CITY OF PRESCOTT
ARIZONA

Public Works Department

433 N. Virginia Street
Prescott, Arizona 86301
(928) 777-1130

ADDENDUM NUMBER THREE

FOR THE

YAVAPAI HILLS #1 LIFT STATION REHABILITATION PROJECT

DATE OF ADDENDUM: May 13, 2024

TO ALL BIDDERS BIDDING ON THE ABOVE PROJECT:

The following addendum shall be made part of the Project Specifications and Contract Documents. All other provisions of the Contract Documents remain unchanged. The Bidder shall acknowledge receipt of this Addendum on page 10 of the Bid Proposal form, in addition to signing below and returning this form with the bid package. The contents of this Addendum shall be given full consideration in the preparation of the Bid.

On Page 5 DELIVERY OF SUBMITTALS change:

Sealed bids will be received before 2:00p.m. Thursday, May 16, 2024, at the City Clerk's Office, 201 N. Montezuma Street, Suite 302, Prescott, Arizona 86301. **All submittals will be publicly opened at 2:10p.m. at the Public Works Office, 433 N Virginia Street, Prescott, AZ 86301.**

REMOVE the Bidding Schedule in its entirety and **REPLACE** it with the **REVISED BIDDING SCHEDULE** dated May 13, 2024 (attached).

REMOVE the Construction Drawings Volume 1 of 4 for Construction Addendum 2 in its entirety and **REPLACE** it with **CONSTRUCTION DRAWINGS VOLUME 1 OF 4 FOR CONSTRUCTION ADDENDUM 3.** (Attached).

REMOVE Standard Details For Construction Addendum 2 Volume 3 of 4 in its entirety and **REPLACE** it with **STANDARD DETAILS FOR CONSTRUCTION ADDENDUM 3 VOLUME 3 of 4.** (attached).

Requests for Information

Question: The Addendum 2 set of plans have only one reference to FRP. Sheet G-002. Vent is referenced on sheet M-101 as 4"CPVC Note 13 and 14. Where are the 200 LF on the latest set of plans?

Response: Both the FA and V piping shall abide by keynotes 13 and 14 on M-101, provide these as CPVC. The 200 LF noted within the bid schedule shall be removed. All FA and V piping shall be CPVC. The cost of the FA and V piping shall be included in the cost of the structure.

Question: Yavapai Hills Lift Sation Revised Plans Page 5 of 31 indicates Manhole 3 used as an effluent bypass to the existing spitter vault. There is an existing manhole in Manhole 3's position. To place Manhole 3 crews must bypass the existing manhole in Manhole 3's location through the adjacent upstream manhole. Followed by demolition of the manhole in Manhole 3's location and placement of Manhole 3. Please advise.

Response: The lift station is an end of line facility. As such the facility must be operational 24/7. How the bypass is ultimately done is a means and methods concern. Whether the bypassing is done pumped, or gravity is at the discretion of the contractor. Pumped bypassing shall be done in accordance with COP Supplement to MAG section 200.2.

Question: On sheet G-006 there is a detail called out we cannot find labeled: 2050, please provide detail sheet.

Response: Detail 2050 has been included within the standard details book.

Question: On page C- 101 there are gravel designations called out throughout the site. Please provide a detail of what exactly is being asked for by "Gavel".

Response: Refer to detail 2504 provided within the standard details book.

Question: The shade canopy shown on C- 101 and E- 102 looks about 26' X 8' in size? Can you provide some details on the height and slope of roof?

Response: Slope shall be 0.03 ft/ft. Height shall be coordinated with the final procurement of electrical equipment to be housed under the canopy. At a minimum provide 2' clearance between the top of the equipment and the shade canopy.

Question: On M-201 there is detail called as: 5400, please provide detail sheet.

Response: Detail 5400 has been included within the standard detail book.

-End-

City of Prescott Public Works Department

Gwen Rowitsch

Digitally signed by Gwen Rowitsch
Date: 2024.05.13 11:52:58 -07'00'

Gwen Rowitsch, Public Works Director _____ Date

Acknowledgement: (must be signed and turned in with the bid documents)

_____
Company Name

_____ _____
Signature of Company Official Date

Yavapai Hills Regional Lift Station #1						
CIP #2105-004						
Line No.	**Item**	**Description**	**Qty**	**Unit**	**Unit Cost**	**Amount**
General Construction Items						
1	105.8	Construction Stakes Lines and Grades	1	LS		
2	107.16	Stormwater Pollution Prevention Plan	1	LS		
3	109.10	Mobilization/Demobilization	1	LS		
4	109.11	Contract Allowance	1	ALL	$350,000.00	$350,000.00
5	COP 200.2	Bypass Pumping	1	LS		
6	420	Permanent Fencing	650	LF		
		General Construction Items Subtotal			*$*	
Sewer Improvements						
7	2200 SP	Piping, Existing Fencing, Pumps, Concrete, Valves, Slide Gates, Manholes and ATS Demolition	1	LS		
8	03410-A SP	Splitter Box - Polymer Pre-Cast	1	EA		
9	03410-B SP	Wet Well - Polymer Pre-Cast	1	EA		
10	725	Storage Building Pad - Slab - on - Grade	10	CY		
11	03400-A SP	Meter Vault - Pre-Cast	1	EA		
12	744	Manhole - Polymer Pre-Cast	3	EA		
13	03400-B SP	Valve Vaults - Pre-Cast	3	EA		
14	08305 SP	Access Hatches	6	EA		
15	2930 SP	Fabricated Steel Gates and Operators	2	EA		
16	15010 SP	Pipe Supports	8	EA		
17	8200 SP	Storage Roll Up Door	1	EA		
18	626.3	Coatings	1	LS		
19	11000 SP	Passive Odor Scrubber	2	EA		
20	11300 SP	Flygt NP3315 HT 452	2	EA		
21	5500 SP	Misc Shelving	1	LS		
22	15100 PSDS PVC1 SP	15" SDR-35 PVC Pipe	50	LF		
23	15100 PSDS PVC1 SP	10" SDR-35 PVC Pipe	75	LF		
24	15100 PSDS DIP SP	10" Class 350 DIP	210	LF		
25	15200.2.2.5.A SP	10" Plug Valve	3	EA		
26	15200.2.2.3.B SP	10" Check Valve	3	EA		
27	11100 SP	10" Sluice Gate Manually Actuated	4	EA		
28	16050 SP	General Electrical Provisions	1	LS		
29	16496 SP	ATS	1	EA		

Yavapai Hills Regional Lift Station #1						
CIP #2105-004						
Line No.	**Item**	**Description**	**Qty**	**Unit**	**Unit Cost**	**Amount**
30	16232 SP	Genset	1	EA		
31	13305 SP	Programming	1	LS		
32	13310.2.2.4 SP	Level Indicator Transmitters	2	EA		
33	13310.2.2.5 SP	Level Switch (High, High High and Low Low)	10	EA		
34	13310.2.2.2 SP	Flow Element and Indicator Transmitter	1	EA		
35	701	Aggregate	1010	SY		
36	215.4	Grading	9035	SY		
					Sewer Improvements Subtotal	*$*
					Total Bid Amount	**$**

TOTAL BID AMOUNT:

Dollars

(In Written Words)

Company Name

Signature of Company Official

Date Signed

Title

CITY OF PRESCOTT
ARIZONA

YAVAPAI HILLS LIFT STATION

5101 CACTUS PL
PRESCOTT, ARIZONA 86301
FEBRUARY 2024

CIP NO. 2105-004
VOLUME 1 OF 4
FOR CONSTRUCTION
~~CONSTRUCTION~~
ADDENDUM 3
2

UTILITY INFORMATION		
COMPANY	CONTACT	TELEPHONE
ARIZONA PUBLIC SERVICE CO. 6672 CORSAIR AVENUE PRESCOTT, ARIZONA 86301	MONIQUE HOLLIDAY	(928) 445-6612
CENTURY LINK 1445 MASONRY WAY PRESCOTT, ARIZONA 86301	DELL HOWARD	(520) 838-3050
UNISOURCE ENERGY SERVICES 6405 WILKINSON DRIVE PRESCOTT, ARIZONA 86301	MALI ROSS	(928) 771-7227
SPARKLIGHT 3201 TOWER ROAD PRESCOTT, ARIZONA 86305	DOUG HAMILTON	(928) 713-8382
CITY OF PRESCOTT WATER & SEWER P.O. BOX 2059 PRESCOTT, ARIZONA 86301	STEVE OLFERS	928-777-1130

NOTES:

YCESD APPROVAL TO CONSTRUCT AND CITY OF PRESCOTT PERMIT REQUIRED PRIOR TO CONSTRUCTION

CONTRACTOR IS TO USE EXTREME CAUTION WHEN WORKING NEAR HIGH VOLTAGE OVERHEAD POWER LINES AND HIGH PRESSURE GAS MAINS.

CONTRACTOR TO LOCATE AND DELINEATE TEMPORARY CONSTRUCTION EASEMENTS.

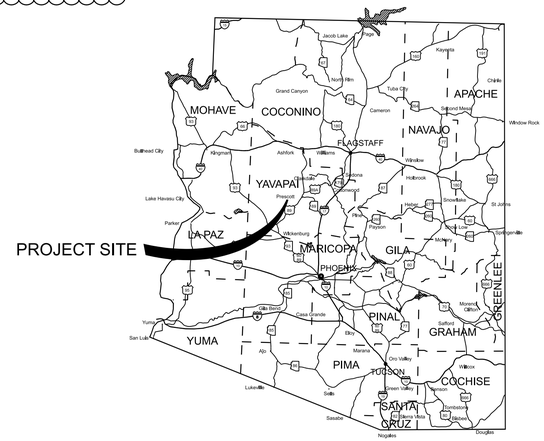
NO ACTIVITY SHALL OCCUR OUTSIDE OF TEMPORARY CONSTRUCTION EASEMENTS.

ALL EASEMENTS CALLED OUT IN THESE CONSTRUCTION DRAWINGS SHALL BE DEDICATED BY A RECORDED LEGAL DESCRIPTION UNLESS OTHERWISE NOTED AS "EXISTING" WITH BOOK & PAGE LOCATION OF RECORDING.

PROJECT IS FUNDED VIA WIFA. PROVIDE WIFA COMPLIANT SIGN, DAVIS-BACON WAGES PER LATEST WAGE DETERMINATION, AMERICAN IRON AND STEEL AND ALL OTHER APPLICABLE WIFA REQUIREMENTS.

REFER TO THE FOLLOWING QUAD CITY STANDARD DETAIL FOR PROJECT NOTES WHICH ARE AVAILABLE FROM THE CITY OF PRESCOTT WEBSITE:
HTTP://WWW.PRESCOTT-AZ.GOV/
101P GENERAL NOTES
103P WATER PLAN GENERAL NOTES
104P WASTEWATER PLAN GENERAL NOTES
105P-1 GRADING AND DRAINAGE NOTES
105P-2 EROSION AND SEDIMENTATION CONTROL NOTES
106P-1 SIGNING AND STRIPING NOTES
106P-2 TRAFFIC SIGNAL NOTES

VICINITY MAP
NTS



LOCATION MAP
NTS

DRAWING INDEX

SHEET NUMBER	DRAWING NUMBER	TITLE
	GENERAL	
1	G-001	COVER SHEET
2	G-002	ABBREVIATIONS
3	G-003	STANDARD DESIGNATIONS
4	G-004	OVERALL SITE PLAN
5	G-005	TEMPORARY BYPASS LINE PHASING PLAN - PHASE 1 & 2
6	G-006	TEMPORARY BYPASS LINE PHASING PLAN - PHASE 3 & 4
	DEMOLITION	
7	D-301	DETAILS 1
8	D-302	DETAILS 2
9	ED-001	ELECTRICAL ONE LINE DIAGRAM 1
10	ED-002	ENLARGED STORAGE BUILDING PLANS
	CIVIL	
11	C-001	SYMBOLS & LEGEND
12	C-101	PAVING, GRADING AND DRAINAGE PLAN
13	C-102	YARD PIPING PLAN
	MECHANICAL	
14	M-001	MECHANICAL LEGEND
15	M-101	LIFT STATION UPPER AND LOWER PLANS
16	M-201	LIFT STATION SECTIONS
	ELECTRICAL	
17	E-001	LEGEND AND SYMBOLS 1
18	E-002	LEGEND AND SYMBOLS 2
19	E-003	LEGEND AND SYMBOLS 3
20	E-010	ONE LINE DIAGRAM
21	E-020	BLOCK DIAGRAMS - 1
22	E-030	SCHEMATICS - 1
23	E-040	SCHEDULES - 1
24	E-101	SITE PLAN
25	E-102	STORAGE BUILDING ENLARGED POWER AND LIGHTING PLANS
26	E-103	LIFT STATION ENLARGED POWER AND LIGHTING PLAN
27	E-301	DETAILS-1
	INSTRUMENTATION	
28	N-001	SYMBOLS AND LEGENDS
29	N-002	SYMBOLS AND ABBREVIATIONS
30	N-601	PRESCOTT YAVAPAI HILLS LIFT STATION P&ID
31	N-602	PRESCOTT YAVAPAI HILLS LIFT STATION P&ID

CITY BENCHMARKS	
COP BM "M-27"	COP BENCHMARK DESIGNATION "NGS M-27", IN PRESCOTT, YAVAPAI COUNTY, AT MAIN WASTEWATER TREATMENT PLANT ON SUNDOG RANCH ROAD, BRASS CAP AT THE NORTHERLY MOST CORNER OF WEST AERATION BED NAVD 88: 5208.842

MAYOR
PHIL GOODE

CITY COUNCIL
ERIC MOORE, BRANDON MONTOYA, CONNIE CANTELME, CATHEY RUSING, LOIS FRUHWORTH, TED GAMBOGI

SUBMITTED BY

JOHN H. MATTA — PRINCIPAL — 2/22/2024 — DATE — 30012 — AZ REGISTRATION NUMBER

ROB D. BRYANT — PROJECT MANAGER — 2/22/2024 — DATE — 42726 — AZ REGISTRATION NUMBER

REVIEWED BY

CITY ENGINEER — DATE

UTILITY MANAGER — DATE

RECORD DRAWING CERTIFICATION

I HEREBY CERTIFY, TO THE BEST OF MY KNOWLEDGE, INFORMATION AND BELIEF, THAT THIS PROJECT HAS BEEN COMPLETED IN SUBSTANTIAL CONFORMANCE WITH THE APPROVED PLANS, SPECIFICATIONS AND REFERENCED STANDARDS, EXCEPT AS SHOWN HEREON; THAT THESE RECORD DRAWINGS REFLECT THE POSITION OF CONSTRUCTED IMPROVEMENTS BASED ON FIELD MEASUREMENTS; AND THAT THE MATERIALS USED IN CONSTRUCTION ARE AS SHOWN BASED ON FIELD OBSERVATION AND TEST RESULTS.

REGISTERED PROFESSIONAL ENGINEER (CIVIL) — DATE

THIS CERTIFICATION DOES NOT WARRANT MATERIALS, WORKMANSHIP, METHODS OF CONSTRUCTION, OR OTHER ITEMS AFFECTING THE WARRANTY OF THIS PROJECT, TO THE CITY OF PRESCOTT. USERS OF THIS INFORMATION ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ACTUAL CONDITIONS.

Contact Arizona 811 at least two full working days before you begin excavation
ARIZONA811 BLUE STAKE, INC.
Call 811 or click Arizona811.com

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

NO	DATE	REVISION	BY	APVD
2	5/07/24	ADDENDUM 3	MR	RDB
1	4/17/24	ADDENDUM 2	MR	RDB

Registered Professional Engineer (Civil) 42726 ROB D. BRYANT Date Signed 02/ 22/24 ARIZONA U.S.A.

DESIGN: R. BRYANT
DRAWN: D. LEWCHANIN / M. PRICE
CHECKED: R. BRYANT
APPROVED: R. BRYANT

WATERWORKS ENGINEERS
SCOTTSDALE, AZ

CITY OF PRESCOTT ARIZONA

YAVAPAI HILLS LIFT STATION

GENERAL
COVER SHEET

DATE: FEBRUARY 2024
PROJECT NO.: 21-064
DRAWING NO.: G-001
SHEET NO.: 1

GENERAL ABBREVIATIONS

@	AT
AB	ANCHOR BOLT, AGGREGATE BASE
AC	ASPHALTIC CONCRETE, ASBESTOS CEMENT
ACI	AMERICAN CONCRETE INSTITUTE
ACU	AIR CONDITIONING UNIT
ADD	ADDITIONAL
ADH AB	ADHESIVE ANCHOR BOLT
ADJ	ADJACENT, ADJUSTABLE
AE	ANALYZER ELEMENT
AFF	ABOVE FINISH FLOOR
AFG	ABOVE FINISH GRADE
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
AIT	ANALYZER INDICATOR/TRANSMITTER
AL, ALUM	ALUMINUM
ALTN	ATERNATE
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APPROX	APPROXIMATE
APVD	APPROVED
APWA	AMERICAN PUBLIC WORKS ASSOCIATION
ARCH, A	ARCHITECTURAL
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AUTO	AUTOMATIC
AUX	AUXILIARY
AVE	AVENUE
AWG	AMERICAN WIRE GAGE
AWWA	AMERICAN WATER WORKS ASSOCIATION
B	BORING
BC	BEGIN CURVE, BOTTOM OF CURVE
BLDG	BUILDING
BLK	BLACK
BLM	BUREAU OF LAND MANAGEMENT
BM	BENCH MARK, BEAM
BOC	BACK OF CURB
BOG	BACK OF GUTTER
BOO	BOTTOM OF OPENING
BOT	BOTTOM
BRG	BRG
BVC	BEGINNING OF VERTICAL CURVE
C to C, CC	CENTER TO CENTER
C	CHANNEL (BEAM)
CATH	CATHODIC PROTECTION
CATV	CABLE TELEVISION
CB	CATCH BASIN
CCS	CENTRAL CONTROL SYSTEM
CE	CONDENSATE
CF	CUBIC FEET
CFM	CUBIC FEET PER MINUTE
CFS	CUBIC FEET PER SECOND
CHE	CHEMICAL TUBING
CHEM	CHEMICAL
CJ	CONSTRUCTION JOINT, CONTRACTION JOINT
CL	CENTERLINE
CLG	CEILING
CLR	CLEAR, CLEARANCE
CLSM	CONTROLLED LOW STRENGTH MATERIAL
CMU	CONCRETE MASONRY UNIT
CO	CLEANOUT
COL	COLUMN
COM	COMMUNICATION
COMB	COMBINED
CONC	CONCRETE
CONN	CONNECTION
CONT	CONTINUOUS, CONTINUATION
COORD	COORDINATE
COP	COPPER
CPLG	COUPLING
CPVC	CPVC
CTRD, CTD	CENTERED
CTR	CENTER
CU	COPPER
CU FT	CUBIC FOOT
CU IN	CUBIC INCH
CU YD	CUBIC YARD
CULV	CULVERT
°C	CELSIUS
d	PENNY
DBA	DEFORMED BAR ANCHOR
DBL	DOUBLE
DET	DETAIL
DF	DOUGLAS FIR/LARCH
DI	DROP INLET
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DIR	DIRECTION
DIST	DISTANCE
DN	DOWN
do	DITTO
DPT	DIFFERENTIAL PRESSURE TRANSMITTER
DR	DRAIN
DWG	DRAWING

E	EAST
EA	EACH
EC	END CURVE
ECC	ECCENTRIC
EF	EACH FACE
EG	EXISTING GRADE
EL	ELEVATION
ELC	ELECTRIC LOAD CENTER
ELEC	ELECTRIC, ELECTRICAL
EM	EMISSION MEASUREMENT
EMR	EMERGENCY
ENGR	ENGINEER
EP	EDGE OF PAVEMENT
EQL SP	EQUALLY SPACED
EQPT	EQUIPMENT
ESC	EROSION SEDIMENT CONTROL
ESA	ENVIRONMENTALLY SENSITIVE AREA
EVC	END OF VERTICAL CURVE
EW	EACH WAY
EWEF	EACH WAY, EACH FACE
EXC	EXCAVATE
EXP	EXPOSED, EXPANSION
EXP JT	EXPANSION JOINT
EXST	EXISTING
FB	FLAT BAR
FBE	FUSION BOND EPOXY
FCO	FLOOR CLEAN OUT
FD	FLOOR DRAIN
FDA	FLOOR DRAIN W/ INTEGRAL TRAP
FDN	FOUNDATION
FEXT	FIRE EXTINGUISHER
FF	FINISH FLOOR
FG	FINISH GRADE, FUEL GAS
FHY	FIRE HYDRANT
FL	FLOOR, FLOW LINE
FLG	FLANGE
FLH	FLAT HEAD
FLL	FLOW LINE
FM	FORCE MAIN
FNSH	FINISH
FOC	FACE OF CONCRETE
FOE	FLANGED ONE END
FRP	FIBERGLASS REINFORCED PLASTIC
FS	FINISHED SURFACE
FT	FOOT OR FEET
FWD	FORWARD
°F	DEGREE FAHRENHEIT
GAL	GALLON
GALV	GALVANIZED
GB	GRADE BREAK
GCO	GRADE CLEAN OUT
GD	GENERAL DRAINAGE
GL	GLASS
GPD	GALLONS PER DAY
GPH	ALLONS PER HOUR
GPM	GALLONS PER MINUTE
GRTG	GRATING
GVL	GRAVEL
GW	GROUND WATER
HD	HUB DRAIN
HDR	HEADER
HDW	HARDWARE
HGL	HYDRAULIC GRADE LINE
HGT	HEIGHT
HM	HOLLOW METAL
HORIZ	HORIZONTAL
HP	HORSEPOWER
HPT	HIGH POINT
HR	HANDRAIL
HSS	HOLLOW STRUCTURE STEEL
HWL	HIGH WATER LEVEL
HWY	HIGHWAY
HYD	HYDRANT
I & C	INSTRUMENTATION & CONTROL
ID	INSIDE DIAMETER
IF	INSIDE FACE
ID	INSIDE DIAMETER
IN	INCH
INSTM	INSTRUMENTATION
INSUL	INSULATE, INSULATION
INV	INVERT
IR	IRON ROD
JT	JOINT
KIP	THOUSAND POUNDS
KW	KILOWATT

L	LEFT, ANGLE, LENGTH
LAB	LABORATORY
LAT'L	LATERAL
LB	POUNDS
LB/CU FT	POUNDS PER CUBIC FOOT
LF	LINEAR FEET
LG	LONG
LONG	LONGITUDINAL
LP	LOW POINT
LR	LONG RADIUS
MAX	MAXIMUM
MCC	MOTOR CONTROL CENTER
MCJ	MASONRY CONTROL JOINT
MECH	MECHANICAL
MFR	MANUFACTURER
MGD	MILLION GALLONS PER DAY
MH	MANHOLE
MIN	MINIMUM, MINUTE
MISC	MISCELLANEOUS
MJ	MECHANICAL JOINT
MPH	MILES PER HOUR
MSNRY	MASONRY
MSP	MILL STEEL PIPE, MANUAL OF STANDARD PRACTICE
MTL	MATERIAL
N	NORTH
NC	NORMALLY CLOSED
NE	NORTHEAST
NIC	NOT IN CONTACT
NO	NUMBER, NUMBERING
NPT	NATIONAL PIPE THREAD
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OF	OUTSIDE FACE
OG	ORIGINAL GROUND
OHE	OVERHEAD ELECTRIC
OMRF	ORDINARY MOMENT RESISITNG FRAME
O TO	OUT TO OUT
OPNG	OPENING
OPP	OPPOSITE
OVF	OVERFLOW
OZ	OUNCE
PENT	PENETRATION
PI	POINT OF INTERSECTION
PJF	PREMOLDED JOINT FILLER
PL	PLATE, PROPERTY LINE
PLYWD	PLYWOOD
POB	POINT OF BEGINNING
POC	POINT OF CONNECTION
POE	POINT OF ENDING, PLAIN ONE END
PP, P&P	PLAN AND PROFILE, POWER POLE
PPM	PARTS PER MILLION
PRC	POINT OF REVERSE CURVE
PRCST	PRECAST
PREFAB	PREFABRICATED
PRESS	PRESSURE
PRI	PRIMARY
PROP	PROPERTY
PS	PUMP STATION
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH, GAUGE
PT	POINT OF TANGENCY
P.U.E.	PUBLIC UTILITY EASEMENT
PVC	POINT OF VERTICAL CURVE
PVCGS	POLYVINYL CHLORIDE PLASTIC-GRAVITY SEWER TYPE
PVCW	POLYVINYL CHLORIDE PLASTIC-WATER DISTRIBUTION SERVICE TYPE
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENCY, PRIVATE
R, RAD	RADIUS
RC	REINFORCED CONCRETE
RD	ROAD, ROOF DRAIN
REF	REFER, REFERENCE
REINF	REINFORCED, REINFORCING, REINFORCE
REQD	REQUIRED
RLS	RUBBER LINED STEEL
RM	ROOM
RO	ROUGH OPENING
RP	RADIUS POINT
R/R	REMOVE AND REPLACE
RST	REINFORCING STEEL

RT	RIGHT
RV	ROOF VENT
R/W	RIGHT-OF-WAY
S	I-BEAM, SOUTH, SLOPE
S =	SLOPE EQUALS
SAT	SUSPENDED ACOUSTIC TILE
SCFH	STANDARD CUBIC FEET PER HOUR
SCFM	STANDARD CUBIC FEET PER MINUTE
SCH	SCHEDULE
SD	STORM DRAIN
SE	SOUTHEAST
SEC	SECONDARY
SECT	SECTION
SH	SHEET
SIM	SIMILAR
SLP	SLOPE
SMP	SAMPLE
SOLN	SOLUTION
SOW	SLIP ON WELD
SP	SPACE OR SPACES
SPEC	SPECIFICATIONS
SPLY	SUPPLY
SQ	SQUARE
SQ FT	SQUARE FOOT
SQ IN	SQUARE INCH
SS	SANITARY SEWER
SSMH	SANITARY SEWER MANHOLE
STA	STATION
STD	STANDARD
STIF	STIFFENER
STL	STEEL
STR	STRAIGHT
STRL	STRUCTURAL
SUBFL	SUBFLOOR
SUP	SUPPLY
SUSP	SUSPEND
SW	SOUTHWEST
SYMM	SYMMETRICAL
T	TANGENT, TELEPHONE LINE, TOP
T&B	TOP AND BOTTOM
T&G	TONGUE AND GROOVE
t, T	THICKNESS
TBG	TUBING
TCE	TEMPORARY CONST EASEMENT
TDH	TOTAL DYNAMIC HEAD
TECH	TECHNICAL
TEL	TELEPHONE
TEMP	TEMPORARY, TEMPERATURE
TF	TOP FACE
THD	THREAD
THK	THICK
TNK	TANK
TOC	TOP OF CURB, TOP OF CONCRETE
TOW	TOP OF WALL
TOF	TOP OF FOOTING
TP	TURNING POINT, TEST PIT
TRANS	TRANSITION
TRANSV	TRANSVERSE
TST	TOP OF STEEL
TT	THRUST TIE
TWS	TRACER WIRE STATION
TYP	TYPICAL
UBC	UNIFORM BUILDING CODE
UD	UNDERDRAIN
UG	UNDERGROUND
UH	UNIT HEATER
UNK	UNKNOWN
UNO	UNLESS NOTED OTHERWISE
V	VOLT
VC	VERTICAL CURVE
VERT	VERTICAL
VPI	VERTICAL POINT OF INTERSECTION
VPS	VENEER PLASTER SYSTEM
VTR	VENT THRU ROOF
W/	WITH
W	WIDE FLANGE (BEAM), WEST, WATER
WC	WATER CLOSET
WD	WOOD
WH	WATER HEATER
WM	WATER METER
WR	WATER RESISTANT
WS	WATER SURFACE, WATER STOP
W SH ST	WEATHERING SHEET STEEL
WSE	WATER SURFACE ELEVATION
WT	WATER TIGHT
WTR	WATER
WW	WASTEWATER
WWF	WELDED WIRE FABRIC
XFMR	TRANSFORMER
Y	YARD

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING

0 1"

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

NO	DATE	REVISION	BY	APVD
1	4/17/24	ADDENDUM 2	MR	RDB

Registered Professional Engineer (Civil) 12726 ROB D. BRYANT Date Signed 02/ 22/24 ARIZONA U.S.A.

DESIGN: R. BRYANT
DRAWN: D. LEWCHANIN
CHECKED: R. BRYANT
APPROVED: R. BRYANT

WATERWORKS ENGINEERS
SCOTTSDALE, AZ

CITY OF PRESCOTT ARIZONA

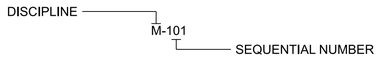
YAVAPAI HILLS LIFT STATION

GENERAL
ABBREVIATIONS

DATE: FEBRUARY 2024
PROJECT NO.: 21-064
DRAWING NO.: G-002
SHEET NO.: 2

FILENAME: L:\CAD\Projects\21-064 Prescott Yavapai Hills LS\Deliverables\2164D-G002.dgn
PLOT DATE: 2/14/2024
PLOT TIME: 3:11:25 PM

DRAWING NUMBER



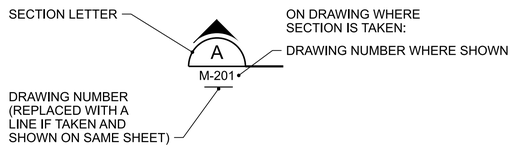
DISCIPLINE

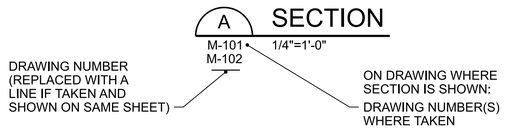
LETTER	DISCIPLINE
G	GENERAL
D	DEMOLITION
C	CIVIL YARD
A	ARCHITECTURAL
S	STRUCTURAL
M	MECHANICAL
H	HEATING, VENTILATION AND COOLING
P	PLUMBING
E	ELECTRICAL
N	INSTRUMENTATION

DRAWING SERIES

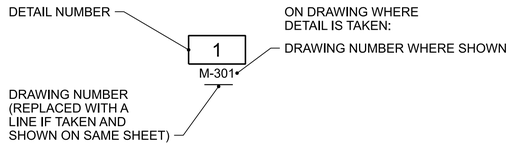
NUMBER SERIES	DRAWING TYPE
000	GENERAL
100	PLANS
200	SECTIONS
300	DETAILS
400	ELEVATIONS/ ISOMETRICS
500	SCHEMATICS
600	SCHEDULES
700	NOT USED
800	NOT USED
900	DEMOLITION

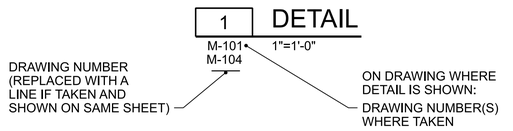
SECTION





DETAIL



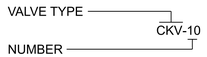


STANDARD DETAIL

NOTES:

1. STANDARD DETAIL CALLOUTS ARE SHOWN TO INDICATE DETAIL REQUIRED AT SPECIFIC LOCATIONS. DETAILS ARE NOT CALLED OUT AT ALL LOCATIONS. WHERE A STANDARD DETAIL CALLOUT IS NOT SHOWN, THE CONTRACTOR SHALL USE THE STANDARD DETAIL MOST APPLICABLE AND CONSISTENT WITH OTHER WORK UNDER THIS CONTRACT.

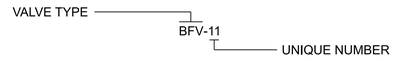
STANDARD VALVE AND OPERATOR



NOTES:

1. SEE SPECIFICATION SECTION 15200.

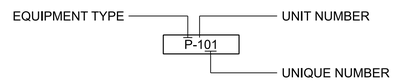
UNIQUE VALVE AND OPERATOR



NOTES:

1. SEE SPECIFICATION SECTION 15200 FOR VALVE SCHEDULE.

EQUIPMENT DESIGNATION



LINE TYPE APPEARANCE

———	BLACK	NEW 'ON' DISCIPLINE
———	LIGHT OR MEDIUM GRAY OR SCREENED	EXISTING 'ON' OR 'OFF' DISCIPLINE
———	DARK GRAY	NEW 'OFF' DISCIPLINE

GENERAL SYMBOLOGY

	STRUCTURE OR EQUIPMENT TO BE REMOVED OR DEMOLISHED
	EQUIPMENT TO BE SALVAGED

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING

0 1"

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

NO	DATE	REVISION	BY	APVD
1	4/17/24	ADDENDUM 2	MR	RDB

Registered Professional Engineer
42726
ROB D. BRYANT
Date Signed 02/ 22/ 24
ARIZONA U.S.A.

DESIGN: A. PRADHAN
DRAWN: D. LEWCHANIN
CHECKED: R. BRYANT
APPROVED: R. BRYANT

WATERWORKS ENGINEERS
SCOTTSDALE, AZ

CITY OF PRESCOTT ARIZONA

YAVAPAI HILLS LIFT STATION

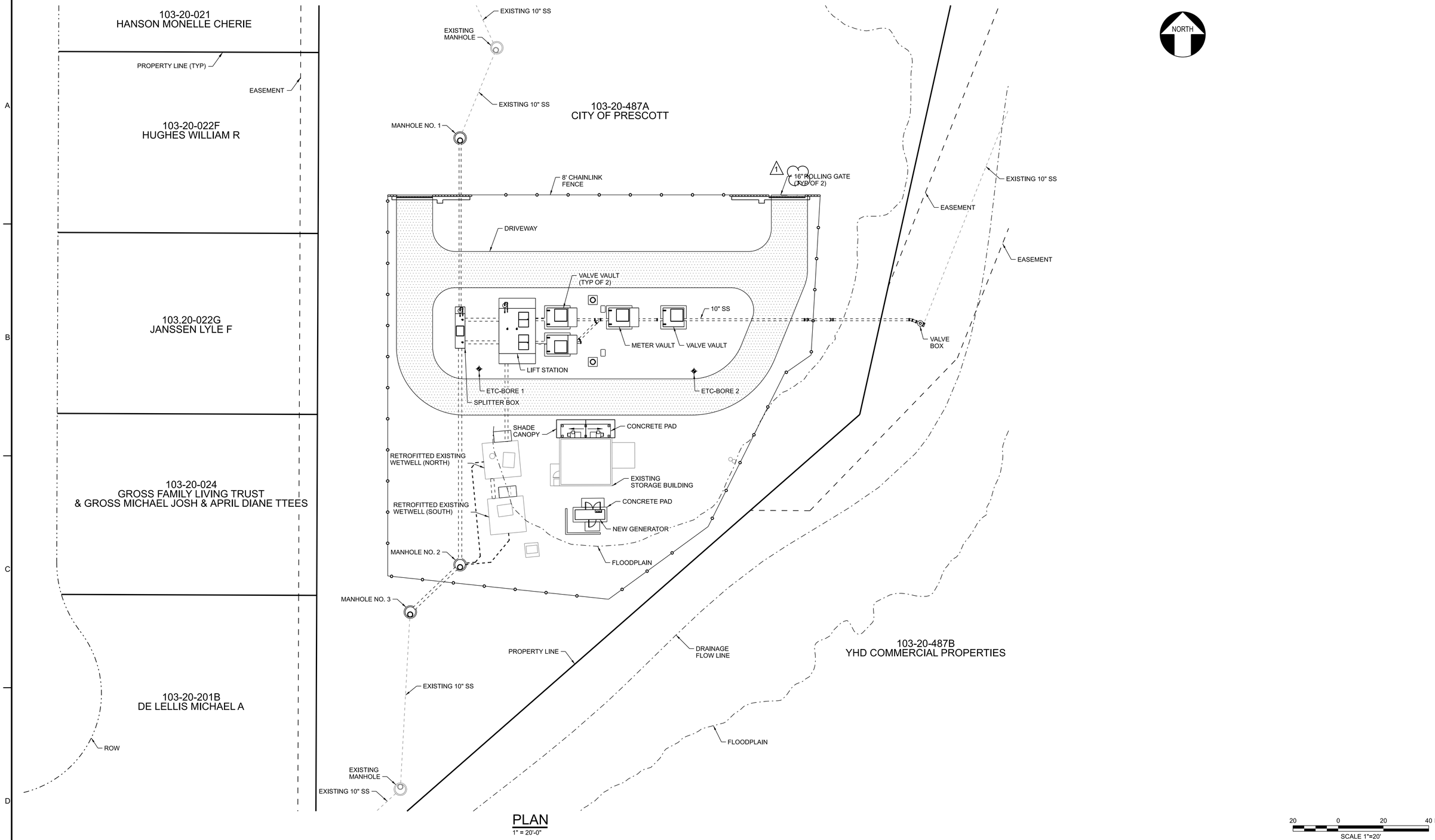
GENERAL

STANDARD DESIGNATIONS

DATE: FEBRUARY 2024
PROJECT NO.: 21-064
DRAWING NO.: G-003
SHEET NO.: 3

FILENAME: L:\CAD\Projects\21-064 Prescott Yavapai Hills LS\Deliverables\2164D-G003.dgn

PLOT DATE: 2/14/2024 PLOT TIME: 3:25:13 PM



PLAN
1" = 20'-0"

20 0 20 40 FEET
SCALE 1"=20'

1	4/17/24	ADDENDUM 2	MR	RDB
NO	DATE	REVISION	BY	APVD

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

Registered Professional Engineer (Civil) 42726 ROB D. BRYANT Date Signed 02/22/24 ARIZONA U.S.A.

DESIGN R. BRYANT
DRAWN D. LEWCHANIN
CHECKED R. BRYANT
APPROVED R. BRYANT

WATERWORKS ENGINEERS
SCOTTSDALE, AZ

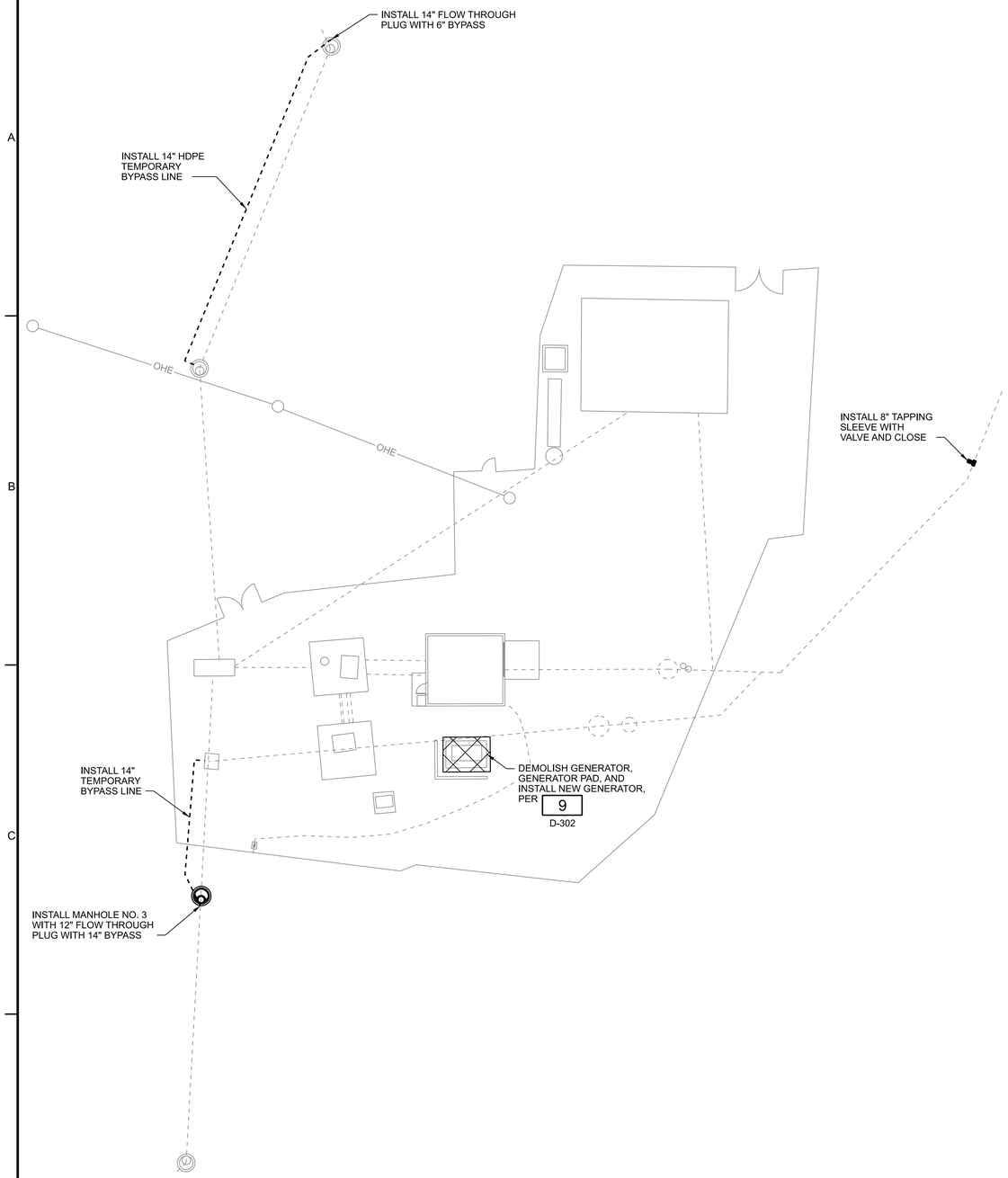
CITY OF PRESCOTT ARIZONA

YAVAPAI HILLS
LIFT STATION

GENERAL
OVERALL SITE PLAN

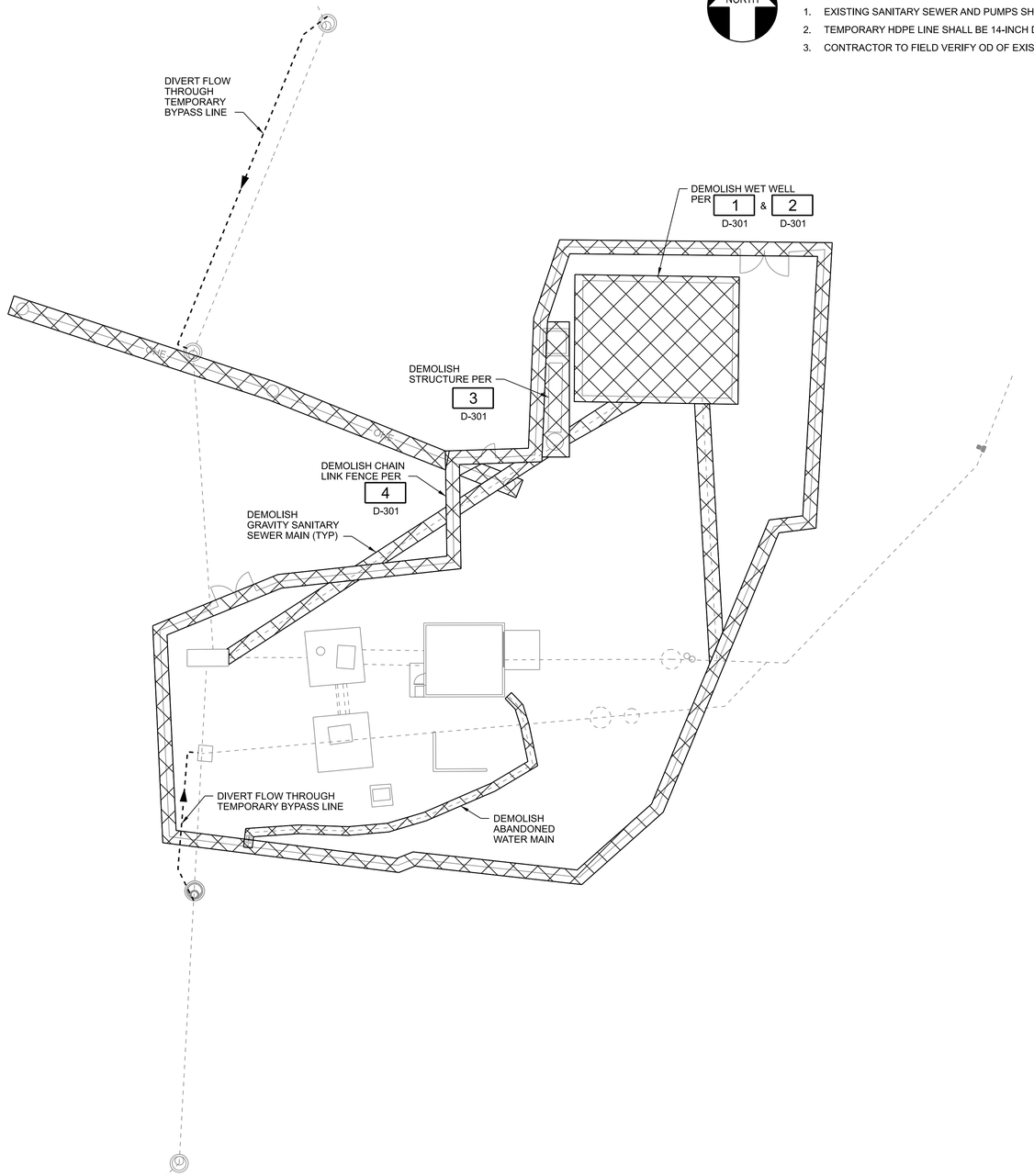
DATE FEBRUARY 2024
PROJECT NO. 21-064
DRAWING NO. G-004
SHEET NO. 4

FILENAME: L:\CAD\Projects\21-064 Prescott Yavapai Hills LS\Deliverables\2164D-G004.dgn
PLOT DATE: 2/14/2024
PLOT TIME: 3:26:10 PM



PLAN - PHASE 1

1" = 20'-0"



PLAN - PHASE 2

1" = 20'-0"

NORTH

NOTES:

1. EXISTING SANITARY SEWER AND PUMPS SHALL REMAIN ONLINE.
2. TEMPORARY HDPE LINE SHALL BE 14-INCH DR 21 (100 PSI) PIPE.
3. CONTRACTOR TO FIELD VERIFY OD OF EXISTING FORCEMAIN.

20 0 20 40 FEET

SCALE 1"=20'

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING

0 1"

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

NO	DATE	REVISION	BY	APVD
1	4/17/24	ADDENDUM 2	MR	RDB

Registered Professional Engineer (Civil) CERTIFICATE NO. 42726 ROB D. BRYANT Date Signed 02/27/24 ARIZONA U.S.A.

DESIGN	R. BRYANT
DRAWN	D. LEWCHANIN
CHECKED	R. BRYANT
APPROVED	R. BRYANT

WATERWORKS ENGINEERS

SCOTTSDALE, AZ

CITY OF PRESCOTT ARIZONA

YAVAPAI HILLS LIFT STATION

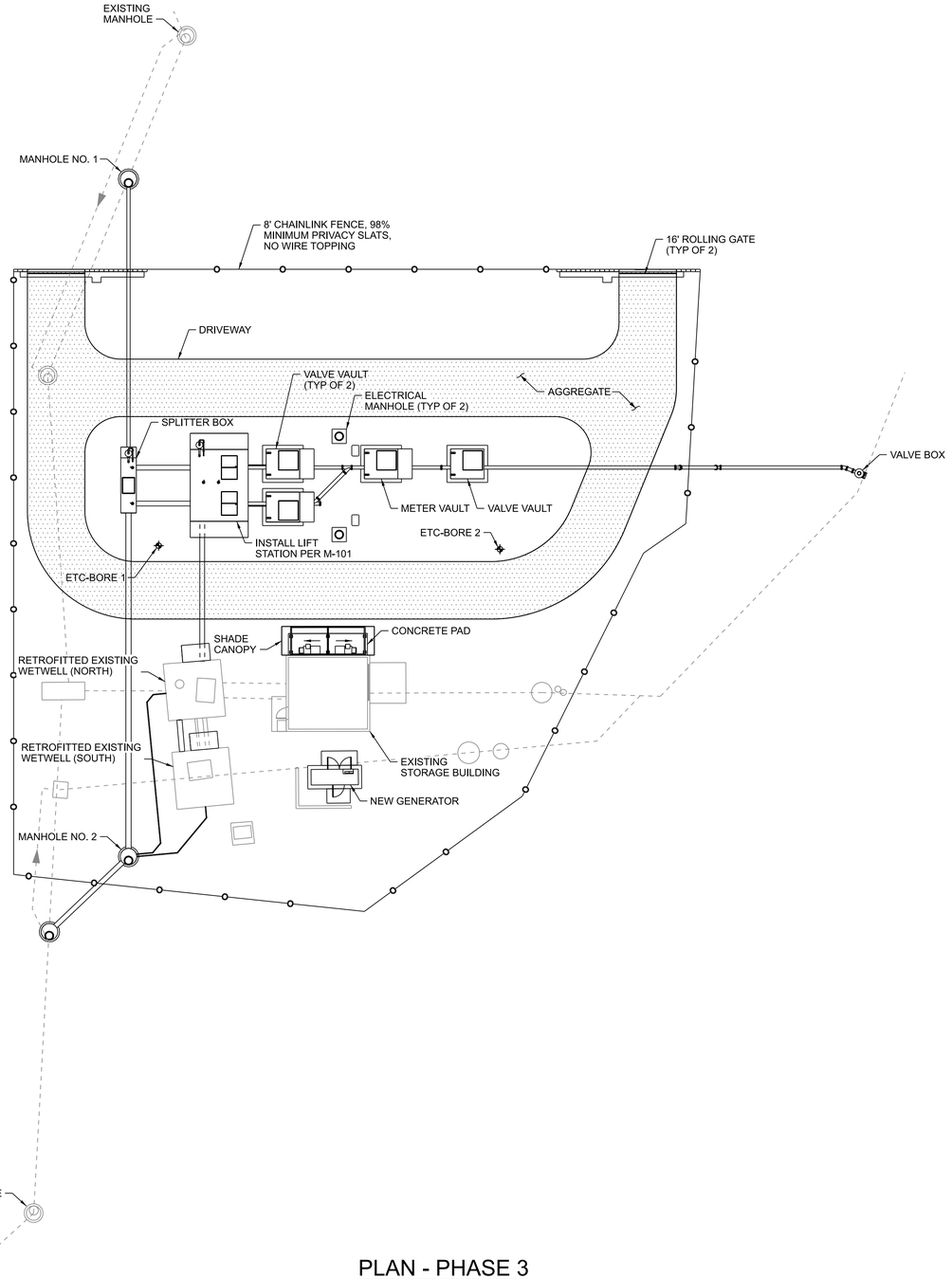
GENERAL

TEMPORARY BYPASS LINE PHASING PLAN - PHASE 1 & 2

DATE	FEBRUARY 2024
PROJECT NO.	21-064
DRAWING NO.	G-005
SHEET NO.	5

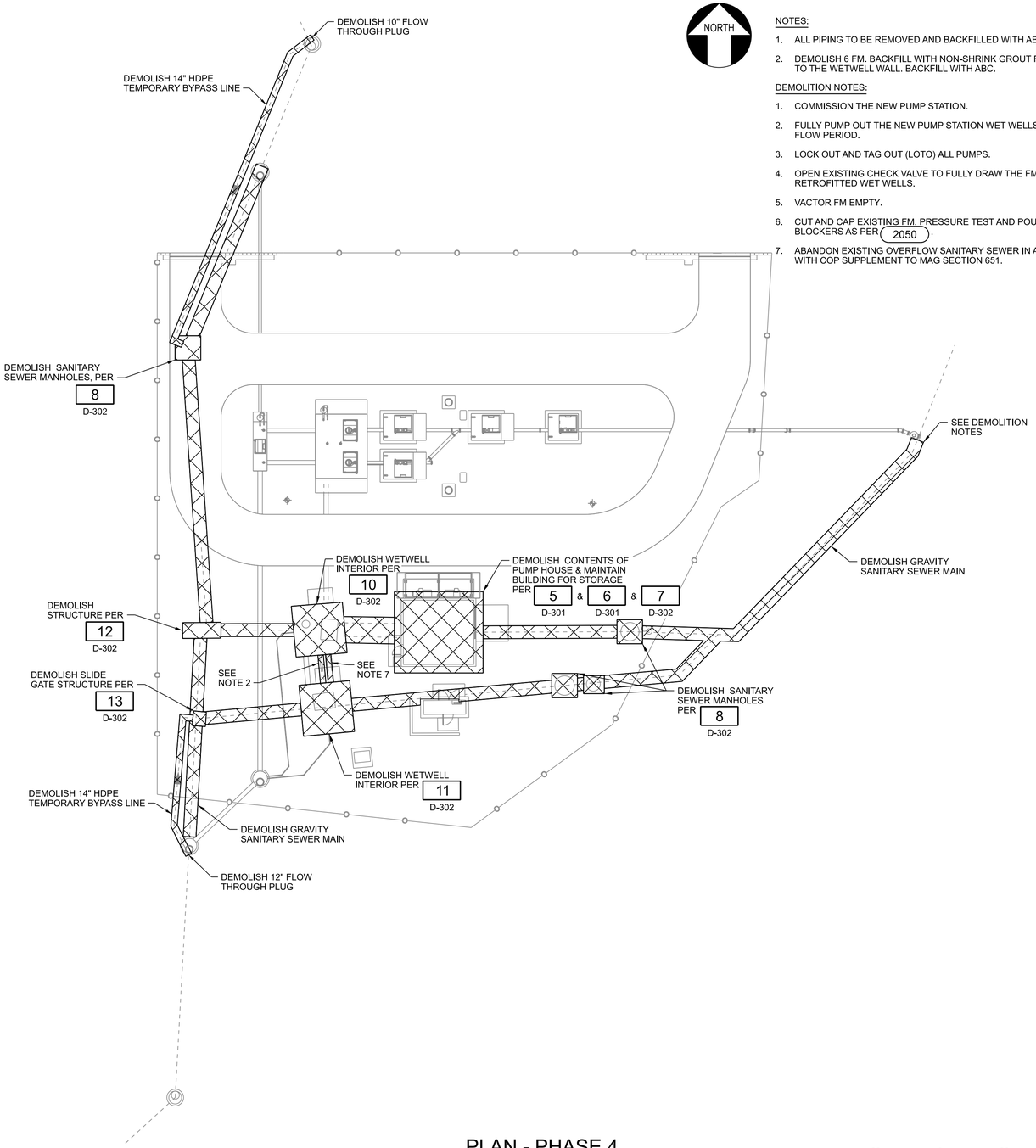
FILENAME: L:\CAD\Projects\21-064 Prescott Yavapai Hills LS\Deliverables\2164D-G005.dgn

PLOT DATE: 2/14/2024 PLOT TIME: 3:26:44 PM



PLAN - PHASE 3

1" = 20'-0"



PLAN - PHASE 4

1" = 20'-0"

NORTH

NOTES:

1. ALL PIPING TO BE REMOVED AND BACKFILLED WITH ABC.
2. DEMOLISH 6 FM. BACKFILL WITH NON-SHRINK GROUT FILL, SMOOTH TO THE WETWELL WALL. BACKFILL WITH ABC.

DEMOLITION NOTES:

1. COMMISSION THE NEW PUMP STATION.
2. FULLY PUMP OUT THE NEW PUMP STATION WET WELLS DURING LOW FLOW PERIOD.
3. LOCK OUT AND TAG OUT (LOTO) ALL PUMPS.
4. OPEN EXISTING CHECK VALVE TO FULLY DRAW THE FM TO EXISTING RETROFITTED WET WELLS.
5. VACTOR FM EMPTY.
6. CUT AND CAP EXISTING FM. PRESSURE TEST AND POUR THRUST BLOCKERS AS PER (2050).
7. ABANDON EXISTING OVERFLOW SANITARY SEWER IN ACCORDANCE WITH COP SUPPLEMENT TO MAG SECTION 651.

20 0 20 40 FEET

SCALE 1"=20'

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING

0 1"

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

NO	DATE	REVISION	BY	APVD
1	4/17/24	ADDENDUM 2	MR	RDB

Registered Professional Engineer (Civil) 42726 ROB D. BRYANT Date Signed 02/22/24 ARIZONA U.S.A.

DESIGN: R. BRYANT
DRAWN: D. LEWCHANIN
CHECKED: R. BRYANT
APPROVED: R. BRYANT

WATERWORKS ENGINEERS
SCOTTSDALE, AZ

CITY OF PRESCOTT ARIZONA

YAVAPAI HILLS LIFT STATION

GENERAL

TEMPORARY BYPASS LINE PHASING PLAN - PHASE 3 & 4

DATE: FEBRUARY 2024
PROJECT NO.: 21-064
DRAWING NO.: G-006
SHEET NO.: 6

FILENAME: L:\CAD\Projects\21-064 Prescott Yavapai Hills LS\Deliverables\2164D-G006.dgn

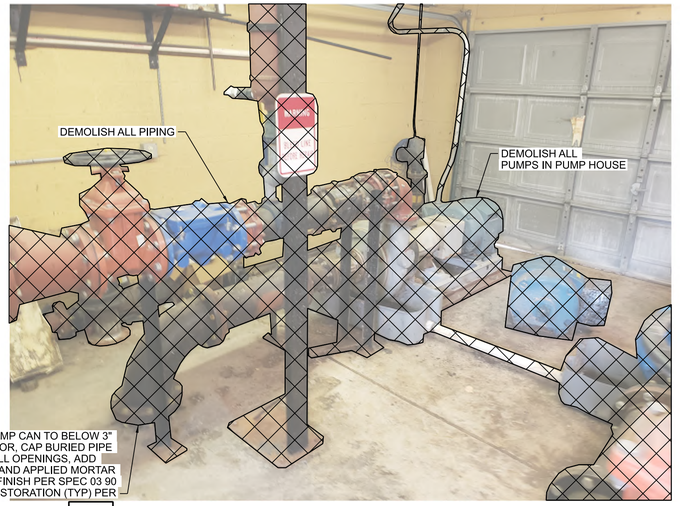
PLOT DATE: 2/14/2024 PLOT TIME: 3:27:22 PM

1 DETAIL
D-101 NTS

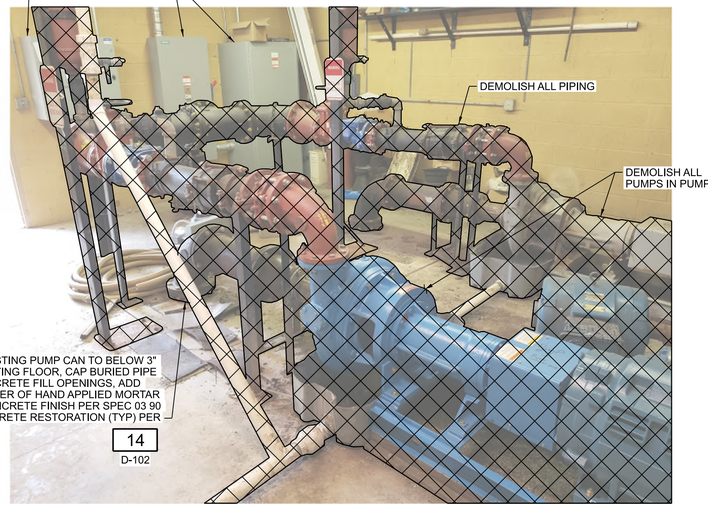
2 DETAIL
D-101 NTS

3 DETAIL
D-101 NTS

4 DETAIL
D-101 NTS



5 DETAIL
D-101 NTS



6 DETAIL
D-101 NTS

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING

0 1"

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

NO	DATE	REVISION	BY	APVD
1	4/17/24	ADDENDUM 2	MR	RDB

Registered Professional Engineer (Civil)
42726
ROB D. BRYANT
Date Signed 02/ 22/24
ARIZONA U.S.A.

DESIGN R. BRYANT
DRAWN D. LEWCHANIN
CHECKED R. BRYANT
APPROVED R. BRYANT

WATERWORKS ENGINEERS
SCOTTSDALE, AZ

CITY OF PRESCOTT ARIZONA

YAVAPAI HILLS
LIFT STATION

DEMOLITION

DETAILS 1

DATE FEBRUARY 2024
PROJECT NO. 21-064
DRAWING NO. D-301
SHEET NO. 7

FILENAME: L:\CAD\Projects\21-064 Prescott Yavapai Hills LS\Deliverables\2164D-D301.dgn

PLOT DATE: 2/14/2024 PLOT TIME: 3:29:39 PM

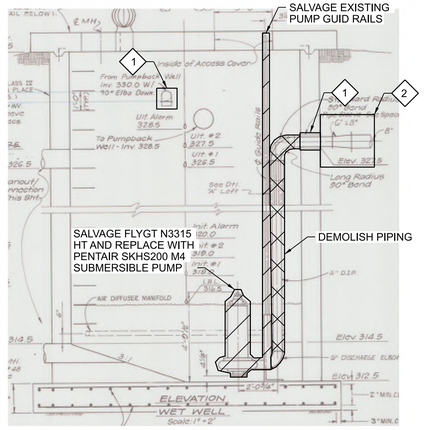
KEY NOTES:

1. FILL PIPE PENETRATION WITH NON-SHRINK GROUT FILL, SMOOTH TO WETWELL SURFACE.
2. BACKFILL WITH ABC, PER QUAD CITY STANDARD DETAIL 200Q-1, SIM.

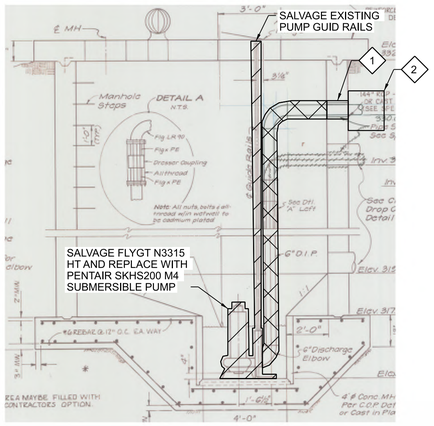
7 DETAIL
D-101 NTS

8 DETAIL
D-101 NTS

9 DETAIL
D-101 NTS



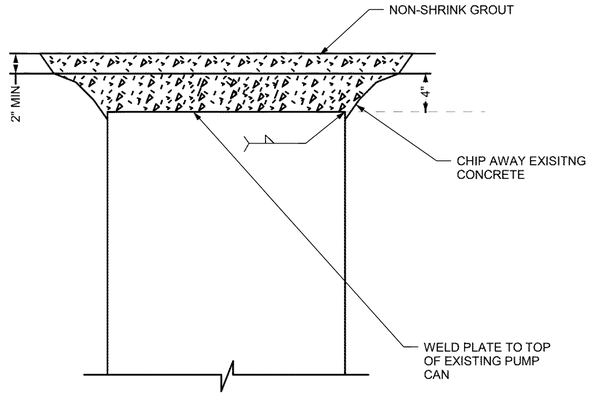
10 DETAIL
D-101 NTS



11 DETAIL
D-101 NTS

12 DETAIL
D-101 NTS

13 DETAIL
D-101 NTS



13 PUMP CAN DEMOLITION DETAIL
D-301 NTS

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING

0 1"

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

NO	DATE	REVISION	BY	APVD
1	4/17/24	ADDENDUM 2	MR	RDB

Registered Professional Engineer (Civil)
42726
ROB D. BRYANT
Date Signed 02/ 22/24
ARIZONA U.S.A.

DESIGN R. BRYANT
DRAWN D. LEWCHANIN
CHECKED R. BRYANT
APPROVED R. BRYANT

WATERWORKS ENGINEERS
SCOTTSDALE, AZ

CITY OF PRESCOTT ARIZONA

YAVAPAI HILLS LIFT STATION

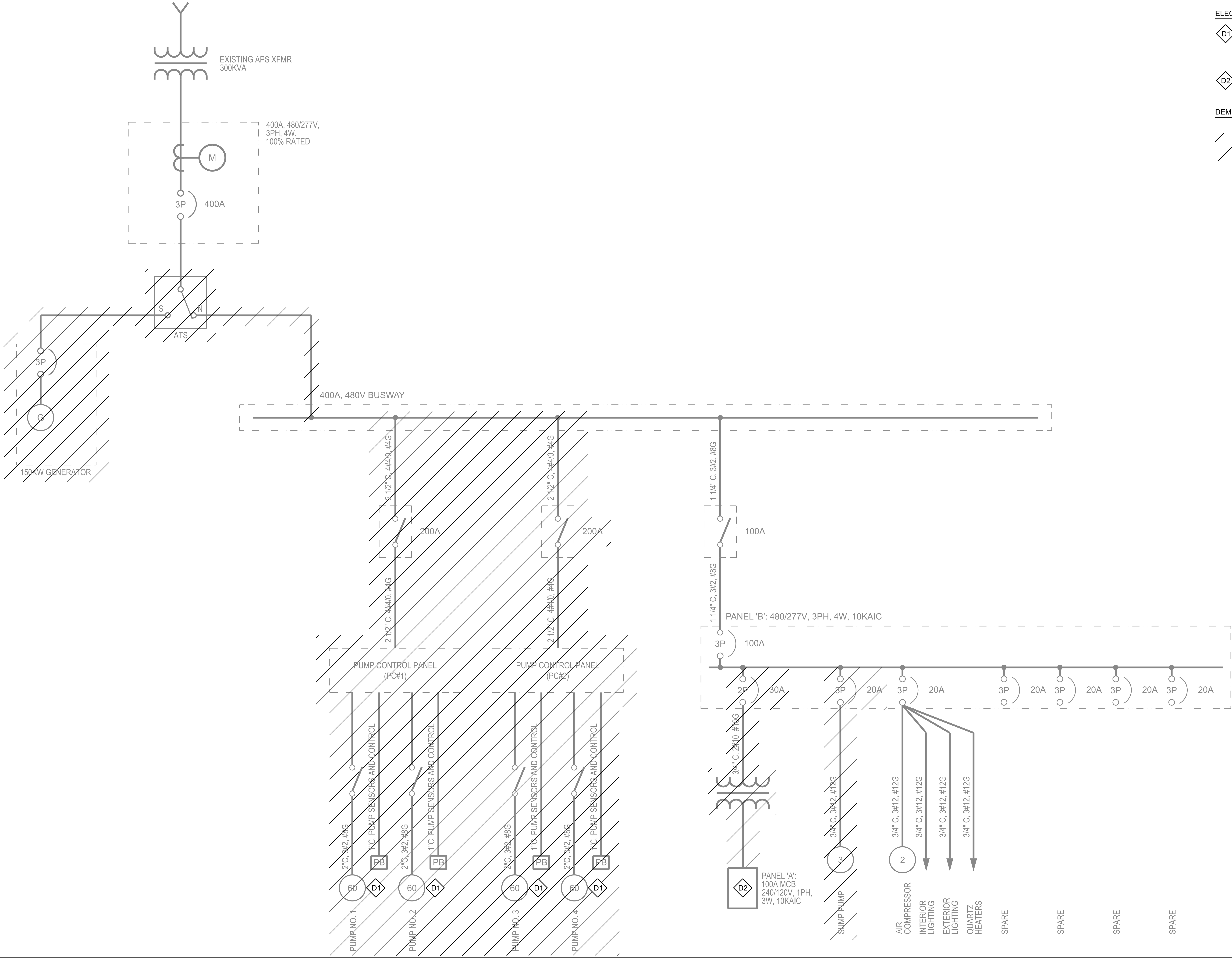
DEMOLITION

DETAILS 2

DATE FEBRUARY 2024
PROJECT NO. 21-064
DRAWING NO. D-302
SHEET NO. 8

FILENAME: L:\CAD\Projects\21-064 Prescott Yavapai Hills LS\Deliverables\2164D-D302.dgn

PLOT DATE: 2/14/2024 PLOT TIME: 3:34:03 PM



ELECTRICAL DEMOLITION KEY NOTES:

D1 CONTRACTOR SHALL FIELD IDENTIFY ALL PUMP SENSORS AND CONTROL DEVICES ASSOCIATED WITH THE EXISTING PUMPS. CONTRACTOR SHALL DEMOLISH THE EXISTING SENSORS, CONTROL DEVICES AND ASSOCIATED CONDUIT AND WIRE BACK TO SOURCE.

D2 PROTECT IN PLACE.

DEMOLITION LEGEND:

INDICATES DEVICES, EQUIPMENT, CONDUIT AND WIRE TO BE DEMOLISHED

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING

0 1"

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

NO	DATE	REVISION	BY	APVD
1	4/17/24	ADDENDUM 2	MR	RDB

DESIGN T. ADAMS
DRAWN D. LEWCHANIN
CHECKED B. YOUNG
APPROVED R. BRYANT

WATERWORKS ENGINEERS
SCOTTSDALE, AZ

CITY OF PRESCOTT ARIZONA

YAVAPAI HILLS LIFT STATION

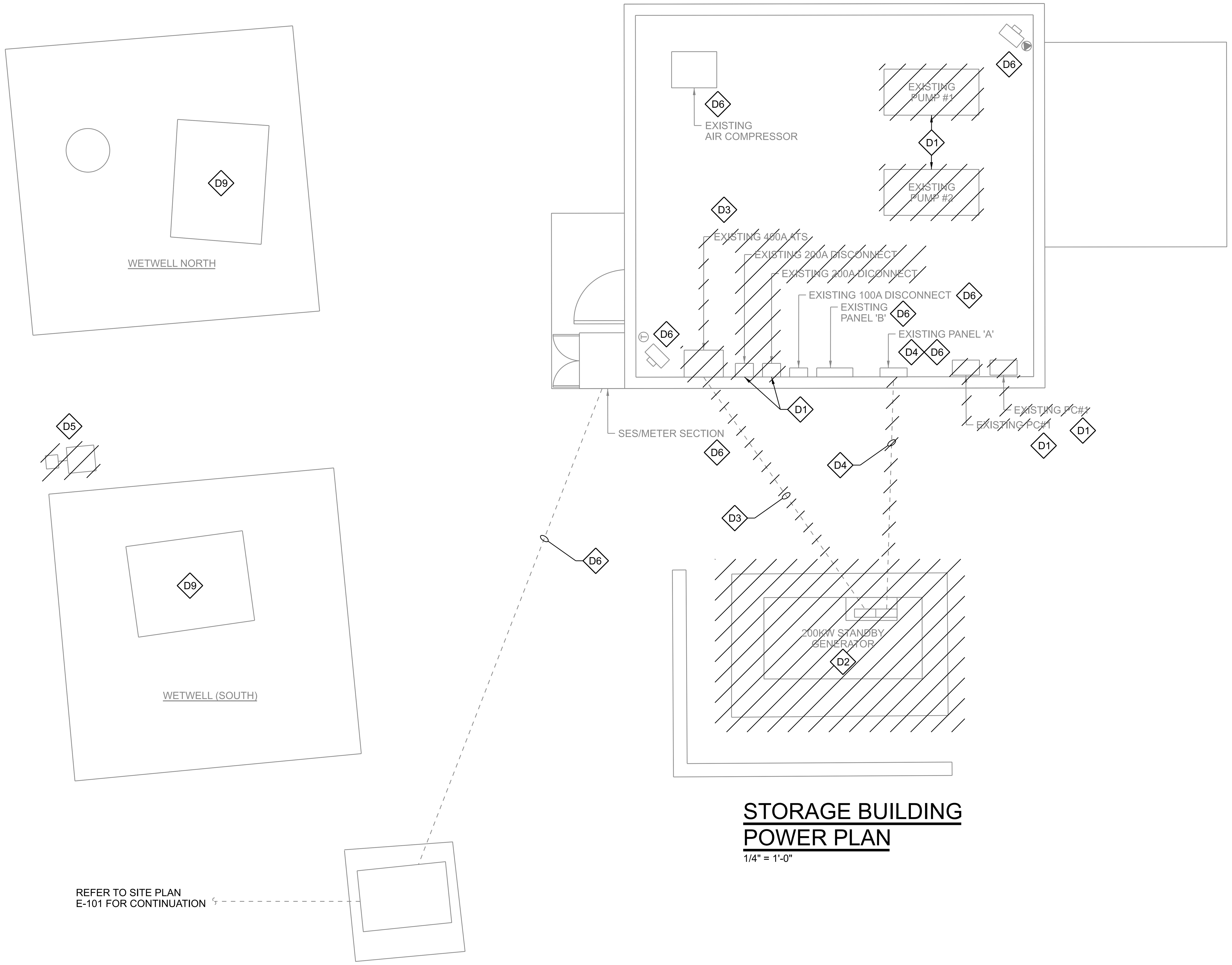
DEMOLITION

ELECTRICAL ONE LINE DIAGRAM

DATE FEBRUARY 2024
PROJECT NO. 21-064
DRAWING NO. ED-001
SHEET NO. 9

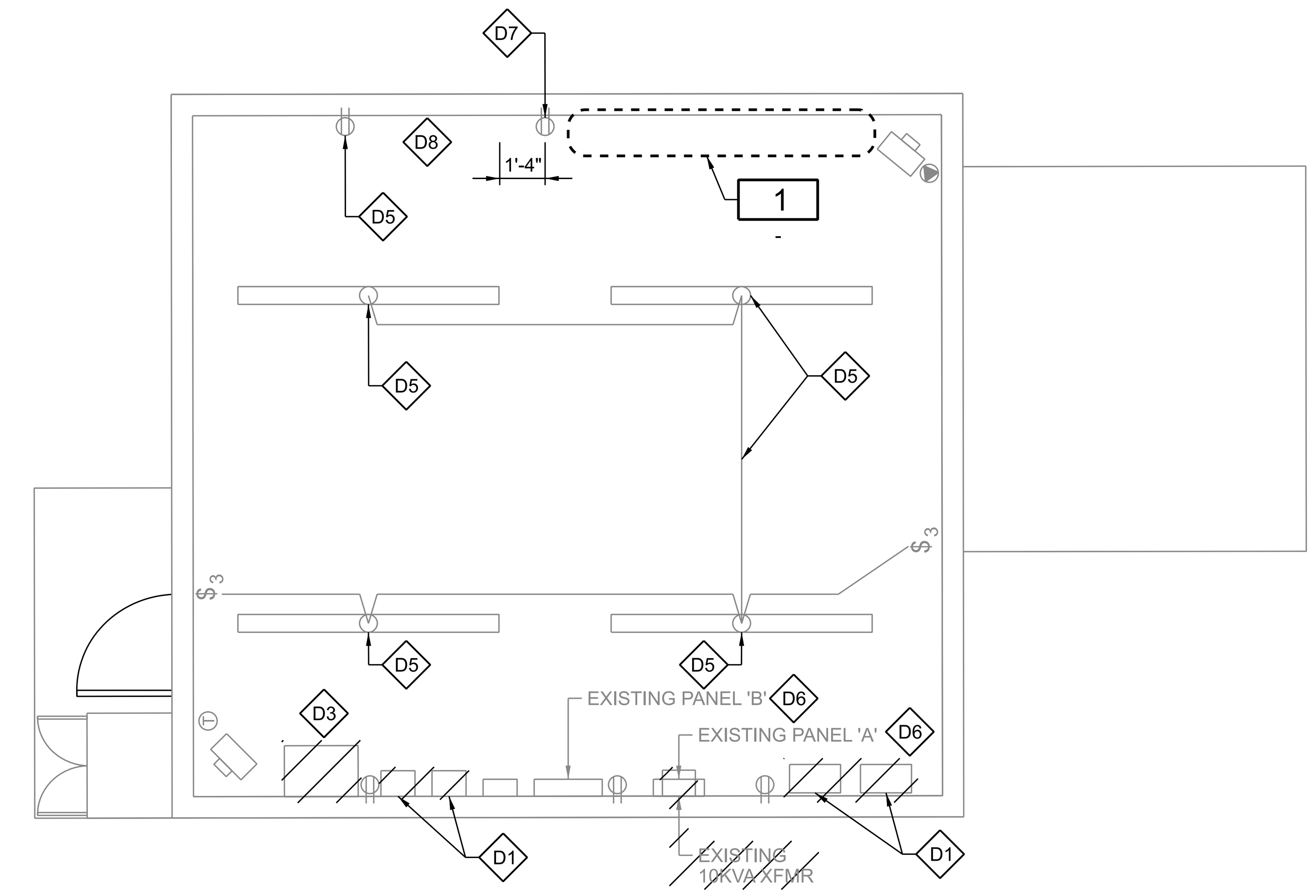
FILENAME: L:\CAD\Projects\21-064 Prescott Yavapai Hills LS\Deliverables\2164D-ED001.dgn

PLOT DATE: 2/14/2024 PLOT TIME: 3:46:30 PM



STORAGE BUILDING POWER PLAN

1/4" = 1'-0"



STORAGE BUILDING LIGHTING PLAN

1/4" = 1'-0"

NORTH

ELECTRICAL DEMOLITION KEY NOTES:

- D1 CONTRACTOR SHALL FIELD IDENTIFY ALL PUMP SENSORS AND CONTROL DEVICES ASSOCIATED WITH THE EXISTING PUMPS. CONTRACTOR SHALL DEMOLISH THE EXISTING SENSORS, CONTROL DEVICES AND ASSOCIATED CONDUIT AND WIRE BACK TO SOURCE.
- D2 SEE DEMOLITION REQUIREMENTS OF EXISTING GENERATOR AND PAD ON DRAWINGS D-101 AND D-302 PRIOR TO BEGINNING NEW CONSTRUCTION.
- D3 SEE DEMOLITION REQUIREMENTS OF EXISTING ATS ON DRAWINGS D-302 PRIOR TO BEGINNING NEW CONSTRUCTION. DEMOLISH EXISTING CONDUIT AND WIRE BETWEEN ATS AND EXITING GENERATOR PRIOR TO NEW CONSTRUCTION.
- D4 DEMOLISH EXISTING CONDUIT AND WIRE BETWEEN EXISTING PANEL 'A', CKT# 1,3 AND EXISTING GENERATOR ACCESSORY PANEL PRIOR TO NEW CONSTRUCTION. PROTECT EXISTING 30A, 2-POLE BREAKER IN PLACE.
- D5 PROTECT IN PLACE EXISTING LIGHTS AND RECEPTACLES.
- D6 PROTECT IN PLACE EXISTING PANEL 'B' AND 'A'.
- D7 RELOCATE EXISTING RECEPTACLE 1'-4" WEST IN PREPARATION FOR NEW WORK. PROVIDE NEW WIRE AND CONDUIT TO MATCH EXISTING AS REQUIRED.
- D8 DEMOLISH EXISTING CONDUIT/PIPE STORAGE RACK LOCATED ON NORTH WALL IN PREPARATION FOR NEW WORK. FOR ADDITIONAL CLARIFICATION SEE 1/-.
- D9 DEMOLISH EXISTING SUMP PUMP, PUMP CABLE, LEVEL SWITCHES, DISCONNECT AND ASSOCIATED CONDUIT AND WIRE BACK TO SOURCE.

DEMOLITION LEGEND:

INDICATES DEVICES, EQUIPMENT, CONDUIT AND WIRE TO BE DEMOLISHED

1 DETAIL

NTS

4 0 4 8 FEET
SCALE 1/4"=1'-0"

VERIFY SCALE	NO	DATE	REVISION	BY	APVD		DESIGN / DRAWN / CHECKED / APPROVED				DEMOLITION	DATE
BAR IS ONE INCH ON ORIGINAL DRAWING 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	1	4/17/24	ADDENDUM 2	MR	RDB	[seal: ROB D. BRYANT, ARIZONA, U.S.A.]	DESIGN T. ADAMS; DRAWN D. LEWCHANIN; CHECKED B. YOUNG; APPROVED R. BRYANT	WATERWORKS ENGINEERS, SCOTTSDALE, AZ	CITY OF PRESCOTT ARIZONA	YAVAPAI HILLS LIFT STATION	ENLARGED STORAGE BUILDING PLANS	FEBRUARY 2024; PROJECT NO. 21-064; DRAWING NO. ED-002; SHEET NO. 10

CIVIL LEGEND

⊗ 158.5	SPOT ELEVATION
155	CONTOUR LINE
4:1	CUT SLOPE (HORIZ:VERT)
4:1	EMBANKMENT - FILL SLOPE (HORIZ:VERT)
	DRAINAGEWAY OR DITCH
	DIRECTION OF FLOW
	CENTER LINE, BUILDING, ROAD
	PROPERTY LINE
	RIGHT OF WAY, EASEMENT OR SETBACK
	STAGING OR WORK AREA LIMITS
N 1000.00 E 1000.00	STRUCTURE, BUILDING OR FACILITY LOCATION POINT COORDINATES
OR	STRUCTURE, BUILDING OR FACILITY
	RETAINING WALL
	CONCRETE CURB
	ARCHITECTURAL FENCE
	GUARD RAIL / BARRICADE
	CHAIN LINK FENCE WITH 3 STRAND BARBED WIRE TOPPING
	ARCHITECTURAL FENCE
// //	WIRE FENCE
X X	BARBED WIRE
	SINGLE SWING GATE
	DOUBLE SWING GATE
	SLIDING GATE
	CULVERT
	WALL
	BRUSH / TREE LINE
	TREE
OR OR	DEMOLITION
	AUTOMATIC AIR RELEASE VALVE
	MANUAL AIR RELEASE VALVE
	WATER SURFACE

CIVIL PATTERN LEGEND

	BEDROCK
	ROCKS OR RIPRAP
	SAND
	AGGREGATE BASE
	NATURAL SOIL
	COMPACTED SOIL
	CONCRETE
	GROUT
	CONTROLLED LOW STRENGTH MATERIAL (CLSM)
	PAVEMENT
	GRATING

NOTES:

1. EXISTING PIPING, EQUIPMENT AND TOPOGRAPHY ARE SHOWN SCREENED AND/OR LIGHT-LINED. NEW PIPING, EQUIPMENT, STRUCTURES AND FINISHED GRADE ARE SHOWN HEAVY-LINED.
2. THIS IS A STANDARD LEGEND SHEET. SOME SYMBOLS MAY APPEAR ON THIS SHEET BUT MAY NOT BE USED ON THE PLANS.

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING

0 1"

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

NO	DATE	REVISION	BY	APVD
1	4/17/24	ADDENDUM 2	MR	RDB

Registered Professional Engineer
42726
ROB D. BRYANT
Date Signed 02/ 22/ 24
ARIZONA U.S.A.

DESIGN: R. BRYANT
DRAWN: D. LEWCHANIN
CHECKED: R. BRYANT
APPROVED: R. BRYANT

WATERWORKS ENGINEERS
SCOTTSDALE, AZ

CITY OF PRESCOTT ARIZONA

YAVAPAI HILLS LIFT STATION

CIVIL

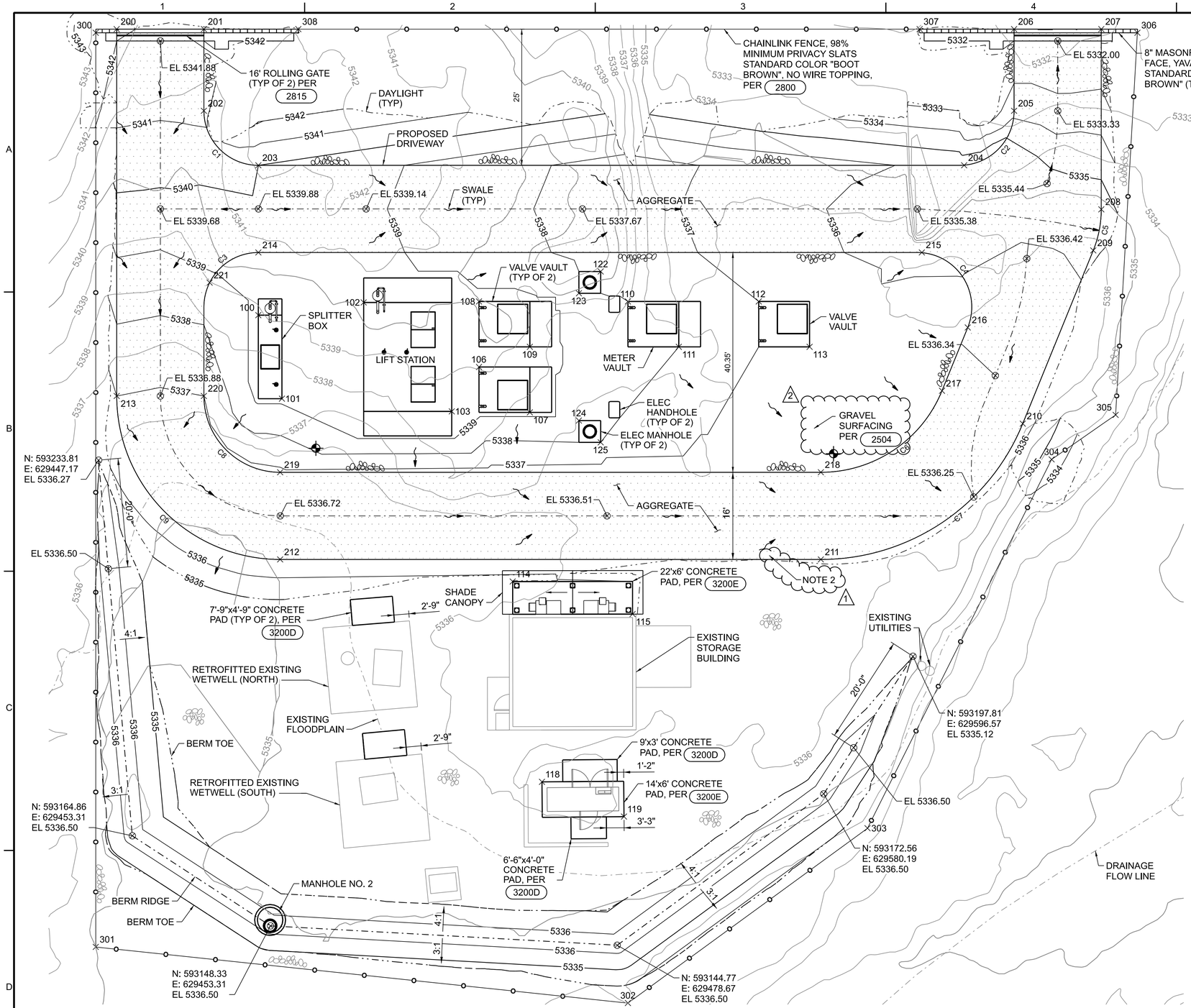
SYMBOLS & LEGEND

DATE: FEBRUARY 2024
PROJECT NO.: 21-064
DRAWING NO.: C-001
SHEET NO.: 11

FILENAME: L:\CAD\Projects\21-064 Prescott Yavapai Hills LS\Deliverables\2164D-C001.dgn

PLOT DATE: 2/14/2024

PLOT TIME: 3:27:56 PM



NOTES:

1. COLOR OF FENCE AND CMU BLOCK WALL SHALL BE SUBMITTED TO OWNER FOR APPROVAL
2. AGGREGATE GRADING SHALL BE PER DETAIL 2505

STRUCTURES POINT TABLE				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
100	593260.42	629476.45	5339.17	SPLITTER BOX FG
101	593245.09	629480.78	5339.17	SPLITTER BOX FG
102	593262.75	629495.78	5339.17	LIFT STATION
103	593242.75	629511.95	5339.17	LIFT STATION
106	593250.91	629516.95	5339.17	VALVE VAULT FG
107	593242.57	629526.28	5339.17	VALVE VAULT FG
108	593262.93	629516.95	5339.17	VALVE VAULT FG
109	593254.60	629526.28	5339.17	VALVE VAULT FG
110	593262.93	629544.28	5338.00	VALVE VAULT FG
111	593254.60	629553.61	5338.00	VALVE VAULT FG
112	593262.93	629568.28	5337.00	METER VAULT FG
113	593254.60	629577.61	5337.00	METER VAULT FG
114	593211.52	629523.12	5336.00	CONC PAD FG
115	593205.55	629545.13	5336.00	CONC PAD FG
118	593174.75	629528.50	5336.00	CONC PAD FG
119	593168.37	629543.55	5336.00	CONC PAD FG
122	593268.43	629539.28	5338.00	ELEC MANHOLE FG
123	593264.43	629535.28	5338.00	ELEC MANHOLE FG
124	593241.07	629535.28	5338.00	ELEC MANHOLE FG
125	593237.07	629539.28	5338.00	ELEC MANHOLE FG

PAVING POINT TABLE				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
200	593312.93	629450.45	5342.00	DRIVEWAY FG
201	593312.93	629466.46	5342.00	DRIVEWAY FG
202	593297.93	629466.45	5341.25	DRIVEWAY FG
203	593287.93	629476.45	5340.00	DRIVEWAY FG
204	593287.93	629605.98	5335.67	DRIVEWAY FG
205	593297.93	629615.14	5333.65	DRIVEWAY FG
206	593312.93	629615.14	5332.00	DRIVEWAY FG
207	593312.93	629631.14	5332.00	DRIVEWAY FG
208	593279.84	629631.14	5335.67	DRIVEWAY FG
209	593272.30	629629.67	5335.67	DRIVEWAY FG
210	593240.50	629616.73	5336.50	DRIVEWAY FG
211	593215.58	629579.68	5336.50	DRIVEWAY FG
212	593215.58	629480.45	5336.84	DRIVEWAY FG
213	593245.58	629450.45	5337.00	DRIVEWAY FG
214	593271.93	629476.45	5340.00	DRIVEWAY FG
215	593271.93	629598.21	5335.50	DRIVEWAY FG
216	593258.16	629606.64	5336.50	DRIVEWAY FG
217	593246.53	629601.91	5336.50	DRIVEWAY FG
218	593231.58	629579.68	5336.50	DRIVEWAY FG
219	593231.58	629480.45	5336.84	DRIVEWAY FG
220	593245.58	629466.45	5337.00	DRIVEWAY FG
221	593266.40	629467.51	5338.25	DRIVEWAY FG

FENCING POINT TABLE			
POINT #	NORTHING	EASTING	DESCRIPTION
300	593312.26	629446.61	CORNER OF FENCE
301	593144.45	629446.61	CORNER OF FENCE
302	593134.15	629544.27	CORNER OF FENCE
303	593166.24	629588.24	CORNER OF FENCE
304	593233.94	629622.02	CORNER OF FENCE
305	593242.11	629633.78	CORNER OF FENCE
306	593312.26	629637.77	CORNER OF FENCE
307	593312.93	629597.81	CORNER OF FENCE
308	593312.93	629483.79	CORNER OF FENCE

CURVE DATA TABLE			
CURVE	LENGTH	RADIUS	DELTA
C1	15.71	10.00	90°00'00"
C2	15.71	10.00	90°00'00"
C3	11.08	10.00	63°27'29"
C4	19.57	10.00	112°08'36"
C5	7.73	20.00	22°08'36"
C6	28.42	24.00	67°51'24"
C7	47.37	40.00	67°51'24"
C8	21.99	14.00	90°00'00"
C9	47.12	30.00	90°00'00"

CRUSHED AGGREGATE GRADATION TABLE	
SIEVE SIZES (SQUARE OPENINGS)	PERCENTAGE BY WEIGHT PASSING SIEVE
2"	100
1.5"	50-90
1.25"	25-50
1"	10-25
0.75"	0-10
NOTE: AGGREGATE TO HAVE A MINIMUM OF 3 FRACTURED FACES	

LEGEND

GRAVEL

AGGREGATE

PLAN

1" = 10'-0"

10 0 10 20 FEET

SCALE 1"-10'

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING

0 1"

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

NO	DATE	REVISION	BY	APVD
2	5/07/24	ADDENDUM 3	MR	RDB
1	4/17/24	ADDENDUM 2	MR	RDB

Registered Professional Engineer (Civil) 42726 ROB D BRYANT Date Signed 02/21/24 ARIZONA U.S.A.

DESIGN R. BRYANT
DRAWN D. LEWCHANIN
CHECKED R. BRYANT
APPROVED R. BRYANT

WATERWORKS ENGINEERS
SCOTTSDALE, AZ

CITY OF PRESCOTT ARIZONA

YAVAPAI HILLS LIFT STATION

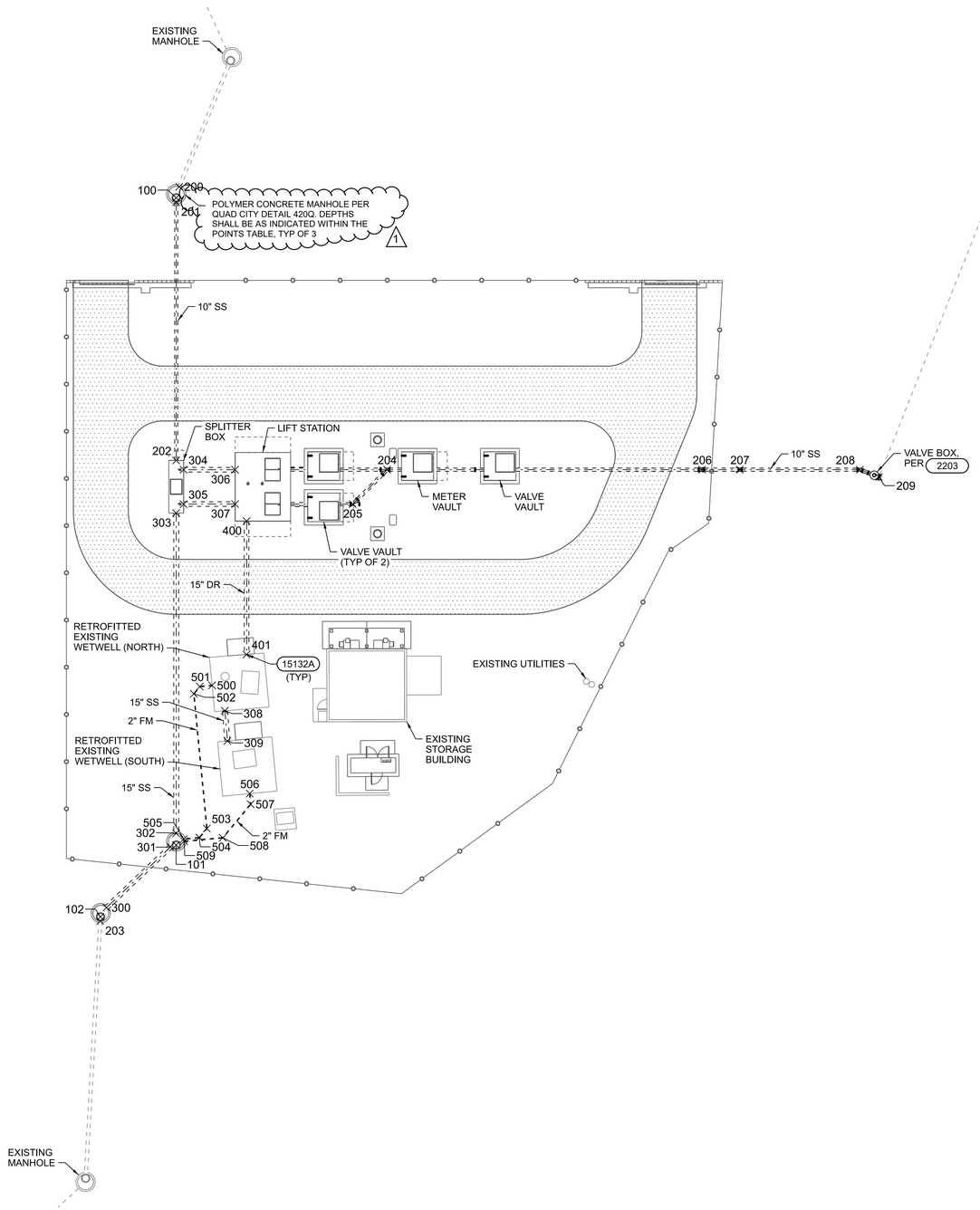
CIVIL

PAVING, GRADING AND DRAINAGE PLAN

DATE FEBRUARY 2024
PROJECT NO. 21-064
DRAWING NO. C-101
SHEET NO. 12

FILENAME: L:\CAD\Projects\21-064 Prescott Yavapai Hills LS\Deliverables\2164D-C101.dgn

PLOT DATE: 2/14/2024 PLOT TIME: 3:28:29 PM



NORTH

NOTES:

1. TAPPING SLEEVE AND VALVE PER MAG STD DTL 340.

MANHOLE POINT TABLE				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
100	593336.95	629478.61	5341.00	MANHOLE NO. 1 RIM
101	593148.33	629478.61	5336.50	MANHOLE NO. 2 RIM
102	593127.42	629456.55	5335.00	MANHOLE NO. 3 RIM

10" SS YARD PIPING POINT TABLE				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
200	593340.19	629479.50	5336.54	10" IN INV
201	593335.70	629478.61	5336.50	10" OUT INV
202	593260.42	629478.61	5328.71	10" IN INV
203	593126.17	629456.48	5330.55	10" IN INV
204	593257.74	629540.11	5330.97	10" WYE CL
205	593247.70	629530.07	5330.97	10" WYE CL
206	593257.74	629631.91	5330.97	10" 45° BEND DOWN CL
207	593257.74	629642.91	5319.90	10" 45° BEND UP CL
208	593257.72	629677.87	5319.90	10" 22.5° BEND CL
209	593255.58	629683.43	5319.90	10"X8" TAPPING SLEEVE CL

15" SS YARD PIPING POINT TABLE				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
300	593130.09	629458.32	5329.08	15" OUT INV
301	593147.82	629476.91	5328.90	15" IN INV
302	593151.75	629478.61	5329.00	15" OUT INV
303	593245.09	629478.61	5328.77	15" IN INV
304	593257.71	629480.78	5328.71	15" OUT INV
305	593247.67	629480.78	5328.71	15" OUT INV
306	593257.73	629495.78	5328.67	15" IN INV
307	593247.71	629495.78	5328.67	15" IN INV
308	593187.47	629492.80	5328.17	15" SS IN INV
309	593178.67	629493.54	5328.08	15" SS OUT INV

15" DR YARD PIPING POINT TABLE				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
400	593242.75	629499.12	5328.18	15" OUT INV
401	593203.85	629499.12	5327.76	15" IN INV

2" FM YARD PIPING POINT TABLE				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
500	593194.87	629489.06	5330.80	2" OUT INV
501	593194.51	629485.50	5330.78	2" 45° BEND INV
502	593192.40	629483.76	5330.77	2" 45° BEND INV
503	593153.16	629487.55	5330.57	2" 45° BEND INV
504	593150.52	629485.37	5330.54	2" 45° BEND INV
505	593150.07	629480.85	5330.49	2" IN INV
506	593163.33	629500.05	5330.80	2" OUT INV
507	593160.22	629500.33	5330.77	2" 45° BEND INV
508	593150.47	629492.20	5330.64	2" 45° BEND INV
509	593149.44	629480.95	5330.53	2" IN INV

PLAN
1" = 20'-0"

20 0 20 40 FEET
SCALE 1"=20'

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING

0 1"

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

NO	DATE	REVISION	BY	APVD
1	4/17/24	ADDENDUM 2	MR	RDB

Registered Professional Engineer (Civil) 42726 ROB D. BRYANT Date Signed 02/ 22/24 ARIZONA U.S.A.

DESIGN R. BRYANT
DRAWN D. LEWCHANIN
CHECKED R. BRYANT
APPROVED R. BRYANT

WATERWORKS ENGINEERS
SCOTTSDALE, AZ

CITY OF PRESCOTT ARIZONA

YAVAPAI HILLS LIFT STATION

CIVIL

YARD PIPING PLAN

DATE FEBRUARY 2024
PROJECT NO. 21-064
DRAWING NO. C-102
SHEET NO. 13

FILENAME: L:\CAD\Projects\21-064 Prescott Yavapai Hills LS\Deliverables\2164D-C102.dgn

PLOT DATE: 2/14/2024 PLOT TIME: 3:29:08 PM

PIPING SYMBOLS

SYMBOL	SINGLE LINE	DESCRIPTION
		EXISTING PIPE (SCREENED)
		NEW PIPE
		EXISTING PIPE TO BE ABANDONED
		EXISTING PIPE TO BE DEMOLISHED OR REMOVED AND SALVAGED

VALVES

SYMBOL	VALVE TYPE
	BALL VALVE
V	VENTED BALL VALVE
	CORPORATION STOP VALVE
	BUTTERFLY VALVE
	DIAPHRAGM VALVE
	GATE VALVE
K	KNIFE GATE
	GLOBE VALVE
	MUD VALVE
	MULTIPORT VALVE
	NEEDLE VALVE
	PINCH VALVE
	PLUG VALVE
	PLUG VALVE (ECCENTRIC)
	BALL CHECK VALVE
	DOUBLE DISK SWING CHECK VALVE
	DUCKBILL CHECK
	SILENT CHECK VALVE
	SWING CHECK VALVE
	TELESCOPING VALVE
	AIR RELIEF VALVE
	AIR VACUUM VALVE
	COMBINATION AIR RELIEF AIR VACUUM VALVE
	PRESSURE REGULATING VALVE
	PRESSURE RELIEF VALVE
	HOSE BIBB OR FLUSHING CONNECTION
	BACKFLOW PREVENTER VALVE

PUMPS

SYMBOL	PUMP TYPE
	CENTRIFUGAL PUMP
	SUBMERSIBLE PUMP
	VERTICAL TURBINE PUMP (PLAN)
	VERTICAL TURBINE PUMP (SECTION)
	DIAPHRAGM METERING PUMP
	PERISTALIC PUMP
	PROGRESSIVE CAVITY PUMP
M	AXIAL FLOW PUMP

BLOWERS

SYMBOL	BLOWER TYPE
	CENTRIFUGAL BLOWER
	BLOWER FAN

FLOWMETERS

SYMBOL	FLOWMETER TYPE
	MAGNETIC FLOWMETER
	PROPELLER FLOWMETER

FILTERS AND STRAINERS

SYMBOL	FILTER TYPE
	FILTER
	CARTRIDGE FILTER (SMALL)
	CARTRIDGE FILTER (LARGE)
	BASKET STRAINER

MIXERS

SYMBOL	MIXER TYPE
M	MIXER
	STATIC MIXER
	WAFER STATIC MIXER

ACTUATORS

SYMBOL	ACTUATOR TYPE
M	MOTOR ACTUATOR
P	PNEUMATIC ACTUATOR
S	SOLENOID ACTUATOR

GATES / WEIR

SYMBOL	GATE / WEIR TYPE
	SLIDE GATE
	STOP LOG
	WEIR

MISC EQUIPMENT

SYMBOL	TYPE
WM	WATER METER
	AIR DIFFUSER
	SPRAY BAR OR DIFFUSER
	EMERGENCY EYEWASH AND SHOWER

MISC FITTING SYMBOLS

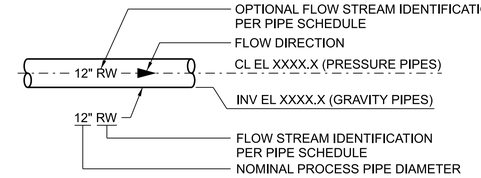
SYMBOL	EQUIPMENT TYPE
	Y STRAINER
	PULSATION DAMPER
	GAUGE
	DIAPHRAGM SEAL
	RUPTURE DISK (PRESSURE)
	RUPTURE DISK (VACUUM)
	ORIFICE
	BLIND FLANGE OR TANK NOZZLE
	EXPANSION COUPLING
	FLEXIBLE COUPLING
	UNION
	CONCENTRIC REDUCER
	ECENTRICE REDUCER
	CAP
	FEMALE QUICK CONNECT
	MALE QUICK CONNECT
	QUICK CONNECT WITH CAP
	QUICK CONNECT COUPLING
	DRAIN
	DRAIN
	SIGHT GLASS
	CALIBRATION COLUMN
FI	ROTAMETER
FI	ROTAMETER WITH NEEDLE VALVE

MISC SYMBOLS

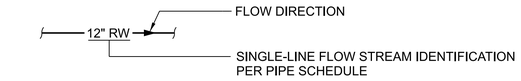
SYMBOL	DESCRIPTION
S	SAMPLE
	WATER SURFACE
	EQUIPMENT TAG

PIPING DESIGNATIONS

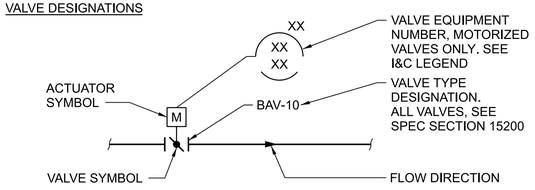
DOUBLE LINE PIPES



SINGLE LINE PIPES



VALVE DESIGNATIONS



NOTES:

1. MOTORIZED VALVE SHOWN, MANUAL VALVE SIMILAR.

NOTES:

1. ONLY FLANGED END CONNECTIONS ARE SHOWN HERE FOR DOUBLE LINE FITTINGS. FITTINGS WITH OTHER END PATTERNS ARE SHOWN SIMILARLY ON THE CONSTRUCTION DRAWINGS. ALSO SEE PIPING SPECIFICATIONS AND THE PIPING SCHEDULE.
2. SYMBOLS SHOWN HERE FOR SINGLE LINE FITTINGS ARE GENERIC ONLY. REFER TO PIPING SPECIFICATIONS FOR SPECIFIC END CONNECTIONS FOR SINGLE LINE PIPE AND FITTINGS.

GENERAL PIPING NOTES:

1. LAY PIPE TO UNIFORM GRADE BETWEEN INDICATED ELEVATION POINTS. MINIMUM COVER SHALL BE 36 INCHES UNLESS OTHERWISE SHOWN.
2. SIZE OF FITTINGS SHOWN ON DRAWINGS SHALL CORRESPOND TO ADJACENT STRAIGHT RUN OF PIPE, UNLESS OTHERWISE INDICATED. TYPE OF JOINT AND FITTING MATERIAL SHALL BE THE SAME AS SHOWN FOR ADJACENT STRAIGHT RUN OF PIPE.
3. LOCATION AND NUMBER OF PIPE HANGERS AND PIPE SUPPORTS SHOWN IS ONLY APPROXIMATE. FINAL SUPPORT REQUIREMENTS SHALL BE DETERMINED IN THE FIELD AND APPROVED BY THE ENGINEER PRIOR TO INSTALLATION. MAXIMUM SPACING SHALL BE AS SPECIFIED.
4. APPROPRIATE STANDARD WALL PIPE DETAIL SHALL BE USED WHEREVER PIPING PASSES FROM A STRUCTURE TO BACKFILL.
5. ALL FLEXIBLE CONNECTORS OR FLANGED COUPLING ADAPTERS SHALL BE PROVIDED WITH THRUST TIES, BLOCKS, OR ANCHORS, UNLESS OTHERWISE NOTED. THRUST PROTECTION SHALL BE ADEQUATE FOR TEST PRESSURES SPECIFIED.
6. SYMBOLS, LEGENDS, AND PIPE USE IDENTIFICATIONS SHOWN SHALL BE FOLLOWED THROUGHOUT THE DRAWINGS, WHEREVER APPLICABLE. ALL OF THE VARIOUS APPLICATIONS ARE NOT NECESSARILY USED IN THE PROJECT.
7. ALL PIPING SPECIFIED TO BE PRESSURE TESTED, EXCEPT FLANGED, WELDED, GROOVED END, OR SCREWED PIPING, SHALL BE PROVIDED WITH TRUST PROTECTION AT ALL DIRECTION CHANGES, UNLESS OTHERWISE NOTED. SEE THRUST DETAILS AND NOTES ON DRAWINGS.
8. NUMBER AND LOCATION OF UNIONS SHOWN ON DRAWINGS ARE ONLY APPROXIMATE. PROVIDE ALL UNIONS NECESSARY TO FACILITATE CONVENIENT REMOVAL OF VALVES AND MECHANICAL EQUIPMENT.
9. THE CONTRACTOR FOR THIS PROJECT IS RESPONSIBLE FOR COORDINATING AND PERFORMING THE CONNECTION OF THE PIPING AND ASSOCIATED APPURTENANCES INSTALLED UNDER THIS CONTRACT TO BOTH THE EXISTING PIPING AND FACILITIES.
10. PRIOR TO SUBMITTING PIPING DRAWINGS FOR ANY NEW PIPE THAT IS TO CONNECT TO OR CROSS AN EXISTING PIPE OR STRUCTURE, THE CONTRACTOR SHALL EXPOSE THE EXISTING PIPE OR STRUCTURE TO VERIFY ITS EXACT LOCATION, SIZE, MATERIALS, AND INVERT ELEVATIONS.
11. COMPONENTS SHOWN WITH A DOUBLE ASTERISK (**) ARE PART OF A PACKAGE SYSTEM. SEE EQUIPMENT SPECIFICATIONS.

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING

0 1"

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

NO	DATE	REVISION	BY	APVD
1	4/17/24	ADDENDUM 2	MR	RDB

Registered Professional Engineer (Civil) 42726 ROB D. BRYANT Date Signed 02/ 22/ 24 ARIZONA U.S.A.

XX-XX-XX

DESIGN R. BRYANT
DRAWN D. LEWCHANIN
CHECKED R. BRYANT
APPROVED R. BRYANT

WATERWORKS ENGINEERS
SCOTTSDALE, AZ

CITY OF PRESCOTT ARIZONA

YAVAPAI HILLS LIFT STATION

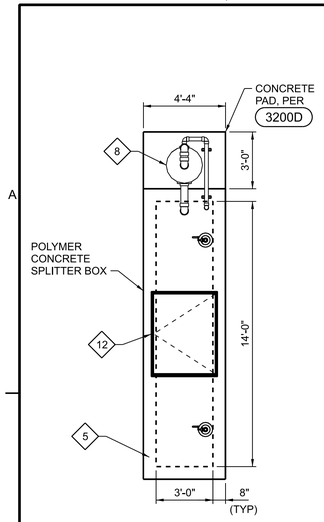
MECHANICAL

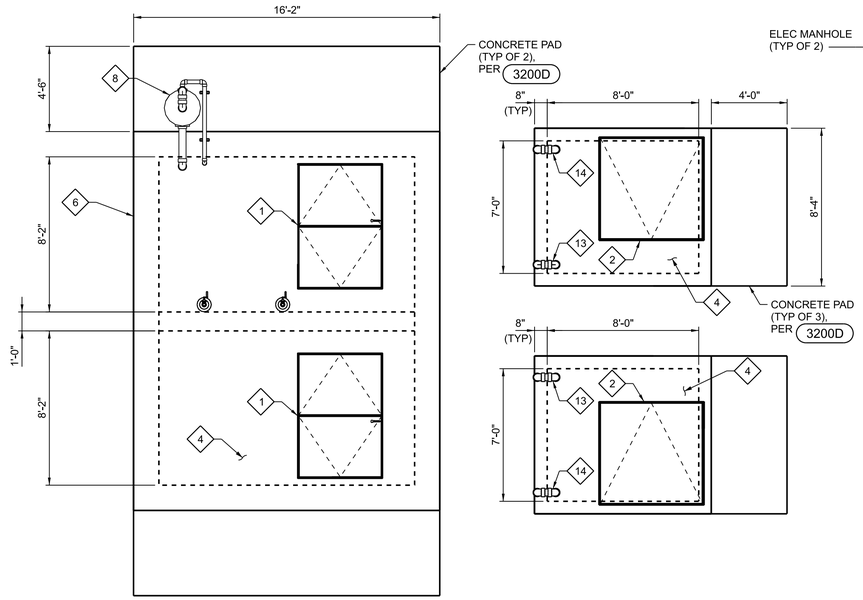
MECHANICAL LEGEND

DATE FEBRUARY 2024
PROJECT NO. 21-064
DRAWING NO. M-001
SHEET NO. 14

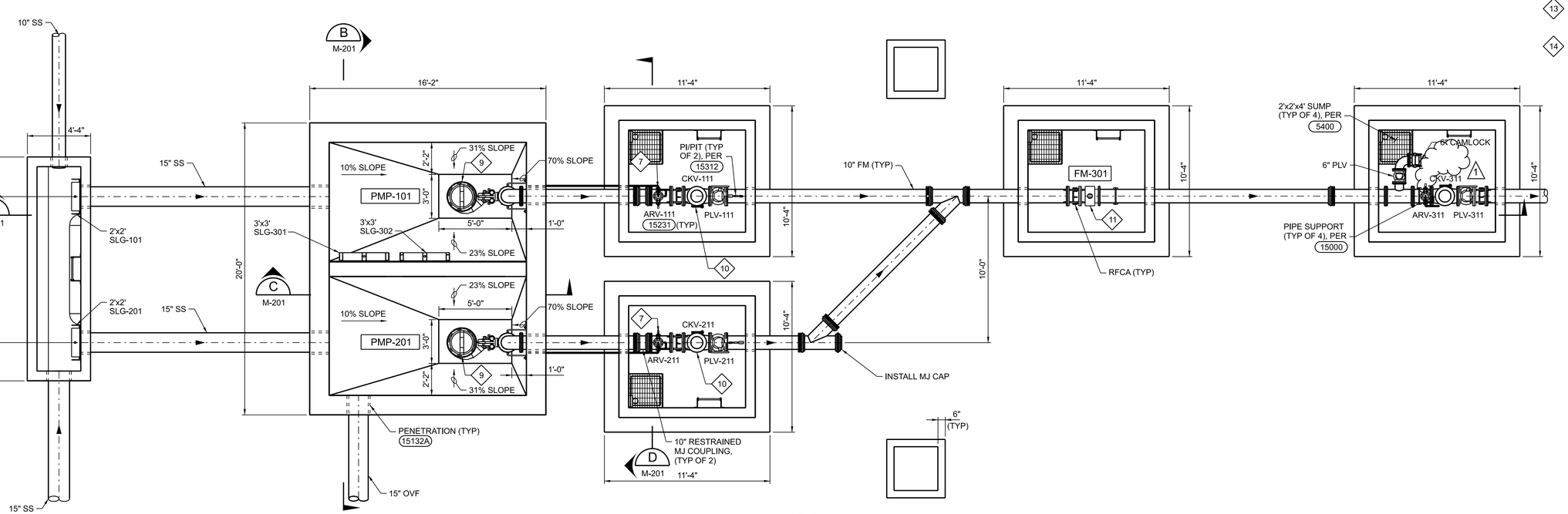
FILENAME: L:\CAD\Projects\21-064 Prescott Yavapai Hills LS\Deliverables\2164D-M001.dgn

PLOT DATE: 2/14/2024 PLOT TIME: 3:47:33 PM





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



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

NOTES:

1. ALL PIPING WITHIN THE LIMITS OF THE PROJECT SHALL BE FULLY RESTRAINED.
2. SLIDE GATES SLG-101, SLG-201, AND SLG-302 SHALL BE FLUSH BOTTOM SEALED.
3. ALL LADDERS SHALL BE INSTALLED WITH SAFETY GRATING AND TELESCOPING SAFETY POST.

KEY NOTES:

1. 6'x4' ALUMINUM HATCH, 300 PSF RATED, DUAL-LEAF WITH FALL PROTECTION GRATING, LIFT ASSIST, SLAM-LOCK, HOLD-OPEN.
2. 5'x5' ALUMINUM HATCH, 300 PSF RATED, SINGLE-LEAF WITH FALL PROTECTION GRATING, LIFT ASSIST, SLAM-LOCK, HOLD-OPEN.
3. PRECAST CONCRETE VAULT, 300 PSF RATED.
4. 3" PAINTED LETTERING "300 PSF LIMIT".
6. PRECAST POLYMER CONCRETE WETWELL.
7. 2" SEWAGE AIR/VACUUM VALVE, ARI D-025. ROUTE VENT TO WET WELL.
8. PASSIVE ODOR CONTROL, CALGON CARBON VENTSORB PE OR APPROVED EQUAL.
9. FLYGT N3315 HT WITH COOLING JACKET 160 HP, VFD RATED WITH LIFT EYE, BASE ELBOW, GUIDE RAILS AND ALL MOUNTING HARDWARE, NO APPROVED EQUAL, PUMP FROM EXISTING WET WELL TO BE REMOVED AND STORED AS A BACKUP.
10. 10" SWING CHECK VALVE, EPOXY LINED AND COATED, EXTERNAL LEVER AND AIR CUSHIONED CLOSURE, 316 STAINLESS STEEL HARDWARE.
11. 10" MAG METER, PTFE LINED WITH REMOTE DISPLAY (ELECTRIC RACK).
12. 3'x4' ALUMINUM HATCH, 300 PSF RATED, SINGLE-LEAF WITH FALL PROTECTION GRATING, LIFT ASSIST, SLAM-LOCK, HOLD-OPEN.
13. 4" CPVC GOOSENECK VENT ENDS 6" BELOW TOP OF CONCRETE, PER 15145.
14. 4" CPVC GOOSENECK VENT ENDS 1'-0" ABOVE BOTTOM OF SLAB, PER 15145.

4 0 4 8 FEET
SCALE 1/4"=1'-0"

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

NO	DATE	REVISION	BY	APVD
1	4/17/24	ADDENDUM 2	MR	RDB

Registered Professional Engineer (Civil) 42726 ROB D. BRYANT Date Signed 02/22/24 ARIZONA U.S.A.

DESIGN R. BRYANT
DRAWN D. LEWCHANIN
CHECKED R. BRYANT
APPROVED R. BRYANT

WATERWORKS ENGINEERS
SCOTTSDALE, AZ

CITY OF PRESCOTT ARIZONA

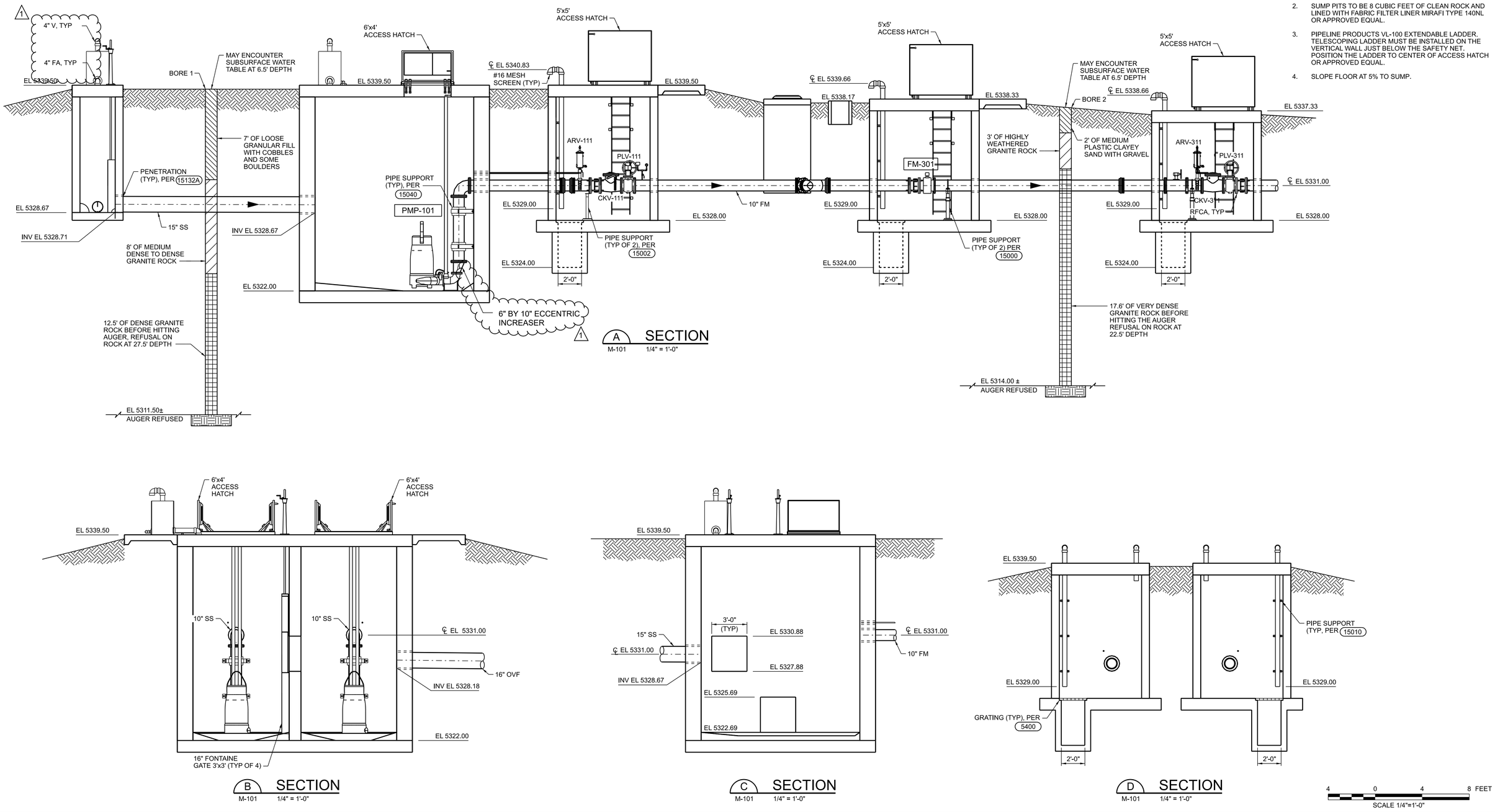
YAVAPAI HILLS LIFT STATION

MECHANICAL

LIFT STATION UPPER AND LOWER PLANS

DATE FEBRUARY 2024
PROJECT NO. 21-064
DRAWING NO. M-101
SHEET NO. 15

FILENAME: L:\CAD\Projects\21-064 Prescott Yavapai Hills LS\Deliverables\2164D-M101.dgn
PLOT DATE: 2/14/2024 PLOT TIME: 3:48:32 PM



A SECTION
M-101 1/4" = 1'-0"

NOTES:

1. REFER TO ETC GEOTECHNICAL REPORT SECTION "LATERAL DESIGN PARAMETERS" REGARDING EXCAVATION TRENCHING LOAD REQUIREMENTS.
2. SUMP PITS TO BE 8 CUBIC FEET OF CLEAN ROCK AND LINED WITH FABRIC FILTER LINER MIRAFI TYPE 140NL OR APPROVED EQUAL.
3. PIPELINE PRODUCTS VL-100 EXTENDABLE LADDER. TELESCOPING LADDER MUST BE INSTALLED ON THE VERTICAL WALL JUST BELOW THE SAFETY NET. POSITION THE LADDER TO CENTER OF ACCESS HATCH OR APPROVED EQUAL.
4. SLOPE FLOOR AT 5% TO SUMP.

B SECTION
M-101 1/4" = 1'-0"

C SECTION
M-101 1/4" = 1'-0"

D SECTION
M-101 1/4" = 1'-0"

4 0 4 8 FEET
SCALE 1/4"=1'-0"

1	4/17/24	ADDENDUM 2	MR	RDB
NO	DATE	REVISION	BY	APVD

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

Registered Professional Engineer (Civil) 42726 ROB D. BRYANT Date Signed 02/ 22/24 ARIZONA U.S.A.

DESIGN R. BRYANT
DRAWN D. LEWCHANIN
CHECKED R. BRYANT
APPROVED R. BRYANT

WATERWORKS ENGINEERS
SCOTTSDALE, AZ

CITY OF PRESCOTT ARIZONA

YAVAPAI HILLS LIFT STATION

MECHANICAL
LIFT STATION SECTIONS

DATE FEBRUARY 2024
PROJECT NO. 21-064
DRAWING NO. M-201
SHEET NO. 16

FILENAME: L:\CAD\Projects\21-064 Prescott Yavapai Hills LS\Deliverables\2164D-M201.dgn
PLOT DATE: 2/14/2024 PLOT TIME: 3:49:05 PM

SINGLE LINE & CONTROL DIAGRAM SYMBOLS

PUSH BUTTONS

NORMALLY OPEN (NO)	NORMALLY CLOSED (NC)	DESCRIPTION:
PB##	PB##	EMERGENCY STOP PUSH BUTTON WITH RED MUSHROOM HEAD OPERATOR (MAINTAINED CONTACT)
PB##	PB##	PUSH BUTTON, MOMENTARY CONTACT, SPRING RETURN
SSPB##		START/STOP PUSH BUTTON CONTROL STATION, MAINTAINED CONTACT WITH LOCKOUT DEVICE ON STOP

PILOT LIGHTS

PLT## CLR FCN

PUSH TO TEST, 110V S6 LAMP UNLESS NOTED. LETTER IS LENS COLOR:

R = RED
A = AMBER
B = BLUE
C = CLEAR
G = GREEN
Y = YELLOW
W = WHITE

SELECTOR SWITCHES

PB## A B OX — PB## A B OX — TWO (2) POSITION SELECTOR SWITCH

SS## A B OX XO — TWO (2) POSITION, TWO (2) POLE SELECTOR SWITCH

SS## A B OX XO XO — TWO (2) POSITION, THREE (3) POLE SELECTOR SWITCH

SS## A B C XOO — SS## A B C OOX — THREE (3) POSITION SELECTOR SWITCH

SS## A B C XOO OXO OOX — THREE (3) POSITION, THREE (3) POLE SELECTOR SWITCH

SS## A B B D OXOO — SS## A B B D XOOO — FOUR (4) POSITION SELECTOR SWITCH

SELECTOR SWITCHES

NORMALLY OPEN (NO)	NORMALLY CLOSED (NC)	DESCRIPTION:
SS## A B B D XOOO OXOO OXOO OXOO		FOUR (4) POSITION, FOUR (4) POLE SELECTOR SWITCH

RELAYS

CR## ???	CR## ???	RELAY CONTACT: NORMALLY OPEN (NO) NORMALLY CLOSED (NC)
CR## CR ### ???		CONTROL RELAY COIL NUMBER AS INDICATED
LR##A L NO NC ???		LATCH RELAY COIL
LR##B U NO NC ???		UNLATCH RELAY COIL

LIMIT SWITCHES

FCN LS##	LS## FCN	POSITION (LIMIT) SWITCH
LS## ???	LS## ???	POSITION (LIMIT) SWITCH NO: HELD CLOSED NC: HELD OPEN
TS## ???	TS## ???	TORQUE SWITCH NO: CLOSES ON HIGH TORQUE NC: OPENS ON HIGH TORQUE

PRESSURE & TEMPERATURE SWITCHES

PS## ???	PS## ???	PRESSURE SWITCH NO: CLOSES ON RISING PRESSURE NC: OPENS ON DROPPING PRESSURE
PSV## V ???	PSV## V ???	VACUUM SWITCH NO: CLOSES ON RISING PRESSURE NC: OPENS ON DROPPING PRESSURE
DPS## ???	DPS## ???	DIFFERENTIAL PRESSURE SWITCH NO: CLOSES ON RISING DIFFERENTIAL PRESSURE NC: OPENS ON DROPPING DIFFERENTIAL PRESSURE
TS## ???	TS## ???	TEMPERATURE SWITCH NO: CLOSES ON RISING TEMPERATURE NC: OPENS ON RISING TEMPERATURE

FLOW & LEVEL SWITCHES

NORMALLY OPEN (NO)	NORMALLY CLOSED (NC)	DESCRIPTION:
FLT## ???	FLT## ???	LIQUID LEVEL (FLOAT) NO: CLOSES ON RISING LEVEL NC: OPENS ON RISING LEVEL
FS## ???	FS## ???	FLOW SWITCH (AIR, WATER, ETC.) NO: CLOSES ON INCREASED FLOW NC: OPENS ON INCREASED FLOW

OTHER SWITCHES

AUX## XO ???	AUX## XO ???	AUXILIARY SWITCH CONTACT
TGS### ???	TGS## ???	TOGGLE SWITCH
FTS## FCN	FTS## FCN	FOOT SWITCH
PRS### FCN	PRS### FCN	PROXY SWITCH
PCS## FCN	PCS## FCN	PULL CORD
APL## FCN	APL## FCN	A-PLUG
PE## FCN	PE## FCN	PHOTO EYE
SPDT##A		SINGLE POLE DOUBLE THROW (SPDT) MAINTAIN
SPDT##B		SINGLE POLE DOUBLE THROW (SPDT) RETURN FROM DOWN
SPDT##C		SINGLE POLE DOUBLE THROW (SPDT) RETURN FROM UP
SPDT##D		SINGLE POLE DOUBLE THROW (SPDT) RETURN FROM BOTH

TIMERS

NORMALLY OPEN (NO)	NORMALLY CLOSED (NC)	DESCRIPTION:
TD## FCN	TD## FCN	ON DELAY NOTC: NORMALLY OPEN TIMED CLOSING, WHEN ENERGIZED NCTO: NORMALLY CLOSED TIMED OPENING, WHEN ENERGIZED
TD## FCN	TD## FCN	OFF DELAY NOTO: NORMALLY OPEN, TIMED OPENING WHEN DEENERGIZED NCTC: NORMALLY CLOSED, TIMED CLOSING WHEN DEENERGIZED

TERMINALS & CONNECTORS

#?	DOT
#	SQUARE
#	ROUND
#	HEXAGON
#	DIAMOND
#	TRIANGLE
PDB##	POWER DISTRIBUTION BOX
PJ##	PLUG / JACK
PJ##	JACK / PLUG
PJ##	PLUG RIGHT OR UP
PJ##	JACK LEFT OR DOWN
	IN LEFT TOP
	IN BOTH TOP
	OUT RIGHT TOP
	OUT BOTH TOP

MISCELLANEOUS DEVICES

ABE## FCN	BELL
ABU## FCN	BUZZER
AH## FCN	HORN
VM## V FCN	VOLT METER
AM## A FCN	AMP METER
BAT##A V OR BAT##B V	BATTERY

CONDUITS & CONDUCTORS

	CONDUCTORS NOT CONNECTED
	CONDUCTORS CONNECTED
	CONDUCTOR SHIELD
	CONDUCTOR SHIELD TWISTED PAIR
	FIELD CONDUCTOR SHIELD
	FIELD CONDUCTOR SHIELD TWISTED PAIR
	EARTH GROUND

MISCELLANEOUS DEVICES (CONT)

SINGLE LINE / CONTROL DIAGRAM	DESCRIPTION:
FR## O OR FR## O	FIXED RESISTOR
VR## O OR VR## O	VARIABLE RESISTOR
VR## O OR VR## O	
D## OR D##	DIODE
ZD## OR ZD##	ZENER DIODE
C## ???	CAPACITOR
TVS## TVS ???	SUPPRESSOR
	GROUND
RCPT## ??? RCPT## ???	RECEPTACLES
LT##	ENCLOSURE LIGHT
	GROUND CHASSIS

CONDUITS & CONDUCTORS (CONT)

SINGLE LINE / CONTROL DIAGRAM	DESCRIPTION:
	CHASSIS GROUND
	NEUTRAL
	SEPARABLE CONNECTOR SIFICATION SHOWN.

MOTOR

M## NO ? NC ? ???	MOTOR STARTER COIL
### HP GEN###	MOTOR
OL MTR###	OVERLOAD
##O O	RESISTOR OR RESISTIVE ELEMENT
HTR### ???	STRIP HEATER OR HEATING ELEMENT
*	HIGH VOLTAGE, GROUP OPERATED, AIR BREAK SWITCH * CONTINUOUS AMPERE RATING
MCR## ??? MCR## ???	MOTOR CONTACT: NORMALLY OPEN (NO) NORMALLY CLOSED (NC)
CAP##A ???	KVAR CAP
CAP##C ???	THREE PHASE KVAR

TIMERS

TD## NO NC ?? DELAY	ON DELAY COIL
TD##A NO NC ON DELAY	ON DELAY MOTOR
TD##A NO NC OFF DELAY	OFF DELAY MOTOR

VERIFY SCALE				
BAR IS ONE INCH ON ORIGINAL DRAWING				
0 — 1"				
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	1	4/17/24	ADDENDUM 2	MR / RDB
	NO	DATE	REVISION	BY / APVD

Registered Professional Engineer (Electrical) — CERTIFICATE NO. 52847 — BRIAN G. YOUNG — Date Signed 02/26/24 — ARIZONA U.S.A.

DESIGN: T. ADAMS
DRAWN: D. LEWCHANIN
CHECKED: B. YOUNG
APPROVED: R. BRYANT

WATERWORKS ENGINEERS
SCOTTSDALE, AZ

CITY OF PRESCOTT ARIZONA

YAVAPAI HILLS LIFT STATION

ELECTRICAL

LEGEND AND SYMBOLS 1

DATE: FEBRUARY 2024
PROJECT NO.: 21-064
DRAWING NO.: E-001
SHEET NO.: 17

FILENAME: L:\CAD\Projects\21-064 Prescott Yavapai Hills LS\Deliverables\2164D-E001.dgn
PLOT DATE: 2/14/2024
PLOT TIME: 3:38:45 PM

SINGLE LINE, CONTROL DIAGRAM & PLAN SYMBOLS

DISCRETE I/O

SINGLE LINE / CONTROL DIAGRAM	DESCRIPTION:
DI## / DI / FCN	DISCRETE INPUT
DO## / DO / FCN	DISCRETE OUTPUT

ANALOG I/O

AI## / AI / FCN	ANALOG INPUT
AO## / AO / FCN	ANALOG OUTPUT

FUSES & CIRCUIT BREAKERS

SINGLE LINE OR CONTROL DIAGRAM	PLAN VIEW	DESCRIPTION:
##A / CB### / ##P		THERMAL MAGNETIC CIRCUIT BREAKER TRIP RATING ABOVE; FRAME RATING BELOW. TYPICAL FOR OTHER TYPES OF BREAKERS. BREAKER TO BE 3 POLE UNLESS NOTED OTHERWISE AS 1P OR 2P
###AT / ###AF / ??? / CB###	N/A	DRAWOUT MEDIUM VOLTAGE POWER BREAKER UPPER NUMBER INDICATES LONG TIME TRIP SETTING LOWER NUMBER INDICATES BREAKER CONTINUOUS CURRENT RATING
##A / ##P / Z		COMBINATION MOTOR STARTER WITH MOTOR CIRCUIT PROTECTOR, MAGNETIC CONTACTOR AND OVERLOAD PROTECTION X= AMPERE SIZE Z= NEMA SIZE
Z		MOTOR STARTER WITH MAGNETIC CONTACTOR AND OVERLOAD PROTECTION Z= NEMA SIZE
FU## / ##A	N/A	FUSE
FU## / ##A	N/A	FUSED SWITCH

TRANSFORMERS

XFMR### ##kVA ###A / ###A ##Ø	TRANSFORMER, RATINGS AND CONNECTIONS AS NOTED. UNLESS OTHERWISE NOTED ON THE ONE LINE DIAGRAMS ALL DRY TYPE TRANSFORMERS SERVICING ADMINISTRATIVE AND LABORATORY SPACES SHALL HAVE A K FACTOR OF 13. ALL OTHER DRY TYPE TRANSFORMERS SHALL HAVE A K-4 RATING. ISOLATION TRANSFORMERS SHALL HAVE A K-20 RATING
XFMR### ##kVA ###A / ###A ##Ø	DUAL TRANSFORMER
###A / ###A / XF### / (*)	CURRENT TRANSFORMER *QUANTITY XXXX = PRIMARY AMPERE RATING
###A / ###A / XF### / (*)	POTENTIAL TRANSFORMER (PT) OR CONTROL POWER TRANSFORMER (CPT) * QUANTITY XXXX = PRIMARY VOLTAGE RATING
	INDUCTOR

POWER EQUIPMENT & DEVICES

SINGLE LINE OR CONTROL DIAGRAM	PLAN VIEW	DESCRIPTION:
DISC# / ###AT / ###AF	DISC#	NON-FUSIBLE DISCONNECT SWITCH, 600 VOLT, 3 POLE, (###A) AMPERE RATING
##A / FU## / ##P / ???	F / DISC###	FUSIBLE DISCONNECT SWITCH, 600 VOLT, 3 POLE, AMPERE RATING AND FUSE SIZE AS NOTED (###A) AMPERE RATING (FU#) FUSE RATING
##A / OL / ##P / MTR###	##P CLR MMS###	MANUAL MOTOR STARTER WITH THERMAL OVERLOAD PROTECTION "CLR" INDICATES WITH PILOT LIGHT "#P" INDICATES NUMBER OF POLES
	N/A	DRAWOUT TYPE EQUIPMENT OR DEVICE
	N/A	MEDIUM VOLTAGE CABLE TERMINATION
TGS### / FCN	N/A	MEDIUM VOLTAGE AIR INTERRUPTER SWITCH
#AT / XMFR##	N/A	MEDIUM VOLTAGE FUSED MOTOR CONTROLLER #AT = AUTOTRANSFORMER TYPE
M## / M / WM / T##	N/A	METER (M##) WM - WATT METER WHM - WATT HOUR METER WHDM - WATT HOUR DEMAND METER WHDR - WATT HOUR DEMAND RECORDER PF - POWER FACTOR METER TRANSDUCER (T##) AX - CURRENT TRANSDUCER WX - WATT TRANSDUCER
### HP / GEN###	G	GENERATOR WITH GENERATION NUMBER, RATINGS AND CONNECTIONS AS NOTED IN CALL OUT ON DRAWING
### HP / MTR### / FCN	MTR	MOTOR, NUMERAL INDICATES HORSEPOWER
ATS## / ??? / S / N	ATS-###	AUTOMATIC TRANSFER SWITCH (ATS) "N" INDICATES NORMAL SOURCE "S" INDICATES STANDBY SOURCE #RATE = INDICATES CONTINUOUS CURRENT RATING # = INDICATES ATS NAME
VFD###	VFD-###	AC MOTOR SPEED CONTROLLER (VARIABLE FREQUENCY DRIVE)
SCR###	SCR-###	DC MOTOR SPEED CONTROLLER (SILICON CONTROLLED RECTIFIER)
VM### / VS / VM / (*)	N/A	VOLTMETER WITH SWITCH, 3 PHASE (*) = SCALE
AM### / VS / AM / (*)	N/A	AMMETER WITH SWITCH, 3 PHASE (*) = SCALE
LA## / ???	N/A	LIGHTNING ARRESTOR

POWER EQUIPMENT & DEVICES (CONT)

SINGLE LINE OR CONTROL DIAGRAM	PLAN VIEW	DESCRIPTION:
CR## / FCN	N/A	NON-FUSIBLE DISCONNECT SWITCH, 600 VOLT, 3 POLE, (###A) AMPERE RATING
TVSS	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR (POWER DISTRIBUTION TYPE)
PLT## / CLR / FNC	N/A	PUSH TO TEST, 110V S6 LAMP UNLESS NOTED, LETTER IS LENS COLOR: R = RED G = GREEN C = CLEAR A = AMBER Y = YELLOW B = BLUE W = WHITE
SOL## / FCN	SOV	SOLENOID OPERATED VALVE
ETM	N/A	ELAPSED TIME METER
UH### / ##kW	UH###	UNIT HEATER
WH### / ##kW	WH###	WATER HEATER
DM-#### / ##kW	DM-####	DAMPER MOTOR
MOV ####	MOV	MOTOR OPERATED VALVE "XXXX" DENOTES LOOP NUMBER TO BE OBTAINED FROM INSTRUMENTATION DRAWINGS
N/A		CONTROL STATION
ITP / ITP#### / FCN	ITP	INTERMEDIATE TERMINAL PANEL
K	N/A	KEY INTERLOCK
K E	N/A	ELECTRONIC KEY INTERLOCK
		CORD AND PLUG CONNECTION
N/A	T	THERMOSTAT
N/A	OC	OCCUPANCY SENSOR
N/A	PC	PHOTOCELL

POWER EQUIPMENT & DEVICES (CONT)

SINGLE LINE OR CONTROL DIAGRAM	PLAN VIEW	DESCRIPTION:
N/A	ESA	EMERGENCY SHOWER ALARM STATION
OR	N/A	JUMPER
MS	N/A	MOTOR SWITCH
N/A	J	JUNCTION BOX
N/A	PB OR PB	PULL BOX
XXX / XXX		FIELD MOUNTED INSTRUMENT: XXX= DESIGNATION TO BE OBTAINED FROM INSTRUMENTATION DRAWINGS

GROUNDING

	GROUND ROD
	GROUND ROD IN GROUNDING WELL
	GROUND ROD IN TEST WELL
	GROUND GRID CABLE CONNECTION, WELDED

SWITCHES

$a	SINGLE POLE SWITCH "a" INDICATES SWITCH LEG SHALL CONTROL LUMINARIES WITH "a" DESIGNATION
$2 b	DOUBLE POLE SWITCH "b" INDICATES SWITCH LEG SHALL CONTROL LUMINARIES WITH "b" DESIGNATION
$3 c	THREE WAY SWITCH "c" INDICATES SWITCH LEG SHALL CONTROL LUMINARIES WITH "c" DESIGNATION
$4 d	FOUR WAY SWITCH "d" INDICATES SWITCH LEG SHALL CONTROL LUMINARIES "d" DESIGNATION
$M	SINGLE POLE, DOUBLE THROW MOMENTARY CONTACT SWITCH, CENTER OFF
$P	SINGLE POLE SWITCH AND PILOT LIGHT

LIGHTING FIXTURES & EQUIPMENT

Ca	LIGHTING CONTACTOR WITH NUMBER OF POLES AS INDICATED a-CONTACTOR NUMBER (C1, C2, ETC.)
TM	TIME SWITCH

LIGHTING FIXTURES & EQUIPMENT (CONT)

PLAN VIEW	DESCRIPTION:
ALCP-### / ALCP-#### OR	AREA LIGHTING CONTACTOR PANEL ### = PANEL NAME
LP-### / LP-#### OR	LIGHTING PANEL BOARD NO. # (240/120V OR 208/120V) ### = PANEL NAME
PP-### / PP-#### OR	POWER DISTRIBUTION PANEL BOARD NO. # (480V OR 480/277V) ### = PANEL NAME
XX / X Y a / NL	TYPICAL LUMINARIES SEE SCHEDULE FOR SPECIFICS "XX"-FIXTURE TYPE X= PANEL BOARD NAME "b"-CONTROLLED BY SWITCH "b" Y= CIRCUIT NUMBER NL= NIGHT LIGHT (UN-SWITCHED)
NL / XX / X Y a	WALL MOUNTED LUMINARIE.REFER TO SCHEDULE FOR SPECIFICS. (NOTATIONS SAME AS ABOVE)
?? / X Y a	DIRECTIONAL FLOOD LIGHT TYPE LUMINARIES. SEE SCHEDULE FOR SPECIFICS. (NOTATIONS SAME AS ABOVE)
?? / X Y a / NL	FLUORESCENT TYPE LUMINARIES. SEE SCHEDULE FOR SPECIFICS. (NOTATIONS SAME AS ABOVE)
?? / X Y a / NL	FLUORESCENT TYPE LUMINARIES. SEE SCHEDULE FOR SPECIFICS. (NOTATIONS SAME AS ABOVE)
##-??-###	INDICATES ALL LUMINARIES WITHIN THE ROOM OR AREA IN WHICH THIS NOTATION APPEARS SHALL BE TYPE "A" UNLESS OTHERWISE NOTED. SEE LIGHTING FIXTURE SCHEDULE FOR TYPES
CLR	ALARM BEACON. COLOR AS NOTED. REFER TO SPECIFICATIONS FOR REQUIREMENTS.
E1 / X Y	EMERGENCY LUMINARIES WITH BATTERY PACK "E1" FIXTURE TYPE. REFER TO SCHEDULE FOR SPECIFICS. X= PANEL BOARD NAME Y= CIRCUIT NUMBER
E2 REM / X Y	REMOTE EMERGENCY LUMINARIES "E2"-FIXTURE TYPE. REFER TO SCHEDULE FOR SPECIFICS
X Y SP / XX	CEILING MOUNTED EXIT SIGN "X1" LUMINAIRE TYPE. REFER TO SCHEDULE FOR SPECIFICS LP-##= PANEL BOARD NAME Y= CIRCUIT NUMBER SP= SELF POWERED
XX / X Y SP	WALL OUTLET EXIT SIGN. ARROW INDICATES DIRECTION OF EXCESS "X2" LUMINAIRE TYPE. REFER TO SCHEDULE FOR SPECIFICS. LP-## = PANEL BOARD NAME Y= CIRCUIT NUMBER SP= SELF POWERED

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING

0 1"

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

NO	DATE	REVISION	BY	APVD
1	4/17/24	ADDENDUM 2	MR	RDB

Registered Professional Engineer — Electrical — CERTIFICATE NO. 52847 — BRIAN G. YOUNG — Date Signed 02/16/24 — ARIZONA U.S.A.

DESIGN: T. ADAMS
DRAWN: D. LEWCHANIN
CHECKED: B. YOUNG
APPROVED: R. BRYANT

WATERWORKS ENGINEERS
SCOTTSDALE, AZ

CITY OF PRESCOTT ARIZONA

YAVAPAI HILLS LIFT STATION

ELECTRICAL

LEGEND AND SYMBOLS 2

DATE: FEBRUARY 2024
PROJECT NO.: 21-064
DRAWING NO.: E-002
SHEET NO.: 18

FILENAME: L:\CAD\Projects\21-064 Prescott Yavapai Hills LS\Deliverables\2164D-E002.dgn

PLOT DATE: 2/14/2024 PLOT TIME: 3:40:29 PM

PLAN VIEW SYMBOLS

CONDUIT

PLAN VIEW	DESCRIPTION:
	EXPOSED CONDUIT
	HIDDEN / CONCEALED CONDUIT
	UNDERGROUND CONDUIT
	DUCT BANK
	OVERHEAD POWER LINES
	GROUNDING CONDUCTOR
100	CONDUITS IDENTIFIED BY A NUMBER SHALL BE LISTED IN THE CONDUIT BLOCK DIAGRAM
AA	CONDUITS IDENTIFIED BY LETTERS SHALL CONFORM TO THE TABLES IN THE LEGEND
	CONDUIT STUBBED OUT AND CAPPED
	FLEXIBLE CONDUIT OR MANUFACTURER'S CABLE(S)
	CONDUIT TURNED DOWN
	CONDUIT TURNED UP
	INDICATES LIMITS OF EQUIPMENT OR WIRING ENCLOSURE
XXXX	CONDUIT HOME RUN, XXX DENOTES DESTINATION CONTRACTOR SHALL FIELD ROUTE FROM EQUIPMENT TO DESIGNATED LOCATION
(2)-3"C, 3-#3/0, 1-#2G	DENOTES A QUANTITY OF TWO (2) 3-INCH CONDUITS EACH CONTAINING THREE NO. 3/0 AWG CONDUCTORS AND 1 NO. 2 AWG GROUND CONDUCTOR
2 PR #16 TWSH	DENOTES A QUANTITY OF TWO INSTRUMENT CABLES. EACH CABLE TO CONSIST OF TWO NO. 16 AWG CONDUCTORS TWISTED TOGETHER AND COVERED WITH A METALLIC SHIELD AND AN OVERALL PROTECTIVE JACKET. REFER TO THE SPECIFICATIONS FOR THE EXACT CABLE TO BE PROVIDED.
2 TR #16 TWSH	SAME AS ABOVE EXCEPT CABLE TO CONSIST OF THREE NO. 16 AWG CONDUCTORS TWISTED, SHIELDED AND COVERED WITH AN OVERALL PROTECTIVE JACKET. REFER TO THE SPECIFICATIONS FOR THE EXACT CABLE TO BE PROVIDED.
2 PR #16 TW	DENOTES A QUANTITY OF TWO INSTRUMENT CABLES. EACH CABLE TO CONSIST OF TWO NO. 16 AWG CONDUCTORS TWISTED TOGETHER AND AN OVERALL PROTECTIVE JACKET. REFER TO THE SPECIFICATIONS FOR THE EXACT CABLE TO BE PROVIDED.
(3)-4"C	THREE 4-INCH CONDUITS

POWER RECEPTACLES

PLAN VIEW	DESCRIPTION:
##A LP-### Y	208V, 3P, 4W, RECEPTACLE ##A = AMPERE RATING AS NOTED LP-### = PANEL BOARD NUMBER Y= CIRCUIT NUMBER
##A LP-### Y	240V, 20, 3W, RECEPTACLE ##A = AMPERE RATING AS NOTED LP-### = PANEL BOARD NUMBER Y= CIRCUIT NUMBER
##A LP-### Y	FLOOR OUTLET BOX WITH TYPE OUTLET INDICATED
##A LP-### Y	480V, 3P, 4W RECEPTACLE AND DISCONNECT SWITCH ##A = AMPERE RATING AS NOTED X = PANEL BOARD NUMBER Y = CIRCUIT NUMBER
##A GFCI X WP Y	DUPLEX RECEPTACLE, 20A, 120V, 2P, 3W UNLESS OTHERWISE NOTED * =C - MOUNTED ABOVE COUNTERTOP GF - GROUND FAULT INTERRUPTER TYPE WP - WEATHERPROOF T - TRANSIENT VOLTAGE SURGE SUPPRESSER X= PANEL BOARD NUMBER Y= CIRCUIT NUMBER
##A LP-### Y	QUAD RECEPTACLE, 20A, 120V, 2P, 3W UNLESS OTHERWISE NOTED NOTATION SAME AS ABOVE

SECURITY SYSTEM

PLAN VIEW	DESCRIPTION:
KP	SECURITY SYSTEM KEY PAD
CR	SECURITY SYSTEM CARD ACCESS READER
MD	SECURITY ALARM MOTION DETECTOR
CCTV	CLOSED CIRCUIT TV CAMERA

TELECOMMUNICATION SYSTEM (CONT)

PLAN VIEW	DESCRIPTION:
C2 C	PAGING SPEAKER, FLUSH MOUNTED CEILING TYPE
S	PAGING STATION, SURFACE MOUNTED
VC	REMOTE WALL MOUNTED VOLUME CONTROL. FOR CEILING SPEAKER (MOUNT UP 5'-0" AFF UNO)
A	PAGING SPEAKER AMPLIFIER ASSEMBLY

FIRE ALARM / LIFE SAFETY

PLAN VIEW	DESCRIPTION:
200 R	FIRE ALARM HEAT DETECTOR 135Y FIXED TEMPERATURE UNLESS OTHER- WISE NOTED. "200" DENOTES 200YF TYPE "R" DENOTES FIXED TEMPERATURE RATE-OF-RISE TYPE.
DSD I	FIRE ALARM DUCT SMOKE DETECTOR PHOTOCELL TYPE UNLESS OTHERWISE NOTED. "I" DENOTES IONIZATION TYPE.
DSD 2	FIRE ALARM DUCT SMOKE DETECTOR
FACP-####	FIRE ALARM CONTROL PANEL
FAVP-####	FIRE ALARM VENTILATION PANEL (WITH GRAPHIC PANEL)
FARAP-####	FIRE ALARM REMOTE ANNUNCIATOR
M WP	FIRE ALARM MANUAL PULL STATION, MOUNT UP 4'-0" WP DENOTES WEATHERPROOF COVER
F	OUTDOOR WEATHERPROOF FIRE ALARM MASTER BOX
F	WP FIRE ALARM SPEAKER, MOUNT UP 7'-8"
S	FIRE ALARM STROBE, WALL MOUNT UP 6'-8" OR AT CEILING
F	FIRE ALARM HORN AND STROBE LIGHT COMBINATION, MOUNT UP 6'-8"
F	FIRE ALARM HORN AND STROBE LIGHT COMBINATION, CEILING MOUNT
	SPRINKLER VALVE SUPERVISORY SWITCH
F	FIRE ALARM BELL

FIRE ALARM / LIFE SAFETY (CONT)

PLAN VIEW	DESCRIPTION:
STB ???	WEATHERPROOF HIGH DENSITY FIRE ALARM STROBE LIGHT
	SPRINKLER FLOW ALARM SWITCH
CM	ADDRESSABLE CONTROL MODULE
MM	ADDRESSABLE MONITOR MODULE
SD	SMOKE DETECTOR

TELECOMMUNICATION SYSTEM

PLAN VIEW	DESCRIPTION:
TTB	TELEPHONE TERMINAL BOARD 4FT X 8FT X 3/4 INCH UNLESS NOTED OTHERWISE
	TELEPHONE OUTLET, WALL TYPE (MOUNT 1'-6" AFF UNO)
	TELEPHONE OUTLET AND FLOOR BOX
	TELEPHONE/DATA OUTLET, WALL TYPE (MOUNT 1'-6" AFF UNO)
	TELEPHONE/DATA OUTLET AND FLOOR BOX
C1 C	PAGING SPEAKER, WALL MOUNTED "H1" AND "C1" DENOTES TYPE. H=HORNC=CONE
H2 H H1 H	PAGING SPEAKER, WALL MOUNTED, BIDIRECTIONAL NOTATIONS SAME AS ABOVE

AREA CLASSIFICATION

PLAN VIEW	DESCRIPTION:
DAMP	INDICATES THAT ALL ELECTRICAL EQUIPMENT AND MATERIALS INSTALLED WITHIN THE ROOM OR AREA IN WHICH THIS NOTATION APPEARS SHALL BE OF NEMA 12 CONSTRUCTION (OR GASKETED AND SUITABLE FOR USE IS A WET LOCATION WHERE NEMA STANDARDS DO NOT APPLY) UNLESS OTHERWISE NOTED.
WET	INDICATES THAT ALL ELECTRICAL EQUIPMENT AND MATERIALS INSTALLED WITHIN THE ROOM OR AREA IN WHICH THIS NOTATION APPEARS SHALL BE OF NEMA 4X CONSTRUCTION (OR GASKETED AND SUITABLE FOR USE IN A WET LOCATION WHERE NEMA STANDARDS DO NOT APPLY) UNLESS OTHERWISE NOTED.
CORROSIVE	INDICATES THAT ALL ELECTRICAL EQUIPMENT AND MATERIALS INSTALLED WITHIN THE ROOM OR AREA IN WHICH THIS NOTATION APPEARS SHALL BE OF NEMA 4X CONSTRUCTION (OR GASKETED AND SUITABLE FOR USE IN A WET LOCATION WHERE NEMA STANDARDS DO NOT APPLY) UNLESS OTHERWISE NOTED.
CLASS 1, DIV. 1 GROUP D	INDICATES THAT ALL ELECTRICAL EQUIPMENT AND MATERIALS INSTALLED WITHIN THE ROOM OR AREA IN WHICH THIS NOTATION APPEARS SHALL CONFORM TO N.E.C. REQUIREMENTS FOR THE HAZARDOUS AREA CLASSIFICATION SHOWN.

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING

0 1"

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

NO	DATE	REVISION	BY	APVD
1	4/17/24	ADDENDUM 2	MR	RDB

Registered Professional Engineer (Electrical) CERTIFICATE NO. 52847 BRIAN G. YOUNG Date Signed 02/29/24 ARIZONA U.S.A.

DESIGN T. ADAMS
DRAWN D. LEWCHANIN
CHECKED B. YOUNG
APPROVED R. BRYANT

WATERWORKS ENGINEERS
SCOTTSDALE, AZ

CITY OF PRESCOTT ARIZONA

YAVAPAI HILLS LIFT STATION

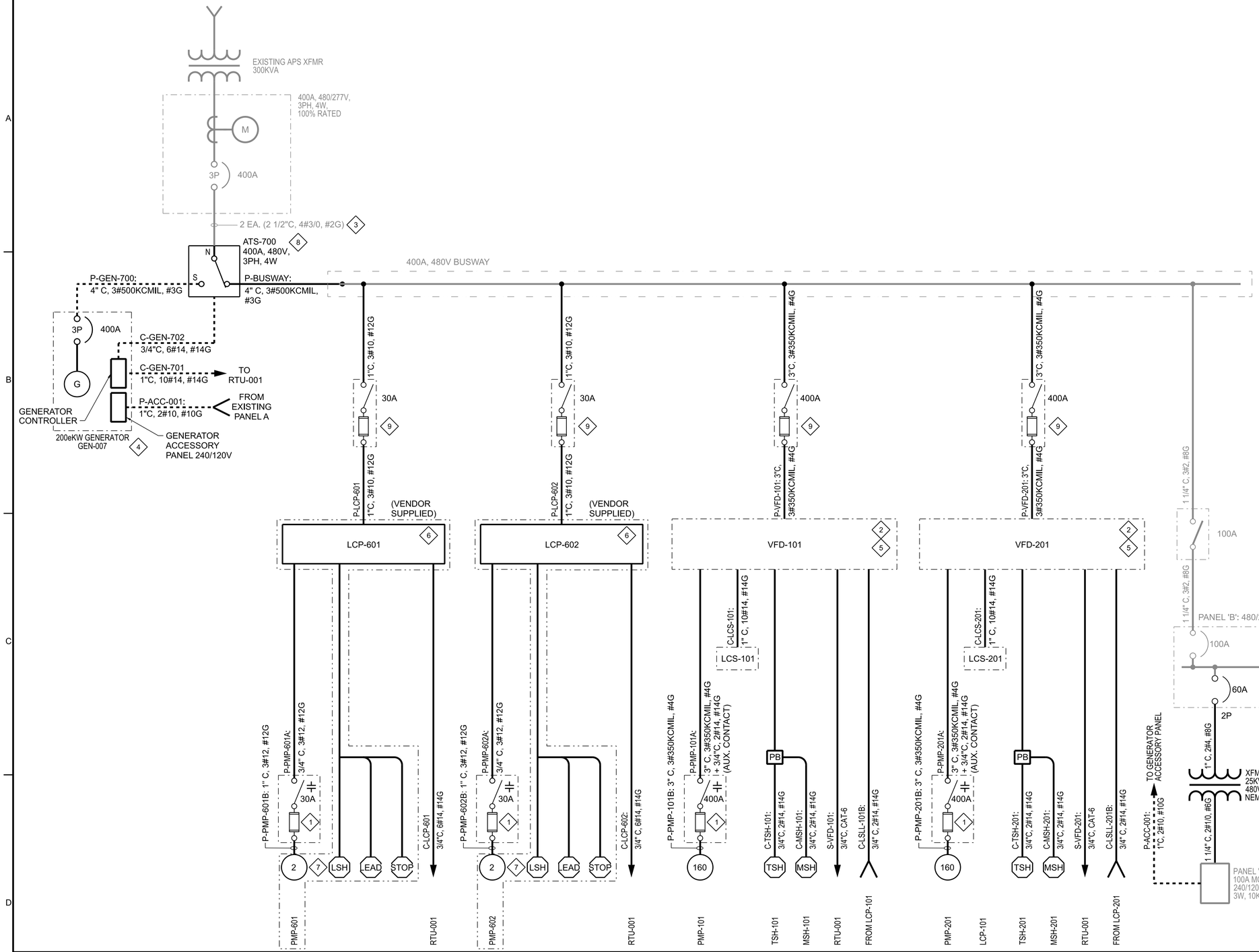
ELECTRICAL

LEGEND AND SYMBOLS 3

DATE: FEBRUARY 2024
PROJECT NO.: 21-064
DRAWING NO.: E-003
SHEET NO.: 19

FILENAME: L:\CAD\Projects\21-064 Prescott Yavapai Hills LS\Deliverables\2164D-E003.dgn

PLOT DATE: 2/14/2024 PLOT TIME: 3:40:52 PM



KEY NOTES:

1. FUSE SIZED PER VFD MANUFACTURER'S RECOMMENDATION.
2. SIZED PER MANUFACTURER'S RECOMMENDATION.
3. RECONNECT EXISTING SERVICE FEEDERS TO NEW ATS.
4. PROVIDE CATERPILLAR STANDBY DIESEL GENERATOR, MODEL#: C7.1 D200GC, 200eKEW / 250 kVA, EPA TIER III, 402 GAL. SUB-BASE TANK: FSBT124 AND SA LEVEL 1 ENCLOSURE MODEL #: D200-2.
5. PROVIDE 480V, 3PH, 200HP, ACTIVE FRONT END (AFE), ALLEN BRADLEY MODEL#: POWERFLEX 755TL, FRAME 6 WITH MAIN BREAKER IN NEMA 4 ENCLOSURE WITH A/C UNIT.
6. PROVIDE 480V, 3PH, WS SERIES SIMPLEX PUMP CONTROL PANEL. SEE WATER INC. MODEL#: WS3P-TP-3004 WITH OPTION 'ETD' ELAPSE TIME METER, LCD DISPLAY AND RESET. PROVIDE OPTION 'SS6' UPGRADED ENCLOSURE - 316 STAINLESS STEEL.
7. PROVIDE 2HP, 460V, 3PH, HYDROMATIC SKHS SERIES SUBMERSIBLE NON-CLOG, SEWAGE EJECTOR PUMP, PENTAIR MODEL#: SKHS200M4 WITH FLOAT SWITCH ASSEMBLY.
8. PROVIDE 400A CAT ATC MOLDED CASE CIRCUIT BREAKER AND MOLDED CASE SWITCH AUTOMATIC TRANSFER SWITCH (ATS), 480V, 3PH, 4W, NEMA 12 ENCLOSURE.
9. FUSED DISCONNECTS MUST BE INSTALLED WITHIN 10 FEET OF EXISTING 400A BUSWAY AS REQUIRED PER NEC 240.21 (B.1).

ELECTRICAL LOAD SUMMARY

LOAD DESCRIPTION	KVA	HP	FLA@ 480V
EXISTING LOADS			
AIR COMPRESSOR		*2*	*3.4*
ELECTRIC HEATER			*2.4*
EXTERIOR LIGHTING			*0.39*
INTERIOR LIGHTING			*0.16*
240/120V XFMR	*25*		*52.1*
LOAD DESCRIPTION	**KVA**	**HP**	**FLA@ 480V**
NEW LOADS			
PUMP NO. 1 (DUTY/STANDBY)		160	240
TRANSFER PUMP NO. 1		2	4.6
TRANSFER PUMP NO. 2		2	4.6
SUBTOTAL:	10	169	307.65
25% OF LARGEST MOTOR			60
TOTAL LOAD @ 480V:			**367.65**

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING

0 1"

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

NO	DATE	REVISION	BY	APVD
1	4/17/24	ADDENDUM 2	MR	RDB

Registered Professional Engineer Certificate No. 52847 BRIAN G. YOUNG Date Signed 02/29/24 ARIZONA U.S.A.

DESIGN T. ADAMS
DRAWN D. LEWCHANIN
CHECKED B. YOUNG
APPROVED R. BRYANT

WATERWORKS ENGINEERS
SCOTTSDALE, AZ

CITY OF PRESCOTT ARIZONA

YAVAPAI HILLS
LIFT STATION

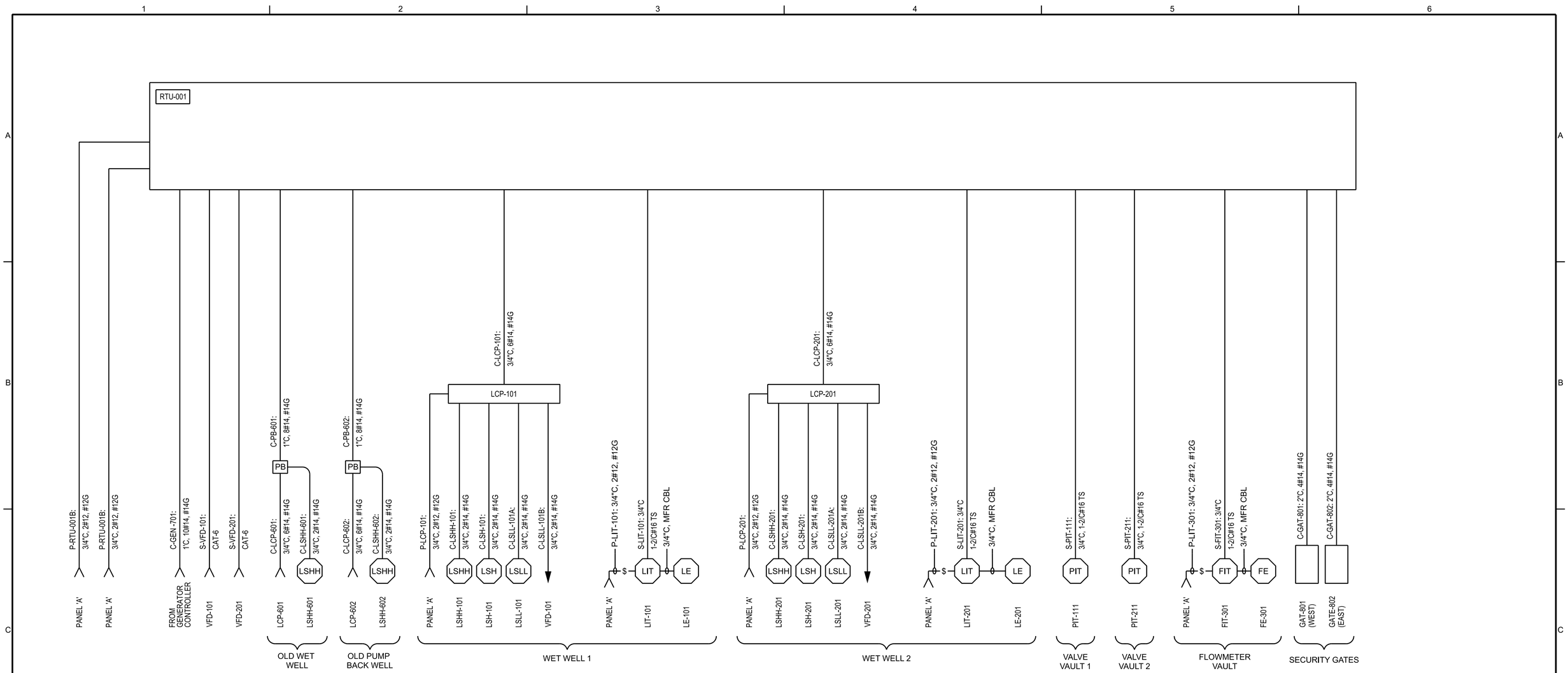
ELECTRICAL

ONE LINE DIAGRAM

DATE: FEBRUARY 2024
PROJECT NO.: 21-064
DRAWING NO.: E-010
SHEET NO.: 20

FILENAME: L:\CAD\Projects\21-064 Prescott Yavapai Hills LS\Deliverables\2164D-E010.dgn

PLOT DATE: 2/14/2024 PLOT TIME: 3:41:27 PM



VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING

0 ■■■■■■■■ 1"

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

NO	DATE	REVISION	BY	APVD
1	4/17/24	ADDENDUM 2	MR	RDB

Registered Professional Engineer - Electrical
CERTIFICATE NO.
52847
BRIAN G. YOUNG
Date Signed 02/20/24
ARIZONA U.S.A.

DESIGN: T. ADAMS
DRAWN: D. LEWCHANIN
CHECKED: B. YOUNG
APPROVED: R. BRYANT

WATERWORKS ENGINEERS
SCOTTSDALE, AZ

CITY OF PRESCOTT ARIZONA

YAVAPAI HILLS LIFT STATION

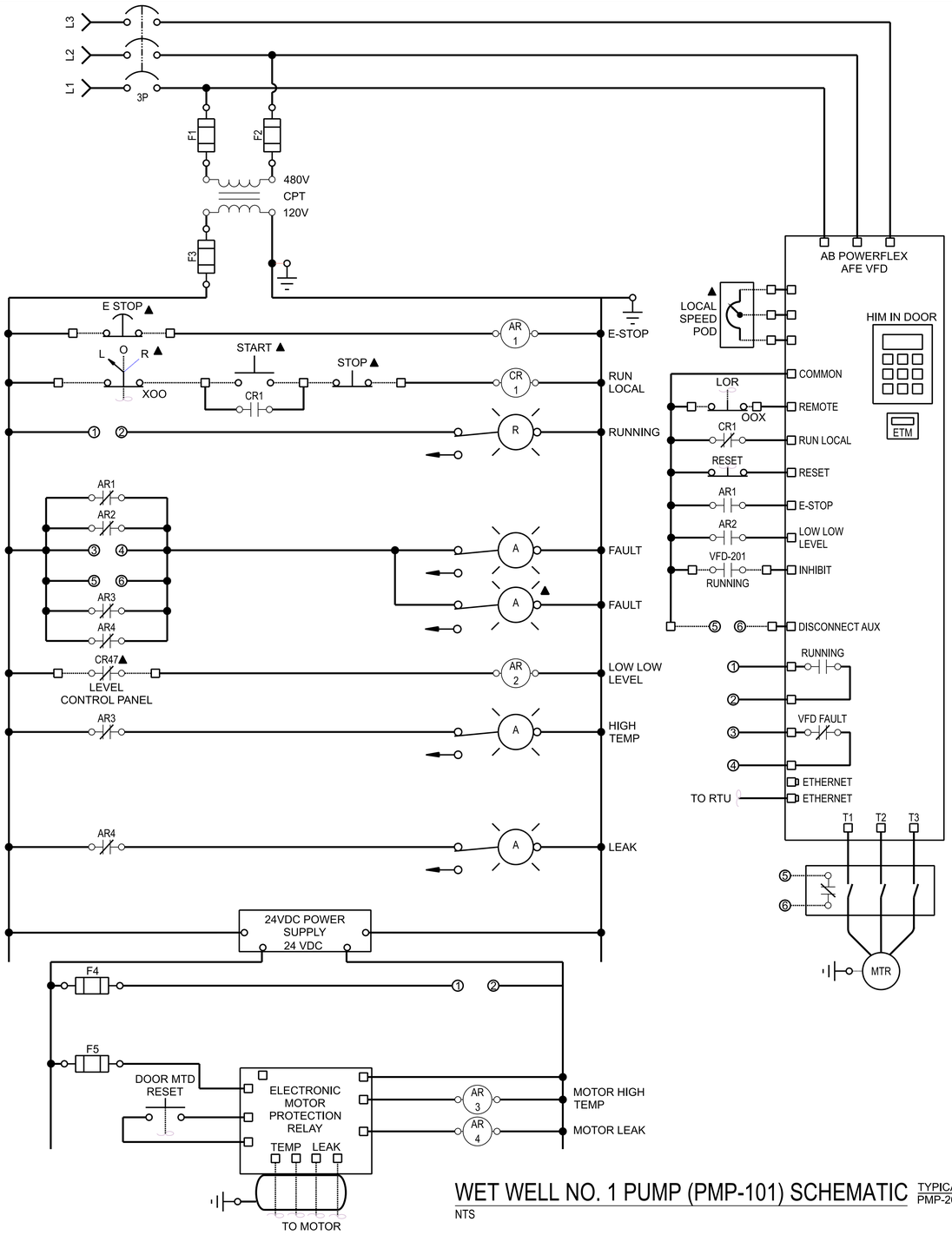
ELECTRICAL

BLOCK DIAGRAMS - 1

DATE: FEBRUARY 2024
PROJECT NO.: 21-064
DRAWING NO.: E-020
SHEET NO.: 21

FILENAME: L:\CAD\Projects\21-064 Prescott Yavapai Hills LS\Deliverables\2164D-E020.dgn

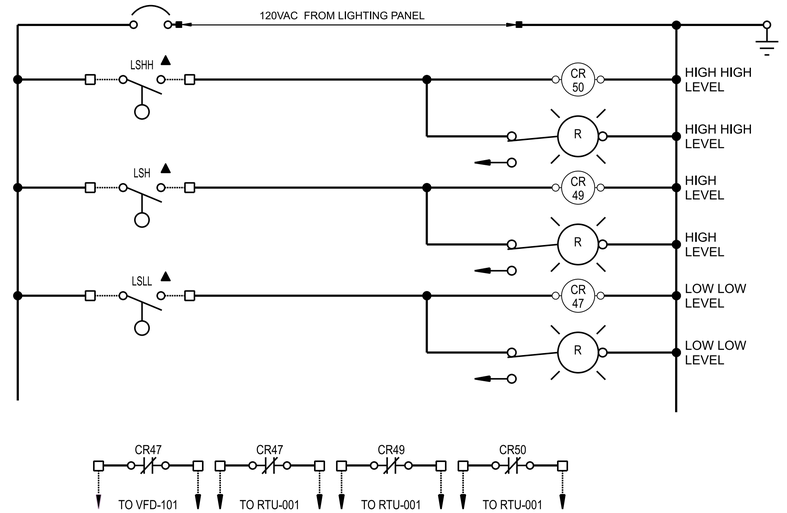
PLOT DATE: 2/14/2024 PLOT TIME: 3:41:59 PM



WET WELL NO. 1 PUMP (PMP-101) SCHEMATIC

TYPICAL FOR: PMP-201

NTS



18"X24"X10" LEVEL CONTROL PANEL

LEVEL CONTROL PANEL LCP-101 SCHEMATIC

TYPICAL FOR: LCP-201

NTS

NOTES:

1. THE CONTRACTOR SHALL BE ALLOWED TO COMBINE LIKE CIRCUITS WHERE APPROPRIATE WITH ENGINEERS APPROVAL.
2. REFER TO ONE LINE DIAGRAMS.

SYMBOLS

- □ ON VFD
- ■ LOCATED AT MOTOR
- ◇ LOCAL TO PLC
- ○ DEVICE TERMINAL
- ▲ LOCATED AT LOCAL CONTROL STATION (LCS)

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING

0 1"

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

NO	DATE	REVISION	BY	APVD
1	4/17/24	ADDENDUM 2	MR	RDB

Registered Professional Engineer (Fire Protection) CERTIFICATE NO. 52847 BRIAN G. YOUNG Date Signed 02/28/24 ARIZONA U.S.A.

DESIGN T. ADAMS
DRAWN D. LEWCHANIN
CHECKED B. YOUNG
APPROVED R. BRYANT

WATERWORKS ENGINEERS
SCOTTSDALE, AZ

CITY OF PRESCOTT ARIZONA

YAVAPAI HILLS LIFT STATION

ELECTRICAL

SCHEMATICS - 1

DATE: FEBRUARY 2024
PROJECT NO.: 21-064
DRAWING NO.: E-030
SHEET NO.: 22

FILENAME: L:\CAD\Projects\21-064 Prescott Yavapai Hills LS\Deliverables\2164D-E030.dgn

PLOT DATE: 2/14/2024 PLOT TIME: 3:42:19 PM

PANEL B

100	AMP MAIN CIRCUIT BREAKER RATING						22	KA SHORT CIRCUIT RATING				LOCATION:	STORAGE BUILDING				
100	AMP BUS RATING	20	POLES				ELECTRONIC GRADE:	NO				ENCLOSURE:	NEMA 1				
480/277	VOLTS	3	PHASE	4	WIRE	60	HZ					MOUNTING:	SURFACE				

		LOAD KVA								LOAD KVA					
CIRCUIT NO.	DESCRIPTION	PHASE A	PHASE B	PHASE C	TYPE	BREAKER AMPS	NOTES	CIRCUIT NO.	DESCRIPTION	PHASE A	PHASE B	PHASE C	TYPE	BREAKER AMPS	NOTES
1	PANEL A - TRANSFORMER (10kVA)	5.04			CONT	30/2		2					CONT		
3			5.04		CONT			4	SPARE				CONT	20/3	
5				1.18	MOTOR			6					CONT		
7	AIR COMPRESSOR	1.18			MOTOR	20/3		8	INTERIOR LIGHTING	0.86			CONT	20/1	
9			1.18		MOTOR			10	SITE LIGHTING		0.10		CONT	20/1	
11	QUARTZ HEATERS			2.00	NON-CONT	25/1		12	BUILDING EXTERIOR/CANOPY LIGHTING			0.07	CONT	20/1	
13	SPACE							14	SPACE						
15	SPACE							16	SPACE						
17	SPACE							18	SPACE						
19	SPACE							20	SPACE						
	SUM OF KVA (ODD):	6.220	6.220	3.180	TRANSFORMER KVA:	17	MIN		SUM OF KVA (EVEN):	0.860	0.100	0.070	25% OF LARGEST MOTOR:		
	FEEDER KVA (ODD):	7.480	7.480	3.180					FEEDER KVA (EVEN):	1.075	0.125	0.088	KVA=		0.295
									TOTAL FEEDER KVA:		19.723		TOTAL AMPS		24

NOTES:		NOTES:	
1	PROVIDE LOCKING HARDWARE	2	PROVIDE LOCKING RED HARDWARE
3	EQUIPMENT PROTECTION 30ma GFI	4	PERSONEL PROTECTION 5ma GFI
5	BRANCH CIRCUIT WIRING: 3/4"C, 2#12,#12G	6	BRANCH CIRCUIT WIRING: 3/4"C, 2#10,#10G
7	BRANCH CIRCUIT WIRING: 3/4"C, 3#12,#12G	8	BRANCH CIRCUIT WIRING: 3/4"C, 3#10,#10G
9	BRANCH CIRCUIT WIRING: 1 1/2"C, 3#6, #10G	10	
11		12	

PANEL A

100	AMP MAIN CIRCUIT BREAKER RATING						22	KA SHORT CIRCUIT RATING				LOCATION:	STORAGE BUILDING				
100	AMP BUS RATING	12	POLES				ELECTRONIC GRADE:	NO				ENCLOSURE:					
240/120	VOLTS	1	PHASE	3	WIRE	60	HZ					MOUNTING:					

		LOAD KVA								LOAD KVA					
CIRCUIT NO.	DESCRIPTION	PHASE A	PHASE B	TYPE	BREAKER AMPS	NOTES	CIRCUIT NO.	DESCRIPTION		PHASE A	PHASE B	TYPE	BREAKER AMPS	NOTES	
1	STBY GENERATOR	2.88		CONT	30/2		2	RECEPTACLES		0.90		CONT	20/1		
3	ACCESSORY PANEL		2.88	CONT			4	SPARE				CONT	20/1		
5	RTU-001(A)	1.20		CONT	20/1		6	SPARE				CONT	20/1		
7	RTU-001(B)		1.92	CONT	20/1		8	P-LIT-101			0.25	CONT	20/1		
9	SPARE			CONT	30/2		10	P-LIT-201		0.25		CONT	20/1		
11				CONT			12	P-FIT-301			0.15	CONT	20/1		
13	WEST SECURITY GATE	0.18		MOTOR	20/2		14	EAST SECURITY GATE		0.18		MOTOR	20/2		
15			0.18	MOTOR			16				0.18	MOTOR			
17	LCP-101	0.20		CONT	20/1		18	LCP-201		0.20		CONT	20/1		
19	SPACE			CONT	/1		20	SPACE				CONT	/1		
21	SPACE			CONT	/1		22	SPACE				CONT	/1		
23	SPACE			CONT	/1		24	SPACE				CONT	/1		
	SUM OF KVA (ODD):	4.460	4.980	TRANSFORMER KVA:	12	MIN		SUM OF KVA (EVEN):		1.530	0.580	25% OF LARGEST MOTOR:			
	FEEDER KVA (ODD):	5.530	6.180					FEEDER KVA (EVEN):		1.868	0.680	KVA=		0.045	
								TOTAL FEEDER KVA:		14.303		TOTAL AMPS		60	

NOTES:		NOTES:	
1	PROVIDE LOCKING HARDWARE	2	PROVIDE LOCKING RED HARDWARE
3	EQUIPMENT PROTECTION 30ma GFI	4	PERSONEL PROTECTION 5ma GFI
5	BRANCH CIRCUIT WIRING: 3/4"C, 2#12,#12G	6	BRANCH CIRCUIT WIRING: 3/4"C, 2#10,#12G
7	BRANCH CIRCUIT WIRING: 3/4"C, 3#12,#12G	8	BRANCH CIRCUIT WIRING: 3/4"C, 2#10,#10G
9		10	
11		12	

LIGHTING FIXTURE SCHEDULE

TYPE	WATT	DESCRIPTION	MFR (OR APPROVED EQUAL)
C1	30	15" SQUARE, SEMI-RECESSED, LED CANOPY FIXTURE, 4,564 LUMEN, TYPE 5 DISTRIBUTION, DIE-CAST ALUMINUM, POWDER-COATED FINISH, ACRYLIC LENS, 277V, 0-10V DIMMING, 40K, 70 CRI, 10KV SURGE PROTECTION, IP65 LISTED.	HUBBELL OUTDOOR LIGHTING: VHS-30-4K7-UNV.
WE	18	WALL-MOUNTED LED, FULLY CUT-OFF WITH BACK BOX, 3000 LUMEN, 40K, 277V (MVOLT), EMERGENCY BATTERY BACKUP (CEC COMPLIANT), BUTTON TYPE PHOTOCELL FOR DUSK-TO-DAWN OPERATION, 6KV SURGE PROTECTION, BLACK FINISH, IP65 RATED, DARK-SKY COMPLIANT.	LITHONIA LIGHTING: ARC1 LED P3 40K MVOLT E4WH/PE/SPD6KV/DBLXD/WS BBW DBLXD.
L1	2x18	TWIN LED, FULLY CUT-OFF, POLE MOUNTED AREA LIGHT, 2x2212 LUMEN, T4 DISTRIBUTION, 277V (UNV), UL LISTED. IP 65 RATED. TYPE: P1 POLE.	VISIONAIRE LIGHTING: VSX-II T4 16LC 3 5K UNV SAM GY
P1	-	16 FOOT, SOFT SQUARE, NON-TAPERED ALUMINUM, HINGED BASE POLE. ARM CONFIGURATION: 180°	VALMONT STRUCTURES: S-160040406YH-D2-DCG

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING

0 1"

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

NO	DATE	REVISION	BY	APVD
1	4/17/24	ADDENDUM 2	MR	RDB

Registered Professional Engineer (Electrical) — CERTIFICATE NO. 52847 — BRIAN G. YOUNG — Date Signed 02/16/24 — ARIZONA U.S.A.

DESIGN: T. ADAMS
DRAWN: D. LEWCHANIN
CHECKED: B. YOUNG
APPROVED: R. BRYANT

WATERWORKS ENGINEERS
SCOTTSDALE, AZ

CITY OF PRESCOTT ARIZONA

YAVAPAI HILLS LIFT STATION

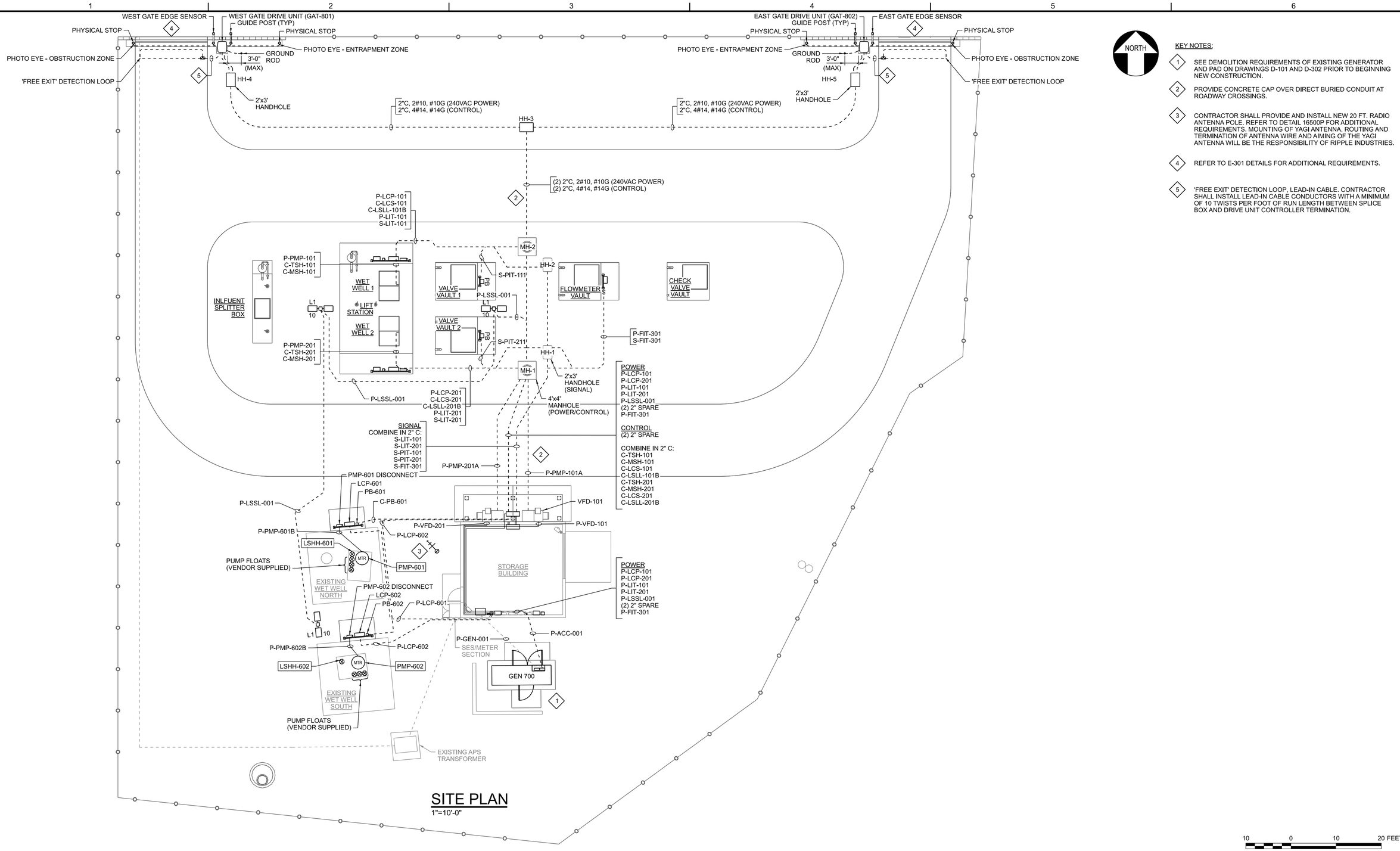
ELECTRICAL

SCHEDULES - 1

DATE: FEBRUARY 2024
PROJECT NO.: 21-064
DRAWING NO.: E-040
SHEET NO.: 23

FILENAME: L:\CAD\Projects\21-064 Prescott Yavapai Hills LS\Deliverables\2164D-E040.dgn

PLOT DATE: 2/14/2024 PLOT TIME: 3:42:39 PM



SITE PLAN

1"=10'-0"

NORTH

KEY NOTES:

1. SEE DEMOLITION REQUIREMENTS OF EXISTING GENERATOR AND PAD ON DRAWINGS D-101 AND D-302 PRIOR TO BEGINNING NEW CONSTRUCTION.
2. PROVIDE CONCRETE CAP OVER DIRECT BURIED CONDUIT AT ROADWAY CROSSINGS.
3. CONTRACTOR SHALL PROVIDE AND INSTALL NEW 20 FT. RADIO ANTENNA POLE. REFER TO DETAIL 16500P FOR ADDITIONAL REQUIREMENTS. MOUNTING OF YAGI ANTENNA, ROUTING AND TERMINATION OF ANTENNA WIRE AND AIMING OF THE YAGI ANTENNA WILL BE THE RESPONSIBILITY OF RIPPLE INDUSTRIES.
4. REFER TO E-301 DETAILS FOR ADDITIONAL REQUIREMENTS.
5. 'FREE EXIT' DETECTION LOOP, LEAD-IN CABLE. CONTRACTOR SHALL INSTALL LEAD-IN CABLE CONDUCTORS WITH A MINIMUM OF 10 TWISTS PER FOOT OF RUN LENGTH BETWEEN SPLICE BOX AND DRIVE UNIT CONTROLLER TERMINATION.

10 0 10 20 FEET
SCALE 1"-10'

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

NO	DATE	REVISION	BY	APVD
1	4/17/24	ADDENDUM 2	MR	RDB

Registered Professional Engineer (Electrical) CERTIFICATE NO. 52847 BRIAN G. YOUNG Date Signed 02/16/24 ARIZONA U.S.A.

DESIGN T. ADAMS
DRAWN D. LEWCHANIN
CHECKED B. YOUNG
APPROVED R. BRYANT

WATERWORKS ENGINEERS
SCOTTSDALE, AZ

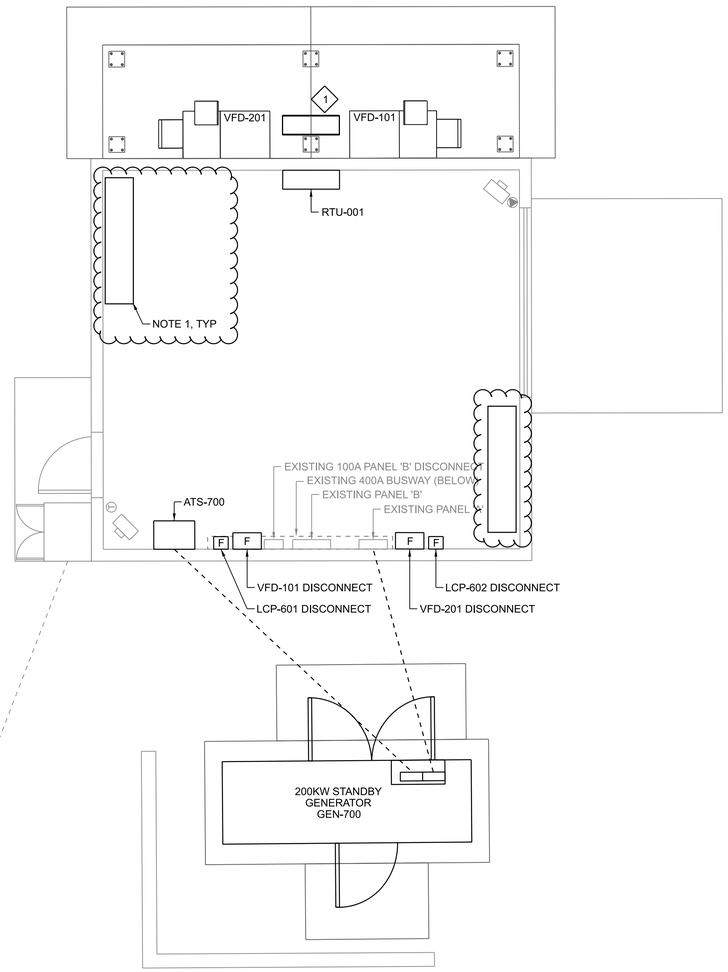
CITY OF PRESCOTT ARIZONA

YAVAPAI HILLS LIFT STATION

ELECTRICAL
SITE PLAN

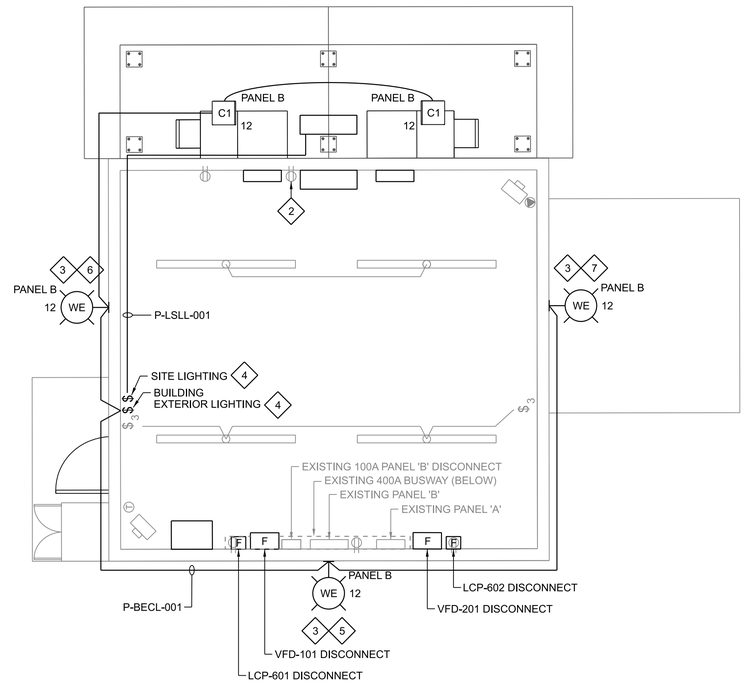
DATE FEBRUARY 2024
PROJECT NO. 21-064
DRAWING NO. E-101
SHEET NO. 24

FILENAME: L:\CAD\Projects\21-064 Prescott Yavapai Hills LS\Deliverables\2164D-E101.dgn
PLOT DATE: 2/14/2024 PLOT TIME: 3:43:30 PM



STORAGE BUILDING POWER PLAN

1/4" = 1'-0"



STORAGE BUILDING LIGHTING PLAN

1/4" = 1'-0"

NORTH

NOTES:

1. PROVIDE PALLET SHELVING IN THE LOCATIONS INDICATED. CONTRACTOR SHALL PROVIDE LAYOUT DRAWINGS AND MAINTAIN REQUIRED CLEARANCES WITH ELECTRICAL EQUIPMENT PER APPLICABLE ORDINANCES. SHELVING SHALL BE 24" DEEP AND SPAN A MINIMUM OF 6'. ACHORING SHALL BE PER THE MANUFACTURERS RECOMMENDATION

1

KEY NOTES:

1. PROVIDE NEMA 3R WIREWAY MOUNTED ABOVE VFD ENCLOSURES FOR ROUTING OF POWER, CONTROL AND SIGNAL CABLE AND WIRES (P/C & S).
2. RELOCATED EXISTING RECEPTACLE. REFER TO DEMOLITION NOTE D7 ON DRAWING ED-002 FOR REQUIREMENTS PRIOR TO BEGINNING NEW WORK IN THIS AREA. SEE ALSO DEMOLITION NOTE D8.
3. PROVIDE UN-SWITCHED HOT LEG BACK TO SOURCE FOR FIXTURE'S EMERGENCY DRIVER.
4. PROVIDE HEAVY-DUTY, 120/277V SWITCH.
5. MOUNT FIXTURE CENTERED ON WALL @ 9'-8 1/2" A.F.F..
6. MOUNT FIXTURE CENTERED ON WALL @ 7'-4 1/2" A.F.G..
7. MOUNT FIXTURE CENTERED @ 4 1/2" OVER GARAGE DOOR ROUGH OPENING.

4 0 4 8 FEET

SCALE 1/4"=1'-0"

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING

0 1"

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

NO	DATE	REVISION	BY	APVD
1	4/17/24	ADDENDUM 2	MR	RDB

Registered Professional Engineer, Electrical
CERTIFICATE NO.
52847
BRIAN G.
YOUNG
Date Signed 02/09/24
ARIZONA U.S.A.

DESIGN: T. ADAMS
DRAWN: D. LEWCHANIN
CHECKED: B. YOUNG
APPROVED: R. BRYANT

WATERWORKS ENGINEERS
SCOTTSDALE, AZ

CITY OF PRESCOTT ARIZONA

YAVAPAI HILLS
LIFT STATION

ELECTRICAL

STORAGE BUILDING ENLARGED
POWER AND LIGHTING PLANS

DATE: FEBRUARY 2024
PROJECT NO.: 21-064
DRAWING NO.: E-102
SHEET NO.: 25

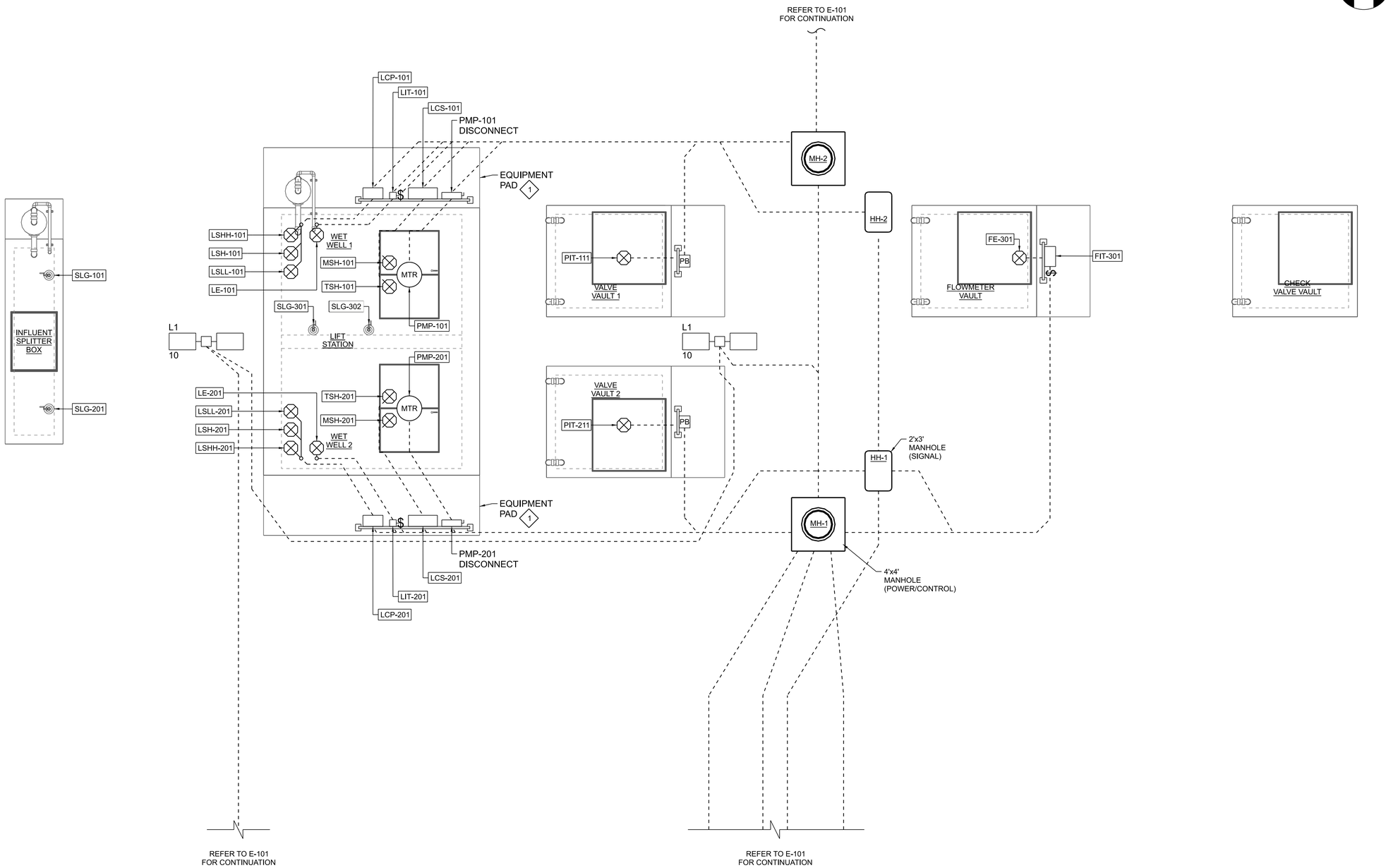
FILENAME: L:\CAD\Projects\21-064 Prescott Yavapai Hills LS\Deliverables\2164D-E102.dgn

PLOT DATE: 2/14/2024 PLOT TIME: 3:43:55 PM

NORTH

KEY NOTES:

1 PROVIDE A SUN SHADE OVER EQUIPMENT PANELS.



ENLARGED POWER PLAN

1"=10'-0"

4 0 4 8 FEET

SCALE 1/4"=1'-0"

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING

0 1"

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

NO	DATE	REVISION	BY	APVD
1	4/17/24	ADDENDUM 2	MR	RDB

Registered Professional Engineer (Electrical) CERTIFICATE NO. 52847 BRIAN G. YOUNG Date Signed 02/16/24 ARIZONA U.S.A.

DESIGN T. ADAMS

DRAWN D. LEWCHANIN

CHECKED B. YOUNG

APPROVED R. BRYANT

WATERWORKS ENGINEERS

SCOTTSDALE, AZ

CITY OF PRESCOTT ARIZONA

YAVAPAI HILLS
LIFT STATION

ELECTRICAL

LIFT STATION ENLARGED
POWER AND LIGHTING PLAN

DATE FEBRUARY 2024

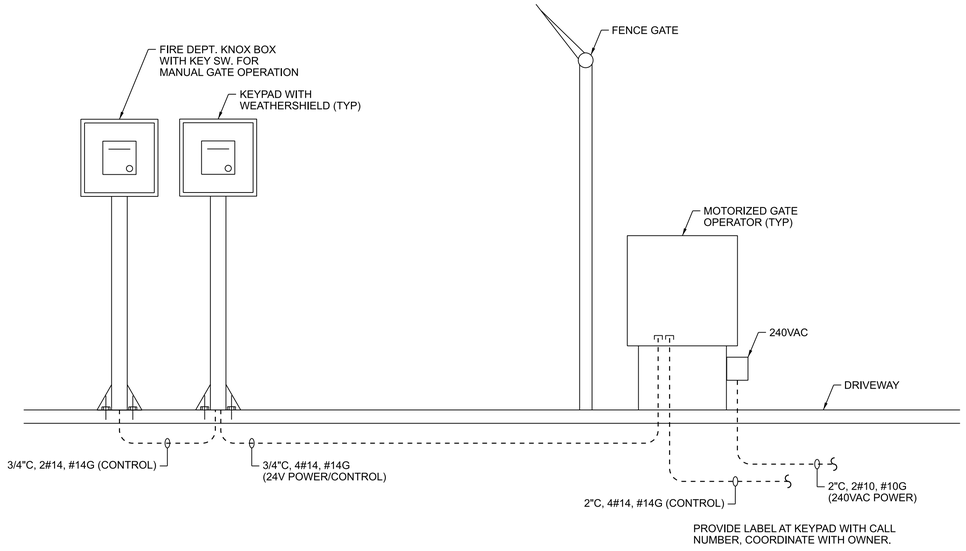
PROJECT NO. 21-064

DRAWING NO. E-103

SHEET NO. 26

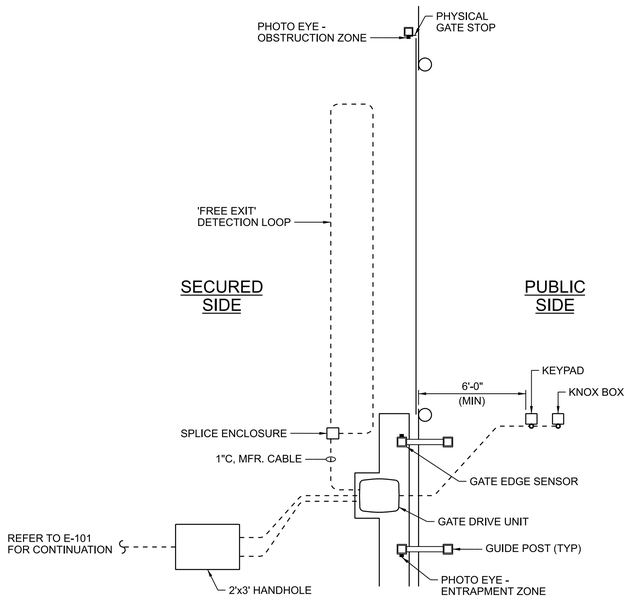
FILENAME: L:\CAD\Projects\21-064 Prescott Yavapai Hills LS\Deliverables\2164D-E103.dgn

PLOT DATE: 2/14/2024 PLOT TIME: 3:44:33 PM



TYPICAL ENTRANCE GATE DETAIL

NTS



ENTRANCE GATE PLAN

NTS

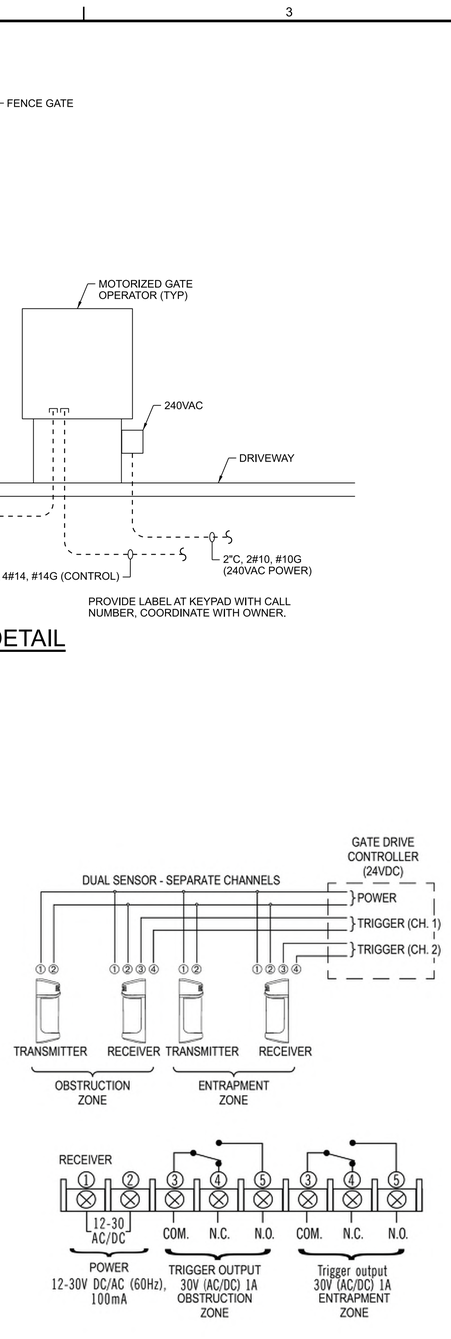
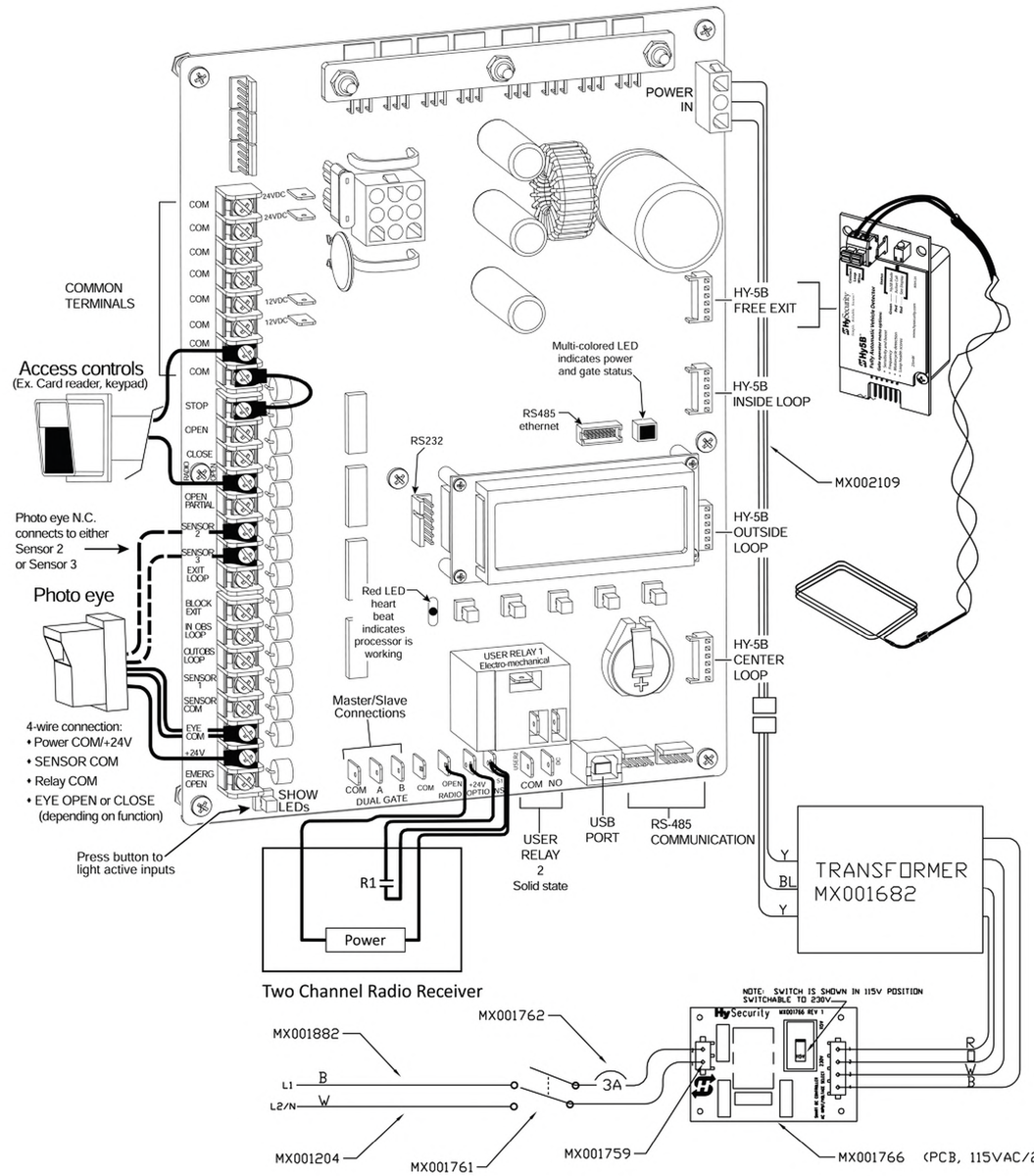


PHOTO EYE WIRING DIAGRAMS

NTS



GATE DRIVE CONTROLLER WIRING DIAGRAM

NTS

VERIFY SCALE				
BAR IS ONE INCH ON ORIGINAL DRAWING				
0 ■ 1"				
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	1	4/17/24	ADDENDUM 2	MR / RDB
	NO	DATE	REVISION	BY / APVD

Registered Professional Engineer (Electrical) — CERTIFICATE NO. 52847 — BRIAN G. YOUNG — Date Signed 02/20/24 — ARIZONA U.S.A.

DESIGN	T. ADAMS
DRAWN	D. LEWCHANIN
CHECKED	B. YOUNG
APPROVED	R. BRYANT

WATERWORKS ENGINEERS
SCOTTSDALE, AZ

CITY OF PRESCOTT ARIZONA

YAVAPAI HILLS
LIFT STATION

ELECTRICAL

DETAILS - 1

DATE	FEBRUARY 2024
PROJECT NO.	21-064
DRAWING NO.	E-301
SHEET NO.	27

FILENAME: L:\CAD\Projects\21-064 Prescott Yavapai Hills LS\Deliverables\2164D-E301.dgn

PLOT DATE: 2/14/2024 PLOT TIME: 3:45:04 PM

PROCESS LINES

LINE WEIGHT, COLOR & LINE TYPE	DESCRIPTION:
	PRIMARY PROCESS LINE
	PRIMARY PROCESS LINE (DEMO)
	PRIMARY PROCESS LINE (FUTURE)
	PRIMARY PROCESS LINE (VENDOR SUPPLIED)
	PRIMARY PROCESS LINE (EXIST)
	SECONDARY PROCESS LINE
	SECONDARY PROCESS LINE (DEMO)
	SECONDARY PROCESS LINE (FUTURE)
	SECONDARY PROCESS LINE (VENDOR SUPPLIED)
	SECONDARY PROCESS LINE (EXIST)
	AUXILIARY / TERTIARY PROCESS LINE
	AUXILIARY / TERTIARY PROCESS LINE (DEMO)
	AUXILIARY / TERTIARY PROCESS LINE (FUTURE)
	AUXILIARY / TERTIARY PROCESS LINE (VENDOR SUPPLIED)
	AUXILIARY / TERTIARY PROCESS LINE (EXIST)
	HEAT TRACE
	INSTRUMENT SUPPLY / CONNECTION TO PROCESS
	CAPILLARY SIGNAL
	ELECTRICAL SIGNAL
	CAT 5E ETHERNET SIGNAL
	FIBER OPTIC SIGNAL
	HYDRAULIC SIGNAL
	MECHANICAL LINK SIGNAL
	PNEUMATIC SIGNAL
	SOFTWARE SIGNAL

PROCESS SYMBOLS

SYMBOL	DESCRIPTION:
	SIGNAL LINE BREAK
	PROCESS LINE BREAK
	SECONDARILY CONTAINED PIPING
	BOX INDICATING FUNCTIONAL GROUPS OR EQUIPMENT THAT REPEATS
	ARROW INDICATES DIRECTION OF PROCESS FLOW
	ARROW INDICATES DIRECTION OF SIGNAL FLOW
	SIGNAL CONNECTION POINT
	PROCESS LINES CROSSING (NOT CONNECTED)
	PROCESS LINES CROSSING (CONNECTED)
##-??-### A	PROCESS GOING TO ANOTHER SHEET (MATCH LETTERS)
B ##-??-###	PROCESS LINE FROM ANOTHER SHEET (MATCH LETTERS)
##-??-### 1	SIGNAL GOING TO ANOTHER SHEET (MATCH NUMBERS)
2 ##-??-###	SIGNAL LINE FROM ANOTHER SHEET (MATCH NUMBERS)
	PROCESS LINE CONTINUED OUTSIDE SCOPE OF DRAWINGS
	ANALOG SIGNAL IN
	ANALOG SIGNAL OUT
	DISCRETE SIGNAL IN
	DISCRETE SIGNAL OUT
	PULSED SIGNAL IN
	FLOAT SWITCH
	LIQUID LEVEL / SURFACE
(SPEC) (SPEC)	PIPE SPEC CHANGE
###V OR ###V	INSTRUMENT POWER SUPPLY
OR	RADIO ANTENNA

ISA INSTRUMENT SYMBOLS & IDENTIFICATION

	FIRST LETTERS		SUCCEEDING LETTERS		
	MEASURE / INITIATING VARIABLE	VARIABLE MODIFIER	READOUT / PASSIVE FUNCTION	OUTPUT / ACTIVE FUNCTION	FUNCTION MODIFIER
A	ANALYSIS		ALARM		
B	BURNER, COMBUSTION		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
C	USER'S CHOICE			CONTROL	CLOSE
D	USER'S CHOICE	DIFFERENCE, DIFFERENTIAL			DEVIATION
E	VOLTAGE		SENSOR, PRIMARY ELEMENT		
F	FLOW, FLOW RATE	RATIO			
G	USER'S CHOICE		GLASS, GAUGE, VIEWING DEVICE		
H	HAND				HIGH
I	CURRENT		INDICATE		
J	POWER		SCAN		
K	TIME, SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT		LOW
M	USER'S CHOICE				MIDDLE, INTERMEDIATE
N	USER'S CHOICE		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
O	USER'S CHOICE		ORIFICE, RESTRICTION		OPEN
P	PRESSURE		POINT (TEST CONNECTION)		
Q	QUANTITY	INTEGRATE, TOTALIZE	INTEGRATE, TOTALIZE		
R	RADIATION		RECORD		RUN
S	SPEED, FREQUENCY	SAFETY		SWITCH	STOP
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	
V	VIBRATION, MECHANICAL ANALYSIS			VALVE, DAMPER, LOUVER	
W	WEIGHT, FORCE		WELL, PROBE		
X	UNCLASSIFIED	X-AXIS	ACCESSORY DEVICE, UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT, STATE, PRESENCE	Y-AXIS		AUXILIARY DEVICES	
Z	POSITION, DIMENSION	Z-AXIS, SAFETY INSTRUMENTED SYSTEM		DRIVER, ACTUATOR, UNCLASSIFIED FINAL CONTROL ELEMENT	

GENERAL INSTRUMENT & DIGITAL INTERFACE SYMBOLS

	FIELD MOUNTED INSTRUMENT	PANEL MOUNTED INSTRUMENT	MCC MOUNTED INSTRUMENT	INACCESSIBLE INSTRUMENT
DISCRETE INSTRUMENTS	XXX / ###	XXX / ###	XXX / ###	XXX / ###
SHARED DISPLAY SHARED CONTROL	XXX / ###	XXX / ###	XXX / ###	XXX / ###
COMPUTER FUNCTION	XXX / ###	XXX / ###	XXX / ###	XXX / ###
PROGRAMMABLE LOGIC CONTROL	XXX / ###	XXX / ###	XXX / ###	XXX / ###

S/S PIT 40101 — INSTRUMENT WITH LONG LOOP NUMBER

PI 38101 PIT 38101 — INSTRUMENTS SHARING A COMMON HOUSING

ALM YL 10101 — PILOT LIGHT PANEL MOUNTED

ALM YL 10101 — PILOT LIGHT FIELD MOUNTED

A 10 — PANEL MOUNTED PATCH BOARD POINT 10

LVL LIT 10201 — RADAR

P — PURGE OR FLUSHING DEVICE

R — REST FOR LATCH-TYPE ACTUATOR

DIAPHRAGM SEAL

I# — UNDEFINED INTERLOCK LOGIC

LVL LIT 10301 — ULTRA SONIC

S — SAMPLE POINT

INSTRUMENT TAG NUMBERING SYSTEM

INSTRUMENT IDENTIFICATION (REFER TO TABLE ABOVE RIGHT) — SUCCEEDING LETTER(S), FIRST LETTER(S)

FIT 08101B

SYSTEM I/O INTERFACE. DIRECTION OF FLOW INDICATES WHETHER IT IS INPUT OR OUTPUT

ZS 40220

LETTERS, TAG NUMBERS, ABBREVIATIONS & OTHER ANNOTATIONS ARE SIMILAR TO THE ABOVE INSTRUMENT IDENTIFICATION.

INSTRUMENT FUNCTION OR CONTROL DESCRIPTOR

HOA

FIT 08201B

INSTRUMENT ID (ISA STANDARD) — DUPLICATE INSTRUMENT

FIT 08 101 B

PROCESS AREA IDENTIFIER — LOOP NUMBER

PROCESS AREA NUMBER DESIGNATION — UNIQUE NUMBER

10-FLT-101

EQUIPMENT TYPE

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING

0 1"

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

NO	DATE	REVISION	BY	APVD
1	4/17/24	ADDENDUM 2	MR	RDB

Registered Professional Engineer (Electrical) — CERTIFICATE NO. 52847 — BRIAN G. YOUNG — Date Signed 02/26/24 — ARIZONA U.S.A.

DESIGN T. ADAMS
DRAWN D. LEWCHANIN
CHECKED B. YOUNG
APPROVED R. BRYANT

WATERWORKS ENGINEERS
SCOTTSDALE, AZ

CITY OF PRESCOTT ARIZONA

YAVAPAI HILLS LIFT STATION

INSTRUMENTATION

SYMBOLS AND LEGENDS

DATE: FEBRUARY 2024
PROJECT NO.: 21-064
DRAWING NO.: N-001
SHEET NO.: 28

FILENAME: L:\CAD\Projects\21-064 Prescott Yavapai Hills LS\Deliverables\2164D-N001.dgn

PLOT DATE: 2/14/2024 PLOT TIME: 3:49:36 PM

PROCESS VALVES

SYMBOL	DESCRIPTION:
ARV-###	AIR RELIEF VALVE
AVV-###	AIR VACUUM VALVE
BFP-###	BACKFLOW PREVENTER VALVE
BPRV-###	BACK PRESSURE REDUCING VALVE
BCV-###	BALL CHECK VALVE
BAV-### NO / BAV-### NC	BALL VALVE NO = NORMALLY OPEN NC = NORMALLY CLOSED
BFV-###	BUTTERFLY VALVE
CARV-###	COMBINATION AIR RELIEF / AIR VACUUM VALVE
CRP-###	CORPORATION STOP VALVE
DPB-###	DIAPHRAGM VALVE
CHK-###	DUAL DISK SWING CHECK VALVE
CHK-###	DUCK BILL CHECK VALVE
GAV-### NO / GAV-### NC	GATE VALVE NO = NORMALLY OPEN NC = NORMALLY CLOSED
GLV-### NO / GLV-### NC	GLOBE VALVE NO = NORMALLY OPEN NC = NORMALLY CLOSED
MV-###	MUD VALVE
MPV-### / MPV-###	MULTI-PORT VALVE(S)
NV-###	NEEDLE VALVE
PV-###	PINCH VALVE
PLV-### NO / PLV-### NC	PLUG VALVE NO = NORMALLY OPEN NC = NORMALLY CLOSED
PRV-###	PRESSURE RELIEF VALVE
PRV-###	PRESSURE REGULATING VALVE
RDV-###	RUPTURE DISK (PRESSURE RELEASE)
RDV-###	RUPTURE DISK (VACUUM RELEASE)

PROCESS VALVES (CONT.)

SYMBOL	DESCRIPTION:
CHK-###	SILENT CHECK VALVE
CHK-###	CHECK VALVE
TV-###	TELESCOPING VALVE
	SLIDE GATE / KNIFE GATE
	STOP LOG
	WEIR
M	
P	
S	

PROCESS FITTINGS & DEVICES (CONT.)

SYMBOL	DESCRIPTION:
	SIGHT GLASS
	SILENCER
	STATIC MIXER
	SONIC FLOW ELEMENT
	SPRAY BAR
	TARGET TYPE FLOW ELEMENT
	TOTALIZING ELEMENT: POSITIVE DISPLACEMENT FLOW
	TURBINE / PROPELLER FLOW ELEMENT
	UNION
V	VENT
	VENTURI TUBE
	Y-STRAINER
	CLEAN OUT

PROCESS FITTINGS & DEVICES

SYMBOL	DESCRIPTION:
	BLIND FLANGE
	PIPE CAP
	EXPANSION COUPLING
	FLEXIBLE COUPLING
	DIAPHRAGM SEAL
	DRAIN
	GAUGE
	DOUBLE CONTAINMENT PIPE
	NOZZLE
	DIFFUSER
	ORIFICE PLATE
	PILOT TUBE
	PULSATION DAMPER
	QUICK CONNECTOR COUPLING WITH CAP
	QUICK CONNECTOR COUPLING
	QUICK CONNECTOR COUPLING (FEMALE)
	QUICK CONNECTOR COUPLING (MALE)
	REDUCER, CONCENTRIC
	REDUCER, ECCENTRIC
FI	ROTAMETER
FI	ROTAMETER WITH NEEDLE VALVE

PROCESS EQUIPMENT (CONT.)

SYMBOL	DESCRIPTION:
	FINE SCREEN
	CENTRIFUGE
	DUMPSTER
	EJECTOR
	CALIBRATION COLUMN
	WASTE GAS BURNER
	INJECTION QUILL
	PROGRESSIVE CAVITY PUMP
M	SUBMERSIBLE PUMP
	CENTRIFUGAL PUMP
	METERING PUMP
	PERISTALTIC PUMP
	CENTRIFUGAL BLOWER
	BLOWER FAN
	COMPRESSOR POSITIVE DISPLACEMENT

PROCESS EQUIPMENT (CONT.)

SYMBOL	DESCRIPTION:
M	EQUIPMENT MOTOR
	HEAT EXCHANGER
	BOILER
	SAFETY SHOWER / EYEWASH STATION
	GRIT BASIN
M	GRIT CLASSIFIER WITH CONCENTRATOR
M	COARSE GRIT SCREEN
	VERTICAL TURBINE PUMP

PROCESS EQUIPMENT

SYMBOL	DESCRIPTION:
	AIR INTAKE FILTER
	AUTO STRAINER
	BASKET STRAINER
	FILTER
FM	FLOW METER (MAGNETIC)
M	MIXER
M	AXIAL FLOW PUMP
	BACK DRAFT DAMPER
	BAR RACK
	COARSE SCREEN

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING

0 1"

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

NO	DATE	REVISION	BY	APVD
1	4/17/24	ADDENDUM 2	MR	RDB

Registered Professional Engineer (Electrical) — CERTIFICATE NO. 52847 — BRIAN G. YOUNG — Date Signed 02/29/24 — ARIZONA U.S.A.

DESIGN T. ADAMS
DRAWN D. LEWCHANIN
CHECKED B. YOUNG
APPROVED R. BRYANT

WATERWORKS ENGINEERS
SCOTTSDALE, AZ

CITY OF PRESCOTT ARIZONA

YAVAPAI HILLS LIFT STATION

INSTRUMENTATION

SYMBOLS AND ABBREVIATIONS

DATE: FEBRUARY 2024
PROJECT NO.: 21-064
DRAWING NO.: N-002
SHEET NO.: 29

FILENAME: L:\CAD\Projects\21-064 Prescott Yavapai Hills LS\Deliverables\2164D-N002.dgn

PLOT DATE: 2/14/2024

PLOT TIME: 3:49:59 PM

TYPICAL FOR LIT-201 | TYPICAL FOR LCP-201 | TYPICAL FOR VFD-201 | TYPICAL FOR PIT-211

PLC / RTU-001

WET WELL NO. 1 LEVEL INDICATION — LI 101
WET WELL NO. 1 HIGH HIGH LEVEL ALARM — LAHH 101
WET WELL NO. 1 HIGH LEVEL ALARM — LAH 101
WET WELL NO. 1 LOW LOW LEVEL ALARM — LALL 101
WET WELL NO. 1 PUMP START COMMAND — YCR 101
WET WELL NO. 1 PUMP STOP COMMAND — YCS 101
WET WELL NO. 1 PUMP SPEED SETPOINT — SC 101
WET WELL NO. 1 PUMP SPEED INDICATION — SI 101
WET WELL NO. 1 PUMP NOT IN REMOTE — NIR 101
WET WELL NO. 1 PUMP RUNNING — MR 101
WET WELL NO. 1 PUMP FAULT — YA 101
VALVE VAULT NO.1 DISCHARGE PRESSURE — PI 111
FLOWMETER VAULT FLOW INDICATION — FI 301
FLOWMETER FAULT TOTALIZED FLOW — FQI 301

480V — VFD-101: HMS 101C VFD RST; HMS 101D MTR PROT RLY RST; SC 101B; SI 101; I2; MR R RNING; YA A FAULT; TAH A HIGH TEMP; MAH A LEAK

LCS-101: HS 101A LOR; HMS 101A START; HMS 101B STOP; YA A FAULT; SC 101A

120V — LCP-101: LAHH R HIGH HIGH LEVEL; LAH R HIGH LEVEL; LALL R LOW LOW LEVEL; I1

DSC — ZSC 101

FROM SEWER SYSTEM — 10" SS

PASSIVE ODOR CONTROL — DRAIN

INFLUENT SPLITTER BOX

SLG-101 — 15" SS

SLG-201 — 15" SS

SLG-301 | SLG-302

120V — LIT 101; LSHH 101; LSH 101; LSLL 101; LE 101; MSH 101; TSH 101; M

WET WELL NO. 1 PUMP — PMP-101 160HP

WET WELL NO. 1

120V — LIT 201; LSHH 201; LSH 201; LSLL 201; LE 201; MSH 201; TSH 201; M

WET WELL NO. 2 PUMP — PMP-201 160HP

WET WELL NO. 2

15" SS — FROM SEWER SYSTEM

15" OVF — TO OLD WET WELL

PASSIVE ODOR CONTROL — DRAIN

4" V

PIT 111; PI 111

1 — ARV-111 — BAV-111 — BAV-112 — BAV-113 — CKV-111 — PLV-111

VALVE VAULT NO. 1

PIT 211; PI 211

1 — ARV-211 — BAV-211 — BAV-212 — BAV-213 — CKV-211 — PLV-211

VALVE VAULT NO. 2

10" FM

120V — FIT 301; FE 301 — FM — FM-301

FLOWMETER VAULT

ARV-311 — BAV-331 — CKV-311 — PLV-311

CHECK VALVE VAULT

RANCH #1 LIFT STATION (LS 70)

INTERLOCKS

I1 LOW LOW LEVEL INTERLOCK.

I2 VENDOR PROGRAMMED PUMP ALTERNATOR INTERLOCK.

KEY NOTES

1 ROUTE DRAIN FROM AIR RELEASE VALVE BACK TO WET WELL.

1	4/17/24	ADDENDUM 2	MR	RDB
NO	DATE	REVISION	BY	APVD

VERIFY SCALE — BAR IS ONE INCH ON ORIGINAL DRAWING — IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

Registered Professional Engineer (Electrical) — CERTIFICATE NO. 52847 — BRIAN G. YOUNG — Date Signed 02/26/24 — ARIZONA U.S.A.

DESIGN T. ADAMS
DRAWN D. LEWCHANIN
CHECKED B. YOUNG
APPROVED R. BRYANT

WATERWORKS ENGINEERS — SCOTTSDALE, AZ

CITY OF PRESCOTT ARIZONA

YAVAPAI HILLS LIFT STATION

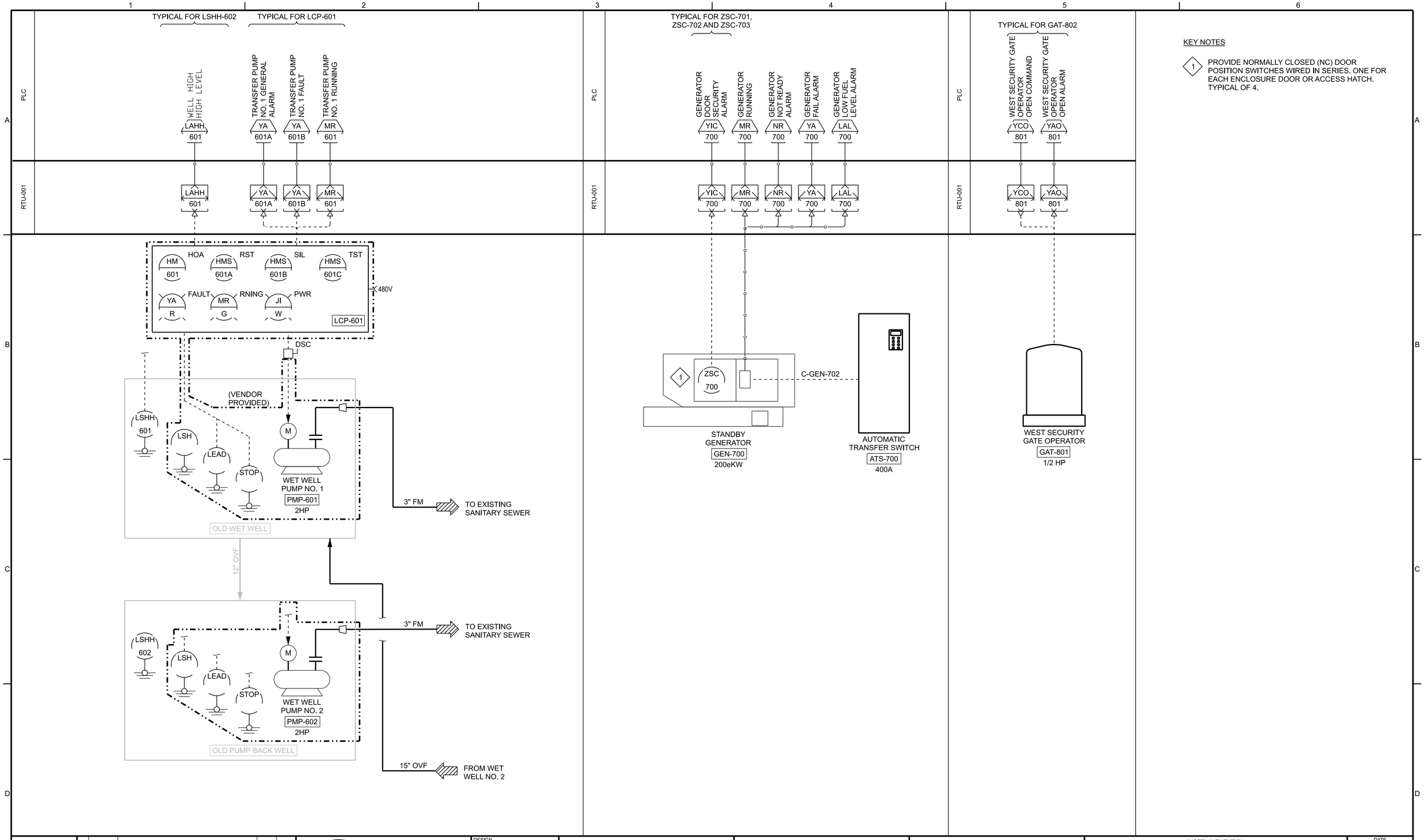
INSTRUMENTATION

PRESCOTT YAVAPAI HILLS LIFT STATION P&ID

DATE FEBRUARY 2024
PROJECT NO. 21-064
DRAWING NO. N-601
SHEET NO. 30

FILENAME: L:\CAD\Projects\21-064 Prescott Yavapai Hills LS\Deliverables\2164D-N601.dgn

PLOT DATE: 2/14/2024 PLOT TIME: 3:50:22 PM



KEY NOTES

1. PROVIDE NORMALLY CLOSED (NC) DOOR POSITION SWITCHES WIRED IN SERIES. ONE FOR EACH ENCLOSURE DOOR OR ACCESS HATCH. TYPICAL OF 4.

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING

0 1"

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

NO	DATE	REVISION	BY	APVD
1	4/17/24	ADDENDUM 2	MR	RDB

Registered Professional Engineer (Electrical) CERTIFICATE NO. 52847 BRIAN G. YOUNG Date Signed 02/16/24 ARIZONA U.S.A.

DESIGN T. ADAMS
DRAWN C. YOUNG
CHECKED B. YOUNG
APPROVED R. BRYANT

WATERWORKS ENGINEERS
SCOTTSDALE, AZ

CITY OF PRESCOTT ARIZONA

YAVAPAI HILLS LIFT STATION

INSTRUMENTATION

PRESCOTT YAVAPAI HILLS LIFT STATION P&ID

DATE FEBRUARY 2024
PROJECT NO. 21-064
DRAWING NO. N-602
SHEET NO. 31

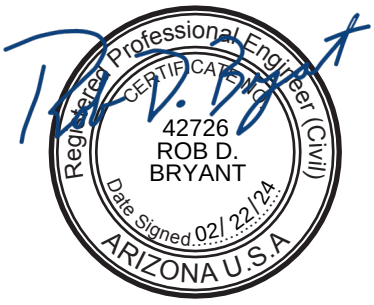
FILENAME: L:\CAD\Projects\21-064 Prescott Yavapai Hills LS\Deliverables\2164D-N602.dgn

PLOT DATE: 2/14/2024 PLOT TIME: 3:50:52 PM

CITY OF PRESCOTT, YAVAPAI
HILLS LIFT STATION # 1
STANDARD DETAILS

FOR CONSTRUCTION ADDENDUM 3
VOLUME 3 OF 4

CITY OF PRESCOTT
ARIZONA
Everybody's Hometown



MAY 2024

PREPARED BY:
WATER WORKS ENGINEERS, LLC.
7500 N. Dobson Road #200
Scottsdale, AZ 85256
(480) 661-1742

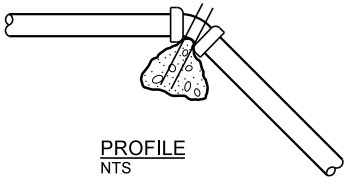
WATERWORKS ENGINEERS

BEARING AREA OF THRUST BLOCKS IN SQ FT (HORIZONTAL BENDS)							
FITTING SIZE	TEE, WYE, PLUG, OR CAP	90° BEND PLUGGED CROSS	TEE PLUGGED RUN		BEND ANGLE (DEGREES)		
			A1	A2	45°	22 1/2°	11 1/4°
4	1.0	1.4	1.9	1.4	1.0	-	-
6	2.1	3.0	4.3	3.0	1.6	1.0	-
8	3.8	5.3	7.6	5.4	2.9	1.5	1.0
10	5.9	8.4	11.8	8.4	4.6	2.4	1.2
12	8.5	12.0	17.0	12.0	6.6	3.4	1.7
14	11.5	16.3	23.0	16.3	8.9	4.6	2.3
16	15.0	21.3	30.0	21.3	11.6	6.0	3.0
18	19.0	27.0	38.0	27.0	14.6	7.6	3.8
20	23.5	33.3	47.0	33.3	18.1	9.4	4.7
24	34.0	48.0	68.0	48.0	26.2	13.6	6.8

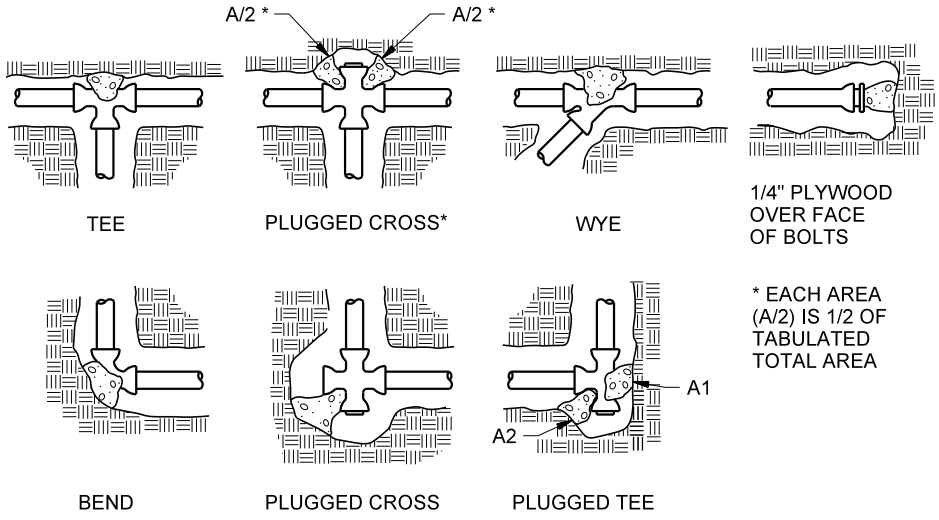
VOLUME OF THRUST BLOCK IN CUBIC YARDS (VERTICAL BENDS)			
FITTING SIZE	BEND ANGLE (DEGREES)		
	45°	22 1/2°	11 1/4°
4	1.1	0.4	0.2
6	2.7	1.0	0.4
8	4.0	1.5	0.6
10	6.0	2.3	0.9
12	8.5	3.2	1.3
14	11.5	4.3	1.8
16	14.8	5.6	2.3

FITTING SIZE	ROD SIZE	EMBEDMENT
12" AND LESS	#6	30"
14" - 16"	#8	36"

GALVANIZED RODS OVER FITTING AND EMBEDDED IN CONCRETE (SEE TABLE FOR SIZES)



PROFILE
NTS



TEE | PLUGGED CROSS* | WYE | 1/4" PLYWOOD OVER FACE OF BOLTS

BEND | PLUGGED CROSS | PLUGGED TEE

* EACH AREA (A/2) IS 1/2 OF TABULATED TOTAL AREA

THRUST BLOCK NOTES

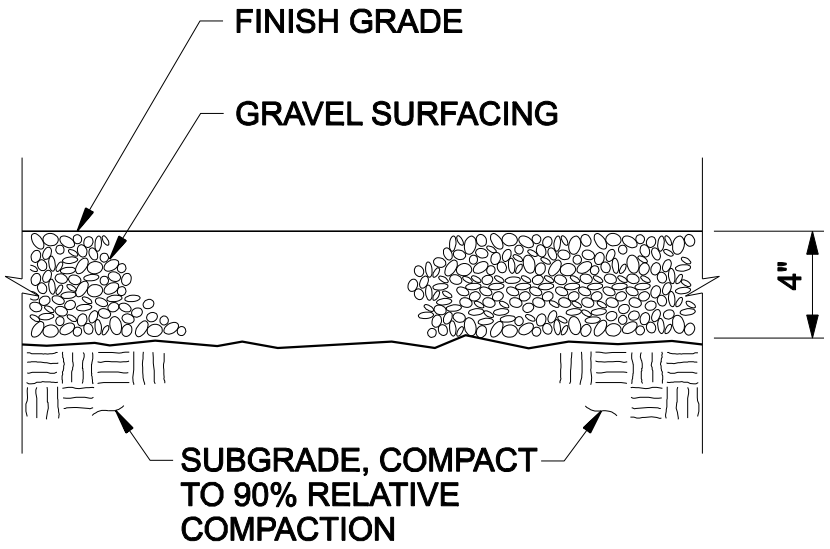
1. KEEP CONCRETE CLEAR OF JOINT AND JOINT ACCESSORIES.
2. CONCRETE THRUST BLOCKING SHALL BE POURED AGAINST UNDISTURBED EARTH.
3. REQUIRED VOLUMES OR BEARING AREAS AT FITTINGS SHALL BE AS INDICATED BELOW, ADJUSTED, IF NECESSARY, TO CONFORM TO THE TEST PRESSURE(S) AND ALLOWABLE SOIL BEARING STRESS(ES) STATED IN THE SPECIFICATIONS.
4. THRUST BLOCK VOLUMES FOR VERTICAL BENDS HAVING UPWARD RESULTANT THRUSTS ARE BASED ON TEST PRESSURE OF 150 PSIG AND THE WEIGHT OF CONCRETE = 4050 LBS/CU YD. TO COMPUTE VOLUMES FOR DIFFERENT TEST PRESSURES, USE THE FOLLOWING EQUATION: VOLUME = (TEST PRESS./150) x (TABLE VALUE).
5. BEARING AREAS FOR HORIZONTAL BEND THRUST BLOCKS ARE BASED ON TEST PRESSURE OF 150 PSIG AND AN ALLOWABLE SOIL BEARING STRESS OF 2000 LBS/SQ FT. TO COMPUTE BEARING AREAS FOR DIFFERENT TEST PRESSURES AND SOIL BEARING STRESSES, USE THE FOLLOWING EQUATION: BEARING AREA = (TEST PRESSURE/150) x (2000/SOIL BEARING STRESS) x (TABLE VALUE).
6. THRUST BLOCKS FOR VERTICAL BENDS HAVING DOWNWARD RESULTANT THRUSTS SHALL BE THE SAME AS FOR HORIZONTAL BENDS.
7. BEARING AREAS, VOLUMES, AND SPECIAL BLOCKING DETAILS SHOWN ON DRAWINGS TAKE PRECEDENCE OVER THIS STANDARD
8. BEARING AREA OF THRUST BLOCK SHALL NOT BE LESS THAN 1.0 SQ FT.
9. VERTICAL BENDS THAT REQUIRE A THRUST BLOCK VOLUME EXCEEDING 5 CUBIC YARDS REQUIRE SPECIAL BLOCKING DETAILS. SEE DRAWINGS FOR VOLUMES SHOWN TO LEFT OF SOLID LINE IN TABLE.
10. TEST PRESSURES ARE SHOWN IN THE PIPING SCHEDULE.
11. ALLOWABLE SOIL BEARING STRESS IS 2000 LBS/SQ FT UNLESS OTHERWISE NOTED ON THIS SHEET.

THRUST BLOCKS

NTS

2050

WATERWORKS ENGINEERS

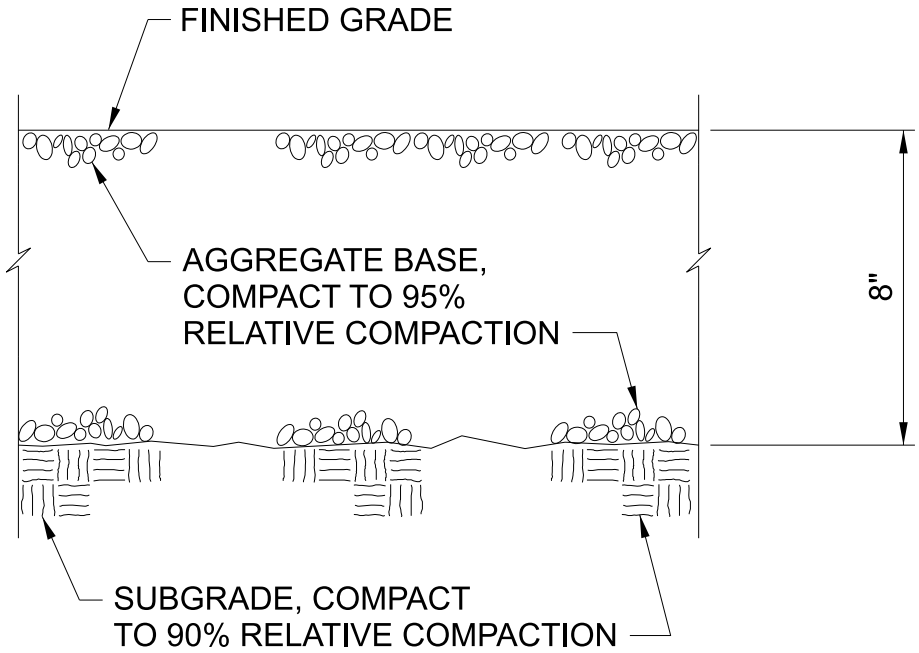


GRAVEL SURFACING

NTS

2504

WATERWORKS ENGINEERS



AGGREGATE BASE SURFACING

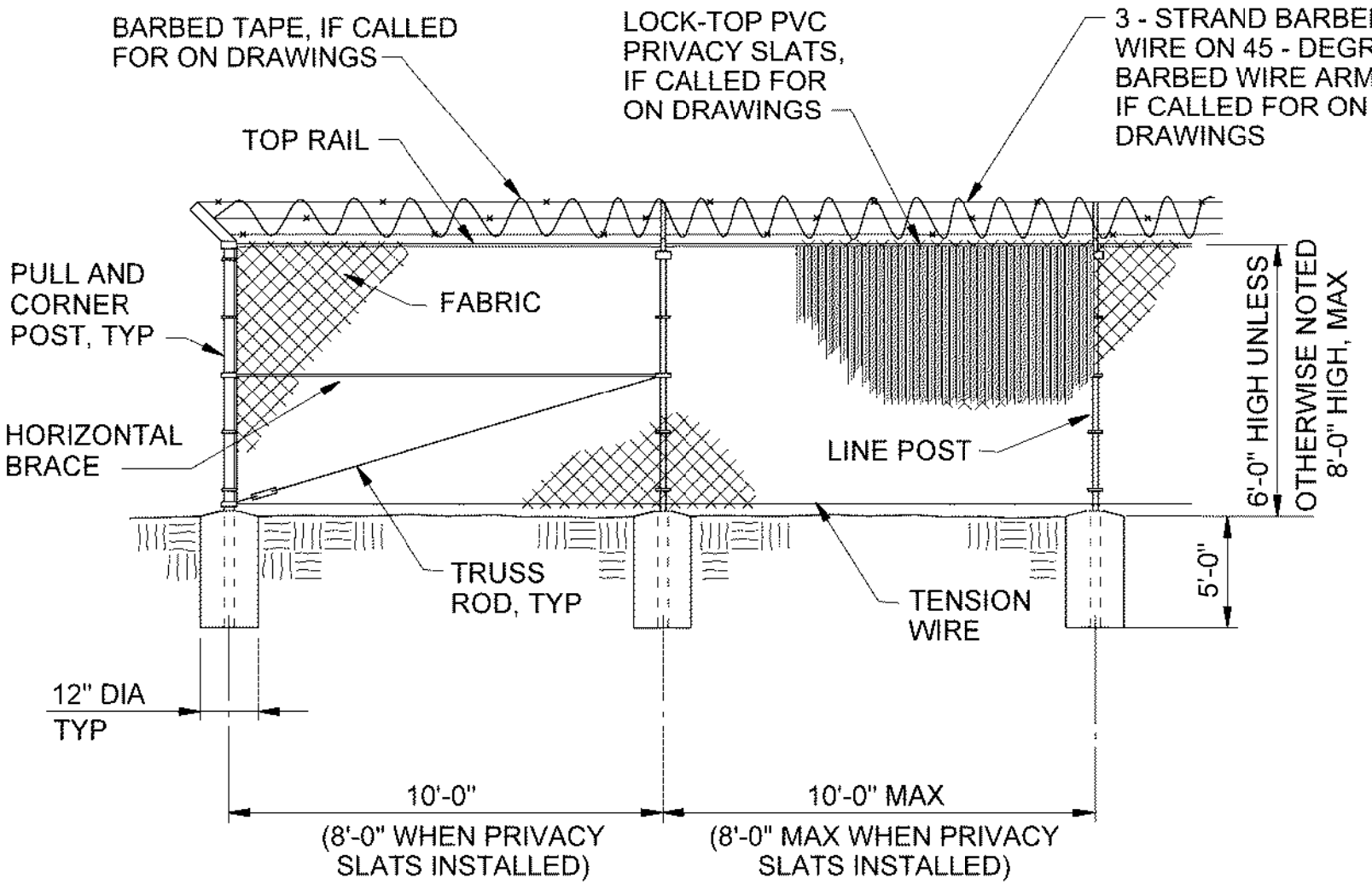
NTS

2505

FILENAME: L:\CAD\Projects\20-097 Redding CCWTP Biosolids Pyrolysis\Standard Details\ADDED TO STD DETAIL SHEETS\CIVIL\32 15 40.01 - GRAVEL ROAD SURFACING.dgn

REV DATE: 3/28/2022

WATERWORKS ENGINEERS

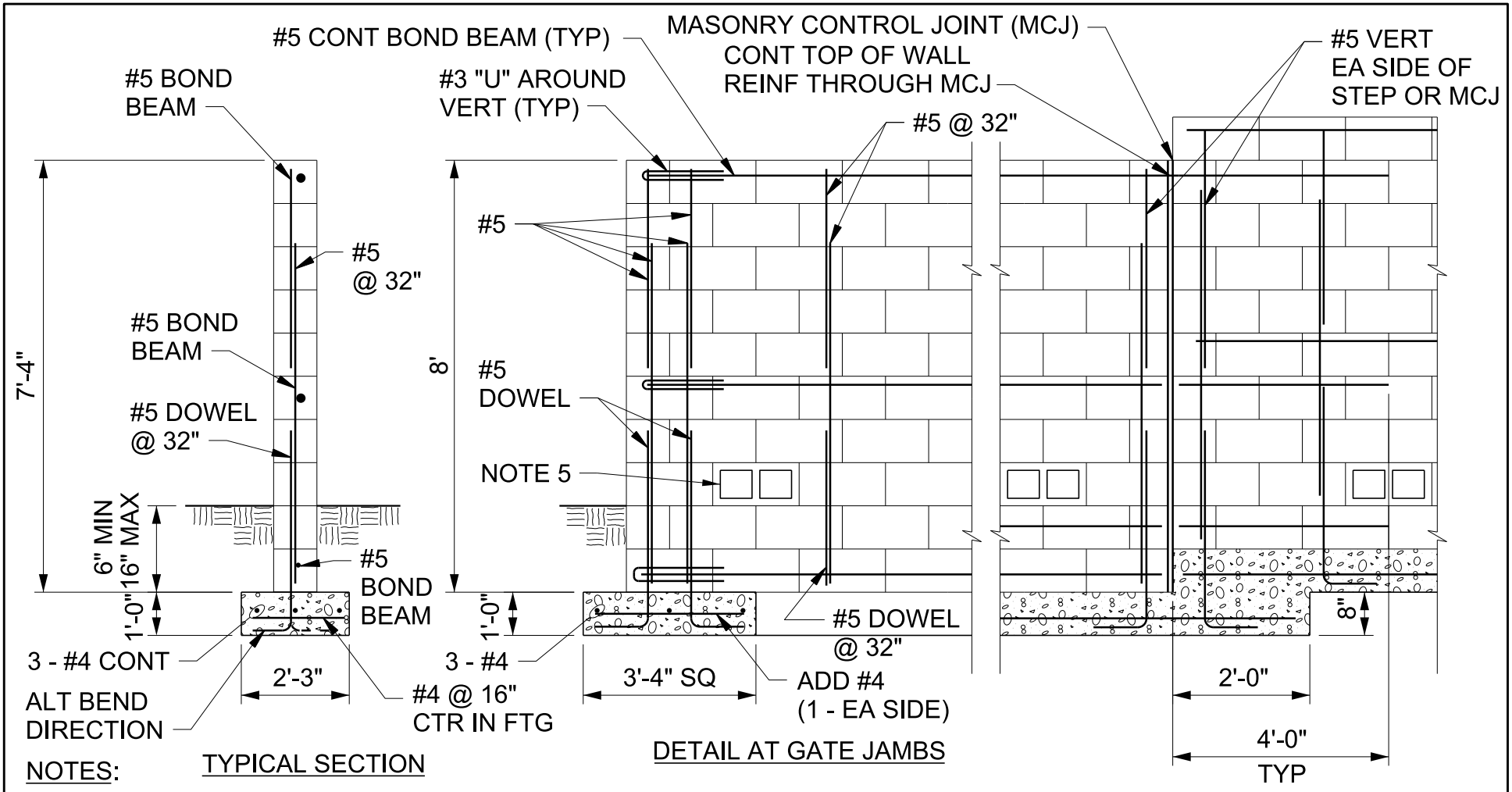


CHAINLINK FENCE

NTS

2800

WATERWORKS ENGINEERS



NOTES:

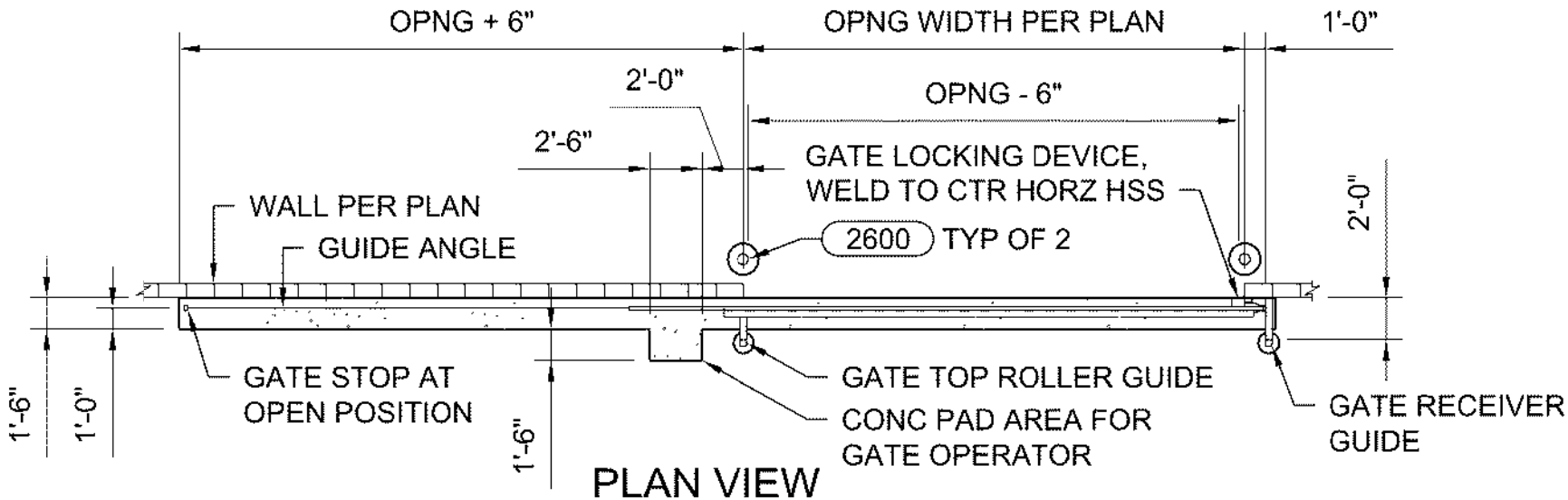
1. FILL SOLID ALL BLOCK BELOW GRADE, AND CELLS WITH REINFORCING.
2. PROVIDE 9 GAUGE LADDER REINF CONTINUOUS EVERY OTHER COURSE.
3. PROVIDE MASONRY CONTROL JOINT (MCJ) AT 30' - 0" OC MAXIMUM.
4. PROVIDE STEPS AS REQUIRED TO MAINTAIN 6' - 0" MINIMUM EXPOSED WALL HEIGHT AND 6" MINIMUM DEPTH OF BURY FOR FOOTING.
5. INSTALL DRAIN BLOCK AT GRADE WHERE DIRECTED.

8 - INCH MASONRY WALL

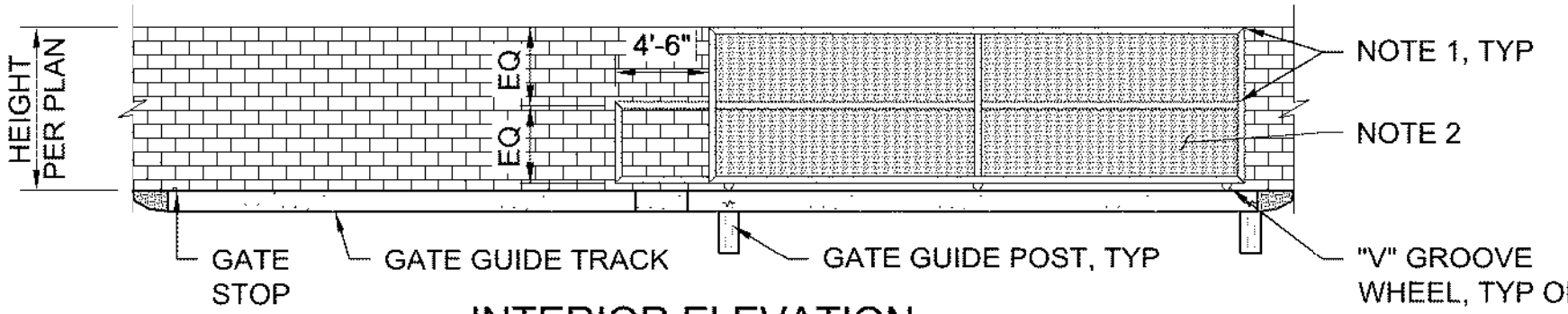
NTS

2812

WATERWORKS ENGINEERS



PLAN VIEW



INTERIOR ELEVATION

NOTES:

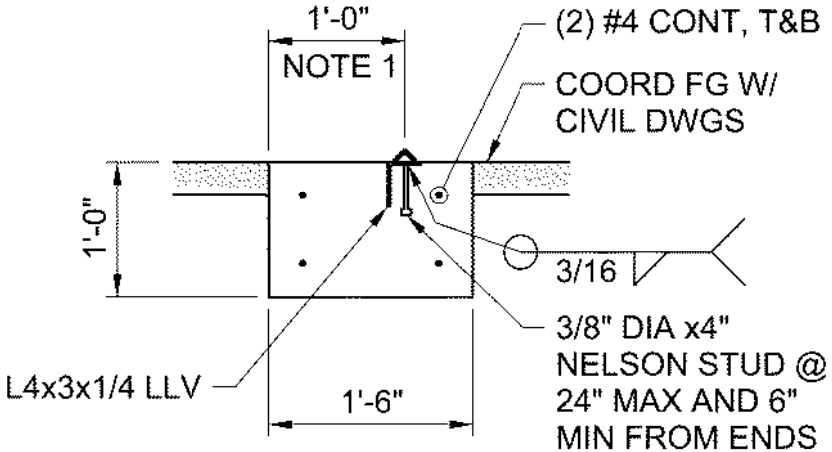
1. HSS2x4x1/4 FRAME, MITER CORNERS AND FULLY WELD ALL JOINTS. COORDINATE GATE WIDTH WITH HARDWARE TO PROPERLY FIT IN THE ROUGH OPENING. GRIND SMOOTH ALL SHARP CORNERS.
2. 1 1/2" DEEP 18 GAUGE PERFORATED / CORRUGATED METAL PANEL WITH 1/4" DIAMETER PERFORATIONS AT 1/2" CENTERS. WELD TO SUPPORTING FRAME AS SHOWN IN THE DETAILS.
3. PAINT ENTIRE GATE ASSEMBLY AFTER FABRICATION USING SYSTEM 300, COLOR SELECTED BY OWNER.
4. FOR ADDITIONAL CONNECTION DETAILS SEE 2819 .

STEEL ROLLING GATE

NTS

2815

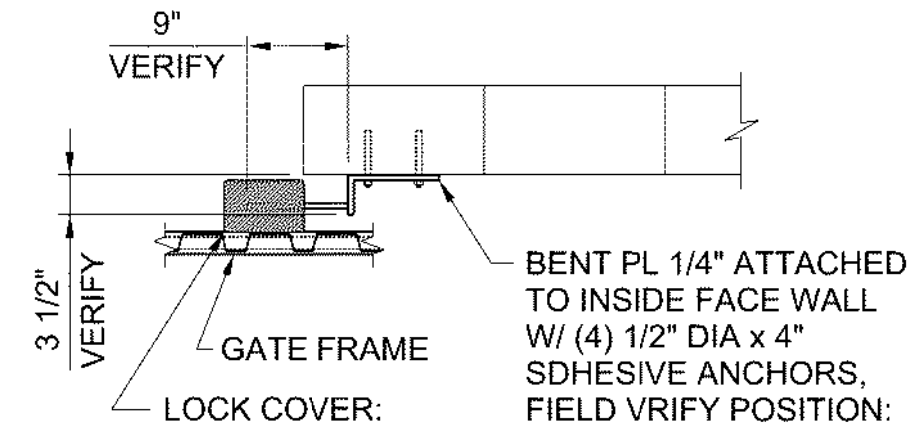
WATERWORKS ENGINEERS

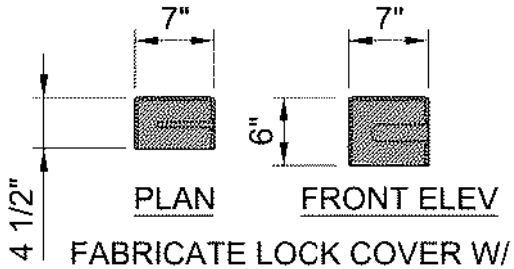


NOTES:

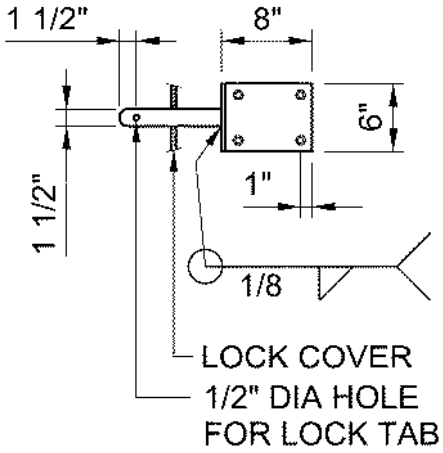
1. COORDINATE WHEEL TRACK LOCATION W/ GATE MFR FOR PRECISE ASSEMBLY. CONSTRUCT TRACK W/ L1 1/2x1 1/2x1/4 ANGLE WELDED TO L4x3, BUTT WELD AND GRIND SMOOTH ALL JOINTS.

GATE GUIDE TRACK





FABRICATE LOCK COVER W/ PL 1/4", TOP FRONT AND SIDES ONLY, BTM AND BACK TO REMAIN OPEN, ALL CORNERS SHALL BE WELDED AND MILLED TO A 1/8" RADIUS, FIELD VERIFY LOCATION W/ GATE OPERATION, PROVIDE SLOT FOR LOCK TAB



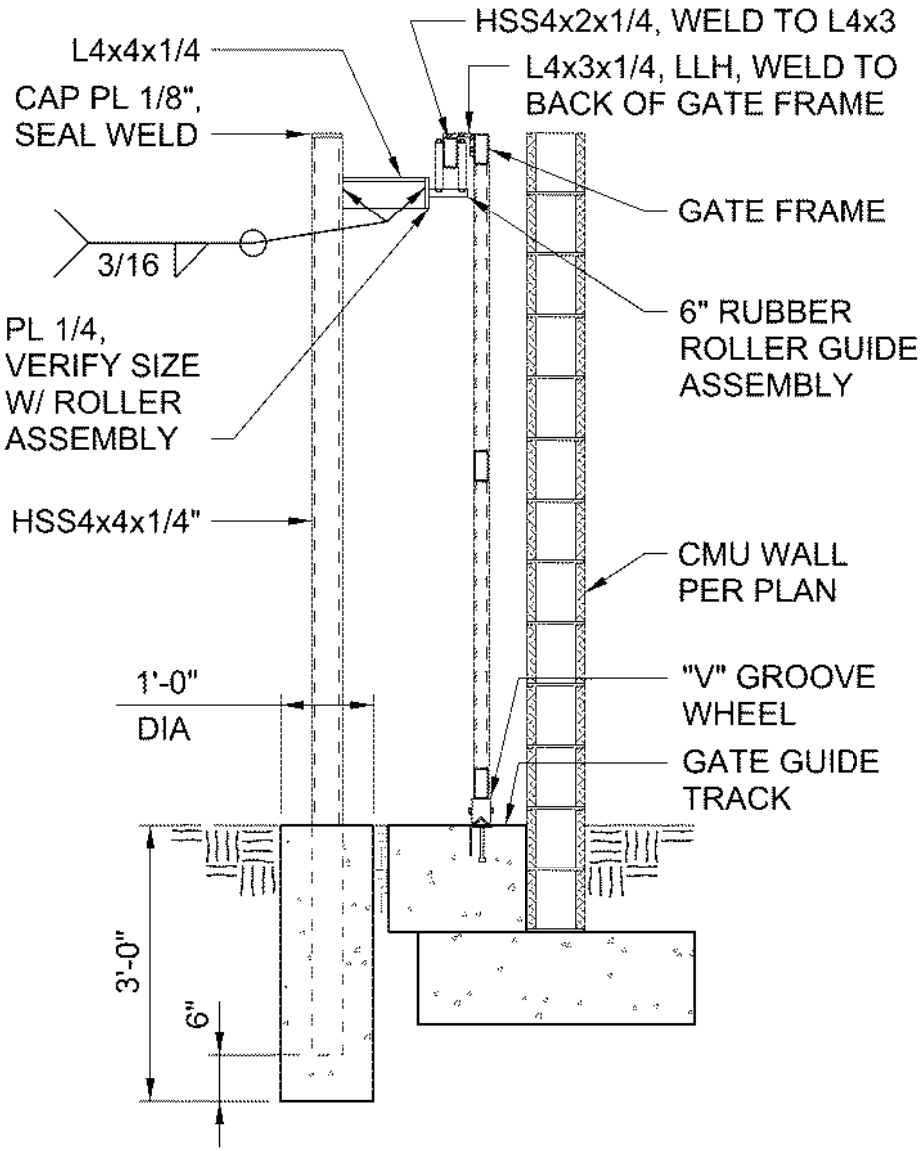
GATE LOCKING DEVICE

STEEL ROLLING GATE

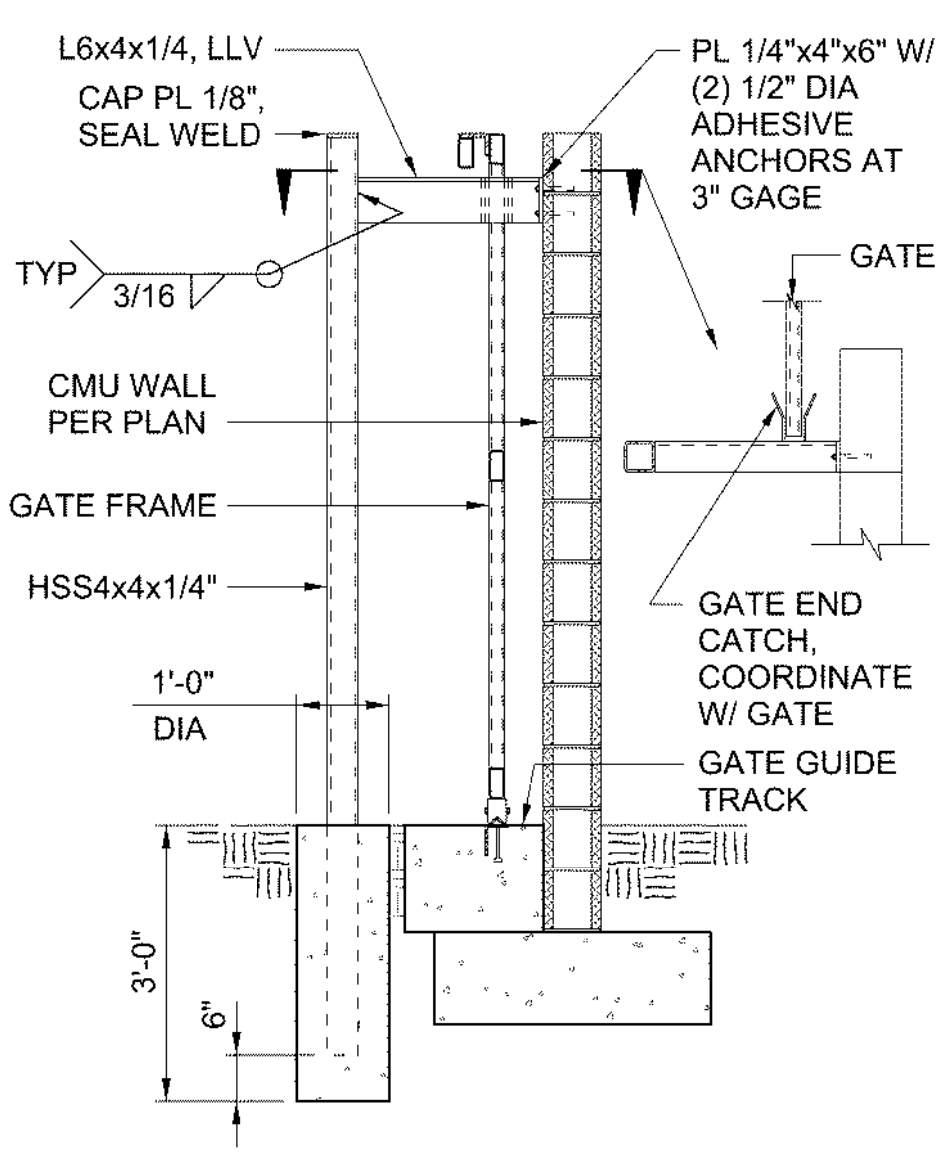
NTS

2815

WATERWORKS ENGINEERS



GATE TOP ROLLER GUIDE



GATE RECEIVER GUIDE

STEEL ROLLING GATE

NTS

2815

WATERWORKS ENGINEERS

NOTES:

1. PAD SIZE SHALL BE MINIMUM INDICATED OR AS SHOWN ON THE DRAWINGS OR AS INDICATED BY THE MANUFACTURER AND APPROVED BY THE ENGINEER.
2. THE SIZE, NUMBER, TYPE, LOCATION, AND THREAD PROJECTION OF THE ANCHOR BOLTS SHALL BE DETERMINED BY THE EQUIPMENT MANUFACTURER, AND SHALL BE AS APPROVED BY THE ENGINEER. ANCHOR BOLTS SHALL BE HELD IN POSITION WITH A ONE PIECE TEMPLATE, MATCHING THE BASE PLATE, WHILE PAD IS BEING POURED.
3. ANCHOR BOLT SLEEVES SHALL BE USED TO PROVIDE THE ANCHOR BOLT A MINIMUM MOVEMENT OF 1/2" IN ALL DIRECTIONS. THE MINIMUM SLEEVE LENGTH SHALL BE 8 TIMES THE BOLT DIAMETER. SLEEVES SHALL BE FILLED WITH NON-SHRINK GROUT.
4. ANCHOR BOLT SLEEVES SHALL HAVE A MINIMUM INTERNAL DIAMETER 1" GREATER THAN BOLT DIAMETER AND A MAXIMUM INTERNAL DIAMETER 3" GREATER THAN ANCHOR BOLT DIAMETER. SLEEVES SHALL BE FILLED WITH NON-SHRINK GROUT.
5. EQUIPMENT BASES SHALL BE INSTALLED LEVEL UNLESS SPECIFIED OTHERWISE.
6. TYPE "D" DETAIL SHALL BE USED ONLY FOR SLABS ON GRADE AND AT GRADE. THE SURROUNDING FLOOR SLAB SHALL NOT BE PLACED UNTIL THE EXACT SIZE AND LOCATION OF THE PAD IS KNOWN.
7. WEDGES OR SHIMS SHALL BE USED TO SUPPORT THE BASE WHILE THE NON-SHRINK GROUT IS PLACED. TEMPORARY LEVELING NUTS SHALL BE BACKED OFF. IF LEFT IN, THE WEDGES OR SHIMS SHALL NOT BE EXPOSED TO VIEW.
8. HEIGHT OF PADS SHALL BE MINIMUM REQUIRED FOR ANCHOR BOLT CLEARANCE TO KEEP ANCHOR BOLT OUT OF SLAB (SEE TABLE BELOW). WHERE EQUIPMENT OR PIPING ELEVATION REQUIRE A PAD HEIGHT LESS THAN THE MINIMUM SHOWN, USE TYPE B WITH BLOCKOUT.

AB DIA (IN.)	1/2	5/8	3/4	7/8	1	1 1/4	1 3/8	1 1/2	1 3/4	2
MIN PAD HT (IN.)	7	8 1/2	10	11	12 1/2	15	16 1/2	18	21	24

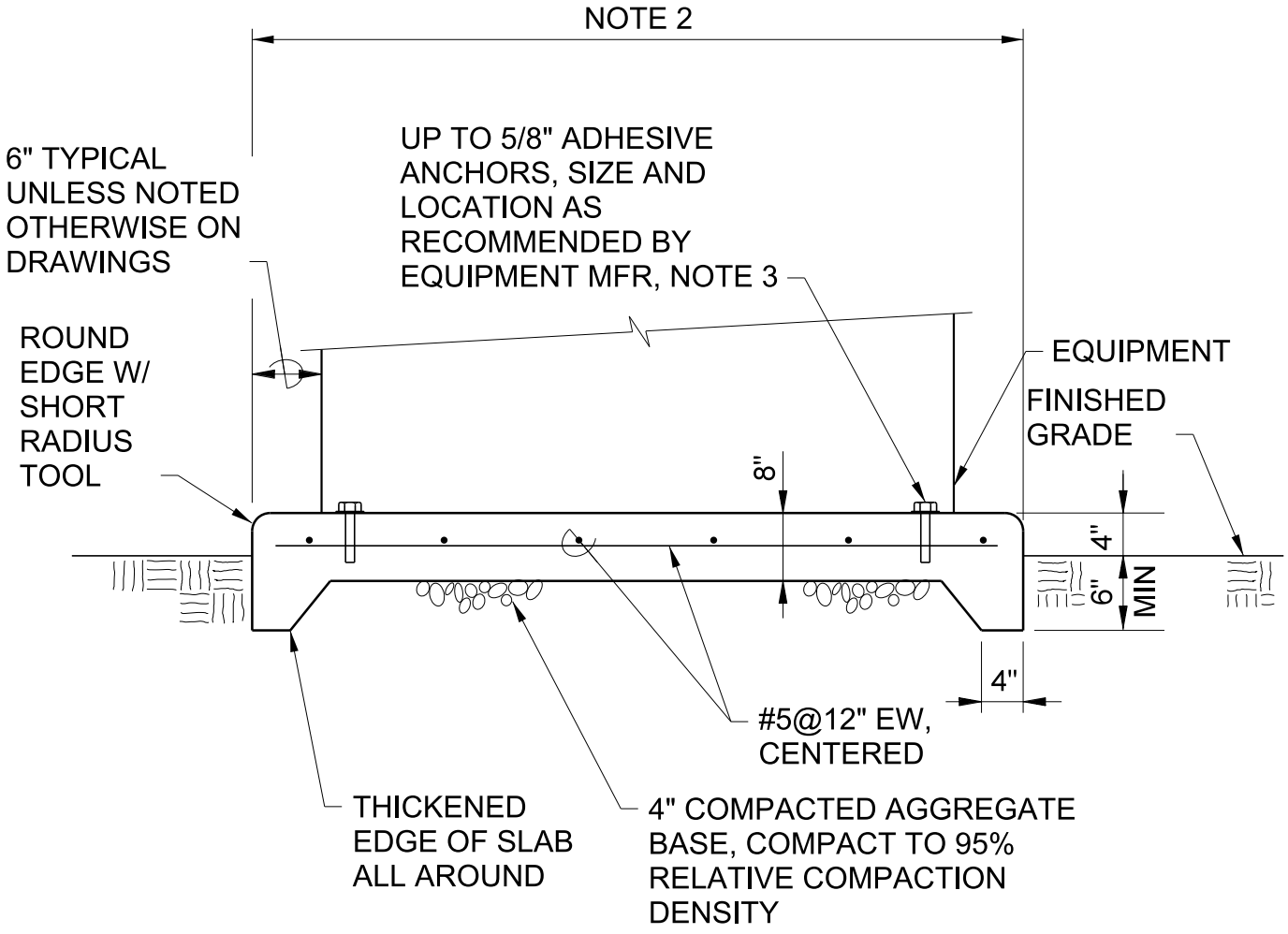
9. TYPE "F" PADS MAY BE SUBSTITUTED FOR TYPE "A" PADS FOR LOCATIONS APPROVED IN WRITING BY THE ENGINEER.
10. SEE ANCHOR BOLT AND BLOCKOUT DETAILS (3210) .

EQUIPMENT PAD NOTES

3200

NTS

WATERWORKS ENGINEERS



NOTES:

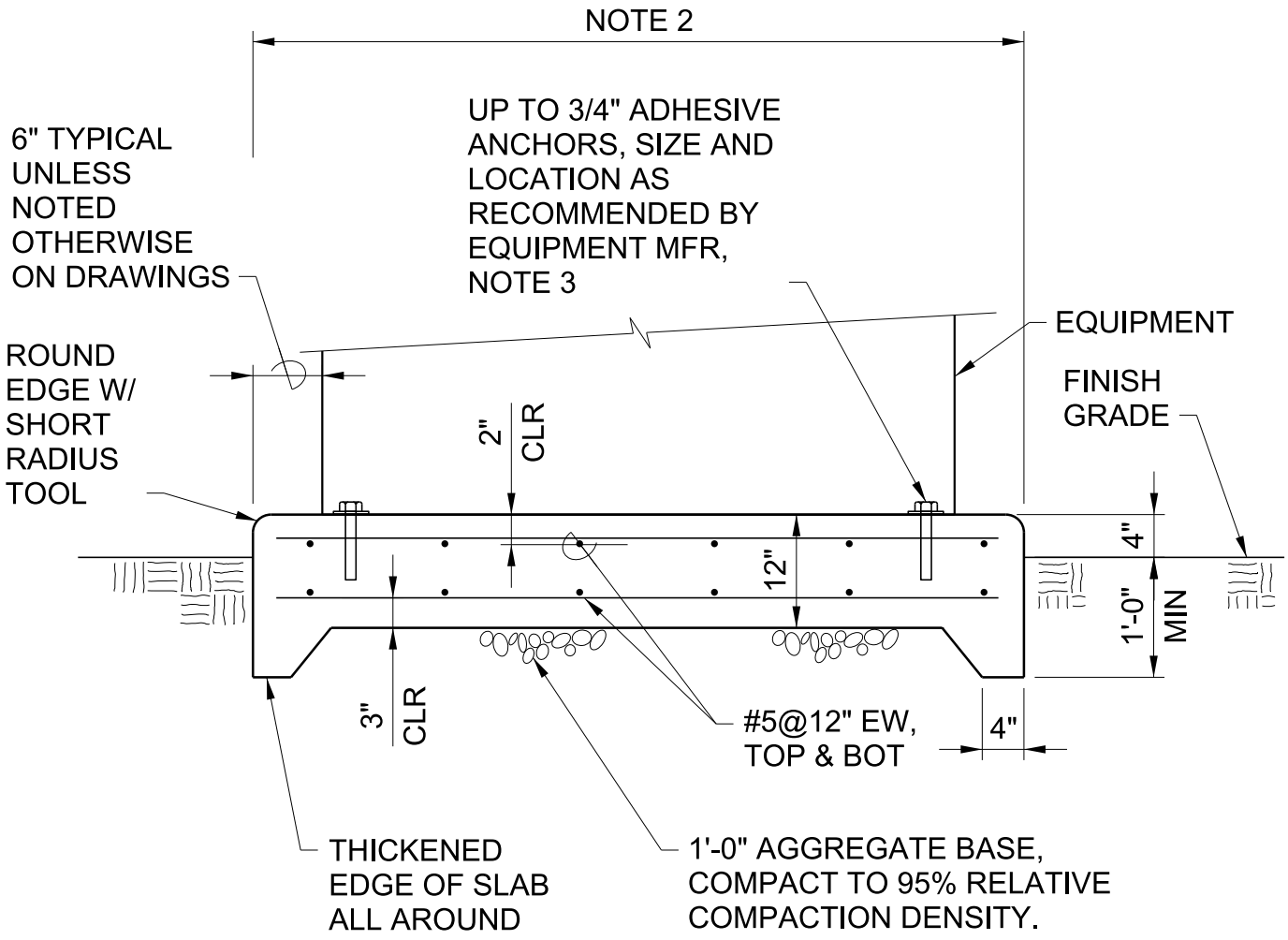
1. SEE (3200) FOR GENERAL EQUIPMENT PAD NOTES.
2. EQUIPMENT PAD SIZE PER DRAWINGS. WHERE PAD SIZE IS NOT SHOWN, SIZE TO FIT EQUIPMENT.
3. IF ANCHOR BOLTS ARE CALLED OUT FOR ON DRAWINGS, PROVIDE ANCHOR BOLTS PER (3210) IN LIEU OF ADHESIVE ANCHORS.

EQUIPMENT PAD-TYPE D

(3200D)

NTS

WATERWORKS ENGINEERS



NOTES:

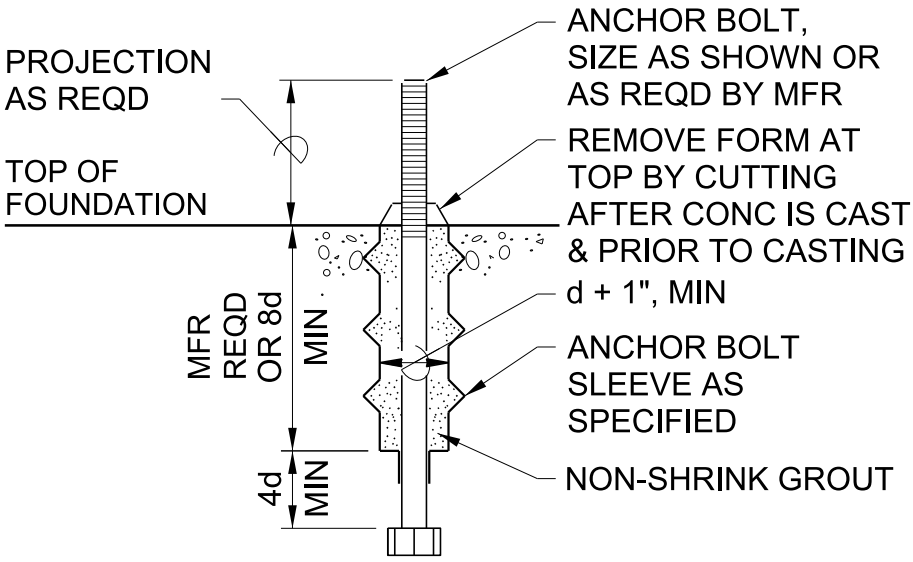
1. SEE (3200) FOR GENERAL EQUIPMENT PAD NOTES.
2. EQUIPMENT PAD SIZE PER DRAWINGS. WHERE PAD SIZE IS NOT SHOWN, SIZE TO FIT EQUIPMENT.
3. IF ANCHOR BOLTS ARE CALLED OUT FOR ON DRAWINGS, PROVIDE ANCHOR BOLTS PER (3210) IN LIEU OF ADHESIVE ANCHORS.

EQUIPMENT PAD-TYPE E

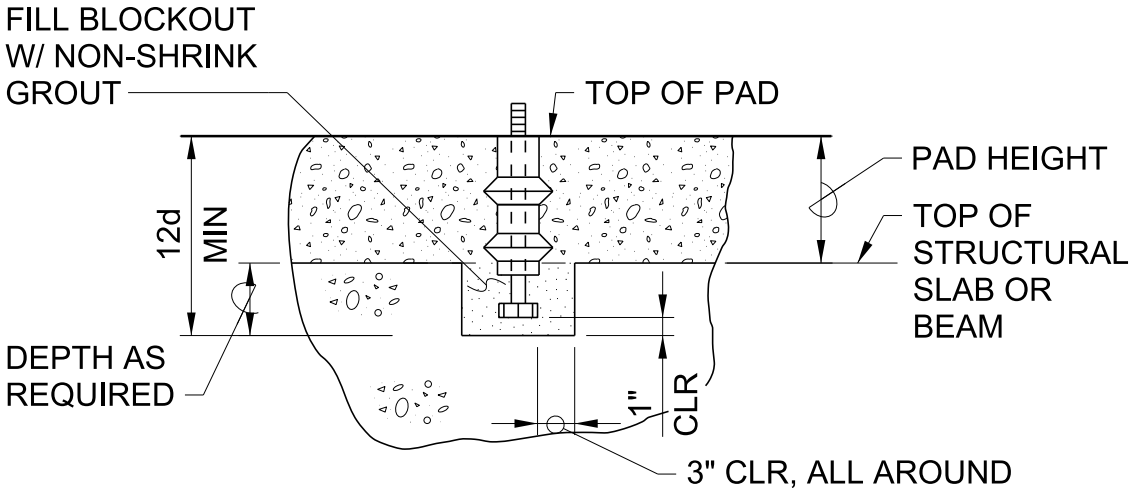
NTS

3200E

WATERWORKS ENGINEERS



ANCHOR BOLT DETAIL



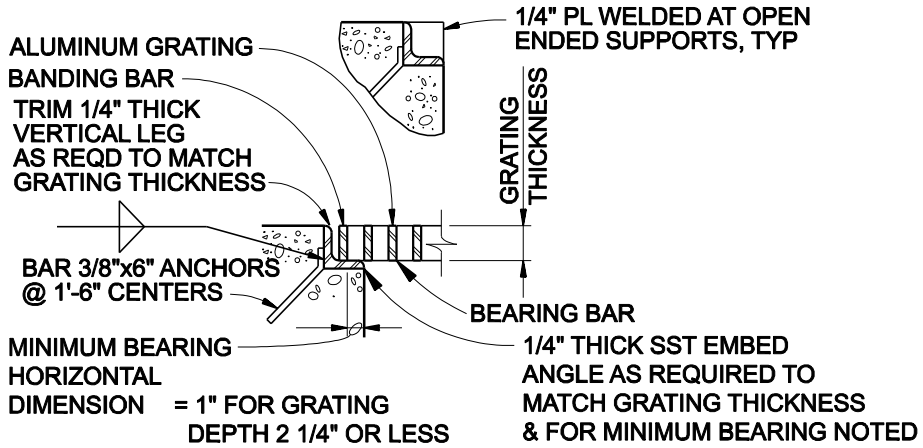
ANCHOR BOLT BLOCKOUT

ANCHOR BOLT DETAILS

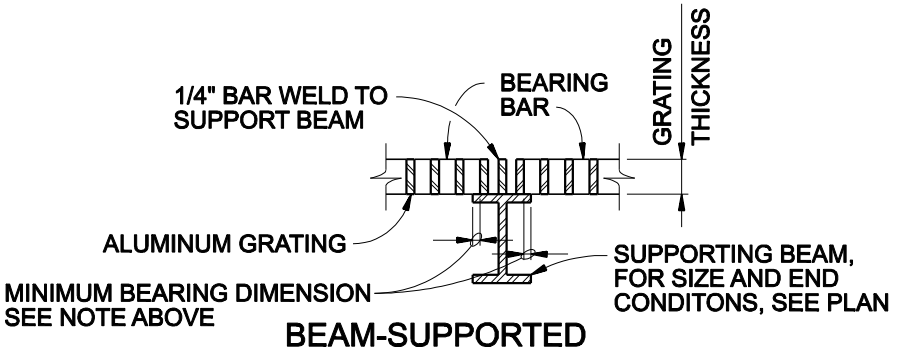
NTS

3210

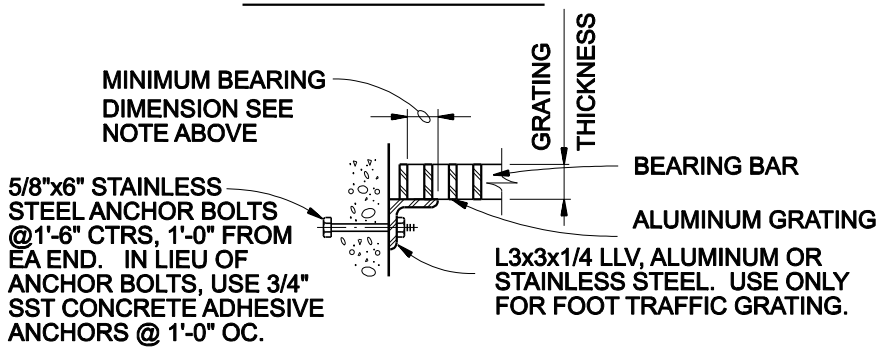
WATERWORKS ENGINEERS



CONCRETE INSERT ANGLE-SUPPORTED



BEAM-SUPPORTED



LEDGER ANGLE-SUPPORTED

GRATING NOTES

1. EXTEND GRATING CONTINUOUSLY OVER GATE GUIDES AND GATES.
2. NOTCH GRATING SUPPORTS AT GATES AS REQUIRED.
3. GRATING SPAN ⟷ SEE PLAN.
4. WIDTH OF GRATING SECTIONS SHALL NOT EXCEED 3'-0" AND INDIVIDUAL SECTION WEIGHT SHALL NOT EXCEED 150 POUNDS.
5. SHOP DRAWINGS BASED ON FIELD DIMENSIONS SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO FABRICATION.
6. MATERIAL FOR SUPPORTS OF ALUMINUM GRATING TO BE SAME AS GRATING, EXCEPT METAL SUPPORTS THAT ARE TO BE EMBEDED IN CONCRETE SHALL BE TYPE 316 STAINLESS STEEL.
7. UNLESS NOTED OTHERWISE ON PLANS, GRATING THICKNESS SHALL BE AS TABULATED IN "GRATING THICKNESS TABLE" FOR APPLICABLE TRAFFIC.
8. BEARING BAR THICKNESS FOR GRATING TO BE 3/16" MINIMUM.
9. BAND ALL EDGES WITH 3/16 x DEPTH OF BEARING BAR.
10. PROVIDE MISCELLANEOUS GRATING FASTENERS AS REQUIRED.
11. THE HORIZONTAL CLEARANCE BETWEEN THE GRATING AND GRATING SUPPORTS SHALL NOT BE LESS THAN 1/4" NOR GREATER THAN 1/2" AND AS SPECIFIED.
12. ALL GRATING SECTIONS, WHEN IN PLACE, SHALL ALWAYS BE FIRMLY ANCHORED TO THEIR SUPPORTS AS SPECIFIED.
13. PROVIDE SUPPORT TYPE SHOWN IN DRAWINGS OR MOST APPLICABLE FOR THE INSTALLATION CONDITIONS.

FOOT TRAFFIC

GRATING THICKNESS TABLE

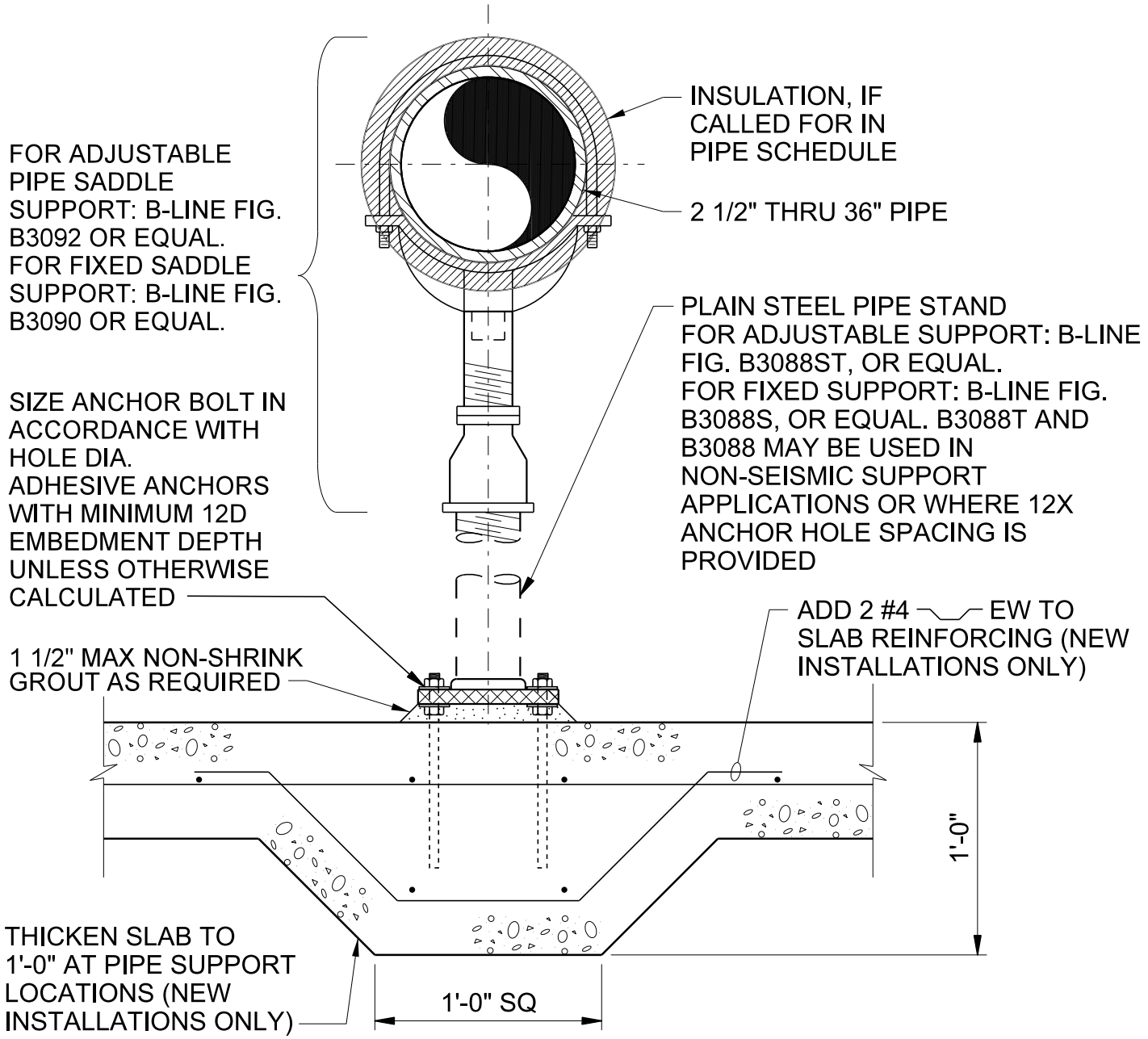
MAXIMUM SPAN	ALUMINUM (IN.)
3'-6"	1 1/4"
4'-0"	1 1/2"
4'-6"	1 3/4"
5'-0"	1 3/4"
5'-6"	2"
6'-0"	2 1/4"
6'-6"	2 1/4"
7'-0"	2 1/2"

5400

ALUMINUM GRATING

NTS

WATERWORKS ENGINEERS



NOTES:

1. COAT ALL SHAPES PER SPECIFICATION SECTION 09900 SYSTEM 300.

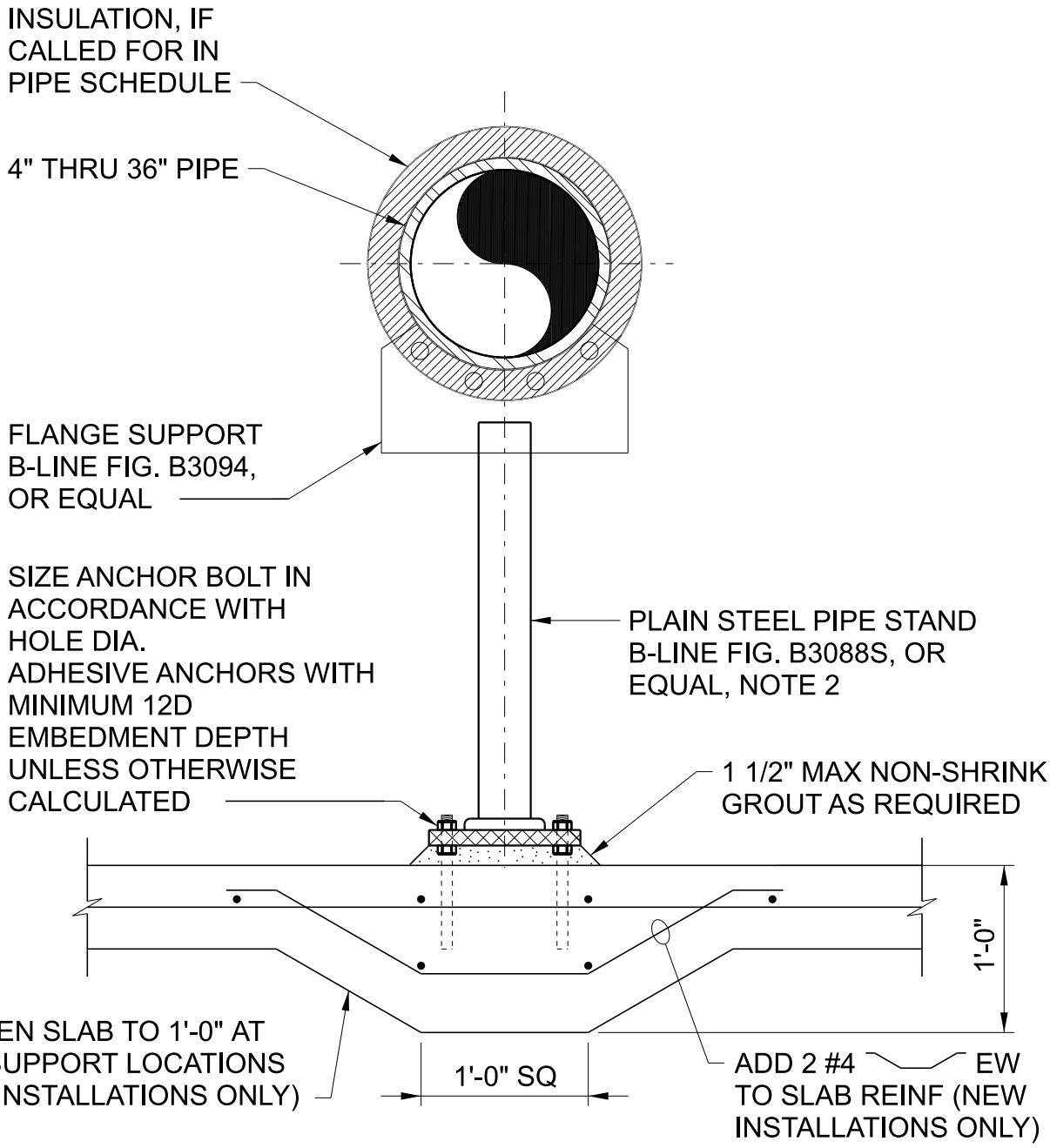
2. ADJUSTABLE OR FIXED SUPPORT INSTALLATION AT CONTRACTOR'S DISCRETION, UNLESS SHOWN OTHERWISE.

SADDLE PIPE SUPPORT

NTS

15000

WATERWORKS ENGINEERS



NOTES:

1. COAT ALL SHAPES PER SPECIFICATION SECTION 09900 SYSTEM 300.

2. B-LINE FIG. B3088 MAY BE USED IN NON-SEISMIC SUPPORT APPLICATIONS OR WHERE 12X ANCHOR HOLE SPACING IS PROVIDED. FOR VERTICAL ADJUSTMENTS USE PIPE ADJUSTER B-LINE FIG. B3089 AND FIG. B3088ST OR FIG. B3088T IN NON-SEISMIC SUPPORT APPLICATIONS.

FLANGE MOUNTED PIPE SUPPORT

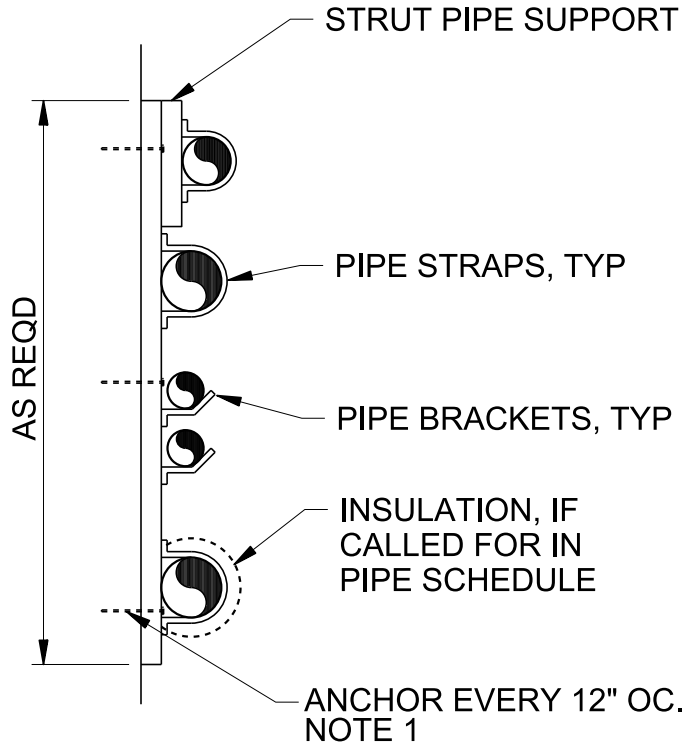
NTS

15002

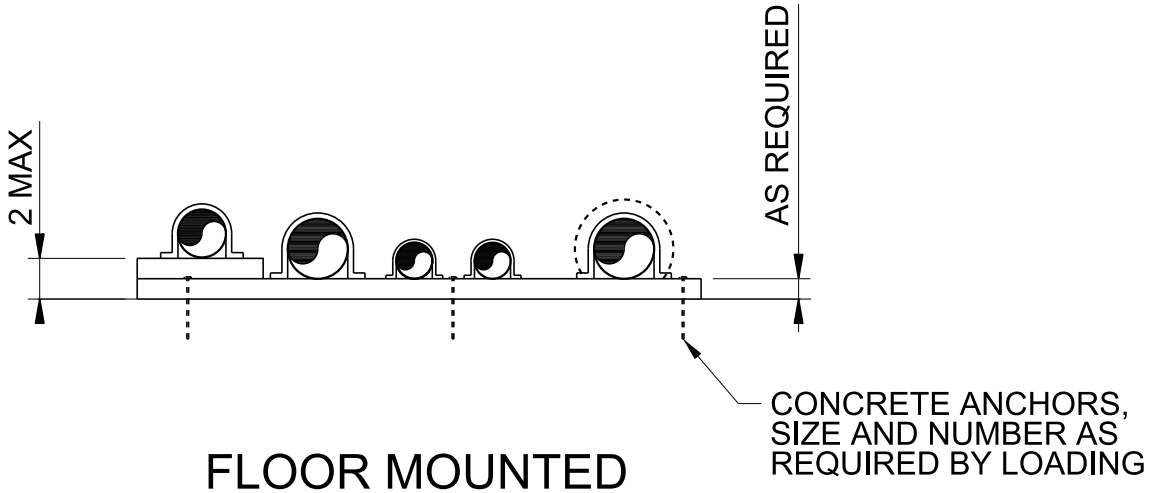
WATERWORKS ENGINEERS

NOTE:

USE NEOPRENE SLEEVE ON COPPER AND PVC PIPING AT STRAPS AND BRACKETS.



WALL MOUNTED



FLOOR MOUNTED

NOTE :

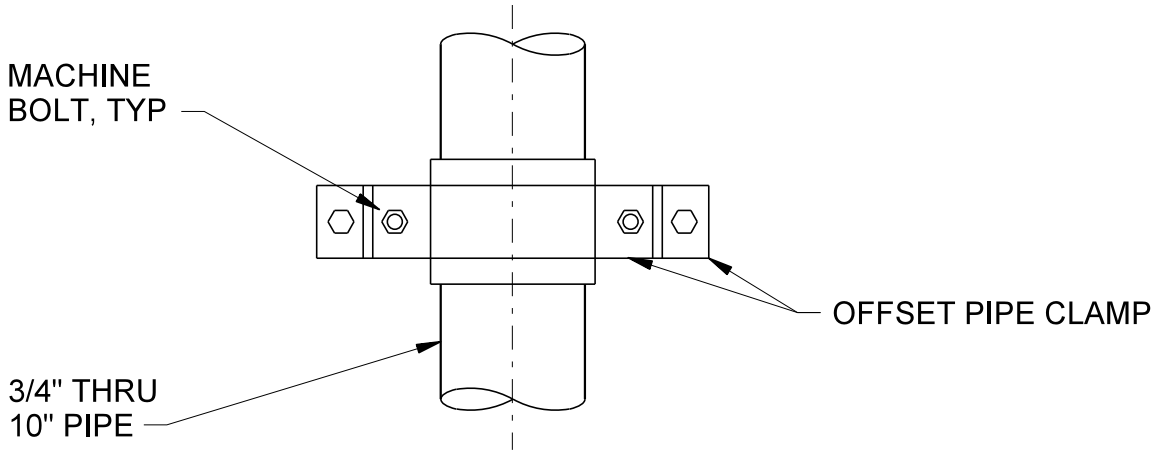
1. ATTACH TO WALL WITH SST ANCHORS, 3/8" DIAMETER MIN, COORDINATED WITH WALL CONSTRUCTION

PIPE SUPPORTS

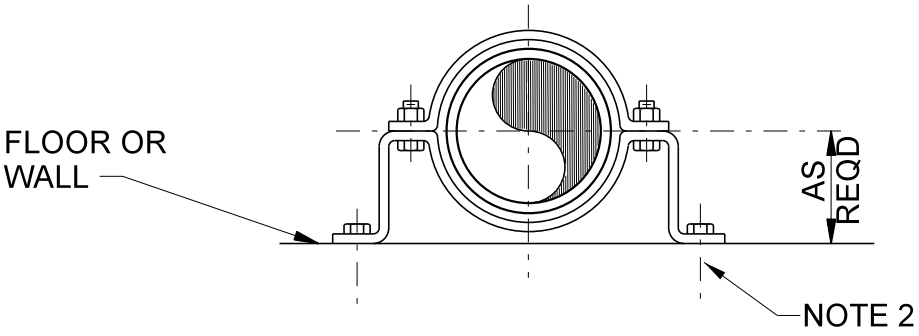
NTS

15010

WATERWORKS ENGINEERS



PLAN OR
VERTICAL PIPE
ELEVATION



SECTION

NOTES:

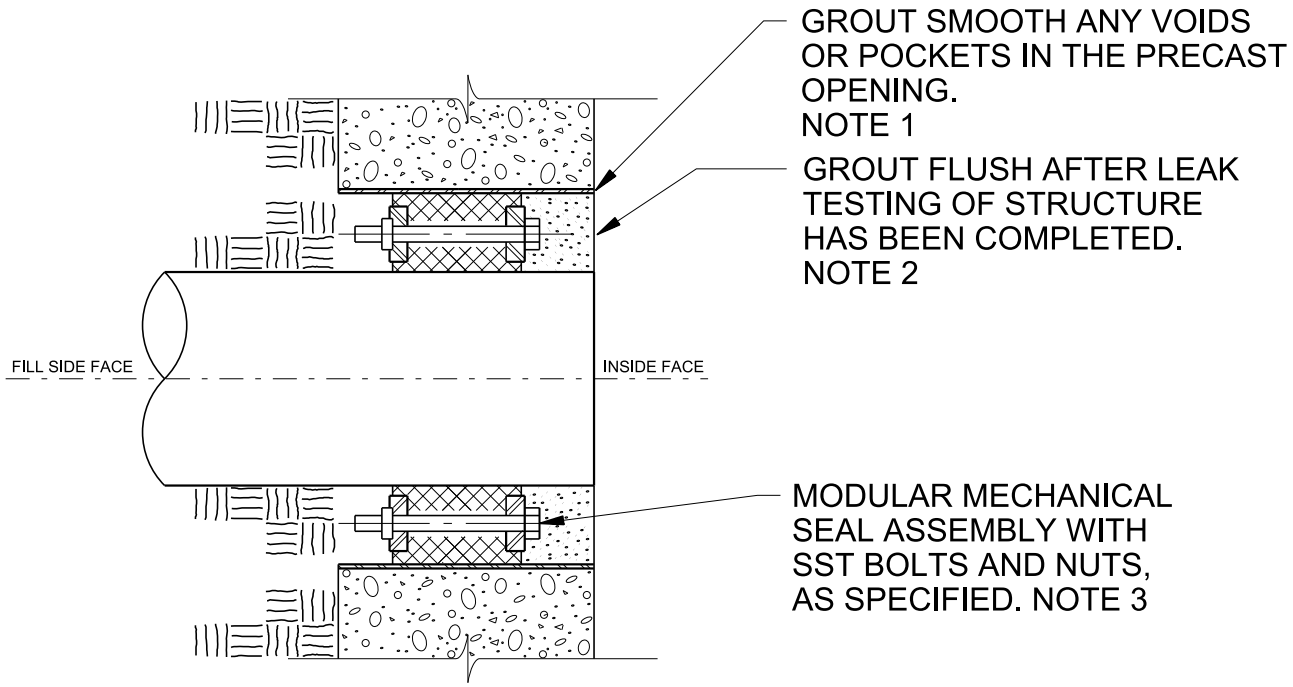
1. FOR VERTICAL PIPE RUNS ONLY.
2. ATTACH TO WALL WITH SST ANCHORS, 3/8" DIAMETER MIN, COORDINATED WITH WALL CONSTRUCTION

WALL-MOUNTED STANDOFF PIPE SUPPORT, TYPE 1

NTS

15040

WATERWORKS ENGINEERS



NOTES:

1. COORDINATE MODULAR SEAL SPACE REQUIRMENTS WITH PRECAST VENDER FOR OPENING SIZES PRIOR TO PLACING ORDER OF PRE-CAST STRUCTURE.

2. AFTER MODULAR SEAL INSTALL AND LEAK TEST BUT BEFORE GROUT IS PLACED, GREASE INSIDE FACE OF SEAL.

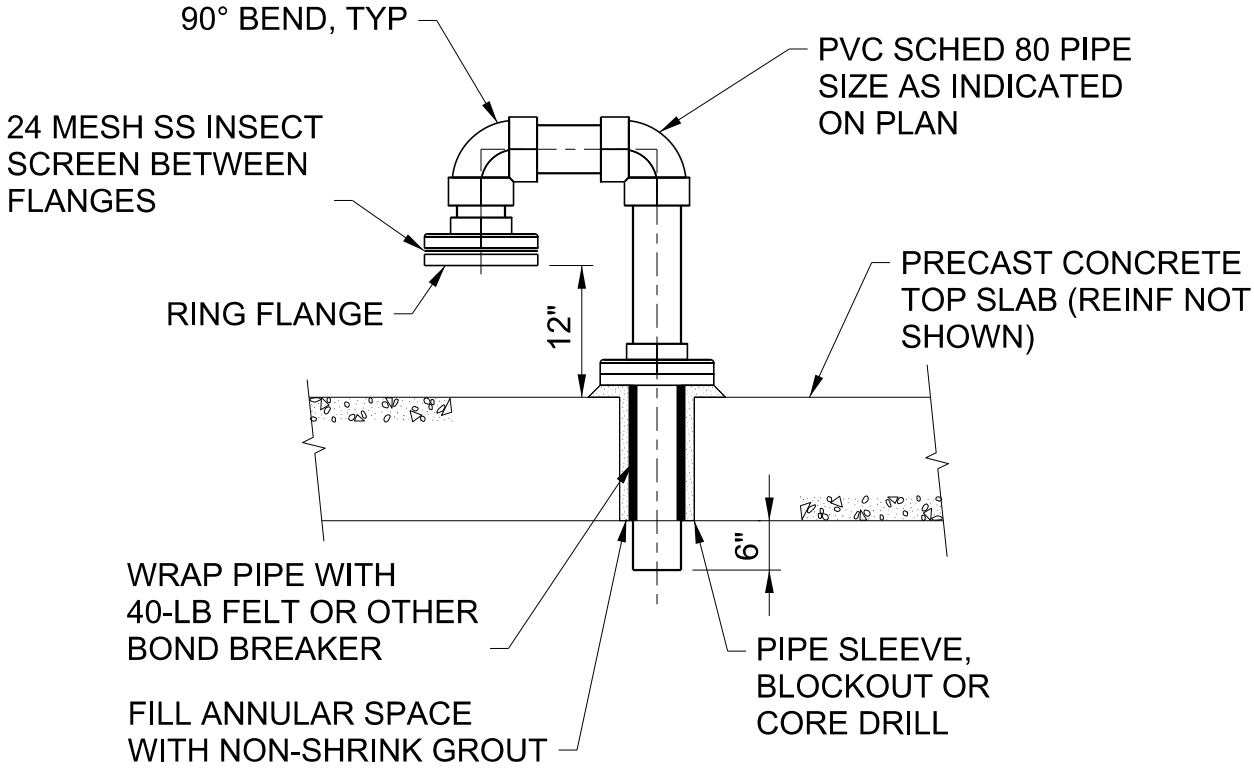
3. INSTALL PER MANUFACTURER'S INSTRUCTIONS WITH THE BOLT HEADS FACING THE INSIDE FACE OF THE STRUCTURE.

PRE-CAST OPENING WITH MODULAR MECHANICAL SEAL (BURIED)

NTS

15132A

WATERWORKS ENGINEERS



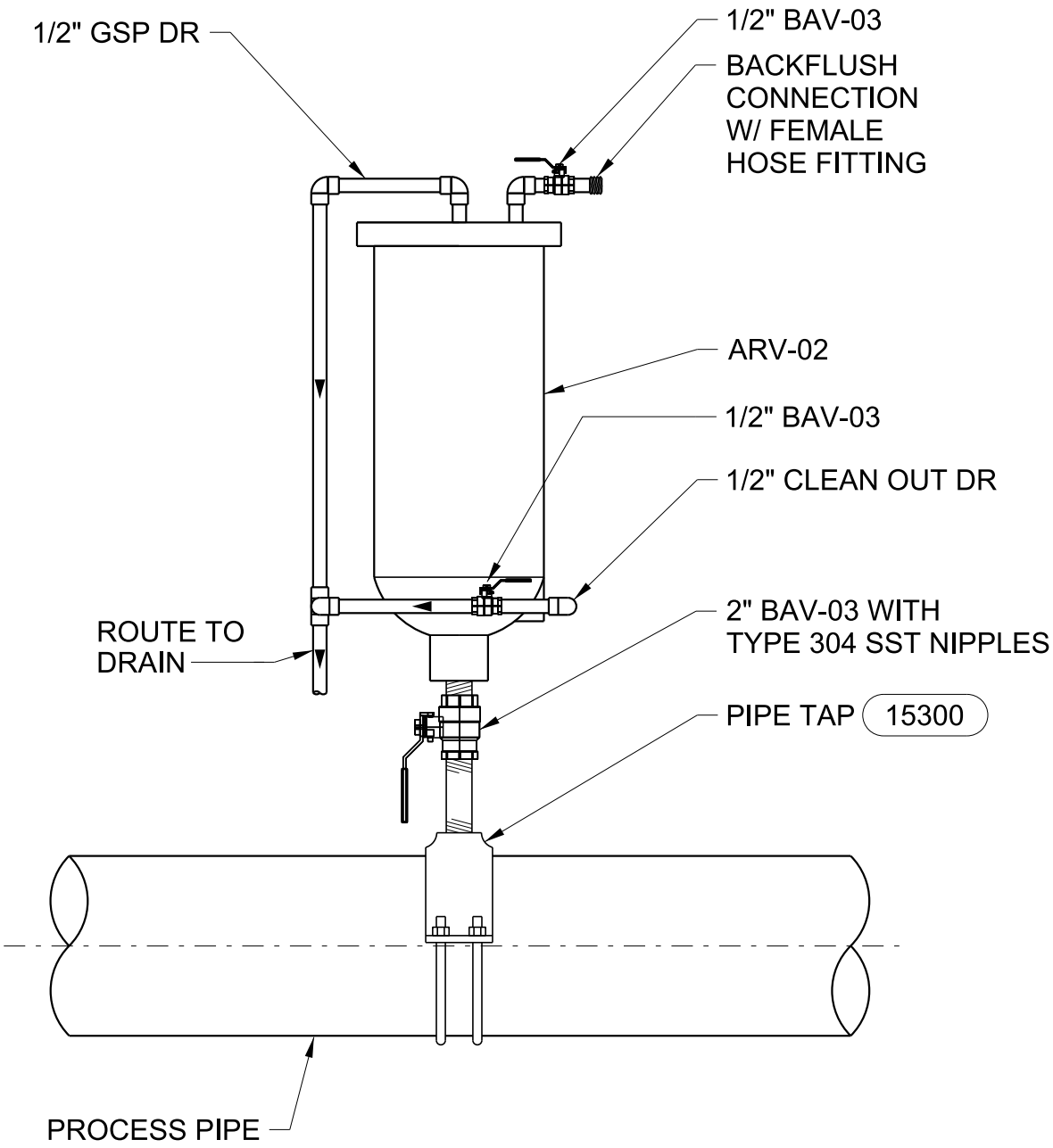
GOOSENECK VENT THRU CONCRETE SLAB

NTS

15145

WATERWORKS ENGINEERS

FILENAME: 15145.dgn PLOT DATE: 3/24/2015



NOTES:

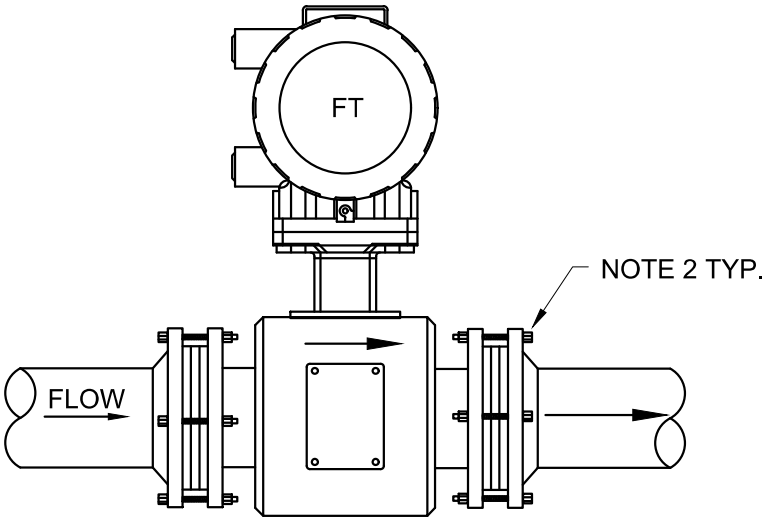
1. PIPING BETWEEN PIPE TAP AND ISOLATION VALVE SHALL BE TYPE 304 SST. ALL OTHER PIPING SHALL BE GALVANIZED STEEL.

AIR RELEASE VALVE INSTALLATION SEWAGE SERVICE

NTS

15231

WATERWORKS ENGINEERS



NOTES:

1. INSTALL WITH A MINIMUM OF FIVE (5) STRAIGHT PIPE DIAMETERS UPSTREAM AND TWO (2) STRAIGHT PIPE DIAMETERS DOWNSTREAM.

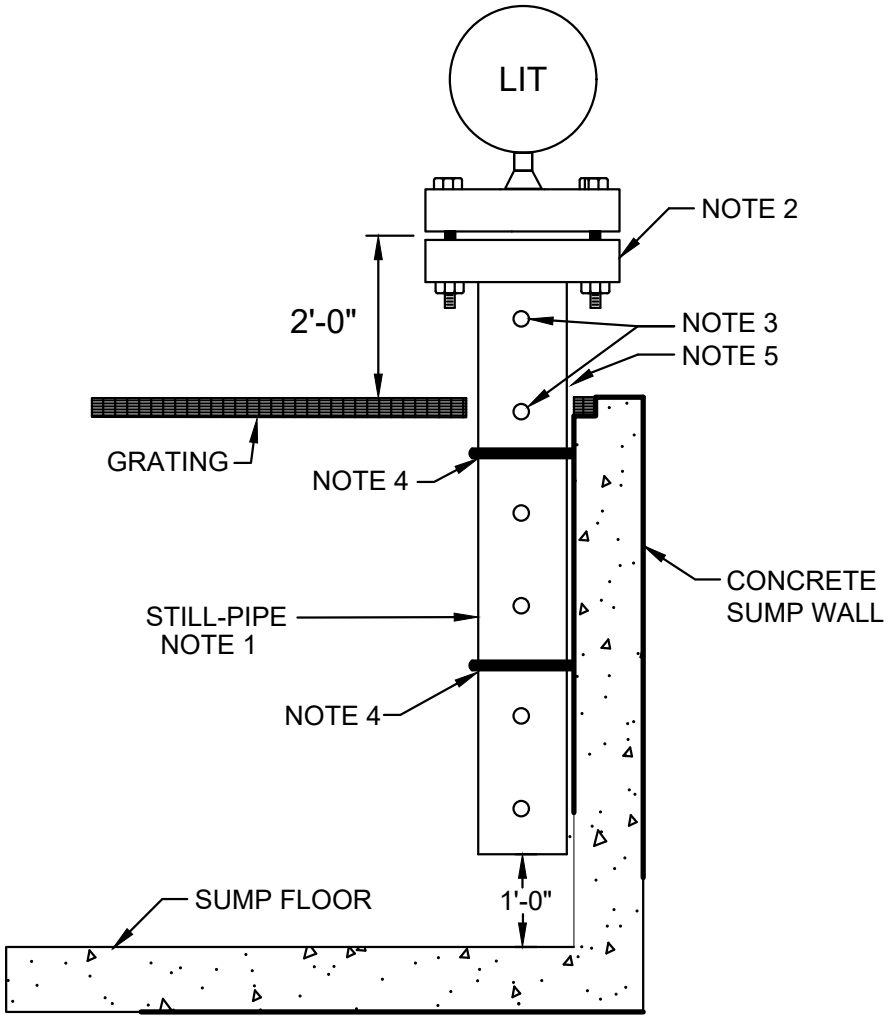
2. PROVIDE MATING FLANGES, GASKETS, AND BOLTING PER THE PDT OF THE PROCESS PIPE.

MAGNETIC FLOWMETER DETAIL

NTS

15235

WATERWORKS ENGINEERS



NOTES:

1. 4" PIPE PER PDT 42.

2. 4" FLANGE, BOLTING, AND GASKET PER PDT 42.

3. DRILL 3/8" DIAMETER HOLE 2" DOWN FROM FLANGE. DRILL REMAINING HOLES DOWN THE SAME SIDE OF THE PIPE AND NO CLOSER THAN 6 INCHES APART.

4. FABRICATE BRACKET WITH STAINLESS STEEL HARDWARE TO SUPPORT STILL-PIPE. BOLT BRACKET WITH 1/2" EXPANSION STUD ANCHORS WITH NUTS AND WASHERS. INSTALL ONE BRACKET AT LEAST EVERY 5'.

5. CUT ACCESS IN GRATING FOR STILL-PIPE. IF GRATING IS METAL, COLD GALVANIZE CUT ENDS.

NON-CONTACT RADAR LEVEL TRANSMITTER

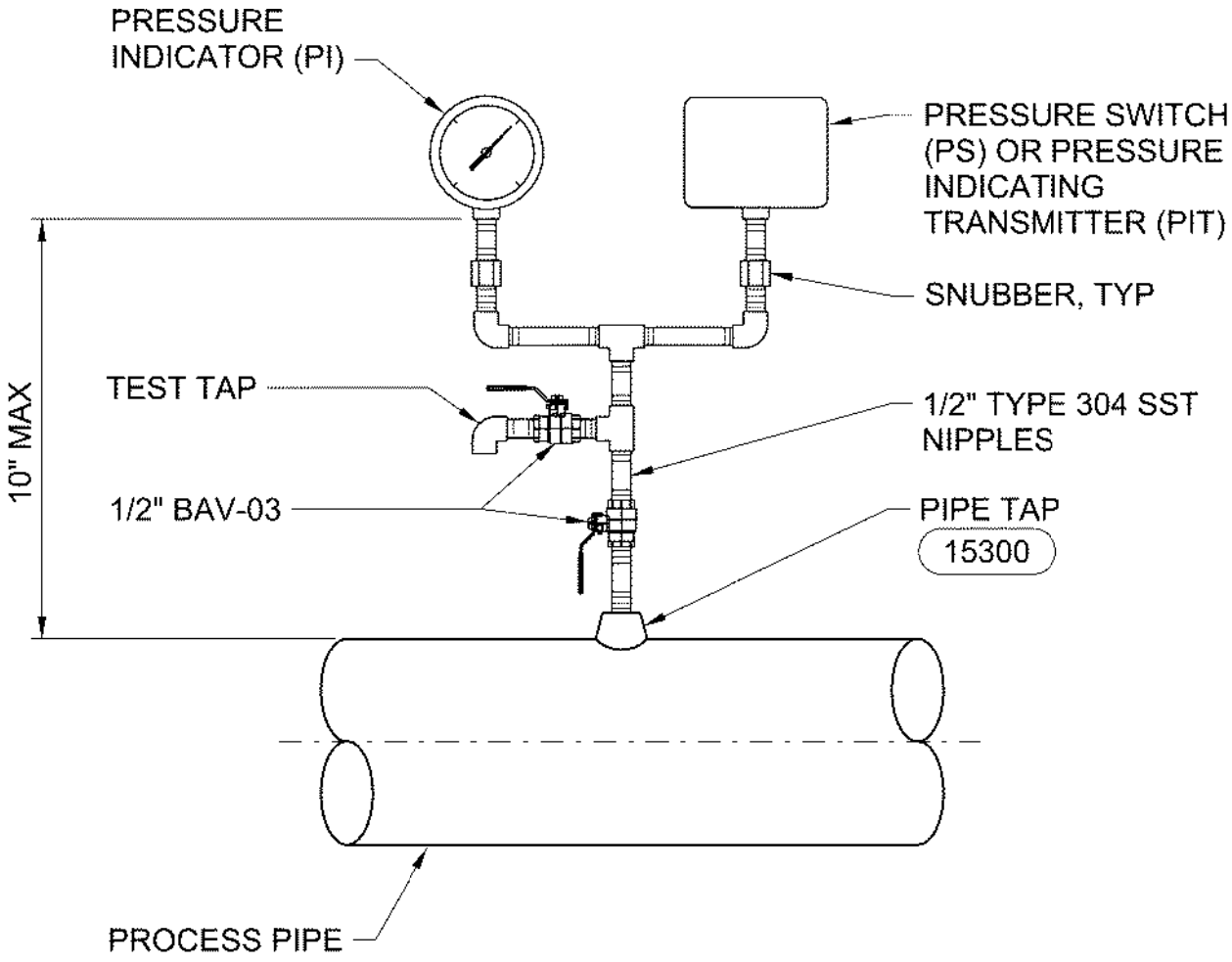
NTS

15340

FILENAME: 40 70 03.03 - NON-CONTACT RADAR LEVEL TRANSMITTER.DWG

REV DATE: August 24, 2021

WATERWORKS ENGINEERS



DIRECT INSTALLATION

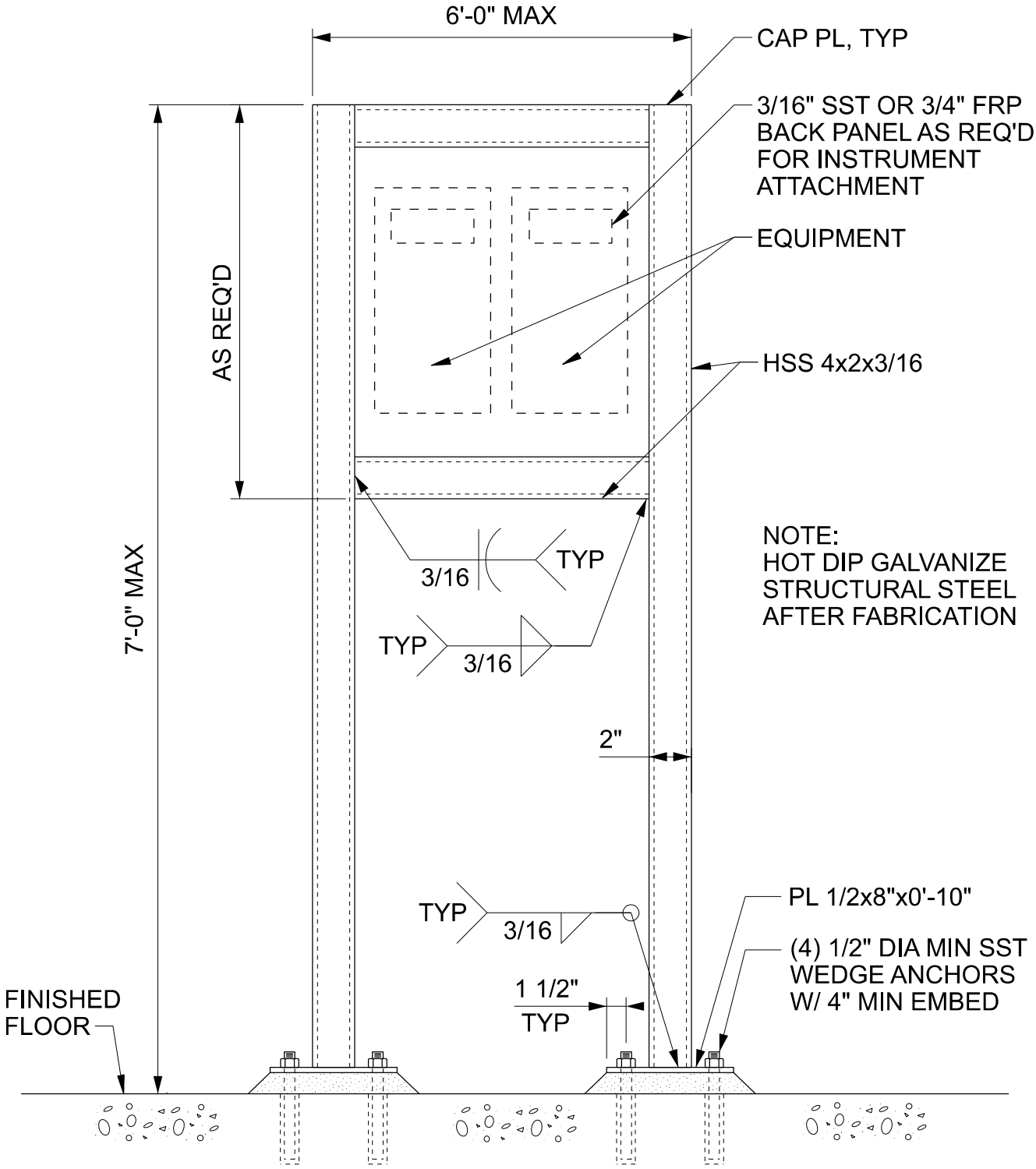
PRESSURE SWITCH AND INDICATOR INSTALLATION

NTS

15312

WATERWORKS ENGINEERS

FILENAME: 15312.DGN PLOT DATE: 12/10/2014 2:41:11 PM

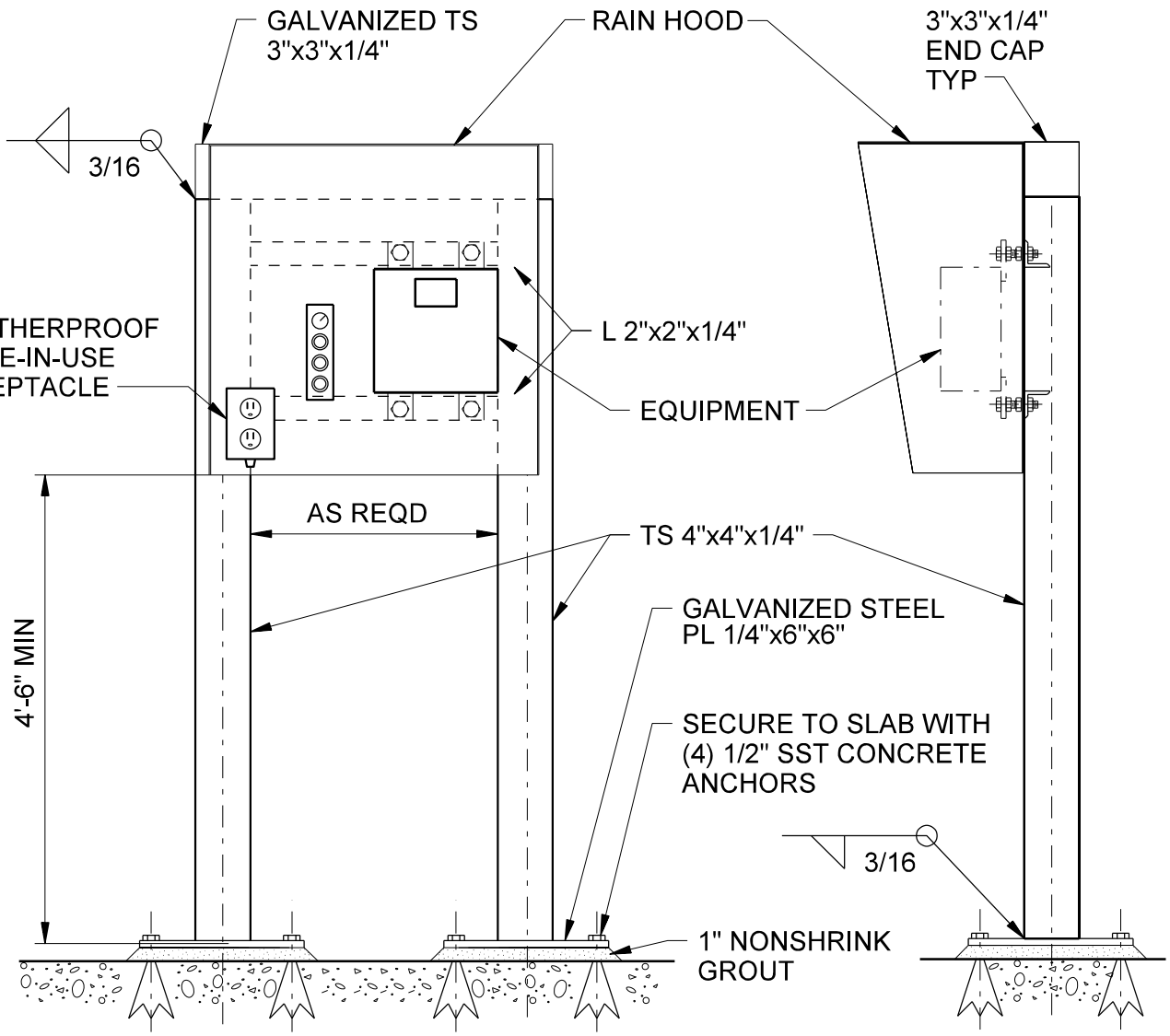


TUBE STEEL SUPPORT FOR INSTRUMENTS

NTS

16000A

WATERWORKS ENGINEERS



NOTE:

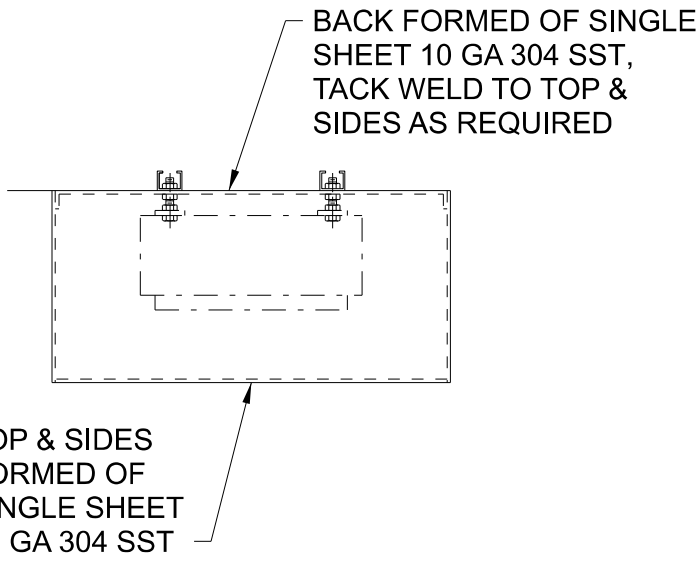
1. ROUND OFF ALL EXPOSED EDGES AND CORNERS.

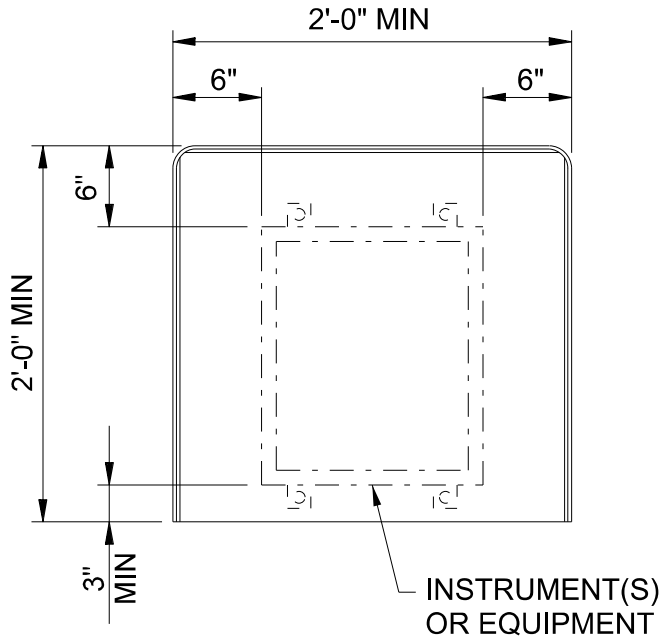
TUBE STEEL EQUIPMENT SUPPORT WITH RAIN HOOD

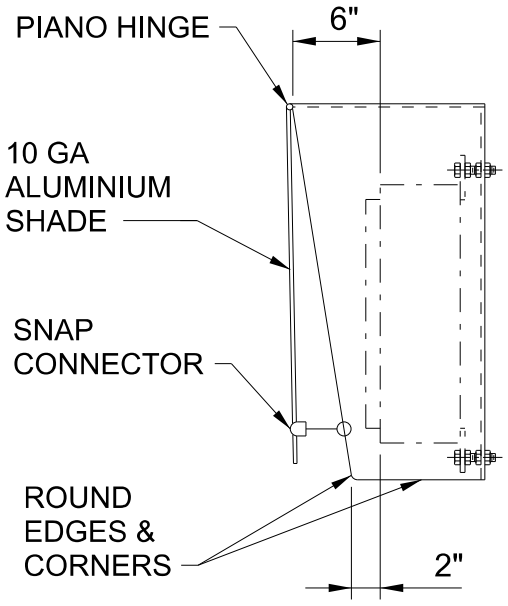
NTS

16000R

WATERWORKS ENGINEERS







NOTES:

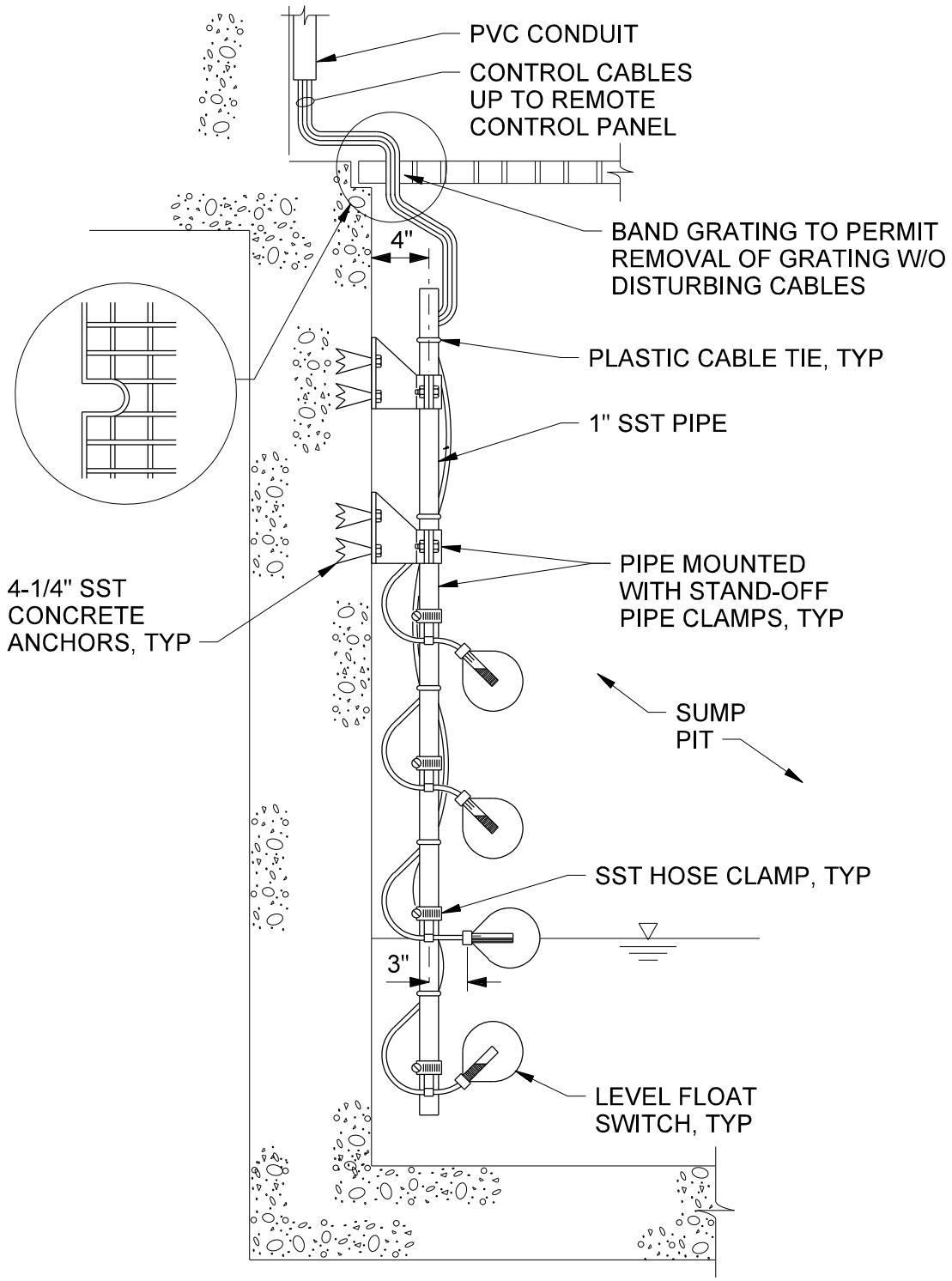
1. ALL EXPOSED EDGES TO BE GROUND SMOOTH AND BURR FREE.
2. ATTACH INSTRUMENT OR EQUIPMENT TO BACK OF RAIN HOOD AS REQUIRED USING 304 SST HARDWARE.

RAIN / SUN HOOD INSTALLATION

NTS

16000Q

WATERWORKS ENGINEERS

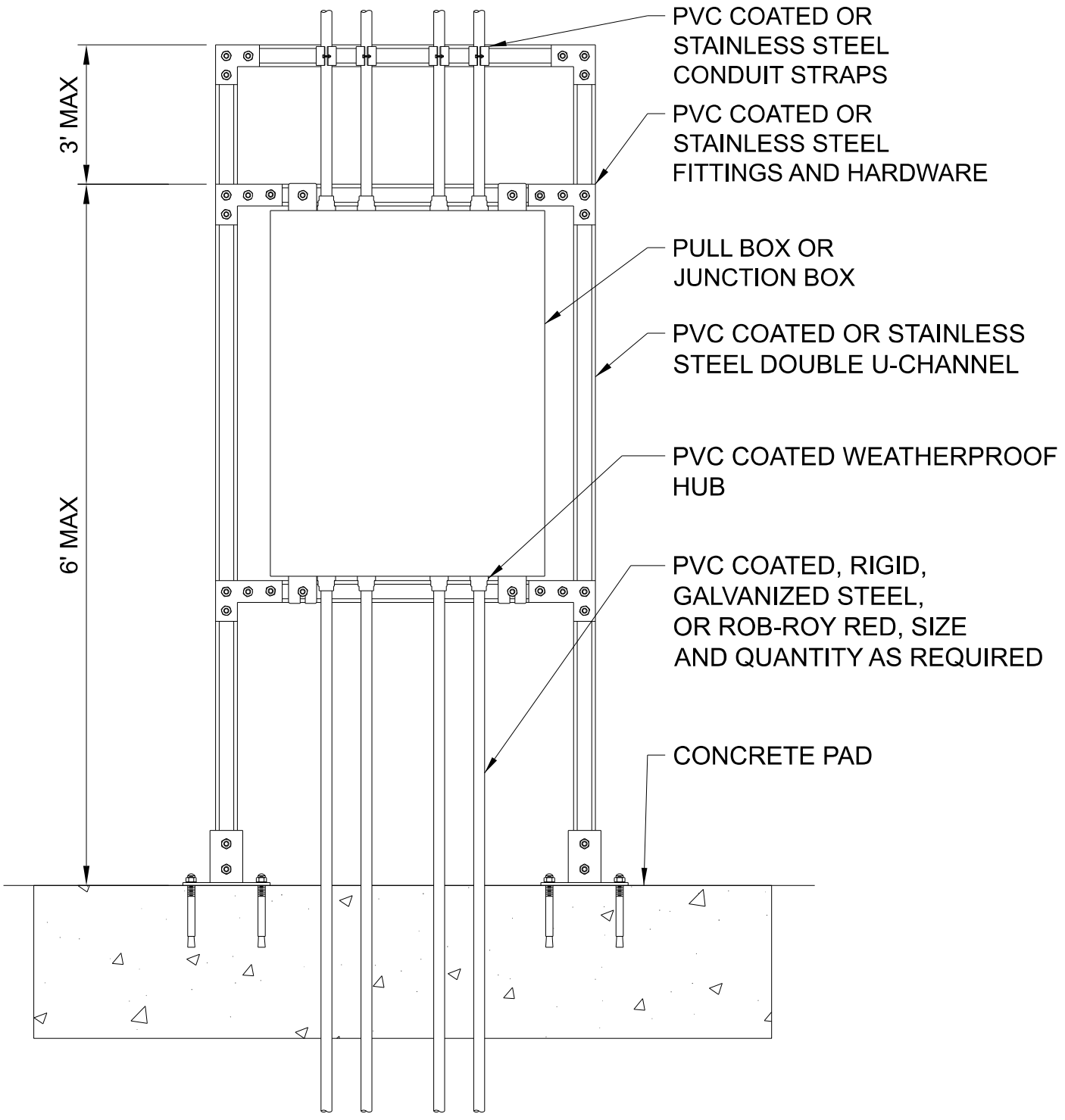


LEVEL SWITCH SUPPORT BRACKET

16191S

NTS

WATERWORKS ENGINEERS

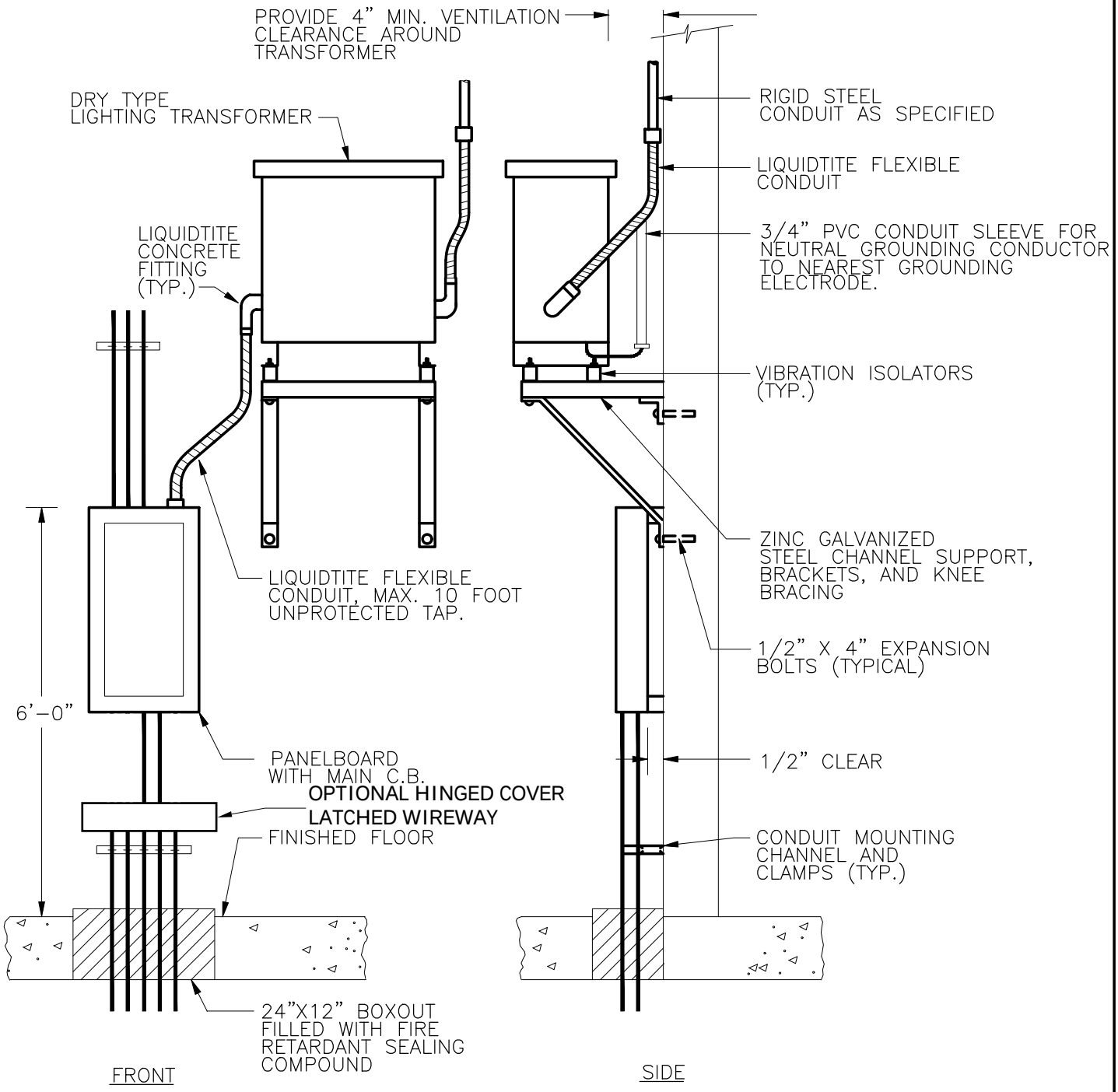


PULL BOX OR JUNCTION BOX EQUIPMENT RACK DETAIL

NTS

16000X

WATERWORKS ENGINEERS



LIGHTING PANEL AND TRANSFORMER INSTALLATION

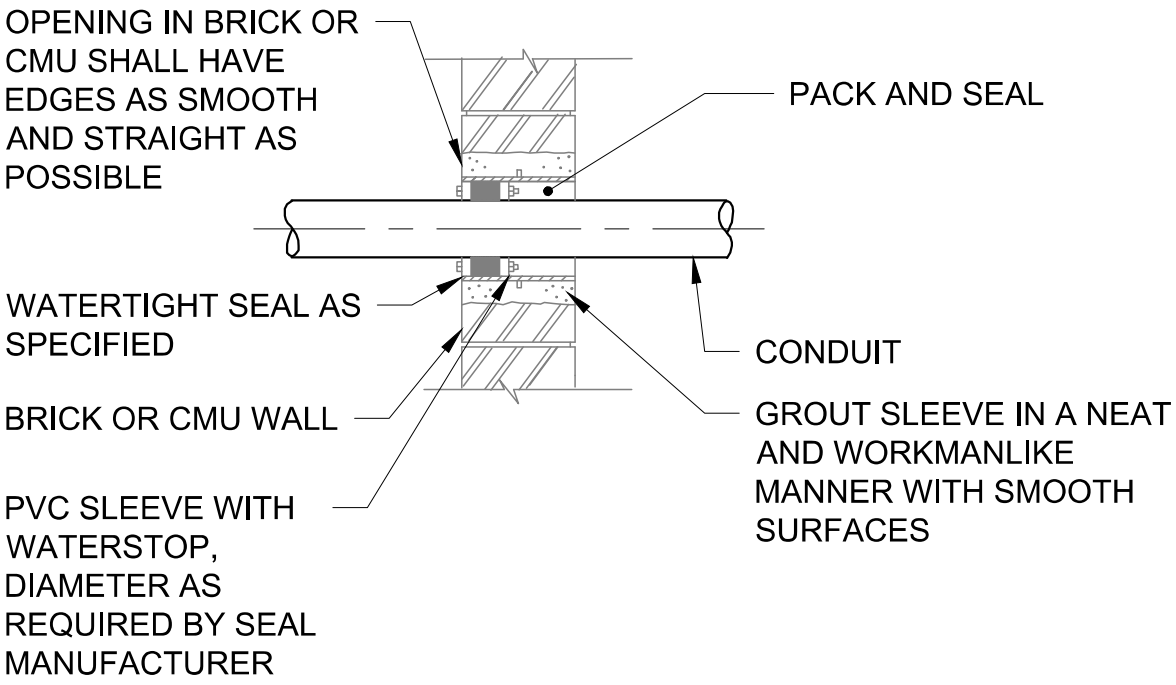
NTS

16010

FILENAME: 26 05 30.10 - LIGHTING PANEL AND TRANSFORMER INSTALLATION.DWG

REV DATE: August 24, 2021

WATERWORKS ENGINEERS

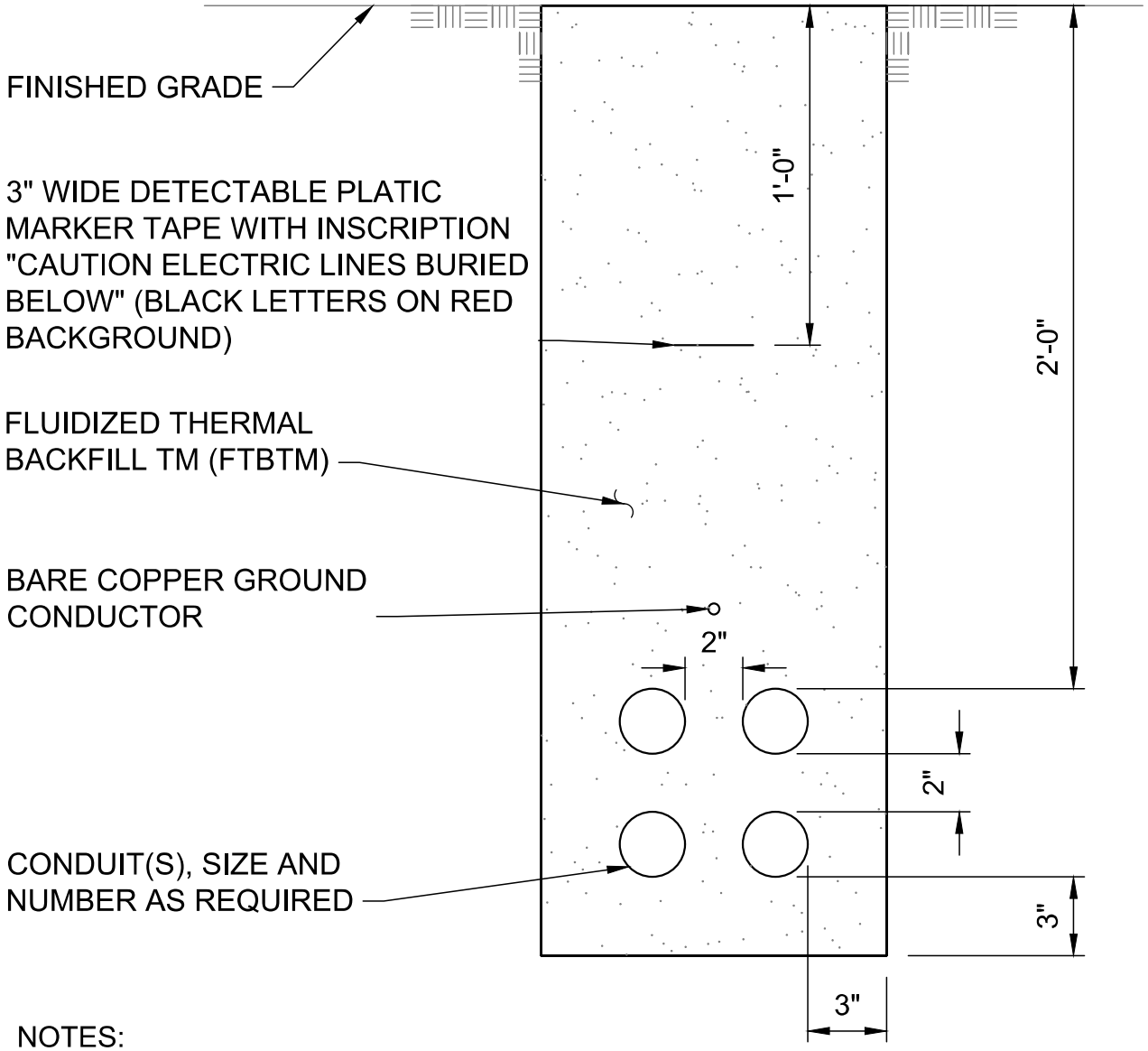


WATERTIGHT CONDUIT PENETRATION, BRICK OR CMU

NTS

16110B

WATERWORKS ENGINEERS



NOTES:

1. GROUND CONDUCTORS SHALL RUN CONTINUOUSLY THROUGH MANHOLES AND SHALL CONTINUE FROM DUCTBANK INTO SWITCHGEAR OR BUILDING GROUNDING SYSTEM AND SHALL BE BONDED TO EACH RIGID METAL CONDUIT. SIZE TO BE 4/0 UNLESS OTHERWISE INDICATED ON PLANS.

2. ALL DIMENSIONS ARE MINIMUM.

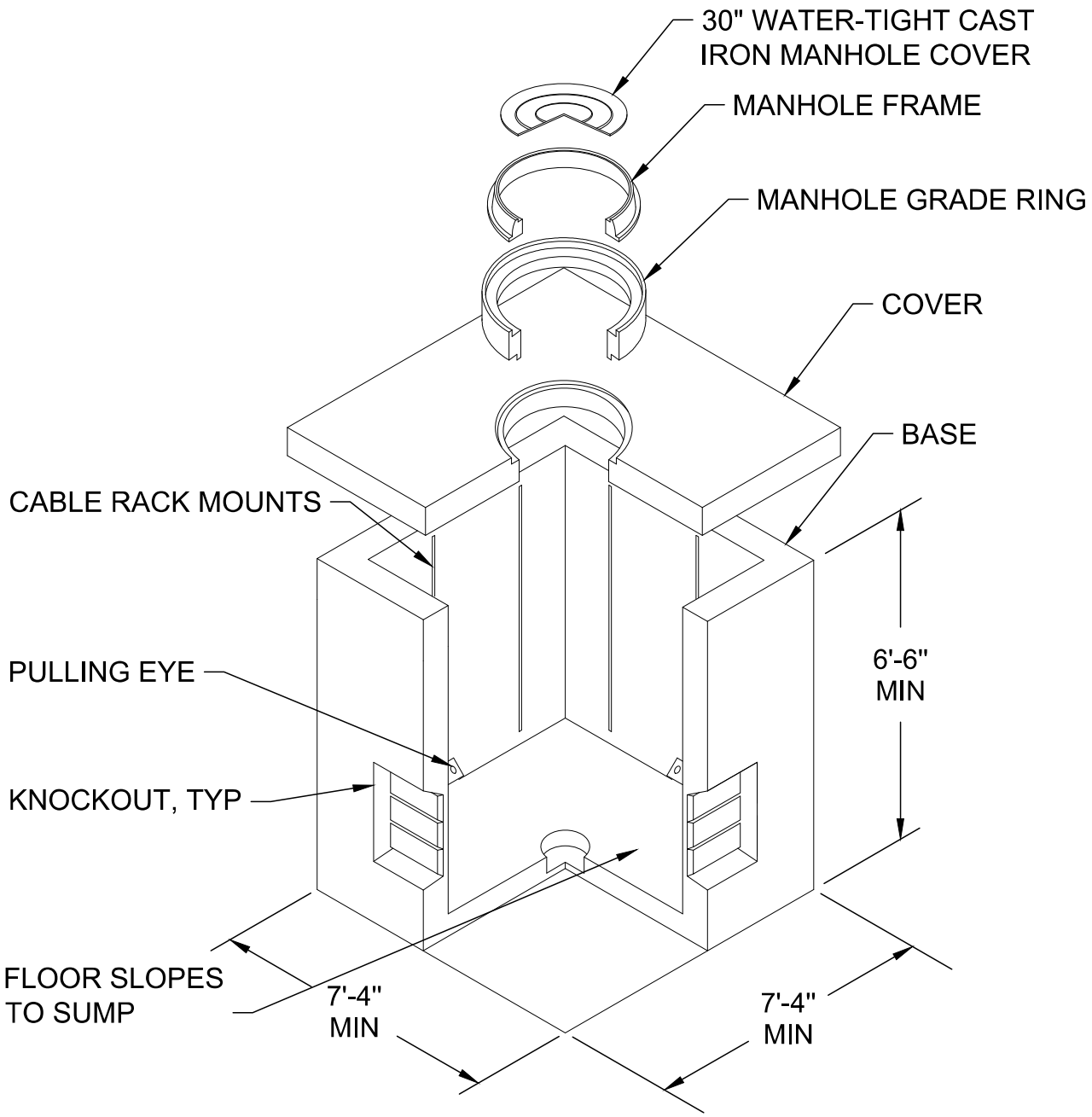
3. FLUIDIZED THERMAL BACKFILL TM (FTBTM) SHALL HAVE MINIMUM RHO OF 75 C-CM/W.

TRENCH/DUCTBANK DETAIL

NTS

16600T

WATERWORKS ENGINEERS



NOTE:

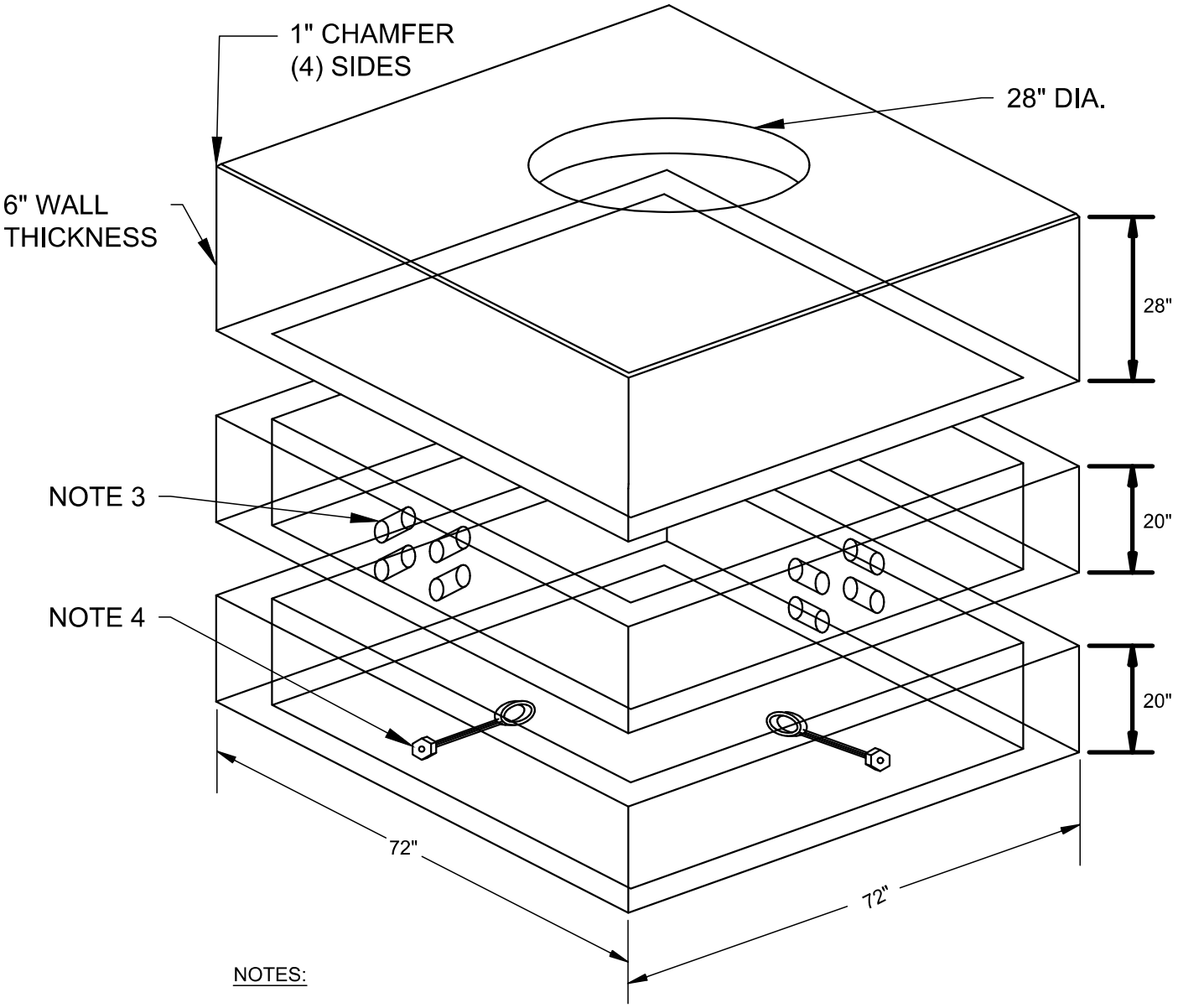
1. INSTALL A GROUND ROD AND CONNECT TO DUCT BANK GROUND. TRAIN CABLES AROUND INTERIOR PERIMETER ON CABLE RACKS

ELECTRIC MANHOLE

NTS

16600M

WATERWORKS ENGINEERS



NOTES:

1. CONCRETE TO BE 5000# HIGH EARLY STRENGTH.
2. CONCRETE TO BE COMPACTED WITH VIBRATOR.
3. 4-1/2" DIA. HOLES ON 7-1/2" CENTERS, IN LINE ALL FOUR SIDES.
4. GALVANIZED PULLING EYES CENTERED ON ALL FOUR SIDES. OPTIONAL.
5. SUPPLIER SHALL BE FRUEAN FE-3A OR LINHARES 6-4.

PRIMARY AND/OR SECONDARY JUNCTION BOX

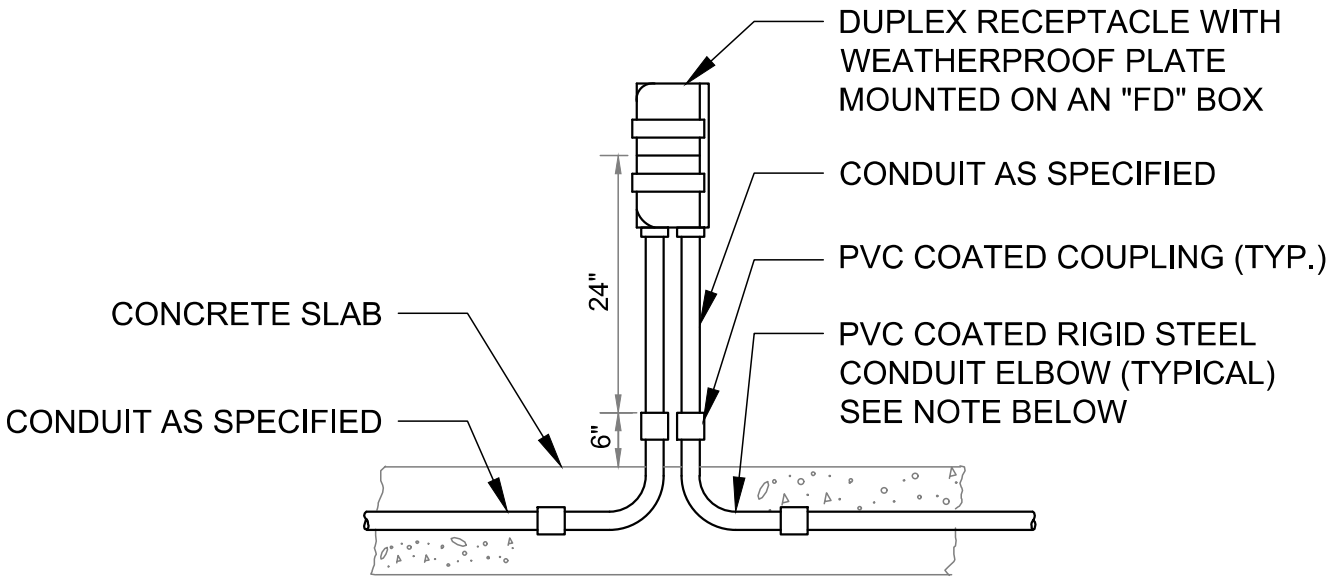
NTS

16640

FILENAME: 26 05 45.03 - PRIMARY AND OR SECONDARY JUNCTION BOX.DWG

REV DATE: August 24, 2021

WATERWORKS ENGINEERS



NOTE:

1. ELBOW TO BE CAPPED IN SLAB ON LAST RECEPTACLE IN ROW (FOR SUPPORT)

DECK MOUNTED RECEPTACLE

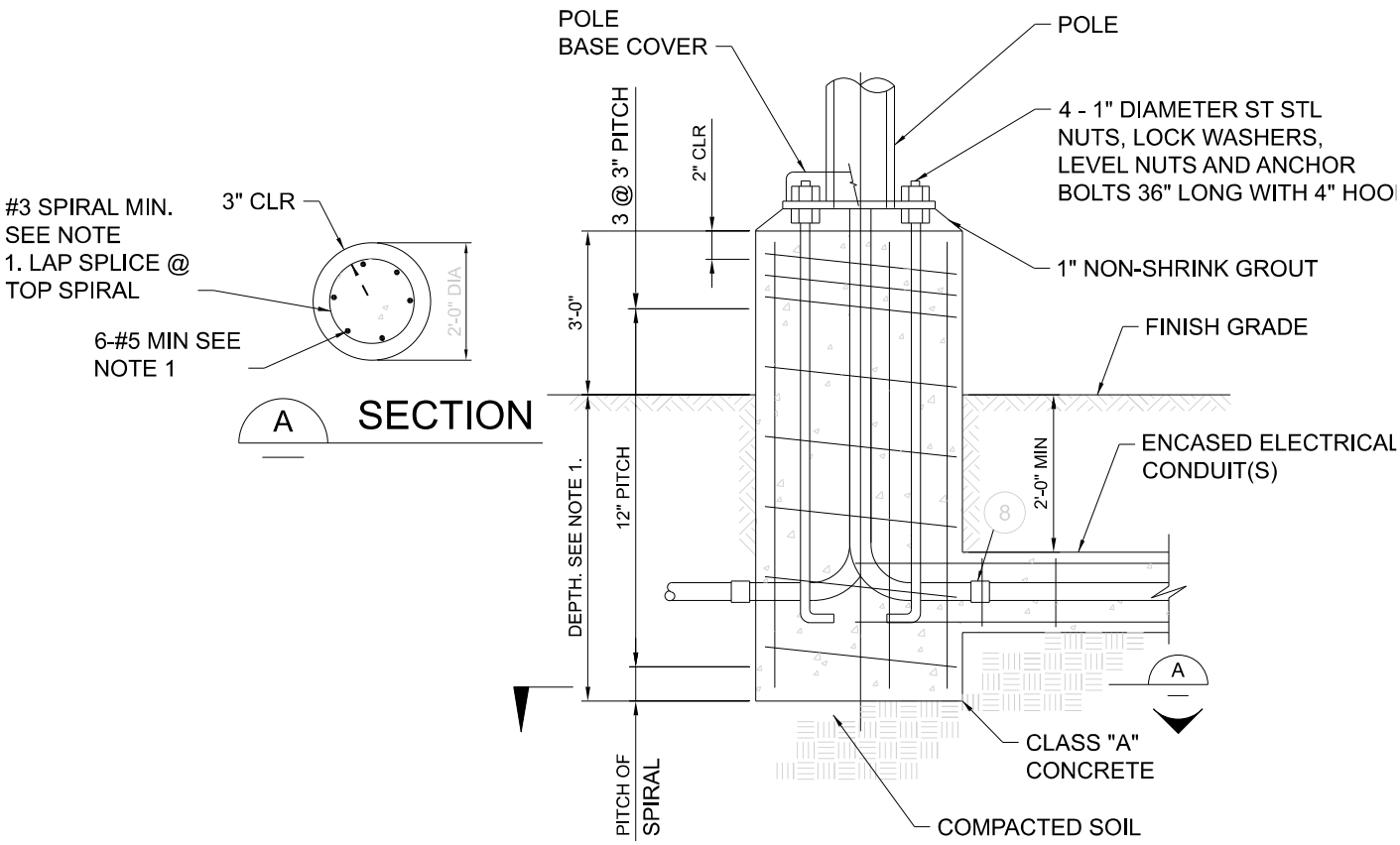
NTS

16650

FILENAME: 26 18 03.01 - DECK MOUNTED RECEPTACLE.DWG

REV DATE: August 25, 2021

WATERWORKS ENGINEERS



NOTES:

1. IF DEPTH AND REINFORCEMENT REQUIREMENTS ARE NOT PROVIDED BY THE POLE MANUFACTURER, PROVIDE A MINIMUM 5' DEPTH AND 2' DIAMETER BASE. LOADING SHALL BE DEAD LOAD PLUS 100 MPH WIND WITH EXPOSURE "C". PROVIDE SIGNED/SEALED STRUCTURAL CALCULATIONS IN SHOP DRAWING SUBMITTAL.

2. COORDINATE WITH RADIO PATH STUDY FOR REQUIRED POLE HEIGHT NOT TO EXCEED 20 FEET.

POLE BASE DETAIL

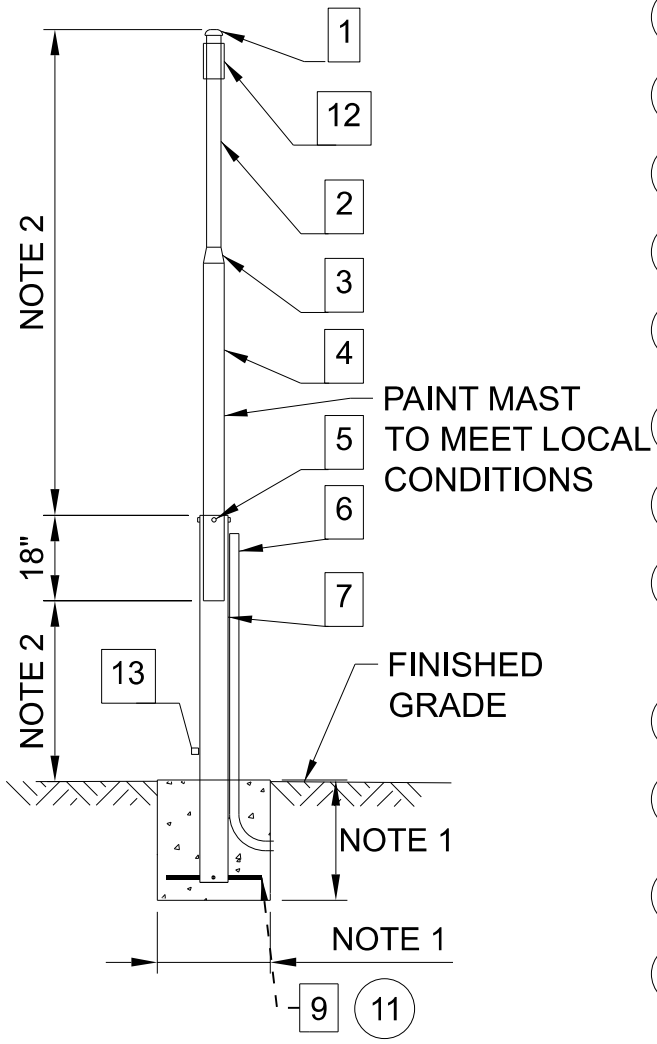
NTS

16660

FILENAME: WWE-BDR_8.5X11.DWG

REV DATE: August 18, 2021

WATERWORKS ENGINEERS



1. RAINTIGHT CAP
2. 2" GALVANIZED RIGID STEEL CONDUIT
3. 2 1/2" TO 2" GALVAIZED STEEL REDUCER
4. 2 1/2" GALVANIZED RIGID STEEL CONDUIT
5. 1/2" SET SCREW (TYP - 4 EACH)
6. 1" RIGID STEEL CONDUIT, STRAP TO MAST INSTALL BUSHING ON TOP OF CONDUIT
7. 3" GALVANIZED RIGID STEEL CONDUIT
8. PVC TO RIGID STEEL CONDUIT FITTING
9. CONCRETE FOUNDATION, CLASS "B" OR AS RECOMMENDED BY POLE MANUFACTURER. SEE NOTE 1
10. 1" PVC CONDUIT TO RADIO TANSCEIVING UNIT
11. REBAR AS RECOMMENDED BY POLE MANUFACTURER. SEE NOTE 1
12. MOUNT YAGI ANTENNA
13. GROUND LUG 12" ABOVE GRADE. CADWELD SYSTEM GROUND TO BUSHINGS AND POLE PER SPECIFICATION 16061.

NOTES:

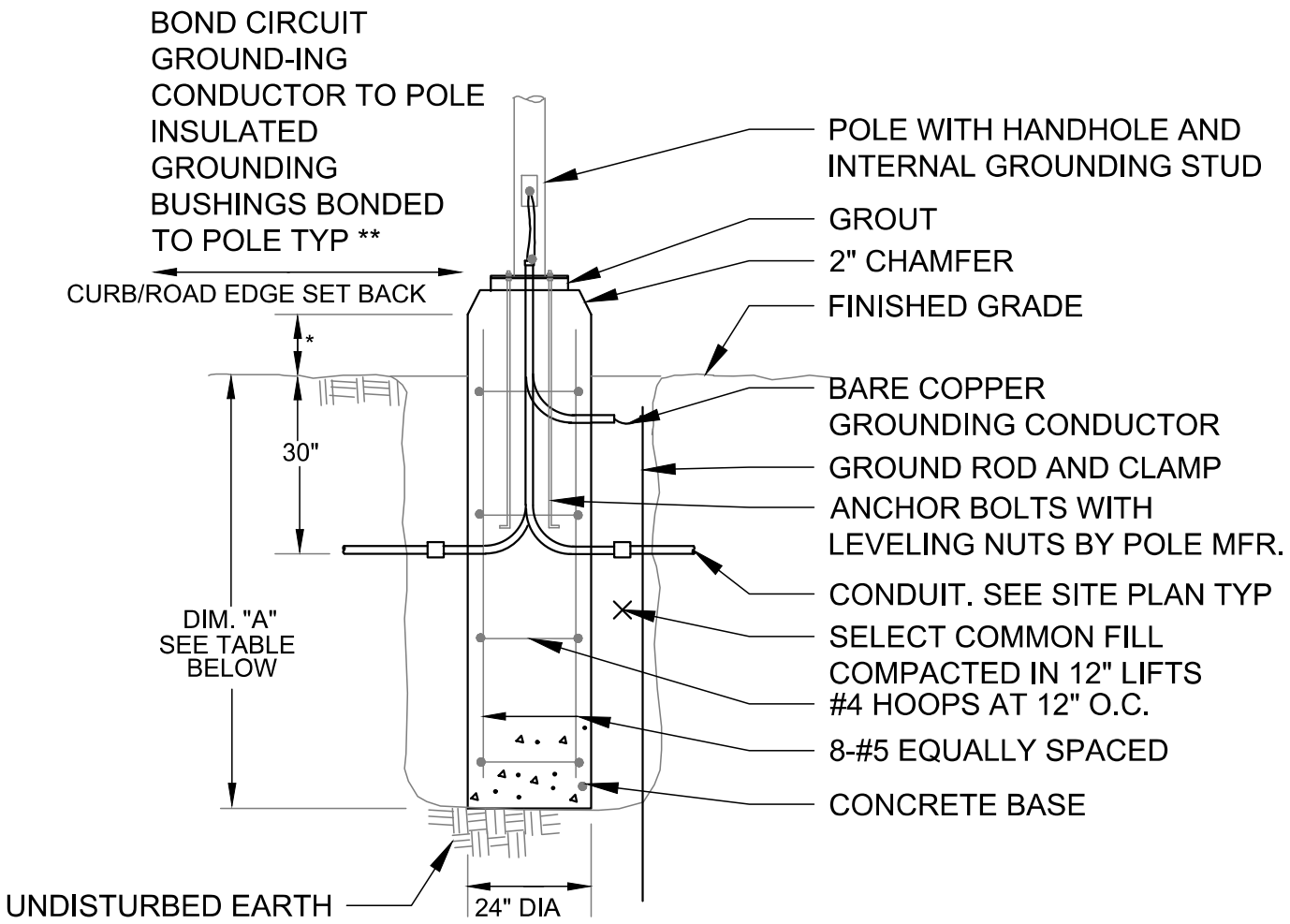
1. IF DEPTH AND REINFORCEMENT REQUIREMENTS ARE NOT PROVIDED BY THE POLE MANUFACTURER, PROVIDE A MINIMUM 5' DEPTH AND 2' DIAMETER BASE. LOADING SHALL BE DEAD LOAD PLUS 100 MPH WIND WITH EXPOSURE "C". PROVIDE SIGNED/SEALED STRUCTURAL CALCULATIONS IN SHOP DRAWING SUBMITTAL.
2. COORDINATE WITH RADIO PATH STUDY FOR REQUIRED POLE HEIGHT NOT TO EXCEED 20 FEET.

POLE DETAIL

NTS

16500P

WATERWORKS ENGINEERS



POLE HEIGHT	DIMENSION "A"
10'-0"	4'-6"
20'-0"	4'-6"
30'-0"	6'-6"
40'-0"	6'-6"

* = 2" AT WALKWAYS; 18" AT ROADWAYS & PARKING AREAS

** = 48" AT WALKWAYS; 24" AT ROADWAYS

NOTE:

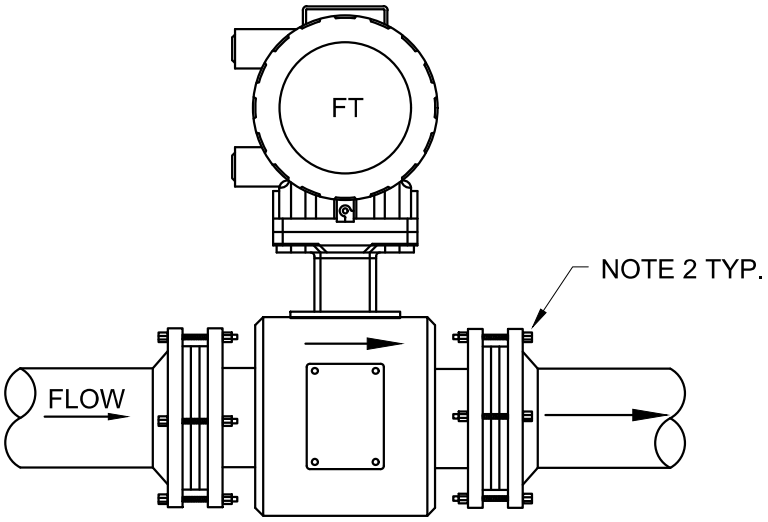
1. REFER TO SPECIFICATIONS FOR MATERIALS

STANDARD LIGHTING BASE

NTS

16500PB

WATERWORKS ENGINEERS



NOTES:

1. INSTALL WITH A MINIMUM OF FIVE (5) STRAIGHT PIPE DIAMETERS UPSTREAM AND TWO (2) STRAIGHT PIPE DIAMETERS DOWNSTREAM.

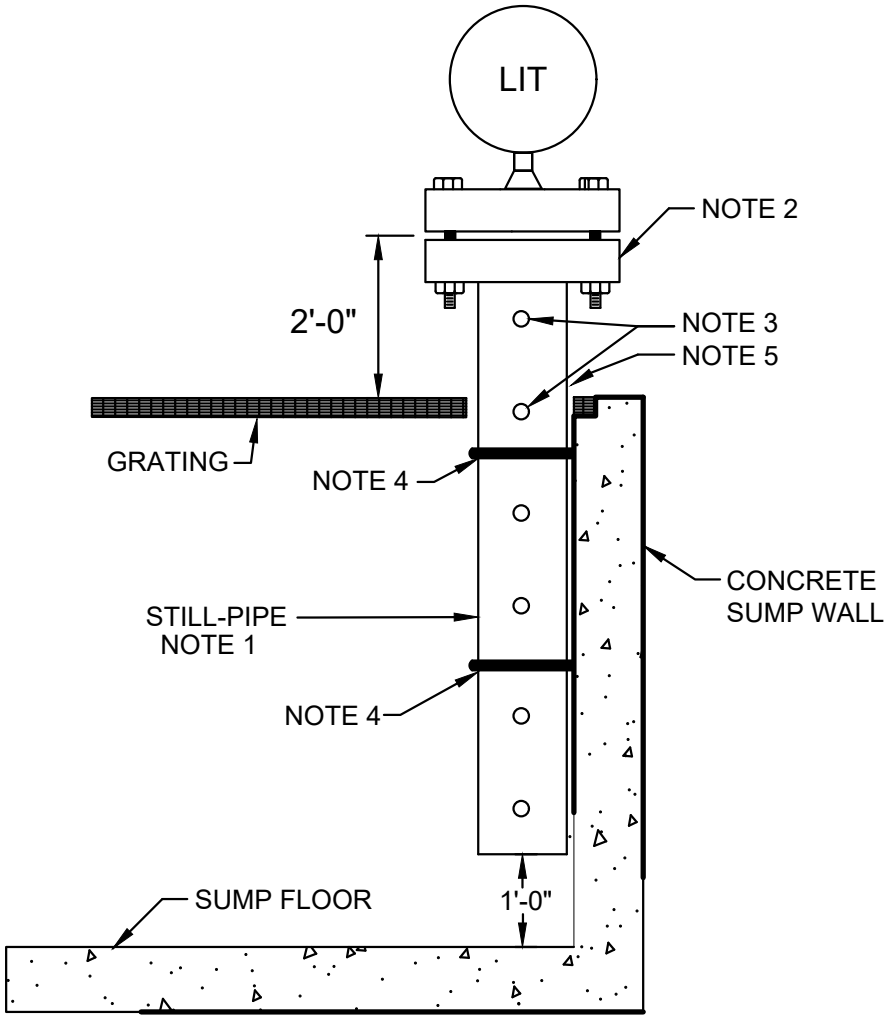
2. PROVIDE MATING FLANGES, GASKETS, AND BOLTING PER THE PDT OF THE PROCESS PIPE.

MAGNETIC FLOWMETER DETAIL

NTS

16191F

WATERWORKS ENGINEERS



NOTES:

1. 4" PIPE PER PDT 42.

2. 4" FLANGE, BOLTING, AND GASKET PER PDT 42.

3. DRILL 3/8" DIAMETER HOLE 2" DOWN FROM FLANGE. DRILL REMAINING HOLES DOWN THE SAME SIDE OF THE PIPE AND NO CLOSER THAN 6 INCHES APART.

4. FABRICATE BRACKET WITH STAINLESS STEEL HARDWARE TO SUPPORT STILL-PIPE. BOLT BRACKET WITH 1/2" EXPANSION STUD ANCHORS WITH NUTS AND WASHERS. INSTALL ONE BRACKET AT LEAST EVERY 5'.

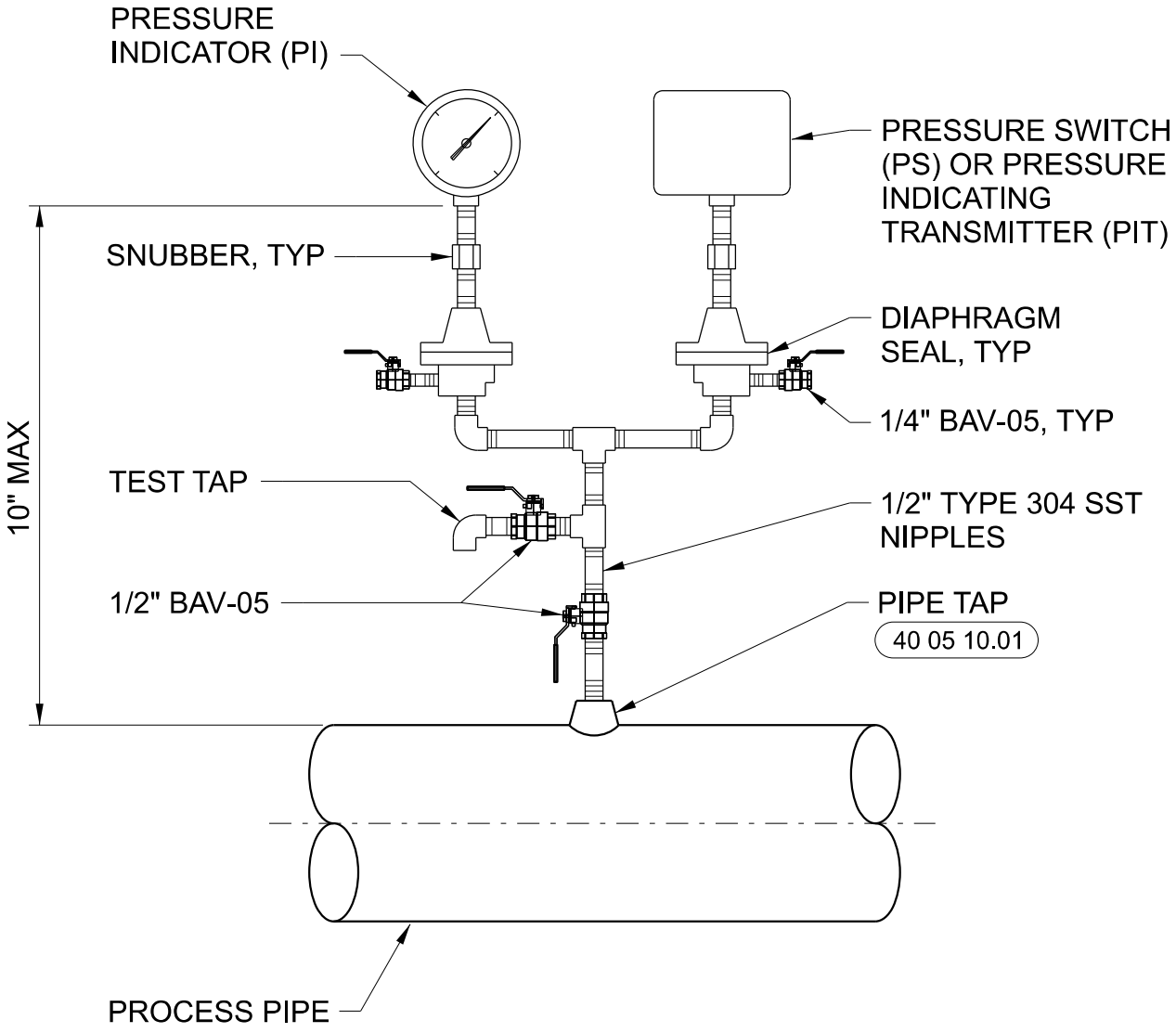
5. CUT ACCESS IN GRATING FOR STILL-PIPE. IF GRATING IS METAL, COLD GALVANIZE CUT ENDS.

NON-CONTACT
RADAR LEVEL TRANSMITTER

NTS

16191LR

WATERWORKS ENGINEERS



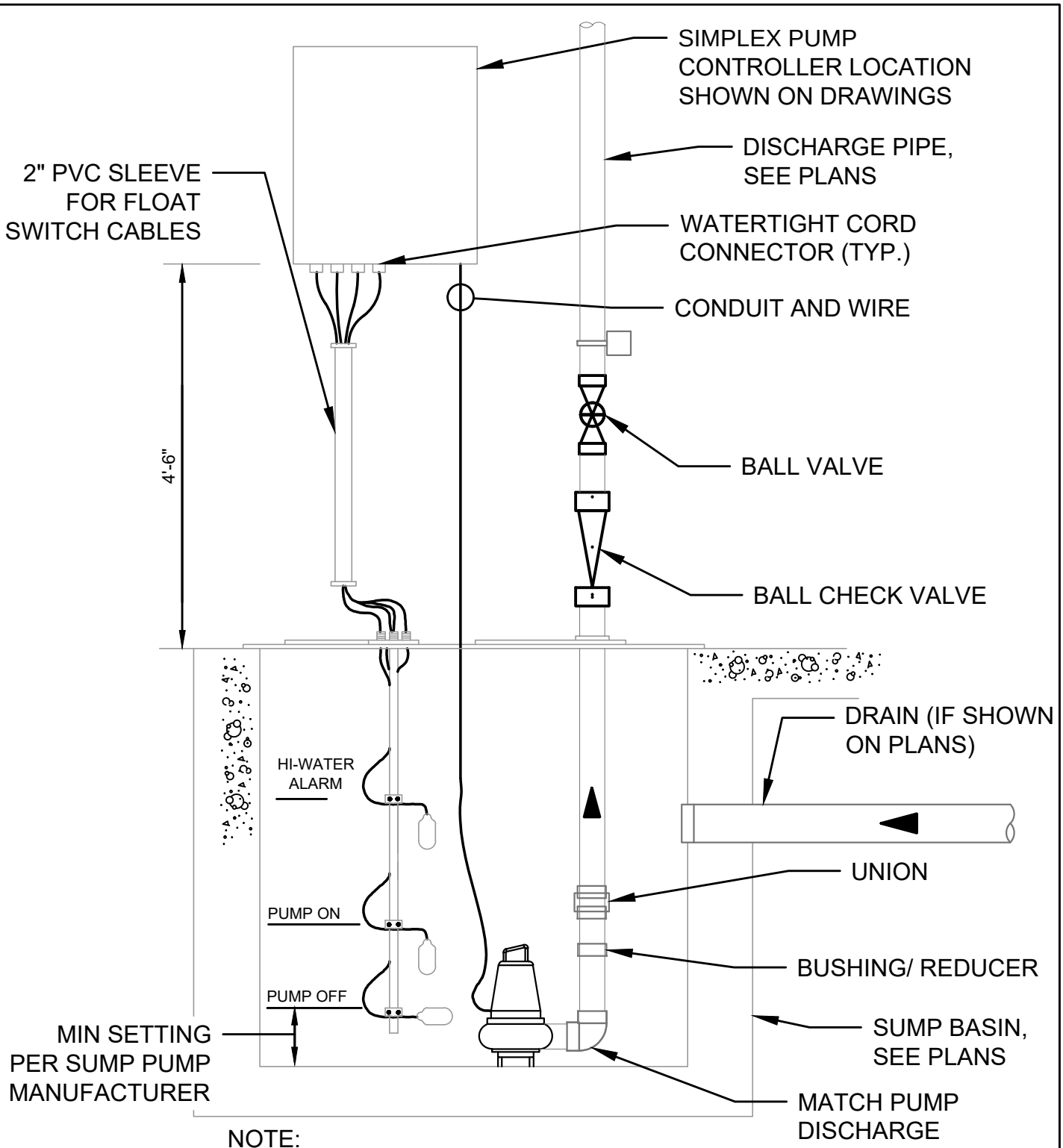
DIRECT MOUNTING WITH DIAPHRAGM SEAL

PRESSURE SWITCH AND INDICATOR INSTALLATION

NTS

16191P

WATERWORKS ENGINEERS



NOTE:

1. PIPE, FITTING, AND VALVE SIZE AND MATERIALS SHALL MATCH DOWNSTREAM DISCHARGE PIPE.
2. CONTRACTOR SHALL VERIFY MATERIAL COMPLIANCE WITH SERVICE AND CHEMICAL EXPOSURE.

SIMPLEX SUMP PUMP WITH FLOATS

NTS

16191AC

WATERWORKS ENGINEERS