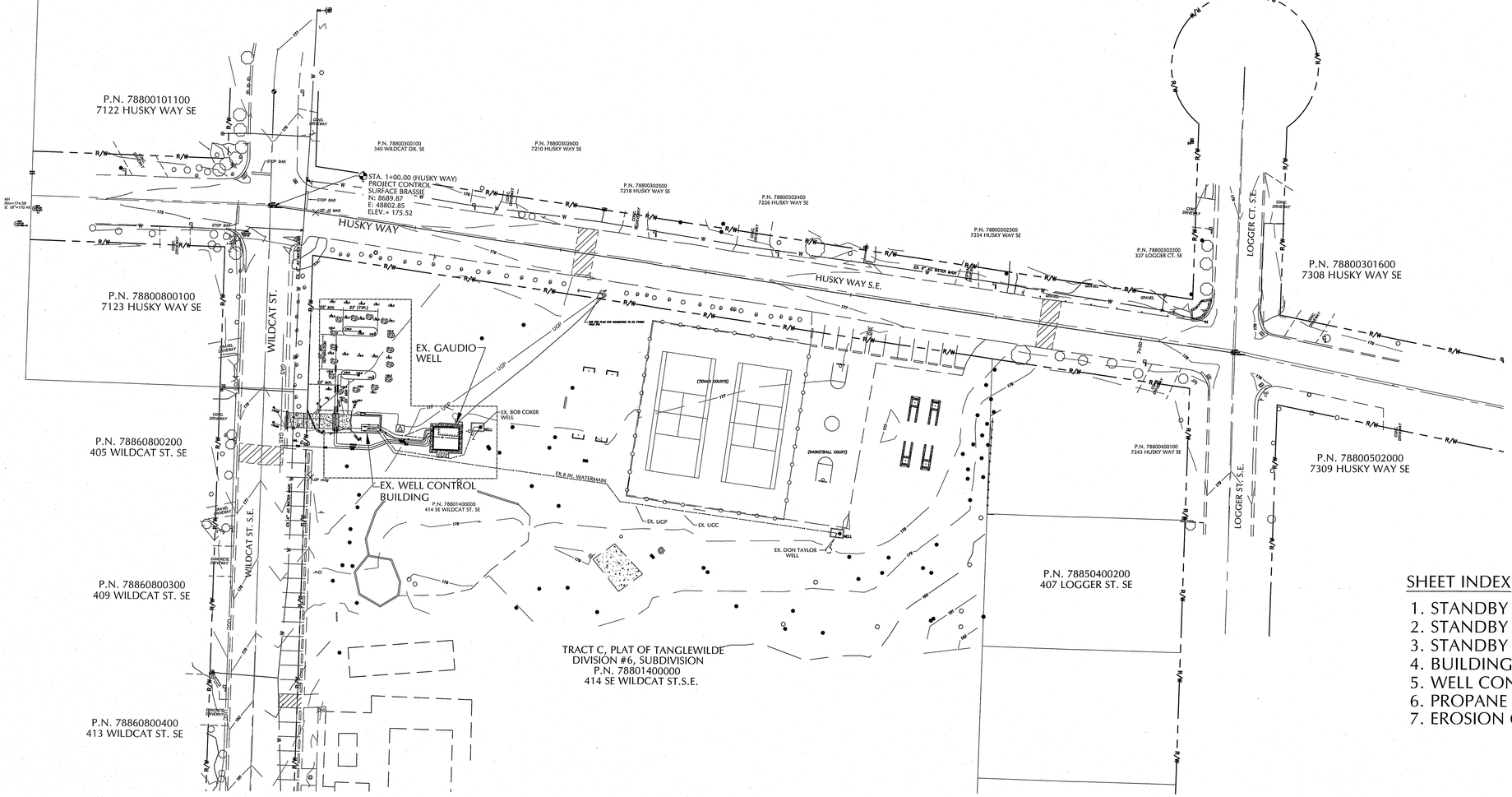
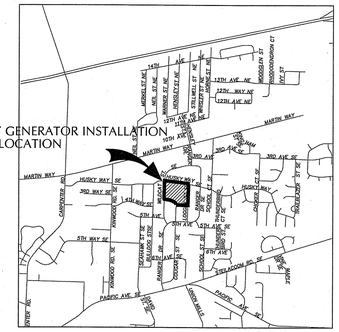
SECTION 10, TOWNSHIP 18 NORTH, RANGE 1 WEST, W.M.

THURSTON PUD
TANGLEWILDE WATER SYSTEM
STANDBY GENERATOR INSTALLATION





VICINITY MAP

SCALE: 1"=2,000'

NOTES:
TOPOGRAPHIC INFORMATION SHOWN HAS BEEN COMPILED FROM A TOPOGRAPHIC SURVEY CONDUCTED BY JWM&A STAFF. UTILITY INFORMATION SHOWN HAS BEEN COMPILED FROM UTILITY MAPPING OR FIELD LOCATES PROVIDED BY RESPECTIVE AGENCIES AND TRANSFERRED TO THE TOPO BASE BY SCALING FROM COMMON REFERENCE POINTS. UTILITY INFORMATION HAS BEEN CONFIRMED WHERE SURFACE FEATURES ARE VISIBLE. JWM&A ASSUMES NO LIABILITY FOR UTILITIES NOT CORRECTLY SHOWN OR OMITTED FROM THESE PLANS.

THE CONTRACTOR SHALL KEEP ACCURATE "ASBUILT" REDLINE DRAWINGS OF SERVICE LATERALS FOR WATER AND OTHER UTILITIES DISCOVERED DURING CONSTRUCTION. THE CONTRACTOR SHALL DELIVER REDLINE DRAWINGS TO THE ENGINEER AT PROJECT COMPLETION.

THE CONTRACTOR SHALL OBTAIN THE SERVICES OF A PROFESSIONAL LICENSED LAND SURVEYOR TO REFERENCE AND REPLACE ALL STREET MONUMENTS REMOVED OR DISTURBED WITHIN THE CONSTRUCTION

THE CONTRACTOR SHALL INSTALL & MAINTAIN AS NEEDED, SILT SOCKS IN CATCH BASINS WITHIN THE CONSTRUCTION LIMITS & OTHER LOCATIONS DOWNSTREAM OF THE CONSTRUCTION ZONE AS REQUIRED BY THE ENGINEER AND THE CITY OF LACEY.

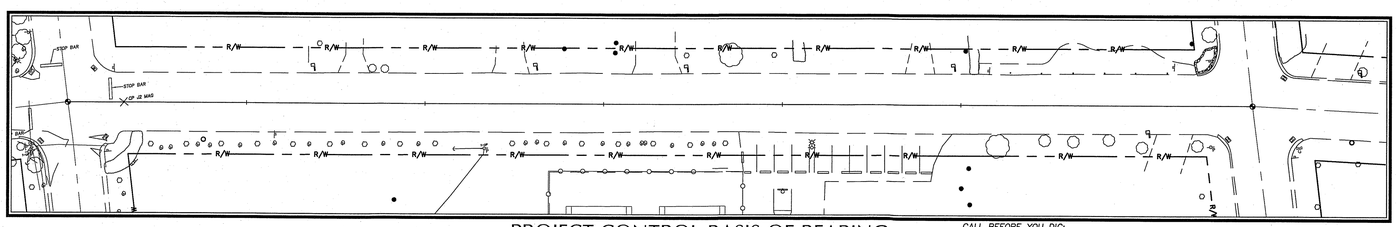
THE CONTRACTOR SHALL RESTORE ALL SURFACES TO EXISTING OR BETTER CONDITIONS.

SCALE: 1"=40 FEET
0 20 40 80

VERTICAL DATUM
ELEV= 175.52
NGVD 29

FOUND THURSTON COUNTY MON COUNTY MON AT INTERSECTION OF HUSKY WAY SE AND WILDCAT ST. SE

SHEET INDEX



PROJECT CONTROL BASIS OF BEARING

SCALE: 1"=40'

CALL BEFORE YOU DIG:
THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE LOCATION AND PROTECTION OF ALL EXISTING UTILITIES. THE CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS PRIOR TO CONSTRUCTION BY CALLING THE UNDERGROUND LOCATE LINE AT 1-800-424-5555 A MINIMUM OF 48 HOURS PRIOR TO ANY CONSTRUCTION.

THE DESIGN IMPROVEMENTS SHOWN IN THIS SET OF PLANS AND CALCULATIONS CONFORM TO THE CURRENT EDITION OF THE THURSTON COUNTY ROAD STANDARDS AND THE DRAINAGE DESIGN AND EROSION CONTROL MANUAL FOR THURSTON COUNTY. ALL DESIGN VARIANCES HAVE BEEN APPROVED BY THE THURSTON COUNTY ENGINEER. I APPROVE THESE PLANS FOR CONSTRUCTION.

BY: _____

DOUGLAS H.M. ENGLUND
STATE OF WASHINGTON
25474
REGISTERED
PROFESSIONAL ENGINEER
12-29-2015

NO	DATE	BY	APPR	REVISIONS
	12/28/15			Addendum 1

JWM&A Civil • Municipal • Geotechnical • Land Surveying
Jerome W. Morrissette & Associates Inc., P.S.
1700 Cooper Pt. Road S.W. #B-2, Olympia, Wa. 98502-1110 Ph 360.352.9456 Fx 360.352.9990

D.E.	12-29-2015
DESIGNED BY	DATE
M.D.	12-29-2015
C.A.D.D. BY	DATE
D.E.	12-29-2015
CHECKED BY	DATE
12-29-2015	
DATE PLOTTED	

Thurston PUD
Tanglewilde/Thompson Place
Water System

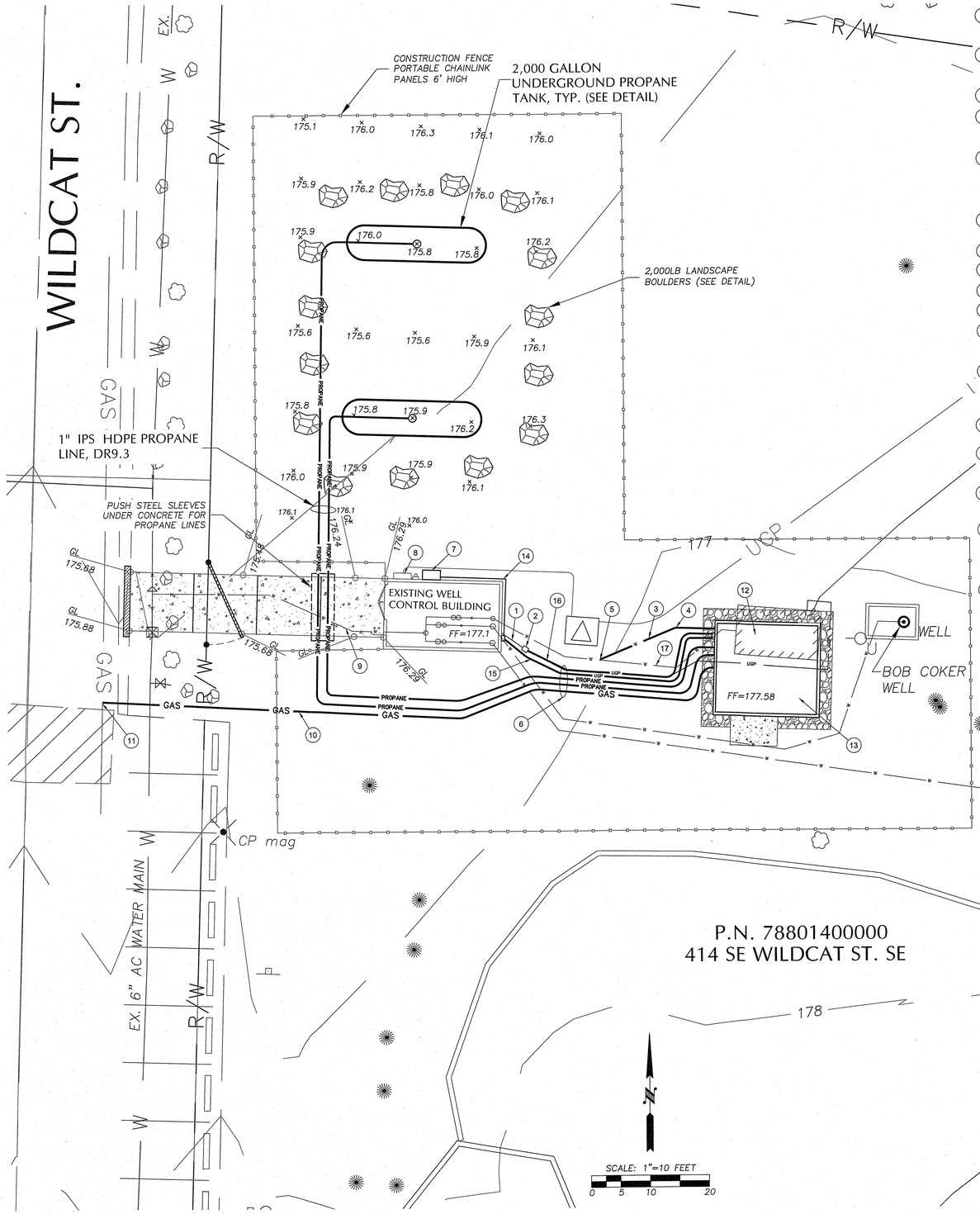
Standby Generator
Installation
Cover Sheet

14117 Standby Generator Building.dwg

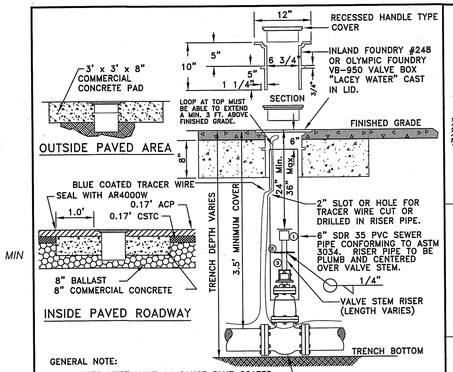
SHT 1 OF 7

Z:\2014 Projects\14117 Thurston PUD SYS Generator Backup RPT -Tanglewilde-Thompson PL\WWA Drawings\GSD Design Drawings\14117 Standby Generator Building.dwg 12/29/2015 11:05:26 AM, SAVIN 3400WD PS

SECTION 10, TOWNSHIP 18 NORTH, RANGE 1 WEST, W.M.



1. EXISTING UNDERGROUND CABLES FOR GAUDIO WELL TRANSFORMER AND GAUDIO WELL CONTROLS AND WATER LEVEL TRANSDUCER
2. FURNISH AND INSTALL CONCRETE PULL BOX WITH SOLID STEEL COVER OVER EXISTING UNDERGROUND LINES, SPLICES AS REQUIRED
3. 4" WATER LINE TO GAUDIO WELL
4. 4" WATER LINE TO GAUDIO WELL
   4" 22.5° BEND (MJ)
   2 – 4" MJ RESTRAINING GLANDS
5. 4" 22.5° BEND (FLxMJ)
   2 – 4" MJ RESTRAINING GLANDS
   CONNECT TO EXISTING 4" LINE
   ADAPTERS AS REQUIRED
   THRUST BLOCKING
6. ROUTE GAS LINES OVER WATER LINES, PROVIDE 3" MIN SAND CUSHION BETWEEN GAS AND WATER LINES
7. AUTOMATIC TRANSFER SWITCH
8. PSE ELECTRICAL SERVICE METER
9. EXISTING 8" WATER LINE
10. PROPOSED NATURAL GAS LINE
11. CONNECT TO EXISTING NATURAL GAS LINE (FIELD VERIFY LOCATION)
12. DEMOLISH EXISTING GAUDIO WELL BUILDING AND EXISTING BELOW GRADE CONCRETE VAULT, SEE SPECS. CONSTRUCT STANDBY GENERATOR BUILDING, SEE DETAILS AND SPECS.
13. CONSTRUCT GAUDIO WELL (STANDBY GENERATOR) BUILDING FF=177.58
14. CONDUITS AND CONDUCTORS FOR ELECTRICAL LINES BETWEEN STANDBY GENERATOR AND AUTOMATIC TRANSFER SWITCH
15. UNDERGROUND CABLES AND CONDUCTORS FOR ELECTRICAL LINES BETWEEN STANDBY GENERATOR AND AUTOMATIC TRANSFER SWITCH
16. UNDERGROUND CABLES AND CONDUCTORS FOR ELECTRICAL LINES BETWEEN MAIN CIRCUIT BREAKER PANEL AND DISCONNECT SWITCH FOR 480V/240–120V TRANSFORMER IN STANDBY GENERATOR BUILDING AND FOR GAUDIO WELL CONTROL
17. REMOVE EXISTING GAUDIO WELL WATER LINE

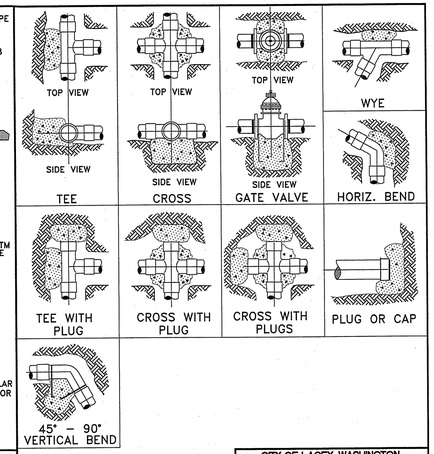


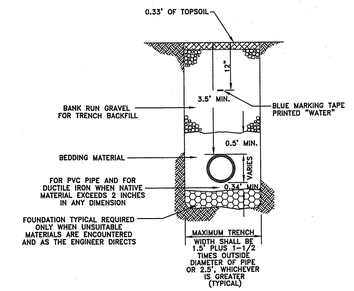
GENERAL NOTE:
ALL VALVES MUST HAVE 14 GAUGE BLUE COATED COPPER TRACER WIRE TIED OFF AT VALVE BODY, EXTENDED OUTSIDE PVC RISER PIPE THEN EXTENDED ONE FOOT TOP OF VALVE BOX.

VALVE STEM EXTENSION LEGEND
① VALVE OPERATING NUT OR 1 7/8" X 1 7/8" X 2" HIGH GRADE STEEL WELDED TO GUIDE PLATE.
② 3/16" THICK X 5 1/8" DIA STEEL GUIDE PLATE WELDED TO RISER SHAFT.
③ 2"X2"X 3/16" SQUARE STRUCTURAL STEEL TUBING TO FIT OPERATING NUT. LENGTH AS REQUIRED.
NOTE: ALL WELDS TO SHAFT SHALL BE FILLET WELD ALL AROUND, AS SPECIFIED ABOVE.

DGS-12.DWG

CITY OF LACEY, WASHINGTON DEPT. OF PUBLIC WORKS			
STANDARD VALVE BOX & ASSEMBLY			
APPROVED			DWG. NO. 6–12
CITY ENGINEER			
DES. WHO	DWN. WHO	CKD. GGW	DATE 11/15/04





NOTES:
1. BEDDING SHALL CONFORM TO SECTION 9–03.16 OF STANDARD SPECIFICATIONS.
2. COMPACTION: BEDDING SHALL BE COMPACTED TO 95% MIN. AS DETERMINED BY ASTM D1557. BACKFILL SHALL BE COMPACTED TO 85% MIN. IN UNPAVED AREA, AND 95% MIN. IN PAVED OR SHOULDER AREAS AS DETERMINED BY ASTM D1557.
3. ALL MATERIALS, WORKMANSHIP, AND INSTALLATION SHALL BE IN CONFORMANCE WITH THE STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION AS AMENDED BY CITY OF LACEY STANDARDS.
4. KEEP TRENCH BOTTOM COMPACTED WITH UNIFORM GRADE. A BELL JOINT SHALL BE REQUIRED AT EACH JOINT FOR PROPER SUPPORT. NO TEMPORARY SUPPORTS, I.E. BLOCKS, WILL BE ALLOWED TO SUPPORT PIPE. TRENCH BOTTOM SHALL BE TO GRADE PRIOR TO PIPE INSTALLATION.

DG4–8.4.DWG

CITY OF LACEY, WASHINGTON DEPT. OF PUBLIC WORKS			
TRENCH RESTORATION FOR UNPAVED AREAS			
APPROVED			DWG. NO. 4–8.4
CITY ENGINEER			
DES. MAH	DWN. GGW	CKD. PDM	DATE 3/29/01

NOTES:
1. CONCRETE THRUST BLOCKING TO BE POURED AGAINST UNDISTURBED EARTH.
2. PLASTIC BARRIER SHALL BE PLACED BETWEEN ALL THRUST BLOCKS & FITTINGS.
3. ANCHOR REBAR SHALL BE 5/8" MINIMUM DIAMETER.

DGS–14.DWG

CITY OF LACEY, WASHINGTON DEPT. OF PUBLIC WORKS			
STANDARD BLOCKING DETAIL			
APPROVED			DWG. NO. 6–14
CITY ENGINEER			
DES. LRW	DWN. RLM	CKD. BFB	DATE 7/30/90

THRUST LOADS

THRUST AT FITTINGS IN POUNDS AT 200 POUNDS PER SQUARE INCH OF WATER PRESSURE

PIPE DIAMETER	90° BEND	45° BEND	22–1/2° BEND	11–1/4° BEND	DEAD END OR TEE
4"	3,600	2,000	1,000	500	2,600
6"	8,000	4,400	2,300	1,200	5,700
8"	14,300	7,700	4,000	2,000	10,100
10"	22,300	12,100	6,200	3,100	15,800
12"	32,000	17,400	8,900	4,500	22,700
14"	43,600	23,600	12,100	6,100	30,800
16"	57,000	30,800	15,700	7,900	40,300

NOTES:
1. BLOCKING SHALL BE COMMERCIAL CONCRETE POURED IN PLACE AGAINST UNDISTURBED EARTH. FITTING SHALL BE ISOLATED FROM CONCRETE THRUST BLOCK WITH PLASTIC OR SIMILAR MATERIAL.
2. TO DETERMINE THE BEARING AREA OF THE THRUST BLOCK IN SQUARE FEET (S.F.):
   EXAMPLE : 12" – 90° BEND IN SAND AND GRAVEL
   32,000 LBS ÷ 3000 LB/S.F. = 10.7 S.F. OF AREA
3. AREAS MUST BE ADJUSTED FOR OTHER PIPE SIZE, PRESSURES AND SOIL CONDITIONS.
4. BLOCKING SHALL BE ADEQUATE TO WITHSTAND FULL TEST PRESSURE AS WELL AS TO CONTINUOUSLY WITHSTAND OPERATING PRESSURE UNDER ALL CONDITIONS OF SERVICE.

SAFE SOIL BEARING LOADS

FOR HORIZONTAL THRUSTS WHEN THE DEPTH OF COVER OVER THE PIPE EXCEEDS 2 FEET

SOIL	POUNDS PER SQUARE FOOT
MUCK, PEAT	0
SOFT CLAY	1,000
SAND	2,000
SAND & GRAVEL	3,000
SAND & GRAVEL CEMENTED WITH CLAY	4,000
HARD SHALE	10,000

DGS–ECWG

CITY OF LACEY, WASHINGTON DEPT. OF PUBLIC WORKS			
THRUST LOADS			
APPROVED			DWG. NO. 6–15
CITY ENGINEER			
DES. LRW	DWN. RLM	CKD. BFB	DATE 5/7/91

NO	DATE	BY	APPR	REVISIONS
	12/28/15			Addendum 1

JWM&A Civil • Municipal • Geotechnical • Land Surveying
Jerome W. Morrissette & Associates Inc., P.S.
1700 Cooper Pt. Road S.W. #B-2, Olympia, Wa. 98502-1110 Ph 360.352.9456 Fx 360.352.9990

D.E. 12–29–2015 DESIGNED BY DATE
M.D. 12–29–2015 C.A.D.D. BY DATE
D.E. 12–29–2015 CHECKED BY DATE
12–29–2015 DATE PLOTTED

Thurston PUD
Tanglewilde/Thompson Place
Water System

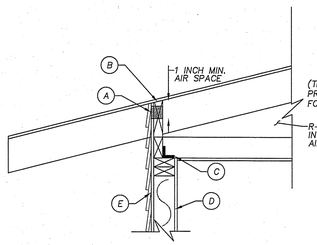
Standby Generator Installation
Site Plan

14117 Standby Generator Building.dwg

SHT 2 OF 7

Z:\2014 Projects\14117 Thurston PUD H2R SYS Generator Buildg\BPF-Tanglewilde-Thompson PU\WMA Drawings\02 Addendum 1 Drawings\14117 Standby Generator Building.dwg, 12/29/2015 2:23:24 PM, SAVIN 3400WD PS

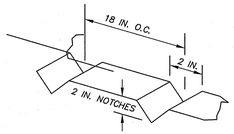
NOTE:
CONCRETE SHALL BE KEPT MOIST AND COVERED WITH PLASTIC SHEETING FOR A MINIMUM CURE DURATION OF 7 DAYS. VEHICULAR TRAFFIC SHALL NOT BE ALLOWED ONTO THE CONCRETE DURING THE 7 DAY CURING PERIOD.



(A) (3) 2" SCREENED HOLES FOR VENTING IN EACH TRUSS SPACE
(B) 2 X 6 HORIZONTAL BLOCK BETWEEN TRUSS TOP CHORDS; NAIL ROOF SHEATHING TO BLOCK 8d @ 6" O.C. A35 (OR EQUAL) CONNECTING BLOCK TO TOP PLATE
(C) "SIMPSON" LSS0 CLIP TO CONNECT BLOCKING TO TOP PLATE (1 per truss space)
(D) EXTERIOR WALL; ROOF SHEATHING MUST CONNECT VIA THIS BOX BLOCK DETAIL
(E) 5/8" OSB WALL SHEATHING

TRUSS BLOCKING

N.T.S.



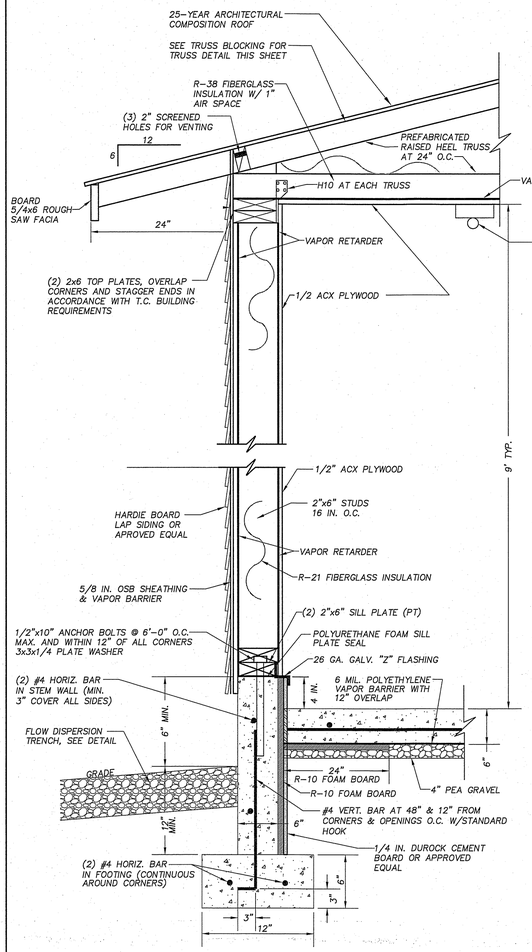
GRADE BOARD NOTCH DETAIL

N.T.S.

BUILDINGS GENERAL NOTES:
1. ALL WORK SHALL BE IN CONFORMANCE WITH THE REQUIREMENTS OF THE UNIFORM BUILDING CODE AS ADOPTED BY THE LOCAL JURISDICTION.
2. CONTRACTOR SHALL OBTAIN BUILDING PERMITS FOR THE STRUCTURES AS SHOWN ON THE PLANS AND DETAILS AND AS DESCRIBED IN THE SPECIFICATIONS AND SHALL FURNISH PERMITS SIGNED BY THE LOCAL JURISDICTION INDICATING APPROVAL OF THE COMPLETED BUILDINGS.
3. ALL EXTERIOR PAINTED SURFACES SHALL BE PAINTED WITH TWO COATS OF EXTERIOR LATEX ENAMEL. COLORS SHALL BE AS APPROVED BY OWNER. INTERIOR SURFACES BELOW THE ELEVATION OF THE RAFTERS SHALL BE PAINTED WITH TWO COATS OF WHITE INTERIOR GLOSS ENAMEL.
4. EXTERIOR JOINTS AROUND WINDOWS AND DOOR FRAMES, OPENINGS BETWEEN WALLS AND FOUNDATION, BETWEEN WALLS AND ROOF AND WALL PANELS; OPENINGS AT PENETRATIONS OF UTILITY SERVICES THROUGH WALLS, FLOORS AND ROOFS; AND ALL OTHER OPENINGS IN THE BUILDING ENVELOPE SHALL BE SEALED, CAULKED, GASKETED OR WEATHER STRIPPED TO LIMIT AIR LEAKAGE.
5. ALL INSULATION MATERIALS SHALL BE INSTALLED ACCORDING TO THE MANUFACTURER'S INSTRUCTION TO ACHIEVE PROPER DENSITIES, MAINTAIN CLEARANCES AND MAINTAIN UNIFORM R-VALUES, TO THE MAXIMUM EXTENT POSSIBLE, INSULATION SHALL EXTEND OVER THE FULL COMPONENT AREA TO THE INTENDED R-VALUE.

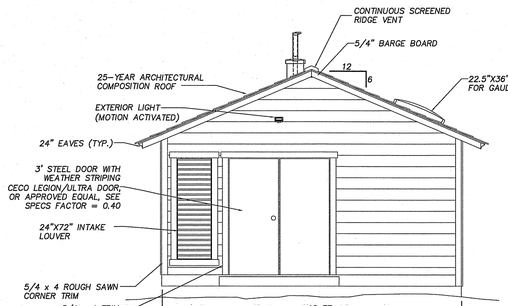
BUILDING ELECTRICAL IMPROVEMENTSO NOTES:
1. ALL WORK SHALL BE IN CONFORMANCE WITH THE NATIONAL ELECTRICAL CODE AND WAC 296-46B, AND THE MANUFACTURERS' RECOMMENDATIONS.
2. CONTRACTOR SHALL OBTAIN AND PAY FOR ALL ELECTRICAL PERMITS REQUIRED BY ALL REGULATORY AGENCIES AND SHALL FURNISH ALL CERTIFICATES, PERMITS AND APPROVALS TO THE ENGINEER.
3. ALL COMPLETED ELECTRICAL WORK SHALL BE IN A NEAT AND WORKMANLIKE MANNER.
4. ALL CONDUITS, CABLES AND CONDUCTORS SHALL BE SIZED PER REGULATORY AGENCY REQUIREMENTS AND MANUFACTURERS' RECOMMENDATIONS FOR LOADS ENCOUNTERED.
5. RUN ALL CONDUITS ALONG WALLS OR CEILING, PROVIDE FLEXIBLE CONDUIT DROPS TO ALL EQUIPMENT.
6. UPON COMPLETION OF CONSTRUCTION CONTRACTOR SHALL TEST EACH COMPONENT TO CONFIRM OPERATION IN ACCORDANCE WITH SPECIFICATIONS AND MANUFACTURERS' RECOMMENDATIONS.
7. SEE STANDBY GENERATOR AND AUTO TRANSFER SWITCH GENERAL NOTES

GENERAL NOTES:
1. ALL MATERIALS AND CONSTRUCTION TO COMPLY WITH WSDOT/APWA "STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION" 2010 EDITION).
2. WATERLINE MATERIAL SHALL BE GALVANIZED STEEL (ASTM A 120) OR DUCTILE IRON FOR ALL INTERIOR BUILDING AREAS OR AS SHOWN ON DRAWINGS.
3. ALL WATERMAINS SHALL HAVE MINIMUM 42" OF COVER TO FINISHED GROUND. ALL WATER VALVES TO BE COMPLETE WITH VALVE COVERS RAISED TO GRADE.
4. PIPE BEDDING, BACKFILLING AND COMPACTION SHALL BE AS SPECIFIED IN THE STANDARD SPECIFICATIONS.
5. ALL FITTINGS SHALL BE INSTALLED WITH THE PROPER THRUST BLOCKING AS SPECIFIED IN THE PLANS AND THE "WATERWORKS MANUAL – BASIC".
6. ALL WATERMAINS SHALL BE PRESSURE TESTED BY THE CONTRACTOR IN CONFORMANCE WITH THE STANDARD SPECIFICATIONS.
7. THE CONTRACTOR SHALL CHLORINATE, FLUSH AND OBTAIN SATISFACTORY BACTERIOLOGICAL SAMPLES FROM THE LOCATIONS DESIGNATED BY THE ENGINEER AND ACCORDING TO 7-11.3(12) OF THE STANDARD SPECIFICATIONS.
8. THE CONTRACTOR SHALL FIELD CONFIRM ALL MEASUREMENTS.
9. THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH "ASBUILT" LOCATIONS IF CONSTRUCTION VARIES FROM THE LOCATIONS SHOWN.
10. GRADE WELL SITE TO DIRECT SURFACE DRAINAGE AWAY FROM THE WELLS AND WELL HOUSES.
11. ALL ELECTRICAL INSTALLATION SHALL COMPLY WITH THE "NATIONAL ELECTRICAL CODE" CURRENT EDITION, THE WASHINGTON SAFETY CODE, AND THE MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
12. ALL ELECTRICAL WORK SHALL COMPLY WITH THE REQUIREMENTS OF THE WASHINGTON SAFETY CODE, THE ELECTRICAL SERVICE UTILITY AND THURSTON COUNTY. THE CONTRACTOR SHALL OBTAIN ALL PERMITS, PAY ALL FEES REQUIRED, AND SUBMIT COPIES OF THE PERMITS, INSPECTION TAGS AND REPORTS TO THE OWNER. THE CONTRACTOR SHALL FURNISH AND INSTALL THE METER BASE PLUS ALL REQUIRED INTERIOR PANELS AND BREAKERS.
13. PROVIDE EMT CONDUIT & CONDUCTORS FOR ALL CIRCUITS AS REQUIRED FOR ALL LOCATIONS 24" OR MORE ABOVE THE FLOOR.
14. PROVIDE LIQUID TIGHT FLEXIBLE CONDUIT WITH STEEL CORE FOR ALL LOCATIONS LOWER THAN 24" ABOVE FLOOR.
15. SIZE CONDUCTORS AND CONDUITS PER WASHINGTON SAFETY CODE REQUIREMENTS.
16. FURNISH AND INSTALL JUNCTION BOXES AS REQUIRED FOR ALL CIRCUITS. ALL JUNCTION BOXES, FIXTURES, AND CONDUITS SHALL BE SURFACE MOUNTED ON THE BUILDING INTERIOR.
17. FURNISH AND INSTALL METER BASE AND ALL OTHER COMPONENTS NOTED ON THE PLANS AND AS REQUIRED SO THAT THE SYSTEM OPERATES AS SPECIFIED AND COMPLIES WITH WASHINGTON SAFETY CODE REQUIREMENTS.
18. PROVIDE ELECTRIC SERVICE ADEQUATE FOR LOADS ENCOUNTERED.



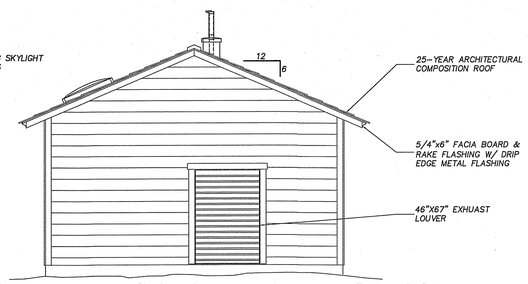
FOUNDATION AND WALL DETAIL

N.T.S.



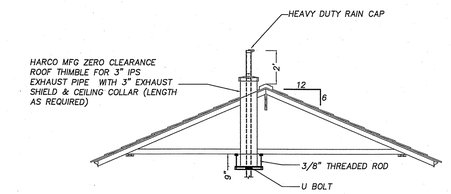
STANDBY GENERATOR BUILDING ELEVATION (LOOKING NORTH)

N.T.S.



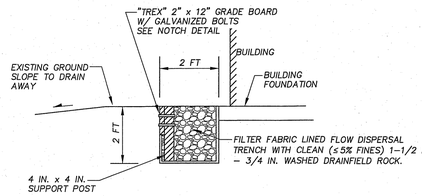
STANDBY GENERATOR BUILDING ELEVATION (LOOKING SOUTH)

N.T.S.



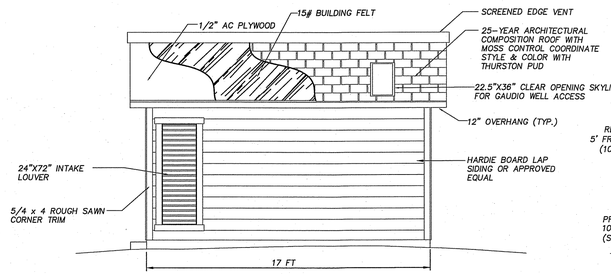
STANDBY GENERATOR BUILDING EXHAUST STACK DETAIL

N.T.S.



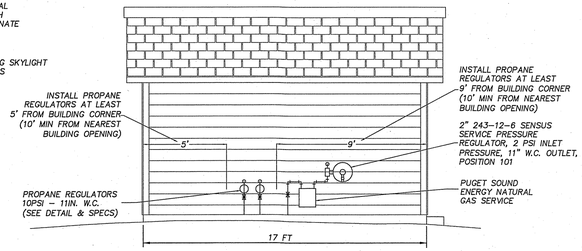
FLOW DISPERSION TRENCH

N.T.S.



STANDBY GENERATOR BUILDING ELEVATION (LOOKING WEST)

N.T.S.



STANDBY GENERATOR BUILDING ELEVATION (LOOKING EAST)

N.T.S.

DOUGLAS H. MORRISSETTE, STATE OF WASHINGTON, 25474, REGISTERED PROFESSIONAL ENGINEER, 12-29-2015

NO	DATE	BY	APPR	REVISIONS
	12/28/15			Addendum 1

JWM&A Civil • Municipal • Geotechnical • Land Surveying
Jerome W. Morrissette & Associates Inc., P.S.
1700 Cooper Pt. Road S.W. #B-2, Olympia, Wa. 98502-1110 Ph 360.352.9456 Fx 360.352.9990

D.E. DESIGNED BY	12-29-2015 DATE
M.D. C.A.D.D. BY	12-29-2015 DATE
D.E. CHECKED BY	12-29-2015 DATE
12-29-2015 DATE PLOTTED	

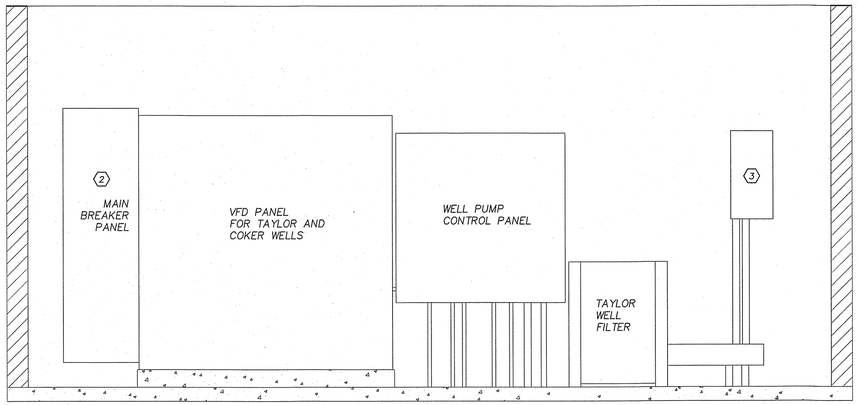
Thurston PUD
Tanglewilde/Thompson Place
Water System

Standby Generator Installation
Standby Generator Building Details

14117 Standby Generator Building.dwg

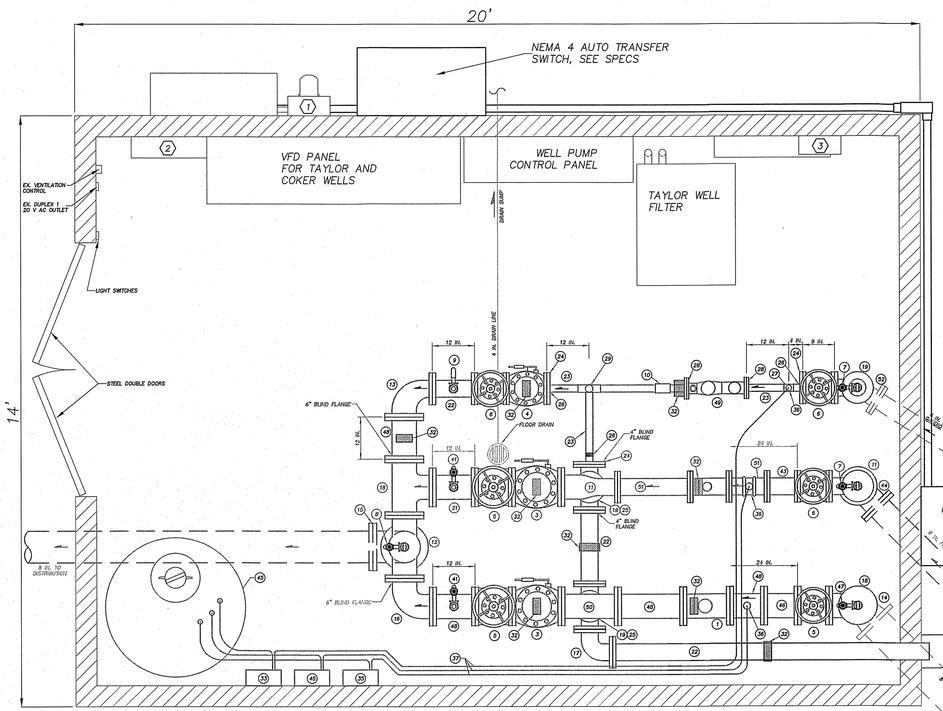
SHT 3 OF 7

Z:\2014 Projects\14117 Thurston PUD SYS Generator Backup (BF-Tanglewilde-Thompson PL\WMA Drawings\02 Design Drawings\14117 Standby Generator Building.dwg, 12/29/2015 11:03:15 AM, SAWN 3400WD PS



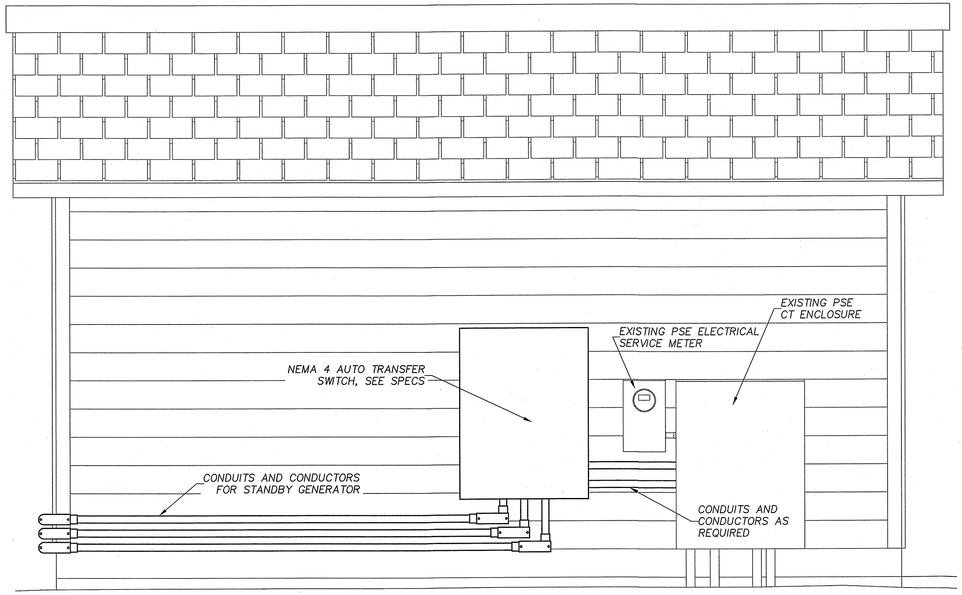
WELL PUMP CONTROL BUILDING
INTERIOR ELEVATION LOOKING NORTH

N.T.S.



WELL PUMP CONTROL BUILDING
- PLAN VIEW

N.T.S.



WELL PUMP CONTROL BUILDING
EXTIEROR ELEVATION LOOKING SOUTH

N.T.S.

GENERAL NOTES:

1. ALL MATERIALS AND CONSTRUCTION TO COMPLY WITH WSDOT/APWA "STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION" 2010 EDITION).
2. WATERLINE MATERIAL SHALL BE GALVANIZED STEEL (ASTM A 120) OR DUCTILE IRON FOR ALL INTERIOR BUILDING AREAS OR AS SHOWN ON DRAWINGS.
3. ALL WATERMAINS SHALL HAVE MINIMUM 42" OF COVER TO FINISHED GROUND. ALL WATER VALVES TO BE COMPLETE WITH VALVE COVERS RAISED TO GRADE.
4. PIPE BEDDING, BACKFILLING AND COMPACTION SHALL BE AS SPECIFIED IN THE STANDARD SPECIFICATIONS.
5. ALL FITTINGS SHALL BE INSTALLED WITH THE PROPER THRUST BLOCKING AS SPECIFIED IN THE PLANS AND THE "WATERWORKS MANUAL – BASIC".
6. ALL WATERMAINS SHALL BE PRESSURE TESTED BY THE CONTRACTOR IN CONFORMANCE WITH THE STANDARD SPECIFICATIONS.
7. THE CONTRACTOR SHALL CHLORINATE, FLUSH AND OBTAIN SATISFACTORY BACTERIOLOGICAL SAMPLES FROM THE LOCATIONS DESIGNATED BY THE ENGINEER AND ACCORDING TO 7–11.3(12) OF THE STANDARD SPECIFICATIONS.
8. THE CONTRACTOR SHALL FIELD CONFIRM ALL MEASUREMENTS.
9. THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH "ASBUILT" LOCATIONS IF CONSTRUCTION VARIES FROM THE LOCATIONS SHOWN.
10. GRADE WELL SITE TO DIRECT SURFACE DRAINAGE AWAY FROM THE WELLS AND WELL HOUSES.
11. ALL ELECTRICAL INSTALLATION SHALL COMPLY WITH THE "NATIONAL ELECTRICAL CODE" CURRENT EDITION, THE WASHINGTON SAFETY CODE, AND THE MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
12. ALL ELECTRICAL WORK SHALL COMPLY WITH THE REQUIREMENTS OF THE WASHINGTON SAFETY CODE, THE ELECTRICAL SERVICE UTILITY AND THURSTON COUNTY. THE CONTRACTOR SHALL OBTAIN ALL PERMITS, PAY ALL FEES REQUIRED, AND SUBMIT COPIES OF THE PERMITS, INSPECTION TAGS AND REPORTS TO THE OWNER. THE CONTRACTOR SHALL FURNISH AND INSTALL THE METER BASE PLUS ALL REQUIRED INTERIOR PANELS AND BREAKERS.
13. PROVIDE EMT CONDUIT & CONDUCTORS FOR ALL CIRCUITS AS REQUIRED FOR ALL LOCATIONS 24" OR MORE ABOVE THE FLOOR.
14. PROVIDE LIQUID TIGHT FLEXIBLE CONDUIT WITH STEEL CORE FOR ALL LOCATIONS LOWER THAN 24" ABOVE FLOOR.
15. SIZE CONDUCTORS AND CONDUITS PER WASHINGTON SAFETY CODE REQUIREMENTS.
16. FURNISH AND INSTALL JUNCTION BOXES AS REQUIRED FOR ALL CIRCUITS. ALL JUNCTION BOXES, FIXTURES, AND CONDUITS SHALL BE SURFACE MOUNTED ON THE BUILDING INTERIOR.
17. FURNISH AND INSTALL METER BASE AND ALL OTHER COMPONENTS NOTED ON THE PLANS AND AS REQUIRED SO THAT THE SYSTEM OPERATES AS SPECIFIED AND COMPLIES WITH WASHINGTON SAFETY CODE REQUIREMENTS.
18. PROVIDE ELECTRIC SERVICE ADEQUATE FOR LOADS ENCOUNTERED.

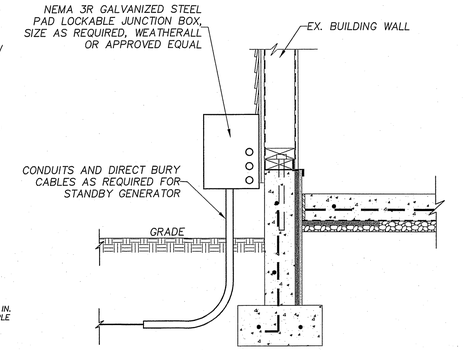
ELECTRICAL NOTES:

1. EXISTING ELECTRIC SERVICE METER & SERVICE METER BASE SAFETY SOCKET
2. EXISTING MAIN BREAKER PANEL
3. EXISTING COKER WELL VARIABLE FREQUENCY DRIVE/SOFT START SELECTOR SWITCH

WATER NOTES:

1. 6" SEAMETRICS WMX101 FLANGED MAGMETER WITH FT420W REMOTE WALL MOUNT RATE / TOTALIZER WITH 4–20 MA OUTPUT
2. 4" SEAMETRICS WMX101 FLANGED MAGMETER WITH FT420W REMOTE WALL MOUNT RATE / TOTALIZER WITH 4–20 MA OUTPUT
3. 6 IN. FLOMATIC SWING CHECK VALVE (FL) MODEL 92LW WITH LEVER AND WEIGHT
4. 4 IN. FLOMATIC SWING CHECK VALVE (FL) MODEL 92LW WITH LEVER AND WEIGHT
5. 6 IN. RESILIENT WEDGE GATE VALVE (FL)
6. 4 IN. RESILIENT WEDGE GATE VALVE (FL)
7. 4 IN. BLIND FLANGE TAPPED 1 IN. NPT, 1 IN. GALV. NIPPLE, 1 IN. GALV. TEE NPT, SAMPLE TAP, 1/4 IN. SHUT OFF COCK NPT, 2 IN. STAINLESS STEEL, OIL FILLED 0–150 PSI PRESSURE GAGE
8. TAP TEE 1 IN. NPT, 1 IN. GALV. NIPPLE, 1 IN. GALV. TEE NPT, SAMPLE TAP, 1/4 IN. SHUT OFF COCK NPT, 2 IN. STAINLESS STEEL, OIL FILLED 0–150 PSI PRESSURE GAGE
9. SADDLE TAP 1 IN. NPT, 1 IN. GALV. NIPPLE, 1 IN. GALV. TEE NPT, 1 IN. PLUG
10. 2" ROMAC COUPLING STYLE 501
11. 6x4x4 IN. REDUCING TEE (FL)
12. 6x6x8 IN. BULL HEAD TEE (FL)
13. 6x4 IN. 90° REDUCING BEND (FL)
14. 8x6 IN. 90° REDUCING BEND (MJ) 8 IN. MECHANICAL JOINT RESTRAINT & IN. MECHANICAL JOINT RESTRAINT THRUST BLOCKING
15. 8 IN. 90° BEND (MJ) 2–8 IN. MECHANICAL JOINT RESTRAINT
16. 6 IN. 90° BEND (FL)
17. 4 IN. 90° BEND (FL)
18. 6 IN. TEE (FL)
19. 4 IN. TEE (FL)
20. 8 IN. SPOOL (FLxPE)
21. 6 IN. D.I. SPOOL (FLxPE)
22. 4 IN. D.I. SPOOL (FLxPE)
23. 2 IN. GALV. STEEL NIPPLE (NPT)
24. 2 IN. COMPANION FLANGE
25. 4 IN. LUG STYLE BUTTERFLY VALVE WITH LEVER HANDLE OPERATOR
26. 4 IN. x 2 IN. REDUCER (FL)
27. 2 IN. RESILIENT WEDGE GATE VALVE (FL)
28. SEAMETRICS \TXB-BRASS INSERTION TURBINE FLOW METER WITH 2 IN. SEAMETRICS BRONZE TEE AND FT420W REMOTE WALL MOUNT RATE AND TOTALIZER INDICATOR WITH 4–20 MA OUTPUT
29. 2 IN. GALV. TEE (NPT)
30. 2 IN. LUG STYLE BUTTERFLY VALVE WITH LEVER HANDLE OPERATOR
31. 2 IN. GALV. STREET ELL (NPT)
32. PIPE SUPPORT (SEE DETAIL THIS SHEET)
33. GAUDIO WELL HYPOCHLORINATION PUMP STEINER SVP4H1
34. RELOCATE EXISTING HYPOCHLORINATION METERING PUMP (PROTECT FROM DAMAGE) FROM GAUDIO WELL BUILDING AND REINSTALL AS NOTED
35. TAYLOR WELL HYPOCHLORINATION PUMP STEINER SVP4H7
36. HYPOCHLORITE INJECTION CHECK VALVE WITH SADDLE TAP, INSTALL TAP AT 6:00 POSITION
37. SODIUM HYPOCHLORITE SOLUTION TUBING
38. WEIGHTED SUCTION LINE STRAINER
39. NOT USED
40. NOT USED
41. SADDLE TAP 1 IN. (NPT) 1 IN. GALV. NIPPLE 1 IN. GALV. TEE, SAMPLE TAP 1 IN. x 1/4 IN. GALV. BUSHING (NPT) 1/4 IN. GALV. NIPPLE (NPT) 1/4 IN. BALL VALVE (NPT) OMEGA DIGITAL PRESSURE GAGE MODEL DGP100DL–200G 4–20 MA LOOP POWERED
42. CADET RMC151W ELECTRIC HEATER 500 W 120 VAC OR APPROVED EQUAL WITH WALL MOUNT THERMOSTAT WITH 44° F LOCK MOUNT THERMOSTAT 60" ABOVE FLOOR MOUNT ELECTRIC HEATER 24" ABOVE FLOOR
43. 4 IN. DISMANTLING JOINT (FL)
44. 6" 90° BEND (MJ) 2–6 IN. MECHANICAL JOINT RESTRAINT
45. REMOVE EXISTING HYPOCHLORINATION TANK (PROTECT FROM DAMAGE) FROM GAUDIO WELL BUILDING AND REINSTALL AS NOTED
46. 6 IN. DISMANTLING JOINT
47. 6 IN. BLIND FLANGE TAPPED 1 IN. NPT, 1 IN. GALV. NIPPLE, 1 IN. GALV. TEE NPT, SAMPLE TAP, 1/4 IN. SHUTOFF COCK NPT, 2 IN. STAINLESS STEEL, OIL FILLED 0–150 psi PRESSURE GAGE
48. 8 IN. D.I. SPOOL (FL)
49. 2 IN. FLOMATIC 92 LW HORIZONTAL SWING CHECK VALVE WITH OUTSIDE LEVER AND WEIGHT (FL)
50. 6 IN.x4 IN. TEE (FL)
51. 4 IN. D.I. SPOOL (FL)
52. 4 IN. 90° BEND (MJ) 2–4 IN. MECHANICAL JOINT RESTRAINT
53. 4 IN. BLIND FLANGE TAPPED 2 IN. NPT

NOT CONTRACT DOCUMENTS



AUTO TRANSFER SWITCH JUNCTION BOX DETAIL

N.T.S.

DOUGLAS H. M. ENGLUND
STATE OF WASHINGTON
25474
REGISTERED PROFESSIONAL ENGINEER
12-29-2015

NO	DATE	BY	APPR	REVISIONS
	12/28/15			Addendum 1

JWM&A Civil • Municipal • Geotechnical • Land Surveying
Jerome W. Morrissette & Associates Inc., P.S.
1700 Cooper Pt. Road S.W. #B-2, Olympia, Wa. 98502-1110 Ph 360.352.9456 Fx 360.352.9990

D.E.	12–29–2015
DESIGNED BY	DATE
M.D.	12–29–2015
C.A.D.D. BY	DATE
D.E.	12–29–2015
CHECKED BY	DATE
12–29–2015	
DATE PLOTTED	

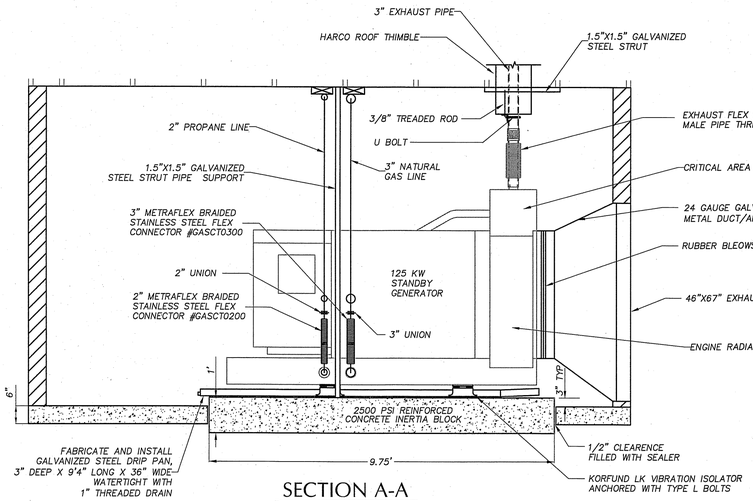
Thurston PUD
Tanglewilde/Thompson Place
Water System

Standby Generator Installation
Well Control Building

14117 Standby Generator Building.dwg

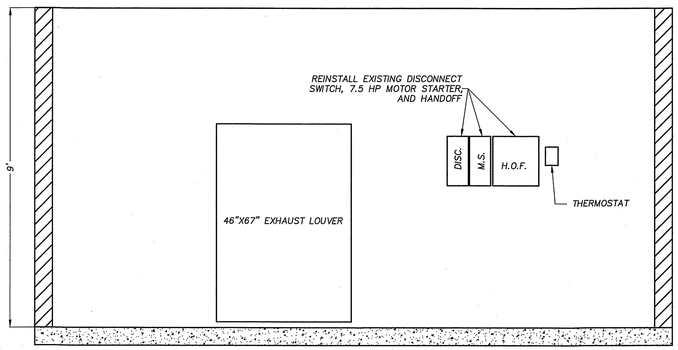
SHT 5 OF 7

Z:\2014 Projects\14117 Thurston PUD 1QD SYS Generator Backup RPT -Tanglewilde-Thompson PLV\MMA Drawings\QD Design Drawings\14117 Standby Generator Building.dwg, 12/29/2015 11:04:03 AM, KAWK 3400WD P5



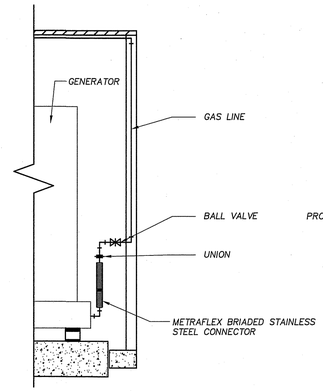
SECTION A-A

N.T.S.



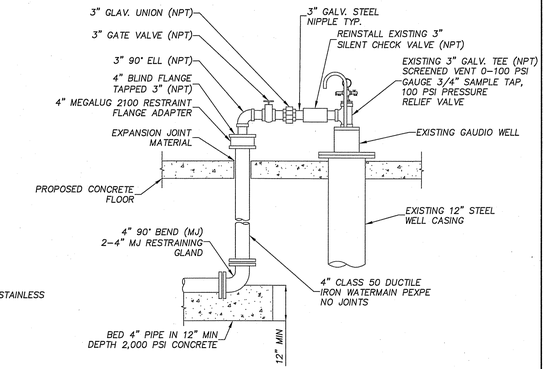
NORTH WALL ELEVATION

N.T.S.



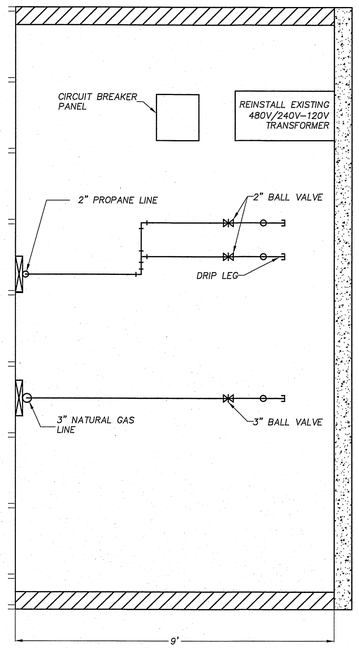
GAS LINE DETAIL

N.T.S.



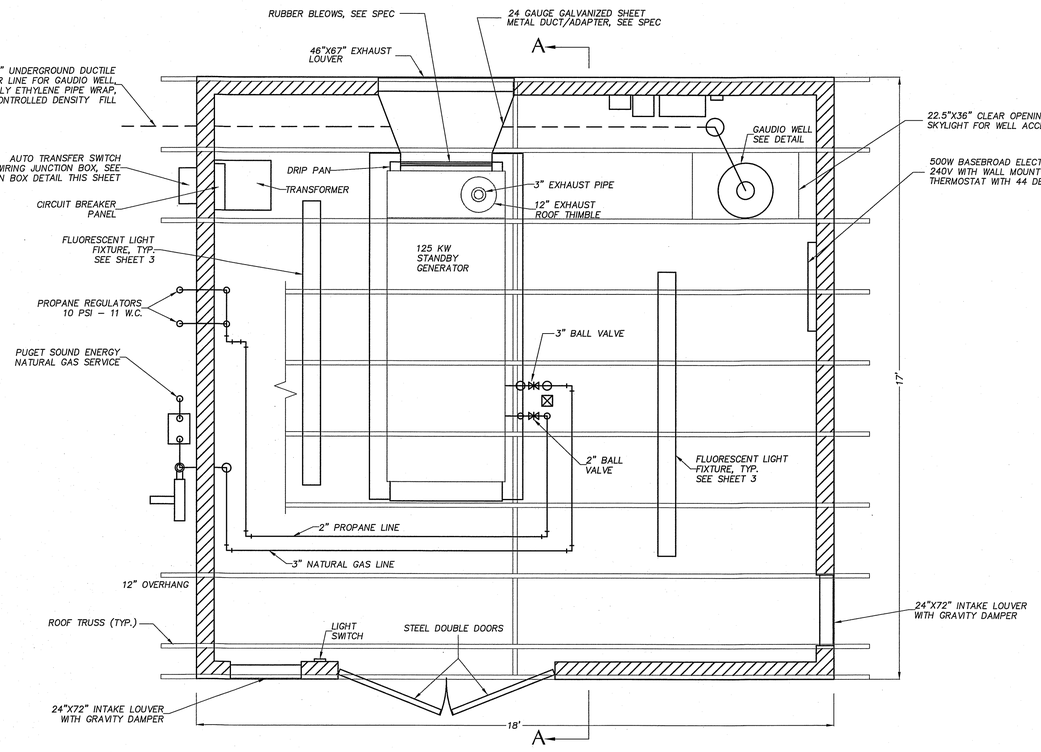
GAUDIO WELL HEAD DETAIL

N.T.S.



WEST WALL ELEVATION

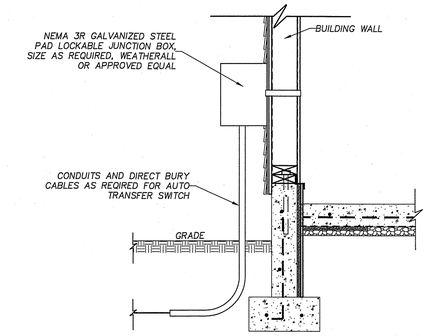
N.T.S.



FLOOR PLAN AND PARTIAL ROOF FRAMING PLAN

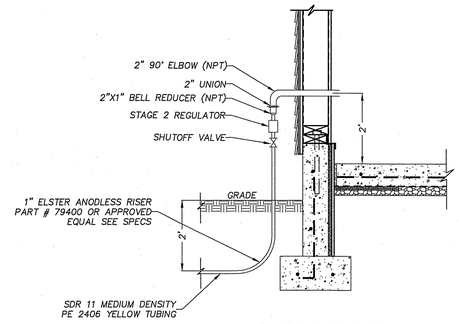
1"=2'

N



AUTO TRANSFER SWITCH JUNCTION BOX DETAIL

N.T.S.



GAS LINE DETAIL

N.T.S.

DOUGLAS H.M. MACLEOD — STATE OF WASHINGTON — 25474 — REGISTERED PROFESSIONAL ENGINEER

12-29-2015

NO	DATE	BY	APPR	REVISIONS
	12/28/15			Addendum 1

JWM&A Civil • Municipal • Geotechnical • Land Surveying
Jerome W. Morrissette & Associates Inc., P.S.
1700 Cooper Pt. Road S.W. #B-2, Olympia, Wa. 98502-1110 Ph 360.352.9456 Fx 360.352.9990

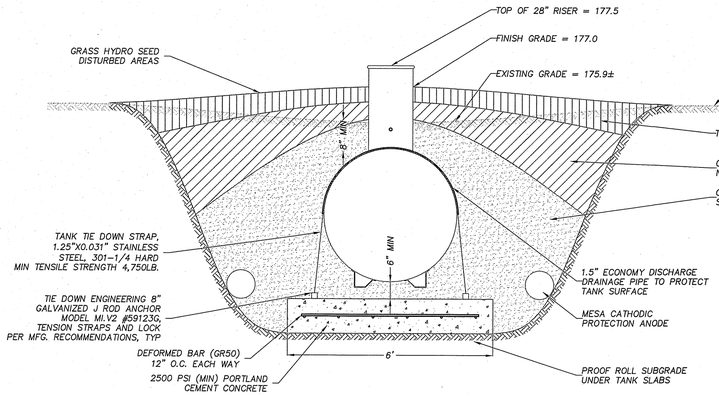
D.E. 12-29-2015 DESIGNED BY DATE
M.D. 12-29-2015 C.A.D.D. BY DATE
12-29-2015 CHECKED BY DATE
12-29-2015 DATE PLOTTED

Thurston PUD
Tanglewilde/Thompson Place
Water System

Standby Generator Installation Building Floor Plan and Details

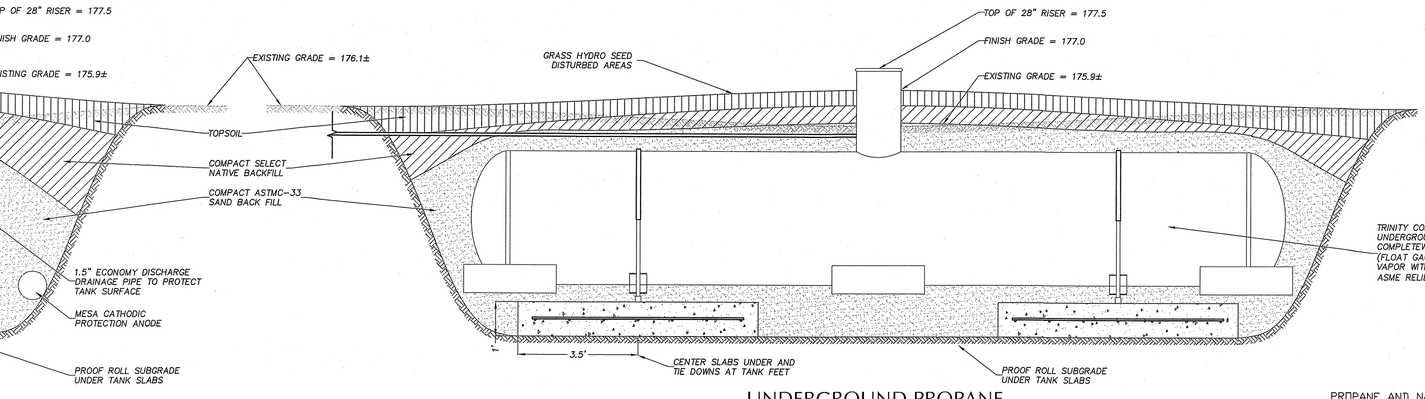
14117 Standby Generator Building.dwg

SHT 4 OF 7



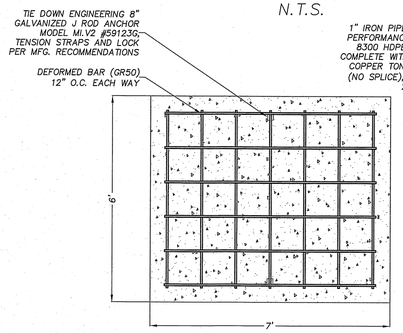
UNDERGROUND PROPANE TANK - END VIEW

N.T.S.



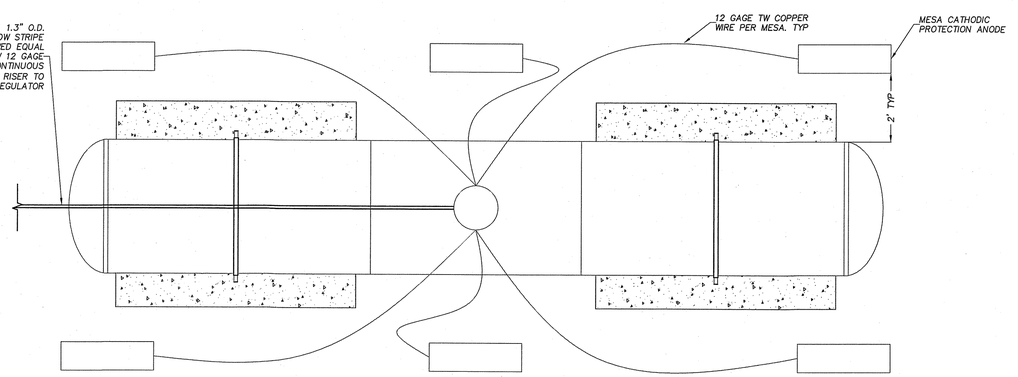
UNDERGROUND PROPANE TANK - SIDE VIEW

N.T.S.



UNDERGROUND PROPANE SLAB DETAIL- PLAN VIEW

N.T.S.



UNDERGROUND PROPANE TANK - PLAN VIEW

N.T.S.

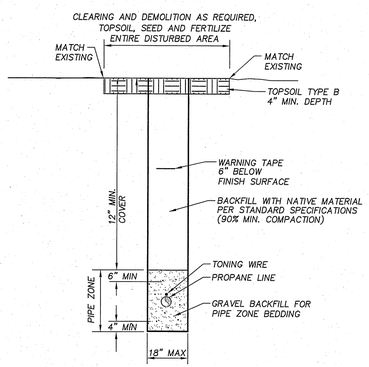
PROPANE AND NATURAL GAS SYSTEMS NOTES:
UNDERGROUND PROPANE TANKS SHALL BE TRINITY CONTAINERS LLC 2000 GALLON (WATER CAPACITY) CONFORMING TO ASME CODE FOR PRESSURE VESSELS AND SECTION VII DIVISION1 NFPA, OR APPROVED EQUAL SUBJECT TO THE ENGINEER'S REVIEW AND APPROVAL PRIOR TO INSTALLATION. TANKS SHALL BE FACTORY EQUIPPED WITH RISER AND MULTIVALVE, INCLUDING FLOAT GAUGE, PRESSURE GAUGE, VAPOR, FILLER, LIQUID LEVEL INDICATOR, AND RELIEF VALVE READY FOR INSTALLATION.

UNDERGROUND PROPANE TANKS SHALL BE EQUIPPED WITH STEEL REINFORCED PORTLAND CEMENT CONCRETE ANTI FLOTATION ANCHORS AND ANCHOR STRAPS AS SHOWN AND NOTED OR APPROVED EQUAL. UNDERGROUND PROPANE TANKS SHALL EACH BE EQUIPPED WITH HIGH PRESSURE FIRST STAGE REGULATORS ,10 PSI, AS SHOWN AND NOTED.

UNDERGROUND PROPANE LINES SHALL CONFORM TO ASTM D2513 STANDARDS FOR THERMOPLASTIC GAS PRESSURE PIPE TUBING AND FITTINGS. UNDERGROUND PROPANE LINE SHALL BE HIGH DENSITY POLYETHYLENE, 1 INCH IRON PIPE SIZE, DR 10, 100 PSI MINIMUM WORKING PRESSURE. PIPE SHALL BE RECOMMENDED BY THE MANUFACTURER FOR USE WITH LP GAS AND SHALL BE MARKED IN COMPLIANCE WITH THE PRODUCT MARKING REQUIREMENTS OF ASTM D2513. POLYETHYLENE PIPE FITTINGS SHALL BE AS FOLLOWS: SOCKET FITTINGS PER ASTM D2683, BUTT FUSION FITTINGS PER ASTM D2513, MOLDED. APPROVED ANODE-LESS RISERS SHALL BE USED TO TRANSITION BETWEEN UNDERGROUND POLYETHYLENE PIPE AND ABOVE GRADE VALVES AND STEEL PIPE AND FITTINGS, SEE DETAILS.

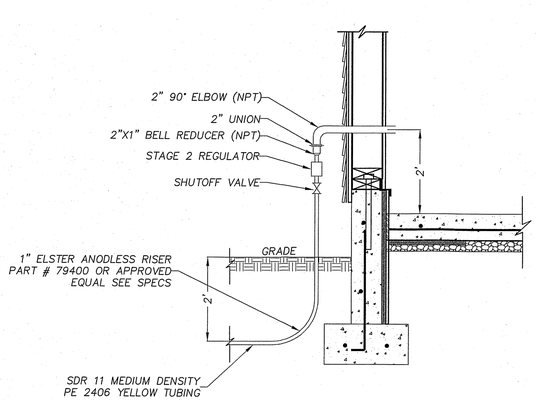
STEEL PIPE SHALL BE BLACK STEEL CONFORMING TO ASTM A53/A53M, SCHEDULE 40 , NATIONAL PIPE THREADING. FITTINGS FOR STEEL PIPE SHALL BE THREADED BLACK MALLEABLE IRON PER ASME B16.3. UNIONS FOR STEEL PIPE SHALL BE BLACK MALLEABLE IRON PER ASME B16.36. STEEL PIPE AND FITTINGS SHALL ONLY BE USED ABOVE GRADE AND IN BUIDING INTERIOR AREAS. VALVES FOR STEEL PIPE SHALL BE CORROSION RESISTING STEEL FULL PORT BALL VALVES PER ASME B16.33, REINFORCED PTFE SEALS, THREADED ENDS AND PTFE SEAT, VALVES AT BUILDING EXTERIOR SHALL BE PADLOCKABLE. FLEXIBLE GAS CONNECTORS FOR CONNECTIONS AT THE STANDBY GENERATOR SHALL BE METRAFLEX STRAIGHT GAS CONNECTOR, CSA LISTED, OR APPROVED EQUAL, WITH SCHEDULE 40 MPT THREADED ENDS, SIZE AS NOTED.

ALL WORK, MATERIALS, AND TESTING SHALL BE IN CONFORMANCE WITH NFPA 54- NATIONAL GAS FUEL CODE, NFPA 58 -LIQUIFIED PETROLEUM GAS CODE, AGA AMERICAN GAS ASSOCIATION RECOMMENDATIONS AND REQUIREMENTS, AND MANUFACTURER RECOMMENDATIONS AND REQUIREMENTS, AND THURSTON COUNTY REQUIREMENTS.



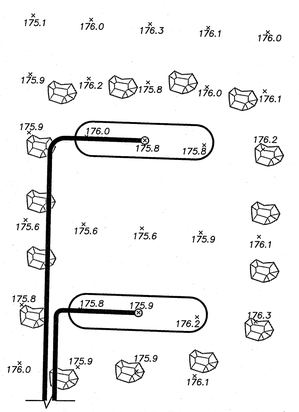
UNDERGROUND PROPANE LINE TYPICAL TRENCH SECTION

N.T.S.



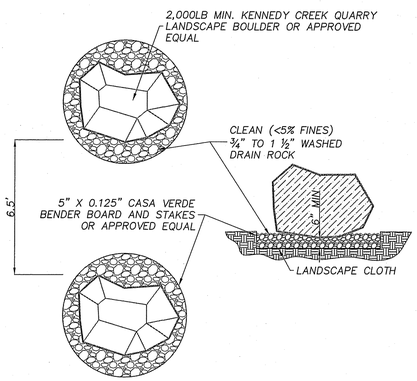
GAS LINE DETAIL

N T S



LANDSCAPE PLAN AND ELEVATION GRID

N.T.S.



LANDSCAPE BOULDER DETAIL

N.T.S.

DOUGLAS H.M. IRELAND
STATE OF WASHINGTON
25474
REGISTERED
PROFESSIONAL ENGINEER
12-8-2015

NO	DATE	BY	APPR	REVISIONS

JWM&A Civil • Municipal • Geotechnical • Land Surveying
Jerome W. Morrissette & Associates Inc., P.S.
1700 Cooper Pt. Road S.W. #B-2, Olympia, Wa. 98502-1110 Ph 360.352.9456 Fx 360.352.9990

D.E.	12-08-2015
DESIGNED BY	DATE
M.D.	12-08-2015
C.A.D.D. BY	DATE
D.E.	12-08-2015
CHECKED BY	DATE
12-08-2015	
DATE PLOTTED	

Thurston PUD
Tanglewilde/Thompson Place
Water System

Standby Generator Installation
Propane Tank Details

14117 Standby Generator Building.dwg

SHT 6 OF 7

APPENDIX T
STANDARD EROSION CONTROL NOTES

SILT FENCES

1. FILTER FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID USE OF JOINTS. WHEN JOINTS ARE NECESSARY, FILTER CLOTH SHALL BE SPLICED TOGETHER ONLY AT A SUPPORT POST, WITH A MINIMUM 6–INCH OVERLAP, AND SECURELY FASTENED AT BOTH ENDS TO POST.
2. POSTS SHALL BE SPACED A MAXIMUM OF 6 FEET APART AND DRIVEN SECURELY INTO THE GROUND (MINIMUM OF 30 INCHES).
3. A TRENCH SHALL BE EXCAVATED APPROXIMATELY 8 INCHES WIDE AND 12 INCHES DEEP ALONG THE LINE OF POSTS AND UPSLOPE FROM THE BARRIER.
4. WHEN STANDARD STRENGTH FILTER FABRIC IS USED, A WIRE MESH SUPPORT FENCE SHALL BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS USING HEAVY–DUTY WIRE STAPLES AT LEAST 1 INCH LONG, TIE WIRES OR HOG RINGS. THE WIRE SHALL EXTEND INTO THE TRENCH A MINIMUM OF 4 INCHES AND SHALL NOT EXTEND MORE THAN 36 INCHES ABOVE THE ORIGINAL GROUND SURFACE.
5. THE STANDARD STRENGTH FILTER FABRIC SHALL BE STAPLED OR WIRED TO THE FENCE, AND 20 INCHES OF THE FABRIC SHALL BE EXTENDED INTO THE TRENCH. THE FABRIC SHALL NOT EXTEND MORE THAN 36 INCHES ABOVE THE ORIGINAL GROUND SURFACE. FILTER FABRIC SHALL NOT BE STAPLED TO EXISTING TREES.
6. WHEN EXTRA–STRENGTH FILTER FABRIC AND CLOSER POST SPACING IS USED, THE WIRE MESH SUPPORT FENCE MAY BE ELIMINATED. IN SUCH A CASE, THE FILTER FABRIC IS STAPLED OR WIRED DIRECTLY TO THE POSTS WITH ALL OTHER PROVISIONS OF ABOVE NOTES APPLYING.
7. FILTER FABRIC FENCES SHALL NOT BE REMOVED BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY STABILIZED.
8. FILTER FABRIC FENCES SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.

STRAW/HAY BALES

1. BALES SHALL BE PLACED IN A SINGLE ROW, LENGTHWISE, ON THE CONTOUR, WITH ENDS OF ADJACENT BALES TIGHTLY ABUTTING ONE ANOTHER.
2. ALL BALES SHALL BE EITHER WIRE–BOUND OR STRING–TIED WITH BINDINGS ORIENTED AROUND THE SIDES RATHER THAN THE TOPS AND BOTTOMS OF THE BALES. THIS WILL PREVENT RAPID DETERIORATION OF THE BINDINGS.
3. THE BARRIER SHALL BE ENTRENCHED AND BACKFILLED. A TRENCH SHALL BE EXCAVATED THE LENGTH AND WIDTH OF THE PROPOSED BARRIER TO A DEPTH OF AT LEAST 4 INCHES. AFTER THE BALES ARE STAKED AND CRACKS BETWEEN BALES CHINKED AS NECESSARY, THE EXCAVATED SOIL SHALL BE BACKFILLED AGAINST THE BARRIER. BACKFILL SOIL SHALL CONFORM TO THE GROUND LEVEL ON THE DOWNHILL SIDE AND SHALL BE BUILT UP TO 4 INCHES AGAINST THE UPHILL SIDE OF THE BARRIER.
4. EACH BALE SHALL BE ANCHORED BY AT LEAST TWO STAKES OR REBARS DRIVEN THROUGH THE BALE. THE FIRST STAKE IN EACH BALE SHALL BE DRIVEN TOWARDS THE PREVIOUSLY LAID BALE IN ORDER TO FORCE THE BALES TOGETHER.

GRAVEL FILTER BERMS

1. BERM MATERIAL SHALL BE 3/4 TO 3–INCH WELL–GRADED GRAVEL OR CRUSHED ROCK WITH LESS THAN 5% FINES.
2. SPACING OF BERMS:

DISTANCE BETWEEN BERMS (FEET)	MAX SLOPE (%)
300	5
200	10
100	>10

3. BERM DIMENSIONS: 1–FOOT HIGH WITH 3:1 SIDE SLOPES; 8 LINEAL FEET PER 1 CFS RUNOFF BASED ON THE 10–YEAR FREQUENCY STORM.

SANDBAG BERMS

1. THE HEIGHT OF THE BERM SHALL BE A MINIMUM OF 18 INCHES MEASURED FROM THE TOP OF THE EXISTING GROUND AT THE UPSLOPE TOE TO THE BOTTOM OF THE BERM.
2. THE WIDTH OF THE BERM SHALL BE AT LEAST 48 INCHES AT THE BOTTOM AND 18 INCHES AT THE TOP.
3. SANDBAGS SHALL BE 24 TO 30 INCHES IN LENGTH, 16 TO 18 INCHES IN WIDTH, AND 6 TO 8 INCHES IN THICKNESS. EACH SANDBAG SHALL WEIGH BETWEEN 90 AND 125 POUNDS.
4. SUITABLE MATERIALS FOR SANDBAGS ARE POLYPROPYLENE, POLYETHYLENE, OR POLYAMIDE WOVEN FABRIC, MINIMUM UNIT WEIGHT 4 OUNCES PER SQUARE YARD, MULLIN BURST STRENGTH EXCEEDING 300 PSI, AND ULTRAVIOLET STABILITY EXCEEDING 70 PERCENT.
5. COARSE GRADE SAND SHALL BE USED.

TRIANGULAR SEDIMENT FILTER DIKES

1. IF THE SLOPE EXCEEDS 10 PERCENT, THE LENGTH OF THE SLOPE ABOVE THE DIKE SHALL BE LESS THAN 50 FEET.
2. ALL DIKES SHALL BE PLACED ON THE CONTOUR AND SHALL BE PLACED IN A ROW WITH THE ENDS TIGHTLY ABUTTING THE ADJACENT DIKE. FILTER MATERIAL SHALL LAP OVER ENDS 6 INCHES TO COVER DIKE TO DIKE JUNCTION; EACH JUNCTION SHALL BE SECURED BY SHOAT RINGS.
3. IN GENERAL, EACH SIDE OF THE TRIANGLE SHALL BE A MINIMUM OF 18 INCHES.
4. NONWOVEN POLYPROPYLENE, POLYETHYLENE OR POLYAMIDE GEOTEXTILE FABRIC MAY BE USED AS FILTER MATERIAL. THIS MATERIAL SHALL HAVE A MINIMUM UNIT WEIGHT OF FOUR AND ONE–HALF (4.5) OUNCES PER SQUARE YARD, MULLIN BURST STRENGTH EXCEEDING 250 PSI, ULTRAVIOLET STABILITY EXCEEDING 70 PERCENT, AND EQUIVALENT OPENING SIZE EXCEEDING 40. THE FABRIC COVER AND SKIRT SHALL BE A CONTINUOUS WRAPPING OF THE FABRIC; THE SKIRT SHALL BE A CONTINUOUS EXTENSION OF THE UPSTREAM FACE.

PIPE SLOPE DRAINS

1. THE SOIL AROUND AND UNDER THE PIPE AND ENTRANCE SECTION SHALL BE THOROUGHLY COMPACTED.
2. THE FLARED INLET SECTION SHALL BE SECURELY CONNECTED TO THE SLOPE DRAIN WITH WATERTIGHT CONNECTING BANDS.
3. SLOPE DRAIN SECTIONS SHALL BE SECURELY FASTENED TOGETHER WITH WATERTIGHT FITTINGS, AND BE SECURELY ANCHORED INTO THE SOIL.
4. INTERCEPTOR DIKES SHALL BE USED TO DIRECT RUNOFF INTO A SLOPE DRAIN. THE HEIGHT OF THE DIKE SHALL BE AT LEAST 1" HIGHER OF ALL POINTS THEN THE TOP OF THE INLET PIPE.
5. THE AREA BELOW THE OUTLET MUST BE STABILIZED WITH A RIP–RAP APRON (SEE CHAPTER 6, OUTFALLS, FOR THE APPROPRIATE PROTECTION).

STAIRSTEPPED CUT SLOPES

1. GRADED AREAS WITH SLOPES GREATER THAN 3:1 BUT LESS THAN 2:1 SHALL BE ROUGHENED BEFORE SEEDING.
2. GRADED AREAS STEEPER THAN 2:1 SHALL BE STAIR–STEPPED WITH BENCHES. PLACE THE FOLLOWING STANDARD NOTES ON DRAWINGS SHOWING EROSION CONTROL BLANKETS:

EROSION CONTROL BLANKETS

1. WHERE SOIL IS HIGHLY ERODIBLE, NET SHALL ONLY BE USED IN CONJUNCTION WITH AN ORGANIC MULCH SUCH AS STRAW AND WOOD FIBER.
2. JUTE NET SHALL BE HEAVY, UNIFORM CLOTH WOVEN OF SINGLE JUTE YARN, WHICH IF 36 TO 48 INCHES WIDE SHALL WEIGH AN AVERAGE OF 1.2 LBS/LINEAR YARD. IT MUST BE SO APPLIED THAT IT IS IN COMPLETE CONTACT WITH THE SOIL.
3. NETTING SHALL BE SECURELY ANCHORED TO THE SOIL WITH NO. 11 GAUGE WIRE STAPLES AT LEAST 6 INCHES LONG.

TEMPORARY DIKES & SWALES

1. SEED AND MULCH SHALL BE APPLIED WITHIN 5 DAYS OF DIKE CONSTRUCTION (SEE VEGETATION).
2. THE UPSLOPE SIDE OF THE DIKE SHALL PROVIDE POSITIVE DRAINAGE TO THE DIKE OUTLET.
3. NO EROSION SHALL OCCUR AT THE DIKE OUTLET. PROVIDE ENERGY DISSIPATION MEASURES AS NECESSARY.
4. SEDIMENT LADEN RUNOFF MUST BE RELEASED THROUGH A SEDIMENT TRAPPING FACILITY SUCH AS A POND, TRAP, OR SILT FENCE AS APPROPRIATE TO DRAINAGE AREA SIZE.

TEMPORARY GRAVEL OUTLETS

1. GRAVEL SHALL BE 5/8–INCH MINUS WASHED ROCK. A LAYER OF FILTER FABRIC SHALL BE EMBEDDED IN THE GRAVEL.
2. MINIMUM LENGTH IN FEET OF THE GRAVEL OUTLET STRUCTURE SHALL BE EQUAL TO SIX TIMES THE NUMBER OF ACRES OF CONTRIBUTING DRAINAGE AREA.
3. THE INVERT OF THE GRAVEL OUTLET SHALL NOT BE LESS THAN 6 INCHES LOWER THAN THE MINIMUM ELEVATION OF THE TOP OF THE DIKE.
4. WATER SHALL BE DISCHARGED FROM THE GRAVEL OUTLET ONTO AN ALREADY STABILIZED AREA OR INTO A STABLE WATERCOURSE.
5. THE GRAVEL OUTLET STRUCTURE SHALL BE INSPECTED AND REPAIRED AFTER EACH RUNOFF–PRODUCING RAIN. THE GRAVEL MUST BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED DUE TO SEDIMENT ACCUMULATION AMONG THE GRAVEL.

CHECK DAMS

1. THE MAXIMUM SPACING BETWEEN THE DAMS SHALL BE SUCH THAT THE TOE OF THE UPSTREAM DAM IS AT THE SAME ELEVATION AS THE TOP OF THE DOWNSTREAM DAM.
2. ROCK CHECK DAMS SHALL BE CONSTRUCTED OF 2–TO 4–INCH DIAMETER ROCK. THE ROCK MUST BE PLACED BY HAND OR MECHANICAL PLACEMENT (NO DUMPING OF ROCK TO FORM DAM) TO ACHIEVE COMPLETE COVERAGE OF THE DITCH OR SWALE AND TO INSURE THAT THE CENTER OF THE DAM IS LOWER THAN THE EDGES.
3. LOG CHECK DAMS SHALL BE CONSTRUCTED OF 4– TO 6–INCH DIAMETER LOGS. THE LOGS SHALL BE EMBEDDED INTO THE SOIL AT LEAST 18 INCHES.
4. IN THE CASE OF GRASS–LINED DITCHES AND SWALES, CHECK DAMS SHALL BE REMOVED WHEN THE GRASS HAS MATURED SUFFICIENTLY TO PROTECT THE DITCH OR SWALE. THE AREA BENEATH THE CHECK DAMS SHALL BE SEEDED AND MULCHED IMMEDIATELY AFTER DAM REMOVAL.
5. CHECK DAMS SHALL BE CHECKED FOR SEDIMENT ACCUMULATION AFTER EACH SIGNIFICANT RAINFALL. SEDIMENT SHALL BE REMOVED WHEN IT REACHES ONE HALF OF THE ORIGINAL DAM HEIGHT OR BEFORE.

PLASTIC COVERING

1. PLASTIC SHEETING SHALL HAVE A MINIMUM THICKNESS OF 6 MILLS AND SHALL MEET THE REQUIREMENTS OF STANDARD SPECIFICATIONS SECTION 9–14.5.
2. COVERING SHALL BE INSTALLED AND MAINTAINED TIGHTLY IN PLACE BY USING SANDBAGS OR TIRES ON ROPES WITH A MAXIMUM 10–FOOT GRID SPACING IN ALL DIRECTIONS. ALL SEAMS SHALL BE TAPED OR WEIGHTED DOWN FULL LENGTH AND THERE SHALL BE AT LEAST A 12 INCH OVERLAP OF ALL SEAMS.
3. CLEAR PLASTIC COVERING SHALL BE INSTALLED IMMEDIATELY ON AREAS SEEDED BETWEEN NOVEMBER 1 AND MARCH 31 AND REMAIN UNTIL VEGETATION IS FIRMLY ESTABLISHED.
4. WHEN THE COVERING IS USED ON UN–SEEDED SLOPES, IT SHALL BE KEPT IN PLACE UNTIL THE NEXT SEEDING PERIOD.
5. PLASTIC COVERING SHEETS SHALL BE BURIED TWO FEET AT THE TOP OF SLOPES IN ORDER TO PREVENT SURFACE WATER FLOW BENEATH SHEETS.
6. PROPER MAINTENANCE INCLUDES REGULAR CHECKS FOR RIPS AND DISLODGED ENDS.

MULCHING

1. MULCH MATERIALS USED SHALL BE AS SHOWN IN TABLE 9.3, AND SHALL BE APPLIED AS NOTED
2. MULCHES SHALL BE APPLIED IN ALL AREAS WITH EXPOSED SLOPES GREATER THAN 2:1.
3. MULCHING SHALL BE USED IMMEDIATELY AFTER SEEDING OR IN AREAS WHICH CANNOT BE SEEDED BECAUSE OF THE SEASON.
4. ALL AREAS NEEDING MULCH SHALL BE COVERED BY NOVEMBER 1.

SEEDING

1. SEED MIXTURE SHALL BE AS SHOWN IN TABLE 9.4 AND SHALL BE APPLIED AT THE RATE OF 120 POUNDS PER ACRE.
2. SEED BEDS PLANTED BETWEEN MAY 1 AND OCTOBER 31 WILL REQUIRE IRRIGATION AND OTHER MAINTENANCE AS NECESSARY TO FOSTER AND PROTECT THE ROOT STRUCTURE.
3. FOR SEED BEDS PLANTED BETWEEN OCTOBER 31 AND APRIL 30, ARMORING OF THE SEED BED WILL BE NECESSARY. (E.G., GEOTEXTILES, JUTE MAT, CLEAR PLASTIC COVERING).
4. BEFORE SEEDING, INSTALL NEEDED SURFACE RUNOFF CONTROL MEASURES SUCH AS GRADIENT TERRACES, INTERCEPTOR DIKES, SWALES, LEVEL SPREADERS AND SEDIMENT BASINS.
5. THE SEEDBED SHALL BE FIRM WITH A FAIRLY FINE SURFACE, FOLLOWING SURFACE ROUGHENING. PERFORM ALL CULTURAL OPERATIONS ACROSS OR AT RIGHT ANGLES TO THE SLOPE.
6. FERTILIZERS ARE TO BE USED ACCORDING TO SUPPLIERS RECOMMENDATIONS. AMOUNTS USED SHOULD BE MINIMIZED, ESPECIALLY ADJACENT TO WATER BODIES AND WETLANDS.

TOPSOIL STOCKPILING

1. STOCKPILES SHALL BE STABILIZED (WITH PLASTIC COVERING OR OTHER APPROVED DEVICE) DAILY BETWEEN NOVEMBER 1 AND MARCH 31.
2. IN ANY SEASON, SEDIMENT LEACHING FROM STOCK PILES MUST BE POSITIVELY PREVENTED.
3. TOPSOIL SHALL NOT BE PLACED WHILE IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBGRADE IS EXCESSIVELY WET, OR WHEN CONDITIONS EXIST THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING OR PROPOSED SODDING OR SEEDING.
4. PREVIOUSLY ESTABLISHED GRADES ON THE AREAS TO BE TOPSOILED SHALL BE MAINTAINED ACCORDING TO THE APPROVAL PLAN.

SOD PLACEMENT

1. SOD SHALL BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF 3/4–INCH AT THE TIME OF CURING. MEASUREMENTS FOR THICKNESS SHALL EXCLUDE TOP GROWTH AND THATCH.
2. STANDARD SIZE SECTIONS OF SOD SHALL BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT AND RETAIN THEIR SIZE AND SHAPE WHEN SUSPENDED BY THE END OF A 3 FOOT SECTION.
3. SOD SHALL NOT BE HARVESTED OR TRANSPLANTED WHEN MOISTURE CONTENT (EXCESSIVELY DRY OR WET) MAY ADVERSELY AFFECT ITS SURVIVAL.
4. SOD SHALL BE HARVESTED, DELIVERED AND INSTALLED WITHIN A PERIOD OF 36 HOURS.

CONSTRUCTION ENTRANCES

1. MATERIAL SHALL BE 4" TO 6" QUARRY SPALLS AND MAY BE TOP–DRESSED WITH 1" TO 3" ROCK. (STANDARD SPECIFICATIONS).
2. THE ROCK PAD SHALL BE AT LEAST 12 INCHES THICK AND 100 FEET LONG. WIDTH SHALL BE THE FULL WIDTH OF THE VEHICLE INGRESS AND EGRESS AREA. SMALLER PADS MAY BE APPROVED FOR SINGLE–FAMILY RESIDENTIAL AND SMALL COMMERCIAL SITES.
3. ADDITIONAL ROCK SHALL BE ADDED PERIODICALLY TO MAINTAIN PROPER FUNCTION OF THE PAD.
4. IF THE PAD DOES NOT ADEQUATELY REMOVE THE MUD FROM THE VEHICLE WHEELS, THE WHEELS SHALL BE HOSED OFF BEFORE THE VEHICLE ENTERS A PAVED STREET. THE WASHING SHALL BE DONE ON AN AREA COVERED WITH CRUSHED ROCK AND WASH WATER SHALL DRAIN TO A SEDIMENT RETENTION FACILITY OR THROUGH SILT FENCE.

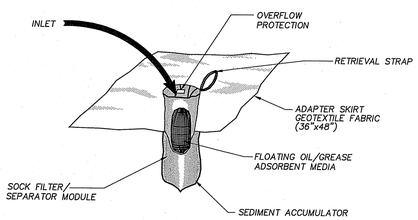
TABLE 9.3 GUIDE TO MULCH MATERIALS, RATES, AND USES

MULCH MATERIAL	QUALITY STANDARDS	APPLICATION RATES		DEPTH OF APPLICATION	REMARKS
		PER 1000 SQ FT	PER ACRE		
GRAVEL, CRUSHED STONE, OR SLAG	WASHED 3/4 TO 1 1/2" INCH	9 C.Y.		3 IN.	GOOD FOR SHORT SLOPE AND AROUND WOODY PLANTS. AND ORNAMENTS. USE WHERE SUBJECT TO FOOT TRAFFIC
HAY OR STRAW	AIR DRY, FREE FROM WEED SEED AND COARSE MATERIAL	75 TO 100 POUNDS (APPROX. 2 IN THICK)	1.5 TO 2.5 TONS 90 TO 120 BALES	MIN 2 IN	USE WHERE NEEDED FOR MORE THAN 3 MOS. SUBJECT TO BLOWING–KEEP MOIST OR TIED DOWN
WOOD FIBER CELLULOSE (PARTLY DIGESTED WOOD FIBERS)	NO GROWTH ORGANISM INHIBITING DIGESTED FACTORS	20 TO 30 POUNDS	1000 TO 1500 POUNDS		WHEN USED ON CRITICAL AREAS, DOUBLE APPLICATION RATE. HYDROMULCHER. NO TIE–DOWN REQUIRED.

TABLE 9.4 SEED MIXTURE FOR EROSION CONTROL

SEED MIXTURE FOR EROSION CONTROL FOR BIO–SWALES & DETENTION POND (SEE FARM PLAN FOR PLANTINGS REQUIREMENTS IN OTHER AREAS)

NAME	PROPORTIONS BY WEIGHT	PERCENT PURITY	PERCENT GERMINATION
REDTOP (ARGROSTIS ALBA)	10 PERCENT	92	90
ANNUAL RYE (LOLIUM)	40 PERCENT	98	90
CHEWING FESCUE (FESTUCA RUBA COMMUTATA) (JAMESTOWN, BANNER, SHADOW, OR KOKET)	40 PERCENT	97	80
WHITE DUTCH CLOVER (TRIFOLIUM REPENS) MULTIFLORUM)	10 PERCENT	96	90



CATCH BASIN SEDIMENT INSERT
N.T.S.
StreamGuard ™

NOTE:
CATCH BASIN INSERTS SHALL BE "STREAM GUARD" FOR SEDIMENT ONLY. CB INSERTS SHALL BE INSTALLED IN ALL NEW CATCH BASIN STRUCTURES & EXISTING CATCH BASINS AS SHOWN ON SHEET 2 & AS REQUIRED BY THE CITY OF LACEY

DOUGLAS H. M. EKLUND
STATE OF WASHINGTON
25474
REGISTERED
PROFESSIONAL ENGINEER
12-8-15

NO	DATE	BY	APPR	REVISIONS

JWM&A Civil • Municipal • Geotechnical • Land Surveying
Jerome W. Morrissette & Associates Inc., P.S.
1700 Cooper Pt. Road S.W. #B-2, Olympia, Wa. 98502-1110 Ph 360.352.9456 Fx 360.352.9990

D.E. 12–08–2015 DESIGNED BY DATE
M.D. 12–08–2015 C.A.D.D. BY DATE
D.E. 12–08–2015 CHECKED BY DATE
12–08–2015 DATE PLOTTED

Thurston PUD
Tanglewilde/Thompson Place
Water System

Standby Generator Installation
Erosion Control Details & Notes

14117 Standby Generator Building.dwg

SHT 7 OF 7

Z:\2014 Projects\141127 Thurston PUD\105 PS\Generator Backup RPT - Tanglewilde-Thompson PU\WMA Drawings\02 Design Drawings\141127 Standby Generator Building.dwg, 12/8/2015 3:45:28 PM, SAVIN 340WD PS