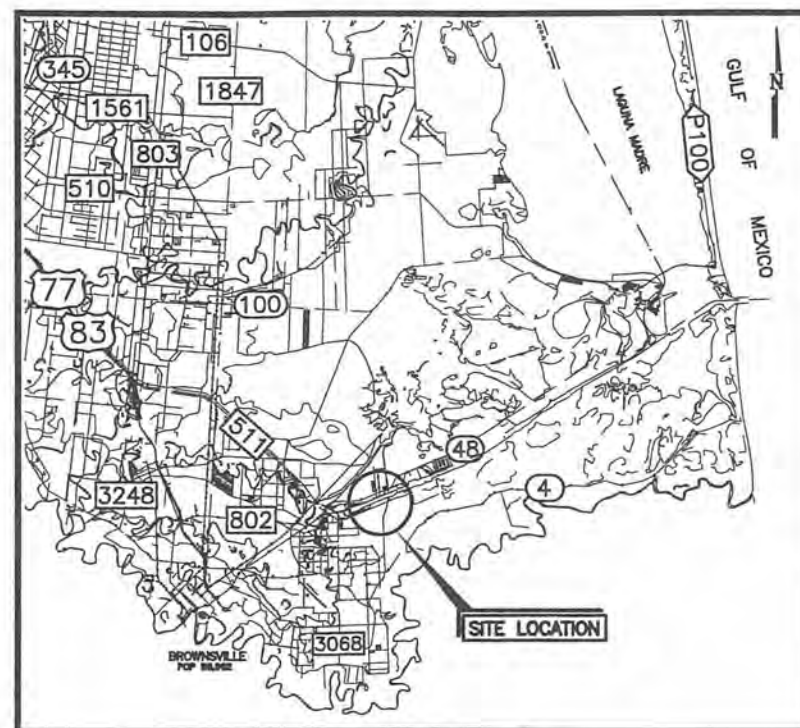


STA. 84+220

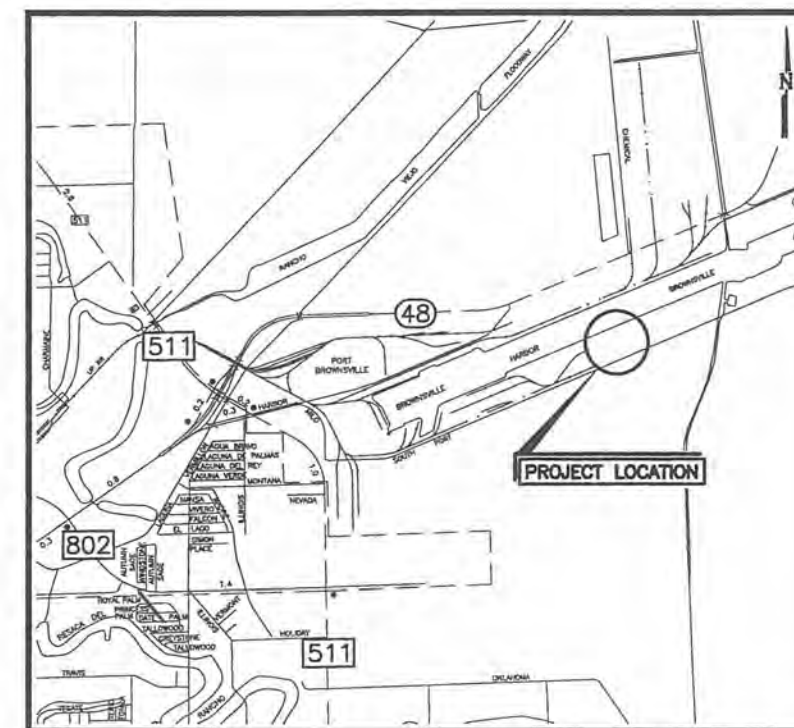
REVISIONS			
MARK	DATE	DESCRIPTION	BY
A	12-10-04	ISSUED FOR REVIEW	JDG
D	12-15-04	ISSUED FOR BID	JDG
1	2-7-05	RE-ISSUED FOR BID	JDG

BROWNSVILLE NAVIGATION DISTRICT

PORT OF BROWNSVILLE



VICINITY MAP



PROJECT LOCATION MAP

SHEET NO	DRAWING LIST
1	TITLE SHEET
2	GENERAL NOTES
3	EXISTING OVERALL DOCK PLAN
4	EXISTING/NEW PARTIAL PILE PLAN SHOWING LOWER BRACING
5	EXISTING/NEW PARTIAL PILE PLAN SHOWING LOWER BRACING
6	EXISTING PARTIAL PILE PLAN SHOWING LOWER BRACING
7	EXISTING/DEMOLITION DOCK SECTION
8	BASE BID/ADDITIVE-BID-NO. 1 -- REPAIRED DOCK SECTION
9	ADDITIVE-BID-NO. 2 -- REPAIRED DOCK SECTION- DELETED SHEET, NOT INCLUDED
10	BASE BID/ADDITIVE-BID-NO. 1 -- PILE DEMOLITION AND REPAIR DETAILS
11	ADDITIVE-BID-NO. 2 -- PILE DEMOLITION AND REPAIR DETAILS- DELETED SHEET, NOT INCLUDED
12	EXISTING/NEW TIMBER FENDER AND EXPANSION JOINT DETAILS
13	EXISTING/DEMOLITION TIMBER FENDER PLAN AND ELEVATION
14	EXISTING/DEMOLITION TIMBER FENDER PLAN AND ELEVATION
15	ADDITIVE BID NO. 1 -- SPALL AND CRACK REPAIR PLAN AND ELEVATION
16	ADDITIVE BID NO. 1 -- SPALL AND CRACK REPAIR PLAN AND ELEVATION
17	ADDITIVE BID NO. 1 -- SPALL AND CRACK REPAIR DETAILS

REHABILITATION OF BULK CARGO DOCK

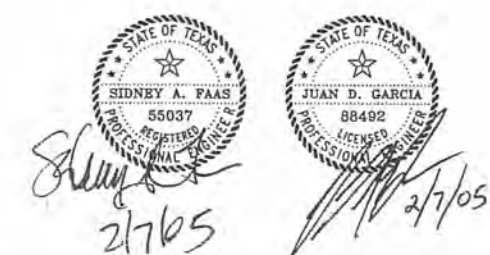
BROWNSVILLE, TEXAS



210 S CARANCAHUA, SUITE 200 (78401)
PO BOX 2886
CORPUS CHRISTI, TX 78403-2886
PHONE: (361) 888-8100
FAX: (361) 888-8600

GEI PROJECT NO A03011-01

FOR REFERENCE
ONLY



1. NOTICE TO CONTRACTORS:

A. GENERALLY THE WORK CONSISTS OF PARTIAL REPAIRS TO A STRUCTURAL STEEL DOCK AND TIMBER FENDER SYSTEM. EXISTING PILES AND BRACES HAVE EXTENSIVE CORROSION AND LOSS OF SECTION IN THE SPLASH ZONE FROM -4.0' MLT (±) TO +4.0' MLT (±). BIDDERS SHALL VISIT THE SITE TO UNDERSTAND EXISTING STEEL STRUCTURE CONDITIONS PRIOR TO BIDDING THE PROJECT. BASE BID WORK INCLUDES THE REMOVAL OF:

1. EXISTING PILE WRAPS AND SLEEVES AT LOCATIONS DESIGNATED IN BASE BID
2. EXISTING HORIZONTAL AND DIAGONAL CROSS-BRACING AT LOCATIONS DESIGNATED IN BASE BID
3. DAMAGED TIMBER PILES DESIGNATED ON SHEETS 13 AND 14 HORIZONTAL AND VERTICAL TIMBERS, RUBBER FENDER ELEMENTS, SLIDE PLATES AND CORRESPONDING HARDWARE
4. ~~DAMAGED/SPALLED CONCRETE~~

B. BASE BID WORK ALSO INCLUDES PROVIDING:

1. REPAIR OF ALL STEEL PILES EXCEPT FOR PILES BELOW WEST APPROACHWAY AND PILES WEST OF THE WEST APPROACHWAY. SEE SHEET 4.
2. NEW STEEL CROSS-BRACING FOR PILES BEING REPAIRED
3. ALL PILES, CROSS-BRACING, REPAIR PLATES, ETC DESIGNATED FOR REPAIR IN BASE BID SHALL BE COATED WITH A COAL TAR EPOXY COATING FROM ELEVATION +1.0' MLT TO +7.0' MLT FOR BASE BID.
4. NEW TIMBER PILES, TIMBERS, SLIDE PLATES AND RUBBER FENDER ELEMENTS (SOME OF THE EXISTING TIMBERS AND PILES ARE REUSED AS NOTED ON THE PLANS)
5. REPAIR OF DAMAGED CONCRETE BY SHOTCRETE OR CONVENTIONAL REPAIR METHODS
6. REPAIR OF EXPANSION JOINT

C. THE REMOVAL OF PILE SLEEVES AND THE REPAIR OF THE STEEL PILES SHALL BE DONE IN AN ALTERNATING SEQUENCE SUCH THAT ADJACENT PILES ARE NOT BEING REPAIRED SIMULTANEOUSLY AND THE STRUCTURAL INTEGRITY OF THE DOCK IS NOT COMPROMISED.

D. ADDITIVE BID ITEM NO 1:

1. IN LIEU OF A COAL TAR EPOXY COATING, ADDITIVE BID ITEM NO 1 INCLUDES AN APPLICATION OF A THERMAL SPRAY ALUMINUM (TSA) COATING TO PILES AND DIAGONAL AND HORIZONTAL BRACES FROM ELEVATION +1.0' MLT TO +7.0' MLT.

1. REPAIR DAMAGED CONCRETE BY SHOTCRETE OR CONVENTIONAL REPAIR METHODS
2. REPAIR EXPANSION JOINT

E. ADDITIVE BID ITEM NO 2:

1. ADDITIVE BID ITEM NO 2 INCLUDES PILE JACKET INSTALLATION AND APPLICATION OF A THERMAL SPRAY ALUMINUM (TSA) COATING TO PILES AND DIAGONAL AND HORIZONTAL BRACES FROM ELEVATION +1.5' MLT TO +10.0' MLT. COAL TAR EPOXY COATING IS DELETED FROM BASE BID.

2. STEEL PILES, CROSS-BRACING AND MISCELLANEOUS STEEL:

- A. ALL STRUCTURAL STEEL SHALL BE FABRICATED IN ACCORDANCE WITH THE SPECIFICATION.
- B. ALL PILES, CROSS-BRACING, REPAIR PLATES, ETC SHALL BE COATED WITH A COAL TAR EPOXY COATING FROM ELEVATION +1.0' MLT TO +7.0' MLT FOR BASE BID.
- ~~C. ALL PILES, CROSS-BRACING, REPAIR PLATES, ETC SHALL BE COATED WITH A THERMAL SPRAY ALUMINUM (TSA) COATING FROM ELEVATION +1.0' MLT TO +7.0' MLT FOR ADDITIVE BID NO 1.~~
- ~~D. ALL PILES, CROSS-BRACING, REPAIR PLATES, ETC SHALL BE COATED WITH A THERMAL SPRAY ALUMINUM (TSA) COATING FROM ELEVATION +1.5' MLT TO +10.0' MLT FOR ADDITIVE BID NO 2.~~
- E. STRUCTURAL STEEL SHALL CONFORM TO ASTM A-36.
- F. ALL WELDS SHALL CONFORM TO AWS SPECIFICATIONS.
- G. ALL WELDS SHALL BE FULL PENETRATION BEVEL WELDS, UNLESS OTHERWISE NOTED.
- H. ALL BOLTS, NUTS AND WASHERS SHALL BE ASTM A-325 HOT DIP GALVANIZED.
- ~~I. FOR ADDITIVE BID NO 2 THE NEW PILE JACKETS SHALL BE WAGO A-P-E TRANSLUCENT FRP JACKETS BY WATSON-BOWMAN AGME (PHONE 1-800-677-1WBA) OR ENGINEER APPROVED EQUAL. EPOXY GROUT SHALL BE WATSON-BOWMAN AGME'S A-P-E GROUT OR APPROVED EQUAL.~~

3. TIMBER FENDER SYSTEM:

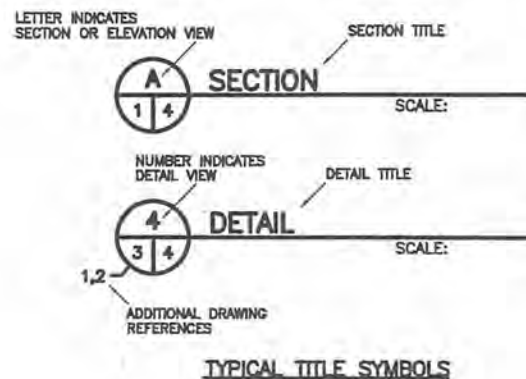
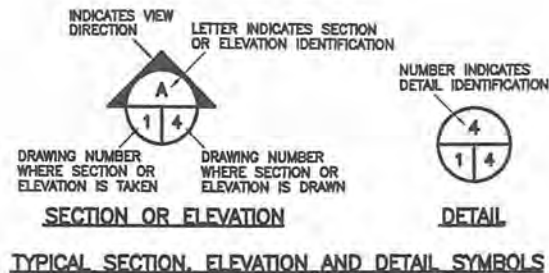
- A. ALL NEW TIMBER PILES SHALL CONFORM TO ASTM D-25, SOUTHERN YELLOW PINE AND BE CCA TREATED IN ACCORDANCE WITH AWPA C3 TO 2.5 pct.
- ~~B. ALL NEW TIMBERS SHALL BE SOUTHERN YELLOW PINE, GRADE NO 1 GR (OR BETTER) AND BE CCA TREATED TO 2.5 pct.~~
- C. ALL BOLTS, NUTS, WASHERS ETC SHALL BE ASTM A-307, HOT DIP GALVANIZED. GALVANIZED CAST IRON OGE WASHERS SHALL BE USED UNDER ALL NUT AND BOLT HEADS BEARING ON TIMBER.
- D. ALL TIMBERS SHALL PREFERABLY BE CUT AND DRILLED BEFORE TREATMENT. FIELD CUTTING AND DRILLING WILL ONLY BE ALLOWED WITH APPROVAL BY OWNER.
- ~~E. RUBBER FENDER ELEMENTS SHALL BE 12"x12"x1'-0" TRELLEX EXTRUDED MARINE FENDER PART NUMBER F5-1000 AVAILABLE FROM J. H. MENGE AND COMPANY, INC., MR. BILL HARTLEY (PHONE 713-224-9750) OR APPROVED EQUAL.~~

4. DEMOLITION NOTES:

- A. CONTRACTOR SHALL SUBMIT PROPOSED DEMOLITION AND REMOVAL PROCEDURE FOR APPROVAL BEFORE WORK IS STARTED. CONTRACTOR SHALL ALSO SUBMIT A METHOD FOR CAPTURING ANY DEMOLISHED MATERIAL (CONCRETE, STEEL, SANDBLASTING MATERIAL, METALLIZED COATING, OVERSPRAYS, ETC) TO PREVENT IT FROM FALLING INTO THE WATER BELOW.
- B. ALL MATERIAL SHALL BECOME THE CONTRACTOR'S PROPERTY AND BE REMOVED FROM THE JOB SITE AND BE PROPERLY DISPOSED OF.

5. BERTHING CRITERIA:

- A. THE FENDER SYSTEM WAS ORIGINALLY DESIGNED TO BERTH BARGES AND SHIPS. THE REPAIR PLANS DATED 3-21-81 ELIMINATED THE LOWER LEVEL RUBBER FENDER ELEMENT. THIS RUBBER FENDER ELEMENT WAS NEEDED FOR BARGE BERTHING. THEREFORE, BARGES SHOULD NOT BERTH AT THE DOCK. THE PURPOSE OF THIS (2004) PROJECT IS TO RESTORE THE DOCK TO THE CAPACITY FOR SHIP BERTHING IN REGARDS TO THE 1981 PLANS.
- B. BASED ON PRIOR BERTHING EXPERIENCE AT THE DOCK, THE MAXIMUM DESIGN VESSEL IS 650' LOA WITH A BEAM WIDTH OF 92' AND A TOTAL DISPLACEMENT OF 53,000 METRIC TONS WITH AN ASSUMED APPROACH VELOCITY OF 0.25 FEET PER SECOND. THE ACTUAL DESIGN VESSEL AND APPROACH VELOCITY IS NOT NOTED ON THE ORIGINAL PLANS DATED JAN 23, 1983.



REBID CONDITIONS:

SCOPE OF WORK IS AS NOTED.

ITEMS FROM THE ORIGINAL BID THAT ARE NOT NEEDED HAVE BEEN DELETED OR STRUCK THROUGH.

ABBREVIATIONS:

ACI	=	AMERICAN CONCRETE INSTITUTE
AGG	=	AGGREGATE
ASTM	=	AMERICAN SOCIETY FOR TESTING AND MATERIALS
BOC	=	BOTTOM OF CONCRETE
BOT	=	BOTTOM
C	=	COMPRESSION
CLR	=	CLEARANCE
CONC	=	CONCRETE
D	=	DIAMETER
DIA	=	DIAMETER
E	=	EAST
EA	=	EACH
EL	=	ELEVATION
EW	=	EACH WAY
EXIST	=	EXISTING
EXP	=	EXPANSION
FT	=	FOOT
GR	=	GRADE
HDG	=	HOT DIP GALVANIZED
HORIZ	=	HORIZONTAL
ID	=	INSIDE DIAMETER
IN	=	INCH
LF	=	LINEAR FEET
MAX	=	MAXIMUM
MIN	=	MINIMUM
MLT	=	MEAN LOW TIDE
MSL	=	MEAN SEA LEVEL
N	=	NORTH
NO	=	NUMBER
NTS	=	NOT TO SCALE
OC	=	ON CENTER
OD	=	OUTSIDE DIAMETER
OH	=	OPPOSITE HAND
PLCS	=	PLACES
PSF	=	POUNDS PER SQUARE FOOT
PSI	=	POUNDS PER SQUARE INCH
P/S	=	PRESTRESSED
PMT	=	PAVEMENT
REIN	=	REINFORCEMENT
S	=	SOUTH
SECT	=	SECTION
SHT	=	SHEET
SIM	=	SIMILAR
SS	=	STAINLESS STEEL
STA	=	STATION
T	=	TENSION
THK	=	THICK
TOC	=	TOP OF CONCRETE
TOG	=	TOP OF GRATE
TS	=	TENSILE STRENGTH
TYP	=	TYPICAL
VERT	=	VERTICAL
W	=	WEST
WP	=	WORKING POINT
YS	=	YIELD STRENGTH
&	=	AND
@	=	AT
#	=	CENTER LINE
%	=	DIAMETER
	=	NUMBER
	=	PERCENT

REVISIONS			
MARK	DATE	DESCRIPTION	BY
A	12-10-04	ISSUED FOR REVIEW	JDG
B	12-15-04	ISSUED FOR BID	JDG
1	2-7-05	RE-ISSUED FOR BID	JDG

DESIGN	J. GARCIA	DATE	7/20/04
DRAWN	J. PEREZ	DATE	7/20/04
CHECKED	J. GARCIA	DATE	12/01/04
APPROVED	S. FAAS	DATE	12/13/04

SEAL AREA	SEAL AREA
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GOLDSTON ENGINEERING INC.
CORPUS CHRISTI HOUSTON

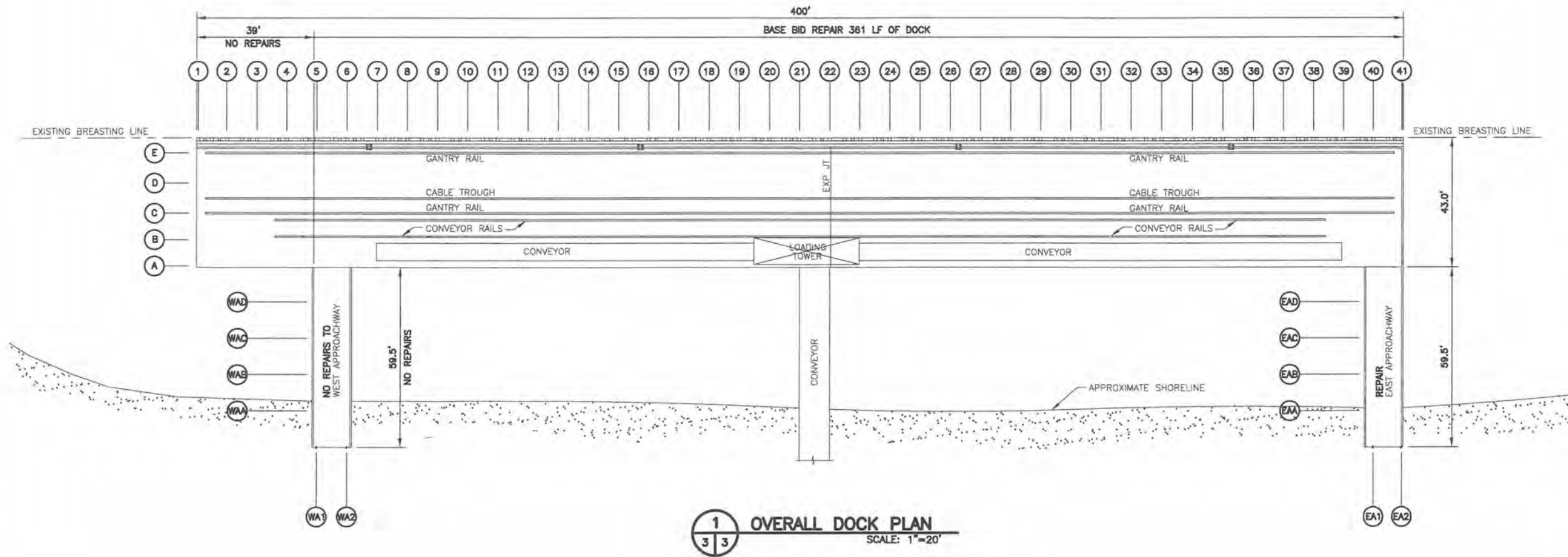


PORT OF BROWNSVILLE
BULK CARGO DOCK
REPAIRS

GENERAL NOTES			
PROJ. NO.	A03011-01	SCALE	2 SHEET OF 17
DRWG. NO.		NOTED	1

FOR REFERENCE
ONLY

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REVISIONS			
MARK	DATE	DESCRIPTION	BY
A	12-10-04	ISSUED FOR REVIEW	JDG
D	12-15-04	ISSUED FOR BID	JDG
1	2-7-05	RE-ISSUED FOR BID	JDG

LEGEND:

- 1 DOCK PILE BENT NUMBER
- E DOCK PILE ROW DESIGNATION
- EA1 EAST APPROACHWAY PILE BENT NUMBER
- EAD EAST APPROACHWAY PILE ROW DESIGNATION

NOTES:

- PORTIONS OF THE DOCK, FENDER SYSTEM PILES, AND EAST APPROACHWAY AND WEST APPROACHWAY REPAIRS ARE INCLUDED IN THIS PROJECT. THE CONVEYOR, LOADING TOWER STRUCTURES AND GANTRY CRANES ARE NOT PART OF THE REPAIR PROJECT. REPAIRS TO THESE STRUCTURES WILL BE MADE BY OTHERS.
- PILE AND CROSS-BRACE REPAIRS ARE NOT NEEDED ON BENTS 1, 2, 3 AND 4 AND THE APPROACHWAY BENTS WAA, WAB, WAC AND WAD.

DESIGN	J. GARCIA	DATE	7/20/04
DRAWN	J. PEREZ	DATE	7/20/04
CHECKED	J. GARCIA	DATE	12/01/04
APPROVED	S. FAAS	DATE	12/13/04
SEAL AREA	SEAL AREA		

2/7/05

GOLDSTON ENGINEERING INC.
CORPUS CHRISTI HOUSTON

PORT OF BROWNSVILLE
BULK CARGO DOCK
REPAIRS

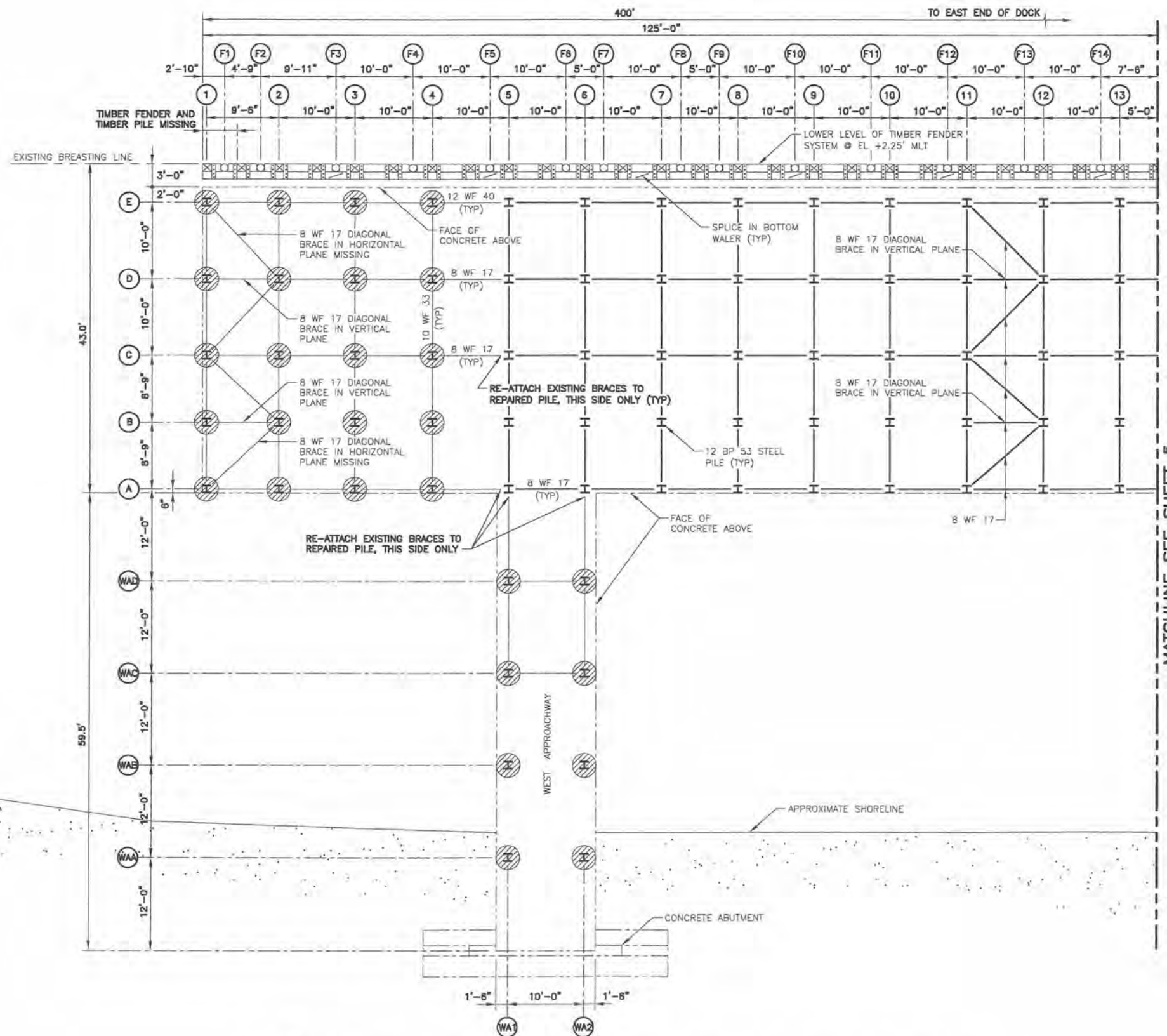
EXISTING OVERALL DOCK PLAN

PROJ. NO.	A03011-01	SCALE	3 SHEET OF 17	REV.	1
DRWG. NO.	NOTED				

**FOR REFERENCE
ONLY**



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1
4 4
EXISTING/NEW PILE PLAN SHOWING LOWER BRACING @ ELEVATION 3.0' MLT
SCALE: 1/8"=1'-0"



REVISIONS			
MARK	DATE	DESCRIPTION	BY
A	12-10-04	ISSUED FOR REVIEW	JDG
D	12-15-04	ISSUED FOR BID	JDG
1	2-7-05	RE-ISSUED FOR BID	JDG

LEGEND:

- 1 DOCK PILE BENT NUMBER
- E DOCK PILE ROW DESIGNATION
- WA1 WEST APPROACHWAY PILE BENT NUMBER
- WAD WEST APPROACHWAY PILE ROW DESIGNATION
- F1 TIMBER FENDER PILE NUMBER
- ⊗ PILES NOT BEING REPAIRED
- |—|— PILES AND BRACES DESIGNATED TO BE REPAIRED/REPLACED
- ⊗ —|—|— PILES AND BRACES DESIGNATED AS NOT BEING REPAIRED

CONSTRUCTION NOTES:

- ALL HORIZONTAL BRACES, DIAGONAL BRACES (WHETHER MISSING OR IN PLACE) IN BOTH THE HORIZONTAL AND VERTICAL PLANES DESIGNATED IN BASE BID SHALL BE REMOVED AND REPLACED WITH NEW MEMBERS. SEE GENERAL NOTES ON SHEET 2 FOR CONSTRUCTION SEQUENCE AND DEMOLITION DOCK SECTION ON SHEET 7.
- DIMENSIONS SHOWN ARE FROM ORIGINAL PLANS AND NOT FIELD VERIFIED. CONTRACTOR SHALL VERIFY ACTUAL DIMENSIONS PRIOR TO FABRICATING MATERIALS.
- BRACES SHOWN IN BOLD PRINT DESIGNATED AS BEING REPLACED. BRACES SHOWN IN LIGHT PRINT WILL NOT BE REPLACED.

DESIGN	J. GARCIA	DATE	7/20/04
DRAWN	J. PEREZ	DATE	7/20/04
CHECKED	J. GARCIA	DATE	12/01/04
APPROVED	S. FAAS	DATE	12/13/04
SEAL AREA			

GOLDSTON ENGINEERING INC.
CORPUS CHRISTI HOUSTON

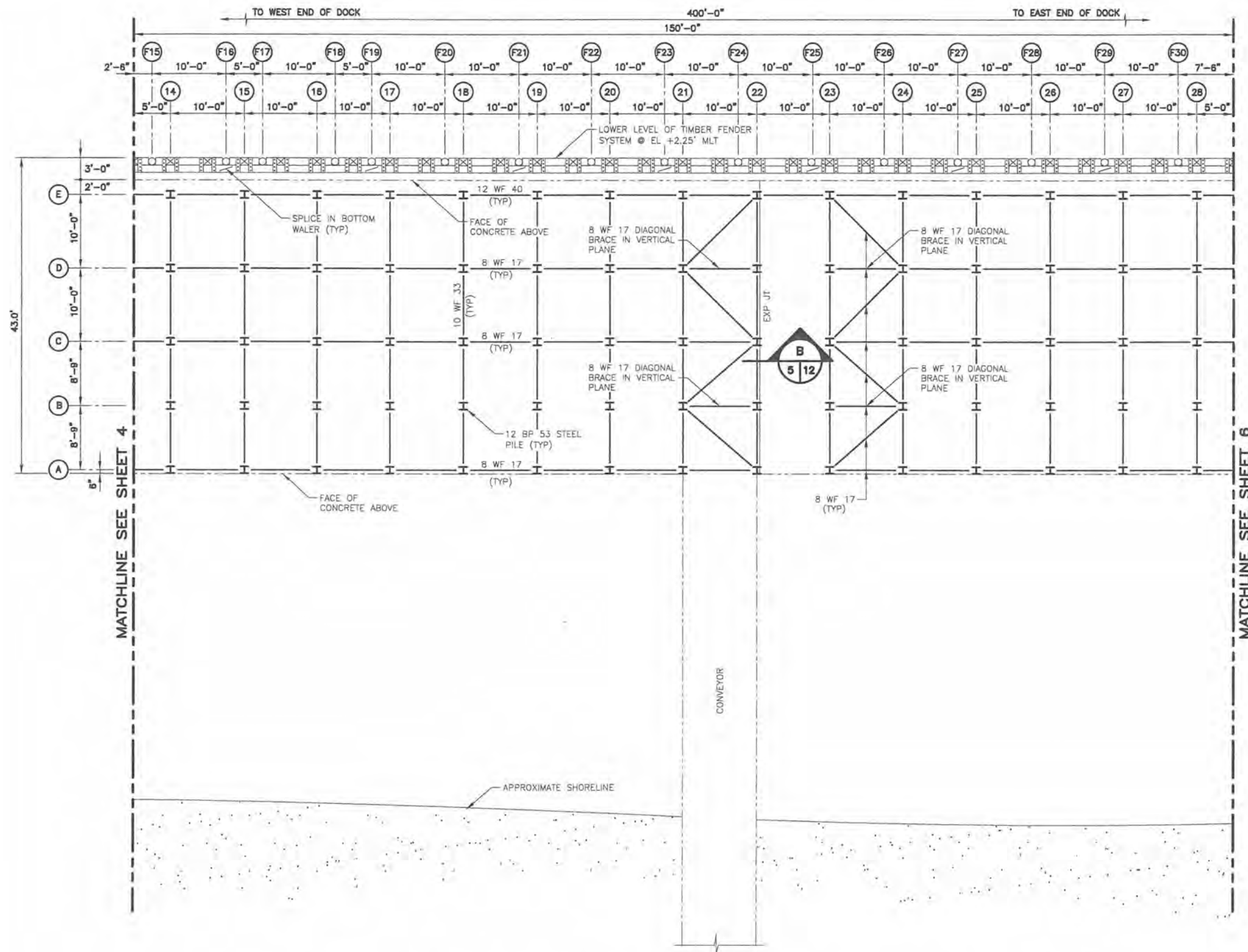
PORT OF BROWNSVILLE
BULK CARGO DOCK
REPAIRS

EXISTING/NEW PARTIAL PILE PLAN
SHOWING LOWER BRACING

PROJ. NO.	A030111-01	SCALE	4 SHEET 17	REV.	1
DRWG. NO.	NOTED				

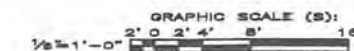
FOR REFERENCE
ONLY

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13:39



1
5 5
EXISTING/NEW PILE PLAN SHOWING LOWER BRACING @ ELEVATION 3.0' MLT
SCALE: 1/8"=1'-0"

FOR REFERENCE
ONLY



REVISIONS			
MARK	DATE	DESCRIPTION	BY
A	12-10-04	ISSUED FOR REVIEW	JDG
D	12-15-04	ISSUED FOR BID	JDG
1	2-7-05	RE-ISSUED FOR BID	JDG

LEGEND:

15 DOCK PILE BENT NUMBER
E DOCK PILE ROW DESIGNATION
F16 TIMBER FENDER PILE NUMBER

CONSTRUCTION NOTES:

1. ALL HORIZONTAL BRACES, DIAGONAL BRACES (WHETHER MISSING OR IN PLACE) IN BOTH THE HORIZONTAL AND VERTICAL PLANES DESIGNATED IN BASE BID SHALL BE REMOVED AND REPLACED WITH NEW MEMBERS. SEE GENERAL NOTES ON SHEET 2 FOR CONSTRUCTION SEQUENCE AND DEMOLITION DOCK SECTION ON SHEET 7.

2. DIMENSIONS SHOWN ARE FROM ORIGINAL PLANS AND NOT FIELD VERIFIED. CONTRACTOR SHALL VERIFY ACTUAL DIMENSIONS PRIOR TO FABRICATING MATERIALS.

DESIGN	J. GARCIA	DATE	7/20/04
DRAWN	J. PEREZ	DATE	7/20/04
CHECKED	J. GARCIA	DATE	12/01/04
APPROVED	S. FAAS	DATE	12/13/04
SEAL AREA			

GOLDSTON ENGINEERING INC.
CORPUS CHRISTI HOUSTON

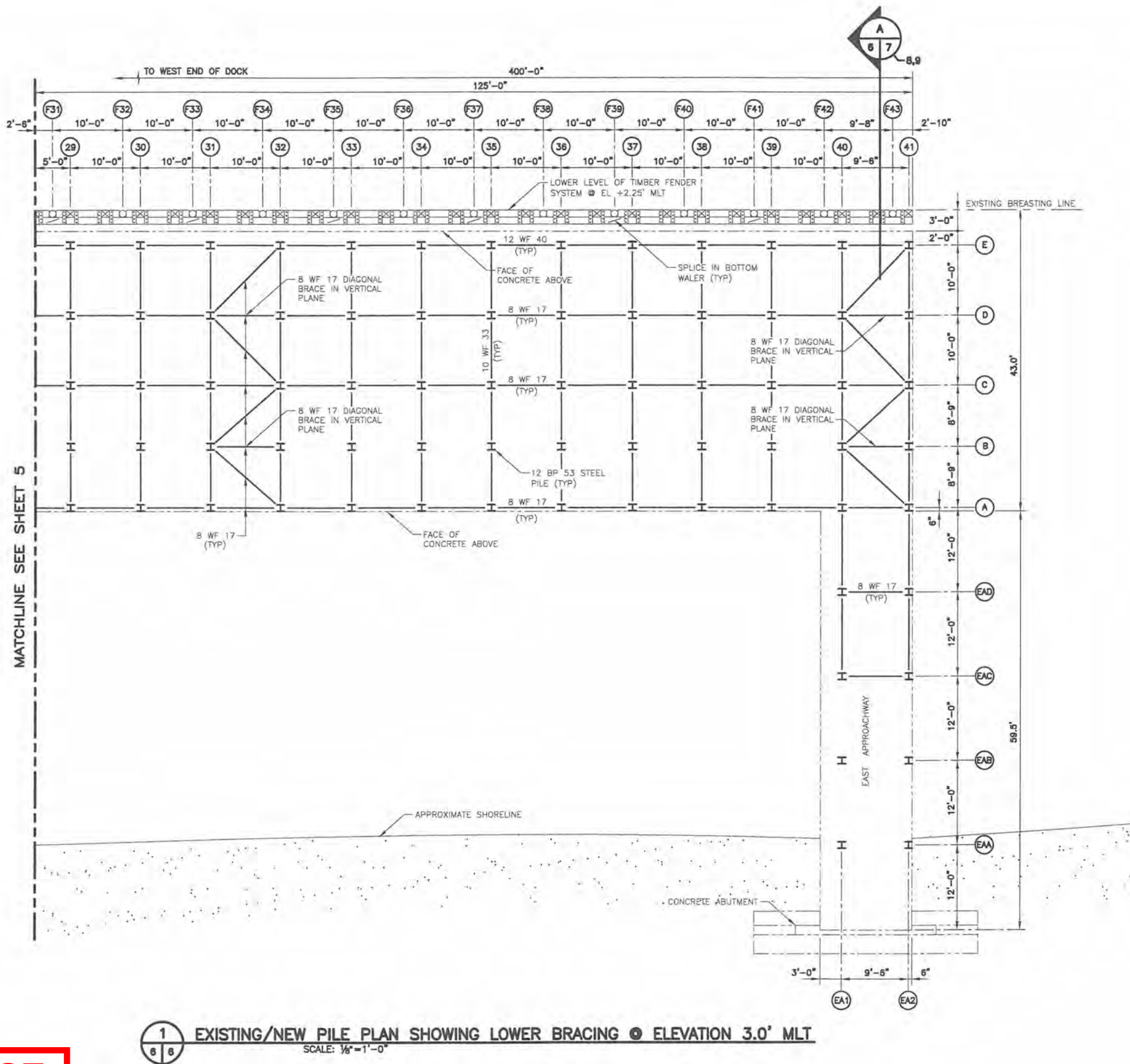
PORT OF BROWNSVILLE
BULK CARGO DOCK REPAIRS

EXISTING/NEW PARTIAL PILE PLAN SHOWING LOWER BRACING

PROJ. NO.	A03011-01	SCALE	5 SHEET OF 17	REV.	1
DRWG. NO.		NOTED			

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FOR REFERENCE
ONLY



REVISIONS			
MARK	DATE	DESCRIPTION	BY
A	12-10-04	ISSUED FOR REVIEW	JDG
B	12-15-04	ISSUED FOR BID	JDG
1	2-7-05	RE-ISSUED FOR BID	JDG

LEGEND:

- 30 DOCK PILE BENT NUMBER
- E DOCK PILE ROW DESIGNATION
- EA1 EAST APPROACHWAY PILE BENT NUMBER
- EAD EAST APPROACHWAY PILE ROW DESIGNATION
- F32 TIMBER FENDER PILE NUMBER

CONSTRUCTION NOTES:

- ALL HORIZONTAL BRACES, DIAGONAL BRACES (WHETHER MISSING OR IN PLACE) IN BOTH THE HORIZONTAL AND VERTICAL PLANES DESIGNATED IN BASE BID SHALL BE REMOVED AND REPLACED WITH NEW MEMBERS. SEE GENERAL NOTES ON SHEET 2 FOR CONSTRUCTION SEQUENCE AND DEMOLITION DOCK SECTION ON SHEET 7.
- DIMENSIONS SHOWN ARE FROM ORIGINAL PLANS AND NOT FIELD VERIFIED. CONTRACTOR SHALL VERIFY ACTUAL DIMENSIONS PRIOR TO FABRICATING MATERIALS.

DESIGN	J. GARCIA	DATE	7/20/04
DRAWN	J. PEREZ	DATE	7/20/04
CHECKED	J. GARCIA	DATE	12/01/04
APPROVED	S. FAAS	DATE	12/13/04
SEAL AREA			

GOLDSTON ENGINEERING INC.
CORPUS CHRISTI HOUSTON

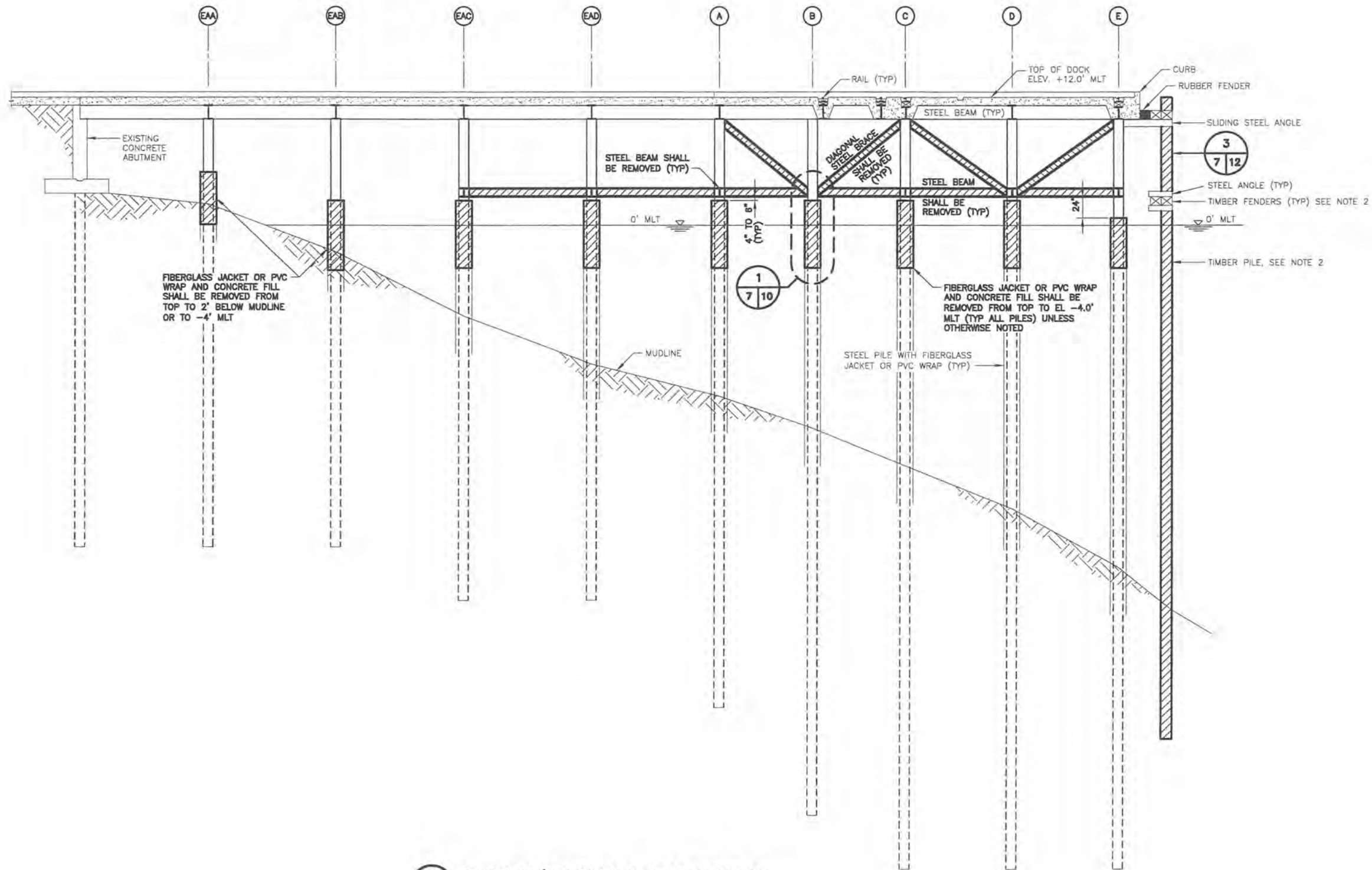
PORT OF BROWNSVILLE
BULK CARGO DOCK
REPAIRS

EXISTING/NEW PARTIAL PILE PLAN
SHOWING LOWER BRACING

PROJ. NO.	A03011-01	SCALE	6 SHEET 17	REV.	1
DRWG. NO.	NOTED				

Project Drawings\A03011-01 Port of Brownsville BC Dock\Drawings\A03011-01 Sht 07-09.dwg
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FOR REFERENCE
ONLY



EXISTING/DEMOLITION DOCK SECTION
SCALE: 3/16"=1'-0"

REVISIONS

MARK	DATE	DESCRIPTION	BY
A	12-10-04	ISSUED FOR REVIEW	JDG
D	12-15-04	ISSUED FOR BID	JDG
1	2-7-05	RE-ISSUED FOR BID	JDG

NOTES:

- ALL HORIZONTAL BRACES, DIAGONAL BRACES (WHETHER MISSING OR IN PLACE) IN BOTH THE HORIZONTAL AND VERTICAL PLANES SHALL BE REMOVED AND REPLACED WITH NEW MEMBERS OF EQUAL SIZE AND SHAPE AND BE WELDED BY FULL PENETRATION WELD TO PILE AT THE SAME ELEVATION. SEE GENERAL NOTES ON SHEET 2 FOR CONSTRUCTION SEQUENCE AND THIS SHEET.
- NOT ALL TIMBER FENDER PILES AND MEMBERS WILL BE REMOVED. SEE SHEETS 13 AND 14 FOR TIMBER FENDER DEMOLITION.
- REMOVAL OF JACKETS OR PVC WRAPS AND PILE REPAIRS SHALL BE DONE IN AN ALTERNATING SEQUENCE, SUCH THAT ADJACENT PILES ARE NOT BEING REPAIRED AT THE SAME TIME AND THE STRUCTURAL INTEGRITY OF DOCK IS NOT COMPROMISED.
- TIDE LEVEL VARIES FROM +2' MLT TO 0' MLT. TIDES ARE OCCASIONALLY HIGHER OR LOWER THAN AVERAGE.
- EXISTING MUDLINE ELEVATION SHOWN WAS TAKEN FROM A SURVEY PERFORMED ON 3-23-03. EXISTING MUDLINE ELEVATION MAY VARY FROM PROFILE SHOWN.
- DIMENSIONS SHOWN ARE FROM ORIGINAL PLANS AND NOT FIELD VERIFIED. CONTRACTOR SHALL VERIFY ACTUAL DIMENSIONS PRIOR TO FABRICATING MATERIALS.
- SECTION SHOWN ON THIS PLAN APPLIES TO A TYPICAL DEMOLITION SECTION THROUGH THE EAST APPROACHWAY. WEST APPROACHWAY WILL HAVE NO DEMOLITION.

LEGEND:

 TO BE REMOVED/DEMOLISHED

DESIGN	J. GARCIA	DATE	7/20/04
DRAWN	J. PEREZ	DATE	7/20/04
CHECKED	J. GARCIA	DATE	12/01/04
APPROVED	S. FAAS	DATE	12/13/04

SEAL AREA



SEAL AREA


GOLDSTON ENGINEERING INC.
CORPUS CHRISTI HOUSTON

PORT OF BROWNSVILLE
BULK CARGO DOCK
REPAIRS

**EXISTING/DEMOLITION
DOCK SECTION**

PROJ. NO.	A03011-01	SCALE	7 SHEET OF 17	REV.	1
DRWG. NO.		NOTED			

**FOR REFERENCE
ONLY**



REVISIONS			
MARK	DATE	DESCRIPTION	BY
A	12-10-04	ISSUED FOR REVIEW	JDG
D	12-15-04	ISSUED FOR BID	JDG
I	2-7-05	RE-ISSUED FOR BID	JDG

NOTE:

1. SEE SHEETS 10, 11 AND 12 FOR TIMBER FENDER REPAIRS.
2. BASE BID INCLUDES APPLICATION OF A COAL TAR EPOXY COATING TO PILES AND DIAGONAL AND HORIZONTAL BRACES FROM ELEVATION +1.0' MLT TO +7.0' MLT.
- ~~3. ADDITIVE BID NO 1 INCLUDES APPLICATION OF A THERMAL SPRAY ALUMINUM (TSA) COATING TO PILES AND DIAGONAL AND HORIZONTAL BRACES FROM ELEVATION +1.0' MLT TO +7.0' MLT.~~
4. REPAIRED SECTION SHOWN ON THIS PLAN APPLIES TO A TYPICAL SECTION THROUGH THE EAST APPROACHWAY. WEST APPROACHWAY WILL HAVE NO REPAIRS.

DESIGN	J. GARCIA	DATE	7/20/04
DRAWN	J. PEREZ	DATE	7/20/04
CHECKED	J. GARCIA	DATE	12/01/04
APPROVED	S. FAAS	DATE	12/13/04
SEAL AREA	SEAL AREA		



2/7/05



GOLDSTON ENGINEERING INC.
CORPUS CHRISTI HOUSTON

PORT OF

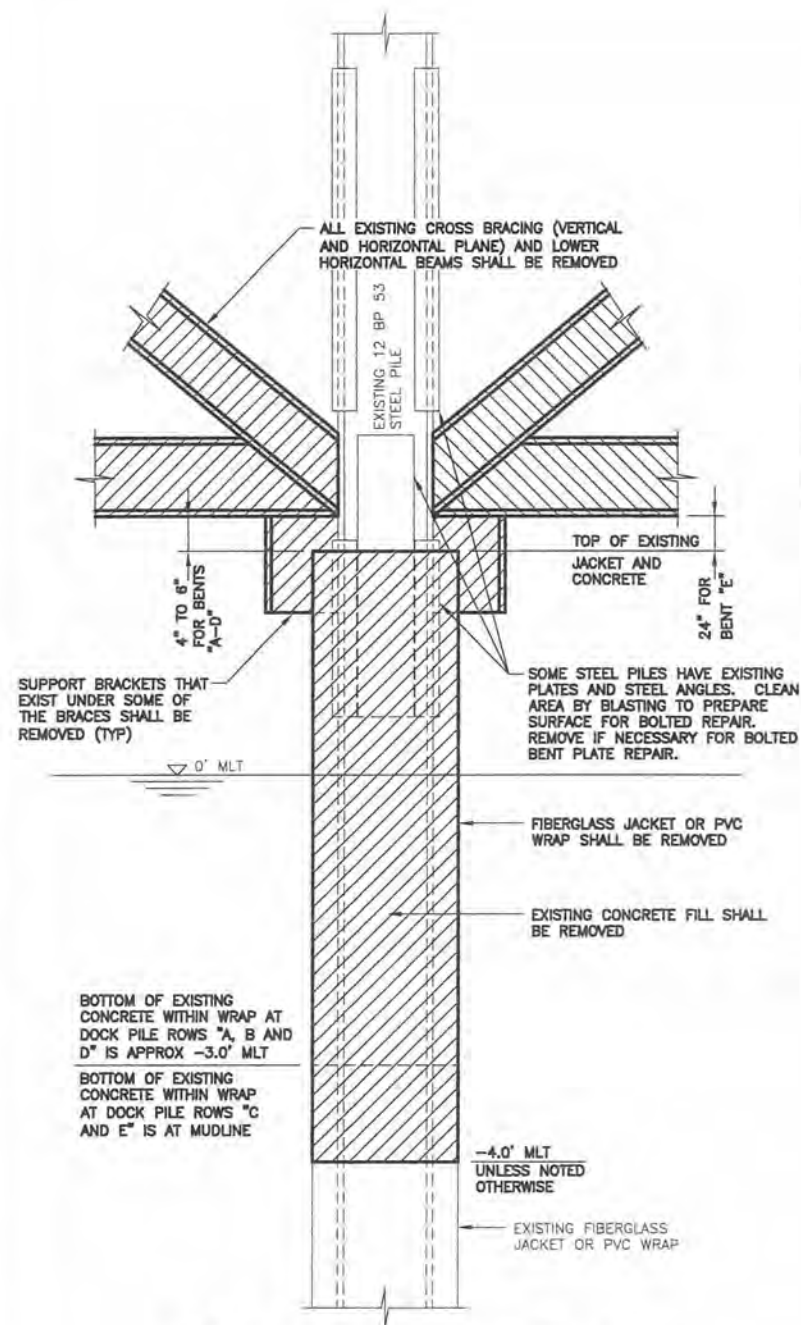


BROWNSVILLE
BULK CARGO DOCK
REPAIRS

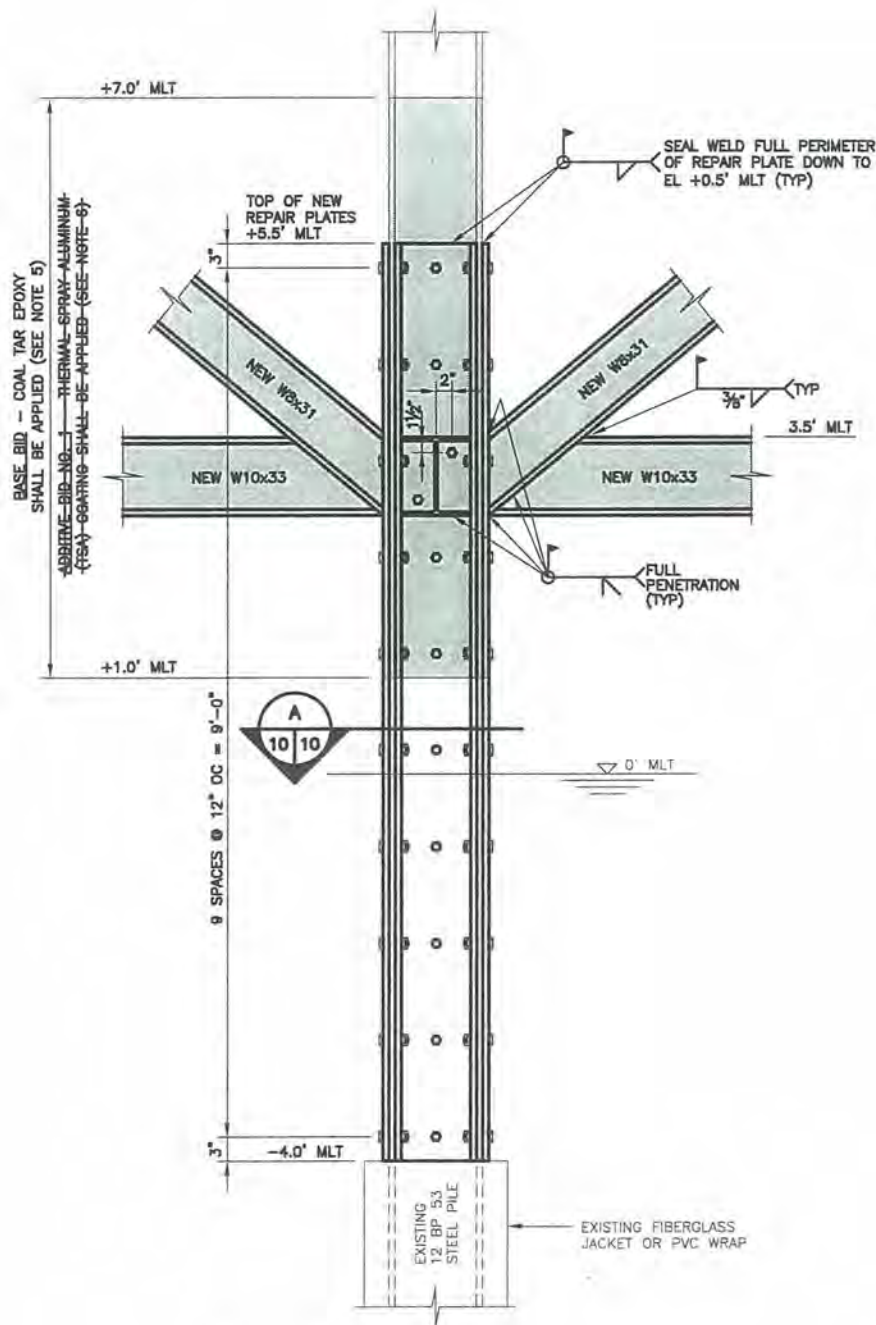
BASE BID/ADDITIVE BID NO. 1
REPAIRED DOCK SECTION

PROJ. NO.	A03011-01	SCALE	8	SHEET OF	17	REV.	1
DRWG. NO.		NOTED					

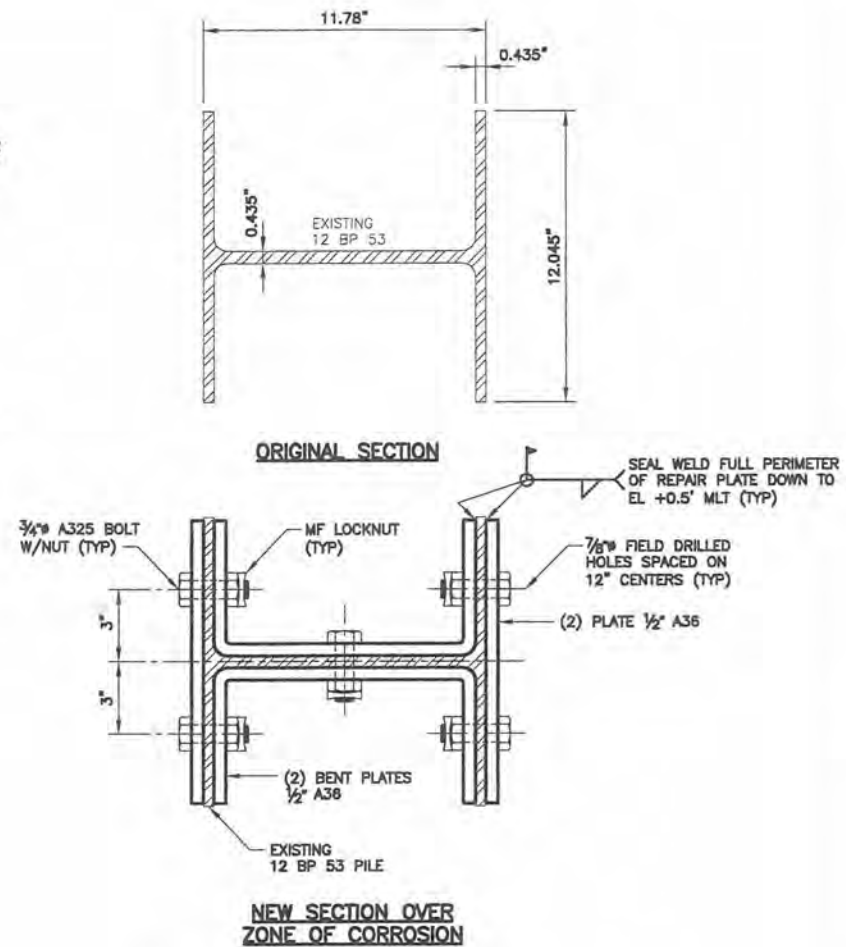
S:\Project Drawings\A03011-01 Port of Brownsville BC Dock\Wg-Repairs\A03011-01 Sht 10-11.dwg
E: 13:43



1
7/10
PILE DEMOLITION DETAIL
SCALE: 1"=1'-0"



2
8/10
PILE REPAIR DETAIL
BASE BID AND ADDITIVE BID NO. 1
SCALE: 1"=1'-0"



A
10/10
PILE REPAIR SECTION
SCALE: 1"=1'-0"

REVISIONS			
MARK	DATE	DESCRIPTION	BY
A	12-10-04	ISSUED FOR REVIEW	JDG
B	12-15-04	ISSUED FOR BID	JDG
1	2-7-05	RE-ISSUED FOR BID	JDG

NOTES:

- EXISTING JACKETS OR WRAPS AND CONCRETE FILL SHALL BE REMOVED AS SHOWN.
- EXISTING STEEL PILES SHALL BE SAND BLASTED, WATER BLASTED OR HAND ABRASDED TO NEAR WHITE FROM EL +7.0' MLT TO -4.0' MLT.
- INSERT WASHERS AND SHIMS AS REQUIRED ACROSS DETERIORATED PILE SUCH THAT SPLICE PLATES FIT TIGHTLY.
- ALL HOLES FOR NEW BOLTS SHALL BE FIELD DRILLED AND NOT FLAME BURNED. FOR BOLTED CONNECTIONS, TIGHTEN NUTS TO A "SNUG-TIGHT" FIT, WHICH IS THE TIGHTNESS THAT EXISTS WHEN PLATES IN A JOINT ARE IN FIRM CONTACT. SEE PART 3 SECTION T-05100 SPECIFICATIONS FOR FURTHER INFORMATION REGARDING CONNECTIONS.
- FOR BASE BID, ALL STEEL PILES AND CROSS-BRACES FROM +1.0' MLT TO +7.0' MLT SHALL BE PAINTED WITH A COAL TAR EPOXY PAINT (BLACK) TO A 16 MIL DFT MANUFACTURED BY AMERON INTERNATIONAL OR APPROVED EQUAL COATING SHALL BE APPLIED PER MANUFACTURER'S REQUIREMENTS.
- FOR ADDITIVE BID NO. 1, ALL STEEL PILES AND CROSS-BRACES FROM +1.0' MLT TO +7.0' MLT SHALL BE METALLIZED USING A THERMAL SPRAY ALUMINUM (TSA) COATING. SEE SPECIFICATION T-05100.

LEGEND:

-  TO BE REMOVED/DEMOLISHED
-  TO BE COATED BY COAL TAR EPOXY (BASE BID) OR THERMAL SPRAY ALUMINUM (TSA) COATING (ADDITIVE BID NO. 1)

DESIGN	J. GARCIA	DATE	7/20/04
DRAWN	J. PEREZ	DATE	7/20/04
CHECKED	J. GARCIA	DATE	12/01/04
APPROVED	S. FAAS	DATE	12/13/04

SEAL AREA



GOLDSTON ENGINEERING INC.
CORPUS CHRISTI HOUSTON

PORT OF BROWNSVILLE
BULK CARGO DOCK
REPAIRS

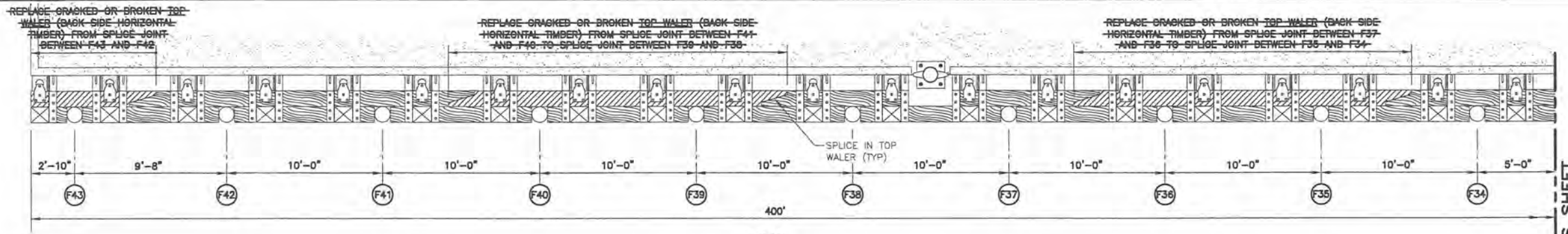
**BASE BID/ADDITIVE BID NO. 1 - PILE
DEMOLITION AND REPAIR DETAILS**

PROJ. NO.	A03011-01	SCALE	10 SHEET OF 17	REV.	1
DRWG. NO.		NOTED			

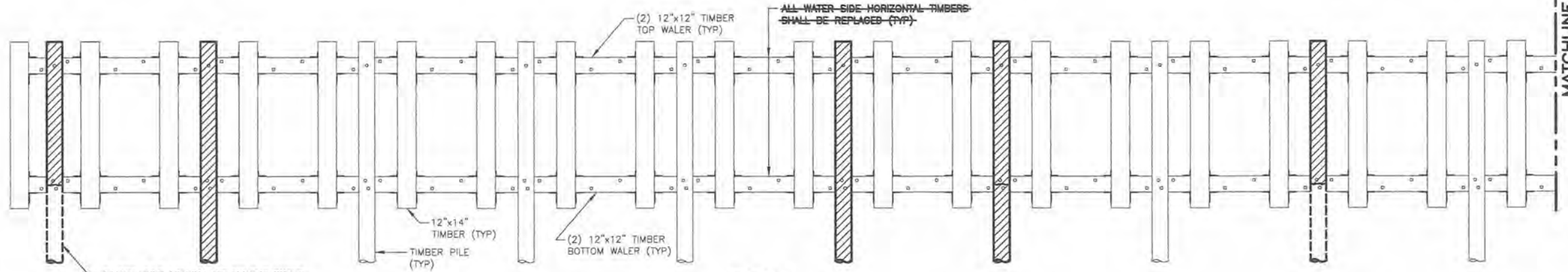
GRAPHIC SCALE (S):
1"=1'-0"

**FOR REFERENCE
ONLY**

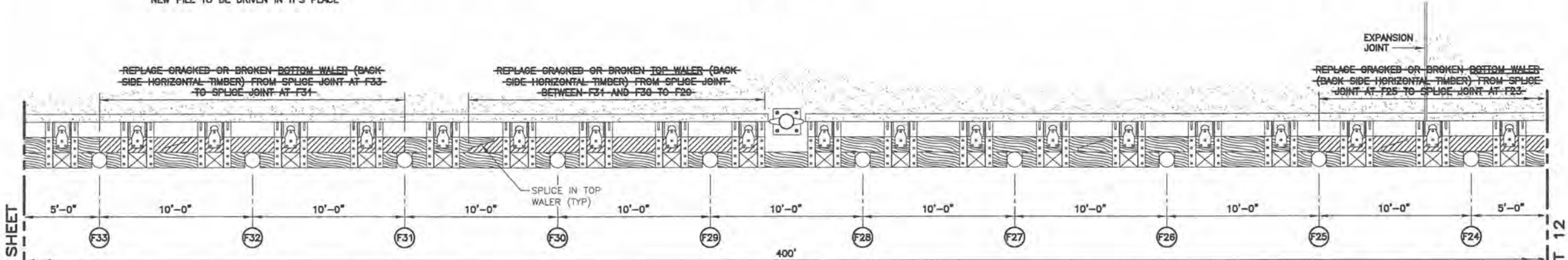
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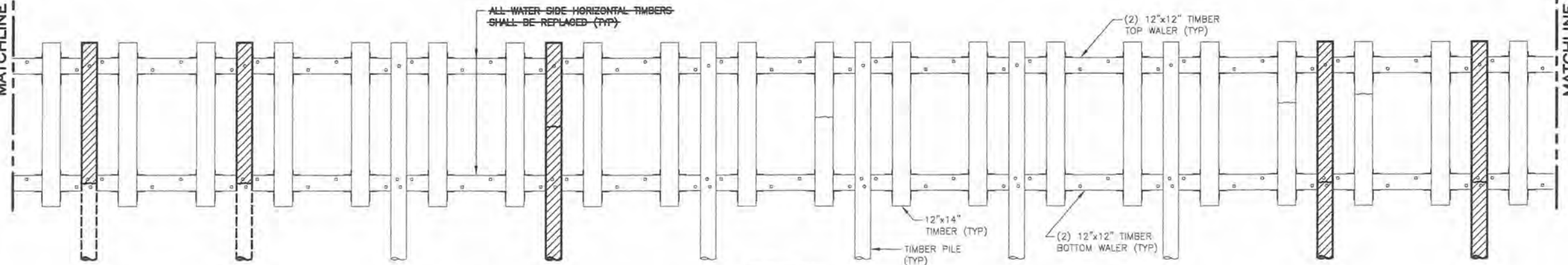
PLAN



ELEVATION



PLAN



ELEVATION

1 EXISTING/DEMOLITION TIMBER FENDER PLAN AND ELEVATION
13 13
SCALE: 1/4"=1'-0"



REVISIONS			
MARK	DATE	DESCRIPTION	BY
A	12-10-04	ISSUED FOR REVIEW	JDG
D	12-15-04	ISSUED FOR BID	JDG
1	2-7-05	RE-ISSUED FOR BID	JDG

- LEGEND:
- SEVERELY DAMAGED TIMBER TO BE REPLACED
 - MISSING TIMBER TO BE REPLACED
 - TIMBER IN GOOD CONDITION TO BE REUSED
 - TIMBER FENDER PILE NUMBER

- NOTES:
- ALL WATER SIDE HORIZONTAL 12"x12" TIMBERS TO BE REPLACED.
 - ALL BACK SIDE HORIZONTAL 12"x12" TIMBERS TO BE REUSED EXCEPT AS NOTED ON SHEETS 13 AND 14.
 - TIMBER PILES TO BE REMOVED SHALL BE REMOVED ENTIRELY TO ALLOW NEW PILE TO BE DRIVEN IN IT'S PLACE.
 - BOLTS IN MEMBERS TO BE REPLACED SHALL BE REMOVED AND NEW BOLTS INSTALLED.
 - DIMENSIONS SHOWN FOR SPACING OF PILES AND TIMBERS ARE APPROXIMATE AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR BEFORE FABRICATION.
 - ALL HARDWARE ASSOCIATED WITH THE FENDER SYSTEM, EXCEPT WHAT IS SHOWN AS GOOD CONDITION TO BE REUSED, SHALL BE REMOVED AND REPLACED WITH NEW HARDWARE.

DESIGN	J. GARCIA	DATE	7/20/04
DRAWN	J. PEREZ	DATE	7/20/04
CHECKED	J. GARCIA	DATE	12/01/04
APPROVED	S. FAAS	DATE	12/13/04
SEAL AREA		SEAL AREA	



GOLDSTON ENGINEERING INC.
CORPUS CHRISTI HOUSTON

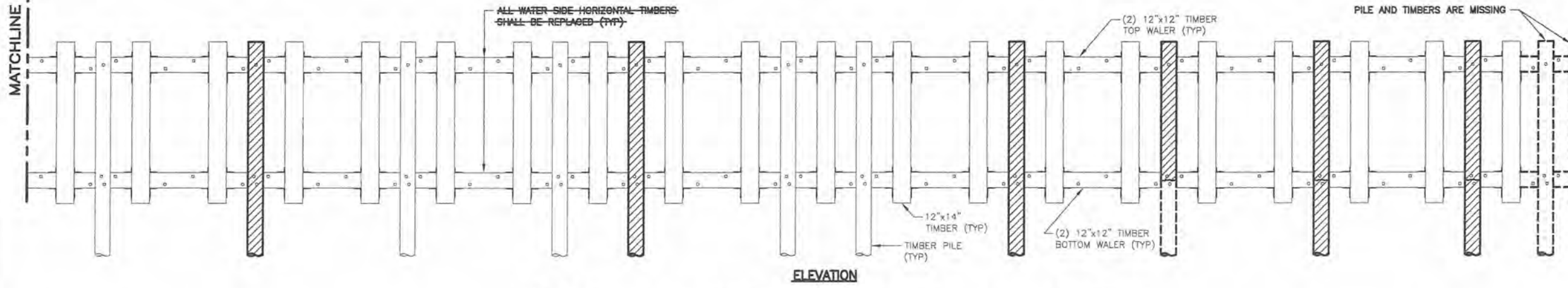
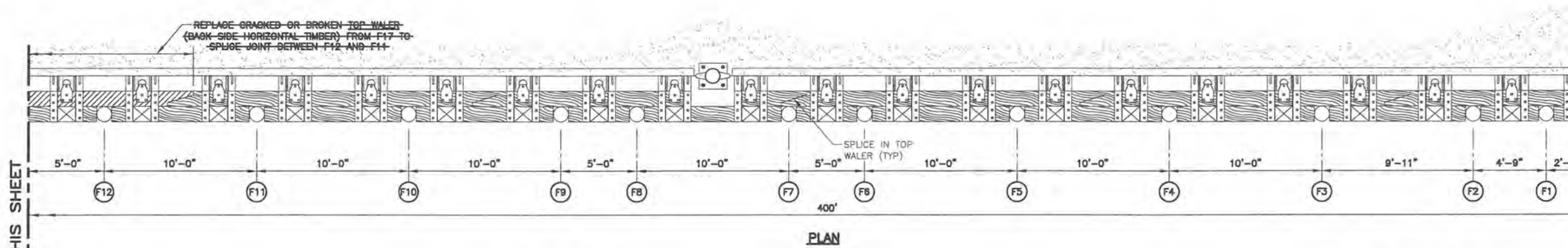
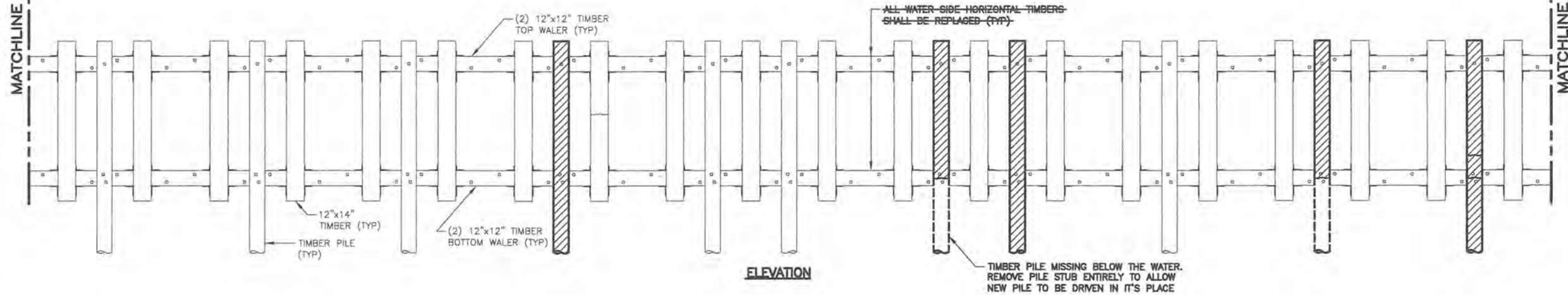
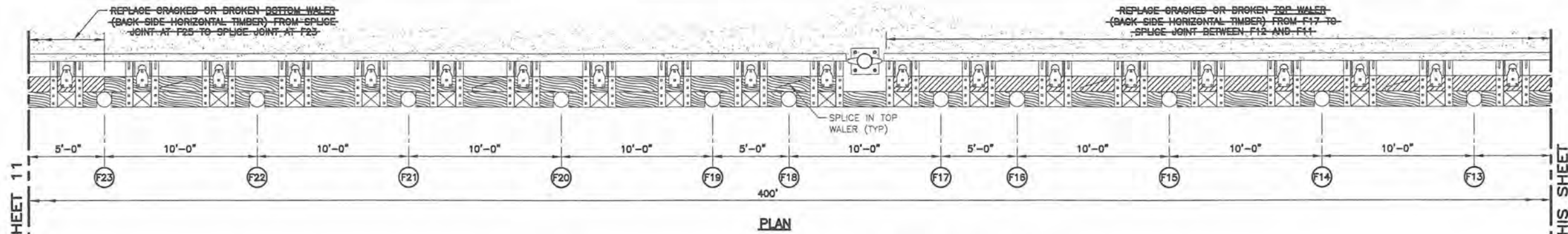
PORT OF BROWNSVILLE
BULK CARGO DOCK
REPAIRS

**EXISTING/DEMOLITION TIMBER
FENDER PLAN AND ELEVATION**

PROJ. NO. A03011-01	SCALE NOTED	13 SHEET OF 17	REV. 1
DRWG. NO.			

FOR REFERENCE ONLY

Project Drawings\A03011-01 Port of Brownsville BC Dock\Drawings\A03011-01 Sht 13-14.dwg
13:44



1 EXISTING/DEMOLITION TIMBER FENDER PLAN AND ELEVATION
SCALE: 1/4"=1'-0"



REVISIONS			
MARK	DATE	DESCRIPTION	BY
A	12-10-04	ISSUED FOR REVIEW	JDG
0	12-15-04	ISSUED FOR BID	JDG
1	2-7-05	RE-ISSUED FOR BID	JDG

- LEGEND:
- SEVERELY DAMAGED TIMBER TO BE REPLACED
 - MISSING TIMBER TO BE REPLACED
 - TIMBER IN GOOD CONDITION TO BE REUSED
 - (F18) TIMBER FENDER PILE NUMBER

- NOTES:
- ALL WATER-SIDE HORIZONTAL 12"x12" TIMBERS TO BE REPLACED.
 - ALL BACK-SIDE HORIZONTAL 12"x12" TIMBERS TO BE REUSED EXCEPT AS NOTED ON SHEETS 13 AND 14.
 - TIMBER PILES TO BE REMOVED SHALL BE REMOVED ENTIRELY TO ALLOW NEW PILE TO BE DRIVEN IN ITS PLACE.
 - BOLTS IN MEMBERS TO BE REPLACED SHALL BE REMOVED AND NEW BOLTS INSTALLED.
 - DIMENSIONS SHOWN FOR SPACING OF PILES AND TIMBERS ARE APPROXIMATE AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR BEFORE FABRICATION.
 - ALL HARDWARE ASSOCIATED WITH THE FENDER SYSTEM EXCEPT WHAT IS SHOWN AS GOOD CONDITION TO BE REUSED, SHALL BE REMOVED AND REPLACED WITH NEW HARDWARE.

DESIGN	J. GARCIA	DATE	7/20/04
DRAWN	J. PEREZ	DATE	7/20/04
CHECKED	J. GARCIA	DATE	12/01/04
APPROVED	S. FAAS	DATE	12/13/04
SEAL AREA		SEAL AREA	



GOLDSTON ENGINEERING INC.
CORPUS CHRISTI HOUSTON

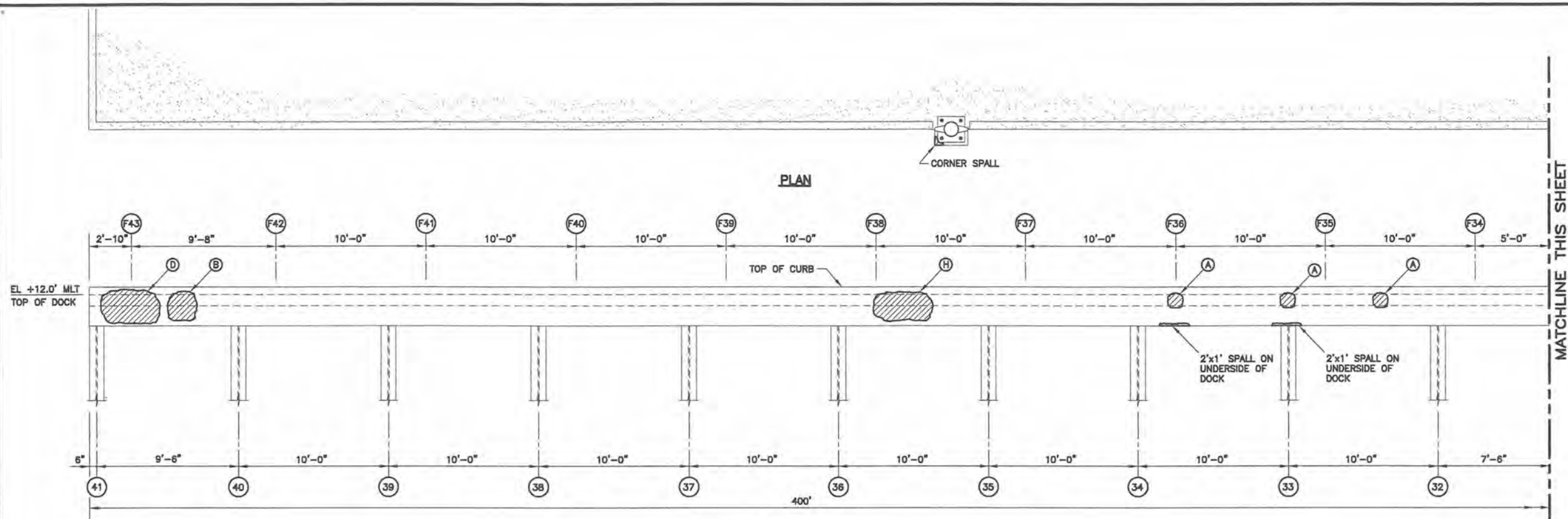
PORT OF BROWNSVILLE
BULK CARGO DOCK
REPAIRS

EXISTING/DEMOLITION TIMBER
FENDER PLAN AND ELEVATION

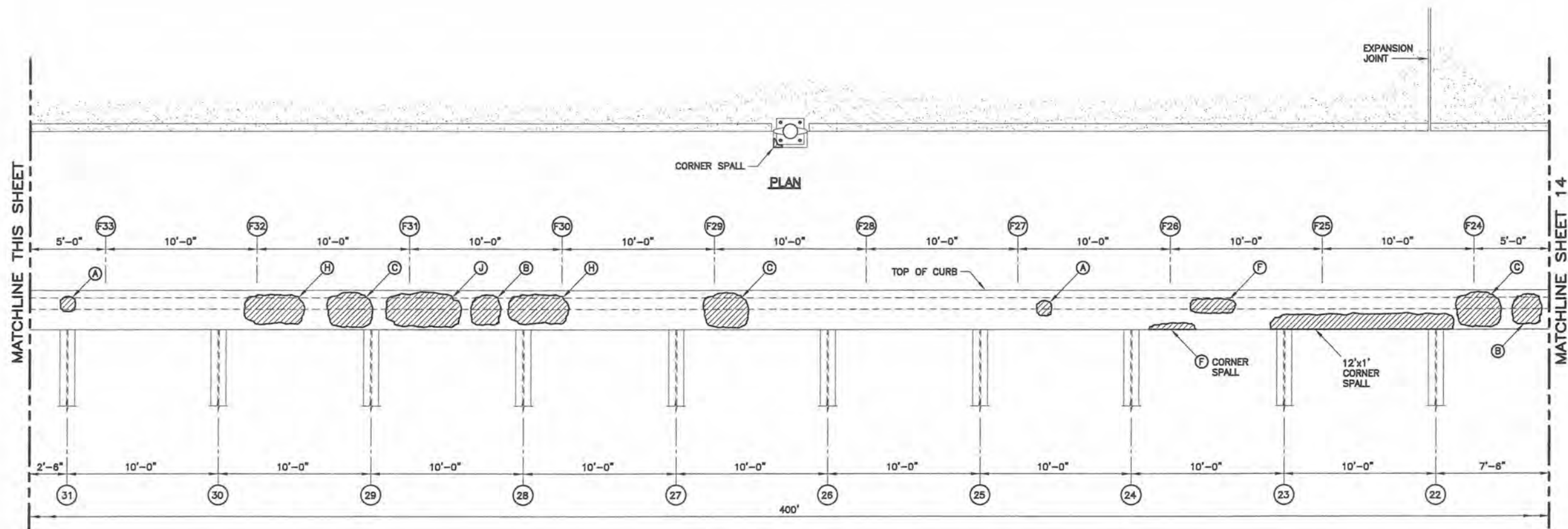
PROJ. NO.	A03011-01	SCALE	14 SHEET OF 17	REV.	1
DRWG. NO.		NOTED			

FOR REFERENCE
ONLY

S:\Projec Drawings\A03011-01 Port of Brownsville BC Dock\Wg-Repairs\Re-Issued for Bid 2-7-05\A03011-01 Sht 15-16.dwg
E: 14:03



ELEVATION



ELEVATION

ADDITIVE BID ITEM NO. 1

1 SPALL AND CRACK REPAIR PLAN AND ELEVATION

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



REVISIONS			
MARK	DATE	DESCRIPTION	BY
A	12-10-04	ISSUED FOR REVIEW	JDG
D	12-15-04	ISSUED FOR BID	JDG
1	2-7-05	RE-ISSUED FOR BID	JDG

LEGEND:

- (36) DOCK PILE BENT NUMBER
(F38) TIMBER FENDER PILE NUMBER

APPROXIMATE SPALL REPAIR QUANTITIES:

- (A) 1'x1' SPALL AREA
(B) 2'x2' SPALL AREA
(C) 3'x3' SPALL AREA
(D) 4'x3' SPALL AREA
(E) 2'x1' SPALL AREA
(F) 3'x1' SPALL AREA
(G) 4'x1' SPALL AREA
(H) 4'x2' SPALL AREA
(J) 5'x3' SPALL AREA

NOTES:

- TIMBER FENDER SYSTEM NOT SHOWN FOR CLARITY.
- REPAIR QUANTITIES SHOWN ARE BASED ON AN INSPECTION PERFORMED ON 11-4-04 THRU 11-5-04. ACTUAL QUANTITIES MAY VARY.
- REPAIR OF CONCRETE STRUCTURE MAY BE ACCOMPLISHED BY SHOTCRETE OR BY CONVENTIONAL REPAIR MEANS AT THE DISCRETION OF THE CONTRACTOR.
- REPAIR SURFACES SHALL BE FORMED OR TROWELED TO MATCH ADJACENT SURFACES.

DESIGN	J. GARCIA	DATE	7/20/04
DRAWN	J. PEREZ	DATE	7/20/04
CHECKED	J. GARCIA	DATE	12/01/04
APPROVED	S. FAAS	DATE	12/13/04

SEAL AREA	SEAL AREA
-----------	-----------



GOLDSTON ENGINEERING INC.
CORPUS CHRISTI HOUSTON

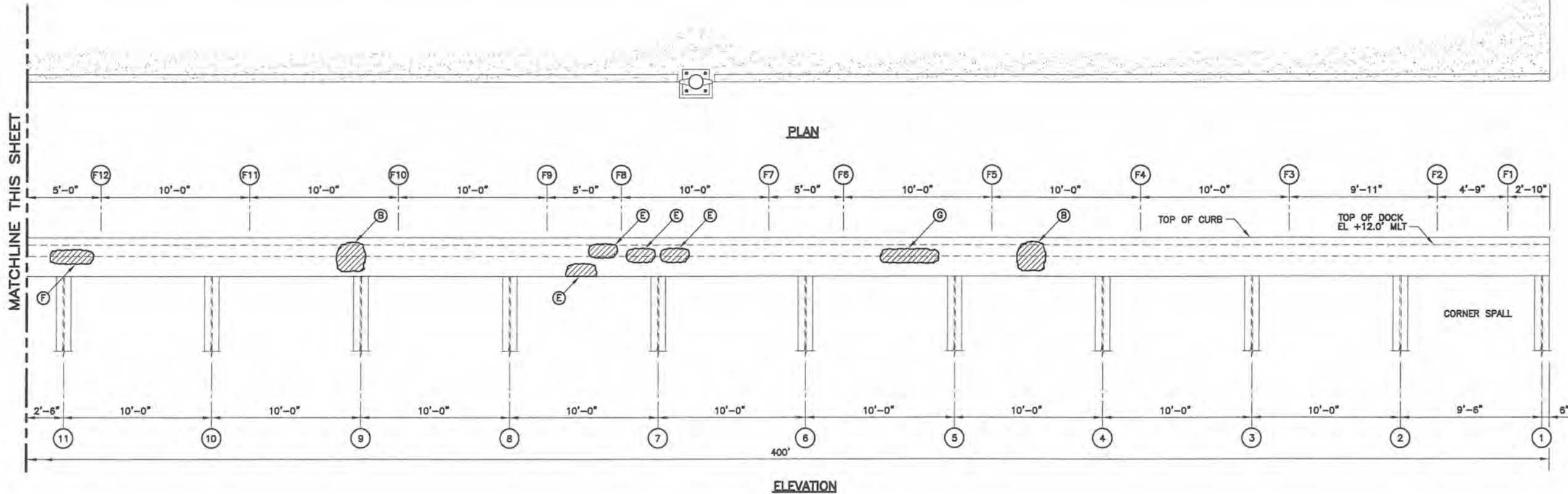
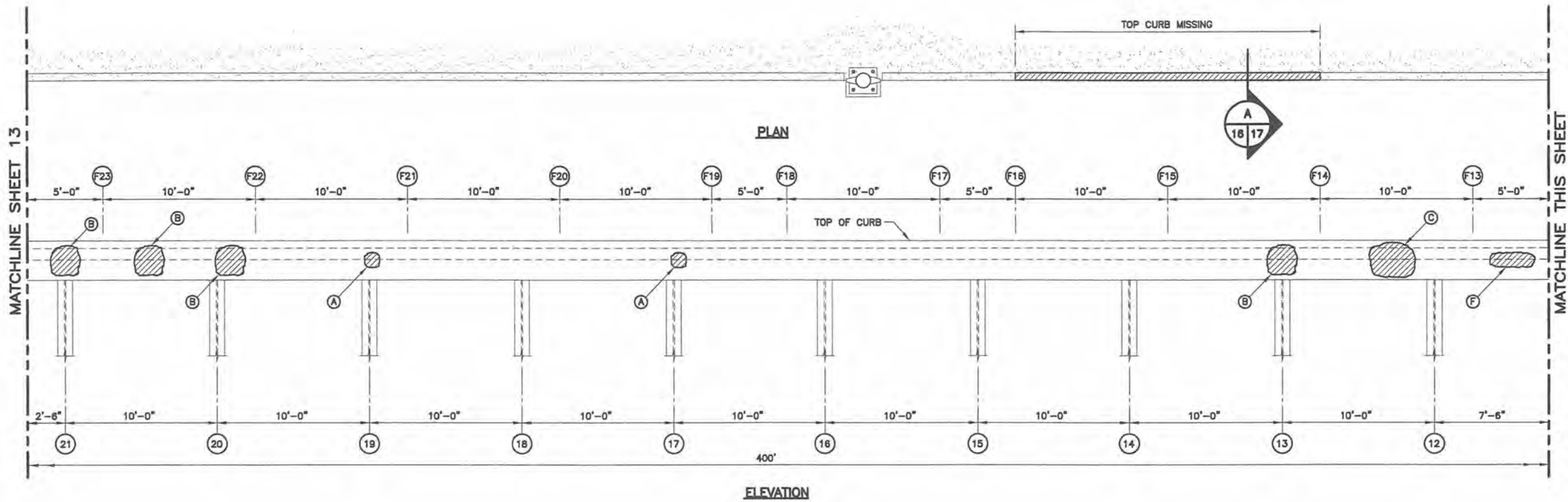
PORT OF BROWNSVILLE
BULK CARGO DOCK
REPAIRS

ADDITIVE BID NO. 1 - SPALL AND
CRACK REPAIR PLAN AND ELEVATION

PROJ. NO.	A03011-01	SCALE	15 SHEET OF 17	REV.	1
DRWG. NO.		NOTED			

FOR REFERENCE
ONLY

S:\Projects\A03011-01 Port of Brownsville BC Dock Repairs\A03011-01 Sht. 15-16.dwg
2:13:45



ADDITIVE BID ITEM NO. 1
1 SPALL AND CRACK REPAIR PLAN AND ELEVATION
SCALE: 1/4" = 1'-0"



REVISIONS			
MARK	DATE	DESCRIPTION	BY
A	12-10-04	ISSUED FOR REVIEW	JDG
0	12-15-04	ISSUED FOR BID	JDG
1	2-7-05	RE-ISSUED FOR BID	JDG

LEGEND:

14 DOCK PILE BENT NUMBER

F15 TIMBER FENDER PILE NUMBER

APPROXIMATE SPALL REPAIR QUANTITIES:

A 1'x1' SPALL AREA

B 2'x2' SPALL AREA

C 3'x3' SPALL AREA

D 4'x3' SPALL AREA

E 2'x1' SPALL AREA

F 3'x1' SPALL AREA

G 4'x1' SPALL AREA

H 4'x2' SPALL AREA

J 5'x3' SPALL AREA

NOTES:

- TIMBER FENDER SYSTEM NOT SHOWN FOR CLARITY.
- REPAIR QUANTITIES SHOWN ARE BASED ON AN INSPECTION PERFORMED ON 11-4-04 THRU 11-5-04. ACTUAL QUANTITIES MAY VARY.
- REPAIR OF CONCRETE STRUCTURE MAY BE ACCOMPLISHED BY SHOTCRETE OR BY CONVENTIONAL REPAIR MEANS AT THE DISCRETION OF THE CONTRACTOR.
- REPAIR SURFACES SHALL BE FORMED OR TROWELED TO MATCH ADJACENT SURFACES.

DESIGN	J. GARCIA	DATE	7/20/04
DRAWN	J. PEREZ	DATE	7/20/04
CHECKED	J. GARCIA	DATE	12/01/04
APPROVED	S. FAAS	DATE	12/13/04
SEAL AREA			

2/7/05

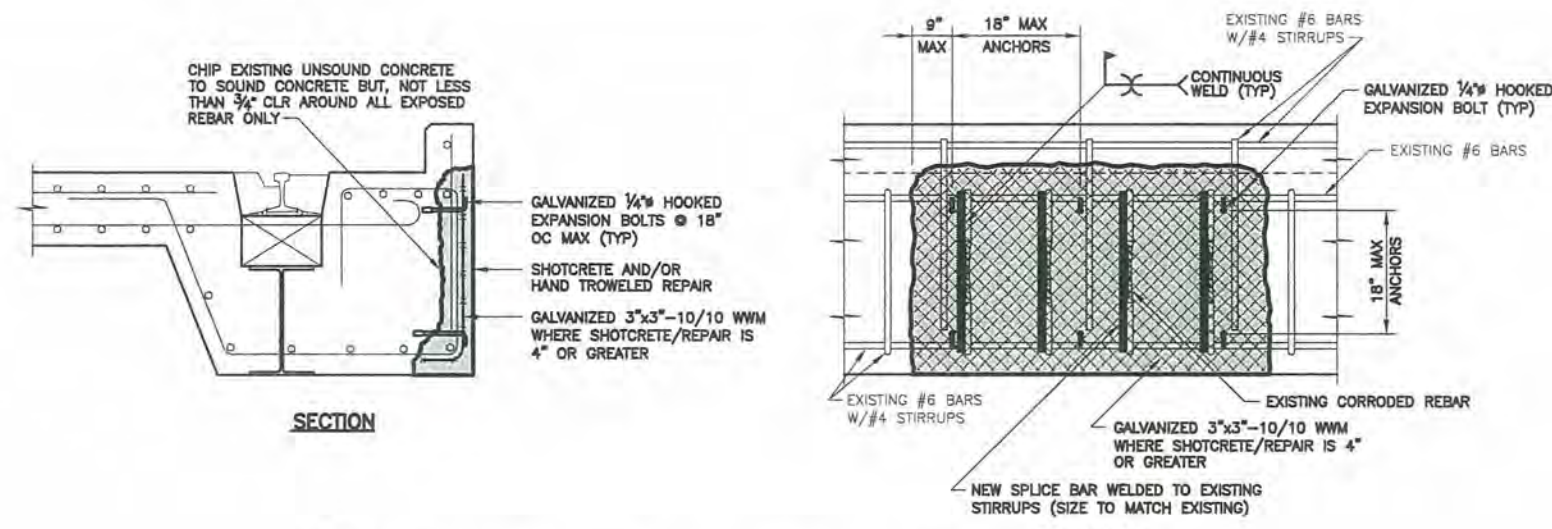
GOLDSTON ENGINEERING INC.
CORPUS CHRISTI HOUSTON

PORT OF BROWNSVILLE
BULK CARGO DOCK REPAIRS

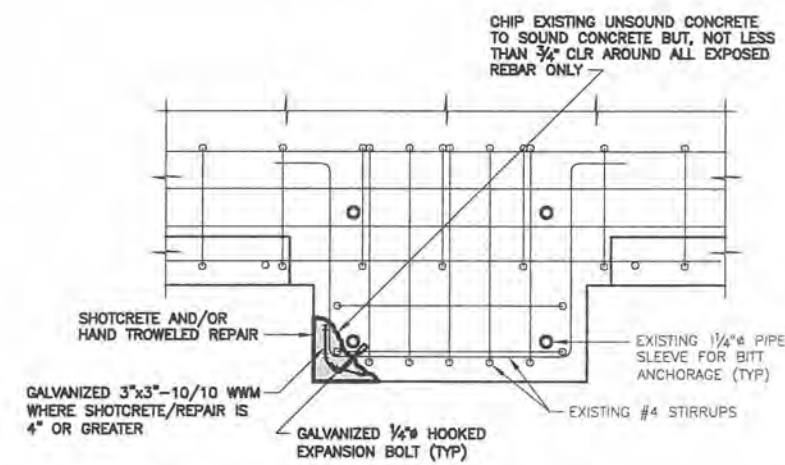
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DRWG. NO.	NOTED		REV. 1

FOR REFERENCE
ONLY

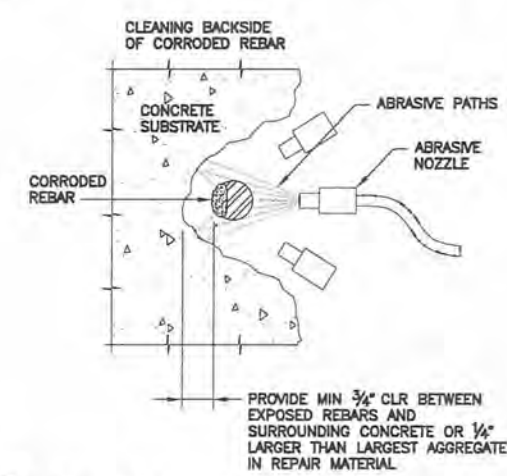
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ME: 140



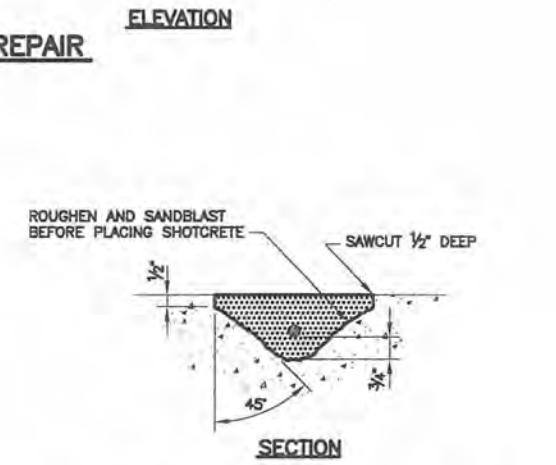
1
17/17
TYPICAL FACE OF CONCRETE DOCK REPAIR
SCALE: 1"=1'-0"



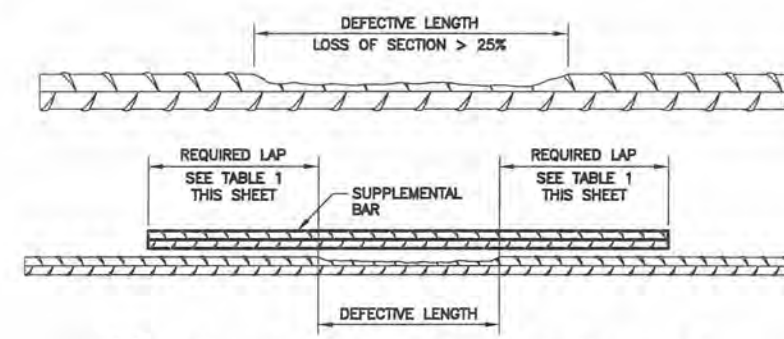
2
17/17
TYPICAL CORNER REPAIR AT PILASTER
SCALE: 1"=1'-0"



4
17/17
REINFORCING STEEL CLEANING DETAIL
SCALE: 1 1/2"=1'-0"



3
17/17
TYPICAL CRACK REPAIR DETAIL
SCALE: NONE



5
17/17
TYPICAL REBAR SPlice REPAIR DETAIL
SCALE: NONE

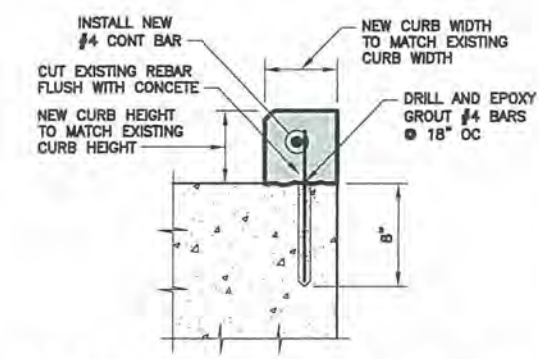
TABLE NO. 1 REBAR SPlice LENGTHS			TABLE NO. 2 REBAR SIZES		
BAR SIZE	LAP SPlice LENGTH (INCHES)		SIZE	DIAMETER (INCHES)	AREA (SQUARE INCHES)
3	14		3	3/8"	.375
4	19		4	1/2"	.500
5	24		5	5/8"	.625
6	29		6	3/4"	.750
7	36		7	7/8"	.875
8	48		8	1"	1.000
9	60		9	1 1/8"	1.128
10	72		10	1 1/4"	1.270
11	84		11	1 3/8"	1.410

CONCRETE REPAIR/SHOTCRETE NOTES:

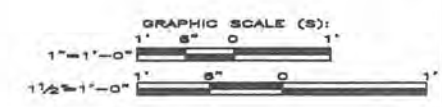
1. PREPARE SURFACES AS NOTED IN GENERAL NOTES AND THE SPECIFICATIONS.
2. INSTALL 1/4" DIAMETER HOOKED EXPANSION BOLTS ON REPAIRS OVER 18" WIDE MIN. AND 3x3-10/10 GALVANIZED WELDED WIRE FABRIC AS SHOWN. FABRIC SHALL BE INSTALLED IN ALL REPAIR AREAS GREATER THAN 4" DEEP. BOLTS SHALL BE HOT DIP GALVANIZED.
3. USE WWM WHERE THICKNESS IS 4" OR GREATER.
4. APPLY SHOTCRETE IN ACCORDANCE WITH THE SPECIFICATIONS PROVIDING A MINIMUM OF 2" OF COVER ON REBAR AT ALL SIDES AND 3" OF COVER ON REBAR AT ALL BOTTOMS.
5. PROVIDE PROPER CURING IN ACCORDANCE WITH THE GENERAL NOTES AND SPECIFICATIONS.
6. ENSURE THAT CONTINUITY BETWEEN WWM AND REBAR EXIST PRIOR TO PLACEMENT OF SHOTCRETE.

REPAIR OF EXISTING REINFORCEMENT:

ALL EXISTING REINFORCEMENT SHALL BE SANDBLASTED AS DESCRIBED IN PARAGRAPH 3.01.B SECTION 03600 IN THE TECHNICAL SPECIFICATIONS. IF THE REINFORCEMENT HAS LOST MORE THAN 25% OF ITS ORIGINAL CROSS-SECTIONAL AREA (NOT DIAMETER), NEW REINFORCEMENT OF THE SAME SIZE AND SHAPE SHALL BE SPICED ONTO THE EXISTING REINFORCEMENT.



A
18/17
SECTION - CURB REPAIR
SCALE: 1 1/2"=1'-0"



REVISIONS			
MARK	DATE	DESCRIPTION	BY
A	12-10-04	ISSUED FOR REVIEW	JDG
D	12-15-04	ISSUED FOR BID	JDG
1	2-7-05	RE-ISSUED FOR BID	JDG

GENERAL NOTES FOR CONCRETE REHABILITATION

1. TYPICAL AREAS TO BE REPAIRED ARE SHOWN ON SHEETS 15 AND 16.
2. PREPARATION OF SURFACES:
REMOVE ALL UNSOUND CONCRETE BY CHIPPING TO SOUND CONCRETE. JACK HAMMERS AND CHIPPING HAMMERS SHALL BE SIZE D SO AS NOT TO DAMAGE THE EXISTING SOUND CONCRETE THAT IS TO REMAIN.
3. SAWCUT 1/2" DEEP AROUND PERIMETER OF REPAIR AREA TO ALLOW A FLAT SURFACE FOR CONCRETE TO BOND TO.
4. DEPTH OF REPAIR VARIES DUE TO VARIATIONS IN THE LOCATION OF REBAR. AVERAGE DEPTH OF REPAIR IS 3" TO 4".
5. SANDBLAST EXISTING SURFACES THAT DO NOT REQUIRE CHIPPING TO REMOVE PAINT, OIL, MARINE GROWTH, ETC. AND TO PROVIDE A ROUGHENED SURFACE FOR PROPER BONDING OF THE CONCRETE REPAIR MATERIAL.
6. SANDBLAST EXISTING REBAR TO REMOVE RUST, OIL, SCALE, ETC. COMPLY WITH SPECIFICATION SSPC-SP6 (COMMERCIAL BLAST CLEANING).
7. REMOVE ALL LOOSE PARTICLES WITH WATER AND/OR COMPRESSED AIR.
8. MATERIAL:
TYPE II CEMENT CONFORMING TO ASTM C150 SHALL BE USED. ADMIXTURES SHALL CONFORM TO THE SPECIFICATIONS. NEW REBAR SHALL CONFORM TO ASTM A-615 GRADE 60. ALL SHOTCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 5000 PSI AT 28 DAYS. FIBERMESH SHALL BE USED IN ALL SHOTCRETE.
9. CURING:
SHOTCRETE SHALL BE CURED PER THE SPECIFICATIONS.
10. METHOD:
CONTRACTOR MAY SUBMIT FOR APPROVAL ALTERNATIVE METHODS OF CONCRETE REPAIR.

DESIGN	J. GARCIA	DATE	7/20/04
DRAWN	J. PEREZ	DATE	7/20/04
CHECKED	J. GARCIA	DATE	12/01/04
APPROVED	S. FAAS	DATE	12/13/04
SEAL AREA	SEAL AREA		

GOLDSTON ENGINEERING INC.
CORPUS CHRISTI HOUSTON

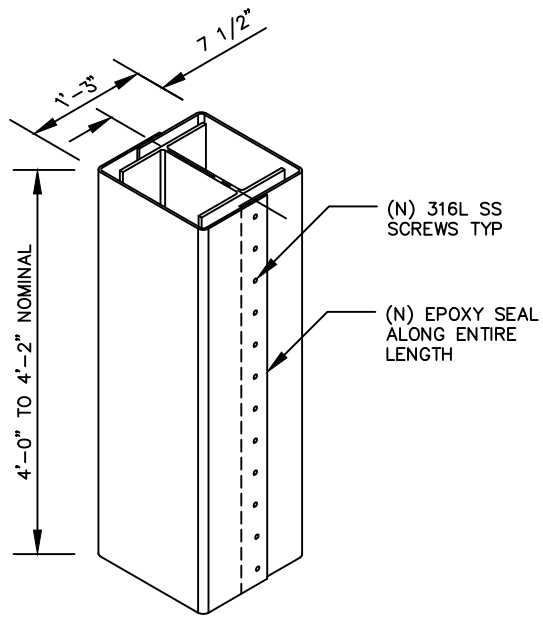
PORT OF BROWNSVILLE
BULK CARGO DOCK REPAIRS

ADDITIVE BID NO. 1 - SPALL AND CRACK REPAIR DETAILS

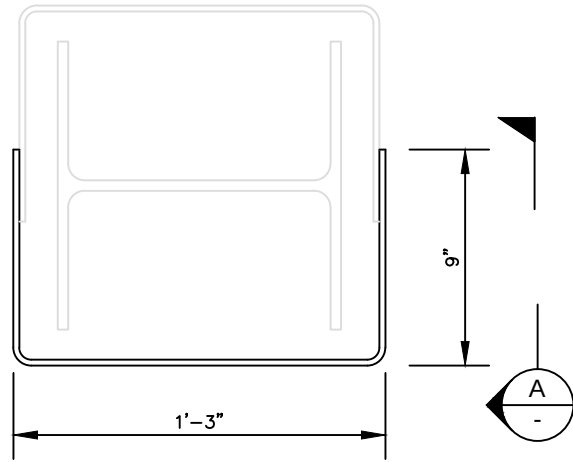
PROJ. NO.	A03011-01	SCALE	17 SHEET OF 17	REV.	0
DRWG. NO.	NOTED				

FOR REFERENCE ONLY

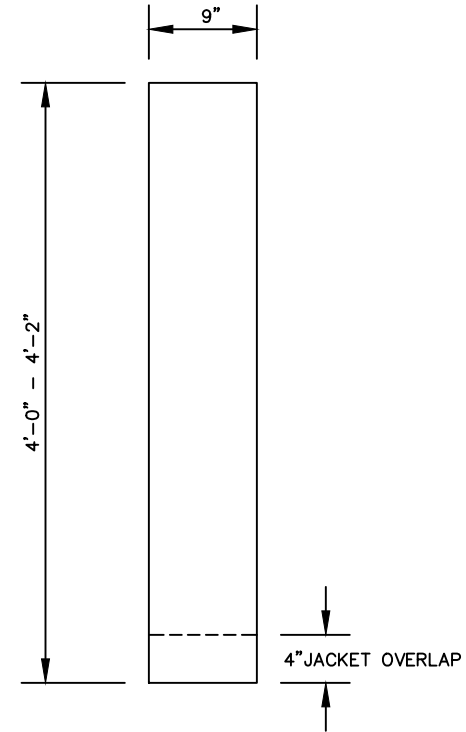
ADDITIVE BID ITEM NO. 1



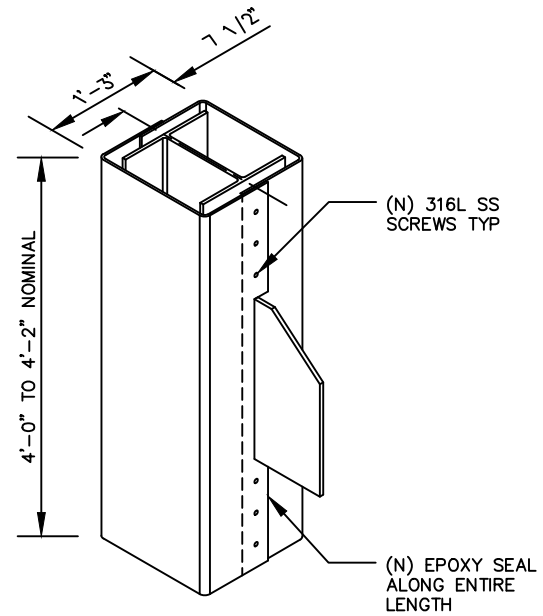
FRP JACKET TYPE "A" W/OUT FLANGE
NOT TO SCALE (2 JACKETS/PILE)



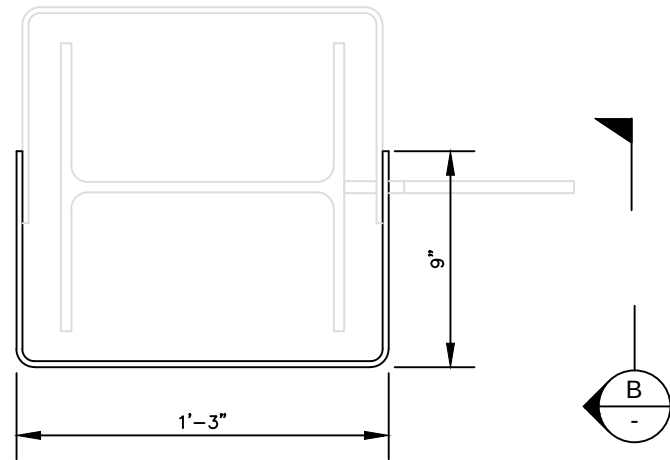
PLAN VIEW TYPE "A"
SCALE: 1 1/2"=1'-0"



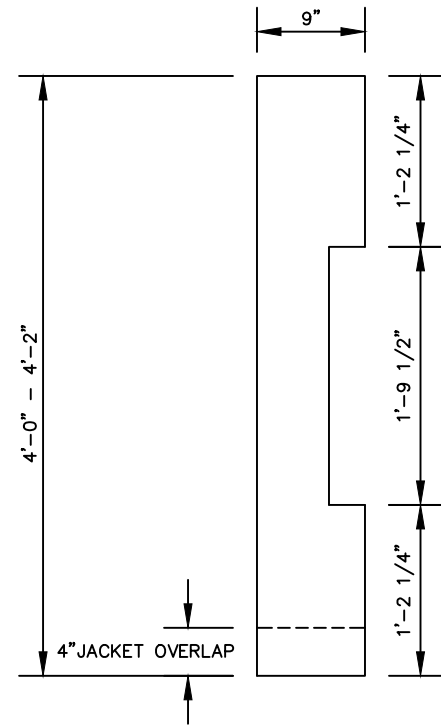
SECTION TYPE "A"
SCALE: 3/4"=1'-0"



FRP JACKET TYPE "B" W/FLANGE
NOT TO SCALE (2 JACKETS/PILE)



PLAN VIEW TYPE "B"
SCALE: 1 1/2"=1'-0"



SECTION TYPE "B"
SCALE: 3/4"=1'-0"



QuakeWrap Inc.

6840 S. Tucson Blvd.
Tucson, Arizona 85756

Phone: (520) 791-7000
Toll Free: (866) QuakeWrap

www.QuakeWrap.com

PROJECT:

BROWNSVILLE, TX

CLIENT:

EDG ENGINEERING

TITLE:

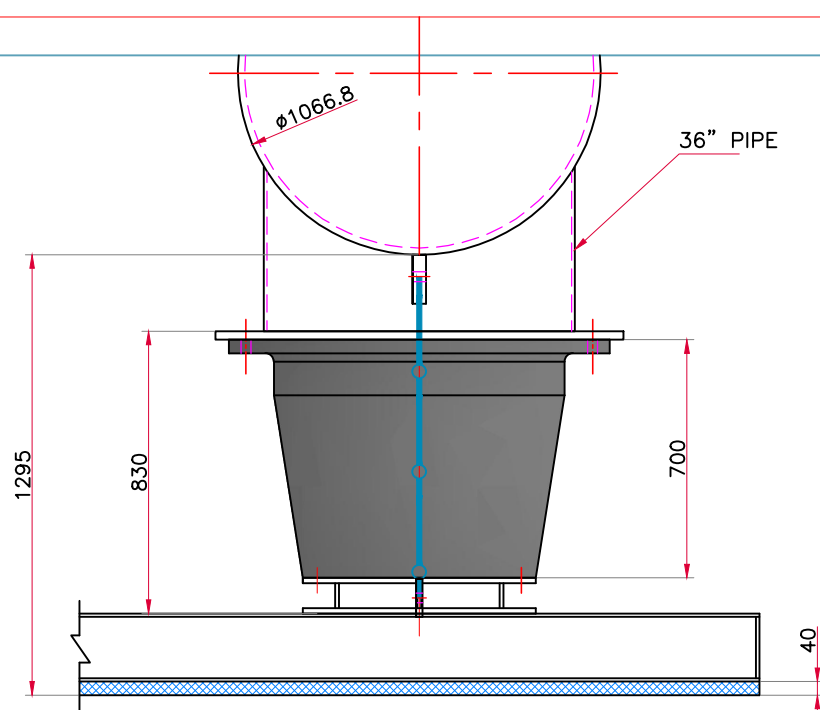
H-PILE REPAIR
FRP JACKET SYSTEM

REFERENCE ONLY

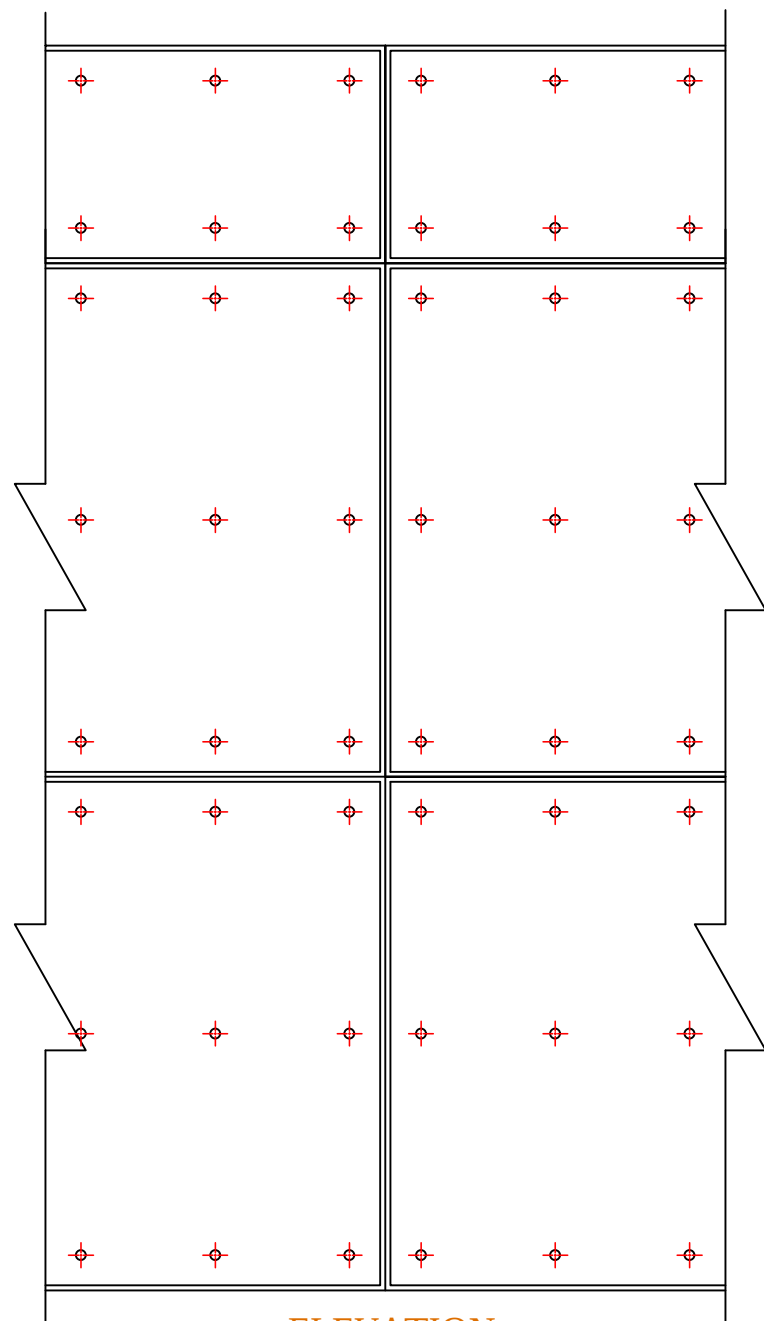
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ALL SERVICES, METHODS AND PRODUCTS OF PILEMEDIC, LLC AND QUAKEWRAP, INC. WHETHER OFFERED BY THIS COMPANY OR VIA ANY OTHER CHANNEL ARE PROTECTED BY MULTIPLE US AND INTERNATIONAL PATENTS AND PENDING PATENT APPLICATIONS.

NO.	DESCRIPTION	DRAWN	CHECKED	DATE
P1	NOT FOR CONSTRUCTION	BJS	PAT	04/13/2017
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			SHEET 2 OF 2	



PLAN



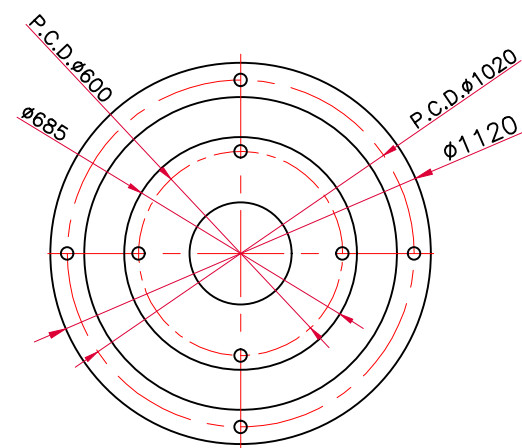
ELEVATION

EL+3.66 M

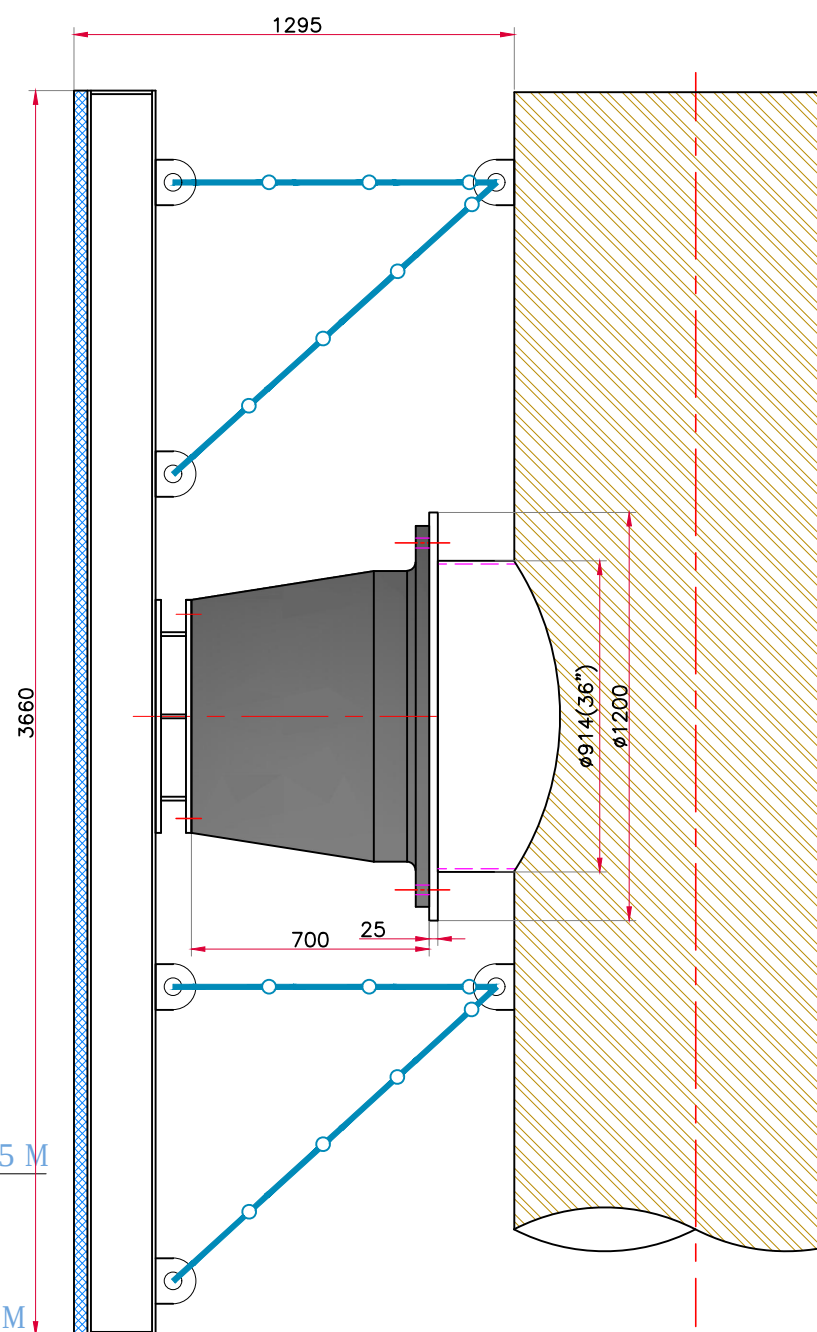
EL+1.82 M

HWL+0.475 M

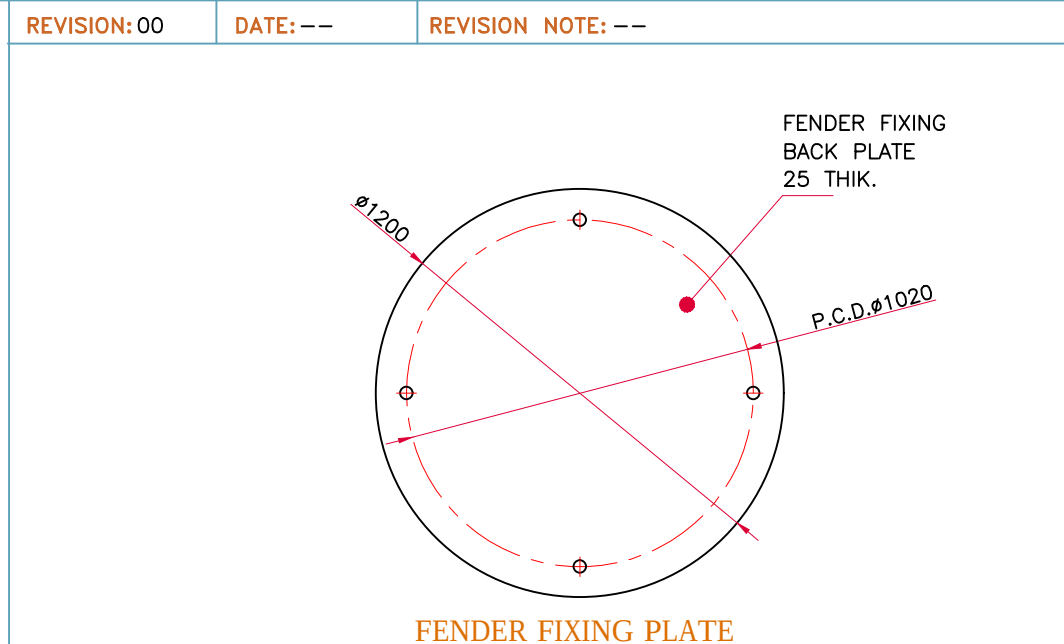
LWL+0.00 M



HOLE ORIENTATION



SIDE VIEW



FENDER FIXING PLATE

10	PIPE	M.S.PAINTED	01	Ø914.4
9	CHAIN BRACKET	M.S.PAINTED	02	**
8	TENSION CHAIN	H.D.G.	02	Ø30
7	WEIGHT CHAIN	H.D.G.	02	Ø30
6	FENDER SUPPORT PLATE	M.S.PAINTED	01	SQ.1200 x 25
5	FACIA PAD FIXING BOLTS	SS 316	**	M16
4	FACIA PAD	U.H.M.W.	**	40 THIK.
3	FENDER FIXING BOLTS	SS 316	04	M30
2	FRAME TO FENDER FIXING BOLTS	SS 316	04	M30
1	CONE FENDER	RUBBER & M.S (INSERT)	01	700H

NO.	DESCRIPTION	MATERIAL	QTY.	SIZE
-----	-------------	----------	------	------

BILL OF MATERIAL

PERFORMANCE OF OUR "DIPTI" CONE FENDERING SYSTEM
SIZE: DCN-700H (GR. R1.1)

DEFLECTION	72%
REACTION FORCE	58.5 TON
ENERGY ABSORPTION	24.5 TON-MTR.

.....PERFORMANCE TOLERANCES ±10%

NOTES:

- * ALL DIMENSIONS ARE IN MM., UNLESS OTHERWISE STATED.
- * RUBBER AS PER ASTM D 2000-12, 4AA, 717, A13, B33, C12, K11, Z.
- * ALL STEEL PLATE WILL BE OF ASTM A36 OR EQUIVALENT.
- * FACIA PADS WILL BE OF UHMW-PE (COLOUR-BLACK/BLUE).
- * STEEL PLATE WILL BE DE-GREASED AND CLEANED BY SAND BLASTING SA 2.5 (40 TO 60 MICRONS) AND THEN PAINT THE FRAME AS PER C5M CLASSIFICATION. (75 MICRON) + HIGH BUILD MODIFIED EPOXY MARINE GRADE (150 MICRON X 2) TOTAL = 450 MICRON MIN. COLOUR-BLACK.
- * DIMENSIONAL TOLERANCES: +4%
-2%

C/9 PURNESHWARE FLATS,
GULBAI TEKRA, AHMEDABAD-15,
INDIA

CLIENT: EDG, INC.

PROJECT: PORT OF BROWNSVILLE BULK CARGO

REF.NO.: E MAIL DATED: 11/01/2017

QTY.: --

DRN BY: SIDDHARTH

CHK BY:

DATE: 12/01/2017

SCALE: N.T.S.

DRG. NO. DCN-700H/0060/18

REV.: 00

SHEET NO. 1 OF 1

FILE PATH: E:\IRM-DD1-DATA\Drawing\Marine fenders\Cone fender\DCN-700H-01-059

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BROWNSVILLE NAVIGATION DISTRICT
DRAWINGS FOR
**2016 BND DOCKS
MAINTENANCE DREDGING**

MARCH 2016



DRAWING LIST

1. COVER SHEET	(SHT. 1)	[PAGE 1]
2. OIL DOCK 3	(SHTS. OD3-1 TO 20)	[PAGES 2-21]
3. OIL DOCK 5	(SHTS. OD5-1 TO 20)	[PAGES 22-41]
4. LIQUID CARGO DOCK	(SHTS. LCD-1 TO 20)	[PAGES 42-61]
5. CARGO DOCK 11	(SHTS. CD11-1 TO 18)	[PAGES 62-79]
6. CARGO DOCK 12	(SHTS. CD12-1 TO 14)	[PAGES 80-93]
7. CARGO DOCK 15	(SHTS. CD15-1 TO 20)	[PAGES 94-113]
8. CARGO DOCK 13	(SHTS. CD13-1 TO 15)	[PAGES 114-128]
9. BULK CARGO DOCK	(SHTS. BCD-1 TO 20)	[PAGES 129-148]
10. CARGO DOCK 3	(SHTS. CD3-1 TO 20)	[PAGES 149-168]

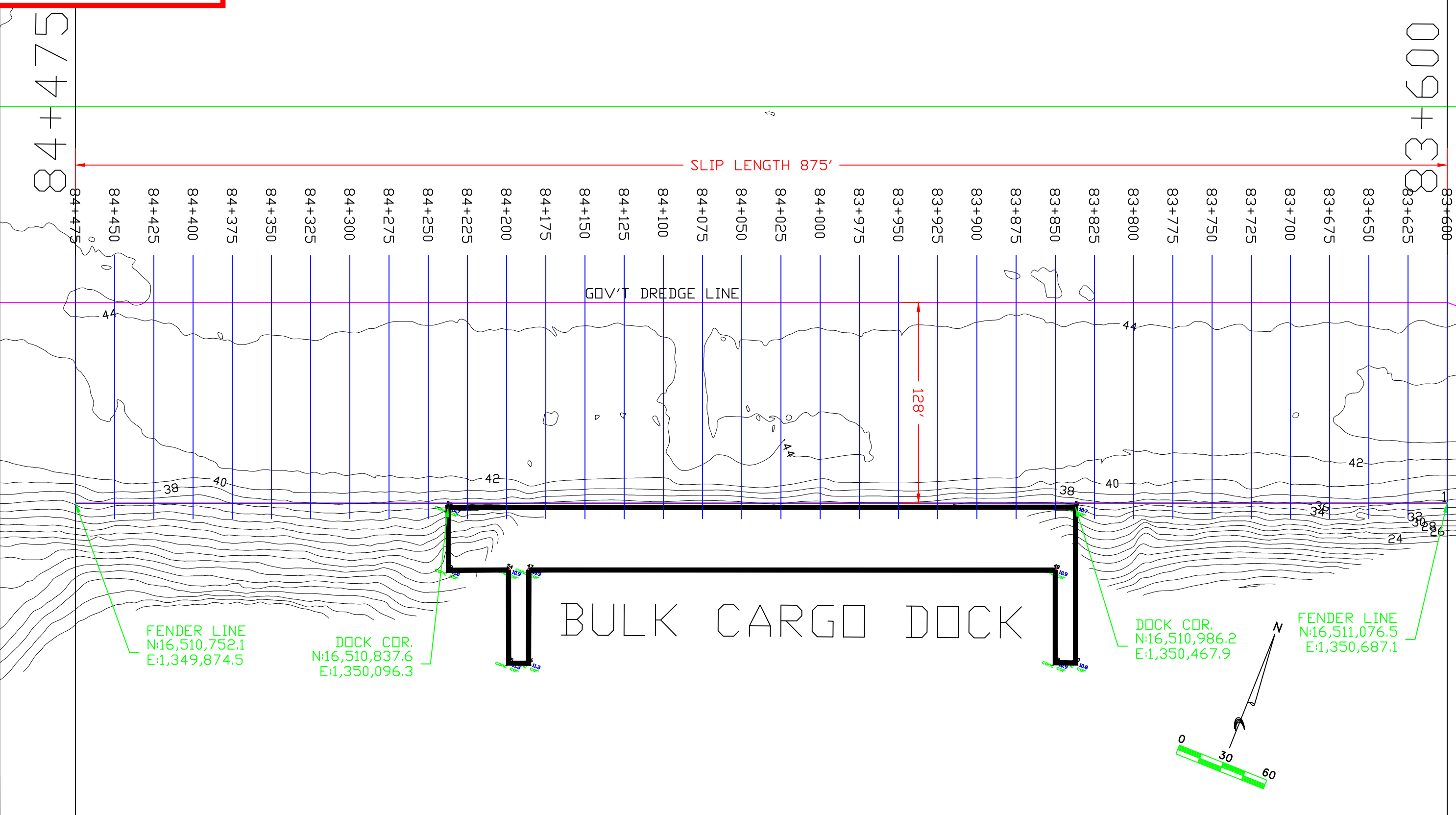
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BROWNSVILLE NAVIGATION DISTRICT
DRAWINGS FOR
2016 BND DOCKS
MAINTENANCE DREDGING

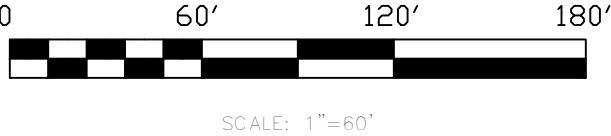
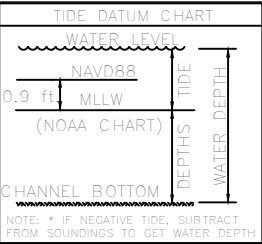
BULK CARGO DOCK



FOR REFERENCE
ONLY



NOTES:
1) DEPTHS/ELEVATIONS WERE MEASURED BY NAISMITH MARINE SERVICES ON DECEMBER 19, 2014.
SEA FLOOR CONDITIONS ARE SUBJECT TO CHANGE.
2) HORIZONTAL DATUM: NAD27, TEXAS SOUTH ZONE, US FEET.
3) VERTICAL DATUM: MEAN LOWER LOW WATER
REFERENCE MONUMENT "535 R/L 1948 89+679.68"
N: 105,292.01
E: 2,360,559.23
ELEV: 14.7' MLLW (13.8' NAVD88)





Naismith Marine
Sea Floor Surveying
3765 South Alameda, Suite 205
Corpus Christi, Texas 78411
WWW.NAISMITHMARINE.COM
(361) 945-0248

NO.	DATE	REVISION

PORT OF BROWNSVILLE

TRANSECT LAYOUT

BULK CARGO DOCK

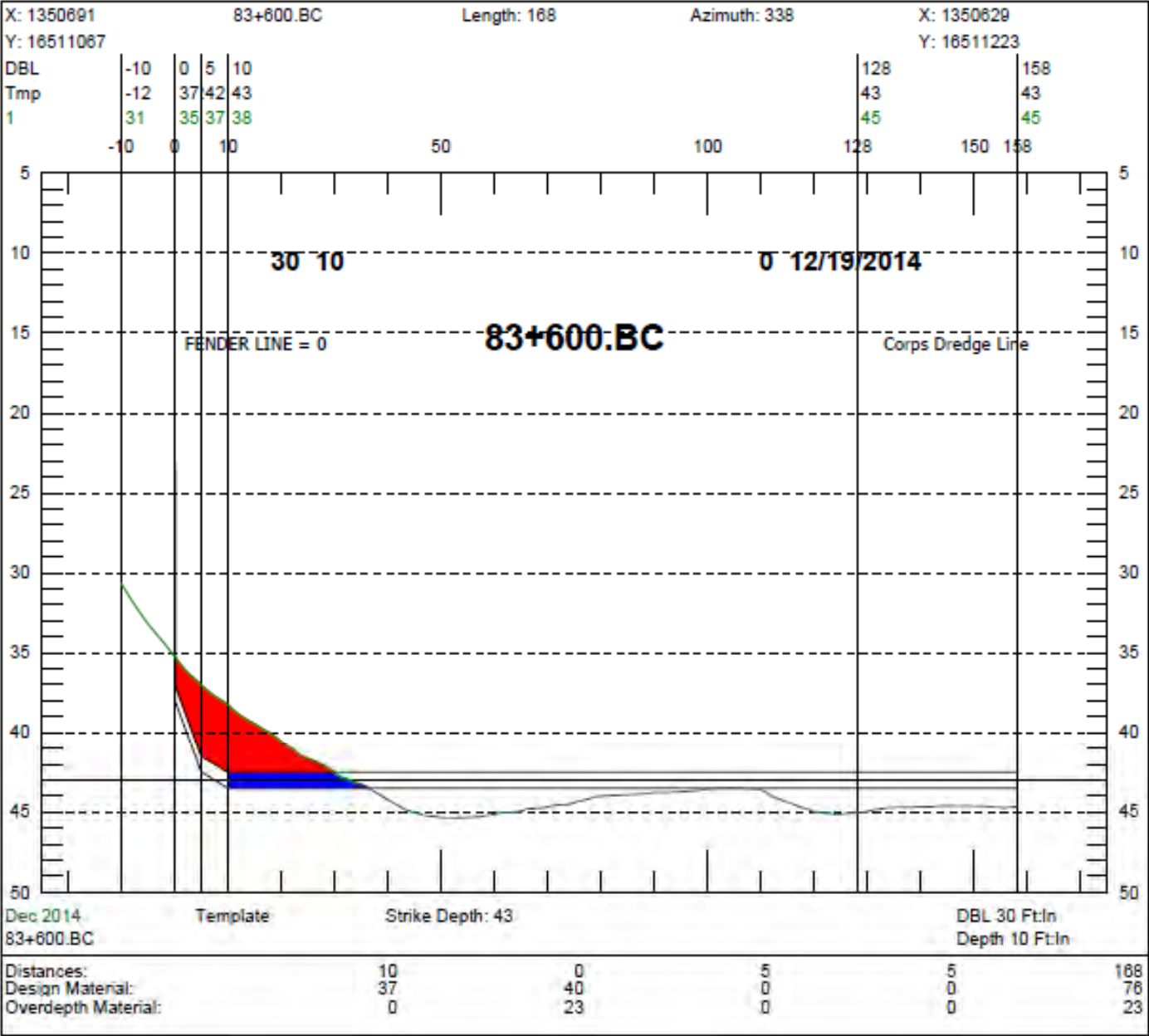
PAGE BCD-2 OF 20

PLAN SHEET 1 OF 1

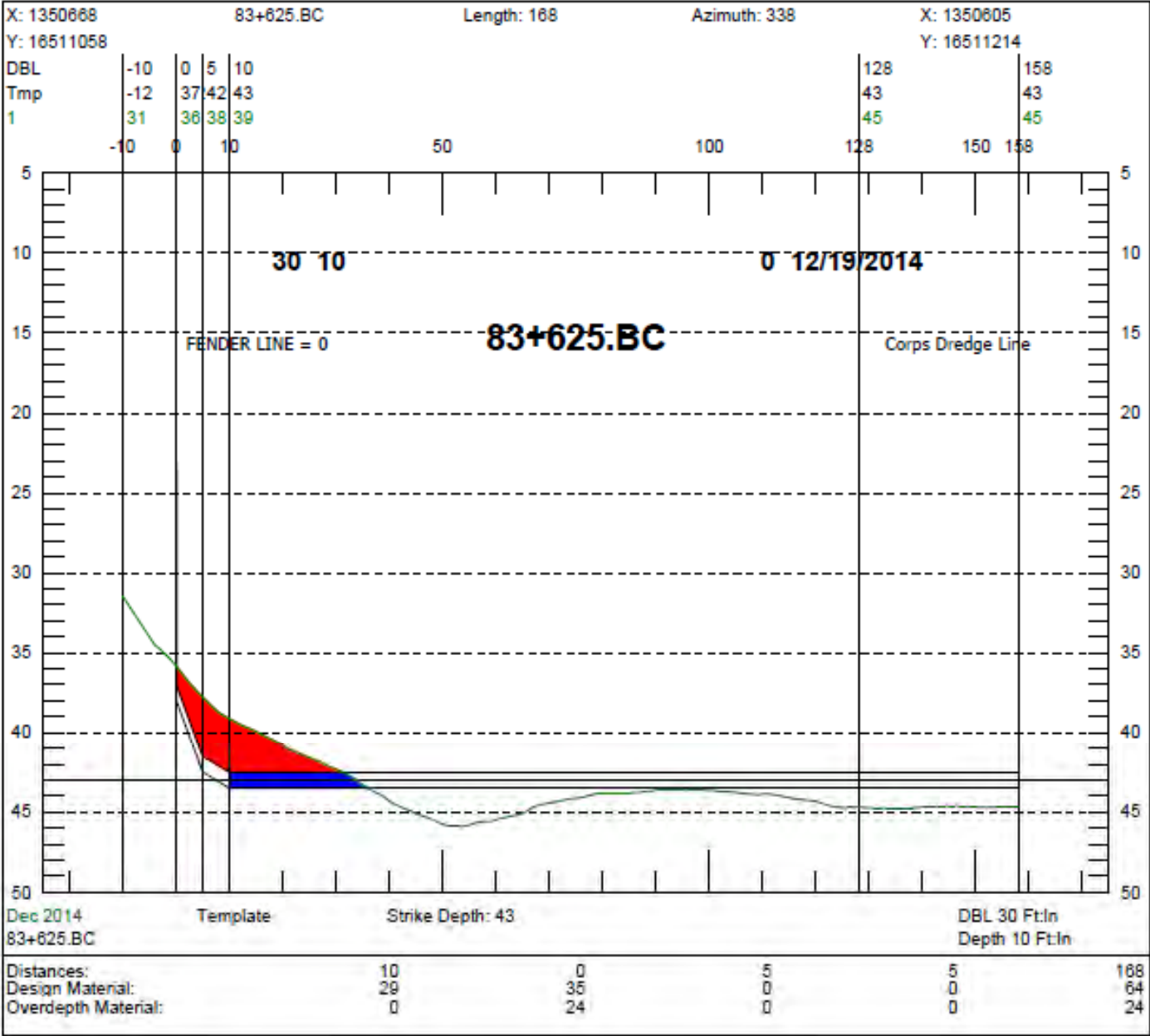
JUN. 2015

SCALE: NOTED

DWN. BY: JMN

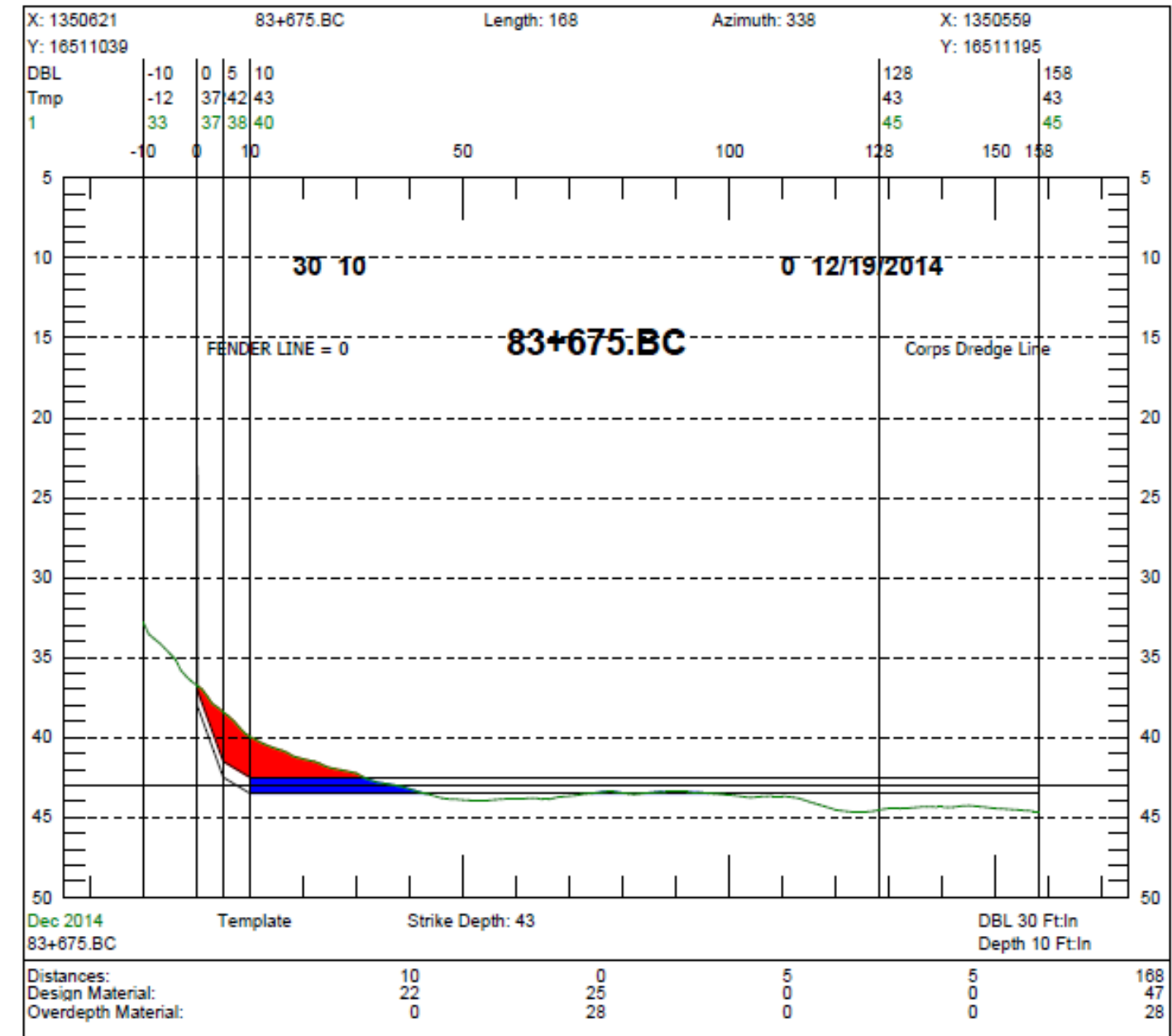
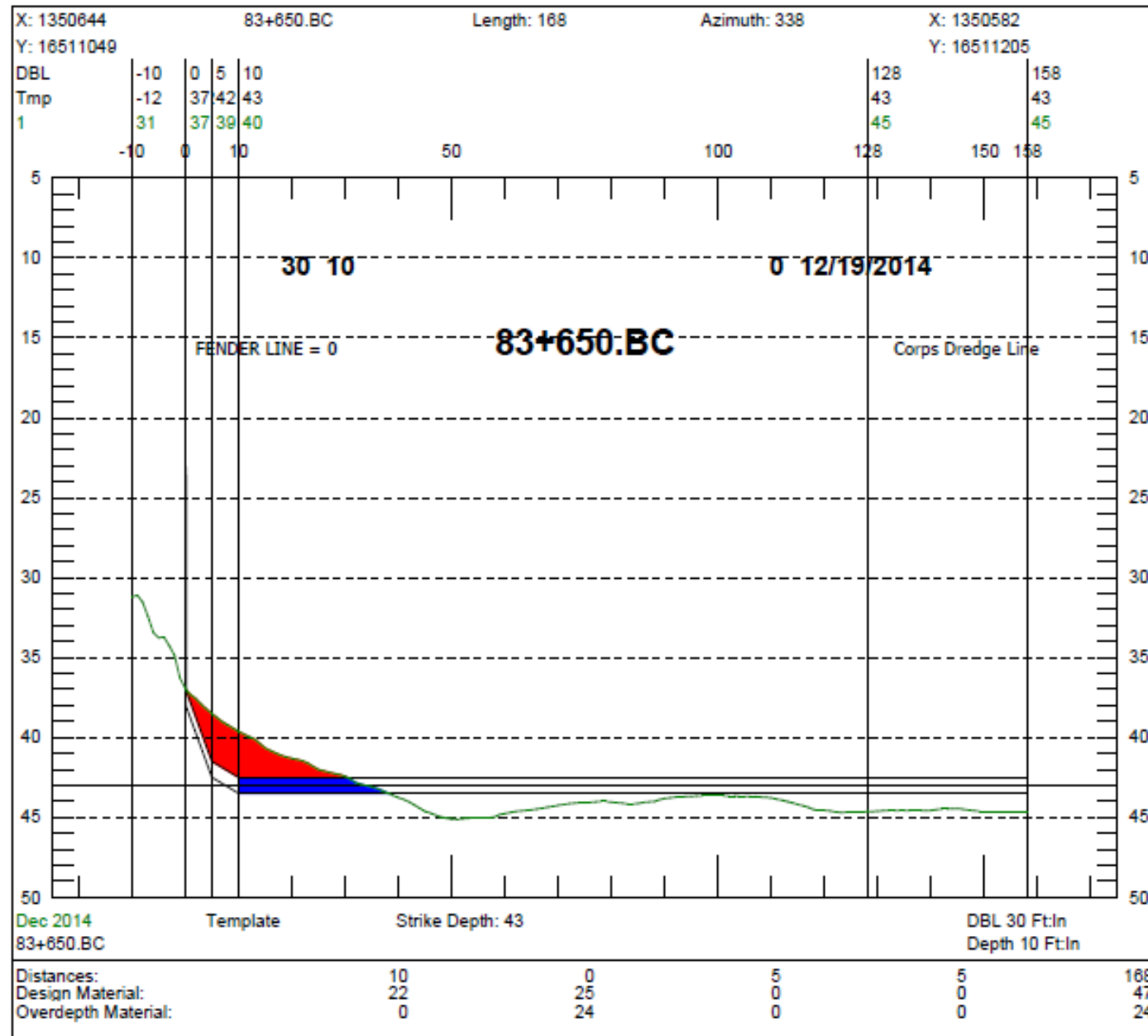


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Area	Bulk Cargo Dock
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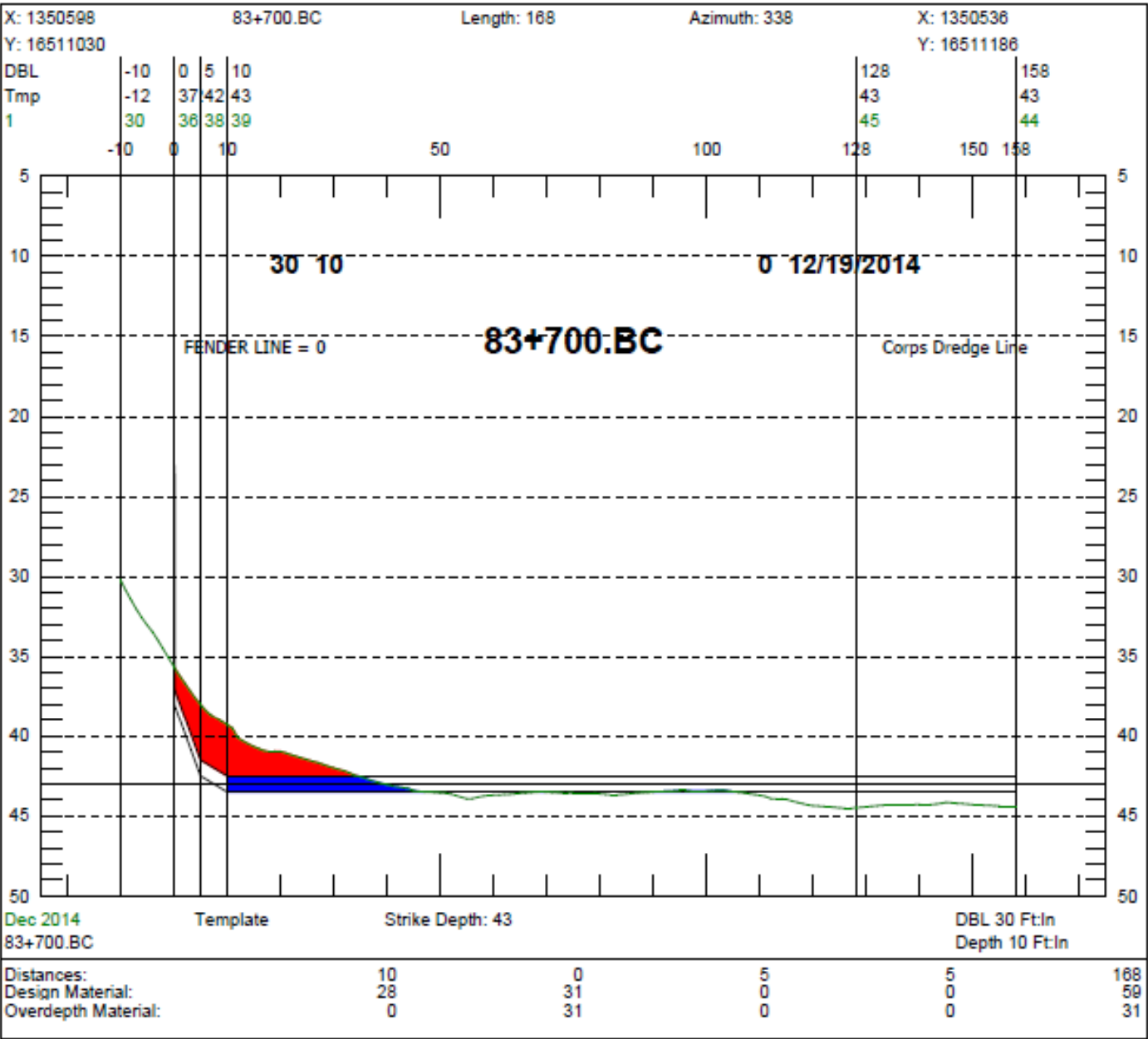
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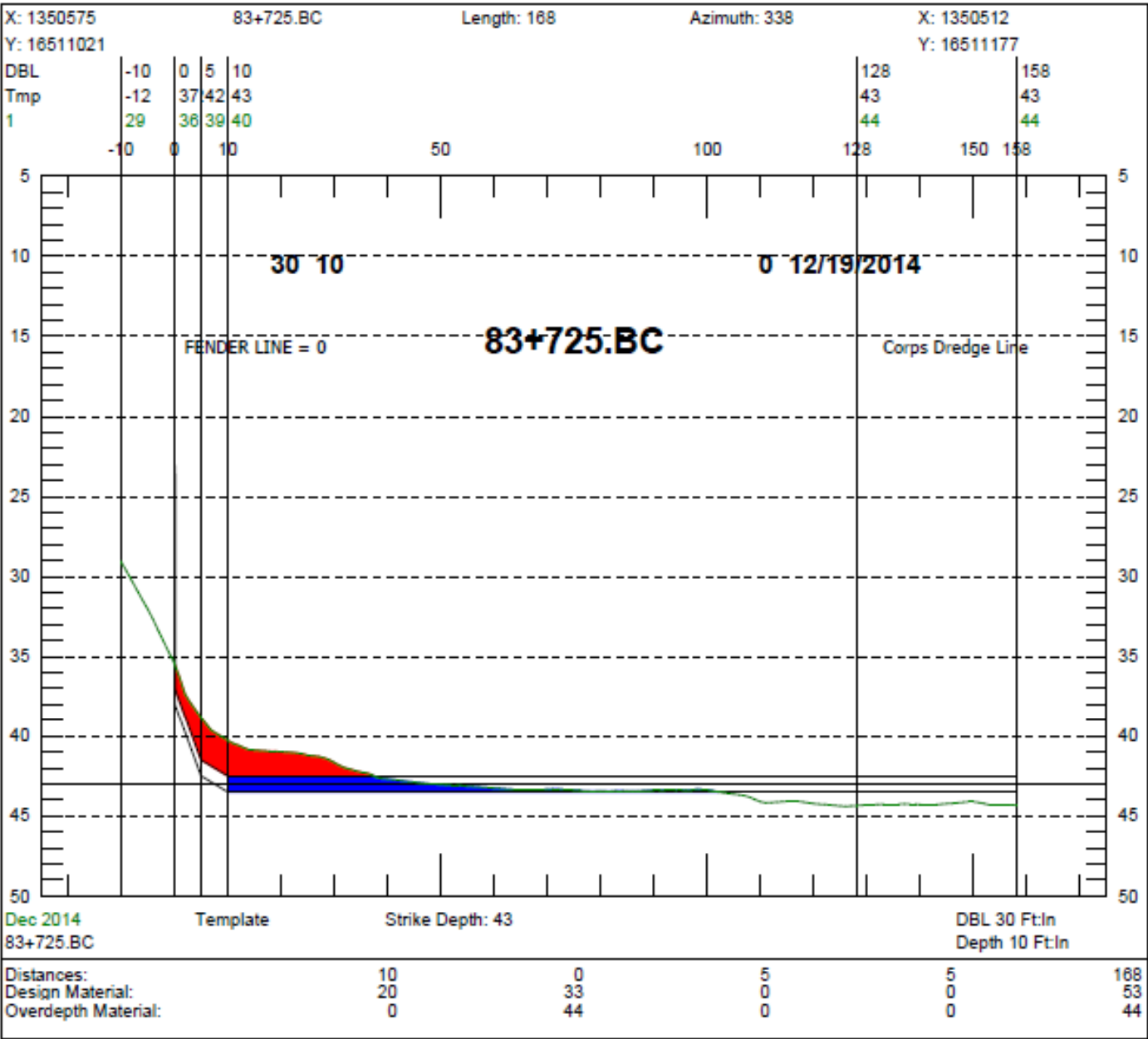
Sheet 4 Of 36	Dec 2014
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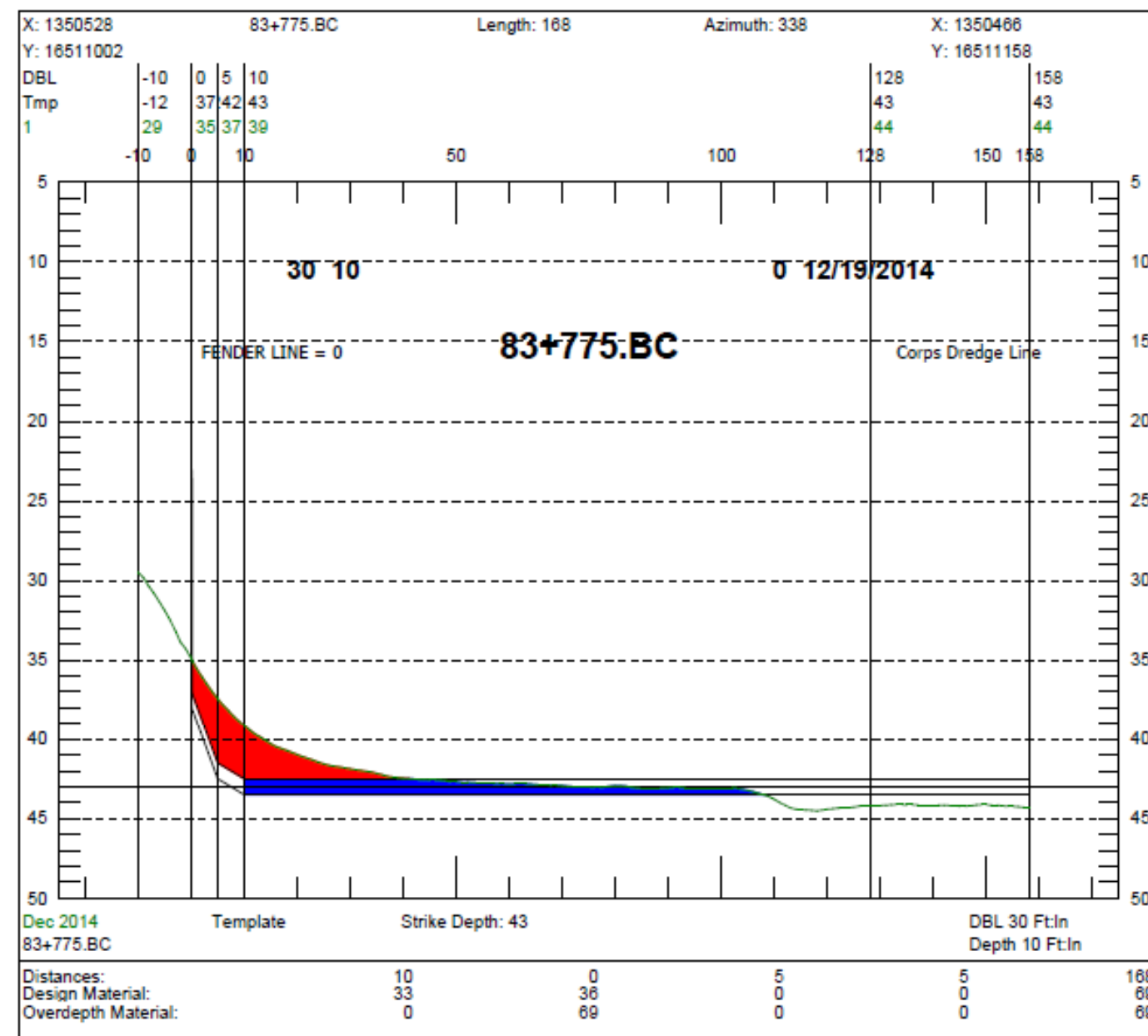
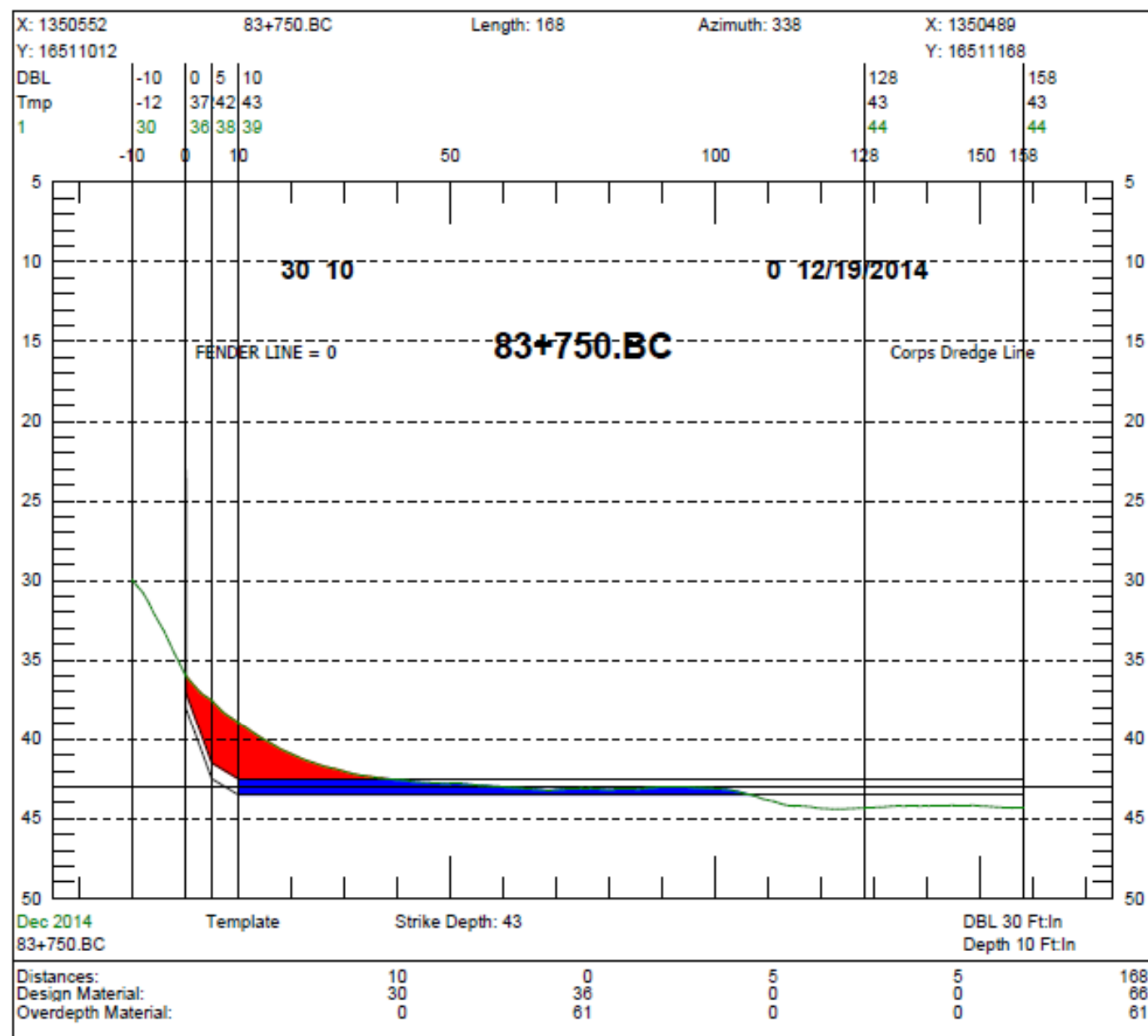


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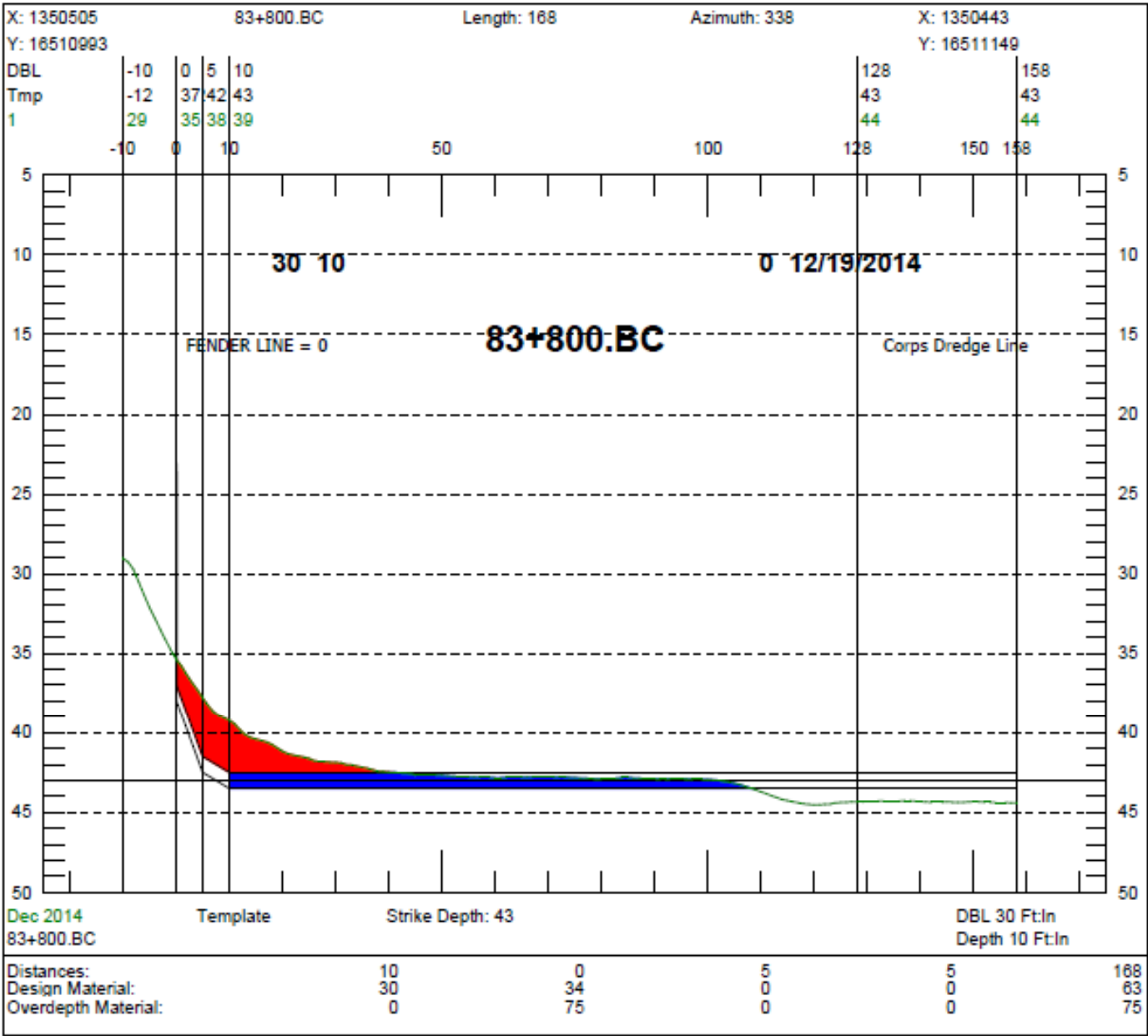
Sheet 6 Of 36	Dec 2014
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Sheet 7 Of 36	Dec 2014
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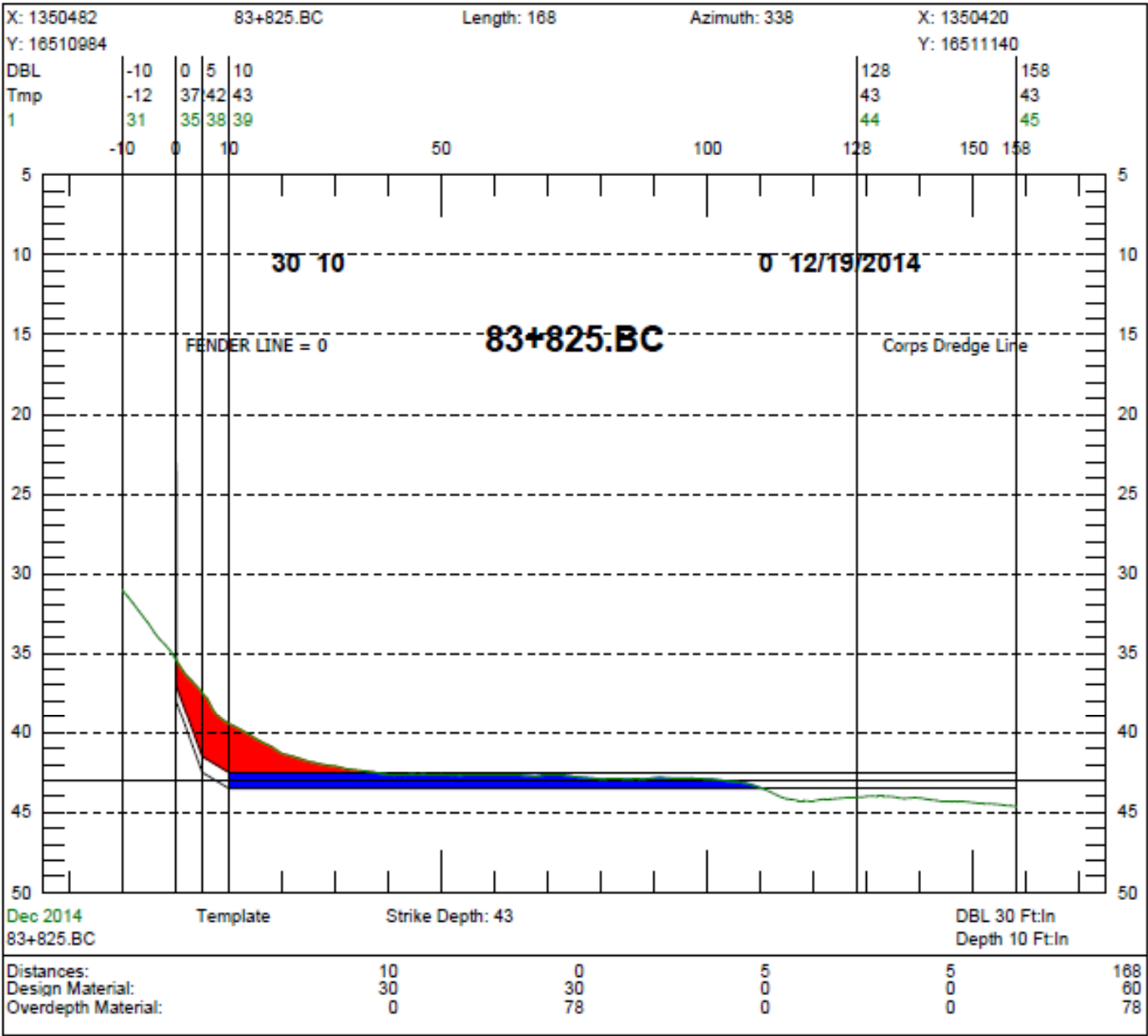
Sheet 8 Of 36	Dec 2014
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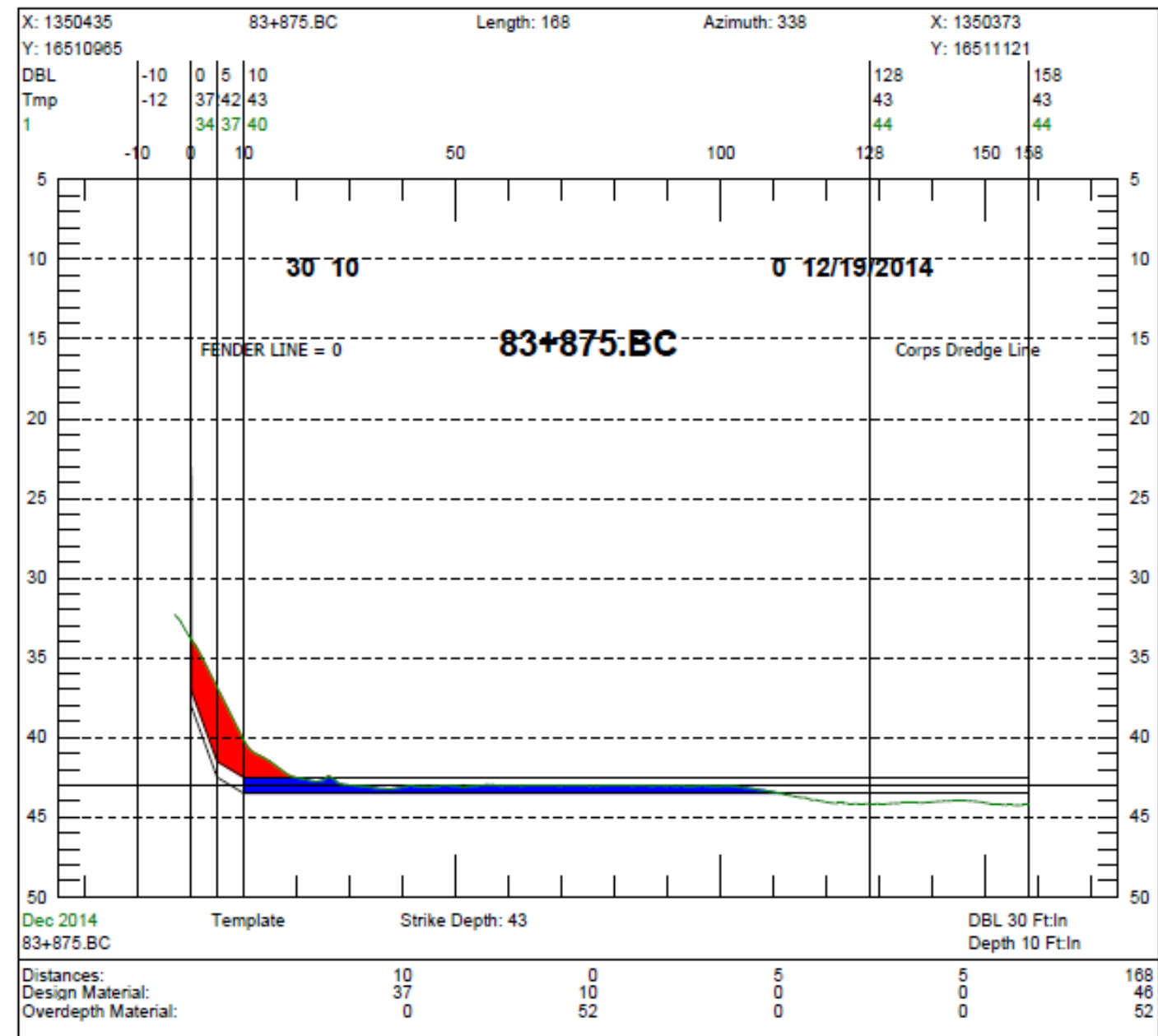
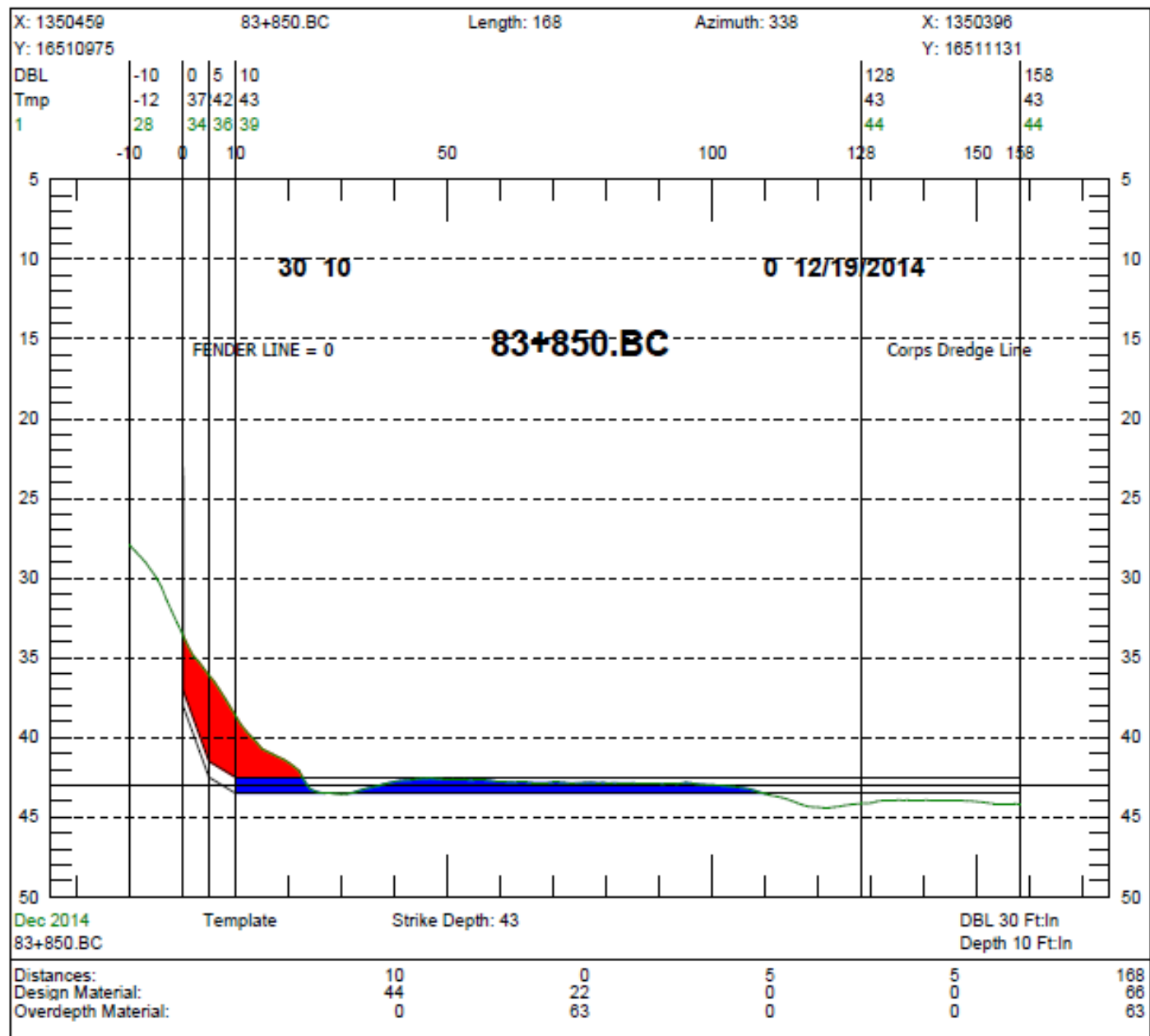


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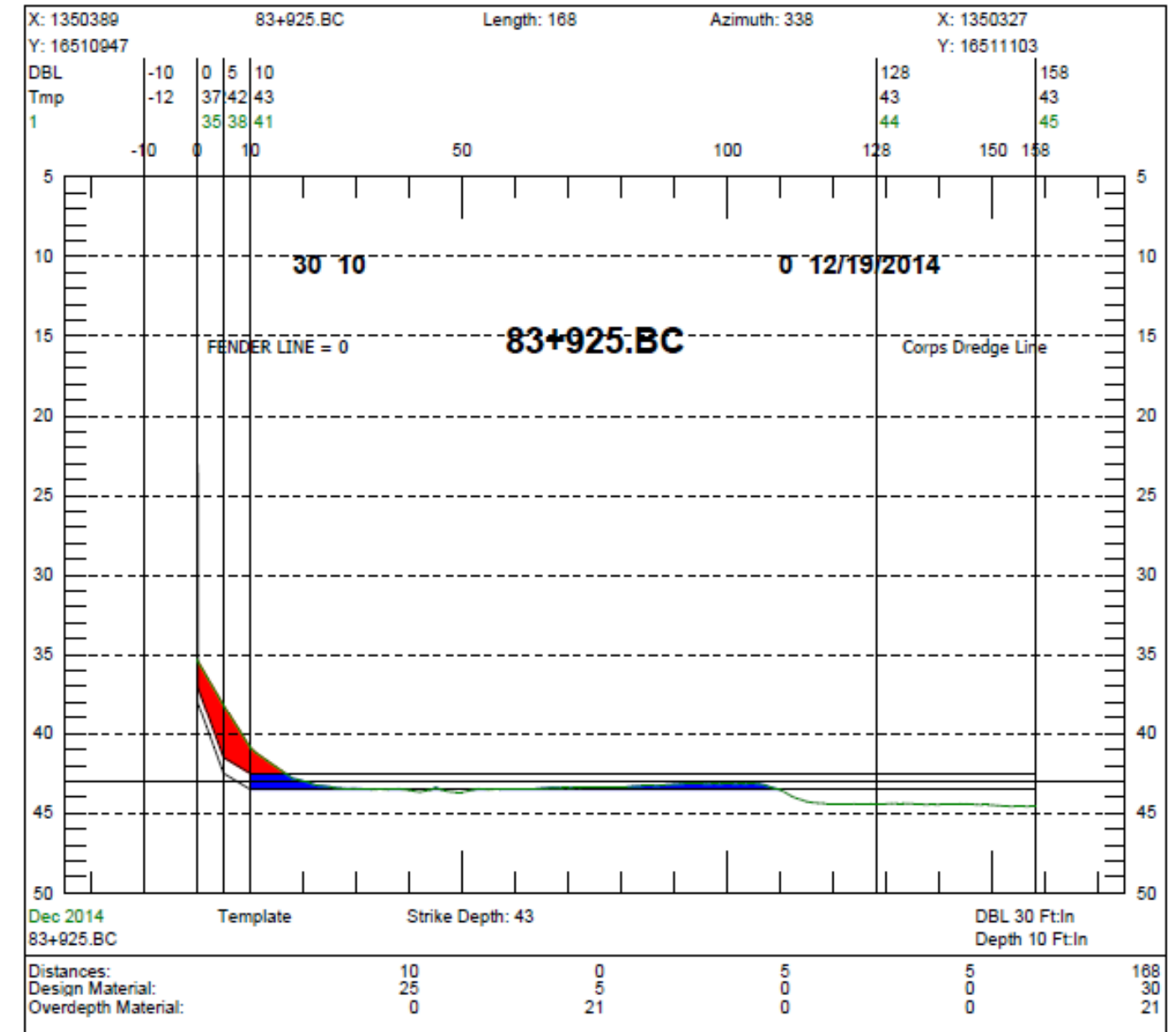
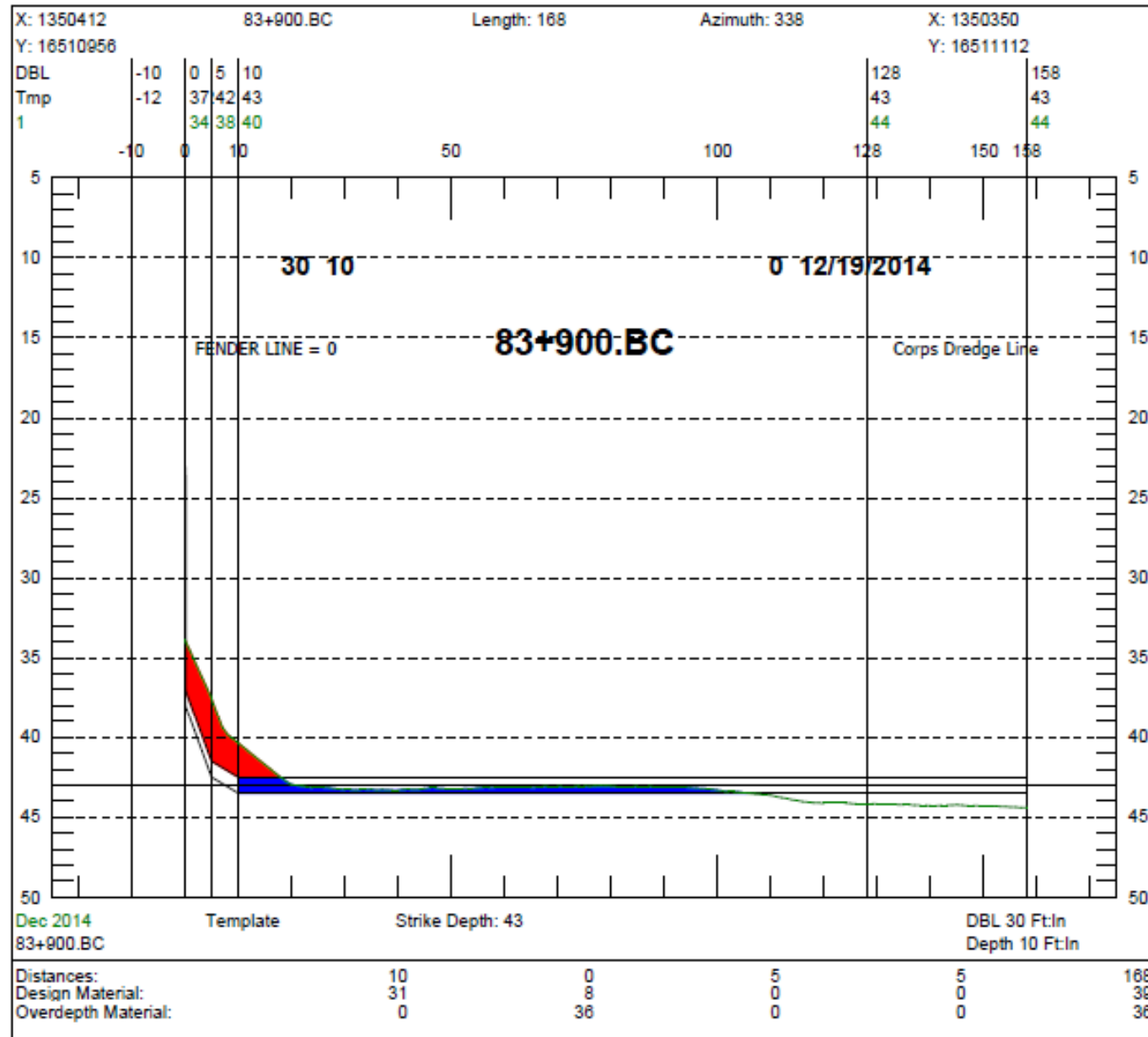
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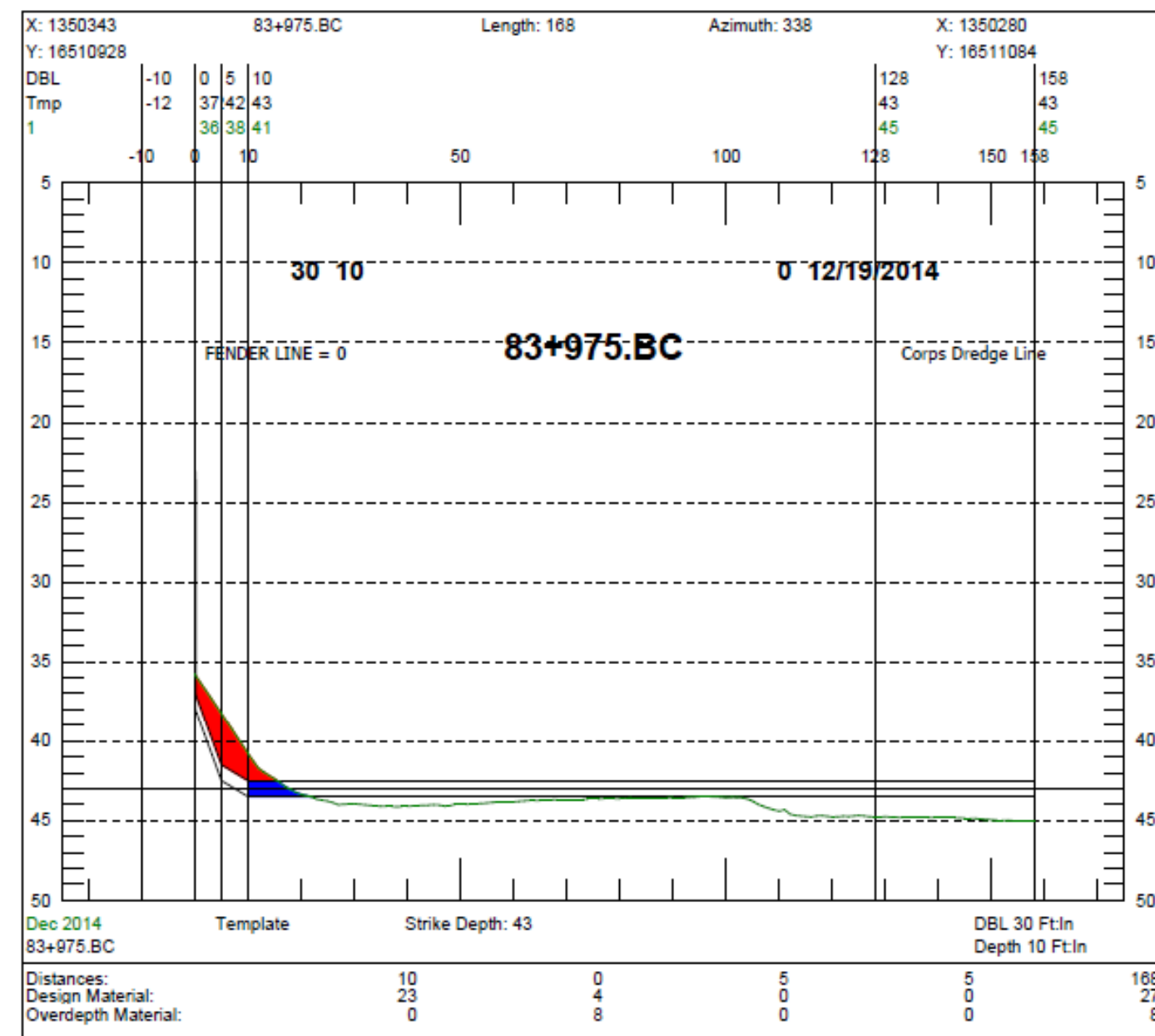
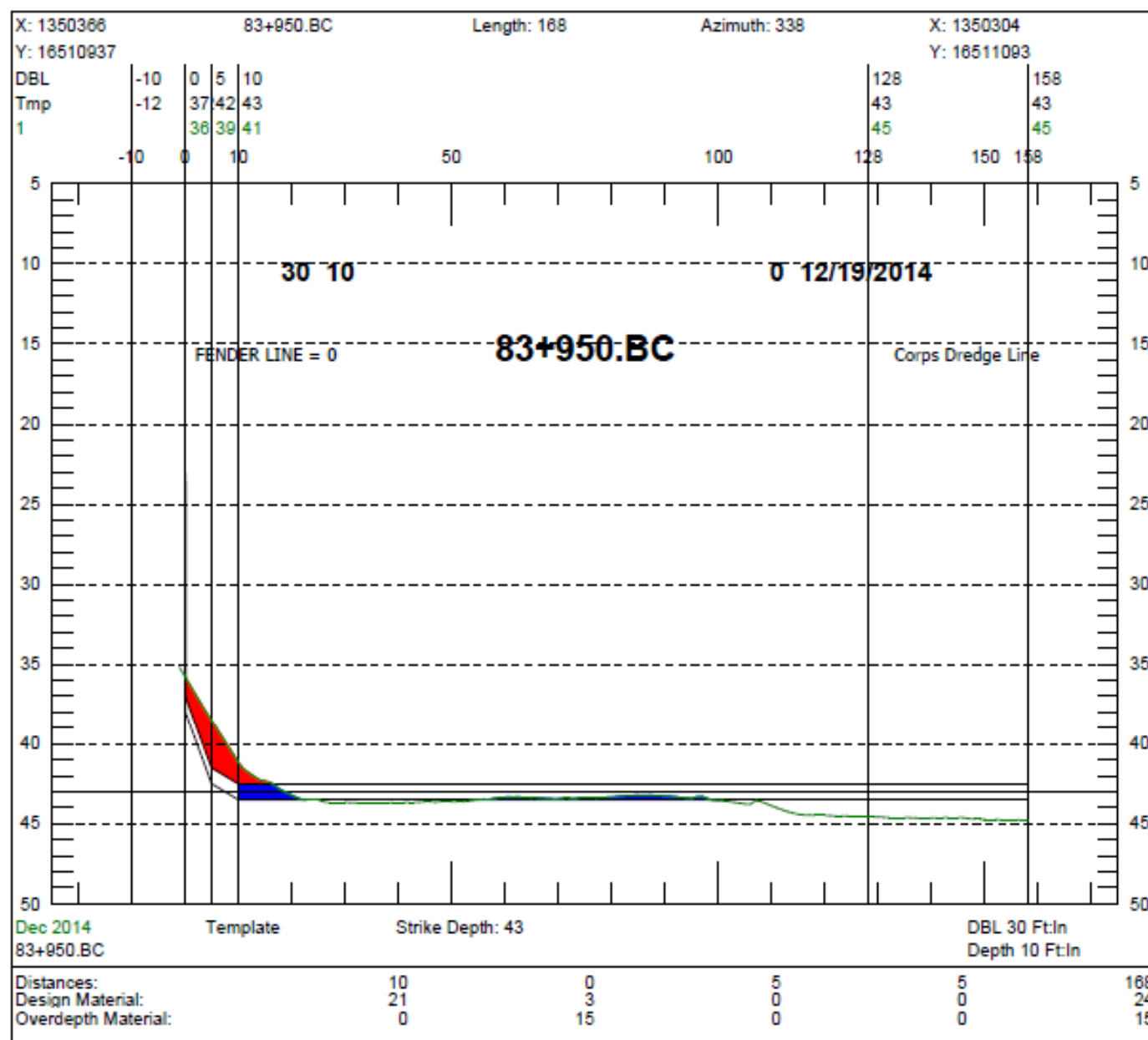
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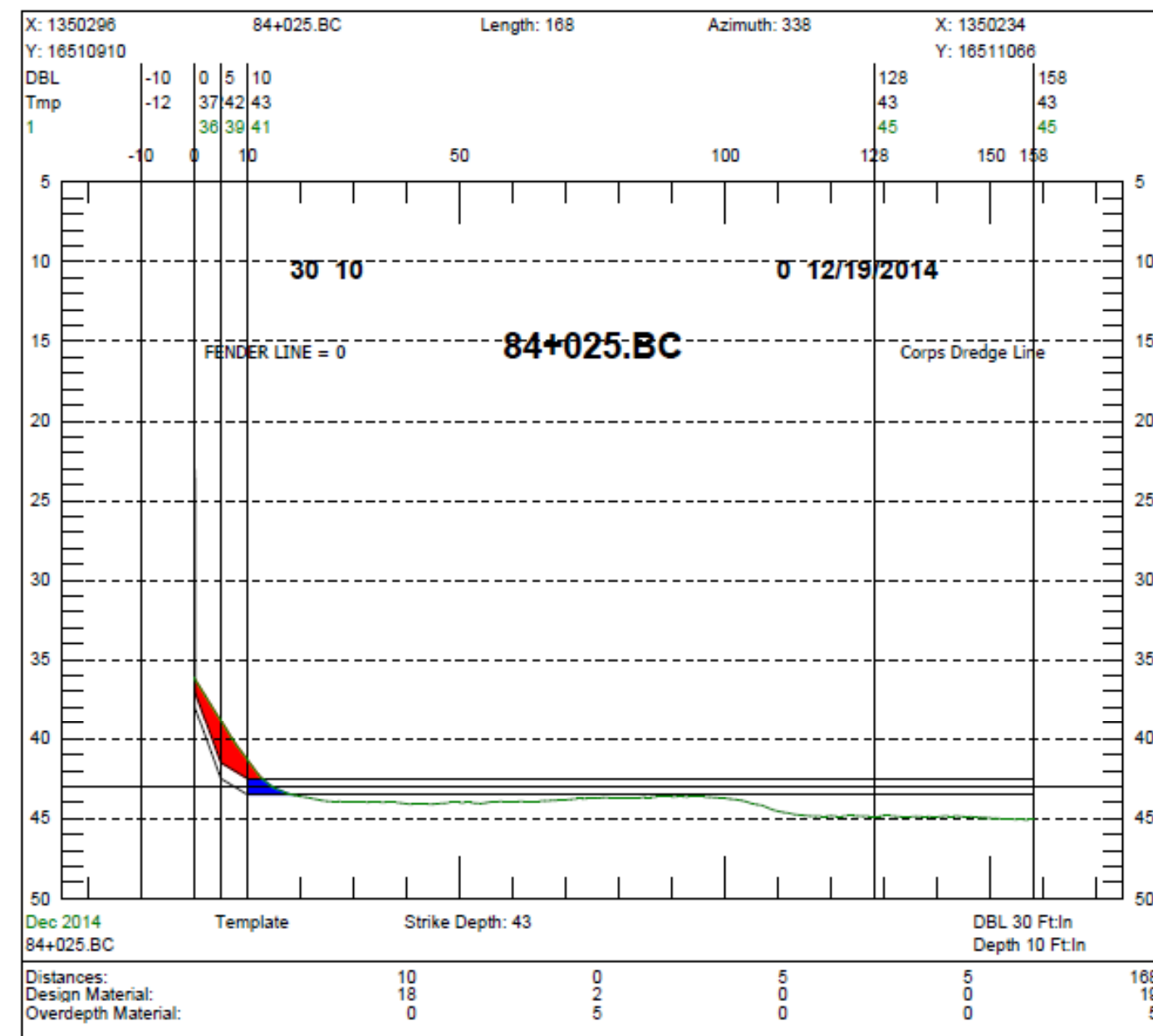
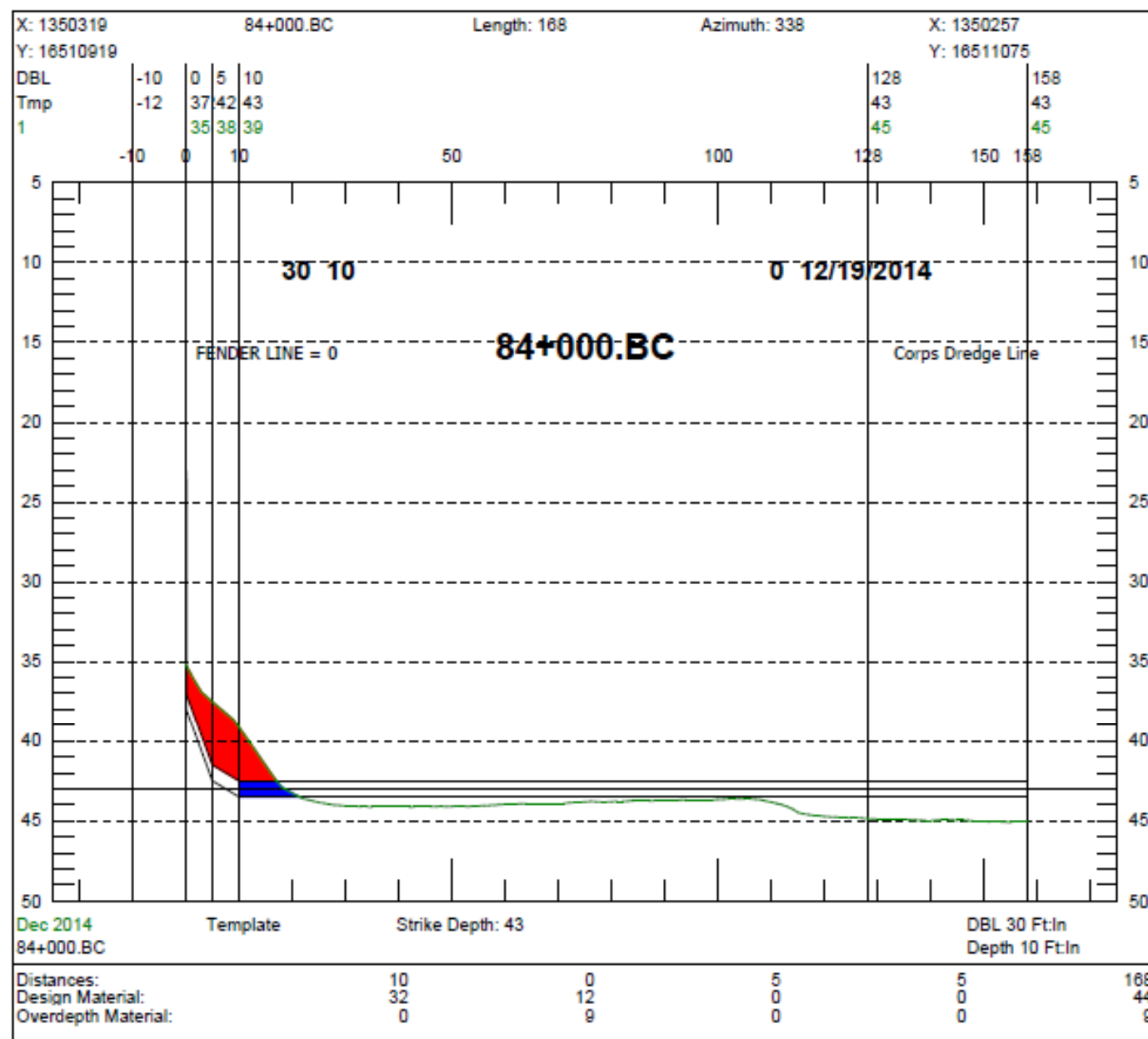
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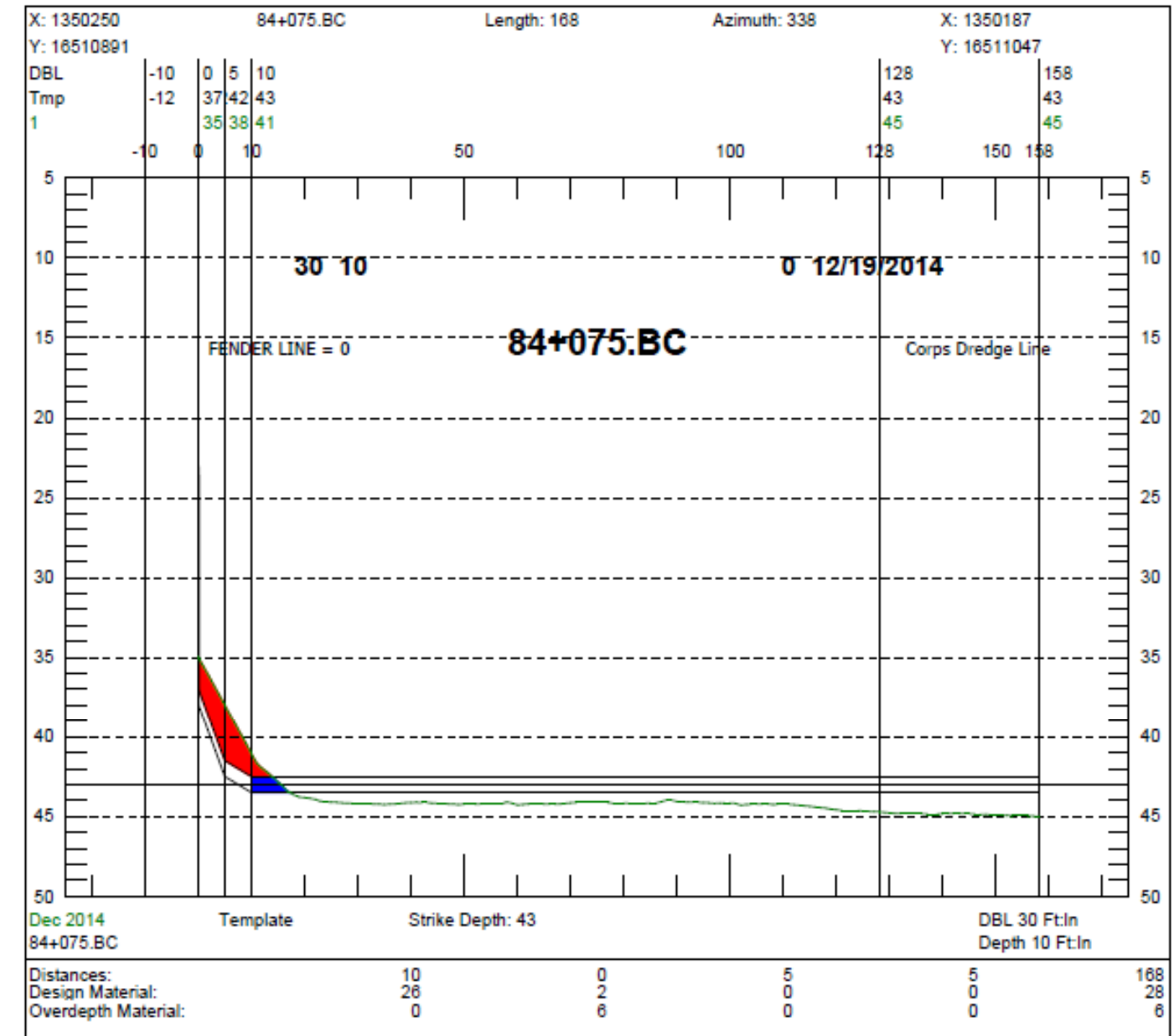
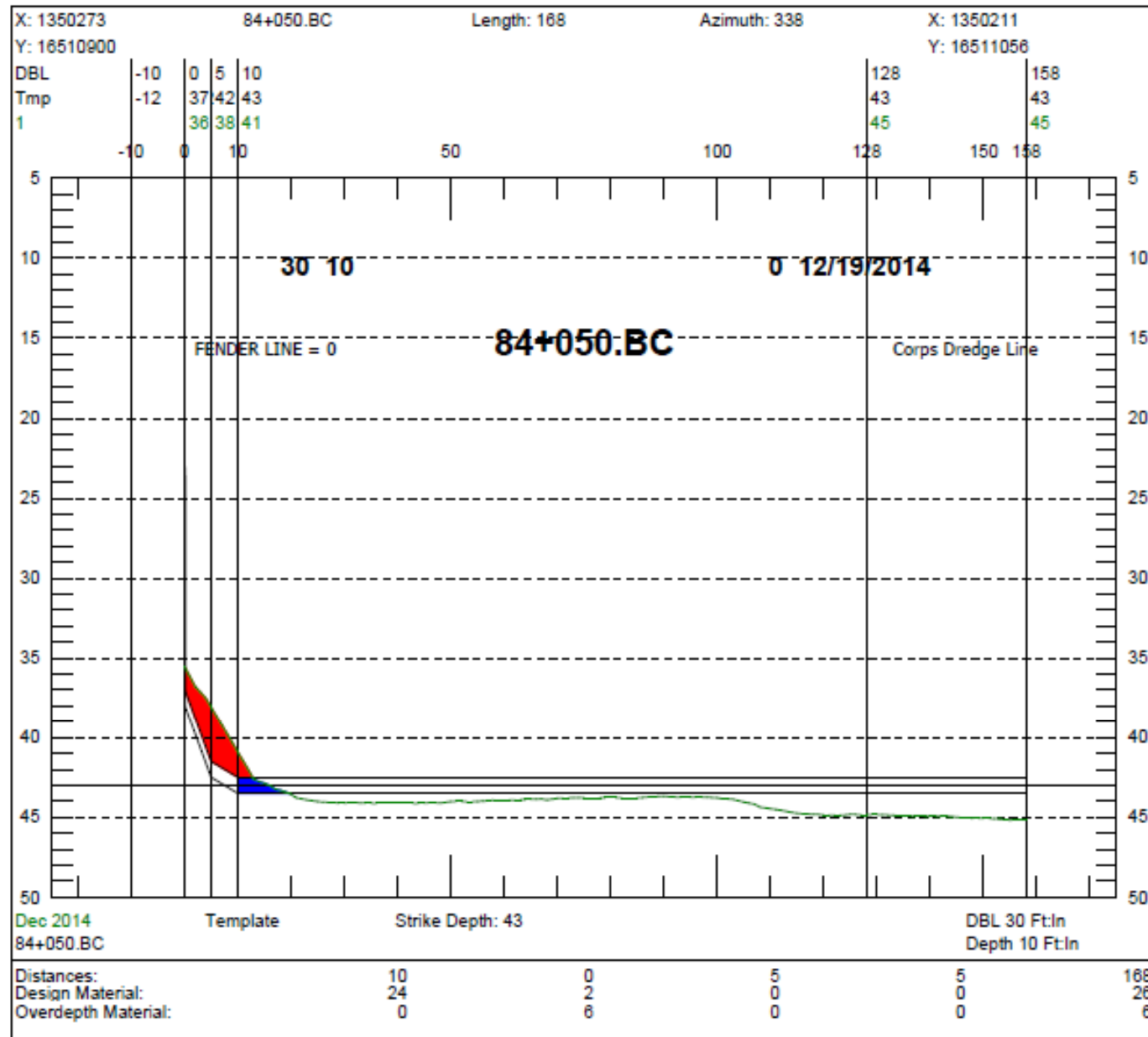
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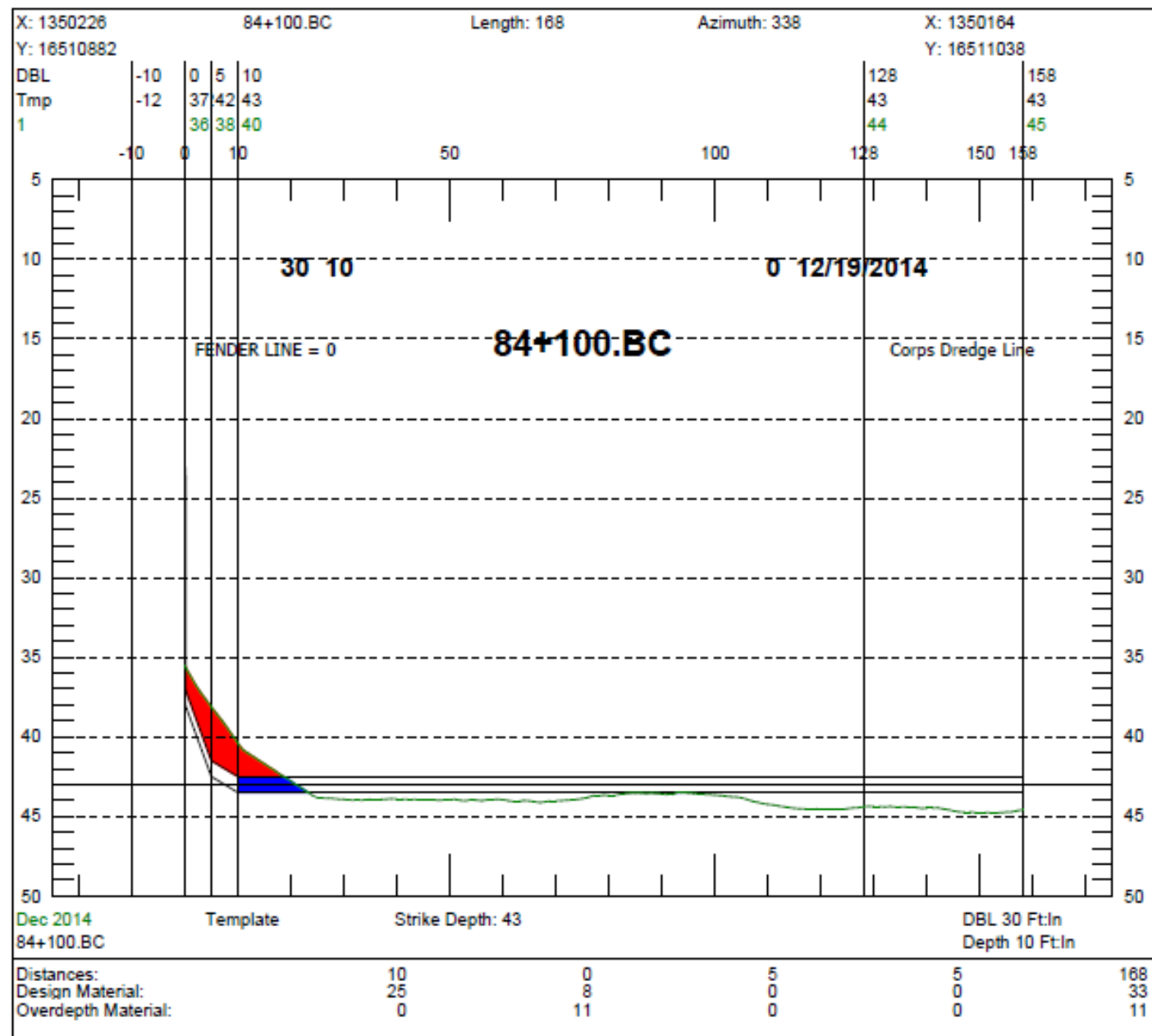
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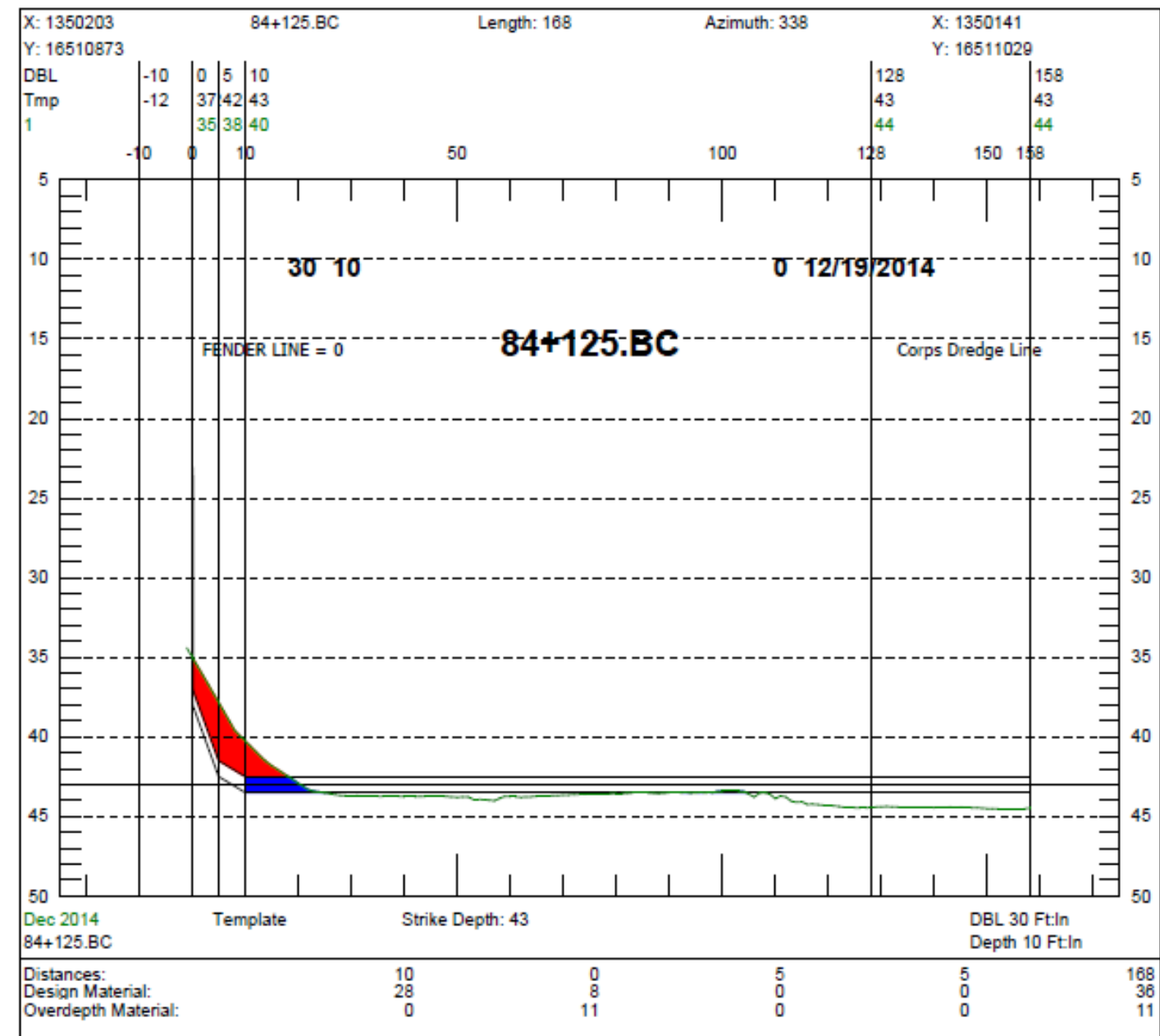
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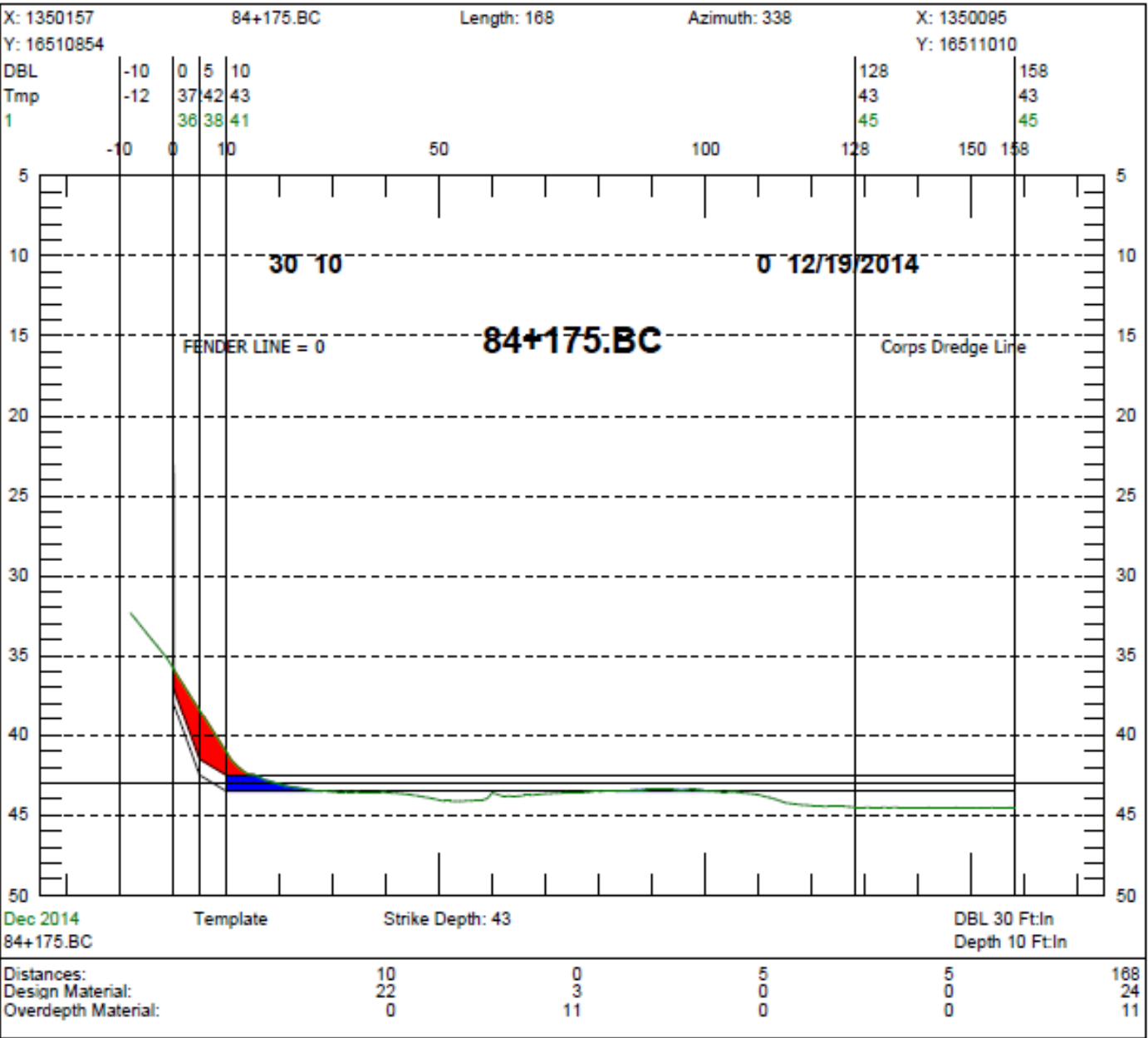
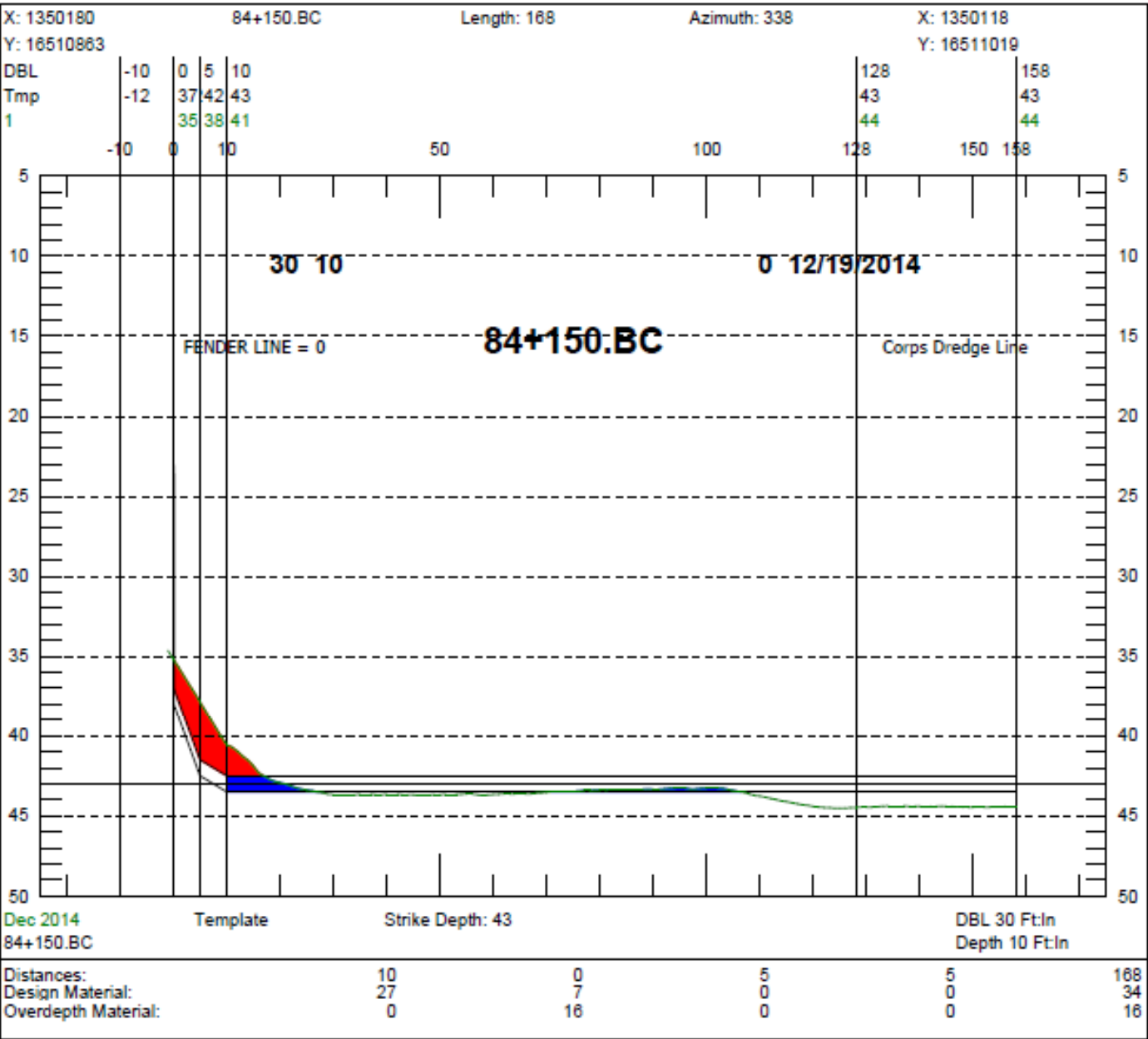


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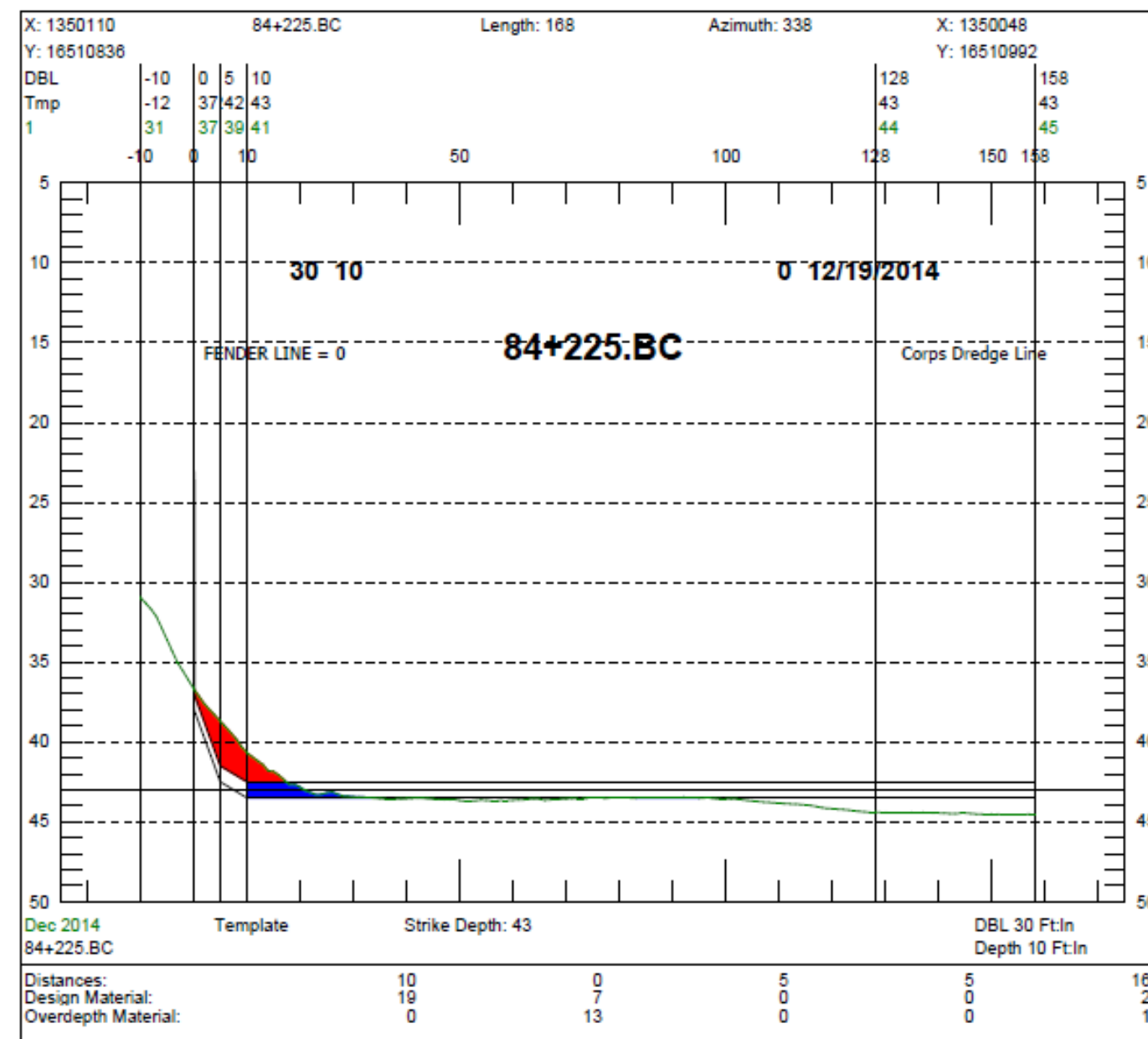
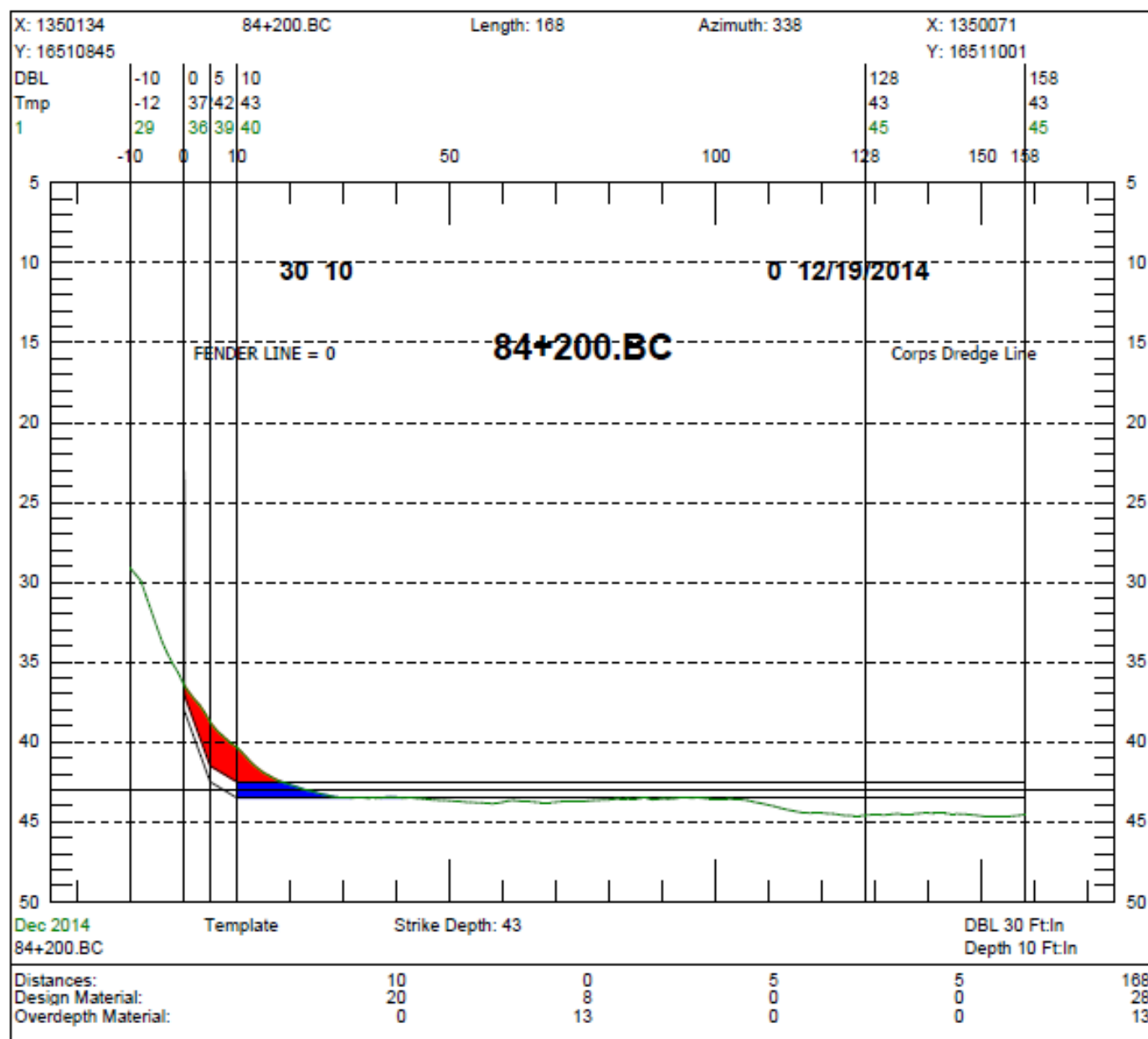
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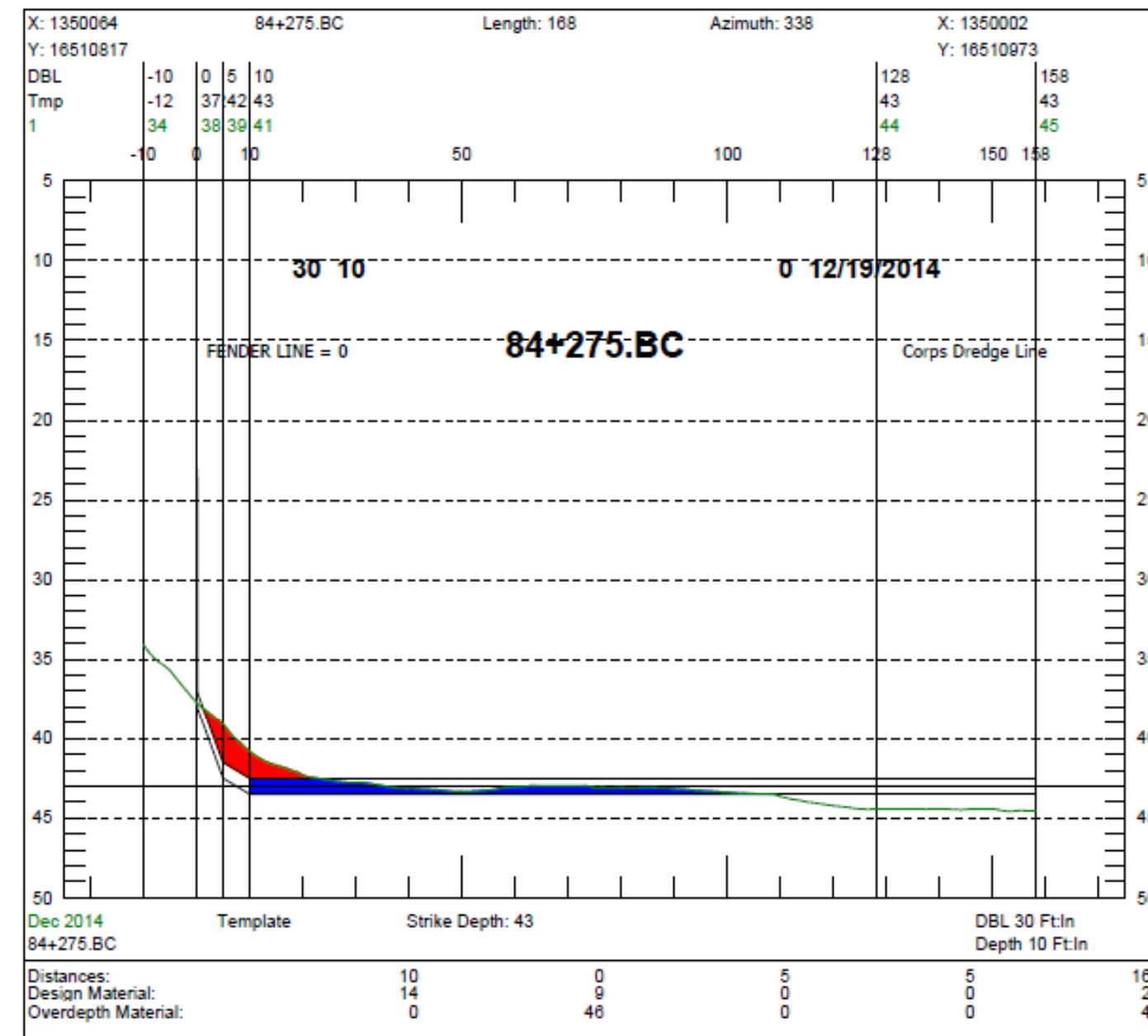
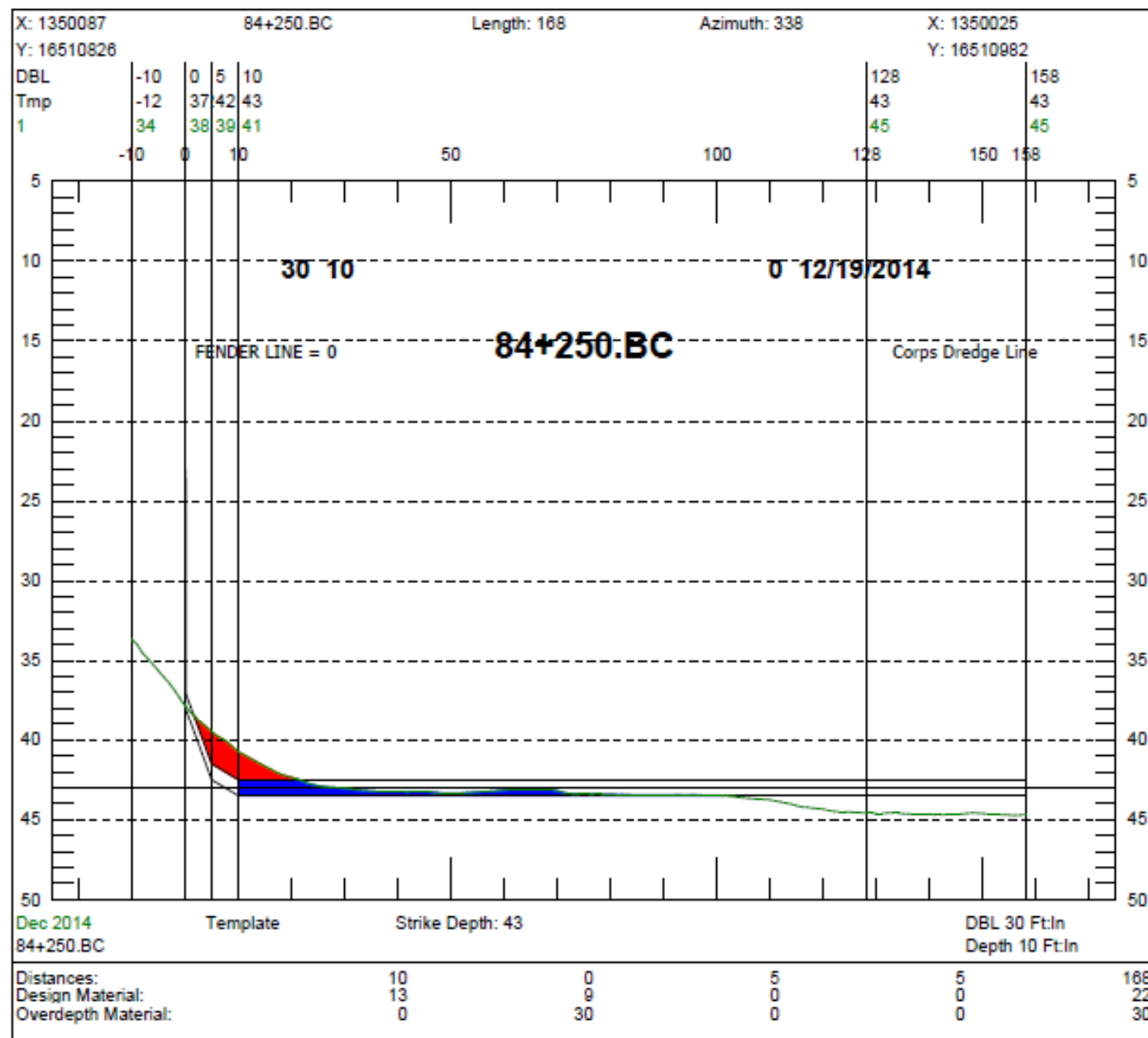
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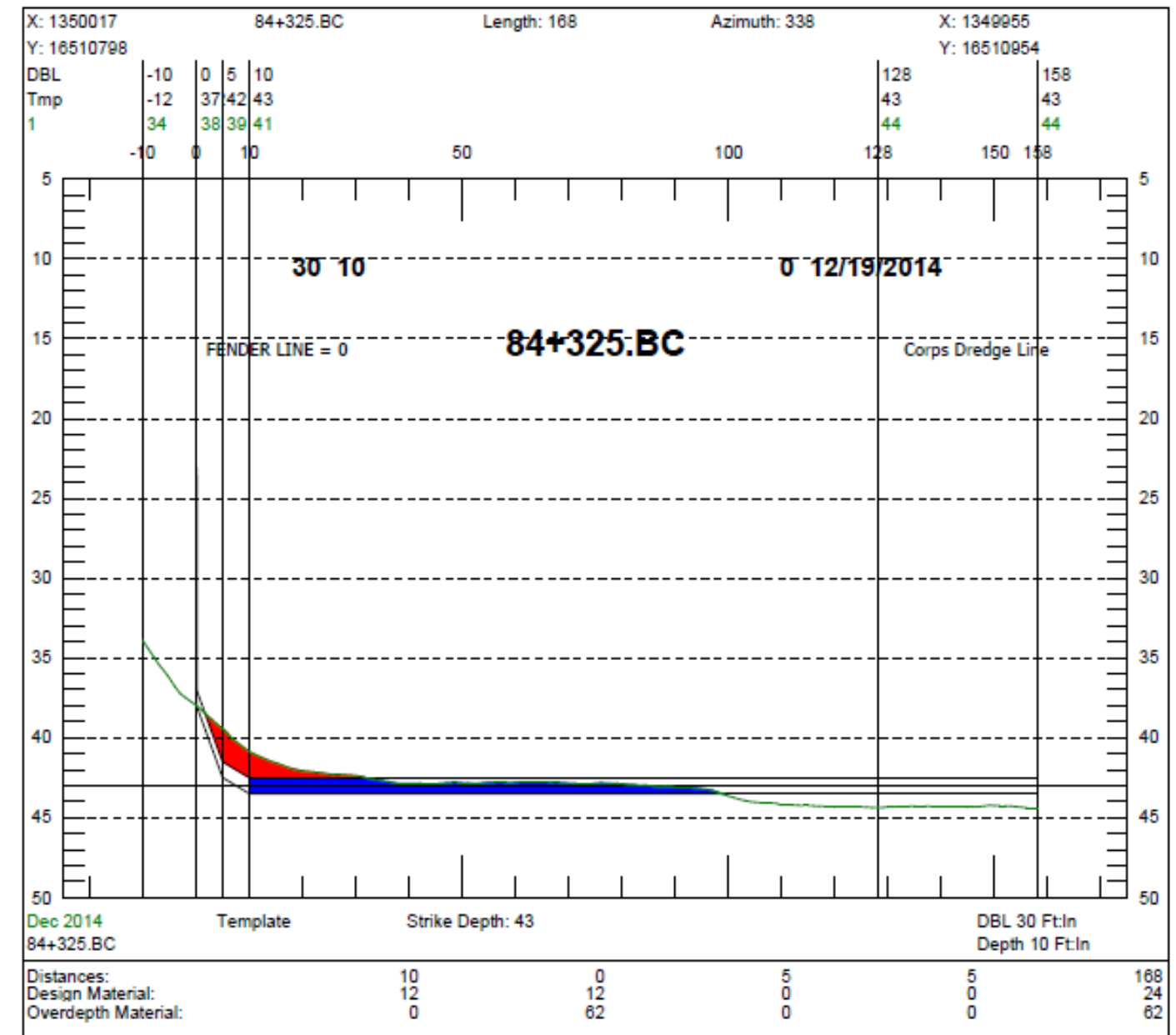
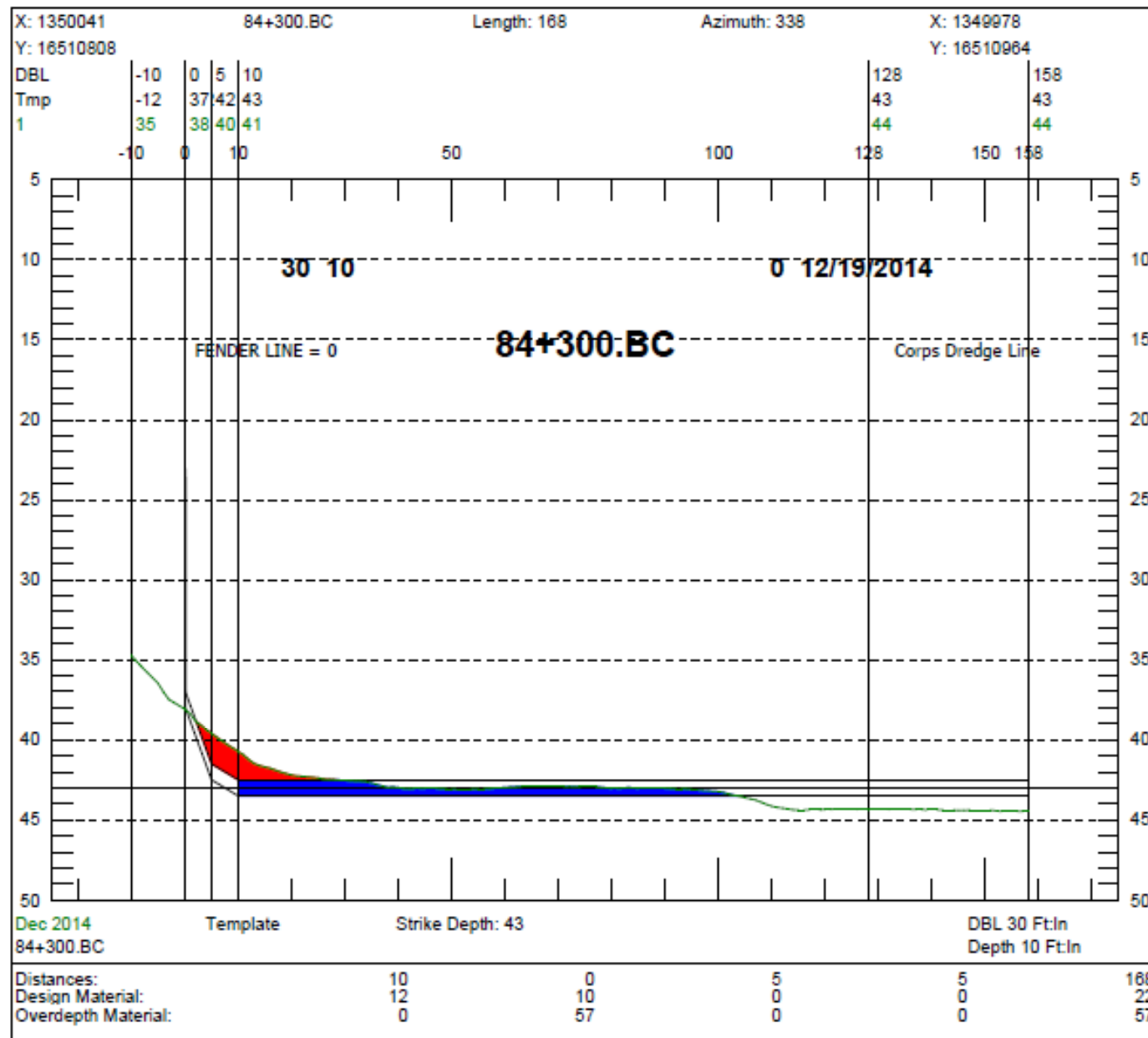
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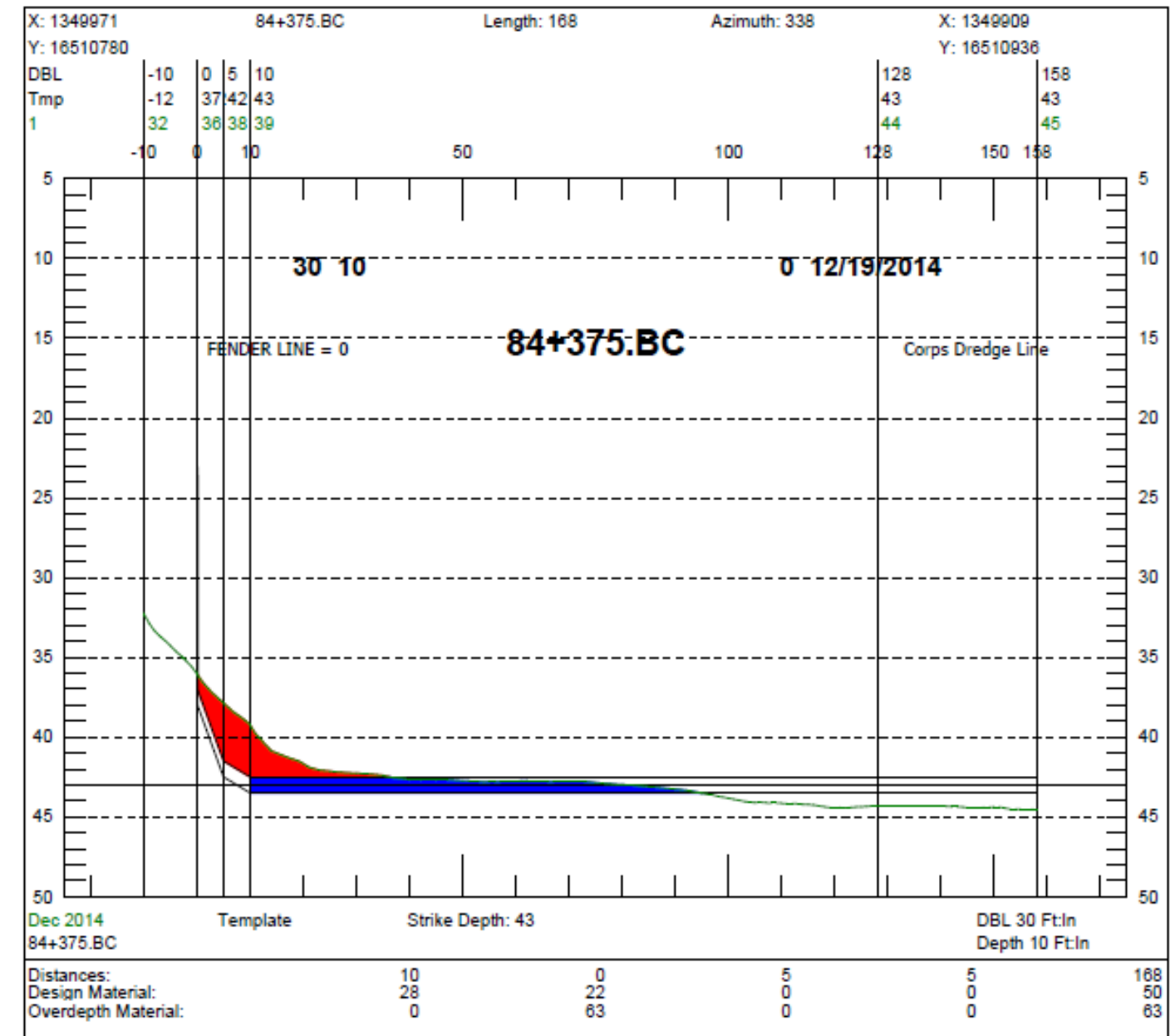
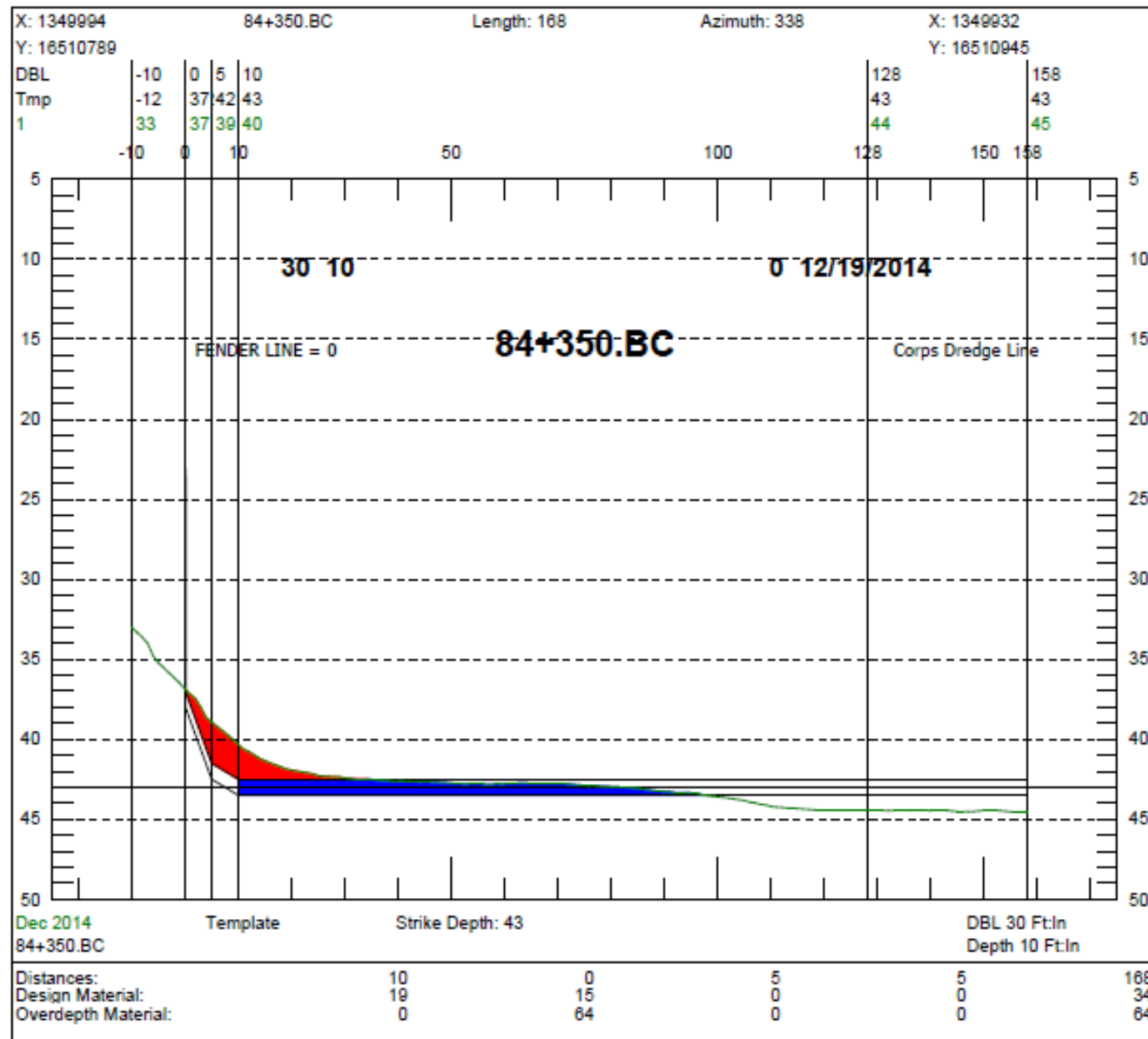
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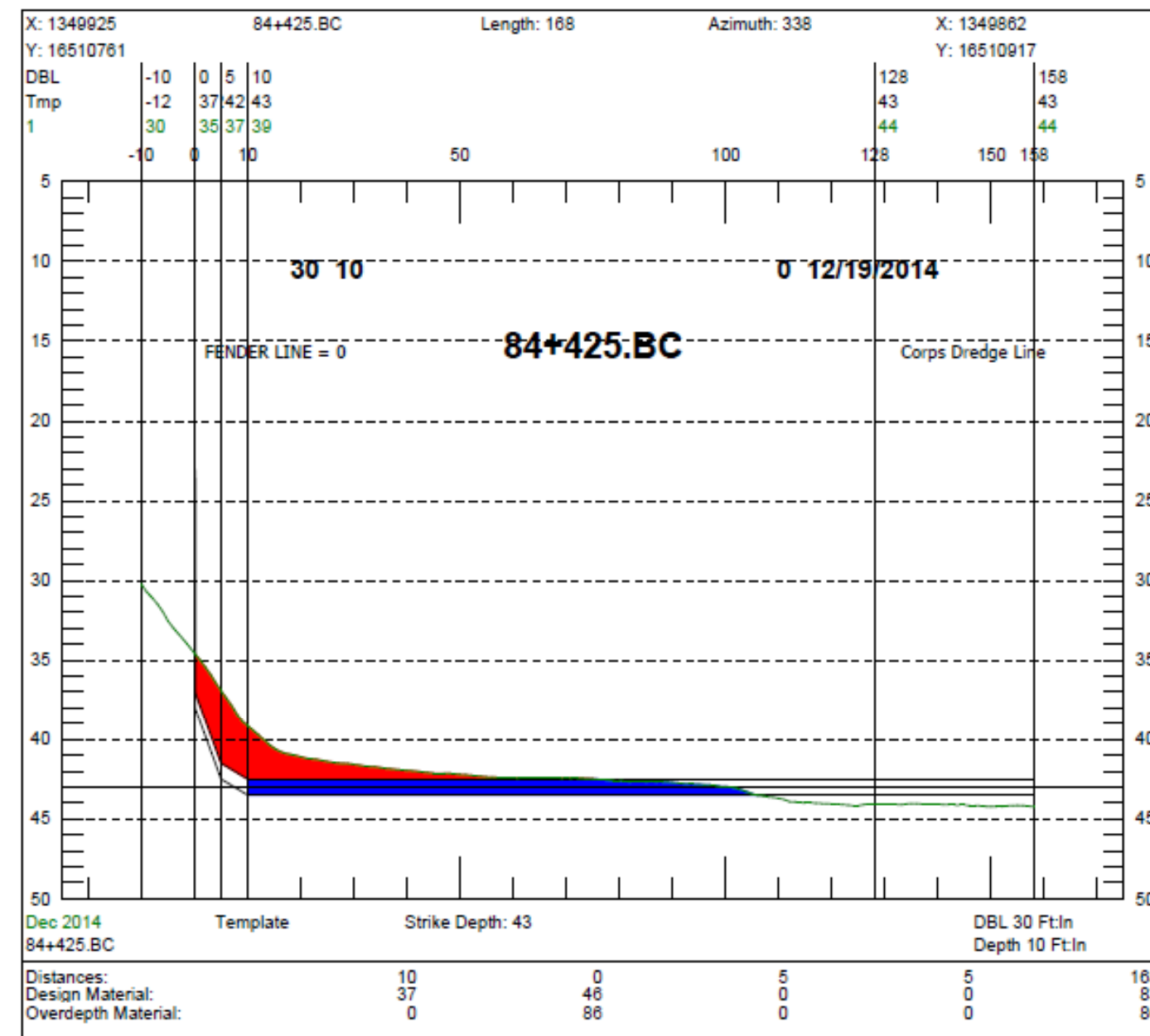
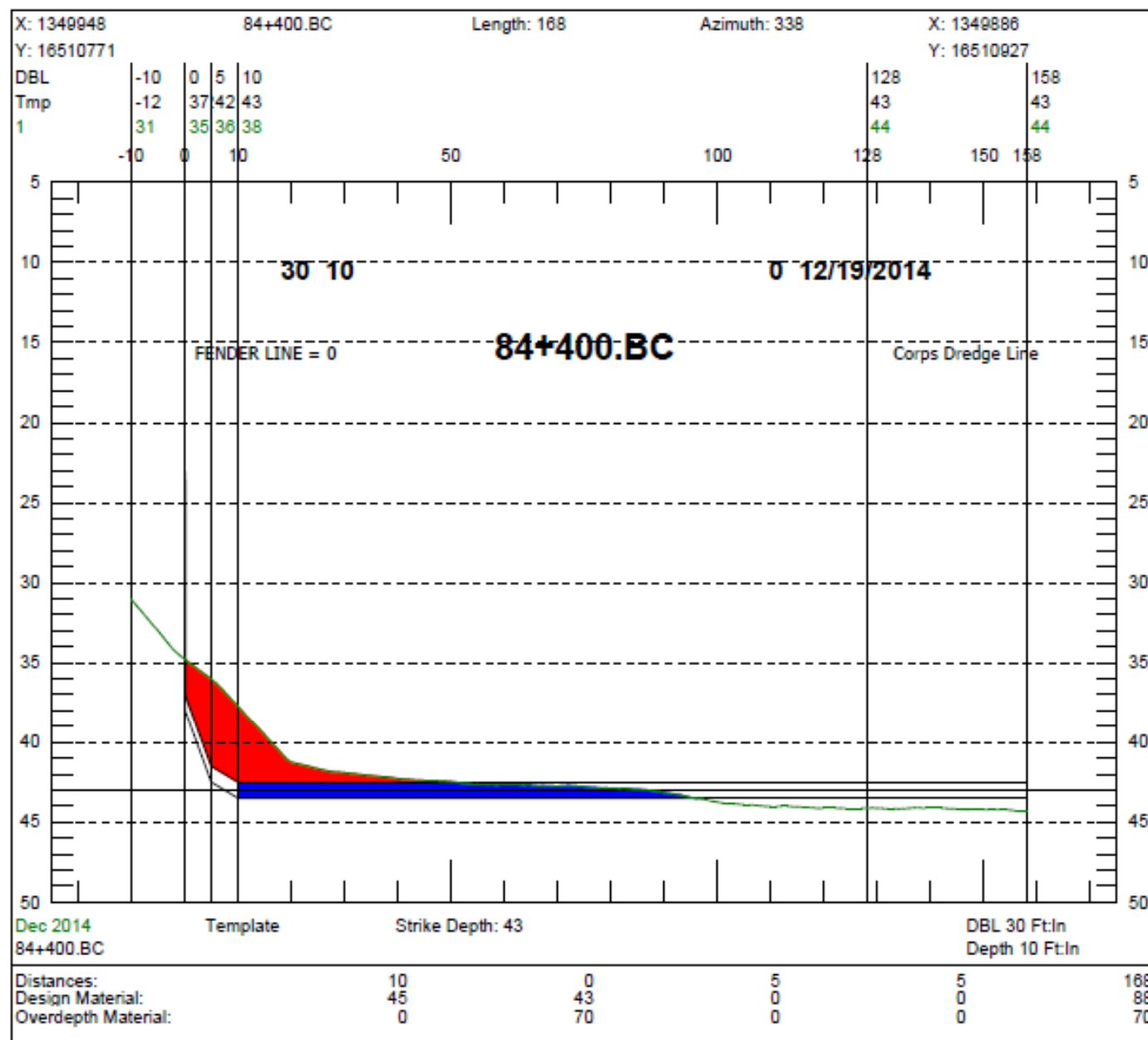
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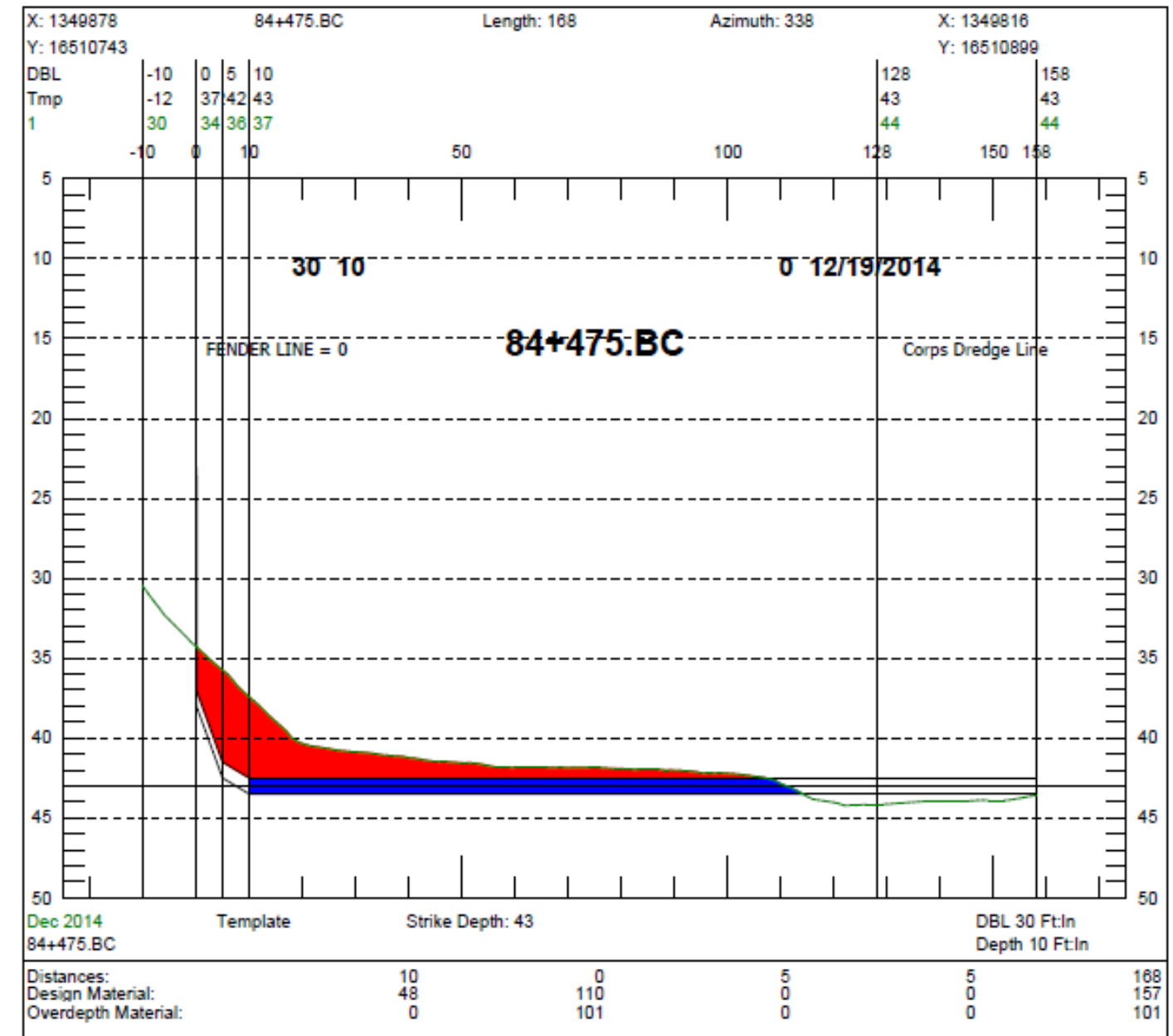
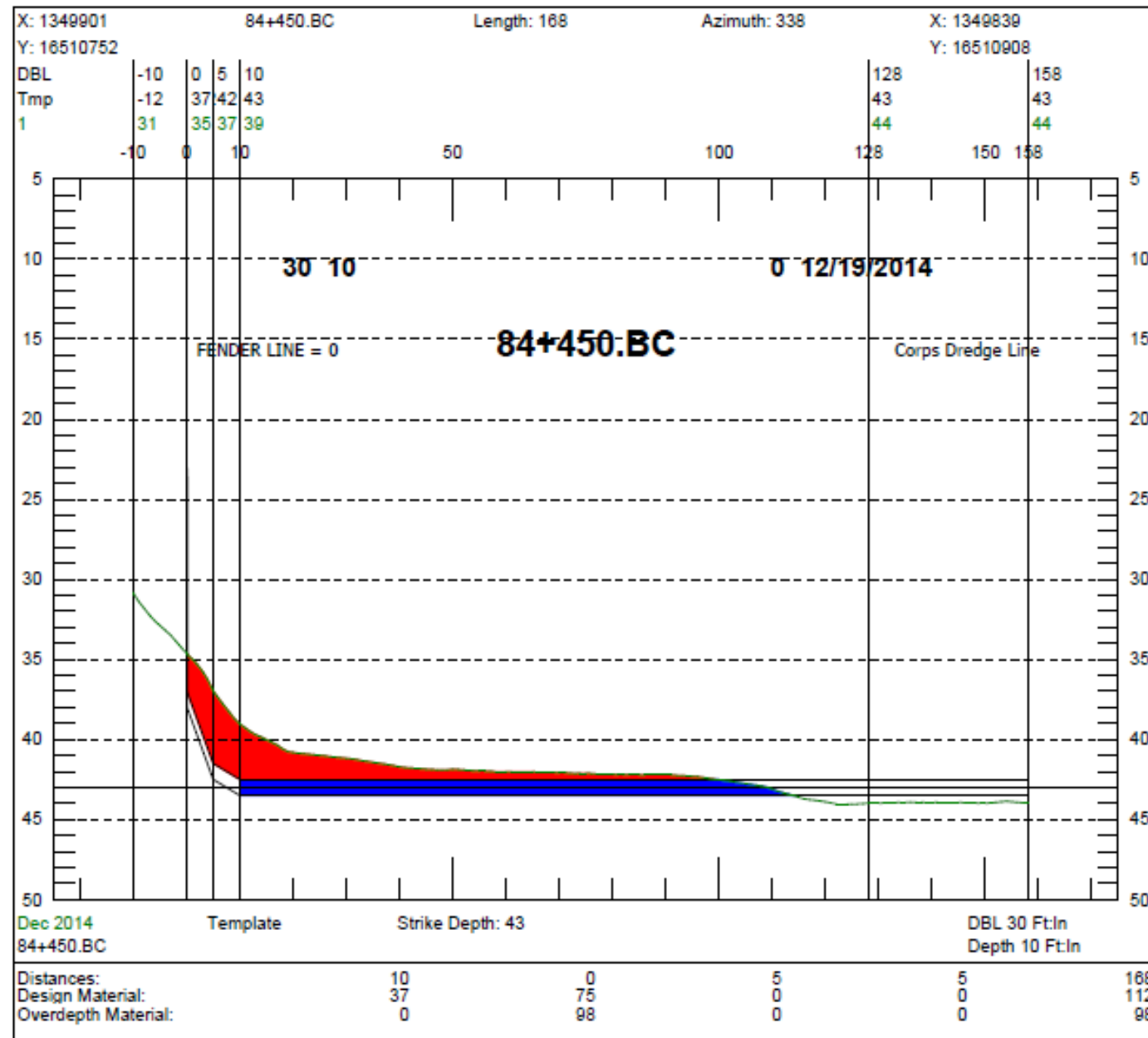
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