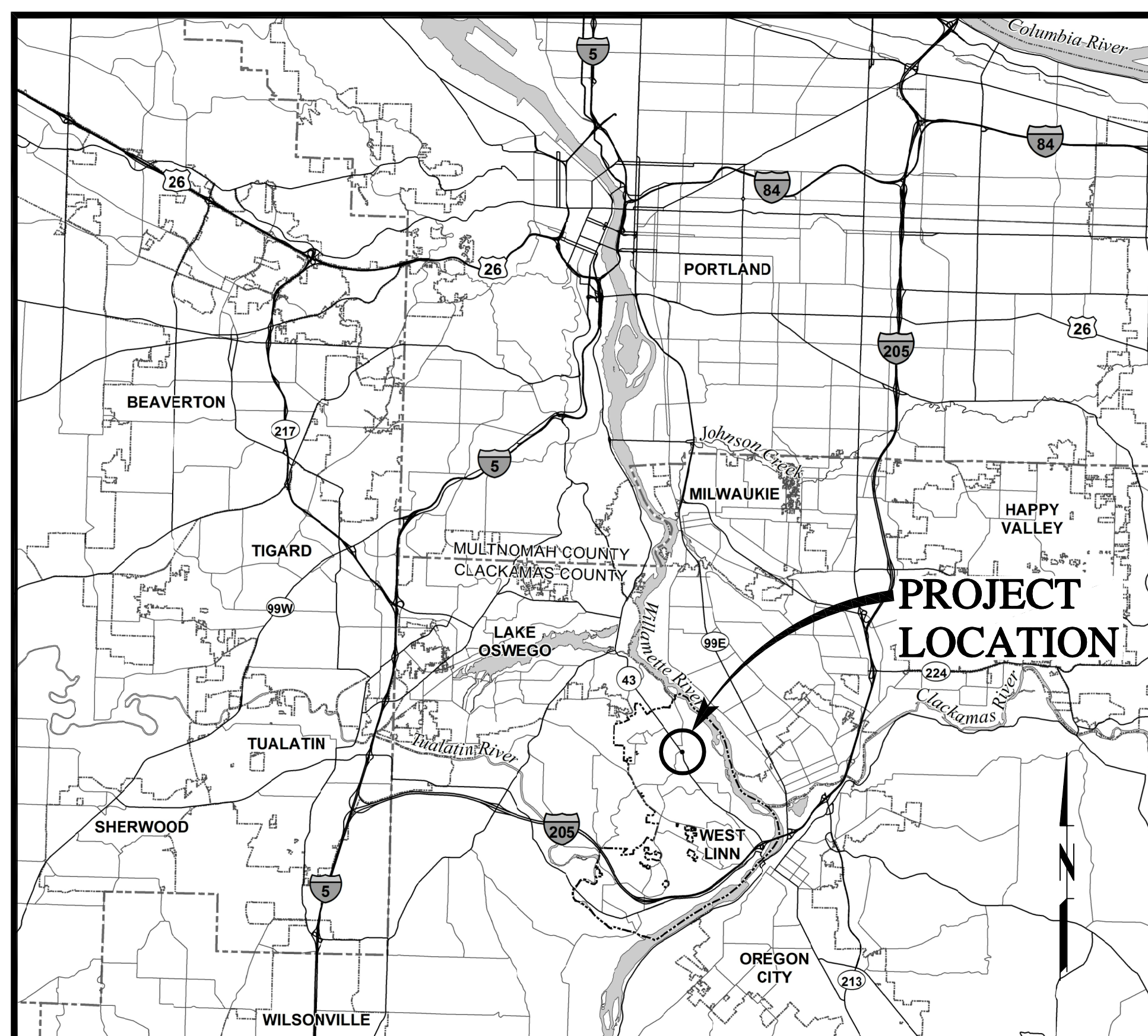




CITY OF
**West
Linn**

EMERGENCY INTERTIE WATER PUMP STATION IMPROVEMENTS PROJECT NO. PW-14-12

FEBRUARY 2015



VICINITY MAP
SCALE: 1"=2 MILES

INDEX OF DRAWINGS

GENERAL

- | | | |
|---|-----|---|
| 1 | G-1 | TITLE SHEET/VICINITY MAP/LOCATION MAP/INDEX OF DRAWINGS |
| 2 | G-2 | ABBREVIATIONS |
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| 4 | G-4 | GENERAL NOTES |

CIVIL

- | | | |
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| 5 | C-1 | SITE PLAN AND EROSION CONTROL PLAN |
| 6 | C-2 | MISCELLANEOUS CIVIL DETAILS |

MECHANICAL

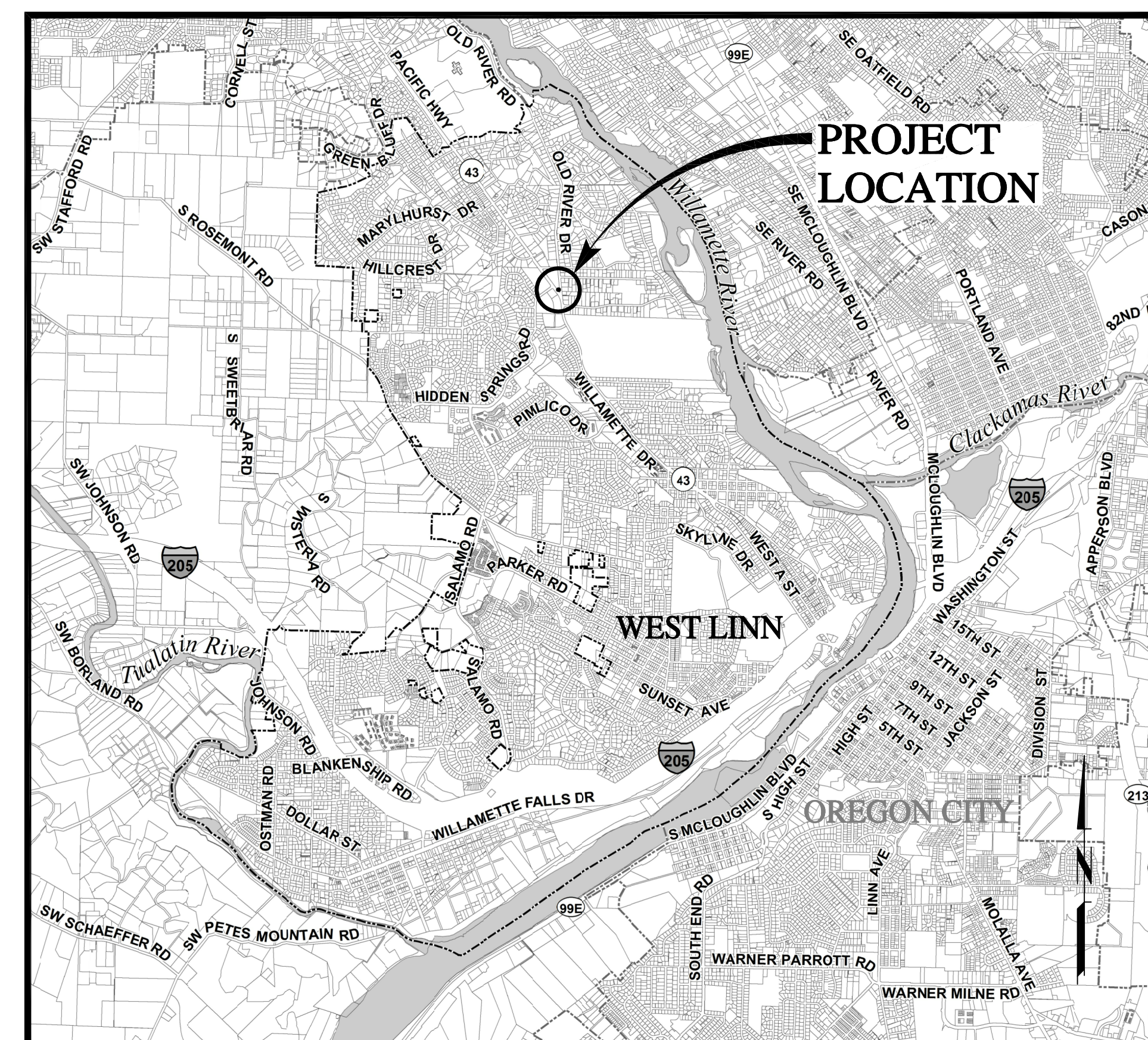
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|---|-----|---|
| 7 | M-1 | PUMP PIPING PLAN AND SECTION |
| 8 | M-2 | FLOW METER VAULT AND MECHANICAL DETAILS |

ELECTRICAL

- | | | |
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| 9 | E-1 | ELECTRICAL SITE PLAN |
| 10 | E-2 | ELECTRICAL BUILDING PLAN |

INSTRUMENTATION & CONTROL

- | | | |
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| 11 | I&C-1 | EXISTING CONTROLS AT PUMP STATION |
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| 13 | I&C-3 | CONTROLS ADDITIONS AND MODIFICATIONS |
| 14 | I&C-4 | CONTROLS PRESENTATION |



LOCATION MAP
SCALE: 1"=3,000'

MSA Murray, Smith & Associates, Inc.
Engineers/Planners
121 S.W. Salmon, Suite 900 PHONE 503-225-9010
Portland, Oregon 97204 FAX 503-225-9022

ATTENTION: OREGON LAW REQUIRES THE CONTRACTOR TO FOLLOW THE RULES ADOPTED BY THE OREGON UTILITY NOTIFICATION CENTER. THOSE RULES ARE SET FORTH IN OAR 952-001-0010 THROUGH OAR 952-001-0090. THE CONTRACTOR MAY OBTAIN COPIES OF THE RULES BY CALLING THE UTILITY NOTIFICATION CENTER. (NOTE: THE TELEPHONE NUMBER FOR THE OREGON UTILITY NOTIFICATION CENTER IS 503-246-6699.)

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PIPE SYMBOLS

PLANT	SCHEMATIC	
		WELDED JOINT
		FLANGED JOINT
		GROOVED END JOINT
		MECHANICAL JOINT
		PUSH-ON JOINT (RUBBER GASKET)
		FLANGED COUPLING ADAPTER
		DOUBLE BALL FLEXIBLE EXTENSION COUPLING
		FLEXIBLE COUPLING W/ THRUST RING
		ELBOW UP
		ELBOW DOWN
		TEE UP
		TEE DOWN
		LATERAL UP
		LATERAL DOWN
		CONCENTRIC REDUCER
		ECCENTRIC REDUCER
		UNION
		BLIND FLANGE
		CAP
		LONG SLEEVE
		FLEXIBLE COUPLING
		CAPPED END OR PLUGGED END
		FITTING

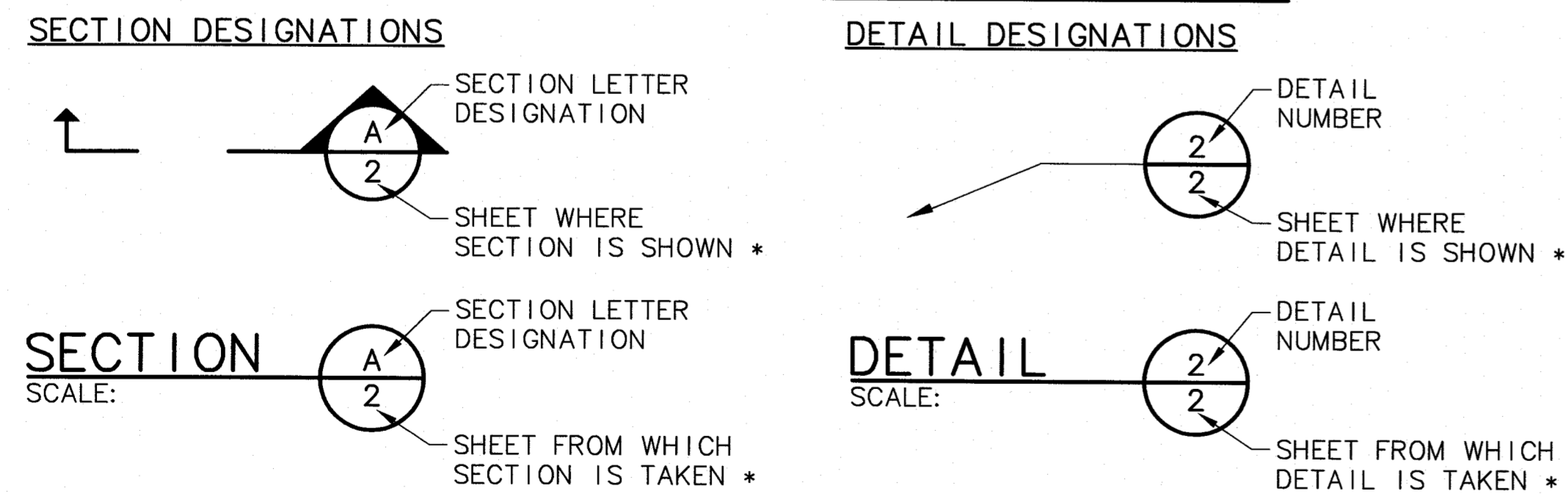
VALVE SYMBOLS

PLANT	SCHEMATIC	
		BUTTERFLY VALVE
		GATE VALVE
		GLOBE VALVE
		BALL VALVE
		BALANCING VALVE
		DIAPHRAGM VALVE
		PLUG VALVE (TOP)
		PLUG VALVE (SIDE)
		3-WAY PLUG VALVE
		SWING CHECK VALVE
		DOUBLE CHECK ASSEMBLY
		BALL SWING CHECK
		SILENT CHECK VALVE
		PRESSURE REDUCING VALVE
		ALTITUDE CONTROL VALVE
		SOLENOID VALVE
		RELIEF VALVE
		NEEDLE VALVE
		HOSE VALVE
		REDUCED PRESSURE BACKFLOW PREVENTER W/ GATE VALVES
		HOSE BIBB

TOPOGRAPHIC LEGEND

	EXISTING	PROPOSED
WATERLINE	---10"W---	—12" DI W—
ELECTRICITY	---E---	—E—
GAS	---4"G---	
TELEPHONE/TELEMETRY	---T---	
CABLE TELEVISION	---CATV---	
SANITARY SEWER LINE	---8"SS---	
SANITARY SEWER FORCE MAIN	---6"FM---	
STORM DRAIN	---8"SD---	—8"SD—
CULVERT		
ABANDON PIPE		+++++
DRAINAGE DITCH	-----	-----
FENCE	x x x	x x x
CHAIN LINK FENCE	o o o	o o o
TEMPORARY SILT FENCE		□ □
GUARDRAIL	
ROCK WALL	
TREE/BUSH LINE	~~~~~	
CENTERLINE	-----	
EASEMENT/PROPERTY LINE	-----	
RIGHT-OF-WAY	-----	
EDGE OF PAVEMENT/AC	-----	
EDGE OF GRAVEL	-----	
CURB	=====	
SIDEWALK	=====	
STRUCTURE OR FACILITY	S/W	
CONTOUR MINOR	-----	-----
CONTOUR MAJOR	200	200
MANHOLE	○	○
CLEAN-OUT	○	○
CATCH BASIN/FIELD INLET	□	□
THRUST BLOCK	△	▲
VALVE	⊗	⊙
AIR INJECTION ASSEMBLY	⊠	⊠
BLOW-OFF ASSEMBLY	⊠	⊠
AIR RELEASE ASSEMBLY	⊠	⊠
FIRE HYDRANT ASSEMBLY	⊠	⊠
WATER METER	⊠	⊠
PULL BOX/JUNCTION BOX	⊠	⊠
UTILITY POLE	⊠	⊠
GUY WIRE	↑	↑
LIGHT POST	★	★
MAILBOX	⊠	⊠
SIGN	⊠	⊠
BENCHMARK	⊠	⊠
TREE DECIDUOUS	☼	☼
TREE CONIFEROUS	☼	☼
TREE TO BE REMOVED	☼	☼
SURFACE ELEVATION	+ 176.63	+ 176.63

SECTION AND DETAIL DESIGNATIONS



* NOTE: IF PLAN AND SECTION FOR DETAIL CALL-OUT AND DETAIL ARE SHOWN ON THE SAME DRAWING, DRAWING NUMBER IS REPLACED WITH A DASH.

MISCELLANEOUS PIPING SYMBOLS

	STRAINER
	SIGHT GLASS
	PRESSURE GAUGE W/ COCK
	PRESSURE SWITCH W/ COCK
	METER
	SLIP-ON JOINT PIPE
	RESTRAINED JOINT PIPE

PROJECT NAME: CITY OF WEST LINN, OREGON
EMERGENCY INTERTIE
WATER PUMP STATION IMPROVEMENTS

PROJECT: 14-1601.201

DATE: FEBRUARY 2015

DESIGNED: JHF
DRAWN: BAW
CHECKED: DAM
APPROVED: TLB

SHEET: G-3
3 OF 14

REVISIONS:

SCALE: NONE
VERT: NONE
HORIZ: NONE

NOTICE: IF THIS BAR DOES NOT MEASURE CORRECTLY WHEN MEASURING, IS NOT TO SCALE.

REGISTERED PROFESSIONAL ENGINEER
STATE OF OREGON
NO. 10000
DATE: JULY 10, 2007
T. L. BARNETT
RENEWS 12-31-16

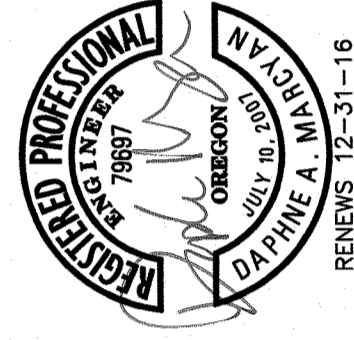
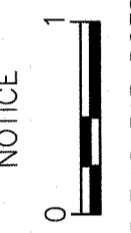
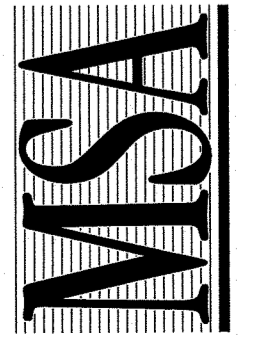
LEGEND

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PHONE: 503-225-9010
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GENERAL NOTES:

1. THE CONTRACTOR SHALL POTHOLE AND VERIFY LOCATIONS, ELEVATIONS, TYPES AND SIZES OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTING NEW PIPING FAR ENOUGH IN ADVANCE TO ALLOW NECESSARY ADJUSTMENTS IN GRADE AND SHALL NOTIFY ENGINEER OF NEED TO ADJUST PIPING INSTALLATION ACCORDINGLY. POTHOLING SHALL SUFFICIENTLY PRECEDE LAYING OF PIPE TO ALLOW REQUIRED ELEVATION ADJUSTMENTS TO BE ACCOMPLISHED WITHOUT REWORK. ELEVATION ADJUSTMENTS SHALL BE EXPECTED AND ARE INCIDENTAL TO THE WORK. DEFLECT PIPE AS REQUIRED AND WITHIN MANUFACTURER'S TOLERANCES TO AVOID EXISTING UTILITIES AND COMPLETE TIE-INS.
2. ALL PIPING TO BE RESTRAINED JOINT PIPING UNLESS OTHERWISE SPECIFICALLY IDENTIFIED AS: (R) FOR RESTRAINED JOINT PIPING; (SP) FOR STANDARD PUSH-ON JOINT PIPING. SEE SPECIFICATIONS FOR TYPES OF RESTRAINT.
3. BACKFILL AND SURFACING REQUIREMENTS ARE IDENTIFIED ON THE DRAWINGS. ALL BEDDING AND PIPE ZONE BACKFILL TO BE GRANULAR. SEE SPECIFICATIONS AND STANDARD WEST LINN DETAIL WL-200. BACKFILL FOR PIPE TRENCHES UNDER PAVED AREAS SHALL BE CLASS B. BACKFILL GRANULAR FOR PIPE TRENCHES IN NON-PAVED AREAS SHALL BE CLASS A NATIVE UNLESS OTHERWISE NOTED.
4. ALL CONCRETE SHALL BE A MINIMUM OF 3000 PSI STRENGTH.
5. LOCATIONS OF EXISTING UTILITIES ARE BASED ON INFORMATION SUPPLIED BY THE UTILITIES AND CONSIDERED APPROXIMATELY ONLY. AS REQUIRED BY STATE LAW, THE CONTRACTOR SHALL OBTAIN UTILITY LOCATES PRIOR TO COMMENCING CONST, CONTACT UTILITIES PRIOR TO CONSTRUCTION AND COMPLY WITH PROVISIONS OF ORS 757.541 TO 757.571.
6. RESTRAIN ALL VALVES, TEES, BENDS, AND FITTINGS UNLESS OTHERWISE NOTED.
7. ALL FLANGE CONNECTIONS TO BE PROVIDED WITH FULL-FACE GASKETS.
8. PROVIDE POLYETHYLENE ENCASEMENT FOR ALL PIPING WITHIN TEN (10) FEET OF EXISTING GAS MAIN ACCORDING TO ANSI/AWWA C105/A21.5.
9. HYDROSTATIC TEST PRESSURE FOR ALL WATER PIPING SHALL BE 1.5 TIMES THE OPERATING PRESSURE MEASURED AT THE LOWEST POINT OF THE PIPE LINE BEING TESTED. THE MINIMUM TEST PRESSURE IS 180 PSI PER WEST LINN STANDARD 403.14 (E AND F).
10. UNLESS NOTED ON THE DRAWINGS OR SPECIFIED OTHERWISE, ALL WORK IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE MOST RECENT VERSION OF CITY OF WEST LINN STANDARDS AND THE OREGON ADMINISTRATIVE RULES (OAR), CHAPTER 333.
11. COMPLY WITH OAR CHAPTER 333 RULES FOR REQUIRED WATERLINE - SEWERLINE SEPARATION AND CROSSING REQUIREMENTS.
12. CONTRACTOR SHALL PROVIDE TEMPORARY BLOW-OFFS AND THRUST BLOCKING AS REQUIRED TO FACILITATE FLUSHING, TESTING, AND DISINFECTION OF WATERLINES. AT COMPLETION OF DISINFECTION, REMOVE TEMPORARY BLOW-OFFS AND REPLACE WITH PERMANENT CONNECTIONS. TEMPORARY BLOW-OFFS SHALL BE CONSTRUCTED PER WEST LINN STANDARD DETAIL WL-404B.
13. CONNECTIONS TO EXISTING WATERLINES MAY REQUIRE TEMPORARY SHUTDOWNS OF EXISTING FACILITIES. THE CONTRACTOR SHALL COORDINATE THIS WORK WITH WEST LINN, THE CITY OF LAKE OSWEGO AND SOUTH FORK WATER BOARD AND PROVIDE A MIN OF 72 HOURS ADVANCE NOTICE PRIOR TO PERFORMING WATERLINE TIE-IN WORK. CONTRACTOR TO VERIFY WITH WEST LINN, LAKE OSWEGO AND SOUTH FORK WATER BOARD IF EXISTING LINES ARE TO BE DEPRESSURIZED PRIOR TO PERFORMING THIS WORK. SEE SPECIFICATIONS FOR SEQUENCE OF CONSTRUCTION REQUIREMENTS. OPERATION OF VALVES SHALL BE BY CITY OF WEST LINN OR LAKE OSWEGO OR SOUTH FORK WATER BOARD ONLY.
14. ALL STRUCTURES, LOTS, CURBS, SIDEWALKS, FENCES, WALLS, GUY WIRES, PIPING AND UTILITIES DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO EXISTING CONDITION UNLESS OTHERWISE SPECIFIED.
15. CONTRACTOR TO OBTAIN AND COMPLY WITH CITY OF WEST LINN, CLACKAMAS COUNTY AND ODOT PERMITS AND REQUIREMENTS FOR WORK IN, AND RESTORATION OF, COUNTY, CITY, AND STATE ROADWAYS.
16. ALL PIPING SHALL HAVE A MINIMUM OF 3 FEET OF COVER FROM TOP OF PIPE TO STREET GRADE OR OTHER FINISHED GRADE, UNLESS OTHERWISE SHOWN OR APPROVED BY ENGINEER.
17. DO NOT REMOVE TREES (GREATER THAN 6" DIAMETER) UNLESS THEY HAVE BEEN PREVIOUSLY IDENTIFIED IN THE FIELD FOR REMOVAL PER ENGINEER.
18. FINAL LOCATIONS OF ALL VALVE BOXES SHALL BE FIELD LOCATED PER ENGINEER.
19. PROVIDE "AS CONSTRUCTED" DRAWINGS INDICATING ALL CHANGES IN GRADE, ALIGNMENT, FITTINGS AND MATERIALS INSTALLED AND ANY OTHER UTILITIES OR OBSTACLES NOT SO INDICATED ON THESE PLANS.
20. ELEVATIONS ARE BASED ON CITY OF LAKE OSWEGO BENCH MARK NO. 22R-1 (184.574' NGVD 29). A BRASS DISK IN CURB AT THE NE CORNER OF THE INTERSECTION OF STATE HIGHWAY NO. 43 AND SOUTH CEDAR OAK DRIVE.
21. AT THE END OF EACH WORK DAY ALL OPEN TRENCHES SHALL BE BACKFILLED AND ALL TRENCHES WITHIN STREETS SHALL BE TEMPORARILY PAVED OR COVERED TO THE SATISFACTION OF THE ENGINEER.
22. IF ASBESTOS CEMENT PIPE IS ENCOUNTERED DURING EXCAVATION OPERATIONS, REMOVE AND DISPOSE OF EXISTING ASBESTOS CEMENT PIPE FOR WATERLINE CONSTRUCTION ACCORDING TO STATE AND LOCAL REQUIREMENTS.
23. ATTACH CONFINED SPACE WARNING SIGN TO THE UNDERSIDE OF THE FLOW METER VAULT ACCESS HATCH. THE SIGN SHALL BE PAINTED ALUMINUM WITH A YELLOW BACKGROUND AND BLACK LETTERING, AND SHALL CONTAIN THE FOLLOWING WORDING: "DANGER, FOLLOW CONFINED SPACE ENTRY PROCEDURES BEFORE ENTERING". MINIMUM SIGN SIZE SHALL BE 7"x10", AND LETTERS SHALL BE A MINIMUM 1/2" TALL.
24. ATTACH LOAD CAPACITY SIGNS ADJACENT TO NEW AND EXISTING LIFTING EYES IN PUMP STATION VAULT (8 TOTAL). EACH SIGN SHALL BE PAINTED ALUMINUM WITH A YELLOW BACKGROUND AND BLACK LETTERING. EACH SIGN SHALL CONTAIN THE FOLLOWING WORDING: "CAUTION - MAXIMUM LIFTING CAPACITY 2,000 LBS". MINIMUM SIGN SIZE SHALL BE 4"x8", AND LETTERS SHALL BE A MINIMUM 1/2" TALL.


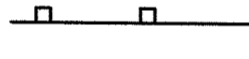
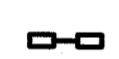
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SCALE	VERT:	NONE	NOTICE				
SCALE	HORIZ:	NONE	IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE				
							
GENERAL NOTES							
PROJECT NAME: CITY OF WEST LINN, OREGON EMERGENCY INERTIE WATER PUMP STATION IMPROVEMENTS							
SHEET TITLE:							
				DATE: FEBRUARY, 2015			
121 S.W. Salmon, Suite 900 Portland, Oregon 97204				PHONE: 503-236-9010 FAX: 503-236-9022			
MSA PROJECT: 14-1601.201							

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EROSION CONTROL NOTES

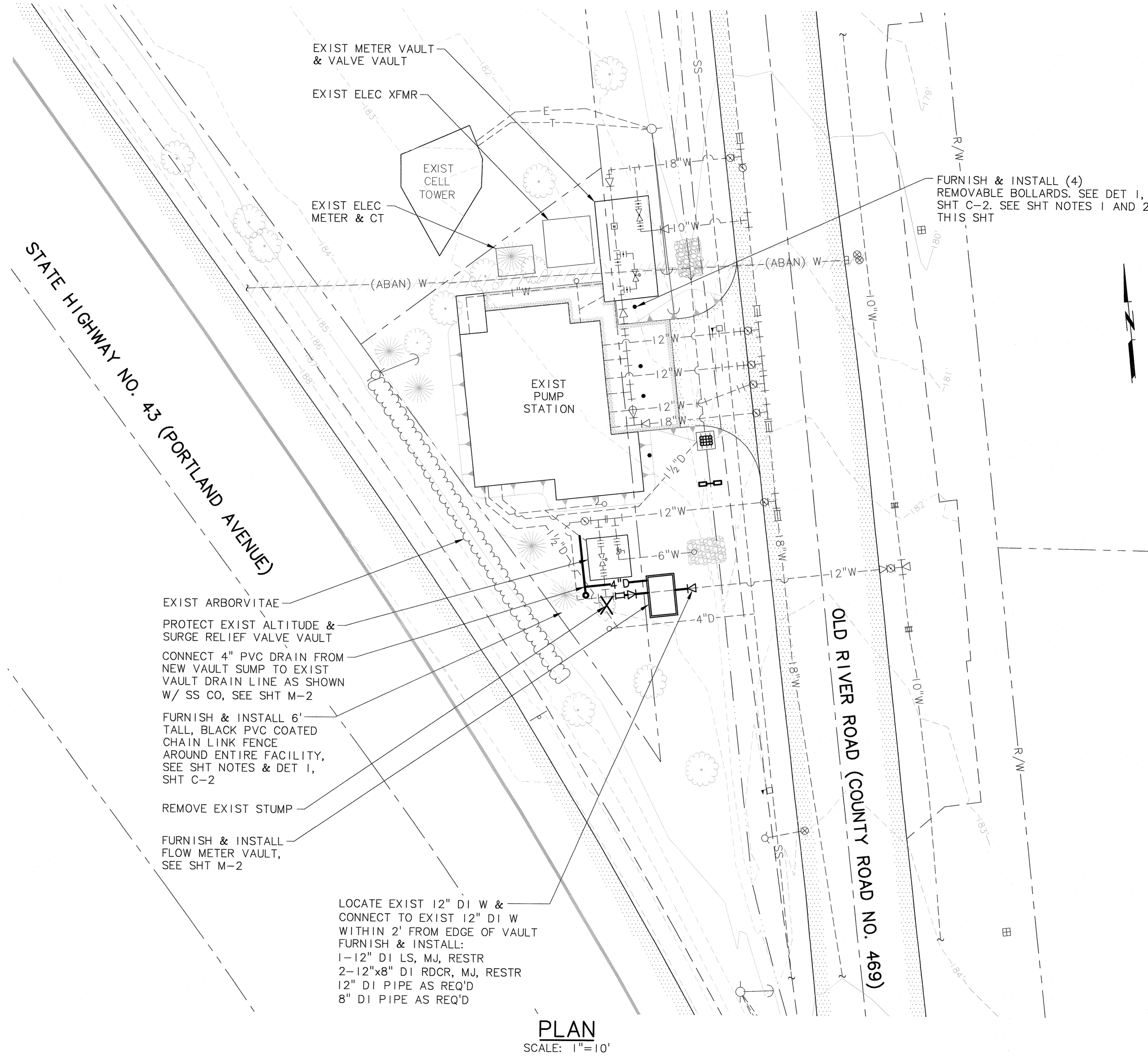
- CONTRACTOR SHALL FURNISH AND INSTALL EROSION AND SEDIMENTATION CONTROL MEASURES IN ACCORDANCE WITH THE CITY OF WEST LINN "EROSION PREVENTION AND SEDIMENT CONTROL - PLANNING AND DESIGN MANUAL", REVISION DECEMBER 2008.
- THE IMPLEMENTATION OF THE EROSION AND SEDIMENTATION CONTROL PLAN, MEASURES AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT AND UPGRADING OF THESE FACILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR UNTIL ALL CONSTRUCTION IS COMPLETED AND APPROVED AND VEGETATION/ LANDSCAPING IS ESTABLISHED.
- THE CONTRACTOR IS SOLELY RESPONSIBLE FOR PROTECTION OF ALL WORK, ADJACENT PROPERTIES AND DOWNSTREAM FACILITIES FROM EROSION AND SILTATION DURING THE COURSE OF THE WORK. ANY DAMAGE RESULTING FROM SUCH EROSION AND SILTATION SHALL BE CORRECTED AT THE SOLE EXPENSE OF THE CONTRACTOR.
- THE EROSION AND SEDIMENTATION CONTROL FACILITIES SHOWN ON THE PLANS PRESENT BASIC CONCEPTS ONLY AND ARE FOR INFORMATIONAL PURPOSES ONLY.
- THE FOLLOWING REFERENCED DETAILS ARE FROM THE ABOVE REFERENCED PLANNING AND DESIGN MANUAL:
 - SEDIMENT FENCE - DETAIL DRAWING 4-23
 - BIOFILTER BAGS - DETAIL DRAWING 4-12
 - BIOFILTER BAG CHECK DAM - DETAIL DRAWING 4-5
 - INLET PROTECTION TYPE 4 - DETAIL DRAWING 4-18

EROSION CONTROL LEGEND

- INLET PROTECTION 
- SEDIMENT FENCING 
- BIOFILTER BAG CHECK DAM 

SHEET NOTES:

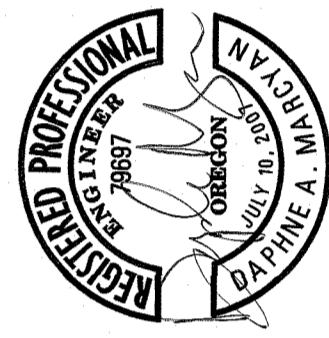
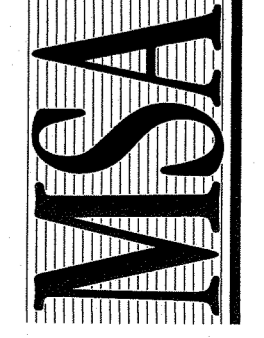
- CONTRACTOR SHALL STAKE OUT LOCATION OF NEW FLOW METER VAULT FOR OWNER REVIEW PRIOR TO INSTALLATION.
- NEW BOLLARDS SHALL BE LOCATED SO AS TO AVOID EXISTING BURIED UTILITIES AND PROVIDE ACCESS TO ALL VAULT HATCHES AND FACILITIES.

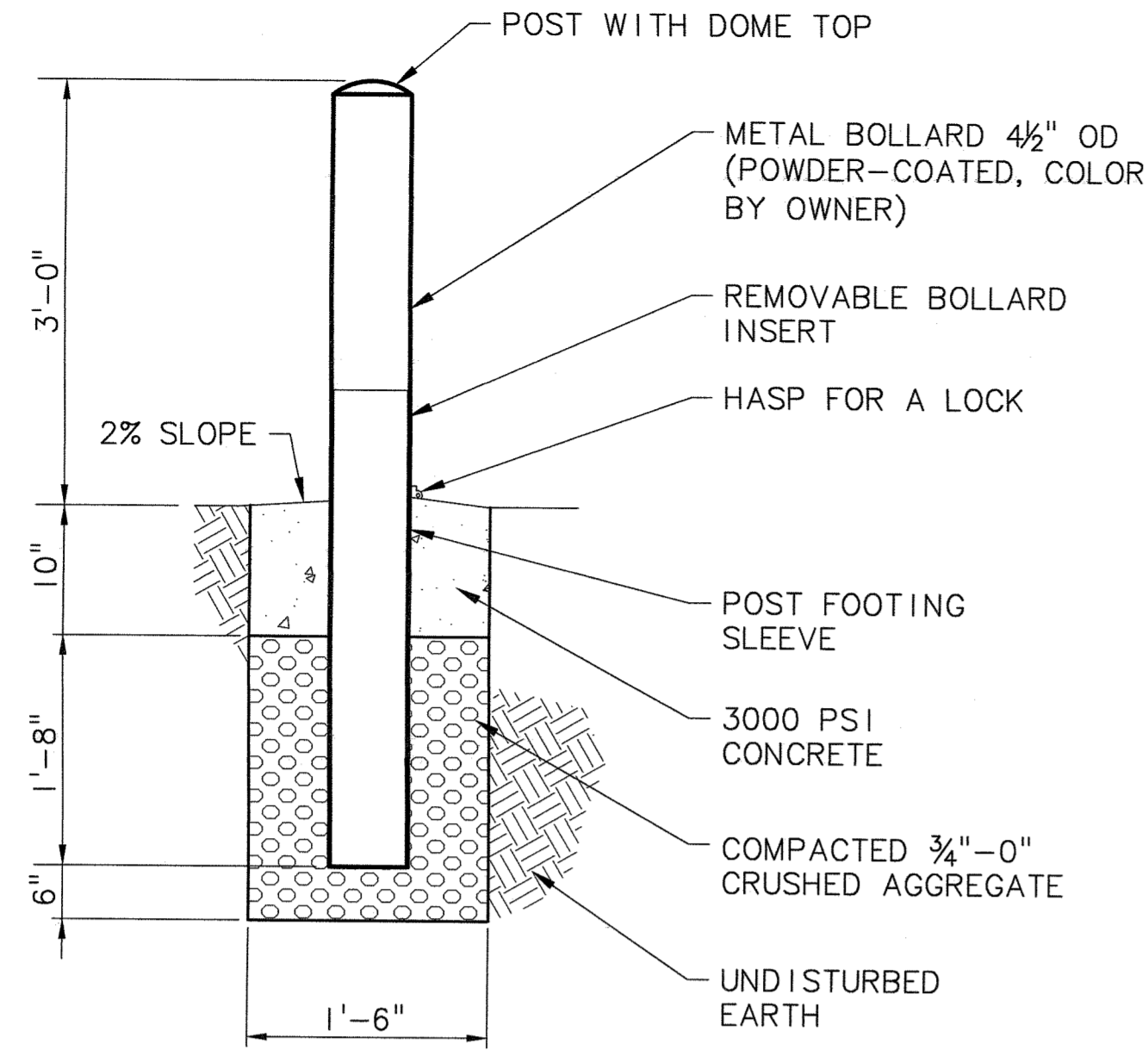


- EXIST ARBORVITAE
- PROTECT EXIST ALTITUDE & SURGE RELIEF VALVE VAULT
- CONNECT 4" PVC DRAIN FROM NEW VAULT SUMP TO EXIST VAULT DRAIN LINE AS SHOWN W/ SS CO, SEE SHT M-2
- FURNISH & INSTALL 6' TALL, BLACK PVC COATED CHAIN LINK FENCE AROUND ENTIRE FACILITY, SEE SHT NOTES & DET 1, SHT C-2
- REMOVE EXIST STUMP
- FURNISH & INSTALL FLOW METER VAULT, SEE SHT M-2
- LOCATE EXIST 12" DI W & CONNECT TO EXIST 12" DI W WITHIN 2' FROM EDGE OF VAULT
FURNISH & INSTALL:
1-12" DI LS, MJ, RESTR
2-12"x8" DI RDCR, MJ, RESTR
12" DI PIPE AS REQ'D
8" DI PIPE AS REQ'D

PLAN
SCALE: 1"=10'

FURNISH & INSTALL (4) REMOVABLE BOLLARDS. SEE DET 1, SHT C-2. SEE SHT NOTES 1 AND 2, THIS SHT

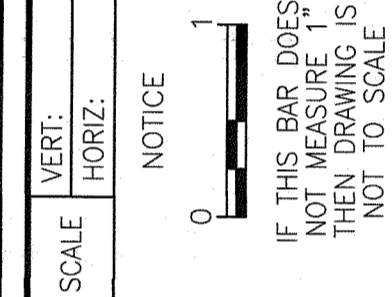
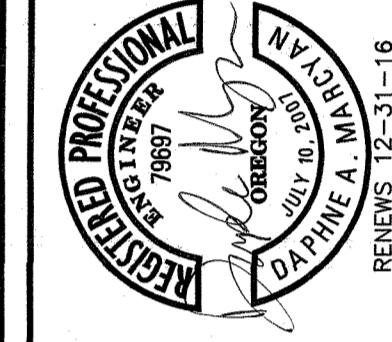
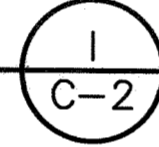
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	DESIGNED: JHF	DRAWN: BAW	CHECKED: DAM	APPROVED: TLB
PROJECT NAME: CITY OF WEST LINN, OREGON EMERGENCY INTERTIE WATER PUMP STATION IMPROVEMENTS				SHEET C-1
SHEET TITLE: SITE PLAN AND EROSION CONTROL PLAN				5 OF 14
 MSA Murray, Smith & Associates, Inc. Engineers/Planners 121 S.W. Salmon, Suite 900 Portland, Oregon 97204 PHONE: 503-225-9010 FAX: 503-225-9022	DATE: FEBRUARY 2015	PROJECT: 14-1601.201		



NOTES:

1. GENERAL LOCATION OF BOLLARDS SHOWN ON PLANS. LOCATE BOLLARDS WITH A MINIMUM 2' CLEARANCE FROM ALL UNDERGROUND PIPING, APPURTENANCES AND FROM ALL STRUCTURES. BOLLARD LOCATIONS SHALL BE AS DIRECTED BY THE OWNER'S REPRESENTATIVE.

4" REMOVABLE BOLLARD
SCALE: NTS



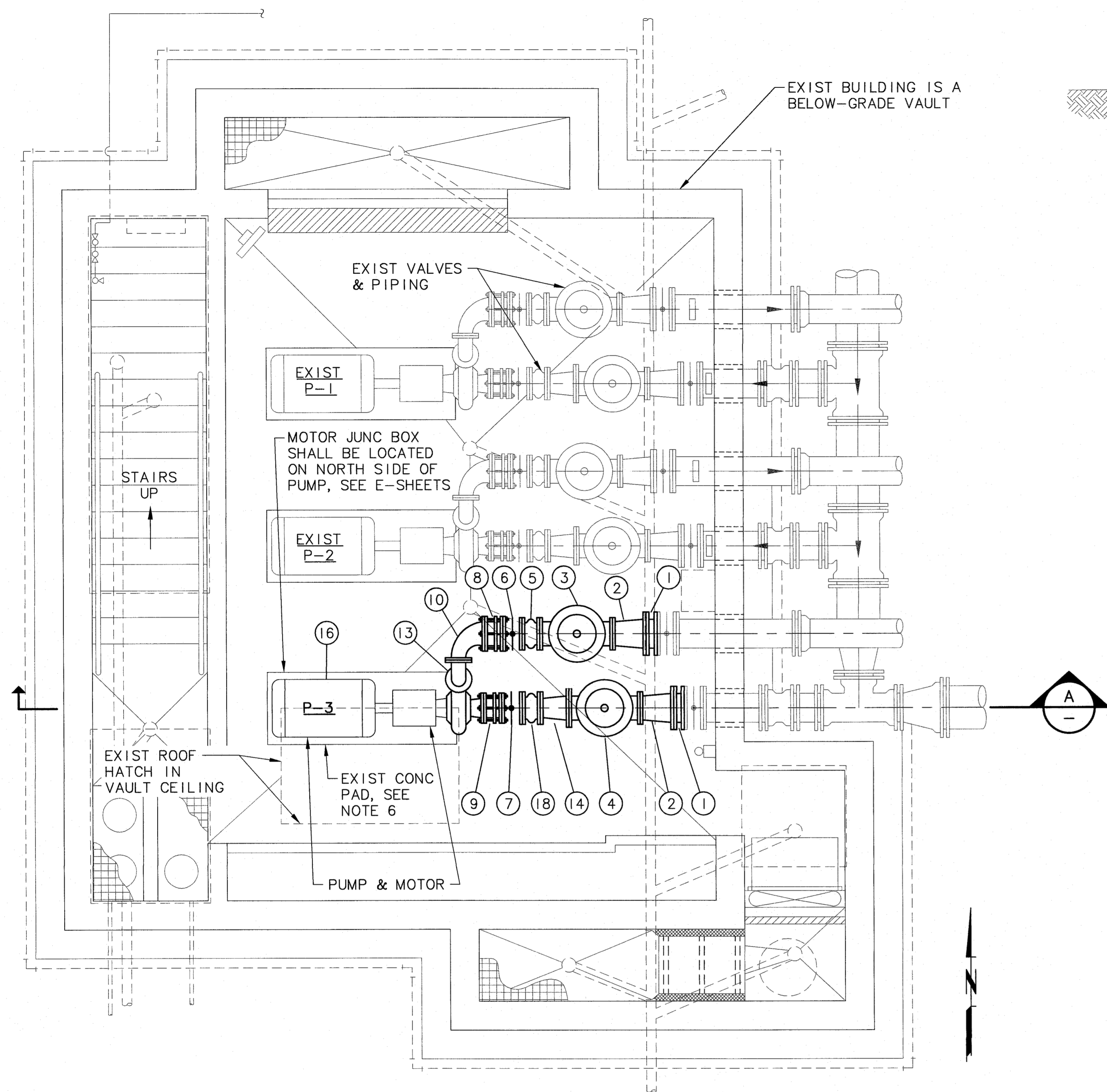
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APPROVED:	TJB		
			SHEET
			C-2
			6 OF 14

PROJECT NAME: CITY OF WEST LINN, OREGON
EMERGENCY INERTIE
WATER PUMP STATION IMPROVEMENTS
SHEET TITLE: **MISCELLANEOUS
DETAILS**

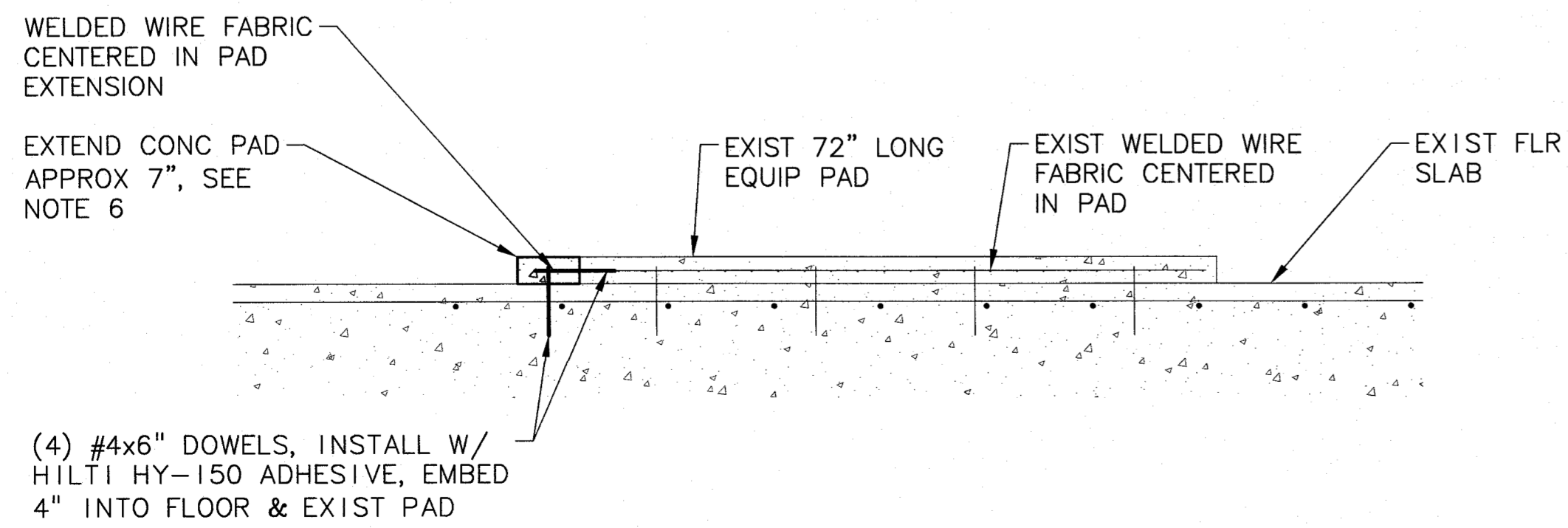
MSA
Murray Smith & Associates, Inc.
Engineers/Planners
121 S.W. Salmon, Suite 800
Portland, Oregon 97204
PHONE: 503-225-9010
FAX: 503-225-9022

DATE: FEBRUARY, 2015

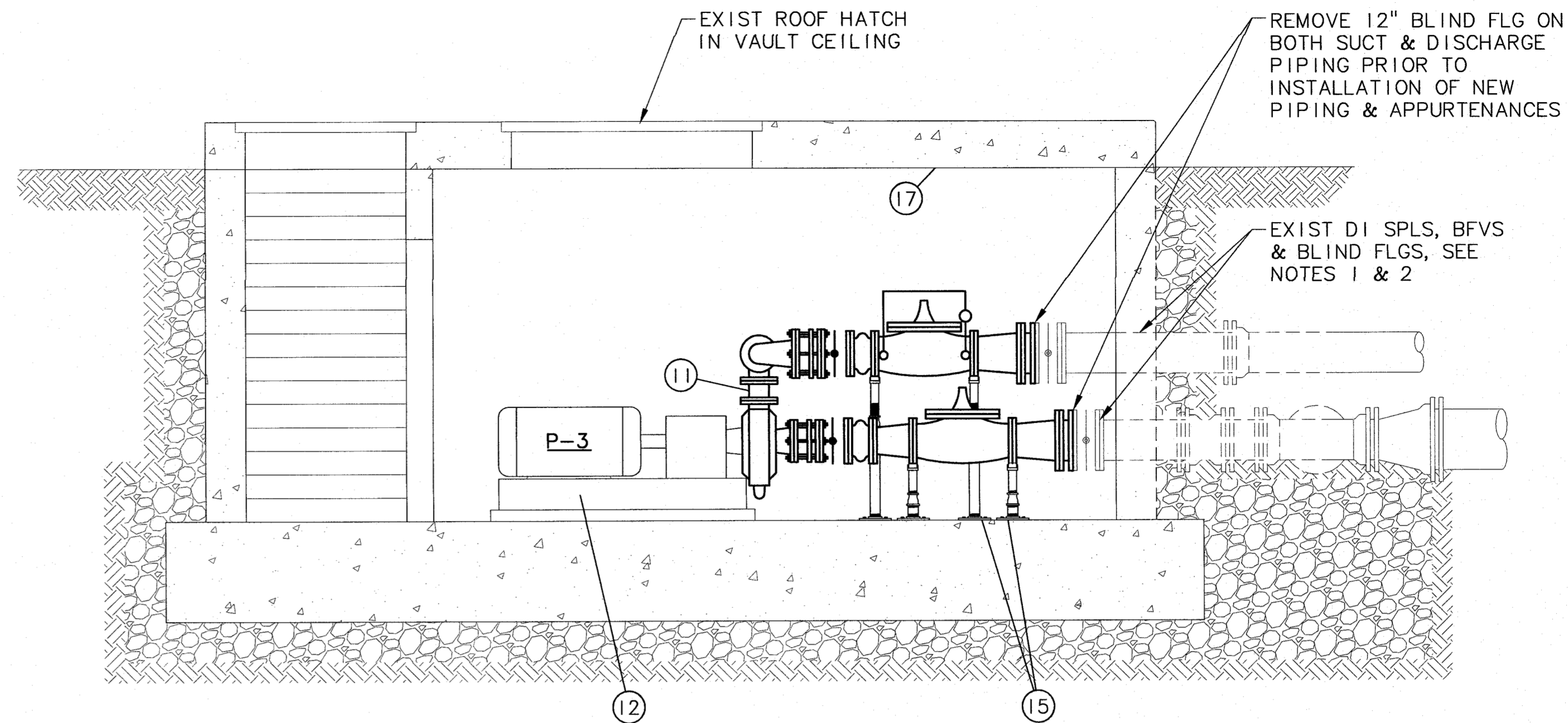
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FLOOR PLAN
SCALE: 3/8"=1'-0"



EQUIPMENT PAD EXTENSION DETAIL
SCALE: 3/4"=1'-0"



SECTION A-A
SCALE: 3/8"=1'-0"

MATERIAL LIST:

- | | |
|--|--|
| ① 12" STL CUSTOM FAB MAKEUP PIECE, SEE NOTES 1 & 2 | ⑫ GALV STL PUMP FRAME, MOUNT TO EQUIP PAD & PACK W/ GROUT ACCORDING TO MFR'S RECOMMENDATIONS |
| ② 12"x10" RDCR, FLG | ⑬ 6" 90° VERT BEND, FLG |
| ③ 10" CV TYPE 11, SEE SPECS | ⑭ 10"x8" RDCR, FLG |
| ④ 10" CV TYPE 1, SEE SPECS | ⑮ PIPE SUPPORTS, STANDON MODEL S89 FLG ADJUSTABLE OR APPVD EQ |
| ⑤ 10" EXP JT, SEE SPECS | ⑯ HORIZ FRAME MOUNTED END SUCTION CENTRIFUGAL PUMP W/ 200 HP HORIZ MOTOR, CORNELL MODEL 6HH, FRAME F18 |
| ⑥ 10" BFV, FLG | ⑰ 2,000 LB CAPACITY LIFTING EYES OVER CV TYPE I & CV TYPE 11 (2 TOTAL), SEE NOTE 4 |
| ⑦ 8" BFV, FLG | ⑱ 8" EXP JT, SEE SPECS |
| ⑧ 10" DISMANTLING JT | |
| ⑨ 8" DISMANTLING JT | |
| ⑩ 10"x6" REDUCING 90° BEND, FLG | |
| ⑪ 6" SPL | |

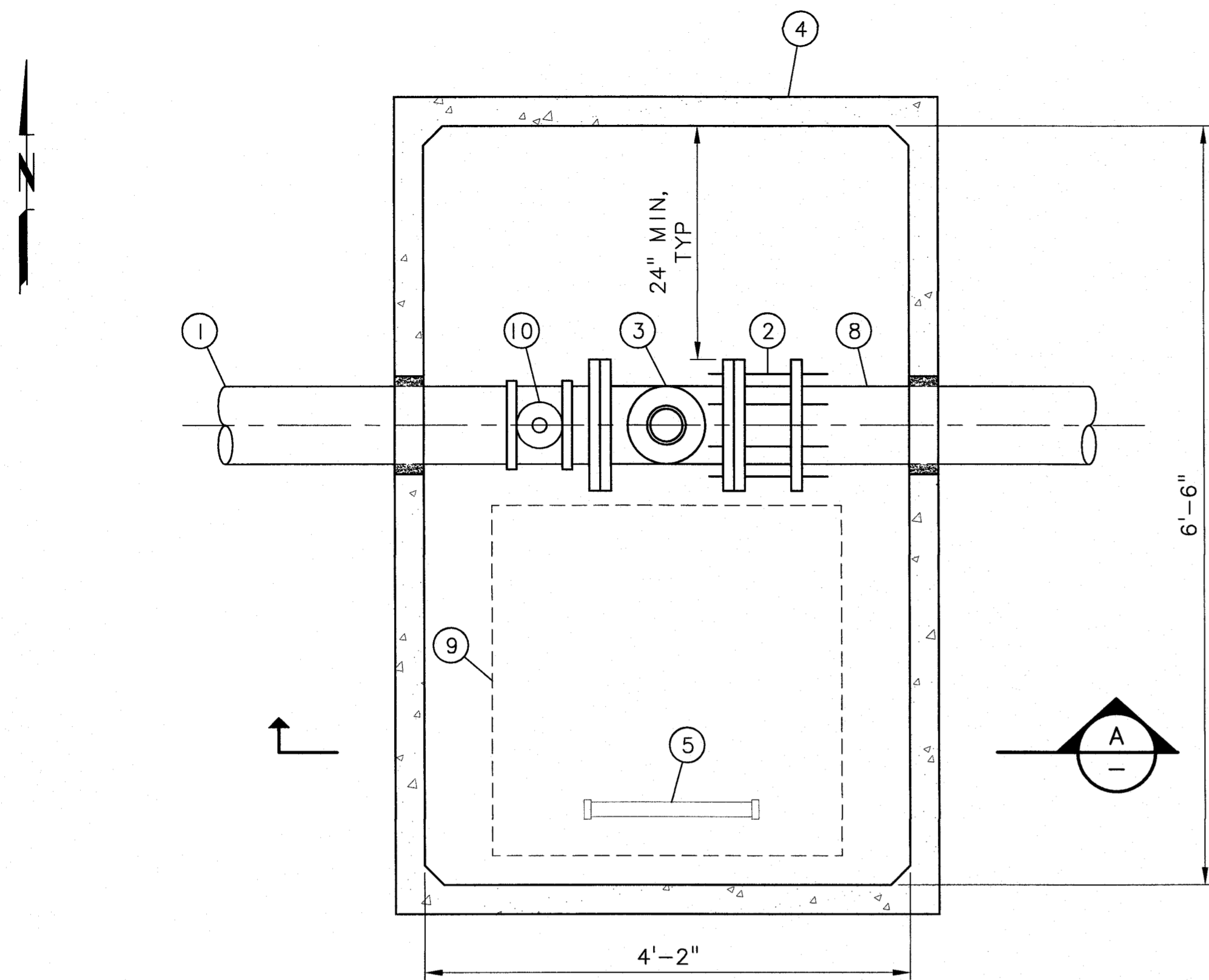
NOTES:

- EXISTING FLANGED DUCTILE IRON SPOOLS THAT TERMINATE WITH BUTTERFLY VALVES AND BLIND FLANGES ENTER THE VAULT AT AN ANGLE THAT IS SLIGHTLY MISALIGNED RELATIVE TO THE PROPOSED PIPING AND PUMP ASSEMBLY. THE SPOOLS ENTER THE VAULT WITH AN APPROXIMATE VERTICAL MISALIGNMENT OF 3/32" ACROSS THE FACE OF THE FLANGE. A HORIZONTAL MISALIGNMENT HAS NOT BEEN ASSESSED BUT MAY ALSO EXIST.
- CONTRACTOR SHALL FIELD VERIFY VERTICAL AND HORIZONTAL MIS-ALIGNMENT OF EXISTING PUMP DISCHARGE AND SUCTION PIPES. 12" STEEL CUSTOM FABRICATED MAKEUP PIECE(S) SHALL BE INSTALLED BETWEEN DUCTILE IRON FLANGES TO ALIGN FLANGE FACE TO COINCIDE WITH REQUIRED ALIGNMENT FOR PIPING ASSOCIATED WITH THE P-3 PUMP ASSEMBLY. NEW PIPING AND VALVING SHALL BE HORIZONTALLY AND VERTICALLY SQUARE FOR INSTALLATION OF NEW PUMP P-3.
- INSTALL PIPE SUPPORTS AS REQUIRED TO SUPPORT PIPING AND APPURTENANCES ACCORDING TO MANUFACTURER'S REQUIREMENTS.
- LOCATE TWO 2,000-POUND LIFTING EYES OVER CONTROL VALVES AFTER INSTALLATION. USE HILTI HIS-RN INTERNALLY THREADED ANCHOR FOR 3/8" DIAMETER WITH HILTI HIT-HY 150 MAX-SD ADHESIVE, EMBED 6 5/8".
- MOUNT ALUMINUM SIGN ADJACENT TO EACH LIFTING EYE (EXISTING AND NEW, 8 TOTAL) THAT READS "CAUTION - MAXIMUM LIFTING CAPACITY 2,000 LBS". MINIMUM SIGN SIZE SHALL BE 4"x8" AND LETTERS SHALL BE A MINIMUM 1/2" TALL.
- EXTEND EXISTING CONCRETE EQUIPMENT PAD APPROXIMATELY 7 INCHES FOR INSTALLATION OF PUMP FRAME. SEE DETAIL THIS SHEET.

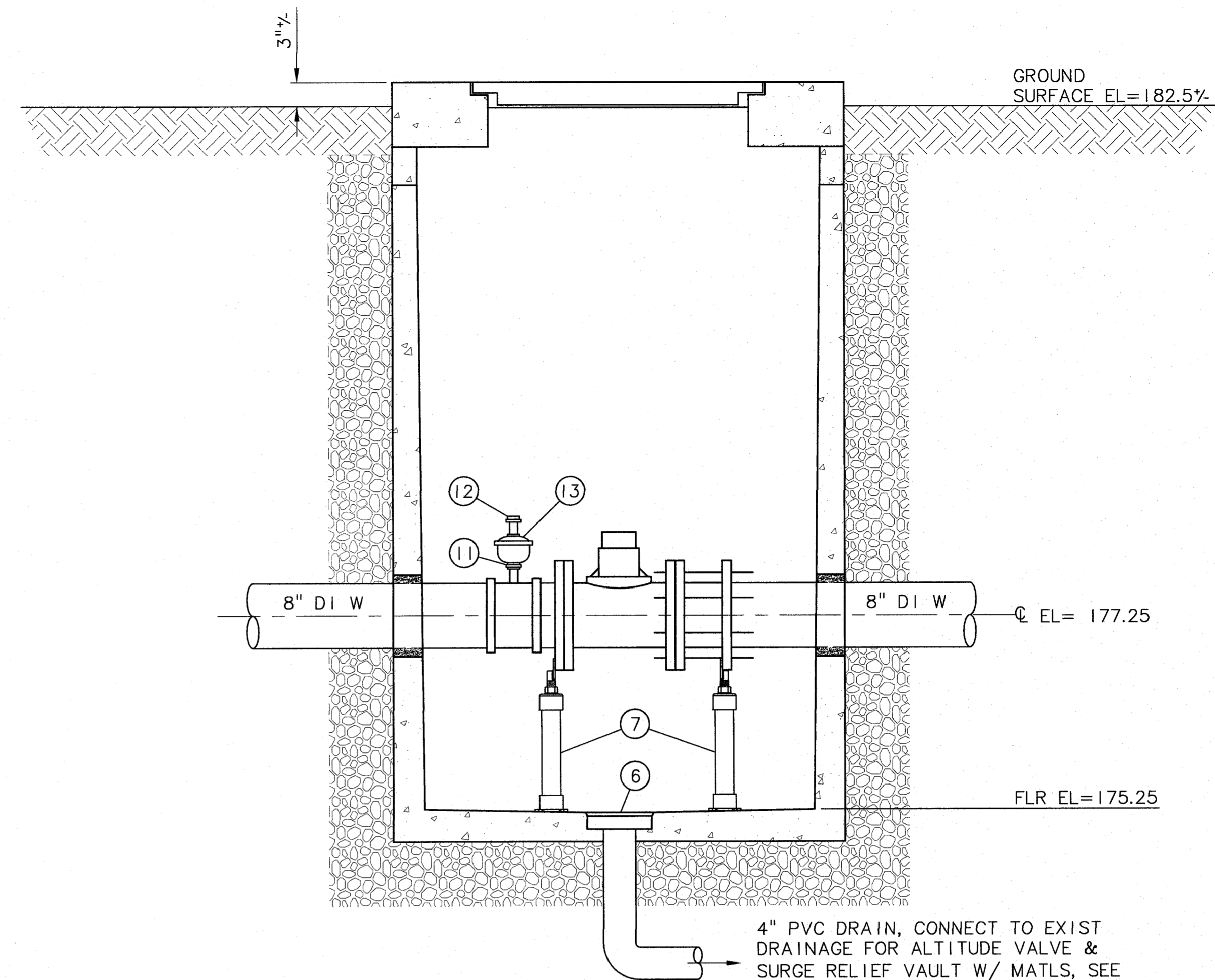
PROJECT NAME:	CITY OF WEST LINN, OREGON EMERGENCY INERTIE WATER PUMP STATION IMPROVEMENTS
SHEET TITLE:	PUMP PIPING PLAN AND SECTION
PROJECT:	14-1601.201
DATE:	FEBRUARY 2015
DESIGNED:	JHF
DRAWN:	BAW
CHECKED:	DAM
APPROVED:	TJB
NO. DATE:	
REVISION:	
BY:	
SHEET:	M-1
7 OF 14	

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121 S.W. Salmon, Suite 900
Portland, Oregon 97204
PHONE: 503-255-9010
FAX: 503-255-9022

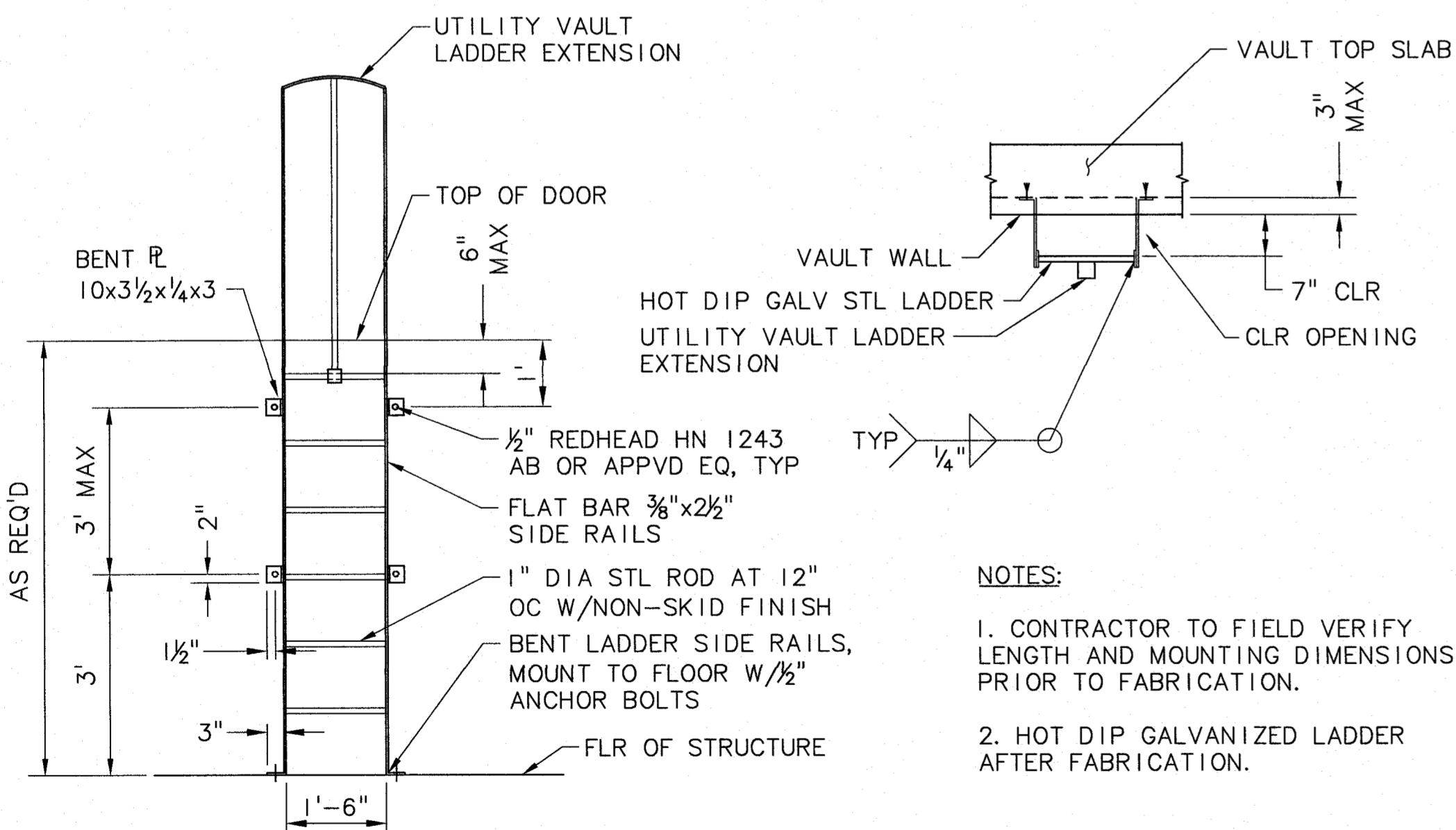
MSA



FLOW METER VAULT PLAN (1)
SCALE: 1"=1'-0"



SECTION (A)
SCALE: 1"=1'-0"



VAULT LADDER (2)
SCALE: 1/2"=1'-0"

NOTES:

1. WALL PENETRATIONS FOR PIPING TO BE PRECAST IN VAULTS, PROVIDE LINK-SEAL OR NON-SHRINK GROUT AROUND PIPE PENETRATIONS.
2. ANCHORS FOR SMALL PIPING SUPPORTS IN VAULT TO BE EXPANSION BOLTS AND SIZED APPROPRIATELY FOR THE SPECIFIED SUPPORT (1/4" MINIMUM DIAMETER).
3. SUPPORT SMALL PIPING WITH UNISTRUT SUPPORTS OR APPROVED EQUAL. CHANNELS TO BE P1000 H3 MOUNTED TO CONCRETE WITH P2072 POSTBASE AND STRAP TO PIPE WITH P2038 CLAMP. CONNECT MEMBERS AS PER MANUFACTURER'S REQUIREMENTS.
4. ALL VALVES, METERS AND SPECIAL FITTINGS INSIDE VAULT TO RECEIVE SHOP-APPLIED, FUSION-BONDED EPOXY COATING.
5. FOR ALL FLANGES NEAR WALL PENETRATIONS FOR WHICH NO DIMENSION IS GIVEN, FLANGE FACE MUST BE 6" MINIMUM FROM WALL.
6. SPECIAL HANGERS AND SUPPORTS ARE SHOWN IN SOME LOCATIONS. CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE LOCATION AND NUMBER OF ALL ADDITIONAL SUPPORTS TO PROPERLY SUPPORT PIPING, VALVES AND EQUIPMENT CONNECTIONS TO PREVENT DEFLECTION AND STRESSES.
7. PROVIDE MINIMUM 6" THICKNESS OF COMPACTED CRUSHED ROCK UNDERNEATH AND ON ALL SIDES OF VAULT.
8. PRECAST VAULT SHALL MEET STANDARDS SET FORTH IN ASTM C857 AND C858.
9. MAXIMUM 2 FOOT HORIZONTAL DISTANCE FROM EXTERIOR EDGE OF VAULT TO NEAREST MECHANICAL JOINT FITTING.
10. CONTRACTOR SHALL VERIFY DEPTH OF EXISTING WATERLINE PRIOR TO ORDERING MATERIALS, AND INCLUDE RISER SECTIONS IN VAULT AS REQUIRED.

NOTES:

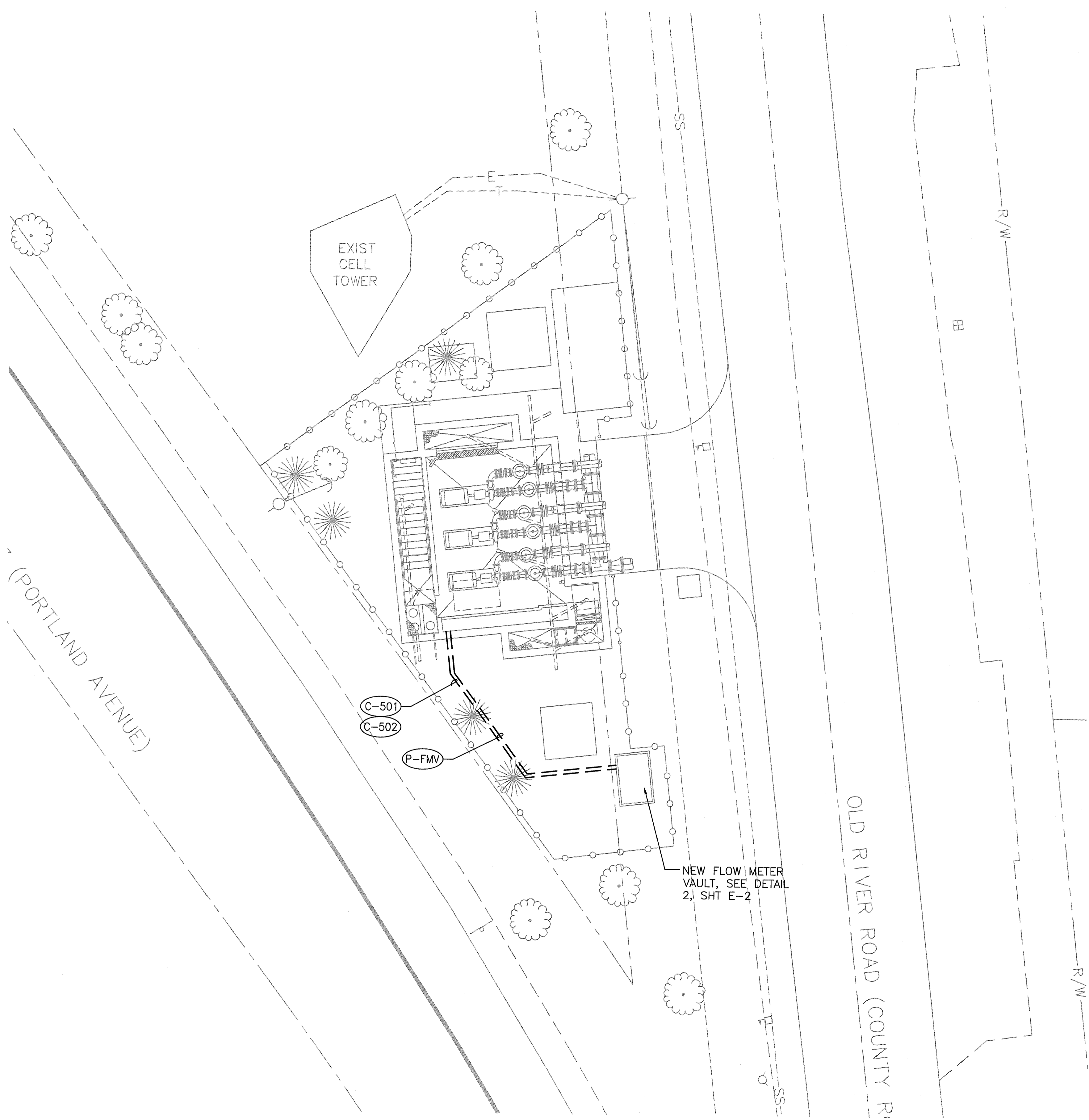
1. CONTRACTOR TO FIELD VERIFY LENGTH AND MOUNTING DIMENSIONS PRIOR TO FABRICATION.
2. HOT DIP GALVANIZED LADDER AFTER FABRICATION.

MATERIAL LIST:

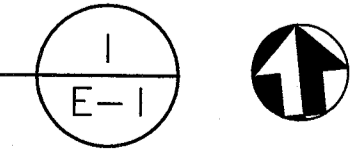
- 1 8" DI SPL, FLGxPE, LENGTH AS REQ'D
- 2 8" FLG ADAPTER MEGAFLANGE BY EBAA IRON OR APPVD EQ
- 3 8" ELECTROMAGNETIC FLOW METER, SIEMENS SITRANS FM MAG 5100 W, OR APPVD EQ
- 4 PRECAST CONC VAULT, OLDCASTLE PRECAST MODEL 577-LA W/ NO. 64-332P TOP, OR APPVD EQ, SEE NOTE 10
- 5 ACCESS LADDER, SEE DET 2, THIS SHEET
- 6 8" DIA FLR DRAIN KNOCKOUT
- 7 STANDON MODEL S89 FLG ADJUSTABLE PIPE SUPPORT OR APPVD EQ
- 8 8" DI SPL, PE, LENGTH AS REQ'D
- 9 SPRING ASSISTED GALV STL DIAMOND PLATE DOOR HATCH W/ LOCKING LATCH
- 10 8"x1" SERVICE SADDLE W/ 1" CORP STOP
- 11 1" DIELECTRIC UNION (FIPTxFIPT), WATTS 3004 OR APPVD EQ
- 12 VENT THRU SCREENED ASSY
- 13 1" COMBINATION AIR VALVE, KINETIC COMPACT FIG 945 BY GA INDUSTRIES OR APPVD EQ

	NO.	DATE	REVISION
	DESIGNED: JHF	DRAWN: BAW	CHECKED: DAM
			SHEET M-2 8 OF 14
PROJECT NAME: CITY OF WEST LINN, OREGON EMERGENCY INERTIE WATER PUMP STATION IMPROVEMENTS SHEET TITLE: FLOW METER VAULT AND MECHANICAL DETAILS			
		DATE: FEBRUARY 2015 MSA PROJECT: 14-1601.201	

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ELECTRICAL SITE PLAN
1/8" = 1'-0"

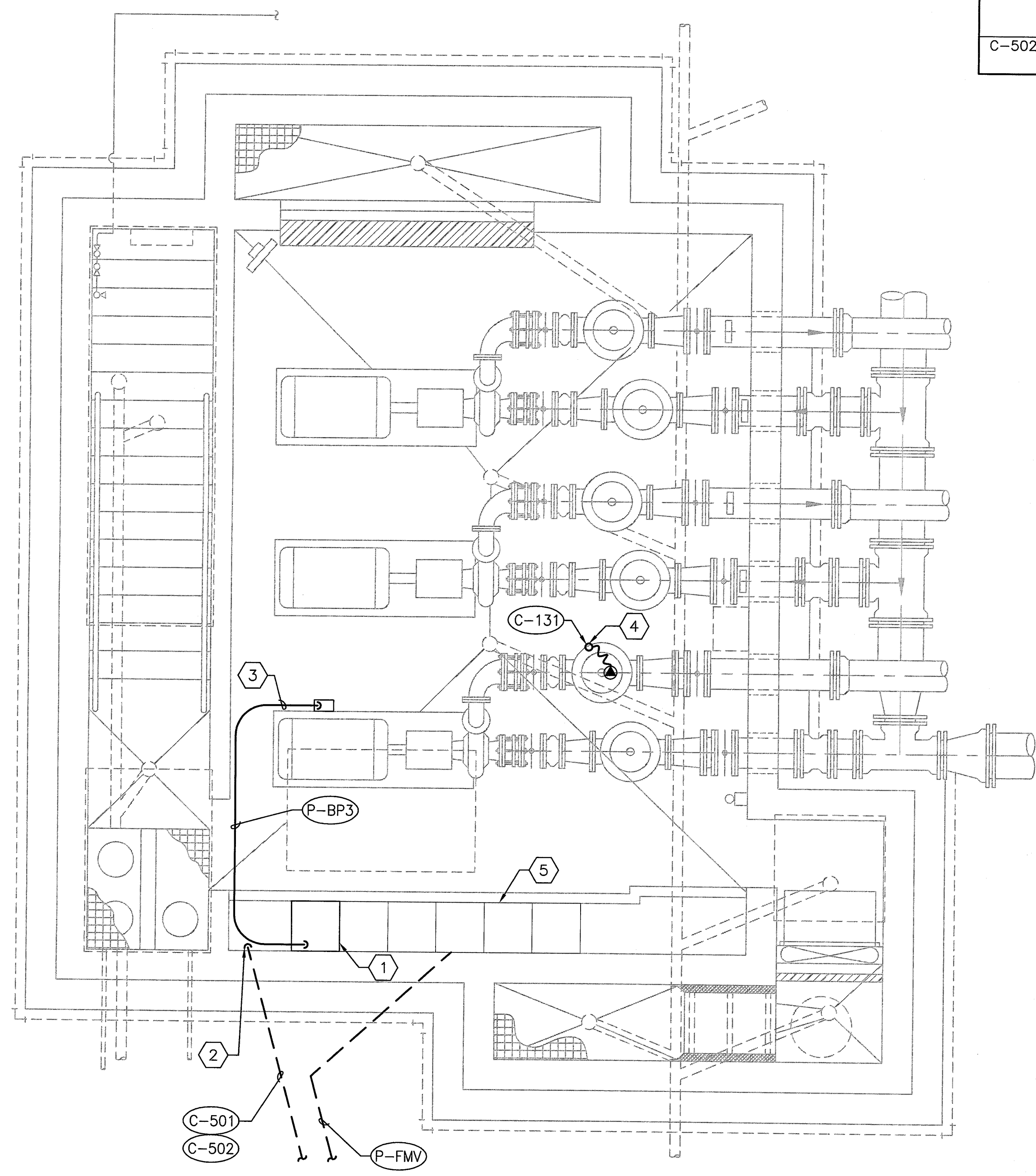


ELECTRICAL SYMBOL LIST			
D.B.	DIRECT BURIED	⊕	RECEPTACLE - DUPLEX, MOUNT 18" AFF, UON
F	FLEX CONDUIT	⊕	RECEPTACLE - DOUBLE DUPLEX, MOUNT 18" AFF, UON
G	GROUND WIRE	⊕	RECEPTACLE - DUPLEX, CEILING-MOUNTED
GFI	GROUND FAULT INTERRUPTER	⊕	RECEPTACLE - SINGLE, CEILING-MOUNTED, CONFIGURATION AS SHOWN
GND	GROUND	⊕	RECEPTACLE - DUPLEX ABOVE COUNTER, HORIZONTAL
IG	ISOLATED GROUND	⊕	RECEPTACLE - MOUNTED ABOVE COUNTER
OP	OVERHEAD POWER	⊕	RECEPTACLE - ISOLATED GROUND
OT	OVERHEAD TELCO	⊕	RECEPTACLE - SPECIAL PURPOSE
S-O	S-O CORD	⊕	RECEPTACLE - SINGLE, CONFIGURATION AS SHOWN
UP	UNDERGROUND POWER	⊕	RECEPTACLE - PENDANT DROP
UT	UNDERGROUND TELCO	⊕	SWITCH DESIGNATOR
WP	WEATHERPROOF	⊕	SWITCH - SINGLE-POLE, MOUNT 48" AFF, UON
---	CONDUIT - BELOW GRADE	⊕	SWITCH - THREE-WAY, MOUNT 48" AFF UON.
---	CONDUIT - CONCEALED	⊕	SWITCH - FOUR-WAY
---	CONDUIT - EXPOSED	⊕	SWITCH - WITH PILOT LIGHT, MOUNT 48" AFF, UON
---	CONDUIT - FLEXIBLE	⊕	SWITCH - DIMMER, MOUNT 48" AFF, UON
---	CONDUIT - STUB-DOWN	⊕	SWITCH - FUSED DISCONNECT
---	CONDUIT - STUB-OUT	⊕	SWITCH - NON-FUSED DISCONNECT
---	CONDUIT - STUB-UP	⊕	COMBINATION STARTER/DISCONNECT
---	HOME RUN. HASH MARKS INDICATE 2#12 WIRE UNLESS NOTED OTHERWISE	⊕	SWITCH - A/C SELECTOR
---	CONDUCTORS IN CONDUIT, (2)#12 OR AS NOTED (QUANTITY AS INDICATED BY HASH MARKS)	⊕	OUTLET - FLUSH FLOOR
---	GROUND WIRE	⊕	OUTLET - TELEPHONE, MOUNT 18" AFF UON & PROVIDE 3/4" TO CEILING OR TRUSS SPACE, UON
---	GROUND CONNECTION	⊕	OUTLET - DATA
⊗	EQUIPMENT CONNECTION	⊕	OUTLET - COMBINATION TELEPHONE/DATA
⊗	EXIT SIGN - CEILING-MOUNTED	⊕	TELEPHONE PEDESTAL
⊗	EXIT SIGN - WALL-MOUNTED	⊕	MOTOR CONNECTION
⊗	EXIT SIGN - DOUBLE FACED WITH DIRECTIONAL ARROWS	⊕	DOOR CONTACTS
⊗	LIGHT FIXTURE - RECESSED	⊕	INTERCOM OUTLET
⊗	LIGHT FIXTURE - SURFACE-MOUNTED	⊕	JUNCTION BOX - CEILING-MOUNTED
⊗	LIGHT FIXTURE - SURFACE-MOUNTED WITH PULL CHAIN	⊕	JUNCTION BOX - WALL-MOUNTED
⊗	LIGHT FIXTURE - WALL-MOUNTED	⊕	METER BASE - UTILITY COMPANY APPROVED
⊗	LIGHT FIXTURE - POLE MOUNTED	⊕	MOTION SENSOR
⊗	LIGHT FIXTURE - DOCK	⊕	OCCUPANCY SENSOR
⊗	LIGHT FIXTURE - BUG-EYE EMERGENCY	⊕	THERMOSTAT
⊗	LIGHT FIXTURE - FLUORESCENT	⊕	TRANSFORMER
⊗	LIGHT FIXTURE - INDIRECT FLUORESCENT	⊕	VOLUME CONTROL
⊗	LIGHT FIXTURE - ON EMERGENCY CIRCUIT	⊕	SPEAKER - INTERIOR PAGING
⊗	LIGHT FIXTURE - FLUORESCENT STRIP	⊕	SPEAKER - EXTERIOR PAGING
⊗	PANEL - FIRE ALARM	⊕	SERVICE WEATHERHEAD
⊗	PANEL - 208Y/120V BRANCH CIRCUIT (FLUSH-MOUNTED)	⊕	
⊗	PANEL - 208Y/120V BRANCH CIRCUIT (SURFACE-MOUNTED)	⊕	

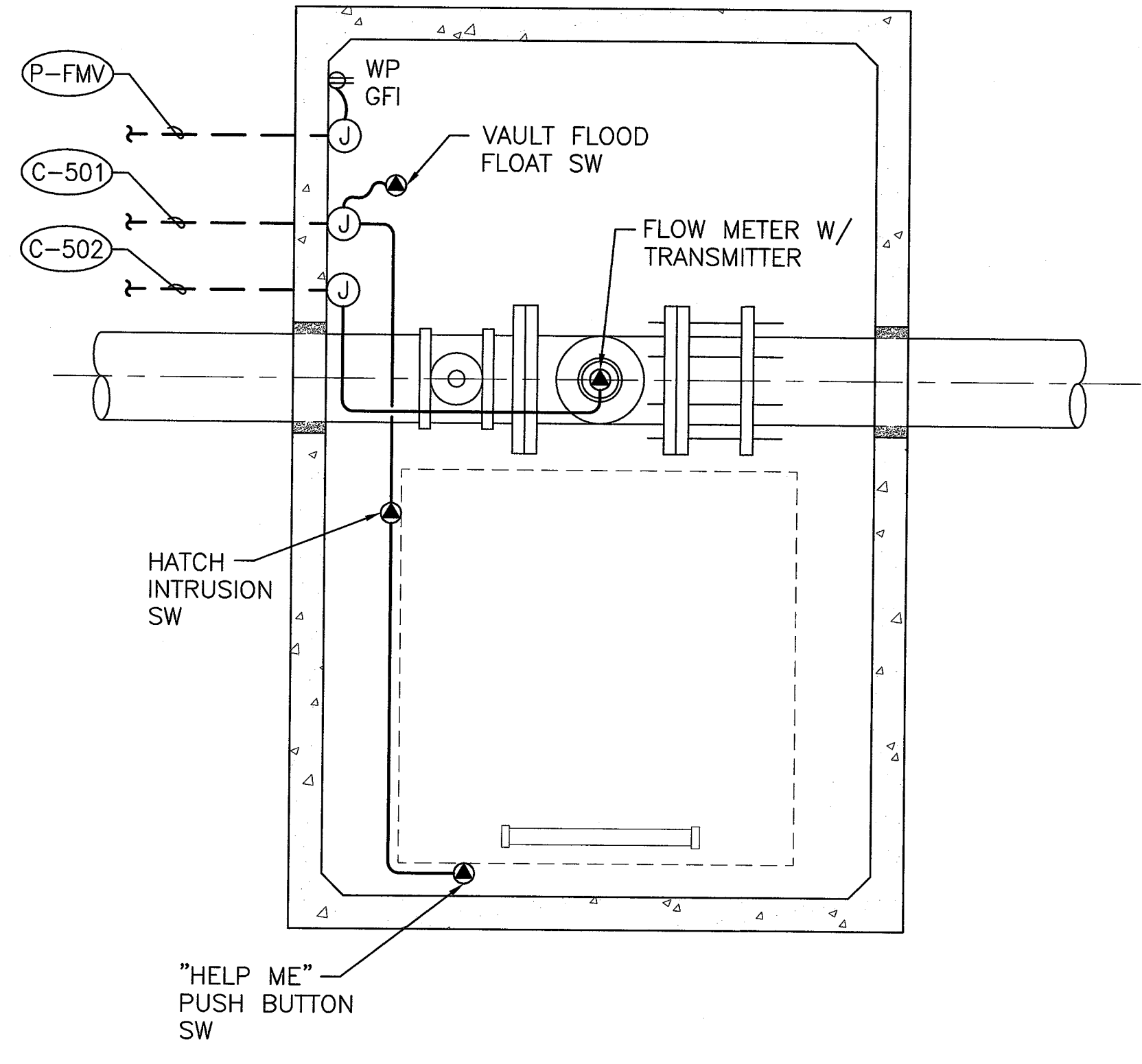
PROJECT NAME: CITY OF WEST LINN, OREGON EMERGENCY INTERFITE WATER PUMP STATION IMPROVEMENTS		SHEET TITLE: ELECTRICAL SITE PLAN	
PROJECT NO.: 14-1801.202		DATE: JANUARY 2015	
DESIGNED: GHS DRAWN: DPR CHECKED: GHS APPROVED: GHS		BY: NO. DATE: REVISION:	
SCALE: VERT: AS SHOWN HORIZ: AS SHOWN		NOTICE: IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.	
Murray, Smith & Associates, Inc. Engineers/Planners 121 S.W. Salmon, Suite 900 Portland, Oregon 97204 PHONE: 503-225-9010 FAX: 503-225-9022		MSA 9615 S.W. Allen Boulevard Suite 107 Beaverton, Oregon 97005 Phone: (503) 726-3331 Fax: (503) 726-3326 E-mail: rwin@msa.com	
MSA PROJECT: 14-1801.202			

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WEST LINN EMERGENCY INTERTIE PUMP STATION Electrical Circuit Schedule					
Ckt No.	From	To	Conductors	Raceway	Notes
P-BP3	RVSS	PUMP MOTOR 3	3 #350 kcmil, P 1 #4 AWG, G 4 #12 AWG, C	3	
P-FMV	MCC/PANEL A	FLOW METER VAULT	2 #12 AWG, P 1 #12 AWG, G	1	
C-131	VALVE CONTROLLER AT PLC CABINET	CONTROL VALVE	4 #12 AWG, C 2 #18 TSP, C 1 #12 AWG, G	(E) 3/4	
C-501	PLC	FLOW METER VAULT	6#14 AWG, C 1 #14 AWG, G	1	VAULT FLOOD, INTRUSION, "HELP ME" SWITCHES
C-502	FLOW TRANSMITTER AT PLC CABINET	FLOW SENSOR	2 #14 AWG, P 3 #18 TSP, C	1	



ELECTRICAL BUILDING PLAN
3/8" = 1'-0"
1
E-2



FLOW METER VAULT PLAN
1" = 1'-0"
2
E-2

- NOTES THIS SHEET**
- NEW MOTOR CONTROL SECTION INSTALLED BY CONTRACTOR. SEE INSTRUMENTATION AND CONTROL DRAWINGS FOR REFERENCE.
 - EXISTING PLC CABINET. SEE INSTRUMENTATION AND CONTROL DRAWINGS FOR CONNECTION.
 - NEW OVERHEAD CONDUIT TO MOTOR JUNCTION BOX. AVOID HATCH OPENING. SEE SCHEDULE FOR CONDUCTORS.
 - EXISTING CONDUIT FROM PLC CABINET FOR NEW CONTROL VALVE. EXTEND FROM FLOOR TO HEIGHT REQUIRED FOR VALVE. PULL NEW CONDUCTORS. SEE SCHEDULE.
 - EXISTING 120 V PANEL BOARD. CONNECT SPARE 20A CIRCUIT BREAKER FOR FLOW VAULT POWER.

NO.	DATE	REVISION	BY
DESIGNED:	GHS		
DRAWN:	DPR		
CHECKED:	GHS		
APPROVED:	GHS		

PROJECT NAME: CITY OF WEST LINN, OREGON
EMERGENCY INTERTIE
WATER PUMP STATION IMPROVEMENTS

SHEET TITLE: **ELECTRICAL BUILDING PLAN**

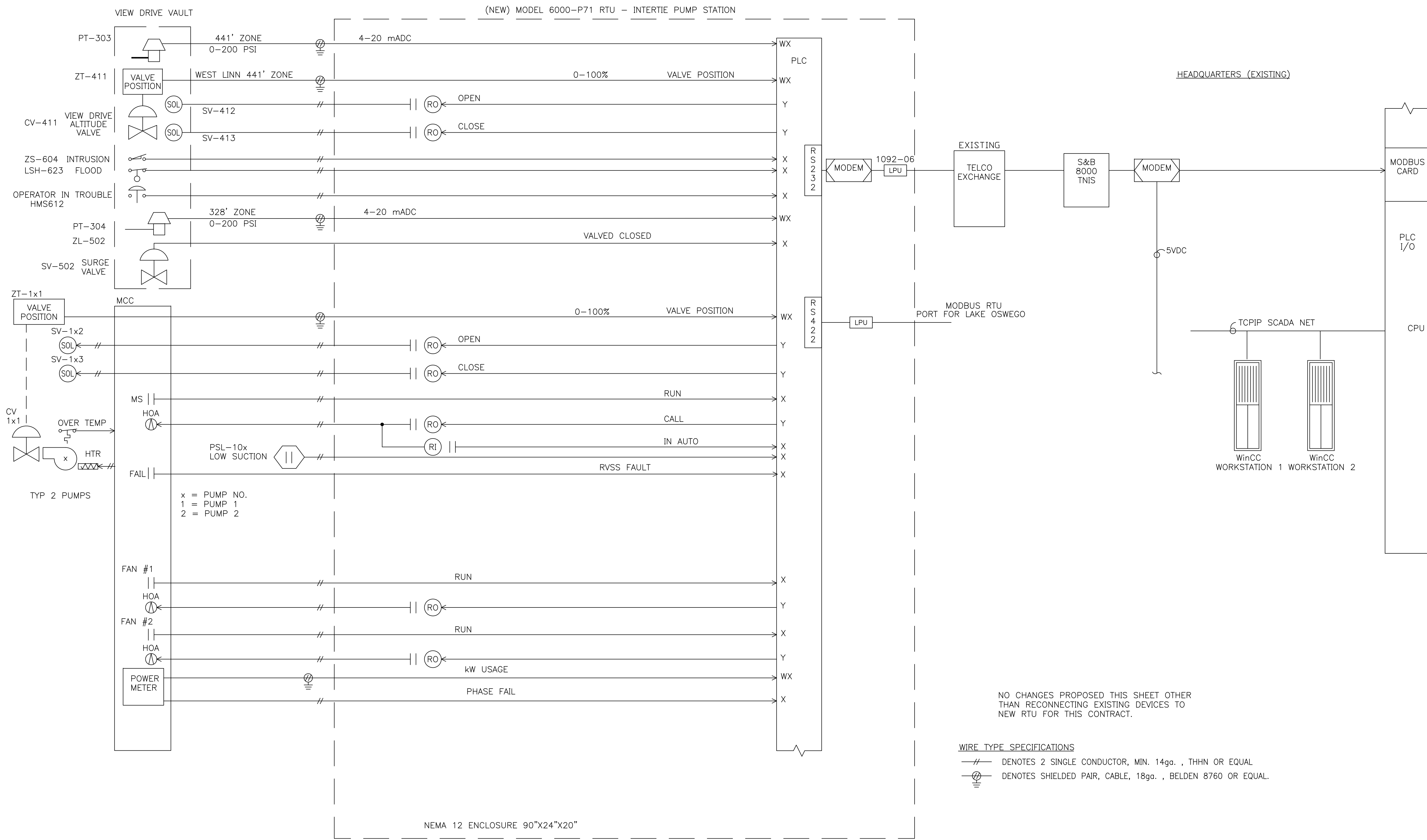
Murray, Smith & Associates, Inc.
Engineers/Planners
121 S.W. Salmon, Suite 900
Portland, Oregon 97204
PHONE: 503-225-9010
FAX: 503-225-9022

DATE: JANUARY 2015

MSA PROJECT: 14-1801.02

10 OF 14

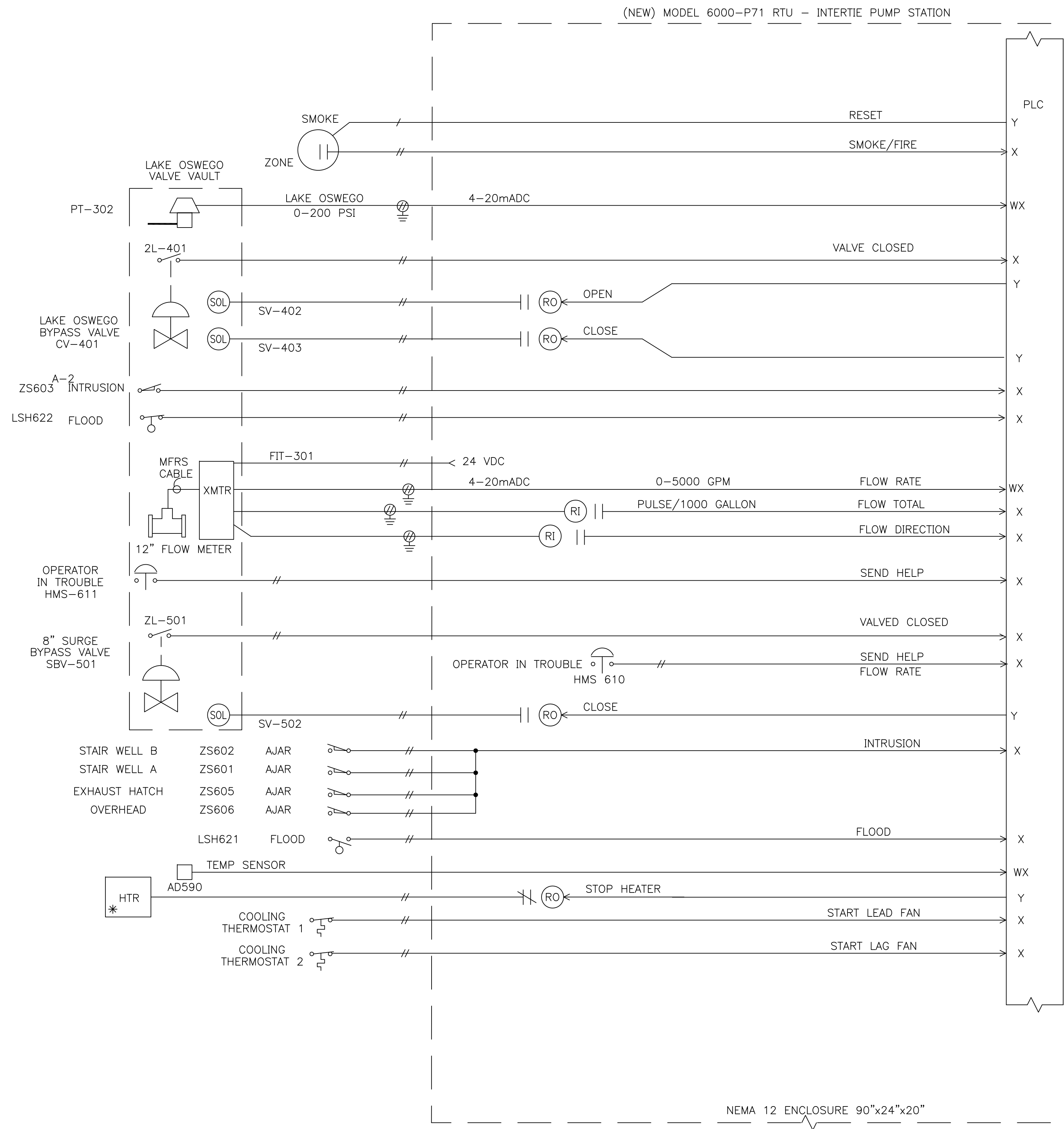




NO CHANGES PROPOSED THIS SHEET OTHER THAN RECONNECTING EXISTING DEVICES TO NEW RTU FOR THIS CONTRACT.

- WIRE TYPE SPECIFICATIONS**
- //— DENOTES 2 SINGLE CONDUCTOR, MIN. 14ga. , THHN OR EQUAL
 - [Symbol]— DENOTES SHIELDED PAIR, CABLE, 18ga. , BELDEN 8760 OR EQUAL.

<p>PROJECT NAME: CITY OF WEST LINN, OREGON EMERGENCY INTERTIE WATER PUMP STATION IMPROVEMENTS</p>	<p>SHEET TITLE: EXISTING CONTROLS AT PUMP STATION</p>	<p>DATE: FEBRUARY 2015</p>	<p>BY: _____</p> <p>REVISION: _____</p>	<p>NO. DATE: _____</p> <p>DESIGNED: RTS</p> <p>DRAWN: JRB</p> <p>CHECKED: DGT</p> <p>APPROVED: RTS</p>	<p>SHEET I&C-1</p> <p>11 OF 14</p>
<p>SCALE: VERT: AS SHOWN HORIZ: AS SHOWN</p> <p>NOTICE: IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE</p>		<p>REGISTERED PROFESSIONAL ENGINEER 14,157 OREGON RANDALL T. GIBB EXPIRATION DATE: 6/30/16</p>			
<p>MSA Murray Smith & Associates, Inc. Engineers/Planners 121 S.W. Salmon, Suite 900 Portland, Oregon 97204 PHONE: 503-225-9010 FAX: 503-225-9022</p>					



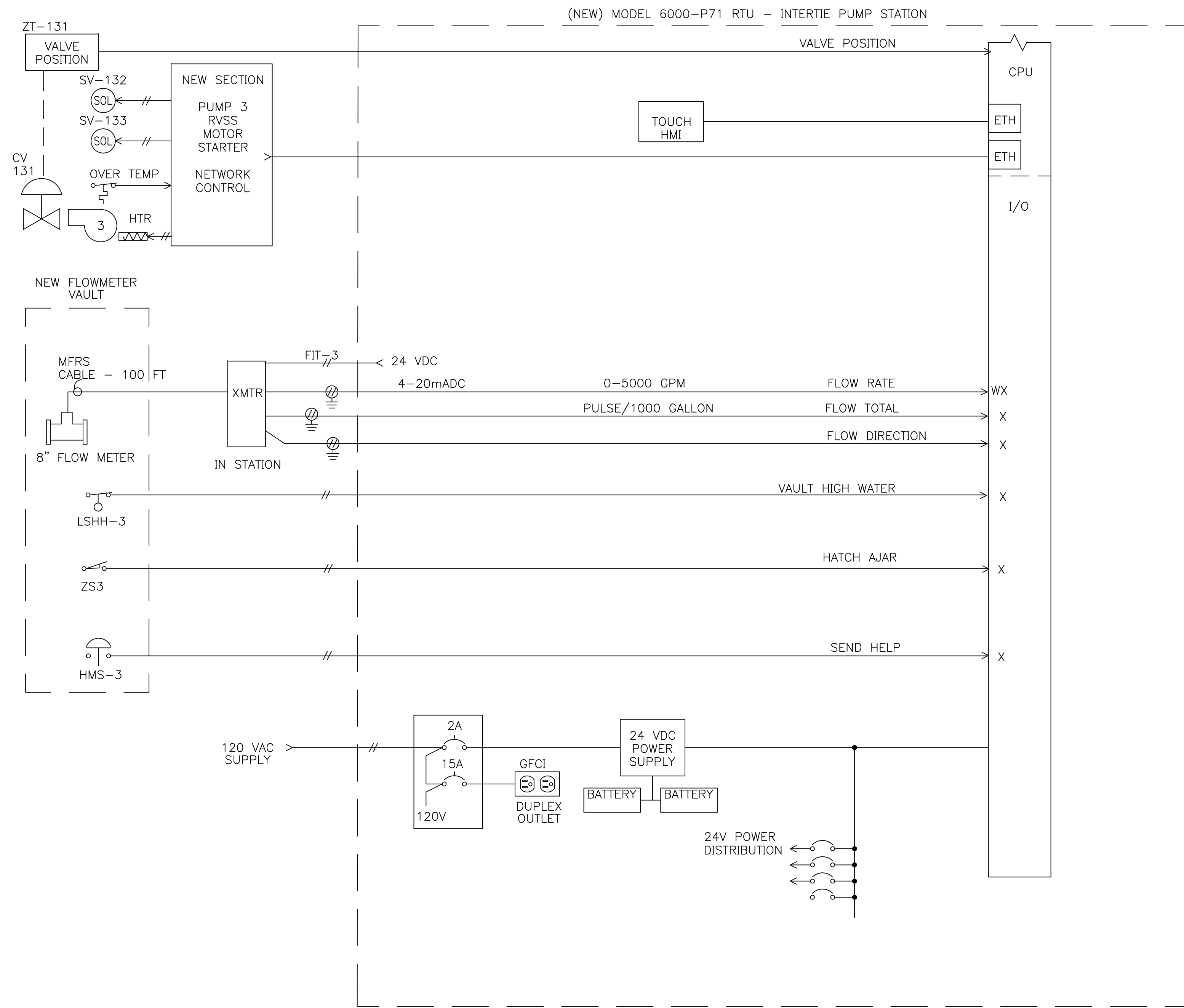
THE RTU PLC IS REPLACED THIS CONTRACT.
ALL FIELD ITEMS ARE EXISTING.

* DENOTES BY OTHERS.

WIRE TYPE SPECIFICATIONS
 // DENOTES 2 SINGLE CONDUCTOR, MIN. 14ga. , THHN OR EQUAL
 [Shielded Pair Symbol] DENOTES SHIELDED PAIR, CABLE, 18ga. , BELDEN 8760 OR EQUAL.

PROJECT NAME:	CITY OF WEST LINN, OREGON EMERGENCY INTERTIE WATER PUMP STATION IMPROVEMENTS EXISTING CONTROLS AT PUMP STATION		
SHEET TITLE:	WATER PUMP STATION IMPROVEMENTS EXISTING CONTROLS AT PUMP STATION		
PROJECT NO.:	14-1601-202		
DATE:	FEBRUARY 2015		
PROJECT:	MSA PROJECT: 14-1601-202		
SCALE:	VERT. AS SHOWN HORIZ. AS SHOWN NOTICE IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE		
NO.:	DATE:	REVISION:	BY:
DESIGNED:	RTS	DRAWN:	JRB
CHECKED:	DGT	APPROVED:	RTS
SHEET:			I&C-2
SHEET:			12 OF 14

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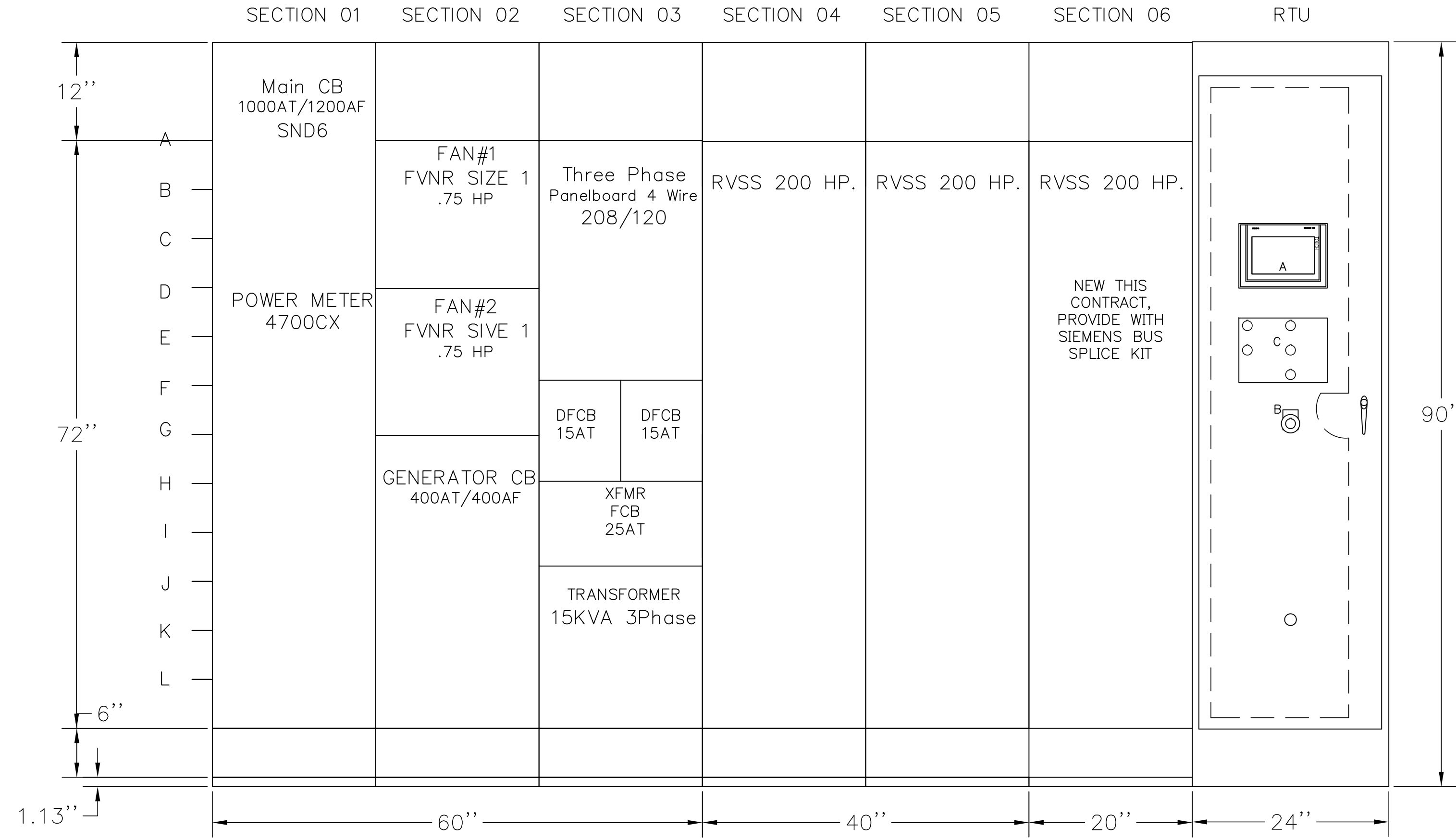
ALL FIELD EQUIPMENT THIS SHEET IS NEW THIS CONTRACT.

* DENOTES BY OTHERS.

WIRE TYPE SPECIFICATIONS

- //— DENOTES 2 SINGLE CONDUCTOR, MIN. 14ga. , THHN OR EQUAL
- /—/— DENOTES SHIELDED PAIR, CABLE, 18ga. , BELDEN 8760 OR EQUAL.

<p>PROJECT NAME: CITY OF WEST LINN, OREGON EMERGENCY INTERTIE WATER PUMP STATION IMPROVEMENTS</p>	<p>SHEET TITLE: EXISTING CONTROLS AT PUMP STATION</p>	<p>DATE: FEBRUARY 2015</p>	<p>PROJECT: 14-1601.202</p>	<p>BY: REVISION: NO. DATE</p>	<p>DESIGNED: RTS DRAWN: JRB CHECKED: DGT APPROVED: RTS</p>	<p>SHEET I&C-3 13 OF 14</p>	
<p>REGISTERED PROFESSIONAL ENGINEER 14,157 istead OREGON RANDALL T. EXPIRATION DATE: 6/30/16</p>		<p>VERT: AS SHOWN HORIZAS SHOWN SCALE NOTICE 0 1 IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE</p>					
<p>MSA Murray Smith & Associates, Inc. Engineers/Planners 121 S.W. Salmon, Suite 900 Portland, Oregon 97204 PHONE 503-225-9010 FAX 503-225-9022</p>							



- A. OPERATOR INTERFACE MODULE (NEW)
- B. SYSTEM SHUTDOWN
- C. GRAVOPLY COVERPLATE

INSTALL NEW RTU BACK PANEL IN EXISTING ENCLOSURE THIS CONTRACT. INSTALL ITEM A, INSTALL COVERPLATE C.

<p>MSA Murray Smith & Associates, Inc. Engineers/Planners 121 S.W. Salmon, Suite 900 Portland, Oregon 97204 PHONE: 503-225-9010 FAX: 503-225-9022</p>	<p>PROJECT NAME: CITY OF WEST LINN, OREGON EMERGENCY INTERTIE WATER PUMP STATION IMPROVEMENTS</p> <p>SHEET TITLE: CONTROLS PRESENTATION</p>	<p>SCALE: VERT: AS SHOWN HORIZAS SHOWN</p> <p>NOTICE: IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE</p>	<p>REGISTERED PROFESSIONAL ENGINEER 14157 Stead OREGON RANDALL T. STEAD JULY 26 1981 EXPIRATION DATE: 6/30/16</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>NO.</th> <th>DATE</th> <th>REVISION</th> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table> <p>DESIGNED: RTS DRAWN: JRB CHECKED: DGT APPROVED: RTS</p> <p>BY: _____ SHEET: I&C-4 14 OF 14</p>	NO.	DATE	REVISION									
NO.	DATE	REVISION														

