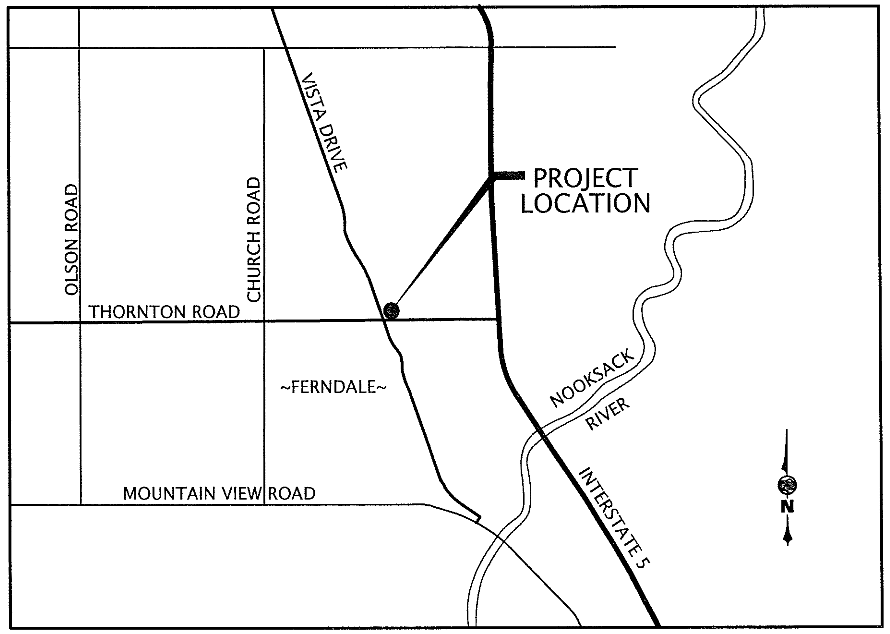
CITY OF FERNDALE, WA

RESERVOIR No. 1 OVERFLOW MODIFICATION

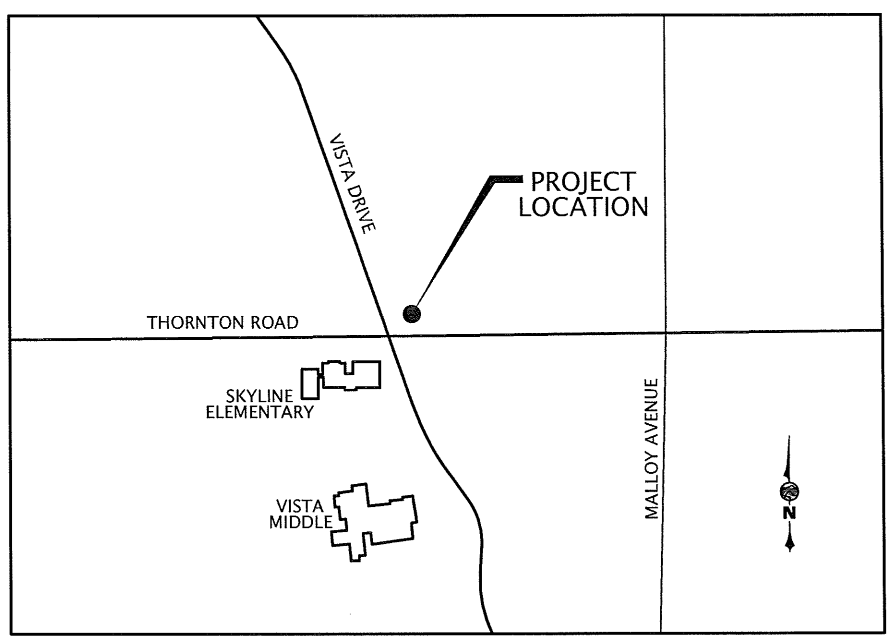
CITY PROJECT No. WA2015-05

NO.	REVISIONS	BY	DATE

AREA MAP - NOT TO SCALE



VICINITY MAP - NOT TO SCALE



INDEX TO DRAWINGS

DATUM NOTES

HORIZONTAL DATUM:	NAD83/91 PER THE CITY OF FERNDALE SURVEY MONUMENT NETWORK OF 2001
VERTICAL DATUM:	NGVD29 PER THE CITY OF FERNDALE SURVEY MONUMENT NETWORK OF 2001

CONTROL NOTES

1. BASIS OF COORDINATES: FOUND SURFACE MONUMENT "FERN05" BETWEEN THE STOP BAR AND THE CROSSWALK BAR AT EXIT DRIVEWAY FOR VISTA SCHOOL. THE FOLLOWING NAD83/91 COORDINATES WERE HELD FOR "FERN05":

   NORTHING = 683,701.32 USFT
   EASTING = 1,214,911.44 USFT
   ELEV. = 220.76'

2. BASIS OF BEARINGS: HELD DERIVED INVERSE BETWEEN THE ABOVE-MENTIONED CONTROL POINT "FERN05" AND "FERN06", A SURFACE MONUMENT BEHIND THE SIDEWALK IN THE GRASS AREA AT THE SOUTH EDGE OF PAVED DRIVEWAY INTO COAST CONSTRUCTION, SAID BEARING BEING N 66°07'58" E, A DISTANCE OF 4403.52'. THE FOLLOWING NAD83/91 COORDINATES WERE HELD FOR "FERN06":

   NORTHING = 685,483.06 USFT
   EASTING = 1,218,938.40 USFT
   ELEV. = 48.96'

3. BASIS OF ELEVATIONS: ELEVATIONS ARE NGVD29 PER THE CITY OF FERNDALE SURVEY MONUMENT NETWORK OF 2001. HELD PUBLISHED NGVD29 ELEVATION FOR "FERN05" OF

   ELEV. = *220.76'*

GENERAL NOTES

1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH CITY OF FERNDALE STANDARDS AND THE MOST CURRENT COPY OF THE STATE OF WASHINGTON STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION (WSDOT/APWA).
2. ALL APPROVALS AND PERMITS REQUIRED BY THE CITY OF FERNDALE SHALL BE OBTAINED PRIOR TO THE START OF CONSTRUCTION.
3. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE LOCATION AND PROTECTION OF ALL EXISTING UTILITIES. THE CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS PRIOR TO CONSTRUCTION BY CALLING THE UNDERGROUND LOCATE LINE AT 1-800-332-2344 A MINIMUM OF 2 BUSINESS DAYS PRIOR TO ANY EXCAVATION.
4. EROSION CONTROL MEASURES SHALL BE TAKEN BY THE CONTRACTOR DURING CONSTRUCTION TO PREVENT SILTATION TO EXISTING STORM DRAINAGE FACILITIES, ROADWAYS, AND ADJACENT PROPERTIES.
5. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO HAVE A COPY OF THESE APPROVED PLANS ON CONSTRUCTION SITE AT ALL TIMES.
6. ANY CHANGES TO THE DESIGN SHALL FIRST BE REVIEWED AND APPROVED BY THE PROJECT ENGINEER.
7. ALL LINES SHALL BE CLEANED AND PRESSURE TESTED PRIOR TO PAVING, IF APPLICABLE, IN CONFORMANCE WITH THE ABOVE REFERENCED SPECIFICATIONS. TESTING SHALL TAKE PLACE AFTER ALL UNDERGROUND UTILITIES ARE INSTALLED AND COMPACTION OF THE ROADWAY SUBGRADE IS COMPLETED.
8. PRIOR TO BACKFILL ALL MAINS AND APPURTENANCES SHALL BE INSPECTED AND APPROVED BY THE CITY OF FERNDALE OR REPRESENTATIVE CONSTRUCTION INSPECTOR. APPROVAL SHALL NOT RELIEVE THE CONTRACTOR FOR CORRECTION OF ANY DEFICIENCIES AND/OR FAILURES AS DETERMINED BY SUBSEQUENT TESTING AND INSPECTIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE INSPECTOR FOR THE REQUIRED INSPECTIONS.
9. ALL WORK AND MATERIALS SHALL BE GUARANTEED BY THE CONTRACTOR FOR ONE YEAR AFTER FINAL ACCEPTANCE.
10. THE LOCATIONS OF ALL EXISTING UTILITIES SHOWN ON THE PLANS ARE APPROXIMATE AND NOT ALL ARE SHOWN. THE CONTRACTOR IS RESPONSIBLE TO VERIFY AND PROTECT ALL UTILITIES.
11. ALL RESTORATION AND LANDSCAPING WITHIN PUBLIC OR PRIVATE PROPERTY SHALL OCCUR WITHIN THREE WEEKS OF DISTURBANCE. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO, ALL LAWNS, LANDSCAPING, FENCES, GRAVEL, ASPHALT AND CONCRETE.
12. THE CONTRACTOR SHALL KEEP A RECORD OF AS-BUILT INFORMATION THROUGHOUT THE ENTIRE PROJECT. THIS INFORMATION SHALL INCLUDE ALL DEVIATIONS FROM THE PLANS AND ANY OTHER INFORMATION NOT SHOWN ON THE PLANS.
13. THE CONTRACTOR SHALL REPLACE ALL MONUMENTS, RIGHT-OF-WAY MARKERS, PROPERTY STAKES, ETC. THAT ARE DISTURBED DURING CONSTRUCTION. THE CONTRACTOR SHALL USE A SURVEYOR REGISTERED IN THE STATE OF WASHINGTON TO COMPLETE ALL SURVEY WORK.

EROSION AND SEDIMENTATION CONTROL

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PREVENT POLLUTION AND EROSION IN ACCORDANCE WITH WSDOT SECTION 1.07.15. EROSION CONTROL BEST MANAGEMENT PRACTICES SHALL CONFORM TO THE CURRENT WASHINGTON DEPARTMENT OF ECOLOGY STORMWATER MANAGEMENT MANUAL.

EXISTING UTILITIES

1. CONTRACTOR IS ADVISED THAT UNDERGROUND WATER, SEWER, STORM, TELEPHONE, FIBER OPTIC, AND GAS MAY BE LOCATED IN THE VICINITY OF THIS PROJECT. NO ATTEMPT WAS MADE TO SHOW ALL UTILITIES ON THE PLAN. LOCATIONS SHOWN FOR EXISTING UTILITIES ARE APPROXIMATE. OTHER UTILITIES MAY EXIST WHICH ARE NOT SHOWN ON THE PLANS.
2. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE TRUE AND CORRECT LOCATIONS OF EXISTING UTILITIES THAT MAY IMPACT THE WORK. CONTRACTOR SHALL NOTIFY ENGINEER PRIOR TO COMMENCING CONSTRUCTION IF MARKED UTILITIES APPEAR TO CONFLICT WITH PROPOSED IMPROVEMENTS. THE COST OF LOCATING, PROTECTING AND ACCOMMODATING EXISTING UTILITIES SHALL BE INCIDENTAL TO THE COST OF THE PROJECT. IF AN ACTUAL CONFLICT REQUIRES RELOCATION OF AN EXISTING UTILITY OR THE REDESIGN OF THE PROPOSED IMPROVEMENT, THE ENGINEER WILL DETERMINE IF EXTRA PAY IS WARRANTED TO ACCOMMODATE THE CHANGED OR UNFORESEEN CONDITION. MINOR HORIZONTAL OR VERTICAL ADJUSTMENTS OF THE PROPOSED IMPROVEMENTS TO AVOID CONFLICTS SHALL NOT ENTITLE THE CONTRACTOR TO EXTRA PAY.

TRAFFIC CONTROL

1. CONTRACTOR IS NOT ALLOWED TO COMPLETELY CLOSE ANY STREET TO TRAFFIC. THE NUMBER OF OPEN LANES OF TRAFFIC TO BE MAINTAINED IN EACH AREA IS ONE LANE. TRAFFIC SHALL BE MAINTAINED ACCORDING TO WSDOT SECTION 1-07.23, AND THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

CITY OF FERNDALE WASHINGTON

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UTILITIES UNDERGROUND LOCATION CENTER

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BELLINGHAM, WA 98225
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www.wilsonengineering.com
Wilson SURVEY/ENGINEERING

CURTIS D. SCHOENFELDER, STATE OF WASHINGTON, 46420, REGISTERED PROFESSIONAL ENGINEER
8-8-2016

DESIGNED BY: CDS | DRAWN BY: JGS | CHECKED BY: AWL

CITY OF FERNDALE, WA
FERNDALE WASHINGTON
RESERVOIR No. 1 OVERFLOW MODIFICATION
COVER SHEET

DATE: 07-26-2016 | SCALE: AS SHOWN | JOB NUMBER: 2015-087

SHEET: C0.1 | PAGE: 1 OF 7

LEGEND & ABBREVIATIONS– SIZE & SCALE MAY VARY

EXISTING HATCH PATTERNS — DESCRIPTION
- EXIST. CONCRETE
- EXIST. BUILDING
- EXIST. EARTH
- EXIST. GRAVEL
- EXIST. SAND

PROPOSED HATCH PATTERNS — DESCRIPTION
- PROP. CONCRETE
- PROP. TOP COURSE GRAVEL
- PROP. GRAVEL
- PROP. SAND
- PROP. QUARRY SPALLS

SURFACE FEATURES EXISTING PLAN LINETYPES — DESCRIPTION
- BRIDGE
- BUILDING LINE
- BUILDING COLUMN
- BUILDING OVERHANG
- BULKHEAD
- CONCRETE EDGE
- CREEK EDGE
- CROWN OF ROAD
- CURB
- DITCH CENTERLINE
- DECK
- DOCK
- EDGE OF SAWCUT
- EDGE OF PAVEMENT
- FENCE (—X—)
- GATE
- GRADE
- GRAVEL
- GUARDRAIL
- JERSEY BARRIER
- LAKE/POND WATER EDGE
- LIP OF CURB
- MISC SURFACE FEATURE
- MISC TRAFFIC
- PLANTER
- PATH
- RAILROAD
- RAMP (WOOD)
- HANDRAIL
- RETAINING WALL
- ROAD STRIPING
- ROCKERY
- RIVERBANK/SHORELINE
- THALWAG LINE (THW)
- TOP OF BANK/SLOPE
- TOE OF BANK/SLOPE
- VEGETATION/SHRUB LINE
- WETLAND/SWAMP PERIMETER
- WETLAND BUFFER

SURFACE FEATURES PROPOSED PLAN LINETYPES — DESCRIPTION
- BRIDGE
- BUILDING LINE
- CONCRETE
- CURB
- DITCH CENTERLINE
- EDGE OF BIKE LANE
- EDGE OF PAVEMENT
- FENCE (—X—)
- GATE
- GRAVEL
- GUARDRAIL
- JERSEY BARRIER
- LIP OF CURB
- REBAR
- RETAINING WALL
- ROCKERY
- ROAD STRIPING
- HANDRAIL

UTILITIES EXISTING PLAN LINETYPES — DESCRIPTION
- TV — CABLE TELEVISION (AERIAL)
- TV — CABLE TELEVISION (BURIED)
- C — SURVEILLANCE CAMERA (BURIED)
- FO — FIBER OPTIC LINE (AERIAL)
- FO — FIBER OPTIC LINE (BURIED)
- OHT — TELEPHONE (AERIAL)
- T — TELEPHONE (BURIED)
- SC — TRAFFIC SIGNAL CONDUIT LINE
- OHP — POWER (AERIAL)
- P — POWER (BURIED)
- UT — UTILITY (AERIAL)
- UT — UTILITY (BURIED)
- PDB — POWER DUCT BANK (BURIED)
- DF — DRAIN FIELD
- S — SANITARY SEWER
- S — APPROXIMATE SEWER LINE
- FM — SANITARY SEWER (FORCE MAIN)
- SD — STORM DRAINAGE
- D — APPROXIMATE DRAIN LINE
- CULVERT (⊕ WIDTH)
- CULVERT
- RW — RECLAIMED WATER
- WATER (PER AS-BUILT, APPROXIMATE)
- W — WATER (PER UTILITY LOCATES)
- W — APPROXIMATE WATER LINE
- 8W — 8" WATER
- STE — STEAM
- G — GAS
- GAS TANK/STRUCTURE
- O — OIL
- AIR — AIR LINE
- BURIED UTILITY APPROX. EXTENTS
- MISC UTILITY (BURIED)

PROPOSED PLAN UTILITY LINETYPES — DESCRIPTION

WATER
- W — WATER
- 8W — 8" WATER
- IRR — IRRIGATION
- RW — RECLAIMED WATER
- PW — POTABLE WATER
- WATER STRUCTURE
- FDC — FIRE DEPARTMENT CONNECTION
- FP — FIRE PROTECTION LINE

SANITARY SEWER
- S — SEWER
- 8S — 8" SEWER
- FM — FORCE MAIN
- DF — DRAIN FIELD
- SEWER STRUCTURE

STORM DRAIN
- D — STORM DRAIN – SUBJECT PIPE
- STORM DRAIN – OTHER PIPE
- FD — FOOTING DRAIN
- STORM STRUCTURE

MISC. UTILITIES
- G — GAS
- P — POWER
- T — TELEPHONE/COMMUNICATIONS

GRADING
- GB — GRADE BREAK
- or — SLOPE ARROWS

EROSION CONTROL — DESCRIPTION
- TSD — EROSION TRIANGULAR SILT DIKE
- CB — EROSION CONTROL COMPOST BERM
- EROSION CONTROL MINOR CONTOUR
- 100 — EROSION CONTROL MAJOR CONTOUR
- OB — ORANGE BARRIER FENCE
- SF — SILT FENCE
- SW — STRAW WATTLE
- EROSION CONTROL FLOWLINE
- SB — STRAW BALE
- IP — INLET PROTECTION
- CD — CHECK DAM

SURVEY PLAN LINETYPES — DESCRIPTION
- CENTERLINE (EXISTING)
- CENTERLINE (CONSTRUCTION)
- CENTERLINE (PROPOSED)
- CONTOUR (EXISTING MINOR)
- 100 — CONTOUR (EXISTING INDEX)
- 100 — HYDRO CONTOUR (EXISTING INDEX)
- CONTOUR (PROPOSED INDEX)
- CONTOUR (PROPOSED MINOR)
- CAT — CATCHLINE
- Cut — CUT LINE
- DONATION LAND CLAIM (EXIST.)
- EASEMENT (PROPOSED)
- EASEMENT (EXISTING)
- Fill — FILL LINE
- MEANDER LINE
- OHW — ORDINARY HIGH WATER LINE
- MLW — MEAN LOW LEVEL WATER LINE
- OWNERSHIP LINE
- PROPERTY LINE (RECORD OR ADJACENT)
- PROPERTY LINE
- QUARTER SECTION LINE
- RANGE/TOWNSHIP LINE
- RESERVATION/PARK/FOREST (EX)
- (RIGHT OF WAY & CONSTRUCTION PLANS) — RIGHT-OF-WAY ℄ (EXISTING)
- (RIGHT OF WAY & CONSTRUCTION PLANS) — RIGHT-OF-WAY (EXISTING)
- (RIGHT OF WAY PLANS) — RIGHT-OF-WAY (EXISTING USED)
- (RIGHT OF WAY PLANS) — RIGHT-OF-WAY (PROPOSED)
- (RIGHT OF WAY PLANS) — RIGHT-OF-WAY (EX. RECORD (RECORD OR ADJACENT)
- RIGHT-OF-WAY (LIMITED ACCESS)
- RIGHT-OF-WAY (LIMITED ACCESS)
- SECTION LINE
- SETBACK LINE (EXISTING)
- SIXTEENTH SECTION LINE
- STATE/COUNTY/CORPORATE LIMIT
- VACATED RIGHT-OF-WAY
- EASEMENT (RECORD)
- RIGHT-OF-WAY CENTER (RECORD)
- DONATION LAND CLAIM (RECORD)
- MEANDER LINE (RECORD)
- PARK LINE (RECORD)
- SECTION LINE (RECORD)
- QUARTER SECTION LINE (RECORD)
- SIXTEENTH SECTION LINE (RECORD)
- STATE LINE (RECORD)
- RANGE LINE (RECORD)

PROFILE LINETYPES — DESCRIPTION
- PROFILE EX. GRND ℄
- PROFILE FINISH GRND ℄
- PROFILE GRID
- PROFILE VERTICAL GRID
- PROFILE EX. GROUND LEFT
- PROFILE EXISTING GROUND RIGHT
- FIBER OPTIC PROFILE (EXISTING)
- GAS PROFILE (EXISTING)
- POWER PROFILE (EXISTING)
- RAILROAD PROFILE (EXISTING)
- SANITARY PROFILE (EXISTING)
- SANITARY PROFILE (PROPOSED)
- STORM PROFILE (EXISTING)
- TELEPHONE PROFILE (EXISTING)
- STORM PROFILE (PROPOSED)
- TV PROFILE (EXISTING)
- UTILITY PROFILE (EXISTING)
- WATER PROFILE (EXISTING)
- WATER PROFILE (PROPOSED)

DEMOLITION — DESCRIPTION
- SURFACE FEATURE OR UTILITY TO BE REMOVED
- SAWCUT
- CLR — CLEARING LIMIT
- TREE OR BUSH TO BE REMOVED

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BID DOCUMENTS

MISC. SYMBOLS — EXISTING / PROPOSED / DESCRIPTION
- SOIL BORING
- MONITORING WELL
- TEST WELL
- TEST PIT
- EMBANKMENT
- MAIL BOX
- SIGN
- RIP RAP
- BOULDER
- SHRUB
- TREE (Conifer)*
- TREE (Deciduous)*
- STUMP–PLAN VIEW
- YARD LIGHT
- WELL
- PILE
- ROCKERY
- WHEEL STOP
- SPLASH BLOCK
- GAS METER
- GAS VALVE
- PAD MOUNTED TRANSFORMER
- POWER VAULT
- TRANSMISSION TOWER
- POWER METER
- GUY POLE
- UTILITY POLE
- UTILITY POLE ANCHOR
- TELE RISER
- CABLE RISER
- FIBER OPTIC RISER
- FIBER OPTIC MANHOLE
- TELEPHONE MANHOLE
- TELEPHONE VAULT
- STEAM MANHOLE
- PARKING METER
- POST

SANITARY SEWER SYMBOLS — EXISTING / PROPOSED / DESCRIPTION
- SAN. SEWER CLEAN OUT
- SAN. SEWER MANHOLE

STORM DRAIN SYMBOLS — EXISTING / PROPOSED / DESCRIPTION
- STORM DRAIN CB TYPE 1
- STORM DRAIN CB TYPE 2
- STORM DRAIN CB TYPE 2 W/CB LID
- STORM DRAIN WITH OVERFLOW GRATE
- STORM DRAIN CLEAN-OUT
- STORM DOWNSPOUTS

SECTION/DETAIL CALL-OUTS

SECTION CALL OUTS: (A) REPRESENTS THE SECTION LABEL, (B) INDICATES THE SHEET ON WHICH THE SECTION APPEARS, AND (C) INDICATES THE SHEET ON WHICH THE SECTION IS CALLED OUT.

DETAIL CALL OUTS: (A) REPRESENTS THE DETAIL LABEL, (B) INDICATES THE SHEET ON WHICH THE DETAIL APPEARS, AND (C) INDICATES THE SHEET ON WHICH THE DETAIL IS CALLED OUT.

WATER SYMBOLS — EXISTING / PROPOSED / DESCRIPTION
- ARV VALVE
- GLOBE VALVE, FL
- BALL CHECK VALVE, FL
- BLOW-OFF VALVE
- SWING CHECK VALVE, FL
- BUTTERFLY VALVE, FL
- HOSE BIB/SPIGOT
- DOUBLE LEAF CHECK VALVE
- PLUG VALVE
- BALL VALVE
- FLOAT VALVE
- PINCH VALVE
- PRESSURE & VACUUM RELIEF VALVE
- VACUUM RELIEF VALVE
- PRESSURE RELIEF VALVE
- PRESSURE REGULATING VALVE (SELF CONTAINED)
- BACK PRESSURE REGULATING VALVE (SELF CONTAINED)
- IN-LINE SPRING LOADED RELIEF VALVE
- CAP/PLUG
- GUARD POST
- THRUST BLOCK
- WATER METER
- FIRE DEPARTMENT CONNECTION
- WATER VALVE
- FIRE HYDRANT
- WATER MANHOLE
- POST INDICATOR VALVE
- 11-1/4 BEND, MJ-FL
- 22-1/2 BEND, MJ-FL
- 45 BEND, MJ-FL
- 90 BEND, MJ-FL
- FLXMJ ADAPTER
- COUPLER
- BLIND FLANGE
- GATE VALVE, FLxMJ
- GATE VALVE, MJ
- REDUCER, MJxFL
- REDUCER, MJ
- TEE, FL
- TEE, MJ
- TEE, MJxFL
- TEE, FLxMJ
- CROSS, FL
- CROSS, MJ

SURVEY SYMBOLS
- BRASS SURFACE MONUMENT
- NAIL IN CONCRETE

SYMBOLS
- ° =DEGREES
- ± =PLUS/MINUS
- Ø =DIAMETER
- Δ =DELTA
- ℄ =CENTERLINE
- =FLOWLINE
- ℙ =PROPERTY LINE

SPOT ELEVATIONS
190.00① TBC②

①= ELEVATION
②= DESCRIPTION– SEE DEFINED ABBREVIATIONS ABOVE

DIRECTIONAL ABBREVIATIONS
- N =NORTH
- NE =NORTHEAST
- E =EAST
- SE =SOUTHEAST
- S =SOUTH
- SW =SOUTHWEST
- W =WEST
- NW =NORTHWEST

ABBREVIATIONS
- AB =AS-BUILT (RECORD)
- AL =ALIGNMENT
- ANC =UTILITY POLE ANCHOR
- APPROX =APPROXIMATE
- ASPH or AC =ASPHALT
- ASS'Y =ASSEMBLY
- ASTM =AMERICAN SOCIETY FOR TESTING & MATERIALS
- BLDG =BUILDING
- BMP =BEST MANAGEMENT PRACTICE
- BVCS =BEGIN VERTICAL CURVE STATION
- BVCE =BEGIN VERTICAL CURVE ELEVATION
- CB =CATCH BASIN
- CK =CHECK VALVE
- C/L, ℄ =CENTERLINE
- CESCL =CERTIFIED EROSION SEDIMENT CONTROL LEAD
- COL =COLUMN
- CMP =CORRUGATED METAL PIPE
- C.O. =CLEAN OUT
- CONC, C =CONCRETE
- COR =CORNER
- CPP =CORRUGATED POLYETHYLENE PIPE
- CSTC =CRUSHED SURFACING TOP COURSE
- DCVA =DOUBLE CHECK VALVE ASSEMBLY
- DF =DRAIN FIELD
- DI =DUCTILE IRON
- DO =DISSOLVED OXYGEN
- DR =DIAMETER RATIO
- DS =DOWNSPOUT
- EB =EXPLORATION BORING
- EFFL =EFFLUENT
- EG =EXISTING GRADE
- ELEV, EL =ELEVATION
- EOG =EDGE OF GRAVEL
- EOP =EDGE OF PAVEMENT
- EP =EXPLORATION PIT
- EXIST, EX =EXISTING
- EVCS =END VERTICAL CURVE STATION
- EVCE =END VERTICAL CURVE ELEVATION
- FDC =FIRE DEPARTMENT CONNECTION
- FF =FINISH FLOOR
- FG =FINISH GRADE
- FL =FLOWLINE OR FLANGE (CONNECTION)
- Ⓕ =FLOWLINE
- FLC =FLOWLINE OF CURB
- FNC =FENCE
- GB =GRADE BREAK
- GMET =GAS METER
- GP =GUY POLE
- GPM =GALLONS PER MINUTE
- GRVL, G =GRAVEL
- GUTT =GUTTER
- GV =GATE VALVE
- HB =HOSE BIB
- HDG =HOT-DIP GALVANIZED
- HDPE =HIGH DENSITY POLYETHYLENE
- H:V =HORIZONTAL:VERTICAL
- HWL =HIGH WATER LEVEL
- HYD =HYDRANT
- IE =INVERT ELEVATION
- INV =INVERT
- LF =LINEAR FEET
- LUM =LUMINAIRE
- LT =LEFT
- MAX =MAXIMUM
- MB =MAIL BOX
- MBR =MEMBRANE BIO-REACTOR
- MC =MAINTENANCE CLEANING
- MFEM =MEMBRANE FILTRATION EQUIPMENT MANUFACTURER
- MFR =MANUFACTURER
- MH =MANHOLE
- MIN =MINIMUM
- MISC =MISCELLANEOUS
- MJ =MECHANICAL JOINT
- MLSS =MIXED LIQUOR SUSPENDED SOLIDS
- MW =MONITORING WELL
- NPDES =NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
- O.C. =ON CENTER
- O.C.E.W =ON CENTER EACH WAY
- OD =OUTSIDE DIAMETER
- OHP =OVERHEAD POWER
- OHT =OVERHEAD TELEPHONE
- OSHA =OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
- PC =POINT OF CURVATURE
- PCC =POINT OF CONTINUING CURVATURE
- PIV =POST INDICATOR VALVE
- P/L, ℙ =PROPERTY LINE
- PLC =PROGRAMMABLE LOGIC CONTROLLER
- PLTR =PLANTER
- POL =POINT ON LINE
- PROP =PROPOSED
- PS =PUMP STATION
- PSI =POUNDS PER SQUARE INCH
- PT =POINT OF TANGENCY
- PVC =POLYVINYL CHLORIDE
- PVI =POINT OF VERTICAL INTERSECTION
- PW =POTABLE WATER
- R =RADIUS
- RCK =ROCK/BOULDER
- RET =RETAINING
- REC =RECORD
- REQ'D =REQUIRED
- RI =RAPID INFILTRATION
- RPBA =REUSE PRESSURE BACKFLOW ASSEMBLY
- RR =RAILROAD
- RT =RIGHT
- R/W or ROW =RIGHT-OF-WAY
- RW =REUSE WATER
- SCADA =SUPERVISORY CONTROL AND DATA ACQUISITION
- SCH =SCHEDULE
- SDCB =STORM DRAIN CATCH BASIN
- SD =STORM DRAIN
- SDMH =STORM DRAIN MANHOLE
- SFH =SINGLE FAMILY HOUSING
- SH =SHRUB/BUSH
- SN =SIGN
- SPD =STANDARD PROCTOR DENSITY
- SPK =SPIKE
- SS =SANITARY SEWER
- SSCO =SANITARY SEWER CLEAN-OUT
- SSMH =SANITARY SEWER MANHOLE
- STA =STATION
- STEP =SEPTIC TANK EFFLUENT PUMP
- S/W =SIDEWALK
- TBC =TOP BACK OF CURB
- TBD =TO BE DETERMINED
- TBM =TEMPORARY BENCH MARK
- T.O.W. =TOP OF WALL
- TYP =TYPICAL
- UP =UTILITY POLE
- VAC =VACATED
- VC =VERTICAL CURVE
- VCI =VOLATILE CORROSION INHIBITOR
- VEG =VEGETATION
- VFD =VARIABLE FREQUENCY DRIVE
- WAS =WASTE ACTIVATED SLUDGE
- WL =WATERLINE
- WM =WATER METER
- WS =WATER SURFACE
- WSDOT =WASHINGTON STATE DEPARTMENT OF TRANSPORTATION
- WV =WATER VALVE
- WWTP =WASTE WATER TREATMENT PLANT
- YD =YARD DRAIN
- YL =YARD LIGHT

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CURTIS D. SCHOENFELDER, STATE OF WASHINGTON, REGISTERED PROFESSIONAL ENGINEER 8-8-2016

DESIGNED BY	DRAWN BY	CHECKED BY
CDS	JGS	AWL

CITY OF FERNDALE, WA — FERNDALE, WASHINGTON

RESERVOIR No. 1 OVERFLOW MODIFICATION
LEGEND & ABBREVIATIONS

DATE	SCALE	JOB NUMBER
07-26-2016	AS SHOWN	2015-087

SHEET C0.2

SURVEYOR'S CERTIFICATE

I HEREBY CERTIFY THAT I AM A LICENSED LAND SURVEYOR IN THE STATE OF WASHINGTON, THAT THIS MAP IS BASED ON AN ACTUAL FIELD SURVEY DONE BY ME OR UNDER MY DIRECT SUPERVISION AND THAT ALL DATA SHOWN HEREON ACTUALLY EXISTS IN THE LOCATIONS SHOWN AT THE TIME OF THIS SURVEY. THIS TOPOGRAPHIC MAP WAS DONE AT THE REQUEST OF THE CITY OF FERNDALE IN OCTOBER OF 2015.

J. THOMAS BREWSTER, P.L.S. NO. 44335 DATE 8-8-2016

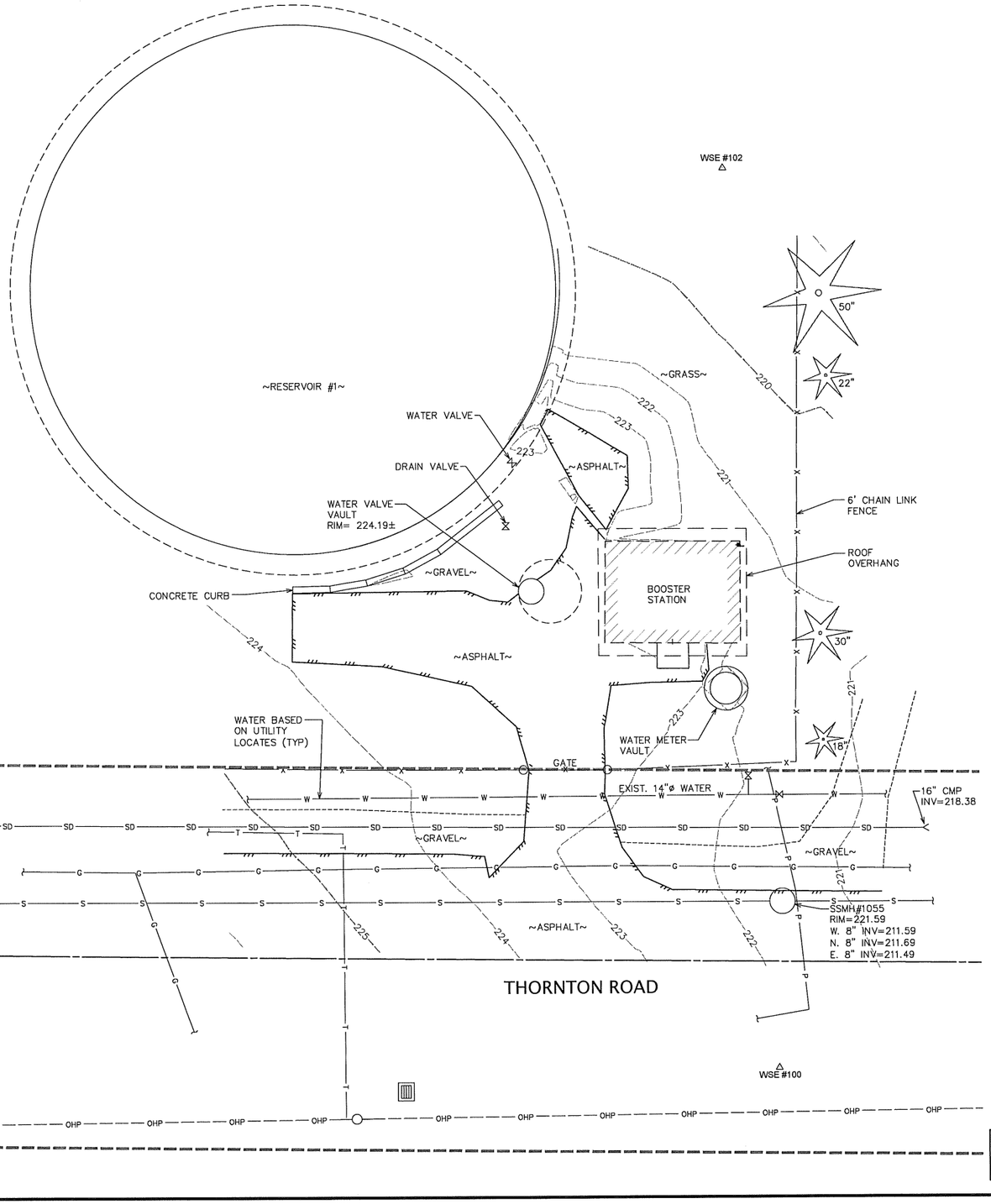
J. THOMAS BREWSTER — 44335 — REGISTERED PROFESSIONAL LAND SURVEYOR — 8-8-16

SURVEY CONTROL (NAD83/91, NGVD29)

POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
100	684425.13	1214892.38	221.64	BERNTSEN SPIKE
101	684440.40	1215016.45	214.22	5/8" REBAR
102	684566.42	1214884.59	219.55	1/2" REBAR AND RED CAP
103	684443.87	1214686.36	230.96	BRASS SURFACE MONUMENT

SITE CONTROL (NAD83/91, NGVD29)

1. THE SURVEY DEPICTED HEREON IS INTENDED TO BE USED FOR THE PURPOSE OF WATER FACILITY PLANNING AND DESIGN. ALTHOUGH THERE IS A BOUNDARY COMPONENT TO THIS SURVEY, NO MONUMENTS WERE SET DURING THE COURSE OF THIS SURVEY PURPORTING TO REPRESENT THE BOUNDARIES HEREON SHOWN. THIS TOPOGRAPHIC SURVEY WAS PREPARED TO SUPPORT WATER LINE DESIGN CONSIDERATIONS, AND SHOULD NOT BE CONSTRUED TO REPRESENT A COMPLETE BOUNDARY AND TOPOGRAPHIC MAP OF THE SUBJECT SITE.
2. CONTROL AND TOPOGRAPHY FOR THIS SURVEY WAS PERFORMED IN OCTOBER, 2015 USING A COMBINATION OF NETWORKED REAL-TIME KINEMATIC GPS AND CONVENTIONAL TECHNIQUES.
3. LOCATIONS OF UNDERGROUND UTILITIES DEPICTED HEREON ARE ACCORDING TO SURFACE MARKS PROVIDED BY OTHERS, AND WILSON CAN NOT AND WILL NOT GUARANTEE THE CORRESPONDENCE BETWEEN THE MARKS AND THE EXTANT UTILITIES. UTILITIES MAY EXIST THAT WERE NOT MARKED AT THE TIME OF THIS SURVEY.
4. THIS SURVEY WAS PERFORMED WITHOUT THE BENEFIT OF A CURRENT TITLE REPORT, AND THE EXISTENCE OF EASEMENTS OF RECORD THAT MAY AFFECT THE PROPERTY'S USE WAS NOT INVESTIGATED IN THE COURSE OF THIS SURVEY.



N

10 0 10 20
SCALE HORIZONTAL SCALE FEET

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Wilson SURVEY/ENGINEERING

J. CREDENDER — 51503 — REGISTERED PROFESSIONAL ENGINEER — 8-8-2016

DESIGNED BY CDS | DRAWN BY JCS | CHECKED BY AWL

CITY OF FERNDALE, WA
FERNDALE WASHINGTON
RESERVOIR No. 1 OVERFLOW MODIFICATION
EXISTING CONDITIONS

DATE 07-26-2016 | SCALE AS SHOWN | JOB NUMBER 2015-087

SHEET C1.1 | PAGE 3 OF 7

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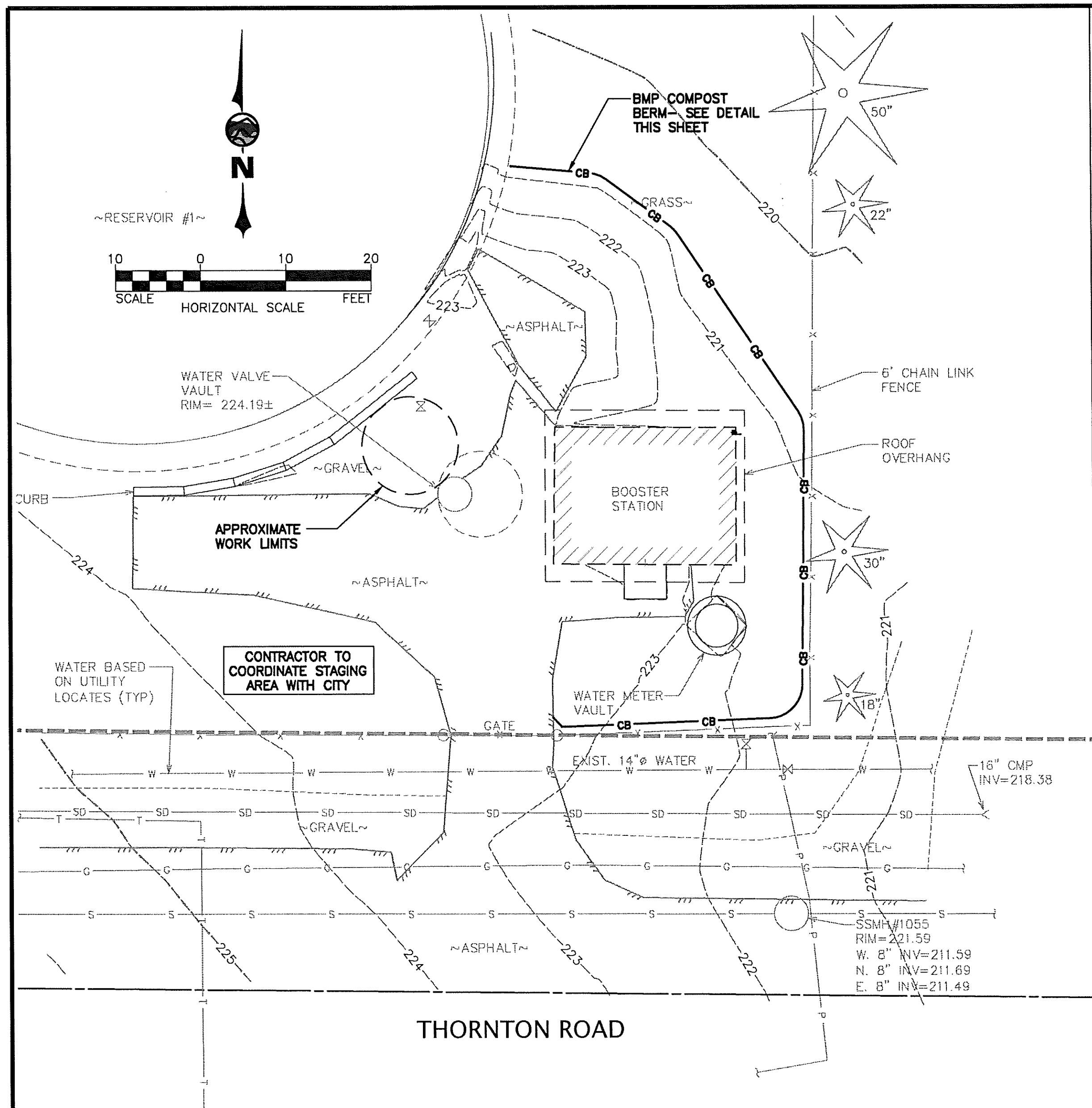

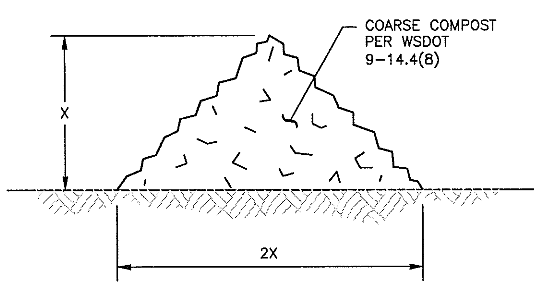

X = 1.0' FOR SLOPES 4H:1V OR FLATTER
X = 1.5' FOR SLOPES STEEPER THAN 4H:1V

1 COMPOST BERM
NOT TO SCALE

TESC PLAN

NARRATIVE

EROSION AND SEDIMENT CONTROL BMPS: ANTICIPATED BMPS THAT WILL BE UTILIZED INCLUDE: MINIMIZING VEGETATION REMOVAL, TEMPORARY COVER MEASURES, PERMANENT SEEDING & PLANTING, SURFACE ROUGHING, AND COMPOST BERM INSTALLATION. OTHER BMPS MAY BE UTILIZED TO MINIMIZE EROSION AND SEDIMENT TRANSPORT AS CONSTRUCTION SCHEDULES AND WEATHER CONDITIONS DICTATE.

TEMPORARY STABILIZATION: ALL DISTURBED AREAS SHALL BE STABILIZED IF IN THE EVENT OF RAIN. ALL DISTURBED AREAS SHALL BE STABILIZED IF UNWORKED FOR SEVEN DAYS.

PERMANENT STABILIZATION: ALL DISTURBED AREAS OUTSIDE OF ROADWAY SHOULDERS AND PARKING AREAS WILL BE PERMANENTLY LANDSCAPED OR SEEDED AND RESTORED TO THEIR EXISTING CONDITIONS.

CONVEYANCE BYPASS: PROVISION FOR BYPASS OF STORMWATER CONVEYANCE SHALL BE PROVIDED IF NECESSARY. BYPASS SHALL BE INSTALLED FOR THE DURATION OF THE WORK. MATERIALS FOR BYPASS NEED NOT BE INSTALLED WHILE WORK IS IN PROGRESS AT A PARTICULAR LOCATION, BUT MATERIALS AND EQUIPMENT FOR IMMEDIATE INSTALLATION SHALL BE ON HAND. BYPASS SHALL BE IN PLACE WHILE SITE IS UNATTENDED FOR GREATER THAN 12 HOURS. A TRENCH MAY BE DUG FOR THE BYPASS PRIOR TO INSTALLATION OF BYPASS IF NECESSARY AND FEASIBLE. ANY PIPING USED FOR BYPASS SHALL BE OF A DIAMETER AT LEAST ⅔ OF THE EXISTING PIPE/CULVERT DIAMETER.

MAINTENANCE: THE BMPS SHALL BE INSPECTED AS NEEDED (MINIMUM OF ONCE EVERY THREE DAYS) AND DURING/AFTER RAINFALL EVENTS. THE BMPS WILL BE MAINTAINED UNTIL THE RISK OF EROSION HAS PASSED AND THE AREA IS PERMANENTLY STABILIZED.

PROJECT WIDE BMPS

THE FOLLOWING BMPS SHALL BE IMPLEMENTED THROUGHOUT THE ENTIRE PROJECT TO THE MAXIMUM EXTENT POSSIBLE:

BMP C101 PRESERVING NATURAL VEGETATION. CONTRACTOR SHALL CLEAR AND DISTURB ONLY AREAS REQUIRED TO CONSTRUCT IMPROVEMENTS AND SHALL DILIGENTLY MINIMIZE DISTURBED AREA.

BMP C102 BUFFER ZONES. CONTRACTOR SHALL MARK CLEARING LIMITS AND KEEP ALL EQUIPMENT AND CONSTRUCTION DEBRIS OUT OF NATURAL AREAS.

BMP C120 PERMANENT SEEDING & PLANTING. CONTRACTOR SHALL COMPLETE REQUIRED LANDSCAPING AS RAPIDLY AS POSSIBLE. ALL OTHER DISTURBED AREAS OUTSIDE OF PAVED AREAS SHALL BE HYDROSEEDED AS RAPIDLY AS POSSIBLE WITH SUITABLE SEED-MULCH-FERTILIZER MIX FOR LOCAL CLIMATE.

BMP C121 MULCHING . CONTRACTOR SHALL MULCH ALL LANDSCAPED AREAS AS RAPIDLY AS POSSIBLE.

BMP C130 SURFACE ROUGHENING. CONTRACTOR SHALL ROUGHEN DISTURBED AREAS PRIOR TO PERMANENT SEEDING AND PLANTING.

BMP C140 DUST CONTROL. CONTRACTOR SHALL KEEP DUST FROM CONSTRUCTION ACTIVITIES AND EXPOSED SOILS TO A MINIMUM.

BMP C160 CERTIFIED EROSION CONTROL LEAD (MUST BE EMPLOYED BY GENERAL CONTRACTOR AND ON SITE DURING CONSTRUCTION.)

AREA SPECIFIC BMPs

THE FOLLOWING BMPs SHALL BE USED IN LOCATIONS IDENTIFIED ON THE SITE PLAN:

COMPOST BERM. CONTRACTOR SHALL INSTALL COMPOST BERM AT LOCATIONS NOTED ON PLANS.

GENERAL NOTES

1. BMPS: BEST MANAGEMENT PRACTICES (BMPS) REFERRED TO ON THIS PLAN AND IN THESE NOTES SHALL BE CONSTRUCTED AND MAINTAINED AS DESCRIBED IN DEPARTMENT OF ECOLOGY'S STORMWATER MANAGEMENT MANUAL FOR THE PUGET SOUND BASIN, CHAPTER II-5, "STANDARDS AND SPECIFICATIONS FOR BEST MANAGEMENT PRACTICES FOR EROSION AND SEDIMENT CONTROL."
2. EXTENT: THE EXTENT OF EROSION AND SEDIMENTATION CONTROL MEASURES IS DEPENDENT ON WEATHER CONDITIONS, SITE SLOPES, LENGTH OF TIME GROUND IS LEFT EXPOSED, AND THE AREA OF EXPOSED GROUND. THE CONTRACTOR SHALL AT ALL TIMES MINIMIZE THE RISK OF SITE EROSION BY CAREFUL SCHEDULING AND BY IMPLEMENTING AND MAINTAINING BMPS UNTIL THE SITE IS PERMANENTLY STABILIZED.
3. UNWORKED SOILS: ALL EXPOSED AND UNWORKED SOILS SHALL BE STABILIZED BY SUITABLE AND TIMELY APPLICATION OF BMPS.
4. VEGETATION: EXISTING VEGETATION SHALL BE PRESERVED WHERE ATTAINABLE.
5. SLOPES: CUT AND FILL SLOPES SHALL BE CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION. SLOPES SHALL BE STABILIZED AS SOON AS POSSIBLE.
6. OUTLETS: STABILIZATION ADEQUATE TO PREVENT EROSION OF OUTLETS AND ADJACENT STREAM BANKS SHALL BE PROVIDED AT THE OUTLETS OF ALL CONVEYANCE SYSTEMS.
7. INLETS: ALL EXISTING AND PROPOSED STORM DRAIN INLETS SHALL BE PROPERLY MAINTAINED AND PROTECTED FROM SILTATION.
8. ENTRANCES: PROVISION SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SOIL ONTO THE PAVED ROAD. IF SOIL IS TRANSPORTED ONTO A ROAD SURFACE, THE ROADS ADJACENT TO THE CONSTRUCTION SITE SHALL BE CLEANED ON A WEEKLY BASIS. STREET WASHING SHALL BE ALLOWED ONLY IF WASHWATER IS INFILTRATED IN THE RIGHT OF WAY.
9. TEMPORARY CONSTRUCTION ENTRANCE: IN PLACE OF A CONSTRUCTED CONSTRUCTION ENTRANCE, CONTRACTOR SHALL PROVIDE ADEQUATE PROVISIONS TO ENSURE THAT NO SEDIMENT IS TRACKED OFF THE CONSTRUCTION SITE. IN THE EVENT THAT SEDIMENT TRACKING OCCURS, CONTRACTOR SHALL REMOVE ALL TRACKED SEDIMENT IMMEDIATELY.
10. SITE RUNOFF: PRIOR TO FLOWING OFF THE SITE, STORMWATER RUNOFF SHALL PASS THROUGH A COMPOST BERM OR EQUAL BMP.
11. ADJACENT PROPERTIES: PROPERTIES ADJACENT TO THE PROJECT SHALL BE PROTECTED FROM SEDIMENT DEPOSITION.
12. DOWNSTREAM WATERWAYS & PROPERTY: PROPERTIES AND WATERWAYS DOWNSTREAM FROM THE CONSTRUCTION SITE SHALL BE PROTECTED FROM EROSION DUE TO ANY TEMPORARY CHANGES IN VOLUME, VELOCITY, AND PEAK FLOW OF STORMWATER RUNOFF FROM THE PROJECT SITE.
13. REMOVAL OF BMPS: ALL TEMPORARY EROSION AND SEDIMENT CONTROL BMPS SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED OR AFTER THE TEMPORARY BMPS ARE NO LONGER NEEDED. TRAPPED SEDIMENT SHALL BE REMOVED OR STABILIZED ON-SITE. DISTURBED SOIL AREAS RESULTING FROM REMOVAL SHALL BE PERMANENTLY STABILIZED.
14. INSPECTIONS: ALL BMPS SHALL BE INSPECTED, MAINTAINED, AND REPAIRED BY THE CONTRACTOR AS NEEDED TO ASSURE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION. ALL ON-SITE EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSPECTED REGULARLY AS NEEDED (AT LEAST ONCE EVERY SEVEN DAYS) AND DURING/WITHIN 24 HOURS AFTER ANY STORM EVENT OF GREATER THAT 0.5-INCHES OF RAIN PER 24-HOUR PERIOD.
15. REPORTS: THE CONTRACTOR SHALL PREPARE AND MAINTAIN REPORTS SUMMARIZING THE SCOPE OF INSPECTIONS, THE PERSONNEL CONDUCTING THE INSPECTION, THE DATES OF THE INSPECTION, MAJOR OBSERVATIONS ACTIONS TAKEN AS A RESULT OF THESE INSPECTIONS.
16. OTHER REQUIREMENTS: THE ENGINEER, OWNER, CITY OF FERNDALE, DEPARTMENT OF ECOLOGY, OR OTHER AGENCIES MAY REQUIRE BMPS IN ADDITION TO WHAT IS SHOWN ON THIS PLAN IF NECESSARY TO PREVENT VIOLATIONS OF SURFACE WATER QUALITY. THE CONTRACTOR SHALL IMPLEMENT THE BMPS AS REQUIRED.
17. IF AREA OF DISTURBANCE WILL EXCEED 1.0 ACRES, CONTRACTOR SHALL COMPLY WITH NPDES CONSTRUCTION GENERAL PERMIT REQUIREMENTS INCLUDING, BUT NOT LIMITED TO: FILING OF N.O.I. PUBLIC NOTICE, PREPARATION AND MAINTENANCE OF A SWPPP, MONITORING, REPORTING AND FILING OF A N.O.T.

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CITY OF FERNDALE, WA
FERNDALE WASHINGTON
RESERVOIR No. 1 OVERFLOW MODIFICATION
T.E.S.C. PLAN & DETAILS

DATE 07-26-2016
SCALE AS SHOWN
JOB NUMBER 2015-087
SHEET C2.1
PAGE 4 OF 7

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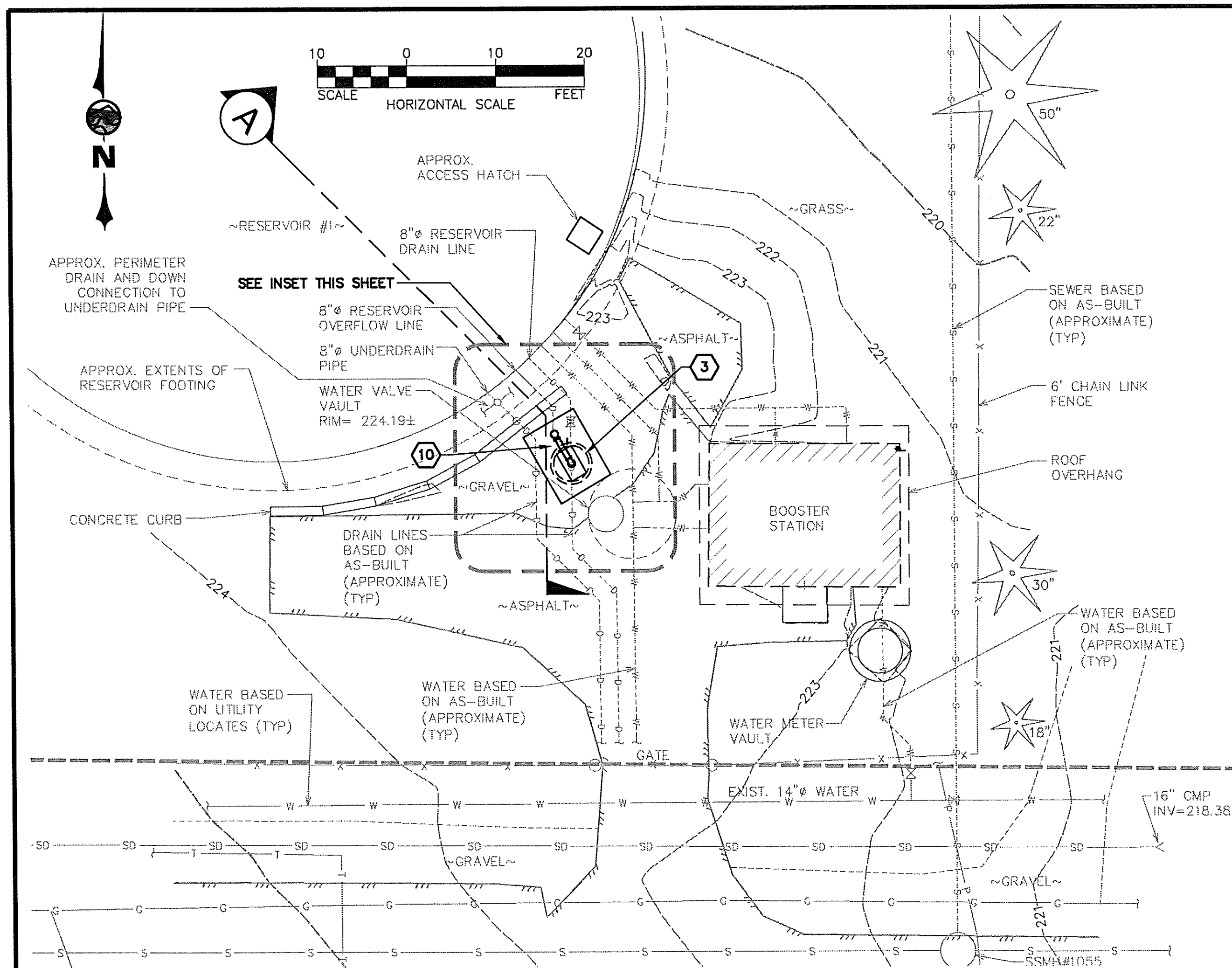
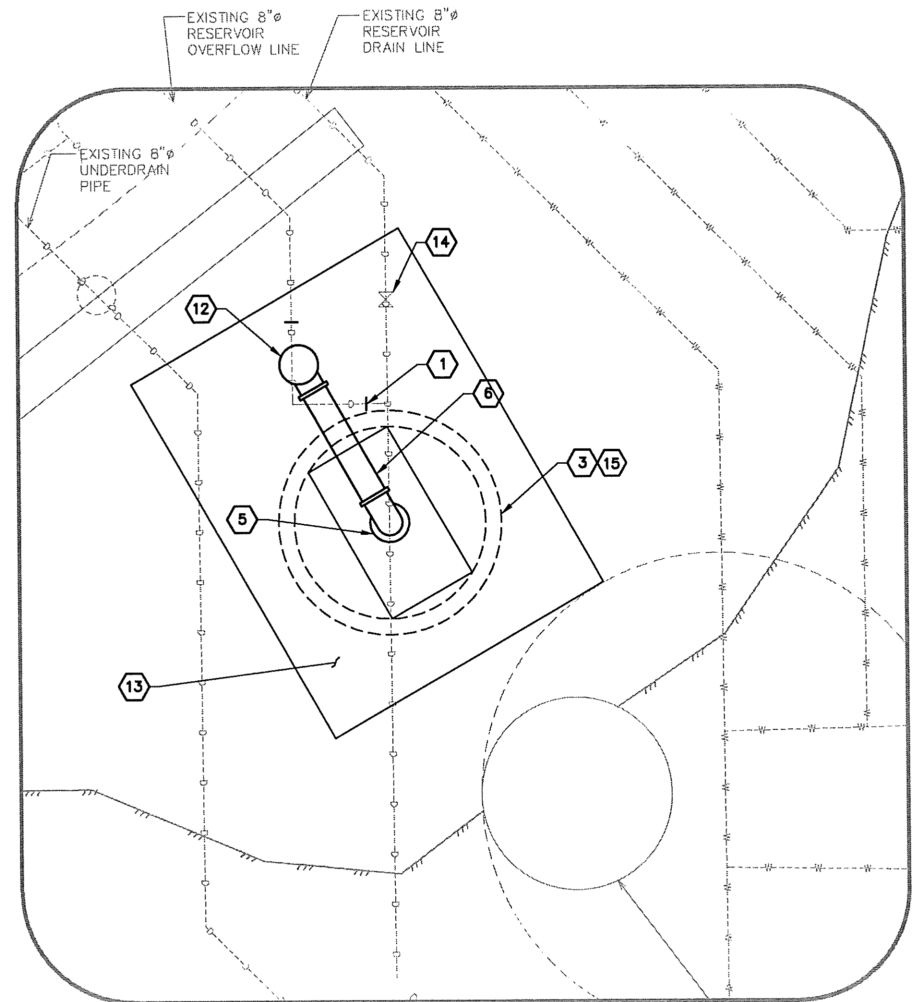


SITE PLAN – PLAN VIEW



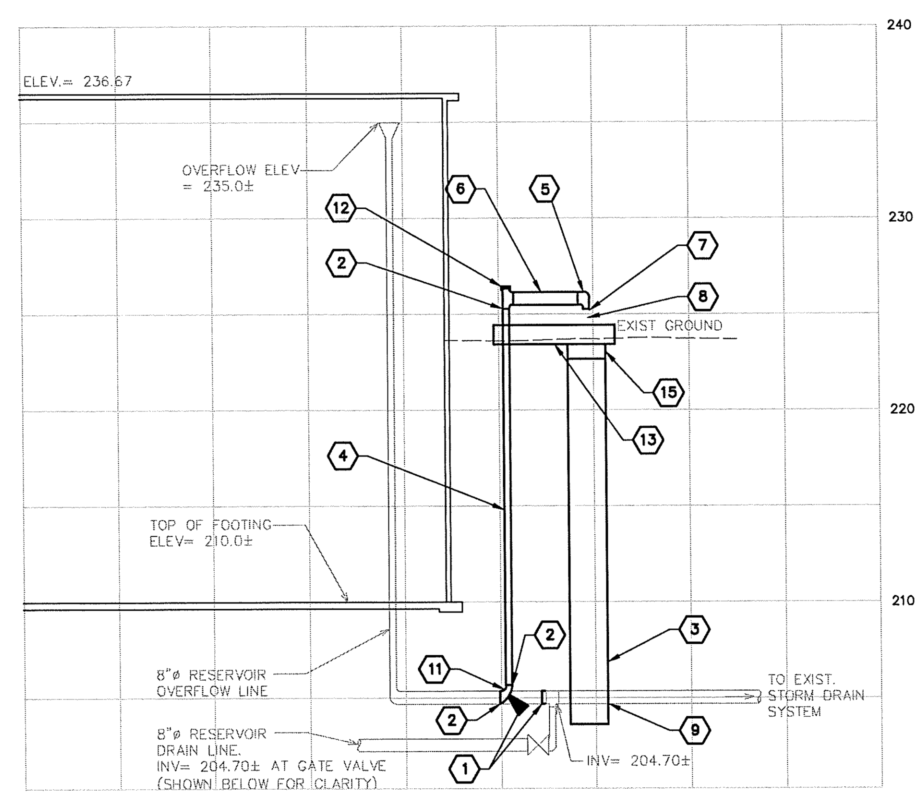
INSET

2 0 2 4
SCALE HORIZONTAL SCALE FEET

EXISTING WATER VALVE VAULT
RIM (4'ø RISER)= 224.19
TOP OF 10'ø MH (APPROX. BASED ON AS-BUILT)= 214.40±
BOTTOM OF 10'ø MH (APPROX. BASED ON AS-BUILT)= 204.40±

KEYED NOTES

1. = CUT EXISTING OVERFLOW LINE AND REMOVE TO TEE W/ DRAIN LINE. INSTALL BLIND FLANGE OR PLUG ON 8" TEE BRANCH.
2. = 8"ø MEGAFLANGE 2100 RESTRAINED ADAPTER.
3. = 4'ø MANHOLE, TYPE 1, W/ 4'ø RISER SECTIONS (NO ECCENTRIC CONE SECTION).
4. = 22 LF± 8"ø D.I., PE, RESTRAIN ANY JOINTS MID-SPAN
5. = 8" 90° ELBOW, FL
6. = 3–4 LF 8"ø D.I. SPOOL, FLANGED. DETERMINE FINAL SPOOL LENGTH IN FIELD
7. = 24-MESH GALVANIZED SCREEN BOLTED BETWEEN EL. FLANGE AND 8"ø FLANGE RING
8. = AIRGAP MIN. 2 PIPE DIAMETERS ABOVE RIM
9. = RECONNECT EXISTING DRAIN LINE, NORTH (IN) & SOUTH (OUT). FLEXIBLE COUPLINGS BOTH SIDES.
10. = EXCAVATE DOWN TO EXISTING RESERVOIR OVERFLOW AND DRAIN LINES. ENSURE STABILITY/CONTAINMENT OF ADJACENT STRUCTURE FOUNDATION AGGREGATE MATERIALS
11. = 90° ELBOW, FL, THRUST BLOCKING
12. = 8" TEE, FL, WITH 8" BLIND FLANGE ON UP-FACING RUN
13. = CUSTOM CONCRETE SLAB, 8.5' x 6.5' x 12" THICKNESS PER DETAIL SHEET C4.1 WITH ALUMINUM GRATE 19-56-4(2½ x 3/16) MFR BY GRATING PACIFIC, OR EQUAL. RIM/TOP OF SLAB = 224.7± AND 4–6" ABOVE SURROUNDING GRADE
14. = REPLACE EXISTING VALVE BOX
15. = 48"ø TOP SLAB, SEE DETAILS (GRANITE PRECAST)



SECTION A–A

10 0 10 20
SCALE HORIZONTAL SCALE FEET

5 0 5 10
SCALE VERTICAL SCALE FEET

NOTES:

1) EXISTING DRAIN AND OVERFLOW PIPING IS DUCTILE IRON BASED ON AS-BUILT DRAWINGS. CONTRACTOR TO PROVIDE APPROPRIATE FITTINGS AND ADAPTERS AS REQUIRED.
2) ALL NEW PIPING SHALL BE DUCTILE IRON SPECIAL THICKNESS CLASS 53 PIPE & FITTINGS IN ACCORDANCE WITH DOT/APWA SPECIFICATION 9-30, UNLESS OTHERWISE SHOWN.
3) CONTRACTOR SHALL RESTORE SURFACE AROUND IMPROVEMENTS TO BLEND IN W/EXISTING SURROUNDING AREA PER TYPICAL GRAVEL SECTION DETAIL.
4) CONTRACTOR SHALL REPLACE ALL SURFACE FEATURES INCLUDING BUT NOT LIMITED TO ASPHALT PAVEMENT & CONCRETE CURB IF DAMAGED DURING CONSTRUCTION.

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CITY OF FERNDALE, WA

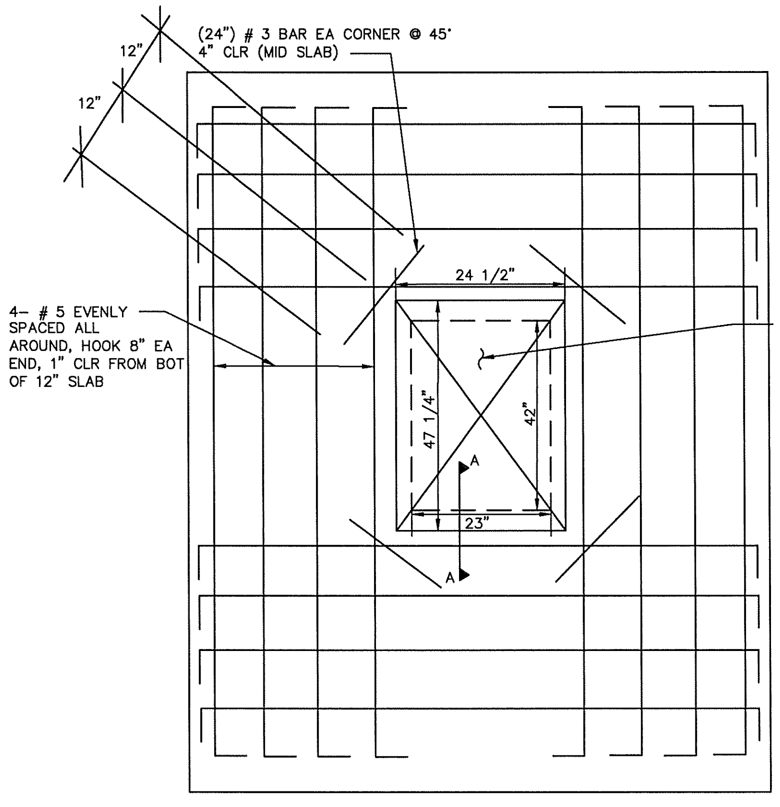
FERNDALE WASHINGTON

RESERVOIR No. 1 OVERFLOW MODIFICATION

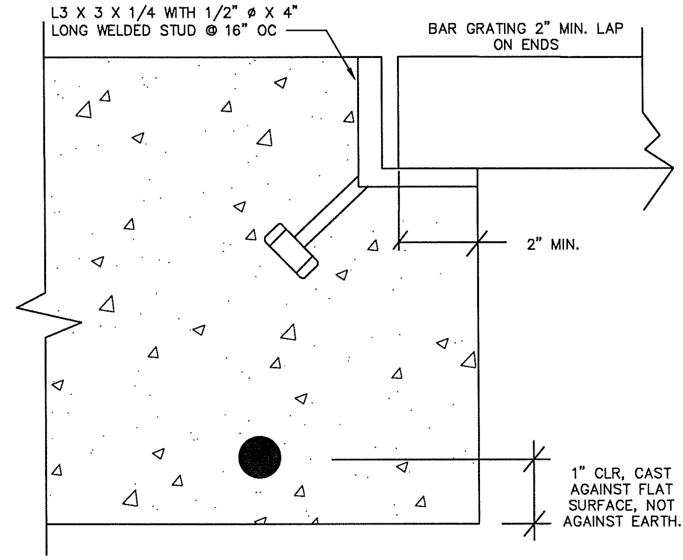
SITE PLAN

DATE 07-26-2016 | SCALE AS SHOWN | JOB NUMBER 2015-087

SHEET C3.1



PLAN VIEW



SECTION A–A

CUSTOM CONCRETE SLAB DETAILS

NOT TO SCALE

NOTES FOR CONRETE SLAB

1. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR TEMPORARY BRACING AND SHORING, AND FOR SAFETY PROGRAMS, METHODS, AND PROCEDURES OF OPERATION FOR THE CONSTRUCTION OF THE DESIGN.
2. CONCRETE SHALL BE READY MIX WITH fc = 4000 PSI, 1" MAX. AGGREGATE, 6% AIR CONTENT, AND MAX W/C RATION OF 0.50. SUBMIT MIX DESIGN FOR REVIEW PRIOR TO BEGINNING WORK.
3. REINFORCING SHALL BE ASTM A615 GRADE 60, AND BARS MARKED CONTINUOUS SHALL BE ONE–PIECE OR LAPPED A MINIMUM OF 40 DIAMETERS. PLACE ON CHAIRS OR OTHER MANUFACTURED DEVICES PER CRSI MANUAL OF STANDARD PRACTICE.
4. PIPE PENETRATIONS SHALL BE SLEEVED, DO NOT CORE THROUGH REBAR. DISPLACE REBAR UP TO 3" EA. WAY AS REQ'D.
5. STEEL ANGLES AND STUDS SHALL BE GALVANIZED AFTER FABRICATION.

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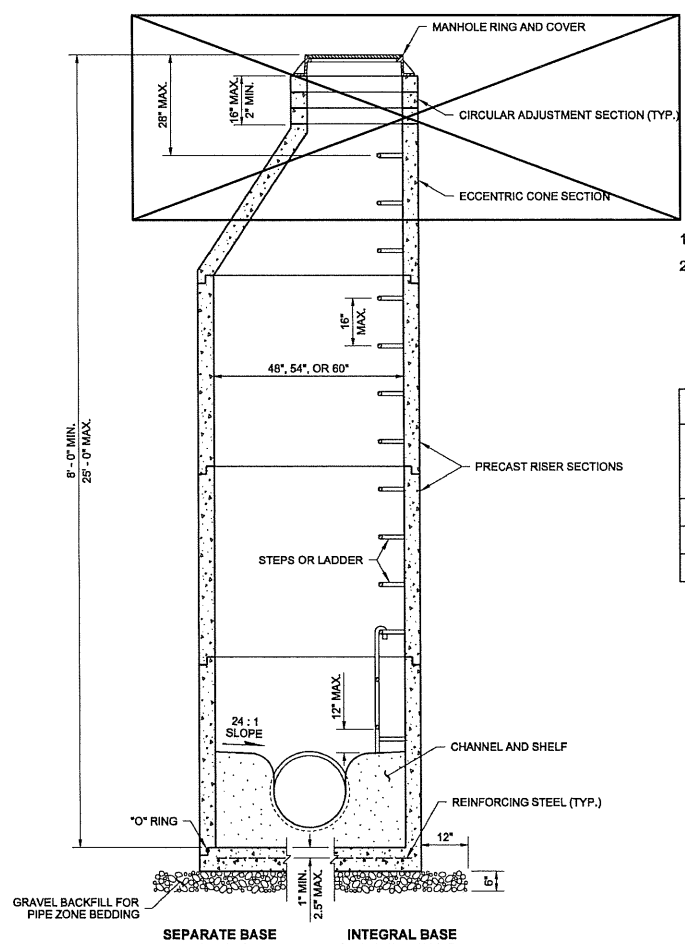


NOTES

1. Knockouts shall have a wall thickness of 2" minimum to 2.5" maximum.
2. For pipe allowances, see **Standard Plan B-10.20.**

MANHOLE DIMENSION TABLE

DIAM.	MIN. WALL THICKNESS	MIN. BASE THICKNESS	MAXIMUM KNOCKOUT SIZE	MINIMUM DISTANCE BETWEEN KNOCKOUTS
48"	4"	6"	36"	8"
54"	4.5"	8"	42"	8"
60"	5"	8"	48"	8"

CASEY M. KRAMER · STATE OF WASHINGTON · 44535 · REGISTERED PROFESSIONAL ENGINEER

MANHOLE TYPE 1

STANDARD PLAN B-15.20-01

SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

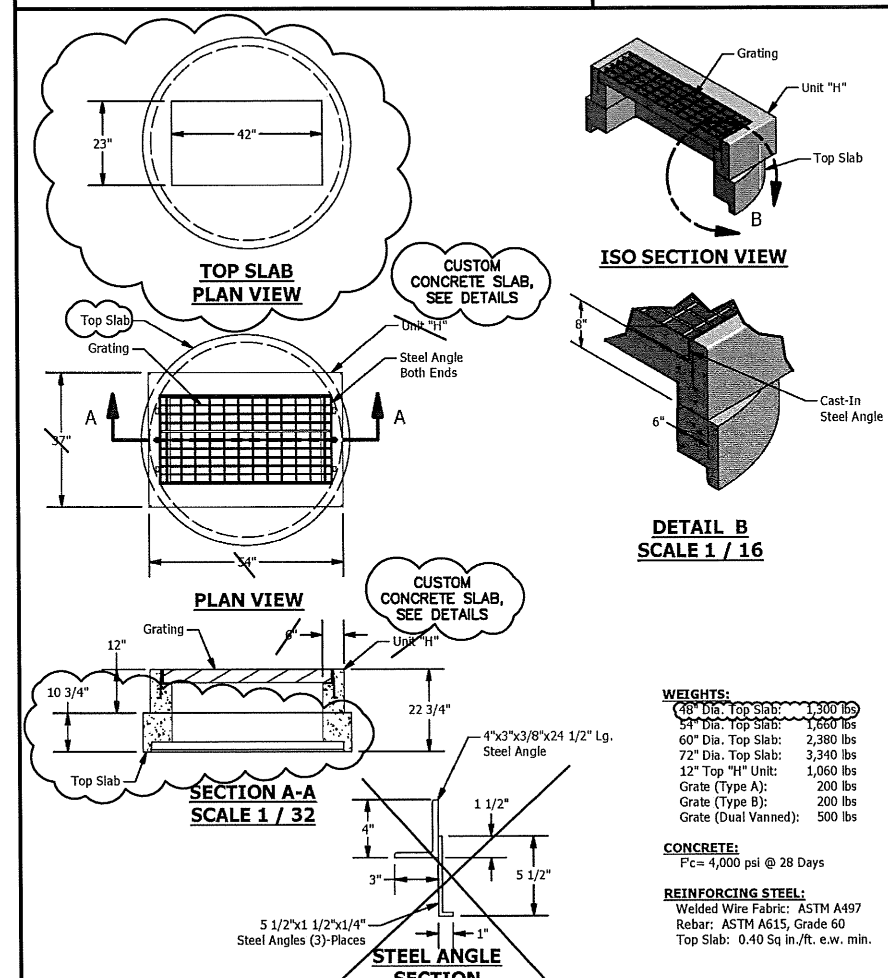
Pasco Bakotich III 02-07-12

STATE DESIGN ENGINEER DATE

Washington State Department of Transportation

WSDOT H-Slab

Meets or Exceeds WSDOT Std Plan B-35.40-00
Manholes Constructed in Accordance With ASTM C-478



WEIGHTS:
48" Dia. Top Slab: 1,300 lbs
54" Dia. Top Slab: 1,660 lbs
60" Dia. Top Slab: 2,380 lbs
72" Dia. Top Slab: 3,340 lbs
12" Top "H" Unit: 1,060 lbs
Grate (Type A): 200 lbs
Grate (Type B): 200 lbs
Grate (Dual Vanned): 500 lbs

CONCRETE:
F'c= 4,000 psi @ 28 Days

REINFORCING STEEL:
Welded Wire Fabric: ASTM A497
Rebar: ASTM A615, Grade 60
Top Slab: 0.40 Sq in./ft. e.w. min.

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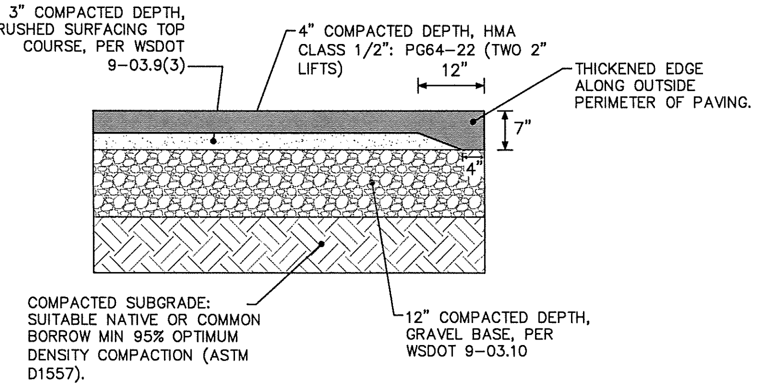
CIVIL DETAILS

DATE 07-26-2016 | SCALE AS SHOWN | JOB NUMBER 2015-087

SHEET C4.1

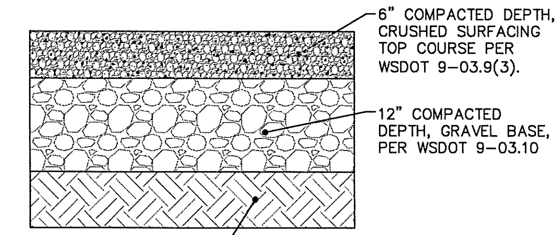
PLOT SETTINGS: DWG To PDF.pc3, ANSI full bleed B (17.00 x 11.00 Inches), Portrait, 1:2, WE APWA_UNSCREENED.ctb
W:\2015\2015-087 FERNDALE RESERVOIR #1\DWG\15087 C4.1 DETAILS.DWG – 8/8/2016 1:29 PM – Jeff Smith



STANDARD ASPHALT SECTION

(A) TYPICAL ASPHALT CONCRETE PAVEMENT SECTION

NOT TO SCALE



(B) TYPICAL GRAVEL SECTION

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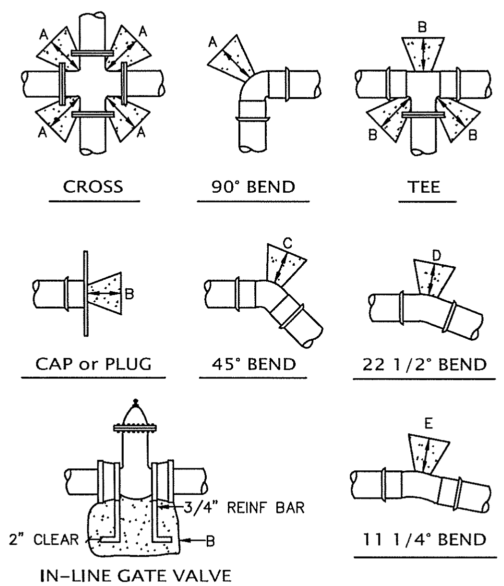
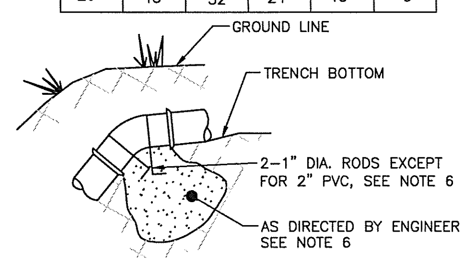


(PARTIAL RESTRAINT MUST BE PROVIDED BY PIPELINE BEYOND VALVE)

THRUST BLOCK TABLE

MINIMUM BEARING AREA AGAINST UNDISTURBED SOIL IN SQUARE FEET

PIPE SIZE	A	B	C	D	E
4"	2	2	2	2	2
6"	4	3	2	2	2
8"	7	5	4	2	2
10"	11	8	6	3	2
12"	16	12	9	5	3
16"	29	20	16	8	4
20"	45	32	24	13	6



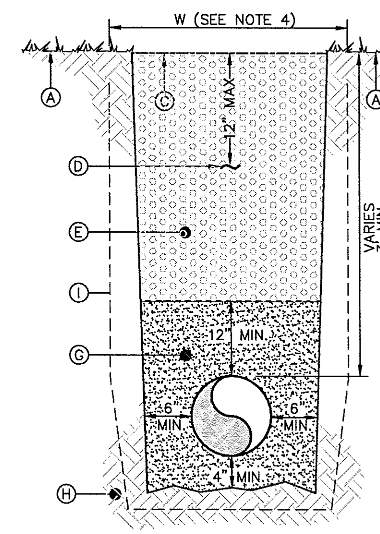
VERTICAL BEND

NOTES

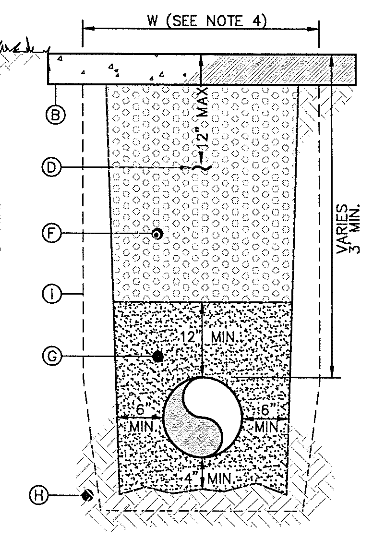
1. SQUARE FEET OF CONCRETE THRUST BLOCK AREA IS BASED ON 200 P.S.I. INTERNAL PRESSURE, A SOIL SAFE BEARING OF 3000 POUNDS PER SQUARE FOOT AND A FACTOR OF SAFETY OF 1.5.
2. BEARING AREA MUST BE ADJUSTED FOR INTERNAL PRESSURES AND LOWER SOIL BEARING VALUES.
3. CONCRETE BLOCKING SHALL BE CAST IN PLACE AND HAVE A MINIMUM OF 1/4 SQUARE FOOT BEARING AGAINST THE FITTING.
4. BLOCK SHALL BEAR AGAINST FITTINGS ONLY AND SHALL BE CLEAR OF JOINTS TO PERMIT TAKING UP OR DISMANTLING JOINT.
5. THE CONTRACTOR SHALL INSTALL BLOCKING WHICH IS ADEQUATE TO WITHSTAND FULL TEST PRESSURE AS WELL AS TO CONTINUOUSLY WITHSTAND OPERATING PRESSURE UNDER ALL CONDITIONS OF SERVICE.
6. STAINLESS STEEL BANDING SHALL BE USED AT 2" PVC VERTICAL BENDS INSTEAD OF 1" RODS. CONTACT ENGINEER FOR SIZING OF THRUST BLOCK AND DETAILS.
7. ALL BENDS, TEES & CROSSES SHALL INCLUDE RESTRAINED JOINTS (ROMAC GRIPPER) AS WELL AS THRUST BLOCKING.

(C) WATERLINE AND FORCEMAIN THRUST BLOCKING SCHEDULE

NOT TO SCALE



UNPAVED AREAS



PAVED AREAS

TRENCH NOTES:

A. HYDROSEED EXPOSED AREAS.
B. NEW SIDEWALK OR PAVEMENT
C. NEW LANDSCAPED SURFACE.
D. 2" METALLIC DETECTOR TAPE 8" TO 12" BELOW FINISH GRADE.
E. BANK RUN GRAVEL BACKFILL PER WSDOT 9-03.19 COMPACTED TO 90% MAX. DENSITY INSIDE RIGHT-OF-WAY.

NATIVE BACKFILL MATERIAL (8" MAX.) COMPACTED TO 90% MAX. DENSITY PERMITTED OUTSIDE OF RIGHT-OF-WAY.

F. BANK RUN GRAVEL BACKFILL PER WSDOT 9-03.19 COMPACTED TO 95% MAX. DENSITY
G. PIPE ZONE GRAVEL BEDDING PER WSDOT 9-03.12(3) COMPACTED TO 95% MAX. DENSITY
H. UNDISTURBED NATIVE MATERIAL
I. ROCK EXCAVATION PAY LIMITS PER WSDOT STANDARD SPECIFICATIONS.

FLEXIBLE PIPE NOTES:

1) PROVIDE UNIFORM SUPPORT UNDER BARRELS.
2) HAND TAMP UNDER HAUNCHES.
3) COMPACT BEDDING MATERIAL TO 95% MAX. DENSITY; DIRECTLY OVER PIPE, HAND TAMP ONLY.
4) SEE "EXCAVATION AND PREPARATION OF TRENCH" IN SANITARY SEWERS SECTION OF THE STANDARD WSDOT/APWA SPECIFICATIONS FOR TRENCH WIDTH "W" AND TRENCHING OPTIONS. THE PIPE ZONE WILL BE THE ACTUAL TRENCH WIDTH. THE MINIMUM CONCRETE WIDTH SHALL BE 1-1/2 I.D. + 18".
5) ROCKS OR LUMPS LARGER THAN 1" PER FOOT OF PIPE DIAMETER SHALL NOT BE USED IN THE BACKFILL MATERIAL.
6) SEE "BEDDING MATERIAL FOR FLEXIBLE PIPE" IN AGGREGATES SECTION OF THE WSDOT/APWA STANDARD SPECIFICATIONS FOR THE MATERIAL SPECIFICATIONS.

(D) TYPICAL PIPE TRENCHING & BACKFILL

NOT TO SCALE

CALL TWO BUSINESS DAYS BEFORE YOU DIG 1-800-424-5555 UTILITIES UNDERGROUND LOCATION CENTER

BID DOCUMENTS

NO.	REVISIONS	BY	DATE

WILSON ENGINEERING, LLC
805 DUPONT STREET
BELLINGHAM, WA 98225
(360) 733-6100 • FAX (360) 647-9061
www.wilsonengineering.com
Wilson SURVEY/ENGINEERING

DESIGNED BY CDS | DRAWN BY JCS | CHECKED BY AWL

CITY OF FERNDALE, WA

FERNDALE WASHINGTON

RESERVOIR No. 1 OVERFLOW MODIFICATION

CIVIL DETAILS

DATE 07-26-2016 | SCALE AS SHOWN | JOB NUMBER 2015-087

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