

CITY OF SHERWOOD

8073 - TONQUIN EMPLOYMENT AREA SANITARY UPGRADE

VOLUME 2 OF 2 - CONTRACT DRAWINGS (MARCH 2013)

COVER SHEET

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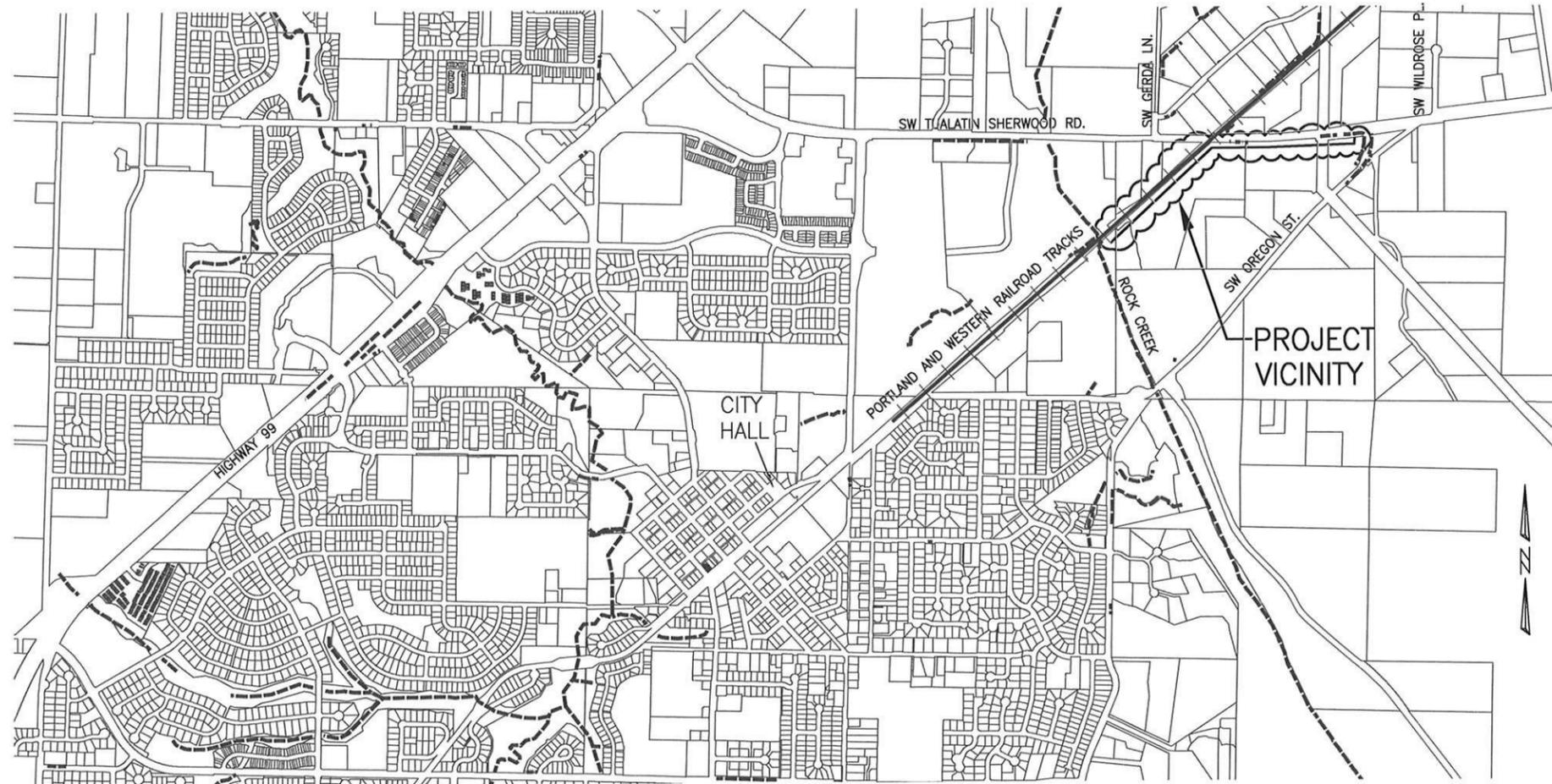
THIS DESIGN COMPLIES WITH ORS 92.044 (7) IN THAT NO UTILITY INFRASTRUCTURE IS DESIGNED TO BE WITHIN ONE (1) FOOT OF A SURVEY MONUMENT LOCATION SHOWN ON A SUBDIVISION OR PARTITION PLAT. NO DESIGN EXCEPTIONS NOR FINAL FIELD LOCATION CHANGES SHALL BE PERMITTED IF THAT CHANGE WOULD CAUSE ANY UTILITY INFRASTRUCTURE TO BE PLACED WITHIN THE PROHIBITED AREA.

DEVELOPER / OWNER:
CITY OF SHERWOOD
22560 SW PINE ST
SHERWOOD, OREGON 97140
CONTACT: CRAIG CHRISTENSEN, P.E.
PH. 503-925-2301
CHRISTENSEN@SHERWOODOREGON.GOV

EXISTING CONDITIONS SURVEYOR:
AKS ENGINEERING & FORESTRY
13910 SW GALBREATH DR, STE 100
SHERWOOD, OREGON 97140
CONTACT: NICK WHITE, P.L.S.
PH. 503-925-8799
NICK@AKS-ENG.COM

TREE INVENTORY SURVEYOR:
AKS ENGINEERING & FORESTRY
13910 SW GALBREATH DR, STE 100
SHERWOOD, OREGON 97140
CONTACT: KEITH JEHNKE, P.E., P.L.S.
PH. 503-925-8799
KEITH@AKS-ENG.COM

ENVIRONMENTAL DELINEATION AND REMEDIATION PLAN:
PACIFIC HABITAT SERVICES, INC.
9450 SW COMMERCE CIRCLE, SUITE 180
WILSONVILLE, OR 97070
CONTACT: JOHN VAN STAVEREN
PH. 503-570-0800
JVS@PACIFICHABITAT.COM



VICINITY MAP
NOT TO SCALE

NEIGHBOR CONTACTS:
SHERWOOD ROAD, LLC
CONTACT: STEVE DURELL
PH. (503) 625-5293
CASCADE COLUMBIA DISTRIBUTION
STEVED@CASCADECOLUMBIA.COM

LEICHTNER TRUST
CONTACT: BARRY GRAHAM
PH. (503) 625-6177, X125
PRIDE DISPOSAL
BARRYG@PRIDEDISPOSAL.COM

INSPECTOR INFORMATION:

CITY OF SHERWOOD: ANDY STIRLING (503) 925-2307
WASHINGTON COUNTY: MATTHEW AASE (503) 846-7628
CONTACT INSPECTOR 48 HOURS PRIOR TO CONSTRUCTION.



ATTENTION EXCAVATORS: OREGON LAW REQUIRES YOU TO FOLLOW RULES ADOPTED BY THE OREGON UTILITY NOTIFICATION CENTER. THOSE RULES ARE SET FORTH IN OAR 952-011-0010 THROUGH OAR 952-001-0090. YOU MAY OBTAIN COPIES OF THESE RULES FROM THE CENTER BY CALLING (503) 232-1987. IF YOU HAVE ANY QUESTIONS ABOUT THE RULES, YOU MAY CONTACT THE CENTER. YOU MUST NOTIFY THE CENTER AT LEAST 2 BUSINESS DAYS, BEFORE COMMENCING ANY EXCAVATION. CALL (503) 246-6699.

SURVEY INFORMATION:

VERTICAL DATUM: NGVD29
HORIZONTAL DATUM: NAD83 (OREGON STATE PLANE NORTH)

BENCH MARK INFORMATION:

WASHINGTON COUNTY BENCHMARK #103, A 2" BRASS DISK IN CONCRETE LOCATED AT THE SOUTHWEST CORNER OF THE INTERSECTION OF TUALATIN-SHERWOOD ROAD AND THE RAILROAD CROSSING BETWEEN GERDA LANE AND OREGON STREET IN THE CITY OF SHERWOOD
ELEV. = 171.38 (NGVD29)

8073-TONQUIN EMPLOYMENT AREA
SANITARY UPGRADE

LOCATED IN SECTIONS 29DA, 28CB AND 28CA, T2S, R1W,
W.M. IN THE CITY OF SHERWOOD, WASHINGTON COUNTY,
STATE OF OREGON

CITY OF SHERWOOD
ENGINEERING DEPARTMENT
22560 SW PINE STREET
SHERWOOD, OREGON 97140
PHONE: (503) 925-2309
FAX: (503) 925-0829
E-MAIL: engineering@sherwoodoregon.gov



DESIGNED BY:	CCC
DRAWN BY:	AGS/CCC
CHECKED BY:	JMW
FULL SIZE SCALE:	AS NOTED
DATE:	MARCH 25, 2013
8073 - TONQUIN EMPLOYMENT AREA SANITARY UPGRADE - SHEETS - PLAN AND PROFILE	

JOB NO. 8073	
SHEET NO.	1
OF 11	
REVISIONS	

GENERAL NOTES

- ALL CONSTRUCTION WORK, MATERIALS AND TESTING SHALL CONFORM TO APPLICABLE CITY OF SHERWOOD STANDARD CONSTRUCTION SPECIFICATIONS, CLEAN WATER SERVICES (CWS) DESIGN AND CONSTRUCTION STANDARDS, UNIFORM PLUMBING CODE (UPC) AND UNIFORM BUILDING CODE (UBC). CONTRACTOR AND SUBCONTRACTOR(S) SHALL HAVE A MINIMUM OF ONE SET OF APPROVED PLANS AND CITY OF SHERWOOD CONSTRUCTION SPECIFICATIONS ON THE JOB SITE AT ALL TIMES DURING CONSTRUCTION.
- CONTRACTOR SHALL OBTAIN A CITY OF SHERWOOD LICENSE BEFORE STARTING CONSTRUCTION.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL UTILITY LOCATIONS PRIOR TO CONSTRUCTION AND ARRANGE FOR THE RELOCATION OF ANY IN CONFLICT WITH THE PROPOSED CONSTRUCTION AT NO COST TO THE CITY. THE LOCATIONS, DEPTH AND DESCRIPTION OF EXISTING UTILITIES SHOWN WERE COMPILED FROM AVAILABLE RECORDS AND/OR FIELD SURVEYS. THE ENGINEER OR UTILITY COMPANIES DO NOT GUARANTEE THE ACCURACY OR THE COMPLETENESS OF SUCH RECORDS. ADDITIONAL UTILITIES MAY EXIST WITHIN THE WORK AREA. COST OF ANY UTILITY RELOCATION IS INCIDENTAL.
- OREGON LAW REQUIRES THE CONTRACTOR TO FOLLOW RULES ADOPTED BY THE OREGON UTILITY NOTIFICATION CENTER. THOSE RULES ARE SET FORTH IN OAR 952-001-0010 THROUGH OAR 952-001-0090. THE CONTRACTOR MAY OBTAIN COPIES OF THESE RULES FROM THE CENTER BY CALLING (503) 232-1987 OR BY ACCESSING THE INTERNET AT WWW.STATE.OR.US/GOVERNMENT.HTM. THE CONTRACTOR MUST NOTIFY THE CENTER AT LEAST 2 BUSINESS DAYS, BUT NOT MORE THAN 10 BUSINESS DAYS, BEFORE COMMENCING AN EXCAVATION. CALL (503) 246-6699.
- THE CONTRACTOR SHALL MAKE PROVISIONS TO KEEP ALL EXISTING UTILITIES IN SERVICE AND PROTECT THEM DURING CONSTRUCTION. CONTRACTOR SHALL IMMEDIATELY REPAIR OR REPLACE ANY DAMAGED UTILITIES USING MATERIAL AND METHODS APPROVED BY THE UTILITY OWNER. NO SERVICE INTERRUPTIONS SHALL BE PERMITTED WITHOUT PRIOR WRITTEN AGREEMENT WITH THE UTILITY PROVIDER.
- THE CONTRACTOR SHALL PRUNE ALL VEGETATION, AS NECESSARY, AS WELL AS ANY ROOT PRUNING AS DETERMINED BY THE ENGINEER. THE CONTRACTOR SHALL PROTECT ALL EXISTING LANDSCAPING THAT IS TO REMAIN.
- CONTRACTOR SHALL NOTIFY THE CITY OF SHERWOOD 48 HOURS IN ADVANCE OF STARTING CONSTRUCTION AND 24 HOURS BEFORE RESUMING WORK AFTER SHUTDOWNS, EXCEPT FOR NORMAL RESUMPTION OF WORK FOLLOWING SATURDAYS, SUNDAYS, OR HOLIDAYS.
- CONTRACTOR SHALL REMOVE AND DISPOSE OF TREES, STUMPS, BRUSH, ROOTS, BOULDERS, MISCELLANEOUS DEBRIS AND OTHER EXCESS MATERIAL OFFSITE. MATERIALS SHALL BE DISPOSED OF IN SUCH A MANNER AS TO MEET ALL APPLICABLE REGULATIONS.
- CONSTRUCTION VEHICLES SHALL PARK ON THE CONSTRUCTION SITE OR AT A LOCATION(S) INDICATED ON AN APPROVED PLAN. HOURS OF CONSTRUCTION SHALL BE 7:30 AM TO 6:00 PM, MONDAY THROUGH FRIDAY, EXCEPT WHEN WORKING OR IMPACTING TRAFFIC WITHIN WASHINGTON COUNTY RIGHT-OF-WAY WHICH SHALL BE 9:00 AM TO 3:00 PM MONDAY THROUGH FRIDAY. CONSTRUCTION IS PROHIBITED ON SATURDAY AND SUNDAY UNLESS WRITTEN APPROVAL IS OBTAINED FROM THE CITY ENGINEER AND CITY MANAGER. CONSTRUCTION ACTIVITIES INCLUDE ALL FIELD MAINTENANCE OF EQUIPMENT, REFUELING, AND PICK UP AND DELIVERY OF EQUIPMENT AS WELL AS THE ACTUAL CONSTRUCTION ACTIVITY.
- AT THE END OF EACH WORK DAY, THE CONTRACTOR SHALL CLEAN UP THE PROJECT AREA AND LEAVE IT IN A NEAT AND SECURED MANNER. UPON COMPLETION, THE CONTRACTOR SHALL LEAVE THE PROJECT AREA FREE OF DEBRIS AND UNUSED MATERIAL.
- THE CONTRACTOR SHALL PERFORM ALL WORK NECESSARY TO COMPLETE THIS PROJECT IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS INCLUDING SUCH INCIDENTALS AS MAY BE NECESSARY TO MEET THE INTENT OF THE PROJECT CONTRACT DOCUMENTS, APPLICABLE AGENCY REQUIREMENTS AND OTHER WORK AS NECESSARY TO PROVIDE A COMPLETE PROJECT.
- CONTRACTOR SHALL PROVIDE EFFECTIVE EROSION PROTECTION TO INCLUDE, BUT NOT BE LIMITED TO, GRADING, DITCHING, STRAW WATTLES, TRIANGULAR SILT DAMS, SILT FENCING, AND SEDIMENT BARRIERS TO MINIMIZE EROSION AND IMPACT TO ADJACENT PROPERTY. SEE EROSION AND SEDIMENT CONTROL NOTES AND PLANS.
- THE CONTRACTOR SHALL MAINTAIN AND COORDINATE ACCESS TO ALL AFFECTED PROPERTIES. THE CONTRACTOR SHALL NOTIFY AFFECTED RESIDENTS A MINIMUM OF 48 HOURS PRIOR TO ANY DRIVEWAY CLOSURES AND ASSIST PROPERTY OWNER WITH ALTERNATIVE PARKING AND ACCESS. PEDESTRIAN ACCESS TO ENTRANCES SHALL BE MAINTAINED AT ALL TIMES. THE CONTRACTOR WILL PROVIDE RAMPS OR OTHER APPROVED METHODS FOR MAINTAINING ACCESS TO ENTRANCES. RAMPS SHALL BE ADA COMPLIANT, APPROVED BY THE ENGINEER, AND INCIDENTAL TO THE CONTRACT.
- IF GROUND WATER SPRINGS ARE ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY CONTACT THE PROJECT ENGINEER. THE CONTRACTOR SHALL TAKE MEASURES TO ENSURE THAT THE WATER IS NOT CONVEYED THROUGH UTILITY TRENCHES AND THE NATURAL FLOW PATH OF THE SPRING IS ALTERED AS LITTLE AS PRACTICABLE.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO VISIT THE SITE AND VERIFY ALL EXISTING CONDITIONS BEFORE THE START OF WORK. THE CONTRACTOR SHALL TAKE ALL NECESSARY FIELD MEASUREMENTS AND OTHERWISE VERIFY ALL DIMENSIONS AND EXISTING CONSTRUCTION CONDITIONS INDICATED AND/OR SHOWN ON THE PLANS. SHOULD ANY ERROR OR INCONSISTENCY EXIST, THE CONTRACTOR SHALL NOT PROCEED WITH THE WORK AFFECTED UNTIL REPORTED TO THE PROJECT ENGINEER FOR CLARIFICATION OR CORRECTION.
- ANY INSPECTION BY THE CITY, COUNTY, STATE, FEDERAL AGENCY OR PROJECT ENGINEER SHALL NOT, IN ANY WAY, RELIEVE THE CONTRACTOR FROM ANY OBLIGATION TO PERFORM THE WORK IN COMPLIANCE WITH THE APPLICABLE CODES, REGULATIONS, CITY STANDARDS AND PROJECT CONTRACT DOCUMENTS.
- THE CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN FOR APPROVAL TO WASHINGTON COUNTY PRIOR TO THE START OF CONSTRUCTION IN ACCORDANCE WITH THE SPECIFICATIONS. TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH THE CURRENT MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
- THE CONTRACTOR SHALL PROVIDE TO THE CITY PROJECT MANAGER AND PROJECT ENGINEER A 24 HOUR CONTACT PERSON AND NUMBER.
- NO TRENCHES OR PITS WILL BE ALLOWED TO REMAIN OPEN OVERNIGHT. ALL TRENCHES AND PITS SHALL BE COVERED WITH STEEL PLATES OR FILLED IN AT NIGHT.
- PROPERTY LINES SHOWN ON ALL PLAN SHEETS ARE FOR GENERAL DELINEATION ONLY AND ARE, BY NO MEANS, MEANT TO REPRESENT THE ACTUAL BOUNDARIES.
- CONTRACTOR TO MAINTAIN ONE COMPLETE SET OF DRAWINGS ON SITE FOR THE SOLE PURPOSE OF CONTRACTOR RECORDING AS-BUILT INSTALLATION OF IMPROVEMENTS. COMPLETE AS-BUILT INFORMATION SHALL BE SUBMITTED TO THE PROJECT ENGINEER UPON COMPLETION OF CONSTRUCTION.
- THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR COMPLYING WITH ALL CONSTRUCTION SAFETY, HEALTH AND OTHER RULES AND REGULATIONS FROM OSHA, DEQ, STATE, AND LOCAL REGULATING AGENCIES FOR SAFETY AND INSTALLATION OF THE WORK INCLUDING BUT NOT LIMITED TO SHORING, BRACING, ERECTION/INSTALLATION, FALL PROTECTION, GUARDRAILS, ETC.
- THE NATIVE SUBGRADE SURFACE SHALL BE APPROVED BY THE ENGINEER BEFORE SCARIFYING OR PLACING ANY FILL OR BASE ROCK. THE UPPER 8 INCHES OF NATIVE SUBGRADE IS TO BE SCARIFIED, DRIED AND RECOMPACTED TO 95% MAXIMUM DRY DENSITY PER ASTM D698 (199, STANDARD PROCTOR). PLACE GEOTEXTILE FABRIC (MIRAFI 500X OR EQUAL) BELOW A.C. PAVEMENT BASE ROCK AREAS. ON-SITE COMPACTION TESTS AND PROOF ROLL DEFLECTION TEST(S) PERFORMED WITH A 35,000 LB. VEHICLE MUST BE PERFORMED AND WITNESSED AS DIRECTED BY THE ENGINEER. NO DEFLECTION IS ALLOWED AND ALL A.C. PAVEMENT AREAS MUST BE TESTED. PROVIDE PROOF-ROLL TEST OVER THE BASE ROCK SURFACES PRIOR TO PLACEMENT OF ANY PAVEMENT.
- 3/4"-0" CRUSHED ROCK PIPE ZONE AND GRANULAR BACKFILL MATERIAL IS REQUIRED FOR ALL UTILITY LINES AND CONDUITS UNLESS NOTED OTHERWISE. REFER TO PROFILES AND TYPICAL TRENCH DETAILS.
- ALL JOINTS BETWEEN NEW A.C. AND CONCRETE STRUCTURES MUST BE TACKED. ALL JOINTS BETWEEN NEW A.C. AND EXISTING ASPHALT MUST BE TACKED AND SAND SEALED.
- WHEN MATCHING EXISTING PAVEMENT, SAWCUT TO FIRM PAVEMENT. MINIMUM SAWCUT IS 1' FROM EXISTING EDGE OF PAVEMENT OR AS SHOWN ON PLANS. SAWCUT LOCATION TO BE APPROVED BY INSPECTOR.
- T-CUT ASPHALT & PAVEMENT REPAIR SHALL BE DONE IN ACCORDANCE WITH THE CITY OF SHERWOOD STANDARD DRAWING RD-47.
- EXISTING UNDERGROUND PRIVATE UTILITY LOCATIONS ARE SHOWN SCHEMATICALLY. ACTUAL LOCATIONS MAY VARY. THE CONTRACTOR SHALL BE RESPONSIBLE TO NOTIFY THE OREGON UTILITY NOTIFICATION CENTER PRIOR TO EXCAVATING.
- FUEL, HAZARDOUS MATERIAL OR ANY EQUIPMENT CONTAINING FUEL OR HAZARDOUS MATERIAL SHALL BE LOCATED WITHIN THE STAGING AREA AT THE END OF EACH DAY. ANY CONTAMINATED SOILS OR AGGREGATES DUE TO CONSTRUCTION OPERATIONS SHALL BE REMOVED AND DISPOSED OF AT THE CONTRACTOR'S EXPENSE. NEW MATERIALS SHALL BE IMPORTED AND INSTALLED TO REPLACE THE REMOVED MATERIALS AT THE CONTRACTOR'S EXPENSE.

SANITARY AND STORM DRAIN NOTES

- PIPE RULES:
 - WATERTIGHT GASKETS ARE REQUIRED ON ALL PIPE SIZES.
 - ALL OPEN TRENCH SEWER PIPING SHALL BE PVC, ASTM D 3034, SDR 35 OR PVC, C-905. COMPATIBLE FITTINGS MUST BE USED. ALL PIPE USED MUST BE OF WATERTIGHT JOINTS AND BE PRESSURE TESTED IF SO REQUIRED BY THE CITY. USE OF "CONCRETE" OR OTHER PLASTIC PIPE FOR OPEN TRENCH SEWER MAINS AND LATERALS IS NOT ALLOWED.
- TRENCH BACKFILL SHALL BE GRANULAR IN ALL PUBLIC RIGHT-OF-WAYS AND PAVED/GRAVELLED AREAS IN THE PROJECT. TRENCH BACKFILL MAY BE CLASS "A" FOR AREAS OUTSIDE PUBLIC RIGHT-OF-WAYS AND OUTSIDE OF PAVED AND GRAVEL SURFACED AREAS, PER SHERWOOD STANDARD DRAWING RD-47.
- MANHOLE WALLS SHALL BE PRECAST REINFORCED CONCRETE OF THE SIZE REQUIRED PER MANUFACTURER'S RECOMMENDATIONS FOR THE PIPE SIZES AND NUMBER OF OPENINGS.
- IF DRAINAGE FIELD TILE IS ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER AND THE CITY'S INSPECTOR. THE INTENT WILL BE TO CONNECT ANY FUNCTIONING DRAIN TILE SYSTEM TO THE STORM DRAIN SYSTEM IN AN APPROPRIATE MANNER. SUCH CONNECTION MUST BE NOTED ON THE AS-BUILT DRAWINGS AND MUST BE APPROVED BY THE PROJECT ENGINEER AS WELL AS THE CITY'S INSPECTOR.
- ALL MANHOLE RIMS NOT IN PAVEMENT/GRAVELLED AREAS, AND NOT IN THE ROADWAY RIGHT-OF-WAY OF A PAVED ROAD, SHALL BE SIX INCHES (6") ABOVE FINISHED GRADE OR AS NOTED.
- ALL MANHOLES SHALL HAVE A CAST IRON MANHOLE FRAME AND COVER GROUTED TO JUST UNDER THE TOP OF THE FRAME. ALL MANHOLE COVERS SHALL BE BOLTED DOWN WITH A MINIMUM OF TWO STAINLESS STEEL BOLTS.
- ALL MANHOLES OUTSIDE OF GRAVELED AREAS SHALL HAVE A ORANGE CARSONITE POST DRIVEN 18 INCHES MINIMUM INTO THE GROUND WITH 48 INCHES MINIMUM OF EXPOSURE ABOVE GROUND. LOCATION AND DIRECTION OF THE CARSONITE POST TO BE APPROVED BY THE INSPECTOR.
- ALL MATERIALS, INSPECTIONS AND TESTS ARE TO BE IN ACCORDANCE WITH CITY OF SHERWOOD AND/OR CWS SPECIFICATIONS. ALL SECTIONS FAILING TO PASS THE REQUIRED TESTS AND INSPECTIONS SHALL BE LOCATED AND REPAIRED. AFTER REPAIR, THESE SECTIONS SHALL BE RETESTED AND INSPECTED UNTIL FOUND ACCEPTABLE.
- SEWER LINES SHALL BE LAID IN A STRAIGHT ALIGNMENT AND IN A UNIFORM GRADE BETWEEN THE MANHOLES AND CLEANOUTS.
- ALL SANITARY LINES SHALL BE MANDREL, VIDEO AND AIR TESTED. SANITARY SEWER MANHOLES SHALL BE HYDROSTATICALLY TESTED OR VACUUM TESTED. TESTING AND INSPECTION SHALL BE IN ACCORDANCE WITH CITY OF SHERWOOD AND CWS STANDARDS.
- CITY WITNESSED VIDEO INSPECTION TO OCCUR AFTER SEWER TRENCH HAS BEEN BACKFILLED TO FINISH GRADE. SHOULD THE CONTRACTOR HAVE QUESTIONS REGARDING THE VIDEO, CITY INSPECTOR SHALL PROVIDE A RECOMMENDATION UPON THE ACCEPTABILITY OF THE SECTION IN QUESTION. TESTS TO BE WITNESSED BY THE CITY; A MINIMUM OF 48-HOURS NOTICE IS REQUIRED.
- ALL OTHER CONSTRUCTION PRACTICES (RELATING TO SANITARY AND STORM SEWER) WITHIN THE CITY'S PUBLIC RIGHT-OF-WAY, NOT COVERED IN THESE "GENERAL REQUIREMENTS" AND/OR "CONSTRUCTION DETAILS" SECTIONS, SHALL COMPLY WITH THE RULES AND REGULATIONS OF THE MOST RECENT EDITION OF THE "CWS DESIGN & CONSTRUCTION STANDARDS."
- ALL NEW SANITARY SEWER PIPES AND MANHOLES SHALL BE TESTED, CLEANED AND VIDEOED PRIOR TO FINAL ACCEPTANCE. NEW SANITARY SEWER FACILITIES MUST BE ACCEPTED BY THE INSPECTOR PRIOR TO RECONNECTION OF THE EXISTING SANITARY SYSTEM.
- ALL FERNCO COUPLINGS SHALL BE STRONG BACK RC SERIES COUPLINGS OR CITY APPROVED EQUIVALENT.

CONSTRUCTION TIMING NOTES

- ALL WORK UNDER THE CONTRACT, EXCEPT SEEDING AND VEGETATION ESTABLISHMENT, MUST BE COMPLETED BY SEPTEMBER 30, 2013.
- PROJECT CONSTRUCTION MAY NOT COMMENCE UNTIL JULY 1, 2013.
- IF STANDING WATER EXISTS WITHIN THE FLOODPLAIN WITHIN THE AREA OF WORK, THEN WORK WITHIN THE FLOODPLAIN WILL BE PERFORMED BETWEEN JULY 15 AND SEPTEMBER 30.

SECURITY FENCING NOTE

- EXISTING SECURITY FENCING AROUND BUSINESSES SHALL COMPLETELY ENCLOSED THE BUSINESS AREA AT THE END OF EACH DAY. CONTRACTOR MAY NEED TO SUPPLY TEMPORARY FENCING AS NEEDED. ALL FENCING WORK TO BE PAID UNDER "REMOVAL AND REINSTALLATION OF FENCING"

LEGEND

EXISTING		EXISTING	
DECIDUOUS TREE		STORM SEWER CLEAN OUT	
CONIFEROUS TREE		STORM SEWER CATCH BASIN	
FIRE HYDRANT		STORM SEWER MANHOLE	
WATER METER		GAS METER	
WATER VALVE		GAS VALVE	
IRRIGATION VALVE		GUY WIRE ANCHOR	
SANITARY SEWER CLEAN OUT		POWER POLE	
SANITARY SEWER MANHOLE		POWER VAULT	
SIGN		POWER JUNCTION BOX	
STREET LIGHT		POWER PEDESTAL	
MAILBOX		COMMUNICATIONS VAULT	
		COMMUNICATIONS JUNCTION BOX	
		COMMUNICATIONS RISER	

EXISTING		SURVEY LEGEND	
RIGHT-OF-WAY LINE		•	FOUND MONUMENT
BOUNDARY LINE		▲	SET BENCHMARK
PROPERTY LINE		DOC. NO.	DOCUMENT NUMBER PER WASHINGTON COUNTY DEED RECORDS
CENTERLINE		IP	IRON PIPE
DITCH		IR	IRON ROD
CURB		W/YPC	WITH A YELLOW PLASTIC CAP SURVEY NUMBER PER WASHINGTON COUNTY SURVEY RECORDS
EDGE OF PAVEMENT		SN	
EASEMENT			
FENCE LINE			
GRAVEL EDGE			
POWER LINE		PWR	
OVERHEAD WIRE		OHW	
COMMUNICATIONS LINE		COM	
FIBER OPTIC LINE		CFO	
GAS LINE		GAS	
STORM SEWER LINE		STM	
SANITARY SEWER LINE		SAN	
WATER LINE		WAT	
SIDEWALK RAMP			

GENERAL NOTES

8073-TONQUIN EMPLOYMENT AREA SANITARY UPGRADE

LOCATED IN SECTIONS 280A, 280B AND 28CA, T2S, R1W, W.M. IN THE CITY OF SHERWOOD, WASHINGTON COUNTY, STATE OF OREGON

CITY OF SHERWOOD ENGINEERING DEPARTMENT
22560 SW PINE STREET
SHERWOOD, OREGON 97140
PHONE: (503) 925-2309
FAX: (503) 625-0629
E-MAIL: engineering@sherwoodoregon.gov

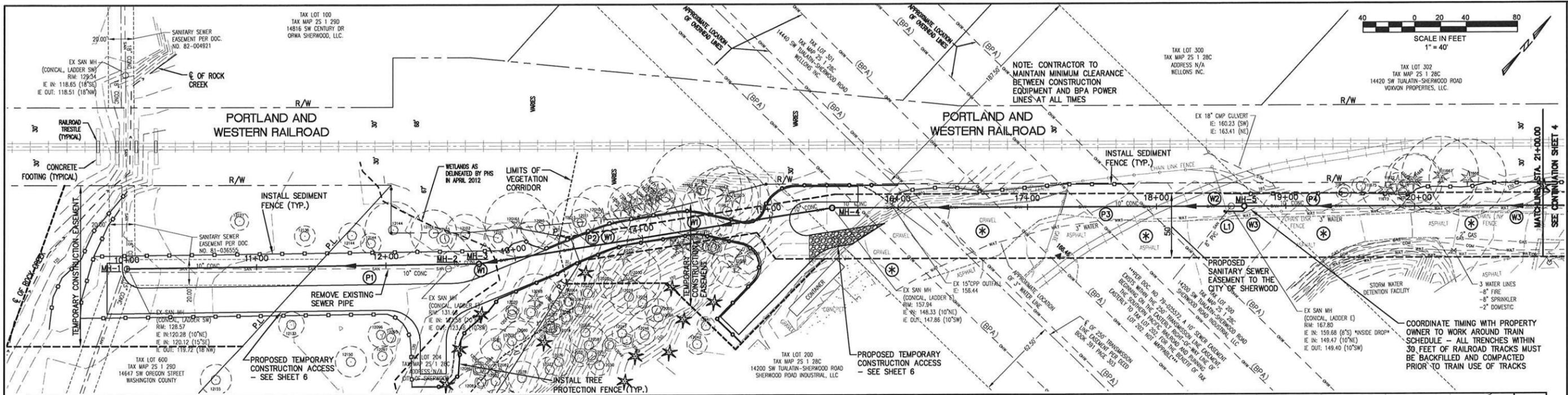
DESIGNED BY: CCC
DRAWN BY: ABS/CCC
CHECKED BY: JMW
FULL SIZE SCALE:
DATE: MARCH 25, 2013

REVISIONS

JOB NO. **8073**

SHEET NO. **2**

OF **11**



SANITARY KEY NOTES

- MH-1**
STA. 10+00.00
EX. SANITARY MANHOLE
RIM 128.57
EX. 15" I.E. IN (SE)=120.12
EX. 10" I.E. IN (NE)=120.28
NEW 15" I.E. IN (NE)=120.28
EX. 18" I.E. OUT (NW)=119.72
- RECHANNEL BASE FOR NEW 15" PIPE FROM NORTHEAST
- INSTALL NEW WATERTIGHT MANHOLE FRAME AND COVER
- INCIDENTAL TO BID ITEM "CONNECTION TO EXISTING MANHOLE"
- MH-2**
REMOVE EX. SANITARY MANHOLE AND BACKFILL WITH CLASS "A" BACKFILL
- MH-3**
STA. 12+71.85
INSTALL NEW SANITARY MANHOLE AND WATER TIGHT FRAME AND COVER
RIM 132.20± (18" MIN. ABOVE FINISH GRADE)
15" I.E. IN (NE)=122.62
15" I.E. OUT (SW)=122.42
- MH-4**
STA. 15+48.66
REMOVE EX. SANITARY MANHOLE AND INSTALL NEW SANITARY MANHOLE AND WATER TIGHT FRAME AND COVER
RIM 157.80± (6" MIN. ABOVE FINISH GRADE)
18" I.E. IN (NE)=148.09
15" I.E. OUT (SW)=147.80
- MH-5**
EX. STA. 18+57.93
REMOVE EX. SANITARY MANHOLE NEW STA. 18+67.93
INSTALL NEW SANITARY MANHOLE AND WATER TIGHT FRAME AND COVER
RIM 167.10± (6" MIN. ABOVE FINISH GRADE)
8" I.E. IN (S)=158.80
INSTALL INSIDE DROP
15" I.E. IN (NE)=149.25
18" I.E. OUT (SW)=149.19

NOTE: ALL NEW MANHOLE CONES SHALL BE CONCENTRIC.

NOTE: NEW PIPING AND MANHOLES WILL NOT BE ALLOWED TO RECEIVE SANITARY FLOW UNTIL TESTED, CLEANED AND APPROVED.

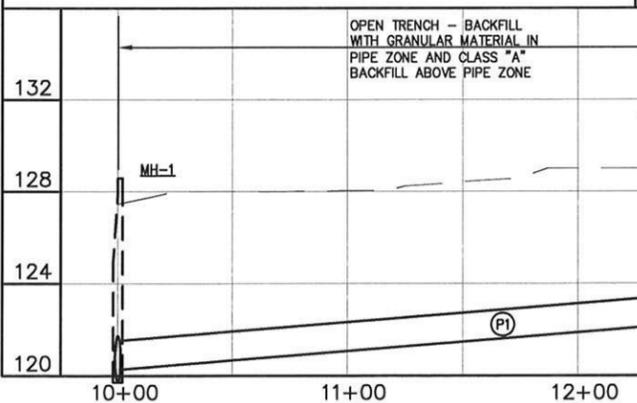
NOTE: THE COST OF INSTALLING AND MAINTAINING ALL NECESSARY SANITARY BYPASS FACILITIES IS COVERED UNDER BID ITEM "SANITARY BYPASS FACILITIES"

NOTE: THE COST OF INSTALLING AND MAINTAINING ALL STORM DRAINAGE BYPASS FACILITIES NECESSARY IS COVERED UNDER BID ITEM "TEMPORARY DRAINAGE FACILITIES"

INSTALL CARSONITE MARKER (CRM 307204) AT MH-1 AND MH-3. DRIVE INTO EXISTING GROUND 2.5 FEET. INCIDENTAL TO BID ITEM "CONCRETE SANITARY SEWER MANHOLE"

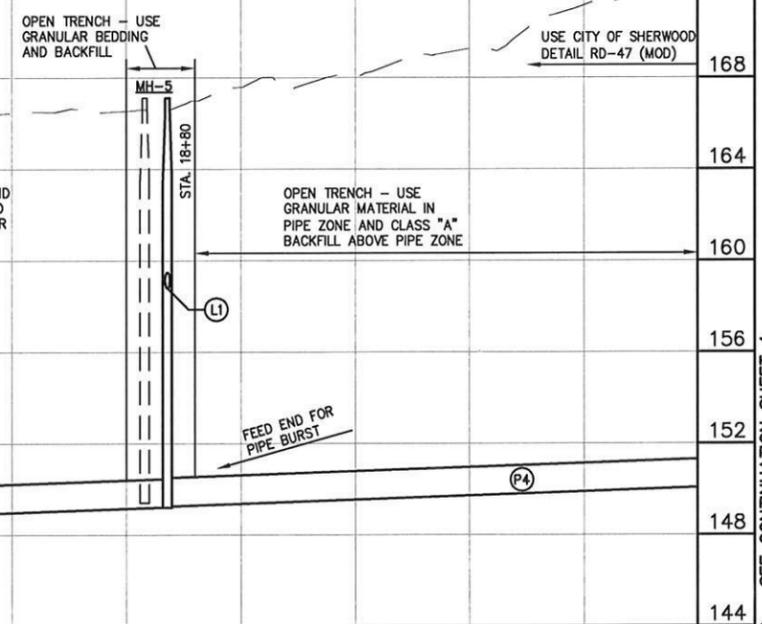
OPEN TRENCH - BACKFILL WITH GRANULAR MATERIAL IN PIPE ZONE AND CLASS "A" BACKFILL ABOVE PIPE ZONE

CAUTION: SHALLOW CONCRETE PIPE - INSTALL SANITARY BYPASS FROM MH-4 TO MH-1 PRIOR TO DRIVING OVER PIPE



SANITARY PROFILE
(STA. 10+00.00 TO STA. 21+00.00)
SCALE: 1" = 40' HORIZONTAL
1" = 4' VERTICAL

NOTE: CONTRACTOR TO MAINTAIN 15' MINIMUM CLEARANCE BETWEEN CONSTRUCTION EQUIPMENT AND BPA POWER LINES WITHIN EASEMENT AT ALL TIMES.



SANITARY KEY NOTES

- (P1) INSTALL 15" PVC D3034, SDR 35 (OPEN TRENCH)
L=267.65' S=0.80%
- (P2) INSTALL 15" PVC D3034, SDR 35 (OPEN TRENCH)
L=272.81' S=9.23%
- (P3) INSTALL 18" O.D. HDPE DR17 15.75" I.D. (PIPE BURST)
L=315.27' S=0.35%
- (P4) INSTALL 15" PVC C905, DR18 (OPEN TRENCH)
L=299.80' S=0.35%
- (L1) INSTALL 8" PVC D3034, SDR 35 L=±20' S=2.0% MIN. + TWO 8" 45° BENDS + 8" WYE + 8" C.O. TO F.G. ONCE NEW PIPING HAS BEEN TESTED AND APPROVED, CONNECT TO EXISTING SANITARY LATERAL WITH FERNCO - TO BE PAID UNDER BID ITEM "RECONNECT EXISTING SEWER LATERAL"
- (W1) CAUTION: SHALLOW CONCRETE PIPE - INSTALL SANITARY BYPASS FROM MH-3 TO MH-1 PRIOR TO DRIVING OVER PIPE
- (W2) TEMPORARILY RELOCATE FENCE AND GATE AS NECESSARY. FENCING TO BE CLOSED AND LOCKED AT THE END OF EACH WORK DAY. GIVE SET OF LOCK KEYS TO STEVE DURRELL. REINSTALL FENCING BACK TO ORIGINAL LOCATION AFTER CONSTRUCTION.
- (W3) CAUTION: EXISTING WATER LINE - SECURE AS NECESSARY (COST INCIDENTAL) - DO NOT DAMAGE. ANY DAMAGE TO EXISTING WATER LINE WILL BE REPAIRED BY THE CONTRACTOR AT HIS EXPENSE.
- (*) DRIVEWAY TO BE USED FOR CONSTRUCTION ACCESS. ANY DAMAGE TO EXISTING DRIVEWAY SHALL BE REPAIRED/REPLACED, AS DETERMINED BY THE ENGINEER, AT THE CONTRACTOR'S EXPENSE.

SANITARY SEWER PLAN AND PROFILE SOUTHWEST

8073-TONQUIN EMPLOYMENT AREA SANITARY UPGRADE

LOCATED IN SECTIONS 28DA, 28CB AND 28CA, T2S, R1W, W1M, IN THE CITY OF SHERWOOD, WASHINGTON COUNTY, STATE OF OREGON

CITY OF SHERWOOD
ENGINEERING DEPARTMENT
22560 SW PINE STREET
SHERWOOD, OREGON 97140

PHONE: (503) 925-2309
FAX: (503) 625-0629
E-MAIL: engineering@sherwoodoregon.gov

DESIGNED BY: CCC
DRAWN BY: ACS/CCC
CHECKED BY: JMW
FULL SIZE SCALE: AS NOTED
DATE: MARCH 25, 2013
JOB NO. **8073**
SHEET NO. **3**
OF **11**

REVISIONS

KEY NOTES

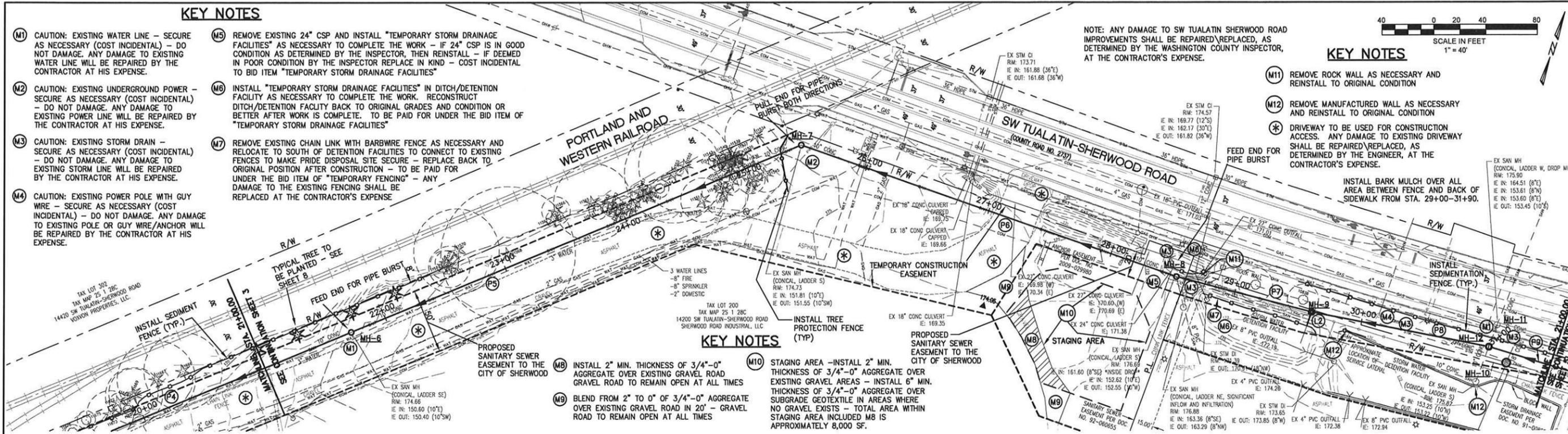
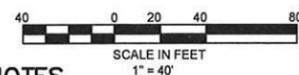
- (M1) CAUTION: EXISTING WATER LINE - SECURE AS NECESSARY (COST INCIDENTAL) - DO NOT DAMAGE. ANY DAMAGE TO EXISTING WATER LINE WILL BE REPAIRED BY THE CONTRACTOR AT HIS EXPENSE.
- (M2) CAUTION: EXISTING UNDERGROUND POWER - SECURE AS NECESSARY (COST INCIDENTAL) - DO NOT DAMAGE. ANY DAMAGE TO EXISTING POWER LINE WILL BE REPAIRED BY THE CONTRACTOR AT HIS EXPENSE.
- (M3) CAUTION: EXISTING STORM DRAIN - SECURE AS NECESSARY (COST INCIDENTAL) - DO NOT DAMAGE. ANY DAMAGE TO EXISTING STORM LINE WILL BE REPAIRED BY THE CONTRACTOR AT HIS EXPENSE.
- (M4) CAUTION: EXISTING POWER POLE WITH GUY WIRE - SECURE AS NECESSARY (COST INCIDENTAL) - DO NOT DAMAGE. ANY DAMAGE TO EXISTING POLE OR GUY WIRE/ANCHOR WILL BE REPAIRED BY THE CONTRACTOR AT HIS EXPENSE.
- (M5) REMOVE EXISTING 24" CSP AND INSTALL "TEMPORARY STORM DRAINAGE FACILITIES" AS NECESSARY TO COMPLETE THE WORK - IF 24" CSP IS IN GOOD CONDITION AS DETERMINED BY THE INSPECTOR, THEN REINSTALL - IF DEEMED IN POOR CONDITION BY THE INSPECTOR REPLACE IN KIND - COST INCIDENTAL TO BID ITEM "TEMPORARY STORM DRAINAGE FACILITIES"
- (M6) INSTALL "TEMPORARY STORM DRAINAGE FACILITIES" IN DITCH/DETENTION FACILITY AS NECESSARY TO COMPLETE THE WORK. RECONSTRUCT DITCH/DETENTION FACILITY BACK TO ORIGINAL GRADES AND CONDITION OR BETTER AFTER WORK IS COMPLETE. TO BE PAID FOR UNDER THE BID ITEM OF "TEMPORARY STORM DRAINAGE FACILITIES"
- (M7) REMOVE EXISTING CHAIN LINK WITH BARRIOWIRE FENCE AS NECESSARY AND RELOCATE TO SOUTH OF DETENTION FACILITIES TO CONNECT TO EXISTING FENCES TO MAKE PRIDE DISPOSAL SITE SECURE - REPLACE BACK TO ORIGINAL POSITION AFTER CONSTRUCTION - TO BE PAID FOR UNDER THE BID ITEM OF "TEMPORARY FENCING" - ANY DAMAGE TO THE EXISTING FENCING SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE

NOTE: ANY DAMAGE TO SW TUALATIN SHERWOOD ROAD IMPROVEMENTS SHALL BE REPAIRED/REPLACED, AS DETERMINED BY THE WASHINGTON COUNTY INSPECTOR, AT THE CONTRACTOR'S EXPENSE.

KEY NOTES

- (M11) REMOVE ROCK WALL AS NECESSARY AND REINSTALL TO ORIGINAL CONDITION
- (M12) REMOVE MANUFACTURED WALL AS NECESSARY AND REINSTALL TO ORIGINAL CONDITION
- (*) DRIVEWAY TO BE USED FOR CONSTRUCTION ACCESS. ANY DAMAGE TO EXISTING DRIVEWAY SHALL BE REPAIRED/REPLACED, AS DETERMINED BY THE ENGINEER, AT THE CONTRACTOR'S EXPENSE.

INSTALL BARK MULCH OVER ALL AREA BETWEEN FENCE AND BACK OF SIDEWALK FROM STA. 29+00-31+90.



SANITARY KEY NOTES

MH-6
STA. 21+71.73
REMOVE EX. SANITARY MANHOLE AND INSTALL NEW SANITARY MANHOLE AND WATER TIGHT FRAME AND COVER
RIM 175.2± (6" MIN. ABOVE FINISH GRADE)
18" I.E. IN (NE)=150.36
15" I.E. OUT (SW)=150.30

MH-7
STA. 25+47.18
REMOVE EX. SANITARY MANHOLE AND INSTALL NEW SANITARY MANHOLE AND WATER TIGHT FRAME AND COVER
RIM 174.70± (6" MIN. ABOVE FINISH GRADE)
18" I.E. IN (E)=151.57
18" I.E. OUT (SW)=151.31

MH-8
STA. 28+53.49
REMOVE EX. SANITARY MANHOLE AND INSTALL NEW SANITARY MANHOLE AND WATER TIGHT FRAME AND COVER
RIM 175.00± (6" MIN. ABOVE FINISH GRADE)
6" I.E. (S) FOR LATERAL (VERIFY ELEV. PRIOR TO ORDERING MANHOLE)
15" I.E. IN (E)=152.69
15" I.E. OUT (W)=152.64
- ABANDON EX. 10" CSP TO EAST TO MH-10 BY FILLING WITH CONTROLLED LOW STRENGTH MATERIALS TO BE PAID UNDER BID ITEM "ABANDONING EXISTING STRUCTURES"

MH-9
STA. 29+60.85
INSTALL NEW SANITARY MANHOLE AND WATER TIGHT FRAME AND COVER
RIM 176.00± (AT FINISH GRADE)
6" I.E. (S) FOR LATERAL (VERIFY ELEV. PRIOR TO ORDERING MANHOLE)
15" I.E. IN (E)=152.69
15" I.E. OUT (W)=152.64

MH-10
STA. 30+95.53, 28.4' RT.
ONCE NEW SANITARY SYSTEM IS TESTED, APPROVED AND IN SERVICE, REMOVE FRAME, COVER AND MANHOLE SECTIONS A MINIMUM OF 3 FEET BELOW GROUND SURFACE
- FILL MANHOLE WITH NATIVE MATERIAL (NO ROCKS LARGER THAN 6") AND COMPACT TO 90% MAX. DENSITY OF AASHTO T-99 TEST METHOD
- INSTALL SALVAGED TOPSOIL IN THE UPPER 6 INCHES

MH-11
STA. 31+01.21, 18.0' LT.
- ABANDON EXISTING 8" CSP TO EAST TO MH-14 BY FILLING WITH CONTROLLED LOW STRENGTH MATERIALS
- FILL OUTSIDE DROP WITH CONTROLLED LOW STRENGTH MATERIALS
- GROUT UPPER AND LOWER 8" I.E.'S FROM THE EAST SHUT (WATERTIGHT)
- TO BE PAID FOR UNDER THE BID ITEM "ABANDONING EXISTING STRUCTURES"

MH-12
STA. 31+00.14
INSTALL NEW SANITARY MANHOLE AND WATER TIGHT FRAME AND COVER
RIM 176.00± (AT FINISH GRADE)
8" I.E. IN (N)=153.38-CALC. (VERIFY)
12" I.E. IN (E)=161.83
INSTALL INSIDE DROP
15" I.E. OUT (W)=153.00
- ABANDON EX. 10" CSP TO SOUTH TO MH-10 BY FILLING WITH CONTROLLED LOW STRENGTH MATERIALS TO BE PAID UNDER BID ITEM "ABANDONING EXISTING STRUCTURES"

- (P4) INSTALL 15" PVC C905, DR18 (OPEN TRENCH)
L=299.80' S=0.35%
- (P5) INSTALL 18" O.D. HDPE DR17 15.75" I.D. (PIPE BURST)
L=371.45' S=0.26%
- (P6) INSTALL 18" O.D. HDPE DR17 15.75" I.D. (PIPE BURST)
L=302.31' S=0.24%
- (P7) INSTALL 15" PVC C905, DR18 (OPEN TRENCH)
L=103.36' S=0.23%

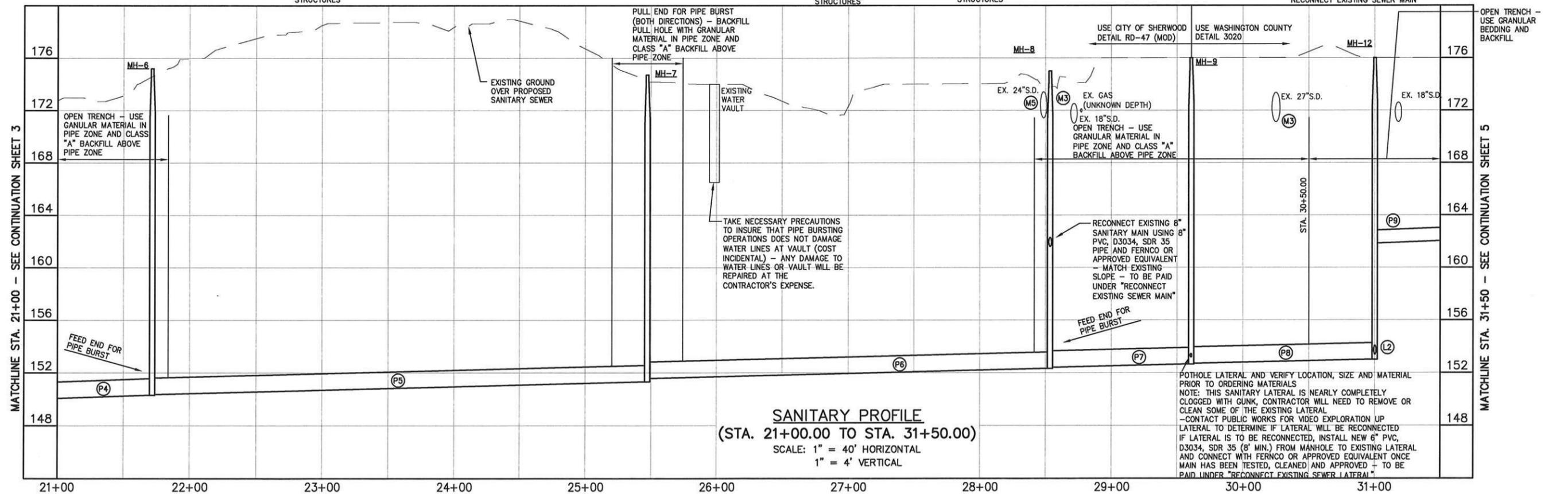
- (P8) INSTALL 15" PVC C905, DR18 (OPEN TRENCH)
L=135.29' S=0.23%
- (P9) INSTALL 12" PVC, D3034, SDR 35 (OPEN TRENCH)
L=192.74' S=0.40%
- (L2) INSTALL 8" PVC D3034, SDR 35 L=5' S=MATCH EXISTING SLOPE ONCE NEW PIPING HAS BEEN TESTED AND APPROVED, CONNECT TO EXISTING SANITARY LATERAL WITH FERNCO - TO BE PAID UNDER BID ITEM "RECONNECT EXISTING SEWER MAIN"

NOTE: NEW PIPING AND MANHOLES WILL NOT BE ALLOWED TO RECEIVE SANITARY FLOW UNTIL TESTED, CLEANED AND APPROVED.

NOTE: THE COST OF INSTALLING AND MAINTAINING ALL NECESSARY SANITARY BYPASS FACILITIES IS COVERED UNDER BID ITEM "SANITARY BYPASS FACILITIES"

NOTE: THE COST OF INSTALLING AND MAINTAINING ALL STORM DRAINAGE BYPASS FACILITIES NECESSARY IS COVERED UNDER BID ITEM "TEMPORARY DRAINAGE FACILITIES"

NOTE: ALL NEW MANHOLE CONES SHALL BE CONCENTRIC.



SANITARY PROFILE
(STA. 21+00.00 TO STA. 31+50.00)
SCALE: 1" = 40' HORIZONTAL
1" = 4' VERTICAL

SANITARY SEWER PLAN AND PROFILE WEST T-S ROAD

8073-TONQUIN EMPLOYMENT AREA SANITARY UPGRADE

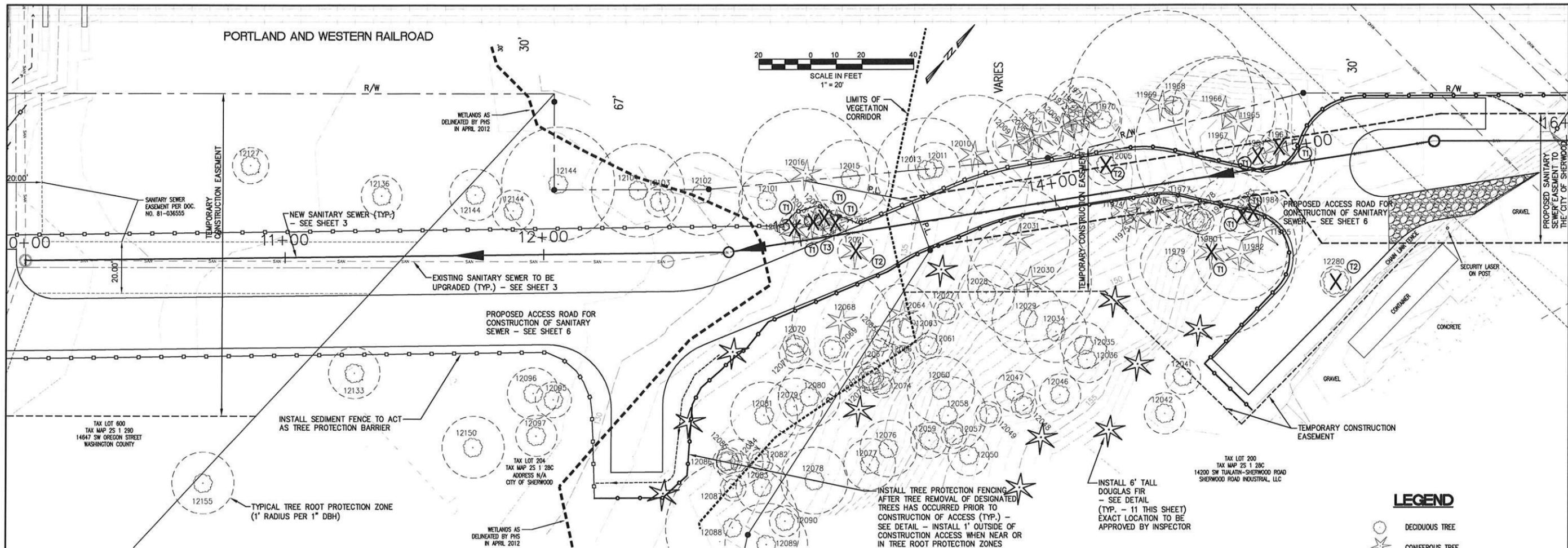
LOCATED IN SECTIONS 28DA, 28CB AND 28CA, T2S, R1W, W1M, IN THE CITY OF SHERWOOD, WASHINGTON COUNTY, STATE OF OREGON

CITY OF SHERWOOD ENGINEERING DEPARTMENT
22560 SW PINE STREET
SHERWOOD, OREGON 97140
PHONE: (503) 925-2309
FAX: (503) 625-0629
E-MAIL: engineering@sherwoodoregon.gov



DESIGNED BY:	CC
DRAWN BY:	AMS/CC
CHECKED BY:	JMM
FULL SIZE SCALE:	AS NOTED
DATE:	MARCH 25, 2013

JOB NO.	8073
SHEET NO.	4
REVISIONS	11



AKS Survey	Total DBH (in)	Tree Species	Basal Area (sq. feet)	Condition/Comments	Hazard Rating 1-4*	Reason for Removal	Wind-throw Rating**
11963	7	Douglas-fir (Pseudotsuga menziesii)	0.27	OK	1	Preserve	C
11964	8	Pacific madrone (Arbutus menziesii)	0.35	Crooked, lean, ok	2	Preserve	B
11965	20	Douglas-fir (Pseudotsuga menziesii)	2.18	Butt swell, sweep, ok	2	Preserve	B
11966	20	Douglas-fir (Pseudotsuga menziesii)	2.18	Butt swell, sweep, ok	2	Preserve	B
11967	35	Oregon white oak (Quercus garryana)	6.68	Included bark, scars, co-dominant, ok	2+	Preserve	B
11968	6	Oregon white oak (Quercus garryana)	0.20	OK	1	Preserve	C
11969	36	Douglas-fir (Pseudotsuga menziesii)	7.07	Butt swell, sweep, ok	2	Preserve	B
11970	7	Maple (Acer spp.)	0.27	Conks, decay, watch	2+	Preserve	B
11971	15	Douglas-fir (Pseudotsuga menziesii)	1.23	Some pitch, ok	2	Preserve	B
11972	7	Douglas-fir (Pseudotsuga menziesii)	0.27	Scar, some pitch, suppressed, ok	2	Preserve	B
11973	5	Douglas-fir (Pseudotsuga menziesii)	0.14	Suppressed, ok	1	Preserve	C
11974	5	Douglas-fir (Pseudotsuga menziesii)	0.14	OK	1	Preserve	C
11975	5	Douglas-fir (Pseudotsuga menziesii)	0.14	OK	1	Preserve	C
11976	8	Douglas-fir (Pseudotsuga menziesii)	0.35	Slight lean, ok	1	Preserve	C
11977	8	Douglas-fir (Pseudotsuga menziesii)	0.35	Slight lean, ok	1	Preserve	C
11978	5	Pacific madrone (Arbutus menziesii)	0.14	OK	1	Preserve	C
11979	14	Oregon white oak (Quercus garryana)	1.07	OK	1	Preserve	C
11980	33	Douglas-fir (Pseudotsuga menziesii)	5.94	Scar, heavy pitch, decay, watch	3	Hazard	A
11981	5	Pacific madrone (Arbutus menziesii)	0.14	OK	1	Preserve	C
11982	18	Douglas-fir (Pseudotsuga menziesii)	1.73	Scar, heavy pitch, decay, watch	2+	Preserve	B
11983	7	Pacific madrone (Arbutus menziesii)	0.27	OK	1	Preserve	C
11984	5	Pacific madrone (Arbutus menziesii)	0.14	Lean, ok	1	Preserve	C
11985	16	Douglas-fir (Pseudotsuga menziesii)	1.40	Butt swell, scar, vines, ok	2	Preserve	B
12005	8	Bigleaf maple (Acer macrophyllum)	0.35	Slight lean, ok	1	Preserve	C
12006	11	Douglas-fir (Pseudotsuga menziesii)	0.66	Large scar, lean, ok	2	Preserve	B
12007	9	Douglas-fir (Pseudotsuga menziesii)	0.44	Lean, large scar, broken top, codominant stems, ok	2+	Preserve	B
12008	17	Douglas-fir (Pseudotsuga menziesii)	1.58	Lean, broken top, codominant stems, ok	2+	Preserve	B
12009	8	Douglas-fir (Pseudotsuga menziesii)	0.35	Slight lean, ok	1	Preserve	C
12010	23	Douglas-fir (Pseudotsuga menziesii)	2.89	Lean, sweep, some pitch, ok	2+	Preserve	B
12011	10	Oregon white oak (Quercus garryana)	0.55	Lean, ok	2+	Preserve	B
12013	5	Oregon white oak (Quercus garryana)	0.14	OK	1	Preserve	B
12015	15	Oregon white oak (Quercus garryana)	1.23	Healthy	1	Preserve	C
12016	25	Douglas-fir (Pseudotsuga menziesii)	3.41	Butt swell, crooked, lean, ok	2+	Preserve	B
12017	7	Douglas-fir (Pseudotsuga menziesii)	0.27	OK	1	Preserve	C
12018	8	Douglas-fir (Pseudotsuga menziesii)	0.35	OK	1	Preserve	C
12019	6	Douglas-fir (Pseudotsuga menziesii)	0.20	OK	1	Preserve	C
12020	5	Douglas-fir (Pseudotsuga menziesii)	0.14	OK	1	Preserve	C
12021	7	Douglas-fir (Pseudotsuga menziesii)	0.27	OK	1	Preserve	C
12027	5	Oregon white oak (Quercus garryana)	0.14	Lean, codominant stems, ok	1	Preserve	C
12028	11	Oregon white oak (Quercus garryana)	0.66	Scar, decay, slight lean, ok	2+	Preserve	B
12029	14	Oregon white oak (Quercus garryana)	1.07	Crooked, ok	2	Preserve	B
12030	24	Douglas-fir (Pseudotsuga menziesii)	3.14	Some pitch, some sweep	2	Preserve	B
12031	20	Douglas-fir (Pseudotsuga menziesii)	2.18	Healthy	1	Preserve	C
12034	12	Oregon white oak (Quercus garryana)	0.79	Healthy	1	Preserve	C
12035	9	Oregon white oak (Quercus garryana)	0.44	Rock rolled against trunk, curved bole, ok	2	Preserve	B
12036	9	Oregon white oak (Quercus garryana)	0.44	OK	1	Preserve	C
12041	7	Poplar species (Populus spp.)	0.27	OK	1	Preserve	C
12042	8	Poplar species (Populus spp.)	0.35	OK	1	Preserve	C
12046	8	Oregon white oak (Quercus garryana)	0.35	OK	1	Preserve	C
12047	8	Oregon white oak (Quercus garryana)	0.35	OK	1	Preserve	C
12048	5	Oregon white oak (Quercus garryana)	0.14	Lean, ok	1	Preserve	C
12049	5	Oregon white oak (Quercus garryana)	0.14	Slight lean, ok	1	Preserve	C

AKS Survey	Total DBH (in)	Tree Species	Basal Area (sq. feet)	Condition/Comments	Hazard Rating 1-4*	Reason for Removal	Wind-throw Rating**
12050	8	Oregon white oak (Quercus garryana)	0.35	OK	1	Preserve	C
12057	5	Oregon white oak (Quercus garryana)	0.14	OK	1	Preserve	C
12058	15	Oregon white oak (Quercus garryana)	1.23	OK	1	Preserve	C
12059	7	Oregon white oak (Quercus garryana)	0.27	Curved bole, ok	2	Preserve	B
12060	13	Oregon white oak (Quercus garryana)	0.92	Slight lean, ok	2	Preserve	B
12061	5	Oregon white oak (Quercus garryana)	0.14	Crooked, ok	1	Preserve	C
12063	6	Oregon white oak (Quercus garryana)	0.20	Crooked bole, ok	2	Preserve	B
12064	12	Douglas-fir (Pseudotsuga menziesii)	0.79	Slight lean, butt swell, ok	2	Preserve	B
12065	5	Oregon white oak (Quercus garryana)	0.14	Slight lean, ok	1	Preserve	C
12066	5	Oregon white oak (Quercus garryana)	0.14	OK	1	Preserve	C
12067	10	Oregon white oak (Quercus garryana)	0.55	codominant stems, OK	1	Preserve	C
12068	19	Douglas-fir (Pseudotsuga menziesii)	1.97	Some sweep, ok	2	Preserve	B
12069	5	Oregon white oak (Quercus garryana)	0.14	Slight lean, ok	1	Preserve	C
12070	5	Oregon white oak (Quercus garryana)	0.14	OK	1	Preserve	C
12071	6	Oregon white oak (Quercus garryana)	0.20	OK	1	Preserve	C
12072	5	Oregon white oak (Quercus garryana)	0.14	OK	1	Preserve	C
12073	5	Oregon white oak (Quercus garryana)	0.14	OK	1	Preserve	C
12074	5	Oregon white oak (Quercus garryana)	0.14	OK	1	Preserve	C
12076	11	Oregon white oak (Quercus garryana)	0.66	Healthy	1	Preserve	C
12077	10	Oregon white oak (Quercus garryana)	0.55	Healthy	1	Preserve	C
12078	13	Oregon white oak (Quercus garryana)	0.92	Healthy	1	Preserve	C
12079	11	Oregon white oak (Quercus garryana)	0.66	OK	1	Preserve	C
12080	12	Oregon white oak (Quercus garryana)	0.79	OK	1	Preserve	C
12081	13	Oregon white oak (Quercus garryana)	0.92	Slight lean, ok	1	Preserve	C
12082	5	Oregon white oak (Quercus garryana)	0.14	Slight lean, ok	1	Preserve	C
12083	10	Oregon white oak (Quercus garryana)	0.55	OK	1	Preserve	C
12084	9	Oregon white oak (Quercus garryana)	0.44	OK	1	Preserve	C
12085	5	Oregon white oak (Quercus garryana)	0.14	Slight lean, ok	1	Preserve	C
12086	5	Oregon white oak (Quercus garryana)	0.14	Slight lean, ok	1	Preserve	C
12087	5	Oregon white oak (Quercus garryana)	0.14	OK	1	Preserve	C
12088	26	Oregon white oak (Quercus garryana)	3.69	Slight lean, ok	1	Preserve	C
12089	16	Oregon white oak (Quercus garryana)	1.40	Slight lean, ok	1	Preserve	C
12090	6	Oregon white oak (Quercus garryana)	0.20	Slight lean, ok	1	Preserve	C
12095	7	Oregon white oak (Quercus garryana)	0.27	Codominant stems, ok	1	Preserve	C
12096	10	Oregon white oak (Quercus garryana)	0.55	Codominant stems, ok	1	Preserve	C
12097	8	Oregon white oak (Quercus garryana)	0.35	Codominant stems, ok	1	Preserve	C
12101	11	Oregon white oak (Quercus garryana)	0.66	Crooked, lean, ok	2	Preserve	B
12102	16	Oregon white oak (Quercus garryana)	1.40	OK	1	Preserve	C
12103	6	Bitter Cherry (Prunus emarginata)	0.20	Crooked, ok	1	Preserve	C
12104	18	Oregon white oak (Quercus garryana)	1.77	Exposed roots, sucker limb, ok	1	Preserve	C
12127	7	Oregon white oak (Quercus garryana)	0.27	Slight lean, ok	1	Preserve	C
12133	10	Oregon white oak (Quercus garryana)	0.55	codominant stems, OK	1	Preserve	C
12136	8	Oregon white oak (Quercus garryana)	0.35	Roots under water, ok	2	Preserve	B
12141	22	Oregon white oak (Quercus garryana)	2.64	Roots under water, peeling bark, scar, ok	2	Preserve	B
12143	8	Oregon white oak (Quercus garryana)	0.35	Lean, ok	1	Preserve	C
12144	10	Oregon white oak (Quercus garryana)	0.55	Broken top, lean, ok	1	Preserve	C
12150	12	Oregon white oak (Quercus garryana)	0.79	Roots under water, ok	2	Preserve	B
12155	12	Oregon white oak (Quercus garryana)	0.79	Broken top, ok	1	Preserve	C
12176	18	Oregon white oak (Quercus garryana)	1.77	DEAD	1	Preserve	C
12380	6	Poplar (Populus spp.)	0.20	OK	1	Preserve	C

- LEGEND**
- DECIDUOUS TREE
 - ★ CONIFEROUS TREE
 - TREE DRIPLINE (1 FOOT RADIUS PER 1 INCH DIAMETER AT BREAST HEIGHT)
 - ⊗ DECIDUOUS TREE TO BE REMOVED
 - ⊗ CONIFEROUS TREE TO BE REMOVED
 - C - REMOVE FOR CONSTRUCTION
 - H - REMOVE DUE TO HAZARD

6 DOUGLAS FIR TREES RANGING FROM 5" TO 6" DBH WILL BE REMOVED FOR CONSTRUCTION OF SANITARY SEWER LINE.

3 PACIFIC MADRONE TREES RANGING FROM 5" TO 8" DBH WILL BE REMOVED FOR CONSTRUCTION OF SANITARY SEWER LINE.

1 POPLAR - 6" DBH WILL BE REMOVED FOR CONSTRUCTION OF SANITARY SEWER LINE.

1 BIGLEAF MAPLE - 8" DBH WILL BE REMOVED FOR CONSTRUCTION OF SANITARY SEWER LINE.

1 DOUGLAS FIR TREE OF 33" DBH WILL BE REMOVED DUE TO BEING A HAZARD.

OTHER TREES NEAR CONSTRUCTION ZONE TO BE PRUNED AS NECESSARY. (INCIDENTAL TO "CLEARING AND GRUBBING")

TREE REMOVAL SHALL BE INCIDENTAL TO "CLEARING AND GRUBBING".

Ⓜ CUT DOWN AND REMOVE TREE. LEAVE TREE STUMP IN PLACE.

Ⓜ CUT DOWN AND REMOVE TREE AND STUMP.

Ⓜ CAUTION: EXISTING SEWER IS SHALLOW DO NOT DRIVE VEHICLES/EQUIPMENT OVER EXISTING SEWER UNLESS SEWER BYPASS IS IN PLACE.

NOTE: ALL TREES TO BE REMOVED SHALL BE WRAPPED WITH ORANGE FLAGGING AND APPROVED BY THE INSPECTOR PRIOR TO REMOVAL. ORANGE RIBBON MARKED BY THE INSPECTOR WITH BLACK "R" ARE APPROVED FOR REMOVAL.

NOTE: THERE WILL BE ADDITIONAL TREES (NOT SHOWN ON THIS PLAN) PLANTED FOR VEGETATION CORRIDOR MITIGATION. SEE PLANTING PLAN (SHEET M1).

**8073-TONQUIN EMPLOYMENT AREA
SANITARY UPGRADE**

**TREE REMOVAL AND
MITIGATION PLAN**

LOCATED IN SECTIONS 29DA, 28CB AND 28CA, T2S, R1W,
W.M. IN THE CITY OF SHERWOOD, WASHINGTON COUNTY,
STATE OF OREGON

**CITY OF SHERWOOD
ENGINEERING DEPARTMENT
22560 SW PINE STREET
SHERWOOD, OREGON 97140**

PHONE: (503) 925-2309
FAX: (503) 625-0629
E-MAIL: engineering@sherwoodoregon.gov

DESIGNED BY: [Signature]
DRAWN BY: [Signature]
CHECKED BY: [Signature]
FULL SIZE SCALE: [Signature]
DATE: MARCH 25, 2013
8073 - TONQUIN EMPLOYMENT AREA SANITARY UPGRADE - SHEETS - ACCESS

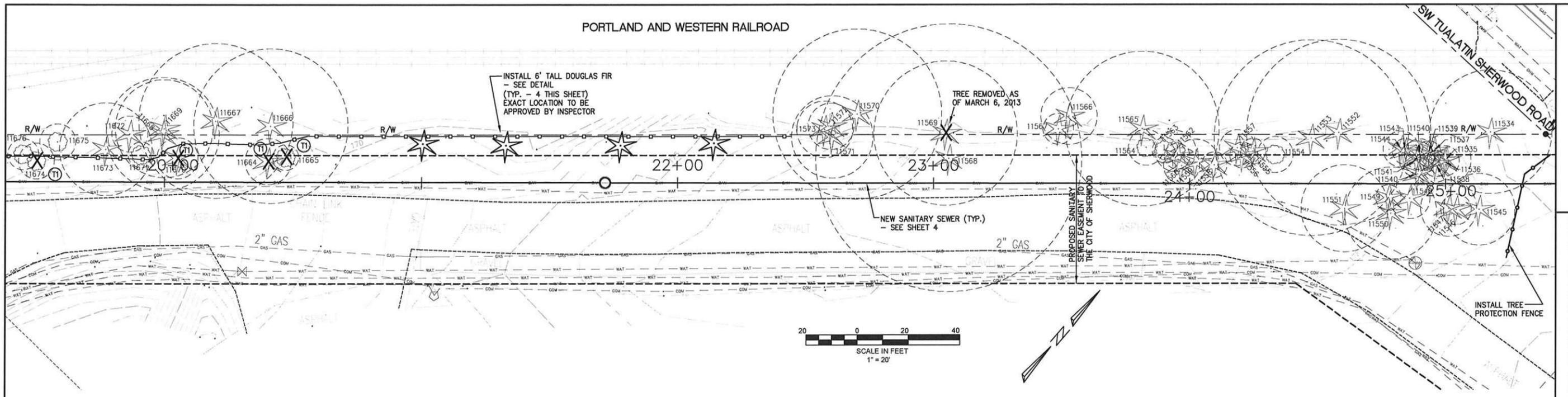
JOB NO. **8073**

SHEET NO. **7**

OF **11**

REVISIONS

PORTLAND AND WESTERN RAILROAD



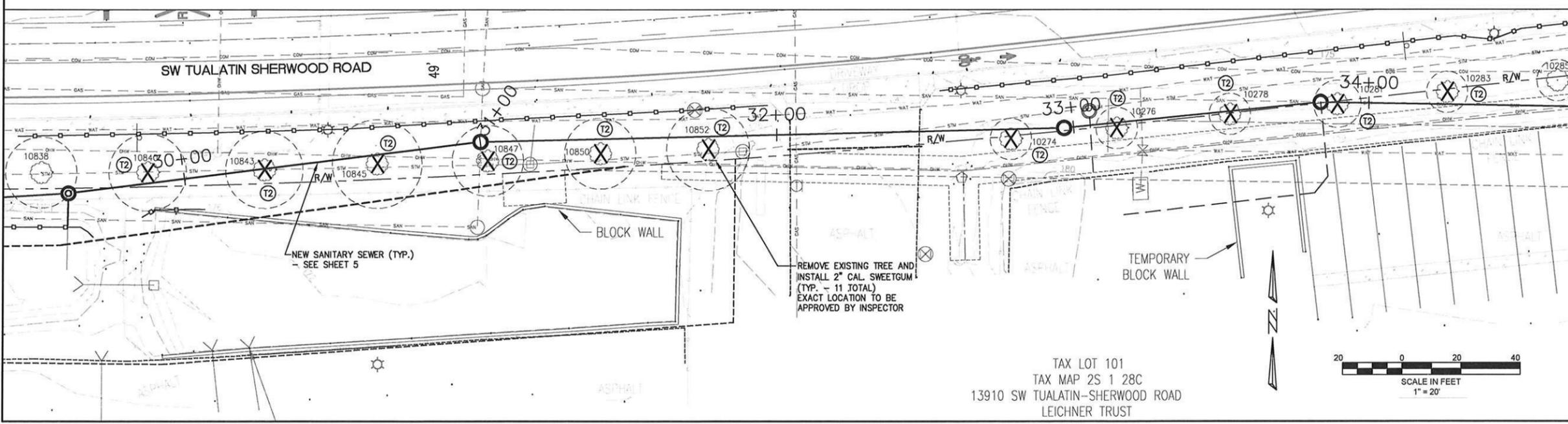
AKS Survey Reference #	Total DBH (in)	Tree Species	Basal Area (sq. feet)	Condition/Comments	Hazard Rating 1-4*	Reason for Removal	Wind-throw Rating**
11534	24	Douglas-fir (Pseudotsuga menziesii)	3.14	Included bark, codominant stems, slight lean, ok	2	Preserve	B
11535	10	Douglas-fir (Pseudotsuga menziesii)	0.55	OK	1	Preserve	C
11536	6	Douglas-fir (Pseudotsuga menziesii)	0.20	OK	1	Preserve	C
11537	9	Douglas-fir (Pseudotsuga menziesii)	0.44	OK	1	Preserve	C
11538	5	Douglas-fir (Pseudotsuga menziesii)	0.14	OK	1	Preserve	C
11539	5	Douglas-fir (Pseudotsuga menziesii)	0.14	OK	1	Preserve	C
11540	6	Douglas-fir (Pseudotsuga menziesii)	0.20	OK	1	Preserve	C
11541	7	Douglas-fir (Pseudotsuga menziesii)	0.27	OK	1	Preserve	C
11542	7	Douglas-fir (Pseudotsuga menziesii)	0.27	OK	1	Preserve	C
11543	5	Douglas-fir (Pseudotsuga menziesii)	0.14	OK	1	Preserve	C
11544	7	Douglas-fir (Pseudotsuga menziesii)	0.27	OK	1	Preserve	C
11545	14	Douglas-fir (Pseudotsuga menziesii)	1.07	OK	1	Preserve	C
11546	6	Douglas-fir (Pseudotsuga menziesii)	0.20	Slight lean, ok	1	Preserve	C
11547	11	Douglas-fir (Pseudotsuga menziesii)	0.66	OK	1	Preserve	C
11548	8	Douglas-fir (Pseudotsuga menziesii)	0.35	Scar, pitch, ok	2	Preserve	B
11549	5	Douglas-fir (Pseudotsuga menziesii)	0.14	OK	1	Preserve	C
11550	18	Douglas-fir (Pseudotsuga menziesii)	1.77	codominant stems, included bark, ok	2	Preserve	B
11551	17	Douglas-fir (Pseudotsuga menziesii)	1.58	codominant stems, included bark, pitch, ok	2	Preserve	B
11552	36	Douglas-fir (Pseudotsuga menziesii)	7.07	Large conks, pitch, watch	3	Hazard	A
11553	38	Douglas-fir (Pseudotsuga menziesii)	7.88	Heavy pitch, slight lean, decay, watch	3	Hazard	A
11554	7	Pacific madrone (Arbutus menziesii)	0.27	Heavy lean, codominant stems	2	Preserve	B
11555	5	Douglas-fir (Pseudotsuga menziesii)	0.14	OK	1	Preserve	C
11556	5	Douglas-fir (Pseudotsuga menziesii)	0.14	OK	1	Preserve	C
11557	7	Douglas-fir (Pseudotsuga menziesii)	0.27	OK	1	Preserve	C
11558	5	Douglas-fir (Pseudotsuga menziesii)	0.14	OK	1	Preserve	C
11559	9	Douglas-fir (Pseudotsuga menziesii)	0.41	OK	1	Preserve	C

AKS Survey Reference #	Total DBH (in)	Tree Species	Basal Area (sq. feet)	Condition/Comments	Hazard Rating 1-4*	Reason for Removal	Wind-throw Rating**
11560	7	Douglas-fir (Pseudotsuga menziesii)	0.27	Sweep, ok	1	Preserve	C
11561	5	Douglas-fir (Pseudotsuga menziesii)	0.14	Suppressed, ok	1	Preserve	C
11562	8	Pacific madrone (Arbutus menziesii)	0.35	Heavy lean, ok	2	Preserve	B
11563	5	Pacific madrone (Arbutus menziesii)	0.14	Heavy lean, crooked, ok	2	Preserve	B
11564	7	Pacific madrone (Arbutus menziesii)	0.27	Heavy lean, ok	2	Preserve	B
11565	30	Douglas-fir (Pseudotsuga menziesii)	4.91	Pitch, poor root area due to railroad grade, ok	2	Preserve	A
11566	11	Douglas-fir (Pseudotsuga menziesii)	0.66	Some lean, on steep slope above railroad grade, ok	2	Preserve	B
11567	6	Douglas-fir (Pseudotsuga menziesii)	0.20	OK	1	Preserve	C
11568	52	Douglas-fir (Pseudotsuga menziesii)	14.75	Pitch, scar, decay, watch	2	Preserve	A
11569	38	Douglas-fir (Pseudotsuga menziesii)	4.28	DEAD	3	Hazard	A
11570	33	Douglas-fir (Pseudotsuga menziesii)	5.91	Pitch, exposed roots, ok	1	Preserve	C
11571	16	Douglas-fir (Pseudotsuga menziesii)	1.40	Some pitch, slight lean, ok	1	Preserve	C
11572	9	Douglas-fir (Pseudotsuga menziesii)	0.44	Some pitch, slight lean, ok	1	Preserve	C
11573	11	Douglas-fir (Pseudotsuga menziesii)	0.66	Sweep, cable scar, slight lean, ok	1	Preserve	C
11664	9	Douglas-fir (Pseudotsuga menziesii)	0.44	OK	1	Preserve	C
11665	5	Poplar species (Populus spp.)	0.14	OK	1	Preserve	C
11666	30	Douglas-fir (Pseudotsuga menziesii)	4.91	Kninked butt, some pitch, ok	2	Preserve	B
11667	30	Douglas-fir (Pseudotsuga menziesii)	4.91	Butt swell, ok	1	Preserve	C
11668	22	Douglas-fir (Pseudotsuga menziesii)	2.64	codominant stems, pitch, butt swell, ok	2	Preserve	B
11669	19	Douglas-fir (Pseudotsuga menziesii)	1.97	Growing tight to another tree, ok	2	Preserve	B
11670	8	Douglas-fir (Pseudotsuga menziesii)	0.35	Broken top, crooked, slight lean	1	Preserve	C
11671	5	Poplar (Populus spp.)	0.14	Slight lean, ok	1	Preserve	C
11672	7	Douglas-fir (Pseudotsuga menziesii)	0.27	OK	1	Preserve	C
11673	18	Douglas-fir (Pseudotsuga menziesii)	1.77	Healthy	1	Preserve	C
11674	7	Bitter Cherry (Prunus emarginata)	0.27	OK	1	Preserve	C
11675	7	Bitter Cherry (Prunus emarginata)	0.27	OK	1	Preserve	C
11676	6	Bitter Cherry (Prunus emarginata)	0.20	Scar, ok	1	Preserve	C

AKS Survey Reference #	Total DBH (in)	Tree Species	Basal Area (sq. feet)	Condition/Comments	Hazard Rating 1-4*	Reason for Removal	Wind-throw Rating**
10274	7	Sweetgum (Liquidambar styraciflua)	0.27	Topped, ok	1	Preserve	C
10275	7	Sweetgum (Liquidambar styraciflua)	0.27	Topped, ok	1	Preserve	C
10276	7	Sweetgum (Liquidambar styraciflua)	0.27	Topped, ok	1	Preserve	C
10277	7	Sweetgum (Liquidambar styraciflua)	0.27	Topped, scar, ok	1	Preserve	C
10278	7	Sweetgum (Liquidambar styraciflua)	0.27	Topped, scar, ok	1	Preserve	C
10279	7	Sweetgum (Liquidambar styraciflua)	0.27	Topped, codominant stems, ok	2	Preserve	B
10280	7	Sweetgum (Liquidambar styraciflua)	0.27	Topped, ok	1	Preserve	C
10281	7	Sweetgum (Liquidambar styraciflua)	0.27	Topped, ok	1	Preserve	C
10282	7	Sweetgum (Liquidambar styraciflua)	0.27	Topped, ok	1	Preserve	C
10283	7	Sweetgum (Liquidambar styraciflua)	0.27	Topped, ok	1	Preserve	C
10284	7	Sweetgum (Liquidambar styraciflua)	0.27	Topped, ok	1	Preserve	C
10285	7	Sweetgum (Liquidambar styraciflua)	0.27	Topped, ok	1	Preserve	C
10286	7	Sweetgum (Liquidambar styraciflua)	0.27	Topped, ok	1	Preserve	C
10287	7	Sweetgum (Liquidambar styraciflua)	0.27	Topped, ok	1	Preserve	C
10288	7	Sweetgum (Liquidambar styraciflua)	0.27	Topped, ok	1	Preserve	C
10289	7	Sweetgum (Liquidambar styraciflua)	0.27	Topped, ok	1	Preserve	C
10290	7	Sweetgum (Liquidambar styraciflua)	0.27	Topped, ok	1	Preserve	C
10291	6	Sweetgum (Liquidambar styraciflua)	0.20	Topped, ok	1	Preserve	C
10292	13	Sweetgum (Liquidambar styraciflua)	0.92	Topped, ok	1	Preserve	C
10293	12	Sweetgum (Liquidambar styraciflua)	0.79	Topped, scars, decay, codominant stems, ok	2	Preserve	B
10294	13	Sweetgum (Liquidambar styraciflua)	0.92	Topped, ok	1	Preserve	C
10295	13	Sweetgum (Liquidambar styraciflua)	0.92	Topped, scars, slight decay, ok	2	Preserve	B
10296	15	Sweetgum (Liquidambar styraciflua)	1.23	Topped, scars, included bark, ok	2	Preserve	B
10297	12	Sweetgum (Liquidambar styraciflua)	0.79	Topped, scars, ok	1	Preserve	C
10298	12	Sweetgum (Liquidambar styraciflua)	0.79	Exposed roots, scars, a growth, ok	2	Preserve	B
10299	14	Sweetgum (Liquidambar styraciflua)	1.07	Scar, ok	1	Preserve	C

LEGEND

- DECIDUOUS TREE
- ★ CONIFEROUS TREE
- TREE DRIPLINE (1 FOOT RADIUS PER 1 INCH DIAMETER AT BREAST HEIGHT)
- ⊗ DECIDUOUS TREE TO BE REMOVED
- ⊗ CONIFEROUS TREE TO BE REMOVED
- C - REMOVE FOR CONSTRUCTION
- H - REMOVE DUE TO HAZARD



2 DOUGLAS FIR TREES RANGING FROM 8" TO 9" DBH WILL BE REMOVED FOR CONSTRUCTION OF SANITARY SEWER LINE.

1 POPLAR - 5" DBH WILL BE REMOVED FOR CONSTRUCTION OF SANITARY SEWER LINE.

1 BITTER CHERRY - 7" DBH WILL BE REMOVED FOR CONSTRUCTION OF SANITARY SEWER LINE.

1 DOUGLAS FIR TREE OF 28" DBH WILL BE REMOVED DUE TO BEING A HAZARD.

11 SWEETGUM - 7" TO 14" DBH WILL BE REMOVED FOR CONSTRUCTION OF SANITARY SEWER LINE.

OTHER TREES NEAR CONSTRUCTION ZONE TO BE PRUNED AS NECESSARY. (INCIDENTAL TO "CLEARING AND GRUBBING")

TREE REMOVAL SHALL BE INCIDENTAL TO "CLEARING AND GRUBBING".

① CUT DOWN AND REMOVE TREE. LEAVE TREE STUMP IN PLACE.

② CUT DOWN AND REMOVE TREE AND STUMP.

TREE REMOVAL AND MITIGATION PLAN

8073 - TONQUIN EMPLOYMENT AREA SANITARY UPGRADE

CITY OF SHERWOOD
ENGINEERING DEPARTMENT
22560 SW PINE STREET
SHERWOOD, OREGON 97140

LOCATED IN SECTIONS 29DA, 28CB AND 28CA, T2S, R1W, W.M. IN THE CITY OF SHERWOOD, WASHINGTON COUNTY, STATE OF OREGON

PHONE: (503) 925-2309
FAX: (503) 625-0629
E-MAIL: engineering@ci.sherwood.or.us

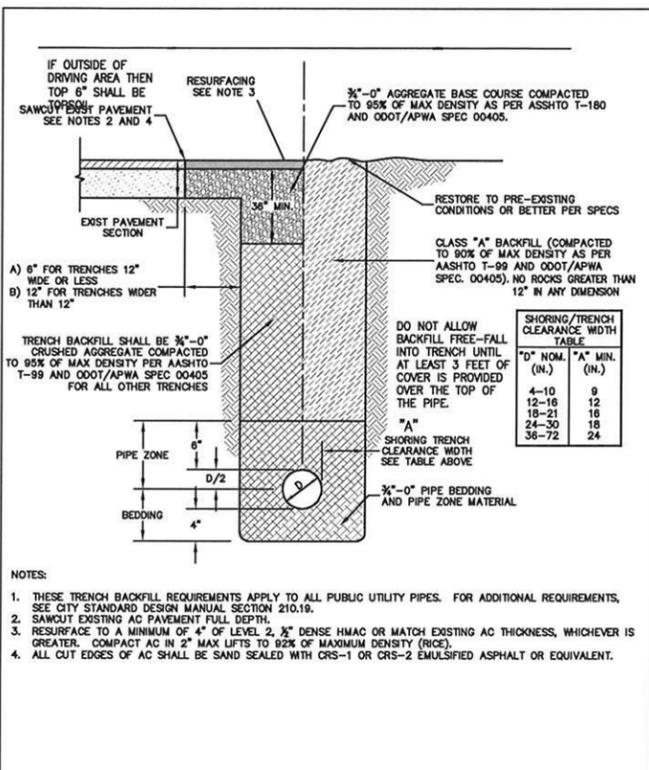
DESIGNED BY: []
DRAWN BY: []
CHECKED BY: []
FULL SIZE SCALE: []
DATE: MARCH 25, 2013
8073 - TONQUIN EMPLOYMENT AREA SANITARY UPGRADE - SHEETS - ACCESS

JOB NO. **8073**

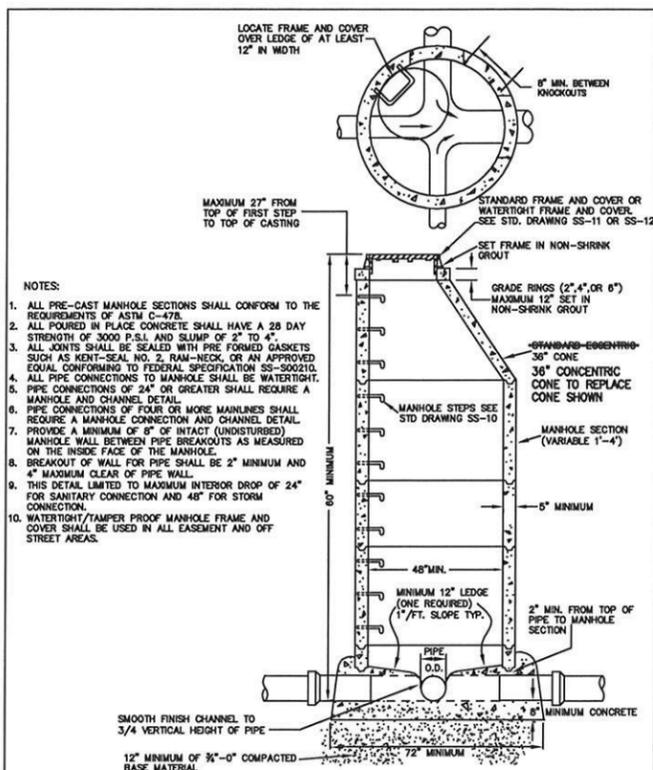
SHEET NO. **8**

OF **11**

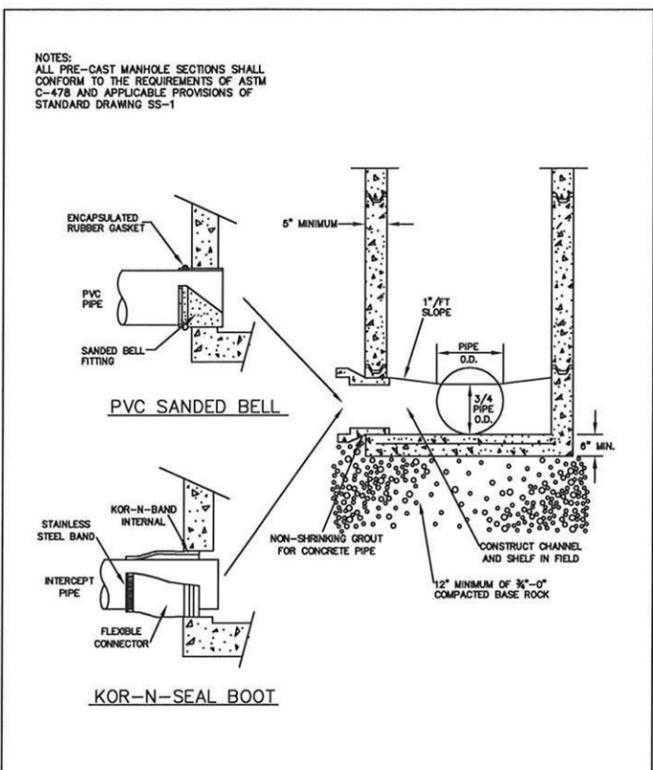
REVISIONS



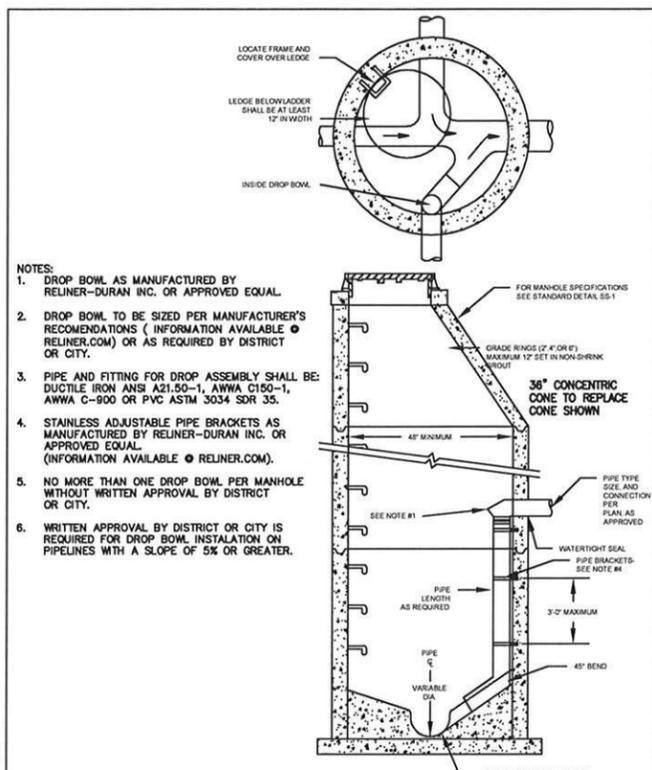
STANDARD DRAWING TITLE	DRAWING NUMBER
STANDARD PIPE TRENCH BACKFILL AND SURFACE RESTORATION	RD-47 (MOD)
SCALE	DATE
N.T.S.	JUL '09



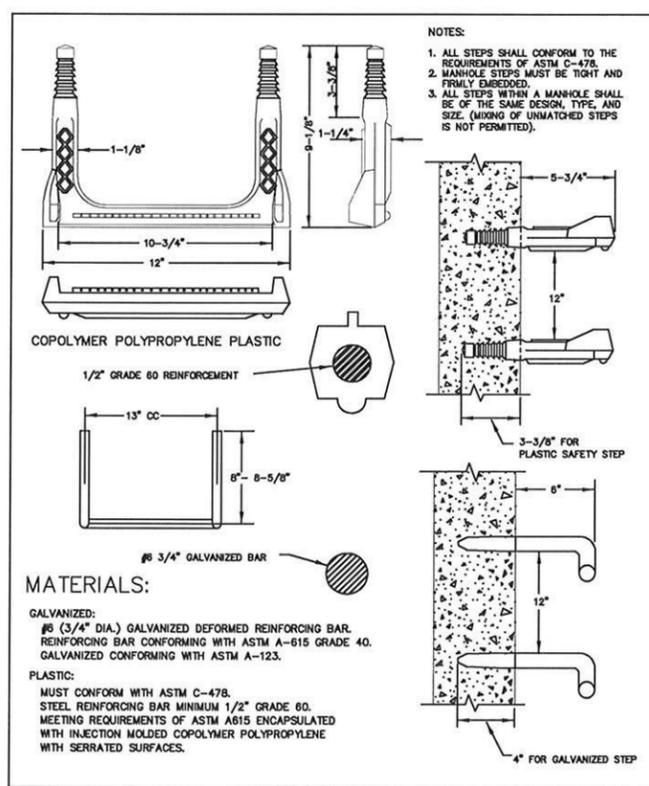
STANDARD DRAWING TITLE	DRAWING NUMBER
STANDARD MANHOLE	SS-1
SCALE	DATE
N.T.S.	JUL '09



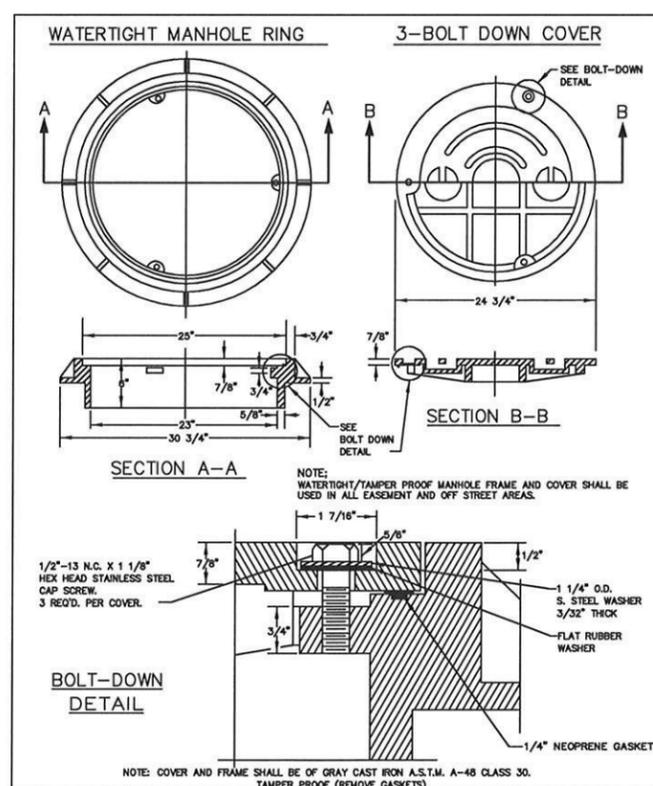
STANDARD DRAWING TITLE	DRAWING NUMBER
PRECAST CONCRETE MANHOLE BASE	SS-2
SCALE	DATE
N.T.S.	JUL '09



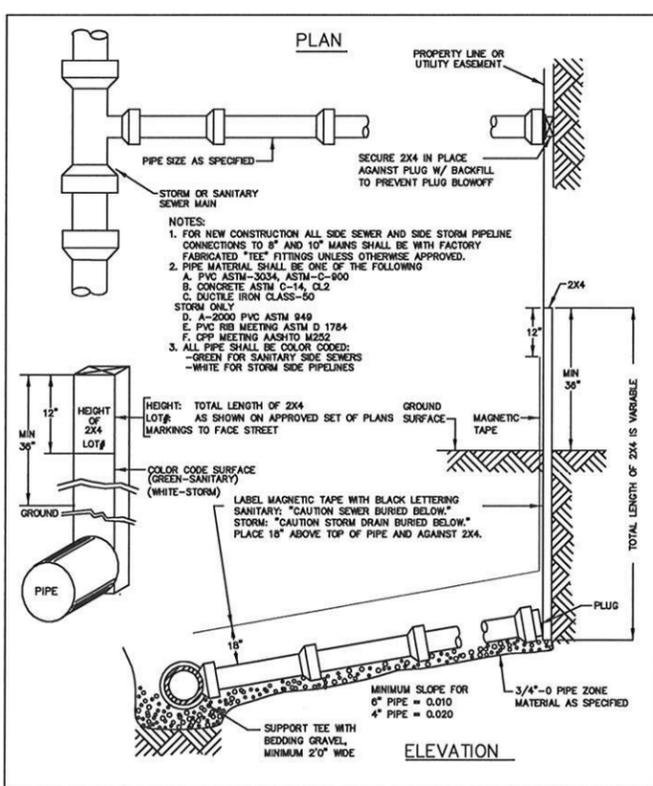
STANDARD DRAWING TITLE	DRAWING NUMBER
INSIDE DROP MANHOLE W/ BOWL	SS-9
SCALE	DATE
N.T.S.	JUL '09



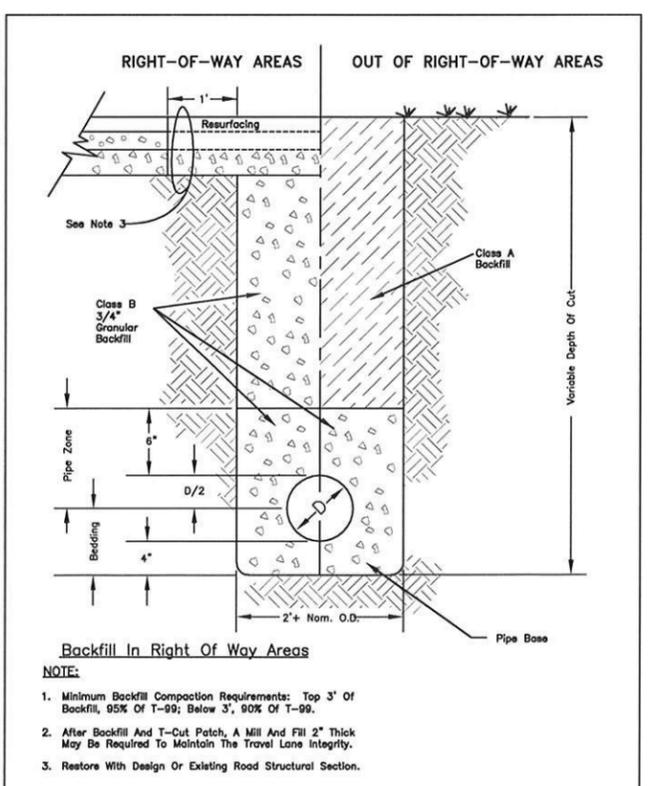
STANDARD DRAWING TITLE	DRAWING NUMBER
MANHOLE STEP	SS-10
SCALE	DATE
N.T.S.	JUL '09



STANDARD DRAWING TITLE	DRAWING NUMBER
WATER TIGHT MANHOLE FRAME AND COVER	SS-13
SCALE	DATE
N.T.S.	JUL '09



STANDARD DRAWING TITLE	DRAWING NUMBER
SIDE SEWERS/STORM PIPELINE	SS-62
SCALE	DATE
N.T.S.	JUL '09



STANDARD DRAWING TITLE	DRAWING NUMBER
PIPE BEDDING AND BACKFILL DETAILS	SS-62
SCALE	DATE
N.T.S.	JUL '09

DETAIL SHEET

**8073-TONQUIN EMPLOYMENT AREA
SANITARY UPGRADE**

CITY OF SHERWOOD
ENGINEERING DEPARTMENT
22560 SW PINE STREET
SHERWOOD, OREGON 97140

PHONE: (503) 925-2309
FAX: (503) 625-0629
E-MAIL: engineering@sherwoodoregon.gov

LOCATED IN SECTIONS 29DA, 28CB AND 28CA, T2S, R1W,
W.M. IN THE CITY OF SHERWOOD, WASHINGTON COUNTY,
STATE OF OREGON

DESIGNED BY:	CCC
DRAWN BY:	ASG/OCC
CHECKED BY:	JMM
FULL SIZE SCALE:	AS NOTED
DATE:	MARCH 25, 2013

REVISIONS

JOB NO.	8073
SHEET NO.	9

of 11



8FPP, L.P.
Operating Partnership
December 28, 2012
ENG 4-2-1 (17.7 - 14)
File Reference # 12-948-1

Craig Christensen, P.E.
Engineering Associate II
City of Sherwood
Engineering Department
22560 SW Pine Street
Sherwood OR 97140

RE: Tonquin Employment Area Sanitary Sewer Upgrade
City of Sherwood Job No. 8073

Dear Mr. Christensen,

This is in reply to your email dated December 17, 2012, concerning the above referenced project in the City of Sherwood, Oregon.

Enclosed is a copy of drawing 485014PDEG, sheet 20, which depicts the general alignment of Kinder Morgan's (KM) active 8-inch high pressure refined petroleum products pipeline.

In the interest of public safety and for pipeline protection the following provisions must be considered in the design and subsequent improvements near the pipeline.

- Adherence to applicable provisions enumerated in the enclosed copy of L-OM200-29 "Guidelines for Design and Construction" relating to proposed projects affecting KM pipelines.
- Exact pipeline location and depth can only be determined by pothole, which must be performed by hand excavation in the presence of a KM representative. Notify KM Area Manager, Mr. Jeff Hibner (503) 220-1263 at least two weeks prior to commencement of work. Mr. Hibner will arrange for a pipeline representative to be present during work near the pipeline.
- All potholes must be performed by hand excavation and in the presence of a KM pipeline representative. Backfill around the pipeline must be sand (or rock free dirt) and must be hand-compacted.
- Pothole the pipeline at point of crossing to determine exact pipeline location prior to excavations utilizing power equipment. Install crossings to pass below KM's pipeline to provide a clearance of two feet. The pipeline must also be exposed and observable when bore and jack operations cross this facility.

1100 Town & Country Road Orange, California 92668 714/560-4400 714/560-4601 Fax

City of Sherwood
Engineering Department
December 28, 2012
Page 2 of 2

Mr. Gregg Lies (503) 220-1239 will be KM's engineering contact as this project moves forward.

To avoid delays in response to future correspondence, please refer to File Reference #12-948.

Sincerely,
DR Quinn
Don Quinn
Manager - Pipeline Engineering

T: Quinn@sherwood.gov

Enclosures

cc: J. A. Hibner
G. A. Lies

Kinder Morgan Inspector - Contractor			
Regular Wages	Hourly (varies with experience)	hr	\$ 32.00
Overtime	Hours Approved by PM (assumed 2 hrs)	hr	\$ 48.00
		Subtotal Wages = \$ 352.00	
Burden	42% of wages		\$ 147.84
		Subtotal Wages + Burden = \$ 499.84	
KM Add-On	KM Mgt Fee of 19.4%		\$ 96.97
		Grand Total = \$ 596.81	
FOR A 10-HOUR DAY			

KINDER MORGAN
Guidelines for Design and Construction near
Kinder Morgan Hazardous Liquid Operated Facilities

Name of Company: _____

The list of design, construction and contractor requirements, including but not limited to the following, for the design and installation of foreign utilities or improvements on KM right-of-way (ROW) are not intended nor do they waive or modify any rights KM may have under existing easements or ROW agreements. Reference existing easements and amendments for additional requirements. This list of requirements is applicable for KM facilities on easements only. Encroachments on fee property should be referred to the ROW Department.

- Design**
- KM shall be provided sufficient prior notice of planned activities involving excavation, blasting, or any type of construction on KM's ROW to determine and resolve any location, grade or encroachment problems and provide protection of our facilities and the public before the actual work is to take place.
 - Encroaching entity shall provide KM with a set of drawings for review and a set of final construction drawings showing all aspects of the proposed facilities in the vicinity of KM's ROW. The encroaching entity shall also provide a set of as-built drawings showing the proposed facilities in the vicinity of KM's ROW.
 - Only facilities shown on drawings reviewed by (Company) will be approved for installation on KM's ROW. All drawing revisions that effect facilities proposed to be placed on KM's ROW must be approved by KM in writing.
 - KM shall approve the design of all permanent road crossings.
 - Any repair to surface facilities following future pipeline maintenance or repair work by KM will be at the expense of the developer or landowner.
 - The depth of cover over the KM pipelines shall not be reduced nor drainage altered without KM's written approval.
 - Construction of any permanent structure, building(s) or obstructions within KM pipeline easement is not permitted.
 - Planting of shrubs and trees is not permitted on KM pipeline easement.
 - Irrigation equipment i.e. backflow prevent devices, meters, valves, valve boxes, etc. shall not be located on KM easement.
 - Foreign line, gas, water, electric and sewer lines, etc., may cross perpendicular to KM's pipeline within the ROW, provided that a minimum of two (2) feet of vertical clearance is maintained between KM pipeline(s) and the foreign pipeline. Constant line elevations must be maintained across KM's entire ROW width, gravity drain lines are the only exception. Foreign line crossings below the KM pipeline must be evaluated by KM to ensure that a significant length of the KM line is not exposed and unsupported during construction. When installing underground utilities, the last line should be placed beneath all existing lines unless it is impractical or unreasonable to do so. Foreign line crossings above the KM pipeline with less than 2 feet of clearance must be evaluated by KM to ensure that additional support is not necessary to prevent settling on top of the KM hazardous liquids pipeline.
 - A foreign pipeline shall cross KM facilities at a near a ninety-degree angle as possible. A foreign pipeline shall not run parallel to KM pipeline within KM easement without written permission of KM.
 - The foreign utility should be advised that KM maintains cathodic protection on their pipelines. The foreign utility must coordinate their cathodic protection system with KM's. At the request of KM, foreign utilities shall install (or allow to be installed) cathodic protection test leads at all crossings for the purposes of monitoring cathodic protection. The KM Cathodic Protection (CP) technician and the foreign utility CP technician shall perform post construction CP interference testing. Interference issues shall be resolved by mutual agreement between foreign utility and KM. All costs associated with the correction of cathodic protection problems on KM pipeline as a result of the foreign utility crossing shall be borne by the foreign utility for a period of one year from date the foreign utility is put in service.
 - The metallic foreign line shall be coated with a suitable pipe coating for a distance of at least 10 feet on either side of the crossing unless otherwise requested by the KM CP Technician.

Reference: L-OM Procedure 204 Page 2 of 3 L-OM200-29
Distribution: Local Files Engineering 11/07

KINDER MORGAN
Guidelines for Design and Construction near
Kinder Morgan Hazardous Liquid Operated Facilities

- AC Electrical lines must be installed in conduit and properly insulated.
 - DOT approved pipeline markers shall be installed so as to indicate the route of the foreign pipeline across the KM ROW.
 - No power poles, light standards, etc. shall be installed on KM easement
 - No pipeline may be located within 50 feet (15 meters) of any private dwelling, or any industrial building or place of public assembly in which persons work, congregata, or assemble.
- Construction**
- Contractors shall be advised of KM's requirements and be contractually obligated to comply.
 - The continued integrity of KM's pipelines and the safety of all individuals in the area of proposed work near KM's facilities are of the utmost importance. Therefore, contractor must meet with KM representatives prior to construction to provide and receive notification listings for appropriate area operations and emergency personnel. KM's on-site representative will require discontinuation of any work that, in his opinion, endangers the operations or safety of personnel, pipelines or facilities.
 - The Contractor must expose all KM pipelines prior to crossing to determine the exact alignment and depth of the lines. A KM representative must be present. In the event of parallel lines, only one pipeline can be exposed at a time.
 - KM will not allow pipelines to remain exposed overnight without consent of KM designated representative. Contractor may be required to backfill pipelines at the end of each day.
 - A KM representative shall do all line locating. A KM representative shall be present for hydraulic excavation. The use of probing rods for pipeline locating shall be performed by KM representatives only, to prevent unnecessary damage to the pipeline coating.
 - Notification shall be given to KM at least 72 hours before start of construction. A schedule of activities for the duration of the (Company). Heavy equipment shall only be allowed to cross KM pipelines at locations designated by Kinder Morgan, Inc. Contractor shall comply with all precautionary measures required by KM to protect its pipelines. When inclement weather exists, provisions must be made to compensate for soil displacement due to subsidence of fires. Equipment excavating within ten (10) feet of KM Pipelines will have a plate guard installed over the teeth to protect the pipeline.
 - Excavating or grading which might result in erosion or which could render the KM ROW inaccessible shall not be permitted unless the contractor/developer/owner agrees to restore the area to its original condition and provide protection to KM's facility.
 - A KM representative shall be on-site to observe any construction activities within ten (10) feet of a KM pipeline or aboveground appurtenance. The contractor shall not work within this distance without a KM representative being on site. Only hand excavation shall be permitted within two (2) feet of KM pipelines, valves and fittings unless State requirements are more stringent. However, proceed with extreme caution when within three (3) feet of the pipe.
 - A KM representative will monitor construction activity within 25 feet of KM facilities during and after the activities to verify the integrity of the pipeline and to ensure the scope and conditions agreed to have not changed. Monitoring means to conduct site inspections on a pre-determined frequency based on items such as: scope of work, duration of expected excavator work, type of equipment, potential impact on pipeline, complexity of work and/or number of excavators involved.
 - Ripping is only allowed when the position of the pipe is known and not within ten (10) feet of KM facility unless company representative is present.
 - Temporary support of any exposed KM pipeline by Contractor may be necessary if required by KM's on-site representative. Backfill below the exposed lines and 12' above the lines shall be replaced with sand or other selected material as approved by KM's on-site representative and thoroughly compacted in 12" lifts to 95% of standard proctor dry density minimum or as approved by KM's on-site representative. This is to adequately protect against stresses that may be caused by the settling of the pipeline.

Reference: L-OM Procedure 204 Page 2 of 3 L-OM200-29
Distribution: Local Files Engineering 11/07

KINDER MORGAN
Guidelines for Design and Construction near
Kinder Morgan Hazardous Liquid Operated Facilities

- No blasting shall be allowed within 1000 feet of KM's facilities unless blasting notification is given to KM including complete Blasting Plan Data. A pre-blast meeting shall be conducted by the organization responsible for blasting. KM shall be indemnified and held harmless from any loss, cost of liability for personal injuries received, death caused or property damage suffered or sustained by any person resulting from any blasting operations undertaken within 500 feet of its facilities. The organization responsible for blasting shall be liable for any and all damages caused to KM's facilities as a result of their activities whether or not KM representatives are present. KM shall have a signed and executed Blasting Indemnification Agreement before authorized permission to blast can be given.
- No blasting shall be allowed within 300 feet of KM's facilities unless blasting notification is given to KM a minimum of one week before blasting. (note: covered above) KM shall review and analyze the blasting methods. A written blasting plan shall be provided by the organization responsible for blasting and agreed to in writing by KM in addition to meeting requirements for 500' and 1000' being met above. A written emergency plan shall be provided by the organization responsible for blasting. (note: covered above)
- Any contact with any KM facility, pipeline, valve set, etc. shall be reported immediately to KM. If repairs to the pipe are necessary, they will be made and inspected before the section is re-coated and the line is back-filled.
- KM personnel shall install all test leads on KM facilities.
- Burning of trash, brush, etc. is not permitted within the KM ROW.

Insurance Requirements

- All contractors, and their subcontractors, working on Company easements shall maintain the following types of insurance policies and minimum limits of coverage. All insurance certificates carried by Contractor and Grantee shall include the following statement: "Kinder Morgan and its affiliated or subsidiary companies are named as additional insured on all above policies (except Worker's Compensation) and waiver of subrogation in favor of Kinder Morgan and its affiliated or subsidiary companies, their respective directors, officers, agents and employees applies as required by written contract." Contractor shall furnish Certificates of Insurance evidencing insurance coverage prior to commencement of work and shall provide thirty (30) days notice prior to the termination or cancellation of any policy.

- Statutory Coverage Workers' Compensation Insurance in accordance with the laws of the states where the work is to be performed. If Contractor performs work on the adjacent or navigable waterways Contractor shall furnish a certificate of insurance showing compliance with the provisions of the Federal Longshoreman's and Harbor Workers' Compensation Law.
- Employer's Liability Insurance, with limits of not less than \$1,000,000 per occurrence and \$1,000,000 disease each employee.
- Commercial General Liability Insurance with a combined single limit of not less than \$2,000,000 per occurrence and in the aggregate. All policies shall include coverage for blanket contractual liability assumed.
- Comprehensive Automobile Liability Insurance with a combined single limit of not less than \$1,000,000. If necessary, the policy shall be endorsed to provide contractual liability coverage.
- If necessary Comprehensive Aircraft Liability Insurance with combined bodily injury, including passengers, and property damage liability single limits of not less than \$5,000,000 each occurrence.
- Contractor's Pollution Liability Insurance this coverage shall be maintained in force for the full period of this agreement with available limits of not less than \$2,000,000 per occurrence.
- Pollution Legal Liability Insurance this coverage must be maintained in a minimum amount of \$5,000,000 per occurrence.

Reference: L-OM Procedure 204 Page 3 of 3 L-OM200-29
Distribution: Local Files Engineering 11/07

KINDER MORGAN
Excavation Site Inspection

Excavator Company	ONE CALL TO HIS	INITIAL CALL DATE	DISTRICT/LOCATION
PERSON TO CONTACT			
LOCATION OF CONSTRUCTION WORK			
Yes No	1. Was the pipeline required to be located?		
<input type="checkbox"/> <input type="checkbox"/>			
Yes No	2. Does the excavation require temporary marker flags?		
<input type="checkbox"/> <input type="checkbox"/>			
	When are they needed? Date	Time	AM PM
	Have they been placed? Date	From	To
<input type="checkbox"/> <input type="checkbox"/>	3. Will the excavation (or heavy equipment above grade) cross or be within 50 feet of the Company's pipeline(s)?		
<input type="checkbox"/> <input type="checkbox"/>	4. Has crossing of the pipeline(s) or excavation encroachment within 50 feet of the pipeline(s) been completed?		
	If no, when will it begin/resume? Date	Time	AM PM
Conditions found and type of equipment on site			
ADDITIONAL COMMENTS			

Notice to Excavator

Excavation equipment and blasting can damage pipelines resulting in the release of product which may cause serious injuries and/or death and severe damage to the environment.

No excavation is allowed within 10' of any Kinder Morgan (KM) pipeline unless a KM representative is onsite or has given explicit exception. All excavation within 2' of a KM pipeline must be done either using hand tools or, with approval, a hydrovac, unless state requirements are more stringent and require a larger tolerance zone.

To avoid damaging a pipeline:

- Look for evidence of a pipeline including such things as caution signs, aerial patrol markers, casing vents and above ground piping. When excavating, look for warning tape.
- Never assume the location of pipelines because:
 - They can change directions abruptly between above ground physical evidence.
 - Their depths can vary substantially in short distances.
 - More than one pipeline may be present.
- Call Kinder Morgan to have its representative approximately locate the line and provide on-site assistance (both are fee services) before ANY excavating activity.
- If you encounter warning tape while excavating, cease excavation and contact the Kinder Morgan representative immediately.

EXCAVATOR NAME _____

EXCAVATOR REPRESENTATIVE _____ TELEPHONE _____

COMPANY REPRESENTATIVE NAME & NUMBER _____

MEETING DATE _____ TIME _____ AM PM _____

SIGNATURE (EXCAVATOR REPRESENTATIVE) _____

IF YOUR PLANS AS INDICATED ABOVE CHANGE, CALL () - 247/7, BEFORE YOU DIG. IN ADDITION CONTACT APPLICABLE ONE CALL CENTER IF REQUIRED.

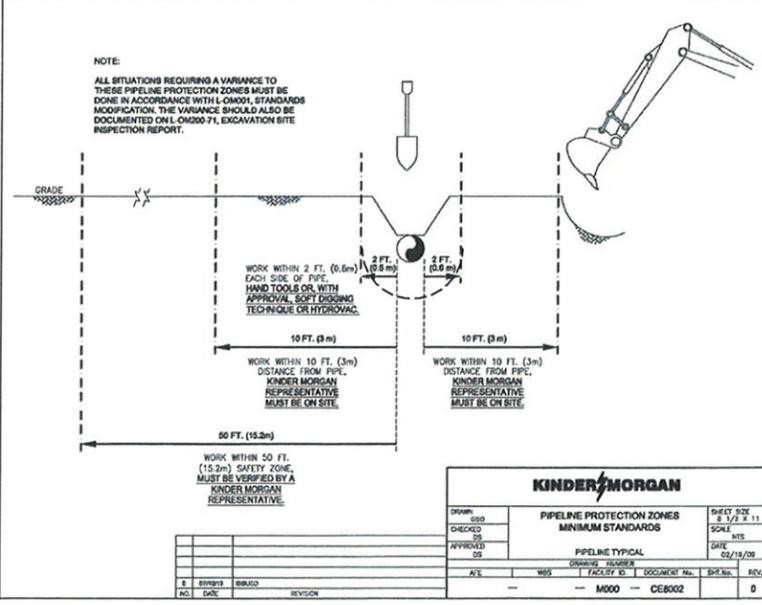
Reference: L-OM Procedure 204 Page 3 of 3 L-OM200-71
Distribution: Local Files Engineering 8/11/10

KINDER MORGAN
Instructions for Form Completion

- Complete this form at the conclusion of the initial meeting with the excavator whenever a field site meeting is conducted. Complete the form after discussing in detail with the excavator's representative his intended excavation plans.
- If Kinder Morgan's assistance will be required at a later date or time to mark the pipeline or monitor the excavation, record the pertinent information in the blanks provided and in the "Additional Comments" section. Confirm the specifics agreed to with the excavator's representative and point this information out to him on the completed form.
- Enter your name and the name of the excavator, and their on-site representative on the appropriate lines. Enter a phone number where the excavator may be reached. Enter a phone number where you may be reached at the bottom of the page.
- If assistance is not needed or is no longer needed, review the "Notice" section with the excavator.
- The form must be re-issued for changes in activities, including, but not limited to: Changes in the scope of work that could affect the safety of the line, changes of affected personnel on the site (excavators, foreman, etc.), changes to the schedule/work plan, that is, digging faster or moving to another area, i.e., across the street.
- Each time this form is used, give the copy with the sketch on the back to the excavator's representative and file the other copy.

Reference: L-OM Procedure 204 Page 2 of 3 L-OM200-71
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KINDER MORGAN
PIPELINE PROTECTION ZONES



NOTE:
THE CONTRACTOR IS REQUIRED TO HAVE A KINDER MORGAN INSPECTOR AT THE PRECONSTRUCTION MEETING AND ON SITE FOR WORK NEAR THEIR FACILITIES. THE HOURLY COST OF A KINDER MORGAN INSPECTOR IS SHOWN ON THE CHART ON THIS SHEET TO THE UPPER LEFT. COST IS INCIDENTAL.

For all work within 10 feet of the pipeline (measured horizontally from the edge of the pipe) we require an inspector to be present. The inspector will discuss the work to be done with the contractor and come to an agreement on the safest method of completing that work. No power equipment is allowed within two feet of the pipeline.

At the time of the crossing the onsite inspector will review the work to be done with the contractor and agree upon the safest method to complete the job. No power equipment will be allowed within 24 inches of any part of the pipeline. In addition to our inspector, the contractor will need to provide a spotter to ensure no power equipment enters the exclusion zone. If the contractor uses power equipment to remove soils beneath the pipe, outside the exclusion zone, they should work from either side and not dig across the pipeline.

The above guidelines may vary depending on the specifics of the jobsite. Our inspectors are specifically trained to assess the on-site risks as they develop work plans for excavations around the pipe. Good communication and cooperation will result in a safe pipeline crossing that will meet your schedule.

KINDER MORGAN
REFERENCE DOCUMENTS

8073-TONQUIN EMPLOYMENT AREA
SANITARY UPGRADE

CITY OF SHERWOOD
ENGINEERING DEPARTMENT
22560 SW PINE STREET
SHERWOOD, OREGON 97140
PHONE: (503) 925-2308
FAX: (503) 625-0623
E-MAIL: engineering@sherwoodoregon.gov



DESIGNED BY:	CCC
DRAWN BY:	AS/CCC
CHECKED BY:	JAW
DATE:	MARCH 25, 2013
SCALE:	AS NOTED

NO.	DATE	REVISIONS

JOB NO. **8073**
SHEET NO. **11**
OF **11**