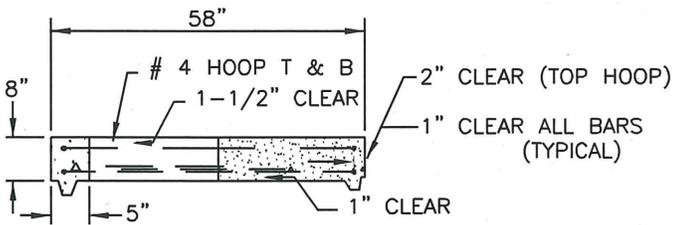


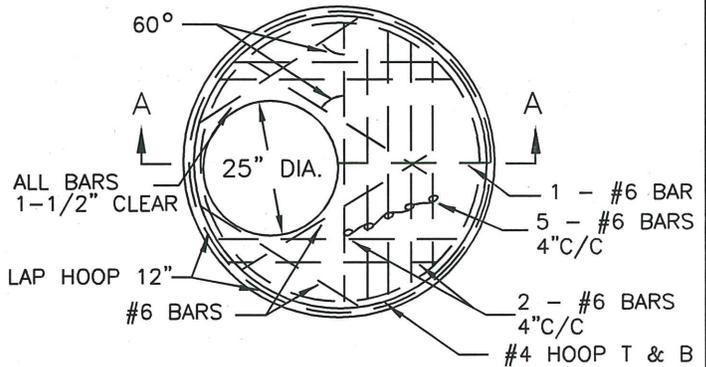




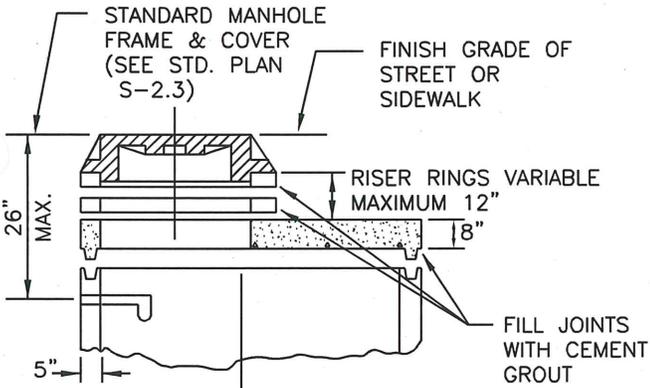
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**SECTION A-A**



**UNIT "MH"**



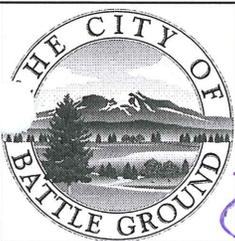
**FLAT SLAB ALTERNATE**

**NOTES:**

1. ALL PRECAST SECTIONS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C-478. ALL POURED IN PLACE CONCRETE SHALL HAVE A 28 DAY STRENGTH OF 3000 P.S.I. & 2" TO 4" SLUMP.
2. ALL REINFORCING SHALL BE GRADE 40 STEEL.
3. MANHOLES UNDER 6'-0" IN DEPTH FROM RIM TO SHELF SHALL HAVE UNIT "MH" TOP SLAB IN LIEU OF CONE.
4. RAINGUARD REQUIRED. SEE DETAIL SS-2.0
5. REFER TO STANDARD DETAIL PLAN SS-2.0 FOR JOINT SEALING REQUIREMENTS.
6. WHIRLY GIG® MANHOLE RISER COLLAR SYSTEM MAY BE USED IN PLACE OF RISER RING.

**TOP SLAB FOR STD. PRECAST MANHOLE**

PLAN #

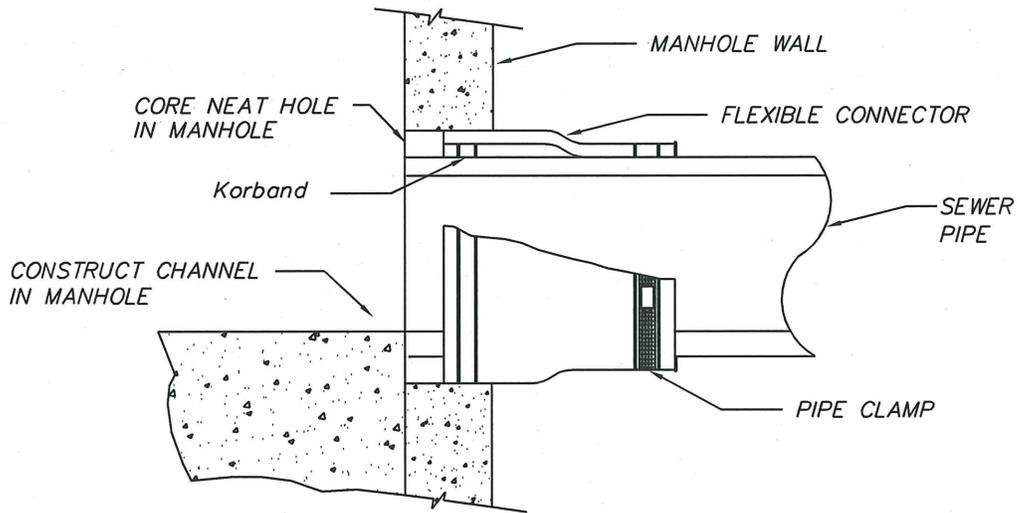


CITY OF BATTLE GROUND  
APPROVED

*[Signature]* 3-28-07  
CITY ENGINEER DATE

REVISIONS:	DATE:	DRAWN:	DESIGNED:
1	8/12/98	BSG	GGH
2	8/30/05	ALL	MCH
3	3/28/07	JMH	MCH

SS-2.1



NOTES:

1. CONNECTIONS TO MANHOLE SHALL BE MADE WITH AN APPROVED EXPANSION TYPE RUBBER BOOT; KOR-N-SEAL (R) OR SEALTITE (R), (NO FLEX JOINT REQUIRED), FOR ALL PIPES UP TO 18". LARGER PIPES WILL BE HANDLED ON A CASE-BY-CASE BASIS.
2. CORE NEAT HOLE IN MANHOLE AND INSTALL BOOT AS REQUIRED PER MANUFACTURER'S SPECIFICATIONS.
3. STUB-OUTS INSTALLED FOR FUTURE EXTENSIONS ARE TO BE PLUGGED.

STANDARD MANHOLE CONNECTION DETAILS

PLAN #



CITY OF BATTLE GROUND  
APPROVED

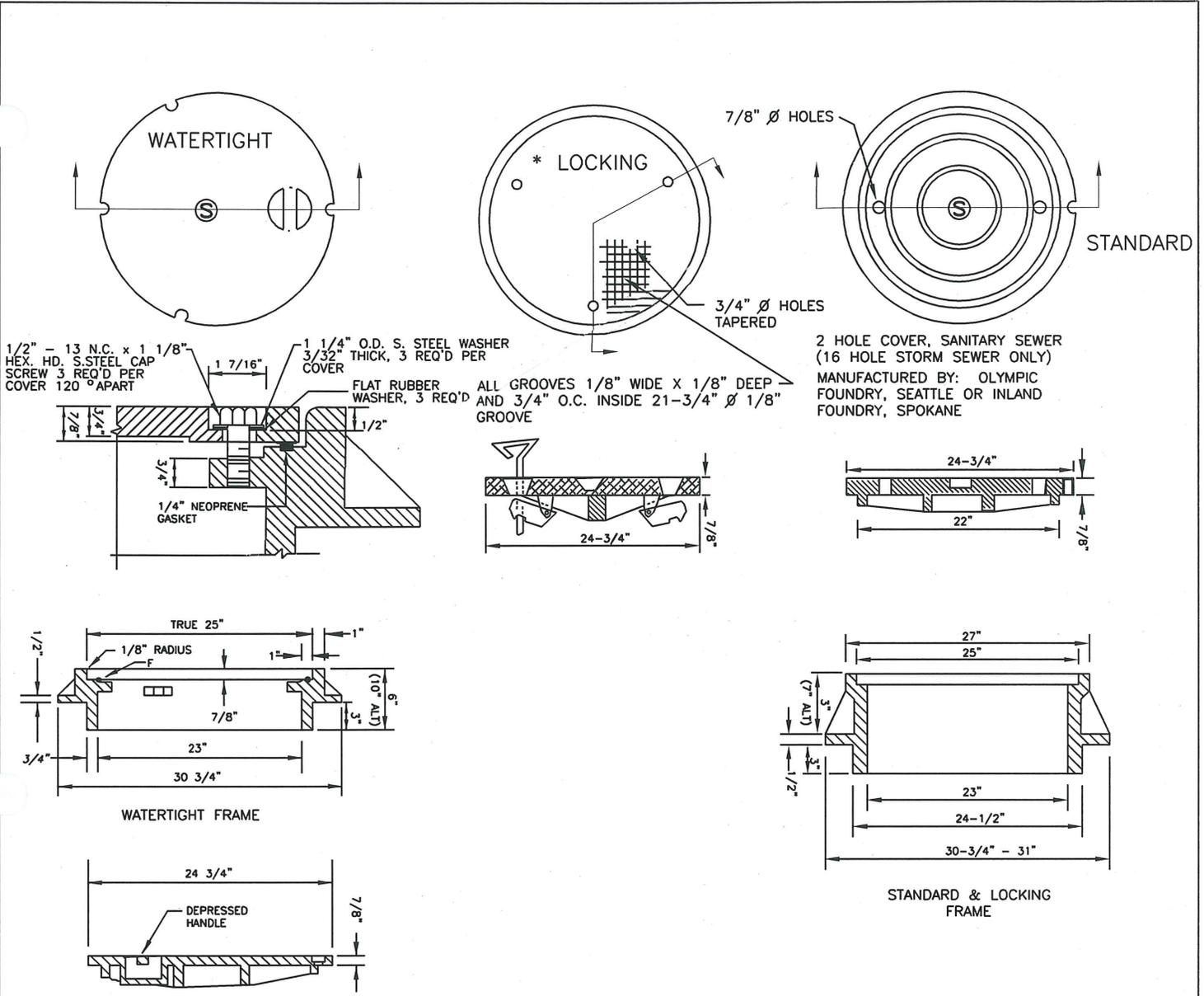
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CITY ENGINEER

3-28-07  
DATE

REVISIONS:	DATE:	DRAWN:	DESIGNED:
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2	8/30/05	ALL	MCH
3	3/28/07	JMH	MCH

SS-2.2

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1 1/2" - 13 N.C. x 1 1/8" HEX. HD. S. STEEL CAP SCREW 3 REQ'D PER COVER 120° APART

1 7/16" COVER

1 1/4" O.D. S. STEEL WASHER 3/32" THICK, 3 REQ'D PER COVER

FLAT RUBBER WASHER, 3 REQ'D

1/4" NEOPRENE GASKET

ALL GROOVES 1/8" WIDE X 1/8" DEEP AND 3/4" O.C. INSIDE 21-3/4" Ø 1/8" GROOVE

2 HOLE COVER, SANITARY SEWER (16 HOLE STORM SEWER ONLY)  
 MANUFACTURED BY: OLYMPIC FOUNDRY, SEATTLE OR INLAND FOUNDRY, SPOKANE

WATERTIGHT FRAME

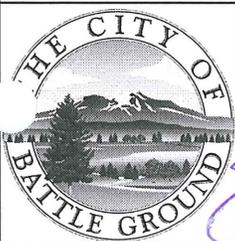
STANDARD & LOCKING FRAME

**NOTES:**

1. COVER & FRAME TO BE MACHINED TO A TRUE BEARING ALL AROUND.
  2. MATERIAL SHALL BE OF GREY CAST IRON. A.S.T.M. A-48, CLASS 30.
- \* LOCKING FRAME AND COVER SHALL BE USED ON ALL SANITARY MANHOLES LOCATED IN EASEMENTS OUTSIDE OF PAVED AREAS.

**STANDARD MANHOLE FRAMES & COVERS**

PLAN #



CITY OF BATTLE GROUND APPROVED

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 CITY ENGINEER DATE

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3	3/28/07	JMH	MCH

SS-2.3

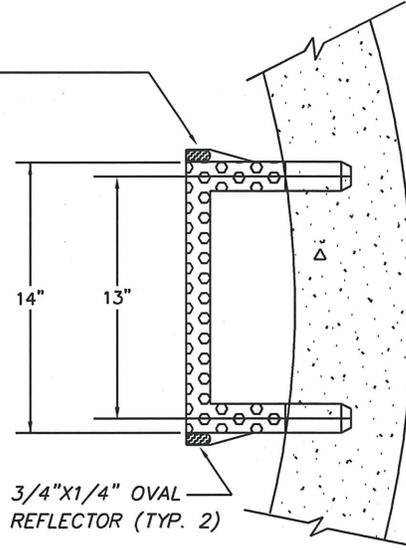
LANE INTERNATIONAL CORPORATION  
 POLYPROPYLENE MANHOLE SAFETY  
 STEP P-14850 WITH REFLECTORS.

NOTES:

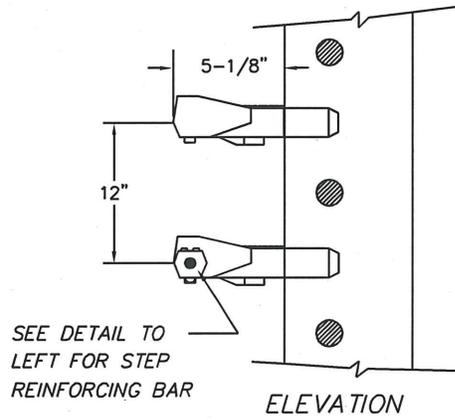
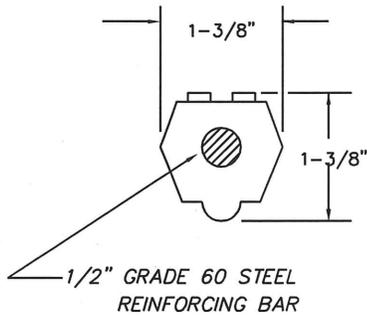
All steps must meet ASTM C-478 and AASHTO M-199 Specifications, polypropylene ASTM D-4104, the 1/2" Grade 60 deformed reinforcing bar ASTM-A--615.

Installation method must resist 1,500 lb. horizontal pull out force and 500 lb. vertical load.

Locate steps over bench whenever possible (not over the main).



PLAN



ELEVATION

STEP DETAIL

PLAN #



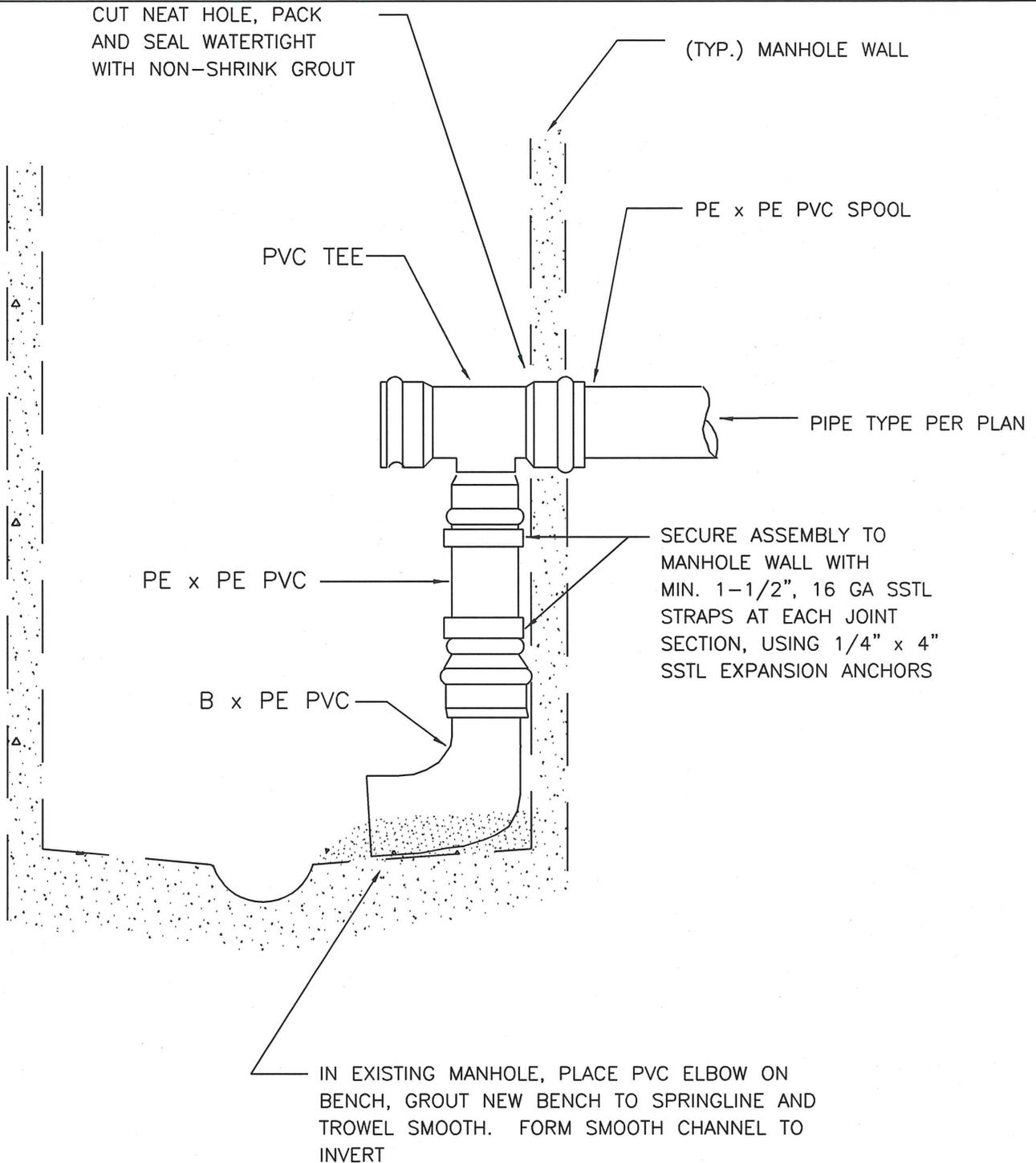
CITY OF BATTLE GROUND  
 APPROVED

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3	3/28/07	JMH	MCH

SS-2.4

*[Signature]* 3-28-07  
 CITY ENGINEER DATE

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NOTE:

1. MAXIMUM ONE ASSEMBLY PER 48" MANHOLE.
2. MUST BE APPROVED BY CITY ENGINEER.

INSIDE DROP MANHOLE CONNECTION

PLAN #



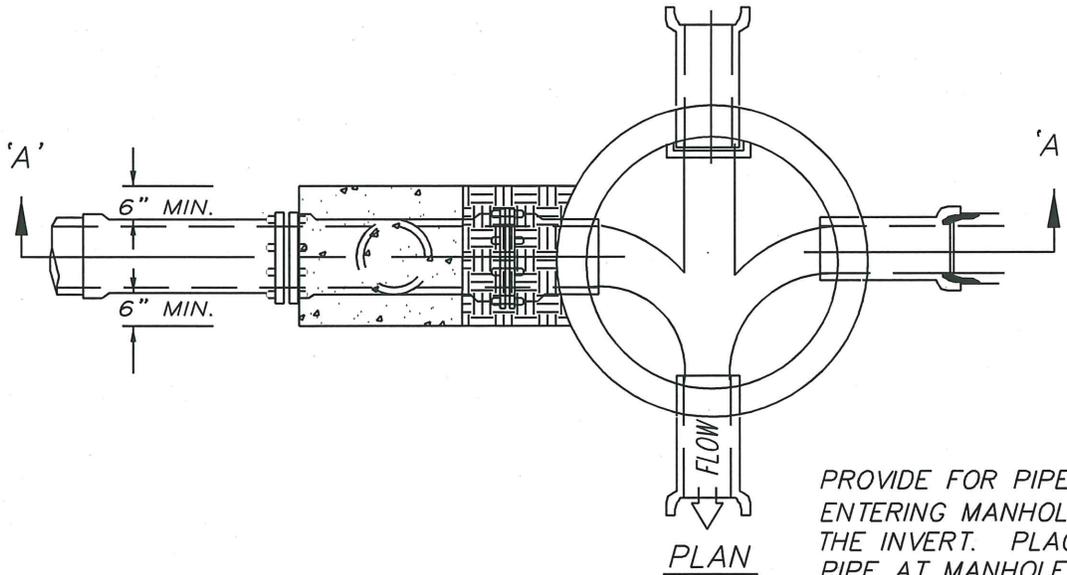
CITY OF BATTLE GROUND  
APPROVED

*Eric Osborn* 3-28-07  
CITY ENGINEER DATE

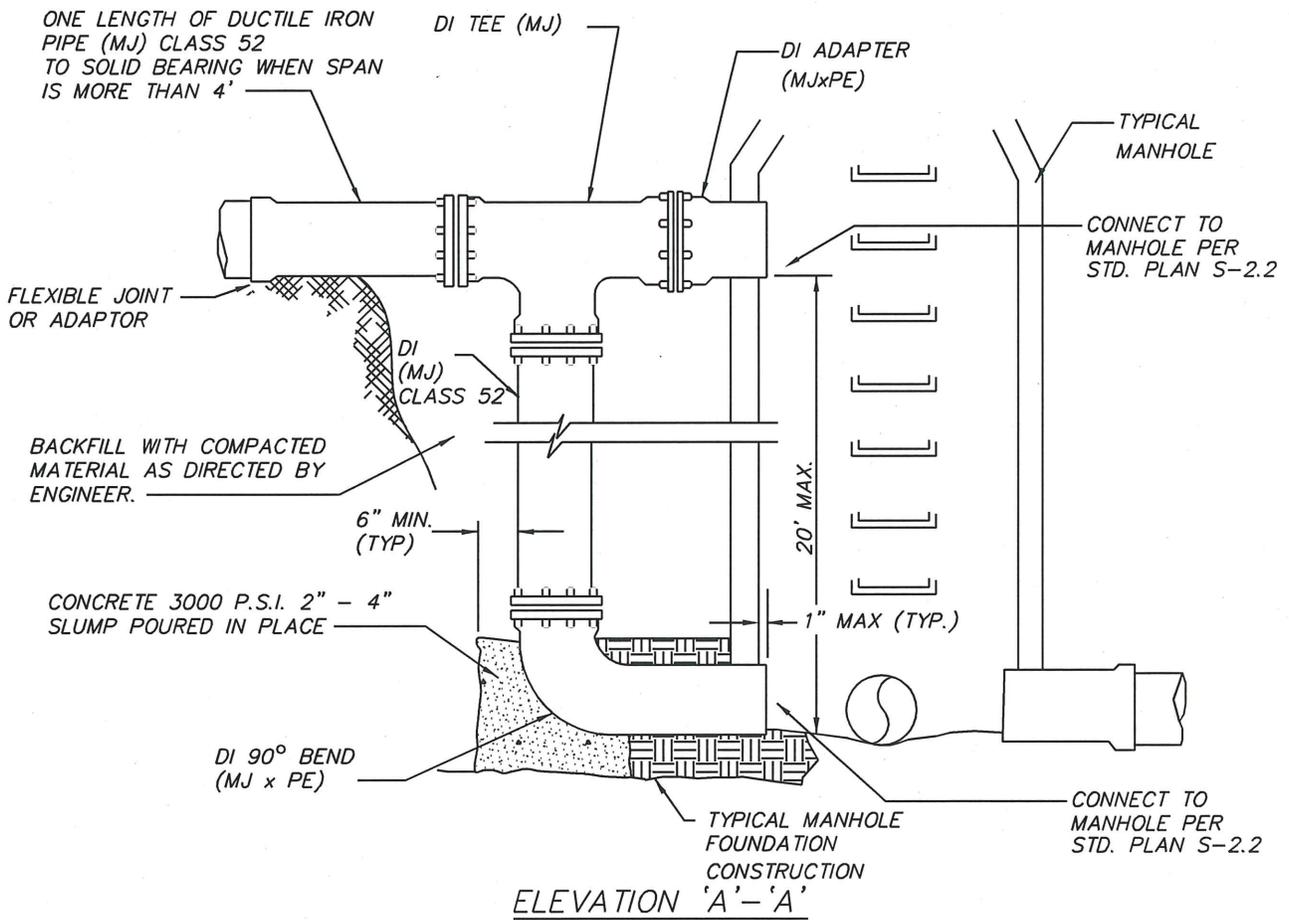
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3	3/28/07	JMH	MCH

SS-2.5

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PROVIDE FOR PIPES <12" WHEN ENTERING MANHOLE >24" ABOVE THE INVERT. PLACE LARGER PIPE AT MANHOLE INVERT.  
\* PIPE TYPE PER PLAN



## OUTSIDE DROP MANHOLE CONNECTION

PLAN #



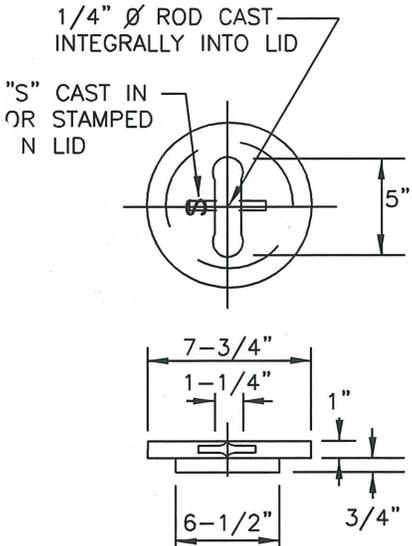
CITY OF BATTLE GROUND  
APPROVED

*Sanjiv Arora* 3-28-07  
CITY ENGINEER DATE

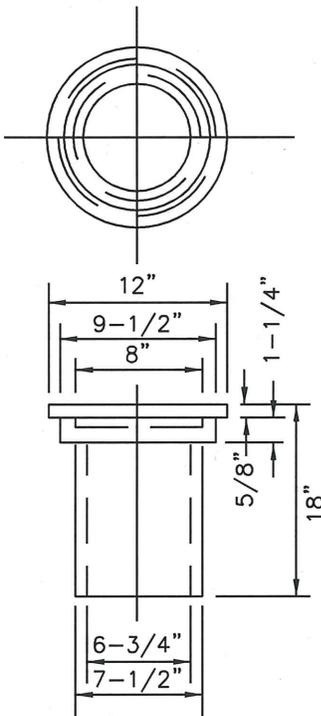
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SS-2.6

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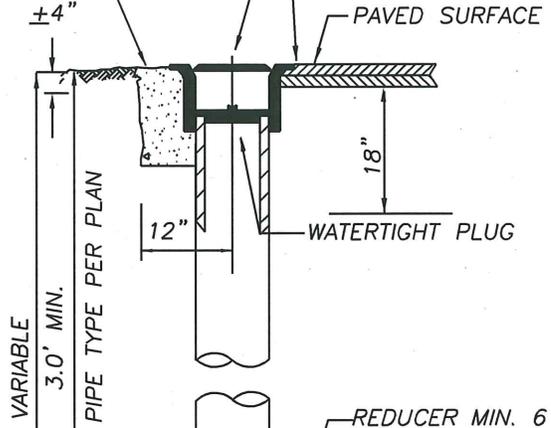


**COVER**



**CAST IRON VALVE BOX AND COVER NO. 910**

CONCRETE ANCHOR REQUIRED ON UNIMPROVED SURFACE  
 CAST IRON VALVE BOX & COVER  
 MATCH A.C. OR P.C.C. DEPTH (3" MIN.)  
 PAVED SURFACE



MATERIAL TO BE GREY CAST IRON CONFORMING TO ASTM A-46 CLASS 30

NOTE: TOLERANCE = 1/8"

NOTE: CLEANOUT TO BE 8" Ø

45° BEND

REDUCER MIN. 6" DIA. (ALLOWED REDUCTION IS ONE PIPE SIZE)

45° BEND

UNDISTURBED NATIVE MATERIAL

3000 PSI CONCRETE, 2-4 INCH SLUMP  
 PIPE TO BE CONCRETE ENCASED ALL AROUND

4" MIN.

**SEWER CLEANOUT**

VALVE BOX SHALL BE FORT VANCOUVER  
 PATTERN NO. 910 CAST IRON OR APPROVED EQUAL

**STANDARD SEWER CLEANOUT**

PLAN #



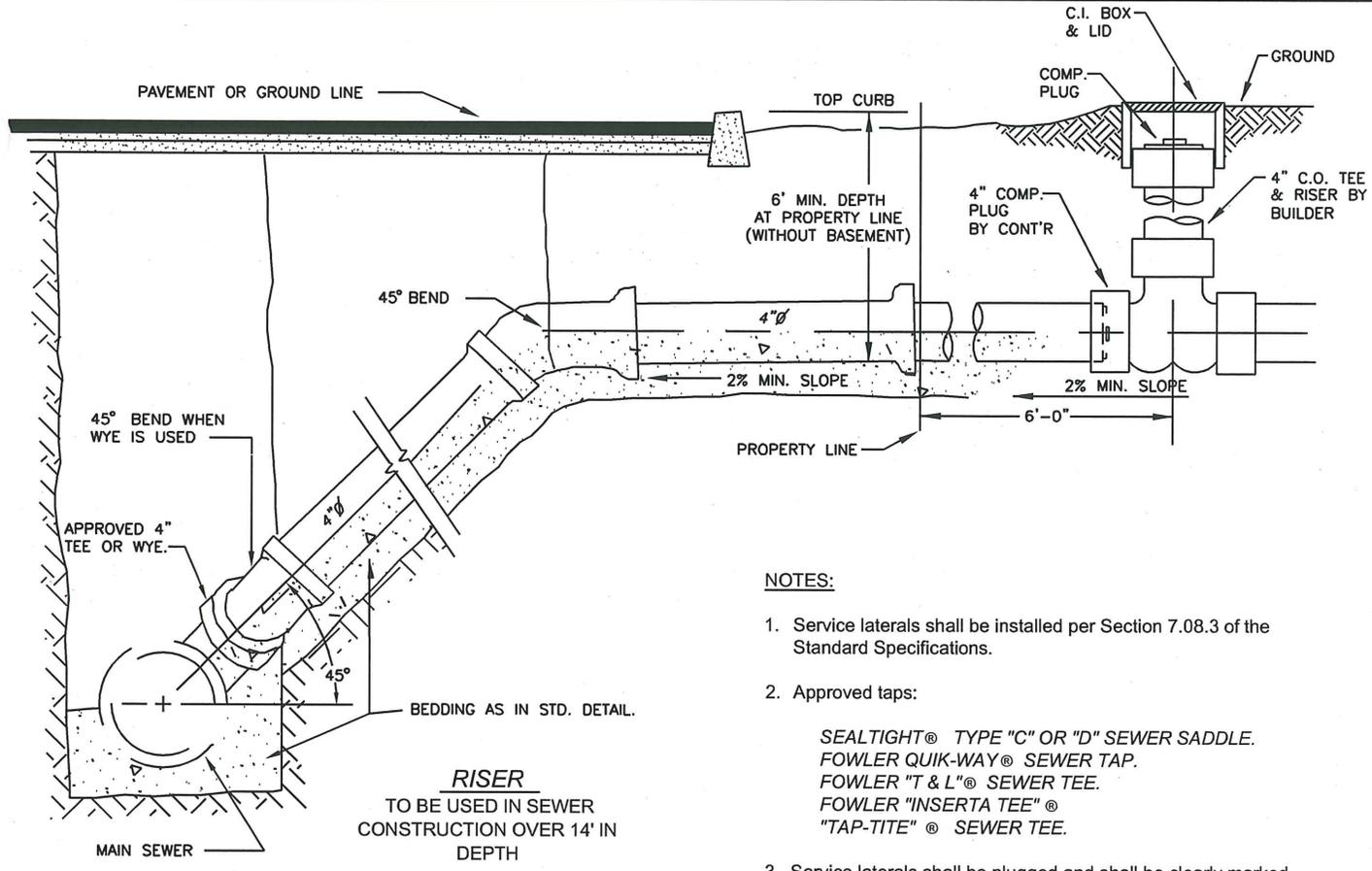
CITY OF BATTLE GROUND APPROVED

*John Adams* 3-29-07  
 CITY ENGINEER DATE

REVISIONS:	DATE:	DRAWN:	DESIGNED:
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3	3/28/07	JMH	MCH

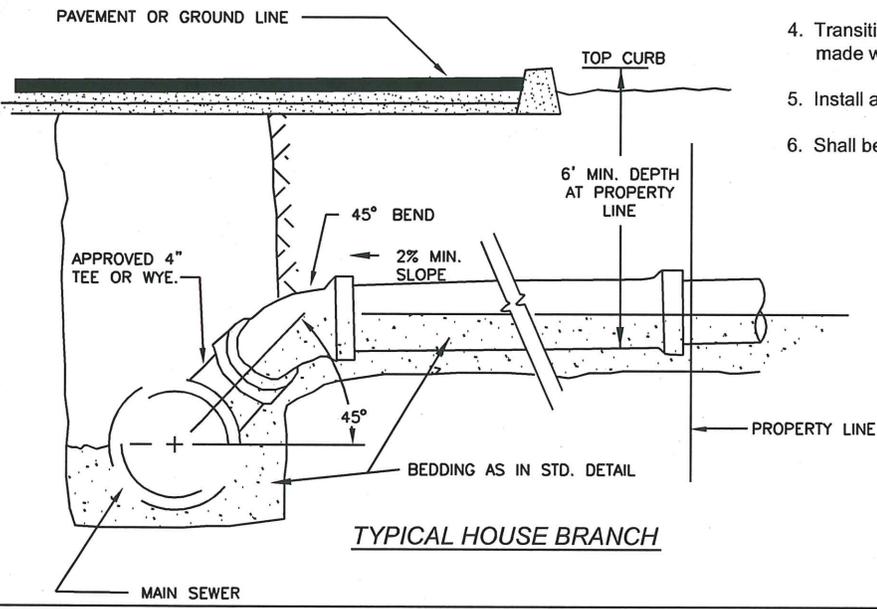
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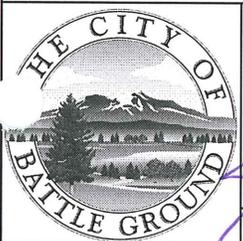
**NOTES:**

1. Service laterals shall be installed per Section 7.08.3 of the Standard Specifications.
2. Approved taps:
  - SEALTIGHT® TYPE "C" OR "D" SEWER SADDLE.
  - FOWLER QUIK-WAY® SEWER TAP.
  - FOWLER "T & L"® SEWER TEE.
  - FOWLER "INSERTA TEE"®
  - "TAP-TITE"® SEWER TEE.
3. Service laterals shall be plugged and shall be clearly marked w/10' 2"x4", and shall be extended 6 feet behind street right-of-way, and wrapped w/10-ga. wire.
4. Transitions between dissimilar pipe materials or sizes shall be made with approved adaptors (Femco, Caulder or Equal).
5. Install a cleanout at the property line.
6. Shall be used for single family residences only.



**FOUR-INCH LATERAL CONNECTION**

PLAN #



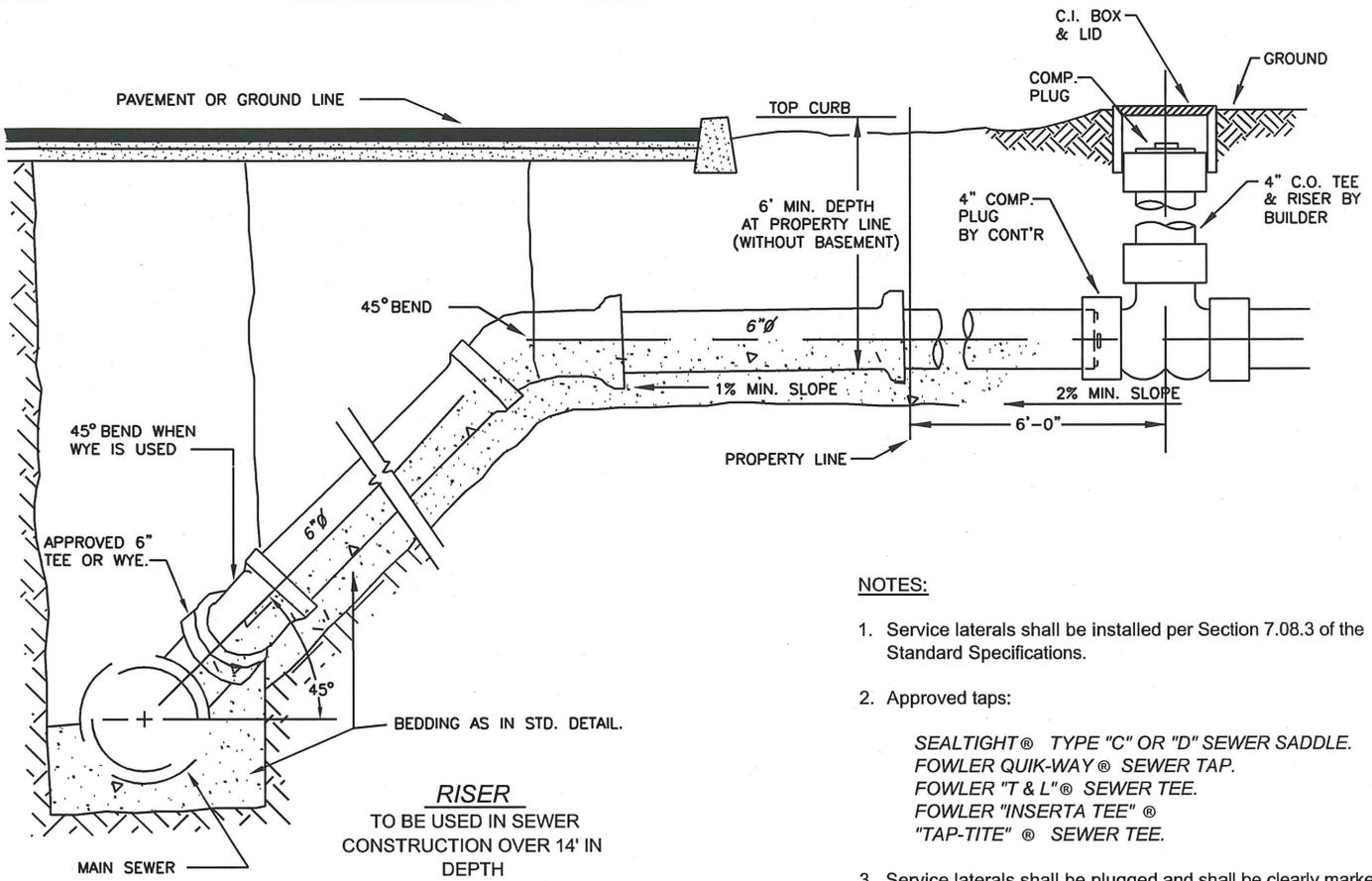
CITY OF BATTLE GROUND APPROVED

*[Signature]*  
CITY ENGINEER DATE 3-29-07

REVISIONS:	DATE:	DRAWN:	DESIGNED:
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2	8/30/05	ALL	MCH
3	3/28/07	JMH	MCH

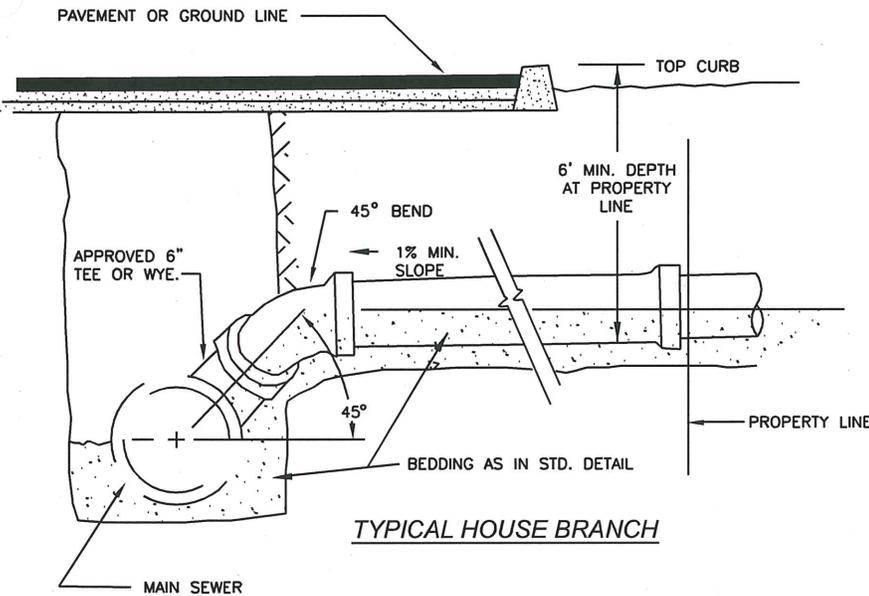
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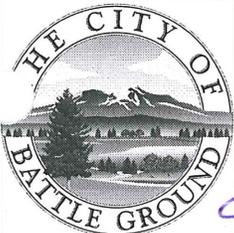
**NOTES:**

1. Service laterals shall be installed per Section 7.08.3 of the Standard Specifications.
2. Approved taps:  
SEALTIGHT® TYPE "C" OR "D" SEWER SADDLE.  
FOWLER QUIK-WAY® SEWER TAP.  
FOWLER "T & L"® SEWER TEE.  
FOWLER "INSERTA TEE"®  
"TAP-TITE"® SEWER TEE.
3. Service laterals shall be plugged and shall be clearly marked w/10" 2"x4", and shall be extended 6 feet behind street right-of-way, and wrapped w/10-ga. wire.
4. Transitions between dissimilar pipe materials or sizes shall be made with approved adaptors (Fernco, Caulder or Equal).
5. Install a cleanout at the property line.
6. Shall be used for non-single family residences.



**SIX-INCH LATERAL CONNECTION**

PLAN #



CITY OF BATTLE GROUND  
APPROVED

*Sam Adams* 3-29-07  
CITY ENGINEER DATE

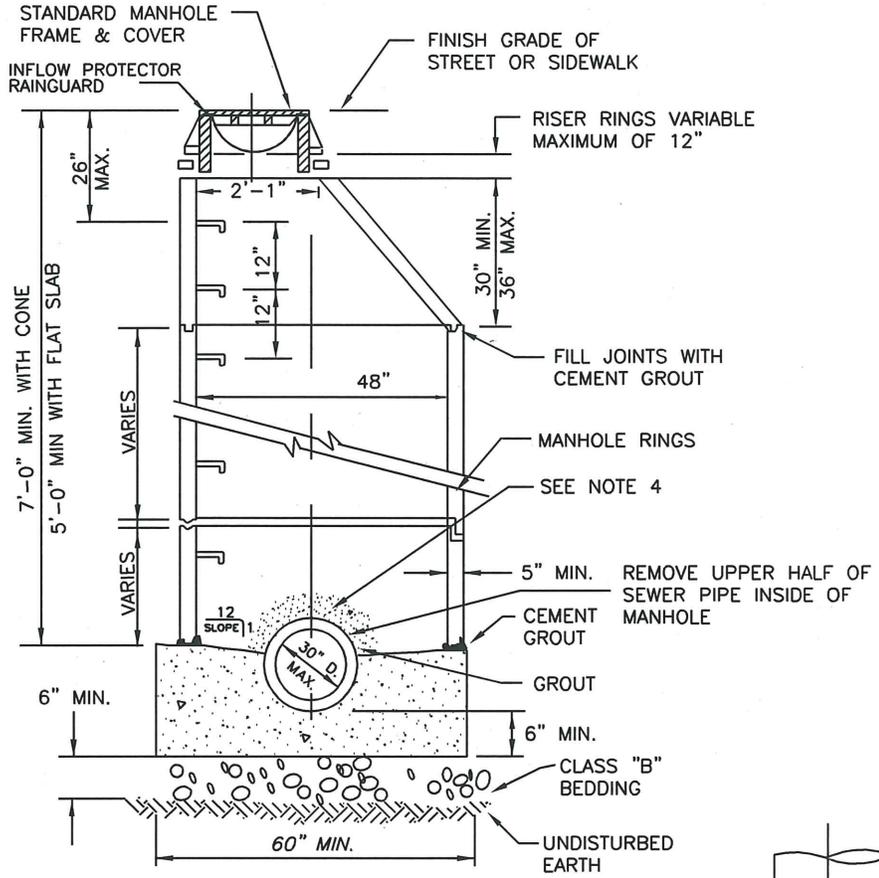
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3	3/28/07	JMH	MCH

SS-3.1

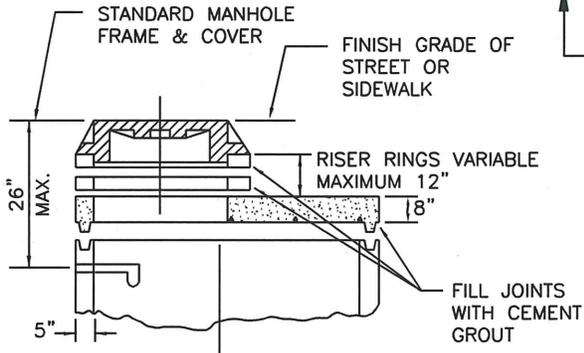
**NOTES:**

ALL PRECAST SECTIONS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C-478. ALL POURED IN PLACE CONCRETE SHALL HAVE A 28 DAY STRENGTH OF 3000 P.S.I. AND 2" TO 4" SLUMP.

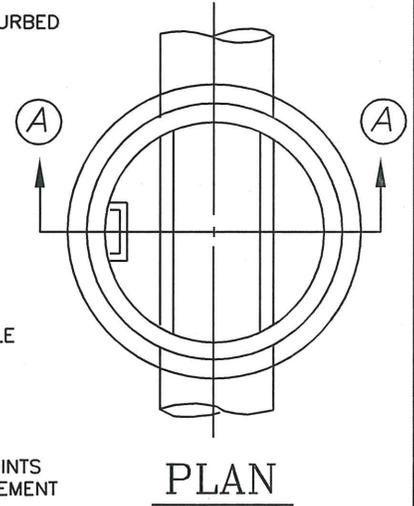
2. THE MANHOLE BASE MAY BE POURED MONOLITHIC TO 8" ABOVE THE BARREL OF THE MAIN SEWER.
3. BASE CONCRETE SHALL BE 3000 P.S.I., 2-4 IN. SLUMP. FLOW LINES AND INSIDE SURFACES SHALL BE TROWLED SMOOTH & UNIFORM AT TIME OF POUR. MANHOLE BASE MAY BE MONOLITHICALLY CAST TO 8" ABOVE BARREL OF MAIN SEWER. CHANNELS SHALL CONFORM ACCURATELY TO SEWER GRADE. INSTALL BENCHES TO ELEVATION OF SPRINGLINE OF PIPE.
4. CAST-IN-PLACE, MONOLITHIC MANHOLE MAY BE SUBSTITUTED WITH SPECIFIC APPROVAL OF THE ENGINEER.
5. JOINTS SHALL BE CONSTRUCTED SO AS TO BE WATERTIGHT. KENT-SEAL NO. 2 OR APPROVED EQUAL SHALL BE USED ON TONGUE & GROOVE SECTIONS, AND ON RISER RINGS PREMOLED "O-RING" MAY BE SUBSTITUTED ON BELL & SPIGOT SECTIONS. ALL JOINTS SHALL BE GROUTED WITH PORTLAND CEMENT CONCRETE GROUT & STRUCK EVEN WITH THE WALL.
6. MANHOLES UNDER 6'-0" IN DEPTH FROM RIM TO SHELF SHALL HAVE A TOP SLAB IN LIEU OF CONE. SEE DETAIL SS-2.1
7. ALL SEWER MANHOLES SHALL BE WRAPPED WITH A HEAT SHRINKABLE SLEEVE SYSTEM, WRAPID SEAL OR APPROVED EQUAL.
8. A WATERTIGHT RAINGUARD IS REQUIRED FOR ALL MANHOLE FRAME/COVERS.
9. WHIRLY GIG @ MANHOLE RISER COLLAR SYSTEM MAY BE USED IN PLACE OF RISER RING.



**SECTION A - A**



**FLAT SLAB ALTERNATE**



**PLAN**

**SAMPLING MANHOLE**

PLAN #



CITY OF BATTLE GROUND  
APPROVED

*[Signature]*  
CITY ENGINEER

3-28-07  
DATE

REVISIONS:	DATE:	DRAWN:	DESIGNED:
1	8/12/98	BSG	GGH
2	8/30/05	ALL	MCH
3	3/28/07	JMH	MCH

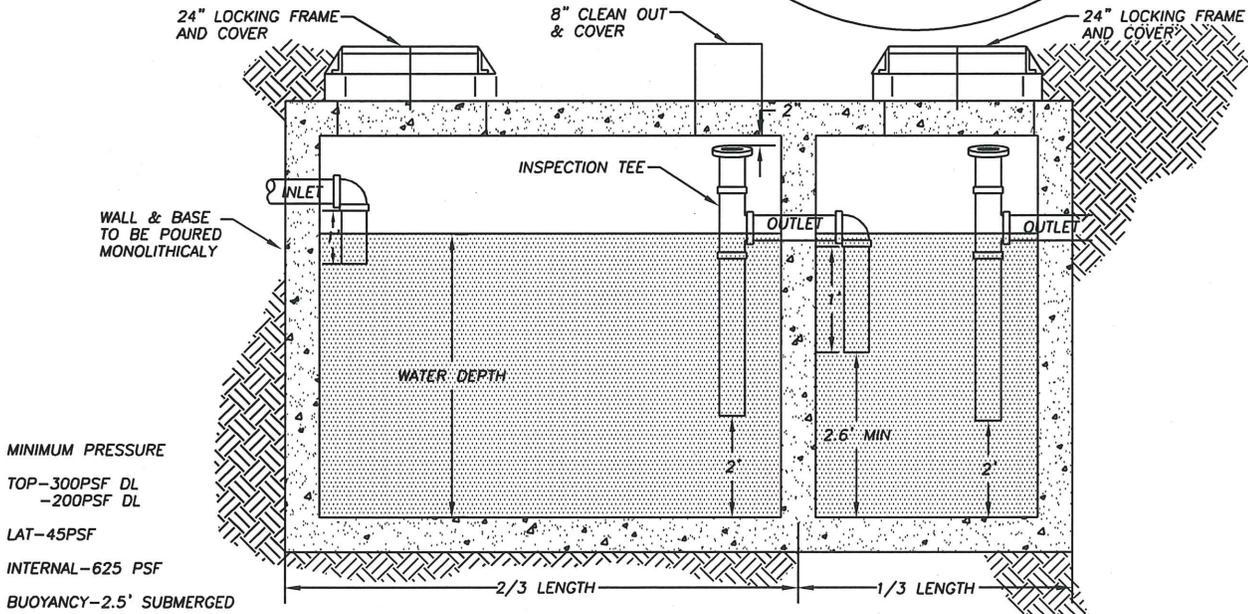
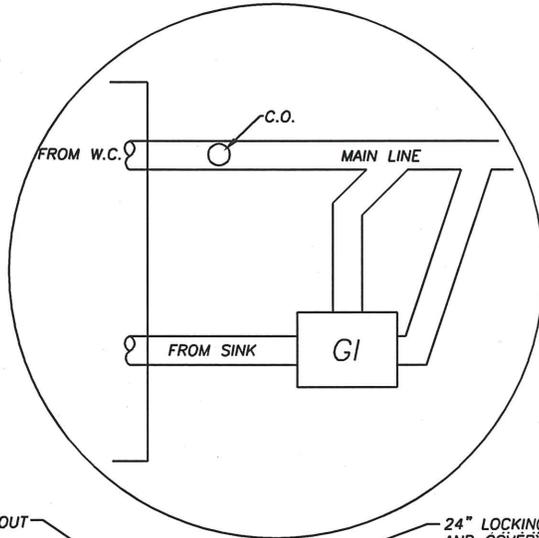
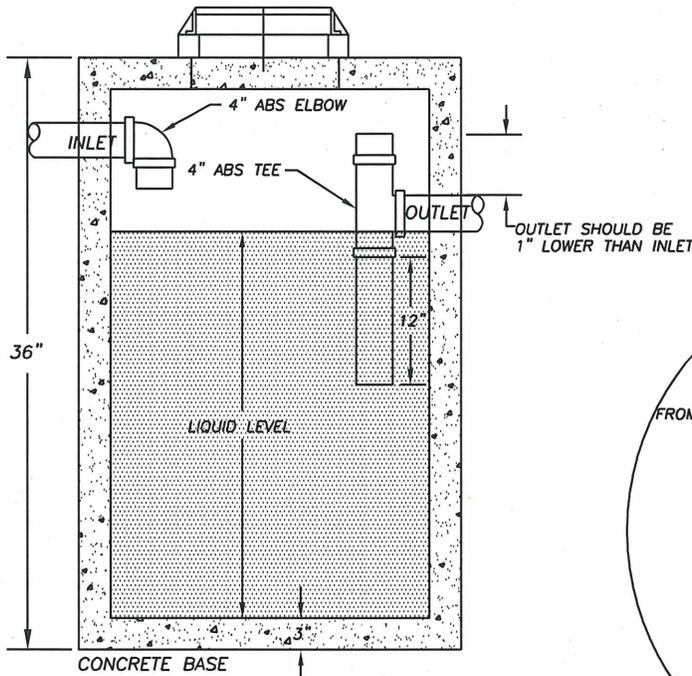
SS-3.2

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**NOTES:**

- 1.) CONCRETE: 28 DAY COMPRESSIVE STRENGTH PC=4500psi
  - 2.) POSITION RISERS BELOW & OFF-CENTER OF MANHOLES TO ALLOW ACCESS & ENTRY
  - 3.) REBAR: ASTM A-615 GRADE 60
  - 4.) MESH: ASTM A-185 GRADE 65
  - 5.) DESIGN: ACI-318-83 BUILDING CODE  
ASTM C-857 "MINIMUM STRUCTURAL DESIGN LOADING FOR UNDERGROUND PRECAST CONCRETE UTILITY STRUCTURES"
  - 6.) LOADS: H-20 TRUCK W/ 30% IMPACT PER ASSHTO
  - 7.) FILL W/ CLEAN WATER PRIOR TO START-UP OF SYSTEM
  - 8.) CONTRACTOR TO SUPPLY & INSTALL ALL PIPING & SAMPLING TEES
  - 9.) GRAY WATER ONLY. BLACK WATER SHALL BE CARRIED BY SEPERATE SIDE SEWER
  - 10.) 1500 OR GREATER REQUIRES A 3RD LOCKING FRAME & COVER
- \* LARGER TANKS MAY BE REQUIRED AS APPROVED BY CITY ENGINEER



MINIMUM PRESSURE  
 TOP-300PSF DL  
 -200PSF DL  
 LAT-45PSF  
 INTERNAL-625 PSF  
 BUOYANCY-2.5' SUBMERGED

MINIMUM REQUIREMENT - 1000 GAL.

**GREASE INTERCEPTOR**

PLAN #



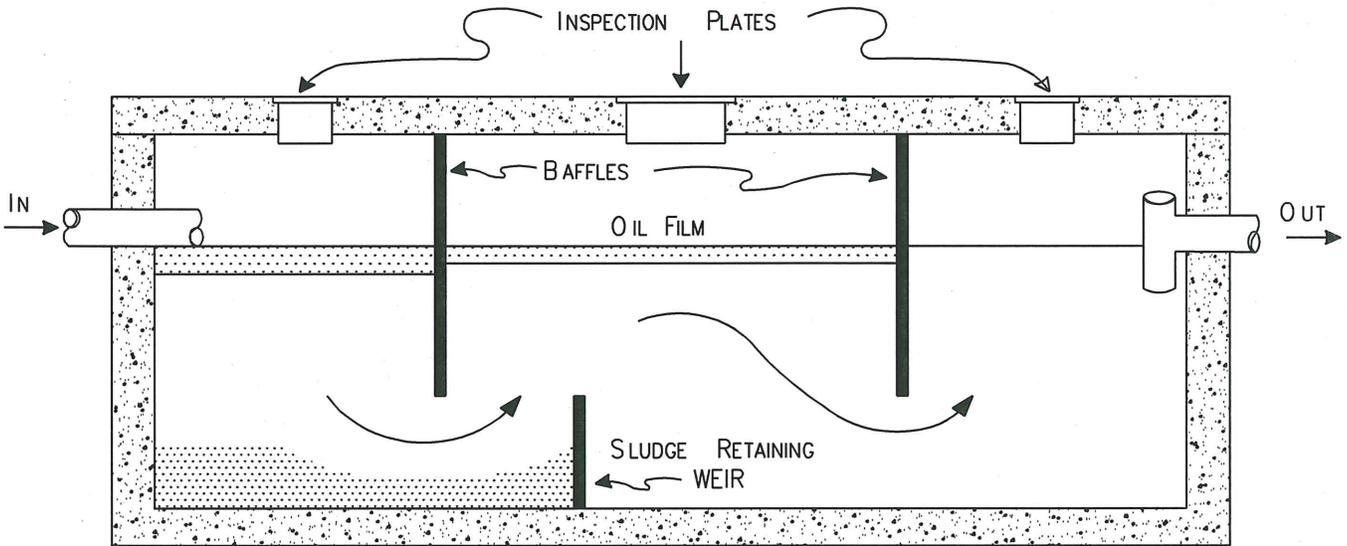
CITY OF BATTLE GROUND  
 APPROVED

*John A. Orman* 3-28-07  
 CITY ENGINEER DATE

REVISIONS:	DATE:	DRAWN:	DESIGNED:
1	8/12/98	BSG	GGH
2	8/30/05	ALL	MCH
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SS-3.4

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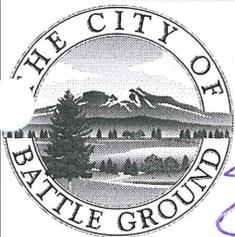


**RECOMMENDED MANAGEMENT PRACTICES**

1. SIZE SEPARATOR FOR A 45 MINUTE RETENTION TIME AT PEAK FLOW, OR EQUIVALENT RETENTION IF USING COALESCING PLATES.
2. BEFORE INSTALLATION, SUBMIT ALL PLANS TO THE CITY ENGINEERING OFFICE FOR REVIEW. INDICATE ALL SOURCES OF WATER TO SEPARATE AND PROVIDE ESTIMATES OF EXPECTED AVERAGE AND MAXIMUM FLOW RATES.
3. INSPECT SEPARATOR EVERY 6 MONTHS. USE A LONG STICK TO CHECK SLUDGE BUILDUP IN FIRST CHAMBER. HAVE SEPARATOR CLEANED IF SLUDGE BUILDUP IS OVER 8" INCHES OR IF THERE ARE MORE THAN 2" INCHES OF OIL FLOATING ON THE SURFACE IN ANY CHAMBER.
4. FOR COALESCING PLATE SEPARATOR, CLEAN THE PLATES BEFORE THEY BECOME COATED WITH SILT OR SOLIDS.
5. DO NOT ALLOW THE FOLLOWING TO ENTER THE SEPARATOR AS THEY WILL EMULSIFY THE OIL: ANTIFREEZE, DEGREASERS, DETERGENTS, ALCOHOL & SOLVENTS. ALSO, AVOID OVERLOADING THE SYSTEM WITH CONCENTRATED OILS OR HEAVY METAL-BEARING WASTEWATER.
6. TO REDUCE MAINTENANCE, REMOVE FLOATING OIL WITH ABSORBENT PADS OR VACUUM OUT OIL FILM. IF NECESSARY, INSTALL A CATCH BASIN BEFORE THE SEPARATOR TO REDUCE SLUDGE LOAD.

**STANDARD OIL/WATER SEPARATOR – SANITARY**

PLAN #



CITY OF BATTLE GROUND  
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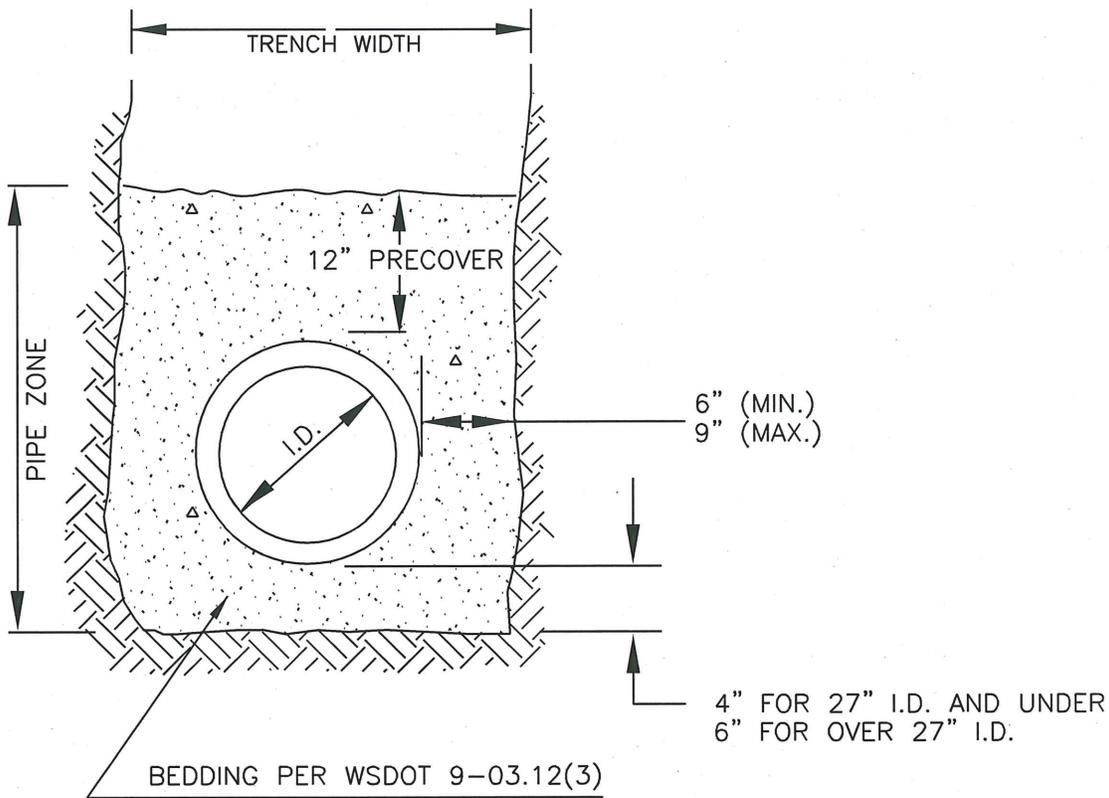
*John Brown* 3-28-07  
CITY ENGINEER DATE

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1	3/28/07	JMH	MCH

SS-3.5



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**NOTES:**

1. WHERE DIRECTED BY THE ENGINEER, GRANULAR TRENCH FOUNDATION STABILIZATION SHALL BE PLACED PRIOR TO PLACEMENT OF THE BEDDING. SIZE AND DEPTH ARE DEPENDENT ON SOIL CONDITIONS.
2. BEDDING AND BACKFILL MATERIALS IN THE PIPE ZONE SHALL BE COMPACTED AS SPECIFIED PRIOR TO BACK-FILLING THE REMAINDER OF THE TRENCH.
3. FOR ROCK AND OTHER INCOMPRESSIBLE MATERIALS, THE TRENCH SHALL BE OVEREXCAVATED A MINIMUM OF 6" AND REFILLED WITH GRANULAR MATERIALS AS DIRECTED BY THE ENGINEER.
4. ALTERNATIVE PRE-COVER MATERIALS ARE ALLOWABLE FROM PIPE CENTERLINE TO ONE FOOT ABOVE THE TOP OF PIPE. ALTERNATE PRE-COVER MATERIALS MUST BE PREAPPROVED BY THE INSPECTOR AND MAY BE SAND, CRUSHER SCREENINGS, GRAVEL, OR OTHER CLEAN GRANULAR MATERIAL CONTAINING NO ROCK LARGER THAN 1-1/4" IN LENGTH.
5. TRENCH WIDTH SHALL NOT EXCEED ONE AND ONE-HALF THE INSIDE DIAMETER OF THE PIPE PLUS 18" AT THE TOP OF THE PIPE ZONE.
6. APPROVAL FOR SUCH ALTERNATE MATERIALS WILL BE GRANTED UPON CONFIRMATION BY TEST OF ITS COMPLIANCE WITH THESE REQUIREMENTS.

**PIPE BEDDING (FLEXIBLE PIPE)**

PLAN #

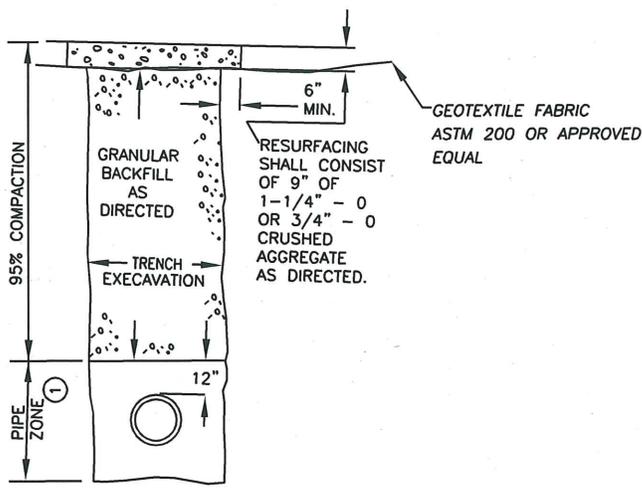


CITY OF BATTLE GROUND  
APPROVED

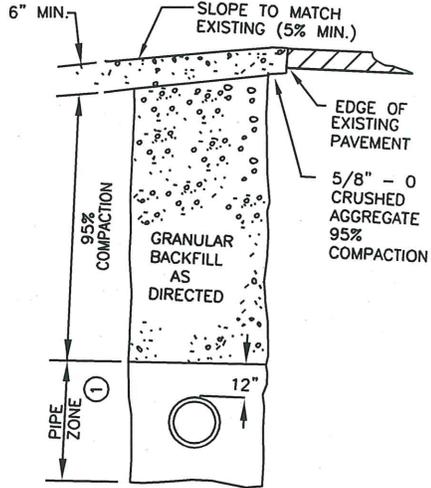
*John A. Osmer* 3-28-07  
CITY ENGINEER DATE

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2	8/30/05	ALL	MCH
3	3/28/07	JMH	MCH

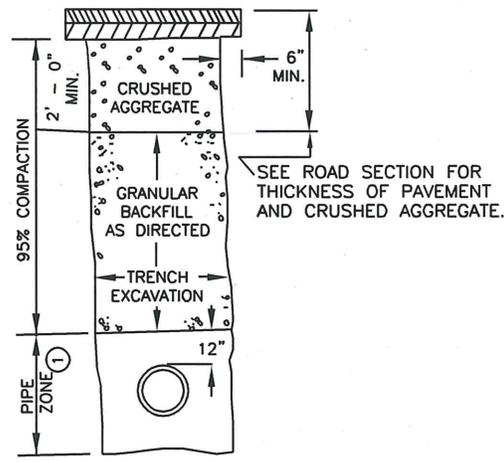
SS-4.1



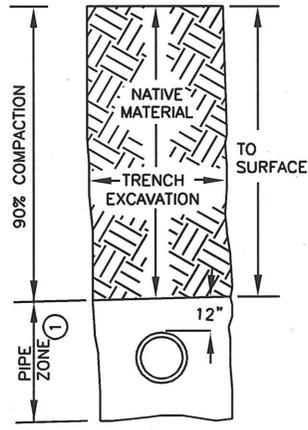
TRAVELED UNIMPROVED STREET



ROADWAY SHOULDER



PUBLIC STREET



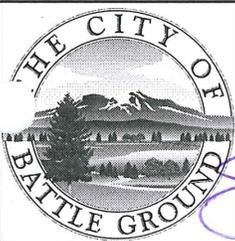
UNTRAVELED EASEMENT

NOTES:

1. FOR PIPE ZONE BEDDING, BACKFILL AND COMPACTION REQUIREMENTS, SEE STD. PLANS (RIGID PIPE), AND/OR (FLEXIBLE PIPE).
2. COMPACTION PERCENTAGES REFER TO RELATIVE DRY DENSITY AS DETERMINED BY STANDARD PROCTOR AASHTO MODIFIED T 180
3. CONTRACTOR MAY USE UP TO 2-1/2" OF 5/8" - 0 OR 3/4" - 0 CRUSHED AGGREGATE IN LIEU OF 1-1/4" - 0 BASE ROCK UNDER SURFACING FOR LEVELING COURSE.
4. ALL EXISTING PAVED SURFACES SHALL BE SAW CUT A MINIMUM OF 6" OUTSIDE OF EDGE OF TRENCH TO PROVIDE A NEAT STRAIGHT EDGE.
5. THE EDGES OF ALL EXISTING ASPHALT SURFACES SHALL BE CLEANED AND A TACK COAT SHALL BE APPLIED. ALL JOINTS SHALL BE SAND SEALED.
6. ALL BACKFILL SHALL BE MECHANICALLY COMPACTED IN LIFTS WHICH IN NO CASE EXCEED 12" LOOSE.

TYPICAL TRENCH BACKFILL BEDDING

PLAN #

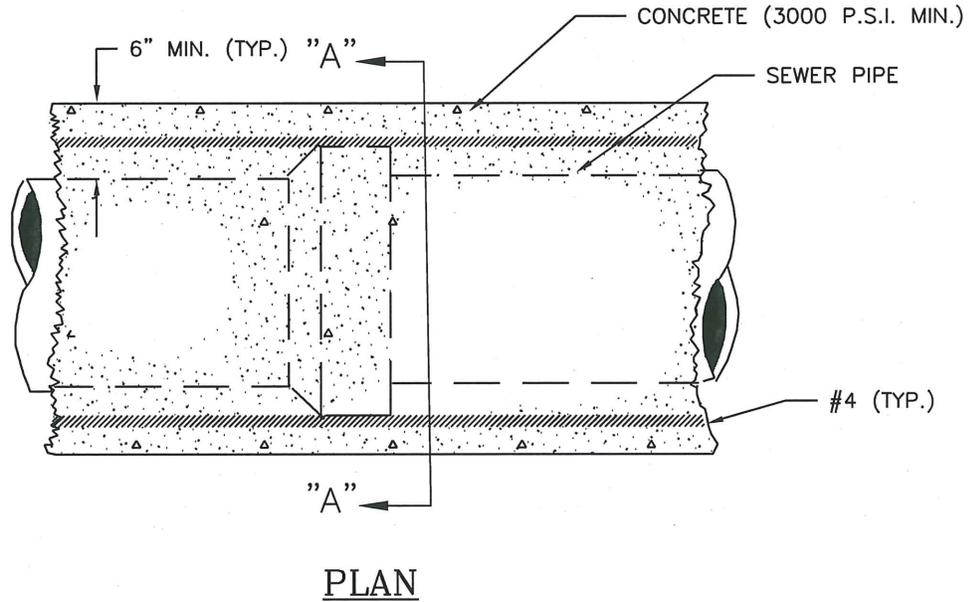
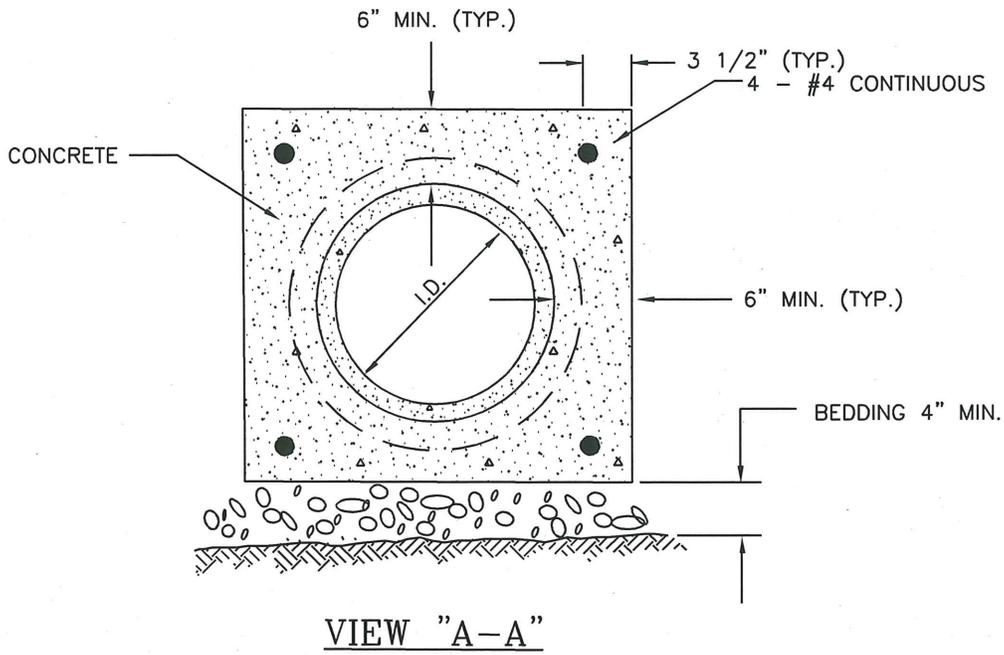


CITY OF BATTLE GROUND APPROVED

*[Signature]*  
CITY ENGINEER DATE 3-28-07

REVISIONS:	DATE:	DRAWN:	DESIGNED:
1	8/12/98	BSG	GGH
2	8/30/05	ALL	MCH
3	3/28/07	JMH	MCH

SS-4.2



NOTES:

1. CONCRETE TO EXTEND 10' ON BOTH SIDES OF WATER CROSSING.
2. MUST BE USED WHERE THERE IS LESS THAN 18" OF CLEARANCE BETWEEN WATERLINE AND SEWER LINE.

**CONCRETE ENCASED SEWER PIPE**

PLAN #



CITY OF BATTLE GROUND  
APPROVED

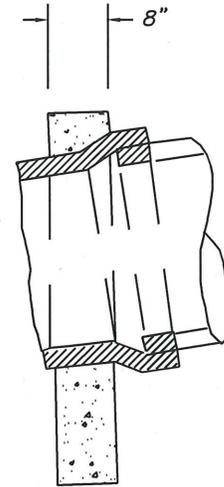
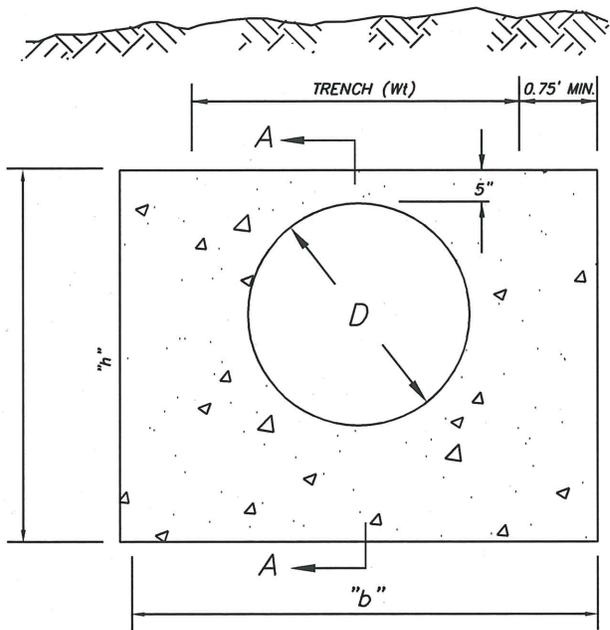
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CITY ENGINEER

3-28-07  
DATE

REVISIONS:	DATE:	DRAWN:	DESIGNED:
1	8/12/98	BSG	GGH
2	8/30/05	ALL	MCH
3	3/28/07	JMH	MCH

SS-4.3

N:\CAD Data\Standard Dwgs\Sanitary Sewer Details\SS-4.4\_Anchor Wall.dwg, 3/28/2007 2:09:19 PM



SECTION A-A

NOTES:

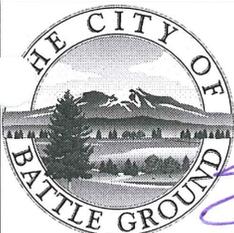
1. ALL CONCRETE TO BE 3000 P.S.I., 2" TO 4" SLUMP.
2. WALLS WILL BE PLACED WHERE GRADE IS 20% OR OVER.
3. ANCHOR WALLS TO BE EQUALLY SPACED WITH MAXIMUM DISTANCE BETWEEN WALLS TO BE AS SHOWN IN TABLE "A".
4. PLACE WALL IMMEDIATELY BELOW BELL OF PIPE WHERE POSSIBLE.
5. CONCRETE SHALL BE POURED AGAINST FORMS OR STABLE UNDISTURBED SOIL.

TABLE "A"		
SLOPE %		MAXIMUM ALLOWABLE SPACING (FT.) (MEASURED ON SLOPE)
OVER	TO	
20	35	36'
35	50	24'
50	100	16'

TABLE "B"				
PIPE SIZE (D)	TRENCH WIDTH MAX. (Wt)	h	b	VOLUME OF CONCRETE (APPROX.)
6", 8", 10"	2.5'	3.0'	4.0'	0.29 C.Y.
12", 15"	2.5'	4.0'	4.0'	0.37 C.Y.
18", 21", 24"	3.5'	4.0'	5.0'	0.42 C.Y.
30", 36"	4.5'	5.0'	6.0'	0.62 C.Y.

ANCHOR WALL DETAIL

PLAN #



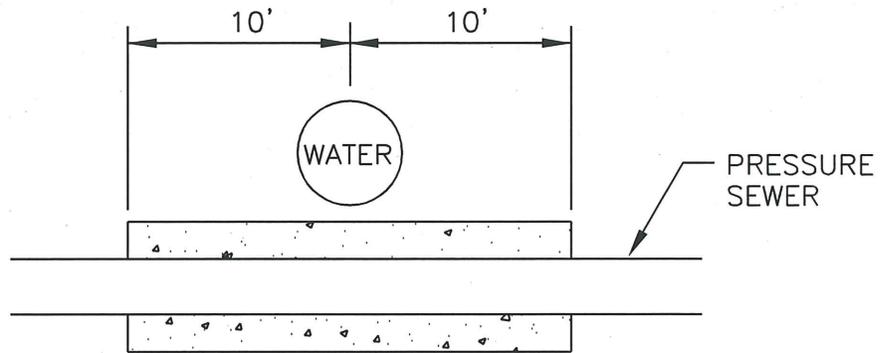
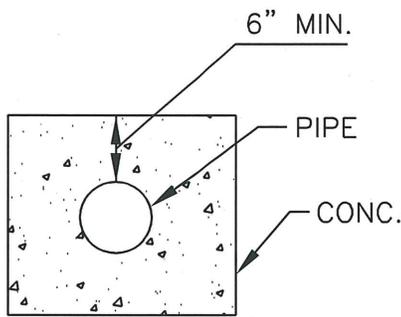
CITY OF BATTLE GROUND  
APPROVED

*John A. Quinn* 3-28-07  
CITY ENGINEER DATE

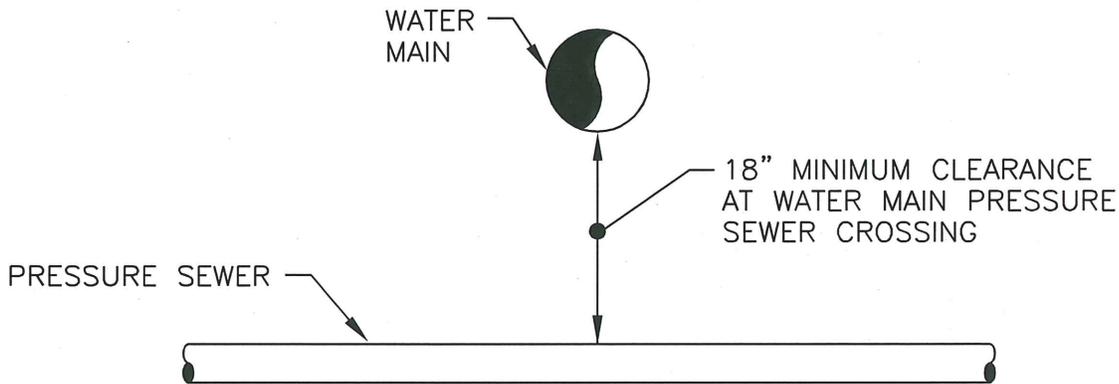
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1	8/12/98	BSG	GGH
2	3/28/07	JMH	MCH

SS-4.4

N:\CAD Data\Standard Dwgs\Sanitary Sewer Details\SS-1.6\_Water-San-Crossing.dwg-3/28/2007 2:38:23 PM



CASING—CLASS 200  
P.V.C. 20' LENGTH  
BOTH ENDS PLUGGED.  
OR 6" CONC.



TYP. WATER MAIN/SANITARY CROSSING

PLAN #



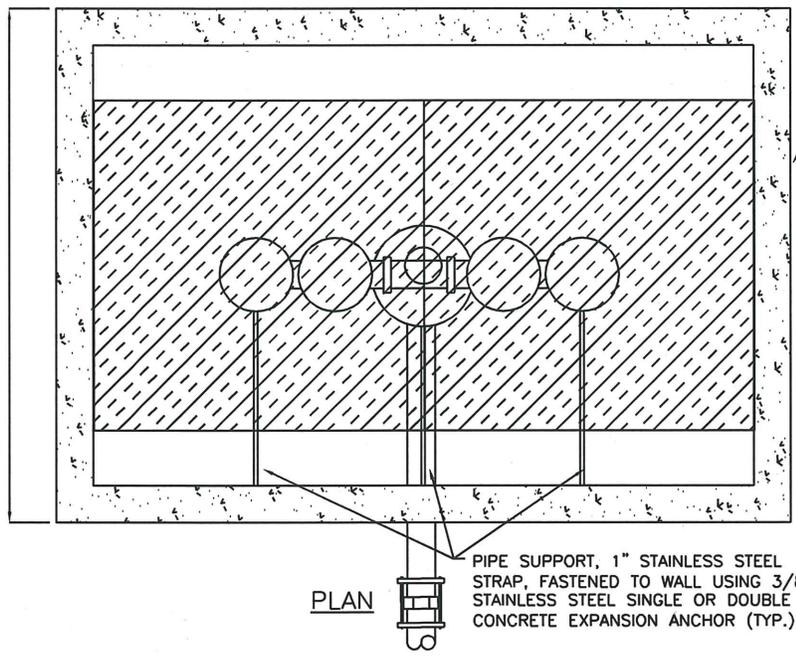
CITY OF BATTLE GROUND  
APPROVED

*Sam Johnson* 3-29-07  
CITY ENGINEER DATE

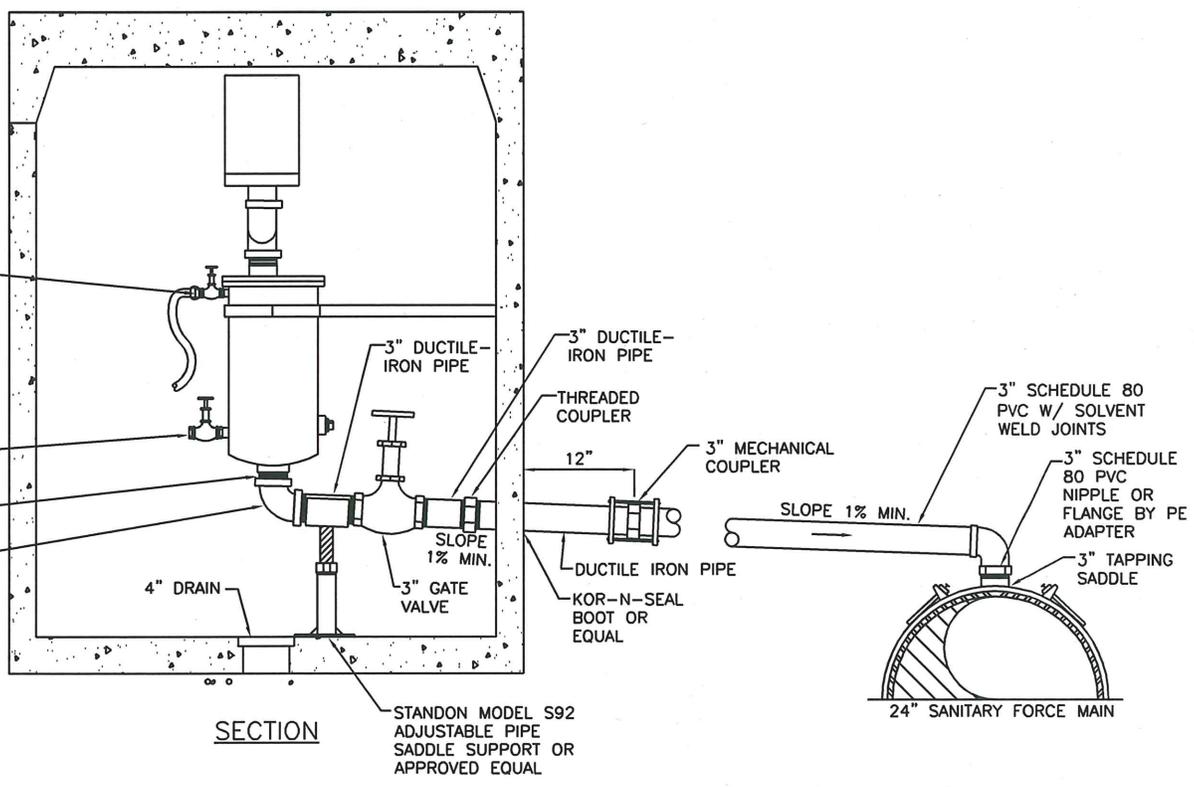
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2	3/28/07	ALL	MCH

SS-4.5

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HANSON PIPE & PRODUCTS, INC. CONCRETE VAULT 466-23, 6'-6" (L) X 4'-6" (W) X 6'-1" (D) OR APPROVED EQUAL. COVER NO. 23 WITH DUAL ACCESS DOORS, 3'-0" SQUARE, NON-SKID SURFACE, H2O RATED.



AIR VACUUM/RELEASE VAULT WITH ODOR CONTROL CANISTER

PLAN #



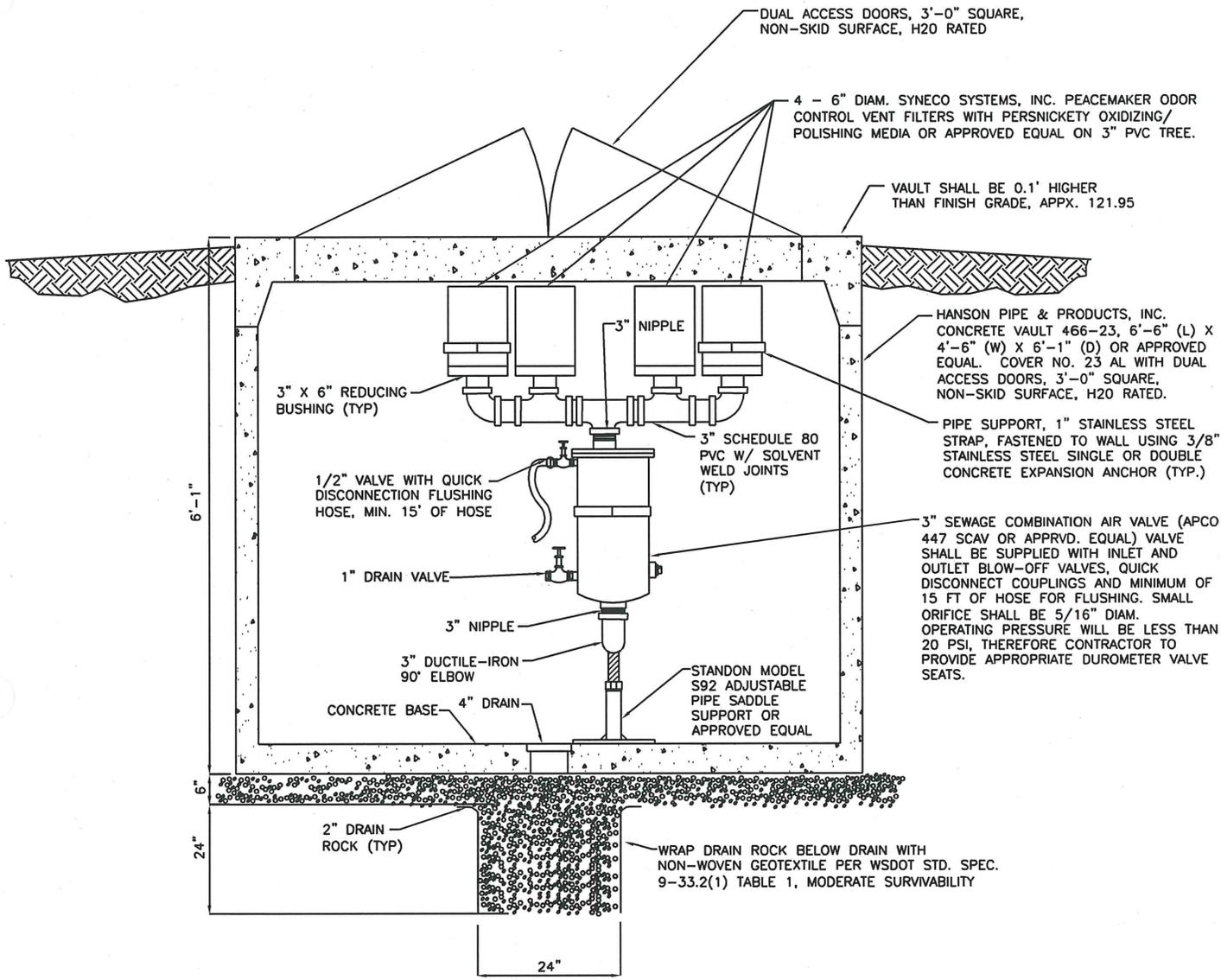
CITY OF BATTLE GROUND APPROVED

*San Adams* 3-28-07  
CITY ENGINEER DATE

REVISIONS:	DATE:	DRAWN:	DESIGNED:
1	3/28/07	JMH	MCH

SS-5.0A

N:\CAD Data\Standard Dwgs\Sanitary Sewer Details\SS-5.0\_AirVacuumRelVault\_B.dwg, 3/28/2007 2:11:01 PM



ELEVATION

NOTE: ALL DUCTILE IRON PIPE SHALL BE PAINTED WITH A THREE COAT SYSTEM PER WSDOT STD. SPEC 6-07.3(1), METHOD B. PAINT SHALL MEET THE REQUIREMENTS OF WSDOT STD. SPEC. 9-08.1.

AIR VACUUM/RELEASE VAULT WITH ODOR CONTROL CANISTER

PLAN #



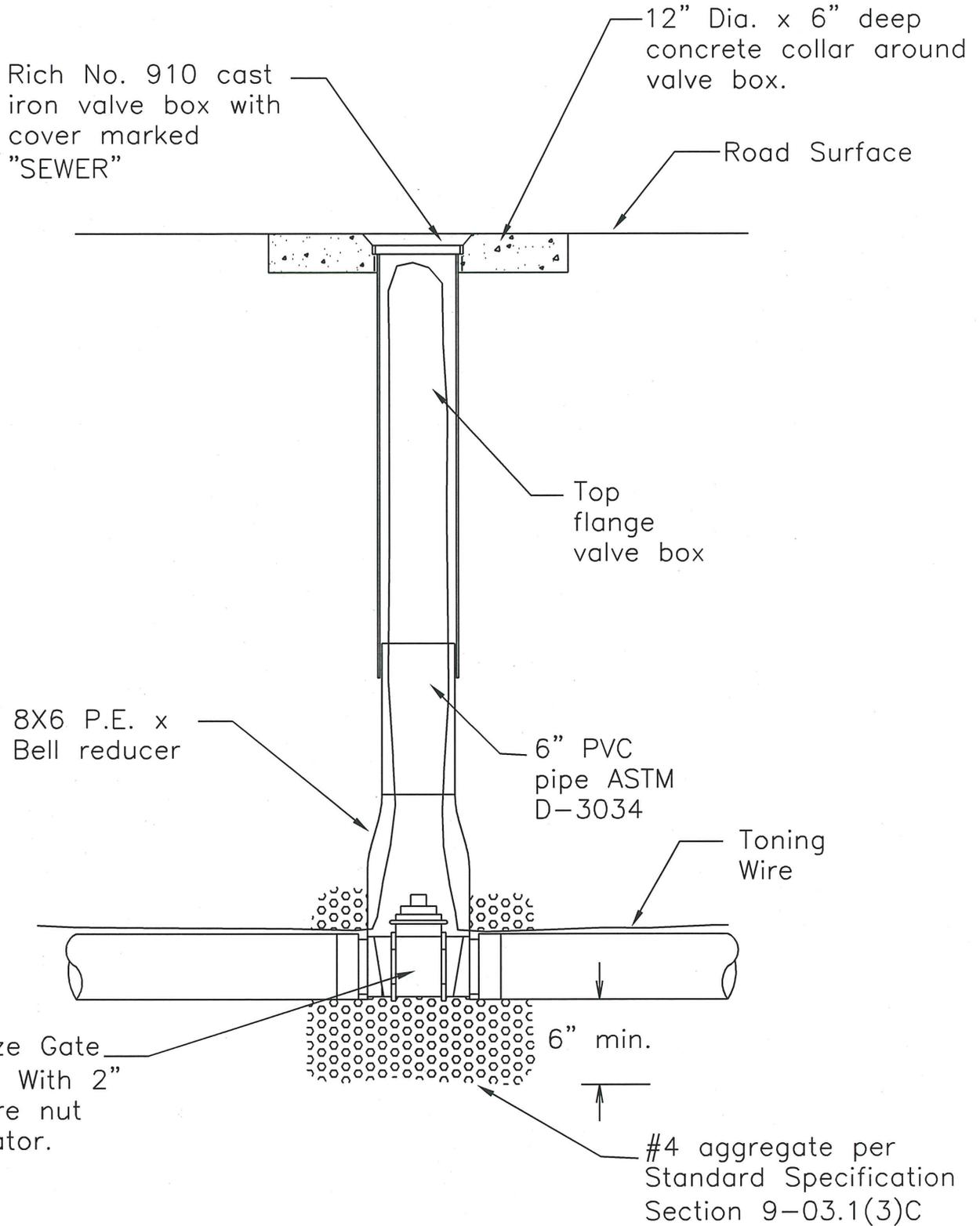
CITY OF BATTLE GROUND APPROVED

REVISIONS:	DATE:	DRAWN:	DESIGNED:
1	3/28/07	JMH	MCH

SS-5.0B

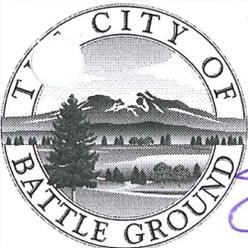
*John Adams* 3-28-07  
CITY ENGINEER DATE

d Dwgs\Sanitary Sewer Details\SS-5.1\_Buried Gate Valve.dwg, 3/28/2007 2:11:43 PM



**BURIED GATE VALVE**

PLAN #



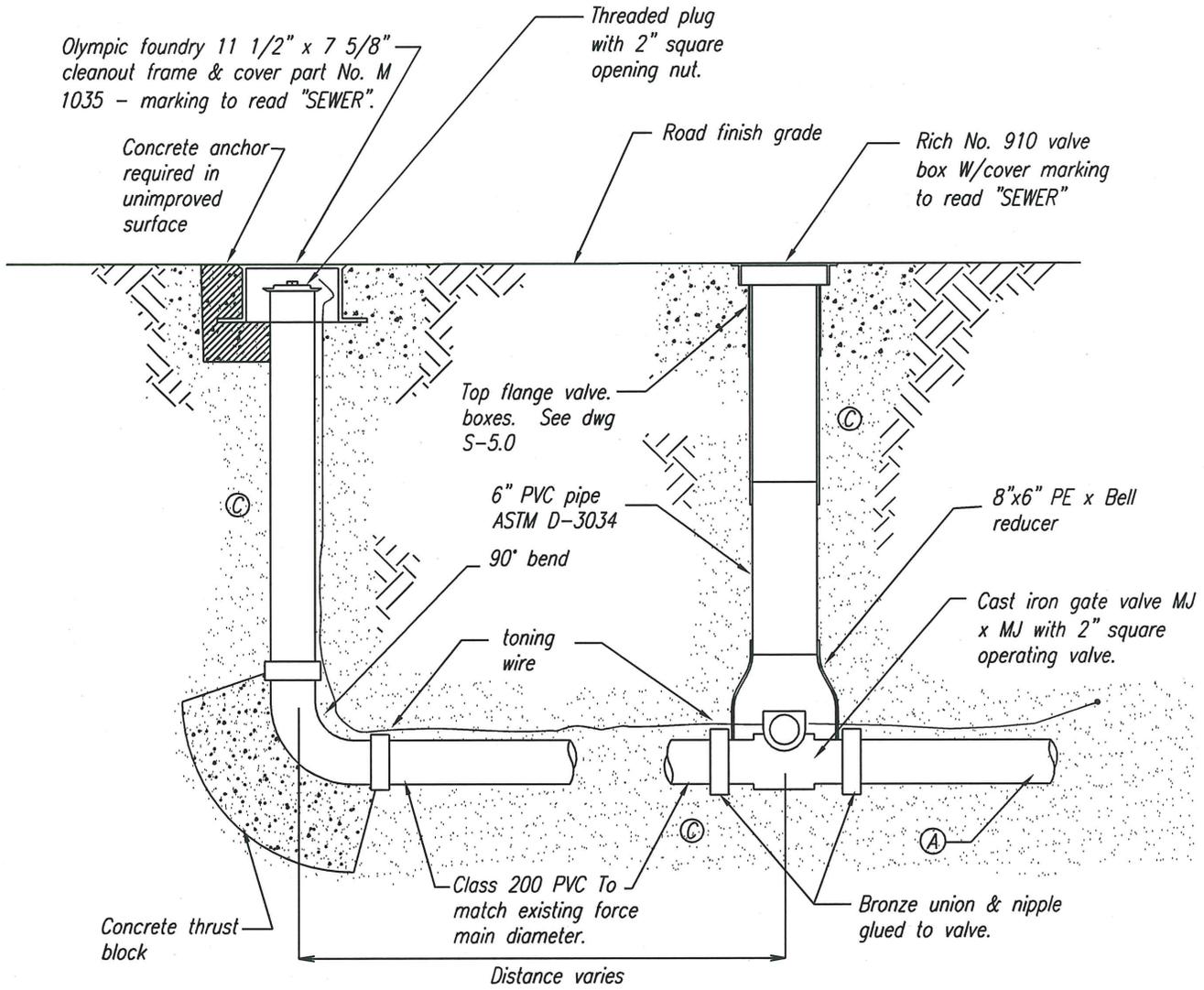
CITY OF BATTLE GROUND  
APPROVED

*John A. Olson* 3-28-07  
CITY ENGINEER DATE

REVISIONS:	DATE:	DRAWN:	DESIGNED:
1	3/28/07	JMH	MCH

SS-5.1

N:\CAD Data\Standard Dwg\Sanitary Sewer Details\SS-5.2\_Typical Pressure Cleanout.dwg, 3/28/2007 2:12:24 PM



NOTES:

- (A) MJ x MJ x MJ Wye or MJ x MY sleeve.
- (B) Concrete shall be 3,000 P.S.I.
- (C) Bedding and backfill to conform with class of bedding and type of backfill specified for sewer line extension.

NTS

TYPICAL PRESSURE CLEANOUT

PLAN #



CITY OF BATTLE GROUND  
APPROVED

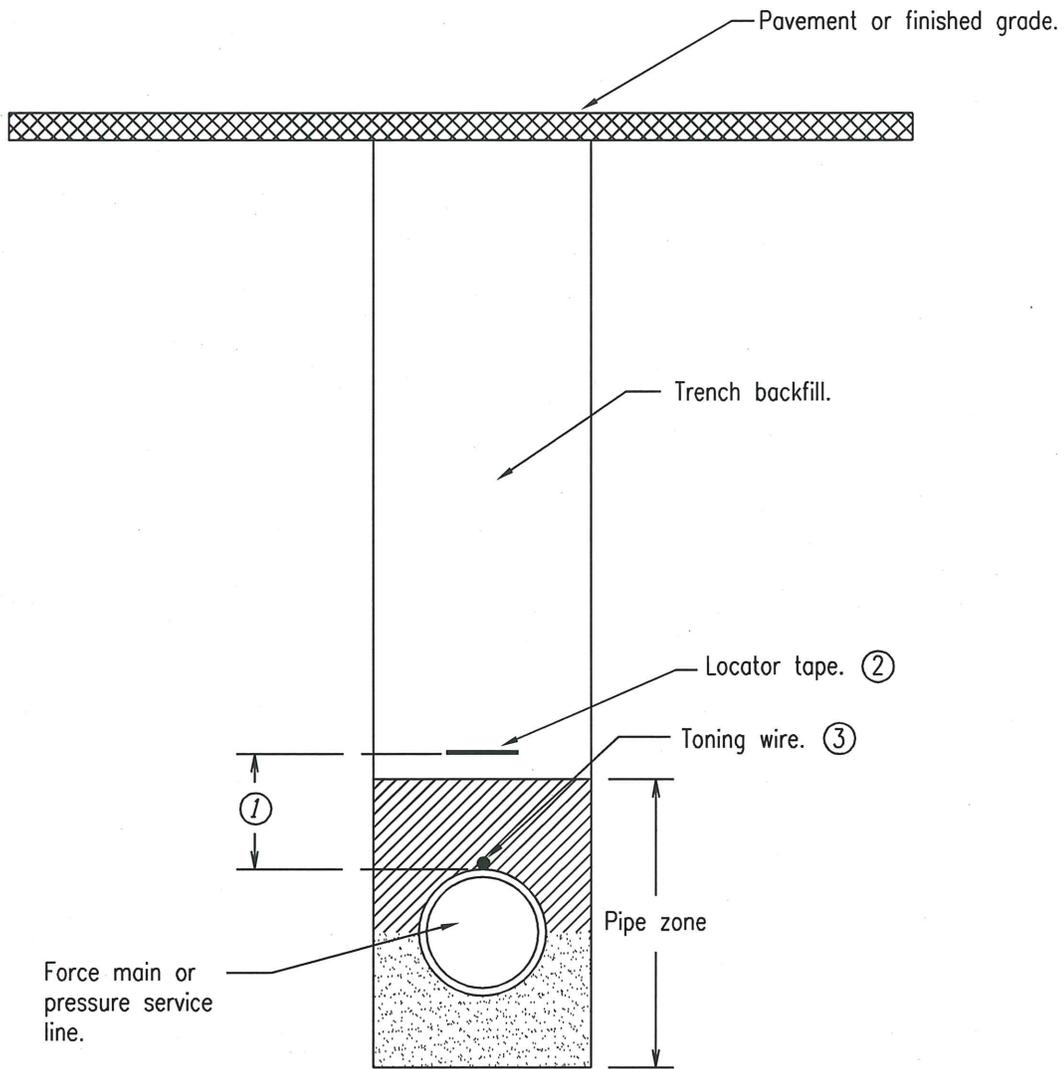
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CITY ENGINEER

3-28-07  
DATE

REVISIONS:	DATE:	DRAWN:	DESIGNED:
1	3/28/07	JMH	MCH

SS-5.2

N:\CAD Data\Standard Dwgs\Sanitary Sewer Details\SS-5.3\_Toning Wire.Locate Tape.dwg, 3/28/2007 2:13:06 PM



- ① Locator tape to be located eighteen (18) inches above a force main and twelve (12) inches above a pressure service line.
- ② The locator tape should be marked with continuous three (3) inch wide green six (6) mil thick locator three (3) inch high black letters every three (3) feet with *"Warning-Buried Pressure Sewer"*.
- ③ A continuous toning wire shall be attached to the top of the pressure service line. The toning wire shall be coated #10 AWG solid copper wire. The toning wire shall end in the valve box with a minimum of one (1) foot coil of wire. The toning wire shall be tested for continuity prior to acceptance. All splices will be soldered a minimum of two (2) inches in length and encased with 3M Scotch #220 vinyl mastic pads (3 1/2" by 4 1/2") or 3M Scotch 33 electrical tape and coated with Scotchkote electrical coating #1485 (repeat process after first coating dries), or approved equal.

N.T.S.

### TONING WIRE AND LOCATOR TAPE

PLAN #



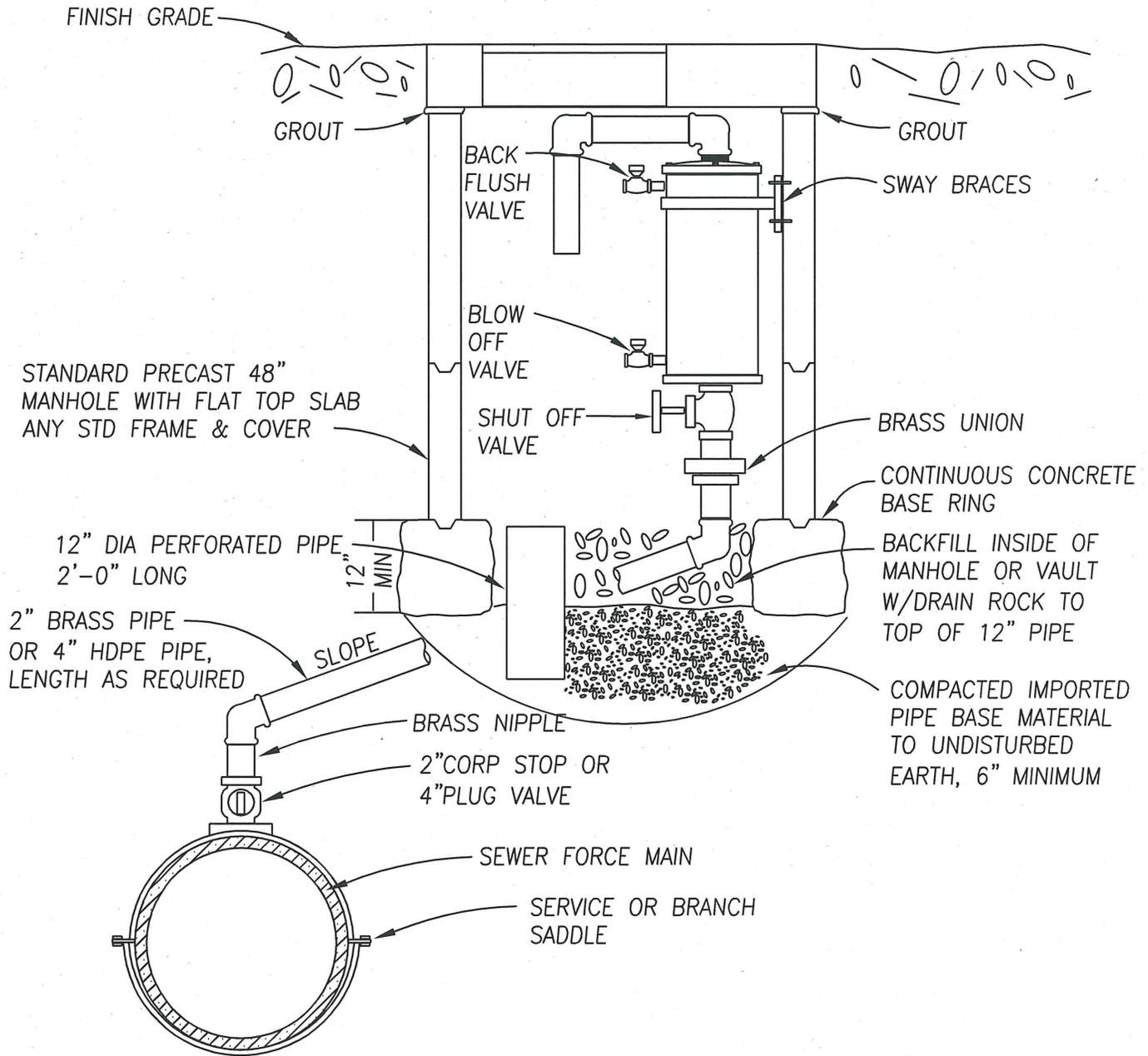
CITY OF BATTLE GROUND  
APPROVED

*John A. Quinn* 3-28-07  
CITY ENGINEER DATE

REVISIONS:	DATE:	DRAWN:	DESIGNED:
1	3/28/07	JMH	MCH

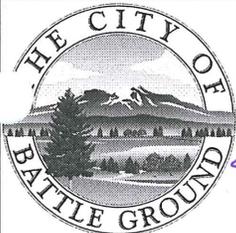
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## AIR RELEASE VALVE

PLAN #



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APPROVED

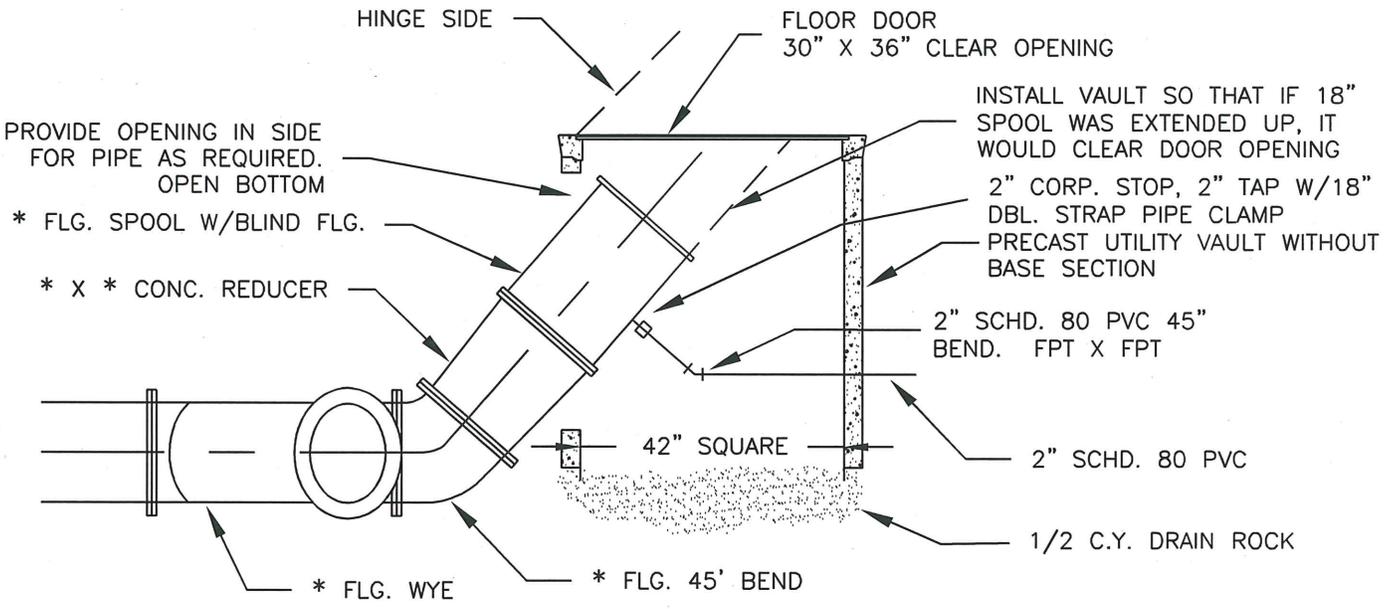
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CITY ENGINEER

DATE

REVISIONS:	DATE:	DRAWN:	DESIGNED:
1	12/9/06	JMH	MCH

SS-5.4

N:\CAD Data\Standard Dwgs\Sanitary Sewer Details\SS-5.5\_Pig Launch.dwg, 3/28/2007 2:13:48 PM



\* Pipe size will vary based on FM diameter.

PIG LAUNCH DETAIL

PLAN #

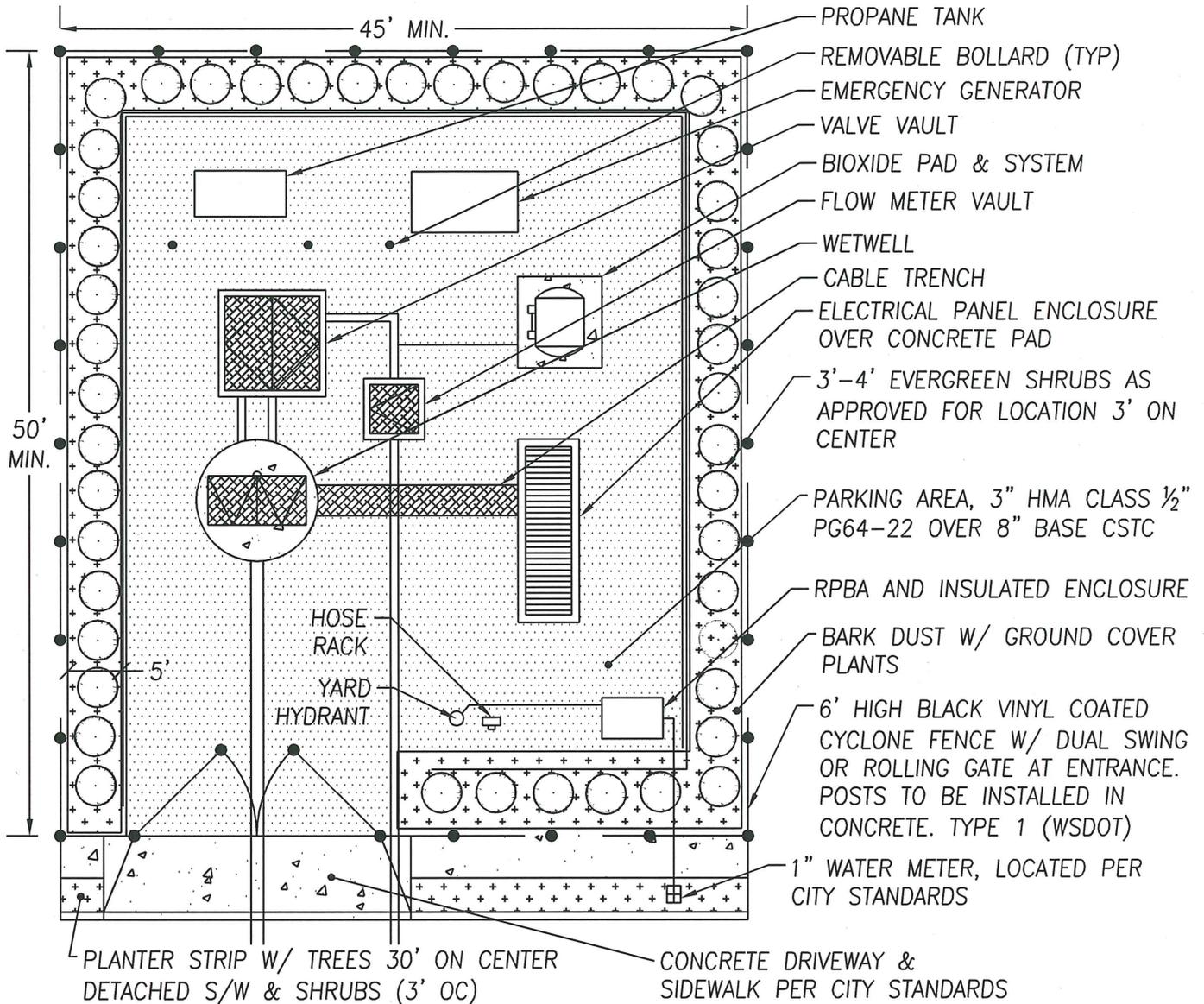


CITY OF BATTLE GROUND APPROVED

*James A. Olson* 3-28-07  
CITY ENGINEER DATE

REVISIONS:	DATE:	DRAWN:	DESIGNED:
1	3/28/07	JMH	MCH

SS-5.5

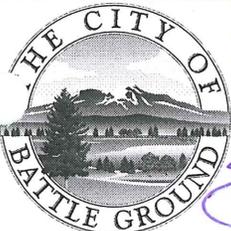


**NOTES:**

1. BARK DUST AREA - PLACE WEED BARRIER FABRIC UNDER BARK DUST TO CONTROL WEEDS.
2. ELECTRICAL STRUCTURE PAD, TERMINAL VAULT LID, WETWELL COVER, GENERATOR PAD, AND VALVE VAULT COVER SHALL BE SET AT THE SAME ELEVATION WITH 4" CLEARANCE TO THE ASPHALT.
3. SITE TO BE ADJUSTED TO MEET ALL SETBACK REQUIREMENTS AS NEEDED.
4. STATION TO BE PLACED ON A TRACT DEDICATED TO THE CITY OF BATTLE GROUND.
5. THIS PLAN SHOWS MINIMUM LANDSCAPING AND SCREENING REQUIREMENTS. ENGINEERS ARE ENCOURAGED TO USE IT AS A GUIDE AND ARE REQUIRED TO SUBMIT A SPECIFIC SITE PLAN FOR REVIEW. ADEQUATE LANDSCAPING IS REQUIRED TO MINIMIZE PUMP STATION IMPACT AND INTRUSION INTO BORDERING NEIGHBORHOOD. LARGER SITES MAY BE REQUIRED, WHEN ACCESS IS OFF OF AN ARTERIAL, TO ALLOW MAINTENANCE VEHICLES TO TURN AROUND ON THE SITE.

**PUMP STATION SITE PLAN**

PLAN #



CITY OF BATTLE GROUND  
APPROVED

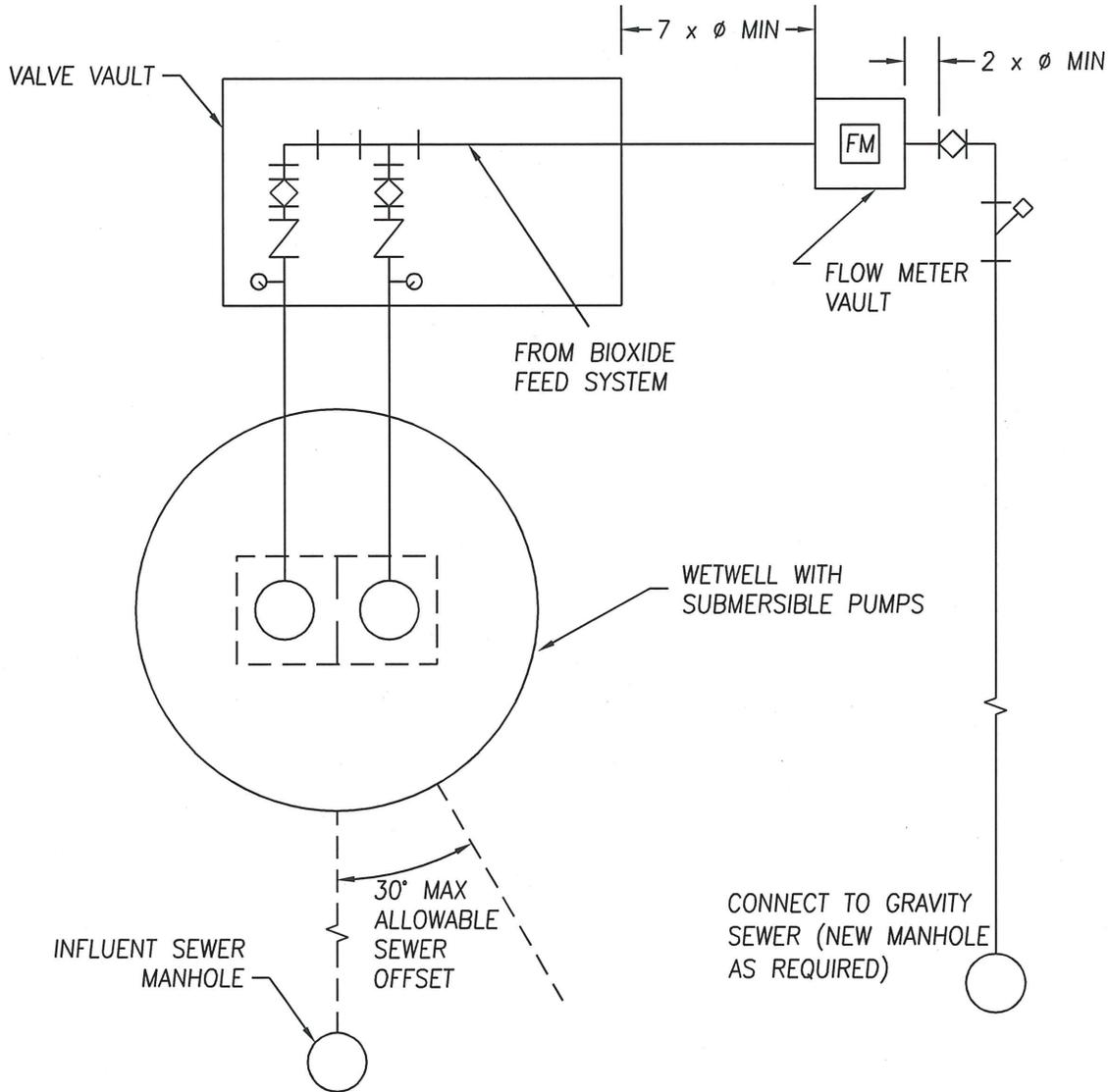
*John Adams* 3-28-07  
CITY ENGINEER DATE

REVISIONS:	DATE:	DRAWN:	DESIGNED:
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2	8/30/05	ALL	MCH
3	3/28/07	JMH	MCH

SS-6.0

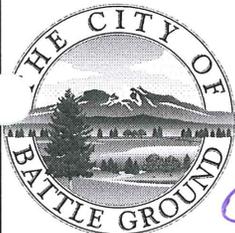
# LEGEND

-  PRESSURE GAUGE
-  CHECK VALVE
-  PLUG VALVE
-  FLOW METER
-  PIGGING STATION
-  FORCE MAIN
-  GRAVITY SEWER



## SITE PIPING SCHEMATIC

PLAN #



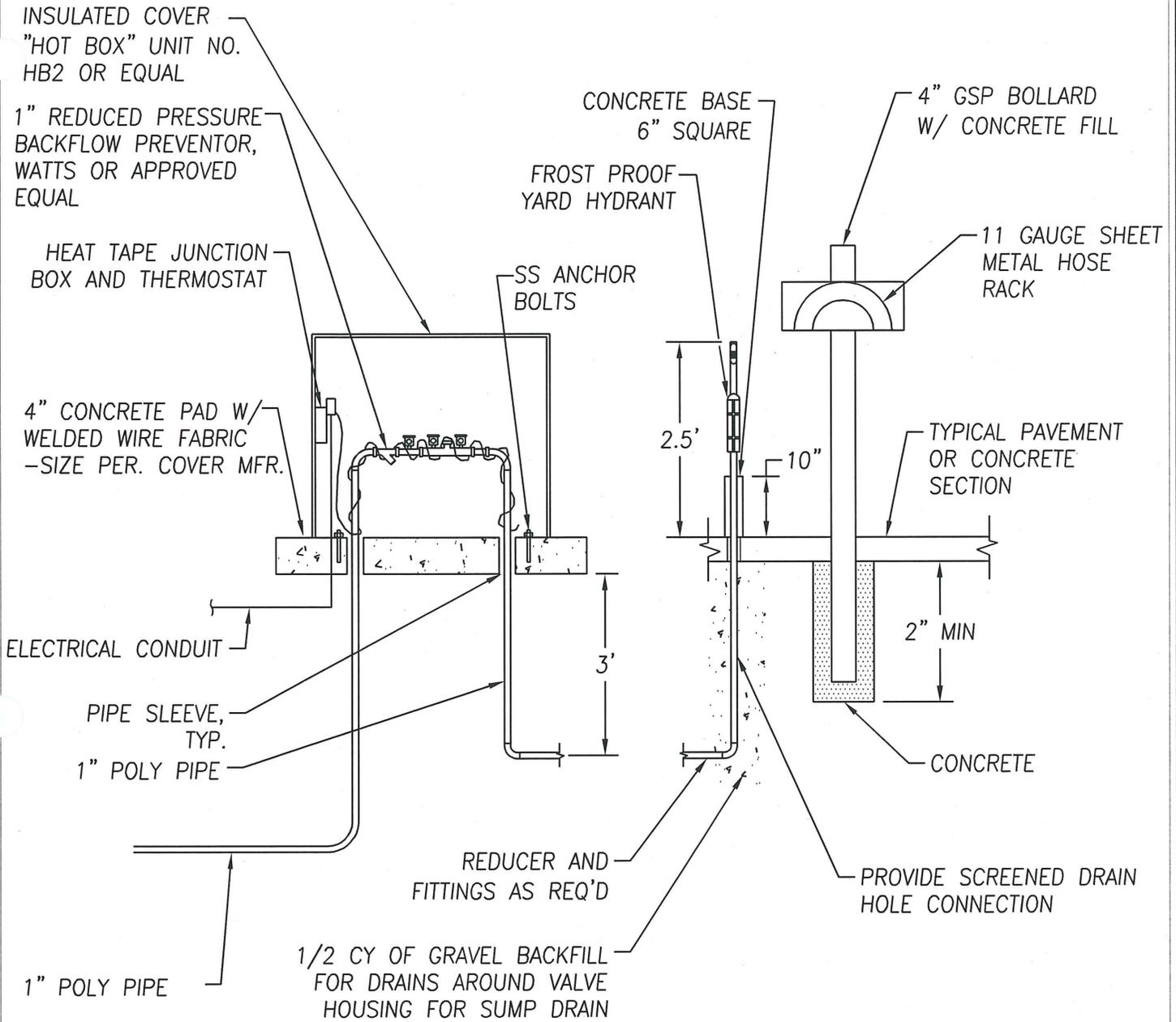
CITY OF BATTLE GROUND  
APPROVED

*Jan Adams* 3-28-07  
CITY ENGINEER DATE

REVISIONS:	DATE:	DRAWN:	DESIGNED:
1	2/23/07	JMH	MCH

SS-6.1

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**NOTE:**

1. WRAP ALL EXPOSED WATER PIPES WITH HEAT TAPE AND PVC COATED PIPE INSULATION.

**RPBA AND YARD HYDRANT DETAIL**

PLAN #



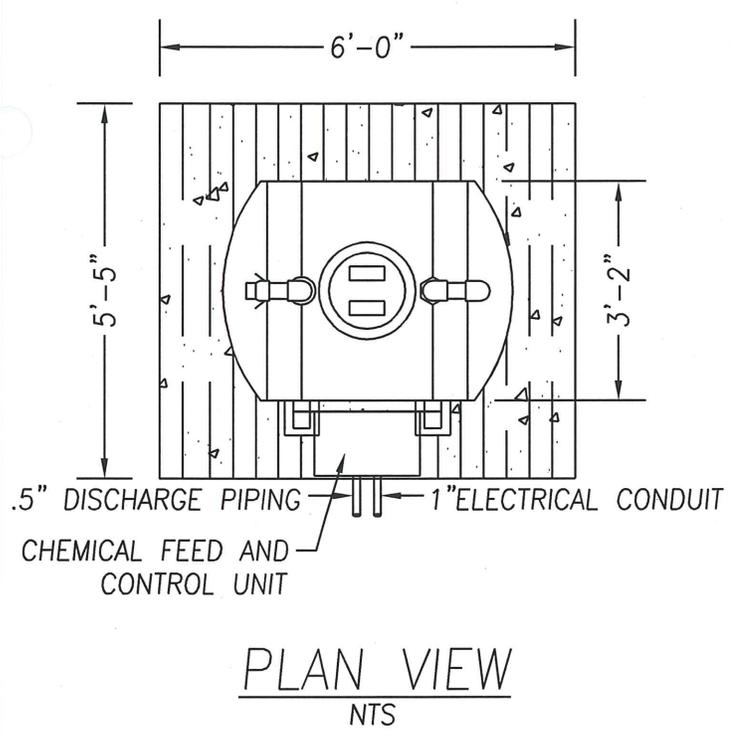
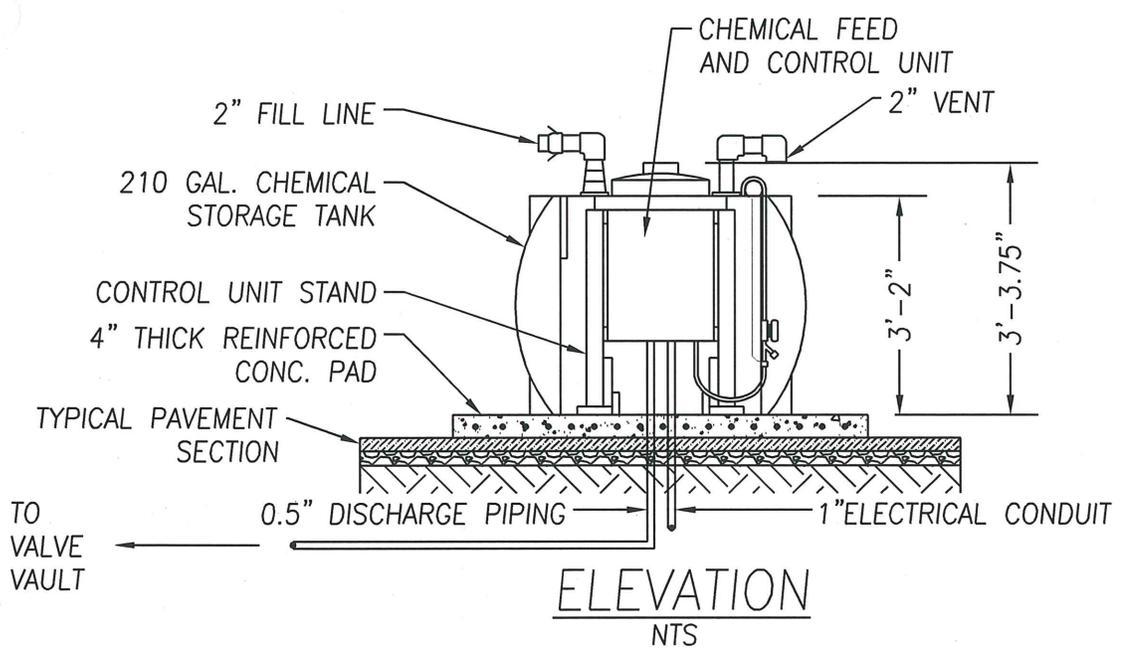
CITY OF BATTLE GROUND  
APPROVED

*Sanjiv Dism* 3-28-07  
CITY ENGINEER DATE

REVISIONS:	DATE:	DRAWN:	DESIGNED:
1	3/28/07	JMH	MCH

SS-6.2

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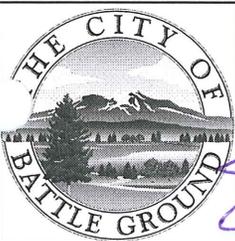


**NOTES:**

1. ALL PIPING AND APPURTENANCES PVC, SCHEDULE 80, UNLESS SPECIFIED OTHERWISE.
2. UTILIZE SWEEPS ONLY (NO ELBOWS) FOR CONDUIT DIRECTIONAL CHANGES.
3. FURNISH AND INSTALL ALL NECESSARY WALL AND SLAB OPENINGS, SLEEVES AND SEALANT.
4. FURNISH AND INSTALL ALL NECESSARY HANGERS, SUPPORTS, AND BLOCKING FOR PIPING.
5. ALL HARDWARE REQUIRED FOR INSTALLATION SHALL BE STAINLESS STEEL.
6. CONTACT SUPPLIER (US FILTER/DAVIS PRODUCTS) TO DETERMINE WHICH PORTIONS OF THE INSTALLATION MUST BE DONE BY OTHERS.

**BIOXIDE FEED SYSTEM**

PLAN #



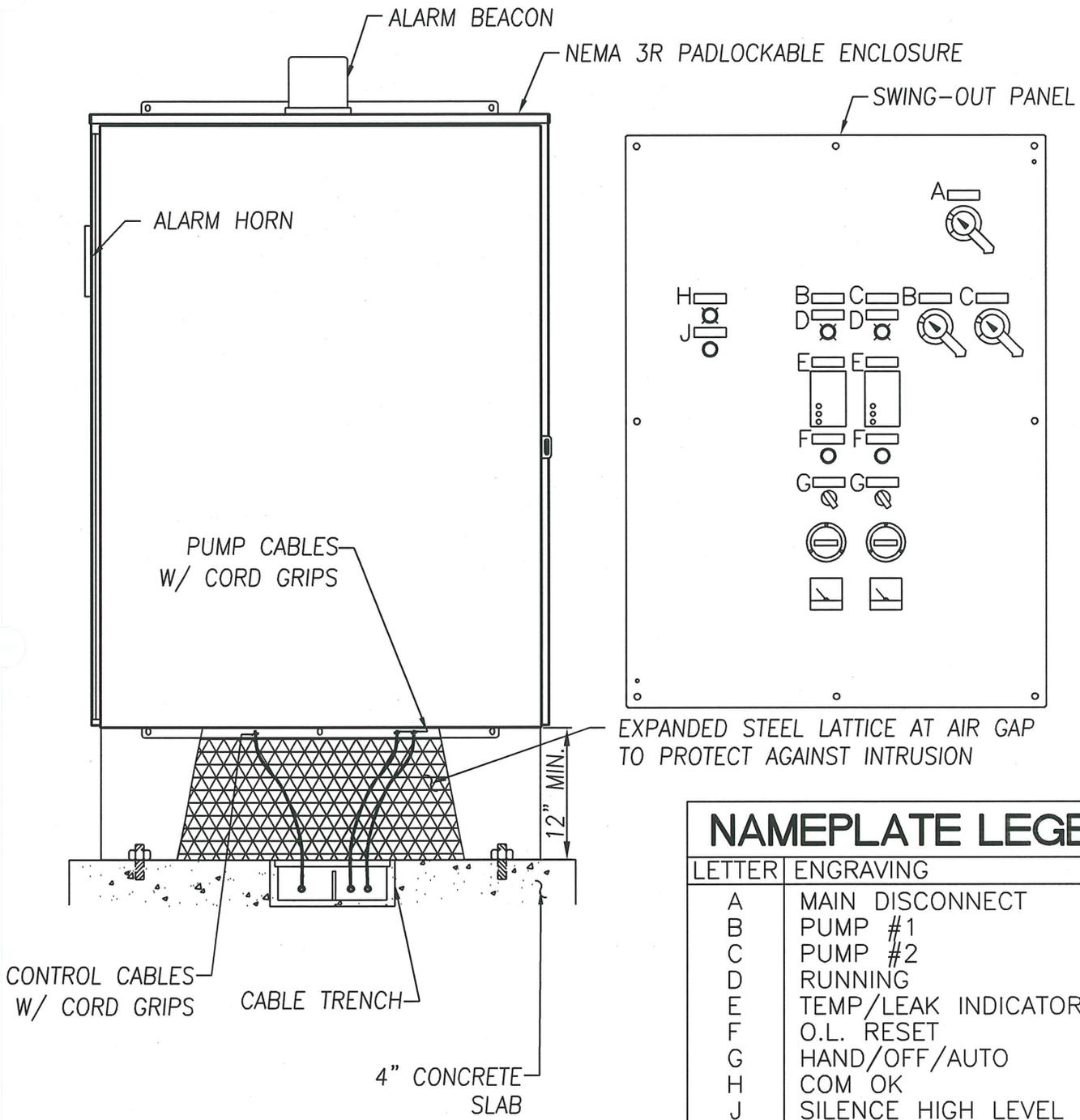
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APPROVED

*[Signature]*  
CITY ENGINEER                      DATE

REVISIONS:	DATE:	DRAWN:	DESIGNED:
1	3/28/07	JMh	MCH

SS-6.3

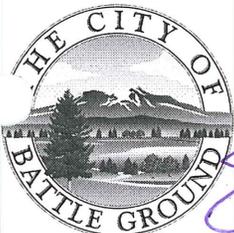
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NAMEPLATE LEGEND	
LETTER	ENGRAVING
A	MAIN DISCONNECT
B	PUMP #1
C	PUMP #2
D	RUNNING
E	TEMP/LEAK INDICATOR
F	O.L. RESET
G	HAND/OFF/AUTO
H	COM OK
J	SILENCE HIGH LEVEL ALARM

TYPICAL CONTROL PANEL DETAIL

PLAN #



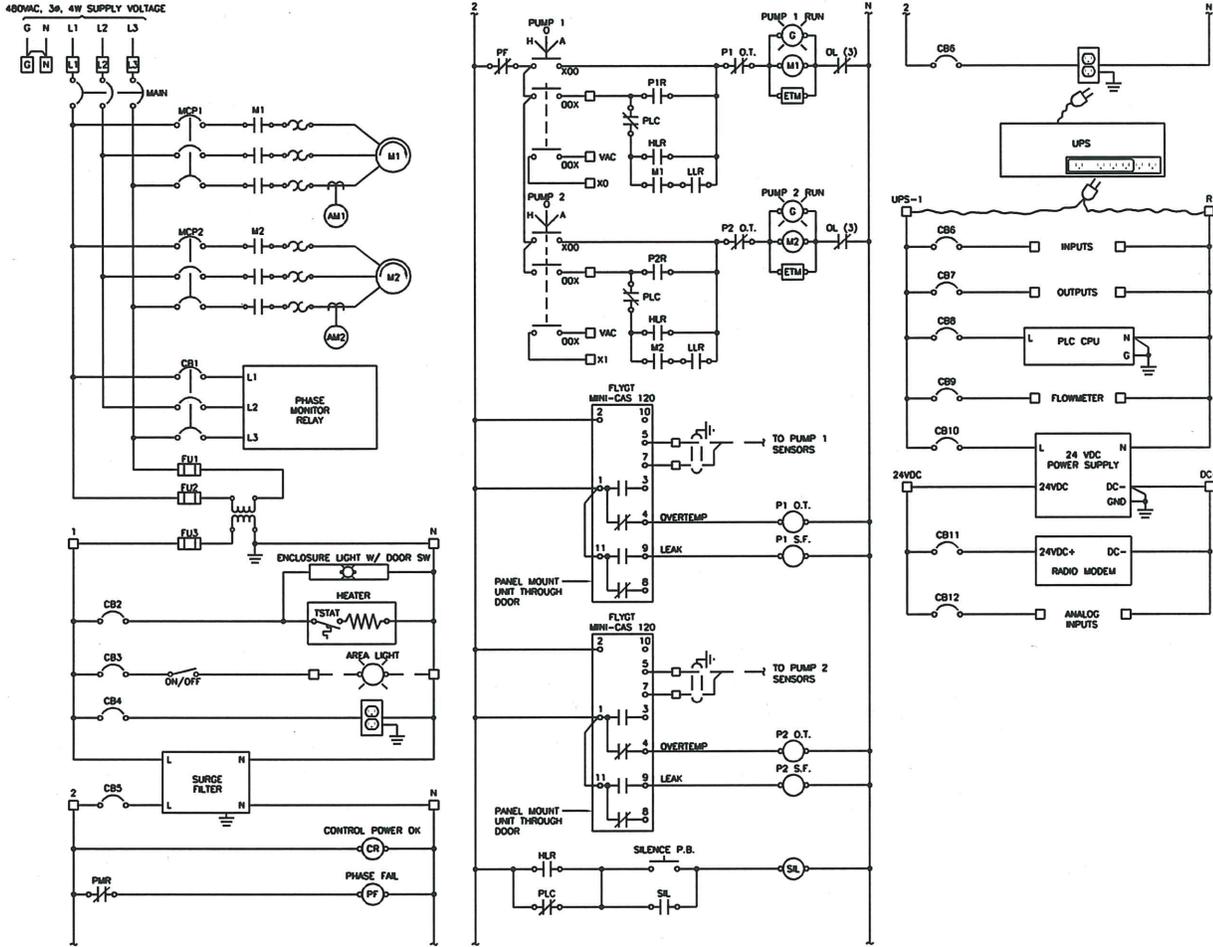
CITY OF BATTLE GROUND  
APPROVED

*John Adams* 3-28-07  
CITY ENGINEER DATE

REVISIONS:	DATE:	DRAWN:	DESIGNED:
1	3/28/07	JMH	MCH

SS-6.4

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# ELECTRICAL DETAILS 1

PLAN #



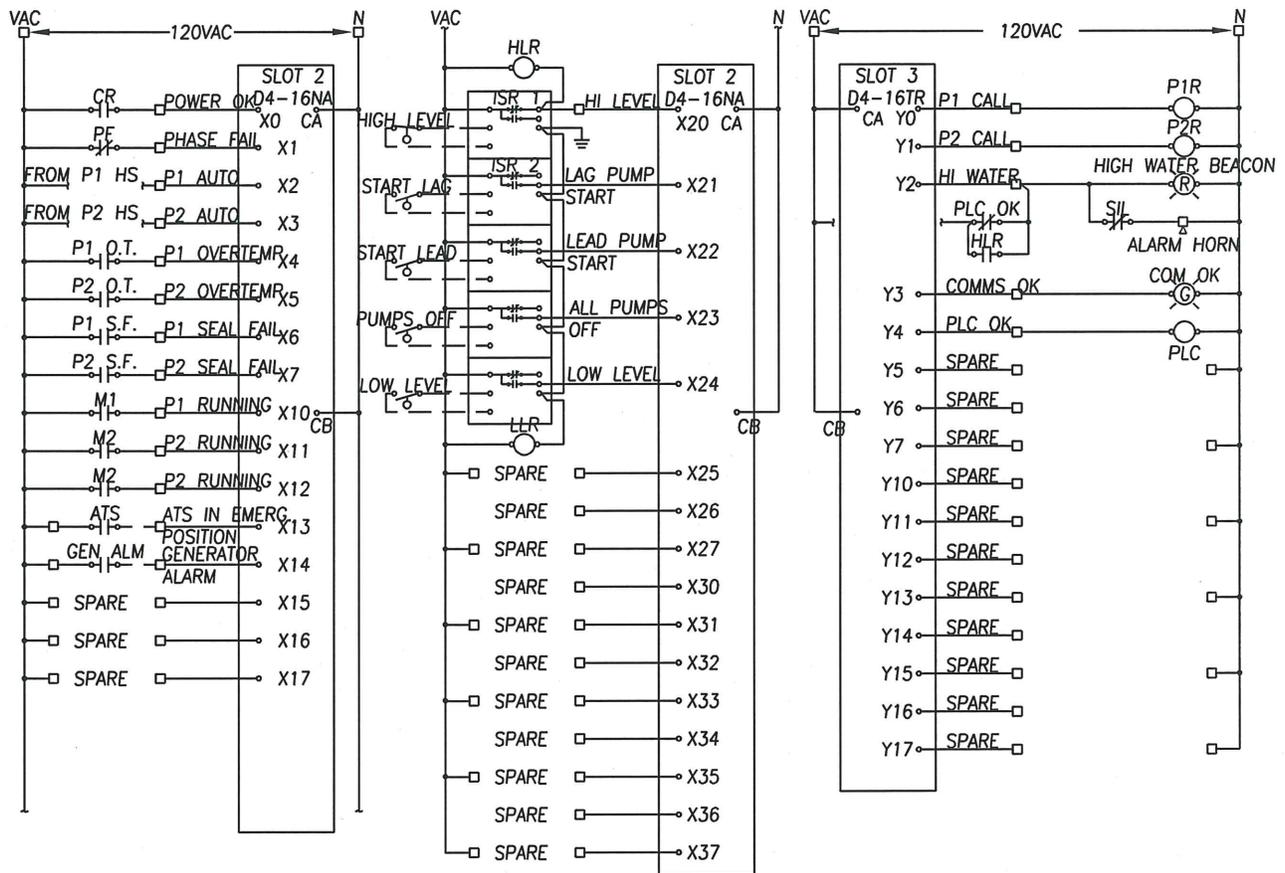
CITY OF BATTLE GROUND  
APPROVED

*John Adams* 3-28-07  
CITY ENGINEER DATE

REVISIONS:	DATE:	DRAWN:	DESIGNED:
1	3/28/07	JMH	MCH

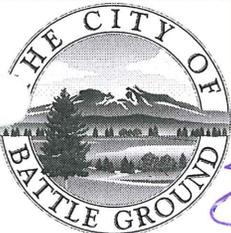
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## ELECTRICAL DETAILS 2

PLAN #



CITY OF BATTLE GROUND  
APPROVED

*Jim Adams* 3-28-07  
CITY ENGINEER DATE

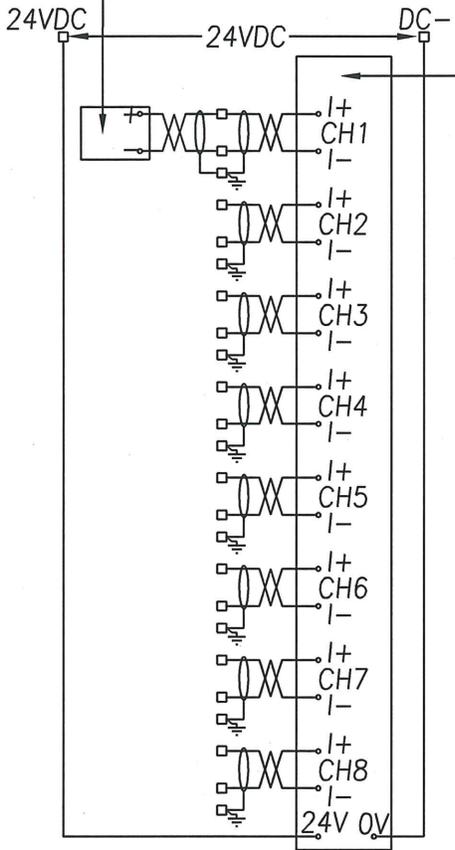
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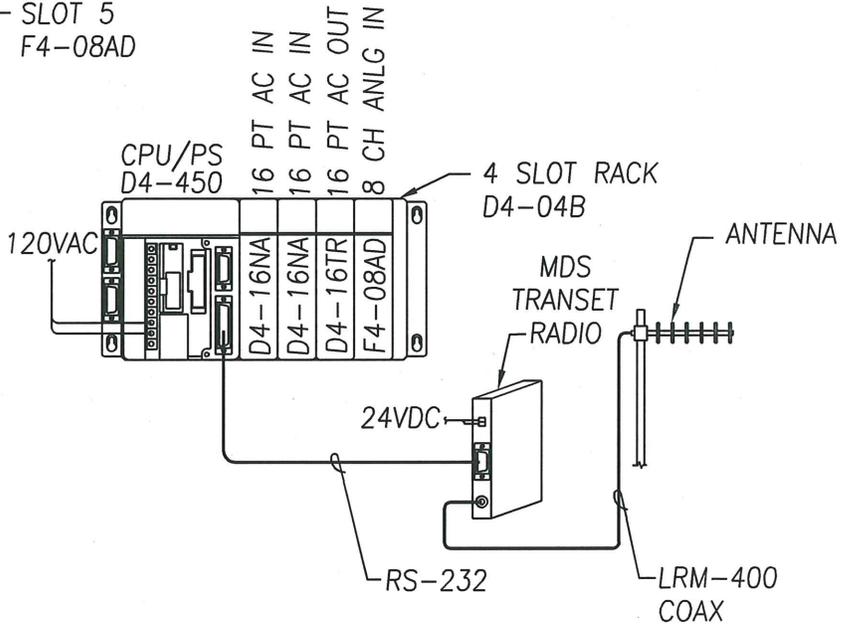
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ANTENNA STYLE  
(OMNI/DIRECTIONAL) AND  
PLACEMENT PER SITE  
REQUIREMENTS

FLOWMETER  
(4-20MA)



SLOT 5  
F4-08AD



ELECTRICAL DETAILS 3

PLAN #



CITY OF BATTLE GROUND  
APPROVED

*Sam Danner* 3-28-07  
CITY ENGINEER DATE

REVISIONS:	DATE:	DRAWN:	DESIGNED:
1	3/28/07	JMH	MCH

SS-6.7