

**2017
MATERIAL
SPECIFICATIONS**



4432 U.S. HWY 98 EAST
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NCLS-08:	Pumper Connection
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GRINDER LIFT STATION:

GLS-01:	Grinder Pump
GLS-02:	Control Panel
GLS-03:	Wet Well
GLS-04:	Valve Vault
GLS-05:	Brass Check Valve
GLS-06:	Stainless Steel Union Fittings
GLS-07:	Brass Union Ball Valve
GLS-08:	Pumper Connection
GLS-09:	Safety Disconnect Switch
GLS-10:	Valve Vault Drain Valve
GLS-11:	Cord Grips



PRODUCT SPECIFICATIONS

**PVC 200 / SDR 21
Class Pipe**

MINIMUM REQUIREMENTS:

- **FOR 2" - 12" DIA. PIPE ONLY.**
- ASTM D2241
- PUSH ON BELL TYPE W/ RUBBER SEALING RING
- I.P.S. STANDARD DIAMETER
- WORKING HYDROSTATIC PRESSURE OF 200 PSI.
- BLUE IN COLOR



APPROVED MANUFACTURERS

**NORTH AMERICAN PIPE
JM EAGLE
NATIONAL PIPE**

SHEET NUMBER

PW-01



MINIMUM REQUIREMENTS:

- **FOR 14" DIA. & LARGER ONLY**
- AWWA C-900
- AWWA C905 FOR 12" DIA. & LARGER
- PUSH ON BELL WITH RUBBER SEALING RING
- D.I.P.S. STANDARD DIAMETER
- BLUE IN COLOR

PRODUCT SPECIFICATIONS

**PVC 150 PSI / DR 18
C900 PIPE**



APPROVED MANUFACTURERS

**NORTH AMERICAN PIPE
JM EAGLE
NATIONAL PIPE**

SHEET NUMBER

PW-02



MINIMUM REQUIREMENTS:

- DR11 OR BETTER
- AWWA C901 & C906
- PE4710 MEETING CELL CLASSIFICATION PE445574C & STANDARDS ASTM D2737, D2239, OR D3035
- BLUE STRIPE

PRODUCT SPECIFICATIONS

HIGH DENSITY POLY-ETHYLENE (HDPE PIPE) (WATER)



APPROVED MANUFACTURERS

PERFORMANCE PIPE

SHEET NUMBER

PW-03



MINIMUM REQUIREMENTS:

- CLASS 350
- PUSH ON JOINT TYPE
- CEMENT LINED
- TAR COATED

PRODUCT SPECIFICATIONS

**DUCTILE IRON PIPE
(WATER ONLY)**



APPROVED MANUFACTURERS

AMERICAN

SHEET NUMBER

PW-04



PRODUCT SPECIFICATIONS

TRACER WIRE (WATER LINE)

MINIMUM REQUIREMENTS:

- 12 GAUGE BLUE WIRE



APPROVED MANUFACTURERS

SHEET NUMBER

PW-05



MINIMUM REQUIREMENTS:

- USED TO CONNECT TRACER WIRE
- RATED FOR DIRECT BURIAL
- SILICONE FILLED
- MUST USE 12 GAUGE WIRE
- PRO-TRACE TW CONNECTOR

PRODUCT SPECIFICATIONS

TRACER WIRE CONNECTOR



APPROVED MANUFACTURERS

PRO-LINE SAFETY PRODUCTS

SHEET NUMBER

PW-06



PRODUCT SPECIFICATIONS

**TAPPING SADDLE
(FOR 1" - 3" TAP SIZES ONLY)**

MINIMUM REQUIREMENTS:

- FORD FS202 STAINLESS BAND
- FOR TAP SIZES 1" - 3"
- MUST SPECIFY FOR CLASS OR C900 PIPE



APPROVED MANUFACTURERS

FORD METER BOX

SHEET NUMBER

PW-07



MINIMUM REQUIREMENTS:

- FORD "FAST" STYLE STAINLESS TAPPING SLEEVE
- 360 DEGREE GASKET

PRODUCT SPECIFICATIONS

**TAPPING SLEEVE
(FOR 4" TAPS & LARGER)**

PREFERRED



APPROVED MANUFACTURERS

FORD METER BOX

SHEET NUMBER

PW-08



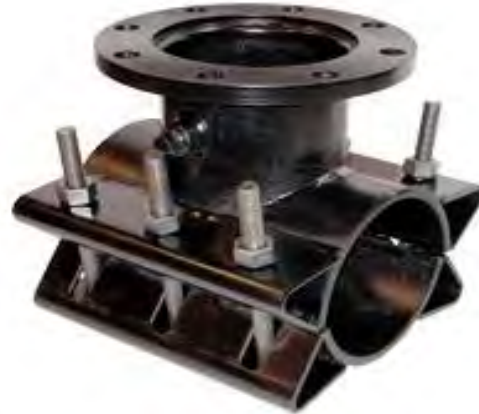
MINIMUM REQUIREMENTS:

- FORD "FTSC" STYLE EPOXY COATED TAPPING SLEEVE

PRODUCT SPECIFICATIONS

**TAPPING SLEEVE
(FOR 4" TAPS & LARGER)**

ALTERNATE



APPROVED MANUFACTURERS

FORD METER BOX

SHEET NUMBER

PW-09



MINIMUM REQUIREMENTS:

- 1-INCH DIAMETER MINIMUM
- DR9 CTS TUBING
- AWWA C906
- 200 PSI OPERATING PRESSURE
- BLACK W/ BLUE STRIPE ONLY
- ****ABSOLUTELY NO SOLID BLUE COLORED TUBING****

PRODUCT SPECIFICATIONS

WATER SERVICE CTS TUBING (FOR 5/8" - 2" SERVICES ONLY)



APPROVED MANUFACTURERS

CHARTER PLASTICS

SHEET NUMBER

PW-10



PRODUCT SPECIFICATIONS

WATER BALL MARKER

MINIMUM REQUIREMENTS:

- PART #1403 FOR WATER APPLICATIONS
- 4-INCH BLUE BALL



APPROVED MANUFACTURERS

3M

SHEET NUMBER

PW-11



MINIMUM REQUIREMENTS:

- RESILIENT WEDGE
- AWWA C515 & C550
- 250PSI WORKING PRESSURE
- MECHANICAL JOINT ENDS
- FUSION BONDED EPOXY COATED

PRODUCT SPECIFICATIONS

GATE VALVES (3" - 12" DIAMETER ONLY)



APPROVED MANUFACTURERS

AMERICAN FLOW CONTROL
AVK

SHEET NUMBER

PW-12



PRODUCT SPECIFICATIONS

GATE VALVES (14" DIA. & LARGER)

MINIMUM REQUIREMENTS:

- RESILIENT WEDGE
- AWWA C515 & C550
- 150 PSI WORKING PRESSURE
- MECHANICAL JOINT ENDS
- FUSION BONDED EPOXY COATED



APPROVED MANUFACTURERS

AMERICAN FLOW CONTROL

SHEET NUMBER

PW-13



MINIMUM REQUIREMENTS:

- AWWA C508
- IRON BODY
- FLANGED ENDS
- OUTSIDE LEVER
- SPRING LOADED
- SWING TYPE
- RENEWABLE BRONZE SEAT RING
- RUBBER FACED DISC

PRODUCT SPECIFICATIONS

CHECK VALVE (3" DIAMETER & LARGER)



APPROVED MANUFACTURERS

AMERICAN FLOW CONTROL
AMERICAN AVK

SHEET NUMBER

PW-14



PRODUCT SPECIFICATIONS

CHECK VALVE (2" DIAMETER & SMALLER)

MINIMUM REQUIREMENTS:

- MODEL G31
- LEAD FREE
- BRASS SWING CHECK VALVE
- 200 PSI WORKING PRESSURE



APPROVED MANUFACTURERS

AMERICAN VALVE

SHEET NUMBER

PW-15



PRODUCT SPECIFICATIONS

CURB STOPS (3/4" - 1" DIA.)

MINIMUM REQUIREMENTS:

- LEAD FREE
- TYPE B43 (CTS x METER SWIVEL)
- STRAIGHT BALL METER VALVE WITH PACK JOINT
- AWWA C800
- CAST BRONZE
- MACHINED FITTING SURFACES
- LOCKABLE
- HB-34 STRAIGHT LEVER HANDLE
- GRIP NUT ONLY



APPROVED MANUFACTURERS

FORD METER BOX

SHEET NUMBER

PW-16



PRODUCT SPECIFICATIONS

CURB STOPS (1-1/4" - 2" DIA.)

MINIMUM REQUIREMENTS:

- LEAD FREE
- TYPE B41 (CTS x FIP)
- STRAIGHT BALL METER VALVE WITH PACK JOINT
- AWWA C800
- CAST BRONZE
- MACHINED FITTING SURFACES
- LOCKABLE
- HH-67 HIGH LEVER HANDLE
- GRIP NUT ONLY



APPROVED MANUFACTURERS

FORD METER BOX

SHEET NUMBER

PW-17



PRODUCT SPECIFICATIONS

CORPORATION STOPS

MINIMUM REQUIREMENTS:

- LEAD FREE
- TYPE F1000
- AWWA C800
- CAST BRONZE
- MACHINED FITTING SURFACES
- STANDARD I.P. THREAD
- COMPRESSION JOINT OUTLETS FOR PLASTIC TUBING
- GRIP NUT ONLY



APPROVED MANUFACTURERS

FORD METER BOX

SHEET NUMBER

PW-18

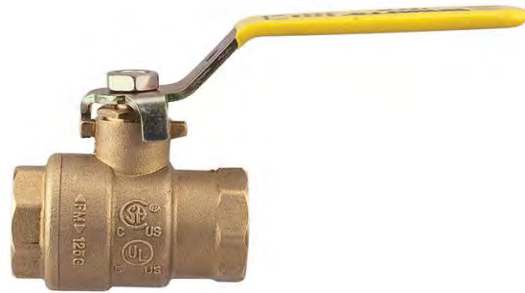


PRODUCT SPECIFICATIONS

BALL VALVES (3/4" - 2" DIA. ONLY)

MINIMUM REQUIREMENTS:

- LEAD FREE
- SERIES LFFBV-3C
- CAST BRONZE BODY
- STEM W/ CHECK
- FULL ROUND WAY OPENING





APPROVED MANUFACTURERS

WATTS

SHEET NUMBER

PW-19

	PRODUCT SPECIFICATIONS	
	VALVE BOX (WATER)	
		
MINIMUM REQUIREMENTS: <ul style="list-style-type: none"> • ADJUSTABLE DUCTILE IRON • COVER MARKED "WATER" 	APPROVED MANUFACTURERS	
	SHEET NUMBER	PW-20



MINIMUM REQUIREMENTS:

- LEAD FREE
- MODEL 975XL
- AUTOMATIC PRESSURE DIFFERENTIAL RELIEF VALVE
- FURNISHED W/ UNION CONNECTIONS
- BALL VALVES BEFORE AND AFTER DEVICE
- PROTECTED BY STRAINER
- ASSE STANDARD 1013

PRODUCT SPECIFICATIONS

**RPZ BACKFLOW PREVENTER
(3/4" - 2")**



APPROVED MANUFACTURERS

WILKINS

SHEET NUMBER

PW-21



MINIMUM REQUIREMENTS:

- LEAD FREE
- MODEL 375
- AUTOMATIC PRESSURE DIFFERENTIAL RELIEF VALVE
- GATE VALVES BEFORE AND AFTER DEVICE
- PROTECTED BY STRAINER

PRODUCT SPECIFICATIONS

RPZ BACKFLOW PREVENTER (3" & LARGER)



APPROVED MANUFACTURERS

WILKINS

SHEET NUMBER

PW-22



PRODUCT SPECIFICATIONS

FIRE LINE BACKFLOW PREVENTER

MINIMUM REQUIREMENTS:

- LEAD FREE
- MODEL 350ADA
- DOUBLE CHECK DETECTOR ASSEMBLY
- ASSE STANDARD 1048
- 5/8" BYPASS DETECTOR METER
- METER TO BE SUPPLIED BY REGIONAL UTILITIES



APPROVED MANUFACTURERS

WILKINS

SHEET NUMBER

PW-23



PRODUCT SPECIFICATIONS

Y STRAINER

MINIMUM REQUIREMENTS:

- LEAD FREE
- MODEL SXL
- CAST BRONZE
- ASTM B584
- 20 MESH SS 300 SERIES SCREEN



APPROVED MANUFACTURERS

WILKINS

SHEET NUMBER

PW-24



PRODUCT SPECIFICATIONS

FIRE HYDRANT (PREFERRED)

MINIMUM REQUIREMENTS:

- AMERICAN DARLING
- MODEL B-84-B
- YELLOW IN COLOR
- AWWA C502
- MECHANICAL JOINT INLET CONNECTION
- (2) 2-1/2" HOSE NOZZLES
- (1) 4-1/2" PUMPER NOZZLE
- 150 PSI WORKING PRESSURE
- FULLY BRONZE MOUNTED
- 5-1/4" INTERNAL SHUTOFF VALVE
- AMERICAN NATION STANDARD FIRE HOSE COUPLING SCREEN THREADS



APPROVED MANUFACTURERS

AMERICAN FLOW CONTROL

SHEET NUMBER

PW-25



PRODUCT SPECIFICATIONS

FIRE HYDRANT (ALTERNATE)

MINIMUM REQUIREMENTS:

- AVK SERIES 2780 NOSTALGIC
- YELLOW IN COLOR
- AWWA C502
- MECHANICAL JOINT INLET CONNECTION
- (2) 2-1/2" HOSE NOZZLES
- (1) 4-1/2" PUMPER NOZZLE
- 150 PSI WORKING PRESSURE
- FULLY BRONZE MOUNTED
- 5-1/4" INTERNAL SHUTOFF VALVE
- AMERICAN NATIONAL STANDARD FIRE HOSE COUPLING SCREEN THREADS



APPROVED MANUFACTURERS

AMERICAN AVK

SHEET NUMBER

PW-26



PRODUCT SPECIFICATIONS

MECHANICAL JOINT FITTINGS

MINIMUM REQUIREMENTS:

- AMERICAN MADE FITTINGS ONLY
- C153 COMPACT MECHANICAL JOINT
- FUSION BONDED EPOXY COATED



APPROVED MANUFACTURERS

TYLER UNION

SHEET NUMBER

PW-27



PRODUCT SPECIFICATIONS

RESTRAINTS

MINIMUM REQUIREMENTS:

- MEGALUG SERIES 2000PV
- AMERICAN MADE ONLY
- FUSION BONDED EPOXY COATED



APPROVED MANUFACTURERS

EBAA IRON

SHEET NUMBER

PW-28



PRODUCT SPECIFICATIONS

CONCRETE VALVE COLLAR

MINIMUM REQUIREMENTS:

- 24" PRE-CAST ROUND BEVELED CONCRETE COLLAR
- FIBER MESH REINFORCED
- #2 REBAR
- 4000 PSI CONCRETE



APPROVED MANUFACTURERS

SHEET NUMBER

PW-29



MINIMUM REQUIREMENTS:

- ECLIPSE #66WC SAMPLING STATION
- STAINLESS STEEL WATERWAY
- LOCKABLE, NON-REMOVABLE ALUMINUM HOUSING
- 7/16" BLOW OFF COMPRESSION VALVE
- 1/4" HYDRAULIC CYLINDER PETCOCK

PRODUCT SPECIFICATIONS

WATER SAMPLE STATION



APPROVED MANUFACTURERS

KUPFERLE FOUNDRY

SHEET NUMBER

PW-30

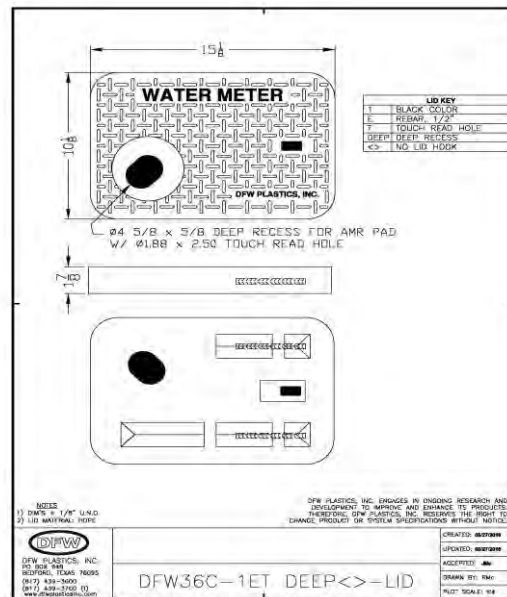


MINIMUM REQUIREMENTS:

- DFW36C-12-BODY COMPOSITE METER BOX
- DFW36C-1ET DEEP<> COMPOSITE METER BOX LID

PRODUCT SPECIFICATIONS

WATER METER BOX (1-INCH METERS)



APPROVED MANUFACTURERS

DFW PLASTICS, INC.

SHEET NUMBER

PW-31



MINIMUM REQUIREMENTS:

- PW-32**



PRODUCT SPECIFICATIONS

WATER AIR RELEASE VALVE

MINIMUM REQUIREMENTS:

- MODEL #986 STAINLESS STEEL
- AUTOMATIC AIR AND VACUUM VALVE
- FNPT THREADED CONNECTION
- SIZE T.B.D. BY ENGINEER OF RECORD



APPROVED MANUFACTURERS

H-TEC USA

SHEET NUMBER

PW-33



MINIMUM REQUIREMENTS:

- PVC CLASS 200
- SDR 21
- ASTM D1784
- PUSH ON BELL TYPE W/ RUBBER SEALING RING
- I.P.S. STANDARD DIAMETER
- WORKING HYDROSTATIC PRESSURE OF 200 PSI
- GREEN IN COLOR

PRODUCT SPECIFICATIONS

PRESSURE SEWER PIPE (2" - 12" DIA. ONLY)



APPROVED MANUFACTURERS

NORTH AMERICAN PIPE
NATIONAL PIPE
JM EAGLE

SHEET NUMBER

PS-01



MINIMUM REQUIREMENTS:

- PVC CLASS 160
- SDR 26
- ASTM D2241
- PUSH ON BELL TYPE W/ RUBBER SEALING RING
- I.P.S. STANDARD DIAMETER
- WORKING HYDROSTATIC PRESSURE OF 160 PSI
- GREEN IN COLOR

PRODUCT SPECIFICATIONS

PRESSURE SEWER PIPE (14" DIA. & LARGER)



APPROVED MANUFACTURERS

NORTH AMERICAN PIPE
NATIONAL PIPE
JM EAGLE

SHEET NUMBER

PS-02



MINIMUM REQUIREMENTS:

- DR11 OR BETTER
- ASTM F717 & SHALL BE MARKED
- PE4710 RESIN CELL CLASSIFICATION
- ASTM D3350
- BLACK W/ GREEN STRIPE

PRODUCT SPECIFICATIONS

**HIGH DENSITY POLY-ETHYLENE
(HDPE) (SEWER)**



APPROVED MANUFACTURERS

PERFORMANCE PIPE

SHEET NUMBER

PS-03



PRODUCT SPECIFICATIONS

DUCTILE IRON (SEWER)

MINIMUM REQUIREMENTS:

- CLASS 350 OR BETTER
- 60,000 PSI TENSILE STRENGTH
- 42,000 PSI YIELD STRENGTH
- 10% MINIMUM ELONGATION
- ANSI STANDARD A21.51
- PROTECTO 401 CERAMIC EPOXY LINED AND COATED



APPROVED MANUFACTURERS

AMERICAN

SHEET NUMBER

PS-04



MINIMUM REQUIREMENTS:

- ANSI A21.10
- AMERICAN MADE FITTINGS ONLY
- MECHANICAL JOINT FITTINGS
- PROTECTO 401 CEREMIC EPOXY LINED & COATED

PRODUCT SPECIFICATIONS

MECHANICAL JOINT FITTINGS (SEWER)



APPROVED MANUFACTURERS

TYLER - UNION

SHEET NUMBER

PS-05



PRODUCT SPECIFICATIONS

RESTRAINTS

MINIMUM REQUIREMENTS:

- MEGALUG SERIES 2000PV
- AMERICAN MADE ONLY
- FUSION BONDED EPOXY COATED



APPROVED MANUFACTURERS

EBAA IRON

SHEET NUMBER

PS-06



PRODUCT SPECIFICATIONS

SEWER TRACER WIRE

MINIMUM REQUIREMENTS:

- GREEN IN COLOR
- 12 GAUGE
- ** SEE PRODUCT SPECIFICATION SHEET PW-6 FOR CONNECTOR DETAILS **



APPROVED MANUFACTURERS

SHEET NUMBER

PS-07



MINIMUM REQUIREMENTS:

- FORD FS202 STAINLESS BAND
- FOR TAP SIZES 1" - 3"
- 1-1/4" CC or IP THREAD
- MUST SPECIFY FOR CLASS OR C900 PIPE

PRODUCT SPECIFICATIONS

**TAPPING SADDLE
(FOR 1" - 3" TAP SIZES ONLY)**



APPROVED MANUFACTURERS

FORD METER BOX

SHEET NUMBER

PS-08



MINIMUM REQUIREMENTS:

- FORD "FAST" STYLE STAINLESS TAPPING SLEEVE
- 360 DEGREE GASKET

PRODUCT SPECIFICATIONS

**TAPPING SLEEVE
(FOR 4" TAPS & LARGER)**

PREFERRED



APPROVED MANUFACTURERS

FORD METER BOX

SHEET NUMBER

PS-09



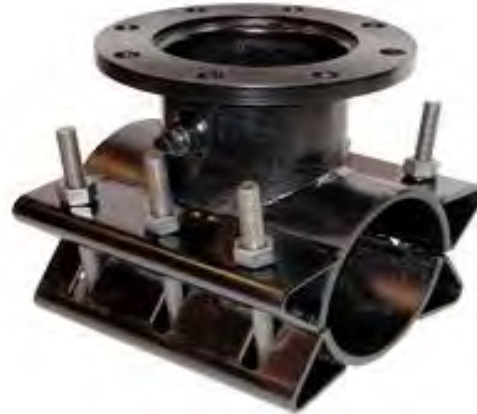
MINIMUM REQUIREMENTS:

- FORD "FTSC" STYLE EPOXY COATED TAPPING SLEEVE

PRODUCT SPECIFICATIONS

**TAPPING SLEEVE
(FOR 4" TAPS & LARGER)**

ALTERNATE



APPROVED MANUFACTURERS

FORD METER BOX

SHEET NUMBER

PS-10



PRODUCT SPECIFICATIONS

SEWER MARKER BALL

MINIMUM REQUIREMENTS:

- 4-INCH GREEN MARKER BALL
- PART #1404



APPROVED MANUFACTURERS

3M

SHEET NUMBER

PS-11

**MINIMUM REQUIREMENTS:**

- FB1700-5
- 1-1/4" MIP x FIP
- BRASS

PRODUCT SPECIFICATIONS**SEWER SERVICE CORPORATION
STOPS****APPROVED MANUFACTURERS****FORD METER BOX****SHEET NUMBER****PS-12**



PRODUCT SPECIFICATIONS

SEWER SERVICE CHECK VALVE

MINIMUM REQUIREMENTS:

- 1-1/4" BRASS SWING CHECK VALVE
W/ REMOVABLE LID
- FEMALE IPS THREADS BOTH ENDS



APPROVED MANUFACTURERS

AMERICAN VALVE

SHEET NUMBER

PS-13



MINIMUM REQUIREMENTS:

- 1-1/4" DIAMETER
- DR9 CTS TUBING
- 200 PSI OPERATING PRESSURE
- BLACK W/ GREEN STRIPE ONLY
- ****ABSOLUTELY NO SOLID GREEN COLORED TUBING****

PRODUCT SPECIFICATIONS

SEWER SERVICE TUBING



APPROVED MANUFACTURERS

CHARTER PLASTICS

SHEET NUMBER

PS-14



MINIMUM REQUIREMENTS:

- RESILIENT WEDGE
- AWWA C515 & C550
- 250PSI WORKING PRESSURE
- MECHANICAL JOINT ENDS
- FUSION BONDED EPOXY COATED

PRODUCT SPECIFICATIONS

**GATE VALVES
(3" - 12" DIAMETER ONLY)**



APPROVED MANUFACTURERS

AMERICAN FLOW CONTROL

SHEET NUMBER

PS-15



PRODUCT SPECIFICATIONS

GATE VALVES (14" DIA. & LARGER)

MINIMUM REQUIREMENTS:

- RESILIENT WEDGE
- AWWA C515 & C550
- 150 PSI WORKING PRESSURE
- MECHANICAL JOINT ENDS
- FUSION BONDED EPOXY COATED



APPROVED MANUFACTURERS

AMERICAN FLOW CONTROL

SHEET NUMBER

PS-16

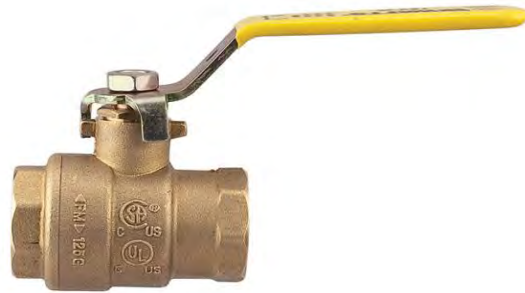


PRODUCT SPECIFICATIONS

BALL VALVES (3/4" - 2" DIA. ONLY)

MINIMUM REQUIREMENTS:

- CAST BRONZE BODY
- STEM W/ CHECK
- FULL ROUND WAY OPENING



APPROVED MANUFACTURERS

MATCO

SHEET NUMBER

PS-17



PRODUCT SPECIFICATIONS

VALVE BOX (SEWER)

MINIMUM REQUIREMENTS:

- ADJUSTABLE DUCTILE IRON
- COVER MARKED "SEWER"



APPROVED MANUFACTURERS

SHEET NUMBER

PS-18



PRODUCT SPECIFICATIONS

CONCRETE VALVE COLLAR

MINIMUM REQUIREMENTS:

- 24" PRE-CAST ROUND BEVELED CONCRETE COLLAR
- FIBER MESH REINFORCED
- #2 REBAR
- 4000 PSI CONCRETE



APPROVED MANUFACTURERS

SHEET NUMBER

PS-19



PRODUCT SPECIFICATIONS

SEWER AIR RELEASE VALVE

MINIMUM REQUIREMENTS:

- MODEL #986 STAINLESS STEEL
- AUTOMATIC AIR AND VACUUM VALVE
- FNPT THREADED CONNECTION
- SIZE T.B.D. BY ENGINEER OF RECORD



APPROVED MANUFACTURERS

H-TEC USA

SHEET NUMBER

PS-20



MINIMUM REQUIREMENTS:

- ASTM D3034-74
- 14' (+/-) LAYING LENGTH
- PUSH ON BELL TYPE W/ RUBBER SEALING RING
- GREEN IN COLOR

PRODUCT SPECIFICATIONS

GRAVITY SEWER PIPE (SDR-35 PVC)



APPROVED MANUFACTURERS

NORTH AMERICAN PIPE
JM EAGLE
NATIONAL PIPE

SHEET NUMBER

SS-01



MINIMUM REQUIREMENTS:

- PROTECTO 401 CERAMIC EPOXY LINED AND COATED
- CLASS 350 OR BETTER
- 60,000 PSI TENSILE STRENGTH
- 42,000 PSI YIELD STRENGTH
- 10% MINIMUM ELONGATION
- ANSI STANDARD A21.51

PRODUCT SPECIFICATIONS

GRAVITY SEWER PIPE (DUCTILE IRON)



APPROVED MANUFACTURERS

AMERICAN

SHEET NUMBER

SS-02



MINIMUM REQUIREMENTS:

- PUSH ON BELL TYPE WITH RUBBER SEALING RING
- 8" X 6" WYE

PRODUCT SPECIFICATIONS

**GRAVITY SEWER LATERAL WYE
(GASKET)**



APPROVED MANUFACTURERS

HARCO

SHEET NUMBER

SS-03



MINIMUM REQUIREMENTS:

- **PVC GLUED FITTINGS FOR SEWER LATERAL ONLY**
- **6-INCH PIPE AND FITTINGS FOR GRAVITY SEWER LATERALS**

PRODUCT SPECIFICATIONS

**GRAVITY SEWER LATERAL PVC
FITTINGS (GLUED)**



APPROVED MANUFACTURERS

HARCO

SHEET NUMBER

SS-04



MINIMUM REQUIREMENTS:

- ****MUST BE PRE-APPROVED FOR USE BY REGIONAL UTILITIES****
- PVC WYE WITH STAINLESS STEEL STRAPS

PRODUCT SPECIFICATIONS

**GRAVITY SEWER PVC TAPPING
SADDLE**



APPROVED MANUFACTURERS

HARCO

SHEET NUMBER

SS-05

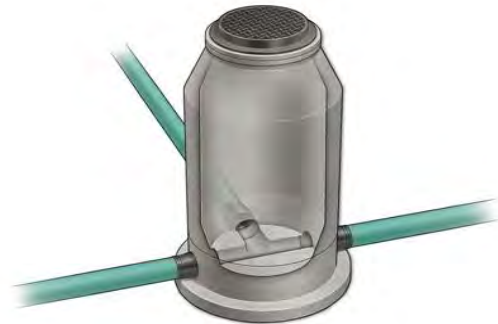


PRODUCT SPECIFICATIONS

GRAVITY SEWER MANHOLE

MINIMUM REQUIREMENTS:

- ASTM C478
- MINIMUM WALL THICKNESS OF 5"
- MINIMUM CONCRETE STRENGTH OF 4000 PSI
- MANHOLE BASE TO CAST INTEGRALLY WITH THE BOTTOM MANHOLE SECTION
- WATERTIGHT LEAK-PROOF BOOTS INSTALLED WHERE PIPES ENTER OR EXIT MANHOLE
- ALL HARWARE TO BE STAINLESS STEEL
- INTERIOR / EXTERIOR RECEIVE 2 COATS (12 MILS) OF BITUMINUS WATER PROOFING PAINT



APPROVED MANUFACTURERS

SHEET NUMBER

SS-06

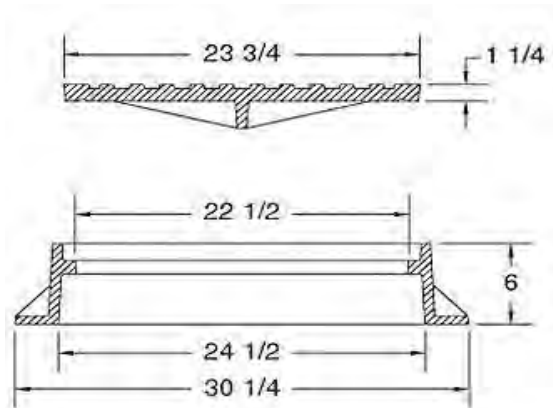


MINIMUM REQUIREMENTS:

- ASTM A48
- MODEL E170
- MARKED "SEWER" OR "SANITARY"

PRODUCT SPECIFICATIONS

MANHOLE RING & COVER



APPROVED MANUFACTURERS

US Foundry

SHEET NUMBER

SS-07



MINIMUM REQUIREMENTS:

- HDPE CHIMNEY SEAL
- INSTALLED BETWEEN THE TOP MANHOLE SECTION AND RING/COVER

PRODUCT SPECIFICATIONS

MANHOLE CHIMNEY SEAL



APPROVED MANUFACTURERS

www.permaform.net

SHEET NUMBER

SS-08



MINIMUM REQUIREMENTS:

- CONCRETE GRADE RINGS SHALL MEET OR EXCEED ASTM C478
- TYPE II CONCRETE WITH A MINIMUM 28 DAY STRENGTH OF 4000 PSI

PRODUCT SPECIFICATIONS

CONCRETE MANHOLE RINGS



APPROVED MANUFACTURERS

MANUFACTURER MUST MEET OR EXCEED ASTM & FDOT SPECIFICATIONS

SHEET NUMBER

SS-09



PRODUCT SPECIFICATIONS

SEWER MARKER BALL

MINIMUM REQUIREMENTS:

- 4-INCH GREEN MARKER BALL
- PART #1404



APPROVED MANUFACTURERS

3M

SHEET NUMBER

SS-10



PRODUCT SPECIFICATIONS

SEWER TRACER WIRE

MINIMUM REQUIREMENTS:

- GREEN IN COLOR
- 12 GAUGE
- ** SEE PRODUCT SPECIFICATION SHEET PW-6 FOR CONNECTOR DETAILS **



APPROVED MANUFACTURERS

SHEET NUMBER

SS-11



PRODUCT SPECIFICATIONS

CONCRETE SEWER COLLAR

MINIMUM REQUIREMENTS:

- 24" PRE-CAST ROUND BEVELED CONCRETE COLLAR
- FIBER MESH REINFORCED
- #2 REBAR
- 4000 PSI CONCRETE
- USED FOR ALL SEWER VALVES
- USED FOR ALL GRAVITY SEWER CLEANOUTS



APPROVED MANUFACTURERS

SHEET NUMBER

SS-12



MINIMUM REQUIREMENTS:

- WILO MODEL FA PUMPS
- ABLE TO PASS 3" DIA. SOLID W/O CLOGGING
- CONSTRUCTED PER ASTM A48, CLASS 30, GRAY CAST IRON
- CENTERLINE DISCHARGE VOLUTE
- DISCHARGE FLANGE CAPABLE OF WITHSTANDING 150% SHUTOFF HEAD
- ALL HARDWARE CONSTRUCTED OF STAINLESS STEEL
- ALL EXPOSED SURFACES COATED W/ SEWAGE RESISTANT PVC VARNISH
- IMPELLER - CONSTRUCTED OF ASTM A339 DUCTILE IRON
- IMPELLER - 316 STAINLESS STEEL HEAT TREATED WEAR RINGS
- MOTOR - DESIGNED W/ SERVICE FACTOR OF 1.25 OVER & ABOVE NAMEPLATE HORSEPOWER AS STANDARD
- POWER REQUIREMENTS UP TO 25HP - 230 VOLT, 3 PHASE, 4 WIRE, 60 HERTZ
- POWER REQUIREMENTS OVER 25 HP - 277/480 VOLT, 3 PHASE WYE, 60 HERTZ, SOFT STARTS
- 304 STAINLESS STEEL ROUND BAR GUIDE RAILS

PRODUCT SPECIFICATIONS

NON-CLOG SUBMERSIBLE SEWAGE PUMP



APPROVED MANUFACTURERS

WILO

SHEET NUMBER

NCLS - 01



MINIMUM REQUIREMENTS:

- CONTROL PANEL PROVIDED BY PUMP MANUFACTURER
- NEMA 4X STAINLESS STEEL W/ LOCKABLE DOOR
- STANDARD SIZE OF 36"H x 24"W x 10"D
- CLEAR PLEXI-GLASS DEADFRONT
- 14 GAUGE MINIMUM RED CONTROL WIRING
- 10 GAUGE MINIMUM BLACK POWER AND LIGHTING WIRING
- WHITE NEUTRAL WIRING
- GREEN GROUND WIRING
- AIR GAP CAGE - PROVIDED BY PANEL MANUFACTURER
- ALARM - 90 DECIBELS IN SOUND
- ALARM - SILENCE PUSH BUTTON
- ALARM - BATTERY BACK UP SYSTEM
- ALARM - RED STROBE LIGHT
- CONTROLLER - RELAY LOGIC SYSTEM FOR LESS THAN 15HP SYSTEMS.
- CONTROLLER - DATA FLOW SCADA SYSTEM FOR 15HP & LARGER
- SURGE SUPPRESSOR - OPERATES UP TO 136,500amp TOTAL PEAK SURGE CURRENT
- PHASE FAILURE RELAY - MODEL 257B, 8 PIN PUG IN DESIGN
- TRANSFER SWITCH - RATED FOR 100amp OR 200amp (DEPENDING ON HP) 3 POLE/600 VOLT
- MOTOR CIRCUIT PROTECTORS - SQUARE D FAL 100amp FRAMS OR AS REQUIRED
- MOTOR STARTERS - SQUARE D, NEMA RATED, SIZED TO MATCH PUMP HP, THERMAL MELTING ALLOY TYPE OVERLOAD, SOFT STARTS REQUIRED ON PUMPS OVER 25HP.
- GFI RECEPTACLE - 15A, 120V, PROTECTED BY A 1 POLE 15A BREAKER
- TRANSFORMER - 1KVA, 460/240V - 120V, 1 PHASE
- ELAPSED TIME METERS - 6 DIGIT, NON RESETABLE
- GENERATOR RECEPTACLE - HUBBELL PIN & SLEEVE, MODEL 4100R9W, 240V 3 PHASE / 460V 3 PHASE, WEATHER PROOF, MOUNTED ON EXTERIOR OF PANEL

PRODUCT SPECIFICATIONS

NON-CLOG LIFT STATION CONTROL PANEL



APPROVED MANUFACTURERS

WILO

SHEET NUMBER

NCLS - 02



MINIMUM REQUIREMENTS:

- REINFORCED CONCRETE
- 7" MINIMUM WALL THICKNESS
- KOP-COAT COAL TAR EPOXY 300-M EXTERIOR COATING (2 COATS - 9 MILS EACH)
- RAVEN 405 MOISTURE TOLERANT BLUE EPOXY RESIN (100 MIL)
- ALL HARDWARE TO STAINLESS STEEL
- ALUMINUM ACCESS HATCH, 48" SQ. MIN., RECESSED HANDLE, PAD LOCK TAB, 300# TRAFFIC RATED HATCH IF LOCATED WITHIN FDOT RIGHT OF WAY
- HDPE FUSED DISCHARGE PIPING WITH AIR RELEASE PORTS AT THE TOP OF THE PIPE

PRODUCT SPECIFICATIONS

NON-CLOG LIFT STATION WET WELL



APPROVED MANUFACTURERS

SHEET NUMBER

NCLS - 03



PRODUCT SPECIFICATIONS

**NON-CLOG LIFT STATION
VALVE VAULT**

MINIMUM REQUIREMENTS:

- REINFORCED CONCRETE
- KOP-COAT COAL TAR EPOXY 300-M EXTERIOR & INTERIOR COATING (2 COATS - 9 MILS EACH)
- ALUMINUM ACCESS HATCH, RECESSED HANDLE, PAD LOCK TAB, 300#, TRAFFIC RATED HATCH IF LOCATED WITHIN FDOT RIGHT OF WAY



APPROVED MANUFACTURERS

SHEET NUMBER

NCLS - 04



PRODUCT SPECIFICATIONS

**NON-CLOG LIFT STATION
ECCENTRIC PLUG VALVE**

MINIMUM REQUIREMENTS:

- 100% PORT ECCENTRIC PLUG VALVE
- LEVER SHUTOFF
- STAINLESS STEEL BOLTING
- 175PSI PRESSURE RATING



APPROVED MANUFACTURERS

DEZURIK

SHEET NUMBER

NCLS - 05



PRODUCT SPECIFICATIONS

NON-CLOG LIFT STATION CHECK VALVE

MINIMUM REQUIREMENTS:

- SWING CHECK VALVE
- 250PSI PRESSURE RATING
- AWWA 508 - BRONZE SEATED
- LEVER & SPRING



APPROVED MANUFACTURERS

AVK

SHEET NUMBER

NCLS - 06



MINIMUM REQUIREMENTS:

- 0 to 60 PSI RANGE ACCURATE TO 1 PSI
- GLYCERIN FILLED
- HIGHER TOP READING RANGE AS NEEDED
- 3 REQUIRED

PRODUCT SPECIFICATIONS

**NON-CLOG LIFT STATION
PRESSURE GUAGE**



APPROVED MANUFACTURERS

SHEET NUMBER

NCLS - 07



MINIMUM REQUIREMENTS:

- 4" OR LARGER AS REQUIRED
- TYPE F MALE QUICK CONNECT CAMLOCK
- CAMLOCK DUST CAP
- ALUMINUM OR STAINLESS STEEL ONLY

PRODUCT SPECIFICATIONS

NON-CLOG LIFT STATION PUMPER CONNECTION



APPROVED MANUFACTURERS

SHEET NUMBER

NCLS - 08



MINIMUM REQUIREMENTS:

- 100 AMP OR LARGER AS REQUIRED
- HEAVY DUTY **FUSED** SAFETY SWITCH
- ENCLOSURE MUST BE STAINLESS STEEL

PRODUCT SPECIFICATIONS

NON-CLOG LIFT STATION SAFETY DISCONNECT SWITCH



APPROVED MANUFACTURERS

SHEET NUMBER

NCLS - 09



MINIMUM REQUIREMENTS:

- **2-INCH** FORD BRASS CURB STOP
- FEMALE IPS THREADS BOTH ENDS

PRODUCT SPECIFICATIONS

**NON-CLOG LIFT STATION
VALVE VAULT DRAIN VALVE**



APPROVED MANUFACTURERS

FORD METER BOX

SHEET NUMBER

NCLS - 10



MINIMUM REQUIREMENTS:

- 2-INCH ALUMINUM HOUSING
- AV-150 AIR VALVE

PRODUCT SPECIFICATIONS

NON-CLOG LIFT STATION AIR RELIEF VALVE



AV-150 AIR VENT AND VACUUM RELIEF VALVE

USES:
Waterman Model AV-150 Air Vents are designed for venting of air when filling a pipe line and provide positive vacuum relief when pipe is emptying.
Use on gravity or higher pressure systems.

FEATURES:
The Model AV-150 uses a cone float, pressure-operated, limit valve design. The float rises against a precision "O-ring" providing a tight seal at very low pressures where other vents often leak. This low leakage sealing characteristic and positive pressure-free up pressure up to 150 psi on the 1½" and 2" with up to 100 psi on the 3" and 4" units.

The aerodynamic "air-flow" design of a high-strength alloy aluminum body and full baffles ensures maximum vent capacity without pressure closing. Majestical exterior prevents "blowing" in the closed position.

Units are furnished with standard female pipe threads which should be protected with "Taper-Guard" or equivalent when installed.

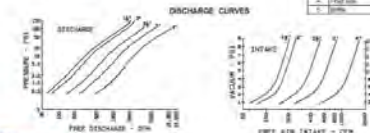
VENT CAPACITY = INLET SIZE
VACUUM RELIEF CAPACITY = CLEAR OPENING SIZE
1½" INLET = 1½" dia. clear opening
2" INLET = 1½" dia. clear opening
3" INLET = 2½" dia. clear opening
4" INLET = 3½" dia. clear opening



MODEL AV-150



PARTS LIST
1. Air Valve
2. Air Valve
3. Air Valve
4. Air Valve
5. Air Valve
6. Air Valve



WATERMAN

APPROVED MANUFACTURERS

WATERMAN

SHEET NUMBER

NCLS - 11



PRODUCT SPECIFICATIONS

**NON-CLOG LIFT STATION
CORD GRIP**

MINIMUM REQUIREMENTS:

- NEMA 4X ALUMINUM OR STAINLESS STEEL
- ONE FOR EACH WIRE ENTERING CONTROL PANEL FROM WET WELL



APPROVED MANUFACTURERS

SHEET NUMBER

NCLS - 12



PRODUCT SPECIFICATIONS

GRINDER LIFT STATION GRINDER PUMP

MINIMUM REQUIREMENTS:

- SGV DOUBLE SEAL OIL FILLED MOTOR
- CONSTRUCTED PER ASTM A48, CLASS 30, GRAY CAST IRON PAINTED W/ WATER BASED AIR-DRY ENAMEL, 2 MIL MINIMUM THICKNESS
- 2-INCH NPT DISCHARGE CONNECTION IN VERTICAL POSITION
- COMPRESSION SQUARE RING TYPE GASKETS
- ALL HARDWARE CONSTRUCTED OF STAINLESS STEEL
- IMPELLER - CONSTRUCTED FROM 85-5-5-5 BRONZE
- IMPELLER - RECESSED VORTEX DESIGN
- MOTOR - 3 PHASE DUAL VOLTAGE 230/460 DESIGN
- MOTOR - WINDINGSSHALL BE CLASS B INSULATION
- MOTOR - NEMA DESIGN B FOR 3 PHASE
- MOTOR - 416 STAINLESS STEEL MOTOR SHAFT
- MOTOR - 230 VOLT, 3 PHASE, 4 WIRE, 60 HERTZ
- MOTOR - 25' TYPE S SPLICED POWER CABLE & 25' TYPE SO SENSOR CABLE
- GUIDE RAILS - 304 STAINLESS STEEL C-CHANNEL GUIDE RAILS W/ STAINLESS STEEL BRACKETS



APPROVED MANUFACTURERS

BARNES (CRANE PUMP SYSTEMS)

SHEET NUMBER

GLS - 01



MINIMUM REQUIREMENTS:

- CONTROL PANEL PROVIDED BY PUMP MANUFACTURER
- NEMA 4X STAINLESS STEEL W/ LOCKABLE DOOR
- STANDARD SIZE OF 36"H x 24"W x 10"D
- CLEAR PLEXI-GLASS DEADFRONT
- 14 GAUGE MINIMUM RED CONTROL WIRING
- 10 GAUGE MINIMUM BLACK POWER AND LIGHTING WIRING
- WHITE NEUTRAL WIRING
- GREEN GROUND WIRING
- AIR GAP CAGE - PROVIDED BY PANEL MANUFACTURER OR CONSTRUCTED ON SITE BY ELECTRICIAN
- ALARM - 90 DECIBELS IN SOUND
- ALARM - SILENCE PUSH BUTTON
- ALARM - BATTERY BACK UP SYSTEM
- ALARM - RED STROBE LIGHT
- CONTROLLER - RELAY LOGIC SYSTEM
- SURGE SUPPRESSOR - OPERATES UP TO 136,500amp TOTAL PEAK SURGE CURRENT
- PHASE FAILURE RELAY - MODEL 257B, 8 PIN PUG IN DESIGN
- TRANSFER SWITCH - RATED FOR 100amp OR 200amp (DEPENDING ON HP) 3 POLE/600 VOLT
- MOTOR CIRCUIT PROTECTORS - SQUARE D FAL 100amp FRAMS OR AS REQUIRED
- MOTOR STARTERS - SQUARE D, NEMA RATED, SIZED TO MATCH PUMP HP, THERMAL MELTING ALLOY TYPE OVERLOAD
- GFI RECEPTACLE - 15A, 120V, PROTECTED BY A 1 POLE 15A BREAKER
- TRANSFORMER - 1KVA, 460/240V - 120V, 1 PHASE
- ELAPSED TIME METERS - 6 DIGIT, NON RESETABLE
- GENERATOR RECEPTACLE - HUBBELL PIN & SLEEVE, MODEL 4100R9W, 240V 3 PHASE / 460V 3 PHASE, WEATHER PROOF, MOUNTED ON EXTERIOR OF PANEL

PRODUCT SPECIFICATIONS

GRINDER LIFT STATION CONTROL PANEL



APPROVED MANUFACTURERS

BARNES (CRANE PUMP SYSTEMS)

SHEET NUMBER

GLS - 02



MINIMUM REQUIREMENTS:

- REINFORCED CONCRETE
- 7" MINIMUM WALL THICKNESS
- KOP-COAT COAL TAR EPOXY 300-M EXTERIOR COATING (2 COATS - 9 MILS EACH)
- ALL HARDWARE TO STAINLESS STEEL
- ALUMINUM ACCESS HATCH, 48" SQ. MIN., RECESSED HANDLE, PAD LOCK TAB, 300# TRAFFIC RATED HATCH IF LOCATED WITHIN FDOT RIGHT OF WAY
- STAINLESS STEEL DISCHARGING PIPE
- **FIBERGLASS WET WELLS / VALVE VAULTS ARE APPROVED ON A CASE BY CASE BASIS**

PRODUCT SPECIFICATIONS

GRINDER LIFT STATION WET WELL



APPROVED MANUFACTURERS

SHEET NUMBER

GLS - 03



PRODUCT SPECIFICATIONS

GRINDER LIFT STATION VALVE VAULT

MINIMUM REQUIREMENTS:

- REINFORCED CONCRETE
- KOP-COAT COAL TAR EPOXY 300-M EXTERIOR & INTERIOR COATING (2 COATS - 9 MILS EACH)
- ALUMINUM ACCESS HATCH, RECESSED HANDLE, PAD LOCK TAB, 300#, TRAFFIC RATED HATCH IF LOCATED WITHIN FDOT RIGHT OF WAY
- FIBERGLASS WET WELLS / VALVE VAULTS ARE APPROVED ON A CASE BY CASE BASIS



APPROVED MANUFACTURERS

SHEET NUMBER

GLS - 04



PRODUCT SPECIFICATIONS

**GRINDER LIFT STATION
BRASS CHECK VALVE**

MINIMUM REQUIREMENTS:

- 2-INCH BRASS CHECK VALVE
- FEMALE NPT THREADS



APPROVED MANUFACTURERS

AMERICAN VALVE

SHEET NUMBER

GLS - 05



MINIMUM REQUIREMENTS:

- 2-INCH STAINLESS STEEL UNION FITTINGS
- NPT THREADS

PRODUCT SPECIFICATIONS

**GRINDER LIFT STATION
SS UNION FITTINGS**



APPROVED MANUFACTURERS

SHEET NUMBER

GLS - 06



PRODUCT SPECIFICATIONS

**GRINDER LIFT STATION
BRASS UNION BALL VALVE**

MINIMUM REQUIREMENTS:

- 2-INCH BRASS TRUE UNION BALL VALVE
- NPT THREADS



APPROVED MANUFACTURERS

SHEET NUMBER

GLS - 07



MINIMUM REQUIREMENTS:

- 2-INCH
- TYPE F MALE QUICK CONNECT CAMLOCK
- CAMLOCK DUST CAP
- ALUMINUM OR STAINLESS STEEL ONLY

PRODUCT SPECIFICATIONS

GRINDER LIFT STATION PUMPER CONNECTION



APPROVED MANUFACTURERS

SHEET NUMBER

GLS - 08



MINIMUM REQUIREMENTS:

- 100 AMP OR LARGER AS REQUIRED
- HEAVY DUTY **FUSED** SAFETY SWITCH
- ENCLOSURE MUST BE STAINLESS STEEL

PRODUCT SPECIFICATIONS

GRINDER LIFT STATION SAFETY DISCONNECT SWITCH



APPROVED MANUFACTURERS

SHEET NUMBER

GLS - 09



PRODUCT SPECIFICATIONS

GRINDER LIFT STATION VALVE VAULT DRAIN VALVE

MINIMUM REQUIREMENTS:

- **2-INCH** FORD BRASS CURB STOP
- FEMALE IPS THREADS BOTH ENDS



APPROVED MANUFACTURERS

FORD METER BOX

SHEET NUMBER

GLS - 10



PRODUCT SPECIFICATIONS

**GRINDER LIFT STATION
CORD GRIP**

MINIMUM REQUIREMENTS:

- NEMA 4X ALUMINUM OR STAINLESS STEEL
- ONE FOR EACH WIRE ENTERING CONTROL PANEL FROM WET WELL



APPROVED MANUFACTURERS

SHEET NUMBER

GLS - 11