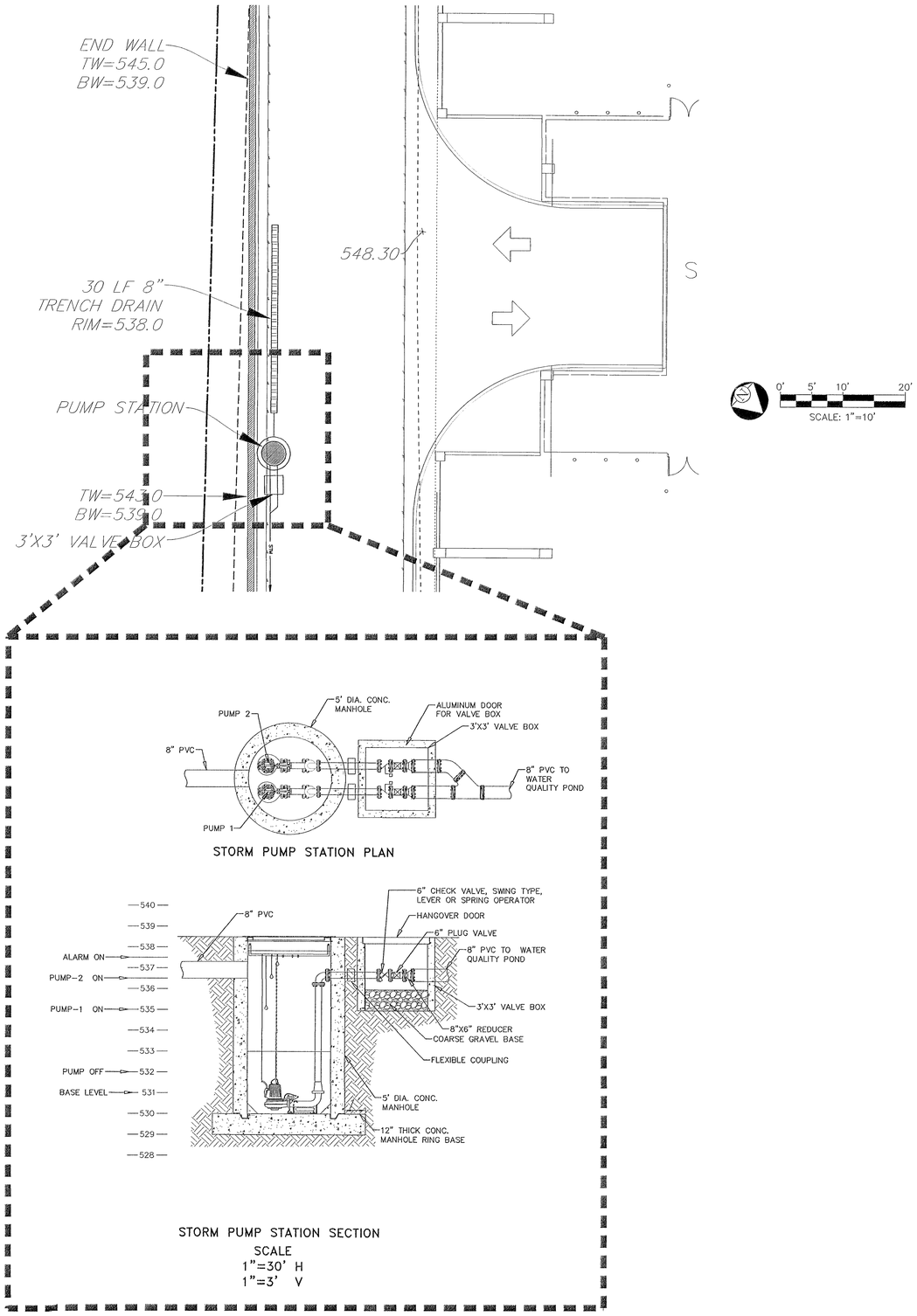

STORM PUMP STATION PLAN

STORM PUMP STATION SECTION

SCALE
1"=30' H
1"=3' V

Design Flow Calculations:

Maximum Daily Flow = **288000.00** gals/day (peak)
= **960.00** gals/min (peak)

Wet Well Design Calculations:

Pump Capacity = **1250.00** gal/min.

Using Maximum Daily inflow = **1000.00** gals/min (MDF)
1250.00 net outflow in gallons per minute

5' Dia. Well: 146.90 gals/foot of depth

		Time to Pump Down		Time to Fill Wet Well		Total Cycle Time	
det depth	det vol	flow	time	flow	time	flow	time
5.00	**734.50**	**250.00**	**2.94**	**1000.00**	**0.73**	**1250.00**	**3.67**

Total Dynamic Head Calculations:

Discharge Pipe: **10.00** Linear Feet
roughness, c = 130.00 Material: DI
diameter, d = 6.00 inches
flow, q (gpm) = 1250.00 (pumping capacity)

$f = 0.21 \times (100/c)^{1.85} \times \frac{q^{1.85}}{d^{4.8655}}$

f = **11.25** feet/100 ft of pipe Velocity, v = **14.18** fps
Total Friction Loss = **1.12** feet (3 to 6 fps is an acceptable range)

Minor Losses in Discharge Pipe:

$HL = \frac{K \times V^2}{2g}$

where: K = 0.9 for 90 deg. bends
K = 0.5 for 45 deg. bends
K = 0.3 for 22.5 deg. bends
K = 2.5 for Swing Check Valve, open full
K = 0.2 for Gate Valve, open full

Number of 90 deg. bends = **2.00**
Number of 45 deg. bends = **0.00**
Number of 22.5 deg. bends =
Number of Swing CVs = **1.00**
Number of Gate Valves = **1.00**

Total Minor Losses = **14.06** feet

Force Main: **144.00** Linear Feet
roughness, c = 130.00 Material: C900 PVC
diameter, d = 8.00 inches
flow, q (gpm) = 2500.00 (pumping capacity)

$f = 0.21 \times (100/c)^{1.85} \times \frac{q^{1.85}}{d^{4.8655}}$

f = **10.00** feet/100 ft of pipe Velocity, v = **15.96** fps
Total Friction Loss = **14.40** feet (3 to 6 fps is an acceptable range)

Minor Losses in Force Main:

$HL = \frac{K \times V^2}{2g}$

where: K = 0.9 for 90 deg. bends
K = 0.5 for 45 deg. bends
K = 0.3 for 22.5 deg. bends
K = 2.5 for Swing Check Valve, open full
K = 0.2 for Gate Valve, open full

Number of 90 deg. bends = **0.00**
Number of 45 deg. bends = **2.00**
Number of 22.5 deg. bends =
Number of Swing CVs =
Number of Gate Valves =

Total Minor Losses = **3.95** feet

Total Dynamic Head = Static Head + Line Pressure + Losses = 43.04

LOCATION OF ALL ANCHOR BOLTS, RELATIVE POSITION OF PUMPS AND ACCESS COVER, MUST BE MAINTAINED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

NO.	DATE	REVISIONS	APPROVAL
2C	6/25/19	ADD PUMP STATION FOR DRAIN IN ACCESS DRIVE	

THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

BOULDIN CREEK COMMONS
2043 S LAMAR BLVD, AUSTIN, TX 78704

PUMP STATION PLAN & SECTION

CIVILITUDE
ENGINEERS & PLANNERS
5110 LANCASTER COURT, AUSTIN, TX 78723 FIRM REG # F12469
PHONE 512 761 6161 FAX 512 761 6167 INFO@CIVILITUDE.COM

SCALE: AS SHOWN
JOB NO: A340
DGN BY: JMS
DWN BY: MAA
RVW BY: JMS

STATE OF TEXAS
JAMES M. SCHISSLER
82472
LICENSED
PROFESSIONAL ENGINEER

SITE PLAN APPROVAL SHEET 15 OF 31
FILE NUMBER: SP-2016-0481C APPLICATION DATE: OCTOBER 14,2016
APPROVED BY COMMISSION ON _____ UNDER SECTION 112 ON
CHAPTER 25-5 OF THE CITY OF AUSTIN CODE
EXPIRATION DATE (25-5-81, LDC) _____ CASE MANAGER _____
PROJECT EXPIRATION DATE (ORD.#970905-A) _____ DWPZ _____ DDZ _____

Director, DEVELOPMENT SERVICES DEPARTMENT
RELEASED FOR GENERAL COMPLIANCE: CS, CS-MU-CO, ZONING CS-MU-CO
Rev. 1 _____ Correction 1 _____
Rev. 2 _____ Correction 2 _____
Rev. 3 _____ Correction 3 _____

Final plat must be recorded by the Project Expiration Date, if applicable. Subsequent Site Plans which do not comply with the Code current at the time of filing, and all required Building Permits and/or a notice of construction (if a Building permit is not required), must also be approved prior to the Project Expiration Date.

SHEET NO. 15 OF 31

BOULDIN CREEK COMMONS — 2043 S LAMAR BLVD, AUSTIN, TX 78704

SP-2016-0481C

P:\A340 Bouldin Creek Commons (2043 S Lamar Blvd)\Civil\Construction Drawings\Sheets\15 - PUMP STATION.dwg

REPLACEMENT SHEET