PROJECT DIRECTORY

Owner: McG Constructors, Inc.
160 Oluea Circle
Kihei, Hawaii, 96753
(907) 738-9011

Architect: Nishikawa Architects, Inc.
2145 Wells Street, Suite 301
Wailuku, Hawaii, 96793
T: (808) 242-6900
F: (808)986-8301
Contact: Lisa Gallant

Civil: Linda Taylor Engineering, Inc.
P.O. Box 779
Makawao, Hawaii, 96768
T: (808) 572-2688
F: (808) 573-0636
Contact: Linda Taylor

Landscape: Chris Hart & Partners, Inc.
115 N Market Street
Wailuku, Hawaii, 96793
T: (808) 242-1955
F: (808) 242-1956
Contact: David Sereda

Structural: Riverstone Structural Concepts
671 E Riverpark Lane, 150
Boise, Idaho, 83706
T: (208) 343-2092
Contact: Jake Timmons

SYMBOL / DESCRIPTION

DETAIL REFERENCE
Detail Number (Typ.)
Sheet Number (Typ.)

ELEVATION REFERENCE

SECTION REFERENCE

ROOM NAME/CODE
Room Name
Floor Material
Typical Ceiling Height

KITCHEN
CER. TILE
10'-6"

DATUM POINT OR ELEVATION HEIGHT

INDEX OF DRAWINGS

COUNTY OF MAUI
MAUI COUNTY CODE, CHAPTER 16.16A ENERGY CODE

To the best of my knowledge, this project's design substantially conforms to the Energy Code for:

X Building Component Systems
____ Electrical Component Systems
____ Mechanical Component Systems

Signature: [signature] **Date:** 09/01/17

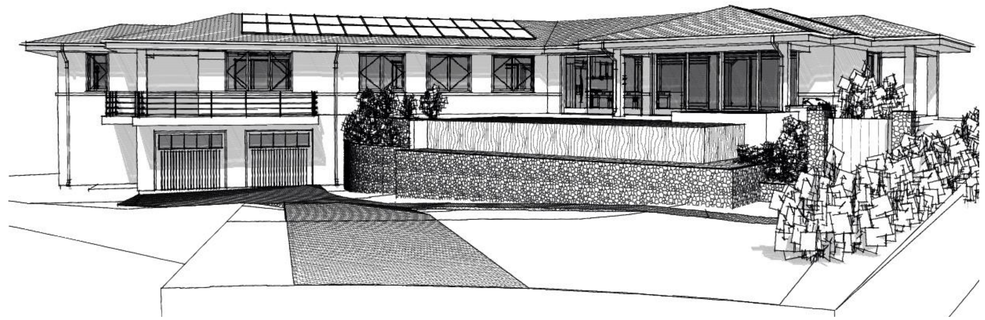
Name: Clayton Nishikawa

Title: Principal

License No: 6710

RESIDENCE FOR MCG CONSTRUCTORS

Wailea Kialoa Subdivision
171 W. Ikea Kai Place, Wailea, Hawaii 96753
TMK: (2) 2-1-024:054



BUILDING INFORMATION

Lot Number: 397
Street Address: 171 W. Ikea Kai Place, Wailea, Hawaii 96753
TMK Number: (2) 2-1-024:054
Lot Area: 10,827 SF
Zoning: R-1
State Land Use: Urban
Const. Type: V-B
Occupancy: R-3
Setbacks: 15' Front Setback
10' Side Setback
20' Rear Setback
Building Code: 2006 IBC with Maui County Amendments
Energy Code: 2006 IECC with Maui County Amendments

Required Building Area:	Actual	Allowable
Garage:	491 SF	400 SF Min.
Storage:	114 SF	100 SF Min.
Building Footprint:	2,417 SF	
Pool Deck Area:	1,412 SF	
Total Building Area:	**3,829 SF**	4,072 SF Max.
Landscaping:	8,410 SF	
Hardscaping:	1,142 SF	2,523 SF Max.
Max. Peak of Roof Elevation:	209'-9" A.S.L.	210'-0" A.S.L. Max.

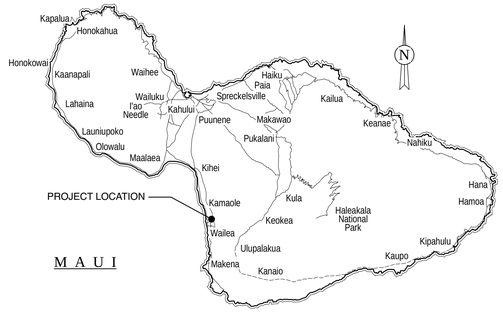
Enclosed Living (Lower Floor):	1,415 SF
Enclosed Living (Main Floor):	2,384 SF
Covered Lanais:	447 SF
Gross Floor Area:	4,246 SF

ABBREVIATIONS

ABBR.	Abbreviation	ABBR.	Abbreviation	ABBR.	Abbreviation	ABBR.	Abbreviation
ACOUS.	Acoustical	EA.	Each	L.T.	Lavatory Tray	U.O.N.	Unless Otherwise Noted
ADJ.	Adjust	E.P.B.	Electrical Panel Box	MAX.	Maximum	W/	With
ALUM.	Aluminum	E.J.	Expansion Joint	M.C.	Medicine Cabinet	W	Washer/Width
ANOD.	Anodized	EQ.	Equal	MECH.	Mechanical	W.C.	Water Closet
BARR.	Barrier	EXIST.	Existing	MIN.	Minimum	WD.	Wood
BD.	Board	F.D.	Floor Drain	MTL.	Metal	WDW.	Window
BM.	Beam	FDN.	Foundation	N.I.C.	Not In Contract	W.H.	Water Heater
C.B.	Catch Basin	FIN. FLR.	Finish Floor	O.C.	On Center	W.P.	Water Proof
CER.	Ceramic	FLUOR.	Fluorescent	OPP.	Opposite	W.R.B.	Weather Resistant Barrier
CLG.	Ceiling	F.O.S.	Face of Stud	PLYWD.	Plywood	V.P.	Vapor Proof
CLOS.	Closet	F.R.P.	Fiber-reinforced Panel	PR.	Pair		
CLR.	Clear	FRMG.	Framing	REF.	Refrigerator		
COL.	Column	FT.	Feet	R.F.	Resilient Flooring		
CONC.	Concrete	GA.	Gauge	R.O.	Rough Opening		
CONT.	Continuous	GL.	Glass	S.C.	Solid Core		
C.T.	Ceramic Tile	GYP.	Gypsum	SIM.	Similar		
CTR.	Counter	H.B.	Hose Bibb	S.S.	Stainless Steel		
D	Dryer	H.C.	Hollow Core	T&G.	Tongue and Groove		
DBL.	Double	HT.	Height	T.B.	Towel Bar		
DIA.	Diameter	H.C.	Hollow Core	THK.	Thick		
DIM.	Dimension	HGR.	Hanger	T.O.W.	Top of Wall		
DN.	Down	INST.	Installed	T.P.	Toilet Paper Holder		
DR.	Door	INSUL.	Insulation	T.R.	Towel Ring		
D.S.	Double Swing	INT.	Interior	TYP.	Typical		

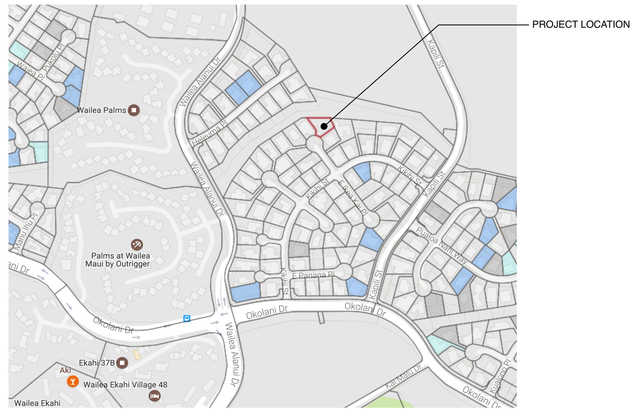
LOCATION MAP

PROJECT LOCATION



VICINITY MAP

PROJECT LOCATION



PERMIT SET

2145 Wells Street Suite 301
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(808) 986-8300 Fax: (808) 986-8301
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Nishikawa Architects, Inc.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

CLAYTON H. NISHIKAWA LICENSED PROFESSIONAL ARCHITECT No. 6710

EXPIRES: 04/30/2018

Residence for McG Constructors
171 W. Ikea Place, Wailea, Hawaii 96753
TMK: (2) 2-1-024:054

1" ACTUAL

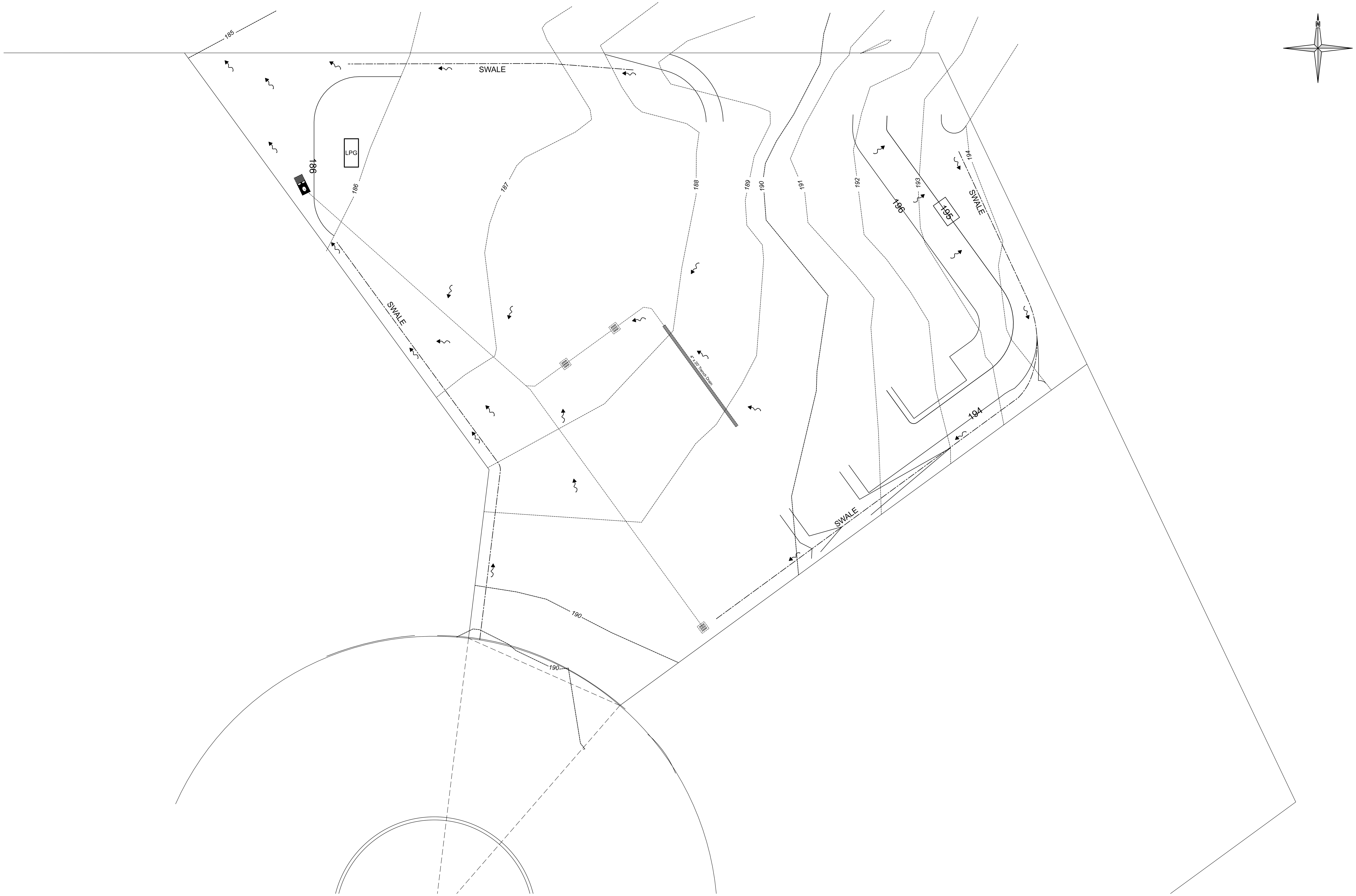
IF THE ABOVE DIMENSION DOES NOT MEASURE ONE INCH (1") EXACTLY, THIS DRAWING WILL HAVE BEEN ENLARGED OR REDUCED, AFFECTING ALL LABELED SCALES.

ID	REVISION	DATE
01	Permit Comments	10/01/17
02	Final Approval Conditions	10/26/17
03	Final Coordination	Work in Progress

Date:	10/01/17
Scale:	AS NOTED
Drawn:	
Job:	
Sheet	

G-001

COVER SHEET



1 AS-001 AS1 SITE PLAN
SCALE: 1/8" = 1'-0"

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EXPIRES: 04/30/2018

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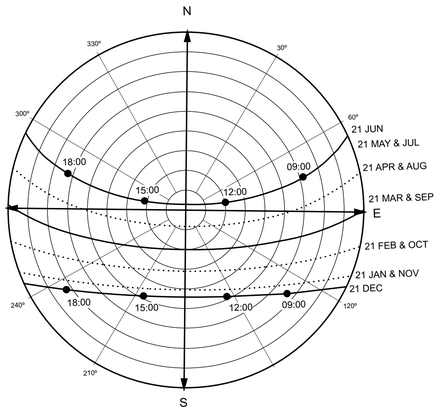
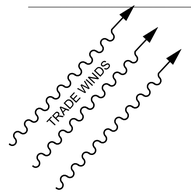
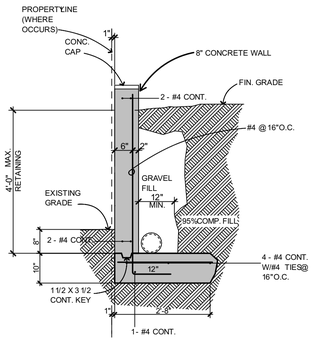
Date:	10/01/17
Scale:	AS NOTED
Drawn:	
Job:	
Sheet	

TOPOGRAPHIC SURVEY

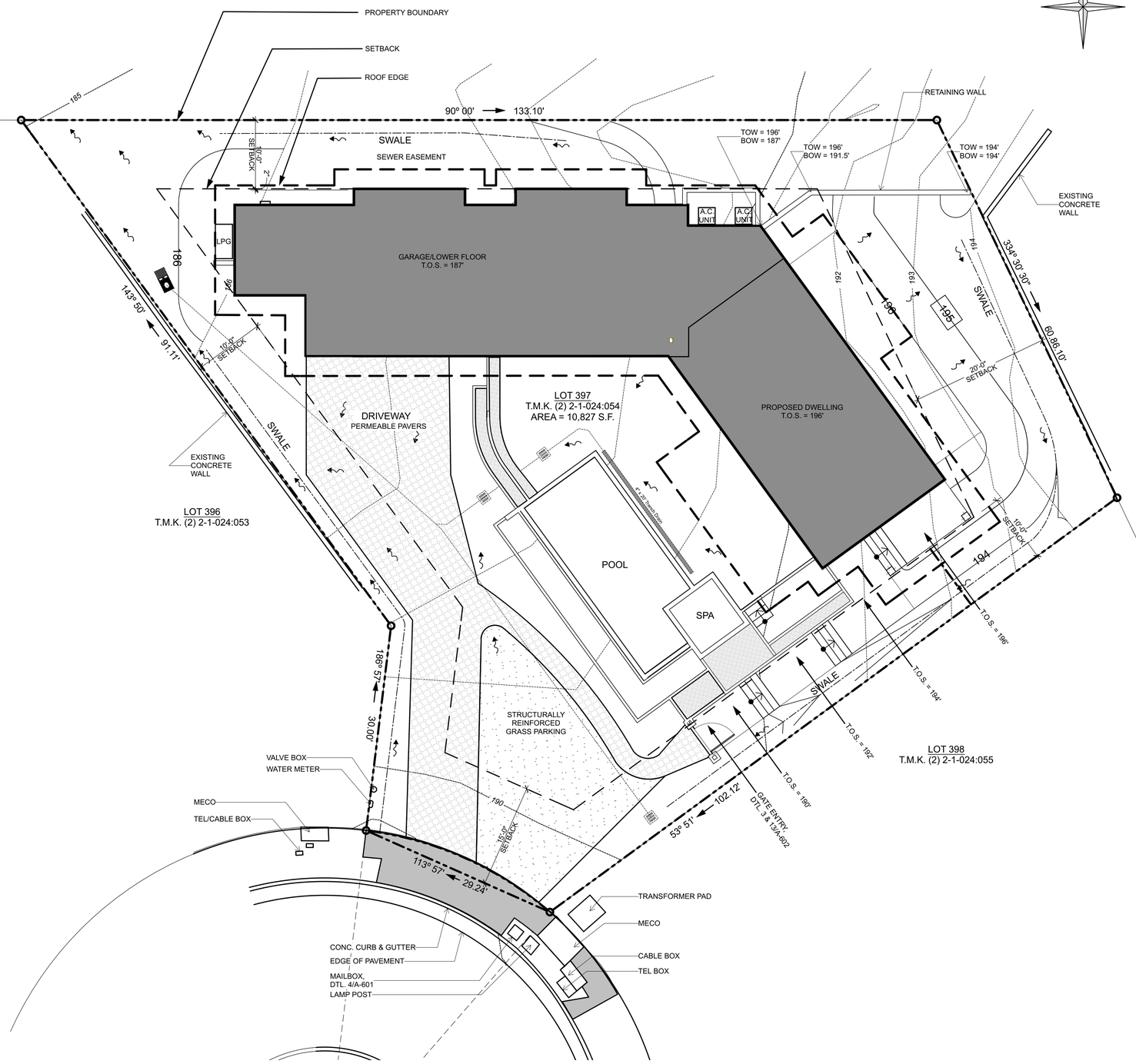
PERMIT SET AS-001







2 AS-002 RETAINING WALL SECTION
SCALE: 1/2" = 1'-0"



1 AS-002 AS1 SITE PLAN
SCALE: 1/8" = 1'-0"

ALLOWABLE HARDSCAPE CALCULATIONS:

LOT AREA:	10,827 SF
BUILDING FOOTPRINT:	- 2,417 SF
LANDSCAPED AREA:	8,410 SF
% ALLOWABLE HARDSCAPE:	30%
MAX. ALLOWABLE HARDSCAPE:	**2,523 SF**
PROPOSED HARDSCAPE:	
POOL & POOL DECK:	1,412 SF
MISC. CONC. PADS:	438 SF
	1,850 SF

REQUIRED BUILDING AREA:	ACTUAL	ALLOWABLE
GARAGE:	491 SF	400 SF MIN.
STORAGE:	114 SF	100 SF MIN.
BUILDING FOOTPRIT:	2,417 SF	
POOL DECK AREA:	1,412 SF	
TOTAL BUILDING AREA:	**3,829 SF**	4,072 SF MAX.
LANDSCAPING:	8,410 SF	
HARDSCAPING:	1,142 SF	2,523 SF MAX.
MAX. PEAK OF ROOF ELEV:	209'-9" A.S.L.	210'-0" A.S.L. MAX.

GROSS FLOOR AREA:	
ENCLOSED LIVING (LOWER FLOOR):	1,415 SF
ENCLOSED LIVING (MAIN FLOOR):	2,384 SF
COVERED LANAIS:	447 SF
GROSS FLOOR AREA:	4,246 SF

PERMIT SET AS-002

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www.nishikawaarchitects.com

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H. NISHIKAWA LICENSED PROFESSIONAL ARCHITECT No. 8710 CLAYTON

EXPIRES: 04/30/2018

Residence for McG Constructors

171 W. Ikea Place, Wailea, Hawaii 96753
TMK: (2) 2-1-024:054

1" ACTUAL

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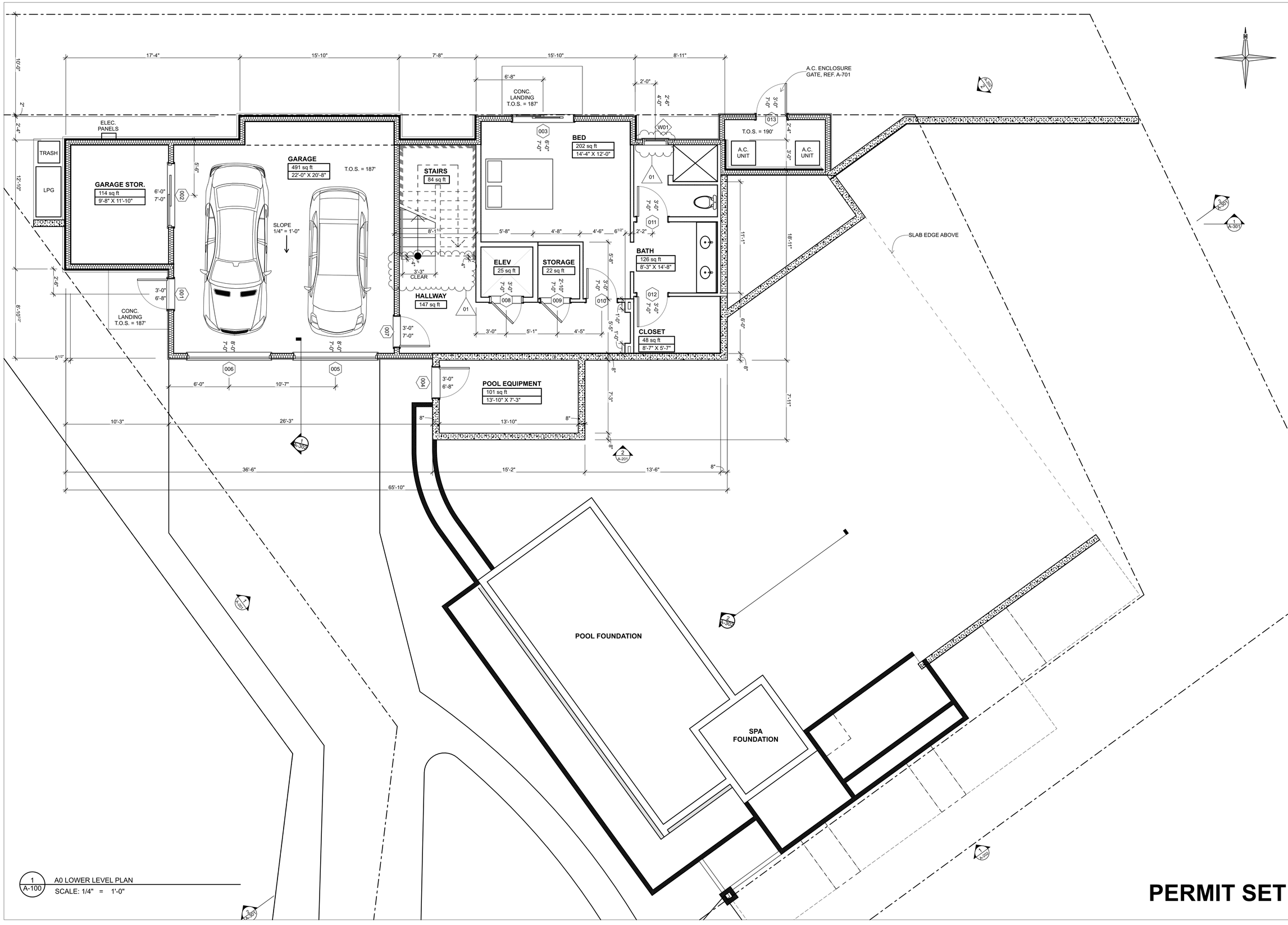
ID	REVISION	DATE

Date:	10/01/17
Scale:	AS NOTED
Drawn:	
Job:	
Sheet	

ARCH. SITE PLAN



1 / A-100 A0 LOWER LEVEL PLAN
SCALE: 1/4" = 1'-0"

PERMIT SET

A-100

LOWER LEVEL PLAN

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Wailuku, Maui, Hawaii 96793
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CLAYTON H. NISHIKAWA LICENSED PROFESSIONAL ARCHITECT No. 8710

EXPIRES: 04/30/2018

Residence for McG Constructors

171 W. Ikea Place, Wailea, Hawaii 96753
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01	Permit Comments	10/01/17

Date:	10/01/17
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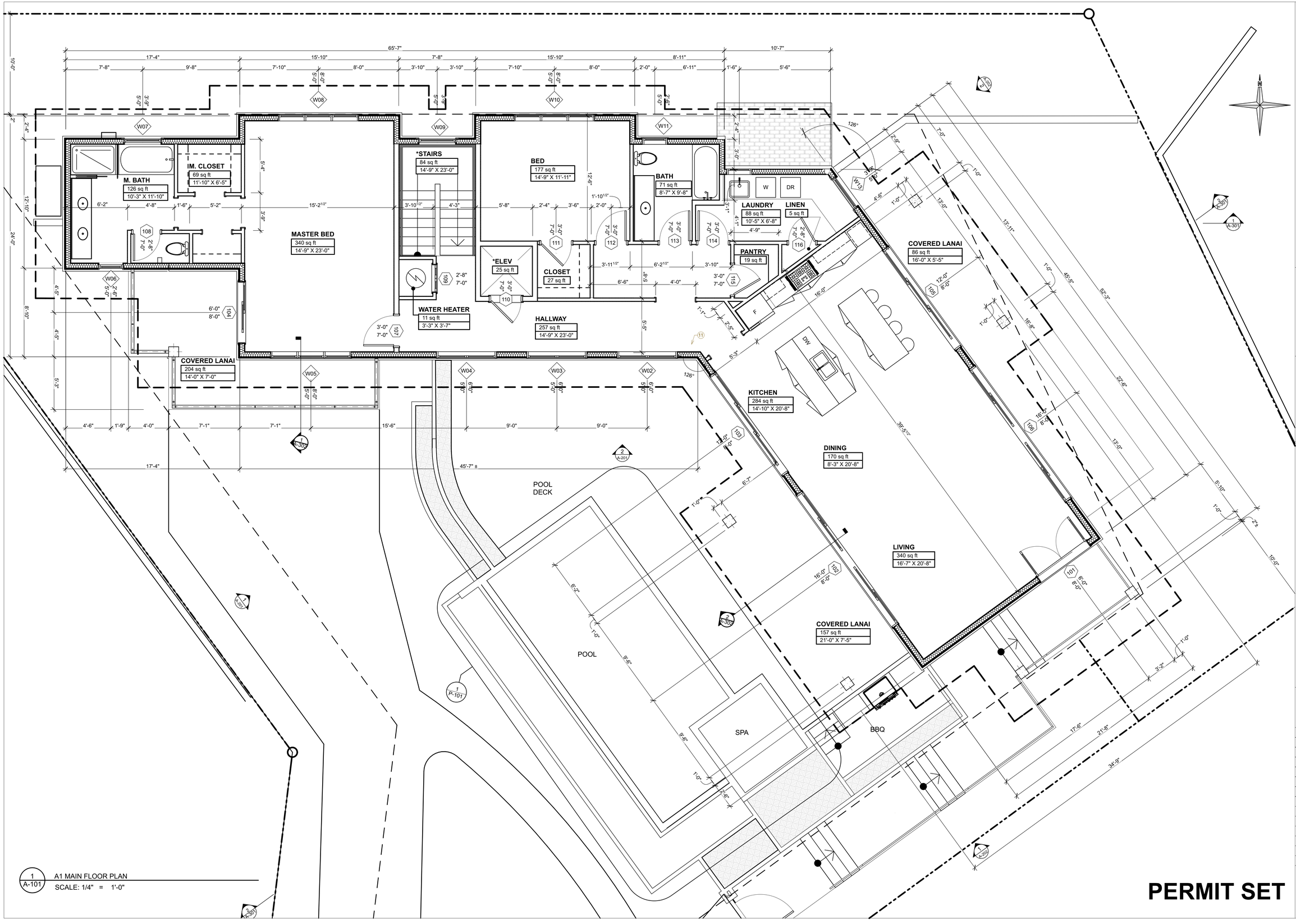

1 A-101 A1 MAIN FLOOR PLAN
SCALE: 1/4" = 1'-0"

PERMIT SET

A-101

MAIN FLOOR PLAN

Nishikawa Architects, Inc.
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EXPIRES: 04/30/2018

Residence for McG Constructors

171 W. Ikea Place, Wailea, Hawaii 96753
TMK: (2) 2-1-024:054

1" ACTUAL

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Job:	
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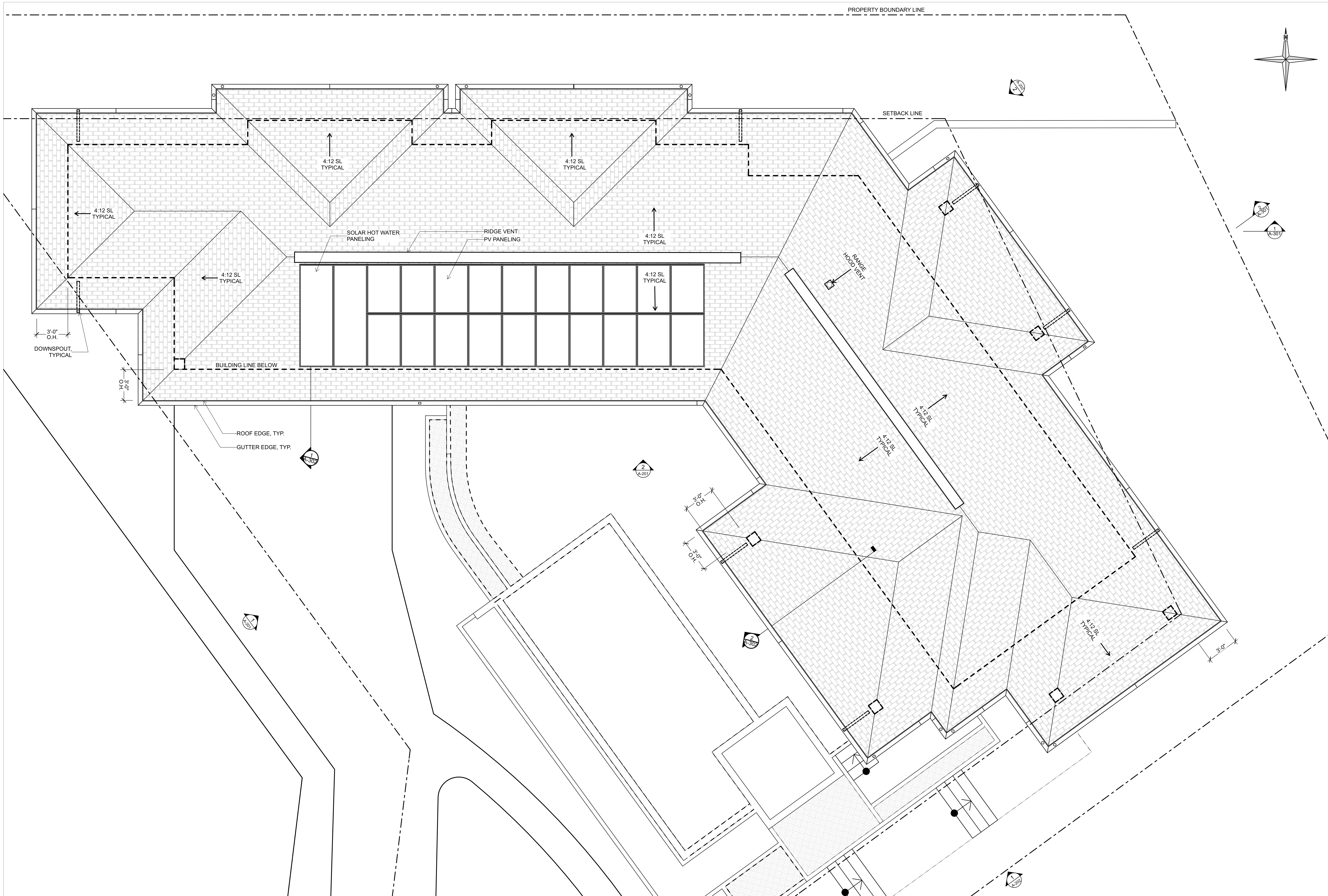

1
A-102

A2 ROOF PLAN
SCALE: 1/4" = 1'-0"

2145 Wells Street Suite 301
Wailuku, Maui, Hawaii 96793
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CLAYTON H. NISHIKAWA
LICENSED PROFESSIONAL ARCHITECT
No. 6710
HAWAII, U.S.A.

EXPIRES: 04/30/2018

Residence for McG Constructors

171 W. Ikea Place, Wailea, Hawaii 96753
TMK: (2) 2-1-024:054

1" ACTUAL

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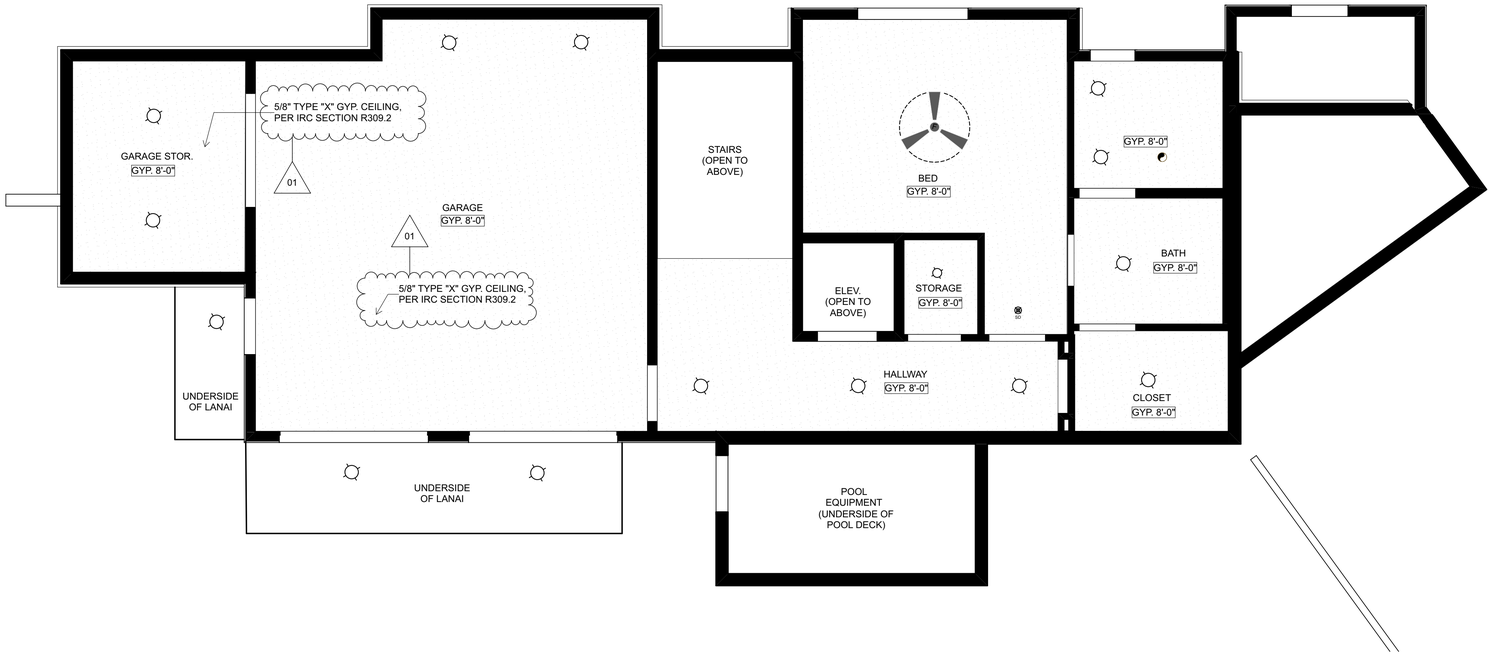
ID	REVISION	DATE

Date:	10/01/17
Scale:	AS NOTED
Drawn:	
Job:	
Sheet	

PERMIT SET

A-102

ROOF PLAN



1
A-103
A3 LOWER LEVEL RCP
SCALE: 1/4" = 1'-0"

PERMIT SET

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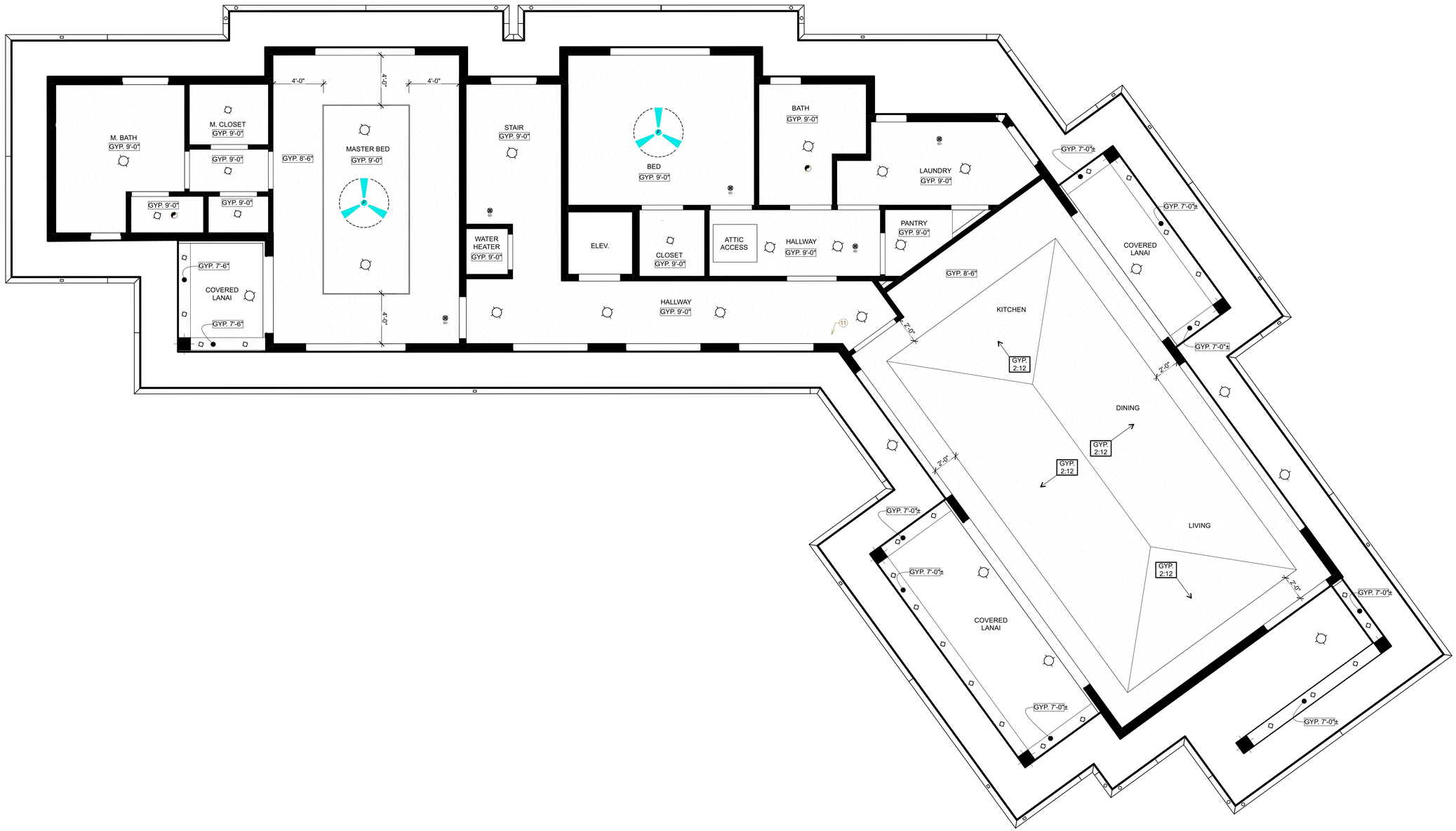
01	Permit Comments	10/01/17

Date:	10/01/17
Scale:	AS NOTED
Drawn:	
Job:	
Sheet	

A-103

LOWER FLOOR RCP



1
A-104
A4 MAIN FLOOR RCP
SCALE: 1/4" = 1'-0"

PERMIT SET

2145 Wells Street Suite 301
Wailuku, Maui, Hawaii 96793
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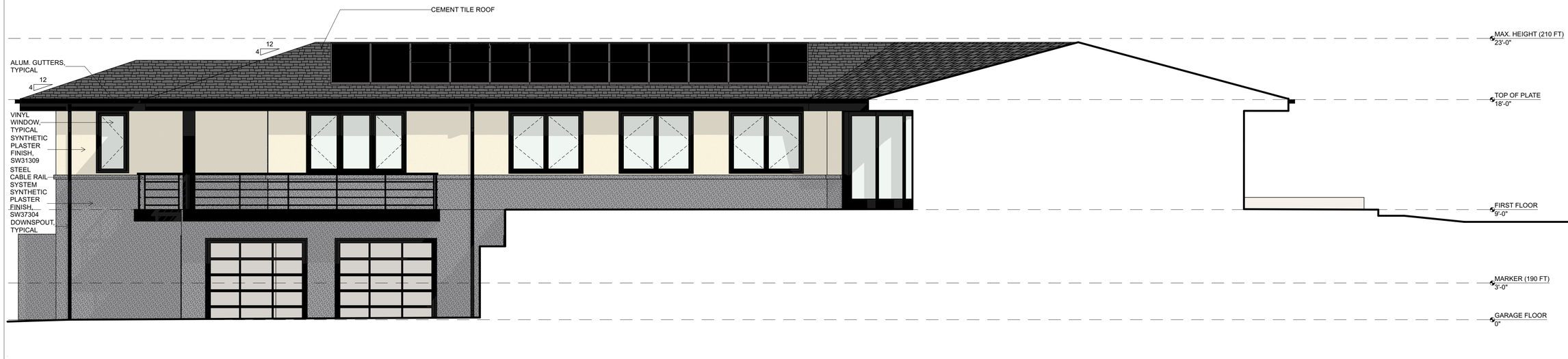
ID	REVISION	DATE

Date:	10/01/17
Scale:	AS NOTED
Drawn:	
Job:	
Sheet	

A-104

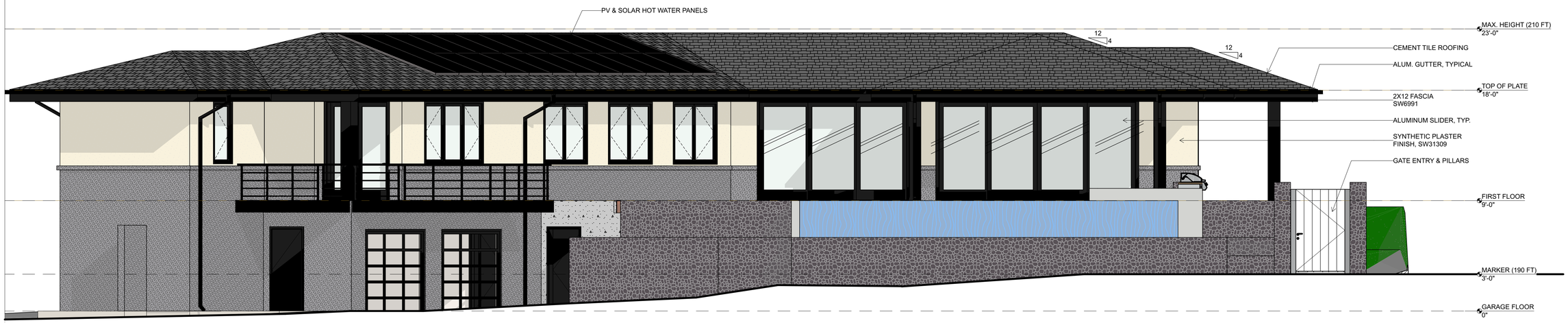
MAIN FLOOR RCP



1
A-201

COURTYARD SOUTH ELEVATION

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



2
A-201

COURTYARD WEST ELEVATION

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

PERMIT SET

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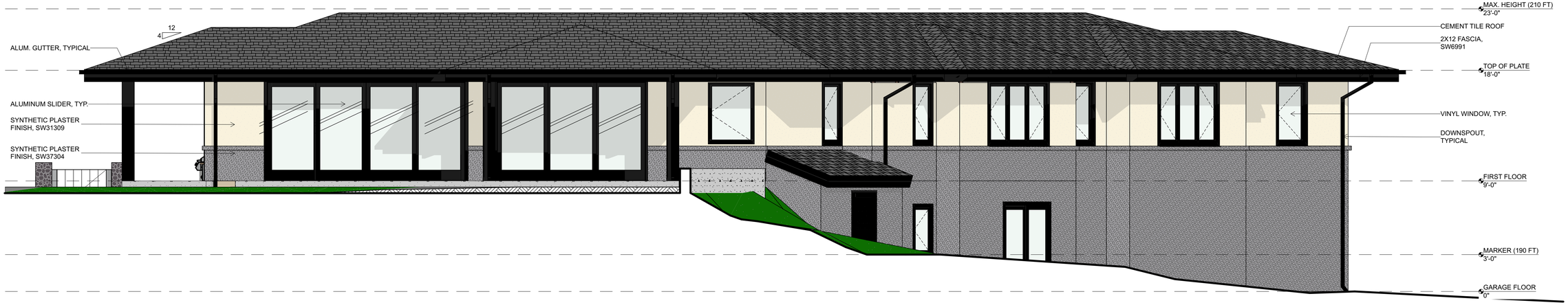
Drawn:	
Job:	
Sheet	

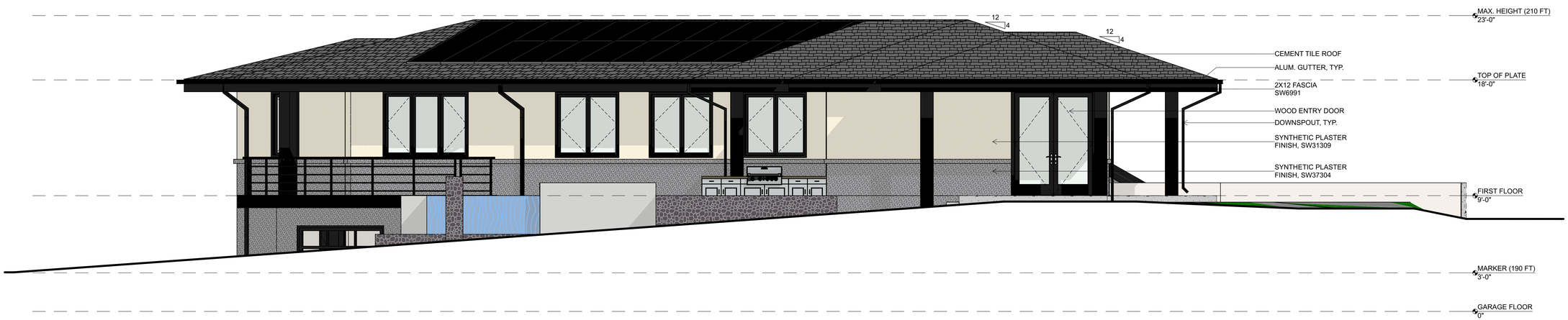
A-201

ELEVATIONS



1
A-202

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



2
A-202

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

PERMIT SET

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H. NISHIKAWA LICENSED PROFESSIONAL ARCHITECT No. 8710 HAWAII

EXPIRES: 04/30/2018

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ID	REVISION	DATE

Date:	10/01/17
Scale:	AS NOTED
Drawn:	
Job:	
Sheet	

A-202

ELEVATIONS

1
A-203

NORTH ELEVATION

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

PERMIT SET

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Date:	10/01/17
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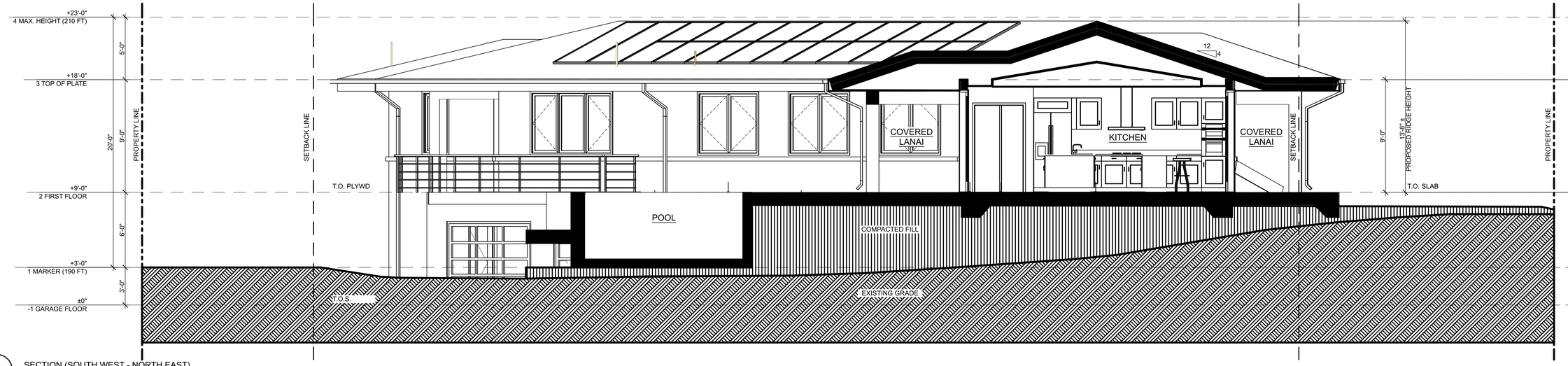
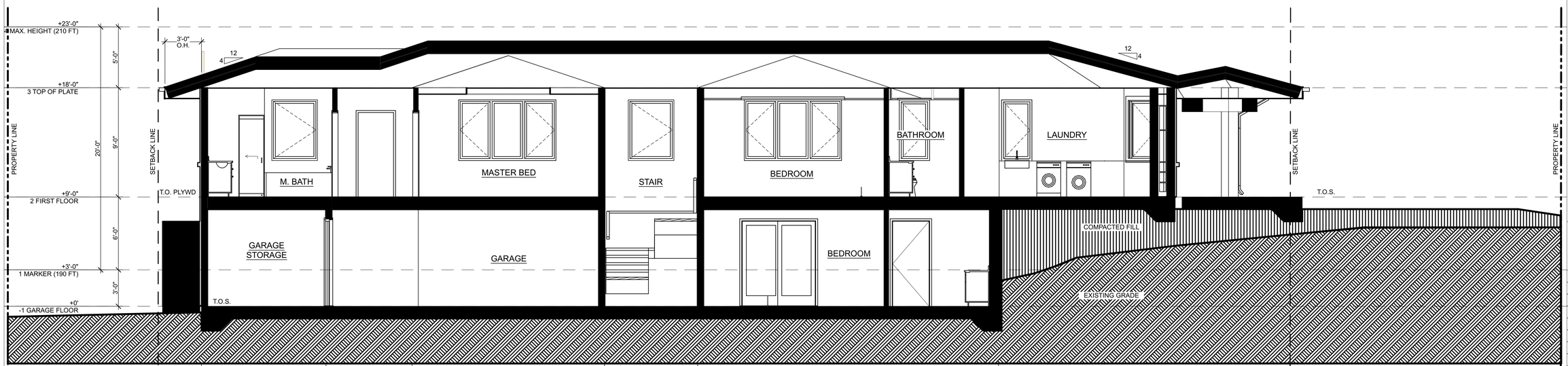
Drawn:	
Job:	
Sheet	

A-203

ELEVATIONS



2 A-301 SECTION (SOUTH WEST - NORTH EAST)
SCALE: 1/4" = 1'-0"



1 A-301 SECTION (WEST - EAST)
SCALE: 1/4" = 1'-0"

2145 Wells Street Suite 301
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Nishikawa Architects, Inc.

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H. NISHIKAWA LICENSED PROFESSIONAL ARCHITECT No. 8710 CLAYTON NISHIKAWA

EXPIRES: 04/30/2018

Residence for McG Constructors

171 W. Ikea Place, Wailea, Hawaii 96753
TMK: (2) 2-1-024:054

1" ACTUAL

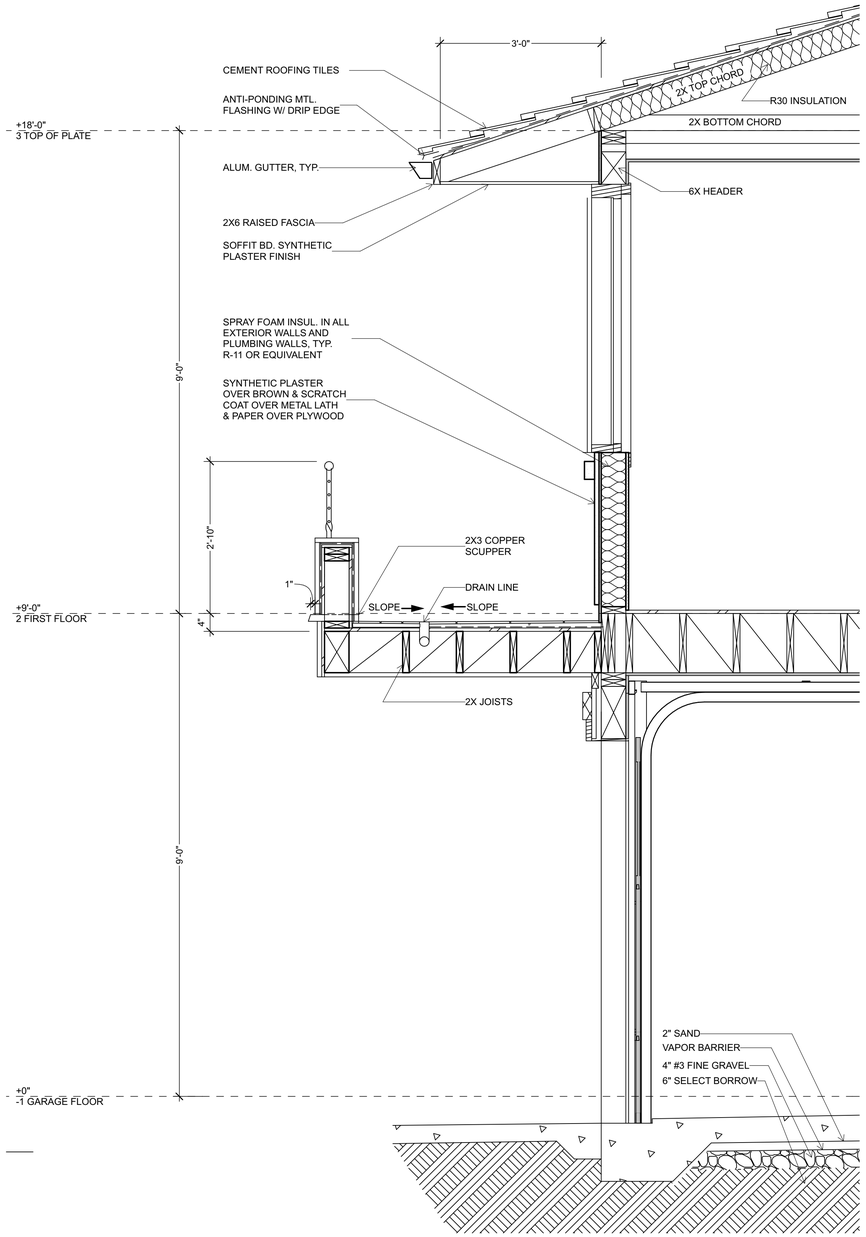
IF THE ABOVE DIMENSION DOES NOT MEASURE ONE INCH (1") EXACTLY, THIS DRAWING WILL HAVE BEEN ENLARGED OR REDUCED, AFFECTING ALL LABELED SCALES.

ID	REVISION	DATE

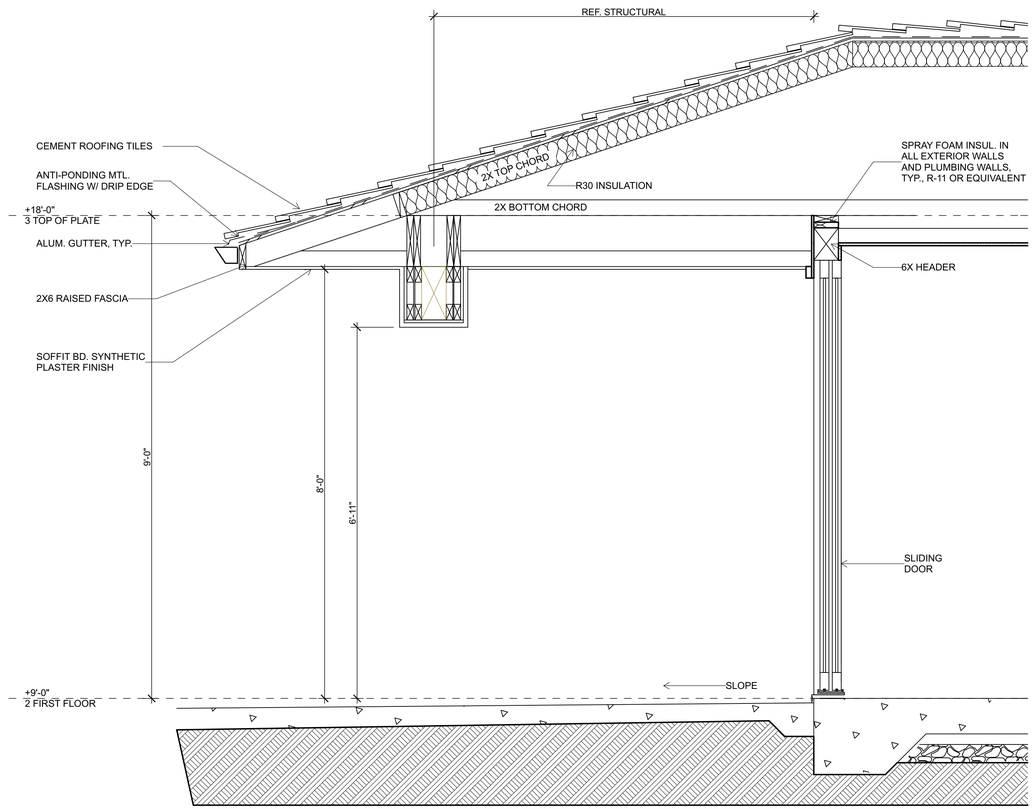
Date:	10/01/17
Scale:	AS NOTED
Drawn:	
Job:	
Sheet	

PERMIT SET **A-301**

BUILDING SECTIONS



1 / A-302 TYP. WALL SECTION @ GARAGE DOOR
SCALE: 3/4" = 1'-0"



2 / A-302 TYP. WALL SECTION @ LANAI
SCALE: 3/4" = 1'-0"

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H. NISHIKAWA LICENSED PROFESSIONAL ARCHITECT No. 6710 HAWAII

EXPIRES: 04/30/2018

Residence for McG Constructors

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TMK: (2) 2-1-024:054

1" ACTUAL

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ID	REVISION	DATE

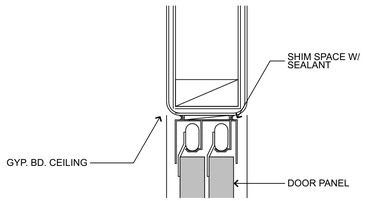
Date:	10/01/17
Scale:	AS NOTED
Drawn:	
Job:	
Sheet	

WALL SECTIONS & DETAILS

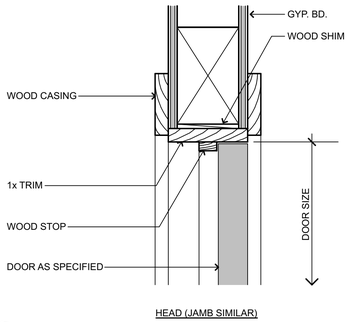
PERMIT SET

A-302

01



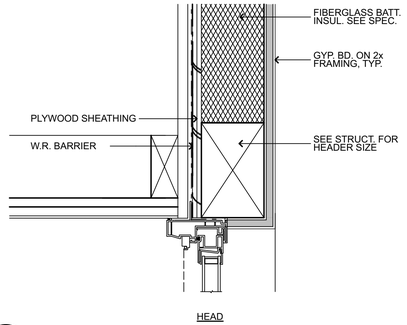
16 A-601 BI-PASS DOOR DETAIL
SCALE: 3" = 1'-0"



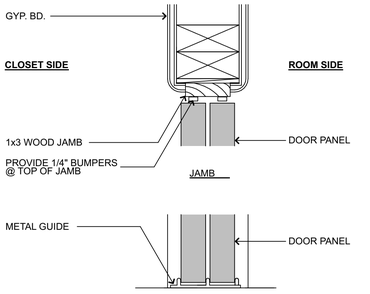
17 A-601 INT DOOR DETAIL
SCALE: 3" = 1'-0"

NOTE:

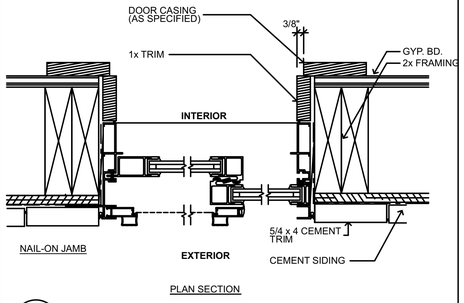
1. SEAL ALL GAPS & PENETRATIONS TO LIMIT AIR INFILTRATION.
2. VERIFY THRESHOLD W/DOOR MANUFACTURER.
3. INSTALL 1/4" BUTYL TAPE @ CORNERS WHERE THRESHOLD MEETS THE JAMB AS PER MANUF. INSTR. INSTALL PAD TIGHT TO THRESHOLD & FLUSH W/ INSIDE EDGE OF THRESHOLD AS PER MANUF. INSTR. STAPLE PADS W/ GALV. STAPLES.



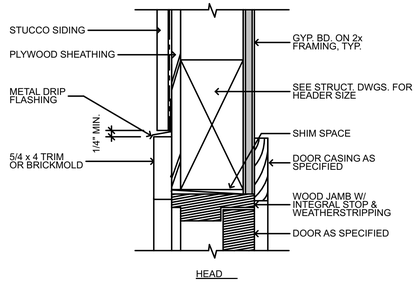
19 A-601 WINDOW DETAILS
SCALE: 3" = 1'-0"



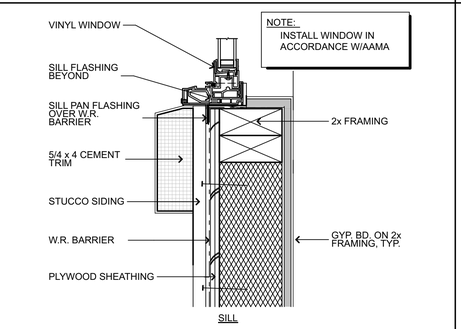
11 A-601 BI-PASS DOOR DETAIL
SCALE: 3" = 1'-0"



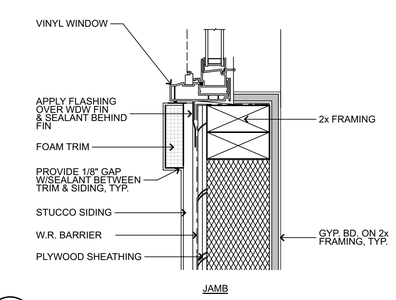
12 A-601 SLIDING GLASS DOOR DETAIL
SCALE: 3" = 1'-0"



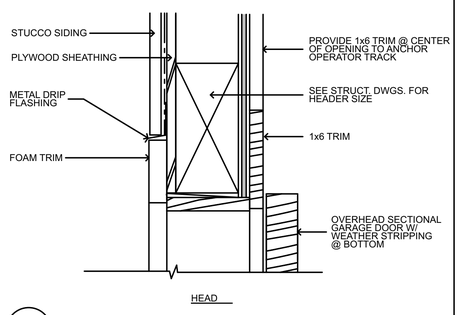
13 A-601 EXT DOOR DETAILS
SCALE: 3" = 1'-0"



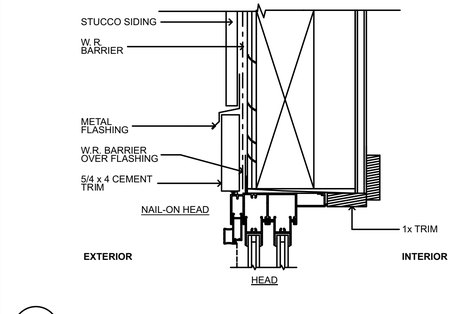
14 A-601 WINDOW DETAILS
SCALE: 3" = 1'-0"



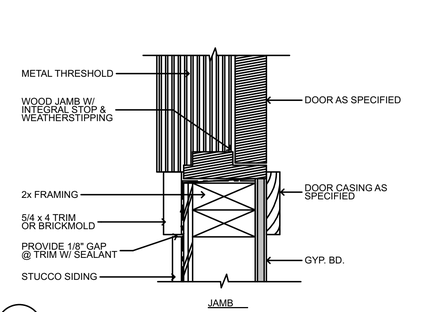
15 A-601 WINDOW DETAILS
SCALE: 3" = 1'-0"



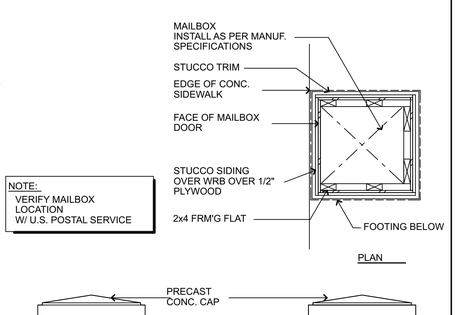
6 A-601 GARAGE DOOR DETAILS
SCALE: 3" = 1'-0"



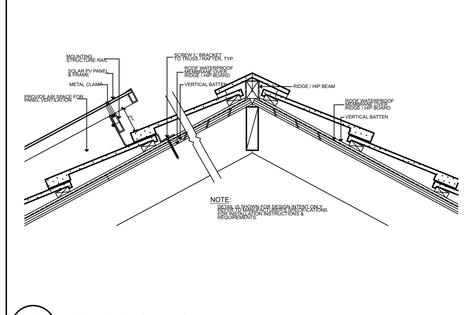
7 A-601 SLIDING GLASS DOOR DETAIL
SCALE: 3" = 1'-0"



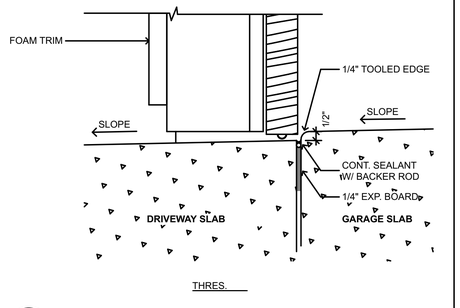
8 A-601 EXT DOOR DETAILS
SCALE: 3" = 1'-0"



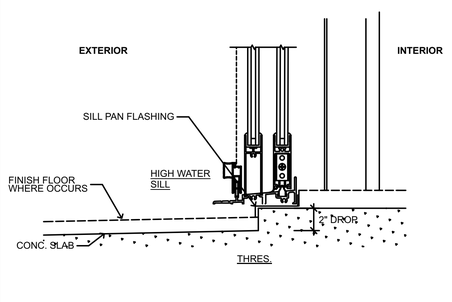
4 A-601 MAILBOX DETAIL
SCALE: 3/4" = 1'-0"



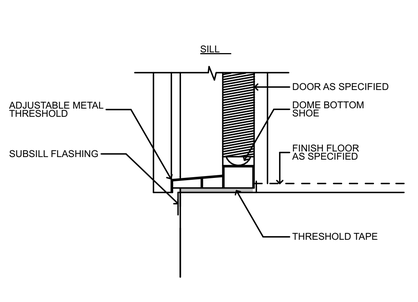
10 A-601 SOLAR/PV PANEL DETAIL
SCALE: 1 1/2"= 1'-0"



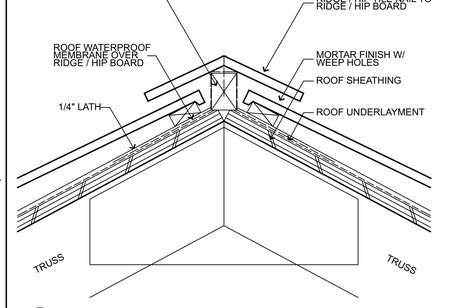
1 A-601 GARAGE DOOR DETAILS
SCALE: 3" = 1'-0"



2 A-601 SLIDING GLASS DOOR DETAIL
SCALE: 3" = 1'-0"



3 A-601 EXT DOOR DETAILS
SCALE: 3" = 1'-0"



5 A-601 ROOF RIDGE DETAIL
SCALE: 3" = 1'-0"

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CLAYTON H. NISHIKAWA LICENSED PROFESSIONAL ARCHITECT No. 6710

EXPIRES: 04/30/2018

Residence for McG Constructors

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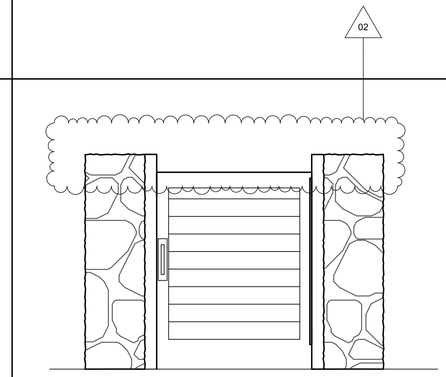
ID	REVISION	DATE
01	Permit Comments	10/01/17

Date:	10/01/17
Scale:	AS NOTED
Drawn:	
Job:	
Sheet	

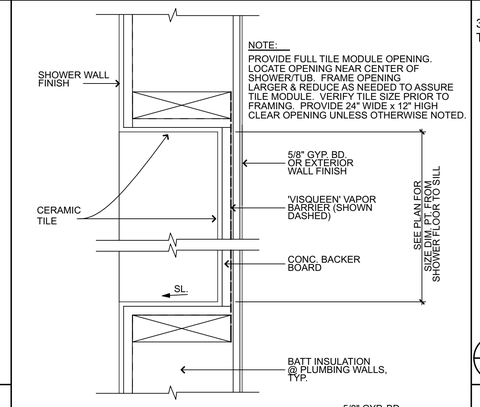
PERMIT SET

A-601

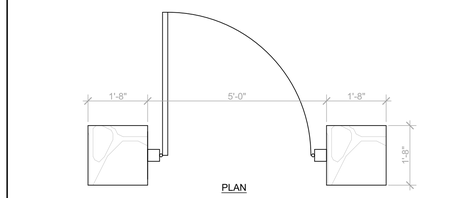
DETAILS

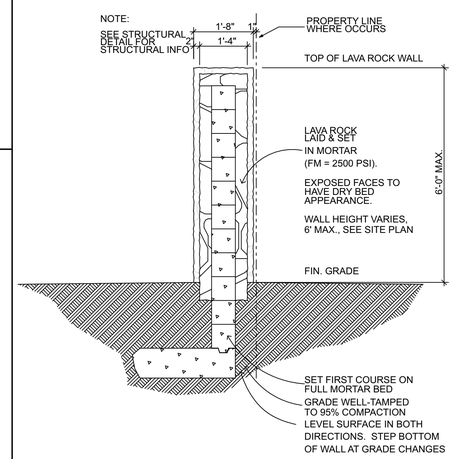


3 A-602 ENTRY GATE DETAILS
SCALE: 1/2" = 1'-0"



9 A-602 SHOWER NICHE DETAIL
SCALE: 3" = 1'-0"





3 A-602 ENTRY GATE DETAILS
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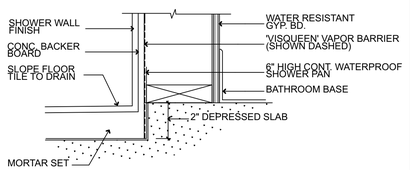

4 A-602 SHOWER DEPRESSION DETAIL
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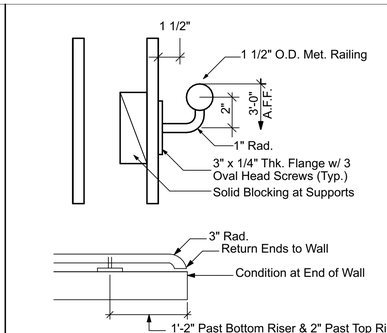
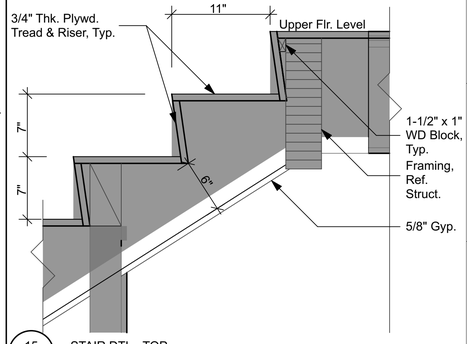
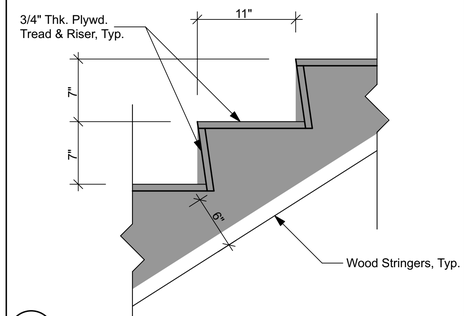


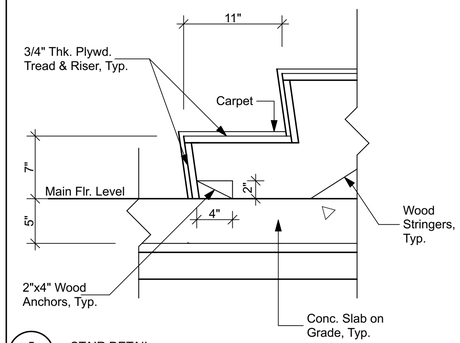
20 A-602 STAIR DTLS - HANDRAILS
SCALE: 3" = 1'-0"



15 A-602 STAIR DTL - TOP
SCALE: 1 1/2"= 1'-0"



10 A-602 STAIR DTL - MIDDLE
SCALE: 1 1/2"= 1'-0"



5 A-602 STAIR DETAIL
SCALE: 1 1/2"= 1'-0"

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H. NISHIKAWA LICENSED PROFESSIONAL ARCHITECT No. 6710 CERTIFICATION

EXPIRES: 04/30/2018

Residence for McG Constructors

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ID	REVISION	DATE
01	Permit Comments	10/01/17
02	Final Approval Conditions	10/26/17

Date:	10/01/17
Scale:	AS NOTED
Drawn:	
Job:	
Sheet	

PERMIT SET

A-602

DETAILS

DOOR SCHEDULE

MARK	DOOR						FRAME				NOTES
	SIZE			TYPE	MATL.	GLZ.	FIN.	DETAILS			
	W	H	THK.					HEAD	JAMB	SILL	
001	3'-0"	6'-8"	1 3/4"	A	SCW	--	WP	13/A-601	8/A-601	3/A-601	
002	6'-0"	7'-0"	1 1/4"	H	HCW	--	WP	16/A-601	11/A-601	11/A-601	
003	6'-0"	7'-0"	1 3/4"	D	ALUM	TG	AN	7/A-601	12/A-601	2/A-601	
004	3'-0"	6'-8"	1 3/4"	A	SCW	--	WP	13/A-601 SIM.	8/A-601 SIM.	3/A-601 SIM.	
005	8'-0"	7'-0"	1 1/4"	J	HCW	TG	WP	6/A-601	6/A-601 SIM.	1/A-601	GARAGE DOOR
006	8'-0"	7'-0"	1 1/4"	J	HCW	TG	WP	6/A-601	6/A-601 SIM.	1/A-601	GARAGE DOOR
007	3'-0"	7'-0"	1 3/4"	A	SCW	--	WP	17/A-601	17/A-601	--	
008	3'-0"	7'-0"	--	--	MFR	--	MFR	-	--	--	ELEVATOR
009	2'-10"	7'-0"	1 3/4"	B	HCW	--	WP	17/A-601	17/A-601	--	
010	3'-0"	7'-0"	1 3/4"	B	SCW	--	WP	17/A-601	17/A-601	--	
011	3'-0"	7'-0"	1 3/4"	A	SCW	--	WP	17/A-601	17/A-601	-	
012	3'-0"	7'-0"	1 3/4"	A	SCW	-	WP	17/A-601	17/A-601	--	
013	3'-0"	7'-0"	--	K	--	--	--	-	-	-	GATE ENTRY
101	6'-0"	8'-0"	1 3/4"	C	SCW	TG	WP	13/A-601	8/A-601	3/A-601	
102	16'-0"	8'-0"	1 3/4"	F	ALUM	TG	AN	7/A-601	12/A-601	2/A-601	
103	12'-0"	8'-0"	1 3/4"	E	ALUM	TG	AN	7/A-601	12/A-601	2/A-601	
104	6'-0"	8'-0"	1 3/4"	D	ALUM	TG	AN	7/A-601	12/A-601	2/A-601	
105	12'-0"	8'-0"	1 3/4"	E	ALUM	TG	AN	7/A-601	12/A-601	2/A-601	
106	16'-0"	8'-0"	1 3/4"	F	ALUM	TG	AN	7/A-601	12/A-601	2/A-601	
107	3'-0"	7'-0"	1 3/4"	B	SCW	--	WP	17/A-601	17/A-601	--	
108	2'-8"	7'-0"	1 3/4"	B	SCW	--	WP	17/A-601	17/A-601	-	
109	2'-8"	7'-0"	1 3/8"	G	HCW	--	WP	17/A-601 SIM.	17/A-601 SIM.	--	
110	3'-0"	7'-0"	--	--	MFR	--	MFR	--	--	--	ELEVATOR
111	3'-0"	7'-0"	1 3/4"	B	SCW	--	WP	17/A-601	17/A-601	--	
112	3'-0"	7'-0"	1 3/4"	B	SCW	--	WP	17/A-601	17/A-601	--	
113	3'-0"	7'-0"	1 3/4"	B	SCW	--	WP	17/A-601	17/A-601	--	
114	3'-0"	7'-0"	1 3/4"	B	SCW	--	WP	17/A-601	17/A-601	--	
115	3'-0"	7'-0"	1 3/4"	B	SCW	--	WP	17/A-601	17/A-601	--	
116	2'-8"	7'-0"	1 3/4"	B	HCW	--	WP	17/A-601	17/A-601	--	

WINDOW SCHEDULE

MARK	SIZE		HEAD	TYPE	MATL.	GLZ.	FRAME				NOTES
							FIN.	DETAILS			
	W	H						HEAD	JAMB	SILL	
W01	2'-6"	4'-0"	7'-0"	A	VN	TG		19/A-601	15/A-601	14/A-601	
W02	6'-0"	5'-0"	8'-0"	B	VN			19/A-601	15/A-601	14/A-601	
W03	6'-0"	5'-0"	8'-0"	B	VN			19/A-601	15/A-601	14/A-601	
W04	6'-0"	5'-0"	8'-0"	B	VN			19/A-601	15/A-601	14/A-601	
W05	8'-0"	5'-0"	8'-0"	C	VN			19/A-601	15/A-601	14/A-601	
W06	2'-6"	5'-0"	8'-0"	A	VN			19/A-601	15/A-601	14/A-601	
W07	3'-9"	5'-0"	8'-0"	A	VN			19/A-601	15/A-601	14/A-601	
W08	8'-0"	5'-0"	8'-0"	C	VN			19/A-601	15/A-601	14/A-601	
W09	3'-9"	5'-0"	8'-0"	A	VN	TG		19/A-601	15/A-601	14/A-601	
W10	8'-0"	5'-0"	8'-0"	C	VN			19/A-601	15/A-601	14/A-601	
W11	2'-6"	5'-0"	8'-0"	A	VN			19/A-601	15/A-601	14/A-601	
W12	2'-6"	5'-0"	8'-0"	A	VN			19/A-601	15/A-601	14/A-601	
W13	3'-9"	5'-0"	8'-0"	A	VN			19/A-601	15/A-601	14/A-601	

DOOR SCHEDULE GENERAL NOTES:

1. DOOR CONSTRUCTION:
   ALUM = ALUMINUM AND GLASS
   HCW = HOLLOW CORE WOOD
   HM = HOLLOW METAL (STEEL)
   MR = METAL (STEEL) ROLL-UP
   SCW = SOLID CORE (WOOD)
   SR = STILE AND RAIL (WOOD)

2. FACING AND FINISH:
   AN = ALUMINUM, ANODIZED
   EP = ALUMINUM, ELECTROSTATIC, PAINTED
   MP = METAL, PAINTED
   PL = PLASTIC LAMINATE
   WP = WOOD, PAINTED
   WS = HARDWOOD, STAINED

3. GLASS/LOUVER TYPES:
   AL = ALUMINUM (LOUVER)
   SG = SAFETY GLASS
   SM = SHEET METAL (LOUVER)
   TG = TEMPERED GLASS
   WD = WOOD LOUVER (SPECIES & FINISH TO MATCH DOOR)

4. 3HR, 1-1/2HR, 1HR, 3⁄4HR, OR 20 MINUTES
   INDICATED LABELED TIME OF FIRE RATING.

5. ALL DOORS SHALL MEET THE “2006 INTERNATIONAL ENERGY CONSERVATION CODE” REQUIREMENTS, INCLUDING BUT NOT LIMITED TO:
   a. MAX U-FACTOR OF 1.2
   b. MAX SHGC OF 0.40
   c. MAX AIR LEAKAGE OF 0.30 CFM/SF FOR SLIDING DOORS
   d. MAX AIR LEAKAGE OF 0.50 CFM/SF FOR SWING DOORS

WINDOW SCHEDULE GENERAL NOTES:

1. “< >” AROUND AN ENTRY DENOTES REMARK RELATING TO THAT ENTRY. REFER TO REMARKS COLUMN OF SCHEDULE & “WINDOW SCHEDULE REMARKS” LIST.

2. CONSTRUCTION:
   AL = ALUMINUM
   VN = VINYL
   WD = WOOD

3. FINISH:
   AN = ALUMINUM, ANODIZED
   MP = METAL, PAINTED
   WS = WOOD, STAINED

4. GLASS TYPES:
   FG = FLOAT GLASS
   MG = MIRROR GLASS
   PG = PROJECTION GLASS
   SG = SAFETY GLASS
   SN = SPANDREL GLASS
   TG = TEMPERED GLASS
   OB = OBSCURE GLASS
   LG = LAMINATED GLASS

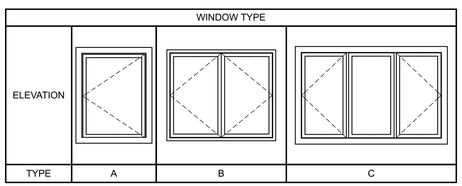
5. FIBERGLASS SCREENS IN ALUMINUM FRAMES, MOUNTED ON EXTERIOR SIDE OF OPERABLE SECTIONS, UNLESS OTHERWISE NOTED.

6. SINGLE-PANE GLASS IS 3/16” THICK UNLESS OTHERWISE NOTED.

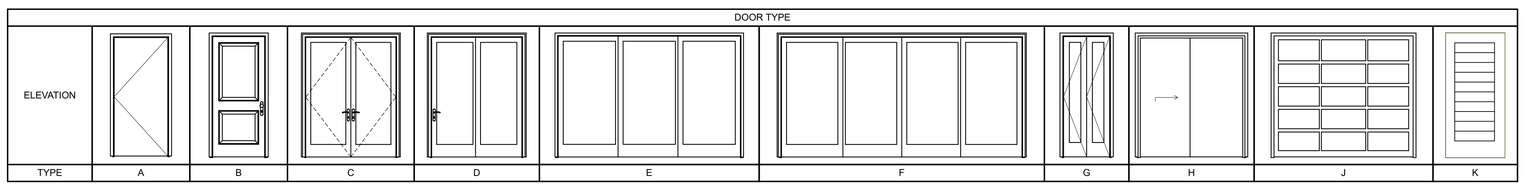
7. ALL WINDOWS ARE DUAL-GLAZED UNLESS OTHERWISE NOTED.

8. ALL WINDOWS SHALL MEET THE “2006 INTERNATIONAL ENERGY CONSERVATION CODE” REQUIREMENTS, INCLUDING BUT NOT LIMITED TO:
   a. MAX U-FACTOR OF 1.20
   b. MAX SHGC OF 0.40
   c. MAX AIR LEAKAGE OF 0.30 CFM/SF
   d. MAX AIR LEAKAGE OF 1.20 CFM/SF FOR JALOUSIE WINDOWS

WINDOW TYPE



DOOR TYPE



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Nishikawa Architects, Inc.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

H. NISHIKAWA LICENSED PROFESSIONAL ARCHITECT No. 6710 CLAYTON

EXPIRES: 04/30/2018

Residence for McG Constructors

171 W. Ikea Place, Wailea, Hawaii 96753
TMK: (2) 2-1-024:054

1" ACTUAL

IF THE ABOVE DIMENSION DOES NOT MEASURE ONE INCH (1") EXACTLY, THIS DRAWING WILL HAVE BEEN ENLARGED OR REDUCED, AFFECTING ALL LABELED SCALES.

ID	REVISION	DATE
01	Permit Comments	10/01/17

Date:	10/01/17
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Job:	
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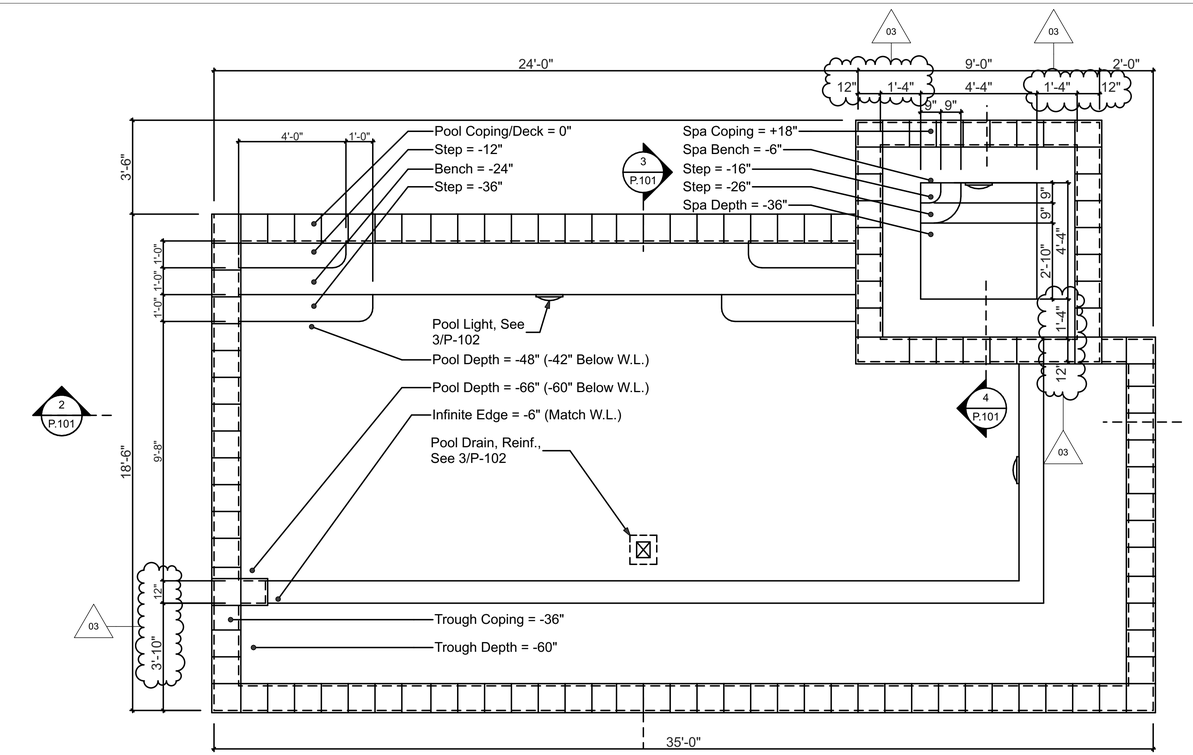
01

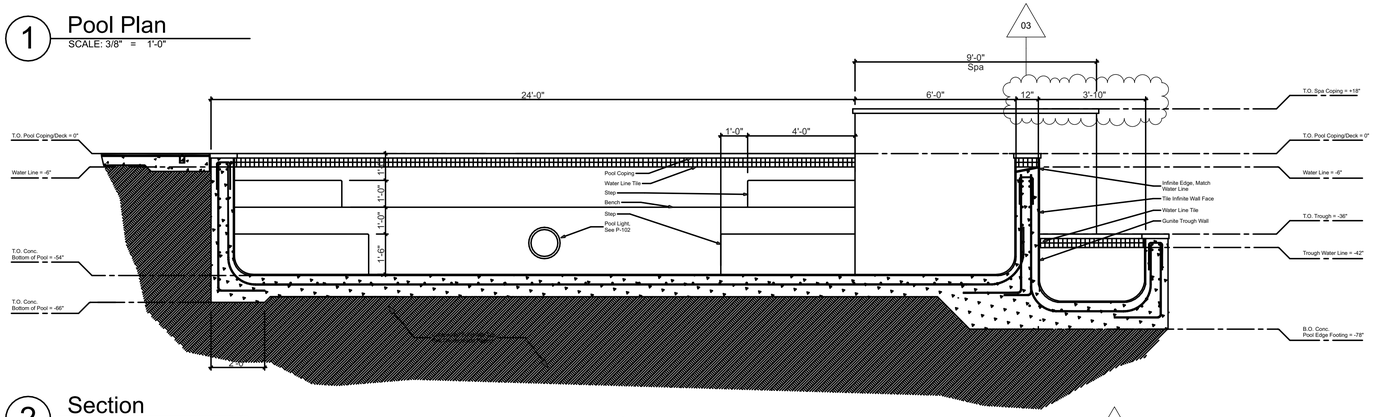
PERMIT SET

A-701

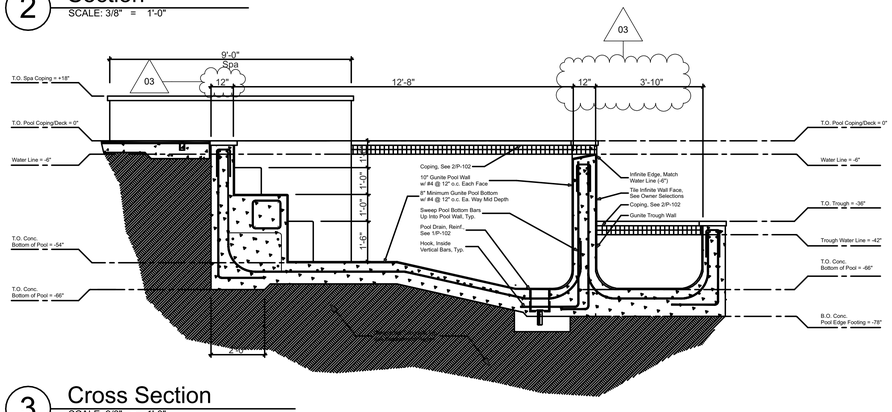
SCHEDULES



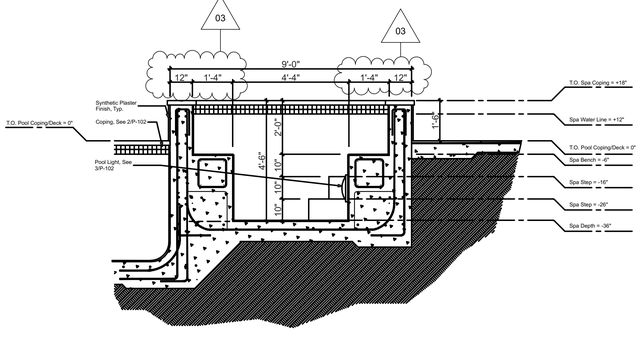
1 Pool Plan
SCALE: 3/8" = 1'-0"



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



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



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

General Notes:

Swimming Pool Contractor Shall Be Responsible for:

1. Obtaining all necessary permits and approvals to install & complete the pool and spa as shown on this plan.
2. Coordinating all work with other trades.
3. Verifying all utility locations prior to any excavation. Do not damage existing utilities while constructing pool.
4. Performing all works as per all local & governing codes.
5. Providing proper soil compaction below and around proposed pool (95%+).

Electrical

1. All electrical work shall conform to the requirement of local code and N.E.C. Art. 680, latest edition.
2. All equipment shall comply with the N.E.C. and shall be U.L. approved bonding and grounding of all equipment to reinforcing stell shall be with A.W.S. #8 copper conductor.
3. No electrical attachment, receptacle, or overhead wiring shall be within 10'-0" of the pool or spa. All receptacles located between 10' to 15' from the pool or spa shall be protected by a ground fault circuit interrupter (GFCI).

Steel Reinforcing

1. Standard floor and wall - #4 @ 12" O.C. E.W. rebar shall be grade 60. All steel is to be electrically grounded.

Specifications in General

1. All Shotcrete (Gunite) shall be 4000 PSI min. after 28 days. Provide minimum 6.5 sacks of cement per cu. yd.
2. All reinforcing shall conform to ASTM - A615, grade 60 or better.
3. All materials and all workmanship shall comply w/ all applicable state and local codes and regulations.
4. Pool piping to be schedule 40 P.V.C. min.
5. Supporting soil shall be natural undisturbed soil capable of supporting at least 2,000 pounds per sq. foot. If other conditions are present or encountered, the builder(s) shall notify the engineer.
6. Pool to be fed by hose bibb.
7. Verify coping thickness prior to setting bond beam height.

Concrete

1. All concrete shall be minimum 3,000 PSI @ 28 days. Min. conrete thickness is to be 4".

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H. NISHIKAWA LICENSED PROFESSIONAL ARCHITECT No. 6710 CLAYTON

EXPIRES: 04/30/2018

Residence for McG Constructors

171 W. Ikea Place, Wailea, Hawaii 96753
TMK: (2) 2-1-024:054

1" ACTUAL

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ID	REVISION	DATE
03	Final Coordination	11/14/17

Date:	10/01/17
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Job:	
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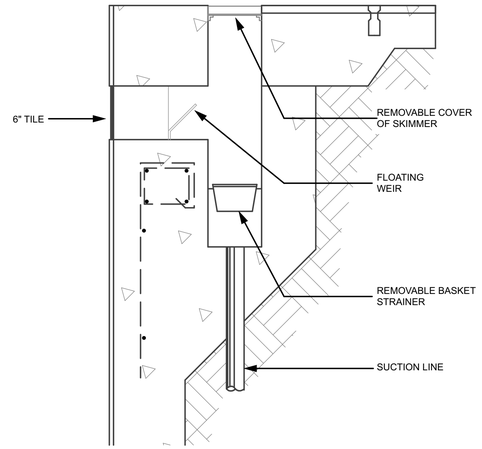
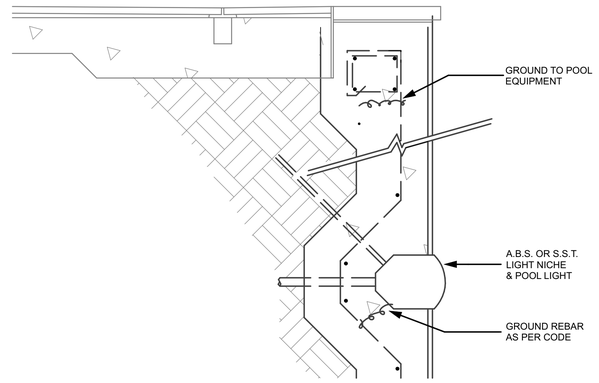
POOL PLAN AND SECTIONS

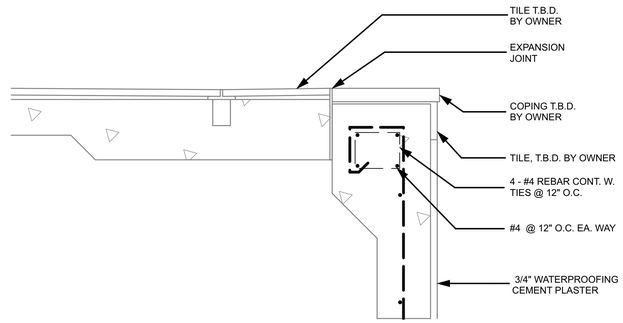
P-101



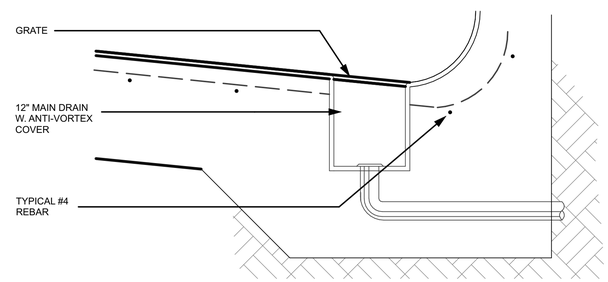
4 P-102 POOL SKIMMER
SCALE: 1/2" = 1'-0"



3 P-102 POOL LIGHT
SCALE: 1/2" = 1'-0"



2 P-102 POOL COPING
SCALE: 1/2" = 1'-0"



1 P-102 Pool Main Drain
SCALE: 1/2" = 1'-0"

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H. NISHIKAWA LICENSED PROFESSIONAL ARCHITECT No. 6710 HAWAII

EXPIRES: 04/30/2018

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TMK: (2) 2-1-024:054

1" ACTUAL

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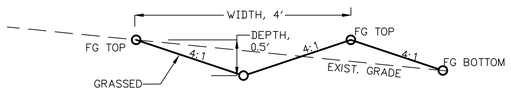
P-102

POOL DETAILS



SWALE DETAIL - 4 FT WIDTH

NTS

EXISTING UTILITIES:

1. THE LOCATION, DEPTH AND TYPE OF THE VARIOUS EXISTING UTILITY LINE SHOWN ON THE CONSTRUCTION PLANS WERE DETERMINED ON THE BASIS OF THE BEST INFORMATION AVAILABLE. THE CONTRACTOR SHALL VERIFY EXACT LOCATION, DEPTH AND TYPE PRIOR TO COMMENCEMENT OF WORK.
2. CONTRACTOR SHALL NOTIFY THE ENGINEEER OF ANY DISCREPANCIES BETWEEN THE EXISTING UTILITIES AS SHOWN ON THE CONSTRUCTION PLANS AND IN GROUND AND NOT PROCEED WITH ANY FURTHER WORK UNTIL WRITTEN NOTIFICATION IS RECEIVED FROM THE ENGINEER.
3. ALL EXISTING UTILITIES WHETHER OR NOT SHOWN ON PLANS, IF DAMAGED DURING CONSTRUCTION BY THE CONTRACTOR, SHALL BE REPAIRED SOLELY AT HIS EXPENSE.

EXISTING GRADES:

1. EXISTING GRADES SHALL BE VERIFIED BY THE CONTRACTOR BEFORE PROCEEDING WITH GRADING WORK. SHOULD ANY DISCREPANCIES BE DISCOVERED IN THE EXISTING GRADES OR DIMENSIONS GIVEN ON THE PLANS. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER BEFORE PROCEEDING FURTHER WITH ANY WORK, OTHERWISE HE WILL BE HELD RESPONSIBLE FOR ANY COST INVOLVED IN CORRECTION OF CONSTRUCTION PLACED DUE TO SUCH DISCREPANCIES.

EROSION CONTROL AND BMP IMPLEMENTATION NOTE:

1. TIMING OF CONTROL MEASURE IMPLEMENTATION. TIMING OF CONTROL MEASURE IMPLEMENTATION SHALL BE IN ACCORDANCE WITH THE APPROVED EROSION CONTROL PLAN IF SUCH PLAN IS REQUIRED. AT A MINIMUM DISTURBED AREAS OF CONSTRUCTION SITES THAT WILL NOT BE REDISTURBED FOR TWENTY-ONE DAYS OR MORE WILL BE STABILIZED (GRASSES OR GRAVELED) BY NO LATER THAN THE FOURTEENTH DAY AFTER LAST DISTURBANCE. PER MAUI COUNTY CODE 20.08.035(G)

DUST FENCE 3
ENTIRE LOT PERIMITER

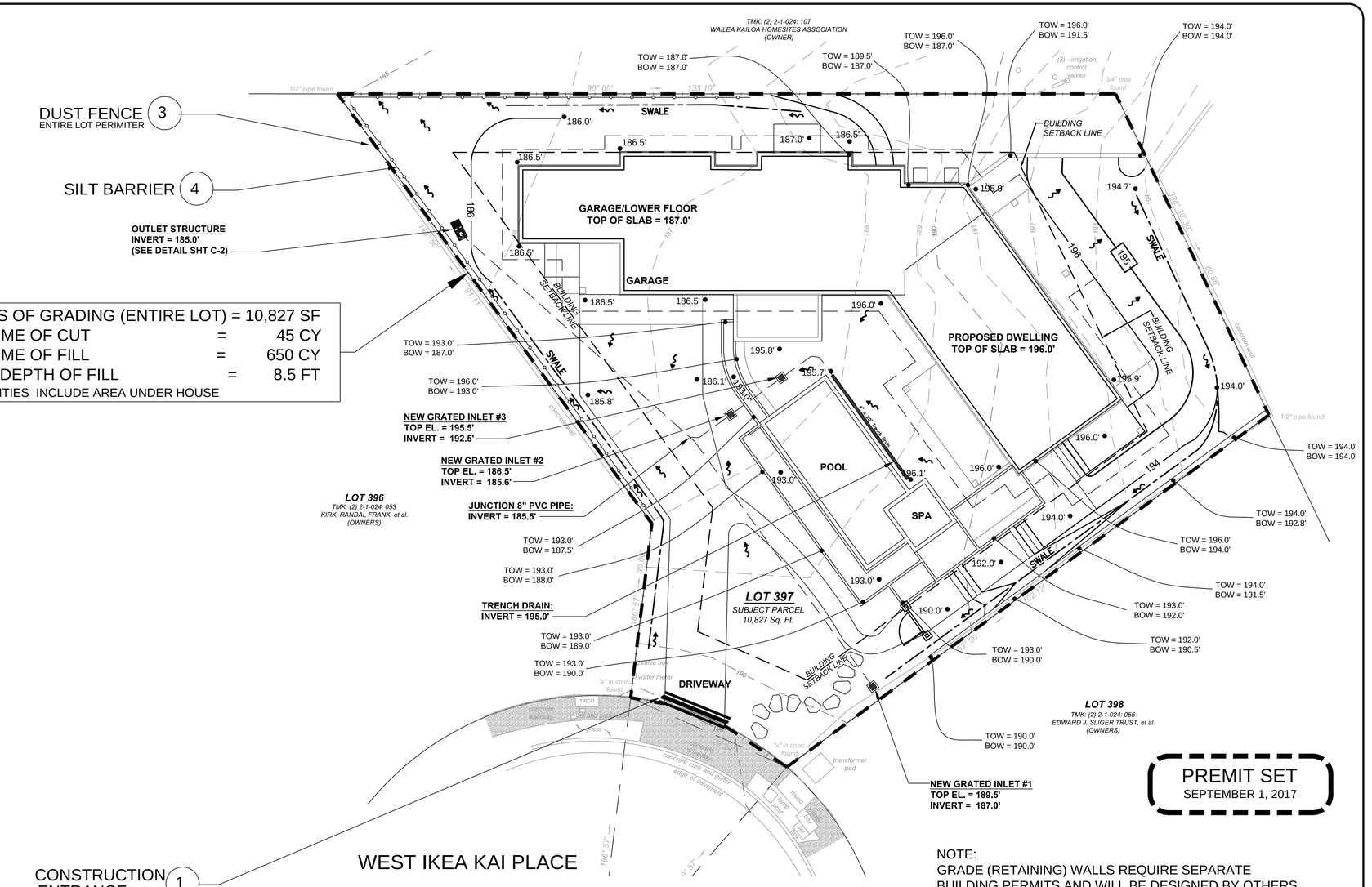
SILT BARRIER 4

CONSTRUCTION ENTRANCE 1

OUTLET STRUCTURE
INVERT = 185.0'
(SEE DETAIL SHT C-2)

LIMITS OF GRADING (ENTIRE LOT) = 10,827 SF		
VOLUME OF CUT	=	45 CY
VOLUME OF FILL	=	650 CY
MAX. DEPTH OF FILL	=	8.5 FT

QUANTITIES INCLUDE AREA UNDER HOUSE



PREMIT SET
SEPTEMBER 1, 2017

NOTE:
GRADE (RETAINING) WALLS REQUIRE SEPARATE BUILDING PERMITS AND WILL BE DESIGNED BY OTHERS.

GRADING, DRAINAGE AND EROSION CONTROL PLAN

SCALE: 1" = 10'

LEGEND:

- EXISTING MINOR CONTOUR LINE
- 580 EXISTING MAJOR GRADE CONTOUR LINE
- FINISHED MINOR CONTOUR LINE
- 580 FINISH MAJOR GRADE CONTOUR LINE
- SWALE CENTERLINE
- SILT BARRIER
- DUST FENCE
- OVER LAND RUNOFF FLOW DIRECTION
- TOW = 60.0' / BOW = 56.0' RETAINING WALL CALLOUT (NOT FOR AESTHETIC WALLS) TOW = "RETAINED SOIL ELEVATION" BOW = "SOIL ELEVATION AT TOE OF WALL"
- D8" DRAINLINE W/ SIZE & FLOW DIRECTION (MINIMUM SLOPE = 2%)
- DS DOWNSPOUTS (TYP.)

REVISION	BY

Linda Taylor Engineering, Inc.
Post Office Box 779
Makawao, Maui,
Hawaii

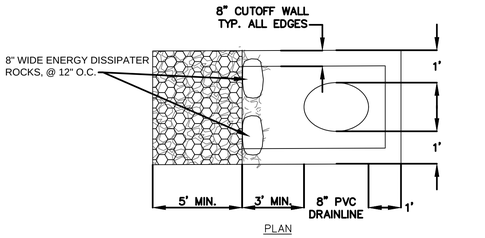
SIGNATURE
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION, AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.
04/30/18
DATE OF LICENSE

LINDA VANDEGRAAFF TAYLOR
LICENSED PROFESSIONAL ENGINEER
No. 6507-C
HAWAII, U.S.A.

GRADING, DRAINAGE & EROSION CONTROL PLAN
RESIDENCE FOR MCG CONSTRUCTORS
171 W IKEA KAI PLACE
WAILEA, KIHEI, MAUI, HAWAII
T.M.K. (2) 2-1-024: 054

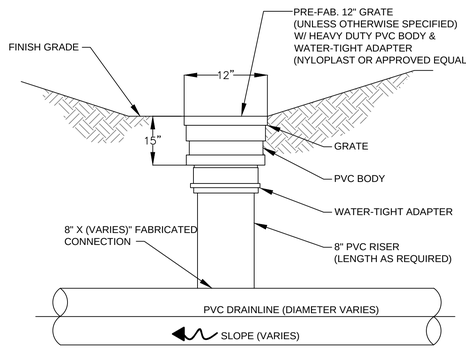
DRAWN	APS
CHECKED	LVT
DATE	SEPTEMBER 1, 2017
SCALE	AS NOTED
JOB	MCGRAW RESIDENCE
SHEET	C-1

1 OF 2 SHEETS



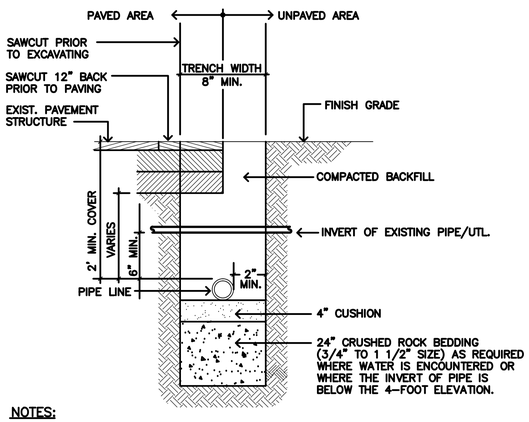
8" OUTLET STRUCTURE DETAIL

NTS



DRAINAGE INLET DETAIL

NTS



NOTES:

DAMAGES TO EXISTING UTILITIES SHALL BE REPLACED AND/OR RESORED TO ITS ORIGINAL CONDITION AT NO ADDITIONAL COST TO THE OWNER.

TRENCHING DETAIL

NTS

MINIMUM BMP CHECKLIST FOR SMALL PROJECTS:

1. **STABILIZED CONSTRUCTION ENTRANCE**
ALL POINTS OF EGRESS AND INGRESS TO A SITE SHALL BE PROTECTED WITH A STABILIZED CONSTRUCTION ENTRANCE. 20' x 20' MIN.

2. **STOCKPILES**
STOCKPILES SHALL NOT BE LOCATED IN DRAINAGE WAYS OR OTHER AREAS OF CONCENTRATED FLOWS. DURING PERIODS OF WET WEATHER, SUCH AS THE RAINY SEASON, STOCKPILES SHALL BE STABILIZED. STOCKPILES COVERED IN PLASTIC WHEN NOT IN USE. SEDIMENT TRAPPING DEVICES SUCH AS FENCES, TRAPS, BASINS OR BARRIERS SHALL BE USED AROUND THE BASE OF ALL STOCKPILES.

3. **DUST CONTROL**
DUST CONTROLSHOULD BE APPLIED TO REDUCE DUST EMISSIONS. THE CONTRACTOR SHALL KEEP THE PROJECT AREA AND SURROUNDING AREA FREE FROM DUST NUISANCE. THE WORK SHALL BE IN CONFORMANCE WITH THE AIR POLLUTION CONSTROL STANDARDS CONTAINED IN HAWAII AMINISTRATIVE RULES: CHAPTER 11-60, "AIR POLLUTION CONTROL".

4. **SEDIMENT BARRIERS OR TRAPS**
SEDIMENT TRAPPING DEVICES SUCH AS FENCES, TRAP BASINS OR BARRIERS SHALL BE USED DOWN SLOPE OF ALL DISTURBED AREAS AND AROUND THE BASE OF ALL MATERIAL STOCKPILES. STOCKPILES TO BE COVERED WITH PLASTIC.

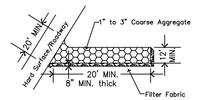
5. **SLOPE PROTECTION**
SURFACE FLOW FROM ABOVE AN EXPOSED SLOPE SHALL NOT BE ALLOWED TO FLOW OVER THE SLOPE WITHOUT PROTECTION. SLOPE PROTECTION SHALL BE USED ON AREAS WITH SLOPES GREATER THAN 50% AND ON AREAS OF MODERATE SLOPES THAT ARE PRONE TO EROSION.

6. **INLET PROTECTION**
ALL STORM DRAIN INLETS ON SITE, AND THOSE OFFSITE THAT MAY RECEIVE RUNOFF FROM THE SITE SHALL USE AN INLET PROTECTION DEVICE.

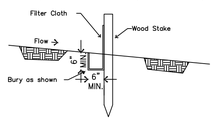
7. **TEMPORARY STABILIZATION**
IS NOT REQUIRED WHEN THE DISTURBED AREA WILL BE WORKED WITHIN A 14 DAY PERIOD. STABILIZATION IS REQUIRED FOR DISTURBED AREAS AT FINAL GRADE AND FOR THOSE AREAS THAT WILL NOT BE WORKED WITHIN A 14 DAY PERIOD.

8. **PERMANENT STABILIZATION**
ALL DISTURBED AREAS SHALL BE PERMANENTLY STABILIZED PRIOR TO REMOVING EROSION AND SEDIMENT MEASURES. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED. TRAPPED SEDIMENT AND AREAS OF DISTURBED SOIL WHICH RESULT FROM THE REMOVAL OF THE TEMPORARY MEASURES SHALL BE IMMEDIATELY PERMANENTLY STABILIZED. AREA TO BE PERMANENTLY SEEDED/MULCHED WITHIN 14 DAYS OF FINAL GRADE EXCEPT HOUSE AREA WHICH WILL BE FORMED AND SLABBED WITHIN 14 DAYS.

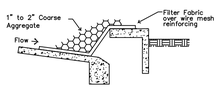
Stabilized Construction Entrance



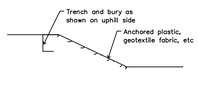
Sample Sediment Barrier (method varies)



Inlet Protection



Slope Protection



ADDITIONAL BMPS:

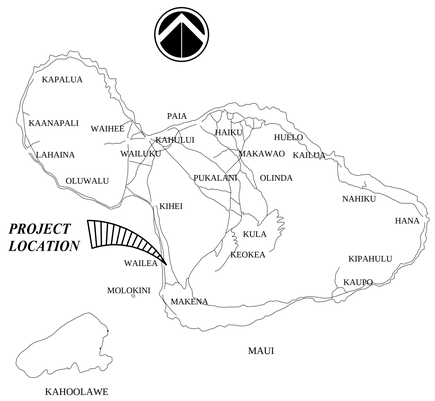
THE FOLLOWING MEASURES SHALL BE TAKEN DURING CONSTRUCTION:

1. PREVENT CEMENT PRODUCTS, OIL, FUEL, AND OTHER TOXIC SUBSTANCES FROM CONTAIMANTING SITE.
2. AVOID FERTILIZERS AND BIOCIDES, OR APPLY ONLY DURING PERIODS OF LOW RAINFALL TO MINIMIZE CHEMICAL RUNOFF.
3. COVER OPEN VEHICLES CARRYING SOILS, GRAVEL, OR OTHER PARTICULATE MATTER.
4. CONSTRUCT DRAINAGE CONTROL FEATURES, SUCH AS BERMS.
5. KEEP RUN-OFF ON-SITE.
6. RETAIN GROUND COVER UNTIL THE LAST POSSIBLE DATE.
7. STABILIZE DENUDED AREAS BY SODDING OR PLANTING AS SOON AS POSSIBLE. REPLANTING SHOULD INCLUDE SOIL AMENDMENTS, FERTILIZERS AND TEMPORARY IRRIGATION. USE HIGH SEEDING RATES TO ENSURE RAPID STAND ESTABLISHMENT.

EROSION CONTROL PLAN

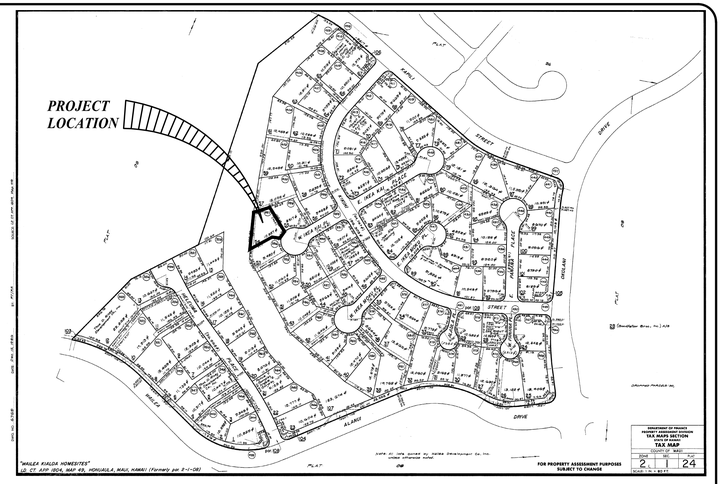
THE FOLLOWING MEASURE WILL BE TAKEN TO CONTROL EROSION DURING THE CONSTRUCTION PERIOD.

1. MINIMIZE CONSTRUCTION TIME.
2. RETAIN EXISTING GROUND COVER AS LONG AS POSSIBLE.
3. EARLY INSTALLATION OF EROSION CONTROL MEASURES.
4. USE TEMPORARY AREA SPRINKLERS IN NON-ACTIVE AREAS WHEN GROUND COVER IS REMOVED.
5. PROVIDE WATER FOR IMMEDIATE SPRINKLING, AS NEEDED, IN ACTIVE AREAS.
6. USE TEMPORARY EROSION CONTROL MEASURES WHERE NEEDED.
7. THOROUGHLY WATER GRADED AREAS AT THE END OF EACH WORK DAY AND WEEKENDS.
8. PROVIDE TEMPORARY IRRIGATION SYSTEM, AND GRASS ALL CUT AND FILL SLOPES WITHIN 30 DAYS AFTER GRADING WORK IS COMPLETED.



LOCATION MAP

NTS



VICINITY MAP

NTS

ENVIRONMENTAL HEALTH CONSTRUCTION NOTES

1. THE CONTRACTOR SHALL REMOVE ALL SILT AND DEBRIS RESULTING FROM HIS WORK AND DEPOSITED IN DRAINAGE FACILITIES, ROADWAYS, AND OTHER AREAS. THE COSTS INCURRED FOR ANY NECESSARY REMEDIAL ACTION BY THE STATE DEPARTMENT OF HEALTH SHALL BE PAYABLE BY THE CONTRACTOR.

2. THE CONTRACTOR, AT HIS EXPENSE, SHALL KEEP THE PROJECT AREA AND SURROUNDING AREA FREE OF DUST NUISANCE. THE WORK SHALL BE IN CONFORMANCE WITH THE AIR POLLUTION CONTROL STANDARDS AND REGULATIONS OF THE STATE DEPARTMENT OF HEALTH.

3. ALL GRADING OPERATIONS SHALL BE PERFORMED IN CONFORMANCE WITH THE APPLICABLE PROVISIONS OF THE WATER POLLUTION CONTROL AND WATER QUALITY STANDARDS CONTAINED IN THE PUBLIC HEALTH REGULATIONS, STATE DEPARTMENT OF HEALTH, ON WATER POLLUTION CONTROL AND WATER QUALITY STANDARDS, AND THE COUNTY GRADING ORDINANCE.

4. ALL SLOPES AND EXPOSED AREAS SHALL BE PLANTED OR PAVED IMMEDIATELY AFTER THE GRADING WORK HAS BEEN COMPLETED.

5. CONSTRUCTION DEBRIS AND WASTES SHALL BE DEPOSITED AT AN APPROPRIATE SITE. THE CONTRACTOR SHALL INFORM THE ENGINEER OF THE LOCATION OF DISPOSAL SITES. THE DISPOSAL SITE MUST ALSO FULFILL REQUIREMENTS OF THE GRADING ORDINANCES.

6. THE CONTRACTOR SHALL PROVIDE CONTINUOUS EROSION CONTROL MEASURES SHOWN IN THE APPROVED EROSION CONTROL PLAN AND OUTLINED IN THE REPORT ON DRAINAGE AND EROSION CONTROL. PROVIDE TEMPORARY DUST CONTROL BY SPRINKLING WITH WATER WAGONS OR OTHER SUITABLE MEANS SEVEN (7) DAYS A WEEK. GRASS EXPOSED AREAS IMMEDIATELY AFTER GRADING IS COMPLETED.

7. THE CONTRACTOR SHALL NOT DEMOLISH OR CLEAR ANY STRUCTURE, SITE OR VACANT LOT WITHOUT FIRST ASCERTAINING THE PRESENCE OR ABSENCE OF RODENTS WHICH MAY ENDANGER THE PUBLIC HEALTH BY DISPERSAL FROM SUCH PREMISES. SHOULD SUCH INSPECTION REVEAL THE PRESENCE OF SUCH RODENTS, THE CONTRACTOR SHALL ERADICATE SUCH RODENTS BEFORE DEMOLISHING OR CLEARING SAID STRUCTURE, SITE OR VACANT LOT.

COMPACTION REQUIREMENTS

1. TESTING OF MATERIALS SHALL BE CONDUCTED BY AN APPROVED INDEPENDENT TESTING AGENCY IN ACCORDANCE WITH ASTM STANDARD METHODS OR AS SPECIFIED BY THE DEPARTMENT OF PUBLIC WORKS, ENGINEERING DIVISION, AS FOLLOWS:
   - A. EMBANKMENT/SELECT BORROW AND SUBGRADE MATERIALS: ONE (1) COMPACTION TEST PER 600 SQUARE YARDS;
   - B. AGGREGATE SUBBASE COURSE: ONE (1) COMPACTION TEST PER 400 SQUARE YARDS; ONE (1) GRADATION AND SAND EQUIVALENT TEST PER PROJECT;
   - C. AGGREGATE BASE COURSE: ONE (1) COMPACTION TEST PER 300 SQUARE YARDS; ONE (1) GRADATION AND SAND EQUIVALENT TEST PER PROJECT;
   - D. ASPHALT CONCRETE PAVEMENT OR ASPHALT TREATED BASE COURSE: THREE (3) A.C. CORES FOR THICKNESS AND DENSITY TESTS PER PROJECT;
   - E. TRENCH BACKFILL MATERIAL: ONE (1) TEST FOR EACH 300 LINEAL FEET OF TRENCH PER LIFT OF MATERIAL.
2. CONTRACTOR SHALL SUBMIT ALL TESTING REPORTS INCLUDING RESULTS TO THE COUNTY'S INSPECTION AGENCY FOR REVIEW AND APPROVAL PRIOR TO COUNTY'S ACCEPTANCE OF WORK.
3. THE CONTRACTOR SHALL BE REQUIRED TO NOTIFY THE COUNTY OF ANY TESTING FAILURES AND CORRECT EACH FAILURE PRIOR TO PROCEEDING TO THE NEXT PHASE OF CONSTRUCTION. NONCOMPLIANCE WILL REQUIRE REMOVAL OF ALL SUBSEQUENT WORK T CORRECT THE AREA OF FAILURE. ALL COSTS OF TESTING, REMOVAL, AND RECONSTRUCTION, SHALL BE BORNE BY THE CONTRACTOR.

EROSION CONTROL

THE FOLLOWING MEASURES SHALL BE TAKEN TO CONTROL EROSION DURING THE SITE DEVELOPMENT PERIOD:

1. MINIMIZE TIME OF CONSTRUCTION.
2. RETAIN EXISTING GROUND COVER UNTIL LATEST DATE TO COMPLETE CONSTRUCTION.
3. EARLY CONSTRUCTION OF DRAINAGE CONTROL FEATURES.
4. USE TEMPORARY AREA SPRINKLERS IN NON–ACTIVE CONSTRUCTION AREAS WHEN GROUND COVER IS REMOVED.
5. STATION WATER TRUCK ON SITE DURING CONSTRUCTION PERIOD TO PROVIDE FOR IMMEDIATE SPRINKLING, AS NEEDED. IN ACTIVE CONSTRUCTION ZONES (WEEKENDS AND HLIDAYS INCLUDED.).
6. USE TEMPORARY BERMS AND CUT–OFF DITCHES, WHERE NEEDED, FOR CONTROL OF EROSION.
7. GRADED AREAS SHALL BE THOROUGHLY WATERED AFTER CONSTRUCTION ACTIVITY HAS CEASED FOR THE DAY AND ON WEEKENDS.
8. ALL CUT AND FILL SLOPES SHALL BE SODDED OR PLANTED IMMEDIATELY AFTER GRADING WORK HAS BEEN COMPLETED.

EARTHWORK:

DISTANCE FROM TIP OF CUT OR BOTTOM OF FILL TO PROPERTY LINES.

HEIGHT OF CUT OR FILL	DISTANCE FROM PROPERTY LINE
0' TO 2'	
MORE THAN 2' TO 4'	2'
MORE THAN 4' TO 6'	3'
MORE THAN 6' TO 10'	4'
MORE THAN 10' TO 15'	5'
MORE THAN 15'	8'

PREMIT SET
SEPTEMBER 1, 2017

REVISION	BY

Linda Taylor Engineering, Inc.
Post Office Box 779
Makawao, Maui,
Hawaii

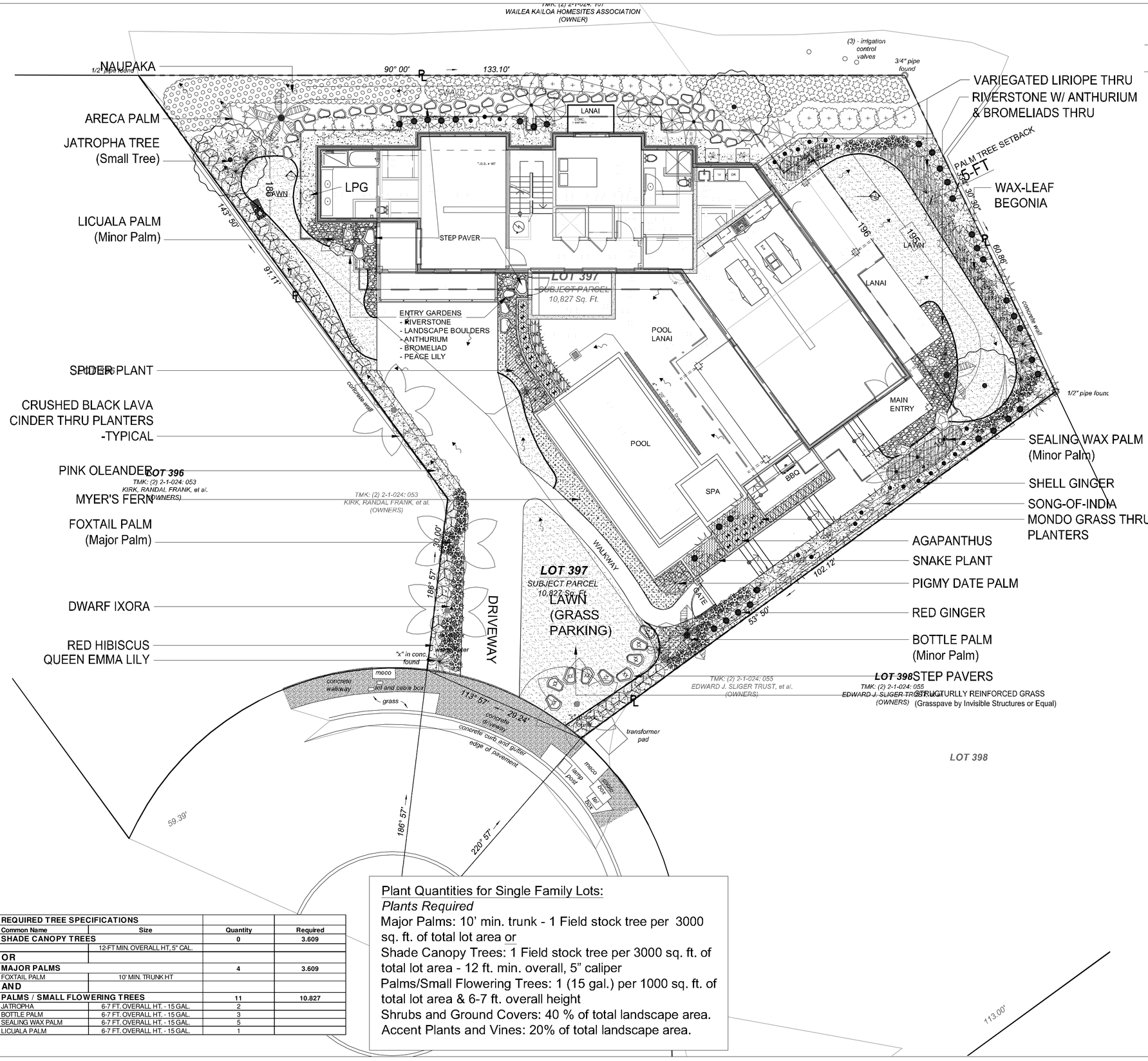
SIGNATURE: Linda Taylor
04/30/18
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION, AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.
DATE OF LICENSE

LINDA VANDE GRAAFF TAYLOR * LICENSED PROFESSIONAL ENGINEER * No. 6507-C * U.S.A. * HAWAII

CONSTRUCTION NOTES & DETAILS
RESIDENCE FOR MCG CONSTRUCTORS
171 W IKEA KAI PLACE
WAILEA, KIHEI, MAUI, HAWAII
T.M.K. (2) 2-1-024: 054

DRAWN	APS
CHECKED	LVT
DATE	SEPTEMBER 1, 2017
SCALE	AS NOTED
JOB	MCGRAW RESIDENCE
SHEET	C-2

2 OF 2 SHEETS



PLANT LEGEND

Symbol	Common Name
TREES AND PALM	
	TREES:
	Jatropha Tree (15 gal., min. 6-ft overall ht.)
	PALM TREES:
	Foxtail Palm (min. 10' trunk ht.)
	Sealing Wax Palm (15 gal., min. 6-ft overall ht.)
	Bottle Palm (15 gal., min. 6-ft overall ht.)
	Areca Palm
	Licuala Palm
	Pigmy Date Palm
SHRUBS AND GROUNDCOVER	
	Song-of-India
	Wax-Leaf Begonia
	Shell Ginger
	Agapanthus
	Snake Plant
	Red Ginger
	Queen Emma Lily
	Red Hibiscus
	Dwarf Ixora - orange/yellow
	Pink Oleander
	Spider Plant
	Naupaka
	Bougainvillea "Temple Fire"
	Liriope 'Varigated'
	Myer's Fern
	Mondo Grass
	Lawn - Bermuda
	Riverstone w/ Anthurium Peace Lily & Bromeliad
	Crushed Black Lava Cinder

REQUIRED TREE SPECIFICATIONS			
Common Name	Size	Quantity	Required
SHADE CANOPY TREES		0	3.609
	12-FT MIN. OVERALL HT, 5" CAL.		
OR			
MAJOR PALMS		4	3.609
FOXTAIL PALM	10' MIN. TRUNK HT		
AND			
PALMS / SMALL FLOWERING TREES		11	10.827
JATROPHA	6-7 FT. OVERALL HT. - 15 GAL.	2	
BOTTLE PALM	6-7 FT. OVERALL HT. - 15 GAL.	3	
SEALING WAX PALM	6-7 FT. OVERALL HT. - 15 GAL.	5	
LICUALA PALM	6-7 FT. OVERALL HT. - 15 GAL.	1	

Plant Quantities for Single Family Lots:

Plants Required

Major Palms: 10' min. trunk - 1 Field stock tree per 3000 sq. ft. of total lot area or

Shade Canopy Trees: 1 Field stock tree per 3000 sq. ft. of total lot area - 12 ft. min. overall, 5" caliper

Palms/Small Flowering Trees: 1 (15 gal.) per 1000 sq. ft. of total lot area & 6-7 ft. overall height

Shrubs and Ground Covers: 40 % of total landscape area.

Accent Plants and Vines: 20% of total landscape area.

0 ft. 4' 8' 16' 24'

NOT FOR CONSTRUCTION

CHRIS HART & PARTNERS
LANDSCAPE ARCHITECTURE & PLANNING
115 N. Market Street
Wailuku, Hawaii 96793
Ph. 808-242-1955
www.chpmaui.com
info@chpmaui.com

DAVID P SEREDA
LICENSED PROFESSIONAL LANDSCAPE ARCHITECT
NO. 15319
HAWAII U.S.A.

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Signature Expires 04-30-18

Residence for McG Constructors

171 W. IKEA PLACE, WAILEA, MAUI, HAWAII
TMK: (2) 2-1-024 : 054

PREPARED FOR:

PERMIT SET

PLANTING PLAN

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

Designed by	DS
Drawn by	RB
Checked by	DS
Date	SEPT. 1, 2017
File No.	17-040

SHEET
L-1
1 of 6 sheets

valves

90° 00' → 133.10'

PROPERTY BOUNDARY LINE

NOT FOR CONSTRUCTION

SWALE

CONC. LANDING

SETBACK LINE

GARAGE
491 sq ft
22'-0" X 20'-8"
4:12 SL TYPICAL
T.O.S. = 187'

GARAGE STOR.
114 sq ft
9'-8" X 11'-10"
4:12 SL TYPICAL

STAIRS
84 sq ft

BED
202 sq ft
22'-0" X 20'-8"
4:12 SL TYPICAL

A.C. UNIT

A.C. UNIT

W

DR

PANELING

4:12 SL TYPICAL

BATH
126 sq ft
22'-0" X 20'-8"
4:12 SL TYPICAL

ELEV
25 sq ft

STORAGE
22 sq ft

HALLWAY
147 sq ft
22'-0" X 20'-8"

CLOSET
48 sq ft
14'-9" X 23'-0"

POOL EQUIPMENT
14'-9" X 23'-0"

DOWNSPOUT, TYPICAL

ROOF EDGE, TYP.

GUTTER EDGE, TYP.

DW

4:12 SL TYPICAL

4:12 SL TYPICAL

126'

196'

186'

143° 50'

91.11'

LOT 397
SUBJECT PARCEL
10,827 Sq. Ft.

4" x 20' Trench Drain

concrete wall

(2) 2-1-024: 053
DAL FRANK, et al.
OWNERS)

30.00'

57'

LOT 397

102.12'

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Expires 04-30-18

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171 W. IKEA PLACE, WAILEA, MAUI, HAWAII
TMK: (2) 2-1-024 : 054

PREPARED FOR:

PERMIT SET

PLANTING PLAN

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

1	.
2	.
3	.
4	.
5	.
6	.
7	.

Designed by	DS
Drawn by	RB
Checked by	DS
Date	AUGUST 31, 2017
File No.	17-040

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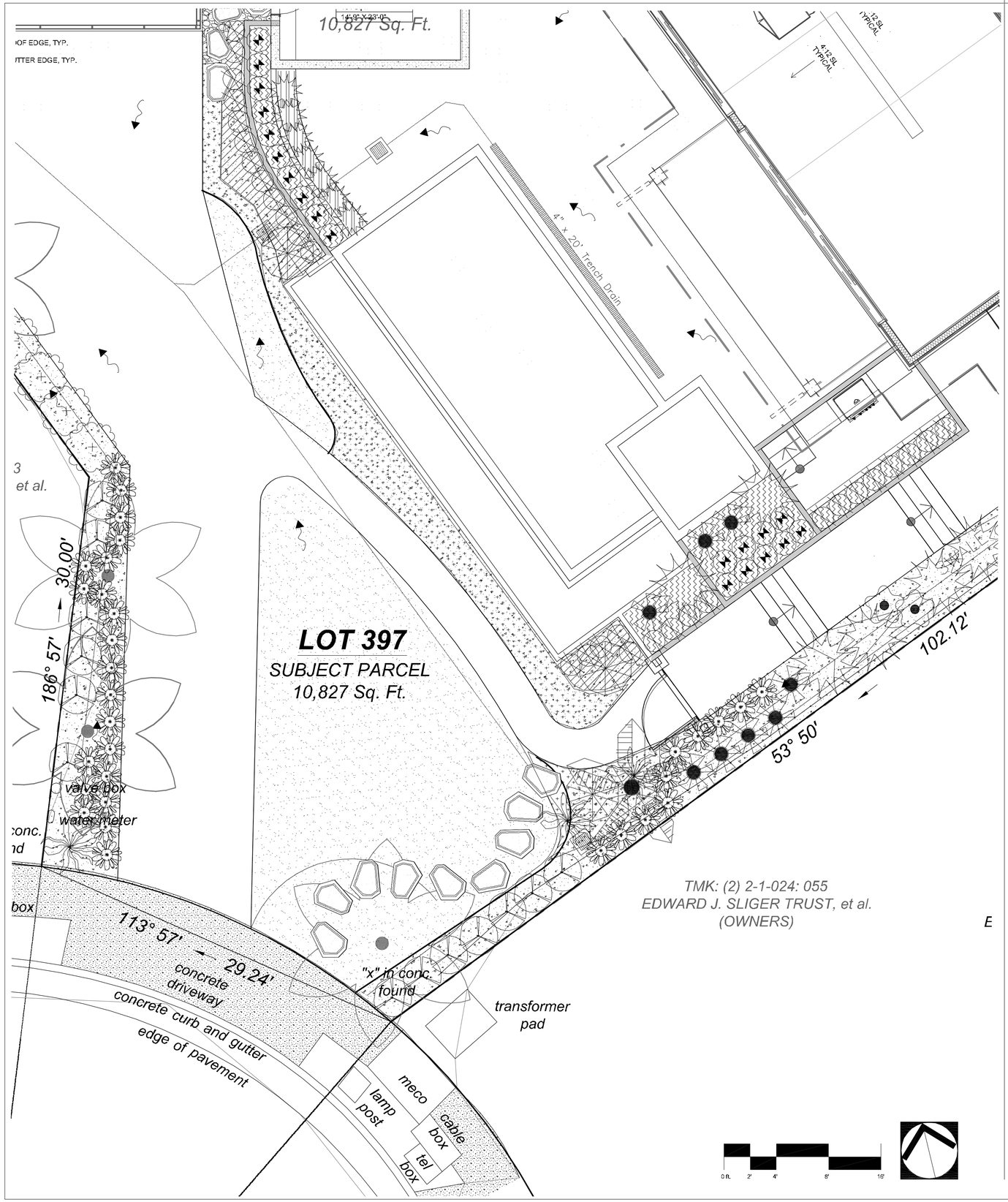
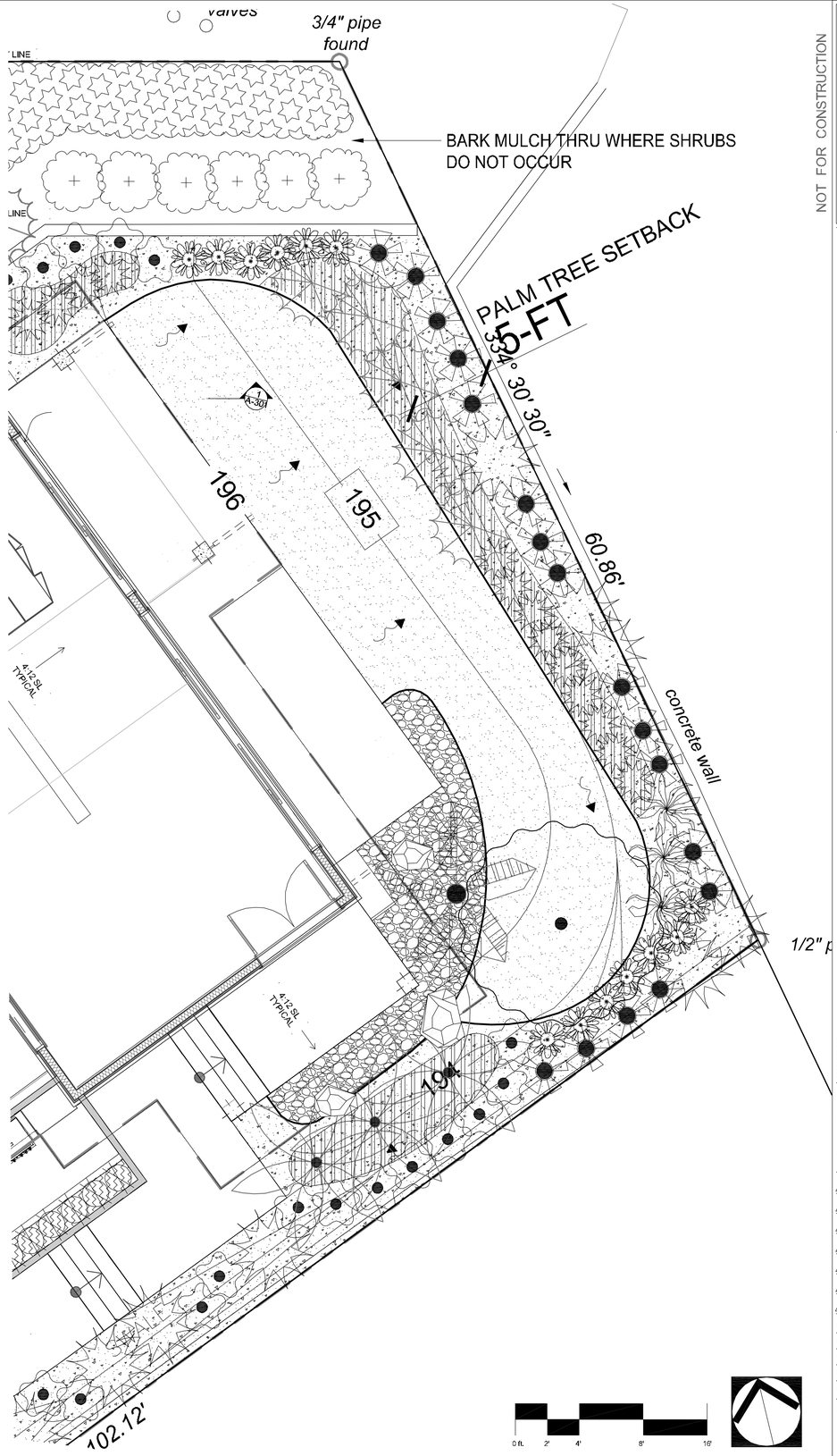
2 of 6 sheets





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Signature Expires 04-30-18

Residence for McG Constructors

171 W. IKEA PLACE, WAILEA, MAUI, HAWAII
TMK: (2) 2-1-024 : 054

PREPARED FOR

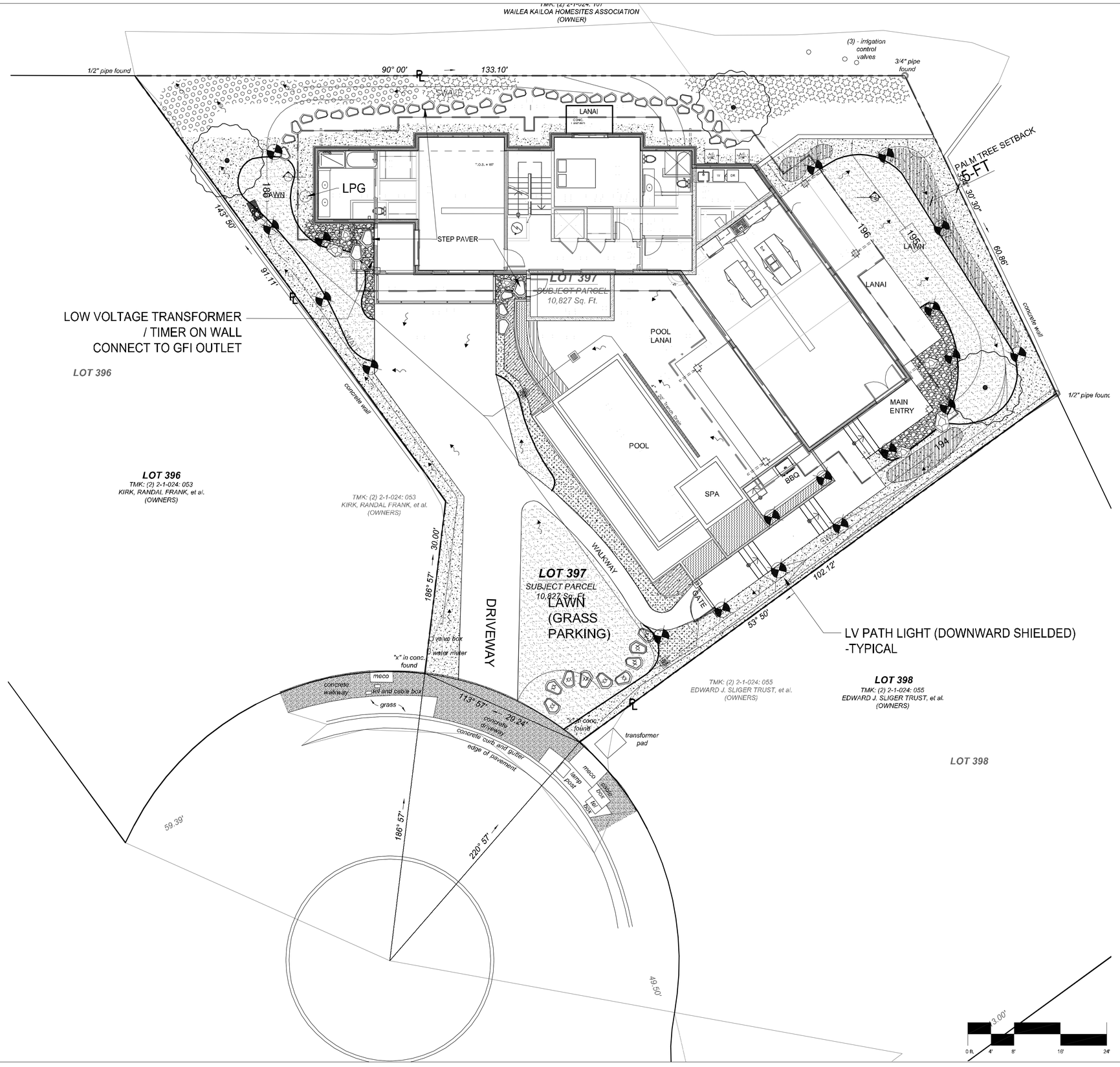
PERMIT SET

PLANTING PLAN

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

Designed by	DS
Drawn by	RB
Checked by	DS
Date	SEPT 1, 2017
File No.	17-040

SHEET
L-3
3 of 7 sheets



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171 W. IKEA PLACE, WAILEA, MAUI, HAWAII
TMK: (2) 2-1-024 : 054

PREPARED FOR:

PERMIT SET

L.V. LIGHTING PLAN

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

Designed by	DS
Drawn by	RB
Checked by	DS
Date	SEPT. 1, 2017
File No.	17-040

SHEET
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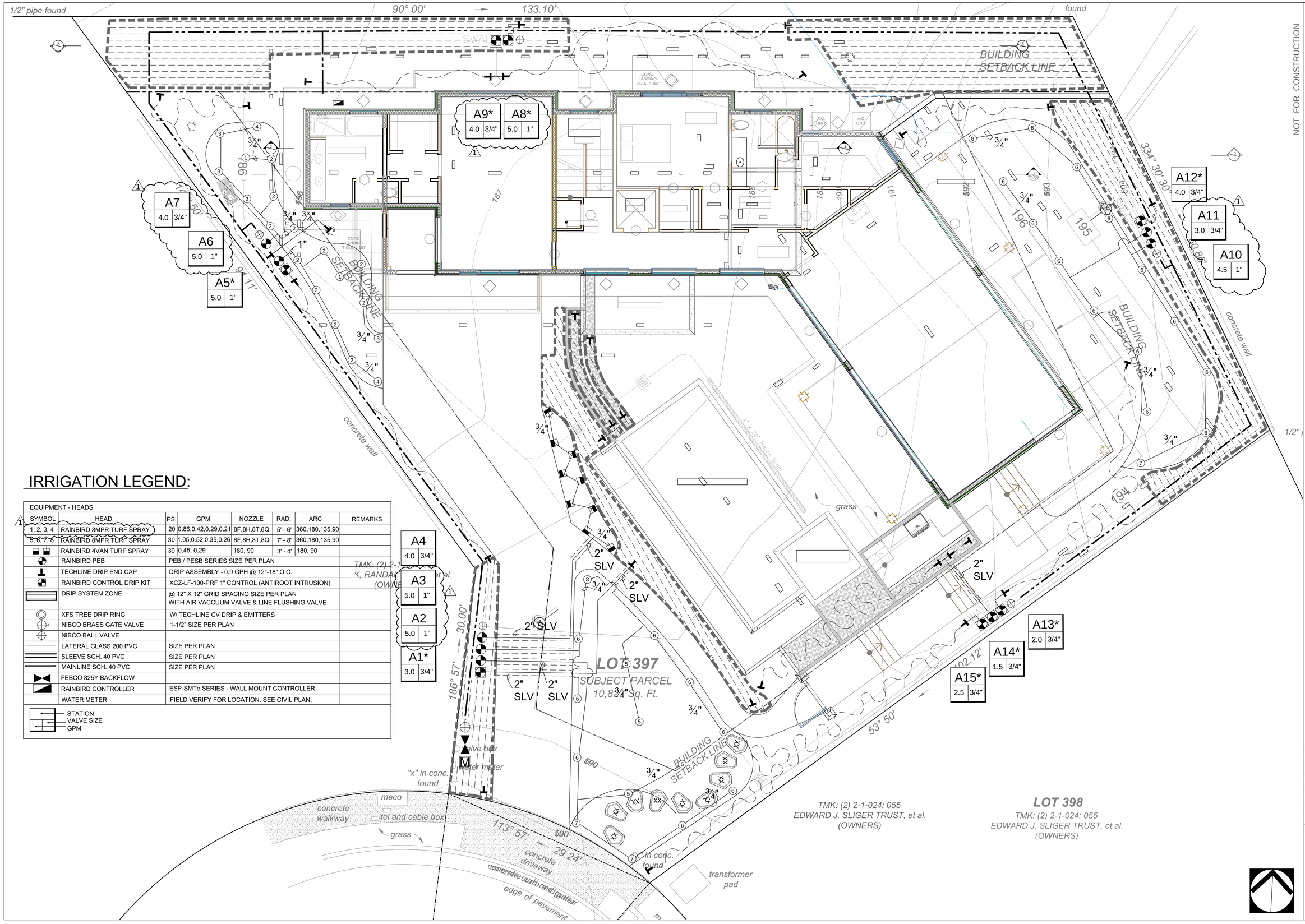
4 of 6 sheets



IRRIGATION LEGEND:

EQUIPMENT - HEADS							
SYMBOL	HEAD	PSI	GPM	NOZZLE	RAD.	ARC	REMARKS
1, 2, 3, 4	RAINBIRD 8MPR TURF SPRAY	20	0.86,0.42,0.29,0.21	8F,8H,8T,8Q	5' - 6'	360,180,135,90	
5, 6, 7, 8	RAINBIRD 8MPR TURF SPRAY	30	1.05,0.52,0.35,0.26	8F,8H,8T,8Q	7' - 8'	360,180,135,90	
	RAINBIRD 4VAN TURF SPRAY	30	0.45, 0.29	180, 90	3' - 4'	180, 90	
	RAINBIRD PEB	PEB / PESB SERIES SIZE PER PLAN					
	TECHLINE DRIP END CAP	DRIP ASSEMBLY - 0.9 GPH @ 12"-18" O.C.					
	RAINBIRD CONTROL DRIP KIT	XCZ-LF-100-PRF 1" CONTROL (ANTIROOT INTRUSION)					
	DRIP SYSTEM ZONE	@ 12" X 12" GRID SPACING SIZE PER PLAN WITH AIR VACCUUM VALVE & LINE FLUSHING VALVE					
	XFS TREE DRIP RING	W/ TECHLINE CV DRIP & EMITTERS					
	NIBCO BRASS GATE VALVE	1-1/2" SIZE PER PLAN					
	NIBCO BALL VALVE						
	LATERAL CLASS 200 PVC	SIZE PER PLAN					
	SLEEVE SCH. 40 PVC	SIZE PER PLAN					
	MAINLINE SCH. 40 PVC	SIZE PER PLAN					
	FEBCO 825Y BACKFLOW						
	RAINBIRD CONTROLLER	ESP-SMTe SERIES - WALL MOUNT CONTROLLER					
	WATER METER	FIELD VERIFY FOR LOCATION. SEE CIVIL PLAN.					

STATION
VALVE SIZE
GPM

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Expires 04-30-18

Residence for McG Constructors

171 W. IKEA PLACE, WAILEA, MAUI, HAWAII
TMK: (2) 2-1-024 : 054

PREPARED FOR:

PERMIT SET

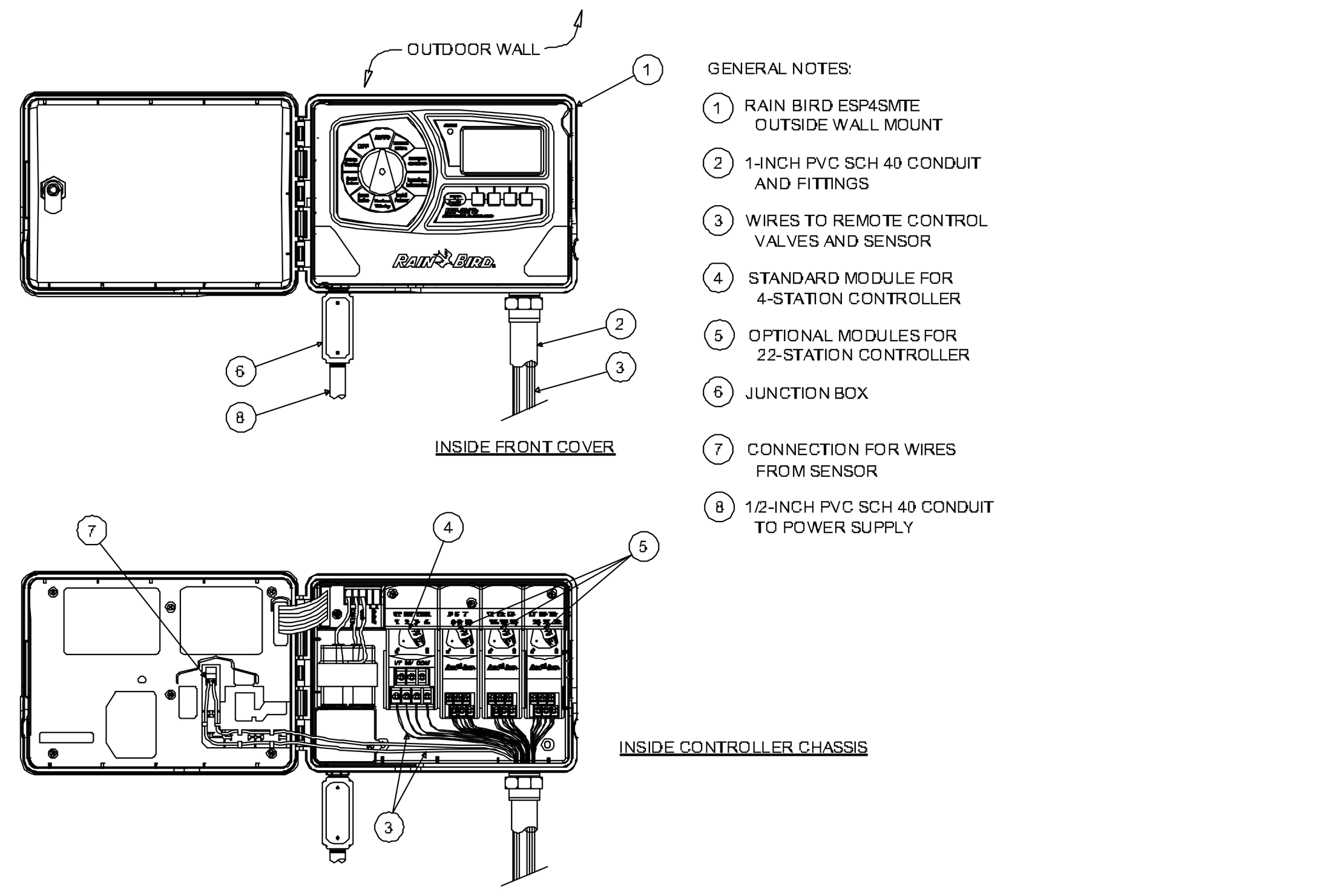
IRRIGATION PLAN

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

1	REVISION 11-10-17
2	-
3	-
4	-
5	-
6	-
7	-

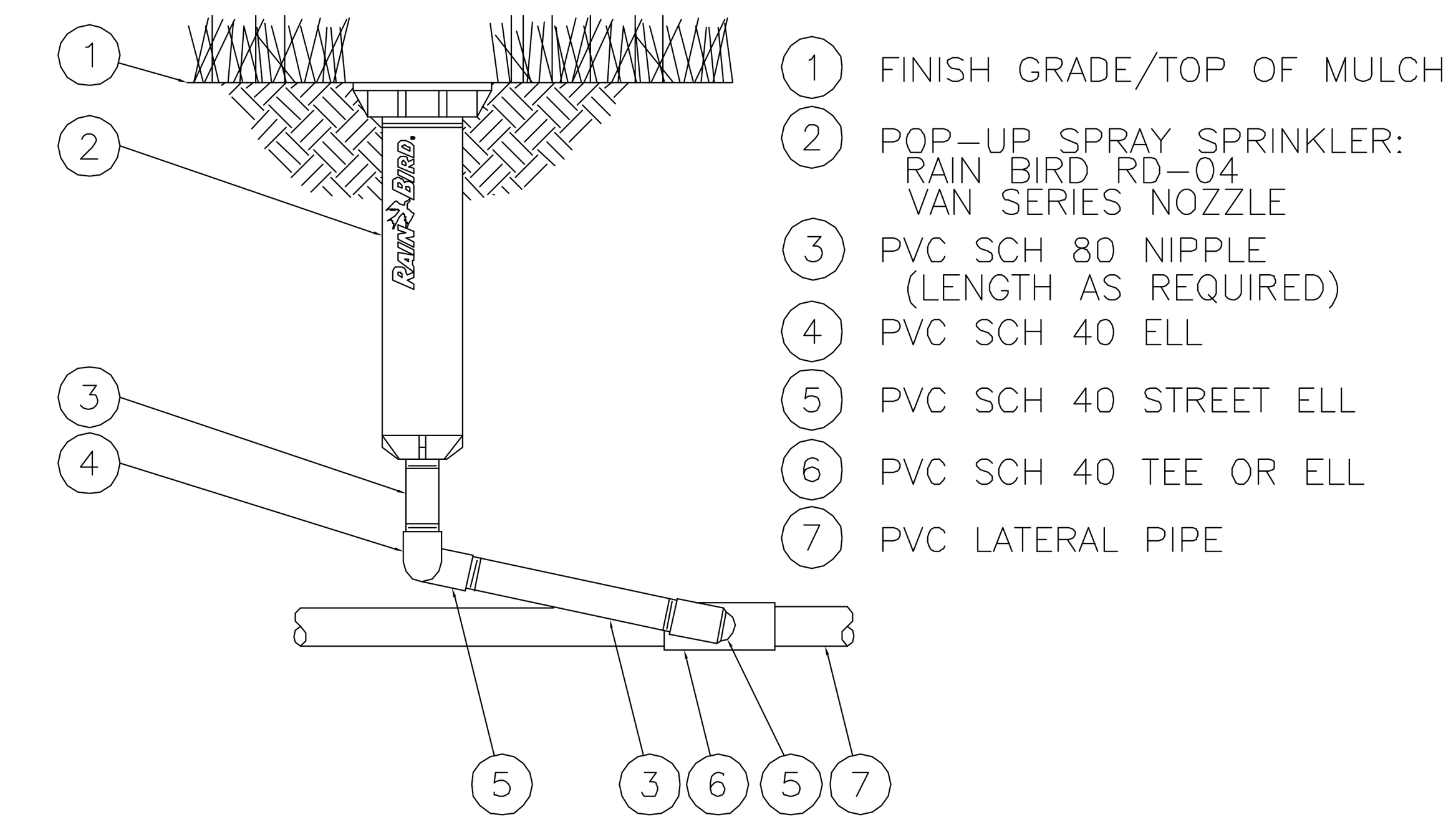
Designed by	RJB
Drawn by	RJB
Checked by	DS
Date	SEPT. 1, 2017
File No.	17-040

SHEET
L-4
5 of 7 sheets



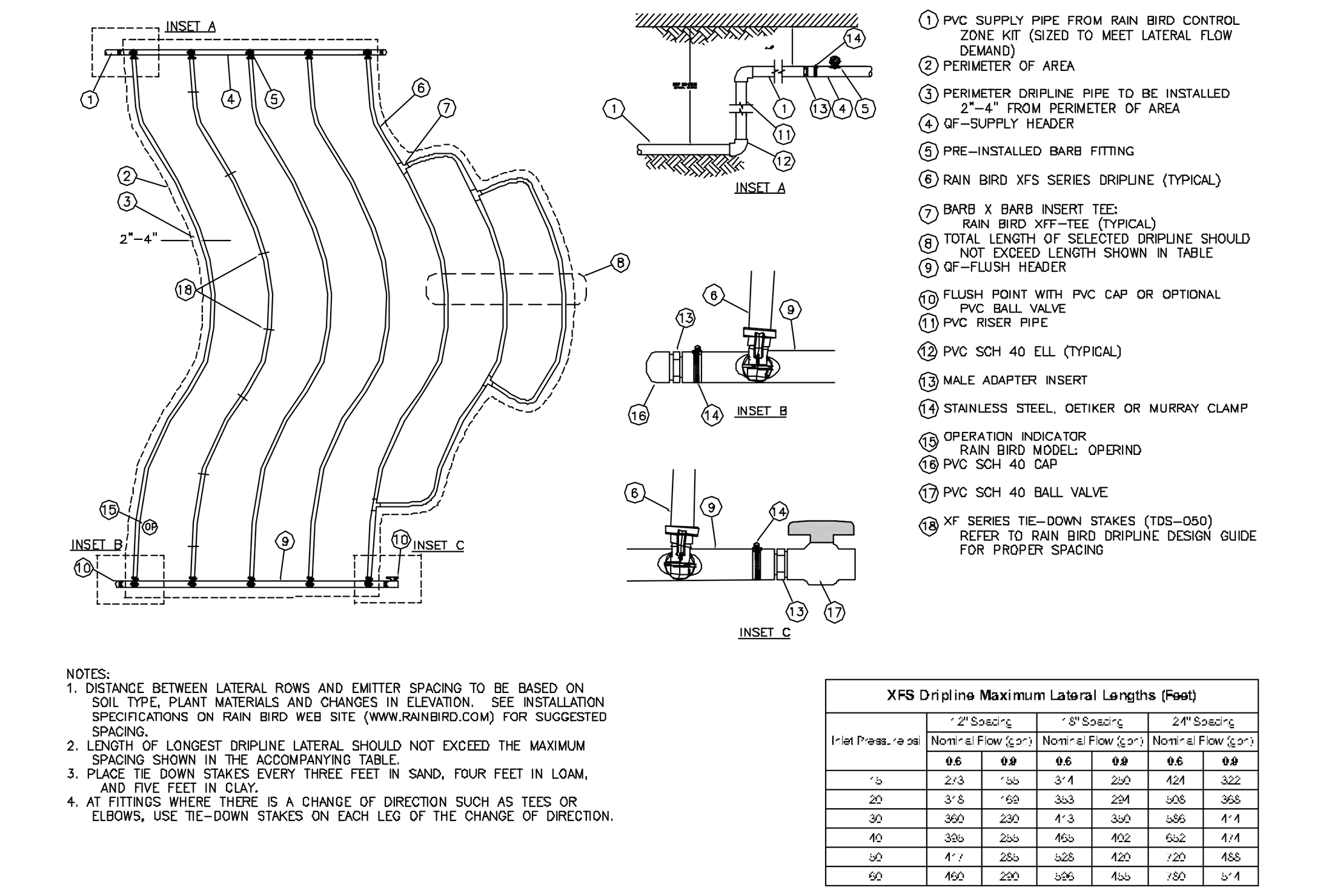
I RAINBIRD CONTROLLER - ESP-SMTe SERIES

SECTION SCALE: N.T.S.



E 1804 RAINBIRD TURF POP-UP VAN SPRINKLER

SECTION SCALE: N.T.S.



A RAINBIRD XFS SUB-SURFACE DRIPLINE

SECTION SCALE: N.T.S.

IRRIGATION GENERAL NOTES

1. 110 power to controllers to be provided by general contractor. Irrigation contractor is responsible for coordinating controller placement with general contractor.
2. Install low head check valves on any heads requiring them due to low head drainage.
3. Coordinate irrigation sleeves and conduit placement with the general contractor.
4. All pressure pipe and control wire shall be placed in sch. 40 pvc sleeves if crossing under paving or through walls.
5. All irrigation heads to be placed min. 6" from all walks and walls and 18" from any buildings unless noted otherwise.
6. Valve boxes should be located away from walks and high visibility areas and be set flush with finished grade.
7. Contractor shall provide two spare wires from the furthest valve or manifold to each controller.
8. Rainbird 'Pen-tite' connectors or equal shall be used at all wire connections below grade.
9. Contractor is responsible for making any adjustments to the system necessary to ensure 100% head to head coverage without spraying buildings or walls.
10. Contractor shall install pressure regulating valves if static operating pressure exceeds maximum operating pressure of the head specified.
11. Contractor shall verify static pressure at P.O.C. necessary to operate system as designed at minimun 75 p.s.i. prior to commencing work.
12. Contractor is responsible for the verification of all utility lines. Any utilities damaged as a result of the contractor's operation shall be repaired at the contractor's expense. The irrigation contractor shall coordinate closely with the general contractor to limit damage to new utilities and structures.
13. Contractor to stake alignment of lawn areas in field for approval by Landscape Architect prior to trenching lateral systems.
14. Contractor shall label all valves with water proof tags indicating the controller station operating them.
15. All materials and work shall be guaranteed for one year from written acceptance by the Owner or his representative. Contractor shall repair and/or replace any defective parts or components of the irrigation system immediately within the guarantee period at no cost to the Owner.
16. The Contractor shall, at the completion of all work, provide the Owner with one set of "AS-BUILT" drawings.
17. Contractor shall refer to written specifications accompanying these plans for additional information.
18. Install Hunter Rain Sensor and see plan for the location.
19. Drip irrigation tubing is to be covered with cinder or soil so it is not visible.
20. Contractor shall install riser with rebar-stake on all slopes, and the pop-up shall be install close to walkway, parking, pedestrian, and planter areas.

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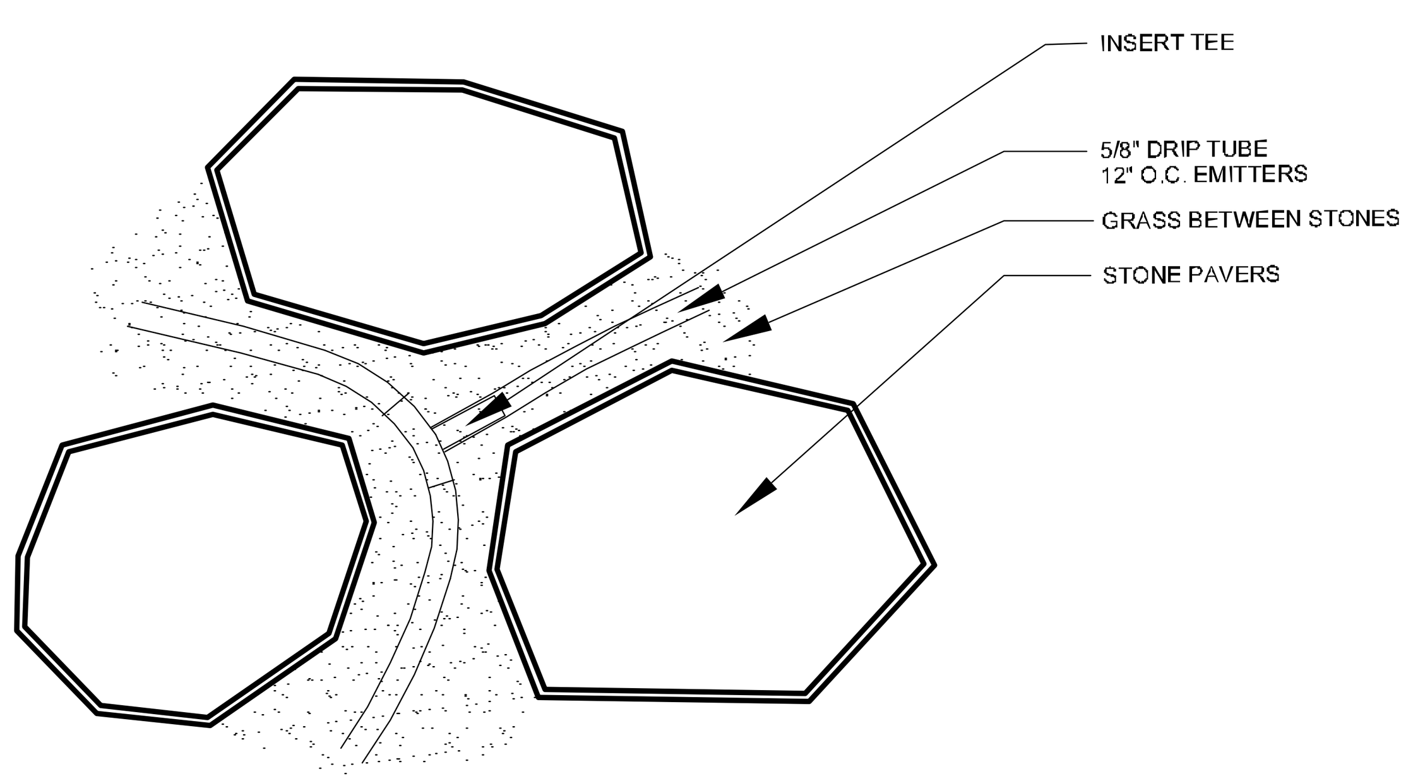
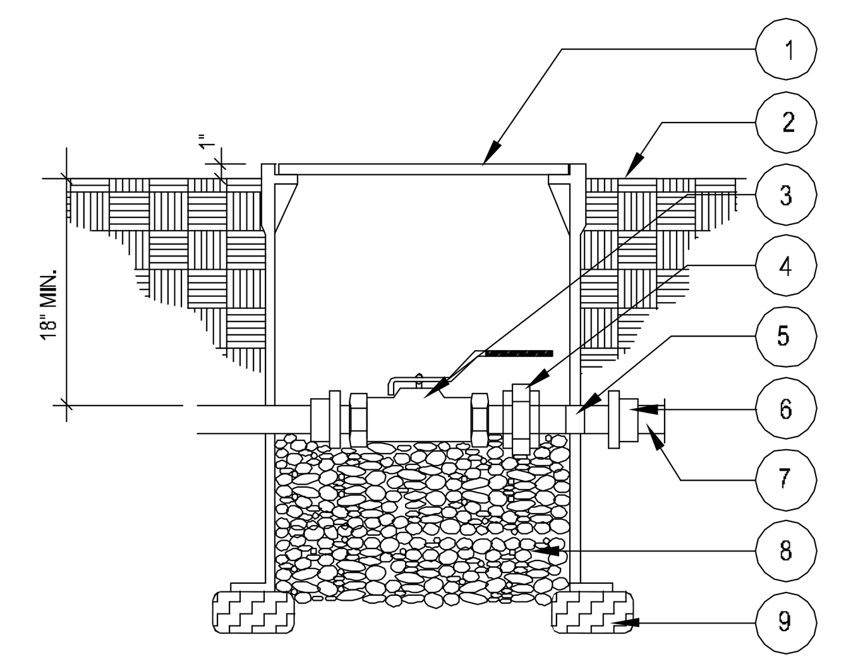


J DRIPLINE BETWEEN STEP PAVERS

SECTION SCALE: N.T.S.



LEGEND

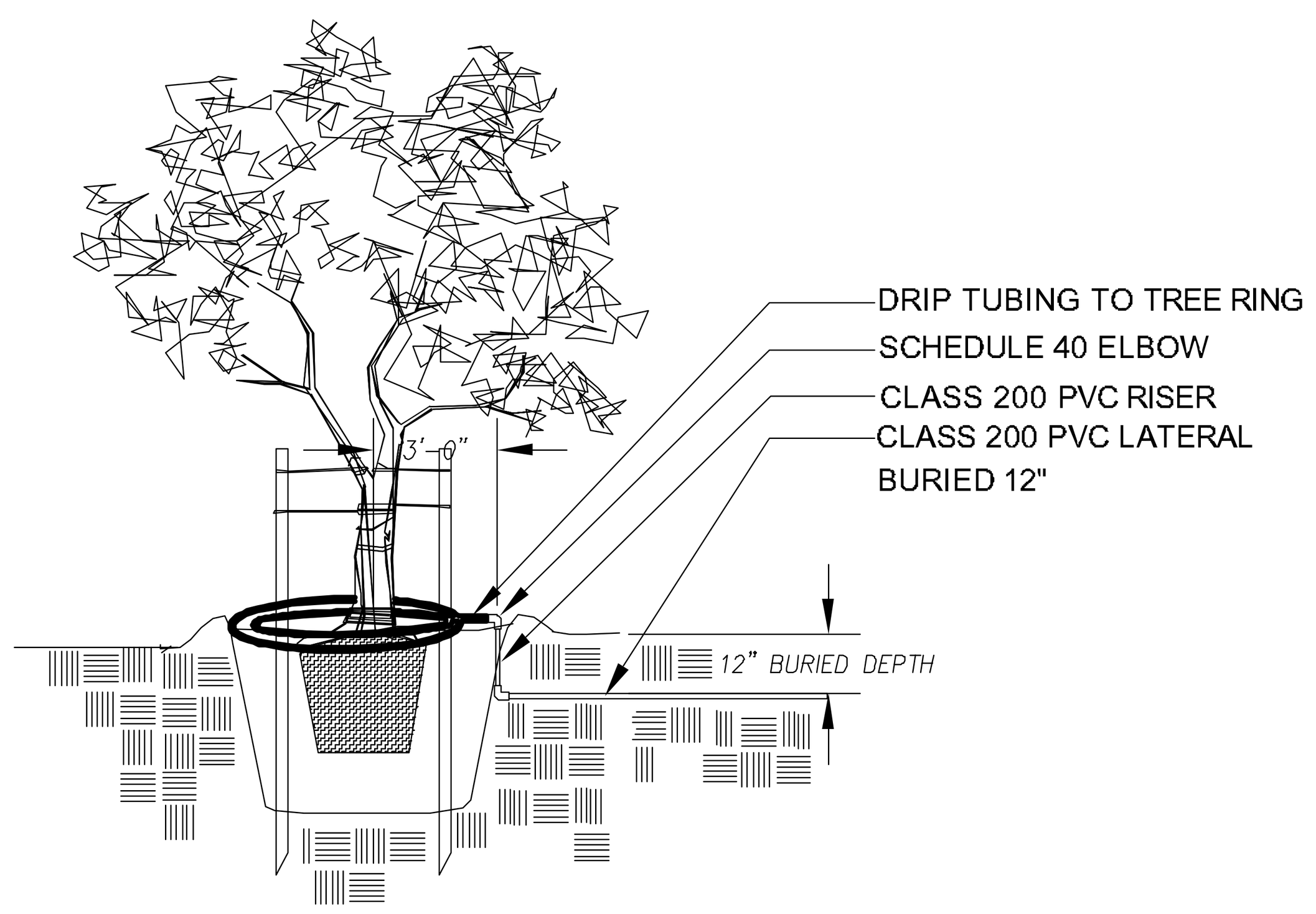
1. ROUND PLASTIC VALVE BOX, W/ LOCKING COVER WITH BRANDING.
2. FINISH GRADE.
3. BRASS BALL VALVE. SEE IRRIGATION LEGEND.
4. BRASS UNION.
5. BRASS NIPPLE, TYP.
6. PVC ADAPTER.
7. PVC MAINLINE.
8. 1 CU. FT. PEA GRAVEL.
9. BRICK BLOCKING FOR SUPPORT.

NOTE

a. COLOR OF VALVE BOX SHALL BE GREEN IN ALL TURF AREAS AND TAN IN ALL AREAS WITH CINDER OR MULCH.

F BALL VALVE

SECTION SCALE: N.T.S.



B TREE DRIP RING DETAIL

SECTION SCALE: N.T.S.

IRRIGATION LEGEND:

EQUIPMENT - HEADS							
SYMBOL	HEAD	PSI	GPM	NOZZLE	RAD.	ARC	REMARKS
1, 2, 3, 4	RAINBIRD 6VAN TURF SPRAY	30	1.20,0.6,1.10,0.37	330,270,180,90	4' - 6'	330,270,180,90	
5, 6, 7, 8	RAINBIRD 8MPR TURF SPRAY	30	1.05,0.52,0.35,.26	8F,8H,8T,8Q	5' - 8'	360,180,135,90	
	RAINBIRD 4VAN TURF SPRAY	30	0.45, 0.29	180, 90	3' - 4'	180, 90	
	RAINBIRD PEB	PEB / PESB SERIES SIZE PER PLAN					
	TECHLINE DRIP END CAP	DRIP ASSEMBLY - 0.6 GPH @ 12"O.C.					
	RAINBIRD CONTROL DRIP KIT	XCZ-LF-100-PRF 1" CONTROL (ANTIROOT INTRUSION)					
	DRIP SYSTEM ZONE	@ 12" X 12" GRID SPACING SIZE PER PLAN WITH AIR VACCUUM VALVE & LINE FLUSHING VALVE					
	XFS TREE DRIP RING	W/ TECHLINE CV DRIP & EMITTERS					
	NIBCO BRASS GATE VALVE	1-1/2" SIZE PER PLAN					
	NIBCO BALL VALVE						
	LATERAL CLASS 200 PVC	SIZE PER PLAN					
	SLEEVE SCH. 40 PVC	SIZE PER PLAN					
	MAINLINE SCH. 40 PVC	SIZE PER PLAN					
	FEBCO 825Y BACKFLOW						
	RAINBIRD CONTROLLER	ESP-SMTe SERIES - WALL MOUNT CONTROLLER					
	WATER METER	FIELD VERIFY FOR LOCATION. SEE CIVIL PLAN.					

STATION
VALVE SIZE
GPM

Residence for McG Constructors

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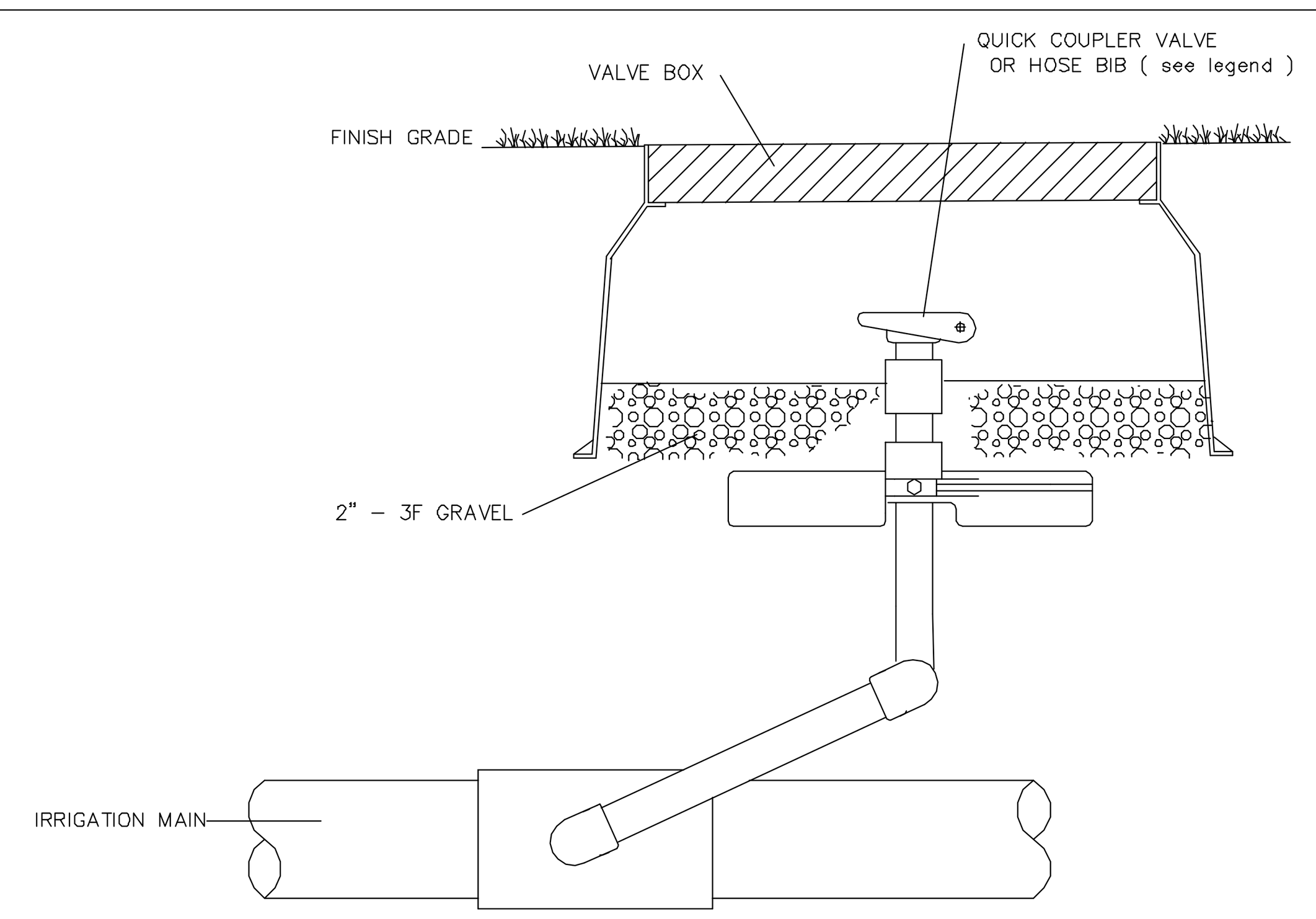
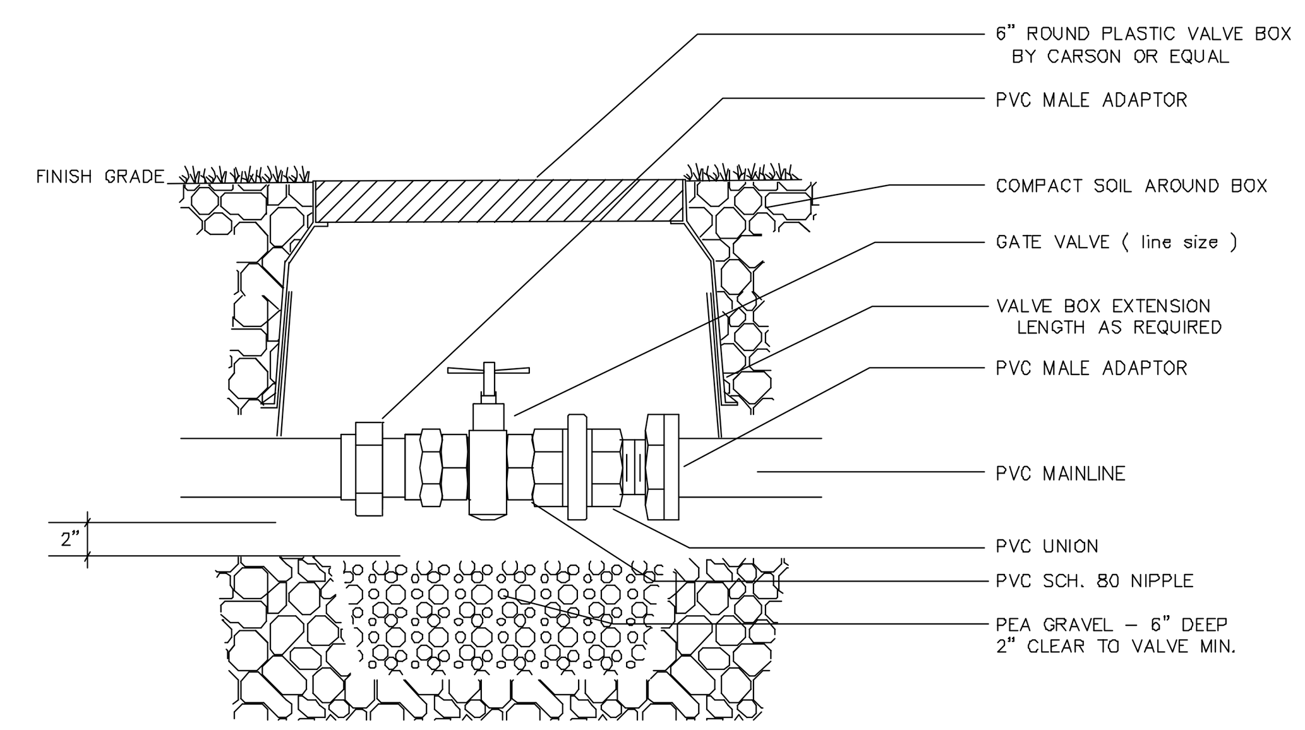
TMK: (2) 2-1-024 : 054



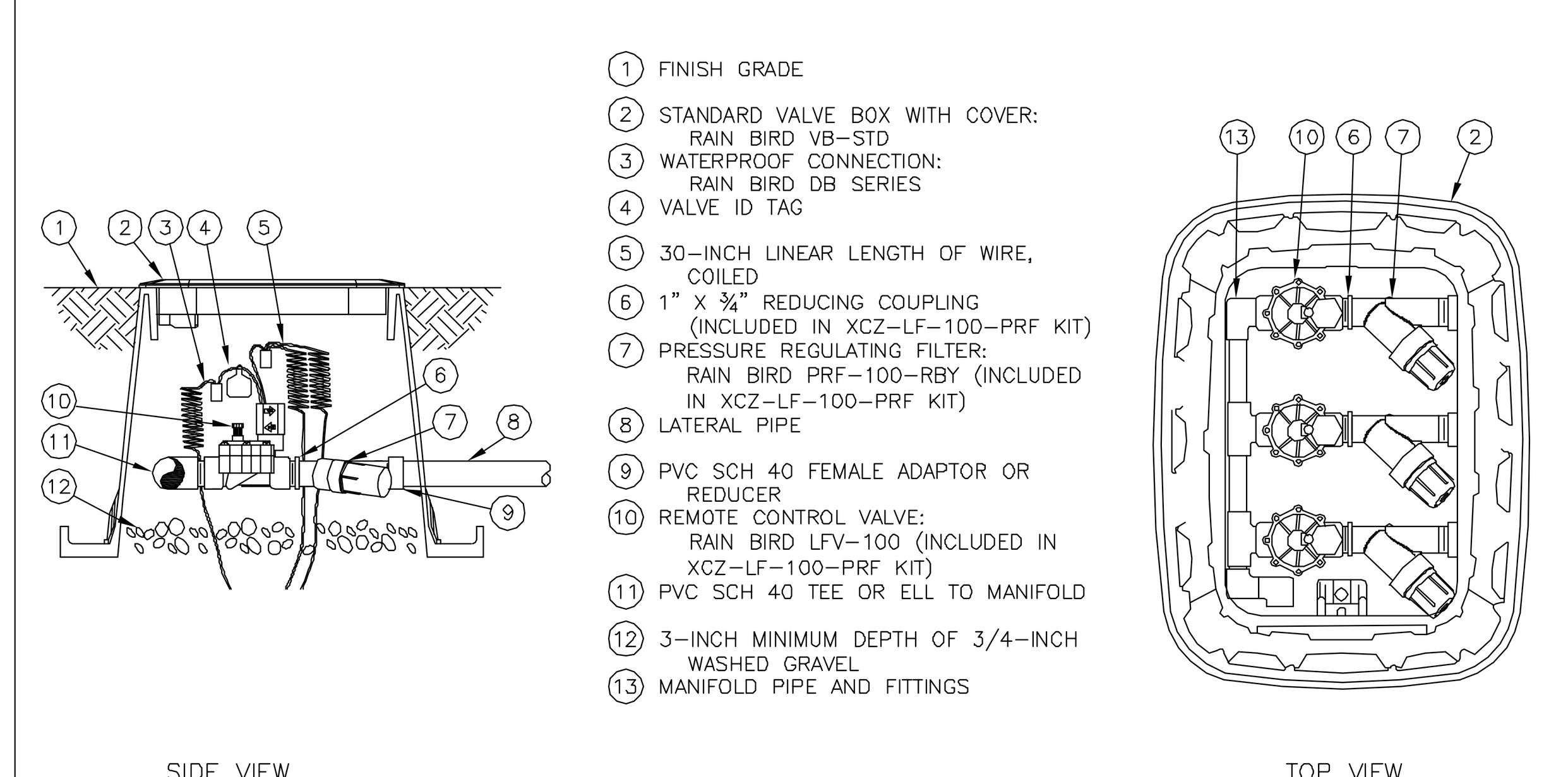
K RAINBIRD QUICK COUPLER / HOSE BIB

SECTION SCALE: N.T.S.



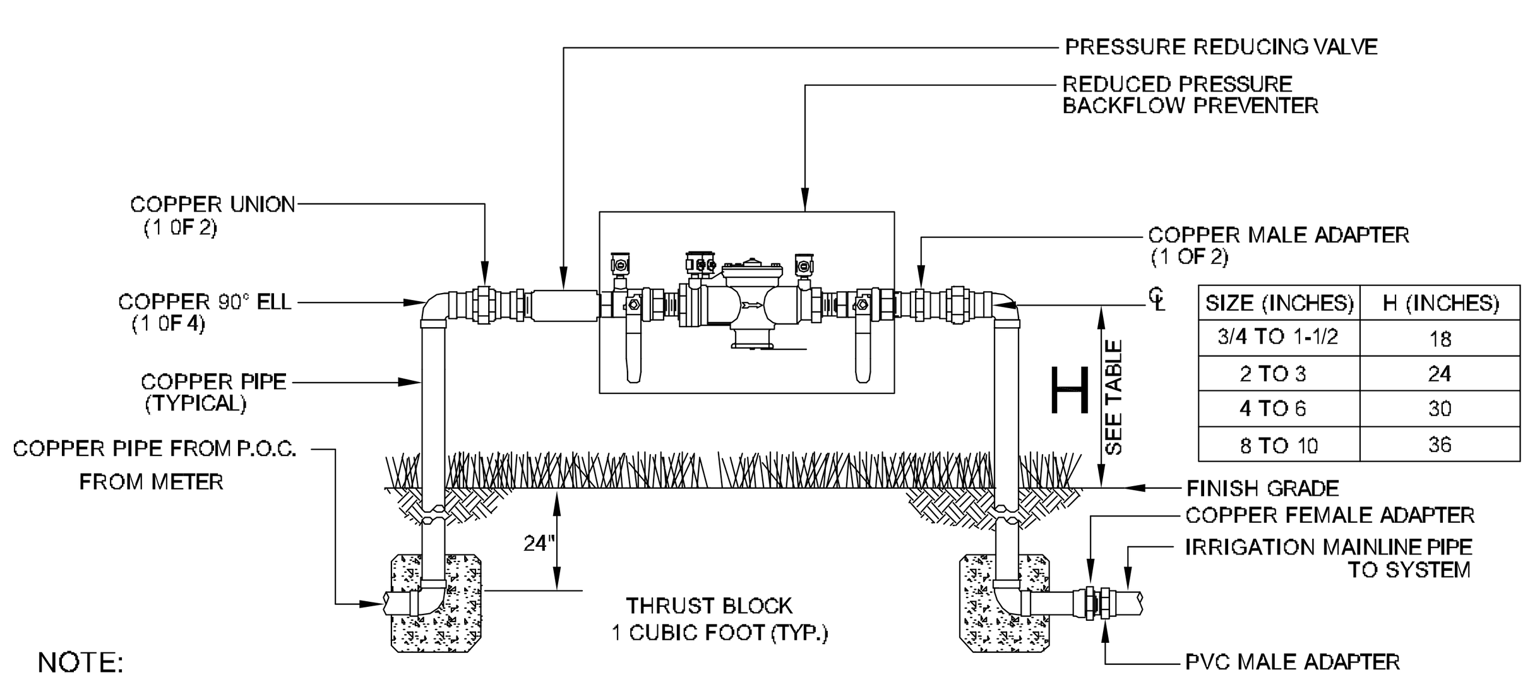
G GATE VALVE

SECTION SCALE: N.T.S.



C DRIP CONTROL ZONE ASSEMBLY

SECTION SCALE: N.T.S.

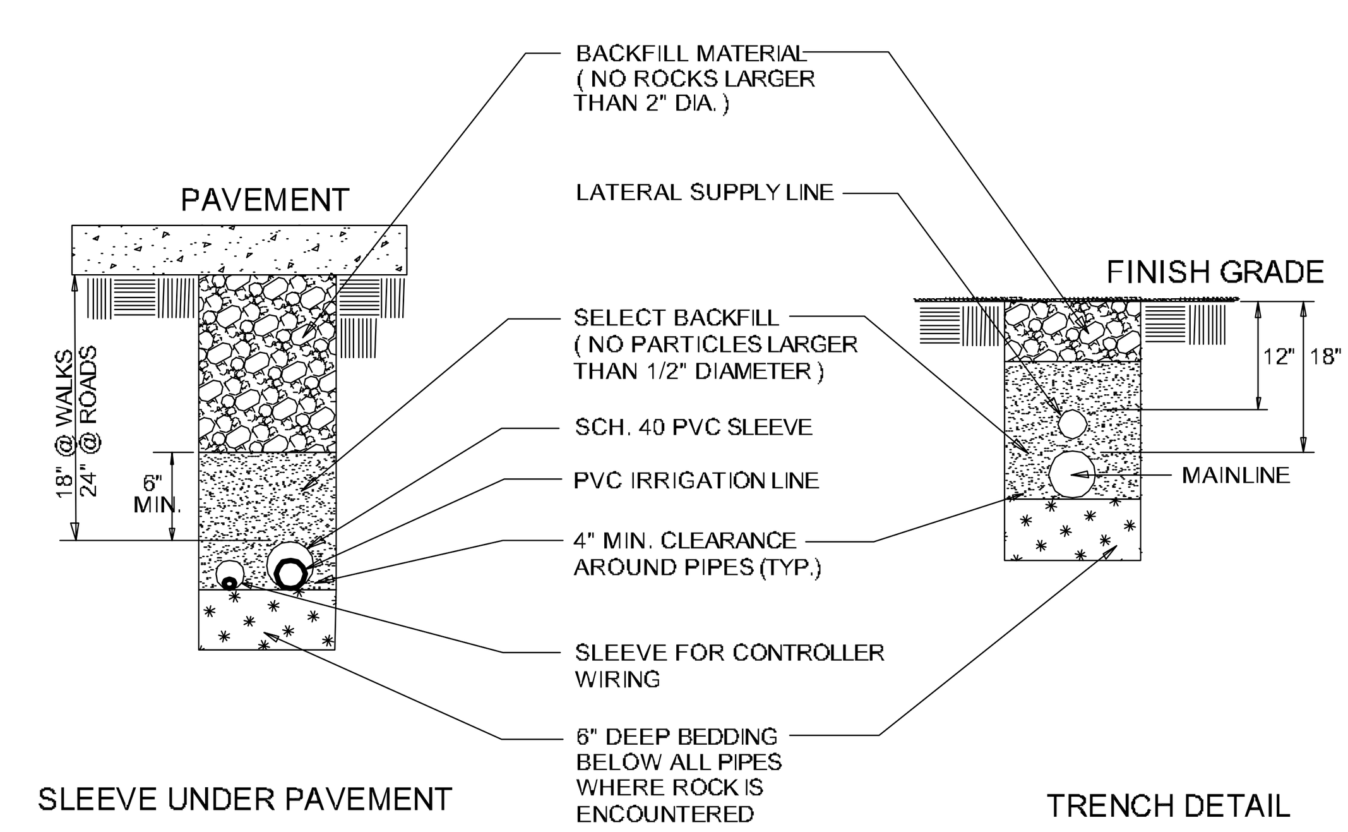


SIZE (INCHES)	H (INCHES)
3/4 TO 1-1/2	18
2 TO 3	24
4 TO 6	30
8 TO 10	36

NOTE:
1. CLOSE NIPPLES SHALL NOT BE USED
2. INSTALL AS PER MANUFACTURERS SPECIFICATIONS.
3. ALL FITTINGS SHALL BE RED BRASS UNLESS OTHERWISE NOTED.
4. BACKFLOW PREVENTER ASSEMBLY SHALL BE TESTED UPON INSTALLATION BY A CERTIFIED BACKFLOW DEVICE TESTER. CONTRACTOR SHALL PROVIDE THE ENGINEER WITH WRITTEN CERTIFIED TEST RESULTS PRIOR TO THE BACKFLOW PREVENTER ASSEMBLY'S ACCEPTANCE BY THE ENGINEER.

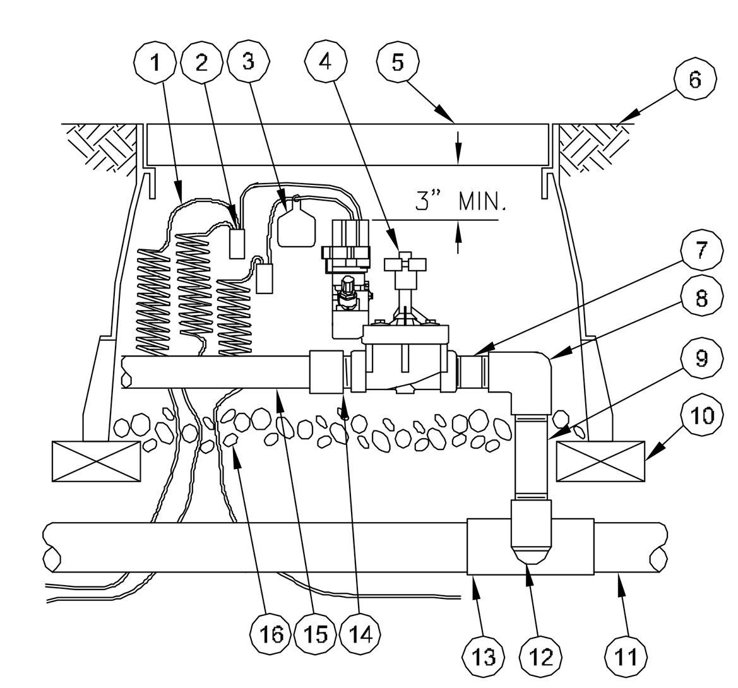
L BACKFLOW PREVENTER

SECTION SCALE: N.T.S.



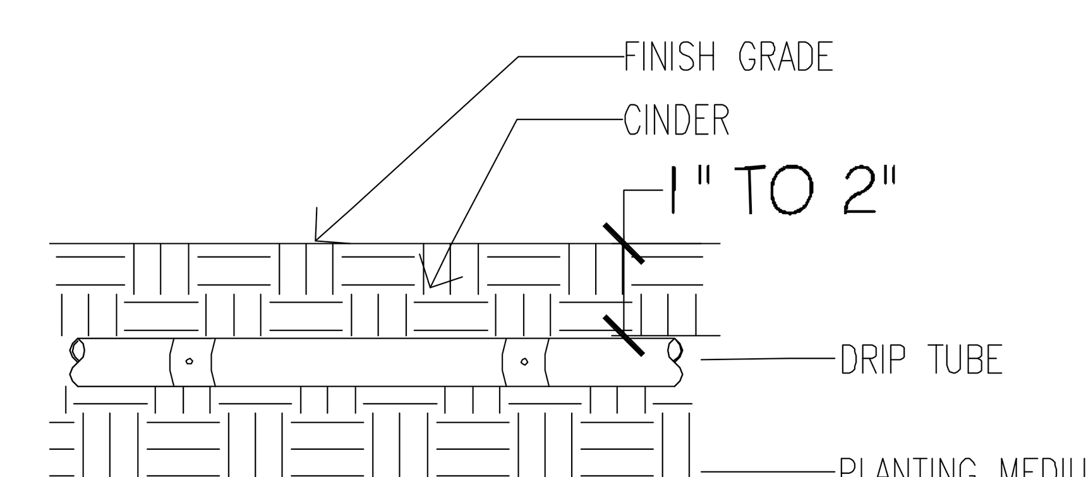
H PIPE SLEEVE & TRENCH DETAIL

SECTION SCALE: N.T.S.



D ELECTRIC REMOTE-CONTROL VALVE

SECTION SCALE: N.T.S.



DRIP TUBING BURIAL

SECTION SCALE: N.T.S.

PREPARED FOR:

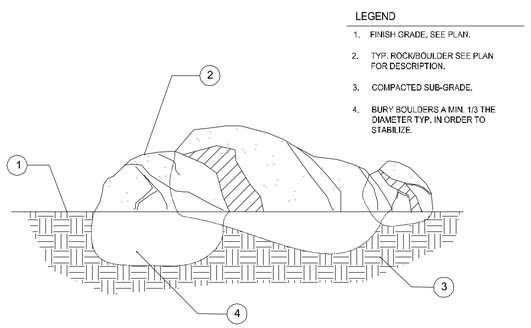
PERMIT SET

IRRIGATION DETAIL & NOTES

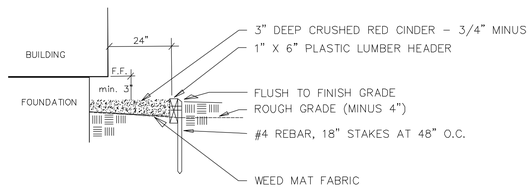
Scale: AS NOTED

1	-
2	-
3	-
4	-
5	-
6	-
7	-
Designed by	RJB
Drawn by	RJB
Checked by	DS
Date	SEPT. 1, 2017
File No.	17-040

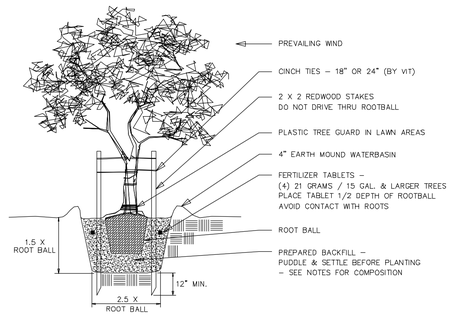
SHEET
L-6
7 of 7 sheets



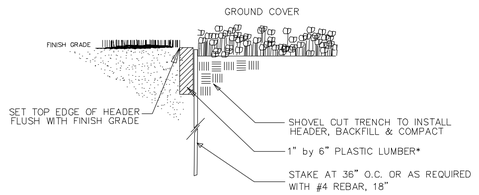
I BOULDER PLACEMENT
SECTION SCALE: N.T.S.



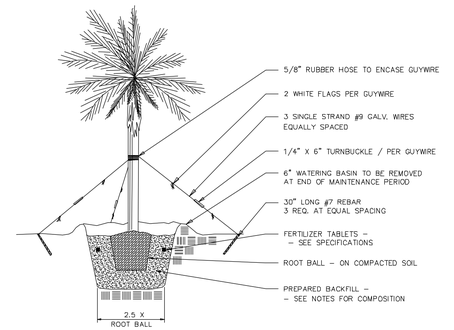
E MAINTENANCE STRIP DETAIL
SECTION SCALE: N.T.S.



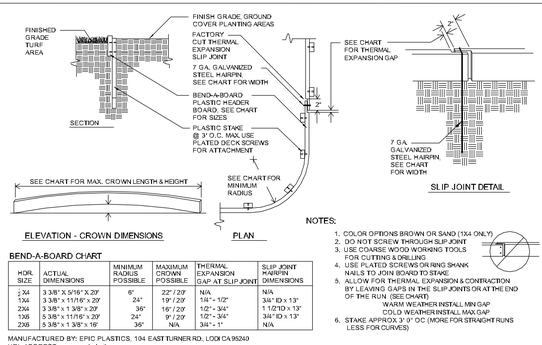
A TREE PLANTING DETAIL
SECTION SCALE: N.T.S.



F HEADER DETAIL
SECTION SCALE: N.T.S.



B PALM PLANTING DETAIL
SECTION SCALE: N.T.S.



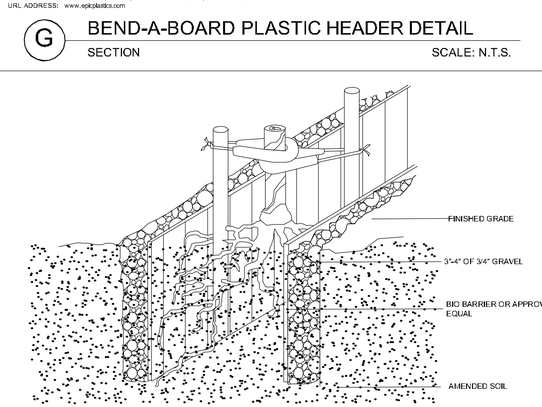
NOTES:
1. COLOR OPTIONS BROWN OR SAND (1X4 ONLY)
2. DO NOT SCREW THROUGH SLIP JOINT
3. USE COARSE WOOD WORKING TOOLS FOR CUTTING & DRILLING
4. USE PLATED SCREWS OR RING SHANK NAILS TO JOIN BOARD TO STAKE
5. ALLOW FOR THERMAL EXPANSION & CONTRACTION BY LEAVING GAPS IN THE SLIP JOINTS OR AT THE END OF THE RUN (SEE CHART)
   WARM WEATHER INSTALL MIN GAP
   COLD WEATHER INSTALL MAX GAP
6. STAKE APPROX 3' 0" OC (MORE FOR STRAIGHT RUNS LESS FOR CURVES)

BEND-A-BOARD CHART

HDR. SIZE	ACTUAL DIMENSIONS	MINIMUM RADIUS POSSIBLE	MAXIMUM CROWN POSSIBLE	THERMAL EXPANSION GAP AT SLIP JOINT	SLIP JOINT HAIRPIN DIMENSIONS
1X4	3 3/8" X 5/16" X 20'	6"	22" / 2'0"	N/A	N/A
1X4	3 3/8" x 11/16" x 20'	24"	19" / 2'0"	1/4" - 1/2"	3/4" ID x 13"
2X4	3 3/8" x 1 3/8" x 20'	36"	16" / 2'0"	1/2" - 3/4"	1 1/2"ID x 13"
1X6	5 3/8" x 11/16" x 20'	24"	9" / 2'0"	1/2" - 3/4"	3/4 "ID x 13"
2X6	5 3/8" x 1 3/8" x 16'	36"	N/A	3/4" - 1"	N/A

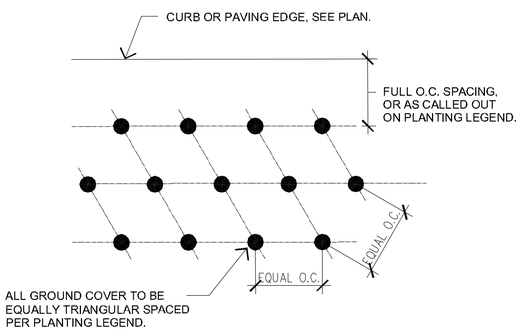
MANUFACTURED BY: EPIC PLASTICS, 104 EAST TURNER RD., LODI CA 95240
URL ADDRESS: www.epicplastics.com

G BEND-A-BOARD PLASTIC HEADER DETAIL
SECTION SCALE: N.T.S.



C SHRUB PLANTING DETAIL
SECTION SCALE: N.T.S.

H ROOT BARRIER
SECTION SCALE: N.T.S.



D GROUND COVER SPACING
SECTION SCALE: N.T.S.

GENERAL NOTES

GRADING

1. Landscape Contractor shall maintain a minimum 1% drainage away from all buildings and finish grades shall be smoothed to eliminate ponding or standing water. Fine grade all planting areas prior to commencement of planting operation. The Landscape Contractor shall coordinate with all trades and maintain drainage during construction.
2. Rough grade (i.e. finish grade less 4") to be provided by others in landscape areas.
3. Place Jute Mesh over slope areas 2:1 or greater.

SOIL PREPARATION

1. Evenly spread 4" layer (after settlement) of imported Amended Cinder Topsoil Mix topsoil over all planting areas, unless otherwise specified.
2. Pre-mix AMENDED CINDER TOPSOIL MIX as follows:
   1/3 screened Topsoil: 1/3 Cinder (3/8" minus): 1/3 Organic Compost
3. Uniformly distribute 10-30-10 fertilizer at a rate of 10 lbs. per 1000 sq. ft.

PLANTING:

1. Plant quantities shown in the legend are for the Contractor's reference only. The Contractor shall verify all quantities before bidding. The Contractor is responsible for providing sufficient material to cover all areas shown on the plans.
2. Plant materials shall be in quantities and sizes specified and be spotted approximately as shown on the plans after the site is graded. The Landscape Architect shall approve these locations before plants are removed from containers and any excavation for plant pits begin.
3. Plant material is subject to change by Landscape Architect or Owner based on availability, functional and aesthetic considerations.
4. Contractor shall obtain Landscape Architect's approval prior to any substitutions for material specified on the plans.
5. Contractor shall layout lawn areas for Landscape Architect's approval prior to any installation of planting or irrigation.
6. Shrubs and trees shall have ground cover planted under them as shown by adjacent symbol. Areas not receiving ground cover shall have mulch evenly under shrubs as called for in the materials legend.
7. Ground cover shall be planted using triangular spacing.
8. Vines and espaliers shall be secured to adjacent fences, posts or walls using vine ties. Remove nursery stakes or trellis.
9. Contractor shall guarantee plant longevity as follows: Trees one year; Shrubs and Ground covers for three months. This period to begin at the end of the maintenance period and after final acceptance.
10. All planted and irrigated areas shall be subject to a ninety (90) day maintenance period. Formal maintenance period shall begin when installation is approved by Landscape Architect.
11. Root barriers as shown on plans shall be installed as per the manufacturer's specifications.
12. Contractor shall be aware of all new utility locations prior to excavation. See Civil, Mechanical and Electrical drawings.
13. Large specimen trees and palms shall be guyed as required for healthy plant establishment.
14. Refer to Landscape Specifications for additional information regarding material and installation requirements.

NOT FOR CONSTRUCTION

CHRIS HART & PARTNERS
LANDSCAPE ARCHITECTURE & PLANNING
115 N. Market Street
Wailuku, Hawaii 96793
Ph. 808-242-1955
www.chpmaui.com
info@chpmaui.com

DAVID P SEREDA
LICENSED PROFESSIONAL LANDSCAPE ARCHITECT NO. 15319
HAWAII U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY SUPERVISION

Signature Expires 04-30-18

Residence for McG Constructors
171 W. IKEA PLACE, WAILEA, MAUI, HAWAII
TMK: (2) 2-1-024 : 054

PREPARED FOR:

PERMIT SET

LANDSCAPE DETAILS & NOTES

Scale: As Noted

Designed by	DS
Drawn by	RJB
Checked by	DS
Date	SEPT. 1, 2017
File No.	17-040

SHEET L-5

6 of 7 sheets

1. GENERAL

1. ENTIRE CONTRACT DOCUMENTS SHALL BE USED TO BUILD BUILDING. SOME CRITICAL ITEMS REQUIRED BY OTHER DISCIPLINES MAY NOT BE SHOWN ON STRUCTURAL DRAWING (I.E. WALL, FLOOR AND ROOF OPENING, ARCHITECTURAL, MECHANICAL AND PLUMBING LOADS, SUPPORT PLATES ETC.)
2. ITEMS SHOWN BY OTHER DISCIPLINES WITH REFERENCE TO STRUCTURAL DRAWING BUT NOT SHOWN ON THIS STRUCTURAL DOCUMENT SHALL BE CONSIDERED DESIGN BUILD ITEMS. CONTRACTOR SHALL SUBMIT DESIGN BY OTHERS FOR REVIEW.
3. THE STRUCTURAL CONSTRUCTION DOCUMENTS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, SHORING FOR LOADS DUE TO CONSTRUCTION EQUIPMENT, ETC. THE STRUCTURAL ENGINEER SHALL NOT BE RESPONSIBLE FOR THE CONTRACTOR'S MEANS, METHODS, TECHNIQUES, AND SEQUENCES FOR PROCEDURE OF CONSTRUCTION, OR THE SAFETY PRECAUTIONS AND THE PROGRAMS INCIDENT THERETO (NOR SHALL OBSERVATION VISITS TO THE SITE INCLUDE INSPECTION OF THESE ITEMS).
4. CONSTRUCTION MATERIALS SHALL BE SPREAD OUT IF PLACED ON FRAMED CONSTRUCTION. LOAD SHALL NOT EXCEED THE DESIGN LIVE LOAD PER SQUARE FOOT.
5. WHERE REFERENCE IS MADE TO VARIOUS TEST STANDARDS FOR MATERIALS, SUCH STANDARDS SHALL BE THE LATEST EDITION AND/OR ADDENDA.
6. ESTABLISH AND VERIFY ALL OPENINGS AND INSERTS FOR ARCHITECTURAL, MECHANICAL, PLUMBING AND ELECTRICAL WITH APPROPRIATE TRADES, DRAWINGS AND SUBCONTRACTORS PRIOR TO CONSTRUCTION.
7. OPTIONS ARE FOR CONTRACTOR'S CONVENIENCE. IF HE CHOOSES AN OPTION, CONTRACTOR SHALL BE RESPONSIBLE FOR ALL NECESSARY CHANGES AND SHALL COORDINATE ALL DETAILS.
8. NOTES AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL STRUCTURAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT.
9. ALL DIMENSIONS SHOWN (INCLUDING ELEVATIONS) ON STRUCTURAL DRAWINGS ARE TO ASSIST CONTRACTOR IN VERIFICATION. SCALING DIMENSIONS FROM DRAWINGS IS NOT PERMITTED. LOCATION OF ALL ITEMS SHALL BE DETERMINED BY DIMENSIONS OR NOTES ONLY; DO NOT USE GRAPHIC APPEARANCE TO ASSUME SPECIFIC LOCATIONS.
10. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL DIMENSIONS WITH ARCHITECTURAL AND FINISHED GRADE WITH CIVIL DRAWINGS PRIOR TO START OF CONSTRUCTION. RESOLVE ANY DISCREPANCY WITH THE ARCHITECT.
11. TYPICAL DETAILS MAY NOT NECESSARILY BE CUT ON PLANS, BUT APPLY UNLESS NOTED OTHERWISE.
12. WHERE DISCREPANCIES OCCUR BETWEEN PLANS, DETAILS, GENERAL STRUCTURAL NOTES AND SPECIFICATIONS, THE GREATER REQUIREMENTS SHALL GOVERN.
13. ANY ENGINEERING DESIGN, PROVIDED BY OTHERS AND SUBMITTED FOR REVIEW, SHALL BEAR THE SEAL OF AN ENGINEER REGISTERED IN THE STATE OF JURISDICTION.
14. SUPPLIER OF ENGINEERED STRUCTURAL COMPONENTS (I.E. STEEL JOISTS, STAIRS, AND PRECAST ITEMS) SHALL BE RESPONSIBLE FOR COMPLETE DESIGN AND SHALL USE ENTIRE CONTRACT DOCUMENTS TO INCLUDE ALL LOADS AND DETAIL REQUIREMENTS FROM ALL DISCIPLINES. SUPPLIER SHALL PROVIDE ADDITIONAL MATERIAL REQUIRED TO MEET ALL THEIR REQUIREMENTS FOR INSTALLATION (I.E. WIDER BEARING PLATES, SHIMS, AND ERECTION BOLTS ETC.).
15. STRUCTURAL STEEL SUPPLIER SHALL FURNISH BOLTS FOR OSHA CONNECTIONS (SEE DRAWINGS FOR DETAILS). TYPICAL DETAILS AND SCHEDULES INDICATED MAY NOT BE SPECIFICALLY REFERENCED ON THE DRAWINGS. THE CONTRACTOR IS RESPONSIBLE TO DETERMINE WHERE EACH TYPICAL DETAIL OR SCHEDULE APPLIES. IF LOCATIONS ARE FOUND WHERE NO TYPICAL DETAIL, TYPICAL SCHEDULE, OR SPECIFIC DETAIL APPLIES, NOTIFY THE ARCHITECT/STRUCTURAL ENGINEER. - DRAWINGS INDICATE GENERAL AND TYPICAL DETAILS OF CONSTRUCTION. TYPICAL DETAILS AND GENERAL NOTES SHALL APPLY EVEN IF NOT SPECIFICALLY DENOTED ON PLANS, UNO. WHERE CONDITIONS ARE NOT SPECIFICALLY INDICATED SIMILAR DETAILS OF CONSTRUCTION SHALL BE USED, SUBJECT TO REVIEW AND APPROVAL BY THE ARCHITECT AND THE STRUCTURAL ENGINEER OF RECORD.
16. OBSERVATION VISITS (SITE VISITS) BY REPRESENTATIVES OF ARCHITECT/STRUCTURAL ENGINEER DO NOT INCLUDE INSPECTION OF CONSTRUCTION MEANS AND METHODS. SITE VISITS DURING CONSTRUCTION ARE NOT CONTINUOUS NOR DETAILED INSPECTION SERVICES WHICH ARE TO BE PERFORMED BY OTHERS. OBSERVATIONS ARE PERFORMED SOLELY FOR THE PURPOSE OF DETERMINING IF THE CONTRACTOR UNDERSTANDS DESIGN INTENT SHOWN IN THE CONTRACT DRAWINGS. OBSERVATIONS DO NOT GUARANTEE CONTRACTOR'S PERFORMANCE AND ARE NOT TO BE CONSTRUED AS SUPERVISION OR VERIFICATION OF CONSTRUCTION.
17. NOTIFY THE STRUCTURAL ENGINEER PRIOR TO CONSTRUCTING OR FABRICATING, WHEN DRAWINGS BY OTHERS SHOW OPENINGS, POCKETS, ETC., NOT SHOWN ON THE STRUCTURAL DRAWINGS, BUT WHICH ARE LOCATED IN THE STRUCTURAL MEMBERS.
18. CONSTRUCTION MATERIALS SHALL BE SPREAD OUT WHEN PLACED ON FRAMED FLOORS OR ROOFS. THE CONSTRUCTION MATERIAL LOAD SHALL NOT EXCEED THE DESIGN LIVE LOAD PER SQUARE FOOT. PROVIDE ADEQUATE SHORING AND/OR BRACING WHERE STRUCTURE HAS NOT ATTAINED DESIGN STRENGTH.
19. SEE THE ARCHITECTURAL DRAWINGS FOR THE FOLLOWING: SIZE AND LOCATION OF DOOR AND WINDOW OPENINGS, SIZE AND LOCATION OF INTERIOR AND EXTERIOR NON-BEARING PARTITIONS, SIZE AND LOCATION OF CONCRETE CURBS, FLOOR DRAINS, SLOPES, DEPRESSED AREAS, CHANGES IN LEVEL, CHAMFERS, GROOVES, INSERTS, SIZE AND LOCATION OF FLOOR AND ROOF OPENINGS, FLOOR AND ROOF FINISHES, STAIR FRAMING AND DETAILS, DIMENSIONS NOT SHOWN ON THE STRUCTURAL DRAWINGS, CEILING ASSEMBLIES, EXTERIOR WALL ASSEMBLIES, ETC.

2. DESIGN CRITERIA

A. BUILDING CODE

2006 EDITION OF THE INTERNATIONAL BUILDING CODE, WITH LOCAL AMENDMENTS.

B. LOADS

ROOF LIVE LOAD	20 PSF
ROOF DEAD LOAD	40 PSF
FLOOR DEAD LOAD	30 PSF
FLOOR LIVE LOAD	40 PSF
DECK LIVE LOAD	40 PSF

C. WIND

EXPOSURE	C
ULTIMATE WIND SPEED	90 MPH
I_W	1.0
INTERNAL PRESSURE COEFFICIENT (GCPI)	± 0.18
V_{WIND}	10.192 KIPS

D. SEISMIC

RISK CATEGORY	II
I_E	1.0
SOIL SITE CLASS	D
SEISMIC DESIGN CATEGORY	D
S_S	0.979
S_1	0.252
S_{DS}	0.723
S_{D1}	0.319
R	6.5 (LIGHT FRAMED WOOD CONSTRUCTION)
PROCEDURE USED	EQUIVALENT LATERAL FORCE PROCEDURE
C_S	1.1112 (STRENGTH)
$V_{SEISMIC}$	19.181 KIPS

E. FOUNDATIONS

A. GENERAL

1. THE FOUNDATION SYSTEM IS DESIGNED BASED ON THE FOLLOWING GEOTECHNICAL PROPERTIES:

ALLOWABLE SOIL BEARING CAPACITY	1500 PSF
MINIMUM FOOTING EMBEDMENT	18 IN

2. RETAINING WALLS SHOULD BE BACKFILLED WITH FREE-DRAINING MATERIAL THAT EXTENDS ALONG THE HEIGHT OF THE WALL AND A DISTANCE OF AT LEAST 18 INCHES BEHIND THE WALL. THE UPPER 12 INCHES OF THE WALL BACKFILL MAY CONSIST OF A LESS PERMEABLE SOIL IF DESIRED. A PERFORATED DRAIN PIPE SHOULD BE PLACED ALONG THE BASE OF THE WALL AND CONNECTED TO AN APPROVED DISCHARGE LOCATION. A TYPICAL RETAINING WALL DRAINAGE DETAIL CAN BE FOUND IN THE SOILS REPORT.
3. THE CONTRACTOR SHALL PROVIDE FOR PROPER DEWATERING OF EXCAVATIONS FROM SURFACE WATER, GROUND WATER, SEEPAGE, ETC.
4. DRAINAGE SYSTEMS, INCLUDING FOUNDATION, ROOF AND SURFACE DRAINS, SHALL BE INSTALLED AS DIRECTED BY THE GEOTECHNICAL REPORT AND IBC SECTION 1805.
5. VAPOR RETARDER PLACED BELOW SLAB ON GRADE SHALL CONFORM TO ASTM E 1643 AND ASTM E 745. COORDINATE PLACEMENT WITH GEOTECH AND/OR ARCHITECTURAL DRAWINGS.
6. THE CONTRACTOR SHALL PROVIDE FOR THE INSTALLATION AND DESIGN OF ALL CRIBBING, SHEATHING AND SHORING REQUIRED TO SAFELY AND ADEQUATELY RETAIN THE EARTH BANKS AND SUPPORT ANY EXISTING STRUCTURES IN ACCORDANCE WITH ALL NATIONAL, STATE AND LOCAL SAFETY ORDINANCES.
7. ALL ABANDONED UTILITIES, FOOTINGS, ETC., THAT INTERFERE WITH THE NEW CONSTRUCTION SHALL BE REMOVED. NOTIFY THE STRUCTURAL ENGINEER SHOULD ANY FOUNDATIONS FOR EXISTING STRUCTURES BE ENCOUNTERED THAT ARE NOT SHOWN ON THE STRUCTURAL DRAWINGS.
8. FOOTINGS SHALL BE PLACED AND ESTIMATED ACCORDING TO DEPTHS SHOWN ON THE DRAWINGS. EXCAVATIONS AND SUBGRADE PREPARATION FOR FOOTINGS AND SLAB ON GRADE SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACING THE CONCRETE AND REINFORCING. THE CONTRACTOR SHALL NOTIFY THE GEOTECHNICAL ENGINEER WHEN THE EXCAVATIONS ARE READY FOR INSPECTION. THE GEOTECHNICAL ENGINEER SHALL SUBMIT A LETTER OF COMPLIANCE TO THE OWNER. SHOULD SOIL ENCOUNTERED AT THESE DEPTHS NOT BE APPROVED BY THE GEOTECHNICAL ENGINEER, MODIFIED FOOTING ELEVATIONS OR FOOTING DESIGNS MAY BE REQUIRED.
9. ALL EXCAVATIONS SHALL BE PROPERLY BACKFILLED. FOOTING BACKFILL AND UTILITY TRENCH BACKFILL WITHIN THE BUILDING PERIMETER SHALL BE MECHANICALLY COMPACTED IN LAYERS, TO THE APPROVAL OF THE GEOTECHNICAL ENGINEER. SEE GEOTECHNICAL REPORT FOR REQUIREMENTS. FLOODING WILL NOT BE PERMITTED.
10. THE CONTRACTOR SHALL NOT BACKFILL BEHIND RETAINING WALLS BEFORE THE CONCRETE OR MASONRY WALLS HAVE REACHED FULL DESIGN STRENGTH. THE CONTRACTOR SHALL BRACE OR PROTECT ALL BUILDING AND PIT WALLS BELOW GRADE FROM LATERAL LOADS UNTIL ATTACHING FLOORS ARE COMPLETELY IN PLACE AND HAVE REACHED FULL DESIGN STRENGTH. THE CONTRACTOR SHALL PROVIDE FOR THE DESIGN, ANY REQUIRED PERMITS AND THE INSTALLATION OF SUCH BRACING AND PROTECTION.
11. SUB-BASE BELOW, SLABS ON GRADE SHALL BE SUPPORTED ON NATURAL GRADE OR STRUCTURAL FILL AS DIRECTED IN THE GEOTECHNICAL REPORT OR BY A GEOTCHNICAL ENGINEER. SUB-GRADE WILL BE COMPACTED PER THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER AND NO SUB-GRADE RUTTING WILL BE ALLOWED AT TIME OF CONCRETE PLACEMENT UNDER SLABS ON GRADE.
12. UNLESS OTHERWISE NOTED, FOOTINGS SHALL BE CENTERED BELOW COLUMNS OR WALLS.
13. EXISTING UTILITIES:

    THE CONTRACTOR SHALL DETERMINE THE LOCATION OF ALL ADJACENT UNDERGROUND UTILITIES PRIOR TO ANY EXCAVATION, SHORING, PILE DRIVING, OR PIER DRILLING. ANY UTILITY INFORMATION SHOWN ON THE PLANS AND DETAILS ARE APPROXIMATE AND NOT VERIFIED BY THE STRUCTURAL ENGINEER OF RECORD. CONTRACTOR IS TO PROVIDE PROTECTION OF ANY UTILITIES OR UNDERGROUND STRUCTURES DURING CONSTRUCTION.
14. NEW UTILITIES:

    CONTRACTOR TO DETERMINE THE LOCATION OF ALL NEW BELOW GRADE UTILITIES AND COORDINATE PLACEMENT WITH NEW FOOTINGS PER TYPICAL DETAILS FOR FOUNDATIONS AT OR ADJACENT TO EXCAVATIONS AND UTILITIES.

B. STRUCTURAL FILL

1. STRUCTURAL FILL IS DEFINED AS COMPACTED SOIL PLACED IN FOUNDATION SLAB-ON GRADE, AND ROADWAY AREAS. FILLS PLACED TO CONSTRUCT PERMANENT SLOPES AND THROUGHOUT RETAINING WALL AND UTILITY TRENCH BACKFILL AREAS ARE ALSO CONSIDERED STRUCTURAL FILL. SOILS PLACED IN STRUCTURAL AREAS SHOULD BE PLACED IN LOOSE LIFTS OF 12" OR LESS AND COMPACTED TO A RELATIVE COMPACTION OF 90 PERCENT, BASED ON THE LABORATORY MAXIMUM DRY DENSITY AS DETERMINED BY THE MODIFIED PROCTOR METHOD (ASTM D1557). SOIL PLACED IN THE UPPER 12 INCHES OF SLAB-ON-GRADE, UTILITY TRENCH, AND PAVEMENT AREAS SHOULD BE COMPACTED TO A RELATIVE COMPACTION OF AT LEAST 95 PERCENT. MORE STRINGENT COMPACTION SPECIFICATIONS MAY BE REQUIRED FOR UTILITY TRENCH BACKFILL ZONES DEPENDING ON THE RESPONSIBLE UTILITY DISTRICT OR JURISDICTION.
2. ALL FILL PLACED TO SUPPORT SLABS ON GRADE, BEHIND PERMANENT WALLS, AND AROUND ALL DRAINS SHALL CONSIST OF WELL GRADED, GRANULAR MATERIAL PER THE SPECIFICATIONS. SOILS FOR STRUCTURAL FILL SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER. STRUCTURAL FILL SHALL BE PLACED ON SOUND NATIVE MATERIAL. PROOF-ROLL CUT AREAS WHICH PROVIDE SUPPORT FOR PERMANENT STRUCTURES. AREAS WHICH ARE EXCESSIVELY YIELDING, AS DETERMINED BY THE CONTINUOUS OBSERVATION OF THE GEOTECHNICAL ENGINEER, SHALL BE OVER-EXCAVATED AND REPLACED WITH STRUCTURAL FILL. STRUCTURAL FILL SHALL BE PLACED PER THE SPECIFICATION.

3. ABBREVIATIONS

C	CENTERLINE	HSS	HOLLOW STRUCT. STL.
#	NUMBER OR POUND	IN.	INCH
A.B.	ANCHOR BOLT	INSUL.	INSULATION
A.F.F.	ABOVE FINISH FLOOR	INT.	INTERIOR
ABV.	ABOVE	KP	KING POST
ALT.	ALTERNATIVE	L.L.V.	LONG LEG VERTICAL
ARCH.	ARCHITECTURAL	L.L.H.	LONG LEG HORIZONTAL
B.O.	BOTTOM OF	LSL	TIMBERSTRAND
B.O.C.	BOTTOM OF CONCRETE	LVL	MICROLLAM
B.N.	BOUNDARY NAIL(ING)	LBS.	POUNDS
BLDG.	BUILDING	MAX.	MAXIMUM
BLK.	BLOCK	MECH.	MECHANICAL
BLKG.	BLOCKING	MFR.	MANUFACTURER
BM.	BEAM	M.F.	MOMENT FRAME
BOT.	BOTTOM	MIN.	MINIMUM
C.I.P.	CAST IN PLACE	MISC.	MISCELLANEOUS
C.M.U.	CONCRETE MASONRY UNIT	N.T.S.	NOT TO SCALE
		O.C.	ON CENTER
CLG	CEILING	O.D.	OUTSIDE DIAMETER
CLR.	CLEAR	O.H.	OVERHANG
CNTRSK.	COUNTERSUNK	OPP.	OPPOSITE
COL.	COLUMN	P.A.	POST ABOVE
CONC.	CONCRETE	P.A.F.	POWER-ACTUATED FASTENER
CONT.	CONTINUOUS		
D.B.A.	DEFORMED BAR ANCHOR	P.E.	PRE-ENGINEERED
D.F.	DOUGLAS FIR	PL.	PLATE
DFL.	DOUGLAS FIR LARCH	PLYWD.	PLYWOOD
DET.	DETAIL	P.M.	PRE-MANUFACTURED
DIA.	DIAMETER	PSL	PARALLAM
DIAG.	DIAGONAL	R.	RADIUS OR RISER
DIM.	DIMENSION	R.D.	ROOF DRAIN
DN.	DOWN	R.O.	ROUGH OPENING
DWG.	DRAWING	RE:	REFERENCE (CW/)
E.B.	EXPANSION BOLT	REQ'D	REQUIRED
E.J.	EXPANSION JOINT	S.F.	SQUARE FEET OR FOOT
E.N.	EDGE NAIL(ING)	S.S.	STAINLESS STEEL
EA.	EACH	SCHED.	SCHEDULE
EL.	ELEVATION	SIM.	SIMILAR OR SIMILAR TO
E.O.	EVERY OTHER	SPECS.	SPECIFICATIONS
E.O.R.	ENGINEER OF RECORD	SQ.	SQUARE
EXP.	EXPANSION	STD.	STANDARD
EXT.	EXTERIOR	STL.	STEEL
F.F.E.	FINISH FLOOR ELEVATION	STRUC.	STRUCTURAL
F.O.M.	FACE OF MASONRY	SYP	SOUTHERN YELLOW PINE
F.O.S.	FACE OF STUDS	T&G	TOUNGE AND GROOVE
FDN.	FOUNDATION	T.O.	TOP OF
FIN.	FINISH	T.O.C.	TOP OF CURB/CONCRETE
FT.	FOOT OR FEET	T.O.D.	TOP OF DECK
FTG.	FOOTING	T.O.M.	TOP OF MASONRY
FTW.	FIRE TREATED WOOD	T.O.S.	TOP OF SLAB
GA.	GAUGE OR GAGE	T.O.W.	TOP OF WALL
GALV.	GALVANIZED	THK.	THICKNESS
GYP.	GYPSUM	T.J.I.	TRUSS JOIST I-JOIST
H.C.A.	HEADED CONCRETE ANCHOR	U.N.O.	UNLESS NOTED OTHERWISE
HORIZ.	HORIZONTAL	V.I.F.	VERIFY IN FIELD
HT.	HEIGHT	VERT.	VERTICAL
I.D.	INSIDE DIAMETER	W/	WITH
HVAC	HEATING VENTILATING / AIR CONDITIONING	W/O	WITHOUT
		WD.	WOOD

4. WOOD

A. GENERAL FRAMING

1. ALL WOOD FRAMING DETAILS NOT SHOWN OTHERWISE SHALL BE CONSTRUCTED TO THE MINIMUM STANDARDS OF SECTION 2308 OF THE IBC.
2. COORDINATE THE SIZE AND LOCATION OF ALL OPENINGS WITH MECHANICAL AND ARCHITECTURAL DRAWINGS.
3. PROVIDE DOUBLE JOISTS UNDER ALL PARALLEL PARTITIONS THAT EXTEND OVER MORE THAN HALF THE JOIST LENGTH AND AROUND ALL OPENINGS IN FLOORS OR ROOFS UNO. PROVIDE SOLID BLOCKING AT ALL BEARING POINTS.
4. ALL WOOD FRAMING SHALL BE PRESSURE-TREATED WITH AN APPROVED PRESERVATIVE PER IBC SECTION 2303.1.8. CUT OR DRILLED SECTIONS OF TREATED MATERIAL SHALL BE TREATED WITH AN APPROVED PRESERVATIVE PER IBC SECTION 2303.1.8. SEE IBC SECTION 2304.11 FOR ADDITIONAL REQUIREMENTS.
5. FASTENERS, INCLUDING NUTS AND WASHERS, IN CONTACT WITH PRESERVATIVE TREATED WOOD SHALL BE OF HOT-DIPPED ZINC-COATED GALVANIZED STEEL, STAINLESS STEEL, SILICONE BRONZE OR COPPER. FASTENERS OTHER THEN NAILS, TIMBER RIVETS, WOOD SCREWS AND LAG SCREWS SHALL BE PERMITTED TO BE OF MECHANICALLY DEPOSITED ZINC-COATED STEEL WITH COATING WEIGHTS IN ACCORDANCE WITH ASTM A695, CLASS 55 MINIMUM. CONNECTORS THAT ARE USED IN EXTERIOR APPLICATIONS AND IN CONTACT WITH PRESERVATIVE TREATED WOOD SHALL HAVE COATINGS TYPES AND WEIGHTS IN ACCORDANCE WITH THE TREATED WOOD OR CONNECTOR MANUFACTURE'S RECOMMENDATIONS. IN THE ABSENCE OF MANUFACTURE'S RECOMMENDATIONS, A MINIMUM OF ASTM A653, TYPE G185 ZINC-COATED GALVANIZED STEEL, OR EQUIVALENT SHALL BE USED.
6. ALLOW FOR 1/2" OF WOOD SHRINKAGE/COMPRESSION AT EACH LEVEL (INCLUDING FOUNDATION). VALUES ARE CUMULATIVE FOR THE HEIGHT OF THE BUILDING. BUILDING SYSTEMS SUCH AS MECHANICAL, ELECTRICAL, PLUMBING, FIRE SPRINKLERS, ETC. SHALL HAVE FLEXIBLE COMPONENTS THAT ACCOUNT FOR THE POTENTIAL WOOD SHRINKAGE/COMPRESSION. ARCHITECTURAL FINISHES SHALL ALSO ACCOUNT FOR THE POTENTIAL WOOD SHRINKAGE/COMPRESSION.
7. ALL STUD WALL TOP PLATES SHALL BE DOUBLE MEMBERS SPLICED WITH 48" MINIMUM LAP WITH MINIMUM OF 24 - 16D NAILS EACH END OF SPLICE - 48 NAILS TOTAL, UNLESS NOTED OTHERWISE.
8. DO NOT NOTCH JOISTS, RAFTERS OR BEAMS, EXCEPT WHERE SHOWN IN DETAILS. OBTAIN ENGINEER'S APPROVAL FOR ANY HOLES OR NOTCHES NOT DETAILED. HOLES THROUGH SILLS, PLATES, STUDS AND DOUBLE PLATES IN INTERIOR, BEARING AND SHEAR WALLS SHALL NOT EXCEED 1/3 THE PLATE WIDTH. USE BORED HOLES LOCATED IN THE CENTER OF THE STUD OR PLATE. SEE TYPICAL DETAIL FOR CLARIFICATION.
9. CROSS-BRIDGING OR SOLID BLOCKING SHALL BE SPACED PER THE MORE STRINGENT OF THE LUMBER MANUFACTURER'S RECOMMENDATIONS OR THE FOLLOWING: RAFTERS GREATER THAN 8 INCHES IN DEPTH = 10 FT. OC MAXIMUM FLOOR JOISTS GREATER THAN 4 INCHES IN DEPTH = 8 FT. OC MAXIMUM

B. FASTENERS AND HARDWARE

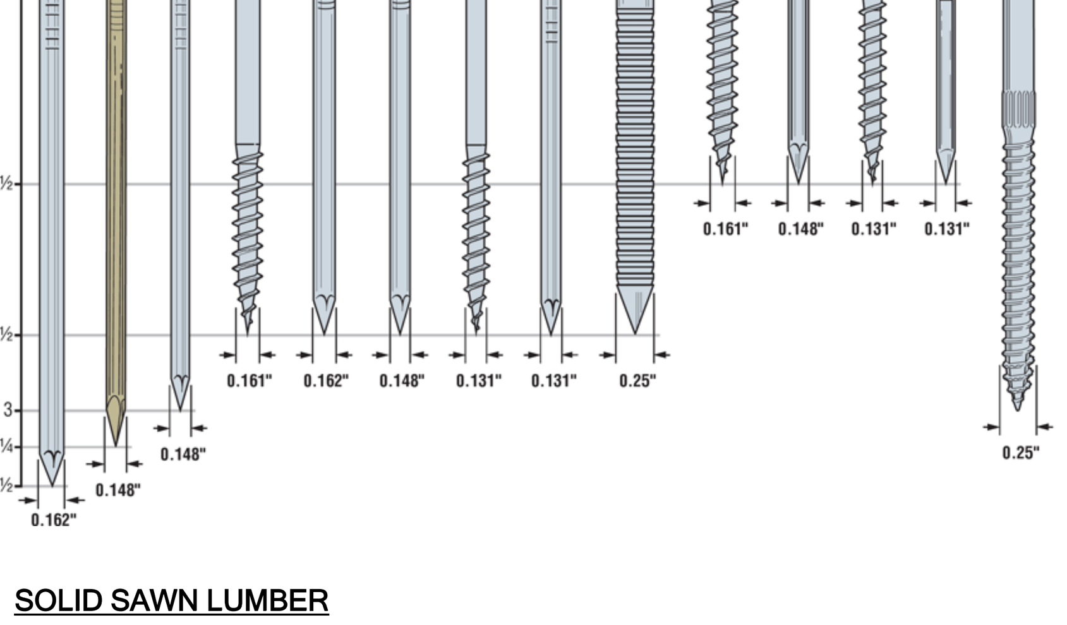
1. MINIMUM NAILING, UNLESS OTHERWISE NOTED, SHALL CONFORM TO TABLE 2304.9.1 OF THE IBC. ALL NAILS SHALL BE COMMON, UNO. DETAILS GOVERN OVER SCHEDULE.
2. BOLTS, ANCHOR RODS, AND LAG SCREWS SHALL BE CENTERED IN MEMBERS, UNO. C. WHERE AUTOMATIC NAILING IS USED, NAIL HEADS SHALL NOT PENETRATE PLYWOOD SHEATHING. CONNECTIONS LISTED ARE MINIMUM PERMISSIBLE.
3. WHEN MULTIPLE MEMBERS ARE GROUPED TOGETHER, FASTEN WITH: 2 ROWS OF 16D NAILS AT 12" O.C. USE THREE ROWS OF 16D NAILS AT 12" O.C. FOR DEPTHS 14" OR GREATER.
4. ALL BOLTS IN WOOD SHALL CONFORM TO ASTM A307 BOLTS AND SHALL BE INSTALLED IN HOLES BORED WITH A BIT 1/16 INCH LARGER THAN THE DIAMETER OF THE BOLT. BOLTS AND NUTS SEATING ON WOOD SHALL HAVE CUT STEEL WASHERS UNDER HEADS AND NUTS. DAMAGE THREADS AFTER INSTALLATION TO PREVENT LOOSENING.
5. SPECIFIED HARDWARE SHALL BE SIMPSON STRONG-TIE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS, UNO.
6. SILL PLATE MAXIMUM ANCHOR BOLT SPACING SHALL BE 48 INCHES ON CENTER UNLESS NOTED OTHERWISE ON PLANS AND DETAILS. ALL ANCHOR BOLTS (OTHER THAN BOLTS FOR HOLDOWNS) SHALL BE 1/2" DIAMETER WITH A MINIMUM EMBEDMENT OF 9 INCHES INTO CONCRETE UNO. ANCHOR BOLTS FOR HOLDOWNS SHALL NOT BE CONSIDERED AS PART OF REQUIRED ANCHOR BOLTS FOR SHEAR WALLS. ALL EXTERIOR WALLS SHALL BE SECURED WITH MINIMUM ANCHOR BOLTS. INTERIOR WALLS MAY BE DRIVEN SHOT PINS ACCORDING TO ALTERNATE OUTLINED HEREIN UNO.
7. ANCHOR BOLTS SHALL HAVE 3" X 3" X 1/4" THICK SLOTTED PLATE WASHERS UNDER EACH NUT. EDGE OF PLATE WASHER TO BE WITHIN 1/2" OF SHEATHING. AT SHEAR WALLS WITH SHEATHING ON BOTH FACES ALTERNATE WASHER EDGES.
8. INSTALLATION OF LAG SCREWS SHALL CONFORM TO 2005 NDS SECTION 11.1.3.
9. PNEUMATIC NAILING SHALL BE PLAIN SHANK, COATED OR GALVANIZED:

8D	0.131" DIA.X2 1/2" MIN. LENGTH
10D	0.148" DIA.X3" MIN. LENGTH
16D	0.135" DIA.X3 1/2" MIN. LENGTH

10. HAND NAILING SHALL BE SINKERS, COATED:

8D	11 1/2GA.X2 3/8"
10D	11GA.X2 7/8"
16D	9GA.X3 1/4"

11. FASTENER TYPES ARE AS FOLLOWS



C. SOLID SAWN LUMBER

1. SOLID SAWN LUMBER SHALL BE PRESSURE TREATED WITH JURISDICTIONAL REQUIREMENTS AND COMPLY WITH THE LATEST EDITION OF THE GRADING RULES OF THE WESTERN WOOD PRODUCTS ASSOCIATION (WWPA) OR THE WEST COAST LUMBER INSPECTION BUREAU (WCLIB).
2. ALL SOLID SAWN LUMBER SHALL BE STAMPED WITH THE GRADE MARK OF AN APPROVED GRADING AGENCY. SOLID SAWN LUMBER SHALL HAVE THE FOLLOWING MINIMUM GRADES:

2X4 STUDS AND BLOCKING	DF-L #2
2X6 STUDS AND BLOCKING	DF-L #2
JOIST, TOP PLATES AND BLOCKING	DF-L #2
4X BEAMS AND POSTS	DF-L #2
6X BEAMS AND POSTS	DF-L #1

3. INTERIOR NONBEARING PARTITIONS MAY BE DF-L STUD GRADE.
4. ALL EXPOSED ARCHITECTURAL LUMBER TO BE KILN DRIED (KD) UNO. MOISTURE CONTENT AT TIME OF MANUFACTURING 19 PERCENT OR LESS.
5. ALL LUMBER TO BE SUPPLIED WITH PROPER GRADE STAMP TO PROJECT. F.
6. PROVIDE SOLID BLOCKING FOR ALL WOOD COLUMNS THROUGH FLOORS TO SUPPORT BELOW.

D. GLUED-LAMINATED BEAMS (GLB)

1. GLULAMS SHALL BE TREATED TO BE BOTH INSECT REPELLANT AND MOISTURE RESISTANT.
2. GLB SHALL BE DOUGLAS FIR, COMBINATION 24F-V4 (1.8E) AT SIMPLE SPAN BEAMS AND 24F-V8 (1.8E) AT CANTILEVERED OR CONTINUOUS BEAMS WITH THE FOLLOWING MINIMUM PROPERTIES: FB = 2400 PSI, FV = 265 PSI, FC (PERPENDICULAR) = 650 PSI
3. ALL BEAMS SHALL BE FABRICATED USING WATERPROOF GLUE.
4. FABRICATION AND HANDLING SHALL BE PER THE LATEST AMERICAN INSTITUTE OF TIMBER CONSTRUCTION (AITC) STANDARDS.
5. ALL BEAMS SHALL BEAR THE GRADE STAMP AND AITC STAMP AND CERTIFICATE.
6. ALL BEAMS SHALL HAVE STANDARD CAMBER U.N.O. ON THE DRAWINGS.
7. UNLESS NOTED ON THE DRAWINGS OR SPECIFIED BY THE ARCHITECT, BEAMS SHALL BE 'INDUSTRIAL' APPEARANCE GRADE.
8. ALL LAMINATIONS FOR 'GLU-LAM' BEAMS SHALL BE 1 1/2 INCHES THICK AND THE OVERALL SIZE SHALL BE AS SHOWN ON THE DRAWINGS. ALL LAMINATIONS SHALL BE PARALLEL TO THE BOTTOM OF THE BEAM, UNLESS NOTED OTHERWISE ON THE DRAWINGS.
9. GLUED LAMINATED WOOD SHOP DRAWINGS SHALL BE SUBMITTED TO THE ARCHITECT FOR REVIEW BEFORE FABRICATION.

E. ENGINEERED LUMBER

1. ALL ENGINEERED LUMBER, SHALL BE MANUFACTURED AND INSTALLED IN ACCORDANCE WITH I LEVEL TRUSS JOIST ENGINEERED WOOD PRODUCTS BY WEYERHUEASER OR APPROVED EQUAL MANUFACTURING STANDARDS AS REFERENCED IN ESR-1387, AND SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES:

MATERIAL	E	FB	FC PERP	FC PARA.	FV
TIMBERSTRAND (LSL)	1.55 MPSI	2,325 PSI	900 PSI	2,170 PSI	310 PSI
MICROLAM (LVL)	2.0 MPSI	2,600 PSI	750 PSI	2,510 PSI	285 PSI
PARALAM (PSL)	2.0 MPSI	2,900 PSI	750 PSI	2,900 PSI	290 PSI

F. SHEATHING

1. PLYWOOD FOR ROOFS AND FLOORS SHALL BE C-C OR C-D SHEATHING CONFORMING TO THE CURRENT VERSION OF THE PRODUCTS STANDARD PS 1-09. LAY PLYWOOD WITH FACE GRAIN PERPENDICULAR TO SUPPORTS. ALL NAILING SHALL BE WITH COMMON NAILS AND SOLID 2X BLOCKING SHALL BE PLACED AT ALL RIDGES AND VALLEYS. ALL ROOF AND FLOOR SHEATHING SHALL BE NAILED WITH BOUNDARY NAILING ALONG THE ENTIRE LENGTH OF SUPPORTING MEMBERS USED AS "DRAG" MEMBERS. A DRAG MEMBER IS A TRUSS OR BEAM DESIGNED TO TRANSMIT A LATERAL FORCE AND/OR A DIAPHRAGM CHORD FORCE AS INDICATED ON THE FRAMING PLANS. PROVIDE BLOCKING AT PANEL EDGES WHERE INDICATED ON PLANS. ALL PLYWOOD SHALL BE OF THE FOLLOWING NOMINAL THICKNESS AND SPAN/INDEX RATING AND SHALL BE NAILED AS FOLLOWS UNLESS NOTED OTHERWISE:

LEVEL	THICKNESS	SPAN RATING	EDGE NAILING	FIELD NAILING
ROOF	1/2"	32/16	8D @ 6" O.C.	8D @ 12" O.C.
FLOOR	3/4"	48/24	10D @ 6" O.C.	10D @ 12" O.C.

2. PLYWOOD FOR SHEAR WALLS SHALL BE STRUCTURAL I C-C OR C-D, SPAN INDEX 24/0 CONFORMING TO PS 1-09. THICKNESS SHALL BE AS CALLED FOR ON THE PLANS AND SHEAR WALL SCHEDULE. PROVIDE BLOCKING AT ALL PANEL EDGES. ALL WALLS DESIGNATED AS SHEAR WALLS SHALL BE CONNECTED TO ROOF AND FLOOR DIAPHRAGMS WITH BOUNDARY NAILING TO PROVIDE PROPER SHEAR TRANSFER.
3. AS AN ALTERNATE TO PLYWOOD, AMERICAN PLYWOOD ASSOCIATION (APA) PERFORMANCE RATED SHEATHING MAY BE USED WITH PRIOR APPROVAL OF THE OWNER AND ARCHITECT. RATED SHEATHING SHALL COMPLY WITH ICC-ES REPORT ESR-2586, EXPOSURE 1, AND SHALL HAVE A SPAN RATING EQUIVALENT TO OR BETTER THAN THE PLYWOOD IT REPLACES. ATTACHMENT AND THICKNESS (WITHIN 1/32") SHALL BE THE SAME AS THE PLYWOOD IT REPLACES. INSTALL PER MANUFACTURER RECOMMENDATIONS.
4. REFER TO THE PLANS AND SHEAR WALL SCHEDULE FOR REQUIRED SHEATHING AND NAILING. PROVIDE 7/16" APA RATED SHEATHING ON EXTERIOR SURFACES NAILED AT ALL PANEL EDGES (BLOCK UNSUPPORTED EDGES), TOP AND BOTTOM PLATES WITH 8D COMMON NAILS AT 6"OC. AND TO ALL INTERMEDIATE STUDS AND BLOCKING AT 12"OC. ALLOW 1/8" GAP AT ALL APA SHEATHING PANEL EDGES AND ENDS.

G. PLYWOOD I-JOISTS

1. PREFABRICATED PLYWOOD WEB I-JOISTS/PURLINS (TJI SERIES OR EQUAL) SHALL BE DESIGNED, FABRICATED, AND ERECTED IN ACCORDANCE WITH THE LATEST EDITION OF ICC-ES ESR1153.
2. CONNECTIONS AND BEARING MATERIAL TO BE DESIGNED AND FURNISHED BY JOIST FABRICATOR.
3. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS WITH DESIGN CALCULATIONS SEALED BY A REGISTERED ENGINEER FOR REVIEW PRIOR TO MANUFACTURE.
4. ADDITIONAL MEMBERS SHALL BE SUPPLIED AS REQUIRED TO SUPPORT MECHANICAL EQUIPMENT. WHERE BRIDGING INTERFERES WITH MECHANICAL OR OTHER INSTALLATIONS, REMOVE BRIDGING AFTER DECK IS IN PLACE AND REPLACE WITH ADDITIONAL MANUFACTURER-SUPPLIED HORIZONTAL STRUT BRACING AT TOP AND BOTTOM CHORDS.

5. CONCRETE

1. MINIMUM 28 DAY STRENGTH 3,000 PSI EXCEPT AS FOLLOWS: (TYPE V, U.N.O.)

SLABS ON GRADE/MAT. FTG.	4,500 PSI
CONCRETE WALLS & FOOTINGS, U.N.O.	3,000 PSI
STRUCTURE WAS DESIGNED TO (NO SPECIAL INSPECTIONS REQ'D)	2,500 PSI

2. MECHANICALLY VIBRATE ALL CONCRETE WHEN PLACED, EXCEPT THAT SLABS ON GRADE NEED BE VIBRATED ONLY AROUND UNDER-FLOOR DUCTS, ETC. MAXIMUM SLUMP IS 4 1/2" FOR CONCRETE WITHOUT PLASTICIZER. IF PLASTICIZER IS USED, A HIGHER FINAL SLUMP MAY BE ALLOWED UPON STRUCTURAL ENGINEER'S APPROVAL. CAST CLOSURE POUR AROUND COLUMNS AFTER COLUMN DEAD LOAD IS APPLIED. UNLESS APPROVED OTHERWISE IN WRITING BY THE ARCHITECT, ALL CONCRETE SLABS ON GRADE SHALL BE BOUND BY CONTROL JOINTS (KEYED OR SAW CUT), SUCH THAT THE ENCLOSED AREA DOES NOT EXCEED 225 SQUARE FEET. KEYED CONTROL JOINTS NEED ONLY OCCUR AT EXPOSED EDGES DURING POURING, ALL OTHER JOINTS MAY BE SAW CUT. CONTRACTOR SHALL SUBMIT PROPOSED LOCATIONS FOR APPROVAL PRIOR TO CONSTRUCTION.
3. NO FLY ASH ADDITIVES SHALL BE USED IN FLATWORK OR ARCHITECTURALLY EXPOSED CONCRETE.
4. FLY ASH - IF PERMITTED BY ARCHITECTURAL SPECIFICATIONS, SHALL BE LIMITED TO 20% OF CEMENTITIOUS MATERIALS AND SHALL HAVE A REPLACEMENT FACTOR OF 1.2 RELATIVE TO CEMENT REPLACED.
5. CONTRACTOR SHALL REVIEW ARCHITECTURAL DRAWINGS AND SPECIFICATION FOR SPECIAL SLAB TREATMENTS AND VAPOR BARRIERS REQUIRED FOR FINISH FLOORING.
6. CONCRETE SLAB ON GRADE SHALL BE 4" THICKNESS WITH #3 BARS AT 18" O.C. FILL MATERIAL PER SOILS REPORT. REFER TO SOILS REPORT FOR ADDITIONAL INFORMATION.
7. ALL ASPECTS OF WORK PERTAINING TO THE CONCRETE CONSTRUCTION SHALL BE IN ACCORDANCE WITH ACI 318, 'BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE' AND THE LATEST EDITION OF 'SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS', ACI 301, WITH MODIFICATIONS AS NOTED ON THE PROJECT DRAWINGS AND\OR SPECIFICATIONS. ACI 318, SECTION 5.12 FOR COLD WEATHER PLACEMENT AND ACI 318, SECTION 5.13 FOR HOT WEATHER PLACEMENT.
8. CONCRETE MIX DESIGNS SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW. ALL MIX DESIGNS SHALL BE DESIGNED BY A QUALIFIED TESTING LABORATORY AND SHALL BE SEALED BY AN ENGINEER LICENSED IN THE APPROPRIATE STATE PER THE APPROPRIATE DISCIPLINE. BASE DESIGN MIX ON FIELD EXPERIENCE OR TRIAL MIXTURES AS STIPULATED IN IBC SECTION 1905.3
9. PORTLAND CEMENT SHALL CONFORM TO ASTM C150 TYPE I OR II CONCRETE MINIMUM, COORDINATE ADDITIONAL REQUIREMENTS WITH NOTE 5.
10. ALL CONCRETE SHALL BE READY MIX CONCRETE AND SHALL BE MIXED AND DELIVERED IN ACCORDANCE WITH ATSM C94 OR ATSM C685
11. CONCRETE MIX DESIGNS SHALL MEET THE FOLLOWING MINIMUM EXPOSURE REQUIREMENTS PER ACI 318 CHAPTER 4.

SEVERITY	CLASS	ACI REQUIREMENTS
FREEZING AND THAWING		
NOT APPLICABLE	F0	-
MODERATE	F1	ACI 318 TABLE 4.3.1 AND 4.4.1
SEVERE	F2	ACI 318 TABLE 4.3.1 AND 4.4.1
VERY SEVERE	F3	ACI 318 TABLE 4.3.1 AND 4.4.1 AND 4.4.2
SULFATE		
NOT APPLICABLE	S0	-
MODERATE	S1	ACI 318 TABLE 4.3.1
SEVERE	S2	ACI 318 TABLE 4.3.1
VERY SEVERE	S3	ACI 318 TABLE 4.3.1
PERMEABILITY		
NOT REQUIRED	P0	-
REQUIRED	P1	ACI TABLE 4.3.1
COROSION PROTECTION OF REINFORCING		
NOT APPLICABLE	C0	-
MODERATE	C1	ACI 318 TABLE 4.3.1
SEVERE	C2	ACI 318 TABLE 4.3.1

12. ANY CURING COMPOUNDS USED ON CONCRETE THAT IS TO RECEIVE A RESILIENT TILE FINISH SHALL BE APPROVED BY THE FINISH APPLICATOR BEFORE USE.
13. FLY ASH MAY BE USED IN CONCRETE MIXES. THE FLY ASH SHALL CONFORM TO ASTM C618 CLASS F. THE LOSS OF IGNITION SHALL BE LIMITED TO 2%. THE ADDITION RATE FOR FLY ASH SHALL BE LIMITED TO 20% OF THE CEMENT WEIGHT. THE CONTRACTOR SHALL SUBMIT ALL CERTIFICATES SHOWING THE FLY ASH IS IN ACCORDANCE WITH THE ABOVE CRITERIA.
14. DO NOT USE CONCRETE OR GROUT CONTAINING CHLORIDES.
15. AGGREGATE:
    - A. HARD ROCK CONCRETE - AGGREGATE SHALL CONFORM TO ALL REQUIREMENTS AND TESTS OF ASTM C33 AND PROJECT SPECIFICATIONS. EXCEPTIONS MAY BE USED ONLY WITH APPROVAL OF THE STRUCTURAL ENGINEER. PROVIDE CONCRETE MIX DESIGN WITH PROVEN SHRINKAGE CHARACTERISTICS OF LESS THAN 0.0005 INCHES/INCH.
    - B. LIGHTWEIGHT CONCRETE - AGGREGATE SHALL BE IN ACCORDANCE WITH ASTM C330 AND PROJECT SPECIFICATIONS. LIGHTWEIGHT CONCRETE MIX DESIGNS SHALL BE TESTED PRIOR TO APPROVAL, FOR SHRINKAGE IN ACCORDANCE WITH ASTM C157. SHRINKAGE SHALL NOT EXCEED 0.00035 INCHES / INCH.
16. AT CONCRETE SLABS TO BE EXPOSED, SHRINKAGE LIMIT SHALL BE REDUCED TO 0.00035 INCHES/INCH UNO.
17. THE MODULUS OF ELASTICITY OF CONCRETE, SHALL BE TESTED IN ACCORDANCE WITH ASTM C469 FOR FRAMED CONCRETE SLABS AND BEAMS AND SHALL BE AT LEAST THE VALUE GIVEN BY THE EQUATIONS IN SECTION 8.5.1 OF ACI 318 FOR THE SPECIFIED CONCRETE 28-DAY STRENGTH.
18. DRY PACK OR GROUT UNDER BASE PLATES, SILL PLATES, ETC., SEE SPECIFICATIONS. STRENGTH REQUIREMENTS ARE AS REQUIRED FOR CONCRETE. MINIMUM GROUT STRENGTH SHALL BE F'C= 7,000 PSI.
19. CLEAR COVERAGE OF CONCRETE OVER REINFORCING BARS SHALL BE AS FOLLOWS UNO ON PLANS:

LOCATION OF CONCRETE	MINIMUM CONCRETE COVER
CONCRETE CAST AGAINST AND PERMENENTLY EXPOSED TO EARTH:	3"
CONCRETE EXPOSED TO EARTH OR WEATHER:	
#6 THROUGH #18 BAR	2"
#5 BAR AND SMALLER	1 ½"
CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND, UNO:	
SLABS, WALLS AND JOISTS:	
#14 THROUGH #18 BAR	1 ½"
#11 BAR AND SMALLER	¾"
BEAMS AND COLUMNS:	
PRIMARY REINFORCING, TIES, STIRRUPS, SPIRALS	1 ½"
SLAB ON GRADE:	2" CLEAR FROM TOP
PRECAST CONCRETE (MANUFACTURED UNDER PLANT CONTROLLED CONDITIONS:	SEE IBC SECTION 1907.7.3
PRESTRESSED CONCRETE CONVERAGE:	SEE IBC SECTION 1907.7.2

20. PRIOR TO CONCRETE PLACEMENT, ALL REINFORCING BARS, ANCHOR BOLTS AND OTHER CONCRETE INSERTS SHALL BE WELL SECURED IN POSITION UTILIZING WIRE TIRES OR APPROVED ALTERNATIVE.
21. MECHANICAL PIPES OR ELECTRICAL CONDUIT SHALL NOT PASS THROUGH CONCRETE COLUMNS OR BEAMS UNLESS SPECIFICALLY DETAILED.
22. UNLESS OTHERWISE INDICATED IN THE MECHANICAL, ELECTRICAL DRAWINGS OR PROJECT SPECIFICATIONS, MECHANICAL PIPES AND ELECTRICAL CONDUITS WHICH PASS THROUGH SLAB ON GRADE, CONCRETE ON STEEL DECK, FRAMED CONCRETE FLOORS AND WALLS DO NOT REQUIRE SLEEVES. IF SLEEVES ARE REQUIRED, THE SLEEVES SHALL BE INSTALLED PRIOR TO PLACING CONCRETE. DO NOT CUT ANY REINFORCING WHICH MAY INTERFERE WITH SLEEVE PLACEMENT. PROVIDE CONCRETE CLEAR COVER PER NOTE 13 FOR ADJACENT TO SLEEVES REINFORCING. CORING OPENINGS IN CONCRETE IS NOT PERMITTED. NOTIFY THE STRUCTURAL ENGINEER IN ADVANCE OF CONDITIONS NOT SHOWN ON THE STRUCTURAL DRAWINGS.
23. WITH THE EXCEPTION OF SLABS ON GRADE AND CONCRETE ON STEEL DECK, THE OUTSIDE DIAMETER OF MECHANICAL PIPES AND/OR EMBEDDED ELECTRICAL CONDUITS (OTHER THAN THOSE PASSING THROUGH) SHALL NOT EXCEED 1/3 OF THE SLAB THICKNESS AND SHALL BE CENTERED BETWEEN THE TOP AND BOTTOM REINFORCING, UNLESS SPECIFICALLY DETAILED OTHERWISE. CONCENTRATIONS OF MECHANICAL PIPES AND/OR ELECTRICAL CONDUITS SHALL BE AVOIDED EXCEPT WHERE DETAILED OPENINGS ARE PROVIDED. CONDUIT AND PIPE SHALL BE SPACED AT 3" OR 3 DIAMETERS ON CENTER, WHICHEVER IS LARGER.
24. FOR SLABS ON GRADE, NO PIPES OR CONDUITS SHALL BE PLACED WITHIN THE INDICATED CONCRETE SLAB THICKNESS AND SHALL BE LOCATED BELOW THE SLAB UNLESS SPECIFICALLY DETAILED OTHERWISE.

A. CONSTRUCTION JOINTS

1. ALL CONSTRUCTION JOINTS IN WALLS SHALL BE KEYED IN ACCORDANCE WITH THE TYPICAL CONSTRUCTION JOINT DETAILS SHOWN ON THE STRUCTURAL DRAWINGS OR, AT THE CONTRACTOR'S OPTION, SHALL BE INTENTIONALLY ROUGHENED IN ACCORDANCE WITH THE FOLLOWING: THE SURFACE OF ROUGHENED JOINTS SHALL BE SAND BLASTED OR ROUGHENED WITH A CHIPPING HAMMER TO EXPOSE THE AGGREGATE EMBEDDED IN THE PREVIOUS POUR. THE EXPOSED AGGREGATE SHALL PROTRUDE A MINIMUM OF 1/4 INCH. ALL SURFACES OF CONSTRUCTION JOINTS SHALL BE CLEANED AND LAITANCE REMOVED. IMMEDIATELY BEFORE NEW CONCRETE IS PLACED, ALL CONSTRUCTION JOINTS SHALL BE WETTED AND STANDING WATER REMOVED. VERTICAL CONSTRUCTION JOINTS IN WALLS SHALL BE HELD TO A MAXIMUM SPACING OF 30'-0". ALL CONSTRUCTION JOINTS IN SLABS, JOISTS, BEAMS, AND GIRDERS SHALL BE OFFSET A DISTANCE EQUAL TO TWICE THE WIDTH OF THE BEAM.
2. ACCORDANCE WITH THE TYPICAL SLAB ON DECK CONSTRUCTION JOINT DETAIL SHOWN ON THE STRUCTURAL DRAWINGS. BEAMS AND GIRDERS HAVE BEEN DESIGNED ASSUMING THE CONSTRUCTION JOINTS TO BE LOCATED IN THE MIDDLE THIRD OF THE BEAM, GIRDER, OR SLAB SPAN. ALL CONSTRUCTION, CONTROL, AND ISOLATION JOINTS FOR SLABS ON GRADE SHALL BE IN ACCORDANCE WITH THE TYPICAL SLAB ON GRADE DETAILS. THE CONTRACTOR SHALL SUBMIT THE PROPOSED LOCATIONS OF CONSTRUCTION JOINTS TO THE ENGINEER FOR ACCEPTANCE BEFORE STARTING CONSTRUCTION.

STRUCTURAL SHEET INDEX

PERMIT SET

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THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

Signature 4/30/18 Expiration Date of My License

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PROJECT #:	R17-046
APPROVED:	PB
DRAWN:	GC
SCALE:	AS SHOWN
DATE:	9/7/2017

GENERAL STRUCTURAL NOTES

MCGRAW RESIDENCE
171 W. IKEA KAI PLACE
WAILEA, HAWAII 96753

REVISIONS

MARK	REASON	DATE
3	FINAL COORDINATION	10/14/17

SHEET NUMBER:
S0.00

PLOT DATE: 11/14/2017, 4:20 PM

B. CONCRETE INSERTS

3. THIN SLAB TYPE INSERTS SHALL BE GALVANIZED AND HAVE THE FOLLOWING MINIMUM WORKING LOADS (A 4:1 RATIO OF ULTIMATE TO WORKING VALUES IS ASSUMED):

	WORKING LOAD	
BOLT DIAMETER	SHEAR	TENSION
1/2"	1,000 LBS	650 LBS
5/8"	1,250 LBS	700 LBS
3/4"	1,600 LBS	850 LBS

1. COIL LOOP INSERTS SHALL BE GALVANIZED AND HAVE THE FOLLOWING MINIMUM WORKING LOADS (A 3:1 RATIO OF ULTIMATE TO WORKING VALUES IS ASSUMED):

	WORKING LOAD	
BOLT DIAMETER	SHEAR	TENSION
1/2"	2,200 LBS	2,820 LBS
5/8"	3,000 LBS	3,620 LBS
3/4"	3,100 LBS	3,660 LBS

2. THREADED COIL RODS, COIL NUTS, ETC., USED IN CONJUNCTION WITH CONCRETE INSERTS, SHALL HAVE A WORKING LOAD EQUAL TO OR GREATER THAN THE CORRESPONDING CONCRETE INSERT. CONTRACTOR SHALL SUBMIT MANUFACTURER'S SIZE AND STRENGTH DATA PRIOR TO CONSTRUCTION TO THE STRUCTURAL ENGINEER THRU THE ARCHITECT. VALUES LISTED ABOVE ARE FOR RICHMOND STRUCTURAL CONNECTION INSERTS.

C. NOTES ON CRACKING OF CONCRETE STRUCTURES

1. CRACKING IS INHERENT TO THE MATERIAL PROPERTIES OF CONCRETE CONSTRUCTION (INCLUDING POST- TENSIONED CONCRETE STRUCTURES). WHILE EVERY EFFORT HAS BEEN MADE TO MINIMIZE THE EFFECTS OF UNSIGHTLY CRACKING, THE PRESENCE OF CRACKS ARE NORMAL AND UNAVOIDABLE. THE DESIGN OF THE CONCRETE STRUCTURAL ITEMS HAVE BEEN ANALYZED USING A "CRACKING SECTION." THE PRESENCE OF THE CRACKING SHOULD NOT BE CONSIDERED DETRIMENTAL TO THE STRUCTURE. CRACKS LARGER THAN 10 MILS SHALL BE FILLED AND SEALED WITH AM APPROVED CRACK FILLER TO PREVENT FUTURE DETERIORATION. ALLOWANCE SHALL BE MADE IN THE CONSTRUCTION BUDGET FOR SEALING OF SUCH CRACKS. IN SOME CASE, CRACKS DO NOT APPEAR UNTIL WELL AFTER CONSTRUCTION HAS BEEN COMPLETED, IT IS THE RESPONSIBILITY OF THE OWNER TO MAINTAIN THE STRUCTURE PROPERLY OVER THE LIFE OF THE STRUCTURE. CONCRETE CRACKS, SHOULD THEY OCCUR, SHALL BE FILLED AND SEALED TO PREVENT PREMATURE DETERIORATION OF THE STRUCTURE.

MASTER KEYNOTE SCHEDULE

MK.	NOTE
01	4" SLAB ON GRADE WITH #4 BARS AT 18" O.C. EACH WAY CENTERED IN SLAB
02	1/2" ROOF SHEATHING (32/16 SPAN RATING) w/8d @ 6" O.C. EDGE AND 12" O.C. FIELD NAILING. REFER TO DETAIL 035 FOR MORE INFO.
03	3/4" APA RATED SHTG. (48/24 SPAN RATING) w/8d NAILS @ 6" O.C. EDGE & 12" O.C. FIELD. REFER TO DETAIL 035 FOR MORE INFO.
04	STEP IN CONCRETE
05	STEP CONCRETE FOOTING PER TYPICAL DETAIL 001
06	3x NAILER w/1/2" DIA. T.W.S. @ 16" O.C. CONNECT STRAP FROM ABOVE TO NAILER, AND PROVIDE E.N. AT NAILER.
07	STAIRS BY OTHERS
08	SIMPSON ECCLL BUCKET
09	EMBED. PLATE PER DETAIL 112/S3.00
10	SIMPSON CS14 PER DRAG STRAP SCHED.
11	SIMPSON CMST12 PER DRAG STRAP SCHED.
12	REDUCED DEPTH FRAMING @ DROPPED SHOWER PAN LOC. REF. w/ARCH.
13	ALING JOIST w/WALL FOR DRAG STRAP ATTACH.
14	PROVIDE WELDED BEAM TO COL. @ ECCENTRIC LOAD CONDITION PER 028/S0.21

PERMIT SET

PATRICK E. BIRD
LICENSED PROFESSIONAL ENGINEER
No. PE-12831-S
HAWAII U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

Signature 4/30/18 Expiration Date of My License

RIVERSTONE STRUCTURAL CONCEPT
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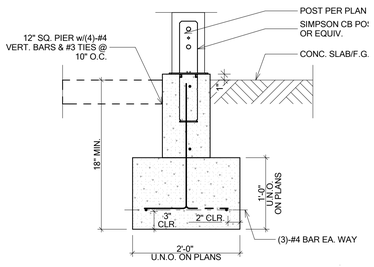
REVISIONS

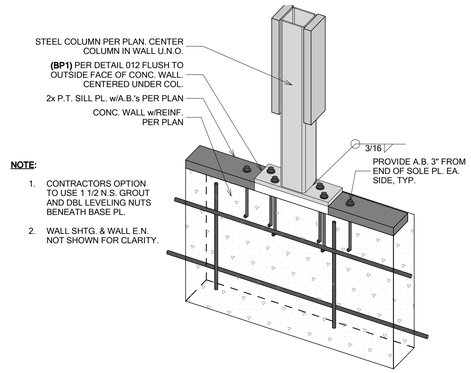
MARK	REASON	DATE
3	FINAL COORDINATION	10/14/17

SHEET NUMBER: S0.01

PLOT DATE: 11/14/2017, 4:05 PM



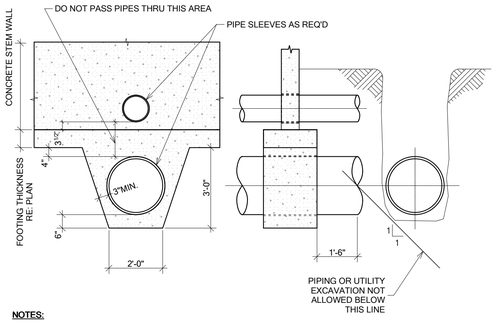
015 TYPICAL CONCRETE PIER DETAIL 1" = 1'-0"



NOTE:

1. CONTRACTORS OPTION TO USE 1 1/2 N.S. GROUT AND DBL LEVELING NUTS BENEATH BASE PL.
2. WALL SHTG. & WALL E.N. NOT SHOWN FOR CLARITY.

011A TYPICAL STEEL COLUMN TO FOUNDATION

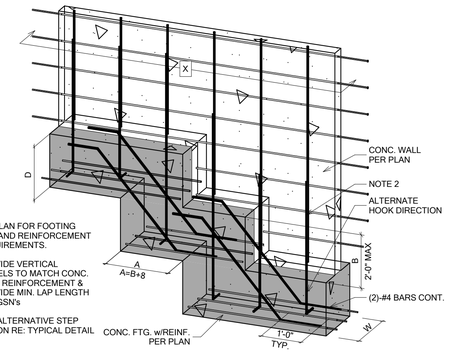


NOTES:

1: SEE PLAN FOR ALL REINFORCEMENT REQUIREMENTS NOT SHOWN HERE.

2: WHERE PIPES ARE REQUIRED WITHIN THIS FOOTING THICKNESS LEVEL, STEP FOOTING AS REQUIRED TO PASS PIPES THROUGH THE STEM WALL.

004 TYPICAL WALL PENETRATION



NOTES:

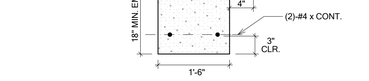
1: RE: PLAN FOR FOOTING SIZE AND REINFORCEMENT REQUIREMENTS.

2: PROVIDE VERTICAL DOWELS TO MATCH CONC. WALL REINFORCEMENT & PROVIDE MIN. LAP LENGTH PER GSN's

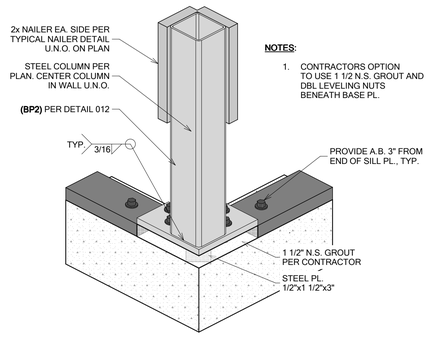
3: FOR ALTERNATIVE STEP OPTION RE: TYPICAL DETAIL 1B.

4: "D" DENOTES FTG. DEPTH PER PLAN. "W" DENOTES FTG. WIDTH PER PLAN.

001 TYPICAL STEP ON FOOTING



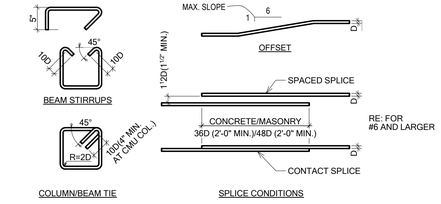
016 TYPICAL SLAB TURNDOWN 1" = 1'-0"



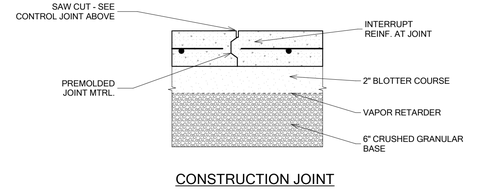
NOTES:

1. CONTRACTORS OPTION TO USE 1 1/2 N.S. GROUT AND DBL LEVELING NUTS BENEATH BASE PL.

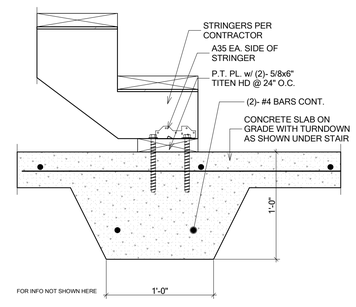
011B TYP. COL. TO FND. @ CORNER



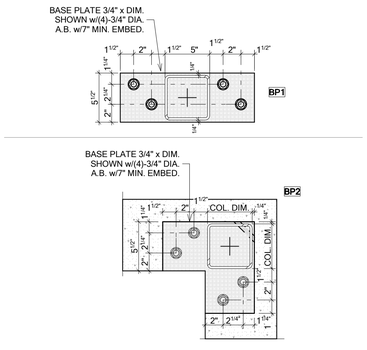
005 TYPICAL REINF. BAR BENDS



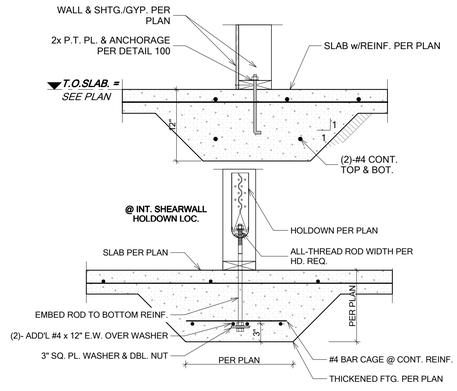
002 TYPICAL CONTROL JOINT



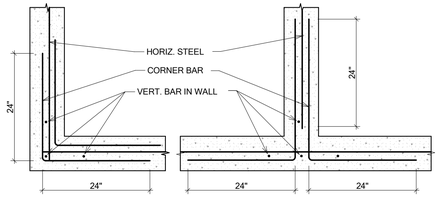
017 TYP. STAIRS TO FOUNDATION



012 STEEL BASE PLATES



006 TYP. INTERIOR BEARING WALL AT SLAB 1" = 1'-0"



NOTE:
RE: PLAN FOR WALL SIZE AND REINFORCING REQUIREMENTS.

003 TYPICAL CORNER/INTERSECTION REINF.

PERMIT SET

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HAWAII U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

Signature 4/30/18 Expiration Date of My License

RIVERSTONE STRUCTURAL CONCEPT
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PROJECT #: R17-046
APPROVED: PB
DRAWN: GC
SCALE: AS SHOWN
DATE: 9/7/2017

TYP. CONCRETE DETAILS 000-019

MCGRAW RESIDENCE
171 W. IKEA KAI PLACE
WAILEA, HAWAII 96753

REVISIONS		
MARK	REASON	DATE
3	FINAL COORDINATION	10/14/17

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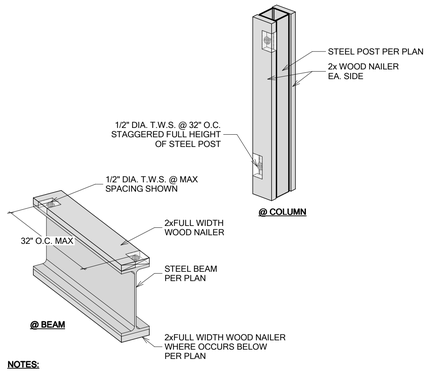
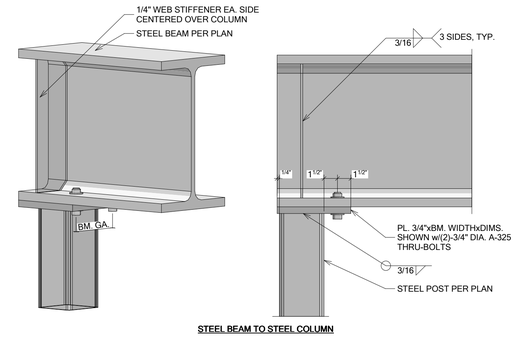


NOTES:

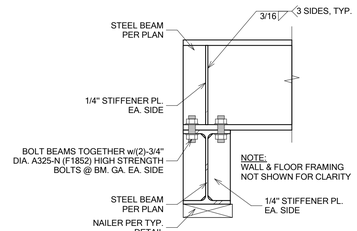
1. EMBED NUT IN NAILER OR ROUT SHEATHING AS REQ'D TO AVOID CONFLICT.
2. CONTRACTORS OPTION TO USE TB1460S SCREWS @ 32" O.C. WHERE THE STEEL THICKNESS IS 5/16" OR LESS IN LIEU OF T.W.S.

022B TYPICAL 2x NAILER

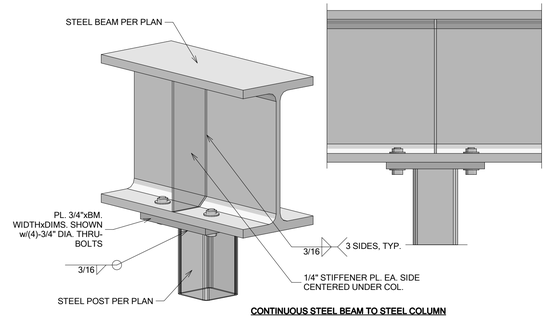


STEEL BEAM TO STEEL COLUMN

020A TYPICAL STEEL BEAM TO COL.

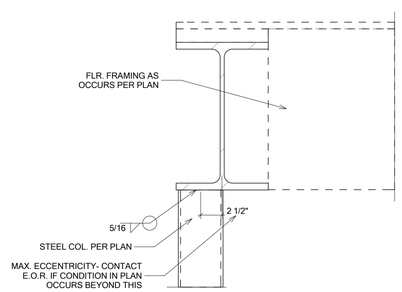


023 TYPICAL STEEL BM. TO DROPPED BM.

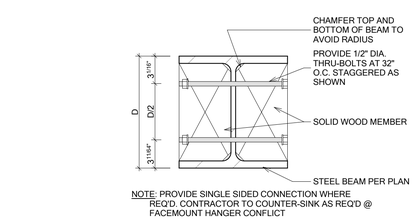


CONTINUOUS STEEL BEAM TO STEEL COLUMN

020B CONT. STEEL BEAM OVER COL.



028 ECCENTRIC STEEL BEAM TO COL.



NOTE: PROVIDE SINGLE SIDED CONNECTION WHERE REQ'D. CONTRACTOR TO COUNTER-SINK AS REQ'D @ FACEMOUNT HANGER CONFLICT

022A TYPICAL STEEL BEAM WEB PACK

PERMIT SET

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TYP. STEEL DETAILS 20-29

MCGRAW RESIDENCE
171 W. IKEA KAI PLACE
WAILEA, HAWAII 96753

REVISIONS

MARK	REASON	DATE
3	FINAL COORDINATION	10/14/17

SHEET NUMBER: S0.11

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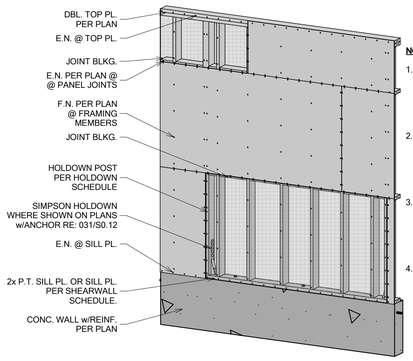
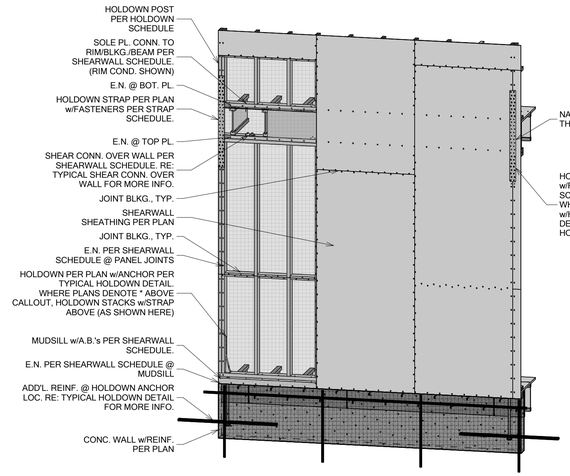


NOTES:

1. ORIENT SHEATHING WITH FACE GRAIN PERPENDICULAR TO WALL FRAMING MEMBERS AS SHOWN .
2. MINIMUM PANEL SIZE SHALL BE NO LESS THAN 2'-0"x2'-0" UNLESS ALL EDGES ARE BLOCKED.
3. EDGE OF SHEATHING JOINTS TO BE CENTERED ON WALL FRAMING MEMBERS AND/OR BLKG.
4. STAGGER SHEATING A MIN. OF 2'-0".

036 ALTERNATIVE SHEAR PANEL LAYOUT



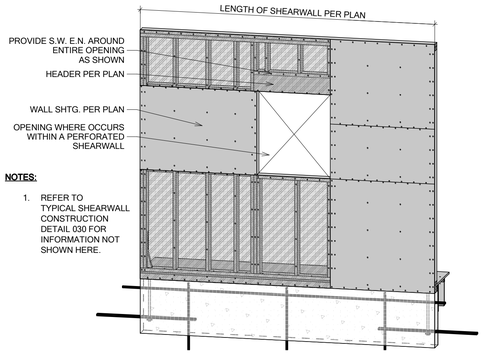
SHEAR WALL SCHEDULE

MARK	SIDES	EDGE NAILING	FIELD NAILING	MUD SILL	FRAMING MEMBERS @ ADJOINING PANEL EDGE	SOLE PLATE CONNECTIONS TO RIM/BLKG./BEAM	SHEAR CONN. OVER WALL		
							OPTION 1	OPTION 2	OPTION 3
W6	1	10d @ 6" O.C.	10d @ 12" O.C.	2xMIN P.T. PL. w/1/2" x 10" A.B. @ 48" O.C.	2x	1/2"ø ANCHOR BOLTS @ 48" O.C.	A35 @ 32" O.C.	LTP4 @ 24" O.C.	16d @ 8" O.C.
W4	1	10d @ 4" O.C.	10d @ 12" O.C.	2xMIN P.T. PL. w/1/2" x 10" A.B. @ 32" O.C.	(2)-2x	1/2"ø ANCHOR BOLTS @ 32" O.C.	A35 @ 20" O.C.	LTP4 @ 16" O.C.	16d @ 5" O.C.
W3	1	10d @ 3" O.C.	10d @ 12" O.C.	2xMIN P.T. PL. w/1/2" x 10" A.B. @ 24" O.C.	(2)-2x	1/2"ø ANCHOR BOLTS @ 24" O.C.	A35 @ 16" O.C.	LTP4 @ 12" O.C.	16d @ 4" O.C.
W2	1	10d @ 2" O.C.	10d @ 12" O.C.	3x P.T. PL. w/1/2" x 12" A.B. @ 16" O.C.	(4)-2x, OR (2)-3x, OR (1)-6x6 (4x6 @ 2x4 WALL)	1/2"ø ANCHOR BOLTS @ 16" O.C.	A35 @ 12" O.C.	LTP4 @ 10" O.C.	SDS 1/4"x3 1/2" SCREWS @ 6" O.C.
2W4	2	10d @ 4" O.C.	10d @ 12" O.C.	3x P.T. PL. w/1/2" x 12" A.B. @ 16" O.C.	(4)-2x, OR (2)-3x, OR (1)-6x6 (4x6 @ 2x4 WALL)	1/2"ø ANCHOR BOLTS @ 16" O.C.	A35 @ 10" O.C.	LTP4 @ 8" O.C.	SDS 1/4"x3 1/2" SCREWS @ 6" O.C.
2W3	2	10d @ 3" O.C.	10d @ 12" O.C.	4x P.T. PL. w/1/2" x 14" A.B. @ 12" O.C.	(4)-2x, OR (2)-3x, OR (1)-6x6 (4x6 @ 2x4 WALL)	1/2"ø ANCHOR BOLTS @ 12" O.C.	A35 @ 8" O.C.	LTP4 @ 6" O.C.	SDS 1/4"x3 1/2" SCREWS @ 5" O.C.

NOTES:

1. REFER TO PLAN NOTES FOR SHEATHING SIZE & RATING REQUIREMENTS.
2. OREINT SHEATHING AS SHOWN, & WALL SHALL BE FRAMED WITH STUDS AT 16" O.C. OR PANELS SHALL BE APPLIED WITH LONG DIMENSION ACROSS STUDS. RE: TYPICAL ALTERNATIVE SHEAR PANEL LAYOUT FOR MORE INFORMATION.
3. ALL FRAMING MEMBERS RECEIVING EDGE NAILING FROM ABUTTING PANELS SHALL NOT BE LESS THAN TWO 2-INCH NOMINAL MEMBERS FASTENED IN ACCORDANCE WITH SECTION 2306.1 TO TRANSFER THE DESIGN SHEAR VALUE BETWEEN FRAMING MEMBERS (U.N.O. IN SCHED. ABOVE). WOOD STRUCTURAL PANEL JOINT AND SILL PLATE NAILING SHALL BE STAGGERED IN ALL CASES.
4. ALL HARDWARE SHALL BE SIMPSON STRONGTIE CONNECTORS U.N.O.
5. MINIMUM SHEARWALL PANEL SIZE SHALL BE NO LESS THAN 2'-0"x2'-0" UNLESS ALL EDGES ARE BLOCKED.
6. STAGGER SHEATHING A MIN. OF 2'-0".
7. TYPICAL JOIST TO WALL w/LEDGER SCENERIO SHOWN, RE: PLAN FOR ALTERNATIVE FRAMING REQUIREMENTS.
8. ALL LUMBER SHALL BE P.T. AS REQ'D BY G.S.N.'s.

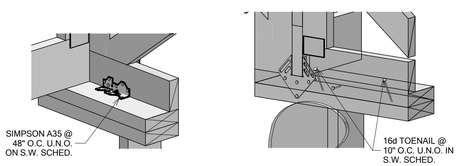
030 TYP. SHEARWALL CONST. SHEAWALL SCHED.



NOTES:

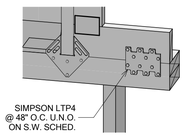
1. REFER TO TYPICAL SHEARWALL CONSTRUCTION DETAIL 030 FOR INFORMATION NOT SHOWN HERE.

034B TYPICAL PERFORATED WALL



SHEAR CONN. OVER WALL OPTION 1

SHEAR CONN. OVER WALL OPTION 3



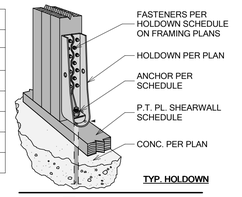
SHEAR CONN. OVER WALL OPTION 2

033 TYPICAL SHEAR CONN. OVER WALL

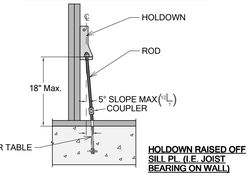
SIMPSON HOLDOWN	ANCHOR OPTIONS			
	SSTB ANCHOR/EMBED.(1)		SB ANCHOR/EMBED.(1)	
HDU2	SSTB24(1)	20 5/8"	SB5/8x24(3)	18"
HDU4	SSTB24(1)	20 5/8"	SB5/8x24(3)	18"
HDU5	SSTB24(1)	20 5/8"	SB5/8x24(3)	18"
HDU8	SSTB36(2)	28 5/8"	SB7/8x24(3)	18"
HDU11	N/A	N/A	SB1x30(4)	24"
HDU14	N/A	N/A	SB1x30(4)	24"

NOTES:

1. QUANTITIES SHOWN ARE MINIMUM CONCRETE EMBEDMENT LENGTHS. CONTRATOR TO PROVIDE ADD'L. CONCRETE TO ALLOW A MIN. OF 3" OF CLEARANCE BETWEEN BOTTOM OF ANCHOR AND BOTTOM OF CONCRETE IF NECESSARY PER PLANS.
2. ANCHORS TO BE SIMPSON OR EQUIV. CONTRACTOR TO CONTACT SIMPSON FOR ADDITIONAL INSTALLATION REQUIREMENTS/RECOMMENDATIONS.
3. CONTRACTOR TO CONTACT E.O.R. FOR ADDITIONAL ANCHOR OPTION.
4. (2)-ADD'L. HORIZ. REBAR REQ'D @ ANCHOR DEPTH.

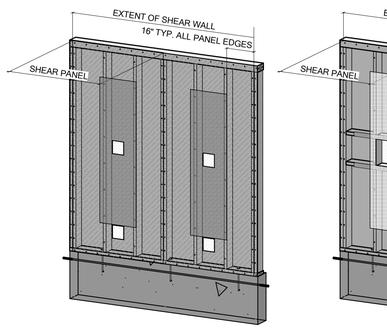


TYP. HOLDOWN



HOLDOWN RAISED OFF SILL PL. (I.E. JOIST BEARING ON WALL)

031 HOLDOWN ANCHOR OPTIONS



OPENING PARAMETERS

ZONE A: 6"x6" MAX UNBLOCKED PENETRATION OR 8"x8" MAX PENETRATION WITH ALL EDGES BLOCKED & EDGE NAILED WITHIN AREA HATCHED AS SHOWN. FOR LARGER PENTRATIONS, SEE ZONE C SPECIFICATIONS FOR STRAPPED OPENINGS.

ZONE B: 6"x6" MAX PENETRATION WITH ALL EDGES BLOCKED & EDGE NAILED WITHIN AREA HATCHED AS SHOWN. FOR LARGER PENTRATIONS, SEE ZONE C SPECIFICATIONS FOR STRAPPED OPENINGS.

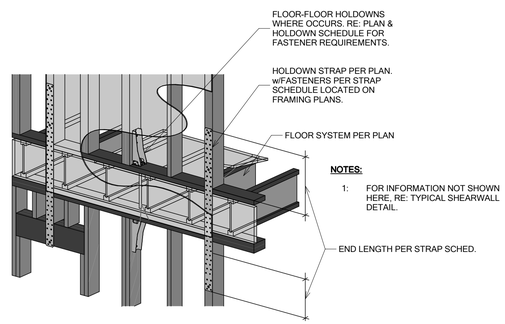
ZONE C: 12"x12" MAX PENETRATION WITH ALL EDGES BLOCKED & EDGE NAILED. PROVIDE STUD EACH SIDE OF OPENING. PROVIDE CS16 STRAP OVER 2x BLKG. A MIN. OF 12" PAST OPENING EA. WAY. FILL EVERY OTHER PAIR OF NAIL HOLES.

LIMITATIONS

1. APPLES TO SINGLE-SIDES SHEAR WALLS ONLY.
2. THE NUMBER OF PENTRATIONS SHALL NOT EXCEED ANY OF THE FOLLOWING CRITERIA:

   (1) OPENING > 6"x6" PER SHEAR WALL
   (2) OPENING PER SHEAR PANEL
   (4) OPENINGS PER SHEAR WALL

034A TYP. SHEARWALL PENETRATIONS



NOTES:

1: FOR INFORMATION NOT SHOWN HERE, RE: TYPICAL SHEARWALL DETAIL.

032 TYPICAL FLOOR TO FLOOR SHEARWALL STRAP

PERMIT SET

PATRICK E. BIRD
LICENSED PROFESSIONAL ENGINEER
No. PE-12831-S
HAWAII U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

Signature 4/30/18 Expiration Date of My License

RIVERSTONE STRUCTURAL CONCEPT
671 E RIVERPARK LN, SUITE 150, BOISE, ID 83706
PHONE: 208.343.2092 - FAX: 208.343.2493
www.riverstonesc.com

PROJECT #: R17-046
APPROVED: PB
DRAWN: GC
SCALE: AS SHOWN
DATE: 9/7/2017

TYP. SHEAR DETAILS 30-49

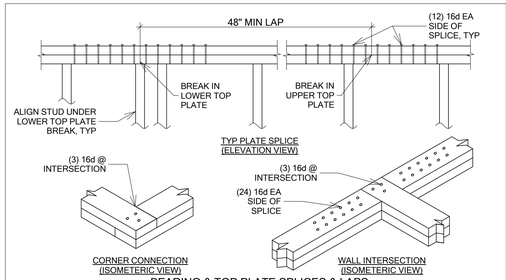
MCGRAW RESIDENCE
171 W. IKEA KAI PLACE
WAILEA, HAWAII 96753

REVISIONS

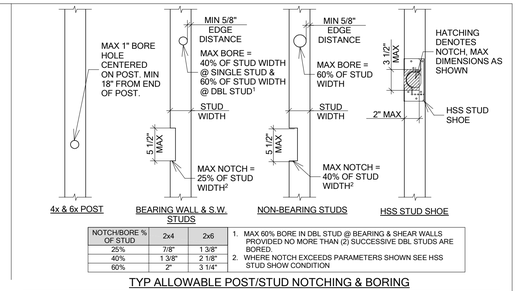
MARK	REASON	DATE
3	FINAL COORDINATION	10/14/17

SHEET NUMBER: S0.12

PLOT DATE: 11/14/2017 4:20 PM



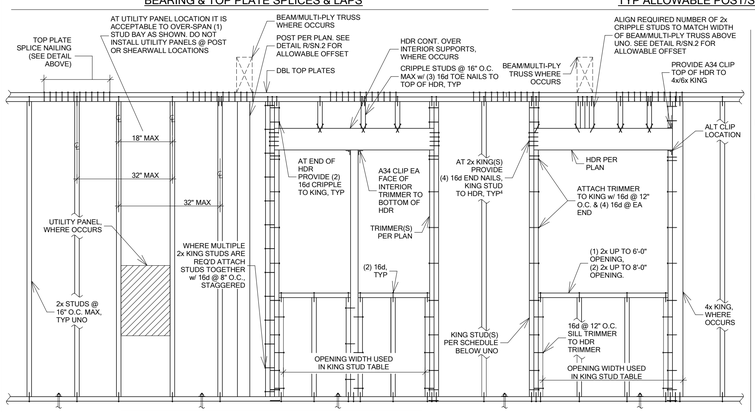
BEARING & TOP PLATE SPLICES & LAPS



NOTCH/BORE % OF STUD	2x4	2x6
25%	7/8"	1 3/8"
40%	1 3/8"	2 1/8"
60%	2"	3 1/4"

1. MAX 60% BORE IN DBL STUD @ BEARING & SHEAR WALLS PROVIDED NO MORE THAN (2) SUCCESSIVE DBL STUDS ARE BORED.
2. WHERE NOTCH EXCEEDS PARAMETERS SHOWN SEE HSS STUD SHOW CONDITION

TYP ALLOWABLE POST/STUD NOTCHING & BORING



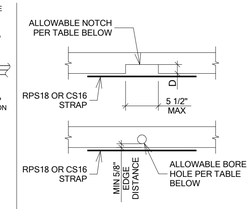
HEADER SCHEDULE

HEADER	MEMBER SIZE	TRIMMER	KING STUD
H1	(2)-2x8 DFL #2	(1)-2x	(1)-2x
H2	(3)-1 3/4"x11 7/8" LVL	(2)-2x	(2)-2x
H3	(2)-1 3/4"x18" LVL	(2)-2x	(2)-2x
	W12x22		
	8 3/4" x 15" GLB.		
	(5)-1 3/4"x14" LVL		

NOTES:

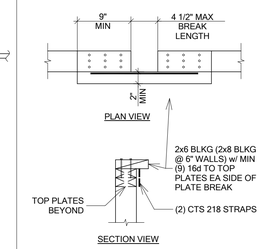
1. FOR BACK TO BACK OPENINGS w/ A FULL-HEIGHT CENTER KING, SIZE FOR SUM OF OPENING WIDTHS. (EXAMPLE: (2) 3'-0" OPENINGS=KING FOR A 6'-0" OPENING)
2. PROVIDE THE FOLLOWING AT NON-STANDARD CONDITIONS MIN, UNO: GARAGE DOOR & PORCH HEADERS: (2) 2x KING STUDS; INTERIOR & GARAGE/HOUSE WALLS: (1) 2x KING STUD AT OPENINGS UP TO 12' & (2) 2x KINGS AT OPENINGS UP TO 16'.
3. SEE WOOD NOTES & FASTENING SCHEDULE IN G.S.N.'S FOR MINIMUM FRAMING CONNECTION REQUIREMENTS.
4. IF A SCENARIO OCCURS IN THIS PROJECT THAT IS NOT SPECIFICALLY COVERED BY THIS TABLE, CONTACT E.O.R. FOR MEMBER SIZE AND CONNECTION.
5. THIS SCHEDULE WAS DESIGNED FOR A COMPONENTS AND CLADDING PRESSURE OF 21psf FOR EXPOSURE C (ASD).

TYPICAL WALL FRAMING SPECIFICATIONS



WALL FRAMING	"D" MAX	MAX BORE
2x4 BEARING/S.W.	1 1/2"	1 1/2" DIA
2x4 NON-BEARING	2 1/2"	2 1/2" DIA
2x6 BEARING/S.W.	3 1/2"	3 1/2" DIA
2x6 NON-BEARING	4"	4" DIA

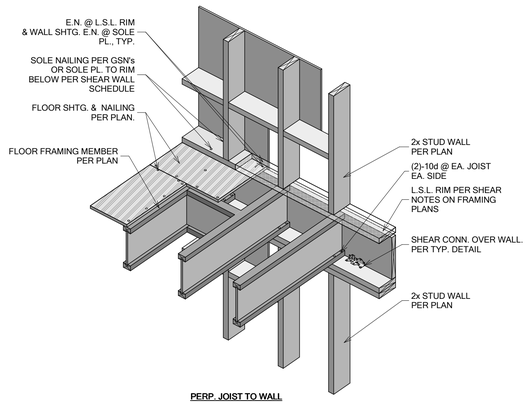
TYP ALLOWABLE TOP PLATE NOTCHING & BORING



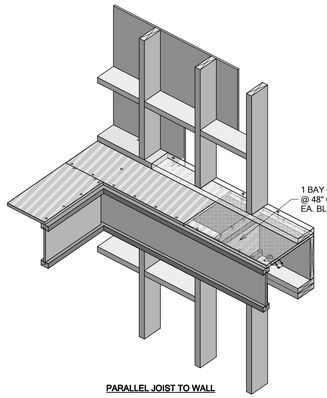
OVERNOTCHED/OVERBORED & BROKEN TOP PLATES

TOP PLATE NOTCHING & BORING

069 TYPICAL WALL FRAMING DETAIL

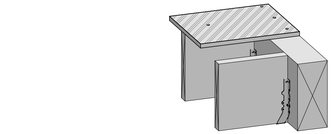


PERP. JOIST TO WALL

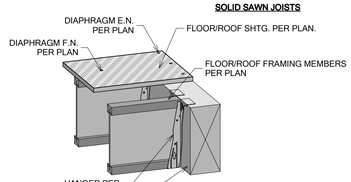


PARALLEL JOIST TO WALL

062 TYPICAL JOIST TO WALL

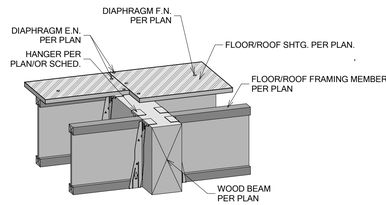


SOLID SAWN JOISTS

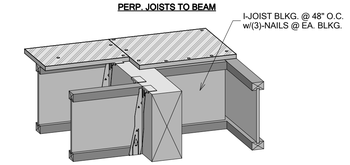


ENGINEERED JOISTS

056A TYPICAL JOIST TO BEAM



PERP. JOISTS TO BEAM



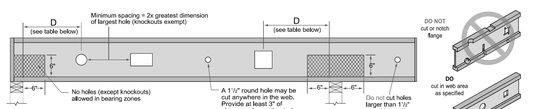
PERP. & PARALLEL JOISTS TO BEAM

056B TYPICAL JOIST TO BEAM

BCI® Joist Hole Location & Sizing

7

BCI® Joists are manufactured with 1½" round perforated knockouts in the web at approximately 12" on center



Minimum distance from support, listed in table below, is required for all holes greater than 1½"

MINIMUM DISTANCE (D) FROM ANY SUPPORT TO THE CENTERLINE OF THE HOLE															
Round Hole Diameter [in]		2	3	4	5	6	7	8	8⅛	10	11	12	13	14	15
Rectangular Hole Side [in]		-	-	-	3	5	7	-	-	-	-	-	-	-	-
Any 9½" Joist	Span [ft] 8	1'-0"	1'-1"	1'-8"	2'-4"	2'-11"	3'-7"								
	12	1'-0"	1'-7"	2'-7"	3'-6"	4'-5"	5'-4"								
	16	1'-0"	2'-2"	3'-5"	4'-8"	5'-11"	7'-2"								
Round Hole Diameter [in]		2	3	4	5	6	7	8	8⅛	10	11	12	13	14	15
Rectangular Hole Side [in]		-	-	-	2	3	5	7	8	-	-	-	-	-	-
Any 11⅞" Joist	Span [ft] 8	1'-0"	1'-1"	1'-6"	2'-0"	2'-5"	2'-11"	3'-5"	3'-10"						
	12	1'-0"	1'-7"	2'-3"	3'-0"	3'-8"	4'-5"	5'-1"	5'-9"						
	16	1'-2"	2'-1"	3'-0"	4'-0"	4'-11"	5'-10"	6'-10"	7'-8"						
	20	1'-5"	2'-7"	3'-10"	5'-0"	6'-2"	7'-4"	8'-6"	9'-7"						

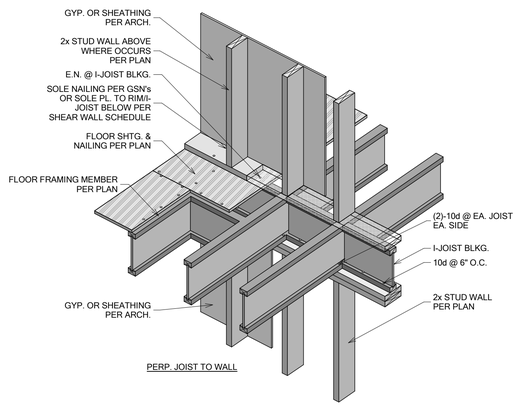
- Select a table row based on joist depth and the actual joist span rounded up to the nearest table span. Scan across the row to the column headed by the appropriate round hole diameter or rectangular hole side. Use the longest side of a rectangular hole. The table value is the closest that the centerline of the hole may be to the centerline of the nearest support.
- The entire web may be cut out

BCI® Joists

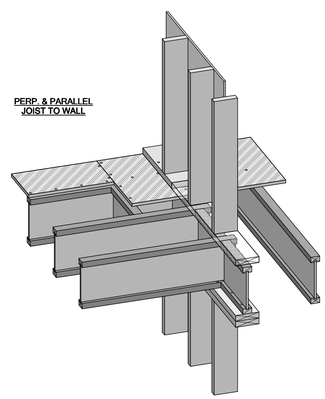
CATEGORY 3 BCI® 6500 1.8	CATEGORY 4 BCI® 60 2.0	CATEGORY 5 BCI® 90 2.0	VERSA-LAM® 1.7 2400	VERSA-LAM® 1.7 2650	VERSA-LAM® 2.0 2800	VERSA-LAM® 2.0 3100
1⅛"	1½"	1½"	1½", 3½"	3½", 5¼"	1½", 5¼", 2⅜"	3½", 5¼", 7"
⅜"	⅜"	⅜"	3½" to 11¼"	3½" to 16"	5½" to 18"	5½" to 24"
9½" 11⅞" 14" 16"	11⅞" 14" 16"	11⅞" 14" 16" 18" 20"				
2⅞"	2⅝"	3½"				

able in all markets. Contact your Boise Cascade EWP representative for availability.

088 BCI MEMBER ALLOWABLE HOLES



PERP. JOIST TO WALL



PERP. & PARALLEL JOIST TO WALL

063 TYPICAL JOIST OVER INTERIOR BEARING WALL

PERMIT SET

PATRICK E. BIRD
LICENSED PROFESSIONAL ENGINEER
No. PE-12831-S
HAWAII U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

Signature 4/30/18 Expiration Date of My License

RIVERSTONE STRUCTURAL CONCEPT
671 E.RIVERPARK LN., SUITE 150, BOISE, ID 83706
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www.riverstonesc.com

PROJECT #: R17-046
APPROVED: PB
DRAWN: GC
SCALE: AS SHOWN
DATE: 9/7/2017

TYP. WOOD FRAMING DETAILS 050-099

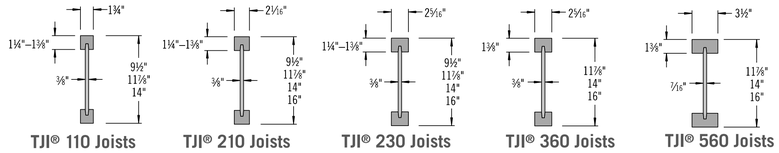
MCGRAW RESIDENCE
171 W. IKEA KAI PLACE
WAILEA, HAWAII 96753

REVISIONS

MARK	REASON	DATE
3	FINAL COORDINATION	10/14/17

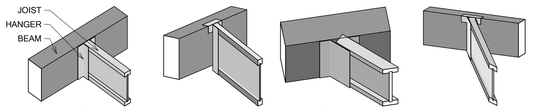
SHEET NUMBER: S0.13

PLOT DATE: 11/14/2017, 4:20 PM



TJI® 110 Joists | TJI® 210 Joists | TJI® 230 Joists | TJI® 360 Joists | TJI® 560 Joists

HANGER SCHEDULE



FLAT-FACE MOUNT CONDITION | SLOPED / SKEWED-TOP FLANGE CONDITION | SKEWED-FACE MOUNT CONDITION | SLOPED / SKEWED-TOP FLANGE CONDITION

I-JOIST HANGER SCHEDULE

		FACE MOUNT		TOP FLANGE	
	WIDTH	FLAT	SLOPED/SKEWED	FLAT	SLOPED/SKEWED
11 7/8" DEPTH	2"	IUS2.06/11.88	--	ITS2.06/11.88	LBV2.1/11.88
	2 5/16"	IUS2.37/11.88	HU3511/HUC3511	ITS2.37/11.88	LBV2.37/11.88
	3 1/2"	IUS3.56/14	--	ITS3.56/11.88	LBV3.56/11.88
14" DEPTH	2"	IUS2.06/14	--	ITS2.06/14	LBV2.06/14
	2 5/16"	IUS2.37/14	HU3514/HUC3514	ITS2.37/14	LBV2.37/14
	2 9/16"	IUS2.56/14	HU314/HUC314	ITS2.56/14	LBV2.56/14
	3 1/2"	IUS3.56/14	--	ITS3.56/14	LBV3.56/14
16" DEPTH	2"	IUS2.06/16	--	ITS2.06/16	LBV2.06/16
	2 5/16"	IUS2.37/16	HU3516/22/HU3516/22	ITS2.37/16	LBV2.37/16
	2 9/16"	IUS2.56/16	HU316/HUC316	ITS2.56/16	LBV2.56/16
	3 1/2"	IUS3.56/16	--	ITS3.56/16	LBV3.56/16

NOTE:
1. HANGERS TO BE BY SIMPSON STRONGTIE®
2. USE HANGERS IN THIS TABLE U.N.O. ON PLANS.
3. IF JOISTS ARE SUBSTITUTED, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY EQUIVALENCE OF SUBSTITUTED HANGERS.
4. RE: SIMPSON WOOD CONSTRUCTION CONNECTOR CATALOG FOR SPECIFIC WEB STIFFENER REQUIREMENTS WITH REGARD TO HANGERS

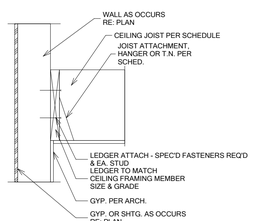
SOLID SAWN & SCL HANGER SCHEDULE

NOMINAL DEPTH		FACE MOUNT		TOP FLANGE	
	WIDTH	FLAT	SLOPED/SKEWED	FLAT	SLOPED/SKEWED
8" DEPTH	1 1/2"	LUS26	HU28	JB28	HU28-2TF
	1 3/4"	HU7		LBV1.81	
	3"	LUS26-2	HU28-2/HU28-2 (MAX)	HUS28-2TF	HU28-2TF
	3 1/2"	HU48/HUC48 (MAX)		LBV3.56	
	4 1/2"	LUS28-3	HU26-3/HU26-3 (MAX)	--	
	5 1/4"	HU68/HUC68 (MAX)		WPU5.50	
10" DEPTH	1 1/2"	LUS28	HU210	JB210	HU210TF
	1 3/4"	HU9		LBV1.81	
	3"	LUS28-2	HU210-2/HU210-2 (MAX)	HUS210-2TF	HU210-2TF
	3 1/2"	HU410/HUC410 (MAX)		LBV3.56	
	4 1/2"	LUS28-3	HU210-3/HU210-3 (MAX)	HU210-3TF	
	5 1/4"	HU610/HUC610 (MAX)		GLTV	
12" DEPTH	1 1/2"	LUS210	HU212	JB212	HU212TF
	1 3/4"	HU11 (MAX)		ITS1.81/LBV1.81	LBV1.81
	3"	LUS210-2	HU212-2/HUC212-2	HUS212-2TF	HU212-2TF
	3 1/2"	U410		ITS3.56	LBV3.56
	4 1/2"	LUS210-3	HU212-3/HUC212-3	HU212-3TF	
	5 1/4"	HU612/HUC612		LBV5.12	
14" DEPTH	1 3/4"	U14		ITS1.81/LBV1.81	LBV1.81
	3 1/2"	HU416/HUC416		ITS3.56	LBV3.56
	5 1/4"	HU614/HUC614		HB5.5/14	
16" DEPTH	1 3/4"	U14		ITS1.81	LBV1.81
	3 1/2"	HU416/HUC416		ITS3.56	LBV3.56
	5 1/4"	HU616/HUC612		HB5.5/16	

NOTES:
1. HANGERS TO BE BY SIMPSON STRONGTIE®
2. USE HANGERS IN THIS TABLE U.N.O. ON PLANS.
3. IF JOISTS ARE SUBSTITUTED, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY EQUIVALENCE OF SUBSTITUTED HANGERS.
4. (MAX) REFERENCES HIGHER VALUE OF HANGER IN SIMPSON MANUAL THAT REQUIRES MORE FASTENERS PER HANGER.
5. WHERE HANGER DEPTH IS NOT SPECIFICALLY STATED IN SCHEDULE, PROVIDE MAXIMUM DEPTH HANGER THAT MEMBER WILL ALLOW WITHIN THE SPECIFIED SERIES.
6. FOR HANGER INSTALED @ EXTERIOR APPLICATION PROVIDE SIMPSON ZMAX PROTECTION OR HOT-DIPPED GALVANIZED EQUIV.

SYMBOL DIRECTORY

MASONRY WALL
BEARING WALL
NON-BEARING WALL
CONCRETE WALL
ELEVATION REFERENCE
SECTION REFERENCE
DETAIL REFERENCE
CONTINUOUS FOOTING SYMBOL (CFX.X)
PAD FOOTING SYMBOL (PFX.X)
HEADER CALLOUT (HX)
ELEVATION SYMBOL (T.O. CONC. = 100'-0")
OVERBUILD FRAMING
SHEATHING
SHEARWALL SYMBOL (WX)
HOLDOWN SYMBOL (HDUX)
STRAP SYMBOL (MSTCX)
SNOW DRIFT LOADING
TRUSS
JOIST
STEEL BEAM
HEADER
WOOD BEAM
WOOD COLUMN
STEEL COLUMN
CONCRETE FOOTING OUTLINE
ROOF OUTLINE
KEYNOTE REFERENCE
GRADE
NORTH ARROW
SLOPE SYMBOL (SLOPE)



CEILING FRAMING SCHEDULE[2]

SPACING in O.C.	2x4	LEDGER ATTACH	JOIST ATTACH[3]	2x6	LEDGER ATTACH	JOIST ATTACH[3]	2x8	LEDGER ATTACH	JOIST ATTACH[3]	2x10	LEDGER ATTACH	JOIST ATTACH[3]
12	12'-5"	(2)-16d	(2)-16d	19'-6"	(2)-16d	U26	25'-8"	(2)-16d	U28	26' MAX[1]	(2)-SDS 1/4"x2 1/2"	U28
16	11'-3"	(2)-16d	(2)-16d	17'-8"	(2)-16d	U26	23'-0"	(2)-16d	U28	26' MAX[1]	(2)-SDS 1/4"x2 1/2"	U28
24	9'-10"	(2)-16d	(2)-16d	14'-10"	(2)-16d	U26	18'-9"	(2)-16d	U28	22'-11"	(2)-SDS 1/4"x2 1/2"	U28

NOTES:
1. CONTACT E.O.R. FOR SPANS EXCEEDING 26'
2. ALL LUMBER TO BE DFL#2 TYP.
3. WHERE NAILS ARE SPEC'D AS JOIST ATTACHMENT PROVIDE SPEC'D NAILS EA. SIDE OF JOIST TOENAILED

MASTER KEYNOTE SCHEDULE

MK.	NOTE
01	4" SLAB ON GRADE WITH #4 BARS AT 18" O.C. EACH WAY CENTERED IN SLAB
02	1/2" ROOF SHEATHING (32/16 SPAN RATING) w/8d @ 6" O.C. EDGE AND 12" O.C. FIELD NAILING. REFER TO DETAIL 035 FOR MORE INFO.
03	3/4" APA RATED SHTG. (48/24 SPAN RATING) w/8d NAILS @ 6" O.C. EDGE & 12" O.C. FIELD. REFER TO DETAIL 035 FOR MORE INFO.
04	STEP IN CONCRETE
05	STEP CONCRETE FOOTING PER TYPICAL DETAIL 001
06	3x NAILER w/1/2" DIA. T.W.S. @ 16" O.C. CONNECT STRAP FROM ABOVE TO NAILER, AND PROVIDE E.N. AT NAILER.
07	STAIRS BY OTHERS
08	SIMPSON ECCLL BUCKET
09	EMBED. PLATE PER DETAIL 112/S3.00
10	SIMPSON CS14 PER DRAG STRAP SCHED.
11	SIMPSON CMST12 PER DRAG STRAP SCHED.
12	REDUCED DEPTH FRAMING @ DROPPED SHOWER PAN LOC. REF. w/ARCH.
13	ALING JOIST w/WALL FOR DRAG STRAP ATTACH.
14	PROVIDE WELDED BEAM TO COL. @ ECCENTRIC LOAD CONDITION PER 028/S0.21

FOUNDATION SCHEDULE

MARK	WIDTH	LENGTH	DEPTH	REINF.
CF2.5	CONT.	2'-6"	12"	(4)-#4 CONT.
PF2.0	2'-0"	2'-0"	12"	(3)- #4 BARS E.W.
PF2.5	2'-6"	2'-6"	12"	(4)- #4 BARS E.W.
PF4.5	4'-6"	4'-6"	12"	(6)- #4 BARS E.W.

SHEARWALL HOLDOWN SCHEDULE

MARK	CONN.	HD POST	CAP. (lbs)	QTY
HDU2	(6) SDS 1/4 x 2 1/2"	2-2x6	3075	3
HDU5	(14) SDS 1/4 x 2 1/2"	2-2x6	5645	10
HDU11	(30)- SDS 1/4 x 2 1/2"	1-6x6	9535	4

FLOOR-FLOOR STRAP SCHEDULE

MARK	CAP. (lbs)	CONN.	END LENGTH	QTY	DET.
(2)- CS14	4980	(26) - 10d EA.	N/A	7	032/S0.22

DRAG STRAP SCHEDULE

STRAP	MIN. NAILS EA. END	LENGTH ONTO (L):			
		DF/GLB	SCL[3]	JOIST[3,4]	BLKG.[5]
CS14	(26)-10d	15"	27"	27"	6'-6"
CMST12	(74)-10d	34"	65"	65"	25'-6"

NOTES:
1. ⟶ DENOTES SIMPSON STRAP FOR DRAG CONNECTION. RE: DRAG STRAP SCHEDULE (THIS SHEET) FOR REQUIRED STRAP LENGTHS & RE: TYPICAL DETAIL 083 IN S0.2 SERIES FOR MORE INFO. (APPLICABLE @ FRAMING LEVELS).
2. PROVIDE SIMPSON CS14 U.N.O. ON PLANS.
3. FILL EVERY OTHER PAIR OF NAIL HOLES.
4. FOR MANUFACTURED JOISTS ONLY, PROVIDE ADD'L JOIST AND USE DF/GLB LENGTHS FOR SOLID SAWN AND FABRICATED TRUSSES.
5. 2x FLAT BLKG. PERMITTED U.N.O. IN TYPICAL DRAG STRAP DETAIL 083. FILL EVERY PAIR OF NAIL HOLES THE LENGTH OF STRAP. BLKG. SCENARIO OCCURS WHERE STRAP IS PERP. TO FRAMING.
6. PROVIDE A MIN OF 4" END DISTANCE TO 1ST NAIL OF ALL STRAPS (THIS LENGTH NOT INCLUDED IN LENGTHS ABOVE).
7. DRAG STRAPS TO BE BY SIMPSON STRONGTIE U.N.O.

PERMIT SET

PATRICK E. BIRD
LICENSED PROFESSIONAL ENGINEER
No. PE-12831-S
HAWAII U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

Signature 4/30/18 Expiration Date of My License

RIVERSTONE STRUCTURAL CONCEPT
671 E RIVERPARK LN, SUITE 150, BOISE, ID 83706
PHONE: 208.343.2092 - FAX: 208.343.2493
www.riverstonesc.com

PROJECT #: R17-046
APPROVED: PB
DRAWN: GC
SCALE: AS SHOWN
DATE: 9/7/2017

PROJECT SCHEDULES

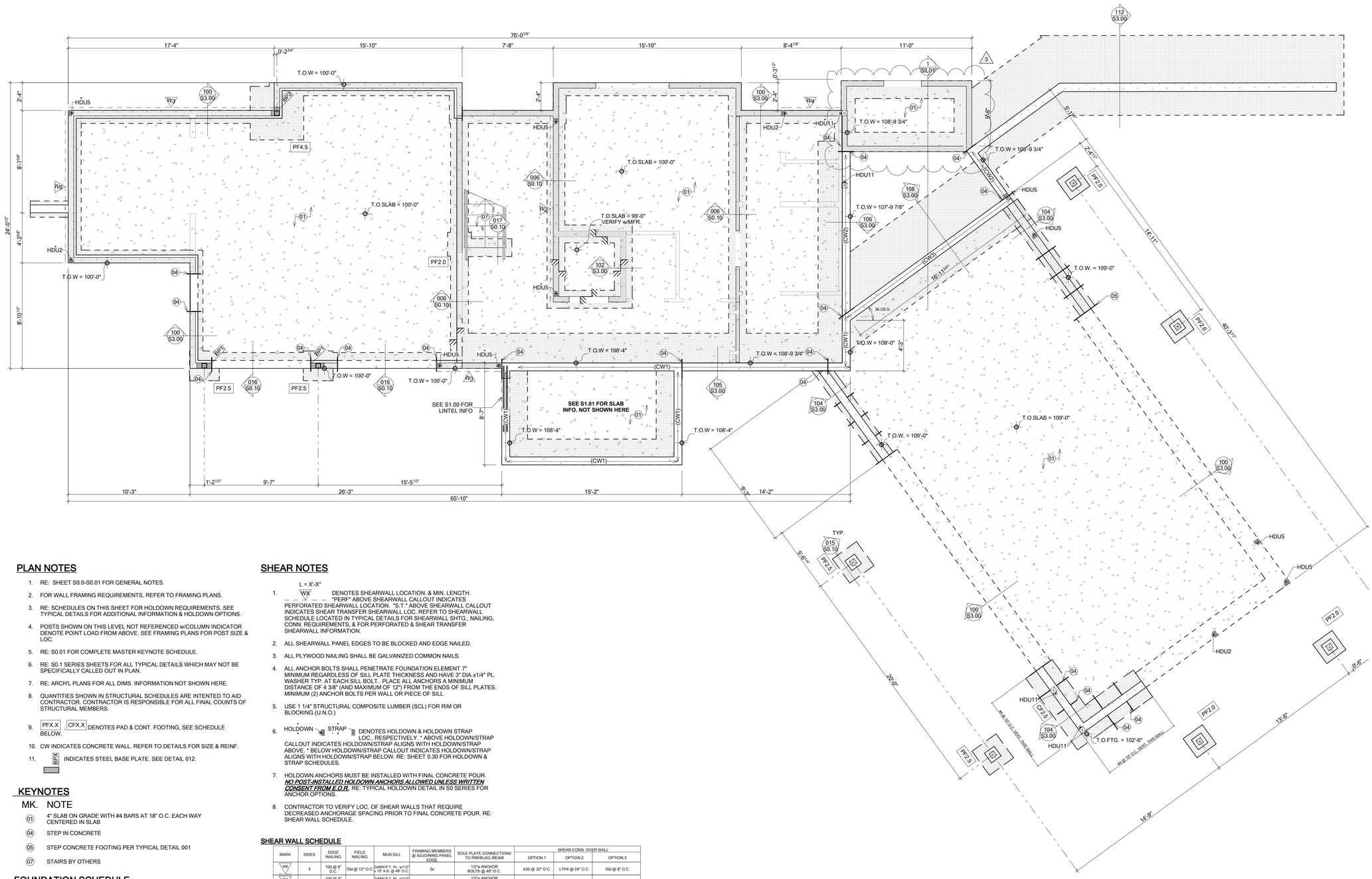
MCGRAW RESIDENCE
171 W. IKEA KAI PLACE
WAILEA, HAWAII 96753

REVISIONS

MARK	REASON	DATE
3	FINAL COORDINATION	10/14/17

SHEET NUMBER: S0.20

PLOT DATE: 11/14/2017 - 4:28 PM



PLAN NOTES

1. RE: SHEET S0.0-S0.01 FOR GENERAL NOTES.
2. FOR WALL FRAMING REQUIREMENTS, REFER TO FRAMING PLANS.
3. RE: SCHEDULES ON THIS SHEET FOR HOLDOWN REQUIREMENTS. SEE TYPICAL DETAILS FOR ADDITIONAL INFORMATION & HOLDOWN OPTIONS.
4. POSTS SHOWN ON THIS LEVEL NOT REFERENCED w/COLUMN INDICATOR DENOTE POINT LOAD FROM ABOVE. SEE FRAMING PLANS FOR POST SIZE & LOC.
5. RE: S0.01 FOR COMPLETE MASTER KEYNOTE SCHEDULE.
6. RE: S0.1 SERIES SHEETS FOR ALL TYPICAL DETAILS WHICH MAY NOT BE SPECIFICALLY CALLED OUT IN PLAN.
7. RE: ARCH'L PLANS FOR ALL DIMS. INFORMATION NOT SHOWN HERE.
8. QUANTITIES SHOWN IN STRUCTURAL SCHEDULES ARE INTENTED TO AID CONTRACTOR. CONTRACTOR IS RESPONSIBLE FOR ALL FINAL COUNTS OF STRUCTURAL MEMBERS.
9. PFX.X / CFX.X DENOTES PAD & CONT. FOOTING, SEE SCHEDULE BELOW.
10. CW INDICATES CONCRETE WALL. REFER TO DETAILS FOR SIZE & REINF.
11. BPX INDICATES STEEL BASE PLATE. SEE DETAIL 012.

KEYNOTES

MK.	NOTE
01	4" SLAB ON GRADE WITH #4 BARS AT 18" O.C. EACH WAY CENTERED IN SLAB
04	STEP IN CONCRETE
05	STEP CONCRETE FOOTING PER TYPICAL DETAIL 001
07	STAIRS BY OTHERS

FOUNDATION SCHEDULE

MARK	WIDTH	LENGTH	DEPTH	REINF.
CF2.5	CONT.	2'-6"	12"	(4)-#4 CONT.
PF2.0	2'-0"	2'-0"	12"	(3)- #4 BARS E.W.
PF2.5	2'-6"	2'-6"	12"	(4)- #4 BARS E.W.
PF4.5	4'-6"	4'-6"	12"	(6)- #4 BARS E.W.

SHEARWALL HOLDOWN SCHEDULE

MARK	CONN.	HD POST	CAP. (lbs)	QTY
HDU2	(6) SDS 1/4 x 2 1/2"	2-2x6	3075	3
HDU5	(14) SDS 1/4 x 2 1/2"	2-2x6	5645	10
HDU11	(30)- SDS 1/4 x 2 1/2"	1-6x6	9535	4

SHEAR NOTES

1. L = X'-X" / W# / _ _ _ _ DENOTES SHEARWALL LOCATION. & MIN. LENGTH. "PERF" ABOVE SHEARWALL CALLOUT INDICATES PERFORATED SHEARWALL LOCATION. "S.T." ABOVE SHEARWALL CALLOUT INDICATES SHEAR TRANSFER SHEARWALL LOC. REFER TO SHEARWALL SCHEDULE LOCATED IN TYPICAL DETAILS FOR SHEARWALL SHTG., NAILING, CONN. REQUIREMENTS, & FOR PERFORATED & SHEAR TRANSFER SHEARWALL INFORMATION.
2. ALL SHEARWALL PANEL EDGES TO BE BLOCKED AND EDGE NAILED.
3. ALL PLYWOOD NAILING SHALL BE GALVANIZED COMMON NAILS.
4. ALL ANCHOR BOLTS SHALL PENETRATE FOUNDATION ELEMENT 7" MINIMUM REGARDLESS OF SILL PLATE THICKNESS AND HAVE 3" DIA.x1/4" PL. WASHER TYP. AT EACH SILL BOLT. PLACE ALL ANCHORS A MINIMUM DISTANCE OF 4 3/8" (AND MAXIMUM OF 12") FROM THE ENDS OF SILL PLATES. MINIMUM (2) ANCHOR BOLTS PER WALL OR PIECE OF SILL
5. USE 1 1/4" STRUCTURAL COMPOSITE LUMBER (SCL) FOR RIM OR BLOCKING (U.N.O.)
6. HOLDOWN * / STRAP * DENOTES HOLDOWN & HOLDOWN STRAP LOC., RESPECTIVELY. * ABOVE HOLDOWN/STRAP CALLOUT INDICATES HOLDOWN/STRAP ALIGNS WITH HOLDOWN/STRAP ABOVE. * BELOW HOLDOWN/STRAP CALLOUT INDICATES HOLDOWN/STRAP ALIGNS WITH HOLDOWN/STRAP BELOW. RE: SHEET 0.30 FOR HOLDOWN & STRAP SCHEDULES.
7. HOLDOWN ANCHORS MUST BE INSTALLED WITH FINAL CONCRETE POUR. ***NO POST-INSTALLED HOLDOWN ANCHORS ALLOWED UNLESS WRITTEN CONSENT FROM E.O.R.*** RE: TYPICAL HOLDOWN DETAIL IN S0 SERIES FOR ANCHOR OPTIONS.
8. CONTRACTOR TO VERIFY LOC. OF SHEAR WALLS THAT REQUIRE DECREASED ANCHORAGE SPACING PRIOR TO FINAL CONCRETE POUR. RE: SHEAR WALL SCHEDULE.

SHEAR WALL SCHEDULE

MARK	SIDES	EDGE NAILING	FIELD NAILING	MUD SILL	FRAMING MEMBERS @ ADJOINING PANEL EDGE	SOLE PLATE CONNECTIONS TO RIM/BLKG./BEAM	SHEAR CONN. OVER WALL		
							OPTION 1	OPTION 2	OPTION 3
W6	1	10d @ 6" O.C.	10d @ 12" O.C.	2xMIN.P.T. PL. w/1/2" x 10" A.B. @ 48" O.C.	2x	1/2"ø ANCHOR BOLTS @ 48" O.C.	A35 @ 32" O.C.	LTP4 @ 24" O.C.	16d @ 8" O.C.
W4	1	10d @ 4" O.C.	10d @ 12" O.C.	2xMIN.P.T. PL. w/1/2" x 10" A.B. @ 32" O.C.	(2)-2x	1/2"ø ANCHOR BOLTS @ 32" O.C.	A35 @ 20" O.C.	LTP4 @ 16" O.C.	16d @ 5" O.C.
W3	1	10d @ 3" O.C.	10d @ 12" O.C.	2xMIN.P.T. PL. w/1/2" x 10" A.B. @ 24" O.C.	(2)-2x	1/2"ø ANCHOR BOLTS @ 24" O.C.	A35 @ 16" O.C.	LTP4 @ 12" O.C.	16d @ 4" O.C.
W2	1	10d @ 2" O.C.	10d @ 12" O.C.	3x P.T. PL. w/1/2" x 12" A.B. @ 16" O.C.	(4)-2x, OR (2)-3x, OR (1)-6x6 (4x6 @ 2x4 WALL)	1/2"ø ANCHOR BOLTS @ 16" O.C.	A35 @ 12" O.C.	LTP4 @ 10" O.C.	SDS 1/4"x3 1/2" SCREWS @ 8" O.C.
W#/	2	10d @ 4" O.C.	10d @ 12" O.C.	3x P.T. PL. w/1/2" x 12" A.B. @ 16" O.C.	(4)-2x, OR (2)-3x, OR (1)-6x6 (4x6 @ 2x4 WALL)	1/2"ø ANCHOR BOLTS @ 16" O.C.	A35 @ 10" O.C.	LTP4 @ 8" O.C.	SDS 1/4"x3 1/2" SCREWS @ 6" O.C.
W#/	2	10d @ 3" O.C.	10d @ 12" O.C.	4x P.T. PL. w/1/2" x 14" A.B. @ 12" O.C.	(4)-2x, OR (2)-3x, OR (1)-6x6 (4x6 @ 2x4 WALL)	1/2"ø ANCHOR BOLTS @ 12" O.C.	A35 @ 8" O.C.	LTP4 @ 6" O.C.	SDS 1/4"x3 1/2" SCREWS @ 5" O.C.

1 FOUNDATION PLAN 1/4" = 1'-0"

NORTH
VERIF. w/ARCH.

PERMIT SET

PATRICK E. BIRD
LICENSED PROFESSIONAL ENGINEER
No. PE-12831-S
HAWAII U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.
Signature 4/30/18 Expiration Date of My License

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PROJECT #: R17-046
APPROVED: PB
DRAWN: GC
SCALE: AS SHOWN
DATE: 9/7/2017

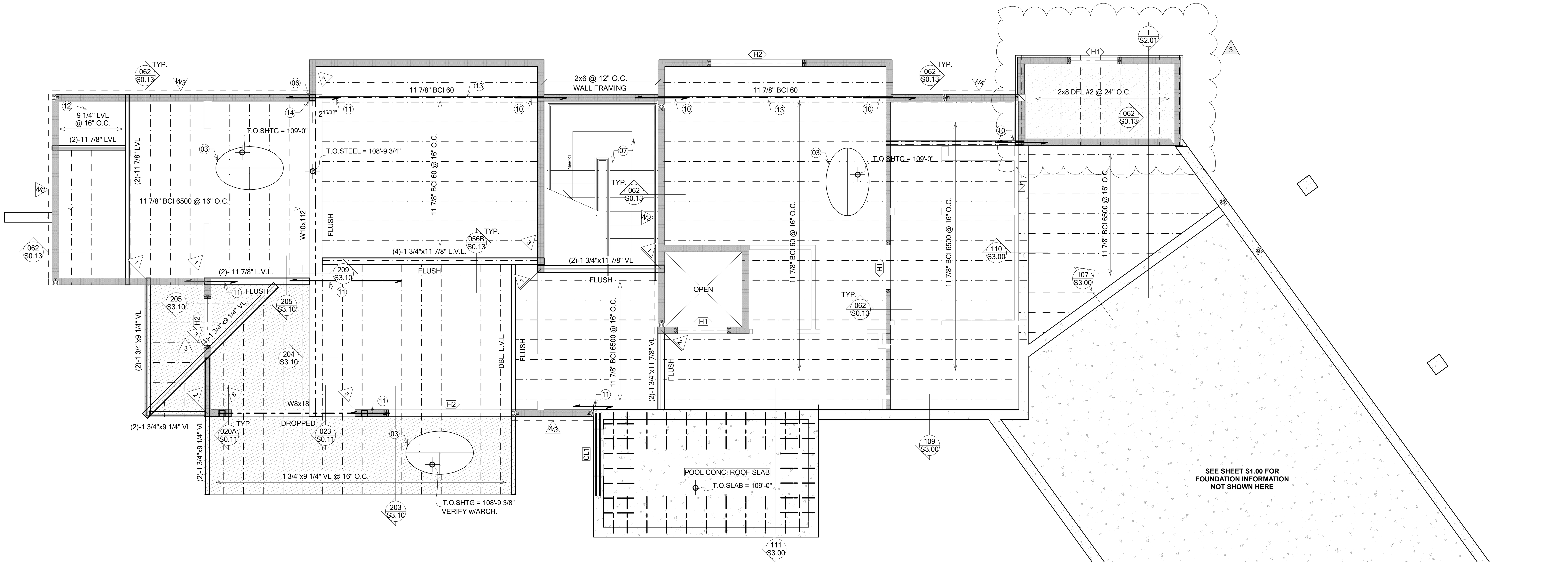
FOUNDATION PLAN

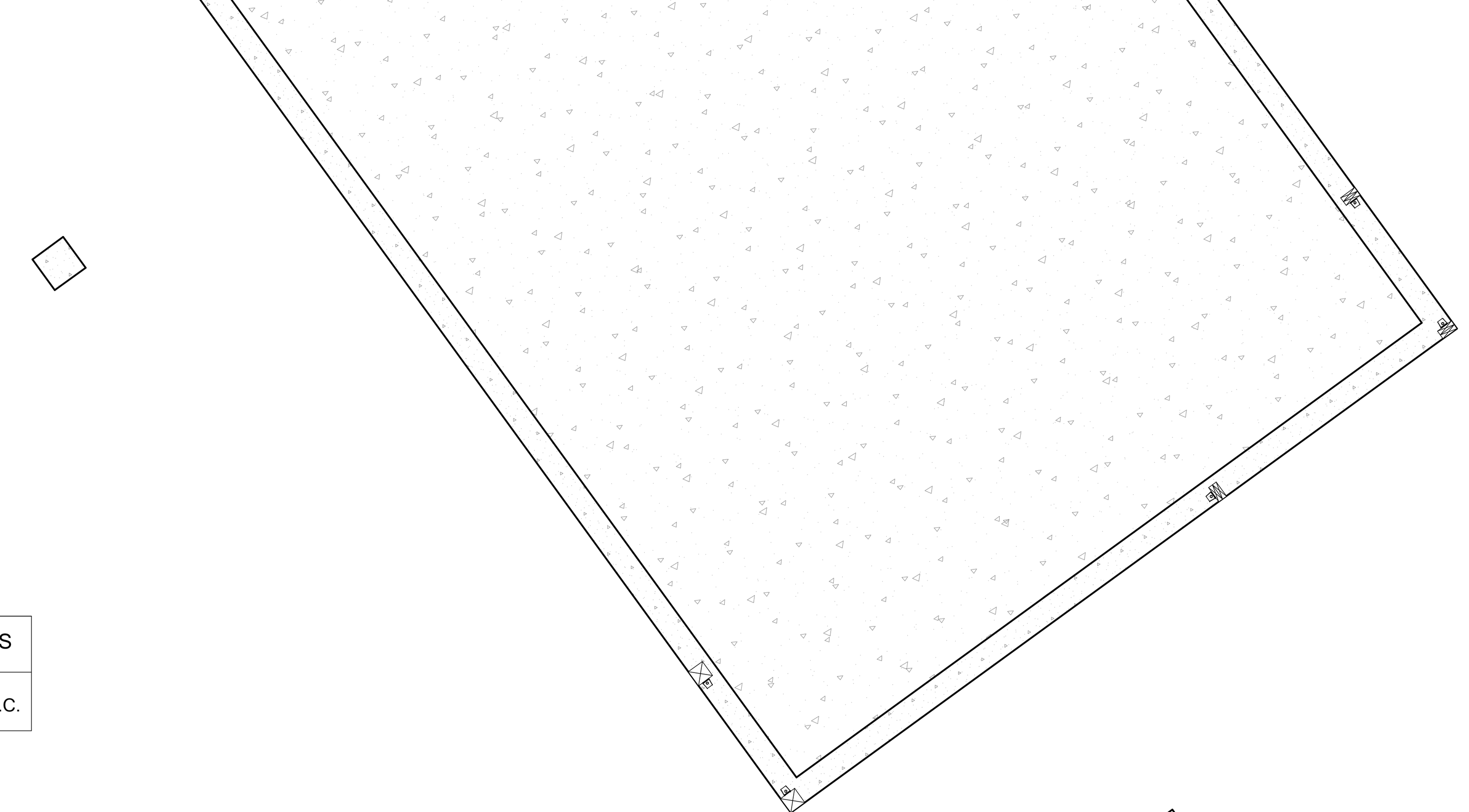
MCGRAW RESIDENCE
171 W. IKEA KAI PLACE
WAILEA, HAWAII 96753

REVISIONS		
MARK	REASON	DATE
3	FINAL COORDINATION	10/14/17

SHEET NUMBER: S1.00

PLOT DATE: 11/14/2017, 4:28 PM





PLAN NOTES

1. RE: SHEET S0.00-S0.02 FOR GENERAL NOTES.
2. RE: ARCH. FOR ROOF SLOPE INFO
3. RE: ARCH'L PLANS FOR ALL DIMS. INFORMATION NOT SHOWN HERE
4. ALL EXTERIOR WALLS ARE CONSIDERED BEARING AND SHALL BE CONSTRUCTED WITH 2x6 @ 16" O.C. U.N.O. ALL EXTERIOR WALLS SHALL BE SHEATHED WITH 5/8" (MIN) APA RATED SHEATHING U.N.O. MINIMUM NAILING PATTERN SHALL CONSIST OF 10d NAILS @ 6" O.C. ALL SUPPORTED PANEL EDGES & 12" O.C. FIELD. U.N.O. ON SHEAR PLANS. INTERIOR WALLS SHALL BE NON-BEARING PARTITIONS U.N.O.THOSE NOTED AS BEARING SHALL HAVE 5/8" (MIN) GYP BOARD APPLIED TO EACH SIDE OF WALL AS SHOWN ON ARCH'L PLANS. INTERIOR SHEAR WALL SHALL BE SHEATHED AS SPECIFIED ON SHEAR PLANS.
5. HX DENOTES HEADER. FOR HEADER SCHEDULE RE: 069/S0.13
6. DENOTES BEARING WALL FRAMING, SEE ABOVE FOR REQUIREMENTS.
7. DENOTES NON-BEARING WALL FRAMING, SEE GSN's FOR REQUIREMENTS.
10. HATCH DENOTES EXTERIOR DECK.
12. WHERE BEAMS/TRUSSES BEAR ON OR ARE POCKETED IN WALLS, PROVIDE BEARING STUDS EQUAL TO OR GREATER THAN THE WIDTH OF THE MEMBER BEING SUPPORTED, U.N.O. ON PLANS
13. RE: S0.2 SERIES SHEETS FOR ALL TYPICAL DETAILS WHICH MAY NOT BE SPECIFICALLY CALLED OUT IN PLAN.
14. RE: S0.30 FOR ALL HANGERS NOT SPECIFICALLY CALLED OUT IN PLAN
15. QUANTITIES SHOWN IN STRUCTURAL SCHEDULES ARE INTENTED TO AID CONTRACTOR. CONTRACTOR IS RESPONSIBLE FOR ALL FINAL COUNTS OF STRUCTURAL MEMBERS.
16. ALL LUMBER SHALL BE PRESSURE TREATED TO RESIST DAMAGE FROM INSECTS OR THE ENVIRONMENT. RE GSN's FOR MORE INFO.
17. ALL FASTENERS SHALL BE GALVANIZED OR HAVE AN EQUIVALENT COATING SEE GSN's FOR MORE INFO.

KEYNOTES

MK.	NOTE
03	3/4" APA RATED SHTG. (48/24 SPAN RATING) w/8d NAILS @ 6" O.C. EDGE & 12" O.C. FIELD. REFER TO DETAIL 035 FOR MORE INFO.
06	3x NAILER w/1/2" DIA. T.W.S. @ 16" O.C. CONNECT STRAP FROM ABOVE TO NAILER, AND PROVIDE E.N. AT NAILER.
07	STAIRS BY OTHERS
09	EMBED. PLATE PER DETAIL 112/S3.00
10	SIMPSON CS14 PER DRAG STRAP SCHED.
11	SIMPSON CMST12 PER DRAG STRAP SCHED.
12	REDUCED DEPTH FRAMING @ DROPPED SHOWER PAN LOC. REF. w/ARCH.
13	ALING JOIST w/WALL FOR DRAG STRAP ATTACH.
14	PROVIDE WELDED BEAM TO COL. @ ECCENTRIC LOAD CONDITION PER 028/S0.21

SHEAR NOTES

1. L = X'-X" WX DENOTES SHEARWALL LOCATION. & MIN. LENGTH. "PERF" ABOVE SHEARWALL CALLOUT INDICATES PERFORATED SHEARWALL LOCATION. "S.T." ABOVE SHEARWALL CALLOUT INDICATES SHEAR TRANSFER SHEARWALL LOC. REFER TO SHEARWALL SCHEDULE LOCATED IN TYPICAL DETAILS FOR SHEARWALL SHTG., NAILING, CONN. REQUIREMENTS, & FOR PERFORATED & SHEAR TRANSFER SHEARWALL INFORMATION.
2. ALL SHEARWALL PANEL EDGES TO BE BLOCKED AND EDGE NAILED.
3. ALL PLYWOOD NAILING SHALL BE GALVANIZED COMMON NAILS.
4. ALL ANCHOR BOLTS SHALL PENETRATE FOUNDATION ELEMENT 7" MINIMUM REGARDLESS OF SILL PLATE THICKNESS AND HAVE 3" DIA.x1/4" PL. WASHER TYP. AT EACH SILL BOLT.. PLACE ALL ANCHORS A MINIMUM DISTANCE OF 4 3/8" (AND MAXIMUM OF 12") FROM THE ENDS OF SILL PLATES. MINIMUM (2) ANCHOR BOLTS PER WALL OR PIECE OF SILL
5. USE 1 1/4" STRUCTURAL COMPOSITE LUMBER (SCL) FOR RIM OR BLOCKING (U.N.O.)
6. HOLDOWN * STRAP * DENOTES HOLDOWN & HOLDOWN STRAP LOC., RESPECTIVELY. * ABOVE HOLDOWN/STRAP CALLOUT INDICATES HOLDOWN/STRAP ALIGNS WITH HOLDOWN/STRAP ABOVE. * BELOW HOLDOWN/STRAP CALLOUT INDICATES HOLDOWN/STRAP ALIGNS WITH HOLDOWN/STRAP BELOW. RE: SHEET 0.30 FOR HOLDOWN & STRAP SCHEDULES.
7. HOLDOWN ANCHORS MUST BE INSTALLED WITH FINAL CONCRETE POUR. ***NO POST-INSTALLED HOLDOWN ANCHORS ALLOWED UNLESS WRITTEN CONSENT FROM E.O.R.***. RE: TYPICAL HOLDOWN DETAIL IN S0 SERIES FOR ANCHOR OPTIONS.
8. CONTRACTOR TO VERIFY LOC. OF SHEAR WALLS THAT REQUIRE DECREASED ANCHORAGE SPACING PRIOR TO FINAL CONCRETE POUR. RE: SHEAR WALL SCHEDULE.

DRAG STRAP SCHEDULE

STRAP	MIN. NAILS EA. END	LENGTH ONTO (L):			
		DF/GLB	SCL[3]	JOIST[3,4]	BLKG.[5]
CS14	(26)-10d	15"	27"	27"	6'-6"
CMST12	(74)-10d	34"	65"	65"	25'-6"

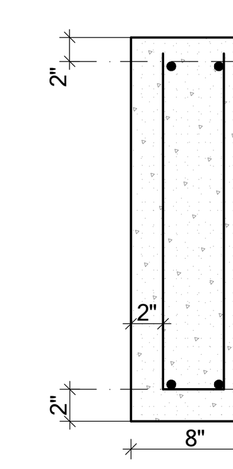
NOTES:

1. DENOTES SIMPSON STRAP FOR DRAG CONNECTION. RE: DRAG STRAP SCHEDULE (THIS SHEET) FOR REQUIRED STRAP LENGTHS & RE: TYPICAL DETAIL 083 IN S0.2 SERIES FOR MORE INFO. (APPLICABLE @ FRAMING LEVELS).
2. PROVIDE SIMPSON CS14 U.N.O. ON PLANS.
3. FILL EVERY OTHER PAIR OF NAIL HOLES.
4. FOR MANUFACTURED JOISTS ONLY, PROVIDE ADD'L JOIST AND USE DF/GLB LENGTHS FOR SOLID SAWN AND FABRICATED TRUSSES.
5. 2x FLAT BLKG. PERMITTED U.N.O. IN TYPICAL DRAG STRAP DETAIL 083. FILL EVERY PAIR OF NAIL HOLES THE LENGTH OF STRAP. BLKG. SCENARIO OCCURS WHERE STRAP IS PERP. TO FRAMING.
6. PROVIDE A MIN OF 4" END DISTANCE TO 1ST NAIL OF ALL STRAPS (THIS LENGTH NOT INCLUDED IN LENGTHS ABOVE).
7. DRAG STRAPS TO BE BY SIMPSON STRONGTIE U.N.O.

COLUMN SCHEDULE

MARK	COLUMN	QTY.
1	(2)- 2x	12
2	(3)- 2x	8
3	(4)- 2x	3
5	6x6	7
6	HSS 5x5x1/4	2
7	HSS 5x5x1/2	1

CONCRETE LINTEL SCHEDULE



MARK	WIDTH	DEPTH (MIN.)	REINFORCING TOP & BOTTOM	STIRRUPS
CL01	8"	12"	(2)- #5	#3 @ 10" O.C.

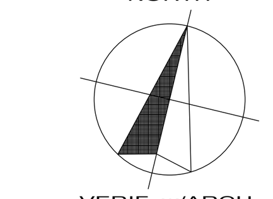
NOTES:

1. CL0X DENOTES CONCRETE LINTEL. RE: TABLE ABOVE FOR SIZE & REINFORCING REQUIREMENTS.
2. CONCRETE WALL MAY EXIST. ABOVE LINTEL. PROVIDE SIZE AND REINF. PER PLAN
3. EXTEND HORIZ. REINF. 12" BEYOND OPENING TYP. EA. SIDE OR CONT. TO CORNER OF WALL IF REQ'D. PROVIDE MIN. HOOK AROUND CORNER OF WALL PER TYP. DET.

HEADER SCHEDULE			
HEADER	MEMBER SIZE	TRIMMER	KING STUD
H1	(2)-2x8 DFL #2	(1)-2x	(1)-2x
H2	(3)-1 3/4"x11 7/8" LVL	(2)-2x	(2)-2x
H3	(2)-1 3/4"x18" LVL	(2)-2x	(2)-2x
	W12x22		
	8 3/4" x 15" GLB.		
	(5)-1 3/4"x14" LVL		

SEE S0.23 FOR MORE INFO.

2 MAIN FLOOR FRAMING PLAN 1/4" = 1'-0"



PERMIT SET

PATRICK E. BIRD LICENSED PROFESSIONAL ENGINEER No. PE-12831-S HAWAII U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

Signature 4/30/18 Expiration Date of My License

RIVERSTONE STRUCTURAL CONCEPTS
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PROJECT #: R17-046
APPROVED: PB
DRAWN: GC
SCALE: AS SHOWN
DATE: 9/7/2017

MAIN FLOOR FRAMING PLAN

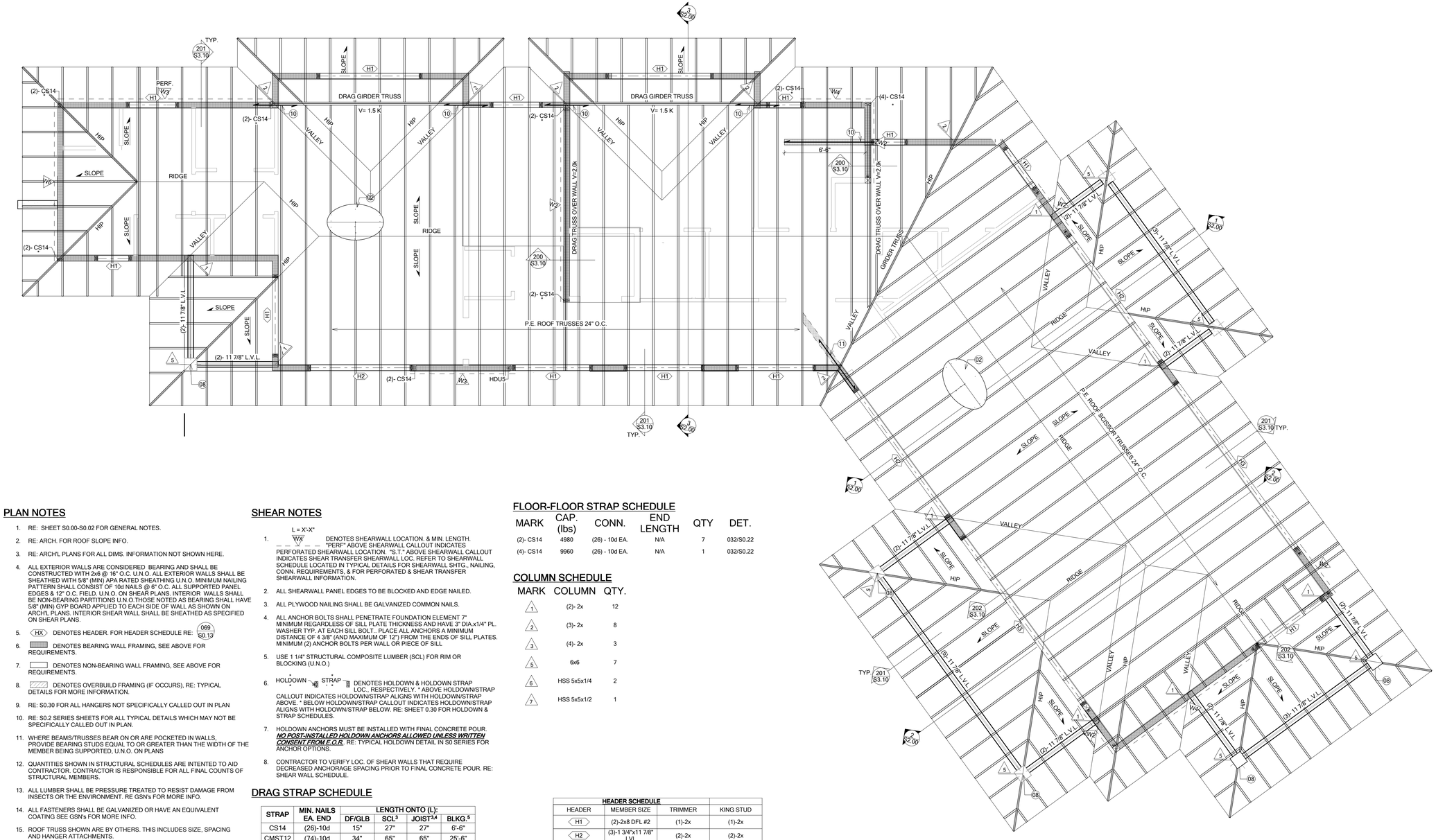
MCGRAW RESIDENCE
171 W. IKEA KAI PLACE
WAILEA, HAWAII 96753

REVISIONS

MARK	REASON	DATE
3	FINAL COORDINATION	10/14/17

SHEET NUMBER: S1.01

PLOT DATE: 11/14/2017, 4:20 PM



PLAN NOTES

1. RE: SHEET S0.00-S0.02 FOR GENERAL NOTES.
2. RE: ARCH. FOR ROOF SLOPE INFO.
3. RE: ARCH'L PLANS FOR ALL DIMS. INFORMATION NOT SHOWN HERE.
4. ALL EXTERIOR WALLS ARE CONSIDERED BEARING AND SHALL BE CONSTRUCTED WITH 2x6 @ 16" O.C. U.N.O. ALL EXTERIOR WALLS SHALL BE SHEATHED WITH 5/8" (MIN) APA RATED SHEATHING U.N.O. MINIMUM NAILING PATTERN SHALL CONSIST OF 10d NAILS @ 6" O.C. ALL SUPPORTED PANEL EDGES & 12" O.C. FIELD. U.N.O. ON SHEAR PLANS. INTERIOR WALLS SHALL BE NON-BEARING PARTITIONS U.N.O THOSE NOTED AS BEARING SHALL HAVE 5/8" (MIN) GYP BOARD APPLIED TO EACH SIDE OF WALL AS SHOWN ON ARCH'L PLANS. INTERIOR SHEAR WALL SHALL BE SHEATHED AS SPECIFIED ON SHEAR PLANS.
5. ⟨HX⟩ DENOTES HEADER. FOR HEADER SCHEDULE RE: (069 S0.13)
6. DENOTES BEARING WALL FRAMING, SEE ABOVE FOR REQUIREMENTS.
7. DENOTES NON-BEARING WALL FRAMING, SEE ABOVE FOR REQUIREMENTS.
8. DENOTES OVERBUILD FRAMING (IF OCCURS), RE: TYPICAL DETAILS FOR MORE INFORMATION.
9. RE: S0.30 FOR ALL HANGERS NOT SPECIFICALLY CALLED OUT IN PLAN
10. RE: S0.2 SERIES SHEETS FOR ALL TYPICAL DETAILS WHICH MAY NOT BE SPECIFICALLY CALLED OUT IN PLAN.
11. WHERE BEAMS/TRUSSES BEAR ON OR ARE POCKETED IN WALLS, PROVIDE BEARING STUDS EQUAL TO OR GREATER THAN THE WIDTH OF THE MEMBER BEING SUPPORTED, U.N.O. ON PLANS
12. QUANTITIES SHOWN IN STRUCTURAL SCHEDULES ARE INTENTED TO AID CONTRACTOR. CONTRACTOR IS RESPONSIBLE FOR ALL FINAL COUNTS OF STRUCTURAL MEMBERS.
13. ALL LUMBER SHALL BE PRESSURE TREATED TO RESIST DAMAGE FROM INSECTS OR THE ENVIRONMENT. RE GSN's FOR MORE INFO.
14. ALL FASTENERS SHALL BE GALVANIZED OR HAVE AN EQUIVALENT COATING SEE GSN's FOR MORE INFO.
15. ROOF TRUSS SHOWN ARE BY OTHERS. THIS INCLUDES SIZE, SPACING AND HANGER ATTACHMENTS.

KEYNOTES

MK.	NOTE
02	1/2" ROOF SHEATHING (32/16 SPAN RATING) w/8d @ 6" O.C. EDGE AND 12" O.C. FIELD NAILING. REFER TO DETAIL 035 FOR MORE INFO.
08	SIMPSON ECCLL BUCKET
10	SIMPSON CS14 PER DRAG STRAP SCHED.

SHEAR NOTES

1. L = X'-X" WX DENOTES SHEARWALL LOCATION. & MIN. LENGTH. "PERF" ABOVE SHEARWALL CALLOUT INDICATES PERFORATED SHEARWALL LOCATION. "S.T." ABOVE SHEARWALL CALLOUT INDICATES SHEAR TRANSFER SHEARWALL LOC. REFER TO SHEARWALL SCHEDULE LOCATED IN TYPICAL DETAILS FOR SHEARWALL SHTG., NAILING, CONN. REQUIREMENTS, & FOR PERFORATED & SHEAR TRANSFER SHEARWALL INFORMATION.
2. ALL SHEARWALL PANEL EDGES TO BE BLOCKED AND EDGE NAILED.
3. ALL PLYWOOD NAILING SHALL BE GALVANIZED COMMON NAILS.
4. ALL ANCHOR BOLTS SHALL PENETRATE FOUNDATION ELEMENT 7" MINIMUM REGARDLESS OF SILL PLATE THICKNESS AND HAVE 3" DIA.x1/4" PL. WASHER TYP. AT EACH SILL BOLT., PLACE ALL ANCHORS A MINIMUM DISTANCE OF 4 3/8" (AND MAXIMUM OF 12") FROM THE ENDS OF SILL PLATES. MINIMUM (2) ANCHOR BOLTS PER WALL OR PIECE OF SILL
5. USE 1 1/4" STRUCTURAL COMPOSITE LUMBER (SCL) FOR RIM OR BLOCKING (U.N.O.)
6. HOLDOWN • • STRAP DENOTES HOLDOWN & HOLDOWN STRAP LOC., RESPECTIVELY. * ABOVE HOLDOWN/STRAP CALLOUT INDICATES HOLDOWN/STRAP ALIGNS WITH HOLDOWN/STRAP ABOVE. * BELOW HOLDOWN/STRAP CALLOUT INDICATES HOLDOWN/STRAP ALIGNS WITH HOLDOWN/STRAP BELOW. RE: SHEET 0.30 FOR HOLDOWN & STRAP SCHEDULES.
7. HOLDOWN ANCHORS MUST BE INSTALLED WITH FINAL CONCRETE POUR. ***NO POST-INSTALLED HOLDOWN ANCHORS ALLOWED UNLESS WRITTEN CONSENT FROM E.O.R.*** RE: TYPICAL HOLDOWN DETAIL IN S0 SERIES FOR ANCHOR OPTIONS.
8. CONTRACTOR TO VERIFY LOC. OF SHEAR WALLS THAT REQUIRE DECREASED ANCHORAGE SPACING PRIOR TO FINAL CONCRETE POUR. RE: SHEAR WALL SCHEDULE.

DRAG STRAP SCHEDULE

STRAP	MIN. NAILS EA. END	LENGTH ONTO (L):			
		DF/GLB	SCL[3]	JOIST[3,4]	BLKG.[5]
CS14	(26)-10d	15"	27"	27"	6'-6"
CMST12	(74)-10d	34"	65"	65"	25'-6"

NOTES:

1. DENOTES SIMPSON STRAP FOR DRAG CONNECTION. RE: DRAG STRAP SCHEDULE (THIS SHEET) FOR REQUIRED STRAP LENGTHS & RE: TYPICAL DETAIL 083 IN S0.2 SERIES FOR MORE INFO. (APPLICABLE @ FRAMING LEVELS).
2. PROVIDE SIMPSON CS14 U.N.O. ON PLANS.
3. FILL EVERY OTHER PAIR OF NAIL HOLES.
4. FOR MANUFACTURED JOISTS ONLY, PROVIDE ADD'L JOIST AND USE DF/GLB LENGTHS FOR SOLID SAWN AND FABRICATED TRUSSES.
5. 2x FLAT BLKG. PERMITTED U.N.O. IN TYPICAL DRAG STRAP DETAIL 083. FILL EVERY PAIR OF NAIL HOLES THE LENGTH OF STRAP. BLKG. SCENARIO OCCURS WHERE STRAP IS PERP. TO FRAMING.
6. PROVIDE A MIN OF 4" END DISTANCE TO 1ST NAIL OF ALL STRAPS (THIS LENGTH NOT INCLUDED IN LENGTHS ABOVE).
7. DRAG STRAPS TO BE BY SIMPSON STRONGTIE U.N.O.

FLOOR-FLOOR STRAP SCHEDULE

MARK	CAP. (lbs)	CONN.	END LENGTH	QTY	DET.
(2)- CS14	4980	(26) - 10d EA.	N/A	7	032/S0.22
(4)- CS14	9960	(26) - 10d EA.	N/A	1	032/S0.22

COLUMN SCHEDULE

MARK	COLUMN	QTY.
1	(2)- 2x	12
2	(3)- 2x	8
3	(4)- 2x	3
5	6x6	7
6	HSS 5x5x1/4	2
7	HSS 5x5x1/2	1

HEADER SCHEDULE			
HEADER	MEMBER SIZE	TRIMMER	KING STUD
⟨H1⟩	(2)-2x8 DFL #2	(1)-2x	(1)-2x
⟨H2⟩	(3)-1 3/4"x11 7/8" LVL	(2)-2x	(2)-2x
⟨H3⟩	(2)-1 3/4"x18" LVL	(2)-2x	(2)-2x
	W12x22		
	8 3/4" x 15" GLB.		
	(5)-1 3/4"x14" LVL		

SEE S0.23 FOR MORE INFO.

1 ROOF FRAMING PLAN 1/4" = 1'-0"

NORTH

VERIF. w/ARCH.

PERMIT SET

PATRICK E. BIRD LICENSED PROFESSIONAL ENGINEER No. PE-12831-S HAWAII U.S.A.

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Signature 4/30/18 Expiration Date of My License

RIVERSTONE STRUCTURAL CONCEPT
671 E RIVERPARK LN, SUITE 150, BOISE, ID 83706
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www.riverstonesc.com

PROJECT #: R17-046
APPROVED: PB
DRAWN: GC
SCALE: AS SHOWN
DATE: 9/7/2017

ROOF FRAMING PLAN

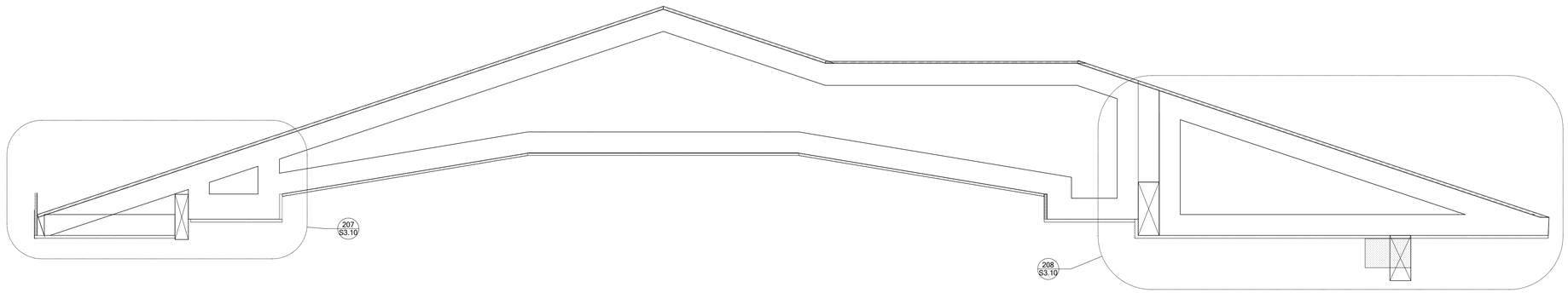
MCGRAW RESIDENCE
171 W. IKEA KAI PLACE
WAILEA, HAWAII 96753

REVISIONS

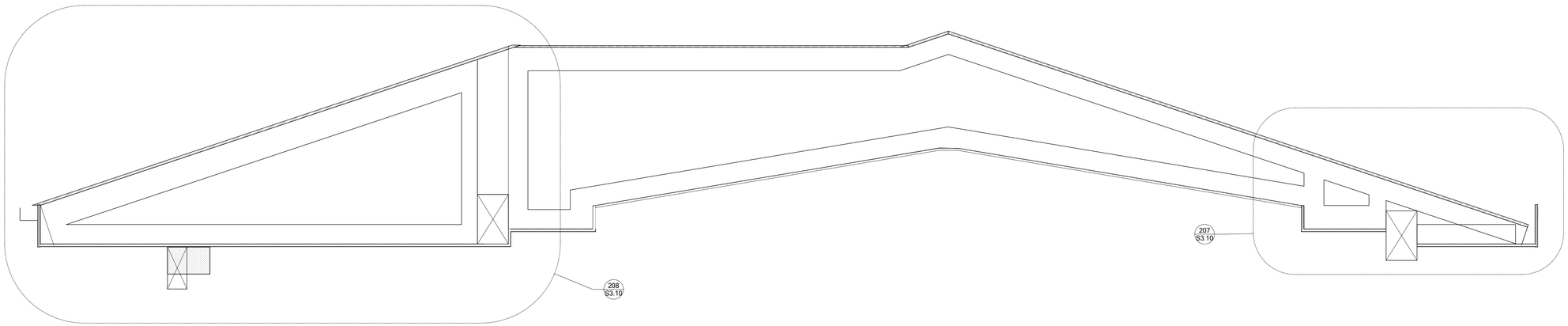
MARK	REASON	DATE
3	FINAL COORDINATION	10/14/17

SHEET NUMBER: S1.02

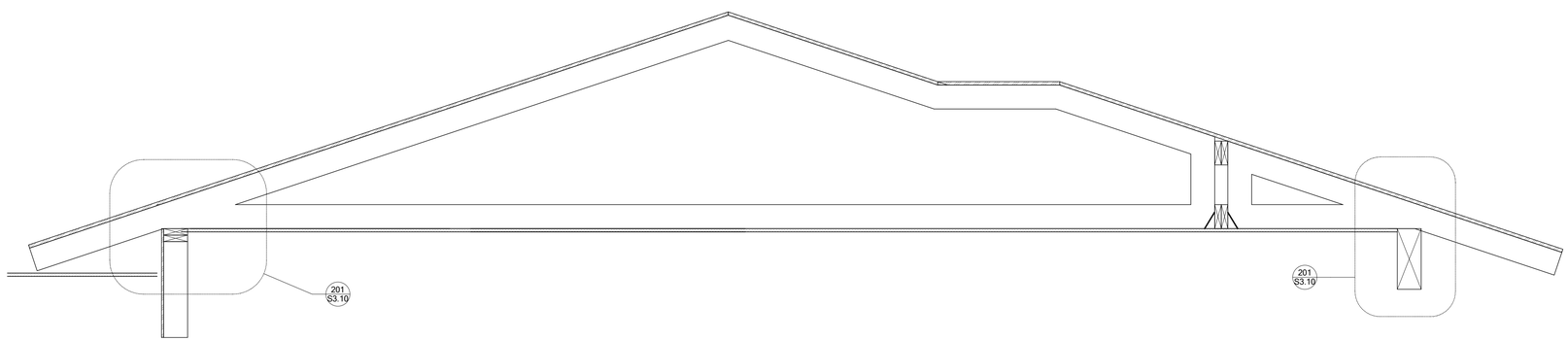
PLOT DATE: 11/14/2017 4:28 PM



1 ROOF SECTION 3/4" = 1'-0"



2 ROOF SECTION 3/4" = 1'-0"



3 ROOF SECTION 3/4" = 1'-0"

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PROJECT #: R17-046
APPROVED: PB
DRAWN: GC
SCALE: AS SHOWN
DATE: 9/7/2017

STRUCTURAL ROOF SECTION

MCGRAW RESIDENCE
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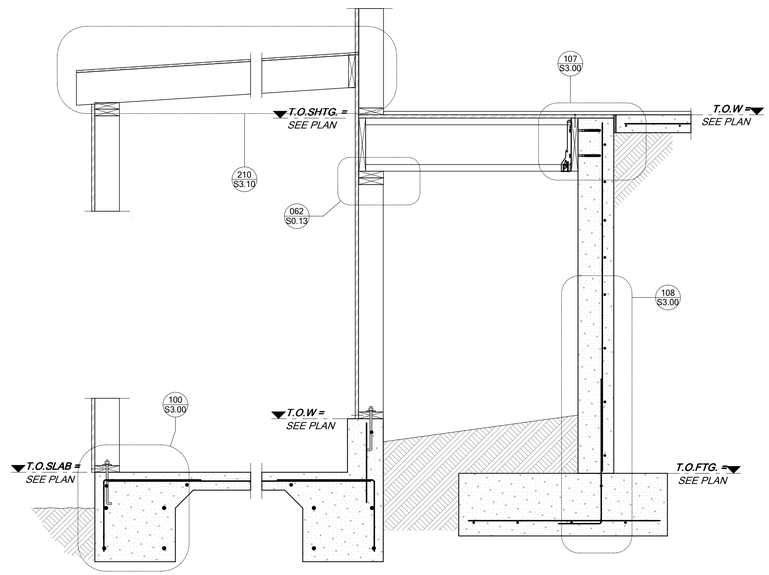
WAILEA, HAWAII 96753

REVISIONS		
MARK	REASON	DATE
3	FINAL COORDINATION	10/14/17

SHEET NUMBER: S2.00

PLOT DATE: 11/14/2017, 4:20 PM



1 CRAWLSPACE SECTION 3/4" = 1'-0"

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DRAWN: GC
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DATE: 9/7/2017

STRUCTURAL SECTION

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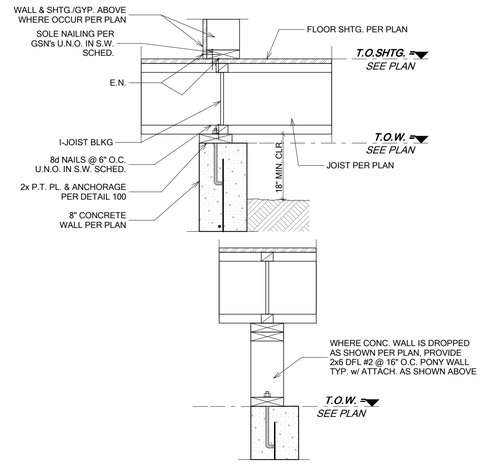
REVISIONS

MARK	REASON	DATE
3	FINAL COORDINATION	10/14/17

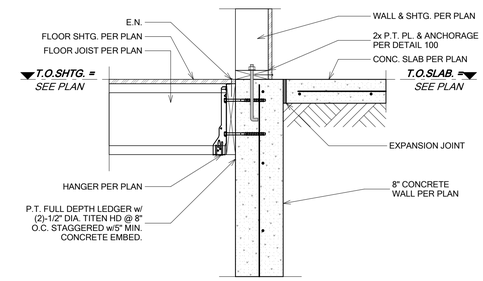
3

SHEET NUMBER: S2.01

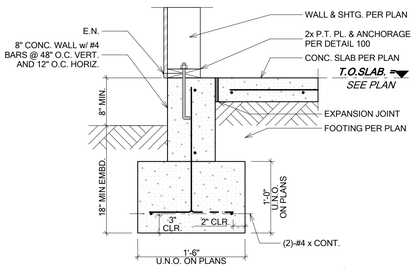
PLOT DATE: 7/14/2017, 4:20 PM



110 JOIST OVER CONCRETE WALL 1" = 1'-0"

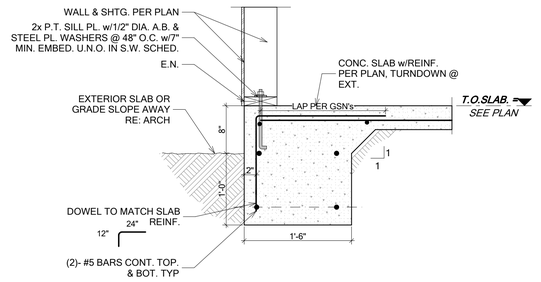


107 JOIST TO WALL AT SLAB TRANSITION 1" = 1'-0"

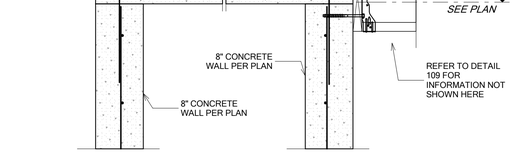


104 WALL TO FOUNDATION STEM WALL 1" = 1'-0"

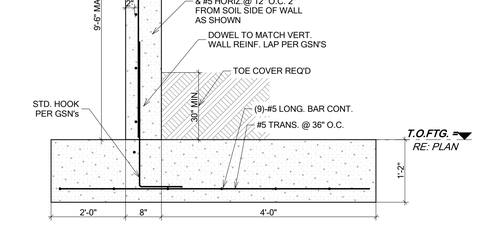
SLAB @ EXTERIOR



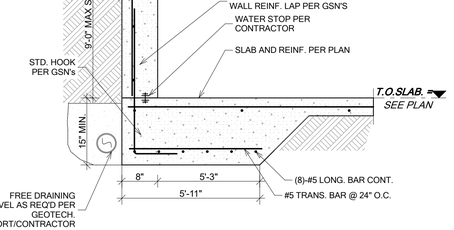
100 WOOD WALL TO CONCRETE 1" = 1'-0"



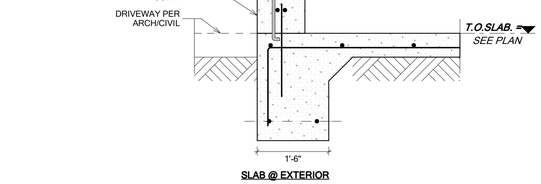
111 MECHANICAL ROOF SLAB DETAIL 1" = 1'-0"



108 RETAINING WALL (CW3) 3/4" = 1'-0"

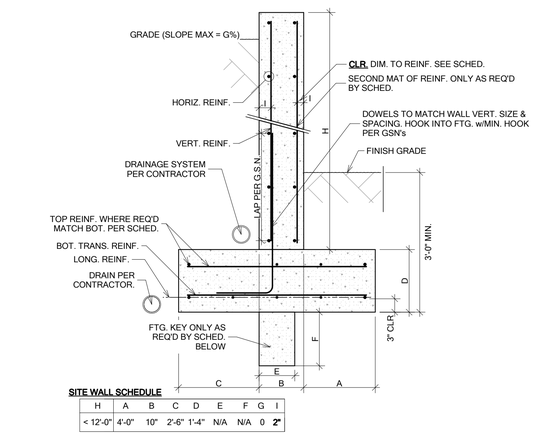


105 RETAINING WALL (CW1) 3/4" = 1'-0"



SLAB @ EXTERIOR

101 SLAB TURNDOWN AT GARAGE w/CURB 1" = 1'-0"

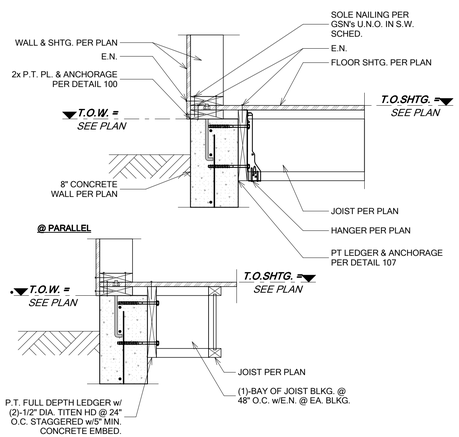


SITE WALL SCHEDULE

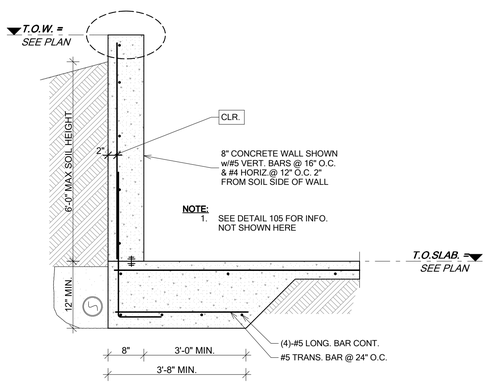
H	A	B	C	D	E	F	G	I
< 12'-0"	4'-0"	10"	2'-6"	1'-4"	N/A	N/A	0	2"

H	FOOTING REINF.				WALL REINF.		
	LONG.	TRANS.	TOP REQ'D?	KEY REQ'D?	VERT.	HORIZ.	2ND MAT REQ'D?
< 12'-0"	(7)-#5	#5 @ 12" O.C.	YES	NO	#7 @ 12" O.C.	#5 @ 10" O.C.	NO

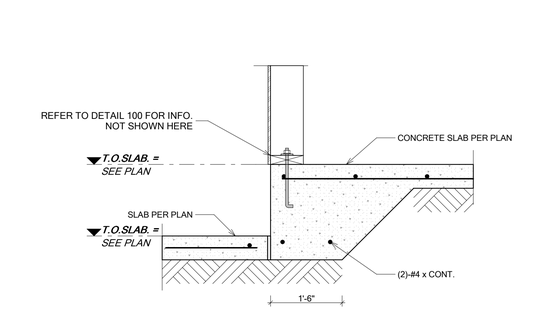
112 TYP. SITE WALL CONSTRUCTION 3/4" = 1'-0"



109 JOIST TO CONCRETE WALL 1" = 1'-0"



106 RETAINING WALL (CW2) 3/4" = 1'-0"



102 SLAB STEP DETAIL 1" = 1'-0"

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PROJECT #: R17-046
APPROVED: PB
DRAWN: GC
SCALE: AS SHOWN
DATE: 9/7/2017

FOUNDATION DETAILS 100-199

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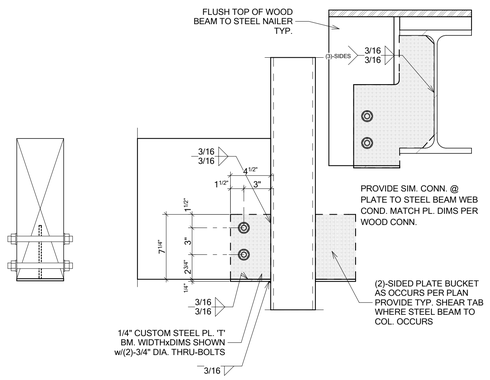
REVISIONS

MARK	REASON	DATE
3	FINAL COORDINATION	10/14/17

SHEET NUMBER: S3.00

PLOT DATE: 11/14/2017, 4:20 PM



209 WOOD BEAM TO STEEL

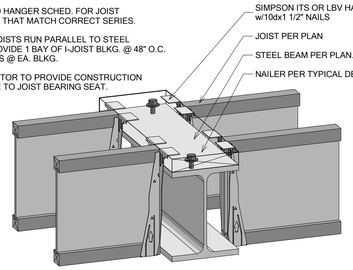
NOTES:

1: SHTG. & NAILING NOT SHOWN FOR CLARITY

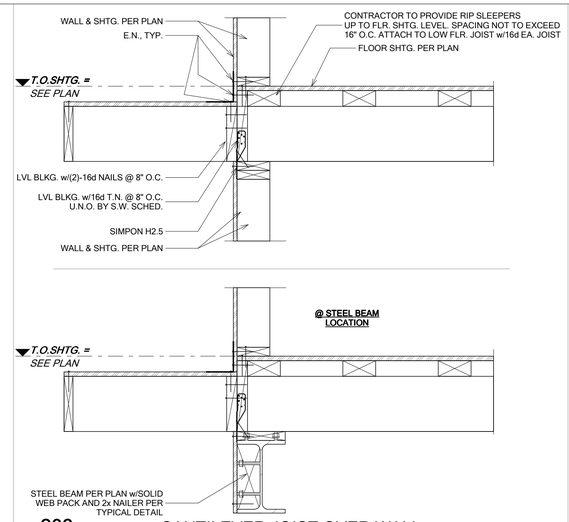
2: REFER TO HANGER SCHED. FOR JOIST HANGERS THAT MATCH CORRECT SERIES.

3: WHERE JOISTS RUN PARALLEL TO STEEL BEAM PROVIDE 1 BAY OF I-JOIST BLKG. @ 48" O.C. w/(3)-NAILS @ EA. BLKG.

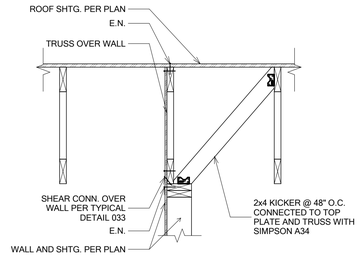
4. CONTRACTOR TO PROVIDE CONSTRUCTION ADHESIVE TO JOIST BEARING SEAT.



206 JOIST TO STEEL BEAM 1 1/2"= 1'-0"



203 CANTILEVER JOIST OVER WALL 1" = 1'-0"



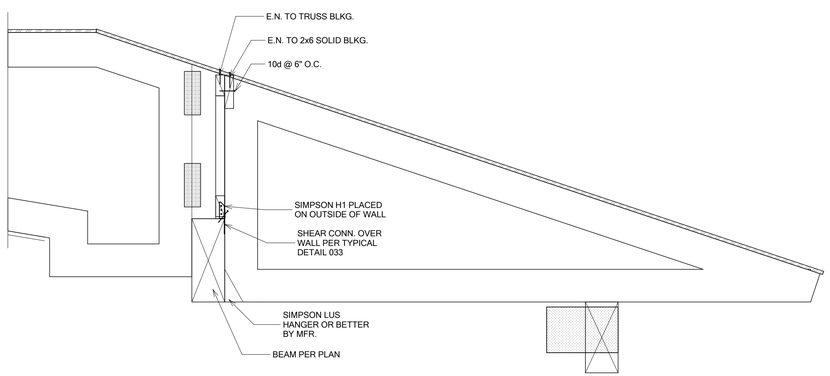
200 TRUSS PARALLEL TO SHEARWALL 3/4" = 1'-0"

210 ROOF JOIST TO WALL

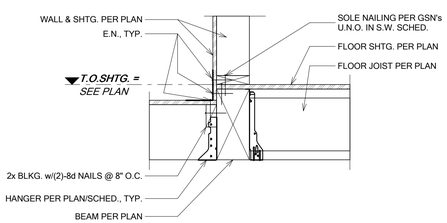
207 TRUSS TO FLUSH BEAM/HEADER 1" = 1'-0"

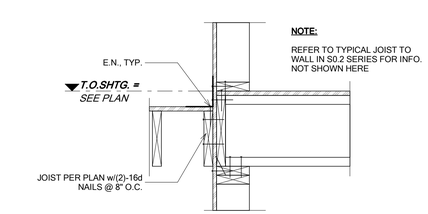
204 DECK JOIST TO STEEL BEAM 1" = 1'-0"

201 TRUSS TO WALL 1" = 1'-0"

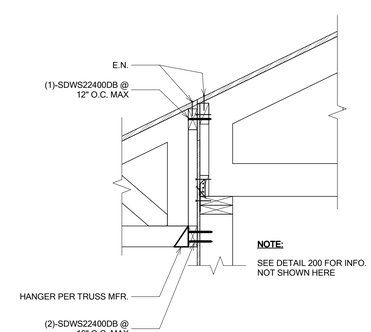


208 TRUSS TO FLUSH BEAM/HEADER 1" = 1'-0"





205 DECK JOIST TO BEAM/WALL 1" = 1'-0"



202 TRUSSES TO WALL 1" = 1'-0"

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PROJECT #: R17-046
APPROVED: PB
DRAWN: GC
SCALE: AS SHOWN
DATE: 9/7/2017

WOOD FRAMING DETAILS 200-299

MCGRAW RESIDENCE
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REVISIONS

MARK	REASON	DATE
3	FINAL COORDINATION	10/14/17

SHEET NUMBER: S3.10

PLOT DATE: 11/14/2017 - 5:29 PM