

UTILITIES, INC. OF FLORIDA - SANLANDO SERVICE AREA

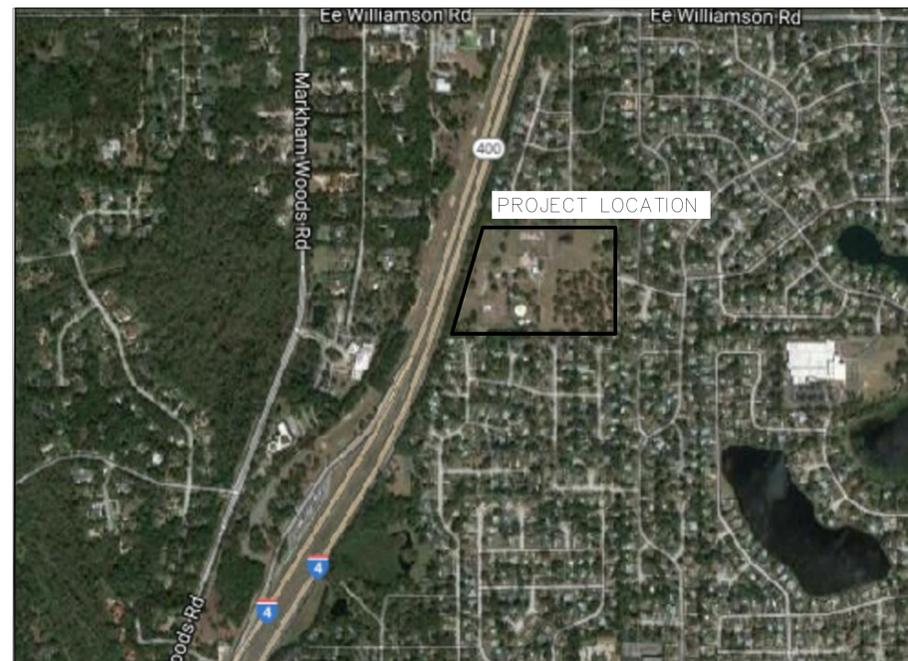
DES PINAR MASTER PUMP STATION SEMINOLE COUNTY, FLORIDA

NOVEMBER 2016



OWNER:
UTILITIES, INC. OF FLORIDA
200 WEATHERSFIELD AVE.
ALTAMONTE SPRINGS, FL 32714
CONTACT: MR. BRYAN GONGRE
866-842-8432 EXT. 1360

ENGINEER:
KIMLEY-HORN AND ASSOCIATES, INC.
3660 MAGUIRE BLVD, SUITE 200
ORLANDO, FLORIDA 32803
CONTACT: NICOLE QUINBY, P.E.
407-409-7005



PROJECT VICINITY MAP
N.T.S.

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THE SITE CONSTRUCTION STAKEOUT SHALL BE PERFORMED UNDER THE DIRECTION OF A FLORIDA REGISTERED SURVEYOR. AUTOCAD FILES WILL BE FURNISHED TO AID IN THE SITE CONSTRUCTION STAKEOUT. ANY DISCREPANCIES FOUND BETWEEN AUTOCAD FILES AND SITE CONSTRUCTION PLANS SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION FOR CLARIFICATION PRIOR TO THAT STAKEOUT.

I HEREBY CERTIFY THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF THE DESIGN OF THIS PROJECT, AS PREPARED UNDER MY PERSONAL DIRECTION AND CONTROL, COMPLIES WITH ALL APPLICABLE STANDARDS, INCLUDING THE "MANUAL OF UNIFORM MINIMUM STANDARDS FOR DESIGN, CONSTRUCTION AND MAINTENANCE FOR STREETS AND HIGHWAYS" AS ADOPTED BY THE FLORIDA DEPARTMENT OF TRANSPORTATION PURSUANT TO SUBSECTIONS 335.075(1) AND (4), FLORIDA STATUTES AND SEMINOLE COUNTY LAND DEVELOPMENT REGULATIONS.

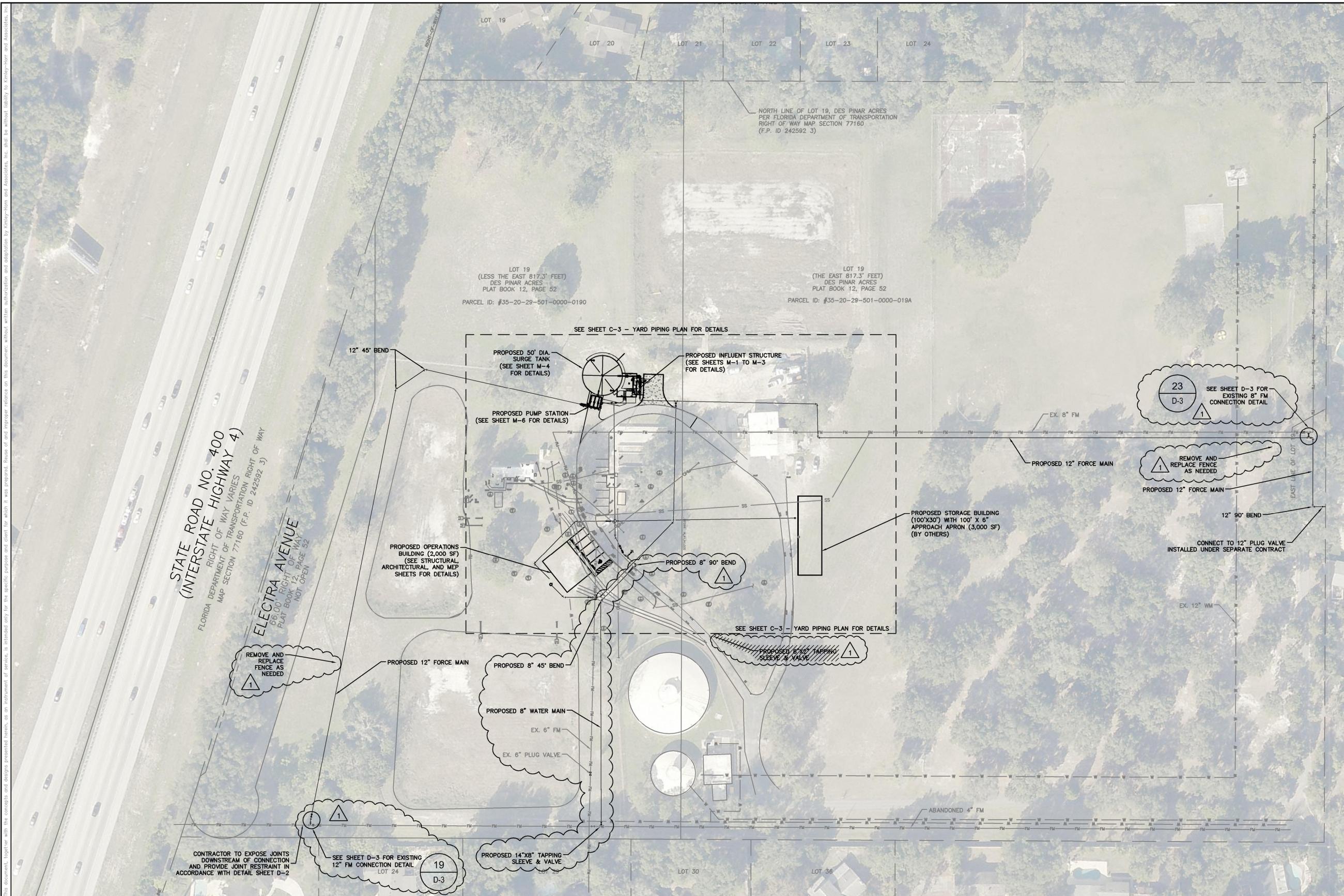
PREPARED BY
Kimley»Horn

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DATE NOV, 2016	PROJECT NO. 149685007	SHEET NUMBER G-1
NICOLE E. QUINBY, P.E. FLORIDA LICENSE NUMBER: 73789		DATE: 11/7/2016



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KHA PROJECT
 149685007
 DATE
 12/19/16
 SCALE AS SHOWN
 DESIGNED BY NEQ
 DRAWN BY MNA
 CHECKED BY SNR

**DES PINAR
 MASTER PUMP STATION**

LICENSED PROFESSIONAL
 NICOLE E. QUINBY, P.E.
 73789
 DATE: _____

OVERALL SITE PLAN

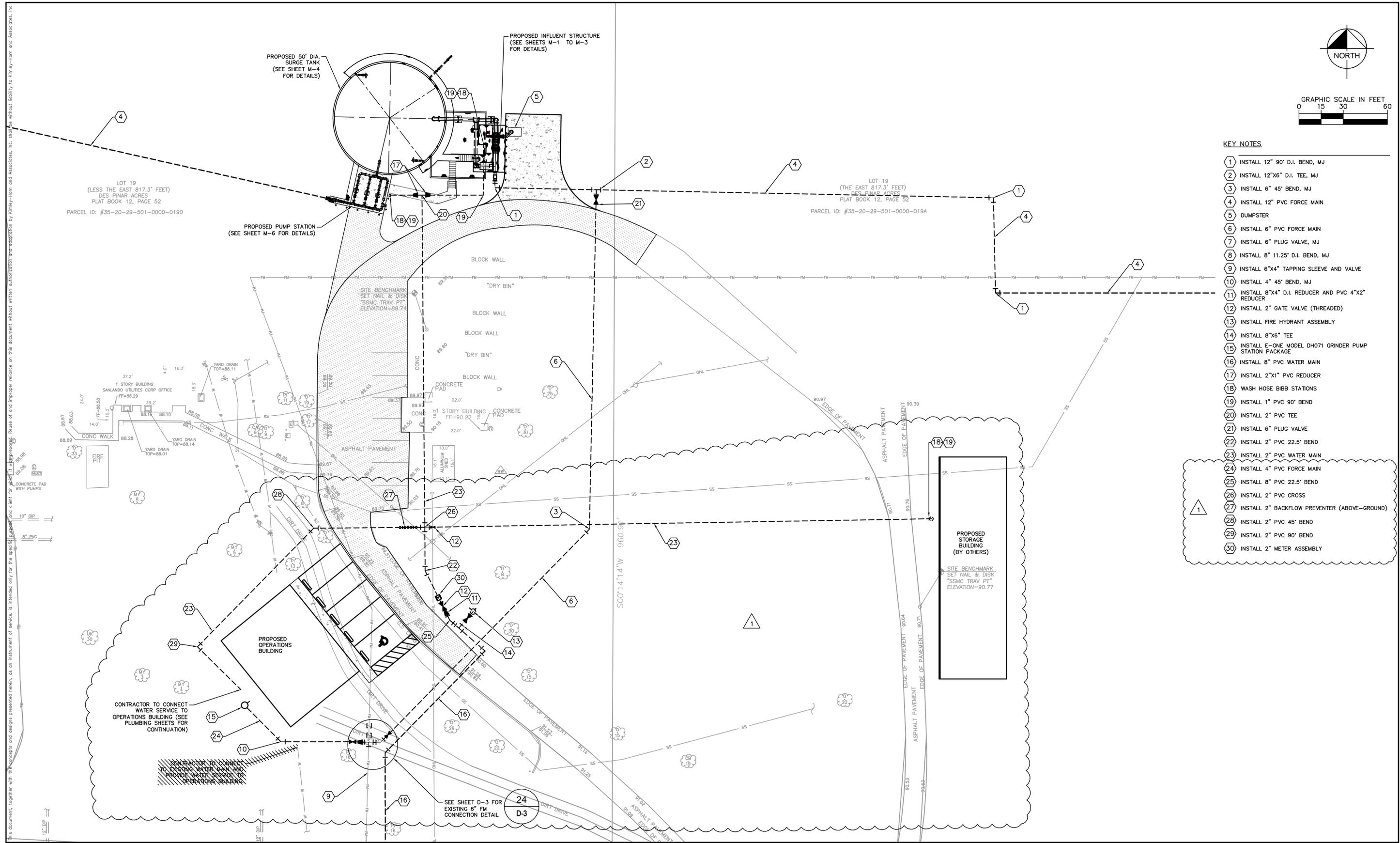
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KEY NOTES

- ① INSTALL 12" 90° D.I. BEND, MJ
- ② INSTALL 12"x6" D.I. TEE, MJ
- ③ INSTALL 6" 45° BEND, MJ
- ④ INSTALL 12" PVC FORCE MAIN
- ⑤ DUMPSTER
- ⑥ INSTALL 6" PVC FORCE MAIN
- ⑦ INSTALL 6" PLUG VALVE, MJ
- ⑧ INSTALL 8" 11.25° D.I. BEND, MJ
- ⑨ INSTALL 6"x4" TAPPING SLEEVE AND VALVE
- ⑩ INSTALL 4" 45° BEND, MJ
- ⑪ INSTALL 8"x4" D.I. REDUCER AND PVC 4"x2" REDUCER
- ⑫ INSTALL 2" GATE VALVE (THREADED)
- ⑬ INSTALL FIRE HYDRANT ASSEMBLY
- ⑭ INSTALL 8"x6" TEE
- ⑮ INSTALL E-ONE MODEL DH071 GRINDER PUMP STATION PACKAGE
- ⑯ INSTALL 8" PVC WATER MAIN
- ⑰ INSTALL 2"x1" PVC REDUCER
- ⑱ WASH HOSE BIBB STATIONS
- ⑲ INSTALL 1" PVC 90° BEND
- ⑳ INSTALL 2" PVC TEE
- ㉑ INSTALL 6" PLUG VALVE
- ㉒ INSTALL 2" PVC 22.5° BEND
- ㉓ INSTALL 2" PVC WATER MAIN
- ㉔ INSTALL 4" PVC FORCE MAIN
- ㉕ INSTALL 8" PVC 22.5° BEND
- ㉖ INSTALL 2" PVC CROSS
- ㉗ INSTALL 2" BACKFLOW PREVENTER (ABOVE-GROUND)
- ㉘ INSTALL 2" PVC 45° BEND
- ㉙ INSTALL 2" PVC 90° BEND
- ㉚ INSTALL 2" METER ASSEMBLY



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CHECKED BY SNR

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LICENSED PROFESSIONAL

NICOLE E. QUINBY, P.E.

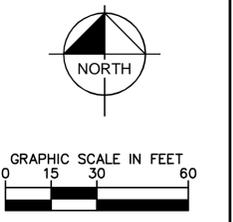
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YARD PIPING PLAN

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C-3

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STATE HIGHWAY 4)
 RIGHT OF WAY VARIES
 FLORIDA DEPARTMENT OF TRANSPORTATION
 MAP SECTION 77160 (F.P. ID 242592.3)
 ELECTRA AVENUE
 86,000 SQ. FT. OF WAY
 NOT OPEN

LEGEND
 TO BE DEMOLISHED

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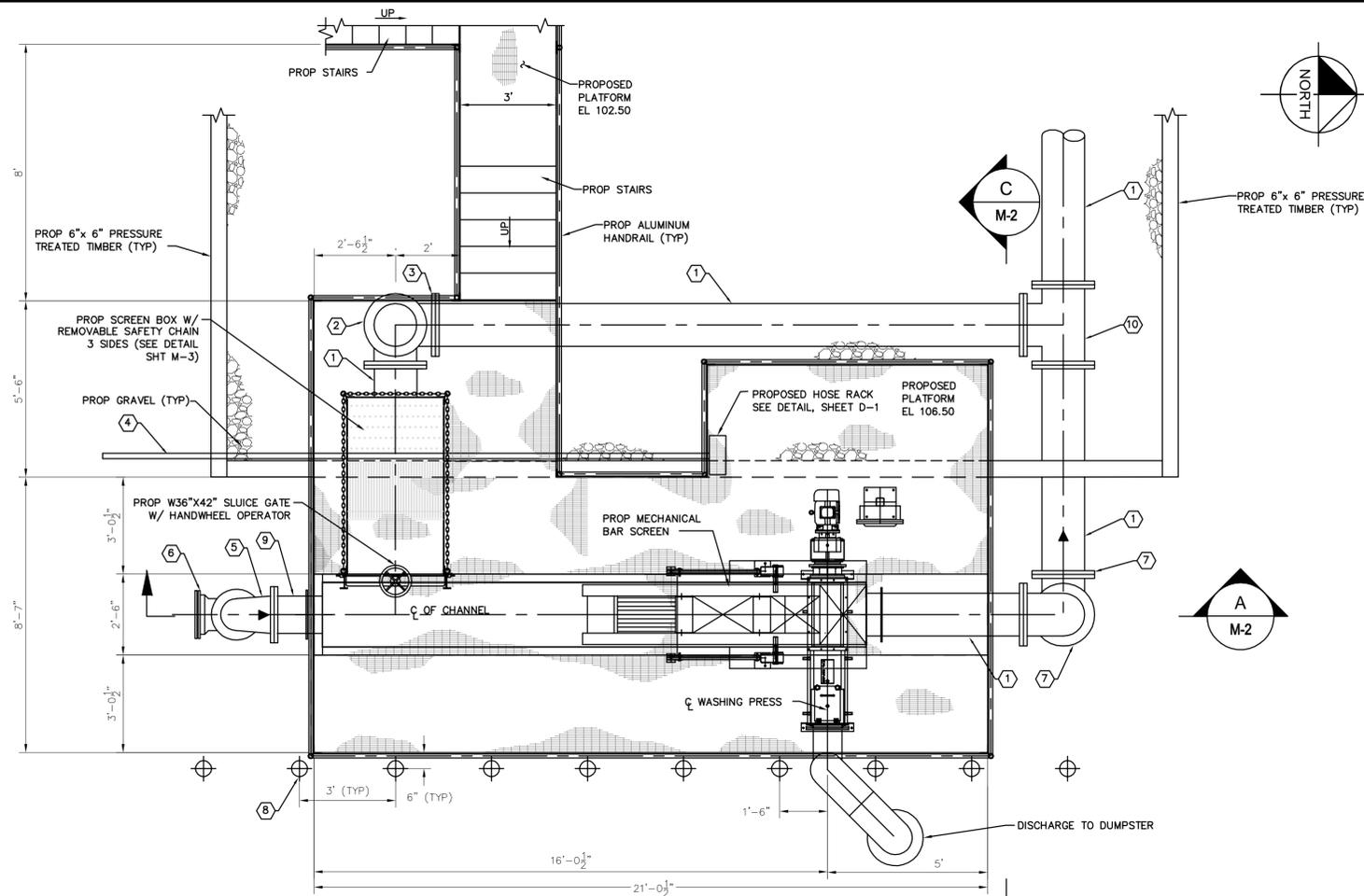
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DEMOLITION PLAN

SHEET NUMBER
DM-1

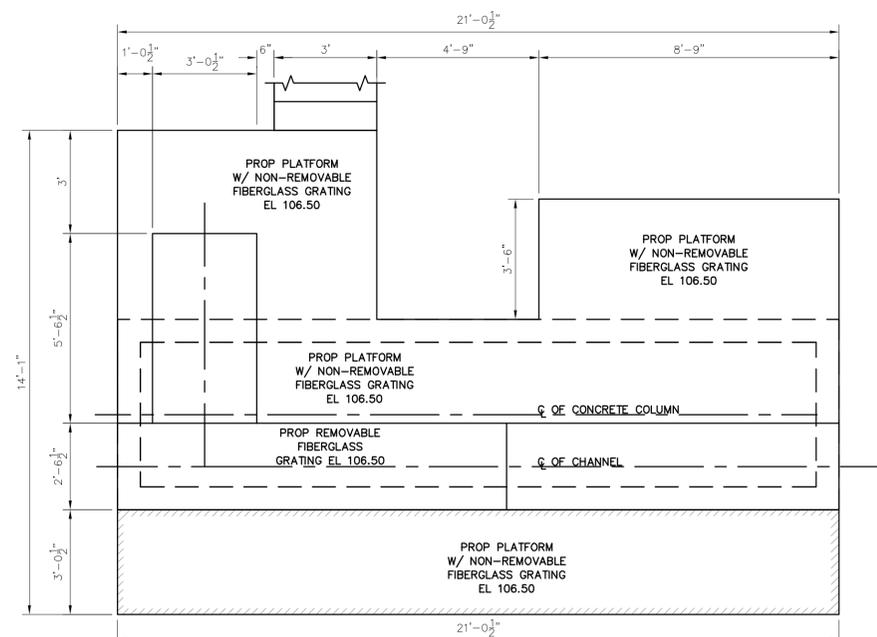
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INFLUENT STRUCTURE PLAN
SCALE: 3/8" = 1'-0"

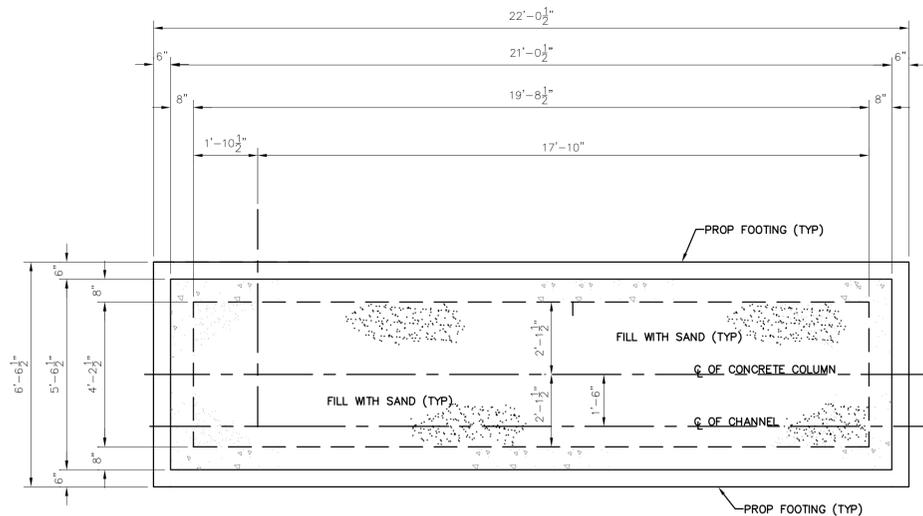
- KEY NOTES**
- ① 16" D.I. PIPE SPOOL PIECE, FLG (LENGTH AS REQUIRED)
 - ② 16" D.I. TEE W/ BLIND FLANGE, FLG
 - ③ 16" D.I. 90° BEND, FLG
 - ④ 1" PVC PIPE (TO WASH HOSE BIBB STATIONS)
 - ⑤ 12"x14" D.I. REDUCING 90° BEND, FLG
 - ⑥ 12" D.I. 90° BEND, MJ
 - ⑦ 16" D.I. 90° BEND, FLG
 - ⑧ BOLLARD (SEE DETAIL SHT D-2)
 - ⑨ 14" D.I. PIPE SPOOL PIECE, FLG
 - ⑩ 16" D.I. TEE, FLG

- NOTES:**
- MECHANICAL BAR SCREEN, STAINLESS STEEL CHANNEL, FIXED BAR SCREEN, SLUICE GATES AND STOP GATES SHALL BE SUPPLIED BY A SINGLE MANUFACTURER.
 - STAINLESS STEEL CHANNEL SHALL BE 316 PLATE DESIGNED BY THE MANUFACTURER TO BE STRUCTURALLY SOUND AND CAPABLE OF SUPPORTING EQUIPMENT, WALKWAYS, AND PERSONNEL.
 - ALUMINUM WALKWAYS SUPPORTS SHALL BE SEPARATED FROM STAINLESS STEEL CHANNEL USING A 1/4" THICK HDPE BARRIER.
 - BELOW GRADE PIPING AND FITTINGS SHALL BE LINED WITH PROTECTO 401 CERAMIC EPOXY UNLESS OTHERWISE NOTED.
 - ABOVE GRADE PIPING SHALL BE CERAMIC LINED DUCTILE IRON PIPE UNLESS OTHERWISE NOTED.



NOTE: EQUIPMENT, HANDRAILS, GRATING, FITTINGS AND PIPING NOT SHOWN ON PLAN FOR CLARITY.

INFLUENT STRUCTURE PLATFORM PLAN
SCALE: 3/8" = 1'-0"



CONCRETE COLUMN PLAN
SCALE: 3/8" = 1'-0"

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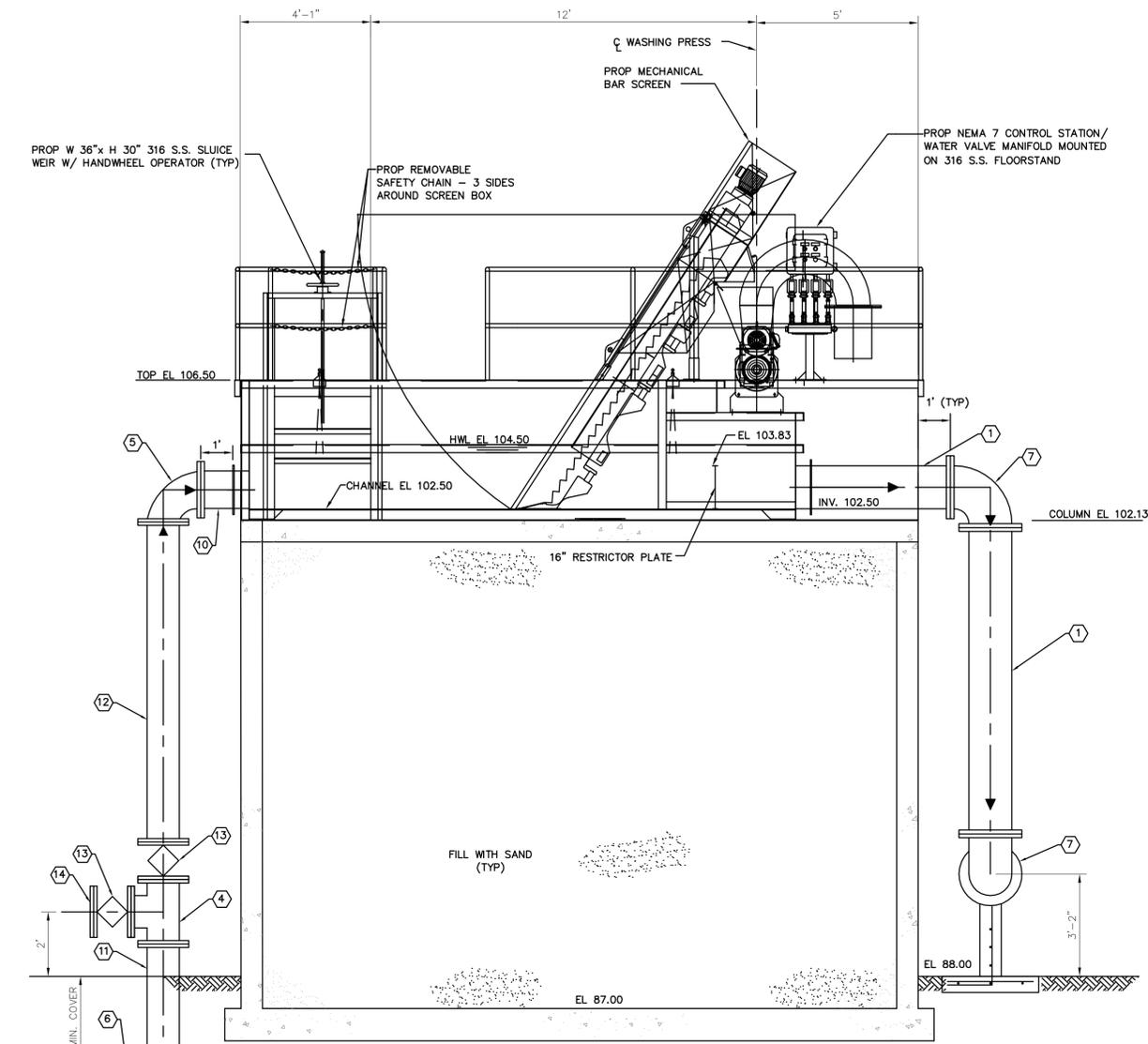
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INFLUENT STRUCTURE
PLANS

SHEET NUMBER

M-1

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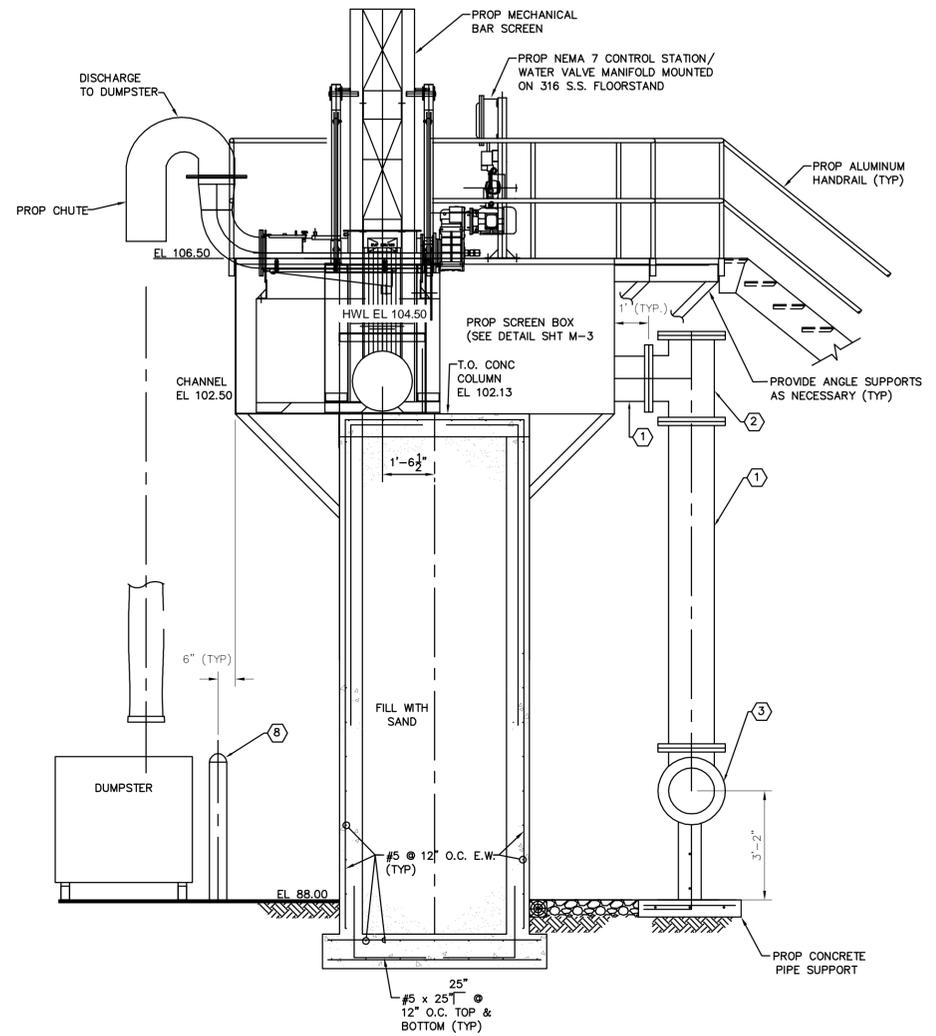
A SECTION
M-1 SCALE: 3/8"=1'-0"

KEY NOTES

- ① 16" D.I. PIPE SPOOL PIECE, FLG (LENGTH AS REQUIRED)
- ② 16" D.I. TEE W/ BLIND FLANGE, FLG
- ③ 14" D.I. 90° BEND, FLG
- ④ 12" D.I. TEE, FLG
- ⑤ 14"x12" D.I. REDUCING 90° BEND, FLG
- ⑥ 12" D.I. 90° BEND, MJ
- ⑦ 16" D.I. 90° BEND, FLG
- ⑧ BOLLARD (SEE DETAIL SHT D-2)
- ⑨ 12" D.I. PIPE, MJ
- ⑩ 14" D.I. PIPE SPOOL PIECE, FLG (LENGTH AS REQUIRED)
- ⑪ 12" D.I. PIPE SPOOL PIECE, PE X FLG
- ⑫ 12" D.I. PIPE SPOOL PIECE, FLG
- ⑬ 12" PLUG VALVE W/ HANDWHEEL
- ⑭ 12" BLIND FLANGE

NOTES:

1. MECHANICAL BAR SCREEN, STAINLESS STEEL CHANNEL, FIXED BAR SCREEN, SLUICE GATES AND STOP GATES SHALL BE SUPPLIED BY TSC-JACOBS (813) 242-2660.
2. STAINLESS STEEL CHANNEL SHALL BE 316 PLATE DESIGNED BY THE MANUFACTURER TO BE STRUCTURALLY SOUND AND CAPABLE OF SUPPORTING EQUIPMENT, WALKWAYS, AND PERSONNEL.
3. ALUMINUM WALKWAYS SUPPORTS SHALL BE SEPARATED FROM STAINLESS STEEL CHANNEL USING A 1/4" THICK HDPE BARRIER.
4. BELOW GRADE PIPING AND FITTINGS SHALL BE LINED WITH PROTECTO 401 CERAMIC EPOXY UNLESS OTHERWISE NOTED.
5. ABOVE GRADE PIPING SHALL BE CERAMIC LINED DUCTILE IRON PIPE UNLESS OTHERWISE NOTED.



C SECTION
M-1 SCALE: 3/8"=1'-0"

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CHECKED BY SNR

**DES PINAR
MASTER PUMP STATION**

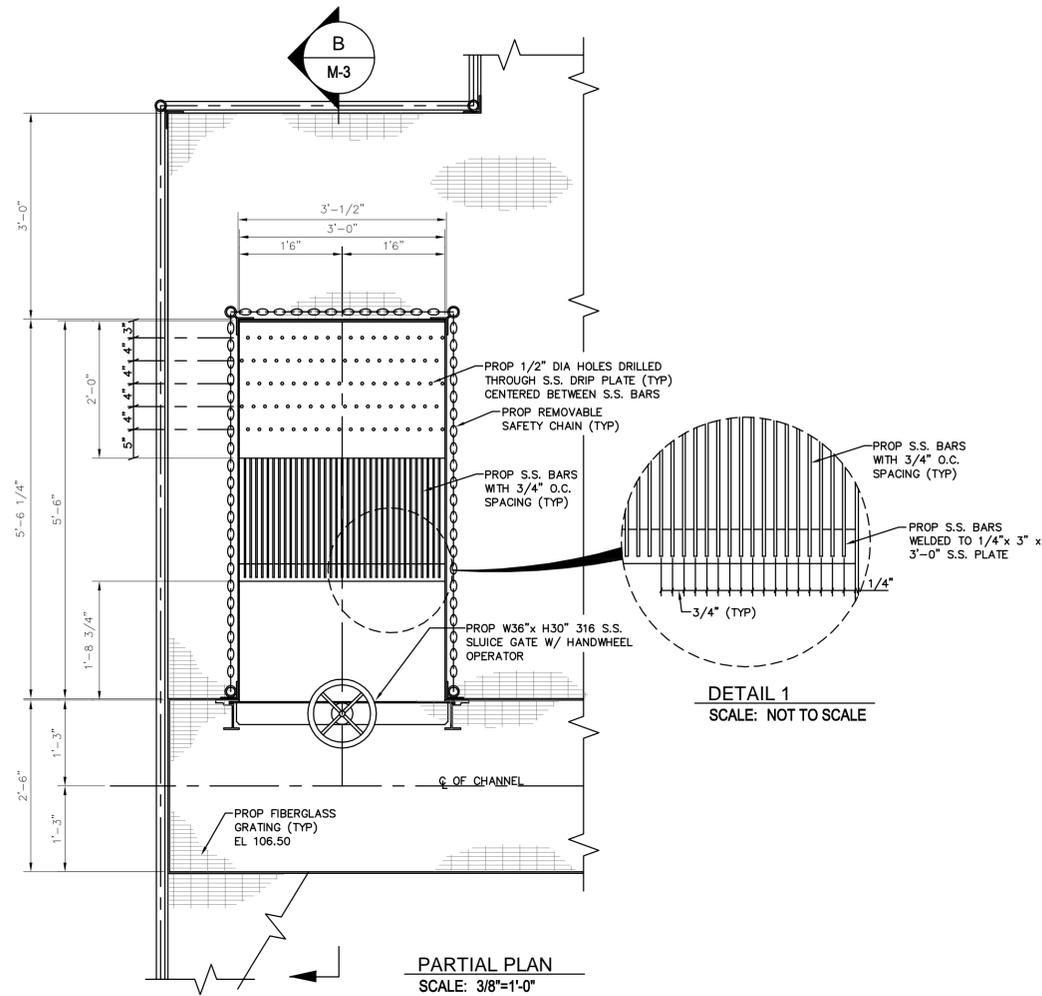
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73789
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**INFLUENT STRUCTURE
SECTIONS**

SHEET NUMBER

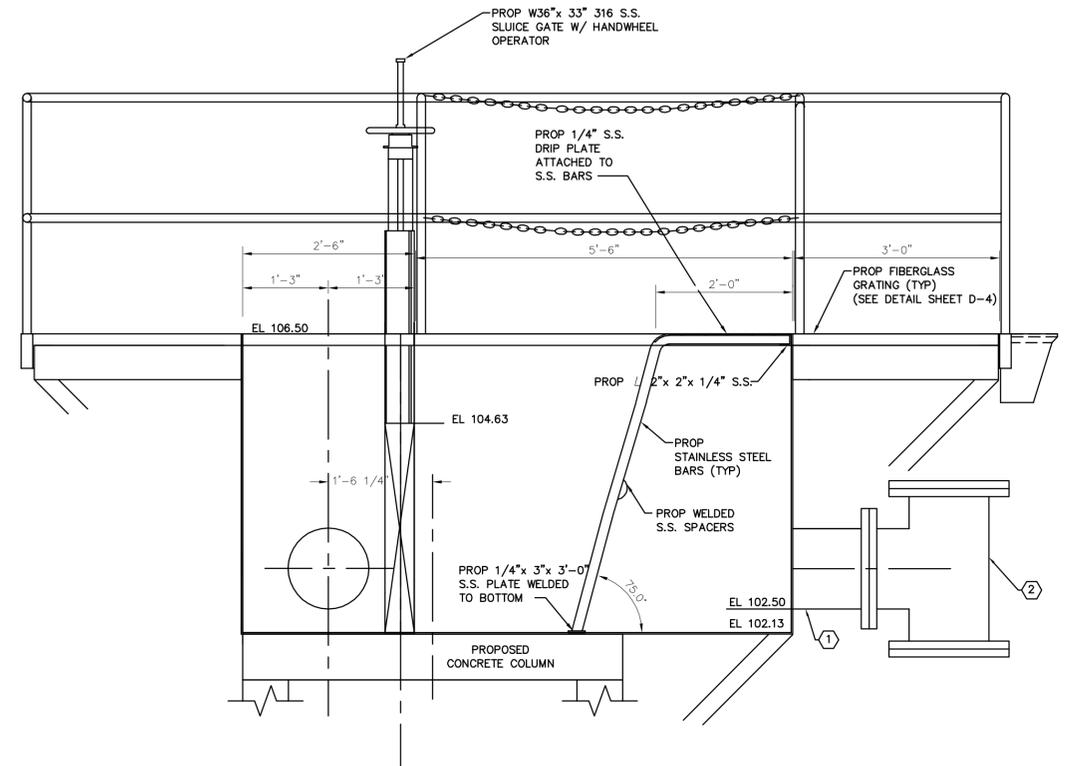
M-2

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NOTES:

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- ALUMINUM WALKWAYS SUPPORTS SHALL BE SEPARATED FROM STAINLESS STEEL CHANNEL USING A 1/4" THICK HDPE BARRIER.



B
M-3
SCREEN BOX - DETAIL
SCALE: 3/4"=1'-0"

KEY NOTES

- 16" D.I. PIPE SPOOL PIECE, FLG (LENGTH AS REQUIRED)
- 16" D.I. TEE W/ BLIND FLANGE, FLG

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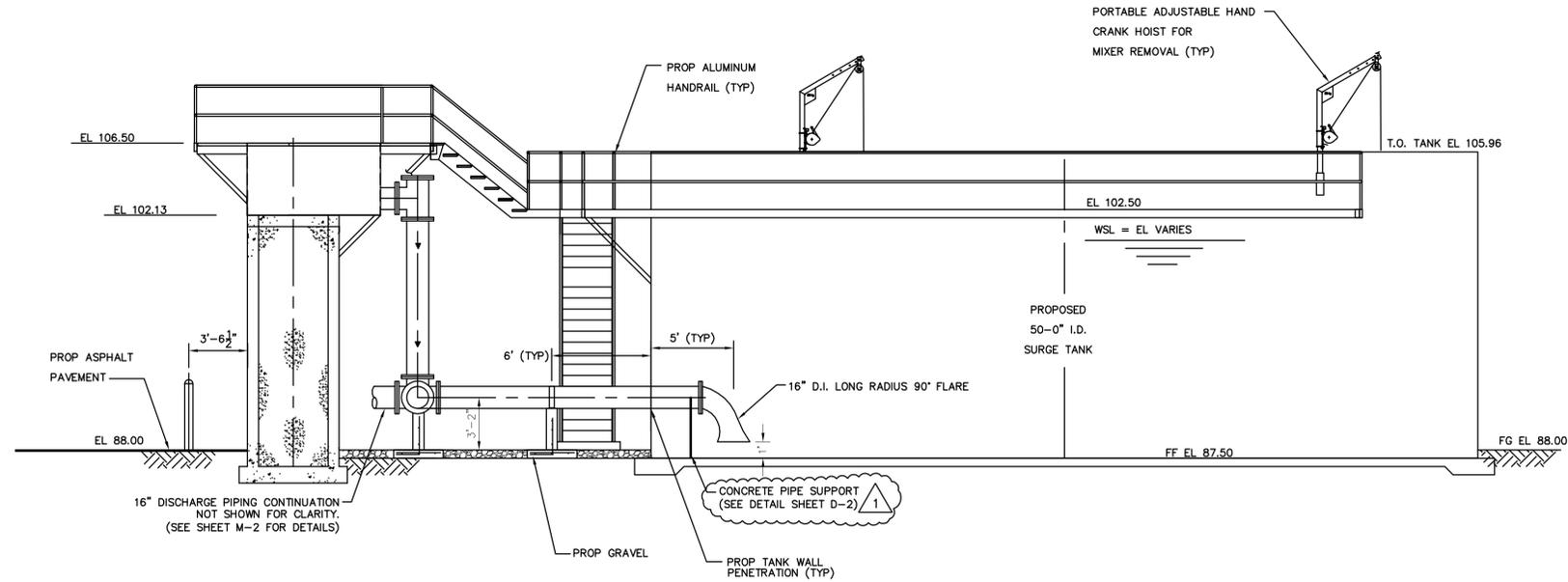
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LICENSED PROFESSIONAL NICOLE E. QUINBY, P.E. 73789 DATE: _____

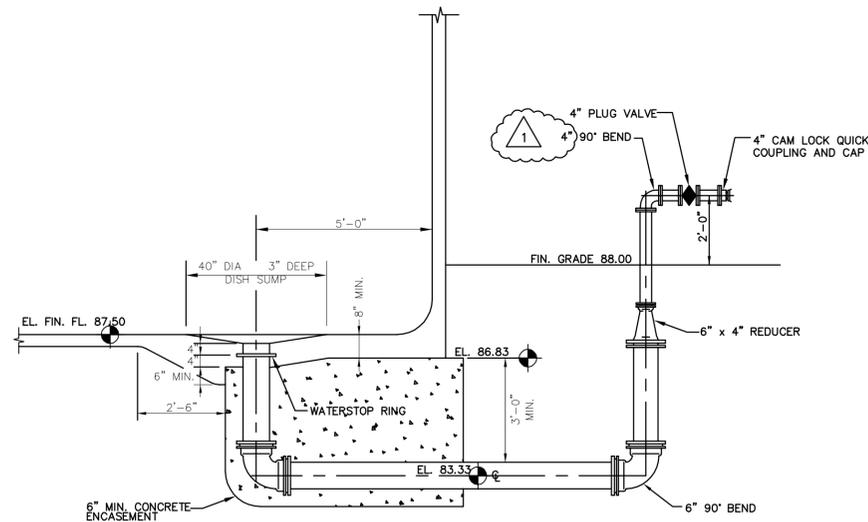
**INFLUENT STRUCTURE PLAN
SECTIONS & DETAILS**

SHEET NUMBER M-3

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A SURGE TANK PROFILE
M-4 SCALE: 3/16" = 1'-0"



B 6" D.I.P. DRAIN WITH DISH SUMP SECTION
M-4 SCALE: NOT TO SCALE

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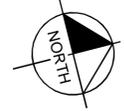
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SURGE TANK PROFILE

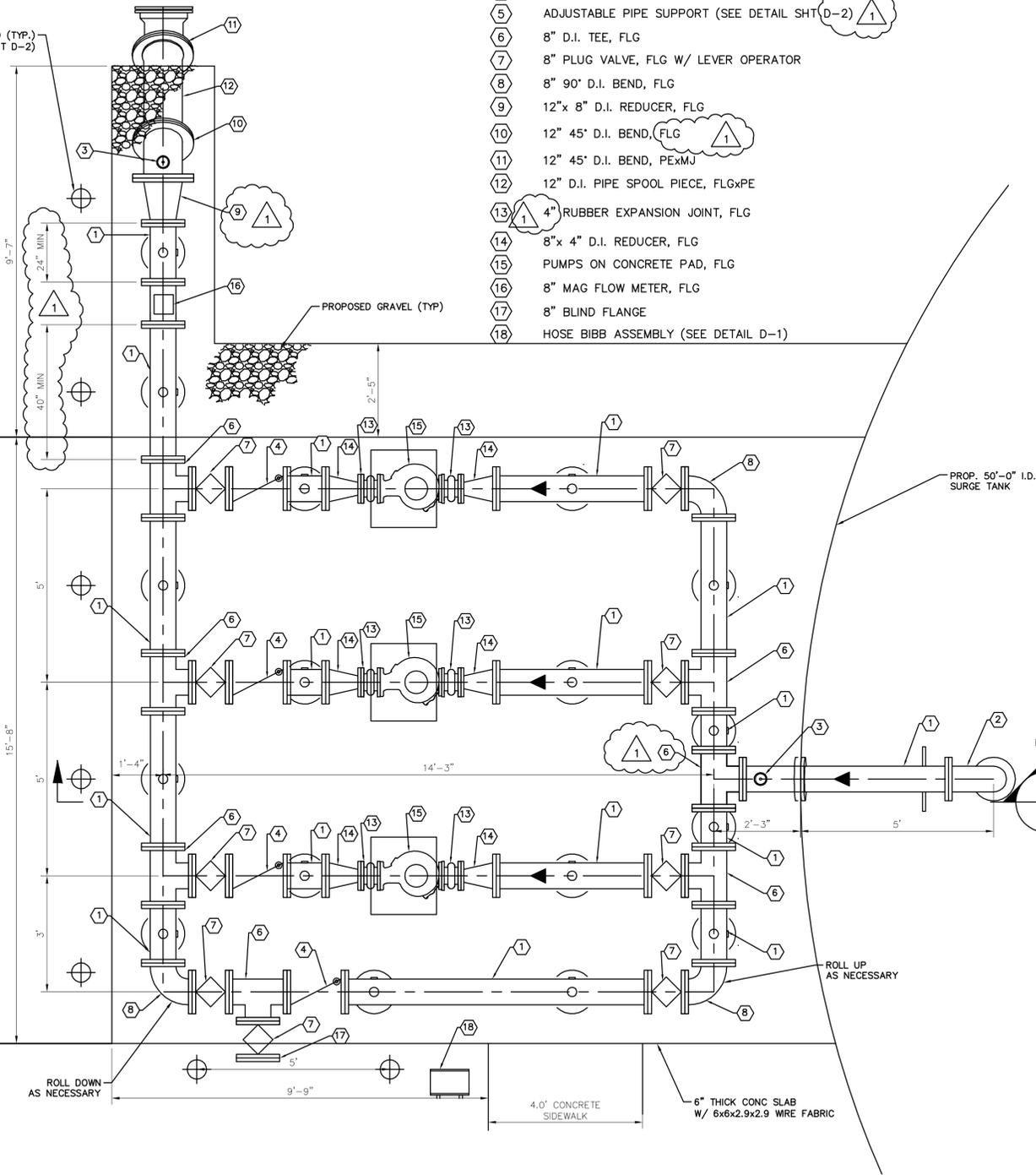
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M-5

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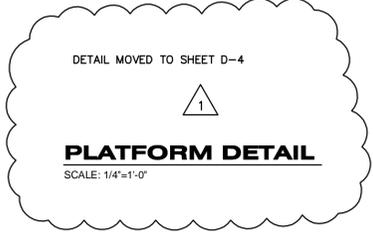


KEY NOTES

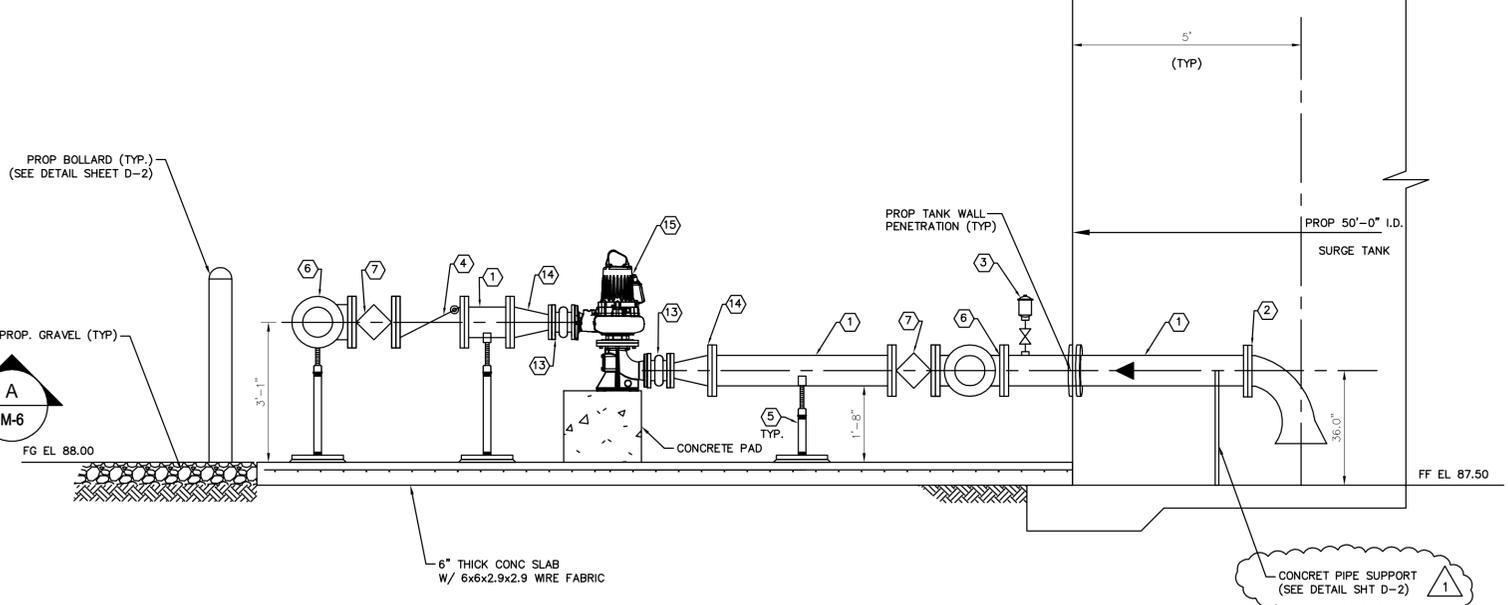
- ① 8" D.I. PIPE SPOOL PIECE, FLG (LENGTH AS REQUIRED)
- ② 8" 90° LONG RADIUS FLARE, FLG
- ③ 1" TAP, 1" BALL VALVE, 1" AIR & VACUUM RELEASE VALVE, THREADED
- ④ 8" CHECK VALVE, FLG W/ LEVER AND WEIGHT
- ⑤ ADJUSTABLE PIPE SUPPORT (SEE DETAIL SHT D-2)
- ⑥ 8" D.I. TEE, FLG
- ⑦ 8" PLUG VALVE, FLG W/ LEVER OPERATOR
- ⑧ 8" 90° D.I. BEND, FLG
- ⑨ 12"x 8" D.I. REDUCER, FLG
- ⑩ 12" 45° D.I. BEND, FLG
- ⑪ 12" 45° D.I. BEND, PEXMJ
- ⑫ 12" D.I. PIPE SPOOL PIECE, FLGxPE
- ⑬ RUBBER EXPANSION JOINT, FLG
- ⑭ 8"x 4" D.I. REDUCER, FLG
- ⑮ PUMPS ON CONCRETE PAD, FLG
- ⑯ 8" MAG FLOW METER, FLG
- ⑰ 8" BLIND FLANGE
- ⑱ HOSE BIBB ASSEMBLY (SEE DETAIL D-1)



SUBMERSIBLE PUMPS - PARTIAL PLAN
SCALE: 1/2" = 1'-0"



DETAIL MOVED TO SHEET D-4
PLATFORM DETAIL
SCALE: 1/4" = 1'-0"



A SECTION
M-6
SCALE: 1/2" = 1'-0"

PUMPS	
MANUFACTURER	FLYGT OR EQUAL
MODEL	NT 3102
H.P.	5.5 HP EACH.
PHASE	3
VOLTAGE	480V
Hz	60Hz
RPM	1800

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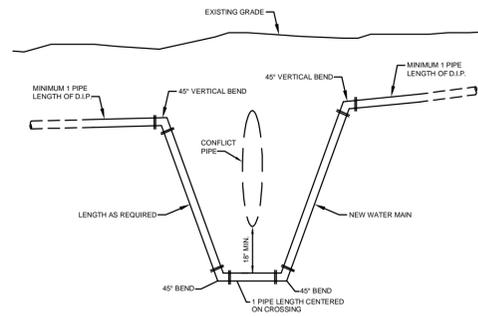
**SURGE TANK PUMPS PLAN,
SECTION, & DETAILS**

SHEET NUMBER
M-6

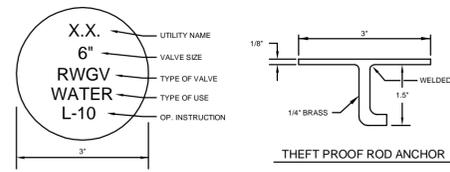
T.O. TANK EL 105.96

FF EL 87.50

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1
TYPICAL CONFLICT DETAIL
SCALE: NOT TO SCALE



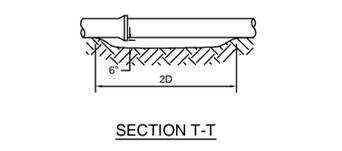
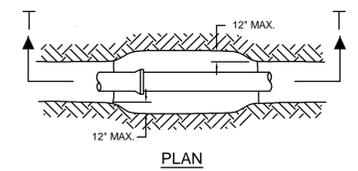
TEXT FOR TYPE OF VALVE
 RSGV RESILIENT SEAT GATE VALVE
 RWGV RESILIENT WEDGE GATE VALVE
 BVV BUTTERFLY VALVE
 PVV PLUG VALVE
 CV CHECK VALVE

TEXT FOR TYPE OF USE
 WATER WATER
 SEWER SEWER
 RECLMD RECLAIMED
 NPW NON-POTABLE WATER

TEXT FOR OPERATING INSTRUCTION
 L-10 LEFT NO. TURNS
 R-10 RIGHT NO. TURNS

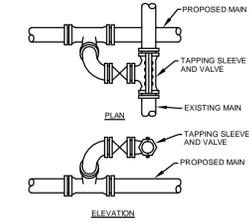
NOTES:
 1. SHALL BE 3" DIA. 1/8" THICK SOLID HARD BRASS W/1/4" WELDED ROD ANCHOR WITH HOOK END. SURFACE TO BE ENGRAVED WITH 1/4" TO 3/8" CAPITAL LETTERS APPROX. (1/8" DEPTH (HAND PUNCHED LETTERS NOT ACCEPTABLE). SURFACE TO BE GROUND SMOOTH AND EPDM-COATED TO PREVENT FADING.
 2. MARKERS SHALL BE WAGCO MARKERS OR APPROVED EQUAL.
 3. MARKERS SHALL BE INSPECTED BY THE UTILITY PRIOR TO INSTALLATION.
 4. REFER TO UTILITY SPECIFICATION AND PAVED VALVE UV1 INSTALLATION DETAIL FOR PLACEMENT.
 5. UTILITY NAME SHALL BE THE INITIALS OF THE UTILITY PROVIDING SERVICE.

2
UNDERGROUND VALVE
MARKER (UV1) DETAIL
SCALE: NOT TO SCALE

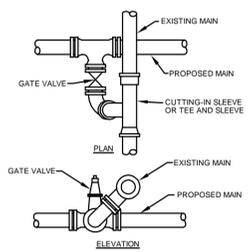


NOTE:
 PIPE SHALL BE CONTINUOUSLY SUPPORTED FOLLOWING BACKFILL. THE MAXIMUM BELL HOLE EXCAVATION WILL BE AS SHOWN.

3
EXCAVATION AT PIPE BELL
SCALE: NOT TO SCALE

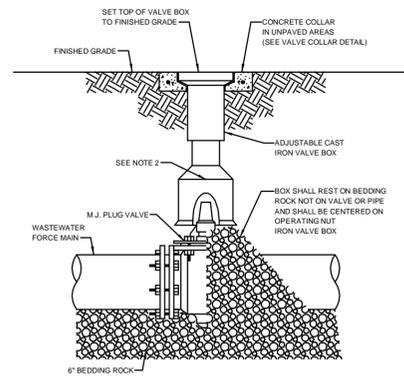


TYPE 'B' INTERCONNECTION



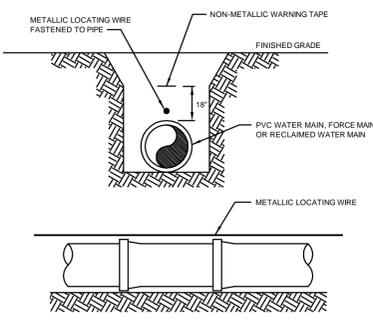
NOTES:
 1. ALTERNATE TYPE PIPE JOINTS WILL BE APPROVED AS INDICATED IN THE SPECIFICATIONS OR GENERAL NOTES.
 2. ALL CONCRETE TO HAVE A 28-DAY COMPRESSIVE STRENGTH OF NOT LESS THAN 3000 PSI.
 3. TYPICAL DETAILS AS SHOWN ON THIS SHEET ARE TO ILLUSTRATE THE ENGINEER'S INTENT IN INSTALLING MAINS AND ARE NOT PRESENTED AS A SOLUTION TO ALL CONSTRUCTION PROBLEMS ENCOUNTERED IN THE FIELD. THE CONTRACTOR MAY ALTER THE METHOD OF CONSTRUCTION TO SUIT FIELD CONDITIONS PROVIDED HE SUBMITS PROPOSED ALTERNATE TO THE ENGINEER AND/OR REGULATORY AGENCY FOR APPROVAL AND MATERIAL USE ARE AS DESIGNATED IN THE SPECIFICATIONS.

4
TYPICAL INTERCONNECTION DETAILS
SCALE: NOT TO SCALE



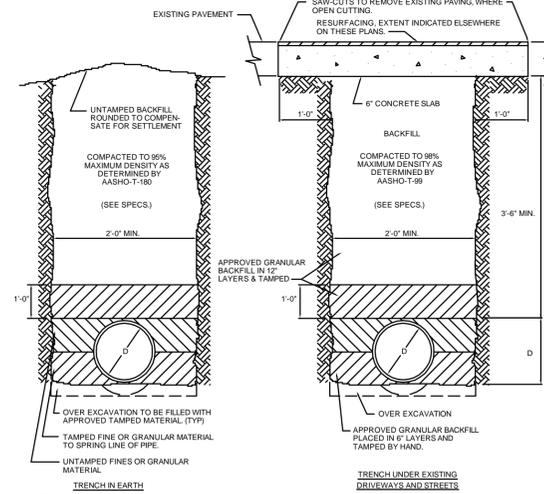
NOTES:
 1. PVC EXTENSIONS SHALL NOT BE USED ON VALVE BOX INSTALLATION.
 2. THE ACTUATING NUT FOR DEEPER VALVES SHALL BE EXTENDED TO COME UP TO A FOOT DEPTH BELOW FINISHED GRADE.

5
PLUG VALVE & BOX DETAIL
SCALE: NOT TO SCALE



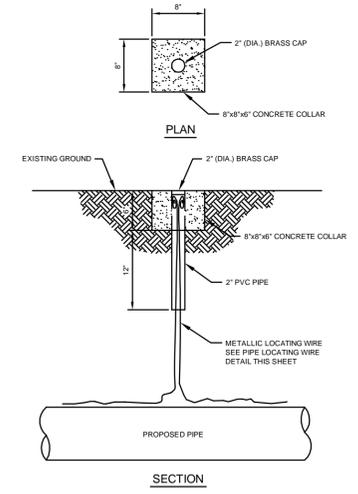
NOTES:
 1. ALL NON-METALLIC PIPE SHALL REQUIRE CONTINUOUS INSULATED METALLIC LOCATING WIRE (14 GAUGE COPPER) CAPABLE OF DETECTION BY A CABLE LOCATOR AND SHALL BE BURIED DIRECTLY ABOVE THE CENTERLINE OF THE PIPE.
 2. THE TRACING WIRE SHALL BE CENTERED ON ALL PIPE (INCLUDING SERVICES) AND TIED INTO ALL HYDRANTS, VALVE BOXES AND METER BOXES. TESTING FOR CONTINUITY IS REQUIRED.
 3. USE VINYL TIE-STRAPS AS NECESSARY TO HOLD WIRE DIRECTLY ON THE TOP OF THE PIPE. DUCT TAPE SHALL NOT BE USED.
 4. WIRE CONNECTIONS MUST BE CLAMPED TOGETHER AND SEALED FOR MOISTURE.
 5. ALL WIRE SPLICE LOCATIONS SHALL BE SHOWN ON THE AS-BUILT DRAWINGS.
 6. WIRE AND WARNING TYPE SHALL BE COLOR CODED AS FOLLOWS:
 WATER: BLUE
 SEWER: GREEN
 RECLAIMED: PURPLE

6
PIPE LOCATING WIRE DETAIL
SCALE: NOT TO SCALE

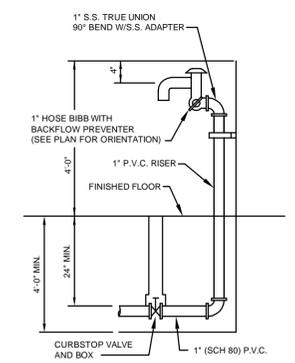


NOTE:
 1. TRENCHES SHALL BE AS NARROW AS POSSIBLE TO ALLOW FOR SAFE AND PROPER PIPE INSTALLATION. TRENCH SIDES SHALL BE VERTICAL TO A POINT 1'-0" ABOVE THE TOP OF THE PIPE. ABOVE THIS POINT SLOPED SIDES MAY BE USED IF CONDITIONS PERMIT, BUT SHOULD BE KEPT AS NEARLY VERTICAL AS POSSIBLE.
 2. FOR TRENCH IN CINDER FILLS, GARBAGE DUMPS, SALT MARSHES, MUCK SOILS OR PLACES WHERE HARMFUL CORROSIVE CONDITIONS EXIST, PIPE SHALL BE PROTECTED WITH AT LEAST 10" OF SAND OR LIMESTONE SCREENINGS ON ALL SIDES AND TAMPED BY HAND IN 6" LAYERS. SEE SPECIFICATIONS. NO ADDITIONAL COMPENSATION FOR CORROSION PROTECTION OF A PIPE WILL BE ALLOWED.

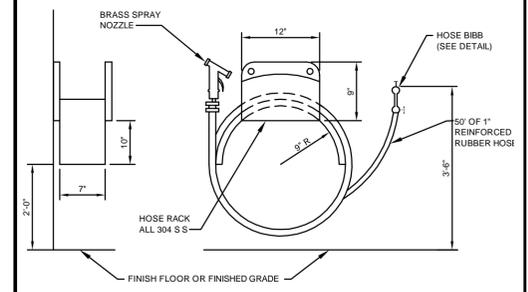
7
TRENCH DETAILS
SCALE: NOT TO SCALE



8
TRACER WIRE PORT DETAIL
SCALE: NOT TO SCALE



9
HOSE BIBB - DETAIL
SCALE: NOT TO SCALE



NOTE:
 ANCHOR WASH HOSE STATION WITH 316 STAINLESS STEEL HARDWARE AS REQUIRED.

10
WASH HOSE STATION - DETAIL
SCALE: NOT TO SCALE

No.	REVISIONS	DATE	BY

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KHA PROJECT 149685007
DATE 12/13/16
SCALE AS SHOWN
DESIGNED BY NEQ
DRAWN BY MNA
CHECKED BY SNR

**DES PINAR
 MASTER PUMP STATION**

LICENSED PROFESSIONAL NICOLE E. QUINBY, P.E. 73789
DATE: _____

MISCELLANEOUS DETAILS

SHEET NUMBER D-1

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PIPE RESTRAINT FOR PVC PIPE (C-900/C-905 DR 18)
MINIMUM RESTRAINED LENGTH (FT) - EACH SIDE OF FITTING

FITTING TYPE	PIPE SIZE - INCHES												
	4	6	8	10	12	14	16	18	20	24			
VERT. UP OR HORIZ													
11-1/4 BEND	2	3	4	5	6	6	7	8	9	10			
22-1/2 BEND	5	6	8	10	12	13	15	16	17	20			
45 BEND	10	13	17	21	24	27	30	33	36	41			
90 BEND	23	32	42	50	58	66	73	80	87	100			
VERTICAL DOWN													
11-1/4 BEND	6	8	10	12	14	16	18	20	22	25			
22-1/2 BEND	11	16	20	24	28	32	36	40	43	50			
45 BEND	23	33	42	51	59	67	75	83	91	106			
90 BEND	56	79	102	122	143	163	182	201	219	253			
BRANCH OF TEE	20	41	63	83	103	129	141	159	177	210			
DEAD END	56	79	102	122	143	163	182	201	219	253			
REDUCERS													
SIZE	6X4	8X4	8X6	10X6	10X8	12X6	12X8	12X10	14X6	14X8			
RESTR. LENGTH	41	74	43	76	41	106	77	42	133	108			
SIZE	16X6	16X8	16X12	18X8	18X12	18X16	20X12	20X16	24X12	24X16			
REST. LENGTH	159	137	79	163	111	41	141	78	194	142			

PIPE RESTRAINT FOR D.I. PIPE
MINIMUM RESTRAINED LENGTH (FT) - EACH SIDE OF FITTING

FITTING TYPE	PIPE SIZE - INCHES												
	4	6	8	10	12	14	16	18	20	24	30	36	
VERT. UP OR HORIZ													
11-1/4 BEND	2	3	4	4	5	6	6	7	8	9	10	12	
22-1/2 BEND	4	6	7	9	10	12	13	14	16	18	21	24	
45 BEND	8	12	15	18	21	24	27	30	32	37	44	50	
90 BEND	20	29	37	44	52	59	65	72	78	90	106	120	
VERTICAL DOWN													
11-1/4 BEND	4	6	8	9	11	12	14	15	17	19	23	26	
22-1/2 BEND	8	12	15	19	22	25	28	31	34	39	46	53	
45 BEND	17	25	32	39	45	52	58	64	70	82	97	111	
90 BEND	42	60	77	94	109	125	140	155	169	197	234	269	
BRANCH OF TEE	15	31	48	63	79	94	108	123	136	164	200	234	
DEAD END	42	60	77	94	109	125	140	155	169	197	234	269	
REDUCERS													
SIZE	6X4	8X4	8X6	10X6	10X8	12X6	12X8	12X10	14X6	14X8	16X6	16X8	
RESTR. LENGTH	31	57	33	59	32	82	59	32	103	84	123	106	
SIZE	16X12	18X12	18X16	20X12	20X16	24X12	24X16	30X20	30X24	36X20	36X24	36X24	
REST. LENGTH	60	86	32	109	60	150	110	152	151	130	207	190	

- NOTES:**
- INCREASE RESTRAINED LENGTH WHEN TEST PRESSURES EXCEED 150 PSI
 - RESTRAINED LENGTH BASED ON USING DUCTILE IRON FITTINGS.
 - RESTRAINED LENGTHS SHOWN ARE BASED ON LAYING CONDITION 3, AND MINIMUM COVER OF 3 FT.
 - RESTRAINED LENGTH BASED ON SAND-SILT SOILS, INT. FRICTION ANGLE = 30, DENSITY = 90 PCF PIPE TO SOIL FRICTION RATIO OF 0.6 (PVC), 0.75 (DI), PIPE TO SOIL COHESION RATIO OF 0 (PVC AND DI) ADJUST RESTRAINED LENGTHS FOR DIFFERENT SOIL TYPES.
 - INCREASE DIP RESTRAINED LENGTH WHEN USING POLYETHYLENE ENCASMENT.
 - TEE RESTRAINT IS BASED ON A MAXIMUM DISTANCE BETWEEN FIRST JOINTS OF 20 FEET. SHOULD THIS DISTANCE DECREASE, INCREASE THE RESTRAINED LENGTH. SHOULD THIS DISTANCE INCREASE, DECREASE THE RESTRAINED LENGTH.
 - TEE RESTRAINT SHOWN IS FOR NON-REDUCING TEES. FOR REDUCING TEES, THE RESTRAINED LENGTH OF THE BRANCH SHALL BE EITHER THE LENGTH BASED ON THE DIAMETER OF THE RUN OF THE TEE OR THE LENGTH REQUIRED FOR A REDUCER FITTING, WHICHEVER IS GREATER.
 - ALL PROPOSED REVISIONS TO THE ABOVE SHALL BE APPROVED BY THE ENGINEER.
 - THE SAFETY FACTOR UTILIZED FOR THE ABOVE TABLE IS 1.5.

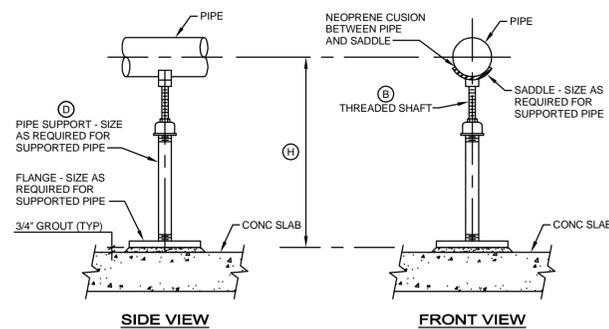
11 RESTRAINED JOINT TABLE
SCALE: NONE

MINIMUM HORIZONTAL AND VERTICAL SEPARATION REQUIREMENTS

PROPOSED UTILITY	POTABLE WATER				RECLAIMED WATER*				SANITARY SEWER FORCE MAIN				SANITARY SEWER GRAVITY MAIN				STORM SEWER OR VACUUM TYPE SANITARY SEWER	
	HORIZONTAL	VERTICAL	HORIZONTAL	VERTICAL	HORIZONTAL	VERTICAL	HORIZONTAL	VERTICAL	HORIZONTAL	VERTICAL	HORIZONTAL	VERTICAL	HORIZONTAL	VERTICAL	HORIZONTAL	VERTICAL		
POTABLE WATER	-	-	3'	12"	6'	12"	6'	12"	6'	12"	6'	12"	6'	12"	3'	6' ABOVE 12' BELOW		
RECLAIMED WATER	3'	12"	-	-	3'	12"	3'	12"	-	-	-	-	-	-	-			
SANITARY SEWER FORCE MAIN	6'	12"	3'	12"	-	-	-	-	-	-	-	-	-	-	-			
SANITARY SEWER GRAVITY MAIN	6'	12"	3'	12"	-	-	-	-	-	-	-	-	-	-	-			
FIRE HYDRANTS W/ UNDERGROUND DRAINS	-	-	3'	-	6'	-	6'	-	6'	-	3'	-	-	-	-			

- THE TABLE REPRESENTS THE MINIMUM SEPARATION REQUIREMENTS AS DESCRIBED IN F.D.P. RULES PER THE FLORIDA ADMINISTRATION CODE (F.A.C.). THESE SEPARATION REQUIREMENTS SHALL APPLY BETWEEN NEWLY PROPOSED UTILITY LINES AND EXISTING OR PROPOSED UTILITY LINES.
- FOR THE PURPOSE OF THIS TABLE RECLAIMED WATER SHALL MEAN UNRESTRICTED PUBLIC ACCESS REUSE WATER AS DEFINED BY F.A.C. 62-160. OTHER TYPES OF RECLAIMED WATER ARE CONSIDERED RAW SEWAGE AND SEPARATION LISTED FOR SANITARY SEWER SHALL APPLY.
- ALL SEPARATION DISTANCES ARE FROM OUTSIDE OF PIPE TO OUTSIDE OF PIPE.
 - *4. THE MINIMUM HORIZONTAL SEPARATION BETWEEN POTABLE WATER AND GRAVITY SANITARY SEWER MAY BE REDUCED TO 3 FEET IF THE BOTTOM OF THE WATER MAIN IS LOCATED AT LEAST 6 INCHES ABOVE THE TOP OF THE GRAVITY SEWER.
- AT UTILITY CROSSINGS ONE FULL LENGTH OF WATER MAIN SHALL BE CENTERED ABOVE OR BELOW THE OTHER UTILITY PIPELINE MAXIMIZING THE SEPARATION OF PIPELINE JOINTS. ALTERNATIVELY, WATER MAIN JOINTS MUST BE:
 - A. AT LEAST 3' FROM ALL JOINTS IN VACUUM TYPE SANITARY SEWERS, STORM SEWERS, STORMWATER FORCE MAINS, OR UNRESTRICTED PUBLIC ACCESS RECLAIMED WATER.
 - B. AT LEAST 6' FROM ALL JOINTS IN GRAVITY OR PRESSURE SANITARY SEWERS, WASTEWATER FORCE MAINS, AND ALL OTHER TYPES OF RECLAIMED WATER.
- NO WATER PIPE SHALL PASS THROUGH OR BE CONSTRUCTED TOUCHING ANY PART OF A SANITARY MANHOLE OR STORM SEWER MANHOLE OR INLET STRUCTURE.
 - 7. NEW OR RELOCATED FIRE HYDRANTS WITH UNDERGROUND DRAINS MUST BE AT LEAST 10 FEET FROM ANY EXISTING OR PROPOSED "ON-SITE" SEWAGE TREATMENT AND DISPOSAL SYSTEM AS DEFINED IN SECTION 381.0065 (2), F.S., AND RULE 64E 6.002, F.A.C. (E.G. SEPTIC TANKS, DRAIN FIELDS, AND GREASE TRAPS).
 - 8. THE FOLLOWING ARE ACCEPTABLE ALTERNATIVE CONSTRUCTION VARIANCES WHERE IT IS NOT POSSIBLE TO MEET THE SEPARATION REQUIREMENTS, AND ARE ONLY TO BE IMPLEMENTED UPON RECEIPT OF EXPRESSED WRITTEN CONSENT FROM THE ENGINEER.
 - A. WHERE A WATER MAIN IS BEING LAID LESS THAN THE REQUIRED MINIMUM HORIZONTAL DISTANCE AND/OR WHERE A WATER MAIN CROSSING HAS LESS THAN THE MINIMUM REQUIRED DISTANCE BETWEEN JOINTS:
 - 1. USE OF PRESSURE RATED PIPE CONFORMING TO AWWA STANDARDS, FOR A GRAVITY OR VACUUM TYPE PIPE LINE.
 - 2. USE OF WELDED, FUSED OR OTHERWISE RESTRAINED JOINTS FOR EITHER PIPE.
 - 3. USE OF WATERTIGHT CASING PIPE OR CONCRETE ENCASMENT AT LEAST 4" THICK FOR EITHER PIPE.
 - B. WHERE A WATER MAIN IS BEING LAID LESS THAN 3 FEET HORIZONTALLY FROM ANOTHER PIPE LINE AND/OR WHERE A WATER MAIN IS BEING LAID WITH LESS THAN THE REQUIRED MINIMUM VERTICAL SEPARATION:
 - 1. USE OF PIPE OR CASING PIPE, HAVING HIGH IMPACT STRENGTH (AT LEAST EQUAL TO 0.25" THICK D.I.P.), OR CONCRETE ENCASMENT AT LEAST 4" THICK FOR THE WATER MAIN AND THE OTHER PIPE LINE IF THE OTHER PIPE LINE CONVEYS WASTEWATER OR RECLAIMED WATER.

15 MINIMUM HORIZONTAL & VERTICAL SEPARATION REQUIREMENTS
SCALE: NONE

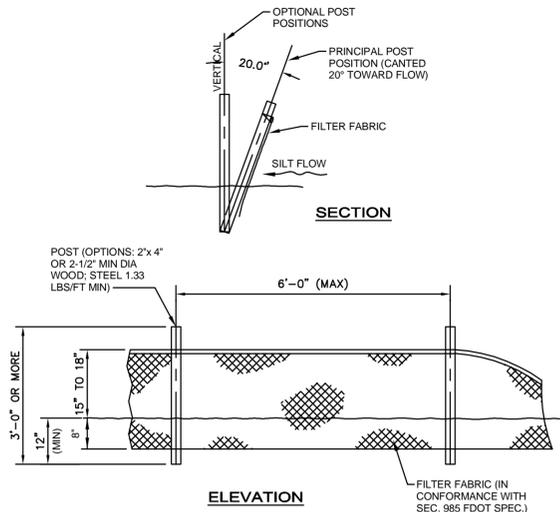


ADJUSTABLE PIPE SUPPORT SCHEDULE

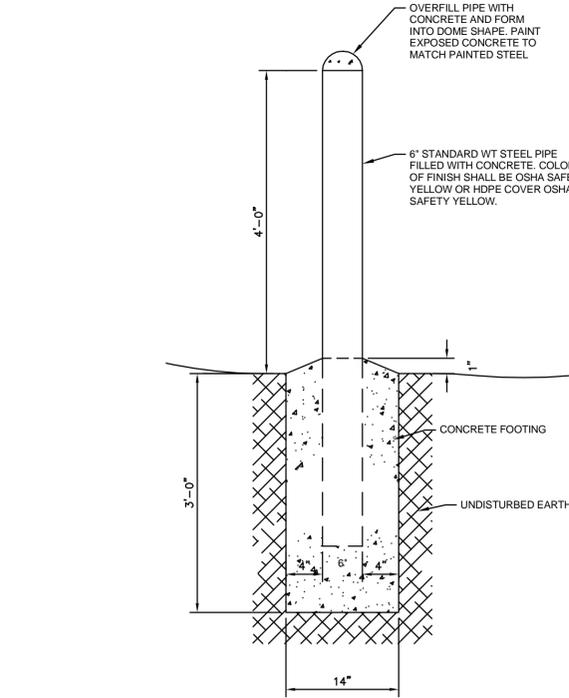
SIZE OF PIPE TO BE SUPPORTED - INCHES	DIMENSIONS OF MATERIALS USED			SIZE OF SUPPORTING PIPE "D" - INCHES	MAXIMUM HEIGHT "H" - INCHES	
	SIZE	SADDLE INCHES	SHANK "B" INCHES ROD SIZE LENGTH			
2	2.375	3/8 x 2	3/8 6	7 1/2	1 1/4 STD	24
3	3.96	3/8 x 2	3/8 6	7 1/2	1 1/4 STD	24
4	4.80	3/8 x 2	5/8 6	9	1 1/2 STD	30
6	6.90	3/8 x 2	7/8 6	11	2 STD	36
8	9.05	1/2 x 2	1 6	13 1/2	2 STD	36
10	11.10	1/2 x 3	1 6	16	2 1/2 STD	42
12	13.20	1/2 x 3	1 1/8 6	19	2 1/2 STD	42
14	15.30	1/2 x 3 1/2	1 1/4 6	21	3 EX HVY	48
14	15.65	1/2 x 3 1/2	1 1/4 6	21	3 EX HVY	48
16	17.40	1/2 x 3 1/2	1 1/4 6	23 1/2	3 EX HVY	48
16	17.80	1/2 x 3 1/2	1 1/4 6	23 1/2	3 EX HVY	48
18	19.50	1/2 x 4	1 1/4 6	25	3 1/2 EX HVY	60
18	19.92	1/2 x 4	1 1/4 6	25	3 1/2 EX HVY	60
20	21.60	1/2 x 4	1 1/2 6	27 1/2	3 1/2 EX HVY	60
20	22.06	1/2 x 4	1 1/2 6	27 1/2	3 1/2 EX HVY	60
24	25.80	1/2 x 5	1 1/2 6	32	4 EX HVY	72
24	26.32	1/2 x 5	1 1/2 6	32	4 EX HVY	72

NOTE:
LENGTH OF THREADED SHANKS WILL ALLOW UP TO 4-INCHES FOR ADJUSTMENT.

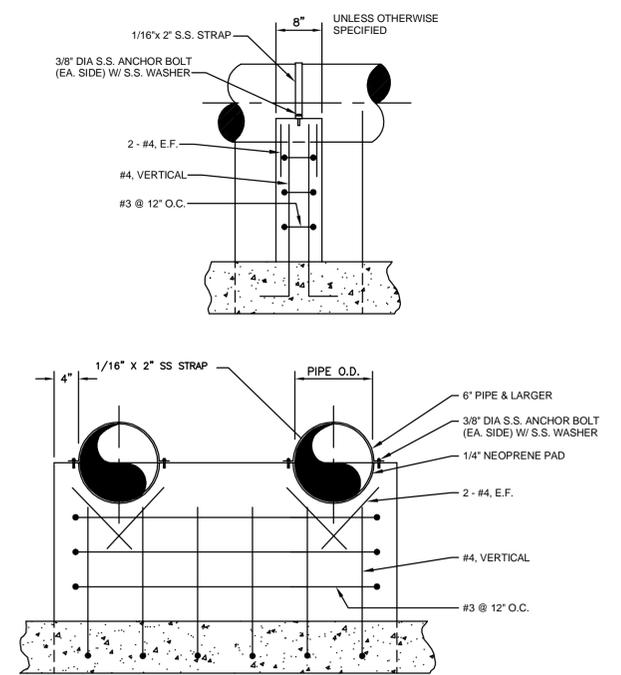
12 ADJUSTABLE PIPE SUPPORT - DETAIL
SCALE: NOT TO SCALE



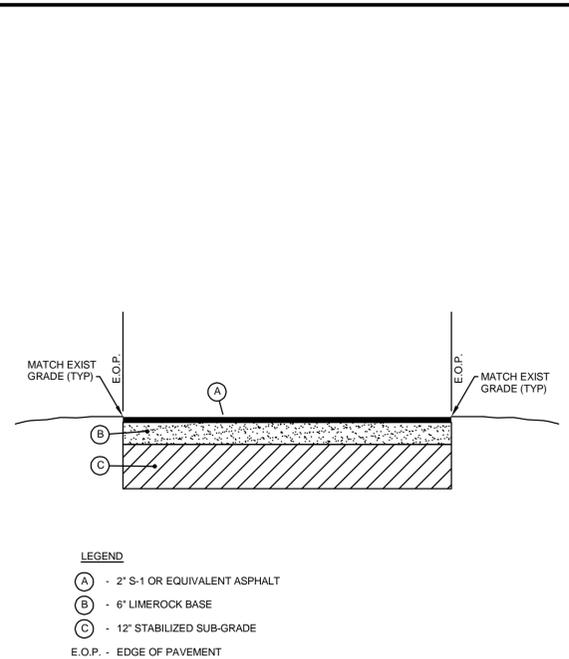
16 TYPE III SILT FENCE (FDOT INDEX NO. 102)
SCALE: NOT TO SCALE



13 BOLLARD - DETAIL
SCALE: NOT TO SCALE

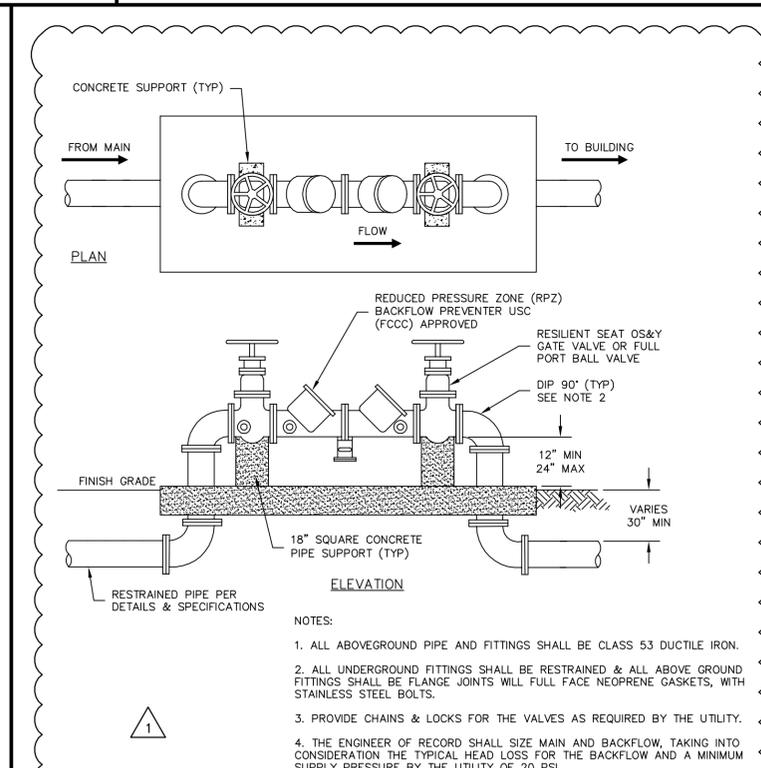


14 TYPICAL CONCRETE PIPE SUPPORT - DETAIL
SCALE: NOT TO SCALE



- LEGEND**
- (A) - 2" S-1 OR EQUIVALENT ASPHALT
 - (B) - 6" LIMEROCK BASE
 - (C) - 12" STABILIZED SUB-GRADE
 - E.O.P. - EDGE OF PAVEMENT

17 ASPHALT ACCESS DRIVE DETAIL
SCALE: NOT TO SCALE



- NOTES:**
- ALL ABOVEGROUND PIPE AND FITTINGS SHALL BE CLASS 53 DUCTILE IRON.
 - ALL UNDERGROUND FITTINGS SHALL BE RESTRAINED & ALL ABOVE GROUND FITTINGS SHALL BE FLANGE JOINTS WILL FULL FACE NEOPRENE GASKETS, WITH STAINLESS STEEL BOLTS.
 - PROVIDE CHAINS & LOCKS FOR THE VALVES AS REQUIRED BY THE UTILITY.
 - THE ENGINEER OF RECORD SHALL SIZE MAIN AND BACKFLOW, TAKING INTO CONSIDERATION THE TYPICAL HEAD LOSS FOR THE BACKFLOW AND A MINIMUM SUPPLY PRESSURE BY THE UTILITY OF 20 PSI.

18 BACKFLOW PREVENTION DETAIL
SCALE: NOT TO SCALE

1	ADDENDUM 2	12/16/16	RL
No.	REVISIONS	DATE	BY

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KHA PROJECT
149685007
DATE
12/13/16
SCALE AS SHOWN
DESIGNED BY NEQ
DRAWN BY MNA
CHECKED BY SNR

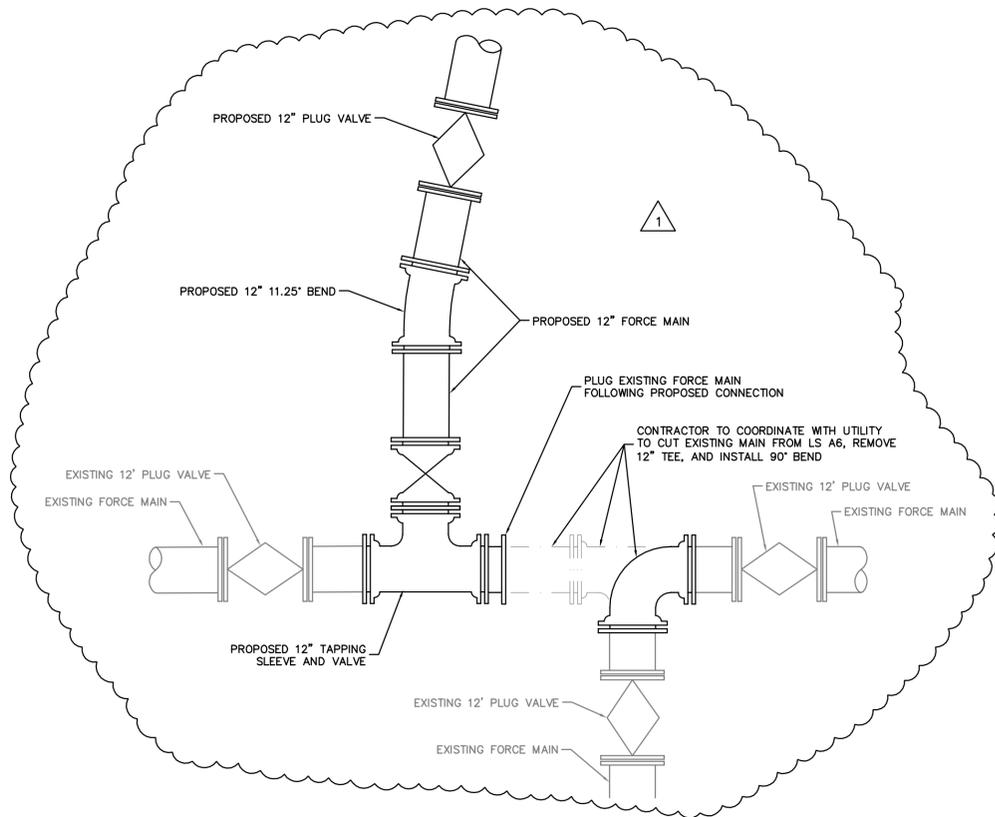
**DES PINAR
MASTER PUMP STATION**

LICENSED PROFESSIONAL
NICOLE E. QUINBY, P.E.
73789
DATE: _____

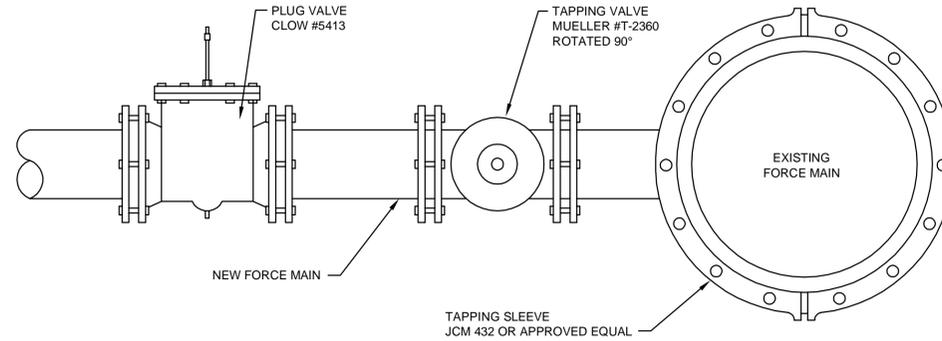
MISCELLANEOUS DETAILS

SHEET NUMBER
D-2

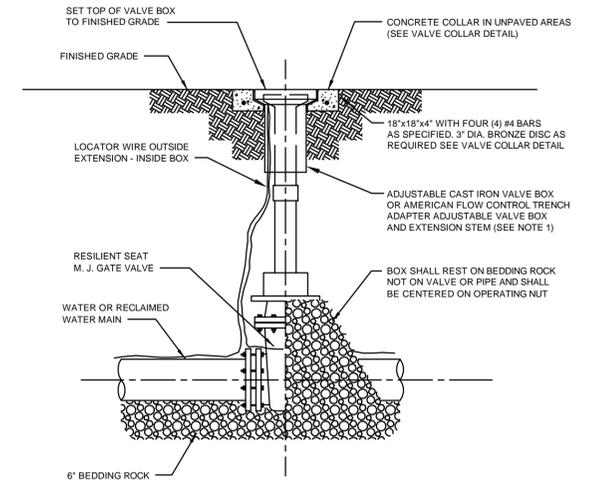
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19 EXISTING 12" FM CONNECTION DETAIL
SCALE: NOT TO SCALE

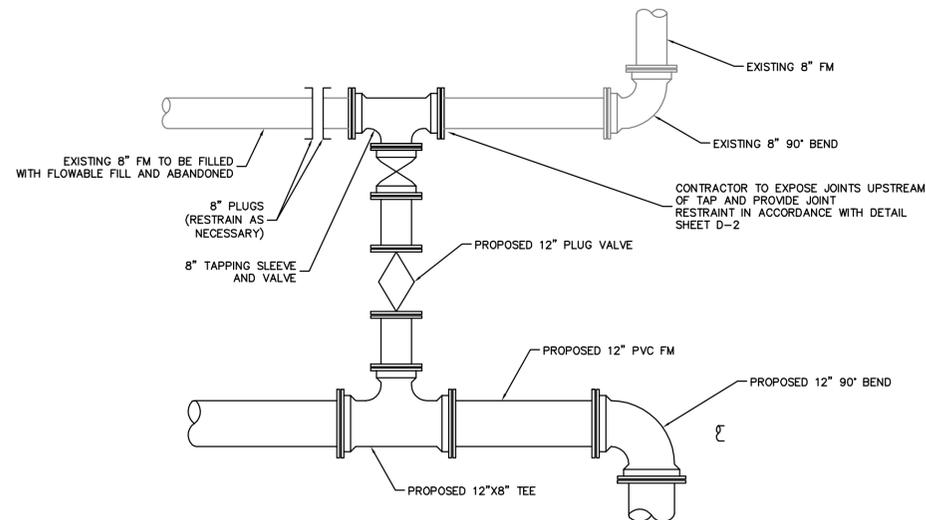


20 CONNECTION DETAIL - NEW FORCE MAIN TO EXISTING
SCALE: NOT TO SCALE

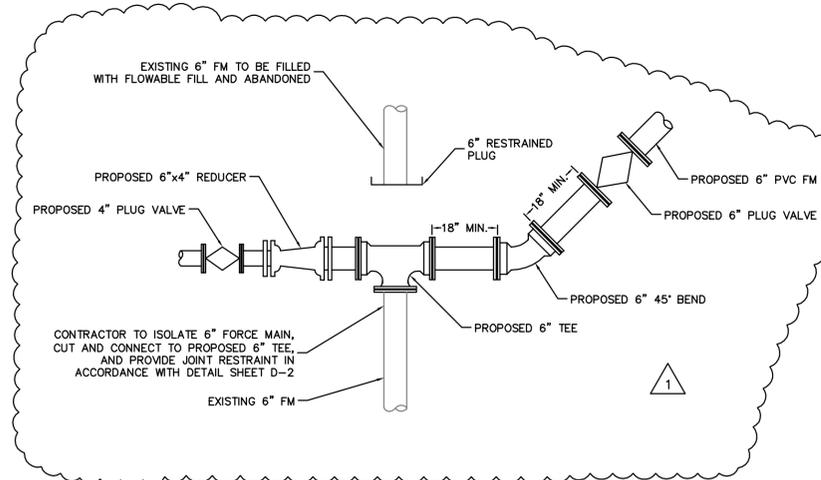


- NOTES:
1. PVC EXTENSIONS SHALL NOT BE USED ON VALVE BOX INSTALLATION, EXCEPT FOR THE AMERICAN FLOW CONTROL TRENCH ADAPTER WITH 2" SQUARE NUT WRENCH AND EXTENSION STEM SPACER AND STOP
 2. COVER TO BE MARKED "WATER", "RECLAIMED", "NPW", OR "SEWER" AS APPROPRIATE.
 3. VALVES SHALL NOT BE LOCATED IN STREET CURBS.

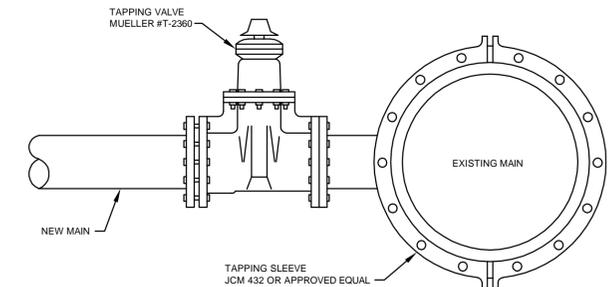
21 VALVE & VALVE BOX DETAIL
SCALE: NOT TO SCALE



23 EXISTING 8" FM CONNECTION DETAIL
SCALE: 1/2" = 1'-0"



24 EXISTING 6" FM CONNECTION DETAIL
SCALE: 1/2" = 1'-0"



- NOTES:
- THIS DETAIL IS APPLICABLE TO WATER AND RECLAIMED WATER MAINS. FORCE MAINS ARE DETAILED SEPARATELY.

25 CONNECTION DETAIL - NEW MAIN TO EXISTING MAIN
SCALE: NOT TO SCALE

1 ADDENDUM 2				12/16/16	RLL
No.	REVISIONS	DATE	BY		

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KHA PROJECT
149685007
DATE
12/19/16
SCALE AS SHOWN
DESIGNED BY NEQ
DRAWN BY MNA
CHECKED BY SNR

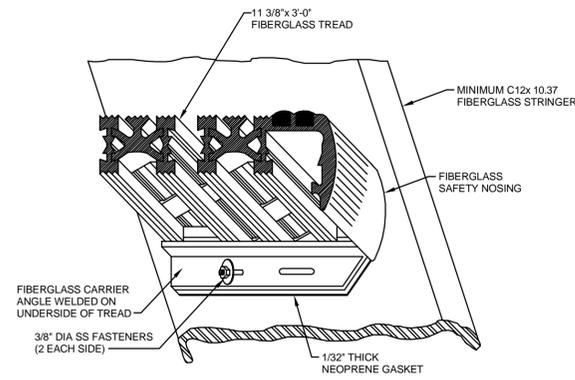
DES PINAR
MASTER PUMP STATION

LICENSED PROFESSIONAL
NICOLE E. QUINBY, P.E.
73789
DATE: _____

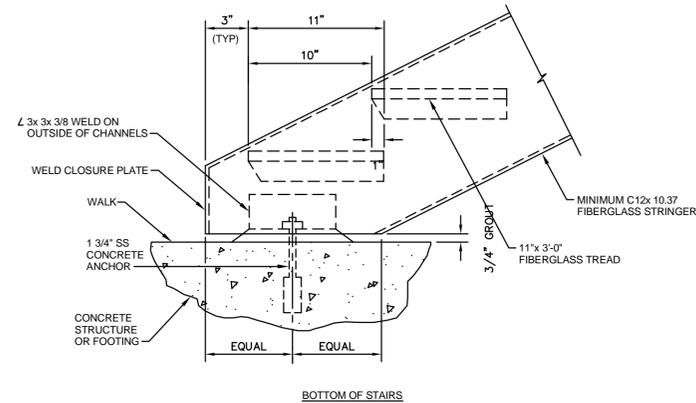
MISCELLANEOUS DETAILS

SHEET NUMBER
D-3

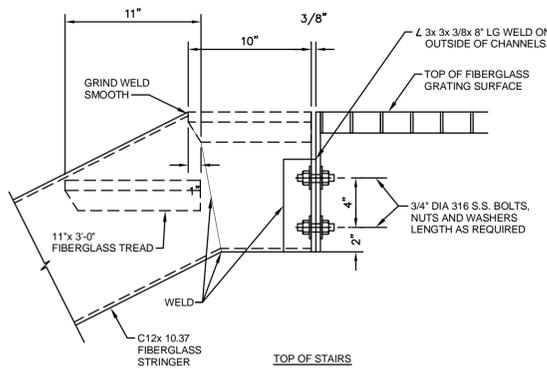
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26 FIBERGLASS TREAD - DETAIL
SCALE: NOT TO SCALE



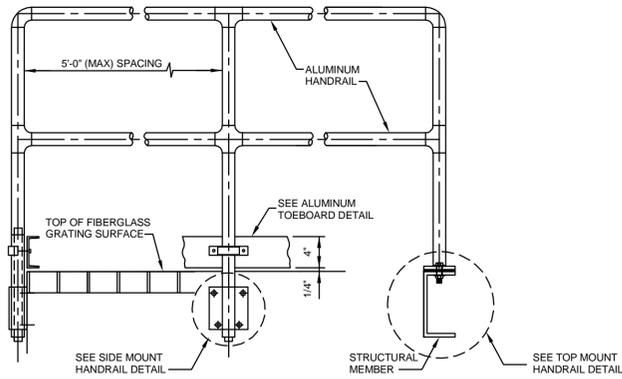
BOTTOM OF STAIRS



TOP OF STAIRS

NOTE:
FOR ATTACHMENT AT BEAMS PROVIDE 1/4" CONTINUOUS WELD SURFACE PLATE AND 3/4" BOLTS FOR ATTACHMENT OF STAIRS TO BEAM.

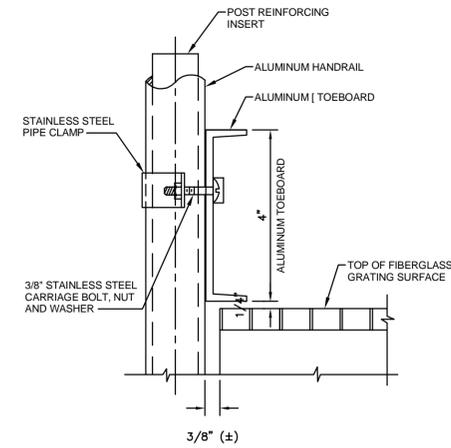
30 STAIR CONNECTION - DETAIL
SCALE: NOT TO SCALE



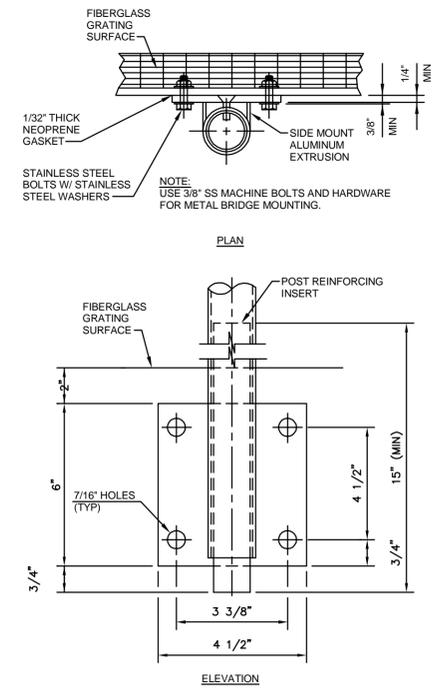
HANDRAIL NOTES:

- HANDRAIL, POST, BRACKETS AND MOUNTINGS SHALL BE DESIGNED TO CARRY MINIMUM LOADS OF 50 LBS/FT OSHA AND SOUTHERN BUILDING CODE LOADING REQUIREMENTS.
- ALL HANDRAILS SHALL BE 38" HIGH ABOVE FINISHED FLOOR UNLESS NOTED OTHERWISE ON THE PLANS.
- FURNISH AND INSTALL H.J. THELEN CO. OSHA TYPE ALUMINUM TOE BOARDS ON ALUMINUM POSTS WHERE NOTED ON PLANS OR REQUIRED BY CODE.
- THERE SHALL BE A GASKET TYPE BOND BREAK IN ANY CASE WHERE TWO DIFFERENT METALS OR METAL AND CONCRETE ARE FASTENED TOGETHER.
- HANDRAILS SHALL BE 1-1/2" INSIDE DIAMETER SCHEDULE 40 ANODIZED ALUMINUM OR 2" NOMINAL OUTSIDE DIAMETER.

27 ALUMINUM HANDRAIL - DETAIL
SCALE: NOT TO SCALE

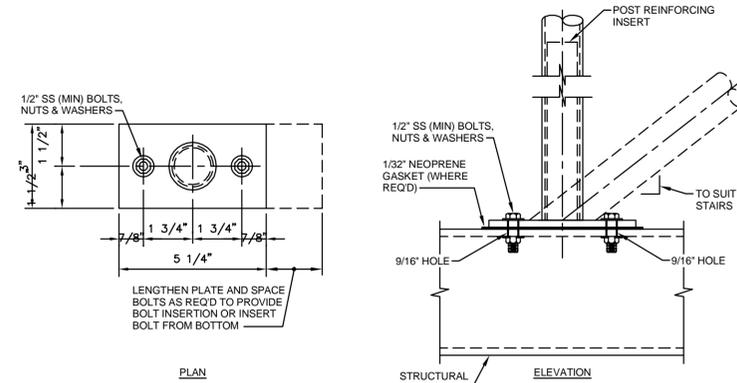


28 ALUMINUM TOEBOARD - DETAIL
SCALE: NOT TO SCALE



ELEVATION

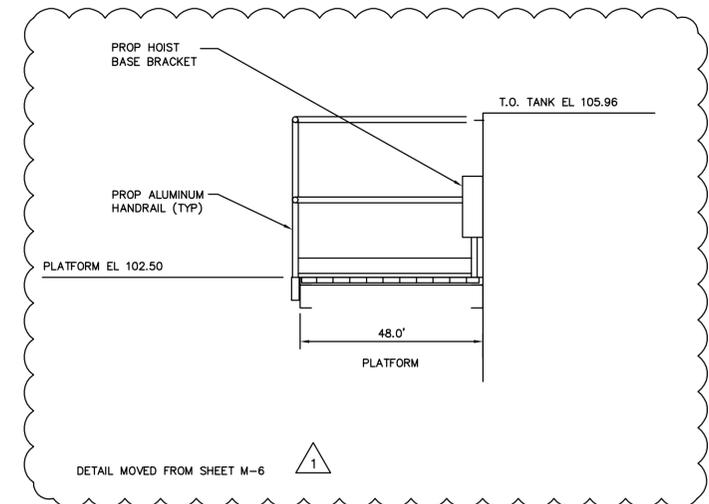
29 SIDE MOUNT HANDRAIL - DETAIL
SCALE: NOT TO SCALE



PLAN

ELEVATION

31 TOP MOUNT HANDRAIL - DETAIL
SCALE: NOT TO SCALE



32 PLATFORM DETAIL
SCALE: 1/2"=1'-0"

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73789
DATE: _____

STAIR & HANDRAIL DETAILS

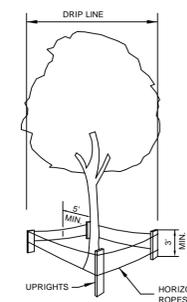
SHEET NUMBER
D-4

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LANDSCAPE REQUIREMENTS:

- THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MATERIALS AND ALL WORK AS CALLED FOR ON THE LANDSCAPE PLANS AND IN THE LANDSCAPE SPECIFICATIONS. IN THE EVENT OF VARIATION BETWEEN QUANTITIES SHOWN ON PLANT LIST AND THE PLANS, THE PLANS CONTROL. THE LANDSCAPE CONTRACTOR SHALL VERIFY ALL QUANTITIES AND REPORT ANY DISCREPANCIES AT THE TIME OF BIDDING.
- THE LANDSCAPE CONTRACTOR SHALL REVIEW ARCHITECTURAL/ENGINEERING PLANS AND BECOME THOROUGHLY FAMILIAR WITH SURFACE UTILITIES.
- EVERY POSSIBLE SAFEGUARD SHALL BE TAKEN TO PROTECT BUILDING SURFACES, EQUIPMENT AND FURNISHINGS. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE OR INJURY TO PERSON OR PROPERTY WHICH MAY OCCUR AS A RESULT OF NEGLIGENCE IN THE EXECUTION OF THE WORK.
- ALL PLANTING SHALL BE PERFORMED BY PERSONNEL FAMILIAR WITH PLANTING PROCEDURE AND UNDER THE SUPERVISION OF A QUALIFIED PLANTING FOREMAN.
- ALL PLANT MATERIAL SHALL BE GRADED FLORIDA NO. 1 OR BETTER AS OUTLINED UNDER GRADES AND STANDARDS FOR NURSERY PLANTS, DIVISION OF PLANT INDUSTRY, STATE OF FLORIDA, UNLESS OTHERWISE NOTED.
- THE LANDSCAPE ARCHITECT OR OWNER SHALL HAVE THE RIGHT, AT ANY STAGE OF THE OPERATIONS, TO REJECT ANY AND ALL WORK AND MATERIALS WHICH, IN HIS OPINION DO NOT MEET WITH THE REQUIREMENTS OF THESE SPECIFICATIONS.
- EXCEPT AS OTHERWISE SPECIFIED, THE LANDSCAPE CONTRACTOR'S WORK SHALL CONFORM TO ACCEPTED HORTICULTURAL PRACTICES AS USED IN THE TRADE.
- THE MINIMUM ACCEPTABLE SIZE OF ALL PLANTS, MEASURED AFTER PRUNING, WITH BRANCHES IN NORMAL POSITIONS, SHALL CONFORM TO THE MEASUREMENTS SPECIFIED ON THE PLANT LIST OR AS INDICATED ON THE LANDSCAPE DRAWING. HEIGHT AND SPREAD DIMENSIONS REFER TO MAIN BODY OF THE PLANT AND NOT EXTREME BRANCH TIP TO TIP. THE CALIPER OF TREE TRUNKS IS TO BE TAKEN ONE FOOT ABOVE THE GROUND LEVEL.
- PLANTS SHALL BE PROTECTED UPON ARRIVAL AT THE SITE BY BEING THOROUGHLY WATERED AND PROPERLY MAINTAINED UNTIL PLANTED.
- ALL TREE PITS SHALL BE EXCAVATED TO SIZE AND DEPTH IN ACCORDANCE WITH THE USDA STANDARD FOR NURSERY STOCK 200.1, UNLESS SHOWN OTHERWISE ON THE DRAWINGS, AND BACKFILLED WITH THE SPECIFIED PLANTING SOIL. THE LANDSCAPE CONTRACTOR SHALL TEST FILL ALL TREE PITS WITH WATER BEFORE PLANTING TO ASSURE PROPER DRAINAGE PERCOLATION IS AVAILABLE.
- PLANTING SOIL MIXTURE CONSIST OF 2/3 EXISTING SOIL ON SITE, MIXED WITH 1/3 PULVERIZED PEAT AND 1 LB. OF 4-8-16 ORGANIC FERTILIZER WITH TRACE ELEMENTS PER CUBIC YARD. PLANTING SOIL SHALL BE TREATED WITH A PRE-EMERGENT HERBICIDE PRIOR TO INSTALLATION OF PLANT MATERIAL.
- THE LANDSCAPE CONTRACTOR SHALL INSTALL A TEMPORARY LANDSCAPE IRRIGATION SYSTEM CONSISTING OF GEAR DRIVEN ROTORS OR ADJUSTABLE IMPACT SPRINKLERS TO COVER NEARLY SOODED TURF AREAS. HEADS SHALL BE PLACED TO PROVIDE 100% OVERLAP (HEAD TO HEAD). THE PLACEMENT TREES SHALL BE IRRIGATED WITH MICRO-JET TYPE HEADS ATTACHED TO A 3/4" SURFACE LINE. ALL PLANTS SHALL BE THOROUGHLY WATERED AT TIME OF PLANTING AND KEPT ADEQUATELY WATERED UNTIL TIME OF ACCEPTANCE. IT IS ALSO THE LANDSCAPE CONTRACTOR'S RESPONSIBILITY TO ASSURE THAT PLANTS ARE NOT OVER WATERED.
- IT SHALL BE THE LANDSCAPE CONTRACTOR'S RESPONSIBILITY TO PREVENT PLANTS FROM FALLING OR BEING BLOWN OVER. TO RE-STRAIGHTEN AND REPLANT ALL PLANTS WHICH LEAN OR FALL AND TO REPLACE ALL PLANTS WHICH ARE DAMAGED DUE TO LACK OF PROPER GUYS OR STAKES. THE LANDSCAPE CONTRACTOR SHALL BE LEGALLY LIABLE FOR ANY DAMAGE CAUSED BY INSTABILITY OF ANY PLANT MATERIAL.
- PLANTS BLOWN OVER BY HIGH WINDS, WITHIN THE GUARANTEED PERIOD, SHALL NOT BE CAUSE FOR ADDITIONAL EXPENSE TO THE OWNER, BUT SHALL BE THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR. DAMAGED PLANTS SHALL BE REPLACED BY THE LANDSCAPE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
- SOD SHALL BE CERTIFIED TO BE FREE OF THE IMPORTED FIRE ANT. SOD SHALL HAVE A CLEAN GROWTH OF ACCEPTABLE GRASS, REASONABLY FREE OF WEEDS WITH NOT LESS THAN 1" OF SOIL FIRMLY ADHERING TO ROOTS. ALL SOD SHALL BE RECOGNIZED AS AUGUSTINE "FLORATAM". IT SHALL BE THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR TO MEASURE AND DETERMINE THE EXACT AMOUNT REQUIRED. THIS AMOUNT SHALL BE VERIFIED WITH THE OWNER OR LANDSCAPE ARCHITECT BEFORE INSTALLATION.
- THE LANDSCAPE CONTRACTOR SHALL INSURE ADEQUATE VERTICAL DRAINAGE IN ALL PLANT BEDS, PLANTERS, AND SOD AREAS. VERTICAL DRILLING THROUGH ANY COMPACTED FILL TO NATIVE SOIL SHALL BE ACCOMPLISHED TO INSURE DRAINAGE. IF WELL DRAINED FILL IS NECESSARY TO ASSURE POSITIVE DRAINAGE, THIS ISSUE SHALL BE BROUGHT UP BY THE LANDSCAPE CONTRACTOR AT TIME OF BIDDING.
- THE LANDSCAPE CONTRACTOR SHALL INSURE THAT HIS WORK DOES NOT INTERRUPT ESTABLISHED OR PROJECTED DRAINAGE PATTERNS.
- MULCH - ALL PLANT BEDS SHALL BE TOP DRESSED WITH 2"-3" PINE BARK MULCH OR AS SPECIFIED (OR APPROVED EQUAL).
- MAINTENANCE PRIOR TO FINAL INSPECTION AND ACCEPTANCE:
 - MAINTENANCE SHALL COMMENCE AFTER EACH PLANT IS PLANTED AND THE MAINTENANCE PERIOD SHALL CONTINUE UNTIL THE JOB OR SPECIFIC PHASE OF THE JOB IS ACCEPTED BY THE LANDSCAPE ARCHITECT OR OWNER. EXTREME CARE SHALL BE TAKEN TO INSTRUCT THE OWNER OR HIS REPRESENTATIVES IN GENERAL MAINTENANCE PROCEDURES.
 - PLANT MAINTENANCE SHALL INCLUDE WATERING, PRUNING, WEEDING, CULTIVATING, MULCHING, TIGHTENING, AND REPAIRING OF GUYS, REPLACEMENT OF SICK OR DEAD PLANTS, RESETTling PLANTS TO PROPER GRADES OR UPRIGHT POSITIONS AND RESTORATION OF THE PLANTING SAUCER AND ALL OTHER CARE NEEDED FOR PROPER GROWTH OF THE PLANTS.
 - DURING THE MAINTENANCE PERIOD AND UP TO THE DATE OF FINAL ACCEPTANCE, THE LANDSCAPE CONTRACTOR SHALL DO ALL SEASONAL SPRAYING AND/OR DUSTING OF TREES AND SHRUBS. UPON COMPLETION OF ALL PLANTING, AN INSPECTION FOR ACCEPTANCE OF WORK WILL BE HELD. THE LANDSCAPE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT OR OWNER FOR SCHEDULING OF THE INSPECTION 10 DAYS PRIOR TO THE ANTICIPATED DATE.
 - AT THE TIME OF THE INSPECTION, IF ALL OF THE MATERIALS ARE ACCEPTABLE A WRITTEN NOTICE WILL BE GIVEN BY THE LANDSCAPE ARCHITECT OR OWNER TO THE LANDSCAPE CONTRACTOR STATING THE DATE WHEN THE MAINTENANCE PERIOD ENDS.
- GUARANTEE AND REPLACEMENT:
 - ALL PLANT MATERIALS, EXCEPT SOD, SHALL BE GUARANTEED FOR ONE HUNDRED EIGHTY (180) DAYS FROM THE TIME OF FINAL INSPECTION AND INTERIM ACCEPTANCE SHALL BE ALIVE AND IN SATISFACTORY GROWTH FOR EACH SPECIFIC KIND OF PLANT AT THE END OF THE GUARANTEED PERIOD. SOD SHALL BE GUARANTEED FOR A PERIOD OF NINETY (90) DAYS FROM THE DATE OF FINAL INSPECTION ON INTERIM ACCEPTANCE.
 - AT THE END OF THE GUARANTEE PERIOD, ANY PLANT REQUIRED UNDER THIS CONTRACT THAT IS DEAD OR NOT IN SATISFACTORY GROWTH, AS DETERMINED BY THE OWNER OR THE LANDSCAPE ARCHITECT, SHALL BE REMOVED AND REPLACED. REPLACEMENT PLANTS SHALL HAVE AN EXTENDED GUARANTEE, AS NOTED ABOVE, FROM THE TIME OF REPLACEMENT.
 - ALL REPLACEMENTS SHALL BE PLANTED OF THE SAME KIND AND SIZE AS SPECIFIED ON THE PLANT LIST. THEY SHALL BE THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR.

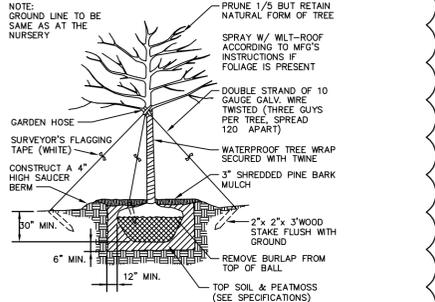


- NOTE: BARRIER MUST BE ERRECTED PRIOR TO CONSTRUCTION
- SPECIFICATION FOR WOOD BARRIER
- MINIMUM RADIUS TO BE PROTECTED IS ENTIRE DRIP LINE
 - MINIMUM 3' IN HEIGHT
 - UPRIGHTS - THE EQUIVALENT OF 2"x4" LUMBER ON 6' MINIMUM CENTERS
 - HORIZONTAL - THE EQUIVALENT OF TWO COURSES OF 1/2" ROPING WITH YELLOW PLASTIC TAPE FLAGGING
 - BARRIERS TO BE ERRECTED AROUND TREES TO REMAIN BEFORE CONSTRUCTION OR NEARBY TREES ARE REMOVED
 - BARRIERS TO REMAIN IN PLACE UNTIL ALL PAVING, CONSTRUCTION AND HEAVY EQUIPMENT IS OUT OF AREA

TREE PROTECTION MEASURES

MASTER PLANT LIST

SYMBOL	QUANTITY	BOTANICAL NAME	COMMON NAME	SPECIFICATIONS
	12	TAXODIUM DISTICHUM	BALD CYPRESS	3" DIA. 1 FT. ABOVE GRADE, 8 FT., 20' O.C.
	9	PINUS PALUSTRIS	LONGLEAF PINE	3" DIA. 1 FT. ABOVE GRADE, 8 FT., 15' O.C.



TREE PLANTING DETAIL

EXISTING TREES TO BE REMOVED

TREE	3" TO LESS THAN 12"	12" TO LESS THAN 24"	24" OR LARGER
OAK		2	
CYPRESS	1		

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1	ADDENDUM 2	12/16/16	RLL

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SCALE AS SHOWN
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DRAWN BY MNA
CHECKED BY SNR

**DES PINAR
MASTER PUMP STATION**

LICENSED PROFESSIONAL

NICOLE E. QUINBY, P.E.

73789

DATE: _____

LANDSCAPING PLAN

SHEET NUMBER
L-1

1000 GENERAL NOTES:

- STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH PROJECT SPECIFICATIONS AND ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING, AND SITE DRAWINGS. CONSULT THESE DRAWINGS FOR OPENINGS, DEPRESSIONS, EQUIPMENT WEIGHTS AND LOCATIONS, EMBEDDED ITEMS AND OTHER DETAILS NOT SHOWN ON STRUCTURAL DRAWINGS.
- DIMENSIONS AND CONDITIONS MUST BE VERIFIED IN THE FIELD. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER OF RECORD BEFORE PROCEEDING WITH THE AFFECTED PART OF THE WORK.
- NO STRUCTURAL MEMBER OR COMPONENT SHALL BE CUT, NOTCHED, OR OTHERWISE ALTERED UNLESS APPROVED IN WRITING BY THE ENGINEER OF RECORD. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL COSTS INCURRED BY THE ENGINEER OF RECORD FOR REVIEW OF ANY SUCH DEVIATIONS.
- DO NOT SCALE DRAWINGS.
- THE STRUCTURE IS DESIGNED TO BE SELF-SUPPORTING AND STABLE AFTER THE BUILDING IS COMPLETE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE ERECTION PROCEDURES AND SEQUENCE TO INSURE SAFETY OF THE BUILDING AND ITS COMPONENTS DURING ERECTION. THIS INCLUDES THE ADDITION OF NECESSARY SHORING, SHEETING, TEMPORARY BRACING, GUYS OR TIE-DOWNS.
- DETAILS LABELED "TYPICAL DETAILS" ON THE DRAWINGS SHALL APPLY TO ALL SITUATIONS OCCURRING ON THE PROJECT THAT ARE THE SAME OR SIMILAR TO THOSE SPECIFICALLY DETAILED. THE APPLICABILITY OF THE DETAIL TO ITS LOCATION ON THE DRAWINGS CAN BE DETERMINED BY THE TITLE OF DETAIL. SUCH DETAILS SHALL APPLY WHETHER OR NOT THEY ARE REFERENCED AT EACH LOCATION. QUESTIONS REGARDING APPLICABILITY OF TYPICAL DETAILS SHALL BE DETERMINED BY THE ENGINEER OF RECORD.
- THE GENERAL CONTRACTOR SHALL COMPARE THE ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING, CIVIL AND STRUCTURAL DRAWINGS AND REPORT ANY DISCREPANCIES BETWEEN EACH SET OF DRAWINGS AND WITHIN EACH SET OF DRAWINGS TO THE ARCHITECT AND ENGINEER OF RECORD PRIOR TO THE FABRICATION AND INSTALLATION OF ANY STRUCTURAL MEMBERS. THE CONTRACT STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE, AND DO NOT INDICATE THE METHOD OR MEANS OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND CONTROL THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, PROCEDURES, TECHNIQUES, SEQUENCE AND SAFETY. THE ENGINEER DOES NOT HAVE CONTROL OR CHARGE OF, AND SHALL NOT BE RESPONSIBLE FOR, CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, OR PROCEDURES, FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, FOR THE ACTS OR OMISSION OF THE CONTRACTOR, SUBCONTRACTOR OR ANY OTHER PERSONS PERFORMING ANY OF THE WORK, OR FOR THE FAILURE OF ANY OF THEM TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
- THE STRUCTURAL ENGINEER'S OBLIGATIONS TO REVIEW SHOP DRAWINGS AND OTHER SUBMITTALS AND TO RETURN THEM IN A TIMELY MANNER ARE CONDITIONED UPON THE PRIOR REVIEW AND APPROVAL OF THE SHOP DRAWINGS OR SUBMITTALS BY THE CONTRACTOR AS REQUIRED IN THE CONSTRUCTION CONTRACT AND THE CONTRACTOR'S SUBMITTAL OF THE SHOP DRAWINGS AND OTHER SUBMITTALS IN ACCORDANCE WITH A WRITTEN AGREEMENT DISTRIBUTED IN ADVANCE TO THE ENGINEER IDENTIFYING THE DATES FOR THE SUBMITTAL OF THE VARIOUS SHOP DRAWINGS AND SUBMITTALS.
- PERIODIC SITE OBSERVATION BY FIELD REPRESENTATIVES OF IBC-ENGINEERING DESIGN SERVICES, INC. IS SOLELY FOR THE PURPOSE OF DETERMINING IF THE WORK OF THE CONTRACTOR IS PROCEEDING IN GENERAL ACCORDANCE WITH THE STRUCTURAL CONTRACT DOCUMENTS. THIS LIMITED SITE OBSERVATION SHALL NOT BE CONSTRUED AS EXHAUSTIVE OR CONTINUOUS TO CHECK THE QUALITY OR QUANTITY OF THE WORK.
- ALL STRUCTURES REQUIRE PERIODIC MAINTENANCE TO EXCEED LIFESPAN AND TO ENSURE STRUCTURAL INTEGRITY FROM EXPOSURE TO THE ENVIRONMENT. A PLANNED PROGRAM OF MAINTENANCE SHALL BE ESTABLISHED BY THE OWNER. THIS PROGRAM SHALL INCLUDE ITEMS SUCH AS, BUT NOT LIMITED TO, PAINTING OF STRUCTURAL STEEL, PROTECTIVE COATINGS FOR CONCRETE, SEALANTS, CAULKED JOINTS, EXPANSION JOINTS, CONTROL JOINTS, SPALLS AND CRACKS IN CONCRETE, AND PRESSURE WASHING OF EXPOSED STRUCTURAL ELEMENTS EXPOSED TO SALT ENVIRONMENT OR OTHER HARSH CHEMICALS.
- STRUCTURAL ENGINEER OF RECORD IS NOT RESPONSIBLE FOR THE DESIGN OF STEEL STAIRS, HANDRAILS, CURTAIN WALL/WINDOW WALL SYSTEMS, COLD-FORMED FRAMING, OR OTHER SYSTEMS NOT SHOWN IN THE STRUCTURAL DOCUMENTS. SUCH SYSTEMS SHALL BE DESIGNED, FURNISHED, AND INSTALLED AS REQUIRED BY OTHER PORTIONS OF THE CONTRACT DOCUMENTS.
- IN THE PROFESSIONAL OPINION OF IBC-ENGINEERING DESIGN SERVICES, INC. THE STRUCTURAL CONTRACT DOCUMENTS FOR THIS PROJECT HAVE BEEN PREPARED IN ACCORDANCE WITH THE DESIGN CRITERIA AS SET FORTH IN THE FLORIDA BUILDING CODE.
- NO PROVISIONS HAVE BEEN MADE FOR VERTICAL OR HORIZONTAL EXPANSION.
- FINISH FLOOR ELEVATION (FIRST FLOOR) OF 4'-0" IS USED AS A REFERENCE ELEVATION. SEE CIVIL DRAWINGS FOR ACTUAL ELEVATION.
- THE USE OF REPRODUCTIONS OF THESE CONTRACT DOCUMENTS AND USE OF CAD FILES BY ANY CONTRACTOR, SUBCONTRACTOR, ERECTOR, FABRICATOR OR MATERIAL SUPPLIER IN LIEU OF PREPARATION OF SHOP DRAWINGS SIGNIFY HIS ACCEPTANCE OF ALL INFORMATION SHOWN HEREON AS CORRECT AND OBLIGATES HIMSELF TO ANY JOBS EXPENSE, REAL OR IMPLIED, ARISING DUE TO ANY ERRORS THAT MAY OCCUR HEREON.

1060 DESIGN LOADS:

- THE STRUCTURAL SYSTEM FOR THIS BUILDING HAS BEEN DESIGNED IN ACCORDANCE WITH THE FLORIDA BUILDING CODE, 2014 EDITION.
- THE FOLLOWING SUPERIMPOSED LOADINGS HAVE BEEN UTILIZED:

2.1	DEAD LOADS	(SEE NOTES- 5404 THIS SHEET)
2.2	ROOF STRUCTURE	
	LIVE LOADS	
	GROUND FLOOR LEVEL (U.N.O.)	100 psf
	ROOF	20 psf
2.3	WIND: PER 2014 FLORIDA BUILDING CODE AND ASCE 7-10	
	SEE SHEET S002 FOR COMPONENTS AND CLADDING PRESSURES.	
	V	139 MPH (3-SECOND GUST)
	BUILDING CATEGORY =	II
	EXPOSURE CATEGORY =	C
	ENCLOSURE CLASSIFICATION =	ENCLOSED

1330 SHOP DRAWING REVIEW:

- SHOP DRAWINGS SHALL ADEQUATELY DEPICT THE STRUCTURAL ELEMENTS AND CONNECTIONS SHOWN ON THE CONTRACT DOCUMENTS. SHOP DRAWINGS WILL BE REVIEWED FOR GENERAL COMPLIANCE WITH THE DESIGN INTENT OF THE CONTRACT DOCUMENTS ONLY. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY COMPLIANCE WITH THE CONTRACT DOCUMENTS AS TO QUANTITY, LENGTH, ELEVATIONS, DIMENSIONS, ETC. REVIEW OF SUBMITTALS AND SHOP DRAWINGS DOES NOT RELIEVE THE CONTRACTOR OF FULL RESPONSIBILITY FOR ERRORS AND OMISSIONS ASSOCIATED WITH THE PREPARATION OF THE SHOP DRAWINGS.
- SHOP DRAWINGS SHALL BE REVIEWED BY THE CONTRACTOR AND MARKED "APPROVED" PRIOR TO SUBMITTAL TO THE ARCHITECT/ENGINEER. NON-CONFORMING DRAWINGS SUBMITTALS WILL BE RETURNED WITHOUT REVIEW.
- SHOP DRAWING SUBMITTALS SHALL INCLUDE ONE GOOD QUALITY REPRODUCIBLE AND THREE SETS OF BLUEPRINTS. ONE SET OF PRINTS WILL BE RETAINED BY THE ENGINEER OF RECORD, ONE BY THE ARCHITECT, ONE BY THE LOCAL BUILDING DEPARTMENT (WHERE REQUIRED) AND THE CONTRACTOR SHALL MAKE PRINTS FROM THE REPRODUCIBLE AS REQUIRED FOR DISTRIBUTION.
- THE CONTRACT DOCUMENTS WILL GOVERN OVER THE SHOP DRAWINGS UNLESS OTHERWISE SPECIFIED IN WRITING BY THE ENGINEER OF RECORD.
- CHANGES AND ADDITIONS MADE ON RE-SUBMITTALS SHALL BE CLEARLY FLAGGED AND NOTED. THE PURPOSE OF THE RE-SUBMITTALS SHALL BE CLEARLY NOTED ON THE LETTER OF TRANSMITTAL. ARCHITECT/ENGINEER OF RECORD REVIEW WILL BE LIMITED TO THOSE ITEMS CAUSING THE RE-SUBMITTAL. CONTRACTOR IS RESPONSIBLE FOR COSTS CAUSED BY MULTIPLE RE-SUBMITTALS (MORE THAN ONE) AT ARCHITECT/ENGINEERS' CURRENT

1333 SUBMITTALS:

- ALL SHOP DRAWINGS MUST BE REVIEWED AND STAMPED APPROVED BY THE GENERAL CONTRACTOR PRIOR TO SUBMITTAL.
- THE GENERAL CONTRACTOR SHALL SUBMIT FOR ENGINEER REVIEW SHOP DRAWINGS FOR THE FOLLOWING ITEMS:
 - A. STRUCTURAL STEEL (*)
 - B. REINFORCING STEEL
 - C. METAL ROOF DECK
 - D. LIGHT GAGE METAL TRUSS FRAMING SYSTEM (*)
 - F. CONCRETE MIX DESIGNS

ITEMS MARKED (*) SHALL HAVE SHOP DRAWINGS SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE IN WHICH THE PROJECT RESIDES.

ITEMS MARKED (#) SHALL BE SUBMITTED FOR ENGINEERS RECORD ONLY.

MANUFACTURER'S LITERATURE. SUBMIT TWO COPIES OF MANUFACTURER'S LITERATURE FOR ALL MATERIALS AND PRODUCTS USED IN CONSTRUCTION ON THE PROJECT.

1334 REQUEST FOR INTERPRETATION (RFI):

- RFI SHALL ORIGINATE WITH CONTRACTOR AND SHALL BE SUBMITTED IN THE FORM SPECIFIED WITHIN CONTRACT DOCUMENTS. RFI SHALL BE SUBMITTED IN A PROMPT MANNER AS TO AVOID DELAYS IN CONTRACTOR'S WORK.
- RFI SHALL BE SUBMITTED AS SPECIFIED WITHIN THE CONTRACT DOCUMENTS AND SHALL BE FORWARDED TO THE ENGINEER VIA THE ARCHITECT OR DIRECTLY BY CONTRACTOR TO ENGINEER WHEN APPROVED BY THE ARCHITECT.
- ENGINEER SHALL TAKE UP TO 5 BUSINESS DAYS TO REVIEW AND RETURN RFI'S. HOWEVER, THE ENGINEER WILL ATTEMPT TO EXPEDITE THE REVIEW OF ALL RFI'S WITHIN A REASONABLE TIME FRAME.
- RFI RESPONSES ARE NOT INTENDED TO AUTHORIZE ANY INCREASE IN CONSTRUCTION COST, SCHEDULE OR TIME EXTENSIONS, OR CONSTRUCTION IN CONFLICT WITH ANY APPLICABLE CODES OR SPECIFIED DESIGN STANDARDS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE DESIGN TEAM IMMEDIATELY OF ANY PERCEIVED SCOPE, SCHEDULE, COST IMPACTS, OR ADJUSTMENTS. IF THE CONTRACTOR REQUESTS ANY ADDITIONAL COST, INCREASE IN SCHEDULE OR ADJUSTMENT IN SCOPE, THE CONTRACTOR SHALL NOT PROCEED WITH ADDITIONAL WORK UNTIL APPROVED IN WRITING BY THE CONSTRUCTION ADMINISTRATOR.

2310 FOUNDATIONS – W/O SOIL REPORTS:

- FOUNDATION DESIGN IS BASED ON A SOIL BEARING PRESSURE OF 3,000 PSF TO BE VERIFIED DURING CONSTRUCTION BY A GEOTECHNICAL ENGINEER REGISTERED IN THE STATE OF FLORIDA.
- SLAB ON GRADE AND BUILDING FOUNDATIONS SHALL BE SUPPORTED ON ENGINEERED COMPACTED FILL CLEAN FROM ALL ORGANIC MATERIAL AND PREPARED IN ACCORDANCE WITH THE GEOTECHNICAL ENGINEER'S INSTRUCTIONS AND RECOMMENDATIONS.

3302 CONCRETE:

- SHALL BE PER AN APPROVED MIX DESIGN PROPORTIONED TO ACHIEVE A STRENGTH AT 28 DAYS AS LISTED BELOW WITH A PLASTIC AND WORKABLE MIX:

LOCATION	STRENGTH	SLUMP	MAX AGGREGATE	WCM RATIO (MAX)
FOUNDATIONS	3000 PSI	4-6"	3/4"	0.48
SLABS ON GRADE	3000 PSI	4-6"	3/4"	0.48
BEAMS/COLUMNS	5000 PSI	4-6"	3/4"	0.42
TILT WALL PANELS	5000 PSI	4-6"	3/8"	0.48
OTHER STRUCTURAL CONCRETE	3000 PSI	4-6"	3/4"	0.45
- CONCRETE SHALL BE PLACED AND CURED ACCORDING TO ACI STANDARDS AND SPECIFICATIONS.
- SUBMIT PROPOSED MIX DESIGN WITH RECENT FIELD CYLINDER OR LAB TESTS FOR REVIEW PRIOR TO USE. MIX SHALL BE UNIQUELY IDENTIFIED BY MIX NUMBER OR OTHER POSITIVE IDENTIFICATION. MIX SHALL MEET THE REQUIREMENTS OF ASTM C93 FOR COARSE AGGREGATE.
- CONCRETE SHALL COMPLY WITH THE REQUIREMENTS OF ASTM STANDARD C94 FOR MEASURING, MIXING, TRANSPORTING, ETC. CONCRETE TICKETS SHALL BE TIME STAMPED WHEN CONCRETE IS BATCHED.
- THE MAXIMUM TIME ALLOWED FROM THE TIME THE MIXING WATER IS ADDED UNTIL IT IS DEPOSITED IN ITS FINAL POSITION SHALL NOT EXCEED ONE AND ONE HALF (1-1/2) HOURS. IF FOR ANY REASON THERE IS A LONGER DELAY THAN THAT STATED ABOVE, THE CONCRETE SHALL BE DISCARDED. IT SHALL BE THE RESPONSIBILITY OF THE TESTING LAB TO NOTIFY THE OWNER'S REPRESENTATIVE AND THE CONTRACTOR OF ANY NONCOMPLIANCE WITH THE ABOVE.
- SLABS SHALL BE CURED USING A DISSIPATING CURING COMPOUND MEETING ASTM STANDARD C309 TYPE 1-CLASS D AND SHALL HAVE A FUGITIVE DYE. THE COMPOUND SHALL BE PLACED AS SOON AS THE FINISHING IS COMPLETED OR AS SOON AS THE WATER HAS LEFT THE UNFINISHED CONCRETE. SCUFFED OR BROKEN AREAS IN THE CURING MEMBRANE SHALL BE RECOATED DAILY.
- CALCIUM CHLORIDES SHALL NOT BE UTILIZED; OTHER ADMXTURES MAY BE USED ONLY WITH THE APPROVAL OF THE ENGINEER.
- CONCRETE MIX DESIGNS SHALL INCLUDE A WRITTEN DESCRIPTION INDICATING WHERE EACH PARTICULAR MIX IS TO BE PLACED WITHIN THE STRUCTURE.
- CONDUITS, PIPES AND SLEEVES SHALL BE PLACED AND SPACED IN ACCORDANCE WITH ACI 318, 6.3.
- PEA ROCK PUMP MIX USE IS LIMITED TO VERTICAL ELEMENT POURS AND BEAM POURS LESS THAN 60 LINEAR FEET PER POUR.
- CONCRETE DESIGN MIX SUBMITTALS SHALL INCLUDE TESTED, STATISTICAL BACK-UP DATA AS PER CHAPTER 5 OF ACI 318.
- WHEN TOTAL WIDTH OF PIPES OR DUCTS CAST INTO A SLAB EXCEED 12" IN A 24" WIDTH THEN THE CONTRACTOR SHALL ADD A LAYER OF #4 @ 12" ABOVE AND PERPENDICULAR TO THE DUCT/PIPE RUNS EXTENDING 12" BEYOND THE LAST DUCT/PIPE ON EACH SIDE.
- WHEN WATER-BASED ADHESIVE ARE BEING USED ON CONCRETE SURFACES THE CONTRACTOR SHALL VERIFY THAT THE WATER CONTENT OF THE CONCRETE IS WITHIN THE ALLOWABLE RANGE BEFORE INSTALLATION

3310 REINFORCING STEEL:

- SHALL BE ASTM A615 GRADE 60 DEFORMED BARS, FREE FROM OIL, SCALE AND RUST AND PLACED IN ACCORDANCE WITH THE TYPICAL BENDING DIAGRAM AND PLACING DETAILS OF ACI STANDARDS AND SPECIFICATIONS.
- PROVIDE CONCRETE COVER OVER REINFORCEMENT AS FOLLOWS, UNLESS OTHERWISE NOTED:

BEAMS	1-1/2"
SLABS ON GRADE	3/4"
WALLS	1-1/2"
FOOTINGS	3"
CONCRETE EXPOSED TO EARTH OR WEATHER	2"-#6 BARS OR LARGER
	1-1/2"-#5 BARS OR SMALLER
- SECURE APPROVAL OF SHOP DRAWINGS PRIOR TO COMMENCING FABRICATION.
- PROVIDE STANDARD HOOKS AT DISCONTINUOUS ENDS OF ALL TOP BARS.
- WHERE REINFORCING IS SHOWN CONTINUOUS, SPLICE BOTTOM BARS OVER SUPPORTS AND TOP BARS AT CENTER OF SPAN. ALL OTHER LAP SPLICES SHALL BE IN ACCORDANCE WITH SPLICE TABLES AND DETAILS SHOWN ON DRAWINGS.
- PROVIDE DOWELS INTO FOOTINGS, PILE CAPS, SUPPORT BEAMS, ETC. TO MATCH VERTICAL BARS WITH CLASS B TENSION LAP SPLICES, U.N.O.

3314 WELDED WIRE FABRIC:

- SHALL CONFORM TO ASTM A-185, FREE FROM OIL, SCALE AND RUST AND PLACED IN ACCORDANCE WITH THE TYPICAL PLACING DETAILS OF ACI STANDARDS AND SPECIFICATIONS.
- MINIMUM LAP SHALL BE ONE SPACE PLUS TWO INCHES.
- USE OF FLAT MANUFACTURED SHEETS AS REQUIRED (NO ROLLS).
- INSTALL WWF ON BRICKS OR BOLSTERS AT MID DEPTH OF SLAB U.N.O.

3322 CONSTRUCTION JOINTS:

- ANY DEVIATION OR ADDITION OF CONSTRUCTION JOINTS FROM THAT SHOWN ON THE DRAWINGS MUST BE REVIEWED AND APPROVED IN WRITING BY THE ENGINEER OF RECORD.
- ALTERNATE OR ADDED CONSTRUCTION JOINT LOCATIONS ARE ACCEPTABLE ONLY AS A CHANGE ORDER, WHICH WILL INCLUDE ENGINEERING CHARGES BY THE ENGINEER OF RECORD FOR REDESIGN OF THE STRUCTURE, SHORING, ETC.

3601 CHEMICAL (ADHESIVE) ANCHORS:

- SHALL BE AN EQUAL TWO PART EPOXY POLYMER INJECTION SYSTEM, SUCH AS RAMSET "EPCON", POWERS POWER-FAST CARTRIDGE SYSTEM, DUR-O-WAL "DUR-O-PAIR" EPOXY ANCHOR, OR HILTI HIT HY 200 ADHESIVE SYSTEM, OR ENGINEER APPROVED SUBSTITUTION.
- INSTALL IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS.
- THE MANUFACTURER'S REPRESENTATIVE SHALL TRAIN INSTALLERS.

4810 MASONRY WALLS:

- ALL MASONRY CONSTRUCTION SHALL CONFORM TO ACI 530/ASCE 5/TMS 402 "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES" AND ACI 530.1/ASCE 6/TMS 602 "SPECIFICATION FOR MASONRY STRUCTURES", LATEST EDITION.
- MASONRY UNITS SHALL MEET ASTM C-90 FOR HOLLOW LOAD BEARING TYPE MASONRY WITH UNIT STRENGTH OF 1900 PSI ON THE NET AREA (f_m = 1500 PSI), MORTAR SHALL BE TYPE "M" OR "S" AND MEET ASTM C-270.
- GROUT SHALL BE 3000 PSI MINIMUM COMPRESSIVE STRENGTH AND MEET ASTM C-476 AND HAVE A SLUMP BETWEEN 8" AND 11" WITH WATER OM RATIO OF 0.55 MAXIMUM AND WITH 3/8" MAXIMUM AGGREGATE.
- PROVIDE HOOKED DOWELS IN FOUNDATIONS FOR VERTICAL REINFORCING ABOVE. LAP SPLICES TO BE 48 BAR DIAMETERS (U.N.O.).
- BLOCK CELLS SHALL BE GROUT FILLED WITH VERTICAL REINFORCING BARS AT CORNERS, INTERSECTIONS, EACH SIDE OF OPENINGS AND AS SHOWN ON THE DRAWINGS.
- DOWELS SHALL BE USED TO PROVIDE CONTINUITY INTO THE STRUCTURE ABOVE AND/OR BELOW, UNLESS NOTED OTHERWISE.
- USE METAL LATH, MORTAR OR SPECIAL UNITS TO CONFINE CONCRETE AND GROUT TO AREA AS REQUIRED.
- MASONRY SHALL BE LAID IN RUNNING BOND PATTERN UNLESS NOTED OTHERWISE. AT FILLED CELLS LAY UNITS WITH FULL BED JOINTS AROUND CELLS.
- PROVIDE 9 GAGE GALVANIZED HORIZONTAL JOINT REINFORCING (DUR-O-WALL OR ENGINEER APPROVED SUBSTITUTION) AT ALTERNATE BLOCK COURSES. LADDER TYPE IS RECOMMENDED WITH REINFORCED FILLED CELLS. PROVIDE PREFABRICATED "TEE" OR CORNER SECTIONS AT WALL INTERSECTIONS.
- SUBMIT PROPOSED GROUT MIX DESIGNS FOR REVIEW PRIOR TO USE. MIX NUMBER OR OTHER POSITIVE IDENTIFICATION SHALL UNIQUELY IDENTIFY MIX.
- USE OF SUPERPLASTICIZER IS PROHIBITED.
- CELLS TO BE GROUT FILLED SHALL HAVE VERTICAL ALIGNMENT SUFFICIENT TO MAINTAIN A CLEAR, UNOBSTRUCTED, CONTINUOUS VERTICAL GROUT SPACE.
- CLEANOUT OPENINGS SHALL BE PROVIDED AT THE BOTTOM OF CELLS TO BE GROUT FILLED IN EACH POUR IN EXCESS OF 5 FEET IN HEIGHT. AFTER INSPECTION AND BEFORE GROUTING, THE REBAR SHALL BE TIED AT THE CLEANOUTS AND THE CLEANOUTS SHALL BE SEALED.
- ANY OVERHANGING MORTAR OR OTHER OBSTRUCTION OR DEBRIS SHALL BE REMOVED FROM THE INSIDES OF SUCH CELL WALLS.
- VERTICAL REINFORCEMENT SHALL BE HELD IN POSITION AT TOP AND BOTTOM AND AT INTERVALS NOT EXCEEDING 192 BAR DIAMETERS.
- CELLS CONTAINING REINFORCEMENT SHALL BE FILLED SOLIDLY WITH GROUT. SAMPLE AND TEST GROUT PER ASTM C1019.
- GROUT SHALL BE Poured IN LIFTS OF 4 FEET MAXIMUM HEIGHT. GROUT SHALL BE CONSOLIDATED AT TIME OF PLACING BY VIBRATING AND RECONSOLIDATED LATER BY VIBRATING BEFORE PLASTICITY IS LOST.
- WHEN TOTAL GROUT POUR EXCEEDS 5 FEET IN HEIGHT, (HIGH LIFT GROUT), THE GROUT SHALL BE PLACED IN 4-FOOT LIFTS WITH A MINIMUM OF A 30 MINUTE DELAY BETWEEN LIFTS. MINIMUM CELL DIMENSION SHALL BE IN ACCORDANCE WITH TABLE 5 OF ACI 530.1 (3" X 3" FOR COARSE GROUT, 12 FT. MAXIMUM POUR HEIGHT).
- WHEN THE GROUTING IS STOPPED FOR ONE HOUR OR LONGER, HORIZONTAL CONSTRUCTION JOINTS SHALL BE MADE BY STOPPING THE POUR OF GROUT NOT LESS THAN 1-1/2 INCH BELOW THE TOP OF THE UPPERMOST UNIT GROUTED.

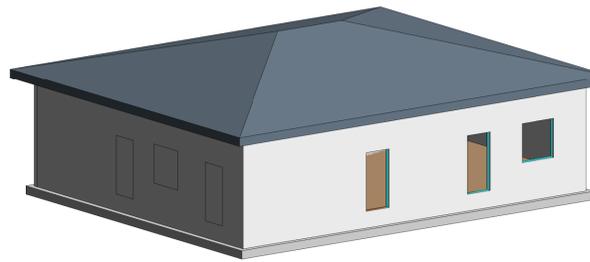
5312 STEEL ROOF DECK:

- SHALL BE 1 1/2" DEEP - 20 GAGE GALVANIZED (G90) STEEL ROOF DECKS AND SHALL CONFORM TO PROVISIONS OF THE STEEL DECK INSTITUTE (SDI) SPECIFICATIONS FOR STEEL ROOF DECK. SEE PLAN FOR DECK TYPE.
- DECK CENTERING SHALL BE PLACED IN CONFORMANCE WITH MANUFACTURER'S RECOMMENDATIONS AND SHALL BE CONTINUOUS OVER AT LEAST 3 SPANS.
- DECK FASTENING PATTERN FOR VULCRAFT TYPE 1.5B DECK SHALL BE MINIMUM 36/7 WITH #12 TEK SCREWS FOR SUPPORT AND (10) #10 TEK SCREWS FOR SIDELAPS UNLESS NOTED OTHERWISE.
- DIAPHRAGM LOAD CAPACITY SHALL BE MINIMUM OF 500 PLF.
- DECK SUBMITTALS SHALL INCLUDE THE INTENDED FASTENING PATTERNS AND THE CAPACITY OF EACH PATTERN IN UPLIFT AND DIAPHRAGM ACTION.

5404 COLD-FORMED STEEL (CFS) TRUSSES:

- DESIGN DOCUMENTS INCLUDE A SYSTEM OF CUSTOM ENGINEERED TRUSS COMPONENTS, ASSEMBLIES AND CONNECTIONS IN ACCORDANCE WITH AISI CODE OF STANDARD PRACTICE FOR CFS STRUCTURAL FRAMING (2006 EDITION), AND THE STATE OF FLORIDA DEPARTMENT OF PROFESSIONAL REGULATION AND GUIDELINES (FLORIDA ADMINISTRATIVE CODE 61G15). THE ENTIRE SYSTEM, INCLUDING ALL TRUSSES, CONNECTIONS, BRIDGING, TEMPORARY AND PERMANENT BRACING SHALL BE DESIGNED BY A DELEGATED SPECIALTY Professional ENGINEER REGISTERED IN THE STATE OF FLORIDA.
- THE COLD-FORMED STEEL TRUSSES SHALL BE DESIGNED BY TRUSS SUPPLIER USING COLD-FORMED STEEL SHAPES. CHORD MEMBERS TO COMPLY WITH ASTM A653 WITH MINIMUM STRENGTH OF 50 KSI, AND MINIMUM 22 GAGE (28 MILS). WEB MEMBERS TO COMPLY WITH ASTM A500 WITH MINIMUM STRENGTH OF 45 KSI AND MINIMUM 20 GAGE (33 MILS).
- ALL CFS TRUSS ELEMENTS SHALL BE DESIGNED, FABRICATED AND ERECTED IN STRIC ACCORDANCE WITH THE LATEST EDITION OF AISI/COFS TRUSS-2004 AND OTHER APPLICABLE CODES AND SPECIFICATIONS.
- THE CFS TRUSS SUPPLIER SHALL SUBMIT FOR REVIEW AND APPROVAL, DETAILED SHOP DRAWINGS AND DESIGN CALCULATIONS SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE STATE OF FLORIDA. FABRICATION OF CFS TRUSSES SHALL NOT BEGIN UNTIL THE SHOP DRAWINGS AND CALCULATIONS HAVE BEEN REVIEWED AND RETURNED APPROVED. REFER TO CONTRACT SPECIFICATIONS FOR APPROVED MANUFACTURERS. MANUFACTURERS NOT PRE-APPROVED, MUST HAVE QUALIFICATIONS MEETING CONTRACT SPECIFICATIONS APPROVED PRIOR TO BIDDING.
- DELEGATED ENGINEER CALCULATIONS SHALL INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING:
 - A. ENGINEERING ANALYSIS SHOWING LOADING, MEMBER STRESSES AND DEFLECTIONS FOR EACH DIFFERENT TRUSS DESIGN BASED ON DESIGN LOADS LISTED ON THE DRAWINGS.
 - B. ALL TRUSS MEMBERS, PITCH, SPAN, CAMBER, BEARING, CONFIGURATION, TYPE, LOCATION, SPACING AND LAYOUT OF TRUSSES.
 - C. ALL BRIDGING AND BRACING FOR LOADS INDICATED INCLUDING WIND DIAPHRAGM CONSTRUCTION, AND ALL OTHERS, TEMPORARY AND PERMANENT LOADS.
 - D. ALL TRUSS TO TRUSS CONNECTIONS, TRUSS TO STEEL BEAM, TRUSS TO CONCRETE BEAM, JOISTS, TRACK, GUSSET PLATES, FASTENERS, BRIDGING AND RELATED ACCESSORIES TO BE DESIGNED AND DETAILED FOR ALL LOADING CONDITIONS INCLUDING NET WIND UPLIFT AND REACTIONS FROM HORIZONTAL WIND DIAPHRAGM ACTION.
 - E. ALL TRUSS MEMBER AND BRACING SIZES, PROPERTIES, AND ANY VIELD STRENGTH.
 - F. SPACING AND LAYOUT OF TRUSSES MEETING REQUIREMENTS INDICATED ON THE DRAWINGS.
 - G. NOTE ANY PROPOSED TRUSS LAYOUT CHANGES THAT WOULD EFFECT THE LOCATION OF BEARING WALLS OR FOUNDATION DESIGN OR CONSTRUCTION.
 - H. WIND TRUSSES SHALL BE DESIGNED TO TRANSFER THE HORIZONTAL WIND LOADS AS NOTED ON THE DRAWINGS IF APPLICABLE.
- GENERAL CONTRACTOR SHALL COORDINATE TRUSS REQUIREMENTS WITH ME/P, HVAC AND DUCT WORK REQUIREMENTS, INCLUDING HORIZONTAL AND VERTICAL CHASES, ATTIC/ACCESS SPACE REQUIREMENTS, INCLUDING SIZE AND LOCATION WITH ARCHITECTURAL, MECHANICAL AND ELECTRICAL DESIGN DOCUMENTS.
- SUBMIT FULL TRUSS SYSTEM DESIGN AND ERECTION DRAWINGS PREPARED BY DELEGATED SPECIALTY ENGINEER FOR APPROVAL. THESE DRAWINGS SHALL INCLUDE:
 - A. PLACING DRAWINGS FOR STEEL AND TRUSS SYSTEM SHOWING MEMBERS, PITCH, SPAN, CAMBER, CONFIGURATION, TYPE, LOCATIONS, AND SPACING OF ALL MEMBERS, ALL ATTACHMENTS, BRIDGING, AND ANCHORAGE SHALL BE CLEARLY DETAILED ON DWGS. INDICATE SUPPLEMENTAL STRAPPINGS, BRACINGS, CLIPS & OTHER ACCESSORIES REQUIRED FOR PROPER INSTALLATION, MEETING DESIGN CRITERIA OUTLINED.
 - B. CROSS SECTIONS, DRAWINGS AND ELEVATIONS DEPICTING COMPONENT LOCATIONS, CONNECTION DETAILS SHOWING SCREW TYPES, NUMBER AND LOCATIONS, MAXIMUM VERTICAL AND HORIZONTAL ALLOWABLE LOADS LENGTHS AND LOCATIONS OR OTHER RELATED FASTENER REQUIREMENTS. ALL CONNECTIONS SHALL MEET OUTLINED DESIGN CRITERIA.
 - D. DETAILED TRUSS SYSTEM DRAWINGS OUTLINING PROPOSED PERMANENT AND TEMPORARY BRACING, CONNECTIONS, AND PROPOSED REACTIONS TO ADJACENT STRUCTURAL SYSTEMS IF UTILIZED AS BRACING RESTRAINT.
- THE CFS TRUSSES SHALL BE SHOP FABRICATED BY THE TRUSS SUPPLIER. FIELD FABRICATION OF TRUSSES IS NOT PERMITTED. THE DELEGATED SPECIALTY ENGINEER FOR THE STEEL TRUSSES SHALL INSPECT ALL FABRICATED TRUSSES AND SHALL PROVIDE A SIGNED AND SEALED LETTER CERTIFYING THAT THE TRUSSES ARE FABRICATED IN ACCORDANCE WITH THE APPROVED SHOP DRAWINGS AND WILL SUSTAIN THE DESIGN LOADS SPECIFIED IN THE CONTRACT DOCUMENTS.
- THE TRUSS SUPPLIER SHALL SUBMIT FOR REVIEW DESIGN DATA FOR ALL SHOP OR FIELD SELF-DRILLING FASTENERS USED FOR CONSTRUCTION OF TRUSSES. PROVIDE CONNECTION DETAILS SHOWING SCREW TYPES, NUMBER AND LOCATIONS, AND OTHER RELATED FASTENER REQUIREMENTS, INCLUDING MAXIMUM VERTICAL AND HORIZONTAL ALLOWABLE LOADS.
- DESIGN LOADS FOR TRUSSES:

A.	BUILDING DESIGN CODE =	FLORIDA BUILDING CODE 2014 EDITION
	UPLIFT	SEE SHEET S002
	DIAPHRAGM	500 PLF
	TOP CHORD:	
	LIVE LOAD	20 PSF
	DEAD LOAD	20 PSF
	BOTTOM CHORD:	
	LIVE LOAD	10 PSF
	DEAD LOAD	15 PSF
- DESIGN TRUSS MEMBERS FOR CONCENTRATED LOAD OF PIPING, EQUIPMENT, AND OTHER COLLATERAL MECHANICAL LOADS. SEE MECHANICAL DRAWINGS.
- SEE PLANS FOR SPECIAL CONCENTRATED AND UNIFORM LOADS.
- THE ACTUAL IN-SERVICE DEAD LOAD OF SPRINKLER AND MECHANICAL PIPING SHOULD BE USEFOR THE DESIGN OF TRUSSES. THE SPRINKLER AND MECHANICAL CONTRACTOR SHALL SUBMIT ACTUAL SIZE, LOCATION AND WEIGHT OF ALL PIPING TO BE USED. THE GENERAL CONTRACTOR SHALL SUPPLY THIS INFORMATION TO THE TRUSS SUPPLIER TO BE USED FOR FINAL TRUSS DESIGN. MECHANICAL PIPING SUPPORTS SHALL BEAR ON TRUSS BOTTOM CHORDS. THE BOTTOM CHORD MEMBER SHALL BE CAPABLE OF SUPPORTING THIS LOAD.
- THE BOTTOM CHORD SHALL NOT BE ASSUMED TO BE LATERALLY SUPPORTED BY THE CEILING CONSTRUCTION. BOTTOM CHORD BRACING SHALL BE DESIGNED AND FURNISHED BY THE LIGHT GAUGE STEEL TRUSS SUPPLIER.
- THE CONTRACTOR IS RESPONSIBLE FOR THE TEMPORARY BRACING OF THE STRUCTURE DURING ERECTION. THE STRUCTURE IS NOT STABLE UNTIL ALL ELEMENTS ARE CONNECTED IN PLACE. DO NOT PLACE ANY LOAD ON TRUSSES UNTIL ALL BRACING IS INSTALLED AS DETAILED ON APPROVED SHOP DRAWINGS. BRACING AND BRIDGING SHALL BE COORDINATED WITH THE LOCATIONS OF MECHANICAL PIPING AND DUCTWORK IN THE ATTIC SPACE BY THE TRUSS SUPPLIER AND THE CONTRACTOR. DO NOT STORE OR STAGE MATERIALS ON ROOF TRUSSES WITHOUT PRIOR WRITTEN APPROVAL OF TRUSS SYSTEM SPECIALTY ENGINEER. LIFTING AND STAGING OF TRUSSES TO COMPLY WITH SUPPLIERS -- FIELD INSTALLATION GUIDE FOR CFS TRUSSES AND CFSI TECH NOTE 551 d and e.
- PERMANENT CFS TRUSS BRACING DESIGN AND CONSTRUCTION TO COMPLY WITH CFSI TECH NOTE 551e. THE ROOF DECK CAN BE RELIED ON TO SERVE AS TOP CHORD LATERAL BRACING ONCE FULLY INSTALLED PER CONTRACT DOCUMENTS FOR CFSI TECH NOTE 558 b-1.
- TEMPORARY CFS TRUSS BRACING DESIGN AND CONSTRUCTION TO COMPLY WITH TECH NOTE 551d. PROVIDE GROUND BRACING AS REQUIRED PER CFSI TECH NOTE 556 a-6.



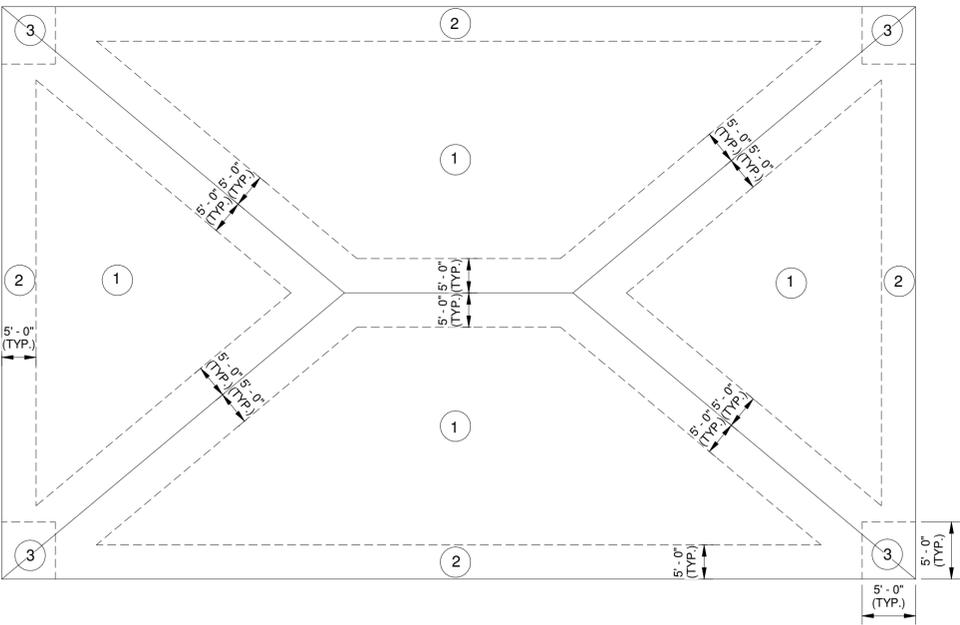
1 BUILDING ISOMETRIC VIEW

Sheet List	
Sheet Number	Sheet Name
S001	STRUCTURAL GENERAL NOTES
S002	ABBR./SYMBOLS/WIND DIAGRAMS
S101	GROUND FLOOR PLAN
S102	ROOF FRAMING PLAN
S201	EXTERIOR WALL ELEVATIONS
S301	FULL HEIGHT BUILDING SECTIONS
S401	FOUNDATION SECTIONS & DETAILS
S501	TYP. CMU WALL DETAILS

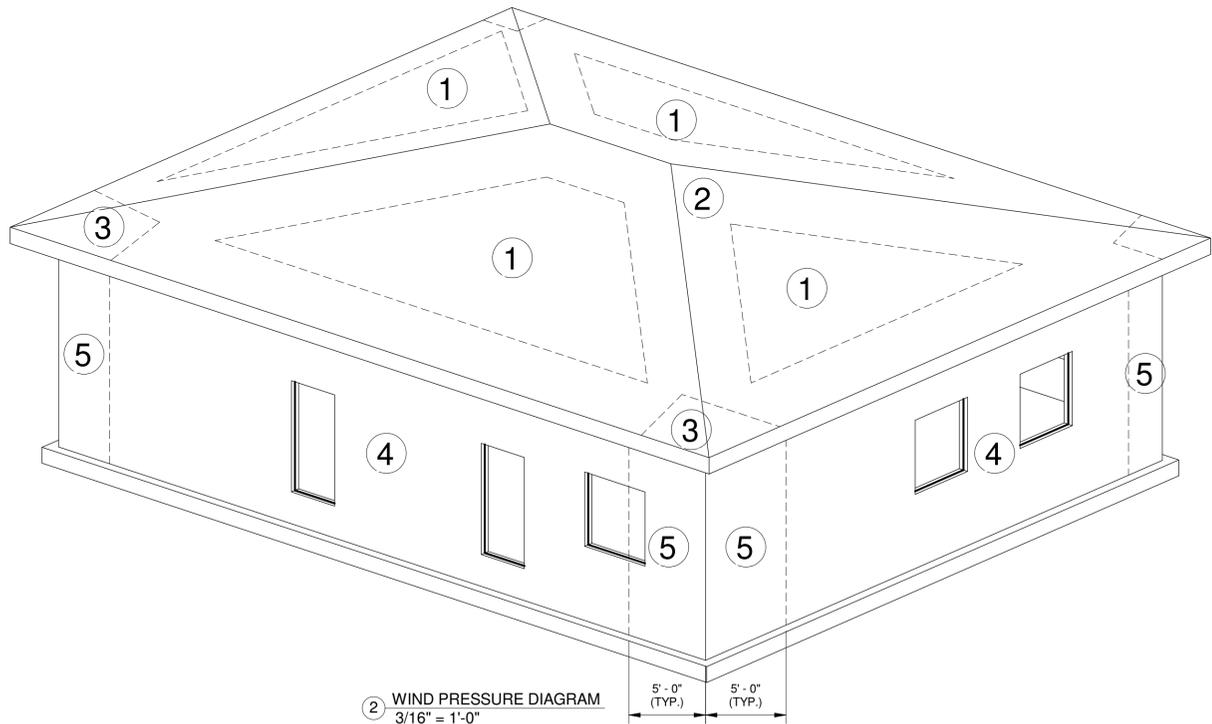
UTILITIES INC. OPERATIONS BUILDING

<p>BORELLI + PARTNERS ARCHITECTURE PLANNING LANDSCAPE INTERIORS</p> <p>720 Vossor Street, Orlando FL 32804 407.418.1338 :: Fax 407.418.1342</p> <p><small>CONTRACTOR: THE DRAWINGS OF THE PROPERTY OF BORELLI + PARTNERS ARCHITECTURE PLANNING LANDSCAPE INTERIORS. THESE DRAWINGS ARE NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF BORELLI + PARTNERS, INC. 07/17/16</small></p>		SIGNATURE AND DATED SEAL
<p>IBC Engineering Design Services, Inc. 2860 W. Colonial Blvd., Suite 411 Orlando, FL 32808 Tel: (321) 418-1725 Fax: (407) 312-6995</p>		CONSULTANTS
<p>144 WESTERN FORK ROAD LONGWOOD, FL 32750</p> <p>OWNER NAME AND ADDRESS UTILITIES INC.</p>		SHEET TITLE STRUCTURAL GENERAL NOTES
PROJECT No. 16037	DATE	REV.
PHASE 100% Construction Documents	DESCRIPTION	DATE
SCALE 1 1/2" = 1'-0"	REV.	DATE
DRAWN BY WGL	DATE	
CHECKED BY HSA		
DATE 12/15/2016		





1 ROOF WIND PRESSURE DIAGRAM
1/8" = 1'-0"

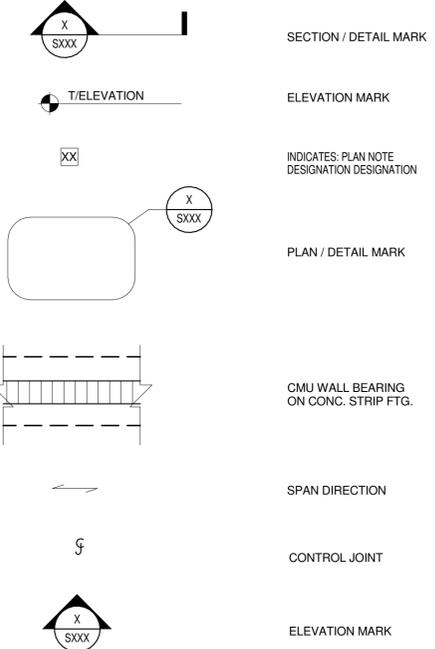


2 WIND PRESSURE DIAGRAM
3/16" = 1'-0"

STRUCTURAL ABBREVIATIONS

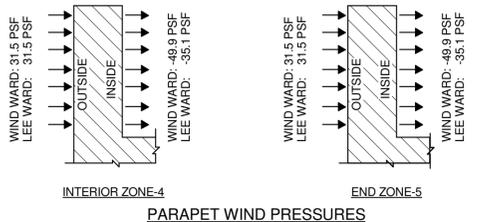
ABBREVIATION	ABBREVIATION	ABBREVIATION	ABBREVIATION	ABBREVIATION	
ACI	AMERICAN CONCRETE INSTITUTE	LB	POUND	UNO	UNLESS NOTED OTHERWISE
ADD	ADDITIVE	LGTH	LENGTH	VERT	VERTICAL
ADDL	ADDITIONAL	LL	LIVE LOAD	VOL	VOLUME
AFF	ABOVE FINISHED FLOOR	LLH	LONG LEG HORIZONTAL	W	WIDE FLANGE SECTION
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION	LLV	LONG LEG VERTICAL	W/O	WITHOUT
ASI	AMERICAN IRON AND STEEL INSTITUTE	LONG	LONGITUDINAL	WD	WOOD
ALT	ALTERNATE/ALTERNATIVE	LST	LAMINATED STRAND LUMBER	WF	WALL FOOTING
ALUM	ALUMINUM	LT WT	LIGHT WEIGHT	WP	WATERPROOF
ARCH	ARCHITECTURE/ARCHITECTURAL	LVL	LAMINATED VENEER LUMBER	W.P.	WORKING POINT
ASTM	AMERICAN SOCIETY OF TESTING MATERIALS	MATL	MATERIAL	WS	WELDED STUD
AW	AMERICAN WELDING SOCIETY	MAX	MAXIMUM	WT	WEIGHT/STRUCTURAL TEE SECTION
B/	BOTTOM OF	MB	MASONRY BEAM	WWF	WELDED WIRE FABRIC
BCX	BOTTOM CHORD EXTENSION	MC	MISCELLANEOUS CHANNEL/MASONRY COLUMN		
BLDG	BUILDING	MECH	MECHANICAL		
BLK	BLOCK	MET	METAL		
BM	BEAM	MFR	MANUFACTURE/MANUFACTURER		
BOT	BOTTOM	MID	MIDDLE		
BP	BASE PLATE/BEARING PLATE	MIN	MINIMUM		
BRG	BEARING	MISC	MISCELLANEOUS		
BTWN	BETWEEN	MO	MASONRY OPENING		
		MPH	MILES PER HOUR		
C	CHANNEL	NGVD	NATIONAL GEODETIC VERTICAL DATUM		
CB	CONCRETE BEAM	NIC	NOT IN CONTRACT		
CC	CONCRETE COLUMN	NO.	NUMBER		
CF	CUBIC FEET (FOOT)	NS	NEAR SIDE		
CIP	CAST IN PLACE	NTS	NOT TO SCALE		
CJ	CONTRACTION JOINT				
CL	CENTERLINE	OC	ON CENTERS		
CLR	CLEAR/CLEARANCE	OD	OUTSIDE DIAMETER		
CM	CONCRETE MASONRY	O.F.	OUTSIDE FACE		
CMU	CONCRETE MASONRY UNIT	OPNG	OPENING		
CO	COMPANY	OPP	OPPOSITE		
COL	COLUMN	OSB	ORIENTED STRAND BOARD		
CONC	CONCRETE				
CONT	CONTINUOUS	P/C	PRECAST CONCRETE/PILE CAP		
CONN	CONNECTION	P/T	POST TENSIONED		
CONST	CONSTRUCTION	PAR	PARALLEL		
COORD	COORDINATE	PCB	PRECAST CONCRETE BEAM		
CSJ	CONSTRUCTION JOINT	PCC	PRECAST CONCRETE COLUMN		
CTR	CENTER	PCF	POUNDS PER CUBIC FEET		
CTRD	CENTERED	PEMB	PRE-ENGINEERED METAL BUILDING		
CY	CUBIC YARD	PEN	PENETRATION		
		P.J.	PANEL JOINT CENTERLINE		
DEPT	DEPARTMENT	PL	PLATE		
DET	DETAIL	PLF	POUNDS PER LINEAR FOOT		
DIA	DIAMETER	PLMG	PLUMBING		
DIAG	DIAGONAL	PLY	PLYWOOD		
DIM	DIMENSION	PREFAB	PREFABRICATED		
DIST	DISTANCE	PSF	POUNDS PER SQUARE FOOT		
DL	DEAD LOAD	PSI	POUNDS PER SQUARE INCH		
DN	DOWN	PSL	PARALLEL STRAND LUMBER		
DWG	DRAWING	PT	PRESSURE TREATED		
EA	EACH	R/W	REINFORCED WITH		
EE	EACH END	RD	ROOF DRAIN		
EF	EACH FACE	REF	REFERENCE		
EHPA	EMERGENCY HURRICANE PROTECTION AREA	REINF	REINFORCING		
EJ	EXPANSION JOINT	REOD	REQUIRED		
ELEC	ELECTRIC/ELECTRICAL	REV	REVISION		
EL, ELEV	ELEVATION	RTU	ROOF TOP UNIT		
ENGR	ENGINEER				
EOD	EDGE OF DECK	SB	SOFFIT BEAM		
EOR	ENGINEER OF RECORD	SCHED	SCHEDULE		
EQ SP	EQUAL SPACED	S.F.	SQUARE FEET		
ES	EACH SIDE	SF	STRIP FOUNDATION		
EW	EACH WAY	SIM	SIMILAR		
EXIST	EXISTING	SPC	SPACE/SPACES		
EXP	EXPANSION	SPECS	SPECIFICATIONS		
EXT	EXTERIOR	SQ	SQUARE		
		SS	STAINLESS STEEL		
F	FOUNDATION	STD	STANDARD		
FD	FLOOR DRAIN	STIFF	STIFFENER		
FDN	FOUNDATION	STL	STEEL		
FF	FINISHED FLOOR	STRUCT	STRUCTURAL		
FIN	FINISH	SYM	SYMMETRICAL		
FIN GR	FINISH GRADE				
FLR	FLOOR	T/	TOP OF		
FS	FAR SIDE	TB	TIE BEAM		
FT	FEET/FOOT	T&B	TOP AND BOTTOM		
FTG	FOOTING	TCX	TOP CHORD EXTENSION		
		TDS	TURN DOWN SLAB		
GA	GAGE/GAUGE	TE	THICKENED EDGE		
GALV	GALVANIZED	TEMP	TEMPERATURE		
GB	GRADE BEAM	TENS	TENSION		
GC	GENERAL CONTRACTOR	THD	THREAD/THREADED		
GEN	GENERAL	THK	THICK		
GL	GRID LINE	TOL	TOLERANCE		
GS	GALVANIZED STEEL	TRANS	TRANSVERSE		
		TS	TUBE STEEL		
HD	HOT DIPPED	T.S.	THICKENED SLAB		
HDS	HOT DIPPED GALVANIZED	TWF	THICKENED WALL FOUNDATION		
HORIZ	HORIZONTAL	TYP	TYPICAL		
HSA	HEADED STUD ANCHOR				
HSS	HOLLOW STRUCTURAL SECTION				
HT	HEIGHT				
I	MOMENT OF INERTIA				
ID	INSIDE DIAMETER				
I.F.	INSIDE FACE				
IN.	INCH				
INT	INTERIOR				
JST	JOIST				
JT	JOINT				
K	KIP (1000 LB)				
KLF	KIPS PER LINEAL FOOT				
KSI	KIPS PER SQUARE INCH				
KWY	KEYWAY				

STRUCTURAL SYMBOLS



TRIBUTARY AREA (FT ²)	INTERIOR ZONE 1 (PSF)		EDGE ZONE 2 (PSF)		CORNER ZONE 3 (PSF)	
	POSITIVE	NEGATIVE	POSITIVE	NEGATIVE	POSITIVE	NEGATIVE
10	17.9	-43.9	40.2	-73.7	40.2	-73.7
25	16.4	-42.2	37.8	-63.3	37.8	-63.3
50	15.3	-41.3	36.1	-55.5	36.1	-55.5
≥ 100	14.1	-40.2	34.3	-47.6	34.3	-47.6

TRIBUTARY AREA	INTERIOR ZONE 4 (PSF)		END ZONE 5 (PSF)	
	POSITIVE	NEGATIVE	POSITIVE	NEGATIVE
10	40.2	-43.5	40.2	-53.6
50	36.1	-39.4	36.1	-45.3
200	32.5	-35.8	32.5	-38.2
≥ 500	30.1	-33.5	30.1	-33.5



WIND SCHEDULE NOTES:
 1) POSITIVE & NEGATIVE VALUES INDICATE ULTIMATE LIMIT STATE COMPONENTS AND CLADDING WIND PRESSURES ACTING TOWARD & AWAY FROM THE SURFACES, RESPECTIVELY.
 2) NET UPLIFT = UPLIFT-DEAD (DECK & STRUCTURAL STEEL).

UTILITIES INC. OPERATIONS BUILDING

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 407.418.1338 :: Fax 407.418.1342

SIGNATURE AND DATED SEAL

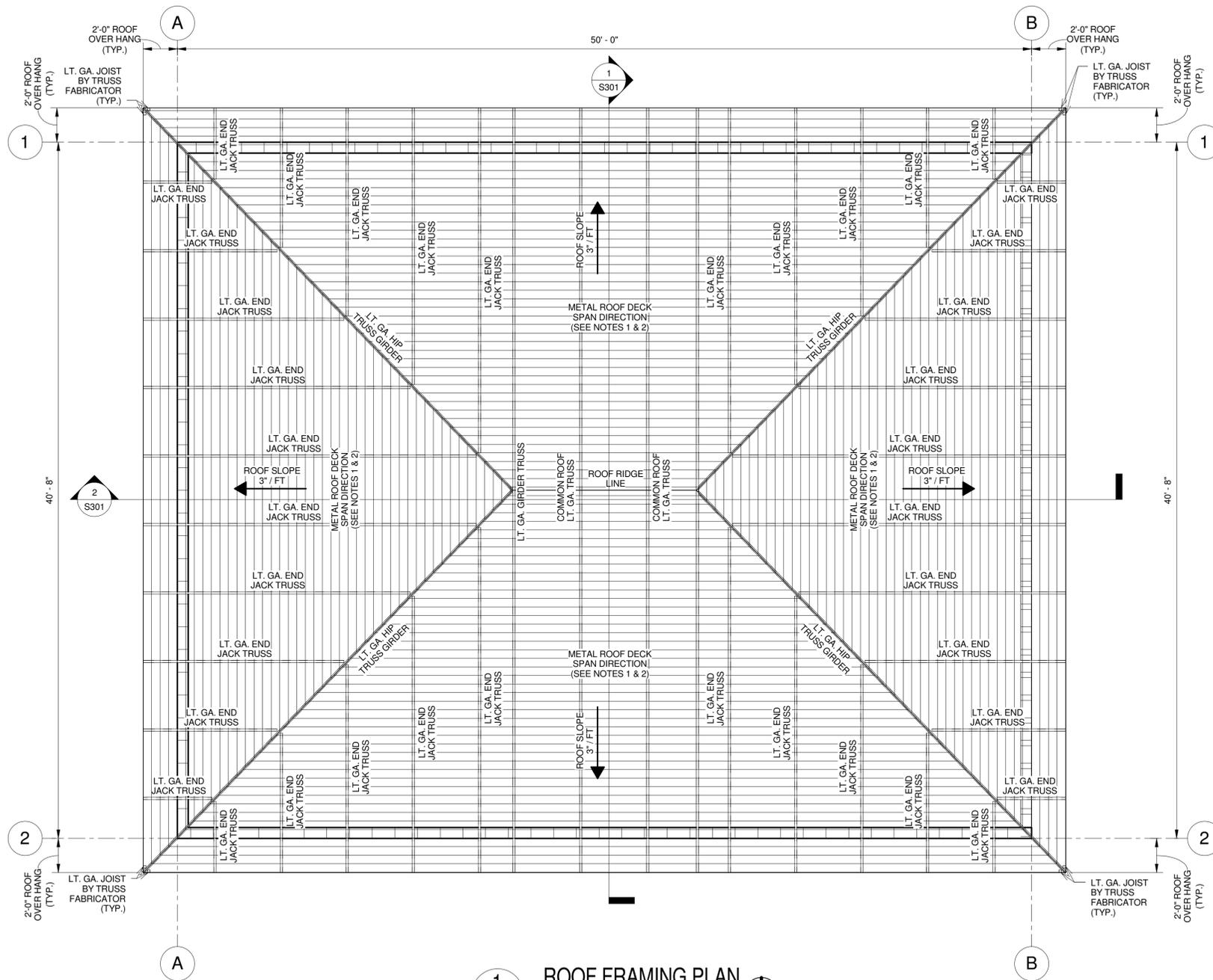
IBC
 IBC Engineering Design Services, Inc.
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SHEET TITLE
ABBR./SYMBOLS/WIND DIAGRAMS

PROJECT ADDRESS
 144 WESTERN FORK ROAD
 LONGWOOD, FL 32750
 OWNER NAME AND ADDRESS
 UTILITIES INC.

REV.	DESCRIPTION	DATE
16037	Construction Documents	
100%	As Indicated	
SCALE	WGL	
DRAWN BY	HSA	
CHECKED BY		
DATE	12/15/2016	

S002
OF



1
S102
ROOF FRAMING PLAN
1/4" = 1'-0"

ROOF FRAMING PLAN NOTES

- COORDINATE ALL ROOF SLOPES, DIMENSIONS, ELEVATIONS AND FINISH DETAILS WITH ARCHITECTURAL DRAWINGS.
- METAL ROOF DECK: SHALL BE COMPOSED OF 1 1/2" - 20 GAUGE GALVANIZED (TYPE WIDE RIP) CONTINUOUS OVER THREE ROOF JOIST BAYS BY VULCRAFT OR APPROVED EQUAL (SEE GENERAL NOTES ON SHEET S001 TYP., U.N.O.)
- ROOF FRAMING SHALL BE COMPOSED OF PRE-ENGINEERED LIGHT GAUGE METAL TRUSSES SPACED AT 4'-0" O.C. (MAX). ROOF FRAMING SHALL BE DESIGNED AND DETAILED BY FABRICATOR'S SPECIALTY ENGINEER PER DESIGN CRITERIA OF THESE STRUCTURAL DRAWINGS. SUBMIT SIGNED AND SEALED SHOP DRAWINGS AND CALCULATIONS FOR REVIEW AND APPROVAL (SEE GENERAL NOTES ON SHEET S001 FOR ADDITIONAL INFORMATION).
- EXTERIOR 8" THICK, LOAD BEARING CMU WALL ALL AROUND BUILDING PARAMETER (SEE STRUCTURAL GROUND FLOOR PLAN AND REFER TO WALL ELEVATIONS/SECTIONS AND DETAIL SHEETS FOR ADDITIONAL INFORMATION (COORDINATE ALL DIMENSIONS, ELEVATIONS AND FINISH DETAILS WITH ARCHITECTURAL DRAWINGS).

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SHEET TITLE
ROOF FRAMING PLAN

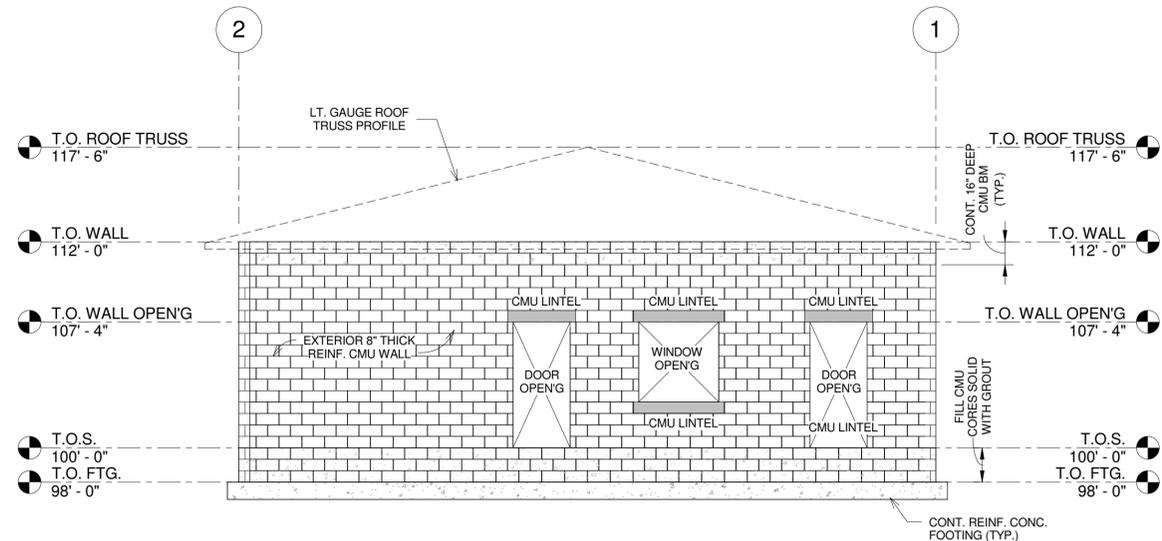
PROJECT ADDRESS
144 WESTERN FORK ROAD
LONGWOOD, FL 32750
OWNER NAME AND ADDRESS
UTILITIES INC.

REV.	DESCRIPTION	DATE

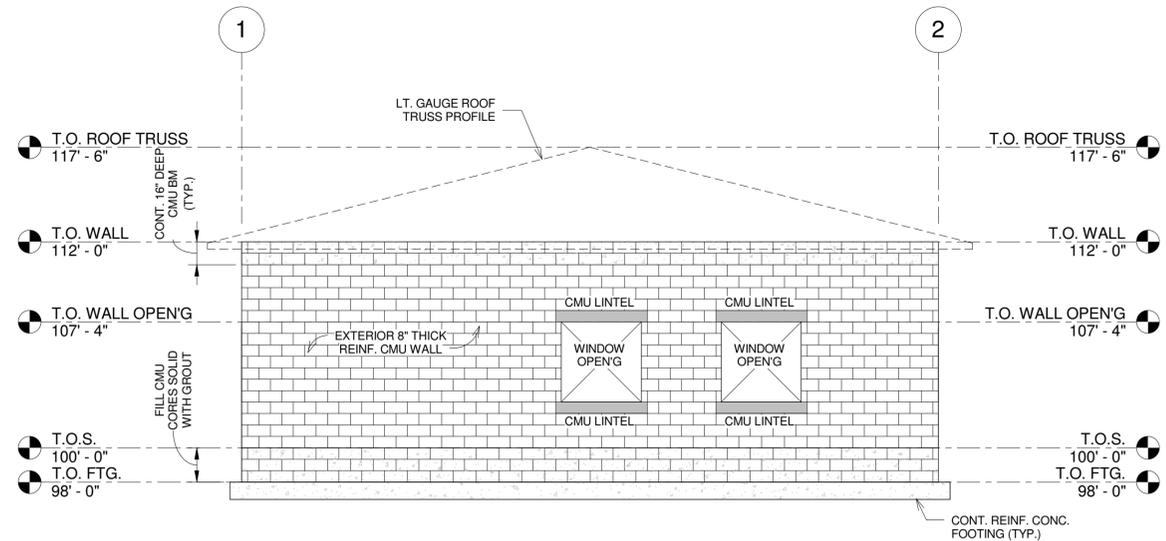
PROJECT No.	16037
PHASE	100% Construction Documents
SCALE	As Indicated
DRAWN BY	WGL
CHECKED BY	HSA
DATE	12/15/2016

S102
OF

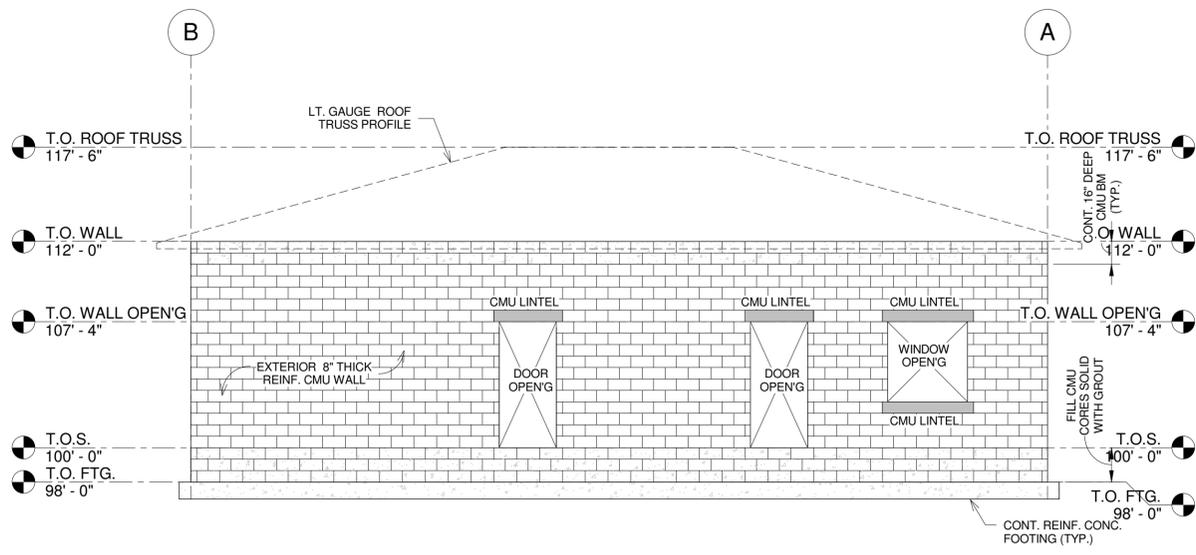
R:\2\018\780\16-160\4-0\Drawings\A - Active Drawings\1 - B+P\CONSULTANT REVIT FILES\Utilities Inc Operations Building 100pc STR-IBC16037-Dec1516.rvt



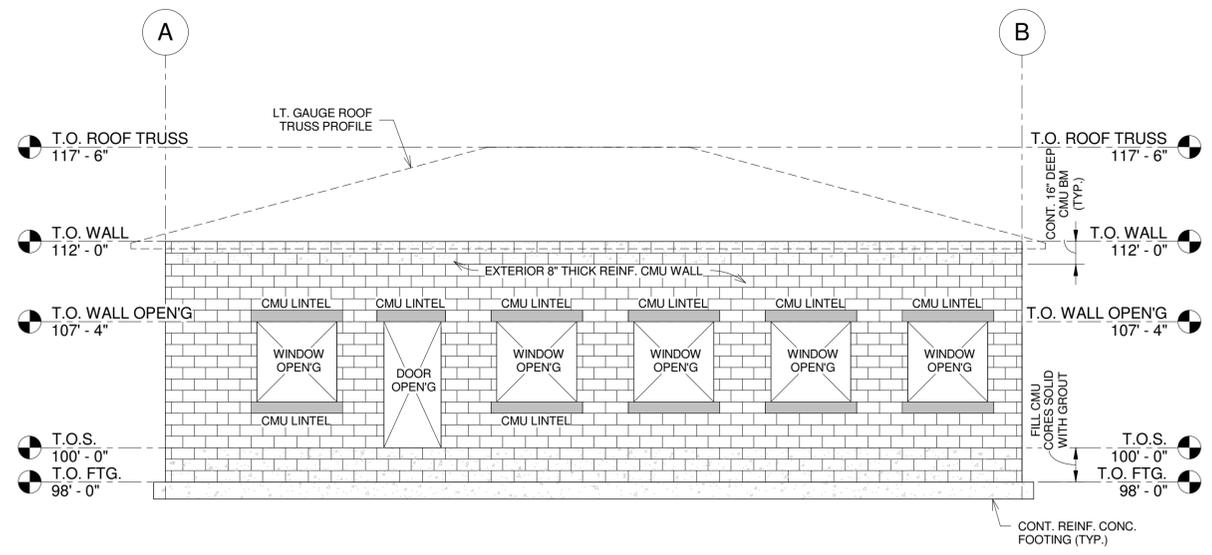
1 BUILDING EAST ELEVATION
S201 3/16" = 1'-0"



2 BUILDING WEST ELEVATION
S201 3/16" = 1'-0"



3 BUILDING NORTH ELEVATION
S201 3/16" = 1'-0"



4 BUILDING SOUTH ELEVATION
S201 3/16" = 1'-0"

UTILITIES INC. OPERATIONS BUILDING

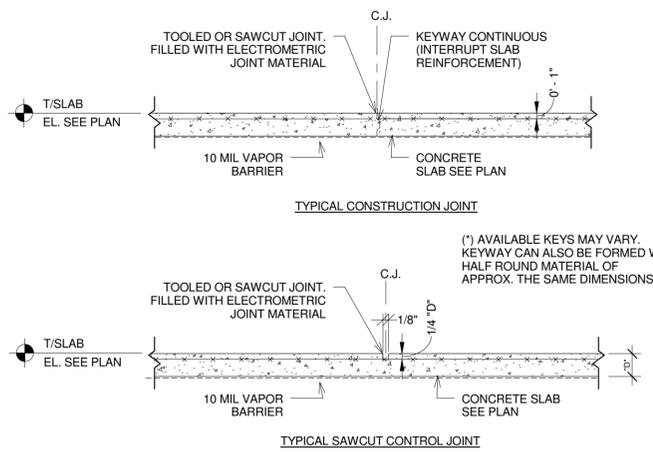
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EXTERIOR WALL ELEVATIONS

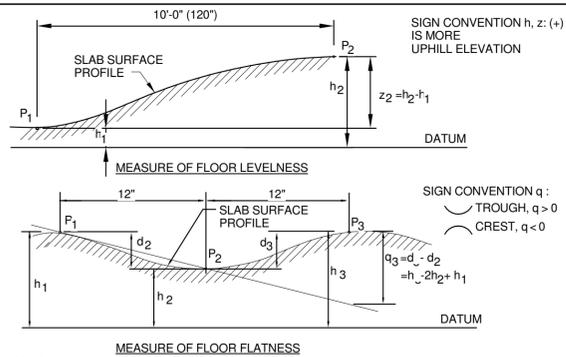
REV.	DESCRIPTION	DATE	PROJECT ADDRESS	OWNER NAME AND ADDRESS
			144 WESTERN FORK ROAD LONGWOOD, FL 32750	UTILITIES INC.

S201
OF



NOTES:
 1. C.J. INDICATES CONTROL OR CONSTRUCTION JOINT.
 2. CONTROL JOINTS SHALL BE SAWCUT AS SOON AS POSSIBLE WITHOUT RAVELING CONCRETE (4 TO 16 HOURS AFTER PLACEMENT MAX.)
 3. JOINT PLACEMENT REQUIREMENTS:
 FOR ENCLOSED INTERIOR AREAS, 20'-0" O.C. (MAX.) EACH WAY
 FOR OUTSIDE-EXTERIOR AREAS, 8'-0" O.C. (MAX.) EACH WAY (5'-0" MAX. FOR 5'-0" WIDE WALKWAYS)
 WHERE TOP OF SLAB SURFACES ARE TO BE FINISHED WITH TILE, GENERAL CONTRACTOR IS TO COORDINATE JOINT LOCATIONS WITH THAT OF MORTAR JOINTS.

1 TYPICAL SLAB CONSTRUCTION/CONTROL JOINT DETAILS
 S401 3/4" = 1'-0"

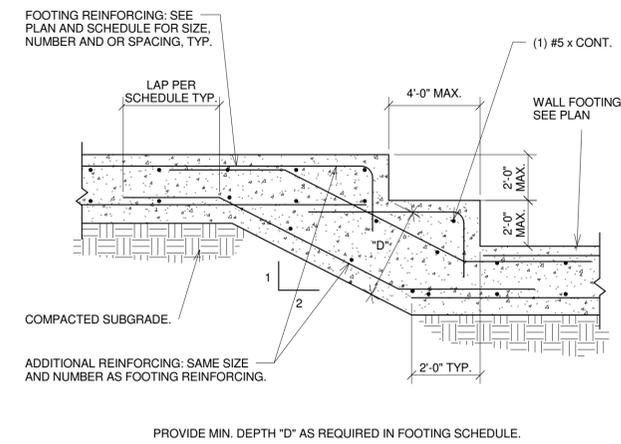


NOTES:
 1. F_L = LEVELNESS F-NUMBER

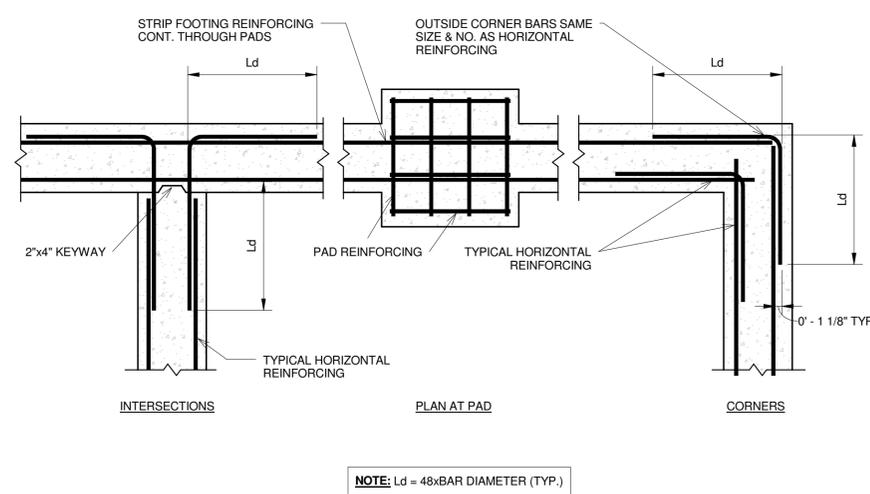
$$F_L = \frac{12.5}{(3 \times S_z) + z}$$
 WHERE z = MEAN VALUE OF ALL z FLOOR READINGS
 S_z = STANDARD DEVIATION OF ALL z FLOOR READINGS
 2. F_F = FLATNESS F-NUMBER

$$F_F = \frac{4.57}{(3 \times S_q) + q}$$
 WHERE q = MEAN VALUE OF ALL q FLOOR READINGS
 S_q = STANDARD DEVIATION OF ALL q FLOOR READINGS
 3. F_L AND F_F SHALL BE STATISTICALLY DETERMINED ACCORDING TO ASTM E 1155
 4. REFER TO CONCRETE SPECIFICATIONS FOR REQUIRED F_F AND F_L VALUES.
 USING THE F-NUMBER SYSTEM.*

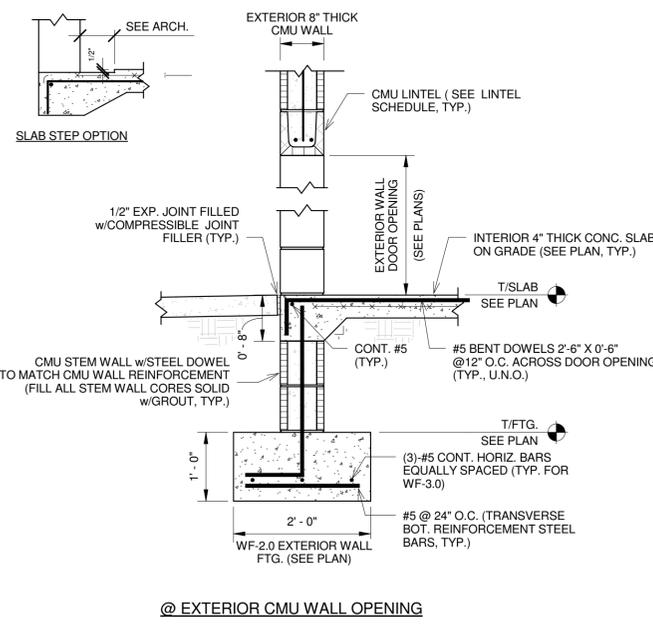
2 SLAB SURFACE TOLERANCE
 S401 3/4" = 1'-0"



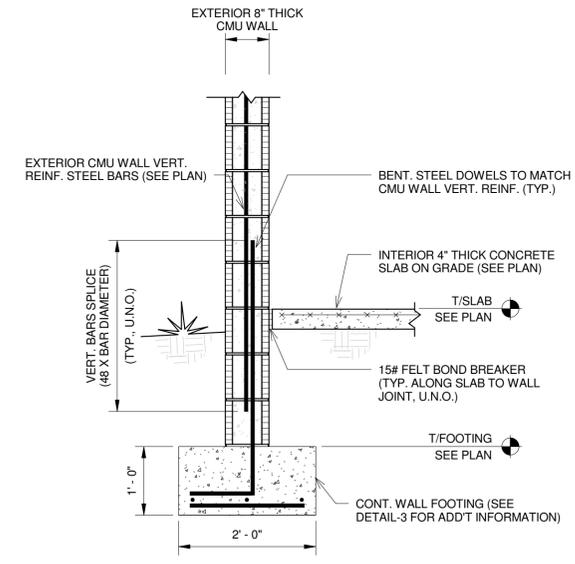
3 TYP. SECTION @ FOOTING STEP
 S401 3/4" = 1'-0"



4 TYPICAL HORIZ. REINF. @ FOOTINGS INTERSECTING LOCATIONS
 S401 3/4" = 1'-0"



5 TYP. EXTERIOR WALL FOUNDATION DETAIL
 S401 3/4" = 1'-0"



6 TYP. SECTION @ EXTERIOR CMU WALL FND.
 S401 3/4" = 1'-0"

TENSION DEVELOPMENT AND LAP SPLICE LENGTHS FOR BARS IN WALLS, SLAB, COLUMN, BEAMS, AND CONCRETE EXPOSED TO EARTH (INCHES)

BAR SIZE	LAP CLASS	fc=3000 psi		fc=4000 psi		fc=5000 psi		fc=7000 psi	
		TOP BARS	OTHER BAR	TOP BARS	OTHER BAR	TOP BARS	OTHER BAR	TOP BARS	OTHER BAR
#3	B	28	21	24	18	22	17	18	14
#4	B	37	28	32	25	29	22	24	19
#5	B	46	36	40	31	36	28	30	23
#6	B	96	43	48	37	43	33	36	28
#7	B	81	62	70	54	63	48	53	41
#8	B	93	71	80	62	72	55	61	47
#9	B	104	80	90	70	81	62	68	53
#10	B	118	90	102	78	91	70	77	59
#11	B	131	100	113	87	101	78	85	66

7 TENSION DEVELOPMENT AS LAP SPLICE SCHEDULE
 S401 1 1/2" = 1'-0"

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FOUNDATION SECTIONS & DETAILS

PROJECT ADDRESS: 144 WESTERN FORK ROAD, LONGWOOD, FL 32750
 OWNER NAME AND ADDRESS: UTILITIES INC.

REV. DESCRIPTION DATE
 16037
 100% Construction Documents
 As Indicated
 HA
 12/15/2016

PROJECT No. 16037
 PHASE 100% Construction Documents
 SCALE As Indicated
 DRAWN BY HA
 CHECKED BY
 DATE 12/15/2016

PROJECT No. 16037
 PHASE 100% Construction Documents
 SCALE As Indicated
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 CHECKED BY
 DATE 12/15/2016

S401 OF

Architectural General Notes:

- CONTRACTOR SHALL VISIT AND INSPECT THE PREMISES, PRIOR TO SUBMITTING THEIR PROPOSAL, TO FAMILIARIZE THEMSELVES WITH THE CONDITIONS UNDER WHICH WORK WILL BE PERFORMED. NO SUBSEQUENT EXTRAS OR ADDITIONS WILL BE ALLOWED ON ANY CLAIM DUE TO LACK OF KNOWLEDGE OF CONDITIONS OR CIRCUMSTANCES ABOUT WHICH THE CONTRACTOR COULD HAVE INFORMED THEMSELVES.
- CONTRACTOR SHALL, BEFORE COMMENCING WORK, REVIEW ALL PLANS, NOTES, GENERAL CONDITIONS, AND SPECIFICATIONS AND VERIFY ALL GOVERNING DIMENSIONS ON THE JOB SITE. THE CONTRACTOR SHALL EXAMINE ALL ADJOINING AREAS OR AREA UPON WHICH THE PERFORMANCE OF HIS WORK IS IN ANY WAY DEPENDENT. ALL VARIANCES OR DISCREPANCIES SHALL BE REPORTED TO THE ARCHITECT PRIOR TO FABRICATION OR ERECTION OF WORK IN QUESTION. ANY VARIANCES OR DISCREPANCIES IN THE DOCUMENTS NOT REPORTED IMMEDIATELY TO THE ARCHITECT SHALL BECOME THE RESPONSIBILITY OF THE CONTRACTOR.
- CONTRACTOR SHALL MAKE KNOWN TO THE ARCHITECT ANY LIMITATIONS, EXCLUSIONS, OR MODIFICATIONS TO THE DOCUMENTS DURING THE PRICING PHASES OF THE PROJECT. UNLESS ADVISED OTHERWISE IN WRITING, THESE ITEMS SHALL BE PRESUMED INCLUDED IN THE CONTRACTOR'S PRICE.
- CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE ACCURACY OF HIS MEASUREMENTS AND TOTAL FINISH REQUIREMENTS TO BE FURNISHED. NO REQUESTS FOR MATERIALS OR INSTALLATION EXTRAS WILL BE CONSIDERED DUE TO MEASUREMENT OR TAKEOFF ERRORS BY CONTRACTOR.
- THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR DISTRIBUTION OF 100% CONSTRUCTION DOCUMENTS TO ALL TRADES AND NOT THE RESPONSIBILITY OF THE ARCHITECT.
- THE CONTRACTOR IS TO PROVIDE ALL LABOR AND MATERIALS TO EXECUTE ALL WORK AS SHOWN ON THESE DRAWINGS WITH THE EXCEPTION OF ITEMS OR AREAS MARKED "NOT IN CONTRACT", "N.I.C.", OR "BY OTHERS".
- THE CONTRACTOR SHALL KEEP SUFFICIENT WORKERS ON THE JOB SITE AT ALL TIMES TO PERFORM THE WORK IN THE MOST EXPEDITIOUS MANNER CONSISTENT WITH GOOD WORKMANSHIP, SOUND BUSINESS PRACTICE AND THE BEST INTEREST OF THE TENANT.
- ALL FEES, TAXES, PERMITS, APPLICATIONS, CERTIFICATES OF INSPECTION AND THE FILING OF ALL WORK WITH GOVERNMENTAL AGENCIES SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.
- CONTRACTOR SHALL NOT PROCEED WITH ANY ADDITIONAL WORK OR CHANGES FOR WHICH THEY EXPECT ADDITIONAL COMPENSATION WITHOUT WRITTEN AUTHORIZATION TO PERFORM SUCH WORK.
- CONTRACTOR SHALL AT ALL TIMES KEEP THE PREMISES FREE OF ACCUMULATION OF WASTE MATERIALS OR RUBBISH CAUSED BY HIS OPERATIONS OF THE OPERATIONS OF ANY OTHER CONTRACTORS WITHIN THE AREA OF WORK. METHODS FOR SUCH REMOVAL MUST BE AGREEABLE TO THE OWNER.
- PREMISES SHALL BE SWEEPED CLEAN DAILY OF CONSTRUCTION DEBRIS.
- FINAL CLEANING PRIOR TO END USER OCCUPANCY SHALL INCLUDE (BUT NOT BE LIMITED TO): CLEANING OF ALL WOOD AND GLASS SURFACES, DUSTING OF ALL HORIZONTAL SURFACES, VACUUMING OF ALL CARPETED AREAS, REPAIRS OF ALL STAINS, SPOTS, SPILLS, ETC. ON ANY SURFACE, MOP CLEANING AND WAXING OF ALL RESILIENT FLOORS, AND CLEANING ALL VINYL WALL COVERINGS FREE FROM DIRT ADHESIVE OR OTHER FOREIGN MATERIALS.
- GENERAL CONTRACTOR AND HIS VENDORS SHALL DETERMINE AVAILABILITY OF ALL FINISH MATERIALS, TRADES AND ITEMS SHOWN IN THESE DOCUMENTS. ANY DELIVERY THAT MAY CAUSE POTENTIAL PROBLEMS IN MEETING AGREED UPON CONSTRUCTION SCHEDULE SHALL BE BROUGHT TO THE ARCHITECT ATTENTION FOR POSSIBLE REEVALUATION OF MATERIAL DESIGNATION.
- THE CONTRACTOR SHALL BE ANSWERABLE FOR THEIR WORK AND SHALL NOT ACCEPT INSTRUCTION FROM LOCAL PERSONNEL WITHOUT VERIFICATION FROM THE TENANT'S AGREED UPON REPRESENTATIVE. THE CONTRACTOR WILL BE LIABLE FOR ANY EXPENSE CAUSED BY THE EXECUTION AND REMOVAL OF SUCH WORK WITHOUT WRITTEN AUTHORIZATION FROM THE TENANT'S REPRESENTATIVE.
- PROVIDE ALL WOOD BLOCKING NECESSARY FOR THE ATTACHMENT OF MISCELLANEOUS EQUIPMENT INCLUDING BUT NOT LIMITED TO TOILET ACCESSORIES, TV BRACKETS, DOOR HARDWARE, ELECTRICAL DEVICES, EQUIPMENT, GRAB BARS, HANDRAILS, CASEWORK AND MILLWORK, AS APPLICABLE.
- CONTRACTOR SHALL COMPLY WITH ALL THE RULES AND REGULATIONS OF THE BUILDING AS TO HOURS OF AVAILABILITY OF ELEVATORS, LOADING DOCKS, ETC. FOR THE PURPOSE OF DELIVERY AND THE MANNER OF HANDLING MATERIALS, EQUIPMENT AND DEBRIS, TO AVOID CONFLICT OR INTERFERENCE WITH NORMAL BUILDING OPERATIONS.
- EACH CONTRACTOR SHALL VERIFY ALL DIMENSIONS SHOWN ON THE DRAWINGS PRIOR TO PROCEEDING WITH CONSTRUCTION AND OBTAIN ALL MEASUREMENTS REQUIRED FOR PROPER EXECUTION OF WORK. ALL DISCREPANCIES AND OMISSIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT. WHEN VERIFICATION OF EXISTING DIMENSIONS IS REQUIRED, THE CONTRACTOR REQUIRING SAID VERIFICATION FOR THE CONSTRUCTION OR FABRICATION OF HIS MATERIAL SHALL BE THE CONTRACTOR RESPONSIBLE FOR THE PROCUREMENT OF THE FIELD INFORMATION.
- THE TRANSITION OF DIFFERENT FLOORING MATERIALS AT A DOORWAY SHALL OCCUR AT THE CENTERLINE OF DOOR UNLESS INDICATED OTHERWISE.
- ALL WALL SURFACES, DOOR FRAMES, BULKHEADS AND CEILINGS SHALL RECEIVE PAINT WHEN PAINT IS INDICATED ON THE FINISH SCHEDULE OR FINISH PLANS. PAINT SURFACES BEHIND MOVABLE EQUIPMENT AND FURNITURE SAME AS SIMILAR EXPOSED SURFACES. PAINT SURFACES BEHIND PERMANENTLY FIXED EQUIPMENT OR FURNITURE WITH PRIME COAT ONLY BEFORE FINAL INSTALLATION OF EQUIPMENT. PAINT ALL MECHANICAL AND ELECTRICAL EQUIPMENT EXPOSED IN FINISHED SPACES UNLESS INDICATED OTHERWISE.
- REPAIR ALL SURFACES DAMAGED BY NEW CONSTRUCTION TO MATCH EXISTING ADJACENT OR CONTIGUOUS FINISH.
- ALL CUTTING AND PATCHING AS A RESULT OF NEW CONSTRUCTION SHALL BE PERFORMED IN A WORKMANLIKE MANNER, AND SHALL MATCH IN COLOR, SHAPE, SIZE AND TEXTURE ADJACENT AND/OR CONTIGUOUS FINISHED SURFACES.
- FIGURED DIMENSIONS TAKE PRECEDENCE OVER SCALED MEASUREMENTS. DO NOT SCALE DRAWINGS.
- DETAILED DRAWINGS AND LARGER SCALE DRAWINGS TAKE PRECEDENCE OVER SMALL SCALE DRAWINGS.
- UNLESS OTHERWISE NOTED, PLAN DIMENSIONS ARE TAKEN FROM FACE OF STUDS TO FACE OF STUDS, OR FACE OF FINISH GYP. BD. (CORRIDORS), TO FACE OF FINISH.
- DOORS NOT OTHERWISE DIMENSIONED SHALL BE 8" FROM FACE OF ADJACENT CMU OR CONCRETE WALL TO ROUGH DOOR OPENING, AND 4" FROM FACE OF ADJACENT STUD WALL TO ROUGH DOOR OPENING.
- FOR CONSTRUCTION DETAILS NOT SHOWN, USE THE PRODUCT MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS AND STANDARD DETAILS, IN STRICT ACCORDANCE WITH THE PROJECT SPECIFICATION REQUIREMENTS AND DESIGN INTENT.
- PLAN NORTH DIFFERS FROM ACTUAL NORTH. ACTUAL NORTH IS INDICATED ON PLAN SHEETS FOR REMAINDER OF DISCIPLINES UNO. ORDINAL DIRECTIONS ON NON-CIVIL PLAN DRAWINGS ARE IN REFERENCE TO PLAN NORTH UNO.
- IF THE CONTRACTOR ENCOUNTERS ANY UNFORESEEN CONDITION, THE ARCHITECT MUST BE MADE AWARE FOR A POSSIBLE CHANGE IN DESIGN.
- THE CONTRACTOR SHALL REVIEW THE ARCHITECTURAL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS FOR LOCATION AND DIMENSIONS OF CHASE, INSERTS, OPENINGS, SLEEVES, DEPRESSIONS AND OTHER PROJECT REQUIREMENTS. ALL DISCREPANCIES AND OMISSIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT PRIOR TO PROCEEDING WITH CONSTRUCTION.
- THESE DRAWINGS WERE DESIGNED TO BE USED (AND REFERENCED) BY AN EXPERIENCED, QUALIFIED AND FLORIDA LICENSED GENERAL CONTRACTOR. INTERPRETATION OF THE PLANS BY A LAY PERSON IS NOT RECOMMENDED OR AUTHORIZED BY THE ARCHITECT.
- CONTRACTOR SHALL SUBMIT SAMPLES TO THE TENANT FOR REVIEW OF ALL MATERIALS INTENDED TO BE USE IN THE WORK PRIOR TO COMMENCEMENT OF WORK.
- WHEN THE JOB IS SUBSTANTIALLY COMPLETE, THE GENERAL CONTRACTOR SHALL PREPARE A PUNCH LIST OF ITEMS TO BE COMPLETED AND SUBMIT THIS LIST TO BUILDING OWNER AND TO THE TENANT. FAILURE TO INCLUDE ANY ITEMS ON THIS LIST DOES NOT ALTER THE RESPONSIBILITY OF THE CONTRACTOR TO COMPLETE THE WORK IN ACCORDANCE WITH THESE DOCUMENTS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING THE END USER (IN WRITING) ALL MANUFACTURER'S MANUALS, WARRANTIES, AND RECOMMENDED MAINTENANCE PROCEDURES/SCHEDULES FOR ALL EQUIPMENT AND FINISHES INSTALLED.
- ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE GOVERNMENTAL AGENCY HAVING JURISDICTION AND SHALL CONFORM TO ALL LIFE SAFETY AND SANITARY LAWS, CITY, COUNTY, STATE, AND/OR FEDERAL ORDINANCES WHICH APPLY.
- THE MANUFACTURER'S STANDARD DETAILS SHALL APPLY UNLESS OTHERWISE DETAILED IN CONSTRUCTION DOCUMENTS.
- FINISH FLOOR ELEVATION 0'-0" SHOWN ON ARCHITECTURAL DRAWINGS IS EQUAL TO ACTUAL FINISH FLOOR ELEVATIONS SHOWN ON CIVIL DRAWINGS.
- ASBESTOS OR ANY ASBESTOS CONTAINING MATERIAL SHALL NOT BE USED UNDER ANY CIRCUMSTANCES.

ARCHITECTURAL ANNOTATION LEGEND

SYMBOL	LEGEND
	DOOR IDENTIFIER
	LOUVER IDENTIFIER
	WALL TYPE INDICATOR
	WINDOW IDENTIFIER
Room name 	ROOM IDENTIFICATION TAG
Room name 	ROOM IDENTIFICATION TAG + AREA
	LEVEL HEAD INDICATOR
	GRID REFERENCE INDICATOR
	DETAIL INDICATOR / DETAIL CALLOUT
	ELEVATION INDICATOR
	SECTION HEAD INDICATOR
	NORTH ARROW
	DIRECTION OF SLOPE DOWN
	BREAK LINE
	CENTER LINE
	CONTROL JOINT
	EXPANSION JOINT
	REVISION TAG
	LEFT SIDED ELEVATION
	RIGHT SIDED ELEVATION
	TILE TAG

ABBREVIATIONS

AB	ANCHOR BOLTS	FD	FLOOR DRAIN	PC	PORTLAND CEMENT
AC or A/C	AIR CONDITIONING	FE	FIRE EXTINGUISHER	PL	PLATE
ACOUS	ACOUSTICAL	FH	FULL HEIGHT	PLYWD	PLYWOOD
AD	ACCESS DOOR	FHC	FIRE HOSE CABINET	PD	PAIR
AFF	ABOVE FINISHED FLOOR	FIN	FINISH	PREP	PREPARATION
ALUM	ALUMINUM	FLR	FLOOR	PROJ	PROJECTION
APPR	APPROVED	FO	FINISHED OPENING	QT	QUARRY TILE
BD or BRD	BOARD	FOC	FACE OF CONCRETE	R	RISER
BLDG	BUILDING	FOS	FACE OF STUD	RAD	RADIUS
BLK	BLOCK	FOJND	FOUNDATION	RD	ROOF DRAIN
BM	BEAM	FOW	FACE OF WALL	REF	REFERENCE
BOB	BOTTOM OF BEAM	FS	FLOOR SINK	REFL	REFLECTED
BOT	BOTTOM	FT	FEET	REINF	REINFORCE
C/C	CENTER TO CENTER	GA	GAUGE	REQD	REQUIRED
CEM	CEMENT	GALV	GALVANIZE	REV	REVERSE
CER	CERAMIC	GL	GLASS	RM	ROOM
CH	CEILING HEIGHT	GR	GRADE	RO	ROUGH OPENING
CJ	CEILING CONTROL JOINT	GYP BD	GYP SUM BOARD	SCWD	SOLID CORE WOOD DOOR
CLG or CEIL	CEILING	GWB		SECT	SECTION
CLO	CLOSET	HDWD	HARDWOOD	SHT	SHEET
CLR	CLEAR	HM	HOLLOW METAL	SIM	SIMILAR
CMU	CONCRETE MASONRY UNIT	HORIZ	HORIZONTAL	SIMUL	SIMULATED
COL	COLUMN	ID	INSIDE DIAMETER	SPECS	SPECIFICATIONS
COMP	COMPOSITION	INSUL	INSULATION	SQ	SQUARE
CONC	CONCRETE	INT	INTERIOR	SS	STAINLESS STEEL
CONN	CONNECTION	JAN	JANITOR	STD	STANDARD
CONT	CONTINUOUS	LAV	LAVATORY	STL	STEEL
CORR	CORRIDOR	LEV	LEVEL	STRUCT	STRUCTURAL
CSK	COUNTERSINK	LTG	LIGHTING	SUSP	SUSPENDED
DBL	DOUBLE	LT WT	LIGHT WEIGHT	SYM	SYMMETRICAL
DF	DRINKING FOUNTAIN	MAINT	MAINTENANCE	T	TREAD
DIA	DIAMETER	MATL	MATERIAL	TB	TACKBOARD
DIAG	DIAGONAL	MAX	MAXIMUM	T&G	TONGUE AND GROOVE
DIM	DIMENSION	MECH	MECHANICAL	TEMP	TEMPERED
DN	DOWN	TEL	TELEPHONE	THK	THICK
DO	DOOR OPENING	TOC	TOP OF CONCRETE / CURB	TOP	TOP OF PARAPET
DR	DOOR	TOS	TOP OF STEEL	TOW	TOP OF WALL
DS	DOWNSPOUT	TYP	TYPICAL	UNO	UNLESS NOTED OTHERWISE
DTL	DETAIL	VERT	VERTICAL	WC	WATER CLOSET
DWG	DRAWINGS	WD	WOOD	WI	WROUGHT IRON
EA	EACH	WL	WATER LEVEL	WP	WATERPROOFING
EJ	EXPANSION JOINT	WPP	WORKING POINT		
ELEC	ELECTRICAL				
ELEV or EL	ELEVATION				
EQ	EQUAL				
EQUIP	EQUIPMENT				
EXIST	EXISTING				
EXT	EXTERIOR				
EWC	ELEC. WATER COOLER				
OC	ON CENTER				
OD	OUTSIDE DIAMETER				
OH	OPPOSITE HAND				
OPNG	OPENING				
OPP	OPPOSITE				

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SIGNATURE AND DATED SEAL

CONSULTANTS

ARCHITECTURAL INFORMATION

SHEET TITLE

PROJECT ADDRESS
144 WESTERN FORK ROAD
LONGWOOD, FL 32750
OWNER NAME AND ADDRESS
UTILITIES INC. OPERATIONS BUILDING

REV.	DESCRIPTION	DATE

PROJECT No. 16-160
PHASE 100 % CONSTR.
SCALE 1/4" = 1'-0"
DRAWN BY RF
CHECKED BY JM
DATE 12/15/2016

A001



1 LIFE SAFETY PLAN
1/4" = 1'-0"

LIFE SAFETY LEGEND

SYMBOL	LEGEND
---	1 HR RATED WALL
-.-.-.-	2 HR RATED WALL
TTD= 1'-0"	TOTAL TRAVEL DISTANCE
CPT= 1'-0"	COMMON PATH OF TRAVEL
⊙	STARTING POINT OF TRAVEL DISTANCE
● FE	FIRE EXTINGUISHER WALL MOUNTED
● FE	FIRE EXTINGUISHER SEMI RECESSED

FIRE EXTINGUISHER
NOTE: TYPE A,C

SYMBOL	LEGEND
▲	KNOCK BOX
⊙	WALL EXIT LIGHT
←	EXIT
Room name XX SF 100 1	OCCUPANT LOAD IDENTIFIER

NOTE: NOT ALL ITEMS USED. SEE ELECTRICAL AND MECHANICAL DRAWINGS FOR ITEMS NOT NECESSARILY SHOWN.

TYPES OF FIRES - EXTINGUISHER:

Class A
Class A fires are fires in ordinary combustibles such as wood, paper, cloth, trash, and plastics.

Class C
Class C fires are fires involving energized electrical equipment such as motors, transformers, and appliances. Remove the power and the Class C fire becomes one of the other classes of fire.

SYMBOL	FUNCTION OF SPACE	FLOOR AREA IN SQ FT PER OCCUPANT
▨	OFFICE	671 GROSS
▨	ASSEMBLY	486 GROSS

BUILDING CODE ANALYSIS

APPLICABLE CODES:

Building:	FLORIDA BUILDING CODE (FBC)	EDITION: 2014
A.D.A.:	FBC ACCESSIBILITY	EDITION: 2014
Fire:	FLORIDA FIRE PREVENTION CODE	EDITION: 5th EDITION
	NFPA - 1 UNIFORM CODE	FLORIDA EDITION
Life Safety:	NFPA - 101 LIFE SAFETY CODE	FLORIDA EDITION

OCCUPANCY:

Use & Occupancy Classification	BUSINESS - GROUP B (FBC BUILDING SECTION 503)
Gross Floor Area:	ONE STORY, 2,030 GROSS SF
Occupant / Sq. Ft.:	SEE LIFE SAFETY PLANS FOR INDIVIDUAL SPACES
Total Occupants:	41 TOTAL

CONSTRUCTION:

Type of Construction:	TYPE V-B (FBC BUILDING 503) (1 STORY, 2,030 SF)
Sprinklered or Non-sprinklered:	NON-SPRINKLERED
Building Height:	APPROX. < 20'-0" (FBC BUILDING 503)

FIRE-RESISTANCE RATING REQUIREMEI(FBC BUILDING TABLE 601):

	TYPE V-B
Structural Frame:	0 hours
Bearing Walls (Ext.):	0 hours
Bearing Walls (Int.):	0 hours
Non-bearing Walls (Ext.):	0 hours
Non-bearing Walls (Int.):	0 hours
Floor Construction:	0 hours
Roof Construction:	0 hours

PLUMBING

41 TOTAL OCCUPANTS
41 / 2 = 20.5
21 PER SEX

MENS	1/25 = 1 REQUIRED
W.C.	1 PROVIDED
LAV.	1/40 = 1 REQUIRED
	1 PROVIDED

WOMENS	1/25 = 1 REQUIRED
W.C.	1 PROVIDED
LAV.	1/40 = 1 REQUIRED
	1 PROVIDED

DRINKING FOUNTAIN	1/100 = 41
	1 REQUIRED
	1 PROVIDED
	HI-LO ADA

SERVICE SINK	1 REQUIRED
	1 PROVIDED

EXITS:

Table 1005.1
Egress Width Per Occupant Served
Maximum Occupant Load: 41 People x 0.2= 8.2'

Minimum Number of Exits (FBC 1021.1):	2
Exit(s) Provided:	3
Maximum Dead End Hall (FBC 1018.4):	20 FT
Maximum Travel Distance (FBC 1028.7):	200 FT

Is a separate or emergency source of light required: YES
Is special egress panic hardware required: NO

UTILITIES INC. OPERATIONS BUILDING

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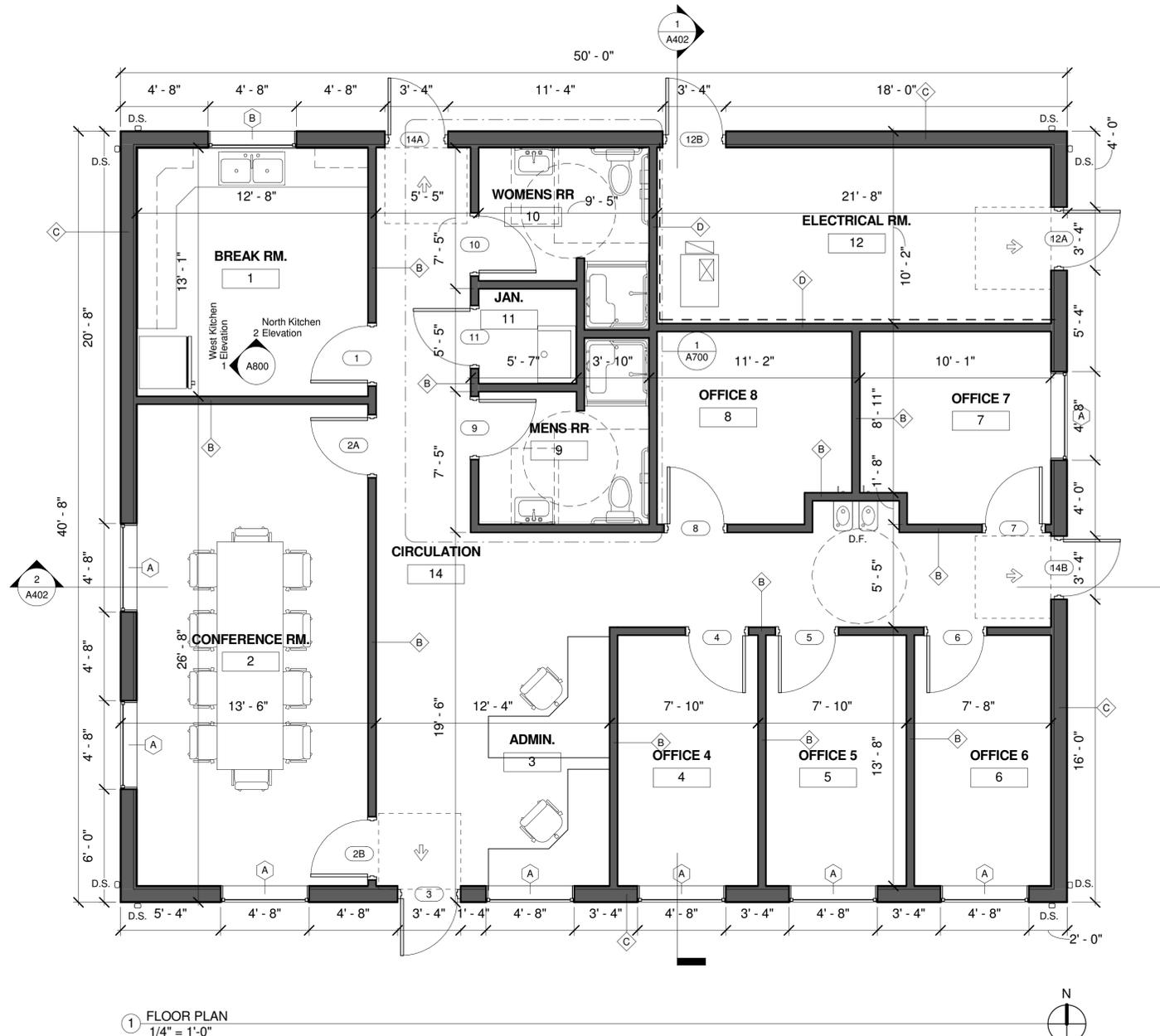
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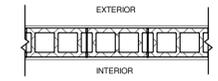
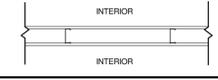
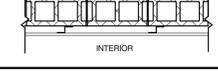
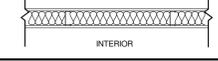
PROJECT No. 16-160

PHASE 100 % CONSTR.



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

Wall Type

TYPE	INDICATION	DESCRIPTION	TOTAL WIDTH	COMMENTS
A		-Stucco -Vapor Barrier Membrane -8" CMU Block -5/8" Dry Wall	8"	
D		-5/8" Dry Wall -3 5/8" Metal Stud -5/8" Dry Wall	5 1/4"	
C		-Stucco -Vapor Barrier Membrane -8" CMU Block -1 1/2" Z-Furring (24" O.C.) -5/8" Dry Wall	11 1/8"	
D		-5/8" Dry Wall Type "X" -3 5/8" Metal Stud -5/8" Dry Wall Type "X"	5 1/4"	UL U465 Interior Partitions -Steel Stud (Non-load-bearing) 1-HOUR RATED

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SIGNATURE AND DATED SEAL
CONSULTANTS
JAMES L. MOORE
ARB5980

SHEET TITLE
FLOOR PLAN

PROJECT ADDRESS
144 WESTERN FORK ROAD
LONGWOOD, FL 32750
OWNER NAME AND ADDRESS
UTILITIES INC. OPERATIONS BUILDING

REV. DESCRIPTION DATE
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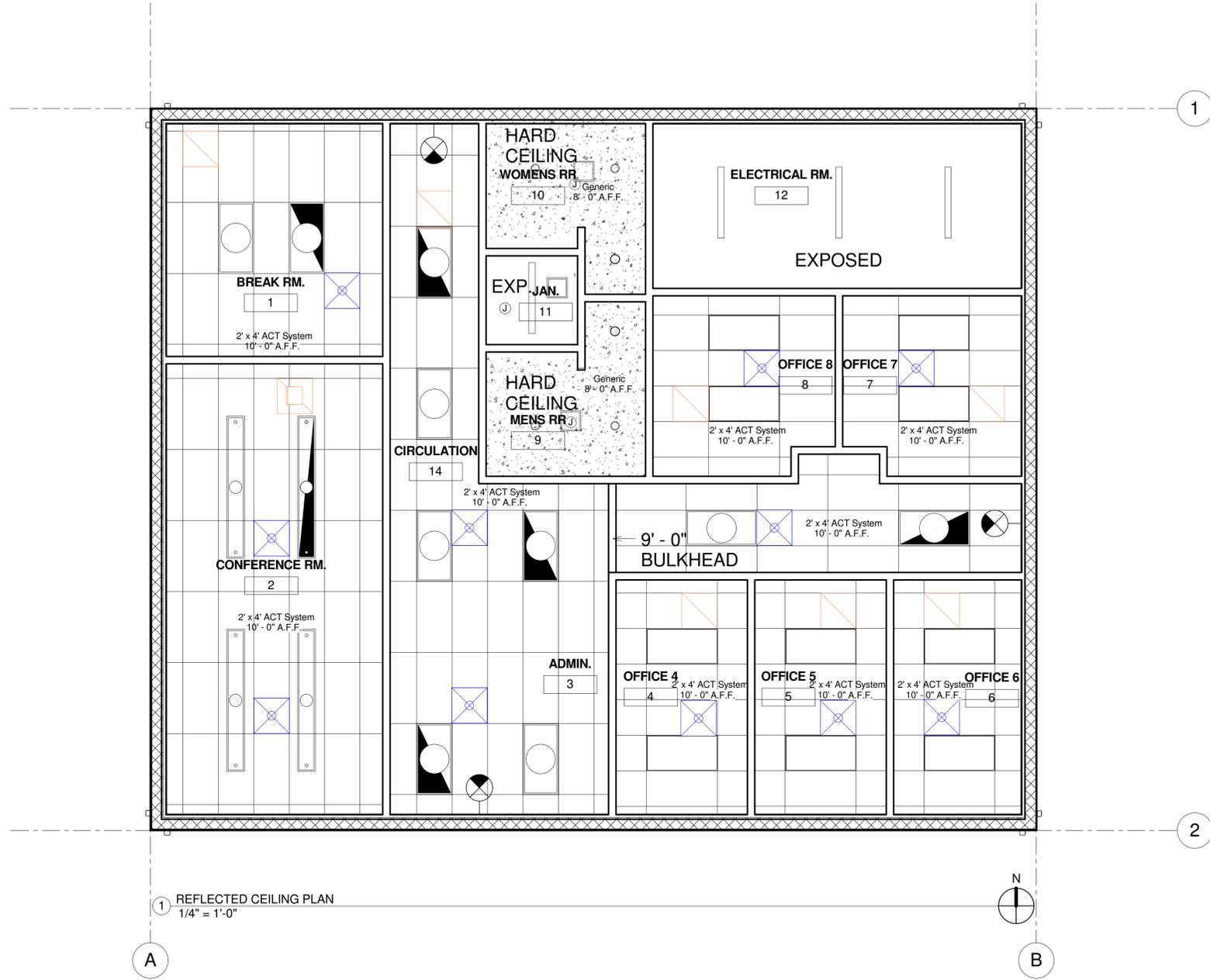
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PHASE 100 % CONSTR. DOCS.
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DATE 12/15/2016

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A101

REFLECTED CEILING PLAN LEGEND

SYMBOL	LEGEND
	WALL MOUNTED EXIT LIGHT
	5/8" MOISTURE RESISTANT GYP. BD.
	2' X 4' ACT
	EXPOSED TO DECK ABOVE
	LIGHT FIXTURE
	LINEAR DIRECT/INDIRECT LIGHT FIXTURE
	SUPPLY
	RETURN



1 REFLECTED CEILING PLAN
1/4" = 1'-0"

SIGNATURE AND DATED SEAL

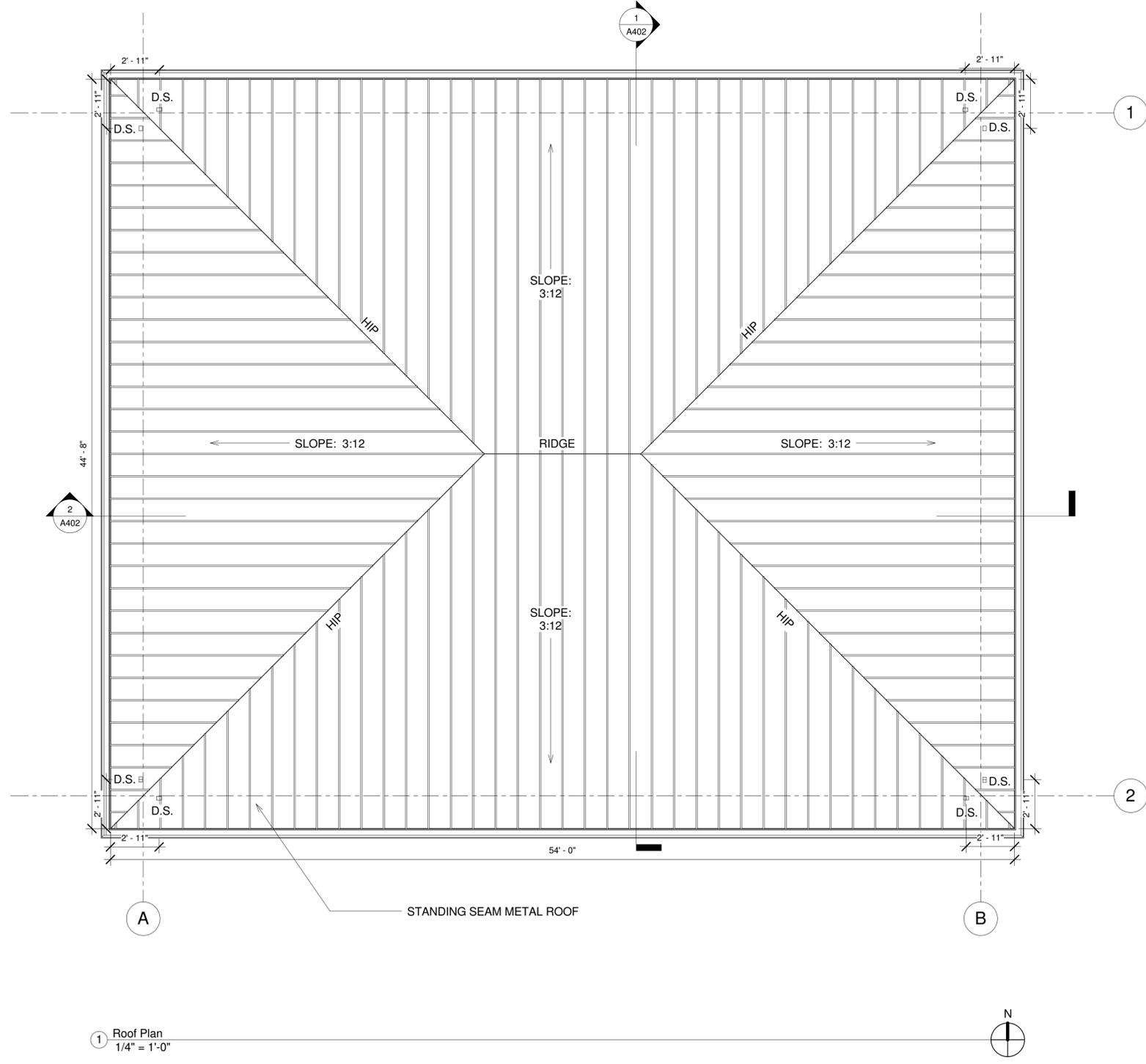
CONSULTANTS

SHEET TITLE
REFLECTED CEILING PLAN

PROJECT ADDRESS
144 WESTERN FORK ROAD
LONGWOOD, FL 32750
OWNER NAME AND ADDRESS
UTILITIES INC. OPERATIONS BUILDING

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DATE 12/15/2016



1 Roof Plan
1/4" = 1'-0"

STANDING SEAM METAL ROOF

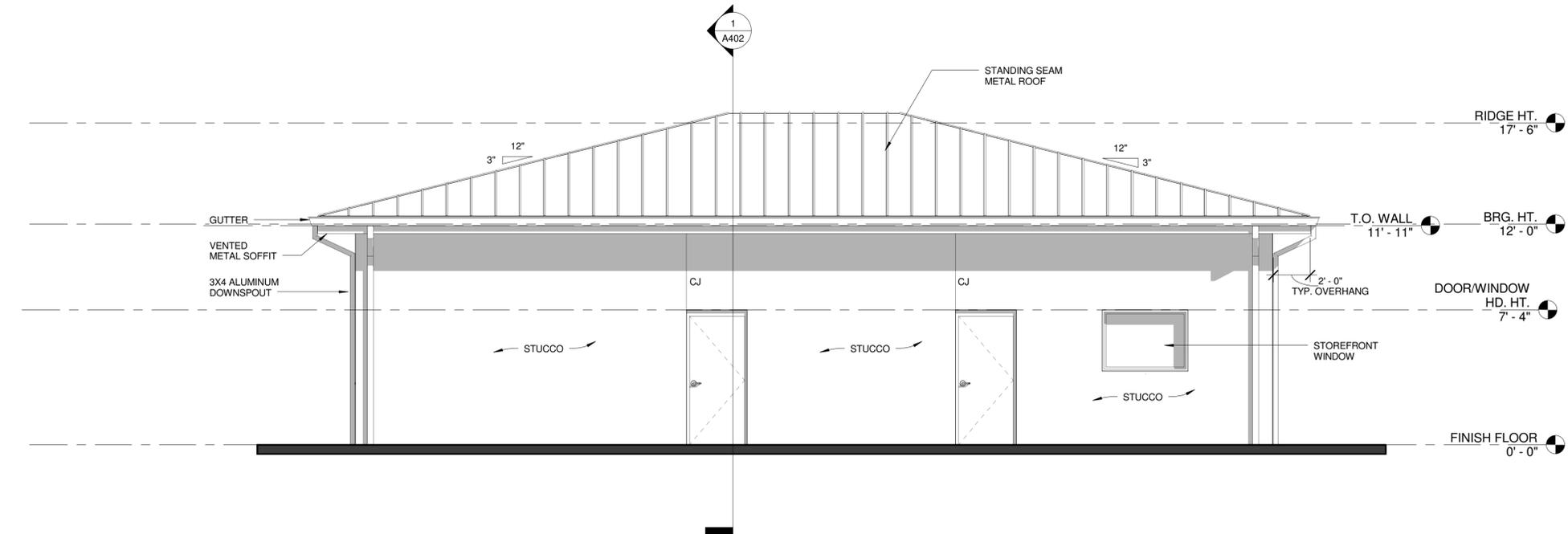
UTILITIES INC. OPERATIONS BUILDING

PROJECT No.	16-160	REV.	DESCRIPTION	DATE	PROJECT ADDRESS	SHEET TITLE	CONSULTANTS	SIGNATURE AND DATED SEAL
PHASE	100 % CONSTR.				144 WESTERN FORK ROAD LONGWOOD, FL 32750	ROOF PLAN		
SCALE	1/4" = 1'-0"				OWNER NAME AND ADDRESS			
DRAWN BY	RP				UTILITIES INC. OPERATIONS BUILDING			
CHECKED BY	JM							
DATE	12/15/2016							

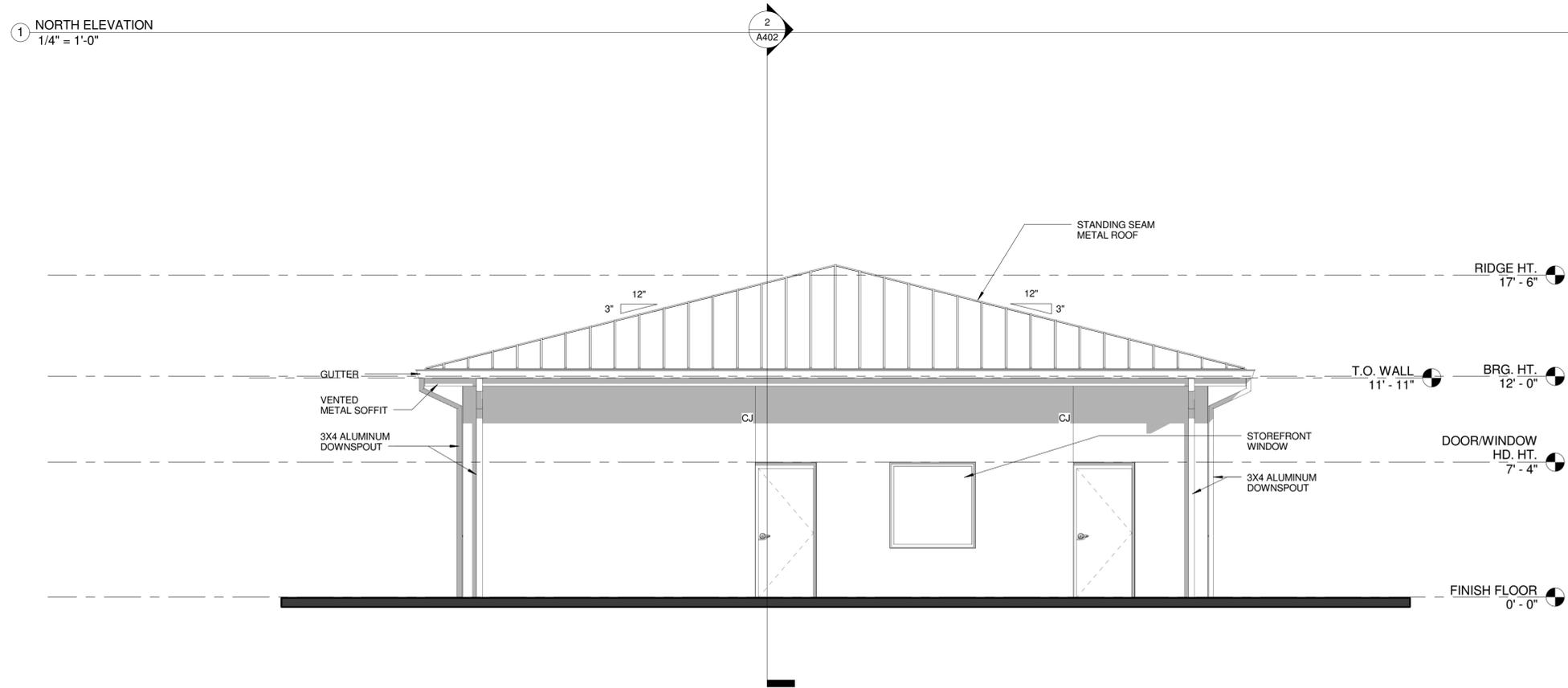


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JAMES L. MOORE
ARB5890



1 NORTH ELEVATION
1/4" = 1'-0"



2 EAST ELEVATION
1/4" = 1'-0"

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CONSULTANTS
JAMES L. MOORE
ARB5980

SHEET TITLE
EXTERIOR ELEVATIONS

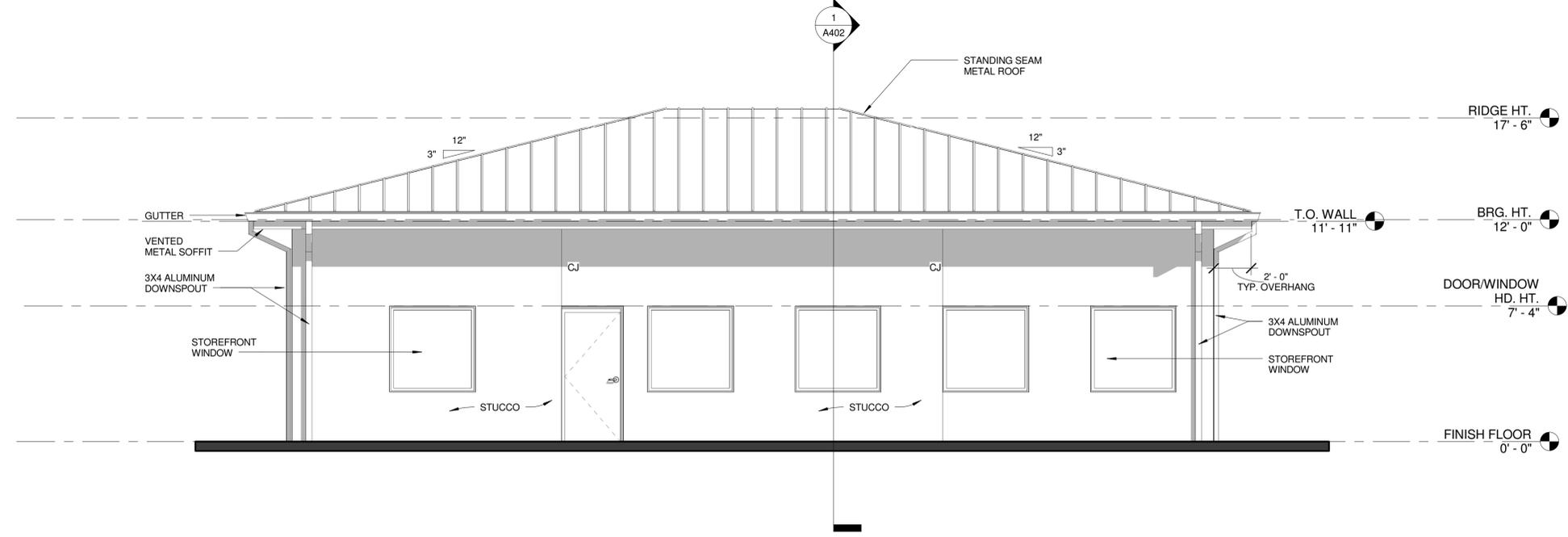
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144 WESTERN FORK ROAD
LONGWOOD, FL 32750
OWNER NAME AND ADDRESS
UTILITIES INC. OPERATIONS BUILDING

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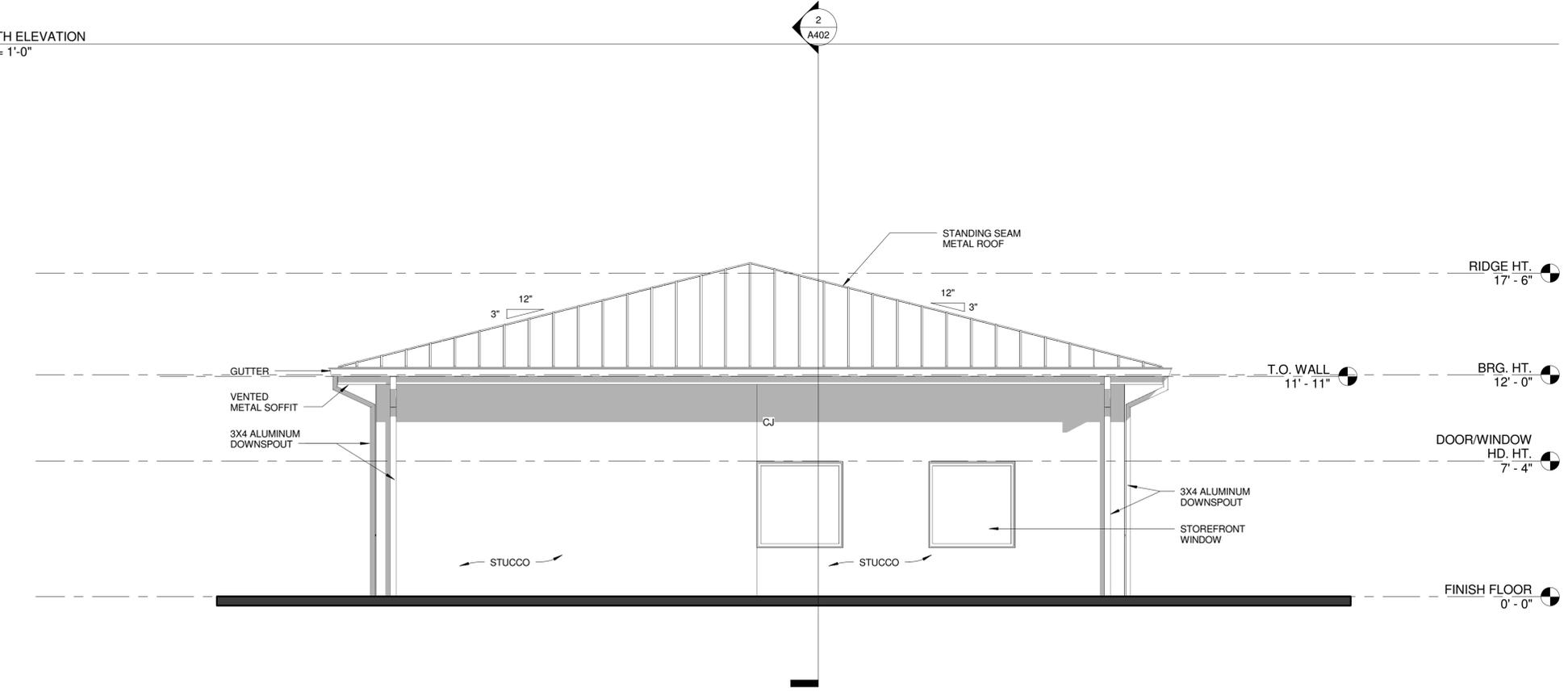
PROJECT No.	16-160
PHASE	100 % CONSTR. DOCS.
SCALE	1/4" = 1'-0"
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A201

① SOUTH ELEVATION
1/4" = 1'-0"



② WEST ELEVATION
1/4" = 1'-0"



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SHEET TITLE
EXTERIOR ELEVATIONS

PROJECT ADDRESS
144 WESTERN FORK ROAD
LONGWOOD, FL 32750
OWNER NAME AND ADDRESS
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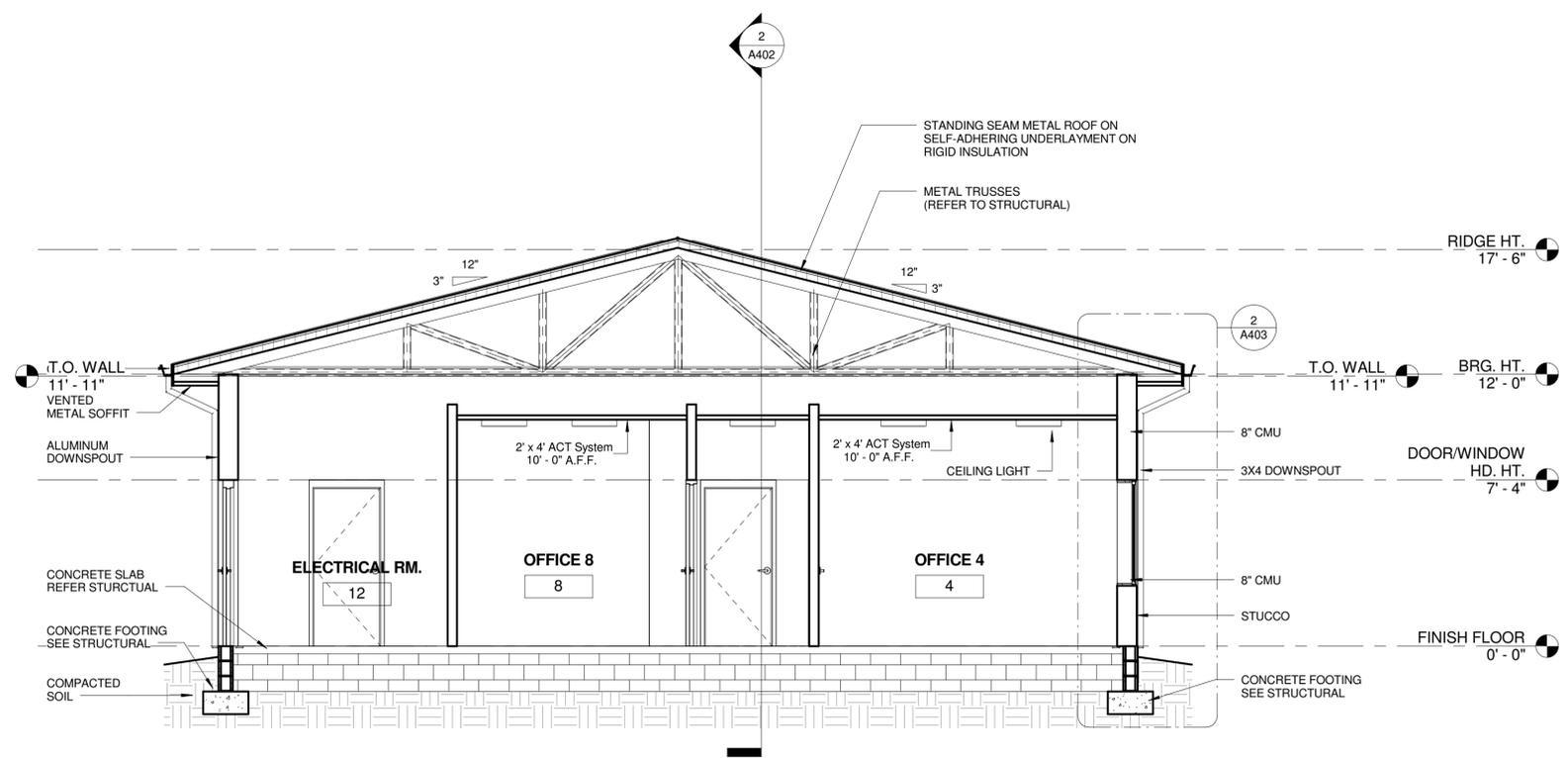
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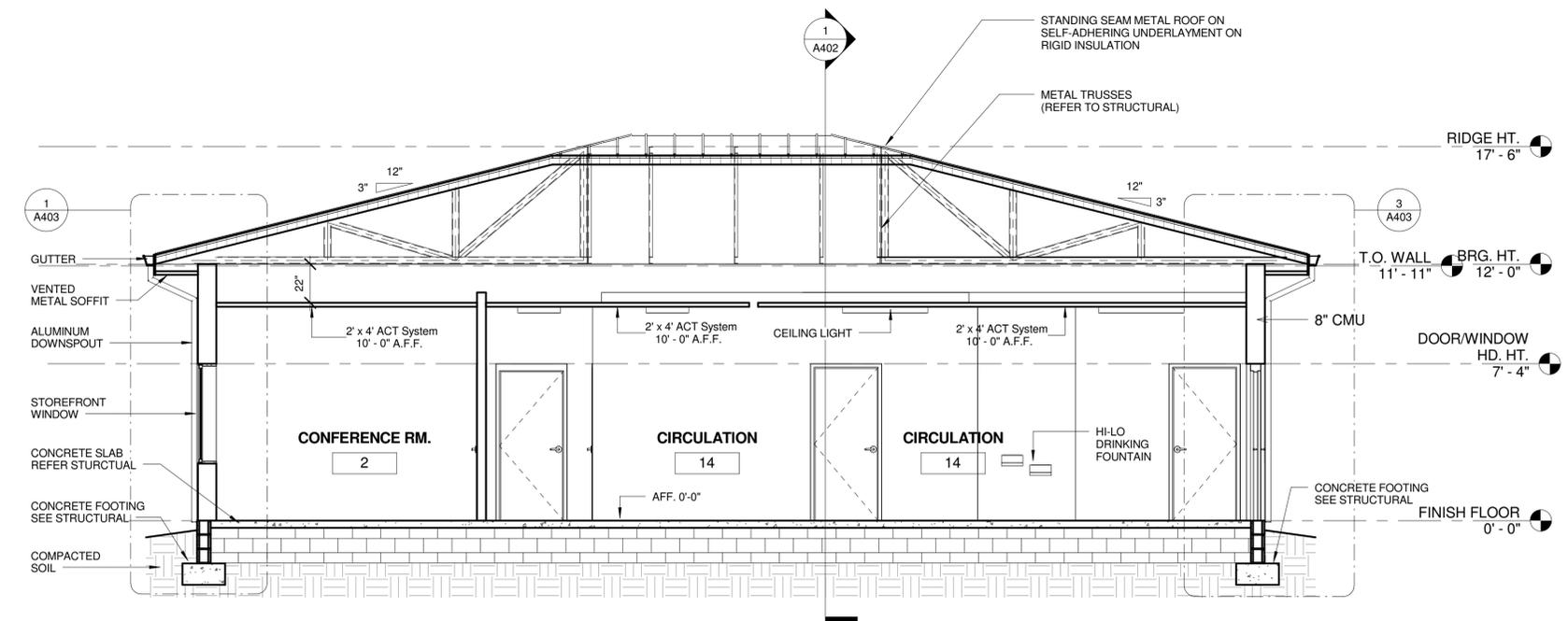
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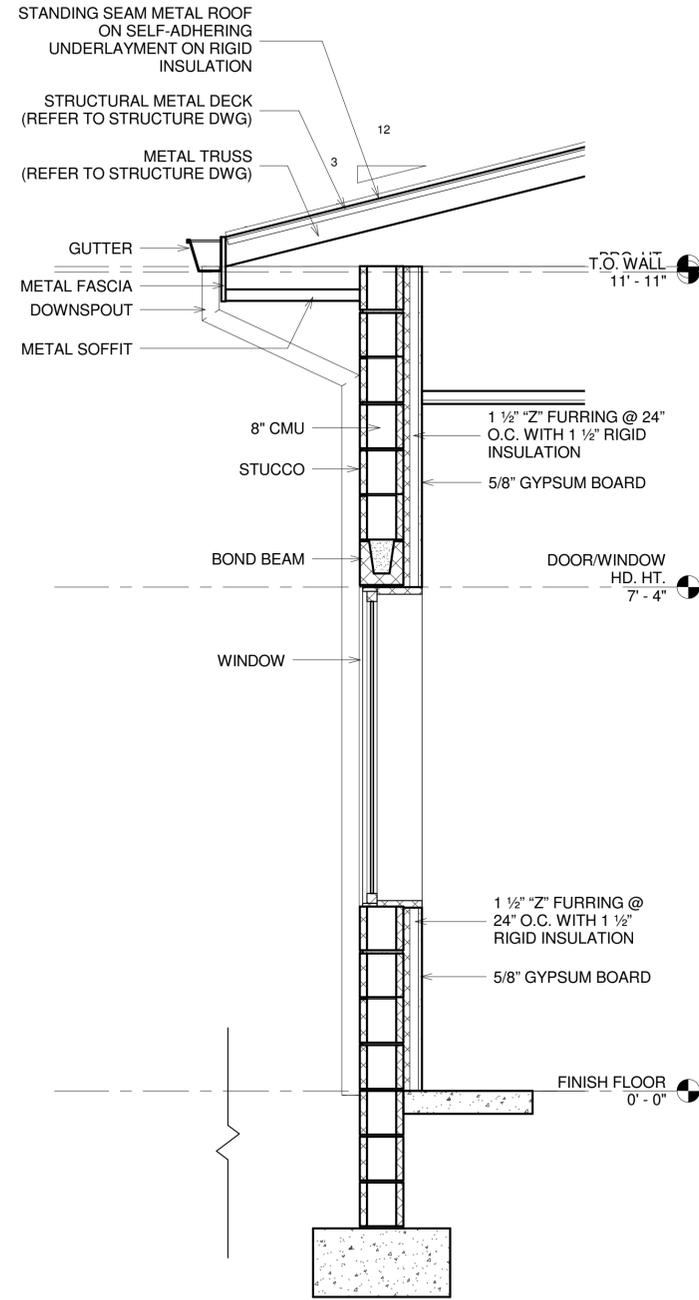
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A95980



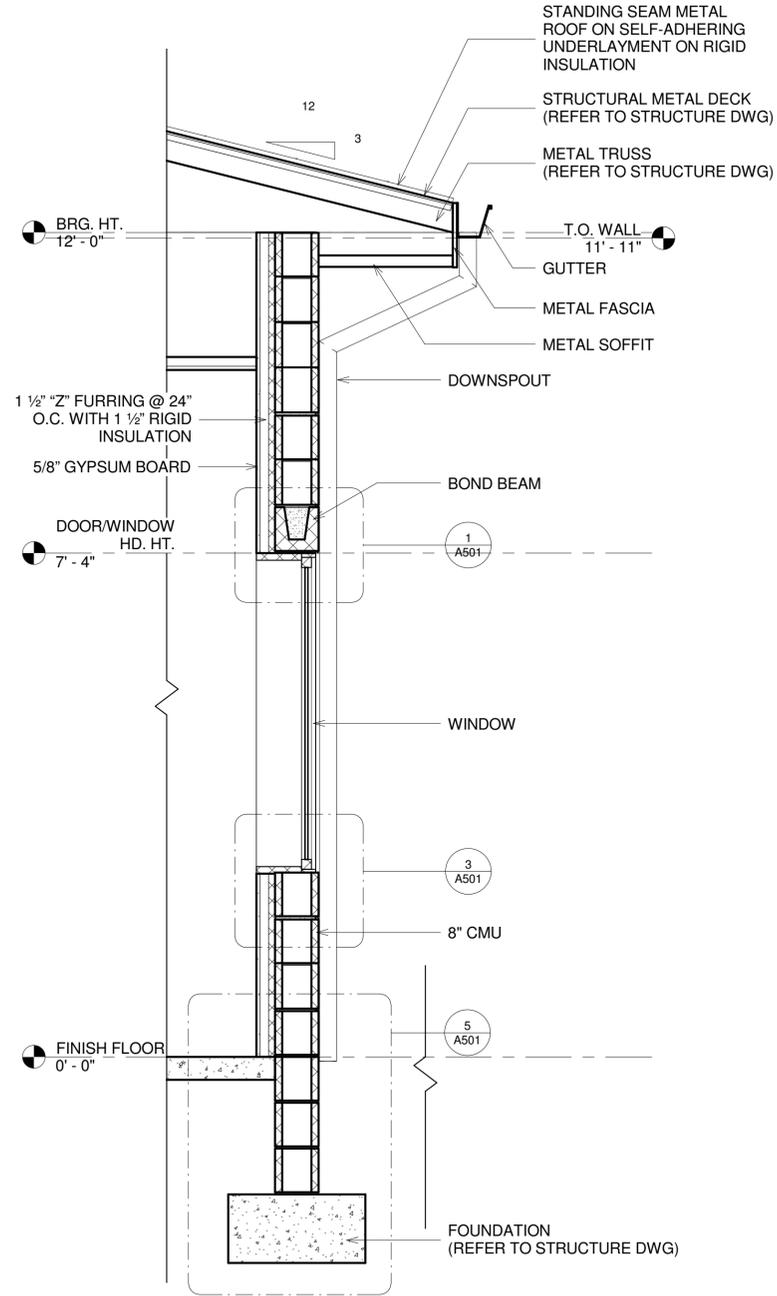
1 NORTH-SOUTH BUILDING SECTION
1/4" = 1'-0"



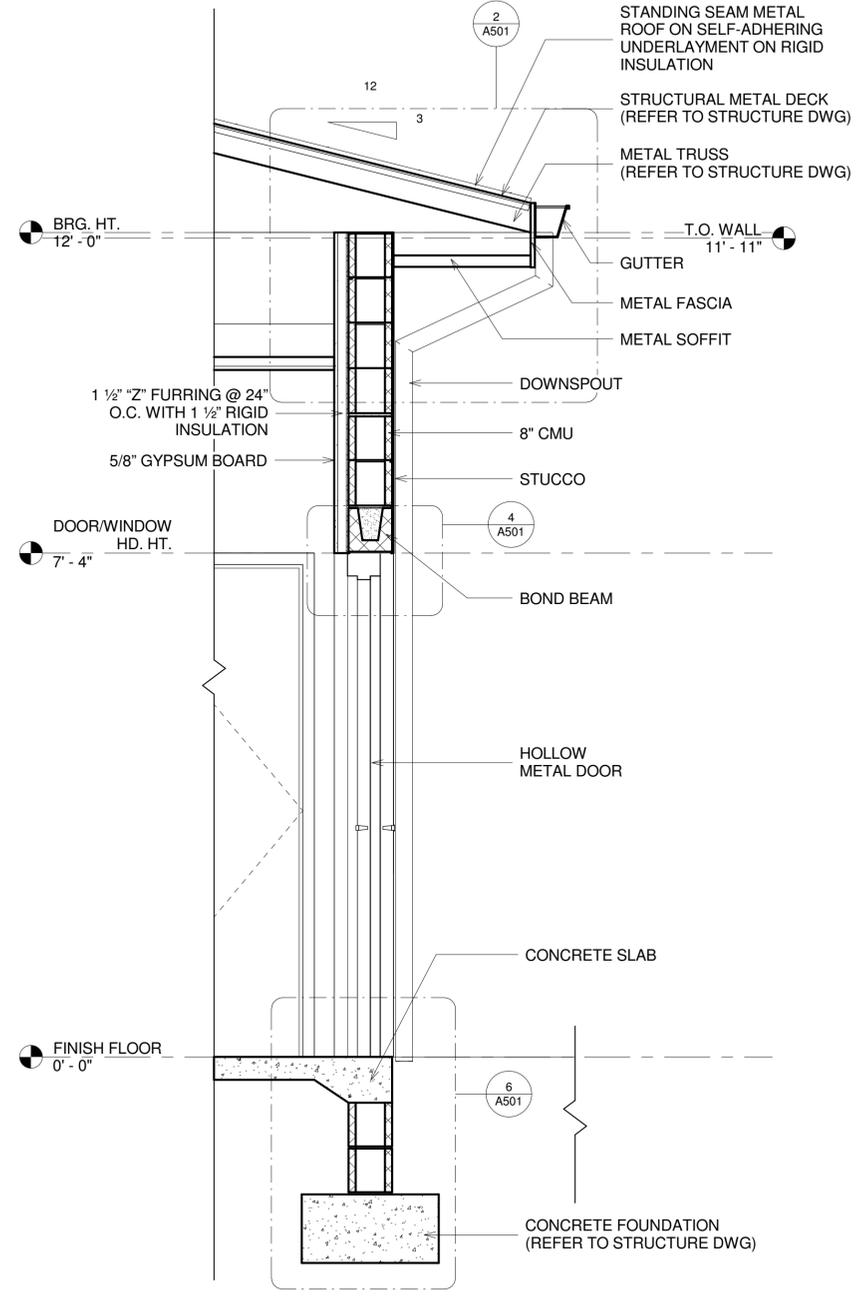
2 EAST-WEST BUILDING SECTION
1/4" = 1'-0"



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



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



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

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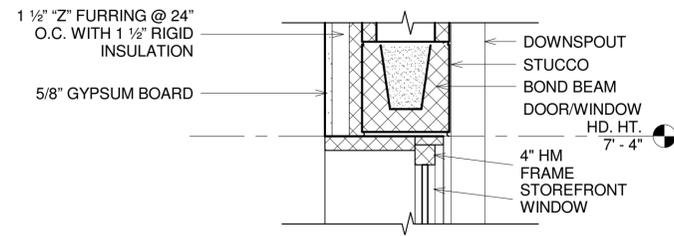
SHEET TITLE
WALL SECTIONS

PROJECT ADDRESS
144 WESTERN FORK ROAD
LONGWOOD, FL 32750

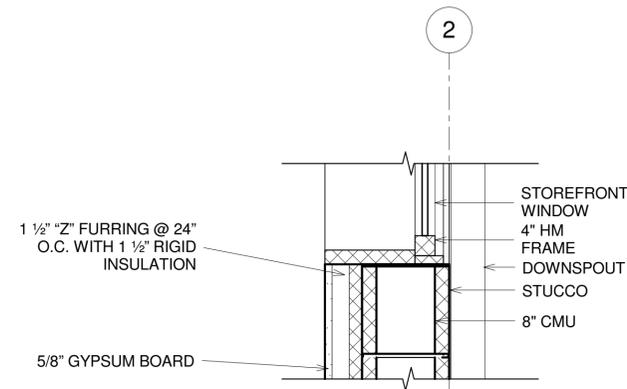
OWNER NAME AND ADDRESS
UTILITIES INC. OPERATIONS BUILDING

REV.	DESCRIPTION	DATE
16-160	PROJECT No.	
100 % CONSTR.	PHASE	
3/4" = 1'-0"	SCALE	
RP	DRAWN BY	
JM	CHECKED BY	
12/15/2016	DATE	

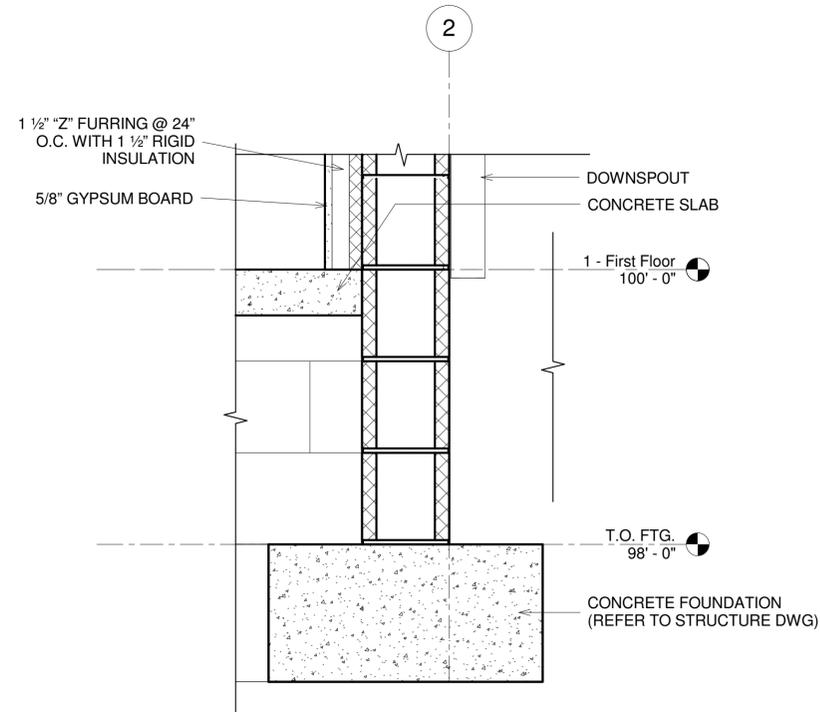
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1 WINDOW DETAIL 1
1 1/2" = 1'-0"



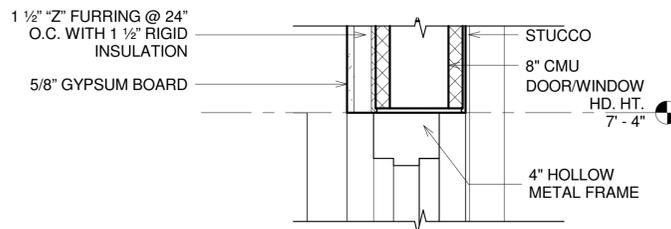
3 WINDOW DETAIL 2
1 1/2" = 1'-0"



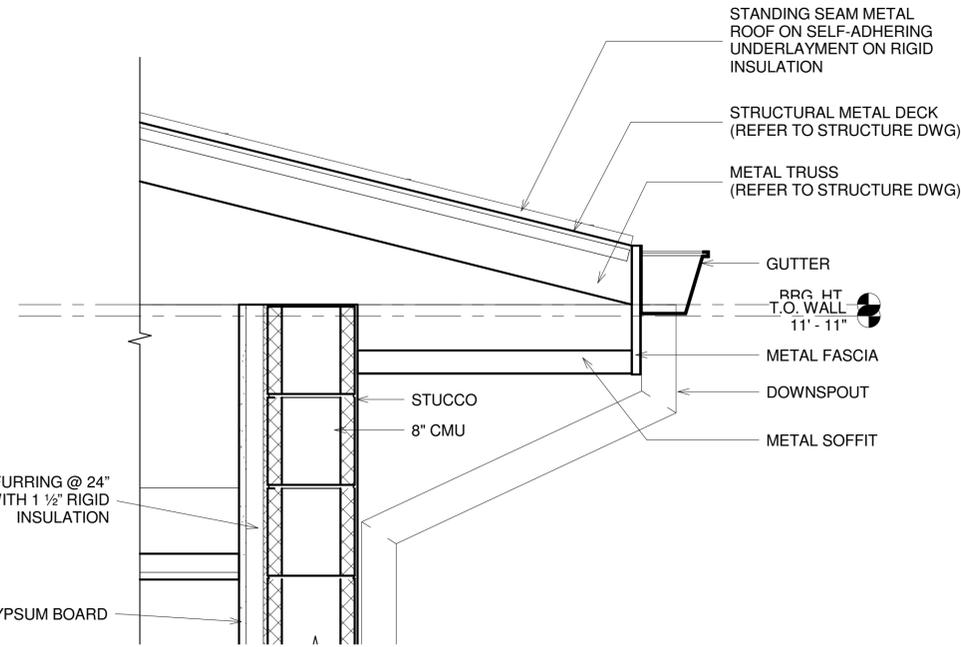
5 SLAB DETAIL 1
1 1/2" = 1'-0"



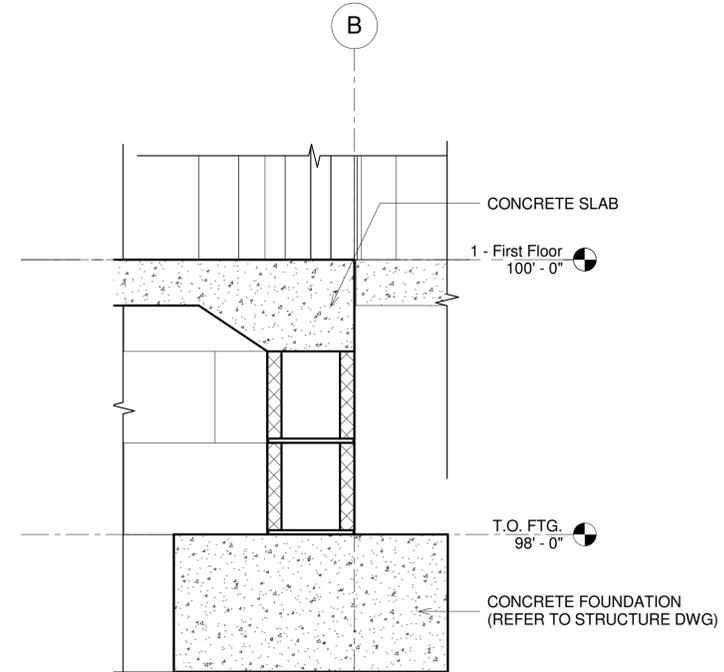
2 ROOF DETAIL
1 1/2" = 1'-0"



4 DOOR DETAIL
1 1/2" = 1'-0"



2 ROOF DETAIL
1 1/2" = 1'-0"



6 SLAB DETAIL 2
1 1/2" = 1'-0"

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ARB5980

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DETAILS

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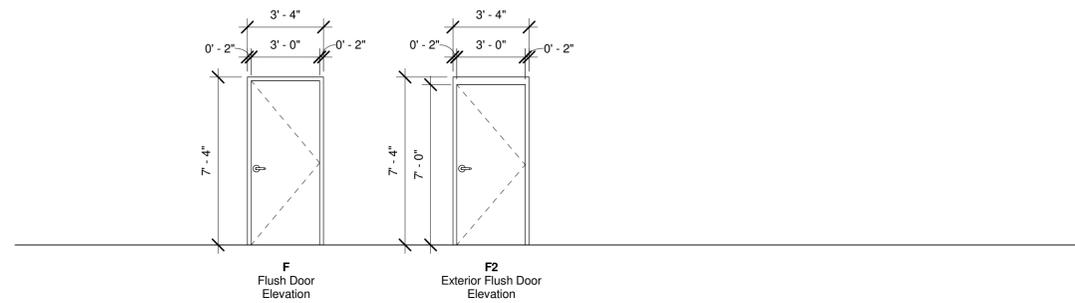
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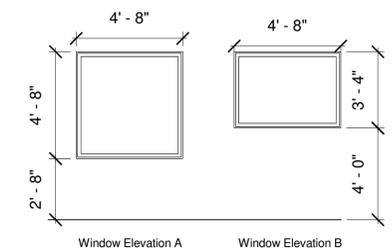
Door Schedule													
Mark	Type	Door Material	Door			Frame				Name Type	Hardware Set	Remarks	
			Width	Size		Frame Type	Frame Material	Details					
				Height	Thickness			Jamb	Head				Saddle
1	F	WOOD	3' - 0"	7' - 2"	0' - 1 3/4"		HM	HM	HM	HM	Flush	3.0	
2A	F	WOOD	3' - 0"	7' - 2"	0' - 1 3/4"		HM	HM	HM	HM	Flush	6.0	
2B	F	WOOD	3' - 0"	7' - 2"	0' - 1 3/4"		HM	HM	HM	HM	Flush	6.0	
3	F 2	HM	3' - 0"	7' - 0"	0' - 1 3/4"		HM	HM	HM	HM	Flush	1.0	
4	F	WOOD	3' - 0"	7' - 2"	0' - 1 3/4"		HM	HM	HM	HM	Flush	5.0	
5	F	WOOD	3' - 0"	7' - 2"	0' - 1 3/4"		HM	HM	HM	HM	Flush	5.0	
6	F	WOOD	3' - 0"	7' - 2"	0' - 1 3/4"		HM	HM	HM	HM	Flush	5.0	
7	F	WOOD	3' - 0"	7' - 2"	0' - 1 3/4"		HM	HM	HM	HM	Flush	5.0	
8	F	WOOD	3' - 0"	7' - 2"	0' - 1 3/4"		HM	HM	HM	HM	Flush	5.0	
9	F	WOOD	3' - 0"	7' - 2"	0' - 1 3/4"		HM	HM	HM	HM	Flush	2.0	
10	F	WOOD	3' - 0"	7' - 2"	0' - 1 3/4"		HM	HM	HM	HM	Flush	2.0	
11	F	WOOD	3' - 0"	7' - 2"	0' - 1 3/4"		HM	HM	HM	HM	Flush	4.0	
12A	F 2	HM	3' - 0"	7' - 0"	0' - 1 3/4"		HM	HM	HM	HM	Flush	1.0	
12B	F 2	HM	3' - 0"	7' - 0"	0' - 1 3/4"		HM	HM	HM	HM	Flush	1.0	
14A	F 2	HM	3' - 0"	7' - 0"	0' - 1 3/4"		HM	HM	HM	HM	Flush	1.0	
14B	F 2	HM	3' - 0"	7' - 0"	0' - 1 3/4"		HM	HM	HM	HM	Flush	1.0	

Door Elevations 3D Elevations



Door Elevations
1/4" = 1'-0"

Window Schedule											
Mark	Type	Window		Location		Frame					Remarks
		Size		Floor to Head Height	Floor to Sill Height	Frame Type	Frame Material	Details			
		Height	Width					Head	Jamb	Sill	
A	Fixed	4' - 8"	4' - 8"	7' - 4"	2' - 8"	Aluminum	Aluminum	HM	HM	HM	
A	Fixed	4' - 8"	4' - 8"	7' - 4"	2' - 8"	Aluminum	Aluminum	HM	HM	HM	
A	Fixed	4' - 8"	4' - 8"	7' - 4"	2' - 8"	Aluminum	Aluminum	HM	HM	HM	
A	Fixed	4' - 8"	4' - 8"	7' - 4"	2' - 8"	Aluminum	Aluminum	HM	HM	HM	
A	Fixed	4' - 8"	4' - 8"	7' - 4"	2' - 8"	Aluminum	Aluminum	HM	HM	HM	
B	Fixed	3' - 4"	4' - 8"	7' - 4"	4' - 0"	Aluminum	Aluminum	HM	HM	HM	
A	Fixed	4' - 8"	4' - 8"	7' - 4"	2' - 8"	Aluminum	Aluminum	HM	HM	HM	
A	Fixed	4' - 8"	4' - 8"	7' - 4"	2' - 8"	Aluminum	Aluminum	HM	HM	HM	
A	Fixed	4' - 8"	4' - 8"	7' - 4"	2' - 8"	Aluminum	Aluminum	HM	HM	HM	



Window Elevations
1/4" = 1'-0"

UTILITIES INC. OPERATIONS BUILDING

BORRELLI + PARTNERS
ARCHITECTURE PLANNING LANDSCAPE INTERIORS
720 Vassar Street, Orlando FL 32804
407.418.1338 :: Fax 407.418.1342

SIGNATURE AND DATED SEAL
CONSULTANTS
JAMES L. MOORE
A95980

SHEET TITLE
DOOR / WINDOW
SCHEDULE

PROJECT ADDRESS
144 WESTERN FORK ROAD
LONGWOOD, FL 32750
OWNER NAME AND ADDRESS
UTILITIES INC. OPERATIONS BUILDING

REV. DESCRIPTION DATE
16-160 100% CONSTR. DOCS. 1/4" = 1'-0"
12/15/2016

PROJECT No. 16-160
PHASE 100% CONSTR. DOCS.
SCALE 1/4" = 1'-0"
DRAWN BY Author
CHECKED BY Checker
DATE 12/15/2016

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SECTION 087100 - DOOR HARDWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes commercial door hardware for the following:

1. Swinging doors.
2. Other doors to the extent indicated.

B. Door hardware includes, but is not necessarily limited to, the following:

1. Mechanical door hardware.
2. Electromechanical door hardware.
3. Cylinders specified for doors in other sections.

C. Related Sections:

1. Division 08 Section "Door Hardware Schedule".
2. Division 08 Section "Hollow Metal Doors and Frames".
3. Division 08 Section "Access Control Hardware".

D. Codes and References: Comply with the version year adopted by the Authority Having Jurisdiction.

1. ANSI A117.1 - Accessible and Usable Buildings and Facilities.
2. ICC/IBC - International Building Code.
3. NFPA 70 - National Electrical Code.
4. NFPA 90 - Fire Doors and Windows.
5. NFPA 101 - Life Safety Code.
6. NFPA 105 - Installation of Smoke Door Assemblies.
7. State Building Codes, Local Amendments.

E. Standards: All hardware specified herein shall comply with the following industry standards:

1. ANSI/BHMA Certified Product Standards - A156 Series
2. UL10C - Positive Pressure Fire Tests of Door Assemblies

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1.6 COORDINATION

A. Templates: Obtain and distribute to the parties involved templates for doors, frames, and other work specified to be factory prepared for installing standard and electrified hardware. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing hardware to comply with indicated requirements.

B. Door Hardware and Electrical Connections: Coordinate the layout and installation of scheduled electrified door hardware and related access control equipment with required connections to source power junction boxes, low voltage power supplies, detection and monitoring hardware, and fire and detection alarm systems.

C. Door and Frame Preparation: Doors and corresponding frames are to be prepared, reinforced and pre-wired (if applicable) to receive the installation of the specified electrified, monitoring, signaling and access control system hardware without additional in-field modifications.

1.7 WARRANTY

A. General Warranty: Reference Division 01, General Requirements. Special warranties specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.

B. Warranty Period: Written warranty, executed by manufacturer(s), agreeing to repair or replace components of standard and electrified door hardware that fails in materials or workmanship within specified warranty period after final acceptance by the Owner. Failures include, but are not limited to, the following:

1. Structural failures including excessive deflection, cracking, or breakage.
2. Faulty operation of the hardware.
3. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
4. Electrical component defects and failures within the systems operation.

C. Standard Warranty Period: One year from date of Substantial Completion, unless otherwise indicated.

D. Special Warranty Periods:

1. Ten years for mortise locks and latches.
2. Twenty five years for manual surface door closer bodies.
3. Five years for motorized electric latch retraction exit devices.
4. Two years for electromechanical door hardware.

1.8 MAINTENANCE SERVICE

A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.

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1.3 SUBMITTALS

A. Product Data: Manufacturer's product data sheets including installation details, material descriptions, dimensions of individual components and profiles, operational descriptions and finishes.

B. Door Hardware Schedule: Prepared by or under the supervision of supplier, detailing fabrication and assembly of door hardware, as well as procedures and diagrams. Coordinate the final Door Hardware Schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.

1. Format: Comply with scheduling sequence and vertical format in DHI's "Sequence and Format for the Hardware Schedule."

2. Organization: Organize the Door Hardware Schedule into door hardware sets indicating complete designations of every item required for each door or opening. Organize door hardware sets in same order as in the Door Hardware Sets at the end of Part 3. Submittals that do not follow the same format and order as the Door Hardware Sets will be rejected and subject to resubmission.

3. Content: Include the following information:

- a. Type, style, function, size, label, hand, and finish of each door hardware item.
- b. Manufacturer of each item.
- c. Fastenings and other pertinent information.
- d. Location of door hardware set, cross-referenced to Drawings, both on floor plans and in door and frame schedule.
- e. Explanation of abbreviations, symbols, and codes contained in schedule.
- f. Mounting locations for door hardware.
- g. Door and frame sizes and materials.
- h. Warranty information for each product.

4. Submittal Sequence: Submit the final Door Hardware Schedule at earliest possible date, particularly where approval of the Door Hardware Schedule must precede fabrication of other work that is critical in the Project construction schedule. Include Product Data, Samples, Shop Drawings of other work affected by door hardware, and other information essential to the coordinated review of the Door Hardware Schedule.

C. Shop Drawings: Details of electrified access control hardware indicating the following:

1. Wiring Diagrams: Upon receipt of approved schedules, submit detailed system wiring diagrams for power, signaling, monitoring, communication, and control of the access control system electrified hardware. Differentiate between manufacturer-installed and field-installed wiring. Include the following:

- a. Elevation diagram of each unique access controlled opening showing location and interconnection of major system components with respect to their placement in the respective door openings.

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PART 2 - PRODUCTS

2.1 SCHEDULED DOOR HARDWARE

A. General: Provide door hardware for each door to comply with requirements in Door Hardware Sets and each referenced section that products are to be supplied under.

B. Designations: Requirements for quantity, item, size, finish or color, grade, function, and other distinctive qualities of each type of door hardware are indicated in the Door Hardware Sets at the end of Part 3. Products are identified by using door hardware designations, as follows:

C. Named Manufacturer's Products: Product designation and manufacturer are listed for each door hardware type required for the purpose of establishing requirements. Manufacturers' names are abbreviated in the Door Hardware Schedule.

D. Substitutions: Requests for substitution and product approval for inclusive mechanical and electromechanical door hardware in compliance with the specifications must be submitted in writing and in accordance with the procedures and time frames outlined in Division 01, Substitution Procedures. Approval of requests is at the discretion of the architect, owner, and their designated consultants.

2.2 HANGING DEVICES

A. Hinges: ANSI/BHMA A156.1 certified butt hinges with number of hinge knuckles as specified in the Door Hardware Sets.

1. Quantity: Provide the following hinge quantity, unless otherwise indicated:

- a. Three Hinges: For doors with heights 61 to 90 inches.
- b. Four Hinges: For doors with heights 91 to 120 inches.

2. Hinge Size: Provide the following, unless otherwise indicated, with hinge widths sized for door thickness and clearances required:

- a. Widths up to 3'0": 4-1/2" standard or heavy weight as specified.
- b. Sizes from 3'1" to 4'0": 5" standard or heavy weight as specified.

3. Acceptable Manufacturers:

- a. Hager Companies (HA).
- b. McKinney Products (MK).

B. Continuous Geared Hinges: ANSI/BHMA A156.26 Grade 1-600 certified continuous geared hinge, with minimum 0.120-inch thick extruded 6060 T6 aluminum alloy hinge leaves and a minimum overall width of 4 inches. Hinges are non-handed, reversible and fabricated to template screw locations. Factory trim hinges to suit door height and prepare for electrical cut-outs.

1. Acceptable Manufacturers:

1. Acceptable Manufacturers:

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b. Complete (risers, point-to-point) access control system block wiring diagrams.

c. Wiring instructions for each electronic component scheduled herein.

2. Electrical Coordination: Coordinate with related sections the voltages and wiring details required at electrically controlled and operated hardware openings.

D. Keying Schedule: After a keying meeting with the owner has taken place prepare a separate keying schedule detailing final instructions. Submit the keying schedule in electronic format. Include keying system explanation, door numbers, key set symbols, hardware set numbers and special instructions. Owner must approve submitted keying schedule prior to the ordering of permanent cylinders/cores.

E. Informational Submittals:

1. Product Test Reports: Indicating compliance with cycle testing requirements, based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified independent testing agency.

F. Operating and Maintenance Manuals: Provide manufacturers operating and maintenance manuals for each item comprising the complete door hardware installation in quantity as required in Division 01, Closeout Submittals.

1.4 QUALITY ASSURANCE

A. Manufacturers Qualifications: Engage qualified manufacturers with a minimum 5 years of documented experience in producing hardware and equipment similar to that indicated for this Project and that have a proven record of successful in-service performance.

B. Installer Qualifications: A minimum 3 years documented experience installing both standard and electrified door hardware similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.

C. Door Hardware Supplier Qualifications: Experienced commercial door hardware distributors with a minimum 5 years documented experience supplying both mechanical and electromechanical hardware installations comparable in material, design, and extent to that indicated for this Project. Supplier recognized as a factory direct distributor by the manufacturers of the primary materials with a warehousing facility in Project's vicinity. Supplier to have on staff a certified Architectural Hardware Consultant (AHC) available during the course of the Work to consult with Contractor, Architect, and Owner concerning both standard and electromechanical door hardware and keying.

D. Source Limitations: Obtain each type and variety of door hardware specified in this section from a single source unless otherwise indicated.

1. Electrified modifications or enhancements made to a source manufacturer's product line by a secondary or third party source will not be accepted.

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- a. McKinney Products (MK).
- b. Pemko Manufacturing (PE).

2.3 POWER TRANSFER DEVICES

A. Electrified Quick Connect Continuous Geared Transfer Hinges: Provide electrified transfer continuous geared hinges with a 12" removable service panel cutout accessible without demounting door from the frame. Furnish with Molex™ standardized plug connectors with sufficient number of concealed wires (up to 12) to accommodate the electrified functions specified in the Door Hardware Sets. Connectors plug directly to through-door wiring harnesses for connection to electric locking devices and power supplies. Wire nut connections are not acceptable.

1. Acceptable Manufacturers:

- a. McKinney Products (MK) - SER-QC (# wires) Option.
- b. Pemko Manufacturing (PE) - SER-QC (# wires) Option.

B. Electric Door Wire Harnesses: Provide electric/data transfer wiring harnesses with standardized plug connectors to accommodate up to twelve (12) wires. Connectors plug directly to through-door wiring harnesses for connection to electric locking devices and power supplies. Provide sufficient number and type of concealed wires to accommodate electric function of specified hardware. Provide a connector for through-door electronic locking devices and from hinge to junction box above the opening. Wire nut connections are not acceptable. Determine the length required for each electrified hardware component for the door type, size and construction, minimum of two per electrified opening.

1. Provide one each of the following tools as part of the base bid contract:

- a. McKinney Products (MK) - Electrical Connecting Kit: QC-R001.
- b. McKinney Products (MK) - Connector Hand Tool: QC-R003.

2. Acceptable Manufacturers:

- a. McKinney Products (MK) - QC-C Series.

2.4 CYLINDERS AND KEYING

A. General: Cylinder manufacturer to have minimum (10) years experience designing secured master key systems and have on record a published security keying system policy.

B. Source Limitations: Obtain each type of keyed cylinder and keys from the same source manufacturer as locksets and exit devices, unless otherwise indicated.

C. Cylinders: Original manufacturer cylinders complying with the following:

1. Mortise Type: Threaded cylinders with rings and cams to suit hardware application.
2. Rim Type: Cylinders with back plate, flat-type vertical or horizontal tailpiece, and raised trim ring.

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2. Provide electromechanical door hardware from the same manufacturer as mechanical door hardware, unless otherwise indicated.

E. Each unit to bear third party permanent label demonstrating compliance with the referenced standards.

F. Keying Conference: Conduct conference to comply with requirements in Division 01 Section "Project Meetings." Keying conference to incorporate the following criteria into the final keying schedule document:

1. Function of building, purpose of each area and degree of security required.
2. Plans for existing and future key system expansion.
3. Requirements for key control storage and software.
4. Installation of permanent keys, cylinder cores and software.
5. Address and requirements for delivery of keys.

G. Pre-Submittal Conference: Conduct coordination conference in compliance with requirements in Division 01 Section "Project Meetings" with attendance by representatives of Supplier(s), Installer(s), and Contractor(s) to review proper methods and the procedures for receiving, handling, and installing door hardware.

1. Prior to installation of door hardware, conduct a project specific training meeting to instruct the installing contractor's personnel on the proper installation and adjustment of their respective products. Product training to be attended by installers of door hardware (including electromechanical hardware) for aluminum, hollow metal and wood doors. Training will include the use of installation manuals, hardware schedules, templates and physical product samples as required.

2. Inspect and discuss electrical roughing-in, power supply connections, and other preparatory work performed by other trades.

3. Review sequence of operation narratives for each unique access controlled opening.

4. Review and finalize construction schedule and verify availability of materials.

5. Review the required inspecting, testing, commissioning, and demonstration procedures

H. At completion of installation, provide written documentation that components were applied to manufacturer's instructions and recommendations and according to approved schedule.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Inventory door hardware on receipt and provide secure lock-up and shelving for door hardware delivered to Project site. Do not store electronic access control hardware, software or accessories at Project site without prior authorization.

B. Tag each item or package separately with identification related to the final Door Hardware Schedule, and include basic installation instructions with each item or package.

C. Deliver, as applicable, permanent keys, cylinders, cores, access control credentials, software and related accessories directly to Owner via registered mail or overnight package service. Instructions for delivery to the Owner shall be established at the "Keying Conference".

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3. Keyway: Manufacturer's Standard.

D. Patented Cylinders: At Access control doors only-ANSI/BHMA A156.5, Grade 1, certified cylinders employing a utility patented and restricted keyway requiring the use of patented controlled keys. Provide bump resistant, fixed core cylinders as standard with solid recessed cylinder collars. Cylinders are to be factory keyed where permanent keying records will be established and maintained.

1. Provide a 6 pin multi-level master key system comprised of patented controlled keys and security and high security cylinders operated by one (1) key of the highest level. Geographical exclusivity to be provided for all security and high security cylinders and UL437 certification where specified.

a. Level 1 Cylinders: Provide utility patented controlled keyway cylinders that are furnished with patented keys available only from authorized distribution.

2. Acceptable Manufacturers:

- a. Sargent Manufacturing (SA) - Degree Series.
- b. Corbin Russwin (RU) - Access 3 Series.

E. Keying System: Each type of lock and cylinders to be factory keyed.

1. Conduct specified "Keying Conference" to define and document keying system instructions and requirements.

2. Furnish factory cut, nickel-silver large bow permanently inscribed with a visual key control number as directed by Owner.

3. New System: Key locks to a new key system as directed by the Owner.

F. Key Quantity: Provide the following minimum number of keys:

1. Change Keys per Cylinder: Two (2)
2. Master Keys (per Master Key Level/Group): Five (5).
3. Construction Keys (where required): Ten (10).

G. Construction Keying: Provide construction master keyed cylinders.

H. Key Registration List (Bitting List):

1. Provide keying transcript list to Owner's representative in the proper format for importing into key control software.

2. Provide transcript list in writing or electronic file as directed by the Owner.

2.5 MECHANICAL LOCKS AND LATCHING DEVICES

A. Mortise Locksets, Grade 1 (Heavy Duty): ANSI/BHMA A156.13, Series 1000, Operational Grade 1 certified. Locksets are to be manufactured with a corrosion resistant steel case and be field-reversible for handing without disassembly of the lock body.

1. Acceptable Manufacturers:

UTILITIES INC. OPERATIONS BUILDING

BORRELLI + PARTNERS
ARCHITECTURE PLANNING LANDSCAPE INTERIORS
720 Vossor Street, Orlando FL 32804
407.418.1338 :: Fax 407.418.1342

SIGNATURE AND DATED SEAL

CONSULTANTS

SHEET TITLE
DOOR HARDWARE
UTILITIES

PROJECT ADDRESS
144 WESTERN FORK ROAD
LONGWOOD, FL 32750
OWNER NAME AND ADDRESS
UTILITIES INC. OPERATIONS BUILDING

DATE
DESCRIPTION
REV.

PROJECT No. 16-160
PHASE 100 % CONSTR.
SCALE
DRAWN BY
CHECKED BY
DATE 12/15/2016

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- a. Corbin Russwin Hardware (RU) - ML2000 Series.
- b. Sargent Manufacturing (SA) - 8200 Series.
- c. Yale Locks and Hardware (YA) - 8800FL Series.

2.6 CONVENTIONAL EXIT DEVICES

- I. Hurricane and Tornado Resistance Compliance: Conventional exit devices are to be U.L. listed for windstorm assemblies where applicable. Provide the appropriate hurricane or tornado resistant products that have been independent third party tested, certified, and labeled to meet state and local windstorm building codes applicable to project.

2.7 DOOR CLOSERS

- A. Door Closers, Surface Mounted (Commercial Duty): ANSI/BHMA 156.4, Grade 1 certified surface mounted, insituational grade door closers with complete spring power adjustment, sizes 1 thru 6; and fully operational adjustable according to door size, frequency of use, and opening force. Closers to be rack and pinion type, one piece cast iron or aluminum alloy body construction, with adjustable backcheck, closing sweep, and latch speed control valves. Provide non-handed units standard.

1. Acceptable Manufacturers:

- a. Corbin Russwin Hardware (RU) - DC6000 Series.
- b. Norton Door Controls (NO) - 8500 Series.
- c. Sargent Manufacturing (SA) - 1431 Series.
- d. Yale Locks and Hardware (YA) - 3500 Series.

2.8 DOOR STOPS AND HOLDERS

- A. General: Door stops and holders to be of type and design as specified below or in the Hardware Sets.

- B. Door Stops and Bumpers: ANSI/BHMA A156.16, Grade 1 certified door stops and wall bumpers. Provide wall bumpers, either convex or concave types with anchorage as indicated, unless floor or other types of door stops are specified in Hardware Sets. Do not mount floor stops where they will impede traffic. Where floor or wall bumpers are not appropriate, provide overhead type stops and holders.

1. Acceptable Manufacturers:

- a. Rockwood Manufacturing (RO).

- C. Overhead Door Stops and Holders: ANSI/BHMA A156.6, Grade 1 certified overhead stops and holders to be surface or concealed types as indicated in Hardware Sets. Track, slide, arm and jamb bracket to be constructed of extruded bronze and shock absorber spring of heavy tempered steel. Provide non-handed design with mounting brackets as required for proper operation and function.

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3.5 ADJUSTING

- A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

3.6 CLEANING AND PROTECTION

- A. Protect all hardware stored on construction site in a covered and dry place. Protect exposed hardware installed on doors during the construction phase. Install any and all hardware at the latest possible time frame.

- B. Clean adjacent surfaces soiled by door hardware installation.

- C. Clean operating items as necessary to restore proper finish. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of owner occupancy.

3.7 DEMONSTRATION

- A. Instruct Owner's maintenance personnel to adjust, operate, and maintain mechanical and electromechanical door hardware.

3.8 DOOR HARDWARE SETS

- 1. MK - McKinney
- 2. PE - Pemko
- 3. SA - Sargent
- 4. RF - Rixson
- 5. RO - Rockwood
- 6. SU - Securitron

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1. Acceptable Manufacturers:

- a. Rixson Door Controls (RF).
- b. Rockwood Manufacturing (RO).
- c. Sargent Manufacturing (SA).

2.9 ARCHITECTURAL SEALS

- A. General: Thresholds, weatherstripping, and gasket seals to be of type and design as specified below or in the Hardware Sets. Provide continuous weatherstrip gasketing on exterior doors and provide smoke, light, or sound gasketing on interior doors where indicated. At exterior applications provide non-corrosive fasteners and elsewhere where indicated.

- B. Smoke Labeled Gasketing: Assemblies complying with NFPA 105 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for smoke control ratings indicated, based on testing according to UL 1784.

- 1. Provide smoke labeled perimeter gasketing at all smoke labeled openings.

- C. Fire Labeled Gasketing: Assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to UL-10C.

- 1. Provide intumescent seals as indicated to meet UL10C Standard for Positive Pressure Fire Tests of Door Assemblies, and NFPA 252, Standard Methods of Fire Tests of Door Assemblies.

- D. Sound-Rated Gasketing: Assemblies that are listed and labeled by a testing and inspecting agency, for sound ratings indicated.

- E. Replaceable Seal Strips: Provide only those units where resilient or flexible seal strips are easily replaceable and readily available from stocks maintained by manufacturer.

F. Acceptable Manufacturers:

- 1. National Guard Products (NG).
- 2. Pemko Manufacturing (PE).
- 3. Reese Enterprises, Inc. (RE).

2.10 ELECTRONIC ACCESSORIES

- A. Digital Keypads: Digital keypad designed for high volume use controlling entry of electrified locking devices. Fully weather proof, vandal resistant with wall type gang box or mullion mounting applications. Digital keypad system circuit board is remote mounted in a metal enclosure and provides for multiple users and digit codes, and variable programmable release times. Operates on either 12 or 24 volts AC or DC.

1. Acceptable Manufacturers:

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Hardware Schedule

Set: 1.0

Doors: ADMIN-03, CIRCULATION-14A, CIRCULATION-14B, ELECTRICAL-12A, ELECTRICAL-12B

Quantity	Description	Manufacturer	Material	Notes
1	Continuous Hinge	CFMxSLF-HD1 SER12 x door height	PE	
1	Exit Device	DG1 HC 43 55 8876-24v ETL	US32D SA	
1	Door Closer	1431 CPS	EN SA	
1	Kick Plate	K1050 8" x 2" LDW	US32D RO	
1	Threshold	2005AV x door width	PE	
1	Rain Guard	346C x door width plus 4"	PE	
1	Gasketing	303CS head & jambs	PE	
1	Sweep	315CN x door width	PE	
1	Electrol.ynx Harness lock to hinge	QC-Cxxx x length required	MK	
1	Electrol.ynx Harness hinge to ceiling J-box	QC-Cxxxx x LAR	MK	
1	Patch Converter	52-2946	SA	
1	Digital Entry	DK-26SS	SU	
1	Position Switch	DPS-M-BK	SU	
1	Power Supply	AQD6	SU	

Notes: -Exterior doors and hardware to comply with FBC windstorm requirements.

Set: 2.0

Doors: TOILET-09, TOILET-10

Quantity	Description	Manufacturer	Material	Notes
3	Hinge	TA2714	US26D MK	
1	Privacy Set	49 8265 LNL	US26D SA	
1	Door Closer	1431 UO	EN SA	
1	Kick Plate	K1050 8" x 2" LDW	US32D RO	
1	Mop Plate	K1050 4" x 1" LDW	US32D RO	
1	Door Stop	442 or 409 as required	US26D / US32D RO	
3	Silencer	608	RO	

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a. Securitron (SU) - DK Series.

- B. Door Position Switches: Door position magnetic reed contact switches specifically designed for use in commercial door applications. On recessed models the contact and magnetic housing snap-lock into a 1" diameter hole. Surface mounted models include wide gap distance design complete with armored flex cabling. Provide SPDT, N/O switches with optional Rare Earth Magnet installation on steel doors with flush top channels.

1. Acceptable Manufacturers:

- a. Securitron (SU) - DPS Series.

2.11 FABRICATION

- A. Fasteners: Provide door hardware manufactured to comply with published templates generally prepared for machine, wood, and sheet metal screws. Provide screws according to manufacturers recognized installation standards for application intended.

2.12 FINISHES

- A. Standard: Designations used in the Hardware Sets and elsewhere indicate hardware finishes complying with ANSI/BHMA A156.18, including coordination with traditional U.S. finishes indicated by certain manufacturers for their products.

- B. Provide quality of finish, including thickness of plating or coating (if any), composition, hardness, and other qualities complying with manufacturer's standards, but in no case less than specified by referenced standards for the applicable units of hardware

- C. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine scheduled openings, with Installer present, for compliance with requirements for installation tolerances, labeled fire door assembly construction, wall and floor construction, and other conditions affecting performance.

- B. Notify architect of any discrepancies or conflicts between the door schedule, door types, drawings and scheduled hardware. Proceed only after such discrepancies or conflicts have been resolved in writing.

DOOR HARDWARE

087100 - 11

UTILITIES INC - OPERATIONS BUILDING
LONGWOOD, FL

16-160

Set: 3.0

Doors: BREAK ROOM-01

Quantity	Description	Manufacturer	Material	Notes
3	Hinge	TA2714	US26D MK	
1	Passage Set	8215 LNL	US26D SA	
1	Door Closer	1431 UO	EN SA	
1	Kick Plate	K1050 8" x 2" LDW	US32D RO	
1	Door Stop	442 or 409 as required	US26D / US32D RO	
3	Silencer	608	RO	

Set: 4.0

Doors: JANITOR-11

Quantity	Description	Manufacturer	Material	Notes
3	Hinge	TA2714	US26D MK	
1	Storeroom Lock	8204 LNL	US26D SA	
1	Surface Overhead Stop	9-X36	652 RF	
3	Silencer	608	RO	

Set: 5.0

Doors: OFFICE-04, OFFICE-05, OFFICE-06, OFFICE-07, OFFICE-08

Quantity	Description	Manufacturer	Material	Notes
3	Hinge	TA2714	US26D MK	
1	Office Lock	8205 LNL	US26D SA	
1	Door Stop	442 or 409 as required	US26D / US32D RO	
3	Silencer	608	RO	

Set: 6.0

Doors: CONFERENCE-02A, CONFERENCE-02B

Quantity	Description	Manufacturer	Material	Notes
3	Hinge	TA2714	US26D MK	
1	Passage Set	8215 LNL	US26D SA	
1	Door Stop	442 or 409 as required	US26D / US32D RO	
3	Silencer	608	RO	

END OF SECTION 087100

DOOR HARDWARE

087100 - 15

UTILITIES INC - OPERATIONS BUILDING
LONGWOOD, FL

16-160

3.2 PREPARATION

- A. Hollow Metal Doors and Frames: Comply with ANSI/DHI A115 series.
- B. Wood Doors: Comply with ANSI/DHI A115-W series.

3.3 INSTALLATION

- A. Install each item of mechanical and electromechanical hardware and access control equipment to comply with manufacturer's written instructions and according to specifications.

- 1. Installers are to be trained and certified by the manufacturer on the proper installation and adjustment of fire, life safety, and security products including: hanging devices; locking devices; closing devices; and seals.

- B. Mounting Heights: Mount door hardware units at heights indicated in following applicable publications, unless specifically indicated or required to comply with governing regulations:

- 1. Standard Steel Doors and Frames: DHI's "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."
- 2. Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."
- 3. Where indicated to comply with accessibility requirements, comply with ANSI A117.1 "Accessibility Guidelines for Buildings and Facilities."
- 4. Provide blocking in drywall partitions where wall stops or other wall mounted hardware is located.

- C. Retrofitting: Install door hardware to comply with manufacturer's published templates and written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work specified in Division 9 Sections. Do not install surface-mounted items until finishes have been completed on substrates involved.

- D. Thresholds: Set thresholds for exterior and acoustical doors in full bed of sealant complying with requirements specified in Division 7 Section "Joint Sealants."

- E. Storage: Provide a secure lock up for hardware delivered to the project but not yet installed. Control the handling and installation of hardware items so that the completion of the work will not be delayed by hardware losses before and after installation.

3.4 FIELD QUALITY CONTROL

- A. Field Inspection: Supplier will perform a final inspection of installed door hardware and state in report whether work complies with or deviates from requirements, including whether door hardware is properly installed, operating and adjusted.

DOOR HARDWARE

087100 - 12

UTILITIES INC. OPERATIONS BUILDING

BORRELLI + PARTNERS
ARCHITECTURE PLANNING LANDSCAPE INTERIORS
720 Vossor Street, Orlando FL 32804
407.418.1338 :: Fax 407.418.1342

SIGNATURE AND DATED SEAL
JAMES L. MOORE
ARB980

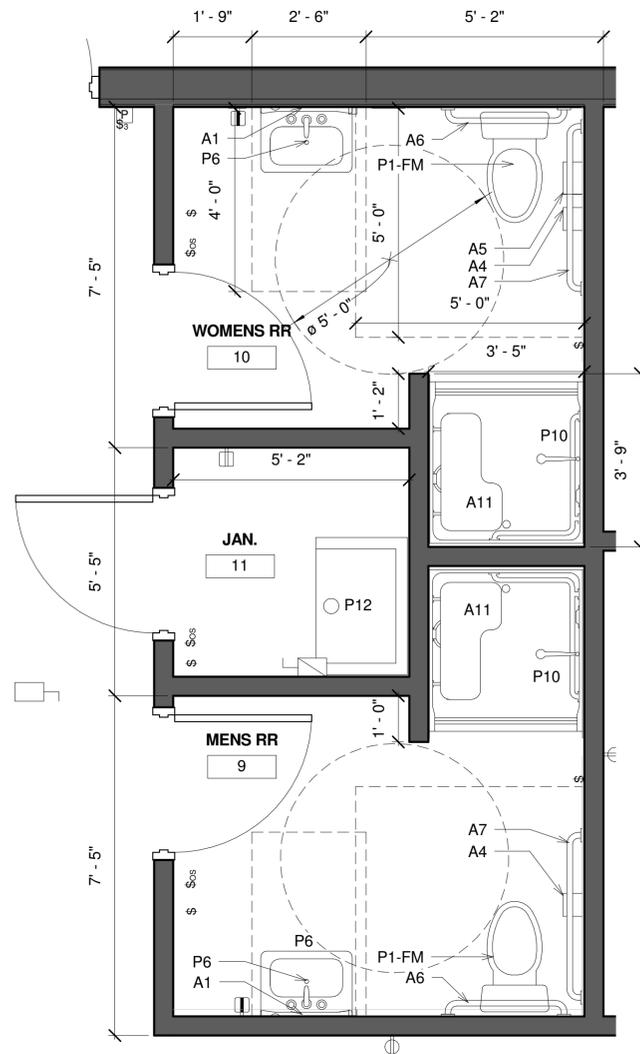
CONSULTANTS

SHEET TITLE
DOOR HARDWARE UTILITIES

PROJECT ADDRESS
144 WESTERN FORK ROAD
LONGWOOD, FL 32750
OWNER NAME AND ADDRESS
UTILITIES INC. OPERATIONS BUILDING

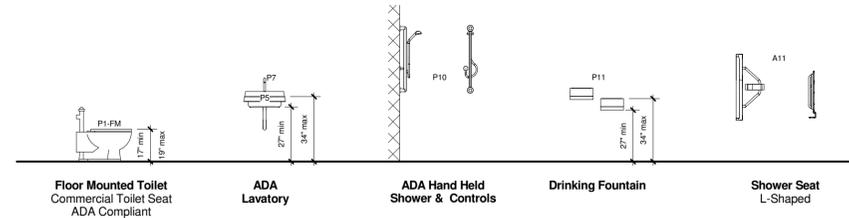
PROJECT No.	16-160
PHASE	100 % CONSTR. DOCS.
SCALE	
DRAWN BY	Author
CHECKED BY	Checker
DATE	12/15/2016

A603

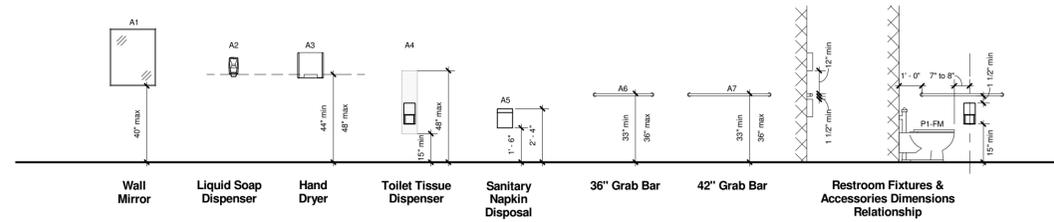


1 Enlarged Plan
1/2" = 1'-0"

Plumbing Fixtures

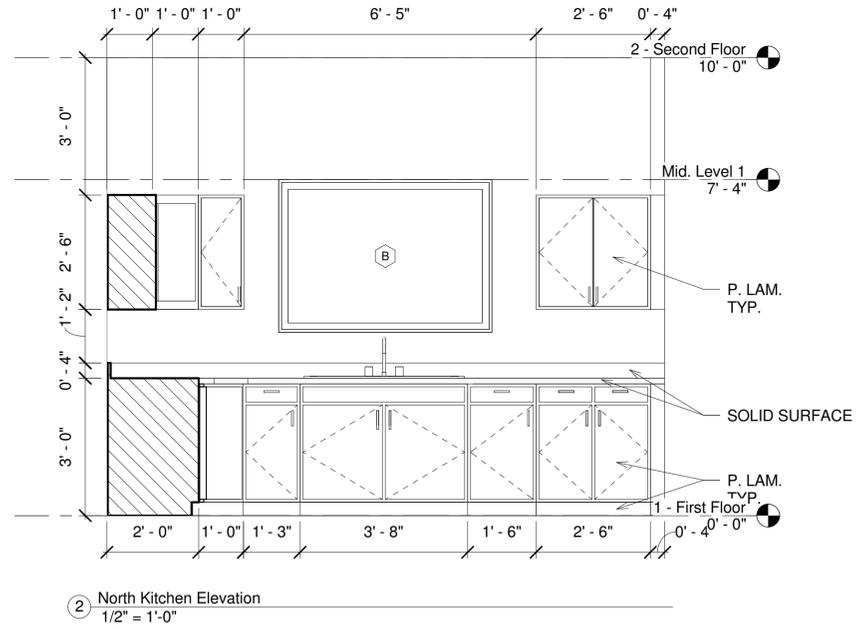
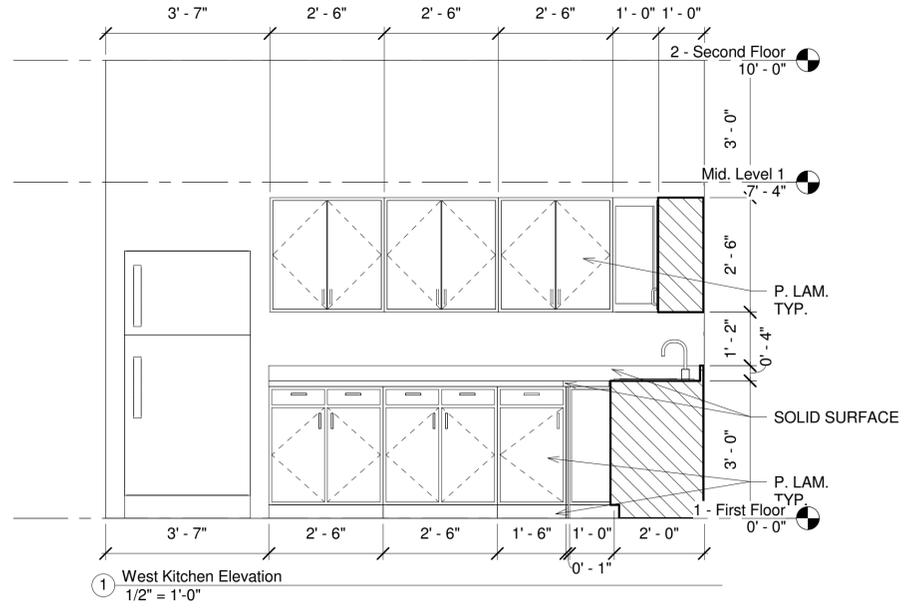


Specialty Equipment



NOTE:
 FIXTURES & ACCESSORIES MOUNTING HEIGHTS MAY CHANGED
 DEPENDING ON THE SPECIFIC FIXTURES SELECTED. ALL
 PROPOSED FIXTURES MUST BE REVIEWED AND APPROVED.
 ALL ITEM TO BE MOUNTED IN ACCORDANCE WITH FLORIDA
 BUILDING CODE 2014 - 5th EDITION

FIXTURES & ACCESSORIES SCHEDULE		
MCD	FIXTURES	REMARKS
P1-WM	Toilet ADA	White Finish, Wall Hung, Flow 1.28 GPF, Flush Valve (Diaphragm)
P2-WM	Toilet	White Finish, Wall Hung, Flow 1.28 GPF, Flush Valve (Diaphragm), ADA Compliant
P1-FM	Toilet ADA	
P2-FM	Toilet	
P3	Urinal	White Finish, Wall Hung, Flow 1.25 GPF, Flush Valve (Diaphragm)
P4	Urinal ADA	White Finish, Wall Hung, Flow 1.25 GPF, Flush Valve (Diaphragm), ADA Compliant
P5	Lavatory	White Finish, Wall Hung Sink
P6	Lavatory ADA	White Finish, Wall Hung Sink, ADA Compliant
P7	Lavatory Faucet	-----
P8	Lavatory Faucet ADA	Two Handle Lavatory Faucet
P9	Shower Head & Controls	Wall Mounted W/ 2 Metal Lever Handles
P10	ADA Hand Held Shower & Controls	Wall Mounted, Spray Unit W/ 59" Long Minimum Hose - Shower Head W/ Adjustable Vertical Bar
P11	Drinking Fountain	Hi & Lo Drinking Fountain (ADA Compliant)
P12	Janitor Mop Sink	-----
P13	Standard Single Sink	Commercial Kitchen Sink
A1	Wall Mirror	Concealed Wall Hanger W/ Theft-Resistant Mounting & Tempered Glass Mirror
A2	Liquid Soap Dispenser	Surface-Mounted, Vandal & Corrosion Resistant W/ Satin-finish Stainless Steel
A3	Hand Dryer	Surface Mounted, ADA Compliant, Satin-finish Stainless Steel
A4	Toilet Tissue Dispenser	Surface-Mounted Multi-Roll, Heavy Duty, Satin Finish W/ Concealed Locking Device
A5	Sanitary Napkin Disposal	Surface-Mounted, Heavy Duty, Satin Finish W/ Removable plastic receptacle.
A6	36" Straight Grab Bar	Exposed Mounting, 1-1/4" dia. tubing, Satin-finish Stainless Steel
A7	42" Straight Grab Bar	Exposed Mounting, 1-1/4" dia. tubing, Satin-finish Stainless Steel
A8	Urinal Screen System	Wall Mounted, Solid Color Reinforced Composite
A9	Toilet Partition System	Solid Color Reinforced Composite
A9-OB	Toilet Partition System - Overhead Braced	Solid Color Reinforced Composite W/ Overhead-Braced
A9-CH	Toilet Partition System - Ceiling Hung	Solid Color Reinforced Composite Ceiling Hung
A9-FC	Toilet Partition System - Floor To Ceiling	Solid Color Reinforced Composite Floor To Ceiling
A9-FM	Toilet Partition System - Floor Mount	Solid Color Reinforced Composite Floor Mounted
A10	Baby Changing Station	Horizontal - Wall / Surface Mounted W/ Steel Hinges, Concave Interior Surface
A11	Shower Seat L-Shaped	Wall Mounted Opposite to the Shower Head and Controls, ADA Compliant
A12	Bath Rod	Wall Mounted
A13	Robe Hook	Wall Mounted
A14	Mop Holder	Wall Mounted



A800

PROJECT No.	16-160
PHASE	100 % CONSTR. DOCS.
SCALE	1/2" = 1'-0"
DRAWN BY	Author
CHECKED BY	Checker
DATE	12/15/2016

REV.	DESCRIPTION	DATE

PROJECT ADDRESS	144 WESTERN FORK ROAD LONGWOOD, FL 32750
OWNER NAME AND ADDRESS	UTILITIES INC. OPERATIONS BUILDING

SHEET TITLE	INTERIOR MILLWORK ELEVATIONS
-------------	---------------------------------

CONSULTANTS	
SIGNATURE AND DATED SEAL	

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ARCHITECTURE PLANNING LANDSCAPE INTERIORS
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407.418.1338 :: Fax 407.418.1342
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JAMES L. MOORE
ARCHITECT
A95980

UTILITIES INC. OPERATIONS BUILDING

HVAC ABBREVIATIONS

SYMBOL	DESCRIPTION
AFF	ABOVE FINISHED FLOOR
AFR	ABOVE FINISHED ROOF
AHU	AIR HANDLING UNIT
AP	ACCESS PANEL
BP	BOTTOM OF PIPE
BHP	BRAKE HORSEPOWER
BTU	BRITISH THERMAL UNIT
CFM	CUBIC FEET PER MINUTE
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
CT	COOLING TOWER
CU	CONDENSING UNIT
DDC	DIRECT DIGITAL CONTROLS
DN	DOWN
EAT	ENTERING AIR TEMPERATURE
EDH	ELECTRIC DUCT HEATER
EF	EXHAUST FAN
ESP	EXTERNAL STATIC PRESSURE
EWT	ENTERING WATER TEMPERATURE
FCU	FAN COIL UNIT
FF	FINAL FILTERS
FLA	FULL LOAD AMPS
FPM	FEET PER MINUTE
GPM	GALLONS PER MINUTE
KW	KILOWATT
LAT	LEAVING AIR TEMPERATURE
LWT	LEAVING WATER TEMPERATURE
MBH	THOUSAND BTUS PER HOUR
MCA	MINIMUM CIRCUIT AMPS
MOC	MAXIMUM OVER CURRENT PROTECTION
MOD	MOTOR OPERATED CONTROL DAMPER (MOD)
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OAL	OUTSIDE AIR LOUVER
PRV	PRESSURE REDUCING VALVE
PRS	PRESSURE REDUCING STATION
PSI	POUNDS PER SQUARE INCH
PSIG	PSI GAUGE
PTAC	PACKAGED TERMINAL AIR CONDITIONER
RA	REHEAT COIL
RHC	REHEAT COIL
RPM	REVOLUTIONS PER MINUTE
SA	SUPPLY AIR
SP	STATIC PRESSURE
TEMP	TEMPERATURE
TSP	TOTAL STATIC PRESSURE
UNO	UNLESS NOTED OTHERWISE
V PH	VOLTS / PHASE
VAV	VARIABLE AIR VOLUME
VFD	VARIABLE FREQUENCY DRIVE

HVAC PIPING SYMBOL LEGEND

SYMBOL	DESCRIPTION
	CHILLED WATER SUPPLY
	CHILLED WATER RETURN
	CONDENSATE
	CONDENSATE RETURN
	PUMPED CONDENSATE
	HOT WATER RETURN
	HOT WATER SUPPLY
	FLOW DIRECTION
	GATE VALVE
	BALL VALVE
	CALIBRATING BALANCING VALVE
	BUTTERFLY VALVE
	GAS COCK
	UNION
	STRAINER
	CONTROL VALVE
	SOLENOID VALVE
	PSI REG.
	CHECK VALVE
	FLOW SWITCH
	FLEX CONNECTION
	O.S. & Y GATE VALVE
	THREE-WAY CONTROL VALVE
	THERMOMETER
	P-TRAP
	TWO-WAY CHECK VALVE
	MANUAL VENT
	PRESSURE GAUGE
	ELBOW, TURNED DOWN
	ELBOW, TURNED UP
	TEE, OUTLET DOWN
	TEE, OUTLET UP

RENOVATION

SYMBOL	DESCRIPTION
	CONNECT TO EXISTING
	DEMOLISH TO POINT INDICATED
	NEW DUCTWORK TO BE PROVIDED
	EXISTING DUCTWORK TO REMAIN
	EXISTING DUCTWORK TO BE REMOVED
	NEW PIPING TO BE PROVIDED
	EXISTING PIPING TO REMAIN
	EXISTING PIPING TO BE REMOVED
	RELOCATE EXISTING DEVICE, EXTEND RUN-OUT AS NEEDED. BALANCE TO FLOW INDICATED
	*** PROVIDE NEW DEVICE AT NEW LOCATION. EXTEND RUN-OUT AS NEEDED AND BALANCE TO FLOW INDICATED

EQUIPMENT

SYMBOL	DESCRIPTION
	EXHAUST DUCT UP TO FAN ABOVE
	EXHAUST FAN ON ROOF AND DUCT DROP TO BELOW
	IN-LINE CENTRIFUGAL FAN
	P-TRAP

CONTROLS

SYMBOL	DESCRIPTION
	THERMOSTAT / TEMPERATURE SENSOR
	HUMIDISTAT / HUMIDITY SENSOR
	MOTORIZED CONTROL DAMPER
	TEMPERATURE SENSOR
	PRESSURE SENSOR
	CO2 SENSOR

AIR DISTRIBUTION

SYMBOL	DESCRIPTION
	AIR DISTRIBUTION DEVICE: SUPPLY (4-WAY BLOW UNLESS INDICATED BY FLOW ARROWS)
	AIR DISTRIBUTION DEVICE: RETURN
	AIR DISTRIBUTION DEVICE: EXHAUST
	AIR TERMINAL DEVICE: SIDEWALL MOUNTED RETURN OR SUPPLY
	DOOR GRILLE: SEE ARCHITECTURAL DRAWINGS
	UNDERCUT DOOR: SEE ARCHITECTURAL DRAWINGS

GENERAL TAGS

SYMBOL	DESCRIPTION
	AIR HANDLING UNIT
	FAN
	ROOF TOP UNIT
	CONDENSING UNIT
	VARIABLE AIR VOLUME TERMINAL UNIT
	FAN POWERED VARIABLE VOLUME TERMINAL UNIT
	ELECTRIC DUCT HEATER
	PUMP
	REVISION REFERENCE
	DETAIL REFERENCE: TOP: DETAIL # BOTTOM: DRAWING # DETAIL SHOWN ON
	NEUTRAL RELATIVE PRESSURE
	POSITIVE RELATIVE PRESSURE
	NEGATIVE RELATIVE PRESSURE
	KEY NOTE CALLOUT

LIFE SAFETY

SYMBOL	DESCRIPTION
	FIRE DAMPER WITH ACCESS DOOR PANEL
	SMOKE DAMPER WITH ACCESS DOOR PANEL
	FIRE AND SMOKE DAMPER WITH ACCESS DOOR PANEL
	EXISTING FIRE DAMPER TO REMAIN WITH ACCESS PANEL, UNLESS OTHERWISE NOTED
	EXISTING FIRE AND SMOKE DAMPER TO REMAIN WITH ACCESS PANEL, UNLESS OTHERWISE NOTED
	DUCT SMOKE DETECTOR

DUCTWORK

SYMBOL	DESCRIPTION
	NEW DUCTWORK, FIRST DIMENSION IS SIDE SHOWN PROVIDE EXTERNALLY INSULATED SHEET-METAL DUCT
	DUCT ELBOW POSITIVE PRESSURE (SUPPLY)
	DUCT ELBOW NEGATIVE PRESSURE (EXHAUST)
	DUCT ELBOW NEGATIVE PRESSURE (RETURN)
	CHANGE OF ELEVATION
	FLEXIBLE DUCT
	TRANSITION, CONCENTRIC
	TRANSITION, ECCENTRIC
	TRANSITION, SQUARE TO ROUND
	SQUARE THROAT ELBOW WITH TURNING VANES
	RADIUS ELBOW
	RECTANGULAR / ROUND BRANCH TAKE-OFF OR ROUND / ROUND BRANCH TAKE-OFF
	RECTANGULAR DUCTWORK
	FLAT OVAL DUCTWORK
	ROUND DUCTWORK

DUCT ACCESSORIES

SYMBOL	DESCRIPTION
	SOUND ATTENUATOR
	MOTOR OPERATED CONTROL DAMPER (MOD)
	AIR FLOW MEASURING STATION
	MANUAL BALANCING DAMPER
	ACCESS DOORS, VERTICAL OR HORIZONTAL
	FLEXIBLE CONNECTION
	CFM SENSOR
	BACKDRAFT DAMPER

GENERAL NOTES

- SCOPE:** WORK SHALL INCLUDE ALL MATERIALS, EQUIPMENT AND LABOR NECESSARY FOR A COMPLETE AND PROPERLY FUNCTIONING MECHANICAL INSTALLATION IN ACCORDANCE WITH ALL APPLICABLE CODES AND CONTRACT DRAWINGS AND SPECIFICATIONS. WORK SHALL INCLUDE ALL WORK NORMALLY SPECIFIED IN DIVISION 23.
PAY FOR ALL REQUIRED LICENSES, FEES, INSPECTIONS AND PERMITS.
- CODES:** INSTALL ALL WORK IN ACCORDANCE WITH THE LATEST EDITION OF ALL APPLICABLE REGULATIONS AND GOVERNING CODES, INCLUDING THE REGULATIONS OF THE UTILITY COMPANIES SERVING THE PROJECT.
WHERE A CONFLICT IN CODE REQUIREMENTS OCCURS THE MORE STRINGENT REQUIREMENT SHALL GOVERN.
- STANDARDS:** ALL EQUIPMENT AND DEVICES SHALL BEAR U.L. LABEL, THE LABEL OF AN INDUSTRY RECOGNIZED APPROVED TESTING AGENCY OR A.G.A. CERTIFICATION FOR SAID ITEM OF EQUIPMENT OR DEVICE.
ALL ELECTRICAL DEVICES MUST BE U.L. APPROVED.
- DRAWINGS:** DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENT AND EXTENT OF WORK. EXACT LOCATIONS AND ARRANGEMENT OF MATERIALS AND EQUIPMENT SHALL BE DETERMINED WITH THE ACCEPTANCE OF THE ARCHITECT / ENGINEER, AS WORK PROGRESSES TO CONFORM IN THE BEST POSSIBLE MANNER WITH THE SURROUNDINGS AND WITH THE ADJOINING WORK OF OTHER TRADES WHERE LOCATIONS OF EQUIPMENT, DEVICES OR FIXTURES ARE CONTROLLED BY ARCHITECTURAL FEATURES. ESTABLISH SUCH LOCATIONS BY REFERRING TO DIMENSIONS ON ARCHITECTURAL DRAWINGS AND NOT BY SCALING DRAWINGS.
- DISCREPANCIES:** IN CASE OF DIFFERENCES BETWEEN DRAWINGS AND SPECIFICATIONS OR WHERE DRAWINGS AND SPECIFICATIONS ARE NOT CLEAR OR DEFINITE, THE SUBJECT SHALL BE REFERRED TO ARCHITECT / ENGINEER FOR CLARIFICATION AND INSTRUCTIONS.
- ELECTRICAL PROVISIONS:** WORK INCLUDES VARIOUS ELECTRICAL REQUIREMENTS (A) WHICH INCORPORATE SPECIFIC ELECTRICAL FEATURES AND COMPONENTS WHICH ARE REQUIRED TO BE PHYSICALLY INTEGRAL WITH MECHANICAL EQUIPMENT, OR (B) WHICH REQUIRE NECESSARY ELECTRICAL INTERCONNECTING COMPONENTS FOR THE MECHANICAL SYSTEMS.
DEFINITIONS: DEFINITIONS FOR THE PURPOSE OF MECHANICAL / ELECTRICAL CONTROL AND POWER COORDINATION ARE AS GIVEN BELOW. ANY ITEMS WHICH DO NOT FALL WITHIN THE SCOPE OF THIS PARAGRAPH SHALL BE COORDINATED AS INDIVIDUALLY SPECIFIED.
*FURNISH MEANS TO PROCURE AN ITEM AND TO DELIVER IT TO THE PROJECT FOR INSTALLATION.
*INSTALL MEANS TO DETERMINE (IN COORDINATION WITH OTHERS AS NECESSARY) THE APPROPRIATE INTENDED LOCATION OF AN ITEM AND TO SET AND CONNECT IT IN PLACE.
*PROVIDE MEANS TO BOTH FURNISH AND INSTALL.
- AUXILIARIES AND ACCESSORIES:** SUBMIT FOR CHECKING A SPECIFIC SET OF WRITTEN OPERATING INSTRUCTIONS ON EACH ITEM WHICH REQUIRES INSTRUCTIONS TO OPERATE. AFTER ACCEPTANCE, INSERT INFORMATION IN EACH TECHNICAL INFORMATION DOCUMENT.
- INVESTIGATION OF SITE:** CHECK SITE AND EXISTING CONDITIONS THOROUGHLY BEFORE PROVIDING A BID PRICE. ADVISE ARCHITECT / ENGINEER OF DISCREPANCIES OR QUESTIONS BEFORE BIDDING.
- COORDINATION:** PROVIDE ALL REQUIRED COORDINATION AND SUPERVISION WHERE MECHANICAL WORK INTERFACES DIRECTLY OR INDIRECTLY WITH WORK OF ANY TRADES.
- PROVISIONS FOR OPENINGS:** PROVIDE ALL REQUIRED OPENINGS TO ACCOMPLISH THE WORK. PROVIDE SLEEVES OR OTHER APPROVED METHODS TO ALLOW PASSAGE OF ITEMS INSTALLED.
- INTERRUPTION OF EXISTING SERVICES:** ANY INTERRUPTION OF EXISTING MECHANICAL AND ELECTRICAL SERVICES SHALL BE COORDINATED IN ADVANCE WITH THE OWNER'S REPRESENTATIVE. THIS INCLUDES, BUT IS NOT LIMITED TO, SERVICES PROVIDING CHILLED WATER, ELECTRICITY OR OTHER CRITICAL SYSTEMS AS MAY BE PERTINENT TO THIS PARTICULAR PROJECT. SERVICE INTERRUPTION TIMES AND DURATION OF INTERRUPTION OF SERVICES SHALL BE DECIDED BY THE OWNER. PROVIDE APPROPRIATE PROVISIONS (E.G., ISOLATION SHUT-OFF VALVES, DAMPERS, END CAPS AND SIMILAR ITEMS) AS NECESSARY TO ACCOMMODATE THE REQUIRED SERVICE INTERRUPTIONS. IF SHUTDOWNS CANNOT BE ACCOMMODATED, PROVIDE MEANS FOR WET TAPPING OR HOT TAPPING OF PIPING SYSTEMS.
- CLEANING AND PROTECTION:** EQUIPMENT: ALL MECHANICAL EQUIPMENT PROVIDED SHALL BE THOROUGHLY CLEANED OF ALL DIRT, OIL, CONCRETE, ETC., ANY DENTS, SCRATCHES OR OTHER VISIBLE BLEMISHES SHALL BE CORRECTED AND THE APPEARANCE OF THE EQUIPMENT MADE LIKE NEW AND TO THE SATISFACTION OF THE ARCHITECT / ENGINEER.
UPON COMPLETION AND BEFORE FINAL ACCEPTANCE OF THE WORK, ALL DEBRIS, RUBBISH, LEFTOVER MATERIALS, TOOLS AND EQUIPMENT SHALL BE REMOVED FROM THE SITE.
PROTECTION OF WORK UNTIL FINAL ACCEPTANCE: PROTECT ALL MATERIALS AND EQUIPMENT FROM DAMAGE, ENTRANCE OF DIRT AND CONSTRUCTION DEBRIS FROM THE TIME OF INSTALLATION UNTIL FINAL ACCEPTANCE. ANY MATERIALS AND EQUIPMENT WHICH ARE DAMAGED SHALL BE REPAIRED TO AS NEW CONDITION OR REPLACED AT THE DIRECTION OF THE ARCHITECT / ENGINEER. WHERE FACTORY FINISHES OCCUR AND DAMAGE IS MINOR, FINISHES MAY BE TOUCHED UP. IF, IN THE OPINION OF THE ARCHITECT / ENGINEER THE DAMAGE IS EXCESSIVE, FACTORY FINISH SHALL BE REPLACED TO NEW CONDITION.
- SHOP DRAWINGS:** SUBMIT SHOP DRAWINGS FOR ALL WORK INCLUDING ALL ITEMS, SERVICES AND SYSTEMS PROVIDED FOR THE PROJECT.
SHOP DRAWINGS SHALL CLEARLY SHOW THE FOLLOWING:
TECHNICAL AND DESCRIPTIVE DATA IN DETAIL, EQUAL TO OR GREATER THAN THE DATA GIVEN IN THE ITEM SPECIFICATION. INDICATE ALL CHARACTERISTICS, SPECIAL MODIFICATIONS AND FEATURES. WHERE PERFORMANCE AND CHARACTERISTICS DATA SHALL BE PROVIDED IN A DEGREE WHICH IS BOTH QUANTITATIVELY AND QUALITATIVELY EQUAL TO THAT SPECIFIED AND SHOWN SO THAT COMPARISON CAN BE MADE. PRESENT DATA IN DETAIL EQUAL TO OR GREATER THAN THAT GIVEN IN ITEM SPECIFICATION AND INCLUDE ALL WEIGHTS, DEFLECTIONS, SPEEDS, VELOCITIES, PRESSURE DROPS, OPERATING TEMPERATURES, OPERATING CURVES, TEMPERATURE RANGES, SOUND RATINGS, DIMENSIONS, SIZES, MANUFACTURERS' NAMES, MODEL NUMBERS, TYPES OF MATERIAL USED, OPERATING PRESSURES, FULL LOAD AMPERAGES, STARTING AMPERAGES, FOULING FACTORS, CAPACITIES, SET POINTS, CHEMICAL COMPOSITIONS, CERTIFICATIONS AND ENDORSEMENTS, OPERATING VOLTAGES, THICKNESS, GAUGES AND ALL OTHER RELATED INFORMATION AS APPLICABLE TO PARTICULAR ITEMS.
EXCEPTIONS TO OR DEVIATIONS FROM THE CONTRACT DOCUMENTS, SHOULD ARCHITECT / ENGINEER ACCEPT ANY ITEMS HAVING SUCH DEVIATIONS WHICH ARE NOT CLEARLY BROUGHT TO ARCHITECT / ENGINEER'S ATTENTION. IN WRITING, ON ITEM SUBMITTAL, THEN CONTRACTOR IS RESPONSIBLE FOR CORRECTION OF SUCH DEVIATIONS REGARDLESS OF WHEN SUCH DEVIATIONS ARE DISCOVERED.
- SHOP DRAWINGS TECHNICAL INFORMATION BROCHURE:** NEAR CONCLUSION OF WORK AND NOT LESS THAN 10 DAYS PRIOR TO SUBSTANTIAL COMPLETION INSPECTION, SUBMIT A TECHNICAL INFORMATION DOCUMENT (TID) CONTAINING ALL FINAL SHOP DRAWING AND SUBMITTAL INFORMATION FOR THE PROJECT. THIS TECHNICAL INFORMATION DOCUMENT SHALL CONSIST OF ONE OR MORE ADEQUATELY SIZED, HARD-COVER, 3-RING BINDER FOR 8-1/2" x 11" SHEETS.
SHOP DRAWING TECHNICAL AND DESCRIPTIVE DATA SHALL BE INSERTED IN THE TID IN PROPER ORDER ON ALL ITEMS. PROVIDE COMPLETE INFORMATION, INCLUDING, BUT NOT LIMITED TO, WIRING AND CONTROL DIAGRAMS, SCALE DRAWINGS SHOWING THAT PROPOSED SUBSTITUTE EQUIPMENT WILL FIT INTO ALLOTTED SPACE (INDICATE ALL SERVICE ACCESS, CONNECTIONS, ETC.), TEST DATA AND OTHER DATA REQUIRED TO DETERMINE IF EQUIPMENT COMPLIES FULLY WITH THE SPECIFICATIONS.
- OPERATING INSTRUCTIONS:** SUBMIT FOR CHECKING A SPECIFIC SET OF WRITTEN OPERATING INSTRUCTIONS ON EACH ITEM WHICH REQUIRES INSTRUCTIONS TO OPERATE. AFTER ACCEPTANCE, INSERT INFORMATION IN EACH TECHNICAL INFORMATION DOCUMENT.
- MAINTENANCE INFORMATION:** SUBMIT FOR ACCEPTANCE MAINTENANCE INFORMATION CONSISTING OF MANUFACTURERS PRINTED INSTRUCTION AND PARTS LISTS FOR EACH MAJOR ITEM OF EQUIPMENT. AFTER ACCEPTANCE, INSERT INFORMATION IN EACH TECHNICAL INFORMATION DOCUMENT.
- SYSTEM GUARANTEE:** PROVIDE A ONE YEAR GUARANTEE. THIS GUARANTEE SHALL BE BY THE CONTRACTOR TO THE OWNER TO REPLACE FOR THE OWNER ANY DEFECTIVE WORKMANSHIP, EQUIPMENT OR MATERIAL WHICH HAS BEEN FURNISHED UNDER THIS CONTRACT AT NO COST TO THE OWNER FOR A PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE OF THE SYSTEM. THIS GUARANTEE SHALL ALSO INCLUDE REASONABLE ADJUSTMENTS OF THE SYSTEM REQUIRED FOR PROPER OPERATION DURING THE GUARANTEE PERIOD. EXPLAIN THE PROVISIONS OF GUARANTEE TO OWNER AT THE "INSTRUCTION IN OPERATION CONFERENCE".
- INSTRUCTION TO OWNER:** WHEN ALL WORK IS COMPLETED, PROVIDE THE OWNER AN INSTRUCTION IN OPERATION CONFERENCE. AT THE CONFERENCE, THE CONTRACTOR SHALL REVIEW WITH THE OWNER ALL APPROPRIATE INFORMATION.

CODE COMPLIANCE

- TO THE BEST OF MY KNOWLEDGE, THESE PLANS AND SPECIFICATIONS ARE COMPLETE AND COMPLY WITH THE 2014 FLORIDA BUILDING CODE, 2014 FLORIDA FIRE PREVENTION CODE AND THE CODES REFERENCED WITHIN.

SHEET INDEX

NUMBER	NAME
M000	MECHANICAL LEGEND
M201	FIRST FLOOR MECHANICAL PLAN
M501	MECHANICAL CONTROLS
M601	MECHANICAL SCHEDULES
M901	MECHANICAL DETAILS
M902	MECHANICAL DETAILS

BORRELLI + PARTNERS
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UTILITIES INC. OPERATIONS BUILDING

144 WESTERN FORK ROAD
LONGWOOD, FL 32750

OWNER NAME AND ADDRESS
UTILITIES INC.

PROJECT No. 16-160

PHASE 100% CONSTRUCTION DOCUMENTS

SCALE 1/2" = 1'-0"

DRAWN BY L.S.

CHECKED BY L.S.

DATE 12/15/2016

CONSULTANTS

VOLT AIR
MECHANICAL LEGEND
CELEBRATING 10 YEARS

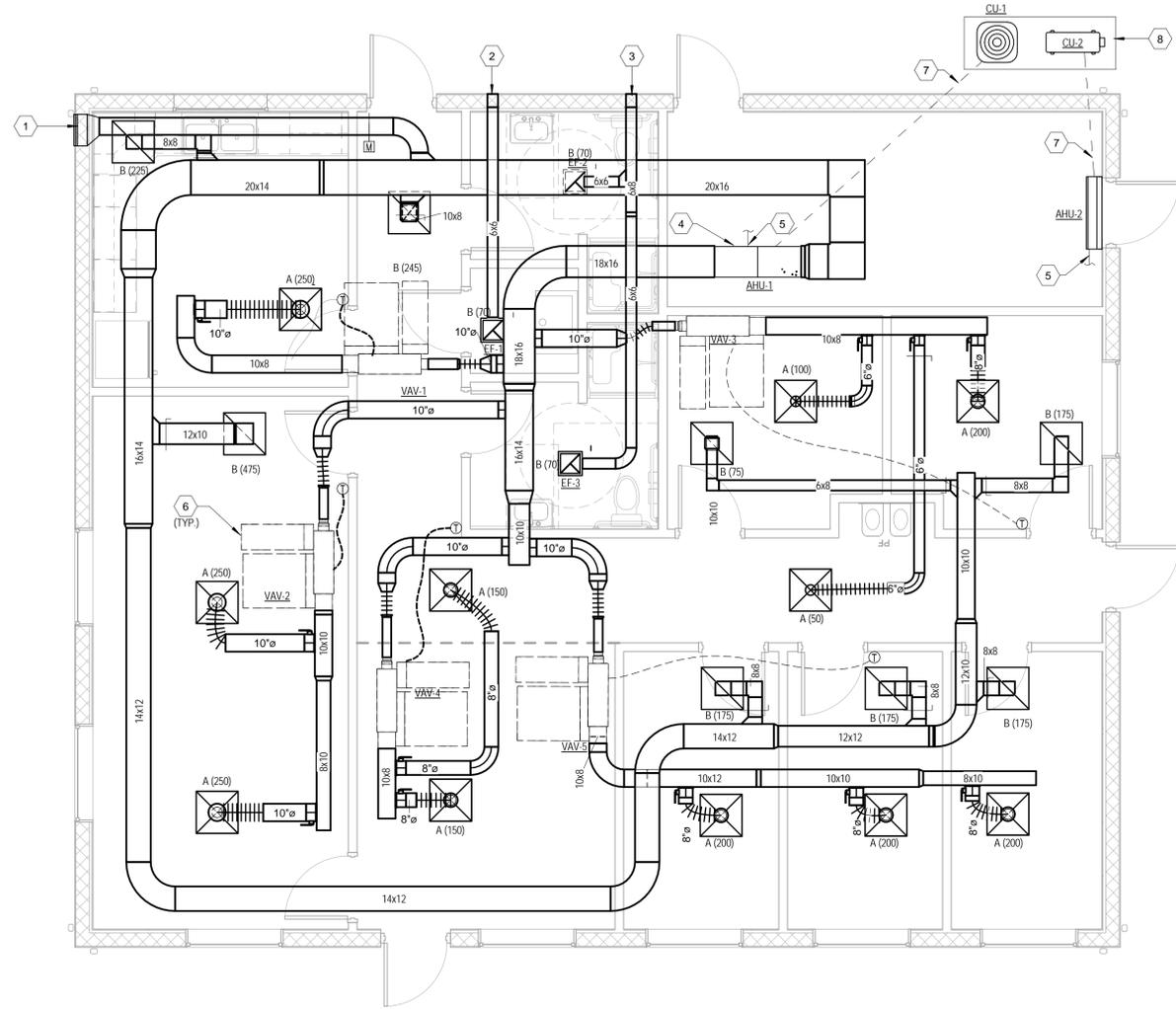
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Project: 03.16031
COA #27158
LAWRENCE M. STOFF, P.E. #9506

SIGNATURE AND DATED SEAL

SHEET TITLE

M000

OF



1 - First Floor Mechanical Plan
1/4" = 1'-0"

GENERAL NOTES

- SEE GENERAL NOTES FOR THIS DISCIPLINE.
- ALL CEILING MOUNTED DEVICES TO BE COORDINATED WITH OTHER TRADES AND FINAL LOCATIONS DETERMINED BY THE ARCHITECTURAL RCP PLAN.
- DO LOCATE ANY EXHAUST A MINIMUM OF 10' AWAY FROM ANY MECHANICAL INTAKE AND 3' FROM ANY DOOR/WINDOW.

KEYNOTES

- | NUMBER | NOTES |
|--------|------------------------------------------------------------------------------------------------------------------------------------|
| 1 | 18"x12" OUTSIDE AIR LOUVER EQUAL TO EME-520MD.SLOPE LOUVER PLENUM TO EXTERIOR. PROVIDE REMOVABLE BIRD SCREEN. |
| 2 | PROVIDE 6" DIAMETER WALL CAP WITH INTEGRAL BACKDRAFT DAMPER/FLAPPER. PAINT TO MATCH ADJACENT SURFACE. |
| 3 | PROVIDE 8" DIAMETER WALL CAP WITH INTEGRAL BACKDRAFT DAMPER/FLAPPER. PAINT TO MATCH ADJACENT SURFACE. |
| 4 | HORIZONTAL AHU HUNG FROM STRUCTURE. INSTALL WITH SECONDARY CONDENSATE DRAIN PAN WITH FLOAT SWITCH. SEE DETAILS. |
| 5 | ROUTE 1" DIA CONDENSATE PIPE TO EXTERIOR WALL. ROUTE DOWN WITHIN WALL, PENETRATING TO EXTERIOR WITH GOOSENECK DOWN 1' ABOVE GRADE. |
| 6 | VAV NEC CLEARANCE. |
| 7 | REFRIGERANT LINES. INSTALL PER MANUFACTURER'S INSTRUCTIONS. |
| 8 | PLACE CONDENSING UNITS ON 4" TURNED DOWN HOUSEKEEPING PAD. |

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LAWRENCE M. STOFF P.E. #78086

SHEET TITLE
**FIRST FLOOR
MECHANICAL PLAN**

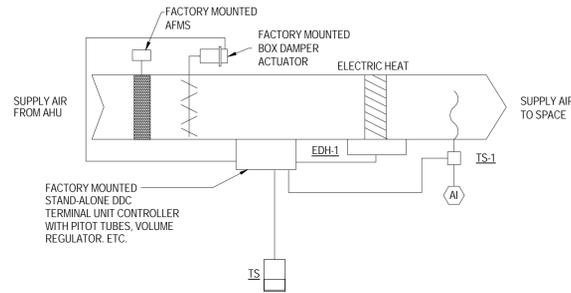
PROJECT ADDRESS
144 WESTERN FORK ROAD
LONGWOOD, FL 32750
OWNER NAME AND ADDRESS
UTILITIES INC.

PROJECT No.	DATE	DESCRIPTION	REV.
16-160			
100% CONSTRUCTION DOCUMENTS			
SCALE		As Indicated	
DRAWN BY		L.S.	
CHECKED BY		L.S.	
DATE		12/15/2016	

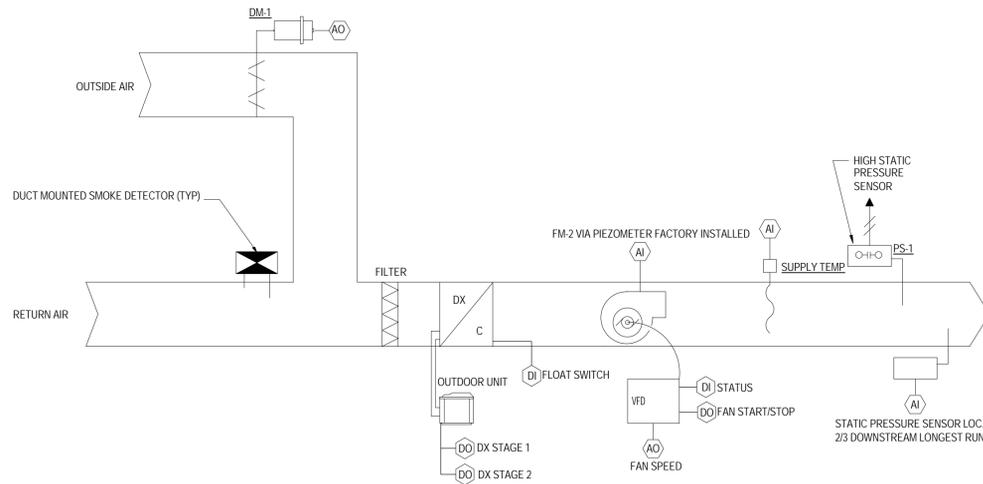
M201
OF

AIR TERMINAL UNIT CONTROL:

- UPON A RISE IN SPACE TEMPERATURE ABOVE THE COOLING SETPOINT (ADJ.), THE VAV BOX DAMPER SHALL MODULATE OPEN TO MAINTAIN SPACE TEMPERATURE.
- UPON A FALL IN SPACE TEMPERATURE BELOW THE HEATING SETPOINT (ADJ.), THE VAV BOX DAMPER SHALL CLOSE TO ITS MINIMUM AIRFLOW VALUE. UPON A FURTHER FALL IN SPACE TEMPERATURE, THE VAV BOX DAMPER SHALL MODULATE TO THE HEATING AIRFLOW VALUE SCHEDULED AND THE SCR ELECTRIC HEAT SHALL ENGAGE/MODULATE TO MAINTAIN THE HEATING SPACE TEMPERATURE SETPOINT. UPON A RISE ABOVE THE SPACE TEMPERATURE'S HEATING SETPOINT (ADJ.) THE VAV BOX DAMPER SHALL AGAIN MODULATE TO CONTROL SPACE TEMPERATURE.
- SPACE TEMPERATURE SETPOINTS SHALL BE RESET TO AN ADJUSTABLE NIGHT SETBACK SETPOINT WHEN INDEXED BY BAS OR BY OCCUPANCY SENSOR.



B NO SCALE VARIABLE AIR VOLUME TERMINAL UNIT CONTROL - ELECTRIC HEAT



SEQUENCE OF OPERATION - VAV SPLIT DX AHU

BUILDING AUTOMATION SYSTEM INTERFACE
THE BUILDING AUTOMATION SYSTEM (BAS) WILL SEND THE UNIT CONTROLLER OCCUPIED, UNOCCUPIED, OCCUPIED BYPASS, AND OPTIMAL START COMMANDS. IF COMMUNICATION IS LOST WITH THE BAS, THE SYSTEM WILL DEFAULT TO OCCUPIED OPERATION.

OCCUPIED MODE
DURING OCCUPIED PERIODS, THE SUPPLY FAN WILL RUN CONTINUOUSLY AND THE OUTSIDE AIR DAMPER WILL OPEN TO MAINTAIN MINIMUM VENTILATION REQUIREMENTS. DAMPER MINIMUM POSITION WILL BE DETERMINED BY THE TEST & BALANCE CONTRACTOR. THE SUPPLY FAN SPEED WILL MODULATE TO MAINTAIN DUCT STATIC PRESSURE AT SET POINT. AN OUTSIDE AIR COMPENSATION ROUTINE WILL ADJUST THE OUTSIDE AIR DAMPER POSITION IN RESPONSE TO SUPPLY FAN SPEED VARIATION. THE DX COOLING WILL STAGE AS NEEDED TO MAINTAIN SUPPLY AIR TEMPERATURE AT SET POINT.

UNOCCUPIED MODE
DURING UNOCCUPIED PERIODS, THE SUPPLY FAN AND DX COOLING WILL BE DISABLED. THE SUPPLY FAN AND DX COOLING WILL BE ENABLED AS NEEDED IN ACCORDANCE WITH CALLS FROM THE ASSOCIATED VARIABLE VOLUME TERMINAL UNITS TO MAINTAIN UNOCCUPIED SPACE TEMPERATURES AT SET POINT. THE OUTSIDE AIR DAMPER WILL REMAIN CLOSED DURING UNOCCUPIED OPERATION.

OCCUPIED BYPASS
DURING UNOCCUPIED PERIODS, IF AN OCCUPIED BYPASS IS INITIATED VIA ANY ASSOCIATED SPACE TEMPERATURE SENSOR, OR THROUGH THE BAS, THE SYSTEM WILL OPERATE IN THE OCCUPIED MODE UNTIL THE BYPASS EXPIRES OR IS CANCELLED.

SUPPLY AIR TEMPERATURE CONTROL
UPON A CALL FOR COOLING, THE DX COOLING WILL STAGE AS REQUIRED TO MAINTAIN THE SUPPLY AIR TEMPERATURE AT SET POINT. THE INITIAL SUPPLY AIR TEMPERATURE SET POINT WILL BE 55° F AND WILL BE ADJUSTABLE VIA THE BAS. IF THE SUPPLY AIR TEMPERATURE SENSOR FAILS, THE FIRST STAGE OF DX COOLING WILL BE ENABLED AND A CORRESPONDING TEMPERATURE SENSOR FAILURE ALARM WILL BE GENERATED. COMPRESSOR STAGING COMMANDS WILL BE GOVERNED BY MINIMUM RUN TIMES TO LIMIT SYSTEM CYCLING.

SUPPLY FAN CONTROL
THE SUPPLY FAN WILL OPERATE CONTINUOUSLY DURING OCCUPIED OPERATION AND CYCLE ON AS NEEDED DURING UNOCCUPIED OPERATION. WHEN ENABLED, THE SUPPLY FAN SPEED WILL MODULATE TO MAINTAIN THE SUPPLY DUCT STATIC PRESSURE AT SET POINT. INITIAL STATIC PRESSURE SET POINT WILL BE 1.5 IN. W.C. AND WILL BE ADJUSTABLE VIA THE BAS. THE BAS WILL MONITOR THE OPERATIONAL STATUS OF THE SUPPLY FAN. IF THE SUPPLY FAN FAILS TO START OR FAILS DURING NORMAL OPERATION, A SUPPLY FAN FAILURE ALARM WILL BE GENERATED.

SYSTEM ALARMS

- SUPPLY FAN FAILURE
- SUPPLY AIR TEMPERATURE SENSOR FAILURE
- HIGH STATIC SHUT DOWN
- FILTER MAINTENANCE REQUIRED

D NO SCALE DX VAV SPLIT SYSTEM AHU



A NO SCALE CONTROLS LEGEND AND ABBREVIATIONS

GENERAL CONTROLS SYSTEM DESCRIPTION

THE BUILDING AUTOMATION SYSTEM (BAS) WILL BE A WEB-BASED TRANE TRACER SC OR EQUIVALENT. SUPERVISORY CONTROLLER WILL COMMUNICATE WITH SYSTEM LEVEL CONTROLLERS VIA BACNET OVER ZIGBEE WIRELESS PROTOCOL. THE SYSTEM WILL ALSO BE CAPABLE OF COMMUNICATION VIA BACNET TYP, MODBUS RTU, MODBUS IP, AND LONLANT™ PROTOCOLS. SIMULTANEOUSLY, AT THE SYSTEM LEVEL TO ALLOW FOR SEAMLESS INTEGRATION WITH FUTURE EQUIPMENT EXPANSIONS AS NEEDED. REMOTE USER INTERFACE WILL BE WEB BASED WITH ACCESS AVAILABLE VIA ANY STANDARD INTERNET BROWSER. SYSTEMS EMPLOYING PROPRIETARY PC SOFTWARE TO FACILITATE REMOTE ACCESS WILL NOT BE ACCEPTABLE. THE SYSTEM MUST ALSO EMPLOY A LIGHT VERSION OF THE REMOTE USER INTERFACE INCORPORATED INTO A FREE SMARTPHONE APPLICATION (TRANE BAS OPERATOR SUITE OR EQUIVALENT). THE APPLICATION MUST BE COMPATIBLE WITH DEVICES RUNNING APPLE IOS 5 OR LATER AND GOOGLE ANDROID 4.0 OR LATER. LOGGING INTO THE WEB BASED SYSTEM INTERFACE VIA A SMARTPHONE OR TABLET WEB BROWSER WILL NOT BE CONSIDERED EQUIVALENT TO A DEDICATED SMARTPHONE APPLICATION.

THE LOCAL OPERATOR INTERFACE POINT FOR THE BAS WILL BE A DEDICATED LCD PANEL MOUNTED IN A FIXED LOCATION AT THE OWNER'S DISCRETION. THE LCD PANEL WILL BE A WIFI ENABLED 10" TOUCHSCREEN (TRANE TRACER CONCISERS OR EQUIVALENT). THE OPERATOR INTERFACE WILL CONSIST OF INDIVIDUAL GRAPHICAL WIDGETS ASSOCIATED WITH EACH TEMPERATURE CONTROL ZONE. WIDGETS WILL DISPLAY THE ACTIVE ZONE TEMPERATURE, ACTIVE ZONE SET POINT, AND ACTIVE ZONE OCCUPANCY STATE AT ALL TIMES AND WILL FEATURE TOUCH BASED COMMANDS ALLOWING THE USER TO MODIFY THE SPACE TEMPERATURE SET POINT AND INITIATE TIMED OCCUPANCY OVERRIDES. THE LCD PANEL WILL BE MANUFACTURED AND BRANDED BY THE INSTALLING CONTROLS SYSTEM CONTRACTOR. USE OF THIRD PARTY GENERIC BACNET DISPLAYS OR TABLET PCS WILL NOT BE ACCEPTABLE. THE SYSTEM COMMUNICATION NETWORK WILL CONSIST OF LOCAL WIRELESS NETWORKS GROUPED TO OPTIMIZE SYSTEM LEVEL FUNCTIONALITY. EACH NETWORK WILL BE EQUIPPED WITH AN INDEPENDENT WIRELESS COORDINATOR (TRANE WCI OR EQUIVALENT). THE WIRELESS COMMUNICATION NETWORK WILL EMPLOY A MESH ARCHITECTURE SUCH THAT MULTIPLE PATHS OF DATA ROUTING EXIST AND FAILURES OF INDIVIDUAL NODES WITHIN THE NETWORK WILL NOT RESULT IN LOSS OF SYSTEM INTEGRITY. WIRELESS SCHEMES EMPLOYING POINT TO POINT COMMUNICATION WILL NOT BE PERMITTED. WIRELESS COORDINATORS MUST HAVE AN OPERATIONAL COMMUNICATION RADIUS OF AT LEAST TWO HUNDRED FEET IN ALL DIRECTIONS.

AIR HANDLING UNITS (AHUS) WILL BE EQUIPPED WITH FULLY PROGRAMMABLE UNIT CONTROLLERS (TRANE UC400 OR EQUIVALENT). CONTROLLERS WILL BE CAPABLE OF INTERFACING WITH THE BAS VIA BACNET OVER ZIGBEE WIRELESS PROTOCOL AND ACCEPTING CUSTOM PROGRAMMING AS NEEDED TO ACHIEVE ALL SEQUENCES OF OPERATION. THE USE OF NON-PROGRAMMABLE OR APPLICATION SPECIFIC CONTROLLERS TO CONTROL OR MONITOR THE AHUS WILL NOT BE ACCEPTABLE.

VAV TERMINAL UNITS WILL BE PROVIDED WITH FACTORY MOUNTED FULLY PROGRAMMABLE CONTROLLERS (TRANE UC210 OR EQUIVALENT). TERMINAL UNIT CONTROLLERS WILL BE CAPABLE OF INTERFACING WITH THE BAS VIA BACNET OF ZIGBEE WIRELESS PROTOCOL AND ACCEPTING CUSTOM PROGRAMMING AS NEEDED TO ACHIEVE ALL SEQUENCES OF OPERATION. THE USE OF NON-PROGRAMMABLE OR APPLICATION SPECIFIC CONTROLLERS TO CONTROL OR MONITOR VAV TERMINAL UNITS WILL NOT BE ACCEPTABLE.

ZONE TEMPERATURE AND HUMIDITY SENSORS ASSOCIATED WITH VAV TERMINALS WILL ALSO COMMUNICATE VIA THE WIRELESS INTERFACE. BATTERY POWERED WIRELESS SENSORS MUST HAVE A STANDARD OPERATIONAL LIFE OF AT LEAST TEN YEARS BETWEEN BATTERY REPLACEMENTS.

THE CONTROL SYSTEM WILL BE EQUIPPED WITH STANDARD APPLICATION PROGRAMS BUILT INTO THE SUPERVISORY CONTROLLER TO FACILITATE VARIABLE AIR VOLUME FUNCTIONALITY AND ASSOCIATION BETWEEN TERMINAL UNITS AND THE RESPECTIVE AIR HANDLING UNIT. TO MINIMIZE THE USE OF CUSTOM PROGRAMMING AT THE SYSTEM LEVEL (TRANE AREA CONTROL AND VAS OR EQUIVALENT).

THE INSTALLING CONTRACTOR WILL PROVIDE A MINIMUM OF FOUR HOURS OF SYSTEM TRAINING FOR THE BUILDING OWNER AND APPROPRIATE BUILDING PERSONNEL. TRAINING WILL INCLUDE INSTRUCTION IN THE OPERATION OF THE SMARTPHONE APPLICATION AND LOCAL INTERFACE LCD PANEL AS IT RELATES TO SET POINTS, OCCUPANCY COMMANDS, ALARMS, AND NAVIGATION OF THE STANDARD SYSTEM GRAPHICS. THE CONTRACTOR WILL ALSO MAKE UP TO TWO SERVICE VISITS TO THE PROJECT SITE DURING THE SYSTEM WARRANTY PERIOD TO ENSURE THE SYSTEM IS FUNCTIONING AS INTENDED AND TO PROVIDE ADDITIONAL TRAINING AT THE OWNERS REQUEST.

D NO SCALE GENERAL CONTROLS SYSTEM DESCRIPTION

UTILITIES INC. OPERATIONS BUILDING

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COA #27158 Project: 03.16031
LAWRENCE M. STOFF P.E. #7806

SHEET TITLE
MECHANICAL CONTROLS

PROJECT ADDRESS
144 WESTERN FORK ROAD
LONGWOOD, FL 32750

OWNER NAME AND ADDRESS
UTILITIES, INC.

PROJECT No.	16-160
PHASE	100% CONSTRUCTION DOCUMENTS
SCALE	
DRAWN BY	AJS
CHECKED BY	LMS
DATE	12/15/2016

M501
OF

VARIABLE AIR VOLUME TERMINAL BOX SCHEDULE - ELECTRIC HEAT													
PLAN MARK	MAX PRIMARY AIRFLOW (CFM)	PRIMARY AIR TEMP (°F)	MIN PRIMARY AIRFLOW (CFM)	HEATING AIRFLOW (CFM)	HEATER EAT (°F)	HEATER LAT (°F)	MAX ΔP (IN H2O)	HEATER CAPACITY (KW)	VOLT/PH	STEPS	MANUFACTURE / MODEL	INLET SIZE	NOTES
VAV 1-1-1	250	55.0	65	125	55.0	80	0.05	1.0	208/1	1	TRANE / VCEF	5	ALL
VAV 1-1-2	500	55.0	125	250	55.0	86	0.05	2.5	208/1	1	TRANE / VCEF	8	ALL
VAV 1-1-3	350	55.0	90	175	55.0	82	0.05	1.5	208/1	1	TRANE / VCEF	6	ALL
VAV 1-1-4	300	55.0	75	150	55.0	86	0.05	1.5	208/1	1	TRANE / VCEF	6	ALL
VAV 1-1-5	600	55.0	150	300	55.0	86	0.05	3.0	208/1	1	TRANE / VCEF	8	ALL

NOTES:

- 1 ALL VAV BOXES SHALL BE SUPPLIED WITH A FACTORY MOUNTED STEP-DOWN TRANSFORMER FOR CONTROLS. TRANSFORMER VOLTAGE SHALL MATCH HEATER VOLTAGE. BOXES WITH NO HEAT SHALL BE PROVIDE WITH A 120V/1PH TRANSFORMER.
- 2 MAX ALLOWABLE NC LEVEL IS NC 25 AS A RESULT OF RADIATED OR DISCHARGE NOISE FROM UNIT.
- 3 PROVIDE NON-FUSED DOOR INTERLOCKING DISCONNECT.
- 4 PROVIDE SINGLE POINT POWER CONNECTION
- 5 PROVIDE HEATER WITH AUTO RESET PRIMARY TEMPERATURE LIMIT, SECONDARY HIGH LIMITS AND AIRFLOW SWITCH.
- 6 IF MINIMUM AIRFLOW SETTINGS SCHEDULED ARE BELOW THE CONTROLLABLE VAV BOX LIMIT FOR MANUFACTURER, MIN SHALL BE SET TO THE LOWEST CONTROLLABLE AIRFLOW.

FAN SCHEDULE															
PLAN MARK	SERVING	PRODUCT MANUFACTURE	MODEL NO.	TYPE	CFM	STATIC PRESS. IN. WG.	FAN RPM	MOTOR			VOLT/ PHASE	DRIVE TYPE	SONES	ACCESSORIES	INTERLOCKS
								RPM	HP / WATTS	ECM MOTOR					
EF-1	JANITORIAL	GREENHECK	SP-B110	CEILING EXHAUST FAN	70	0.3	711	950	80W	NO	120/1	DIRECT	2.0	1,7,10,12,24	SWITCH INDEPENDENT OF LIGHT SWITCH
EF-2	WOMENS RR	GREENHECK	SP-B110	CEILING EXHAUST FAN	70	0.3	711	950	80W	NO	120/1	DIRECT	2.0	1,7,10,12,24	
EF-3	MENS RR	GREENHECK	SP-B110	CEILING EXHAUST FAN	70	0.3	711	950	80W	NO	120/1	DIRECT	2.0	1,7,10,12,24	

NOTES:

1. MODEL NUMBERS AND FAN SELECTION ARE BASED ON GREENHECK WITH THE FOLLOWING ACCESSORIES SCHEDULED:

1) BACKDRAFT DAMPER	8) INLET SCREEN	15) WEATHER COVER	22) HINGED FRAMES
2) THERMOSTAT	9) CURB MOUNT ROOF JACK	16) 2 SPEED / 1 WINDING	23) SPARK/EXPLOSION PROOF
3) BIRDSCREEN	10) SPEED CONTROLLER	17) FILTERS	24) UL/UL 507 LISTED
4) ROOF CURB	11) WALL SHUTTER	18) WALL COLLAR	25) SPECIAL COATING: AIR DRY PHENOLIC
5) DISCONNECT SWITCH	12) VIBRATION ISOLATORS	19) FAN GUARD/SCREEN	26) TIE DOWN POINTS
6) DRAIN	13) WALL CAP	20) COMPANION FLANGES	
7) EQUIPMENT SUPPORTS	14) WALL SHUTTER - MOTORIZED	21) INSULATED HOUSING FOR SOUND CONTROL	

AIR DISTRIBUTION SCHEDULE	
SYMBOL/TAG	DESCRIPTION
A(XXX) 	BASIS OF DESIGN: TITUS TMS COLOR: WHITE MATERIAL: ALUMINUM SERVICE: CEILING SUPPLY
B(XXX) 	BASIS OF DESIGN: TITUS 50F COLOR: WHITE MATERIAL: ALUMINUM SERVICE: CEILING RETURN AND EXHAUST
C(XXX) 	BASIS OF DESIGN: TITUS 300F(S) / 350RL (R) COLOR: WHITE MATERIAL: ALUMINUM SERVICE: SIDEWALL SUPPLY (300FL) SERVICE: SIDEWALL SUPPLY (350RL)

GENERAL NOTES:

1. AIR DISTRIBUTION DEVICES LOCATED WITHIN ACOUSTICAL TILE CEILINGS SHALL BE PROVIDED WITH BORDER TYPE 3 FOR LAY-IN MOUNTING. AIR DISTRIBUTION DEVICES LOCATED WITHIN GYPSUM BOARD CEILINGS OR WALLS SHALL BE PROVIDED WITH BORDER TYPE 1 FOR SURFACE MOUNTING. REFER TO ARCHITECTURAL DOCUMENTS FOR CEILING TYPES.
2. AIR DISTRIBUTION DEVICES LOCATED IN SMALL ROOMS WHERE FULL 24"x24" GRID ARE NOT AVAILABLE SHALL BE PROVIDED WITH SURFACE MOUNTING BORDERS IN LIEU OF LAY-IN. SECURE EACH DEVICE TO CEILING GRID WITH FIELD-FABRICATED SUPPORTS.
3. MAXIMUM SOUND RATING FOR ALL AIR DEVICES 25 NC.
4. PROVIDE SECTORIZING BAFFLES IN SUPPLY AIR DEVICES TO DIRECT AIR AS INDICATED ON FLOOR PLANS WITH DIRECTIONAL ARROWS SHOWN.

DX SPLIT SYSTEM - INDOOR UNIT/AHU SCHEDULE																		
UNIT NO.	SELECTION BASED ON		SERVING	FAN DATA						SEER @ AHRI	ELECTRIC HEATER SIZE (KW)	UNIT ELECTRICAL DATA				UNIT WEIGHT (LBS)	NOTES	
	MANUFACTURER	MODEL		TOTAL CFM	OUTSIDE AIR CFM	EXT. STATIC P. IN H2O	MOTOR DATA					VOLT	PH	FAN FLA	MCA			MOCAP
AHU-1	TRANE	TWE073E	OFFICES	2000	285	1.0	3	208	1	13	---	208	1	9.40	12	20	385	2,3,4,5
AHU-2	TRANE	4MYW6524	ELECTRICAL ROOM	440	---	---	---	208	1	16	---	208	1	0.45	---	---	44	1,2,6

NOTES:

1. UNIT TYPE IS A DUCTLESS MINI-SPLIT UNIT. INDOOR UNIT POWERED FROM OUTDOOR UNIT.
2. INSTALL PER MANUFACTURER'S INSTALLATION INSTRUCTIONS AND DO NOT EXCEED MAX REFRIGERANT LINE LENGTH.
3. UNIT SHALL BE PROVIDED WITH SINGLE POINT POWER.
4. UNIT SHALL BE HORIZONTALLY CONFIGURED FOR A CEILING HUNG INSTALLATION. PROVIDE WITH VIBRATION ISOLATION HANGERS. SEE DETAILS.
5. UNIT SHALL WORK IN A VAV SCHEME. PROVIDE UNIT WITH INTEGRAL VFD, HIGH STATIC FAN AND ALL NECESSARY ACCESSORIES TO WORK AS INDICATED ON DOCUMENTS. SEE CONTROLS SHEET.
6. UNIT SHALL BE PROVIDED WITH A CONDENSATE PUMP EQUAL TO "LITTLE GIANT #VCL-14ULS".

DX SPLIT SYSTEM - CONDENSING UNIT SCHEDULE:																		
UNIT NO.	SECTION BASED ON		SERVING	UNIT DATA				COND. FAN MOTOR			COMPRESSOR DATA			UNIT ELECTRIC DATA				
	MANUFACTURER	MODEL		NOM CAP (MBH)	SEER	COND. EAT F	REFRIG TYPE	NO.	HP (WATTS)	FAN FLA	QTY	STEPS	RLA	LRA	VOLT	PH	MCA	MOCAP
CU-1	TRANE	TTA073H	AHU-1	72.0	13.0	95	R-410A	1	1/2	3.10	2	2	21.9	136.0	208	3	24	30
CU-2	TRANE	4TYK6524	AHU-2	24.0	16.0	95	R-410A	1	(60)	0.62	1	1	11.3	41.0	208	1	16	25

NOTES:

1. UNIT SHALL BE PLACED ON A 4" CONCRETE HOUSEKEEPING PAD. SEE FLOOR PLAN.
2. CU-2 PROVIDES POWER TO THE AHU-2. SEE AHU SCHEDULE.

VENTILATION REQUIREMENT SCHEDULE										
SERVED BY	ROOM	SPACE TYPE	NO. OF PEOPLE	REQ'D CFM PER PERSON	SQ.FT. OF AREA	REQ'D CFM PER SQ.FT.	NO. OF PEOPLE/ 1000 SQ.FT. (DEFAULT VALUE)	CFM/ PERSON (DEFAULT VALUE)	TOTAL REQ'D CFM	REMARKS
AHU-1	Break Room	OFFICE SPACE	6	5	272	0.06	5	17	47	
	Conference Room	CONFERENCE / MEETING	10	5	620	0.06	50	6	88	
	Admin	RECEPTION AREAS	2	5	621	0.06	30	7	48	
	Corridor	CORRIDORS	1	0	622	0.06	0	0	37	
	Offices 4-6	OFFICE SPACE	3	5	190	0.06	5	17	27	
	Offices 6-7	OFFICE SPACE	3	5	320	0.06	5	17	35	
TOTAL REQ'D OA FOR AHU-1									282	
TOTAL PROVIDED OA FOR AHU-1									285	

NOTE:

REQUIRED OUTSIDE AIRFLOW (CFM) VALUES BASED ON FBCM 5TH ED. (2014) & ANSI/ASHRAE STANDARD 62.1-2010.

BUILDING AIR BALANCE	
TOTAL OUTSIDE AIR	285
TOTAL EXHAUST AIR	210
TOTAL BUILDING PRESSURE	75

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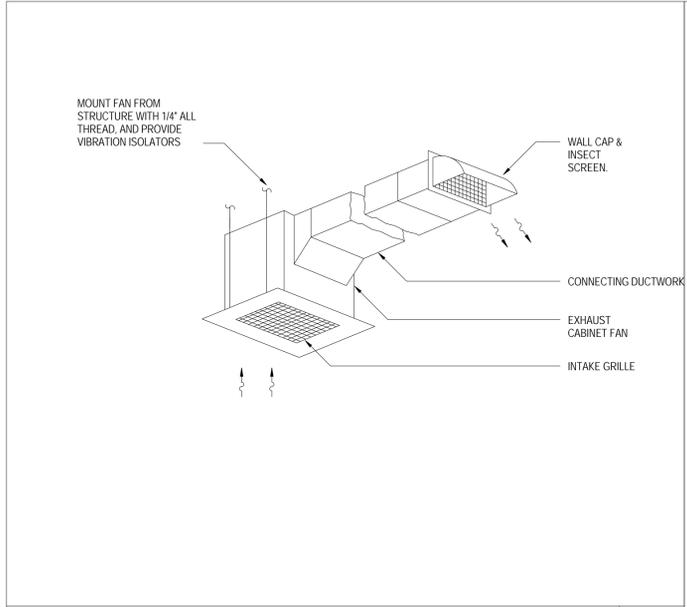
VOLT AIR
MECHANICAL SCHEDULES
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COA #27158 Project: 03.16031
LAWRENCE M. STOFF, P.E. #7806

MECHANICAL SCHEDULES

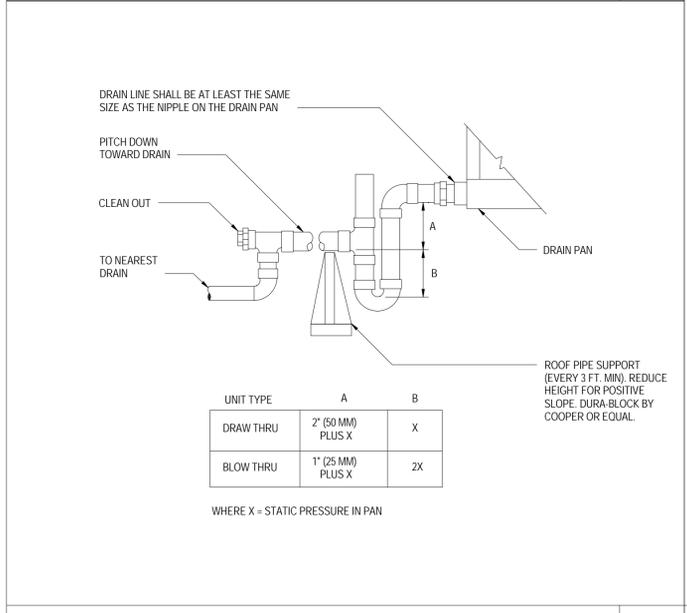
PROJECT ADDRESS
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OWNER NAME AND ADDRESS
UTILITIES INC.

PROJECT No. 16-160
PHASE 100% CONSTRUCTION DOCUMENTS
SCALE
DRAWN BY AJS
CHECKED BY LMS
DATE 12/15/2016
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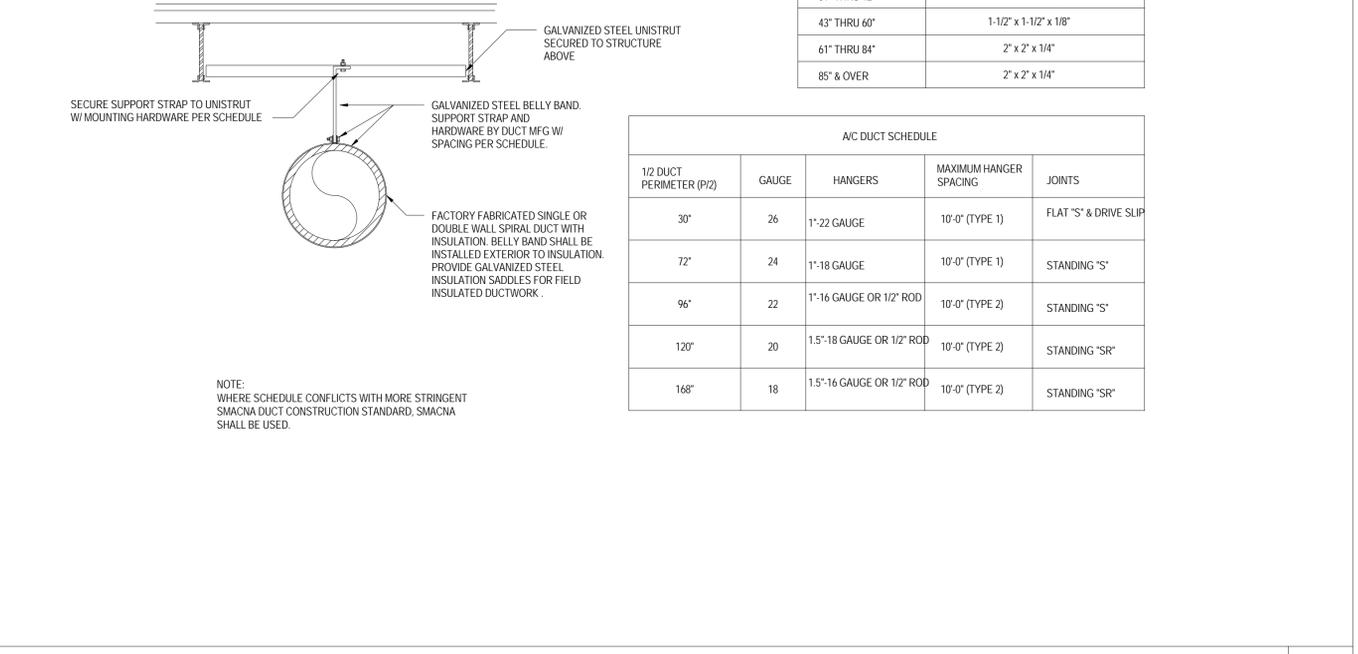
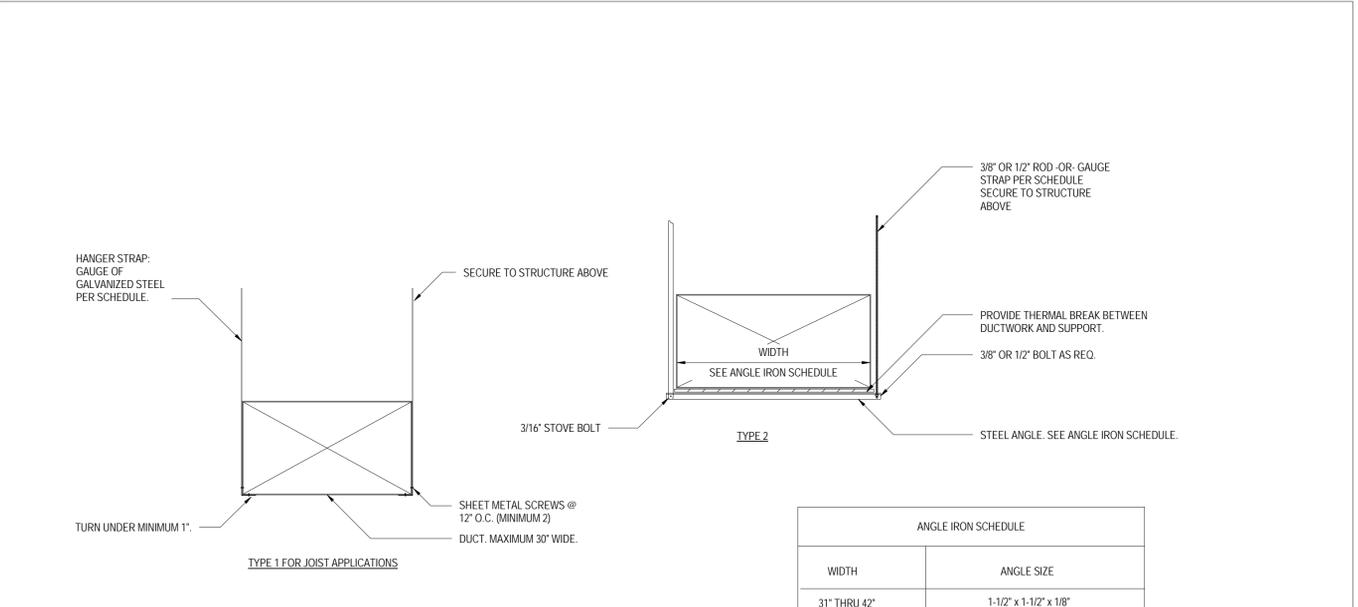
M601
OF



CEILING EXHAUST FAN DETAIL B



AIR HANDLING UNIT DRAIN TRAP DETAIL C



TYPICAL DUCT SUPPORT DETAILS (CONCEALED LOCATIONS) A

ANGLE IRON SCHEDULE	
WIDTH	ANGLE SIZE
31" THRU 42"	1-1/2" x 1-1/2" x 1/8"
43" THRU 60"	1-1/2" x 1-1/2" x 1/8"
61" THRU 84"	2" x 2" x 1/4"
85" & OVER	2" x 2" x 1/4"

A/C DUCT SCHEDULE				
1/2 DUCT PERIMETER (P/2)	GAUGE	HANGERS	MAXIMUM HANGER SPACING	JOINTS
30"	26	1"-22 GAUGE	10'-0" (TYPE 1)	FLAT "S" & DRIVE SLIP
72"	24	1"-18 GAUGE	10'-0" (TYPE 1)	STANDING "S"
96"	22	1"-16 GAUGE OR 1/2" ROD	10'-0" (TYPE 2)	STANDING "S"
120"	20	1.5"-18 GAUGE OR 1/2" ROD	10'-0" (TYPE 2)	STANDING "SR"
168"	18	1.5"-16 GAUGE OR 1/2" ROD	10'-0" (TYPE 2)	STANDING "SR"

NOTE: WHERE SCHEDULE CONFLICTS WITH MORE STRINGENT SMACNA DUCT CONSTRUCTION STANDARD, SMACNA SHALL BE USED.

UTILITIES INC. OPERATIONS BUILDING

BORRELLI + PARTNERS
ARCHITECTURE PLANNING LANDSCAPE INTERIORS
720 Vossor Street, Orlando Fl. 32804
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VOLT AIR
MECHANICAL
CELEBRATING 10 YEARS
2186 Central Florida Parkway, Suite A10
Orlando, Florida 32837 Tel: 321.822.2330
COA #27158 Project: 0316031
LAWRENCE M. STOFF P.E. #7806

CONSULTANTS
SHEET TITLE
MECHANICAL DETAILS

PROJECT ADDRESS
144 WESTERN FORK ROAD
LONGWOOD, FL 32750
OWNER NAME AND ADDRESS
UTILITIES INC.

PROJECT No. 16-160
PHASE 100% CONSTRUCTION DOCUMENTS
SCALE
DRAWN BY Author
CHECKED BY Checker
DATE 12/15/2016

M902
OF

ELECTRICAL ABBREVIATIONS

SYMBOL	DESCRIPTION
A	AMPERES
AC	ALTERNATING CURRENT
ACI	AIR CONDITIONING
AFCI	ARC FAULT CIRCUIT INTERRUPTER
AHJ	AIR HANDLING UNIT
AIC	AMPERE INTERRUPTING CAPACITY
AL	ALUMINUM
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
C	CONDUIT
CATV	CABLE TELEVISION
CB	CRITICAL BRANCH
C/B	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
CIR	CIRCUIT
CKT	CIRCUIT
CU	COPPER
DC	DIRECT CURRENT
DIA	DIAMETER
EB	EQUIPMENT BRANCH
EC	ELECTRICAL CONTRACTOR
EF	EXHAUST FAN
ELEV	ELEVATOR
EM	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
EP	EMERGENCY POWER
EPO	EMERGENCY POWER OFF (BUTTON OR SWITCH)
EWC	ELECTRIC WATER COOLER
F	FUSE
FA	FIRE ALARM
FAA	FIRE ALARM ANNUNCIATOR
FLA	FULL LOAD AMPERES
FMC	FLEXIBLE METAL CONDUIT
G	GROUND
GFCL, GFI	GROUND FAULT CIRCUIT INTERRUPTER
GND	GROUND
GRMC	GALVANIZED RIGID METAL CONDUIT
HOA	HAND-OFF-AUTOMATIC SWITCH
HVAC	HEATING, VENTILATION, AIR CONDITIONING
HZ	HERTZ
IEEE	INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS
IG	ISOLATED GROUND
IMC	INTERMEDIATE METAL CONDUIT
KCMIL	THOUSAND CIRCULAR MILS
KVA	KILOVOLT - AMPERES
LPMC	LIQUID TIGHT FLEXIBLE METAL CONDUIT
LTG	LIGHTING
LRA	LOCK ROTOR AMPS
MC	METAL CLAD CABLE
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CIRCUIT PROTECTION
MLO	MAIN LUGS ONLY
MTD	MOUNTED
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NL	NIGHT LIGHT
NO	NORMALLY OPEN OR NUMBER
P	POLE
PB	PUSH BUTTON, PANIC BUTTON OR PULLBOX
PNL	PANEL
PWR	POWER
QTY	QUANTITY
REQ	REQUIRED
RMC	RIGID METAL CONDUIT
RNC	RIGID NON-METALLIC CONDUIT
RTS	REMOTE TEST STATION
RTU	ROOF TOP UNIT
SP	SPARE
ST	SHUNT-TRIP
SW	SWITCH
SYM	SYMMETRICAL
TEL	TELEPHONE
TGB	TELECOMMUNICATIONS GROUNDING BUSBAR
TMCB	THERMAL MAGNETIC CIRCUIT BREAKER
UG	UNDERGROUND
UL	UNDERWRITERS LABORATORY
V	VOLT
VA	VOLT - AMPERE
W	WATT OR WIRE
WH	WATER HEATER
WP	WEATHERPROOF
XFMR	TRANSFORMER

SECURITY (RACEWAY ONLY)

SYMBOL	DESCRIPTION
KP	SECURITY KEYPAD
CR	SECURITY CARD READER
MD	SECURITY - MOTION DETECTOR
DL	SECURITY - MAGNETIC LOCK MOUNTED ON DOOR FRAME
ES	SECURITY - ELECTRIC STRIKE MOUNTED ON DOOR
DC	SECURITY - DOOR / WINDOW CONTACT
PS	SECURITY - POWER SUPPLY
#C	SECURITY - FIXED CAMERA
#Z	SECURITY - PTZ (PAN / TILT / ZOOM) CAMERA
●	SECURITY CONTACT - SURFACE MOUNTED
●	SECURITY CONTACT - FLUSH MOUNTED
CM	SECURITY MOTION - CEILING MOUNTED
S	SECURITY SIREN (WP: WEATHERPROOF)

TELECOMMUNICATION (RACEWAY ONLY)

SYMBOL	DESCRIPTION
XN	INFORMATION OUTLET
TV	INFORMATION OUTLET, FLOOR MOUNTED
TV	CATV OUTLET
TV	TELEVISION OUTLET, FLOOR MOUNTED
S	INTERCOM SPEAKER - CEILING MOUNTED
IC	INTERCOM CALL STATION
M	INTERCOM MICROPHONE
M	MICROPHONE - FLOOR MOUNTED
V	INTERCOM VOLUME CONTROL
HS	INTERCOM HORN / SPEAKER
AMP	INTERCOM AMPLIFIER

MISCELLANEOUS

SYMBOL	DESCRIPTION
3P/60A 3R NF	DISCONNECT SWITCH, NON-FUSIBLE 3 POLE, 60 AMP, NF: NON-FUSED, 3R: NEMA 3R ENCLOSURE
3P/60A F-50A 3R	DISCONNECT SWITCH, FUSIBLE 3 POLE, 60 AMP, FUSED AT 50 AMPS, 3R: NEMA 3R ENCLOSURE
3P/60A Nx 3R	COMBINATION STARTER / DISCONNECT SWITCH, FUSIBLE 3 POLE, 60 AMP, NEMA x SIZE, 3R: NEMA 3R ENCLOSURE
MS	MAGNETIC MOTOR STARTER
ECB	ENCLOSED CIRCUIT BREAKER, AS INDICATED
PB	PANELBOARD, 480 / 277V
PB	PANELBOARD, 208 / 120V
MH	MANHOLE
HH	HANDHOLE
SPD	SURGE PROTECTION DEVICE
EM	ELECTRICAL METER
TX	TRANSFORMER
MH	MOTOR CONNECTION, HP: DENOTES HORSEPOWER RATING
EF	EXHAUST FAN
GB	GROUND BUS BAR
PB	PUSHBUTTON
PB	3/4" PLYWOOD TELEPHONE BACKBOARD
CE	CONCRETE ENCASED DUCTBANK
HR	HOMERUN TO PANEL INDICATED NUMBER OF ARROWS INDICATE NUMBER OF CIRCUITS
W	WIRE IN CONDUIT CONCEALED, #12 AWG SIZE WIRE IN 1/2" CONDUIT MINIMUM UNLESS OTHERWISE NOTED
W	WIRE IN CONDUIT CONCEALED BELOW SLAB OR GRADE
---	CONDUIT EXPOSED
W	FLEXIBLE CONDUIT
U	CONDUIT TURNING UP
D	CONDUIT TURNING DOWN
S	CONDUIT STUB

LIGHTNING PROTECTION

SYMBOL	DESCRIPTION
---	LIGHTNING PROTECTION CONDUCTOR
●	LIGHTNING PROTECTION AIR TERMINAL
---	LIGHTNING PROTECTION DOWN CONDUCTOR WITH GROUND RODS
---	LIGHTNING PROTECTION BONDING CONNECTION

RECEPTACLE(S)

SYMBOL	DESCRIPTION
⊕	DUPLEX RECEPTACLE, 20 AMP, 120V U.O.N.
⊕	DUPLEX RECEPTACLE, 20 AMP, 120V U.O.N. MOUNTED AT 48" UNLESS NOTED OTHERWISE
⊕	QUADRAPLEX RECEPTACLE, 20 AMP, 120V U.O.N.
⊕	QUADRAPLEX RECEPTACLE, 20 AMP, 120V U.O.N. MOUNTED AT 48" UNLESS NOTED OTHERWISE
⊕	SINGLE RECEPTACLE, 20 AMP, 120V U.O.N.
⊕	GFI - TYPE DUPLEX RECEPTACLE (WP: DENOTES WEATHERPROOF COVER)
⊕	GFI - TYPE DOUBLE DUPLEX RECEPTACLE
⊕	GFI - DUPLEX RECEPTACLE MOUNTED AT 48" UNLESS OTHERWISE NOTED
⊕	GFI - DOUBLE DUPLEX RECEPTACLE MOUNTED AT 48" UNLESS OTHERWISE NOTED
⊕	SPECIAL PURPOSE RECEPTACLE (NEMA RATING AS INDICATED)
⊕	QUADRAPLEX RECEPTACLE, TICK MARKS DENOTE EMERGENCY (TYPICAL ALL RECEPTABLES)
⊕	DUPLEX RECEPTACLE - HALF SWITCHED
⊕	DUPLEX RECEPTACLE - CEILING MOUNTED
⊕ ^{IG}	DUPLEX RECEPTACLE WITH ISOLATED GROUND
⊕	QUADRAPLEX RECEPTACLE - FLOOR MOUNTED
PP	POWER POLE
⊕	JUNCTION BOX - CEILING MOUNTED
⊕	JUNCTION BOX - WALL MOUNTED
⊕	JUNCTION BOX - FLOOR / GROUND MOUNTED

FIRE ALARM

SYMBOL	DESCRIPTION
FA	FACP: FIRE ALARM CONTROL PANEL FATC: FIRE ALARM TERMINAL CABINET FAAP: FIRE ALARM ANNUNCIATOR PANEL EVAC: FIRE ALARM VOICE / EVAC. UNIT
P	FIRE ALARM MANUAL PULL STATION
⊕	FIRE ALARM STROBE ONLY DEVICE MINIMUM 75cd RATING
⊕	FIRE ALARM HORN / STROBE ONLY DEVICE MINIMUM 75cd RATING
⊕	FIRE ALARM SPEAKER / STROBE ONLY DEVICE MINIMUM 75cd RATING
⊕	FIRE ALARM SPEAKER DEVICE
⊕	FIRE ALARM HORN DEVICE MINIMUM 75cd RATING
⊕	FIRE ALARM STROBE ONLY DEVICE MINIMUM 75cd RATING - CEILING MOUNTED
⊕	FIRE ALARM HORN / STROBE ONLY DEVICE MINIMUM 75cd RATING - CEILING MOUNTED
⊕	FIRE ALARM SPEAKER / STROBE ONLY DEVICE MINIMUM 75cd RATING - CEILING MOUNTED
⊕	FIRE ALARM SPEAKER DEVICE - CEILING MOUNTED
⊕	FIRE ALARM HORN DEVICE MINIMUM 75cd RATING - CEILING MOUNTED
⊕	FIRE ALARM HEATER DETECTOR - CEILING MOUNTED
⊕	FIRE ALARM SMOKE DETECTOR - CEILING MOUNTED SB: SOUNDER BASE I: IONIC CO: CARBON MONOXIDE
⊕	FIRE ALARM SMOKE DETECTOR - WALL MOUNTED SB: SOUNDER BASE CO: CARBON MONOXIDE UF: UNDERFLOOR
⊕ ^{S/R}	FIRE ALARM DUCT SMOKE DETECTOR S: SUPPLY...R: RETURN
⊕	TAMPER SWITCH
⊕	FLOW SWITCH
R	FIRE ALARM RELAY
DC	ELECTROMAGNETIC DOOR CONTACT
DH	DOOR HOLDER
RA	FIRE ALARM REMOTE ALARM INDICATOR WITH TEST SWITCH, FLUSH CEILING MOUNTED, WALL MTD, CENTER LINE 48" A.F.F. IN MECHANICAL ROOMS
MM	MONITORING MODULE

LIGHTING

SYMBOL	DESCRIPTION
⊕	CEILING MOUNTED 2'x2' / 2'x4' LIGHT FIXTURE - RECESSED NORMAL POWER
⊕	CEILING MOUNTED 2'x2' / 2'x4' LIGHT FIXTURE - RECESSED LIFE SAFETY POWER / NL: NIGHT LIGHT
⊕	CEILING MOUNTED 2'x2' / 2'x4' LIGHT FIXTURE - RECESSED CRITICAL POWER
⊕	CEILING MOUNTED 1'x4' LIGHT FIXTURE RECESSED OR SURFACE MOUNTED - NORMAL POWER
⊕	CEILING MOUNTED 1'x4' LIGHT FIXTURE RECESSED OR SURFACE MOUNTED - LIFE SAFETY POWER
⊕	CEILING MOUNTED 1'x4' LIGHT FIXTURE RECESSED OR SURFACE MOUNTED - CRITICAL POWER
⊕	CEILING MOUNTED 1'x4' LIGHT FIXTURE PENDANT MOUNTED - NORMAL POWER
⊕	CEILING MOUNTED 1'x4' LIGHT FIXTURE PENDANT MOUNTED - LIFE SAFETY POWER
⊕	CEILING MOUNTED 1'x4' LIGHT FIXTURE PENDANT MOUNTED - CRITICAL POWER
⊕	FLUORESCENT STRIP LIGHT FIXTURE - NORMAL POWER
⊕	FLUORESCENT STRIP LIGHT FIXTURE - LIFE SAFETY POWER
⊕	FLUORESCENT STRIP LIGHT FIXTURE - CRITICAL POWER
⊕	DOWN LIGHT FIXTURE - NORMAL POWER
⊕	DOWN LIGHT FIXTURE - LIFE SAFETY POWER
⊕	DOWN LIGHT FIXTURE - CRITICAL POWER
⊕	WALL MOUNTED LIGHT FIXTURE - NORMAL POWER
⊕	WALL MOUNTED LIGHT FIXTURE - LIFE SAFETY POWER
⊕	WALL MOUNTED LIGHT FIXTURE - CRITICAL POWER
⊕	CEILING FAN
⊕	TRACK LIGHTING
⊕	UNDERCOUNTER LIGHTING
⊕	FLOOD LIGHT FIXTURE
⊕	POLE LIGHT FIXTURE
⊕	BOLLARD LIGHT FIXTURE
⊕	STEP LIGHT FIXTURE
⊕	EMERGENCY LIGHT UNIT
⊕	EXIT LIGHT - SINGLE FACE WITH DIRECTIONAL ARROW
⊕	EXIT LIGHT - DOUBLE FACE
⊕	EXIT LIGHT - WALL MOUNTED

SWITCHES

SYMBOL	DESCRIPTION
\$A	SINGLE POWER TOGGLE SWITCH (LETTER DENOTES FIXTURE CONTROLLED)
\$3	THREE-WAY TOGGLE SWITCH
\$4	FOUR-WAY TOGGLE SWITCH
\$M	MOTOR SWITCH
\$F	FAN SWITCH
\$SP	THREE POSITION SELECTOR SWITCH
\$T	TIMER SWITCH (60 MINUTES)
\$LV	LOW VOLTAGE SWITCH
\$HOA	HAND-OFF-AUTOMATIC SWITCH
\$K	KEY SWITCH
\$WP	SWITCH - WEATHERPROOF
\$OS	WALL SWITCH OCCUPANCY SENSOR
\$OOS	DUAL-LEVEL OCCUPANCY SENSOR SWITCH
⊕	OCCUPANCY SENSOR - CEILING MOUNTED
⊕	OCCUPANCY SENSOR - WALL MOUNTED
PC	PHOTOCELL
LC	LIGHTING CONTACTOR
TC	TIME CLOCK

CODES AND STANDARDS

NFPA-70	NATIONAL ELECTRICAL CODE (2011)
NFPA-72	NATIONAL FIRE ALARM CODE (2010)
NFPA-75	STANDARD FOR THE PROTECTION OF ELECTRONIC COMPUTER / DATA PROCESSING EQUIPMENT (2009)
NFPA-90A	STANDARD FOR THE INSTALLATION OF AIR CONDITIONING AND VENTILATING SYSTEMS (2012)
NFPA-90B	STANDARD FOR THE INSTALLATION OF WARM AIR HEATING AND AIR CONDITIONING SYSTEMS (2012)
NFPA-92	RECOMMENDED PRACTICE FOR SMOKE CONTROL SYSTEMS (2012)
NFPA-101	LIFE SAFETY CODE (2012)
NFPA-110	STANDARD FOR EMERGENCY AND STAND-BY POWER SYSTEMS (2010)
2014 EDT.	FLORIDA BUILDING CODE (5th EDITION)

GENERAL NOTES

- ALL SYMBOLS SHOWN MAY NOT BE USED IN THIS PROJECT.
- #12 AWG NEUTRAL CONDUCTOR SHALL BE INCLUDED FOR EACH BRANCH CIRCUIT UNLESS OTHERWISE NOTED.
- #12 AWG GREEN GROUND CONDUCTOR SHALL BE INCLUDED IN EACH RACEWAY UNLESS OTHERWISE NOTED.
- HOME RUNS TO PANEL BOARDS SHALL HAVE A MAXIMUM OF THREE (3) PHASE CONDUCTORS (ONE PER PHASE) PLUS DEDICATED NEUTRAL FOR EACH PHASE CONDUCTOR AND GROUND CONDUCTOR IN EACH CONDUIT

SHEET INDEX

NUMBER	NAME
E000	ELECTRICAL LEGEND
E201	FIRST FLOOR POWER PLAN
E301	FIRST FLOOR LIGHTING PLAN
E501	ELECTRICAL RISER DIAGRAM
E901	ELECTRICAL DETAILS

LUMINAIRE SCHEDULE

IMAGE	TYPE	DESCRIPTION	MANUFACTURER	MODEL #	LAMP TYPE
	A	2'x4' LED TROFFER LIGHT	EATON	24CZ-LD4-40-UNV-L835-CD1-U OR APPROVED EQUAL.	LED
	AE	2'x4' LED TROFFER LIGHT	EATON	24CZ-LD4-40-UNV-EL14W-L835-CD1-U OR APPROVED EQUAL.	LED
	B	SURFACE LED DOWNLIGHT	EATON	SLD06835WHJB OR APPROVED EQUAL.	LED
	C	RECESSED 6" LED DOWNLIGHT	EATON	PD615ED010 PDM6A835 61VC OR APPROVED EQUAL.	LED
	P	PENDANT LINEAR LED LIGHT	EATON	8WSL-LD2-80-SPS-UNV-L835-CD1-U OR APPROVED EQUAL.	LED
	PE	PENDANT LINEAR LED LIGHT	EATON	8WSL-LD2-80-SPS-UNV-EL14W-L835-CD1-U OR APPROVED EQUAL.	LED
	S	LED STRIPLIGHT	EATON	4SNLED-LD4-41SL-LW-UNV-L840-CD1-U OR APPROVED EQUAL.	LED
	SE	LED STRIPLIGHT	EATON	4SNLED-LD4-41SL-LW-UNV-EL14W-L840-CD1-U OR APPROVED EQUAL.	LED
	X	EXIT SIGN	EATON	APX7G OR APPROVED EQUAL.	LED

- NOTES:
- FINAL FIXTURE COLORS AND FINISHES SHALL BE SELECTED AND APPROVED BY OWNER/ARCHITECT.
 - ALL LED LAMPS SHALL BE 3500 KELVIN COLOR TEMPERATURE, UNLESS OTHERWISE NOTED.
 - EXIT LIGHTS SHALL BE CONNECTED TO THE NEAREST UNSWITCHED CIRCUIT.

UTILITIES INC. OPERATIONS BUILDING

SIGNATURE AND DATED SEAL

CONSULTANTS

SHEET TITLE

PROJECT ADDRESS

DATE

REV.

DESCRIPTION

PROJECT No. 16-160

PHASE 100 % CONSTRUCTION DOCUMENTS

SCALE NOT TO SCALE

DRAWN BY

CHECKED BY

DATE 12/15/2016

BORRELLI + PARTNERS
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NEDM MUBBUDVOC P.E. #74728

VOLT AIR
ELECTRICAL
CELEBRATING 10 YEARS

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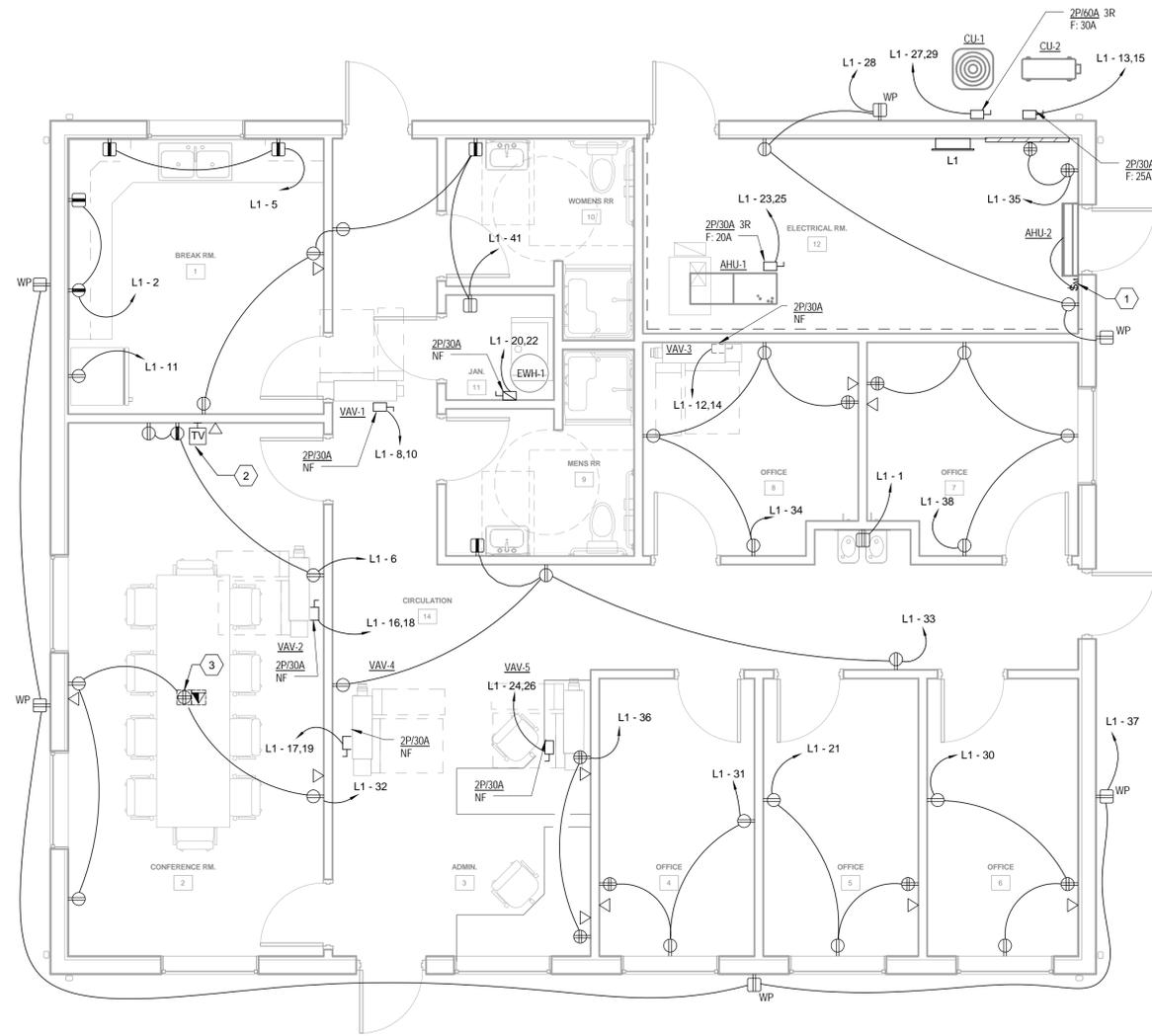
ELECTRICAL LEGEND

OWNER NAME AND ADDRESS
UTILITIES INC.

E000

OF

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1 - First Floor Power Plan
1/4" = 1'-0"

GENERAL NOTES

- COORDINATE WITH MECHANICAL EQUIPMENT SHOP DRAWINGS FOR OVER CURRENT PROTECTION REQUIREMENTS PRIOR TO RELEASE OF ELECTRICAL DISTRIBUTION EQUIPMENT.
- PROVIDE #10 CU. IN LIEU OF #12 CU. FOR ANY BRANCH CIRCUIT IN EXCESS OF 100 FEET OR OF CIRCUIT LENGTH TO FARTHEST DEVICE TO PREVENT EXCESSIVE VOLTAGE DROP. PROVIDE #8 CU. IN LIEU OF #10 CU. FOR ANY BRANCH CIRCUIT IN EXCESS 160 FEET OF CIRCUIT LENGTH TO FARTHEST DEVICE TO PREVENT EXCESSIVE VOLTAGE DROP.

KEYNOTES

- | NUMBER | NOTES |
|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | PROVIDE TWO POLE TOGGLE SWITCH, MOTOR RATED. MOUNT ADJACENT TO HVAC AIR CENTRAL UNIT. PROVIDE POWER CONNECTIONS TO CONDENSING UNIT. COORDINATE WITH MECHANICAL. |
| 2 | WALL MOUNTED TV OUTLET, DATA OUTLET AND RECEPTACLE FOR WALL MOUNTED TV. COORDINATE EXACT LOCATIONS WITH ARCHITECT AND OWNER PRIOR TO ROUGH-IN. |
| 3 | FLOOR OUTLET WITH QUAD RECEPTACLE, DATA OUTLETS, AND BRASS COVER FLANGE. PROVIDE WIREMOLD LEGRAND EFB6S. |

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COA #27158 Project: 0316031

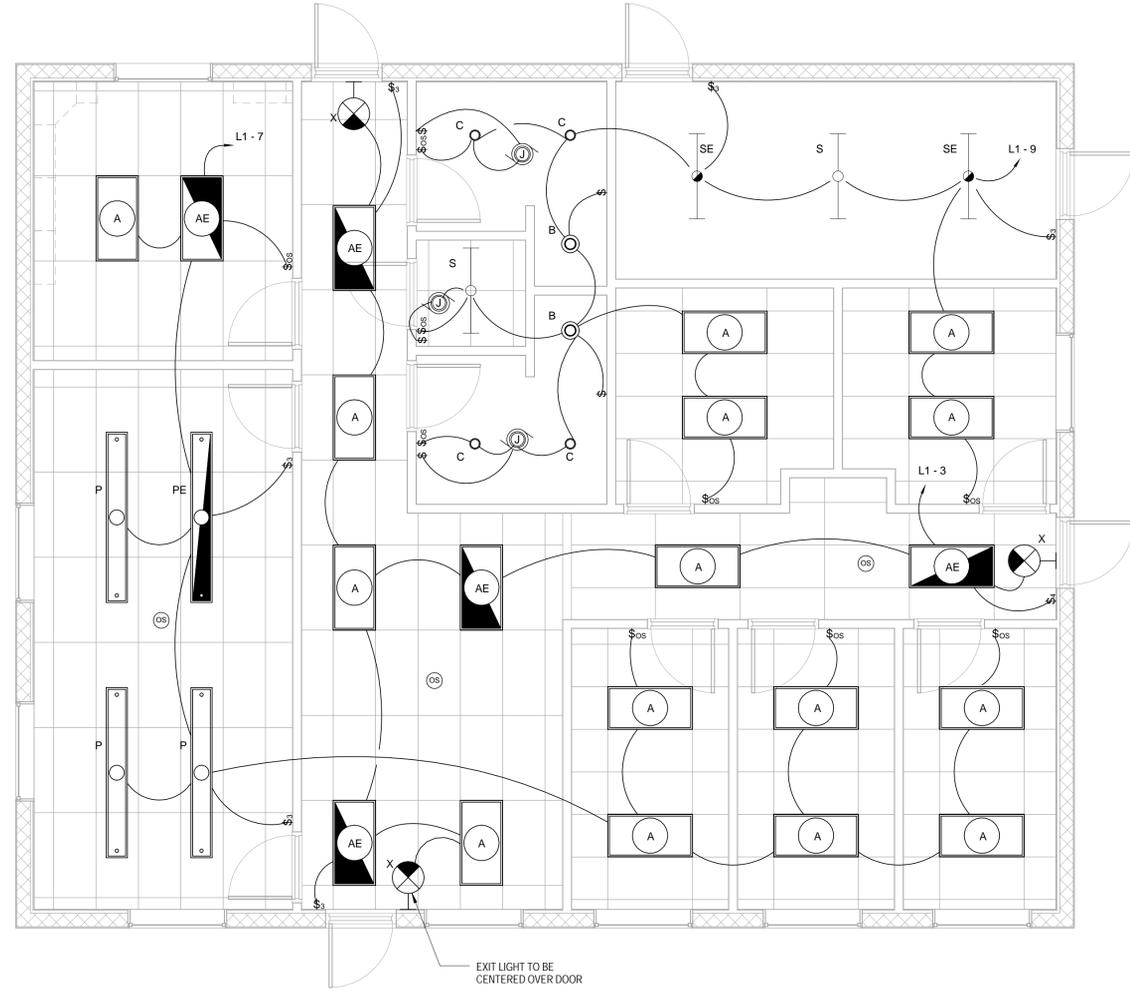
SHEET TITLE
FIRST FLOOR POWER PLAN

PROJECT ADDRESS
144 WESTERN FORK ROAD
LONGWOOD, FL 32750
OWNER NAME AND ADDRESS
UTILITIES INC.

PROJECT No.	DATE	DESCRIPTION	REV.
16-160			
100 % CONSTRUCTION DOCUMENTS			
SCALE		As Indicated	
DRAWN BY		D.R.	
CHECKED BY		N.M.	
DATE		12/15/2016	

E201
OF

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1 - First Floor Lighting Plan
1/4" = 1'-0"

- GENERAL NOTES**
1. ARCHITECT TO REVIEW ALL LIGHT/CEILING FIXTURE LOCATIONS PRIOR TO INSTALLATION. COORDINATE ALL LIGHT FIXTURE MOUNTING HEIGHTS WITH ARCHITECT PRIOR TO INSTALLATION.
 2. VERIFY CEILING CONSTRUCTION & AVAILABLE DEPTH PRIOR TO ORDERING OF RECESSED LUMINAIRES.
 3. ELECTRICAL CONTRACTOR TO CHECK LOCATION OF EACH LUMINAIRE PRIOR TO ORDERING MOUNTING KITS SUITABLE FOR GYP. BOARD CEILING & CONTACT INSULATION.
 4. ALL LUMINAIRES TO BE INSTALLED ACCORDING TO LOCAL CODE REQUIREMENTS AND TO HAVE U.L. LABEL. CONTRACTOR TO DETERMINE IF I.C. RATING IS REQUIRED PRIOR TO PLACING THE ORDER.
 5. PROVIDE UNSWITCHED POWER CONNECTION FROM LOCAL LIGHTING CIRCUIT FOR ALL EXIT / EMERGENCY LIGHTING FIXTURES.
 6. ALL FIXTURE COLORS SHALL BE COORDINATED WITH ARCHITECT PRIOR TO ORDERING.

UTILITIES INC. OPERATIONS BUILDING

		PROJECT No. 16-160 PHASE 100 % CONSTRUCTION DOCUMENTS SCALE As Indicated DRAWN BY D.R. CHECKED BY N.M. DATE 12/15/2016	DESCRIPTION 16031_Uilities_OPS_Bldg_Electrical_Central_2015_1.Stor.rvt	REV. (Empty)	DATE (Empty)	PROJECT ADDRESS 144 WESTERN FORK ROAD LONGWOOD, FL 32750	OWNER NAME AND ADDRESS UTILITIES INC.	SHEET TITLE FIRST FLOOR LIGHTING PLAN	CONSULTANTS 2186 Central Florida Parkway, Suite A10 Orlando, Florida 32837 Tel: 321.822.2230 COA #27158 Project: 031.6031	SIGNATURE AND DATED SEAL NEDM MUBEDOVIC P.E. #74728	BORRELLI + PARTNERS ARCHITECTURE PLANNING LANDSCAPE INTERIORS 720 Vossor Street, Orlando FL 32804 407.418.1338 :: fax 407.418.1342
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Branch Panel: L1

Location: ELECTRICAL RM. 12 **AHU-1** 120/208 Wye **A.I.C. Rating:** 10000
Supply From: **Phases:** 3 **Mains Type:** MLO
Mounting: Surface **Wires:** 4 **Mains Rating:** 200 A
Enclosure: Type 1 **MCB Rating:**

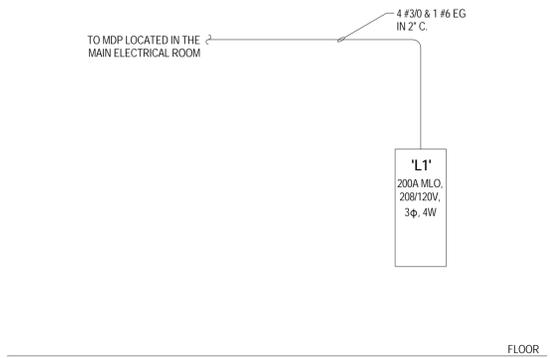
Notes:

Note	Ckt	Circuit Description	Wire Size	Trip (A)	Pole	A	B	C	Pole	Trip (A)	Wire Size	Circuit Description	Ckt	Note		
1		EWC	12	20	1	180	360			1	20	12	RECPT. BREAK RM. 1	2		
3		LIGHTS CORRIDOR	12	20	1			270.9	0		1	20	12	SPARE	4	
5		RECPT. BREAK RM. 1	12	20	1					360	540	12	RECPT. CONFERENCE RM. 2	6		
7		LIGHTS BR/CONF RM/OFF	12	20	1	559.6	500					2	20	12	VAV-1	8
9		LTGS REST RMS/ELECT RM/	12	20	1			623	500					12	--	10
11		RECPT. BREAK RM. 1	12	20	1					800	750	2	20	12	VAV-3	12
13		CU-2	10	30	2	1992	750							12	--	14
15		--	10	--	--			1992	1250			2	20	12	VAV-2	16
17		VAV-4	12	20	2				750	1250			--	12	--	18
19		--	12	--	--	750	2250					2	30	10	WATER HEATER	20
21		RECPT. OFFICE 5	12	20	1			720	2250			--	--	10	--	22
23		AHU-1	12	20	2					1440	1500	2	20	12	VAV-5	24
25		--	12	--	--	1440	1500					--	--	12	--	26
27		CU-1	10	30	2			2880	720			1	20	12	RECPT. ELECTRICAL RM. 12	28
29		--	10	--	--					2880	720	1	20	12	RECPT. OFFICE 6	30
31		RECPT. OFFICE 4	12	20	1	720	900					1	20	12	RECPT. CONFERENCE RM. 2	32
33		RECPT. CIRCULATION 14	12	20	1			720	900			1	20	12	RECPT. OFFICE 8	34
35		RECPT. ELECTRICAL RM. 12	12	20	1					720	720	1	20	12	RECPT. ADMIN. 3	36
37		OUTSIDE RECEPPTS	12	20	1	720	900					1	20	12	RECPT. OFFICE 7	38
39		SPARE	20	1				0	0			1	20		SPARE	40
41		RECPT. ROOM 1, 10	12	20	1					900	0	1	20		SPARE	42
43		SPARE	20	1	0	0						1	20		SPARE	44
45		SPARE	20	1			0	0				1	20		SPARE	46
47		SPARE	20	1				0	0			1	20		SPARE	48
49		SPACE	--	--	0	0						--	--		SPACE	50
51		SPACE	--	--			0	0				--	--		SPACE	52
53		SPACE	--	--				0	0			--	--		SPACE	54
						Total Load	13521.6 VA	12826 VA	13330 VA							
						Total Amps	113 A	107 A	112 A							

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
HVAC	6864 VA	100.00%	6864 VA	
Heating	19760 VA	100.00%	19760 VA	Total Conn. Load: 39685 VA
Lighting	1461 VA	125.00%	1827 VA	Total Est. Demand: 39251 VA
Receptacle	11600 VA	93.10%	10800 VA	Total Conn.: 110 A
				Total Est. Demand: 109 A

Notes:



PARTIAL RISER DIAGRAM

NOT TO SCALE

BUILDING DEMAND LOAD SUMMARY		System Information		
		Voltage	Phase	
		120	208	3
LIGHTING 'L1'	1.46 KVA @ 125 DF =		1.826 KVA	
RECEPT 'R'	11.40 KVA 1ST 100VA + 50% OF REMAINDER =		10.800 KVA	
A/C 'A'	6.86 KVA @ 100 DF =		6.864 KVA	
HEATING 'H'	19.76 KVA @ 100 DF =		19.760 KVA	
MISC 'S'	KVA @ 100 DF =		0.500 KVA	
Total Connected Load		39.69 KVA		
Total Connected Load @ 208V, 3PH		110.29 AMPS		
		Total Connected Load	39.250 KVA	
		Total Demand Load @ 208V, 3PH	109.08 AMPS	

** - LOAD BASED IN HIGHER OF TWO LOADS - HEATING.

BORRELLI + PARTNERS
ARCHITECTURE PLANNING LANDSCAPE INTERIORS

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407.418.1338 :: fax: 407.418.1342

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VOLT AIR
CONSULTANTS

CELEBRATING 10 YEARS

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Fax: 321.822.2330
COA #27158 Project: 0316031

NEOM MUBBODVIC P.E. #74728

UTILITIES INC. OPERATIONS BUILDING

SHEET TITLE

ELECTRICAL RISER DIAGRAM

PROJECT No. 16-160

PHASE 100 % CONSTRUCTION DOCUMENTS

SCALE NOT TO SCALE

DRAWN BY D.R.

CHECKED BY N.M.

DATE 12/15/2016

PROJECT ADDRESS

144 WESTERN FORK ROAD
LONGWOOD, FL 32750

OWNER NAME AND ADDRESS

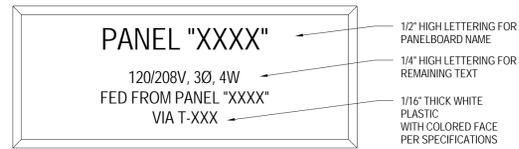
UTILITIES INC.

DATE

E501

OF

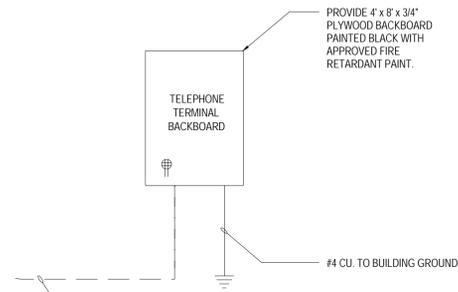
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TYPICAL 120/208V PANELBOARD

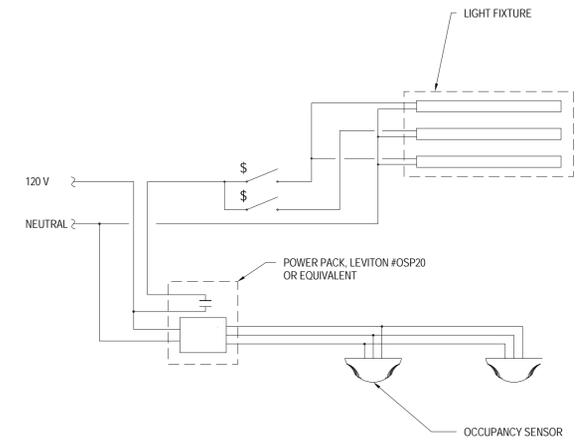
PANELBOARD NAMEPLATE DETAIL

E



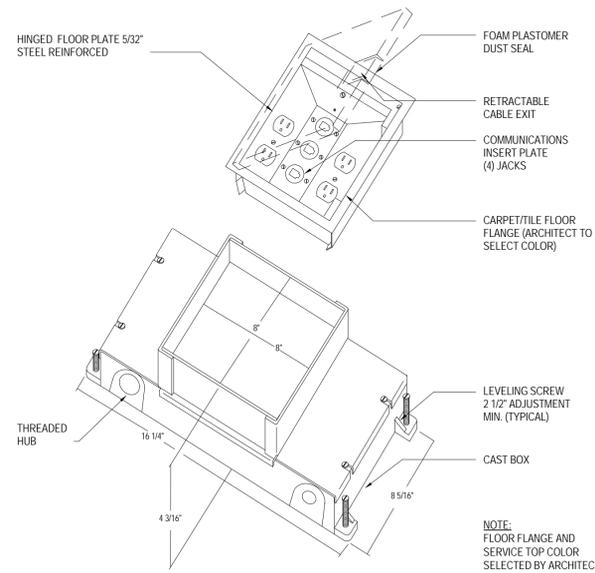
TELEPHONE BACKBOARD DETAIL

C



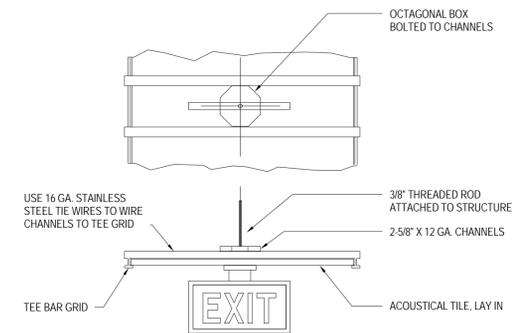
INTERIOR LIGHTING WITH OCCUPANCY SENSOR CONTROLS

A



FLOOR BOX: DATA / COMMUNICATION / POWER

D



EXIT LIGHT MOUNTING DETAIL (CEILING ONLY)

B

UTILITIES INC. OPERATIONS BUILDING

BORRELLI + PARTNERS
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720 Vossor Street, Orlando FL 32804
407.418.1338 :: fax 407.418.1342

SIGNATURE AND DATED SEAL
NEDIM MUBERDOVIC P.E. #74728

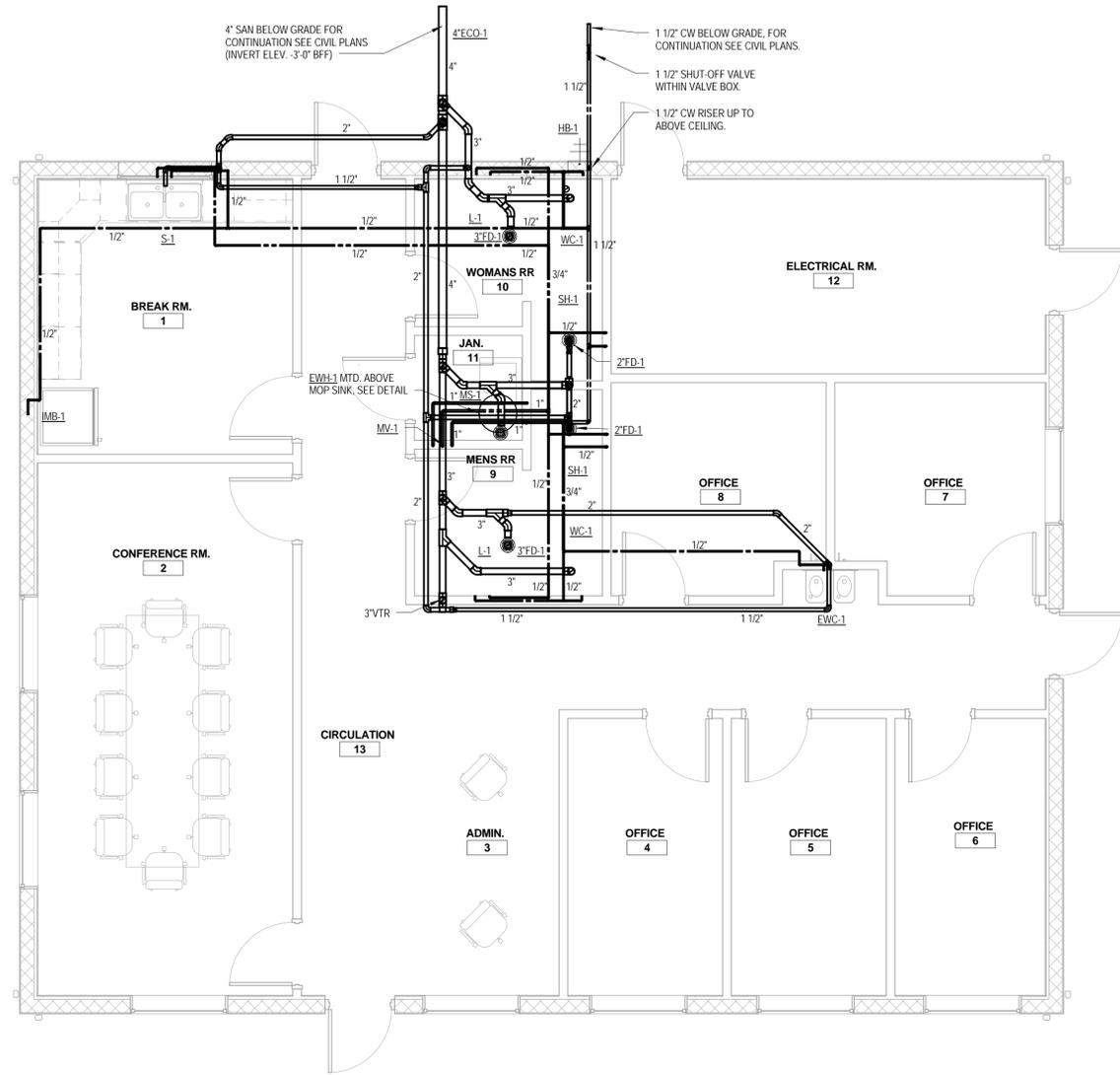
VOLT AIR
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Fax: 321.822.2330
COA #27158 Project: 0316031

ELECTRICAL DETAILS

PROJECT ADDRESS
144 WESTERN FORK ROAD
LONGWOOD, FL 32750
OWNER NAME AND ADDRESS
UTILITIES INC.

PROJECT No.	16-160
PHASE	100 % CONSTRUCTION DOCUMENTS
SCALE	NOT TO SCALE
DRAWN BY	D.R.
CHECKED BY	N.M.
DATE	12/15/2016

E901
OF

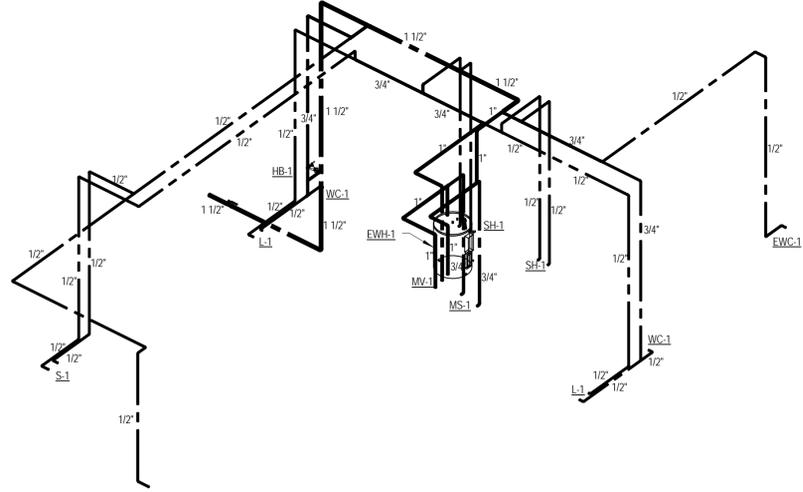


1 - First Floor Plan - Plumbing
1/4" = 1'-0"

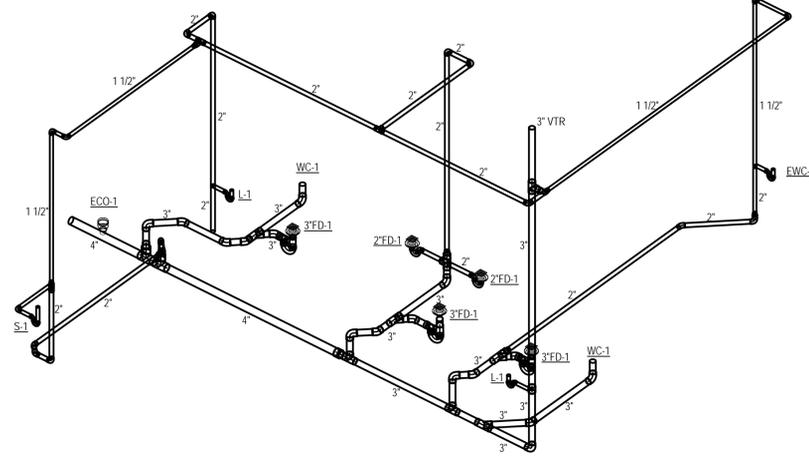
UTILITIES INC. OPERATIONS BUILDING

	PROJECT No. 16-160 PHASE 100 % CONSTRUCTION DOCUMENTS SCALE 1/4" = 1'-0" DRAWN BY L.S. CHECKED BY L.S. DATE 12/15/2016	PROJECT ADDRESS 144 WESTERN FORK ROAD LONGWOOD, FL 32750 OWNER NAME AND ADDRESS UTILITIES INC.	SHEET TITLE FIRST FLOOR PLAN - PLUMBING	CONSULTANTS 2186 Central Florida Parkway, Suite A10 Orlando, Florida 32837 Tel: 321.622.2230 COA #27158 Project: 031.6031	SIGNATURE AND DATED SEAL 	BORRELLI + PARTNERS ARCHITECTURE PLANNING LANDSCAPE INTERIORS 720 Vossor Street, Orlando FL 32804 407.418.1338 :: fax 407.418.1342
	CONTRACTOR: UTILITIES INC., 144 WESTERN FORK ROAD, LONGWOOD, FL 32750 CONTRACT NO. 16-160-01-01, 16-160-01-02, 16-160-01-03, 16-160-01-04, 16-160-01-05, 16-160-01-06, 16-160-01-07, 16-160-01-08, 16-160-01-09, 16-160-01-10, 16-160-01-11, 16-160-01-12, 16-160-01-13, 16-160-01-14, 16-160-01-15, 16-160-01-16, 16-160-01-17, 16-160-01-18, 16-160-01-19, 16-160-01-20, 16-160-01-21, 16-160-01-22, 16-160-01-23, 16-160-01-24, 16-160-01-25, 16-160-01-26, 16-160-01-27, 16-160-01-28, 16-160-01-29, 16-160-01-30, 16-160-01-31, 16-160-01-32, 16-160-01-33, 16-160-01-34, 16-160-01-35, 16-160-01-36, 16-160-01-37, 16-160-01-38, 16-160-01-39, 16-160-01-40, 16-160-01-41, 16-160-01-42, 16-160-01-43, 16-160-01-44, 16-160-01-45, 16-160-01-46, 16-160-01-47, 16-160-01-48, 16-160-01-49, 16-160-01-50, 16-160-01-51, 16-160-01-52, 16-160-01-53, 16-160-01-54, 16-160-01-55, 16-160-01-56, 16-160-01-57, 16-160-01-58, 16-160-01-59, 16-160-01-60, 16-160-01-61, 16-160-01-62, 16-160-01-63, 16-160-01-64, 16-160-01-65, 16-160-01-66, 16-160-01-67, 16-160-01-68, 16-160-01-69, 16-160-01-70, 16-160-01-71, 16-160-01-72, 16-160-01-73, 16-160-01-74, 16-160-01-75, 16-160-01-76, 16-160-01-77, 16-160-01-78, 16-160-01-79, 16-160-01-80, 16-160-01-81, 16-160-01-82, 16-160-01-83, 16-160-01-84, 16-160-01-85, 16-160-01-86, 16-160-01-87, 16-160-01-88, 16-160-01-89, 16-160-01-90, 16-160-01-91, 16-160-01-92, 16-160-01-93, 16-160-01-94, 16-160-01-95, 16-160-01-96, 16-160-01-97, 16-160-01-98, 16-160-01-99, 16-160-01-100					

2 DOMESTIC WATER RISER DIAGRAM

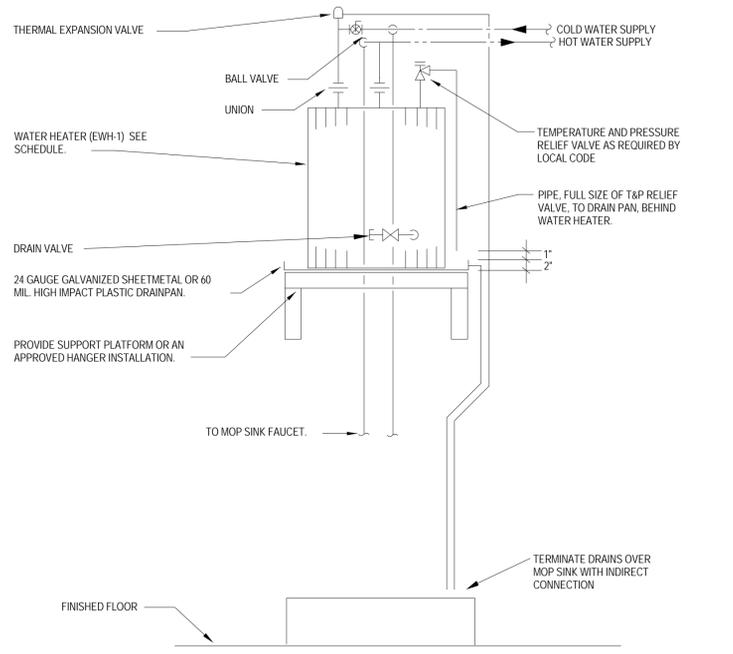


1 SANITARY RISER DIAGRAM

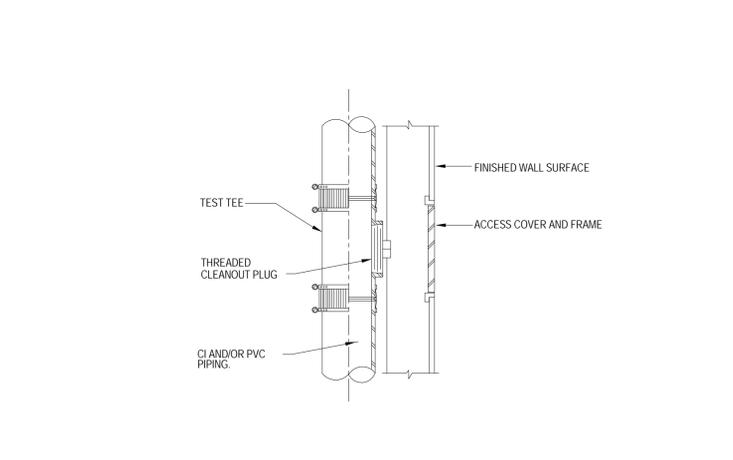


UTILITIES INC. OPERATIONS BUILDING

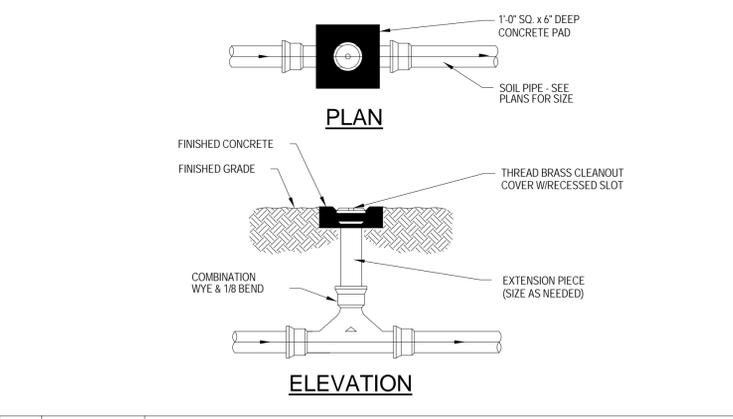
	PROJECT No. 16-160 PHASE 100 % CONSTRUCTION DOCUMENTS SCALE DRAWN BY L.S. CHECKED BY L.S. DATE 12/15/2016	REV. DESCRIPTION 1 2	DATE PROJECT ADDRESS 144 WESTERN FORK ROAD LONGWOOD, FL 32750	SHEET TITLE PLUMBING RISER DIAGRAMS	CONSULTANTS VOLT AIR 2186 Central Florida Parkway, Suite A10 Orlando, Florida 32837 Tel: 321.622.2230 COA #27158 Project: 0316031	SIGNATURE AND DATED SEAL LAWRENCE M. STOFF, P.E. #7806	BORRELLI + PARTNERS ARCHITECTURE PLANNING LANDSCAPE INTERIORS 720 Vossor Street, Orlando FL 32804 407.418.1338 :: fax 407.418.1342
	CONTRACTING, INSTALLATION, AND MAINTENANCE OF MECHANICAL, ELECTRICAL, AND PLUMBING SYSTEMS FOR THE OPERATIONS BUILDING AT UTILITIES INC.						



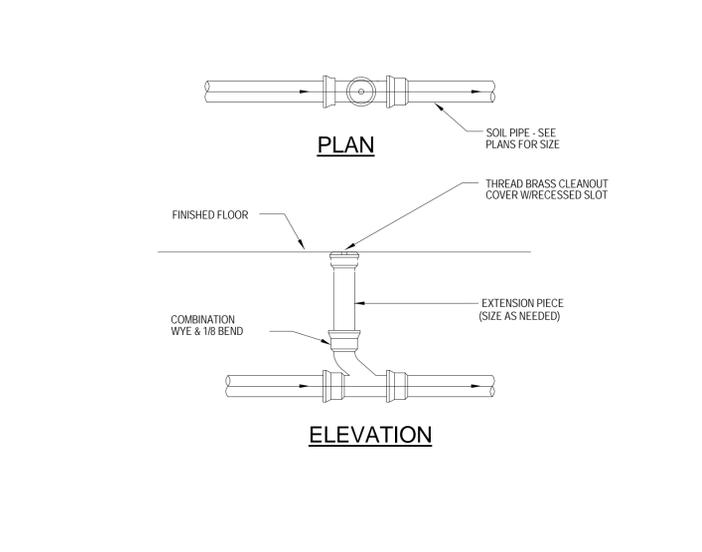
5 NO SCALE WATER HEATER DETAIL



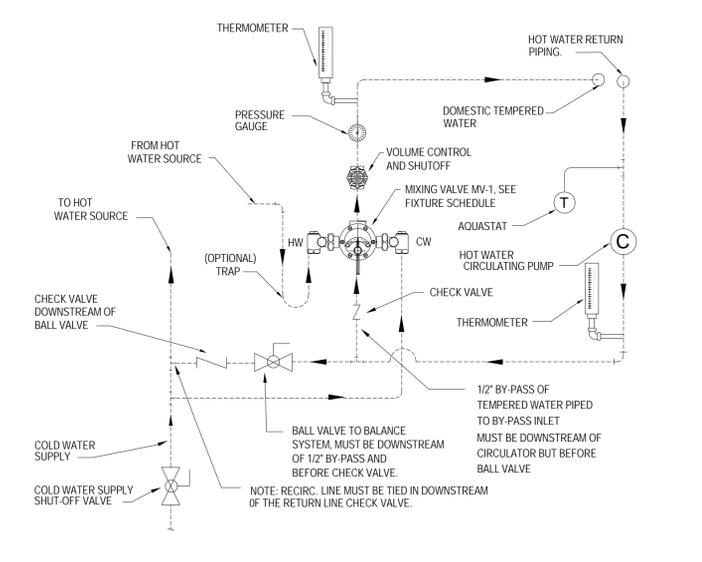
4 NO SCALE WALL CLEAN OUT DETAIL



3 NO SCALE EXTERIOR CLEAN OUT DETAIL



1 NO SCALE EXTERIOR CLEAN OUT DETAIL



2 NO SCALE MIXING VALVE DETAIL

WATER HEATER SCHEDULE											
UNIT #	SERVING	TYPE	GALLONS	INPUT KW	EFF.	GPH REC. @ 70°F RISE	VOLT/PHASE CURRENT DRAW (PER PHASE)	WEIGHT (LBS.)	DIMENSIONS	MANUFACTURER	
										MANUFACTURER	MODEL #
EWH-1	HAND & STONE	ELECTRIC	30	4.5	95%	26	208V - 1ø	451	32" H x 24"ø	AO SMITH	ENLB-30

NOTES:
 1. PROVIDE WITH EXPANSION VALVE, T & P VALVE AND WATER HEATER DRAIN PAN.
 2. COORDINATE WATER HEATER LOCATION AND PIPING WITH MECHANICAL AND ELECTRICAL PLANS.

PLUMBING FIXTURE SCHEDULE

<p>WC-1 ACCESSIBLE WATER CLOSET</p> <p>1.28 GPF WATER CLOSET WITH ELONGATED BOWL, SINGLE FLUSH, ADA COMPLIANT. OPEN FRONT LESS COVER, ELONGATED, EXTRA HEAVY DUTY, INJECTION MOLDED SOLID PLASTIC SEAT. SELF-SUSTAINING STAINLESS STEEL CHECK HINGES.</p> <p>1/2" COMPRESSION X 3/8" COMPRESSION CHROME PLATED ANGLE SUPPLY STOP WITH CHROME PLATED 1/2" FLEXIBLE RISER AND ESCUTCHEON.</p> <p>BASIS OF DESIGN</p> <p>WATER CLOSET - AMERICAN STANDARD - 215A104 SEAT - BEIMS - 1655SCT SUPPLIES - MCGUIRE - 2165CC</p> <p>L-1 ACCESSIBLE WALL HUNG LAVATORY</p> <p>BRUSHED NICKEL FINISH FAUCET WITH PULLOUT SPRAYER, THREE HOLE 4" C-C SPACING.</p> <p>PRE-INSULATED CHROME PLATED WHEELCHAIR LAVATORY STRAINER, CAST GRID DRAIN PLUG WITH STRAINER AND OFFSET DRAIN ASSEMBLY WITH 1-1/4 INCH O.D. TAILPIECE, CHROME PLATED 1/2" GAUGE 1-1/4 X 1-1/2" BRASS P-TRAP WITH CLEANOUT.</p> <p>PRE-INSULATED 1/2" COMPRESSION X 3/8 INCH COMPRESSION CHROME PLATED ANGLE SUPPLY STOPS WITH CHROME PLATED 1/2" FLEXIBLE RISERS AND ESCUTCHEONS.</p> <p>FULLY ADJUSTABLE LAVATORY CARRIER ADJUSTED TO ACCESSIBLE HEIGHT, SEE SPECS.</p> <p>PROVIDE INSULATED LAVATORY GUARDS FOR HANDICAPPED LOCATIONS.</p> <p>BASIS OF DESIGN</p> <p>CHINA - KOHLER - K-2005-0 FAUCET - PFISTER - IDEAL F-548-IDMK STRAINER/TRAP/STOPS - MCGUIRE - 2125WC CARRIER - ZURN ZR-1200 SERIES</p> <p>S-1 SINK</p> <p>DOUBLE COMPARTMENT SELF RIMMING SINK, CONSTRUCTED OF TYPE 302 18 GAUGE STAINLESS STEEL, 33"x22"x10", CRUMB CUP STRAINER</p> <p>1/2" COMPRESSION X 3/8" COMPRESSION CHROME PLATED ANGLE SUPPLY STOPS WITH CHROME PLATED 1/2" FLEXIBLE RISERS AND ESCUTCHEONS.</p> <p>CHROME PLATED 1/2" GAUGE 1-1/2" X 1-1/2" P-TRAP WITH CLEANOUT.</p> <p>BASIS OF DESIGN</p> <p>ELKAY - 3322-10 FAUCET - KOHLER - K15072-P SUPPLIES - MCGUIRE - 2165CC TRAP - MCGUIRE - 8912</p> <p>EW-1 ELECTRIC WATER COOLER</p> <p>BARRIER FREE, ADA, WALL MOUNTED DUAL HEIGHT, WALL MOUNTED REFRIGERATION SYSTEM, TYPE 304 STAINLESS STEEL DRINKING FOUNTAIN BASIN WITH INTEGRAL DRAIN, FLEXI-GUARD SAFETY BUBBLERS, STRAINER AND TAILPIECE, INTERNAL CHILLER UNIT CAPABLE OF 8 GPH OF 50 DEG. F AT AN AMBIENT TEMPERATURE OF 90 DEG. F. ELECTRICAL CHARACTERISTICS - 115 V AC, 60 HZ.</p> <p>3/8 INCH I.P.S SUPPLY WITH KEY STRAIGHT STOP.</p> <p>BASIS OF DESIGN</p> <p>COOLER - ELKAY - EZ21BSC TRAP - MCGUIRE - 8902 SUPPLY - MCGUIRE - 158LK CARRIER - ZURN</p>	<p>SH-1 SHOWER</p> <p>SHOWER RE- INFORCED FIBERGLASS ENCLOSURE, 36 x 36, SHOWER PRESSURE BALANCING MIXING VALVE, BRASS BODY, WASHER-LESS CERAMIC DRIP-FREE DISC VALVE CARTRIDGE, INTEGRAL HOT WATER LIMIT STOP SET TO 105° F, SCREW DRIVER STOPS WITH SEPARATE CHECKS, METAL WALL ESCUTCHEON, PRESSURE BALANCING MIXING VALVE, METAL LEVER HANDLE, ALTERNATE SHOWER HEAD, ARM AND FLANGE.</p> <p>SINGLE FUNCTION SHOWER HEAD, TURBINE SPRAY, ADJUSTABLE ANGLE, 1.5 GPM.</p> <p>DIVERTER VALVE TRIM, METAL LEVER HANDLE, 24" SLIDE BAR.</p> <p>WATER-SAVING SOFT SPRAY HAND HELD SHOWER AND 60" HOSE, 1.5 GPM, SPRAY PATTERN ADJUSTING FROM CONVENTIONAL SPRAY HEAD, EASY CLEAN RUBBER NOZZLES.</p> <p>2-WAY IN WALL DIVERTER VALVE, HAND HELD SHOWER VACUUM BREAKER, BETWEEN SUPPLY OUTLET AND PERSONAL SHOWER HOSE.</p> <p>BRASSCRAFT - 11383834-BLS/BS AMERICAN STANDARD - 1662-SG-213.002</p> <p>DRAIN - SEE FD-1</p> <p>HB-1 HOSE BIBB</p> <p>EXPOSED ANTI-SIPHON, VACUUM BREAKER PROTECTED, 3/4" INCH MALE HOSE THREADED WALL FAUCET, PROVIDE METAL WHEEL HANDLE.</p> <p>BASIS OF DESIGN</p> <p>WOODFORD - MODEL 24</p> <p>IMB-1 ICE MAKER BOX</p> <p>PROVIDE 11" X 9" RECESSED SUPPLY BOX WITH WALL FLANGE, MANUFACTURED FROM MINIMUM 16 GAUGE STEEL WITH EPOXY FINISH, FURNISH WITH 1/2" X 1/4" COMPRESSION ANGLE VALVE.</p> <p>BASIS OF DESIGN</p> <p>OATEY - MODEL 38487</p> <p>MV-1 MIXING VALVE</p> <p>THERMOSTATIC MIXING VALVE 1.5 MINIMUM/15 GPM MAXIMUM FLOW RATE, INTEGRAL COMBINATION CHECK STOPS WITH WALL SUPPORT, COPPER ENCAPSULATED THERMOSTATIC ASSEMBLY WITH TEFLON COATED STAINLESS STEEL SHUTTLE LOCKING TEMPERATURE REGULATING HANDLE, INTEGRAL STAINLESS STEEL PARTS.</p> <p>BASIS OF DESIGN</p> <p>BRADLEY 559-2025-T-B-P</p> <p>FD-1 FLOOR DRAIN</p> <p>COATED CAST IRON BODY WITH BOTTOM OUTLET, COMBINATION AND ADJUSTABLE TYPE "B" NICKEL BRONZE STRAINER, 6" ROUND TOP, PROVIDE TRAP GUARD TRAP PRIMER, VANDAL PROOF.</p> <p>BASIS OF DESIGN</p> <p>WATTS - FD-200-A6</p> <p>MS-1 MOP SINK</p> <p>CHROME PLATED 1/2" GAUGE 1-1/2" X 1-1/2" P-TRAP WITH CLEANOUT.</p> <p>BASIS OF DESIGN</p> <p>SINK - FIAT - MSBIDTG-2424 FAUCET - 830AA SUPPLIES - MCGUIRE - 2165CC TRAP - MCGUIRE - 8912</p>
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UTILITIES INC. OPERATIONS BUILDING

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 ARCHITECTURE PLANNING LANDSCAPE INTERIORS
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 COA # 27158 Project: 0316031
 LAWRENCE M. STOFF P.E. #9086

SIGNATURE AND DATED SEAL

CONSULTANTS

SHEET TITLE

PROJECT ADDRESS
144 WESTERN FORK ROAD
LONGWOOD, FL 32750

OWNER NAME AND ADDRESS
UTILITIES, INC.

DATE

PROJECT No. 16-160

REVISIONS

PHASE 100% CONSTRUCTION DOCUMENTS

SCALE 12" = 1'-0"

DRAWN BY L.S.

CHECKED BY L.S.

DATE 12/15/2016

P901

OF