



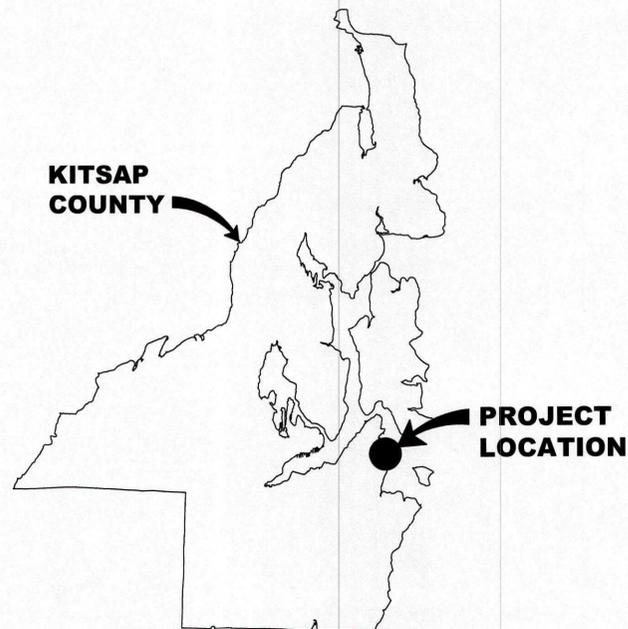
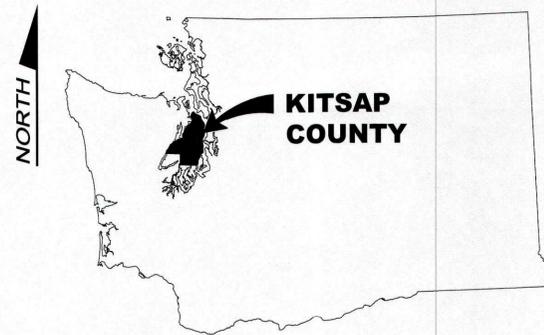
**KITSAP COUNTY**

**MANCHESTER PUMP STATIONS 45, 46, & 47 AND  
BEACH LINES REHABILITATION**

**AUGUST 2016**

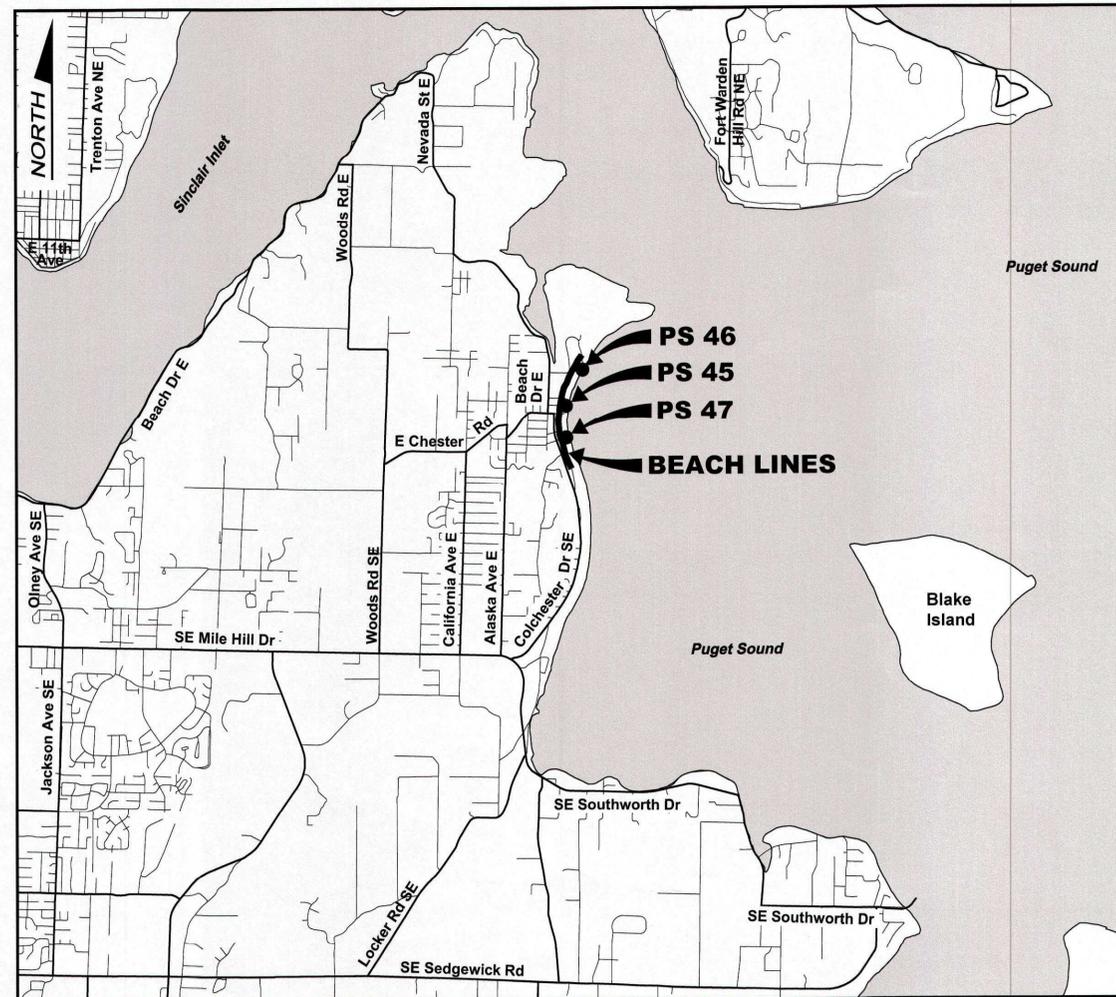
**LOCATION MAPS**

NTS



**VICINITY MAP**

NTS



**COUNTY COMMISSIONERS**

- Robert Gelder - District #1
- Charlotte Garrido - District #2
- Edward E. Wolfe - District #3

**APPROVED BY**

19 AUG 16  
DATE

DAVID TUCKER  
ASSISTANT DIRECTOR OF PUBLIC WORKS

8/19/16  
DATE

JON BRAND  
COUNTY ROAD ENGINEER

**PREPARED BY**



**BHC Consultants, LLC**  
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**IN ASSOCIATION WITH**

- Geotechnical & Environmental - Landau Associates, Inc.
- Survey - AES Consulting, Inc.
- Cultural Resources - Cascadia Archaeology, LLC
- Coastal - Mott MacDonald

**FUNDED IN PART BY THE WASHINGTON  
STATE DEPARTMENT OF ECOLOGY**

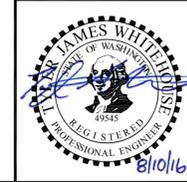
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**DRAWING REFERENCE**

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D46	DEMOLITION PUMP STATION 46		
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R46	RESTORATION PUMP STATION 46		
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**Call 48 Hours Before You Dig**  
 1-800-424-5555  
 UNDERGROUND SERVICE



Path: S:\Cad\Kitsap County\15-10341 PS 45 46 47 BL Design\DWG\15-10341\_G-2\_Plot.dwg; Plot date: Aug 09, 2016-01:26:23pm; CAD User: acariaso; Xref Filename: |X|15-10341\_TB|Whitehouse|Schuyler\_Adam|Dahl|Gibson|Schuyler\_Erika|

Designed: T. Whitehouse, P.E.	Scale: N/A
Drawn: P. Simon	
Checked: A. Schuyler, P.E.	One Inch at Full Scale
Approved: R. Dorn, P.E.	If Not One Inch Scale Accordingly

**Kitsap County Public Works**  
 614 Division Street, MS 26  
 Port Orchard, WA 98366

**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION**

**INDEX OF DRAWINGS**

No.	Revision	Date	By	App'd
	ISSUED FOR BID	08-2016	TJW	RAD
	BUILDING PERMIT SUBMITTAL	04-2016	TJW	RAD
	ECOLOGY SUBMITTAL	02-2016	TJW	RAD

Drawing: <b>G-2</b>
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File: P15-10341_G-2
Date: August 2016



**GENERAL NOTES**

1. ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH THE 2014 EDITION OF THE STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION (REFERRED TO HEREIN AS THE STANDARD SPECIFICATIONS), PREPARED BY THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION AND THE WASHINGTON STATE CHAPTER OF THE APWA; KITSAP COUNTY DEPARTMENT OF PUBLIC WORKS STANDARD FOR SANITARY SEWER EXTENSIONS; AND KITSAP COUNTY'S ROAD STANDARDS AND SPECIFICATIONS, AS SUPPLEMENTED BY THE DRAWINGS AND CONTRACT DOCUMENTS.
2. CONTRACTOR SHALL VERIFY ALL DIMENSIONS BEFORE STARTING WORK AND IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
3. THE CONTRACTOR SHALL EMPLOY THE PROPER STANDARD OF CARE FOR ALL WORK AROUND EXISTING OVERHEAD AND UNDERGROUND UTILITIES. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING UTILITIES AND SHALL VERIFY ALL UTILITY LOCATIONS PRIOR TO CONSTRUCTION BY CALLING THE ONE CALL AT 1-800-424-5555, KITSAP COUNTY PUBLIC WORKS AT (360) 337-5777 AND THE WSDOT, A MINIMUM OF 48 HOURS PRIOR TO ANY EXCAVATION.
4. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO HAVE A COPY OF THE APPROVED CONSTRUCTION PLANS ON THE CONSTRUCTION SITE AT ALL TIMES.
5. ALL PIPING SHALL BE CLEANED AND TESTED PRIOR TO PAVING IN CONFORMANCE WITH THE SPECIFICATIONS.
6. PRIOR TO BACKFILL, ALL PIPES AND APPURTENANCES SHALL BE INSPECTED BY THE COUNTY. INSPECTION SHALL NOT RELIEVE THE CONTRACTOR OF CORRECTION OF ANY DEFICIENCIES AND/OR FAILURES AS DETERMINED BY SUBSEQUENT TESTING AND INSPECTION.
7. CONTRACTOR SHALL COORDINATE WITH THE COUNTY CONSTRUCTION MANAGER REGARDING TEMPORARY CONSTRUCTION EASEMENTS PRIOR TO CONSTRUCTION ON EASEMENTS.
8. CONTRACTOR SHALL DEVELOP A SANITARY SEWER TEMPORARY BYPASS PLAN PRIOR TO DISRUPTING ANY LIVE SEWERS, INCLUDING MAIN LINES, FORCE MAINS, OR SIDE SEWERS. PLAN SHALL ADDRESS COUNTY COORDINATION NEEDS. SUBMIT PLAN TO THE ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION.
9. PHYSICAL CONNECTIONS TO THE EXISTING SEWER SYSTEM SHALL NOT BE MADE UNTIL AUTHORIZED BY THE ENGINEER. SUCH AUTHORIZATION WILL NOT BE GIVEN UNTIL THE CONTRACTOR HAS SATISFIED THE ENGINEER THAT THE NEW GRAVITY SEWER OR FORCE MAIN IS READY TO BE PLACED INTO SERVICE.
10. CONTRACTOR SHALL DEVELOP A WATER LINE TEMPORARY BYPASS PLAN PRIOR TO DISRUPTING ANY LIVE WATER LINES, INCLUDING MAIN LINES OR WATER SERVICE LINES. PLAN SHALL ADDRESS WATER PURVEYOR AND PROPERTY OWNER COORDINATION. SUBMIT PLAN TO THE ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION.
11. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR VERIFYING ACCURACY OF ALL UTILITY LOCATIONS SHOWN ON DRAWINGS AND TO FURTHER DISCOVER AND AVOID ALL UTILITIES, SHOWN OR NOT SHOWN, THAT MAY BE IMPACTED BY THE CONTRACTOR'S WORK.
12. CONTRACTOR SHALL ADJUST ALL MAINTENANCE HOLE RIMS, DRAINAGE STRUCTURES, LIDS, VALVE BOXES, UTILITY ACCESS STRUCTURES, AND MONUMENT COVERS TO FINISH GRADE WITHIN AREAS AFFECTED BY THE CONTRACTOR'S WORK.
13. PUMP STATIONS SHALL HAVE TWO POWER SOURCES AT ALL TIMES -- UTILITY POWER AND TEMPORARY OR PERMANENT GENERATOR POWER. THE PRIMARY POWER SOURCE AT NIGHT -- 5 PM TO 7 AM -- SHALL BE UTILITY POWER.
14. THE OWNER'S TELEMETRY SYSTEM MUST BE OPERATIONAL AT ALL TIMES.
15. CONTRACTOR SHALL RE-ESTABLISH ALL DISTURBED SURVEYING MARKERS OR MONUMENTS USING A LICENSED LAND SURVEYOR IN ACCORDANCE WITH THE SPECIFICATIONS.
16. PROTECTION OF THE ENVIRONMENT: NO CONSTRUCTION RELATED ACTIVITY SHALL CONTRIBUTE TO THE DEGRADATION OF THE ENVIRONMENT, ALLOW MATERIAL TO ENTER SURFACE OR GROUND WATERS, OR ALLOW PARTICULATE EMISSIONS TO THE ATMOSPHERE, WHICH EXCEED STATE OR FEDERAL STANDARDS. ANY ACTIONS THAT POTENTIALLY ALLOW A DISCHARGE TO STATE WATERS MUST HAVE PRIOR APPROVAL OF THE WASHINGTON STATE DEPARTMENT OF ECOLOGY.

**EROSION AND SEDIMENT CONTROL NOTES**

1. THE OWNER WILL OBTAIN DOE'S CONSTRUCTION STORMWATER GENERAL PERMIT AND TRANSFER TO THE CONTRACTOR AT THE START OF CONSTRUCTION. CONTRACTOR MAY MODIFY THE DRAFT SWPPP INCLUDED AS AN APPENDIX TO THE SPECIFICATIONS TO ADDRESS THE CONTRACTOR'S MEANS AND METHODS OR PREPARE A NEW SWPPP AS REQUIRED BY THE PERMIT. ONCE THE SWPPP IS APPROVED BY DOE, THE CONTRACTOR SHALL FOLLOW ALL CONSTRUCTION STORMWATER GENERAL PERMIT REQUIREMENTS.
2. DISTURBED AREAS SHALL BE STABILIZED WITH TESC BEST MANAGEMENT PRACTICES AS DETAILED IN THE SWPPP. CONTRACTOR SHALL PREVENT EROSION OR SEDIMENT TRANSPORT IN ALL DISTURBED AREAS UNTIL FINAL RESTORATION HAS BEEN ACCOMPLISHED.
3. CONTRACTOR SHALL BE RESPONSIBLE AT ALL TIMES FOR PREVENTING SILT AND DEBRIS LADEN RUNOFF FROM LEAVING THE PROJECT SITE, ENTERING THE DRAINAGE SYSTEM, OR VIOLATING APPLICABLE WATER QUALITY STANDARDS. FAILURE BY THE CONTRACTOR TO PREVENT SILT OR DEBRIS LADEN RUNOFF OR SEDIMENT FROM BEING TRANSPORTED FROM THE PROJECT SITE MAY RESULT IN A FINE. THE DESIGNATED CONTACT PERSON SHALL BE AVAILABLE BY TELEPHONE ON A 24 HOUR PER DAY BASIS THROUGHOUT CONSTRUCTION AND UNTIL THE PROJECT HAS BEEN COMPLETED AND ACCEPTED BY THE OWNER.
4. TESC MEASURES SHOWN ON THE PLANS AND IDENTIFIED IN THE CONTRACTOR'S SWPPP ARE CONSIDERED BASIC REQUIREMENTS FOR THE ANTICIPATED SITE CONDITIONS. DURING CONSTRUCTION, ADDITIONAL PROVISIONS MAY BE NECESSARY TO MAINTAIN WATER QUALITY. MINOR DEPARTURES FROM THE TESC MEASURES SHOWN ON THE PLANS MAY BE PERMITTED SUBJECT TO THE APPROVAL OF THE COUNTY CONSTRUCTION MANAGER. HOWEVER, EXCEPT FOR EMERGENCY SITUATIONS, MAJOR DEVIATIONS MUST BE APPROVED BY THE ENGINEER. DOCUMENTATION AND RECORD KEEPING OF THESE ACTIVITIES SHALL BE IN ACCORDANCE WITH THE CONTRACTOR'S SWPPP.
5. TESC MEASURES SHALL BE INSPECTED BY THE CONTRACTOR AS DEFINED IN THE SPECIFICATIONS AND IMMEDIATELY AFTER EACH RAINFALL, AND SHALL BE MAINTAINED AS NECESSARY TO INSURE THEIR CONTINUED FUNCTION. ALL SEDIMENT SHALL BE REMOVED FROM SILT FENCES, STRAW BALES, SEDIMENT PONDS, CATCH BASIN INSERTS, ETC. PRIOR TO THE SEDIMENT REACHING APPROXIMATELY ONE-HALF OF THE MAXIMUM POTENTIAL DEPTH.
6. AT NO TIME SHALL CONCRETE, CONCRETE BY-PRODUCTS, VEHICLE FLUIDS, PAINT, CHEMICALS, OR OTHER POLLUTING MATTER BE PERMITTED TO DISCHARGE TO THE TEMPORARY OR PERMANENT DRAINAGE SYSTEM OR TO DISCHARGE FROM THE PROJECT SITE.
7. PERMANENT DETENTION/RETENTION PONDS, PIPES, TANKS, OR VAULTS MAY ONLY BE USED FOR SEDIMENT CONTAINMENT WHEN SPECIFICALLY INDICATED ON THESE PLANS OR OTHERWISE APPROVED BY THE OWNER.
8. SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE TESC MEASURES ARE NO LONGER REQUIRED, SHALL BE REMOVED OR DRESSED TO CONFORM TO THE EXISTING GRADE AND SEEDED.
9. BARE EARTH AREAS WHERE NO FURTHER WORK IS ANTICIPATED FOR A PERIOD OF 15 DAYS SHALL BE IMMEDIATELY STABILIZED WITH APPROVED TESC MEASURES.
10. TESC MEASURES ON INACTIVE SITES SHALL BE INSPECTED AND MAINTAINED AS NECESSARY.
11. CONTRACTOR SHALL KEEP ALL PAVED SURFACES IN THE RIGHT OF WAY CLEAN BY SWEEPING.

**SURVEY NOTES**

1. THE LOCATION OF UNDERGROUND UTILITIES SHOWN IS APPROXIMATE ONLY AND HAVE BEEN LOCATED FROM VISIBLE EVIDENCE, AS-BUILT MAPS AND PAINT MARKS BY OTHERS. AES CONSULTANTS, INC. MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION SHOWN OR COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE LOCATION OF CRITICAL UNDERGROUND UTILITIES SHOULD BE EXPOSED AND VERIFIED PRIOR TO DESIGN OR CONSTRUCTION. NOTIFY ONE CALL AT 1-800-424-5555 AND ARRANGE FOR FIELD LOCATION OF EXISTING FACILITIES BEFORE ANY CONSTRUCTION.
2. TOPOGRAPHIC SURVEY CONDUCTED BY AES CONSULTANTS, INC., IN FEBRUARY 2015.
3. SANITARY SEWER MANHOLES WERE NOT ENTERED DURING THIS SURVEY. PIPE SIZES AND MATERIALS WERE OBSERVED FROM THE OUTSIDE OF THE MANHOLE AND ARE ESTIMATED.

**HORIZONTAL DATUM**

HORIZONTAL CONTROL DATUM IS NAD 83(2012) BASED ON GPS OBSERVATIONS WITH CROSS CHECKS TO KITSAP COUNTY SURVEY CONTROL.

**VERTICAL DATUM**

NGVD 29, PER GPS OBSERVATIONS AND VERTCON.

**DESIGN CRITERIA**

**PUMP STATION 45 - DANIELS REHABILITATION**

PUMP TYPE	SUBMERSIBLE
PUMP MANUFACTURER	FLYGT
FORCE MAIN DIAMETER	4-INCH
NO. OF PUMPS	2 (1-DUTY, 1-STANDBY)
PUMP MODEL	NP 3085 SH 3 - ADAPTIVE 256
RATED CAPACITY, EACH PUMP	210 GPM @ 34 FT TDH
RATED PUMP SPEED	3,415 RPM
MOTOR HP, EACH PUMP	4 HP
MOTOR SPEED	3,600 RPM
VOLTAGE/PHASES/HERTZ	230/3/60
SPEED CONTROL	FIXED
FIRM PUMPING CAPACITY	210 GPM (1-DUTY, 1-STANDBY)
STANDBY GENERATOR	25 KW

**PUMP STATION 46 - CARAWAY REHABILITATION**

PUMP TYPE	SUBMERSIBLE
PUMP MANUFACTURER	FLYGT
FORCE MAIN DIAMETER	4-INCH
NO. OF PUMPS	2 (1-DUTY, 1-STANDBY)
PUMP MODEL	NP 3085 SH 3 - ADAPTIVE 256
RATED CAPACITY, EACH PUMP	265 GPM @ 21 FT TDH
RATED PUMP SPEED	3,415 RPM
MOTOR HP, EACH PUMP	4 HP
MOTOR SPEED	3,600 RPM
VOLTAGE/PHASES/HERTZ	230/3/60
SPEED CONTROL	FIXED
FIRM PUMPING CAPACITY	265 GPM (1-DUTY, 1-STANDBY)
STANDBY GENERATOR	25 KW

**PUMP STATION 47 - HEMLOCK REHABILITATION**

PUMP TYPE	SUBMERSIBLE
PUMP MANUFACTURER	FLYGT
FORCE MAIN DIAMETER	4-INCH
NO. OF PUMPS	2 (1-DUTY, 1-STANDBY)
PUMP MODEL	NP 3085 SH 3 - ADAPTIVE 256
RATED CAPACITY, EACH PUMP	195 GPM @ 37 FT TDH
RATED PUMP SPEED	3,415 RPM
MOTOR HP, EACH PUMP	4 HP
MOTOR SPEED	3,600 RPM
VOLTAGE/PHASES/HERTZ	230/3/60
SPEED CONTROL	FIXED
FIRM PUMPING CAPACITY	195 GPM (1-DUTY, 1-STANDBY)
STANDBY GENERATOR	25 KW

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ISSUED FOR BID	08-2016	TJW	RAD	
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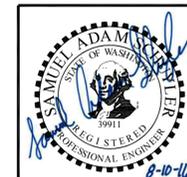
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Drawn: P. Simon	
Checked: A. Schuyler, P.E.	One Inch at Full Scale If Not One Inch Scale Accordingly
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**Kitsap County Public Works**  
 614 Division Street, MS 26  
 Port Orchard, WA 98366

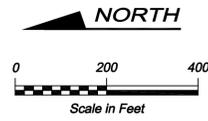
**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION**

**NOTES AND DESIGN CRITERIA**

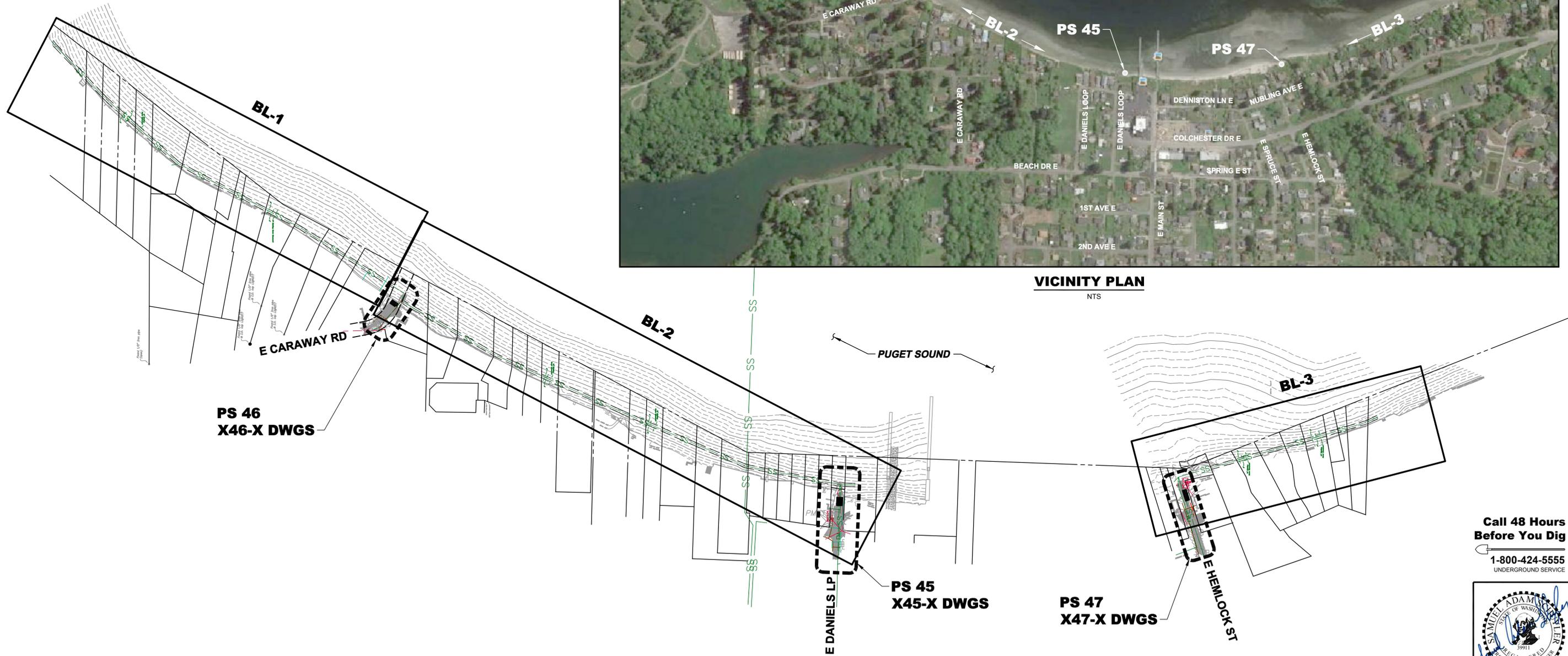
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 UNDERGROUND SERVICE



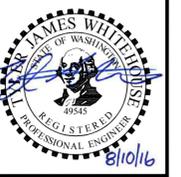
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File:	P15-10341_G-4
Date:	August 2016



**VICINITY PLAN**  
NTS



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UNDERGROUND SERVICE



Path: S:\Cad\Kitsap County\15-10341 PS 45 46 47 BL Design\15-10341\_G-5 Plot date: Aug 11, 2016 07:44:46am CAD User: psimon.  
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Designed: E. Schuyler, P.E.  
Drawn: P. Simon  
Checked: A. Schuyler, P.E.  
Approved: R. Dorn, P.E.

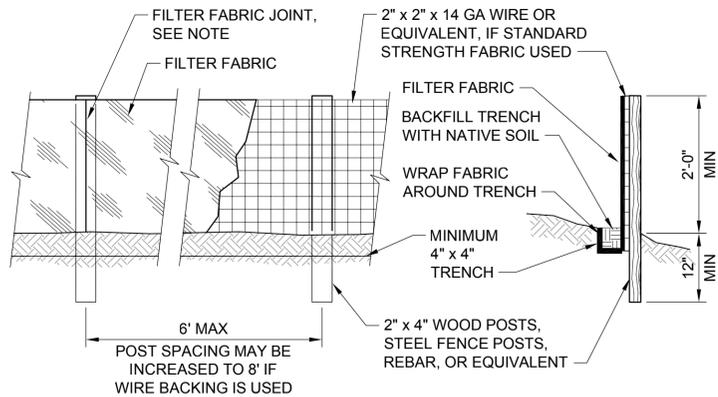
Scale:  
1" = 150'-0"  
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If Not One Inch Scale Accordingly



**Kitsap County Public Works**  
614 Division Street, MS 26  
Port Orchard, WA 98366

**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION**  
**OVERALL KEY MAP**

Drawing: **G-5**  
Sheet: **5** of **73**  
File: P15-10341\_G-5  
Date: August 2016



**NOTES:**

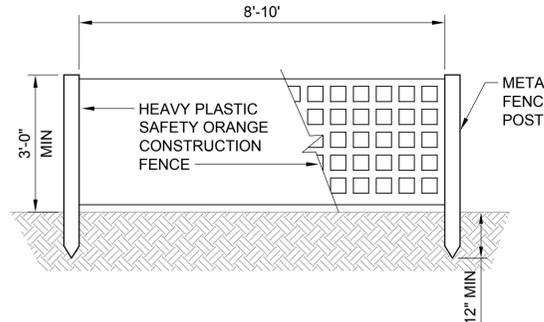
1. FILTER FABRIC FENCES SHALL BE INSTALLED ALONG CONTOUR WHENEVER POSSIBLE. JOINTS IN FILTER FABRIC SHALL BE SPLICED AT POSTS. USE STAPLES, WIRE RINGS, OR EQUIVALENT TO ATTACH FABRIC TO POSTS. INSTALL FILTER FABRIC ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS.
2. FILTER FABRIC FENCE TO BE USED WHERE NEEDED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

**FILTER FABRIC FENCE**

**DETAIL**

NTS

1  
TYP



**NOTE:**

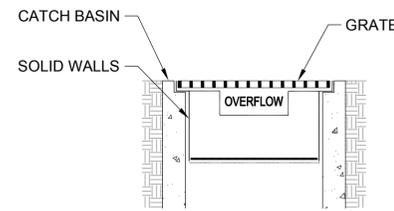
FENCE TO BE USED WHERE CONSTRUCTION OR REMEDIATION ACTIVITIES ARE ONGOING AND WILL BE INSTALLED ALONG THE PROJECT CLEARING LIMITS TO DELINEATE WORK ZONE.

**CLEARING LIMIT/WORK ZONE DELINEATION FENCE**

**DETAIL**

NTS

2  
TYP



**CATCH BASIN FILTER MAINTENANCE STANDARDS:**

1. ANY ACCUMULATED SEDIMENT ON OR AROUND THE FILTER FABRIC PROTECTION SHALL BE REMOVED IMMEDIATELY. SEDIMENT SHALL NOT BE REMOVED WITH WATER, AND ALL SEDIMENT MUST BE DISPOSED OF AS FILL ON-SITE OR HAULED OFF-SITE.
2. ANY SEDIMENT IN THE CATCH BASIN INSERT SHALL BE REMOVED WHEN THE SEDIMENT HAS FILLED ONE-THIRD OF THE AVAILABLE STORAGE. THE FILTER MEDIA FOR THE INSERT SHALL BE CLEANED OR REPLACED AT LEAST MONTHLY.
3. REGULAR MAINTENANCE IS CRITICAL FOR CATCH BASIN PROTECTION. UNLIKE MANY FORMS OF PROTECTION THAT FAIL GRADUALLY, CATCH BASIN PROTECTION WILL FAIL SUDDENLY AND COMPLETELY IF NOT MAINTAINED PROPERLY.

**NOTE:**

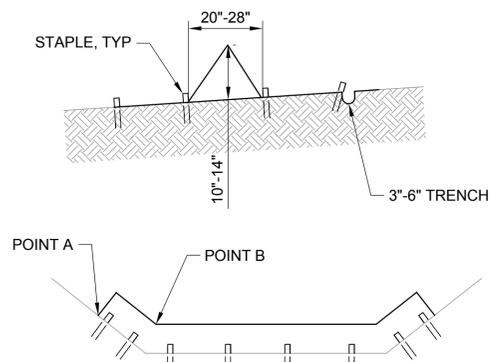
THIS DETAIL IS ONLY SCHEMATIC. ANY INSERT IS ALLOWED THAT HAS A MINIMUM 0.5 CF OF STORAGE, THE MEANS TO DEWATER THE STORED SEDIMENT, HAS AN OVERFLOW, AND CAN BE EASILY MAINTAINED.

**CATCH BASIN INSERT**

**DETAIL**

NTS

3  
TYP



**NOTES:**

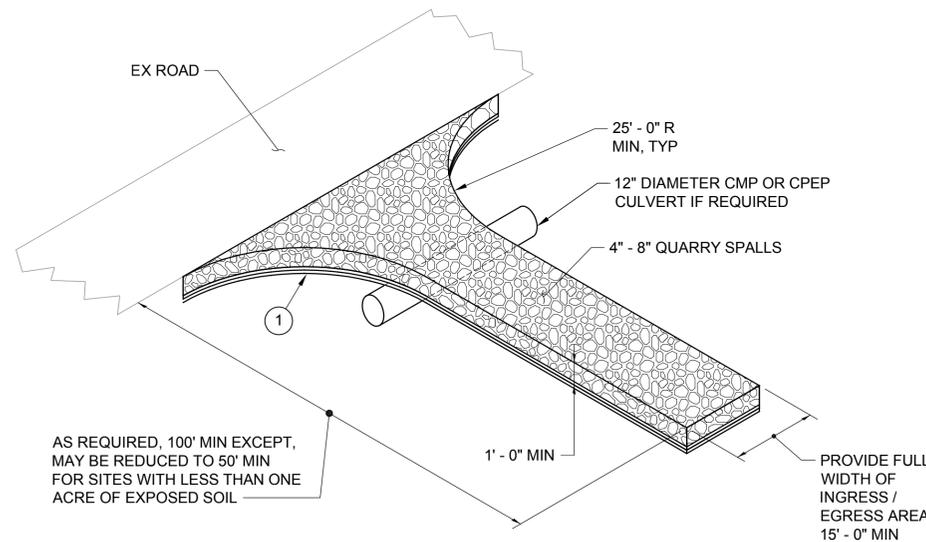
1. TRIANGULAR SILT DIKE SHALL BE URETHANE FOAM SEWN INTO A WOVEN GEOSYNTHETIC FABRIC.
2. A 2' MINIMUM APRON SHALL EXTEND ON EITHER SIDE OF THE TRIANGULAR SECTION.
3. STAPLES SHALL BE NO. 11 GAUGE WIRE, 8"-12" IN LENGTH, INSTALLED 3' ON CENTER AND WHERE DIKE UNITS OVERLAP.
4. THE LEADING EDGE SHALL BE SECURED WITH SANDBAGS OR KEYED INTO NATIVE GROUND.
5. SEDIMENT SHALL BE REMOVED WHEN IT REACHES ONE HALF THE HEIGHT OF THE DAM.
6. POINT A SHALL BE HIGHER THAN POINT B.

**SILT DIKE**

**DETAIL**

NTS

4  
TYP



1. PLACE CONSTRUCTION GEOTEXTILE FOR SOIL STABILIZATION AND A MINIMUM OF 0.15" CRUSHED ROCK UNDER THE SPALLS FOR THE FULL LENGTH AND WIDTH OF THE ENTRANCE.

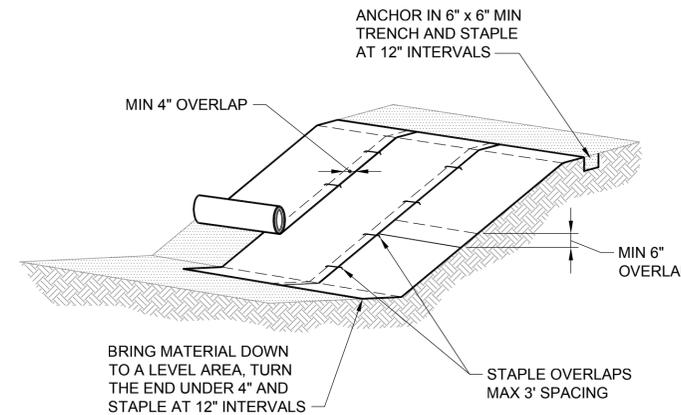
**ISOMETRIC VIEW**

**STABILIZED CONSTRUCTION ENTRANCE**

**DETAIL**

NTS

5  
TYP



**NOTES:**

1. SLOPE SURFACE SHALL BE SMOOTH BEFORE PLACEMENT FOR PROPER SOIL CONTACT.
2. STAPLING PATTERN AS PER MANUFACTURER'S RECOMMENDATIONS.
3. DO NOT STRETCH BLANKETS/MATTINGS TIGHT - ALLOW THE ROLLS TO MOLD TO ANY IRREGULARITIES.
4. FOR SLOPE LESS THAN 3H:1V, ROLLS MAY BE PLACED IN HORIZONTAL STRIPS.
5. IF THERE IS A BERM AT THE TOP OF SLOPE, ANCHOR UPSLOPE OF THE BERM.
6. LIME, FERTILIZE AND SEED BEFORE INSTALLATION. PLANTING OF SHRUBS, TREES, ETC. SHALL OCCUR AFTER INSTALLATION.
7. EROSION CONTROL BLANKETS SHALL BE BIODEGRADABLE.

**EROSION CONTROL BLANKET**

**DETAIL**

NTS

6  
TYP

Path: S:\Cadd\Kitsap County\15-10341\_P15-46 47 BL Design\15-10341\_EC-1 Plot date: Aug 09, 2016-02:12:13pm CAD User: acaniaso.  
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No.	Revision	Date	By	App'd
	ISSUED FOR BID	08-2016	TJW	RAD
	BUILDING PERMIT SUBMITTAL	04-2016	TJW	RAD
	ECOLOGY SUBMITTAL	02-2016	TJW	RAD



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 206.505.3400  
 206.505.3406 (fax)  
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Designed: T. Whitehouse, P.E.  
 Drawn: P. Simon  
 Checked: A. Schuyler, P.E.  
 Approved: R. Dorn, P.E.

Scale:

NTS

One Inch at Full Scale  
 If Not One Inch Scale Accordingly

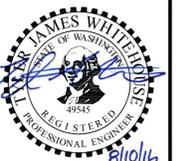
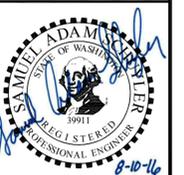


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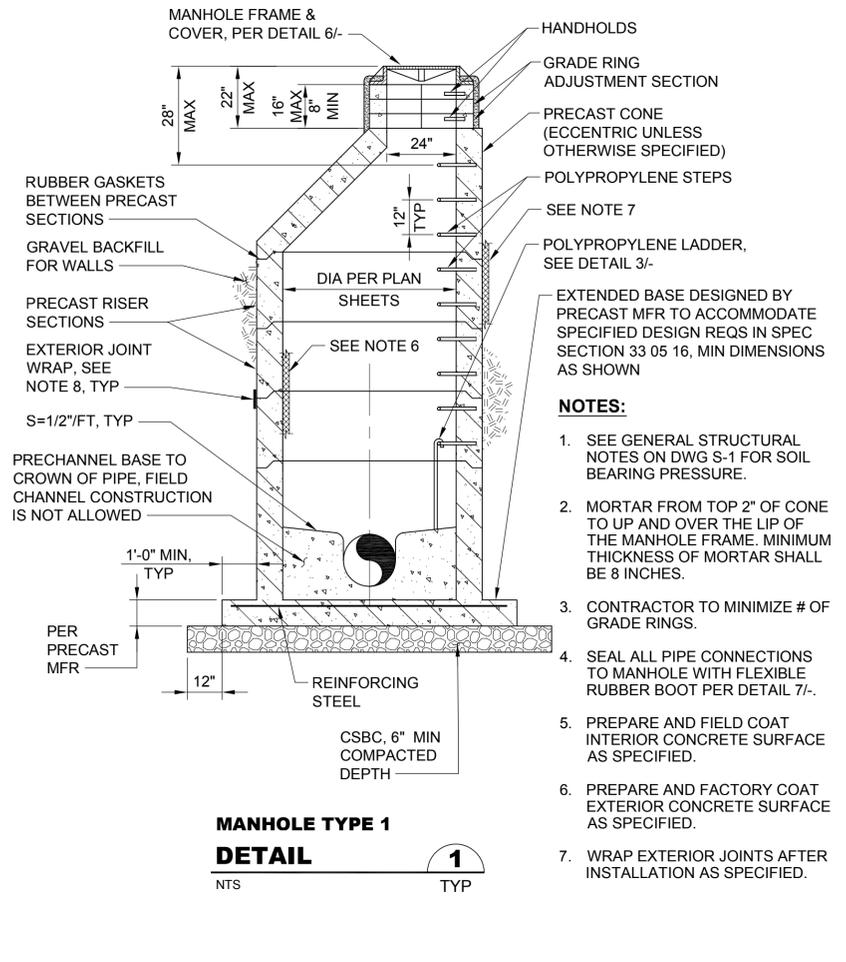
**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION**

**EROSION CONTROL DETAILS**

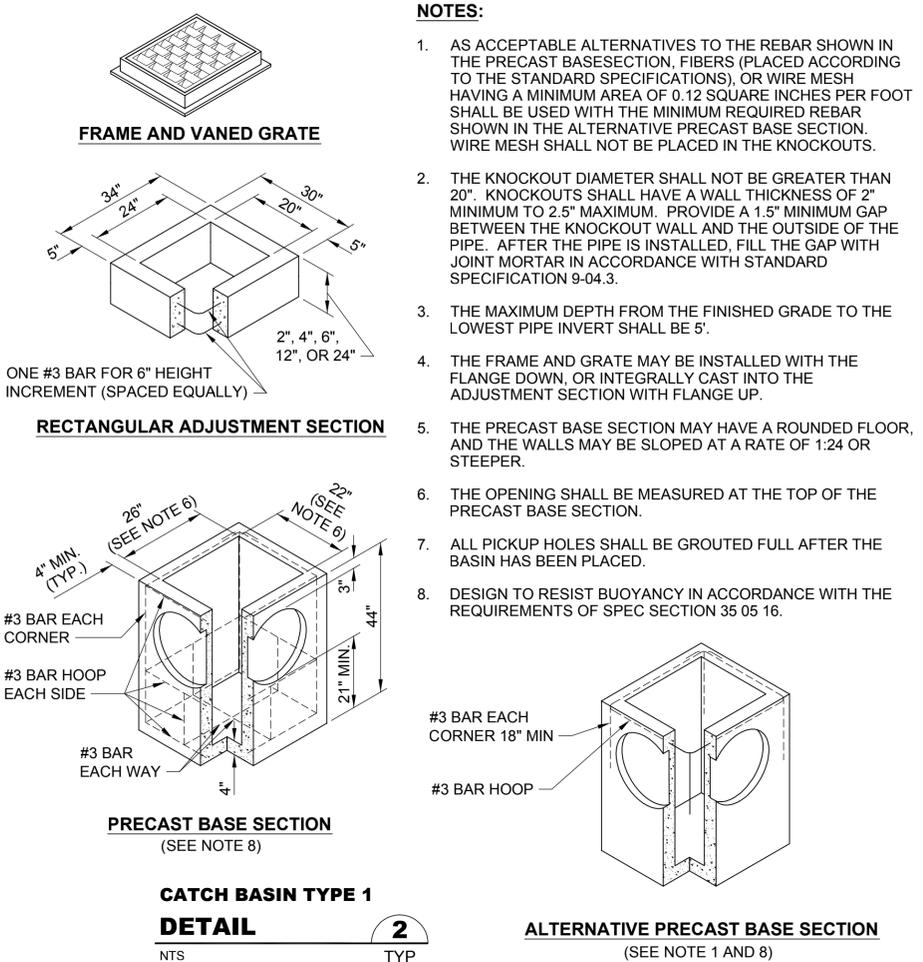
**Call 48 Hours Before You Dig**  
 1-800-424-5555  
 UNDERGROUND SERVICE



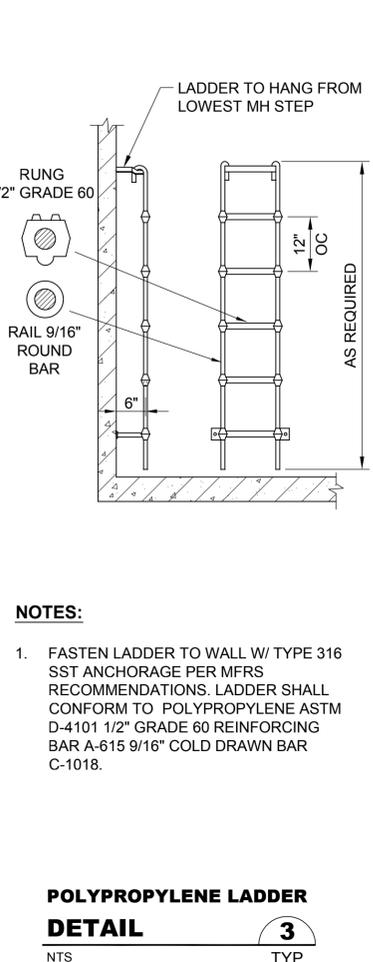
Drawing: **EC-1**  
 Sheet: **6** of **73**  
 File: P15-10341\_EC-1  
 Date: August 2016



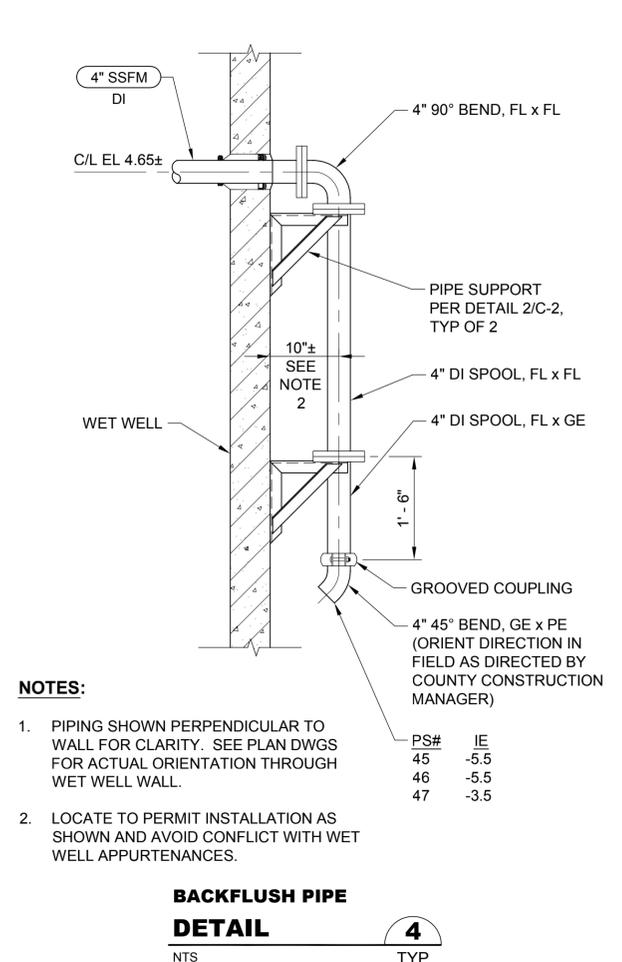
**MANHOLE TYPE 1  
DETAIL**  
NTS TYP



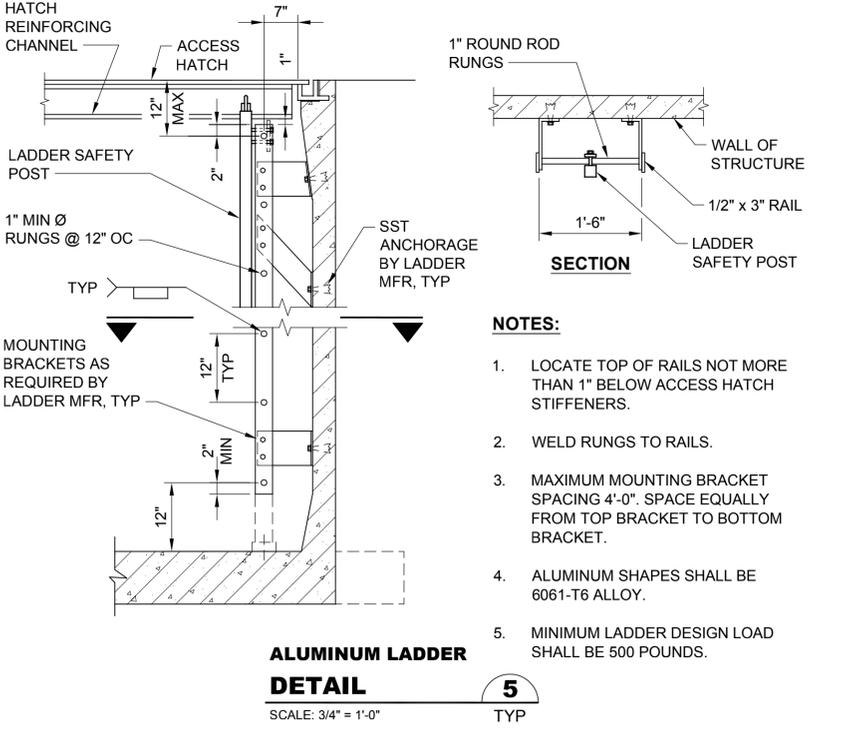
**CATCH BASIN TYPE 1  
DETAIL**  
NTS TYP  
\* BASED ON WSDOT STD PLAN B-5.20-01



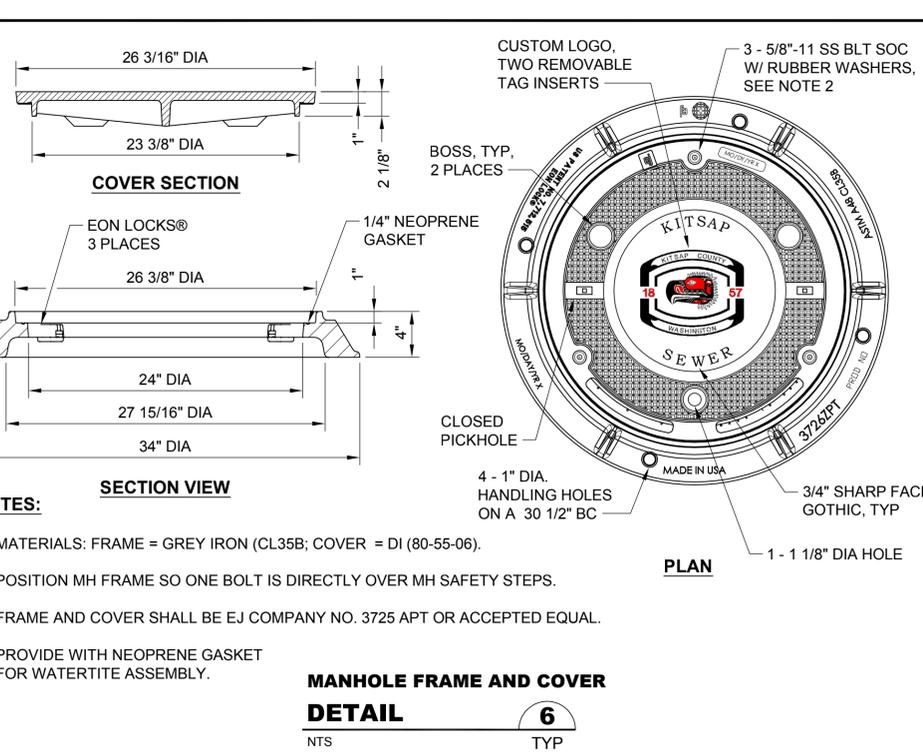
**POLYPROPYLENE LADDER  
DETAIL**  
NTS TYP



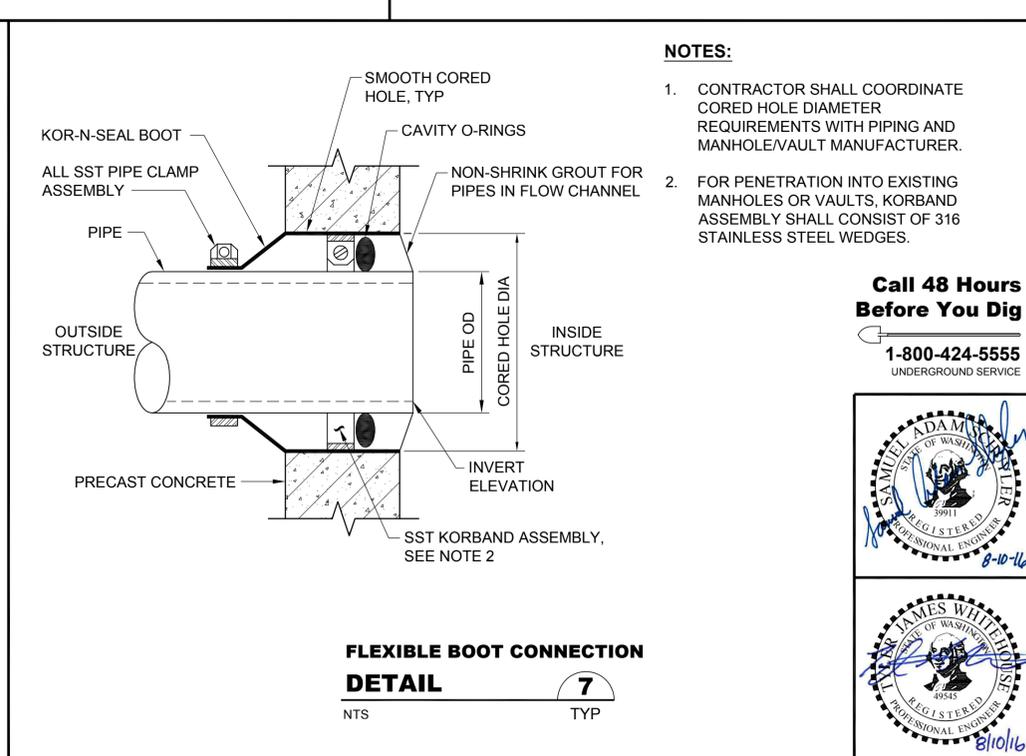
**BACKFLUSH PIPE  
DETAIL**  
NTS TYP



**ALUMINUM LADDER  
DETAIL**  
SCALE: 3/4" = 1'-0" TYP



**MANHOLE FRAME AND COVER  
DETAIL**  
NTS TYP



**FLEXIBLE BOOT CONNECTION  
DETAIL**  
NTS TYP

Path: S:\Cad\Kitsap County\15-10341 PS 45 46 47 BL Design\15-10341\_C-1\_Plot date: Aug 11, 2016-07:47:45am CAD User: psmon. Xref Filename: X:\15-10341\_TB\Whitehouse\Schuyler\_Adam\Gibson\Schuyler\_Erika

No.	Revision	Date	By	App'd
	ISSUED FOR BID	08-2016	TJW	RAD
	BUILDING PERMIT SUBMITTAL	04-2016	TJW	RAD
	ECOLOGY SUBMITTAL	02-2016	TJW	RAD

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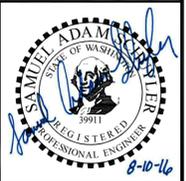
Designed: T. Whitehouse, P.E.  
Drawn: A. Cariaso  
Checked: A. Schuyler, P.E.  
Approved: R. Dorn, P.E.

Scale: NTS  
One Inch at Full Scale  
If Not One Inch Scale Accordingly

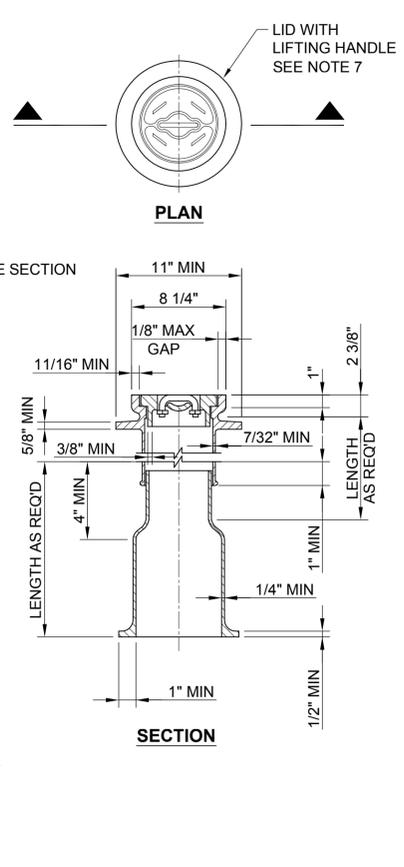
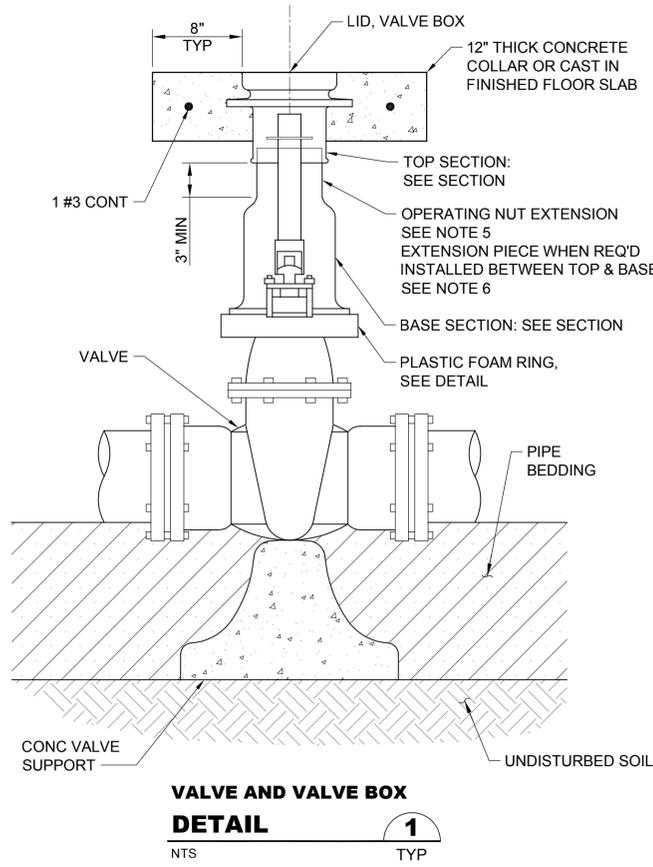
**Kitsap County Public Works**  
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Port Orchard, WA 98366

**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION**  
**CIVIL DETAILS - 1**

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UNDERGROUND SERVICE

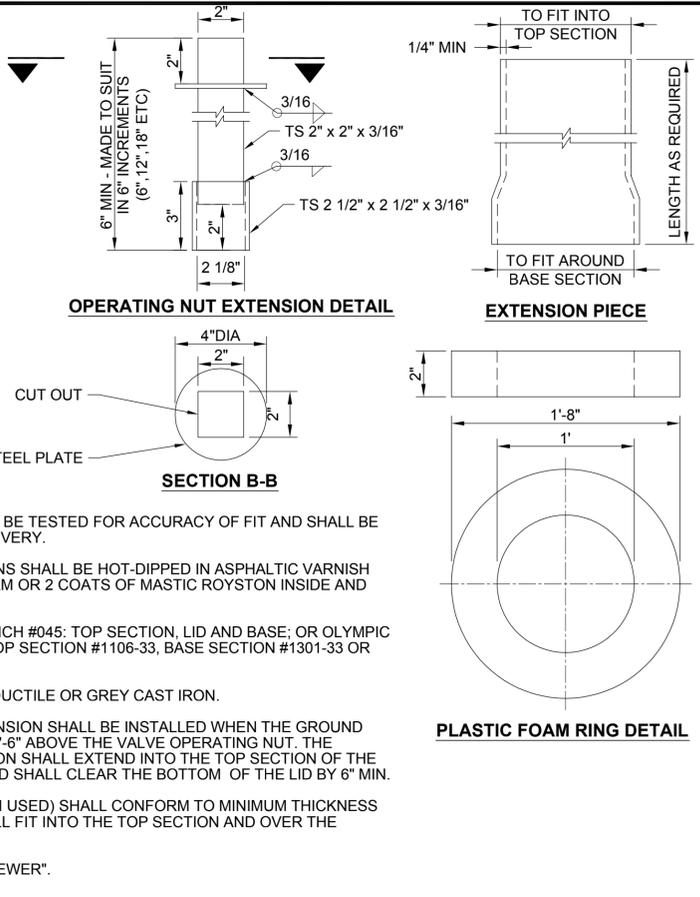


Drawing: **C-1**  
Sheet: **7** of **73**  
File: P15-10341\_C-1  
Date: August 2016



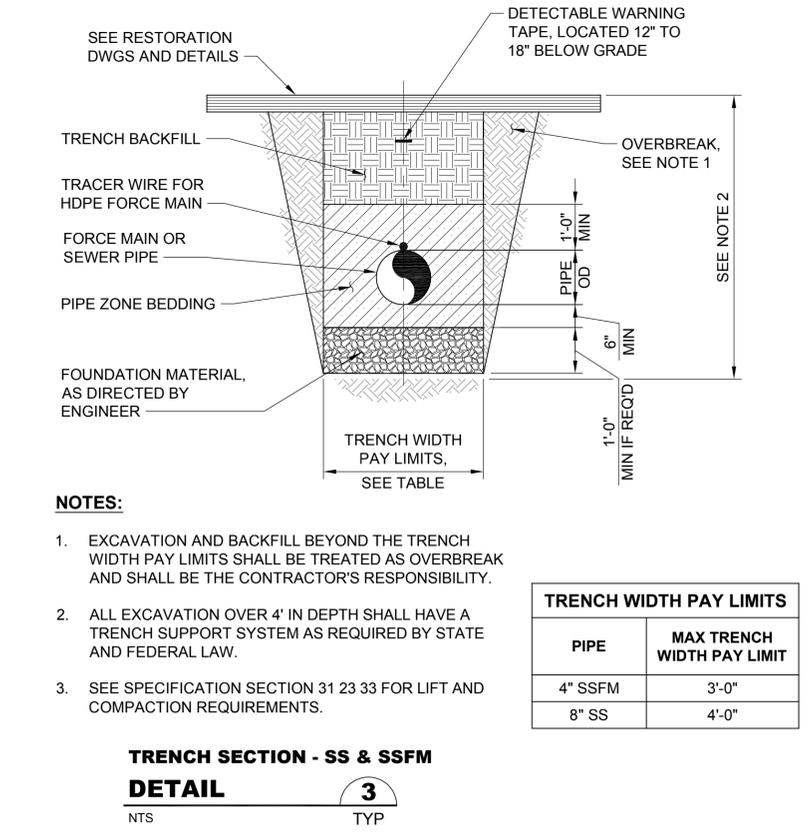
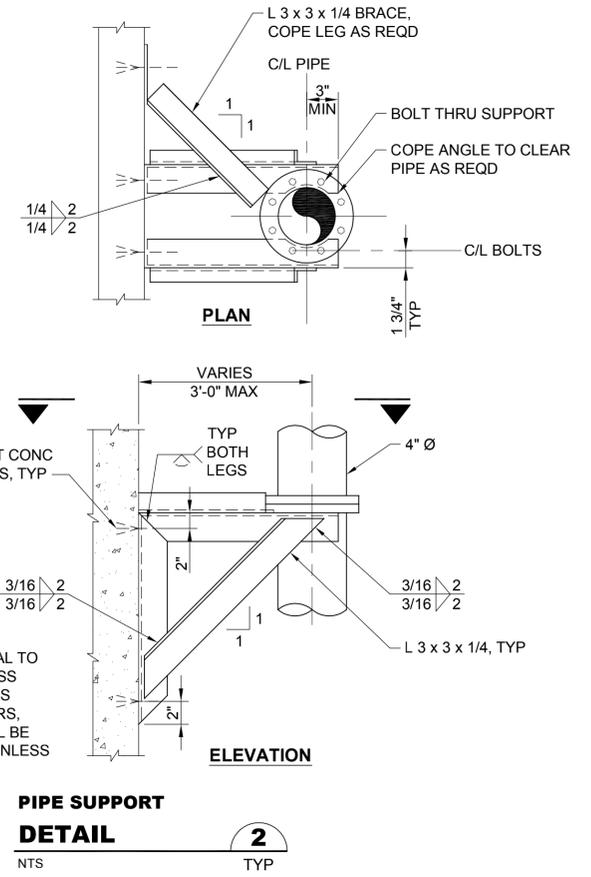
**NOTES:**

1. FRAME AND COVER SHALL BE TESTED FOR ACCURACY OF FIT AND SHALL BE MARKED IN SETS FOR DELIVERY.
2. CASTINGS AND EXTENSIONS SHALL BE HOT-DIPPED IN ASPHALTIC VARNISH ROYSTON ROSKOTE #612XM OR 2 COATS OF MASTIC ROYSTON INSIDE AND OUT.
3. VALVE BOXES SHALL BE RICH #045: TOP SECTION, LID AND BASE; OR OLYMPIC FOUNDRY: LID #1908-33, TOP SECTION #1106-33, BASE SECTION #1301-33 OR APPROVED EQUAL.
4. ALL CASTINGS SHALL BE DUCTILE OR GREY CAST IRON.
5. AN OPERATING NUT EXTENSION SHALL BE INSTALLED WHEN THE GROUND SURFACE IS MORE THAN 2'-6" ABOVE THE VALVE OPERATING NUT. THE OPERATING NUT EXTENSION SHALL EXTEND INTO THE TOP SECTION OF THE STANDARD VALVE BOX AND SHALL CLEAR THE BOTTOM OF THE LID BY 6" MIN.
6. EXTENSION PIECES (WHEN USED) SHALL CONFORM TO MINIMUM THICKNESS REQUIREMENTS AND SHALL FIT INTO THE TOP SECTION AND OVER THE BOTTOM SECTION.
7. LID SHALL BE STAMPED "SEWER".

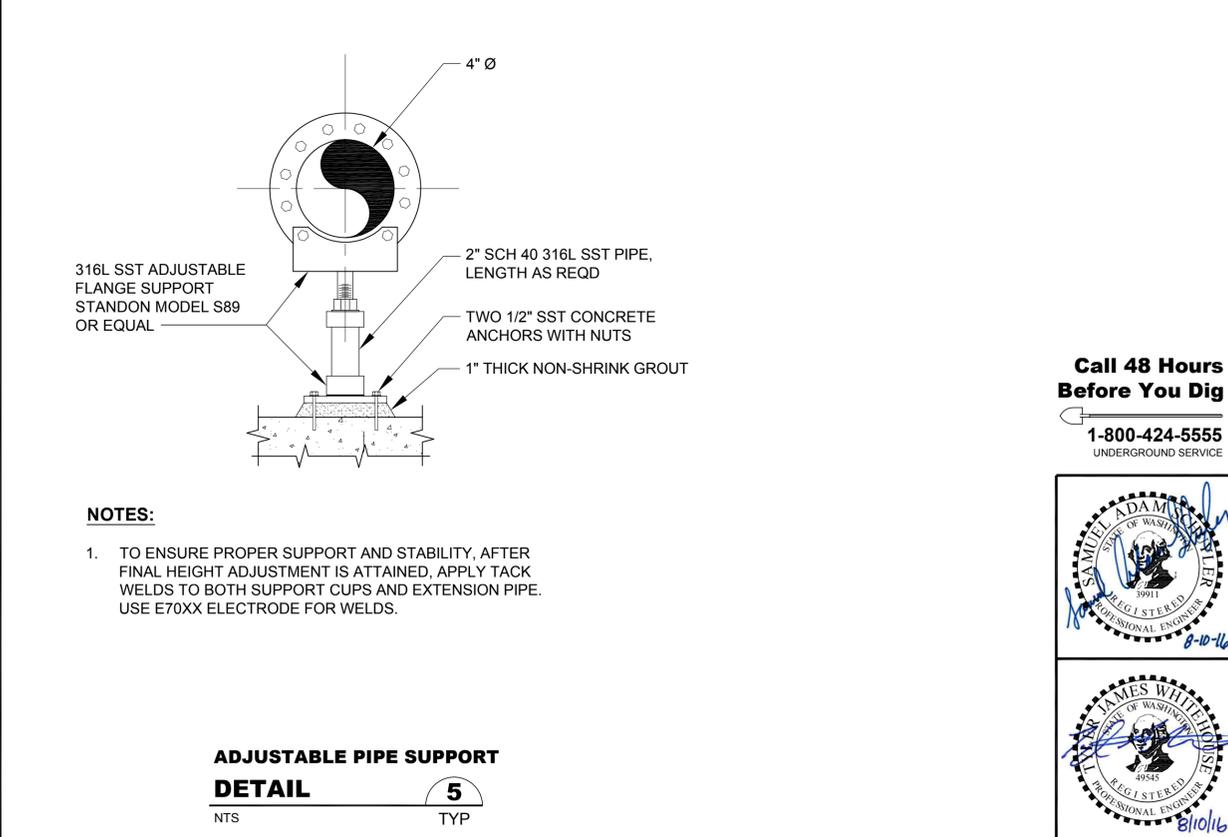
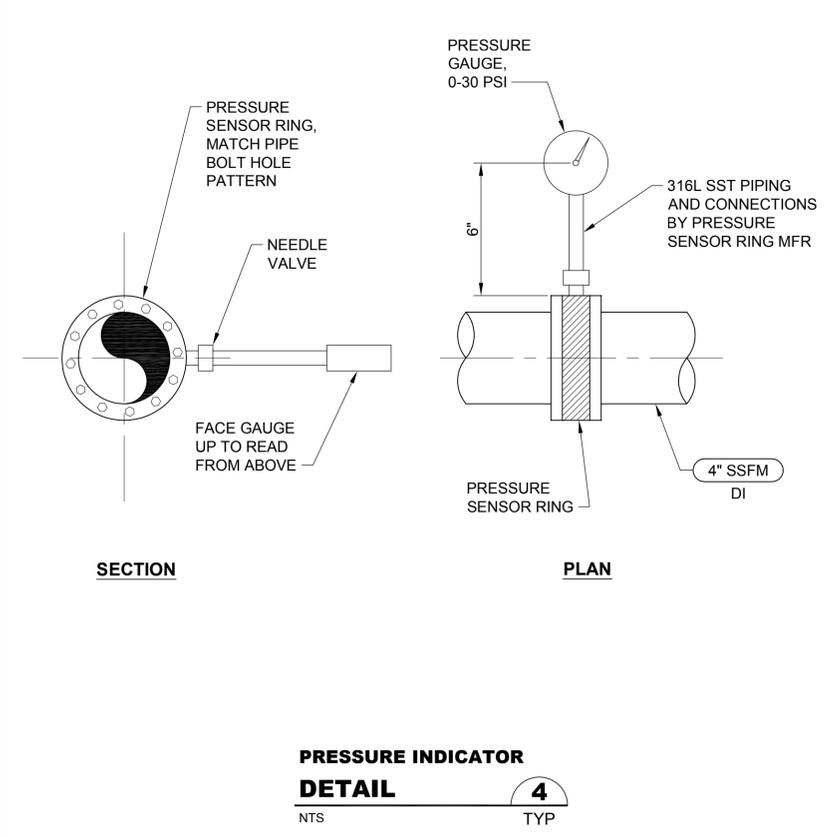


**NOTE:**

1. ALL SUPPORT MATERIAL TO BE TYPE 316L STAINLESS STEEL. ALL FASTENERS (NUTS, BOLTS, ANCHORS, WASHERS, ETC.) SHALL BE TYPE 316 OR 316L STAINLESS STEEL.

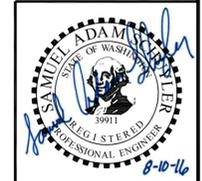


TRENCH WIDTH PAY LIMITS		
PIPE	MAX TRENCH WIDTH PAY LIMIT	
4" SSFM	3'-0"	
8" SS	4'-0"	



**Call 48 Hours  
Before You Dig**

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UNDERGROUND SERVICE



Path: S:\Card\Kitsap County\15-10341 PS 45 46 47 BL Design\15-10341\_C-2\_Plot date: Aug 09, 2016-02:16:00pm CAD User: acariano  
Xref Filename: | X 15-10341\_TB | Whitehouse | Schuyler\_Adam | Dahl | Gibson | Schuyler\_Erika |

No.	Revision	Date	By	App'd
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Designed: T. Whitehouse, P.E.  
Drawn: A. Cariano  
Checked: A. Schuyler, P.E.  
Approved: R. Dorn, P.E.

Scale: NTS  
One Inch at Full Scale  
If Not One Inch Scale Accordingly

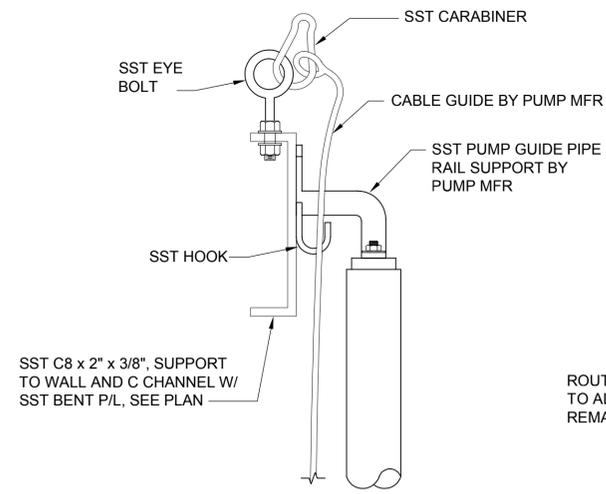


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**MANCHESTER PUMP STATIONS 45, 46, & 47 AND  
BEACH LINES REHABILITATION**

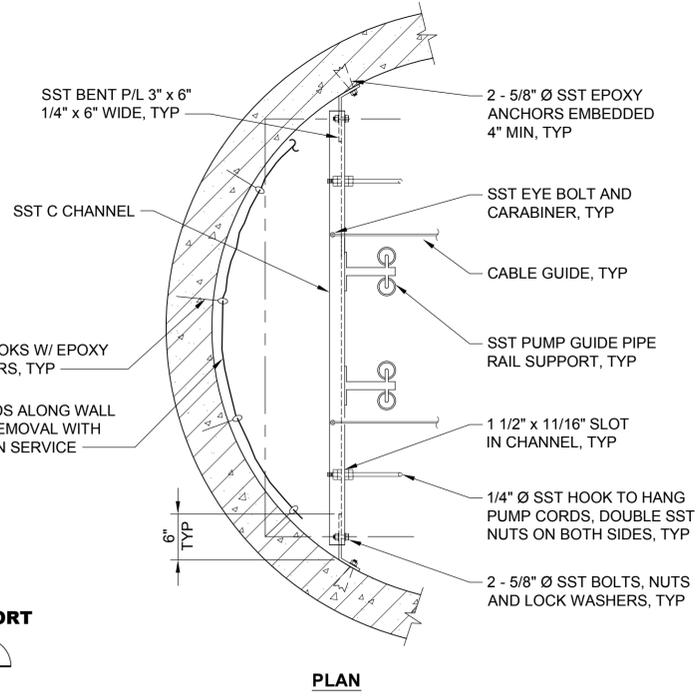
**CIVIL DETAILS - 2**

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Sheet: **8** of **73**  
File: P15-10341\_C-2  
Date: August 2016

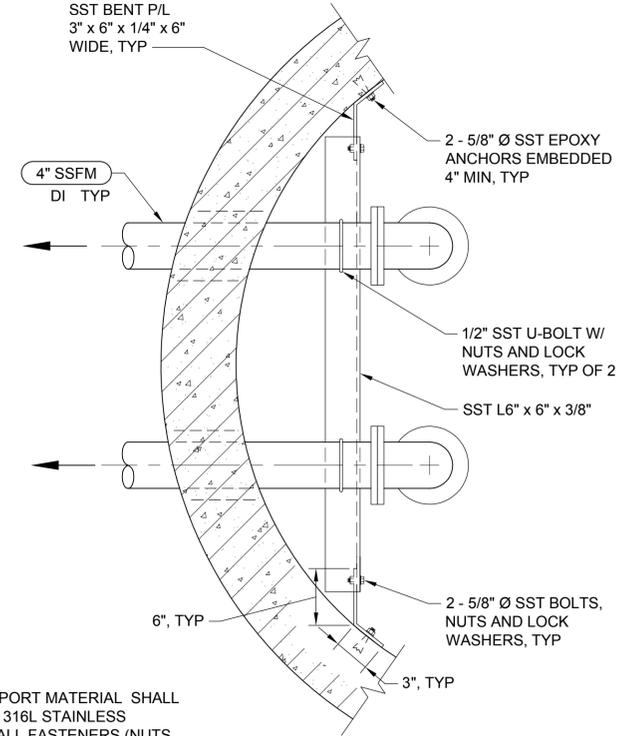


**NOTE:**  
 1. ALL SUPPORT MATERIAL SHALL BE TYPE 316L STAINLESS STEEL. ALL FASTENERS (NUTS, BOLTS, ANCHORS, WASHERS, ETC.) SHALL BE TYPE 316 OR 316L STAINLESS STEEL.

**UPPER GUIDE RAIL SUPPORT  
 DETAIL 1**  
 NTS TYP

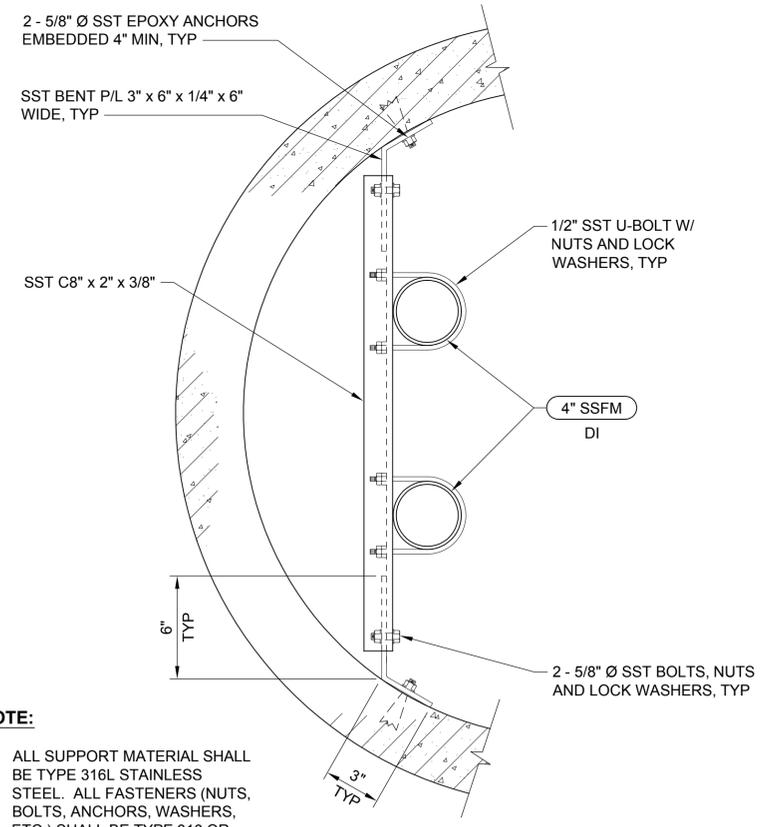


**PLAN**



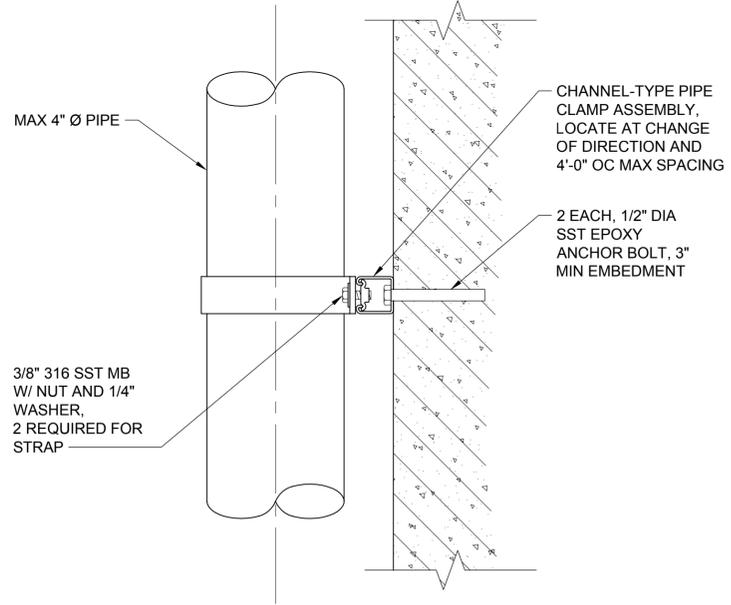
**NOTE:**  
 1. ALL SUPPORT MATERIAL SHALL BE TYPE 316L STAINLESS STEEL. ALL FASTENERS (NUTS, BOLTS, ANCHORS, WASHERS, ETC.) SHALL BE TYPE 316 OR 316L STAINLESS STEEL.

**TOP PIPE SUPPORT  
 DETAIL 2**  
 NTS TYP

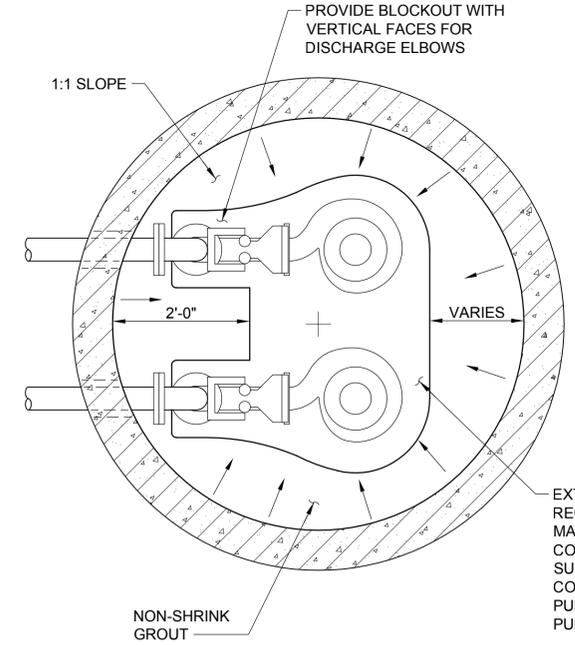


**NOTE:**  
 1. ALL SUPPORT MATERIAL SHALL BE TYPE 316L STAINLESS STEEL. ALL FASTENERS (NUTS, BOLTS, ANCHORS, WASHERS, ETC.) SHALL BE TYPE 316 OR 316L STAINLESS STEEL.

**INTERMEDIATE PIPE SUPPORT  
 DETAIL 3**  
 NTS TYP



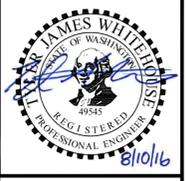
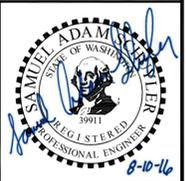
**CHANNEL-TYPE PIPE SUPPORT  
 DETAIL 4**  
 NTS TYP



**NOTE:**  
 1. FINAL CONFIGURATION OF GROUT FILLETS TO BE DETERMINED IN THE FIELD AT TIME OF CONSTRUCTION, IN ACCORDANCE WITH PUMP MFR'S RECOMMENDATIONS.  
 2. CREATE FLAT AREA IN GROUT FILLET TO INSTALL TRANSDUCER.

**WET WELL GROUT FILLET  
 DETAIL 5**  
 NTS TYP

**Call 48 Hours  
 Before You Dig**  
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 UNDERGROUND SERVICE



Path: S:\Cad\Kitsap County\15-10341 PS 45 46 47 BL Design\15-10341\_C-3 Plot date: Aug 09, 2016-02:15:24pm CAD User: acariaso  
 Xref Filename: |X|15-10341\_TB|Whitehouse|Schuyler\_Adam|Dahl|Gibson|Schuyler\_Erika|

No.	Revision	Date	By	App'd
	ISSUED FOR BID	08-2016	TJW	RAD
	BUILDING PERMIT SUBMITTAL	04-2016	TJW	RAD
	ECOLOGY SUBMITTAL	02-2016	TJW	RAD

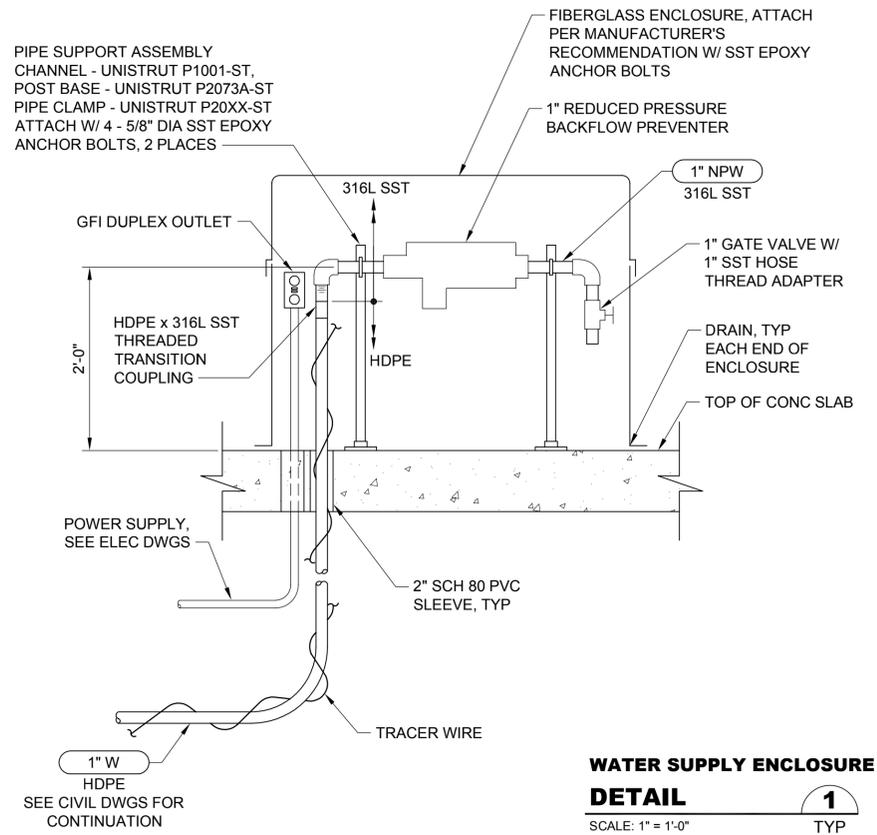
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 Seattle, Washington 98101  
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Designed: T. Whitehouse, P.E.	Scale: NTS
Drawn: A. Cariaso	One Inch at Full Scale
Checked: A. Schuyler, P.E.	If Not One Inch Scale Accordingly
Approved: R. Dorn, P.E.	

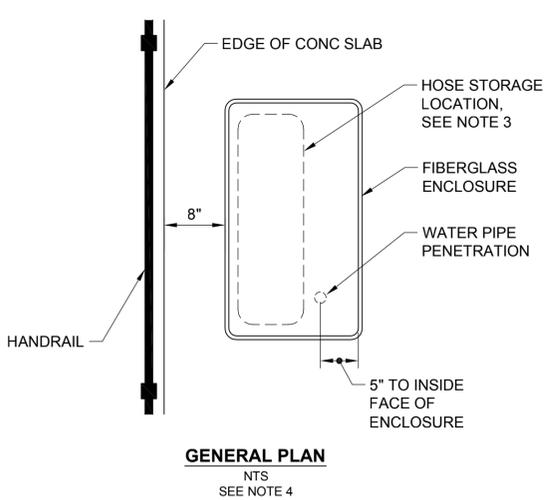
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**MANCHESTER PUMP STATIONS 45, 46, & 47 AND  
 BEACH LINES REHABILITATION**  
**CIVIL DETAILS - 3**

Drawing:	<b>C-3</b>
Sheet:	<b>9</b> of <b>73</b>
File:	P15-10341_C-3
Date:	August 2016

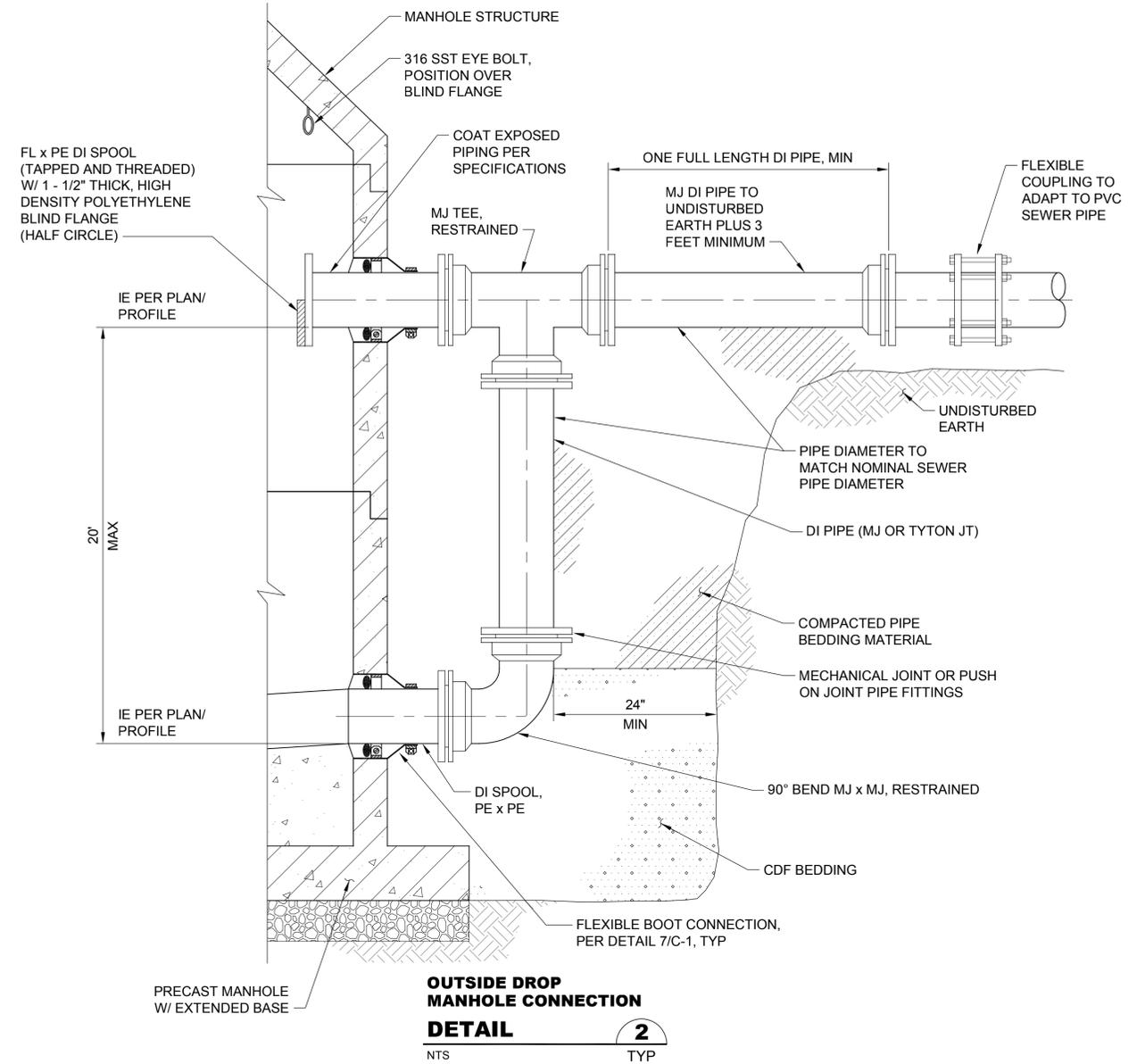


**WATER SUPPLY ENCLOSURE  
DETAIL 1**  
SCALE: 1" = 1'-0" TYP

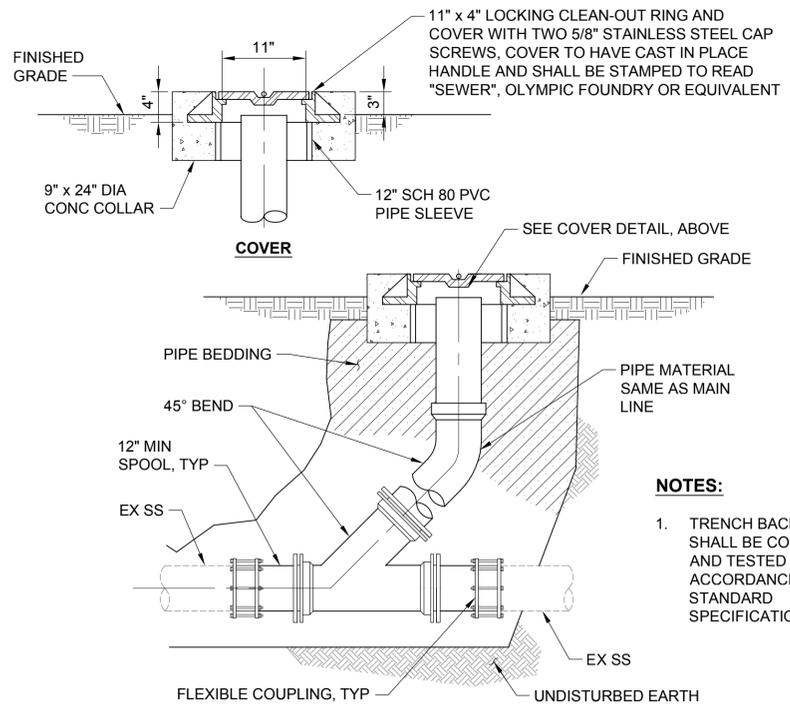


**GENERAL PLAN  
NTS  
SEE NOTE 4**

- NOTES:**
1. ALL PIPE AND FITTINGS SHALL BE TYPE 316L STAINLESS STEEL, EXCEPT AS NOTED.
  2. ATTACH SIGN TO INSIDE OF FIBERGLASS ENCLOSURE STATING "CAUTION NON-POTABLE WATER DO NOT DRINK".
  3. PROVIDE AND STORE HOSE IN FIBERGLASS ENCLOSURE.
  4. SEE CIVIL DWGS FOR ACTUAL ORIENTATION OF ENCLOSURE AND PIPING ON PUMP STATION SLAB.

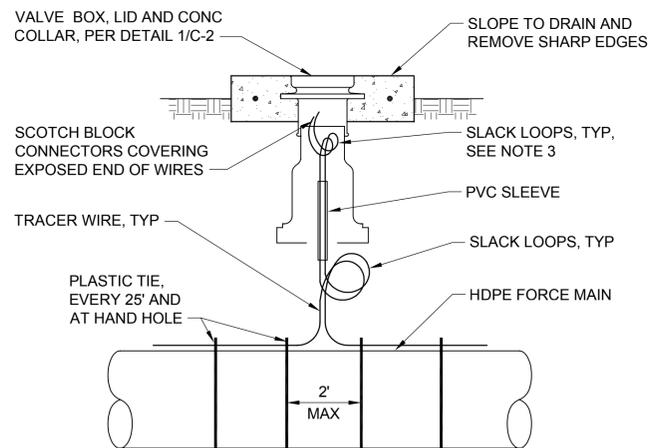


**OUTSIDE DROP  
MANHOLE CONNECTION  
DETAIL 2**  
NTS TYP



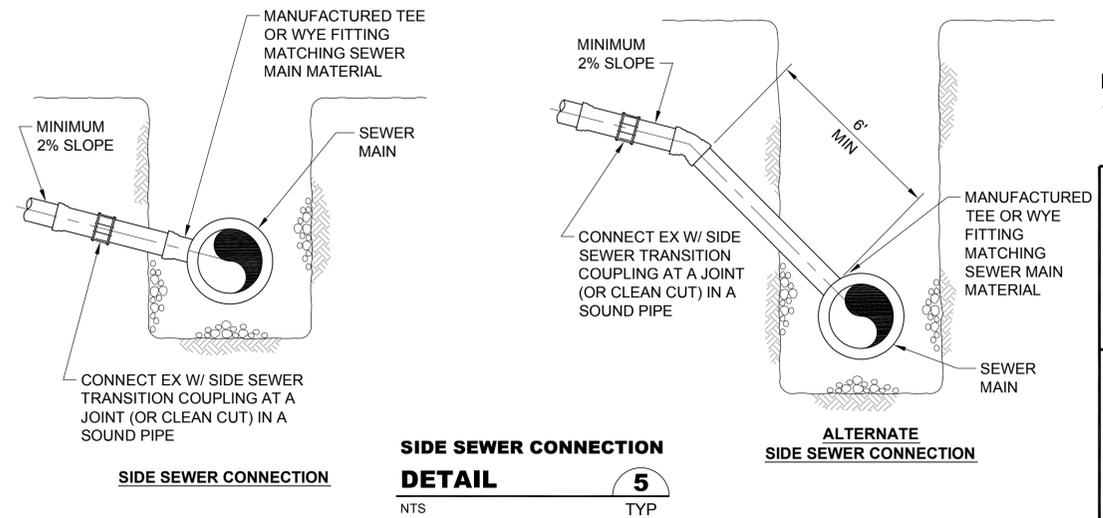
**CUT-IN CLEANOUT  
DETAIL 3**  
NTS TYP

- NOTES:**
1. TRENCH BACKFILL SHALL BE COMPACTED AND TESTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS.



- NOTES:**
- FOR ALL HDPE FORCE MAINS**
1. LOCATE HAND HOLE OVER CENTERLINE OF FORCEMAIN.
  2. NO WIRE SPLICES ALLOWED BETWEEN TRACER WIRE HAND HOLES, UNLESS OTHERWISE APPROVED BY ENGINEER.
  3. PROVIDE 24" WIRE LOOP INSIDE VALVE BOX, TYP.
  4. PROVIDE DETECTABLE WARNING TAPE OVER FORCE MAIN.
  5. PLASTIC TIE: 150 LB TENSILE STRENGTH NYLON ZIP TIE.

**TRACER WIRE AND HAND HOLE  
DETAIL 4**  
NTS TYP



**SIDE SEWER CONNECTION  
DETAIL 5**  
NTS TYP

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Path: S:\Cad\Kitsap County\15-10341 PS 45 46 47 BL Design\15-10341\_C-4\_Plot.dwg; Aug 11, 2016 02:56:21pm CAD User: psimon.  
Xref Filename: 15-10341\_TB\Whitehouse | Schuyler, Adam | Gibson | Schuyler, Erika

No.	Revision	Date	By	App'd
	ISSUED FOR BID	08-2016	TJW	RAD
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Designed: T. Whitehouse, P.E.  
Drawn: A. Carlaso  
Checked: A. Schuyler, P.E.  
Approved: R. Dorn, P.E.

Scale:  
As Shown  
One Inch at Full Scale  
If Not One Inch Scale Accordingly



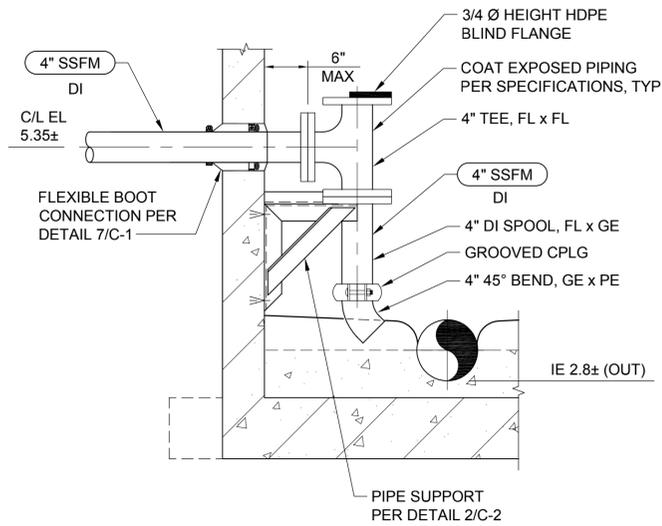
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**MANCHESTER PUMP STATIONS 45, 46, & 47 AND  
BEACH LINES REHABILITATION**

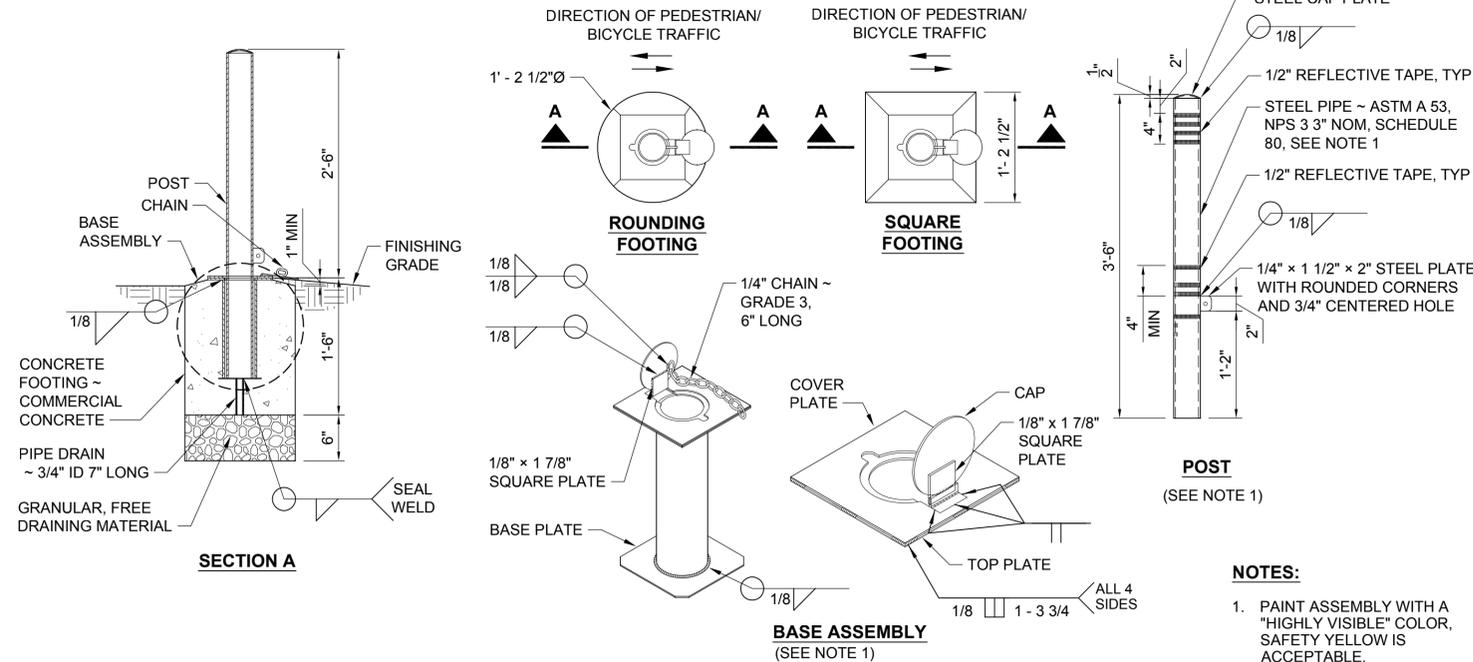
**CIVIL DETAILS - 4**

Drawing: **C-4**  
Sheet: **10** of **73**  
File: 15-10341\_C-4  
Date: August 2016

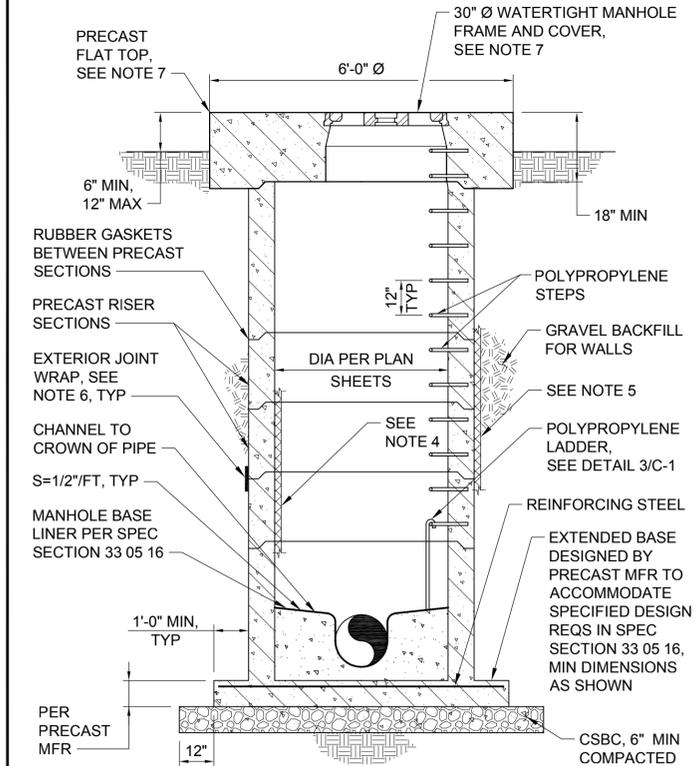
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 Xref Filename: | X 15-10341\_TB | Whitehouse | Schuyler, Adam | Dahl | Gibson | Schuyler, Erika |



**INSIDE DROP MANHOLE CONNECTION - FORCE MAIN DETAIL 1**  
 NTS C46-1

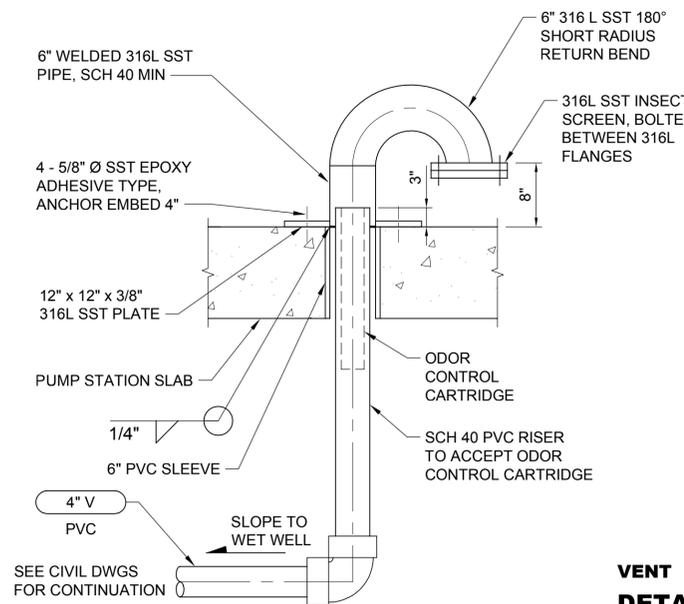


**REMOVABLE BOLLARD DETAIL 2**  
 NTS TYP  
 \*WSDOT STD PLAN H-60.10-01

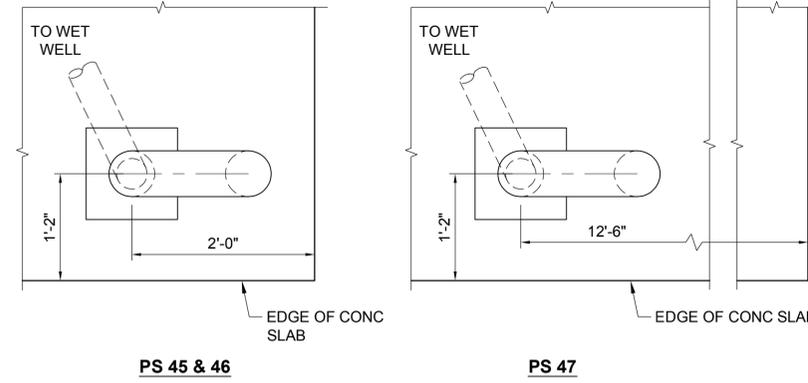


- NOTES:**
1. SEE GENERAL STRUCTURAL NOTES ON DWG S-1 FOR SOIL BEARING PRESSURE.
  2. SEAL ALL PIPE CONNECTIONS TO MANHOLE WITH FLEXIBLE BOOT CONNECTION PER DETAIL 7/C-1.
  3. PREPARE AND FIELD COAT INTERIOR CONCRETE SURFACE AS SPECIFIED.
  4. PREPARE AND FACTORY COAT EXTERIOR CONCRETE SURFACES AS SPECIFIED.
  5. WRAP EXTERIOR JOINTS AFTER INSTALLATION AS SPECIFIED.
  6. WHERE INDICATED ON THE DRAWINGS, PROVIDE STANDARD PRECAST FLAT TOP TO MATCH MANHOLE DIAMETER WITH FRAME AND COVER PER DETAIL 6/C-1.

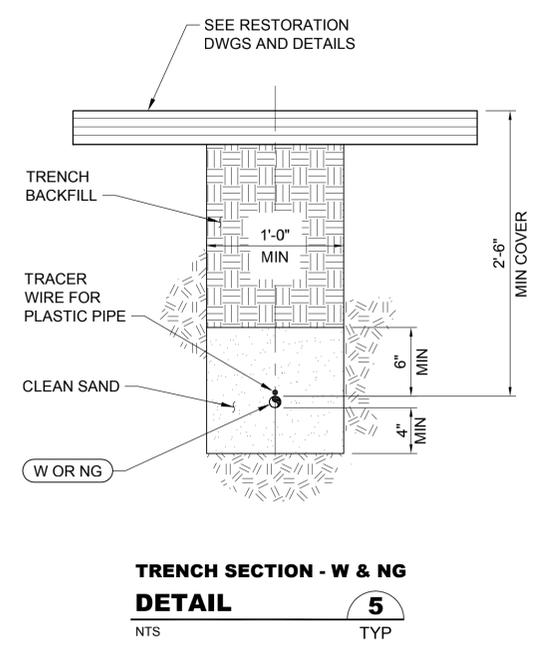
**BEACH MANHOLE DETAIL 3**  
 NTS TYP



**VENT DETAIL 4**  
 NTS TYP

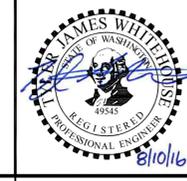


**VENT LOCATION**



**TRENCH SECTION - W & NG DETAIL 5**  
 NTS TYP

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No.	Revision	Date	By	App'd
	ISSUED FOR BID	08-2016	TJW	RAD
	BUILDING PERMIT SUBMITTAL	04-2016	TJW	RAD
	ECOLOGY SUBMITTAL	02-2016	TJW	RAD

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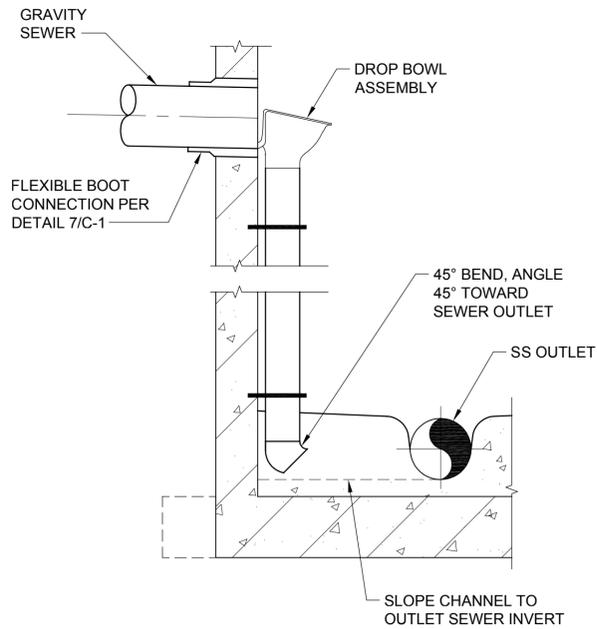
Designed: T. Whitehouse, P.E.  
 Drawn: S. Olsoe  
 Checked: A. Schuyler, P.E.  
 Approved: R. Dorn, P.E.

Scale: NTS  
 One Inch at Full Scale  
 If Not One Inch Scale Accordingly

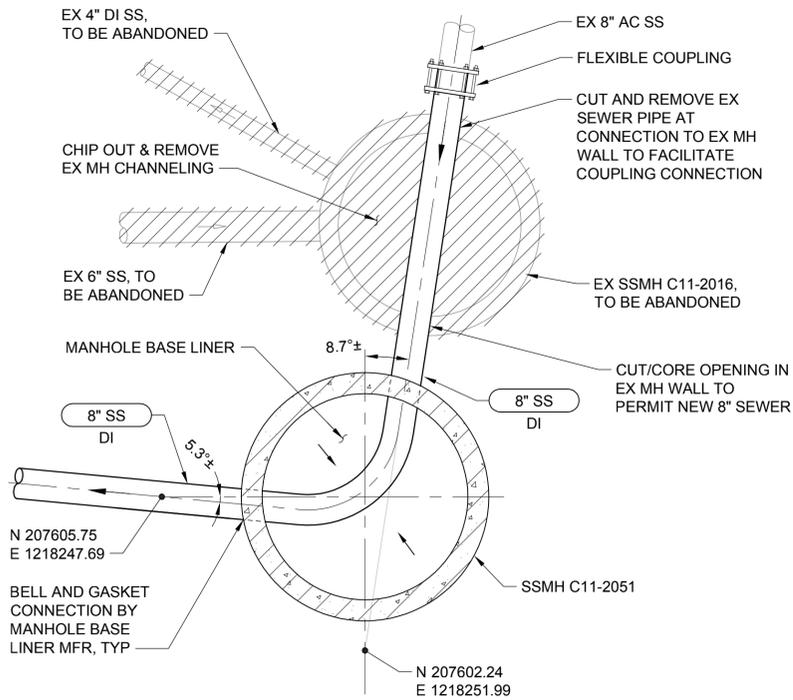
**Kitsap County Public Works**  
 614 Division Street, MS 26  
 Port Orchard, WA 98366

**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION**  
**CIVIL DETAILS - 5**

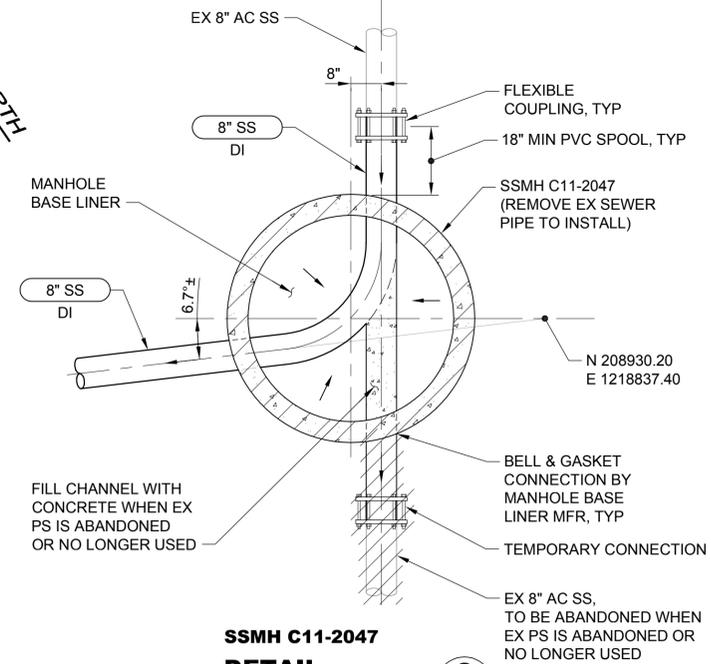
Drawing: **C-5**  
 Sheet: **11** of **73**  
 File: P15-10341\_C-5  
 Date: August 2016



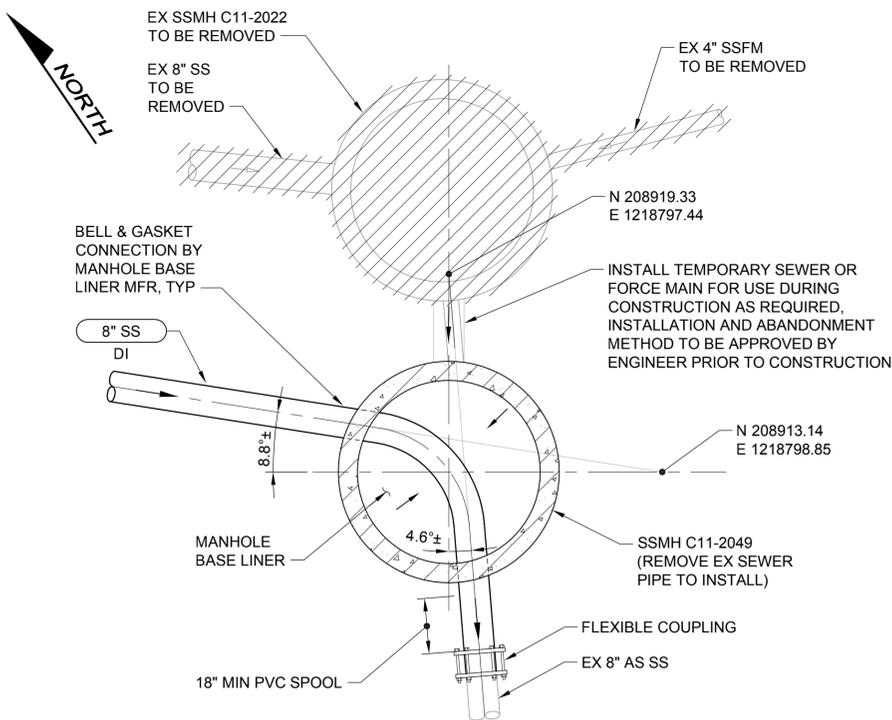
**INSIDE DROP MANHOLE CONNECTION - GRAVITY SEWER**  
**DETAIL 1**  
NTS TYP



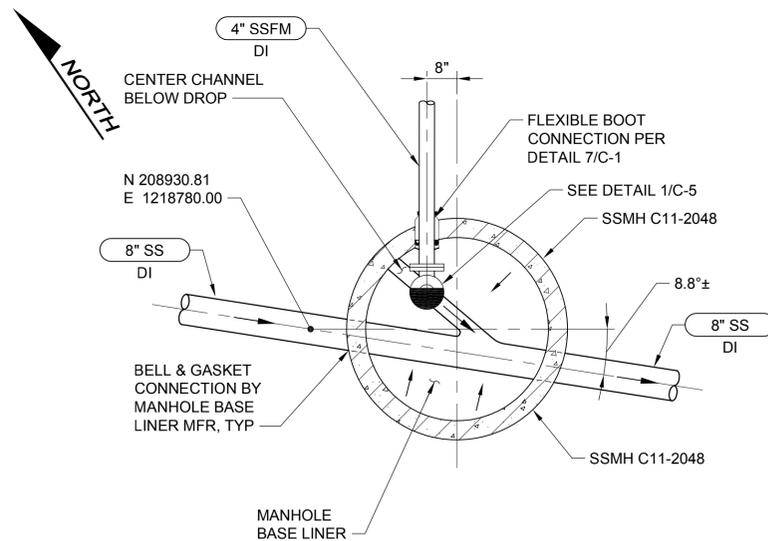
**SSMH C11-2051**  
**DETAIL 2**  
NTS C45-1



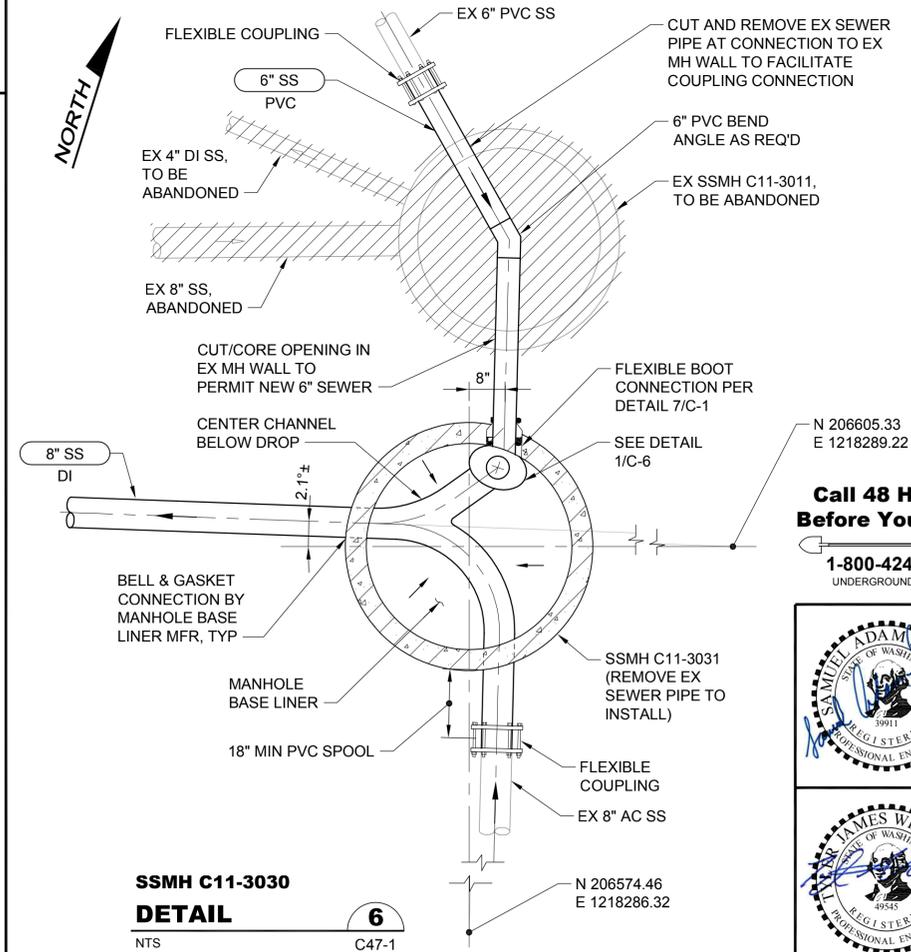
**SSMH C11-2047**  
**DETAIL 3**  
NTS C46-1



**SSMH C11-2049**  
**DETAIL 4**  
NTS C46-1



**SSMH C11-2048**  
**DETAIL 5**  
NTS C46-1



**SSMH C11-3030**  
**DETAIL 6**  
NTS C47-1

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Path: S:\CAD\Kitsap County\15-10341\_P15-45\_46\_47\_BLDesign\15-10341\_C-6\_Plot date: Aug 09, 2016-02:44:47pm CAD User: acariano  
Xref Filename: | X 15-10341\_TB | Whitehouse | Schuyler\_Adam | Dahl | Gibson | Schuyler\_Erika

No.	Revision	Date	By	App'd
	ISSUED FOR BID	08-2016	TJW	RAD
	BUILDING PERMIT SUBMITTAL	04-2016	TJW	RAD
	ECOLOGY SUBMITTAL	02-2016	TJW	RAD

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Designed: T. Whitehouse, P.E.  
Drawn: A. Cariano  
Checked: A. Schuyler, P.E.  
Approved: R. Dorn, P.E.  
Scale: NTS  
One Inch at Full Scale  
If Not One Inch Scale Accordingly

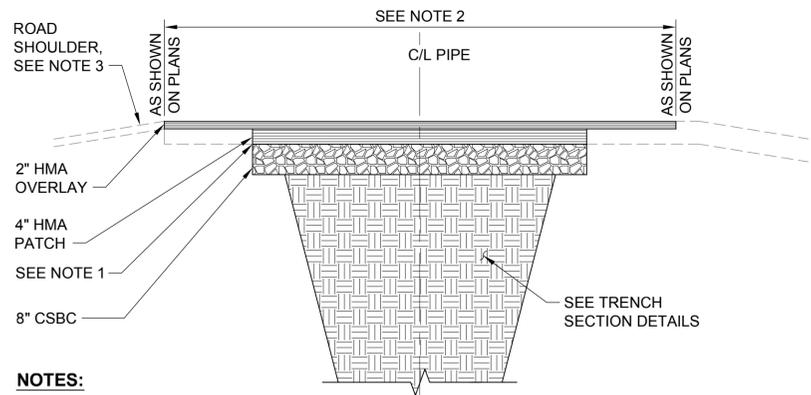
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**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION**

**CIVIL DETAILS - 6**

Drawing: **C-6**  
Sheet: **12** of **73**  
File: P15-10341\_C-6  
Date: August 2016

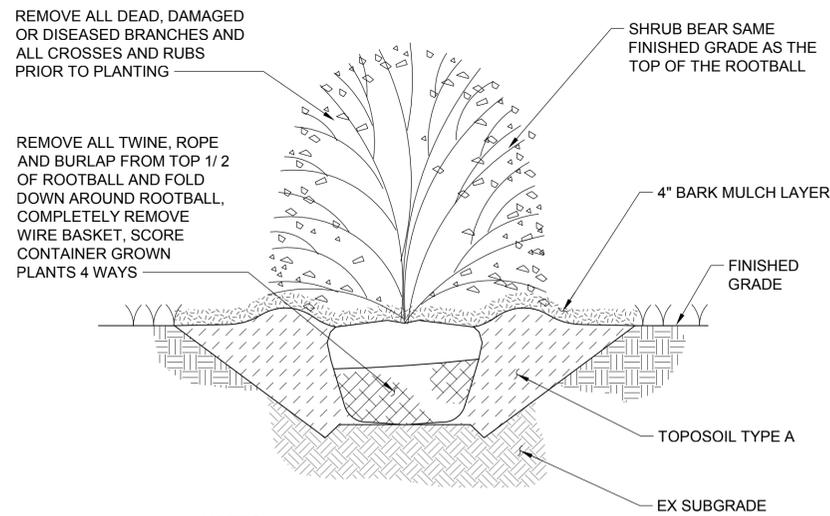
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 Xref Filename: | X:15-10341\_TB | Whitehouse | Schuyler\_Adam | Dahl | Gibson | Schuyler\_Erika |



- NOTES:**
1. SAW CUT EXISTING AC PAVEMENT 12" WIDER THAN TOP OF TRENCH. CUT SHALL BE STRAIGHT AND FULL DEPTH. REMOVE AND DISPOSE OF EXISTING AC OVER TRENCH. CLEAN, HEAT, AND TACK EDGES OF EXISTING AC WITH SEALER PRIOR TO INSTALLING NEW HMA PATCH.
  2. SAW CUT EXISTING AC PAVEMENT AT EDGE OF OVERLAY LIMITS. GRIND AND REMOVE EXISTING AC TO FACILITATE HMA OVERLAY. CUTS SHALL BE STRAIGHT AND VERTICAL. CLEAN, HEAT, AND TACK EDGES WITH SEALER. PROVIDE SMOOTH TRANSITION BETWEEN EXISTING ROADWAY AND NEW HMA OVERLAY.
  3. RESTORE DISTURBED GRAVEL SHOULDER WITH 4" OF CSTC. REMOVE EXISTING GRAVEL AS NECESSARY TO MAINTAIN GRADES.
  4. EXISTING AC MAY BE GROUND AND REUSED IN LIEU OF CSBC.
  5. GRIND TRANSITION ZONES AT LIMITS OF PAVING PERPENDICULAR TO THE CENTERLINE PER SECTION 5-04.3 (23) OF SPECIAL PROVISIONS.
  6. ALL JOINTS SHALL BE SEALED WITH A 12" WIDE STRIP OF AR 2000 ASPHALT SEALER CENTERED ON JOINT.
  7. MATCH ELEVATIONS OF EXISTING PAVEMENT, DRIVEWAYS, SHOULDERS, AND OTHER SURFACE FEATURES.
  8. RESTORE ALL DISTURBED PAVEMENT MARKINGS.

**HMA PAVEMENT PATCH & OVERLAY DETAIL**

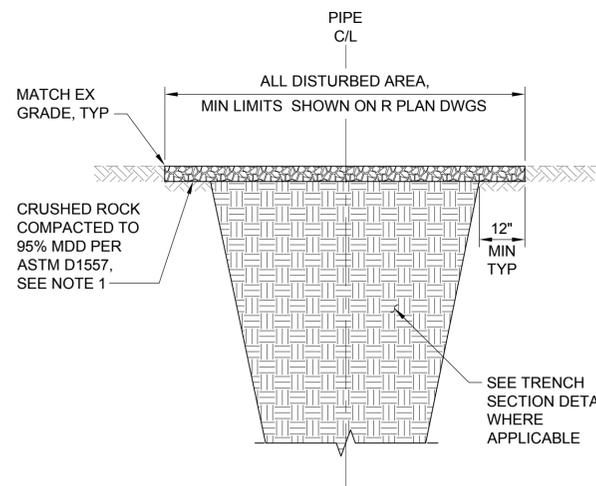
NTS TYP **1**



- NOTES:**
1. SEE RESTORATION PLAN DWGS FOR PLANT TYPE.

**PLANTING DETAIL**

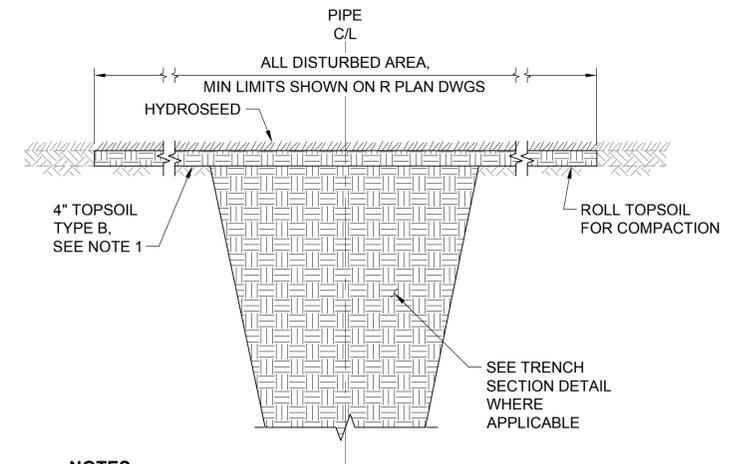
NTS TYP **4**



- NOTES:**
1. CRUSHED ROCK SIZE AND DEPTH AS NOTED ON RESTORATION PLAN DWGS.

**GRAVEL SURFACING DETAIL**

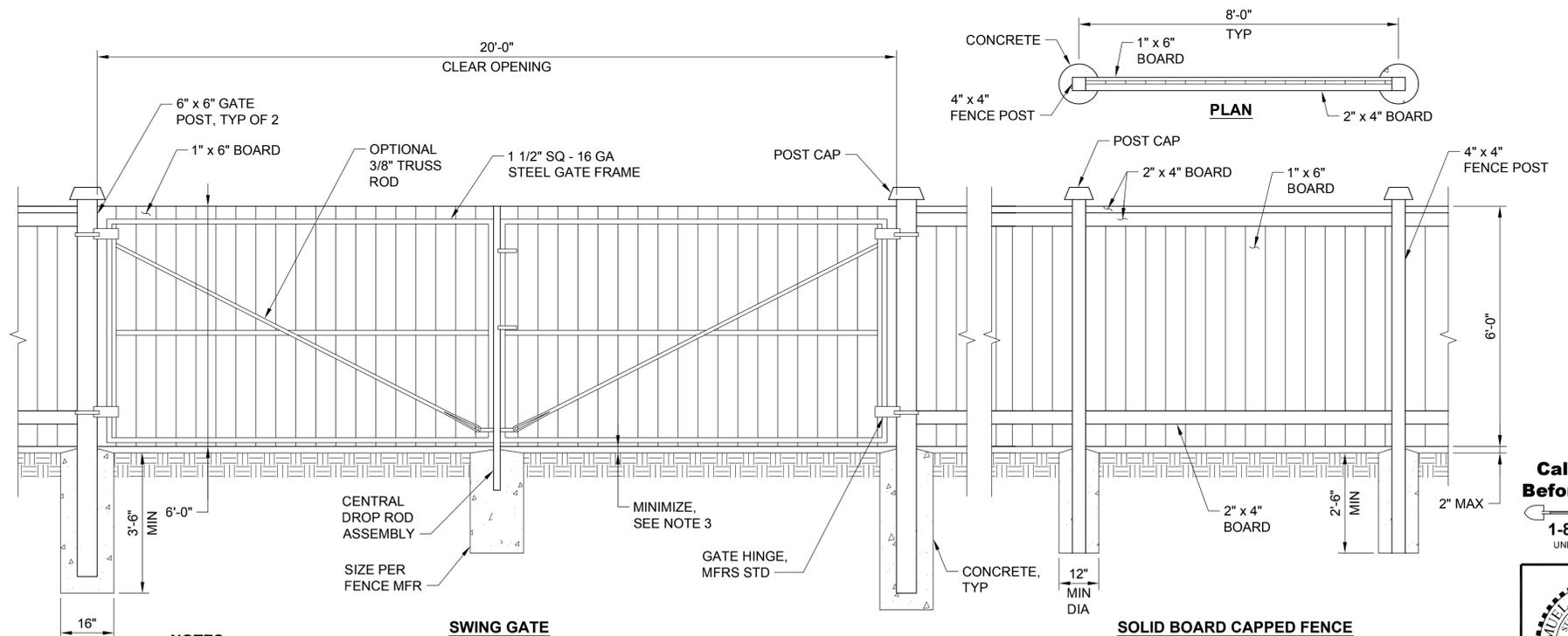
NTS TYP **2**



- NOTES:**
1. REGRADE DISTURBED AREAS TO ORIGINAL CONTOURS LESS DEPTH OF NEW TOPSOIL PRIOR TO INSTALLING NEW TOPSOIL. RESTORE ORIGINAL GRADE AND ELEVATIONS AFTER INSTALLATION OF TOPSOIL.

**HYDROSEED DETAIL**

NTS TYP **3**



- NOTES:**
1. ALL FENCE MATERIALS SHALL BE CONSTRUCTED OF CEDAR UNLESS OTHERWISE INDICATED. GATE AND FENCE POSTS SHALL BE PRESSURE TREATED.
  2. CEDAR FENCE, SWING GATE AND HARDWARE TO BE SUPPLIED AND INSTALLED BY VIKING FENCE CO, INC. OR ACCEPTED EQUAL.
  3. COORDINATE GRADING AT SWING GATE IN FIELD WITH CONSTRUCTION MANAGER PRIOR TO INSTALLATION TO PERMIT UNOBSTRUCTED SWING MOTION.

**CEDAR FENCE AND SWING GATE DETAIL**

NTS TYP **5**

No.	Revision	Date	By	App'd
	ISSUED FOR BID	08-2016	TJW	RAD
	BUILDING PERMIT SUBMITTAL	04-2016	TJW	RAD
	ECOLOGY SUBMITTAL	02-2016	TJW	RAD

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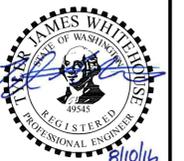
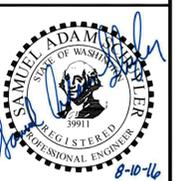
Designed: T. Whitehouse, P.E.	Scale: NTS
Drawn: S. Olsoe	One Inch at Full Scale
Checked: A. Schuyler, P.E.	If Not One Inch Scale Accordingly
Approved: R. Dorn, P.E.	

**Kitsap County Public Works**  
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**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION**

**RESTORATION DETAILS**

**Call 48 Hours Before You Dig**  
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Drawing: <b>R-1</b>
Sheet: <b>13</b> of <b>73</b>
File: P15-10341_R-1
Date: August 2016

**GENERAL STRUCTURAL NOTES**

**A. GENERAL**

- SCOPE  
THE GENERAL STRUCTURAL NOTES AND TYPICAL STRUCTURAL DETAILS ARE GENERAL AND APPLY TO THE ENTIRE PROJECT EXCEPT WHERE THERE ARE SPECIFIC INDICATIONS OR MODIFICATIONS TO THE CONTRARY.
- APPLICABLE SPECIFICATIONS AND CODES  
ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE BUILDING CODE, (SEE BELOW). THE PROVISIONS OF THE BUILDING CODE SHALL SUPERSEDE THE PLANS AND SPECIFICATIONS EXCEPT WHERE THE PLANS AND SPECIFICATIONS ARE MORE RESTRICTIVE.  
  
IN ADDITION TO THE BUILDING CODE, CONSTRUCTION SHALL CONFORM TO OTHER STANDARDS AND CODES AS REFERENCED ON THE DRAWINGS OR IN THE SPECIFICATIONS.
- DIMENSIONS  
STRUCTURAL DIMENSIONS CONTROLLED BY OR RELATED TO MECHANICAL AND ELECTRICAL EQUIPMENT SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.  
  
REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR SIZE AND LOCATION OF ALL OPENINGS FOR DUCTS, PIPING, CONDUITS, ETC., NOT SHOWN. ALL OPENINGS IN STRUCTURAL MEMBERS SHALL BE APPROVED BY THE STRUCTURAL ENGINEER. REFER TO CIVIL DRAWINGS AND SPECIFICATIONS FOR SUBGRADE INFORMATION AND CRITERIA. VERIFY ALL DIMENSIONS WITH CIVIL, MECHANICAL, AND ELECTRICAL DRAWINGS.
- PROVISIONS FOR EQUIPMENT  
MECHANICAL AND ELECTRICAL EQUIPMENT SUPPORTS, ANCHORAGES, OPENINGS, PIPE SLEEVES AND PENETRATIONS, RECESSES AND REVEALS NOT SHOWN ON THE STRUCTURAL DRAWINGS, BUT REQUIRED BY OTHER CONTRACT DRAWINGS SHALL BE PROVIDED FOR PRIOR TO CASTING CONCRETE.
- CONSTRUCTION LOADS  
STRUCTURES HAVE BEEN DESIGNED FOR OPERATIONAL LOADS ON THE COMPLETED STRUCTURES. DURING CONSTRUCTION, THE STRUCTURES SHALL BE PROTECTED BY BRACING AND SUPPORTS WHEREVER EXCESSIVE CONSTRUCTION LOADS MAY OCCUR. THE CONTRACTOR SHALL DETERMINE WHEN SUCH BRACING IS NECESSARY.

**B. STRUCTURAL DESIGN DATA**

- GENERAL
  - BUILDING CODE: 2012 INTERNATIONAL BUILDING CODE WITH KITSAP COUNTY AMENDMENTS AND WASHINGTON STATE AMENDMENTS (WAC 51-50) AND BY REFERENCE ASCE 7-10 MINIMUM DESIGN LOADS FOR AND BUILDINGS AND OTHER STRUCTURES.
  - LOCATION: N 47.555°, W 122.545°
  - RISK CATEGORY IV
- DESIGN LOADS
  - DEAD LOAD: BUILDING STRUCTURE: ACTUAL WEIGHT  
  
LIVE LOAD: PUMP STATION TOP SLAB: HS-20 OR 250 PSF WHICHEVER IS GREATER
  - SNOW LOAD:  
  
GROUND SNOW LOAD Pg: 30 PSF  
FLAT-ROOF SNOW LOAD Pf: 31 PSF  
SLOPING ROOF SNOW LOAD, PS: 22 PSF  
SNOW EXPOSURE FACTOR Ce: 1.0  
SNOW LOAD IMPORTANCE FACTOR: Is = 1.1  
THERMAL FACTOR Ct: 1.2
  - WIND DESIGN DATA  
BASIC WIND SPEED (3 SECOND GUST): 115 MPH  
WIND IMPORTANCE FACTOR: Iw = 1.15  
WIND EXPOSURE: C ALL DIRECTIONS  
INTERNAL PRESSURE COEFFICIENT: OPEN STRUCTURE. GCpi = 0.00

**B. STRUCTURAL DESIGN DATA (CONTINUED)**

- EARTHQUAKE DESIGN DATA:  
  
SEISMIC IMPORTANCE FACTOR: Ie = 1.50  
MAPPED SPECTRAL ACCELERATIONS: Ss = 1.59 S1 = 0.61  
SITE CLASS: C  
SPECTRAL RESPONSE COEFFICIENTS: SDS = 1.06 SD1 = 0.53  
SEISMIC DESIGN CATEGORY: D  
BASIC FORCE RESISTING SYSTEM: CONCRETE SHEARWALL  
SEISMIC RESPONSE COEFFICIENT:  
RESPONSE MODIFICATION FACTOR: 5.0  
ANALYSIS PROCEDURE: EQUIVALENT STATIC FORCE PROCEDURE
- SOILS DATA:  
  
SOILS EXPLORATION INFORMATION IS CONTAINED IN GEOTECHNICAL REPORT MANCHESTER PUMP STATION Nos. 45, 46, 47 UPGRADES DESIGN KITSAP COUNTY LANDAU ASSOCIATES 07/28/2015  
  
REST EARTH PRESSURES: 95 PCF EQUIV FLUID  
TRAFFIC SURCHARGE: 100 PSF  
PASSIVE EARTH PRESSURE: 300 PCF EQUIV FLUID  
SOIL BEARING PRESSURE: 2 KSF, AND MAY BE INCREASED BY ONE THIRD FOR SEISMIC AND WIND LOADS  
  
FROST DEPTH: 24 INCHES  
SLIDING FRICTION COEFFICIENT: 0.35  
SUBGRADE MODULUS: 138 KCF  
MAXIMUM GROUND WATER ELEVATION: AT SLAB LEVEL  
ACTIVE EARTH PRESSURE: 35 PCF EQUIV FLUID

**C. CONCRETE**

- SPECIFICATION  
SEE SPECIFICATIONS FOR COMPLETE REQUIREMENTS FOR MIX DESIGNS, FORMING, REINFORCEMENT, PLACING, CURING, AND FINISHING.
- DESIGN STRESSES
  - STRUCTURAL CONCRETE: 4500 PSI @ 28 DAYS
  - PLAIN CONCRETE: 3000 PSI AT 28 DAYS
- ALL CONCRETE SHALL CONTAIN AN ACCEPTABLE ADMIXTURE TO PRODUCE 4- TO 6- PERCENT ENTRAINED AIR.
- REINFORCING STEEL SHALL BE ASTM A615 DEFORMED BARS, GRADE 60. EPOXY COATED.
- BAR SPLICES  
SPLICES OF REINFORCING STEEL BARS SHALL BE IN ACCORDANCE WITH THE BUILDING CODE AND SHALL BE CLASS B, UNLESS OTHERWISE NOTED. THE LENGTH OF LAP SPLICE OF BARS OF DIFFERENT DIAMETER SHALL BE BASED ON THE SMALLER DIAMETER.
- STANDARD HOOKS  
BARS ENDING IN RIGHT ANGLE BENDS OR HOOKS SHALL CONFORM TO THE REQUIREMENTS OF THE BUILDING CODE.
- SLOPING SLABS  
MONOLITHIC SLABS WITH TOPS THAT ARE SLOPED SHALL HAVE BOTTOM SLOPED THE SAME AMOUNT, MAINTAINING A UNIFORM SLAB THICKNESS, UNLESS OTHERWISE NOTED.
- CHAMFERS  
EXCEPT AS OTHERWISE NOTED, EXPOSED CONCRETE CORNERS AND EDGES SHALL HAVE 3/4" CHAMFERS. RE-ENTRANT CORNERS SHALL NOT HAVE FILLETS.
- CONSTRUCTION JOINTS  
ENGINEER APPROVAL IS REQUIRED FOR ANY CONSTRUCTION JOINTS NOT SHOWN ON THE DRAWINGS. CONSTRUCTION JOINTS SHALL BE DETAILED AS SHOWN ON THE DRAWINGS.
- ANCHORS  
USE RESIN-BONDED ANCHORS, HILTI HIT RE-500 OR SIMPSON SET/ET.

**D. NON-SHRINK GROUT**

GROUT FOR BASE PLATES, EQUIPMENT ANCHORAGE AND GENERAL PURPOSES SHALL BE APPROVED, NON-SHRINK CEMENTITIOUS GROUT CONTAINING NATURAL AGGREGATES DELIVERED TO THE JOB SITE IN FACTORY PREPACKAGED CONTAINERS REQUIRING ONLY THE ADDITION OF WATER, ASTM C1107 TYPE B OR C.

**E. STEEL**

- CODE AND SPECIFICATIONS  
STEEL CONSTRUCTION SHALL CONFORM TO THE SPECIFICATIONS AND STANDARDS AS CONTAINED IN THE 9TH EDITION OF THE AISC MANUAL OF STEEL CONSTRUCTION.
- MATERIAL  
STRUCTURAL SHAPES, BARS, PLATES, AND SHEETS SHALL BE STEEL MEETING ASTM A36 SPECIFICATIONS. ANCHOR BOLTS SHALL CONFORM TO ASTM F593, 316 STAINLESS STEEL. PIPE COLUMNS SHALL BE ASTM A53 GRADE B STANDARD WEIGHT. TUBE SECTIONS SHALL BE ASTM A500 GRADE B. WIDE FLANGE SHAPES MAY BE ASTM A572 GRADE B OR ASTM A992.
- WELDING  
WELDING SHALL CONFORM TO AWS D1.1 CODE FOR ARC AND GAS WELDING IN BUILDING CONSTRUCTION. WELD FILLER SHALL BE 70FSI LOW HYDROGEN GROUP. WELDING SHALL BE CONDUCTED BY WELDERS CERTIFIED BY THE AWS. MINIMUM FILLET WELD SHALL BE 3/16".
- BOLTS  
BOLTS SHALL CONFORM TO ASTM F593, 316 STAINLESS STEEL.

**I. FOUNDATION PREPARATION**

FOUNDATIONS, UNLESS NOTED OTHERWISE IN THE GEOTECHNICAL REPORT, SHALL BEAR ON UNDISTURBED, DENSE ALLUVIAL SOIL OR COMPACTED BACKFILL IN ACCORDANCE WITH THE SPECIFICATIONS. IF UNDISTURBED, DENSE ALLUVIAL SOIL IS NOT FOUND AT THE BOTTOM OF THE FOOTING ELEVATION. WEAK MATERIAL SHALL BE REMOVED AND REPLACED WITH COMPACTED BACKFILL. PROVIDE GRADED CRUSHED OR NATURAL ROCK BASE COURSE BENEATH CONCRETE SLABS OR FOOTINGS WHERE INDICATED.

BACKFILL SHALL BE COMPACTED TO 95% OF MAXIMUM DENSITY USING ASTM D1557.

**J. SPECIAL INSPECTION**

IN ADDITION TO THE INSPECTIONS REQUIRED BY SECTION 1701 OF THE IBC, SPECIAL INSPECTIONS SHALL BE PROVIDED DURING CONSTRUCTION OF THE FOLLOWING WORK:

- ANCHOR BOLTS: INSTALLED IN CONCRETE OR MASONRY PRIOR TO AND DURING THE PLACEMENT OF CONCRETE AROUND BOLTS.
- ALL CONCRETE: SHALL BE INSPECTED IN ACCORDANCE WITH REQUIREMENTS OF IBC 2012 TABLE 1705.3.
- REINFORCING STEEL: ALL PLACEMENT SHALL BE INSPECTED.

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No.	Revision	Date	By	App'd
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Designed: K. Dahl, P.E., S.E.	Scale: None
Drawn: M. Caldwell	
Checked: A. Schuyler, P.E.	One Inch at Full Scale If Not One Inch Scale Accordingly
Approved: R. Dorn, P.E.	



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**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION**

**GENERAL STRUCTURAL NOTES**

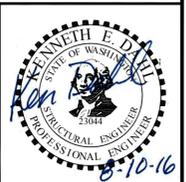
Drawing: <b>S-1</b>
Sheet: <b>14</b> of <b>73</b>
File: P15-10341_S-1
Date: August 2016

**STRUCTURAL ABBREVIATIONS**

@	AT			STL	STEEL
AB	ANCHOR BOLT	GA	GAGE	STR	STRUCTURAL
ACI	AMERICAN CONCRETE INSTITUTE	GAL	GALLON		
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION	GALV	GALVANIZED	T&B	TOP AND BOTTOM
AITC	AMERICAN INSTITUTE OF TIMBER CONSTRUCTION	GLULAM	GLUE LAMINATED BEAM	TEMP	TEMPORARY
AL	ALUMINUM	HORIZ, H	HORIZONTAL	TOC	TOP OF CONCRETE
ALT	ALTERNATE	HT	HEIGHT	TOF	TOP OF FOOTING
ANSI	AMERICAN NATIONAL STANDARD INSTITUTE	IBC	INTERNATIONAL BUILDING CODE	TOG	TOP OF GRATE
APPROX	APPROXIMATE	ID	INSIDE DIAMETER	TOS	TOP OF STEEL, TOP OF SLAB
ARCH	ARCHITECTURAL	IE	INVERT ELEVATION	TOW	TOP OF WALL
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS	IF	INSIDE FACE	TPI	TRUSS PLATE INSTITUTE
AWS	AMERICAN WELDING SOCIETY	IN or "	INCH	TRANS	TRANSVERSE
		IE	INVERT	TYP	TYPICAL
				UNO	UNLESS NOTED OTHERWISE
BLDG	BUILDING	JST	JOIST	VAR	VARIES
BM	BEAM	JT	JOINT	VERT	VERTICAL
BOT	BOTTOM	K	KIP	W/	WITH
BP	BASE PLATE			W/O	WITHOUT
BR	BRICK	L	LENGTH or METAL ANGLE	WHS	WELDED HEADED STUD
BRG	BEARING	LBS	POUNDS	WP	WORK POINT
		LF	LINEAR FEET	WSTP	WATER STOP
CB	CORNER BAR	LONGIT	LONGITUDINAL	WWR	WELDED WIRE REINFORCEMENT
CC	CENTER TO CENTER				
CF	CUBIC FEET	MAX	MAXIMUM		
CFS	COLD FORMED STEEL	MECH	MECHANICAL		
CIP	CAST-IN-PLACE	MFR	MANUFACTURER		
CJ	CONTRACTION JOINT	MIN	MINIMUM		
C/L	CENTER LINE	MISC	MISCELLANEOUS		
CLR	CLEARANCE, CLEAR	MO	MASONRY OPENING		
CLSM	CONTROLLED LOW STRENGTH MATERIAL				
CNR	CORNER	N/A	NOT APPLICABLE		
CMU	CONCRETE MASONRY UNIT	NIC	NOT IN CONTRACT		
COL	COLUMN	NO. or #	NUMBER		
CONC	CONCRETE	NOM	NOMINAL		
CONN	CONNECTION	NS	NEAR SIDE		
CONT	CONTINUOUS	NTS	NOT TO SCALE		
CPLG	COUPLING				
		OC	ON CENTER		
DBA	DEFORMED BAR ANCHOR	OD	OUTSIDE DIAMETER		
DEG or °	DEGREES	OF	OUTSIDE FACE		
DI	DUCTILE IRON				
DIA	DIAMETER	PC	PRECAST		
DWG	DRAWING	PCF	POUNDS PER CUBIC FOOT		
		PERF	PERFORATED		
EA	EACH	PJF	PERFORMED JOINT FILLER		
EF	EACH FACE	PL	PLATE		
EJ	EXPANSION JOINT	PS	PRESTRESSING TENDON		
EL	ELEVATION	PSF	POUNDS PER SQUARE FOOT		
ELEC	ELECTRICAL	PSI	POUNDS PER SQUARE INCH		
EL	ELBOW	PVC	POLYVINYL CHLORIDE		
EMBED	EMBEDMENT	R	RADIUS		
EQ	EQUAL	RC	REINFORCED CONCRETE		
ES	EACH SIDE	RCP	REINFORCED CONCRETE PIPE		
EW	EACH WAY	RED	REDUCER		
EXIST	EXISTING	REINF	REINFORCING		
		RO	ROUGH OPENING		
FAB	FABRICATION	SL	SLOPE		
FB	FLAT BAR	SOG	SLAB ON GRADE		
FIN	FINISH	SP	SPACE		
FF	FINISHED FLOOR	SQ	SQUARE		
FLR	FLOOR	SQ IN	SQUARE INCH		
FS	FAR SIDE	SSTL	STAINLESS STEEL		
FT or '	FOOT or FEET	STIR	STIRRUP		
FTG	FOOTING	STD	STANDARD		

Path: S:\Cad\Kitsap County\15-10341\_PS\_45\_46\_47\_BLDG\Design\15-10341\_S-2\_Plot.dwg; Plot date: Aug 09, 2016-02:34:11pm; CAD User: acarriaso; Xref Filename: |X:15-10341\_TB|Whitehouse|Schuyler\_Adam|Dahl|Gibson|Schuyler\_Erika|

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	BUILDING PERMIT SUBMITTAL	04-2016	TJW	RAD
	ECOLOGY SUBMITTAL	02-2016	TJW	RAD



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Designed: K. Dahl, P.E., S.E.
Drawn: M. Caldwell
Checked: A. Schuyler, P.E.
Approved: R. Dorn, P.E.

Scale:  
 None  
 One Inch at Full Scale  
 If Not One Inch Scale Accordingly

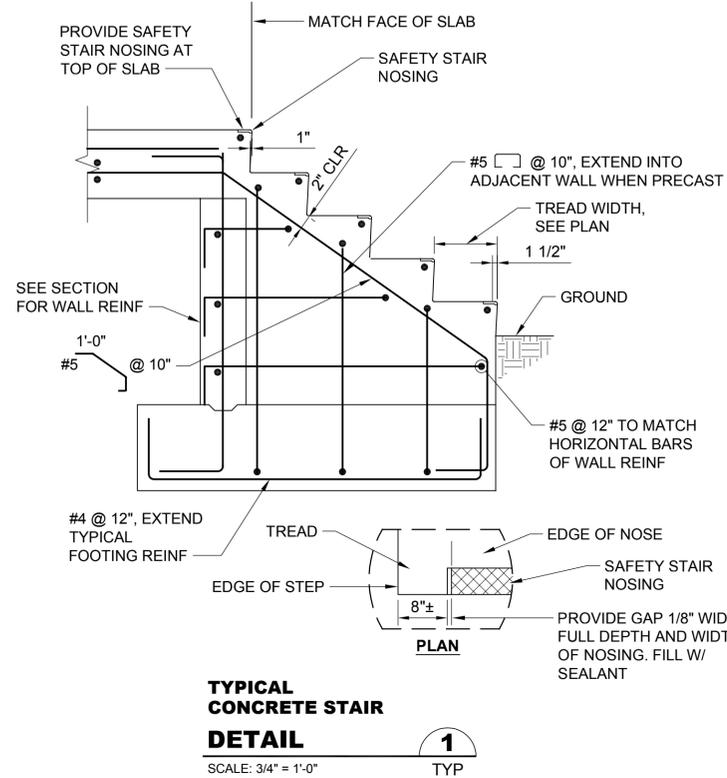


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**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION**  
**STRUCTURAL ABBREVIATIONS**

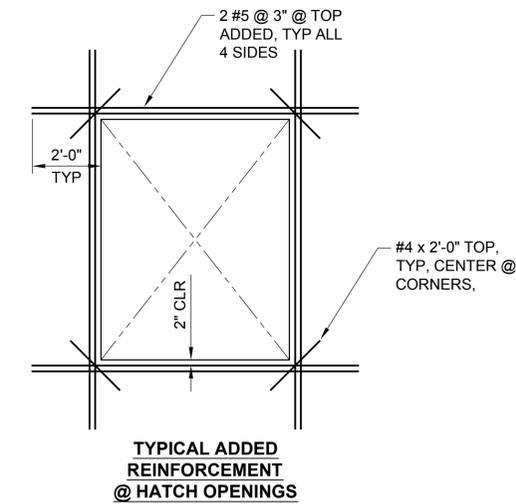
Drawing: <b>S-2</b>
Sheet: <b>15</b> of <b>73</b>
File: P15-10341_S-2
Date: August 2016

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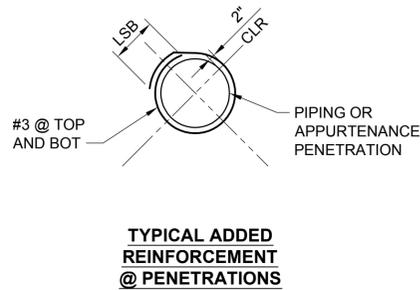


**TYPICAL CONCRETE STAIR DETAIL**

SCALE: 3/4" = 1'-0"



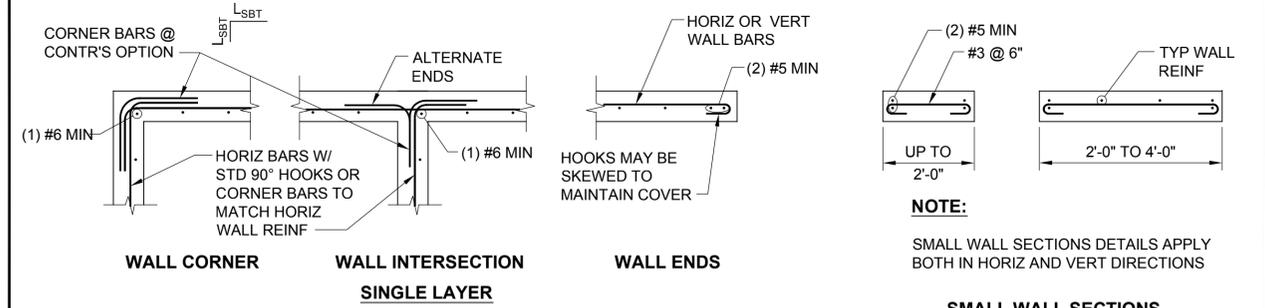
**TYPICAL ADDED REINFORCEMENT @ HATCH OPENINGS**



**TYPICAL ADDED REINFORCEMENT @ PENETRATIONS**

**TYPICAL OPENING DETAIL**

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



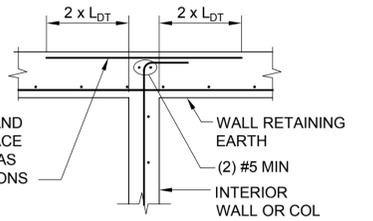
**CONCRETE WALL REINFORCING DETAIL**

NTS

TYP

- NOTE:**
- LAP WALL REINFORCING AT SPLICES  $L_{SB(G)}$ , SEE NOTE 4.
  - ALL VERTICAL REINFORCING IN CONCRETE WALLS SHALL BE CONTINUOUS FROM STRUCTURAL FLOOR TO STRUCTURAL FLOOR, OR FROM FOOTING TO FIRST STRUCTURAL FLOOR ABOVE, UNLESS NOTED OTHERWISE.
  - START HORIZONTAL AND VERTICAL BARS 1 INCH CLEAR OF EDGE OF OPENINGS. SPACE REINFORCING BARS AT EQUAL SPACES NOT TO EXCEED REQUIRED SPACING.
  - REFER TO 3/S-3 FOR VALUES OF  $L_D$ ,  $L_{SB}$ , AND  $L_{SBG}$ . LENGTHS SHOWN AS  $L_{SB(G)}$  SHALL BE EITHER  $L_{SB}$  OR  $L_{SBT}$  DEPENDING ON BAR SPACING, SEE 3/S-3.

**SMALL WALL SECTIONS**



**WALL INTERSECTION AT RETAINING WALL**

**NOTES:**

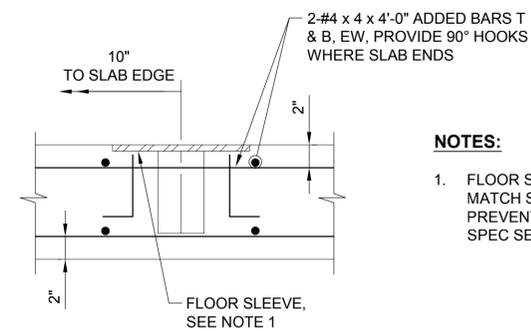
- LENGTHS EXPRESSED IN INCHES.
- LENGTHS APPLICABLE FOR  $f'_c = 4500$  psi, NORMAL WEIGHT CONCRETE ONLY, AND REINFORCEMENT WITH  $f_y = 60,000$  PSI
- $L_D$  TENSION DEVELOPMENT LENGTH, BARS OTHER THAN TOP BARS  
 $L_{DT}$  TENSION DEVELOPMENT LENGTH, TOP BARS (SEE NOTE 4)  
 $L_{SB}$  CLASS B TENSION SPLICE, BAR SPACING  
 $L_{SBT}$  CLASS B TENSION SPLICE, TOP BARS (SEE NOTE 4)  
 $L_B$  COMPRESSION DEVELOPMENT LENGTH, BOTTOM BAR OR DOWEL
- TOP BARS ARE HORIZONTAL BARS WITH MORE THAN 12 INCHES OF CONCRETE CAST BELOW THE BARS.
- FOR EPOXY COATED BARS, INCREASE ALL LENGTHS 50 PERCENT.
- USE OF THIS CHART IS RESTRICTED TO BARS WITH CONCRETE COVER OF AT LEAST ONE BAR DIAMETER AND CLEAR SPACE BETWEEN BARS OF AT LEAST TWO BAR DIMENSIONS. FOR OTHER SITUATIONS, SPLICE LENGTHS SHALL BE INCREASED BY 50%, EXCEPT FOR  $L_B$ .

BAR SIZE	$L_D$	$L_{DT}$	$L_{SB}$	$L_{SBT}$	$L_B$
3	14	18	18	24	8
4	19	25	25	32	10
5	24	31	31	40	12
6	28	37	37	48	14
7	42	54	54	70	17
8	47	62	62	80	19
9	54	70	70	90	22
10	60	78	78	102	24
11	67	87	87	113	26

**CONCRETE REINFORCING BAR LAP SLICE AND DEVELOPMENT LENGTHS DETAIL**

NTS

TYP



**DETAIL 4**

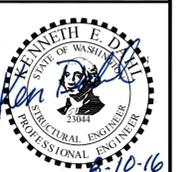
SCALE: 1 1/2" = 1'-0"

**NOTES:**

- FLOOR SLEEVES SHALL MATCH SPECIFIED FALL PREVENTION SYSTEM, SEE SPEC SECTION 41 67 00.

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Drawing: **S-3**  
Sheet: **16** of **73**  
File: P15-10341\_S-3  
Date: August 2016

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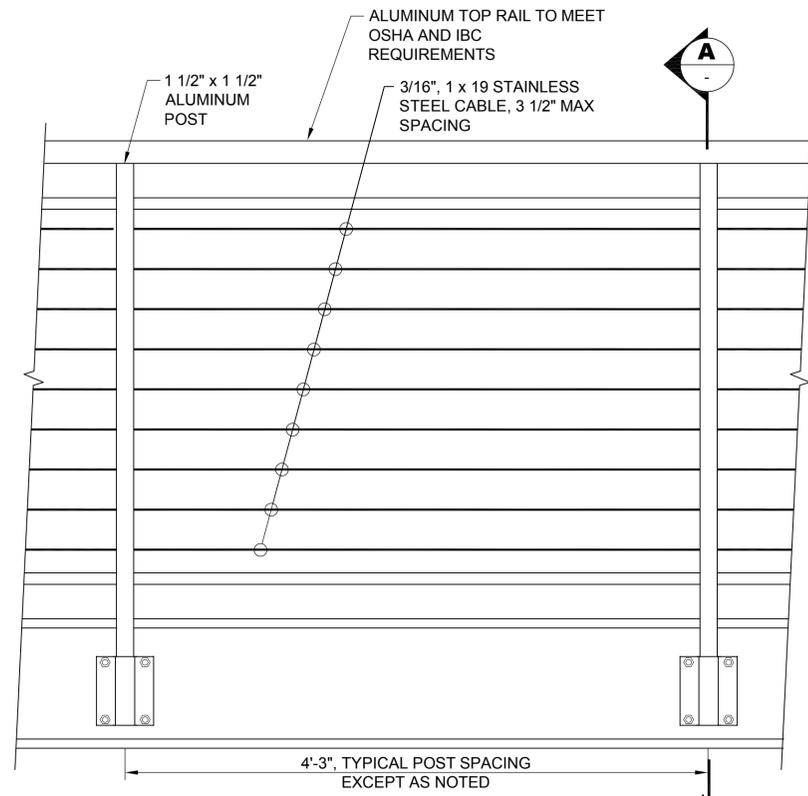
Designed: K. Dahl, P.E., S.E.  
Drawn: M. Caldwell  
Checked: A. Schuyler, P.E.  
Approved: R. Dorn, P.E.

Scale: NTS  
One Inch at Full Scale  
If Not One Inch Scale Accordingly



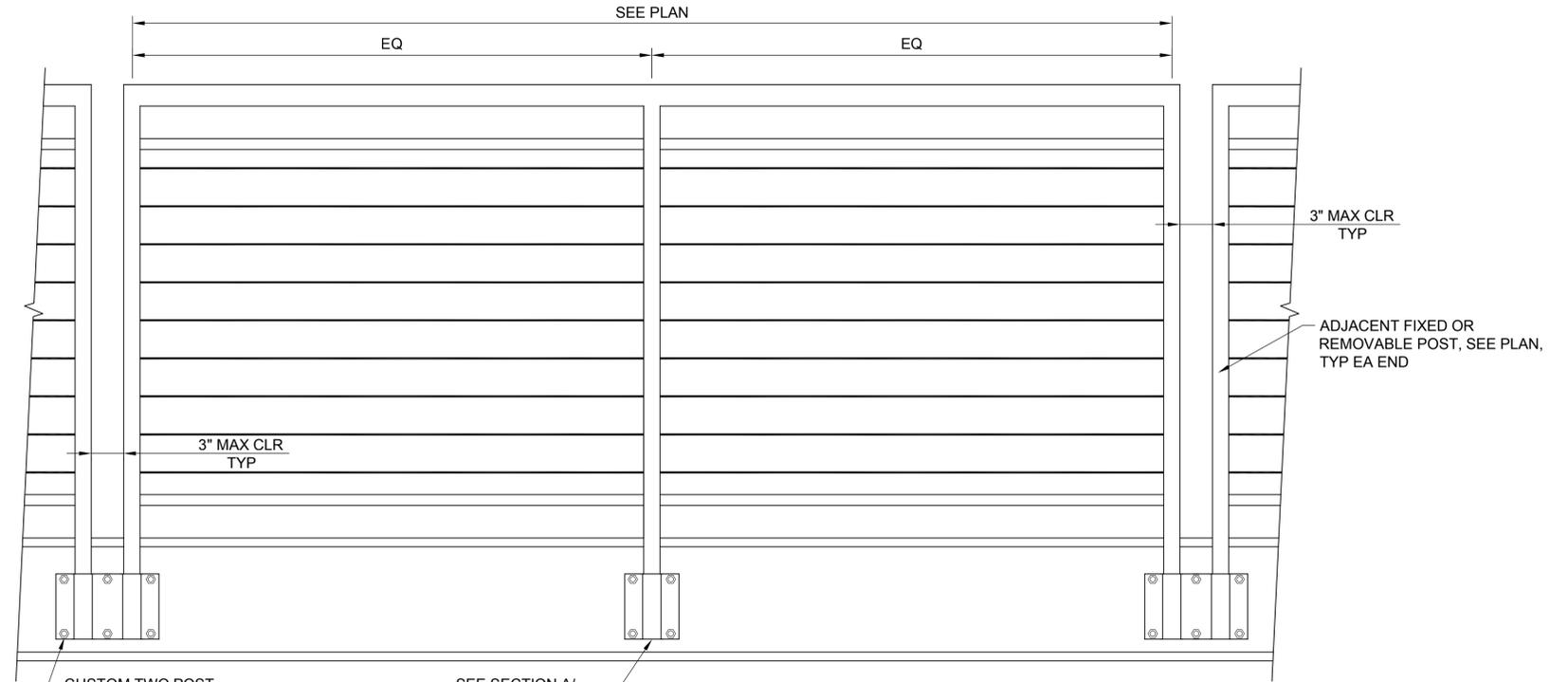
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**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION**  
**TYPICAL STRUCTURAL DETAILS - 1**



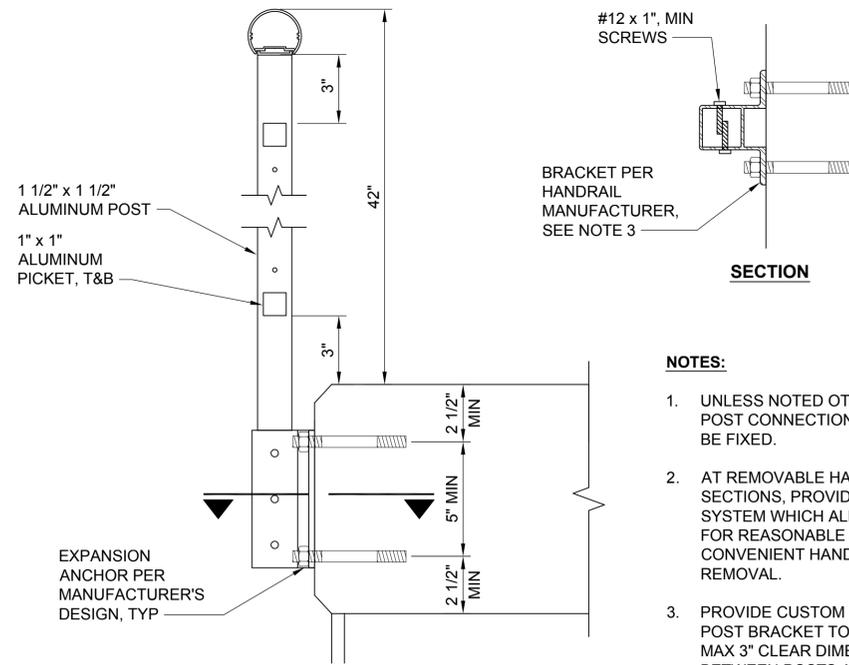
**42" HIGH STAINLESS STEEL  
CABLE RAILING  
DETAIL**

SCALE: 1 1/2" = 1'-0"  
**1**  
TYP



**REMOVABLE HANDRAIL  
DETAIL**

SCALE: 1 1/2" = 1'-0"  
**2**  
TYP



**SECTION**

SCALE: 3" = 1'-0"  
**A**

**NOTES:**

1. UNLESS NOTED OTHERWISE, POST CONNECTIONS SHALL BE FIXED.
2. AT REMOVABLE HANDRAIL SECTIONS, PROVIDE SYSTEM WHICH ALLOWS FOR REASONABLE AND CONVENIENT HANDRAIL REMOVAL.
3. PROVIDE CUSTOM TWO POST BRACKET TO MAINTAIN MAX 3" CLEAR DIMENSION BETWEEN POSTS AT REMOVABLE SECTIONS AND SLAB CORNERS.

Path: S:\Cad\Kitsap County\15-10341 PS 45 46 47 BL Design\15-10341\_S-4\_Plot.dwg Plot date: Aug 11, 2016 03:04:33pm CAD User: psimon.  
Xref Filename: X:\15-10341\_Prelim\X15-10341\_TB\Whitehouse\Schuyler\_Adam | Schuyler\_Erika | Gibson | Schuyler\_Erika |

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Scale:  
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Scale Accordingly



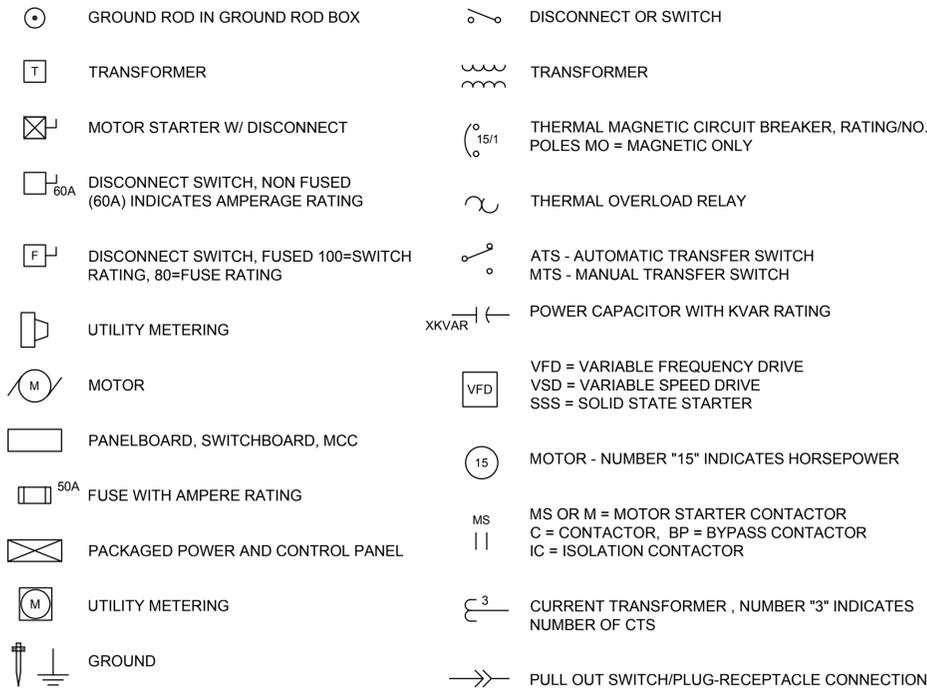
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**MANCHESTER PUMP STATIONS 45, 46, & 47 AND  
BEACH LINES REHABILITATION**  
**TYPICAL RAILING DETAILS**

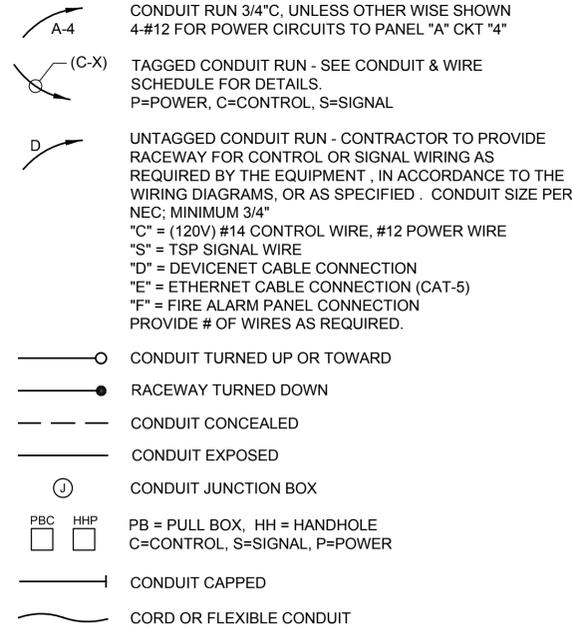
Drawing: **S-4**  
Sheet: **17** of **73**  
File: P15-10341\_S-4  
Date: August 2016

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Xref Filename: |X|15-10341\_TB|Whitehouse |Schuyler\_Adam |Dahl |Gibson |Schuyler\_Erika |

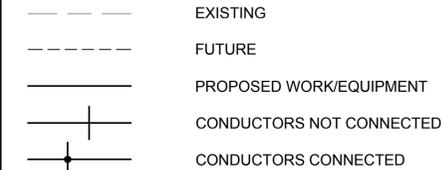
**MOTORS AND POWER EQUIPMENT**



**RACEWAY SYMBOLS**



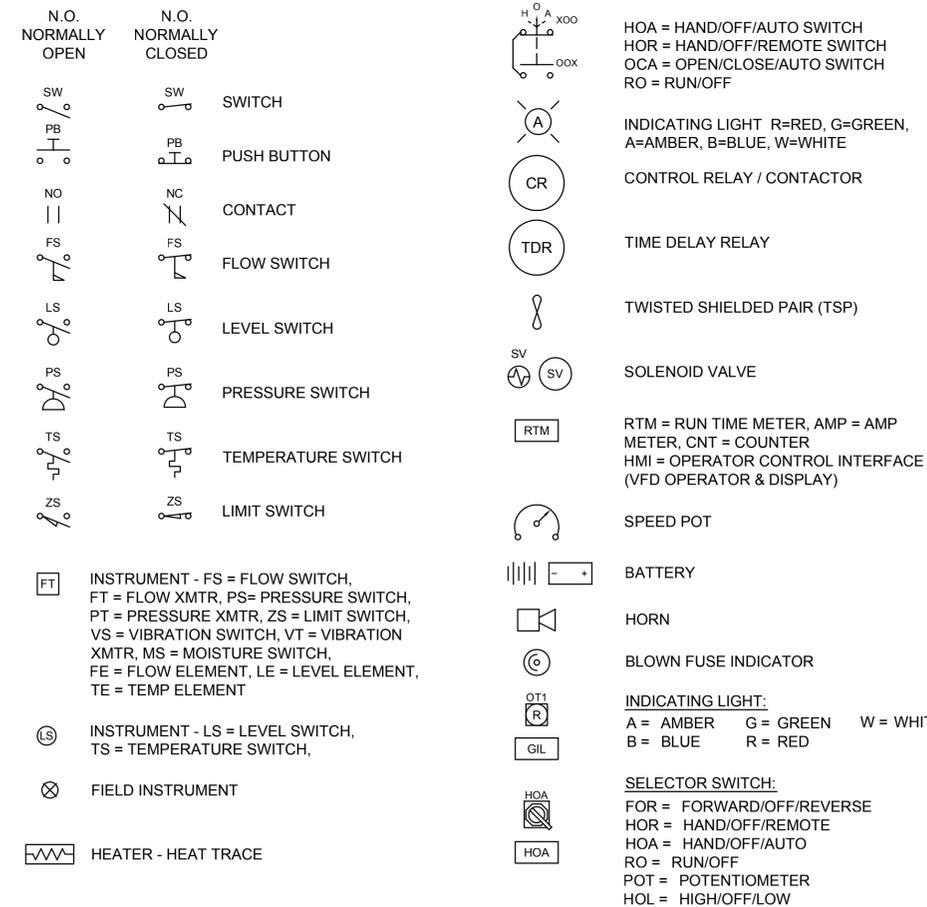
**WIRE DIAGRAMS, ONE-LINES, MISC**



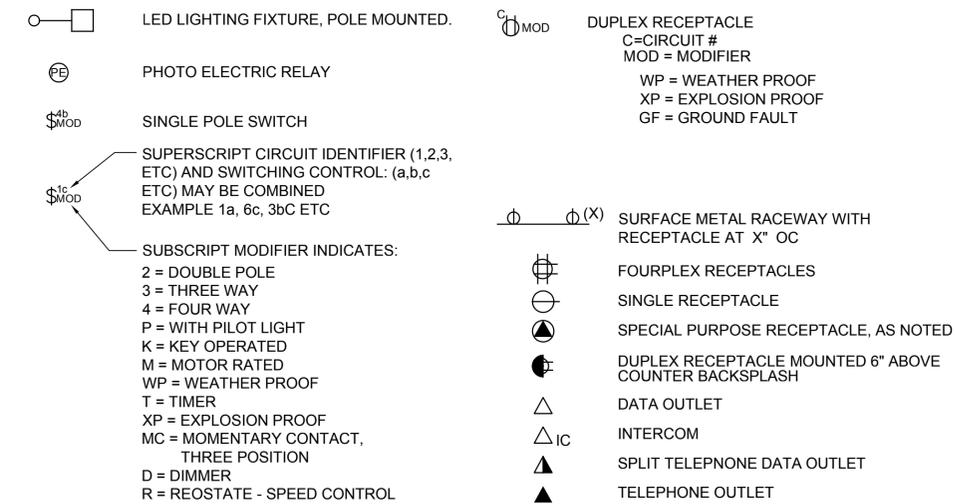
**ABBREVIATIONS**

A, AMP	AMPERE	M	METER
AC	AIR COMPRESSOR, ALTERNATING CURRENT	MCC	MOTOR CONTROL CENTER
AF	AMPERE FRAME	MCP	MAIN CONTROL PANEL
AFF	ABOVE FINISHED FLOOR	MFR	MANUFACTURER
AI	ANALOG INPUT POINT (PLC)	MH	MANHOLE
AIC	AMPERES INTERRUPTING CAPACITY	MO	MAGNETIC ONLY (CIRCUIT BREAKER)
AIL	AMBER INDICATING LIGHT	MOV	MOTOR OPERATED VALVE
AL	ALARM	MS	MOTOR STARTER
ALT	ALTERNATOR	MTS	MANUAL TRANSFER SWITCH
AM	AMMETER	N	NEUTRAL
AO	ANALOG OUTPUT POINT (PLC)	NC	NORMALLY CLOSED
AS	AMPERE SWITCH	NF	NON FUSED
AT	AMPERE TRIP	NO	NORMALLY OPEN
ATS	AUTOMATIC TRANSFER SWITCH	OI	OPERATOR INTERFACE
BAT	BATTERY	OIT	OPERATOR IN TROUBLE
BC	BATTERY CHARGER	OL	OVERLOAD RELAY
BH	BLOCK HEATER	OT	OVER TEMP
BIL	BLUE INDICATING LIGHT	P	POWER
BP	BYPASS CONTRACTOR	PS	PUMP STATION
C	CONDUIT, CONTROL	PB	PUSH BUTTON
CAP	CAPACITOR	PBC	PULLBOX (CONTROL)
CB	CIRCUIT BREAKER	PBD	PULLBOX (DATA)
CKT	CIRCUIT	PBL	PUSH BUTTON - LIGHTED
CNT	START COUNTER	PBP	PULLBOX (POWER)
CP	CONTROL PANEL	PBS	PULLBOX (SIGNAL)
CPT	CONTROL POWER TRANSFORMER	PE	PHOTO ELECTRIC RELAY
CR	CONTROL RELAY	PF	PHASE FAILURE RELAY
CT	CURRENT TRANSFORMER	PLC	PROGRAMMABLE LOGIC CONTROLLER
CV	CHECK VALVE	PMD	POWER MONITORING DEVICE
DB	DIRECT BURIED	PNL	PANEL
DEM	DEMAND	POT	POTENTIOMETER
DF	DEMAND FACTOR	PS	PRESSURE SWITCH
DI	AC DIGITAL INPUT POINT (PLC)	PT	POTENTIAL TRANSFORMER
DO	AC DIGITAL OUTPUT POINT (PLC)	PVC	POLYVINYL CHLORIDE (CONDUIT)
DWG	DRAWING	RCP	REMOTE CONTROL PANEL
EX	EXISTING	RIL	RED INDICATING LIGHT
EF	EXHAUST FAN	RO	RUN - OFF
F	FUSED	RTD	RESISTANCE TEMPERATURE DEVICE
FACFP	FIRE ALARM CONTROL PANEL	RTM	RUN TIME METER
FS	FLOW SWITCH	RV	REDUCED VOLTAGE
FT	FLOW TRANSMITTER	RVAT	REDUCED VOLTAGE AUTO TRANSFORMER
FVNR	FULL VOLTAGE NON-REVERSING	S	STARTER
FVR	FULL VOLTAGE REVERSING	SA	SIGNAL SURGE ARRESTOR
G, GND	GROUND	SE	SERVICE ENTRANCE
GEN	GENERATOR	SST	STAINLESS STEEL
GFI	GROUND FAULT INTERRUPTER	SSS	SOLID STATE STARTER
GIL	GREEN INDICATING LIGHT	SV	SOLENOID VALVE
GRS	(GRC) GALVANIZED RIGID STEEL (CONDUIT)	T	THERMOSTAT
H	HOT, HIGH, HAND	TC	TIME CLOCK
HH	HAND HOLE	TDOD	TIME DELAY ON DE-ENERGIZATION
HID	HIGH INTENSITY DISCHARGE	TDOE	TIME DELAY ON ENERGIZATION
HMI	HUMAN MACHINE INTERFACE	TDR	TIME DELAY RELAY
HOA	HAND OFF AUTO (SELECTOR SWITCH)	TEL	TELEPHONE
HS	HAND STATION (HOA SWITCH & POT)	TNI	TELEPHONE NETWORK INTERFACE
HTR	HEATER	TS	TEMPERATURE SWITCH
IC	ISOLATION CONTRACTOR	TSP	TWISTED SHIELDED PAIR
ISR	INTRINSICALLY SAFE RELAY	TST	TWISTED SHIELDED THREE WIRE
kVA	KILO VOLT AMPS	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSER
kVAR	KILO VOLT AMP REACTIVE	TYP	TYPICAL
kVARH	KILOVAR HOUR	UH	UNIT HEATER
kW	KILOWATT	UPS	UNINTERRUPTIBLE POWER SUPPLY
kWh	KILOWATT HOUR	V	VAULT
L	LOW	VS	VIBRATION SWITCH
LC	LIGHTING CONTACTOR	VFD	VARIABLE FREQUENCY DRIVE
LCP	LOCAL CONTROL PANEL	VSD	VARIABLE SPEED DRIVE
LE	LEVEL ELEMENT	W	WATT
LS	LEVEL SWITCH	WHM	WATT HOUR METER
LT	LEVEL TRANSMITTER	WIL	WHITE INDICATING LIGHT
LTG	LIGHTING	WP	WEATHER PROOF
		XFMR	TRANSFORMER
		XP	EXPLOSION PROOF
		XMTR	TRANSMITTER
		ZS	LIMIT SWITCH

**MOTORS AND POWER EQUIPMENT**



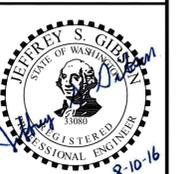
**LIGHTING & RECEPTACLE SYMBOLS**



**REFERENCE SYMBOLS**



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ISSUED FOR BID	08-2016	TJW	RAD
BUILDING PERMIT SUBMITTAL	04-2016	TJW	RAD
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No.	Revision	Date	By App'd

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Designed: J. Gibson, P.E.  
 Drawn: A. Cariaso  
 Checked: A. Schuyler, P.E.  
 Approved: R. Dorn, P.E.

Scale:  
 NTS  
 One Inch at Full Scale  
 If Not One Inch Scale Accordingly



**Kitsap County Public Works**  
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**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION**  
**ELECTRICAL SYMBOLS AND ABBREVIATIONS**

Drawing: **E-1**  
 Sheet: **18** of **73**  
 File: P15-10341\_E-1  
 Date: August 2016

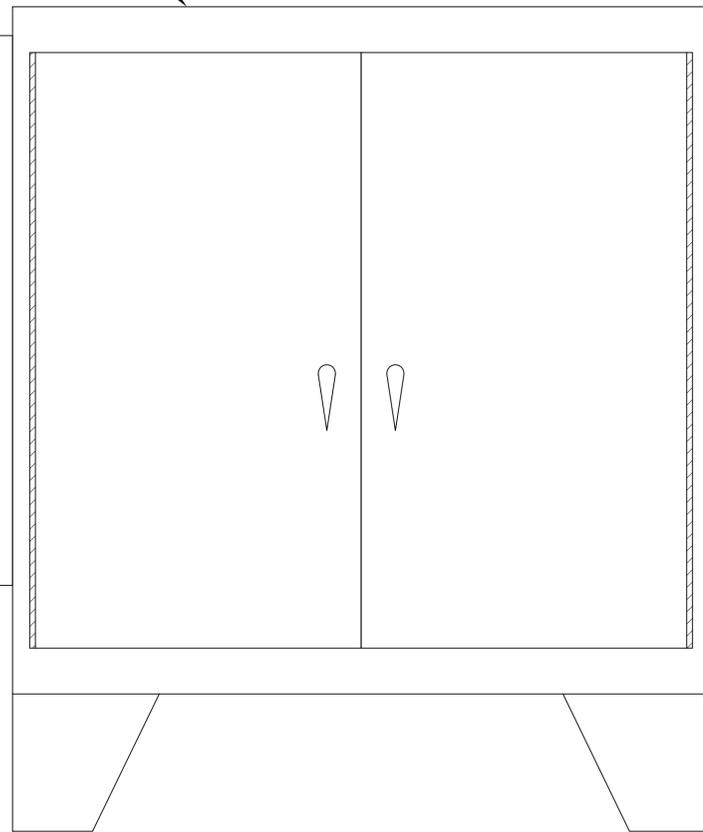
**NOTES:**

- LAYOUT OF CONTROL PANEL IS GENERAL IN NATURE - SPECIFIC LAYOUT TO BE DETERMINED BY THE SYSTEM INTEGRATOR AND REVIEWED BY THE ENGINEER DURING THE SUBMITTAL PROCESS - SIZE OF THE CONTROL PANEL SHOWN IS INTENDED TO BE A MAXIMUM SIZE. INTEGRATOR SHALL NOT UPSIZE THE CABINET UNLESS APPROVED BY THE ENGINEER.

MAIN CONTROL PANEL (MCP)  
KITSAP COUNTY  
PUMP STATION XX

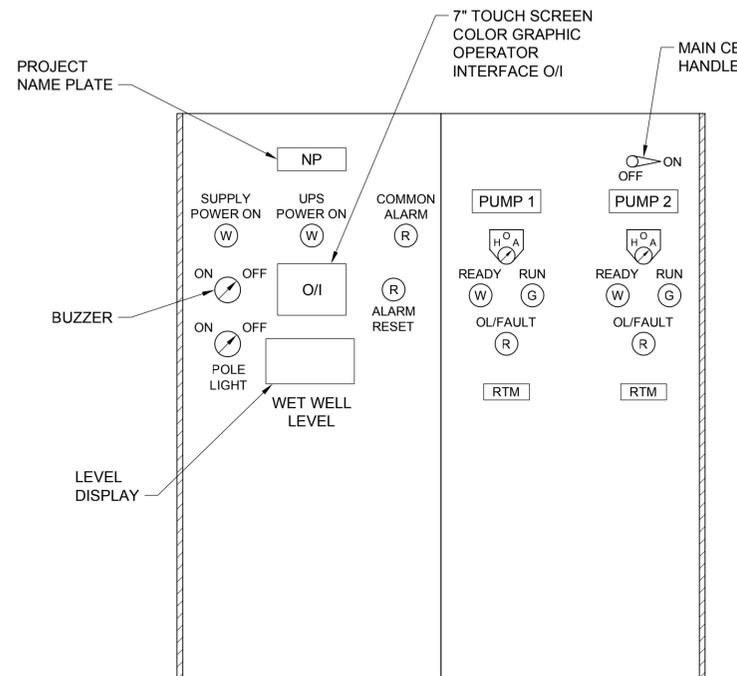
NEMA 4X SS, TYPE 316 SS  
60" x 60" x 18" D W/ 12" STANDS

AIR  
CONDITIONING  
UNIT

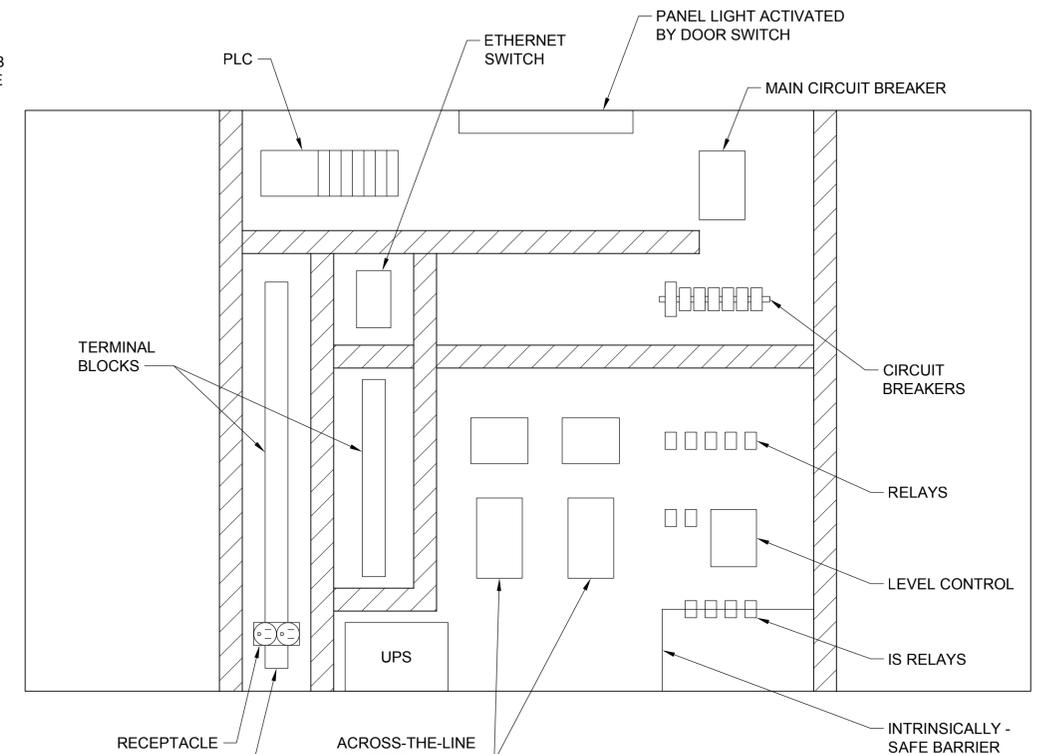


**FRONT**

**PROJECT NAMEPLATE**



**INTERIOR SWING PANELS**



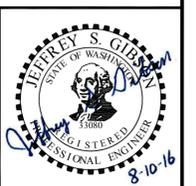
**INTERIOR BACK AND SIDE PANELS**

**ELEVATIONS**

NTS **A** TYP

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Path: S:\Cad\Kitsap County\15-10341 PS 45 46 47 BL Design\15-10341 E-2 Plot date: Aug 11, 2016-02:56:59pm CAD User: acarliso.  
Xref Filename: |X|15-10341\_TB|Whitehouse|Schuyler\_Adam|Dahl|Gibson|Schuyler\_Erika|

No.	Revision	Date	By	App'd
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	BUILDING PERMIT SUBMITTAL	04-2016	TJW	RAD
	ECOLOGY SUBMITTAL	02-2016	TJW	RAD

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Designed: J. Gibson, P.E.  
Drawn: G. Castillo  
Checked: A. Schuyler, P.E.  
Approved: R. Dorn, P.E.

Scale:  
NTS  
One Inch at Full Scale  
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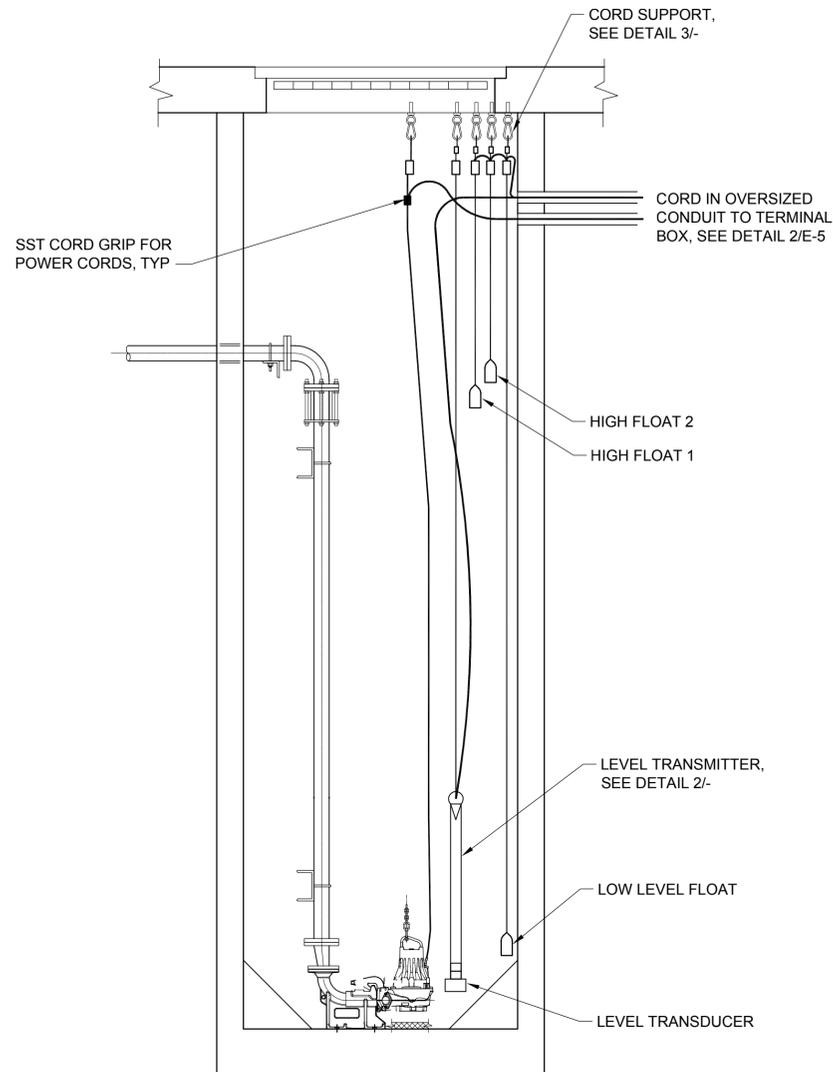


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**MANCHESTER PUMP STATIONS 45, 46, & 47 AND  
BEACH LINES REHABILITATION**  
**CONTROL PANEL  
CABINET ELEVATIONS**

Drawing: **E-2**  
Sheet: **19** of **73**  
File: P15-10341\_E-2  
Date: August 2016

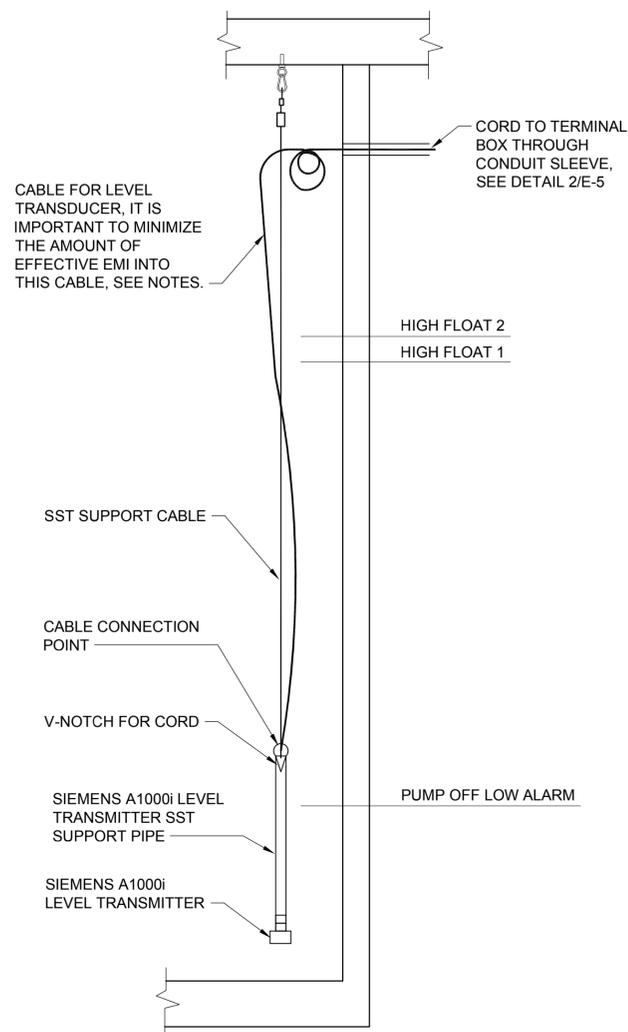
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 Xref Filename: | X:15-10341\_TB | Whitehouse | Schuyler\_Adam | Dahl | Gibson | Schuyler\_Erika |



**NOTES:**

1. PROVIDE 3" MINIMUM SEPARATION OF HIGH LEVEL FLOATS SO THAT THE PUMPS WILL HAVE STAGGERED START.
2. INSTALL ALL HOOKS TO BE ACCESSIBLE FROM OUTSIDE THE WET WELL SO THAT THE FLOATS AND LEVEL TRANSDUCER CAN BE ADJUSTED AND REMOVED WITHOUT ENTERING THE WET WELL.

**WET WELL ELECTRICAL  
 DETAIL 1**  
 NTS

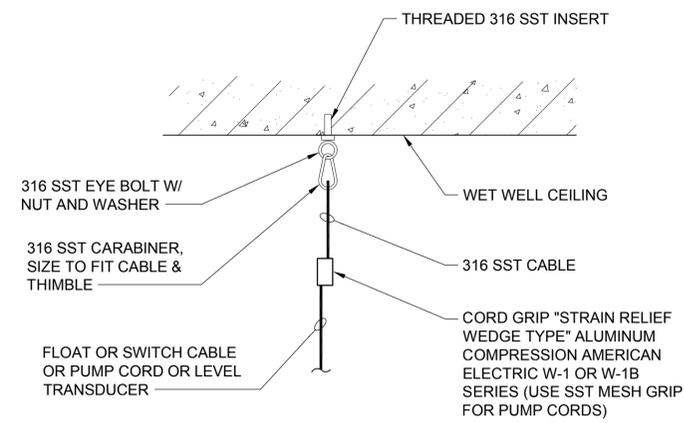


**NOTES:**

1. INSTALL LEVEL TRANSDUCER AWAY FROM TURBULENCE.
2. THE LEVEL TRANSDUCER IS SUSPENDED BY A STAINLESS STEEL CABLE.
3. KEEP THE SIGNAL CABLE AS FAR AWAY FROM OTHER CABLES AS POSSIBLE. PROVIDE ONLY 18" OF EXTRA CABLE.

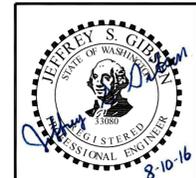
**LEVEL TRANSMITTER  
 DETAIL 2**  
 NTS

CONDUIT SCHEDULE					
TAG	FROM	TO	SIZE	WIRE	NOTES
1	POWER POLE	METER BASE	2"	(4) #2	
2	METER BASE	ATS	2"	(4) #2	
3	GENERATOR	ATS	2"	(4) #2, #8G	
4	ATS	CONTROL PANEL	2"	(4) #2, #8G	
5	CONTROL PANEL	TERMINAL BOX	1 1/2"	(3) #12, #12G, (4) #14	PUMP 1
6	CONTROL PANEL	TERMINAL BOX	1 1/2"	(3) #12, #12G, (4) #14	PUMP 2
7	CONTROL PANEL	TERMINAL BOX	1"	(10) #14	FLOAT SWITCHES
8	CONTROL PANEL	TERMINAL BOX	1"	(1) TSP #20	WETWELL LEVEL TRANSDUCER
9	TERMINAL BOX	WETWELL	2"	PUMP CORD	BY PUMP MANUFACTURER
10	TERMINAL BOX	WETWELL	2"	PUMP CORD	BY PUMP MANUFACTURER
11	TERMINAL BOX	WETWELL	2"	FLOAT CORDS	BY MANUFACTURER
12	TERMINAL BOX	WETWELL	2"	TRANSDUCER CORD	BY TRANSDUCER MANUFACTURER
13	TERMINAL BOX	VALVE VAULT	1"	FLOAT CORDS	BY FLOAT MANUFACTURER
14	CONTROL PANEL	GENERATOR	1"	(2)#10, (2)#12, #10G	COOLANT HEATER, BATTERY CHARGER/RECEPTACLE
15	CONTROL PANEL	VALVE VAULT	3/4"	TSP #20	FLOW SIGNAL
16	CONTROL PANEL	WATER SUPPLY ENCLOSURE	3/4"	(2)#12, #12G	GFI RECEPT, HEATER
17	POWER POLE	CONTROL PANEL	2"	SPARE	FUTURE FIBER OPTIC CABLE. EXTEND 10 FEET UP POWER POLE AS DIRECTED BY UTILITY. PROVIDE PULL CORD AND CONDUIT CAPS.
18	CONTROL PANEL	GENERATOR	2"	(16)#14	
19	CONTROL PANEL	ATS	1"	(8)#14	
20	CONTROL PANEL	TELEMETRY	1 1/4"	(24) #14, (2) TSP #20	
21	CONTROL PANEL	VALVE VAULT	3/4"	(2) #12, #12G	FLOW METER UPS POWER



**PUMP POWER AND INSTRUMENT  
 CORD INSTALLATION  
 DETAIL 3**  
 NTS

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No.	Revision	Date	By	App'd
	ISSUED FOR BID	08-2016	TJW	RAD
	BUILDING PERMIT SUBMITTAL	04-2016	TJW	RAD
	ECOLOGY SUBMITTAL	02-2016	TJW	RAD

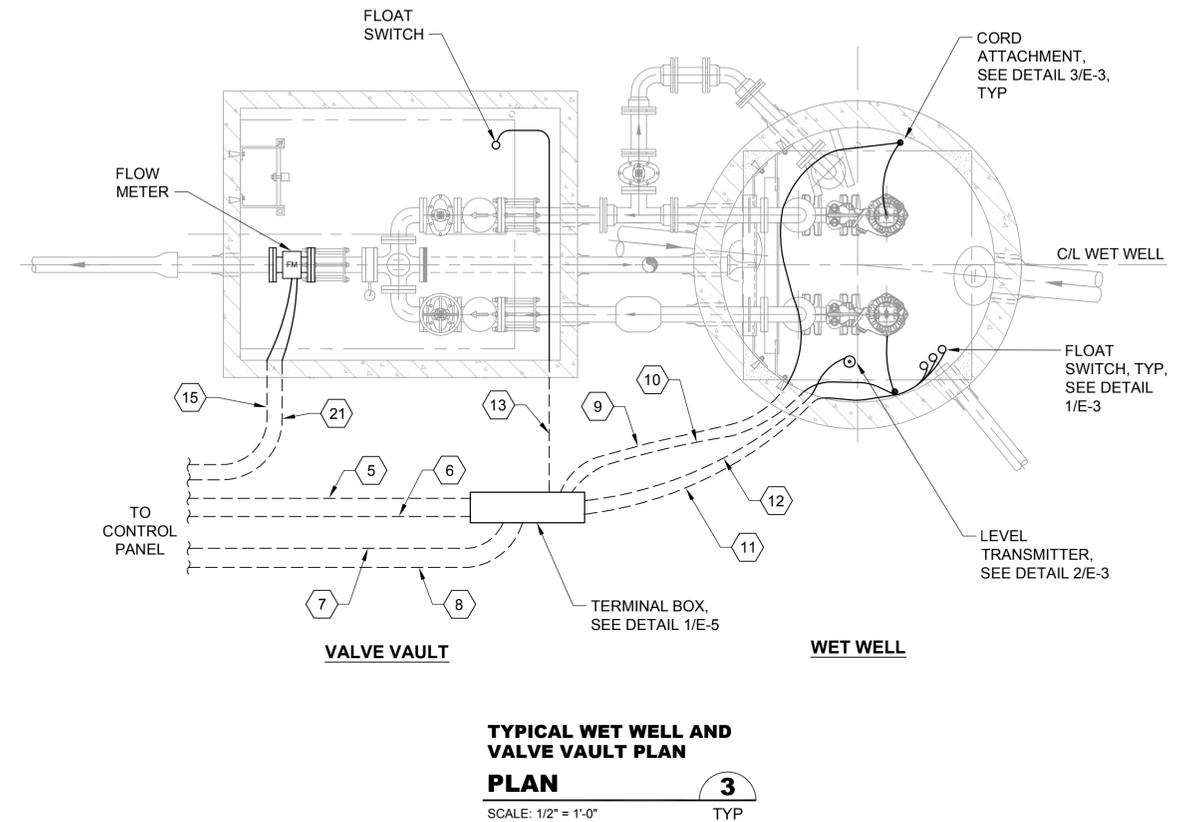
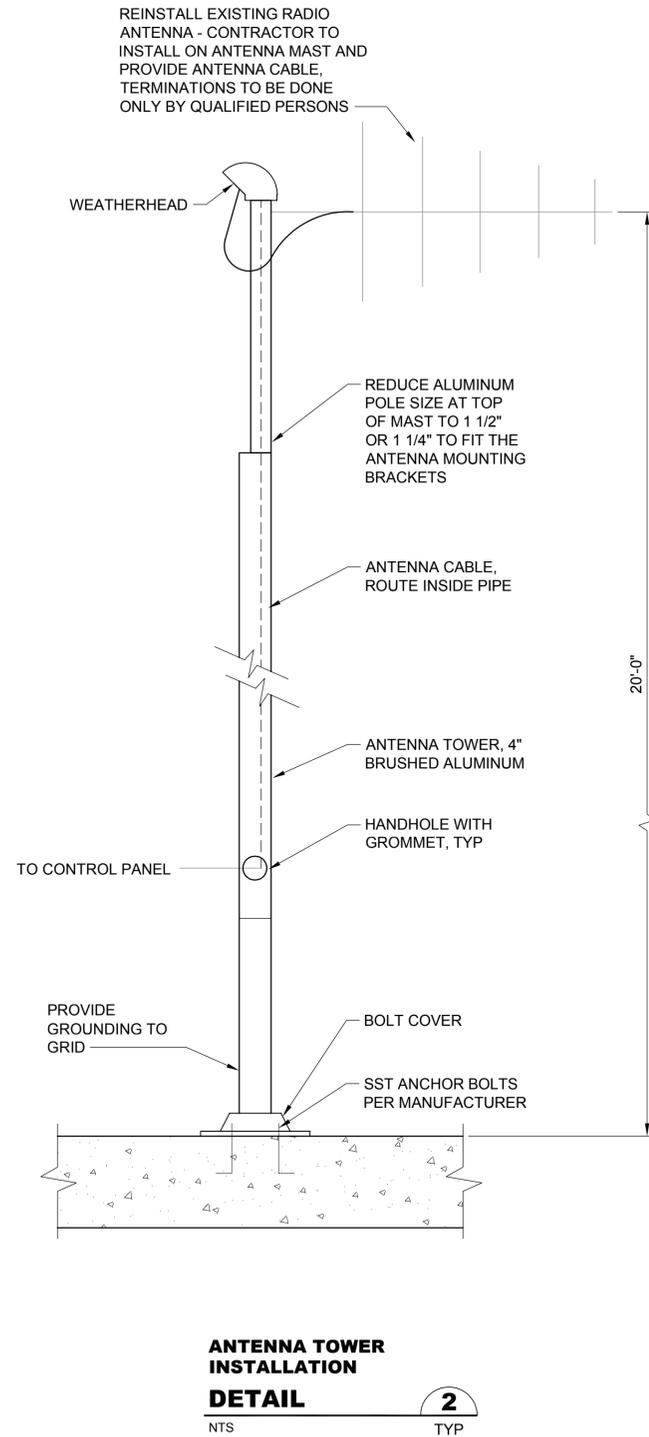
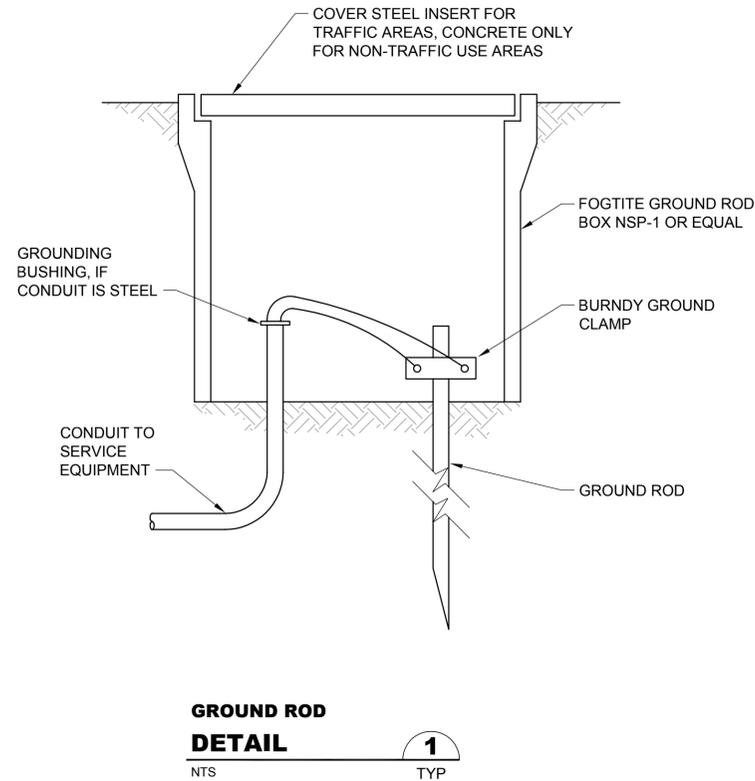
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 Checked: A. Schuyler, P.E.  
 Approved: R. Dorn, P.E.  
 Scale: NTS  
 One Inch at Full Scale  
 If Not One Inch Scale Accordingly

**Kitsap County Public Works**  
 614 Division Street, MS 26  
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**MANCHESTER PUMP STATIONS 45, 46, & 47 AND  
 BEACH LINES REHABILITATION  
 ELECTRICAL CONDUIT  
 SCHEDULE & DETAILS**

Drawing: **E-3**  
 Sheet: **20** of **73**  
 File: P15-10341\_E-3  
 Date: August 2016



Path: S:\Cad\Kitsap County\15-10341 PS 45 46 47 BL Design\15-10341 E-4 Plot date: Aug 11, 2016 02:59:00pm CAD User: acarriaso  
Xref Filename: | X:15-10341\_TB | Whitehouse | Schuyler\_Adam | Dahl | Gibson | Schuyler\_Erika |

No.	Revision	Date	By	App'd
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Drawn: S. Olsoe  
Checked: A. Schuyler, P.E.  
Approved: R. Dorn, P.E.

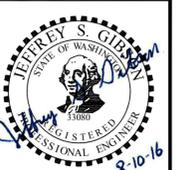
Scale:  
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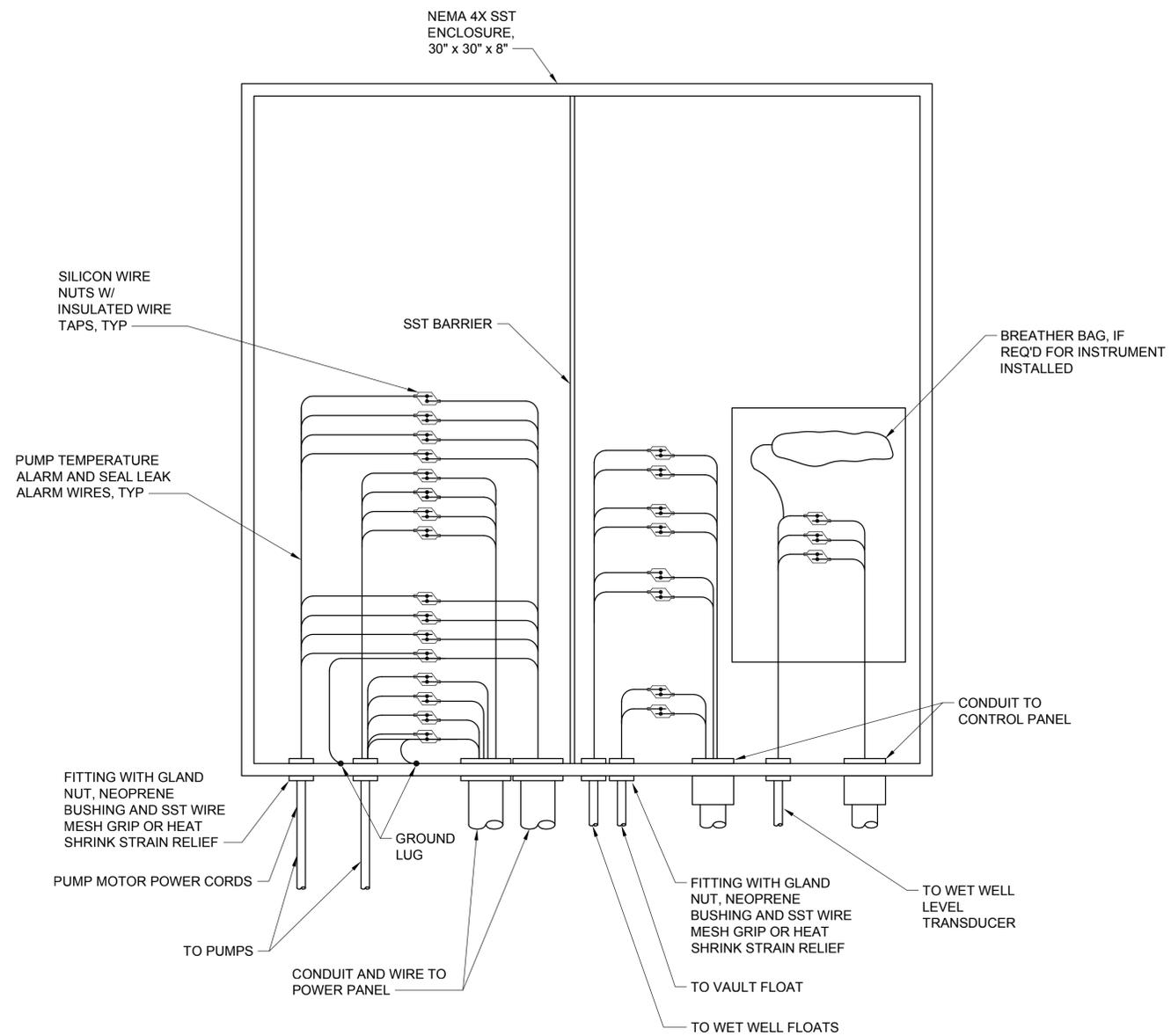
**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION**  
**ELECTRICAL DETAILS - 1**

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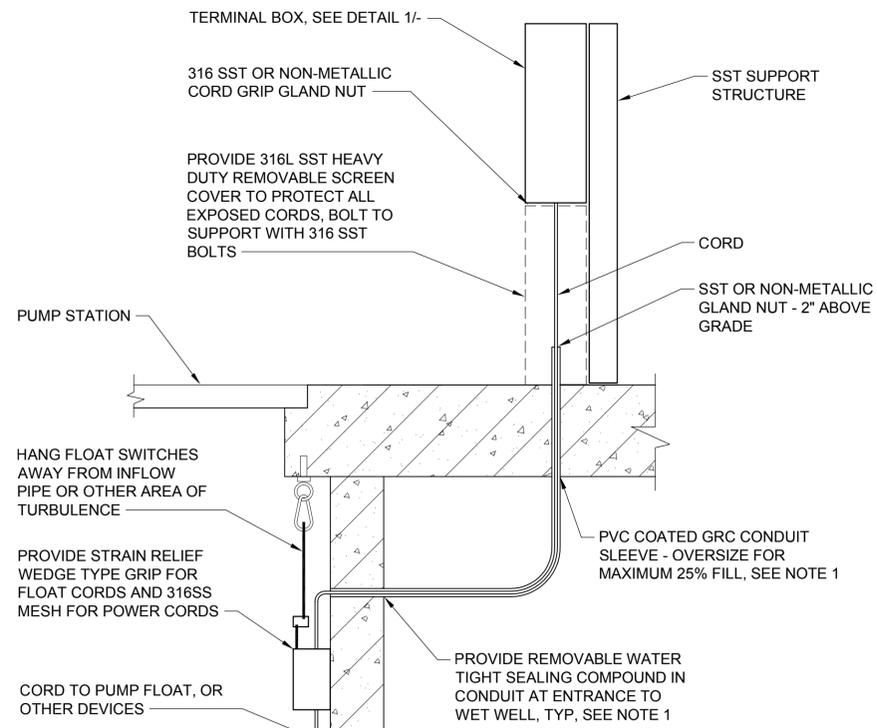


Drawing: **E-4**  
Sheet: **21** of **73**  
File: P15-10341\_E-4  
Date: August 2016

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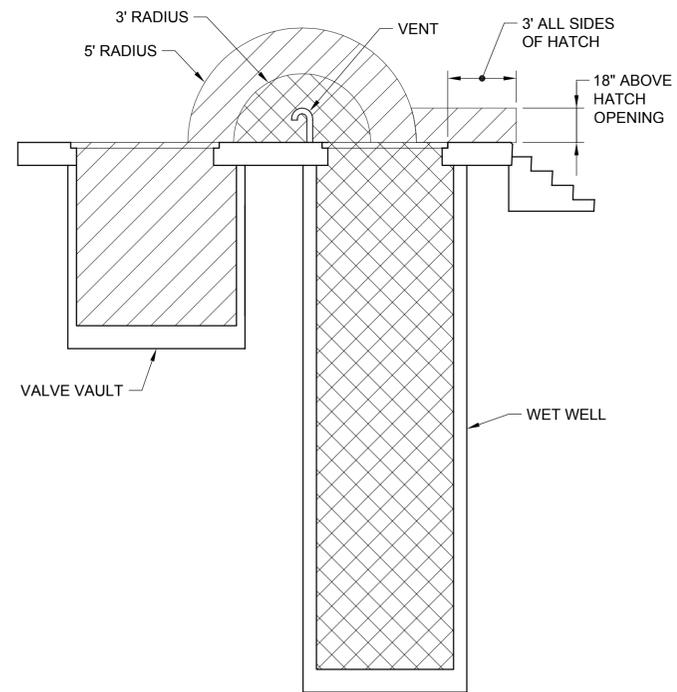
**CORD TO CABLE  
 TERMINAL BOX INSTALLATION  
 DETAIL 1**  
 NTS TYP



**PUMP POWER AND INSTRUMENT  
 CORD INSTALLATION  
 DETAIL 2**  
 NTS TYP

**NOTES:**

1. PROVIDE INSTALLATION OF CORDS, SIZE OF RACEWAYS AND OTHER COMPONENTS SO THAT THEY CAN BE EASILY PULLED BACK THROUGH THE SLEEVE INTO THE WET WELL FOR REMOVAL OF THE EQUIPMENT OR INSTRUMENTATION.

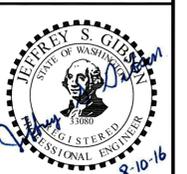


**HAZARDOUS  
 CLASSIFICATION AREA  
 DETAIL 3**  
 NTS TYP

**LEGEND:**

- CLASS 1, DIV 1
- CLASS 1, DIV 2

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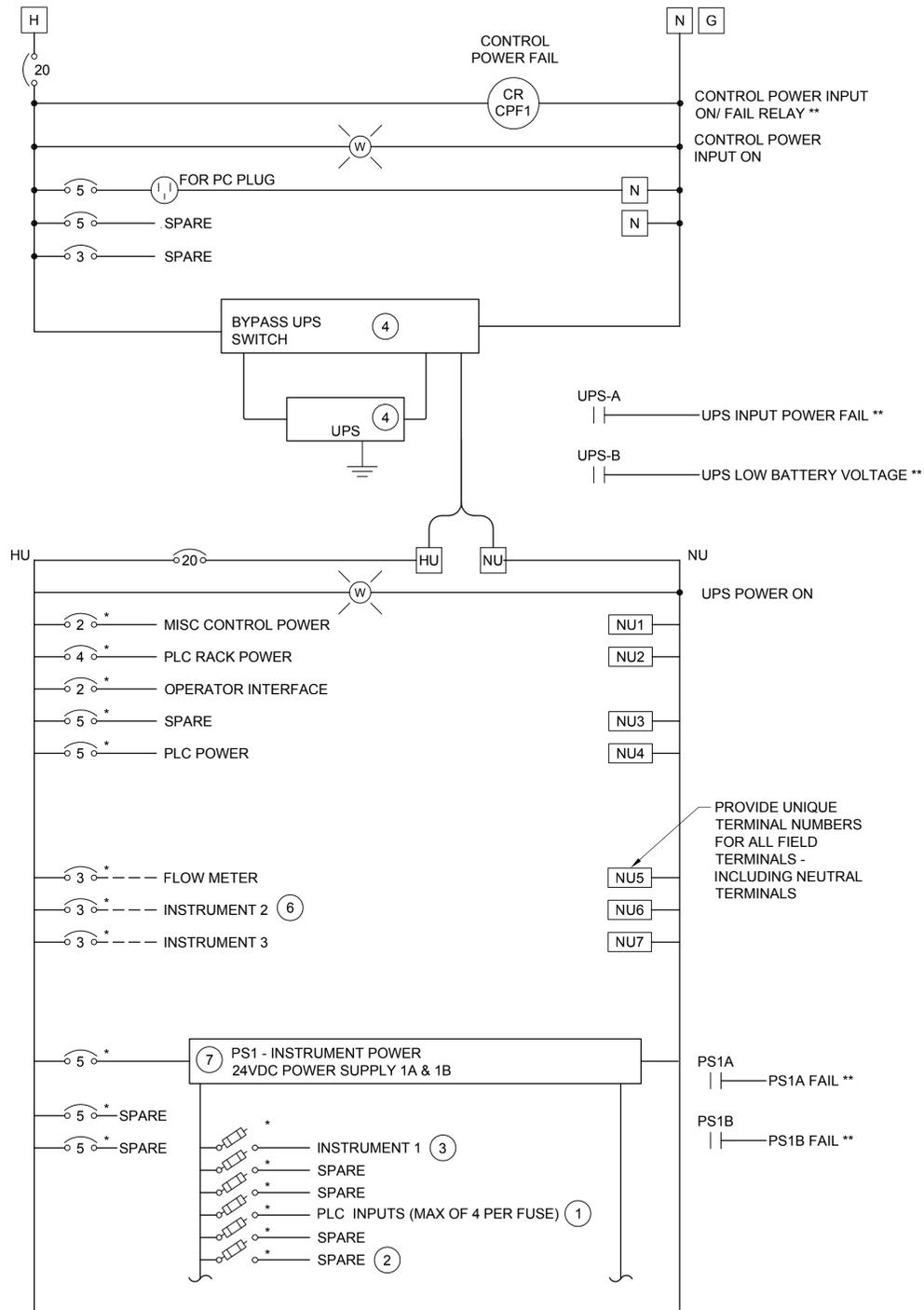
Designed: J. Gibson, P.E.	Scale: NTS
Drawn: S. Olsoe	One Inch at Full Scale
Checked: A. Schuyler, P.E.	If Not One Inch Scale Accordingly
Approved: R. Dorn, P.E.	

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**MANCHESTER PUMP STATIONS 45, 46, & 47 AND  
 BEACH LINES REHABILITATION  
 ELECTRICAL DETAILS - 2**

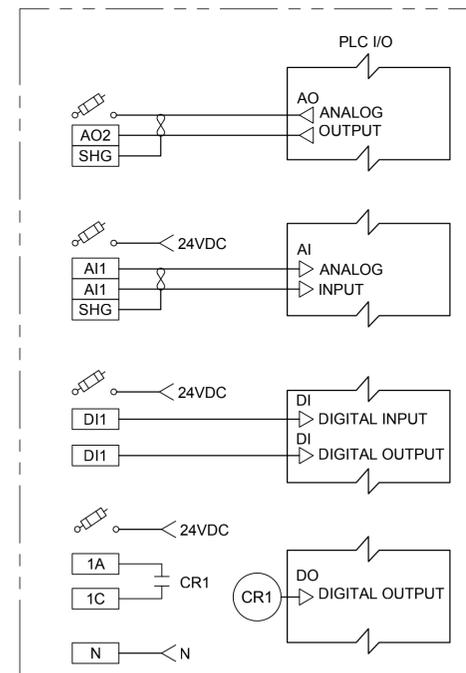
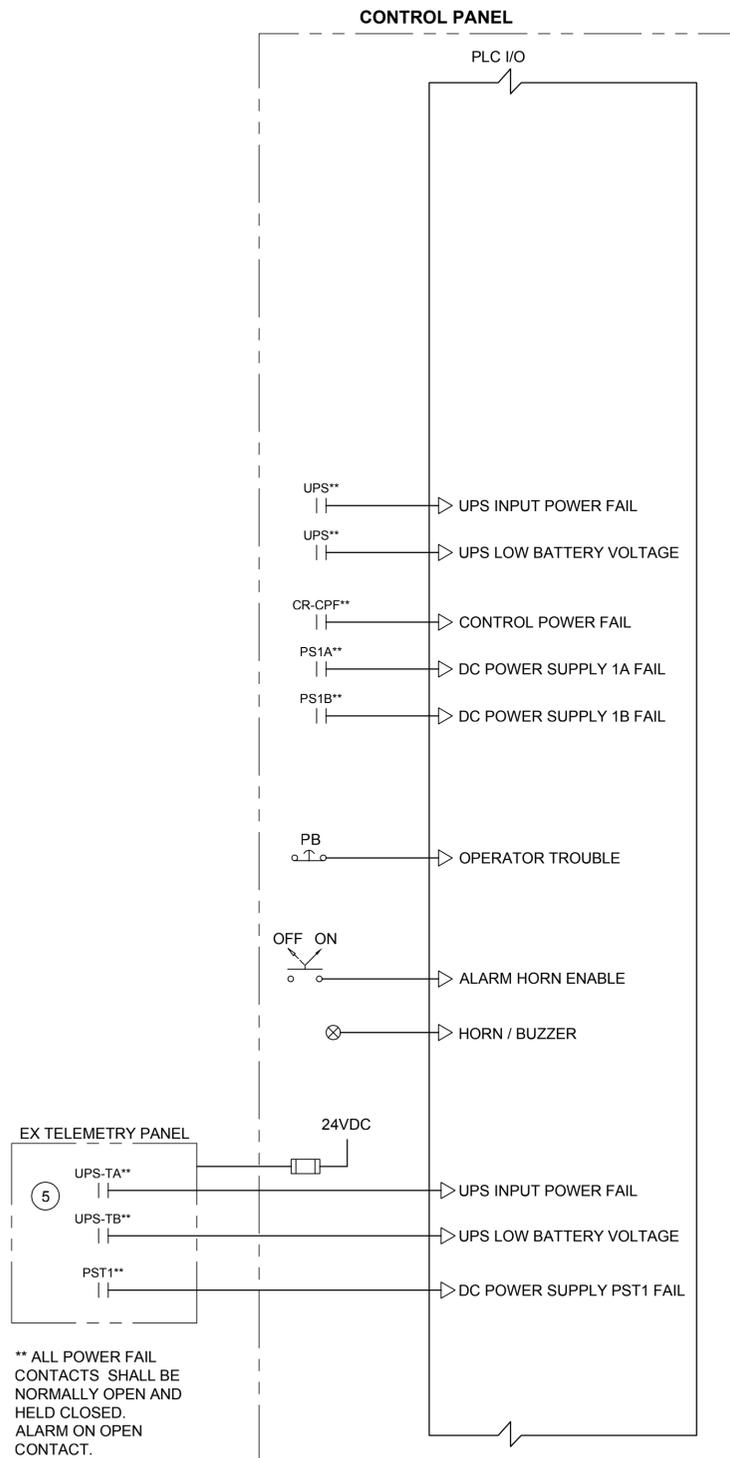
Drawing: <b>E-5</b>
Sheet: <b>22</b> of <b>73</b>
File: P15-10341_E-5
Date: August 2016

Path: S:\Cad\Kitsap County\15-10341 PS 45 46 47 BL Design\15-10341\_E-6 Plot date: Aug 11, 2016-02:59:53pm CAD User: acarriaso  
 Xref Filename: | X 15-10341\_TB | Whitehouse | Schuyler\_Adam | Dahl | Gibson | Schuyler\_Erika



**MCP CONTROL POWER DISTRIBUTION**

- \* PROVIDE CIRCUIT INDEX OR COPY OF POWER CIRCUIT WIRING DIAGRAM FOR ALL DISTRIBUTION BREAKERS AND DC DISTRIBUTION FUSES - LAMINATE AND MOUNT ON INSIDE CABINET DOOR.
- \*\* PROVIDE ALL POWER FAIL AS SUPERVISED CONTROL/MONITORING CIRCUITS. NORMALLY OPEN CONTACTS THAT ARE HELD CLOSED AND OPEN WHEN POWER FAILS.



TYPICAL TERMINAL WIRING FOR ANALOG OUTPUTS - PROVIDE ONE SHIELD GROUNDING TERMINAL FOR EVERY TWO ANALOG OUTPUTS.

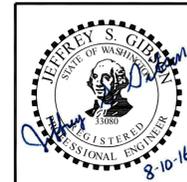
TYPICAL TERMINAL WIRING FOR ANALOG INPUTS - PROVIDE ONE SHIELD TERMINAL FOR EVERY TWO ANALOG INPUTS. PROVIDE ONE 1A FUSED DISCONNECT FOR EACH ANALOG INPUT.

TYPICAL TERMINAL WIRING FOR DIGITAL INPUTS - PROVIDE ONE FUSED TERMINAL FOR EVERY FOUR DIGITAL INPUTS.

TYPICAL TERMINAL WIRING FOR DIGITAL OUTPUTS - PROVIDE ONE 2A FUSED TERMINAL AND ONE NEUTRAL TERMINAL FOR EVERY EIGHT DIGITAL OUTPUTS

- KEY NOTES:**
- 1 PROVIDE ONE - 1 AMP FUSE FOR THE INPUTS ASSOCIATED WITH EACH INDIVIDUAL MOTOR LOAD AND ONE 1 AMP FUSE FOR EACH GROUP OF 4 PLC INPUTS. PROVIDE BLOWN FUSE INDICATORS ON ALL FUSES. PROVIDE ONE SPARE FUSE FOR EVERY 4 SPARE PLC INPUTS PLUS AN ADDITIONAL 2 SPARE 1 AMP FUSES.
  - 2 PROVIDE ONE 50mA FUSE FOR EACH WIRED AND EACH SPARE ANALOG INPUT. WIRE ALL SPARE ANALOG INPUT TERMINALS FOR EITHER LOOP OR SEPARATELY POWERED INSTRUMENTS.
  - 3 PROVIDE ONE APPROPRIATELY SIZED FUSE FOR EACH DC CIRCUIT PLUS 3 - 1 AMP SPARE FUSES.
  - 4 DIN-RAIL MOUNTED UPS WITH BYPASS SWITCH - SIZE FOR APPLICATION.
  - 5 PROVIDE INPUT TO PLC FOR TROUBLE MONITORING, UPS AND POWER SUPPLIES - PROVIDE INTERPOSING RELAY IF NECESSARY.
  - 6 PROVIDE ONE CIRCUIT BREAKER FOR EACH INSTRUMENT - SIZE PER LOAD SERVED AND MANUFACTURERS REQUIREMENTS.
  - 7 PROVIDE REDUNDANT PAIRS FOR EACH TYPE OF POWER SUPPLY W/ MONITORING FOR FAILURE TO THE PLC.

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Designed: J. Gibson, P.E.  
 Drawn: A. Carriaso  
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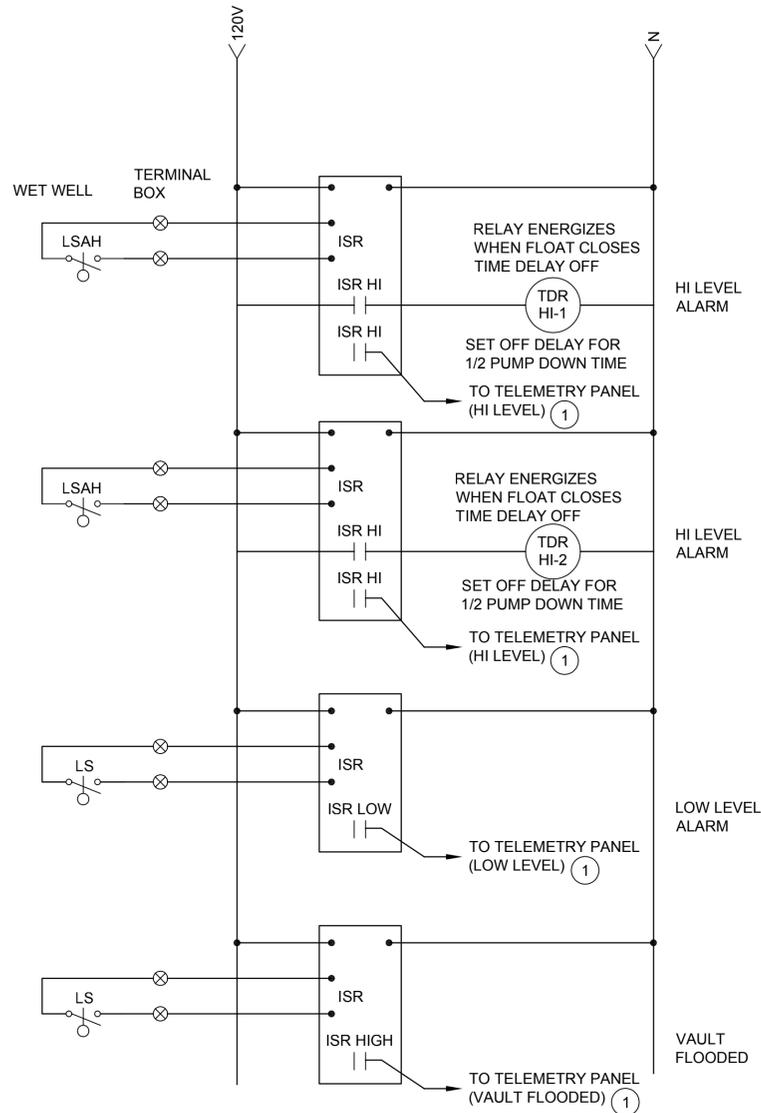
Scale: NTS  
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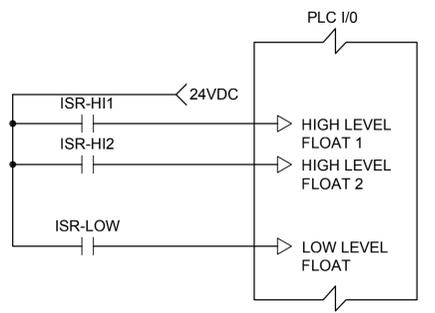
**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION**  
**WIRING DIAGRAMS - 1**

Drawing: **E-6**  
 Sheet: **23** of **73**  
 File: P15-10341\_E-6  
 Date: August 2016

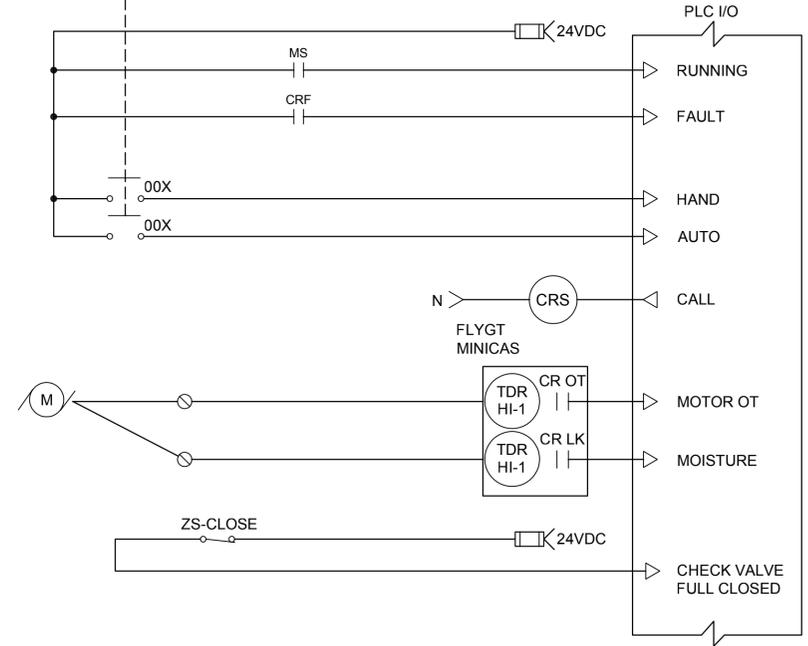
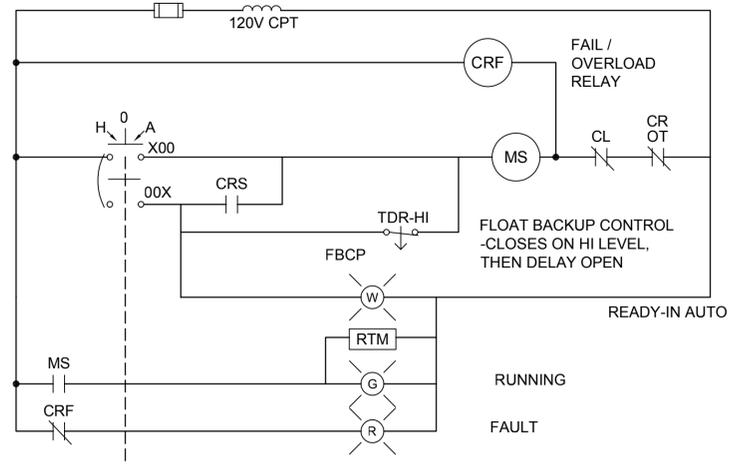
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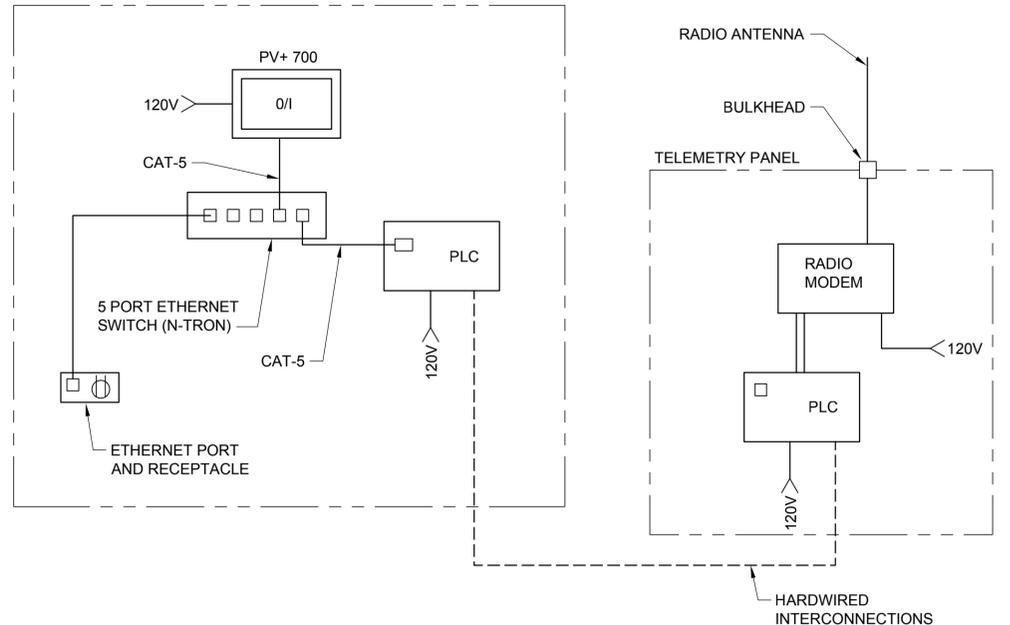
**KEY NOTES:**  
 ① PROVIDE NORMALLY OPEN CONTACTS THAT CLOSE ON ALARM FOR INPUTS TO TELEMETRY.



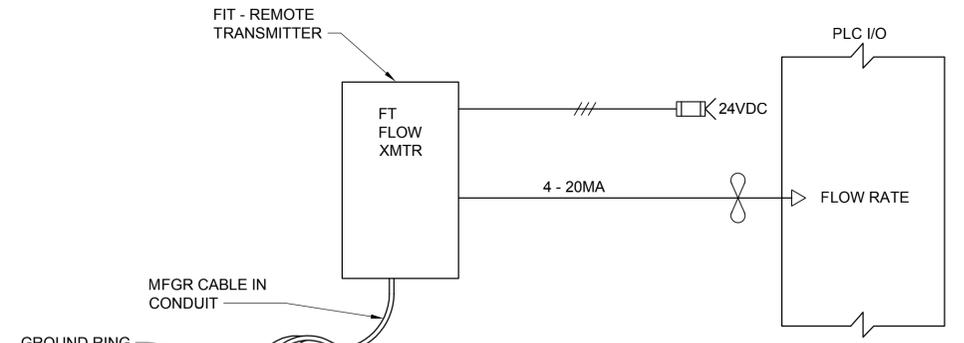
**BACK-UP FLOAT CONTROLS**



**PUMP CONTROL, TYPICAL**



**NETWORK DIAGRAM**



**MAGNETIC FLOW METER**

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No.	Revision	Date	By	App'd
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	BUILDING PERMIT SUBMITTAL	04-2016	TJW	RAD
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 Drawn: A. Carlaso  
 Checked: A. Schuyler, P.E.  
 Approved: R. Dorn, P.E.

Scale:  
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 If Not One Inch Scale Accordingly

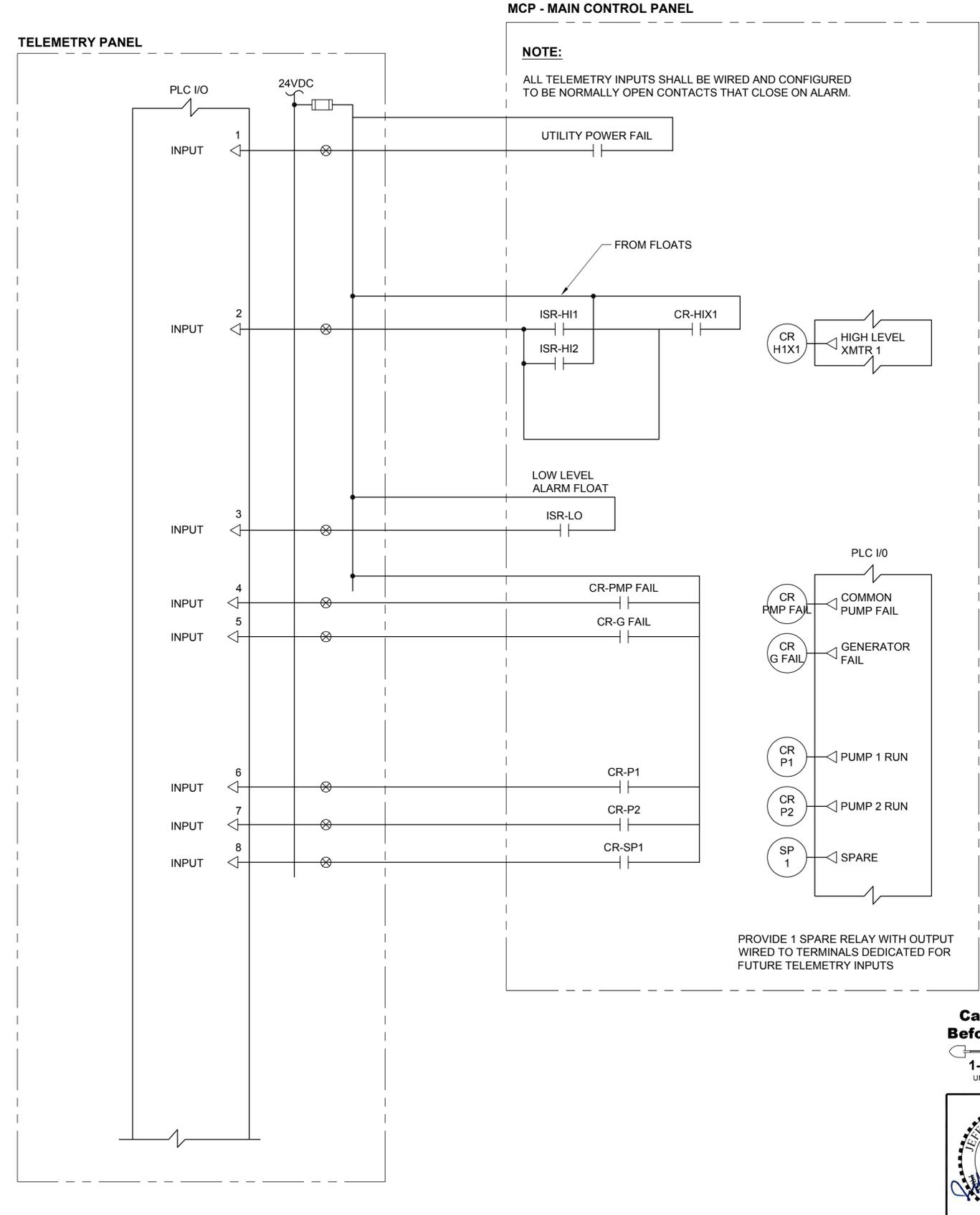
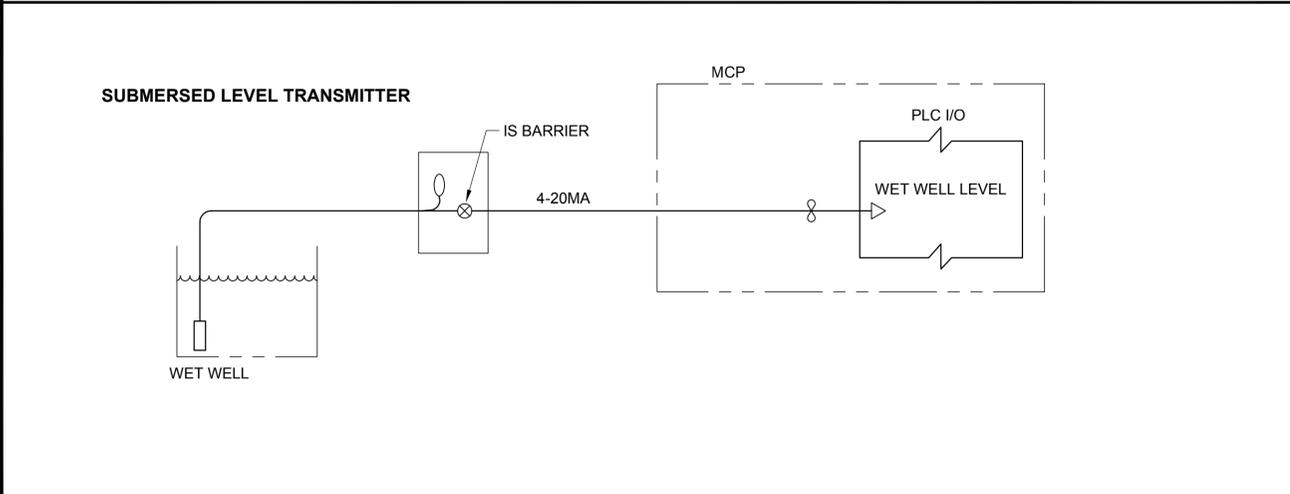
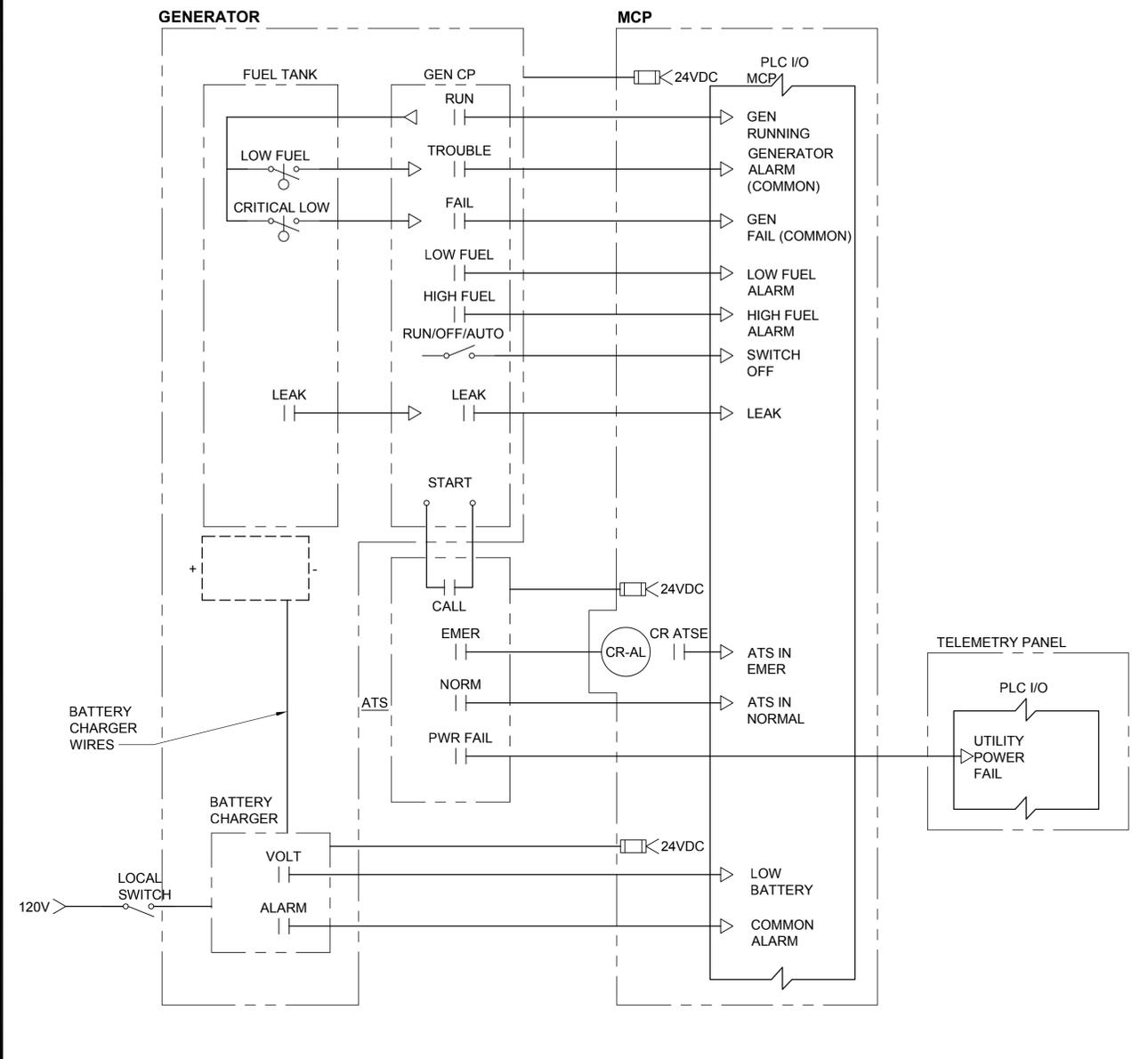


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**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION**  
**WIRING DIAGRAMS - 2**

Drawing: **E-7**  
 Sheet: **24** of **73**  
 File: P15-10341\_E-7  
 Date: August 2016

Path: S:\Card\Kitsap County\15-10341 PS 45 46 47 BL Design\15-10341\_E-8 Plot date: Aug 11, 2016-03:01:28pm CAD User: acariaso  
 Xref Filename: | X:15-10341\_TB | Whitehouse | Schuyler\_Adam | Dahl | Gibson | Schuyler\_Erika |



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**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION**  
**WIRING DIAGRAMS - 3**

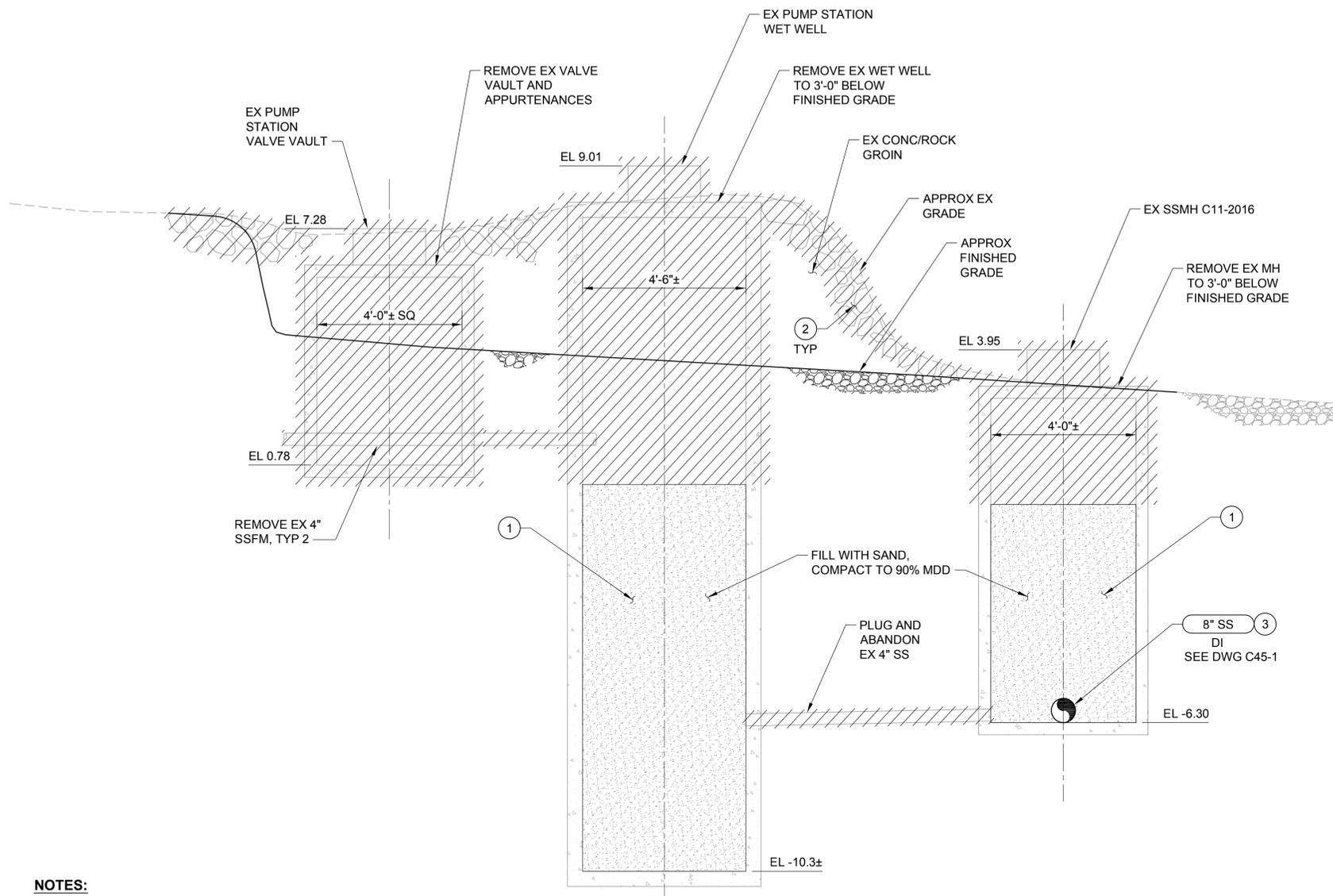
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**JEFFREY S. GIBSON**  
 REGISTERED PROFESSIONAL ENGINEER  
 8-10-16

Drawing: **E-8**  
 Sheet: **25** of **73**  
 File: P15-10341\_E-8  
 Date: August 2016



Path: S:\Card\Kitsap County\15-10341 PS 45 46 47 BL Design\15-10341\_D45-2 Plot date: Aug 09, 2016-03:01:34pm CAD User: acariaso  
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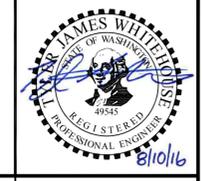
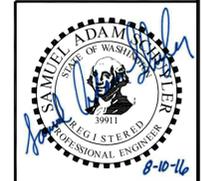


**NOTES:**

- ① REMOVE ALL EXISTING MECHANICAL AND STRUCTURAL APPURTENANCES. CUT PIPE, SUPPORTS, ANCHORS, ETC FLUSH WITH WALL. PLUG ALL PIPE CONNECTIONS THROUGH WALL WITH CONCRETE. HOSE DOWN AND PUMP OUT EXISTING STRUCTURE BEFORE BACKFILLING.
- ② REMOVE EXISTING CONC/ROCK GROIN IN ACCORDANCE WITH SPEC SECTION 02 41 10..
- ③ CORE DRILL AND/OR CUT OUT WALL OF EXISTING MANHOLE TO INSTALL.

**PUMP STATION DEMOLITION SECTION A**  
 SCALE: 1/2" = 1'-0" D45-1

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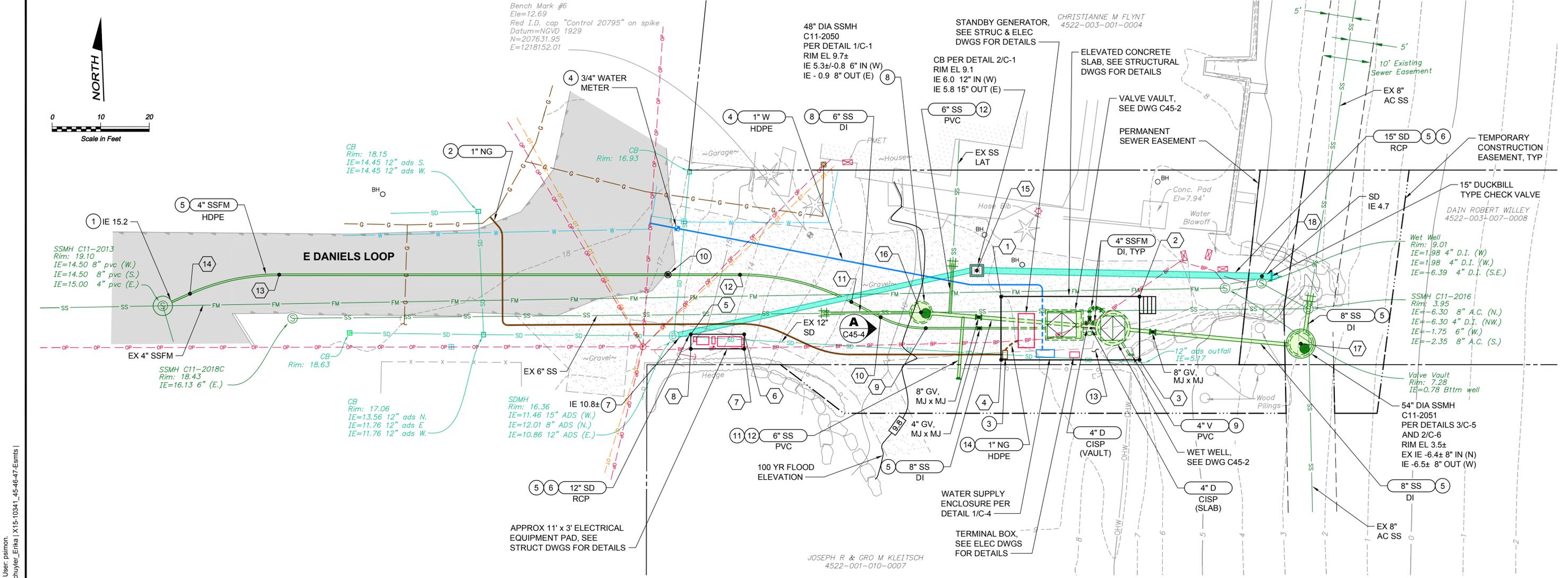
Scale:  
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**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION**  
**DEMOLITION SECTIONS**

Drawing: **D45-2**  
 Sheet: **27** of **73**  
 File: P15-10341\_D45-2  
 Date: August 2016



**NOTES:**

- EXISTING PUMP STATION FACILITIES ARE SHOWN AND SHALL REMAIN IN SERVICE THROUGHOUT CONSTRUCTION. SEE DEMOLITION DWGS FOR DECOMMISSIONING, DEMOLITION, REMOVAL AND ABANDONING OF EXISTING PUMP STATION FACILITIES. SEE RESTORATION DWGS FOR FINISHED SITE AND RESTORATION PLAN.
- SEE SPECIAL PROVISIONS SECTION 1-08.3(2)C FOR CONSTRUCTION SEQUENCING AND CONSTRAINTS.
- MAINTAIN ACCESS TO EXISTING PUMP STATION AND SITE FACILITIES FOR COUNTY STAFF AND SERVICE TRUCKS AT ALL TIMES DURING CONSTRUCTION.
- ALL SSFM PIPE AND VALVE JOINTS, FITTINGS AND COUPLINGS SHALL BE RESTRAINED.
- INSTALL BURIED VALVES PER DETAIL 1/C-2.

**CONSTRUCTION NOTES:**

- CORE DRILL AND SEAL WITH FLEXIBLE BOOT PER DETAIL 7/C-1.
- CASCADE NATURAL GAS WILL PROVIDE AND INSTALL NATURAL GAS PIPELINE, CONNECTION TO MAIN, AND METER. CONTRACTOR SHALL EXCAVATE TRENCH PER DETAIL 5/C-5 AND PROVIDE AND INSTALL REQUIRED BACKFILL AND RESTORE SURFACE. CONTRACTOR SHALL PROVIDE AND INSTALL ALL MATERIALS DOWNSTREAM OF METER. CONTRACTOR SHALL COORDINATE ALL PIPING AND APPURTENANCES INSTALLED BY CASCADE NATURAL GAS WITH EXISTING AND NEW PIPING AND FACILITIES TO AVOID CONFLICT.
- FINAL LOCATION OF METER TO BE DETERMINED BY COUNTY CONSTRUCTION MANAGER AND ENGINEER IN FIELD.
- MANCHESTER WATER DISTRICT WILL PROVIDE AND INSTALL ALL MATERIALS AND RESTORE SURFACE FROM CONNECTION TO EXISTING WATER MAIN TO NEW WATER METER. CONTRACTOR SHALL PROVIDE AND INSTALL ALL MATERIALS AND RESTORE SURFACE DOWNSTREAM OF NEW WATER METER. TRENCH SECTION PER DETAIL 5/C-5. CONTRACTOR SHALL COORDINATE ALL PIPING AND APPURTENANCES INSTALLED BY MANCHESTER WATER DISTRICT WITH EXISTING AND NEW PIPING AND FACILITIES TO AVOID CONFLICT.
- SEE DRAWING C45-5 FOR PIPE PROFILE.
- FINAL INSTALLATION SHALL OCCUR AFTER REMOVAL OF ROCK JETTY TO PERMIT FREE DISCHARGE, INSTALL TEMPORARY FLEXIBLE STORM DRAIN DURING CONSTRUCTION.
- CAREFULLY CUT/CHIP OUT TO REMOVE EXISTING 12" SD AT MANHOLE. CUT/CHIP OUT ADDITIONAL CONCRETE AS REQUIRED TO ACCOMMODATE NEW PIPE EXIT ANGLE. GROUT TO FILL VOIDS AND CREATE A SMOOTH SURFACE, SEAL WITH FLEXIBLE BOOT PER DETAIL 7/C-1.
- INSTALL OUTSIDE DROP MANHOLE CONNECTION FOR 6" INLET SEWER PER DETAIL 2/C-4.
- SEE DETAIL 4/C-5 FOR VENT LOCATION AND DETAILS.
- TRACER WIRE AND HAND HOLE PER DETAIL 4/C-4.
- EXTEND SEWER LATERAL, 3' BEYOND PROPERTY LINE, IE AT TERMINATION = 3.5. CAP PIPE AND MARK LOCATION WITH STAKE AT PROPERTY LINE.
- CONNECT SIDE SEWER TO NEW SEWER MAIN PER DETAIL 5/C-4.
- MAINTAIN 8" CLEAR SPACE BETWEEN EDGE OF PUMP STATION SLAB AND ANY EQUIPMENT, PIPING AND OR CONCRETE PADS FOR A FUTURE CURB, FULL PERIMETER OF STRUCTURE.
- ROUTE NG FROM METER TO GENERATOR BELOW SLAB. TRANSITION FROM BSP TO HDPE WITH TRANSITION SERVICE LINE RISER.

COORDINATE TABLE			
PT #	NORTHING	EASTING	DESCRIPTION
1	207617.72	1218190.84	NW CORNER, PS SLAB
2	207616.58	1218219.32	NE CORNER, PS SLAB
3	207603.65	1218218.89	SE CORNER, PS SLAB
4	207604.73	1218190.32	SW CORNER, PS SLAB
5	207612.53	1218126.65	NW CORNER, ELECTRICAL EQUIPMENT PAD
6	207612.09	1218137.64	NE CORNER, ELECTRICAL EQUIPMENT PAD
7	207609.09	1218137.52	SE CORNER, ELECTRICAL EQUIPMENT PAD
8	207609.53	1218126.53	SW CORNER, ELECTRICAL EQUIPMENT PAD
9	207611.84	1218175.06	PT, 4" SSFM
10	207614.48	1218165.87	PC, 4" SSFM
11	207617.85	1218159.97	PT, 4" SSFM
12	207624.36	1218137.25	PC, 4" SSFM
13	207628.15	1218042.39	PT, 4" SSFM
14	207624.98	1218023.88	PC, 4" SSFM
15	207623.27	1218186.05	CB CENTER, APPROXIMATE
16	207615.12	1218174.20	MH CENTER, APPROXIMATE
17	207605.57	1218252.13	MH CENTER, APPROXIMATE
18	207619.75	1218244.69	C/L SD TERMINATION, APPROXIMATE

Path: S:\Card\Kitsap County\15-10341 PS 45 46 47 BL Design\15-10341\_C45-1 Plot date: Aug 11, 2016 03:06:58pm CAD User: psimon.  
 Xref Filename: X:\15-10341\_P545-Prop | X:\15-10341\_TB | Whitehouse | Schuyler\_Adam | Dahl | Gibson | X:\15-10341\_45-46-47-Topo | Schuyler\_Erika | X:\15-10341\_45-46-47-Esmis |

No.	Revision	Date	By	App'd
	ISSUED FOR BID	08-2016	TJW	RAD
	BUILDING PERMIT SUBMITTAL	04-2016	TJW	RAD
	ECOLOGY SUBMITTAL	02-2016	TJW	RAD



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 206.505.3400  
 206.505.3406 (fax)  
 www.bhcconsultants.com

Designed: T. Whitehouse, P.E.  
 Drawn: P. Simon  
 Checked: A. Schuyler, P.E.  
 Approved: R. Dorn, P.E.

Scale:  
 1" = 10'-0"  
 One Inch at Full Scale  
 If Not One Inch Scale Accordingly

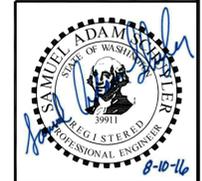


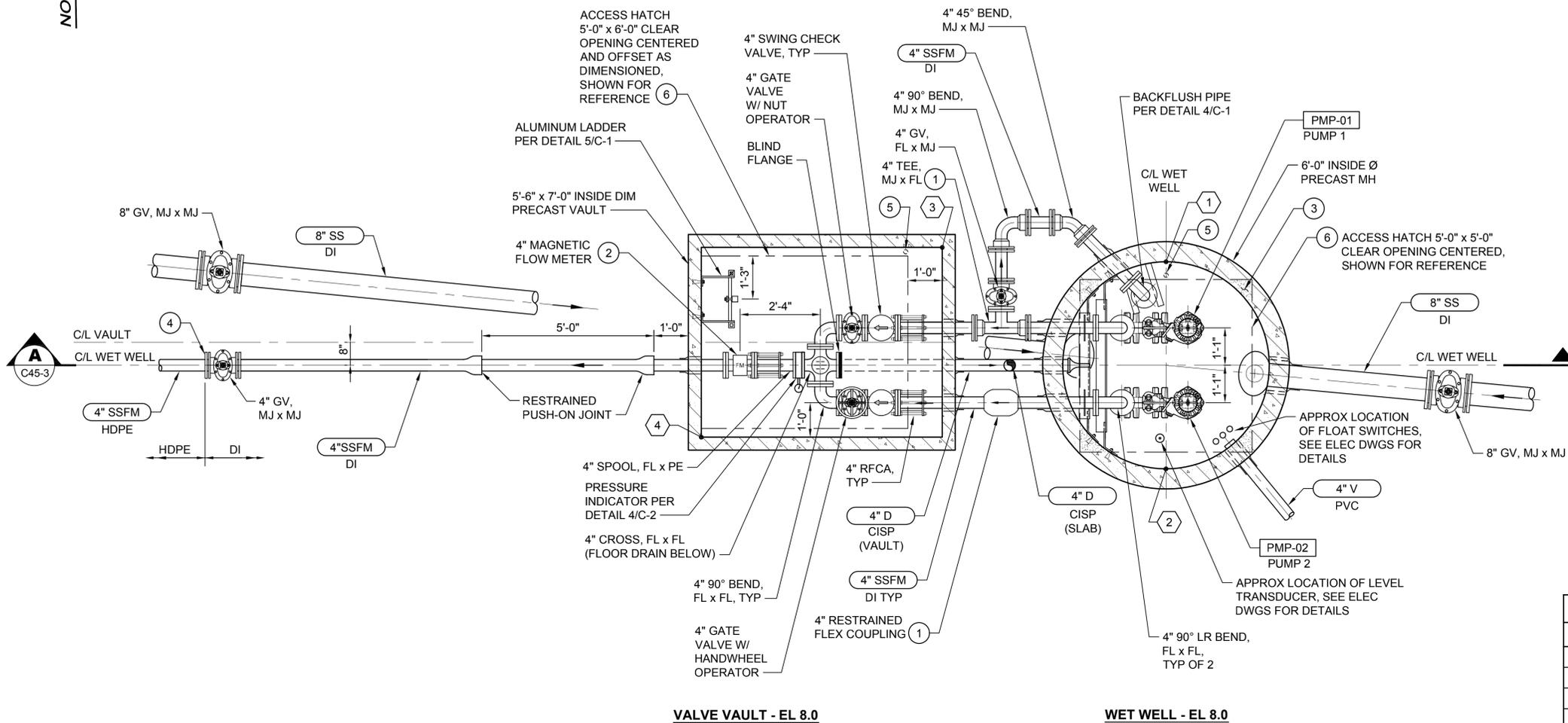
**Kitsap County Public Works**  
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 Port Orchard, WA 98366

**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION**  
**PUMP STATION AND PIPING PLAN**

Drawing: **C45-1**  
 Sheet: **28** of **73**  
 File: P15-10341\_C45-1  
 Date: August 2016

**Call 48 Hours Before You Dig**  
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 UNDERGROUND SERVICE





**NOTES:**

1. ALL SSFM PIPE AND VALVE JOINTS, FITTINGS AND COUPLINGS SHALL BE RESTRAINED.
2. ALL SUPPORT MATERIALS IN WET WELL AND VALVE VAULT SHALL BE TYPE 316L STAINLESS STEEL. ALL FASTENERS (NUTS, BOLTS, ANCHORS, WASHERS, ETC.) SHALL BE TYPE 316 OR 316L STAINLESS STEEL.
3. SEE DWG C45-1 FOR PIPE CONTINUATION.
4. INSTALL BURIED VALVES PER DETAIL 1/C-2.
5. SEAL ALL PIPE PENETRATIONS THROUGH WALLS PER DETAIL 7/C-1.
6. DUCTILE IRON PIPE AND FITTINGS SHALL BE CLASS 52 AND LINED WITH PROTECTO 401.

**CONSTRUCTION NOTES:**

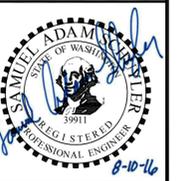
- ① CENTER BETWEEN STRUCTURES.
- ② PROVIDE FABRICATED 4" DI SSFM FLANGED SPOOL TO MATCH LAY LENGTH OF INSTALLED FLOW METER.
- ③ PRIOR TO INTERIOR COATING, GROUT FLAT AREA AT TOP OF MANHOLE RING, SLOPE TO DRAIN, TYP 4 LOCATIONS.
- ④ RESTRAIN WITH MECHANICAL JOINT RESTRAINT COUPLING FOR HDPE PIPE.
- ⑤ APPROXIMATE ACCESS HATCH DRAIN LOCATION, SEE DRAWING C45-3 FOR DETAILS.
- ⑥ SEE DWG S45-1 FOR ACCESS HATCH ORIENTATION.

**COORDINATE TABLE**

PT (#)	NORTHING	EASTING	DESCRIPTION
1	256124.15	1208945.11	NORTH INSIDE EDGE, WET WELL
2	256118.15	1208945.11	SOUTH INSIDE EDGE, WET WELL
3	256124.57	1208938.61	NE INSIDE CORNER, VALVE VAULT
4	256119.07	1208931.61	SW INSIDE CORNER, VALVE VAULT

**WET WELL AND VALVE VAULT PLAN**  
**PLAN 1**  
 SCALE: 1/2" = 1'-0" C45-1

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Path: S:\Cadd\Kitsap County\15-10341 PS 45 46 47 BL Design\DWG\15-10341\_C45-2\_Plan.dwg Plot date: Aug 09, 2016-02:59:32pm CAD User: acariaso  
 Xref Filename: |X|15-10341\_TB|Whitehouse|Schuyler\_Adam|Dahl|Gibson|Schuyler\_Erika|

No.	Revision	Date	By	App'd
	ISSUED FOR BID	08-2016	TJW	RAD
	BUILDING PERMIT SUBMITTAL	04-2016	TJW	RAD
	ECOLOGY SUBMITTAL	02-2016	TJW	RAD

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 1601 Fifth Avenue, Suite 500  
 Seattle, Washington 98101  
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 206.505.3406 (fax)  
 www.bhcconsultants.com

Designed: T. Whitehouse, P.E.  
 Drawn: S. Olsoe  
 Checked: A. Schuyler, P.E.  
 Approved: R. Dorn, P.E.

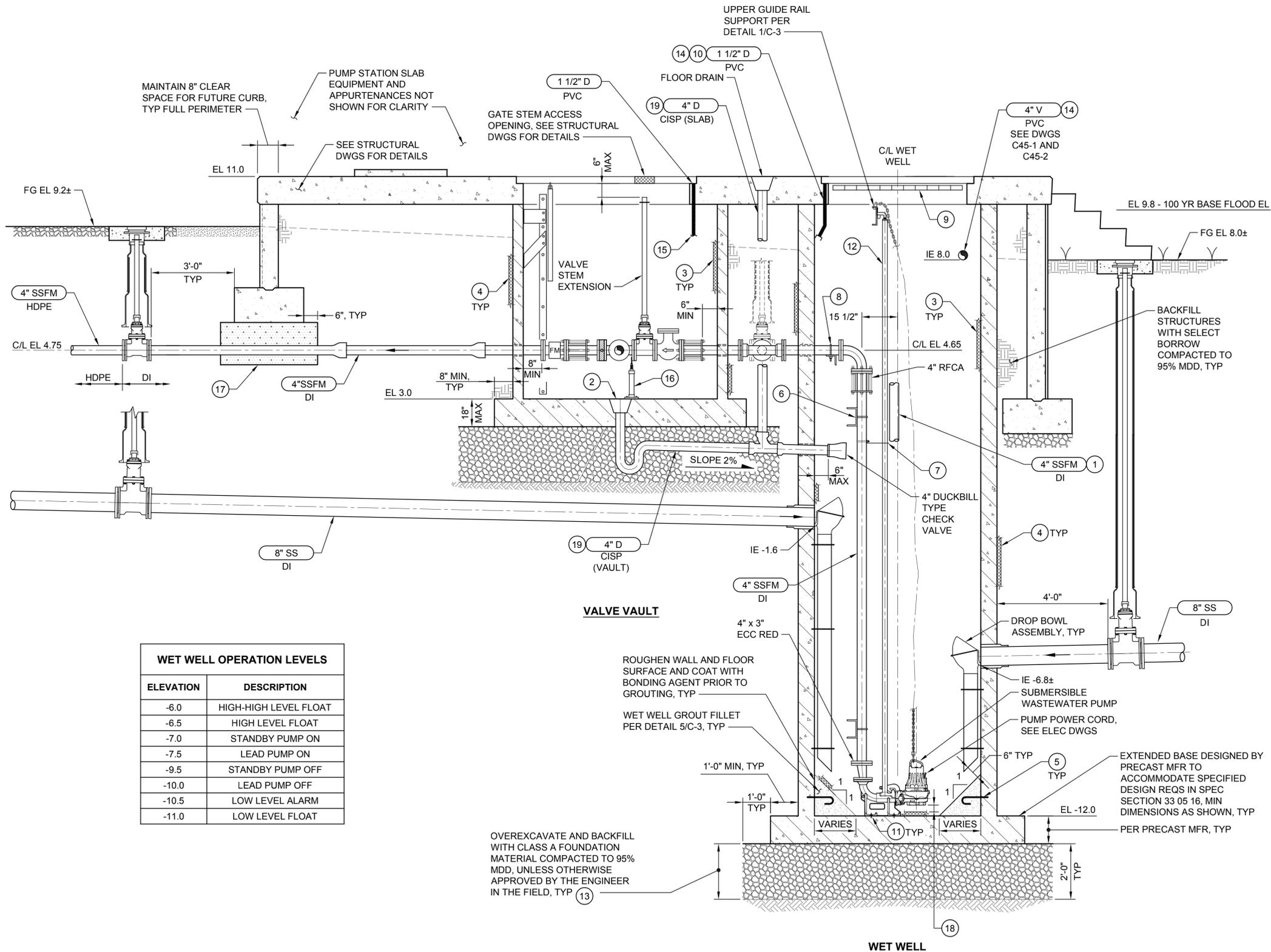
Scale:  
 1/2" = 1'-0"  
 One Inch at Full Scale  
 If Not One Inch Scale Accordingly

**Kitsap County Public Works**  
 614 Division Street, MS 26  
 Port Orchard, WA 98366

**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION**  
**WET WELL AND VALVE VAULT PLAN**

Drawing: **C45-2**  
 Sheet: **29** of **73**  
 File: P15-10341\_C45-2  
 Date: August 2016

Path: S:\Cad\Kitsap County\15-10341 PS 45 46 47 BL Design\15-10341\_C45-3 Plot date: Aug 11, 2016-03:08:58pm CAD User: psimon.  
 Xref Filename: |Schuyler\_Adam| P15-10341\_TB |Whitehouse| Dahl| Gibson| Schuyler\_Erika|



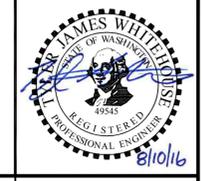
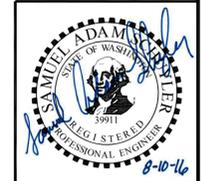
WET WELL OPERATION LEVELS	
ELEVATION	DESCRIPTION
-6.0	HIGH-HIGH LEVEL FLOAT
-6.5	HIGH LEVEL FLOAT
-7.0	STANDBY PUMP ON
-7.5	LEAD PUMP ON
-9.5	STANDBY PUMP OFF
-10.0	LEAD PUMP OFF
-10.5	LOW LEVEL ALARM
-11.0	LOW LEVEL FLOAT

**WET WELL AND VALVE VAULT SECTION**  
 SCALE: 1/2" = 1'-0" A C45-2

- NOTES:**
- ALL SSFM PIPE AND VALVE JOINTS, FITTINGS AND COUPLINGS SHALL BE RESTRAINED.
  - ALL SUPPORT MATERIALS IN WET WELL AND VALVE VAULT SHALL BE TYPE 316L STAINLESS STEEL. ALL FASTENERS (NUTS, BOLTS, ANCHORS, WASHERS, ETC.) SHALL BE TYPE 316 OR 316L STAINLESS STEEL.
  - SEE DWG C45-1 FOR PIPE CONTINUATION.
  - INSTALL BURIED VALVES PER DETAIL 1/C-2.
  - SEAL ALL PIPE PENETRATIONS THROUGH WALLS PER DETAIL 7/C-1.
  - DUCTILE IRON PIPE AND FITTINGS SHALL BE CLASS 52 AND LINED WITH PROTECTO 401.

- CONSTRUCTION NOTES:**
- BACKFLUSH PIPE BEYOND, SHOWN OFFSET FOR CLARITY. SEE DETAIL 4/C-1.
  - CAST FLOOR DRAIN IN VAULT BASE, SEE DRAWING C45-2 FOR LOCATION, SLOPE FLOOR TO DRAIN.
  - PREPARE AND FIELD COAT ALL INTERIOR CONCRETE AND GROUTED SURFACES PER SPEC SECTION 09 96 00 PRIOR TO INSTALLATION OF INTERIOR PIPING AND APPURTENANCES.
  - PREPARE AND FACTORY COAT EXTERIOR CONCRETE WALL SURFACES IN ACCORDANCE WITH SPEC SECTION 09 96 00. WRAP ALL EXTERIOR JOINTS AFTER INSTALLATION PER SPEC SECTION 33 05 16.
  - #4 EPOXY GROUTED DOWEL W/ STD 180 DEG HOOK, MIN 4-INCH EMBEDDED IN WET WELL WALL, MIN 8-INCH EMBEDDED IN GROUT FILL. SPACE DOWELS AT 2 FEET EACH WAY.
  - INTERMEDIATE PIPE SUPPORT PER DETAIL 3/C-3, TYP 2.
  - INTERMEDIATE GUIDE RAIL SUPPORT BY PUMP MFR, TYP 1 PER PUMP.
  - TOP PIPE SUPPORT PER DETAIL 2/C-3.
  - SAFETY GRATE PROVIDED BY HATCH MFR. SWING DIRECTION SHALL BE SAME AS DOOR. COORDINATE WITH GUIDE RAIL MOUNTING TO AVOID CONFLICT.
  - HATCH FRAME DRAIN, ANGLE TOWARDS WALL AND TERMINATE.
  - TYPE 316 SST ANCHORAGE AS RECOMMENDED BY PUMP MFR.
  - GUIDE RAIL SYSTEM, SIZE PER MFR, SCH 40 316L SST.
  - IF CONTRACTOR'S MEANS AND METHODS UTILIZE A CONC BOTTOM SEAL, FOUNDATION TO BE DETERMINED AND APPROVED BY ENGINEER PRIOR TO CONSTRUCTION.
  - SHOWN OUT OF SECTION FOR CLARITY.
  - TERMINATE AT FLOOR W/ 90° ELBOW DIRECTED TOWARD DRAIN. SUPPORT PIPE TO WALL PER DETAIL 4/C-3.
  - ADJUSTABLE PIPE SUPPORT, PER DETAIL 5/C-2, TYP OF 2.
  - FULLY ENCASE PIPE CROSSING UNDER FOOTING WITH CDF TO UNDERSIDE OF FOOTING. NO PIPE JOINTS ARE ALLOWED WITHIN ENCASEMENT.
  - AS RECOMMENDED BY PUMP MANUFACTURER, INSTALL DISCHARGE ELBOW ON NON-SHRINK GROUT LEVELING PAD AS REQUIRED.
  - BED AND BACKFILL PIPING WITH CDF

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	ECOLOGY SUBMITTAL	02-2016	TJW	RAD

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Designed: T. Whitehouse, P.E.	Scale: 1/2" = 1'-0"
Drawn: S. Olsoe	One Inch at Full Scale
Checked: A. Schuyler, P.E.	If Not One Inch Scale Accordingly
Approved: R. Dorn, P.E.	

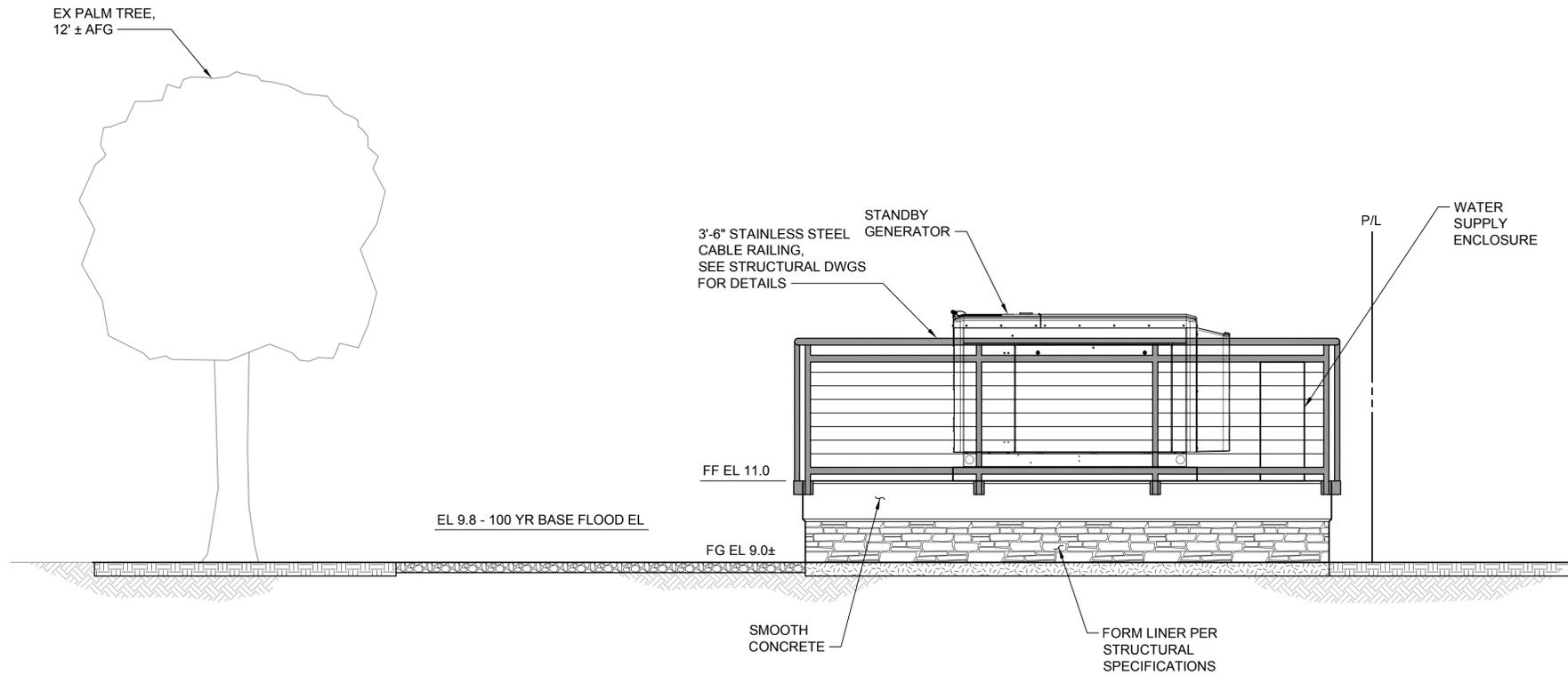
**Kitsap County Public Works**  
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**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION**  
**WET WELL AND VALVE VAULT SECTION**

Drawing: C45-3
Sheet: 30 of 73
File: P15-10341_C45-3
Date: August 2016

**NOTES:**

1. PLANTS NOT SHOWN FOR CLARITY, SEE DWG R45-1 FOR DETAILS.
2. ELEVATION VIEW IS ILLUSTRATIVE, NOT ALL ABOVEGROUND FEATURES ARE SHOWN. MAJOR COMPONENTS ARE ILLUSTRATED ONLY.



**WEST ELEVATION**  
 SCALE: 1/2" = 1'-0"  
 A  
 C45-1

**Call 48 Hours Before You Dig**  
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 UNDERGROUND SERVICE



Path: S:\Cad\Kitsap County\15-10341 PS 45 46 47 BL Design\15-10341\_C45-4 Plot date: Aug 09, 2016 03:04:28pm CAD User: acariaso  
 Xref Filename: | Whitehouse | Schuyler\_Adam | Dahl | Gibson | X15-10341\_TB | Schuyler\_Erika |

No.	Revision	Date	By	App'd
	ISSUED FOR BID	08-2016	TJW	RAD
	BUILDING PERMIT SUBMITTAL	04-2016	TJW	RAD
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Drawn: S. Olsoe	One Inch at Full Scale
Checked: A. Schuyler, P.E.	If Not One Inch Scale Accordingly
Approved: R. Dorn, P.E.	

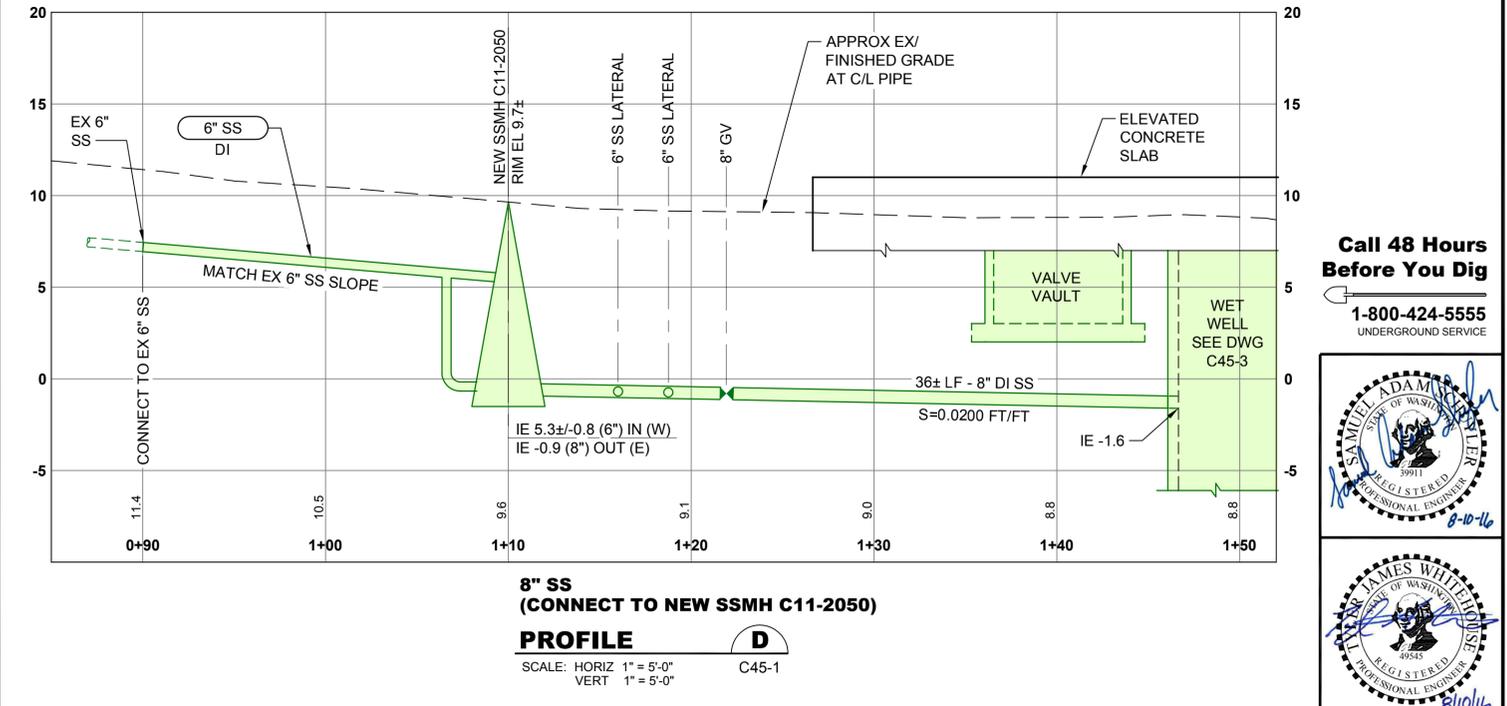
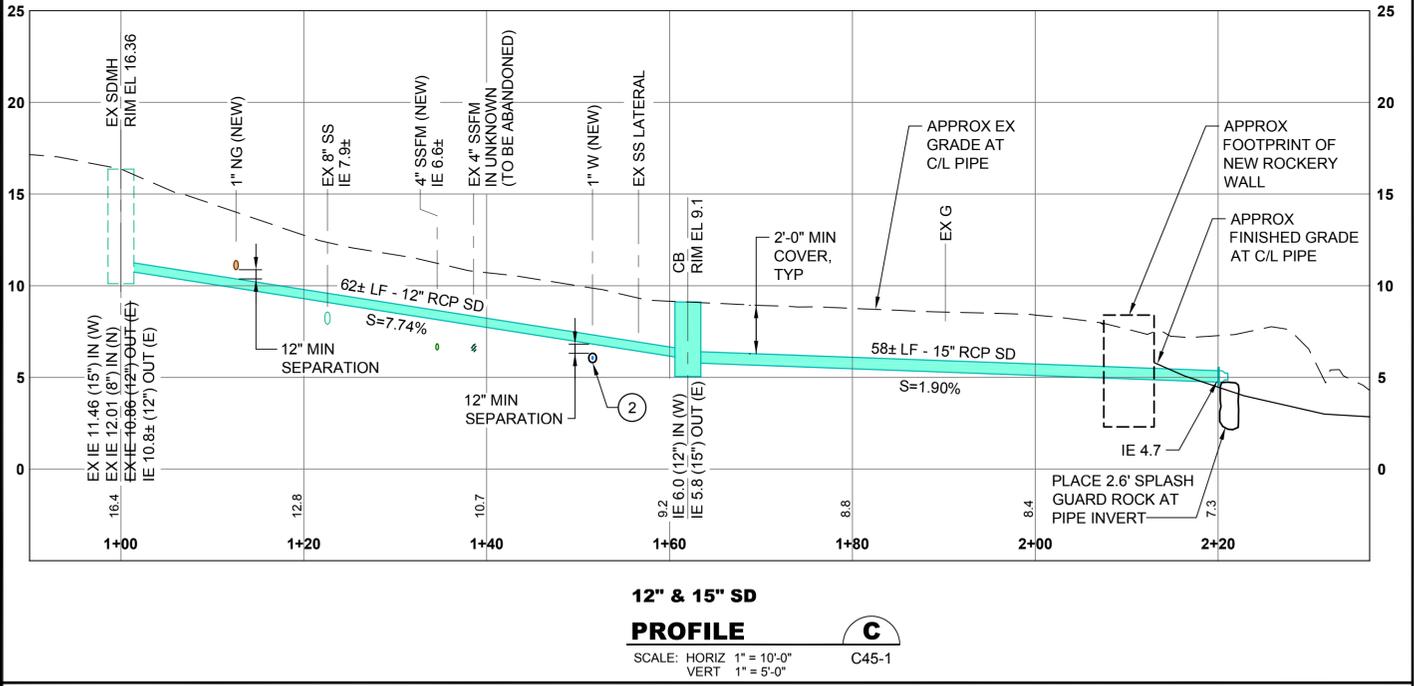
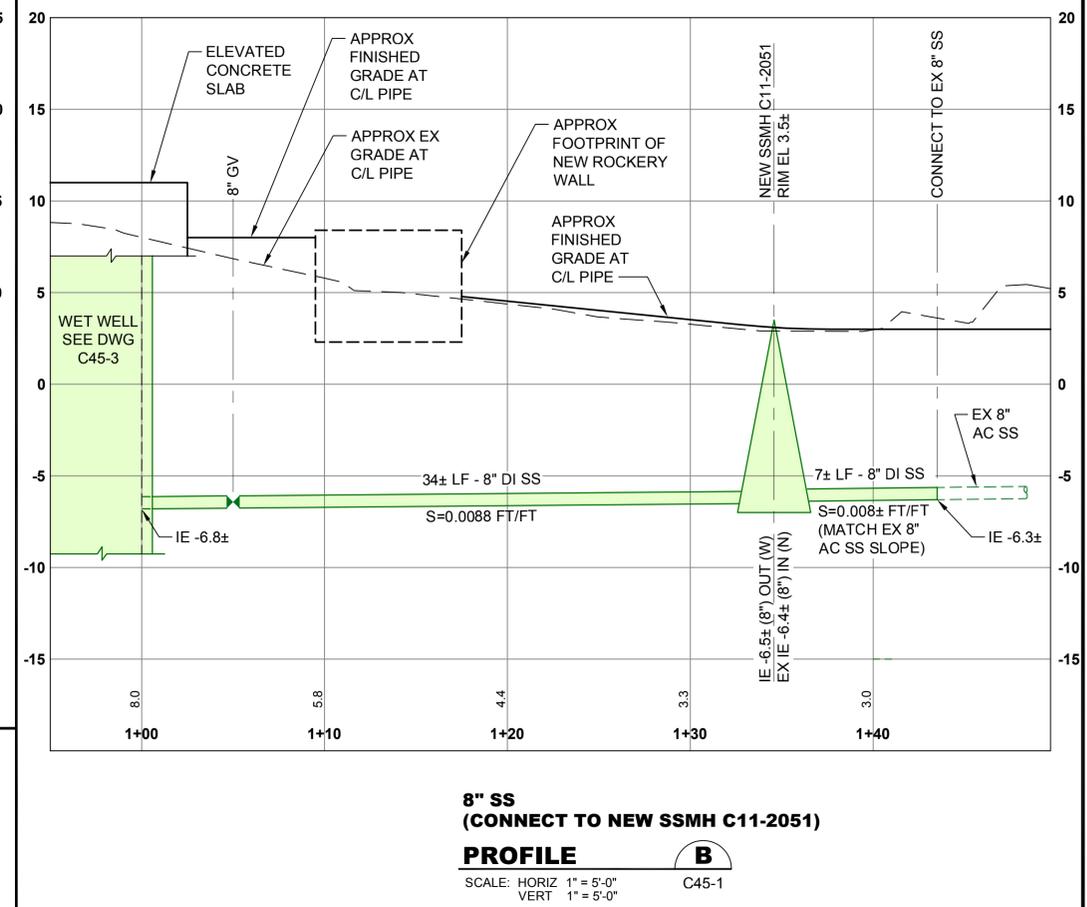
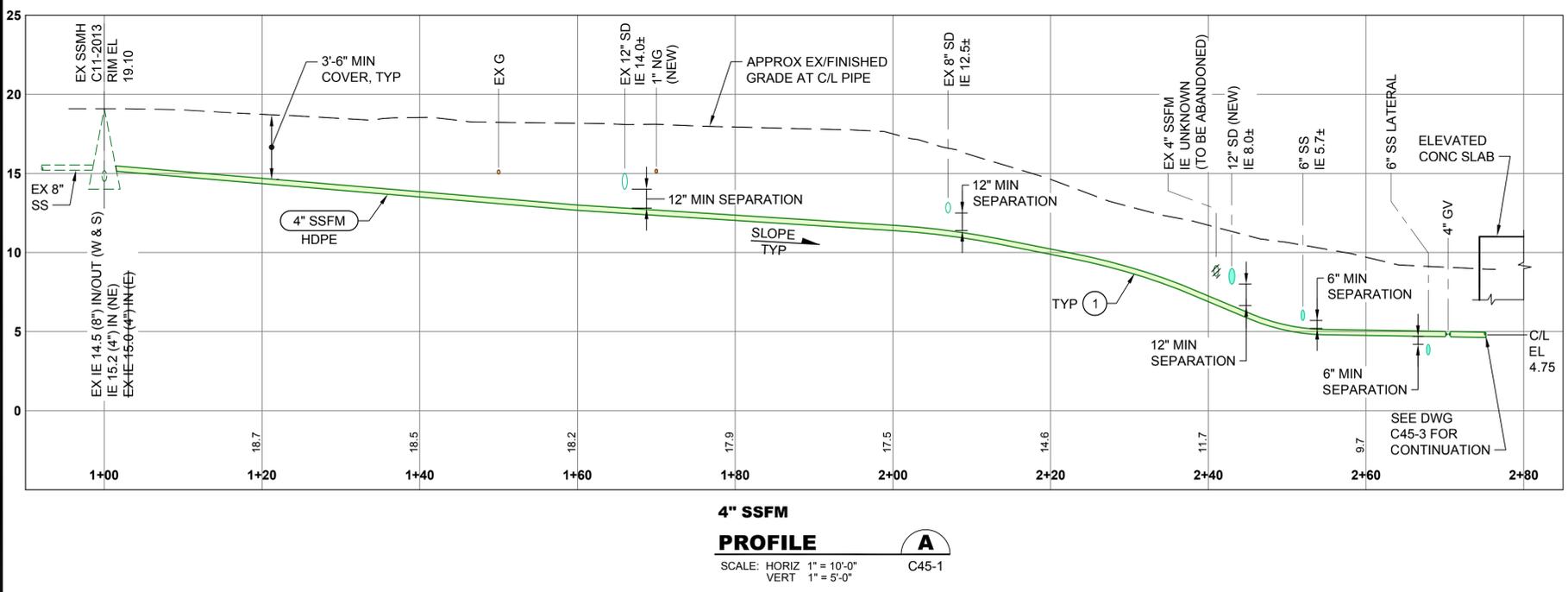


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**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION**  
**PUMP STATION ELEVATION**

Drawing: <b>C45-4</b>
Sheet: <b>31</b> of <b>73</b>
File: P15-10341_C45-4
Date: August 2016

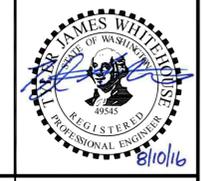
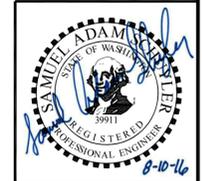
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 Xref Filename: X:\15-10341\_P15-10341\_C45-5\_Prop | Whitehouse | Schuyler\_Erika | X:\15-10341\_10-5 Prof | X:\15-10341\_5-5 Prof



- NOTES:**
- LOCATION OF EXISTING UTILITIES SHOWN ARE APPROXIMATE. DEPTH IS UNKNOWN. CONTRACTOR SHALL POthOLE TO FIELD VERIFY LOCATION AND DEPTH OF EXISTING UTILITIES PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER OF ANY CONFLICTS.
  - NEW ELECTRICAL CONDUITS ARE NOT SHOWN IN PROFILE. CONTRACTOR TO COORDINATE ROUTING WITH EXISTING AND NEW UTILITIES TO AVOID CONFLICT.

- CONSTRUCTION NOTES:**
- BEND HDPE PIPE TO ACCOMMODATE CHANGES IN HORIZONTAL AND VERTICAL ALIGNMENT. LIMIT BEND RADIUS OF HDPE PIPE TO TWICE MFRS ALLOWABLE MINIMUM BEND RADIUS.
  - ENCASE WATER SERVICE IN 10' MINIMUM PVC SLEEVE CENTERED ON CROSSING. PLUG EACH END WATERTIGHT.

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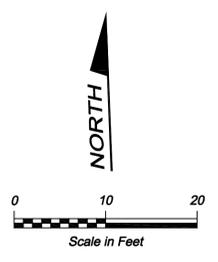
Designed: T. Whitehouse, P.E.  
 Drawn: P. Simon  
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 Approved: R. Dorn, P.E.

Scale:  
 As Noted  
 One Inch at Full Scale  
 If Not One Inch Scale Accordingly

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 Port Orchard, WA 98366

**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION**  
**PIPING PROFILES**

Drawing: **C45-5**  
 Sheet: **32** of **73**  
 File: P15-10341\_C45-5  
 Date: August 2016



Bench Mark #6  
 Ele=12.69  
 Red I.D. cap "Control 20795" on spike  
 Datum=NGVD 1929  
 N=207631.95  
 E=1218152.01

CHRISTIANNE M FLYNT  
 4522-003-001-0004

DAIN ROBERT WILLEY  
 4522-003-007-0008

JOSEPH R & GRO M KLEITSCH  
 4522-001-010-0007

SAWCUT AND REMOVE EX ASPHALT AND REPLACE WITH HMA PAVEMENT PATCH & OVERLAY PER DETAIL 1/R-1, TYP

EX ASPHALT TO REMAIN, TYP

REMOVE TOP 4" OF EX GROUND AND REPLACE WITH TOPSOIL AND HYDROSEED PER DETAIL 3/R-1, TYP

SEE DWGS R45-2 AND R45-3 FOR SHORELINE STABILIZATION PLAN AND DETAILS

REMOVE TOP 4" OF EX GROUND AND REPLACE WITH 5/8" CRUSHED ROCK PER DETAIL 2/R-1

CEDAR FENCE AND SWING GATE PER DETAIL 5/R-1

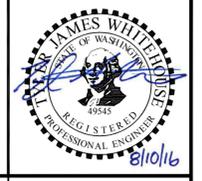
**NOTES:**

- ALL NECESSARY RESTORATION MAY NOT BE IDENTIFIED ON THE DRAWINGS. CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS TO PRE-CONSTRUCTION CONDITIONS OR BETTER.

**CONSTRUCTION NOTES:**

- GRADE AREA WITHIN 3 FEET NORTH OF STEPPED EQUIPMENT PAD NEARLY LEVEL AS DIRECTED BY THE CONSTRUCTION MANAGER IN THE FIELD. SEE DETAIL 2/S45-2 FOR APPROXIMATE ELEVATIONS.
- GRADE IMMEDIATE AREA AROUND CB TO SLOPE TO CB AS DIRECTED BY THE CONSTRUCTION MANAGER IN THE FIELD.

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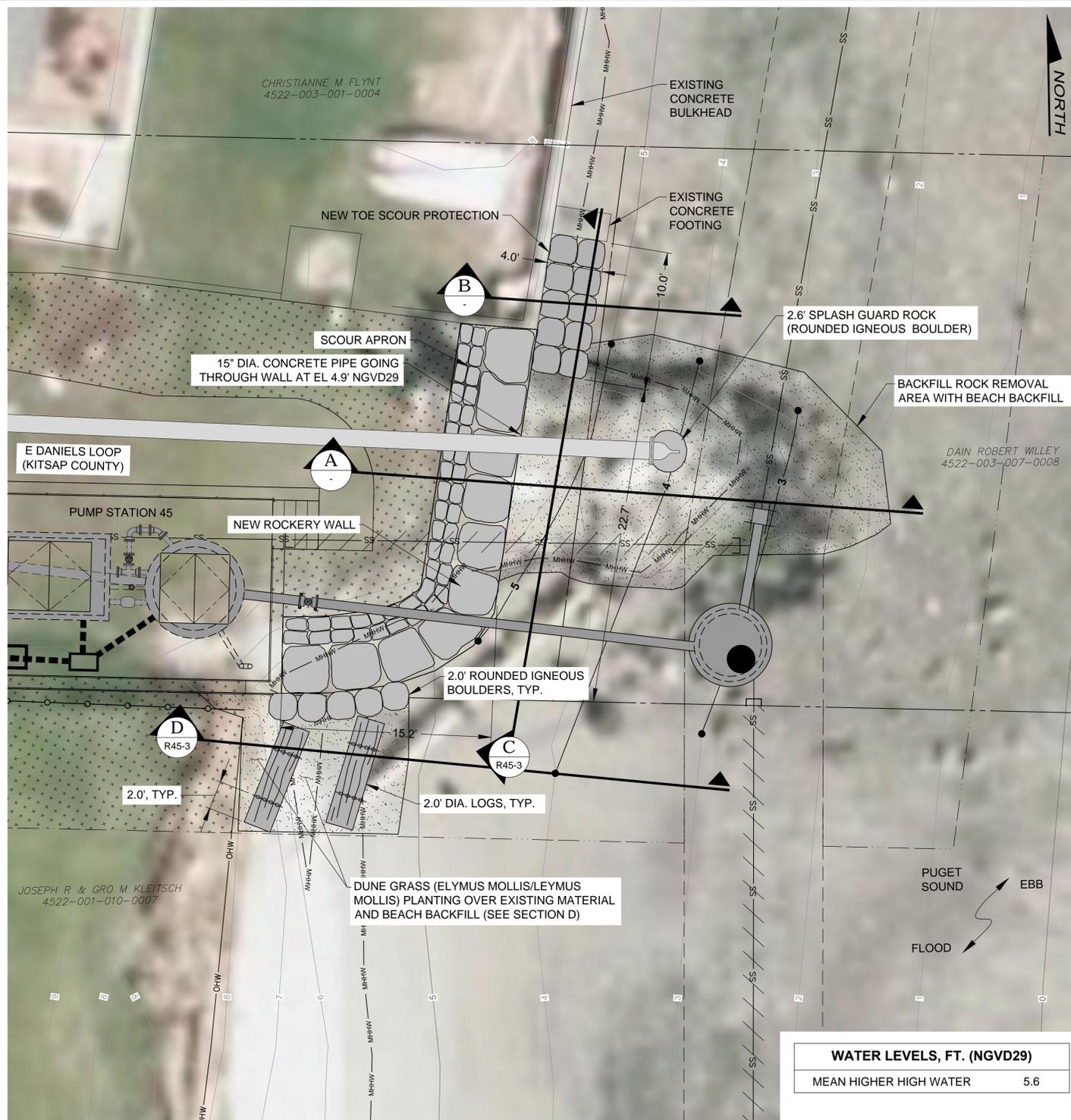


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**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION**  
**FINISHED SITE AND RESTORATION PLAN**

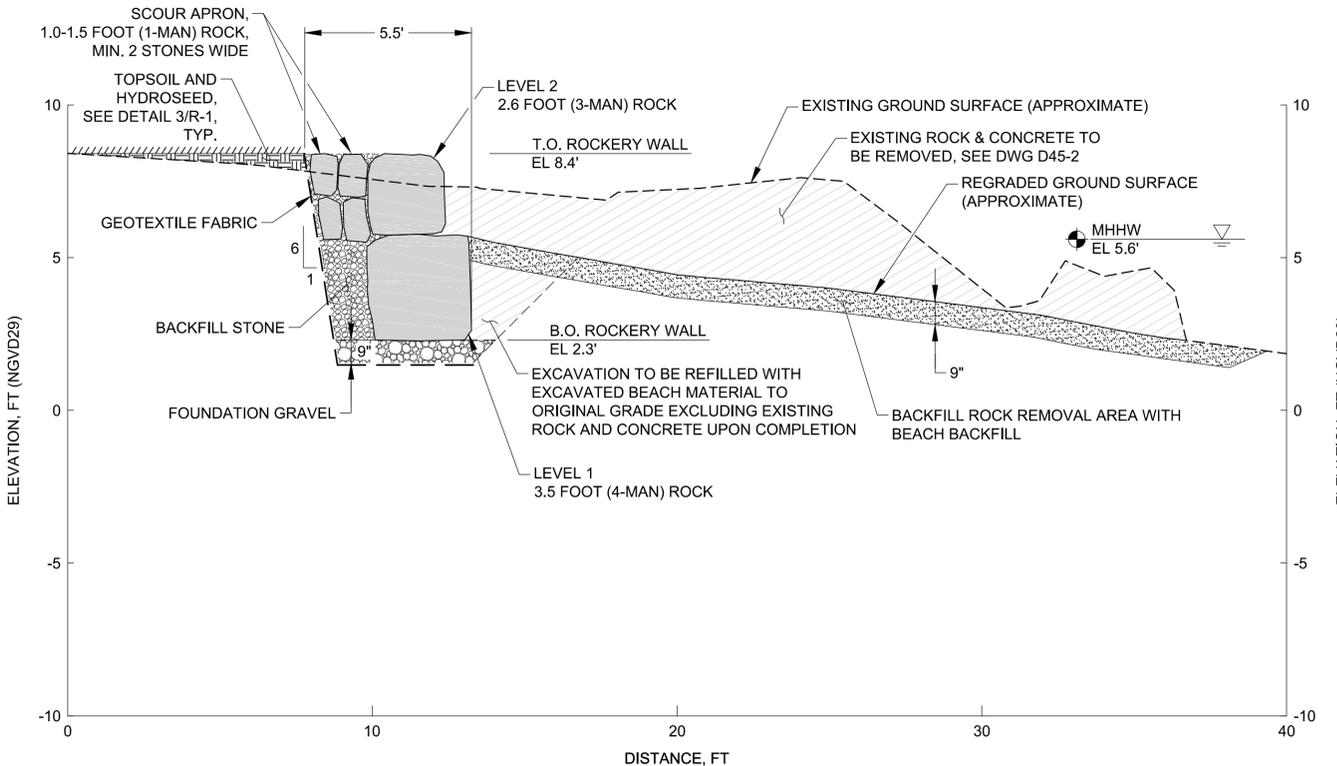
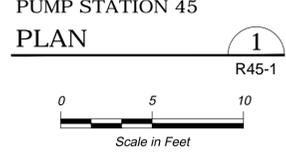
Drawing: **R45-1**  
 Sheet: **33** of **73**  
 File: P15-10341\_R45-1  
 Date: August 2016

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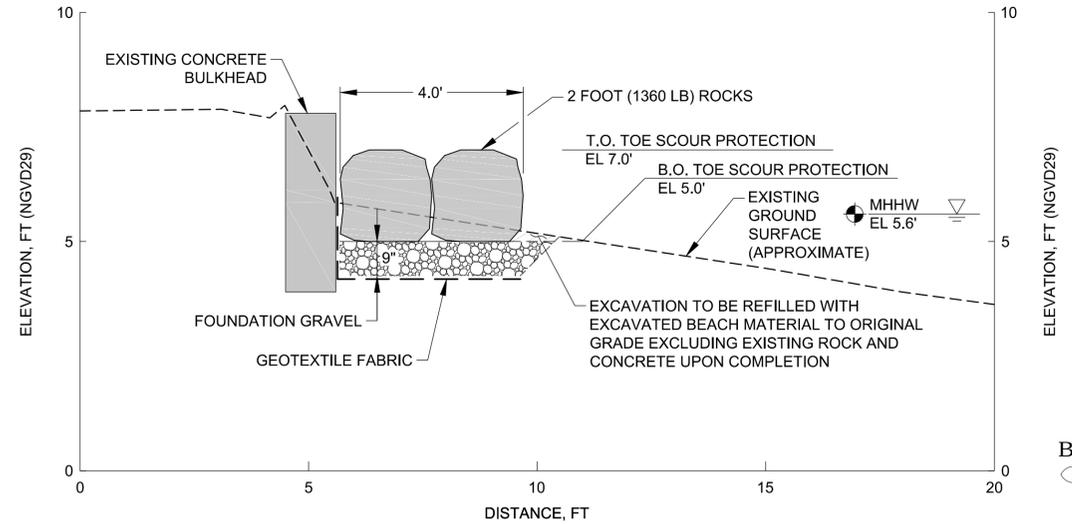


WATER LEVELS, FT. (NGVD29)	
MEAN HIGHER HIGH WATER	5.6

- NOTES:**
- HORIZONTAL DATUM: WASHINGTON STATE PLANE NORTH ZONE, NAD83, U.S. SURVEY FEET.
  - VERTICAL DATUM: NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD29).
  - TOPOGRAPHIC SURVEY CONDUCTED BY AES CONSULTANTS, INC., IN FEBRUARY 2015.
  - ORDINARY HIGH WATER MARK SHOWN IS APPROXIMATE BASED ON VEGETATION BY AES SURVEY.
  - BEACH BACKFILL SHALL BE SIMILAR TO EXISTING BEACH MATERIAL (UP TO 2.5\"/>



SECTION A



SECTION B

Call 48 Hours Before You Dig  
 1-800-424-5555  
 UNDERGROUND SERVICE

No.	Revision	Date	By	App'd
	ISSUED FOR BID	08-2016	CMD	RSP
	ECOLOGY RESUBMITTAL	07-2016	CMD	RSP
	ECOLOGY RESUBMITTAL	06-2016	CMD	RSP
	BUILDING PERMIT SUBMITTAL	04-2016	CMD	RSP
	ECOLOGY SUBMITTAL	02-2016	CMD	RSP

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 110 James Street  
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 F +1 (425) 778 6883  
 www.mottmacdonald.com

Designed: C. Day, P.E.  
 Drawn: C. Taylor  
 Checked: D. Simpson, P.E.  
 Approved: R. S. Phillips, P.E.  
 Scale: AS NOTED  
 One Inch At Full Scale  
 If Not One Inch Scale Accordingly

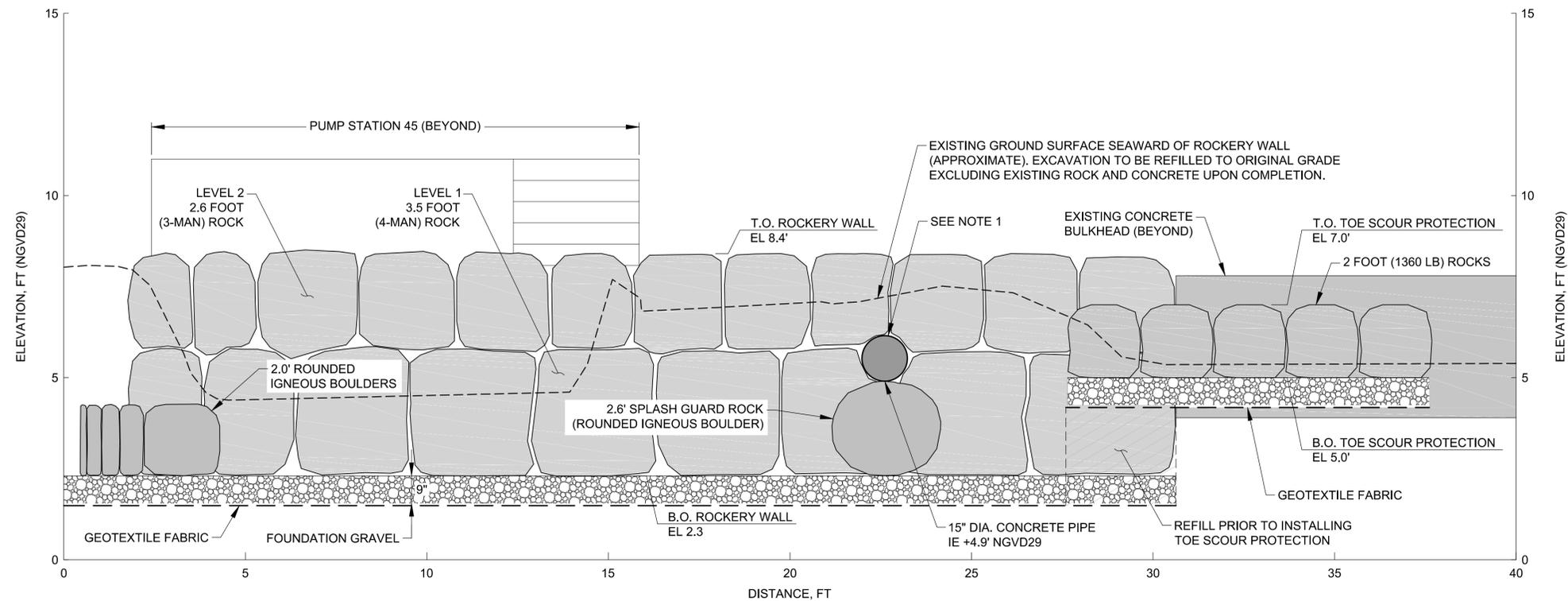
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MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION  
 SHORELINE STABILIZATION PLAN AND SECTIONS

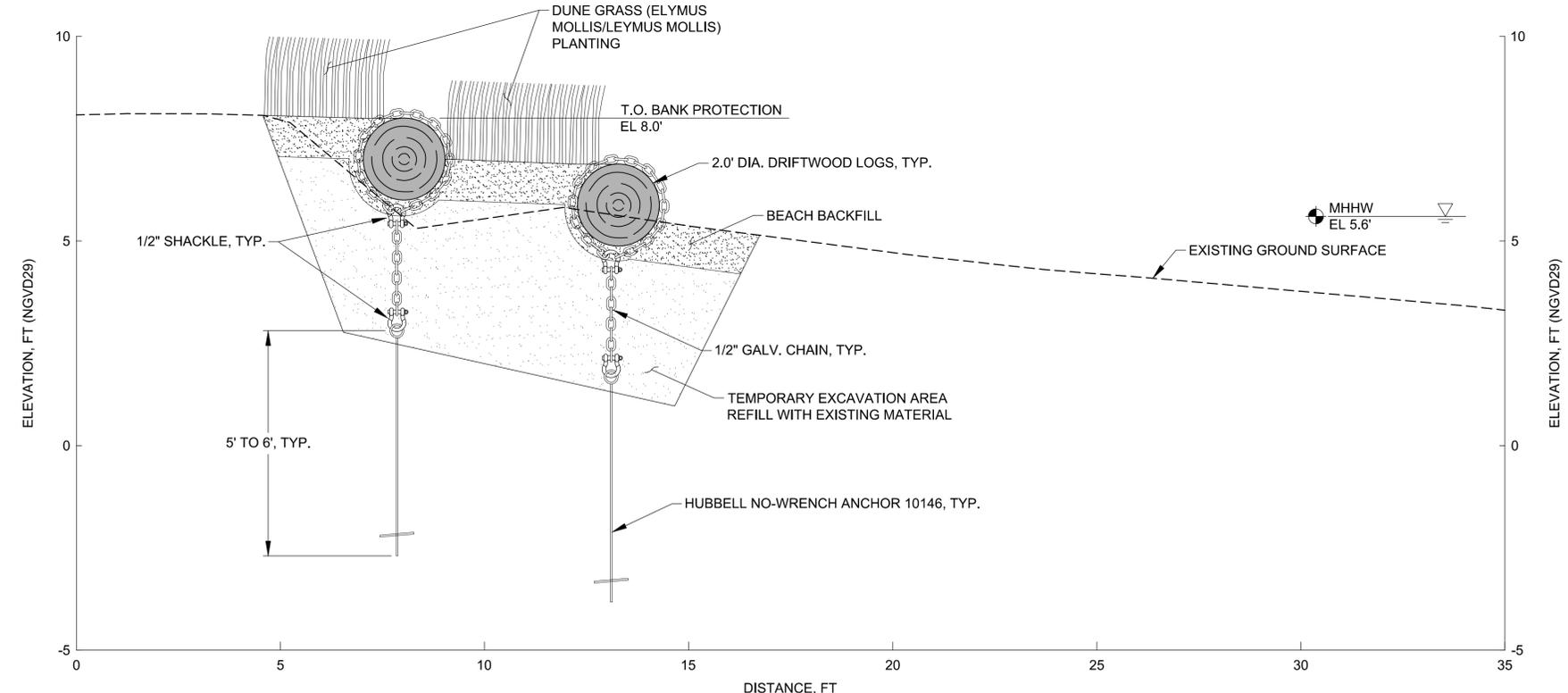
**CHRISTOPHER M. DAY**  
 REGISTERED PROFESSIONAL ENGINEER  
 8/10/16

Drawing: R45-2  
 Sheet: 34 of 73  
 File: 365056-Design Site  
 Date: Aug. 2016

FILE NAME (UPDATED BY): 2016-02-18 8:52 AM Morrison, Tyler E  
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 PLOT DATE & TIME: 2016-02-18 8:52 AM Morrison, Tyler E  
 PLOT: 365056-Design\_Site.dwg



SECTION C  
R45-2



SECTION D  
R45-2

- NOTES:**
1. SELECT ROCK SIZE AND SHAPE TO REMAIN STABLE WITHOUT RESTING ON PIPE.

FILE NAME (UPDATED BY) 2016-02-18 9:02 AM Morrison, Tyler E  
 w:\365056 - manchester pump station 7 - design\365056-Design\_Site.dwg  
 PLOT DATE & TIME 2016-02-18 9:02 AM Morrison, Tyler E  
 PLOT: 1/8" = 1'-0"

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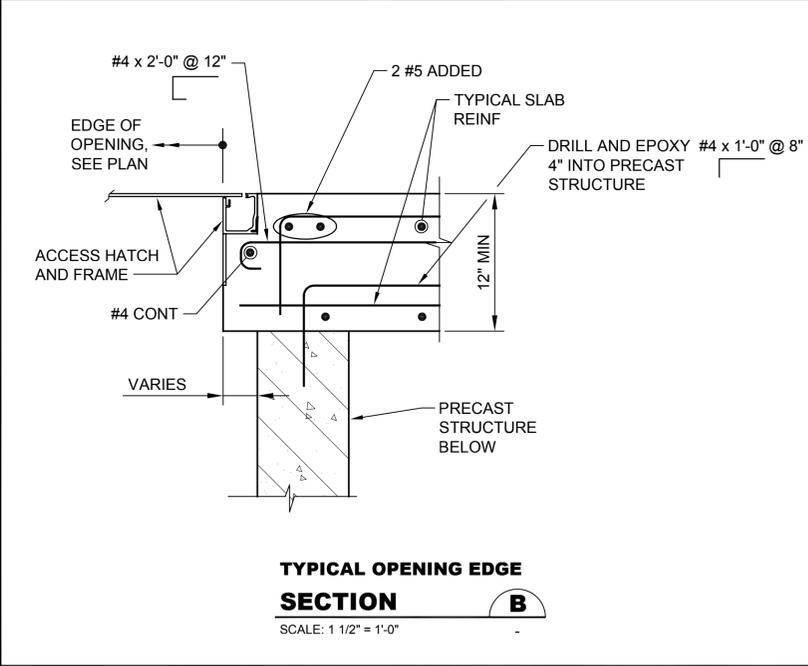
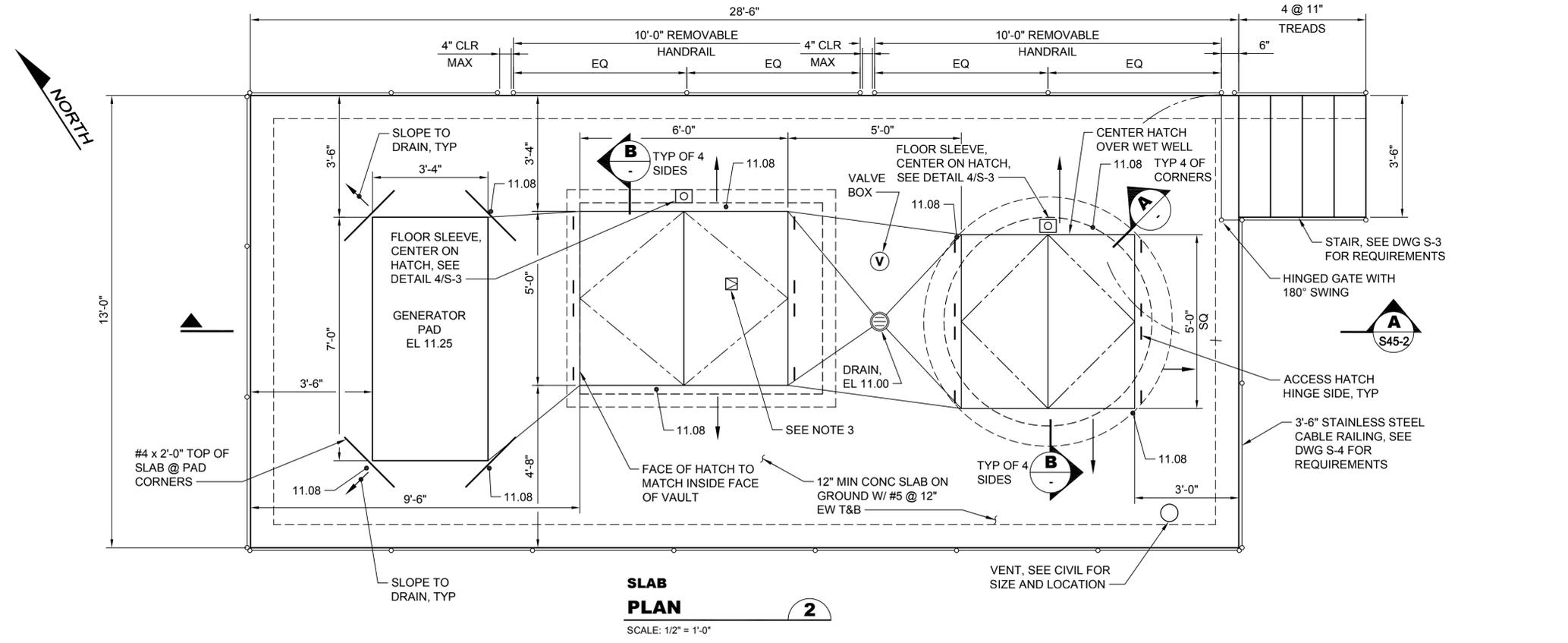
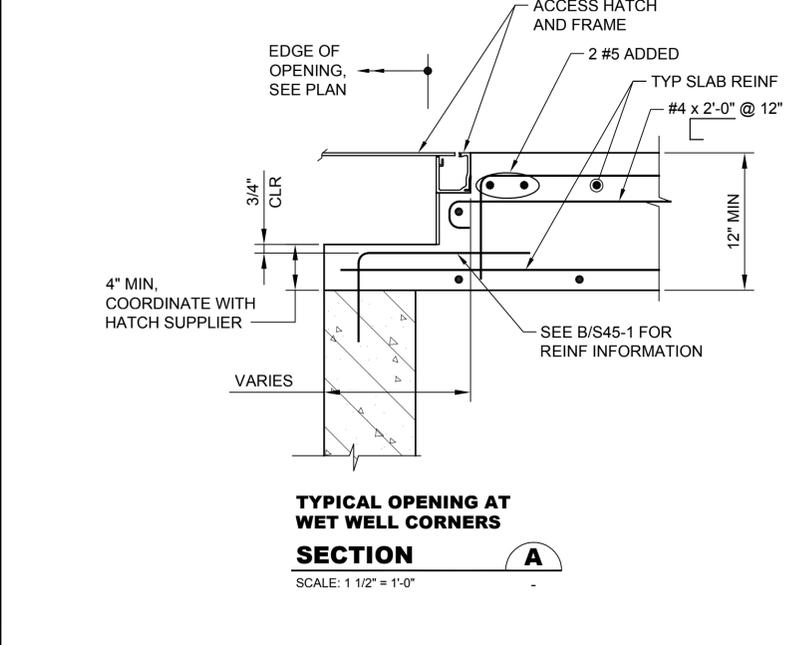
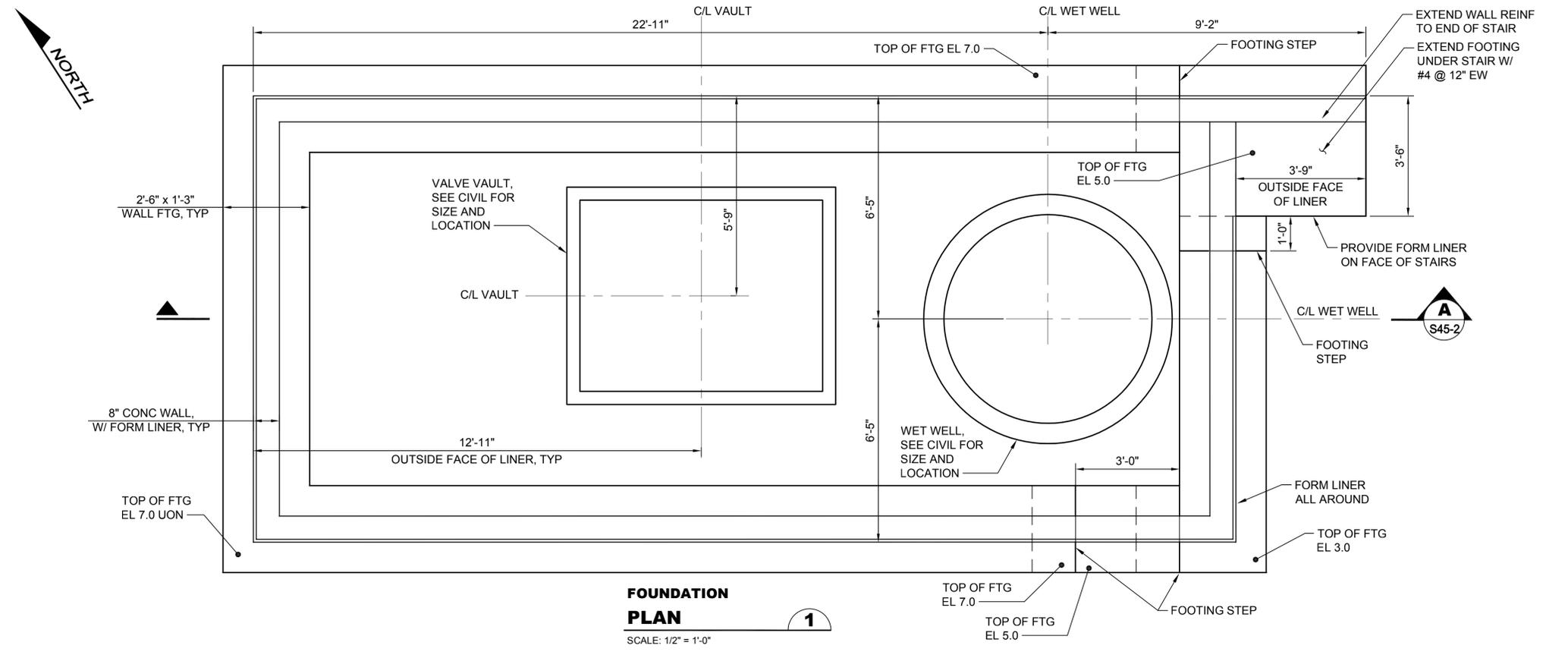
Designed: C. Day, P.E.  
 Drawn: C. Taylor  
 Checked: D. Simpson, P.E.  
 Approved: R. S. Phillips, P.E.  
 Scale: AS NOTED  
 One Inch At Full Scale  
 If Not One Inch Scale Accordingly

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 614 Division Street, MS 26  
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MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION  
 SHORELINE STABILIZATION SECTION

Drawing: R45-3  
 Sheet: 35 of 73  
 File: 365056-Design Site  
 Date: Aug. 2016

Path: S:\Cadd\Kitsap County\15-10341\_P15-46-47\_BLD\Design\15-10341\_P15-46-47\_BLD.dwg Plot date: Aug 09, 2016 03:13:49pm CAD User: acariaso  
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- NOTES:**
- SEE TYPICAL SLAB OPENING DETAILS ON DRAWING S-3 FOR ADDITIONAL REINFORCEMENT REQUIREMENTS.
  - VERIFY GENERATOR PAD DIMENSIONS WITH GENERATOR SUPPLIER PRIOR TO SHOP DRAWING PRODUCTION.
  - HINGED 4" x 4" CLEAR OPENING BY ACCESS HATCH MANUFACTURER. LOCATE OPENING CENTERED OVER FINE VALVE STEM BELOW. CONTRACTOR TO COORDINATE FINAL LOCATION OF OPENING WITH HATCH MANUFACTURER.
  - SMALL DIAMETER PIPING PENETRATIONS NOT SHOWN, SEE CIVIL DRAWINGS FOR SIZE AND LOCATION.
  - SEE CIVIL DWGS FOR PROVISIONS FOR FUTURE CURB AROUND STRUCTURE PERIMETER.

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No.	Revision	Date	By	App'd
	ISSUED FOR BID	08-2016	TJW	RAD
	BUILDING PERMIT SUBMITTAL	04-2016	TJW	RAD
	ECOLOGY SUBMITTAL	02-2016	TJW	RAD

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Designed: K. Dahl, P.E., S.E.	Scale: As Shown
Drawn: M. Caldwell	One Inch at Full Scale
Checked: A. Schuyler, P.E.	If Not One Inch Scale Accordingly
Approved: R. Dorn, P.E.	

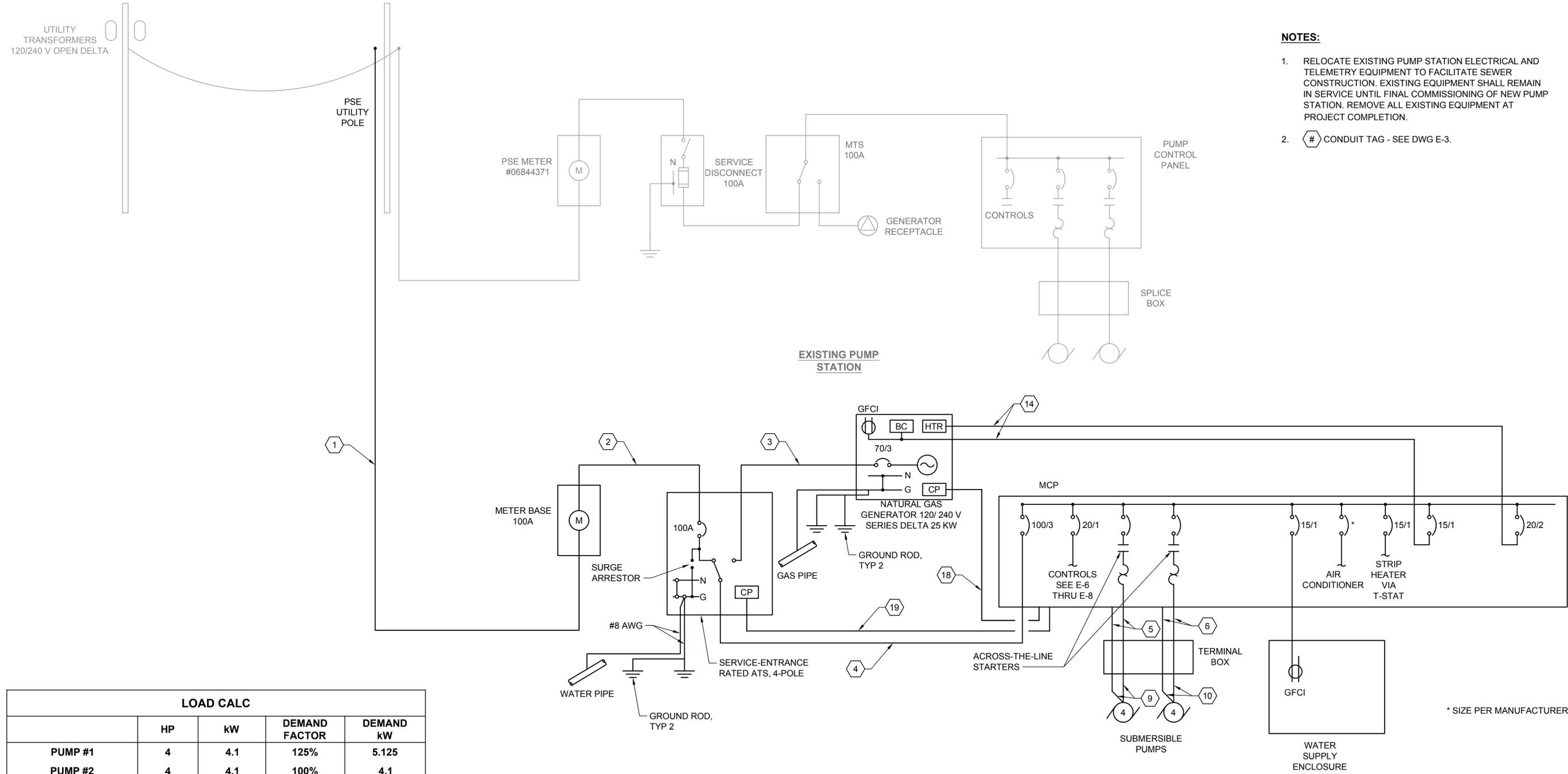
**Kitsap County Public Works**  
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 Port Orchard, WA 98366

**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION**  
**FOUNDATION AND SLAB PLANS**

Drawing: S45-1
Sheet: 36 of 73
File: P15-10341_S45-1
Date: August 2016







- NOTES:**
- RELOCATE EXISTING PUMP STATION ELECTRICAL AND TELEMETRY EQUIPMENT TO FACILITATE SEWER CONSTRUCTION. EXISTING EQUIPMENT SHALL REMAIN IN SERVICE UNTIL FINAL COMMISSIONING OF NEW PUMP STATION. REMOVE ALL EXISTING EQUIPMENT AT PROJECT COMPLETION.
  - # CONDUIT TAG - SEE DWG E-3.

LOAD CALC				
	HP	kW	DEMAND FACTOR	DEMAND kW
PUMP #1	4	4.1	125%	5.125
PUMP #2	4	4.1	100%	4.1
LIGHTING		0.1	125%	0.125
RECEPTACLES		0.36	100%	0.36
CONTROLS		1.1	100%	1.1
HEATER (GENERATOR)		1.5	100%	1.5
<b>TOTAL</b>		<b>11.26 kW</b>		<b>12.31 kW</b>
				<b>29.61 Amps</b>

**ELECTRICAL RISER DIAGRAM DETAIL**  
 NTS

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Path: S:\Card\Kitsap County\15-10341 PS 45 46 47 BL Design\15-10341\_E45-2 Plot date: Aug 11, 2016 02:53:57pm CAD User: acarliao.  
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No.	Revision	Date	By	App'd
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Designed: J. Gibson, P.E.  
 Drawn: S. Olsoe  
 Checked: A. Schuyler, P.E.  
 Approved: R. Dorn, P.E.

Scale:  
 NTS  
 One Inch at Full Scale  
 If Not One Inch Scale Accordingly

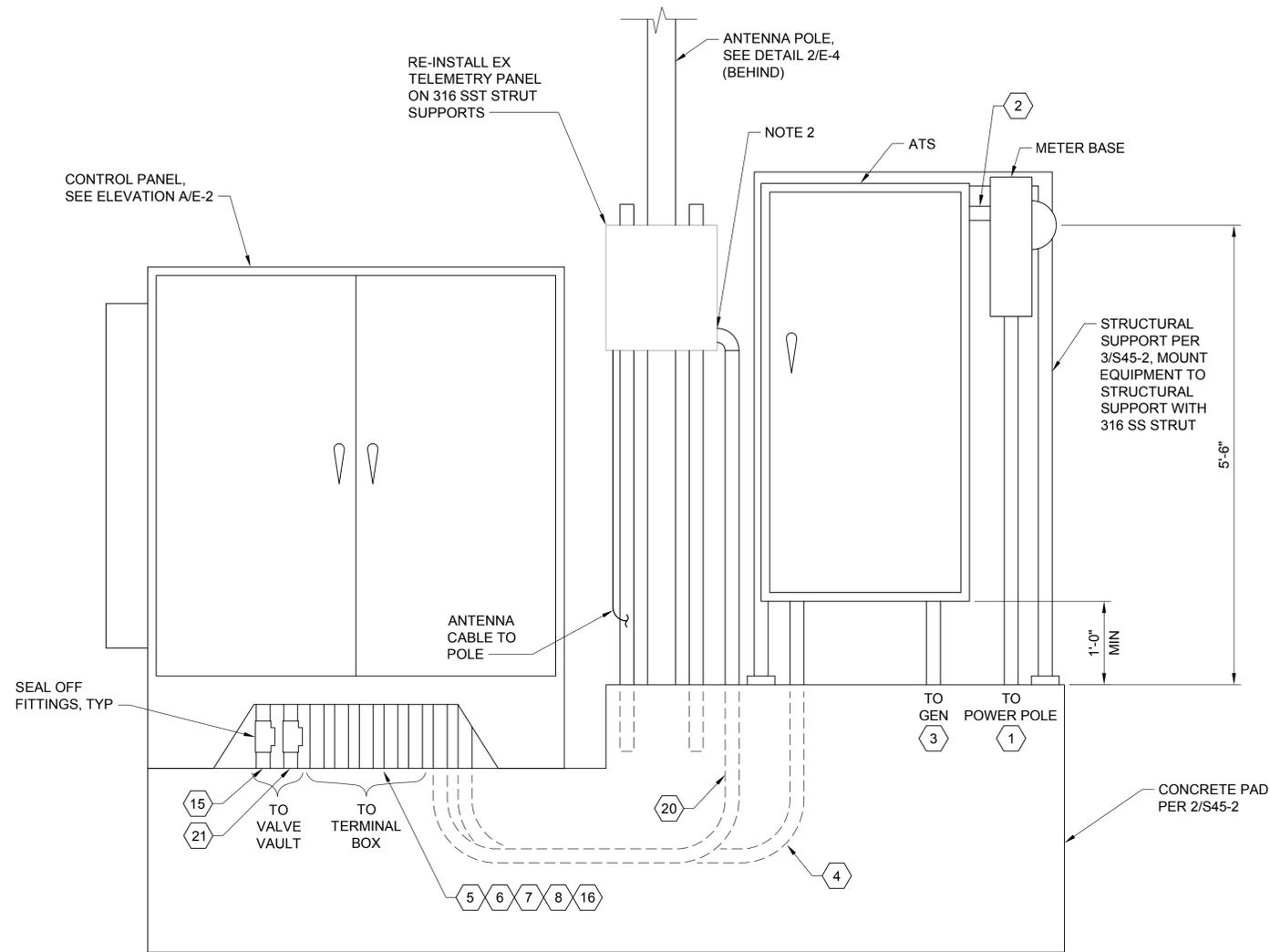


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**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION**  
**ONE LINE DIAGRAM AND LOAD CALCULATIONS**

Drawing: **E45-2**  
 Sheet: **39** of **73**  
 File: P15-10341\_E45-2  
 Date: August 2016

Path: S:\Cad\Kitsap County\15-10341 PS 45 46 47 BL Design\15-10341\_P15-10341\_E45-3 Plot date: Aug 11, 2016 03:05:19pm CAD User: acarliao  
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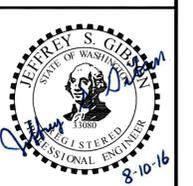


**NOTES:**

1. # CONDUIT TAG - SEE DWG E-3.
2. RE-USE OR REPAIR EXISTING CONDUIT KNOCKOUTS

**ELEVATION** **A**  
 NTS E45-1

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No.	Revision	Date	By	App'd
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Designed: J. Gibson, P.E.  
 Drawn: M. Caldwell  
 Checked: A. Schuyler, P.E.  
 Approved: R. Dorn, P.E.

Scale:  
 NTS  
 One Inch at Full Scale  
 If Not One Inch Scale Accordingly

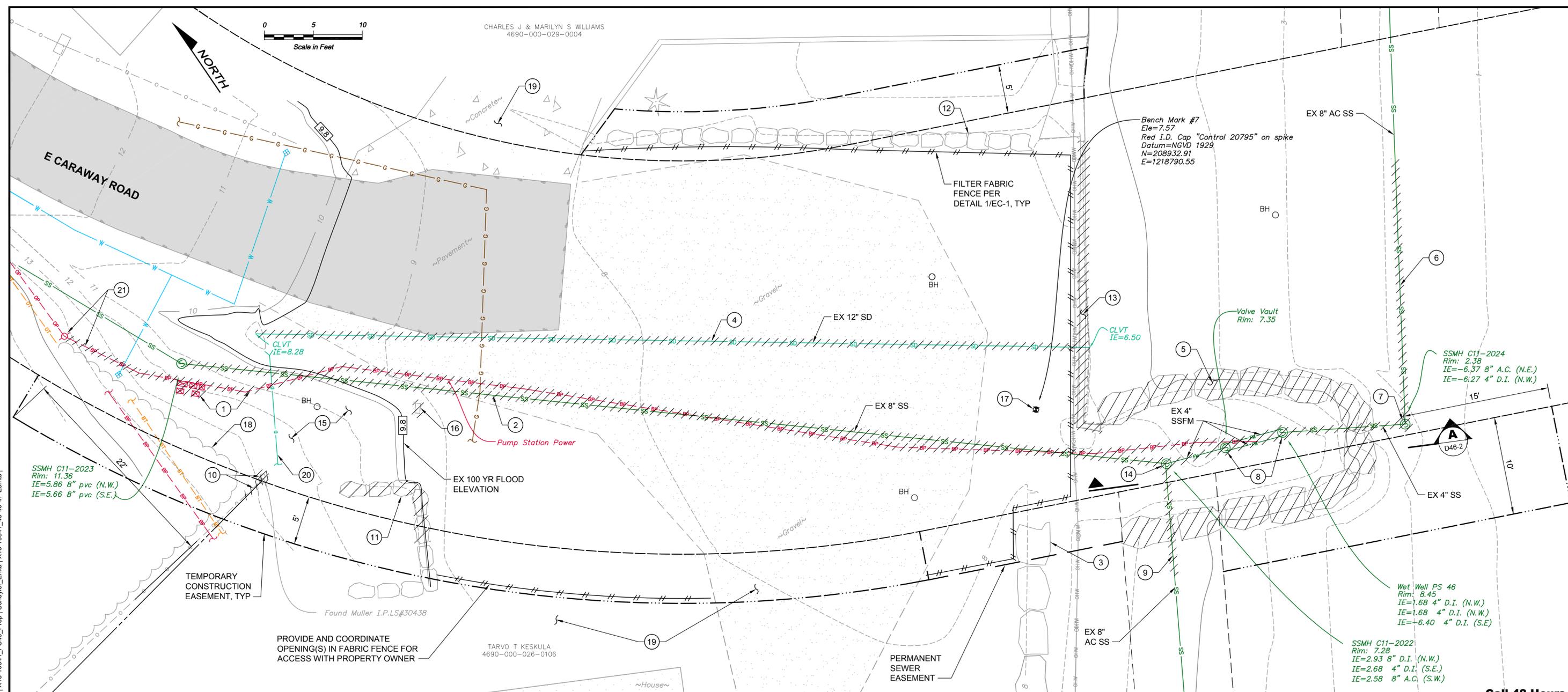


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**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION**  
**ELECTRICAL EQUIPMENT CABINET ELEVATIONS**

Drawing:	<b>E45-3</b>
Sheet:	<b>40</b> of <b>73</b>
File:	P15-10341_E45-3
Date:	August 2016

Path: S:\Card\Kitsap County\15-10341\_P15-46-47\_BLD\Design\15-10341\_D46-1\_Plot.dwg; Aug 09, 2016-03:33:53pm; CAD User: acariaso; Xref Filename: X:\15-10341\_TB\Whitehouse\Schuyler\_Adam\X15-10341\_P15-46-47\_Prop\Schuyler\_Erika\X15-10341\_45-46-47-Esmts



**NOTES:**

1. DEMOLITION OF EXISTING PUMP STATION FACILITIES SHALL OCCUR ONLY AFTER COMMISSIONING (INSTALLATION, TESTING, AND CONFIRMED OPERATION) OF THE NEW PUMP STATION, UNLESS OTHERWISE APPROVED BY THE COUNTY.
2. SEE SPECIAL PROVISIONS SECTION 1-08.3(2)C FOR CONSTRUCTION SEQUENCING AND CONSTRAINTS.
3. SEE SPEC SECTION 02 41 00 FOR ADDITIONAL DEMOLITION AND SALVAGE REQUIREMENTS.
4. PROTECT ALL EXISTING UTILITIES, STRUCTURES, FACILITIES, TREES, ETC. UNLESS SPECIFICALLY INDICATED TO BE REMOVED.
5. MAINTAIN ACCESS TO EXISTING PUMP STATION AND SITE FACILITIES FOR COUNTY STAFF AND SERVICE TRUCKS AT ALL TIMES DURING CONSTRUCTION.
6. SEE RESTORATION DWGS FOR REMOVAL OF EXISTING ASPHALT AND GROUND.
7. ADJUST/REMOVE/REINSTALL FILTER FABRIC FENCE AS NECESSARY TO CONSTRUCT IMPROVEMENTS.

**CONSTRUCTION NOTES:**

1. RELOCATE EXISTING PUMP STATION ELECTRICAL EQUIPMENT AND POWER SERVICE PER ELECTRICAL DWGS FOR USE DURING CONSTRUCTION. REMOVE EXISTING PUMP STATION POWER SERVICE. FOLLOWING COMMISSIONING OF NEW PUMP STATION, REMOVE TEMPORARY ELECTRICAL EQUIPMENT AND POWER SERVICE.
2. REMOVE AND REPLACE EXISTING SEWER. SEE DWG C46-1 FOR REROUTING.
3. REMOVE AND REINSTALL ROCKERY TO TIE INTO NEW ROCKERY WALL.
4. REMOVE AND REPLACE EXISTING STORM DRAIN. SEE DWG C46-1 FOR REROUTING.
5. REMOVE EXISTING CONC/ROCK GROIN DURING DEMOLITION OF EXISTING PUMP STATION, SEE R46 DWGS FOR RESTORATION DETAILS. MINOR REMOVAL AND REPLACEMENT WILL BE ALLOWED FOR INSTALLATION OF NEW MANHOLE AND 8" SS.
6. PLUG AND ABANDON EXISTING SEWER, REMOVE AS REQUIRED. MAINTAIN SERVICE DURING CONSTRUCTION, SEE NEW BEACH MANHOLE LOCATION ON DWG C46-1.
7. REMOVE EXISTING SSMH. SEE DWG D46-2 FOR ADDITIONAL DEMOLITION DETAILS.
8. DECOMMISSION AND REMOVE MECH, ELECT, AND MISC EQUIPMENT FROM EXISTING PUMP STATION WET WELL AND VALVE VAULT. REMOVE FM PIPING ENTERING AND EXITING STRUCTURES. SEE DWG D46-2 FOR ADDITIONAL DEMOLITION DETAILS.
9. REMOVE EXISTING SEWER TO FACILITATE NEW MANHOLE AND PIPING CONNECTION. BYPASS PUMP FROM SSMH C11-2022. SEE DWG C46-1 FOR NEW MANHOLE LOCATION.
10. REMOVE AND REINSTALL EXISTING FENCE TO EDGE OF PROPERTY LINE TO MATCH EXISTING. RE-ESTABLISH PROPERTY MARKER.
11. REMOVE AND REINSTALL EXISTING ROCK WALL PLANTER. SEE DWG FOR R46-1 FOR RESTORATION DETAILS.
12. REMOVE AND REINSTALL ROCKERY AND LANDSCAPING TO MATCH EXISTING.
13. REMOVE EXISTING CONCRETE BULKHEAD AFTER CONSTRUCTION OF NEW PUMP STATION. SEE R46 DWGS FOR RESTORATION DETAILS.
14. REMOVE EXISTING SSMH. INSTALL TEMPORARY FORCE MAIN AND/OR GRAVITY SEWER TO NEW SSMH C11-2049 FOR EXISTING PUMP STATION OPERATION DURING CONSTRUCTION AS REQUIRED. SEE DWG D46-2 FOR ADDITIONAL DEMOLITION DETAILS.
15. CUT/FILL AND REGRADE AREA TO CONSTRUCT NEW IMPROVEMENTS, SEE DWG R46-1 FOR FINISHED GRADE ELEVATIONS.
16. REMOVE AND RELOCATE MAILBOX TO LOCATION DIRECTED BY PROPERTY OWNER.
17. BENCH MARK FOR USE DURING CONSTRUCTION. RE-ESTABLISHMENT AFTER CONSTRUCTION IS NOT REQUIRED.
18. HEAVY SHRUBBERY, TRIM BACK TO CONSTRUCT NEW IMPROVEMENTS AS REQUIRED. PROTECT TREES.
19. MAINTAIN DRIVEABLE ACCESS TO PROPERTIES DURING CONSTRUCTION. NOTIFY HOMEOWNERS ONE DAY IN ADVANCE OF ANY CONSTRUCTION ACTIVITY REQUIRING BLOCKAGES OF 30 MINUTES OR MORE. BLOCKAGES SHALL LAST NO LONGER THAN 4 HOURS UNLESS PRIOR APPROVAL IS GIVEN BY THE HOMEOWNER.
20. REMOVE AND REPLACE 4" CURTAIN DRAIN IN KIND. REROUTE AROUND NEW IMPROVEMENTS.
21. REMOVE SHRUBBERY TO POWER POLE FOR NEW CONDUIT INSTALLATION. REMOVE SHRUBBERY WITHIN A 3 FOOT RADIUS OF EXISTING POWER POLE.

No.	Revision	Date	By	App'd
	ISSUED FOR BID	08-2016	TJW	RAD
	BUILDING PERMIT SUBMITTAL	04-2016	TJW	RAD
	ECOLOGY SUBMITTAL	02-2016	TJW	RAD

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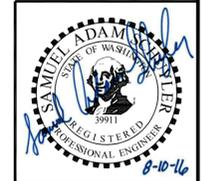
Designed: T. Whitehouse, P.E.  
 Drawn: P. Simon  
 Checked: A. Schuyler, P.E.  
 Approved: R. Dorn, P.E.

Scale:  
 1" = 5'-0"  
 One Inch at Full Scale  
 If Not One Inch Scale Accordingly

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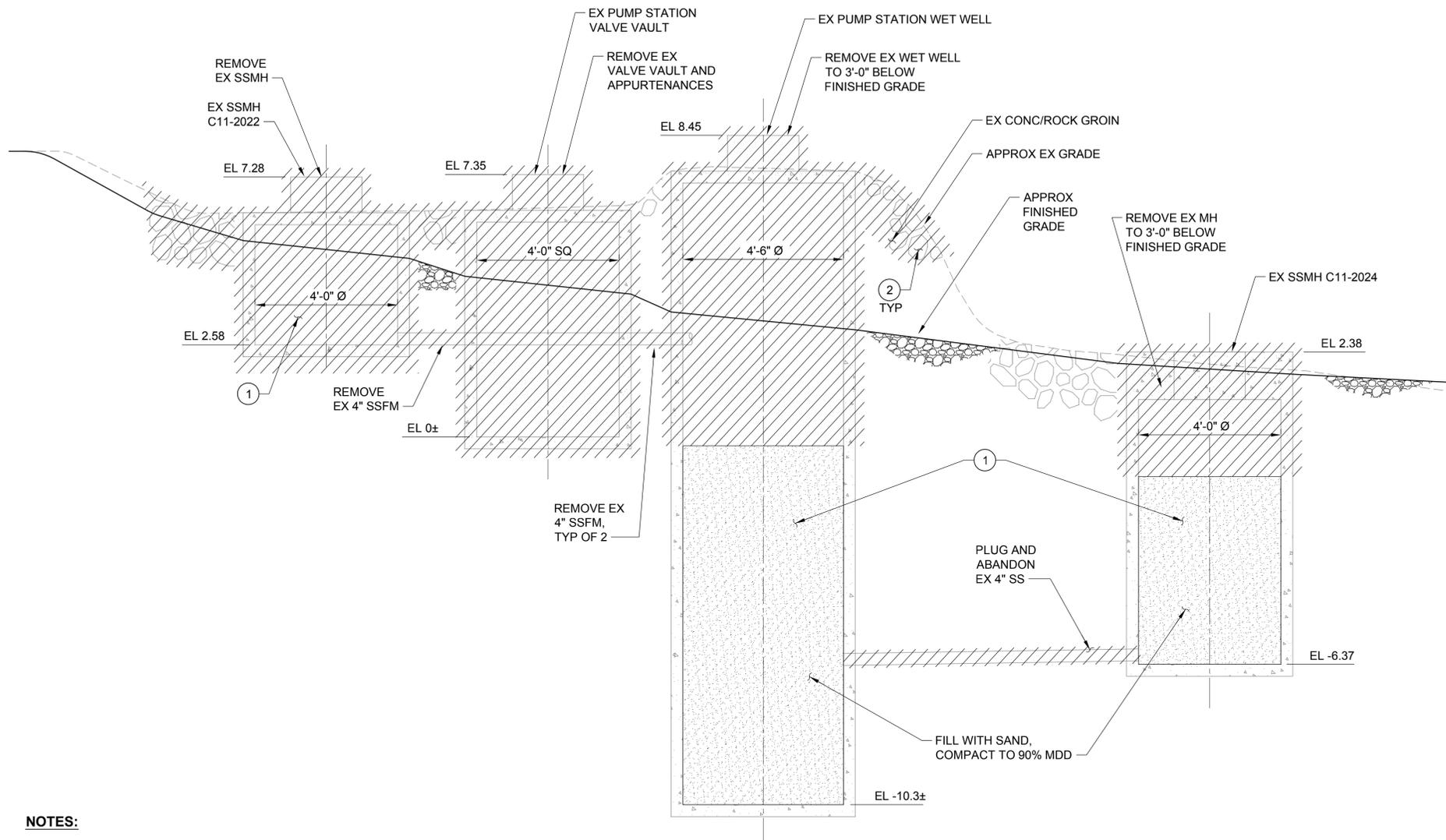
**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION**  
**EXISTING PUMP STATION SITE, TESC AND DEMOLITION PLAN**

**Call 48 Hours Before You Dig**  
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 UNDERGROUND SERVICE



Drawing: **D46-1**  
 Sheet: **41** of **73**  
 File: P15-10341\_D46-1  
 Date: August 2016

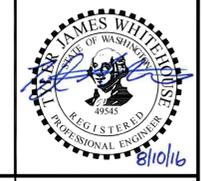
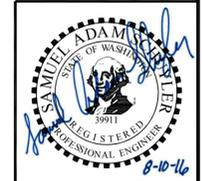
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 Xref File Name: X15-10341\_TB | Whitehouse | Schuyler\_Adam | Dahl | Gibson | Schuyler\_Erika | X15-10341\_45-46-47-Topo | X15-10341\_PS46-Prop |



- NOTES:**
- ① REMOVE ALL EXISTING MECHANICAL AND STRUCTURAL APPURTENANCES. CUT PIPE, SUPPORTS, ANCHORS, ETC FLUSH WITH WALL. PLUG ALL PIPE CONNECTIONS THROUGH WALL WITH CONCRETE. HOSE DOWN AND PUMP OUT EXISTING STRUCTURE BEFORE BACKFILLING.
  - ② REMOVE EXISTING CONC/ROCK GROIN IN ACCORDANCE WITH SPEC SECTION 02 41 10.

**PUMP STATION DEMOLITION SECTION**  
 SCALE: 1/2" = 1'-0" **A**  
 D46-1

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No.	Revision	Date	By	App'd
	ISSUED FOR BID	08-2016	TJW	RAD
	BUILDING PERMIT SUBMITTAL	04-2016	TJW	RAD
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Designed: T. Whitehouse, P.E.  
 Drawn: A. Cariaso  
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 Approved: R. Dorn, P.E.

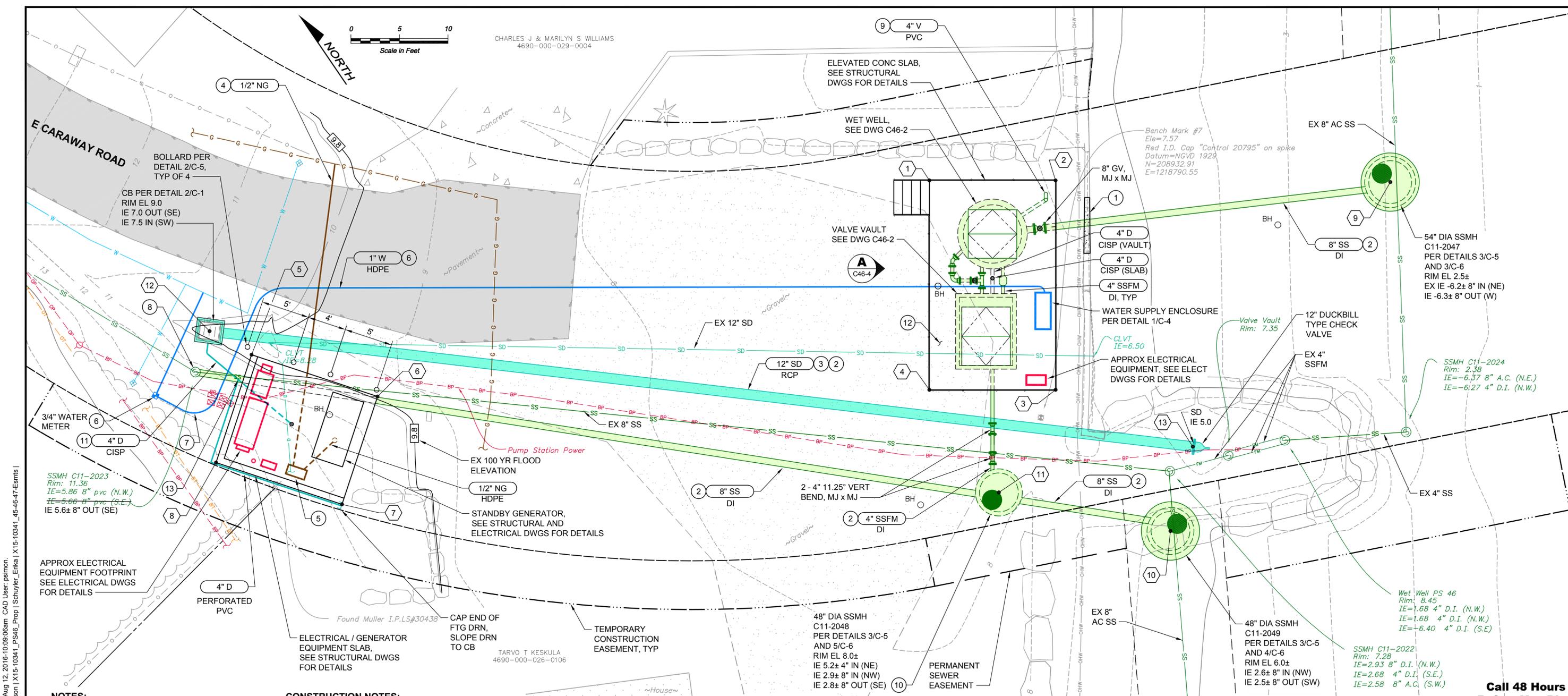
Scale:  
 1/2" = 1'-0"  
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**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION**  
**DEMOLITION SECTIONS**

Drawing: **D46-2**  
 Sheet: **42** of **73**  
 File: P15-10341\_D46-2  
 Date: August 2016



- NOTES:**
- EXISTING PUMP STATION FACILITIES ARE SHOWN AND SHALL REMAIN IN SERVICE THROUGHOUT CONSTRUCTION. SEE DEMOLITION DRAWINGS FOR DECOMMISSIONING, DEMOLITION, REMOVAL AND ABANDONING OF EXISTING PUMP STATION FACILITIES. SEE RESTORATION DRAWINGS FOR FINISHED SITE AND RESTORATION PLAN.
  - SEE SPECIAL PROVISIONS SECTION 1-08.3(2)C FOR CONSTRUCTION SEQUENCING AND CONSTRAINTS.
  - MAINTAIN ACCESS TO EXISTING PUMP STATION AND SITE FACILITIES FOR COUNTY STAFF AND SERVICE TRUCKS AT ALL TIMES DURING CONSTRUCTION.
  - ALL SSFM PIPE AND VALVE JOINTS, FITTINGS AND COUPLINGS SHALL BE RESTRAINED.
  - INSTALL BURIED VALVES PER DETAIL 1/C-2.

- CONSTRUCTION NOTES:**
- SAWCUT AND REMOVE A PORTION OF EXISTING CONCRETE BULKHEAD TO FACILITATE CONSTRUCTION OF NEW SEWER. BRIDGE WITH SECURED BOARDS AND STAINLESS STEEL ANCHORAGE DURING CONSTRUCTION UNTIL REMOVED AND REPLACED. PROTECT EXISTING CONCRETE BULKHEAD DURING CONSTRUCTION IN ACCORDANCE WITH SPEC SECTION 02 41 10.
  - SEE DRAWING C46-5 FOR PIPE PROFILE.
  - FINAL INSTALLATION SHALL OCCUR AFTER REMOVAL OF ROCK JETTY TO PERMIT FREE DISCHARGE, INSTALL TEMPORARY FLEXIBLE STORM DRAIN DURING CONSTRUCTION.
  - CASCADE NATURAL GAS WILL PROVIDE AND INSTALL NATURAL GAS PIPELINE, CONNECTION TO MAIN, AND METER. CONTRACTOR SHALL EXCAVATE TRENCH PER DETAIL 5/C-5 AND PROVIDE AND INSTALL REQUIRED BACKFILL AND RESTORE SURFACE. CONTRACTOR SHALL PROVIDE AND INSTALL ALL MATERIALS DOWNSTREAM OF METER.

- CONTRACTOR SHALL COORDINATE ALL PIPING AND APPURTENANCES INSTALLED BY CASCADE NATURAL GAS WITH EXISTING AND NEW PIPING AND FACILITIES TO AVOID CONFLICT.
- FINAL LOCATION OF METER TO BE DETERMINED BY COUNTY CONSTRUCTION MANAGER AND ENGINEER IN FIELD.
- MANCHESTER WATER DISTRICT WILL PROVIDE AND INSTALL ALL MATERIALS AND RESTORE SURFACE FROM CONNECTION TO EXISTING WATER MAIN TO NEW WATER METER. CONTRACTOR SHALL PROVIDE AND RESTORE SURFACE DOWNSTREAM OF NEW WATER METER. TRENCH SECTION PER DETAIL 5/C-5. CONTRACTOR SHALL COORDINATE ALL PIPING AND APPURTENANCES INSTALLED BY MANCHESTER WATER DISTRICT WITH EXISTING AND NEW PIPING AND FACILITIES TO AVOID CONFLICT.
- ROUTING IS APPROXIMATE, FIELD ROUTE WITH COUNTY CONSTRUCTION MANAGER.

- CAREFULLY CUT/CHIP OUT TO REMOVE EXISTING 8" SANITARY SEWER. GROUT TO PROVIDE A SMOOTH, CIRCULAR SURFACE. SEAL PIPE CONNECTION WITH FLEXIBLE BOOT PER DETAIL 7/C-1.
- SEE DETAIL 4/C-5 FOR VENT LOCATION AND DETAILS.
- PROVIDE STANDARD PRECAST FLAT TOP WITH MANHOLE FRAME AND COVER PER DETAIL 6/C-1.
- FIELD ROUTE TO AVOID CONFLICT, MINIMIZE FITTINGS. CONTINUOUSLY SLOPE TO DRAIN.
- MAINTAIN 8" CLEAR SPACE BETWEEN EDGE OF PUMP STATION SLAB AND ANY EQUIPMENT, PIPING AND OR CONCRETE PADS FOR A FUTURE CURB, FULL PERIMETER OF STRUCTURE.
- CONNECT FOOTING DRAIN TO SLAB DRAIN WITH FITTINGS AS REQUIRED AND FLEXIBLE COUPLING.

**COORDINATE TABLE**

PT #	NORTHING	EASTING	DESCRIPTION
1	208959.50	1218794.80	NW CORNER, PS SLAB
2	208952.17	1218805.53	NE CORNER, PS SLAB
3	208934.41	1218793.41	SE CORNER, PS SLAB
4	208941.75	1218782.67	SW CORNER, PS SLAB
5	208984.09	1218727.05	N CORNER, ELECT/GEN EQPT PAD WALL
6	208973.23	1218735.35	E CORNER, ELECT/GEN EQPT PAD
7	208966.15	1218726.07	S CORNER, ELECT/GEN EQPT PAD WALL
8	208977.01	1218717.78	W CORNER, ELECT/GEN EQPT PAD WALL
9	208932.59	1218833.90	MH CENTER, APPROXIMATE
10	208915.77	1218795.01	MH CENTER, APPROXIMATE
11	208929.01	1218782.64	MH CENTER, APPROXIMATE
12	208988.53	1218724.84	CB CENTER, APPROXIMATE
13	208921.62	1218801.79	C/L SD TERMINATION, APPROXIMATE

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Drawn: S. Olsoe  
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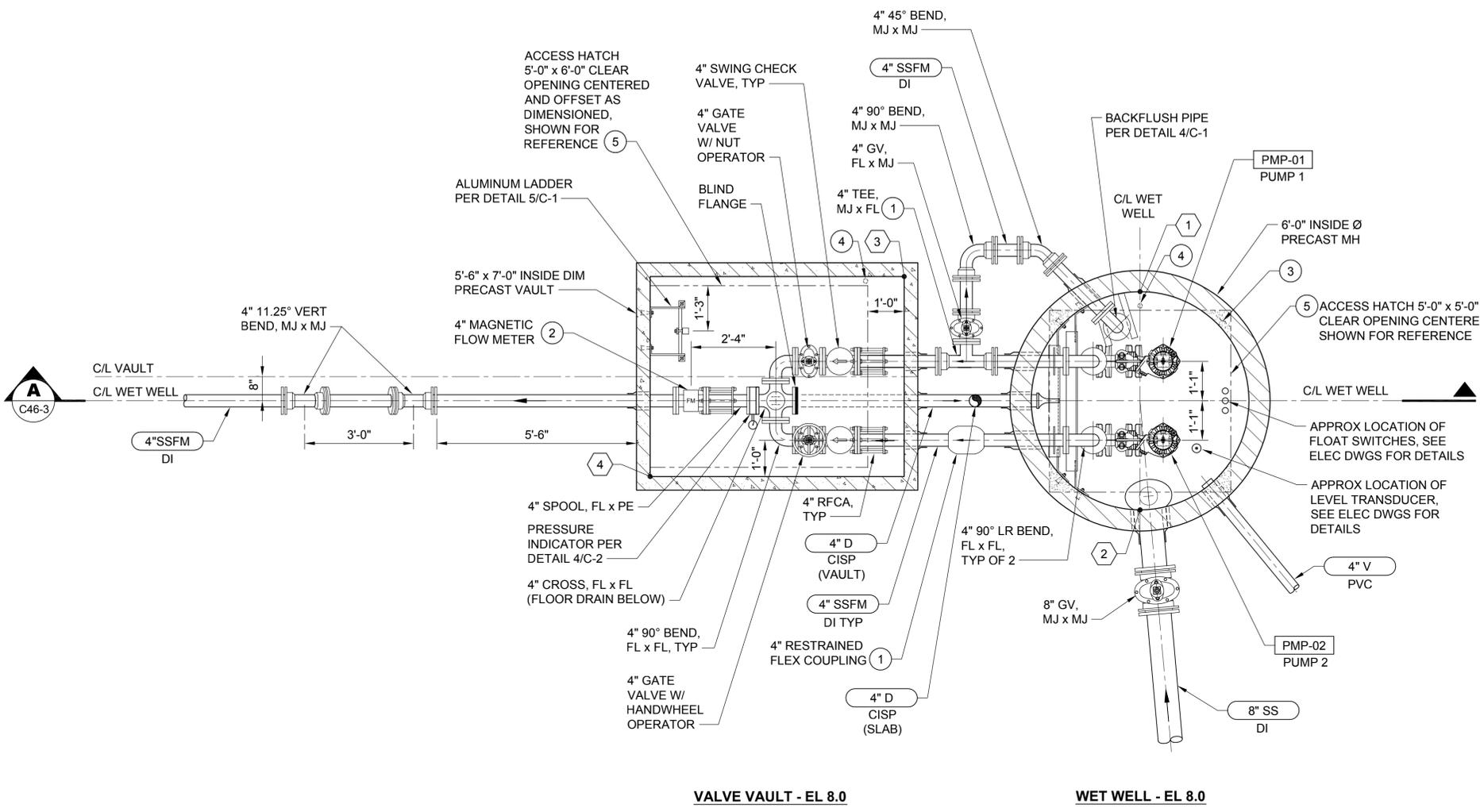
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**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION**  
**PUMP STATION AND PIPING PLAN**

Drawing: **C46-1**  
Sheet: **43** of **73**  
File: P15-10341\_C46-1  
Date: August 2016

Path: S:\Card\Kitsap County\15-10341\_P15-45-46-47\_BLDesign\15-10341\_C46-1\_Plot.dwg Aug 12, 2016 10:09:06am CAD User: psimon.  
Xref Filename: X:\15-10341\_45-46-47-Topo\X15-10341\_TB [Whitehouse] Schuyler\_Adam | Schuyler\_Erika | X15-10341\_45-46-47-Esmts



**NOTES:**

1. ALL SSFM PIPE AND VALVE JOINTS, FITTINGS AND COUPLINGS SHALL BE RESTRAINED.
2. ALL SUPPORT MATERIALS IN WET WELL AND VALVE VAULT SHALL BE TYPE 316L STAINLESS STEEL. ALL FASTENERS (NUTS, BOLTS, ANCHORS, WASHERS, ETC.) SHALL BE TYPE 316 OR 316L STAINLESS STEEL.
3. SEE DWG C46-1 FOR PIPE CONTINUATION.
4. INSTALL BURIED VALVES PER DETAIL 1/C-2.
5. SEAL ALL PIPE PENETRATIONS THROUGH WALLS PER DETAIL 7/C-1.
6. DUCTILE IRON PIPE AND FITTINGS SHALL BE CLASS 52 AND LINED WITH PROTECTO 401.

**CONSTRUCTION NOTES:**

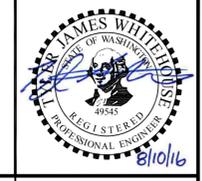
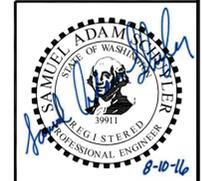
- ① CENTER BETWEEN STRUCTURES.
- ② PROVIDE FABRICATED 4" DI SSFM FLANGED SPOOL TO MATCH LAY LENGTH OF INSTALLED FLOW METER.
- ③ PRIOR TO INTERIOR COATING, GROUT FLAT AREA AT TOP OF MANHOLE RING, SLOPE TO DRAIN, TYP 4 LOCATIONS.
- ④ APPROXIMATE ACCESS HATCH DRAIN LOCATION, SEE DWG C46-3 FOR DETAILS.
- ⑤ SEE DWG S46-1 FOR ACCESS HATCH ORIENTATION.

COORDINATE TABLE			
PT #	NORTHING	EASTING	DESCRIPTION
1	208952.98	1218794.59	NW INSIDE EDGE, WET WELL
2	208949.60	1218799.54	SE INSIDE EDGE, WET WELL
3	208947.85	1218790.58	NORTH INSIDE CORNER, VALVE VAULT
4	208938.97	1218791.17	SOUTH INSIDE CORNER, VALVE VAULT

**VALVE VAULT - EL. 8.0**                      **WET WELL - EL. 8.0**

**WET WELL AND VALVE VAULT PLAN**  
 SCALE: 1/2" = 1'-0"                      1  
 C46-1

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Path: S:\Cad\Kitsap County\15-10341 PS 45 46 47 BL Design\15-10341\_C46-2 Plot date: Aug 09, 2016-03:59:33pm CAD User: acariaso  
 Xref Filename: | Whitehouse | Schuyler\_Adam | Dahl | Gibson | X15-10341\_TB | Schuyler\_Erika |

No.	Revision	Date	By	App'd
	ISSUED FOR BID	08-2016	TJW	RAD
	BUILDING PERMIT SUBMITTAL	04-2016	TJW	RAD
	ECOLOGY SUBMITTAL	02-2016	TJW	RAD

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Designed: T. Whitehouse, P.E.  
 Drawn: S. Olsoe  
 Checked: A. Schuyler, P.E.  
 Approved: R. Dorn, P.E.

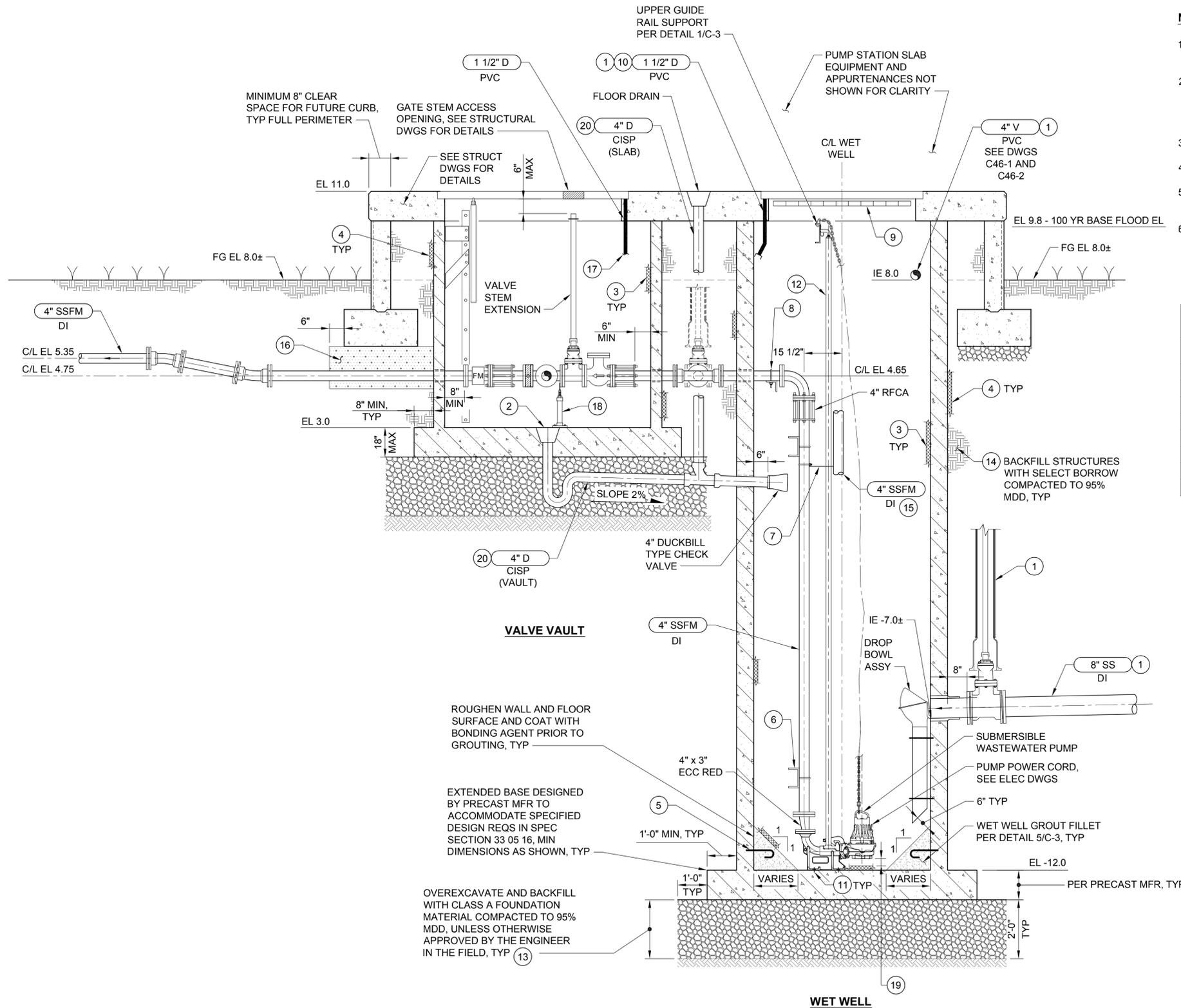
Scale:  
 1/2" = 1'-0"  
 One Inch at Full Scale  
 If Not One Inch Scale Accordingly

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**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION**  
**WET WELL AND VALVE VAULT PLAN**

Drawing: **C46-2**  
 Sheet: **44** of **73**  
 File: P15-10341\_C46-2  
 Date: August 2016

Path: S:\Cad\Kitsap County\15-10341\_P15-46-47-Bl-Design\15-10341\_C46-3\_Plot.dwg Plot date: Aug 11, 2016-03:30:18pm CAD User: psimon.  
 Xref Filename: |X|15-10341\_TB|Whitehouse|Schuyler\_Adam|Dahl|Gibson|Schuyler\_Erika|



**WET WELL AND VALVE VAULT SECTION**  
 SCALE: 1/2" = 1'-0"  
 A  
 C46-2

**NOTES:**

- ALL SSFM PIPE AND VALVE JOINTS, FITTINGS AND COUPLINGS SHALL BE RESTRAINED.
- ALL SUPPORT MATERIALS IN WET WELL AND VALVE VAULT SHALL BE TYPE 316L STAINLESS STEEL. ALL FASTENERS (NUTS, BOLTS, ANCHORS, WASHERS, ETC.) SHALL BE TYPE 316 OR 316L STAINLESS STEEL.
- SEE DWG C46-1 FOR PIPE CONTINUATION.
- INSTALL BURIED VALVES PER DETAIL 1/C-2.
- SEAL ALL PIPE PENETRATIONS THROUGH WALLS PER DETAIL 7/C-1.
- DUCTILE IRON PIPE AND FITTINGS SHALL BE CLASS 52 AND LINED WITH PROTECTO 401.

WET WELL OPERATION LEVELS	
ELEVATION	DESCRIPTION
-6.0	HIGH-HIGH LEVEL FLOAT
-6.5	HIGH LEVEL FLOAT
-7.0	STANDBY PUMP ON
-7.5	LEAD PUMP ON
-9.5	STANDBY PUMP OFF
-10.0	LEAD PUMP OFF
-10.5	LOW LEVEL ALARM
-11.0	LOW LEVEL FLOAT

**CONSTRUCTION NOTES:**

- SHOWN OUT OF SECTION FOR CLARITY.
- CAST FLOOR DRAIN IN VAULT BASE. SEE DRAWING C46-2 FOR LOCATION, SLOPE FLOOR TO DRAIN.
- PREPARE AND FIELD COAT ALL INTERIOR CONCRETE AND GROUTED SURFACES PER SPEC SECTION 09 96 00 PRIOR TO INSTALLATION OF INTERIOR PIPING AND APPURTENANCES.
- PREPARE AND FACTORY COAT EXTERIOR CONCRETE WALL SURFACES IN ACCORDANCE WITH SPEC SECTION 09 96 00. WRAP ALL EXTERIOR JOINTS AFTER INSTALLATION PER SPEC SECTION 33 05 16.
- #4 EPOXY GROUTED DOWEL W/ STD 180 DEG HOOK, MIN 4-INCH EMBEDDED IN WET WELL WALL, MIN 8-INCH EMBEDDED IN GROUT FILL. SPACE DOWELS AT 2 FEET EACH WAY.
- INTERMEDIATE PIPE SUPPORT PER DETAIL 3/C-3, TYP 2.
- INTERMEDIATE GUIDE RAIL SUPPORT BY PUMP MFR, TYP 1 PER PUMP.
- TOP PIPE SUPPORT PER DETAIL 2/C-3.
- SAFETY GRATE PROVIDED BY HATCH MFR, SWING DIRECTION SHALL BE SAME AS DOOR. COORDINATE WITH GUIDE RAIL MOUNTING TO AVOID CONFLICT.
- HATCH FRAME DRAIN, ANGLE TOWARDS WALL AND TERMINATE.
- TYPE 316 SST ANCHORAGE AS RECOMMENDED BY PUMP MFR.
- GUIDE RAIL SYSTEM, SIZE PER MFR, SCH 40 316L SST.
- IF CONTRACTOR'S MEANS AND METHODS UTILIZE A CONC BOTTOM SEAL, FOUNDATION TO BE DETERMINED AND APPROVED BY ENGINEER PRIOR TO CONSTRUCTION.
- OVEREXCAVATE ALL PEAT SOILS ENCOUNTERED AND REPLACE WITH SELECT BORROW. ENGINEER SHALL BE PRESENT DURING EXCAVATION. CONTRACTOR TO PROVIDE 5 DAYS NOTICE PRIOR TO EXCAVATION.
- BACKFLUSH PIPE BEYOND, SHOWN OFFSET FOR CLARITY. SEE DETAIL 4/C-1.
- FULLY ENCASE PIPE CROSSING UNDER FOOTING WITH CDF TO UNDERSIDE OF FOOTING. NO PIPE JOINTS ARE ALLOWED WITHIN ENCASEMENT.
- TERMINATE AT FLOOR W/ 90° ELBOW DIRECTED TOWARD DRAIN. SUPPORT PIPE TO WALL PER DETAIL 4/C-3.
- ADJUSTABLE PIPE SUPPORT, PER DETAIL 5/C-2, TYP OF 2.
- AS RECOMMENDED BY PUMP MANUFACTURER. INSTALL DISCHARGE ELBOW ON NON-SHRINK GROUT LEVELING PAD AS REQUIRED.
- BED AND BACKFILL PIPING WITH CDF.

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	ECOLOGY SUBMITTAL	02-2016	TJW	RAD

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Designed: T. Whitehouse, P.E.  
 Drawn: S. Olsoe  
 Checked: A. Schuyler, P.E.  
 Approved: R. Dorn, P.E.

Scale: 1/2" = 1'-0"  
 One Inch at Full Scale  
 If Not One Inch Scale Accordingly

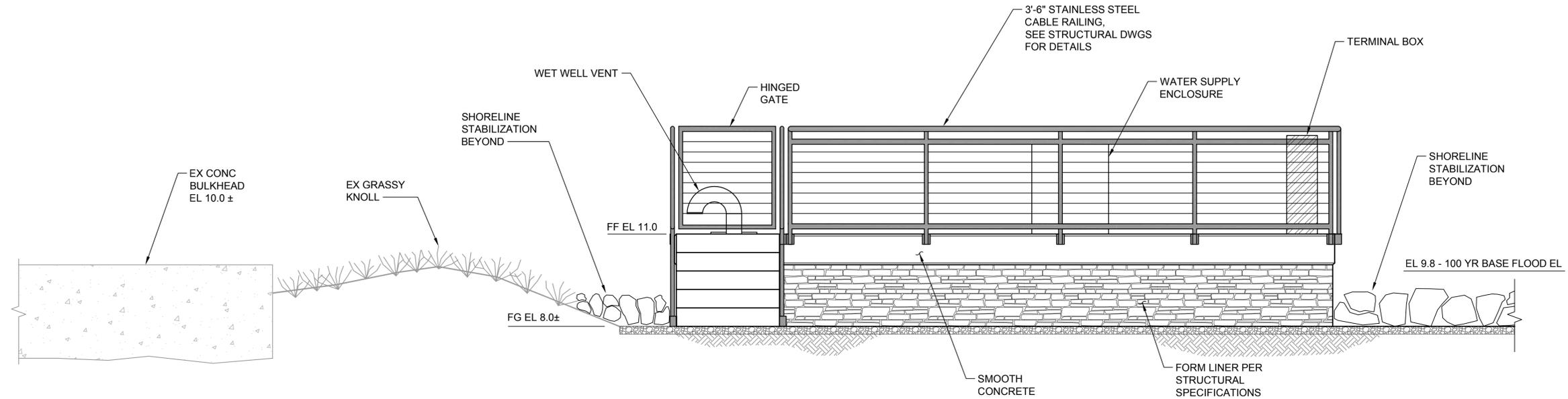
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**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION**  
**WET WELL AND VALVE VAULT SECTION**

Drawing: **C46-3**  
 Sheet: **45** of **73**  
 File: P15-10341\_C46-3  
 Date: August 2016

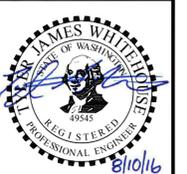
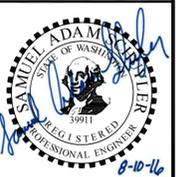
**NOTES:**

- ELEVATION VIEW IS ILLUSTRATIVE. NOT ALL ABOVEGROUND FEATURES ARE SHOWN. MAJOR COMPONENTS ARE ILLUSTRATED ONLY.



**WEST ELEVATION**  
 SCALE: 1/2" = 1'-0"  
 A  
 C46-1

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Path: S:\Cad\Kitsap County\15-10341 PS 45 46 47 BL Design\15-10341\_C46-4 Plot date: Aug 09, 2016 04:00:47pm CAD User: acariaso.  
 Xref Filename: | Whitehouse | Schuyler\_Adam | Dahl | Gibson | X15-10341\_TB | Schuyler\_Erika |

No.	Revision	Date	By	App'd
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	BUILDING PERMIT SUBMITTAL	04-2016	TJW	RAD
	ECOLOGY SUBMITTAL	02-2016	TJW	RAD

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Designed: T. Whitehouse, P.E.  
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 Checked: A. Schuyler, P.E.  
 Approved: R. Dorn, P.E.

Scale:  
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 One Inch at Full Scale  
 If Not One Inch Scale Accordingly

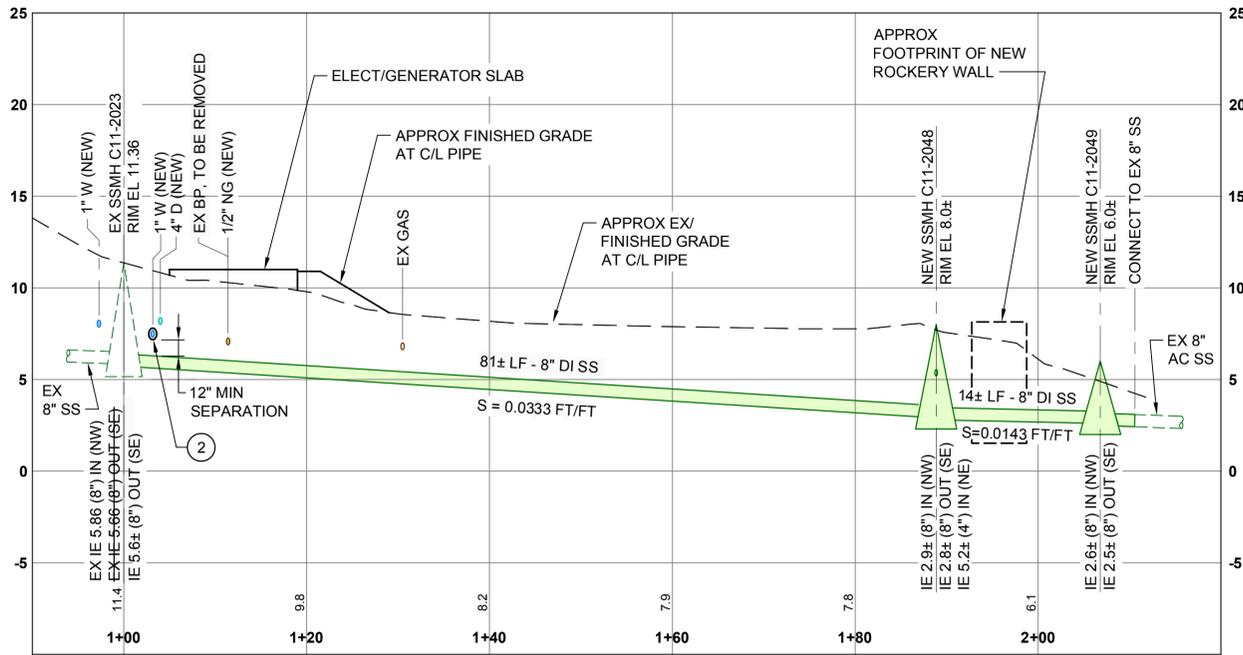


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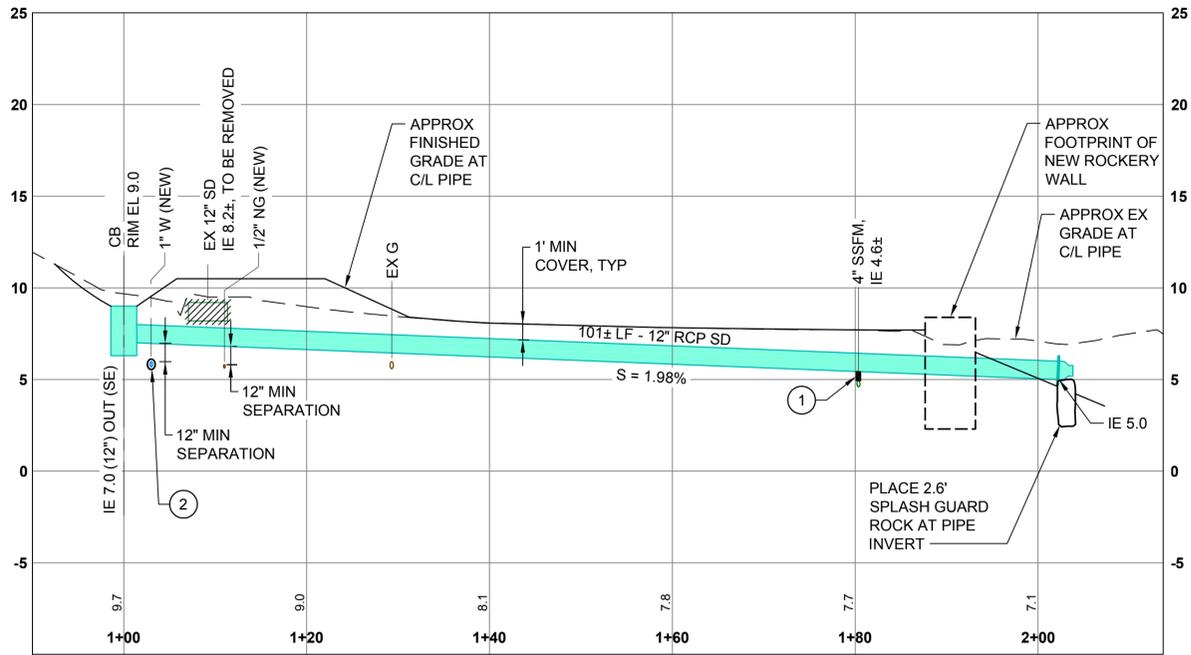
**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION**  
**PUMP STATION ELEVATION**

Drawing: **C46-4**  
 Sheet: **46** of **73**  
 File: P15-10341\_C46-4  
 Date: August 2016

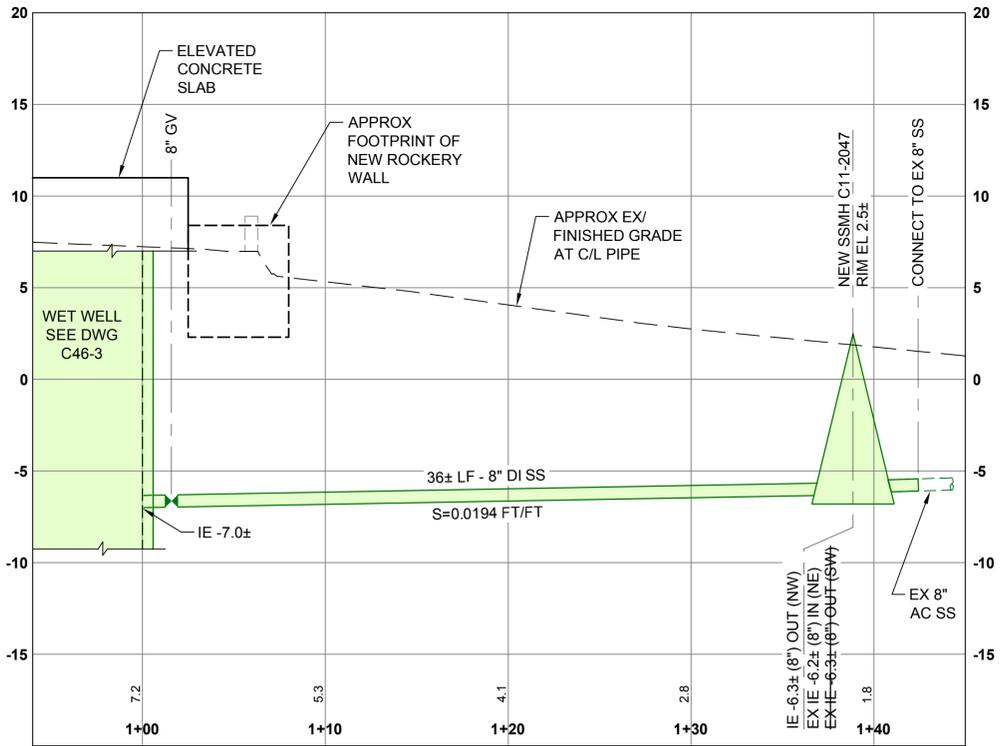
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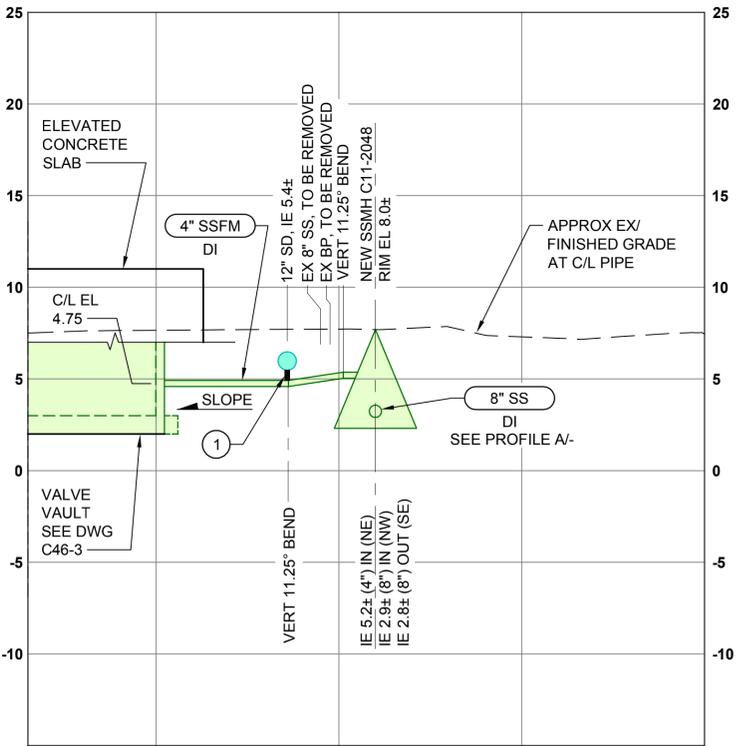
**8" SS  
(CONNECT TO NEW SSMH C11-2048 & SSMH C11-2049)**  
**PROFILE A**  
 SCALE: HORIZ 1" = 10'-0"  
 VERT 1" = 5'-0" C46-1



**12" SD  
PROFILE B**  
 SCALE: HORIZ 1" = 10'-0"  
 VERT 1" = 5'-0" C46-1



**8" SS  
(CONNECT TO NEW SSMH C11-2047)**  
**PROFILE C**  
 SCALE: HORIZ 1" = 5'-0"  
 VERT 1" = 5'-0" C46-1



**4" SSFM AND 8" SS  
(CONNECT TO NEW SSMH C11-2048)**  
**PROFILE D**  
 SCALE: HORIZ 1" = 5'-0"  
 VERT 1" = 5'-0" C46-1

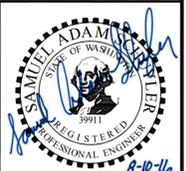
**NOTES:**

1. LOCATION OF EXISTING UTILITIES SHOWN ARE APPROXIMATE. DEPTH IS UNKNOWN. CONTRACTOR SHALL POthOLE TO FIELD VERIFY LOCATION AND DEPTH OF EXISTING UTILITIES PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER OF ANY CONFLICTS.
2. NEW ELECTRICAL CONDUITS ARE NOT SHOWN IN PROFILE. CONTRACTOR TO COORDINATE ROUTING WITH EXISTING AND NEW UTILITIES TO AVOID CONFLICT.

**CONSTRUCTION NOTES:**

1. INSTALL ETHAFOAM PAD AT CROSSING.
2. ENCASE WATER SERVICE IN 10' MINIMUM PVC SLEEVE CENTERED ON CROSSING, PLUG EACH END WATERTIGHT.

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Designed: T. Whitehouse, P.E.	Scale: As Noted
Drawn: P. Simon	One Inch at Full Scale
Checked: A. Schuyler, P.E.	If Not One Inch Scale Accordingly
Approved: R. Dorn, P.E.	

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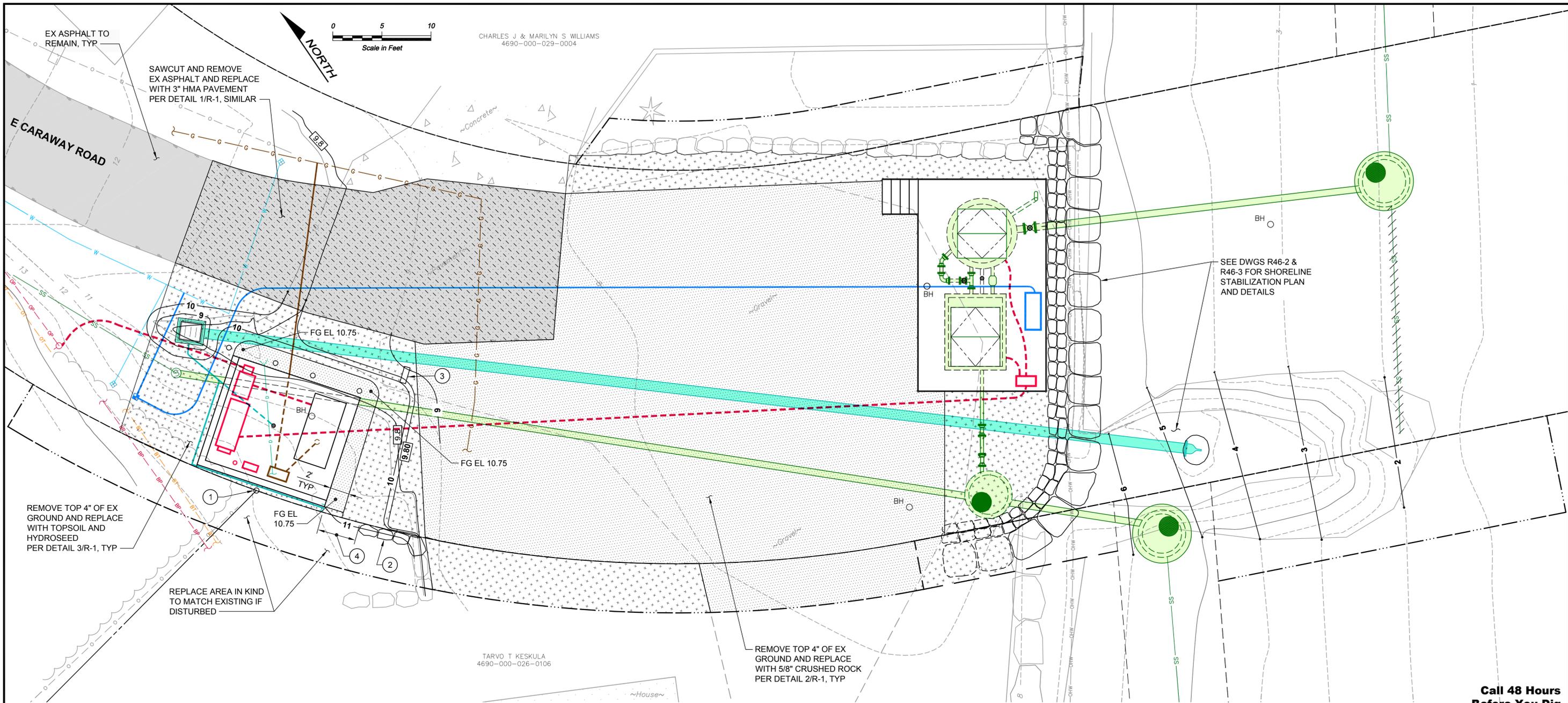
**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION**  
**PIPING PROFILES**

No.	Revision	Date	By	App'd
	ISSUED FOR BID	08-2016	TJW	RAD
	BUILDING PERMIT SUBMITTAL	04-2016	TJW	RAD
	ECOLOGY SUBMITTAL	02-2016	TJW	RAD

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Drawing: <b>C46-5</b>
Sheet: <b>47</b> of <b>73</b>
File: P15-10341_C45-5
Date: August 2016

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 Xref Filename: X:\15-10341\_TB\Whitehouse | Schuyler\_Adam | X:\15-10341\_PS46-Prop | Schuyler\_Erika | X:\15-10341\_45-46-47-Esmis |



**NOTES:**

1. ALL NECESSARY RESTORATION MAY NOT BE IDENTIFIED ON THE DRAWINGS. CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS TO PRE-CONSTRUCTION CONDITIONS OR BETTER.

**CONSTRUCTION NOTES:**

- 1 RE-ESTABLISHED PROPERTY MARKER.
- 2 REINSTALL ROCK WALL PLANTER TO MATCH EXISTING. REMOVE AND RELOCATE/REPLACE IRRIGATION SYSTEM IN KIND AS NECESSARY.
- 3 RELOCATED MAILBOX, FINAL LOCATION AS DIRECTED BY PROPERTY OWNER.
- 4 PROVIDE 4'-0" CLEAR OPENING BETWEEN EDGE OF ROCKERY AND STRUCTURE. GRADE OPENING AT CONSTANT SLOPE TO TRANSITION FROM PROPOSED TO EXISTING GRADES.

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No.	Revision	Date	By	App'd
	ISSUED FOR BID	08-2016	TJW	RAD
	BUILDING PERMIT SUBMITTAL	04-2016	TJW	RAD
	ECOLOGY SUBMITTAL	02-2016	TJW	RAD

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Designed: T. Whitehouse, P.E.  
 Drawn: P. Simon  
 Checked: A. Schuyler, P.E.  
 Approved: R. Dorn, P.E.  
 Scale: 1" = 5'-0"  
 One Inch at Full Scale  
 If Not One Inch Scale Accordingly

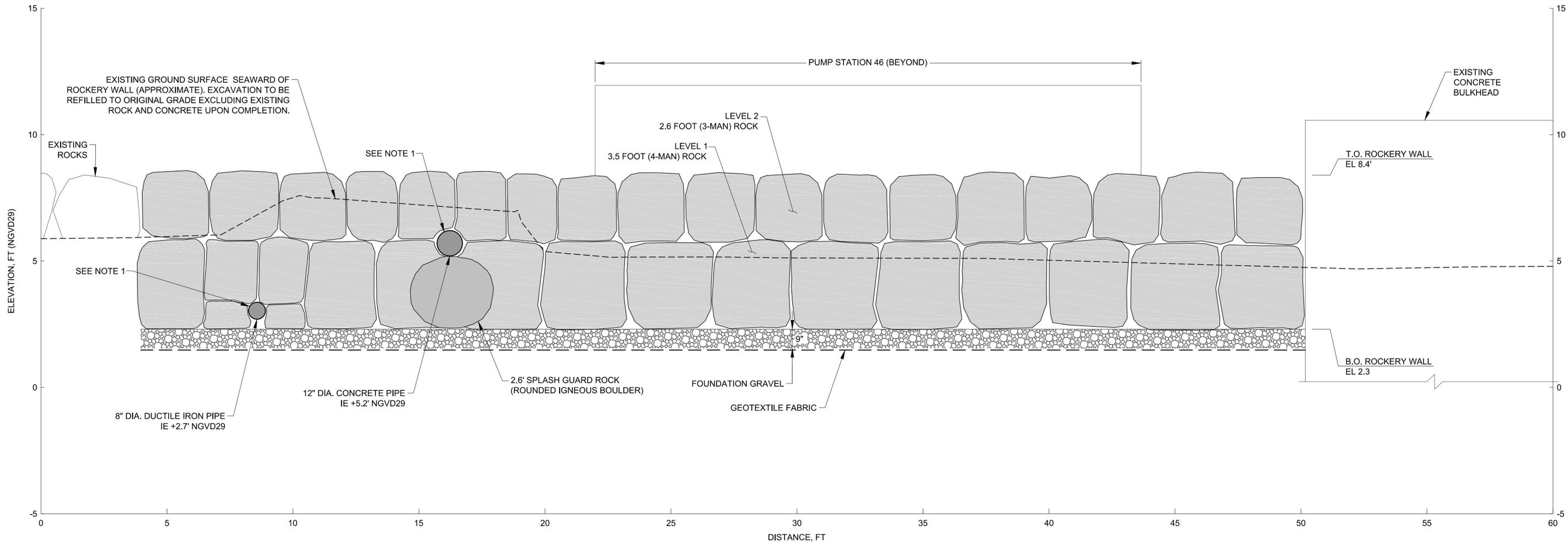
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**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION**  
**FINISHED SITE AND RESTORATION PLAN**

Drawing: **R46-1**  
 Sheet: **48** of **73**  
 File: P15-10341\_R46-1  
 Date: August 2016



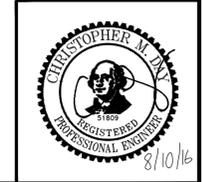
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 PLOT: 365056-Design\_Site.dwg



SECTION C  
R46-2

- NOTES:**
1. SELECT ROCK SIZE AND SHAPE TO REMAIN STABLE WITHOUT RESTING ON PIPE.

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No.	Revision	Date	By	App'd
	ISSUED FOR BID	08-2016	CMD	RSP
	ECOLOGY RESUBMITTAL	06-2016	CMD	RSP
	BUILDING PERMIT SUBMITTAL	04-2016	CMD	RSP
	ECOLOGY SUBMITTAL	02-2016	CMD	RSP

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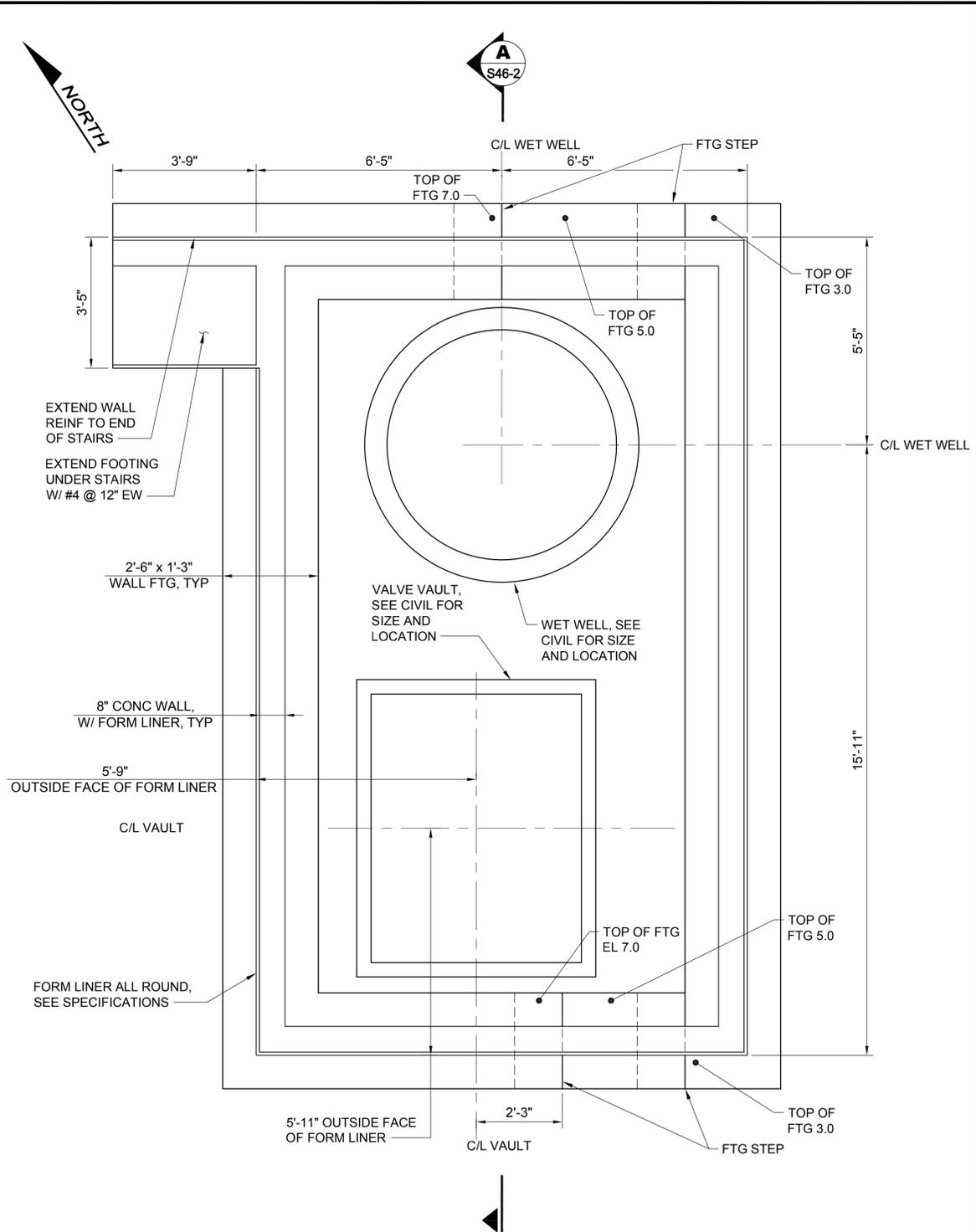
Designed: C. Day, P.E.  
 Drawn: C. Taylor  
 Checked: D. Simpson, P.E.  
 Approved: R. S. Phillips, P.E.  
 Scale: AS NOTED  
 One Inch At Full Scale  
 If Not One Inch Scale Accordingly

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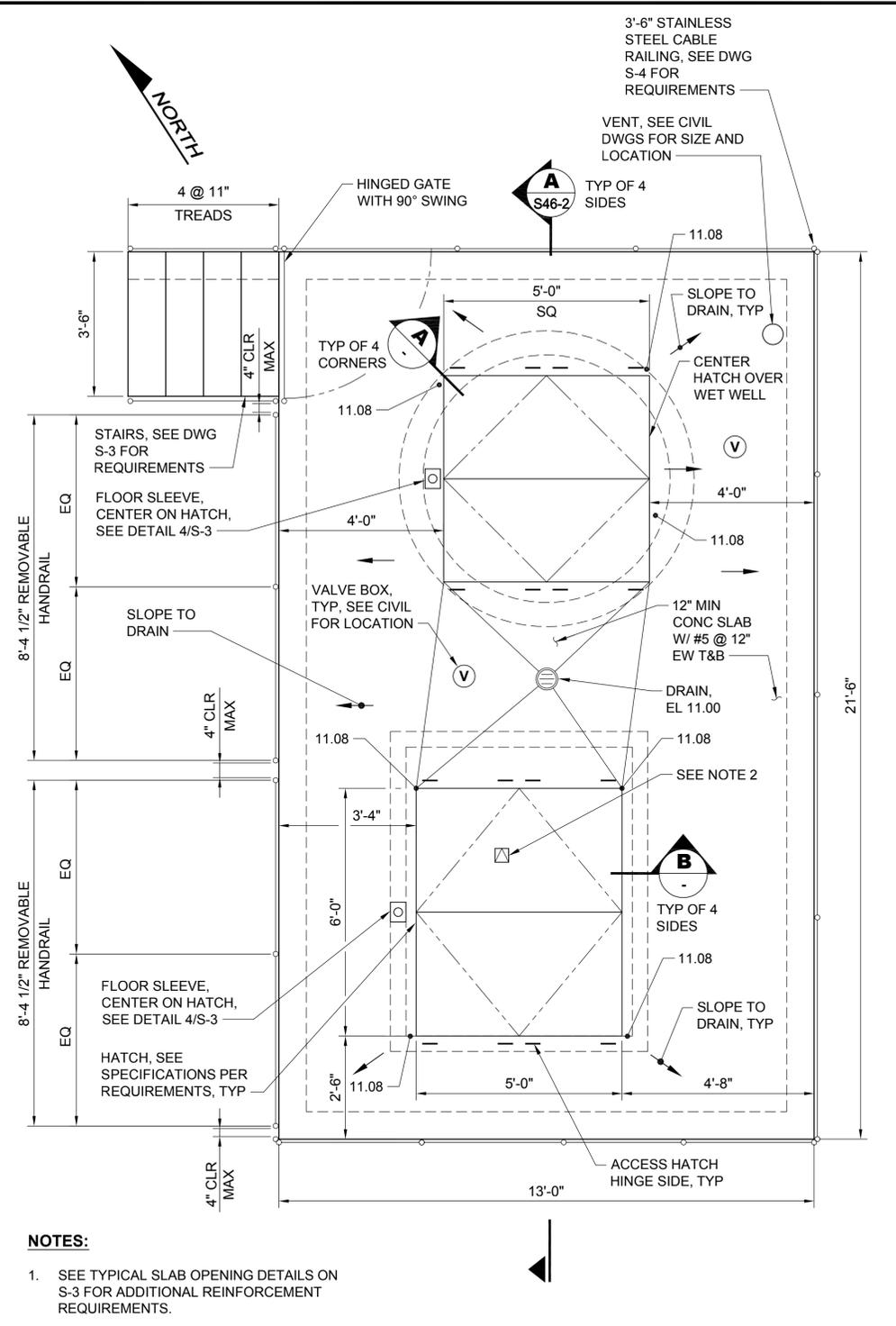
MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION  
 SHORELINE STABILIZATION SECTION

Drawing: R46-3  
 Sheet: 50 of 73  
 File: 365056-Design Site  
 Date: Aug. 2016

Path: S:\Cad\Kitsap County\15-10341 PS 45 46 47 BL Design\15-10341\_S46-1 Plot date: Aug 09, 2016 04:08:16pm CAD User: acarliao.  
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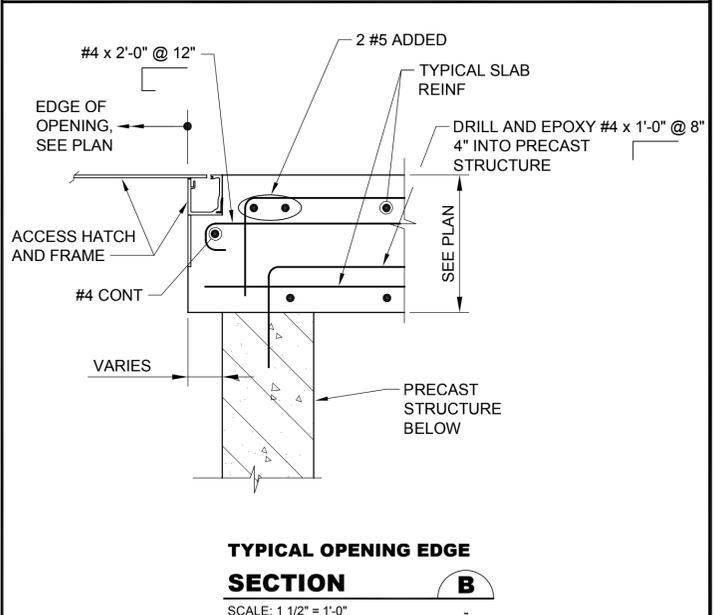
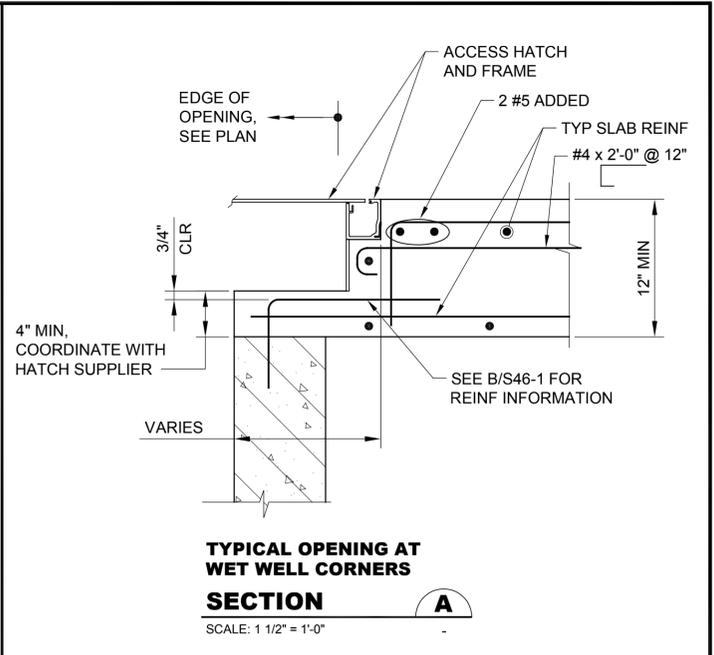


**FOUNDATION PLAN 1**  
 SCALE: 1/2" = 1'-0"



**SLAB PLAN 2**  
 SCALE: 1/2" = 1'-0"

- NOTES:**
- SEE TYPICAL SLAB OPENING DETAILS ON S-3 FOR ADDITIONAL REINFORCEMENT REQUIREMENTS.
  - HINGED 4" x 4" CLEAR OPENING BY ACCESS HATCH MANUFACTURER, LOCATE OPENING CENTERED OVER GATE VALVE STEM BELOW. CONTRACTOR TO COORDINATE FINAL LOCATION OF OPENING WITH HATCH MANUFACTURER.
  - SMALL DIAMETER PIPING PENETRATIONS NOT SHOWN, SEE CIVIL DRAWINGS FOR SIZE AND LOCATION.
  - SEE CIVIL DWGS FOR PROVISIONS FOR FUTURE CURB AROUND STRUCTURE PERIMETER.



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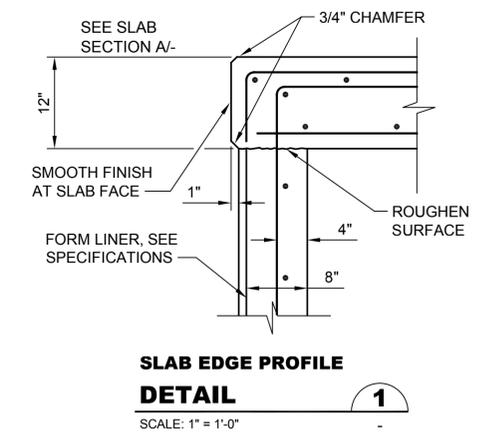
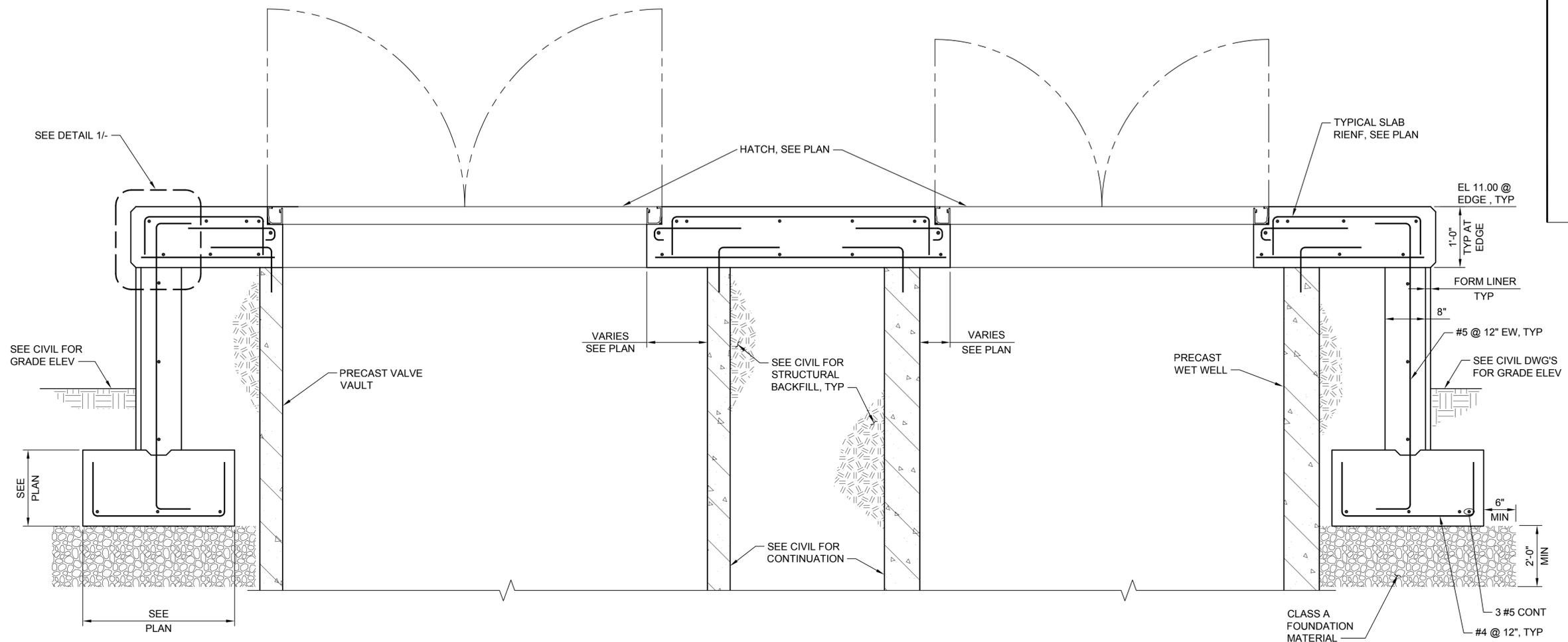
Designed: K. Dahl, P.E., S.E.	Scale: As Noted
Drawn: M. Caldwell	One Inch at Full Scale
Checked: A. Schuyler, P.E.	If Not One Inch Scale Accordingly
Approved: R. Dorn, P.E.	

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**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION**  
**FOUNDATION AND SLAB PLANS**

Drawing: <b>S46-1</b>
Sheet: <b>51</b> of <b>73</b>
File: P15-10341_S46-1
Date: August 2016

Path: S:\Cadd\Kitsap County\15-10341\_PS\_45\_46\_47\_BI\_Design\15-10341\_PS\_45\_46\_47\_BI\_Design\15-10341\_S46-2\_Plot.dwg Aug 09, 2016 04:09:23pm CAD User: acariaso  
 Xref Filename: X:\15-10341\_TB\X\15-10341\_Prelim\Whitehouse\Schuyler\_Adam\Schuyler\_Adam\Gibson\Schuyler\_Erika



- NOTES:**
- CABLE RAILING SYSTEM NOT SHOWN, SEE DRAWING S-4 FOR DETAILS.

**PUMP STATION SLAB SECTION**  
 SCALE: 1"=1'-0" **A**  
 S46-1

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Drawn: M. Caldwell	One Inch at Full Scale
Checked: A. Schuyler, P.E.	If Not One Inch Scale Accordingly
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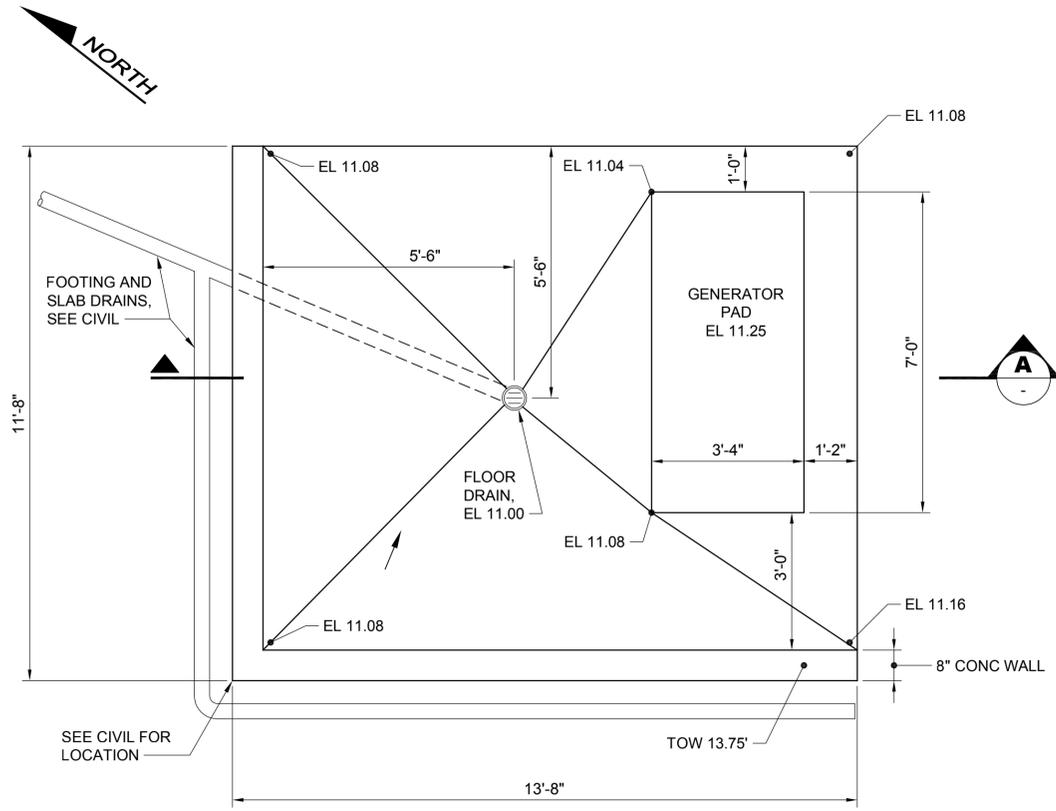


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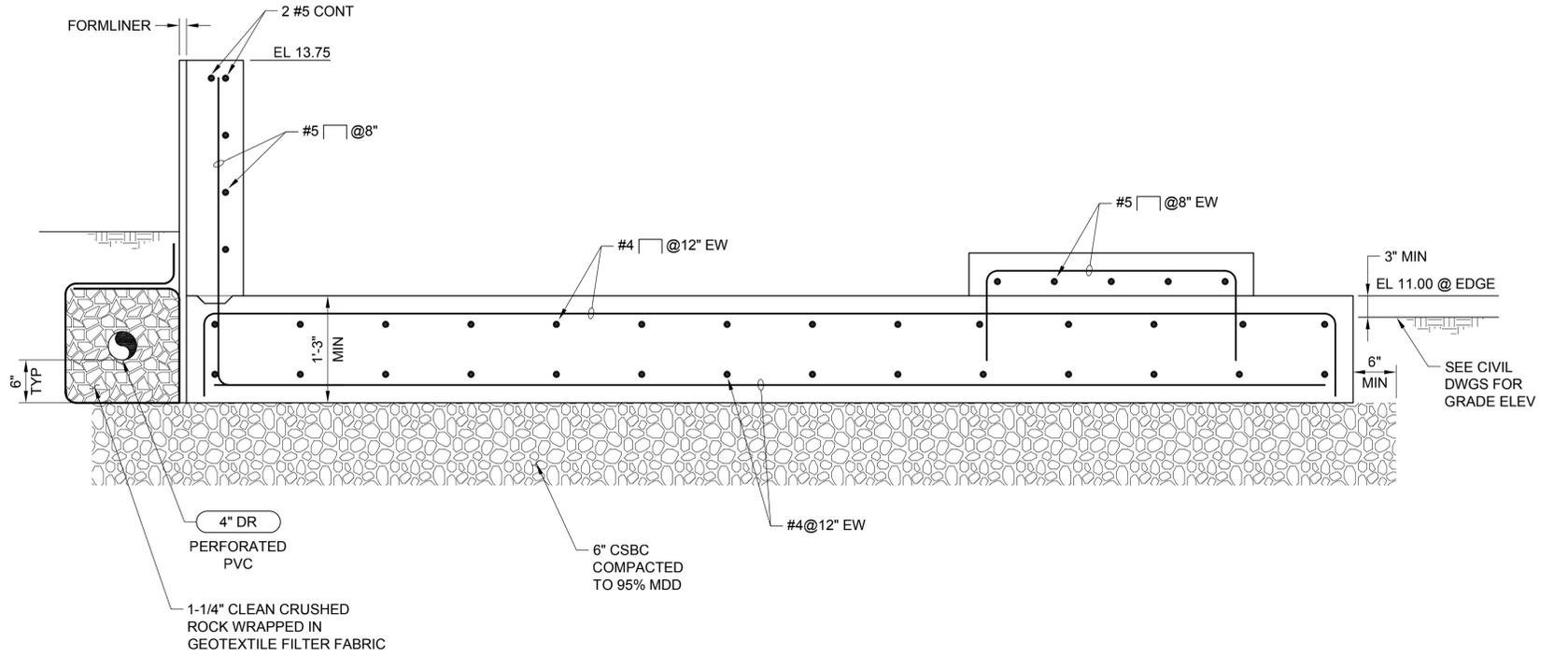
**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION**  
**SLAB SECTION**

Drawing: <b>S46-2</b>
Sheet: <b>52</b> of <b>73</b>
File: P15-10341_S46-2
Date: August 2016

Path: S:\Cad\Kitsap County\15-10341\_PS\_45\_46\_47\_BLD\_Design\15-10341\_S46-3\_Plot.dwg Plot date: Aug 11, 2016 08:45:31am CAD User: psimon.  
 Xref Filename: | Whitehouse | Schuyler\_Adam | Dahl | X15-10341\_TB | Gibson | Schuyler\_Erika |



**PLAN**  
 SCALE: 1/2" = 1'-0"  
**1**



**SECTION**  
 Scale: 1" = 1'-0"  
**A**

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No.	Revision	Date	By	App'd
	ISSUED FOR BID	08-2016	TJW	RAD
	BUILDING PERMIT SUBMITTAL	04-2016	TJW	RAD
	ECOLOGY SUBMITTAL	02-2016	TJW	RAD

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 206.505.3400  
 206.505.3406 (fax)  
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Designed: K. Dahl, P.E., S.E.  
 Drawn: M. Caldwell  
 Checked: A. Schuyler, P.E.  
 Approved: R. Dorn, P.E.

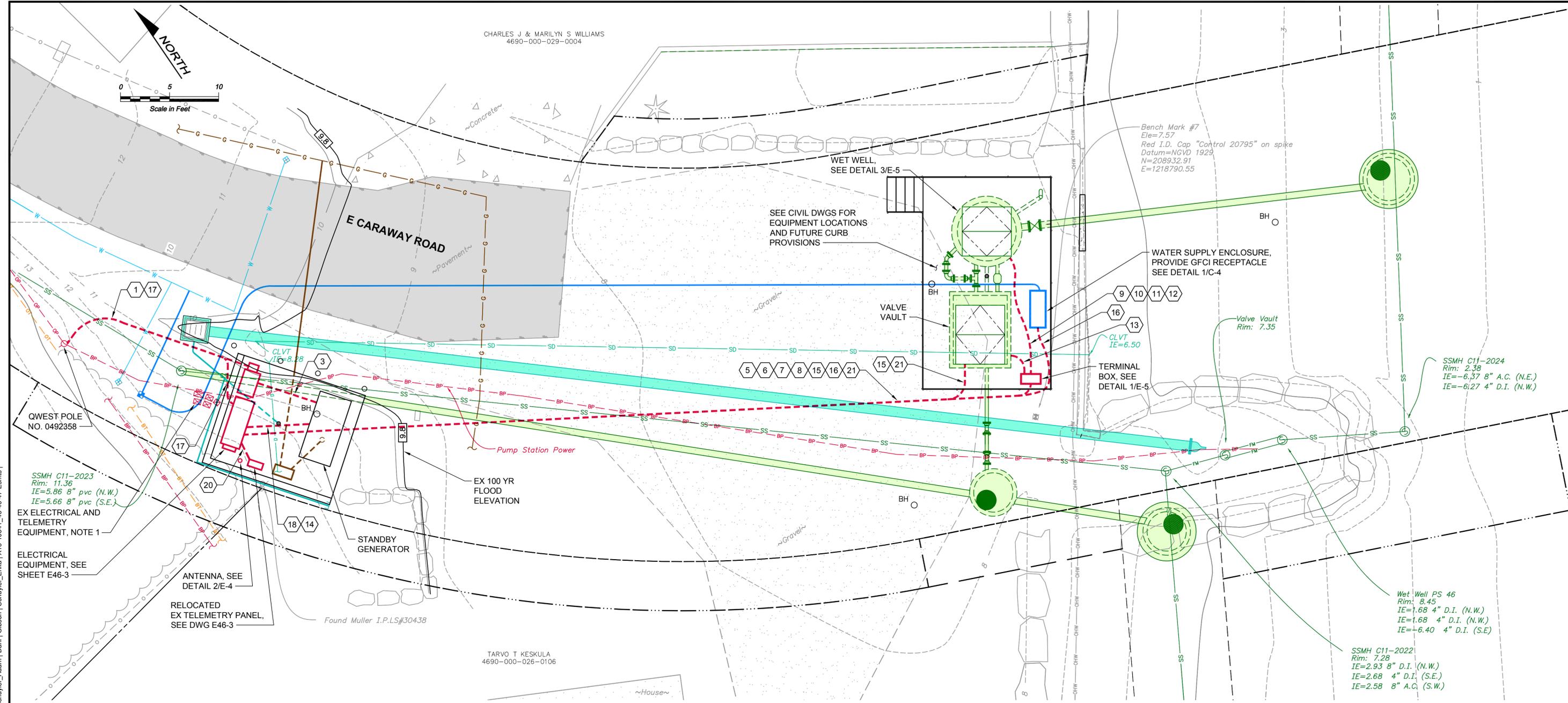
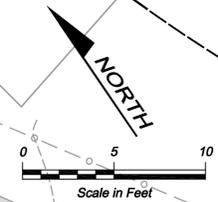
Scale:  
 As Noted  
 One Inch at Full Scale  
 If Not One Inch Scale Accordingly

**Kitsap County Public Works**  
 614 Division Street, MS 26  
 Port Orchard, WA 98366

**MANCHESTER PUMP STATIONS 45, 46, & 47 AND  
 BEACH LINES REHABILITATION**  
**GENERATOR AND ELECTRICAL  
 EQUIPMENT PAD**

Drawing: **S46-3**  
 Sheet: **53** of **73**  
 File: P15-10341\_S46-3  
 Date: August 2016

CHARLES J & MARILYN S WILLIAMS  
4690-000-029-0004



**LEGEND:**

- PROPOSED ELECTRICAL STRUCTURES & EQUIPMENT
- PROPOSED ELECTRICAL CONDUIT
- # CONDUIT TAG - SEE DWG E-3

**NOTES:**

1. THE EXISTING PUMP STATION SHALL REMAIN IN SERVICE UNTIL FINAL COMMISSIONING OF NEW PUMP STATION. RELOCATE EXISTING SERVICE AND CONTROL EQUIPMENT AS NECESSARY TO FACILITATE CONSTRUCTION OF NEW CONCRETE PAD. COORDINATE WITH ELECTRIC UTILITY (PSE) AND PAY ALL FEES.
2. PROVIDE TEMPORARY PUMPING DURING CUTOVER AND TESTING OF RELOCATED EQUIPMENT.

Path: S:\Cad\Kitsap County\15-10341\_P15-10341\_E46-1\_Plot.dwg; File: 15-10341\_E46-1\_Plot.dwg; Date: Aug 11, 2016 03:34:38pm; CAD User: psimon; Xref File: 15-10341\_P946-Prop; Xref File: 15-10341\_TB; Whitehouse; Schuyler\_Adam; Dahl; Gibson; Schuyler\_Erika; Xref File: 15-10341\_45-46-47-Esmis

No.	Revision	Date	By	App'd
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Designed: J. Gibson, P.E.	Scale: As Noted
Drawn: S. Olsoe	One Inch at Full Scale
Checked: A. Schuyler, P.E.	If Not One Inch Scale Accordingly
Approved: R. Dorn, P.E.	

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**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION**  
**ELECTRICAL SITE PLAN**

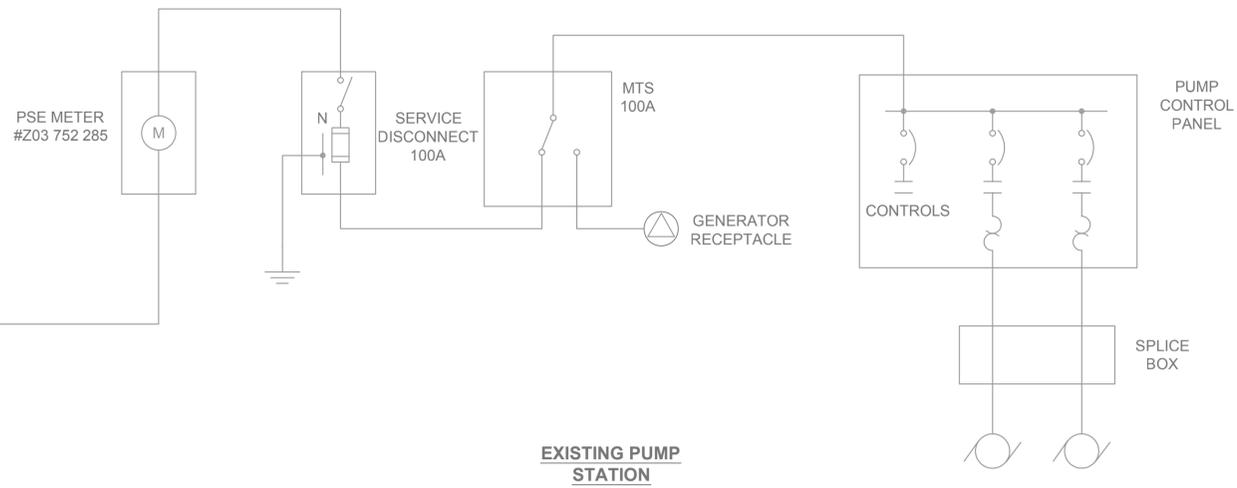
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Drawing: <b>E46-1</b>
Sheet: <b>54</b> of <b>73</b>
File: P15-10341_E46-1
Date: August 2016

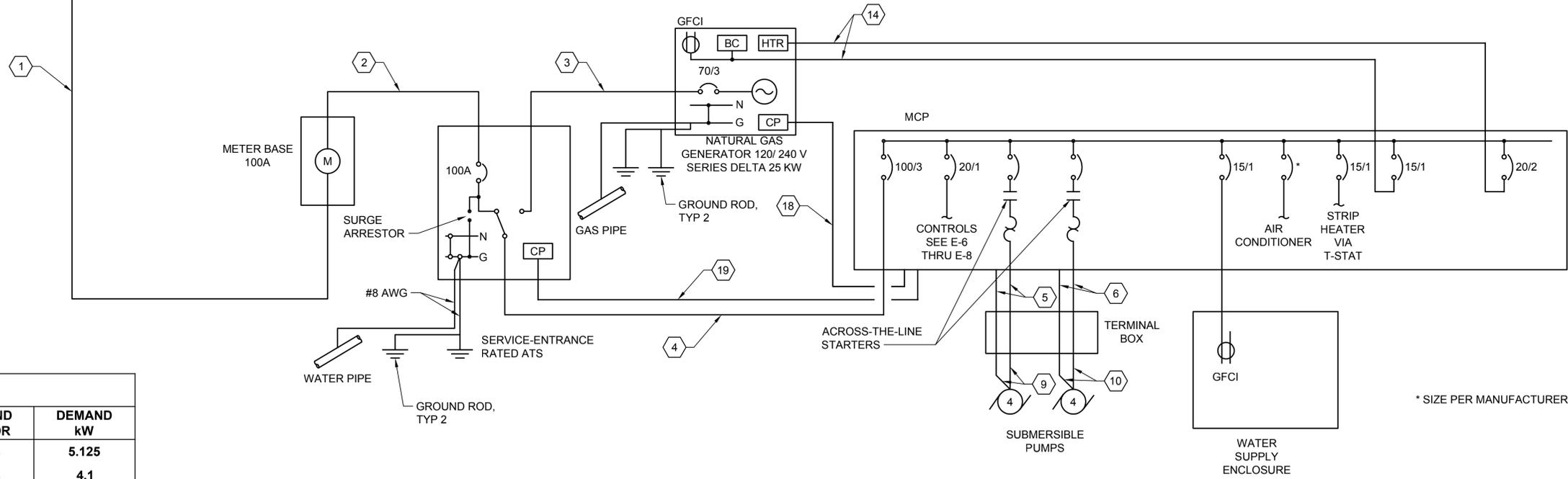
UTILITY TRANSFORMERS  
120/240 V OPEN DELTA

UTILITY POLE



**NOTES:**

- RELOCATE EXISTING PUMP STATION ELECTRICAL AND TELEMETRY EQUIPMENT TO FACILITATE CONSTRUCTION. EXISTING EQUIPMENT SHALL REMAIN IN SERVICE UNTIL FINAL COMMISSIONING OF NEW PUMP STATION. REMOVE ALL EXISTING EQUIPMENT AT PROJECT COMPLETION.
- ⬡ CONDUIT TAG - SEE DWG E-3.



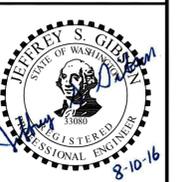
LOAD CALC				
	HP	kW	DEMAND FACTOR	DEMAND kW
PUMP #1	4	4.1	125%	5.125
PUMP #2	4	4.1	100%	4.1
LIGHTING		0.1	125%	0.125
RECEPTACLES		0.36	100%	0.36
CONTROLS		1.1	100%	1.1
HEATER (GENERATOR)		1.5	100%	1.5
<b>TOTAL</b>		<b>11.26 kW</b>		<b>12.31 kW</b>
				<b>29.61 Amps</b>

**ELECTRICAL RISER DIAGRAM  
DETAIL**

NTS

Path: S:\Cad\Kitsap County\15-10341 PS 45 46 47 BL Design\15-10341\_E46-2\_Plot.dwg Plot date: Aug 11, 2016 02:54:46pm CAD User: acarliao  
Xref Filename: |X|15-10341\_TB|Whitehouse|Schuyler\_Adam|Dahl|Gibson|Schuyler\_Erika|

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Designed: J. Gibson, P.E.  
Drawn: S. Olsoe  
Checked: A. Schuyler, P.E.  
Approved: R. Dorn, P.E.

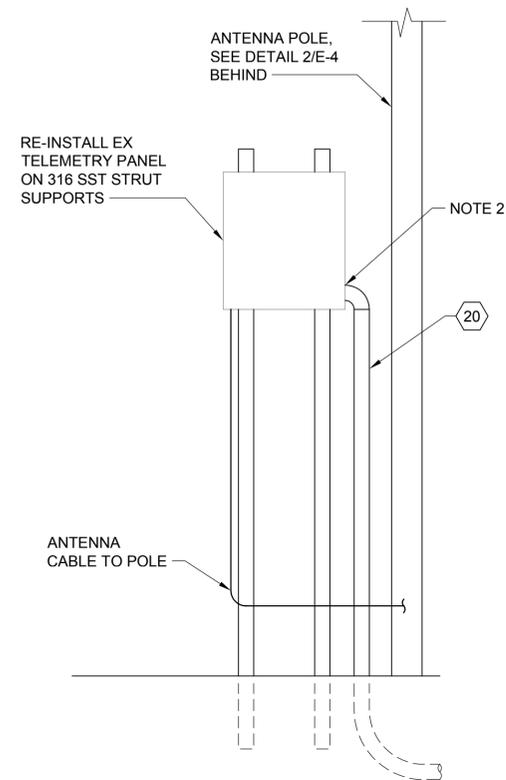
Scale:  
NTS  
One Inch at Full Scale  
If Not One Inch Scale Accordingly

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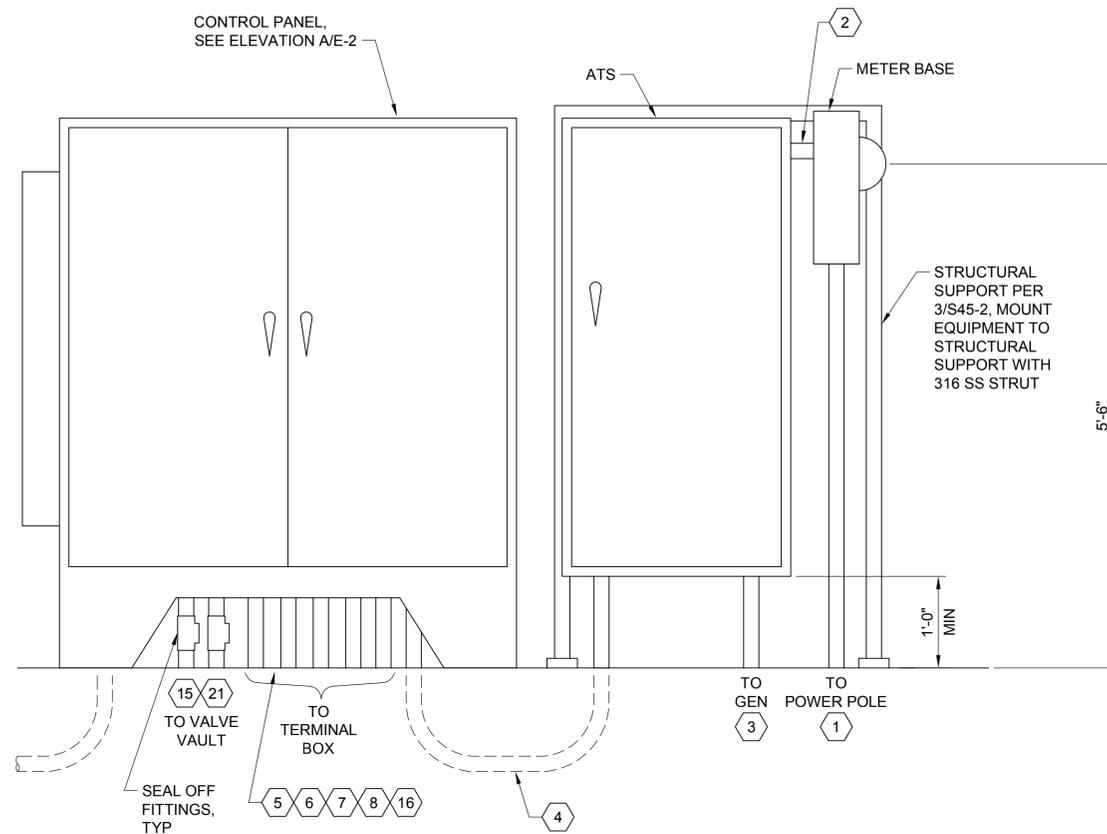
**MANCHESTER PUMP STATIONS 45, 46, & 47 AND  
BEACH LINES REHABILITATION**  
**ONE LINE DIAGRAM  
AND LOAD CALCULATIONS**

Drawing: **E46-2**  
Sheet: **55** of **73**  
File: P15-10341\_E46-2  
Date: August 2016

Path: S:\Cad\Kitsap County\15-10341 PS 45 46 47 BL Design\15-10341 E46-3 Plot date: Aug 11, 2016 03:09:59pm CAD User: acariaso  
 Xref Filename: | X:15-10341\_TB | Whitehouse | Schuyler\_Adam | Dahl | Gibson | Schuyler\_Erika |



**ELEVATION A**  
 NTS E46-1

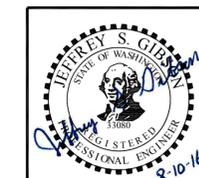


**ELEVATION B**  
 NTS E46-1

**NOTES:**

1. (#) CONDUIT TAG - SEE DWG E-3.
2. REUSE OR REPAIR EXISTING CONDUIT KNOCKOUTS.

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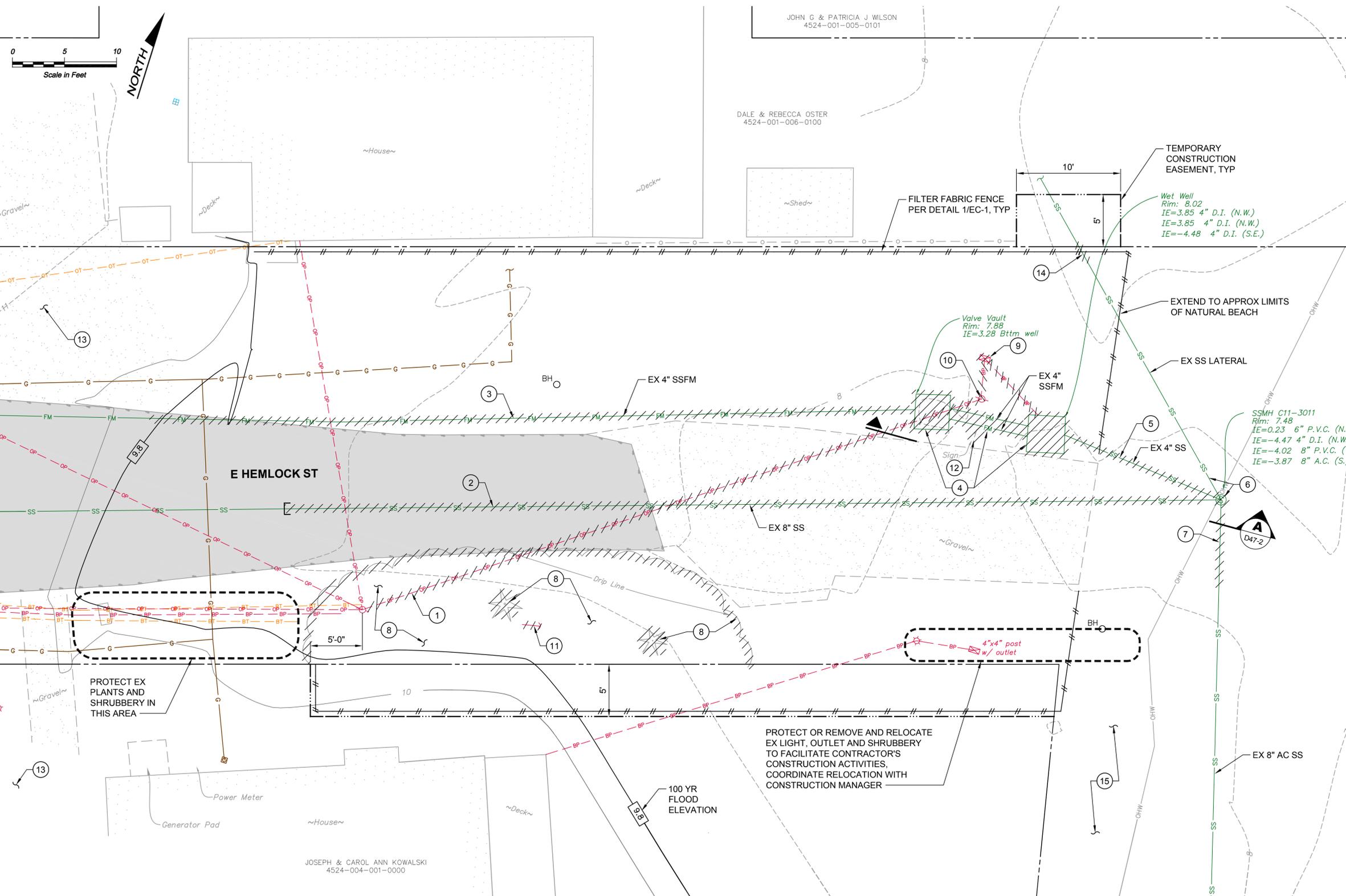
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Designed: J. Gibson, P.E.  
 Drawn: M. Caldwell  
 Checked: A. Schuyler, P.E.  
 Approved: R. Dorn, P.E.  
 Scale: NTS  
 One Inch at Full Scale  
 If Not One Inch Scale Accordingly

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**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION**  
**ELECTRICAL EQUIPMENT CABINET ELEVATIONS**

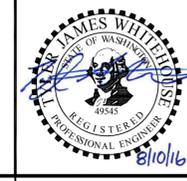
Drawing: **E46-3**  
 Sheet: **56** of **73**  
 File: P15-10341\_E46-3  
 Date: August 2016



- NOTES:**
- DEMOLITION OF EXISTING PUMP STATION FACILITIES SHALL OCCUR ONLY AFTER COMMISSIONING (INSTALLATION, TESTING, AND CONFIRMED OPERATION) OF THE NEW PUMP STATION, UNLESS OTHERWISE APPROVED BY THE COUNTY.
  - SEE SPECIAL PROVISIONS SECTION 1-08.3(2)C FOR CONSTRUCTION SEQUENCING AND CONSTRAINTS.
  - SEE SPEC SECTION 02 41 00 FOR ADDITIONAL DEMOLITION AND SALVAGE REQUIREMENTS.
  - PROTECT ALL EXISTING UTILITIES, STRUCTURES, FACILITIES, TREES, ETC. UNLESS SPECIFICALLY INDICATED TO BE REMOVED.
  - MAINTAIN ACCESS TO EXISTING PUMP STATION AND SITE FACILITIES FOR COUNTY STAFF AND SERVICE TRUCKS AT ALL TIMES DURING CONSTRUCTION.
  - SEE RESTORATION DWGS FOR REMOVAL OF EXISTING ASPHALT AND GROUND.
  - ADJUST/REMOVE/REINSTALL FILTER FABRIC FENCE AS NECESSARY TO CONSTRUCT IMPROVEMENTS.

- CONSTRUCTION NOTES:**
- RELOCATE OVERHEAD POWER SERVICE PER ELECT DWGS AND REMOVE EXISTING PUMP STATION POWER SERVICE. FOLLOWING COMMISSIONING OF NEW PUMP STATION, REMOVE TEMPORARY SERVICE.
  - PLUG AND ABANDON EXISTING SEWER, REMOVE AS REQUIRED. SEE DWG C47-1 FOR LIMITS OF NEW IMPROVEMENTS.
  - REMOVE EXISTING FORCE MAIN. SEE DWG C47-1 FOR LIMITS OF NEW IMPROVEMENTS.
  - DECOMMISSION AND REMOVE MECH, ELECT, AND MISC EQUIPMENT FROM EXISTING PUMP STATION WET WELL AND VALVE VAULT. REMOVE DISCHARGE PIPING BETWEEN STRUCTURES. SEE DWG D47-2 FOR ADDITIONAL DEMOLITION DETAILS.
  - PLUG AND ABANDON EXISTING SEWER.
  - MAINTAIN SERVICE OF EXISTING SEWER LATERAL DURING AND AFTER CONSTRUCTION. SEE DWG D47-2 FOR ADDITIONAL DEMOLITION DETAILS. SEE NEW BEACH MANHOLE LOCATION ON DWG C47-1 FOR EXISTING SEWER LATERAL RECONNECTION.
  - REMOVE AS REQUIRED AND CONNECT TO NEW SSMH. MAINTAIN SERVICE DURING CONSTRUCTION, SEE NEW BEACH MANHOLE LOCATION ON DWG C47-1.
  - CAREFULLY REMOVE BOXWOOD SHRUB SCREEN, WRAP IN BURLAP AND DELIVER TO ADJACENT PROPERTY OWNER (KOWALSKI) FOR REPLANTING. REMOVE TREE AND REMAINING HEAVY SHRUBBERY FOR CONSTRUCTION OF NEW IMPROVEMENTS.
  - REMOVE ELECT EQUIP.
  - REMOVE EXISTING POWER POLE.
  - REMOVE AND REPLACE OR RELOCATE POWER POLE GUY WIRE. COORD W/ UTILITY PROVIDER.
  - REMOVE AND REINSTALL SIGN IN LOCATION DIRECTED BY COUNTY.
  - MAINTAIN DRIVEABLE ACCESS TO PROPERTIES DURING CONSTRUCTION. NOTIFY HOMEOWNERS ONE DAY IN ADVANCE OF ANY CONSTRUCTION ACTIVITY REQUIRING BLOCKAGES OF 30 MINUTES OR MORE. BLOCKAGES SHALL LAST NO LONGER THAN 4 HOURS UNLESS PRIOR APPROVAL IS GIVEN BY THE HOMEOWNER.
  - REMOVE EXISTING SEWER LATERAL TO INSTALL CLEANOUT, SEE C47-1 FOR LOCATION.
  - REMOVE CREOSOTE TREATED DRIFT LOGS AND STYROFOAM AS DIRECTED BY THE CONSTRUCTION MANAGER.

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**SURVEY CONTROL**  
 BENCH MARK #5 LOCATED AT NW CORNER OF INTERSECTION OF NUBLING AVE E AND E HEMLOCK ST  
 EL 21.86  
 MAG NAIL  
 DATUM=NGVD 1929  
 N=206551.84  
 E=1218047.88

No.	Revision	Date	By	App'd
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Designed: T. Whitehouse, P.E.  
 Drawn: P. Simon  
 Checked: A. Schuyler, P.E.  
 Approved: R. Dorn, P.E.

Scale:  
 1" = 5'-0"  
 One Inch at Full Scale  
 If Not One Inch Scale Accordingly

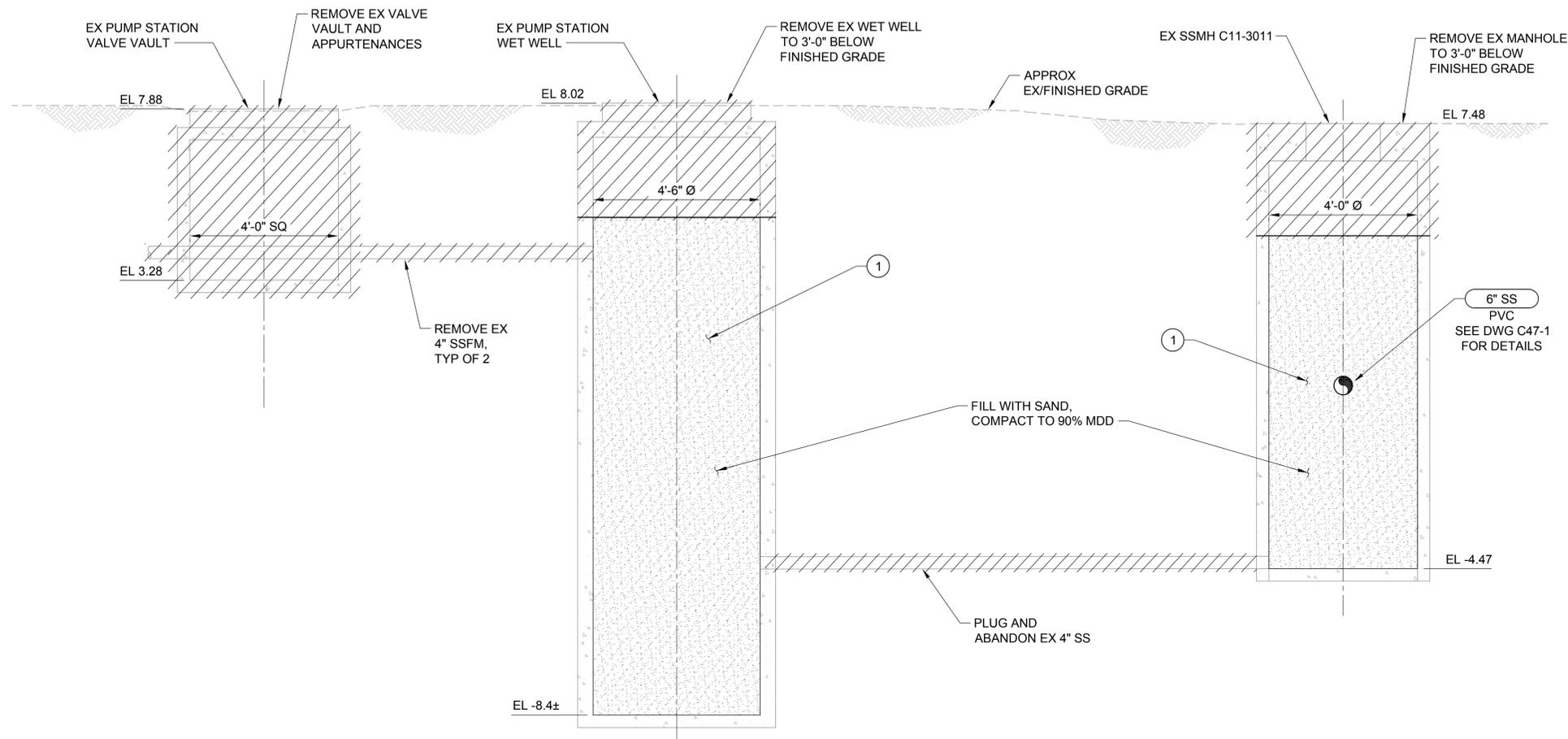
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**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION**  
**EXISTING PUMP STATION SITE, TESC AND DEMOLITION PLAN**

Drawing: **D47-1**  
 Sheet: **57** of **73**  
 File: P15-10341\_D47-1  
 Date: August 2016

Path: S:\Card\Kitsap County\15-10341 PS 45 46 47 BL Design\15-10341\_D47-1 Plot date: Aug 11, 2016-08:52:09am CAD User: psimon.  
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 Xref Filename: | X:15-10341\_TB | Whitehouse | Schuyler\_Adam | Dahl | Gibson | Schuyler\_Erika |



**NOTES:**

- 1 REMOVE ALL EXISTING MECHANICAL AND STRUCTURAL APPURTENANCES. CUT PIPE, SUPPORTS, ANCHORS, ETC FLUSH WITH WALL. PLUG ALL PIPE CONNECTIONS THROUGH WALL WITH CONCRETE. HOSE DOWN AND PUMP OUT EXISTING STRUCTURE BEFORE BACKFILLING.

**PUMP STATION  
DEMOLITION  
SECTION**

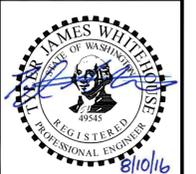
SCALE: 1/2" = 1'-0"



D47-1

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No.	Revision	Date	By	App'd
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Designed: T. Whitehouse, P.E.  
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 Checked: A. Schuyler, P.E.  
 Approved: R. Dorn, P.E.

Scale:  
 1/2" = 1'-0"  
 One Inch at Full Scale  
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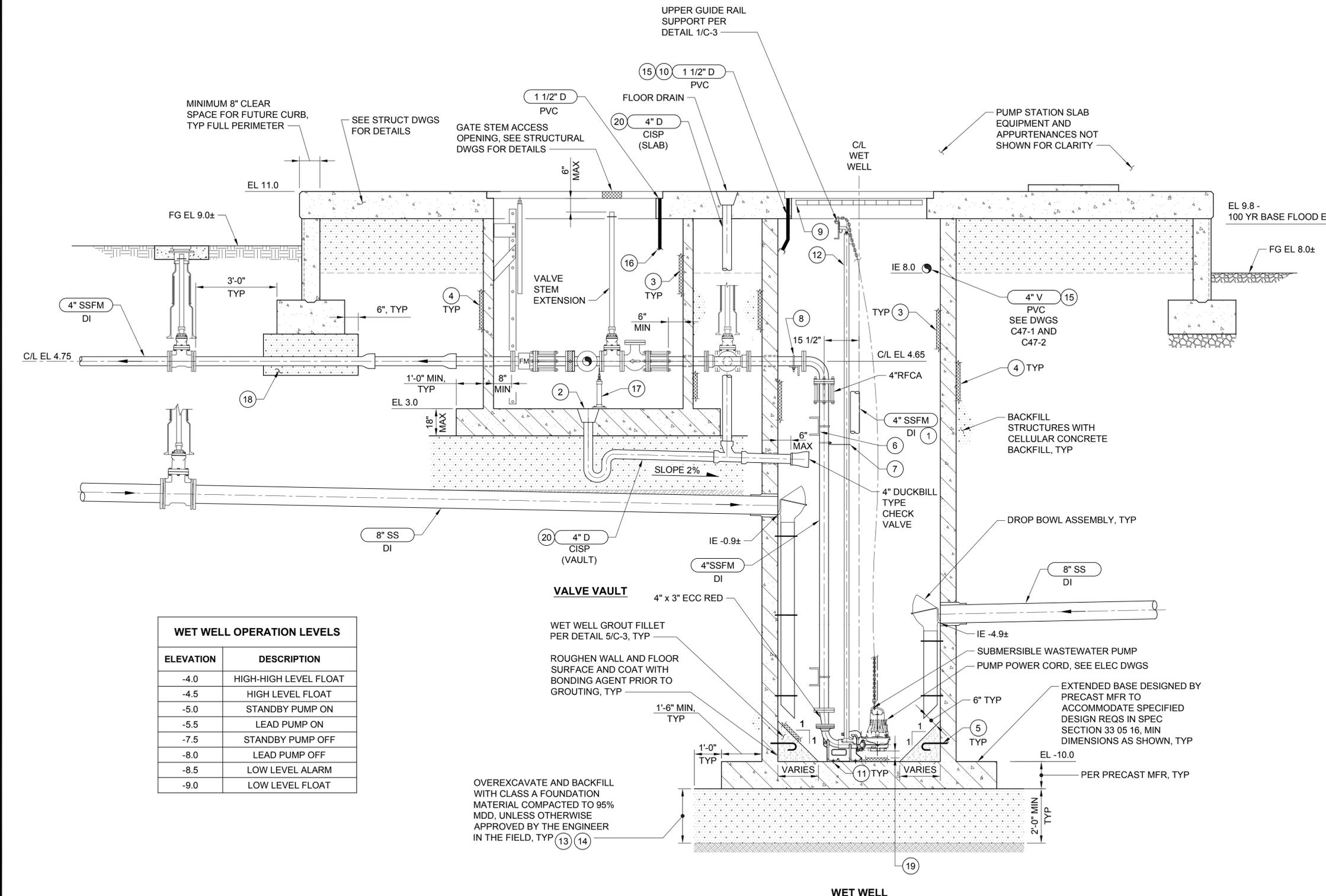
**MANCHESTER PUMP STATIONS 45, 46, & 47 AND  
BEACH LINES REHABILITATION**  
**DEMOLITION SECTIONS**

Drawing: **D47-2**  
 Sheet: **58** of **73**  
 File: P15-10341\_D47-2  
 Date: August 2016





Path: S:\Cad\Kitsap County\15-10341 PS 45 46 47 BL Design\15-10341\_C47-3 Plot date: Aug 11, 2016-03:40:00pm CAD User: acariaso.  
 Xref Filename: |Whitehouse| Schuyler\_Adam | Dahl | Gibson | X15-10341\_TB | Schuyler\_Erika



WET WELL OPERATION LEVELS	
ELEVATION	DESCRIPTION
-4.0	HIGH-HIGH LEVEL FLOAT
-4.5	HIGH LEVEL FLOAT
-5.0	STANDBY PUMP ON
-5.5	LEAD PUMP ON
-7.5	STANDBY PUMP OFF
-8.0	LEAD PUMP OFF
-8.5	LOW LEVEL ALARM
-9.0	LOW LEVEL FLOAT

**VALVE VAULT**

WET WELL GROUT FILLET PER DETAIL 5/C-3, TYP

ROUGHEN WALL AND FLOOR SURFACE AND COAT WITH BONDING AGENT PRIOR TO GROUTING, TYP

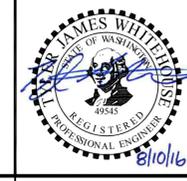
OVEREXCAVATE AND BACKFILL WITH CLASS A FOUNDATION MATERIAL COMPACTED TO 95% MDD, UNLESS OTHERWISE APPROVED BY THE ENGINEER IN THE FIELD, TYP

**WET WELL AND VALVE VAULT SECTION A**  
 SCALE: 1/2" = 1'-0" C47-2

- NOTES:**
- ALL SSFM PIPE AND VALVE JOINTS, FITTINGS AND COUPLINGS SHALL BE RESTRAINED.
  - ALL SUPPORT MATERIALS IN WET WELL AND VALVE VAULT SHALL BE TYPE 316L STAINLESS STEEL. ALL FASTENERS (NUTS, BOLTS, ANCHORS, WASHERS, ETC.) SHALL BE TYPE 316 OR 316L STAINLESS STEEL.
  - SEE DWG C47-1 FOR PIPE CONTINUATION.
  - INSTALL BURIED VALVES PER DETAIL 1/C-2.
  - SEAL ALL PIPE PENETRATIONS THROUGH WALLS PER DETAIL 7/C-1.
  - DUCTILE IRON PIPE AND FITTINGS SHALL BE CLASS 52 AND LINED WITH PROTECTO 401.

- CONSTRUCTION NOTES:**
- BACKFLUSH PIPE BEYOND, SHOWN OFFSET FOR CLARITY. SEE DETAIL 4/C-1.
  - CAST FLOOR DRAIN IN VAULT BASE, SEE DRAWING C47-2 FOR LOCATION, SLOPE FLOOR TO DRAIN.
  - PREPARE AND FIELD COAT ALL INTERIOR CONCRETE AND GROUTED SURFACES PER SPEC SECTION 09 96 00 PRIOR TO INSTALLATION OF INTERIOR PIPING AND APPURTENANCES.
  - PREPARE AND FACTORY COAT EXTERIOR CONCRETE WALL SURFACES IN ACCORDANCE WITH SPEC SECTION 09 96 00. WRAP ALL EXTERIOR JOINTS AFTER INSTALLATION PER SPEC SECTION 33 05 16.
  - #4 EPOXY GROUTED DOWEL W/ STD 180 DEG HOOK, MIN 4-INCH EMBEDDED IN WET WELL WALL, MIN 8-INCH EMBEDDED IN GROUT FILL. SPACE DOWELS AT 2 FEET EACH WAY.
  - INTERMEDIATE PIPE SUPPORT PER DETAIL 3/C-3, TYP 2.
  - INTERMEDIATE GUIDE RAIL SUPPORT BY PUMP MFR, TYP 1 PER PUMP.
  - TOP PIPE SUPPORT PER DETAIL 2/C-3.
  - SAFETY GRATE PROVIDED BY HATCH MFR, SWING DIRECTION SHALL BE SAME AS DOOR. COORDINATE WITH GUIDE RAIL MOUNTING TO AVOID CONFLICT.
  - HATCH FRAME DRAIN, ANGLE TOWARDS WALL AND TERMINATE.
  - TYPE 316 SST ANCHORAGE AS RECOMMENDED BY PUMP MFR.
  - GUIDE RAIL SYSTEM, SIZE PER MFR, SCH 40 316L SST.
  - IF CONTRACTOR'S MEANS AND METHODS UTILIZE A CONC BOTTOM SEAL, FOUNDATION TO BE DETERMINED AND APPROVED BY ENGINEER PRIOR TO CONSTRUCTION.
  - FOUNDATION MATERIAL SHALL BE CELLULAR CONCRETE BACKFILL IF PEAT IS ENCOUNTERED AT BASE OF EXCAVATION. ENGINEER SHALL BE PRESENT DURING EXCAVATION. CONTRACTOR TO PROVIDE 5 DAYS NOTICE PRIOR TO EXCAVATION. LIMITS OF PEAT REMOVAL SHALL BE AT THE DISCRETION OF THE ENGINEER.
  - SHOWN OUT OF SECTION FOR CLARITY.
  - TERMINATE AT FLOOR W/ 90° ELBOW DIRECTED TOWARD DRAIN. SUPPORT PIPE TO WALL PER DETAIL 4/C-3.
  - ADJUSTABLE PIPE SUPPORT, PER DETAIL 5/C-2, TYP OF 2.
  - FULLY ENCASE PIPE CROSSING UNDER FOOTING WITH CDF OR CELLULAR CONCRETE BACKFILL TO UNDERSIDE OF FOOTING. NO PIPE JOINTS ARE ALLOWED WITHIN ENCASEMENT.
  - AS RECOMMENDED BY PUMP MFR, INSTALL DISCHARGE ELBOW ON NON-SHRINK GROUT LEVELING PAD AS REQUIRED.
  - BED AND BACKFILL PIPING WITH CELLULAR CONCRETE BACKFILL.

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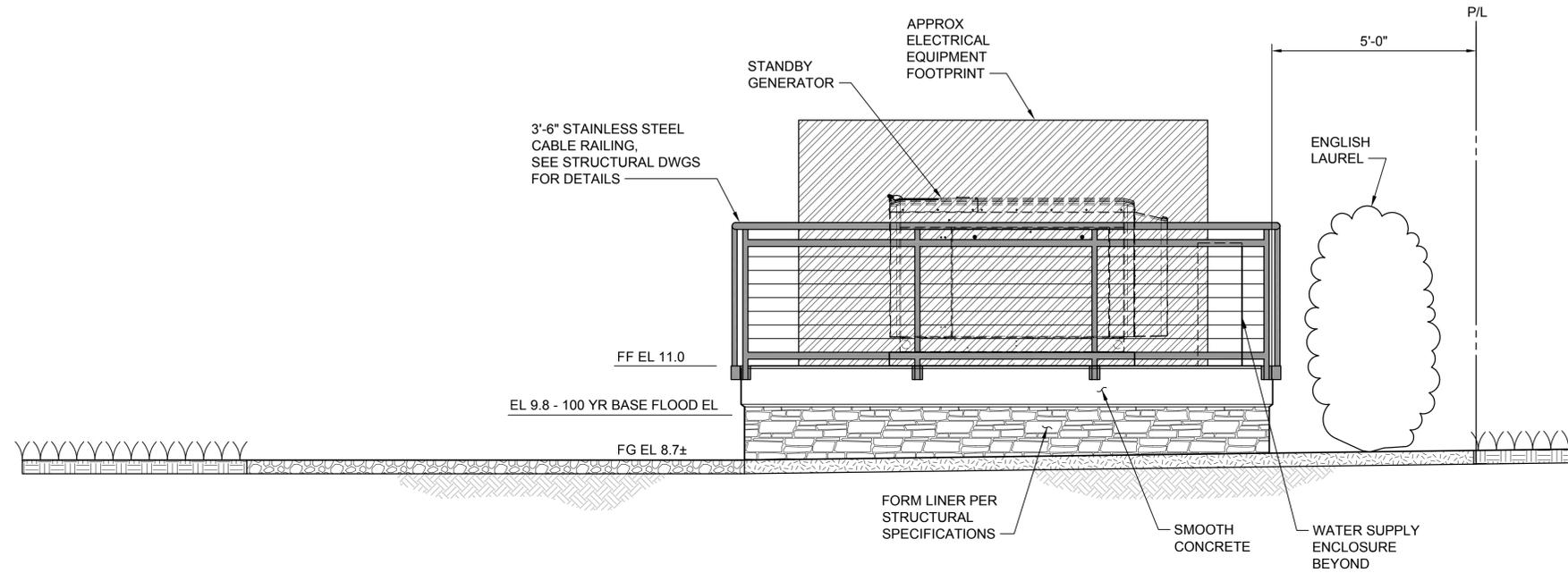
**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION**  
**WET WELL AND VALVE VAULT SECTION**

Drawing: **C47-3**  
 Sheet: **61** of **73**  
 File: P15-10341\_C47-3  
 Date: August 2016

Path: S:\Cad\Kitsap County\15-10341 PS 45 46 47 BL Design\15-10341\_C47-4 Plot date: Aug 11, 2016-09:22:51am CAD User: psimon.  
 Xref Filename: |Whitehouse |Schuyler\_Adam |Dahl |X15-10341\_Prop |Gibson |X15-10341\_TB |Schuyler\_Erika |

**NOTES:**

1. PLANTS IN FRONT OF PUMP STATION ARE NOT SHOWN FOR CLARITY, SEE DWG R47-1 FOR DETAILS.
2. ELEVATION VIEW IS ILLUSTRATIVE, NOT ALL ABOVEGROUND FEATURES ARE SHOWN. MAJOR COMPONENTS ARE ILLUSTRATED ONLY.



**WEST ELEVATION**  
 SCALE: 1/2" = 1'-0"  
 A  
 C47-1

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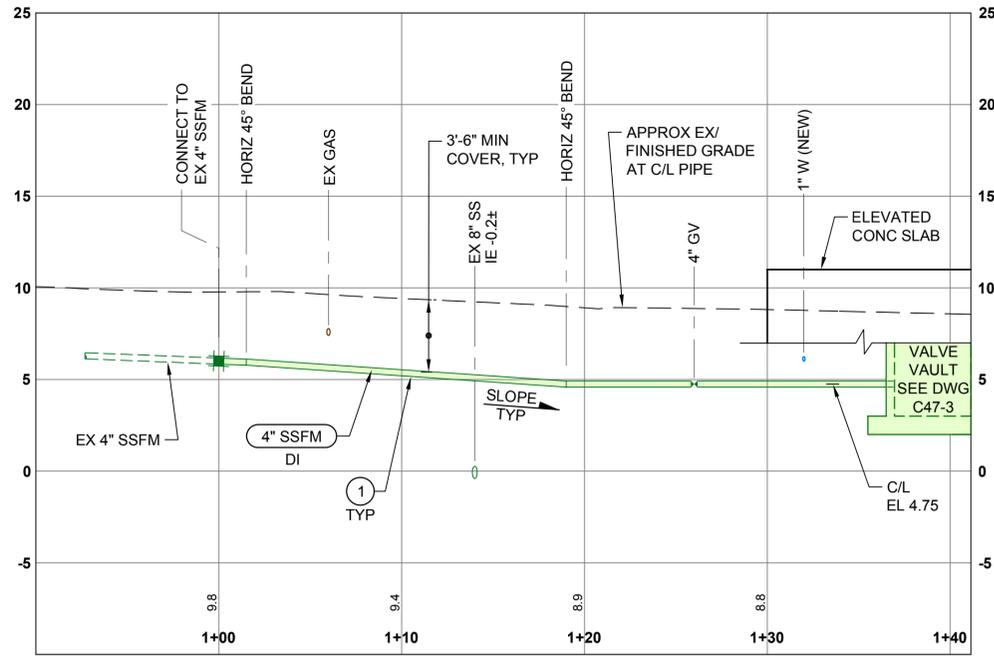
Designed: T. Whitehouse, P.E.	Scale: 1/2" = 1'-0"
Drawn: S. Olsoe	One Inch at Full Scale
Checked: A. Schuyler, P.E.	If Not One Inch Scale Accordingly
Approved: R. Dorn, P.E.	

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**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION**  
**PUMP STATION ELEVATION**

Drawing: <b>C47-4</b>
Sheet: <b>62</b> of <b>73</b>
File: P15-10341_C47-4
Date: August 2016

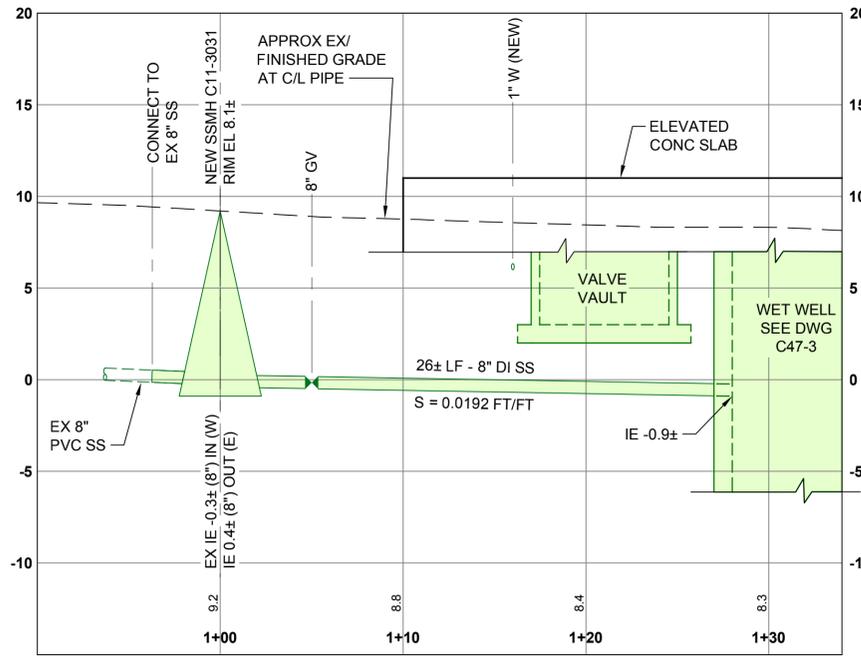
Path: S:\Cadd\Kitsap County\15-10341\_P.S. 45 46 47 BL Design\15-10341\_C47-5 Plot date: Aug 11, 2016-09:27:38am CAD User: psimon.  
 Xref Filename: X:\15-10341\_TB\Whitehouse\Schuyler\_Adam\15-10341\_45-46-47-Topo | X:\15-10341\_5-5 Prof | X:\15-10341\_PS47-Prop | X:\15-10341\_45-46-47-Esmts |



**4" SSFM  
(CONNECT TO EX SSFM)**

**PROFILE A**

SCALE: HORIZ 1" = 5'-0"  
 VERT 1" = 5'-0" C47-1



**8" SS  
(CONNECT TO NEW SSMH C11-3031)**

**PROFILE B**

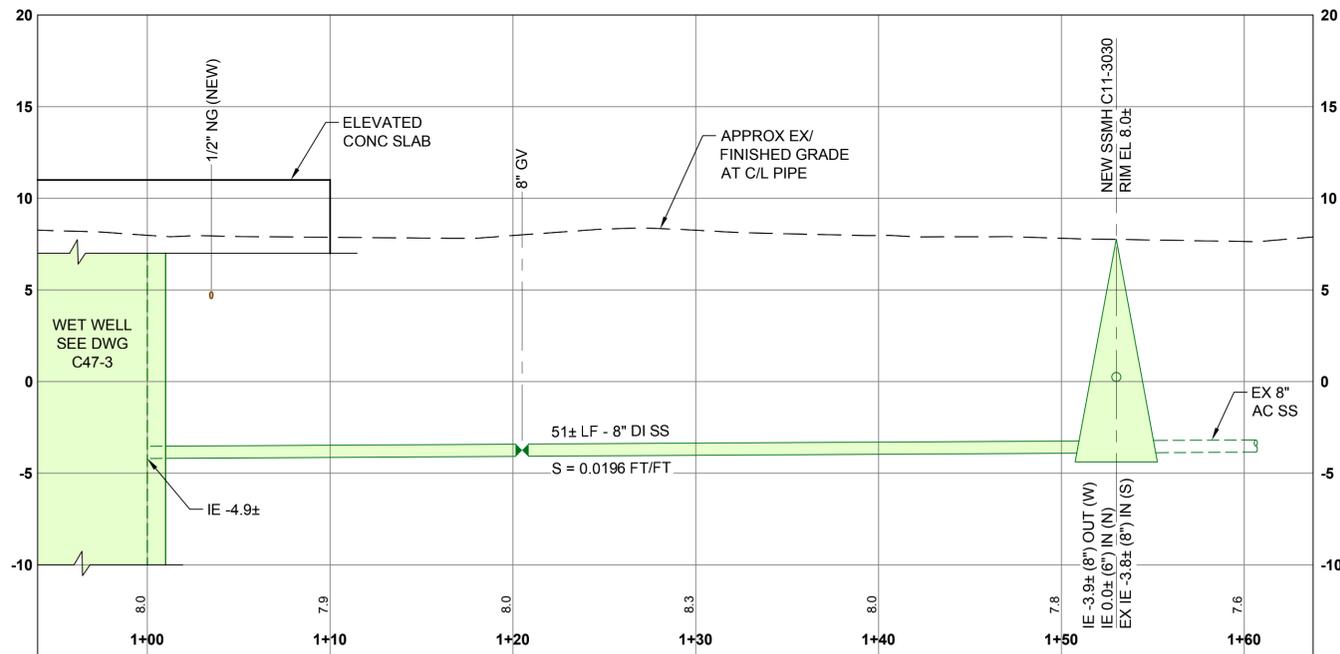
SCALE: HORIZ 1" = 5'-0"  
 VERT 1" = 5'-0" C47-1

**NOTES:**

1. LOCATION OF EXISTING UTILITIES SHOWN ARE APPROXIMATE, DEPTH IS UNKNOWN. CONTRACTOR SHALL POthOLE TO FIELD VERIFY LOCATION AND DEPTH OF EXISTING UTILITIES PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER OF ANY CONFLICTS.
2. NEW ELECTRICAL CONDUITS ARE NOT SHOWN IN PROFILE. CONTRACTOR TO COORDINATE ROUTING WITH EXISTING AND NEW UTILITIES TO AVOID CONFLICT.

**CONSTRUCTION NOTES:**

1. DEFLECT PIPE JOINTS AND/OR ROLL FITTINGS TO ACHIEVE VERTICAL PROFILE. LIMIT DEFLECTION TO 1/2 MANUFACTURER'S MAXIMUM ALLOWABLE DEFLECTION.



**8" SS  
(CONNECT TO NEW SSMH C11-3030)**

**PROFILE C**

SCALE: HORIZ 1" = 5'-0"  
 VERT 1" = 5'-0" C47-1

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 UNDERGROUND SERVICE



No.	Revision	Date	By	App'd
	ISSUED FOR BID	08-2016	TJW	RAD
	BUILDING PERMIT SUBMITTAL	04-2016	TJW	RAD
	ECOLOGY SUBMITTAL	02-2016	TJW	RAD

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 Seattle, Washington 98101  
 206.505.3400  
 206.505.3406 (fax)  
 www.bhcconsultants.com

Designed: T. Whitehouse, P.E.  
 Drawn: P. Simon  
 Checked: A. Schuyler, P.E.  
 Approved: R. Dorn, P.E.

Scale:  
 As Noted  
 One Inch at Full Scale  
 If Not One Inch Scale Accordingly

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 Port Orchard, WA 98366

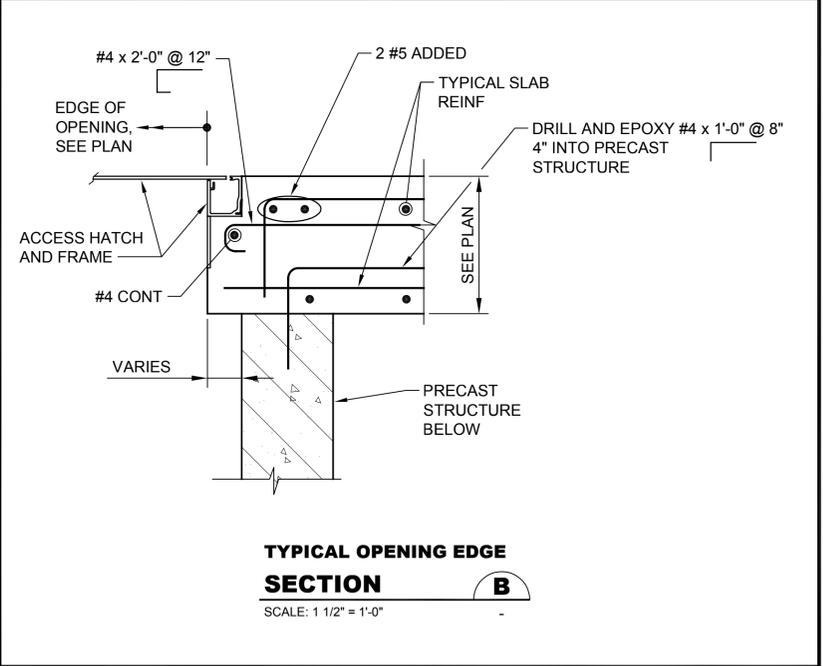
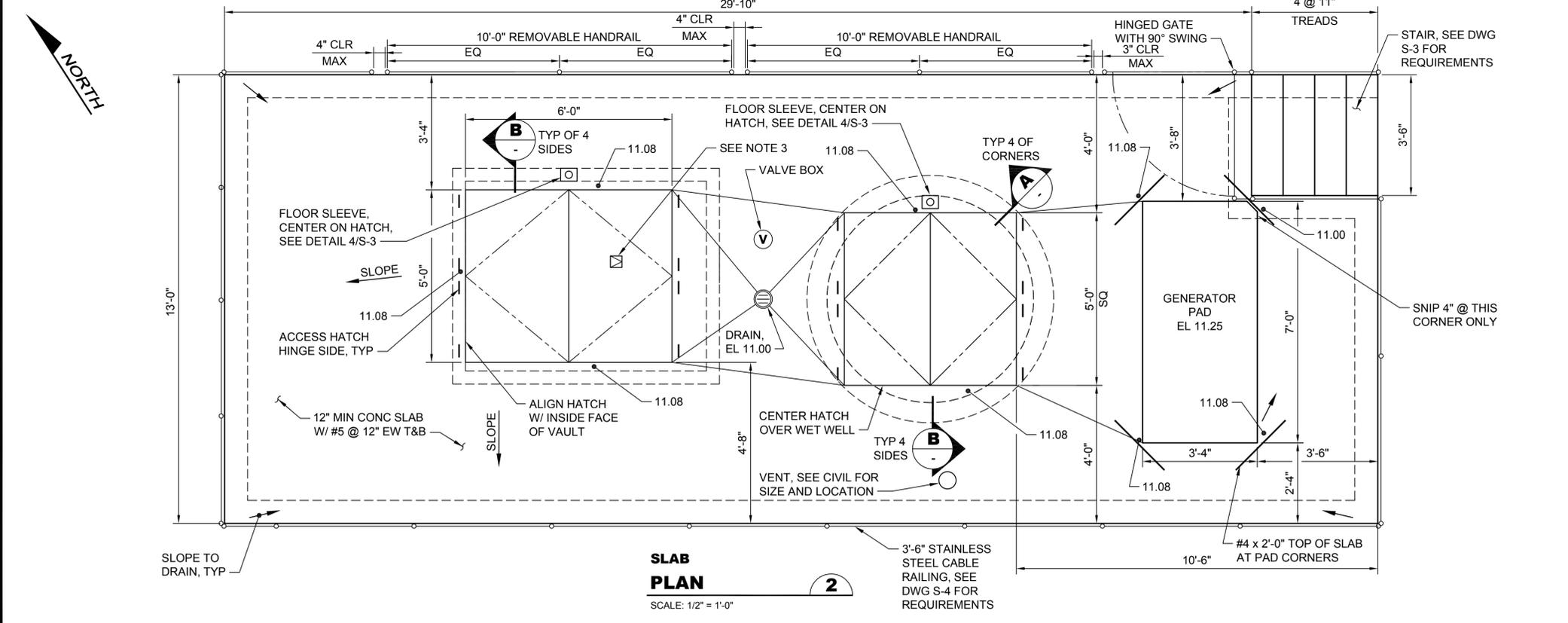
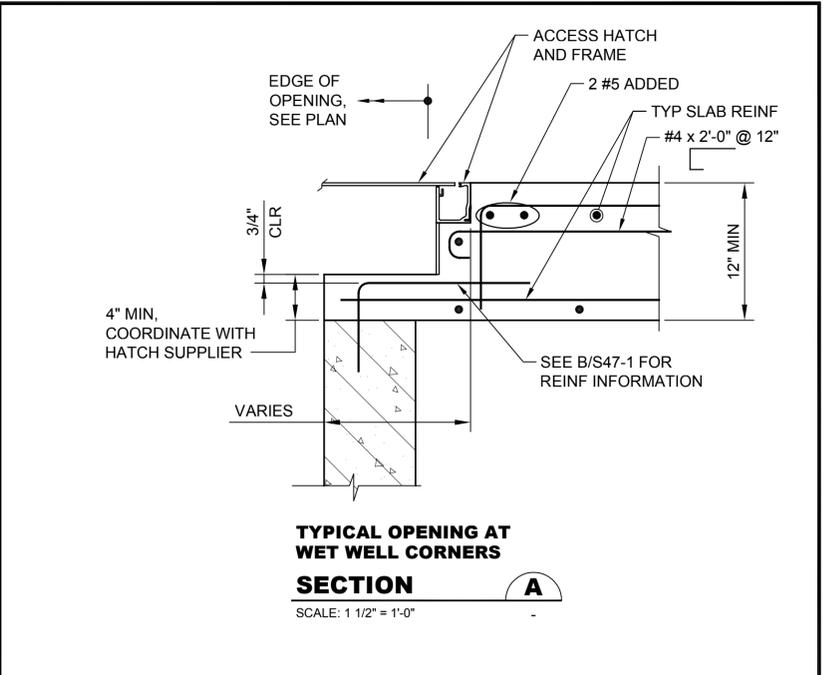
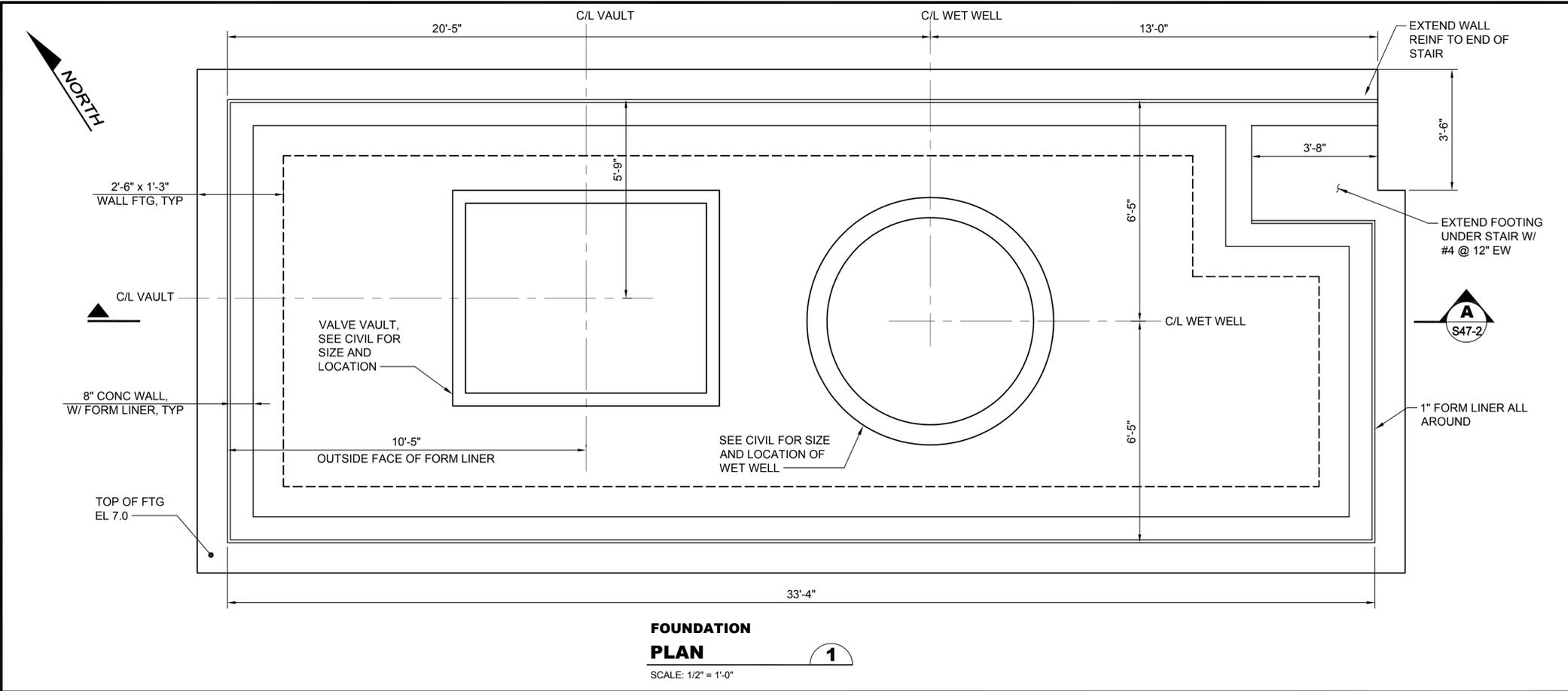
**MANCHESTER PUMP STATIONS 45, 46, & 47 AND  
 BEACH LINES REHABILITATION**

**PIPING PROFILES**

Drawing: **C47-5**  
 Sheet: **63** of **73**  
 File: P15-10341\_C47-5  
 Date: August 2016



Path: S:\Cadd\Kitsap County\15-10341\_P15-46-47\_BLD\Design\15-10341\_P15-46-47\_BLD.dwg Plot date: Aug 09, 2016-04-23:08pm CAD User: acarliao  
 Xref File name: | X:\15-10341\_P15-46-47\_BLD\Whitehouse | Schuyler\_Adam | Dahl | Gibson | Schuyler\_Erika |



- NOTES:**
- SEE TYPICAL SLAB OPENING DETAILS ON DWG S-3 FOR REIN REQUIREMENTS.
  - VERIFY GENERATOR PAD DIMENSIONS WITH GENERATOR SUPPLIER PRIOR TO SHOP DRAWING PRODUCTION.
  - HINGED 4" x 4" CLEAR OPENING BY ACCESS HATCH MANUFACTURER, LOCATE OPENING CENTERED OVER GATE VALVE STEM BELOW. CONTRACTOR TO COORDINATE FINAL LOCATION OF OPENING WITH HATCH MANUFACTURER.
  - SMALL DIAMETER PIPING PENETRATIONS NOT SHOWN, SEE CIVIL DRAWINGS FOR SIZE AND LOCATION.
  - SEE CIVIL DWGS FOR PROVISIONS FOR FUTURE CURB AROUND STRUCTURE PERIMETER.

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No.	Revision	Date	By	App'd
	ISSUED FOR BID	08-2016	TJW	RAD
	BUILDING PERMIT SUBMITTAL	04-2016	TJW	RAD
	ECOLOGY SUBMITTAL	02-2016	TJW	RAD

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 206.505.3406 (fax)  
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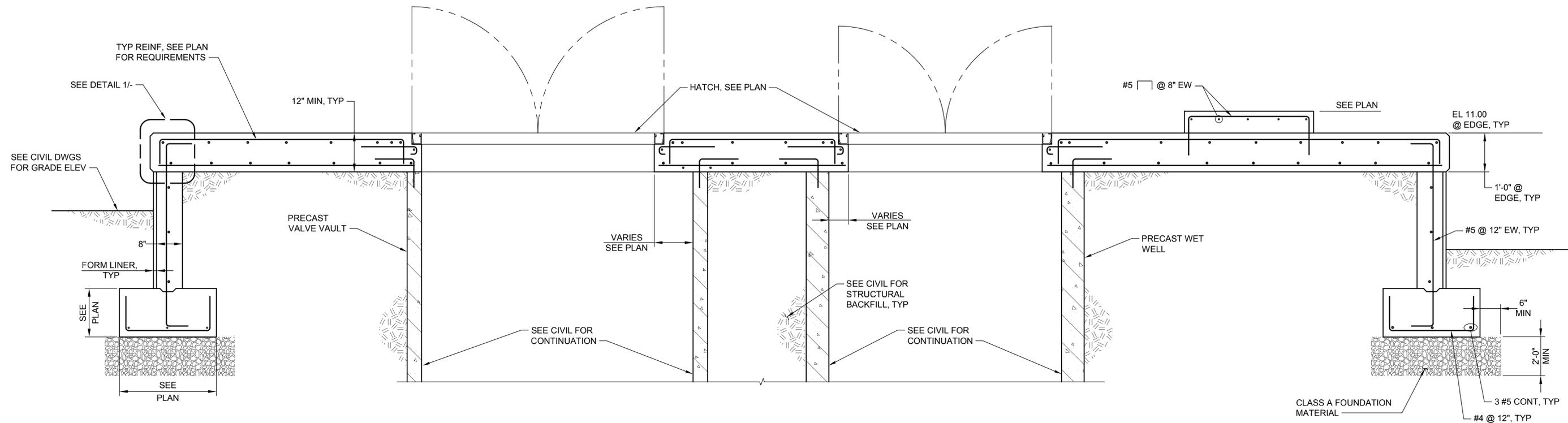
Designed: K. Dahl, P.E., S.E.	Scale: 1/2" = 1'-0"
Drawn: S. Olsoe	One Inch at Full Scale
Checked: A. Schuyler, P.E.	If Not One Inch Scale Accordingly
Approved: R. Dorn, P.E.	

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**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION**  
**FOUNDATION AND SLAB PLANS**

Drawing: <b>S47-1</b>
Sheet: <b>65</b> of <b>73</b>
File: P15-10341_S47-1
Date: August 2016

Path: S:\Cad\Kitsap County\15-10341 PS 45 46 47 BL Design\15-10341 PS 45 46 47 BL Design\15-10341\_S47-2 Plot date: Aug 11, 2016 08:59:36am CAD User: psimon.  
 Xref Filename: X:\15-10341\_PS47\_TB\Whitehouse | Schuyler\_Adam | Dahl | Gibson | Schuyler\_Erika |

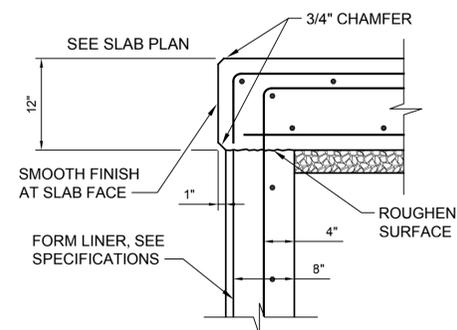


**NOTES:**

1. CABLE RAILING SYSTEM NOT SHOWN, SEE DRAWING S-4 FOR DETAILS.

**PUMP STATION SLAB SECTION**

SCALE: 1/2" = 1'-0" **A**  
S47-1



**SLAB EDGE PROFILE DETAIL**

SCALE: 1" = 1'-0" **1**

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	ECOLOGY SUBMITTAL	02-2016	TJW	RAD

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Designed: K. Dahl, P.E., S.E.  
 Drawn: M. Caldwell  
 Checked: A. Schuyler, P.E.  
 Approved: R. Dorn, P.E.

Scale:  
 As Noted  
 One Inch at Full Scale  
 If Not One Inch Scale Accordingly



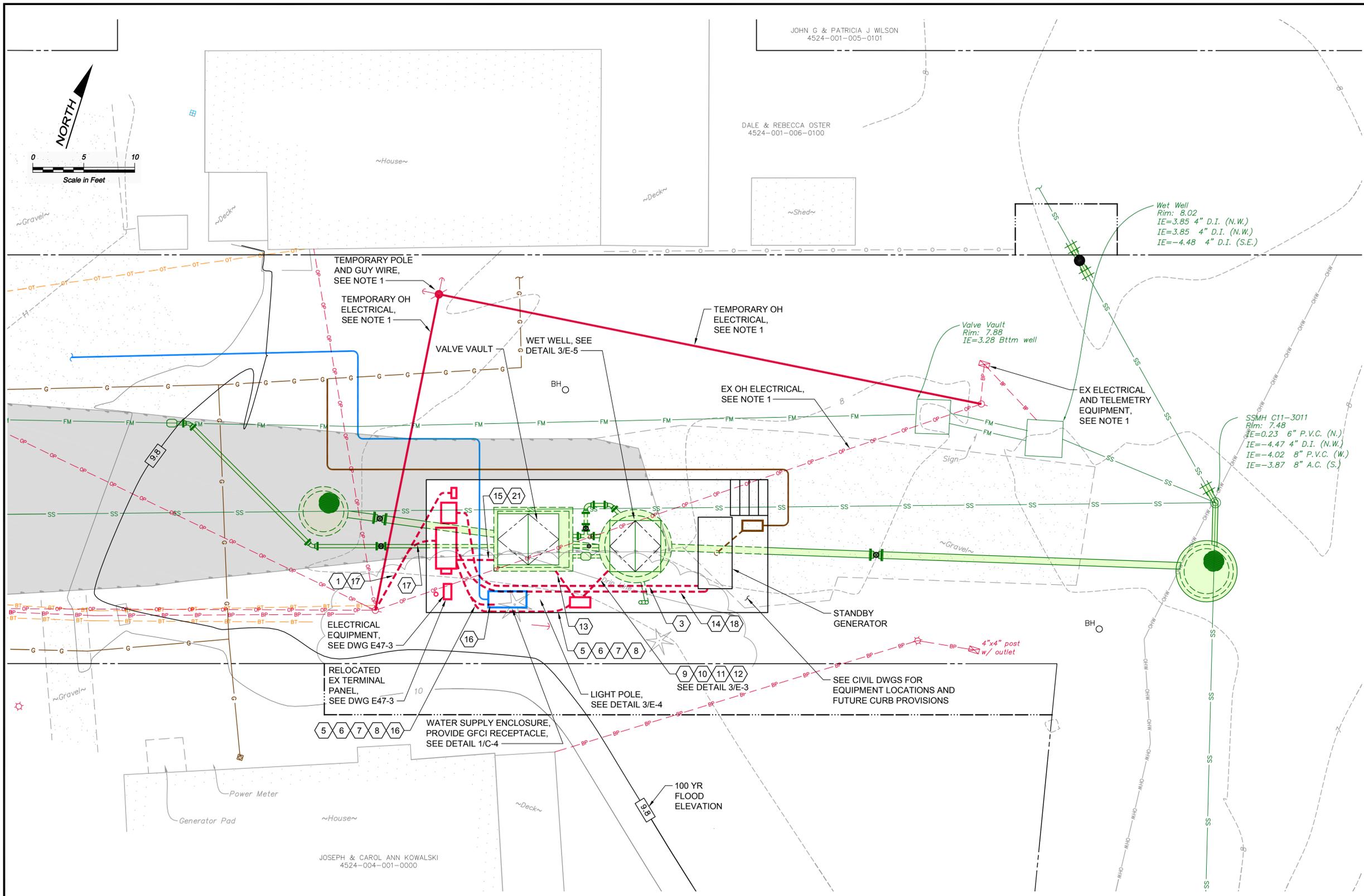
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**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION**

**SLAB SECTION**

Drawing: **S47-2**  
 Sheet: **66** of **73**  
 File: P15-10341\_S47-2  
 Date: August 2016

Path: S:\Cadd\Kitsap County\15-10341\_P15-45-46-47-Topo\15-10341\_E47-1\_Plot.dwg Plot date: Aug 11, 2016 03:43:19pm CAD User: acariaso  
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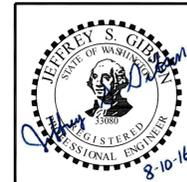
**NOTES:**

1. THE EXISTING PUMP STATION SHALL REMAIN IN SERVICE UNTIL FINAL COMMISSIONING OF NEW PUMP STATION. RELOCATE OVERHEAD SERVICE TO EXISTING PUMP STATION IF REQUIRED TO FACILITATE CONSTRUCTION OF NEW STATION. COORDINATE WITH ELECTRICAL UTILITY (PSE) AND PAY ALL FEES.

**LEGEND:**

- PROPOSED ELECTRICAL STRUCTURES & EQUIPMENT
- PROPOSED ELECTRICAL CONDUIT
- TEMPORARY ELECTRICAL
- CONDUIT TAG - SEE DWG E-3

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	ECOLOGY SUBMITTAL	02-2016	TJW	RAD



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Designed: J. Gibson, P.E.  
 Drawn: S. Olsoe  
 Checked: A. Schuyler, P.E.  
 Approved: R. Dorn, P.E.

Scale:  
 As Noted  
 One Inch at Full Scale  
 If Not One Inch Scale Accordingly



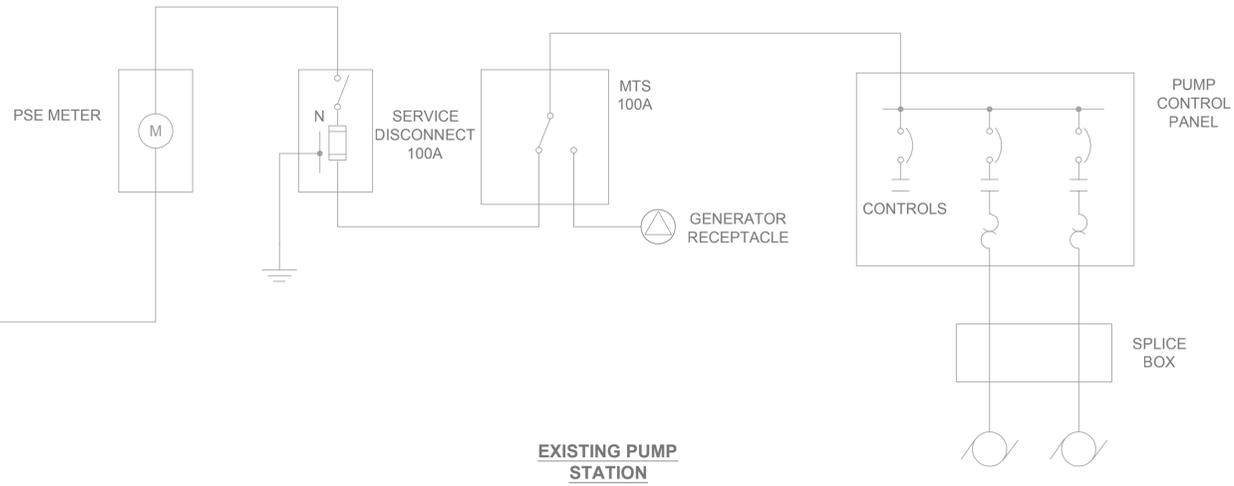
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**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION**  
**ELECTRICAL SITE PLAN**

Drawing: **E47-1**  
 Sheet: **67** of **73**  
 File: P15-10341\_E47-1  
 Date: August 2016

UTILITY TRANSFORMERS  
120/240 V OPEN DELTA

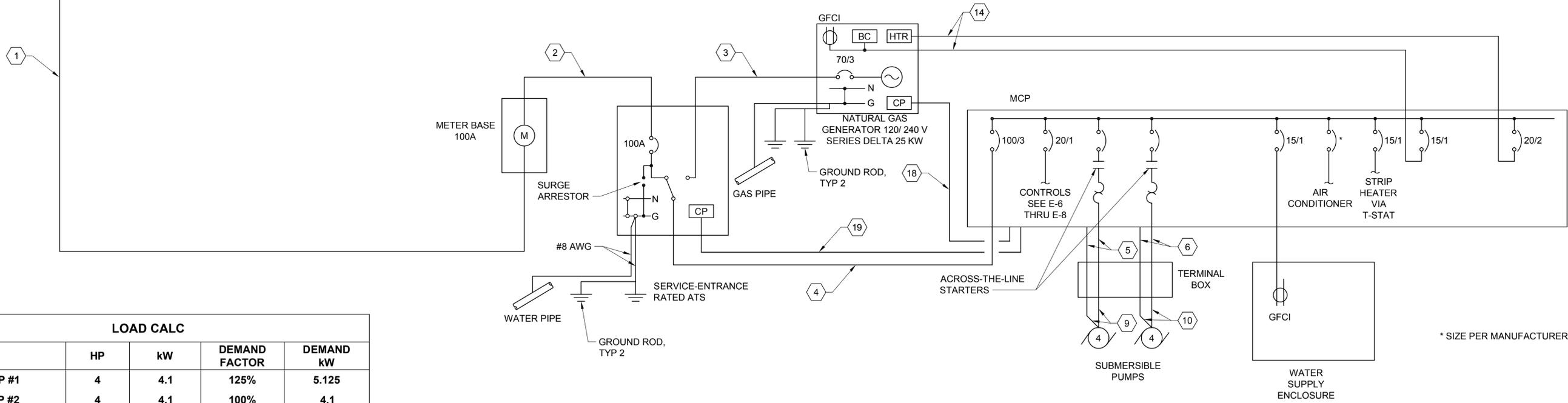
PSE  
UTILITY  
POLE



**NOTES:**

- EXISTING EQUIPMENT SHALL REMAIN IN SERVICE UNTIL FINAL COMMISSIONING OF NEW PUMP STATION. REMOVE ALL EXISTING EQUIPMENT AT PROJECT COMPLETION.
- # CONDUIT TAG - SEE DWG E-3.

**EXISTING PUMP STATION**



\* SIZE PER MANUFACTURER

LOAD CALC				
	HP	kW	DEMAND FACTOR	DEMAND kW
PUMP #1	4	4.1	125%	5.125
PUMP #2	4	4.1	100%	4.1
LIGHTING		0.1	125%	0.125
RECEPTACLES		0.36	100%	0.36
CONTROLS		1.1	100%	1.1
HEATER (GENERATOR)		1.5	100%	1.5
<b>TOTAL</b>		<b>11.26 kW</b>		<b>12.31 kW</b>
				<b>29.61 Amps</b>

**ELECTRICAL RISER DIAGRAM  
DETAIL**

1

NTS

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Path: S:\Card\Kitsap County\15-10341 PS 45 46 47 BL Design\15-10341\_E47-2 Plot date: Aug 11, 2016 02:55:21pm CAD User: acarliao.  
Xref Filename: |X|15-10341\_TB|Whitehouse|Schuyler\_Adam|Dahl|Gibson|Schuyler\_Erika|

No.	Revision	Date	By	App'd
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	ECOLOGY SUBMITTAL	02-2016	TJW	RAD



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Designed: J. Gibson, P.E.  
Drawn: S. Olsoe  
Checked: A. Schuyler, P.E.  
Approved: R. Dorn, P.E.

Scale:  
NTS  
One Inch at Full Scale  
If Not One Inch Scale Accordingly



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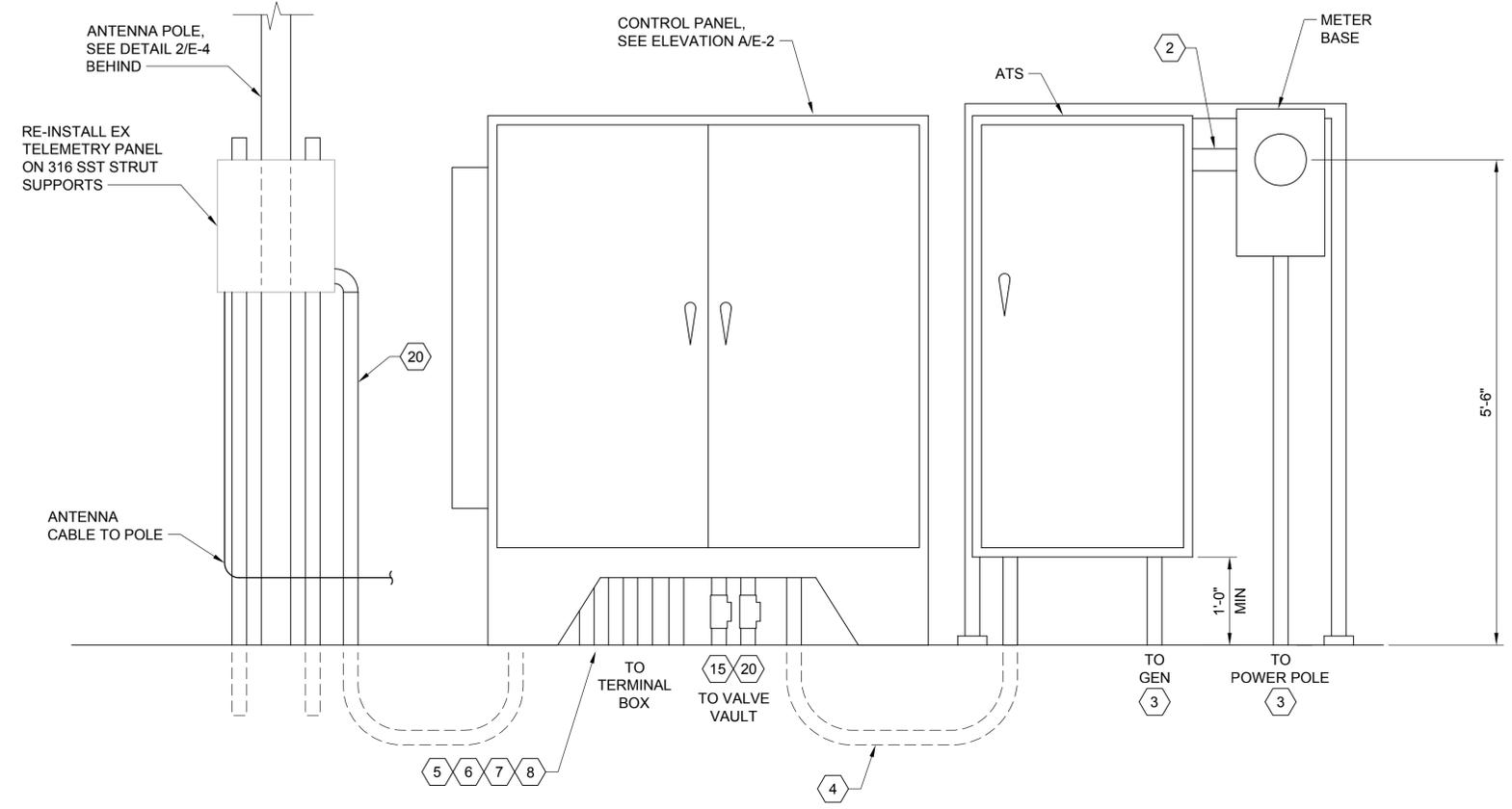
**MANCHESTER PUMP STATIONS 45, 46, & 47 AND  
BEACH LINES REHABILITATION**  
**ONE LINE DIAGRAM  
AND LOAD CALCULATIONS**

Drawing: **E47-2**  
Sheet: **68** of **73**  
File: P15-10341\_E47-2  
Date: August 2016

Path: S:\Cad\Kitsap County\15-10341 PS 45 46 47 BL Design\15-10341\_E47-3 Plot date: Aug 11, 2016 03:12:54pm CAD User: acarliao.  
 Xref Filename: | X:15-10341\_TB | Whitehouse | Schuyler\_Adam | Dahl | Gibson | Schuyler\_Erika |

**NOTES:**

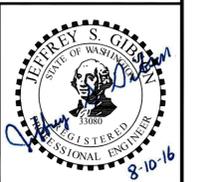
1. # CONDUIT TAG - SEE DWG E-3.



**ELEVATION**

**ELEVATION A**  
 NTS E47-1

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No.	Revision	Date	By	App'd
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	ECOLOGY SUBMITTAL	02-2016	TJW	RAD

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Designed: J. Gibson, P.E.	Scale: NTS
Drawn: G. Castillo	One Inch at Full Scale
Checked: A. Schuyler, P.E.	If Not One Inch Scale Accordingly
Approved: R. Dorn, P.E.	

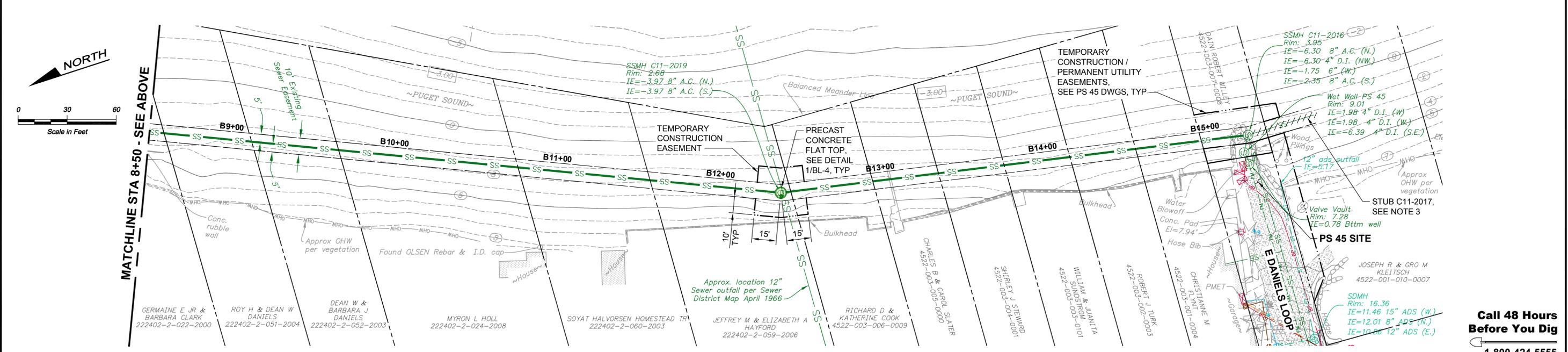
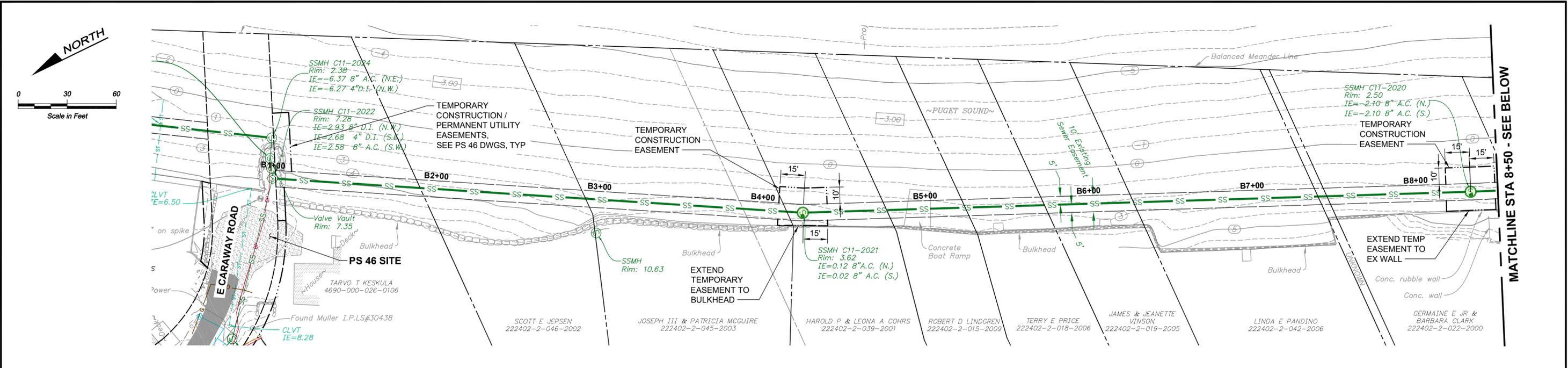
**Kitsap County Public Works**  
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**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION**  
**ELECTRICAL EQUIPMENT CABINET ELEVATION**

Drawing: <b>E47-3</b>
Sheet: <b>69</b> of <b>73</b>
File: P15-10341_E47-3
Date: August 2016



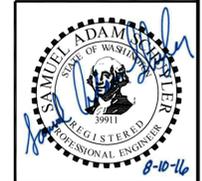
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CURED IN PLACE PIPE FOR SANITARY SEWER TABLE									
UPSTREAM STATION	UPSTREAM MANHOLE	APPROX DEPTH TO PIPE INVERT	DOWNSTREAM STATION	DOWNSTREAM MANHOLE	APPROX DEPTH TO PIPE INVERT	EXISTING PIPE MATERIAL	PIPE SIZE	APPROX RUN LENGTH	APPROX # LATERALS TO REINSTATE
B1+00	C11-2022	4.70 FT	B4+25	C11-2021	3.50 FT	AC	8"	325 FT	3
B4+25	C11-2021	3.60 FT	B8+34	C11-2020	4.60 FT	AC	8"	409 FT	5
B8+34	C11-2020	4.60 Ft	B12+38	C11-2019	6.65 FT	AC	8"	404 FT	6
B12+38	C11-2019	6.65 FT	B15+26	C11-2016	10.25 FT	AC	8"	288 FT	6

- NOTES:**
- ALL SERVICE LATERALS WILL BE UPGRADED WITH A TOP HAT LATERAL MAIN CONNECTION DURING CIPP INSTALLATION.
  - CONTRACTOR SHALL SUBMIT SEWER BYPASS PLAN PRIOR TO CIPP INSTALLATION, SEE DETAIL 2/BL-4.
  - APPROXIMATELY 40± FEET OF 8" AC PIPE TO BE ABANDONED IN PLACE FROM SSMH C11-2016 TO STUB C11-2017 AND WILL NOT BE LINED WITH CIPP.
  - CONTRACTOR SHALL RESTORE BEACH UPON COMPLETION OF IMPROVEMENTS TO EXISTING CONDITIONS PRIOR TO CONSTRUCTION OR BETTER.
  - REMOVE MISCELLANEOUS NON-NATIVE CONCRETE CHUNKS AND BASALT ROCK AT DIFFERENT LOCATIONS ALONG THE BEACH AS DIRECTED BY THE CONSTRUCTION MANAGER. SEE SPEC SECTION 02 41 10 FOR ADDITIONAL INFORMATION.

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No.	Revision	Date	By	App'd
	ISSUED FOR BID	08-2016	TJW	RAD
	BUILDING PERMIT SUBMITTAL	04-2016	TJW	RAD
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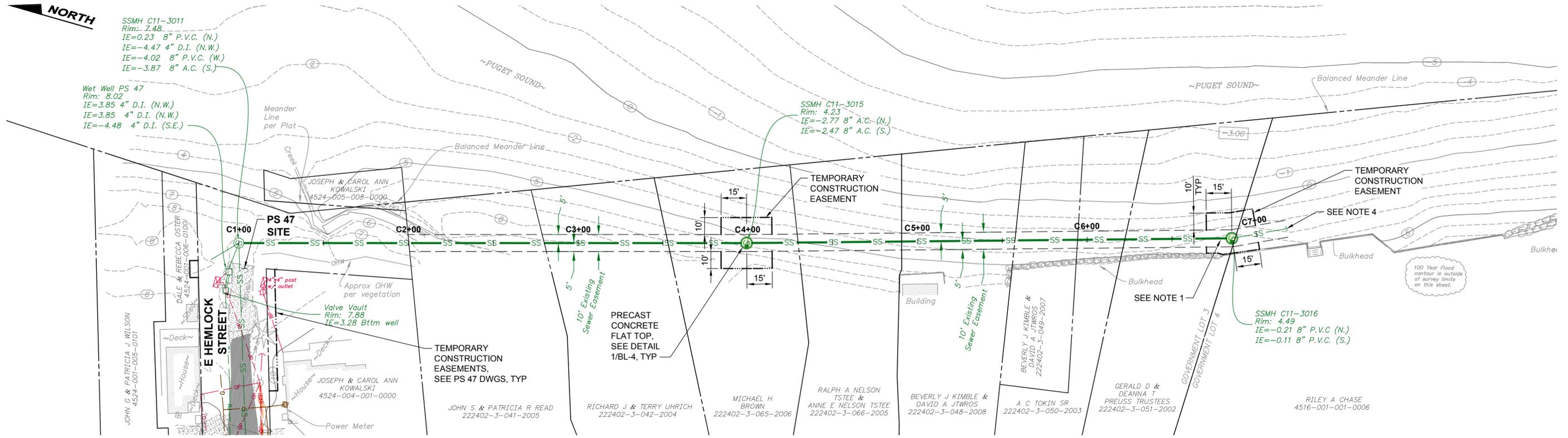
Designed: E. Schuyler, P.E.  
 Drawn: P. Simon  
 Checked: A. Schuyler, P.E.  
 Approved: R. Dorn, P.E.

**Kitsap County Public Works**  
 614 Division Street, MS 26  
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**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION**  
**BEACH LINE SEWER RELINE PLAN**  
**STA B1+00 TO B15+26**

Drawing: **BL-2**  
 Sheet: **71** of **73**  
 File: P15-10341\_B1-2  
 Date: August 2016

Path: S:\Cadd\Kitsap County\15-10341 PS 45 46 47 BL Design\15-10341\_BL-3 Plot date: Aug 11, 2016 09:35:04am CAD User: psimon.  
 Xref Filename: X:\15-10341\_Beachline-Ex-Align-Prof | X:\15-10341\_TB | X:\15-10341\_Beachline-Esmts | Whitehouse | Schuyler\_Adam | Schuyler\_Erika | Gibson | Schuyler\_Erika | X:\15-10341\_45-46-47-Esmts



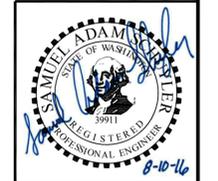
**CURED IN PLACE PIPE FOR SANITARY SEWER TABLE**

UPSTREAM STATION	UPSTREAM MANHOLE	APPROX DEPTH TO PIPE INVERT	DOWNSTREAM STATION	DOWNSTREAM MANHOLE	APPROX DEPTH TO PIPE INVERT	EXISTING PIPE MATERIAL	PIPE SIZE	APPROX RUN LENGTH	APPROX # LATERALS TO REINSTATE
C1+00	C11-3011	11.35 FT	C3+99	C11-3015	7.00 FT	AC	8"	299 FT	3
C3+99	C11-3015	6.7 FT	C6+85	C11-3016	4.7 FT	AC/PVC, SEE NOTE 1	8"	286 FT	7

**NOTES:**

- EXISTING PIPE MATERIAL CHANGES FROM AC TO PVC ABOUT ±10' NORTH OF MH C11-3016.
- ALL SERVICE LATERALS WILL BE UPGRADED WITH A TOP HAT LATERAL MAIN CONNECTION DURING CIPP INSTALLATION, SEE DETAIL 2/BL-4.
- CONTRACTOR SHALL SUBMIT SEWER BYPASS PLAN PRIOR TO CIPP INSTALLATION.
- EXISTING 8" PVC PIPE EXTENDS SOUTH FROM SSMH C11-3016. THIS PIPE WILL NOT BE LINED WITH CIPP AND IS NOT INCLUDED IN THE PROJECT.
- CONTRACTOR SHALL RESTORE BEACH UPON COMPLETION OF IMPROVEMENTS TO EXISTING CONDITIONS PRIOR TO CONSTRUCTION OR BETTER.
- REMOVE MISCELLANEOUS NON-NATIVE CONCRETE CHUNKS AND BASALT ROCK AT DIFFERENT LOCATIONS ALONG THE BEACH AS DIRECTED BY THE CONSTRUCTION MANAGER. SEE SPEC SECTION 02 41 10 FOR ADDITIONAL INFORMATION.

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No.	Revision	Date	By	App'd
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	ECOLOGY SUBMITTAL	02-2016	TJW	RAD



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Designed: E. Schuyler, P.E.  
 Drawn: P. Simon  
 Checked: A. Schuyler, P.E.  
 Approved: R. Dorn, P.E.

Scale:  
 1" = 30'-0"  
 One Inch at Full Scale  
 If Not One Inch Scale Accordingly

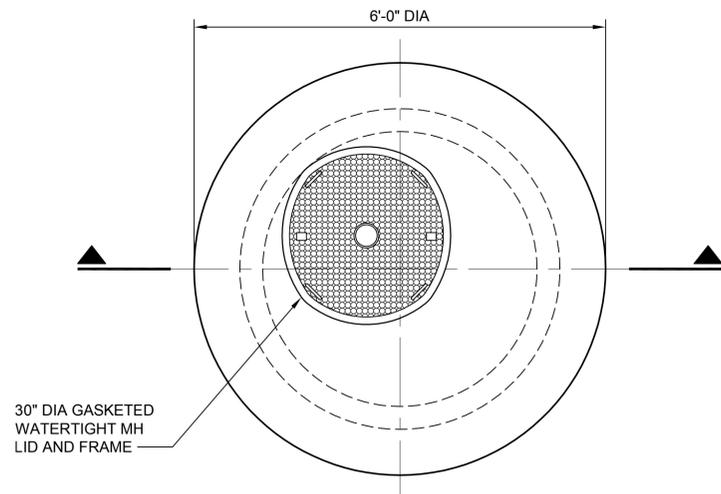


**Kitsap County Public Works**  
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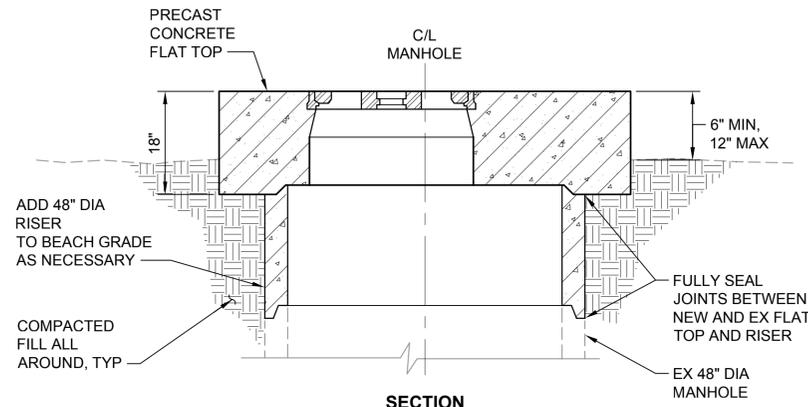
**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION**  
**BEACH LINE SEWER RELINE PLAN**  
**STA C1+00 TO C6+85**

Drawing: **BL-3**  
 Sheet: **72** of **73**  
 File: P15-10341-BL-3  
 Date: August 2016

Path: S:\Cad\Kitsap County\15-10341 PS 45 46 47 BL Design\15-10341\_BL-4 Plot date: Aug 11, 2016 09:38:06am CAD User: psimon  
 Xref Filename: | X 15-10341\_TB | Whitehouse | Schuyler\_Adam | Dahl | Gibson | Schuyler\_Erika |



**PLAN**



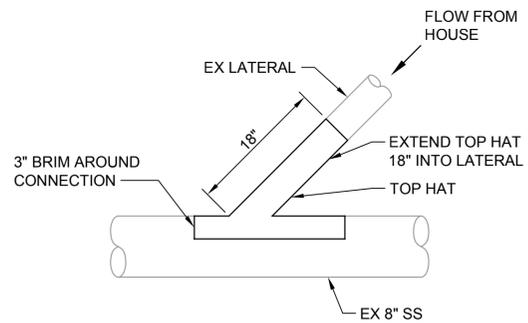
**SECTION**

**NOTES:**

- THE FOLLOWING EXISTING BEACH MANHOLES SHALL BE RETROFIT WITH NEW PRECAST CONCRETE FLAT TOP, INCLUDING 30" DIAMETER GASKETED WATERTIGHT MANHOLE LID AND FRAME:  
 C11-3016 C11-2025  
 C11-3015 C11-2021  
 C11-2028 C11-2020  
 C11-2027 C11-2019  
 C11-2026  
 EXISTING CONCRETE MANHOLE FLAT TOP SHALL BE REMOVED AND PROPERLY DISPOSED OF ONCE NEW FLAT TOP HAS BEEN INSTALLED. EXISTING FLAT TOP SHALL BE CAREFULLY REMOVED PRIOR TO INSTALLATION OF NEW FLAT TOP. FLAT TOP SHALL BE INSTALLED OR REPLACED PRIOR TO HIGH TIDE.
- MANHOLES C11-3015, C11-2028, AND C11-2019 MAY REQUIRE ADDITIONAL MANHOLE RISER(S) TO BRING MANHOLES TO BEACH ELEVATION, SIMILAR TO OTHER EXISTING BEACH MANHOLES. CONTRACTOR SHALL VERIFY EXISTING MANHOLES INTERIOR AND EXTERIOR DIAMETER PRIOR TO FABRICATION OF NEW RISERS TO ENSURE ADDITIONAL RISERS FIT ON TOP OF EXISTING RISERS.
- INTERIOR CONCRETE SURFACE OF THE FOLLOWING EXISTING BEACH MANHOLES SHALL BE PROPERLY PREPARED AND COATED PER SPECIFICATIONS:  
 C11-3016 C11-2025  
 C11-3015 C11-2021  
 C11-2028 C11-2020  
 C11-2027 C11-2019  
 C11-2026
- MANHOLE C11-2028 SHALL BE RETROFIT WITH A BOTTOM FIBERGLASS LINER PER SPECIFICATIONS.

**BEACH MANHOLES REHABILITATION**

**DETAIL 1**  
 SCALE: 3/4" = 1'-0"  
 TYP

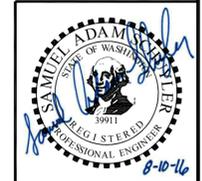


**NOTE:**  
 LATERAL REPAIR BEYOND TOP HAT INSTALLATION IS NOT INCLUDED IN THIS PROJECT UNLESS DIRECTED BY THE ENGINEER

**TOP HAT DETAIL**

SCALE: 1" = 1'-0" TYP

**Call 48 Hours Before You Dig**  
 1-800-424-5555  
 UNDERGROUND SERVICE



No.	Revision	Date	By	App'd
	ISSUED FOR BID	08-2016	TJW	RAD
	BUILDING PERMIT SUBMITTAL	04-2016	TJW	RAD
	ECOLOGY SUBMITTAL	02-2016	TJW	RAD



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Designed: E. Schuyler, P.E.  
 Drawn: A. Cariaso  
 Checked: A. Schuyler, P.E.  
 Approved: R. Dorn, P.E.

Scale:  
 NTS  
 One Inch at Full Scale  
 If Not One Inch Scale Accordingly



**Kitsap County Public Works**  
 614 Division Street, MS 26  
 Port Orchard, WA 98366

**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION**  
**MISCELLANEOUS DETAILS**

Drawing: **BL-4**  
 Sheet: **73** of **73**  
 File: P15-10341\_BL-4  
 Date: August 2016