



May 17, 2018

Hensel Phelps Construction Company
4129 E. Van Buren Street, Suite 100
Phoenix, AZ 85008

Attention: Mr. Eric Niec

Re: PHX Sky Train Stage 2
Phoenix, AZ
DRILLED SHAFT REINFORCING SHOP DRAWING SUBMITTAL FOR SECTION 9

Gentlemen:

Enclosed please find our attached reinforcing shop drawings prepared by our reinforcing subcontractor Paradise Rebar for Section 9. Please review at your earliest convenience.

If you have any questions regarding the information contained herein, or require any additional information, please contact me.

Very truly yours,

CASE FOUNDATION COMPANY

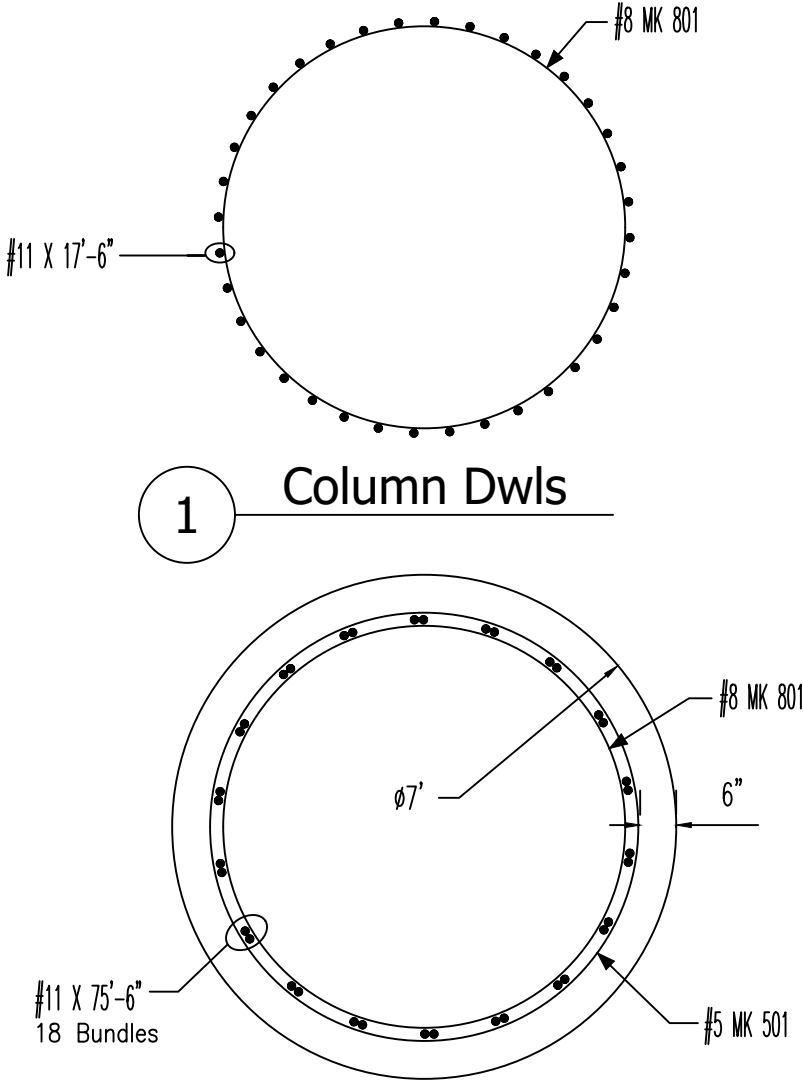
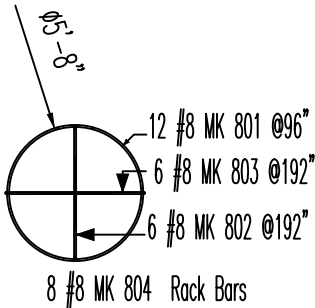
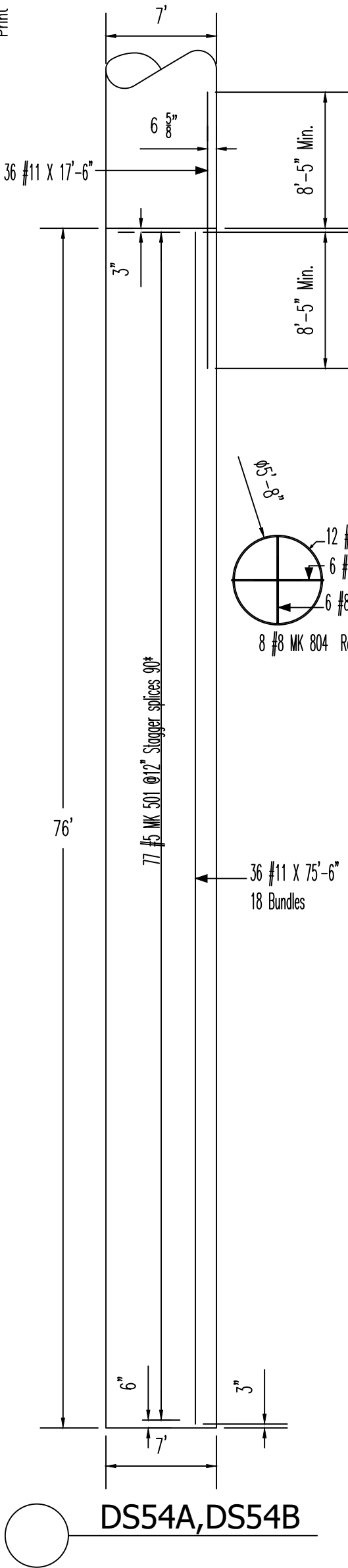
Aaron Thomas, PE
Senior Project Manager

Case Foundation Company
4050 E. Cotton Center Blvd. Suite 10
Phoenix, AZ 85040

t: 602-454-0988
f: 602-454-2165

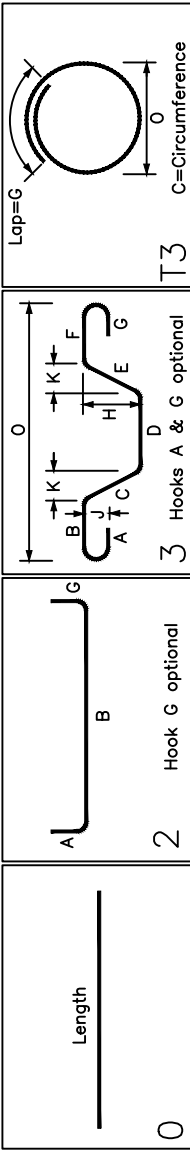
Equal Opportunity Employer – Minorities/Females/Disabled/Veterans





Member Title : DS54A												
Bar Mark	Qty	Size	Total Length	Type	'A'	'B'	'C'	'D'	'E'	'F'	'G'	'H'
	36	#11	75'-6"			75'-6"						'R'
	36	#11	17'-6"			17'-6"						
802	6	#8	8'-2"	2	1'-4"	5'-6"					1'-4"	
803	6	#8	8'-6"	2	1'-4"	5'-10"					1'-4"	
804	8	#8	10'-0"	3		1'-0"	8'-0"	1'-0"			5'-8"	7'-8"
501	77	#5	20'-4"	T3			18'-10"				1'-6"	6'-0"
801	12	#8	19'-3 1/2"	T3			17'-9 1/2"				1'-6"	5'-8"

Member Title : DS54B												
Bar Mark	Qty	Size	Total Length	Type	'A'	'B'	'C'	'D'	'E'	'F'	'G'	'H'
	36	#11	75'-6"			75'-6"						'R'
	36	#11	17'-6"			17'-6"						
802	6	#8	8'-2"	2	1'-4"	5'-6"					1'-4"	
803	6	#8	8'-6"	2	1'-4"	5'-10"					1'-4"	
804	8	#8	10'-0"	3		1'-0"	8'-0"	1'-0"			5'-8"	7'-8"
501	77	#5	20'-4"	T3			18'-10"				1'-6"	6'-0"
801	12	#8	19'-3 1/2"	T3			17'-9 1/2"				1'-6"	5'-8"



 2547 WEST JACKSON ST. PHOENIX, ARIZONA 85009 TEL. (602) 447-0839 FAX. (602) 447-8019	Notes/Revisions			
	Rev 0_For Approval_5/7/18			
Project: Sky Train Stage 2 Shafts	THIS DRAWING IS NOT TO BE SCALED.			
Drawing: Section 9 Pier 54 DS54A,DS54B	Fabricator Job#: 18A111			
Contractor: Case	Date 5/7/18	Drawn Phil	Contract No. 400254	Dwg. No. P54
Location: Sky Harbor				



2547 WEST JACKSON ST.
PHOENIX
ARIZONA 85009
TEL: (602) 447-0839
FAX: (602) 447-8019

Project: Sky Train Stage 2 Shafts

Drawing: Section 9 Pier 55
DS55A,DS55B

Contractor: Case

Location: Sky Harbor

Notes/Revisions

Rev 0_For Approval_5/7/18

THIS DRAWING IS NOT TO BE SCALED.

Fabricator Job#: 18A111

Date
5/7/18

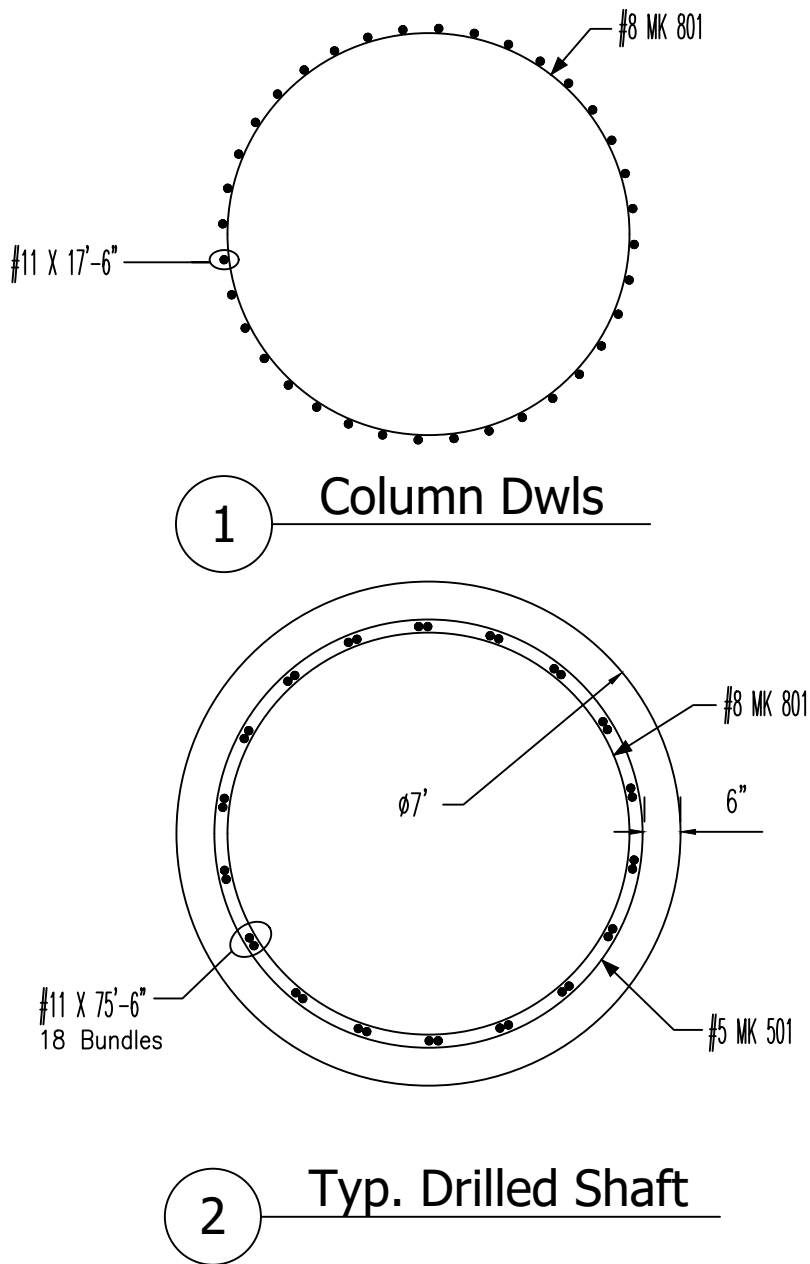
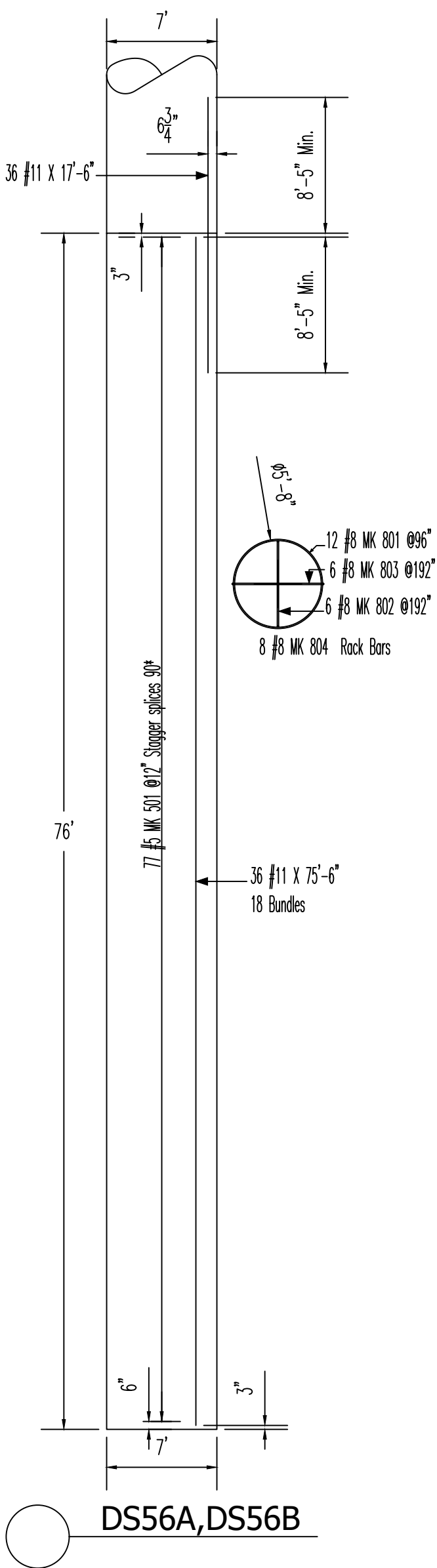
Drawn
Phil

Contract No.
400254

Dwg. No.
P55

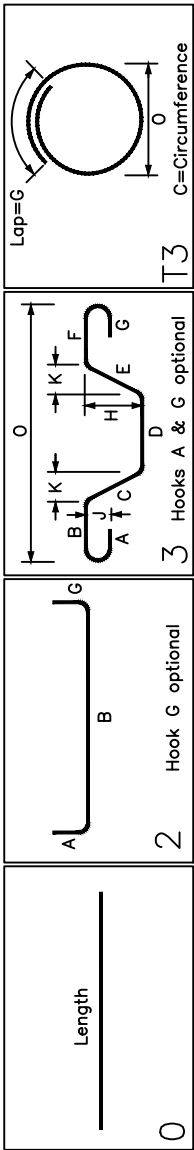
BAR LIST																	
Member Title : DS55A	Bar Mark	Qty	Size	Total Length	Type	'A'	'B'	'C'	'D'	'E'	'F'	'G'	'H'	'J'	'K'	'O'	'R'
		36	#11	75'-6"			75'-6"										
		36	#11	17'-6"			17'-6"										
	802	6	#8	8'-2"	2	1'-4"	5'-6"					1'-4"					
	803	6	#8	8'-6"	2	1'-4"	5'-10"					1'-4"					
	804	8	#8	10'-0"	3		1'-0"	8'-0"	1'-0"				5'-8"		5'-8"	7'-8"	
	501	77	#5	20'-4"	T3			18'-10"				1'-6"				6'-0"	
	801	12	#8	19'-3 1/4"	T3			17'-9 1/4"				1'-6"				5'-8"	
Bar list produced by RebarCAD 2018																	

BAR LIST																	
Member Title : DS55B	Bar Mark	Qty	Size	Total Length	Type	'A'	'B'	'C'	'D'	'E'	'F'	'G'	'H'	'J'	'K'	'O'	'R'
		36	#11	75'-6"			75'-6"										
		36	#11	17'-6"			17'-6"										
	802	6	#8	8'-2"	2	1'-4"	5'-6"					1'-4"					
	803	6	#8	8'-6"	2	1'-4"	5'-10"					1'-4"					
	804	8	#8	10'-0"	3		1'-0"	8'-0"	1'-0"				5'-8"		5'-8"	7'-8"	
	501	77	#5	20'-4"	T3			18'-10"				1'-6"				6'-0"	
	801	12	#8	19'-3 1/4"	T3			17'-9 1/4"				1'-6"				5'-8"	
Bar list produced by RebarCAD 2018																	



Member Title : DSS6A				BAR LIST												
Bar Mark	Qty	Size	Total Length	Type	'A'	'B'	'C'	'D'	'E'	'F'	'G'	'H'	'J'	'K'	'O'	'R'
	36	#11	75'-6"			75'-6"										
	36	#11	17'-6"			17'-6"										
802	6	#8	8'-2"	2	1'-4"	5'-6"					1'-4"					
803	6	#8	8'-6"	2	1'-4"	5'-10"					1'-4"					
804	8	#8	10'-0"	3		1'-0"	8'-0"	1'-0"				5'-8"			7'-8"	
501	77	#5	20'-4"	13			18'-10"				1'-6"				6'-0"	
801	12	#8	19'-3 1/2"	13			17'-9 1/2"				1'-6"				5'-8"	

Member Title : DSS68				BAR LIST												
Bar Mark	Qty	Size	Total Length	Type	A'	B'	C'	D'	E'	F'	G'	H'	J'	K'	O'	R'
	36	#11	75'-6"			75'-6"										
	36	#11	17'-6"			17'-6"										
802	6	#8	8'-2"	2	1'-4"	5'-6"					1'-4"					
803	6	#8	8'-6"	2	1'-4"	5'-10"					1'-4"					
804	8	#8	10'-0"	3		1'-0"	8'-0"	1'-0"				5'-8"		5'-8"	7'-8"	
501	77	#5	20'-4"	13			18'-10"				1'-4"				6'-0"	
801	12	#8	19'-3 1/2"	13			17'-9 1/2"				1'-6"				5'-8"	



	2547 WEST JACKSON ST. PHOENIX ARIZONA 85009 TEL. (602) 447-0839 FAX. (602) 447-8019	Notes/Revisions			
	Project: Sky Train Stage 2 Shafts	Rev 0_For Approval_5/7/18			
Drawing: Section 9 Pier 56 DS56A,DS56B	THIS DRAWING IS NOT TO BE SCALED.				
	Fabricator Job#: 18A111				
Contractor: Case	Date	Drawn	Contract No.	Dwg. No.	
Location: Sky Harbor	5/7/18	Phil	400254	P56	



2547 WEST JACKSON ST.
PHOENIX
ARIZONA 85009
TEL. (602) 447-0539
FAX. (602) 447-8019

Project: Sky Train Stage 2 Shafts

Drawing: Section 9 Pier 57
DS57A,DS74B

Contractor: Case

Location: Sky Harbor

Notes/Revisions

Rev 0_For Approval_5/7/18

THIS DRAWING IS NOT TO BE SCALED.

Fabricator Job#: 18A111

Date
5/7/18

Drawn
Phil

Contract No.
400254

Dwg. No.
P57

Diagram showing the main shaft cross-section with dimensions and reinforcement details:

- Overall diameter: 76'
- Reinforcement: 36 #11 X 17'-6" (18 Bundles), 77 #5 MK 501 @12" Stagger splices 90°, 8 #8 MK 804 Rock Bars, 12 #8 MK 801 @96", 6 #8 MK 803 @192", 6 #8 MK 802 @192".
- Internal dimensions: 7', 6 3/4", 3", 8'-5" Min., 8'-5" Min., 7'.
- Section label: DS57A,DS57B

Member Title : DS57A													
BAR LIST													
Bar Mark	Qty	Size	Total Length	Type	'A'	'B'	'C'	'D'	'E'	'F'	'G'	'H'	'J'
	36	#11	75'-6"			75'-6"							'R'
	36	#11	17'-6"			17'-6"							
802	6	#8	8'-2"	2	1'-4"	5'-6"					1'-4"		
803	6	#8	8'-6"	2	1'-4"	5'-10"					1'-4"		
804	8	#8	10'-0"	3		1'-0"	8'-0"	1'-0"			5'-8"		7'-8"
501	77	#5	20'-4"	T3			18'-10"				1'-6"		6'-0"
801	12	#8	19'-3 1/4"	T3			17'-9 1/4"				1'-6"		5'-8"

Member Title : DS57B													
BAR LIST													
Bar Mark	Qty	Size	Total Length	Type	'A'	'B'	'C'	'D'	'E'	'F'	'G'	'H'	'J'
	36	#11	75'-6"			75'-6"							'R'
	36	#11	17'-6"			17'-6"							
802	6	#8	8'-2"	2	1'-4"	5'-6"					1'-4"		
803	6	#8	8'-6"	2	1'-4"	5'-10"					1'-4"		
804	8	#8	10'-0"	3		1'-0"	8'-0"	1'-0"			5'-8"		7'-8"
501	77	#5	20'-4"	T3			18'-10"				1'-6"		6'-0"
801	12	#8	19'-3 1/4"	T3			17'-9 1/4"				1'-6"		5'-8"

Reinforcement bar detail diagrams showing hooks, laps, and dimensions:

- Diagram 1: Hook G optional, dimension B.
- Diagram 2: Hooks A & G optional, dimensions A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z.
- Diagram 3: Lap=G, dimension O, C=Circumference.

Column and drilled shaft reinforcement diagrams:

- Diagram 1: Column Dwls, showing reinforcement details for a column with diameter 7' and length 18 Bundles.
- Diagram 2: Typ. Drilled Shaft, showing reinforcement details for a typical drilled shaft with diameter 7' and length 18 Bundles.



2547 WEST JACKSON ST.
PHOENIX
ARIZONA 85009
TEL. (602) 447-0839
FAX. (602) 447-8019

Project: Sky Train Stage 2 Shafts

Drawing: Section 9 Pier 58
DS58A,DS58B

Contractor: Case

Location: Sky Harbor

Notes/Revisions

Rev 0_For Approval_5/7/18

THIS DRAWING IS NOT TO BE SCALED.

Fabricator Job#: 18A111

Date
5/7/18

Drawn
Phil

Contract No.
400254

Dwg. No.
P58

76'

36 #11 X 17'-6"

77 #5 MK 501 @12" Stagger splices 90°

3"

6"

7'

7'

8'-5" Min.

8'-5" Min.

3/4"

8'-5"

12 #8 MK 801 @96"

6 #8 MK 803 @192"

6 #8 MK 802 @192"

8 #8 MK 804 Rack Bars

36 #11 X 75'-6" 18 Bundles

DS58A,DS58B

Member Title : DS58A												
BAR LIST												
Bar Mark	Qty	Size	Total Length	Type	'A'	'B'	'C'	'D'	'E'	'F'	'G'	'H'
	36	#11	75'-6"			75'-6"						
	36	#11	17'-6"			17'-6"						
802	6	#8	8'-2"	2	1'-4"	5'-6"					1'-4"	
803	6	#8	8'-6"	2	1'-4"	5'-10"					1'-4"	
804	8	#8	10'-0"	3		1'-0"	8'-0"	1'-0"			5'-8"	7'-8"
501	77	#5	20'-4"	T3			18'-10"		1'-6"		1'-6"	6'-0"
801	12	#8	19'-3 1/2"	T3			17'-9 1/2"		1'-6"		1'-6"	5'-8"

Member Title : DS58B												
BAR LIST												
Bar Mark	Qty	Size	Total Length	Type	'A'	'B'	'C'	'D'	'E'	'F'	'G'	'H'
	36	#11	75'-6"			75'-6"						
	36	#11	17'-6"			17'-6"						
802	6	#8	8'-2"	2	1'-4"	5'-6"					1'-4"	
803	6	#8	8'-6"	2	1'-4"	5'-10"					1'-4"	
804	8	#8	10'-0"	3		1'-0"	8'-0"	1'-0"			5'-8"	7'-8"
501	77	#5	20'-4"	T3			18'-10"		1'-6"		1'-6"	6'-0"
801	12	#8	19'-3 1/2"	T3			17'-9 1/2"		1'-6"		1'-6"	5'-8"

Length

0

2 Hook G optional

A B

3 Hooks A & G optional

A B C D E F G H J K

Lap=G

O C=Circumference

T3

1 Column Dwls

2 Typ. Drilled Shaft

#11 X 17'-6"

#8 MK 801

#11 X 75'-6" 18 Bundles

#8 MK 801

#5 MK 501

6"

7'-8"

6'-0"

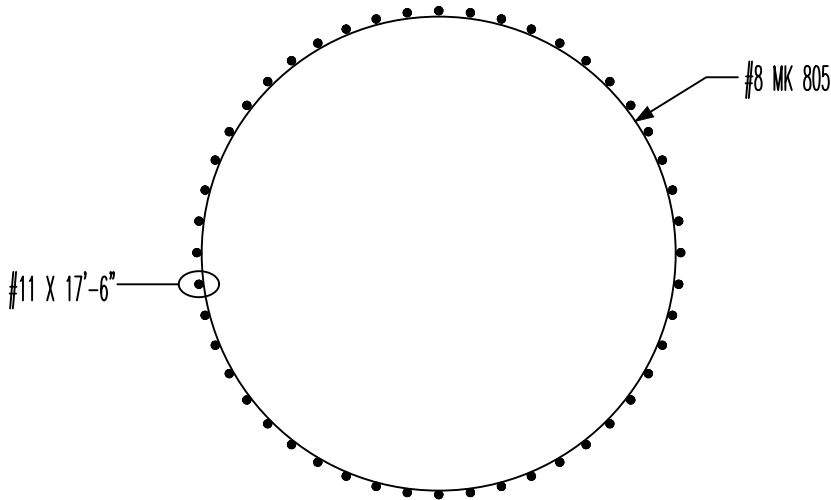
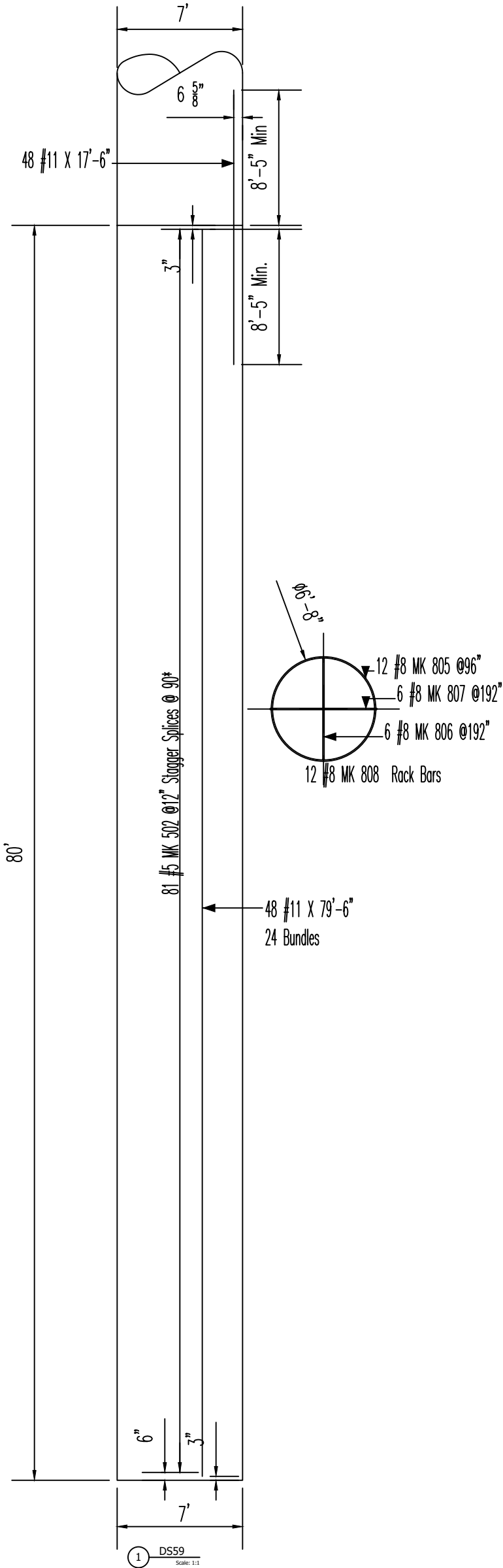
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1'-6"

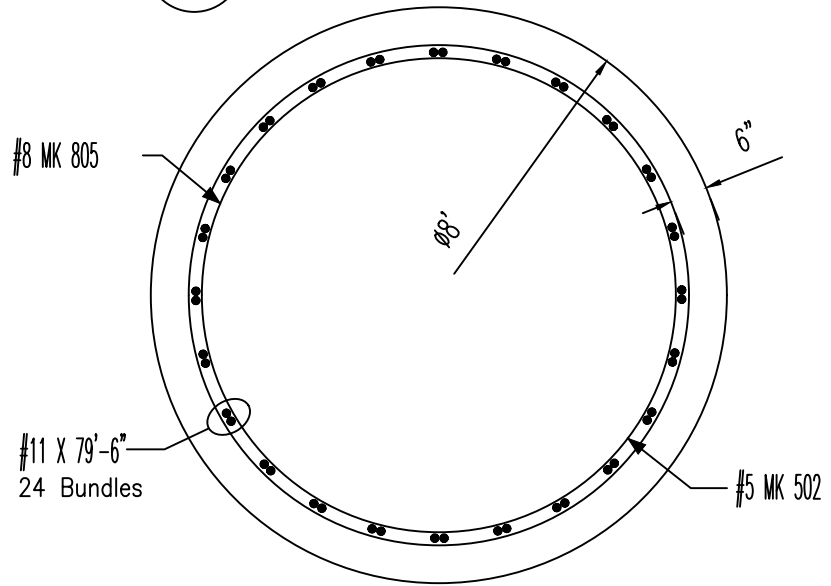
1'-6"

17'-9 1/2"

Print 11x17



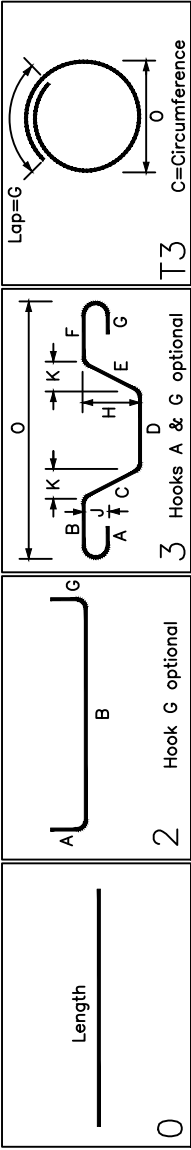
1 Column Dwls



2 Typ. Drilled Shaft

BAR LIST												
Member Title : DS59	Bar Mark	Qty	Size	Total Length	Type	'A'	'B'	'C'	'D'	'E'	'F'	'G'
	48 #11	79'-6"										'H'
	48 #11	17'-6"										'I'
	6 #8	9'-2"	2			1'-4"	6'-6"					'J'
	6 #8	9'-6"	2			1'-4"	6'-10"					'K'
	12 #8	11'-5"	3			1'-0"	1'-0"					'L'
	81 #5	23'-5 1/2"	T3			21'-11 1/2"	9'-5"					'M'
	12 #8	22'-5 1/2"	T3			20'-11 1/2"	1'-6"					'N'

Bar list produced by RebarCAD 2018





2547 WEST JACKSON ST.
PHOENIX
ARIZONA 85009
TEL. (602) 447-0839
FAX. (602) 447-8019

Project: Sky Train Stage 2 Shafts

Drawing: Section 9 Pier 59
DS59A,DS59B

Contractor: Case

Location: Sky Harbor

Notes/Revisions

Rev 0_For Approval_5/7/18

THIS DRAWING IS NOT TO BE SCALED.

Fabricator Job#: 18A111

Date
5/7/18

Drawn
Phil

Contract No.
400254

Dwg. No.
P59



2547 WEST JACKSON ST.
PHOENIX ARIZONA 85009
TEL. (602) 447-0839
FAX. (602) 447-8019

Project: Sky Train Stage 2 Shafts

Drawing: Section 9 Pier 60
DS60

Contractor: Case

Location: Sky Harbor

Notes/Revisions

Rev 0_For Approval_5/7/18

THIS DRAWING IS NOT TO BE SCALED.

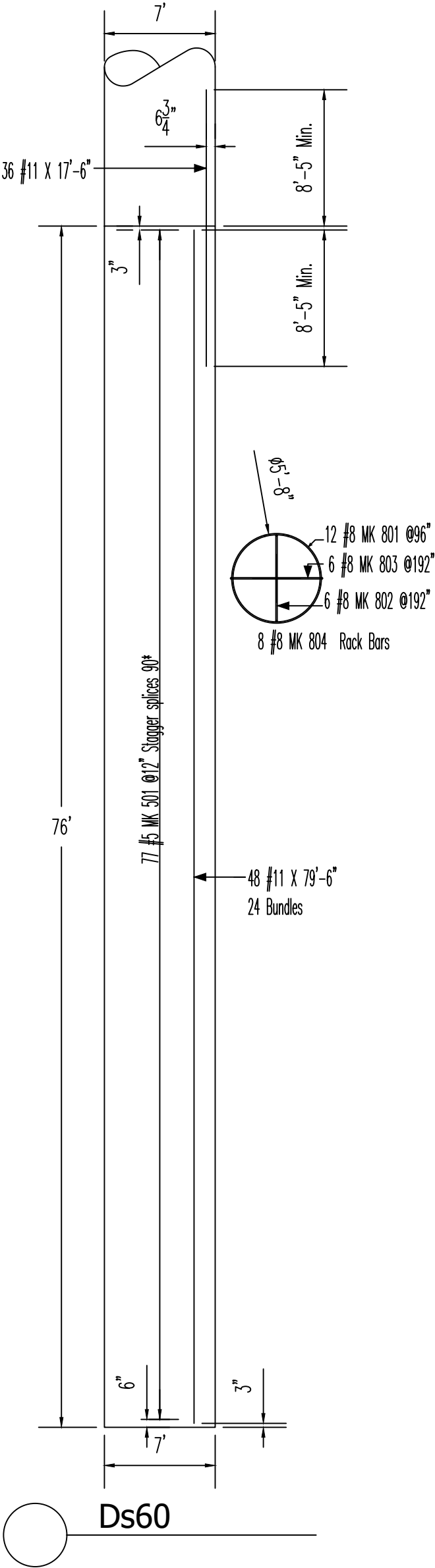
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Date5/7/18

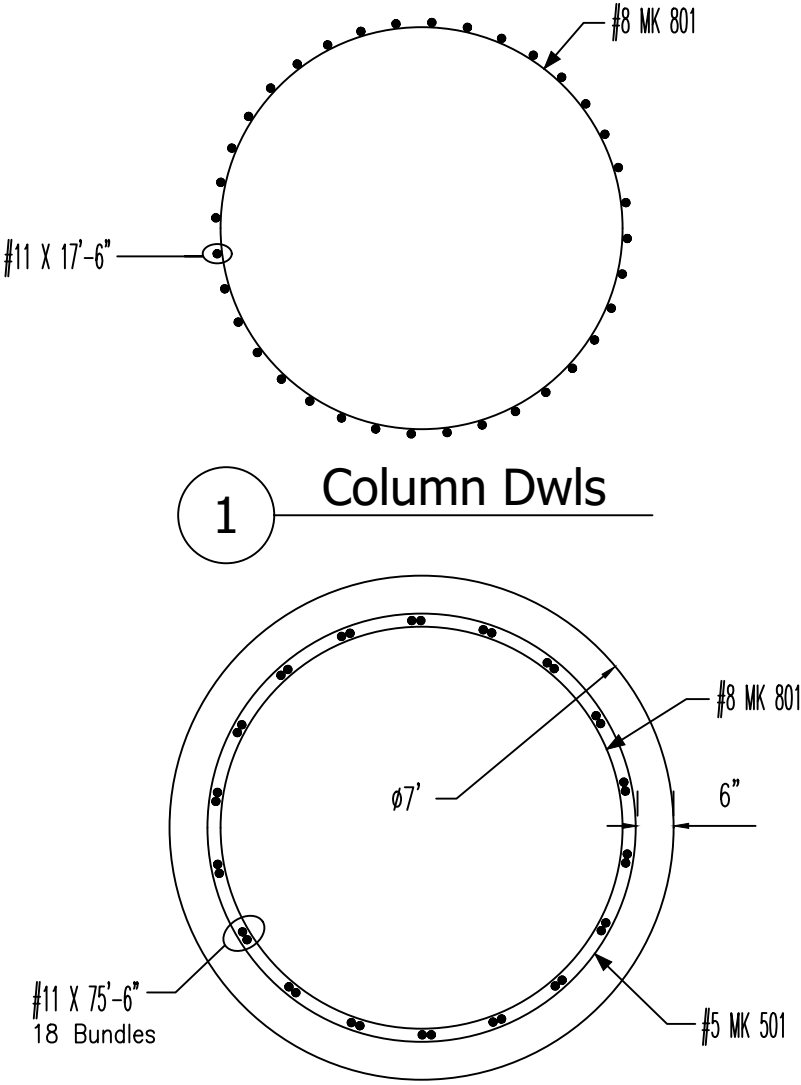
DrawnPhil

Contract No.400254

Dwg. No.P60

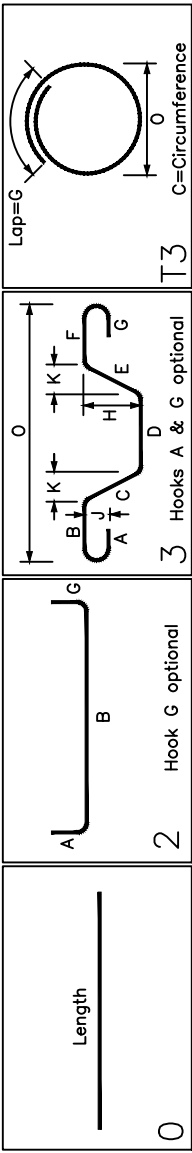


2 Typ. Drilled Shaft



BAR LIST												
Member Title : DS60	Bar Mark	Qty	Size	Total Length	Type	'a'	'b'	'c'	'd'	'e'	'f'	'g'
		36	#11	75'-6"			75'-6"					'h'
		36	#11	17'-6"			17'-6"					'i'
	802	6	#8	8'-2"	2	1'-4"	5'-6"			1'-4"		'j'
	803	6	#8	8'-6"	2	1'-4"	5'-10"			1'-4"		'k'
	804	8	#8	10'-0"	3		1'-0"	8'-0"	1'-0"	5'-8"	7'-8"	'l'
	501	77	#5	20'-4"	T3		18'-10"	1'-6"		1'-6"	6'-0"	'm'
	801	12	#8	19'-3 1/2"	T3		17'-9 1/2"	1'-6"			5'-8"	'n'

Bar list produced by RebarCAD 2018





2547 WEST JACKSON ST.

PHOENIX

ARIZONA 85008

TEL: (602) 447-0839

FAX: (602) 447-8019

Project: Sky Train Stage 2 Shafts

Drawing: Section 9 Pier 61
DS61

Contractor: Case

Location: Sky Harbor

Notes/Revisions

Rev 0_For Approval_5/7/18

THIS DRAWING IS NOT TO BE SCALED.

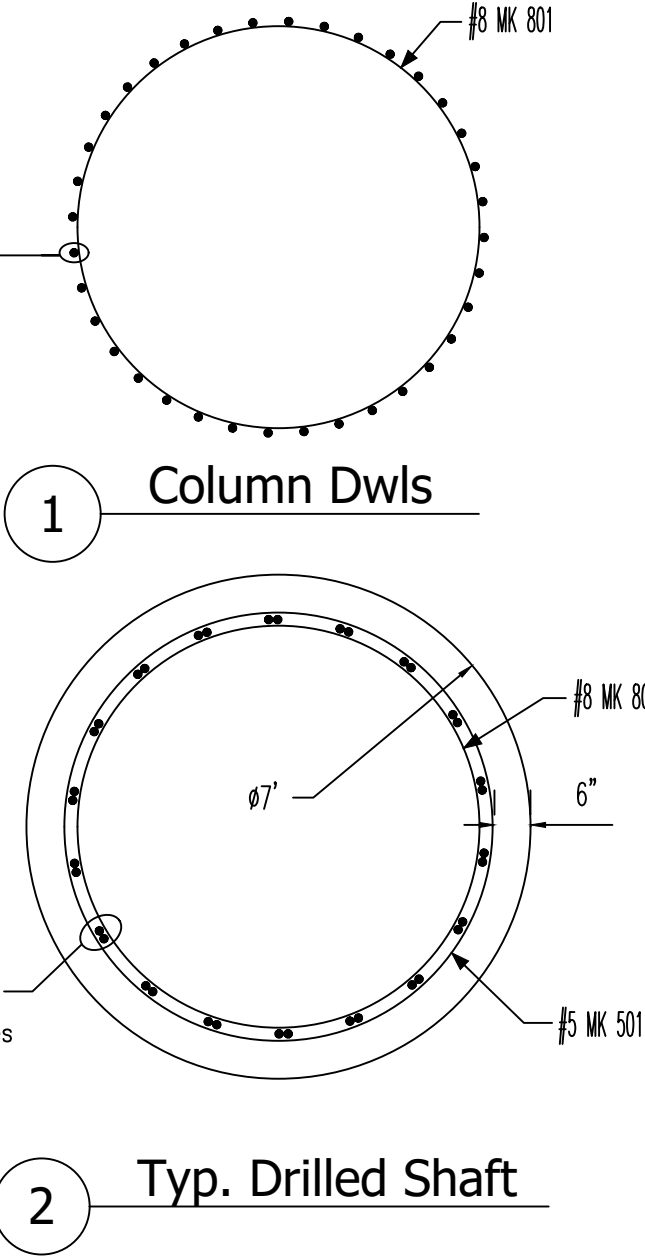
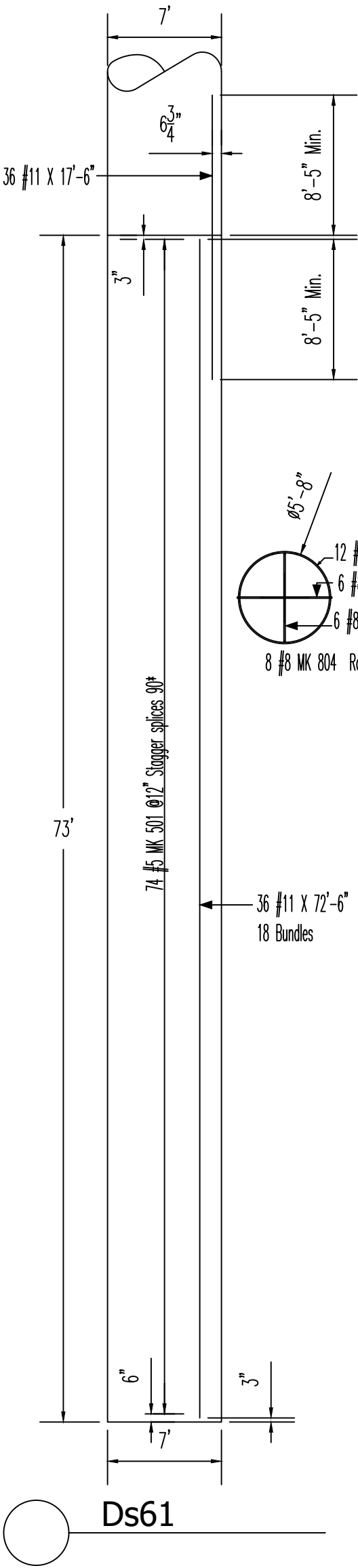
Fabricator Job#: 18A111

Date5/7/18

DrawnPhil

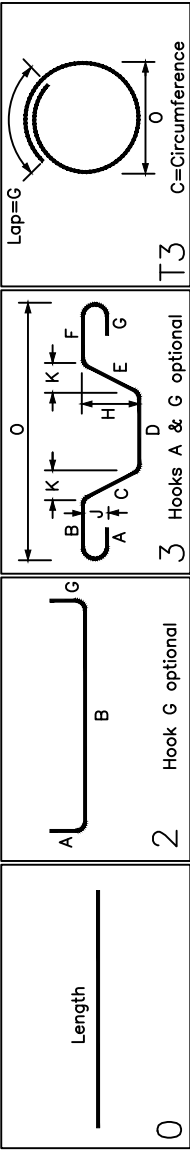
Contract No.400254

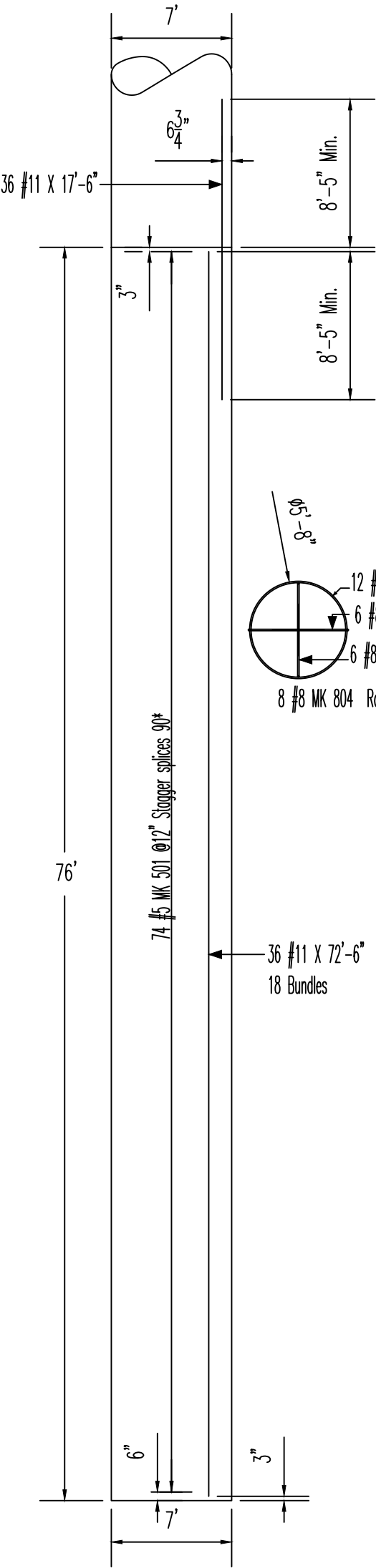
Dwg. No.P61



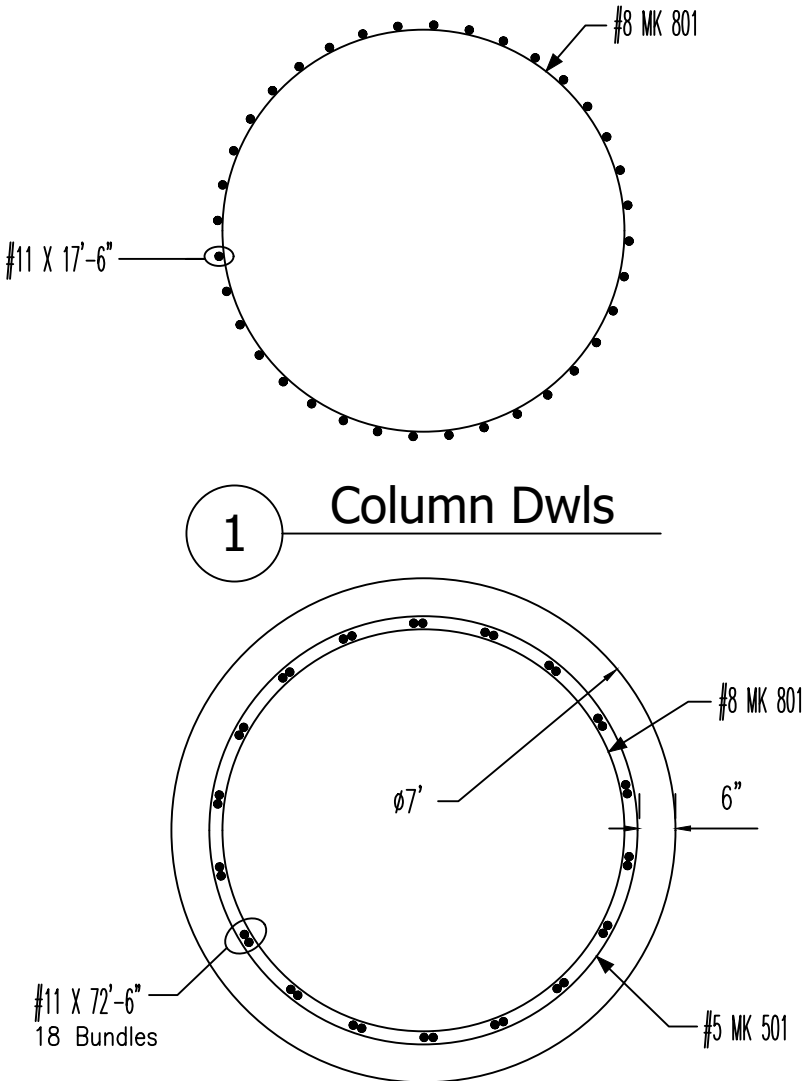
BAR LIST													
Member Title : DS61	Bar Mark	Qty	Size	Total Length	Type	'A'	'B'	'C'	'D'	'E'	'F'	'G'	'H'
		36	#11	72'-6"			72'-6"						'R'
		36	#11	17'-6"			17'-6"						'U'
		6	#8	8'-2"	2	1'-4"	5'-6"					1'-4"	'K'
		6	#8	8'-6"	2	1'-4"	5'-10"					1'-4"	'J'
		8	#8	10'-0"	3		1'-0"	8'-0"	1'-0"			5'-8"	'I'
		74	#5	20'-4"	T3			18'-10"				1'-6"	
		12	#8	19'-3 1/2"	T3			17'-9 1/2"				1'-6"	

Bar list produced by RebarCAD 2018



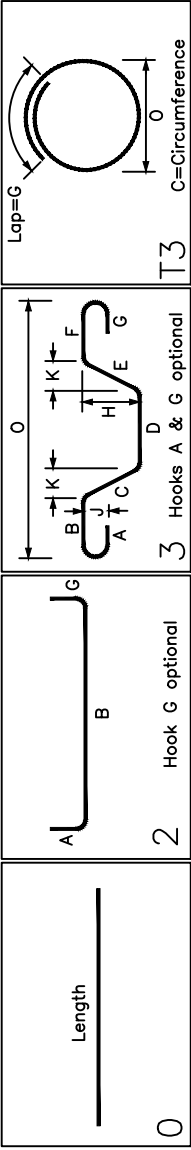


○ Ds62



BAR LIST												
Member Title :	Qty	Size	Total Length	Type	'A'	'B'	'C'	'D'	'E'	'F'	'G'	'H'
Bar Mark	36	#11	17'-6"			17'-6"						'R'
	36	#11	72'-6"			72'-6"						'U'
803	6	#8	8'-6"	2	1'-4"	5'-10"				1'-4"		
802	6	#8	8'-2"	2	1'-4"	5'-6"				1'-4"		
804	8	#8	10'-0"	3		1'-0"	8'-0"	1'-0"		5'-8"		
501	74	#5	20'-4"	T3			18'-10"			1'-6"		
801	12	#8	19'-3 1/2"	T3			17'-9 1/2"			1'-6"		

Bar list produced by RebarCAD 2018



	2547 WEST JACKSON ST. PHOENIX ARIZONA 85009 TEL. (602) 447-0839 FAX. (602) 447-8019	Notes/Revisions			
	Project: Sky Train Stage 2 Shafts				
Drawing: Section 9 Pier 62 DS62		Rev 0_For Approval_5/7/18			
Contractor: Case		THIS DRAWING IS NOT TO BE SCALED.			
Location: Sky Harbor		Fabricator Job#: 18A111			
		Date 5/7/18	Drawn Phil	Contract No. 400254	Dwg. No. P62