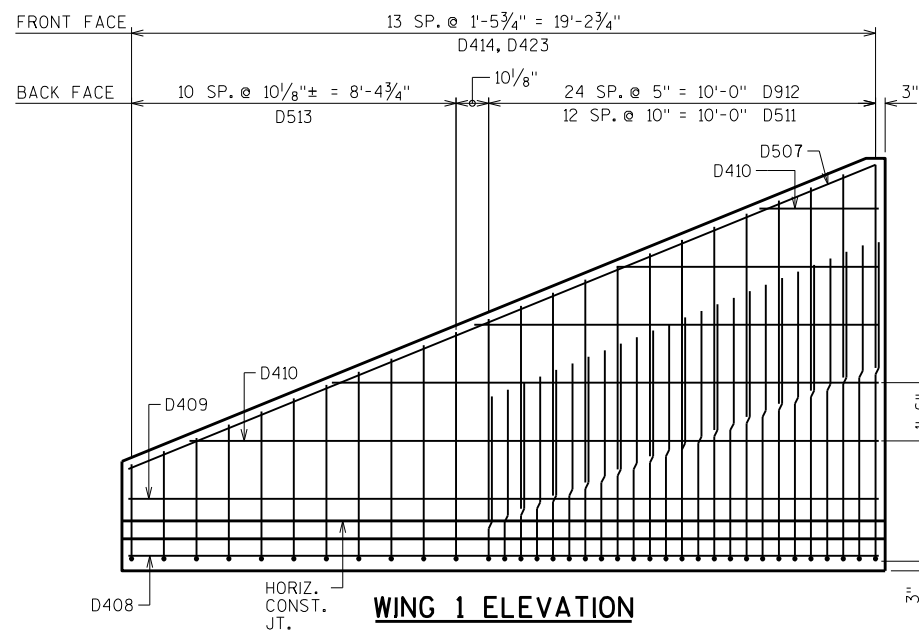


WING 1 SECTION

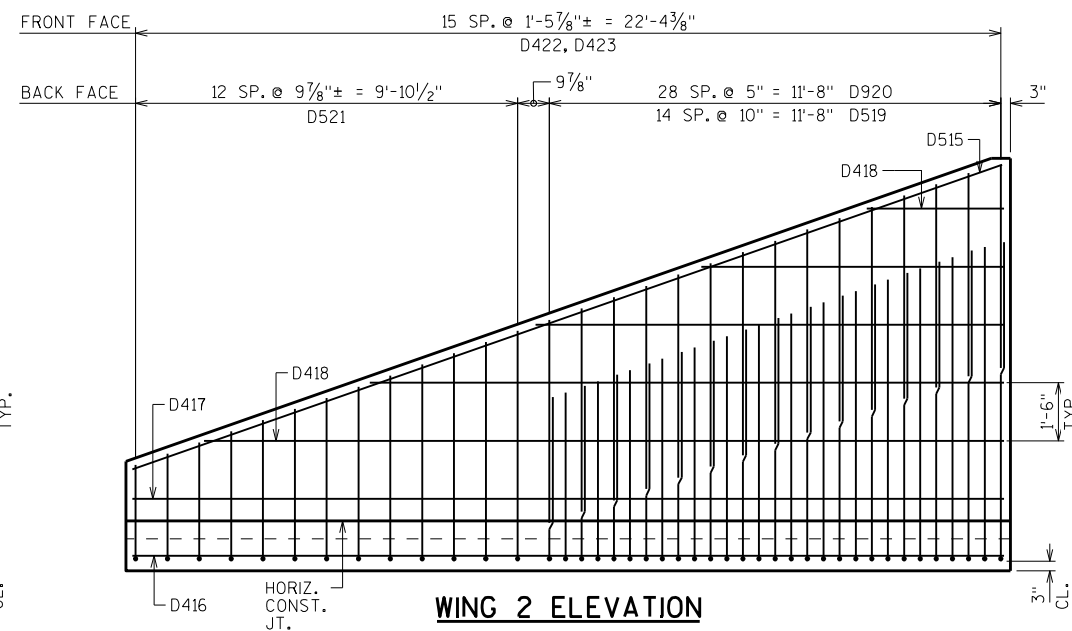
WING 2 SECTION



SECTION THRU WEIR WALL



WING 1 ELEVATION



WING 2 ELEVATION

▲ 18" RUBBERIZED MEMBRANE WATERPROOFING. EXTEND FROM HORIZ. CONST. JT. TO TOP OF WALL.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE C-67-91			
DRAWN BY		NAR	PLANS CK'D. SAD
OUTLET APRON DETAILS 1		SHEET 6	

SCALE = 3.00

BILL OF BARS

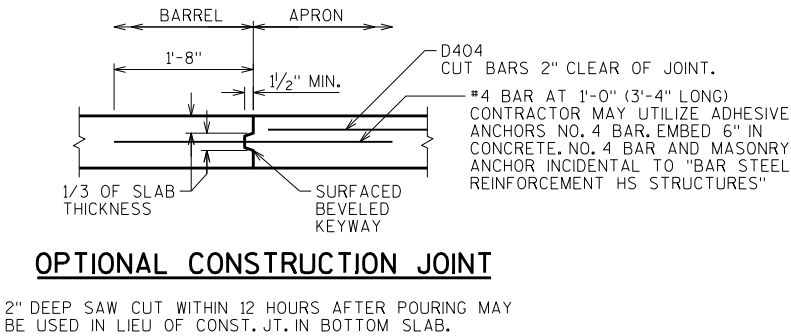
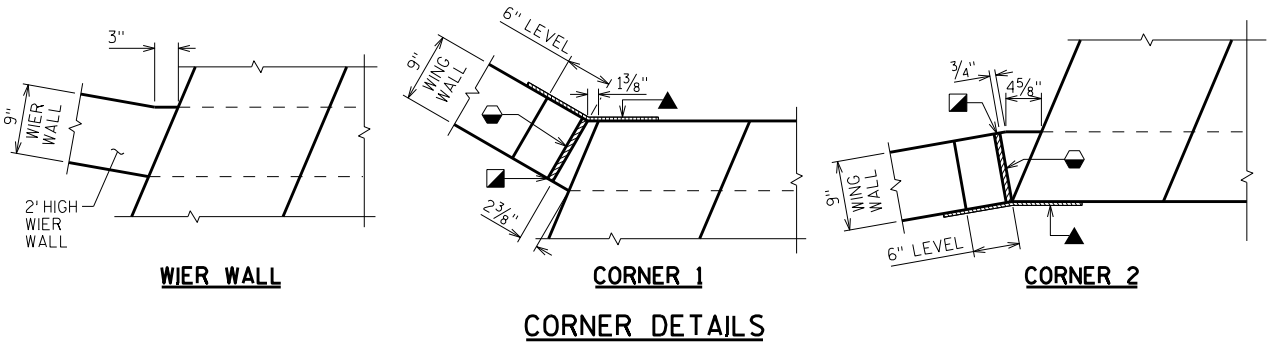
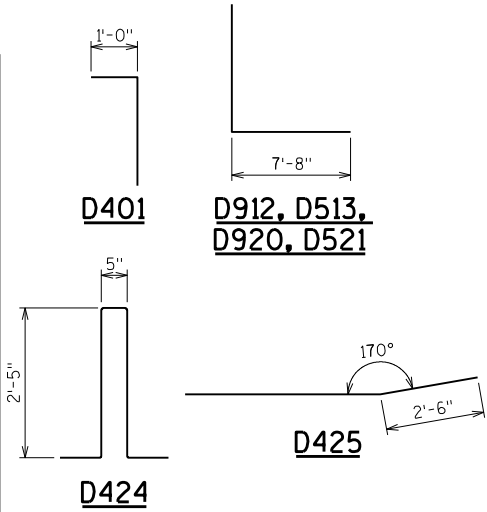
NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
D401		27	5'-6"	X		OUTLET APRON AND CUTOFF WALL VERT.
D402		5	31'-0"			OUTLET APRON AND CUTOFF WALL HORIZ.
D403		19	24'-5"		▲	OUTLET APRON SLAB HORIZ.
D404		16	23'-3"			OUTLET APRON AND BOX SLAB HORIZ.
D405		3	12'-10"		▲	OUTLET APRON SLAB HORIZ.
D406		8	12'-3"		▲	OUTLET APRON SLAB HORIZ.
D507	X	2	20'-10"			WING 1 HORIZ. TOP BOTH FACES
D408	X	2	19'-2"			WING 1 HORIZ. APRON SLAB
D409	X	2	19'-2"			WING 1 HORIZ. BOTTOM BOTH FACES
D410	X	10	10'-6"		▲	WING 1 HORIZ.
D511	X	13	5'-3"			WING 1 VERT. BACKFACE
D912	X	25	13'-8"	X	▲	WING 1 VERT. BACK FACE
D513	X	11	11'-10"	X	▲	WING 1 VERT. BACK FACE
D414	X	14	5'-4"		▲	WING 1 VERT. FRONT FACE
D515	X	2	23'-10"			WING 2 HORIZ. TOP BOTH FACES
D416	X	2	22'-6"			WING 2 HORIZ. APRON SLAB
D417	X	2	22'-6"			WING 2 HORIZ. BOTTOM BOTH FACES
D418	X	10	12'-1"		▲	WING 2 HORIZ.
D519	X	15	5'-3"			WING 2 VERT. BACKFACE
D920	X	29	13'-8"	X	▲	WING 2 VERT. BACKFACE
D521	X	13	11'-10"	X	▲	WING 2 VERT. BACKFACE
D422	X	16	5'-4"		▲	WING 2 VERT. FRONT FACE
D423	X	30	2'-5"			WINGS 1 & 2 DOWELS FRONT FACE
D424	X	20	6'-3"	X		WEIR WALL VERT.
D425	X	6	22'-3"	X		WEIR WALL HORIZ.

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

BAR SERIES TABLE

BAR MARK	NO. REQ'D.	LENGTH
D403	1 SERIES OF 19	17'-6" TO 31'-4"
D405	1 SERIES OF 3	7'-7" TO 18'-1"
D406	1 SERIES OF 8	4'-8" TO 19'-9"
D410	2 SERIES OF 5	3'-1" TO 17'-10"
D912	1 SERIES OF 25	11'-8" TO 15'-8"
D513	1 SERIES OF 11	10'-1" TO 13'-6"
D414	1 SERIES OF 14	1'-5" TO 9'-2"
D418	2 SERIES OF 5	3'-6" TO 20'-8"
D920	1 SERIES OF 29	11'-8" TO 15'-8"
D521	1 SERIES OF 13	10'-1" TO 13'-6"
D422	1 SERIES OF 16	1'-5" TO 9'-2"



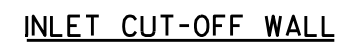
BUNDLE AND TAG EACH SERIES SEPARATELY.

STATE PROJECT NUMBER
2788-00-71

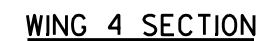
- 3/4" FILLER, TYP. EXTEND FILLER FROM HORIZ. CONST. JT. TO TOP OF WING.
- 1" BEVEL, TYP.
- 18" RUBBERIZED MEMBRANE WATERPROOFING. EXTEND FROM HORIZ. CONST. JT. TO TOP OF WALL.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE C-67-91			
DRAWN BY		NAR	PLANS CK'D. SAD
OUTLET APRON DETAILS 2			SHEET 7

SCALE = 3.00



WING 4 ELEVATION



NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE C-67-91			
DRAWN BY		NAR	PLANS CK'D. SAD
INLET APRON DETAILS 1		SHEET 8	

BILL OF BARS

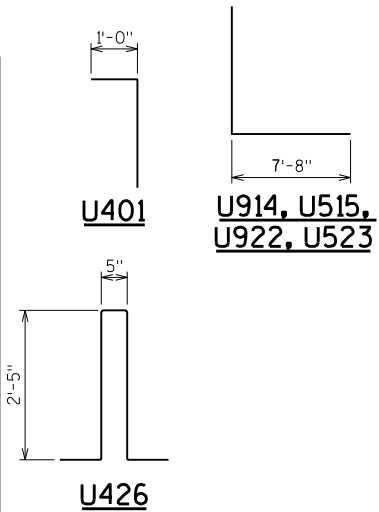
NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
U401		37	3'-6"	X		INLET APRON AND CUTOFF WALL VERT.
U402		3	22'-2"			INLET APRON AND CUTOFF WALL HORIZ.
U403		3	23'-9"			INLET APRON AND CUTOFF WALL HORIZ.
U404		19	17'-3"		▲	INLET APRON SLAB HORIZ.
U405		19	15'-6"		▲	INLET APRON SLAB HORIZ.
U406		16	23'-3"			INLET APRON AND BOX SLAB HORIZ.
U407		8	12'-3"		▲	INLET APRON SLAB HORIZ.
U408		13	12'-4"		▲	INLET APRON SLAB HORIZ.
U509	X	2	32'-2"			WING 3 HORIZ. TOP BOTH FACES
U410	X	2	31'-2"			WING 3 HORIZ. APRON SLAB
U411	X	2	31'-2"			WING 3 HORIZ. BOTTOM BOTH FACES
U412	X	10	16'-9"		▲	WING 3 HORIZ.
U513	X	20	5'-3"			WING 3 VERT. BACKFACE
U914	X	39	13'-8"	X	▲	WING 3 VERT. BACK FACE
U515	X	19	11'-11"	X	▲	WING 3 VERT. BACK FACE
U416	X	22	5'-4"		▲	WING 3 VERT. FRONT FACE
U517	X	2	20'-8"			WING 4 HORIZ. TOP BOTH FACES
U418	X	2	19'-2"			WING 4 HORIZ. APRON SLAB
U419	X	2	19'-2"			WING 4 HORIZ. BOTTOM BOTH FACES
U420	X	10	10'-4"		▲	WING 4 HORIZ.
U521	X	12	5'-3"			WING 4 VERT. BACKFACE
U922	X	23	13'-10"	X	▲	WING 4 VERT. BACKFACE
U523	X	12	12'-0"	X	▲	WING 4 VERT. BACKFACE
U424	X	14	5'-4"		▲	WING 4 VERT. FRONT FACE
U425	X	36	2'-5"			WINGS 3 & 4 DOWELS FRONT FACE
U426	X	22	6'-3"	X		WEIR WALL VERT.
U427	X	6	23'-3"			WEIR WALL HORIZ.

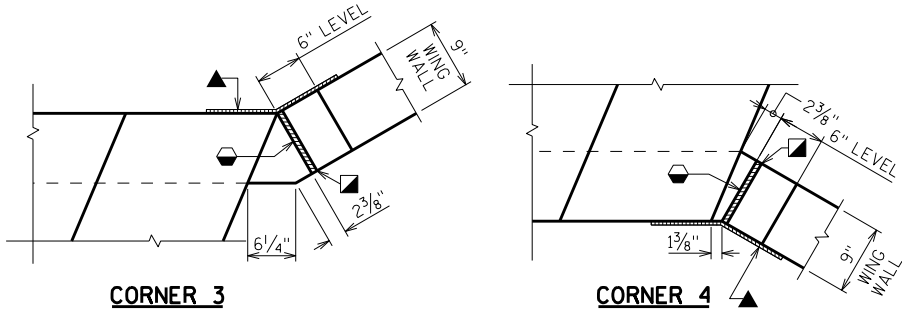
▲ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

BAR SERIES TABLE

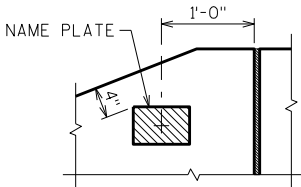
BAR MARK	NO. REQ'D.	LENGTH
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U405	1 SERIES OF 19	7'-4" TO 23'-8"
U407	1 SERIES OF 8	4'-8" TO 19'-9"
U408	1 SERIES OF 13	4'-6" TO 20'-2"
U412	2 SERIES OF 5	4'-10" TO 28'-7"
U914	1 SERIES OF 39	11'-8" TO 15'-8"
U515	1 SERIES OF 19	10'-1" TO 13'-6"
U416	1 SERIES OF 22	1'-5" TO 9'-2"
U420	2 SERIES OF 5	3'-0" TO 17'-7"
U922	1 SERIES OF 23	12'-0" TO 15'-8"
U523	1 SERIES OF 12	10'-1" TO 13'-10"
U424	1 SERIES OF 14	1'-5" TO 9'-2"



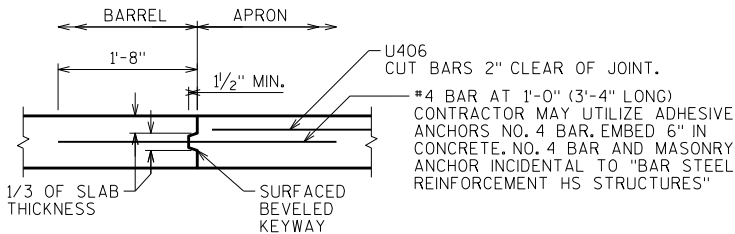
BUNDLE AND TAG EACH SERIES SEPARATELY.



CORNER DETAILS



NAME PLATE LOCATION
WING 4



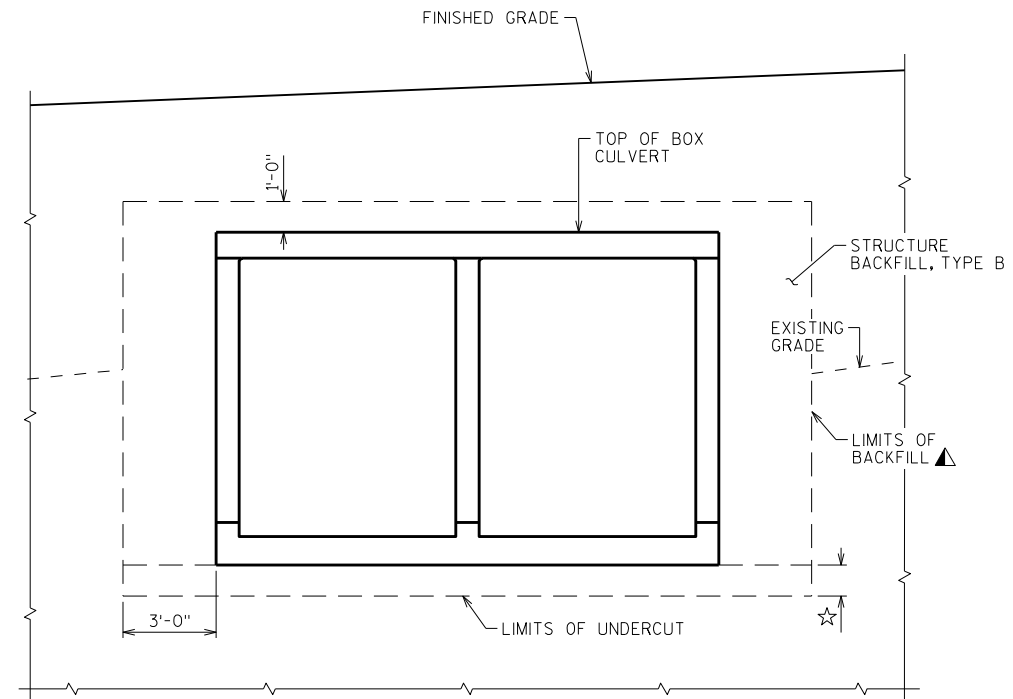
OPTIONAL CONSTRUCTION JOINT

2" DEEP SAW CUT WITHIN 12 HOURS AFTER POURING MAY BE USED IN LIEU OF CONST. JT. IN BOTTOM SLAB.

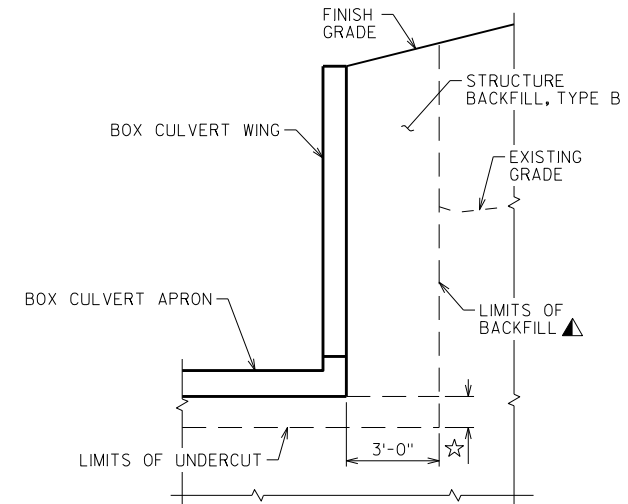
- 3/4" FILLER, TYP. EXTEND FILLER FROM HORIZ. CONST. JT. TO TOP OF WING.
- 1" BEVEL, TYP.
- 18" RUBBERIZED MEMBRANE WATERPROOFING. EXTEND FROM HORIZ. CONST. JT. TO TOP OF WALL.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE C-67-91			
DRAWN BY		NAR	PLANS CK'D. SAD
INLET APRON DETAILS 2			SHEET 9

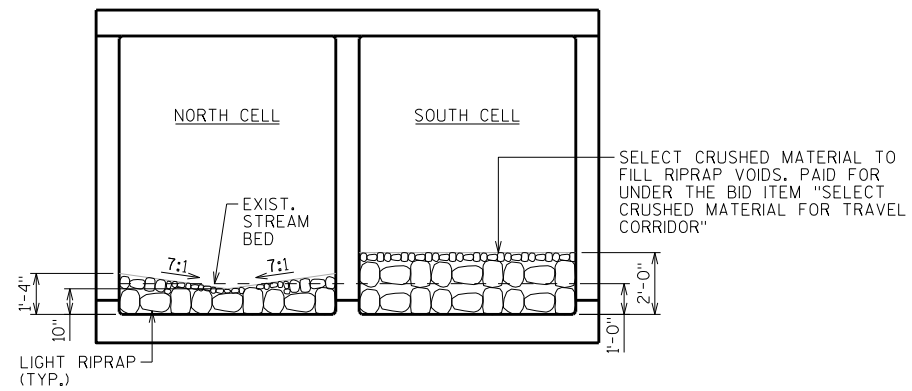
SCALE = 3:00



**TYPICAL SECTION
THRU BOX CULVERT**
(SHOWING BACKFILL LIMITS)



**TYPICAL SECTION
THRU BOX CULVERT WING**
(SHOWING BACKFILL LIMITS)



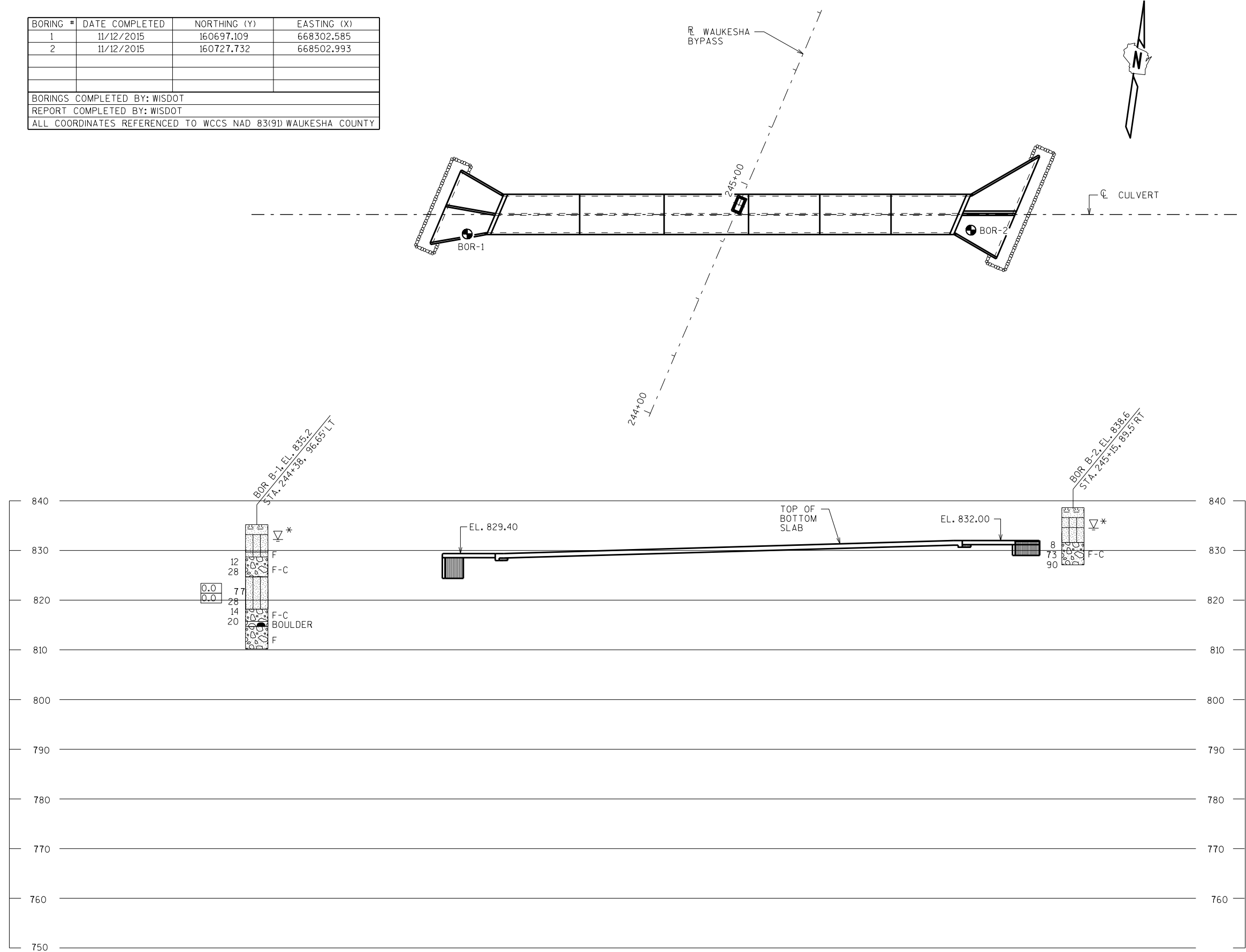
CROSS SECTION THRU BARREL
(SHOWING CULVERT FILL MATERIAL)

▲ BACKFILL PAY LIMITS. BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.

☆ UNDER CUT 1'-0". EXCAVATION FOR UNDER CUT TO BE INCLUDED IN EXCAVATION FOR STRUCTURES. PLACE "GEOTEXTILE TYPE C" AND BACKFILL WITH "BREAKER RUN".

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE C-67-91			
DRAWN BY		NAR	PLANS CK'D. SAD
BACKFILL DETAILS		SHEET 10	

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	11/12/2015	160697.109	668302.585
2	11/12/2015	160727.732	668502.993
BORINGS COMPLETED BY: WISDOT			
REPORT COMPLETED BY: WISDOT			
ALL COORDINATES REFERENCED TO WCCS NAD 83(91) WAUKESHA COUNTY			



STATE PROJECT NUMBER		
2788-00-71		
MATERIAL SYMBOLS		
ASPHALT	TOPSOIL	PEAT
CONCRETE	FILL	GRAVEL
SAND	CLAY	SILT
BOULDERS OR COBBLES	LIMESTONE	BEDROCK (UNKNOWN)
SHALE	SANDSTONE	IGNEOUS/META

LEGEND OF BORING	
⁽¹⁾ UNCONFINED STRENGTH, AS DETERMINED BY A POCKET PENETROMETER (TSF)	
⁽²⁾ UNLESS OTHERWISE, SPECIFIED THE SPT 'N' VALUE IS BASED ON AASHTO T-206, STANDARD PENETRATION TEST. THE SPT 'N' VALUE PRESENTED HAS NOT BEEN CORRECTED FOR OVERBURDEN PRESSURE OR HAMMER EFFICIENCY.	
GROUND WATER ELEVATION	
▽ AT TIME OF DRILLING	
▼ END OF DRILLING	
▽ AFTER DRILLING	
ABBREVIATIONS	
F-FINE M-MEDIUM C-COARSE ST-SHELBY TUBE	

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION	
BORINGS WERE COMPLETED AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING TO OBTAIN INFORMATION CONCERNING THE CHARACTER OF SUBSURFACE MATERIALS FOUND AT THE SITE. BECAUSE THE INVESTIGATED DEPTHS ARE LIMITED AND THE AREA OF THE BORINGS IS VERY SMALL IN RELATION TO THE ENTIRE SITE, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT SIMILAR SUBSURFACE CONDITIONS BELOW, BETWEEN, OR BEYOND THESE BORINGS. VARIATIONS IN SOIL CONDITIONS SHOULD BE EXPECTED AND FLUCTUATIONS IN GROUNDWATER LEVELS MAY OCCUR.	

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE C-67-91			
DRAWN BY TLP/NAR		PLANS CK'D. SAD	
SUBSURFACE EXPLORATION			SHEET 11

* THE GROUND WATER ELEVATION WAS DETERMINED FROM WHERE THE SOIL SAMPLE WAS DESCRIBED AS WET.

SCALE = 20.00