1-20-2012 LETTING ITEM 093

TITLE	PAGE NO.
COVER SHEET	1
SUMMARY OF QUANTITIES	2
BARGE PLANS	3–28(SHEETS 1–26 OF 26)
PUSHBOAT PLANS	29–75(SHEETS 1–47 OF 47)
PUSHBOAT ALTERNATIVE PLAN	76–87(SHEETS 1,4,10,11,19,20,21,23, 24,25,34,36 OF 47)

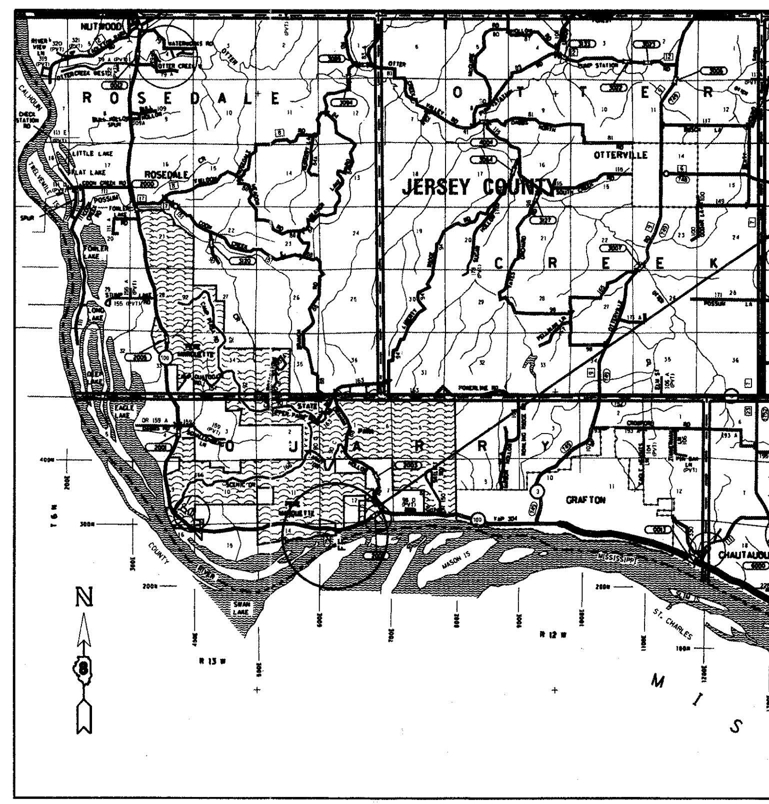
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROPOSED HIGHWAY PLANS

FAP ROUTE 304 (IL 100)
SECTION 21–3
PROJECT FBD-0040(011)
PUSH BOAT & BARGE
JERSEY COUNTY

D-98-062-09

LOCATION OF SECTION INDICATED THUS:–



BRUSSELS FERRY
LANDING AREAS

BRUSSELS FERRY ADT
FAS 754 FROM FERRY TO DEER PLAIN

1998 ADT	=	1000 (ACTUAL)
2001 ADT	=	1000 (ESTIMATED)
2021 ADT	=	1300 (ESTIMATED)

SU = 0.6% (2001)
MU = 0.2% (2001)

SU = 2.6% (2021)
MU = 2.2% (2021)

NOT TO SCALE

LAT. 38.96788
LONG. -90.49442

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED October 21 20 11
Don M Hamer
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

December 9 20 11
acting Scott E. Stitt, P.E. for
ENGINEER OF DESIGN AND ENVIRONMENT

December 9 20 11
Interim William R. Frey for
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

PROJECT ENGINEER: TIM PADGETT (618)346–3325
PROJECT MANAGER: DON HAYDEN (618)346–3194

CONTRACT NO. 76D29

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

SUMMARY OF QUANTITIES

SUMMARY OF QUANTITIES

	CODE NO	ITEM	UNIT	TOTAL QUANTITIES	CONSTRUCTION TYPE CODE: 0026 80% FED. 20% STATE	CONSTRUCTION TYPE CODE: —	CONSTRUCTION TYPE CODE: —
•	67100100	MOBILIZATION	L SUM	1	1		
•	X0327359	BARGE FERRY	EACH	1	1		
•	X0327360	PUSHBOAT	EACH	1	1		
•	X0327361	PUSHBOAT DELIVERY	EACH	1	1		
•	X0327362	BARGE FERRY DELIVERY	EACH	1	1		
•	X0327363	SURPLUS BARGE	EACH	2	2		
•	X0327364	SURPLUS PUSHBOAT	EACH	1	1		

SUMMARY OF QUANTITIES

CODE NO	ITEM	UNIT	TOTAL QUANTITIES	CONSTRUCTION TYPE CODE: —	CONSTRUCTION TYPE CODE: —	CONSTRUCTION TYPE CODE: —

• SPECIALTY ITEM

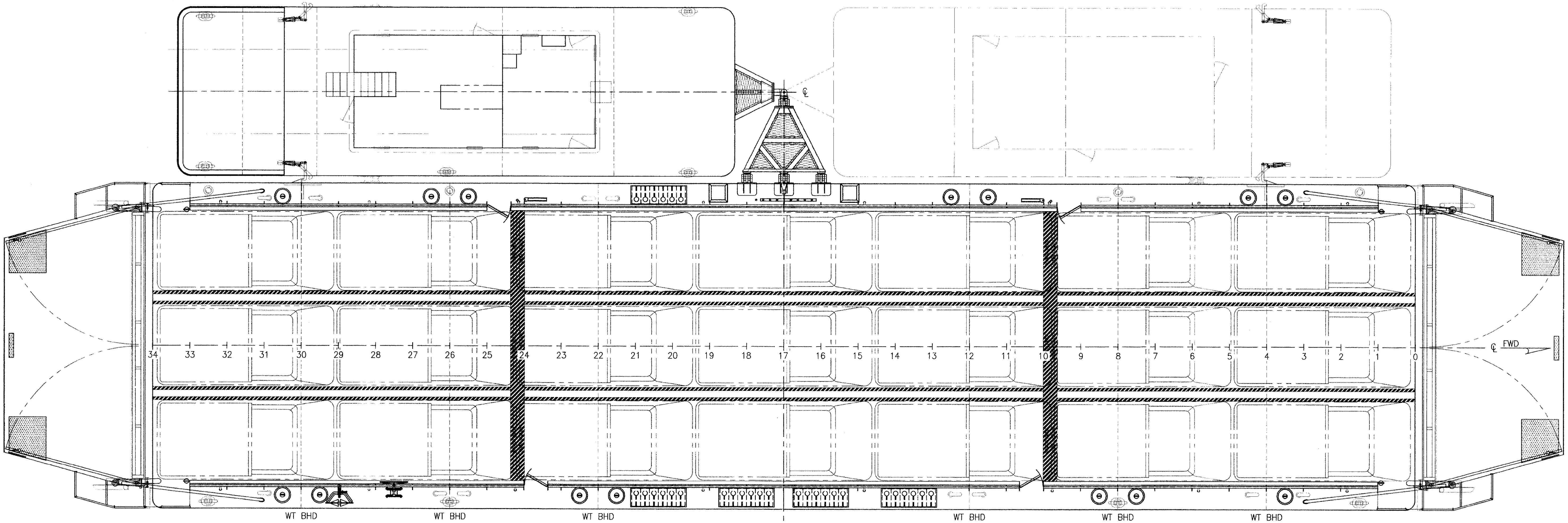
•CALHOUN & JERSEY

FILE NAME = c:\pw_work\pwidot\karlasal\d0149231\d876d29-sht-plan.dgn	USER NAME = karlasal	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SUMMARY OF QUANTITIES
	PLOT SCALE = 50.0000 ' / in.	DRAWN -	REVISED -		SCALE: SHEET NO. __ OF __ SHEETS STA. __ TO STA. __
	PLOT DATE = 10/20/2011	CHECKED -	REVISED -		
		DATE -	REVISED -		

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	•	87	2

CONTRACT NO. 76D29

FED. ROAD DIST. NO. _ ILLINOIS FED. AID PROJECT



GENERAL ARRANGEMENT
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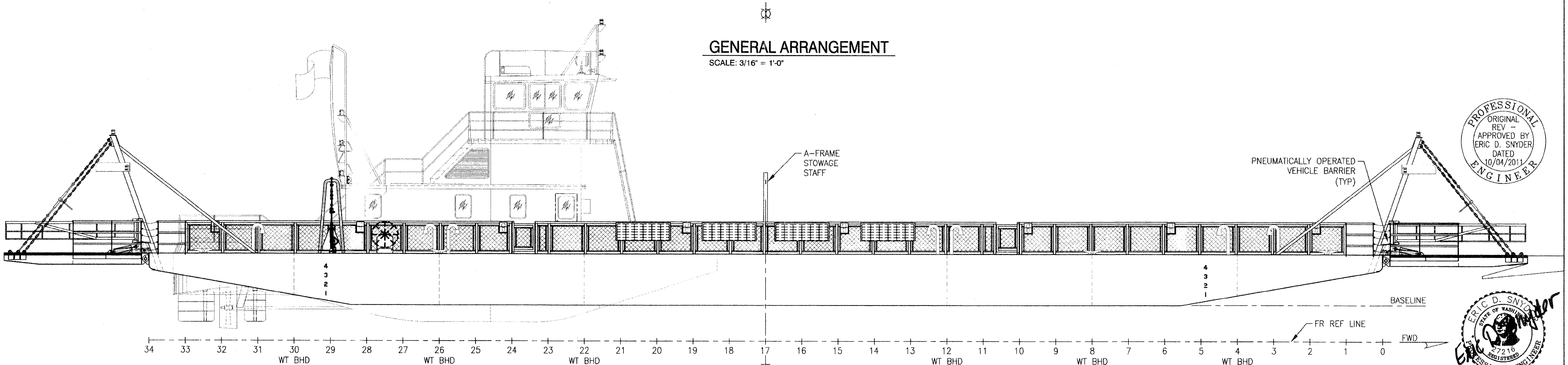


OUTBOARD PROFILE
SCALE: 3/16" = 1'-0"

PROFESSIONAL ENGINEER
ORIGINAL REV – APPROVED BY ERIC D. SNYDER DATED 10/04/2011

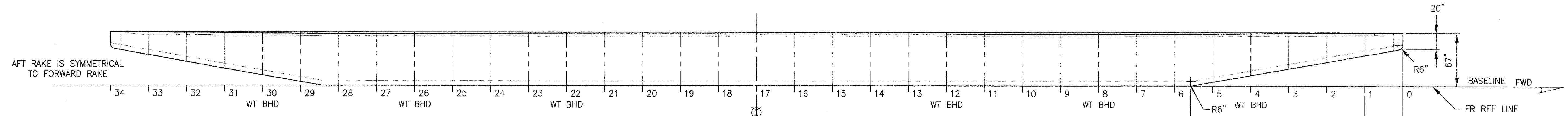
ERIC D. SNYDER STATE OF WASHINGTON 27216 REGISTERED PROFESSIONAL ENGINEER
2011-07-22

SCALE: 3/16" = 1'-0"

ART ANDERSON ASSOCIATES
202 PACIFIC AVE. BREMERTON, WA 98337
(360) 479-5600

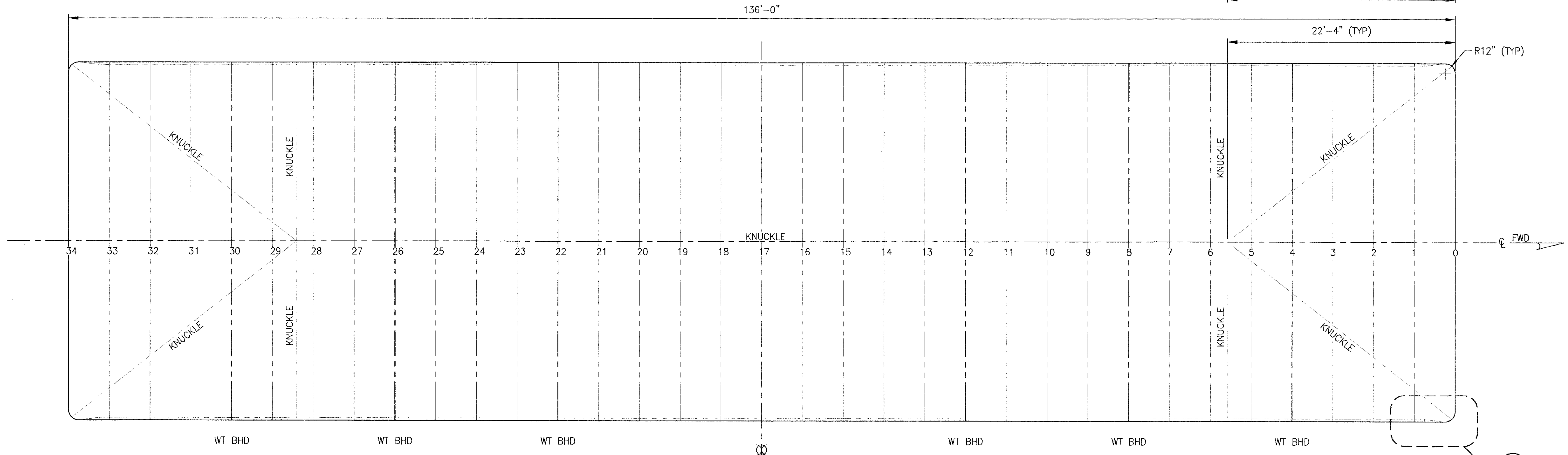
DRAWING NO. CEIDT001BA-801-201

FILE NAME =	USER NAME =	DESIGNED — E. SNYDER	REVISED — REV A 07/21/2011	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	IDOT BRUSSELS FERRY GENERAL ARRANGEMENT - BARGE	F.A.P. RTE. 304 / SECTION 21-3 / COUNTY JERSEY / TOTAL SHEETS 26 / SHEET NO. 1
		DRAWN — J. WALKER	REVISED —			CONTRACT NO. 76D29
	PLOT SCALE =	CHECKED — P. MARTIN	REVISED —			
	PLOT DATE =	DATE — 10/04/2010	REVISED —		SCALE: AS SHOWN / SHEET NO. OF SHEETS / STA. TO STA.	FED. ROAD DIST. NO. / ILLINOIS / FED. AID PROJECT



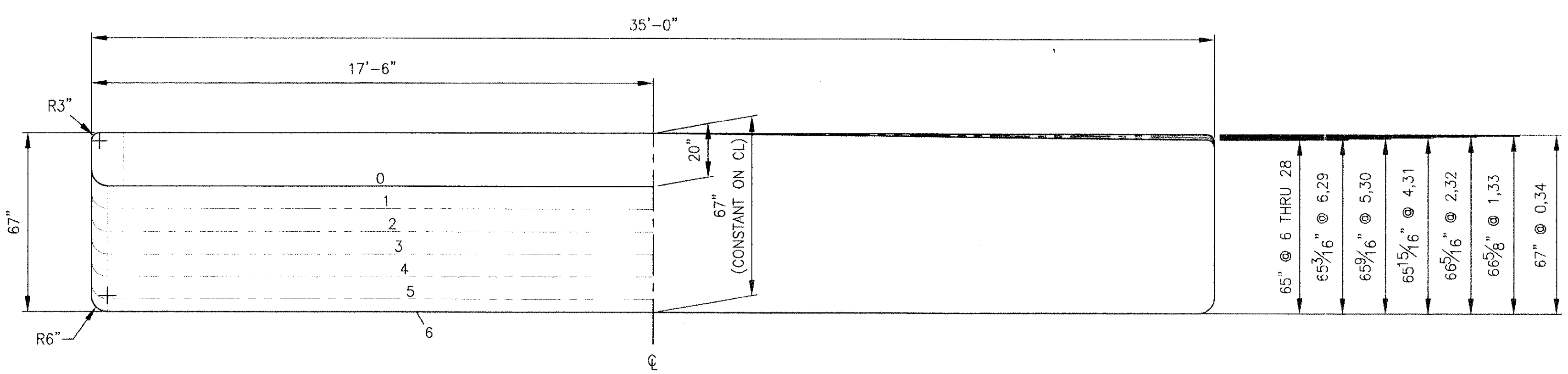
PROFILE

SCALE: 3/16" = 1'-0"



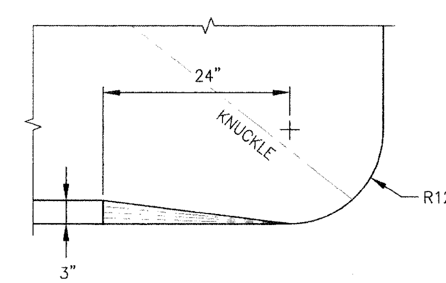
PLAN

SCALE: 3/16" = 1'-0"



BODY PLAN

SCALE: 3/8" = 1'-0"



A CORNER DETAIL

SCALE: 1" = 1'-0"

SCALE: 3/16" = 1'-0"

SCALE: 3/8" = 1'-0"

SCALE: 1" = 1'-0"

PROFESSIONAL ENGINEER ORIGINAL REV – APPROVED BY ERIC D. SNYDER DATED 10/04/2011

ERIC D. SNYDER STATE OF WASHINGTON 37216 REGISTERED PROFESSIONAL ENGINEER 2011-07-22

ART ANDERSON ASSOCIATES 202 PACIFIC AVE. BREMERTON, WA 98337 (360) 479-5600

DRAWING NO. CEIDT001BA-839-201

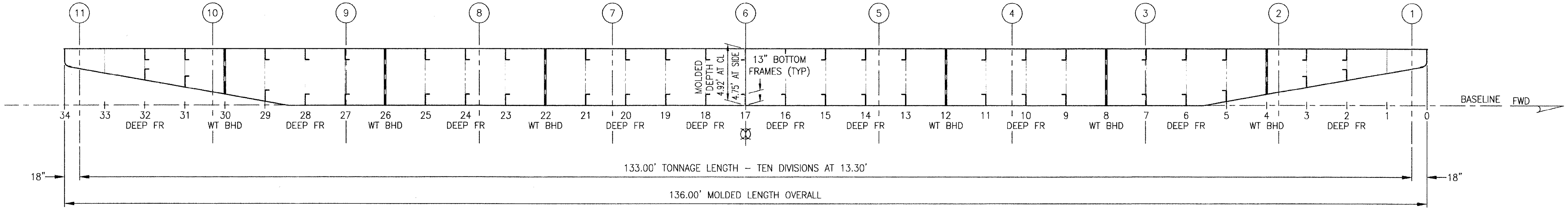
FILE NAME =	USER NAME =	DESIGNED – E. SNYDER	REVISED – REV A 07/21/2011	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
		DRAWN – J. WALKER	REVISED –	
	PLOT SCALE =	CHECKED – P. MARTIN	REVISED –	
	PLOT DATE =	DATE – 10/04/2010	REVISED –	

IDOT BRUSSELS FERRY
LINES AND OFFSETS - BARGE

SCALE: AS SHOWN	SHEET NO. OF SHEETS	STA.	TO STA.

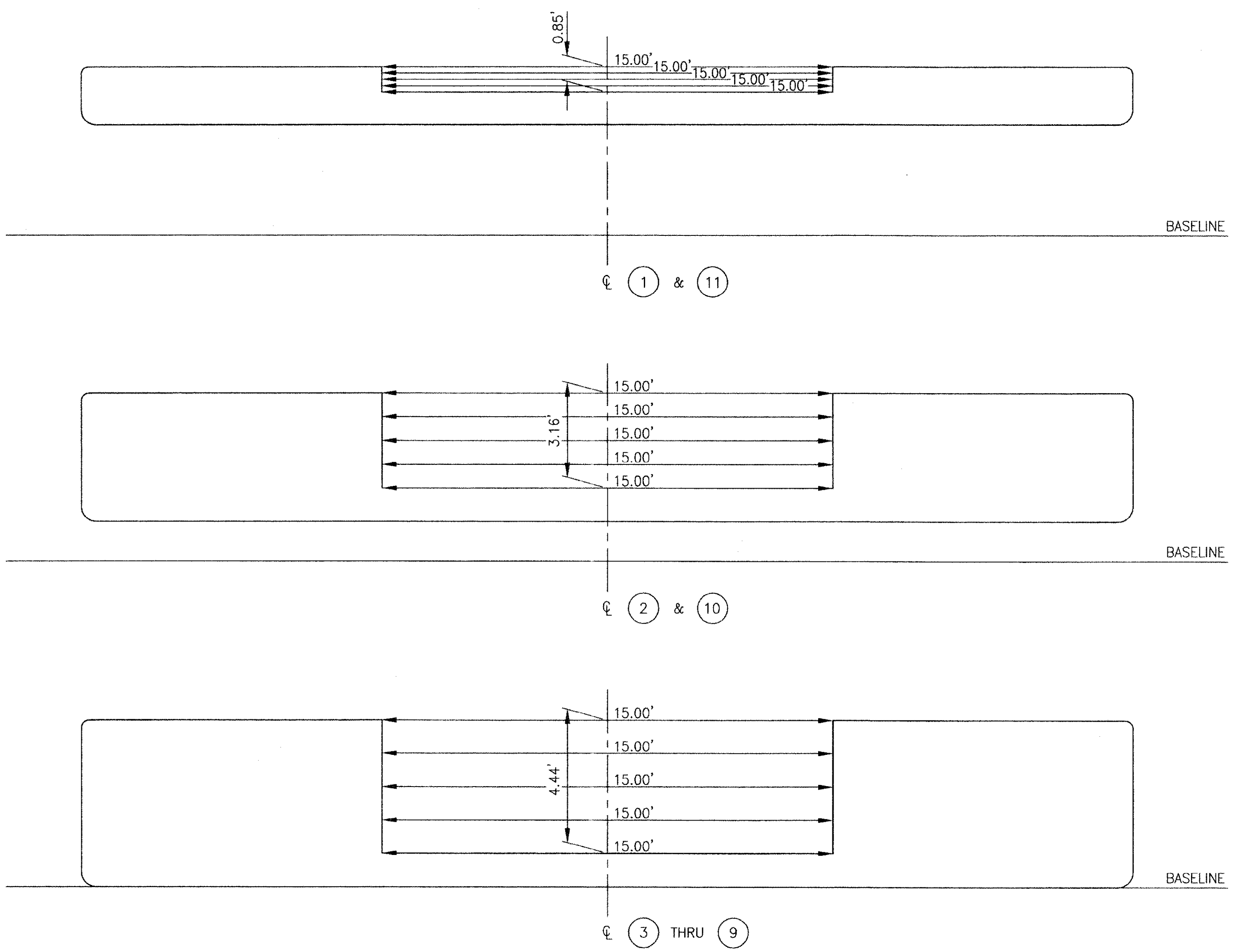
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	26	2
		CONTRACT NO. 76D29		

FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT



PROFILE

SCALE: 3/16" = 1'-0"



TONNAGE SECTIONS

SCALE: 3/8" = 1'-0"

		BREADTHS AND PRODUCTS																					
		SECTION 1		SECTION 2		SECTION 3		SECTION 4		SECTION 5		SECTION 6		SECTION 7		SECTION 1		SECTION 8		SECTION 9		SECTION 10	
TONNAGE DEPTHS		0.85		3.15		4.44		4.44		4.44		4.44		4.44		4.44		4.44		3.15		0.85	
COMMON INTERVAL BETWEEN BREADTHS		0.21		0.79		1.11		1.11		1.11		1.11		1.11		1.11		1.11		0.79		0.21	
NO. OF BREADTHS	MULTI-PLIERS	BREADTHS	PRODUCTS	BREADTHS	PRODUCTS	BREADTHS	PRODUCTS	BREADTHS	PRODUCTS	BREADTHS	PRODUCTS	BREADTHS	PRODUCTS	BREADTHS	PRODUCTS	BREADTHS	PRODUCTS	BREADTHS	PRODUCTS	BREADTHS	PRODUCTS	BREADTHS	PRODUCTS
1	1	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00
2	4	15.00	60.00	15.00	60.00	15.00	60.00	15.00	60.00	15.00	60.00	15.00	60.00	15.00	60.00	15.00	60.00	15.00	60.00	15.00	60.00	15.00	60.00
3	2	15.00	30.00	15.00	30.00	15.00	30.00	15.00	30.00	15.00	30.00	15.00	30.00	15.00	30.00	15.00	30.00	15.00	30.00	15.00	30.00	15.00	30.00
4	4	15.00	60.00	15.00	60.00	15.00	60.00	15.00	60.00	15.00	60.00	15.00	60.00	15.00	60.00	15.00	60.00	15.00	60.00	15.00	60.00	15.00	60.00
5	1	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00
TOTALS......		180.00		180.00		180.00		180.00		180.00		180.00		180.00		180.00		180.00		180.00		180.00	
1/3 COMMON INT. BETWEEN BREADTHS		0.07		0.26		0.37		0.37		0.37		0.37		0.37		0.37		0.37		0.26		0.07	
SQUARE FEET		12.60		46.80		66.60		66.60		66.60		66.60		66.60		66.60		66.60		46.80		12.60	

UNDER TONNAGE DECK			
NO. OF SECTIONS	MULTI-PLIERS	AREA IN SQUARE FEET	PRODUCTS
1	1	12.60	12.60
2	4	46.80	187.20
3	2	66.60	133.20
4	4	66.60	266.40
5	2	66.60	133.20
6	4	66.60	266.40
7	2	66.60	133.20
8	4	66.60	266.40
9	2	66.60	133.20
10	4	46.80	187.20
11	1	12.60	12.60
TOTAL..............................			1731.60
1/3 COMMON INTERVAL BETWEEN SECTIONS........			4.433
			7676.18
			÷100
UNDER TONNAGE DECK AS MEASURED................			76.76

TONNAGE		
	TONS	100ths
UNDER DECK TONNAGE..........	76	76
ENCLOSURE ON OR ABOVE THE TONNAGE DECK.............	00	00
GROSS TONNAGE...................	76	76

PROFESSIONAL ENGINEER
ORIGINAL REV – APPROVED BY ERIC D. SNYDER DATED 10/04/2011

ERIC D. SNYDER STATE OF WASHINGTON 27216 REGISTERED PROFESSIONAL ENGINEER
2011-07-22

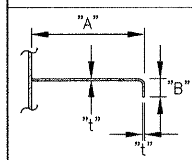
0 1' 2' 3' 4' 5' 6' 8' 10' 12' 16'
SCALE: 3/16" = 1'-0"
0 8" 16" 2' 2'8" 4' 5'4" 8'
SCALE: 3/8" = 1'-0"

ART ANDERSON ASSOCIATES
202 PACIFIC AVE. BREMERTON, WA 98337 (360) 479-5600

DRAWING NO. CEIDT001BA-839-202

FILE NAME =	USER NAME =	DESIGNED – E. SNYDER	REVISED – REV A 07/21/2011	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	IDOT BRUSSELS FERRY BARGE TONNAGE PLAN	F.A.P. RTE. 304	SECTION 21-3	COUNTY JERSEY	TOTAL SHEETS 26	SHEET NO. 3
		DRAWN – J. WALKER	REVISED –					CONTRACT NO. 76D29		
	PLOT SCALE =	CHECKED – P. MARTIN	REVISED –							
	PLOT DATE =	DATE – 10/04/2010	REVISED –		SCALE: AS SHOWN · SHEET NO. OF SHEETS · STA. TO STA.	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

STRUCTURAL SYMBOLS LIST

SYMBOL	DESCRIPTION
	WATERTIGHT BULKHEAD OR DECK
	NON-TIGHT BULKHEAD
	STIFFENER ON FAR SIDE
VL	VERTICAL LADDER
	FLANGE PLATE AxBxt NOTE: FLANGE MAY BE FABRICATED BY BENDING THE PLATE OR BY WELDING THE FLANGE TO THE WEB.

LIST OF ABBREVIATIONS

ABL	ABOVE BASELINE
ABS	AMERICAN BUREAU OF SHIPPING
AFT	AFTER
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AWS	AMERICAN WELDING SOCIETY
BHD	BULKHEAD
BRKT	BRACKET
BTM	BOTTOM
CJP	COMPLETE JOINT PENETRATION
℄	CENTERLINE
CO	CUTOUT
C-C	CENTER TO CENTER
CONT	CONTINUE
DISCH	DISCHARGE
DET	DETAIL
DIA	DIAMETER
DK	DECK
DN	DOWN
DO	DITTO (REPEAT PREVIOUS SCANTLING)
DWG	DRAWING
DWL	DESIGN WATER LINE
EQ	EQUAL
FB	FLAT BAR
FDN	FOUNDATION
FLG PL	FLANGE PLATE
FR	FRAME
FWD	FORWARD
GR	GRADE
INT	INTERVAL
IWO	IN WAY OF
KIPS	THOUSAND POUNDS
KSI	THOUSAND POUNDS PER SQUARE INCH
L	STEEL ANGLE
LEN	LENGTH
LKG	LOOKING
LONG	LONGITUDINAL
MH	MANHOLE
MIN	MINIMUM
NO	NUMBER
NPS SCH	NATIONAL PIPE STANDARDS SCHEDULE
NPS	NATIONAL PIPE STANDARDS
NPT	TAPER PIPE THREAD
NT	NON-TIGHT
NWT	NON-WATERTIGHT
OD	OUTSIDE DIAMETER
OPP	OPPOSITE
P	PORT
P/S	PORT/STARBOARD SYMMETRIC ABOUT CENTERLINE
PCF	POUNDS PER CUBIC FOOT
PL	PLATE
PLCS	PLACES
PLTG	PLATING
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
QAWT	QUICK ACTING WATERTIGHT
QAWTMH	QUICK ACTING WATERTIGHT MANHOLE
R	RADIUS
RB	ROUND BAR
RECT	RECTANGULAR
REF	REFERENCE
SCHED	SCHEDULE
SIM	SIMILAR

LIST OF ABBREVIATIONS (CONT)

ST	SQUARE OR RECTANGULAR TUBING
STBD	STARBOARD
STIF	STIFFENER
SWE	SUPPLIED WITH EQUIPMENT
THK	THICK
THKNS	THICKNESS
THRU	THROUGH
TYP	TYPICAL
TRVS	TRANSVERSE
UNO	UNLESS NOTED OTHERWISE
VL	VERTICAL LADDER
WT	WATERTIGHT

STRUCTURAL STEEL SPECIFICATIONS

1. MATERIALS

WIDE FLANGE/ WT SHAPES	ASTM A992
SHAPES, PLATES, CHANNELS, AND BARS	ASTM A36 OR ASTM A572 GR 50 AS NOTED
ANGLES	ASTM A36
STRUCTURAL TUBING	ASTM A500 GR B
PIPE	ASTM A53 GR B
BOLTS / SCREWS	ASTM F593, TYPE 316 STAINLESS STEEL, UNO
NUTS	ASTM F594, TYPE 316 STAINLESS STEEL, UNO
WASHERS	ASTM F844, WIDE SERIES, MAX THICKNESS, TYPE 316 STAINLESS STEEL, UNO
WELD ELECTRODES	E70XX, 70KSI, LOW HYDROGEN, UNO

2. WELDING

   A. SEE SPECIFICATION FOR GENERAL WELDING AND WELD INSPECTION REQUIREMENTS

   B. WHERE WELDS ARE NOT SHOWN, THE CONNECTION SHALL BE MADE WITH A COMPLETE JOINT PENETRATION WELD OR SHALL DEVELOP THE FULL CAPACITY OF THE MEMBERS BEING CONNECTED.

3. FINISHING

   EDGES OF ALL OPENINGS AND CUTOUTS SHALL BE SMOOTH AND FREE OF ANY BURRS, GOUGES, NICKS, OR SHARP EDGES.

BARGE DESIGN LOADS

1. THE BARGE IS DESIGNED IN ACCORDANCE WITH ABS "RULES FOR BUILDING AND CLASSING STEEL BARGES 2009".
2. HULL FITTINGS LOADS:
   - 8" BOLLARD — 9 KIPS
   - 24" CLEAT — 90 KIPS
3. ACCESS LADDERS AND PLATFORMS:
   - VERTICAL LADDERS — 300 POUND CONCENTRATED ON CENTER OF EACH RUNG
4. GUARDRAILS AND HANDRAILS: 200 POUND CONCENTRATED LOAD APPLIED HORIZONTALLY AT THE TOP OF STANCHIONS AND APPLIED HORIZONTALLY AT MIDLENGTH OF TOP RAIL.
5. THE FOLLOWING UNIT WEIGHTS WERE USED IN THE DESIGN OF THE BARGE:
   - STEEL — 489.6 PCF
   - FRESH WATER — 62.4 PCF

GENERAL NOTES

1. THE REQUIREMENTS INDICATED ON THIS SHEET ARE INTENDED AS A BASIC SUMMARY OF THE MATERIAL AND CONSTRUCTION REQUIREMENTS FOR THE PROJECT. ADDITIONAL, MORE STRINGENT REQUIREMENTS ARE GIVEN IN THE PROJECT SPECIFICATIONS.
2. ALL STRUCTURAL RELATED SHOP DRAWINGS SHALL BE REVIEWED BY THE ENGINEER OF RECORD PRIOR TO CONSTRUCTION.
3. LIMBER AND VENT HOLES SHALL BE PROVIDED IN NON-TIGHT STRUCTURE TO PREVENT ACCUMULATION AND RETENTION OF LIQUIDS AND TO INSURE THEIR FREE FLOW TO DRAINS AND SUCTION PIPES. SUFFICIENT DRAIN HOLES SHALL BE PROVIDED IN BOTTOM STRUCTURE TO ENSURE DRAINAGE OF EACH BAY.
4. SMALL INACCESSIBLE VOIDS AND SPACES AS SHOWN ON THE DRAWINGS SHALL BE FILLED WITH LIGHTWEIGHT CONCRETE AFTER COATING TO PREVENT THE ACCUMULATION OF LIQUIDS.
5. ALL SNIPES AT ENDS OF STIFFENERS SHALL BE 45 DEGREES.
6. VERTICAL LADDERS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE DETAIL ON SHEET 23.

REFERENCES

1. AMERICAN BUREAU OF SHIPPING (ABS), "RULES FOR BUILDING AND CLASSING STEEL BARGES 2009.
2. AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC), MANUAL OF STEEL CONSTRUCTION, ALLOWABLE STRESS DESIGN, THIRTEENTH EDITION, 2005.
3. AMERICAN WELDING SOCIETY (AWS) D1.1, 2006, STRUCTURAL WELDING CODE-STEEL

PROFESSIONAL ENGINEER
ORIGINAL REV - APPROVED BY ERIC D. SNYDER DATED 10/04/2011

ERIC D. SNYDER
STATE OF WASHINGTON
27216
REGISTERED PROFESSIONAL ENGINEER
Eric Snyder
2011-07-22

ART ANDERSON ASSOCIATES
202 PACIFIC AVE. BREMERTON, WA 98337 (360) 479-5600

DRAWING NO. CEIDT001BA-100-201

FILE NAME =	USER NAME =	DESIGNED — E. SNYDER	REVISED — REV A 07/21/2011
		DRAWN — R. MANANSALA	REVISED —
	PLOT SCALE =	CHECKED — P. MARTIN	REVISED —
	PLOT DATE =	DATE — 10/04/2010	REVISED —

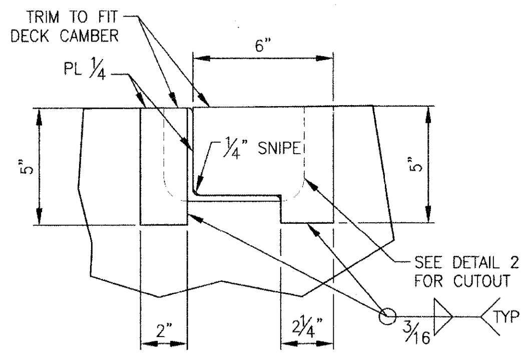
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IDOT BRUSSELS FERRY
STRUCTURAL GENERAL NOTES - BARGE

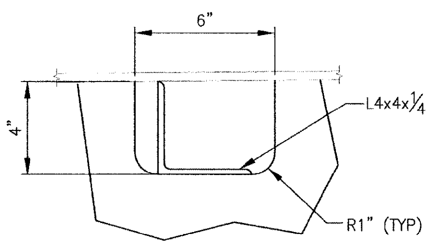
SCALE: NTS | SHEET NO. OF SHEETS | STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	26	4
		CONTRACT NO. 76D29		

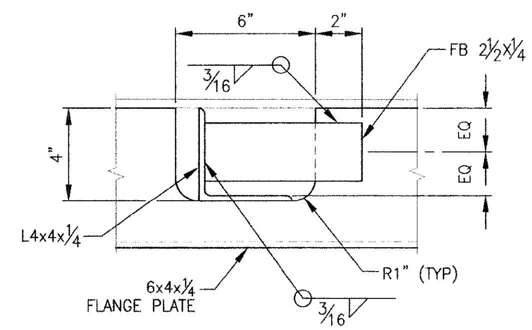
FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT



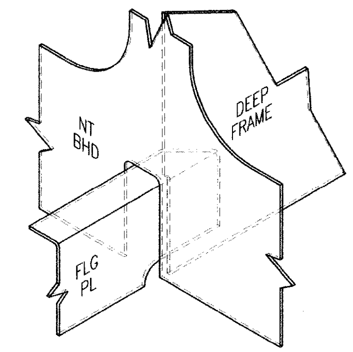
(1) DETAIL
SCALE: 3" = 1'-0"



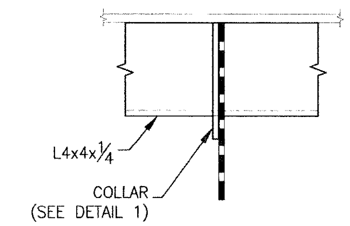
(2) DETAIL
SCALE: 3" = 1'-0"



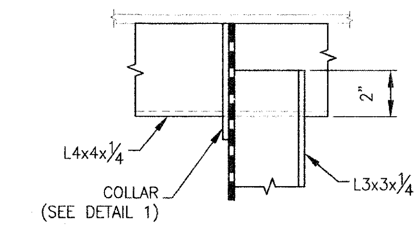
(3) DETAIL
SCALE: 3" = 1'-0"



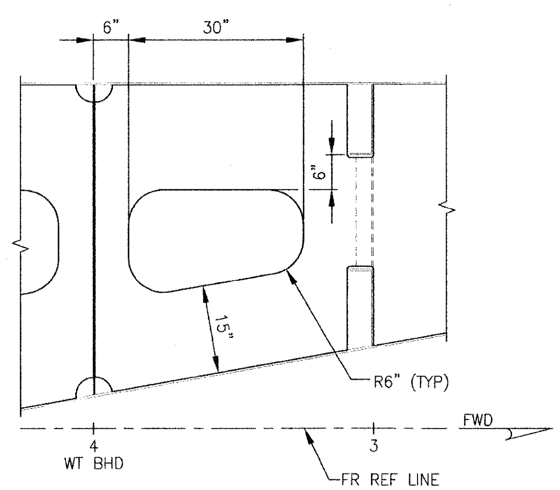
(4) DETAIL
TYPICAL NT BHD & DEEP FRAME INTERSECTION
SCALE: 1 1/2" = 1'-0"



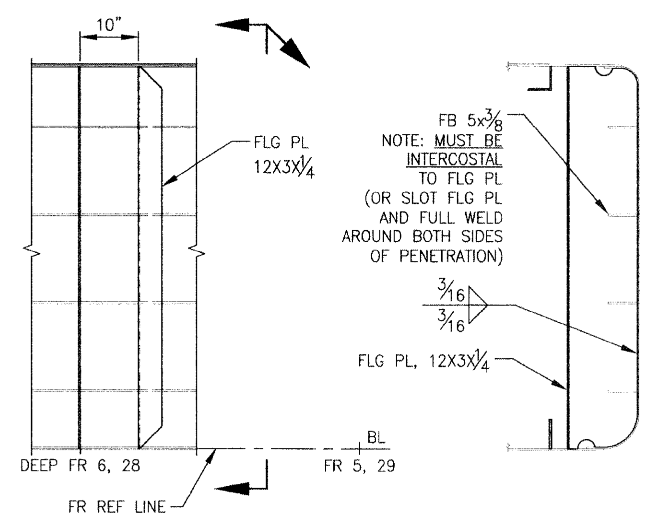
(5) DETAIL
SCALE: 3" = 1'-0"



(6) DETAIL
SCALE: 3" = 1'-0"



(7) DETAIL
NT BHD 7'-6" OFF CL
CUTOUT BETWEEN FR 3 & 4
CUTOUT BETWEEN FR 30 & 31, SIM OPP HAND
SCALE: 3/4" = 1'-0"



(8) FENDER BACKING FRAME DETAIL
PORT ONLY
SCALE: 3/4" = 1'-0"

PROFESSIONAL ENGINEER
ORIGINAL REV – APPROVED BY ERIC D. SNYDER DATED 10/04/2011

SCALE: 3/4" = 1'-0"
SCALE: 1 1/2" = 1'-0"
SCALE: 3" = 1'-0"

ERIC D. SNYDER
STATE OF WASHINGTON
27216
REGISTERED PROFESSIONAL ENGINEER
2011-07-22

ART ANDERSON ASSOCIATES
202 PACIFIC AVE, BREMERTON, WA 98337
(360) 479-5600

DRAWING NO. CEIDT001BA-100-202

FILE NAME =	USER NAME =	DESIGNED – E. SNYDER	REVISED – REV A 07/21/2011
		DRAWN – R. MANANSALA	REVISED –
	PLOT SCALE =	CHECKED – P. MARTIN	REVISED –
	PLOT DATE =	DATE – 10/04/2010	REVISED –

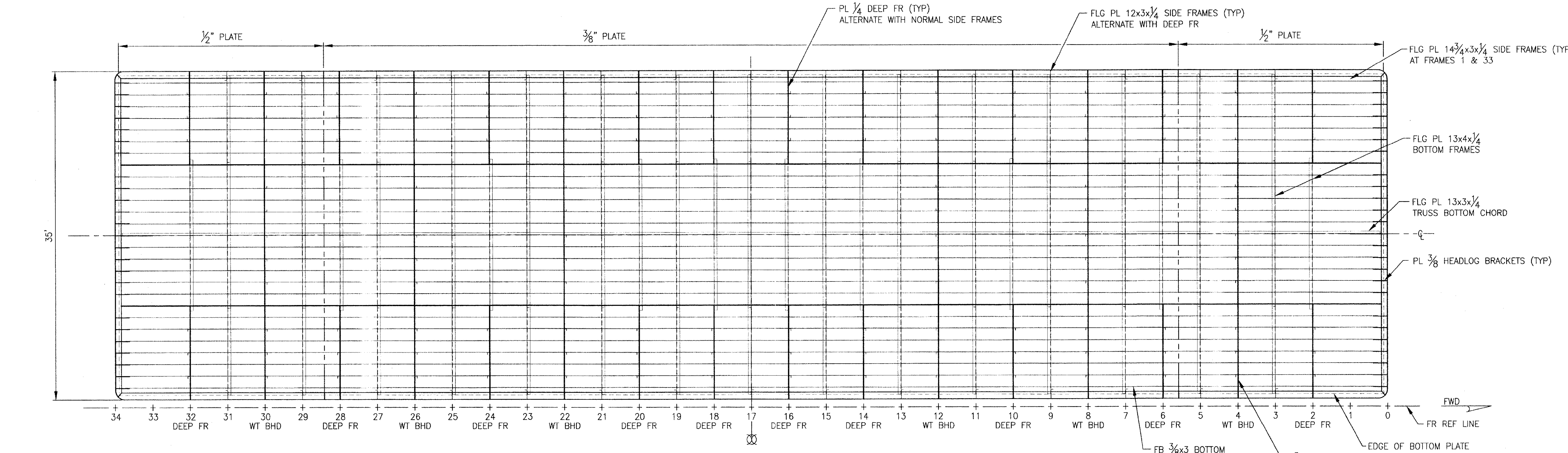
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IDOT BRUSSELS FERRY
STRUCTURAL - DETAILS

SCALE: AS SHOWN | SHEET NO. OF SHEETS | STA. TO STA.

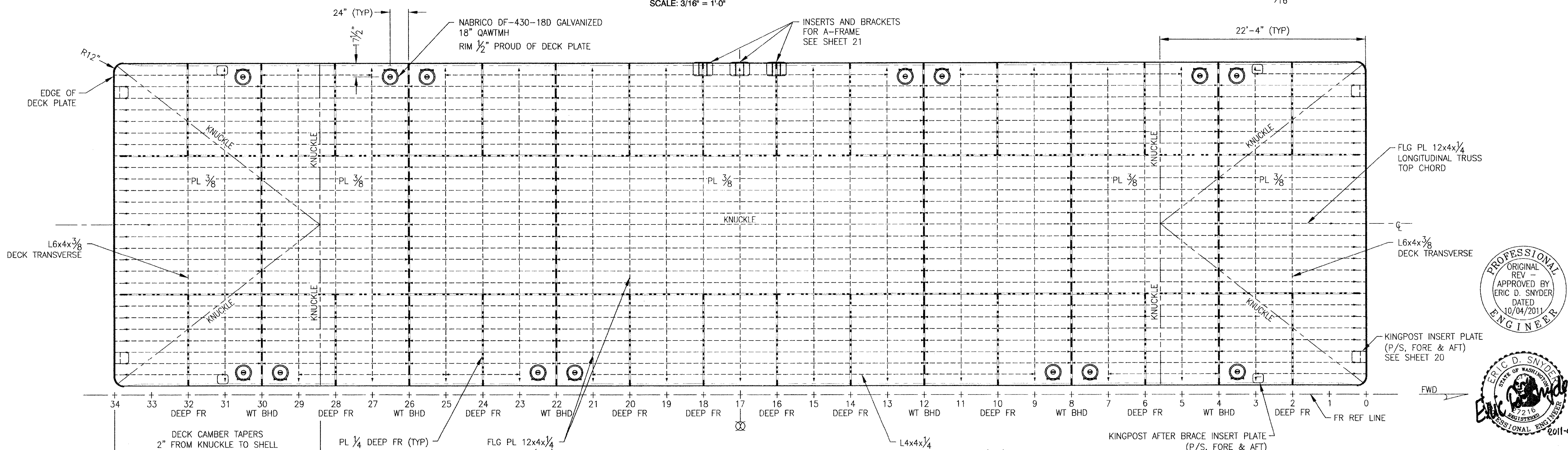
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	26	5
		CONTRACT NO. 76D29		

FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT



BOTTOM PLATING AND FRAMING

SCALE: 3/16" = 1'-0"



DECK PLATING AND FRAMING

SCALE: 3/16" = 1'-0"

PROFESSIONAL ENGINEER
ORIGINAL
REV -
APPROVED BY
ERIC D. SNYDER
DATED
10/04/2011

ERIC D. SNYDER
STATE OF WASHINGTON
37216
REGISTERED
PROFESSIONAL ENGINEER
2011-07-22

0 1' 2' 3' 4' 5' 6' 8' 10' 12' 16'
SCALE: 3/16" = 1'-0"

ART ANDERSON ASSOCIATES
202 PACIFIC AVE. BREMERTON, WA 98337
(360) 479-5600

DRAWING NO. CEIDT001BA-111-201

FILE NAME =	USER NAME =	DESIGNED — E. SNYDER	REVISED — REV A 07/21/2011
		DRAWN — R. MANANSALA	REVISED —
	PLOT SCALE =	CHECKED — P. MARTIN	REVISED —
	PLOT DATE =	DATE — 10/04/2010	REVISED —

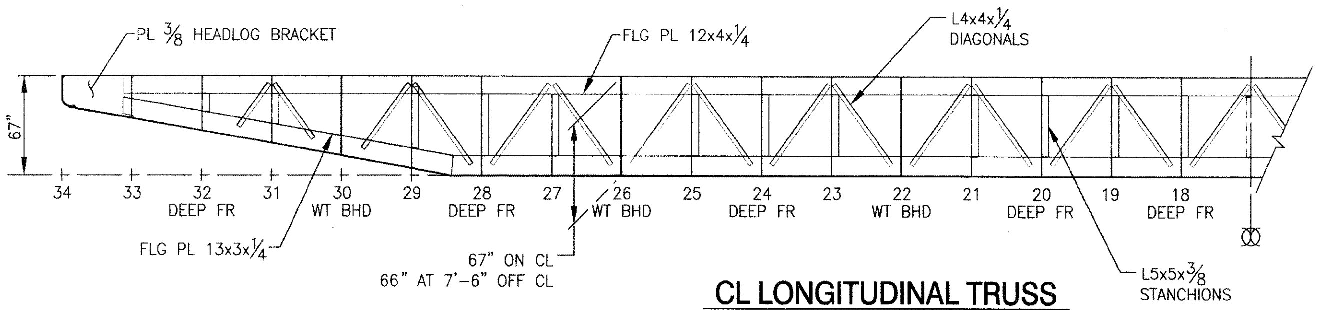
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IDOT BRUSSELS FERRY
SHELL PLATING AND FRAMING - BARGE

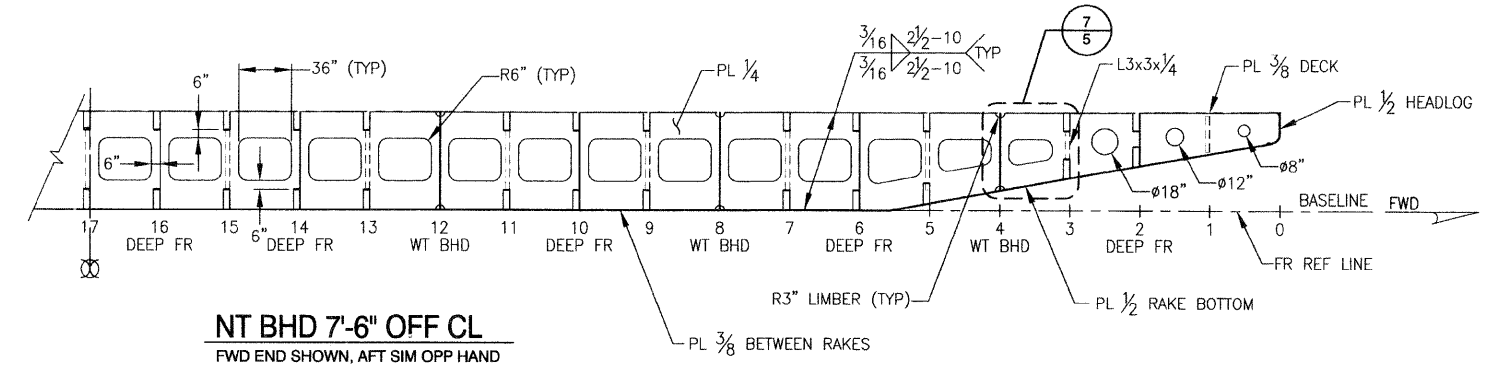
SCALE: AS SHOWN | SHEET NO. OF SHEETS | STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	26	6
		CONTRACT NO. 76D29		

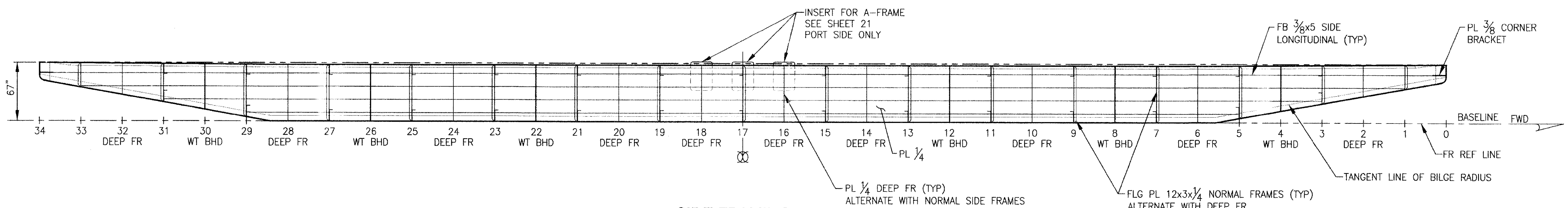
FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT



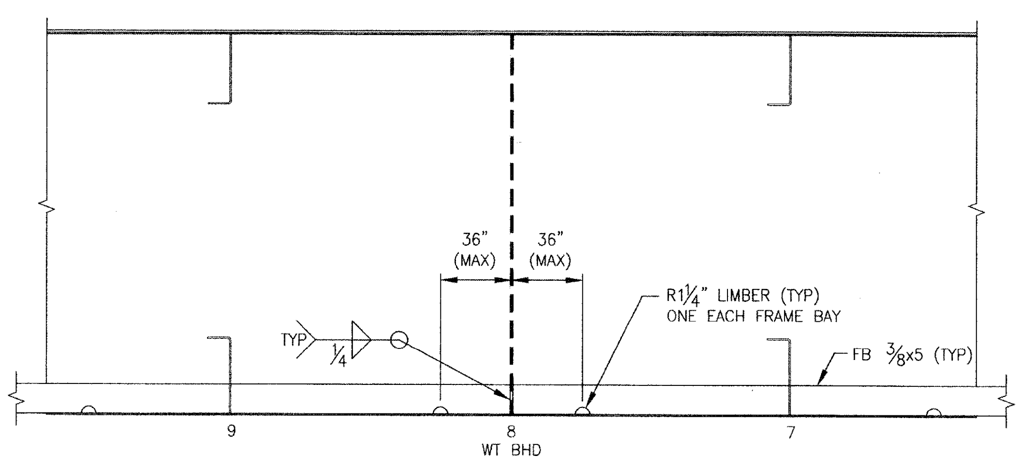
CL LONGITUDINAL TRUSS
AFT END SHOWN, FWD SIM OPP HAND
SCALE: 3/16" = 1'-0"



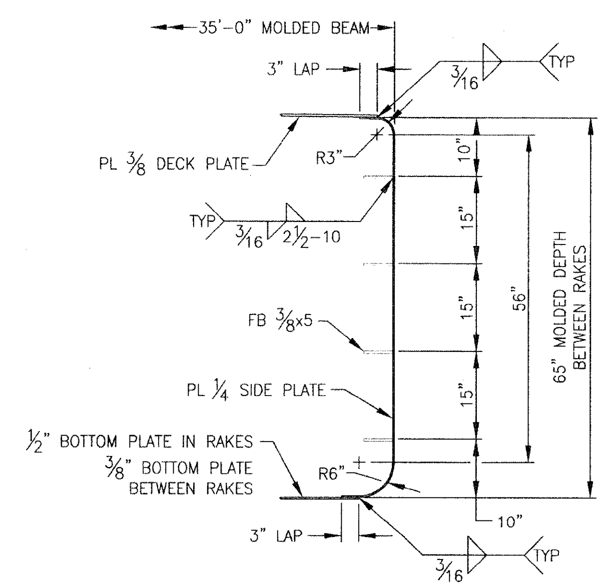
NT BHD 7'-6" OFF CL
FWD END SHOWN, AFT SIM OPP HAND
SCALE: 3/16" = 1'-0"



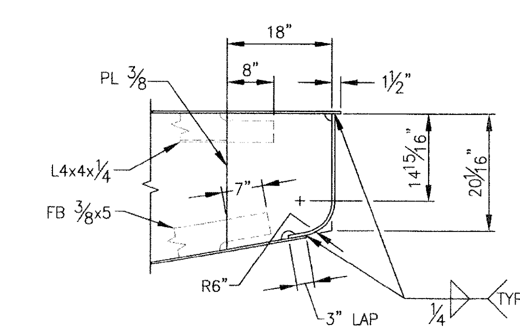
SIDE FRAMING
STDB SHOWN AND PORT SIM OPP HAND
SCALE: 3/16" = 1'-0"



1 BOTTOM LONGITUDINAL FRAME
TYPICAL DETAILS
SCALE: 3/4" = 1'-0"



2 SIDE PLATE & LAPS
SCALE: 3/4" = 1'-0"



3 HEADLOG & BRACKET
SCALE: 3/4" = 1'-0"

PROFESSIONAL ENGINEER
ORIGINAL
REV -
APPROVED BY
ERIC D. SNYDER
DATED
10/04/2011

ERIC D. SNYDER
STATE OF WASHINGTON
27216
REGISTERED
PROFESSIONAL ENGINEER
Eric D. Snyder
2011-07-22

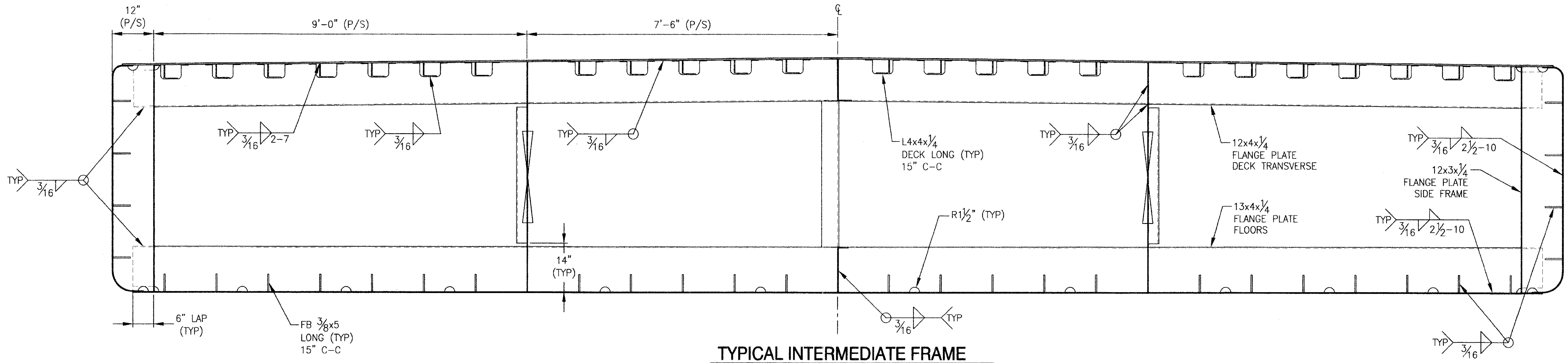
0 1' 2' 3' 4' 5' 6' 8' 10' 12' 16'
SCALE: 3/16" = 1'-0"
0 4" 8" 1' 1'4" 2' 2'8" 4'
SCALE: 3/4" = 1'-0"

ART ANDERSON ASSOCIATES
202 PACIFIC AVE. BREMERTON, WA 98337
(360) 479-5600

DRAWING NO. CEIDT001BA-116-201

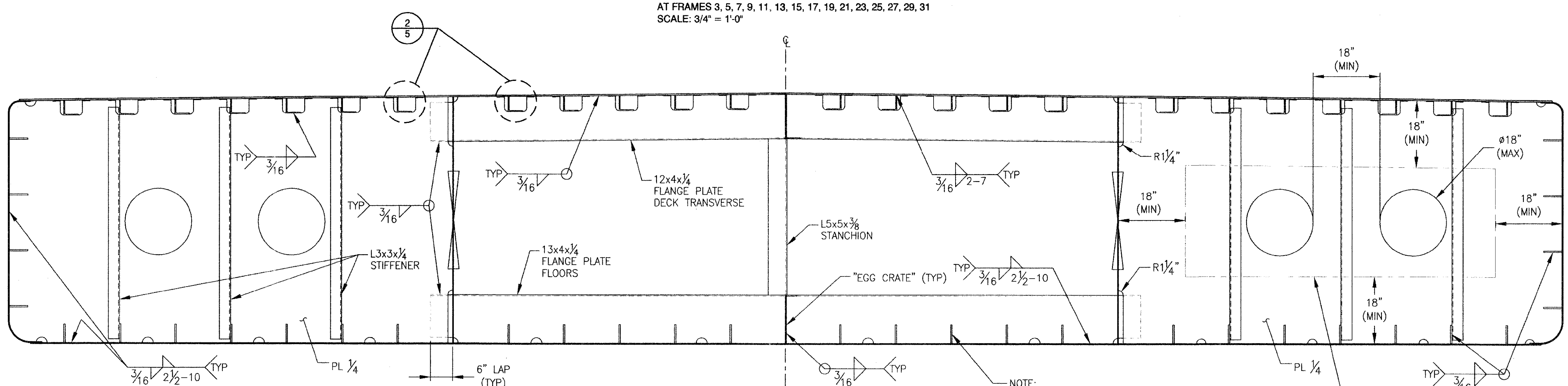
FILE NAME =	USER NAME =	DESIGNED — E. SNYDER	REVISED — REV A 07/21/2011	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	IDOT BRUSSELS FERRY LONGITUDINAL STRUCTURE - BARGE
		DRAWN — R. MANANSALA	REVISED —		
	PLOT SCALE =	CHECKED — P. MARTIN	REVISED —		
	PLOT DATE =	DATE — 10/04/2010	REVISED —		SCALE: AS SHOWN | SHEET NO. OF SHEETS | STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	26	7
		CONTRACT NO. 76D29		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



TYPICAL INTERMEDIATE FRAME

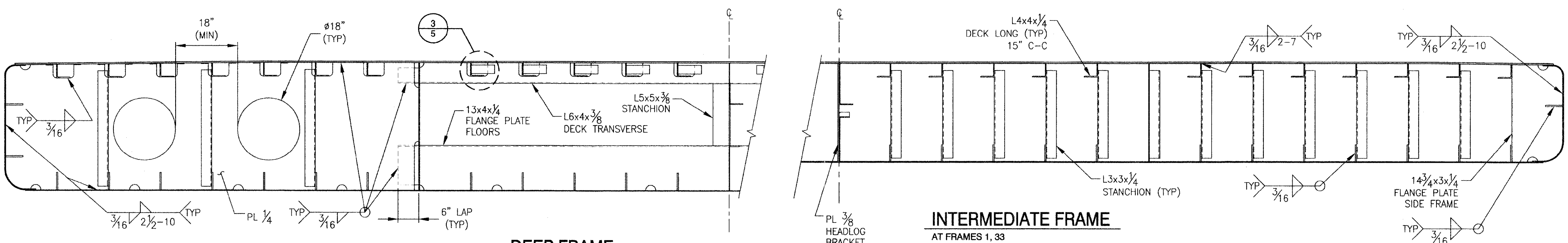
AT FRAMES 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31
SCALE: 3/4" = 1'-0"



TYPICAL DEEP FRAME

AT FRAMES 6, 10, 14, 16, 18, 20, 24, 28
SCALE: 3/4" = 1'-0"

NOTE:
BOTTOM AND SIDE LONGITUDINALS MUST BE INTERCOSTAL TO TRANSVERSE FRAMING (OR SLOT TRANSVERSE FRAMES AND FULL WELD AROUND BOTH SIDE OF PENETRATION).



DEEP FRAME

AT FRAMES 2, 32
SCALE: 3/4" = 1'-0"

INTERMEDIATE FRAME

AT FRAMES 1, 33
SCALE: 3/4" = 1'-0"

PROFESSIONAL ENGINEER — ORIGINAL REV – APPROVED BY ERIC D. SNYDER DATED 10/04/2011

ERIC D. SNYDER — STATE OF WASHINGTON — 27216 — REGISTERED PROFESSIONAL ENGINEER — 2011-07-22

SCALE: 3/4" = 1'-0"

ART ANDERSON ASSOCIATES
202 PACIFIC AVE, BREMERTON, WA 98337 (360) 479-5600

DRAWING NO. CEIDT001BA-117-201

FILE NAME =	USER NAME =	DESIGNED – E. SNYDER	REVISED – REV A 07/21/2011
		DRAWN – R. MANANSALA	REVISED –
	PLOT SCALE =	CHECKED – P. MARTIN	REVISED –
	PLOT DATE =	DATE – 10/04/2010	REVISED –

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

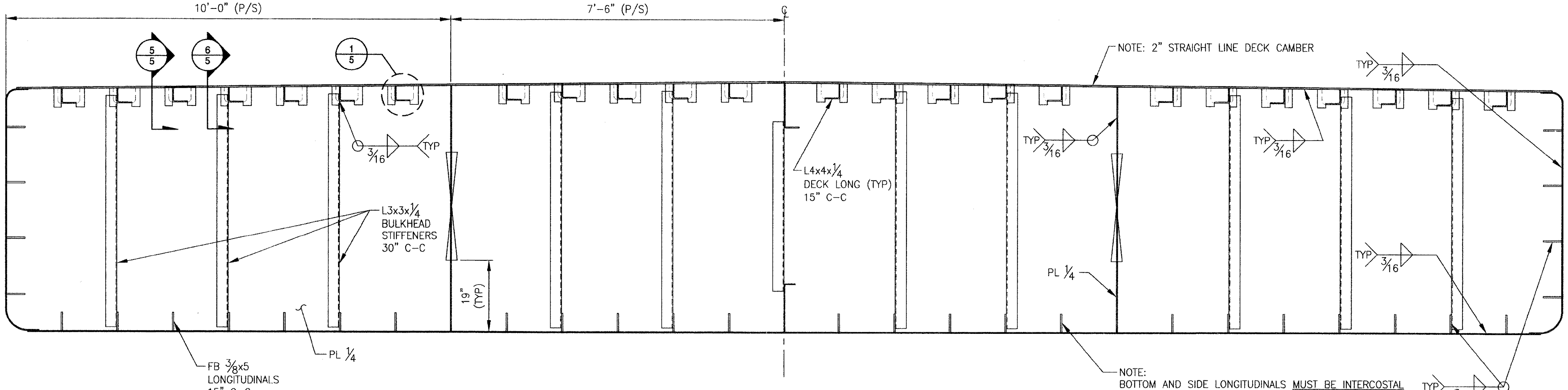
IDOT BRUSSELS FERRY
TRANSVERSE FRAMES - BARGE

SCALE: AS SHOWN | SHEET NO. OF SHEETS | STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	26	8

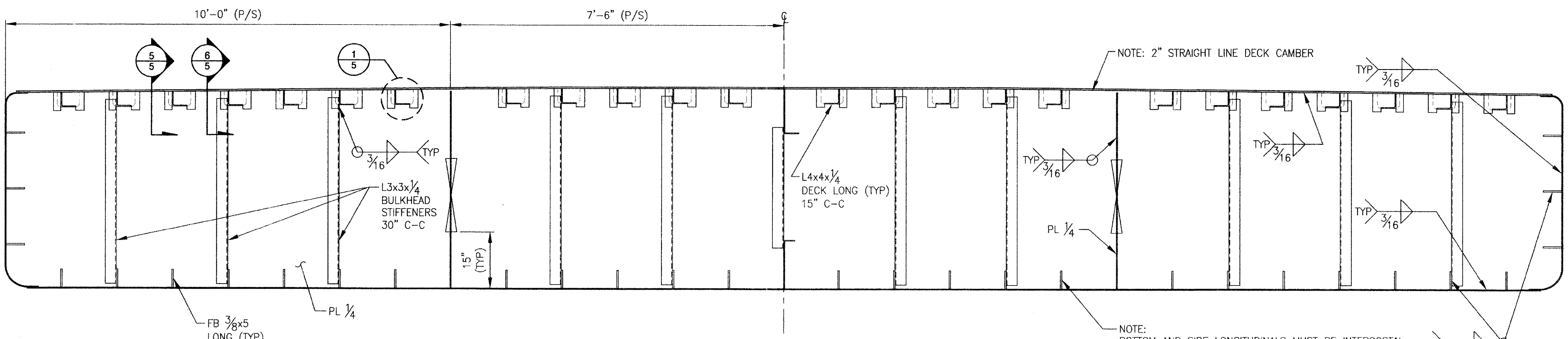
CONTRACT NO. 76D29

FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT



WATERTIGHT BULKHEAD

AT FRAMES 8, 12, 22, 26
SCALE: 3/4" = 1'-0"



WATERTIGHT BULKHEAD

AT FRAMES 4, 30
SCALE: 3/4" = 1'-0"

PROFESSIONAL ENGINEER
ORIGINAL REV - APPROVED BY ERIC D. SNYDER DATED 10/04/2011

ERIC D. SNYDER
STATE OF WASHINGTON
27218
REGISTERED PROFESSIONAL ENGINEER
2011-07-22

0 4" 8" 1' 1'4" 2' 2'8" 4'
SCALE: 3/4" = 1'-0"

ART ANDERSON ASSOCIATES
202 PACIFIC AVE. BREMERTON, WA 98337
(360) 479-5600

DRAWING NO. CEIDT001BA-122-201

FILE NAME =	USER NAME =	DESIGNED — E. SNYDER	REVISED — REV A 07/21/2011
		DRAWN — R. MANANSALA	REVISED —
	PLOT SCALE =	CHECKED — P. MARTIN	REVISED —
	PLOT DATE =	DATE — 10/04/2010	REVISED —

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

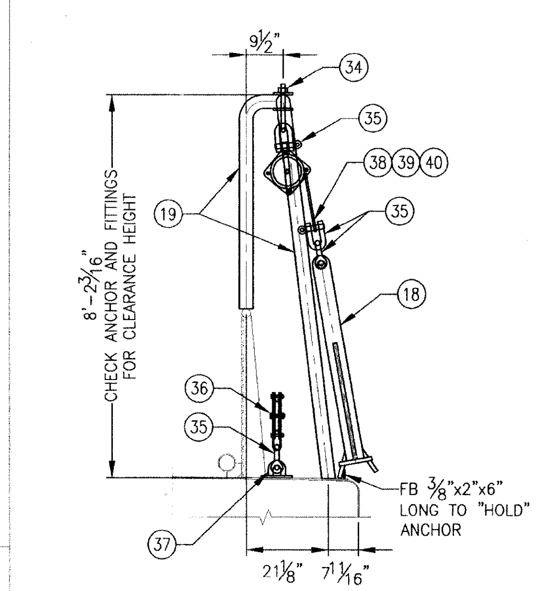
IDOT BRUSSELS FERRY
TRANSVERSE BULKHEADS - BARGE

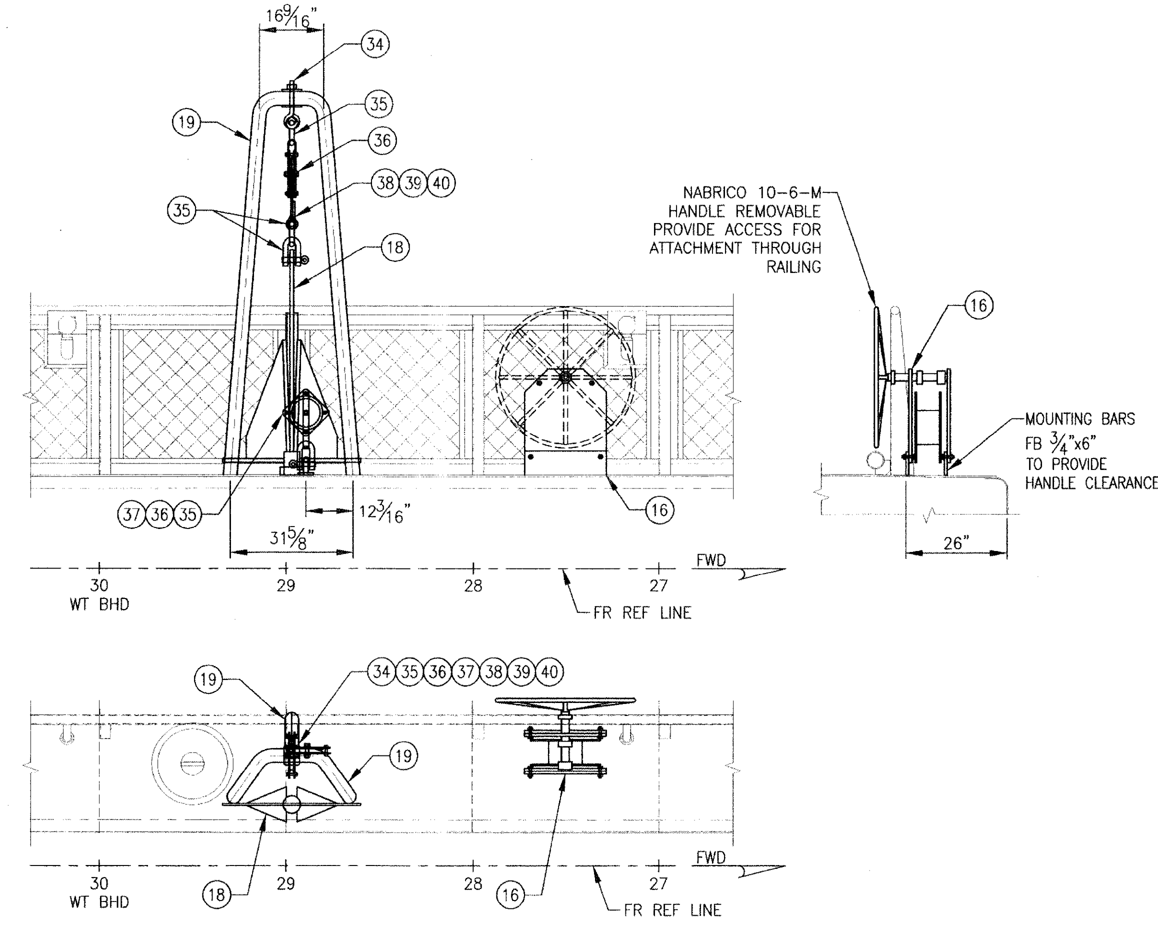
SCALE: AS SHOWN | SHEET NO. OF SHEETS | STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	26	9

CONTRACT NO. 76D29

FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT

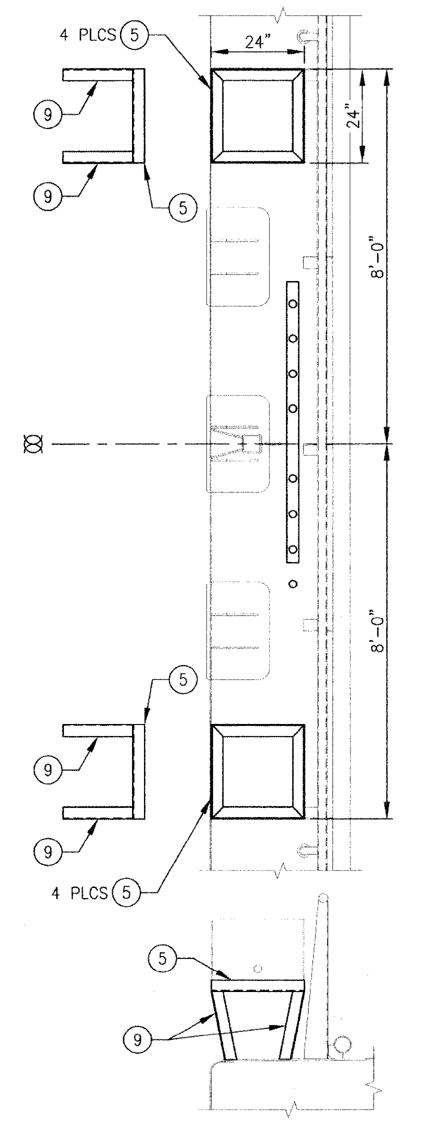




ANCHOR & WINCH

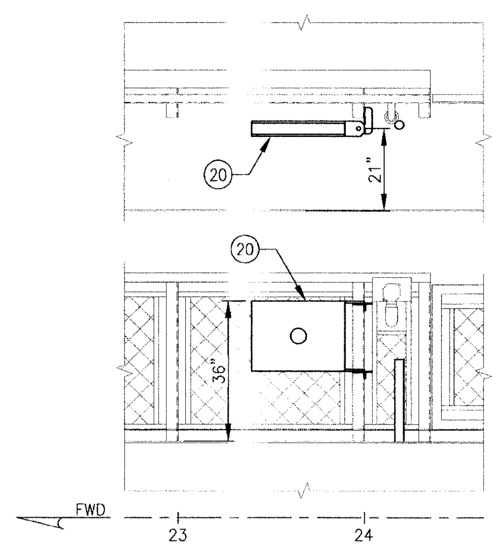
SCALE: 1/2" = 1'-0"

BILL OF MATERIAL			
PC NO.	QTY	EQUIPMENT	REMARK
1	14 EA	4" VENT TERMINAL	WITH SCREEN – HAYWARD OR EQUAL
2	14 EA	4" 180° LR BEND, BW, SCH 40	BLACK STEEL
3	7 EA	PIPE, 4" SCH 40 x 36" LONG	ASTM A-53
4	7 EA	PIPE, 4" SCH 40 x 69½" LONG	ASTM A-53
5	28 EA	LIFE JACKET BOX SUPPORT, SIDE – ALSO FOR FIRE/BILGE PUMP	L3"x3"x¼"x24" LONG, A-36
6	–	–	–
7	10 EA	LIFE JACKET BOX SUPPORT, FACE	L3"x3"x¼"x72" LONG, A-36
8	20 EA	LIFE JACKET BOX SUPPORT, LEG	L3"x3"x¼"x24½" LONG, A-36
9	8 EA	BILGE PUMP SUPPORT, LEG	L3"x3"x¼"x18" LONG, A-36
10	–	–	–
11	–	–	–
12	–	–	–
13	2 EA	FENDER DOUBLER	1" PLATE, A-36, 28"x44"
14	2 EA	FENDER	MORSE E42002 – FULL LENGTHS ON BARGE
15	–	–	–
16	1 EA	ANCHOR WINCH	NABRICO 10-6-M
17	–	–	–
18	1 EA	ANCHOR	DANFORTH 150H
19	5'+18'	ANCHOR SUPPORT & BRACE	PIPE, 3" SCH 80, ASTM A-53
20	2 EA	FIRE HOSE SUPPORT PLATE	¼" PLATE, A-36, 18"x24" WITH 3" FLG
21	–	–	–
22	–	–	–
23	–	–	–
24	–	–	–
25	–	–	–
26	–	–	–
27	–	–	–
28	–	–	–
29	–	–	–
30	–	–	–
31	–	–	–
32	–	–	–
33	–	–	–
34	1 EA	SHOULDER NUT EYEBOLT, 1¼" SHANKx8"	FORGED STEEL, HOT DIP GALVANIZED
35	4 EA	1¼" SCREW PIN CHAIN/ANCHOR SHACKLE	CROSBY OR EQUAL
36	2 EA	8" WIRE ROPE BLOCK, BRONZE BEARING	STEEL SHEAVE, DIAMOND, WESTERN SWIVEL EYE OR EQL
37	1 EA	#5 (1¼") PADEYE	STUFFING BOX
38	1 EA	THIMBLE FOR ½" WIRE ROPE	FED SPEC FF-T-246b TYPE III, EXTRA HEAVY
39	3 EA	SWAGE FOR ½" WIRE ROPE	S-506 "COLD-TUFF" OR EQL, OR WIRE ROPE CLIPS
40	300 LF	½" IWRC 6x67 GALVANIZED WIRE ROPE	–



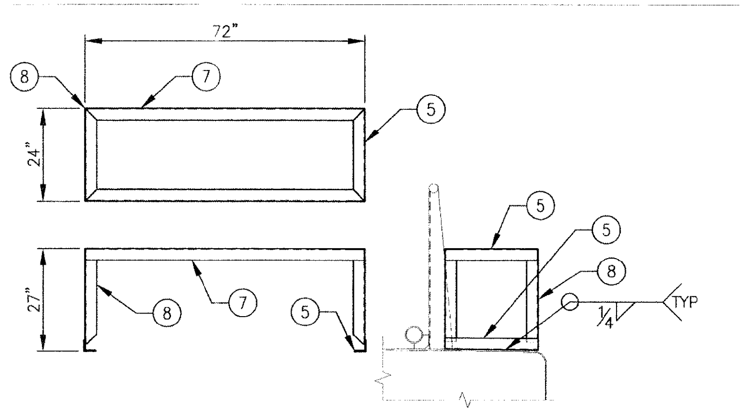
FIRE/BILGE PUMP FDN

SCALE: 1/2" = 1'-0"



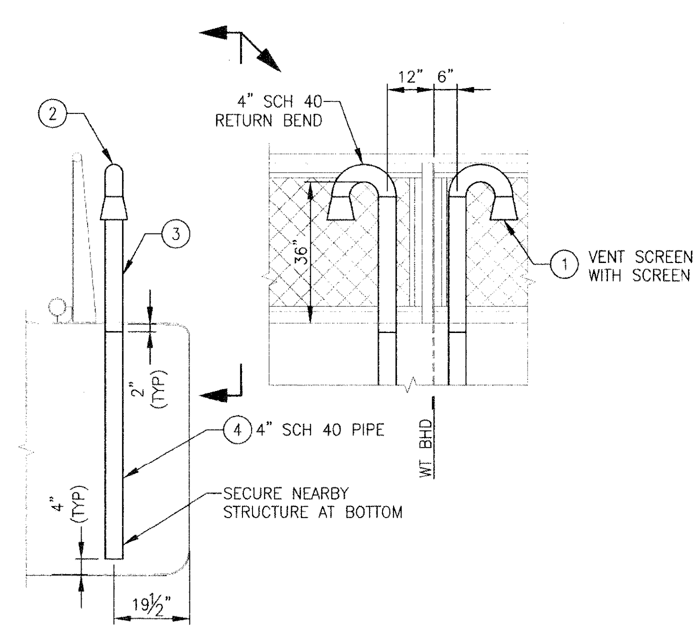
FIRE HOSE RACK FDN

SCALE: 1/2" = 1'-0"



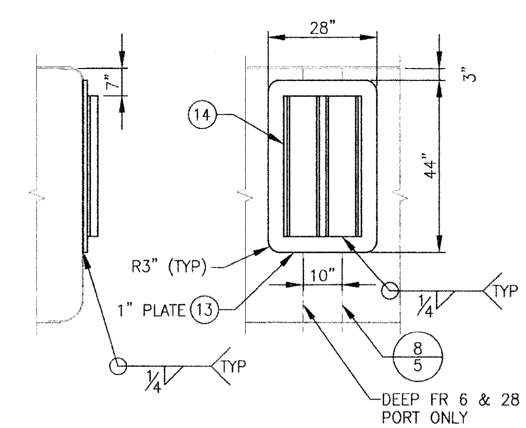
LIFE JACKET BOX FDN

SCALE: 1/2" = 1'-0"



COMPARTMENT VENT

SCALE: 1/2" = 1'-0"



BARGE FENDER ATTACHMENT

SCALE: 1/2" = 1'-0"

PROFESSIONAL ENGINEER ORIGINAL REV – APPROVED BY ERIC D. SNYDER DATED 10/04/2011

ERIC D. SNYDER STATE OF WASHINGTON 27216 REGISTERED PROFESSIONAL ENGINEER

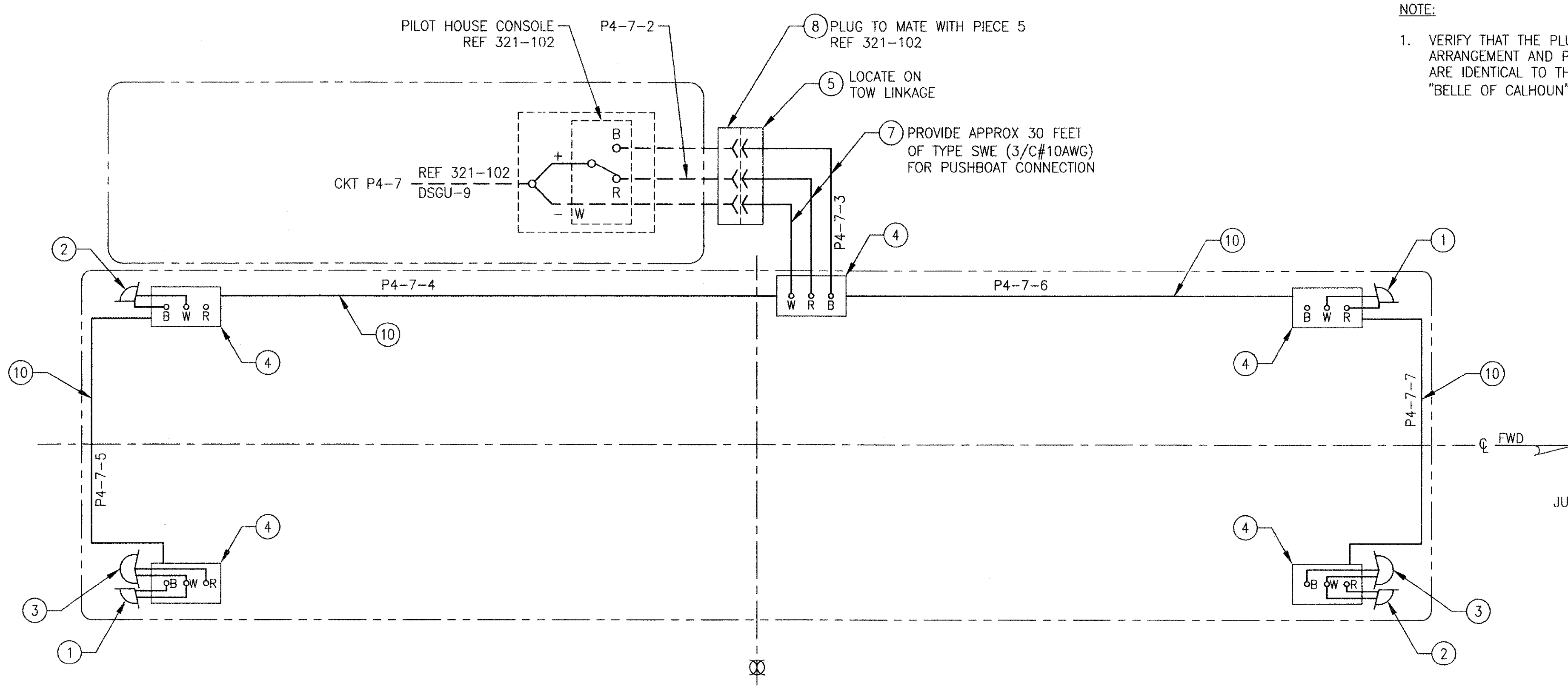
2011-07-22

SCALE: 1/2" = 1'-0"

ART ANDERSON ASSOCIATES
202 PACIFIC AVE. BREMERTON, WA 98337 (360) 479-5600

DRAWING NO. CEIDT001BA-180-201

FILE NAME =	USER NAME =	DESIGNED – E. SNYDER	REVISED – REV A 07/21/2011	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	IDOT BRUSSELS FERRY MISCELLANEOUS FOUNDATONS - BARGE	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN – J. WALKER	REVISED –			304	21-3	JERSEY	26	10
	PLOT SCALE =	CHECKED – P. MARTIN	REVISED –			CONTRACT NO. 76D29				
	PLOT DATE =	DATE – 10/04/2010	REVISED –		SCALE: 1/2" = 1'-0" SHEET NO. OF SHEETS STA. TO STA.	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



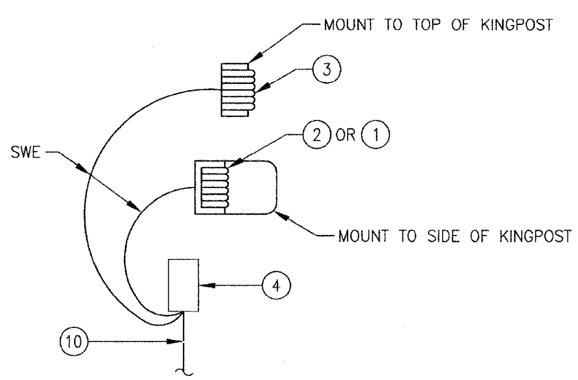
NAVIGATION LIGHT WIRING DIAGRAM

SCALE: 1/8" = 1'-0"

NOTE:

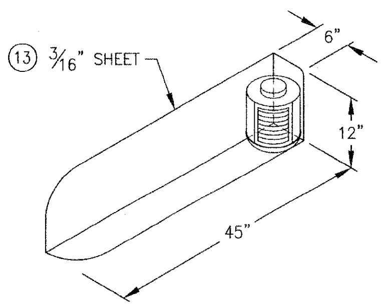
1. VERIFY THAT THE PLUG/RECEPTACLE ARRANGEMENT AND PIN CONNECTIONS ARE IDENTICAL TO THAT OF THE "BELLE OF CALHOUN"

BILL OF MATERIAL				
	PC NO.	QTY	EQUIPMENT	REMARK
	1	2 EA	PORT SIDE LIGHT, 112.5°, RED, W/3' 16/3-SO	PERKO 1127RAOBLK OR EQUAL
	2	2 EA	STBD SIDE LIGHT, 112.5°, GREEN, W/3' 16/3-SO	PERKO 1127GAOBLK OR EQUAL
	3	2 EA	STERN LIGHT, 135°, WHITE, W/3' 16/3-SO	PERKO 1129AOOBLK OR EQUAL
	4	7 EA	JUNCTION BOX W/4 TERMINALS	WATERTIGHT, PAULUHN 580 OR EQUAL
SEE NOTE 1	5	1 EA	RECEPTACLE, COLE-HERSEE	20A, 4 POLE, NO 1232
	6	–	–	–
	7	AS REQ	CABLE, 3-CONDUCTOR	AWG 10-3, TYPE G
SEE NOTE 1	8	–	PLUG, TO MATE WITH PIECE NUMBER 5	COLE HERSEE NO 1233
SEE NOTE 1	9	2 EA	PLUG 30A, 125V HUBBELL	HBL26CM11, HBL60CM31
	10	AS REQ	CABLE, 3-CONDUCTOR, 600V, 60° SERVICE W/GROUND	AWG 10-3, TYPE LSTSGU-9
	11	16 EA	WATERTIGHT GLOBE LIGHT, PAULUHN OR EQUAL POLYCARBONATE OR CYCOLAC GLOBE	707A, WITH YELLOW GLOBE & 100W BULB
	12	AS REQ	CABLE, 2-CONDUCTOR, 600V, 60° SERVICE	AWG 14-2, TYPE LSDSGU-4
	13	AS REQ	3/16" SHEET, SIDE LIGHT GUARDS	ASTM A36



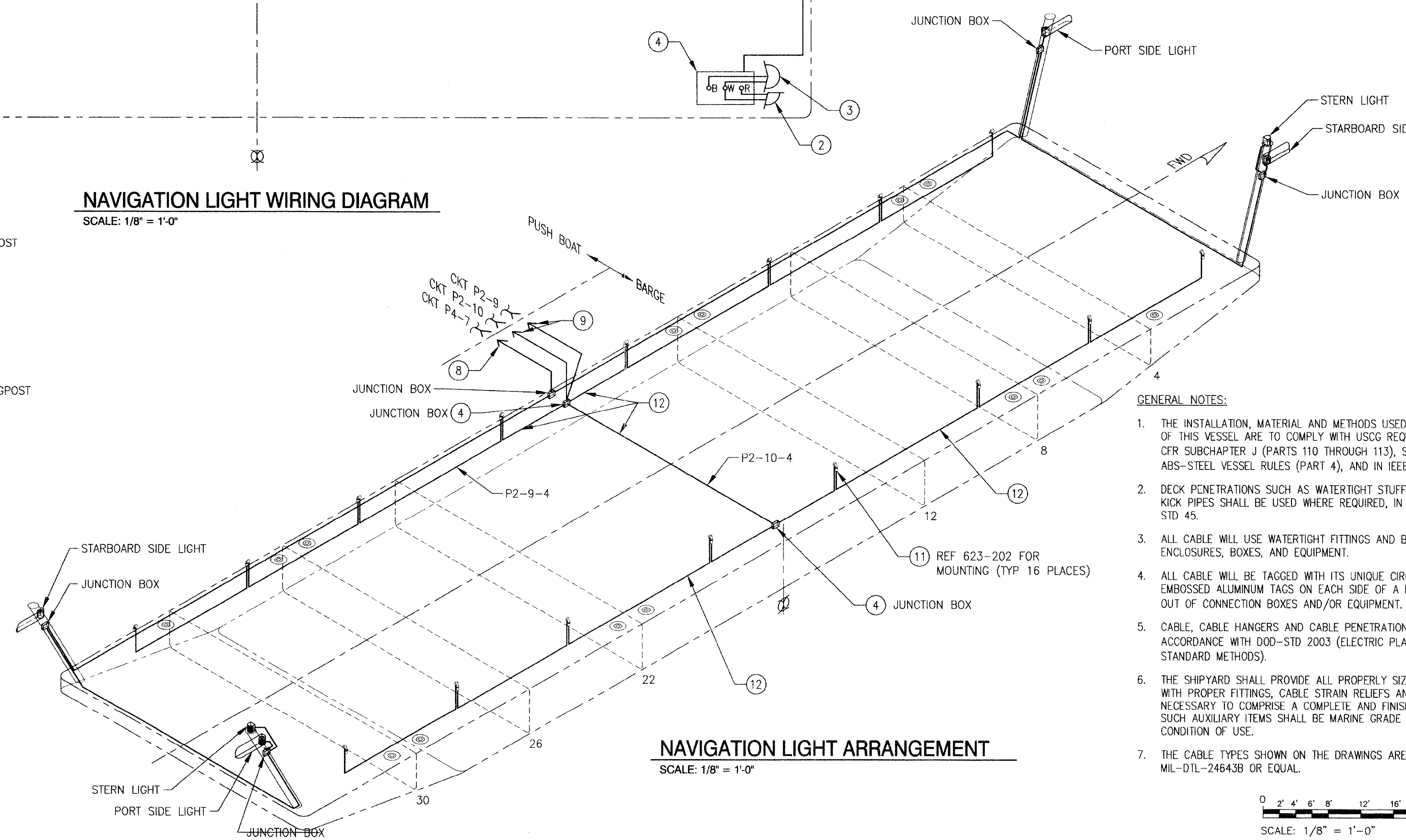
A DETAIL AT KINGPOST

REF 584-201
SCALE: 3/4" = 1'-0"



B SIDE LIGHT GUARD

FOUR PLACES
SCALE: 3/4" = 1'-0"



NAVIGATION LIGHT ARRANGEMENT

SCALE: 1/8" = 1'-0"

GENERAL NOTES:

1. THE INSTALLATION, MATERIAL AND METHODS USED IN THE CONSTRUCTION OF THIS VESSEL ARE TO COMPLY WITH USCG REQUIREMENTS FOUND IN 46 CFR SUBCHAPTER J (PARTS 110 THROUGH 113), STANDARDS FOUND IN ABS-STEEL VESSEL RULES (PART 4), AND IN IEEE STD 45.
2. DECK PENETRATIONS SUCH AS WATERTIGHT STUFFING TUBES, TRANSITS AND KICK PIPES SHALL BE USED WHERE REQUIRED, IN ACCORDANCE WITH IEEE STD 45.
3. ALL CABLE WILL USE WATERTIGHT FITTINGS AND BE BOTTOM ENTRY INTO ENCLOSURES, BOXES, AND EQUIPMENT.
4. ALL CABLE WILL BE TAGGED WITH ITS UNIQUE CIRCUIT DESIGNATION USING EMBOSSED ALUMINUM TAGS ON EACH SIDE OF A PENETRATION, INTO AND OUT OF CONNECTION BOXES AND/OR EQUIPMENT.
5. CABLE, CABLE HANGERS AND CABLE PENETRATIONS SHALL BE INSTALLED IN ACCORDANCE WITH DOD-STD 2003 (ELECTRIC PLANT INSTALLATION STANDARD METHODS).
6. THE SHIPYARD SHALL PROVIDE ALL PROPERLY SIZED CONNECTION BOXES WITH PROPER FITTINGS, CABLE STRAIN RELIEFS AND MOUNTING SUPPORTS NECESSARY TO COMPRISE A COMPLETE AND FINISHED INSTALLATION. ALL SUCH AUXILIARY ITEMS SHALL BE MARINE GRADE AND UL LISTED FOR THE CONDITION OF USE.
7. THE CABLE TYPES SHOWN ON THE DRAWINGS ARE TO BE LOW SMOKE, MIL-DTL-24643B OR EQUAL.

PROFESSIONAL ENGINEER
ORIGINAL REV – APPROVED BY WILLIAM H. HIGGINS DATED 10/04/2011

WILLIAM H. HIGGINS
STATE OF WASHINGTON
9348
REGISTERED PROFESSIONAL ENGINEER
7/21/11

0 2' 4' 6' 8' 12' 16' 24'
SCALE: 1/8" = 1'-0"

0 4" 8" 1' 1'4" 2' 2'8" 4'
SCALE: 3/4" = 1'-0"

ART ANDERSON ASSOCIATES
202 PACIFIC AVE. BREMERTON, WA 98337
(360) 479-5600

DRAWING NO. CEIDT001BA-422-201

FILE NAME =	USER NAME =	DESIGNED – W. HIGGINS	REVISED – REV A 07/21/2011
		DRAWN – R. MANANSALA	REVISED –
	PLOT SCALE =	CHECKED – P. MARTIN	REVISED –
	PLOT DATE =	DATE – 10/04/2010	REVISED –

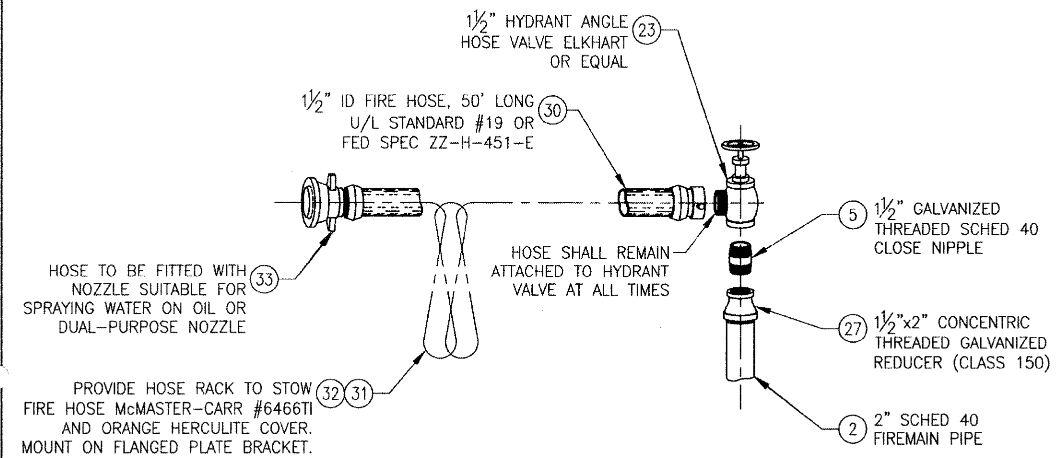
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IDOT BRUSSELS FERRY
NAVIGATION AND DECK LIGHTS

SCALE: AS SHOWN | SHEET NO. OF SHEETS | STA. TO STA.

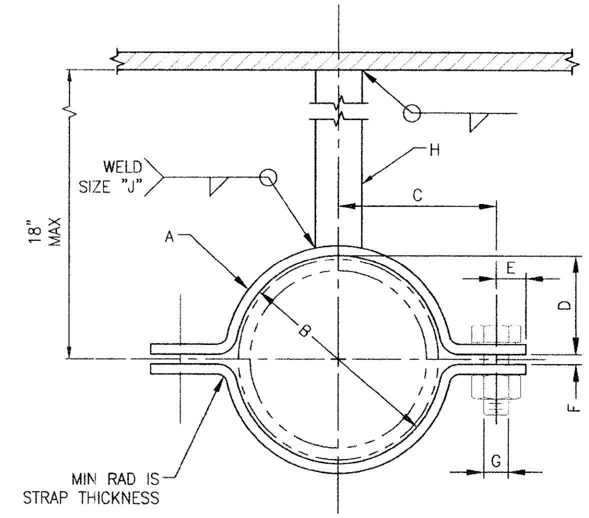
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	26	11
		CONTRACT NO. 76D29		

FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT



1 TYPICAL FIRE HOSE STATION

SEE SHEET 13 FOR BILL OF MATERIAL
SCALE 1 1/2" = 1'-0"



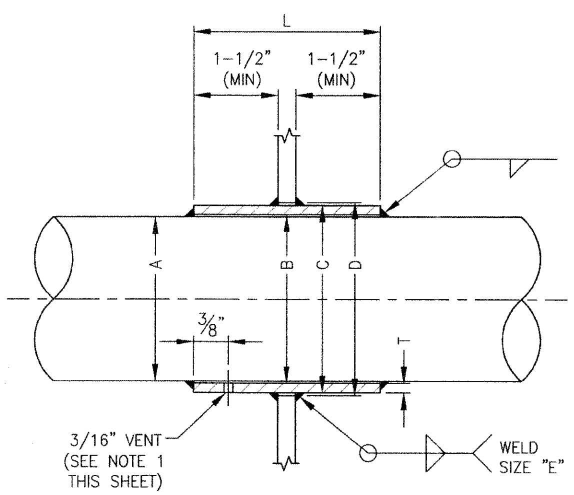
PIPE SIZE	A FLAT BAR SIZE MIN	B I.D. OF STRAP	C ℄ BOLT TO ℄ PIPE	D HEIGHT OF STRAP	E ℄ OF BOLT TO END OF STRAP	F CLEARANCE AT BOLTS	G BOLT DIAMETER MIN	H FLAT BAR SIZE MIN	J WELD SIZE
1/4"	1/8"x3/4"	13/16"	15/16"	13/64"	5/16"	1/8"	1/4"	3/16"x3/4"	1/8"
1/2"	1/8"x3/4"	1 1/8"	1 1/8"	23/64"	5/16"	1/8"	1/4"	3/16"x3/4"	1/8"
3/4"	1/8"x1"	1 5/16"	1 1/4"	15/32"	3/8"	1/8"	5/16"	1/4"x1"	1/8"
1 1/2"	1/8"x1"	2 5/16"	1 11/16"	57/64"	3/8"	1/8"	5/16"	1/4"x1"	1/8"
2"	1/8"x1"	2 5/8"	2"	1 1/8"	3/8"	1/8"	5/16"	1/4"x1"	1/8"

2 TYPICAL PIPE HANGER DETAIL

SCALE: NONE

GENERAL NOTES

1. RULES AND REGULATIONS: ALL WORK AND MATERIALS SHALL BE IN FULL ACCORDANCE WITH FEDERAL, STATE AND LOCAL RULES AND REGULATIONS, FIRE MARSHAL REGULATIONS, CODE OF FEDERAL REGULATIONS TITLE 46 – SHIPPING, STANDARDS OF THE NATIONAL FIRE PROTECTION ASSOCIATIONS, AND ALL OTHER APPLICABLE LAWS, CODES OR REGULATIONS. NOTHING IN THE DRAWINGS OR SPECIFICATIONS SHALL BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.
2. MISCELLANEOUS MATERIALS AND HARDWARE SUCH AS NUTS, BOLTS, SCREWS, PLASTIC SEALANT, AND OTHER SUCH ANCILLARY ITEMS MAY NOT BE INCLUDED IN THE BILL OF MATERIALS'. HOWEVER, ALL ITEMS NECESSARY TO COMPRISE A COMPLETE, FINISHED AND OPERATIONAL INSTALLATION CONFORMING TO USCG REQUIREMENTS AND GOOD SHIPBUILDING PRACTICE SHALL BE PROVIDED BY THE INSTALLER.
3. STEEL PIPE SIZES SHOWN ON THE DRAWING ARE NPS.
4. PIPING SHALL BE ADEQUATELY SUPPORTED TO CARRY WEIGHT, INCLUDING DYNAMIC LOADING AND TO PREVENT DAMAGE FROM VIBRATION AND IMPACT. PIPING SHALL BE SUPPORTED BY HANGERS WITH RESILIENT LINERS FABRICATED AND INSTALLED IN ACCORDANCE WITH ASTM F708 AND THIS DRAWING.
5. ALL WELDS SHALL BE NEATLY FINISHED WITH ALL SLAG AND SPLATTER REMOVED.
6. WELDED PIPING JOINTS SHALL BE IN ACCORDANCE WITH ASTM F-722.
7. WATERTIGHT INTEGRITY SHALL BE MAINTAINED. ALL PIPING PENETRATING WATERTIGHT BULKHEADS AND DECKS SHALL BE INSTALLED WITH USCG APPROVED PIPE SLEEVES OR AS SHOWN ON THIS DRAWING.
8. INSPECTION: DO NOT ALLOW ANY WORK TO BE COVERED UP OR ENCLOSED UNTIL INSPECTED, TESTED AND APPROVED BY THE ENGINEER, OWNER'S REPRESENTATIVE OR OTHER AUTHORITIES HAVING JURISDICTION OVER THE WORK.
9. SHOULD ANY WORK BE ENCLOSED OR COVERED UP BEFORE SUCH INSPECTION AND TEST, CONTRACTOR SHALL, AT HIS OWN EXPENSE, UNCOVER WORK AND, AFTER IT HAS BEEN INSPECTED, TESTED AND APPROVED, MAKE ALL REPAIRS AS NECESSARY TO RESTORE ALL DISTURBED WORK TO ITS ORIGINAL CONDITION.



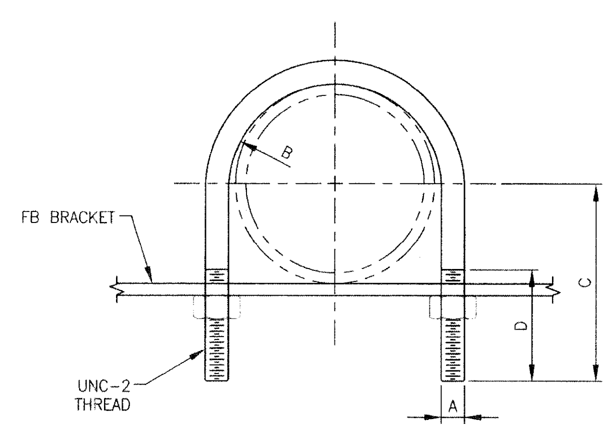
PIPE SIZE	A PIPE O.D.	B I.D. *	C O.D. *	D CUTOUT DIA	E WELD SIZE	L SLEEVE LENGTH	T THICKNESS
3/4"	1.050"	1.075"	1.387"	1.5"	5/32"	4"	0.156"
1 1/2"	1.90"	1.930"	2.242"	2.375"	5/32"	4"	0.156"
2"	2.375"	2.420"	2.870"	3"	3/16"	4"	0.225"

* NOTE:

SLEEVE MATERIAL SHALL BE ASTM A 106, GRADE B AND SHALL BE ORDERED FROM THIS STANDARD DRAWING BY SPECIFYING I.D. SIZE (COL"B"), O.D. SIZE (COL "C"), AND THICKNESS (COL "T"). INSIDE DIAMETER ACCURACY SHALL HAVE PRECEDENCE OVER O.D. AND THICKNESS DIMENSIONS.

3 TYPICAL CONTINUOUS PIPING RUN PENETRATION DETAIL

SCALE: NONE



PIPE SIZE	A ROD DIA MIN	B INSIDE RADIUS OF U-BOLT MIN	C APPROXIMATE LENGTH	D THREAD LENGTH MIN
1/4"	1/4"	19/64"	1 13/16"	1 13/16"
1/2"	1/4"	7/16"	1 15/16"	1 13/16"

4 TYPICAL PIPE RAMP HANGER DETAIL

SCALE: NONE

MECHANICAL SYMBOLS LIST

SYMBOL	DESCRIPTION
	CHECK VALVE
	ANGLE GLOBE VALVE W/ REMOTE OPERATOR
	GLOBE VALVE
	BALL VALVE
	PUMP
	SUCTION
	REDUCER
	FLEXIBLE HOSE
	DIFFERENTIAL PRESSURE GAGE

SCALE: 1 1/2" = 1'-0"

ART ANDERSON ASSOCIATES
202 PACIFIC AVE, BREMERTON, WA 98337 (360) 479-5600

DRAWING NO. CEIDT001BA-500-201

FILE NAME =	USER NAME =	DESIGNED – M. McKAY	REVISED – REV A 07/21/2011
		DRAWN – C. FAWVER	REVISED –
	PLOT SCALE =	CHECKED – P. MARTIN	REVISED –
	PLOT DATE =	DATE – 10/04/2010	REVISED –

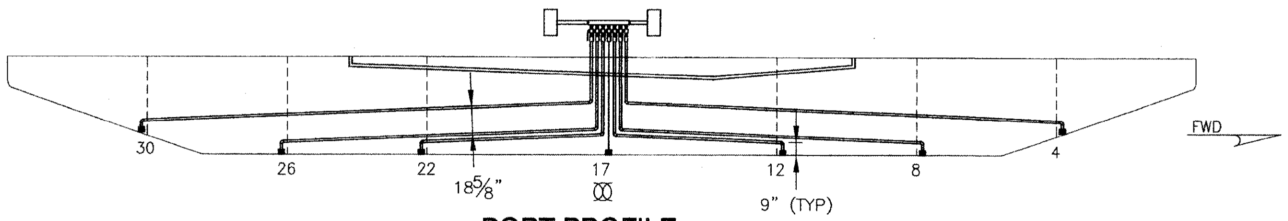
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IDOT BRUSSELS FERRY
MECHANICAL AND OUTFIT GENERAL NOTES - BARGE

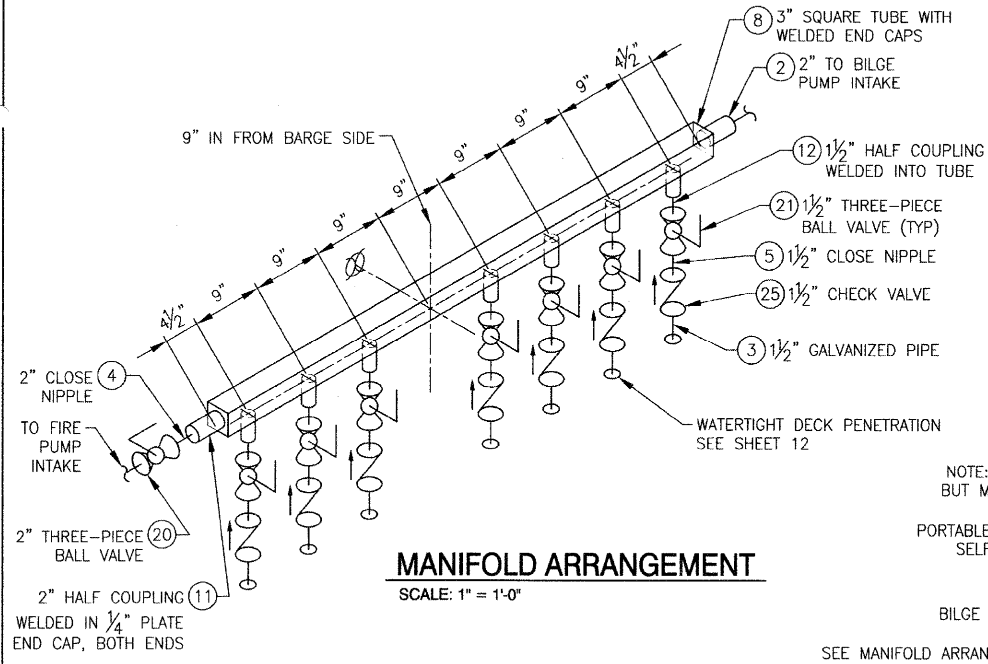
SCALE: AS SHOWN | SHEET NO. OF SHEETS | STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	26	12
		CONTRACT NO. 76D29		

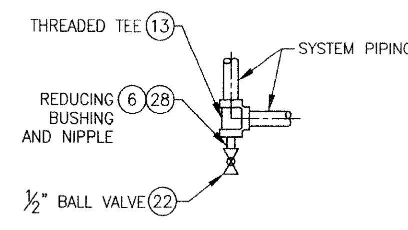
FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT



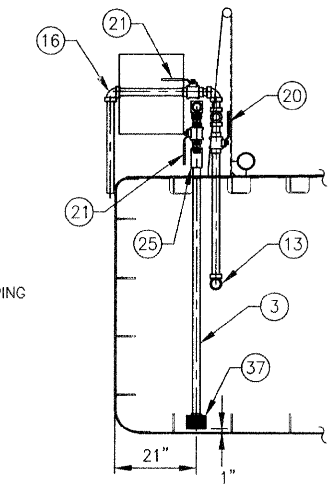
PORT PROFILE
HORIZONTAL SCALE: 3/32" = 1'-0"
VERTICAL SCALE: 3/16" = 1'-0"



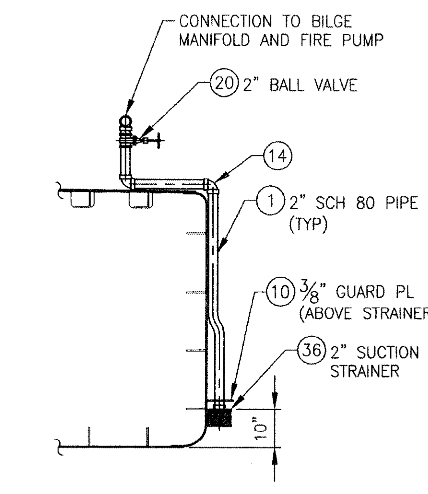
MANIFOLD ARRANGEMENT
SCALE: 1" = 1'-0"



TYPICAL LOW POINT DRAIN
SCALE: 1" = 1'-0"



SECTION AT MAINFOLD
SCALE: 1/2" = 1'-0"

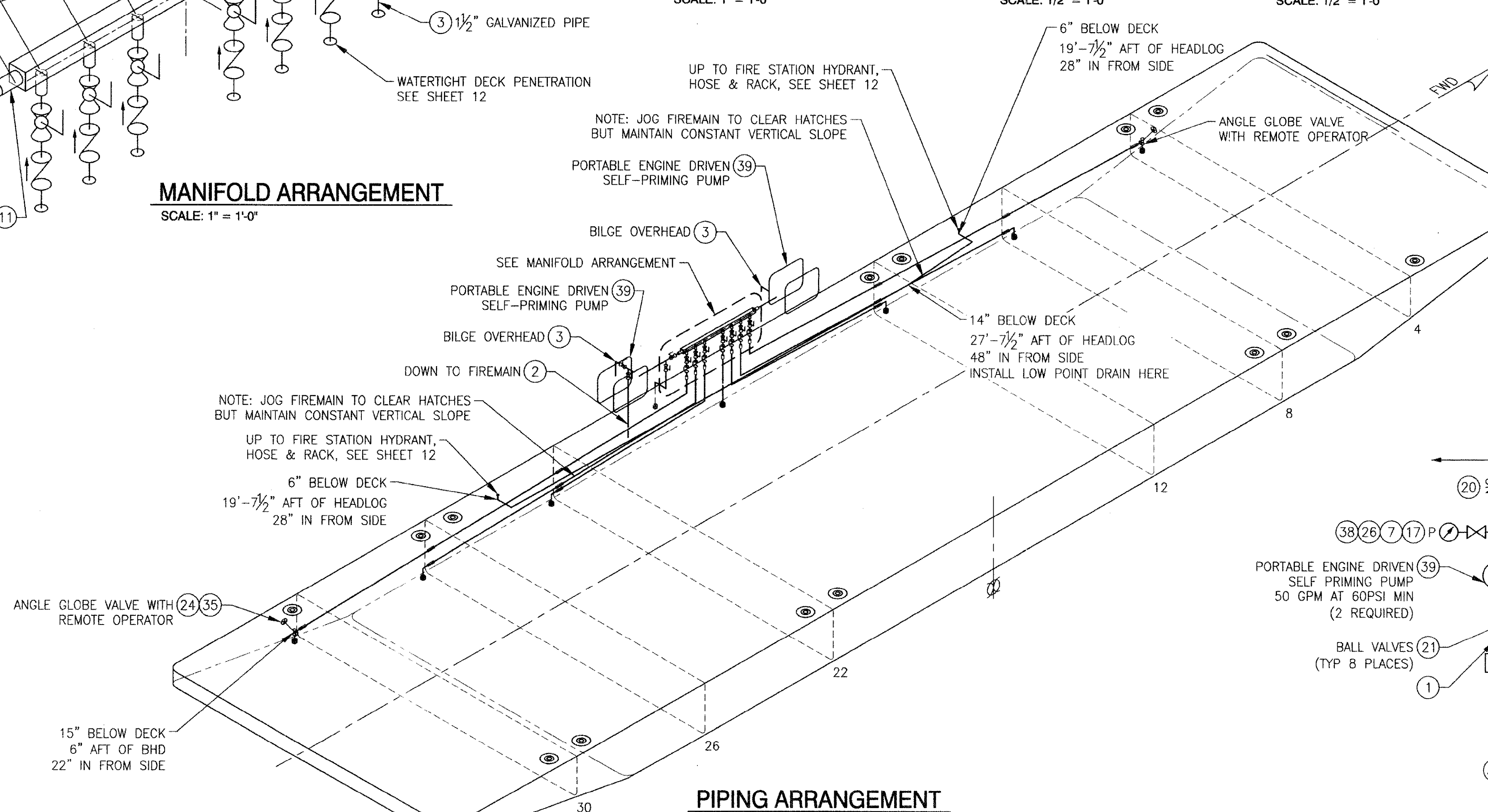


SEA SUCTION ARRANGEMENT
SCALE: 1/2" = 1'-0"

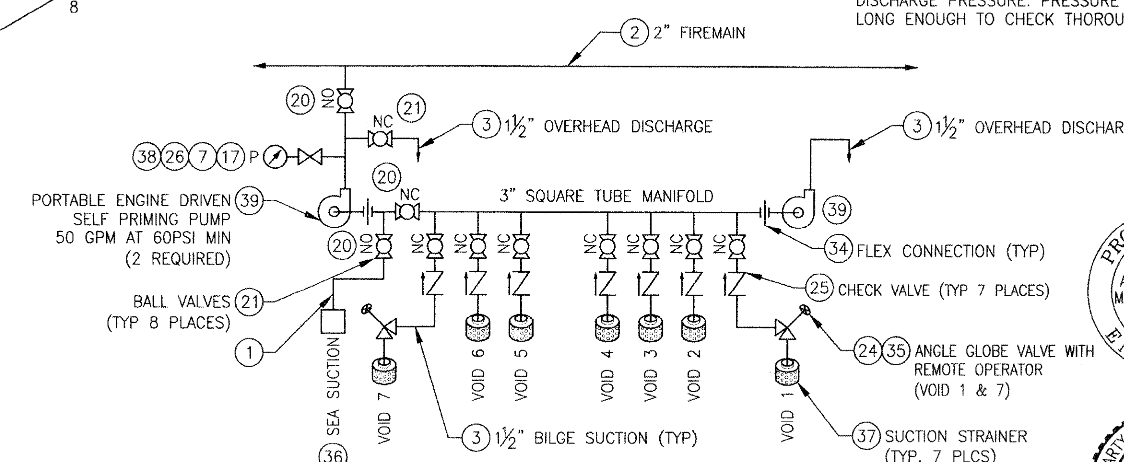
BILL OF MATERIAL			
PC NO.	**QTY**	**DESCRIPTION**	**MATERIAL/SPECIFICATION/REMARKS**
1	AS REQ	PIPE, 2" SCH 80	ASTM A-53
2	AS REQ	PIPE, 2" SCH 40	ASTM A-53
3	AS REQ	PIPE, 1½" SCH 40	ASTM A-53
4	AS REQ	NIPPLE, 2" SCH 40 CLOSE	GALV ASTM A-53
5	AS REQ	NIPPLE, 1½" SCH 40 CLOSE	GALV ASTM A-53
6	AS REQ	NIPPLE, ½" SCH 40 CLOSE	GALV ASTM A-53
7	AS REQ	NIPPLE, ¼" SCH 40 CLOSE	GALV ASTM A-53
8	6 FT	STEEL TUBE, 3"x3"x¼"	ASTM A-500 GRADE 8
9	AS REQ	FB ¼"x1" (HANGERS & BRACKETS)	ASTM A-36 STEEL, SEE SHEET 12
10	AS REQ	PLATE, ⅜"	ASTM A-36 STEEL
11	2 EA	HALF COUPLING, 2"	GALV ASTM A-234
12	7 EA	HALF COUPLING 1½"	GALV ASTM A-234
13	AS REQ	TEE, 2"	GALV ASTM A-234
14	AS REQ	ELBOW, 2" 90°	GALV ASTM A-234
15	AS REQ	ELBOW, 2" 45°	GALV ASTM A-234
16	AS REQ	ELBOW, 1½" 90°	GALV ASTM A-234
17	1 EA	WELDOLET ¼"	COMMERCIAL
18	AS REQ	UNION, 2", THREADED OR SOCKET WELDED	GALV ASTM A-105
19	AS REQ	UNION, 1½", THREADED OR SOCKET WELDED	GALV ASTM A-105
20	3 EA	VALVE, 2" THREADED BALL	BRONZE 150#
21	8 EA	VALVE, 1½" THREADED BALL	BRONZE 150#; 3 PIECE
22	1 EA	VALVE, ½" THREADED BALL	BRONZE 150#
23	2 EA	VALVE, 1½" HYDRANT; ANGLE HOSE	BRONZE 150#; ELKHART OR EQUAL
24	2 EA	VALVE, 1½" ANGLE GLOBE	BRONZE 150#; WITH ITEM #35
25	7 EA	VALVE, CHECK, 1½"	BRONZE 150#
26	1 EA	NEEDLE VALVE, ¼"	BRONZE 150#
27	AS REQ	REDUCING COUPLING 2"x1½"	GALV ASTM A-234
28	1 EA	REDUCING BUSHING 2"x½"	GALV ASTM A-234
29	–	–	–
30	2 EA	HOSE, 1½"	UL STD 19 OR FED SPEC ZZ-H-451-E
31	2 EA	HOSE RACK	McMASTER-CARR #6466T1
32	2 EA	HOSE RACK COVER	McMASTER-CARR #6415T21
33	2 EA	NOZZLE, 1½" HOSE; DUAL PURPOSE	UL STD 19 OR FED SPEC ZZ-H-451-E
34	2 EA	HOSE, ASSEMBLES	SAE J-1942-HOSE, SAE J-1475-FITTINGS
35	2 EA	REACH ROD WITH STUFFING TUBE	COMMERCIAL
36	1 EA	SUCTION STRAINER, 2" THREADED	McMASTER-CARR #4413K2; ZINC PLATED STEEL
37	7 EA	SUCTION STRAINER, 1½"	McMASTER-CARR #4413K1; ZINC PLATED STEEL
38	1 EA	PRESSURE GAUGE	COMMERCIAL 0-150 PSI
39	2 EA	PORTABLE PUMP	AMT 5830-96

NOTE:

FIREMAIN BILGE SYSTEM PIPING IS TO BE HYDROSTATICALLY TESTED TO 150% MAXIMUM PUMP DISCHARGE PRESSURE. PRESSURE SHALL BE HELD LONG ENOUGH TO CHECK THOROUGHLY FOR LEAKS.



PIPING ARRANGEMENT
SCALE: 1/8" = 1'-0"



SCHEMATIC
SCALE: NONE

PROFESSIONAL ENGINEER — ORIGINAL REV – APPROVED BY MARTY E. McKAY DATED 10/04/2011

MARTY EDWARD McKAY — STATE OF WASHINGTON — 46505 — REGISTERED PROFESSIONAL ENGINEER

22 JUL 2011

SCALE: 1/8" = 1'-0" (0 2' 4' 6' 8' 12' 16' 24')

SCALE: 1/2" = 1'-0" (0 1' 2' 3' 4' 6')

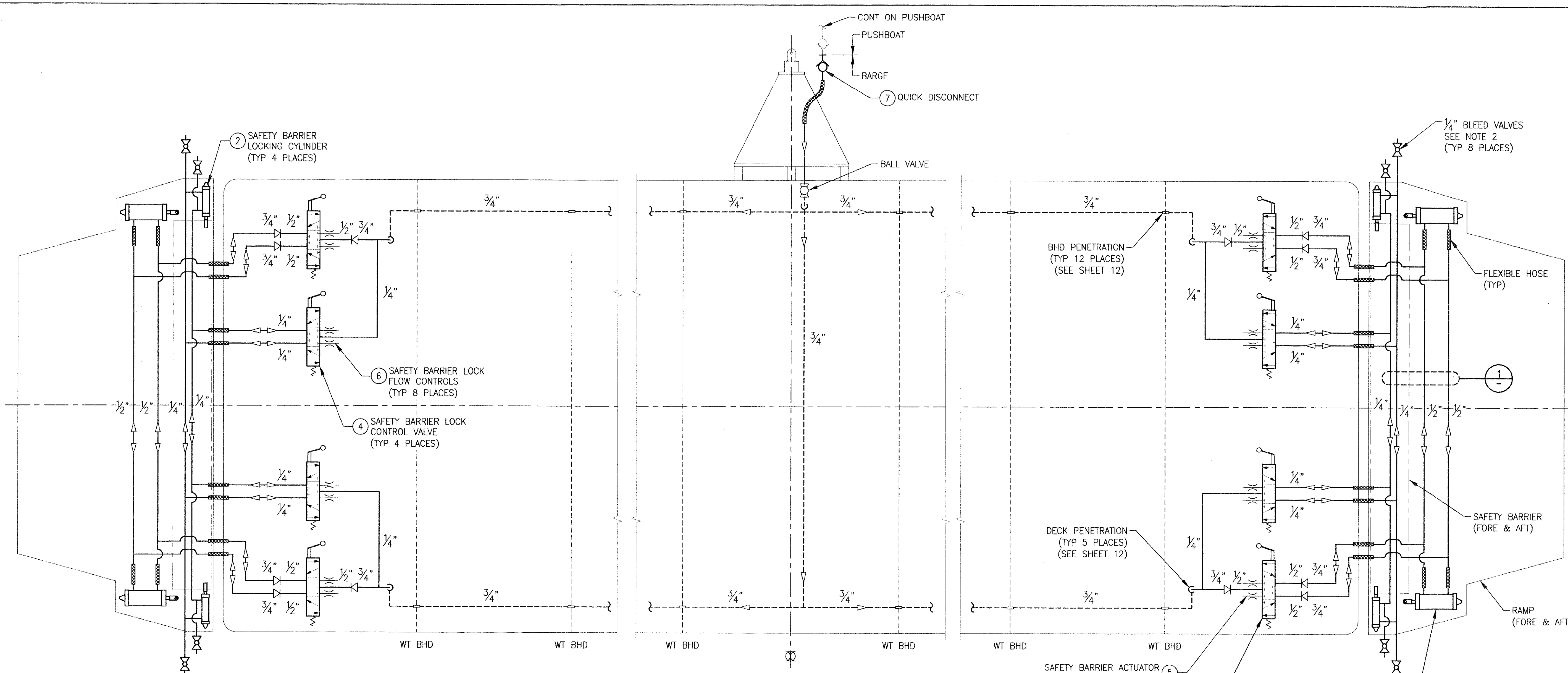
SCALE: 1" = 1'-0" (0 3" 6" 9" 1' 2' 3')

ART ANDERSON ASSOCIATES
202 PACIFIC AVE, BREMERTON, WA 98337 (360) 479-5600

DRAWING NO. CEIDT001BA-529-201

FILE NAME =	USER NAME =	DESIGNED – M. McKAY	REVISED – REV A 07/21/2011	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	IDOT BRUSSELS FERRY FIREMAIN AND BILGE PIPING - BARGE
		DRAWN – R. MANANSALA	REVISED –		
	PLOT SCALE =	CHECKED – P. MARTIN	REVISED –		
	PLOT DATE =	DATE – 10/04/2010	REVISED –		SCALE: AS SHOWN · SHEET NO. OF SHEETS · STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	26	13
		CONTRACT NO. 76D29		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

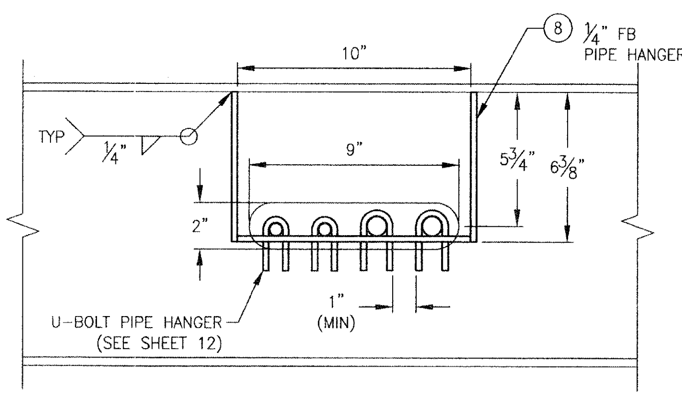


COMPRESSED AIR SYSTEM PLAN

SCALE: NONE

BILL OF MATERIAL			
PC NO.	QTY	DESCRIPTION	MATERIAL/SPECIFICATION/REMARKS
1	4 EA	PNEUMATIC CYLINDER, 7" BORE, 1.375" ROD, 17.875" STROKE	PARKER HANNIFIN 7.00CBB-2AU14ACx17.875
2	4 EA	PNEUMATIC CYLINDER, 1" BORE, 0.5" ROD, 3" STROKE	PARKER HANNIFIN 1.00C-2AU14x1.75
3	4 EA	DIRECTIONAL CONTROL VALVE, ½"	BOSCH REXROTH TYPE "D" PILOTAIR P04-42-0354
4	4 EA	DIRECTIONAL CONTROL VALVE, ¼"	BOSCH REXROTH TYPE "D" PILOTAIR P02-42-0354
5	8 EA	MUFFLER/FLOW CONTROLS, ½"	PARKER HANNIFIN 04508 0080
6	8 EA	MUFFLER/FLOW CONTROLS, ¼"	PARKER HANNIFIN 04504 0004
7	1 EA	QUICK DISCONNECT, ¾", MALE	COML
8	AS REQ	FLAT BAR, ¼"x1", FOR PIPE HANGERS	ASTM A36

MATERIAL SCHEDULE							
SERVICE	SIZE	PIPE	TAKEDOWN JOINTS	FITTINGS	VALVES		FLEXIBLE CONNECTIONS
					BODY	TRIM	
PNEUMATIC PIPING 140 PSIG	ALL	PIPE: SCHED 40, SEAMLESS CARBON STEEL ASTM A-106 GRADE B ASNI B36.10	UNIONS: SOCKET WELD OR THREADED CARBON STEEL ASTM A 105/A 105M MSS-SP-83 FLANGES: SOCKET WELD OR SLIP-ON CARBON STEEL ASTM A 105/A 105M ANSI B16.5	SOCKET WELD: STEEL ASTM A 234/A 234M OR WPB OR A 105/A 105M ASNI B16.11	BALL: BRONZE FLANGED ASME SB61 OR SB62 MSS-SP-72	CRES	HOSE: SAE J-1942 REINFORCED HOSE FITTINGS: SAE J-1475



1 RAMP PENETRATION DETAIL

SCALE: 3" = 1'-0"

NOTES:

1. TESTING OF COMPRESSED AIR SHALL BE IN ACCORDANCE WITH 46 CFR 58.30-35 AND AS FOLLOWS. ALL COMPRESSED AIR PIPING ASSEMBLIES AND ASSOCIATED EQUIPMENT SHALL BE TESTED AT 1.5 TIMES THE MAXIMUM WORKING PRESSURE OF 140 PSIG. THE REQUIRED TEST PRESSURE (210 PSIG) SHALL BE MAINTAINED FOR A SUFFICIENT AMOUNT OF TIME TO CHECK ALL COMPONENTS FOR STRENGTH AND POROSITY AND TO PERMIT AN INSPECTION TO BE MADE OF ALL CONNECTIONS.
2. INSTALL BLEED VALVES FOR SAFETY BARRIER LOCKING CYLINDERS AS CLOSE AS PRACTICABLE TO THE CYLINDERS PORT.

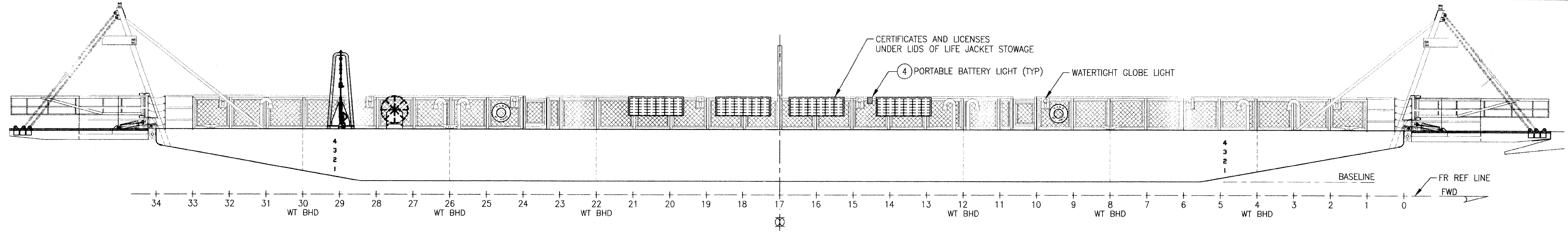
PROFESSIONAL ENGINEER ORIGINAL REV – APPROVED BY MARTY E. McKAY DATED 10/04/2011

MARTY EDWARD McKAY STATE OF WASHINGTON 46505 REGISTERED PROFESSIONAL ENGINEER

22 JUL 2011

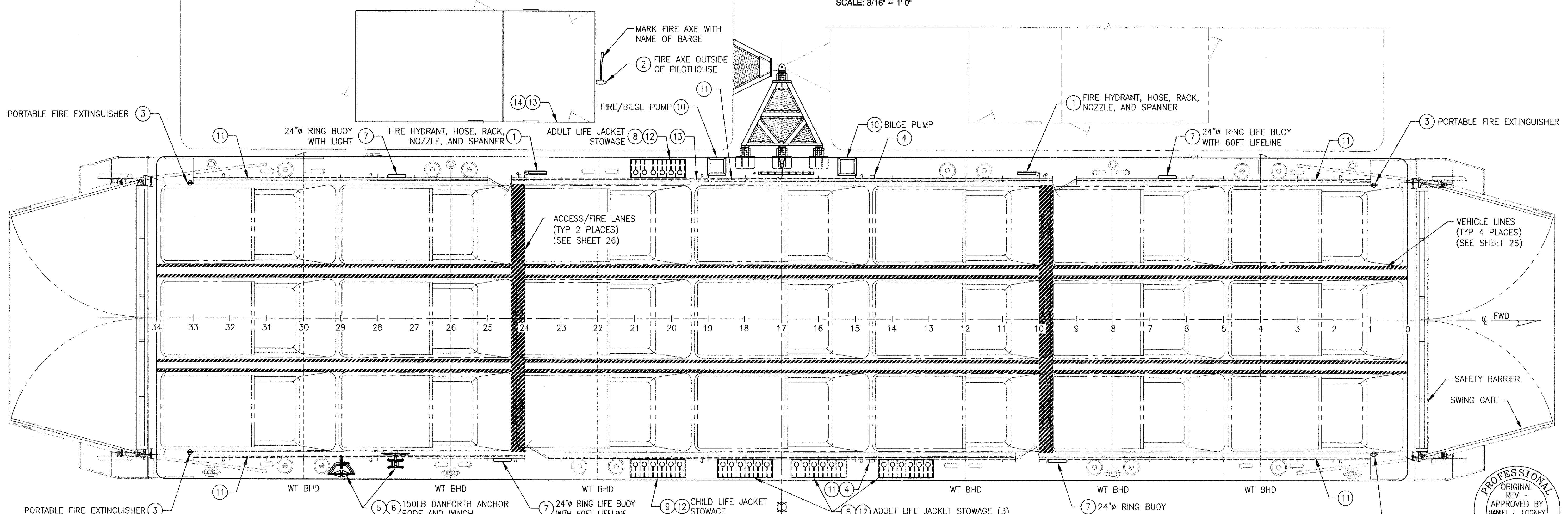
0 2" 4" 8" 12"
SCALE: 3" = 1'-0"

ART ANDERSON ASSOCIATES
202 PACIFIC AVE, BREMERTON, WA 98337 (360) 479-5600



OUTBOARD PROFILE

SCALE: 3/16" = 1'-0"



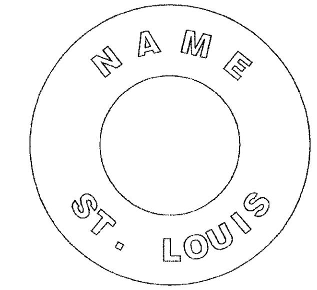
DECK PLAN

SCALE: 3/16" = 1'-0"

PROFESSIONAL ENGINEER
ORIGINAL
REV –
APPROVED BY
DANIEL J. LOONEY
DATED
10/04/2011

BILL OF MATERIALS			
ITEM	QTY	DESCRIPTION	MATERIAL/SPECIFICATION/REMARKS
1	2 EA	FIRE HOSE STATION WITH LINED COMMERCIAL FIRE HOSE PER UL STD 19 & COMBINATION NOZZLE, USCG APPROVED SERIES 162.027	50'x1 ½"; 46CFR 181.310, 181.320 & 162.027, SEE SHT 12
2	1 EA	FIRE AXE	–
3	4 EA	PORTABLE FIRE EXTINGUISHER, 15# CO2 OR 10# DRY CHEMICAL	TYPE B-II; 46CFR 181.500
4	2 EA	PORTABLE BATTERY LIGHTS (FLASHLIGHT OR HAND LANTERN)	46CFR 183.430
5	1 EA	ANCHOR, 150H# DANFORTH TYPE, RODE 300' ¾"	46CFR 184.300
6	1 EA	ANCHOR CHAIN & SWIVEL SHACKLE, 12x⅜"	46CFR 184.300
7	4 EA	24"ø RING LIFE BUOYS, ONE WITH WATER LIGHT AND TWO WITH MIN 60' BUOYANT LINE	46CFR 180.70, 180.604, 160.050 & 161.010
8	150 EA	ADULT LIFE JACKETS	46CFR 180.71, 185.604

BILL OF MATERIALS			
ITEM	QTY	DESCRIPTION	MATERIAL/SPECIFICATION/REMARKS
9	75 EA	CHILD LIFE JACKETS	46CFR 180.71, 180.78 & 185.604
10	2 EA	POWER OPERATED SELF-PRIMING PORTABLE TYPE FIRE/BILGE PUMP (50 GPM MIN 60PSI DISCHARGE WITH PRESSURE GAGE)	46CFR 181.300, SEE SHT 13
11	6 EA	NO SMOKING SIGNS	46CFR 185.340 (c)
12	5 EA	PLACARDS FOR DONNING/USE OF LIFE JACKETS, AND PASSENGER SAFETY	46CRF 185.516, 185.506
13	1 EA	EMERGENCY INSTRUCTIONS	46CFR 185.510
14	1 EA	FIRST AID KIT	46CFR 184.710
15	1 SET	VEHICLE LANE AND AISLE MARKINGS	46CFR 185.340 (a), SEE SHT 25
16	1 SET	PUBLIC ADDRESS SYSTEM AND COMMUNICATIONS	46CFR 184.610 (b), SEE DWG 401-101



LIFE RING MARKING

SCALE: 3" = 1'-0"

SCALE: 3/16" = 1'-0"

SCALE: 3" = 1'-0"

DANIEL JOSEPH LOONEY
STATE OF WASHINGTON
47093
REGISTERED
PROFESSIONAL ENGINEER
07-22-2011

ART ANDERSON ASSOCIATES
202 PACIFIC AVE. BREMERTON, WA 98337 (360) 479-5600

DRAWING NO. CEIDT001BA-555-201

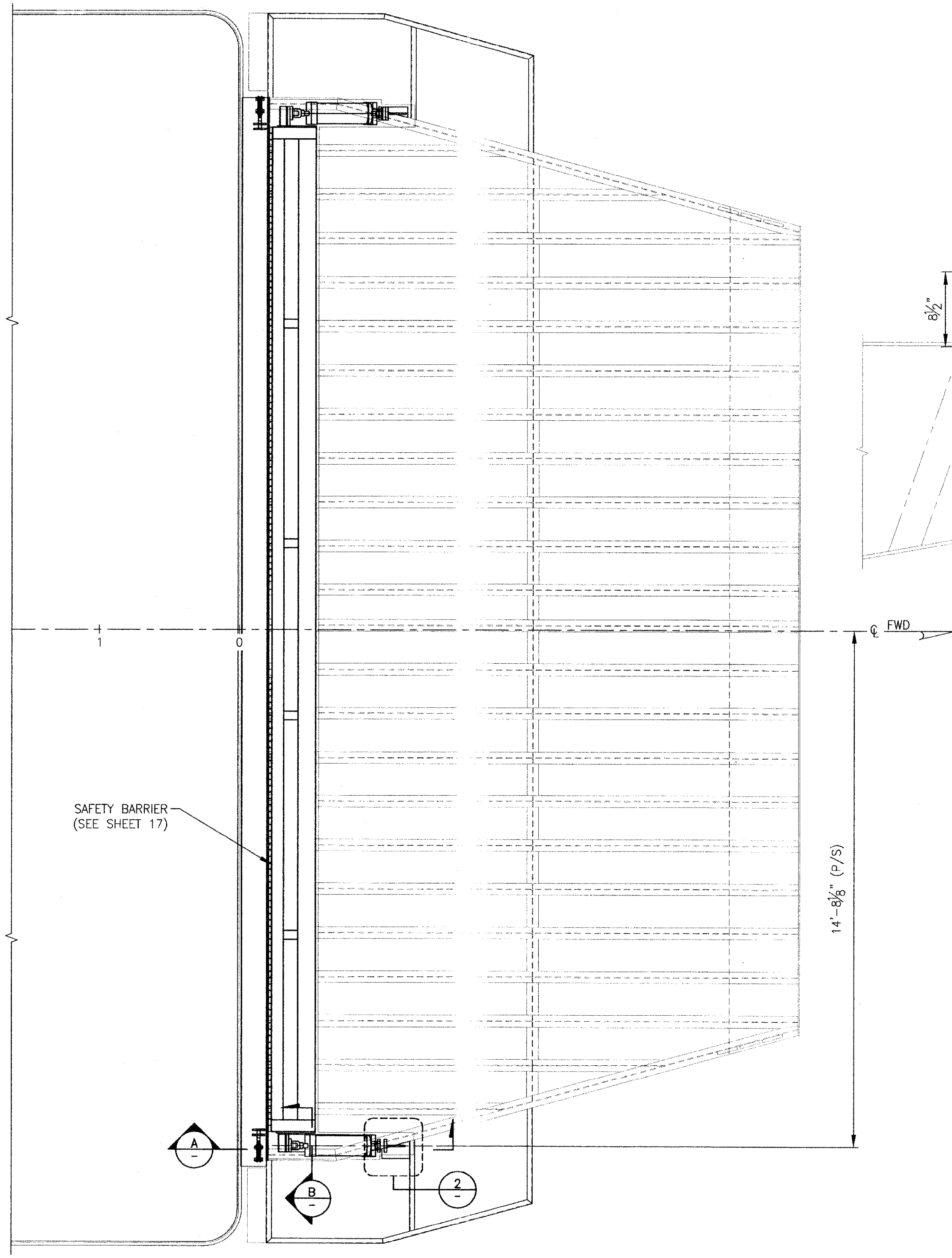
FILE NAME =	USER NAME =	DESIGNED — D. LOONEY	REVISED — REV A 07/21/2011
		DRAWN — C. FAWVER	REVISED —
	PLOT SCALE =	CHECKED — P. MARTIN	REVISED —
	PLOT DATE =	DATE — 10/04/2010	REVISED —

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IDOT BRUSSELS FERRY
FIRE PROTECTION AND LIFE SAVING EQUIPMENT PLAN

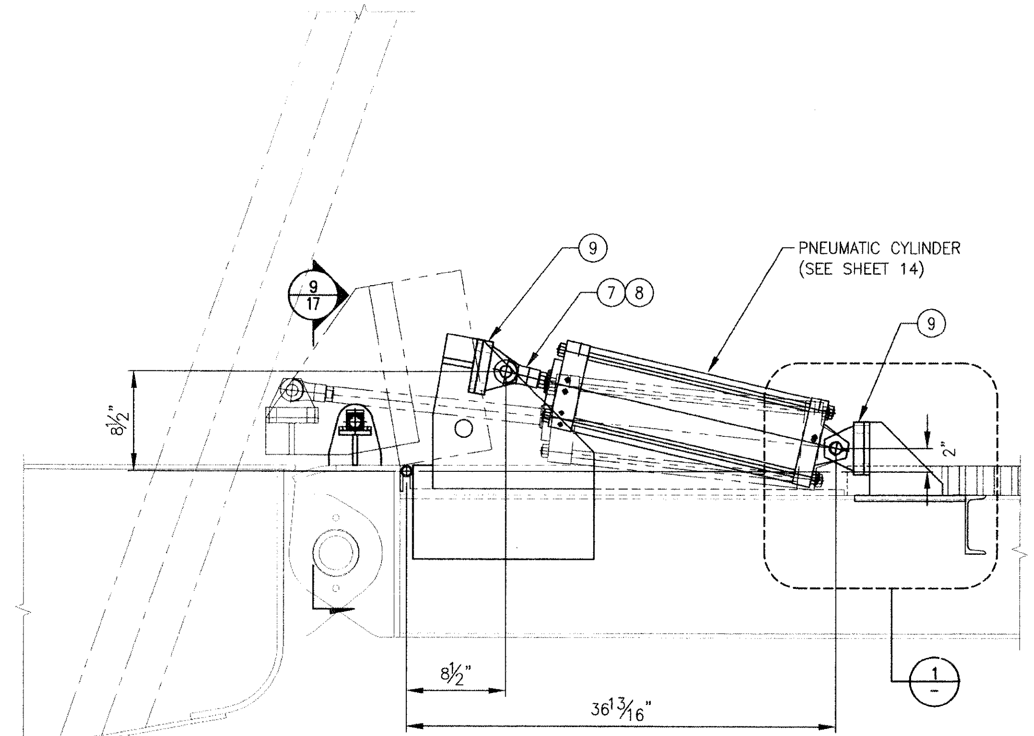
SCALE: AS SHOWN | SHEET NO. OF SHEETS | STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	26	15
		CONTRACT NO. 76D29		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



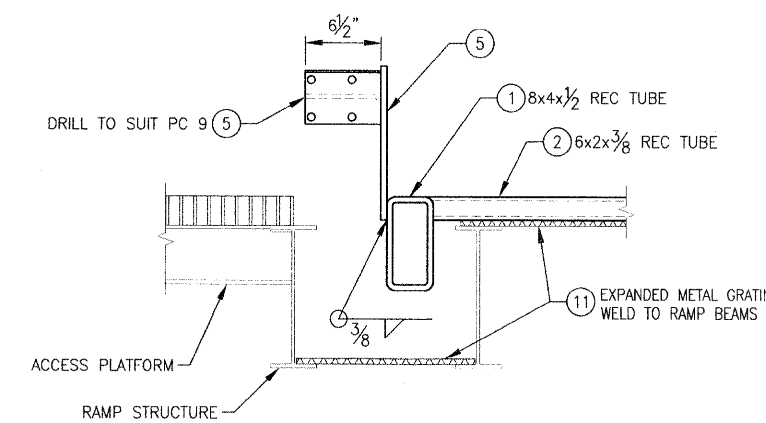
SAFETY BARRIER PLAN

SCALE: 1/2" = 1'-0"



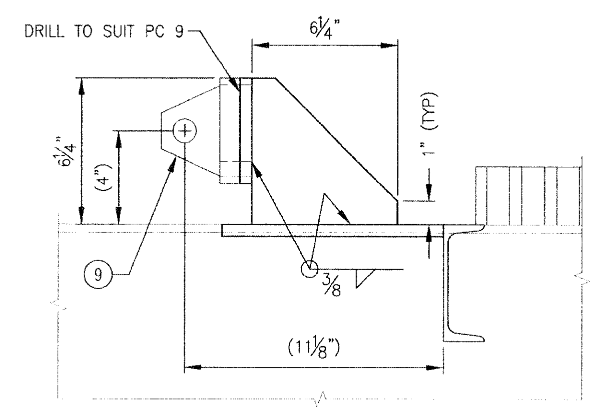
A SECTION

LOWERED POSITION SHOWN
SCALE: 1-1/2" = 1'-0"



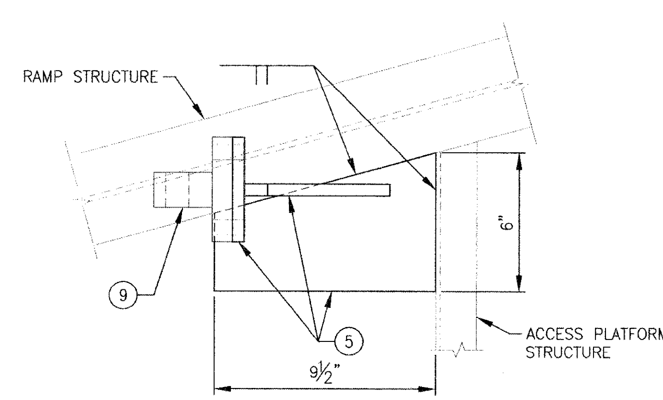
B SECTION

SCALE: 1-1/2" = 1'-0"



1 DETAIL

SCALE: 3" = 1'-0"



2 DETAIL

SCALE: 3" = 1'-0"

BILL OF MATERIAL			
PC NO.	QTY	DESCRIPTION	MATERIAL/SPECIFICATION/REMARKS
1	AS REQ	STRUCTURAL TUBE 8"x4"x½"	ASTM A500
2	AS REQ	STRUCTURAL TUBE 6"x2"x⅜"	ASTM A500
3	AS REQ	STRUCTURAL TUBE 4"x2"x5/16"	ASTM A500
4	AS REQ	STRUCTURAL TUBE 3"x2"x¼"	ASTM A500
5	AS REQ	PLATE, ½"	ASTM A36
6	4 EA	ROUND BAR 1"øx3" LONG	AMTM A572 GR65
7	4 EA	FEMALE ROD CLEVIS	PARKER HANNIFIN 50944
8	4 EA	PIVOT PIN	PARKER HANNIFIN 68370
9	8 EA	MOUNTING PLATE	PARKER HANNIFIN 85361
10	AS REQ	PLATE, ⅜"	ASTM A36
11	AS REQ	GRATING, EXPANDED METAL	MCNICHOLS 2.00#/SF 0.460" THICK
12	AS REQ	PLATE ¼"	STAINLESS 304
13	AS REQ	TUBE, 1"x0.12" WALL THINK	STAINLESS 304, ASTM A269
14	2 EA	ROUND BAR 0.71"øx13" LONG	STAINLESS 316 OR 303
15	AS REQ	BOLT, HEX, ⅜"-16UNC-2A-1¼" LONG	FULLY THREADED, ASTM A354
16	AS REQ	NUT, HEX, ⅜"-16UNC-2B	GRADE 8
17	AS REQ	WASHER, ⅜", OD 0.813	STAINLESS 316

NOTE:

THIS DRAWING WAS DEVELOPED USING PNEUMATIC SPECIFIED ON SHEET 14. SUBJECT TO OWNERS WRITTEN APPROVAL THE CONTRACTOR MAY SELECT DIFFERENT CYLINDERS PROVIDED THEY DEMONSTRATE THE GEOMETRY, MATERIALS, LIFTING CAPACITY, AND OPERATION, INCLUDING THE LOCKING MECHANISM, HAVE THE SAME SALIENT FEATURES AS DESIGNED.

PROFESSIONAL ENGINEER
ORIGINAL REV - APPROVED BY MARTY E. McKAY DATED 10/04/2011

MARTY EDWARD McKAY
STATE OF WASHINGTON
46505
REGISTERED PROFESSIONAL ENGINEER
22 JUL 2011

SCALE: 1/2" = 1'-0"

SCALE: 1" = 1'-0"

SCALE: 3" = 1'-0"

ART ANDERSON ASSOCIATES
202 PACIFIC AVE, BREMERTON, WA 98337
(360) 479-5600

DRAWING NO. CEIDT001BA-575-201

FILE NAME =	USER NAME =	DESIGNED — M. McKAY	REVISED — REV A 07/21/2011
		DRAWN — J. WALKER	REVISED —
	PLOT SCALE =	CHECKED — P. MARTIN	REVISED —
	PLOT DATE =	DATE — 10/04/2010	REVISED —

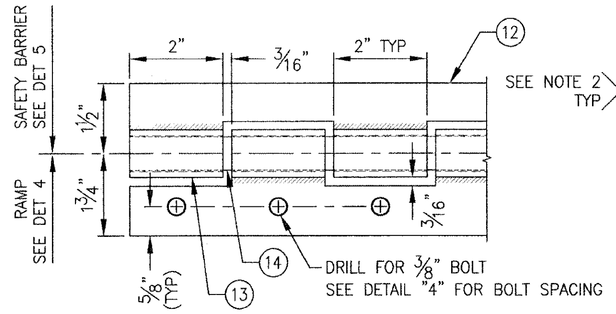
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IDOT BRUSSELS FERRY
SAFETY BARRIER - STRUCTURE

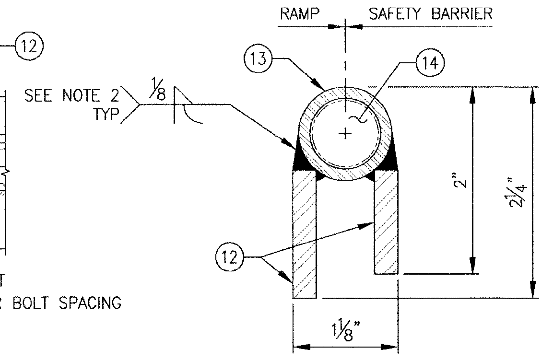
SCALE: AS SHOWN | SHEET NO. OF SHEETS | STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	26	16
		CONTRACT NO. 76D29		

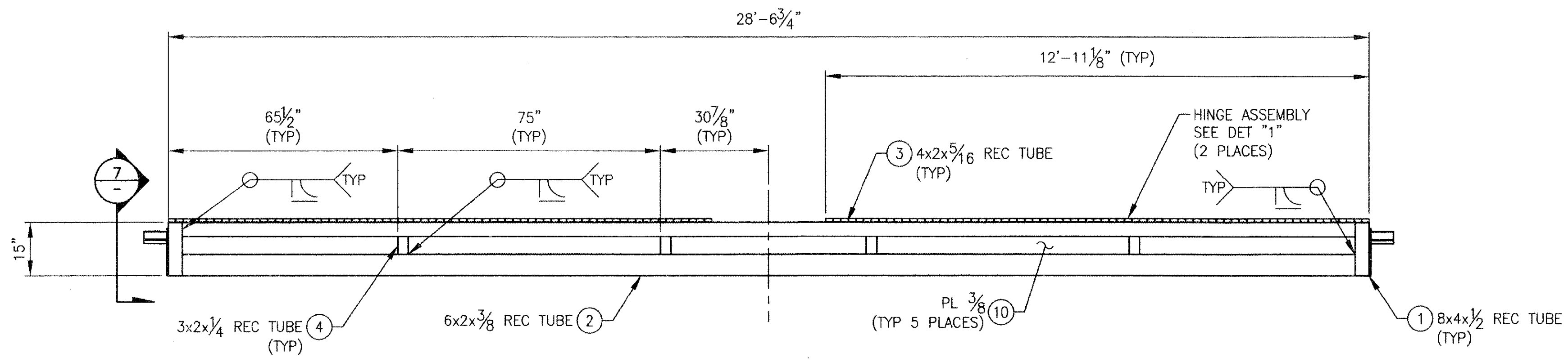
FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT



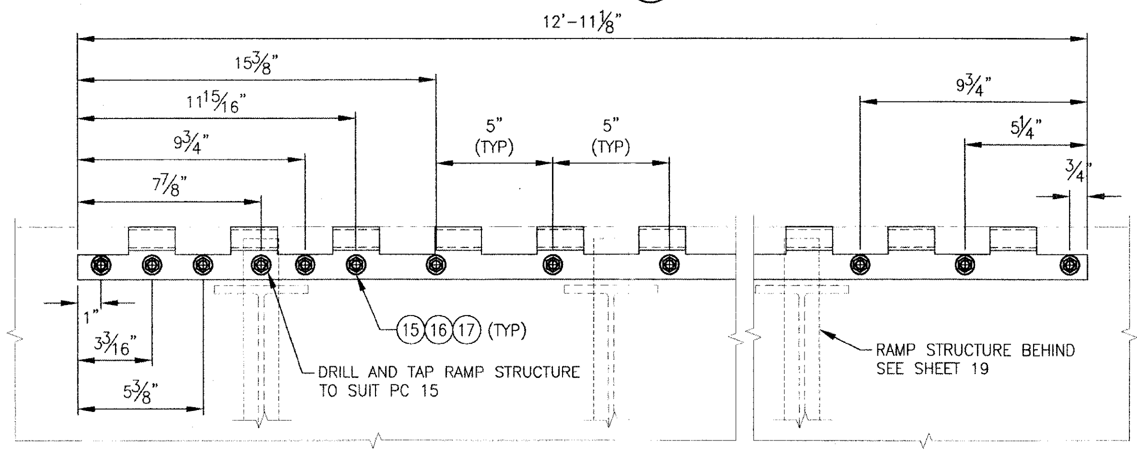
1 HINGE ASSEMBLY
SCALE: 6" = 1'-0"



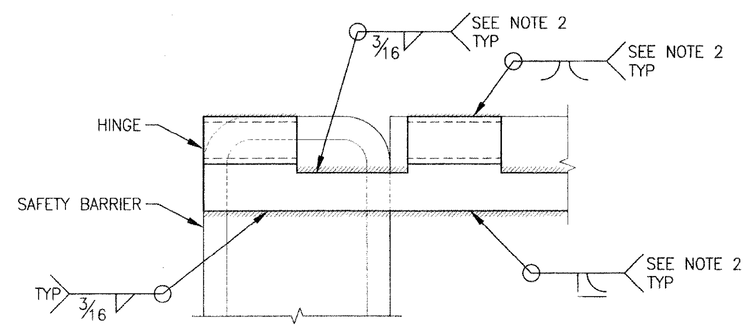
2 HINGE CONSTRUCTION
SCALE: 12" = 1'-0"



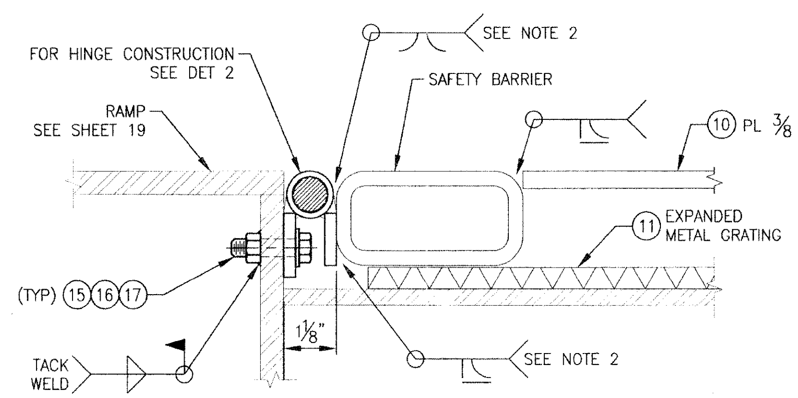
3 SAFETY BARRIER ASSEMBLY
SCALE: 1/2" = 1'-0"



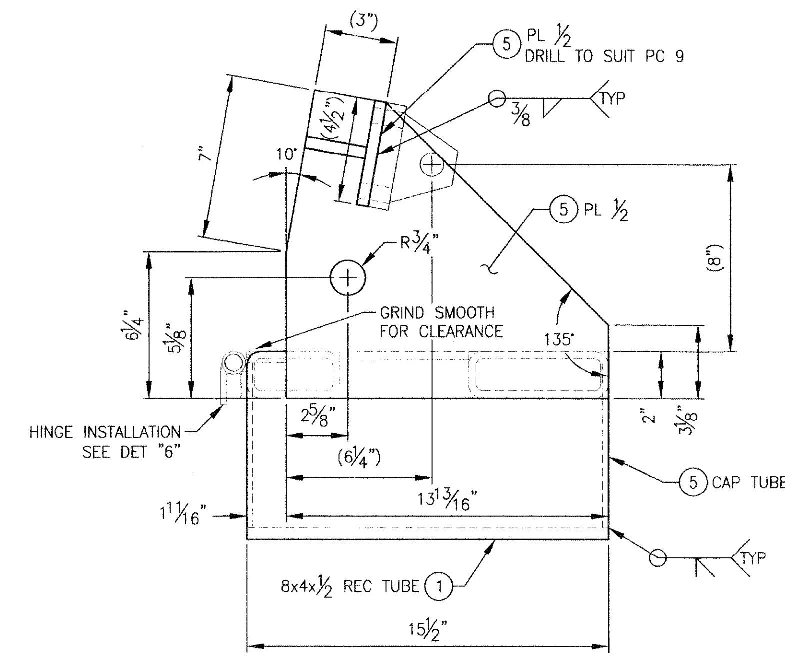
4 HINGE INSTALLATION - RAMP
SCALE: 3" = 1'-0"



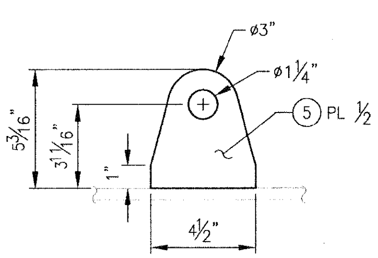
5 HINGE INSTALLATION - SAFETY BARRIER
SCALE: 6" = 1'-0"



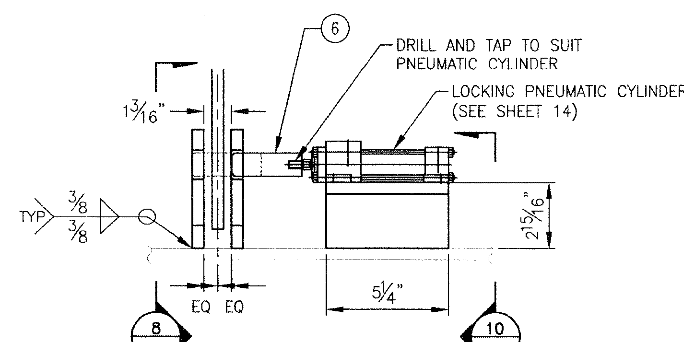
6 HINGE INSTALLATION
SCALE: 6" = 1'-0"



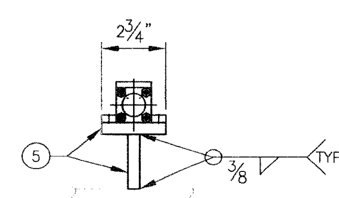
7 DETAIL
SCALE: 3" = 1'-0"



8 DETAIL
SCALE: 3" = 1'-0"



9 DETAIL
SCALE: 3" = 1'-0"



10 DETAIL
SCALE: 3" = 1'-0"

NOTES:

1. MATERIAL LIST SHOWN ON SHEET 16
2. WELDS ADDRESSING THIS NOTE ARE USED TO FABRICATE THE HINGE ASSEMBLIES. WELD PROCEDURES USED SHALL AVOID CAUSING ANY DEFORMATION, DISTORTION, OR ALIGNMENT OF THE PIN.
3. GREASE THE HINGE PIN DURING FINAL ASSEMBLY USING A PRODUCT SUITABLE FOR A MARINE ENVIRONMENT.
4. TACK WELD HINGE PINS TO SAFETY BARRIER AFTER FINAL ASSEMBLY.
5. TEMPLATE LOCATION OF LOCKING CYLINDERS AND LOCKING PLATES TO SUIT FINAL INSTALLATION OF SAFETY BARRIER.

SCALE: 1/2" = 1'-0"
SCALE: 3" = 1'-0"
SCALE: 6" = 1'-0"
SCALE: 12" = 1"-0"

PROFESSIONAL ENGINEER — ORIGINAL REV – APPROVED BY MARTY E. McKAY DATED 10/04/2011

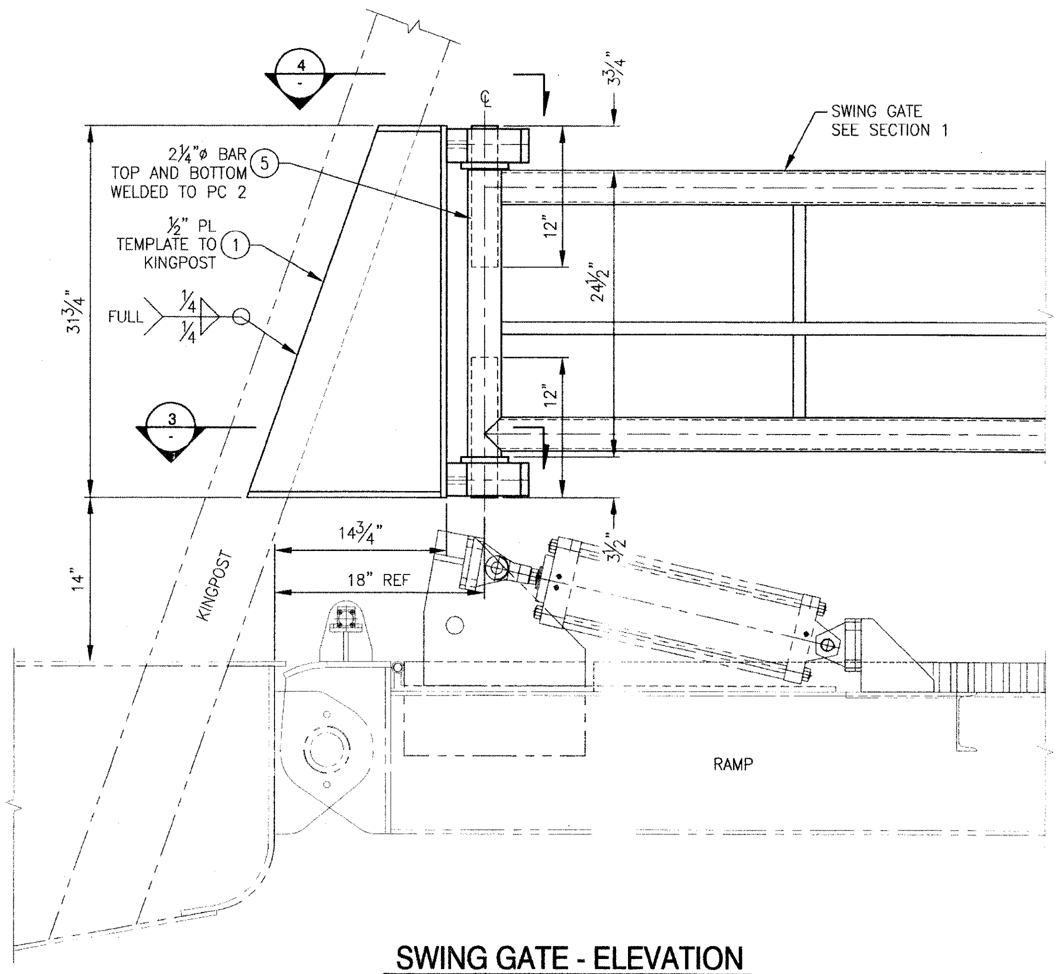
MARTY EDWARD McKAY — STATE OF WASHINGTON — 46505 — REGISTERED PROFESSIONAL ENGINEER — 7/22/11

ART ANDERSON ASSOCIATES
202 PACIFIC AVE. BREMERTON, WA 98337 (360) 479-5600

DRAWING NO. CEIDT001BA-575-202

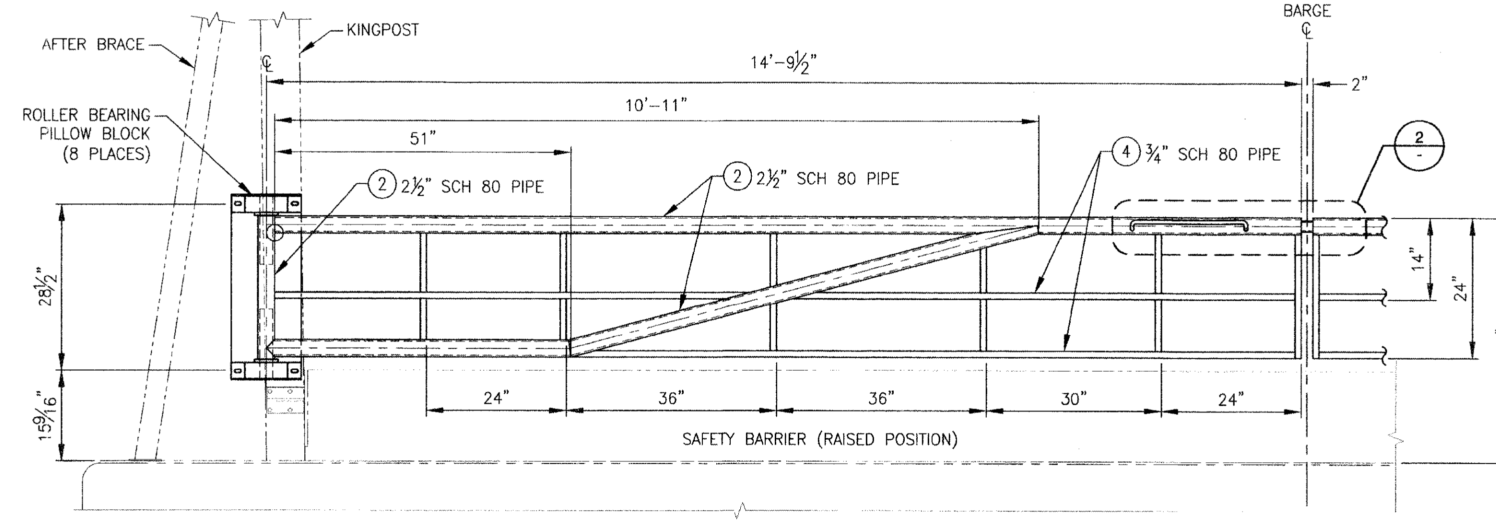
FILE NAME =	USER NAME =	DESIGNED – M. McKAY	REVISED – REV A 07/21/2011	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	IDOT BRUSSELS FERRY SAFETY BARRIER - DETAILS
		DRAWN – J. WALKER	REVISED –		
	PLOT SCALE =	CHECKED – P. MARTIN	REVISED –		
	PLOT DATE =	DATE – 10/04/2010	REVISED –		SCALE: AS SHOWN · SHEET NO. OF SHEETS · STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	26	17
		CONTRACT NO. 76D29		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



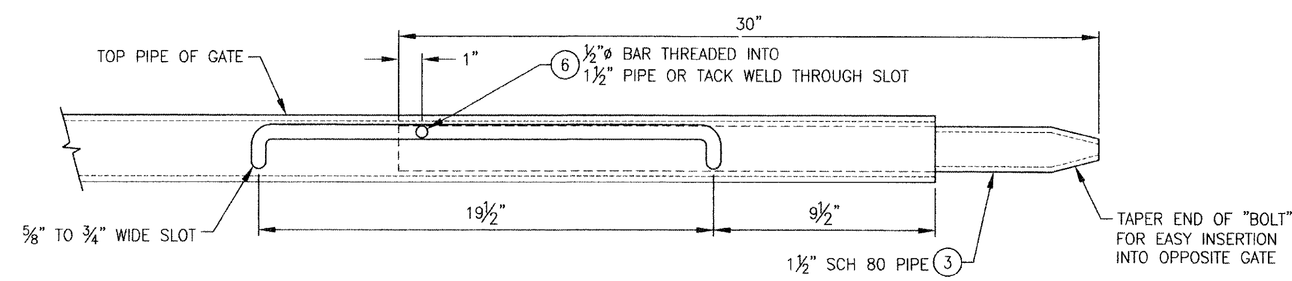
SWING GATE - ELEVATION

SCALE: 1-1/2" = 1'-0"



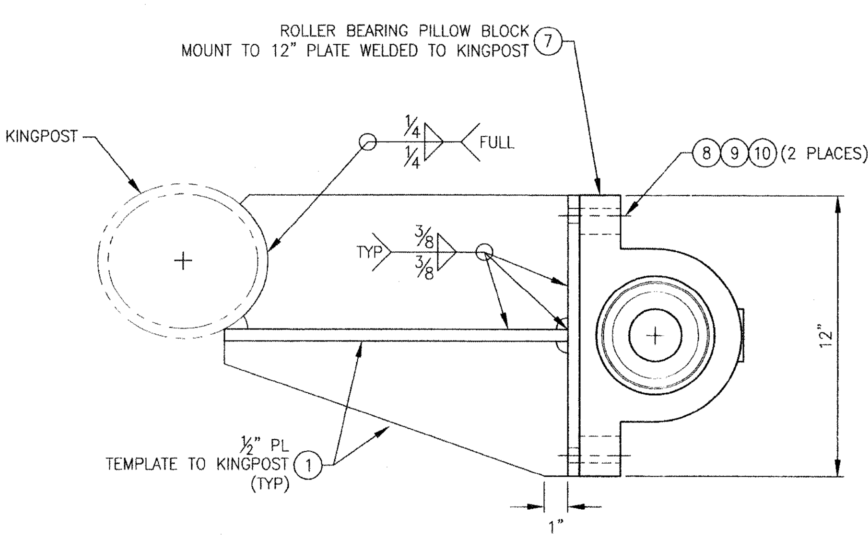
1 SWING GATE - SECTION

SCALE: 3" = 1'-0"



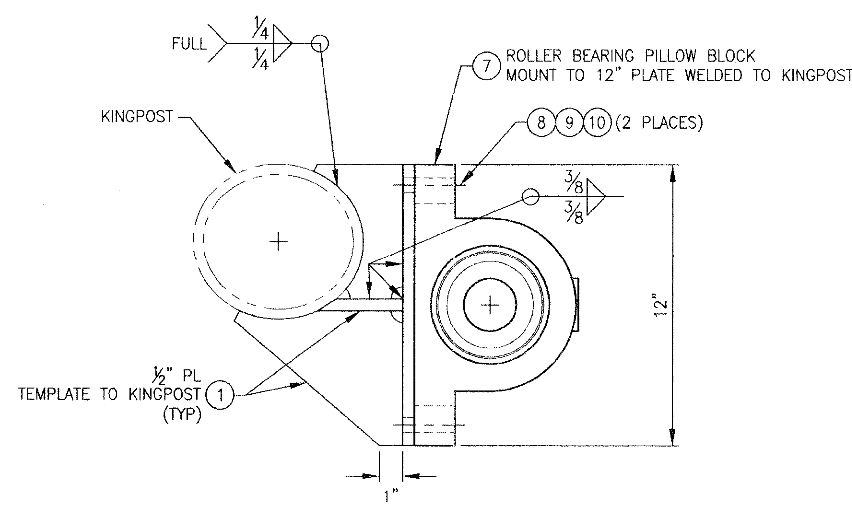
2 DETAIL

SCALE: 3" = 1'-0"



3 DETAIL

SCALE: 3" = 1'-0"



4 DETAIL

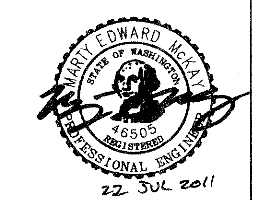
SCALE: 3" = 1'-0"

BILL OF MATERIAL			
PC NO.	QTY	DESCRIPTION	MATERIAL/SPECIFICATION/REMARKS
1	AS REQ	PLATE, ½"	ASTM A36
2	AS REQ	PIPE, 2½" SCH 80	ASTM A53
3	AS REQ	PIPE, 1½" SCH 80	ASTM A53
4	AS REQ	PIPE, ¾" SCH 80	ASTM A53
5	16 EA	ROUND BAR 2¼"øx12" LONG	AMTM A572 GR65
6	AS REQ	ROUND BAR ½"øx3" LONG	AMTM A572 GR65
7	8 EA	TAPERED ROLLER BEARING PILLOW BLOCK, 2¼" TYPE "K"	DODGE 023178 OR EQUAL
8	16 EA	BOLT, HEX, ⅝"-11UNC-2A-3½" LONG	FULLY THREADED, ASTM A354
9	16 EA	NUT, HEX, ⅝"-11UNC-2B	GRADE 8
10	16 EA	WASHER, ⅝", OD 1.500	STAINLESS 316

0 4" 8" 12" 2' 3' 4'
SCALE: 3/4" = 1'-0"

0 2" 4" 6" 12" 2'
SCALE: 1 1/2" = 1'-0"

0 2" 4" 8" 12"
SCALE: 3" = 1'-0"

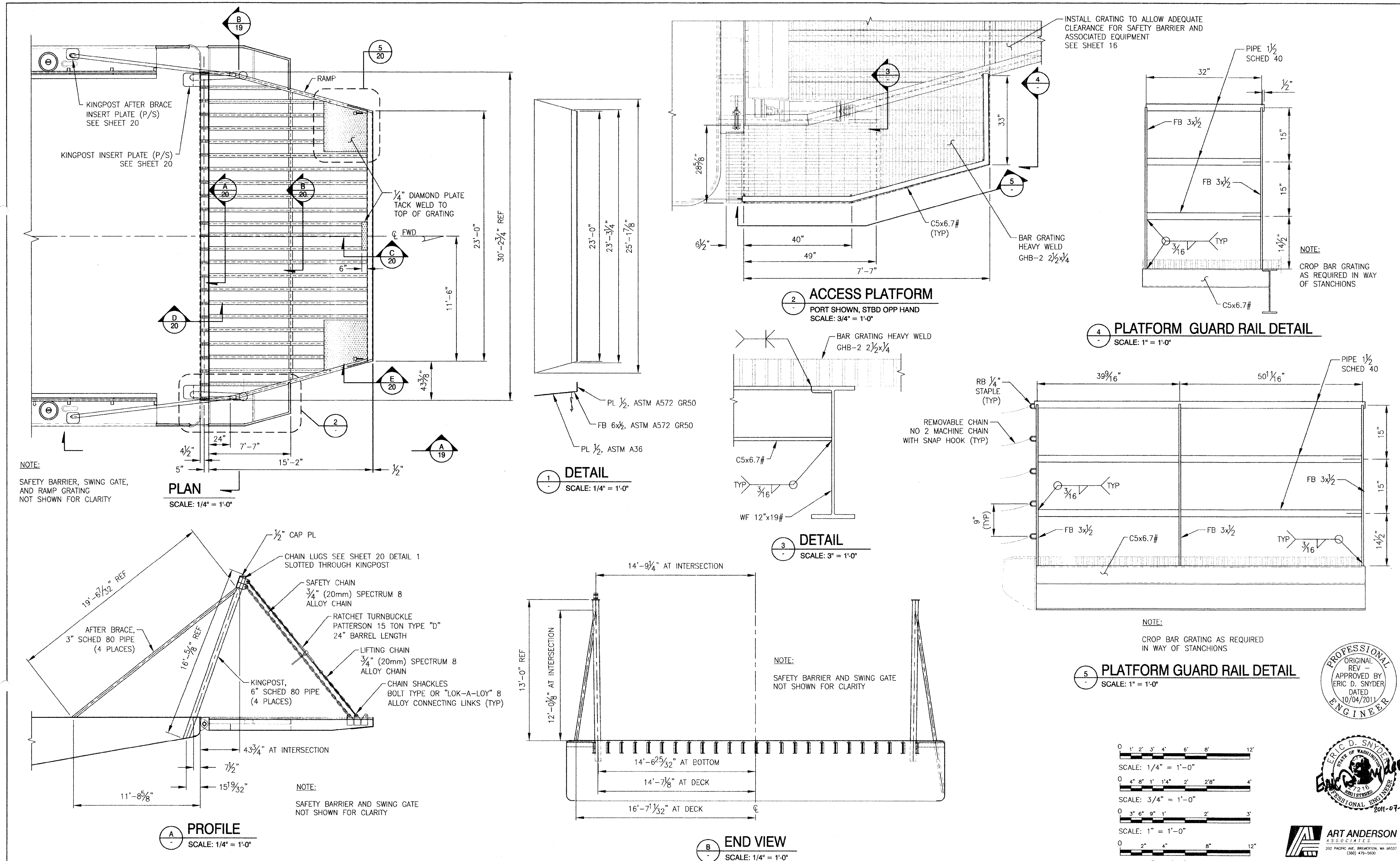


ART ANDERSON ASSOCIATES
202 PACIFIC AVE, BREMERTON, WA 98337
(360) 479-5600

DRAWING NO. CEIDT001BA-575-203

FILE NAME =	USER NAME =	DESIGNED — M. McKAY	REVISED —	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	IDOT BRUSSELS FERRY SWING GATE - ARRANGEMENT AND DETAILS
		DRAWN — J. WALKER	REVISED —		
	PLOT SCALE =	CHECKED — P. MARTIN	REVISED —		
	PLOT DATE =	DATE — 07/21/2011	REVISED —		SCALE: AS SHOWN · SHEET NO. OF SHEETS · STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	26	18
		CONTRACT NO. 76D29		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			

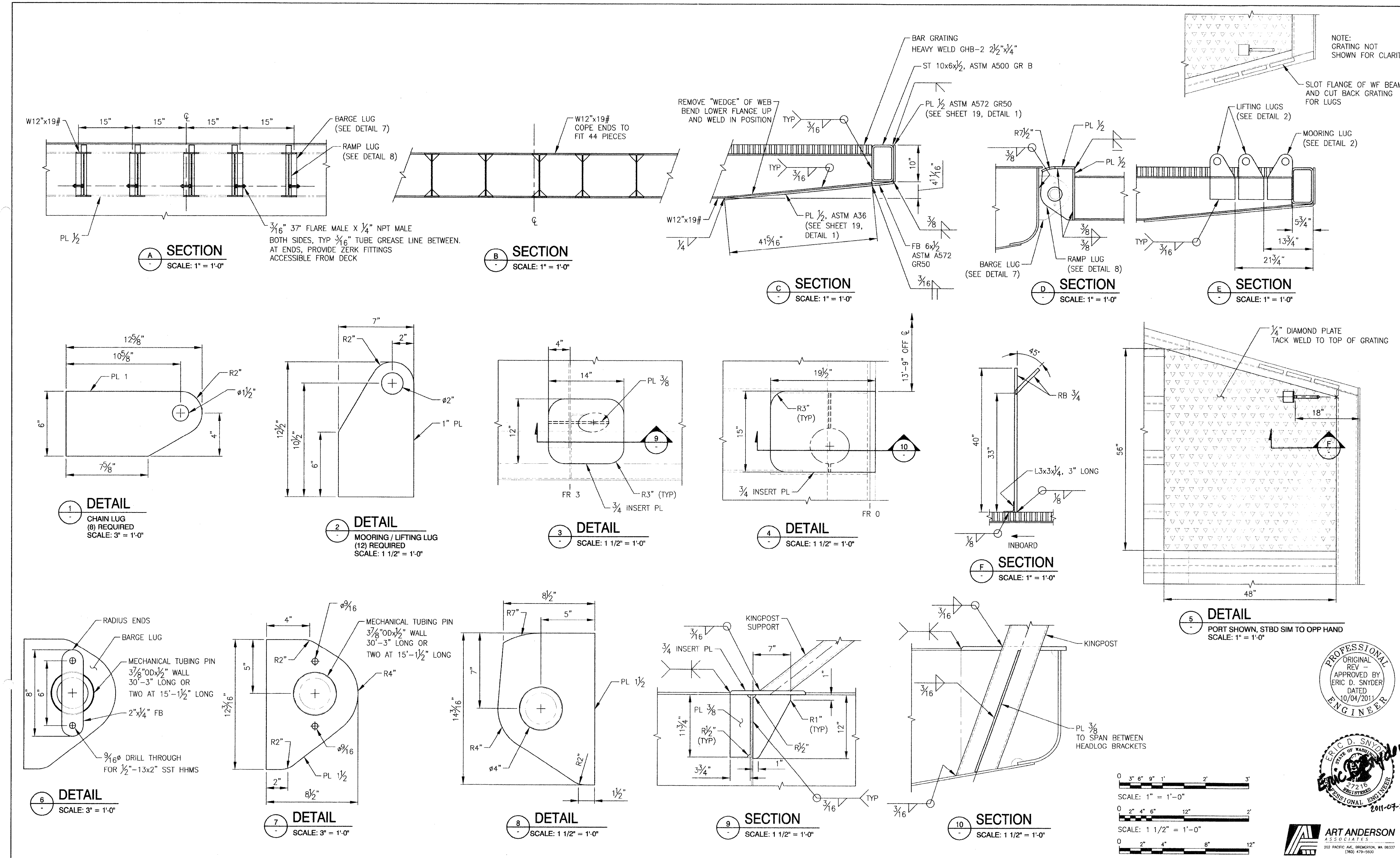


DRAWING NO. CEIDT001BA-584-201

FILE NAME =	USER NAME =	DESIGNED — E. SNYDER	REVISED — REV A 07/21/2011	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	IDOT BRUSSELS FERRY RAMPS AND SUSPENSION SYSTEM - STRUCTURE
		DRAWN — R. MANANSALA	REVISED —		
	PLOT SCALE =	CHECKED — P. MARTIN	REVISED —		
	PLOT DATE =	DATE — 10/04/2010	REVISED —		SCALE: AS SHOWN / SHEET NO. OF SHEETS / STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	26	19
		CONTRACT NO. 76D29		

FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT



DRAWING NO. CEIDT001BA-584-202

FILE NAME =	USER NAME =	DESIGNED – E. SYNDER	REVISED – REV A 07/21/2011
		DRAWN – R. MANANSALA	REVISED –
	PLOT SCALE =	CHECKED – P. MARTIN	REVISED –
	PLOT DATE =	DATE – 10/04/2010	REVISED –

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

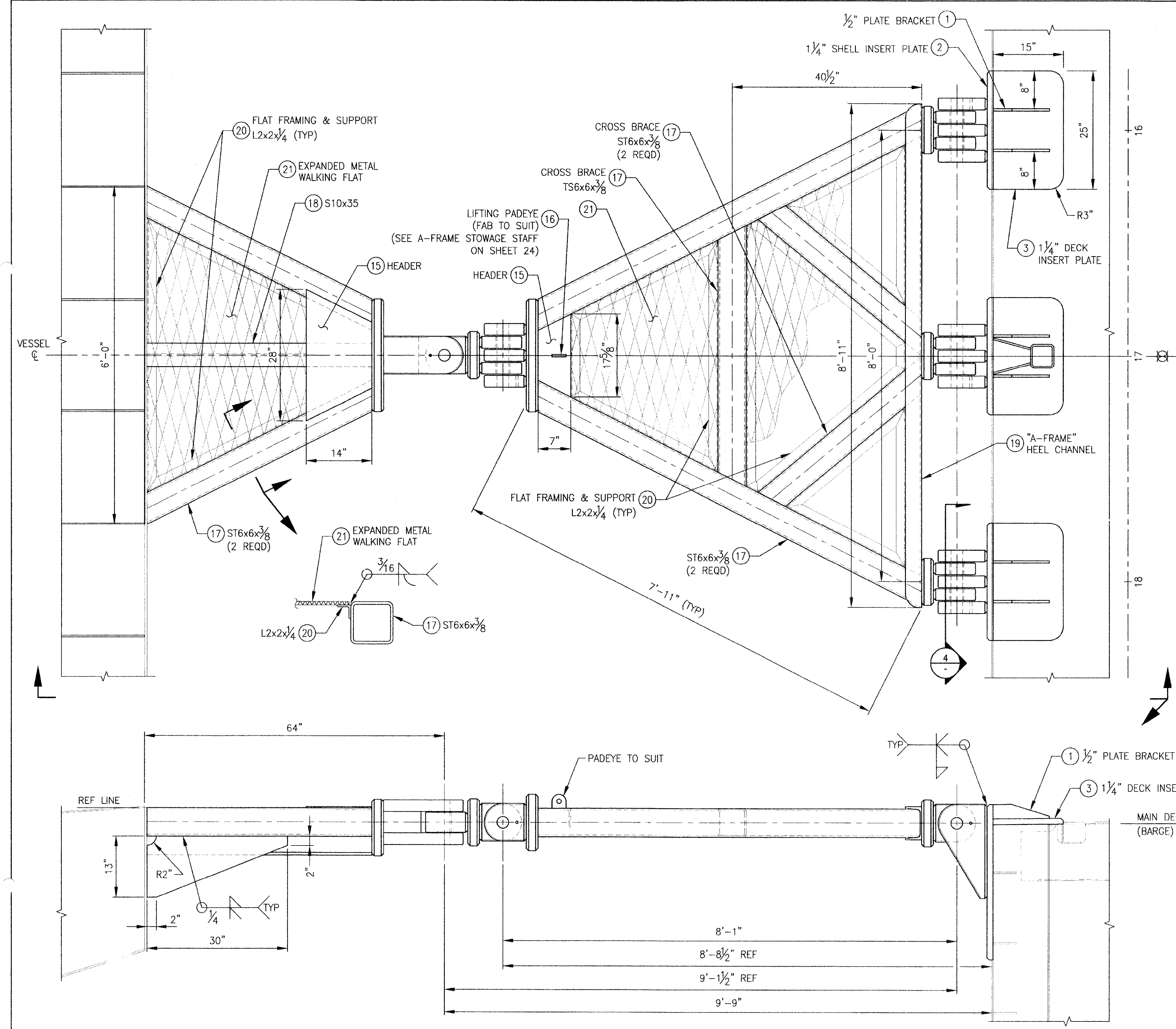
IDOT BRUSSELS FERRY
RAMPS AND SUSPENSION SYSTEM - DETAILS

SCALE: AS SHOWN | SHEET NO. OF SHEETS | STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	26	20

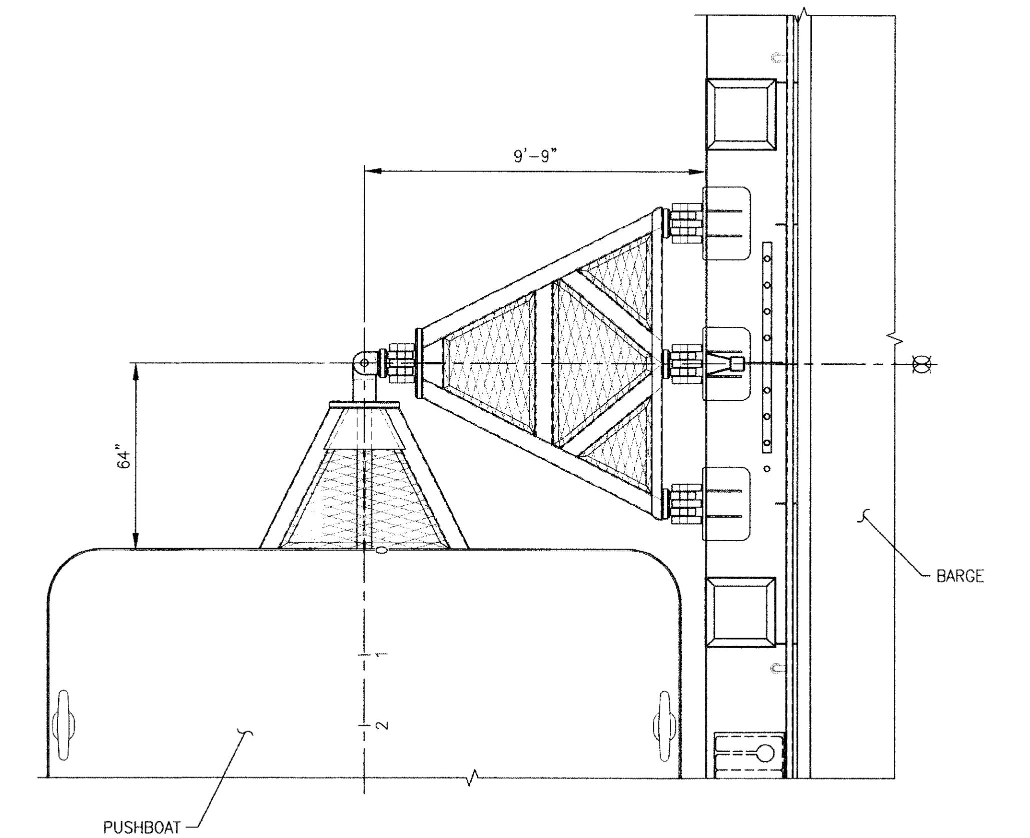
CONTRACT NO. 76D29

FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT

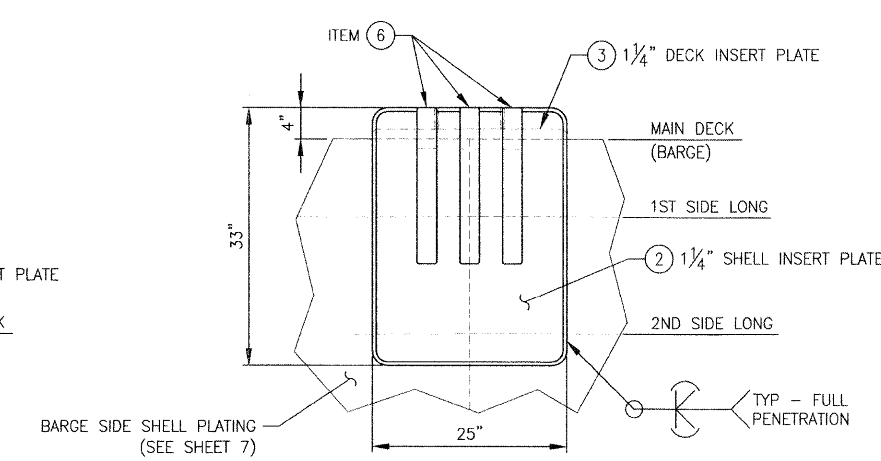


2 PUSHBOAT YOKE DETAIL
1 ASSEMBLY REQUIRED
SCALE: 1" = 1'-0"

3 BARGE "A-FRAME" DETAIL
1 ASSEMBLY REQUIRED
SCALE: 1" = 1'-0"



1 KEY PLAN
TOW-LINKAGE YOKE/A-FRAME ARRANGEMENT
SCALE: 3/8" = 1'-0"



4 DETAIL
TYPICAL 3 PLACES
SCALE: 1" = 1'-0"

NOTE:
SEE SHEET 22 FOR BILL OF MATERIALS

SCALE: 3/8" = 1'-0"

SCALE: 1" = 1'-0"

PROFESSIONAL ENGINEER ORIGINAL REV - APPROVED BY ERIC D. SNYDER DATED 10/04/2011

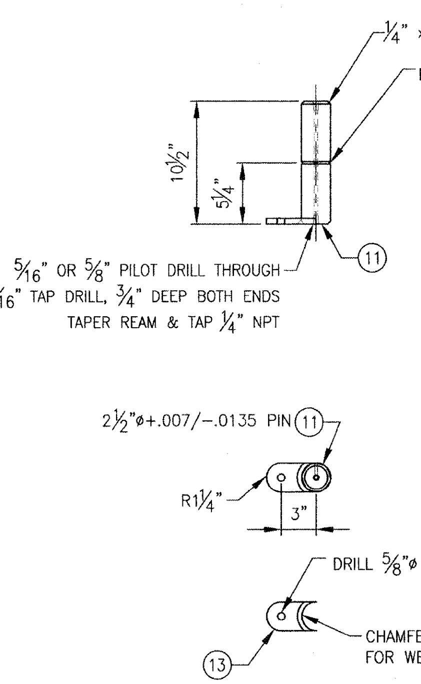
ERIC D. SNYDER STATE OF WASHINGTON 27216 REGISTERED PROFESSIONAL ENGINEER 2011-07-22

ART ANDERSON ASSOCIATES
202 PACIFIC AVE, BREMERTON, WA 98337 (360) 479-5600

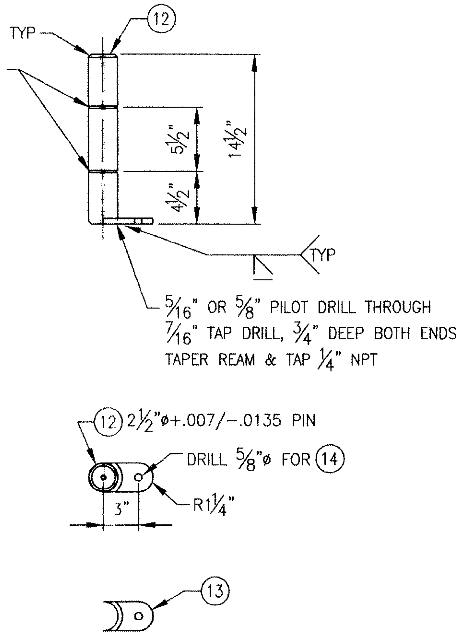
DRAWING NO. CEIDT001BA-611-201

FILE NAME =	USER NAME =	DESIGNED – E. SNYDER	REVISED – REV A 07/21/2011	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	IDOT BRUSSELS FERRY TOW LINKAGE - STRUCTURE
		DRAWN – J. WALKER	REVISED –		
	PLOT SCALE =	CHECKED – P. MARTIN	REVISED –		
	PLOT DATE =	DATE – 10/04/2010	REVISED –		SCALE: NTS · SHEET NO. OF SHEETS · STA. TO STA.

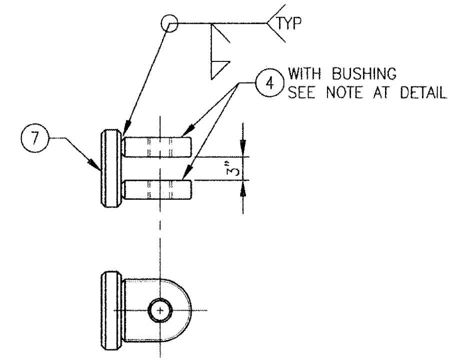
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	26	21
		CONTRACT NO. 76D29		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



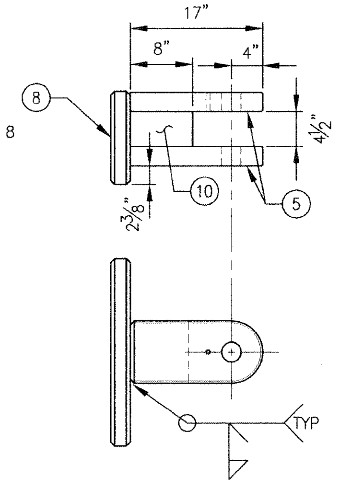
1 2-LUG PIN DETAIL
1 REQUIRED
SCALE: 1 1/2" = 1'-0"



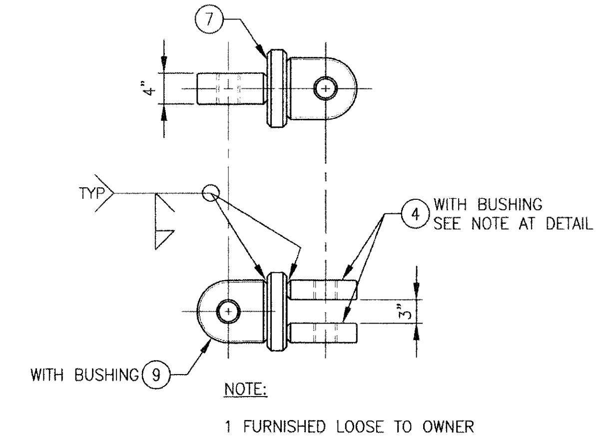
2 3-LUG PIN DETAIL
4 REQUIRED
SCALE: 1 1/2" = 1'-0"



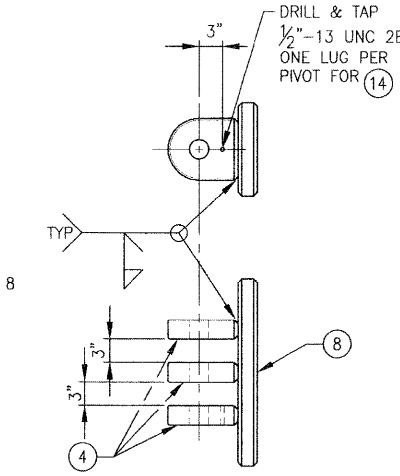
2 2-LUG PIVOT DETAIL
3 REQUIRED ON BARGE "A-FRAME"
SCALE: 1" = 1'-0"



3 2-LUG PIVOT DETAIL
(1) REQUIRED
SCALE: 1" = 1'-0"

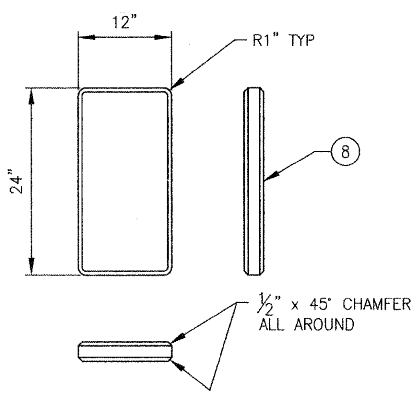


4 JAW-EYE TOGGLE DETAIL
2 REQUIRED
SCALE: 1" = 1'-0"

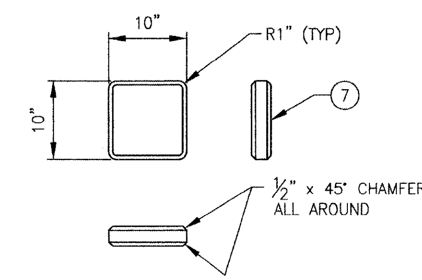


5 3-LUG PIVOT DETAIL
(1) REQUIRED
SCALE: 1" = 1'-0"

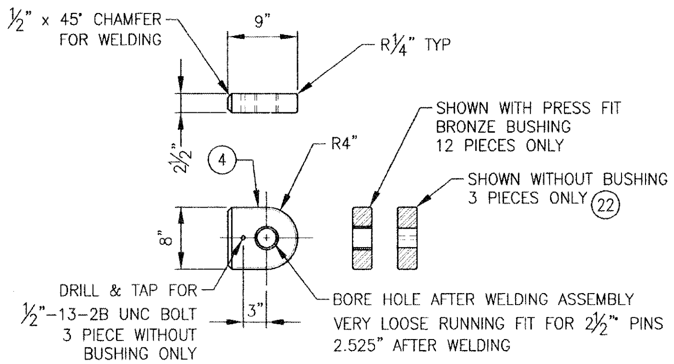
BILL OF MATERIAL				
PC NO.	QTY	DESCRIPTION	MATERIAL/SPECIFICATION	REMARKS
1	6 EA	PLATE ½" BRACKET	ASTM A-36	SEE DETAIL 12
2	3 EA	PLATE 1¼", SHELL INSERT	ASTM A-36	SEE SHEET 21, DETAIL 4
3	3 EA	PLATE 1¼", DECK INSERT	ASTM A-36	SEE SHEET 21, DETAIL 3
4	15 EA	PLATE 2½", LUG, 9" LONG	ASTM A-36	SEE DETAIL 8
5	2 EA	PLATE 2½", LUG, 17" LONG	ASTM A-36	SEE DETAIL 10
6	9 EA	PLATE 2½", LUG, 20" LONG	ASTM A-36	SEE DETAIL 11
7	4 EA	PLATE 2½", LUG BASE PLATE, 10"x10"	ASTM A-36	SEE DETAIL 7
8	2 EA	PLATE 2½", LUG BASE PLATE, 24"x12"	ASTM A-36	SEE DETAIL 6
9	2 EA	PLATE 4", LUG, 9" LONG	ASTM A-36	SEE DETAIL 9
10	1 EA	PLATE 4½", SPACER BLOCK, 8" LONG	ASTM A-36	SEE DETAIL 3
11	1 EA	ROUND BAR 2½", 2-LUG PIN	ASTM A-36	SEE DETAIL 1
12	4 EA	ROUND BAR 2½", 3-LUG PIN	ASTM A-36	SEE DETAIL 2
13	5 EA	FB 2½x½, PIN RETAINING TAB	ASTM A-36	SEE DETAIL 1
14	5 EA	HEX HEAD BOLT ½-13 UNC 2A, PIN RETAINING BOLT	ASTM F593, TYPE 316 SS	–
15	5.5 SF	PLATE ⅜"	ASTM A-36	–
16	1 SF	PLATE ½", PADEYE	ASTM A-36	–
17	36 LF	STRUCTURAL TUBE 6x6x⅜	ASTM A500 GR B	–
18	4 LF	S-BEAM S10x35	ASTM A-36	–
19	9 LF	CHANNEL C7x19.1	ASTM A-36	–
20	53 LF	ANGLE L2x2x¼	ASTM A-36	–
21	31 SF	EXPANDED METAL	CARBON STEEL	McNICHOLS 1½ #13S
22	AS REQ	BUSHING, 3" ODx2½" ID	BRONZE	–
23	1 EA	PLATE 2½", LUG BASE PLATE, 10"x12"	ASTM A-36	SEE DETAIL 13



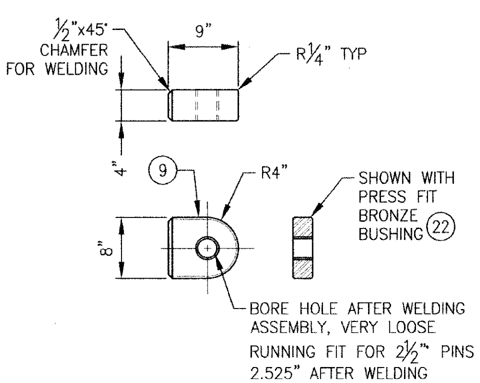
6 3-LUG BASE DETAIL
2 PIECES
SCALE: 1" = 1'-0"



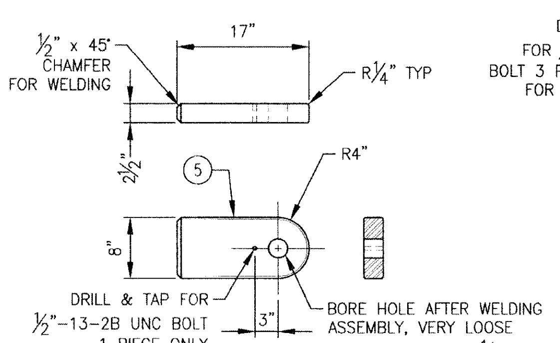
7 2-LUG BASE DETAIL
4 PIECES
SCALE: 1" = 1'-0"



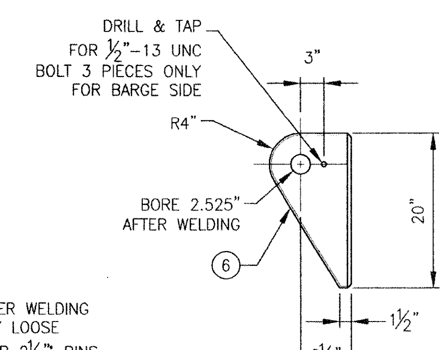
8 LUG DETAIL
11 PIECES
SCALE: 1" = 1'-0"



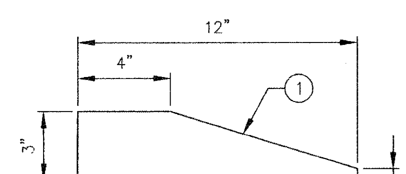
9 LUG DETAIL
SCALE: 1" = 1'-0"



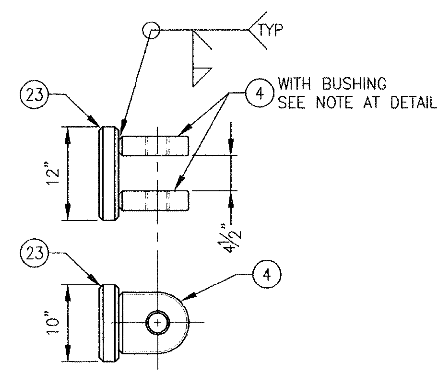
10 LUG DETAIL
2 PIECES
SCALE: 1" = 1'-0"



11 2-LUG PIVOT DETAIL
(9) REQUIRED ON BARGE SIDE
SCALE: 1" = 1'-0"



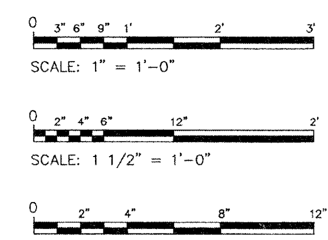
12 PLATE BRACKET DETAIL
(6) REQUIRED ON BARGE
SCALE: 3" = 1'-0"

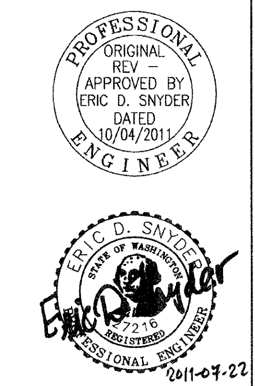


NOTE:

FURNISHED LOOSE TO OWNER

13 2-LUG PIVOT DETAIL
1 REQUIRED
SCALE: 1" = 1'-0"



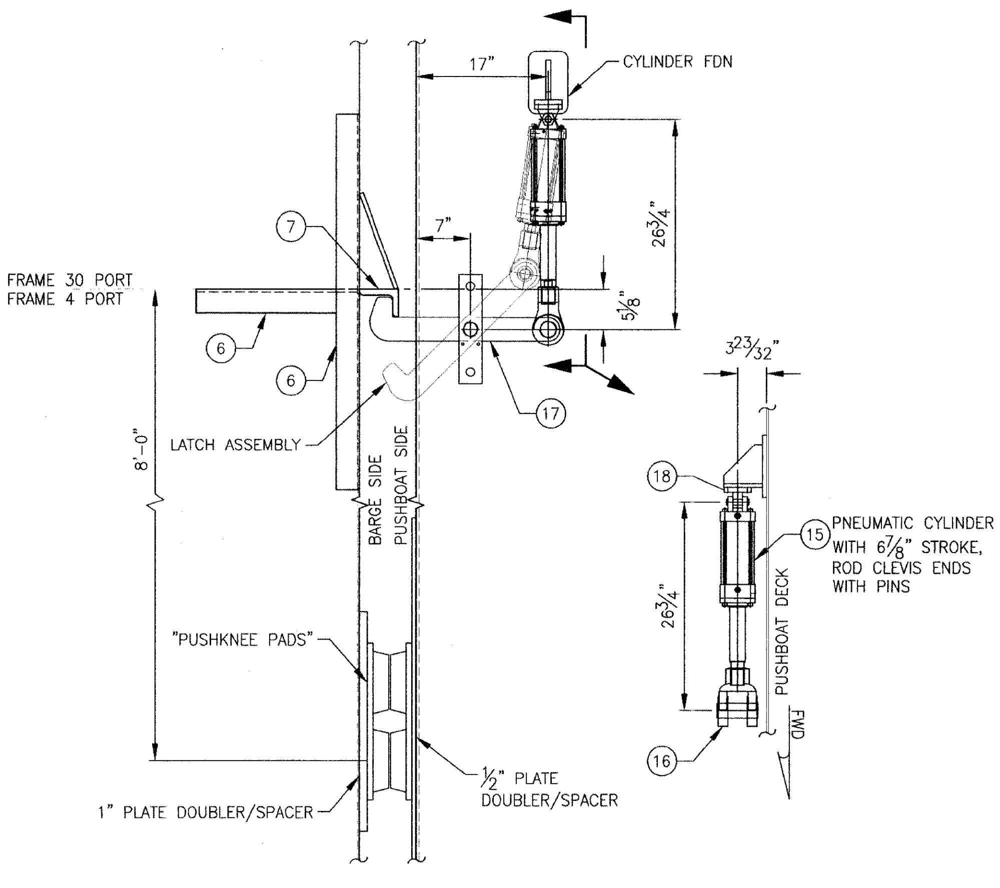


ART ANDERSON
ASSOCIATES
202 PACIFIC AVE, BREMERTON, WA 98337
(360) 479-5600

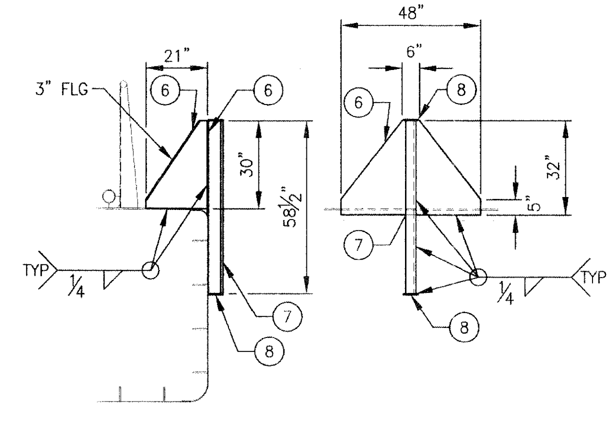
DRAWING NO. CEIDT001BA-611-202

FILE NAME =	USER NAME =	DESIGNED – E. SNYDER	REVISED – REV A 07/21/2011	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	IDOT BRUSSELS FERRY TOW LINKAGE - DETAILS
		DRAWN – J. WALKER	REVISED –		
	PLOT SCALE =	CHECKED – P. MARTIN	REVISED –		
	PLOT DATE =	DATE – 10/04/2010	REVISED –		SCALE: NTS · SHEET NO. OF SHEETS · STA. TO STA.

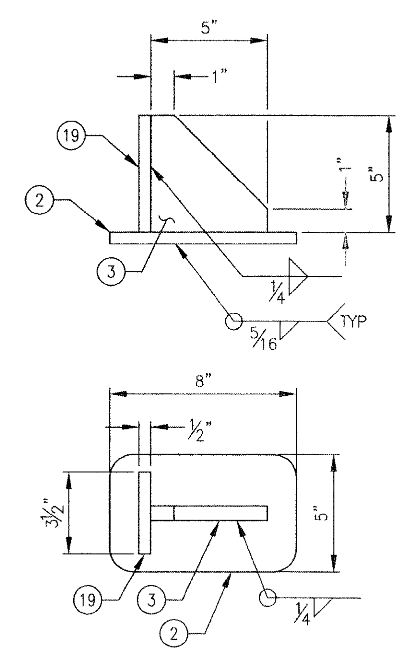
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	26	22
		CONTRACT NO. 76D29		
FED. ROAD DIST. NO.	ILLINOIS	AID PROJECT		



LATCH ASSEMBLY
SCALE: 1" = 1'-0"

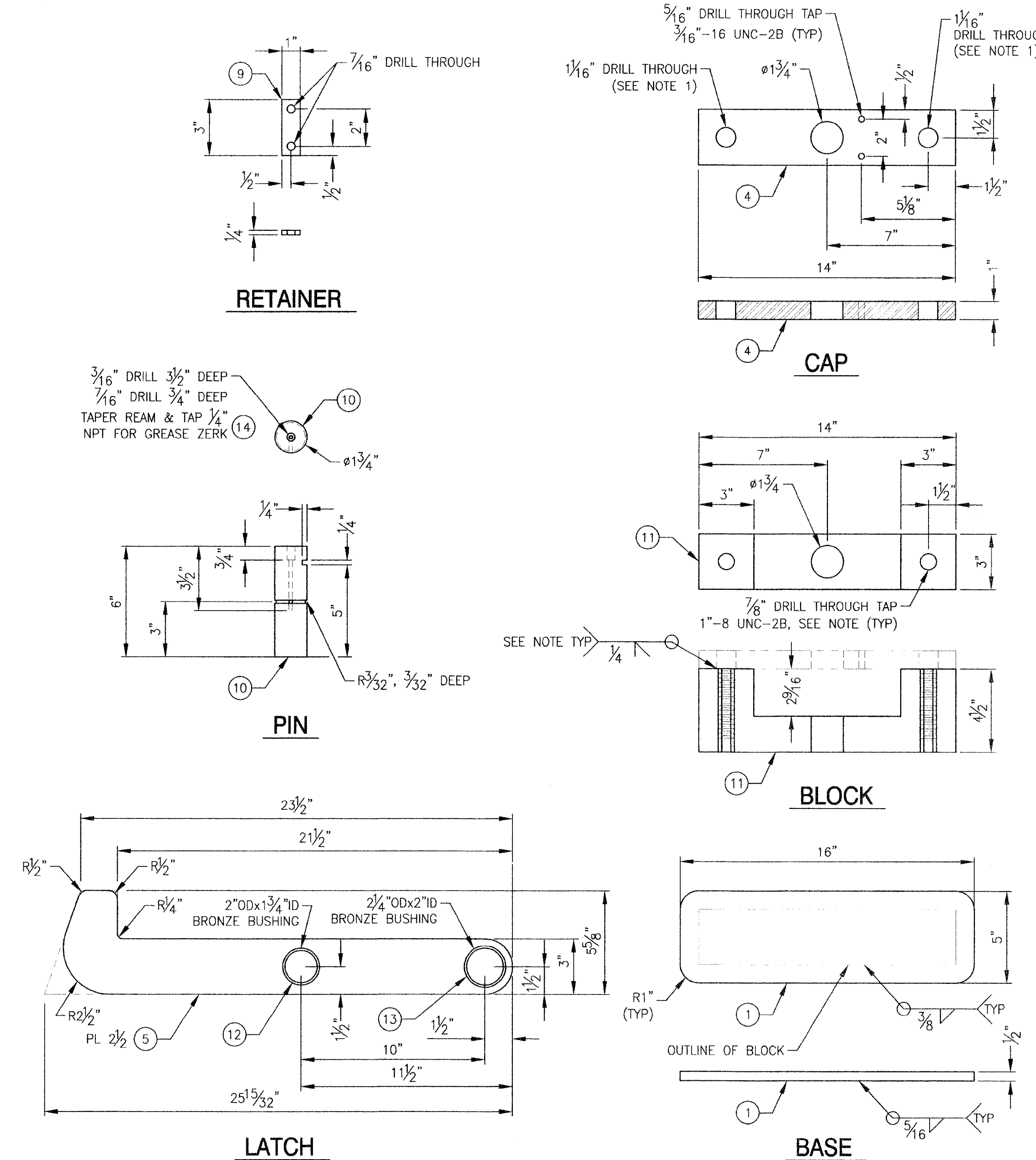


TOWING LATCH HOOK ANGLE
SCALE: 3/8" = 1'-0"



CYLINDER FDN
SCALE: 3" = 1'-0"

BILL OF MATERIAL			
PC NO.	QTY	DESCRIPTION	MATERIAL/SPECIFICATION/REMARKS
1	2 EA	BASE	½" PLATE, A-36, 5"x16"
2	2 EA	CYLINDER FDN BASE	½" PLATE, A-36, 8"x5"
3	2 EA	CYLINDER FDN BRACKET	½" PLATE, A-36, 5"x5"
4	2 EA	CAP	1" PLATE, A-36, 3"x14"
5	2 EA	LATCH	2½" PLATE, A-36, 5⅝"x24½"
6	4 EA	LATCH ANGLE BRACKET WITH 3" FLG	⅜" PLATE, A-36, 48"x32" & 21"x30"
7	2 EA	LATCH ANGLE	L5x3½"x¾"67½" LONG, A-36
8	4 EA	FB ⅜"x5"x5" LONG	A-36
9	2 EA	RETAINER	FB ¼"x1", A-36, 3" LONG
10	2 EA	PIN	RB 1¾", 1045 STEEL, 6" LONG
11	2 EA	BLOCK	4½" BAR, A-36, 3"x14"
12	2 EA	BUSHING	2"ODx1¾"IDx2½" LONG, BRONZE PRESS FIT
13	2 EA	BUSHING	2¼"ODx2"IDx2½" LONG, BRONZE PRESS FIT
14	2 EA	GREASE ZERK	COMMERCIAL, SST, ¼" NPT
15	2 EA	PNEUMATIC CYLINDER	PARKER HANNIFIN 4.00CBB2AU58ACX6.875
16	2 EA	CLEVIS	PARKER HANNIFIN 50947
17	2 EA	PIN	PARKER HANNIFIN 68373
18	2 EA	MOUNTING PLATE	PARKER HANNIFIN 69196
19	2 EA	CYLINDER FDN MOUNTING PLATE	½" PLATE, A-36, 5"x3½"



NOTE:

1. "CAP" MAY BE WELDED TO "BLOCK" THEREFORE BOLTS, HOLES & THREADED HOLES MAY BE ELIMINATED

LATCH AND LATCH FDN PIECES
SCALE: 3" = 1'-0"

PROFESSIONAL ENGINEER
ORIGINAL REV - APPROVED BY ERIC D. SNYDER DATED 10/04/2011

SCALE: 3/8" = 1'-0"

SCALE: 1" = 1'-0"

SCALE: 3" = 1'-0"

ERIC D. SNYDER STATE OF WASHINGTON REGISTERED PROFESSIONAL ENGINEER

Eric Snyder 2011-07-22

ART ANDERSON ASSOCIATES
202 PACIFIC AVE. BREMERTON, WA 98337 (360) 479-5600

DRAWING NO. CEIDT001BA-611-203

FILE NAME =	USER NAME =	DESIGNED – E. SNYDER	REVISED – REV A 07/21/2011
		DRAWN – J. WALKER	REVISED –
	PLOT SCALE =	CHECKED – P. MARTIN	REVISED –
	PLOT DATE =	DATE – 10/04/2010	REVISED –

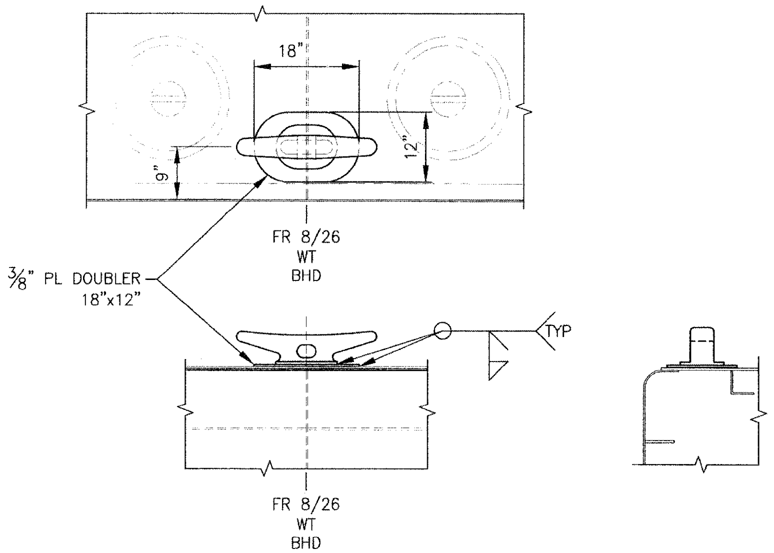
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IDOT BRUSSELS FERRY
TOW LINKAGE - LATCH

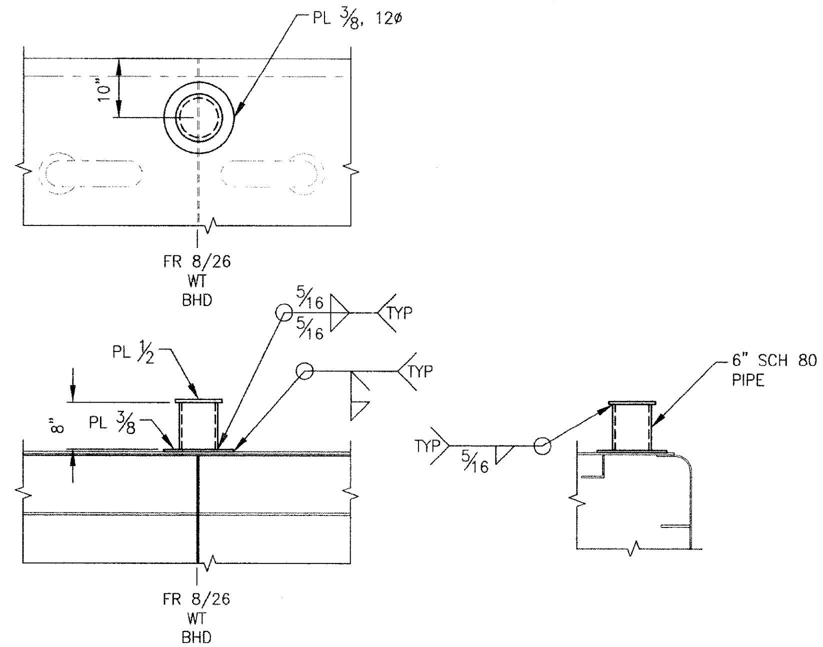
SCALE: AS SHOWN | SHEET NO. OF SHEETS | STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	26	23
		CONTRACT NO. 76D29		

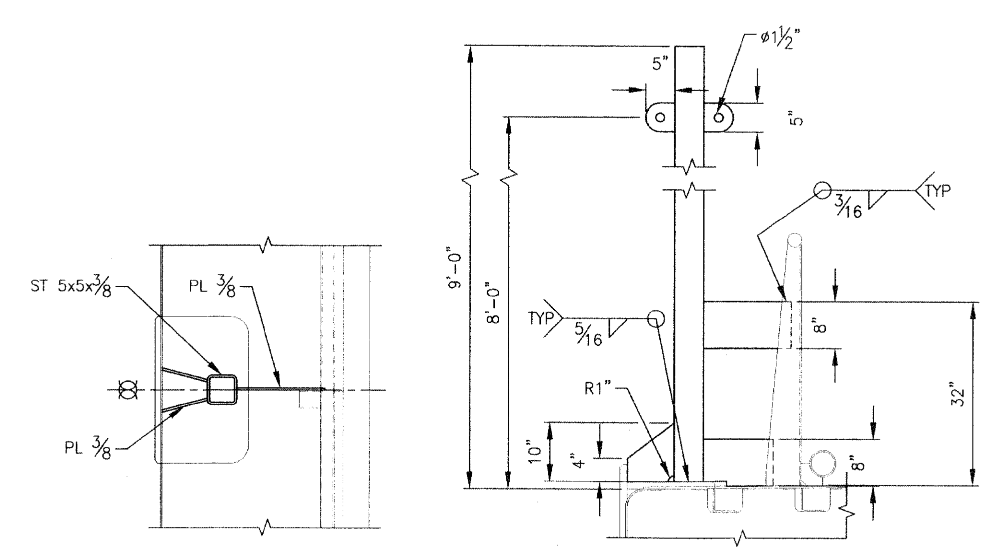
FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT



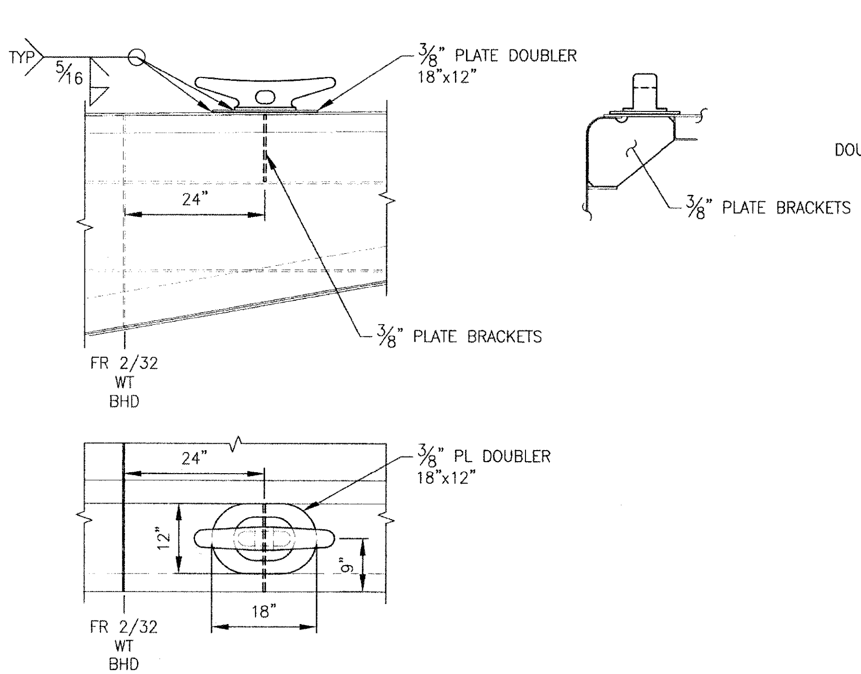
1 24" KEVEL DETAIL
2 PLACES OPPOSITE OF PUSHBOAT
SCALE: 3/4" = 1'-0"



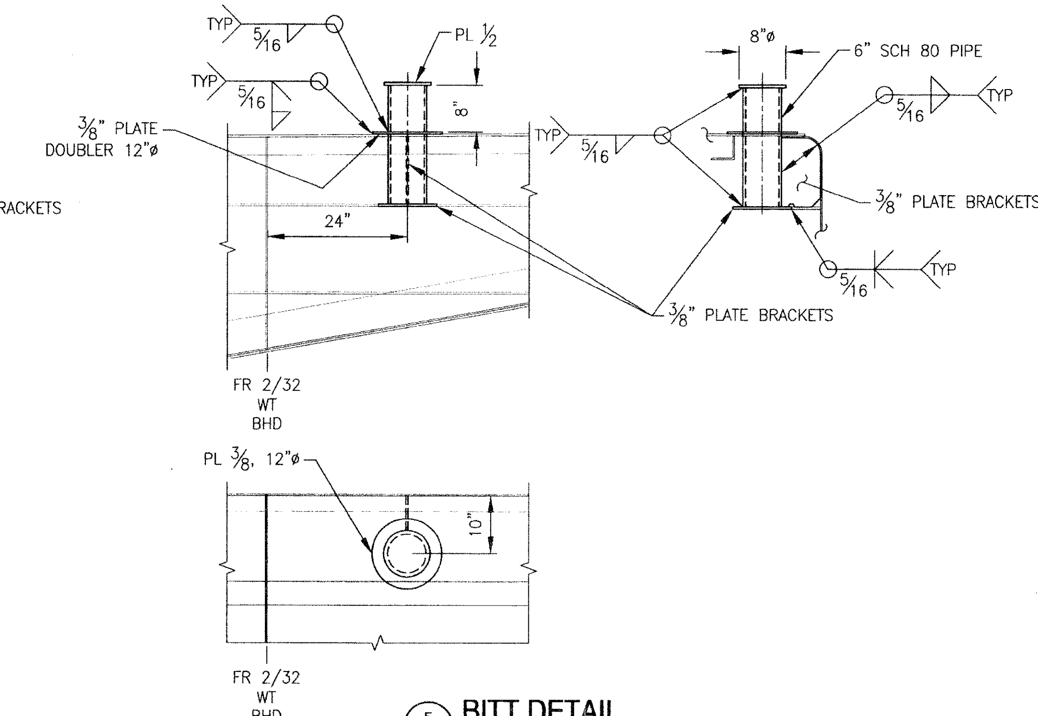
2 BITT DETAIL
2 PLACES ON PUSHBOAT SIDE
SCALE: 3/4" = 1'-0"



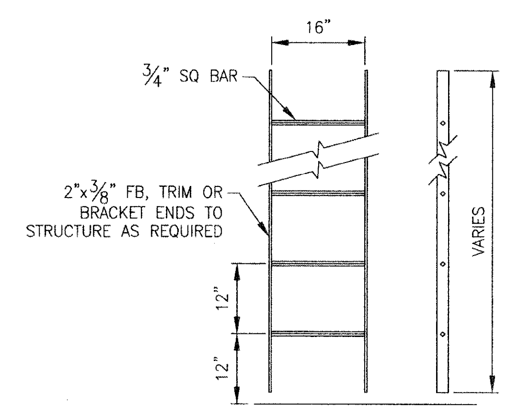
3 A-FRAME STOWAGE STAFF
SCALE: 3/4" = 1'-0"



4 24" KEVEL DETAIL
2 PLACES OPPOSITE OF PUSHBOAT
SCALE: 3/4" = 1'-0"



5 BITT DETAIL
2 PLACES ON PUSHBOAT SIDE
SCALE: 3/4" = 1'-0"



6 VERTICAL LADDER
FOURTEEN REQUIRED
ONE AT EACH MANHOLE
SCALE: 3/4" = 1'-0"

PROFESSIONAL ENGINEER
ORIGINAL
REV –
APPROVED BY
ERIC D. SNYDER
DATED
10/04/2011

ERIC D. SNYDER
STATE OF WASHINGTON
37216
REGISTERED
PROFESSIONAL ENGINEER
2011-07-22

0 4" 8" 1' 1'4" 2' 2'8" 4'
SCALE: 3/4" = 1'-0"

ART ANDERSON
ASSOCIATES
202 PACIFIC AVE, BREMERTON, WA 98337
(360) 479-5600

DRAWING NO. CEIDT001BA-623-201

FILE NAME =	USER NAME =	DESIGNED – E. SNYDER	REVISED – REV A 07/21/2011
		DRAWN – C. FAWVER	REVISED –
	PLOT SCALE =	CHECKED – P. MARTIN	REVISED –
	PLOT DATE =	DATE – 10/04/2010	REVISED –

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

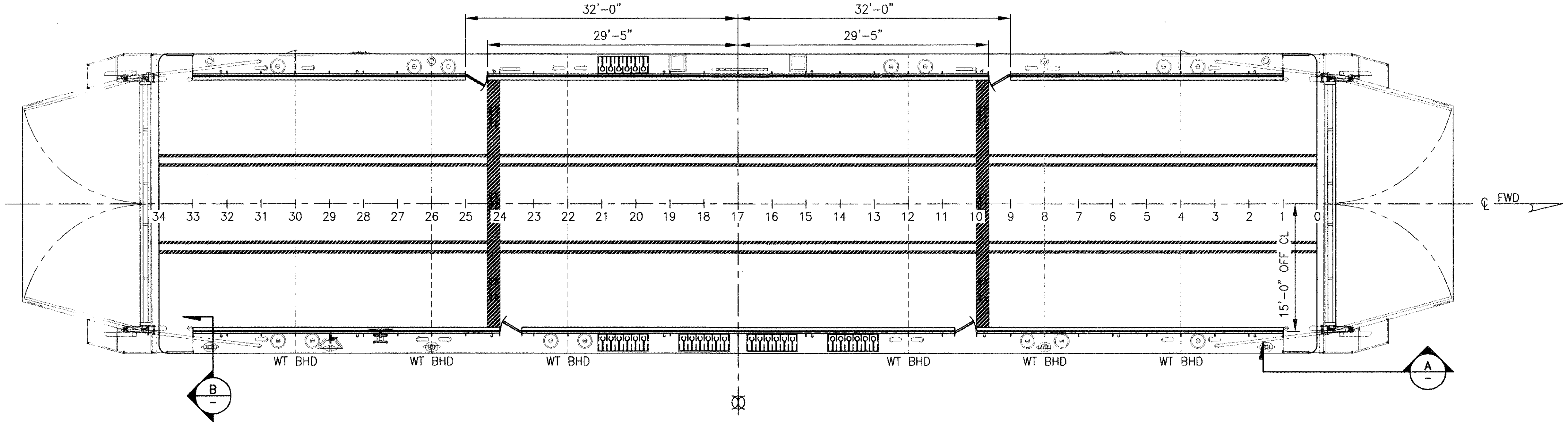
IDOT BRUSSELS FERRY
DECK FITTINGS AND LADDERS - BARGE

SCALE: AS SHOWN | SHEET NO. OF SHEETS | STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	26	24

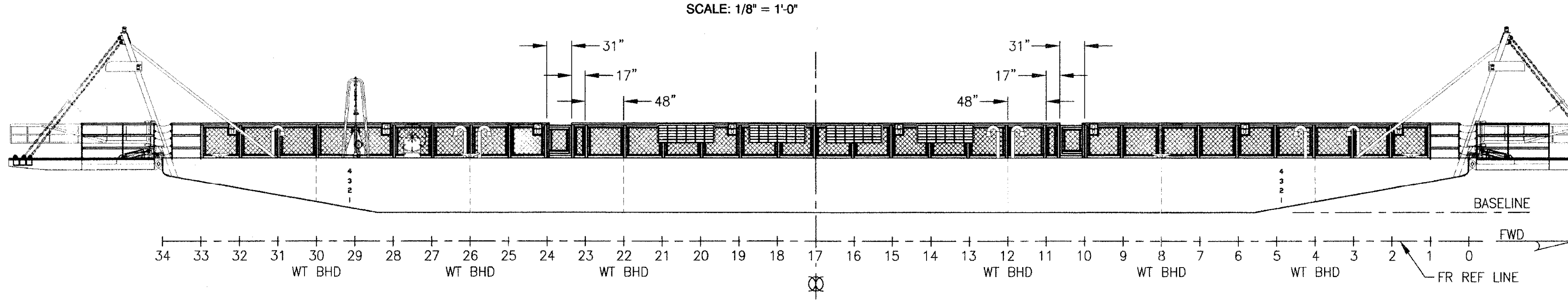
CONTRACT NO. 76D29

FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT



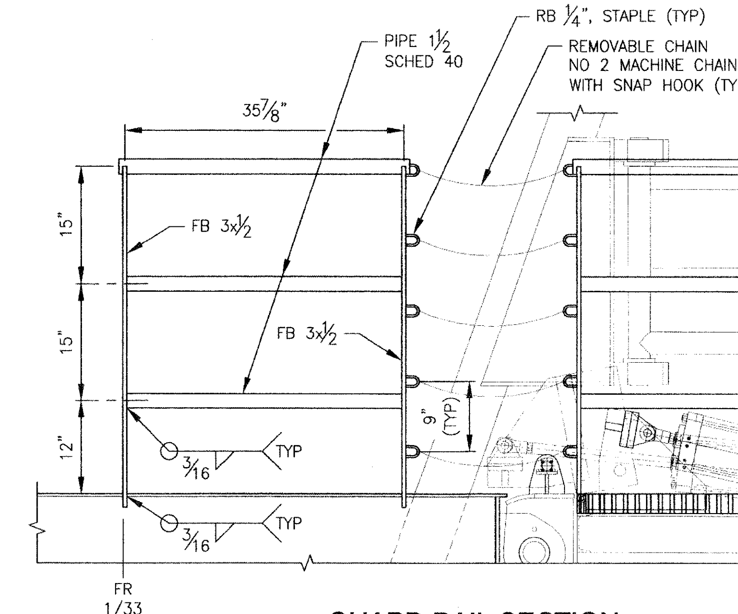
GENERAL ARRANGEMENT

SCALE: 1/8" = 1'-0"



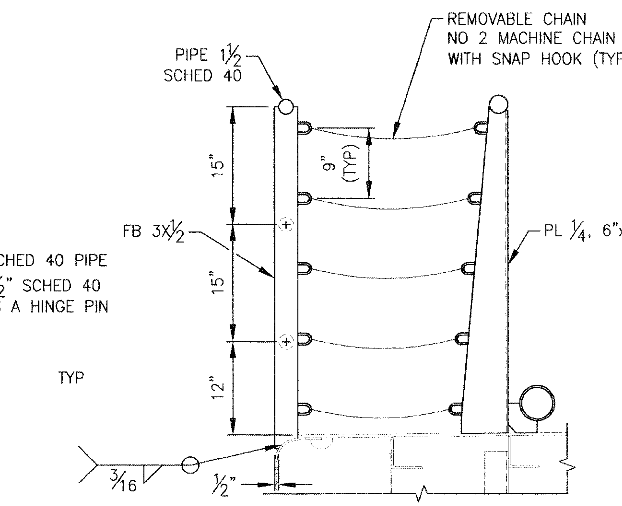
OUTBOARD PROFILE

SCALE: 1/8" = 1'-0"



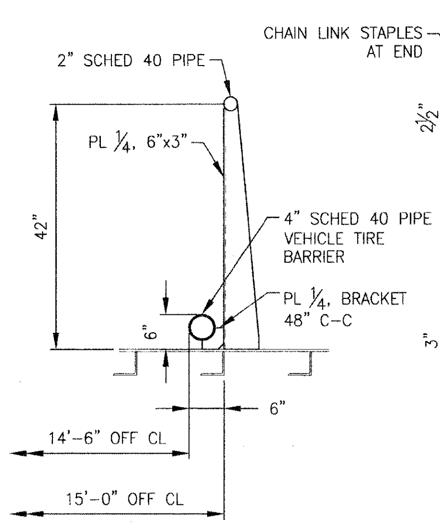
(A) GUARD RAIL SECTION

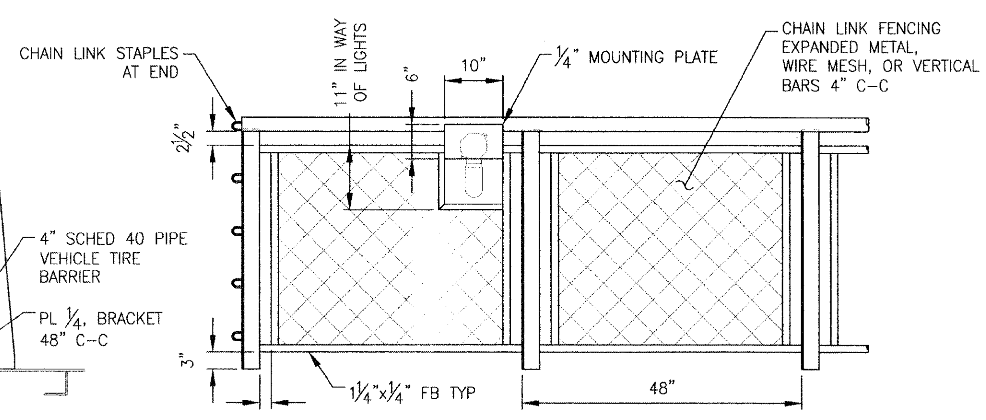
SCALE: 1" = 1'-0"



(B) GUARD RAIL SECTION

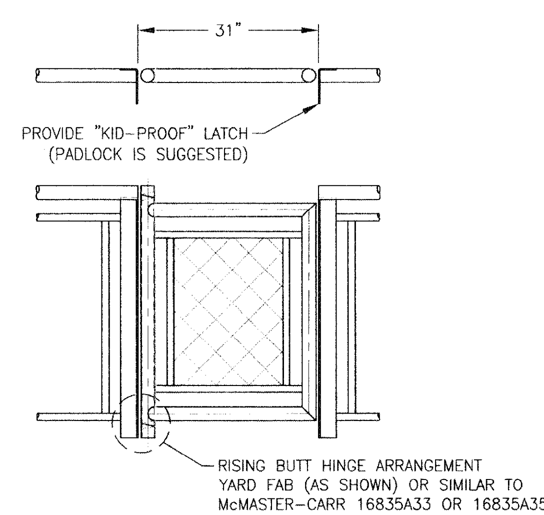
AT FRAME 1, 33 (P/S)
SCALE: 1" = 1'-0"





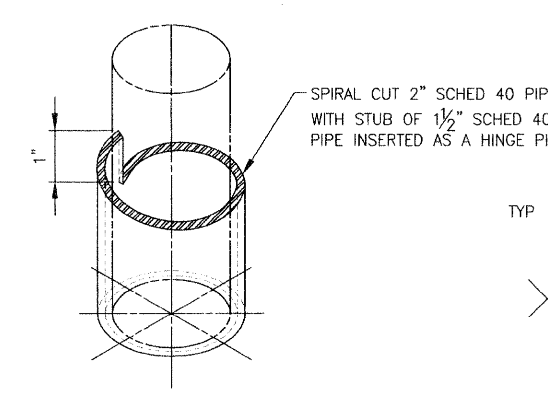
RAILS

SCALE: 3/4" = 1'-0"



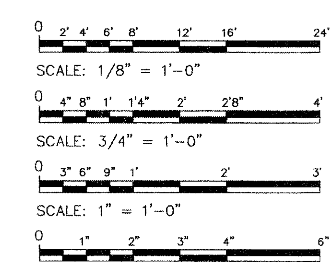
GATE

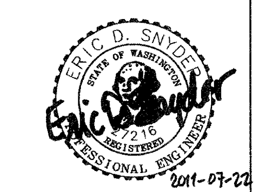
FOUR REQUIRED
TWO LEFT HAND & TWO RIGHT HAND
SCALE: 3/4" = 1'-0"



GATE HINGE

DECK MOUNTED PORTION SHOWN
SCALE: 6" = 1'-0"





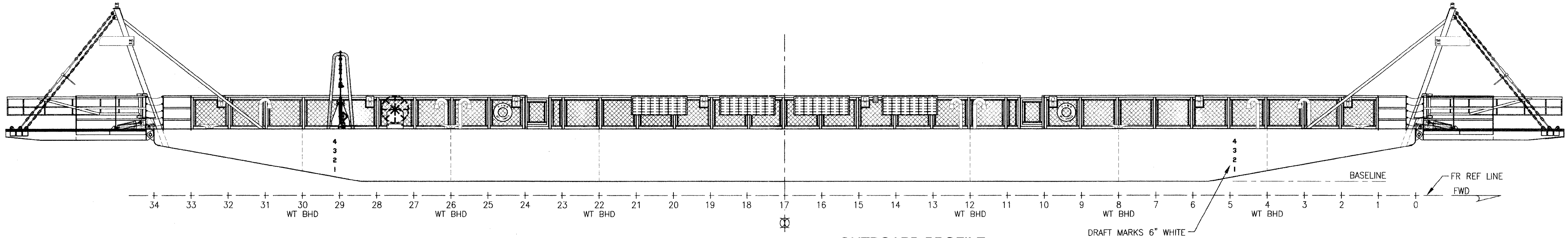
ART ANDERSON ASSOCIATES

DRAWING NO. CEIDT001BA-623-202

FILE NAME =	USER NAME =	DESIGNED — E. SNYDER	REVISED — REV A 07/21/2011	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	IDOT BRUSSELS FERRY DECK FITTINGS AND RAILINGS - BARGE
		DRAWN — C. FAWVER	REVISED —		
	PLOT SCALE =	CHECKED — P. MARTIN	REVISED —		
	PLOT DATE =	DATE — 10/04/2010	REVISED —		SCALE: AS SHOWN / SHEET NO. OF SHEETS / STA. TO STA.

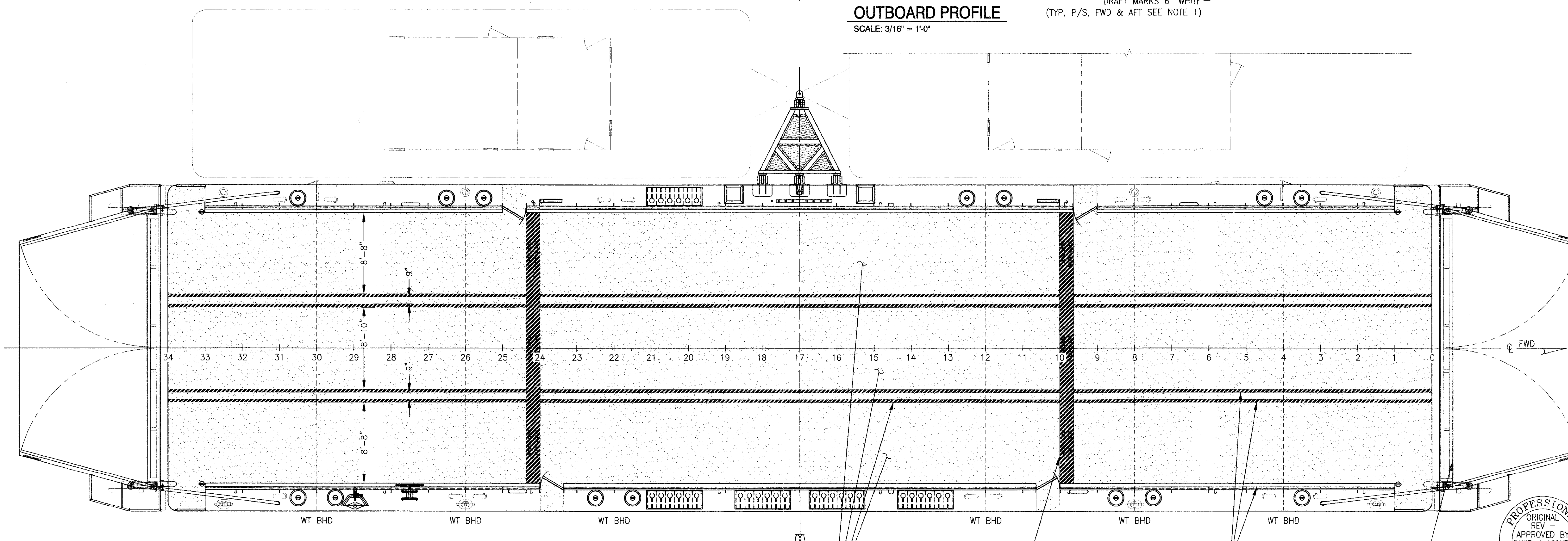
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	26	25
		CONTRACT NO. 76D29		

FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT



OUTBOARD PROFILE

SCALE: 3/16" = 1'-0"



DECK PLAN

SCALE: 3/16" = 1'-0"

NOTES:

1. SEE CONSTRUCTION SPECIFICATIONS FOR PAINTING SCHEDULE AND APPLICATION REQUIREMENTS.
2. NON-SKID SHALL NOT BE APPLIED WITHIN 4" OF CURBS, COAMINGS OR OTHER VERTICAL SURFACES.
3. SHADED AREAS INDICATE DECK SURFACES WHERE NON-SKID.
4. SHADED STRIP AREAS INDICATE DECK SURFACES WHERE YELLOW CAR LANE, CROSSWALK, AND SAFETY MARKINGS SHALL BE APPLIED ON TOP OF NON-SKID.
5. YELLOW STRIPPING WITHOUT NON-SKID.

PROFESSIONAL ENGINEER ORIGINAL REV – APPROVED BY DANIEL J. LOONEY DATED 10/04/2011

DANIEL JOSEPH LOONEY STATE OF WASHINGTON 47093 REGISTERED PROFESSIONAL ENGINEER

07-22-2011

0 1' 2' 3' 4' 5' 6' 8' 10' 12' 16'

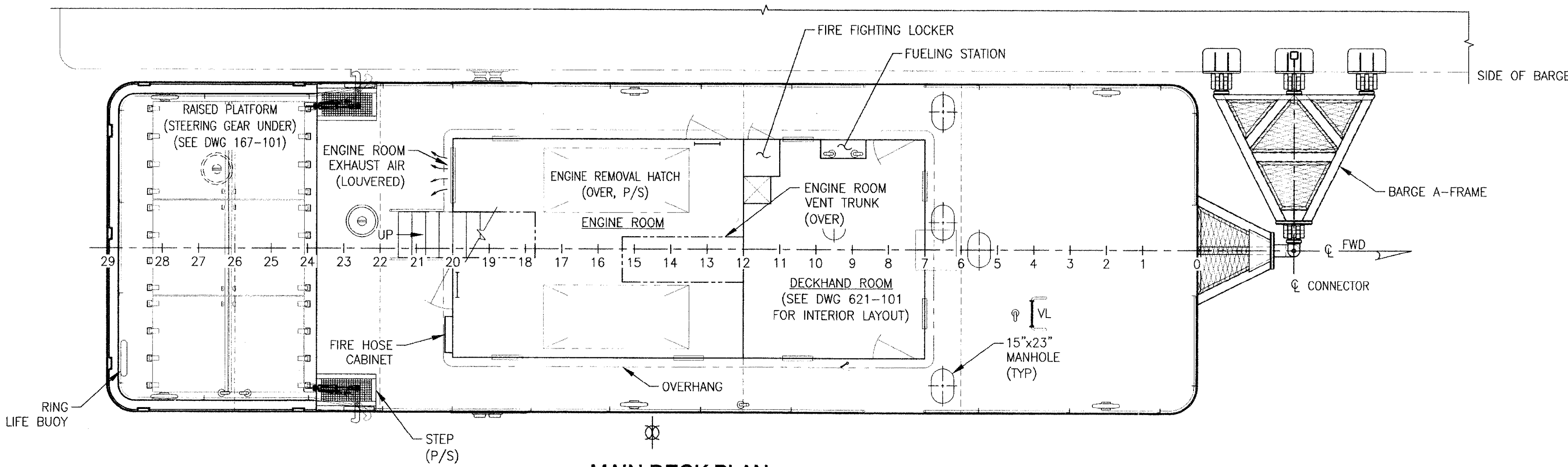
SCALE: 3/16" = 1'-0"

ART ANDERSON ASSOCIATES

DRAWING NO. CEIDT001BA-631-201

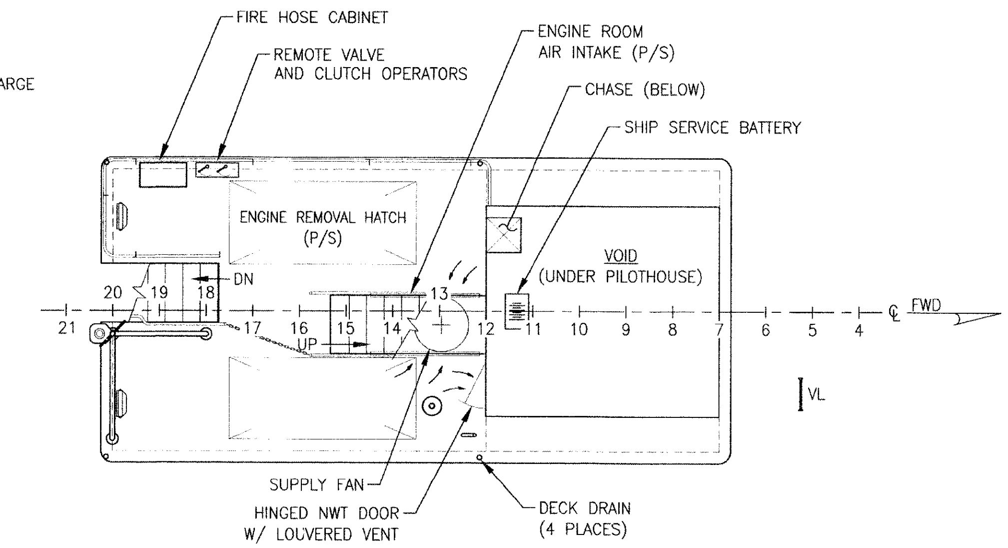
FILE NAME =	USER NAME =	DESIGNED – D. LOONEY	REVISED – REV A 07/21/2011	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	IDOT BRUSSELS FERRY PAINT SCHEME - BARGE
		DRAWN – C. FAWVER	REVISED –		
	PLOT SCALE =	CHECKED – P. MARTIN	REVISED –		
	PLOT DATE =	DATE – 10/04/2010	REVISED –		SCALE: AS SHOWN SHEET NO. OF SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	26	26
		CONTRACT NO. 76D29		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



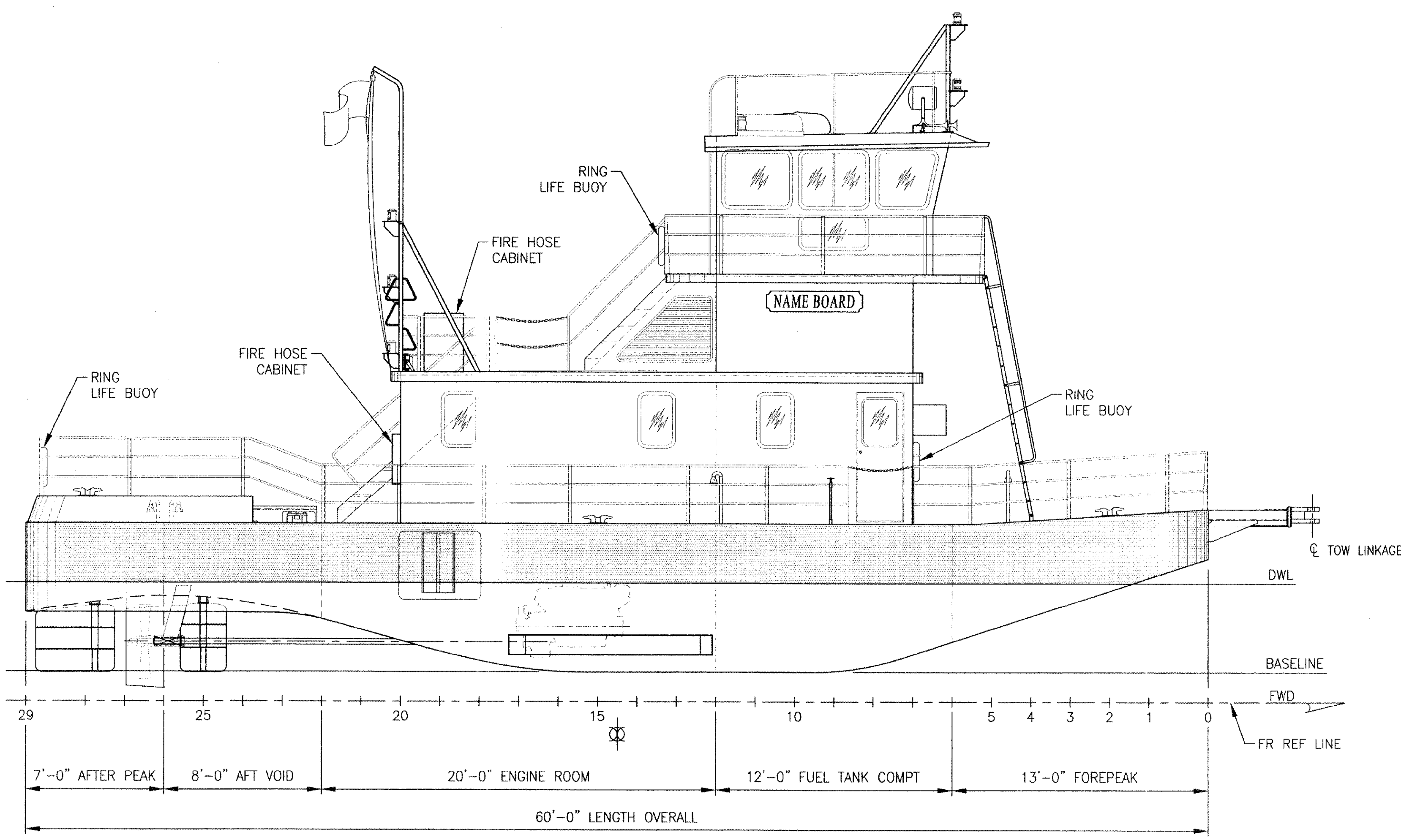
MAIN DECK PLAN

SCALE: 1/4" = 1'-0"



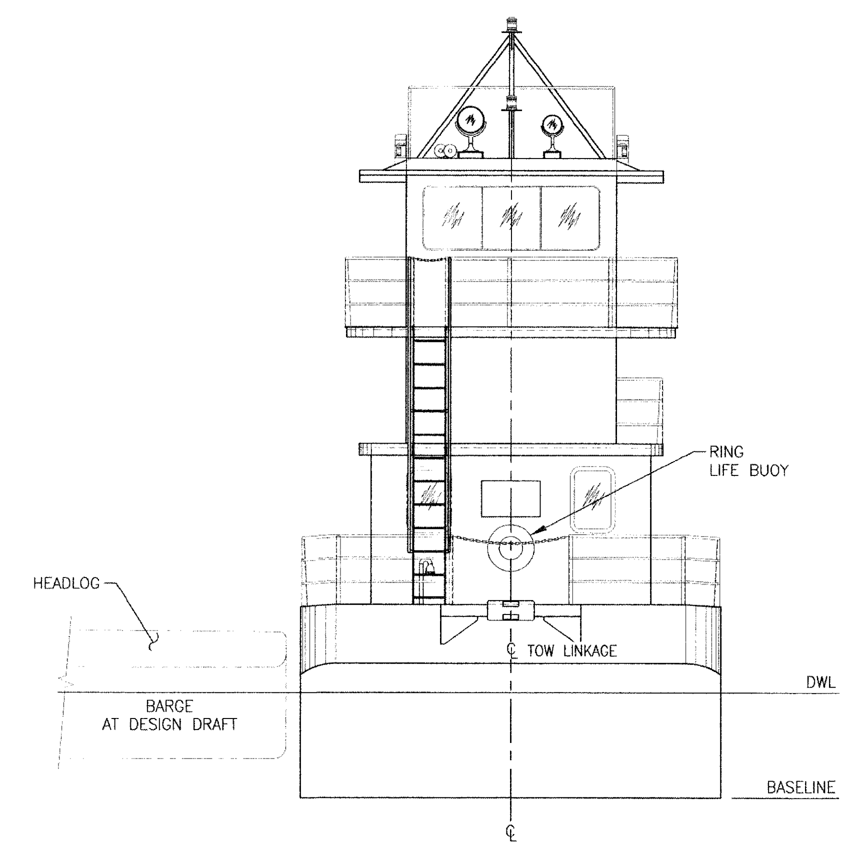
UPPER DECK PLAN

SCALE: 1/4" = 1'-0"



STARBOARD PROFILE

SCALE: 1/4" = 1'-0"



BOW ELEVATION

SCALE: 1/4" = 1'-0"

0 1' 2' 3' 4' 6' 8' 12'

SCALE: 1/4" = 1'-0"

ALAN WINKLEY
STATE OF WASHINGTON
24000
REGISTERED
PROFESSIONAL ENGINEER

ART ANDERSON ASSOCIATES
202 PACIFIC AVE. BREMERTON, WA 98337
(360) 479-5600

DRAWING NO. CEIDT001PB-801-101

FILE NAME =	USER NAME =	DESIGNED — A. WINKLEY	REVISED —
		DRAWN — J. WALKER	REVISED —
	PLOT SCALE =	CHECKED — P. MARTIN	REVISED —
	PLOT DATE =	DATE — 7/19/2011	REVISED —

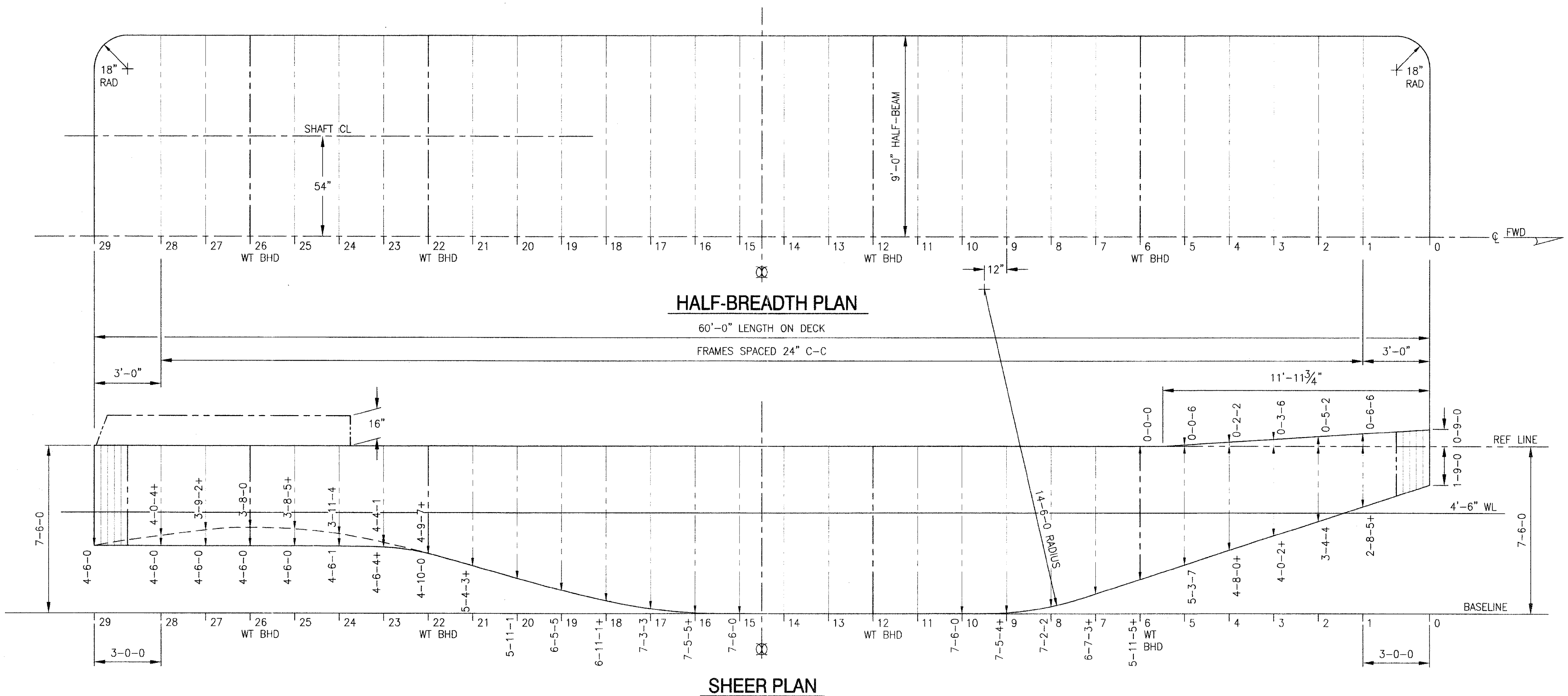
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IDOT BRUSSELS FERRY
GENERAL ARRANGEMENT - PUSHBOAT

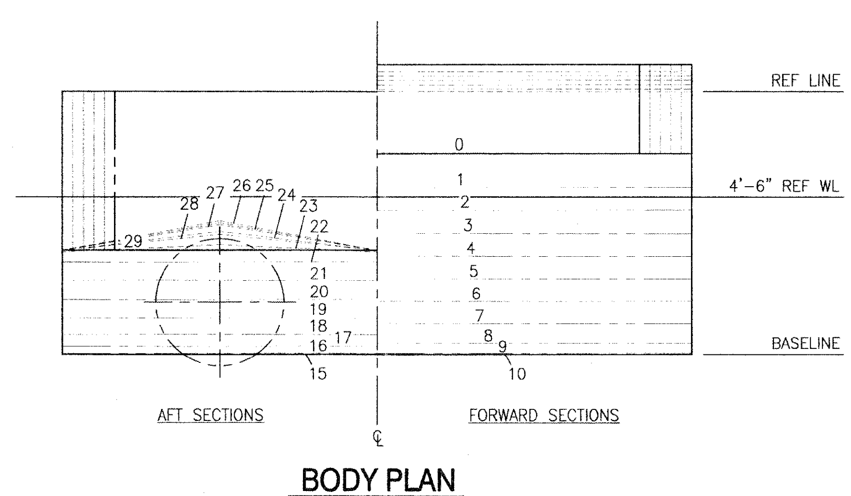
SCALE: AS SHOWN | SHEET NO. OF SHEETS | STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	47	1
		CONTRACT NO. 76D29		

FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT



GENERAL INFORMATION	
LENGTH OVERALL	60'-0"
BEAM	18'-0"
DEPTH	7'-6"
DESIGN DRAFT (MOLDED)	4'-6"
NAVIGATIONAL DRAFT	5'-6" (MAX)
PROPULSION	TWIN SCREW – DIESEL ENGINES
ROUTE/CLASS	UNINSPECTED



NOTES:

1. OFFSETS GIVEN IN FEET–INCHES–EIGHTHS. "+" MEANS ADD 1/16".
2. OFFSETS ARE DIMENSIONED TO 7'-6" REFERENCE LINE.
3. LINES ARE MOLDED, TO INSIDE OF PLATING.

ALAN WINKLEY · STATE OF WASHINGTON · 24000 · REGISTERED PROFESSIONAL ENGINEER · 7/21/2011

SCALE: 3/8" = 1'-0"

ART ANDERSON ASSOCIATES

DRAWING NO. CEIDT001PB-839-101

FILE NAME =	USER NAME =	DESIGNED – A. WINKLEY	REVISED –
		DRAWN – J. WALKER	REVISED –
	PLOT SCALE =	CHECKED – P. MARTIN	REVISED –
	PLOT DATE =	DATE – 7/19/2011	REVISED –

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IDOT BRUSSELS FERRY
LINES AND OFFSETS - PUSHBOAT

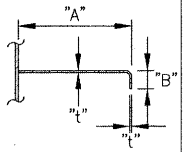
SCALE: 3/8" = 1'-0" | SHEET NO. OF SHEETS | STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	47	2

CONTRACT NO. 76D29

FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT

STRUCTURAL SYMBOLS LIST

SYMBOL	DESCRIPTION
	WATERTIGHT BULKHEAD OR DECK
	NON-TIGHT BULKHEAD
	STIFFENER ON FAR SIDE
VL	VERTICAL LADDER
	FLANGE PLATE AxBxt NOTE: FLANGE MAY BE FABRICATED BY BENDING THE PLATE OR BY WELDING THE FLANGE TO THE WEB.

LIST OF ABBREVIATIONS

ABL	ABOVE BASELINE	OD	OUTSIDE DIAMETER
AL	ALUMINUM	OFE	OWNER FURNISHED EQUIPMENT
ABS	AMERICAN BUREAU OF SHIPPING	P	PORT
AFT	AFTER	P/S	PORT/STARBOARD SYMMETRIC ABOUT CENTERLINE
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION	PCF	POUNDS PER CUBIC FOOT
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS	PL	PLATE
AWS	AMERICAN WELDING SOCIETY	PLCS	PLACES
BHD	BULKHEAD	PLTG	PLATING
BRKT	BRACKET	PSF	POUNDS PER SQUARE FOOT
BTM	BOTTOM	PSI	POUNDS PER SQUARE INCH
CJP	COMPLETE JOINT PENETRATION	PTO	POWER TAKE-OFF
℄	CENTERLINE	QAWT	QUICK ACTING WATERTIGHT
CO	CUTOUT	QAWTMH	QUICK ACTING WATERTIGHT MANHOLE
C.O.	CLEAR OPENING	R	RADIUS
DBLR	DOUBLER	RFOB	REAR (AFT) FACE OF (ENGINE) BLOCK
DISCH	DISCHARGE	RECT	RECTANGULAR
DET	DETAIL	REF	REFERENCE
DIA	DIAMETER	SAE	SOCIETY OF AUTOMOTIVE ENGINEERS
DK	DECK	SCH	SCHEDULE
DN	DOWN	SIM	SIMILAR
DO	DITTO (REPEAT PREVIOUS SCANTLING)	SS	STAINLESS STEEL
DWG	DRAWING	ST	SQUARE OR RECTANGULAR TUBING
DWL	DESIGN WATER LINE	STBD	STARBOARD
FB	FLAT BAR	STIF	STIFFENER
FDN	FOUNDATION	SWE	SUPPLIED WITH EQUIPMENT
FLG PL	FLANGE PLATE	TK	TANK
FR	FRAME	THK	THICK
F.S.	FAR SIDE	THKNS	THICKNESS
FS	FLOAT SWITCH	THRU	THROUGH
FWD	FORWARD	TYP	TYPICAL
GR	GRADE	TRVS	TRANSVERSE
HLA	HIGH LEVEL ALARM	UNO	UNLESS NOTED OTHERWISE
IWO	IN WAY OF	VL	VERTICAL LADDER
KIPS	THOUSAND POUNDS	WT	WATERTIGHT
KSI	THOUSAND POUNDS PER SQUARE INCH	WTRTT	WATERTIGHT
L	STEEL ANGLE	W/	WITH
LEN	LENGTH		
LKG	LOOKING		
LONG	LONGITUDINAL		
MH	MANHOLE		
NC	NORMALLY CLOSED (VALVE)		
NPS SCH	NATIONAL PIPE STANDARDS SCHEDULE		
NPS	NATIONAL PIPE STANDARDS		
NPT	TAPER PIPE THREAD		
NWT	NON-WATERTIGHT		

STRUCTURAL STEEL SPECIFICATIONS

1. MATERIALS

WIDE FLANGE/ WT SHAPES	ASTM A992
SHAPES, PLATES, CHANNELS, AND BARS	ASTM A36 OR ASTM A572 GR 50
ANGLES	ASTM A36
STRUCTURAL TUBING	ASTM A500 GR B
PIPE	ASTM A53 GR B
BOLTS / SCREWS	ASTM F593, TYPE 316 STAINLESS STEEL, UNO
NUTS	ASTM F594, TYPE 316 STAINLESS STEEL, UNO
WASHERS	ASTM F844, WIDE SERIES, MAX THICKNESS, TYPE 316 STAINLESS STEEL, UNO
WELD ELECTRODES	E70XX, 70KSI, LOW HYDROGEN, UNO

2. WELDING
   A. SEE SPECIFICATION FOR GENERAL WELDING AND WELD INSPECTION REQUIREMENTS
   B. WHERE WELDS ARE NOT SHOWN, THE CONNECTION SHALL DEVELOP THE FULL CAPACITY OF THE MEMBERS BEING CONNECTED AND SHALL COMPLY WITH REF 4.
3. FINISHING
   EDGES OF ALL OPENINGS AND CUTOUTS SHALL BE SMOOTH AND FREE OF ANY BURRS, GOUGES, NICKS, OR SHARP EDGES.

GENERAL NOTES

1. THE REQUIREMENTS INDICATED ON THIS SHEET ARE INTENDED AS A BASIC SUMMARY OF THE MATERIAL AND CONSTRUCTION REQUIREMENTS FOR THE PROJECT. ADDITIONAL, MORE STRINGENT REQUIREMENTS ARE GIVEN IN THE PROJECT SPECIFICATIONS.
2. GRIND SMOOTH ALL SHARP CORNERS AND ROUGH EDGES LIABLE TO CAUSE INJURY TO PEOPLE OR DAMAGE TO EQUIPMENT.
3. LIMBER AND VENT HOLES SHALL BE PROVIDED IN NON-TIGHT STRUCTURE TO PREVENT ACCUMULATION AND RETENTION OF LIQUIDS AND TO INSURE THEIR FREE FLOW TO DRAINS AND SUCTION PIPES. SUFFICIENT DRAIN HOLES SHALL BE PROVIDED IN BOTTOM STRUCTURE TO ENSURE DRAINAGE OF EACH BAY.
4. EXCEPT WHERE STEEL THICKNESS IS REFERENCED BY DOUBLE LINES, THE DIMENSIONS SHOWN ARE MOLDED DIMENSIONS.
5. ALL SNIPES AT ENDS OF STIFFENERS SHALL BE 45 DEGREES.
6. VERTICAL LADDERS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE DETAIL ON SHEET 45.

REFERENCES

1. AMERICAN BUREAU OF SHIPPING (ABS), "RULES FOR BUILDING AND CLASSING STEEL VESSELS FOR SERVICES ON RIVERS & INTRACOASTAL WATERWAYS", 2007.
2. AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC), MANUAL OF STEEL CONSTRUCTION, ALLOWABLE STRESS DESIGN, THIRTEENTH EDITION, 2005.
3. AMERICAN WELDING SOCIETY (AWS)D1.1, 2006, STRUCTURAL WELDING CODE-STEEL
4. ABS "RULES FOR MATERIALS AND WELDING", 2008.

ALAN WINKLEY
STATE OF WASHINGTON
24000
REGISTERED
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7/21/2011

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DRAWING NO. CEIDT001PB-100-101

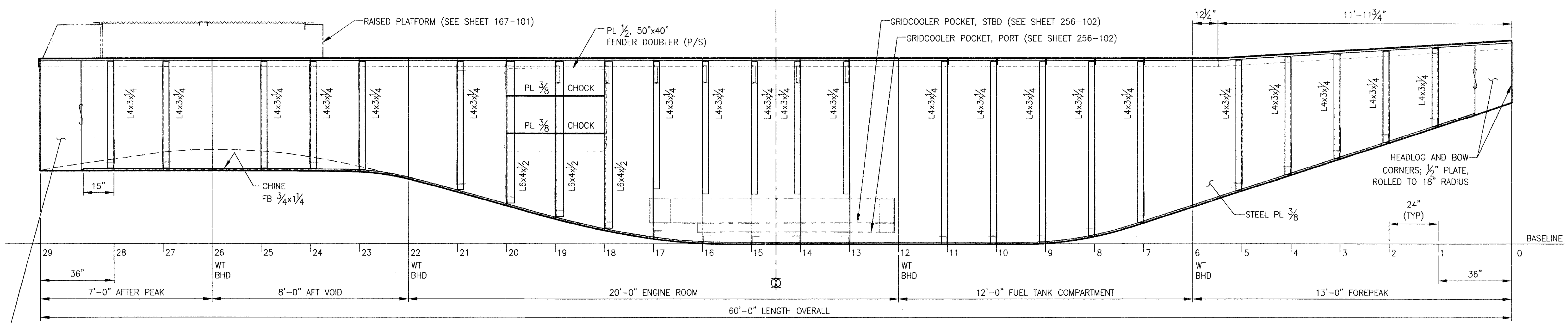
FILE NAME =	USER NAME =	DESIGNED – A. WINKLEY	REVISED –
		DRAWN – R. MANANSALA	REVISED –
	PLOT SCALE =	CHECKED – P. MARTIN	REVISED –
	PLOT DATE =	DATE – 7/19/2011	REVISED –

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IDOT BRUSSELS FERRY
STRUCTURAL GENERAL NOTES - PUSHBOAT

SCALE: NTS | SHEET NO. OF SHEETS | STA. TO STA.

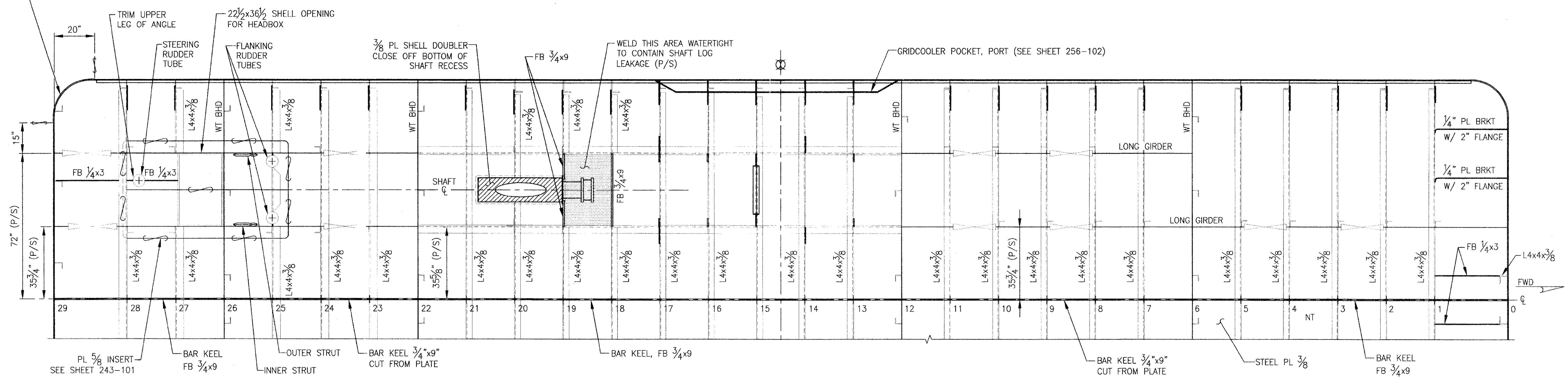
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	47	3
		CONTRACT NO. 76D29		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



STERN CORNERS; 1/2" PLATE, ROLLED TO 18" RADIUS

SIDE SHELL PLATING AND FRAMING

PORT SHOWN, STARBOARD OPPOSITE
SCALE: 1/2" = 1'-0"



BOTTOM PLATING AND FRAMING

PORT SHOWN, STARBOARD OPPOSITE
SCALE: 1/2" = 1'-0"

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0 1' 2' 3' 4' 6'
SCALE: 1/2" = 1'-0"

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DRAWING NO. CEIDT001PB-111-101

FILE NAME =	USER NAME =	DESIGNED — A. WINKLEY	REVISED —
		DRAWN — J. WALKER	REVISED —
	PLOT SCALE =	CHECKED — P. MARTIN	REVISED —
	PLOT DATE =	DATE — 7/19/2011	REVISED —

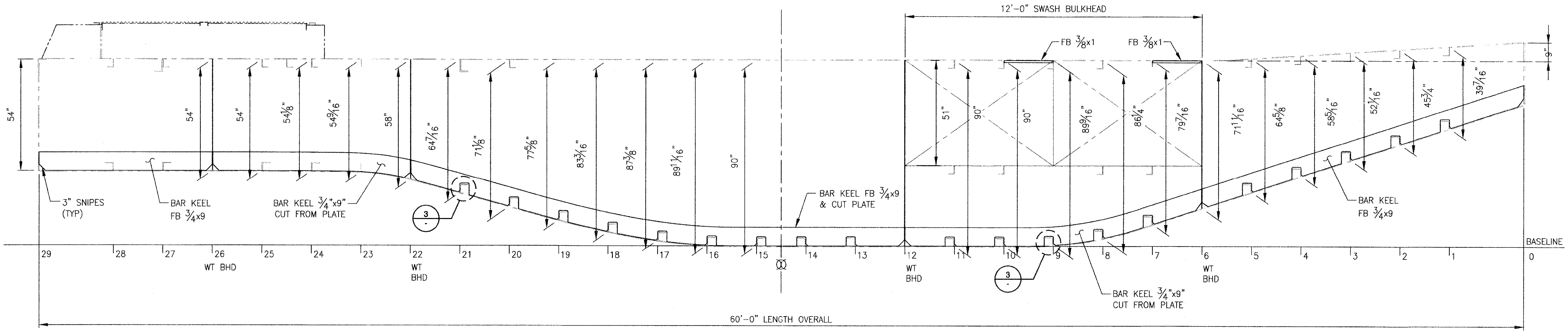
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IDOT BRUSSELS FERRY
SHELL PLATING AND FRAMING - PUSHBOAT

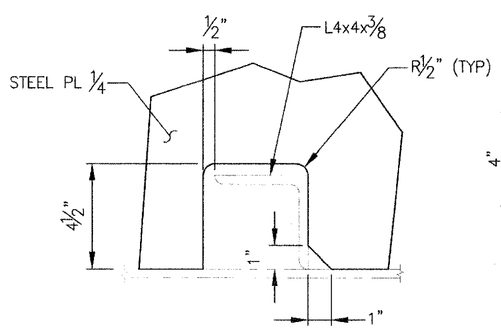
SCALE: 1/2" = 1'-0" | SHEET NO. | OF | SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	47	4
		CONTRACT NO. 76D29		

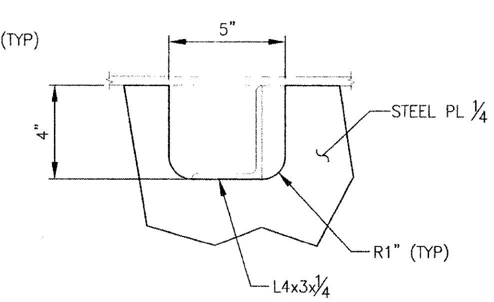
FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT



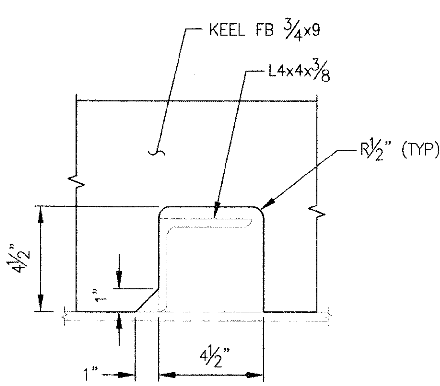
STRUCTURE ON CENTERLINE
SCALE: 1/2" = 1'-0"



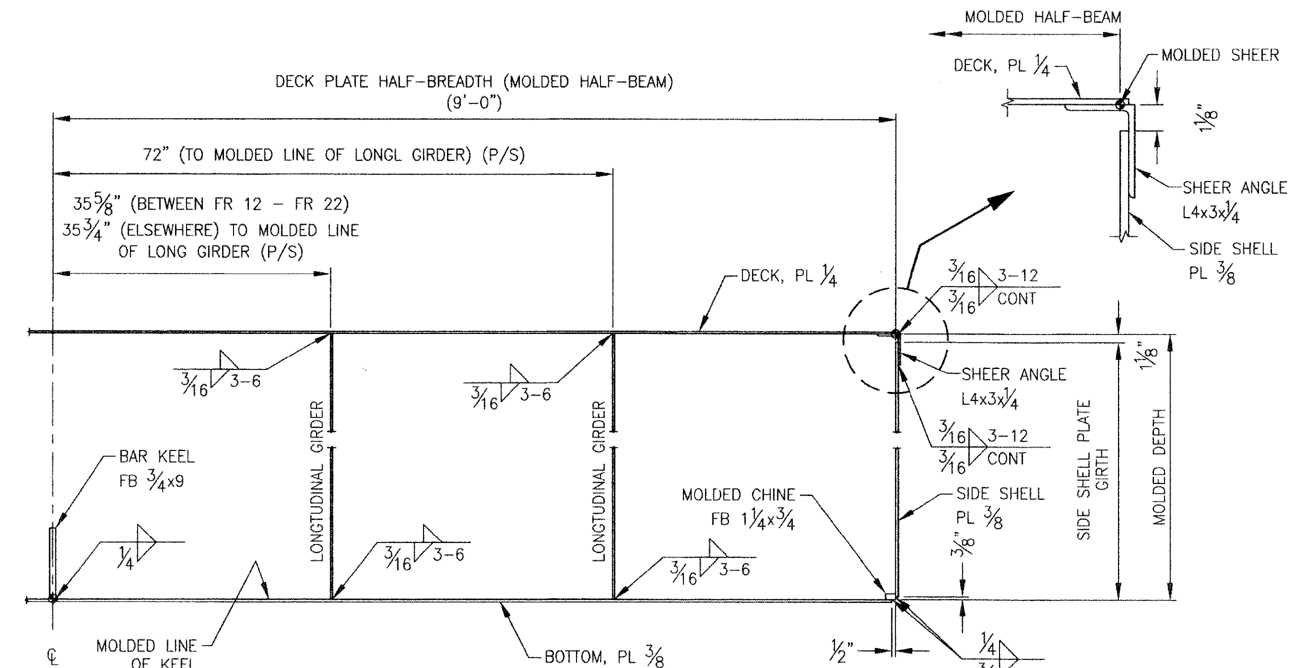
DETAIL 1
SCALE: 3" = 1'-0"



DETAIL 2
SCALE: 3" = 1'-0"



DETAIL 3
SCALE: 3" = 1'-0"



MOLDED LINES AND SHELL WELD JOINTS 4
SCALE: 1" = 1'-0"

SCALE: 1/2" = 1'-0"

SCALE: 1" = 1'-0"

SCALE: 3" = 1'-0"

ART ANDERSON ASSOCIATES

DRAWING NO. CEIDT001PB-116-101

FILE NAME =	USER NAME =	DESIGNED — A. WINKLEY	REVISED —
		DRAWN — J. WALKER	REVISED —
	PLOT SCALE =	CHECKED — P. MARTIN	REVISED —
	PLOT DATE =	DATE — 7/19/2011	REVISED —

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

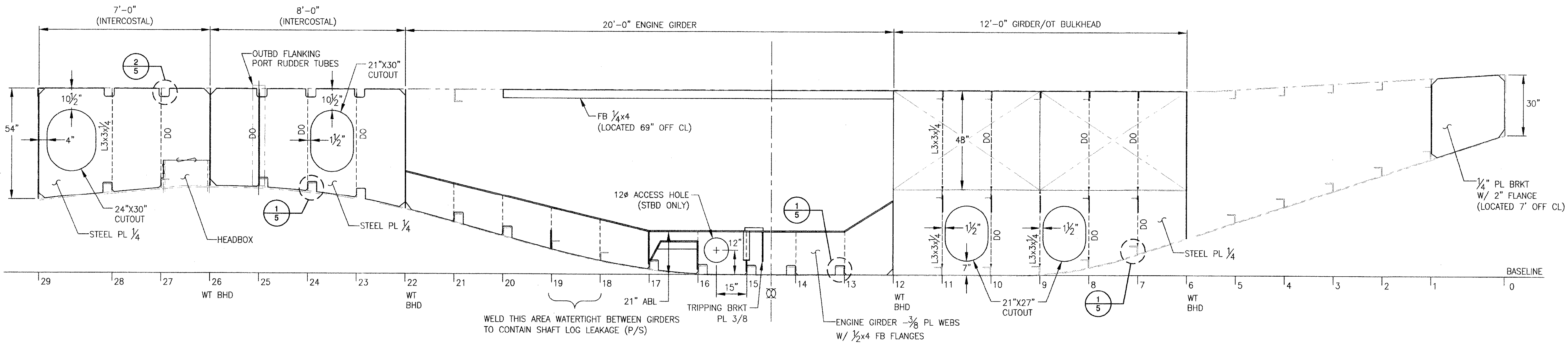
IDOT BRUSSELS FERRY
LONGITUDINAL STRUCTURE - CENTERLINE & DETAILS

SCALE: AS SHOWN | SHEET NO. OF SHEETS | STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	47	5

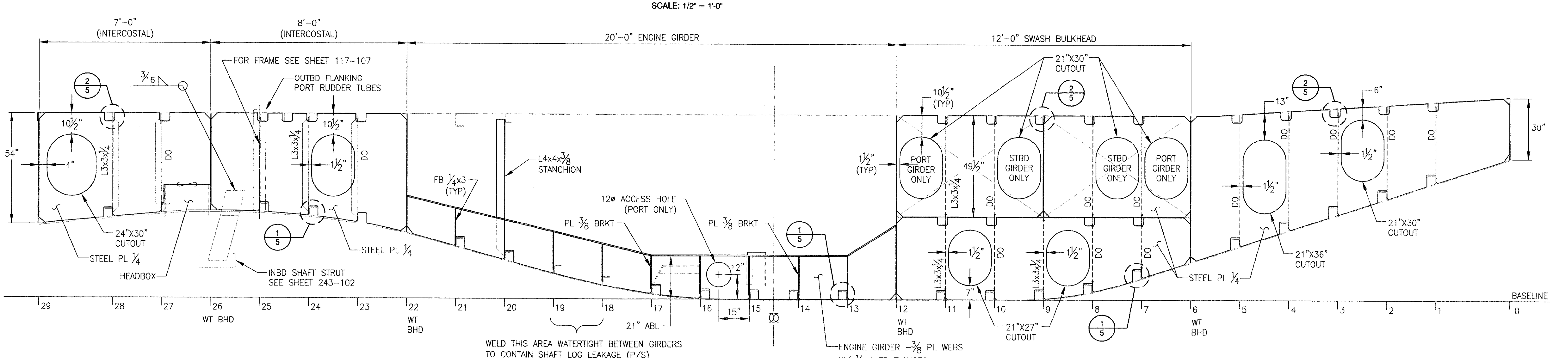
CONTRACT NO. 76D29

FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT



LONGITUDINAL GIRDER 6'-0" OFF CENTERLINE

PORT SIDE SHOWN
SCALE: 1/2" = 1'-0"



LONGITUDINAL GIRDER 36" OFF CENTERLINE NOMINAL

PORT SIDE SHOWN
SCALE: 1/2" = 1'-0"

SCALE: 1/2" = 1'-0"

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		DRAWN — J. WALKER	REVISED —
	PLOT SCALE =	CHECKED — P. MARTIN	REVISED —
	PLOT DATE =	DATE — 7/19/2011	REVISED —

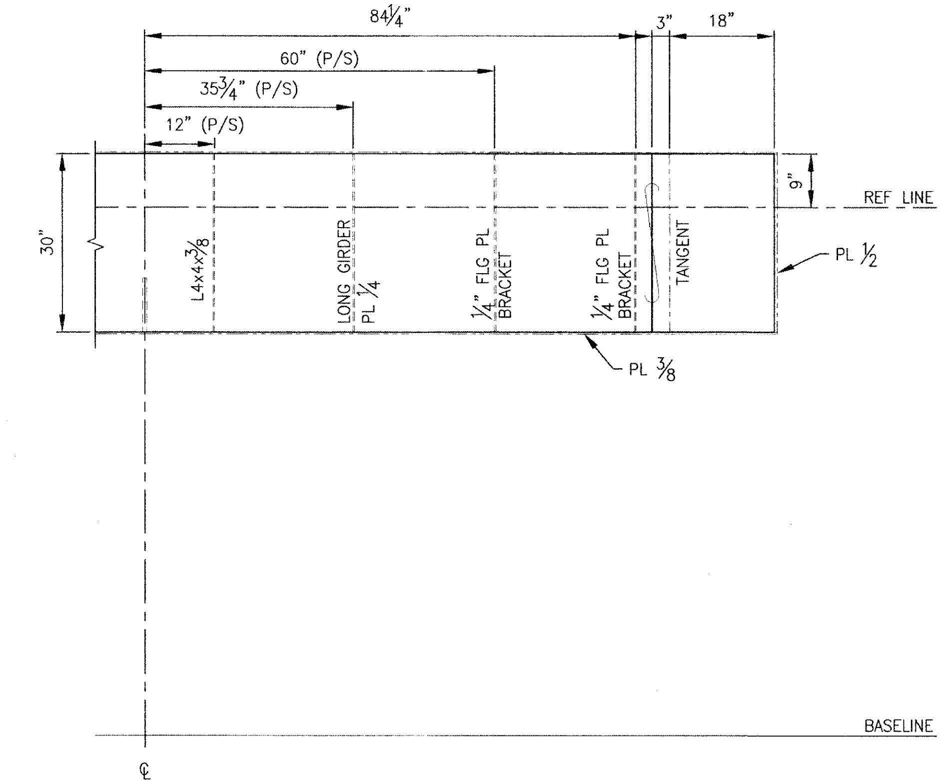
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IDOT BRUSSELS FERRY
LONGITUDINAL GIRDERS

SCALE: 1/2" = 1'-0" | SHEET NO. OF SHEETS | STA. TO STA.

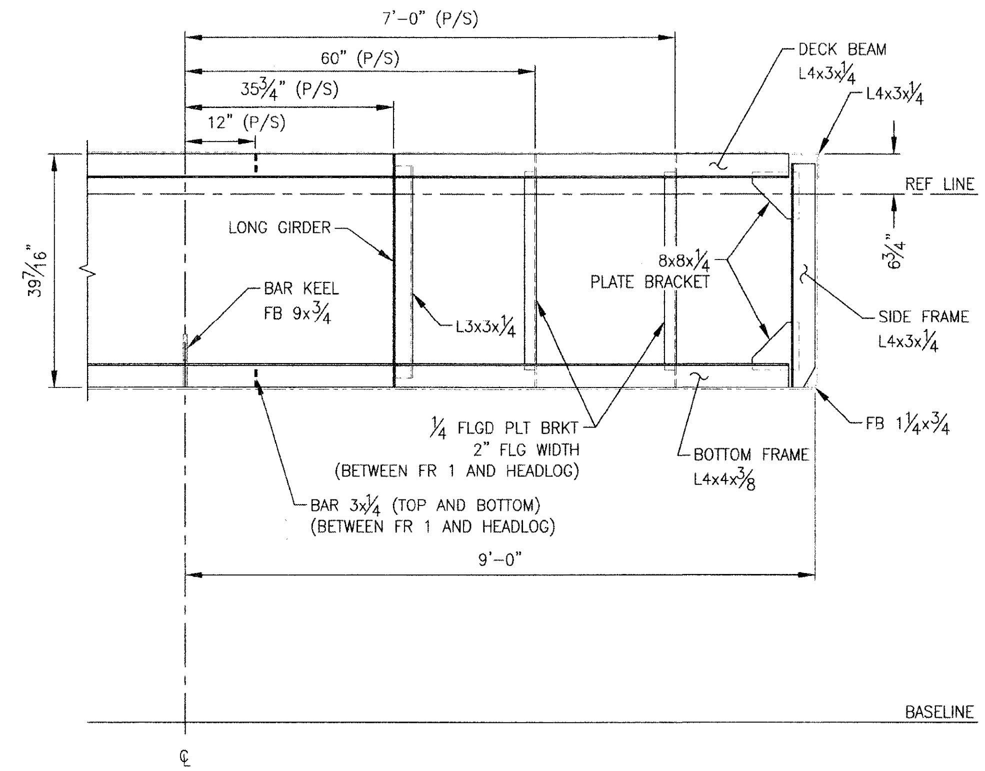
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	47	6
		CONTRACT NO. 76D29		

FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT



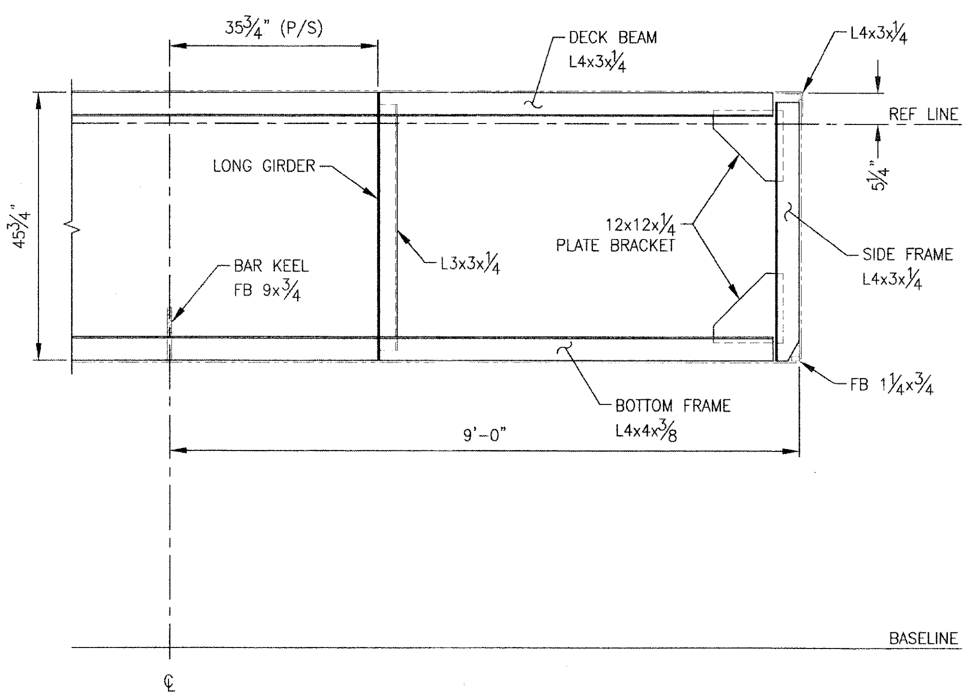
HEADLOG / FRAME 0

HEADLOG AND CORNERS ARE 1/2" PLATE
LOOKING AFT
SCALE: 3/4" = 1'-0"



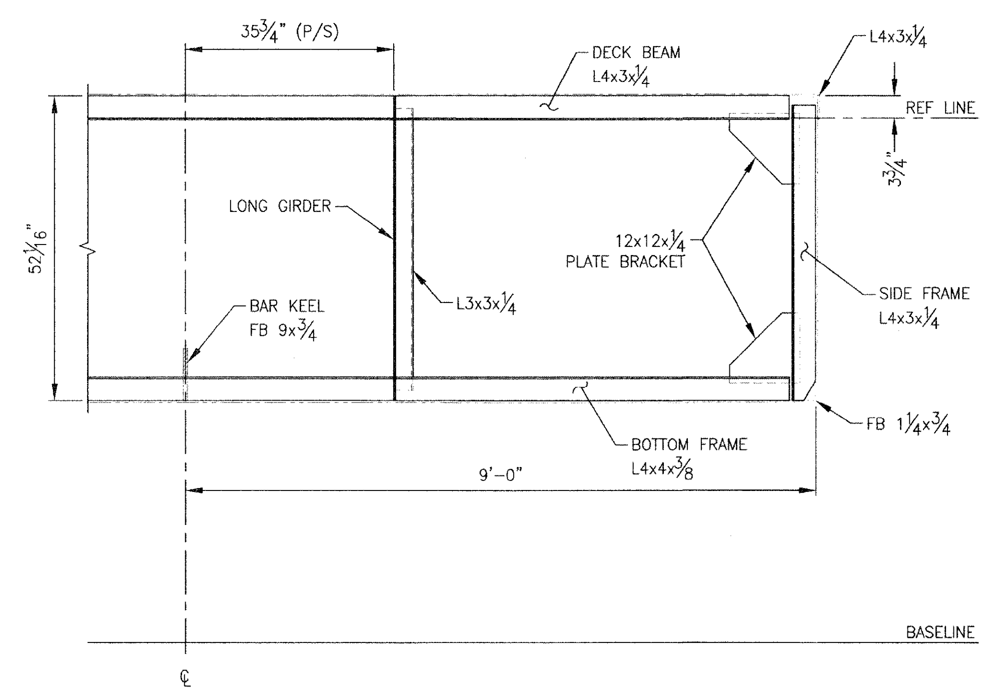
FRAME 1 SECTION

LOOKING FWD
SCALE: 3/4" = 1'-0"



FRAME 2 SECTION

LOOKING FWD
SCALE: 3/4" = 1'-0"



FRAME 3 SECTION

LOOKING FWD
SCALE: 3/4" = 1'-0"

SCALE: 3/4" = 1'-0"

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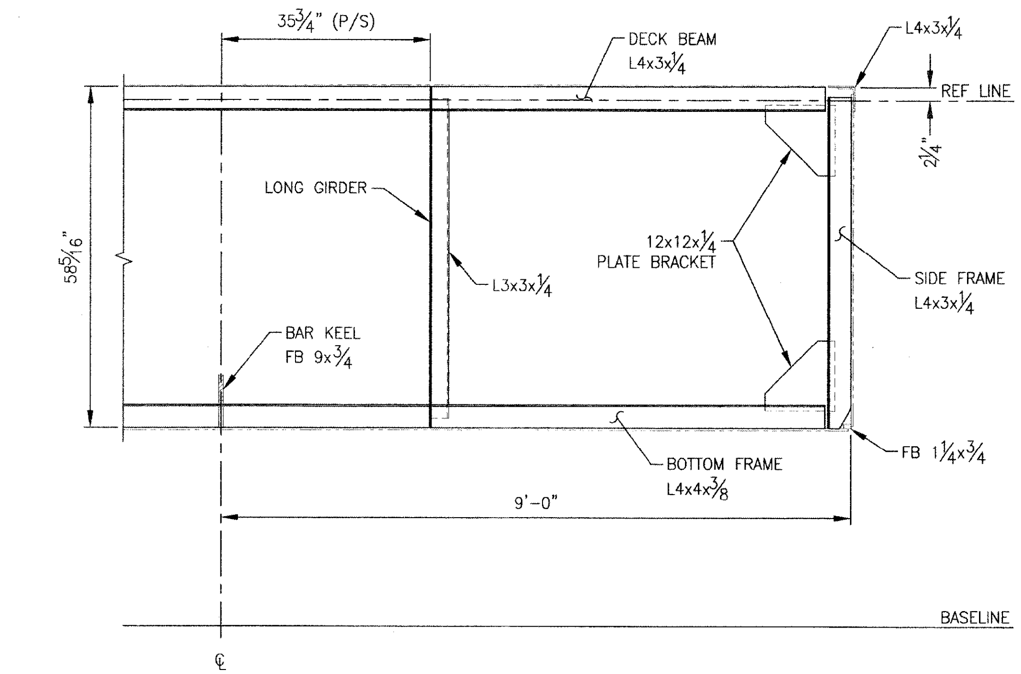
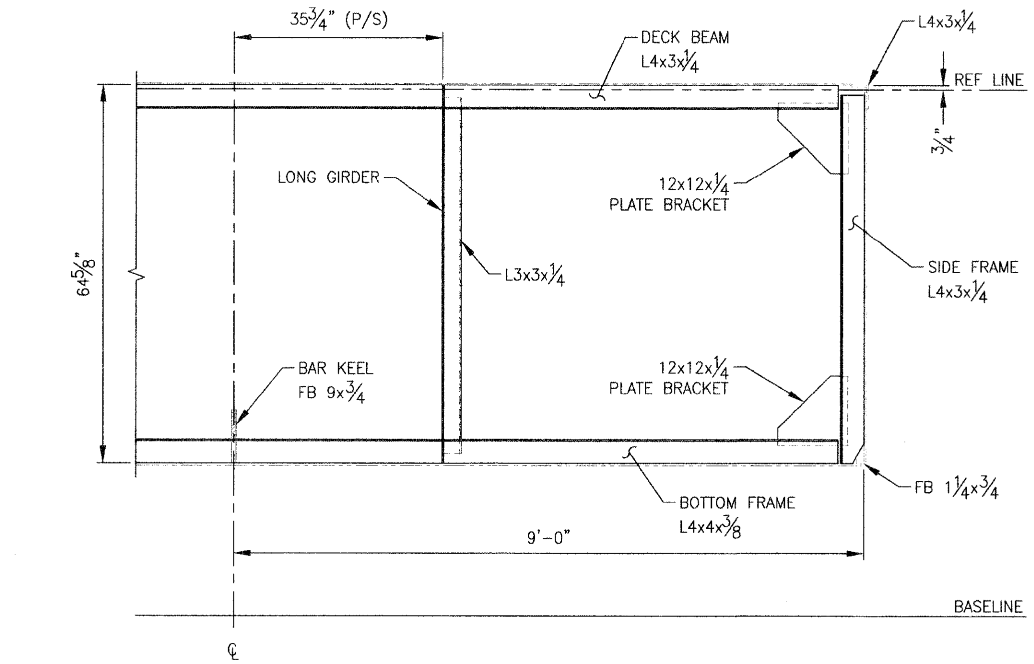
DRAWING NO. CEIDT001PB-117-101

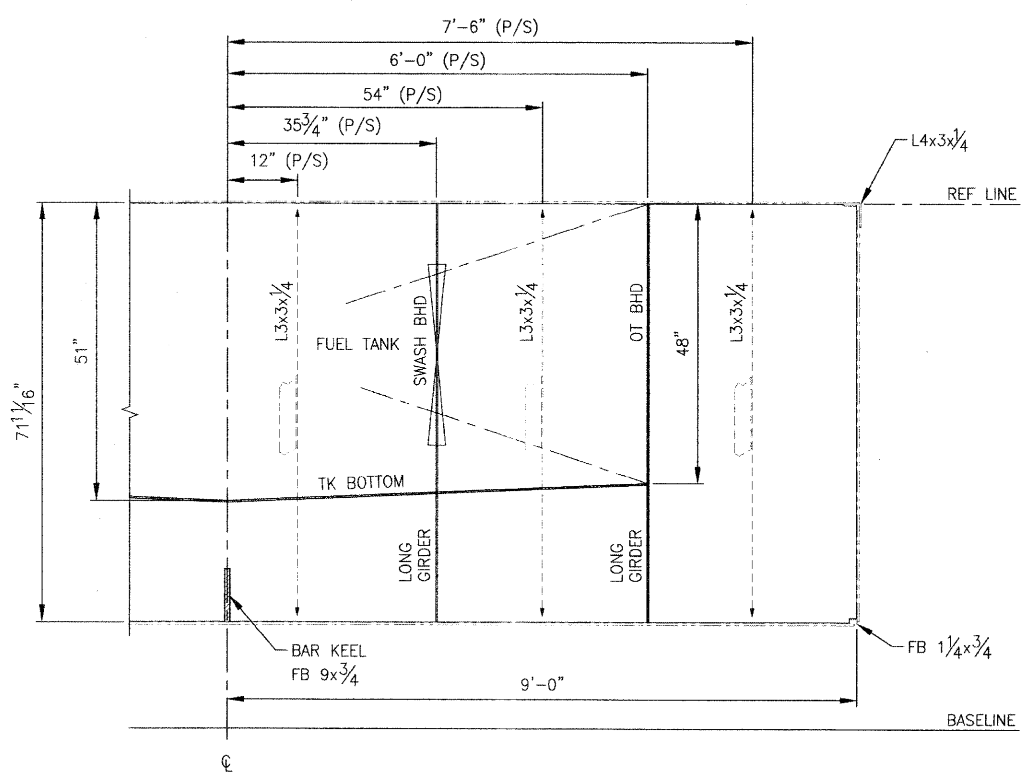
FILE NAME =	USER NAME =	DESIGNED — A. WINKLEY	REVISED —	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	IDOT BRUSSELS FERRY	F.A.P. RTE. 304 / SECTION 21-3 / COUNTY JERSEY / TOTAL SHEETS 47 / SHEET NO. 7
		DRAWN — J. WALKER	REVISED —		TRANSVERSE FRAMING - FR 0 TO 3	CONTRACT NO. 76D29
	PLOT SCALE =	CHECKED — P. MARTIN	REVISED —		SCALE: AS SHOWN / SHEET NO. OF SHEETS / STA. TO STA.	FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT
	PLOT DATE =	DATE — 7/19/2011	REVISED —			



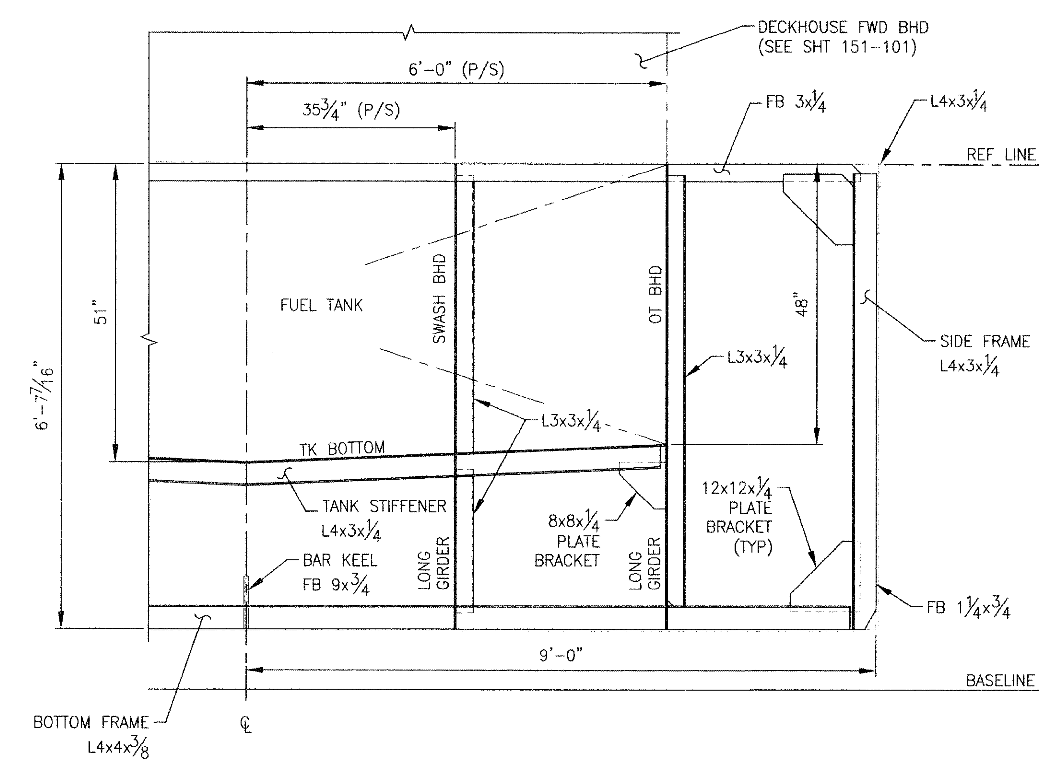
FRAME 4 SECTION
LOOKING FWD
SCALE: 3/4" = 1'-0"



FRAME 5 SECTION
LOOKING FWD
SCALE: 3/4" = 1'-0"



FRAME 6 SECTION
WT BULKHEAD IS 1/4" PLATE
LOOKING FWD
SCALE: 3/4" = 1'-0"



FRAME 7 SECTION
LOOKING FWD
SCALE: 3/4" = 1'-0"

0 4" 8" 12" 2' 3' 4'
SCALE: 3/4" = 1'-0"

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DRAWING NO. CEIDT001PB-117-102

FILE NAME =	USER NAME =	DESIGNED — A. WINKLEY	REVISED —
		DRAWN — J. WALKER	REVISED —
	PLOT SCALE =	CHECKED — P. MARTIN	REVISED —
	PLOT DATE =	DATE — 7/19/2011	REVISED —

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

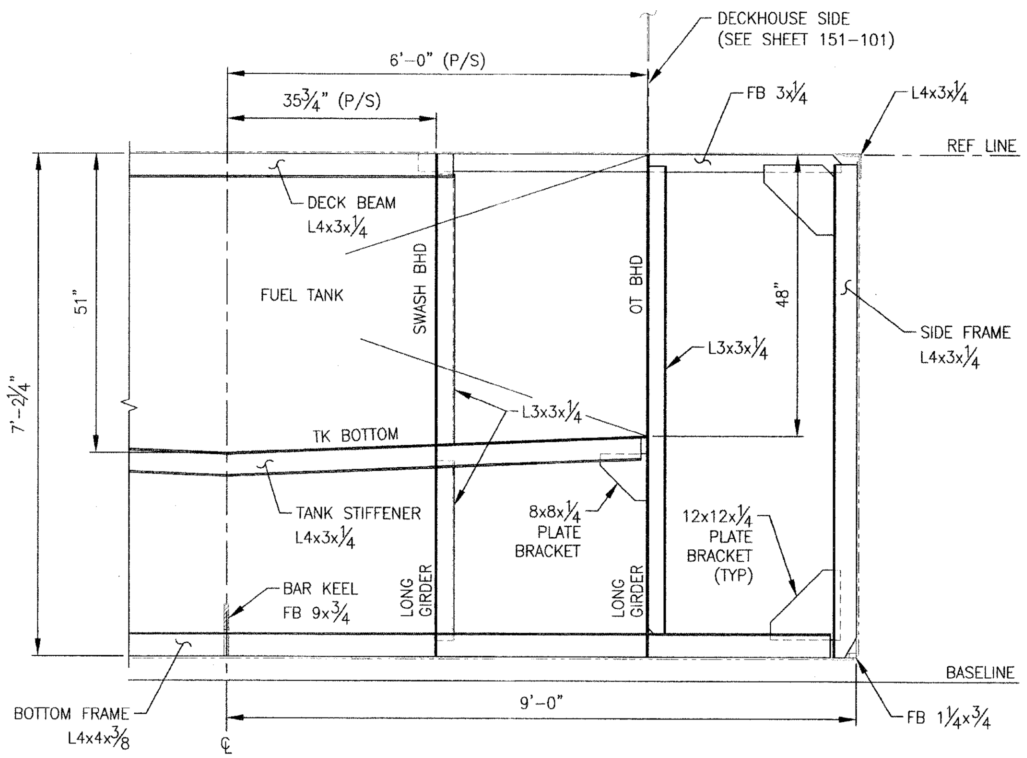
IDOT BRUSSELS FERRY
TRANSVERSE FRAMING - FR 4 TO 7

SCALE: AS SHOWN | SHEET NO. OF SHEETS | STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	47	8

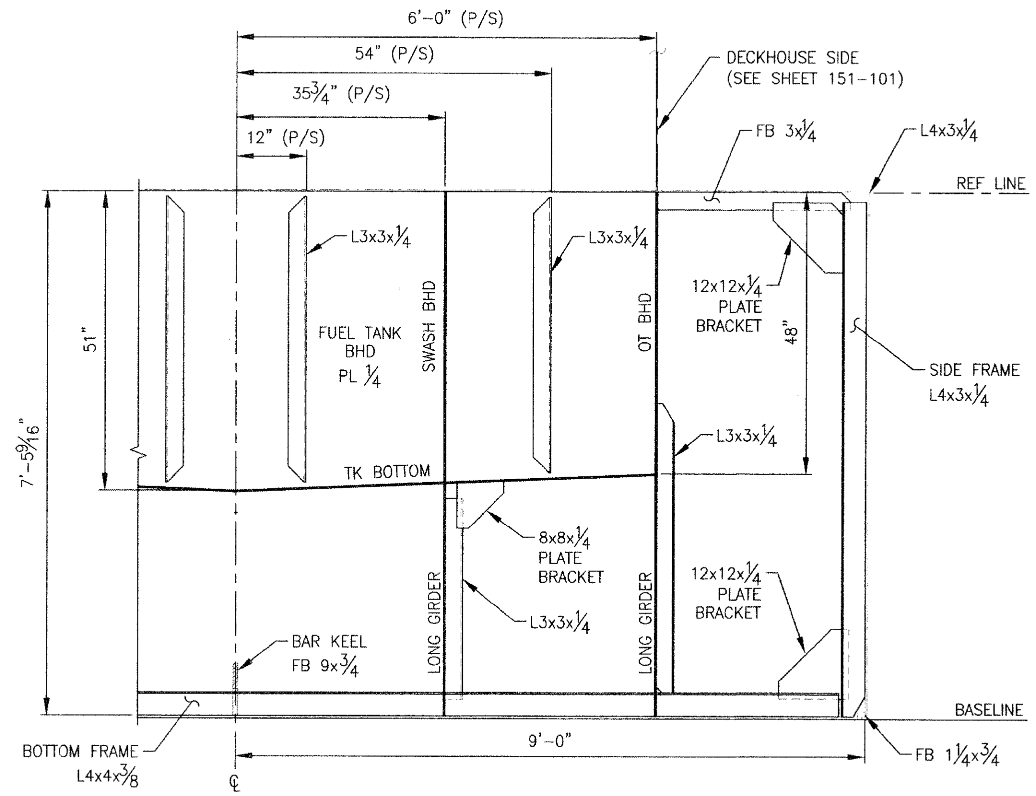
CONTRACT NO. 76D29

FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT



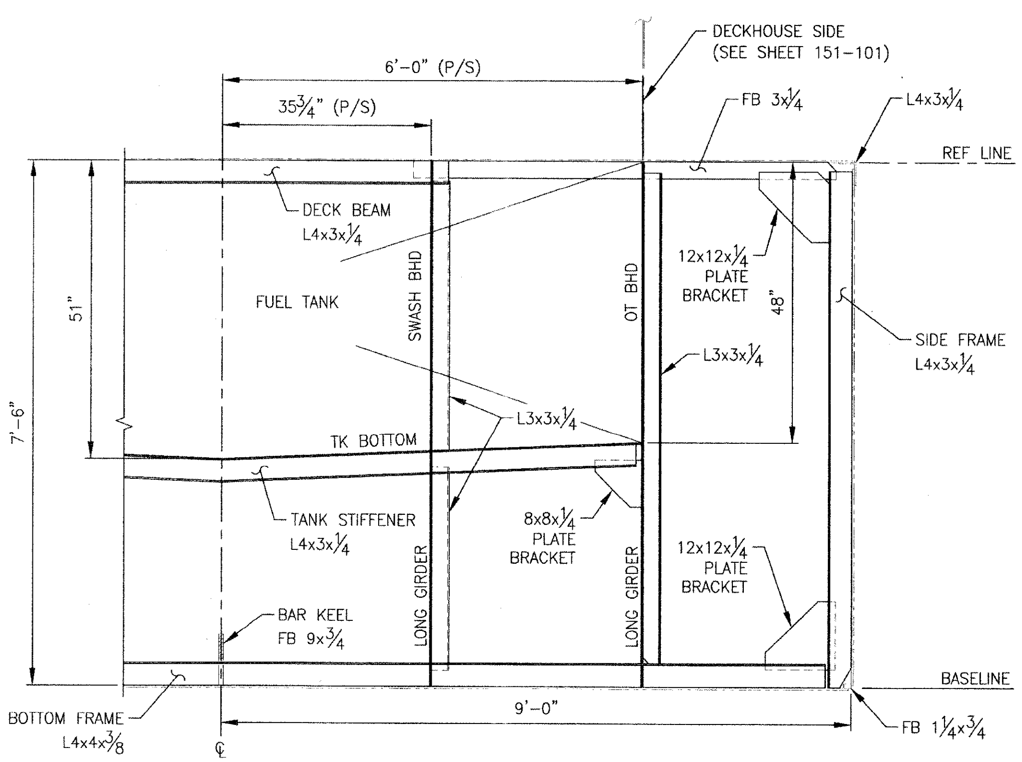
FRAME 8 SECTION

LOOKING FWD
SCALE: 3/4" = 1'-0"



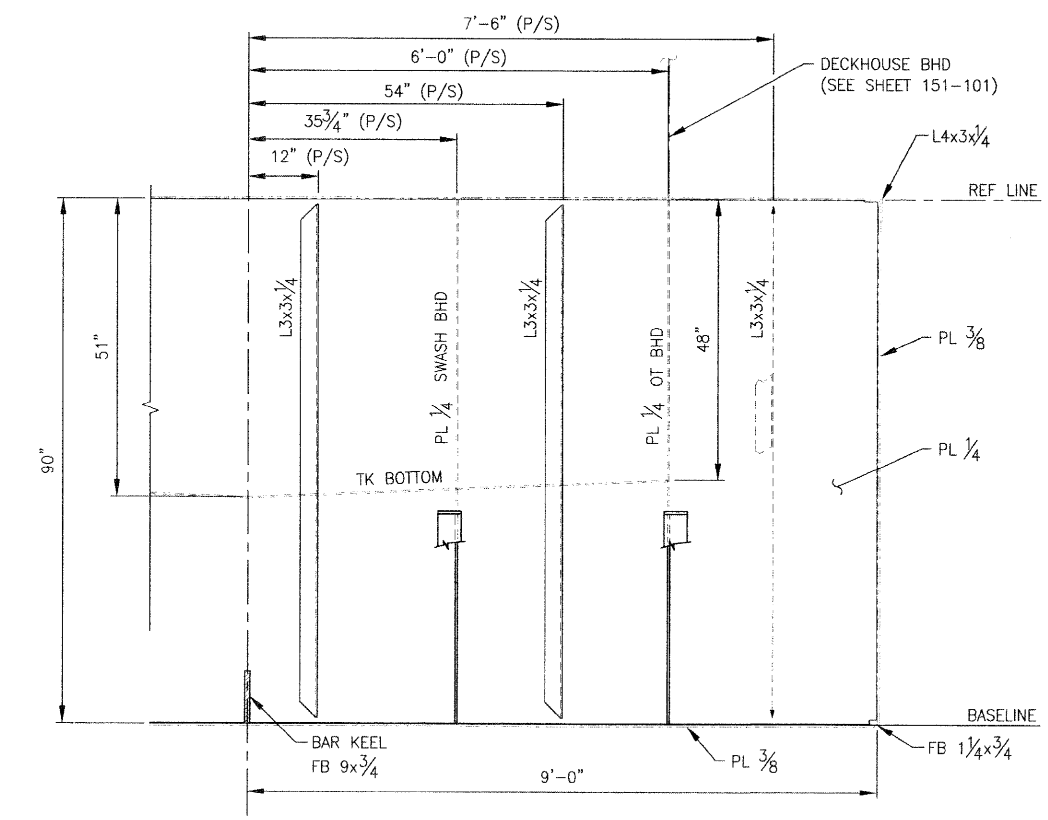
FRAME 9 SECTION

LOOKING FWD
SCALE: 3/4" = 1'-0"



FRAMES 10 & 11 SECTION

LOOKING FWD
SCALE: 3/4" = 1'-0"



FRAME 12 SECTION

LOOKING FWD
SCALE: 3/4" = 1'-0"

SCALE: 3/4" = 1'-0"

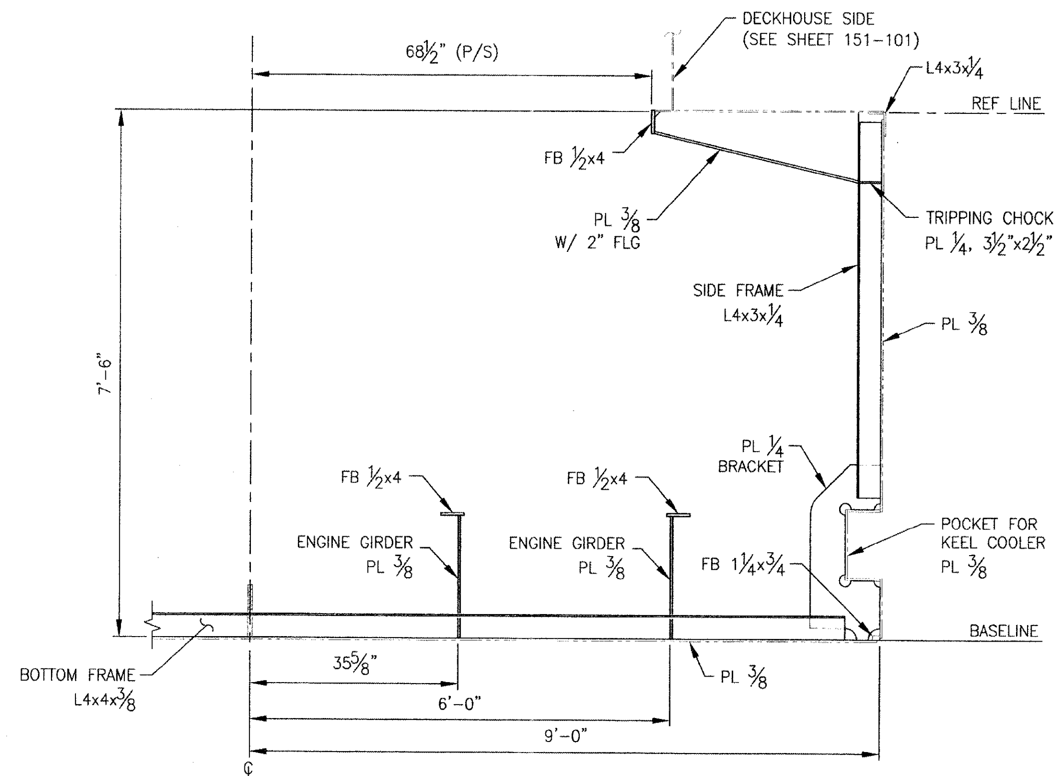
ART ANDERSON ASSOCIATES

DRAWING NO. CEIDT001PB-117-103

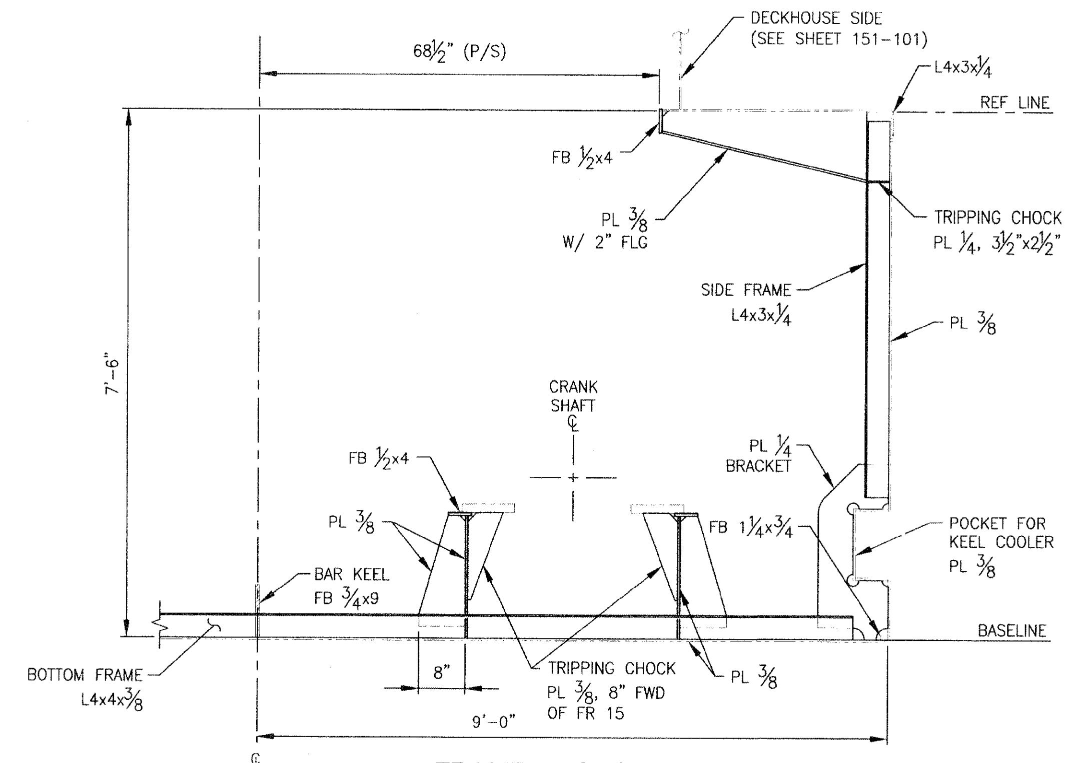
FILE NAME =	USER NAME =	DESIGNED — A. WINKLEY	REVISED —	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	IDOT BRUSSELS FERRY TRANSVERSE FRAMING - FR 8 TO 12
		DRAWN — J. WALKER	REVISED —		
	PLOT SCALE =	CHECKED — P. MARTIN	REVISED —		
	PLOT DATE =	DATE — 7/19/2011	REVISED —		SCALE: AS SHOWN / SHEET NO. OF SHEETS / STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	47	9
		CONTRACT NO. 76D29		

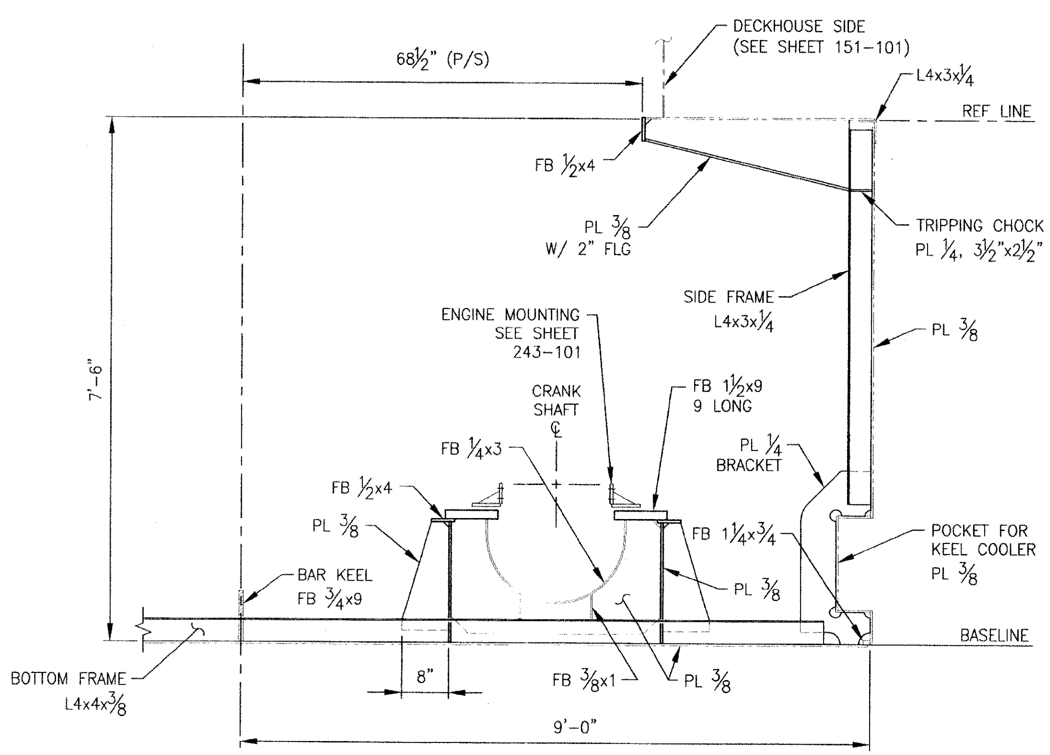
FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT



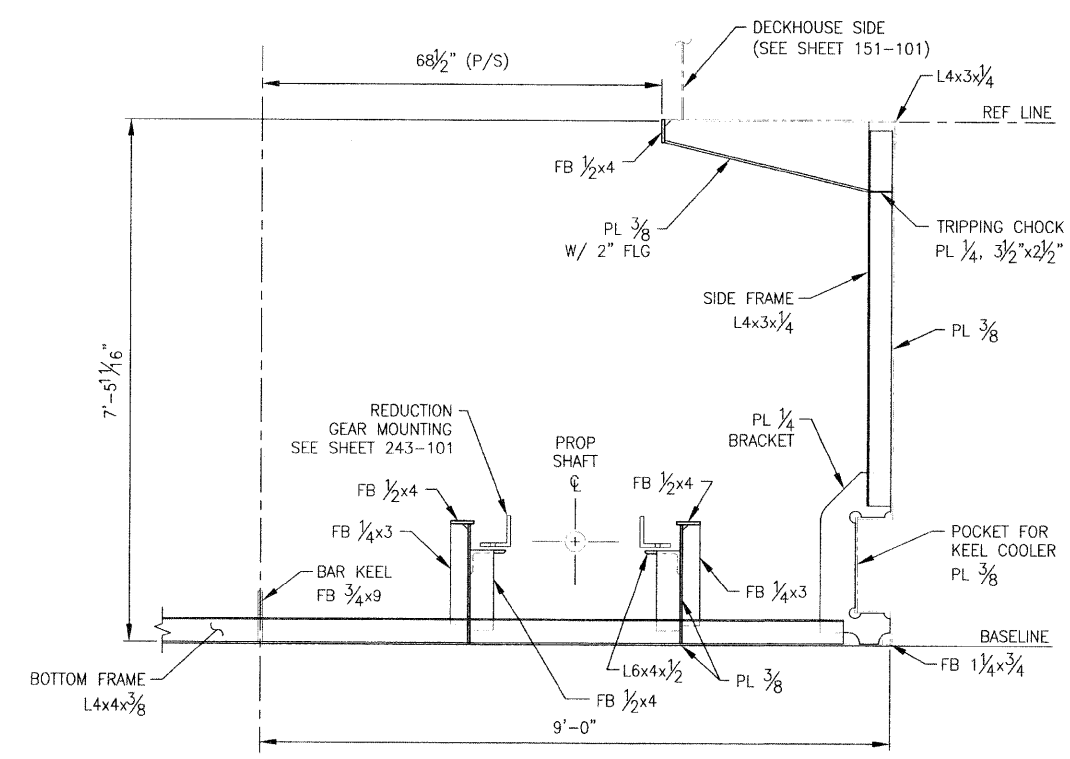
FRAME 13 SECTION
LOOKING FWD
SCALE: 3/4" = 1'-0"



FRAME 14 SECTION
LOOKING FWD
SCALE: 3/4" = 1'-0"



FRAME 15 SECTION
LOOKING AFT
SCALE: 3/4" = 1'-0"



FRAME 16 SECTION
LOOKING AFT
SCALE: 3/4" = 1'-0"

SCALE: 3/4" = 1'-0"

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DRAWING NO. CEIDT001PB-117-104

FILE NAME =	USER NAME =	DESIGNED — A. WINKLEY	REVISED —
		DRAWN — J. WALKER	REVISED —
	PLOT SCALE =	CHECKED — P. MARTIN	REVISED —
	PLOT DATE =	DATE — 7/19/2011	REVISED —

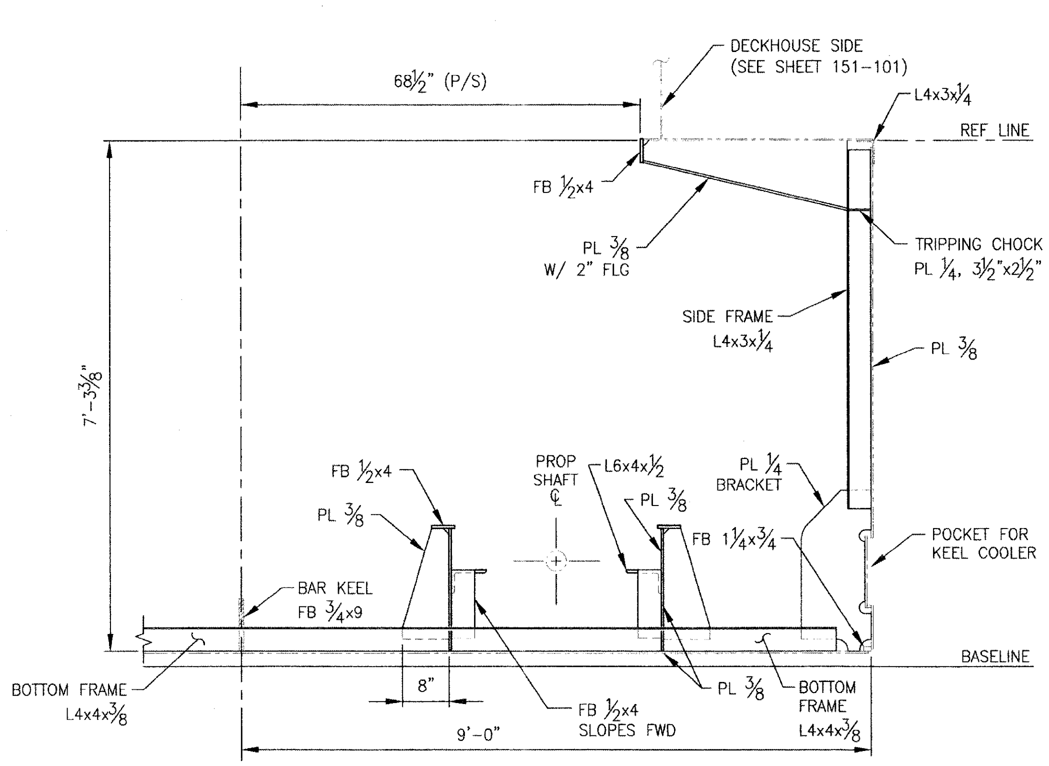
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IDOT BRUSSELS FERRY
TRANSVERSE FRAMING - FR 13 TO 16

SCALE: AS SHOWN | SHEET NO. OF SHEETS | STA. TO STA.

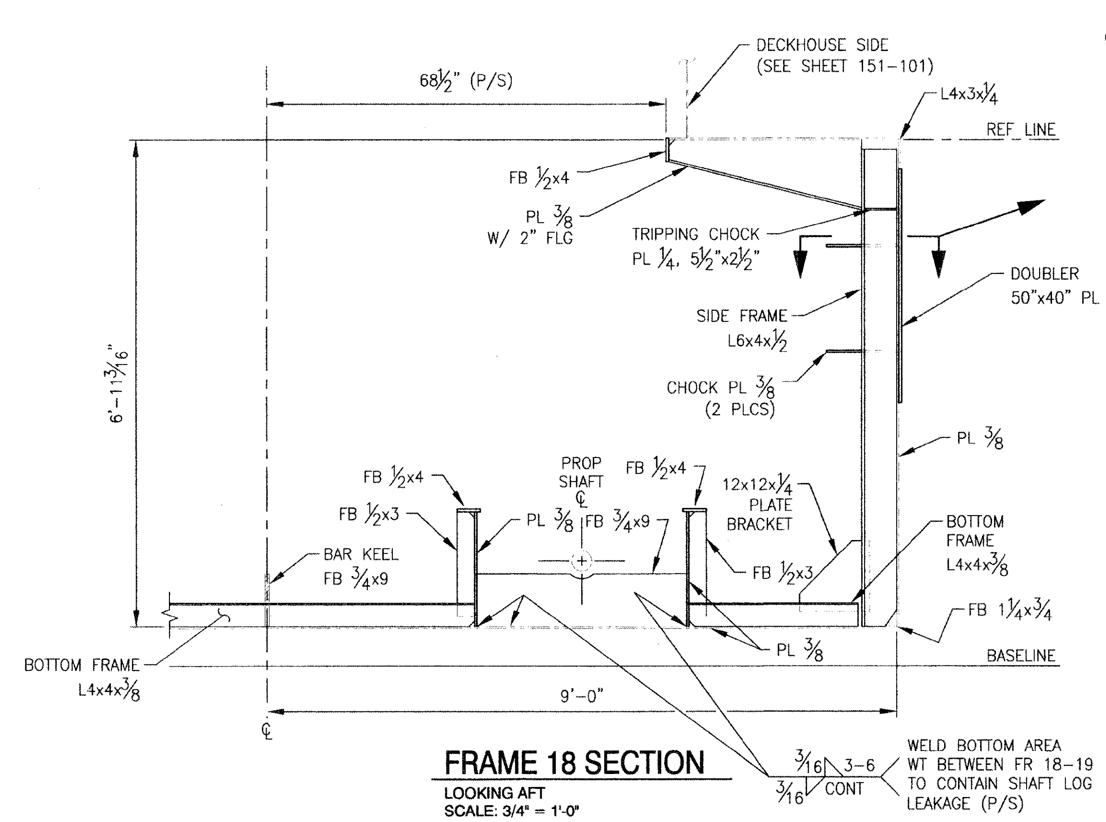
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	47	10
		CONTRACT NO. 76D29		

FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT



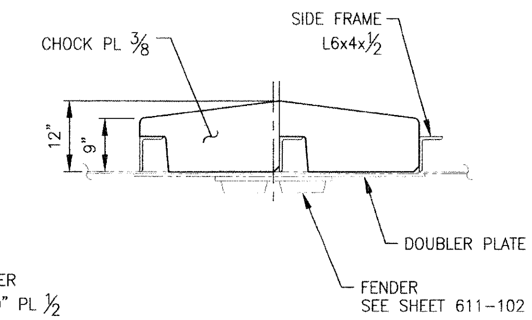
FRAME 17 SECTION

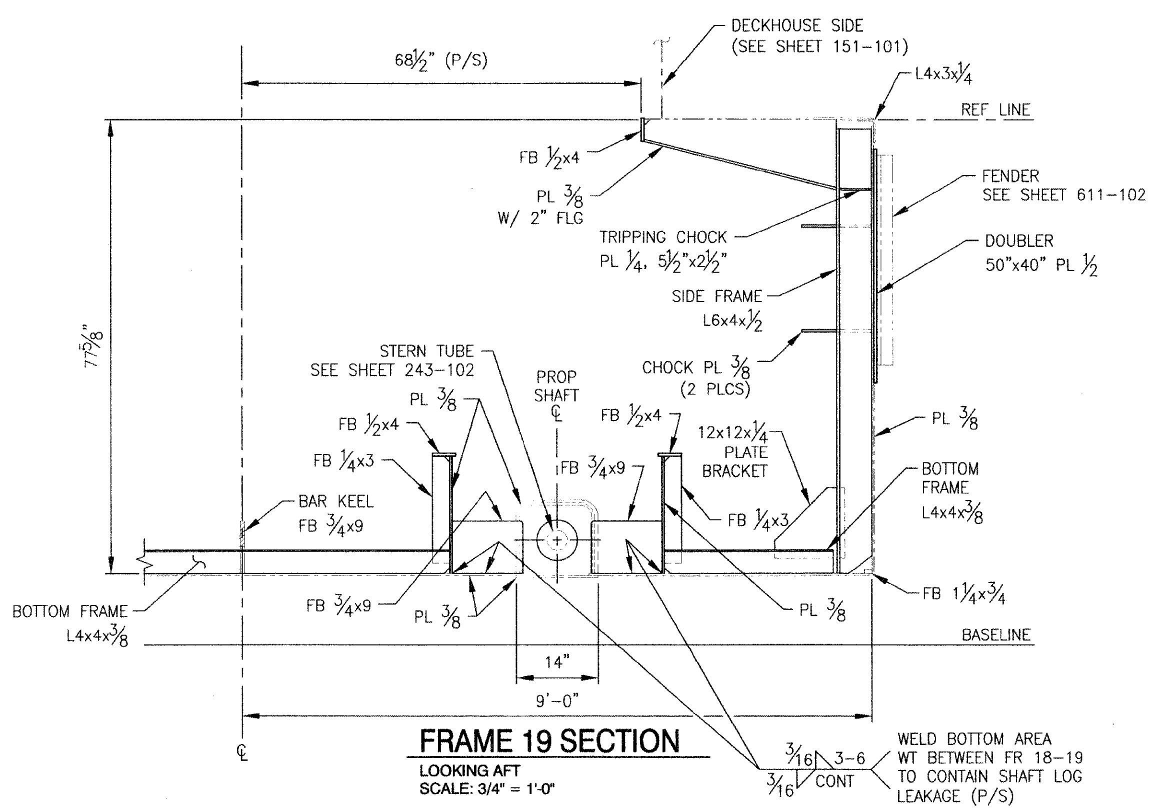
LOOKING AFT
SCALE: 3/4" = 1'-0"



FRAME 18 SECTION

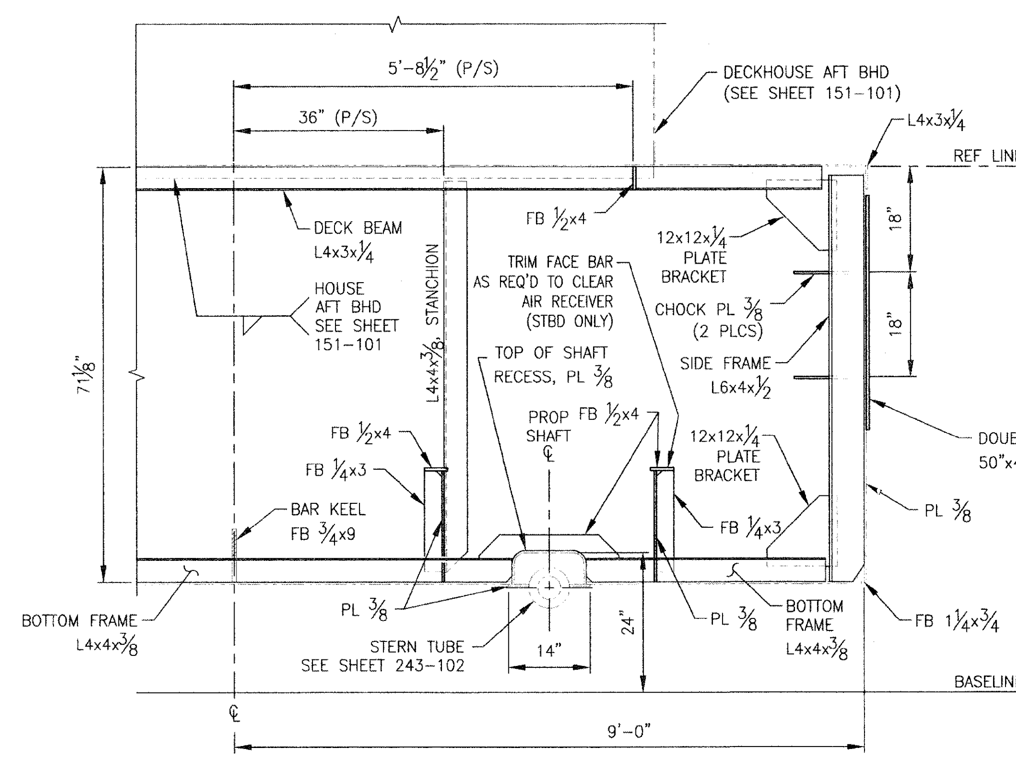
LOOKING AFT
SCALE: 3/4" = 1'-0"





FRAME 19 SECTION

LOOKING AFT
SCALE: 3/4" = 1'-0"



FRAME 20 SECTION

LOOKING AFT
SCALE: 3/4" = 1'-0"

0 4" 8" 12" 2' 3' 4'
SCALE: 3/4" = 1'-0"

ALAN WINKLEY
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7/19/2011

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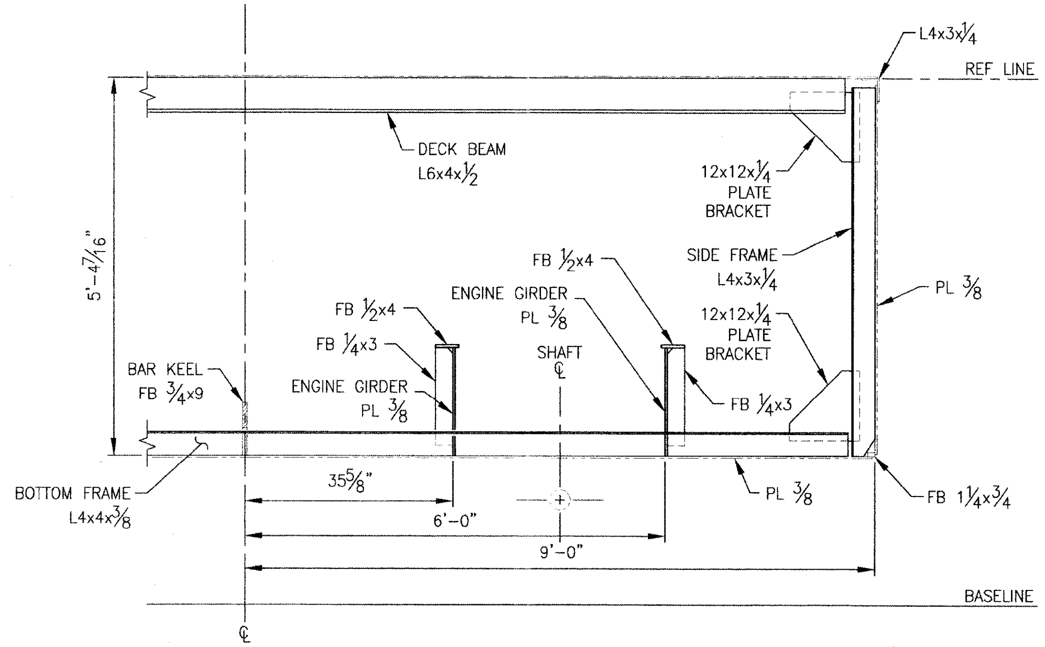
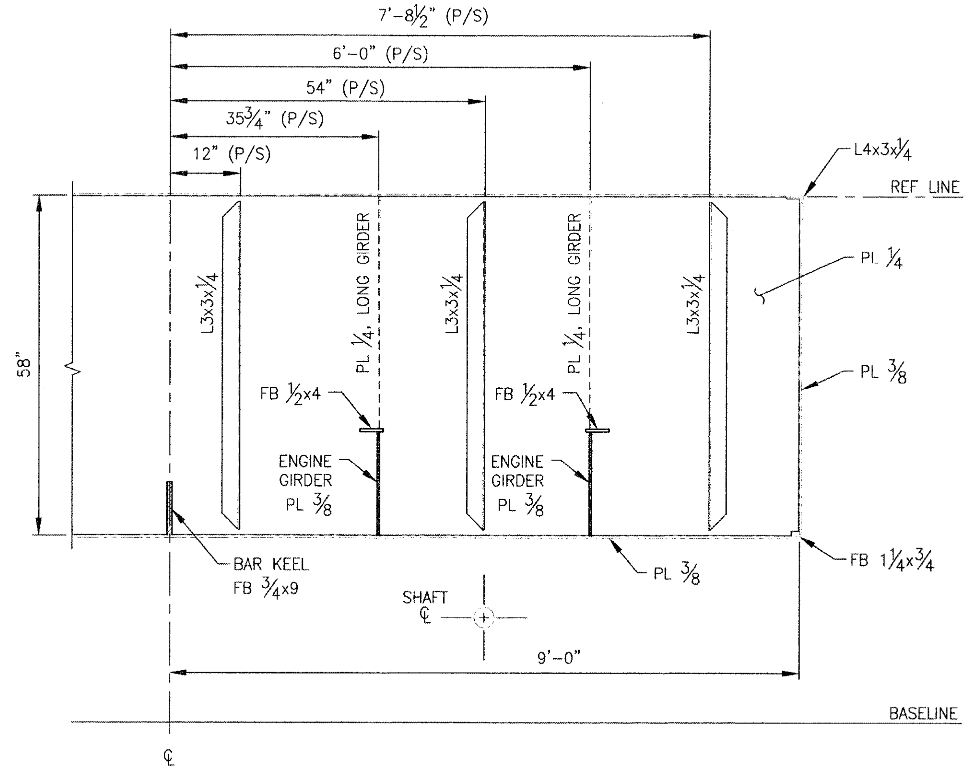
DRAWING NO. CEIDT001PB-117-105

FILE NAME =	USER NAME =	DESIGNED – A. WINKLEY	REVISED –	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	IDOT BRUSSELS FERRY TRANSVERSE FRAMING - FR 17 TO 20
		DRAWN – J. WALKER	REVISED –		
	PLOT SCALE =	CHECKED – P. MARTIN	REVISED –		
	PLOT DATE =	DATE – 7/19/2011	REVISED –		SCALE: AS SHOWN / SHEET NO. OF SHEETS / STA. TO STA.

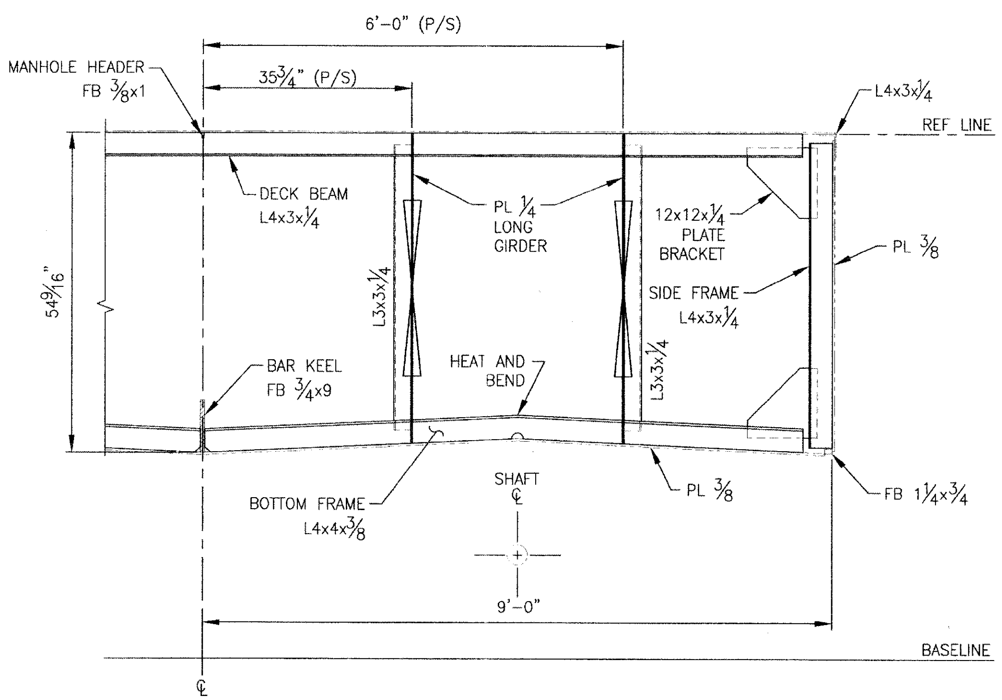
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	47	11
		CONTRACT NO. 76D29		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



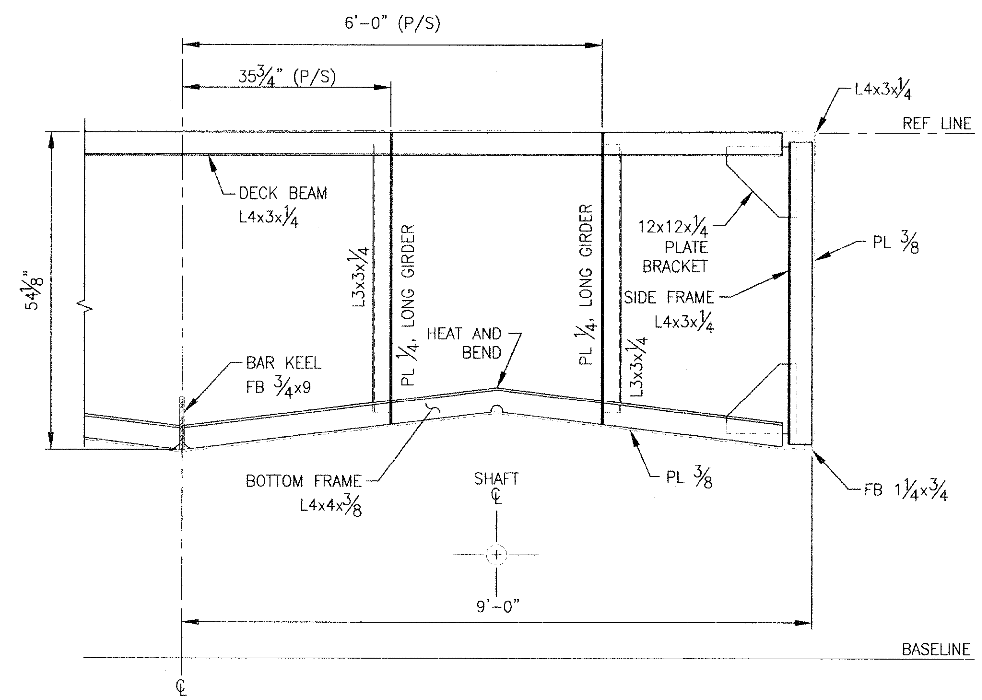
FRAME 21 SECTION
LOOKING AFT
SCALE: 3/4" = 1'-0"



FRAME 22 SECTION
WT BULKHEAD, LOOKING AFT
SCALE: 3/4" = 1'-0"



FRAME 23 SECTION
LOOKING AFT
SCALE: 3/4" = 1'-0"



FRAME 24 SECTION
LOOKING AFT
SCALE: 3/4" = 1'-0"

0 4" 8" 12" 2' 3' 4'
SCALE: 3/4" = 1'-0"

ALAN WINKLEY STATE OF WASHINGTON 24000 REGISTERED PROFESSIONAL ENGINEER 7/21/2011

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DRAWING NO. CEIDT001PB-117-106

FILE NAME =	USER NAME =	DESIGNED — A. WINKLEY	REVISED —
		DRAWN — J. WALKER	REVISED —
	PLOT SCALE =	CHECKED — P. MARTIN	REVISED —
	PLOT DATE =	DATE — 7/19/2011	REVISED —

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

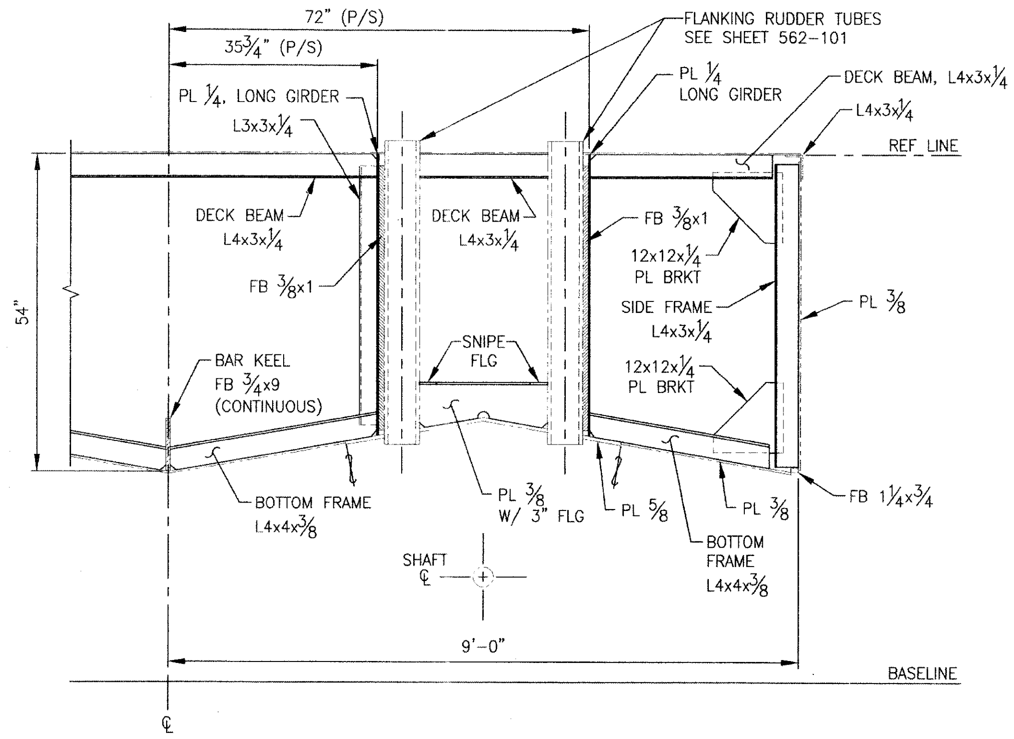
IDOT BRUSSELS FERRY
TRANSVERSE FRAMING - FR 21 TO 24

SCALE: AS SHOWN | SHEET NO. OF SHEETS | STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	47	12

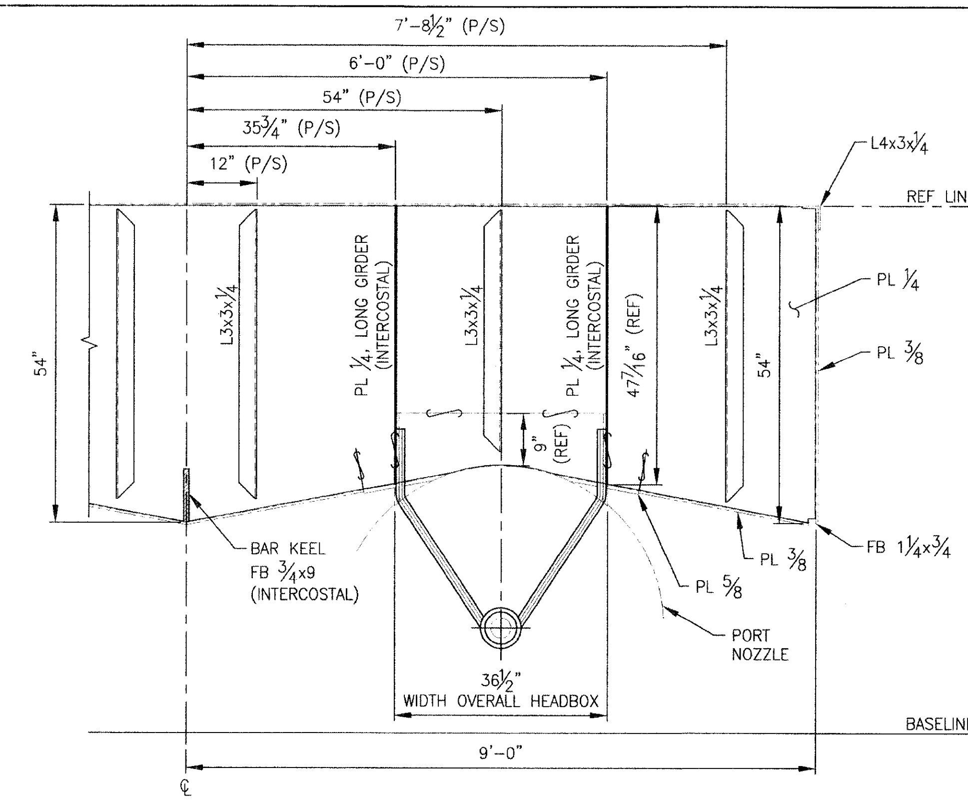
CONTRACT NO. 76D29

FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT



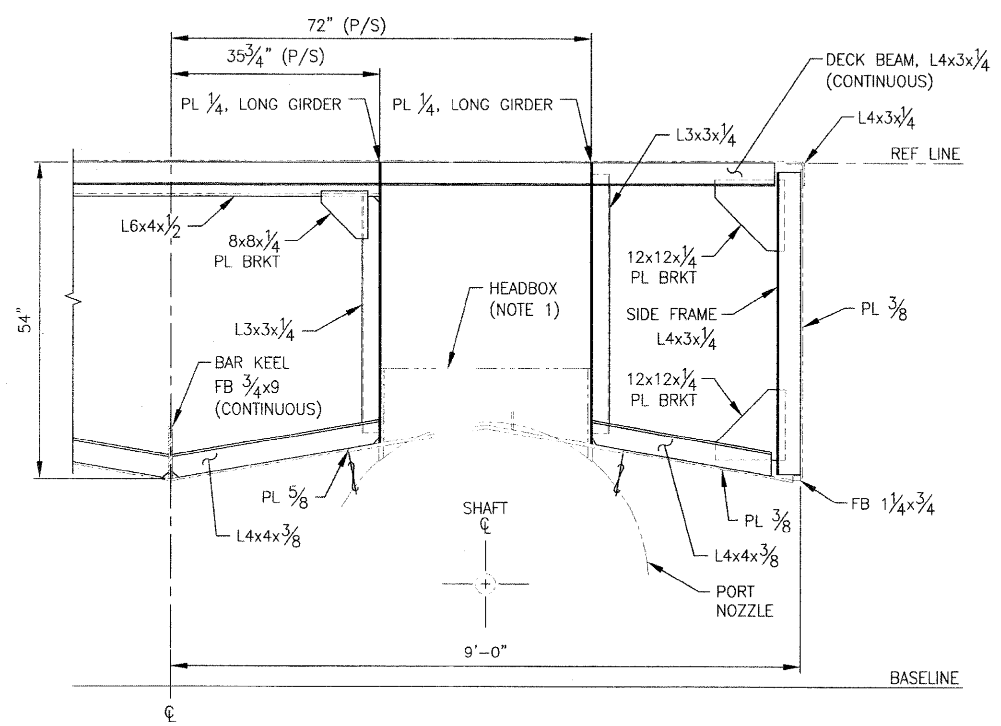
FRAME 25 SECTION

LOOKING AFT
SCALE: 3/4" = 1'-0"



FRAME 26 SECTION

WT BULKHEAD, LOOKING AFT
SCALE: 3/4" = 1'-0"

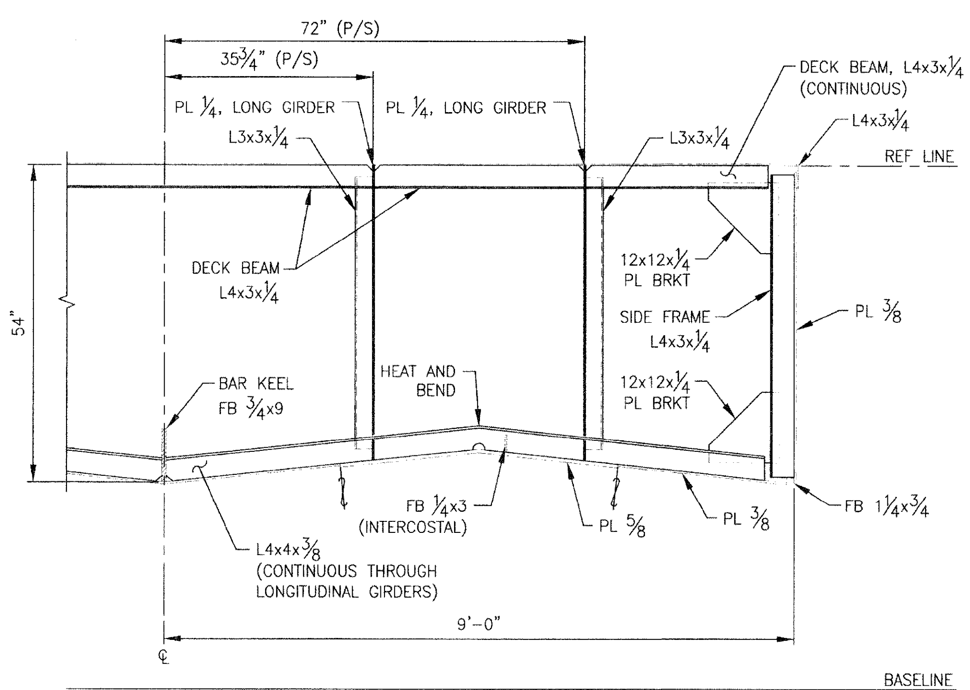


NOTE:

1. AFT EDGE OF HEAD BOX ON KORT NOZZLE LOCATED 1½" FWD OF FR 27 MOLDED LINE.

FRAME 27 SECTION

LOOKING AFT
SCALE: 3/4" = 1'-0"



FRAME 28 SECTION

LOOKING FWD
SCALE: 3/4" = 1'-0"

SCALE: 3/4" = 1'-0"

ART ANDERSON
ASSOCIATES

DRAWING NO. CEIDT001PB-117-107

FILE NAME =	USER NAME =	DESIGNED — A. WINKLEY	REVISED —
		DRAWN — J. WALKER	REVISED —
	PLOT SCALE =	CHECKED — P. MARTIN	REVISED —
	PLOT DATE =	DATE — 7/19/2011	REVISED —

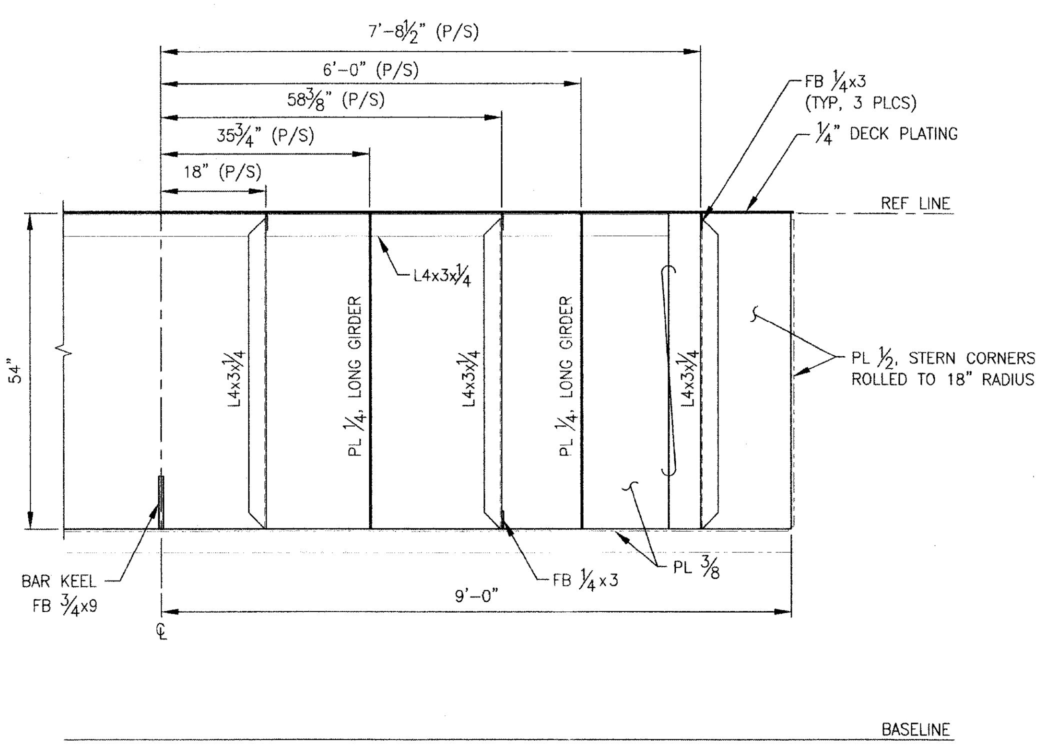
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IDOT BRUSSELS FERRY
TRANSVERSE FRAMING - FR 25 TO 28

SCALE: AS SHOWN | SHEET NO. OF SHEETS | STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	47	13
		CONTRACT NO. 76D29		

FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT



TRANSOM

LOOKING AFT
SCALE: 3/4" = 1'-0"

SCALE: 3/4" = 1'-0"

ART ANDERSON ASSOCIATES

DRAWING NO. CEIDT001PB-117-108

FILE NAME =	USER NAME =	DESIGNED – A. WINKLEY	REVISED –
		DRAWN – J. WALKER	REVISED –
	PLOT SCALE =	CHECKED – P. MARTIN	REVISED –
	PLOT DATE =	DATE – 7/19/2011	REVISED –

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

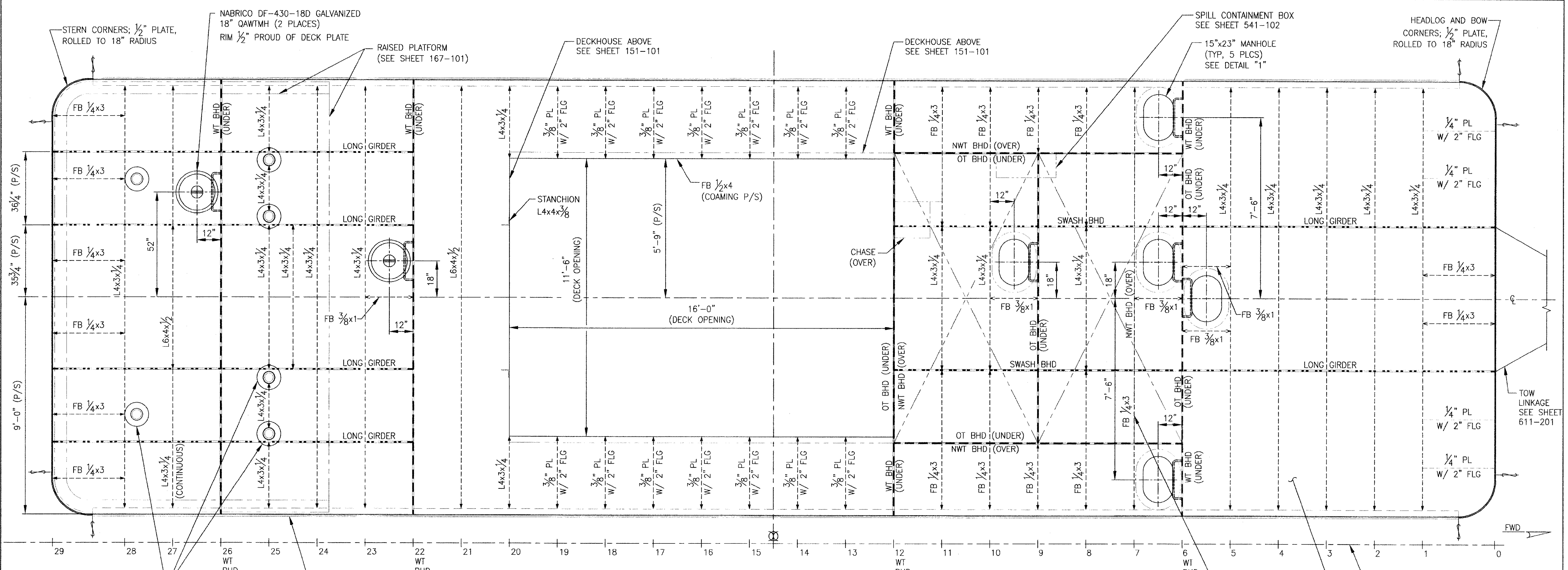
IDOT BRUSSELS FERRY
TRANSVERSE FRAMING - TRANSOM

SCALE: AS SHOWN | SHEET NO. OF SHEETS | STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	47	14

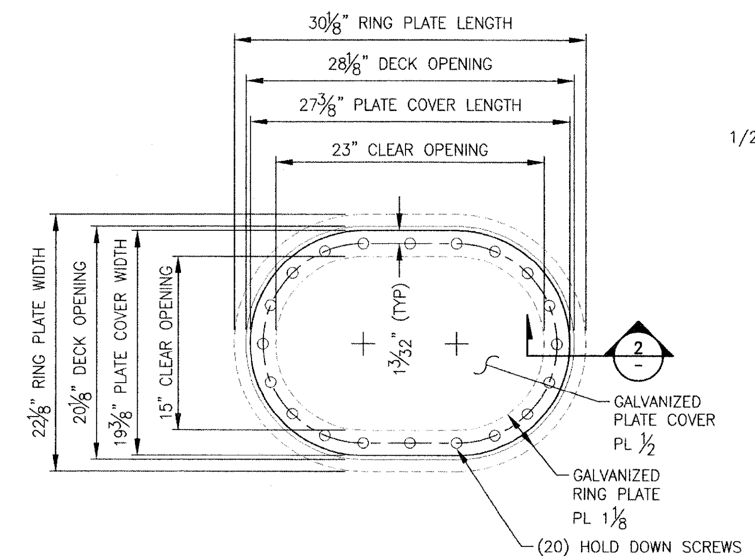
CONTRACT NO. 76D29

FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT



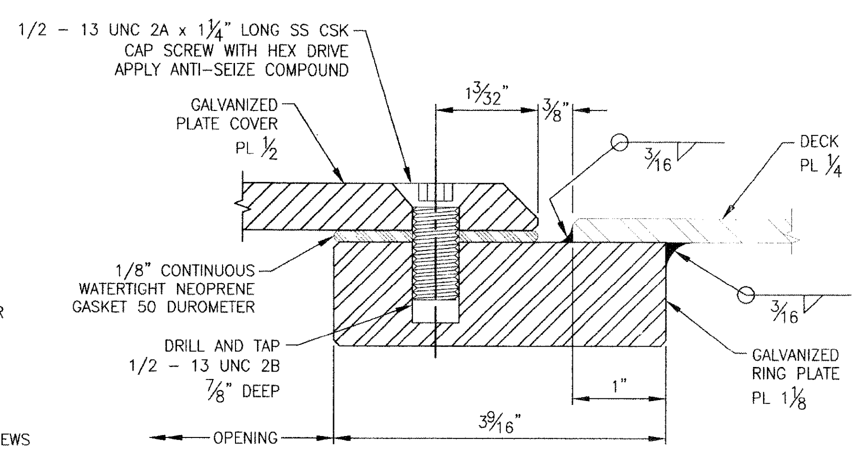
MAIN DECK PLATING AND FRAMING

SCALE: 1/2" = 1'-0"



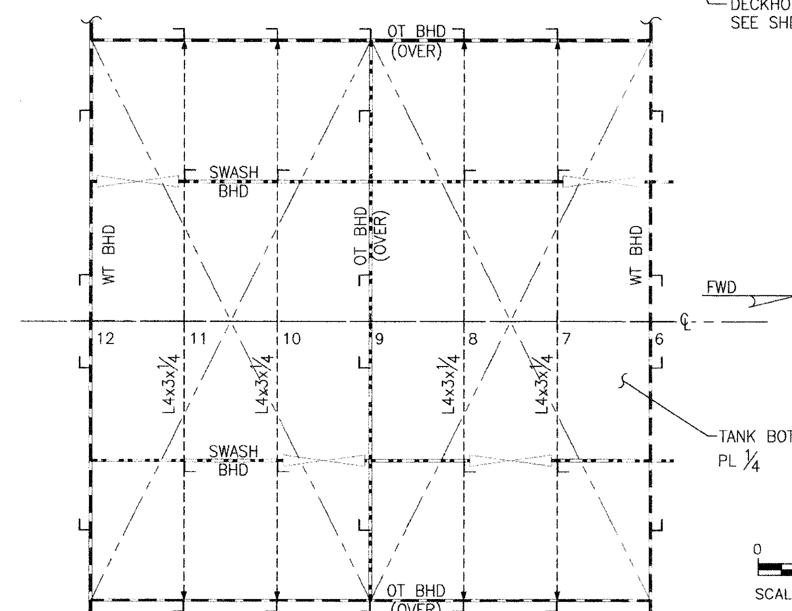
1 — 23"x15" FLUSH WT MANHOLE COVER DETAIL

SEE NOTE 1
SCALE: 1 1/2" = 1'-0"



2 — MANHOLE COVER SEAL SECTION

SEE NOTE 1
SCALE: 12" = 1'-0"



TANK BOTTOM STRUCTURE

SCALE: 1/2" = 1'-0"

NOTE:

1. MANHOLE IS SCHOELLHORN-ALBRECHT #S1551, OR EQUAL.

SCALE: 1/2" = 1'-0"

SCALE: 1 1/2" = 1'-0"

SCALE: 12" = 1'-0"

ALAN WINKLEY — STATE OF WASHINGTON — 24000 — REGISTERED PROFESSIONAL ENGINEER — 7/22/2011

ART ANDERSON ASSOCIATES

DRAWING NO. CEIDT001PB-131-101

FILE NAME =	USER NAME =	DESIGNED — A. WINKLEY	REVISED —
		DRAWN — R. MANANSALA	REVISED —
	PLOT SCALE =	CHECKED — P. MARTIN	REVISED —
	PLOT DATE =	DATE — 7/19/2011	REVISED —

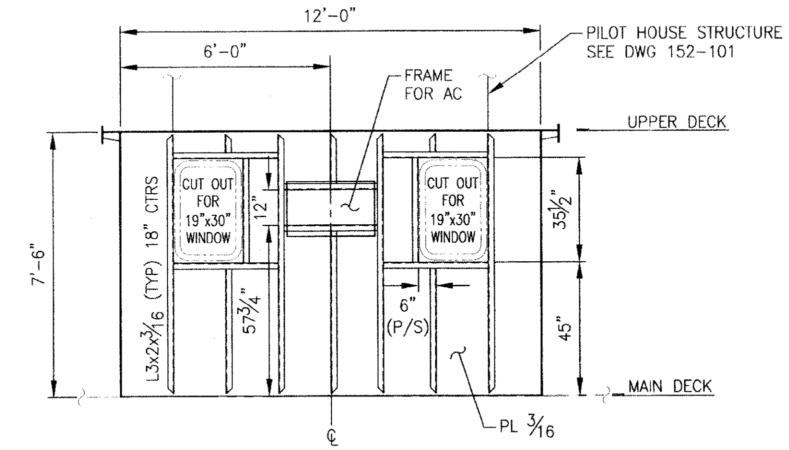
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IDOT BRUSSELS FERRY
MAIN DECK PLATING AND FRAMING - PUSHBOAT

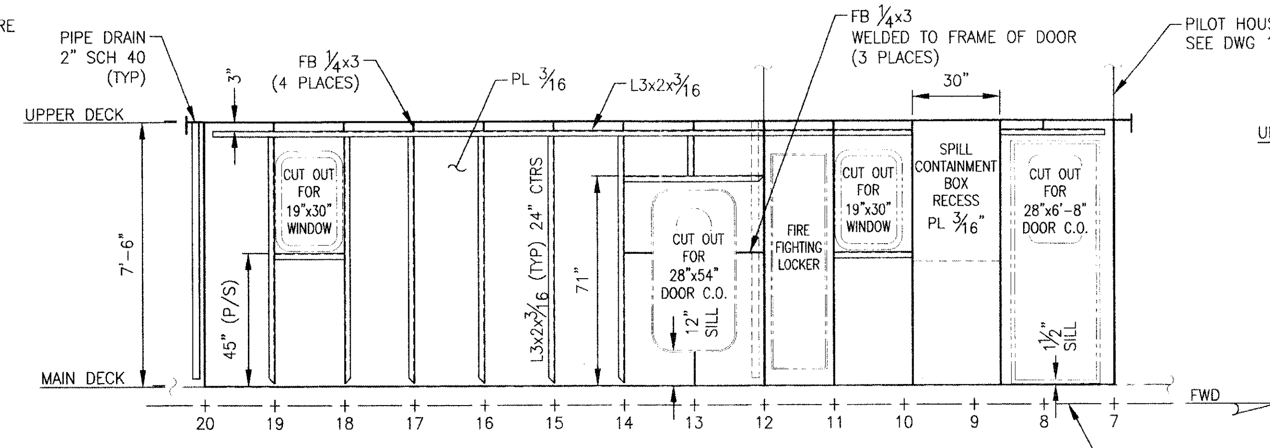
SCALE: AS SHOWN | SHEET NO. OF SHEETS | STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	47	15
		CONTRACT NO. 76D29		

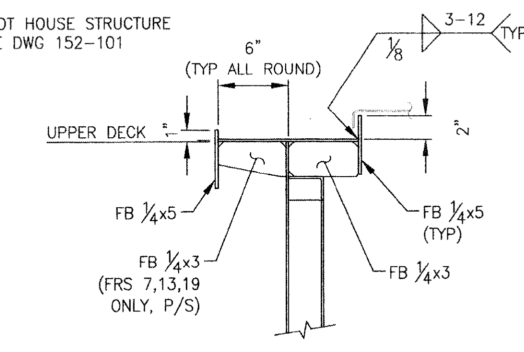
FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT



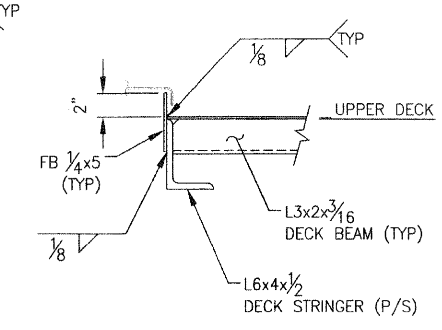
A FR 7 BULKHEAD SECTION
LOOKING FWD
SCALE: 3/8" = 1'0"



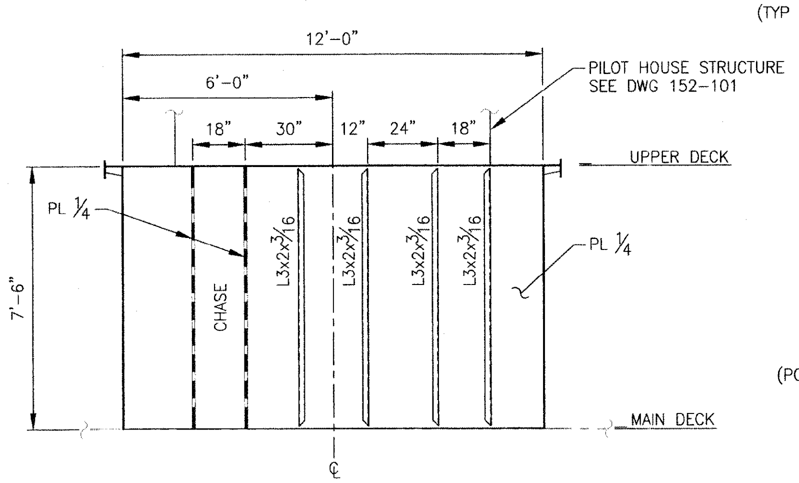
B PORT BULKHEAD ELEVATION
PORT SIDE LOOKING OUTBD
SCALE: 3/8" = 1'0"



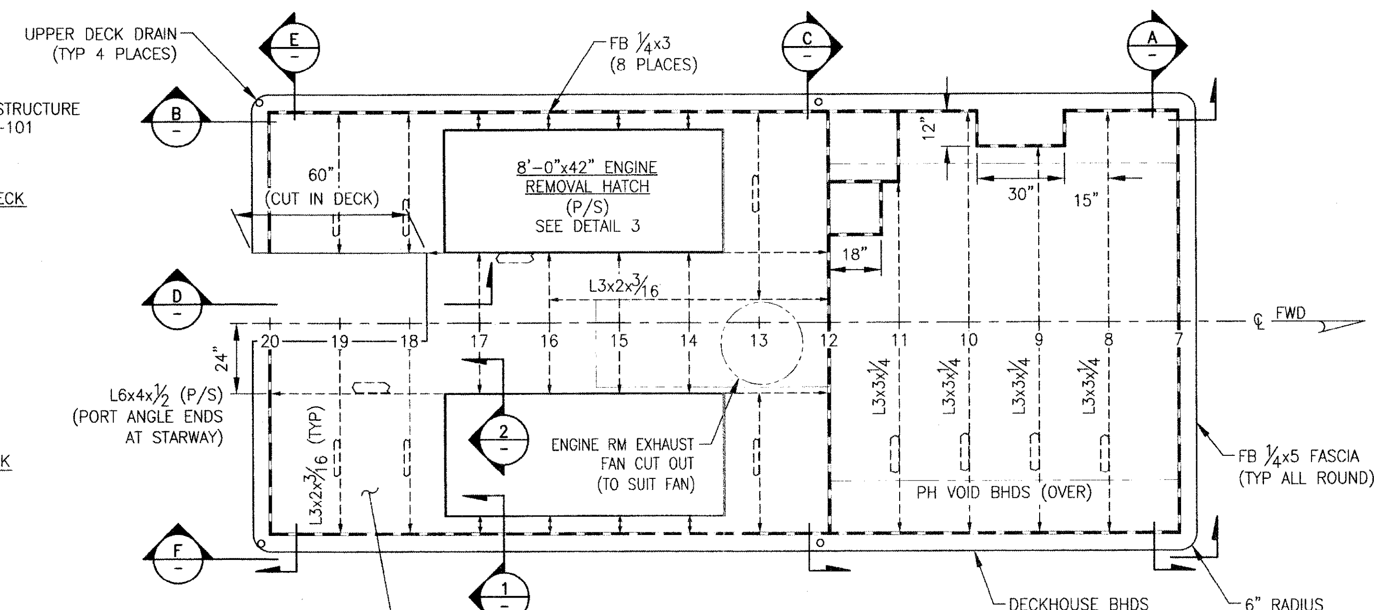
1 HATCH COAMING SECTION
TYPICAL SECTION AT ENGINE HATCHES
SCALE: 1-1/2" = 1'0"



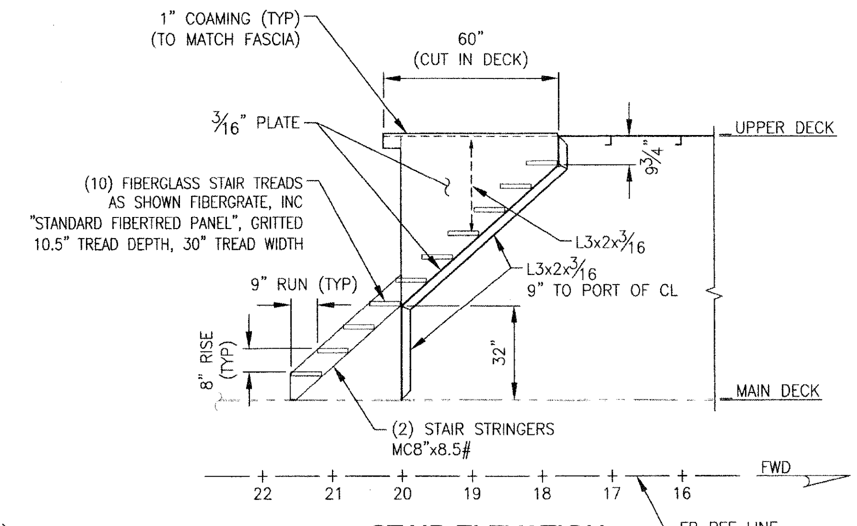
2 HATCH COAMING SECTION
TYPICAL SECTION AT ENGINE HATCHES
SCALE: 1-1/2" = 1'0"



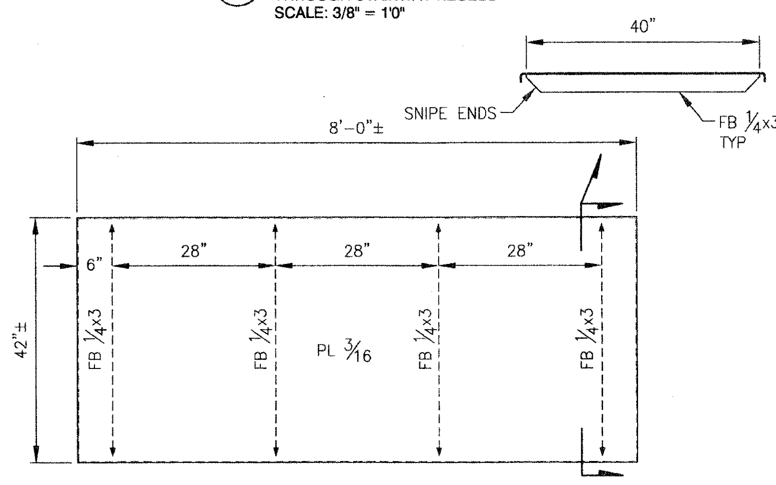
C FR 12 BULKHEAD SECTION
LOOKING FWD
SCALE: 3/8" = 1'0"



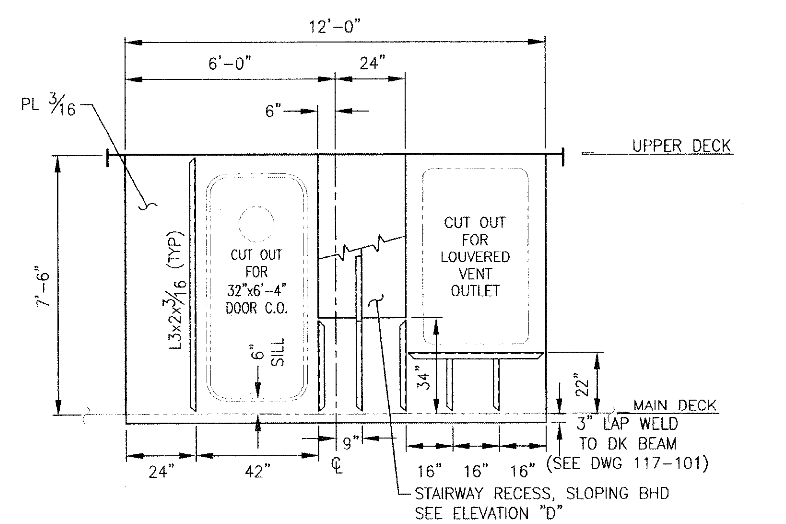
UPPER DECK PLAN
SCALE: 3/8" = 1'0"



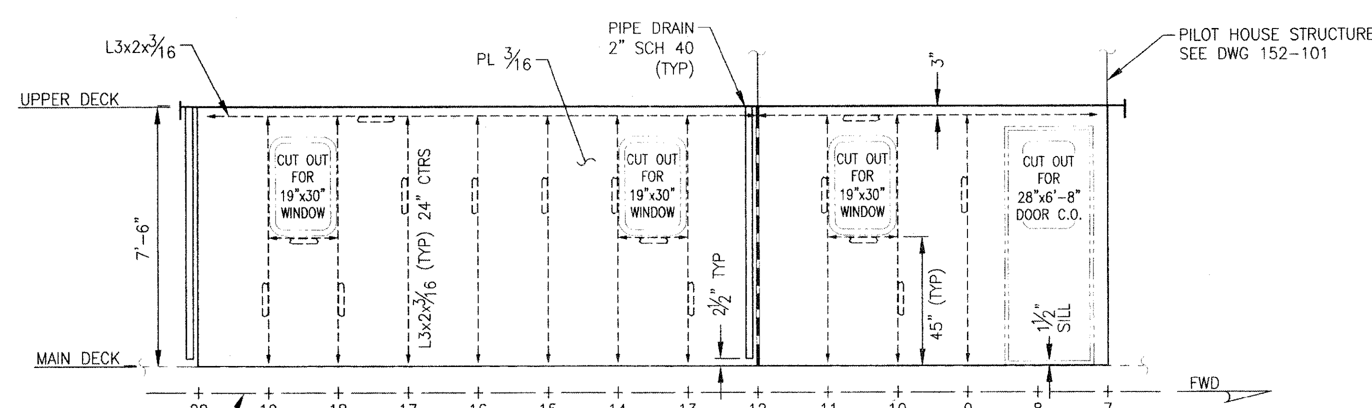
D STAIR ELEVATION
THROUGH STAIRWAY RECESS
SCALE: 3/8" = 1'0"



3 ENGINE REMOVAL HATCH COVER
SCALE: 3/4" = 1'0"



E FR 20 BULKHEAD SECTION
LOOKING AFT
SCALE: 3/8" = 1'0"



F STBD BULKHEAD ELEVATION
STBD SIDE LOOKING INBD
SCALE: 3/8" = 1'0"

0 8" 16" 2' 2'8" 4' 5'4" 8'
SCALE: 3/8" = 1'-0"

0 4" 8" 12" 2' 3' 4'
SCALE: 3/4" = 1'-0"

0 2" 4" 6" 12" 2'
SCALE: 1 1/2" = 1'-0"

ALAN WINKLEY — STATE OF WASHINGTON — 24000 REGISTERED PROFESSIONAL ENGINEER — 7/21/2011

ART ANDERSON ASSOCIATES
202 PACIFIC AVE, BREMERTON, WA 98337 (360) 479-5600

DRAWING NO. CEIDT001PB-151-101

FILE NAME =	USER NAME =	DESIGNED — A. WINKLEY	REVISED —
		DRAWN — J. WALKER	REVISED —
	PLOT SCALE =	CHECKED — P. MARTIN	REVISED —
	PLOT DATE =	DATE — 7/19/2011	REVISED —

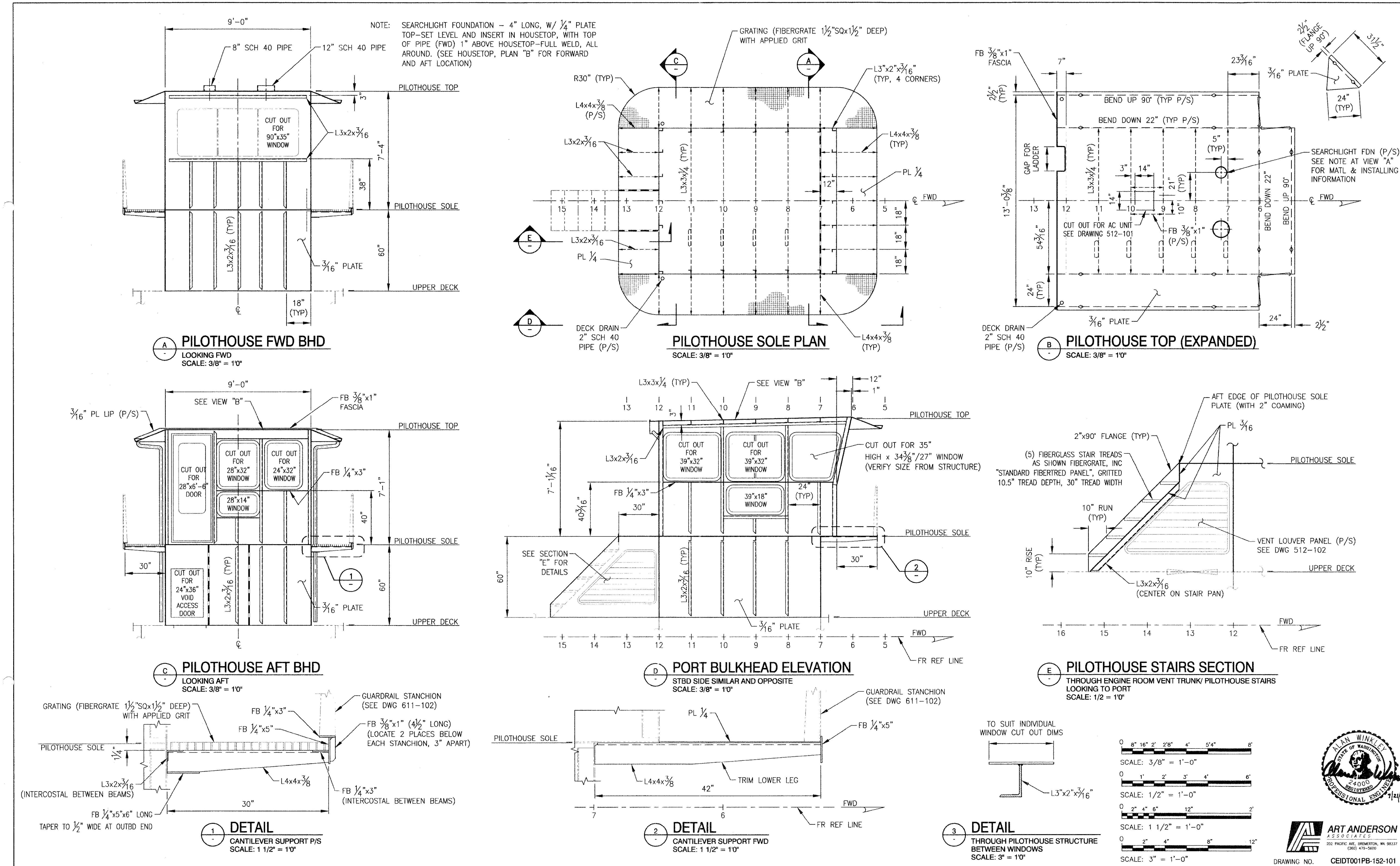
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IDOT BRUSSELS FERRY
DECKHOUSE STRUCTURE

SCALE: AS SHOWN | SHEET NO. OF SHEETS | STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	47	16
		CONTRACT NO. 76D29		

FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT



DRAWING NO. CEIDT001PB-152-101

FILE NAME =	USER NAME =	DESIGNED – A. WINKLEY	REVISED –
		DRAWN – J. WALKER	REVISED –
	PLOT SCALE =	CHECKED – P. MARTIN	REVISED –
	PLOT DATE =	DATE – 7/19/2011	REVISED –

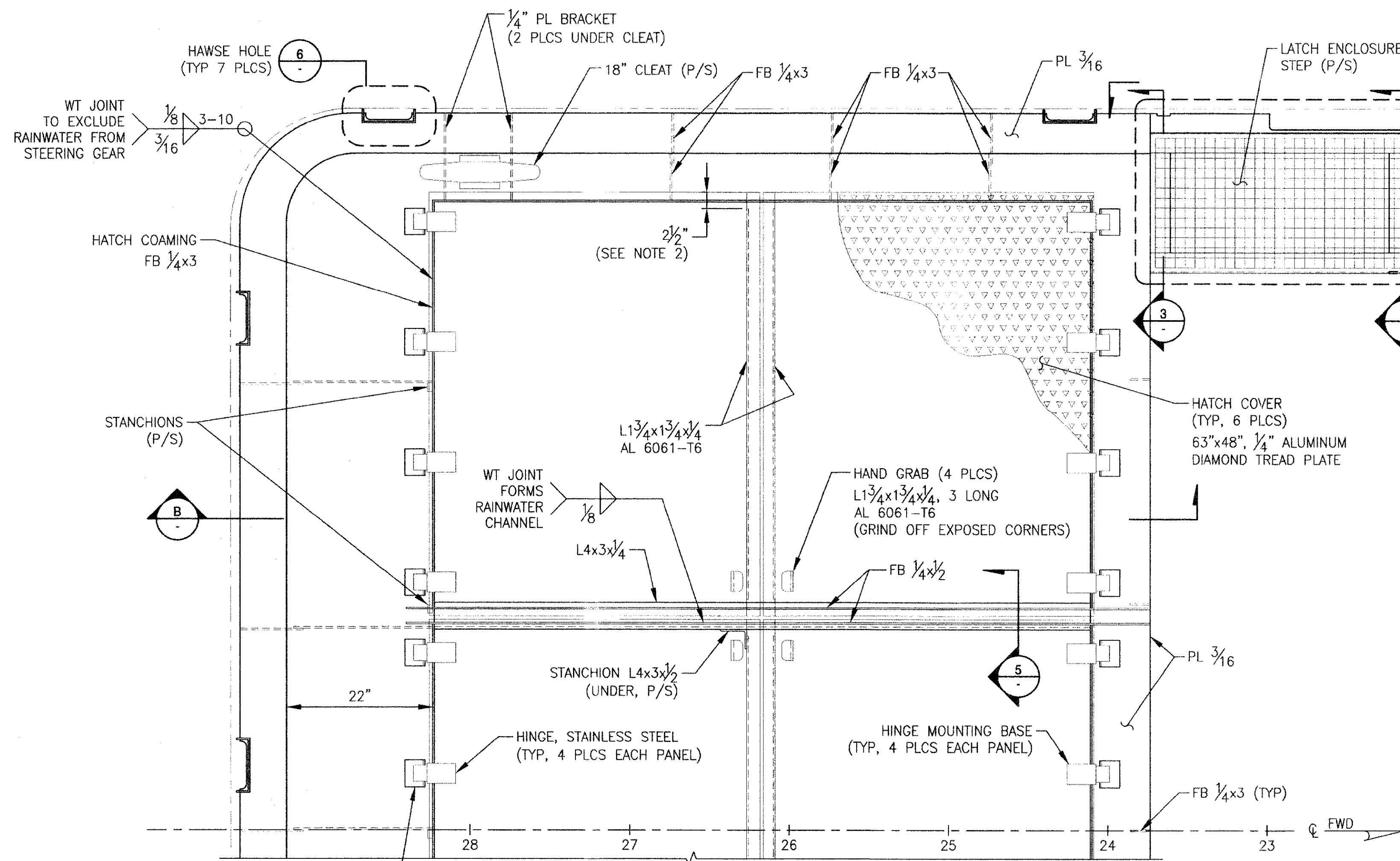
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IDOT BRUSSELS FERRY
PILOTHOUSE STRUCTURE

SCALE: AS SHOWN | SHEET NO. OF SHEETS | STA. TO STA.

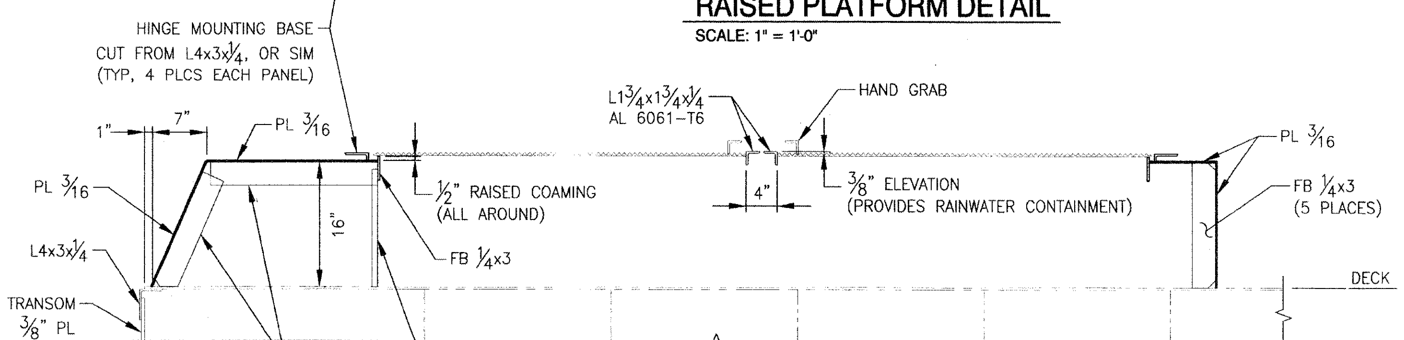
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	47	17
		CONTRACT NO. 76D29		

FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT



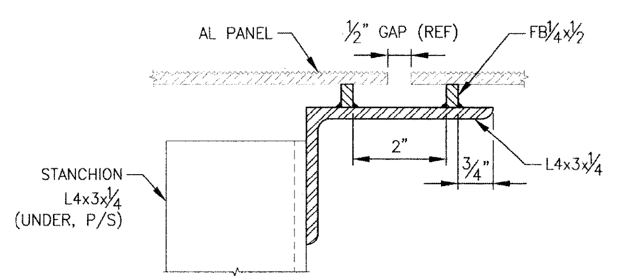
RAISED PLATFORM DETAIL

SCALE: 1" = 1'-0"



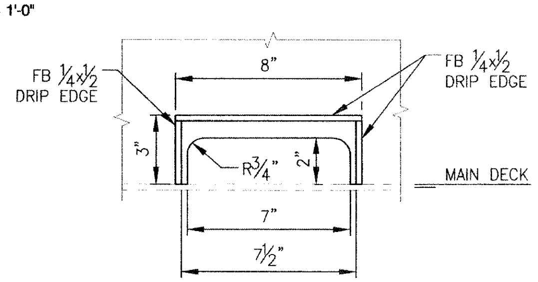
A SECTION

SCALE: 1" = 1'-0"



5 SECTION

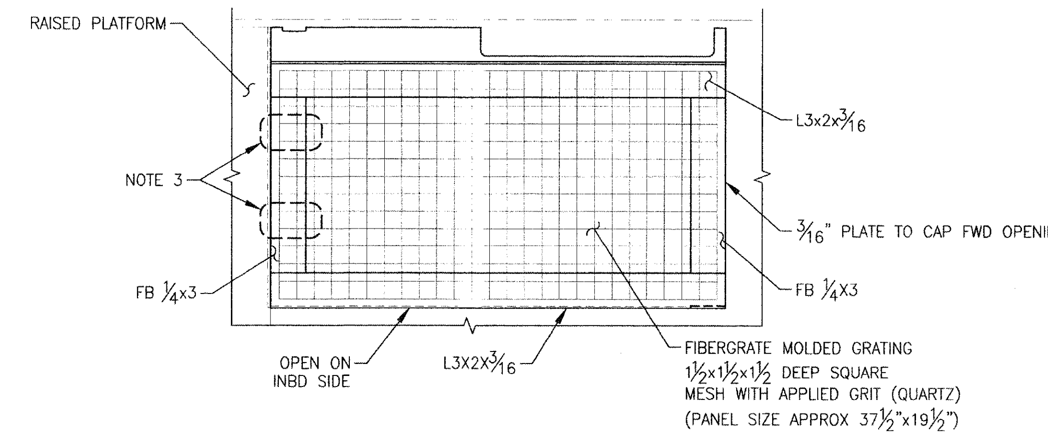
SCALE: 6" = 1'-0"



6 HAWSE HOLE DETAIL

LOOKING INBOARD

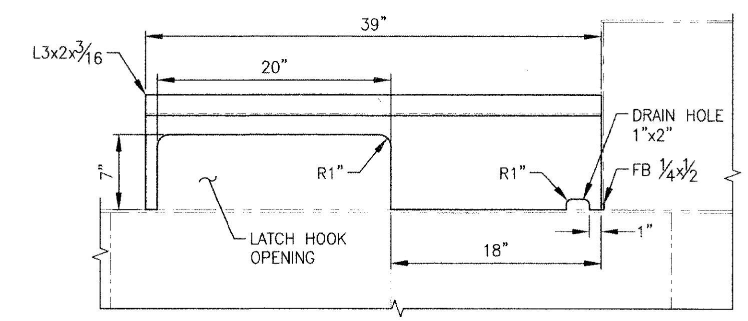
SCALE: 3" = 1'-0"



1 LATCH ENCLOSURE STEP DETAIL

STBD SIDE SYMMETRICALLY OPPOSITE

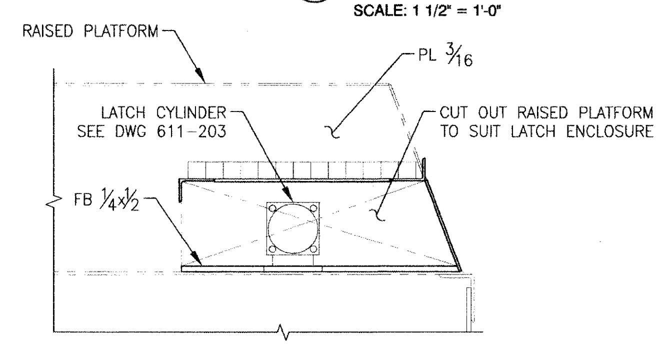
SCALE: 1 1/2" = 1'-0"



2 LATCH ENCLOSURE STEP DETAIL

LOOKING INBOARD

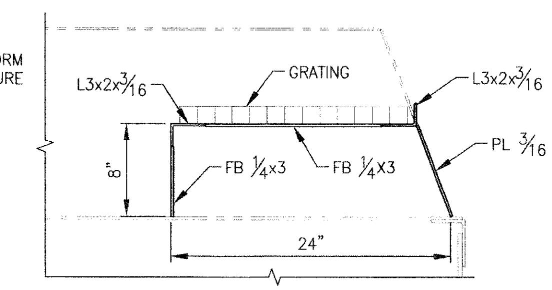
SCALE: 1 1/2" = 1'-0"



3 LATCH ENCLOSURE STEP DETAIL

LOOKING AFT

SCALE: 1 1/2" = 1'-0"



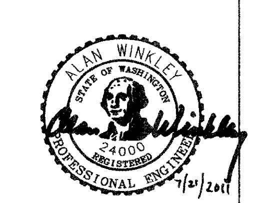
4 LATCH ENCLOSURE STEP DETAIL

LOOKING AFT

SCALE: 1 1/2" = 1'-0"

NOTES:

1. SCANTLINGS DENOTED BY "AL" ARE ALUMINUM.
2. TRIM 2 1/2" OFF EACH END OF LOWER LEG OF 1 3/4"x1 3/4"x1/4" ANGLE FLUSH W/ UNDERSIDE OF AL PL (TYP, EACH OF SIX PANELS).
3. FASTEN AFT EDGE OF GRATING TO FLATBAR WITH HEAVY DUTY CABLE TIES.



0 1" 2" 3" 4" 6"
SCALE: 6" = 1'–0"

0 3" 6" 9" 1' 2' 3'
SCALE: 1" = 1'–0"

0 2" 4" 6" 12" 2'
SCALE: 1 1/2" = 1'–0"

0 2" 4" 8" 12"
SCALE: 3" = 1'–0"

ART ANDERSON ASSOCIATES
202 PACIFIC AVE. BREMERTON, WA 98337 (360) 479-5600

DRAWING NO. CEIDT001PB-167-101

FILE NAME =	USER NAME =	DESIGNED – A. WINKLEY	REVISED –
		DRAWN – J. WALKER	REVISED –
	PLOT SCALE =	CHECKED – P. MARTIN	REVISED –
	PLOT DATE =	DATE – 7/19/2011	REVISED –

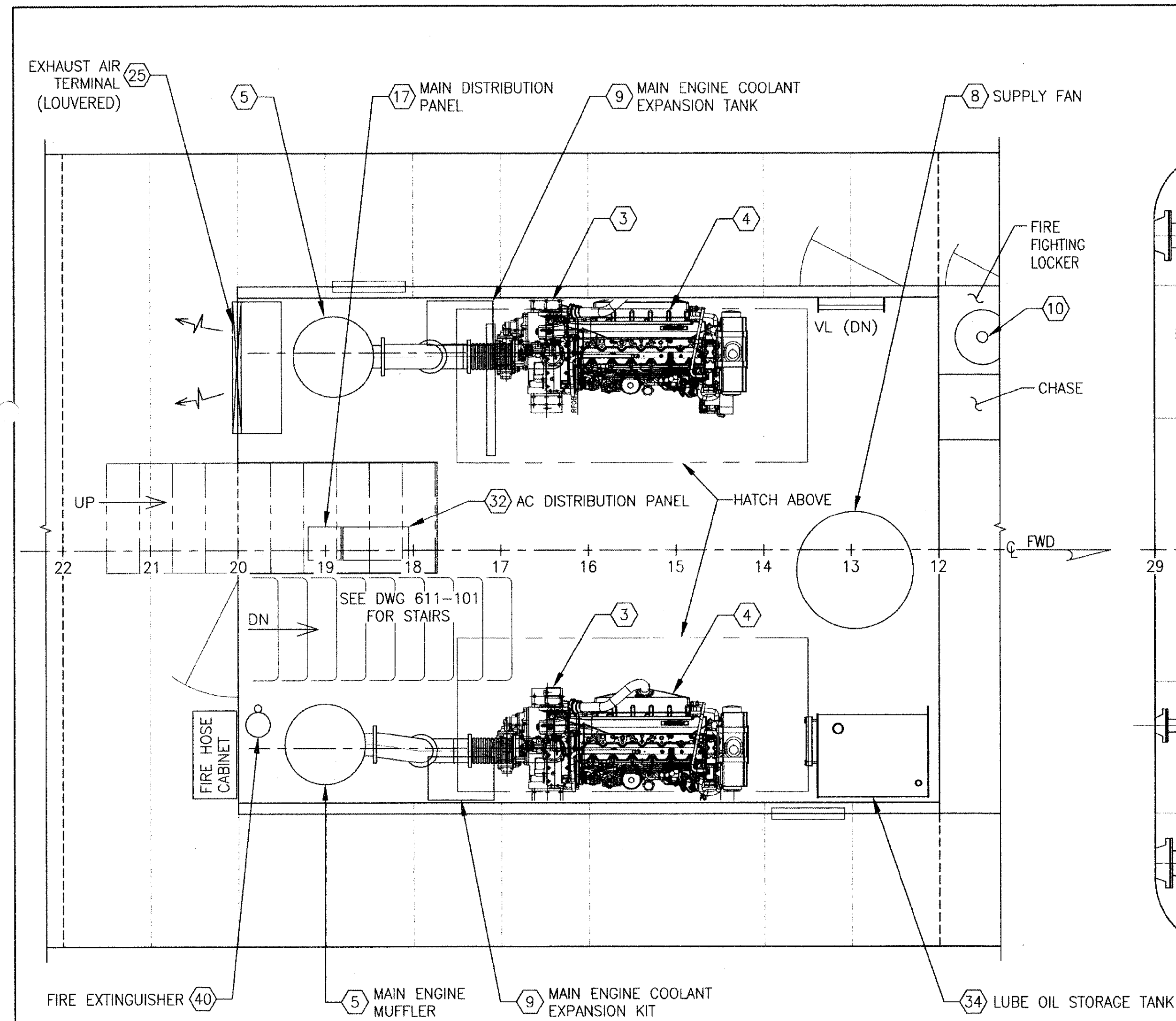
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IDOT BRUSSELS FERRY
HATCHES AND RAISED PLATFORM

SCALE: NTS | SHEET NO. OF SHEETS | STA. TO STA.

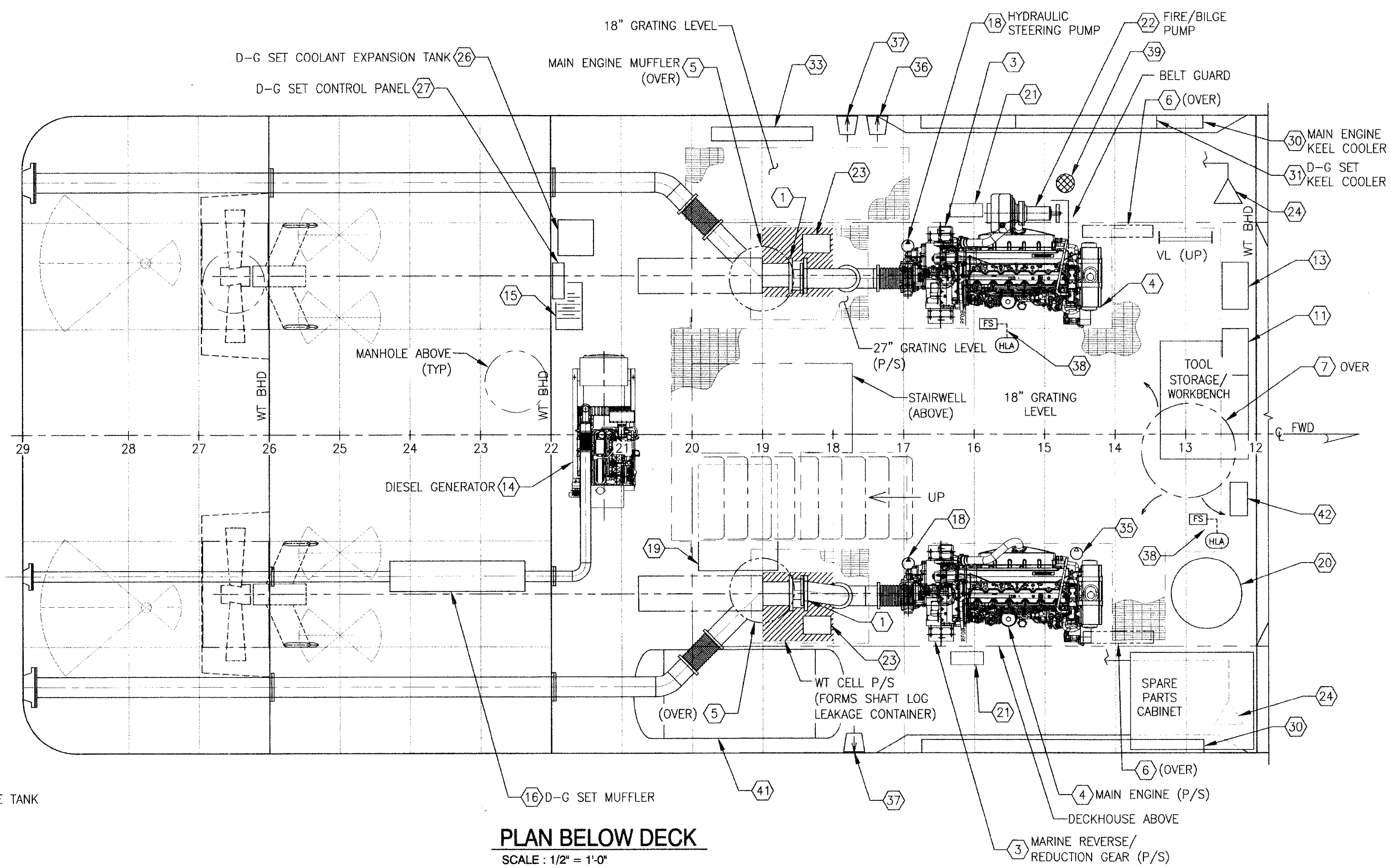
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21–3	JERSEY	47	18
		CONTRACT NO. 76D29		

FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT



PLAN AT MAIN DECK

SCALE : 1/2" = 1'-0"

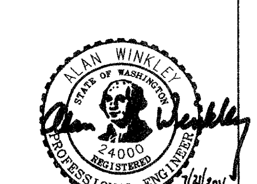


PLAN BELOW DECK

SCALE : 1/2" = 1'-0"

MACHINERY LIST

PC NO.	QTY	EQUIPMENT	MAKE	MODEL	APPROX SIZE	REMARK
1	2 EA	STUFFING BOX	DURAMAX	1790-0400	4"x5"x16"L	P/N886014201; BRONZE, GREASE LUBE; USE W/PACKING UX0500-03
2	2 EA	SHAFT COUPLING	TWIN DISC	XA6988A		COMPANION FLANGE ASSEMBLY TO REDUCTION GEAR
3	2 EA	MARINE REVERSE/REDUCTION GEAR	TWIN DISC	MG5091-DC		4.5:1 RATIO
4	2 EA	MAIN ENGINE	JOHN DEERE	6081AFM75		KEEL COOLING
5	2 EA	MAIN ENGINE MUFFLER	MAXIM	M-41	6"ø	
6	2 EA	ENGINE GAUGE BOARD				
7	1 EA	INTAKE AIR DUCT	YARD BUILD			SEE DWG 512-102
8	1 EA	SUPPLY FAN	HARTZELL	SERIES 53C	29"ø	SEE DWG 512-102
9	2 EA	MAIN ENGINE COOLANT EXPANSION TANK	YARD BUILD		10 TO 12 GAL	STEEL
10	1 EA	CO2 SEMI-PORTABLE FIRE EXTINGUISHING GEAR	ANSUL	433541	19"x15"x66"H	100-POUND CAPACITY; WITH 40' HOSE
11	1 EA	BATTERY CHARGER	NEWMAR	PT80		SEE DWG 321-102
12	1 EA	SHIP SERVICE BATTERY				
13	1 EA	DC ELECTRICAL PANEL (NO 3)				SEE DWG 321-102
14	1 EA	DIESEL-GENERATOR SET	NORTHERN LIGHTS	M30CW	52"x24"x31"H	30kW
15	1 EA	STARTING BATTERY FOR D-G SET				SEE DWG 321-102
16	1 EA	MUFFLER FOR D-G SET	MAXIM	MUL	3"ø	
17	1 EA	MAIN DISTRIBUTION PANEL				SEE DWG 321-103
18	2 EA	HYDRAULIC STEERING PUMP	EATON VICKERS	70423		PTO DRIVE FROM PC NO. 3 (FURNISH WITH KOBELT SYSTEM)
19	1 EA	HYDRAULIC STEERING RESERVOIR	VESCOR	10050	50 GAL	(FURNISH WITH KOBELT SYSTEM)
20	1 EA	AIR COMPRESSOR (PRIMARY)	INGERSOLL RAND	2475N5-P		W/AIR TANK (APPROX 80-GAL CAPACITY), SEE DWG 551-101
21	2 EA	REDUCTION GEAR OIL COOLER	POWER SYSTEM SPECIALISTS	SB-1202-A6-0	6"øx25"L	FURNISH W/PC NO.3 BY PJ POWER (DISTRIBUTOR)
22	1 EA	FIRE/BILGE PUMP	BARNES	25ICU-1	25"x13"x16"H	BELT DRIVE FROM PIECE NO 3 (PORT ONLY)
23	2 EA	STUFFING BOX SUMP PUMP	LOVETT	1200		
24	2 EA	BILGE SUCTION BELLMOUTH (ENGINE ROOM)			1½"ø	(LOCATE AS SHOWN, 1/2" ABOVE BOTTOM SHELL, SEE DWG NO 529-101)
25	1 EA	EXHAUST AIR TERMINAL (LOUVERED)	YARD FURNISHED			SEE DWG 512-102
26	1 EA	D-G SET COOLANT REMOTE EXPANSION TANK	NORTHERN LIGHTS	10-11205		STEEL
27	1 EA	D-G SET CONTROL PANEL	NORTHERN LIGHTS	S-3C		REMOTE MOUNT IN E.R. (20' HARNESS INCLUDED)
28	1 EA	REACH ROD CONTROL FOR FIRE PUMP CLUTCH	ELLIOTT OR EQUAL			SEE DWG NO 233-102
29	1 EA	REACH ROD CONTROL FOR FIRE PUMP INTAKE VALVE	ELLIOTT OR EQUAL			SEE DWG NO 233-102
30	2 EA	MAIN ENGINE KEELCOOLER	FERNSTRUM	BN1287B-E1S1		MODIFICATION OF STOCK DESIGN: HAS MOUNTING LUGS ON OUTER SIDE
31	1 EA	D-G SET KEELCOOLER	FERNSTRUM	BN675B-E1S1		MODIFICATION OF STOCK DESIGN
32	1 EA	AC DISTRIBUTION PANEL (NO 1)				SEE DWG 321-103
33	1 EA	FIRE & BILGE MANIFOLD	YARD BUILD			
34	1 EA	LUBE OIL STORAGE TANK	YARD BUILD	66 GAL APPROX		SEE DWG 543-101
35	1 EA	AIR COMPRESSOR	JOHN DEERE			(BACKUP UNIT)
36	1 EA	BILGE OVERBOARD DISCHARGE			2"ø	LOCATE 5'-6" ABOVE BASELINE
37	2 EA	SUMP PUMP OVERBOARD DISCHARGE			1¼"ø	LOCATE 4'-6" ABOVE BASELINE
38	6 EA	HIGH BILGE ALARM FLOAT SWITCH	RULE	33ALA		VISUAL AND 85DB AUDIBLE ALARM IN PILOT HOUSE (LOCATE 2 FLOAT SWITCHES IN ENGINE ROOM)
39	1 EA	FIREMAIN RAW WATER INTAKE STRAINER	TATE ANDALE, OR EQUAL	F	3"ø	304S.S. BASKET; 3/16" PERFORATIONS
40	1 EA	PORTABLE FIRE EXTINGUISHER	AMEREX	B456		
41	1 EA	AIR RECEIVER, 200 GAL, HORIZONTAL	HANSON	30-HA-200-W		SEE DWG 551-101
42	1 EA	DESICCANT AIR DRYER	INGERSOLL RAND	D-341M		SEE DWG 551-101

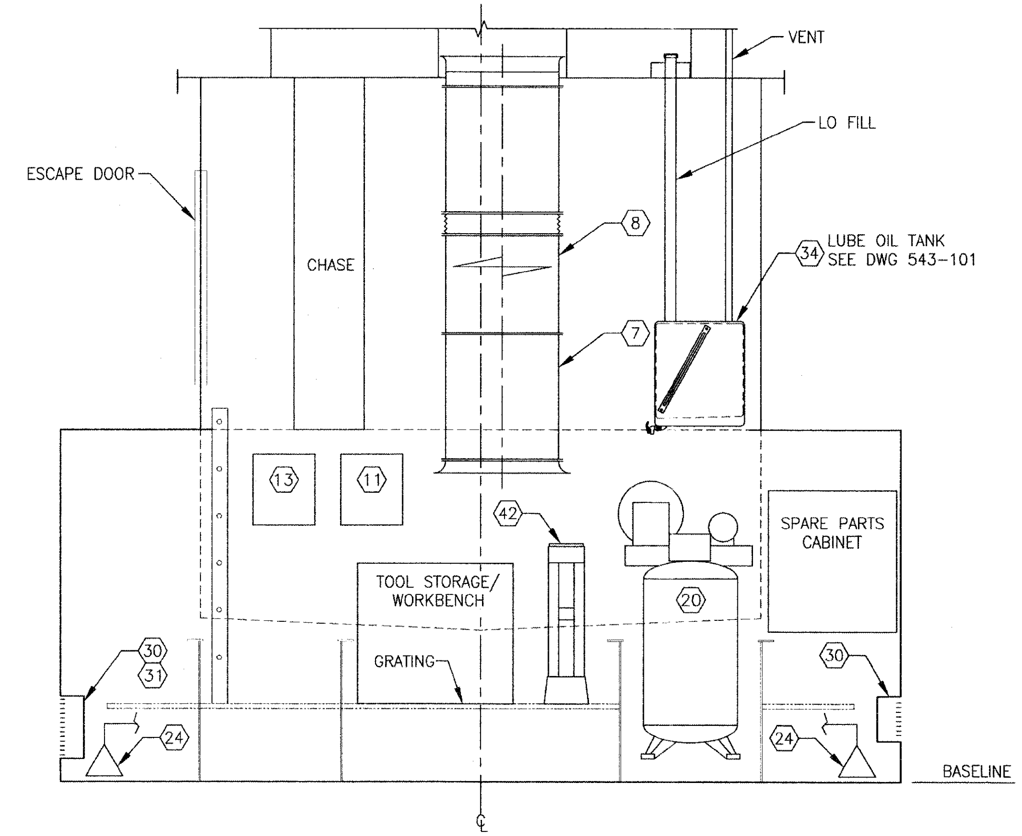


0 1' 2' 3' 4' 6'
SCALE: 1/2" = 1'-0"

ART ANDERSON ASSOCIATES
202 PACIFIC AVE, BREMERTON, WA 98337 (360) 479-5600

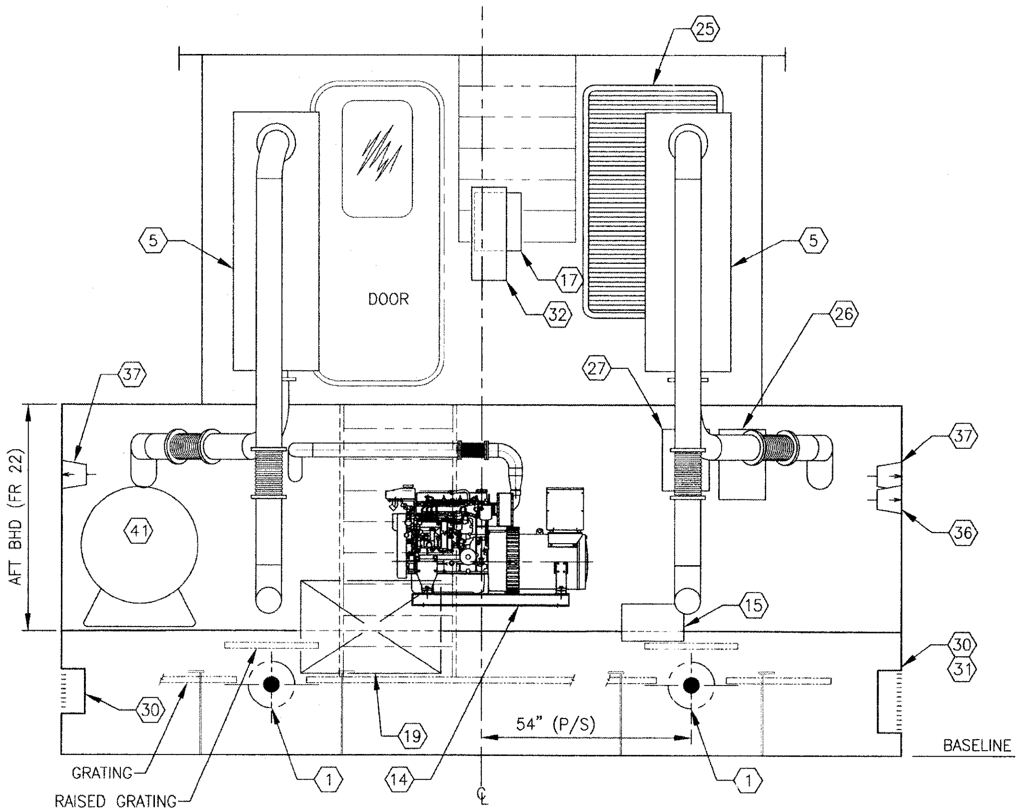
DRAWING NO. CEIDT001PB-233-101

FILE NAME =	USER NAME =	DESIGNED — A. WINKLEY	REVISED —	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	IDOT BRUSSELS FERRY MACHINERY ARRANGEMENT - PLANS	F.A.P. RTE. 304	SECTION 21-3	COUNTY JERSEY	TOTAL SHEETS 47	SHEET NO. 19
		DRAWN — J. WALKER	REVISED —					CONTRACT NO. 76D29		
	PLOT SCALE =	CHECKED — P. MARTIN	REVISED —		SCALE: AS SHOWN	SHEET NO. OF SHEETS	STA. TO STA.			
	PLOT DATE =	DATE — 7/19/2011	REVISED —			FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



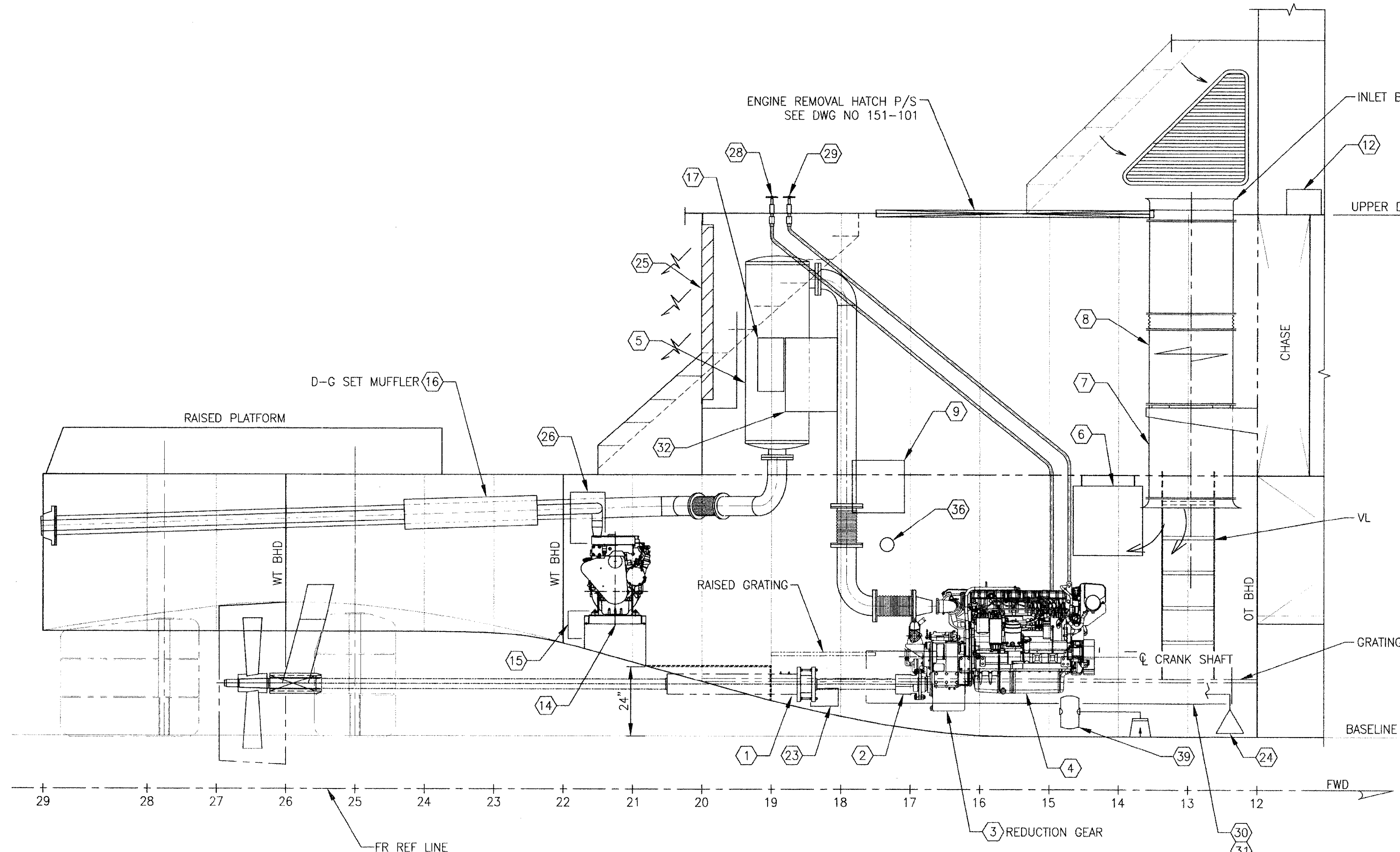
SECTION LOOKING FWD

FROM FRAME 14
SCALE : 1/2" = 1'-0"



SECTION LOOKING AFT

FROM FRAME 17
SCALE : 1/2" = 1'-0"



PORT ELEVATION

SCALE : 1/2" = 1'-0"

NOTE:

1. SEE CEIDT001PB-233-101 FOR MACHINERY LIST.

0 1' 2' 3' 4' 6'
SCALE: 1/2" = 1'-0"

ALAN WINKLEY
STATE OF WASHINGTON
24000
REGISTERED
PROFESSIONAL ENGINEER
7/21/2011

ART ANDERSON
ASSOCIATES
202 PACIFIC AVE. BREMERTON, WA 98337
(360) 479-5600

DRAWING NO. CEIDT001PB-233-102

FILE NAME =	USER NAME =	DESIGNED — A. WINKLEY	REVISED —
		DRAWN — J. WALKER	REVISED —
	PLOT SCALE =	CHECKED — P. MARTIN	REVISED —
	PLOT DATE =	DATE — 7/19/2011	REVISED —

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

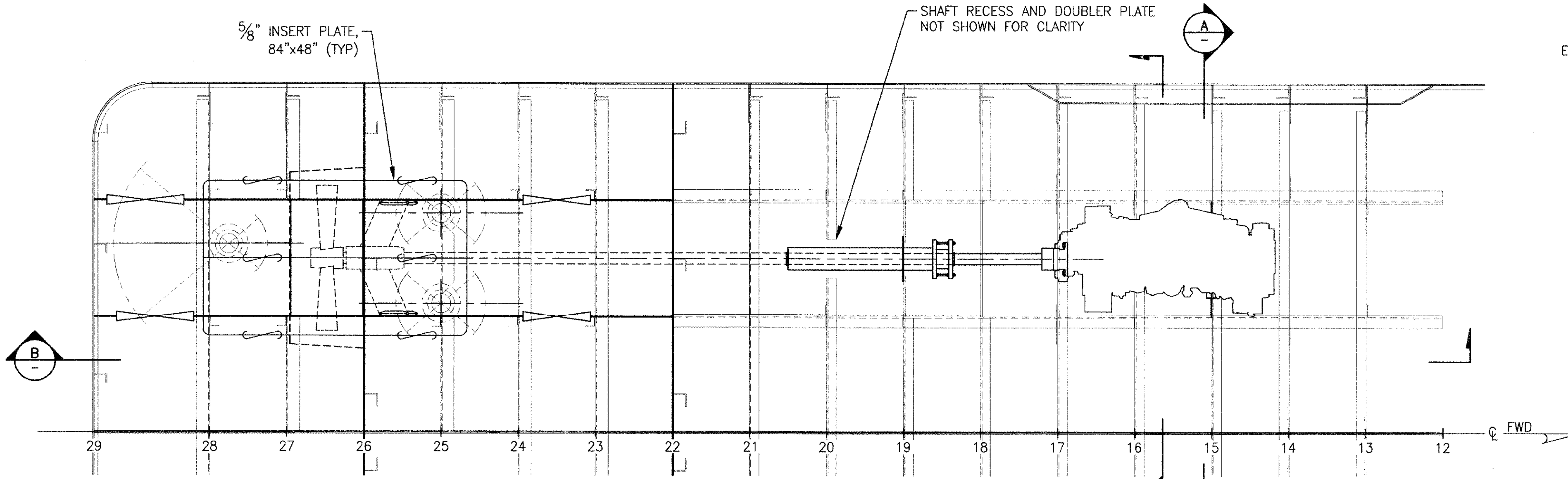
IDOT BRUSSELS FERRY
MACHINERY ARRANGEMENT - SECTIONS AND ELEVATION

SCALE: AS SHOWN | SHEET NO. OF SHEETS | STA. TO STA.

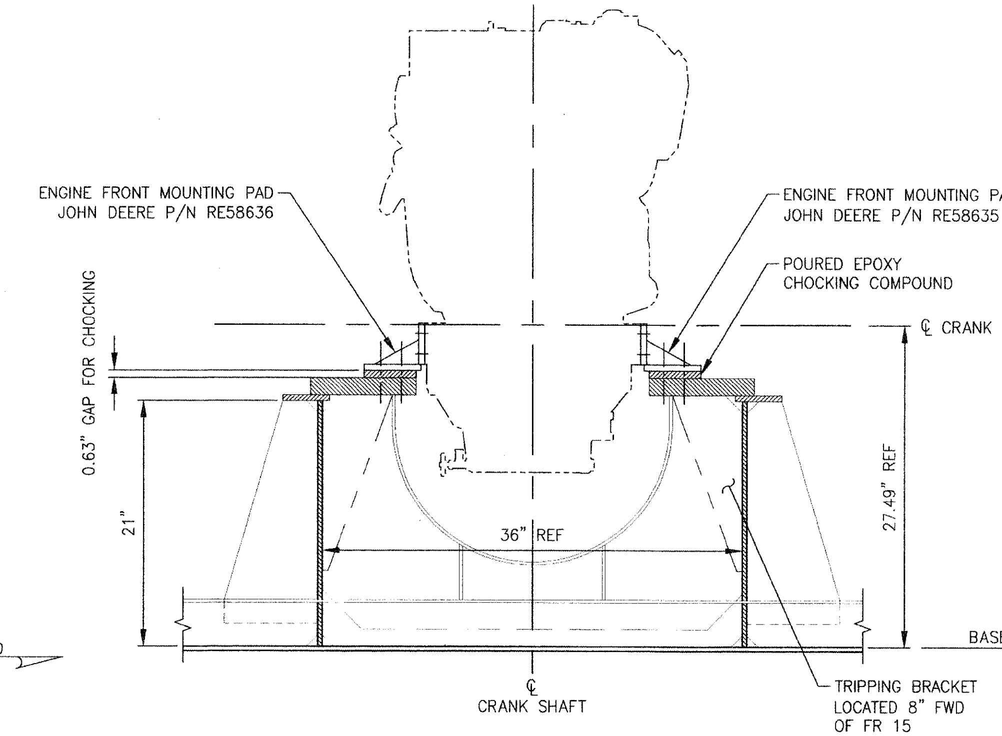
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	47	20

CONTRACT NO. 76D29

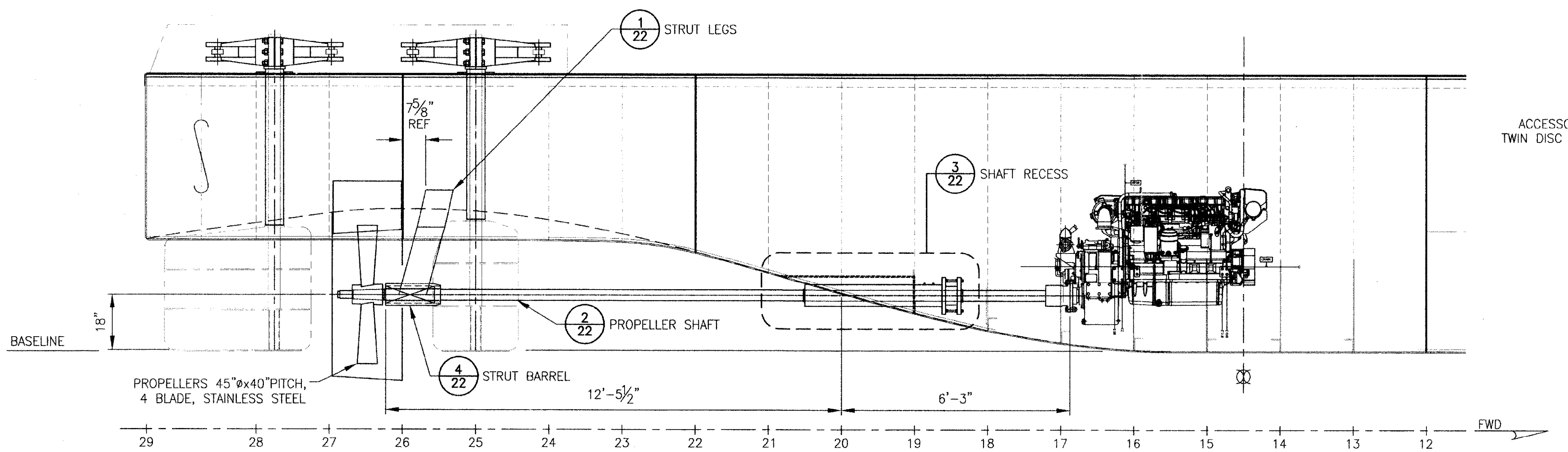
FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT



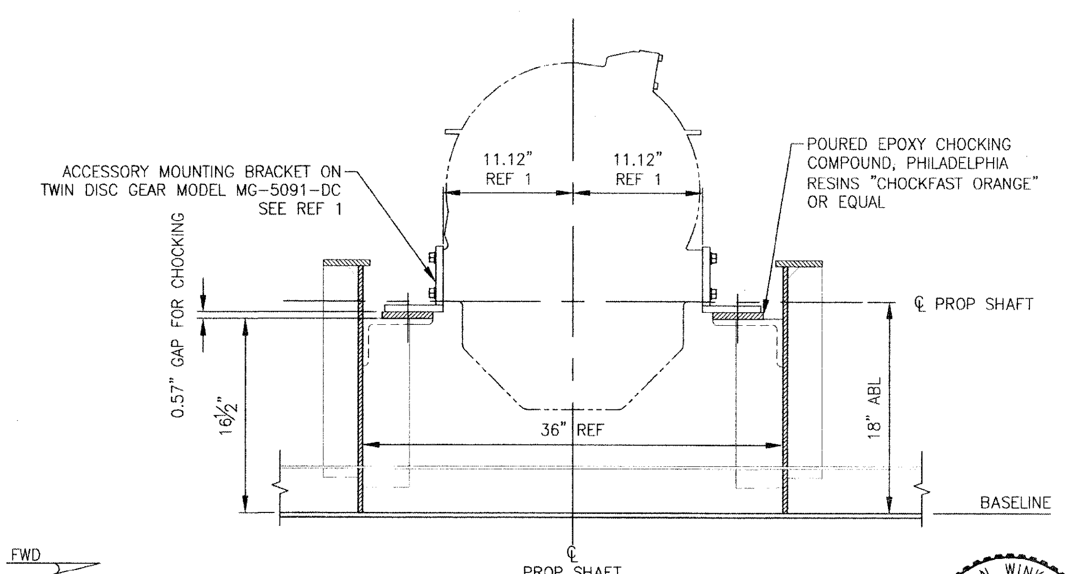
PLAN
PORT SIDE VIEW
SCALE: 1/2" = 1'-0"



A SECTION AT FR15 (LKG AFT)
SCALE: 1 1/2" = 1'-0"



B ELEVATION
PORT SIDE
SCALE: 1/2" = 1'-0"



C SECTION AT FR16 (LKG AFT)
SCALE: 1 1/2" = 1'-0"

REFERENCE:

1. TWIN DISC DWG NO 1016428C

SCALE: 1/2" = 1'-0"

SCALE: 1 1/2" = 1'-0"

ALAN WINKLEY STATE OF WASHINGTON 24000 REGISTERED PROFESSIONAL ENGINEER 7/21/2011

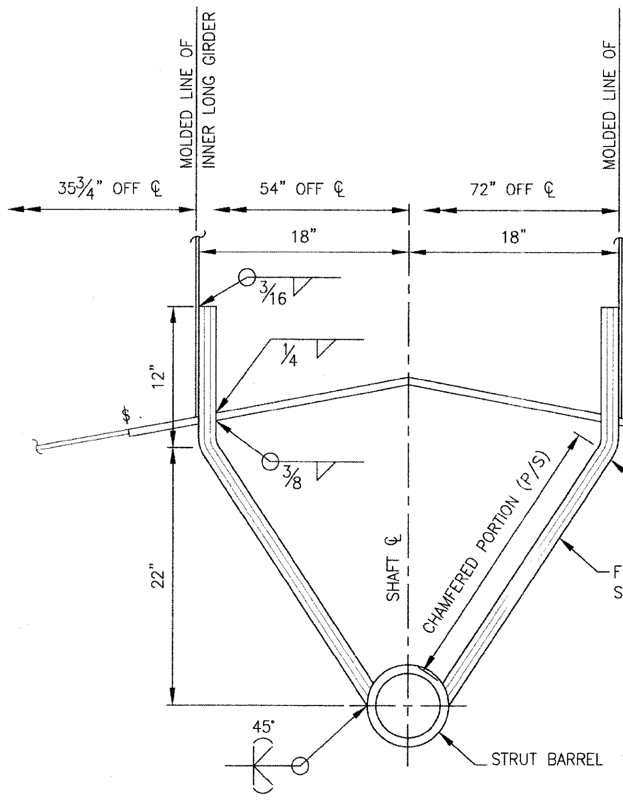
ART ANDERSON ASSOCIATES
202 PACIFIC AVE, BREMERTON, WA 98337 (360) 479-5600

DRAWING NO. CEIDT001PB-243-101

FILE NAME =	USER NAME =	DESIGNED – A. WINKLEY	REVISED –	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	IDOT BRUSSELS FERRY PROPELLER SHAFTING AND SUPPORT	F.A.P. RTE. 304	SECTION 21-3
		DRAWN – C. FAWVER	REVISED –			COUNTY JERSEY	TOTAL SHEETS 47 / SHEET NO. 21
	PLOT SCALE =	CHECKED – P. MARTIN	REVISED –		SCALE: AS SHOWN / SHEET NO. OF SHEETS / STA. TO STA.	CONTRACT NO. 76D29	
	PLOT DATE =	DATE – 7/19/2011	REVISED –			FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT	

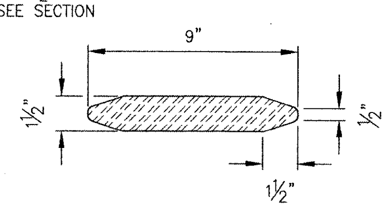
NOTE:

PROPELLER HUB AND SHAFT END MACHINING, KEY AND KEY WAY TO BE PER SAE STANDARD J755



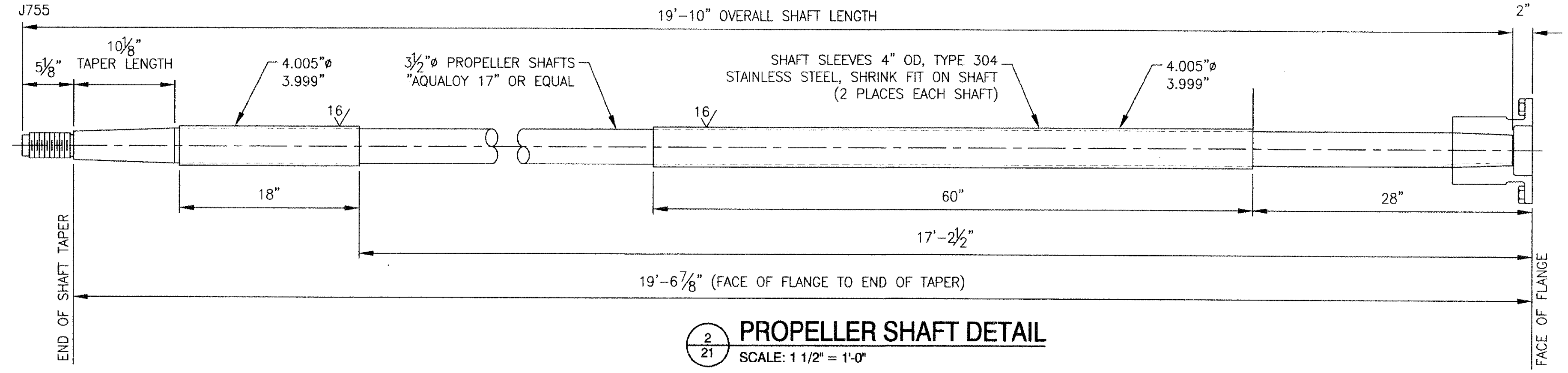
STRUT DETAIL

1/21 SCALE: 1 1/2" = 1'-0"



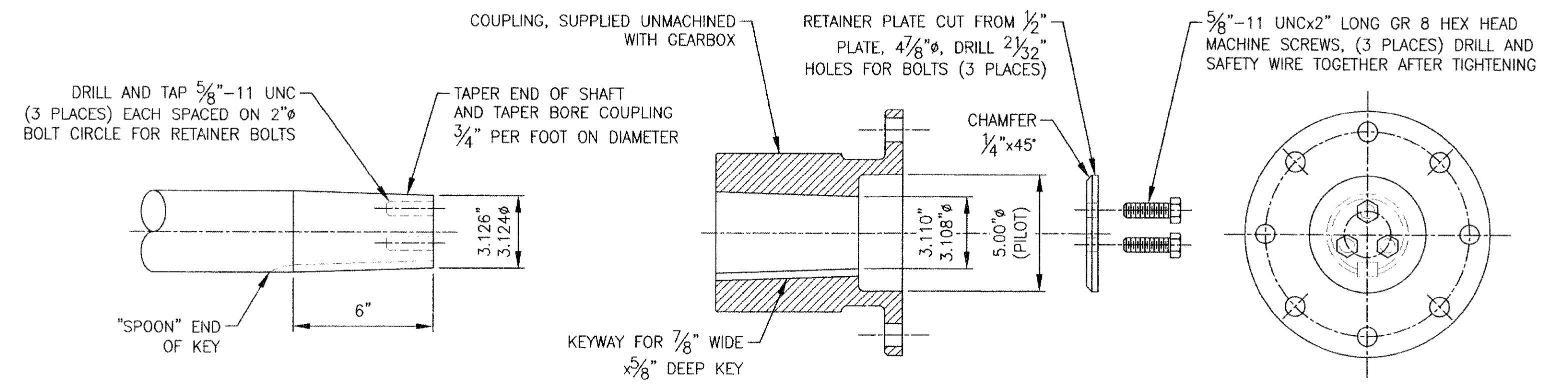
SECTION

SECTION THROUGH STRUT
SCALE: 3" = 1'-0"



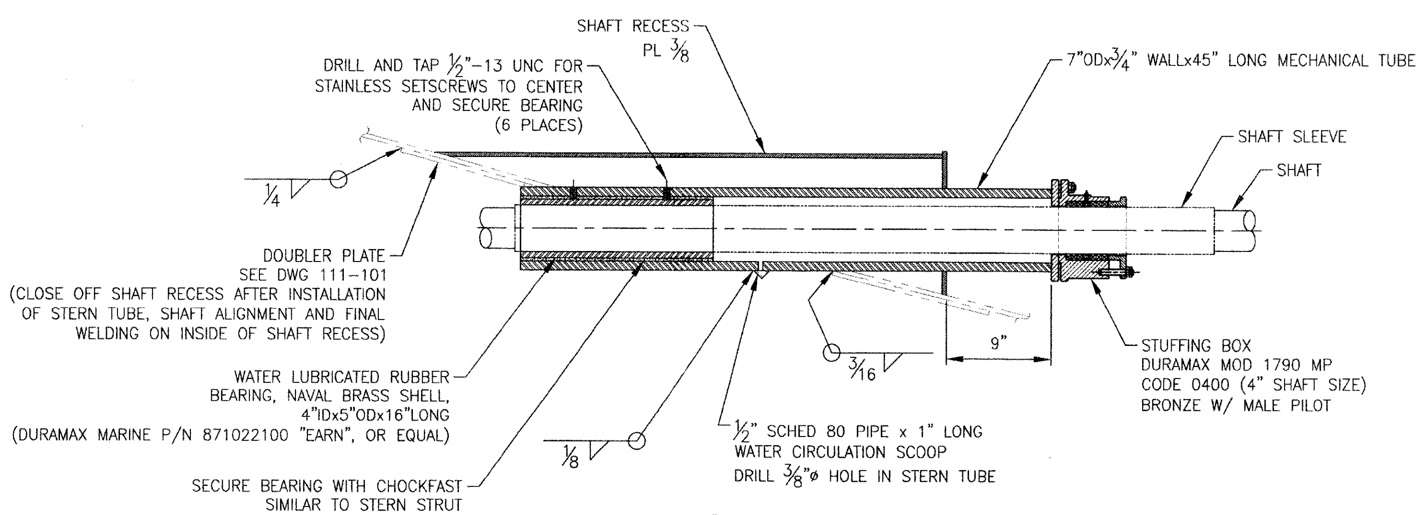
PROPELLER SHAFT DETAIL

2/21 SCALE: 1 1/2" = 1'-0"



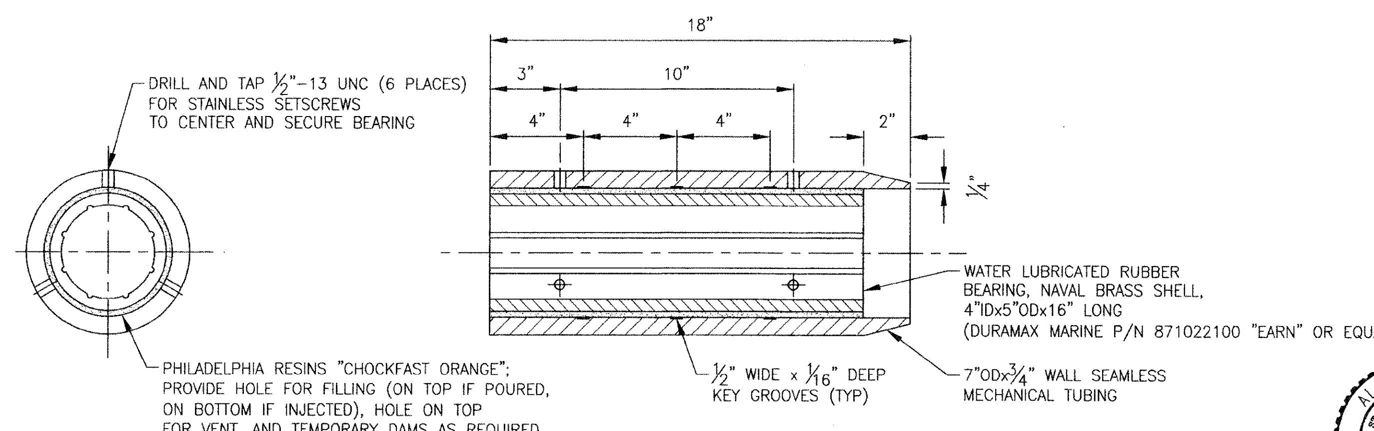
SHAFT COUPLING DETAIL

(TWIN DISC XA6988A)
SCALE: 3" = 1'-0"



SHAFT RECESS DETAIL

3/21 SHAFT RECESS AND STUFFING BOX
SCALE: 1 1/2" = 1'-0"



STRUT BARREL & BEARING DETAILS DETAIL

4/21 SCALE: 3" = 1'-0"

ALAN WINKLEY STATE OF WASHINGTON 24000 REGISTERED PROFESSIONAL ENGINEER 7/20/2011

0 2" 4" 6" 12" 2'
SCALE: 1 1/2" = 1'-0"

0 2" 4" 8" 12"
SCALE: 3" = 1'-0"

ART ANDERSON ASSOCIATES
202 PACIFIC AVE, BREMERTON, WA 98337 (360) 479-5600

DRAWING NO. CEIDT001PB-243-102

FILE NAME =	USER NAME =	DESIGNED – A. WINKLEY	REVISED –
		DRAWN – C. FAWVER	REVISED –
	PLOT SCALE =	CHECKED – P. MARTIN	REVISED –
	PLOT DATE =	DATE – 7/19/2011	REVISED –

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

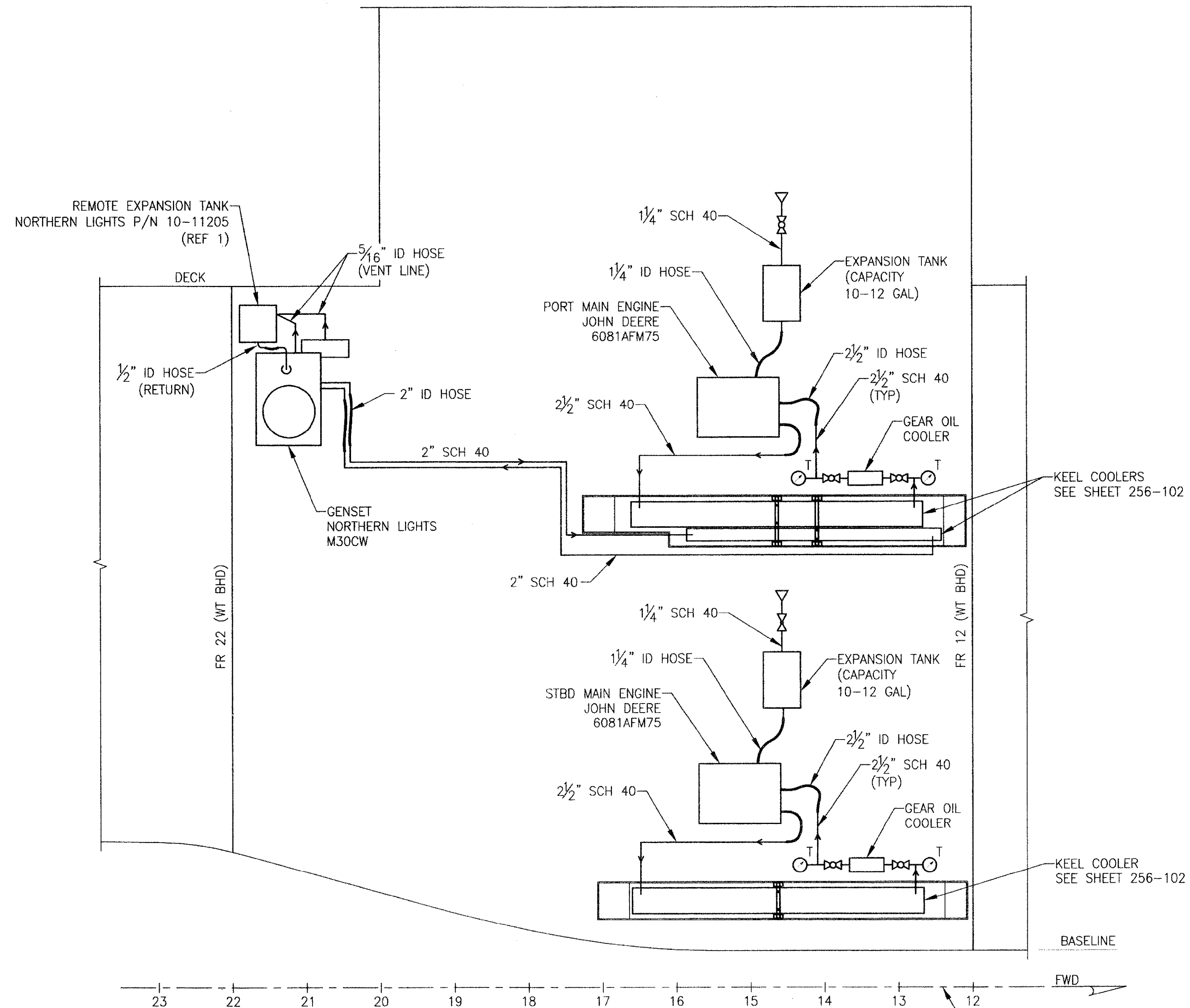
IDOT BRUSSELS FERRY
PROPELLER SHAFTING AND SUPPORT DETAILS

SCALE: AS SHOWN | SHEET NO. OF SHEETS | STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	47	22

CONTRACT NO. 76D29

FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT



SCHEMATIC ELEVATION

REFERENCE: NORTHERN LIGHTS DWG NO. B-9178
REMOTE EXPANSION TANK.

ALAN WINKLEY
STATE OF WASHINGTON
24000
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7/21/2011

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DRAWING NO. CEIDT001PB-256-101

FILE NAME =	USER NAME =	DESIGNED — A. WINKLEY	REVISED —
		DRAWN — C. FAWVER	REVISED —
	PLOT SCALE =	CHECKED — P. MARTIN	REVISED —
	PLOT DATE =	DATE — 7/19/2011	REVISED —

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

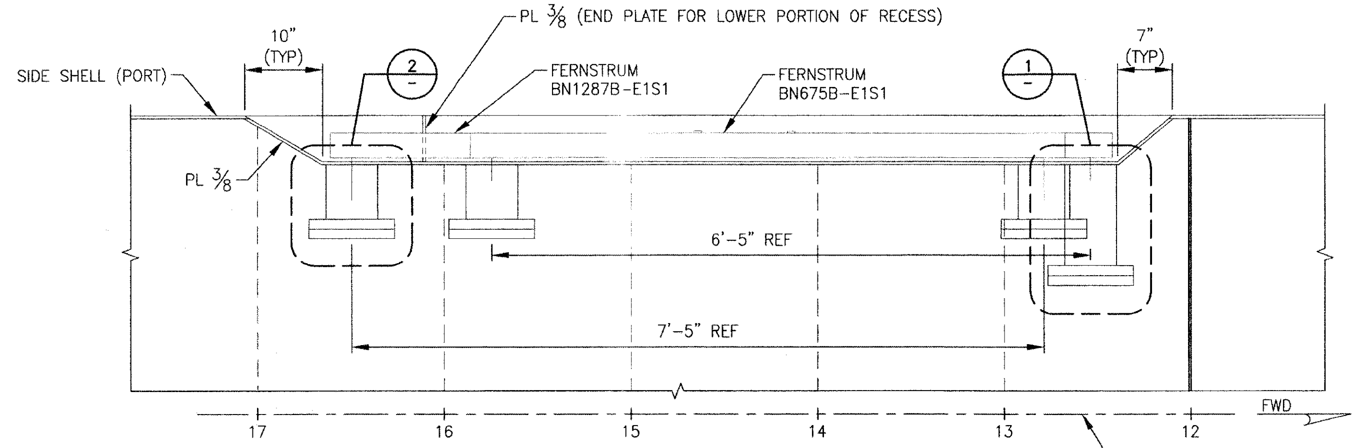
IDOT BRUSSELS FERRY
MACHINERY COOLING SYSTEM PIPING - DIAGRAM

SCALE: NONE | SHEET NO. OF SHEETS | STA. TO STA.

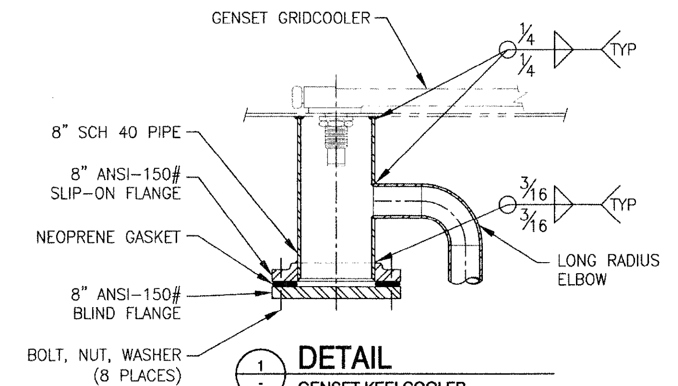
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	47	23

CONTRACT NO. 76D29

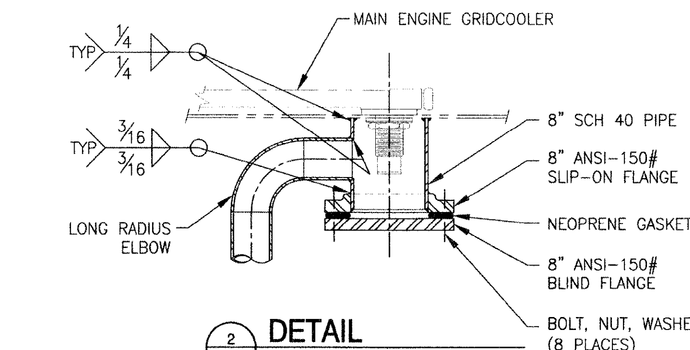
FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT



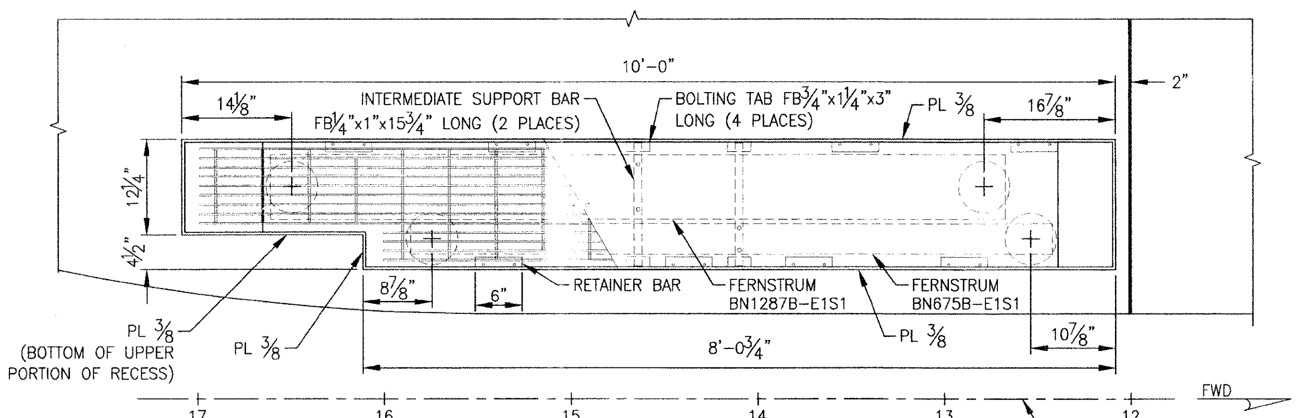
PLAN
KEELCOOLER POCKET
PORT SIDE SHOWN
SCALE: 1" = 1'-0"



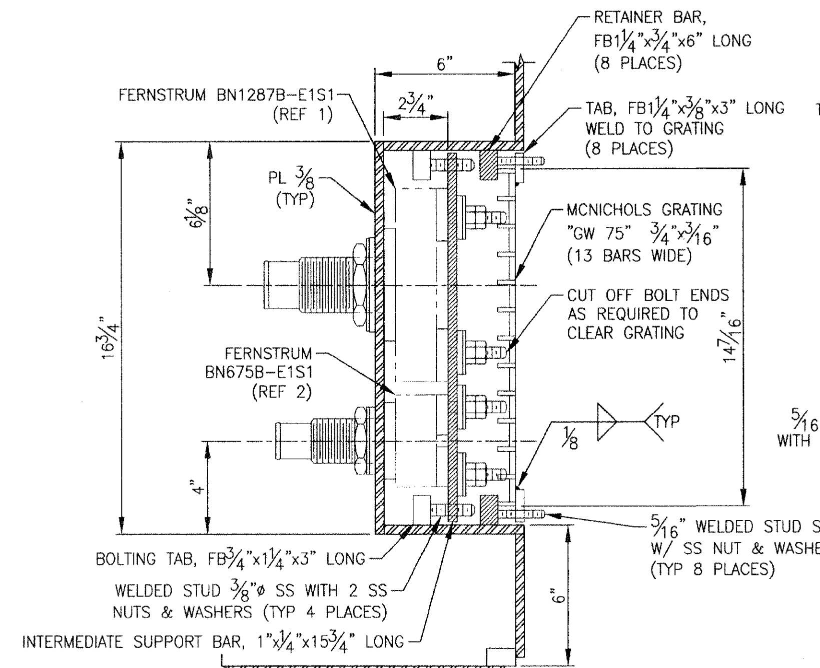
1 DETAIL
GENSET KEELCOOLER
INLET AND OUTLET COFFERDAM
SCALE: 1 1/2" = 1'-0"



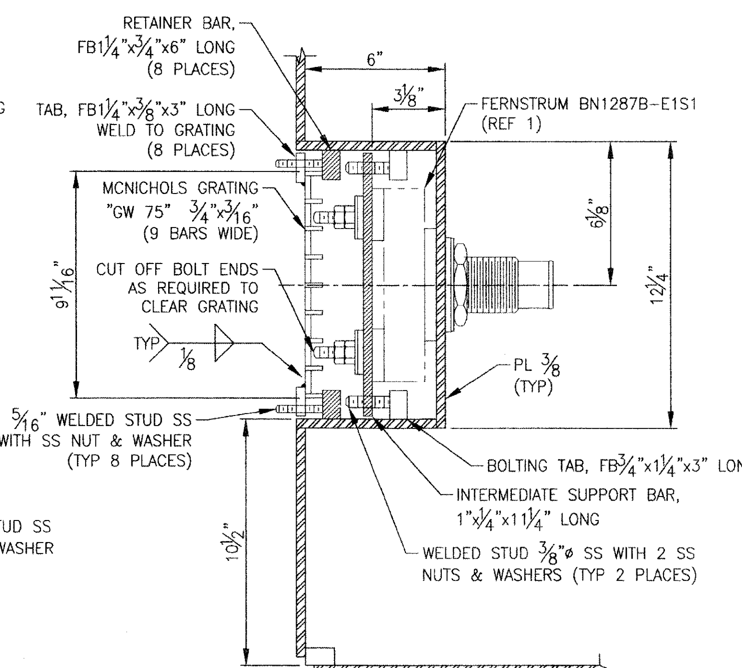
2 DETAIL
MAIN ENGINE KEELCOOLER
INLET AND OUTLET COFFERDAMS
SCALE: 1 1/2" = 1'-0"



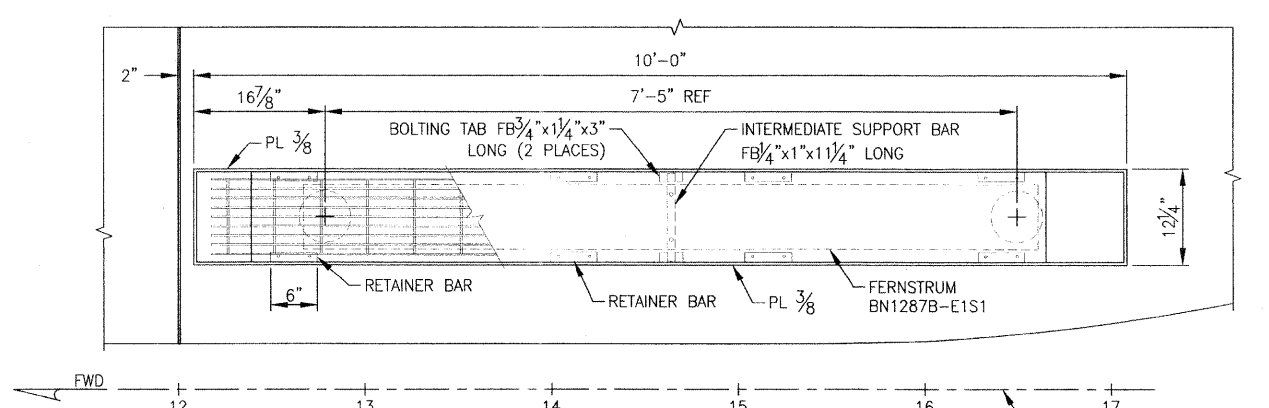
A ELEVATION
PORT KEELCOOLERS
LOOKING OUTBOARD
SCALE: 1" = 1'-0"



1 DETAILS
PORT GRIDCOOLER INSTALLATION
IN KEELCOOLER POCKET
SCALE: 3" = 1'-0"



2 DETAILS
STBD GRIDCOOLER INSTALLATION
IN KEELCOOLER POCKET
SCALE: 3" = 1'-0"



B ELEVATION
STBD KEELCOOLER
LOOKING OUTBOARD
SCALE: 1" = 1'-0"

REFERENCES:

1. R.W FERNSTRUM & CO. DWG NO BN1287B-E1S1
2. R.W FERNSTRUM & CO. DWG NO BN675B-E1S1

0 3" 6" 9" 1' 2' 3'
SCALE: 1" = 1'-0"

0 2" 4" 6" 12" 2'
SCALE: 1 1/2" = 1'-0"

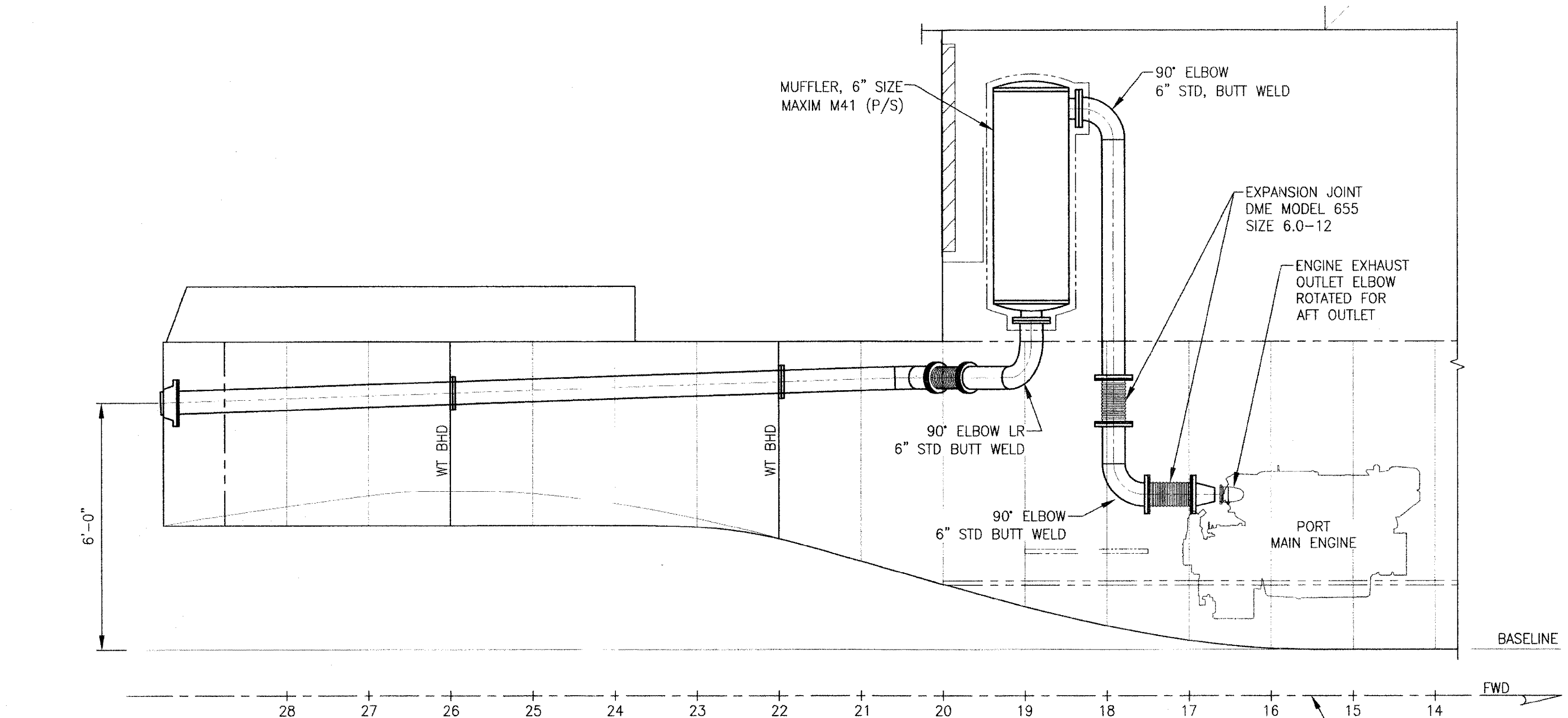
0 2" 4" 8" 12"
SCALE: 3" = 1'-0"

ALAN WINKLEY, STATE OF WASHINGTON, 24000, REGISTERED PROFESSIONAL ENGINEER, 7/21/2011

ART ANDERSON ASSOCIATES
202 PACIFIC AVE. BREMERTON, WA 98337 (360) 479-5600

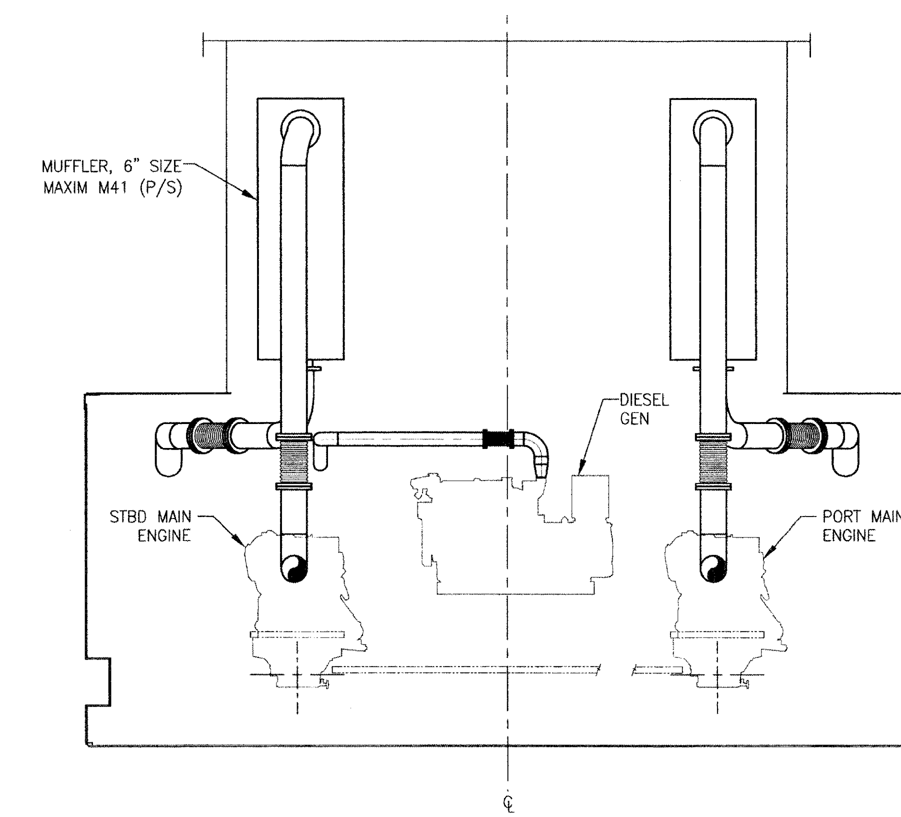
DRAWING NO. CEIDT001PB-256-102

FILE NAME =	USER NAME =	DESIGNED — A. WINKLEY	REVISED —	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	IDOT BRUSSELS FERRY MACHINERY COOLING SYSTEM PIPING - DETAILS	F.A.P. RTE. 304	SECTION 21-3	COUNTY JERSEY	TOTAL SHEETS 47	SHEET NO. 24
		DRAWN — J. WALKER	REVISED —					CONTRACT NO. 76D29		
	PLOT SCALE =	CHECKED — P. MARTIN	REVISED —		SCALE: AS SHOWN | SHEET NO. OF SHEETS | STA. TO STA.	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
	PLOT DATE =	DATE — 7/19/2011	REVISED —							



PORT ELEVATION

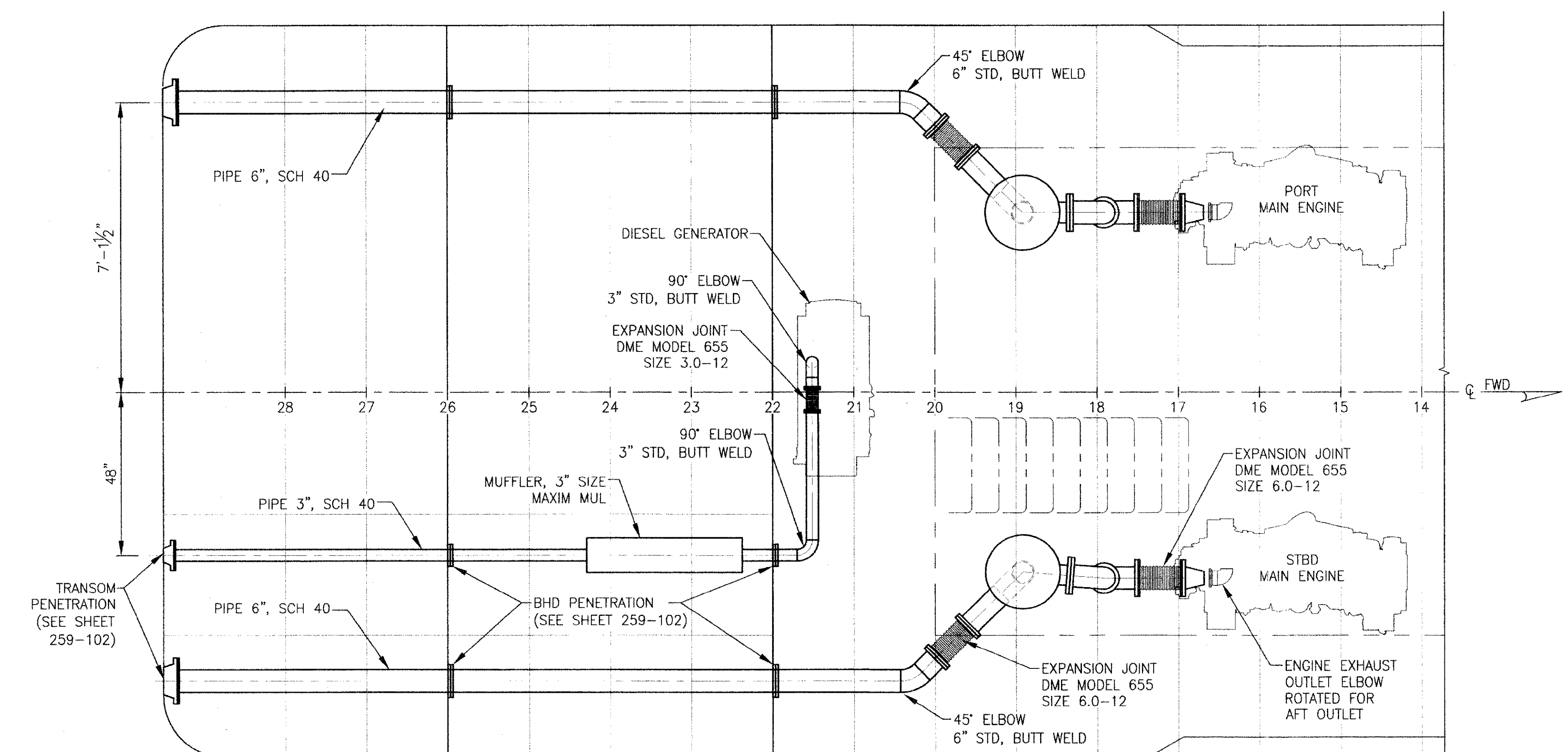
SCALE : 1/2" = 1'-0"



SECTION AT FR 17

LOOKING AFT

SCALE : 1/2" = 1'-0"



PLAN BELOW DECK

SCALE : 1/2" = 1'-0"

NOTES:

1. PIPE HANGERS NOT SHOWN.
2. ISOLATION MOUNTING OF MAIN ENGINE MUFFLERS NOT SHOWN.

ALAN WINKLEY
STATE OF WASHINGTON
24000
REGISTERED
PROFESSIONAL ENGINEER
7/21/2011

0 1' 2' 3' 4' 6'

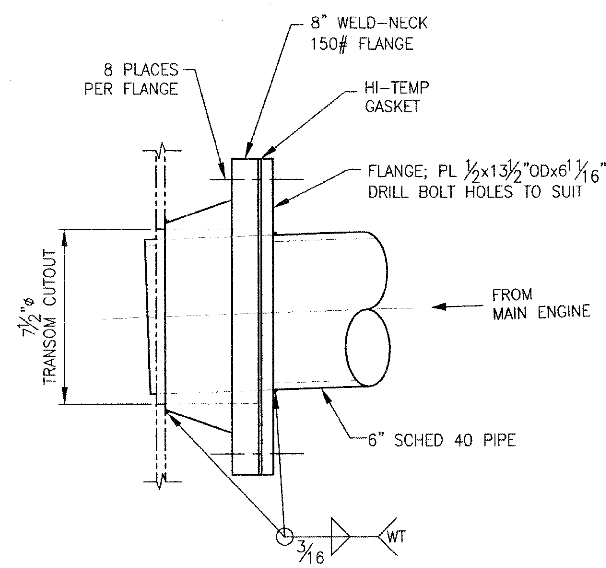
SCALE: 1/2" = 1'-0"

ART ANDERSON
ASSOCIATES
202 PACIFIC AVE, BREMERTON, WA 98337
(360) 479-5600

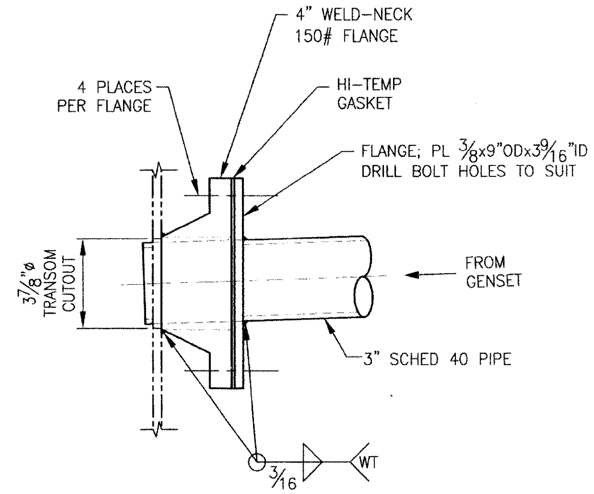
DRAWING NO. CEIDT001PB-259-101

FILE NAME =	USER NAME =	DESIGNED — A. WINKLEY	REVISED —	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	IDOT BRUSSELS FERRY ENGINE EXHAUST PIPING
	PLOT SCALE =	DRAWN — C. FAWVER	REVISED —		SCALE: AS SHOWN
	PLOT DATE =	CHECKED — P. MARTIN	REVISED —		SHEET NO. OF SHEETS
		DATE — 7/19/2011	REVISED —		STA. TO STA.

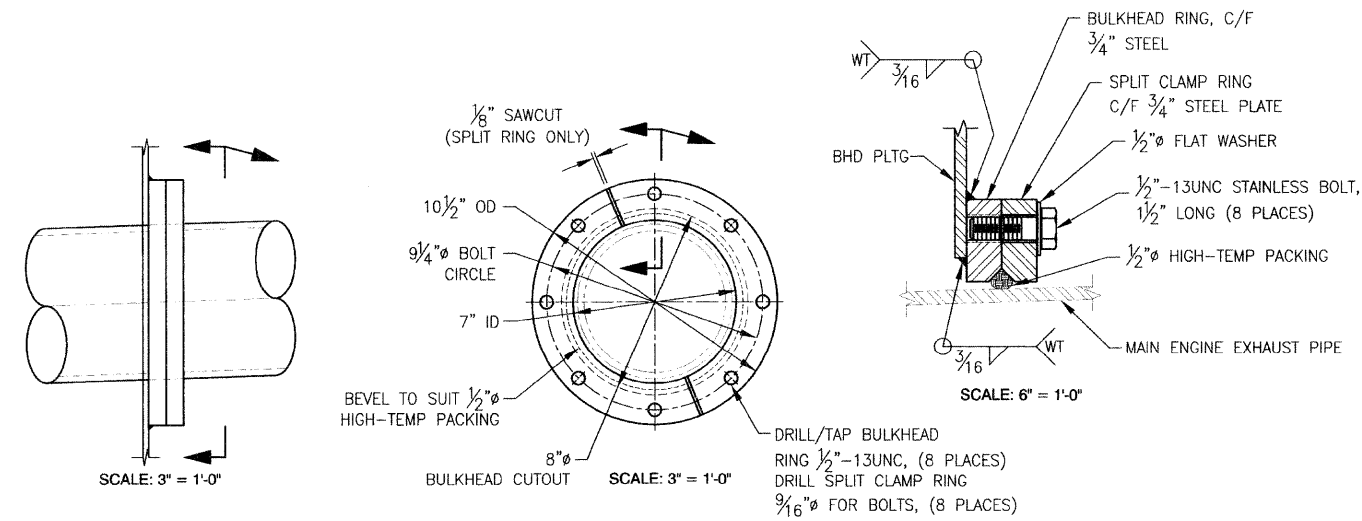
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	47	25
		CONTRACT NO. 76D29		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



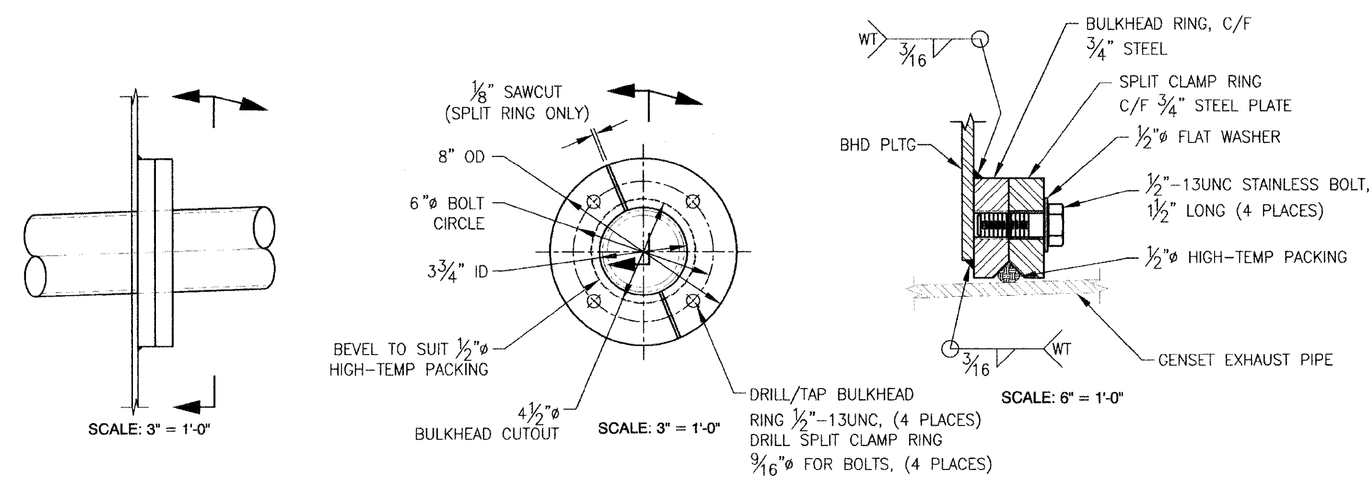
A DETAIL
TRANSOM EXHAUST PENETRATION
SCALE: 3" = 1'-0"



A DETAIL
TRANSOM EXHAUST PENETRATION
SCALE: 3" = 1'-0"



A DETAIL
MAIN ENGINE BULKHEAD EXHAUST PENETRATION
SCALE: AS SHOWN



A DETAIL
GENSET BULKHEAD EXHAUST PENETRATION
SCALE: AS SHOWN

ALAN WINKLEY STATE OF WASHINGTON 24000 REGISTERED PROFESSIONAL ENGINEER 7/21/2011

0 2" 4" 8" 12"
SCALE: 3" = 1'-0"

ART ANDERSON ASSOCIATES
202 PACIFIC AVE. BREMERTON, WA 98337 (360) 479-5600

DRAWING NO. CEIDT001PB-259-102

FILE NAME =	USER NAME =	DESIGNED — A. WINKLEY	REVISED —	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	IDOT BRUSSELS FERRY ENGINE EXHAUST PIPING DETAILS
		DRAWN — C. FAWVER	REVISED —		
	PLOT SCALE =	CHECKED — P. MARTIN	REVISED —		
	PLOT DATE =	DATE — 7/19/2011	REVISED —		SCALE: AS SHOWN · SHEET NO. OF SHEETS · STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	47	26
		CONTRACT NO. 76D29		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

ELECTRICAL GENERAL NOTES

1. THE INSTALLATION, MATERIAL AND METHODS USED IN THE CONSTRUCTION OF THIS VESSEL ARE TO COMPLY WITH USCG REQUIREMENTS FOUND IN 46 CFR SUBCHAPTER J (PARTS 110 THROUGH 113), STANDARDS FOUND IN ABS-STEEL VESSEL RULES (PART 4), AND IN IEEE STD 45.
2. ALL ELECTRICAL EQUIPMENT SHALL BE GROUNDED TO THE SHIPS HULL AS REQUIRED BY 46CFR. 111.05-3.
3. THE CABLE TYPES SHOWN ON THE DRAWINGS ARE TO BE LOW SMOKE, MIL-DTL-24643B OR EQUAL.
4. DECK PENETRATIONS SUCH AS WATERTIGHT STUFFING TUBES, TRANSITS AND KICK PIPES SHALL BE USED WHERE REQUIRED, IN ACCORDANCE WITH IEEE STD 45.
5. PROVIDE WIREWAYS AND STUD RUNS AS REQUIRED TO COMPLETE THE INSTALLATION.
6. ALL ELECTRICAL EQUIPMENT AND MATERIALS SHALL BE OF TYPES SUITABLE FOR MARINE APPLICATION IN THE SERVICES INTENDED AND SHALL OPERATE UNDER ALL EXPECTED CONDITIONS OF VIBRATION AND ROLL, PITCH AND TRIM.
7. THE SHIPYARD SHALL PROVIDE ALL EQUIPMENT AND BOXES WITH PROPER FITTINGS, FLANGES, STRAIN RELIEFS, AND MOUNTING SUPPORTS NECESSARY TO COMPRISE A COMPLETE AND FINISHED INSTALLATION. ALL SUCH AUXILIARY ITEMS SHALL BE UL LISTED FOR THE CONDITION OF USE.
8. ALL CABLE SHALL BE TAGGED WITH ITS UNIQUE CIRCUIT DESIGNATION USING EMBOSSED ALUMINUM TAGS ON EACH SIDE OF A PENETRATION, INTO AND OUT OF CONNECTION BOXES AND/OR EQUIPMENT.
9. ALL NEW CABLES SHALL BE TESTED FOR ELECTRICAL INSULATION INTEGRITY (MEGGERED). THE CABLES SHALL MEET IEEE-45 CLAUSE 38.21.1. TEST RESULTS SHALL BE RECORDED AND GIVEN TO THE VESSEL REPRESENTATIVE.
10. NOT LESS THAN 22KAIC (ASYMMETRICAL SHORT-CIRCUIT CURRENT) SHOULD BE USED AS A BASIS FOR THE INTERRUPTING RATING OF FUSES, THE SHORT TIME CURRENT RATING AND MECHANICAL STRENGTH OF SWITCHES, CABLES, AND BUS WORK ON THE MAIN SWITCHBOARD AS PER 46 CFR 111.52 -3(B).
11. 30 KW, 120/240V, SINGLE PHASE 1800 RPM, 60 Hz, 0.8PF REF DWG 233-101.
12. DRIP PROOF ENCLOSURE SQUARE-D 30 SPACE 150 AMP MAIN LUGS SINGLE PHASE, 3 WIRE.
13. DRIP PROOF ENCLOSURE SQUARE-D 24 SPACE 125 AMP MAIN LUGS SINGLE PHASE, 3 WIRE.

AC ELECTRICAL ONE LINE BILL OF MATERIAL (321-103)

PC NO.	QTY	DESCRIPTION	MATERIAL/SPECIFICATION/REMARKS
1	1 EA	DIESEL GENERATOR	REF DWG 233-101, ITEM 14 NOTE 11
2	1 EA	DISTRIBUTION PANEL, 1ø, 150A, 30 SPACE	SQUARE-D Q030L150RB NOTE 12
3	1 EA	DISTRIBUTION PANEL, 1ø, 125A, 24 SPACE	SQUARE-D NOTE 13
4	1 EA	SHIPSIDE SHORE POWER RECEPTACLE, 100A, 120/240V	HUBBELL, M4100B12R, 3P/4W
5	1 EA	SHORESIDE PLUG, 100A, 120/240V	HUBBELL M4100C12R, 3P/4W (TO MATE WITH PC 4)
6	100 FT	CABLE, TYPE G 4/C, NO 1 AWG	FHOF-133, GAUBERT, ANIXTER OR EQUAL
7	2 EA	GENSET CONTROL PANEL	NORTHERN LIGHTS SERIES 4 OR EQUAL
8	1 EA	MAIN DISTR PANEL, 150A, 120/240V, 1ø	SURFACE MTD, WITH FEEDER BREAKERS AS SHOWN
9	37 EA	CIRCUIT BREAKER	SQUARE-D 15A, 120V, 1 POLE
10	4 EA	CIRCUIT BREAKER	SQUARE-D 15A, 240V, 2 POLE
11	1 EA	CIRCUIT BREAKER	SQUARE-D 20A, 120V, 1 POLE
12	1 EA	CIRCUIT BREAKER	SQUARE-D 50A, 240V, 2 POLE
13	2 EA	CIRCUIT BREAKER	SQUARE-D 30A, 240V, 2 POLE
14	1 EA	CIRCUIT BREAKER	SQUARE-D 60A, 240V, 2 POLE
15	7 EA	SWITCH, SNAP, WATERTIGHT	PAULUHN 862A
16	2 EA	SWITCH, 3-WAY, WITH PILOT LIGHT, NON WATERTIGHT	PAULUHN 2719A
17	6 EA	LIGHT, WT, FLUORESCENT, 2x40W	PAULUHN FPS240
18	2 EA	LIGHT, FLUORESCENT, 2x40W	PAULUHN FLC240
19	15 EA	LIGHT, INCANDESCENT, WT, GUARDED GLOBE	PAULUHN 707A WITH 100W BULB
20	2 EA	FLOODLIGHT, 500W HALOGEN, MARITEAM LIGHTING	ORD ON 422-101
21	1 EA	LIGHT, SEARCHLIGHT, MEDIUM PEDESTAL, LEVER/GEAR, 14"	PERKO 885 MP3 WHT, 969 MAO 846, E BULB AND SOCKET
22	9 EA	RECEPTACLE, DUPLEX, NON WATERTIGHT	PAULUHN 2705A-125
23	1 EA	BATTERY CHARGER	NEWMAR PT-80
24	1 EA	MOTOR STARTER, MANUAL, NEMA TYPE 4	SQUARE-D CLASS 2510, KWIB
25	6 EA	SWITCH, TOGGLE, DPST, NON WATERTIGHT	PAULUHN 2712A
26	1 EA	RECEPTACLE, 60A, 240V, 3-POLE/4-WIRE GROUNDING	HUBBELL 8460A AND 7777A WITH WEATHERTIGHT COVER PLATE
27	3 EA	RECEPTACLE, GFCI DUPLEX, NON WATERTIGHT	PAULUHN 2705A-125-GF
28	1 EA	SWITCH, PUSHBUTTON	SQUARE-D 9001-KR2BH6
29	1 EA	TEMPERATURE MONITOR	WINDLAND TA-1 OR EQUAL
30	1 EA	CIRCUIT BREAKER (SHORE POWER)	SQUARE-D 100A, 240V, 2P WITH ELCI, DRIP PROOF ENCLOSURE
31	1 EA	TRANSFER SWITCH	SQUARE-D 200A, 240V, 3P WITH GROUND BUS, SERVICE RATED, DRIP PROOF ENCLOSURE
32	AS REQ	CABLE, 3 CONDUCTOR	AWG 12/3, TYPE G
33	2 EA	PLUG, 30A, 125V, TWIST-LOCK	HUBBELL #HBL26CM13 & HBL60CM32
34	1 EA	RECEPTACLE & BOX, NEMA 6-30R	HUBBELL #9330, 30A, 250VAC
35	1 EA	RECEPTACLE & BOX, NEMA 5-20R	HUBBELL #8310, 20A, 120V
36	-	CURRENT TRANSFORMER	100-TO-1, USE WITH PC 40
37	1 EA	GROUND DETECTION METER	WITH 0-10A SCALE

DC ELECTRICAL ONE LINE BILL OF MATERIAL (321-102)

PC NO.	QTY	DESCRIPTION	MATERIAL/SPECIFICATION/REMARKS
1	4 EA	LIGHT, WEATHERTIGHT MULTI-LITE	WEST MARINE #350611 WITH 311025 BULB OR EQUAL
2	4 EA	LIGHT, 7" DOME, EXTERIOR	PERKO, 1253 DP2 WHT
3	1 EA	BATTERY CHARGER	NEWMAR PT80
4	1 EA	SEL SWITCH, MOMENTARY CONTACT 3-WAY DPDT TOGGLE	NORMALLY OPEN
5	1 EA	HAILER, INTERCOM, AND PUBLIC ANNOUNCING SYSTEM	RAYTHEON RAY 430, ORDERED ON DWG 401-101
6	1 EA	LIGHT, CHART WITH FLEXIBLE GOOSENECK	WITH RED FILTER
7	2 EA	LIGHT, INTERIOR/NAV 7" DOME	WEST MARINE #1471408, RED AND WHITE OR EQUAL
8	2 EA	STATE RADIO	OFE
9	2 EA	VHF-FM MARINE BAND RADIO	ICOM IC-M504, ORDERED ON DWG 401-101
10	1 EA	LIGHT, SEARCHLIGHT, MEDIUM PEDESTAL, LEVER/GEAR, 10"	PERKO 885 MP2 WHT, 969 MAO 816, F BULB AND SOCKET
11	3 EA	WINDSHIELD WIPERS	12VDC, 2A
12	2 EA	FUSE & FUSE HOLDER	12VDC, 100A
13	1 EA	TERMINAL BLOCK	MCMASTER-CARR 7626K43 - 175A
14	2 EA	BATTERY, HT/8D, 221 AH @ 20HR RATE, 1050 CCA @ 0°F	ROLLS 60A30 WITH BOX
15	3 EA	SWITCH, SNAP, WATERTIGHT	PAULUHN 862A
16	2 EA	DC DISTRIBUTION PANEL, 16 CIRCUITS WITH AMMETER	BASS 90-5235
17	1 EA	NAVIGATION LIGHT PANEL	BASS 90-5145, 50 GROVE ST. SALEM, MA 01970
18	2 EA	FAN, OSCILLATING	GUEST #900, 150CFM ORDERED ON DWG 512-101
19	2 EA	AMMETER, DC	0-50A, 12VDC
20	7 EA	JUNCTION BOX, WATERTIGHT, SIZE AS REQ	PAULUHN 574 OR EQUAL
21	1 EA	METER VOLT	0-15VDC
22	4 EA	SWITCH, PUSHBUTTON MOMENTARY	CONTACT N.O. 10A, 24VDC
23	1 EA	SWITCH, TOGGLE, SPDT	12VDC, 10A
24	1 EA	PLACARD	WHT PHENOLIC WITH ¼" BLK LETTERS
25	6 EA	SWITCH, BILGE, HIGH LEVEL	RULE 33ALA, ORDERED ON DWG 233-101
26	1 EA	FIRE ALARM PANEL	ORDERED ON DWG 401-101
27	1 EA	ALARM ANNUNCIATOR	ORDERED ON DWG 401-101
28	1 EA	DIGITAL INDICATOR	ORDERED ON DWG 401-101
29	1 EA	FUEL PANEL	ORDERED ON DWG 401-101
30	1 EA	STEERING POWER JUNCTION BOX	ORDERED ON DWG 566-101

WILLIAM H. HIGGINS
STATE OF WASHINGTON
9348
REGISTERED
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William H. Higgins
7/27/11

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DRAWING NO. CEIDT001PB-321-101

FILE NAME =	USER NAME =	DESIGNED - W. HIGGINS	REVISED -
		DRAWN - C. FAWVER	REVISED -
	PLOT SCALE =	CHECKED - P. MARTIN	REVISED -
	PLOT DATE =	DATE - 7/19/2011	REVISED -

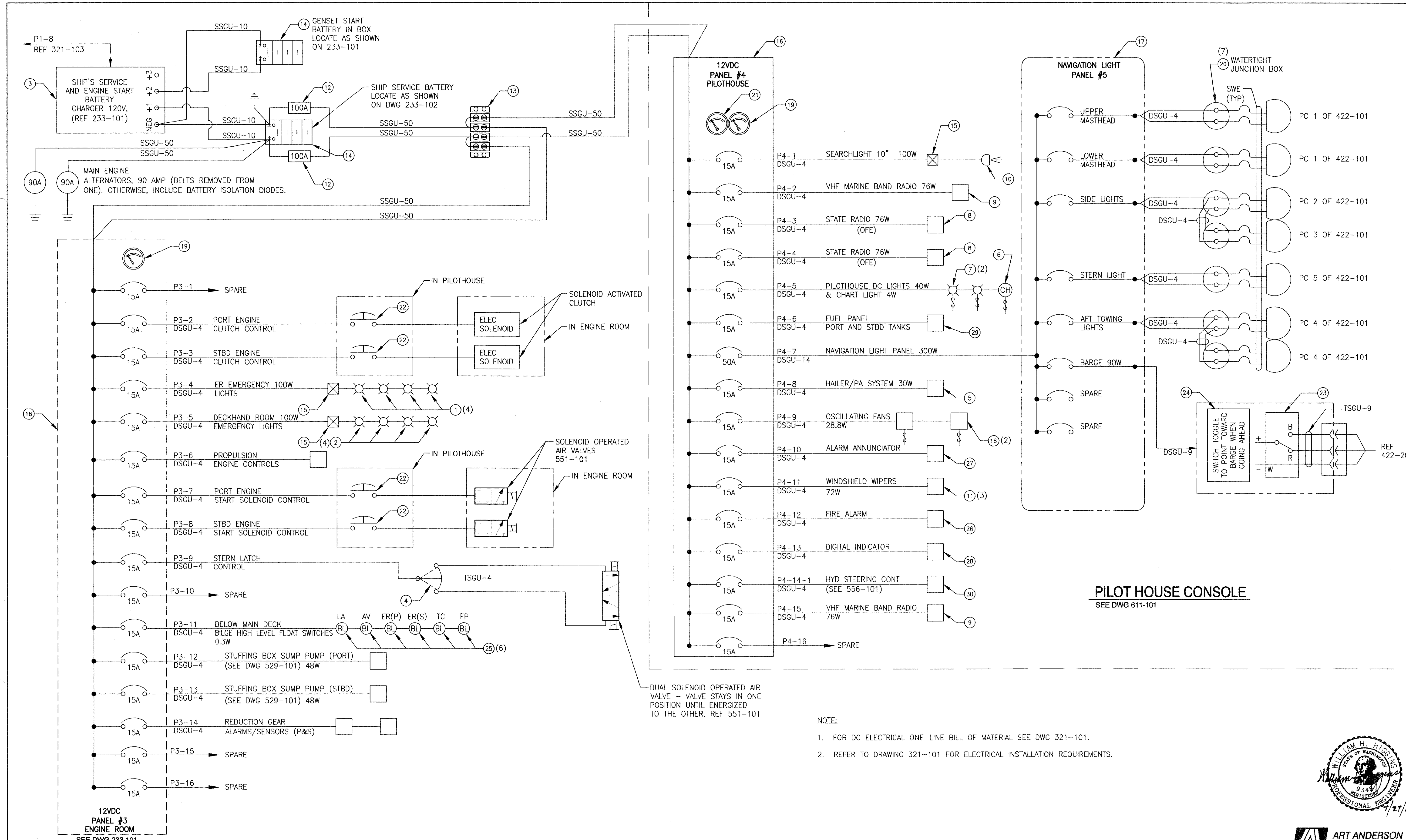
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IDOT BRUSSELS FERRY
ELECTRICAL GENERAL NOTES - PUSHBOAT

SCALE: NONE | SHEET NO. OF SHEETS | STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	47	27
		CONTRACT NO. 76D29		

FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT



PILOT HOUSE CONSOLE

SEE DWG 611-101

NOTE:

1. FOR DC ELECTRICAL ONE-LINE BILL OF MATERIAL SEE DWG 321-101.
2. REFER TO DRAWING 321-101 FOR ELECTRICAL INSTALLATION REQUIREMENTS.

WILLIAM H. HIGGINS, STATE OF WASHINGTON, 9348, REGISTERED PROFESSIONAL ENGINEER 7/27/11

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DRAWING NO. CEIDT001PB-321-102

FILE NAME =	USER NAME =	DESIGNED — B. HIGGINS	REVISED —
		DRAWN — C. FAWVER	REVISED —
	PLOT SCALE =	CHECKED — P. MARTIN	REVISED —
	PLOT DATE =	DATE — 7/19/2011	REVISED —

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

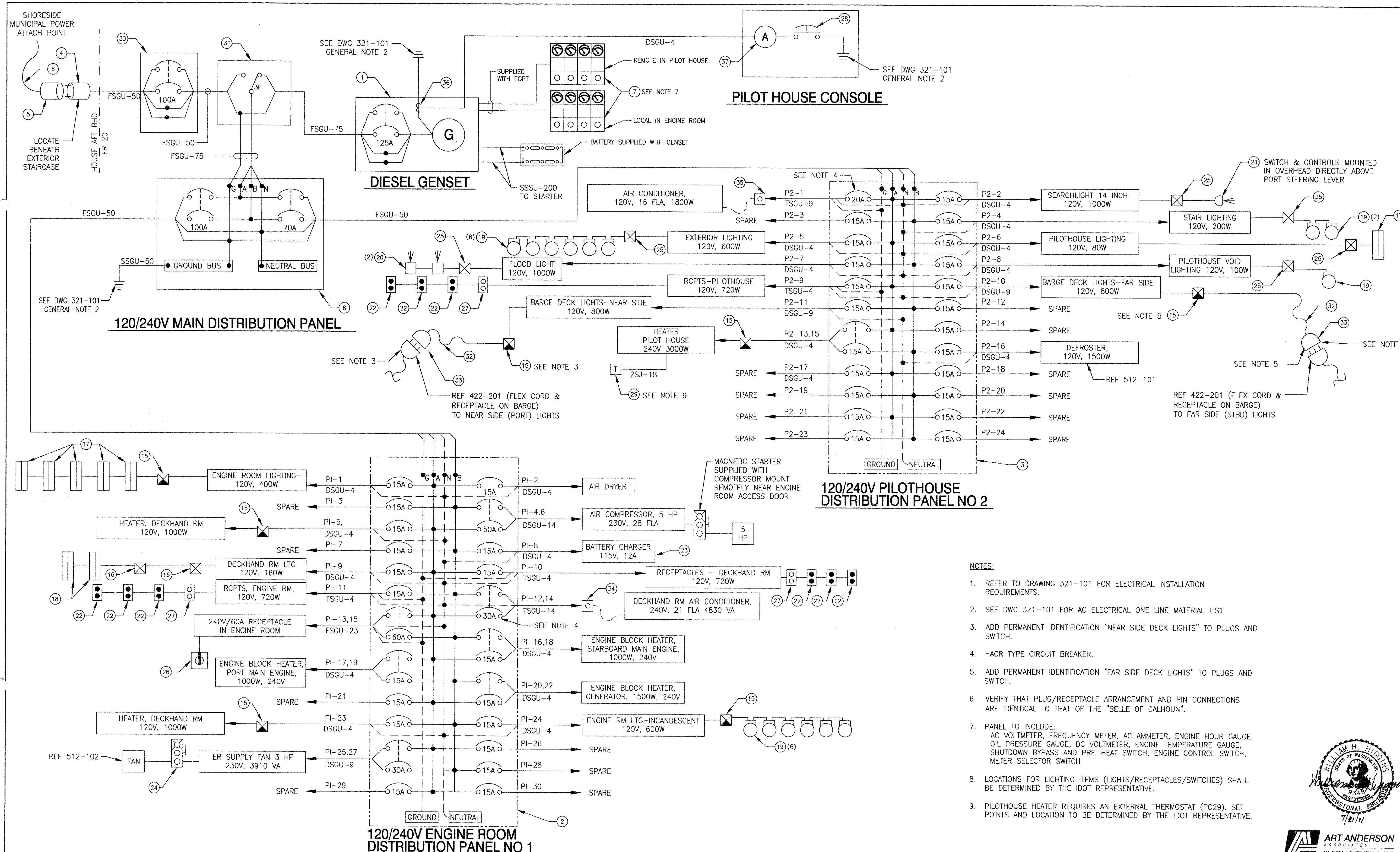
IDOT BRUSSELS FERRY
DC ELECTRICAL ONE LINE DIAGRAM - PUSHBOAT

SCALE: AS SHOWN | SHEET NO. OF SHEETS | STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	47	28

CONTRACT NO. 76D29

FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT



NOTES:

1. REFER TO DRAWING 321-101 FOR ELECTRICAL INSTALLATION REQUIREMENTS.
2. SEE DWG 321-101 FOR AC ELECTRICAL ONE LINE MATERIAL LIST.
3. ADD PERMANENT IDENTIFICATION "NEAR SIDE DECK LIGHTS" TO PLUGS AND SWITCH.
4. HACR TYPE CIRCUIT BREAKER.
5. ADD PERMANENT IDENTIFICATION "FAR SIDE DECK LIGHTS" TO PLUGS AND SWITCH.
6. VERIFY THAT PLUG/RECEPTACLE ARRANGEMENT AND PIN CONNECTIONS ARE IDENTICAL TO THAT OF THE "BELLE OF CALHOUN".
7. PANEL TO INCLUDE:
   AC VOLTMETER, FREQUENCY METER, AC AMMETER, ENGINE HOUR GAUGE, OIL PRESSURE GAUGE, DC VOLTMETER, ENGINE TEMPERATURE GAUGE, SHUTDOWN BYPASS AND PRE-HEAT SWITCH, ENGINE CONTROL SWITCH, METER SELECTOR SWITCH
8. LOCATIONS FOR LIGHTING ITEMS (LIGHTS/RECEPTACLES/SWITCHES) SHALL BE DETERMINED BY THE IDOT REPRESENTATIVE.
9. PILOTHOUSE HEATER REQUIRES AN EXTERNAL THERMOSTAT (PC29). SET POINTS AND LOCATION TO BE DETERMINED BY THE IDOT REPRESENTATIVE.

WILLIAM H. HIGGINS — STATE OF WASHINGTON — 9348 REGISTERED PROFESSIONAL ENGINEER — 7/21/11

ART ANDERSON ASSOCIATES

DRAWING NO. CEIDT001PB-321-103

FILE NAME =	USER NAME =	DESIGNED — W. HIGGINS	REVISED —
		DRAWN — C. FAWVER	REVISED —
	PLOT SCALE =	CHECKED — P. MARTIN	REVISED —
	PLOT DATE =	DATE — 7/19/2011	REVISED —

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

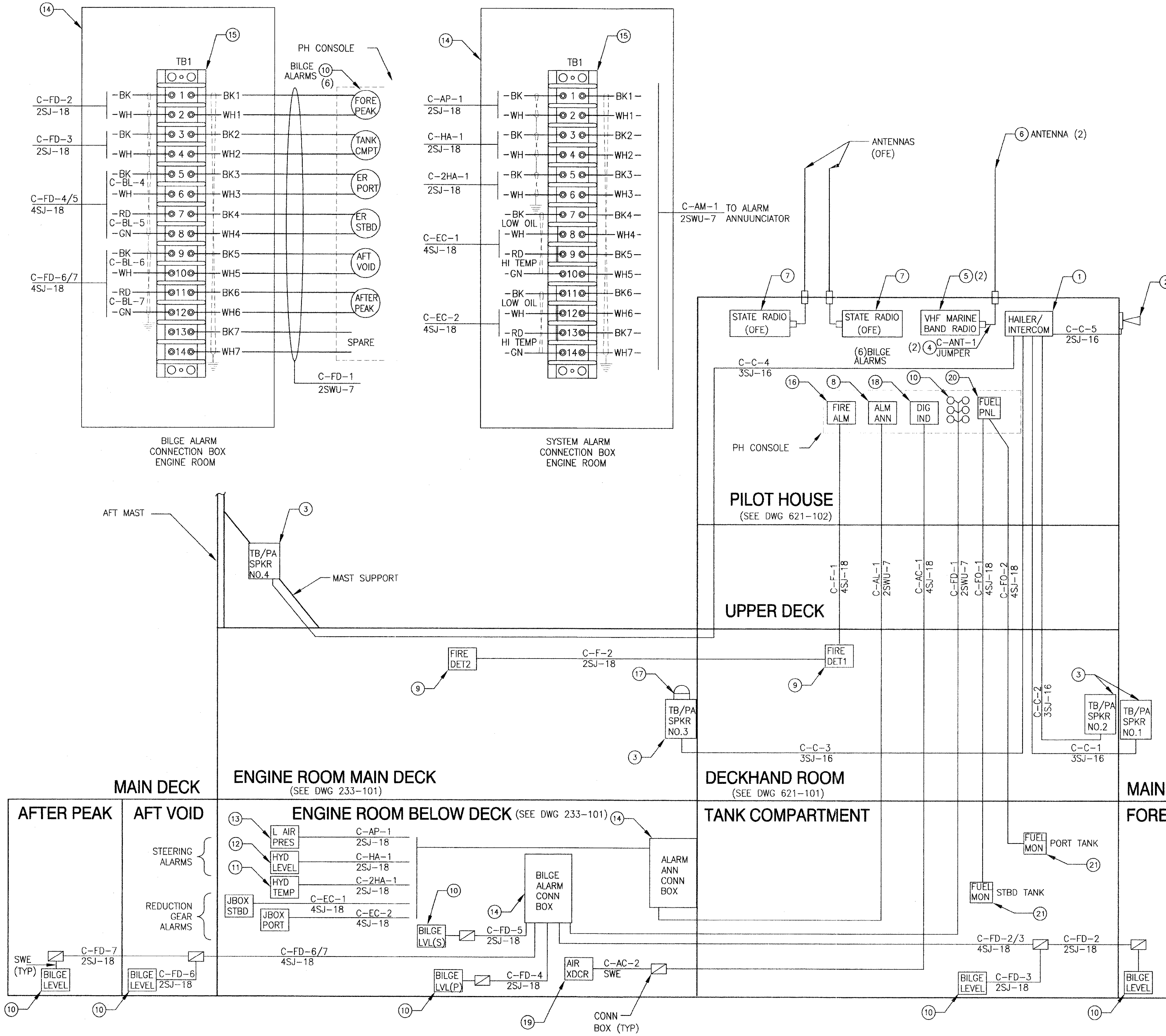
IDOT BRUSSELS FERRY
AC ELECTRICAL ONE LINE DIAGRAM - PUSHBOAT

SCALE: AS SHOWN | SHEET NO. OF SHEETS | STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	47	29

CONTRACT NO. 76D29

FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT



INSTALLATION NOTES

1. REFER TO DRAWING 321-101 FOR ELECTRICAL INSTALLATION REQUIREMENTS.
2. SEE DRAWING 321-102 (DC ELECTRICAL ONE LINE) FOR POWER TO PIECES 1, 5, 7, 8, 10, 16, 18 AND 20.
3. MOUNT CONNECTION BOXES IN A CONVENIENT LOCATION IN THE ENGINE ROOM.
4. CONNECT ALL EQUIPMENT ORDERED ON THIS DRAWING IN ACCORDANCE WITH SUPPLIED INSTALLATION INSTRUCTIONS.
5. MOUNT PIECES 1, 2, 5, 7, 8, 10, 16, 18 AND 20 IN ACCORDANCE WITH ARRANGEMENT DRAWING 621-102.
6. MOUNT PUBLIC ANNOUCING/TALK BACK SPEAKERS (PIECE 3) IN THE GENERAL LOCATIONS SHOWN WITHIN EASY REACH OF CREW MEMBERS.
7. CONNECT STROBE TO PIECE 3 IN THE ENGINE ROOM TO LIGHT WITH SPEAKER ACTIVATION.
8. INCLUDE OPTIONAL 12VDC 7AH BATTERY AND BATTERY BOX.
9. THE HEAT DETECTION AND FIRE ALARM SYSTEM MUST BE INSPECTED AND CERTIFIED BY A REGISTERED PROFESSIONAL ENGINEER (PE), PER USCG FIRE SAFETY GUIDANCE 46 CFR 27.203(g).

BILL OF MATERIAL

PC NO.	QTY	DESCRIPTION	MATERIAL/SPECIFICATION/REMARKS
1	1	HAILER, INTERCOMM AND PUBLIC ANNOUNCING SYSTEM	RAYTHEON RAY 430, #M95997 OR EQUAL SEE NOTES 2,5
2	1	HORN SUPPLIED WITH PC 1	M95435 MOUNT FRONT OF PILOTHOUSE BELOW VISOR
3	4	SPEAKERS, TALK BACK (TB)/PUBLIC ANNOUNCING (PA)	RAYMARINE M95998 U/W PC 1 SEE NOTE 6
4	2	RG-8X COAX JUMPER WITH PLUG (PL-259) ON EACH END	U/W PCS 5 AND 6, LENGTH TO SUIT.
5	2	VHF-FM MARINE BAND RADIO	ICOM IC-M504, OR EQUAL SEE NOTES 2,5
6	2	ANTENNA, VHF, 8', 50 OHM, 6db, SO-239 CONNECTOR	U/W PC 5
7	2	STATE RADIO	OWNER FURNISHED EQUIPMENT (OFE) SEE NOTES 2,5
8	1	ALARM ANNUNCIATOR, 8-POINT, VIGILANTE II	PRECISION DIGITAL #PD158-7R2-0 SEE NOTES 2,5
9	2	REMOTE FIRE DETECTOR	NAUTICAL FIRE SUPPRESSION OR EQUAL
10	6	BILGE HIGH LEVEL SWITCH WITH ALARM	ORDERED ON DRAWING 233-101 SEE NOTES 2,5
11	1	HYDRAULIC OIL TEMPERATURE SWITCH	ORDERED ON KOBELT DRAWING SEE DWG 556-101
12	1	LOW HYDRAULIC OIL SWITCH	ORDERED ON KOBELT DRAWING SEE DWG 556-101
13	1	LOW PRESSURE SWITCH, AIR	PART OF PC1 OF DRAWING 551-101
14	2	CONECTION BOX, HOFFMAN 10'X8'X6'	WITH BACKPLATE OR EQUAL SEE NOTE 3
15	2	TERMINAL BOARD, 14 TERMINAL	KULKA 601-GP-14 OR EQUAL
16	1	FIRE ALARM PANEL, 2 ZONE WITH BACK UP BATTERY	NAUTICAL FIRE SUPPRESSION OR EQUAL SEE NOTES 2,5,8
17	1	STROBE LIGHT, 12VDC, COLOR AMBER	AMSECO SL-401 OR EQUAL SEE NOTE 7
18	1	DIGITAL INDICATOR	U/W PC19 WIKA TYPE A-RD-1 SEE NOTES 2, 5
19	1	TRANSDUCER, WIKA WK8363485	ORD ON 551-101
20	1	FUEL PANEL	HEADHUNTER TS 3002B OR EQUAL SEE NOTES 2, 5
21	2	FUEL MONITOR	HEADHUNTER SYM23Q P/O PC 20 OR EQUAL

WILLIAM H. HIGGINS STATE OF WASHINGTON 9348 REGISTERED PROFESSIONAL ENGINEER 7/27/11

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DRAWING NO. CEIDT001PB-401-101

FILE NAME =	USER NAME =	DESIGNED — M. TASSO	REVISED —
		DRAWN — M. TASSO	REVISED —
	PLOT SCALE =	CHECKED — V. PARKER	REVISED —
	PLOT DATE =	DATE — 7/19/2011	REVISED —

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

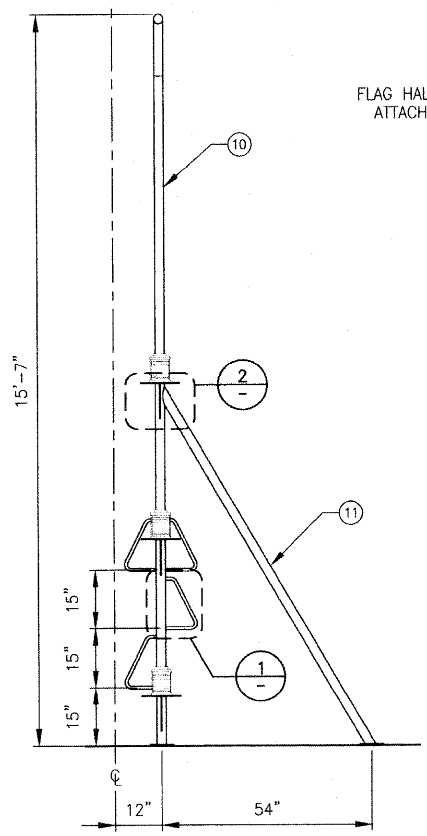
IDOT BRUSSELS FERRY
COMMUNICATION SYSTEMS AND ALARMS

SCALE: AS SHOWN | SHEET NO. OF SHEETS | STA. TO STA.

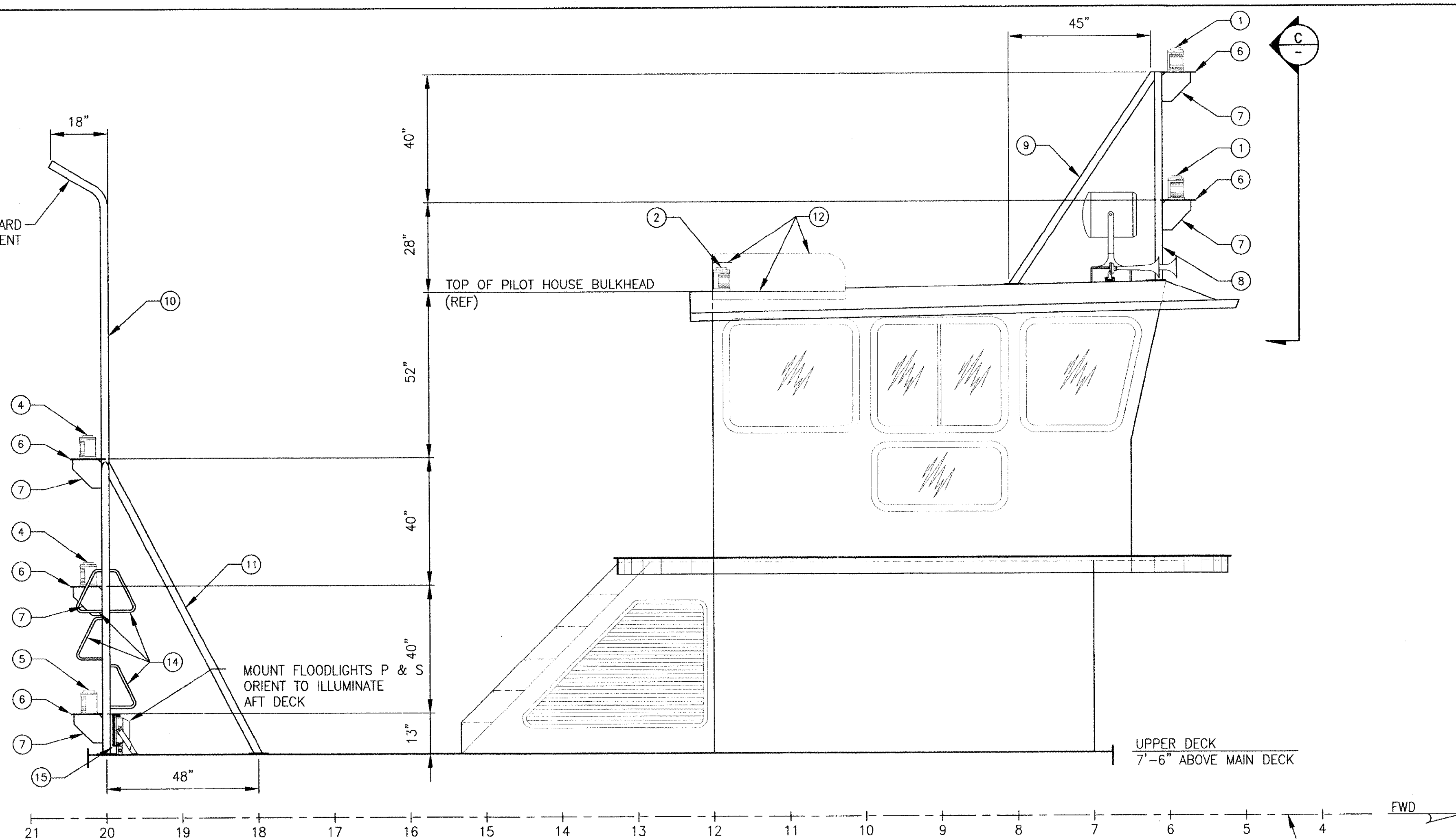
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	47	30

CONTRACT NO. 76D29

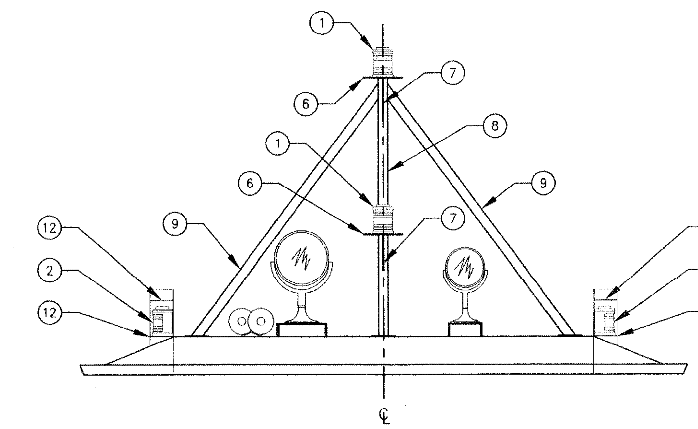
FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT



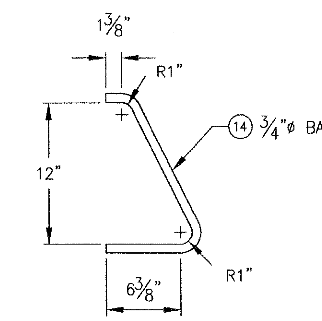
A ELEVATION
SCALE: 1/2" = 1'-0"



B PROFILE
SCALE: 1/2" = 1'-0"

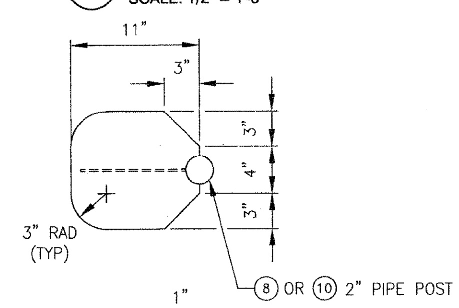


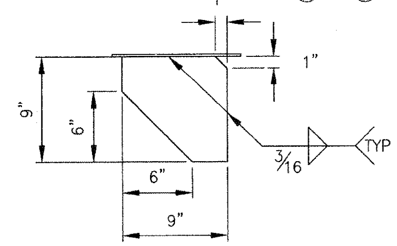
C ELEVATION
SCALE: 1/2" = 1'-0"



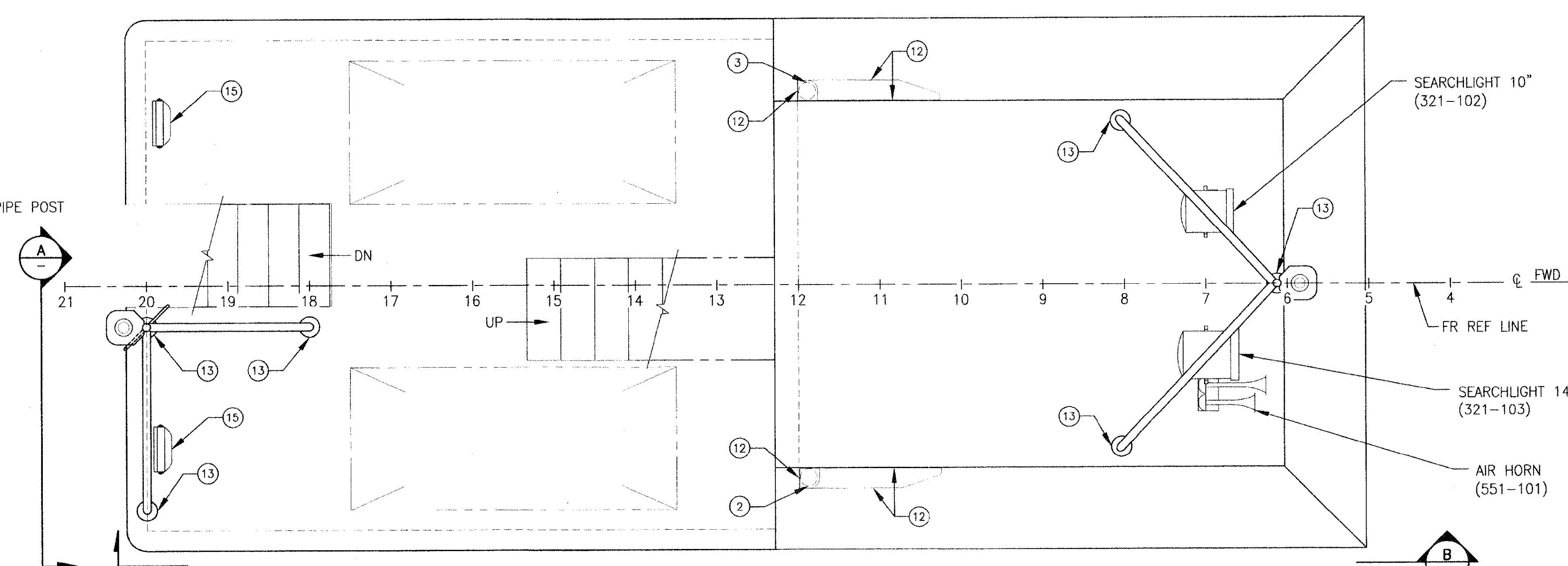
1 CLIMBING STIRRUP
SCALE: 1-1/2" = 1'-0"

BILL OF MATERIAL			
PC NO.	QTY	DESCRIPTION	MATERIAL/SPECIFICATION/REMARKS
1	2 EA	MASTHEAD LIGHT 225° WHITE	PERKO 1128 A00 BLK OR EQUAL SEE 321-102
2	1 EA	STARBOARD SIDE LIGHT 112.5° GREEN	PERKO 1127 GAO BLK OR EQUAL SEE 321-102
3	1 EA	PORT SIDE LIGHT 112.5° RED	PERKO 1127 RAO BLK OR EQUAL SEE 321-102
4	2 EA	TOWING LIGHT 135° YELLOW	PERKO 1129 MAO BLK OR EQUAL SEE 321-102
5	1 EA	STERN LIGHT 135° WHITE	PERKO 1129 A00 BLK OR EQUAL SEE 321-102
6	5 EA	3/16" PLATE 10"x11"	ASTM A-36
7	5 EA	3/16" PLATE 9"x9"	ASTM A-36
8	1 EA	PIPE, 2" SCH 40 x APPROX 6'-4" LONG	ASTM A-53, TRIM ENDS TO FIT
9	2 EA	PIPE, 2" SCH 40 x APPROX 8'-4" LONG	ASTM A-53, TRIM ENDS TO FIT
10	1 EA	PIPE, 2" SCH80 x APPROX 16'-0" LONG	ASTM A-53, TRIM ENDS TO FIT
11	2 EA	PIPE, 2" SCH 40 x APPROX 9'-0" LONG	ASTM A-53, TRIM ENDS TO FIT
12	4 EA	3/16" PLATE 12"x43"	ASTM A-36, SIDE LIGHT SHIELDS
13	6 EA	3/16" PLATE x 6"ø	ASTM A-36, DOUBLERS UNDER PCS 8, 9, 10, 11
14	4 EA	RB ¾" x APPROX 23" LONG	ASTM A-36, CLIMBING STIRRUPS
15	2 EA	FLOODLIGHT, 120V, 500W	MARI TEAM 1069040 W/ LAMP 994021 SEE 321-103





2 LIGHT BRACKET
SCALE: 1-1/2" = 1'-0"
FIVE REQUIRED
PLATE SIZE MAY BE ADJUSTED TO FIT LIGHT FIXTURES



PLAN
SCALE: 1/2" = 1'-0"

SCALE: 1/2" = 1'-0"
SCALE: 1 1/2" = 1'-0"

WILLIAM H. HIGGINS, STATE OF WASHINGTON, 9348, REGISTERED PROFESSIONAL ENGINEER, 7/21/11

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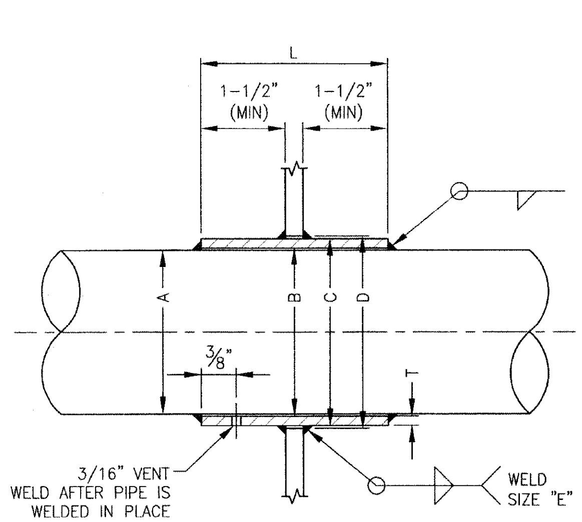
DRAWING NO. CEIDT001PB-422-101

FILE NAME =	USER NAME =	DESIGNED — B. HIGGINS	REVISED —	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	IDOT BRUSSELS FERRY NAVAGATION LIGHTS AND STAFF - PUSHBOAT	F.A.P. RTE. 304	SECTION 21-3
		DRAWN — C. FAWVER	REVISED —			COUNTY JERSEY	TOTAL SHEETS 47 / SHEET NO. 31
	PLOT SCALE =	CHECKED — P. MARTIN	REVISED —			CONTRACT NO. 76D29	
	PLOT DATE =	DATE — 7/19/2011	REVISED —		SCALE: AS SHOWN SHEET NO. OF SHEETS STA. TO STA.	FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT	



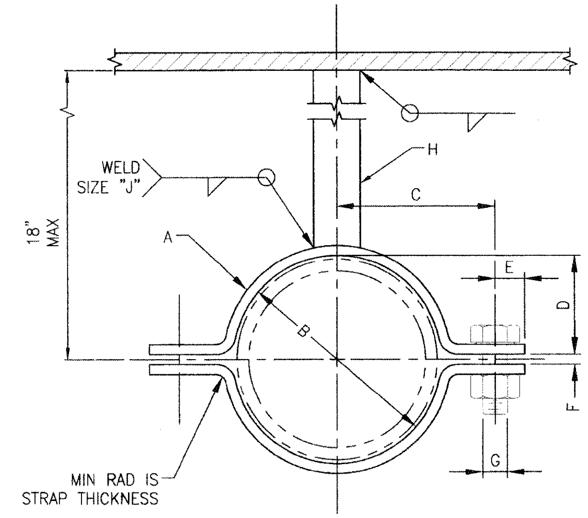
PIPE SIZE	A PIPE O.D.	B I.D. *	C O.D. *	D CUTOUT DIA	E WELD SIZE	L SLEEVE LENGTH	T THICKNESS
1/4"	0.540"	0.581"	0.831"	1.000"	5/32"	4"	0.125"
3/8"	0.675"	0.700"	0.950"	1.125"	5/32"	4"	0.125"
1/2"	0.840"	0.865"	1.177"	1.375"	5/32"	4"	0.156"
3/4"	1.050"	1.075"	1.387"	1.500"	5/32"	4"	0.156"
1"	1.315"	1.340"	1.652"	1.750"	5/32"	4"	0.156"
1 1/4"	1.660"	1.685"	1.997"	2.125"	5/32"	4"	0.156"
1 1/2"	1.900"	1.930"	2.242"	2.375"	5/32"	4"	0.156"
2"	2.375"	2.420"	2.870"	3.000"	3/16"	4"	0.225"
2 1/2"	2.875"	2.920"	3.420"	3.625"	3/16"	4"	0.250"
3"	3.5"	3.545"	4.045"	4.250"	3/16"	4"	0.250"

* NOTE:

SLEEVE MATERIAL SHALL BE ASTM A 106, GRADE B AND SHALL BE ORDERED FROM THIS STANDARD DRAWING BY SPECIFYING I.D. SIZE (COL"B"), O.D. SIZE (COL "C"), AND THICKNESS (COL "T"). INSIDE DIAMETER ACCURACY SHALL HAVE PRECEDENCE OVER O.D. AND THICKNESS DIMENSIONS.

1 TYPICAL CONTINUOUS PIPING RUN PENETRATION DETAIL

SCALE: NONE



PIPE SIZE	A FLAT BAR SIZE MIN	B I.D. OF STRAP	C ℄ BOLT TO ℄ PIPE	D HEIGHT OF STRAP	E ℄ OF BOLT TO END OF STRAP	F CLEARANCE AT BOLTS	G BOLT DIAMETER MIN	H FLAT BAR SIZE MIN	J WELD SIZE
1/4"	1/8"x3/4"	13/16"	15/16"	13/64"	5/16"	1/8"	1/4"	3/16"x3/4"	1/8"
3/8"	1/8"x3/4"	15/16"	1"	9/32"	5/16"	1/8"	1/4"	3/16"x3/4"	1/8"
1/2"	1/8"x3/4"	1 1/8"	1 1/8"	23/64"	5/16"	1/8"	1/4"	3/16"x3/4"	1/8"
3/4"	1/8"x1"	1 5/16"	1 1/4"	15/32"	3/8"	1/8"	5/16"	1/4"x1"	1/8"
1"	1/8"x1"	1 9/16"	1 3/8"	19/32"	3/8"	1/8"	5/16"	1/4"x1"	1/8"
1 1/4"	1/8"x1"	1 15/16"	1 9/16"	49/64"	3/8"	1/8"	5/16"	1/4"x1"	1/8"
1 1/2"	1/8"x1"	2 5/16"	1 11/16"	57/64"	3/8"	1/8"	5/16"	1/4"x1"	1/8"
2"	1/8"x1"	2 5/8"	2"	1 1/8"	3/8"	1/8"	5/16"	1/4"x1"	1/8"
2 1/2"	1/4"x1"	3 1/8"	2 3/8"	1 5/16"	7/16"	1/4"	3/8"	1/4"x1"	5/32"
3"	1/4"x1"	3 3/4"	2 11/16"	1 5/8"	7/16"	1/4"	3/8"	1/4"x1"	5/32"

2 TYPICAL PIPE HANGER DETAIL

SCALE: NONE

GENERAL NOTES

1. RULES AND REGULATIONS: ALL WORK AND MATERIALS SHALL BE IN FULL ACCORDANCE WITH FEDERAL, STATE AND LOCAL RULES AND REGULATIONS, FIRE MARSHAL REGULATIONS, CODE OF FEDERAL REGULATIONS TITLE 46 – SHIPPING, STANDARDS OF THE NATIONAL FIRE PROTECTION ASSOCIATIONS, AND ALL OTHER APPLICABLE LAWS, CODES OR REGULATIONS. NOTHING IN THE DRAWINGS OR SPECIFICATIONS SHALL BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.
2. MISCELLANEOUS MATERIALS AND HARDWARE SUCH AS NUTS, BOLTS, SCREWS, PLASTIC SEALANT, AND OTHER SUCH ANCILLARY ITEMS MAY NOT BE INCLUDED IN THE BILL OF MATERIALS'. HOWEVER, ALL ITEMS NECESSARY TO COMPRISE A COMPLETE, FINISHED AND OPERATIONAL INSTALLATION CONFORMING TO USCG REQUIREMENTS AND GOOD SHIPBUILDING PRACTICE SHALL BE PROVIDED BY THE INSTALLER.
3. STEEL PIPE SIZES SHOWN ON THE DRAWING ARE NPS.
4. PIPING SHALL BE ADEQUATELY SUPPORTED TO CARRY WEIGHT, INCLUDING DYNAMIC LOADING AND TO PREVENT DAMAGE FROM VIBRATION AND IMPACT. PIPING SHALL BE SUPPORTED BY HANGERS WITH RESILIENT LINERS FABRICATED AND INSTALLED IN ACCORDANCE WITH ASTM F708 AND THIS DRAWING.
5. ALL WELDS SHALL BE NEATLY FINISHED WITH ALL SLAG AND SPLATTER REMOVED.
6. WELDED PIPING JOINTS SHALL BE IN ACCORDANCE WITH ASTM F-722.
7. WATERTIGHT INTEGRITY SHALL BE MAINTAINED. ALL PIPING PENETRATING WATERTIGHT BULKHEADS AND DECKS SHALL BE INSTALLED WITH USCG APPROVED PIPE SLEEVES OR AS SHOWN ON THIS DRAWING.
8. INSPECTION: DO NOT ALLOW ANY WORK TO BE COVERED UP OR ENCLOSED UNTIL INSPECTED, TESTED AND APPROVED BY THE ENGINEER, OWNER'S REPRESENTATIVE OR OTHER AUTHORITIES HAVING JURISDICTION OVER THE WORK.
9. SHOULD ANY WORK BE ENCLOSED OR COVERED UP BEFORE SUCH INSPECTION AND TEST, CONTRACTOR SHALL, AT HIS OWN EXPENSE, UNCOVER WORK AND, AFTER IT HAS BEEN INSPECTED, TESTED AND APPROVED, MAKE ALL REPAIRS AS NECESSARY TO RESTORE ALL DISTURBED WORK TO ITS ORIGINAL CONDITION.

MECHANICAL SYMBOLS LIST

SYMBOL	DESCRIPTION
	FLOW DIRECTION
	BALL VALVE
	REDUCER
	FLEXIBLE HOSE
P	DIFFERENTIAL PRESSURE GAGE

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SCALE: 1 1/2" = 1'-0"

DRAWING NO. CEIDT001PB-500-101

FILE NAME =	USER NAME =	DESIGNED – M. McKAY	REVISED –
		DRAWN – J. WALKER	REVISED –
	PLOT SCALE =	CHECKED – P. MARTIN	REVISED –
	PLOT DATE =	DATE – 7/19/2011	REVISED –

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

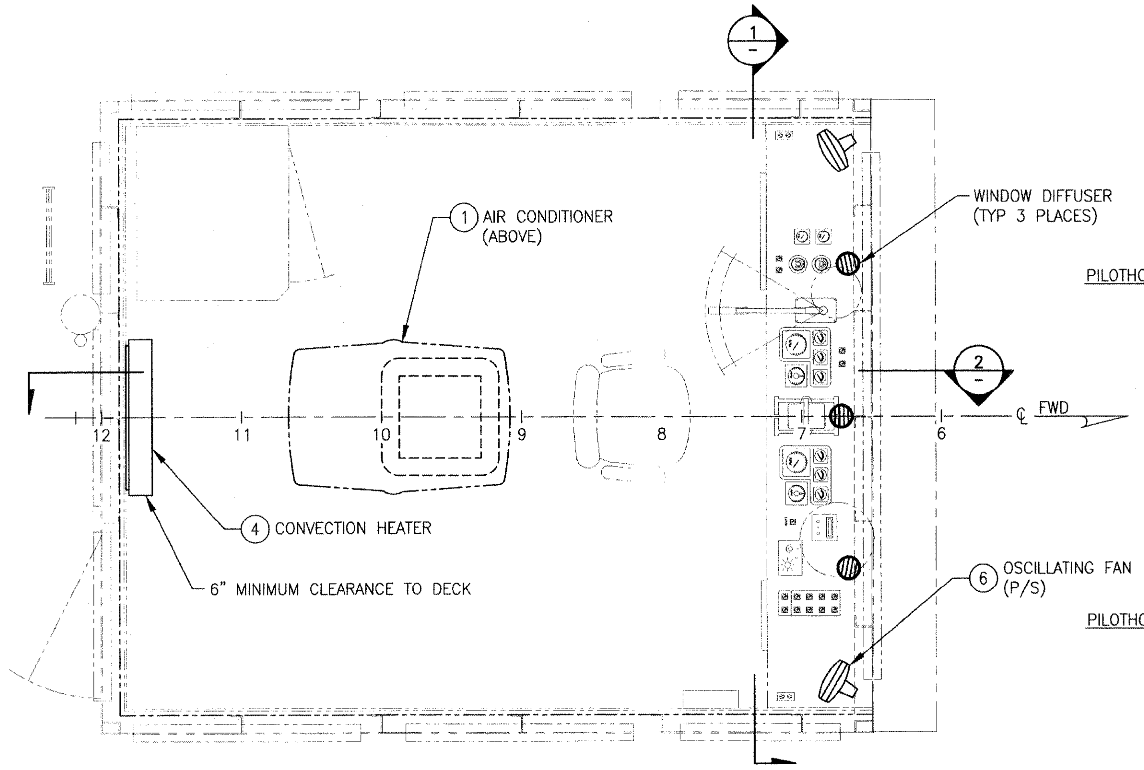
IDOT BRUSSELS FERRY
MECHANICAL GENERAL NOTES - PUSHBOAT

SCALE: AS SHOWN | SHEET NO. OF SHEETS | STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	47	32

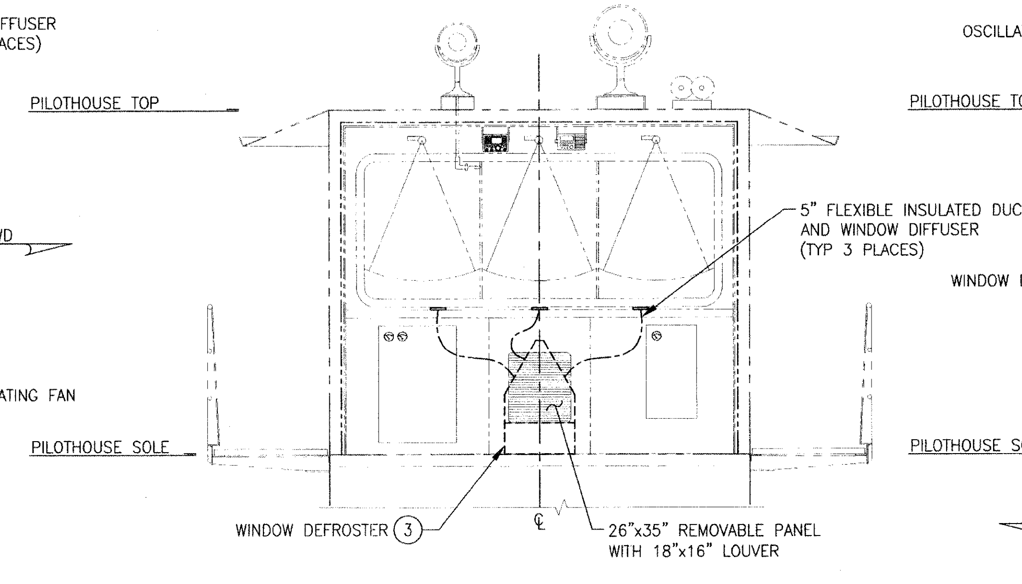
CONTRACT NO. 76D29

FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT



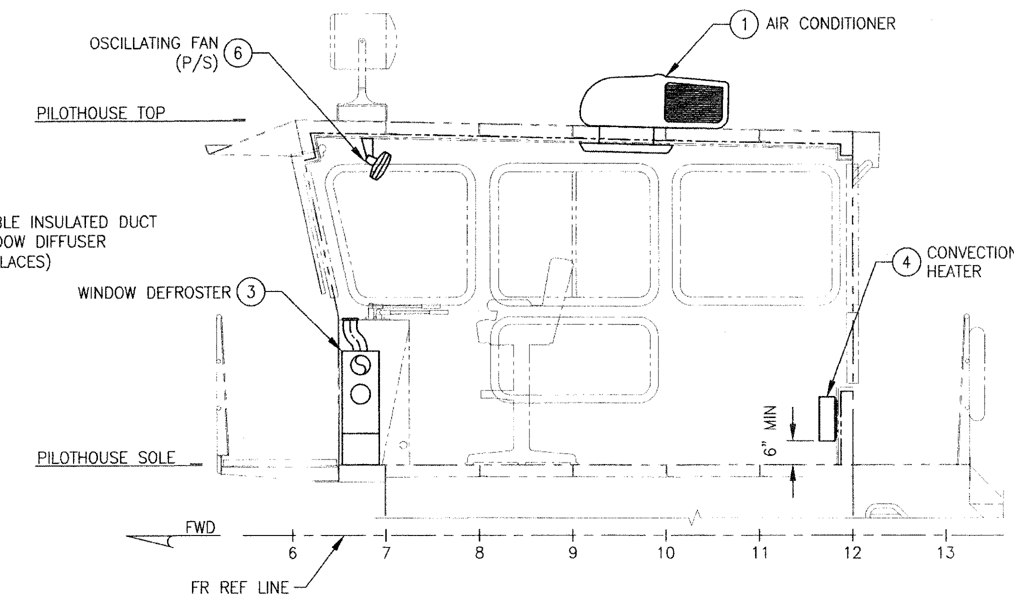
PILOTHOUSE PLAN

SCALE: 3/4" = 1'-0"



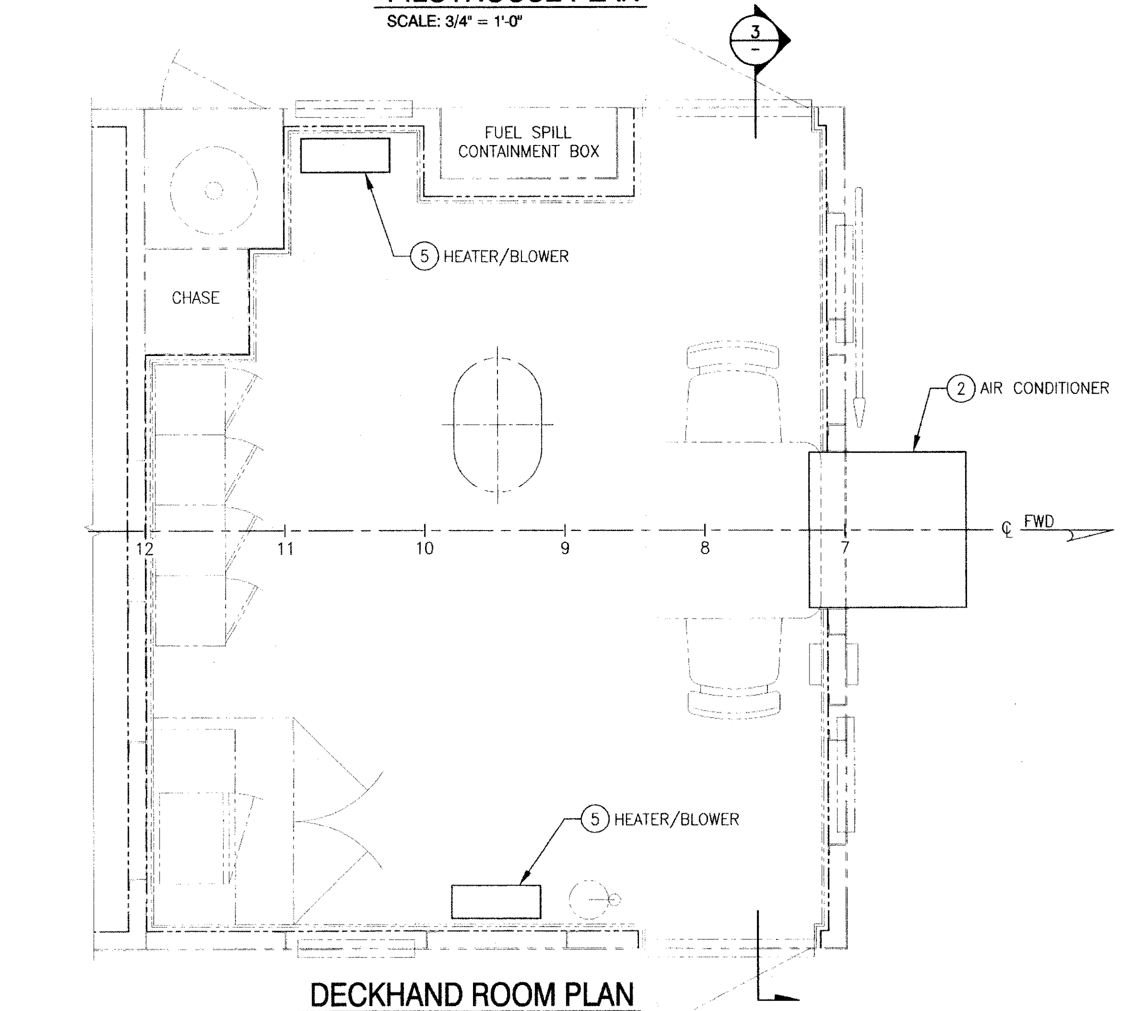
1 FWD BHD ARRANGEMENT

LOOKING FWD
SCALE: 1/2" = 1'-0"



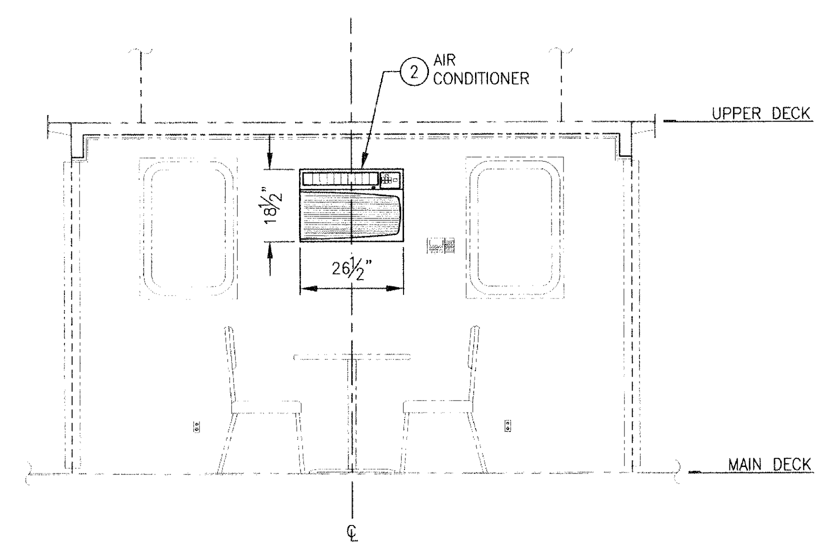
2 STBD BHD ARRANGEMENT

LOOKING OUTBD
SCALE: 1/2" = 1'-0"



DECKHAND ROOM PLAN

SCALE: 3/4" = 1'-0"



3 FWD BHD ARRANGEMENT

LOOKING FWD
SCALE: 1/2" = 1'-0"

BILL OF MATERIAL				
PC NO.	QTY	DESCRIPTION	MATERIAL/SPECIFICATION/REMARKS	
1	1 EA	AIR CONDITIONER – ROOF TOP	COLEMAN SEAMACH 48203-8866, 13,500 BTU/HR, 120VAC, 60HZ, 1 PHASE, OR EQUAL	NOTE 4
2	1 EA	AIR CONDITIONER – WINDOW	CARRIER MARINE KCB233P, 22,350 BTU/HR, 230VAC, 60HZ, 1 PHASE, OR EQUAL	NOTE 4
3	1 EA	WINDOW DEFROSTER	DOMETIC MARINE MODEL PHDCM, 1.5(KW), 305CFM, 240VAC, 1 PHASE, 60HZ, OR EQUAL	NOTE 4
4	1 EA	CONVECTION HEATER	CHROMALOX MODEL H-2407, 3.0KW, 240V, 60HZ, 1 PHASE, OR EQUAL	NOTE 4
5	2 EA	AIR HEATER BLOWER	CHROMALOX RSFM 2101IST-L, 1.0KW, 120VAC, 60HZ, 1 PHASE, OR EQUAL	NOTE 4
6	2 EA	FAN OSCILLATING	GUEST, #900, 150CFM OR EQUAL – 12VDC, OR EQUAL	NOTE 5

NOTES:

1. FOR PILOTHOUSE, VOID AND DECKHOUSE/UPPER ENGINE ROOM STRUCTURE, SEE DRAWING 151-101 AND 151-102; FOR PILOTHOUSE AND DECKHAND ROOM INTERIORS AND JOINERWORK, SEE DRAWINGS 621-101 AND 621-102.
2. VENTILATION OF THE PILOTHOUSE SHALL BE NATURAL VIA THE AFT DOOR, OPENING MIDDLE SIDE WINDOWS AND ROOF TOP AC OUTSIDE AIR INTERNAL DAMPER; DECKHAND ROOM OUTSIDE AIR VENTILATION PROVIDED VIA INTERNAL AC UNIT DAMPER AND OPENING EXTERIOR DOORS.
3. AIR CONDITIONER (PC NO2) SHALL BE "THROUGH-THE-WALL" TYPE, SLEEVE MOUNTED WITH WEATHER TIGHT SEAL THROUGH THE FORWARD DECKHAND ROOM BULKHEAD AS SHOWN ON THE DRAWING. ALL CONTROLS FOR BOTH AIR CONDITIONERS SHALL BE IN THE PILOTHOUSE AND LOCAL AT AC UNIT.
4. SEE 321-103 FOR ELECTRICAL CONNECTIONS.
5. SEE 321-102 FOR ELECTRICAL CONNECTONS.

MARTY EDWARD McKAY
STATE OF WASHINGTON
46505
REGISTERED
PROFESSIONAL ENGINEER
7/22/11

SCALE: 1/2" = 1'-0"

SCALE: 3/4" = 1'-0"

ART ANDERSON ASSOCIATES
202 PACIFIC AVE. BREMERTON, WA 98337
(360) 479-5600

DRAWING NO. CEIDT001PB-512-101

FILE NAME =	USER NAME =	DESIGNED – M. McKAY	REVISED –
		DRAWN – J. WALKER	REVISED –
	PLOT SCALE =	CHECKED – P. MARTIN	REVISED –
	PLOT DATE =	DATE – 7/19/2011	REVISED –

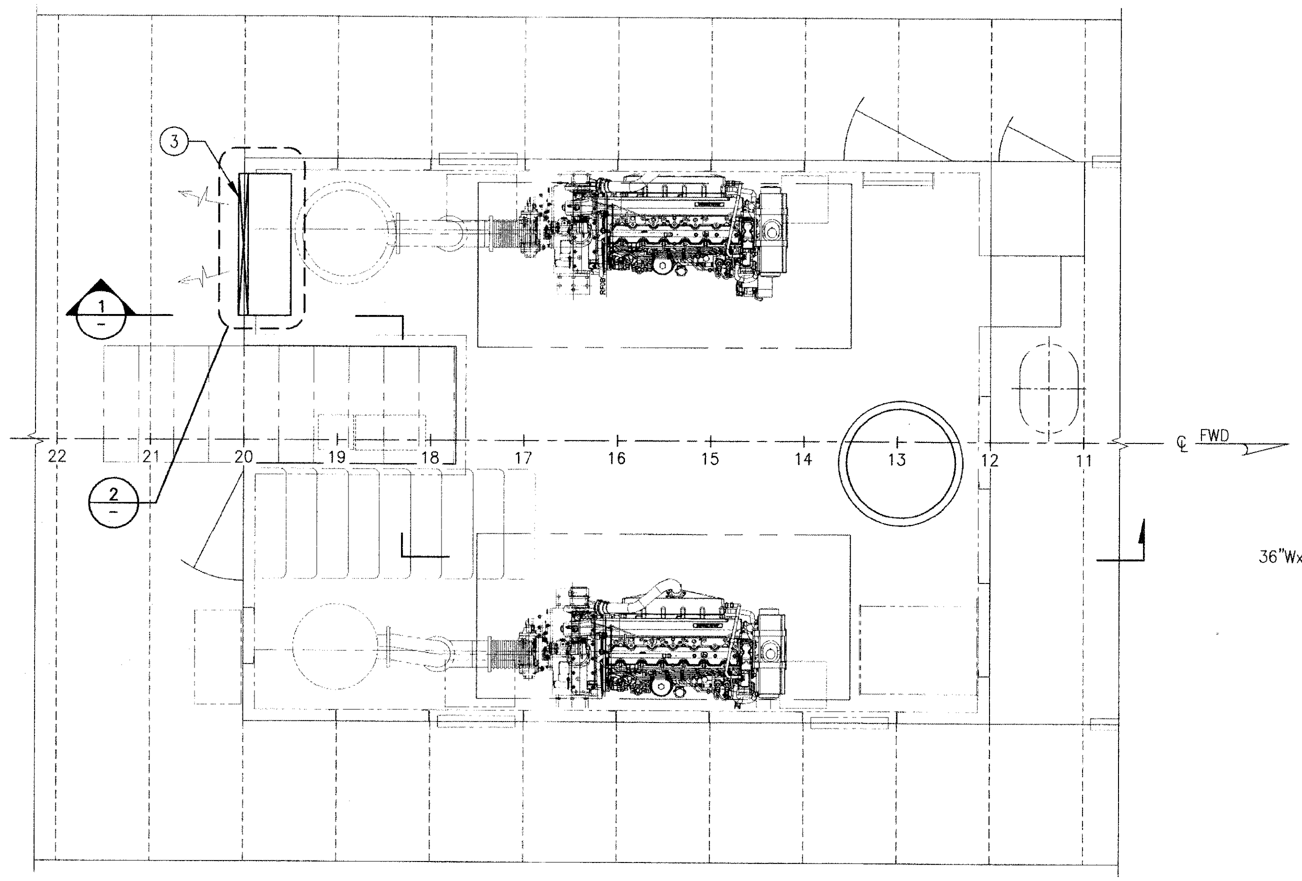
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IDOT BRUSSELS FERRY
HVAC ARRANGEMENT AND DETAILS

SCALE: AS SHOWN | SHEET NO. OF SHEETS | STA. TO STA.

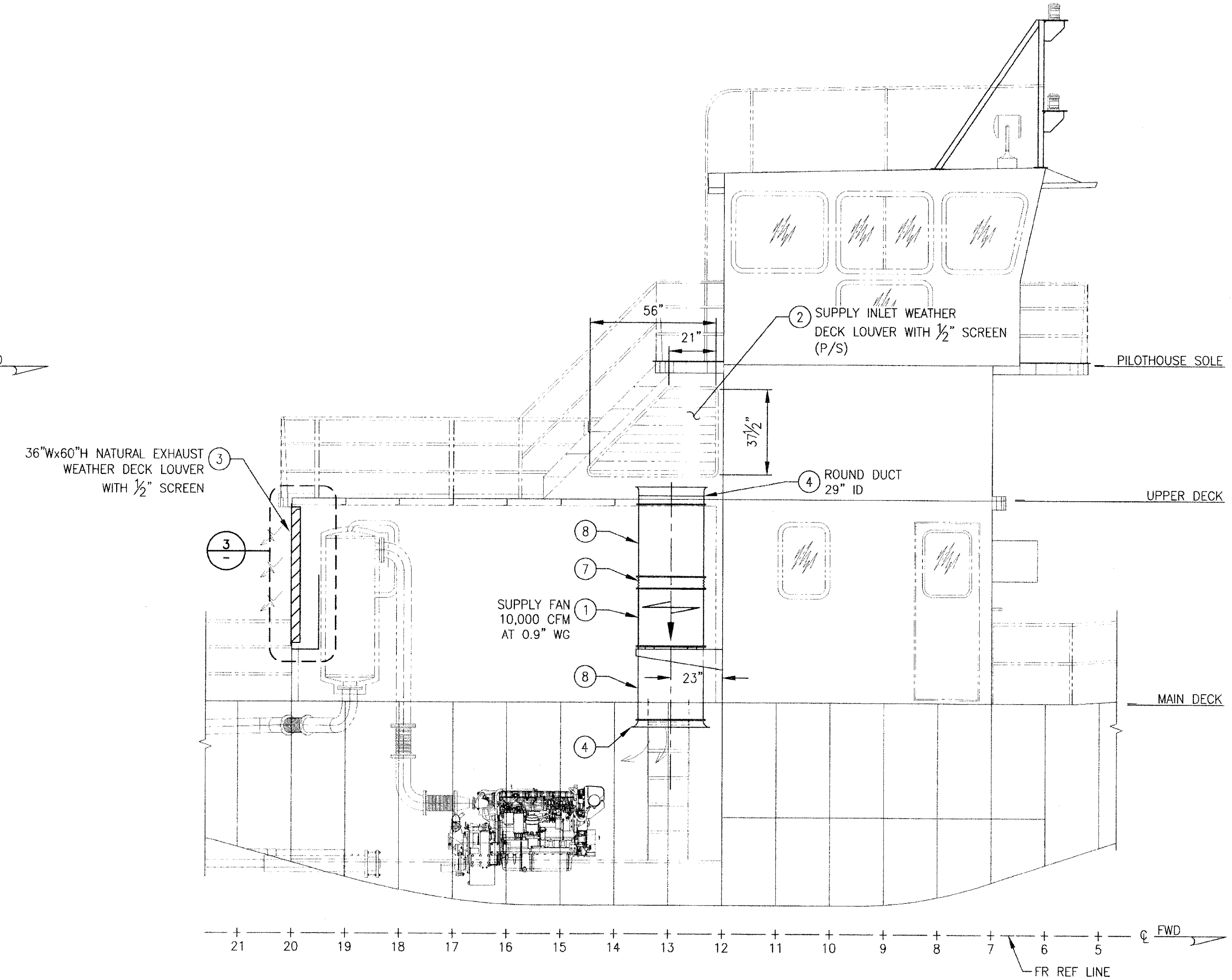
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	47	33
		CONTRACT NO. 76D29		

FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT



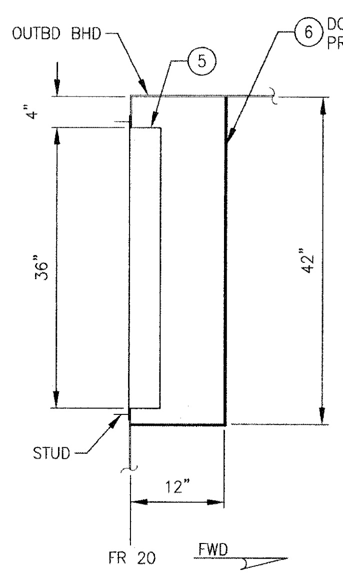
MACHINERY PLAN

SCALE: 1/2" = 1'-0"



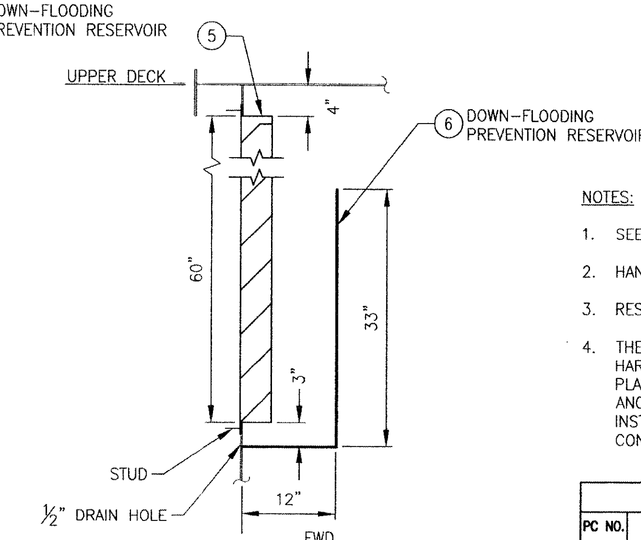
SECTION

SCALE: 3/8" = 1'-0"



DETAIL

SCALE: 1" = 1'-0"



DETAIL

SCALE: 1" = 1'-0"

NOTES:

1. SEE DRAWING 233–101 AND 233–102 FOR ADDITIONAL ENGINE ROOM ARRANGEMENT DETAILS.
2. HANGERS SHALL BE FITTED FOR PROPER SUPPORT OF ALL DUCTWORK.
3. RESILIENTLY MOUNT FAN TO BHD 12 IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
4. THE LIST OF MATERIALS FOR THIS DRAWING DOES NOT INCLUDE MISCELLANEOUS MATERIALS AND HARDWARE SUCH AS NUTS, BOLTS, SCREWS PLASTIC SEALANT, ELECTRICAL INSULATION TAPE, PLASTIC VINYL ELECTRICIANS TAPE, TIE–WARPS, HEAT SHRINK, SLEEVING, AND OTHER SUCH ANCILLARY ITEMS. HOWEVER ALL ITEMS NECESSARY FOR A COMPLETE, FINISHED AND OPERATIONAL INSTALLATION CONFORMING TO GOOD SHIPBUILDING PRACTICE SHALL BE PROVIDED BY THE CONTRACTOR.

BILL OF MATERIAL

PC NO.	QTY	DESCRIPTION	MATERIAL/SPECIFICATION/REMARKS
1	1 EA	SUPPLY FAN	HARTZELL A53C––297VA–––STAIKD, 10,000 CFM, 0.9" WG, 3HP, 1140RPM
2	2 EA	WEATHER DECK LOUVER, INTAKE	RUSKIN ELF6350DMP INTEGRAL FLANGE W/ BIRD & INSECT SCREEN
3	1 EA	WEATHER DECK LOUVER, EXHAUST	RUSKIN ELF445DXH INTEGRAL FLANGE W/ BIRD & INSECT SCREEN
4	AS REQ	DUCT	16 GAUGE GALVANIZED STEEL, SOUND LINED
5	AS REQ	GASKET MATERIAL	BUNA–N RUBBER
6	AS REQ	PLATE, $\frac{3}{16}$"	ASTM A36
7	1 EA	FLEXIBLE DUCT CONNECTION	DURO DYNE
8	2 EA	SILENCER	MARINE GRADE

0 8" 16" 2' 2'8" 4' 5'4" 8'
SCALE: 3/8" = 1'–0"

0 3" 6" 9" 1' 2' 3'
SCALE: 1" = 1'–0"

MARTY EDWARD McKAY
STATE OF WASHINGTON
46505
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7/22/11

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DRAWING NO. CEIDT001PB-512-102

FILE NAME =	USER NAME =	DESIGNED — M. McKAY	REVISED —
		DRAWN — C. FAWVER	REVISED —
	PLOT SCALE =	CHECKED — P. MARTIN	REVISED —
	PLOT DATE =	DATE — 7/19/2011	REVISED —

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

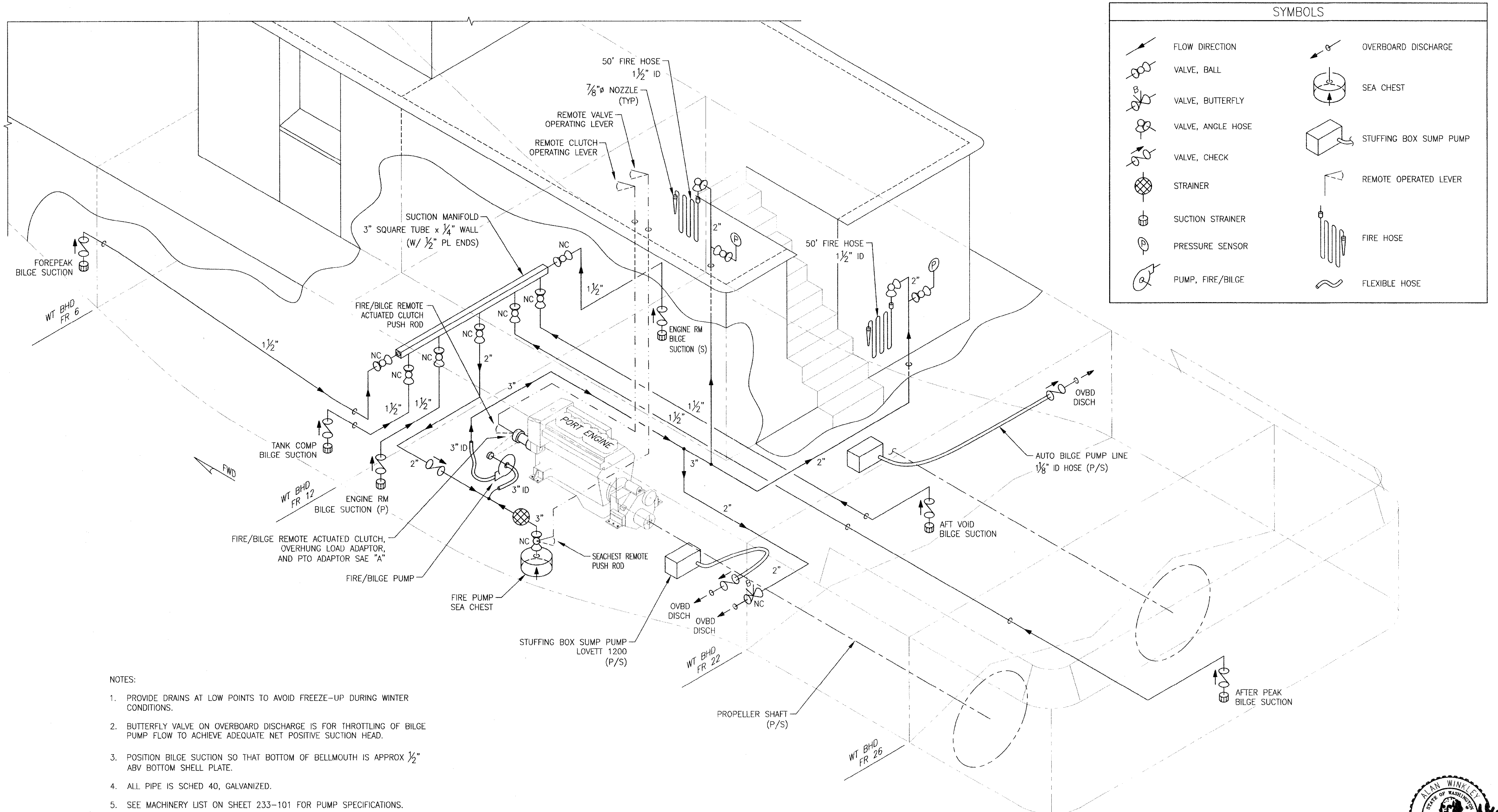
IDOT BRUSSELS FERRY
HVAC ARRANGEMENT AND DETAILS - ENGINE ROOM

SCALE: AS SHOWN | SHEET NO. OF SHEETS | STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21–3	JERSEY	47	34

CONTRACT NO. 76D29

FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT



NOTES:

1. PROVIDE DRAINS AT LOW POINTS TO AVOID FREEZE-UP DURING WINTER CONDITIONS.
2. BUTTERFLY VALVE ON OVERBOARD DISCHARGE IS FOR THROTTLING OF BILGE PUMP FLOW TO ACHIEVE ADEQUATE NET POSITIVE SUCTION HEAD.
3. POSITION BILGE SUCTION SO THAT BOTTOM OF BELLMOUTH IS APPROX ½" ABV BOTTOM SHELL PLATE.
4. ALL PIPE IS SCHED 40, GALVANIZED.
5. SEE MACHINERY LIST ON SHEET 233-101 FOR PUMP SPECIFICATIONS.

FIRE/BILGEMAIN DIAGRAM

SCALE: NONE

ALAN WINKLEY STATE OF WASHINGTON 24000 REGISTERED PROFESSIONAL ENGINEER 7/21/2011

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DRAWING NO. CEIDT001PB-529-101

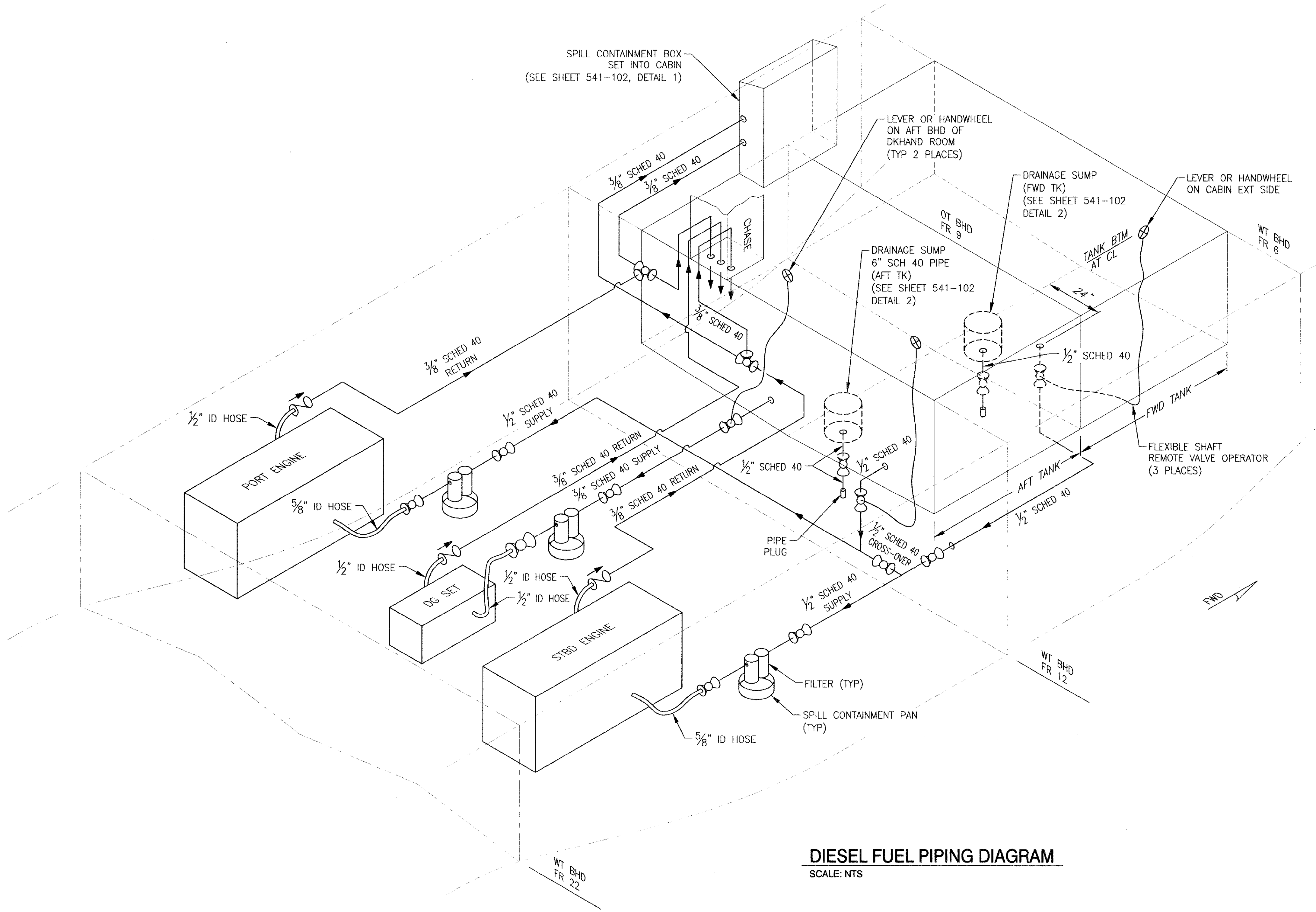
FILE NAME =	USER NAME =	DESIGNED — A. WINKLEY	REVISED —
		DRAWN — J. WALKER	REVISED —
	PLOT SCALE =	CHECKED — P. MARTIN	REVISED —
	PLOT DATE =	DATE — 7/19/2011	REVISED —

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IDOT BRUSSELS FERRY
FIREMAIN AND BILGE PIPING - PUSHBOAT

SCALE: NONE | SHEET NO. OF SHEETS | STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	47	35
		CONTRACT NO. 76D29		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



DIESEL FUEL PIPING DIAGRAM

SCALE: NTS

SYMBOLS

- FLOW DIRECTION
- VALVE, BALL
- VALVE, 3-WAY DIVERTER (SEE NOTE 1)
- VALVE, ANGLE HOSE
- VALVE, CHECK
- FUEL FILTER
- SPILL CONTAINMENT PAN
- PIPE PLUG
- VENT W/ FLAME ARRESTOR
- PIPE CAP
- FLEXIBLE HOSE

NOTES:

1. 3-WAY DIVERTER VALVES TO BE BRONZE, 1/2" SIZE. CONBRACO #70-603-10, OR EQUAL.
2. PROVIDE A TANK LEVEL INDICATOR FOR EACH TANK. HEADHUNTER, MODEL TS-3002B OR EQUAL SEE 401-101. LOCATE FUEL PANEL IN PILOTHOUSE CONSOLE SEE 621-102.

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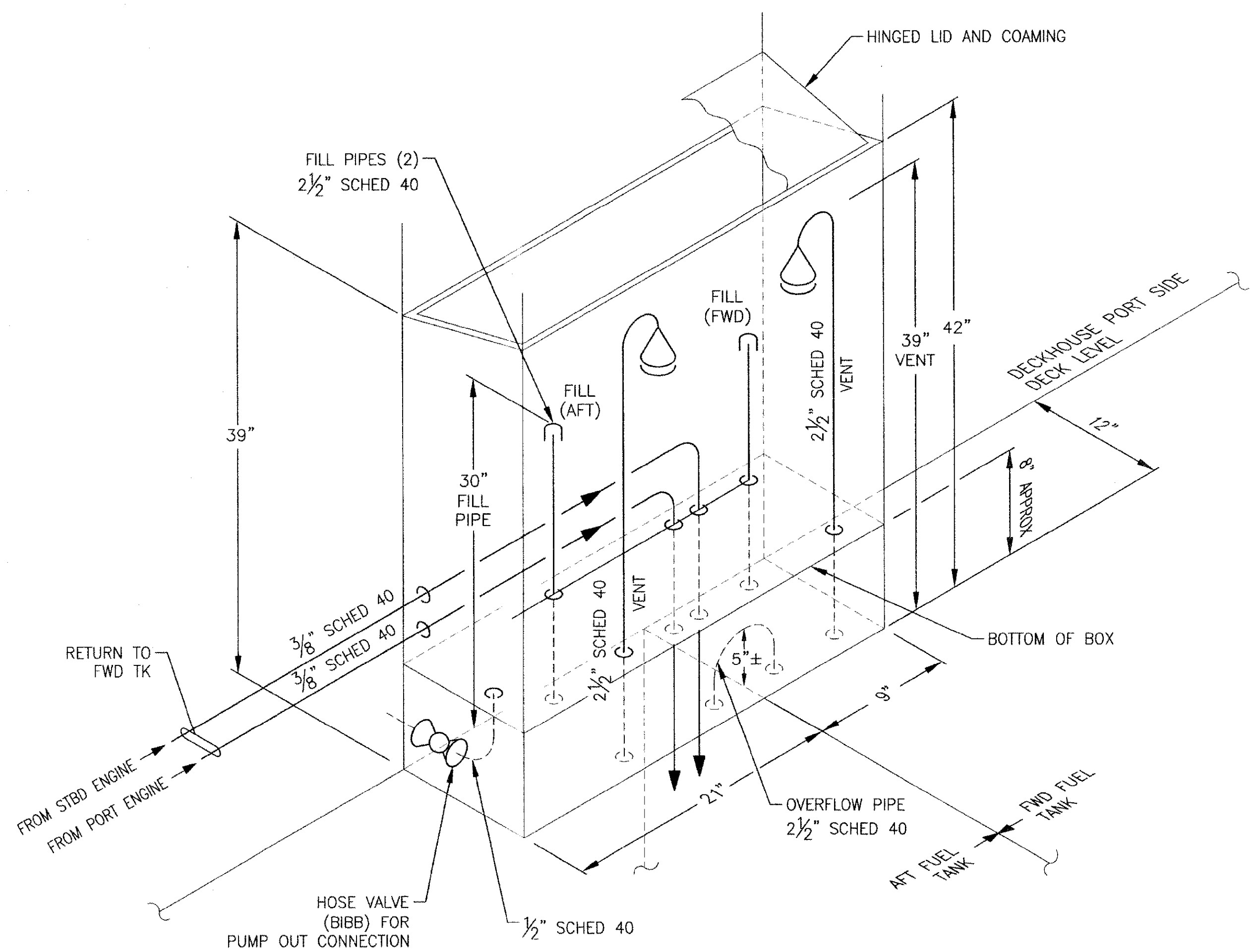
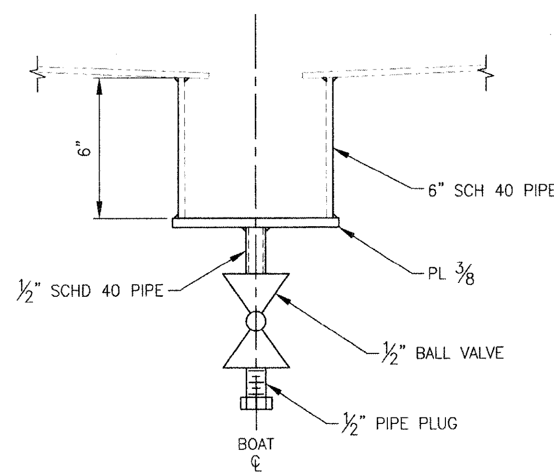
DRAWING NO. CEIDT001PB-541-101

FILE NAME =	USER NAME =	DESIGNED — A. WINKLEY	REVISED —	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	IDOT BRUSSELS FERRY DIESEL FUEL PIPING - DIAGRAM	F.A.P. RTE. 304	SECTION 21-3
		DRAWN — J. WALKER	REVISED —			COUNTY JERSEY	TOTAL SHEETS 47 / SHEET NO. 36
	PLOT SCALE =	CHECKED — P. MARTIN	REVISED —			CONTRACT NO. 76D29	
	PLOT DATE =	DATE — 7/19/2011	REVISED —		SCALE: NTS SHEET NO. OF SHEETS STA. TO STA.	FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT	



1 - **SPILL CONTAINMENT BOX DETAIL**

MADE FROM 3/16" STEEL PLATE
SCALE: NTS



2 - **DETAIL**

SCALE: 3" = 1'-0"

ALAN WINKLEY
STATE OF WASHINGTON
24000
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7/21/2011

0 2" 4" 8" 12"
SCALE: 3" = 1'-0"

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202 PACIFIC AVE. BREMERTON, WA 98337
(360) 479-5600

DRAWING NO. CEIDT001PB-541-102

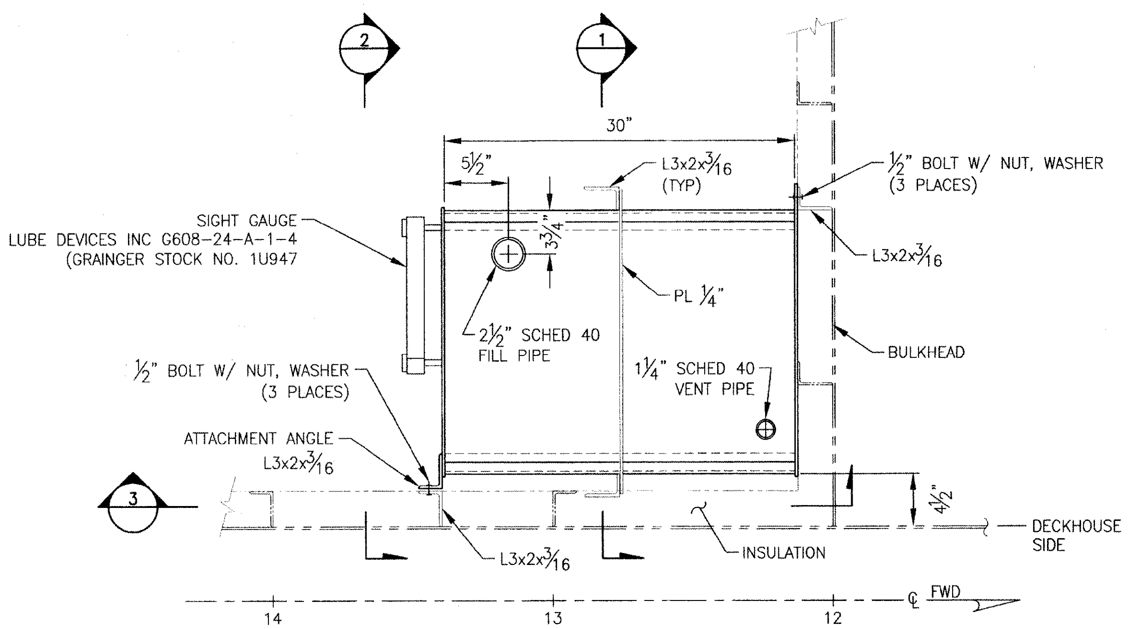
FILE NAME =	USER NAME =	DESIGNED — A. WINKLEY	REVISED —	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
		DRAWN — C. FAWVER	REVISED —	
	PLOT SCALE =	CHECKED — P. MARTIN	REVISED —	
	PLOT DATE =	DATE — 7/19/2011	REVISED —	

IDOT BRUSSELS FERRY
DIESEL FUEL PIPING - DETAILS

SCALE:	NTS	SHEET NO.	OF	SHEETS	STA.	TO STA.

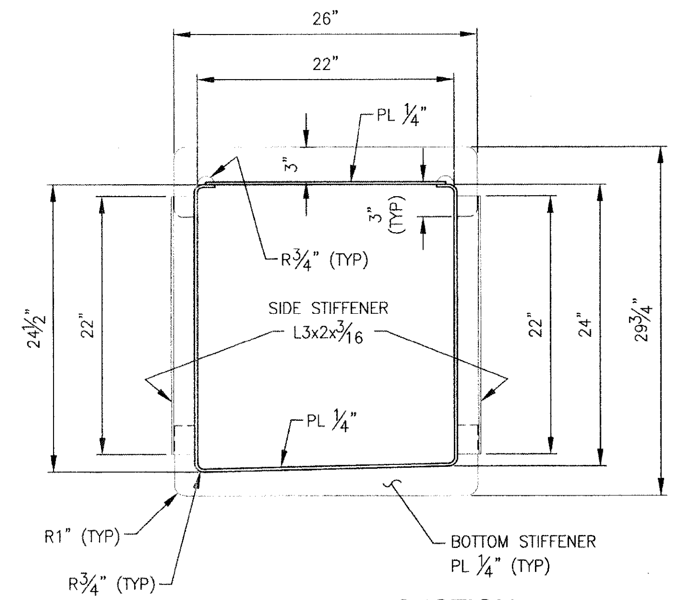
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	47	37
		CONTRACT NO. 76D29		

FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT



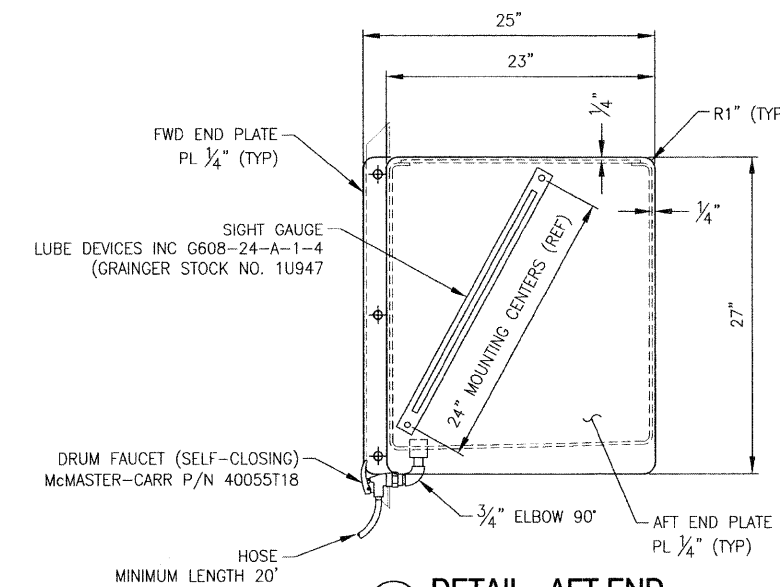
PLAN

SCALE: 1-1/2" = 1'-0"



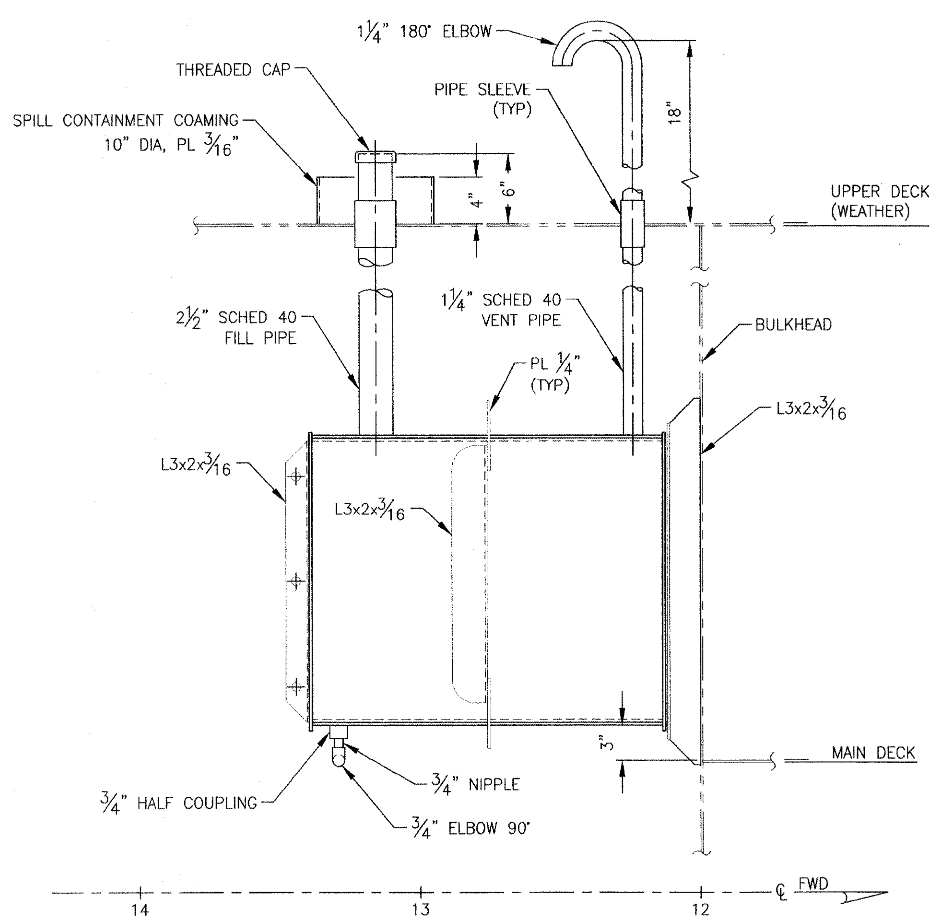
1 DETAIL - SECTION

SCALE: 1-1/2" = 1'-0"



2 DETAIL - AFT END

SCALE: 1-1/2" = 1'-0"



3 DETAIL

STBD SIDE, LOOKING TO PORT
SCALE: 1-1/2" = 1'-0"

ALAN WINKLEY STATE OF WASHINGTON 24000 REGISTERED PROFESSIONAL ENGINEER
7/21/2011

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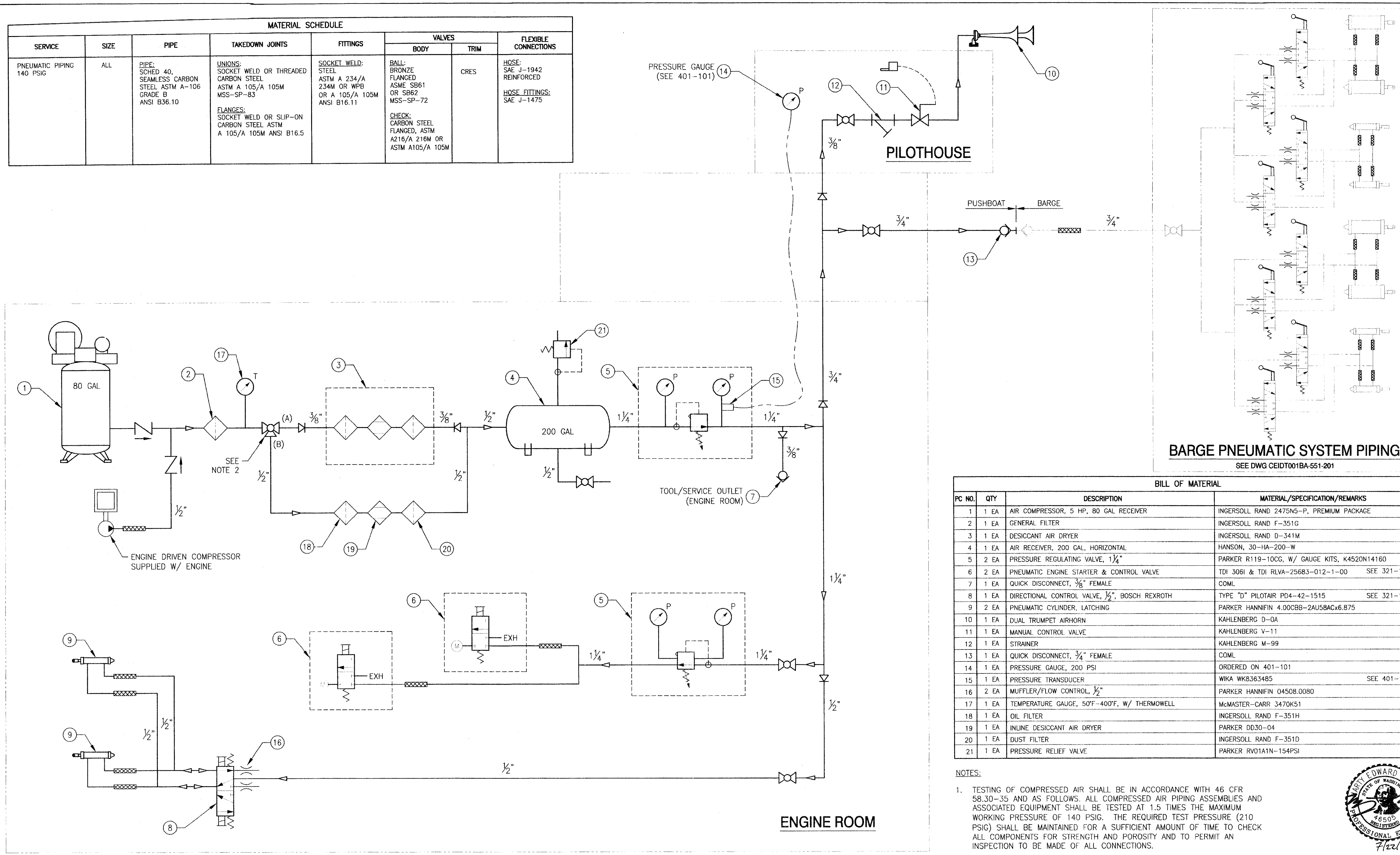
DRAWING NO. CEIDT001PB-543-101

FILE NAME =	USER NAME =	DESIGNED — A. WINKLEY	REVISED —	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	IDOT BRUSSELS FERRY LUBE OIL TANK FABRICATION AND INSTALLATION
		DRAWN — J. WALKER	REVISED —		
	PLOT SCALE =	CHECKED — P. MARTIN	REVISED —		
	PLOT DATE =	DATE — 7/19/2011	REVISED —		SCALE: AS SHOWN · SHEET NO. OF SHEETS · STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	47	38
		CONTRACT NO. 76D29		

FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT

MATERIAL SCHEDULE							
SERVICE	SIZE	PIPE	TAKEDOWN JOINTS	FITTINGS	VALVES		FLEXIBLE CONNECTIONS
					BODY	TRIM	
PNEUMATIC PIPING 140 PSIG	ALL	PIPE: SCHED 40, SEAMLESS CARBON STEEL ASTM A-106 GRADE B ANSI B36.10	UNIONS: SOCKET WELD OR THREADED CARBON STEEL ASTM A 105/A 105M MSS-SP-83 FLANGES: SOCKET WELD OR SLIP-ON CARBON STEEL ASTM A 105/A 105M ANSI B16.5	SOCKET WELD: STEEL ASTM A 234/A 234M OR WPB OR A 105/A 105M ANSI B16.11	BALL: BRONZE FLANGED ASME SB61 OR SB62 MSS-SP-72 CHECK: CARBON STEEL FLANGED, ASTM A216/A 216M OR ASTM A105/A 105M	CRES	HOSE: SAE J-1942 REINFORCED HOSE FITTINGS: SAE J-1475



COMPRESSED AIR SYSTEM

SCALE: NONE

BILL OF MATERIAL			
PC NO.	QTY	DESCRIPTION	MATERIAL/SPECIFICATION/REMARKS
1	1 EA	AIR COMPRESSOR, 5 HP, 80 GAL RECEIVER	INGERSOLL RAND 2475N5-P, PREMIUM PACKAGE
2	1 EA	GENERAL FILTER	INGERSOLL RAND F-351G
3	1 EA	DESICCANT AIR DRYER	INGERSOLL RAND D-341M
4	1 EA	AIR RECEIVER, 200 GAL, HORIZONTAL	HANSON, 30-HA-200-W
5	2 EA	PRESSURE REGULATING VALVE, 1 1/4"	PARKER R119-10CG, W/ GAUGE KITS, K4520N14160
6	2 EA	PNEUMATIC ENGINE STARTER & CONTROL VALVE	TDI 306I & TDI RLVA-25683-012-1-00 SEE 321-102
7	1 EA	QUICK DISCONNECT, 3/8" FEMALE	COML
8	1 EA	DIRECTIONAL CONTROL VALVE, 1/2", BOSCH REXROTH	TYPE "D" PILOTAIR PD4-42-1515 SEE 321-102
9	2 EA	PNEUMATIC CYLINDER, LATCHING	PARKER HANNIFIN 4.00CBB-2AU58ACx6.875
10	1 EA	DUAL TRUMPET AIRHORN	KAHLENBERG D-0A
11	1 EA	MANUAL CONTROL VALVE	KAHLENBERG V-11
12	1 EA	STRAINER	KAHLENBERG M-99
13	1 EA	QUICK DISCONNECT, 3/4" FEMALE	COML
14	1 EA	PRESSURE GAUGE, 200 PSI	ORDERED ON 401-101
15	1 EA	PRESSURE TRANSDUCER	WIKA WK8363485 SEE 401-101
16	2 EA	MUFFLER/FLOW CONTROL, 1/2"	PARKER HANNIFIN 04508.0080
17	1 EA	TEMPERATURE GAUGE, 50°F-400°F, W/ THERMOWELL	McMASTER-CARR 3470K51
18	1 EA	OIL FILTER	INGERSOLL RAND F-351H
19	1 EA	INLINE DESICCANT AIR DRYER	PARKER DD30-04
20	1 EA	DUST FILTER	INGERSOLL RAND F-351D
21	1 EA	PRESSURE RELIEF VALVE	PARKER RV01A1N-154PSI

NOTES:

1. TESTING OF COMPRESSED AIR SHALL BE IN ACCORDANCE WITH 46 CFR 58.30-35 AND AS FOLLOWS. ALL COMPRESSED AIR PIPING ASSEMBLIES AND ASSOCIATED EQUIPMENT SHALL BE TESTED AT 1.5 TIMES THE MAXIMUM WORKING PRESSURE OF 140 PSIG. THE REQUIRED TEST PRESSURE (210 PSIG) SHALL BE MAINTAINED FOR A SUFFICIENT AMOUNT OF TIME TO CHECK ALL COMPONENTS FOR STRENGTH AND POROSITY AND TO PERMIT AN INSPECTION TO BE MADE OF ALL CONNECTIONS.
2. PROVIDE VALVE LABEL PLATE STATING:

   ALIGN 3-WAY VALVE TO PORT (B) WHEN OUT SIDE AIR TEMP IS ABOVE 60°F OR WHEN USING THE ENGINE DRIVEN AIR COMPRESSOR.

MARTY EDWARD McKAY STATE OF WASHINGTON 46505 REGISTERED PROFESSIONAL ENGINEER

7/22/11

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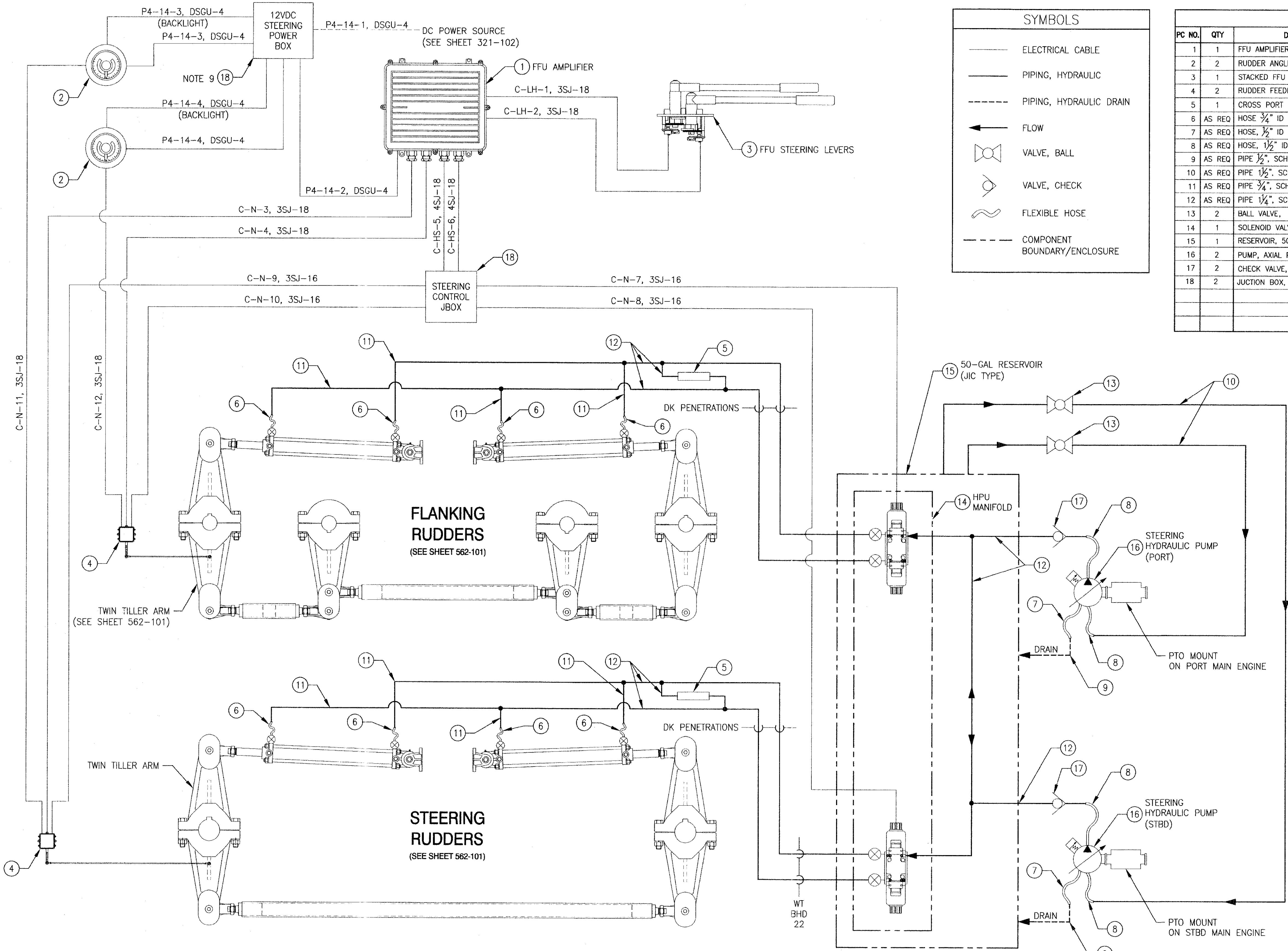
DRAWING NO. CEIDT001PB-551-101

FILE NAME =	USER NAME =	DESIGNED — M. McKAY	REVISED —	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	IDOT BRUSSELS FERRY COMPRESSED AIR SYSTEM
		DRAWN — J. WALKER	REVISED —		
	PLOT SCALE =	CHECKED — P. MARTIN	REVISED —		
	PLOT DATE =	DATE — 7/19/2011	REVISED —		SCALE: AS SHOWN SHEET NO. OF SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	47	39
		CONTRACT NO. 76D29		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



SYMBOLS	
....	ELECTRICAL CABLE
———	PIPING, HYDRAULIC
------	PIPING, HYDRAULIC DRAIN
←—	FLOW
	VALVE, BALL
	VALVE, CHECK
	FLEXIBLE HOSE
— — — —	COMPONENT BOUNDARY/ENCLOSURE

BILL OF MATERIAL

PC NO.	QTY	DESCRIPTION	MATERIAL/SPECIFICATION/REMARKS
1	1	FFU AMPLIFIER	KOBELT, 7173-K
2	2	RUDDER ANGLE INDICATOR	KOBELT, 7175-MY, WITH BACKLIGHT DIMMER
3	1	STACKED FFU LEVER	KOBELT, 7195-B
4	2	RUDDER FEEDBACK UNITS	KOBELT, 7174-B
5	1	CROSS PORT BYPASS VALVE	KOBELT, 7120 (SET 1500 PSI)
6	AS REQ	HOSE 3/4" ID	SAE J1942, SWIVEL END FITTINGS
7	AS REQ	HOSE, 1/2" ID	SAE J1942, SWIVEL END FITTINGS
8	AS REQ	HOSE, 1 1/2" ID	SAE J1942, SWIVEL END FITTINGS
9	AS REQ	PIPE 1/2", SCHED 40	STEEL, ASTM A106 GR B, BLACK
10	AS REQ	PIPE 1 1/2", SCHED 40	STEEL, ASTM A106 GR B, BLACK
11	AS REQ	PIPE 3/4", SCHED 80	STEEL, ASTM A106 GR B, BLACK
12	AS REQ	PIPE 1 1/4", SCHED 80	STEEL, ASTM A106 GR B, BLACK
13	2	BALL VALVE, 1 1/2" FLANGED	SS, MSS-SP-72, NIBCO F-510-56-R-66-FS OR EQUAL
14	1	SOLENOID VALVE MANIFOLD	SEE NOTE 1 (KOBELT SUPPLY)
15	1	RESERVOIR, 50-GAL	SEE SHEET 233-101 (KOBELT SUPPLY)
16	2	PUMP, AXIAL PISTON TYPE	SEE SHEET 233-101 (KOBELT SUPPLY)
17	2	CHECK VALVE, 1 1/4"	ALUMINUM BODY, RATED 3000 PSI, SUN MODEL ICF, OR EQUAL
18	2	JUCTION BOX, 10 TERMINAL	PAULUHN 568T10 OR EQUAL

NOTES:

1. HYDRAULIC SOLENOID VALVE MANIFOLD CONSISTS OF FOLLOWING PACKAGE MOUNTED ON AND PIPED TO THE RESERVOIR (PC 15):
   A. (2) VALVE BASES WITH SAE O-RING PORTS
   B. (2) 12VDC SOLENOID VALVES (CLOSED CENTER, SOFT SHIFT)
   C. (2) DUAL PILOT-OPERATED CHECK VALVES
   D. (2) FLOW CONTROL VALVES, ADJUSTABLE
   E. OIL FILLED PRESSURE GAUGE AND ISOLATOR
   F. LOW PRESSURE SWITCH
2. SYSTEM OPERATING PRESSURE IS 1500PSIG. ENTIRE SYSTEM, EXCEPT FOR VENTED RESERVOIR AND SUCTION PIPING BETWEEN RESERVOIR AND PUMPS IS TO HAVE MAX ALLOWABLE WORKING PRESSURE OR AT LEAST 1500PSIG.
3. MINIMUM PIPE BEND RADIUS IS 4 TIMES OUTSIDE DIAMETER. MINIMUM HOSE BEND RADIUS IS TO BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
4. HYDRAULIC PIPING SHALL BE INSTALLED WITH ISOLATION HANGERS LOCATED TO MINIMIZE VIBRATION AND CONTROL MOVEMENT OF LINES.
5. PIPE PENETRATION OF BULKHEAD AND DECK SHALL BE WATERTIGHT.
6. INSTALLATION AND FILTRATION SHALL BE ADEQUATE TO MAINTAIN SYSTEM CLEANLINESS (CONTAMINATION STANDARD) AT SAE CLASS 4 (ISO CLASS 16/13) OR CLEANER.
7. PROVIDE ONE MADE-UP SPARE OF EACH SIZE AND LENGTH OF HYDRAULIC HOSE, INCLUDING END FITTINGS.
8. REFER TO DRAWING 321-101 FOR ELECTRICAL INSTALLATION REQUIREMENTS.
9. INSTALL A 2A IN LINE FUSE ON EACH BACKLIGHT POSITIVE WIRE IN THE STEERING POWER BOX.

ALAN WINKLEY STATE OF WASHINGTON 24000 REGISTERED PROFESSIONAL ENGINEER 7/21/2011

HYDRAULIC STEERING SYSTEM PIPING & WIRING DIAGRAM

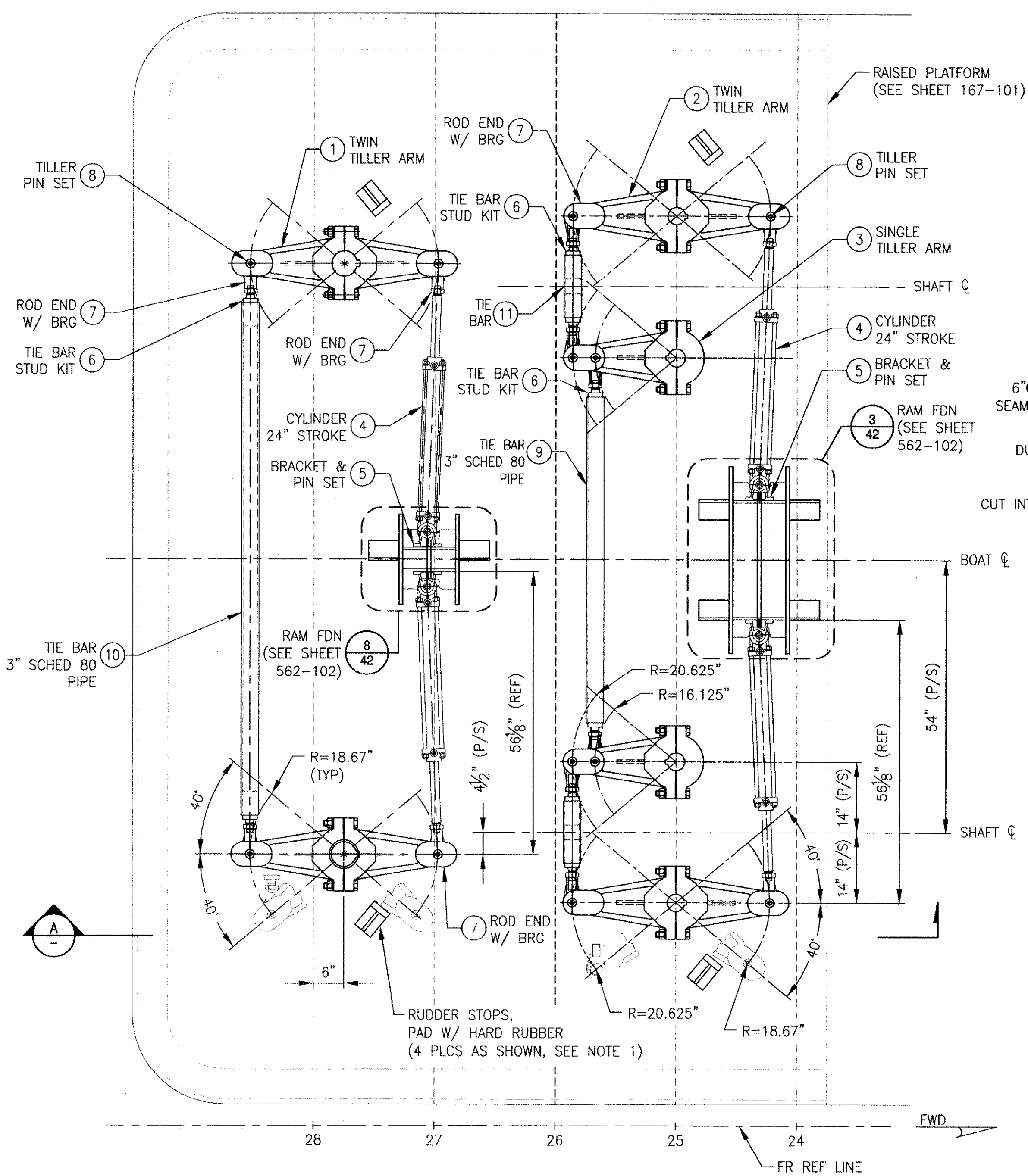
SCALE: NTS

ART ANDERSON ASSOCIATES
202 PACIFIC AVE, BREMERTON, WA 98337 (360) 479-5600

DRAWING NO. CEIDT001PB-556-101

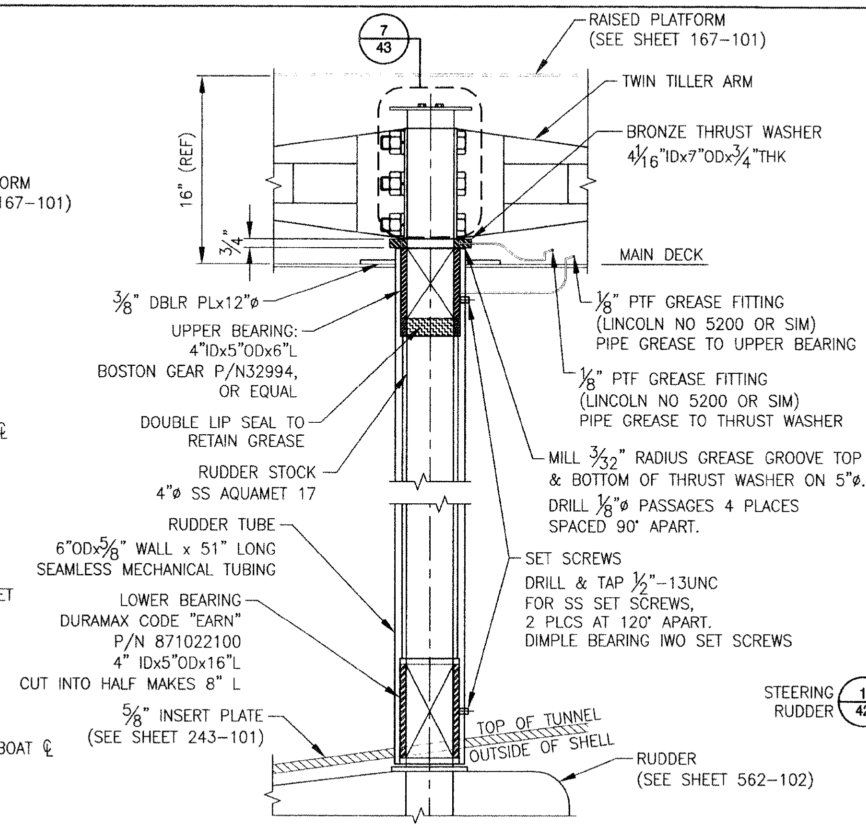
FILE NAME =	USER NAME =	DESIGNED — A. WINKLEY	REVISED —	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	IDOT BRUSSELS FERRY HYDRAULIC STEERING SYSTEM DIAGRAM
		DRAWN — R. MANANSALA	REVISED —		
	PLOT SCALE =	CHECKED — P. MARTIN	REVISED —		
	PLOT DATE =	DATE — 7/19/2011	REVISED —		SCALE: NONE SHEET NO. OF SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	47	40
		CONTRACT NO. 76D29		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



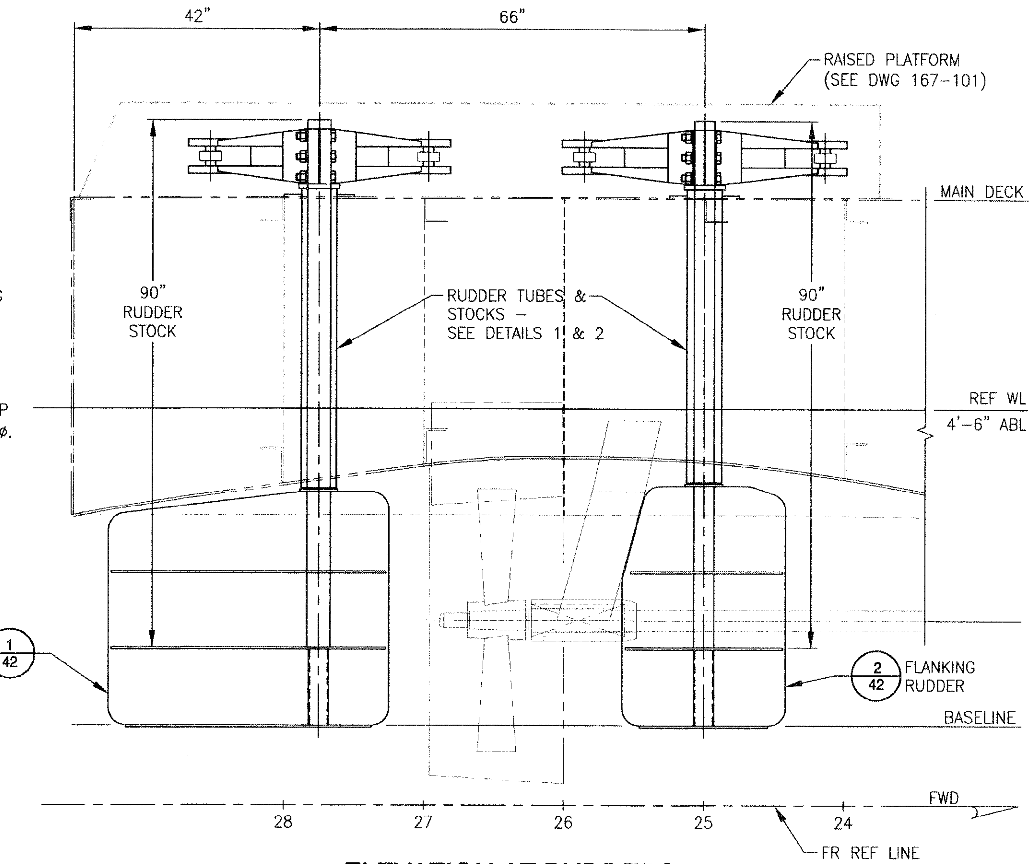
PLAN VIEW AT MAIN DECK

SCALE: 3/4" = 1'-0"



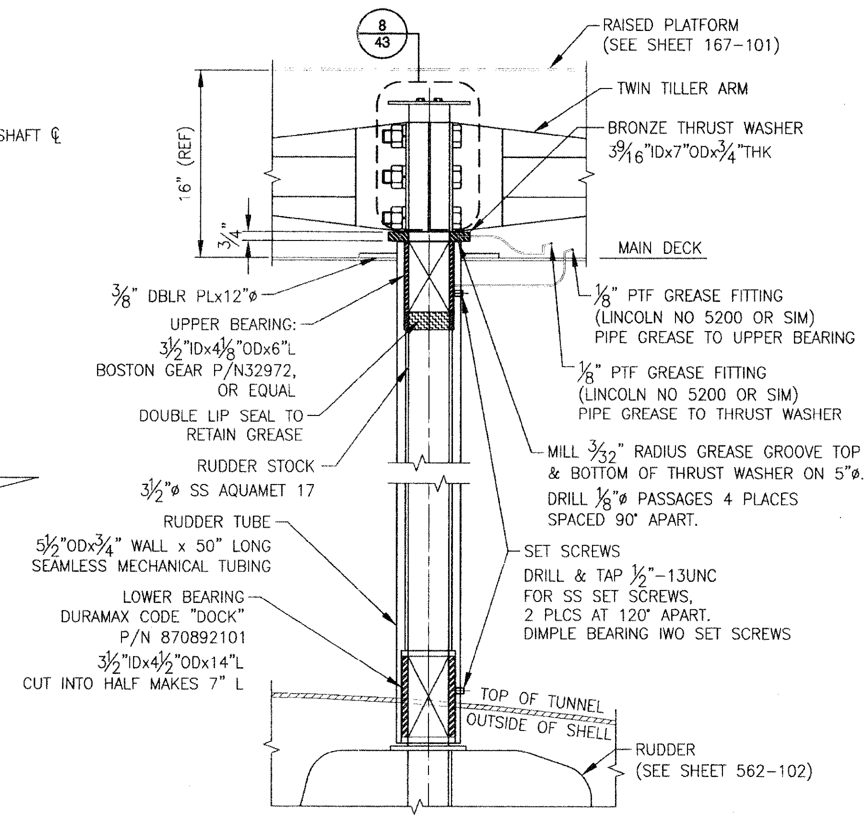
1 STEERING RUDDER TUBES AND STOCKS

SCALE: 1 1/2" = 1'-0"



A ELEVATION AT RUDDERS

SCALE: 3/4" = 1'-0"



2 FLANKING RUDDER TUBES AND STOCKS

SCALE: 1 1/2" = 1'-0"

BILL OF MATERIAL			
PC NO.	QTY	DESCRIPTION	MATERIAL/SPECIFICATION/REMARKS
1	2 EA	TWIN TILLER ARM	KOBELT, 7094T-20-35, BORE 4"ø KEYWAY, R=18.67"
2	2 EA	TWIN TILLER ARM	KOBELT, SIM TO 7094T-20-35, BORE 3½"ø KEYWAY, R^1=18.67", R^2=20.625"
3	2 EA	SINGLE TILLER ARM	KOBELT, SIM TO 7094S-20-35, BORE 3½"ø KEYWAY, R^1=16.125", R^2=20.625"
4	4 EA	CYLINDER 24" STROKE	KOBELT, 7087-U24
5	4 EA	BRACKET & PIN SET	KOBELT, 7087-0205
6	4 EA	TIE BAR STUD KIT	KOBELT, 7087-1004 (EACH KIT CONTAINS 2 IDENTICAL HALVES)
7	12 EA	ROD END W/ BEARING	KOBELT, 7087-0104
8	12 EA	TILLER PIN SET	KOBELT, 7087-0175
9	1 EA	PIPE 3", SCHED 80	64" LONG, BY SHIPYARD
10	1 EA	PIPE 3", SCHED 80	99" LONG, BY SHIPYARD
11	2 EA	PIPE 3", SCHED 80	12" LONG, BY SHIPYARD

NOTE:

1. POSITION RUDDER STOPS TO CONTACT TILLER ARMS AT 39° RUDDER ANGLES (P/S).

ALAN WINKLEY STATE OF WASHINGTON 24000 REGISTERED PROFESSIONAL ENGINEER 7/21/2011

SCALE: 3/4" = 1'-0"

SCALE: 1 1/2" = 1'-0"

ART ANDERSON ASSOCIATES 202 PACIFIC AVE. BREMERTON, WA 98337 (360) 479-5600

DRAWING NO. CEIDT001PB-562-101

FILE NAME =	USER NAME =	DESIGNED – A. WINKLEY	REVISED –
		DRAWN – J. WALKER	REVISED –
	PLOT SCALE =	CHECKED – P. MARTIN	REVISED –
	PLOT DATE =	DATE – 7/19/2011	REVISED –

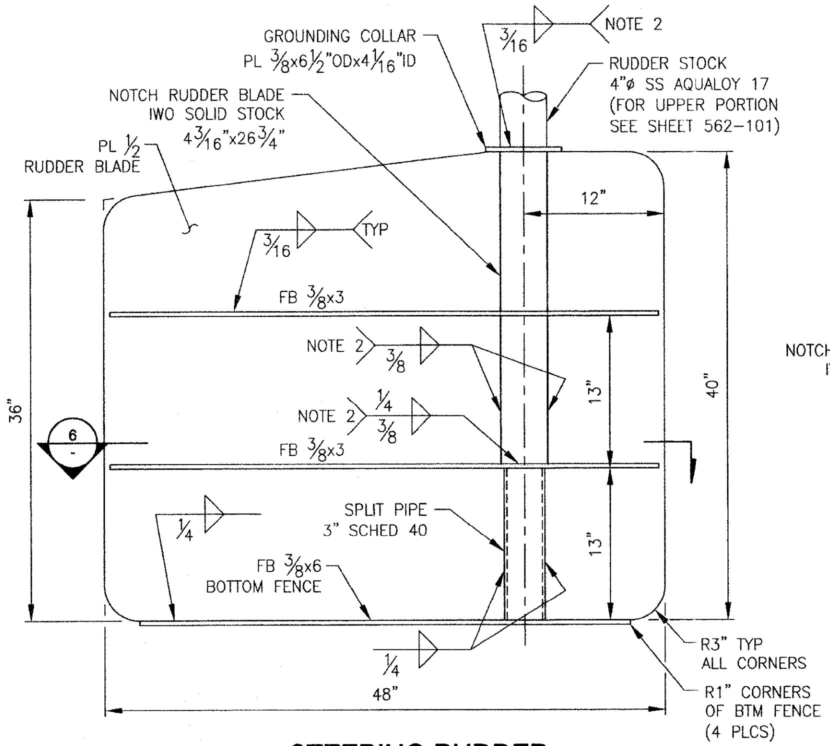
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IDOT BRUSSELS FERRY
RUDDERS AND STEERING GEAR

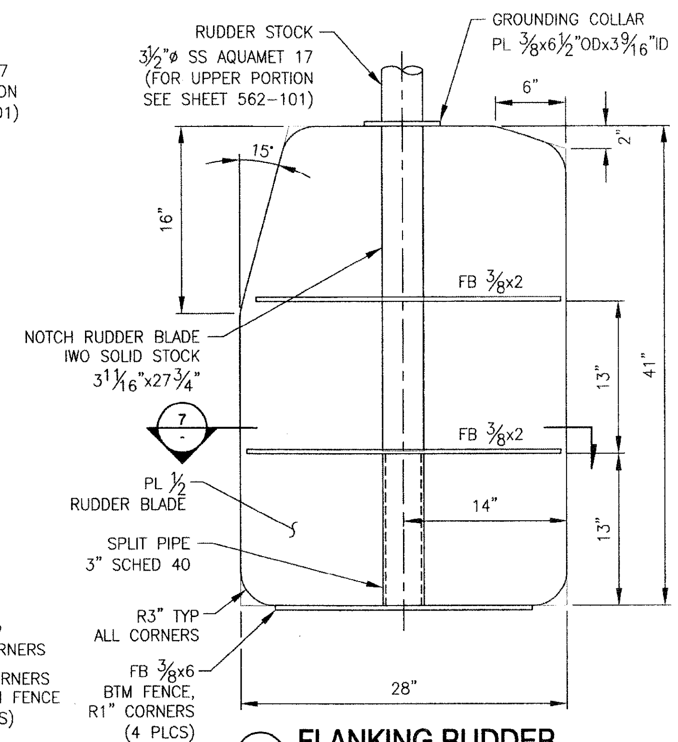
SCALE: AS SHOWN | SHEET NO. OF SHEETS | STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	47	41
		CONTRACT NO. 76D29		

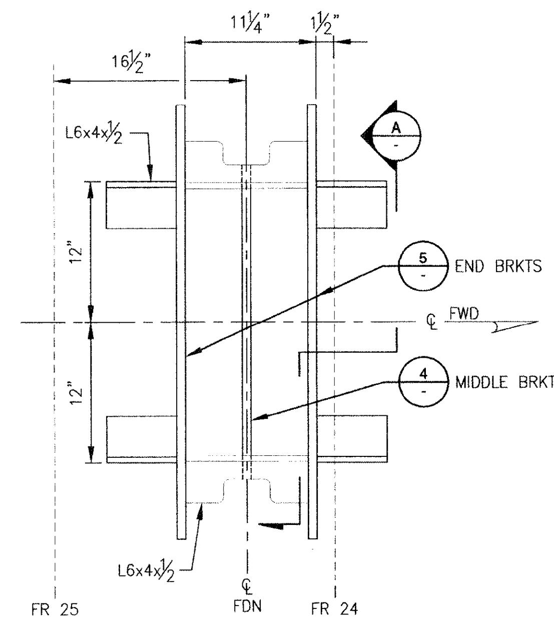
FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT



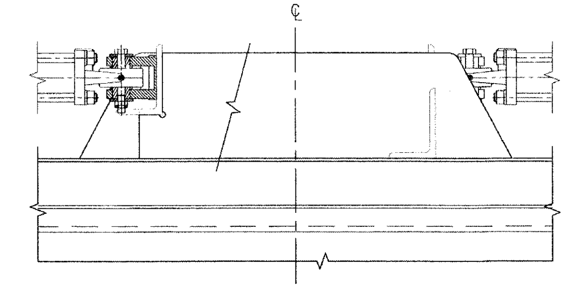
1 STEERING RUDDER
SCALE: 1-1/2" = 1'-0"



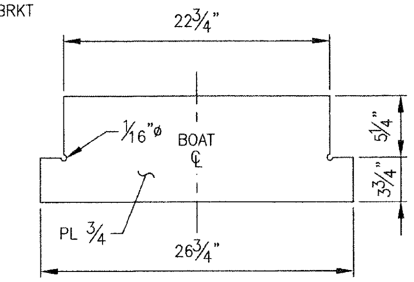
2 FLANKING RUDDER
FOR WELDING, SEE STEERING RUDDER, DET 1
SCALE: 1-1/2" = 1'-0"



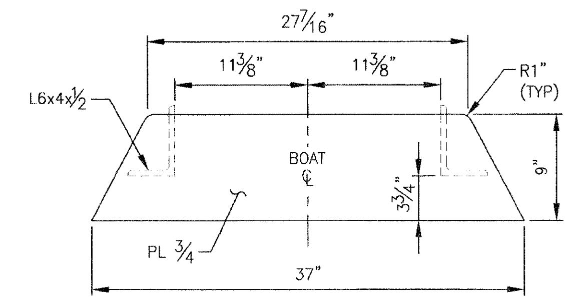
3 HYDRAULIC RAM FOUNDATION
SCALE: 1-1/2" = 1'-0"



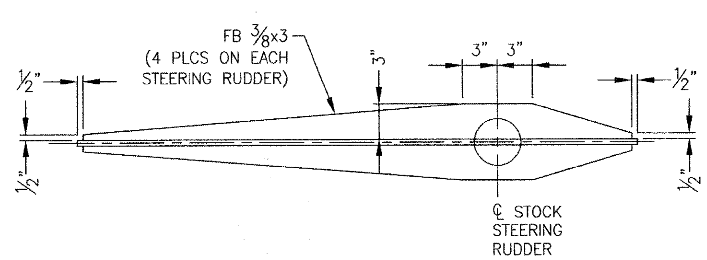
A SECTION
HYDRAULIC RAM FOUNDATION
SCALE: 1-1/2" = 1'-0"



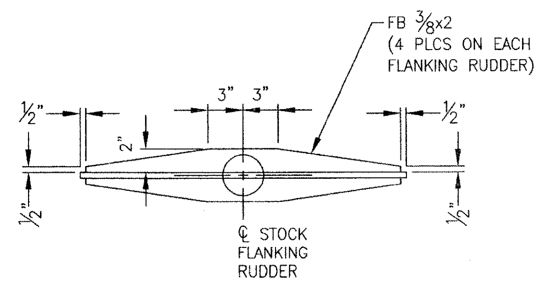
4 MIDDLE BRACKET DETAIL
SEE NOTE 1
SCALE: 1-1/2" = 1'-0"



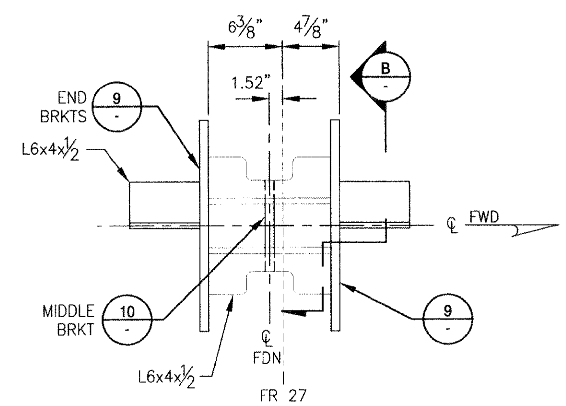
5 END BRACKET DETAIL
SEE NOTE 1
SCALE: 1-1/2" = 1'-0"



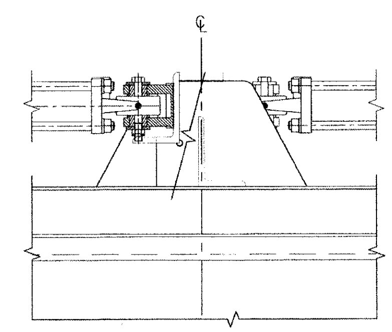
6 STEERING RUDDER DETAIL
SCALE: 1-1/2" = 1'-0"



7 FLANKING RUDDER DETAIL
SCALE: 1-1/2" = 1'-0"



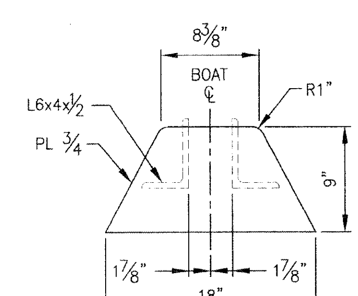
8 HYDRAULIC RAM FOUNDATION
SCALE: 1-1/2" = 1'-0"



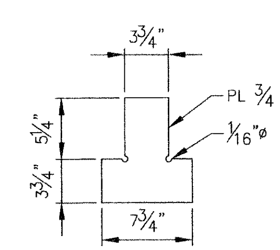
B SECTION
HYDRAULIC RAM FOUNDATION
SCALE: 1-1/2" = 1'-0"

NOTE:

1. BRACKETS MAY BE MADE FROM FB 3/4x9, PL 3/4, OR PL 5/8.
2. TYPE 309 FILLER METAL AND TYPE 309Cb FILLER METAL ARE SUGGESTED ALLOYS FOR WELDING MILD STEEL RUDDER BLADES TO STAINLESS STEEL ("AQUALOY 17") RUDDER STOCKS. CONSULT WESTERN BRANCH METALS ("AQUALOY 17" SUPPLIER) FOR ADVICE



9 END BRACKET DETAIL
SEE NOTE 1
SCALE: 1-1/2" = 1'-0"



10 MIDDLE BRACKET DETAIL
SEE NOTE 1
SCALE: 1-1/2" = 1'-0"

SCALE: 1 1/2" = 1'-0"

SCALE: 3" = 1'-0"

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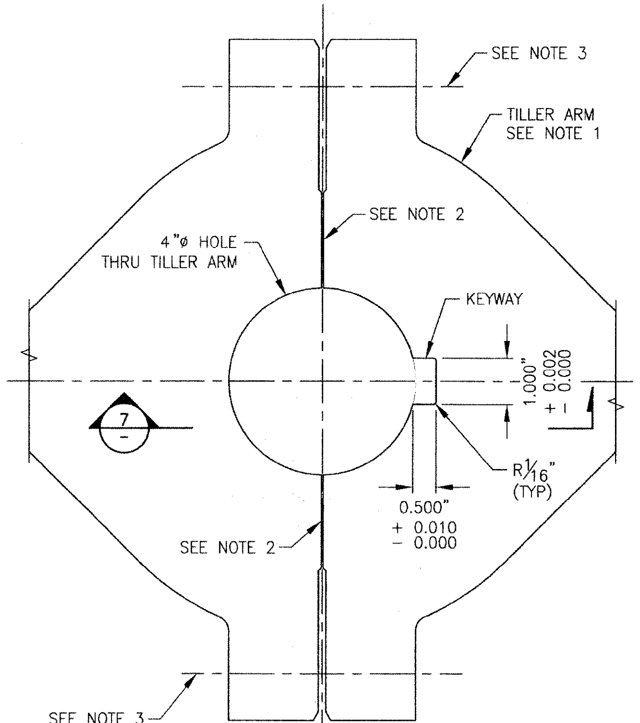
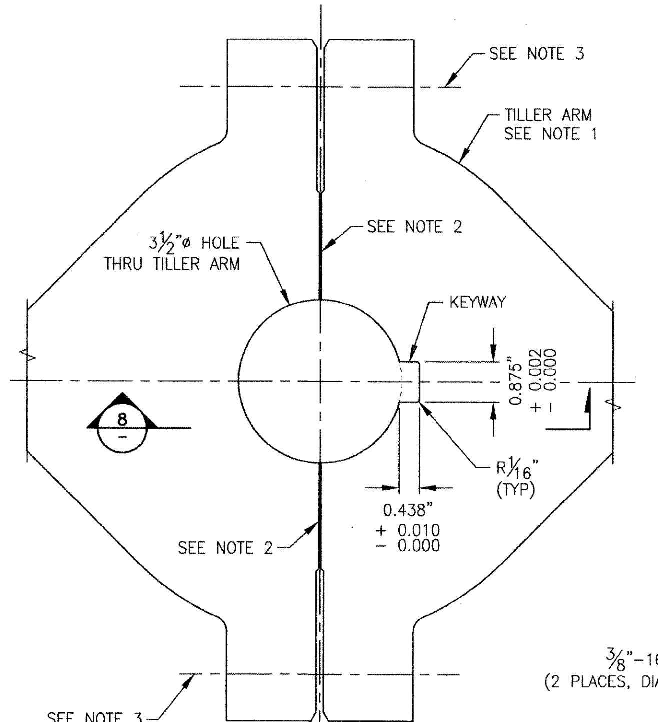
DRAWING NO. CEIDT001PB-562-102

FILE NAME =	USER NAME =	DESIGNED — A. WINKLEY	REVISED —	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	IDOT BRUSSELS FERRY RUDDERS AND STEERING GEAR - DETAILS
		DRAWN — C. FAWVER	REVISED —		
	PLOT SCALE =	CHECKED — P. MARTIN	REVISED —		
	PLOT DATE =	DATE — 7/19/2011	REVISED —		SCALE: AS SHOWN / SHEET NO. OF SHEETS / STA. TO STA.

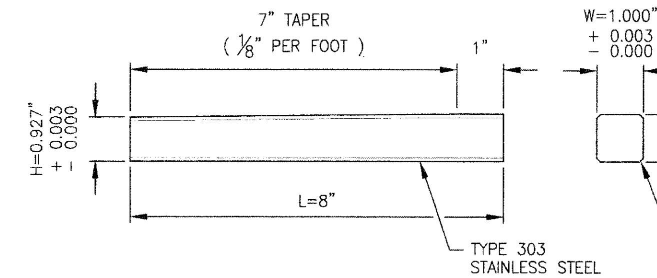
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	47	42
		CONTRACT NO. 76D29		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



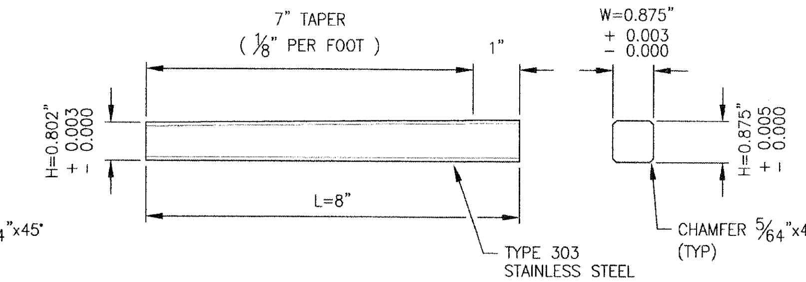
1 TILLER HUB DETAIL
STEERING RUDDER
SCALE: 6" = 1'-0"



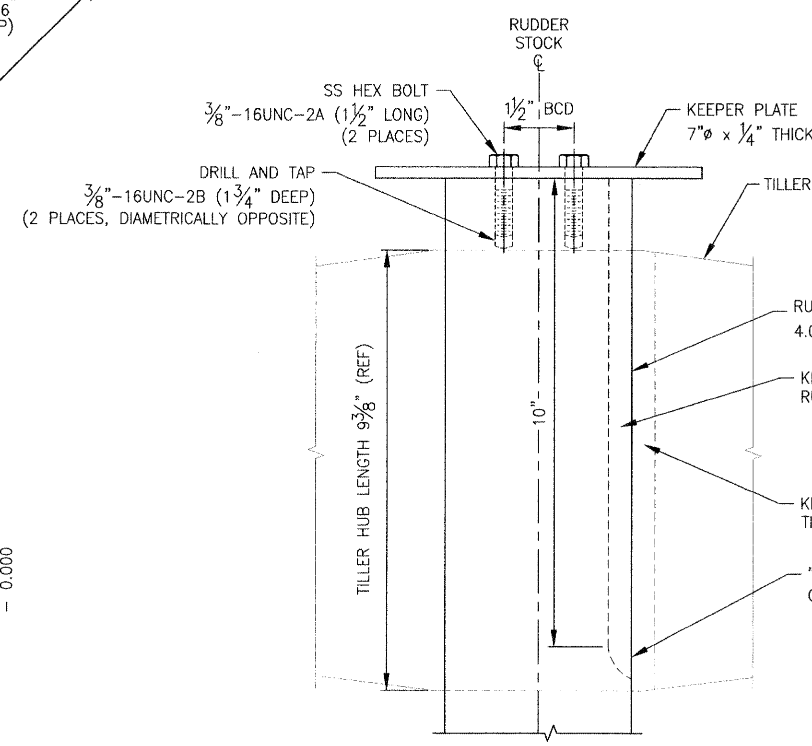
2 TILLER HUB DETAIL
FLANKING RUDDER
SCALE: 6" = 1'-0"



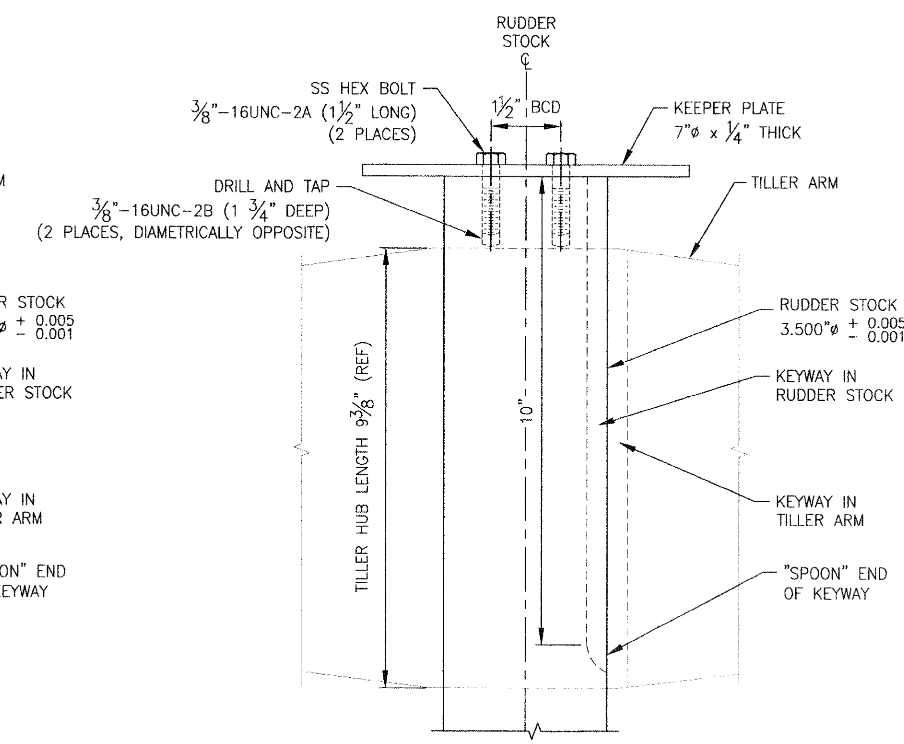
3 KEY DETAIL
STEERING RUDDER
SCALE: 6" = 1'-0"



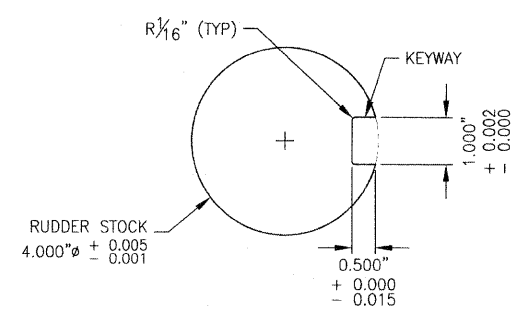
4 KEY DETAIL
FLANKING RUDDER
SCALE: 6" = 1'-0"



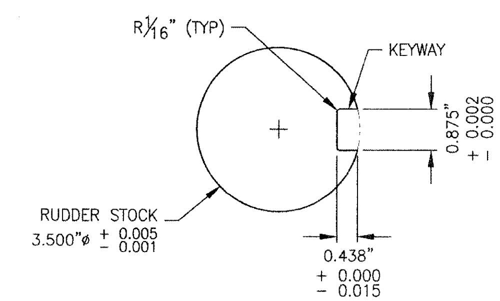
7 KEEPER PLATE DETAIL
STEERING RUDDER
SCALE: 6" = 1'-0"



8 KEEPER PLATE DETAIL
FLANKING RUDDER
SCALE: 6" = 1'-0"



5 RUDDER STOCK DETAIL
STEERING RUDDER
SCALE: 6" = 1'-0"



6 RUDDER STOCK DETAIL
FLANKING RUDDER
SCALE: 6" = 1'-0"

NOTES:

1. TILLER ARMS FURNISHED FROM VENDOR WITH PILOT HOLE FOR RUDDER STOCK BORE ONLY.
2. THE TWO PARTS OF THE TILLER ARE TO BE BORED TOGETHER WITH A SHIM HAVING A THICKNESS OF .006" ±0.001".
3. BOLTS, NUTS, AND OTHER FASTENING HARDWARE IS FURNISHED WITH THE TILLERS. BOLT TORQUE TO BE IN ACCORDANCE WITH MANUFACTURE'S INSTRUCTIONS.

ALAN WINKLEY STATE OF WASHINGTON 24000 REGISTERED PROFESSIONAL ENGINEER 7/21/2011

0 1" 2" 3" 4" 6"
SCALE: 6" = 1'-0"

ART ANDERSON ASSOCIATES
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DRAWING NO. CEIDT001PB-562-103

FILE NAME =	USER NAME =	DESIGNED — A. WINKLEY	REVISED —
		DRAWN — C. FAWVER	REVISED —
	PLOT SCALE =	CHECKED — P. MARTIN	REVISED —
	PLOT DATE =	DATE — 7/19/2011	REVISED —

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

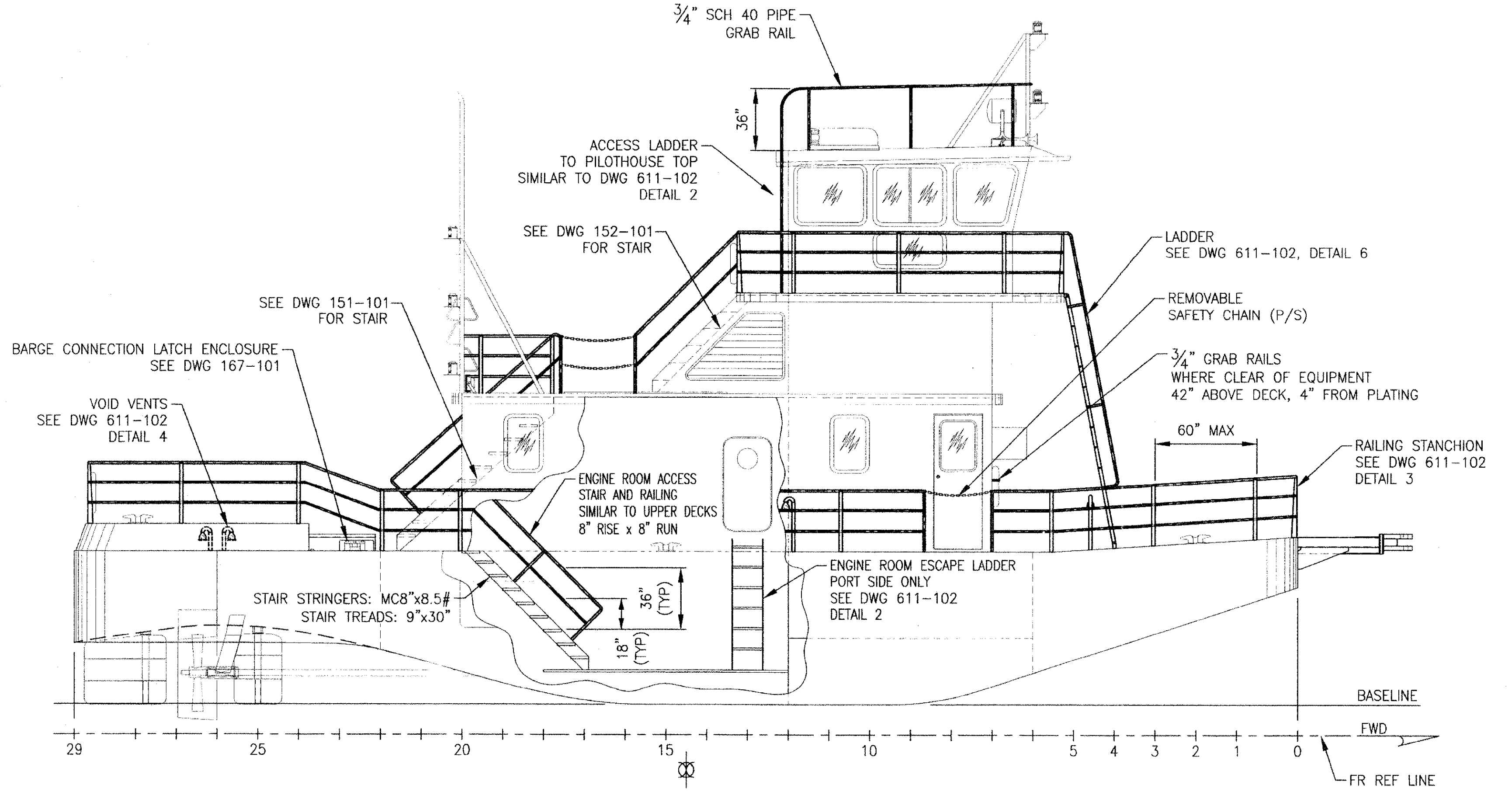
IDOT BRUSSELS FERRY
RUDDERS AND STEERING GEAR - DETAILS

SCALE: AS SHOWN | SHEET NO. OF SHEETS | STA. TO STA.

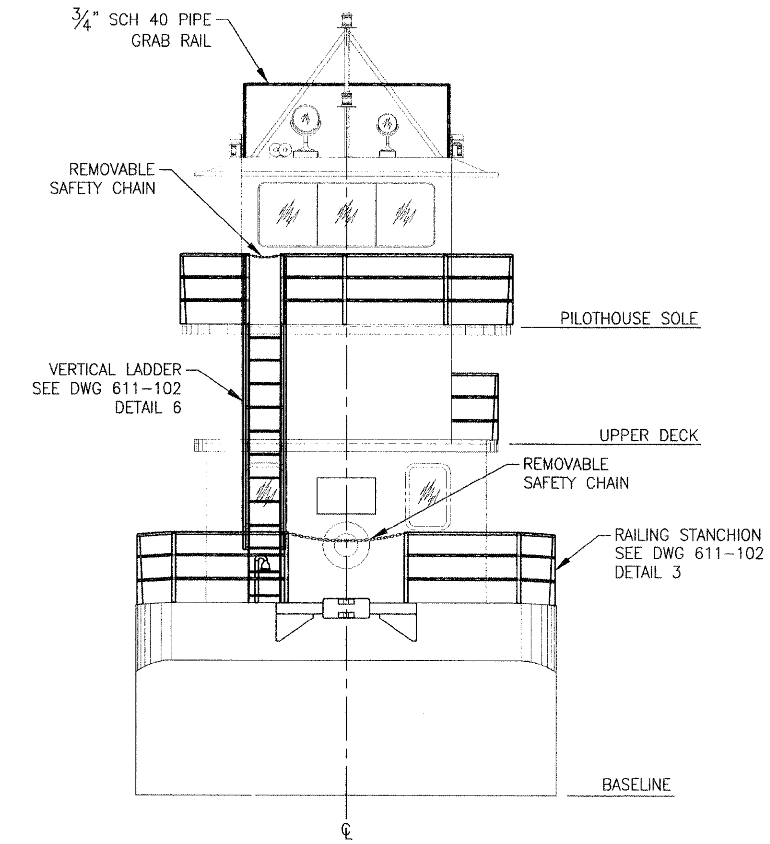
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	47	43

CONTRACT NO. 76D29

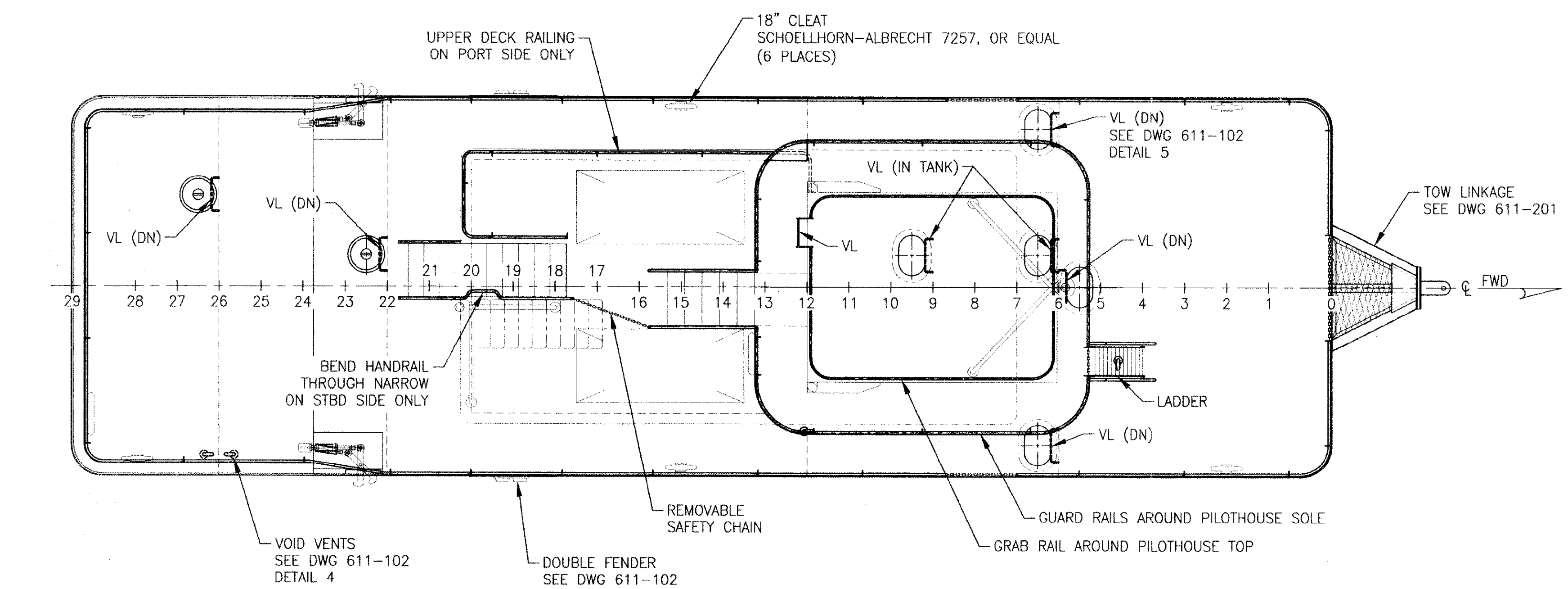
FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT



PROFILE
SCALE: 1/4" = 1'-0"



BOW ELEVATION
SCALE: 1/4" = 1'-0"



DECK PLAN
SCALE: 1/4" = 1'-0"

SCALE: 1/4" = 1'-0"
SCALE: 1/2" = 1'-0"
SCALE: 3/4" = 1'-0"
SCALE: 1" = 1'-0"

ALAN WINKLEY, STATE OF WASHINGTON, 24000 REGISTERED PROFESSIONAL ENGINEER 7/21/2011

ART ANDERSON ASSOCIATES
202 PACIFIC AVE, BREMERTON, WA 98337 (360) 479-5600

DRAWING NO. CEIDT001PB-611-101

FILE NAME =	USER NAME =	DESIGNED — A. WINKLEY	REVISED —	
		DRAWN — J. WALKER	REVISED —	
	PLOT SCALE =	CHECKED — P. MARTIN	REVISED —	
	PLOT DATE =	DATE — 7/19/2011	REVISED —	

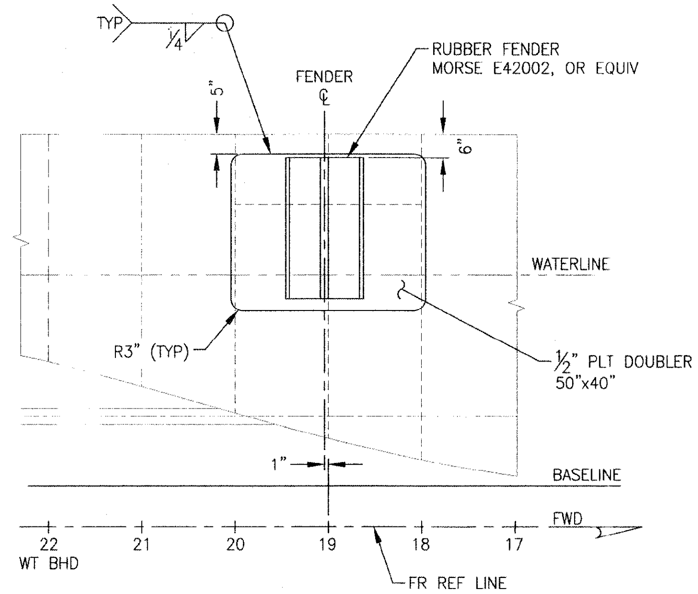
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IDOT BRUSSELS FERRY
DECK FITTINGS, RAILINGS, AND LADDERS

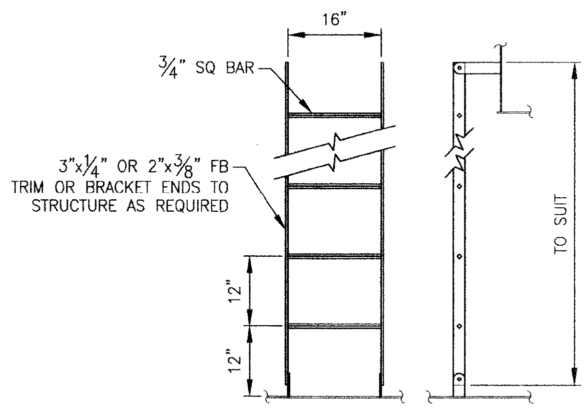
SCALE: AS SHOWN | SHEET NO. OF SHEETS | STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	47	44
		CONTRACT NO. 76D29		

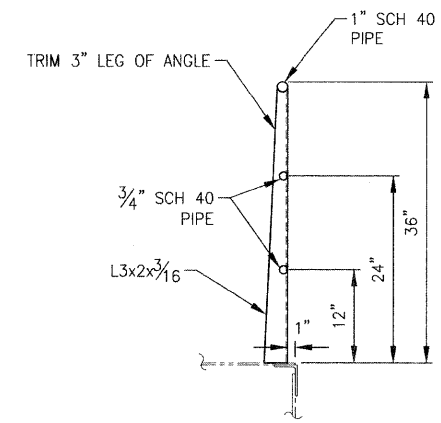
FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT



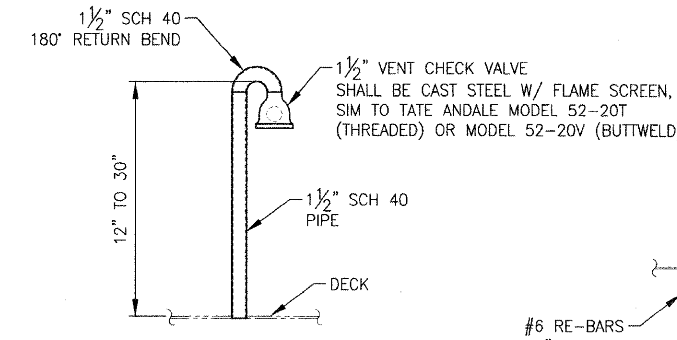
1/44 **FENDER DETAIL**
SCALE: 1/2" = 1'-0"



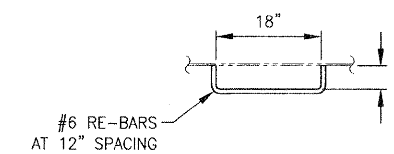
2/44 **DETAIL**
ENGINE ROOM ESCAPE LADDER
SCALE: 3/4" = 1'-0"



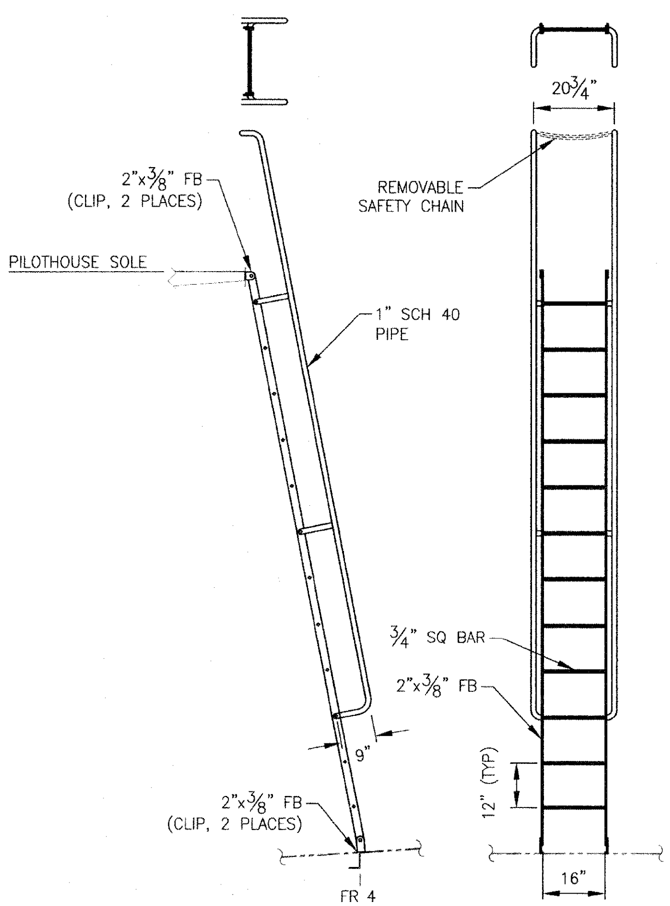
3/44 **DETAIL**
TYPICAL RAILING STANCHION
SCALE: 1" = 1'-0"



4/44 **DETAIL**
GOOSNECK VENT
SCALE: 1" = 1'-0"

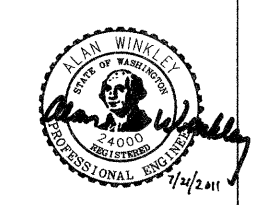


5/44 **DETAIL**
TANK AND VOID LADDER RUNGS
7 PLACES, AS INDICATED BY NOTATION "VL"
SCALE: 3/4" = 1'-0"



6/44 **DETAIL**
PILOT HOUSE LADDER
SCALE: 1/2" = 1'-0"

SCALE: 1/4" = 1'-0"
SCALE: 1/2" = 1'-0"
SCALE: 3/4" = 1'-0"
SCALE: 1" = 1'-0"



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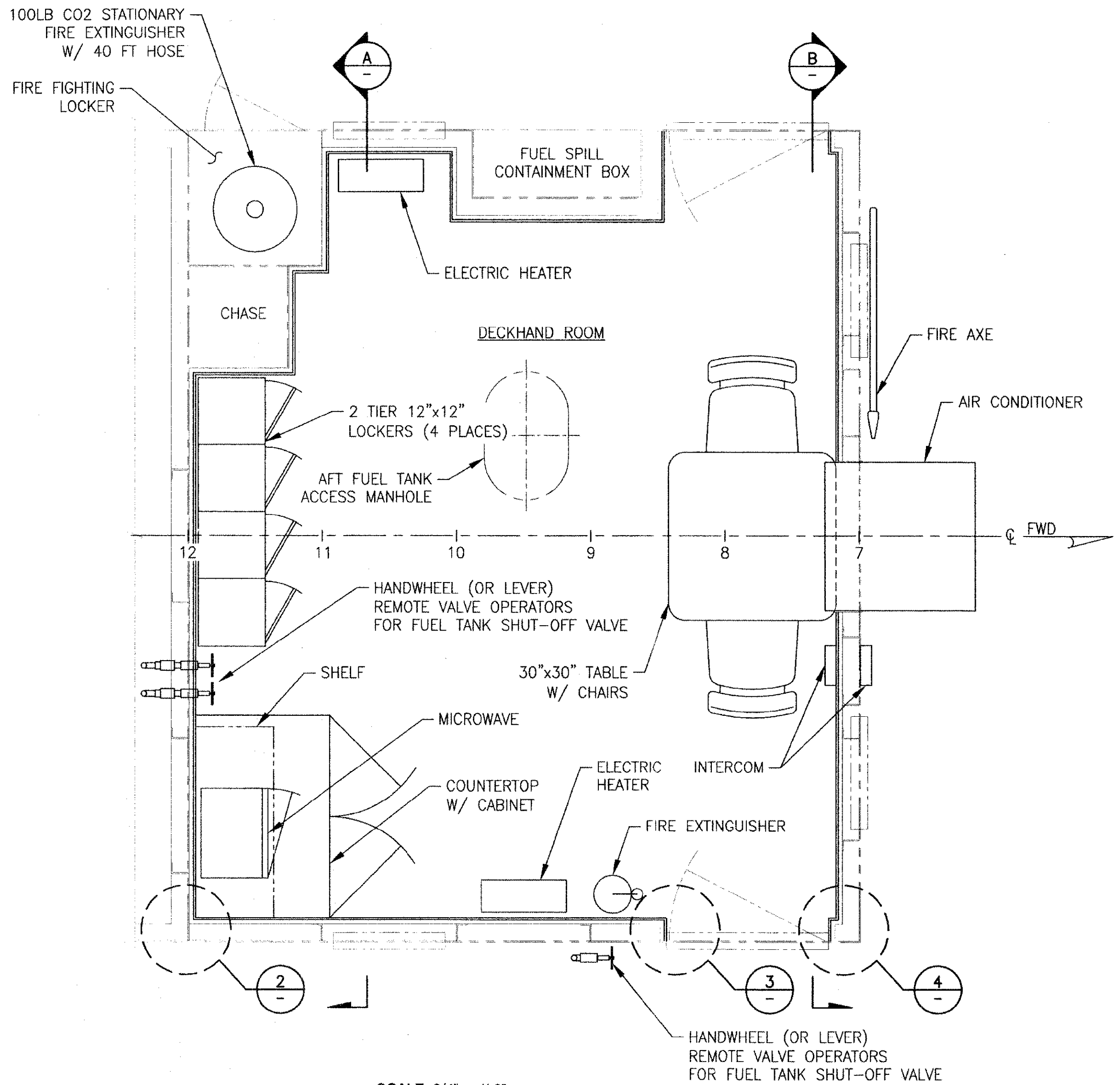
DRAWING NO. CEIDT001PB-611-102

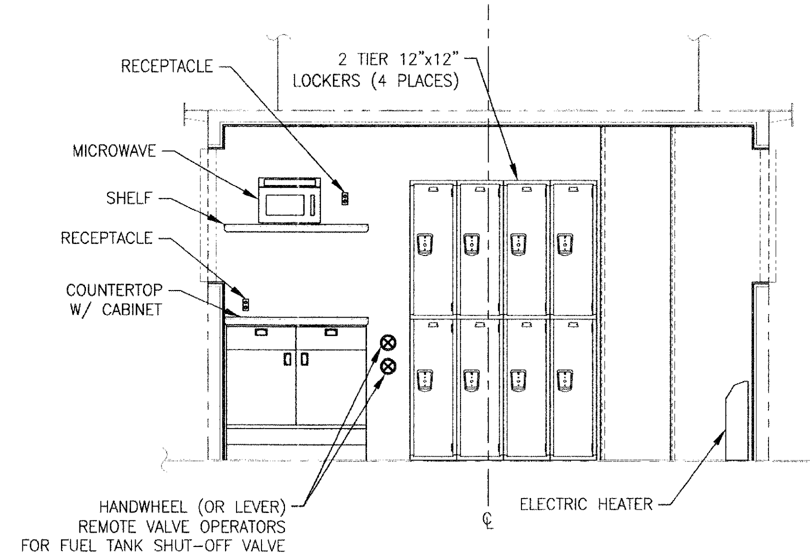
FILE NAME =	USER NAME =	DESIGNED – A. WINKLEY	REVISED –	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	IDOT BRUSSELS FERRY DECK FITTINGS, RAILINGS, AND LADDERS - DETAILS
		DRAWN – J. WALKER	REVISED –		
	PLOT SCALE =	CHECKED – P. MARTIN	REVISED –		
	PLOT DATE =	DATE – 7/19/2011	REVISED –		SCALE: AS SHOWN / SHEET NO. OF SHEETS / STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	47	45
		CONTRACT NO. 76D29		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

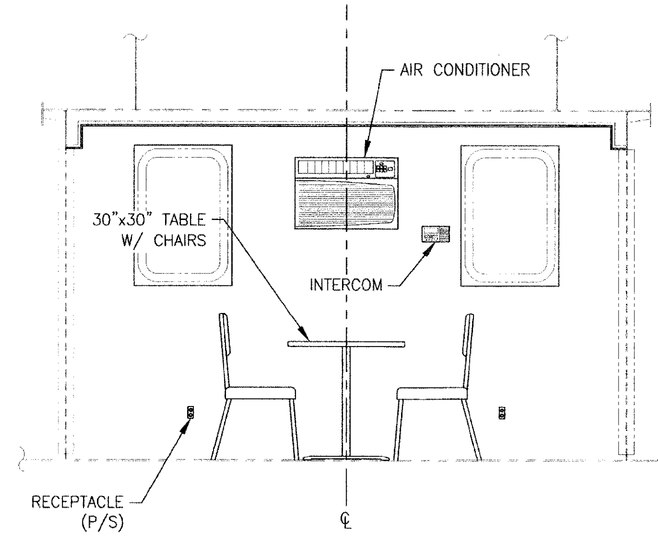


SCALE: 3/4" = 1'-0"

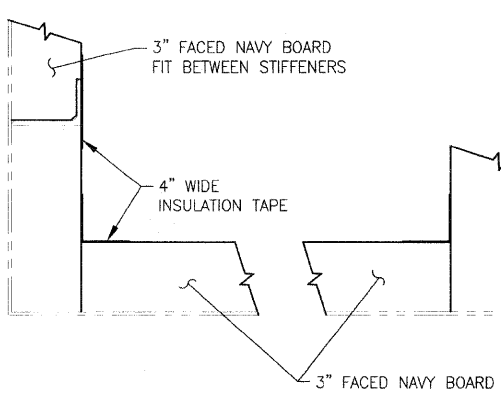
DECKHAND ROOM ARRANGEMENT



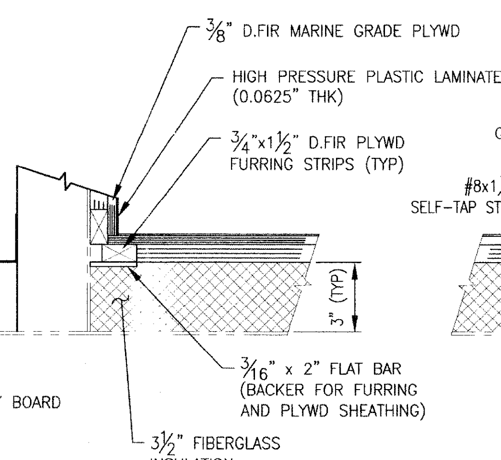
A — **AFT BHD ARRANGEMENT**
LOOKING AFT
SCALE: 1/2" = 1'-0"



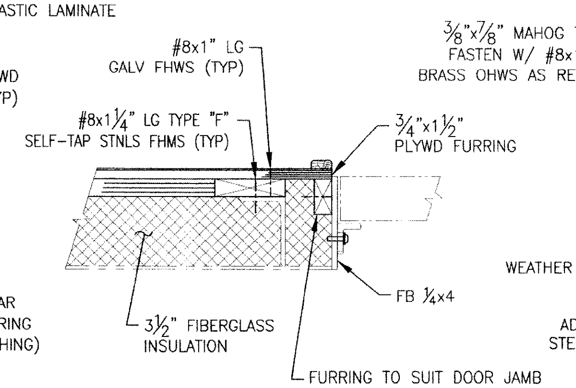
B — **FWD BHD ARRANGEMENT**
LOOKING FWD
SCALE: 1/2" = 1'-0"



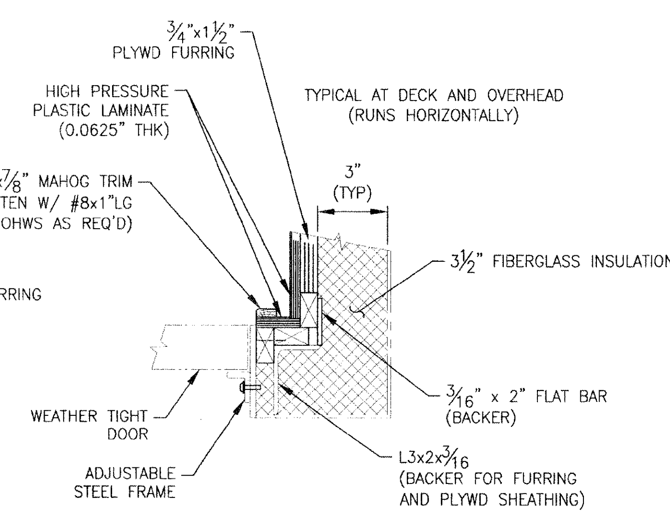
1 — **DETAIL**
TYPICAL JOINERWORK METHOD
INSIDE UPPER ENGINE ROOM
SCALE: 3" = 1'-0"



2 — **DETAIL**
TYPICAL JOINERWORK METHOD
AT INSIDE CORNERS
SCALE: 3" = 1'-0"



3 — **DETAIL**
TYPICAL METHOD OF FURRING AND
SHEATHING AT DOORWAY
SCALE: 3" = 1'-0"



4 — **DETAIL**
TYPICAL JOINERWORK METHOD
AT OUTSIDE CORNERS
SCALE: 3" = 1'-0"

0 1' 2' 3' 4' 6'
SCALE: 1/2" = 1'-0"

0 4" 8" 12" 2' 3' 4'
SCALE: 3/4" = 1'-0"

0 2" 4" 8" 12"
SCALE: 3" = 1'-0"

ALAN WINKLEY
STATE OF WASHINGTON
24000
REGISTERED
PROFESSIONAL ENGINEER
7/21/2011

ART ANDERSON
ASSOCIATES
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DRAWING NO. CEIDT001PB-621-101

FILE NAME =	USER NAME =	DESIGNED — J. WALKER	REVISED —
		DRAWN — J. WALKER	REVISED —
	PLOT SCALE =	CHECKED — A. WINKLEY	REVISED —
	PLOT DATE =	DATE — 11/24/2010	REVISED —

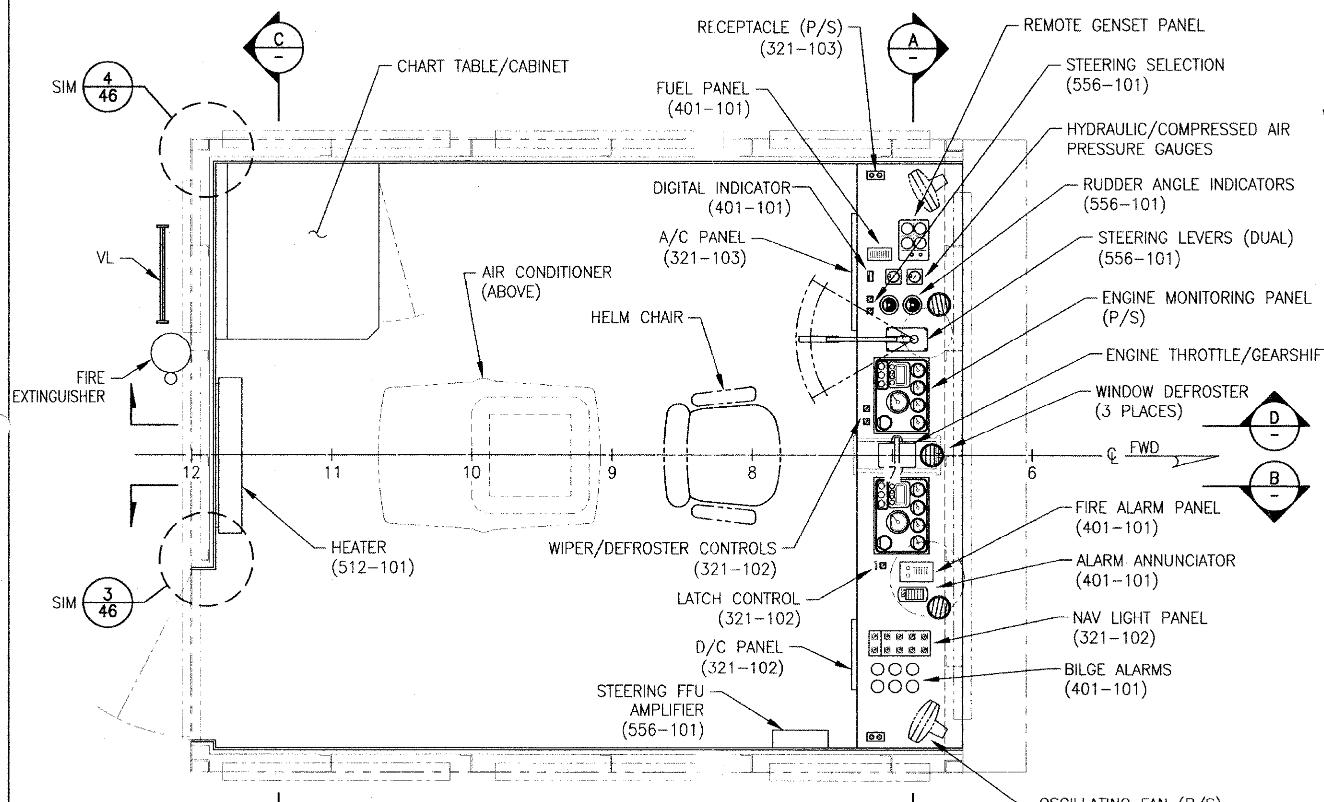
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IDOT BRUSSELS FERRY
DECKHOUSE ARRANGEMENT AND INTERIOR DETAILS

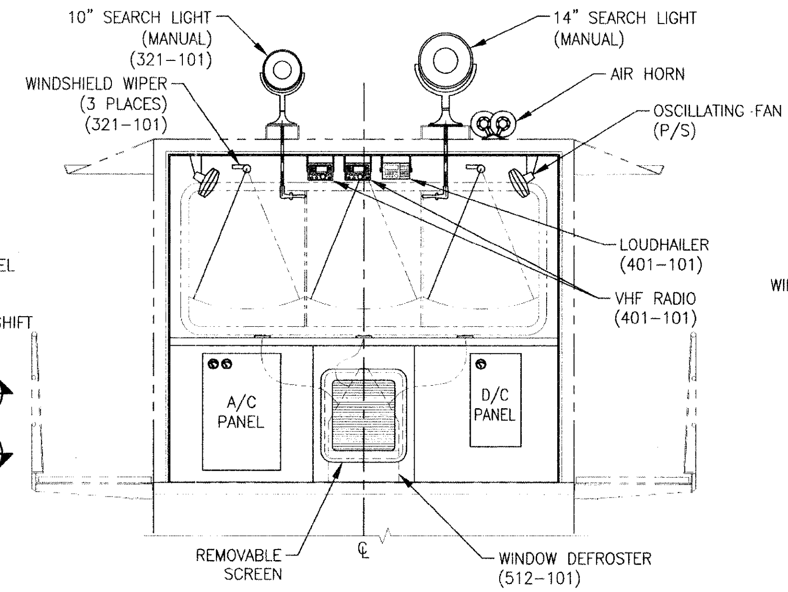
SCALE: AS SHOWN | SHEET NO. OF SHEETS | STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	47	46
		CONTRACT NO. 76D29		

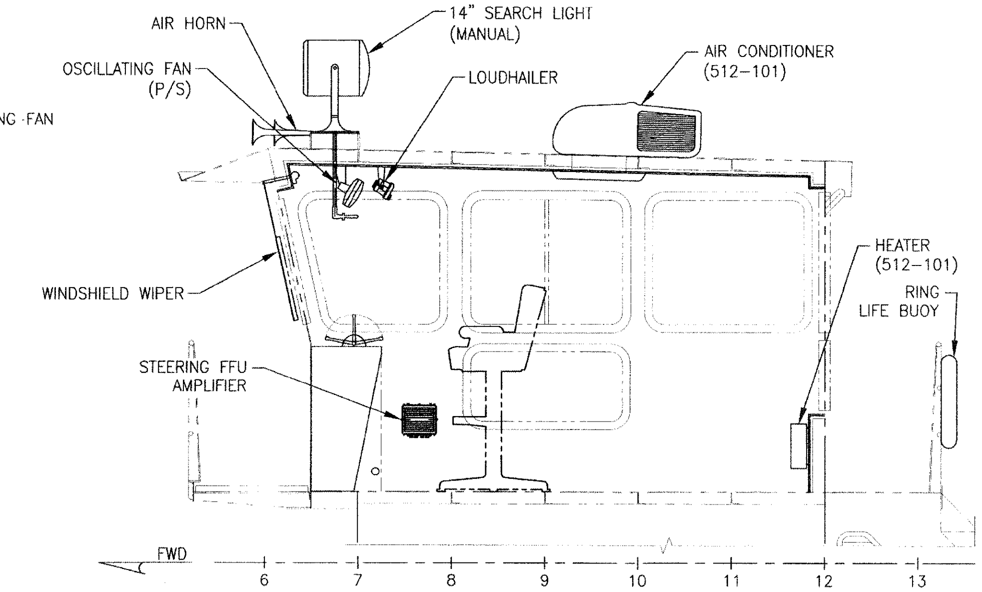
FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT



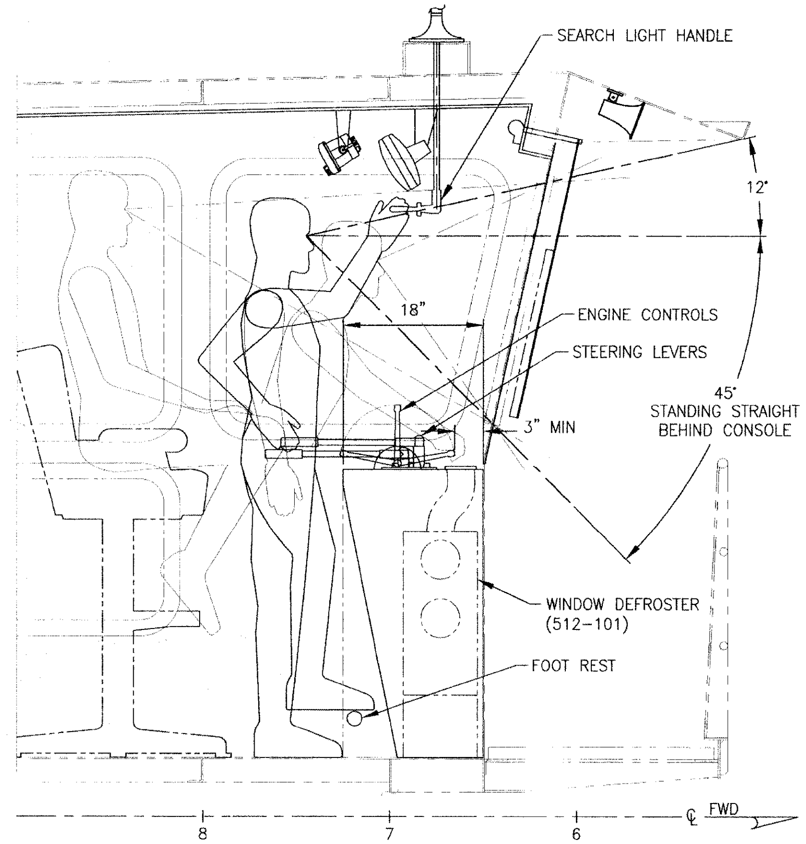
PILOTHOUSE PLAN
SCALE: 3/4" = 1'-0"



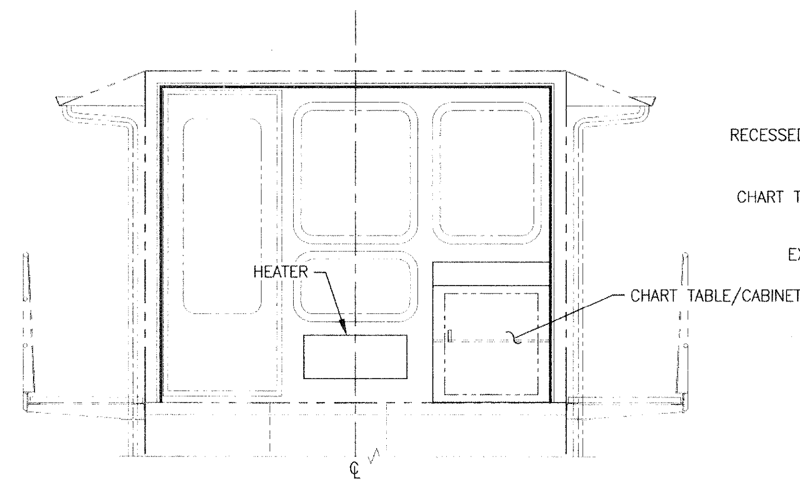
A FWD BHD ARRANGEMENT
LOOKING FWD
SCALE: 1/2" = 1'-0"



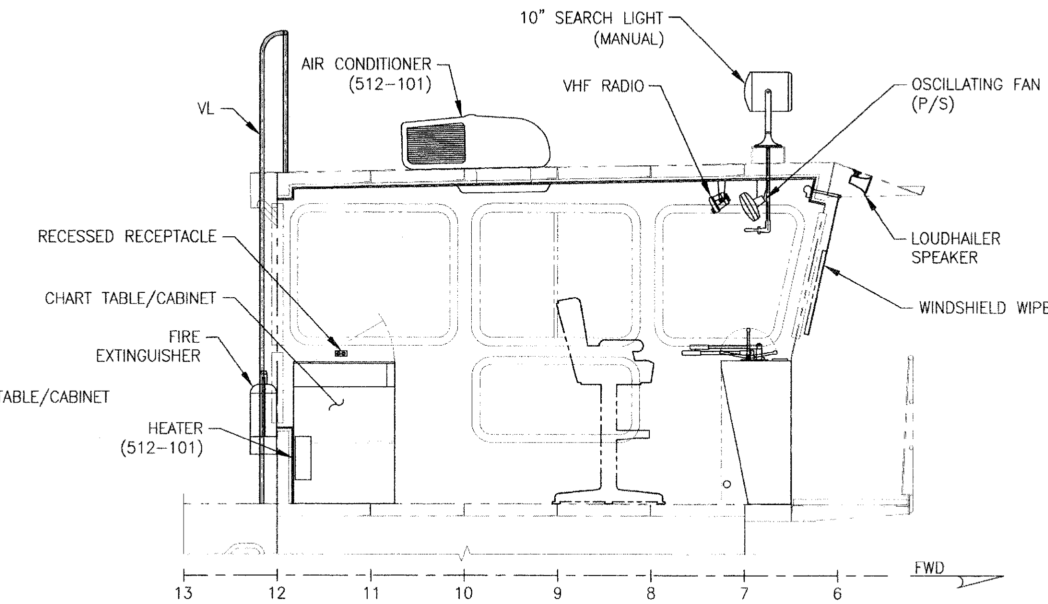
B STBD BHD ARRANGEMENT
LOOKING OUTBD
SCALE: 1/2" = 1'-0"



E SIGHT ARRANGEMENT
SCALE: 1" = 1'-0"



C AFT BHD ARRANGEMENT
LOOKING AFT
SCALE: 1/2" = 1'-0"



D PORT BHD ARRANGEMENT
LOOKING OUTBD
SCALE: 1/2" = 1'-0"

SCALE: 1/2" = 1'-0"
SCALE: 3/4" = 1'-0"
SCALE: 1" = 1'-0"

ALAN WINKLEY
STATE OF WASHINGTON
24000
REGISTERED
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7/28/2011

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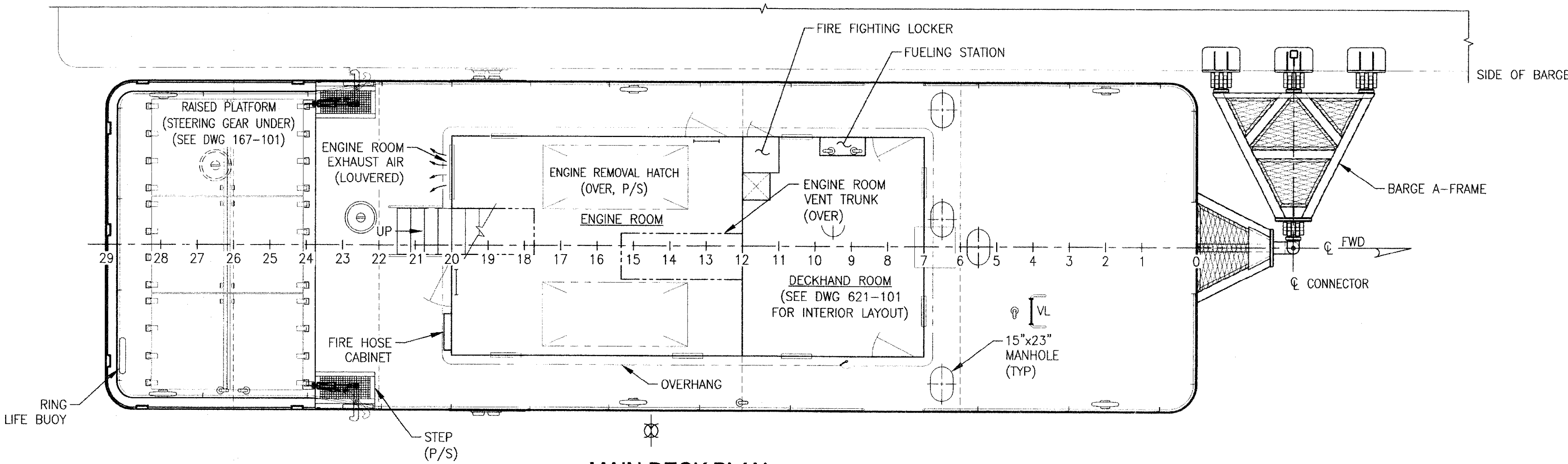
DRAWING NO. CEIDT001PB-621-102

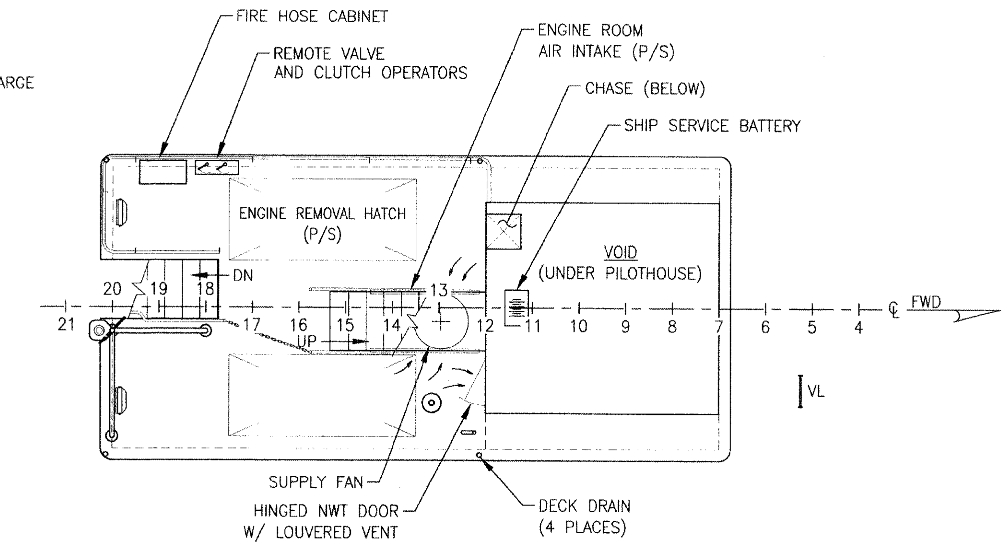
FILE NAME =	USER NAME =	DESIGNED — J. WALKER	REVISED —	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	IDOT BRUSSELS FERRY PILOTHOUSE ARRANGEMENT AND INTERIOR DETAILS
		DRAWN — J. WALKER	REVISED —		
	PLOT SCALE =	CHECKED — A. WINKLEY	REVISED —		
	PLOT DATE =	DATE — 7/19/2011	REVISED —		SCALE: AS SHOWN · SHEET NO. OF SHEETS · STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	47	47
		CONTRACT NO. 76D29		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



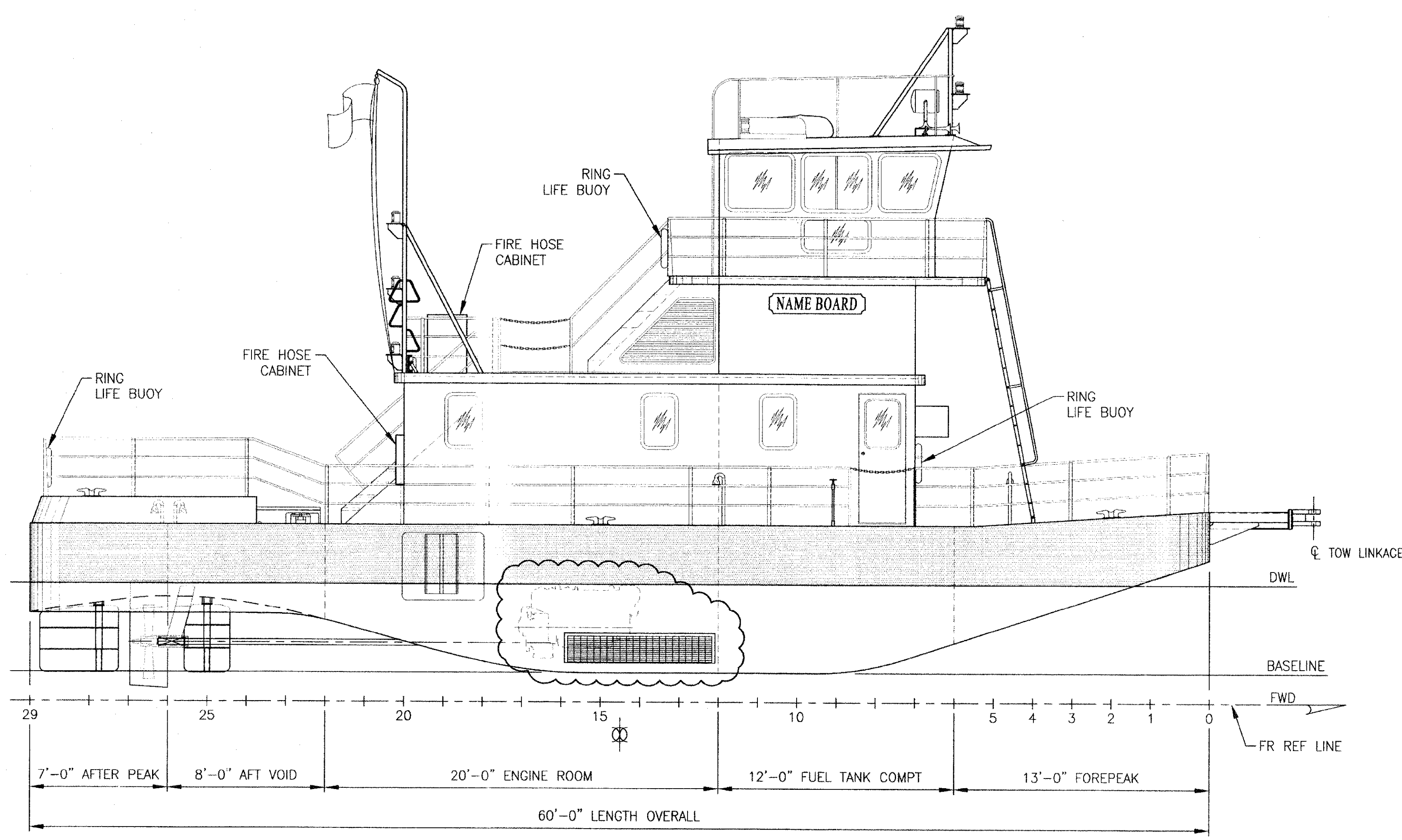
MAIN DECK PLAN

SCALE: 1/4" = 1'-0"



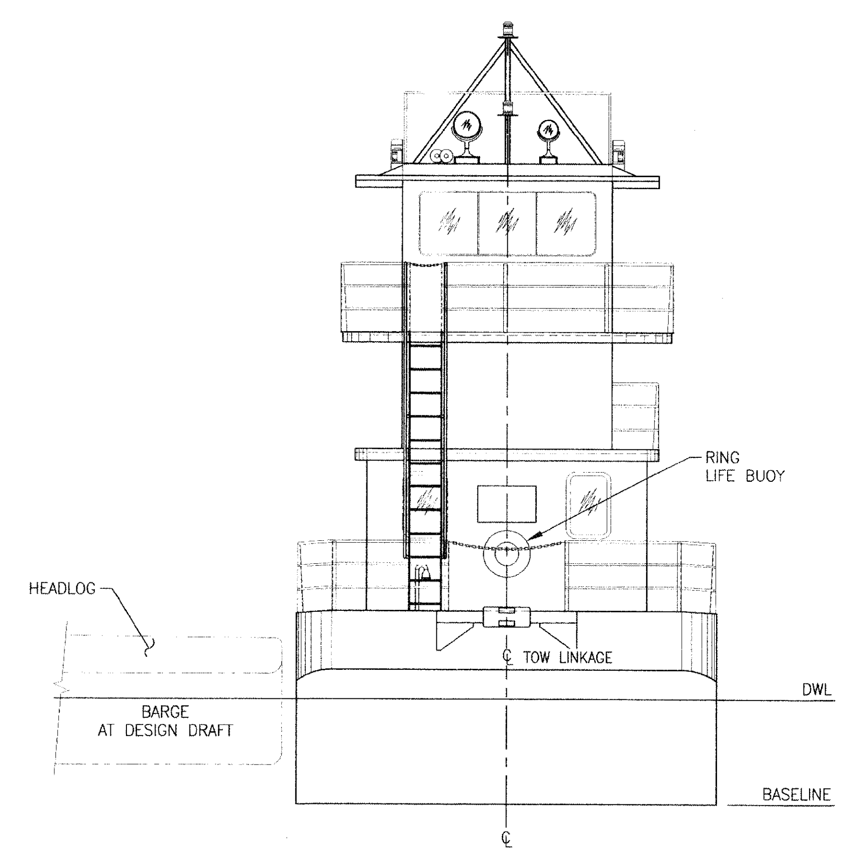
UPPER DECK PLAN

SCALE: 1/4" = 1'-0"



STARBOARD PROFILE

SCALE: 1/4" = 1'-0"



BOW ELEVATION

SCALE: 1/4" = 1'-0"

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BID ALT 1

0 1' 2' 3' 4' 6' 8' 12'
SCALE: 1/4" = 1'-0"

DRAWING NO. CEIDT001PB-801-101

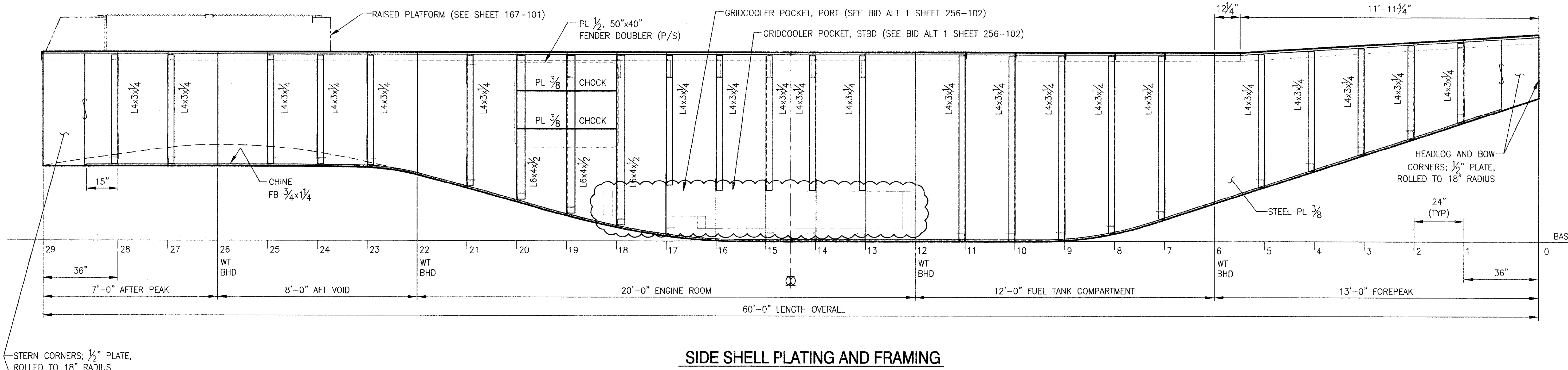
FILE NAME =	USER NAME =	DESIGNED – A. WINKLEY	REVISED –	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
		DRAWN – J. WALKER	REVISED –	
	PLOT SCALE =	CHECKED – P. MARTIN	REVISED –	
	PLOT DATE =	DATE – 7/26/2011	REVISED –	

IDOT BRUSSELS FERRY - BID ALTERNATE
GENERAL ARRANGEMENT - PUSHBOAT

SCALE: AS SHOWN | SHEET NO. OF SHEETS | STA. TO STA.

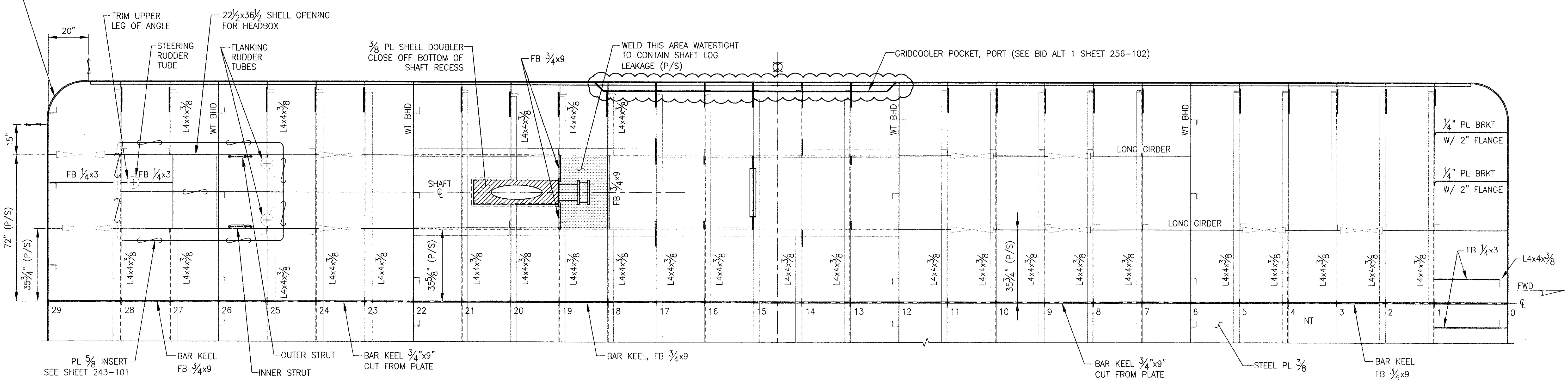
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	47	1
		CONTRACT NO. 76D29		

FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT



SIDE SHELL PLATING AND FRAMING

PORT SHOWN, STARBOARD OPPOSITE
SCALE: 1/2" = 1'-0"



BOTTOM PLATING AND FRAMING

PORT SHOWN, STARBOARD OPPOSITE
SCALE: 1/2" = 1'-0"

ALAN WINKLEY STATE OF WASHINGTON 24000 REGISTERED PROFESSIONAL ENGINEER
7/28/2011

SCALE: 1/2" = 1'-0"

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202 PACIFIC AVE. BREMERTON, WA 98337

BID ALT 1

DRAWING NO. CEIDT001PB-111-101

FILE NAME =	USER NAME =	DESIGNED — A. WINKLEY	REVISED —
		DRAWN — J. WALKER	REVISED —
	PLOT SCALE =	CHECKED — P. MARTIN	REVISED —
	PLOT DATE =	DATE — 7/26/2011	REVISED —

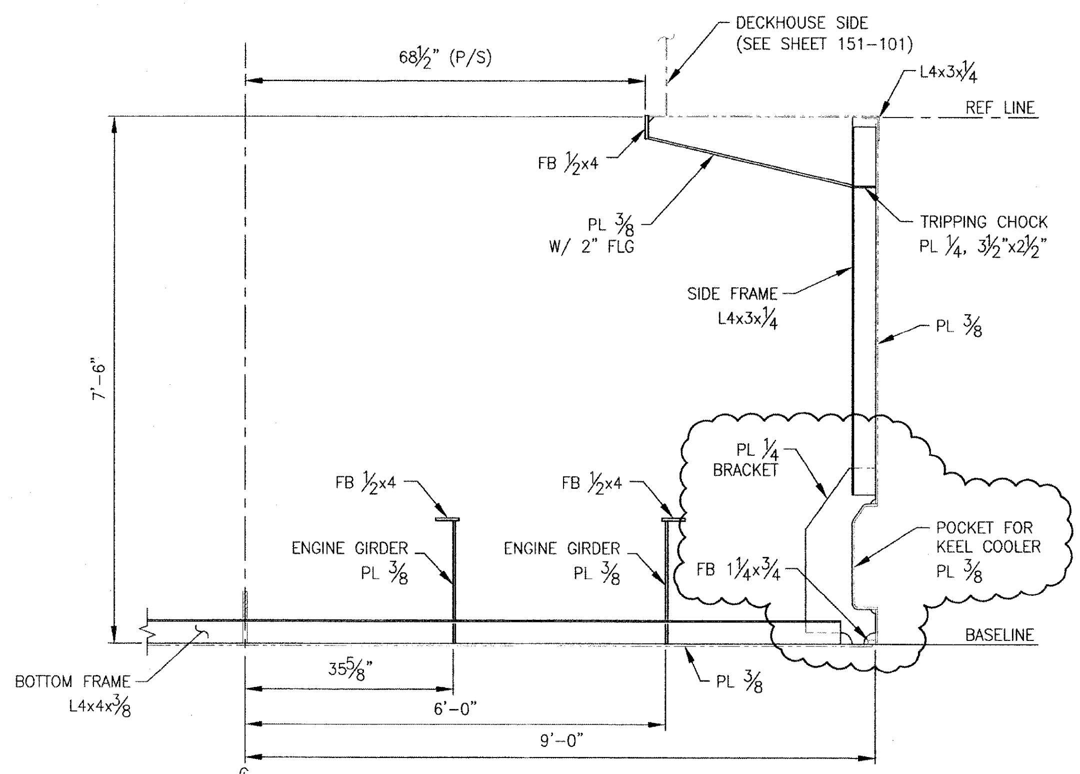
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IDOT BRUSSELS FERRY - BID ALTERNATE
SHELL PLATING AND FRAMING - PUSHBOAT

SCALE: 1/2" = 1'-0" | SHEET NO. OF SHEETS | STA. TO STA.

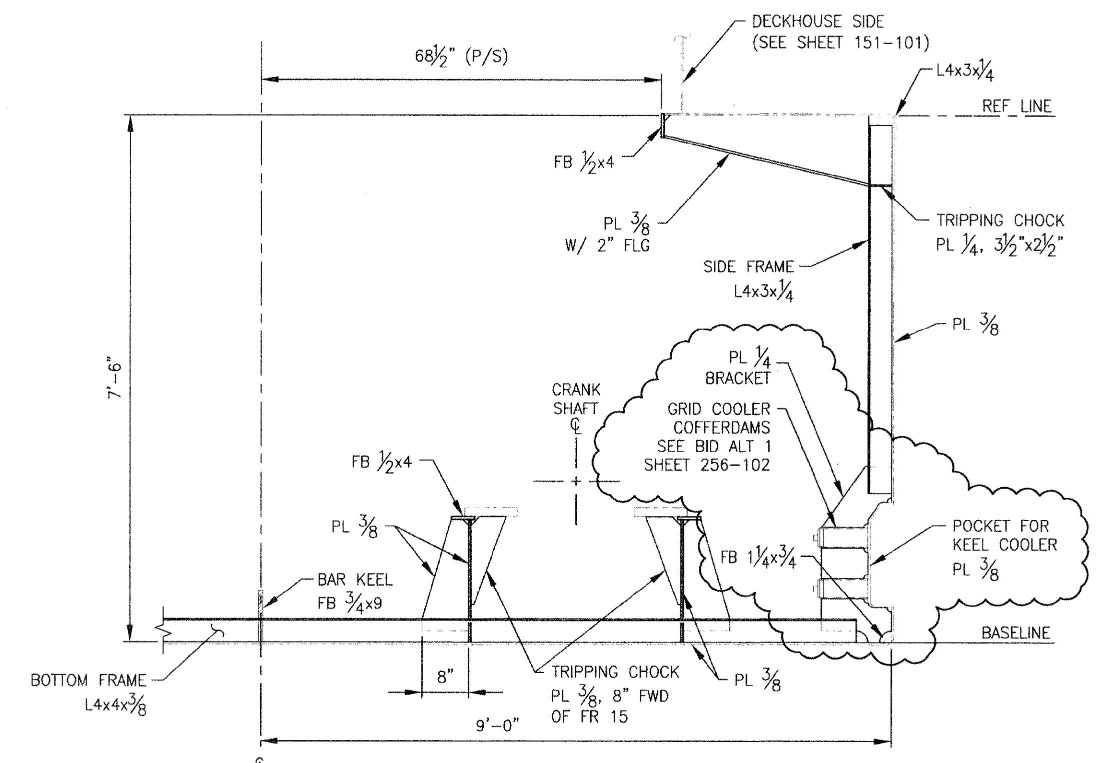
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	47	4
		CONTRACT NO. 76D29		

FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT



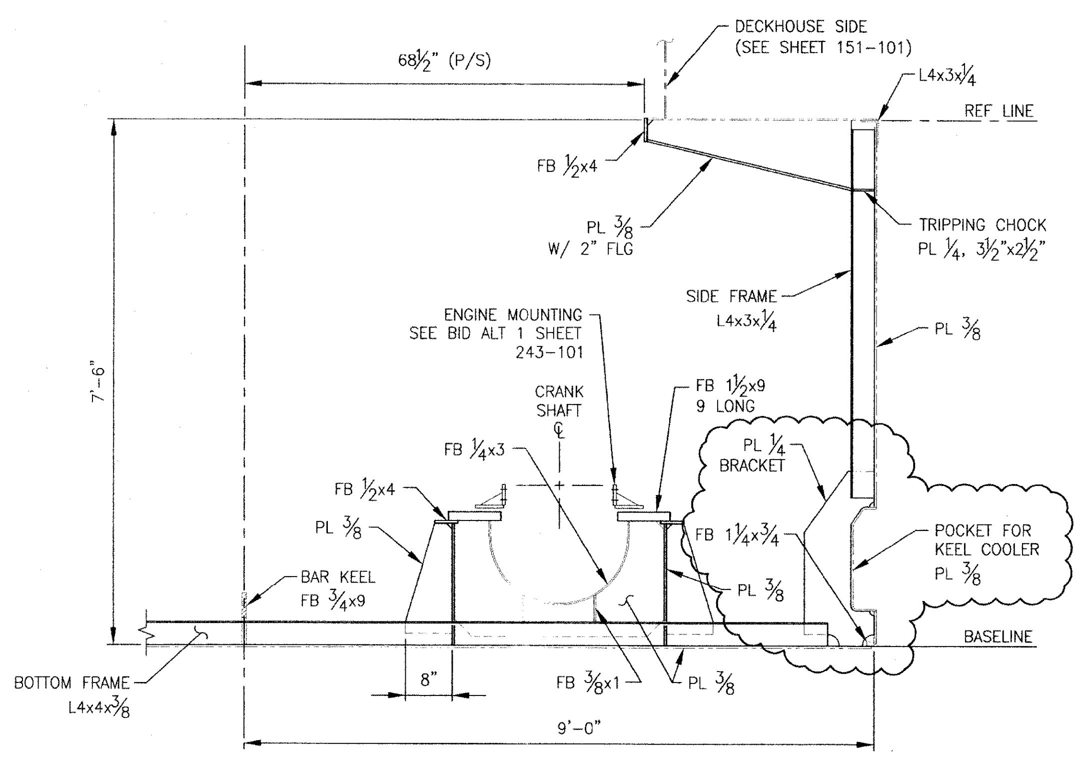
FRAME 13 SECTION

LOOKING FWD
SCALE: 3/4" = 1'-0"



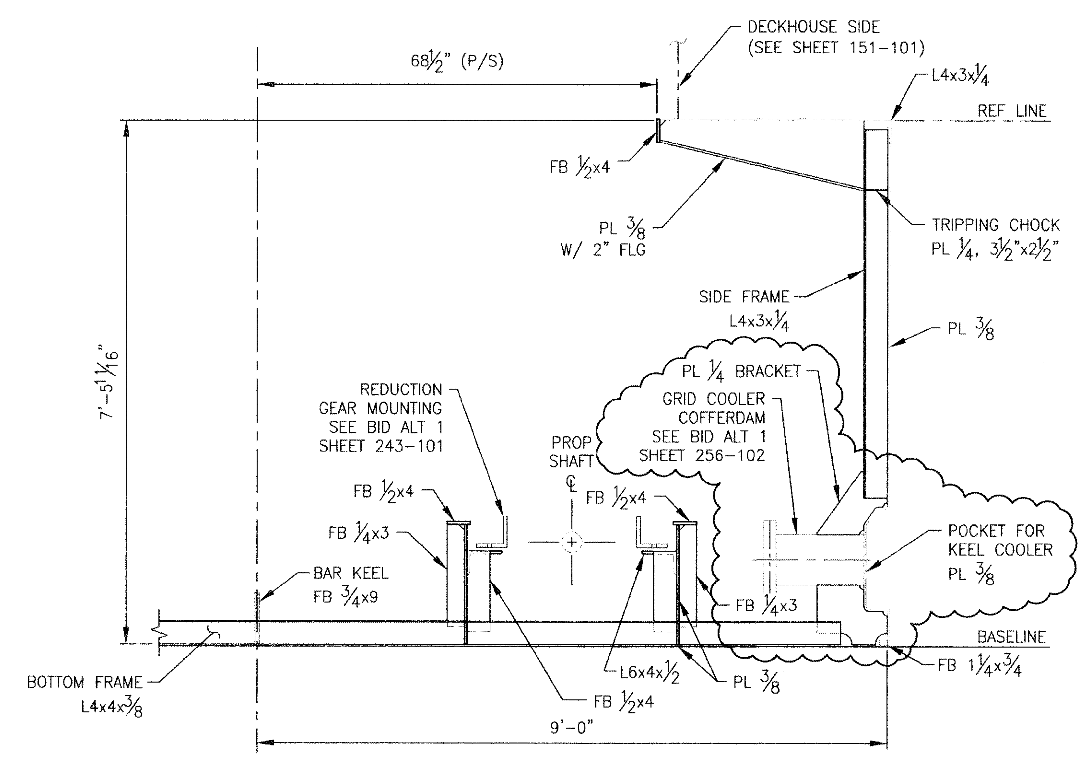
FRAME 14 SECTION

LOOKING FWD
SCALE: 3/4" = 1'-0"



FRAME 15 SECTION

LOOKING AFT
SCALE: 3/4" = 1'-0"



FRAME 16 SECTION

LOOKING AFT
SCALE: 3/4" = 1'-0"

BID ALT 1

0 4" 8" 12" 2' 3' 4'
SCALE: 3/4" = 1'-0"

ALAN WINKLEY
STATE OF WASHINGTON
24000
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7/28/2011

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(360) 479-5600

DRAWING NO. CEIDT001PB-117-104

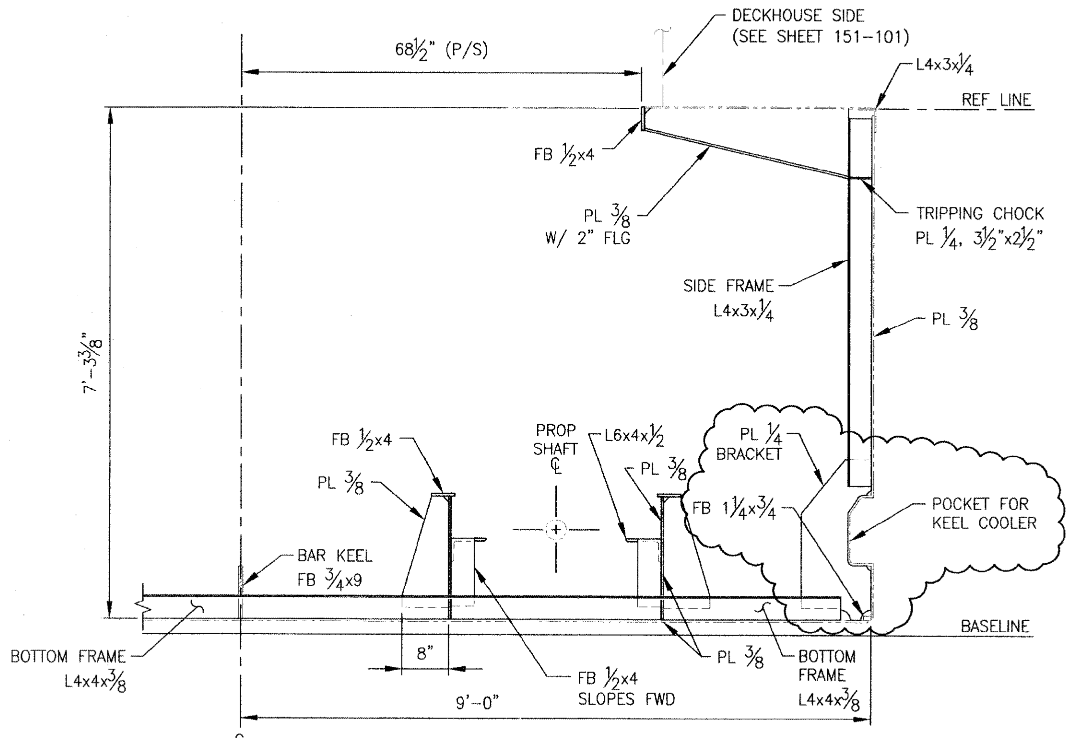
FILE NAME =	USER NAME =	DESIGNED — A. WINKLEY	REVISED —
		DRAWN — J. WALKER	REVISED —
	PLOT SCALE =	CHECKED — P. MARTIN	REVISED —
	PLOT DATE =	DATE — 7/26/2011	REVISED —

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

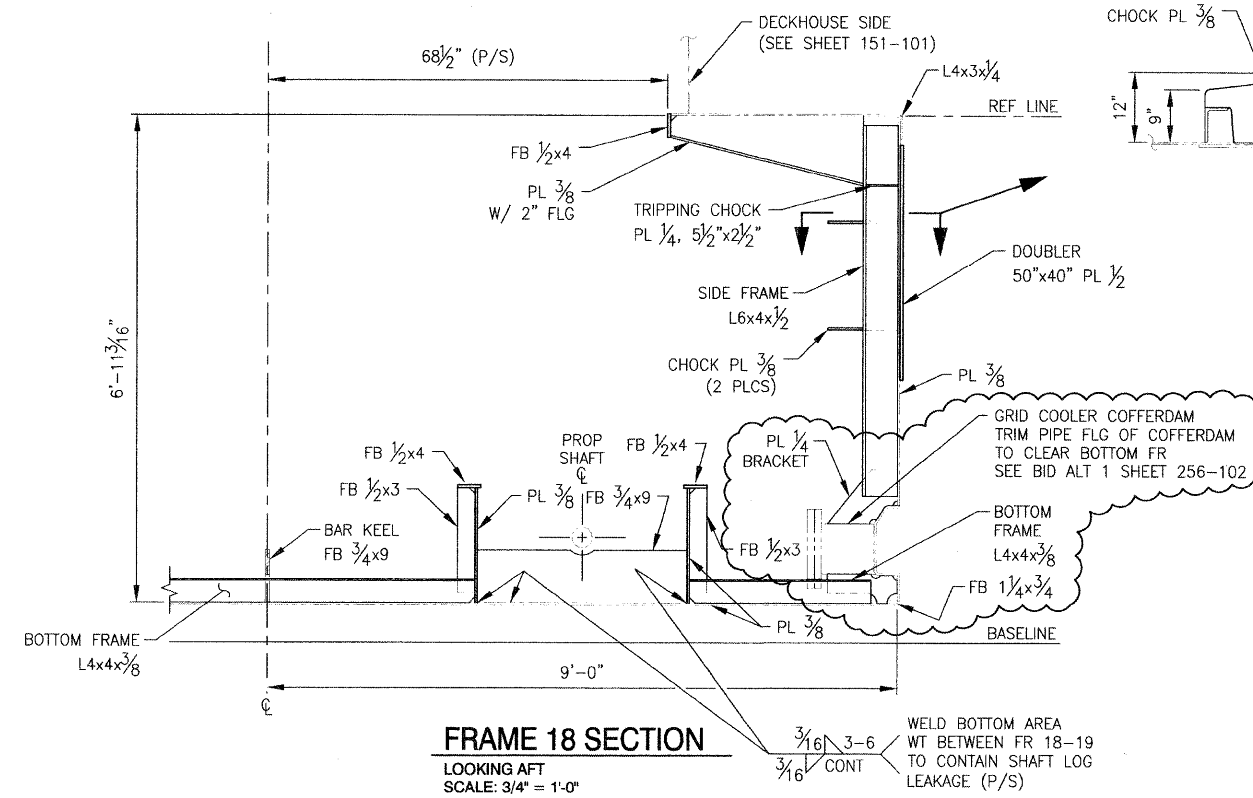
IDOT BRUSSELS FERRY - BID ALTERNATE
TRANSVERSE FRAMING - FR 13 TO 16

SCALE: AS SHOWN | SHEET NO. OF SHEETS | STA. TO STA.

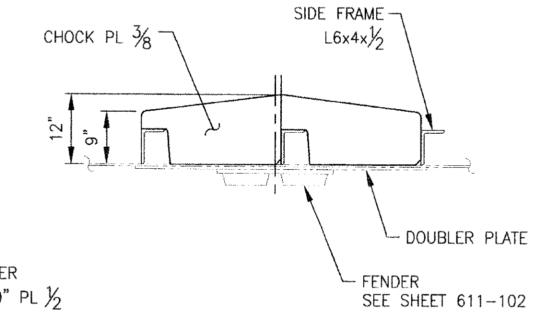
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	47	10
		CONTRACT NO. 76D29		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

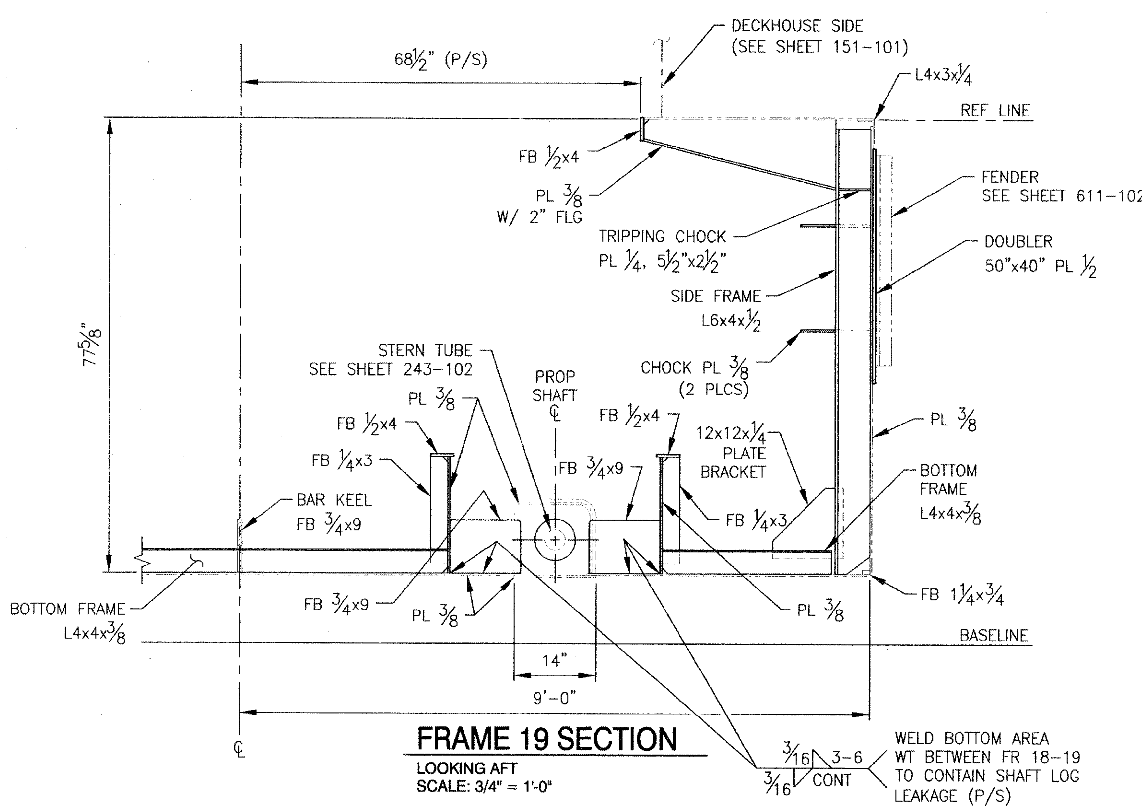


FRAME 17 SECTION
LOOKING AFT
SCALE: 3/4" = 1'-0"

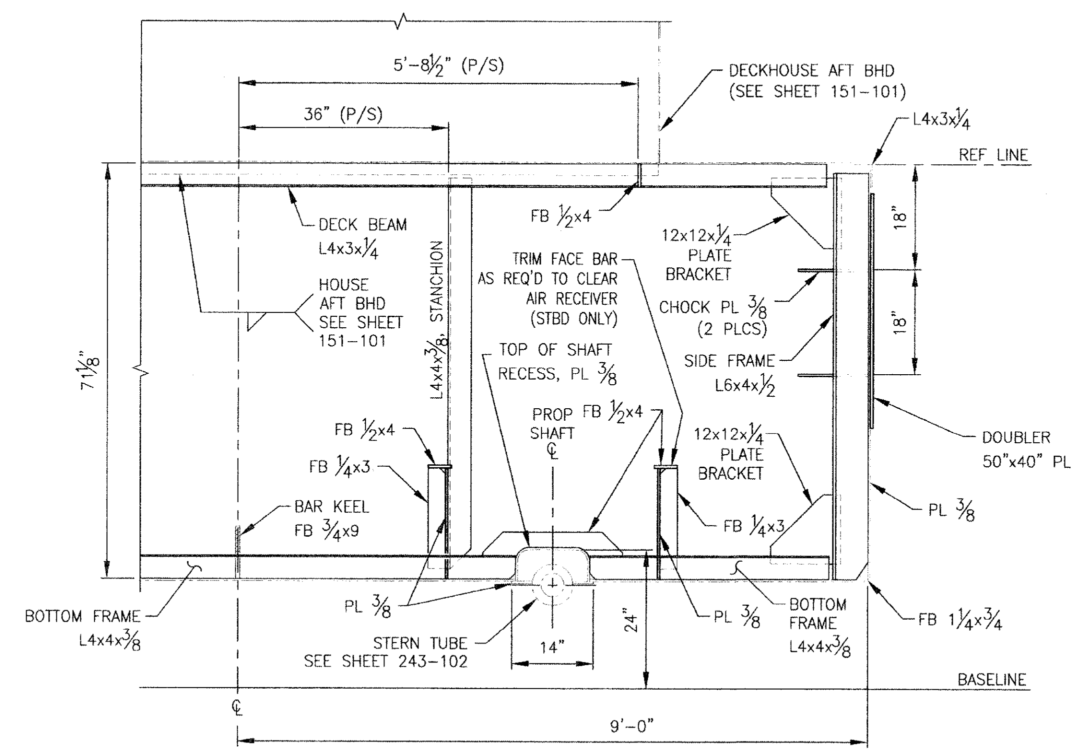


FRAME 18 SECTION
LOOKING AFT
SCALE: 3/4" = 1'-0"





FRAME 19 SECTION
LOOKING AFT
SCALE: 3/4" = 1'-0"



FRAME 20 SECTION
LOOKING AFT
SCALE: 3/4" = 1'-0"

SCALE: 3/4" = 1'-0"

BID ALT 1

ART ANDERSON ASSOCIATES

DRAWING NO. CEIDT001PB-117-105

FILE NAME =	USER NAME =	DESIGNED — A. WINKLEY	REVISED —
		DRAWN — J. WALKER	REVISED —
	PLOT SCALE =	CHECKED — P. MARTIN	REVISED —
	PLOT DATE =	DATE — 7/26/2011	REVISED —

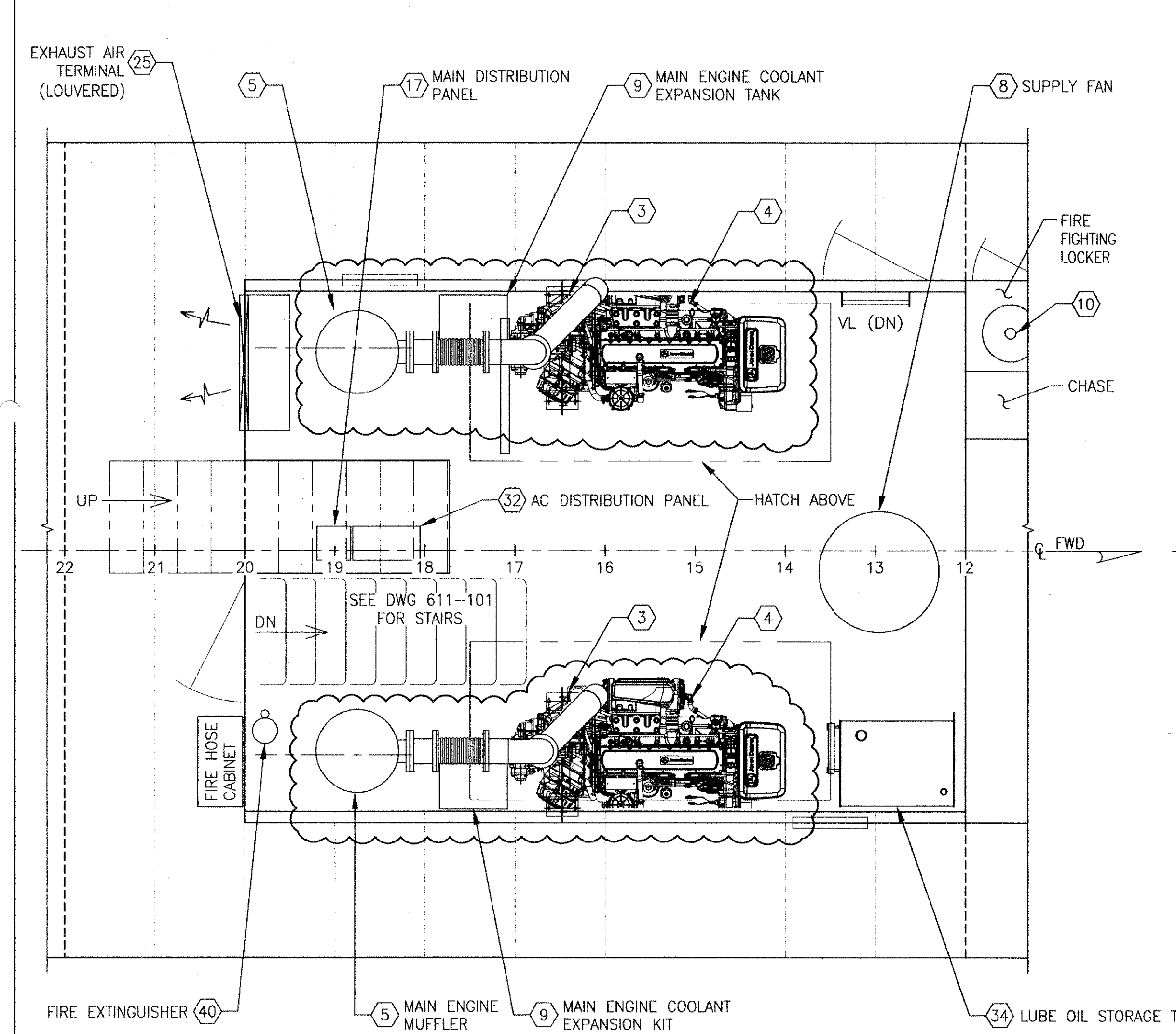
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IDOT BRUSSELS FERRY - BID ALTERNATE
TRANSVERSE FRAMING - FR 17 TO 20

SCALE: AS SHOWN | SHEET NO. OF SHEETS | STA. TO STA.

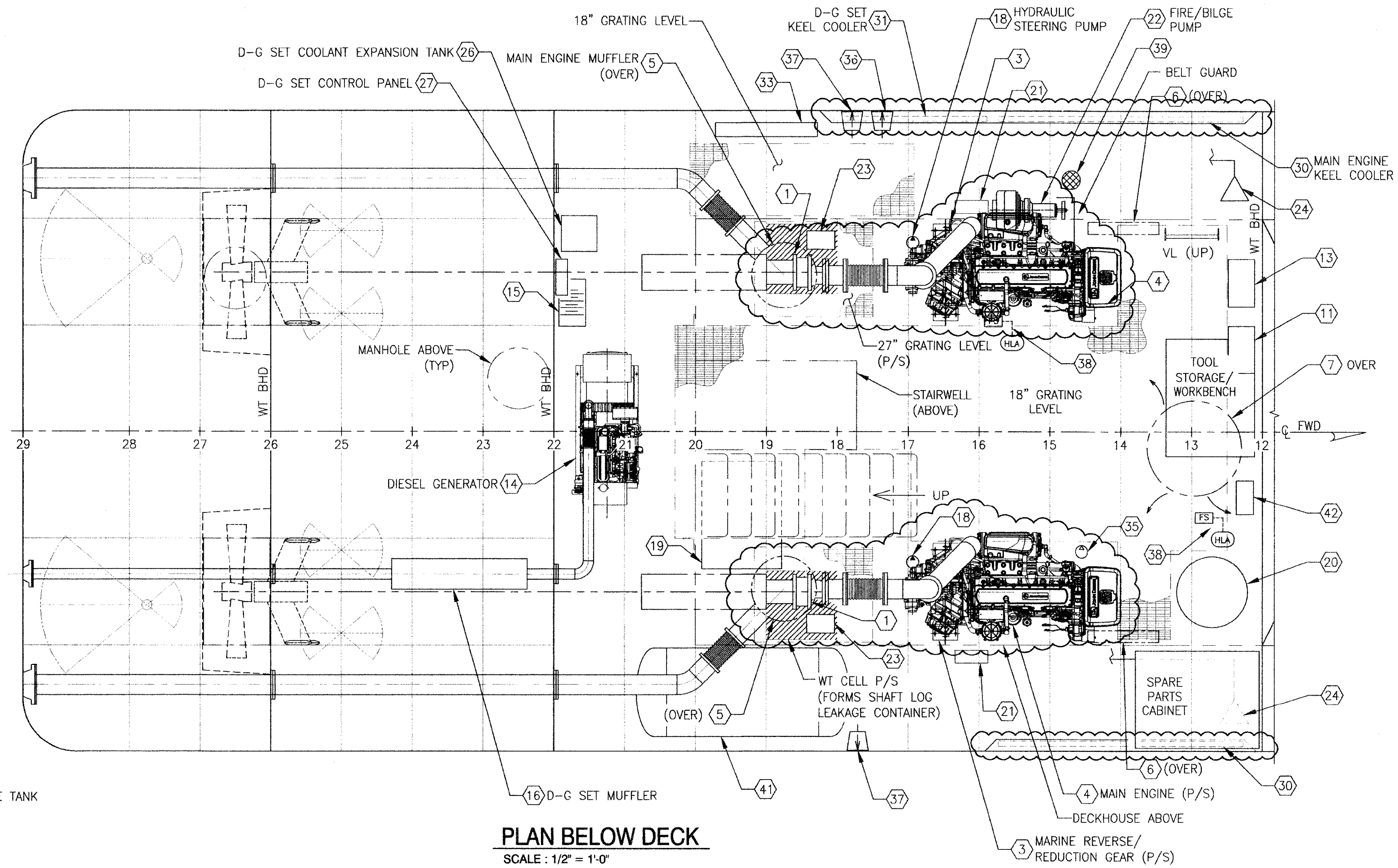
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	47	11
		CONTRACT NO. 76D29		

FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT



PLAN AT MAIN DECK

SCALE : 1/2" = 1'-0"



PLAN BELOW DECK

SCALE : 1/2" = 1'-0"

MACHINERY LIST

PC NO.	QTY	EQUIPMENT	MAKE	MODEL	APPROX SIZE	REMARK
1	2 EA	STUFFING BOX	DURAMAX	1790-0400	4"x5"x16"L	P/N886014201; BRONZE, GREASE LUBE; USE W/PACKING UX0500-03
2	2 EA	SHAFT COUPLING	TWIN DISC	XA6988A		COMPANION FLANGE ASSEMBLY TO REDUCTION GEAR
3	2 EA	MARINE REVERSE/REDUCTION GEAR	TWIN DISC	MG5091-DC		4.5:1 RATIO
4	2 EA	MAIN ENGINE	JOHN DEERE	6090AFM75		KEEL COOLING
5	2 EA	MAIN ENGINE MUFFLER	MAXIM	M-41	6"ø	
6	2 EA	ENGINE GAUGE BOARD				
7	1 EA	INTAKE AIR DUCT	YARD BUILD			SEE BID ALT 1 DWG 512-102
8	1 EA	SUPPLY FAN	HARTZELL	SERIES 53C	29"ø	SEE BID ALT 1 DWG 512-102
9	2 EA	MAIN ENGINE COOLANT EXPANSION TANK	YARD BUILD		10 TO 12 GAL	STEEL
10	1 EA	CO2 SEMI-PORTABLE FIRE EXTINGUISHING GEAR	ANSUL	433541	19"x15"x66"H	100-POUND CAPACITY; WITH 40' HOSE
11	1 EA	BATTERY CHARGER	NEWMAR	PT80		SEE DWG 321-102
12	1 EA	SHIP SERVICE BATTERY				
13	1 EA	DC ELECTRICAL PANEL (NO 3)				SEE DWG 321-102
14	1 EA	DIESEL-GENERATOR SET	NORTHERN LIGHTS	M30CW	52"x24"x31"H	30kW
15	1 EA	STARTING BATTERY FOR D-G SET				SEE DWG 321-102
16	1 EA	MUFFLER FOR D-G SET	MAXIM	MUL	3"ø	
17	1 EA	MAIN DISTRIBUTION PANEL				SEE DWG 321-103
18	2 EA	HYDRAULIC STEERING PUMP	EATON VICKERS	70423		PTO DRIVE FROM PC NO. 3 (FURNISH WITH KOBELT SYSTEM)
19	1 EA	HYDRAULIC STEERING RESERVOIR	VESCOR	10050	50 GAL	(FURNISH WITH KOBELT SYSTEM)
20	1 EA	AIR COMPRESSOR (PRIMARY)	INGERSOLL RAND	2475N5-P		W/AIR TANK (APPROX 80-GAL CAPACITY), SEE DWG 551-101
21	2 EA	REDUCTION GEAR OIL COOLER	POWER SYSTEM SPECIALISTS	SB-1202-A6-0	6"øx25"L	FURNISH W/PC NO.3 BY PJ POWER (DISTRIBUTOR)
22	1 EA	FIRE/BILGE PUMP	BARNES	25ICU-1	25"x13"x16"H	BELT DRIVE FROM PIECE NO 4 (PORT ONLY)
23	2 EA	STUFFING BOX SUMP PUMP	LOVETT	1200		
24	2 EA	BILGE SUCTION BELLMOUTH (ENGINE ROOM)			1½"ø	(LOCATE AS SHOWN, 1/2" ABOVE BOTTOM SHELL, SEE DWG NO 529-101)
25	1 EA	EXHAUST AIR TERMINAL (LOUVERED)	YARD FURNISHED			SEE BID ALT 1 DWG 512-102
26	1 EA	D-G SET COOLANT REMOTE EXPANSION TANK	NORTHERN LIGHTS	10-11205		STEEL
27	1 EA	D-G SET CONTROL PANEL	NORTHERN LIGHTS	S-3C		REMOTE MOUNT IN E.R. (20' HARNESS INCLUDED)
28	1 EA	REACH ROD CONTROL FOR FIRE PUMP CLUTCH	ELLIOTT OR EQUAL			SEE BID ALT 1 DWG NO 233-102
29	1 EA	REACH ROD CONTROL FOR FIRE PUMP INTAKE VALVE	ELLIOTT OR EQUAL			SEE BID ALT 1 DWG NO 233-102
30	2 EA	MAIN ENGINE KEELCOOLER	FERNSTRUM	BN1675B-E1	82⅞"x11½"H	
31	1 EA	D-G SET KEELCOOLER	FERNSTRUM	BN845B-E1	52"x5⅜"H	
32	1 EA	AC DISTRIBUTION PANEL (NO 1)				SEE DWG 321-103
33	1 EA	FIRE & BILGE MANIFOLD	YARD BUILD			
34	1 EA	LUBE OIL STORAGE TANK	YARD BUILD	66 GAL APPROX		SEE DWG 543-101
35	1 EA	AIR COMPRESSOR	JOHN DEERE			(BACKUP UNIT)
36	1 EA	BILGE OVERBOARD DISCHARGE			2"ø	LOCATE 5'-6" ABOVE BASELINE
37	2 EA	SUMP PUMP OVERBOARD DISCHARGE			1¼"ø	LOCATE 4'-6" ABOVE BASELINE
38	6 EA	HIGH BILGE ALARM FLOAT SWITCH	RULE	33ALA		VISUAL AND 85DB AUDIBLE ALARM IN PILOT HOUSE (LOCATE 2 FLOAT SWITCHES IN ENGINE ROOM)
39	1 EA	FIREMAIN RAW WATER INTAKE STRAINER	TATE ANDALE, OR EQUAL	F	3"ø	304S.S. BASKET; $\frac{3}{16}$" PERFORATIONS
40	1 EA	PORTABLE FIRE EXTINGUISHER	AMEREX	B456		
41	1 EA	AIR RECEIVER, 200 GAL, HORIZONTAL	HANSON	30-HA-200-W		SEE DWG 551-101
42	1 EA	DESICCANT AIR DRYER	INGERSOLL RAND	D-341M		SEE DWG 551-101

ALAN WINKLEY STATE OF WASHINGTON 24000 REGISTERED PROFESSIONAL ENGINEER 7/22/2011

ART ANDERSON ASSOCIATES 202 PACIFIC AVE, BREMERTON, WA 98337 (360) 479-5600

BID ALT 1

SCALE: 1/2" = 1'-0"

DRAWING NO. CEIDT001PB-233-101

FILE NAME =	USER NAME =	DESIGNED — A. WINKLEY	REVISED —
		DRAWN — J. WALKER	REVISED —
	PLOT SCALE =	CHECKED — P. MARTIN	REVISED —
	PLOT DATE =	DATE — 7/26/2011	REVISED —

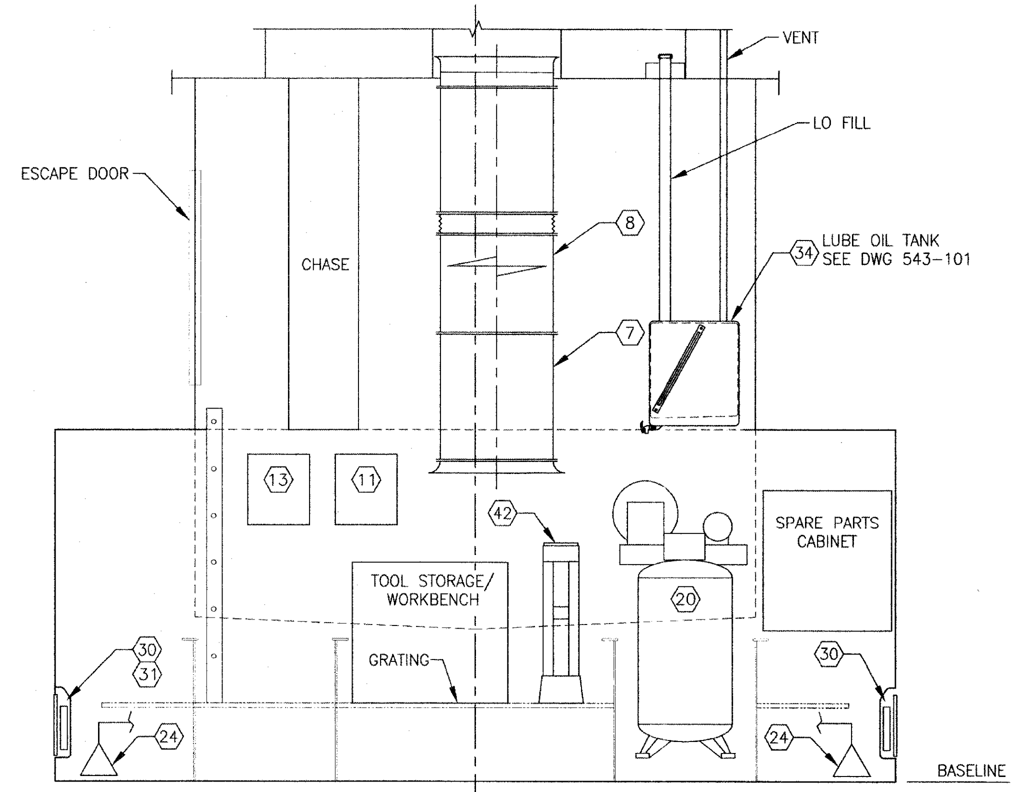
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IDOT BRUSSELS FERRY - BID ALTERNATE
MACHINERY ARRANGEMENT - PLANS

SCALE: AS SHOWN | SHEET NO. OF SHEETS | STA. TO STA.

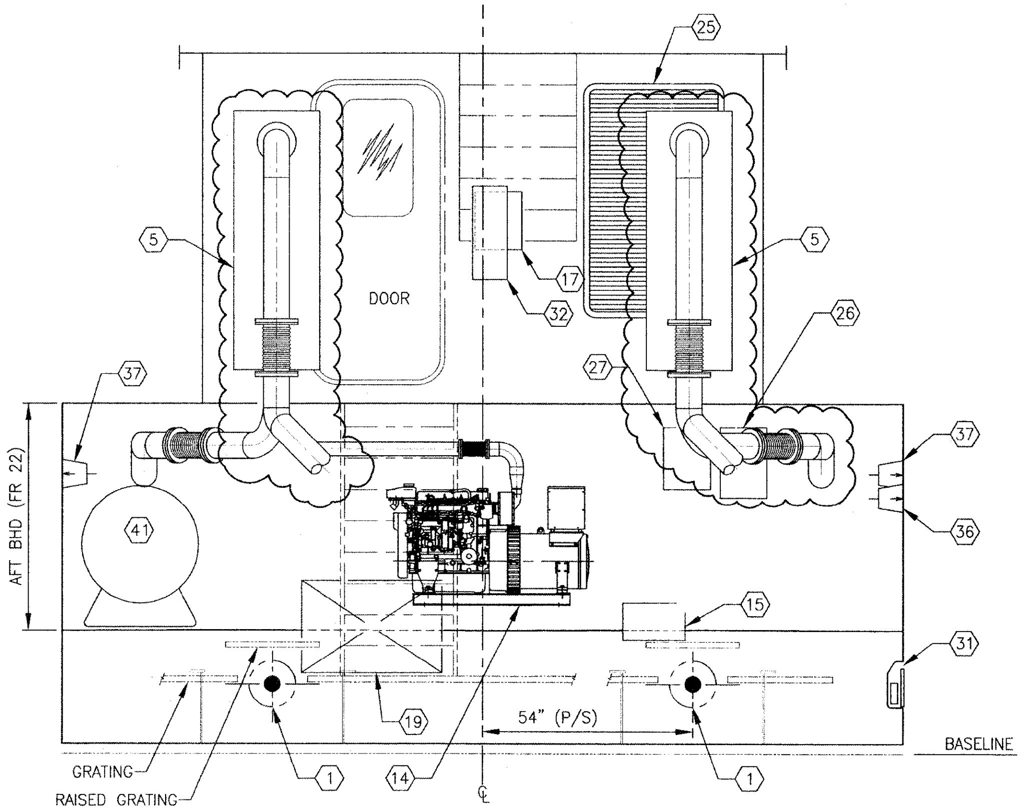
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	47	19
		CONTRACT NO. 76D29		

FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT



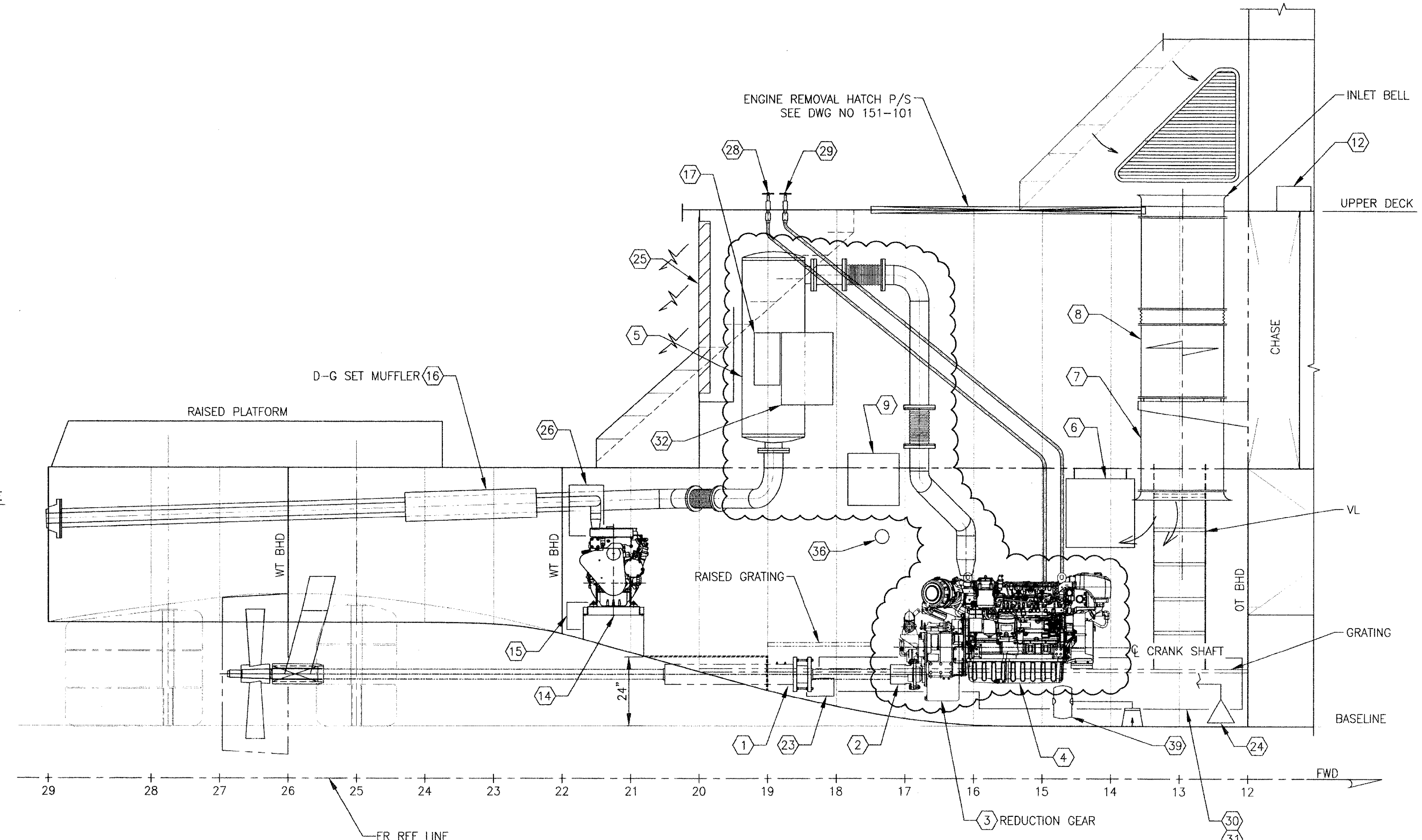
SECTION LOOKING FWD

FROM FRAME 14
SCALE : 1/2" = 1'-0"



SECTION LOOKING AFT

FROM FRAME 17
SCALE : 1/2" = 1'-0"



PORT ELEVATION

SCALE : 1/2" = 1'-0"

NOTE:

1. SEE BID ALT 1 DRAWING 233-101 FOR MACHINERY LIST.

ALAN WINKLEY STATE OF WASHINGTON 24000 REGISTERED PROFESSIONAL ENGINEER 7/28/2011

BID ALT 1

0 1' 2' 3' 4' 6'
SCALE: 1/2" = 1'-0"

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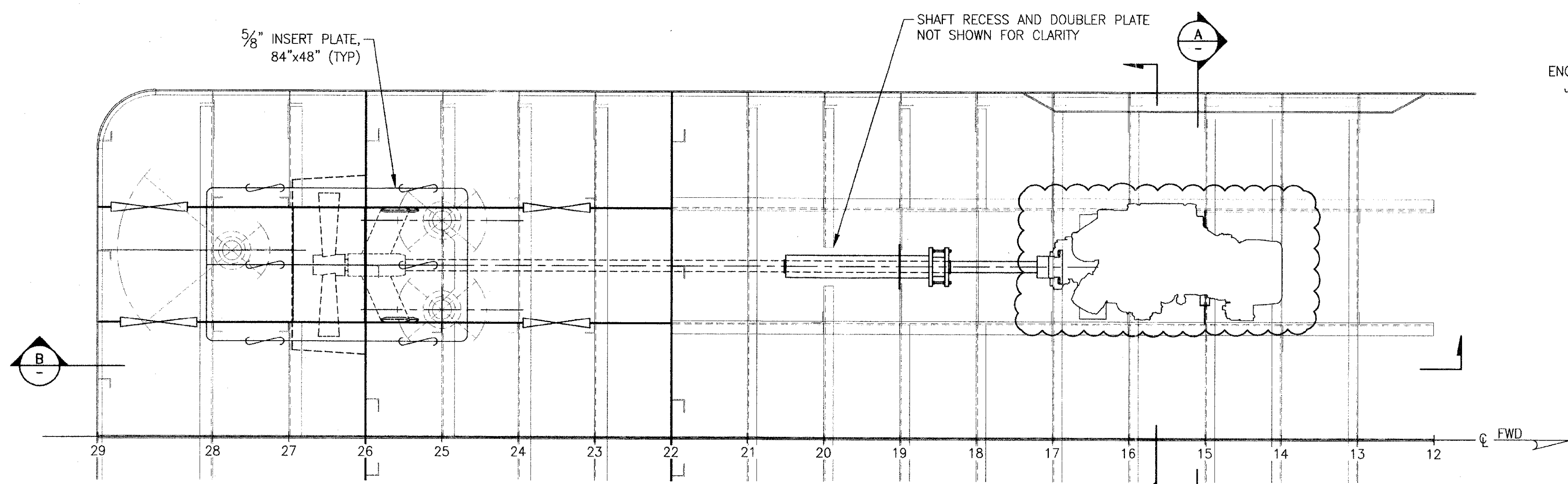
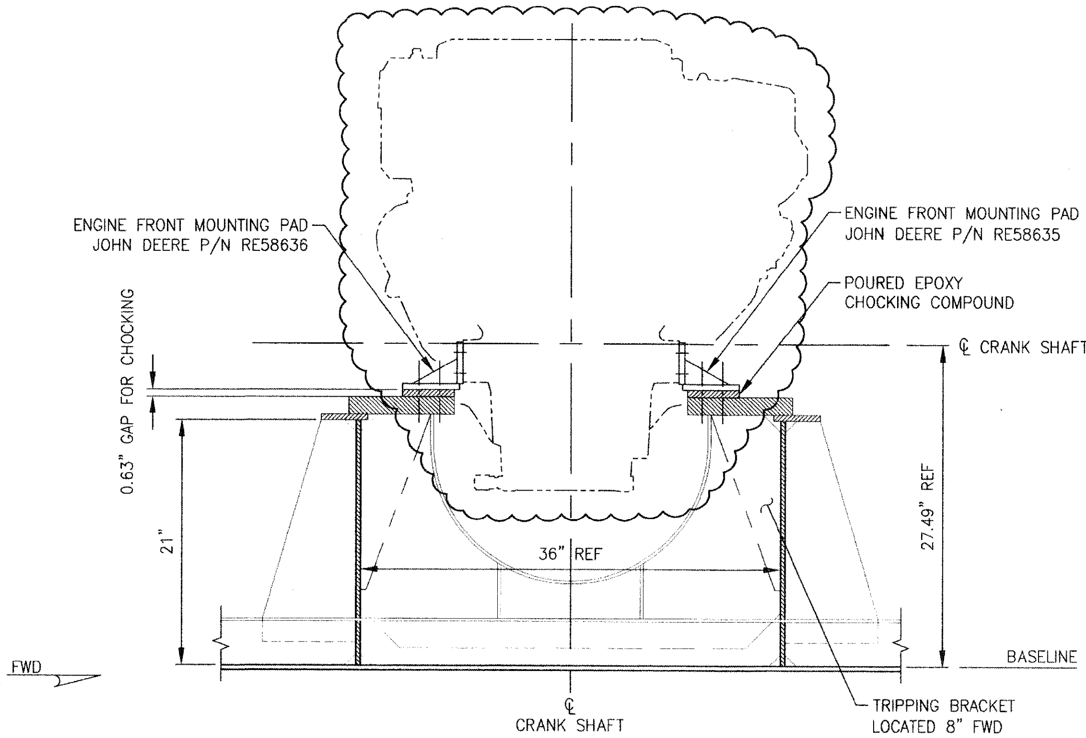
DRAWING NO. CEIDT001PB-233-102

FILE NAME =	USER NAME =	DESIGNED — A. WINKLEY	REVISED —	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	IDOT BRUSSELS FERRY - BID ALTERNATE MACHINERY ARRANGEMENT - SECTIONS AND ELEVATION
		DRAWN — J. WALKER	REVISED —		
	PLOT SCALE =	CHECKED — P. MARTIN	REVISED —		
	PLOT DATE =	DATE — 7/26/2011	REVISED —		SCALE: AS SHOWN / SHEET NO. OF SHEETS / STA. TO STA.

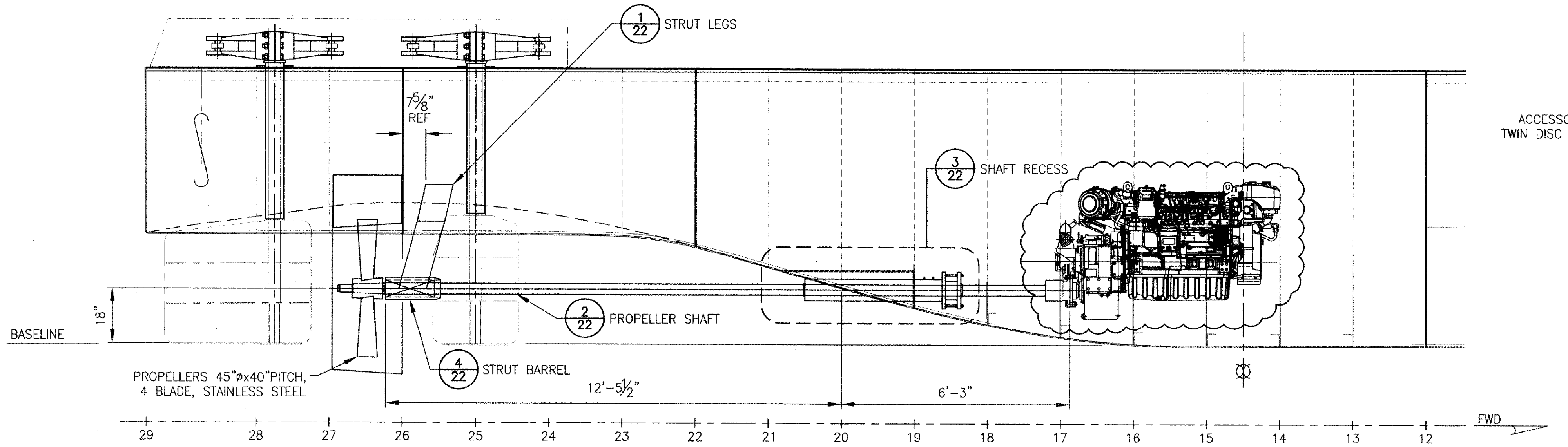
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	47	20
		CONTRACT NO. 76D29		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



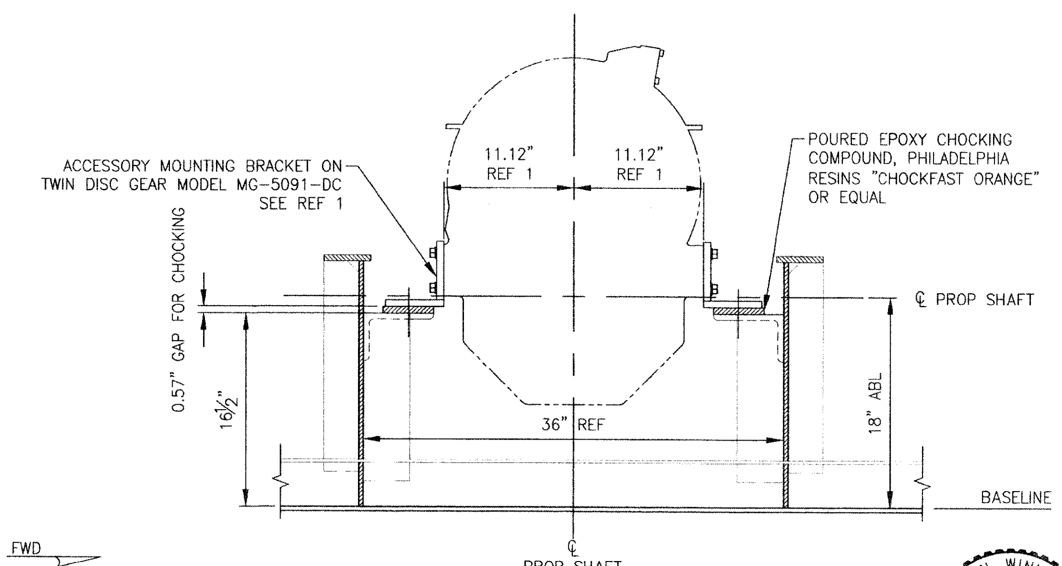
PLAN
PORT SIDE VIEW
SCALE: 1/2" = 1'-0"



A SECTION AT FR15 (LKG AFT)
SCALE: 1 1/2" = 1'-0"



B ELEVATION
PORT SIDE
SCALE: 1/2" = 1'-0"



C SECTION AT FR16 (LKG AFT)
SCALE: 1 1/2" = 1'-0"

REFERENCE:

1. TWIN DISC DWG NO 1016428C

SCALE: 1/2" = 1'-0"

SCALE: 1 1/2" = 1'-0"

ALAN WINKLEY STATE OF WASHINGTON 24000 REGISTERED PROFESSIONAL ENGINEER 7/28/2011

ART ANDERSON ASSOCIATES 202 PACIFIC AVE. BREMERTON, WA 98337 (360) 479-5600

BID ALT 1

DRAWING NO. CEIDT001PB-243-101

FILE NAME =	USER NAME =	DESIGNED — A. WINKLEY	REVISED —
		DRAWN — C. FAWVER	REVISED —
	PLOT SCALE =	CHECKED — P. MARTIN	REVISED —
	PLOT DATE =	DATE — 7/26/2011	REVISED —

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

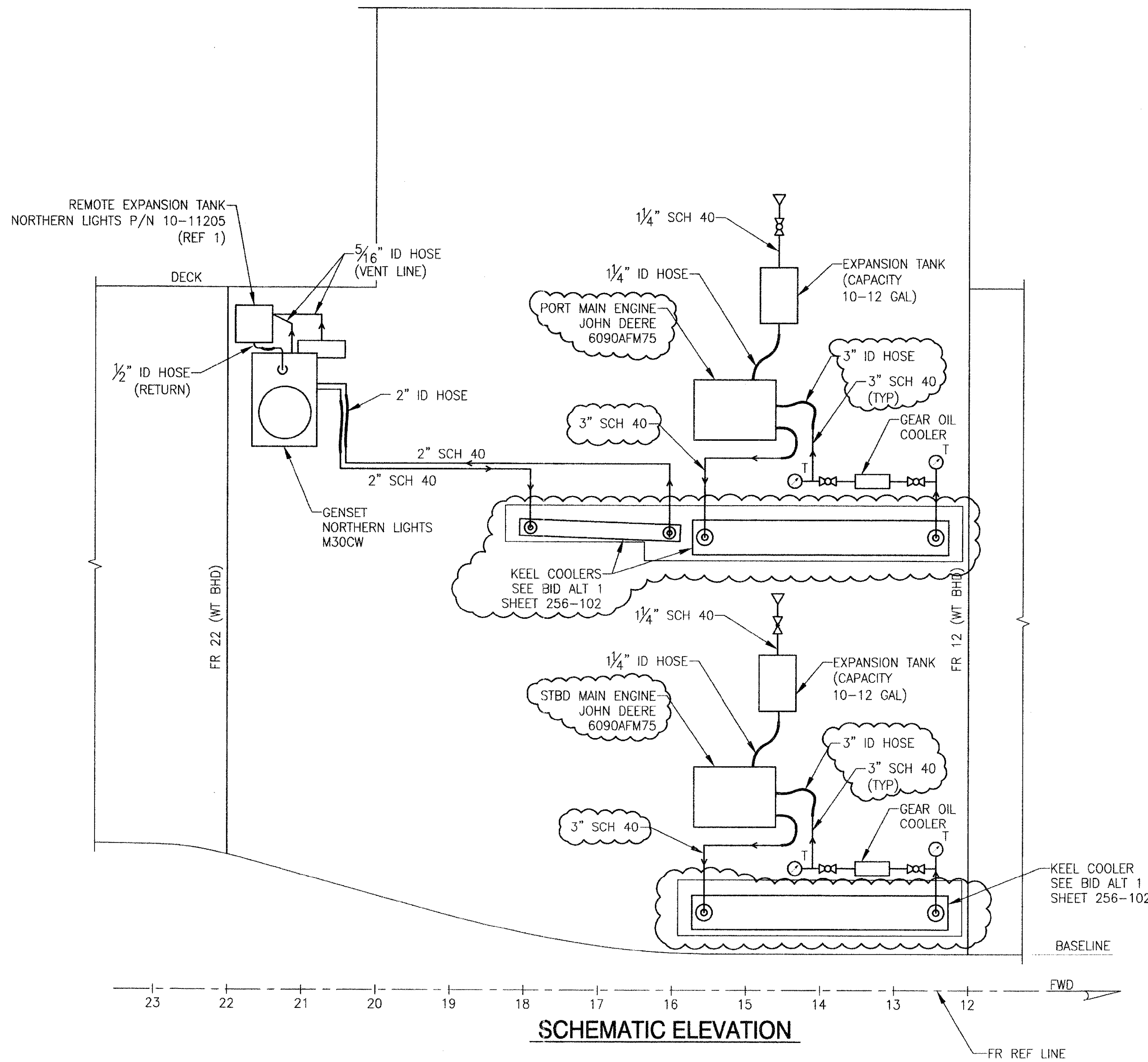
IDOT BRUSSELS FERRY - BID ALTERNATE
PROPELLER SHAFTING AND SUPPORT

SCALE: AS SHOWN | SHEET NO. OF SHEETS | STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	47	21

CONTRACT NO. 76D29

FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT



SCHEMATIC ELEVATION

REFERENCE: NORTHERN LIGHTS DWG NO. B-9178 REMOTE EXPANSION TANK.

ALAN WINKLEY, STATE OF WASHINGTON, 24000, REGISTERED PROFESSIONAL ENGINEER — 7/28/2011

ART ANDERSON ASSOCIATES
202 PACIFIC AVE, BREMERTON, WA 98337 (360) 479-5600

BID ALT 1

DRAWING NO. CEIDT001PB-256-101

FILE NAME =	USER NAME =	DESIGNED — A. WINKLEY	REVISED —	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
		DRAWN — C. FAWVER	REVISED —	
	PLOT SCALE =	CHECKED — P. MARTIN	REVISED —	
	PLOT DATE =	DATE — 7/26/2011	REVISED —	

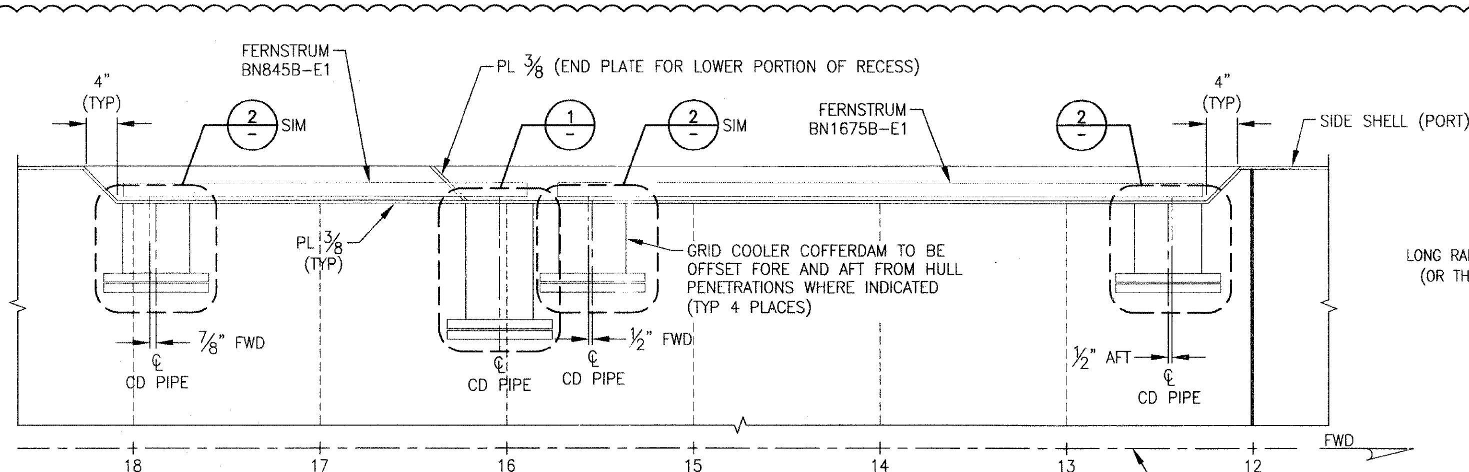
IDOT BRUSSELS FERRY - BID ALTERNATE
MACHINERY COOLING SYSTEM PIPING - DIAGRAM

SCALE: NONE | SHEET NO. OF SHEETS | STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	47	23

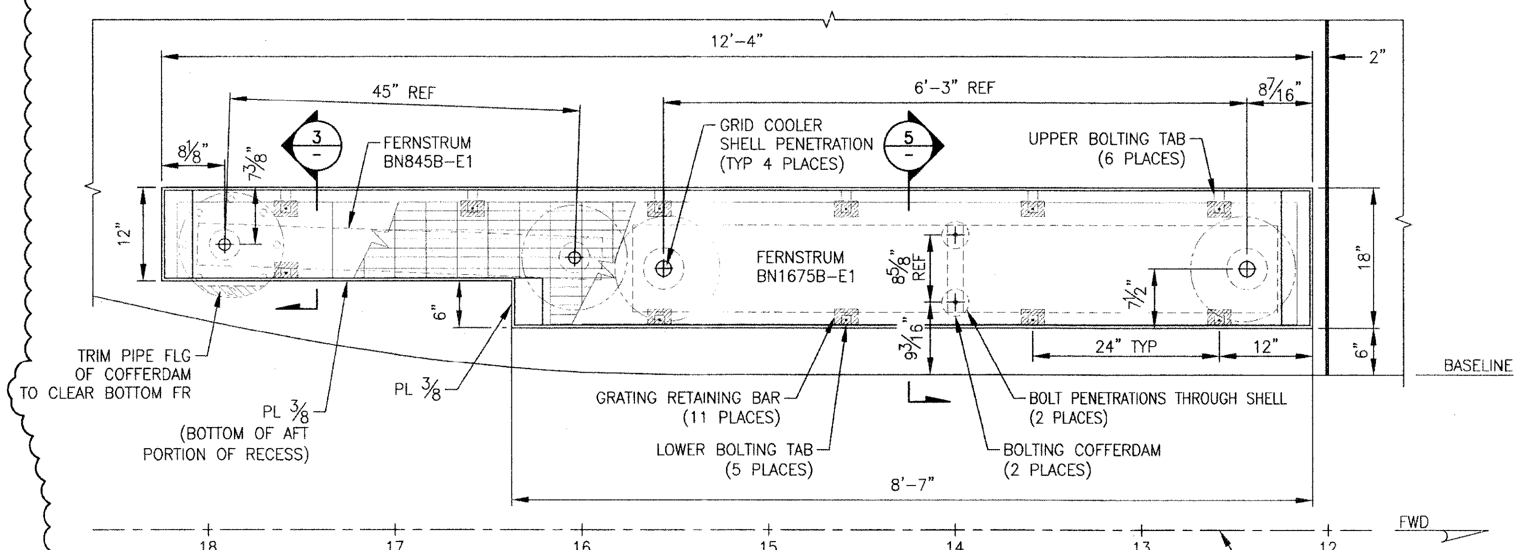
CONTRACT NO. 76D29

FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT



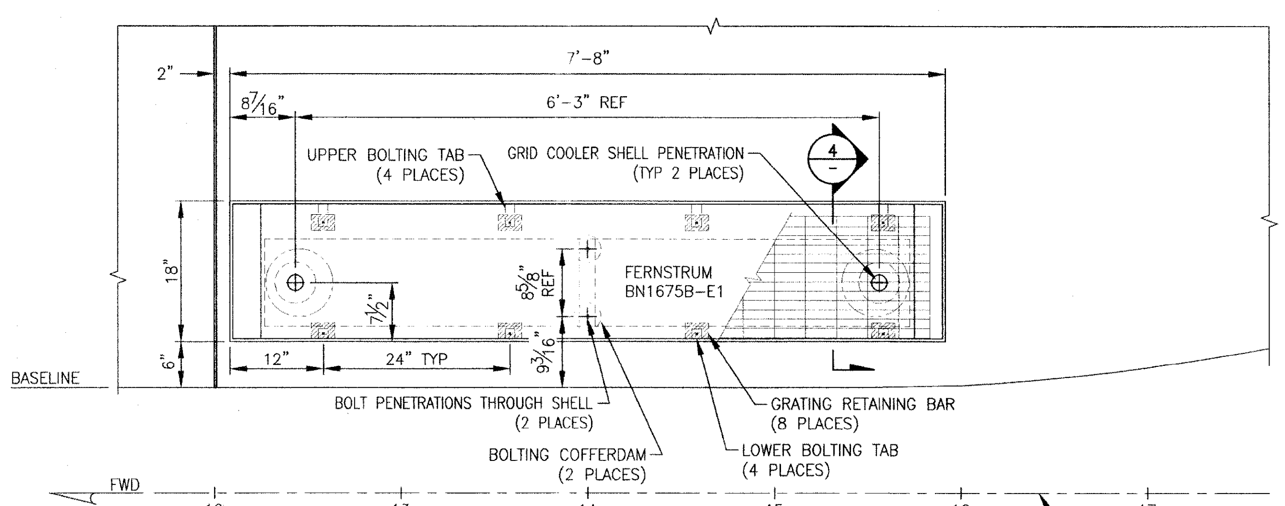
PLAN

KEELCOOLER POCKET
PORT SIDE SHOWN
SCALE: 1" = 1'-0"



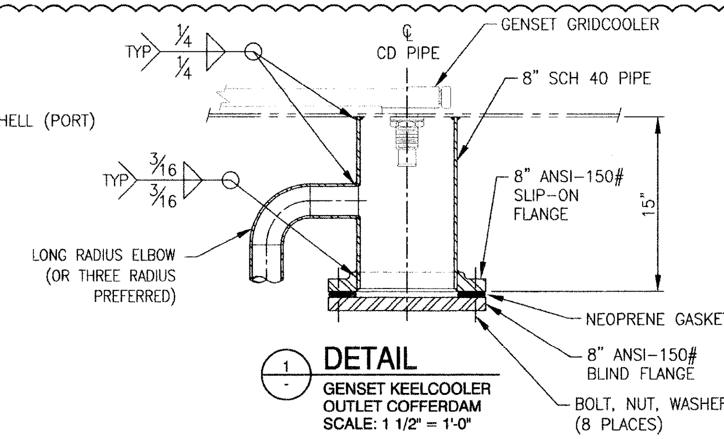
A ELEVATION

PORT KEELCOOLERS
LOOKING OUTBOARD
SCALE: 1" = 1'-0"



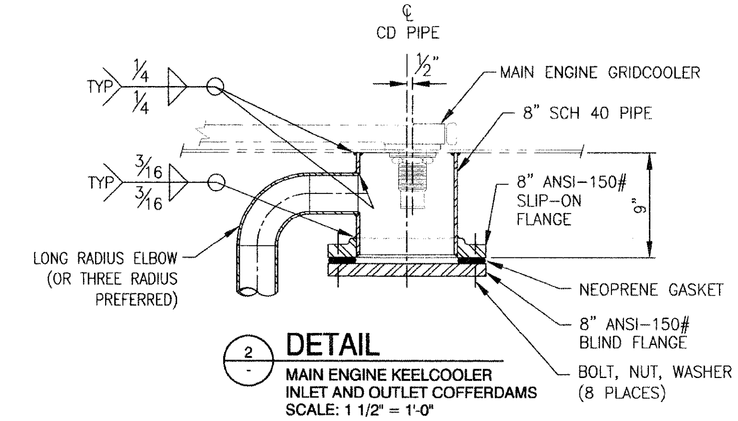
B ELEVATION

STBD KEELCOOLER
LOOKING OUTBOARD
SCALE: 1" = 1'-0"



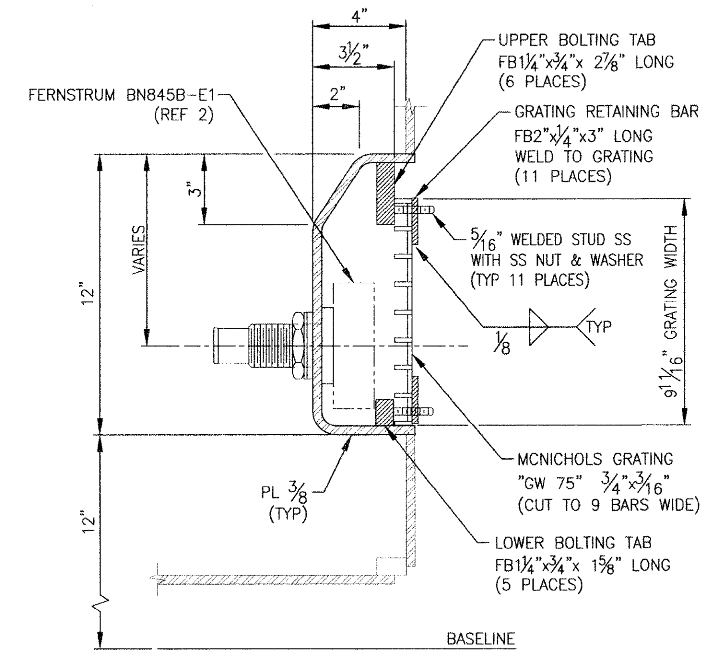
1 DETAIL

GENSET KEELCOOLER
OUTLET COFFERDAM
SCALE: 1 1/2" = 1'-0"



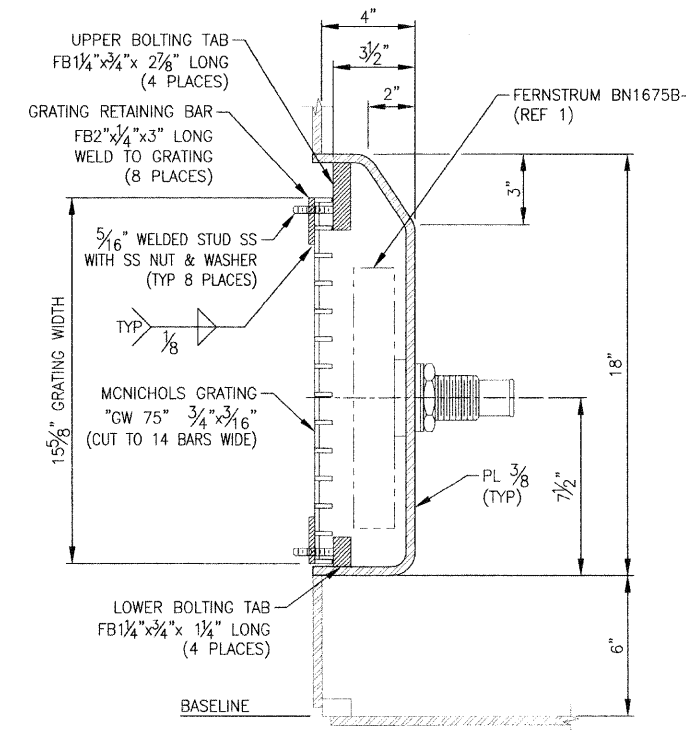
2 DETAIL

MAIN ENGINE KEELCOOLER
INLET AND OUTLET COFFERDAMS
SCALE: 1 1/2" = 1'-0"



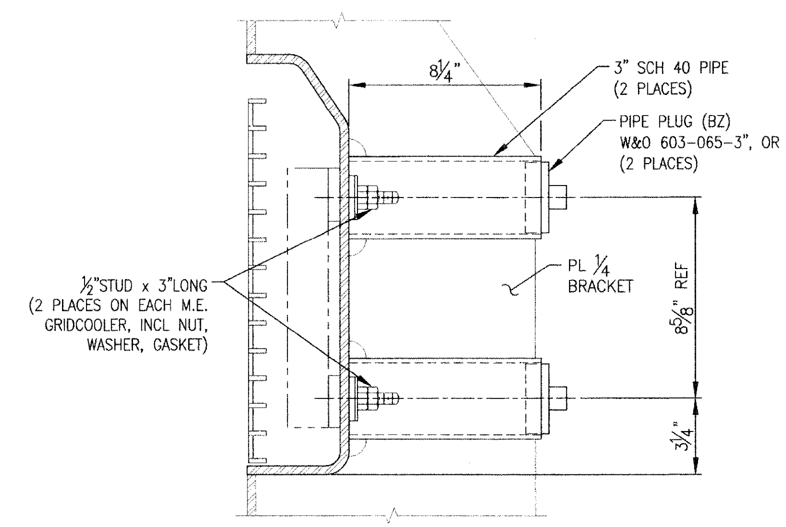
3 DETAIL

PORT GRIDCOOLER INSTALLATION
IN KEELCOOLER POCKET
SCALE: 3" = 1'-0"



4 DETAIL

STBD GRIDCOOLER INSTALLATION
IN KEELCOOLER POCKET
SCALE: 3" = 1'-0"



5 DETAIL

GRIDCOOLER BOLTING & COFFERDAM AT FR 14
PORT SIDE SHOWN, STBD SIDE SIM
SCALE: 3" = 1'-0"

REFERENCES:

1. R.W FERNSTRUM & CO. DWG NO BN1675B-E1
2. R.W FERNSTRUM & CO. DWG NO BN845B-E1

SCALE: 1" = 1'-0"
SCALE: 1 1/2" = 1'-0"
SCALE: 3" = 1'-0"

ALAN WINKLEY STATE OF WASHINGTON 24000 REGISTERED PROFESSIONAL ENGINEER 7/28/2011

ART ANDERSON ASSOCIATES
202 PACIFIC AVE, BREMERTON, WA 98337
(360) 479-5600

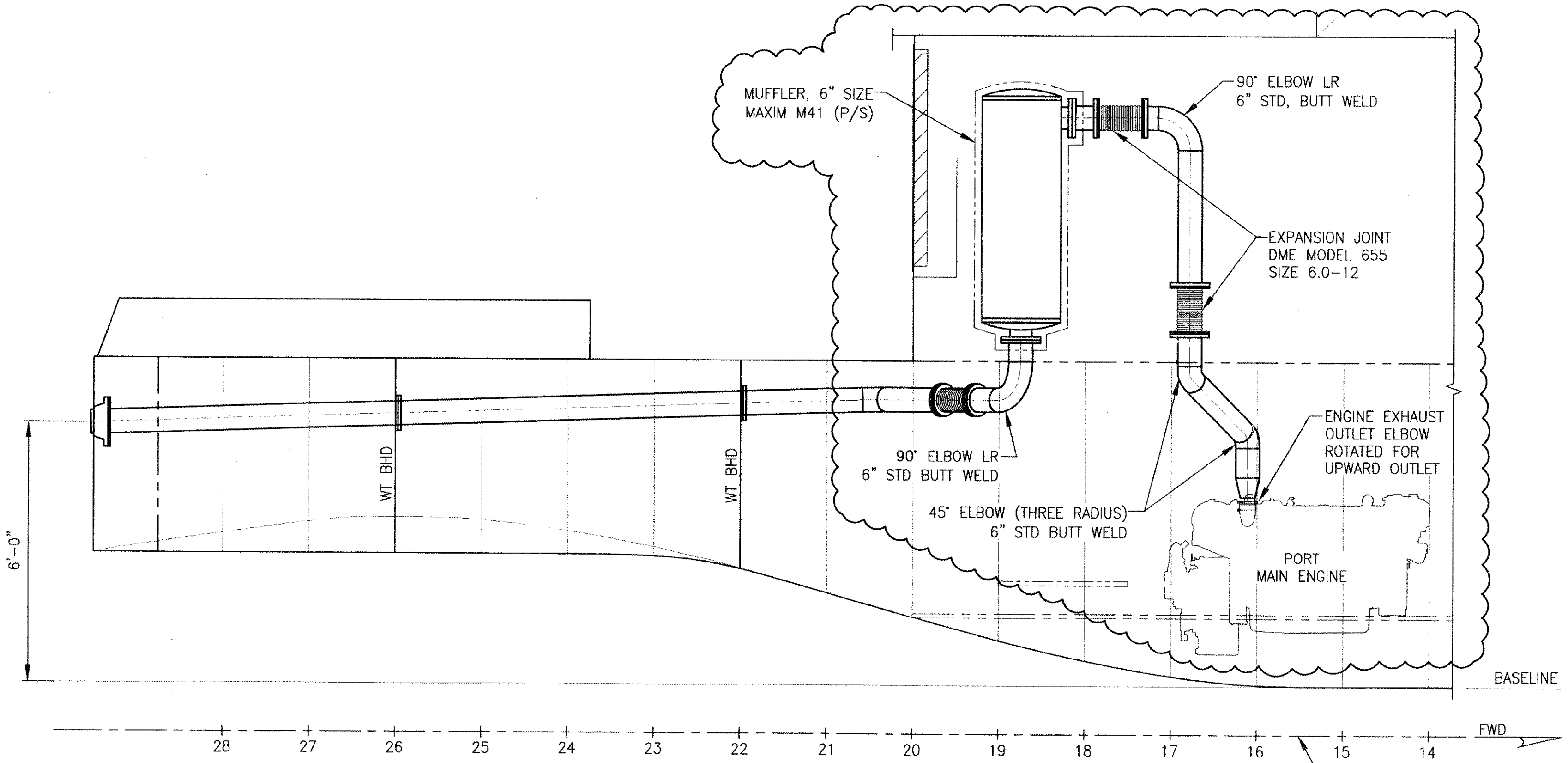
BID ALT 1

DRAWING NO. CEIDT001PB-256-102

FILE NAME =	USER NAME =	DESIGNED – A. WINKLEY	REVISED –	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	IDOT BRUSSELS FERRY - BID ALTERNATE MACHINERY COOLING SYSTEM PIPING - DETAILS
		DRAWN – J. WALKER	REVISED –		
	PLOT SCALE =	CHECKED – P. MARTIN	REVISED –		
	PLOT DATE =	DATE – 7/26/2011	REVISED –		SCALE: AS SHOWN · SHEET NO. OF SHEETS · STA. TO STA.

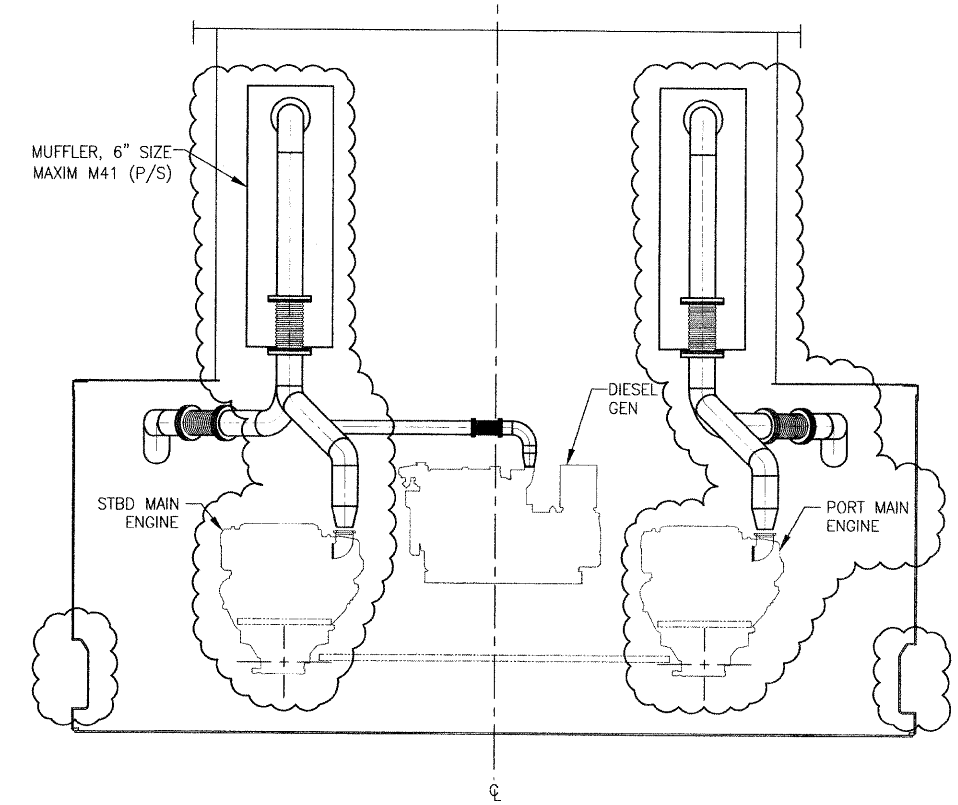
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	47	24
		CONTRACT NO. 76D29		

FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT



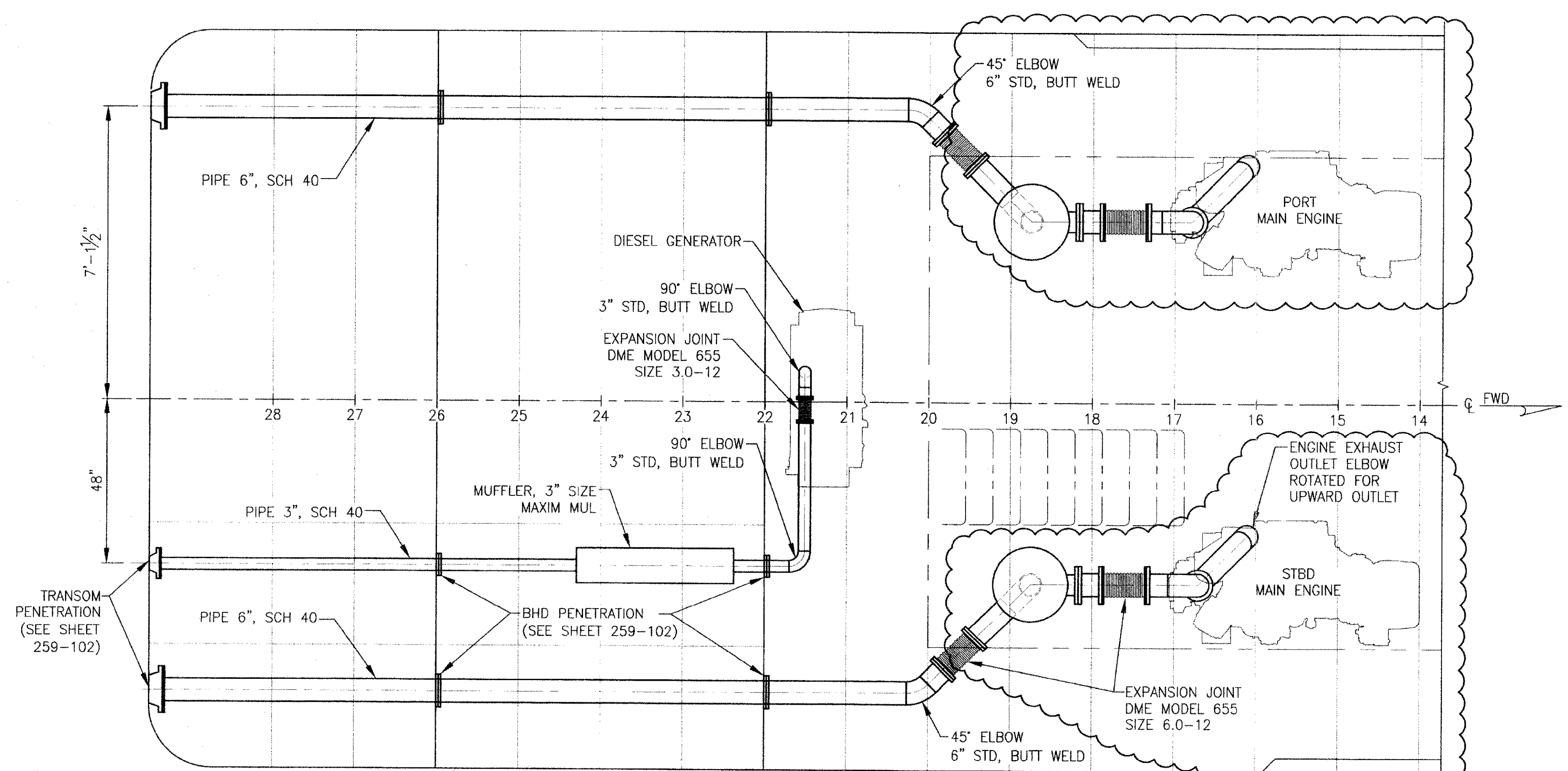
PORT ELEVATION

SCALE : 1/2" = 1'-0"



SECTION AT FR 16

LOOKING AFT
SCALE : 1/2" = 1'-0"



PLAN BELOW DECK

SCALE : 1/2" = 1'-0"

NOTES:

1. PIPE HANGERS NOT SHOWN.
2. ISOLATION MOUNTING OF MAIN ENGINE MUFFLERS NOT SHOWN.

ALAN WINKLEY
STATE OF WASHINGTON
24000
REGISTERED
PROFESSIONAL ENGINEER
7/28/2011

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BID ALT 1

SCALE: 1/2" = 1'-0"

0 1' 2' 3' 4' 6'

DRAWING NO. CEIDT001PB-259-101

FILE NAME =	USER NAME =	DESIGNED – A. WINKLEY	REVISED –
		DRAWN – C. FAWVER	REVISED –
	PLOT SCALE =	CHECKED – P. MARTIN	REVISED –
	PLOT DATE =	DATE – 7/26/2011	REVISED –

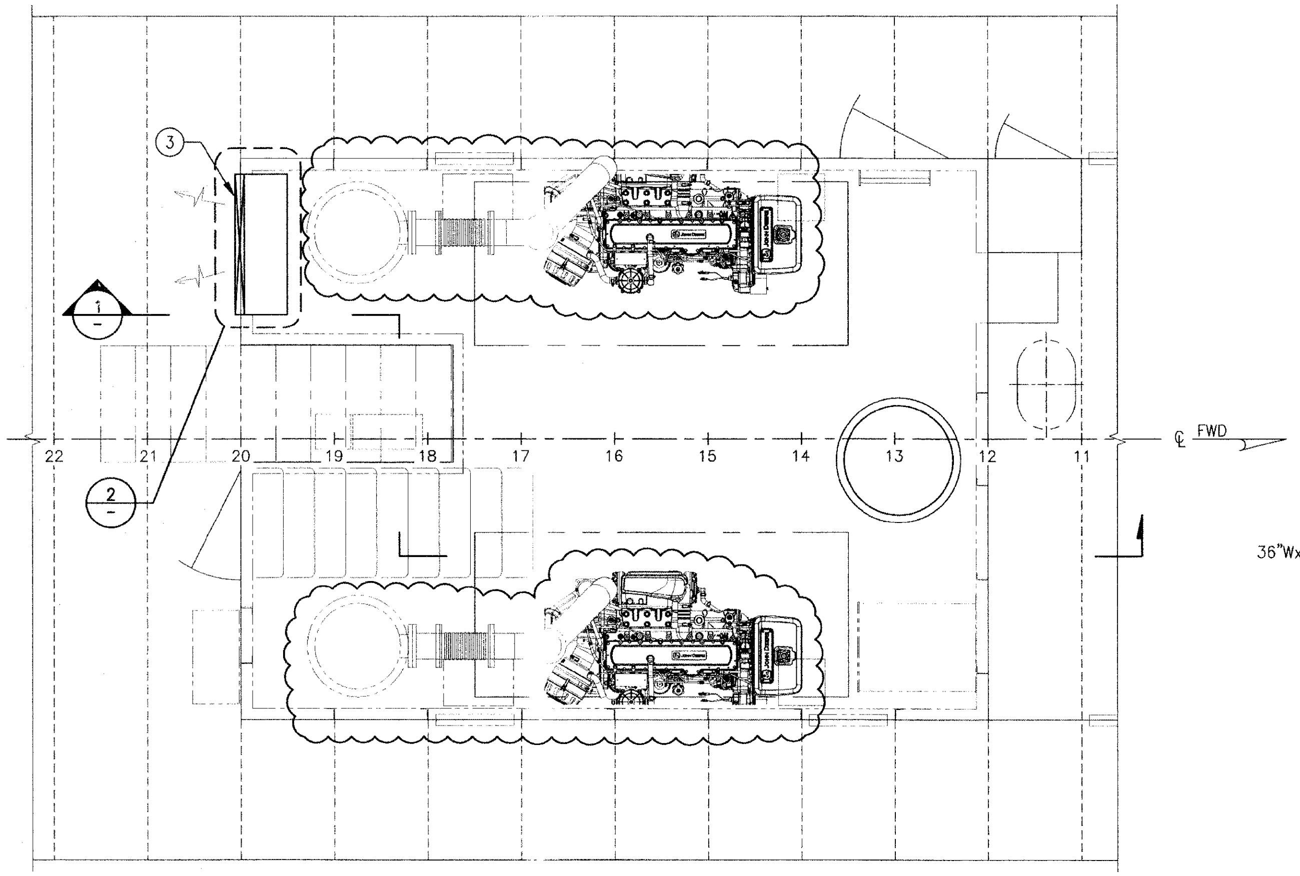
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IDOT BRUSSELS FERRY - BID ALTERNATE
ENGINE EXHAUST PIPING

SCALE: AS SHOWN | SHEET NO. OF SHEETS | STA. TO STA.

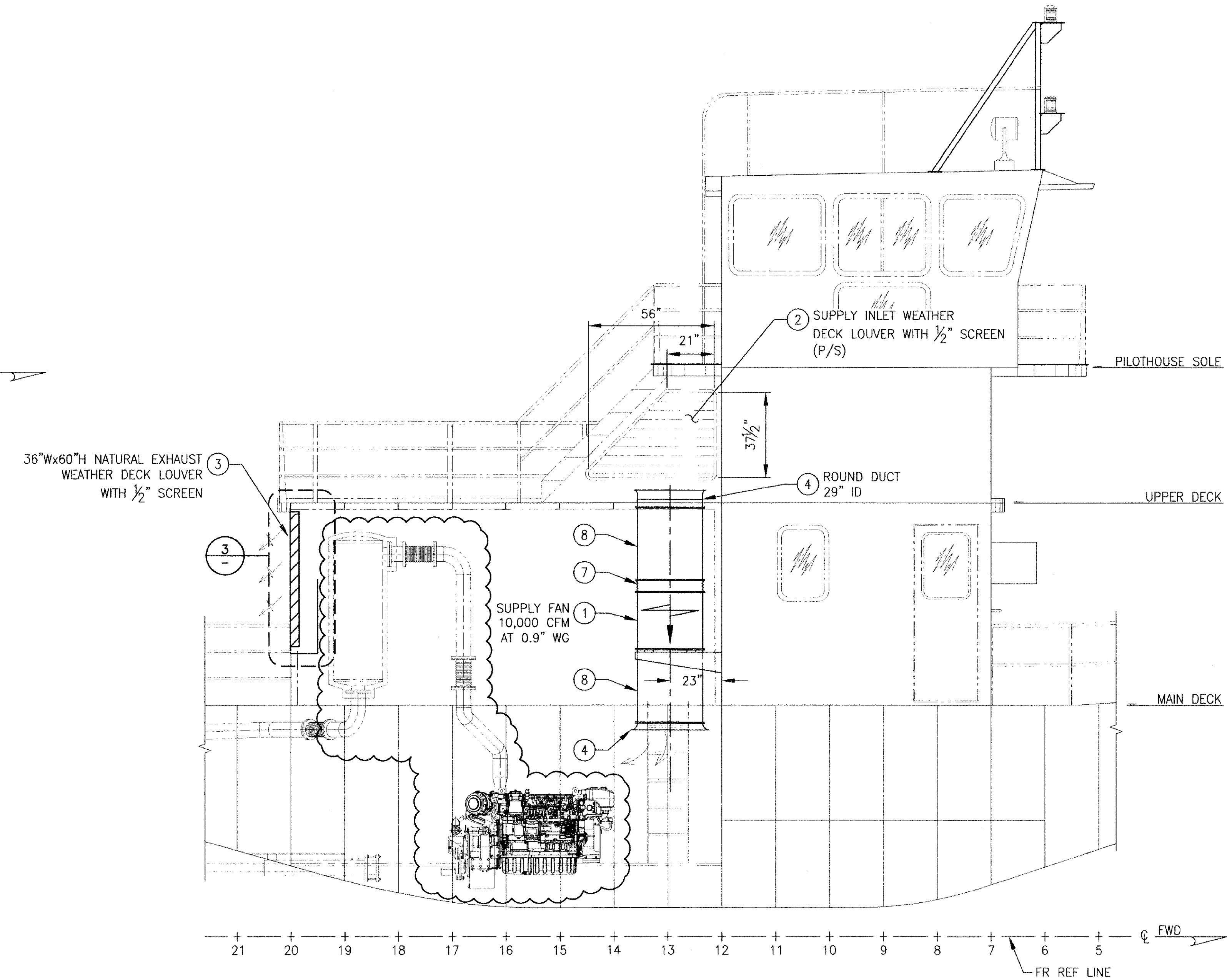
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	47	25
		CONTRACT NO. 76D29		

FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT



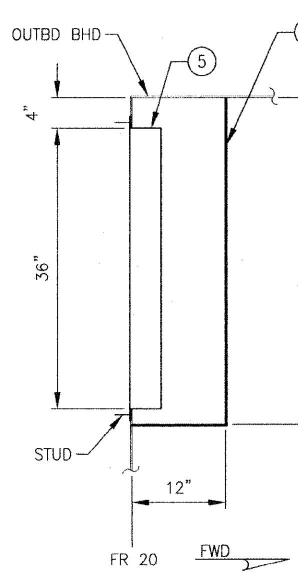
MACHINERY PLAN

SCALE: 1/2" = 1'-0"



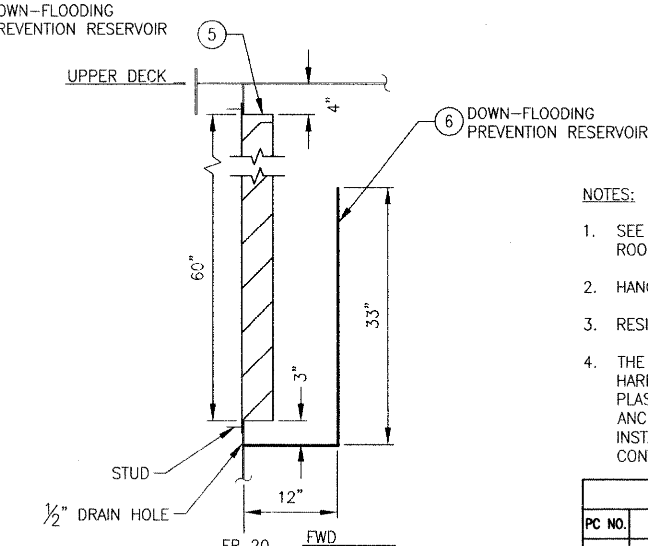
1 SECTION

SCALE: 3/8" = 1'-0"



2 DETAIL

SCALE: 1" = 1'-0"



3 DETAIL

SCALE: 1" = 1'-0"

NOTES:

1. SEE BID ALT 1 DRAWING 233-101 AND BID ALT 1 DRAWING 233-102 FOR ADDITIONAL ENGINE ROOM ARRANGEMENT DETAILS.
2. HANGERS SHALL BE FITTED FOR PROPER SUPPORT OF ALL DUCTWORK.
3. RESILIENTLY MOUNT FAN TO BHD 12 IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
4. THE LIST OF MATERIALS FOR THIS DRAWING DOES NOT INCLUDE MISCELLANEOUS MATERIALS AND HARDWARE SUCH AS NUTS, BOLTS, SCREWS PLASTIC SEALANT, ELECTRICAL INSULATION TAPE, PLASTIC VINYL ELECTRICIANS TAPE, TIE-WARPS, HEAT SHRINK, SLEEVING, AND OTHER SUCH ANCILLARY ITEMS. HOWEVER ALL ITEMS NECESSARY FOR A COMPLETE, FINISHED AND OPERATIONAL INSTALLATION CONFORMING TO GOOD SHIPBUILDING PRACTICE SHALL BE PROVIDED BY THE CONTRACTOR.

BILL OF MATERIAL

PC NO.	QTY	DESCRIPTION	MATERIAL/SPECIFICATION/REMARKS
1	1 EA	SUPPLY FAN	HARTZELL A53C--297VA---STAIKD, 10,000 CFM, 0.9" WG, 3HP, 1140RPM
2	2 EA	WEATHER DECK LOUVER, INTAKE	RUSKIN ELF6350DMP INTEGRAL FLANGE W/ BIRD & INSECT SCREEN
3	1 EA	WEATHER DECK LOUVER, EXHAUST	RUSKIN ELF445DXH INTEGRAL FLANGE W/ BIRD & INSECT SCREEN
4	AS REQ	DUCT	16 GAUGE GALVANIZED STEEL, SOUND LINED
5	AS REQ	GASKET MATERIAL	BUNA-N RUBBER
6	AS REQ	PLATE, 3/16"	ASTM A36
7	1 EA	FLEXIBLE DUCT CONNECTION	DURO DYNE
8	2 EA	SILENCER	MARINE GRADE

BID ALT 1

0 8" 16" 2' 2'8" 4' 5'4" 8'
SCALE: 3/8" = 1'-0"

0 3" 6" 9" 1' 2' 3'
SCALE: 1" = 1'-0"

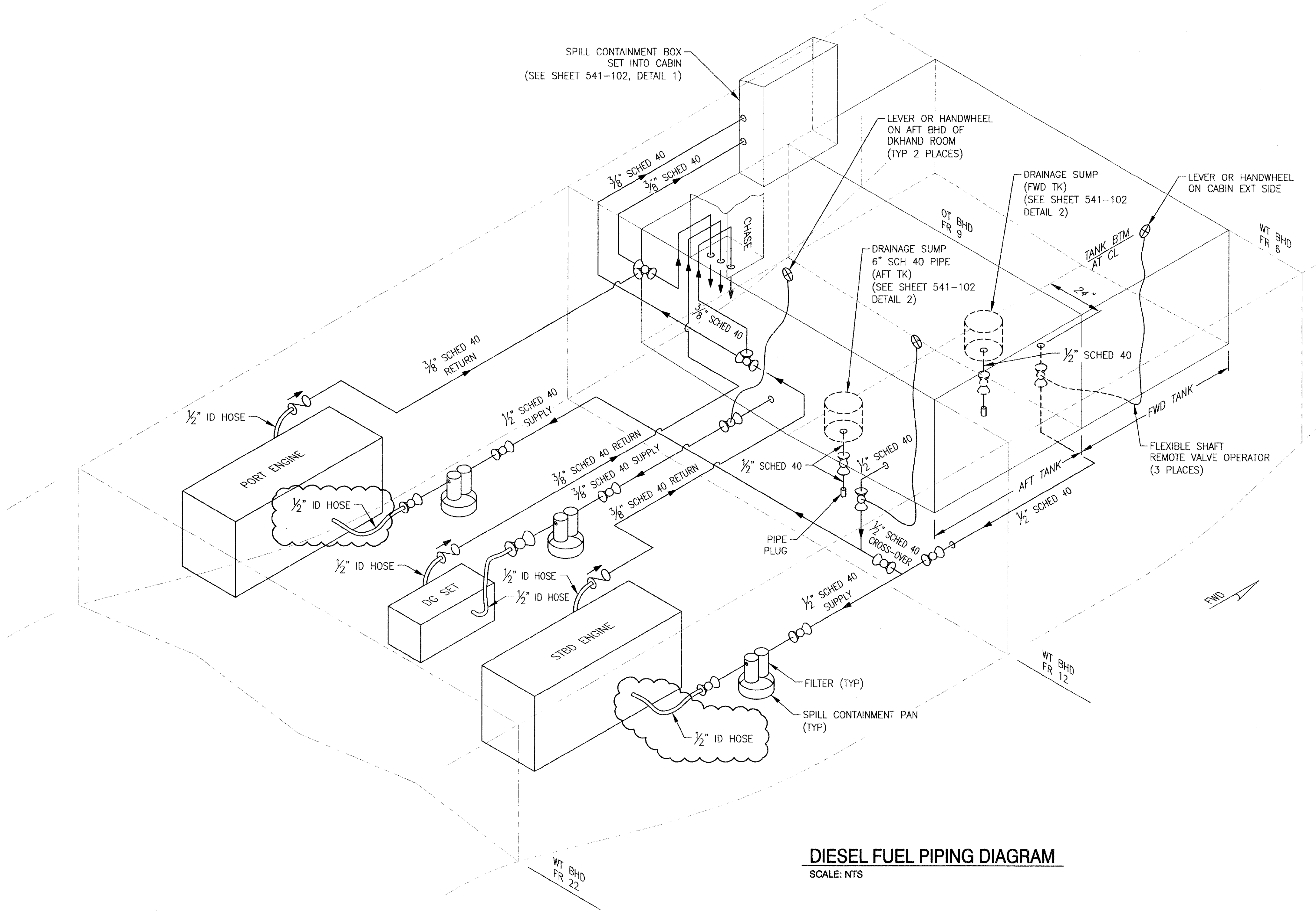
MARTY EDWARD McKAY
STATE OF WASHINGTON
46505
REGISTERED
PROFESSIONAL ENGINEER
28 JUL 2011

ART ANDERSON ASSOCIATES
202 PACIFIC AVE, BREMERTON, WA 98337
(360) 479-5600

DRAWING NO. CEIDT001PB-512-102

FILE NAME =	USER NAME =	DESIGNED — M. McKAY	REVISED —	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	IDOT BRUSSELS FERRY HVAC ARRANGEMENT AND DETAILS - ENGINE ROOM
		DRAWN — C. FAWVER	REVISED —		
	PLOT SCALE =	CHECKED — P. MARTIN	REVISED —		
	PLOT DATE =	DATE — 7/26/2011	REVISED —		SCALE: AS SHOWN | SHEET NO. OF SHEETS | STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	47	34
		CONTRACT NO. 76D29		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



DIESEL FUEL PIPING DIAGRAM

SCALE: NTS

SYMBOLS	
	FLOW DIRECTION
	VALVE, BALL
	VALVE, 3-WAY DIVERTER (SEE NOTE 1)
	VALVE, ANGLE HOSE
	VALVE, CHECK
	FUEL FILTER
	SPILL CONTAINMENT PAN
	PIPE PLUG
	VENT W/ FLAME ARRESTOR
	PIPE CAP
	FLEXIBLE HOSE

NOTES:

1. 3-WAY DIVERTER VALVES TO BE BRONZE, 1/2" SIZE. CONBRACO #70-603-10, OR EQUAL.
2. PROVIDE A TANK LEVEL INDICATOR FOR EACH TANK. HEADHUNTER, MODEL TS-3002B OR EQUAL SEE 401-101. LOCATE FUEL PANEL IN PILOTHOUSE CONSOLE SEE 621-102.

ALAN WINKLEY STATE OF WASHINGTON 24000 REGISTERED PROFESSIONAL ENGINEER 7/28/2011

ART ANDERSON ASSOCIATES 202 PACIFIC AVE. BREMERTON, WA 98337 (360) 479-5600

BID ALT 1

DRAWING NO. CEIDT001PB-541-101

FILE NAME =	USER NAME =	DESIGNED — A. WINKLEY	REVISED —	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	IDOT BRUSSELS FERRY - BID ALTERNATE DIESEL FUEL PIPING - DIAGRAM
		DRAWN — J. WALKER	REVISED —		
	PLOT SCALE =	CHECKED — P. MARTIN	REVISED —		
	PLOT DATE =	DATE — 7/26/2011	REVISED —		SCALE: NTS SHEET NO. OF SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	47	36
		CONTRACT NO. 76D29		

FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT