City of Woodland
Reservoir No. 4
Woodland, Washington

Project Directory

Owner:

City of Woodland
Public Works Director
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Phone No. 360 / 225-7999
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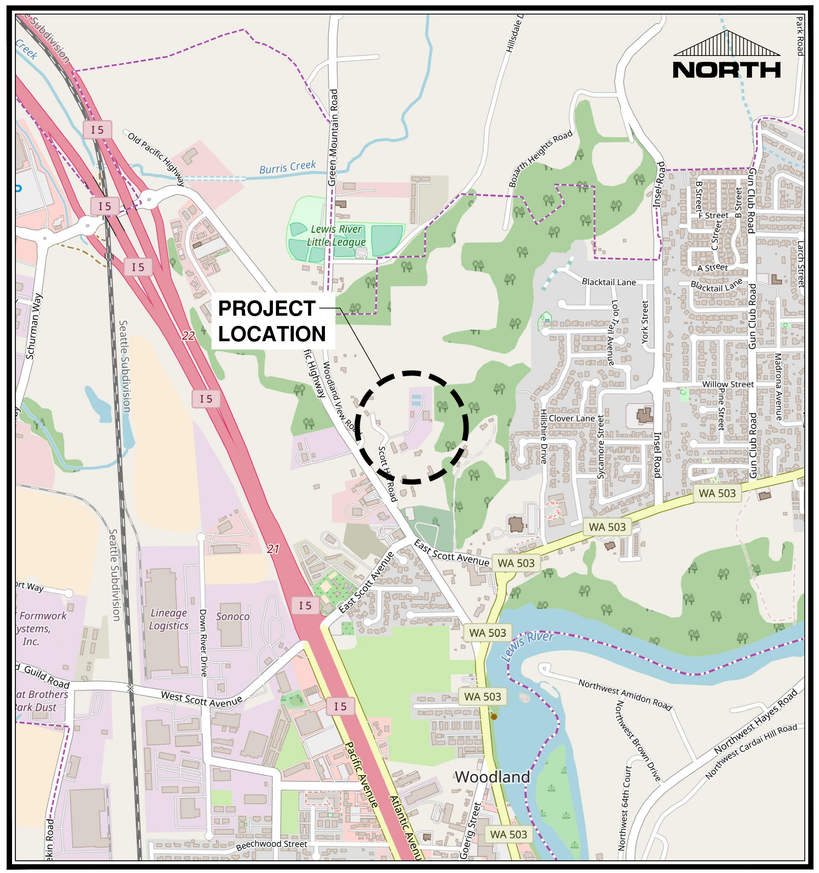


Vicinity Map

City of Woodland

Mayor
Will Finn

City Council
John "JJ" Burke
Carol Rounds
Melissa Doughty
Aaron Alderman
DeeAnna Holland
Terry Hall
Monte Smith

City Administrator
Peter Boyce

Public Works Director
Tracy Coleman

Public Works Superintendent
Tim Sarvela

APPROVED BY:_____ **DATE**_____
Public Works Director

GIBBS & OLSON

City of WOODLAND WASHINGTON

Reservoir No. 4
City of Woodland
Woodland, Washington
Cover Sheet, Vicinity Map & Project Contacts

Datum: **NAD83 / NAVD 88**
Survey Book: **1887 A & B**
Project Milestone: **100%**
Date: **08-28-2023**

RYAN J. WALTERS — STATE OF WASHINGTON — DIGITALLY SIGNED — 53192 — REGISTERED PROFESSIONAL ENGINEER
08/28/2023

Designed by: **RJW**
Checked by: **TEG**
Approved by: **RJW**

Project Number: **0876.4533**
Drawing Number: **G1**
Sheet Number: **1** of **28**

Abbreviations

ADJ	Adjust	MJ	Mechanical Joint
AC	Asphalt Concrete	NAVD	North American Vertical Datum
APPROX	Approximate	(N)	North
ASPH	Asphalt	(NE)	Northeast
ASSY	Assembly	(NW)	Northwest
AVE	Avenue	NTS	Not to Scale
BC	Back of Curb	OD	Outside Diameter
BFV	Butterfly Valve	O/S	Offset
BLKG	Blocking	PC	Point of Curvature
BLDG	Building	PE	Professional Engineer
BVC	Begin Vertical Curve	PERF	Perforated
BVCE	Begin Vertical Curve Elevation	PERM	Permanent
BVCS	Begin Vertical Curve Station	PL	Property Line
CARV	Combination Air Release Valve	PT	Point of Tangency
CB	Catch Basin	PVC	Polyvinyl Chloride
CDF	Control Density Fill	PVMT	Pavement
CI	Cast Iron	PKG	Parking
CL	Centerline	PRV	Pressure Reducing Valve
CL	Class	PT	Point of Tangency
CMP	Corrugated Metal Pipe	PVI	Point of Vertical Intersection
CO	Clean Out	PVIE	Point of Vertical Intersection Elevation
CONC	Concrete	PVIS	Point of Vertical Intersection Station
CONST	Construction	R	Radius
CONTR	Contractor	RBC	Rebar and Cap
CPSSP	Corrugated Polyethylene Storm Sewer Pipe	RCW	Reclaimed Water
CPLG	Coupling	REQ'D	Required
CSBC	Crushed Surfacing Base Course	RPBA	Reduced Pressure Backflow Assembly
CSTC	Crushed Surfacing Top Course	RT	Right
DI	Ductile Iron	ROW	Right-of-Way
DIA	Diameter	S	Slope
DL	Daylight Earthwork	(S)	South
DS	Downspout	SD	Storm Drain
DTL	Detail	SDCB	Storm Drain Catch Basin
DWG	Drawing	SDMH	Storm Drain Manhole
DWY	Driveway	SDR	Sidewall Dimension Ratio
(E)	East	(SE)	Southeast
EC	Erosion Control	SHT	Sheet
EG	Existing Grade	SS	Sanitary Sewer
EGC	Existing Grade at Centerline	SSCO	Sanitary Sewer Clean Out
ELEV	Elevation	SSMH	Sanitary Sewer Manhole
EP	Edge of Pavement	SST	Stainless Steel
EVC	End Vertical Curve	ST	Street
EVCE	End Vertical Curve Elevation	STA	Station
EVCS	End Vertical Curve Station	STD	Standard
EX	Existing	STRUCT	Structure
FCA	Flange Coupling Adapter	SW	Sidewalk
FDC	Fire Department Connection	(SW)	Southwest
FG	Finish Grade	SWMMWW	Stormwater Management Manual for Western Washington
FGC	Finish Grade at Centerline		
FH	Fire Hydrant	TC	Top of Curb
FL	Flow Line	TELE	Telephone
FLG	Flange	TEMP	Temporary
FND	Found	TESC	Temporary Erosion and Sediment Control
FOC	Face of Curb	THRU	Through
GV	Gate Valve	TP	Top of Pipe
HDPE	High Density Polyethylene	TRANS	Transition
HMA	Hot Mix Asphalt	TYP	Typical
HORIZ	Horizontal	UNO	Unless Noted Otherwise
HYD	Hydrant	V	Vertical
ILLUM	Illumination	VC	Vertical Curve
INV	Invert	VERT	Vertical
IE	Invert Elevation	W/	With
INT	Intersection	(W)	West
IP	Iron Pipe	WSE	Water Surface Elevation
JUNCT	Junction		
LT	Left	SYMBOLS	
LF	Linear Feet		
LS	Landscaped Surface	Δ	Delta
MAX	Maximum	#	Number
MD	Measure Down	&	And
MG/L	Milligrams per Liter	@	At
MIN	Minimum	Ø	Diameter
MH	Manhole		

Legends

Existing Line Types

- Existing Major Contour
- Existing Minor Contour
- Existing Building
- Existing Cable TV - Buried
- Existing Centerline Road
- Existing Concrete, Curb, Gutter and Sidewalk
- Existing Creek/Ditch
- Existing Fence
- Existing Gas
- Existing Guardrail
- Existing Gravel
- Existing Pavement Edge
- Existing Power - Aerial
- Existing Power - Buried
- Existing Right-Of-Way
- Existing Sanitary Sewer
- Existing Sanitary Sewer Forcemain
- Existing Storm Drain
- Existing Telephone - Buried
- Existing Traffic Signal
- Existing Toe of Slope
- Existing Top of Slope
- Existing Brush Line
- Existing Water
- Existing Wetland Boundary
- Existing Wetland Buffer

Proposed Line Types

- Proposed Water Line
- Proposed Storm Drain Line
- Proposed Foundation Drain Line
- Utility to be Removed/Abandoned
- Proposed Saw Cut Line
- Proposed Silt Fencing
- Proposed Trench
- Proposed Fence
- Proposed Swale

Existing Symbols

- Existing Yard Light
- Existing Hydrant
- Existing Water Meter
- Existing Gate Valve
- Existing Water Vault
- Existing Mail Box
- Existing Sign
- Existing Conifer Tree
- Existing Deciduous Tree
- Existing Shrub
- Existing Power Pole
- Existing Power Pole Anchor
- Existing Power Transformer
- Existing Power Vault
- Existing Sewer Cleanout
- Existing Sewer Manhole
- Existing Storm Culvert
- Existing SDCB
- Existing SDMH
- Existing Telephone Pole
- Existing Telephone Pole Anchor
- Existing Telephone Riser
- Existing Street Light
- Existing Traffic Signal
- Existing Junction Box
- Existing Gas Valve
- Existing Traffic Signal Cabinet

Proposed Symbols

- Proposed SDMH
- Proposed SDCB
- Proposed SDCO
- Proposed Gate Valve MJ x FLG
- Proposed Gate Valve MJ
- Proposed Fitting MJ
- Proposed Fitting FLG
- Proposed Fitting MJ x FLG
- Proposed Thrust Block
- Proposed Long Cast Sleeve
- Proposed Tapping Tee
- Proposed Coupling
- Proposed Combination Air Release Valve

General Notes

1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATIONS OF THESE CONTRACT DOCUMENTS, THE CITY'S STANDARDS AND THE MOST CURRENT STATE OF WASHINGTON STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION (WSDOT/APWA).
2. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO HAVE A COPY OF THESE PLANS AND SPECIFICATIONS ON THE CONSTRUCTION SITE AT ALL TIMES.
3. ANY CHANGES TO THE DESIGN SHALL FIRST BE REVIEWED AND APPROVED BY THE CONTRACTING AGENCY.
4. APPROXIMATE LOCATIONS OF EXISTING UTILITIES HAVE BEEN OBTAINED FROM AVAILABLE RECORDS AND ARE SHOWN FOR CONVENIENCE. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING UTILITIES. THE CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS PRIOR TO CONSTRUCTION BY CALLING UNDERGROUND LOCATE LINE AT 811 A MINIMUM OF TWO FULL WORKING DAYS PRIOR TO BEGINNING ANY EXCAVATION.
5. CONTRACTOR SHALL NOTIFY AND COORDINATE WITH OTHER UTILITIES AS NEEDED FOR THE DURATION OF THE PROJECT.
6. CONTRACTOR TO POTHOLE AND VERIFY PIPE SIZE, MATERIAL, TYPE AND DEPTH PRIOR TO SUBMITTAL OF SHOP DRAWINGS OR CONSTRUCTION OF UPSTREAM UTILITIES.
7. CONTRACTOR TO NOTIFY ENGINEER IF EXISTING UTILITY MATERIAL, TYPE, SIZE OR INVERT ELEVATIONS DIFFER FROM INFORMATION SHOWN ON THE CONTRACT DRAWINGS.

Sheet Index

Know what's **below.**
Call 811 before you dig.

CAUTION: LOCATION OF EXISTING UTILITIES SHOWN IS APPROXIMATE AND MAY NOT BE ACCURATE OR ALL INCLUSIVE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY LOCATION AND DEPTH OF UTILITIES PRIOR TO PROCEEDING WITH CONSTRUCTION.

GIBBS & OLSON

City of WOODLAND WASHINGTON

Reservoir No. 4
City of Woodland
Woodland, Washington
Notes, Legends, Abbreviations & Sheet Index

Datum: **NAD83 / NAVD 88**

Survey Book: **1887 A & B**

Project Milestone: **100%**

Date: **08-28-2023**

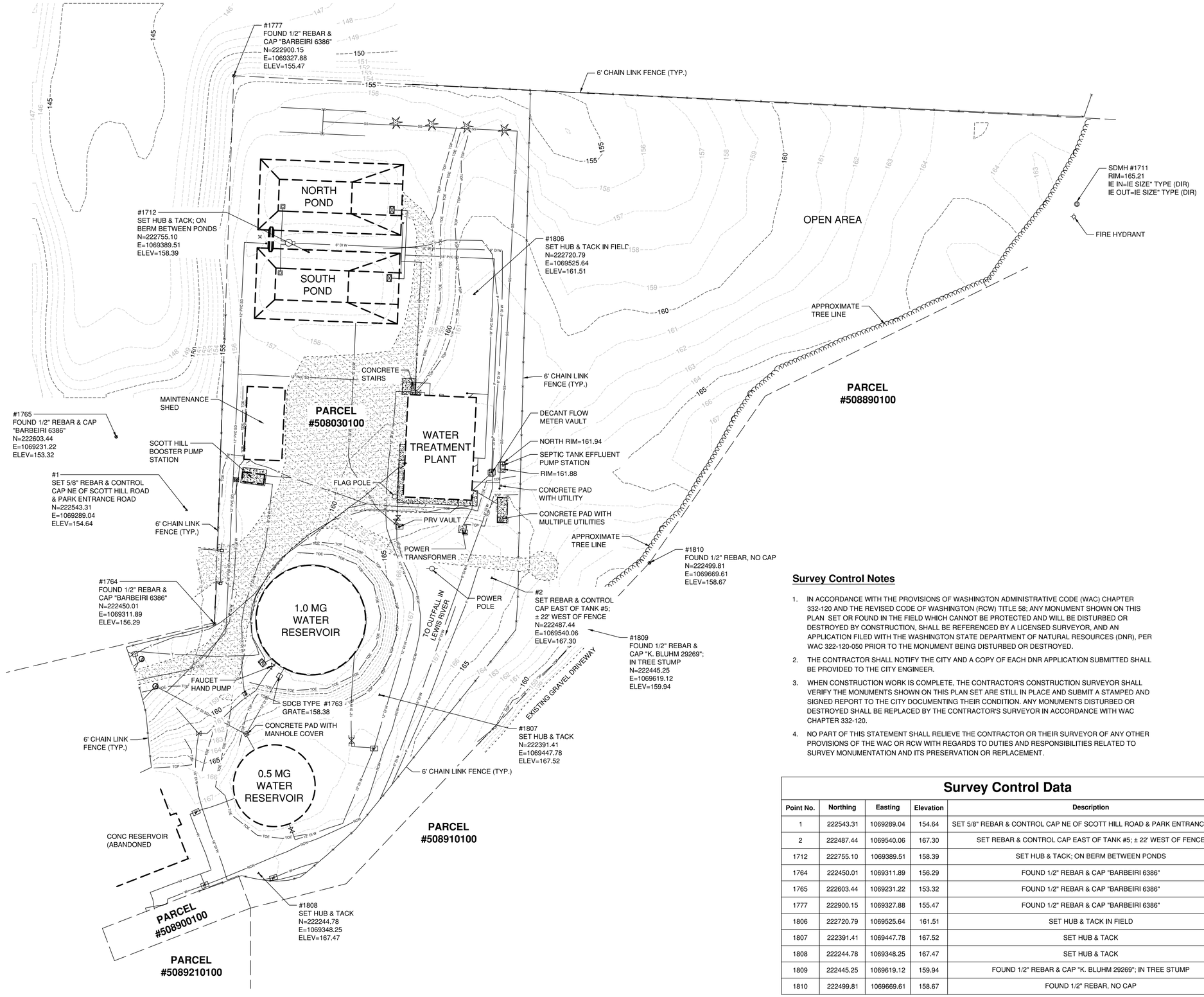
RYAN J. WALTERS
STATE OF WASHINGTON
DIGITALLY SIGNED
52192
REGISTERED
PROFESSIONAL ENGINEER
08/28/2023

Designed by: **RJW**
Checked by: **TEG**
Approved by: **RJW**

Project Number: **0876.4533**

Drawing Number: **G2**

Sheet Number: **2** of **28**



NORTH

0 20 40 80

Scale: (in Feet)

LEGEND

- Brass centerline monument in concrete
- ⅝" Rebar with orange plastic survey cap (Gibbs & Olson WA 49270)
- Rebar with plastic cap (As Noted)
- Rebar with survey cap (As Noted)
- Rebar, survey cap missing
- Calculated point, not set
- ( ) Plat, bearing and distance
- ROS Record of Survey
- Found Corner Monuments as noted
- Control Point
- Survey Monument Number
- ESMT Easement
- D/W Driveway/Approach
- P/L Power Line
- Power Pole
- Guy Anchor
- Power Transformer
- Power Vault
- Telephone Riser
- Telephone Vault
- Storm Drain Manhole
- Storm Drain Catch Basin
- Sanitary Sewer Manhole
- Water Meter
- Water Valve
- Fire Hydrant (3-Port)
- Luminaries
- Mailbox
- Sign
- Ornamental Tree
- Landscape Shrub
- Handicap Parking Symbol
- -P- Power, Field Locate marks
- -T- Telephone, Field Locate Marks
- -TV- Cable, Field Locate Marks
- -G- Gas, Field Locate Marks
- -SD- Storm Drain, Field Locate Marks
- -SS- Sanitary Sewer, Field Locate Marks
- -W- Water, Field Locate Marks
- -RCW- 12" DI Reclaimed Water

Survey Control Notes

1. IN ACCORDANCE WITH THE PROVISIONS OF WASHINGTON ADMINISTRATIVE CODE (WAC) CHAPTER 332-120 AND THE REVISED CODE OF WASHINGTON (RCW) TITLE 58; ANY MONUMENT SHOWN ON THIS PLAN SET OR FOUND IN THE FIELD WHICH CANNOT BE PROTECTED AND WILL BE DISTURBED OR DESTROYED BY CONSTRUCTION, SHALL BE REFERENCED BY A LICENSED SURVEYOR, AND AN APPLICATION FILED WITH THE WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES (DNR), PER WAC 322-120-050 PRIOR TO THE MONUMENT BEING DISTURBED OR DESTROYED.
2. THE CONTRACTOR SHALL NOTIFY THE CITY AND A COPY OF EACH DNR APPLICATION SUBMITTED SHALL BE PROVIDED TO THE CITY ENGINEER.
3. WHEN CONSTRUCTION WORK IS COMPLETE, THE CONTRACTOR'S CONSTRUCTION SURVEYOR SHALL VERIFY THE MONUMENTS SHOWN ON THIS PLAN SET ARE STILL IN PLACE AND SUBMIT A STAMPED AND SIGNED REPORT TO THE CITY DOCUMENTING THEIR CONDITION. ANY MONUMENTS DISTURBED OR DESTROYED SHALL BE REPLACED BY THE CONTRACTOR'S SURVEYOR IN ACCORDANCE WITH WAC CHAPTER 332-120.
4. NO PART OF THIS STATEMENT SHALL RELIEVE THE CONTRACTOR OR THEIR SURVEYOR OF ANY OTHER PROVISIONS OF THE WAC OR RCW WITH REGARDS TO DUTIES AND RESPONSIBILITIES RELATED TO SURVEY MONUMENTATION AND ITS PRESERVATION OR REPLACEMENT.

Survey Control Data

Point No.	Northing	Easting	Elevation	Description
1	222543.31	1069289.04	154.64	SET 5/8" REBAR & CONTROL CAP NE OF SCOTT HILL ROAD & PARK ENTRANCE ROAD
2	222487.44	1069540.06	167.30	SET REBAR & CONTROL CAP EAST OF TANK #5; ± 22' WEST OF FENCE
1712	222755.10	1069389.51	158.39	SET HUB & TACK; ON BERM BETWEEN PONDS
1764	222450.01	1069311.89	156.29	FOUND 1/2" REBAR & CAP "BARBEIRI 6386"
1765	222603.44	1069231.22	153.32	FOUND 1/2" REBAR & CAP "BARBEIRI 6386"
1777	222900.15	1069327.88	155.47	FOUND 1/2" REBAR & CAP "BARBEIRI 6386"
1806	222720.79	1069525.64	161.51	SET HUB & TACK IN FIELD
1807	222391.41	1069447.78	167.52	SET HUB & TACK
1808	222244.78	1069348.25	167.47	SET HUB & TACK
1809	222445.25	1069619.12	159.94	FOUND 1/2" REBAR & CAP "K. BLUHM 29269"; IN TREE STUMP
1810	222499.81	1069669.61	158.67	FOUND 1/2" REBAR, NO CAP

RIGHT-OF-WAY DISCLAIMER

THE RIGHT-OF-WAY AND/OR PROPERTY LINES SHOWN HEREON ARE BASED ON AVAILABLE INFORMATION, NOT ON A SURVEYED LOCATION AND ARE ONLY APPROXIMATE

LiDAR DATA DISCLAIMER

THE CONTOURS DEPICTED ON THIS DRAWING WERE CREATED FROM LiDAR POINT DATA. THIS LiDAR POINT DATA WAS OBTAINED FROM THE NOAA ELEVATION DATABASE AND THE POINT DATA WAS CONSTRUCTED FROM WA 2018 FEMA QL2 LiDAR DATA

GIBBS & OLSON

City of WOODLAND WASHINGTON

Reservoir No. 4
City of Woodland
Woodland, Washington
Existing Conditions & Survey Control Plan

Datum: **NAD83 / NAVD 88**

Survey Book: **1887 A & B**

Project Milestone: **100%**

Date: **08-28-2023**

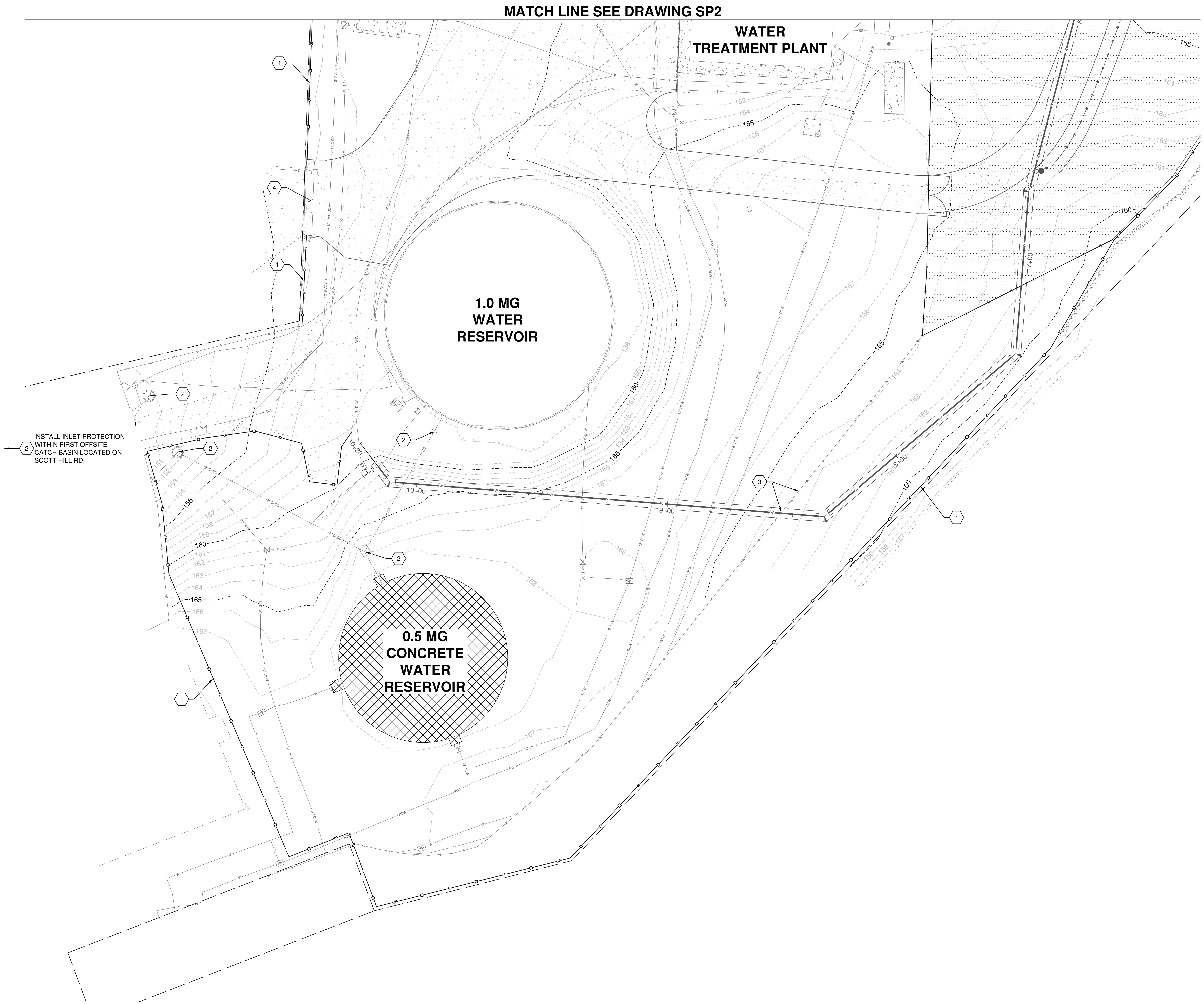
WYAN J. WALTERS
STATE OF WASHINGTON
DIGITALLY SIGNED
52192
REGISTERED
PROFESSIONAL ENGINEER
08/28/2023

Designed by: **RJW**
Checked by: **TEG**
Approved by: **RJW**

Project Number: **0876.4533**

Drawing Number: **G3**

Sheet Number: **3** of **28**



NORTH

Scale: (in Feet) 0 10 20 40

LEGEND:

- CLEARING AND GRUBBING AREA
- EXISTING RESERVOIR & PIPING TO BE DEMOLISHED & WASTEHAULED, SEE DETAIL, DWG C7
- SILT FENCE

 # SITE PREPARATION CONSTRUCTION NOTES:

1. INSTALL SILT FENCE PER DETAIL, DWG SP3.
2. INSTALL INLET PROTECTION PER DETAIL, DWG SP3.
3. REMOVE AND REPLACE EX FENCE, AS NECESSARY, IN KIND PER DETAIL 1, DWG C9.
4. EX GRAVEL DRIVE MAY BE USED AS CONSTRUCTION ENTRANCE.
5. INSTALL SEDIMENT TRAP PER DETAIL, DWG SP3. SEE GENERAL NOTE 3.

GENERAL CONSTRUCTION NOTES:

1. CONTRACTOR TO SALVAGE EXISTING RESERVOIR NO. 2 PLATFORM AND (2) FALL ARREST ATTACHMENTS AND DELIVER TO THE CITY.
2. EXCAVATE INFILTRATION FACILITY TO FINAL GRADE ONLY AFTER CONSTRUCTION IS COMPLETE AND ALL EXPOSED SOILS HAVE BEEN STABILIZED.
3. CONTRACTOR SHALL REMOVE ANY ACCUMULATION OF SEDIMENT AND SCARIFY SOIL PRIOR TO FINAL CONSTRUCTION OF THE INFILTRATION FACILITY.
4. STORMWATER RUNOFF CANNOT BE DISCHARGED FROM THE SITE DURING CONSTRUCTION. ALL RUNOFF MUST BE INFILTRATED ONSITE.

GIBBS & OLSON

City of WOODLAND WASHINGTON

Reservoir No. 4
City of Woodland
Woodland, Washington
Site Preparation & TESC Plan South

Datum: NAD83 / NAVD 88

Survey Book: 1887 A & B

Project Milestone: 100%

Date: 08-28-2023

RYAN J. WALTERS — STATE OF WASHINGTON — DIGITALLY SIGNED — 52192 — REGISTERED PROFESSIONAL ENGINEER — 08/28/2023

Designed by: RJW
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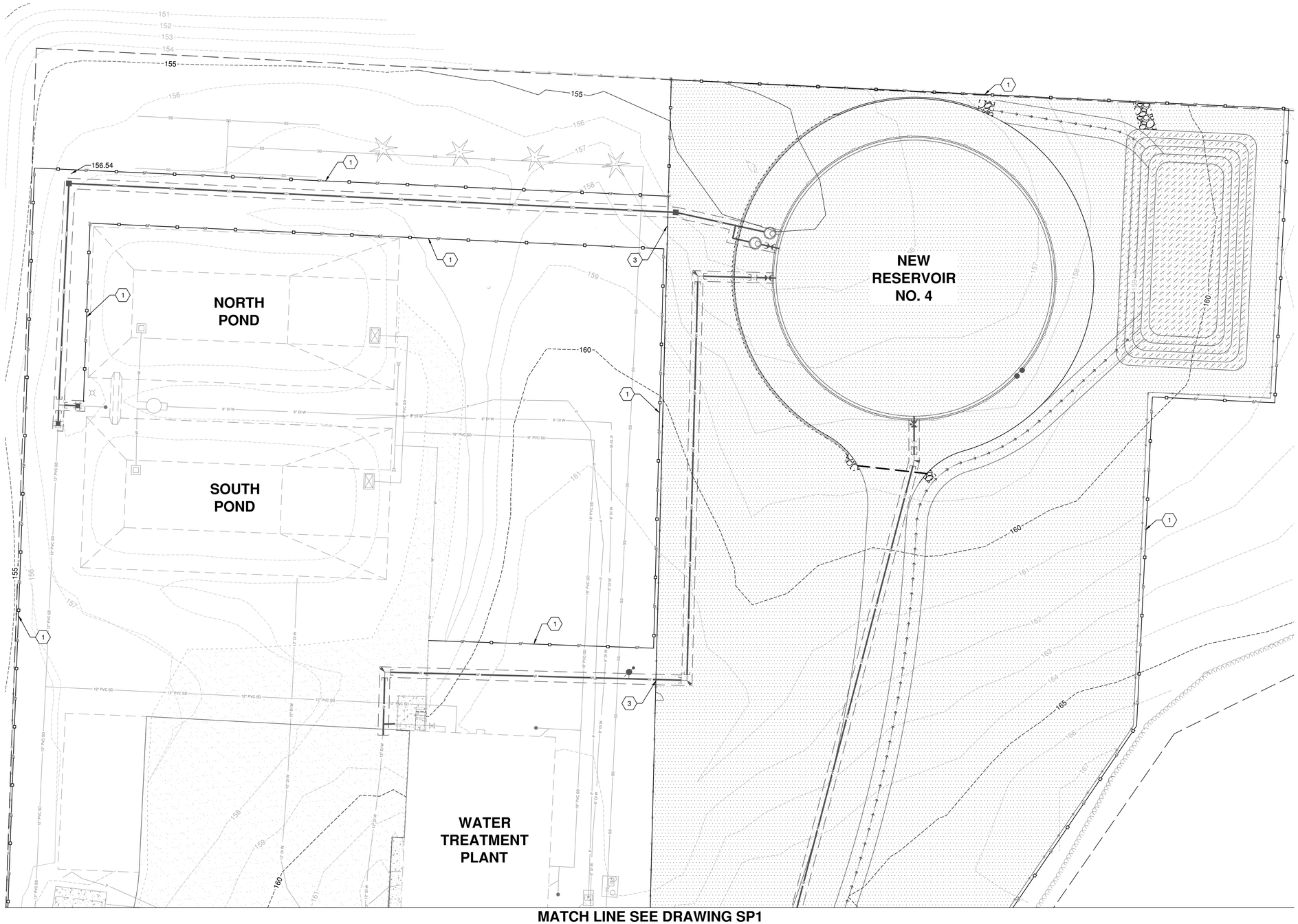
Approved by: RJW

Project Number: 0876.4533

Drawing Number: SP1

Sheet Number: 4 of 28



NORTH

0 10 20 40

Scale: (in Feet)

LEGEND:

- CLEARING AND GRUBBING AREA
- EXISTING RESERVOIR & PIPING TO BE DEMOLISHED & WASTEHAULED, SEE DETAIL, DWG C7
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GIBBS & OLSON

City of WOODLAND WASHINGTON

Reservoir No. 4
City of Woodland
Woodland, Washington
Site Preparation & TESC Plan
North

Datum: **NAD83 / NAVD 88**
Survey Book: **1887 A & B**
Project Milestone: **100%**
Date: **08-28-2023**

RYAN J. W. ALTERS — STATE OF WASHINGTON — DIGITALLY SIGNED — 52192 — REGISTERED PROFESSIONAL ENGINEER
08/28/2023

Designed by: **RJW**
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Project Number: **0876.4533**
Drawing Number: **SP2**
Sheet Number: **5** of **28**

DRAWING: T:\PROJECTS\0876 WOODLAND\4533 RESERVOIR NO 4\CONTRACT DRAWINGS\0876.4533_SITE PREP & TESC PLAN.DWG, LAYOUT: T4B_SP2, PLOT DATE: 8/28/2023, 3:08:06 PM, DRAWING SAVE DATE: 8/28/2023, 2:59:10 PM, PLOTTED BY: KRODERS
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GENERAL EROSION PREVENTION & SEDIMENT CONTROL NOTES

1. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IN PLACE AND IN WORKING CONDITION PRIOR TO ANY LAND DISTURBING ACTIVITY CAUSED BY CLEARING OR GRADING. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE APPROVED BY THE CITY EROSION CONTROL SPECIALIST PRIOR TO THE COMMENCEMENT OF WORK. THE CONTRACTOR SHALL CALL FOR AN ON-SITE INSPECTION WHEN EROSION AND SEDIMENT CONTROL MEASURES ARE IN PLACE AND PRIOR TO COMMENCEMENT OF WORK.
2. THE EROSION AND SEDIMENT CONTROL MEASURES SHALL BE SITED, DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS IN THE CITY OF WOODLAND'S LATEST STANDARD DETAILS AND THE WASHINGTON STATE DEPARTMENT OF ECOLOGY STORMWATER MANUAL FOR WESTERN WASHINGTON, WHERE THE CITY OF WOODLAND GENERAL REQUIREMENTS SHALL TAKE PRECEDENCE.
3. THE DEVELOPER IS RESPONSIBLE FOR MAINTAINING EROSION PREVENTION AND SEDIMENT CONTROL MEASURES DURING AND AFTER INSTALLATION OF ALL UTILITY WORK ASSOCIATED WITH UTILITY TRENCHES.
4. PRIOR TO ANY SITE EXCAVATION, ALL STORM DRAINAGE INLETS SHALL BE PROTECTED DOWN SLOPE FROM ANY DISTURBED OR CONSTRUCTION AREAS PER THE STANDARD DETAILS TO PREVENT SEDIMENT FROM ENTERING THE STORM DRAINAGE SYSTEM PRIOR TO PERMANENT STABILIZATION OF THE DISTURBED AREAS. CLEAN THE FILTER FABRIC AS NECESSARY TO MAINTAIN DRAINAGE. REMOVE FILTER AND CLEAN CATCH BASINS FOLLOWING COMPLETION OF SITEWORK.
5. THE CONTRACTOR SHALL NOT ALLOW SEDIMENT OR DEBRIS TO ENTER NEW OR EXISTING PIPES, CATCH BASINS OR INFILTRATION SYSTEMS.
6. NEWLY CONSTRUCTED OR MODIFIED INLETS AND CATCH BASINS ARE TO BE PROTECTED IMMEDIATELY UPON INSTALLATION.
7. TEMPORARY SEEDING AND MULCHING OF FILL SLOPES AND DIVERSION DIKES SHALL BE COMPLETED WITHIN ONE WEEK AFTER ROUGH GRADING.
8. ALL EXPOSED AND UNWORKED SOILS SHALL BE STABILIZED BY THE APPROPRIATE BEST MANAGEMENT PRACTICES (BMPs). DURING THE PERIOD FROM OCTOBER 1 TO APRIL 30 NO SOIL SHALL BE EXPOSED FOR MORE THAN TWO (2) DAYS. FROM MAY 1 TO SEPTEMBER 30 NO SOIL SHALL BE EXPOSED FOR MORE THAN SEVEN (7) DAYS.
9. MATERIAL STOCKPILES ARE TO BE PROTECTED BY THE FOLLOWING MEANS:
   TEMPORARY: COVER PILES WITH TARPS OR PLASTIC SHEETING WEIGHTED WITH CONCRETE BLOCKS, LUMBER OR TIRES.
   PERMANENT: COVER PILES WITH TARPS OR PLASTIC, OR RESEED. PERIMETER AREAS AROUND PILES ARE TO BE SURROUNDED WITH EROSION CONTROL FILTER FABRIC FENCES UNTIL SOIL SURFACE IS STABILIZED WITH RESEEDING.
10. THE CONTRACTOR SHALL MAINTAIN ON SITE A WRITTEN DAILY LOG OF EROSION CONTROL BMP MAINTENANCE.
11. IF THE CITY INSPECTOR OR ENGINEER(S) HAS EVIDENCE OF POOR CONSTRUCTION PRACTICES OR IMPROPER EROSION PREVENTION BMPs, CITATIONS AND/OR A STOP WORK ORDER SHALL BE ISSUED UNTIL PROPER MEASURES HAVE BEEN TAKEN AND APPROVED BY THE CITY OF WOODLAND. IF THE BMPs APPLIED TO A SITE ARE INSUFFICIENT TO PREVENT SEDIMENT FROM REACHING WATER BODIES, ADJACENT PROPERTIES, OR PUBLIC RIGHT-OF-WAY, THEN THE PUBLIC WORKS DIRECTOR SHALL REQUIRE ADDITIONAL BMPs.

PROTECTION OF ADJACENT PROPERTIES, ROADS AND STREETS

12. PROVIDE A 12-INCH DEEP PAD OF CRUSHED ROCK FOR A DISTANCE OF 100 FEET INTO THE SITE FOR ALL ACCESS POINTS UTILIZED BY CONSTRUCTION EQUIPMENT AND TRUCKS. WIDTH OF THE PAD SHALL BE A MINIMUM OF 20 FEET. ALL TRUCKS LEAVING THE SITE SHALL EGRESS ACROSS THE PAD. ACCUMULATED SOIL SHALL BE PERIODICALLY REMOVED, OR ADDITIONAL ROCK SHALL BE PLACED UPON THE PAD SURFACE. ROCK SHALL BE CLEAN 4 INCH TO 8 INCH QUARRY SPALLS. ALL MATERIALS SPILLED, DROPPED, WASHED OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.
13. PAVEMENT SWEEPING AND SHOVELING IS REQUIRED. WASHING THE PAVEMENT INTO THE STORM SYSTEM IS NOT PERMITTED.
14. AT SITES WITH LESS THAN 1 ACRE OF EXPOSED SOIL, PAD LENGTH MAY BE REDUCED TO 50 FEET. SINGLE FAMILY LOT ENTRANCES MAY HAVE THE PAD LENGTH REDUCED TO 20 FEET. IF CONSTRUCTION OCCURS SIMULTANEOUSLY ON ADJACENT LOTS WITH THE SAME OWNER DURING CONSTRUCTION, ONE LOT ENTRANCE MAY BE USED FOR THE ADJACENT LOTS.
15. INSTALL SEDIMENT FENCE IN ACCORDANCE WITH THIS DETAIL SHEET PRIOR TO BUILDING CONSTRUCTION AND/OR EXCAVATION TO PREVENT SILT INTRUSION UPON ADJACENT LOTS. IF CONSTRUCTION OCCURS SIMULTANEOUSLY ON ADJACENT LOTS AND THE LOTS HAVE THE SAME OWNER DURING CONSTRUCTION, THE SILT FENCE ALONG THE COMMON LOT LINE MAY BE ELIMINATED.
16. CONSTRUCTION ROADS AND PARKING AREAS SHALL BE STABILIZED WHEREVER THEY ARE CONSTRUCTED, WHETHER PERMANENT OR TEMPORARY, FOR THE USE OF CONSTRUCTION TRAFFIC.

MAINTENANCE OF SEDIMENT CONTROL BMPs

17. MAINTAIN AND REMOVE ALL SEDIMENT CONTROLS AS SPECIFIED IN THE STANDARD DETAILS. THE CONTRACTOR SHALL REMOVE ALL ACCUMULATED SEDIMENT FROM THE CATCH BASINS, DRYWELLS, UTILITY TRENCHES AND STORM PIPES PRIOR TO ACCEPTANCE BY THE CITY.
18. SEDIMENT CONTROL BMPs SHALL BE INSPECTED WEEKLY AND AFTER ANY STORM EVENT PRODUCING RUNOFF. THE INSPECTION FREQUENCY FOR STABILIZED, INACTIVE SITES SHALL BE ONCE EVERY TWO WEEKS OR MORE FREQUENTLY AS DETERMINED BY THE LOCAL PERMITTING AUTHORITY BASED ON THE LEVEL OF SOIL STABILITY AND POTENTIAL FOR ADVERSE ENVIRONMENTAL IMPACTS.
19. ALL TEMPORARY EROSION PREVENTION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER SITE STABILIZATION IS ACHIEVED OR AFTER 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.

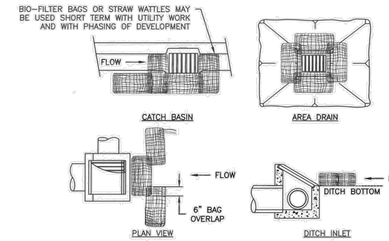
DUST CONTROL

20. IN AREAS SUBJECT TO SURFACE AND AIR MOVEMENT OF DUST ONE OR MORE OF THE FOLLOWING PREVENTATIVE MEASURES SHALL BE TAKEN FOR DUST CONTROL:
   A. MINIMIZE THE PERIOD OF SOIL EXPOSURE THROUGH THE USE OF TEMPORARY GROUND COVER AND OTHER TEMPORARY STABILIZATION PRACTICES.
   B. SPRINKLE THE SITE WITH WATER UNTIL THE SURFACE IS WET.
   C. SPRAY EXPOSED SOIL AREAS WITH A DUST PALLIATIVE. NOTE: USE OF PETROLEUM PRODUCTS OR POTENTIALLY HAZARDOUS MATERIALS ARE PROHIBITED

TEMPORARY SEEDING

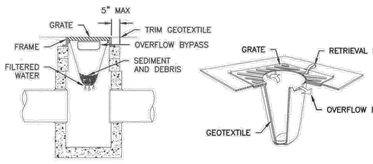
21. EXPOSED SURFACES THAT WILL NOT BE BROUGHT TO FINAL GRADE OR GIVEN A PERMANENT COVER TREATMENT WITHIN 30 DAYS OF THE EXPOSURE SHALL HAVE SEED MIX AND MULCH PLACED TO STABILIZE THE SOIL AND REDUCE EROSION SEDIMENTATION. SEEDED AREAS SHALL BE CHECKED REGULARLY TO ASSURE A GOOD STAND OF GRASS IS BEING MAINTAINED. AREAS THAT FAIL TO ESTABLISH VEGETATION COVER ADEQUATE TO PREVENT EROSION WILL BE RESEEDED AS SOON AS SUCH AREAS ARE IDENTIFIED.
22. APPLY AN APPROVED TEMPORARY SEEDING MIXTURE TO THE PREPARED SEED BED AT A RATE OF 120 LBS/ACRE. NOTE: "HYDROSEEDING" APPLICATIONS WITH APPROVED SEED-MULCH-FERTILIZER MIXTURES MAY ALSO BE USED.

WOODLAND PUBLIC WORKS	EROSION PREVENTION AND SEDIMENT CONTROL		REVISIONS	DATE	DRAWN	DESIGNED	E-03
	APPROVED	2/14/23					
	PUBLIC WORKS DIRECTOR	DATE					



NOTES:

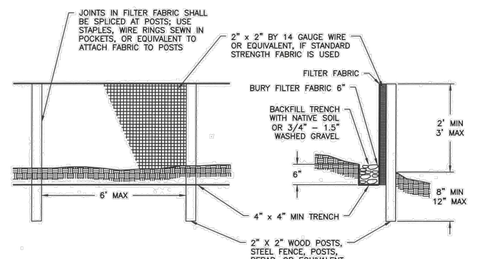
1. ADDITIONAL MEASURES MUST BE CONSIDERED DEPENDING ON SOIL TYPE.
2. BIO-FILTER BAGS SHOULD BE STAKED WHERE APPLICABLE USING (2) 1" x 2" WOODEN STAKES OR APPROVED EQUAL PER BAG.
3. STRAW WATTLES MUST BE STABILIZED BY ATTACHING WIRE CLIPS TO THE CATCH BASIN PER MANUFACTURER SPECIFICATIONS.
4. INLET PROTECTION MUST BE REGULARLY INSPECTED BY THE EROSION CONTROL INDIVIDUAL TO INSURE PROPER PLACEMENT/FUNCTION AND MAINTENANCE.



NOTES:

1. SIZE THE BELOW GRATE INLET DEVICE (BGID) FOR THE STORM WATER STRUCTURE IT WILL SERVICE.
2. THE REMOVAL SYSTEM MUST ALLOW REMOVAL OF THE BGID WITHOUT SPILLING THE COLLECTED MATERIAL.
3. THE BGID SHALL HAVE A BUILT-IN HIGH-FLOW RELIEF SYSTEM (OVERFLOW BYPASS).
4. THE CONTRACTOR SHALL INSPECT THE BAG AFTER EACH STORM EVENT AND AT REGULAR INTERVALS.
5. THE FILTER BAG SHALL BE CLEANED OR REPLACED WHEN THE BAG BECOMES HALF FULL.

WOODLAND PUBLIC WORKS	INLET PROTECTION (1 OF 2)		REVISIONS	DATE	DRAWN	DESIGNED	E-16
	APPROVED	2/14/23					
	PUBLIC WORKS DIRECTOR	DATE					



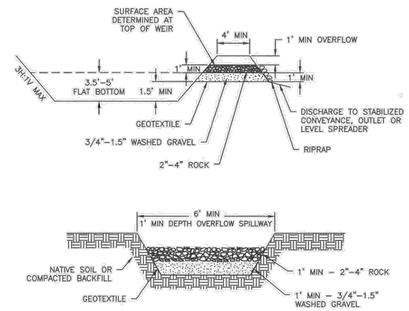
NOTES:

1. FILTER FABRIC FENCES SHALL BE INSTALLED ALONG CONTOUR WHENEVER POSSIBLE.
2. POST SPACING MAY BE INCREASED TO 8' IF WIRE BACKING IS USED.

MAINTENANCE STANDARDS:

1. SILT FENCES AND FILTER BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
2. IF CONCENTRATED FLOWS ARE EVIDENT UPHILL OF THE FENCE, THEY MUST BE INTERCEPTED AND CONVEYED TO A SEDIMENT POND.
3. IT IS IMPORTANT TO CHECK THE UPHILL SIDE OF THE FENCE FOR SIGNS OF THE FENCE CLOGGING AND ACTING AS A BARRIER TO FLOW AND THEN CAUSING CHANNELIZATION OF FLOWS PARALLEL TO THE FENCE. IF THIS OCCURS, REPLACE THE FENCE OR REMOVE THE TRAPPED SEDIMENT.
4. SEDIMENT DEPOSITS SHALL EITHER BE REMOVED WHEN THE DEPOSIT REACHES APPROXIMATELY ONE-THIRD THE HEIGHT OF THE SILT FENCE, OR A SECOND SILT FENCE SHALL BE INSTALLED.
5. IF THE FILTER FABRIC (GEOTEXTILE) HAS DETERIORATED DUE TO ULTRAVIOLET BREAKDOWN, IT SHALL BE REPLACED.

WOODLAND PUBLIC WORKS	SILT FENCE		REVISIONS	DATE	DRAWN	DESIGNED	E-20
	APPROVED	2/14/23					
	PUBLIC WORKS DIRECTOR	DATE					



NOTES:

1. SEDIMENT TRAP MAY BE CONSTRUCTED BY EXCAVATION OR BY BUILDING A BERM.
2. OUTFLOW CHANNEL SHALL BE CONSTRUCTED BY EXCAVATION.
3. SEDIMENT TRAPS SHALL BE LIMITED TO SITES OF LESS THAN 1-ACRE. FOR ANY SITE GREATER THAN 1-ACRE, SEE SEDIMENT BASIN.
4. SEDIMENT SHALL BE REMOVED BEFORE 1' ACCUMULATES.

WOODLAND PUBLIC WORKS	SEDIMENT TRAP		REVISIONS	DATE	DRAWN	DESIGNED	E-22
	APPROVED	2/14/23					
	PUBLIC WORKS DIRECTOR	DATE					

GIBBS & OLSON

City of WOODLAND WASHINGTON

Reservoir No. 4
City of Woodland
Woodland, Washington
Site Preparation & TESC Details

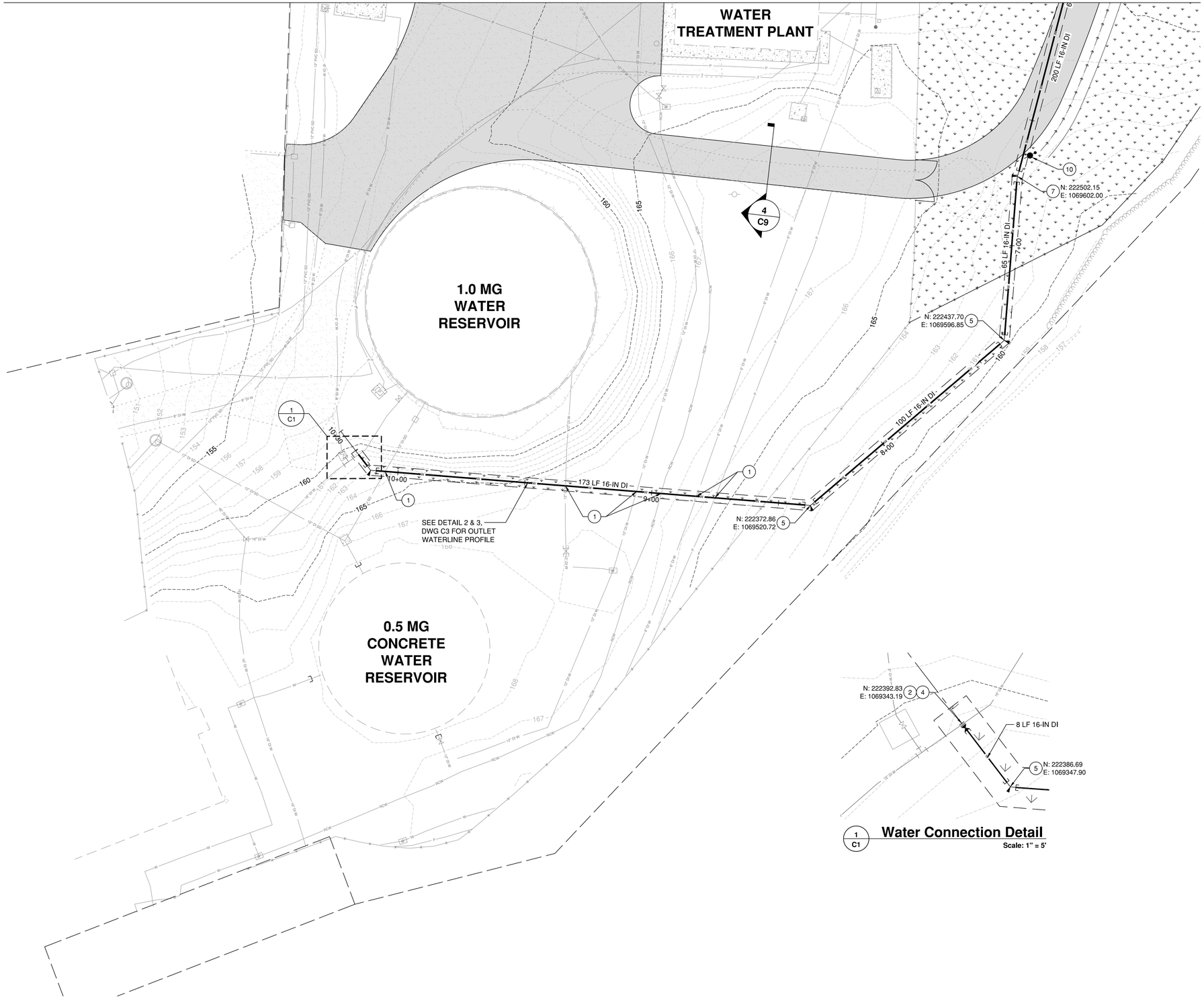
Datum: **NAD83 / NAVD 88**
Survey Book: **1887 A & B**
Project Milestone: **100%**
Date: **08-28-2023**

RYAN J. WALTERS — STATE OF WASHINGTON — DIGITALLY SIGNED — 52192 — REGISTERED PROFESSIONAL ENGINEER
08/28/2023

Designed by: **RJW**
Checked by: **TEG**
Approved by: **RJW**

Project Number: **0876.4533**
Drawing Number: **SP3**
Sheet Number: **6** of **28**

MATCH LINE SEE DRAWING C2



NORTH

0 10 20 40

Scale: (in Feet)

LEGEND:

- ASPHALT PAVEMENT, SEE DWG C9
- GRAVEL RESTORATION
- TOPSOIL AND HYDROSEED RESTORATION
- WATERLINE
- STORM DRAIN LINE
- FOUNDATION DRAIN LINE

(#) WATER CONSTRUCTION NOTES:

1. CAUTION: POTENTIAL UTILITY CONFLICT. CONTRACTOR TO POTHOLE AND VERIFY EXACT LOCATION AND DEPTH, MATERIAL TYPE, AND DIAMETER OF EX UTILITY, PRIOR TO CONSTRUCTION.
2. AFTER PRESSURE AND BACTERIOLOGICAL TESTS AND ACCEPTANCE, CONNECT TO EXISTING SYSTEM.
3. WATER AND SEWER CROSSINGS SHALL BE CONSTRUCTED PER THE CITY OF WOODLAND STANDARD DETAILS AND ENGINEERING STANDARDS.
4. CONTRACTOR SHALL POTHOLE TO VERIFY LOCATION, DEPTH, TYPE, AND SIZE OF EX WATERMAIN, PRIOR TO MAKING HOT-TAP CONNECTION. CONTRACTOR TO COORDINATE TIE-IN W/ WATER TREATMENT PLANT OPERATORS. INSTALL (1) 16-IN TAPPING TEE W/ 16-IN TAPPING VALVE.
5. INSTALL (1) 16-IN 45° BEND (MJ) W/ THRUST BLOCK.
6. INSTALL (1) 16-IN 22.5° BEND (MJ) W/ THRUST BLOCK.
7. INSTALL (1) 16-IN 11.25° BEND (MJ) W/ THRUST BLOCK.
8. INSTALL (1) 12-IN 90° BEND (MJ) W/ THRUST BLOCK.
9. CONTRACTOR TO COORDINATE TIE-IN W/ WATER TREATMENT PLANT OPERATORS SUCH THAT THE EXISTING RESERVOIRS ARE FULL, PRIOR TO MAKING CONNECTION. INSTALL (1) 12-IN TEE (FL) W/ THRUST BLOCK, (2) ADAPTER FLANGES (FLxMJ)(S,E), (1) 12-IN GATE VALVE (FLxMJ)(N), (2) 12-IN PIPE SPOOLS, AND (2) 12-IN LONG PATTERN SLEEVES (MJ)(S,E). REMOVE EX 90° BEND AND PIPING AS REQUIRED FOR CONNECTION.
10. INSTALL COMBINATION AIR RELEASE VALVE PER DETAIL, DWG C7.
11. INSTALL FORCE BALANCED FLEXIBLE EXPANSION COUPLING, SEE DETAIL 1, DWG D4.

GENERAL UTILITY NOTES:

1. ALL DUCTILE IRON (DI) PIPING, (MJ) FITTINGS, AND VALVES SHALL BE MECHANICALLY RESTRAINED.
2. PRIOR TO EXCAVATION, INSTALL TESC FACILITIES AS DETAILED WITHIN THESE PLANS AND AS SPECIFIED WITHIN THE CONTRACT DOCUMENTS.
3. PRIOR TO CONSTRUCTION, CONTRACTOR SHALL CALL 811 FOR LOCATES A MINIMUM OF TWO FULL WORKING DAYS PRIOR TO CONSTRUCTION.
4. CONTRACTOR TO NOTIFY ENGINEER IF EXISTING UTILITY TYPE, SIZE OR INVERT ELEVATIONS DIFFER FROM INFORMATION SHOWN ON THE CONTRACT DRAWINGS.
5. PIPE DEFLECTIONS SHALL BE LIMITED TO ½ THE MANUFACTURER'S RECOMMENDATION.
6. CONTRACTOR SHALL PROTECT ALL MONUMENTS AND PROPERTY CORNERS THROUGHOUT CONSTRUCTION. IF MONUMENT OR PROPERTY CORNERS ARE DAMAGED DURING CONSTRUCTION, THE CONTRACTOR SHALL BEAR ALL COSTS TO SURVEY, REPLACE, AND RECORD MONUMENTS OR PROPERTY CORNERS.

GIBBS & OLSON

City of WOODLAND WASHINGTON

Reservoir No. 4
City of Woodland
Woodland, Washington
Site Piping Plan
South

Datum: **NAD83 / NAVD 88**

Survey Book: **1887 A & B**

Project Milestone: **100%**

Date: **08-28-2023**

RYAN J. WALLERS — STATE OF WASHINGTON — DIGITALLY SIGNED — 53192 — REGISTERED PROFESSIONAL ENGINEER

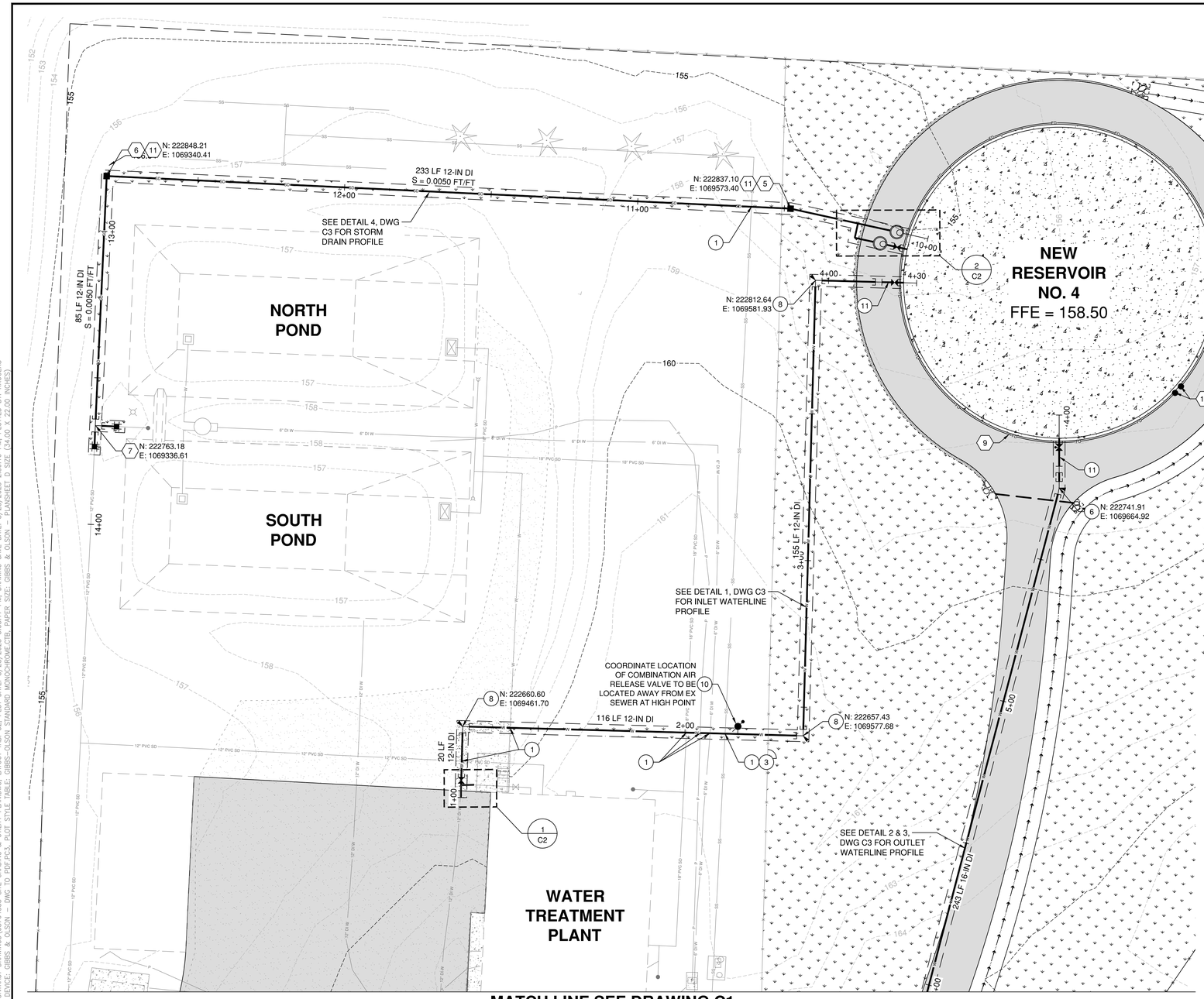
08/28/2023

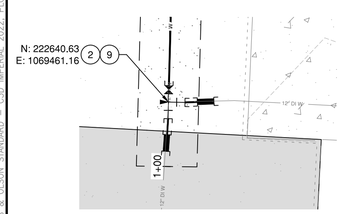
Designed by: **RJW**
Checked by: **TEG**
Approved by: **RJW**

Project Number: **0876.4533**

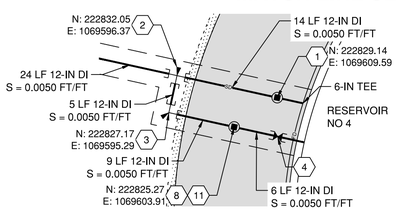
Drawing Number: **C1**

Sheet Number: **7** of **28**





1/C2 **Water Connection Detail**
Scale: 1" = 5'



2/C2 **Storm Connection Detail**
Scale: 1" = 10'

LEGEND:

- ASPHALT PAVEMENT, SEE DWG C9
- GRAVEL RESTORATION
- TOPSOIL AND HYDROSEED RESTORATION
- W — WATERLINE
- SD — STORM DRAIN LINE
- FD — FOUNDATION DRAIN LINE

(#) WATER CONSTRUCTION NOTES:

1. CAUTION: POTENTIAL UTILITY CONFLICT. CONTRACTOR TO POTHOLE AND VERIFY EXACT LOCATION AND DEPTH, MATERIAL TYPE, AND DIAMETER OF EX UTILITY, PRIOR TO CONSTRUCTION.
2. AFTER PRESSURE AND BACTERIOLOGICAL TESTS AND ACCEPTANCE, CONNECT TO EXISTING SYSTEM.
3. WATER AND SEWER CROSSINGS SHALL BE CONSTRUCTED PER THE CITY OF WOODLAND STANDARD DETAILS AND ENGINEERING STANDARDS.
4. CONTRACTOR SHALL POTHOLE TO VERIFY LOCATION, DEPTH, TYPE, AND SIZE OF EX WATERMAIN, PRIOR TO MAKING HOT-TAP CONNECTION. CONTRACTOR TO COORDINATE TIE-IN W/ WATER TREATMENT PLANT OPERATORS. INSTALL (1) 16-IN TAPPING TEE W/ 16-IN TAPPING VALVE.
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7. INSTALL (1) 16-IN 11.25° BEND (MJ) W/ THRUST BLOCK.
8. INSTALL (1) 12-IN 90° BEND (MJ) W/ THRUST BLOCK.
9. CONTRACTOR TO COORDINATE TIE-IN W/ WATER TREATMENT PLANT OPERATORS SUCH THAT THE EXISTING RESERVOIRS ARE FULL, PRIOR TO MAKING CONNECTION. INSTALL (1) 12-IN TEE (FL) W/ THRUST BLOCK, (2) ADAPTER FLANGES (FLxMJ)(S,E), (1) 12-IN GATE VALVE (FLxMJ)(N), (2) 12-IN PIPE SPOOLS, AND (2) 12-IN LONG PATTERN SLEEVES (MJ)(S,E). REMOVE EX 90° BEND AND PIPING AS REQUIRED FOR CONNECTION.
10. INSTALL COMBINATION AIR RELEASE VALVE PER DETAIL, DWG C7.
11. INSTALL FORCE BALANCED FLEXIBLE EXPANSION COUPLING, SEE DETAIL 1, DWG D4.

(#) STORM DRAINAGE CONSTRUCTION NOTES:

1. INSTALL 48-IN Ø TYPE 2 CATCH BASIN (MODIFIED PRE-CAST COVER W/ OFFSET RECTANGULAR OPENING, SEE DETAIL 4, DWG D5).
   RIM EL = 158.26±
   IE IN = 154.66 6-IN PERF ADS FOUNDATION DRAIN (E)
   IE OUT = 154.33 12-IN DI (W)
2. INSTALL 12-IN TEE (MJ) W/ THRUST BLOCK
   IE = 154.26
3. INSTALL 12-IN 90° BEND (MJ) W/ THRUST BLOCK
   IE = 154.29
4. INSTALL 12-IN GATE VALVE (MJ)
   IE = 154.37
5. INSTALL TYPE 1 CATCH BASIN PER WSDOT STD PLAN B-10.20-02, SEE DWG C8.
   RIM EL = 156.41±
   IE IN = 154.14 12-IN DI (E)
   IE OUT = 154.14 12-IN DI (W)
6. INSTALL TYPE 1 CATCH BASIN PER WSDOT STD PLAN B-10.20-02, SEE DWG C8.
   RIM EL = 156.59±
   IE IN = 152.97 12-IN DI (E)
   IE OUT = 152.97 12-IN DI (S)
7. CUT AND REMOVE EX 12-IN 90-DEG BEND & INSTALL (1) 12-IN TEE (MJ), (2) 12-IN PIPE SPOOLS, & (2) 12-IN COUPLINGS (MJ) (E & S).
   IE = 152.54
8. INSTALL 48-IN Ø TYPE 2 CATCH BASIN PER WSDOT STD PLAN B-10.20-02, SEE DWG C8.
   RIM EL =158.22±
   IE IN = 154.34 12-IN DI (E)
   IE OUT = 154.34 12-IN DI (W)
9. INSTALL 6-IN DIA PERF ADS FOUNDATION DRAIN WRAPPED WITH A NON-WOVEN GEOTEXTILE FILTER FABRIC AT THE BASE OF RESERVOIR RING WALL. FOUNDATION DRAIN SHALL BE BACKFILLED WITH A MINIMUM OF 2 CUBIC FT OF OPEN GRADED DRAIN ROCK PER LF OF PIPE. DRAIN ROCK SHALL BE ENCASED IN GEOTEXTILE FABRIC. FOUNDATION DRAIN SHALL BE POSITIVELY SLOPED.
10. INSTALL STORM CLEANOUT PER DETAIL 9, DWG D5.
11. INSTALL SOLID COVER ON CATCH BASIN.

GENERAL UTILITY NOTES:

1. ALL DUCTILE IRON (DI) PIPING, (MJ) FITTINGS, AND VALVES SHALL BE MECHANICALLY RESTRAINED.
2. PRIOR TO EXCAVATION, INSTALL TESC FACILITIES AS DETAILED WITHIN THESE PLANS AND AS SPECIFIED WITHIN THE CONTRACT DOCUMENTS.
3. PRIOR TO CONSTRUCTION, CONTRACTOR SHALL CALL 811 FOR LOCATES A MINIMUM OF TWO FULL WORKING DAYS PRIOR TO CONSTRUCTION.
4. CONTRACTOR TO NOTIFY ENGINEER IF EXISTING UTILITY TYPE, SIZE OR INVERT ELEVATIONS DIFFER FROM INFORMATION SHOWN ON THE CONTRACT DRAWINGS.
5. PIPE DEFLECTIONS SHALL BE LIMITED TO ½ THE MANUFACTURER'S RECOMMENDATION.
6. CONTRACTOR SHALL PROTECT ALL MONUMENTS AND PROPERTY CORNERS THROUGHOUT CONSTRUCTION. IF MONUMENT OR PROPERTY CORNERS ARE DAMAGED DURING CONSTRUCTION, THE CONTRACTOR SHALL BEAR ALL COSTS TO SURVEY, REPLACE, AND RECORD MONUMENTS OR PROPERTY CORNERS.

GIBBS & OLSON

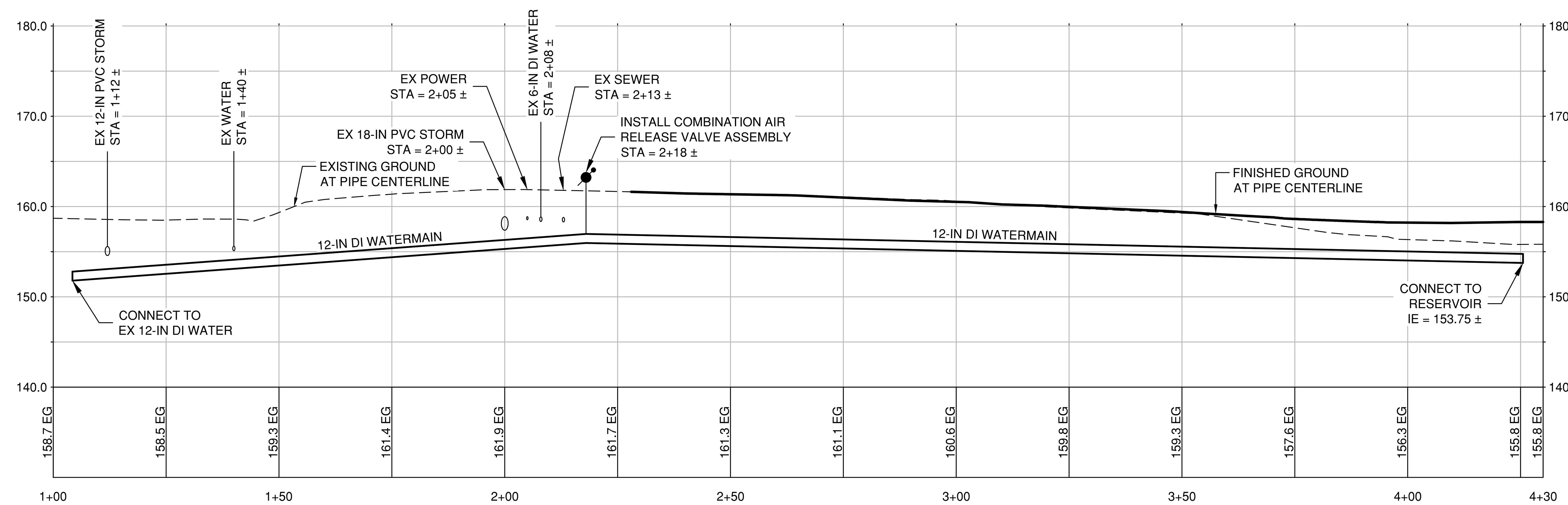
City of WOODLAND WASHINGTON

Reservoir No. 4
City of Woodland
Woodland, Washington
Site Piping Plan
North

Datum: **NAD83 / NAVD 88**
Survey Book: **1887 A & B**
Project Milestone: **100%**
Date: **08-28-2023**

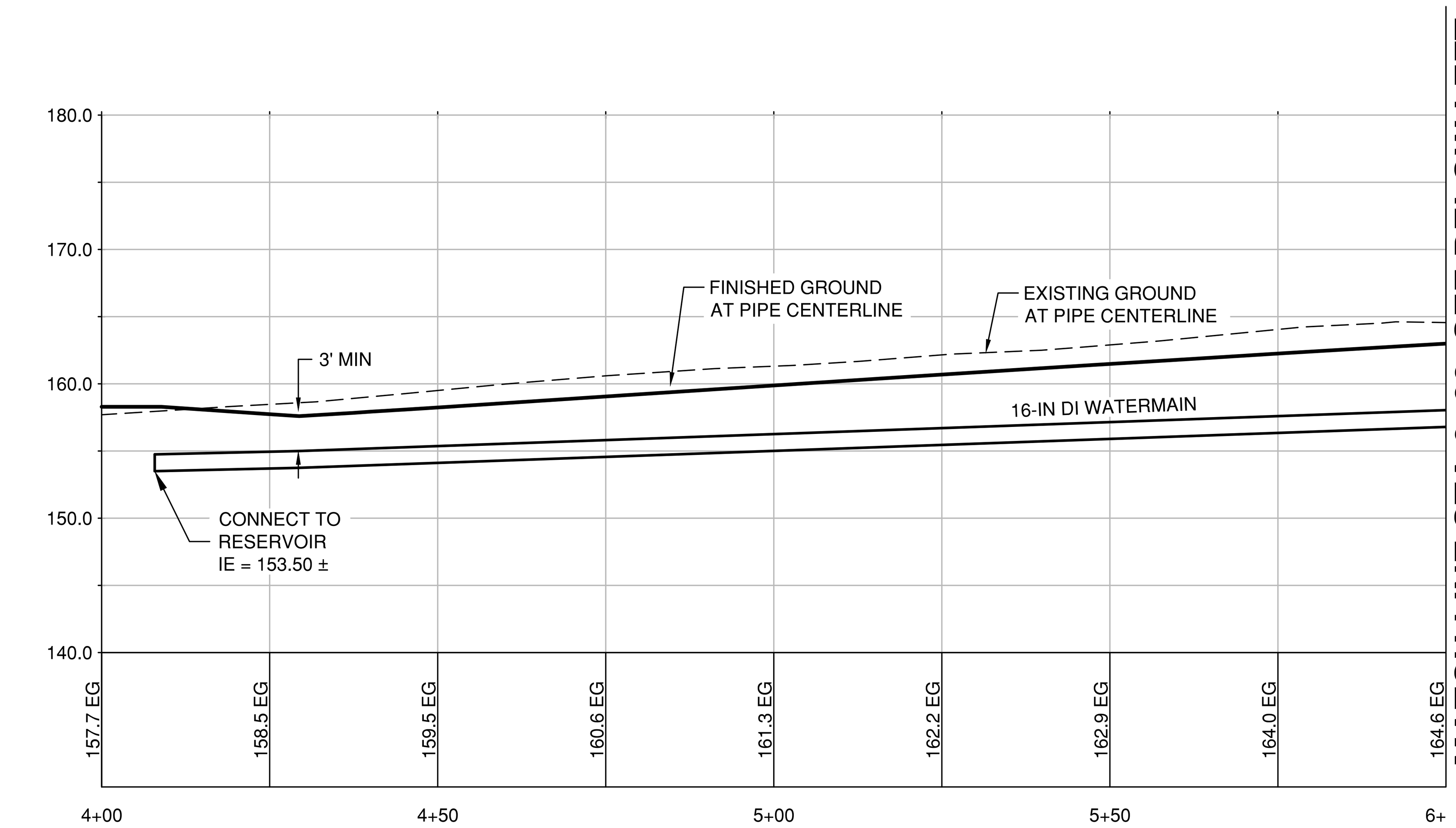
RYAN J. WALTERS — STATE OF WASHINGTON — 52192 — REGISTERED PROFESSIONAL ENGINEER — DIGITALLY SIGNED
08/28/2023

Designed by: **RJW**
Checked by: **TEG**
Approved by: **RJW**
Project Number: **0876.4533**
Drawing Number: **C2**
Sheet Number: **8** of **28**



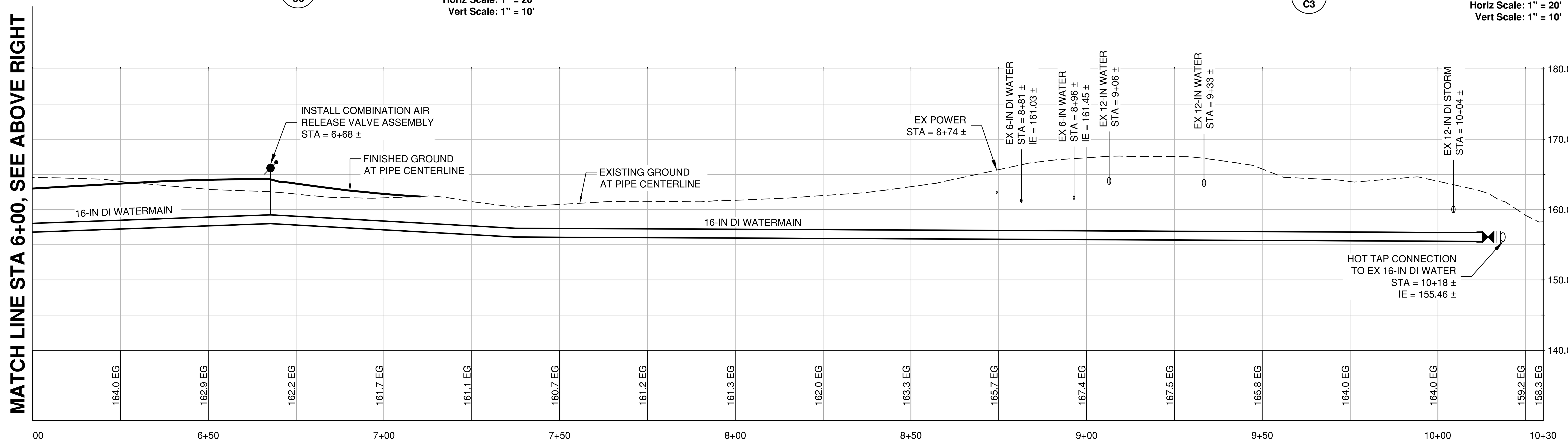
1 C3 **Inlet Waterline Profile**

Horiz Scale: 1" = 20'
Vert Scale: 1" = 10'



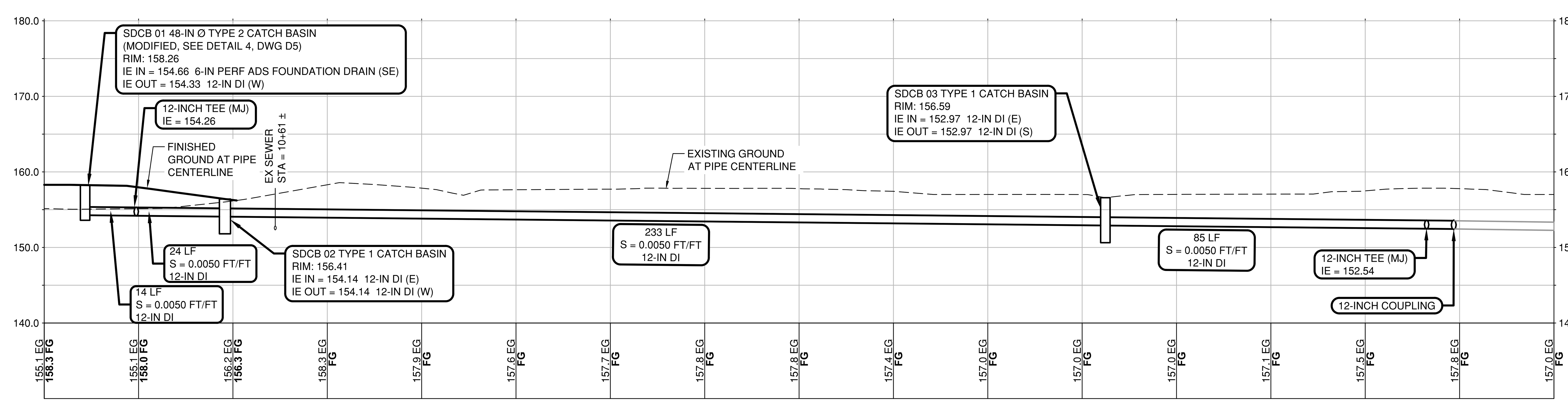
2 C3 **Outlet Waterline Profile**

Horiz Scale: 1" = 20'
Vert Scale: 1" = 10'



3 C3 **Outlet Waterline Profile**

Horiz Scale: 1" = 20'
Vert Scale: 1" = 10'



4 C3 **Storm Drain Profile**

Horiz Scale: 1" = 20'
Vert Scale: 1" = 10'

GIBBS & OLSON

City of WOODLAND WASHINGTON

Reservoir No. 4
City of Woodland
Woodland, Washington
Site Piping Profiles

Datum: NAD83 / NAVD 88
Survey Book: 1887 A & B

Project Milestone: 100%
Date: 08-28-2023

RYAN J. WALTERS — STATE OF WASHINGTON — 52192 — REGISTERED PROFESSIONAL ENGINEER — DIGITALLY SIGNED — 08/28/2023

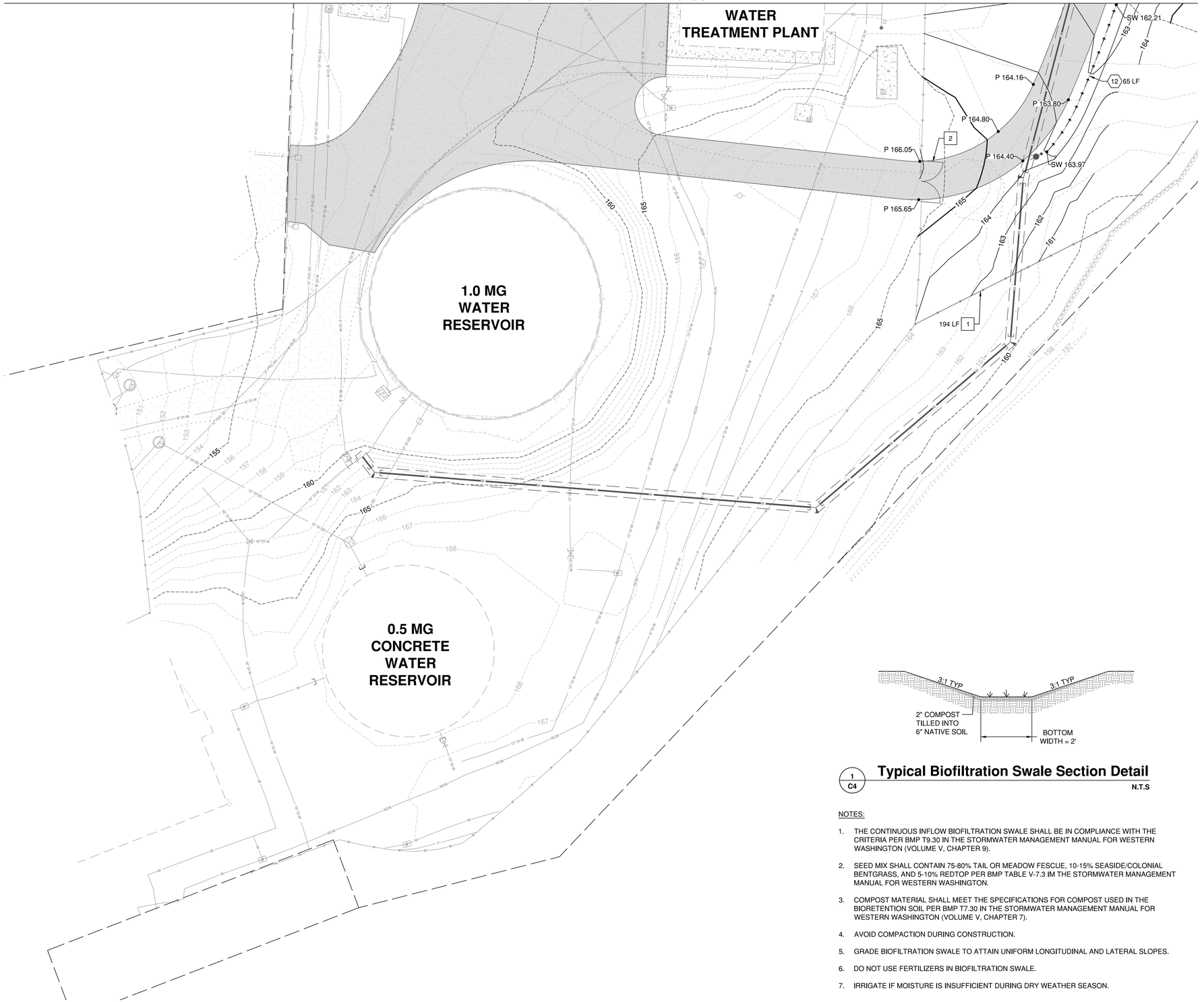
Designed by: RJW
Checked by: TEG
Approved by: RJW

Project Number: 0876.4533

Drawing Number: C3

DRAWING: T:\PROJECTS\0876 WOODLAND\4533 RESERVOIR NO 4\CONTRACT DRAWINGS\08764533 SITE GRADING & UTILITY PLAN.DWG, LAYOUT TAB: C3, PLOT DATE: 8/28/2023 3:08:20 PM, DRAWING SAVE DATE: 8/28/2023 2:59:10 PM, PLOTTED BY: KROGERS
PROFILE: GIBBS & OLSON STANDARD – C3D IMPERIAL 2022, PLOT DEVICE: GIBBS & OLSON – DWG TO PDF.PC3, PLOT STYLE TABLE: GIBBS-OLSON STANDARD MONOCHROME.CTB, PAPER SIZE: GIBBS & OLSON – PLANSHEET D SIZE (34.00 X 22.00 INCHES)

MATCH LINE SEE DRAWING C5



LEGEND:

- RIP-RAP PER WSDOT STD SPEC 9-13.1(5)
- GRAVEL FLOW SPREADER PER WSDOT STD SPEC 9-03.12(4)
- INFILTRATION POND PER TABLE V-12.3 OF THE SWMMWW 2019
- SW XX.XX — SWALE ELEVATION
- P XX.XX — PAVEMENT ELEVATION
- 24.0 — EXISTING CONTOUR
- 24.0 — PROPOSED CONTOUR
- PROPOSED FENCE LINE
- SWALE LINE
- GRADE BREAKLINE

 # SITE CONSTRUCTION NOTES:

1. CONSTRUCT FENCE PER DETAIL 1, DWG C9
2. CONSTRUCT 16 FT DOUBLE SWING GATE PER DETAIL 2, DWG C9
3. CONSTRUCT 3 FT MAN GATE PER DETAIL 3, DWG C9
4. INSTALL CURB PER DETAIL 5, DWG C9

 # STORM DRAINAGE CONSTRUCTION NOTES:

12. CONSTRUCT BIOFILTRATION SWALE PER DETAIL, DWG C4.
13. CONSTRUCT INFILTRATION POND WITH 3:1 SIDE SLOPES
    BOTTOM OF POND DIMENSIONS: 26 FT x 66.7 FT
    BOTTOM OF POND ELEVATION: 154 FT
    TOP OF POND ELEVATION: 158 FT
14. CONSTRUCT EMERGENCY OVERFLOW PATH APPROXIMATELY 6' W x 11' L x 1' D.
    APPROXIMATE ELEVATION: 157.50 FT, GRADE TO DRAIN TO THE NORTH
15. CONSTRUCT 1' W x 1' D GRAVEL FLOW SPREADER FOR DISPERSION PER WSDOT STD SPEC 9-03.12(4).
16. CONSTRUCT AN APPROXIMATE 3' W x 4' L x 1' D RIP-RAP PAD
17. CONSTRUCT AN APPROXIMATE 4' W x 6' L x 1' D RIP-RAP PAD

GENERAL NOTES:

1. WITHIN ALL AREAS THAT HAVE BEEN SUBJECT TO CLEARING AND GRADING, ALL GRASS AND LANDSCAPED AREAS SHALL HAVE A MINIMUM 8-INCH SETTLED TOPSOIL LAYER PRIOR TO SEEDING AND PLANTING THAT MEETS THE CRITERIA PER BMP T5.13 IN THE STORMWATER MANAGEMENT MANUAL FOR WESTERN WASHINGTON, VOL V.
2. CONTRACTOR TO NOTIFY ENGINEER IF EXISTING UTILITY TYPE, SIZE OR INVERT ELEVATIONS DIFFER FROM INFORMATION SHOWN ON THE CONTRACT DRAWINGS.

1 / C4 **Typical Biofiltration Swale Section Detail**

N.T.S

NOTES:

1. THE CONTINUOUS INFLOW BIOFILTRATION SWALE SHALL BE IN COMPLIANCE WITH THE CRITERIA PER BMP T9.30 IN THE STORMWATER MANAGEMENT MANUAL FOR WESTERN WASHINGTON (VOLUME V, CHAPTER 9).
2. SEED MIX SHALL CONTAIN 75-80% TAIL OR MEADOW FESCUE, 10-15% SEASIDE/COLONIAL BENTGRASS, AND 5-10% REDTOP PER BMP TABLE V-7.3 IM THE STORMWATER MANAGEMENT MANUAL FOR WESTERN WASHINGTON.
3. COMPOST MATERIAL SHALL MEET THE SPECIFICATIONS FOR COMPOST USED IN THE BIORETENTION SOIL PER BMP T7.30 IN THE STORMWATER MANAGEMENT MANUAL FOR WESTERN WASHINGTON (VOLUME V, CHAPTER 7).
4. AVOID COMPACTION DURING CONSTRUCTION.
5. GRADE BIOFILTRATION SWALE TO ATTAIN UNIFORM LONGITUDINAL AND LATERAL SLOPES.
6. DO NOT USE FERTILIZERS IN BIOFILTRATION SWALE.
7. IRRIGATE IF MOISTURE IS INSUFFICIENT DURING DRY WEATHER SEASON.

GIBBS & OLSON

City of WOODLAND WASHINGTON

Reservoir No. 4
City of Woodland
Woodland, Washington
Storm Drainage and Site Grading Plan
South

Datum: **NAD83 / NAVD 88**

Survey Book: **1887 A & B**

Project Milestone: **100%**

Date: **08-28-2023**

RYAN J. WALTERS — STATE OF WASHINGTON — DIGITALLY SIGNED — 52192 — REGISTERED PROFESSIONAL ENGINEER

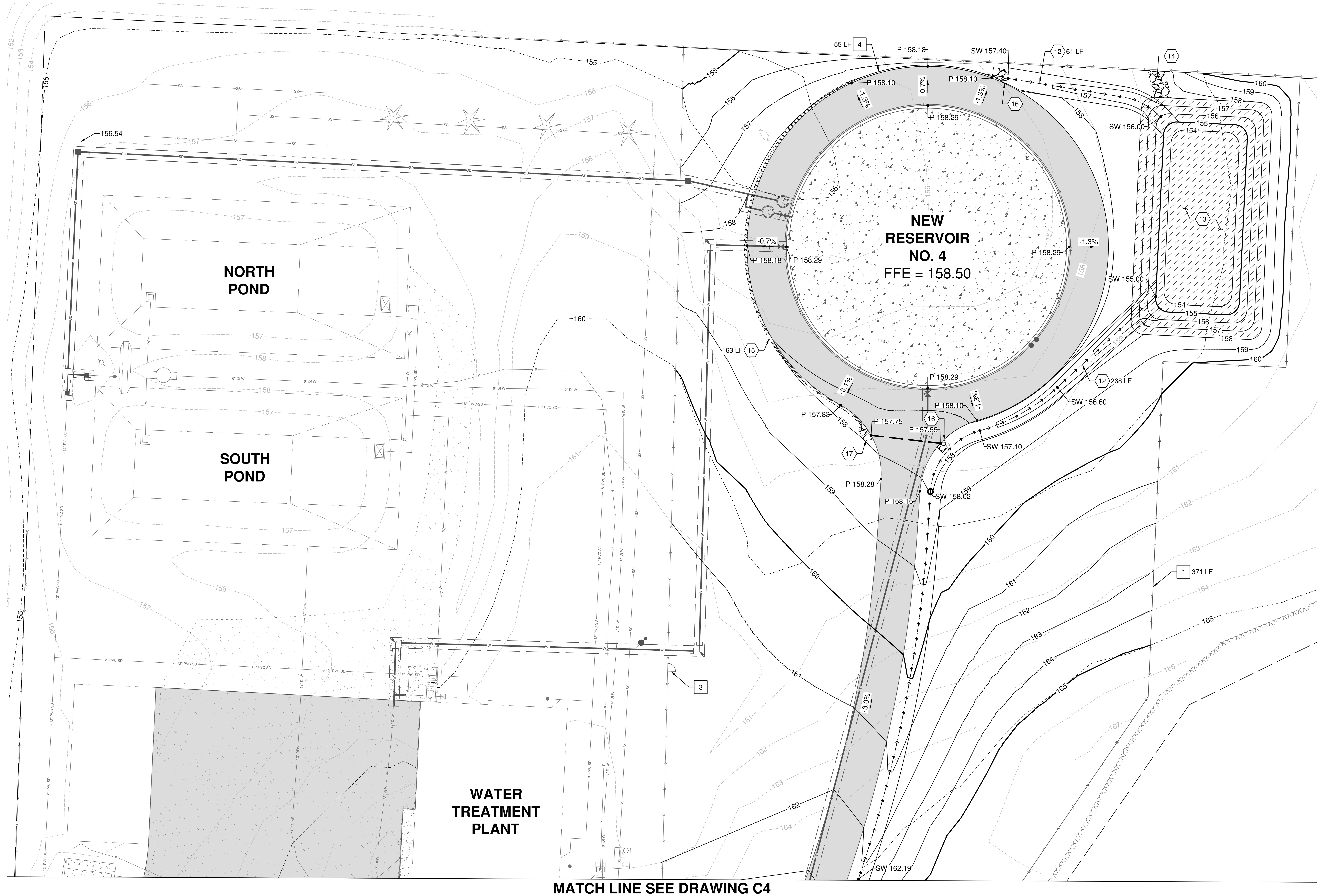
08/28/2023

Designed by: **RJW**
Checked by: **TEG**
Approved by: **RJW**

Project Number: **0876.4533**

Drawing Number: **C4**

Sheet Number: **10** of **28**



NORTH

0 10 20 40

Scale: (in Feet)

LEGEND:

- RIP-RAP PER WSDOT STD SPEC 9-13.1(5)
- GRAVEL FLOW SPREADER PER WSDOT STD SPEC 9-03.12(4)
- INFILTRATION POND PER TABLE V-12.3 OF THE SWMMWW 2019
- SW XX.XX — SWALE ELEVATION
- P XX.XX — PAVEMENT ELEVATION
- 24.0 — EXISTING CONTOUR
- 24.0 — PROPOSED CONTOUR
- PROPOSED FENCE LINE
- SWALE LINE
- GRADE BREAKLINE

 # SITE CONSTRUCTION NOTES:

1. CONSTRUCT FENCE PER DETAIL 1, DWG C9
2. CONSTRUCT 16 FT DOUBLE SWING GATE PER DETAIL 2, DWG C9
3. CONSTRUCT 3 FT MAN GATE PER DETAIL 3, DWG C9
4. INSTALL CURB PER DETAIL 5, DWG C9

 # STORM DRAINAGE CONSTRUCTION NOTES:

12. CONSTRUCT BIOFILTRATION SWALE PER DETAIL, DWG C4.
13. CONSTRUCT INFILTRATION POND WITH 3:1 SIDE SLOPES
    BOTTOM OF POND DIMENSIONS: 26 FT x 66.7 FT
    BOTTOM OF POND ELEVATION: 154 FT
    TOP OF POND ELEVATION: 158 FT
14. CONSTRUCT EMERGENCY OVERFLOW PATH APPROXIMATELY 6' W x 11' L x 1' D. APPROXIMATE ELEVATION: 157.50 FT, GRADE TO DRAIN TO THE NORTH
15. CONSTRUCT 1' W x 1' D GRAVEL FLOW SPREADER FOR DISPERSION PER WSDOT STD SPEC 9-03.12(4).
16. CONSTRUCT AN APPROXIMATE 3' W x 4' L x 1' D RIP-RAP PAD
17. CONSTRUCT AN APPROXIMATE 4' W x 6' L x 1' D RIP-RAP PAD

GENERAL NOTES:

1. WITHIN ALL AREAS THAT HAVE BEEN SUBJECT TO CLEARING AND GRADING, ALL GRASS AND LANDSCAPED AREAS SHALL HAVE A MINIMUM 8-INCH SETTLED TOPSOIL LAYER PRIOR TO SEEDING AND PLANTING THAT MEETS THE CRITERIA PER BMP T5.13 IN THE STORMWATER MANAGEMENT MANUAL FOR WESTERN WASHINGTON, VOL V.
2. CONTRACTOR TO NOTIFY ENGINEER IF EXISTING UTILITY TYPE, SIZE OR INVERT ELEVATIONS DIFFER FROM INFORMATION SHOWN ON THE CONTRACT DRAWINGS.

GIBBS & OLSON

City of WOODLAND WASHINGTON

Reservoir No. 4
City of Woodland
Woodland, Washington
Storm Drainage and Site Grading Plan
North

Datum: NAD83 / NAVD 88

Survey Book: 1887 A & B

Project Milestone: **100%**

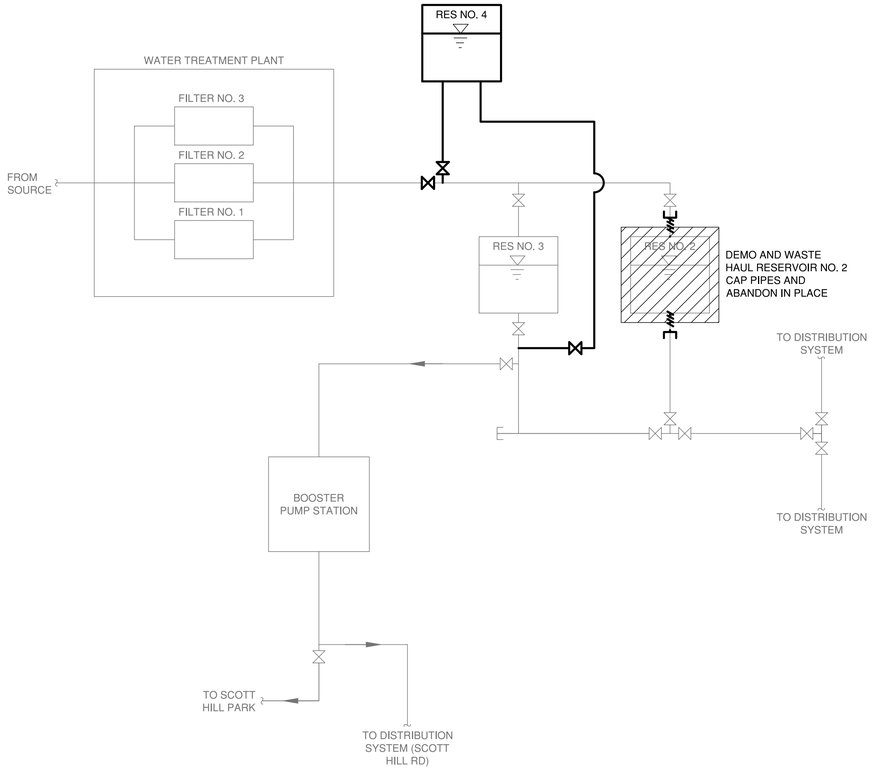
Date: **08-28-2023**

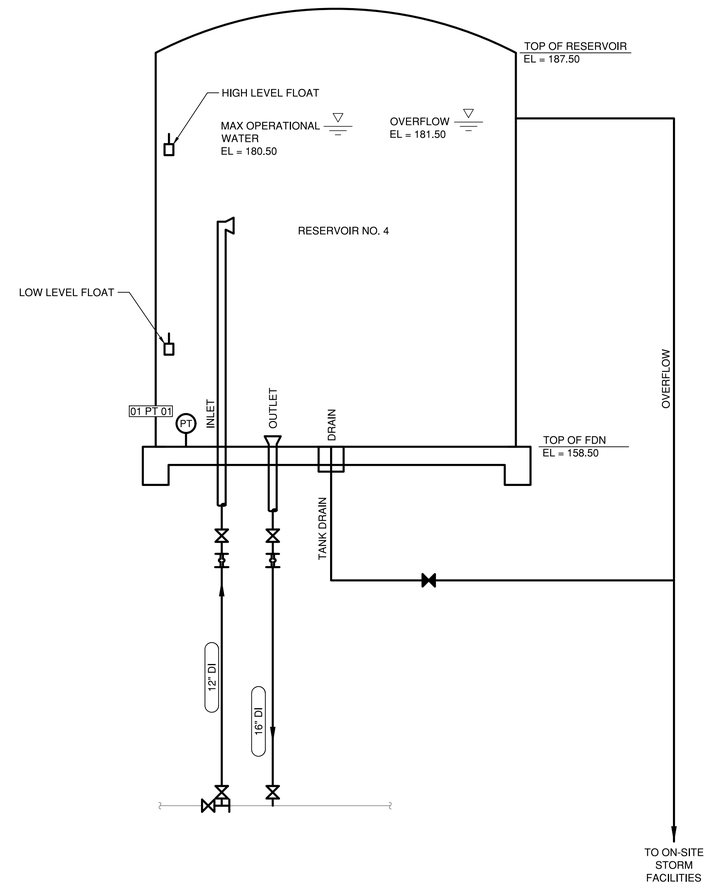
RYAN J. WALTERS — STATE OF WASHINGTON — DIGITALLY SIGNED — 52192 — REGISTERED PROFESSIONAL ENGINEER — 08/28/2023

Designed by: RJW
Checked by: TEG
Approved by: RJW

Project Number: **0876.4533**

Drawing Number: **C5**





LEGEND:

- FE — FLOW METER
- NORMALLY OPENED VALVE
- NORMALLY CLOSED VALVE
- FLEXIBLE EXPANSION COUPLING
- FIT — FLOW INDICATION/TRANSMITTER
- PT — PRESSURE TRANSDUCER
- HIGH LEVEL FLOAT

DESIGN PARAMETERS

RESERVOIR NO. 4		RESERVOIR NO. 3	
TOTAL VOLUME	1,500,000 GALLONS	TOTAL VOLUME	1,100,000 GALLONS
MATERIAL	GLASS FUSED TO STEEL BOLTED TANK	MATERIAL	GLASS FUSED TO STEEL BOLTED TANK
DIAMETER & SHELL HEIGHT	106 FT DIA x 29 FT	DIAMETER & SHELL HEIGHT	90 FT DIA x 24.0 FT
OVERFLOW EL	181.50'	OVERFLOW EL	181.50'
BASE EL	158.50'	BASE EL	158.50'
TYPE	AWWA D-103	TYPE	AWWA D-103

GIBBS & OLSON

City of WOODLAND WASHINGTON

Reservoir No. 4
City of Woodland
Woodland, Washington
Process Flow Diagram

Datum: **NAD83 / NAVD 88**

Survey Book: **1887 A & B**

Project Milestone: **100%**

Date: **08-28-2023**

BRYAN J. WALTERS — STATE OF WASHINGTON — DIGITALLY SIGNED — 52192 — REGISTERED PROFESSIONAL ENGINEER

08/28/2023

Designed by: **RJW**
Checked by: **TEG**
Approved by: **RJW**

Project Number: **0876.4533**

Drawing Number: **C6**

Sheet Number: **12** of **28**

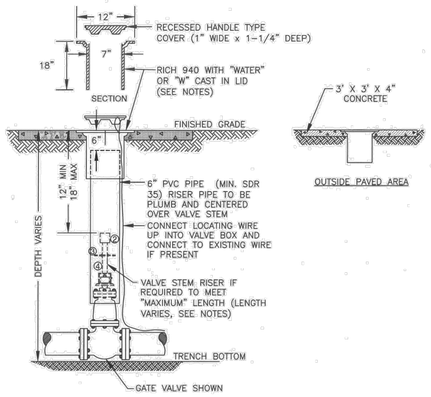
GENERAL NOTES FOR WATER MAIN INSTALLATION

1. ALL WORKMANSHIP AND MATERIAL SHALL BE IN ACCORDANCE WITH THE WSDOT/APWA STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION HEREIN IDENTIFIED AS THE "STANDARD SPECIFICATIONS", AND AWWA SPECIFICATIONS, EXCEPT AS MODIFIED BELOW OR BY CITY OF WOODLAND STANDARD DETAILS.
2. A PRE-CONSTRUCTION MEETING SHALL BE HELD WITH CITY OF WOODLAND AT LEAST 48-HOURS PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE CONSTRUCTION SCHEDULES AND TRAFFIC CONTROL PLANS IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. PROPOSED "EQUIVALENTS" MUST BE SUBMITTED TO THE CITY OF WOODLAND FOR APPROVAL.
3. THE CONTRACTOR SHALL NOTIFY THE CITY PUBLIC WORKS DEPARTMENT AT (360) 225-7999, 48-HOURS PRIOR TO LIVE TAPS OR OTHER CONNECTIONS TO EXISTING WATERMAINS. WHERE CONNECTIONS REQUIRE SHUT-DOWN OF SERVICE, CONNECTION POINTS WILL BE EXPOSED FOR "FIELD VERIFICATION" BY CONTRACTOR AND CONNECTION DETAILS SHALL BE VERIFIED 48 HOURS PRIOR TO DISTRIBUTING SHUT-DOWN NOTICES.
4. CALL UNDERGROUND LOCATE AT 811 A MINIMUM OF 48-HOURS PRIOR TO ANY EXCAVATIONS.
5. UNLESS OTHERWISE ESTABLISHED IN WRITING BY THE CITY, ALL WATER MAINS SHALL BE STAKED FOR GRADES AND ALIGNMENT BY AN ENGINEERING OR SURVEYING FIRM CAPABLE OF PERFORMING SUCH WORK.
6. EXISTING VALVES AND ANY VALVES INSTALLED DIRECTLY TO AND CONNECTED TO A PORTION OF ACTIVE WATER SYSTEM ARE TO BE OPERATED BY CITY OF WOODLAND REPRESENTATIVES ONLY.
7. WATER MAINS SHALL BE PVC IN ACCORDANCE WITH AWWA C900, MINIMUM DR18 OR DUCTILE IRON PRESSURE CLASS 52 OR AS NOTED ON DRAWING. ALL MATERIAL IN SUBSTANTIAL CONTACT WITH DRINKING WATER MUST CONFORM TO ANSI/NSF STANDARD 61 AND BE LEAD FREE.
8. ALL LINES SHALL BE CHLORINATED AND TESTED IN CONFORMANCE WITH THE STANDARD SPECIFICATIONS PRIOR TO USE.
9. HARD COPY AND ELECTRONIC "AS-BUILT" DRAWINGS SHALL BE SUBMITTED TO CITY OF WOODLAND UPON COMPLETION OF THE WORK.
10. ALL WATERMAINS, FIRE HYDRANTS, BLOW OFF ASSEMBLIES, VACUUM BREAKERS, AND WATER SERVICES MUST HAVE LOCATE WIRE INSTALLED.
11. ALL MECHANICAL JOINT FITTINGS SHALL BE RESTRAINED USING MJ FOLLOWER GLANDS, MEGALUG, OR EQUAL.

GENERAL NOTES FOR WATER MAIN INSTALL — W-01

APPROVED — PUBLIC WORKS DIRECTOR — DATE 1-15-22

REVISIONS	DATE	DRAWN	DESIGNED



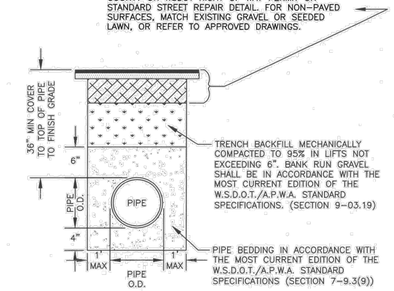
NOTES:

1. VALVE STEM EXTENSION TO INCLUDE THE FOLLOWING WELDS TO BE 1/4" FILLET WELD ALL AROUND.
2. VALVE OPERATING NUT OR 1-7/8" X 1-7/8" X 2" HIGH GRADE STEEL.
3. 3/16" THICK X 5-1/5" DIA STEEL GUIDE PLATE SHAFT.
4. 2" X 2" X 3/16" SQUARE STRUCTURAL STEEL TUBING TO FIT OPERATING NUT.
5. FOR NEW VALVES IN EXISTING STREET, RESTORE PAVEMENT PER CITY OF WOODLAND STANDARDS.

STANDARD VALVE BOX AND COVER — W-06

APPROVED — PUBLIC WORKS DIRECTOR — DATE 1/21/22

REVISIONS	DATE	DRAWN	DESIGNED



NOTE:

1. CLEAN NATIVE MATERIAL MAY BE USED AS PIPE BEDDING AND TRENCH BACKFILL AS APPROVED BY CITY OF WOODLAND PUBLIC WORKS.

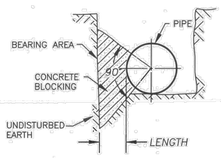
WATER PIPE TRENCH BEDDING & BACKFILL — W-13

APPROVED — PUBLIC WORKS DIRECTOR — DATE 1/21/22

REVISIONS	DATE	DRAWN	DESIGNED

SOIL BEARING = 2000 LB/S.F.

PIPE SIZE	HORZ. BENDS	MIN. BEARING AREA S.F.	MIN. VOL. OF BLOCKING C.F.	MIN. LENGTH OF BLOCKING
4"	TEE	2.3	0.8	0.86
	90°	3.2	1.4	1.06
	45°	1.7	0.5	0.73
	22-1/2°	0.9	0.2	0.46
	11-1/4°	–	–	–
6"	TEE	4.7	2.4	1.24
	90°	6.6	4.0	1.53
	45°	3.6	1.6	1.05
	22-1/2°	1.8	0.6	0.66
	11-1/4°	0.9	0.2	0.39
8"	TEE	8.0	5.4	1.63
	90°	11.4	9.0	2.00
	45°	6.2	3.6	1.37
	22-1/2°	3.1	1.3	0.87
	11-1/4°	1.6	0.5	0.51
10"	TEE	12.1	9.9	2.00
	90°	17.1	16.7	2.46
	45°	9.3	6.6	1.69
	22-1/2°	4.7	2.4	1.08
	11-1/4°	2.4	0.9	0.63
12"	TEE	17.1	16.7	2.37
	90°	24.2	28.0	2.93
	45°	13.1	11.2	2.01
	22-1/2°	6.7	4.1	1.28
	11-1/4°	3.4	1.5	0.74
16"	TEE	23.8	27.3	2.73
	90°	33.6	46.0	3.37
	45°	18.2	18.3	2.29
	22-1/2°	9.3	6.7	1.42
	11-1/4°	4.7	2.4	0.80
18"	TEE	29.8	36.5	3.06
	90°	42.2	64.7	3.79
	45°	22.9	25.8	2.57
	22-1/2°	11.7	9.4	1.60
	11-1/4°	5.9	3.3	0.90
24"	TEE	52.3	89.1	4.03
	90°	74.0	149.8	5.00
	45°	40.0	59.7	3.55
	22-1/2°	20.4	21.7	2.11
	11-1/4°	10.3	7.7	1.18



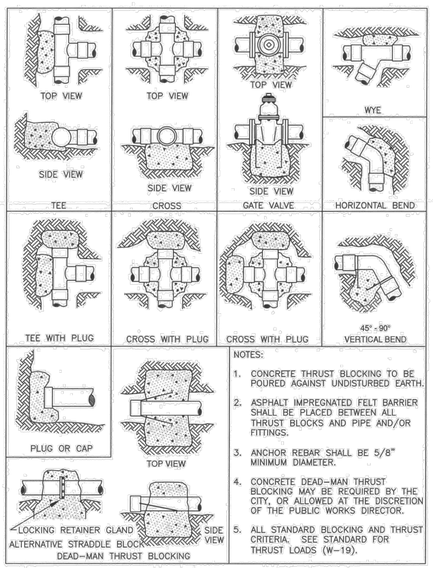
NOTES:

1. ALL BLOCKING SHALL BE POURED AGAINST FIRM UNDISTURBED SOIL.
2. ALL CONCRETE BLOCKING SHALL BE POURED IN PLACE WITHOUT DIRECT CONTACT TO PIPE, FITTINGS OR FLANGES. 15 LB. ASPHALT- IMPREGNATED FELT, OR EQUIVALENT AS APPROVED BY THE INSPECTOR, SHALL BE PLACED BETWEEN THE CONCRETE AND PIPE, FITTINGS OR FLANGES.
3. LAYOUT TO BE APPROVED BY THE INSPECTOR PRIOR TO AND AFTER CONCRETE POUR.
4. CONCRETE FOR ALL BLOCKING SHALL HAVE A 28-DAY MINIMUM COMPRESSIVE STRENGTH OF 2,300 P.S.I.
5. THIS CHART IS NOT APPLICABLE TO VERTICAL BENDS. LOCATION SPECIFIC DESIGN IS REQUIRED FOR SUCH INSTALLATIONS.
6. WHERE THE TRENCH SOIL HAS A BEARING PRESSURE LESS THAN 2000 POUNDS PER SQUARE FOOT, LOCATION SPECIFIC DESIGN IS REQUIRED.

STANDARD THRUST BLOCK — W-17

APPROVED — PUBLIC WORKS DIRECTOR — DATE 1/21/22

REVISIONS	DATE	DRAWN	DESIGNED



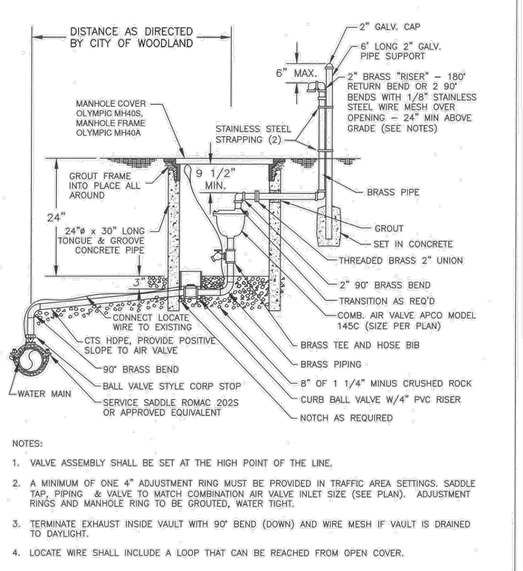
NOTES:

1. CONCRETE THRUST BLOCKING TO BE POURED AGAINST UNDISTURBED EARTH.
2. ASPHALT IMPREGNATED FELT BARRIER SHALL BE PLACED BETWEEN ALL THRUST BLOCKS AND PIPE AND/OR FITTINGS.
3. ANCHOR REBAR SHALL BE 5/8" MINIMUM DIAMETER.
4. CONCRETE DEAD-MAN THRUST BLOCKING MAY BE REQUIRED BY THE CITY, OR ALLOWED AT THE DISCRETION OF THE PUBLIC WORKS DIRECTOR.
5. ALL STANDARD BLOCKING AND THRUST CRITERIA. SEE STANDARD FOR THRUST LOADS (W-19).

THRUST BLOCKING — W-18

APPROVED — PUBLIC WORKS DIRECTOR — DATE 1/21/22

REVISIONS	DATE	DRAWN	DESIGNED



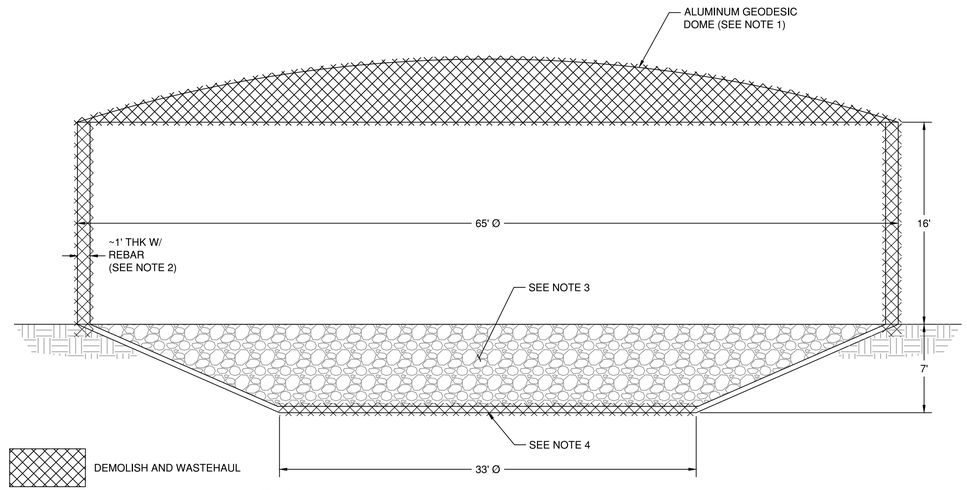
NOTES:

1. VALVE ASSEMBLY SHALL BE SET AT THE HIGH POINT OF THE LINE.
2. A MINIMUM OF ONE 4" ADJUSTMENT RING MUST BE PROVIDED IN TRAFFIC AREA SETTINGS. SADDLE TAP, PIPING & VALVE TO MATCH COMBINATION AIR VALVE INLET SIZE (SEE PLAN). ADJUSTMENT RINGS AND MANHOLE RING TO BE GROUTED, WATER TIGHT.
3. TERMINATE EXHAUST INSIDE VAULT WITH 90° BEND (DOWN) AND WIRE MESH IF VAULT IS DRAINED TO DAYLIGHT.
4. LOCATE WIRE SHALL INCLUDE A LOOP THAT CAN BE REACHED FROM OPEN COVER.

COMBINATION AIR RELEASE VALVE — W-21

APPROVED — PUBLIC WORKS DIRECTOR — DATE 1/21/22

REVISIONS	DATE	DRAWN	DESIGNED



NOTES:

1. CONTRACTOR TO DEMOLISH AND WASTEHAUL EXISTING RESERVOIR GEODESIC ROOF.
2. CONTRACTOR TO DEMOLISH AND WASTEHAUL EXISTING RESERVOIR WALL. BELOW GRADE RESERVOIR TRANSITIONS FROM CYLINDRICAL TO A FRUSTUM OF A CONE. CONTRACTOR TO DEMOLISH WALL TO 1 FOOT BELOW GRADE.
3. CONTRACTOR TO FILL REMAINING EXISTING RESERVOIR WITH CSBC AND FILL REMAINDER OF EXCAVATED AREA WITH CSBC AND GRADE FLAT. COMPACT TO CONSOLIDATE MATERIALS.
4. CONTRACTOR TO BREAK ENTIRE RESERVOIR FLOOR SUCH THAT WATER WILL FREELY DRAIN.

1 / C7 **Reservoir No. 2 Demolition Detail**

N.T.S

GIBBS & OLSON

City of WOODLAND WASHINGTON

Reservoir No. 4
City of Woodland
Woodland, Washington
Water Details

Datum: **NAD83 / NAVD 88**
Survey Book: **1887 A & B**
Project Milestone: **100%**
Date: **08-28-2023**

RYAN J. WALTERS — STATE OF WASHINGTON — DIGITALLY SIGNED — 52192 — REGISTERED PROFESSIONAL ENGINEER
08/28/2023

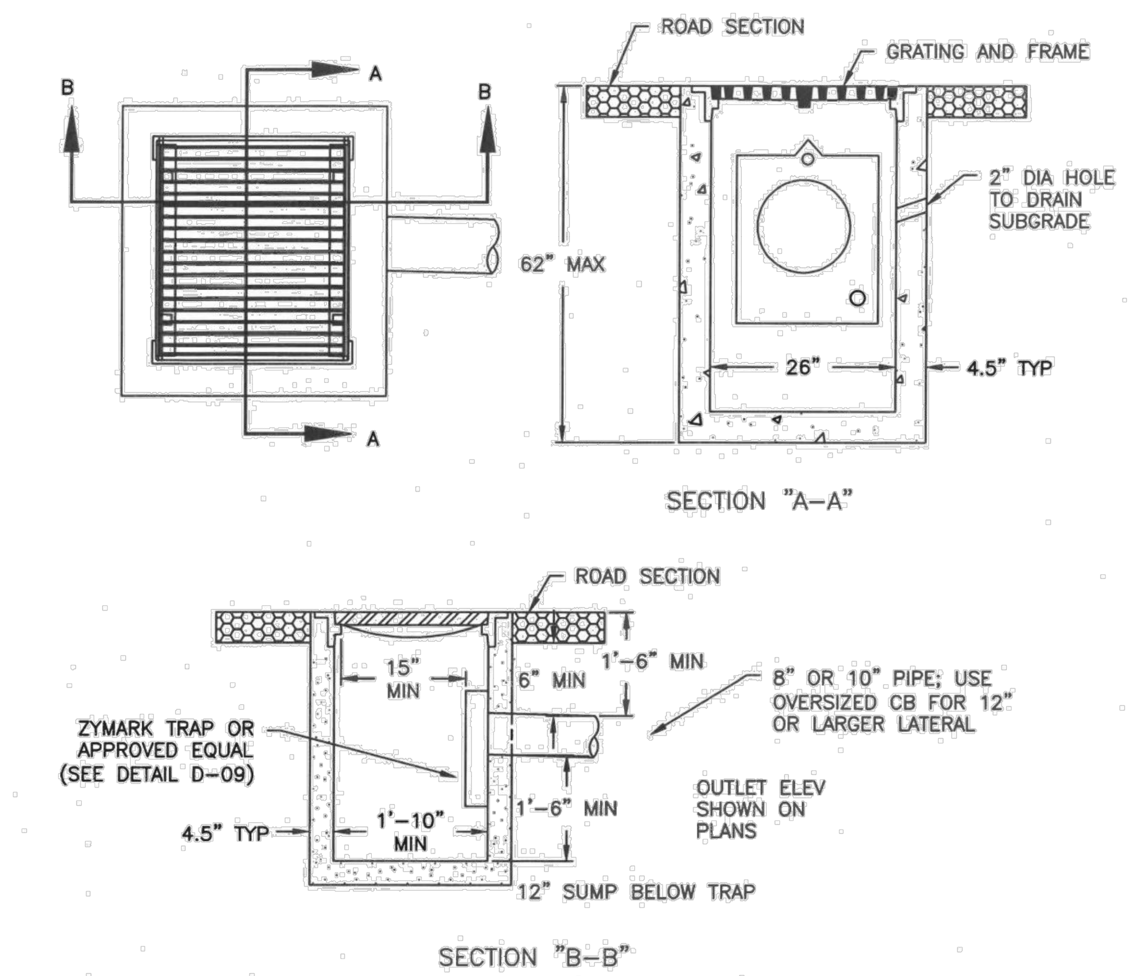
Designed by: **RJW**
Checked by: **TEG**
Approved by: **RJW**

Project Number: **0876.4533**
Drawing Number: **C7**
Sheet Number: **13** of **28**

GENERAL NOTES FOR STORM SEWERS

1. ALL MATERIALS AND INSTALLATION OF STORM SEWERS AND DRAINAGE SYSTEMS SHALL BE IN CONFORMANCE WITH THE REQUIREMENTS IN THE CITY OF WOODLAND'S LATEST VERSION OF STANDARD DETAILS, THE PUBLIC WORKS ENGINEERING STANDARDS, AND THE LATEST EDITION OF THE STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION CHAPTER OF THE AMERICAN PUBLIC WORKS ASSOCIATION (APWA) AND THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION, WHERE THE CITY OF WOODLAND REQUIREMENTS SHALL TAKE PRECEDENCE. WHEREVER THE STANDARD SPECIFICATIONS REFER TO THE OWNER AS EITHER THE "STATE" OR "SECRETARY" OR WHEN REFERENCE IS MADE TO THE DEPARTMENT OF TRANSPORTATION IT SHALL BE UNDERSTOOD THAT THE STANDARD SPECIFICATIONS SHOULD READ THE "CITY".
2. ALL STORM SEWER AND DRAINAGE SYSTEM CONSTRUCTION IS SUBJECT TO INSPECTION AND APPROVAL BY THE CITY OF WOODLAND'S PUBLIC WORKS DEPARTMENT. THE CONTRACTOR SHALL NOTIFY THE PUBLIC WORKS OFFICE (360) 225-7999 AT LEAST 48 HOURS PRIOR TO THE START OF ANY CONSTRUCTION. THE CITY MAY REQUIRE THAT A PRECONSTRUCTION CONFERENCE BE HELD.
3. THE CONTRACTOR IS REQUIRED TO NOTIFY ALL UTILITIES 48 HOURS PRIOR TO COMMENCEMENT OF WORK. THE CONTRACTOR MAY CONTACT THE UTILITY NOTIFICATION CENTER BY DIALING 811 IN LIEU OF CONTACTING INDIVIDUAL UTILITIES.
4. IT SHALL BE THE RESPONSIBILITY OF THE DEVELOPER AND/OR CONTRACTOR TO PROCURE AND COMPLY WITH THE PROVISIONS OF ALL APPLICABLE PERMITS, EASEMENTS, LICENSES AND CERTIFICATES IN CONJUNCTION WITH THE CONSTRUCTION OF STORM SEWERS AND DRAINAGE SYSTEMS. COMPLIANCE SHALL BE AT ALL LEVELS; FEDERAL, STATE, AND CITY, RELATING TO THE PERFORMANCE OF THIS WORK. THE CONTRACTOR SHALL OBTAIN A STREET CUT PERMIT FOR WORK WITHIN THE PUBLIC RIGHT-OF-WAY.
5. THE CONTRACTOR SHALL OBTAIN AND SUBMIT AN APPROVED TRAFFIC CONTROL PLAN PRIOR TO BEGINNING CONSTRUCTION. THE PLAN SHALL BE APPROVED BY THE PUBLIC WORKS DIRECTOR.
6. ALL EROSION CONTROL BEST MANAGEMENT PRACTICES (BMPs) SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE EROSION CONTROL PLAN AND EROSION CONTROL DETAILS, PRIOR TO START OF ANY CONSTRUCTION OR LAND DISTURBING ACTIVITY.
7. THE DEVELOPER OR CONTRACTOR SHALL OBTAIN ALL OFFSITE CONSTRUCTION EASEMENTS PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL VERIFY THAT ALL OFFSITE UTILITIES EASEMENTS HAVE BEEN OBTAINED BY THE OWNER PRIOR TO THE COMMENCEMENT OF ANY OFFSITE CONSTRUCTION.
8. THE CONTRACTOR IS TO VERIFY AND REPORT ANY DISCREPANCIES IMMEDIATELY TO THE ENGINEER. ITEMS TO VERIFY INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
   - -INVERT AND TOP ELEVATIONS OF EXISTING STORM SEWERS
   - -CENTERLINE AND TOP OF CURB ELEVATIONS
9. WATER QUALITY DEVICES WILL BE INSTALLED AND FUNCTIONING PRIOR TO COMMENCING WITH INSTALLATION OF PAVEMENT FOR ALL AREAS DRAINING INTO THE WATER QUALITY SYSTEM. VEGETATION IN BIO-FILTRATION SWALE AND POND SYSTEMS SHALL BE ESTABLISHED AND MECHANICAL DEVICES AND FILTER MEDIA SHALL BE INSTALLED. SWALES AND FILTER STRIPS WILL BE SEEDED WITH AN APPROVED SEED MIX, PER THE WESTERN WASHINGTON MANUAL. TURF IS ALLOWED FOR VEGETATED FILTERS PROVIDED THE TURF AREA IS OVERSEEDED WITH THE EQUIVALENT GRASS SEED MIX.
10. ALL CATCH BASINS SHALL BE STENCILED: "PROTECT STREAMS" OR "PROTECT GROUNDWATER."
11. ROOF DOWNSPOUT RUNOFF MUST BE RETAINED ON EACH SPECIFIC SITE. DOWNSPOUTS SHALL NOT DRAIN TO THE STREET OR ANY ADJACENT PROPERTIES UNLESS SPECIFIC APPROVAL HAS BEEN SHOWN ON APPROVED CIVIL ENGINEERING PLANS.
12. THE CONTRACTOR WILL PROVIDE A TELEVISION REPORT, TAPE, AND TABULAR AS-BUILT OF ALL PUBLIC STORM MAINS AND LATERALS PRIOR TO PAVING. THIS INFORMATION WILL BE SUBMITTED TO THE CITY INSPECTOR FOR REVIEW. APPROVAL AND ACCEPTANCE OF THE TV INSPECTION WILL BE BASED UPON MANUFACTURING AND INSTALLATION DEFECTS, AS WELL AS DEBRIS IN THE LINES. FINAL ACCEPTANCE AND CONSTRUCTION OF STORM SEWERS ARE SUBJECT TO INSPECTION AND TESTING IN ACCORDANCE WITH SECTIONS 1-05.11, 1-05.12, AND 7-04.3 OF THE STANDARD SPECIFICATIONS.

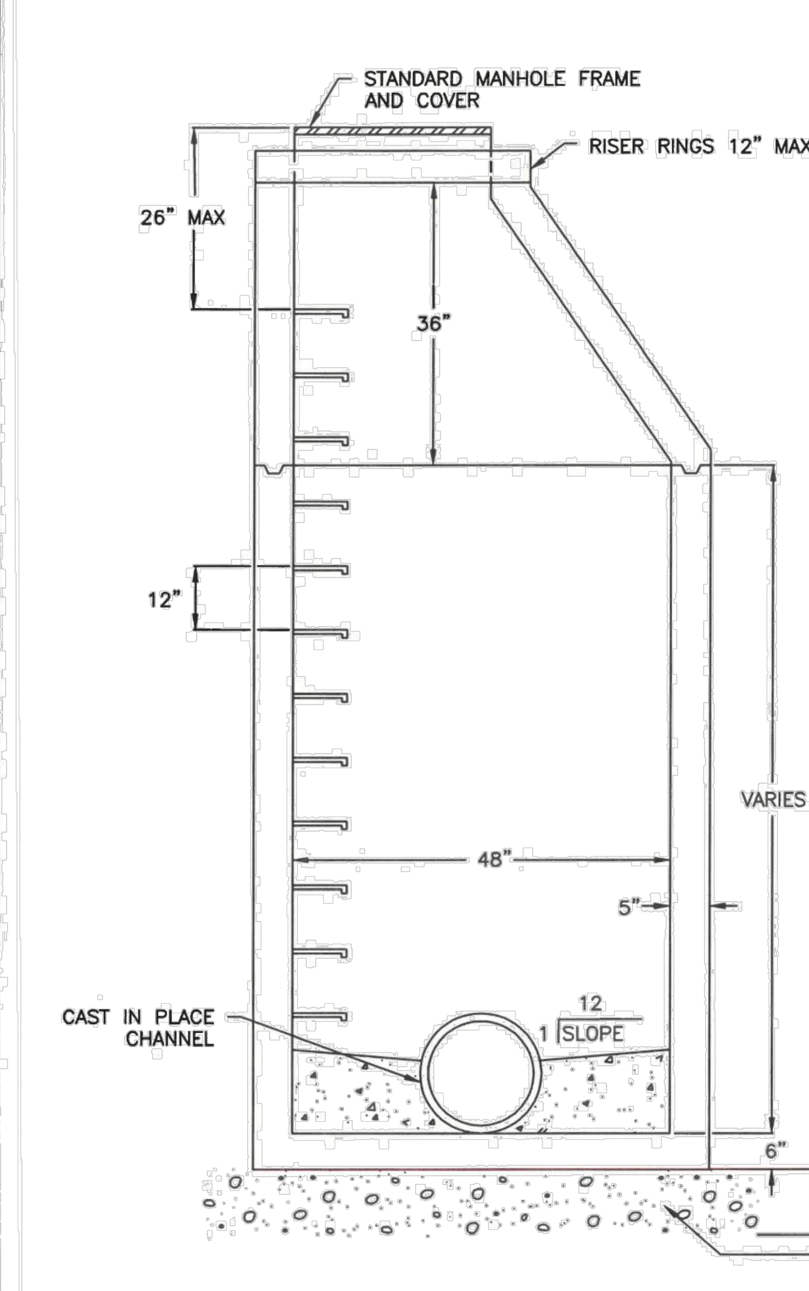
WOODLAND PUBLIC WORKS	GENERAL NOTES FOR STORM SEWERS					D-01
	APPROVED 3-11-22	REVISIONS	DATE	DRAWN	DESIGNED	
	PUBLIC WORKS DIRECTOR / DATE					



NOTES:

1. LATERALS WILL BE CONSTRUCTED TO ENTER THE BASIN PERPENDICULAR TO THE BASIN WALL. THE LATERAL WILL ENTER ONLY AT THE FRONT OR SIDE OF THE BASIN WITH NO LATERALS ALLOWED TO ENTER THE CATCH BASIN AT THE CORNERS. IF NEEDED, A BEND MAY BE USED AS THE FIRST SECTION OF PIPE OUTSIDE THE BASIN WALL. THE MAXIMUM BEND ALLOWED IS 45 DEGREES.
2. ALL REINFORCED STEEL SHALL HAVE A 1-1/2" CLEAR COVER UNLESS OTHERWISE NOTED, AND SHALL BE GRADE 40 OR GRADE 60 (ASTM A-615).
3. ANY PROTRUDING ENDS OF PIPES SHALL BE TRIMMED FLUSH WITH THE INSIDE WALLS AND GROUTED.
4. THE METAL FRAME AND GRATE SHALL BE SET TO A SLOPE TO CONFORM TO THE PARTICULAR DRAINAGE AREA (SEE DETAIL D-08).
5. ALL PRECAST OR CAST-IN-PLACE CONCRETE SHALL BE CLASS 4000.

WOODLAND PUBLIC WORKS	STANDARD CATCH BASIN					D-02
	APPROVED 3-11-22	REVISIONS	DATE	DRAWN	DESIGNED	
	PUBLIC WORKS DIRECTOR / DATE					

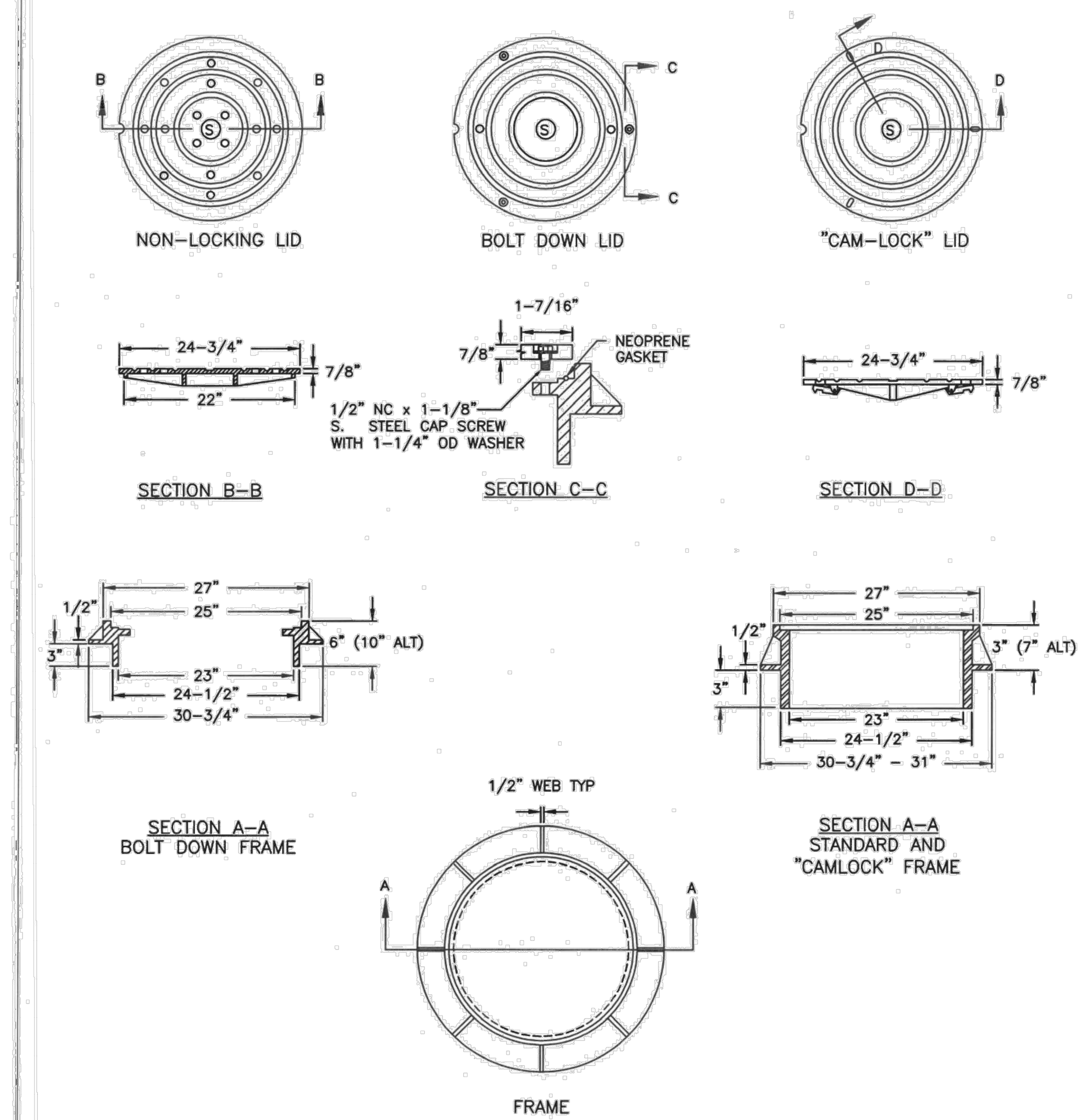


STANDARD MANHOLE FOR 24-INCH OR SMALLER PIPE OR 30-INCH DUCTILE IRON PIPE

NOTES:

1. ALL PRECAST SECTIONS SHALL CONFORM TO REQUIREMENTS OF A.S.T.M. C478.
2. BASE CONCRETE SHALL BE 3000 P.S.I., 2"-4" SLUMP. FLOW LINES AND INSIDE SURFACES SHALL BE TROWELED SMOOTH AND UNIFORM AT TIME OF POUR.
3. JOINTS SHALL BE CONSTRUCTED SO AS TO BE WATERTIGHT. KENT-SEAL NO. 2 OR APPROVED EQUAL SHALL BE USED ON TONGUE AND GROOVE SECTIONS. PREMOLDED "O" RING MAY BE SUBSTITUTED ON BELL AND SPIGOT SECTIONS. ALL JOINTS SHALL BE GROUTED WITH PORTLAND CEMENT GROUT AND STRUCK EVEN WITH THE WALL.
4. MANHOLES UNDER 6 FEET IN DEPTH FROM RIM TO SHELF SHALL HAVE A TOP SLAB IN LIEU OF CONE.
5. ALLOWABLE DISTANCE BETWEEN PIPE KNOCKOUTS IS 8 INCHES.

WOODLAND PUBLIC WORKS	MANHOLE					D-10
	APPROVED 3-11-22	REVISIONS	DATE	DRAWN	DESIGNED	
	PUBLIC WORKS DIRECTOR / DATE					



WOODLAND PUBLIC WORKS	MANHOLE COVER AND FRAME					D-14
	APPROVED 3-11-22	REVISIONS	DATE	DRAWN	DESIGNED	
	PUBLIC WORKS DIRECTOR / DATE					

GIBBS & OLSON

City of WOODLAND WASHINGTON

Reservoir No. 4
City of Woodland
Woodland, Washington
Storm Drain Details

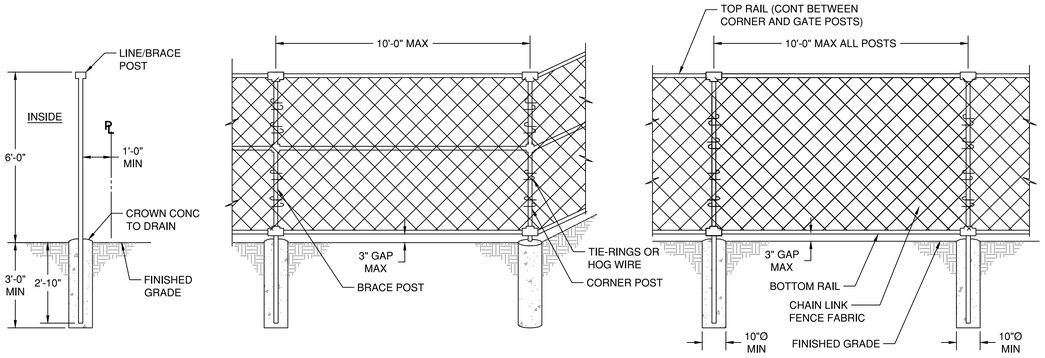
Datum: NAD83 / NAVD 88
Survey Book: 1887 A & B

Project Milestone: 100%
Date: 08-28-2023

RYAN J. WALTERS, STATE OF WASHINGTON, 52192, REGISTERED PROFESSIONAL ENGINEER, DIGITALLY SIGNED, 08/28/2023

Designed by: RJW
Checked by: TEG
Approved by: RJW

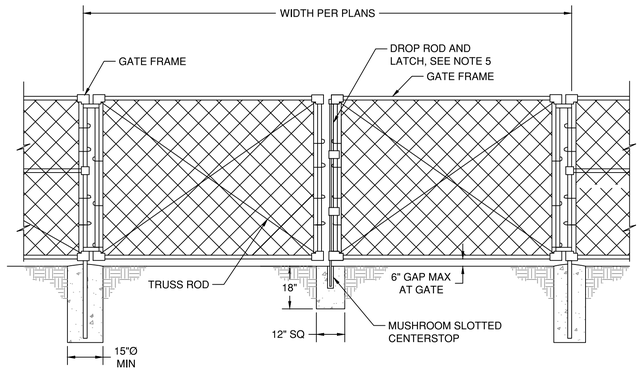
Project Number: 0876.4533
Drawing Number: C8
Sheet Number: 14 of 28



NOTES:

1. SEE SPECIFICATIONS FOR TYPICAL MATERIAL AND INSTALLATION REQUIREMENTS.
2. INSTALL CORNER POSTS WHERE ALIGNMENT CHANGES 30° OR MORE.
3. PROVIDE GALVANIZED FINISH ON POSTS, RAILS AND FITTINGS.
4. PROVIDE GALVANIZED IRON, MUSHROOM TYPE, SLOTTED CENTERSTOP FOR DOUBLE GATE DROP ROD. EMBED IN 12"x12"x18" DIA CONCRETE FOUNDATION.
5. DROP ROD FOR SWING GATE AND MAN GATE SHALL COME EQUIPPED WITH PADLOCK LATCH.

1 C9 Fence Details — Not to Scale



NOTES:

1. SEE SPECIFICATIONS FOR TYPICAL MATERIAL AND INSTALLATION REQUIREMENTS.
2. INSTALL CORNER POSTS WHERE ALIGNMENT CHANGES 30° OR MORE.
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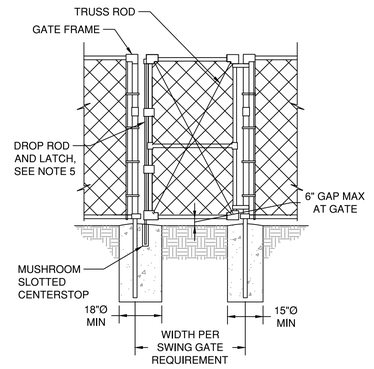
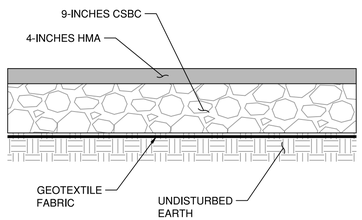
4. PROVIDE GALVANIZED IRON, MUSHROOM TYPE, SLOTTED CENTERSTOP FOR DOUBLE GATE DROP ROD. EMBED IN 12"x12"x18" DIA CONCRETE FOUNDATION.
5. DROP ROD FOR SWING GATE AND MAN GATE SHALL COME EQUIPPED WITH PADLOCK LATCH.

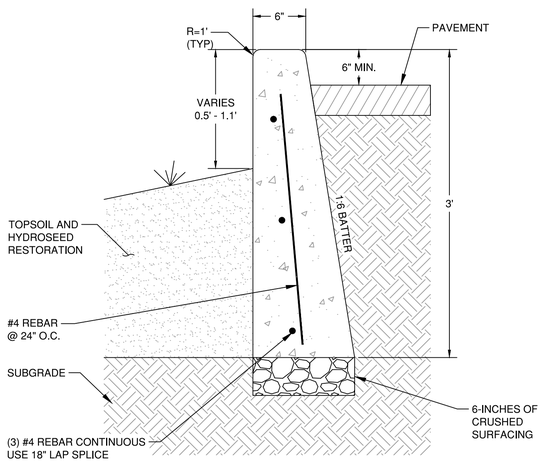
2 C9 Swing Gate Detail — Not to Scale



3 C9 Man Gate Detail — Not to Scale



4 C9 Typical HMA Section — Not to Scale



NOTES:

1. MAINTAIN 1:6 BATTER AND 6" MIN TO TOP OF CURB.
2. BROOM FINISH ALL EXPOSED CONCRETE SURFACES
3. PROVIDE A ¾" DUMMY JOINT AR 10' OC ON SIDES AND TOP. PROVIDE ½" EXPANSION JOINT AT MAXIMUM 100' OC.

5 C9 Curb Detail — N.T.S.

GIBBS & OLSON

City of WOODLAND WASHINGTON

Reservoir No. 4
City of Woodland
Woodland, Washington
Site Details

Datum: **NAD83 / NAVD 88**

Survey Book: **1887 A & B**

Project Milestone: **100%**

Date: **08-28-2023**

RYAN J. WALTERS — STATE OF WASHINGTON — DIGITALLY SIGNED — 52192 — REGISTERED PROFESSIONAL ENGINEER

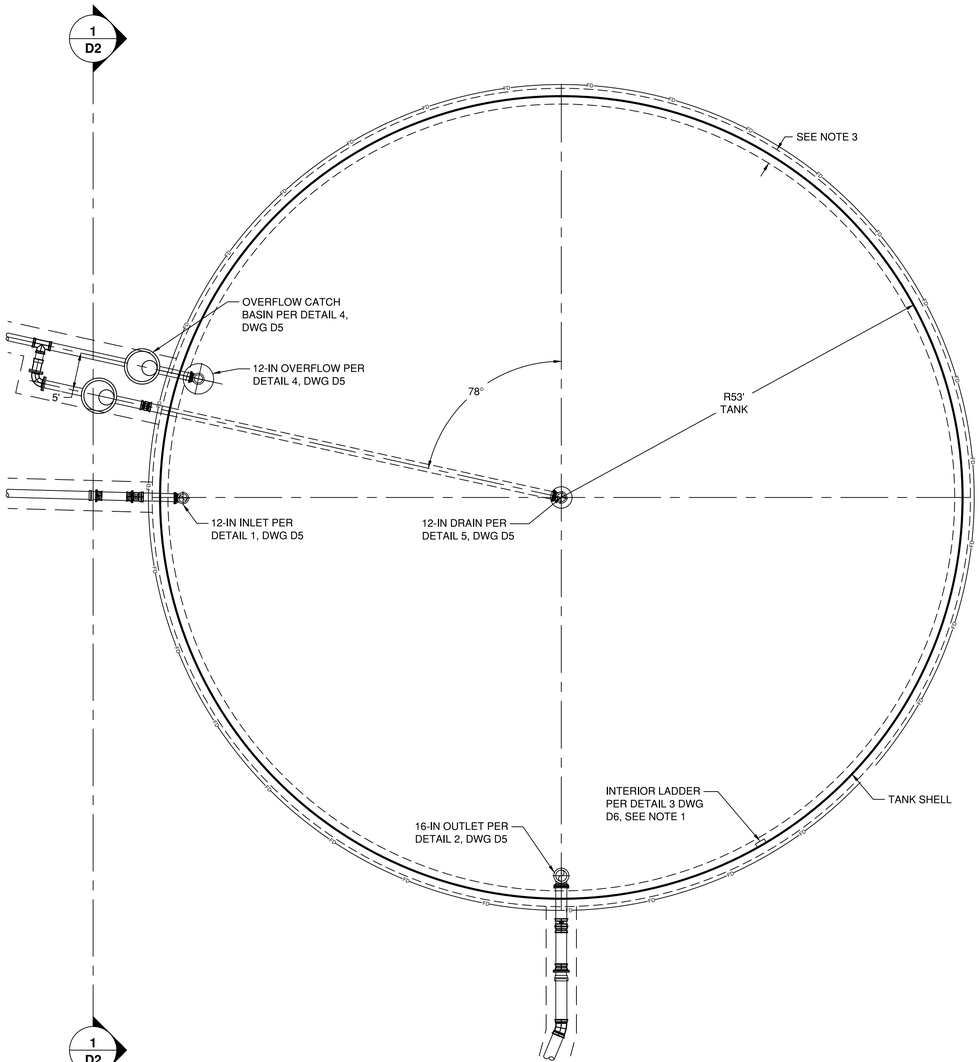
08/28/2023

Designed by: **RJW**
Checked by: **TEG**
Approved by: **RJW**

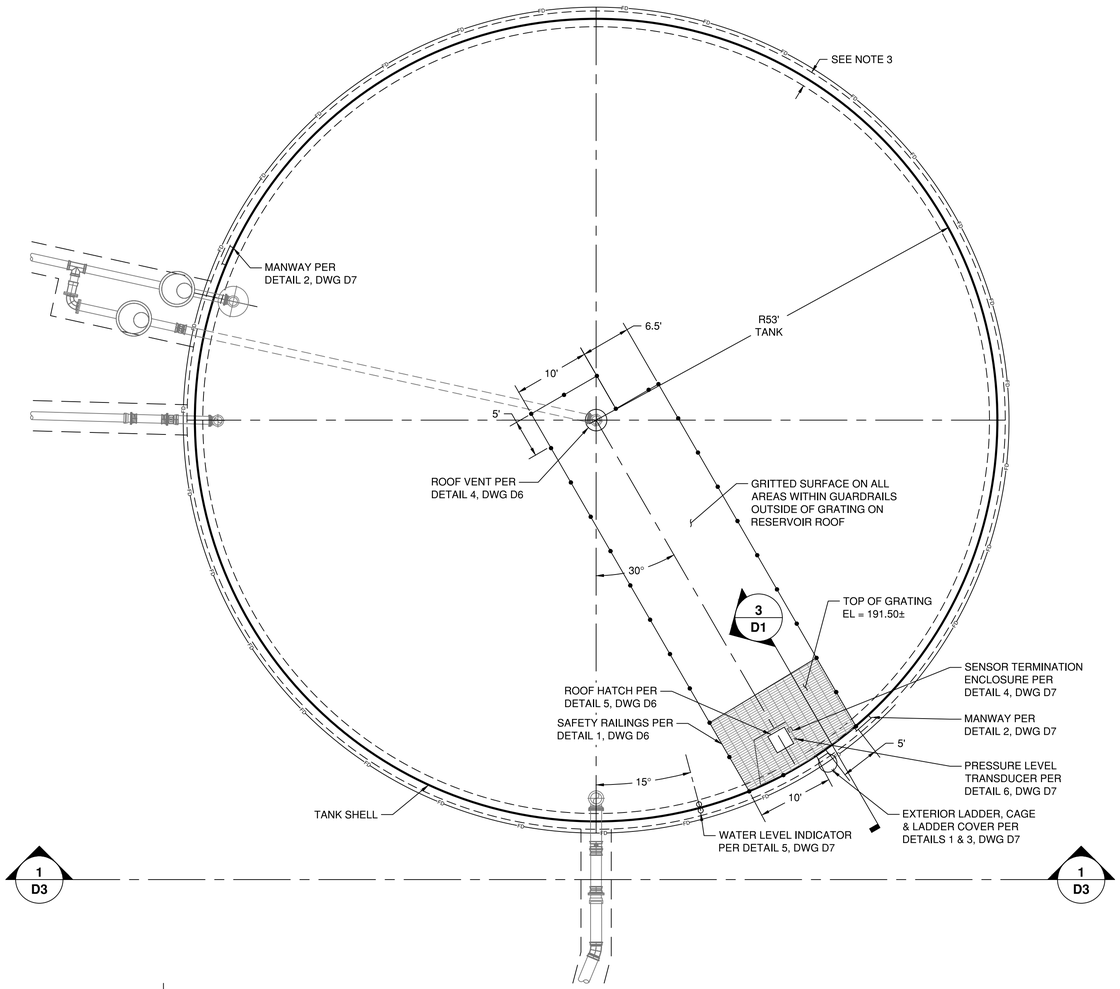
Project Number: **0876.4533**

Drawing Number: **C9**

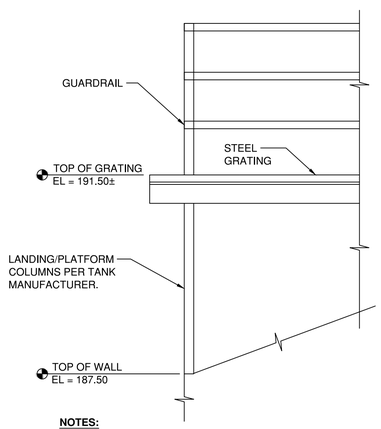
Sheet Number: **15** of **28**



1/D1 **Reservoir - Interior Plan View**
Scale: 1" = 10'



2/D1 **Reservoir - Exterior Plan View**
Scale: 1" = 10'



NOTES:

1. LANDING PLATFORM, SUPPORTS, AND ANCHORAGE DESIGNED BY TANK MANUFACTURER.

3/D1 **Reservoir Section**
Not to Scale

GENERAL NOTES

1. CONTRACTOR SHALL INSTALL RESERVOIR FOUNDATION GRAVEL AND STUB-UP CENTER DRAIN, INLET, OUTLET, AND OVERFLOW PIPING A MIN. 40-INCHES ABOVE FINISHED FLOOR ELEVATION, SEE SHEET D2.
2. CONTRACTOR TO DISINFECT FINISHED RESERVOIR PER AWWA C652 METHOD 3.
3. RESERVOIR FOUNDATION AND RING WALL TO BE DESIGNED BY TANK MANUFACTURER.

GIBBS & OLSON

City of WOODLAND WASHINGTON

Reservoir No. 4
City of Woodland
Woodland, Washington
Reservoir Plan

Datum: **NAD83 / NAVD 88**
Survey Book: **1887 A & B**
Project Milestone: **100%**
Date: **08-28-2023**

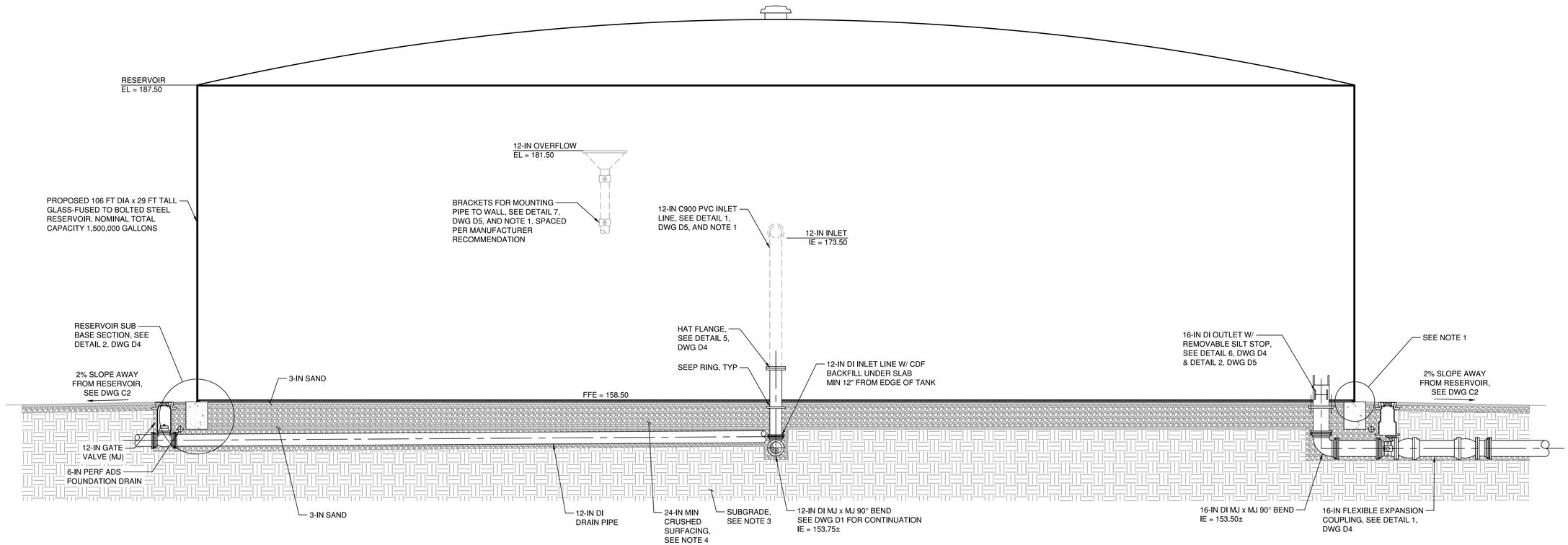
RYAN J. WALTERS — STATE OF WASHINGTON — DIGITALLY SIGNED — 53192 — REGISTERED PROFESSIONAL ENGINEER
08/28/2023

Designed by: **RJW**
Checked by: **TEG**
Approved by: **RJW**

Project Number: **0876.4533**
Drawing Number: **D1**
Sheet Number: **16** of **28**

NOTES:

1. CONTRACTOR SHALL INSTALL RESERVOIR FOUNDATION GRAVEL AND STUB-UP CENTER DRAIN, INLET, OUTLET, AND OVERFLOW PIPING A MIN. 40-INCHES ABOVE FINISHED FLOOR ELEVATION.
2. CONTRACTOR TO DISINFECT FINISHED RESERVOIR PER AWWA C652 METHOD 3.
3. SUBGRADE SHALL BE PREPARED PER WSDOT STANDARD SPECIFICATION 2-06. SUBGRADE SHALL BE PROOF ROLLED WITH A 50,000 POUND NON-VIBRATORY STEEL DRUM ROLLER BY MAKING 5 PASSES. GEOTECHNICAL ENGINEER SHALL BE PRESENT TO WITNESS PROOF ROLLING.
4. CRUSHED SURFACING BASE COURSE SHALL BE PER WSDOT STANDARD SPECIFICATION 9-03.9(3). CRUSHED SURFACING SHALL BE PLACED IN 12-IN VERTICAL LIFTS, SHALL EXTEND 36-INCHES BEYOND FOUNDATION AND COMPACTED WITH A VIBRATORY SMOOTH DRUM ROLLER TO ACHIEVE 95% OF THE MAXIMUM DRY DENSITY PER THE MODIFIED PROCTOR TEST (ASTM D1557).
5. ALL DI PIPING, FITTINGS, AND VALVES SHALL BE MECHANICALLY RESTRAINED.
6. INSIDE LADDER NOT SHOWN FOR CLARITY.
7. RESERVOIR FOUNDATION AND RING WALL TO BE DESIGNED BY TANK MANUFACTURER.



1/D2 **Reservoir Interior Section - Looking East**

Scale: 1" = 5'

GIBBS & OLSON

City of WOODLAND WASHINGTON

Reservoir No. 4
City of Woodland
Woodland, Washington
Reservoir Interior Section

Datum: **NAD83 / NAVD 88**

Survey Book: **1887 A & B**

Project Milestone: **100%**

Date: **08-28-2023**

RYAN J. WALTERS — STATE OF WASHINGTON — DIGITALLY SIGNED — 52192 — REGISTERED PROFESSIONAL ENGINEER

08/28/2023

Designed by: **RJW**
Checked by: **TEG**
Approved by: **RJW**

Project Number: **0876.4533**

Drawing Number: **D2**

Sheet Number: **17** of **28**

NOTES:

1. CONTRACTOR SHALL INSTALL RESERVOIR FOUNDATION GRAVEL AND STUB-UP CENTER DRAIN, INLET, OUTLET, AND OVERFLOW PIPING A MIN. 40-INCHES ABOVE FINISHED FLOOR ELEVATION.
2. CONTRACTOR TO DISINFECT FINISHED RESERVOIR PER AWWA C652-86 METHOD 3.
3. SUBGRADE SHALL BE PREPARED PER WSDOT STANDARD SPECIFICATION 2-06. SUBGRADE SHALL BE PROOF ROLLED WITH A 50,000 POUND NON-VIBRATORY STEEL DRUM ROLLER BY MAKING 5 PASSES. GEOTECHNICAL ENGINEER SHALL BE PRESENT TO WITNESS PROOF ROLLING.
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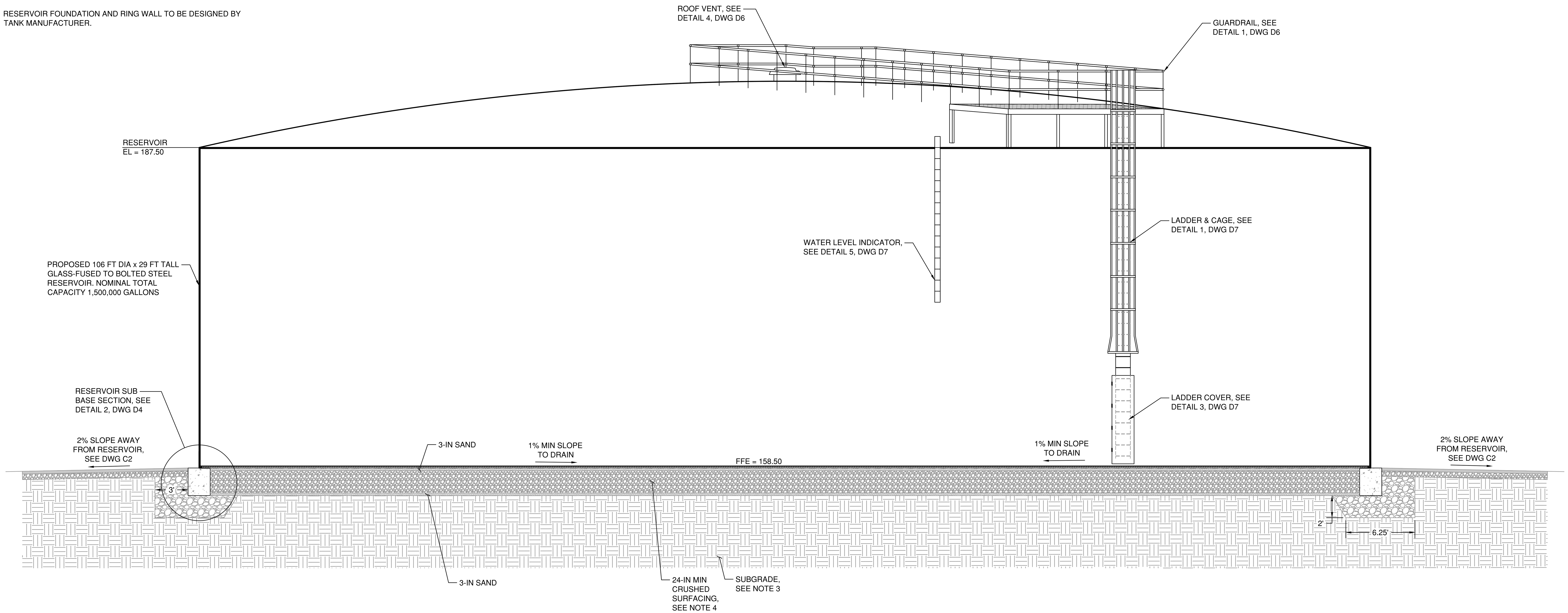
5. ALL DI PIPING, FITTINGS, AND VALVES SHALL BE MECHANICALLY RESTRAINED.
6. INSIDE LADDER NOT SHOWN FOR CLARITY.
7. RESERVOIR FOUNDATION AND RING WALL TO BE DESIGNED BY TANK MANUFACTURER.



1 / D3 **Reservoir Exterior Section - Looking North**

Scale: 1" = 5'

GIBBS & OLSON

City of WOODLAND WASHINGTON

Reservoir No. 4
City of Woodland
Woodland, Washington
Reservoir Exterior Section

Datum: **NAD83 / NAVD 88**
Survey Book: **1887 A & B**

Project Milestone: **100%**
Date: **08-28-2023**

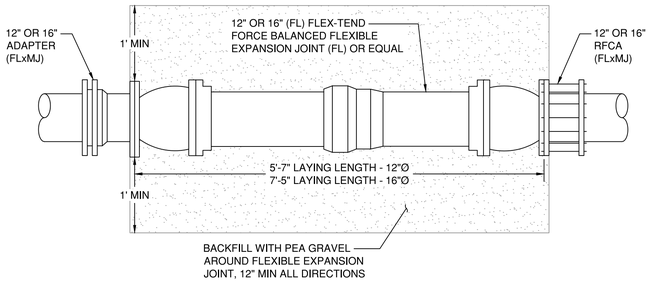
RYAN J. WALTERS – STATE OF WASHINGTON – DIGITALLY SIGNED – 52192 – REGISTERED PROFESSIONAL ENGINEER
08/28/2023

Designed by: **RJW**
Checked by: **TEG**
Approved by: **RJW**

Project Number: **0876.4533**

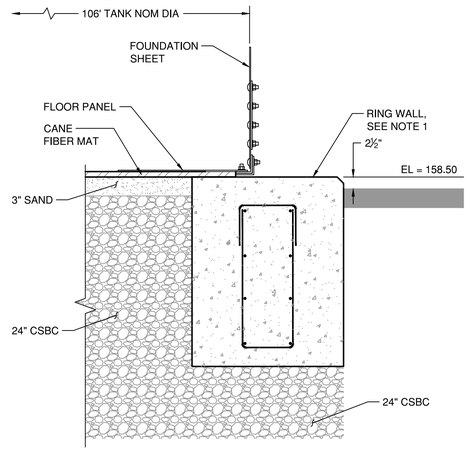
Drawing Number: **D3**

Sheet Number: **18** of **28**



1 D4 Flexible Expansion Coupling Detail

Not to Scale

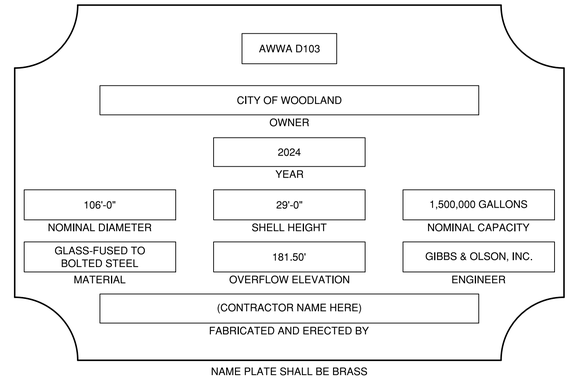


NOTES:

1. RESERVOIR FOUNDATION AND RING WALL TO BE DESIGNED BY TANK MANUFACTURER.

2 D4 Reservoir Sub Base Section

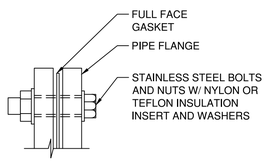
Not to Scale



NAME PLATE SHALL BE BRASS

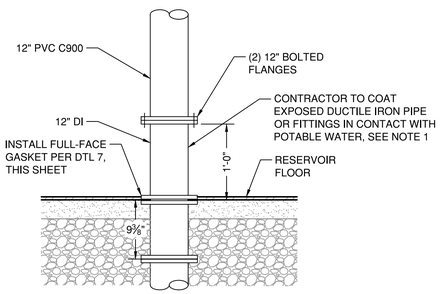
3 D4 Name Plate Detail

Not to Scale



4 D4 Dielectric Coupling Detail

Not to Scale

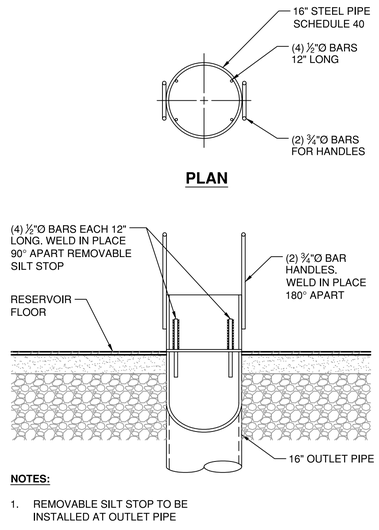


NOTES:

1. SHOP PRIMER: (1) COAT OMNITHANE SERIES 1, MDFT = 2.5 TO 3.5 MILS. FINISH COAT: (2) COATS PERMASHIELD TNEMEC SERIES 446-1222 GRAY, MDFT = 6 TO 9 MILS. TOTAL MDFT = 14.5 TO 19.5 MILS

5 D4 Hat Flange Detail

Not to Scale



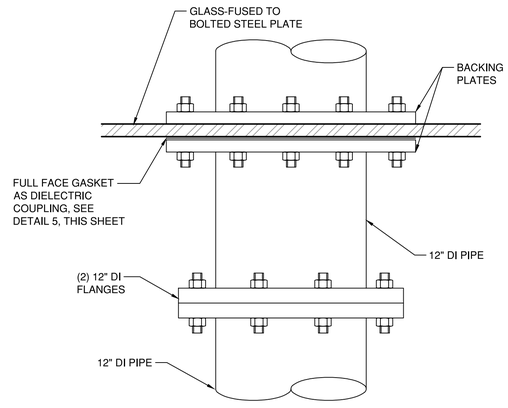
NOTES:

1. REMOVABLE SILT STOP TO BE INSTALLED AT OUTLET PIPE

ELEVATION

6 D4 Removable Silt Stop Detail

Not to Scale



7 D4 Typical Floor Penetration Detail

Not to Scale

GIBBS & OLSON

City of WOODLAND WASHINGTON

Reservoir No. 4
City of Woodland
Woodland, Washington
Reservoir Details

Datum: **NAD83** / **NAVD 88**

Survey Book: **1887 A & B**

Project Milestone: **100%**

Date: **08-28-2023**

RYAN J. W. ALTERS — STATE OF WASHINGTON — DIGITALLY SIGNED — 52092 — REGISTERED PROFESSIONAL ENGINEER

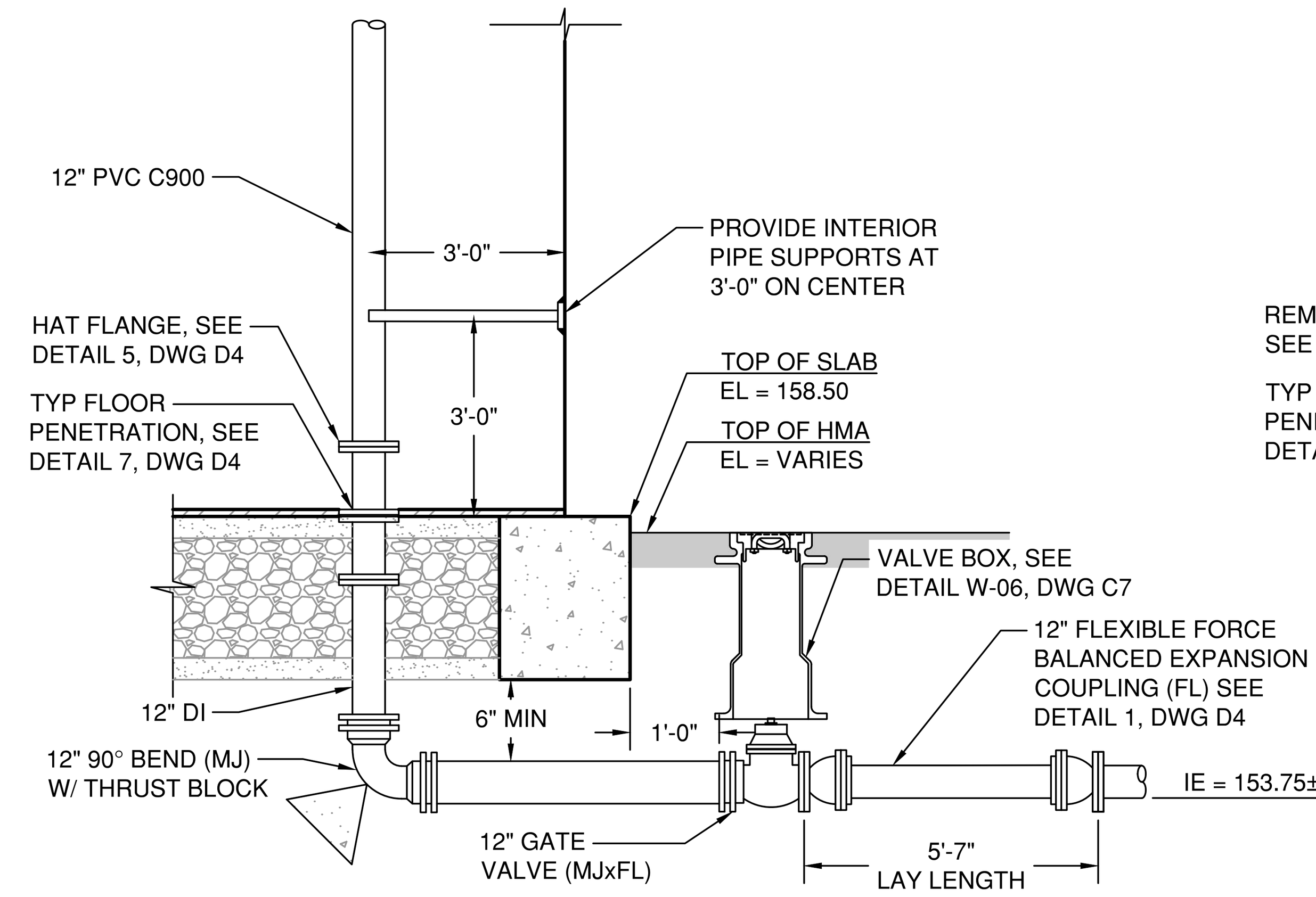
08/28/2023

Designed by: **RJW**
Checked by: **TEG**
Approved by: **RJW**

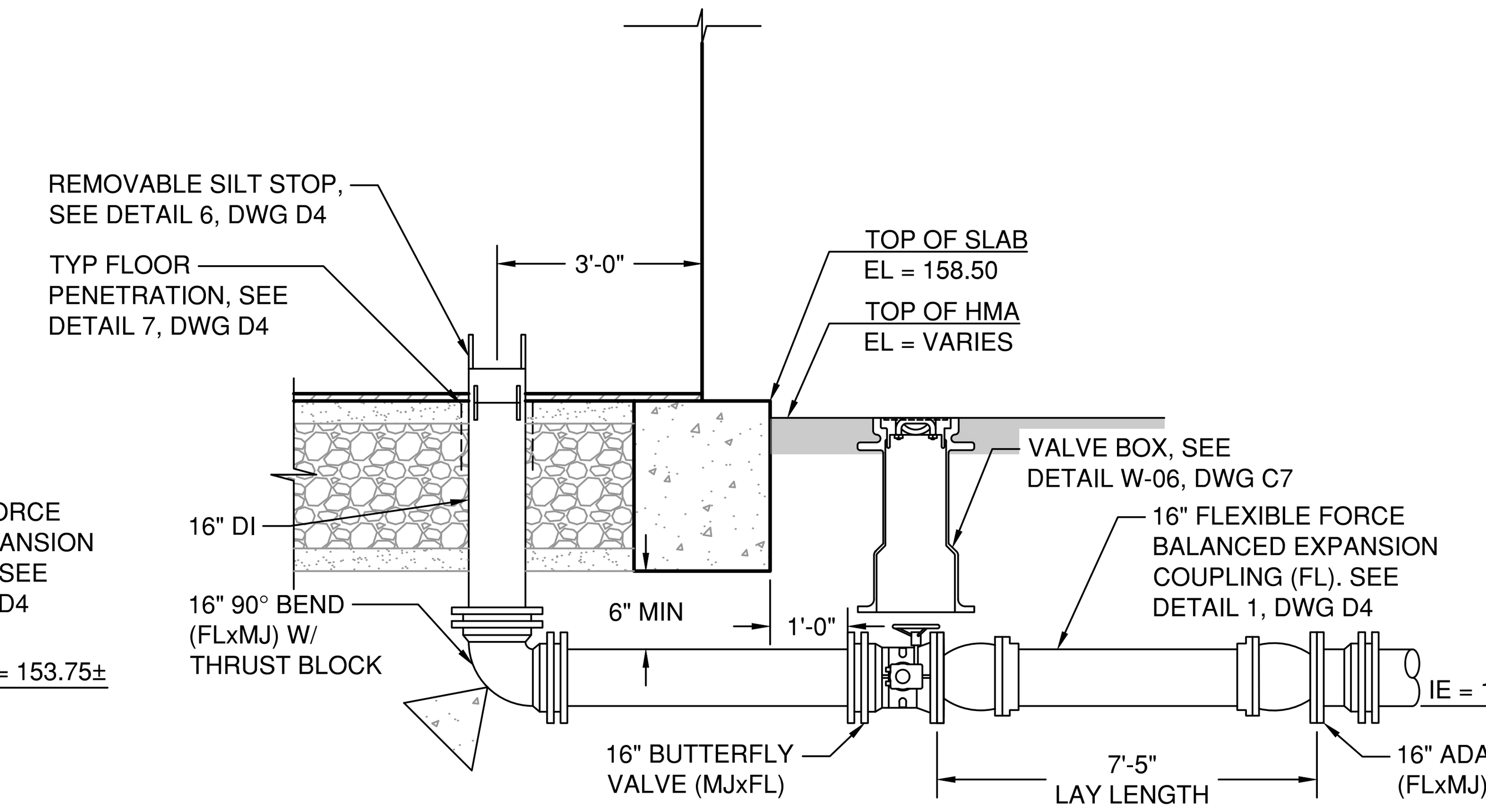
Project Number: **0876.4533**

Drawing Number: **D4**

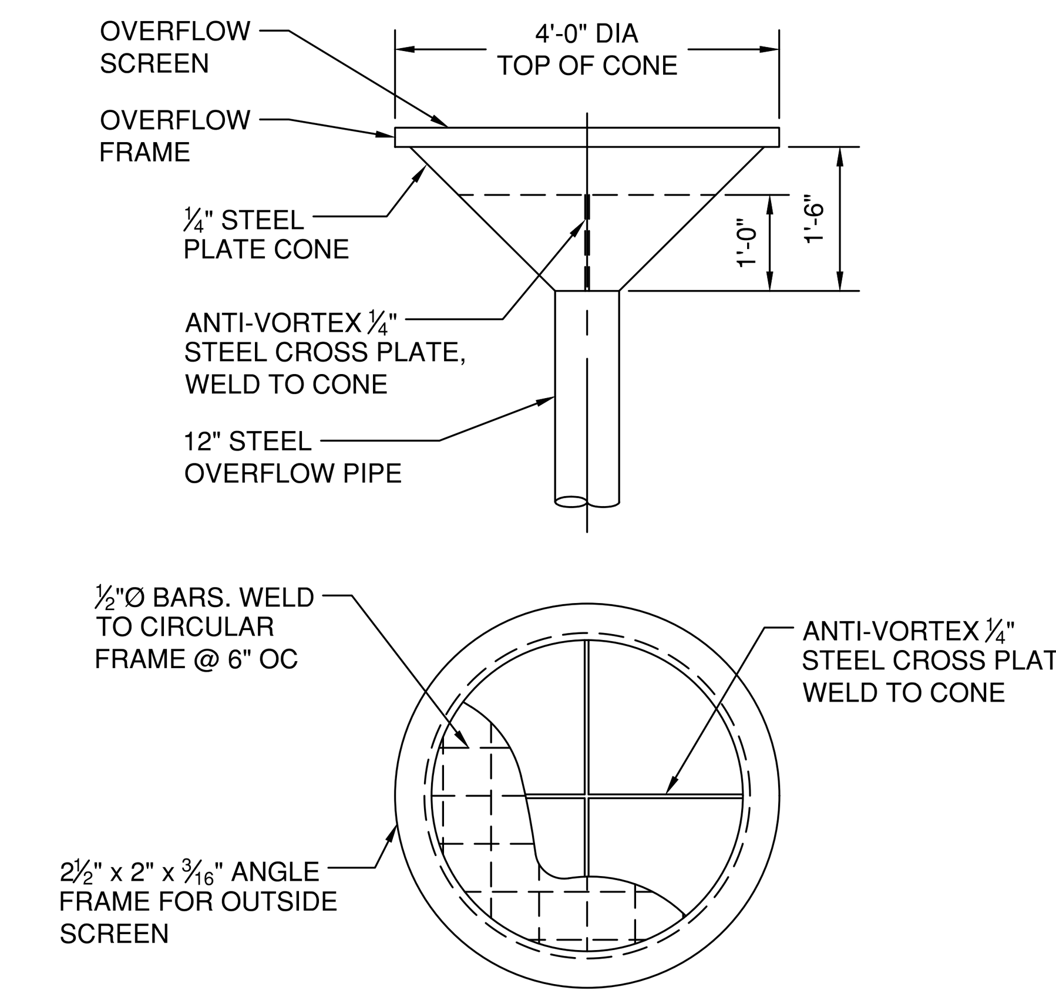
Sheet Number: **19** of **28**



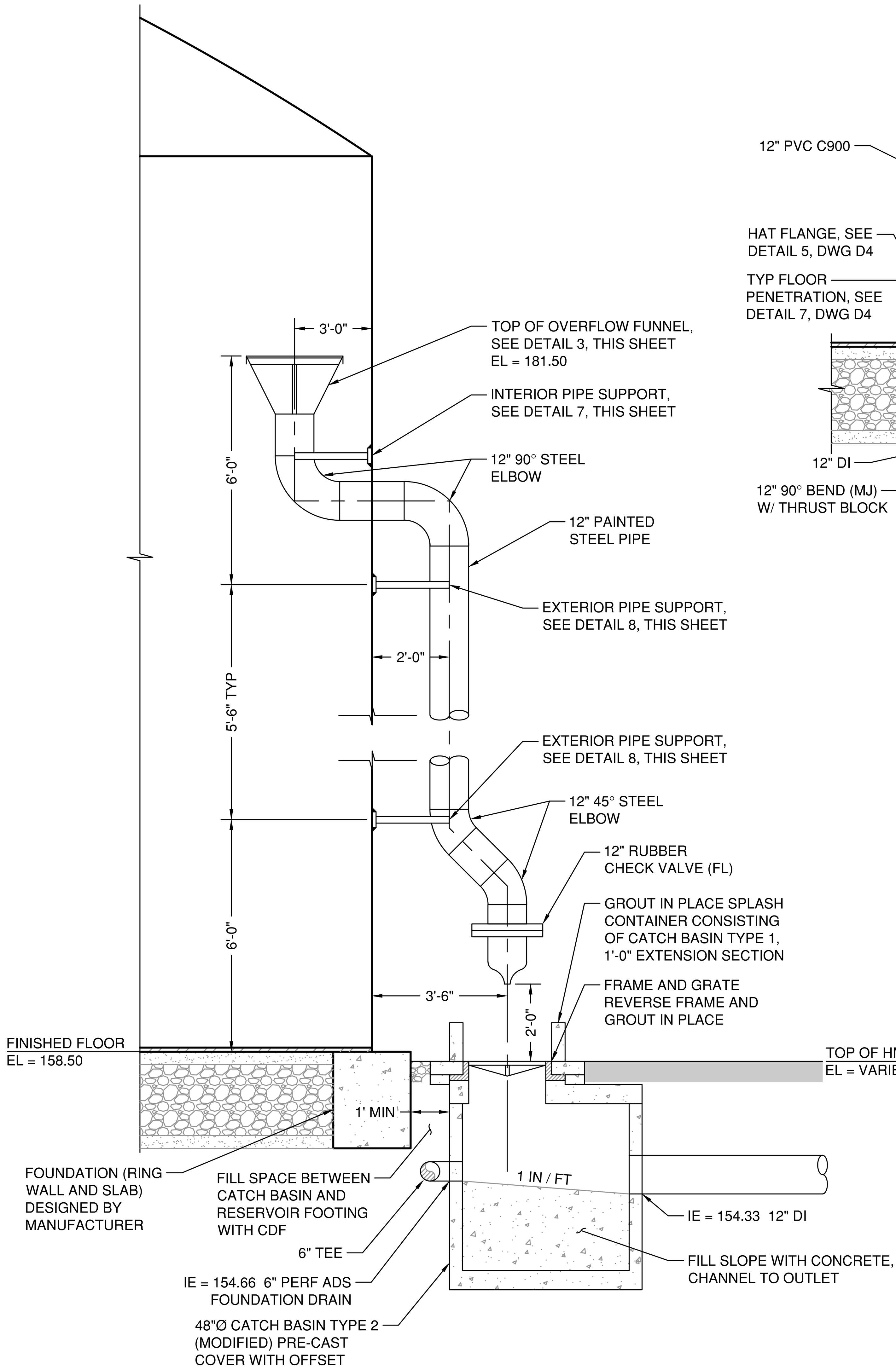
1 / D5 **Inlet Line Detail**
Not to Scale



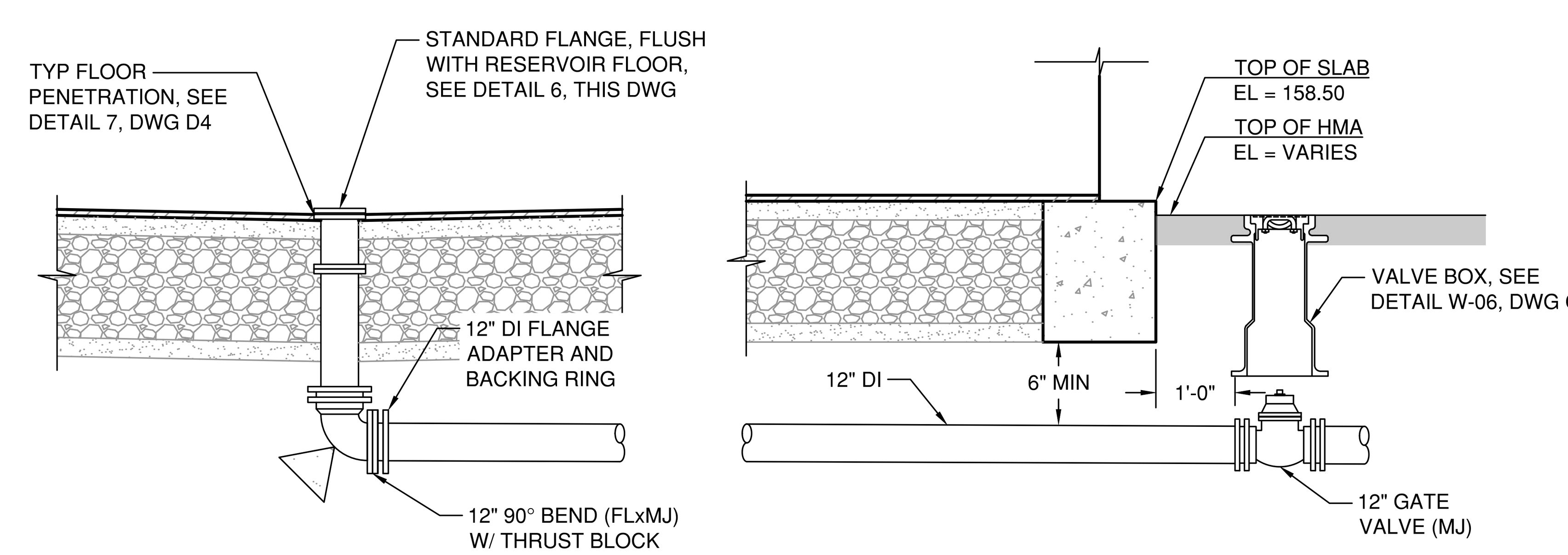
2 / D5 **Outlet Line Detail**
Not to Scale



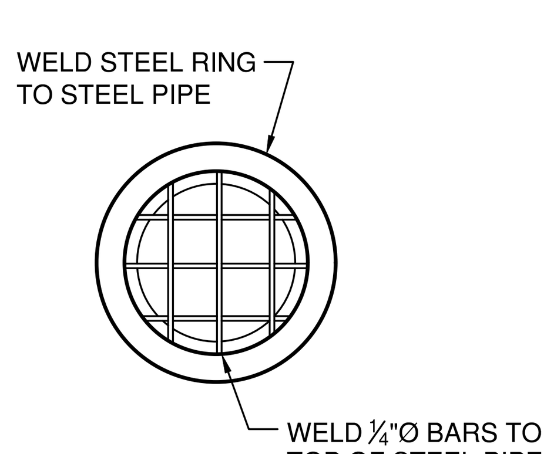
3 / D5 **Overflow Funnel Detail**
Not to Scale



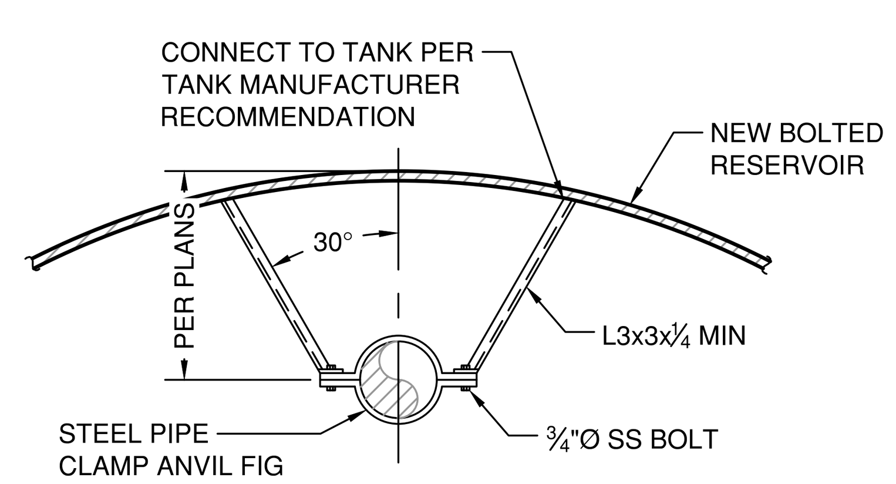
4 / D5 **Overflow Detail**
Not to Scale



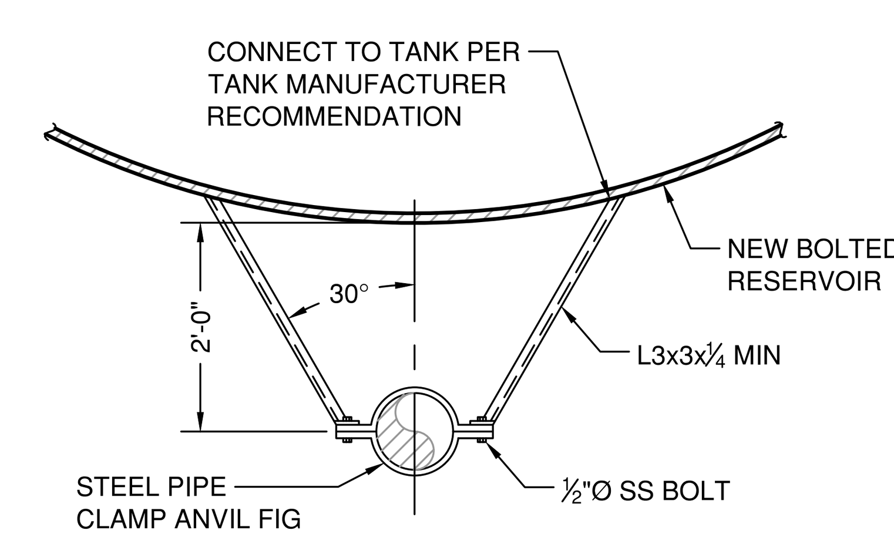
5 / D5 **Drain Pipe Detail**
Not to Scale



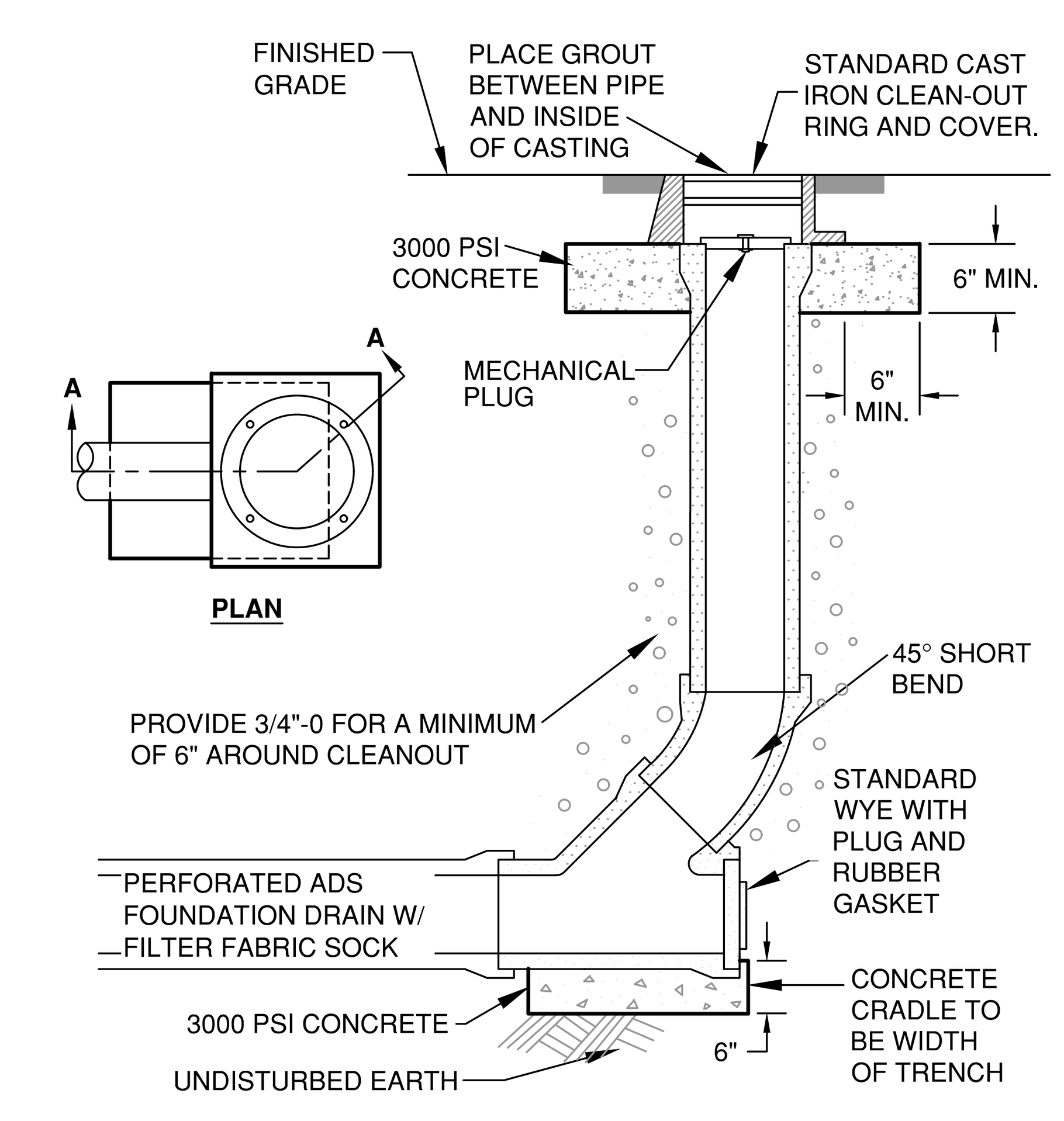
6 / D5 **Drain Pipe Grate Detail**
Not To Scale



7 / D5 **Interior Pipe Support Detail**
Not to Scale



8 / D5 **Exterior Pipe Support Detail**
Not to Scale



9 / D5 **Typical Cleanout Detail**
Not to Scale

GIBBS & OLSON

City of WOODLAND WASHINGTON

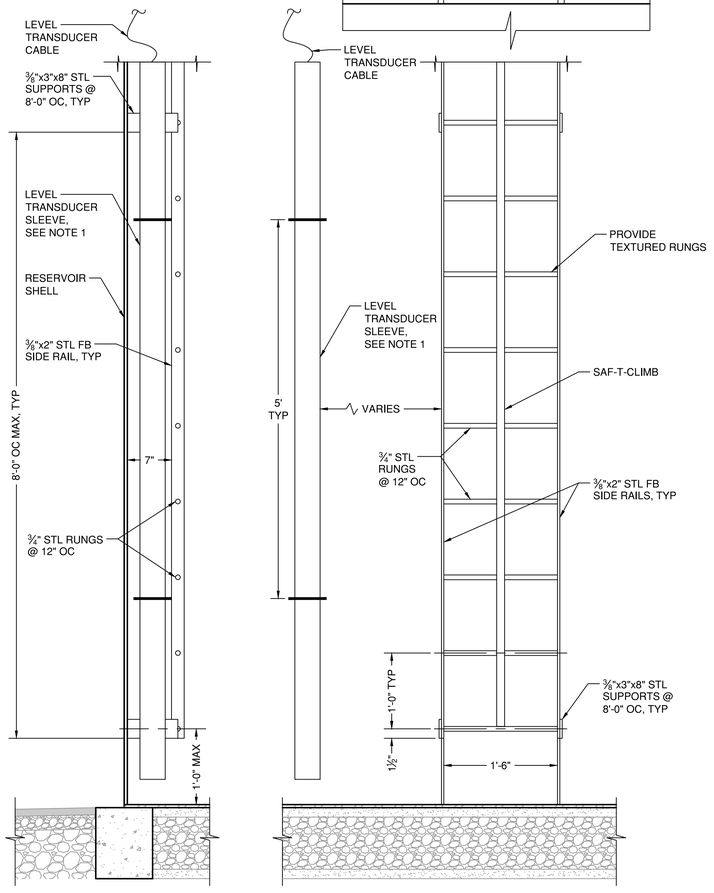
Reservoir No. 4
City of Woodland
Woodland, Washington
Reservoir Details

Datum: NAD83 / NAVD 88
Survey Book: 1887 A & B
Project Milestone: 100%
Date: 08-28-2023

RYAN J. WALTERS — STATE OF WASHINGTON — DIGITALLY SIGNED — 52192 — REGISTERED PROFESSIONAL ENGINEER — 08/28/2023

Designed by: RJW
Checked by: TEG
Approved by: RJW

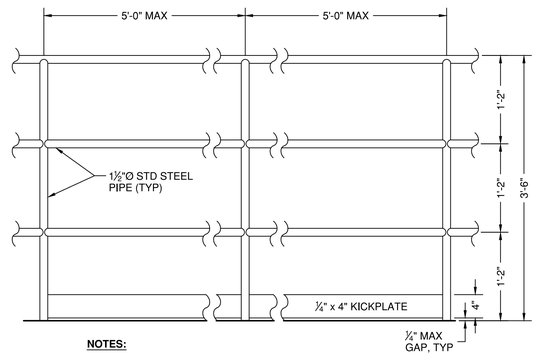
Project Number: 0876.4533
Drawing Number: D5
Sheet Number: 20 of 28



NOTES:

1. CONTRACTOR TO AFFIX TRANSDUCER SLEEVE TO RESERVOIR SHELL WITH UNI-STRUTS. COORDINATE WITH TANK MANUFACTURER.

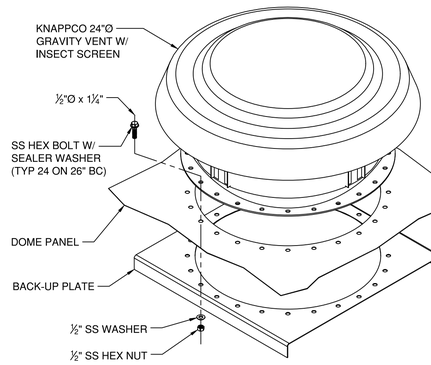
3 / D6 Interior Ladder Detail
Not to Scale

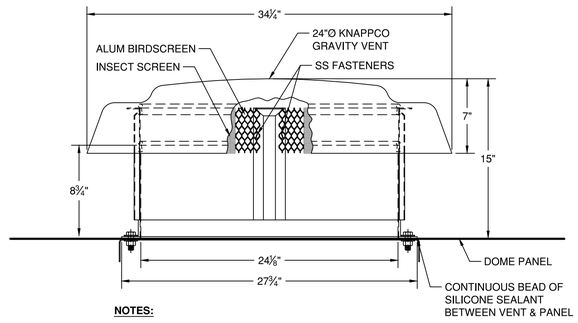


NOTES:

1. ATTACH PER TANK MANUFACTURER RECOMMENDATION.
2. GUARDRAIL SHALL BE HOT-DIPPED GALVANIZED.

1 / D6 Guardrail Detail
Not to Scale

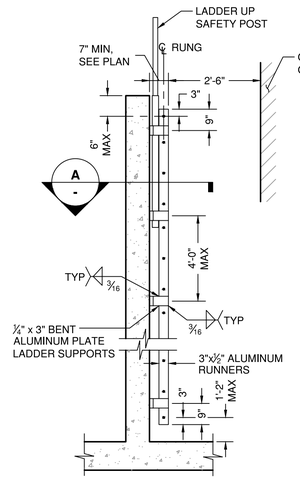


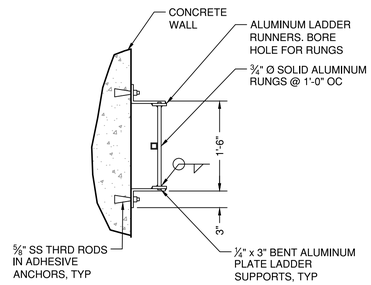


NOTES:

1. ATTACH PER TANK MANUFACTURER RECOMMENDATION.

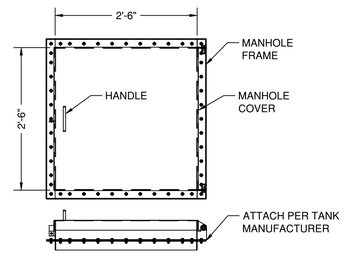
4 / D6 Roof Vent Detail
Not to Scale



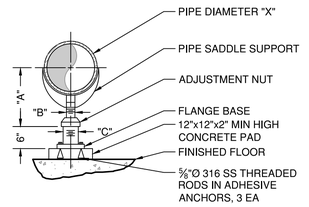


SECTION "A"

2 / D6 Vault Ladder Detail
Not to Scale



5 / D6 Roof Hatch Detail
Not to Scale



PIPE SIZE "X"	MIN LENGTH "A"	MAX LENGTH "A"	PIPE DIAM "B"	PIPE DIAM "C"
4"	9¼"	1'-2"	2½"	3"
6"	10½"	1'-3¼"	2½"	3"
8"	11¾"	1'-4½"	2½"	3"
10"	1'-1½"	1'-6½"	2½"	3"
12"	1'-3"	1'-7¾"	2½"	3"
16"	1'-7½"	2'-0"	3½"	6"

NOTES:

1. PIPE SUPPORT SHALL BE "ANVIL" FIG 264 OR EQUAL
2. PIPE "C" TO BE SET IN THREADED FLANGE BASE AND WELDED ALL AROUND.
3. ALL STEEL NOT STAINLESS SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION.

6 / D6 Pipe Support Type C Detail
Not to Scale

GIBBS & OLSON

City of WOODLAND WASHINGTON

Reservoir No. 4
City of Woodland
Woodland, Washington
Reservoir Details

Datum: **NAD83 / NAVD 88**
Survey Book: **1887 A & B**
Project Milestone: **100%**
Date: **08-28-2023**

RYAN J. WALTERS — STATE OF WASHINGTON — DIGITALLY SIGNED — 23745 — REGISTERED PROFESSIONAL ENGINEER
08/28/2023

Designed by: **RJW**
Checked by: **TEG**
Approved by: **RJW**
Project Number: **0876.4533**
Drawing Number: **D6**
Sheet Number: **21** of **28**

GENERAL NOTES:

1. ALL STEEL COMPONENTS ARE HOT DIP GALVANIZED.

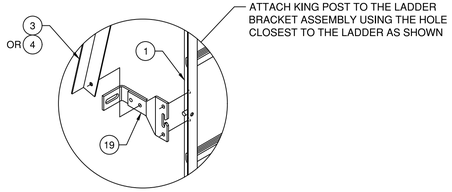
2. FASTEN COMPONENTS TOGETHER USING ⅜"Ø STAINLESS STEEL HEX HD CAP SCREW SETS. (SETS INCLUDE ITEMS #12, 13, 14, AND 15) FASTENER USAGE FOR ASSEMBLY OF THIS SECTION IS AS FOLLOWS:
   SET OF ⅜"x1" LONG (ITEMS #12, 14, AND 15) AT (55) JOINTS.
   SET OF ⅜"x1¼" LONG (ITEMS #13, 14, AND 15) AT (4) JOINTS.

3. SHORT "Y" LADDER BRACKET ASSEMBLIES ARE SHOWN FOR REFERENCE ONLY. POSITION OF THE BRACKETS TO BE DETERMINED DURING INSTALLATION. SEE PROJECT SUBMITTAL DOCUMENTATION FOR BRACKET TYPE AND QUANTITY REQUIREMENTS.

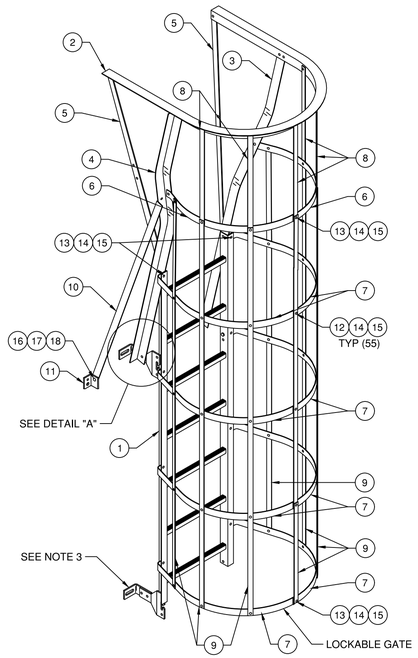
4. SUPPORT THE INDICATED KING POST TO THE SLOPED ROOF AND SHELL SHEET HORIZONTAL BOLT LINE USING THE FOLLOWING COMPONENTS:
   (1) LADDER BRACE - ITEM #10
   (1) CLIP ANGLE - ITEM #11

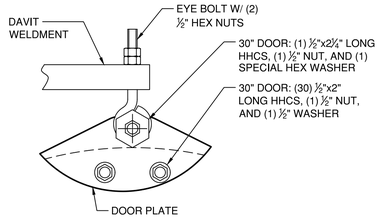
5. THIS LADDER SECTION IS CONNECTED AT THE BOTTOM TO ANY ONE OF THE LADDER SECTIONS ILLUSTRATED ON THE FOLLOWING CONSTRUCTION DETAIL DRAWINGS:
   LADDER SECTION - INTERMEDIATE
   LADDER SECTION - LONG BOTTOM
   LADDER SECTION - SHORT BOTTOM

ITEM	DESCRIPTION	QTY
18	NUT, HEX, ½"	1
17	WASHER, LOCK, ½"	1
16	SCREW, HEX HD CAP, ½" x1"	1
15	NUT, HEX, ⅜"	59
14	WASHER, LOCK, ⅜"	59
13	SCREW, HEX HD CAP, ⅜" x 1¼"	4
12	SCREW, HEX HD CAP, ⅜" x 1"	55
11	CLIP ANGLE, 2" x 2" x 3/16" x 2½"	1
10	LADDER BRACE, 1½" x 1½" x ⅛" x 52¼"	1
9	STRINGER, ⅛" x 1" x 89"	7
8	STRINGER, ⅛" x 1" x 23"	5
7	CAGE RING HALF, ⅛" x 1½" x 13½" R	8
6	CAGE RING HALF, ⅛" x 1½" x 13½" R	2
5	CAGE BRACE, 3/16" x 1¼" x 45°5/16"	2
4	KING POST-LH, 2" x 2" x ⅛" x 69⅞"	1
3	KING POST-RH, 2" x 2" x ⅛" x 69⅞"	1
2	SUPPORT, 2" x 2" x ⅛" FORMED ANGLE	1
1	LADDER ASSEMBLY, TOP	1
--	TOP LADDER & SAFETY CAGE KIT	--

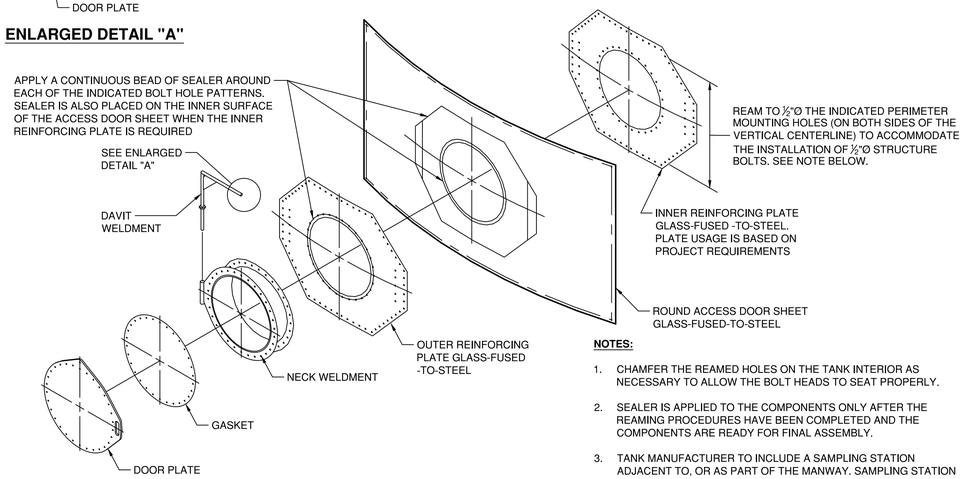


DETAIL "A"





ENLARGED DETAIL "A"



NOTES:

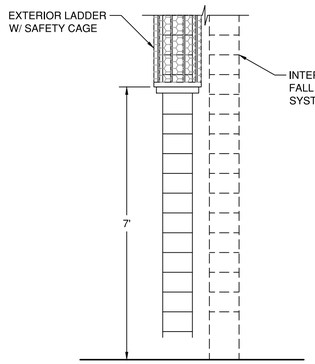
1. CHAMFER THE REAMED HOLES ON THE TANK INTERIOR AS NECESSARY TO ALLOW THE BOLT HEADS TO SEAT PROPERLY.

2. SEALER IS APPLIED TO THE COMPONENTS ONLY AFTER THE REAMING PROCEDURES HAVE BEEN COMPLETED AND THE COMPONENTS ARE READY FOR FINAL ASSEMBLY.

3. TANK MANUFACTURER TO INCLUDE A SAMPLING STATION ADJACENT TO, OR AS PART OF THE MANWAY. SAMPLING STATION SHALL CONSIST OF A HOSE BIB WITH 1/2-INCH ISOLATION VALVE.

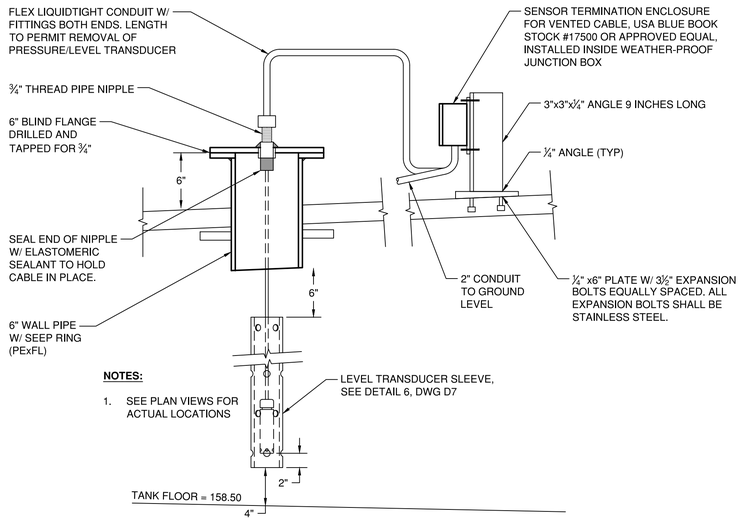
1 D7 Exterior Ladder and Cage Detail

Not to Scale



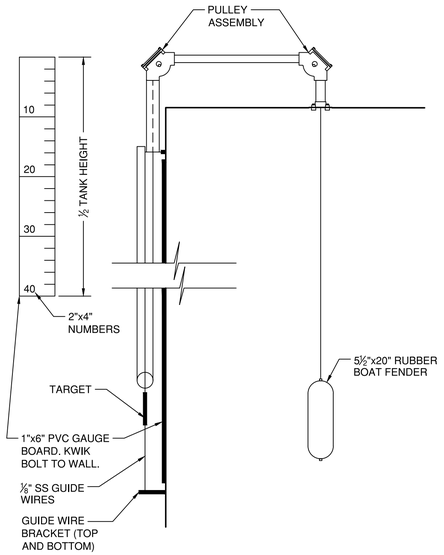
3 D7 Exterior Ladder Cover Detail

Not to Scale



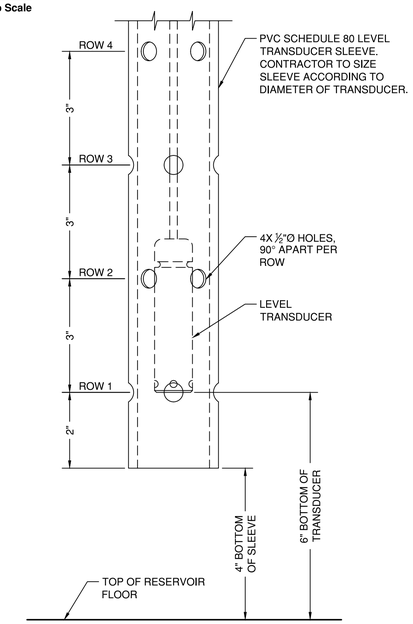
4 D7 Sensor Termination Enclosure Detail

Not to Scale



5 D7 Water Level Indicator Detail

Not to Scale



NOTES:

1. HOLES IN ROWS 2 AND 4 ARE OFFSET 45° FROM THOSE IN ROWS 1 AND 3.

6 D7 Level Transducer Sleeve Detail

Not to Scale

GIBBS & OLSON

City of WOODLAND WASHINGTON

Reservoir No. 4
City of Woodland
Woodland, Washington
Reservoir Details

Datum: **NAD83 / NAVD 88**

Survey Book: **1887 A & B**

Project Milestone: **100%**

Date: **08-28-2023**

RYAN J. WALTERS — STATE OF WASHINGTON — DIGITALLY SIGNED — 53192 — REGISTERED PROFESSIONAL ENGINEER
08/28/2023

Designed by: **RJW**
Checked by: **TEG**
Approved by: **RJW**

Project Number: **0876.4533**

Drawing Number: **D7**

Sheet Number: **22** of **28**

ELECTRICAL LEGEND AND ABBREVIATIONS

S/N — SOLID NEUTRAL CONNECTION

G N — GROUNDING AND NEUTRAL BUSES (BONDED)

GFI WP — DUPLEX RECEPTACLE–NORMAL, GROUND FAULT INTERRUPTING, WEATHERPROOF

CONNECTION TO SPECIAL EQUIPMENT OR OUTLET AS SHOWN

225 — TRANSFER SWITCH, CURRENT RATING SHOWN

GENERATOR SET

5 — MOTOR OUTLET, HORSEPOWER INDICATED.

30 30 — DISCONNECT SWITCH, RATING SHOWN

ELECTRICAL EQUIPMENT

ELECTRICAL EQUIPMENT TO BE DEMO'D

VFD — VARIABLE FREQUENCY DRIVE

LINE OR LOAD REACTOR

J — JUNCTION BOX

P4 — HOME RUN, ELECTRICAL PANEL DESTINATION SHOWN.

CONDUIT CONCEALED UNDERFLOOR OR UNDERGROUND.*

CONDUIT CONCEALED IN WALL OR ABOVE CEILING IN FINISHED AREAS, EXPOSED IN PROCESS AND EQUIPMENT AREAS.*

*NOTES:

1. RUNS MARKED WITH CROSS–HATCHES INDICATE NUMBER OF 12 AWG WIRE. LARGER GAUGES ARE SHOWN OR NOTED ELSEWHERE. LONG CROSS–HATCH INDICATES NEUTRAL, DOTTED LONG CROSS–HATCH INDICATES GREEN GROUND WIRE.
2. FOR UNMARKED CONDUIT RUNS, CONTRACTOR SHALL INSTALL REQUIRED NUMBER OF WIRES FOR POWER AND/OR CONTROL OF ELEMENTS IN CIRCUIT(S) SHOWN. SIZE OF WIRE SHALL BE NO. 12, UNLESS OTHERWISE NOTED OR REQUIRED BY CODE.
3. SIZE CONDUIT ACCORDING TO SPECIFICATIONS AND APPLICABLE CODE.

CURRENT TRANSFORMER

TRANSFORMER

GROUND CONNECTION PER NEC ARTICLE 250

THERMAL MAGNETIC CIRCUIT BREAKER

15AC 400AT — MAGNETIC ONLY CIRCUIT BREAKER (MOTOR CIRCUITS ONLY) CONTINUOUS CURRENT RATING AND TRIP SETTINGS SHOWN

NEMA RATED CONTACTOR WITH MOTOR THERMAL OVERLOAD RELAY (MOTOR STARTER)

400A — FUSE

1 — DRAWING NOTE

1 — ELECTRICAL CIRCUIT IDENTIFICATION

1 2 3 4 — MULTIPLE ELECTRICAL CIRCUITS, SEPARATE CONDUITS

1"C — MULTIPLE ELECTRICAL CIRCUITS, COMMON CONDUIT (SIZE SHOWN)

E — CEILING LIGHT OUTLET*

WALL MOUNTED LUMINAIRE*

E — BARE LAMP/ INDUSTRIAL FLUORESENT LUMINAIRE*

LINEAR LUMINAIRE

LINEAR LUMINAIRE W/BATTERY BACKUP

FLOOD LIGHT – DIRECTIONAL

* "E" INDICATES EMERGENCY LUMINAIRE WITH BATTERY–BACKED BALLAST (OF TYPE INDICATED IN LUMINAIRE SCHEDULE).

A / 3/40 — LUMINAIRE TYPE DESIGNATION; NO. AND WATTAGE OF LAMPS

$ — SPECIAL SWITCH

$X — WALL SWITCH
D –DOOR SWITCH
O –OCCUPANCY SENSOR
WP – WEATHERPROOF

UNIT HEATER

OS — CEILING MOUNT MULTI–TECHNOLOGY OCCUPANCY SENSOR

PC — PHOTOCELL

OS — POWER SUPPLY (24V DC) FOR CEILING MOUNT OCCUPANCY SENSOR

CONDUIT SEAL–OFF (XP)

CONDUIT UP

CONDUIT DOWN

CONDUIT STUB–OUT

A	AMPERES, AMPS
A/V	AUDIO VISUAL
AC	ALTERNATING CURRENT, AMPS CONTINUOUS
AF	AMP FRAME
AFCI	ARC–FAULT CIRCUIT INTERRUPTER
AFD	ADJUSTABLE FREQUENCY DRIVE
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHU	AIR HANDLING UNIT
AIC	AMPERE INTERRUPTING CAPACITY
AL	ALUMINUM, ALARM
AM	AMMETER
ANT	ANTENNA
ARCH	ARCHITECT
AS	AMP SWITCH
ASD	ADJUSTABLE SPEED DRIVE
AT	AMP TRIP
ATS	AUTOMATIC TRANSFER SWITCH
AUD	AUDIOMETER BOX CONNECTION
AUX	AUXILIARY
AWG	AMERICAN WIRE GAUGE
BFF	BELOW FINISHED FLOOR
BFG	BELOW FINISHED GRADE
BLDG	BUILDING
C	CONDUIT, CONTROL, CONTINUOUS
CAM	CAMERA
CAT	CATALOG, CATEGORY
CATV	CABLE TELEVISION
CB	CIRCUIT BREAKER
CC	CONTROL CABLE
CCTV	CLOSED–CIRCUIT TELEVISION
CHH	COMMUNICATIONS HANDHOLE
CKT	CIRCUIT
CMH	COMMUNICATIONS MANHOLE
CNTRL, CTRL	CONTROL
CO	CONDUIT ONLY
COL	COLUMN
CONT	CONTINUOUS, CONTROL
CP	CONTROL PANEL
CPT	CONTROL POWER TRANSFORMER
CR	CONTROL RELAY
CT	CURRENT TRANSFORMER
CU	COPPER
CV	CONTROL VAULT, CHECK VALVE
CVLS	CHECK VALVE LIMIT SWITCH
D, DISC	DISCONNECT
DC	DIRECT CURRENT
DEMO	DEMOLISH
DET	DETECTOR
DIST	DISTRIBUTION
DN	DOWN
DT	DUST–TIGHT
DWG	DRAWING
E	EMERGENCY, EMERGENCY CIRCUIT
(E), EXIST	EXISTING
EA	EACH
EC	ELECTRICAL CONTRACTOR
EF	EXHAUST FAN
EL, ELEV	ELEVATION, ELEVATOR
ELEC	ELECTRIC(AL)
EMER	EMERGENCY, EMERGENCY CIRCUIT
EMT	ELECTRICAL METALLIC TUBING
ENCL	ENCLOSURE
ENT	ELECTRICAL NON–METALLIC TUBING
EOL	END OF LINE
EP	EXPLOSION PROOF
EPO	EMERGENCY POWER OFF
EQUIP	EQUIPMENT
ES, E–STOP	EMERGENCY STOP
ETM	ELAPSED TIME METER
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
F	FLUSH, FUSE
FA	FIRE ALARM
FBO	FURNISHED BY OTHERS
FC	FIRE PROTECTION CONTRACTOR
FCU	FAN COIL UNIT
FDN	FOUNDATION
FDR	FEEDER
FIXT	FIXTURE
FLA	FULL LOAD AMPS
FLEX	FLEXIBLE
FLR	FLOOR
FLUOR	FLUORESCENT
FMC	FLEXIBLE METALLIC CONDUIT
FNC	FLEXIBLE NON–METALLIC CONDUIT
FRE	FIBERGLASS REINFORCED EPOXY CONDUIT
FU	FUSE
FURN	FURNITURE
FVNR	FULL VOLTAGE NON–REVERSING
FVR	FULL VOLTAGE REVERSING
G, GND	GROUND
GC	GENERAL CONTRACTOR
GEN	GENERATOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFI	GROUND FAULT INTERRUPTER
GFPE	GROUND FAULT PROTECTION EQUIPMENT
GFR	GROUND FAULT RELAY
GRC	GALVANIZED RIGID CONDUIT
GRS	GALVANIZED RIGID STEEL CONDUIT
H	HORN
HH	HANDHOLE
HID	HIGH INTENSITY DISCHARGE
HMI	HUMAN–MACHINE INTERFACE
HOA	HAND–OFF–AUTOMATIC
HP	HORSEPOWER, HEAT PUMP
HPS	HIGH PRESSURE SODIUM
H–STAT	HUMIDISTAT
HT, HGT	HEIGHT
HV	HIGH VOLTAGE
HVAC	HEATING, VENTILATING, AND AIR CONDITIONING
HW	HOT WATER
HZ	HERTZ (CYCLE PER SECOND)
IAM	INDIVIDUAL ADDRESSABLE MODULE
IC	INTERRUPTING CAPACITY, INTERCOMMUNICATION
ID	IDENTIFICATION, INSIDE DIAMETER
IG	ISOLATED GROUND
IMC	INTERMEDIATE METALLIC CONDUIT
INC	INTERMEDIATE NON–METALLIC CONDUIT, OR INCANDESCENT
IPS	INTERRUPTIBLE POWER SUPPLY
IR	PASSIVE INFRARED
IR, ISR	INTRINSICALLY SAFE RELAY
J, JB	JUNCTION BOX
K	KEY INTERLOCK (KIRK–KEY)
K/O	KNOCK–OUT
KCMIL	THOUSAND CIRCULAR MILS
KVA	KILOVOLT AMPERE
KVAR	KILOVOLT AMPERE REACTIVE
KW	KILOWATT
LA	LIGHTNING ARRESTER
LC	LIGHTING CONTACTOR
LDR	LOAD RELAY
LFMC	LIQUIDTIGHT FLEXIBLE METALLIC CONDUIT
LFNC	LIQUIDTIGHT FLEXIBLE NON–METALLIC CONDUIT
LOR	LOCAL–OFF–REMOTE
LOS	LOCKOUT STOP
LP	LIGHTING PANELBOARD
LR	LIGHTING RELAY
LTG	LIGHTING
LV	LOW VOLTAGE
M	MAGNETIC CONTACTOR COIL
MAINT	MAINTAINED
MAU	MAKE–UP AIR UNIT
MAX	MAXIMUM
MC	METAL CLAD CABLE
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CIRCUIT PROTECTOR
MD	MOTORIZED DAMPER
MDP	MAIN DISTRIBUTION PANEL
MFR, MANUF	MANUFACTURER
MH	MANHOLE, METAL HALIDE
MISC	MISCELLANEOUS
MLO	MAIN LUGS ONLY
MOD	MOTOR OPERATED DISCONNECT SWITCH
MS	MOTOR STARTER
MTD	MOUNTED
MTG	MOUNTING
MTS	MANUAL TRANSFER SWITCH
N	NEUTRAL
(N)	NEW
N/A	NOT APPLICABLE
NA	NON–AUTOMATIC
NC	NORMALLY CLOSED, NON–CONTINOUS
NEC	NATIONAL ELECTRICAL CODE
NECA	NATIONAL ELECTRICAL CONTRACTORS ASSOCIATION
NEUT	NEUTRAL
NF	NON–FUSED
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT
NM	NON–METALLIC
NMC	NON–METALLIC SHEATHED CABLE
NO	NORMALLY OPEN
NRTL	NATIONALLY RECOGNIZED TESTING LAB
NTS	NOT TO SCALE
OD	OUTSIDE DIAMETER
OHD	OVERHEAD DOOR OPERATOR
OIT	OPERATOR INTERFACE TERMINAL
OL	OVERLOAD RELAY
Ø/O	ON–OFF
	POWER, POLE, PHASE, PANEL
PA	PUBLIC ADDRESS
PB	PULL BOX, PUSHBUTTON
PC	PHOTOCELL, PLUMBING SYSTEM CONTRACTOR
PE	PRIMARY ELECTRIC (SERVICE)
PFR	PHASE FAIL RELAY
PH or Ø	PHASE
PHH	POWER HANDHOLE
PIV	POST INDICATING VALVE
PMH	POWER MANHOLE
PMR	PHASE MONITOR RELAY
PNL	PANEL(BOARD)
PP	POWER PANEL
PR	PAIR
PRI	PRIMARY
PSI	PRESSURE
PT	POTENTIAL TRANSFORMER
PTT	PUSH–TO–TALK
PV	POWER VAULT, PHOTO–VOLTAIC (SOLAR CELL)
PVC	POLYVINYL CHLORIDE CONDUIT
RWR	POWER
	RELAY
RE	REMOVE EXISTING
REC	RECESSED
RECP, RECEPT	RECEPTACLE
REF	ROOF EXHAUST FAN
RGS	RIGID GALVANIZED STEEL CONDUIT
RL	RELOCATE EXISTING
RM	ROOM
RMC	RIGID METALLIC CONDUIT
RNC	RIGID NON–METALLIC CONDUIT
RSC	RIGID STEEL CONDUIT
RT	RAINTIGHT
RTU	ROOFTOP UNIT
RVNR	REDUCED VOLTAGE NON–REVERSING
RVR	REDUCED VOLTAGE REVERSING
	SOLENOID, SURFACE MOUNTED
SCADA	SUPERVISORY CONTROL AND DATA ACQUISITION
SCH	SCHEDULE
SD	SMOKE DAMPER
SE	SECONDARY ELECTRIC
SEC	SECONDARY
SIG	SIGNAL
SN, S/N	SOLID NEUTRAL
SP	SPARE
SPD	SPEED
SPKR	SPEAKER
SPL	SPLICE
SS	STAINLESS STEEL, SOLID–STATE
SSSS	SOLID–STATE SOFT STARTER
STL	CARBON STEEL
STP	SHIELDED TWISTED PAIR
SUSP	SUSPENDED
SV	SOLENOID VALVE
SW	SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
T, T–STAT	THERMOSTAT
TB	TERMINAL BOARD
TC	TELEPHONE CABINET, TIME CLOCK
TC	TIME CLOSING
TCI	TELECOMMUNICATIONS CABLING INSTALLER
TCP	TEMPERATURE CONTROL PANEL
TD	THERMAL DETECTOR
TDR	TIME DELAY RELAY
TEL	TELEPHONE
TEL/DATA	TELEPHONE/DATA
TEMP	TEMPORARY, TEMPERATURE
TERM	TERMINAL(S)
TJB	TERMINAL JUNCTION BOX
TO	TIME OPENING
TR	TIMER–REPEAT CYCLE
TRANS	TRANSFORMER
TSP	TWISTED SHIELDED PAIR
TST	TWISTED SHIELDED TRIAD
TV	TELEVISION
TYP	TYPICAL
U	UP
UC	UNDER COUNTER, UNDERGROUND CONDUIT
UD	UP–DOWN
UG	UNDERGROUND
UH	UNIT HEATER
UOI	UNLESS OTHERWISE INDICATED
UON	UNLESS OTHERWISE NOTED
UOS	UNLESS OTHERWISE SHOWN
UPS	UNINTERRUPTIBLE POWER SOURCE
US, U/S	ULTRASONIC
UTL	UTILITY
UTP	UNSHIELDED TWISTED PAIR
UVR	UNDER VOLTAGE RELAY
V	VOLTAGE, VOLTS, VAULT
VFD	VARIABLE FREQUENCY DRIVE
VM	VOLT METER
VP	VAPORPROOF
VSD	VARIABLE SPEED DRIVE
VT	VAPORTIGHT, VOLTAGE TRANSFORMER
W	WATT
W/	WITH
WG	WIRE GUARD
WH	WATT–HOUR, WATER HEATER
WHD	WATT–HOUR DEMAND METER
WLH	WALL HEATER
WP	WEATHERPROOF
WT	WATER, WATERTIGHT
XFMR	TRANSFORMER
XP	EXPLOSION PROOF
Y	WYE
Z	ZONE, IMPEDANCE
ZAM	ZONE ADAPTER MODULE

NOTES:
1. NOT ALL ABBREVIATIONS USED. ABBREVIATIONS LISTED APPLY TO ELECTRICAL AND INSTRUMENTATION DRAWINGS AND DETAILS. SOME ABBREVIATIONS MAY BE DERIVED FROM MULTIPLE, INDIVIDUAL ONES. LIST MAY BE INCOMPLETE; SEE NOTE 2.

2. MEANING OF ABBREVIATIONS WILL DEPEND ON THE CONTEXT OF USAGE. IF MEANING IS UNCLEAR, SEEK CLARIFICATION FROM ENGINEER BEFORE BIDDING. FAILURE TO UNDERSTAND ABBREVIATIONS AND THEIR POTENTIAL FINANCIAL IMPACT ON THE CONTRACTOR SHALL NOT BE GROUNDS FOR ADDITIONAL COMPENSATION AFTER BID OPENING.

3. COMMON, NON–ELECTRICAL ABBREVIATIONS, SUCH AS COMPASS DIRECTIONS (N, S, E, W, ETC.) AND CHEMICAL COMPOUNDS (O2, CL2, ETC.), ARE NOT INCLUDED.

4. ADDITIONAL ABBREVIATIONS FOR INSTRUMENTATION AND CONTROL ELEMENTS (FLOAT SWITCHES, ETC.) ARE DERIVED FROM ANSI/ISA–S5.1, AND ARE NOT NECESSARILY LISTED HERE.

R&W ENGINEERING, INC.
9615 S.W. Allen Boulevard
Suite 107
Beaverton, Oregon 97005
Phone: (503) 726-3311
Office: (503) 292-6000
E-mail: rweng@rweng.com
Project No.: 247.138.001 Contact: JEFF HOWARD

RIGHT-OF-WAY DISCLAIMER

THE RIGHT-OF-WAY AND/OR PROPERTY LINES SHOWN HEREON ARE BASED ON AVAILABLE INFORMATION, NOT ON A SURVEYED LOCATION AND ARE ONLY APPROXIMATE

GIBBS & OLSON

City of WOODLAND WASHINGTON

Reservoir No. 4
City of Woodland
Woodland, Washington
ELECTRICAL LEGEND AND ABBREVIATIONS

Datum: **NAD83 / NAVD 88**
Survey Book: **1887 A & B**
Project Milestone: **90%**
Date: **08-11-2023**

JEFFREY L. HOWARD — STATE OF WASHINGTON — #42171 — REGISTERED PROFESSIONAL ENGINEER
PRELIMINARY

Designed by: **JLH**
Checked by: **JLH**
Approved by: **JLH**
Project Number: **0876.4533**
Drawing Number: **E1**
Sheet Number: **23** of **28**

GENERAL NOTES

A. PEAK DEMAND = 166 KVA* X 125% = 207.5 KVA
NEW LOADS = (2 X 2.5 KVA) X 125% = 5.0 KVA X 125% = 6.25 KVA
TOTAL = 207.5 KVA + 6.25 KVA = 213.75 KVA = 257.1 A @ 480V, 3-PH

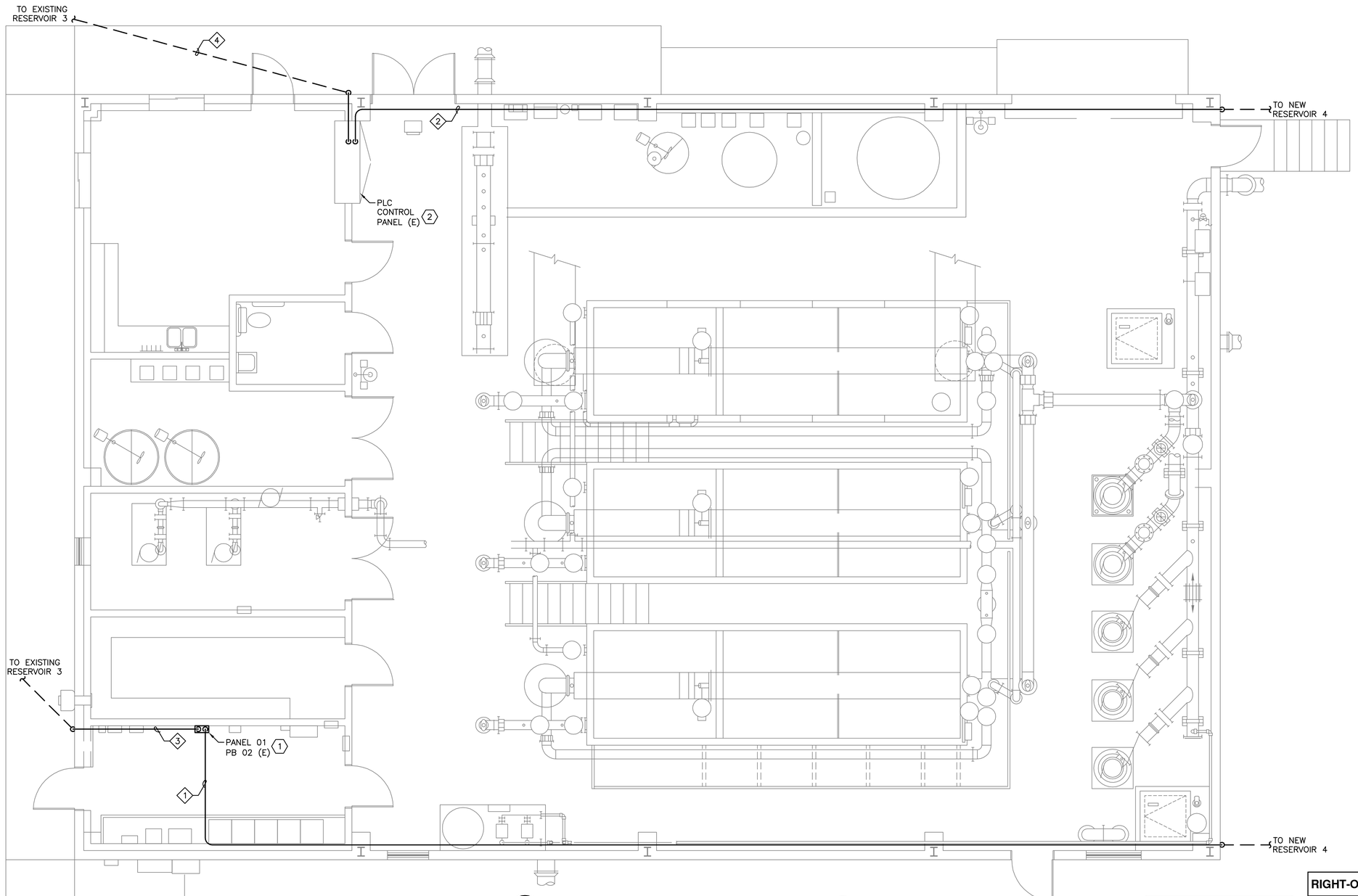
EXISTING SERVICE = 600 A @ 480V, 3-PH

*PER INFORMATION PROVIDED BY COWLITZ PUD, PEAK DEMAND OCCURRED IN FEBRUARY, 2023

NOTES THIS SHEET

1. INSTALL NEW PACKAGE MIXERS ON CIRCUITS 19, 21, AND 23 FOR RESERVOIR 3, AND 25, 27, AND 29 FOR RESERVOIR 4 (FIELD VERIFY). REPLACE (3) EXISTING 20A, 1-POLE "SPARE" CB'S WITH (1) NEW 20A, 3-POLE CB (FOR EACH NEW MIXER CIRCUIT). NEW CB'S TO MATCH CHARACTERISTICS OF EXISTING CB'S, INCLUDING AIC RATING.

2. CONNECT NEW SCADA SIGNALS TO EXISTING PLC. SIGNALS ARE DC. FOR DISCRETE SIGNALS, USE SPARE INPUTS ON DISCRETE INPUT MODULE LOCATED IN RACK 1, SLOT 6. FOR ANALOG SIGNALS, USE SPARE INPUTS ON ANALOG INPUT MODULES LOCATED IN RACK 2, SLOTS 3 AND 5. FIELD VERIFY. AVOID USING "SPARE" MODULES.



1/E2 TREATMENT PLANT BUILDING PLAN
SCALE: 1/4" = 1'-0"

R&W ENGINEERING, INC.
9615 S.W. Allen Boulevard
Suite 107
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Phone: (503) 726-3311
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Project No.: 247.138.001 Contact: JEFF HOWARD

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GIBBS & OLSON

City of WOODLAND WASHINGTON

Reservoir No. 4
City of Woodland
Woodland, Washington
ELECTRICAL TREATMENT PLANT BUILDING PLAN

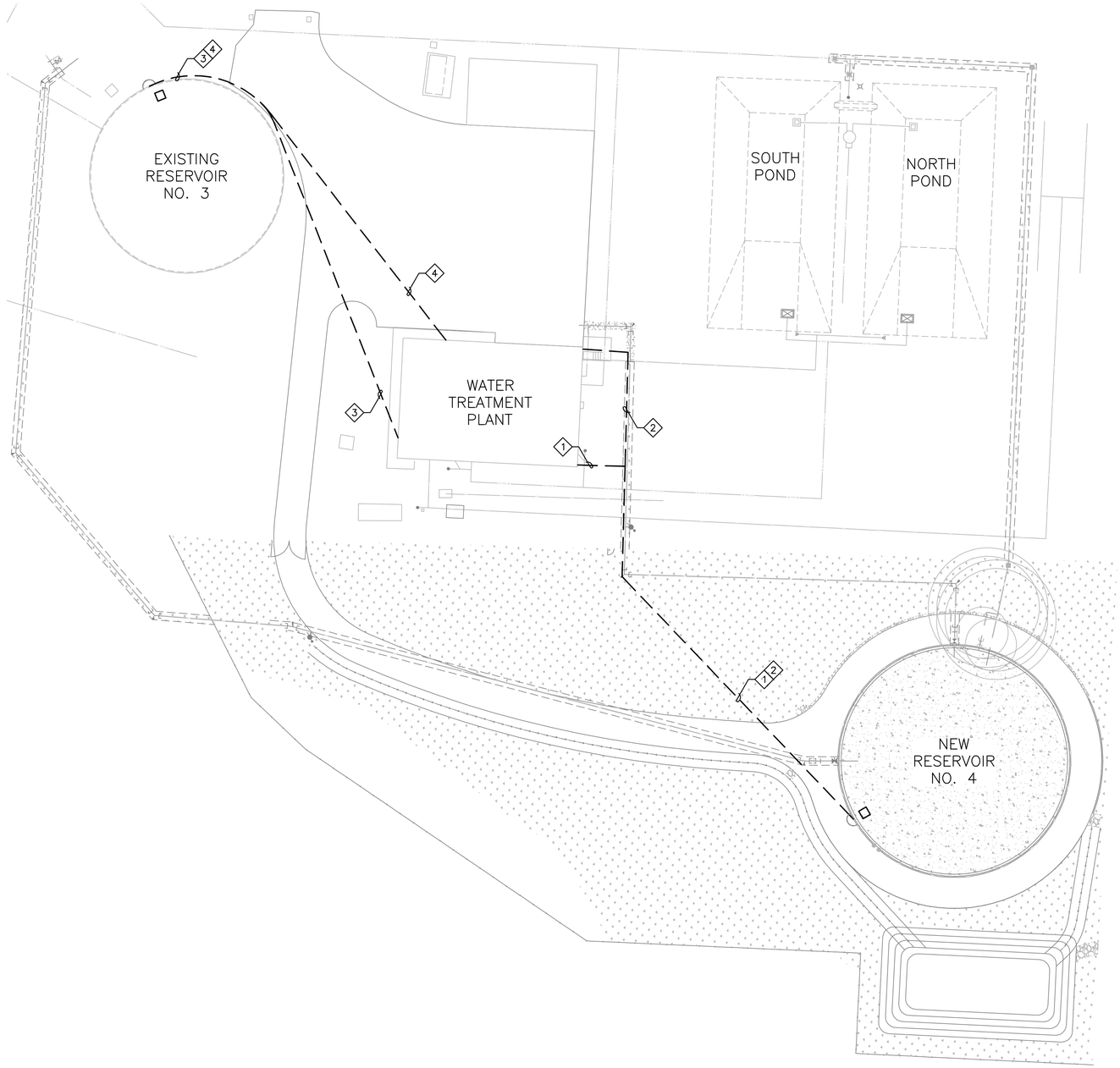
Datum: **NAD83 / NAVD 88**
Survey Book: **1887 A & B**
Project Milestone: **90%**
Date: **08-11-2023**

JEFFREY L. HOWARD STATE OF WASHINGTON #42171 REGISTERED PROFESSIONAL ENGINEER
PRELIMINARY

Designed by: **JLH**
Checked by: **JLH**
Approved by: **JLH**

Project Number: **0876.4533**
Drawing Number: **E2**
Sheet Number: **24** of **28**

DRAWING: \\RWNT\WORKFLOW\WP\247_GIBBS & OLSON\139_CITY OF WOODLAND RES NO 4\001_DSN DOCS\DWG\E2.DWG, LAYOUT TAB: LAYOUT1, PLOT DATE: 8/10/2023 12:10:17 PM, DRAWING SAVE DATE: 8/10/2023 11:14:45 AM, PLOTTED BY: JMINNICK
PROFILE: PDOSCHKE, PLOT DEVICE: NONE, PLOT STYLE TABLE: ----, PAPER SIZE: ANSI A (8.50 X 11.00 INCHES)



1 / E3 ELECTRICAL SITE PLAN
SCALE: 1" = 30'-0"

GENERAL NOTES

A. NOTES...

NOTES THIS SHEET

1 NOTES...

R&W ENGINEERING, INC.
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Project No.: 247.138.001 Contact: JEFF HOWARD

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GIBBS & OLSON

City of WOODLAND WASHINGTON

Reservoir No. 4
City of Woodland
Woodland, Washington
ELECTRICAL SITE PLAN

Datum: **NAD83 / NAVD 88**
Survey Book: **1887 A & B**
Project Milestone: **90%**
Date: **08-11-2023**

JEFFREY L. HOWARD
STATE OF WASHINGTON
#42171
REGISTERED
PROFESSIONAL ENGINEER
PRELIMINARY

Designed by: **JLH**
Checked by: **JLH**
Approved by: **JLH**

Project Number: **0876.4533**
Drawing Number: **E3**
Sheet Number: **25** of **28**

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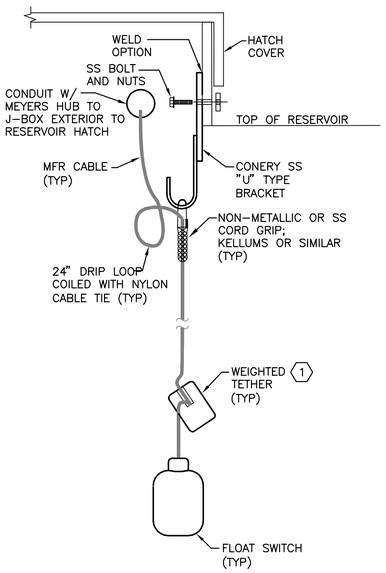
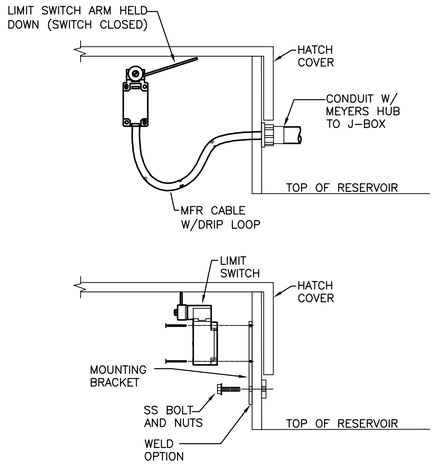
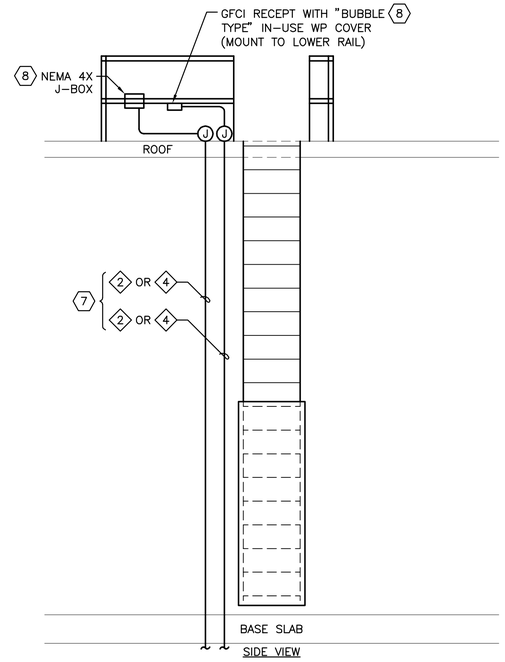


1 E4 FLOAT MOUNTING DETAIL
NOT TO SCALE



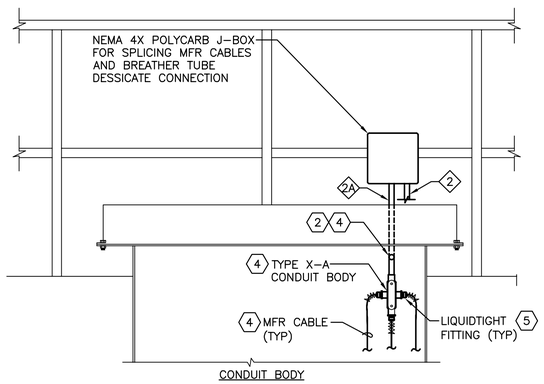
2 E4 HATCH INTRUSION DETAIL
NOT TO SCALE



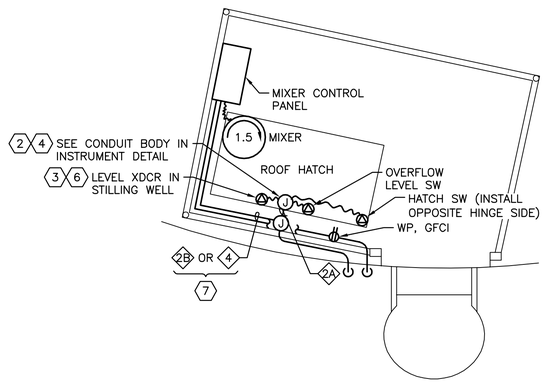
3 E4 RESERVOIR CONDUIT DETAIL
NOT TO SCALE

NOTES THIS SHEET

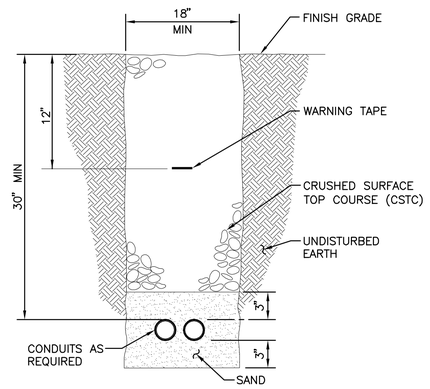
1. FLOAT SWITCH AND WEIGHT KIT MUST BE LISTED FOR POTABLE WATER USE.
2. PROVIDE AND INSTALL MYERS THROUGH BULKHEAD FITTING FOR WATER-TIGHT CONDUIT PENETRATION INTO RESERVOIR.
3. PROVIDE AND INSTALL 3" PERFORATED PVC PIPE FOR LEVEL TRANSDUCER STILLING WELL. MOUNT TO RESERVOIR INTERIOR LADDER STAND-OFFS WITH FRP STRUT AND POLYURETHANE FASTENERS. TRANSDUCER ELEVATION TO BE 1" ABOVE FLOOR
4. ALL CONDUIT AND FITTINGS ENTERING THE RESERVOIR TO BE PVC COATED OR NYLON.
5. NYLON FITTING, NON-METALLIC MESH, LIQUIDTIGHT DELUXE CORD GRIP.
6. LEVEL XFMR TO BE MJK MODEL MBLT-25C-IVPF-60-80, OR APPROVED.
7. CIRCUITS 1, 2, 2A, AND 2B ARE AT RESERVOIR 4. CIRCUITS 3 AND 4 ARE AT RESERVOIR 3.
8. GFCI RECEPTACLE, HATCH SWITCH, OVERFLOW LEVEL SWITCH, RESERVOIR LEVEL TRANSDUCER, AND ALL ASSOCIATED HARDWARE ARE LOCATED AT RESERVOIR 4 ONLY.



4 E4 RESERVOIR INSTRUMENT DETAIL 8
NOT TO SCALE



5 E4 TOP OF RESERVOIR DETAIL 8
NOT TO SCALE



6 E4 TRENCHING DETAIL
NOT TO SCALE

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GIBBS & OLSON

City of WOODLAND WASHINGTON

Reservoir No. 4
City of Woodland
Woodland, Washington
ELECTRICAL DETAILS

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Survey Book: **1887 A & B**
Project Milestone: **90%**
Date: **08-11-2023**

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Designed by: **JLH**
Checked by: **JLH**
Approved by: **JLH**
Project Number: **0876.4533**
Drawing Number: **E4**
Sheet Number: **26** of **28**

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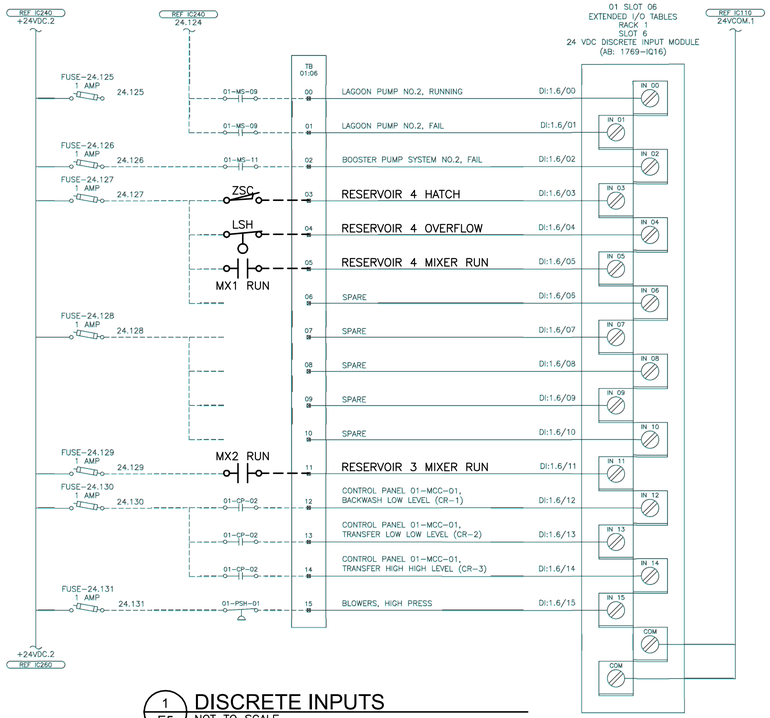
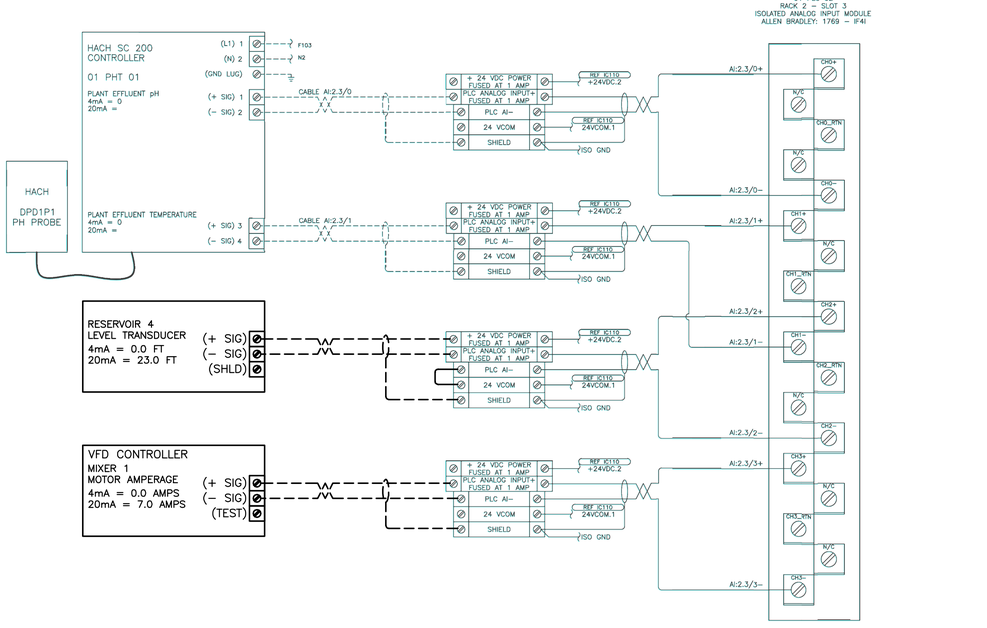
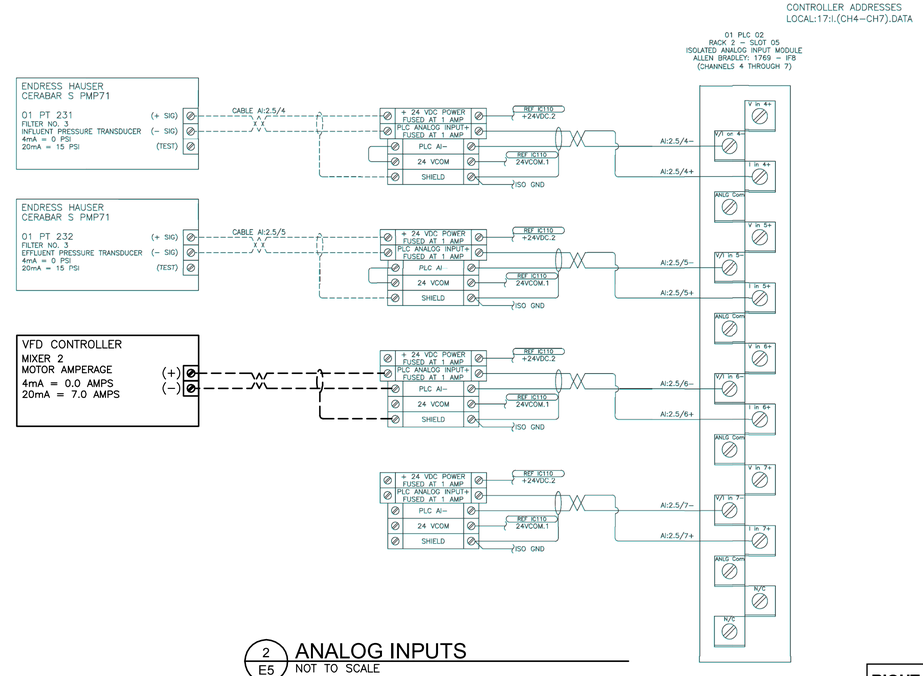


1 E5 DISCRETE INPUTS
NOT TO SCALE





2 E5 ANALOG INPUTS
NOT TO SCALE

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GIBBS & OLSON

City of WOODLAND WASHINGTON

Reservoir No. 4
City of Woodland
Woodland, Washington
ELECTRICAL DETAILS

Datum: **NAD83 / NAVD 88**
Survey Book: **1887 A & B**

Project Milestone: **90%**
Date: **08-11-2023**

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Designed by: **JLH**
Checked by: **JLH**
Approved by: **JLH**

Project Number: **0876.4533**

Drawing Number: **E5**

Sheet Number: **27** of **28**

DRAWING: \\RWM\WORKFLOW\WIP\247_GIBBS & OLSON\139_CITY OF WOODLAND RES NO 4\001_DSN_DOCS\DWG\E5.DWG, LAYOUT TAB: LAYOUT1, PLOT DATE: 8/10/2023 12:08:08 PM, DRAWING SAVE DATE: 8/10/2023 11:44:54 AM, PLOTTED BY: JMINNICK
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WOODLAND RESERVOIR 4
ELECTRICAL CIRCUIT SCHEDULE

ALL CIRCUITS ARE IDENTIFIED ON THE PLANS WITH THE DIAMOND SYMBOL. CONDUCTOR SIZES ARE BASED ON COPPER CONDUCTORS. CONDUIT SIZES ARE SHOWN FOR CASES WHEN CIRCUIT CONDUCTORS ARE RUN WITHOUT OTHER CIRCUITS. MULTIPLE CIRCUITS RUN IN COMMON CONDUITS ARE SHOWN ON PLANS AND SUPERSEDE THE BASIC CONDUIT SIZE SHOWN.

RACEWAY SIZES ARE IN INCHES WITH QUANTITIES IN EXCESS OF (1) SHOWN IN ADJACENT PARENTHESIS. CONDUCTOR CONFIGURATIONS ARE CODED AS FOLLOWS: P– FOR POWER CONDUCTORS, G – FOR GROUND CONDUCTORS, N – FOR NEUTRAL CONDUCTORS, C – FOR CONTROL CONDUCTORS, AND SP – FOR SPARE CONDUCTORS.

CIRCUITS REVISED SINCE LAST ISSUE ARE INDICATED BY AN ASTERISK(*).

CIRCUIT NUMBER	FROM	TO	CONDUCTORS	RACEWAY	NOTES
1	EXISTING POWER PANEL 01 PB 02	PACKAGE MIXER CP RESERVOIR 4 (POWER)	(3) 8 AWG, P (1) 8 AWG, N (1) 8 AWG, P (1) 8 AWG, N (1) 8 AWG, G	1.25	VERIFY IF NEUTRAL REQUIRED FOR 3–PH UNITS. OMIT IF NOT REQUIRED. GFCI RECEPTACLE CIRCUIT.
2	JUNCTION BOX AT TOP OF RESERVOIR 4 (DC SIGNALS)	EXISTING PLC CONTROL PANEL (DC SIGNALS)	(8) 14 AWG, C (4) 14 AWG, SP (2) 16 TSP, C (1) 12 AWG, G	1.25	CIRCUITS 2A, 2B, AND "SPARES"
2A	RESERVOIR 4 SCADA SIGNALS (DC SIGNALS)	JUNCTION BOX AT TOP OF RESERVOIR 4 (DC SIGNALS)	(4) 14 AWG, C (1) 16 TSP, C (1) 12 AWG, G	1	HATCH LIMIT SW, OVERFLOW SW RESERVOIR LEVEL
2B	PACKAGE MIXER CP RESERVOIR 4 (DC SIGNALS)	JUNCTION BOX AT TOP OF RESERVOIR 4 (DC SIGNALS)	(4) 14 AWG, C (1) 16 TSP, G (1) 12 AWG, G	1	MIXER RUN STATUS, "SPARE" MIXER AMPERAGE (FROM VFD)
3	EXISTING POWER PANEL 01 PB 02	PACKAGE MIXER CP RESERVOIR 3 (POWER)	(3) 8 AWG, P (1) 8 AWG, N (1) 8 AWG, G	1	VERIFY IF NEUTRAL REQUIRED FOR 3–PH UNITS. OMIT IF NOT REQUIRED.
4	PACKAGE MIXER CP RESERVOIR 3 (DC SIGNALS)	EXISTING PLC CONTROL PANEL (DC SIGNALS)	(4) 14 AWG, C (1) 16 TSP, G (1) 12 AWG, G	1	MIXER RUN STATUS, "SPARE" MIXER AMPERAGE (FROM VFD)

PANEL: 01 PB 02 BUS: 225 A DATE: 08/10/23 VOLTAGE: 120 / 208 VOLTS, 3 PHASE, 4 WIRE

FEEDER: SEE ONE–LINE DIAGRAM MAIN BRKR: 175 A MOUNTING: SURFACE

CKT NO.	CIRCUIT DESCRIPTION	CKT BKR AMPS/POLE	LOAD TYPE	LOAD VA	PHASE	LOAD VA	LOAD TYPE	CKT BKR AMPS/POLE	CIRCUIT DESCRIPTION	CKT NO.
1	[01 CP 01], Control Panel, Plant Master, PLC Control Power	1–20		480	A	1440		1–20	Recepts, Office	2
3	[01 CP 01], Control Panel, Plant Master, CVS & SVS	1–20		1404	B	1080		1–20	Recepts, Process Room	4
5	DREC Group 1: [01 DREC 01], 02], 03,], 04]	1–20		1680	C	720		1–20	Recepts, Process Room	6
7	DREC Group 2: [01 DREC 05], 06], 07,], 08]	1–20		1680	A	900		1–20	Recepts, Process Room	8
9	DREC Group 3: [01 DREC 09], 10], 11,], 12]	1–20		1680	B	540		1–20	Recepts, Process Room	10
11	DREC Group 4: [01 DREC 13], 14]	1–20		840	C	500		1–20	Wall Heater, EH–2, Lavatory	12
13	[01 DREC 15], Dedicated Recept, Filter Aid Mix Tank Mixer	1–20		1127	A	506		1–20	[01 SF 01], Supply Fan, Electrical Room	14
15	[01 DREC 16], Dedicated Recept, Soda Ash Tank Mixer	1–20		1127	B	100		1–20	Exhaust Fans, EF–4 & EF–5	16
17	[01 CP 01], Control Power, Plant Master, Ancillary Control	Pwr1–20		540	C	100		1–20	Telephone System	18
19	**PACKAGE MIXER, RESERVOIR 3 (SEE NOTE 4)**	**3–20**		**841**	A	500		1–20	Sump Pump	20
21	**–**	**–**		**841**	B	180		1–20	Recept at lagoon Light	22
23	**–**	**–**		**841**	C	506		1–20	[01 EF 05], Exhaust Fan, Chlorine tank	24
25	**PACKAGE MIXER, RESERVOIR 4 (SEE NOTE 4)**	**3–20**		**841**	A	1750		2–50	[01 GADP 01], Generator Auxiliary Device Panel	26
27	**–**	**–**		**841**	B	1750		–	–	28
29	**–**	**–**		**841**	C			1–20	SPARE	30
31	**RECEPTACLE AT TOP OF RESERVOIR 4**	1–20		**180**	A	500		1–20	Office Refrigerator, 4–Plex	32
33	SPARE	2–20			B	3750		2–50	Cabinet Water heater	34
35	–	–			C	3750		–	–	36
37	SPARE	2–50			A	1560		2–20	[01 HP 01], Heat Pump, Office	38
39	–	–			B	1560		–	–	40
41	Process Room Instrumentation Recepts	1–20		1920	C	506		1–20	[01 EF 04], Exhaust Fan, Soda Ash Room	42

		CONNECTED LOAD	
LOAD PER PHASE (VA)	A=	12,304	VA
	B=	14,852	VA
	C=	12,743	VA
LOAD PER PHASE (AMPS)	A=	102.5	A
	B=	123.8	A
	C=	106.2	A
TOTAL LOAD (KVA)		39.9	KVA
TOTAL LOAD AMPS		110.8	A

.....NOTES.....

1. THIS PANEL FED BY 45kVA 208/120V, 3–PH, 4–W XFMR
2. EXISTING LOAD DECRIPTIONS AND VA TAKEN FROM CONTRACTOR'S RED–LINES OF E–10 GRAY & OSBORNE JOB NO. 16238.00, CIRCA 2018.
3. **BOLD INDICATES NEW LOADS**
4. REPLACE (3) EXISTING 20A, 1–P CB'S WITH (1) NEW 20A, 3–P CB, AS SHOWN. NEW CB TO MATCH CHARACTERISTICS OF EXISTING CB'S, INCLUDING AIC RATING.

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GIBBS & OLSON

City of WOODLAND WASHINGTON

Reservoir No. 4
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ELECTRICAL CIRCUIT AND PANEL SCHEDULES

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JEFFREY L. HOWARD STATE OF WASHINGTON 842171 REGISTERED PROFESSIONAL ENGINEER
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Designed by: **JLH**
Checked by: **JLH**
Approved by: **JLH**
Project Number: **0876.4533**
Drawing Number: **E6**
Sheet Number: **28** of **28**

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