Request for Proposals
3.0 MG West Side Reservoir and 24-inch Transmission Main
CIP #1149

Addendum No. 2 **October 18, 2022**

The following is provided as supplementary information to the Request for Proposals published on October 5, 2022 (QuestCDN #8306687).

The optional pre-proposal meeting took place on October 13, 2022 at 1:00 p.m. The following were discussion points or responses to questions answered at the meeting/site visit.

- City staff discussed key highlights of the project, including:
  - City staff involved (review and comment, project management)
  - Scope of work:
    - Phase 1 – preliminary engineering and "mini master plan" to verify assumptions and correct sizing of reservoir and piping
      - Alternatives analysis (specifically for seismic design)
      - Site plan: need to take future use into account – 2nd reservoir and possible well
        - Note: existing house to stay, barn will be demolished. House is currently occupied, and we need to coordinate with tenants.
    - Phase 2 – final engineering and construction services
  - Operational concerns with the length of 24" transmission pipe (water age), as well as construction impacts on Tooze Rd with the Sherwood 48" line in the same corridor.

Questions/Responses:

- Q: Can the City provide the draft water system schematic?
  - Yes, See Attachment D
- Q: What is the purpose of the proposed well?
  - This would be to replace wells that are no longer functioning. This is only a conceptual idea at this point, but the City wants to make sure to have the option available.
- Q: Any other operational concerns?
  - Typical concerns for this type of facility. Need to look at operator safety with the reservoir height (e.g. stairs vs. ladders)

- Q: What level of effort is expected with public involvement?
  - This needs to be right-sized for the project and will depend on the impacts to Tooze Rd. Typically, City expects consultant to provide materials and support for public involvement. There may be a need to attend open-houses at the site or a City Council meeting.
- Q: Does the City have a SCADA integrator? What should the relationship be with the integrator?
  - Yes, the City works with Portland Engineering. It's preferred to include them as a sub-consultant for this project rather than having the City directly contract with them.
- Q: What specifically is the City looking for in a seismic alternatives analysis?
  - Costs associated with different design criteria and guidance in selection (Oregon codes/Resilience Plan vs. Willamette Water Supply standards).
- Q: Schedule – is the schedule in the RFP firm?
  - There is no specific driver for the Oct 2025 completion other than to wrap up before another rainy season. Can be extended but need to be watchful of the City's expansion and need for additional storage.

Attachments:

A. Pre-proposal sign in sheet
B. Pre-proposal meeting agenda
C. Pre-proposal meeting PowerPoint
D. DRAFT – Water System Schematic
E. Record drawings of Sherwood 48" main

End of Addendum No. 2

By: Mike Nacrelli, PE, Project Manager

Attachment A

CITY OF WILSONVILLE
ENGINEERING DEPARATMENT

PRE-PROPOSAL MEETING SIGN-IN

DATE: October 13, 2022, 1:00 PM

PROJECT: West Side Level B Reservoir and 24" Transmission Main

PROJECT MANAGER: Mike Nacrelli, mnacrelli@ci.wilsonville.or.us, 503-570-1540

PRESENT AT MEETING

NAME	REPRESENTING	PHONE #	E-MAIL ADDRESS
Andrew Barrett	COW	503-570-1567	abarrett@ci.wilsonville.or.us
Sarah Alton	COW	503-570-1538	salton@ci.wilsonville.or.us
Ian Eglitis	COW	503-570-1584	eglitis@ci.wilsonville.or.us
Mike Nacrelli	COW	503-570-1540	mnacrelli@ci.wilsonville.or.us
Taylor Stockton	RH2	503-460-7488	tstockton@rh2.com
Jason Rice	WSC	503-387-7300	jrice@wsc-inc.com
Scott Duren	WSC	503-387-7300	sduren@wsc-inc.com
Jesse Fields	Keller	503-999-1434	jfields@kellerassociates.com
Peter Olsen	Keller	503-364-2002	polsen@kellerassociates.com
Lael Alderman	Consor	503-225-9010	Lael.alderman@consoreng.com
Adam Blair	Consor	503-2252-9010	Adam.blair@consoreng.com
Brad Moore	Hazen & Sawyer	Via Zoom	Via Zoom
Dan Garbely	Hazen & Sawyer	Via Zoom	Via Zoom
Mark Nelson	Kennedy/Jenks	Via Zoom	Via Zoom
David Matz	RH2	Via Zoom	Via Zoom
Anna-Marie Matalucci	AKS	Via Zoom	Via Zoom

PRE-PROPOSAL
MEETING AGENDA

PROJECT: West Side Level B Reservoir and 24" Transmission Main
Project No. 1149

LOCATION: 29799 SW Town Center Loop E, Wilsonville, OR 97070
Arrowhead Creek Conference Room or via Zoom

DATE/TIME: October 13, 2022 – 1:00 PM

OWNER: City of Wilsonville

PROJECT MANAGER: Mike Nacrelli, P.E. (City of Wilsonville)

1. INTRODUCTIONS – Name, Company, and Role

2. RFP SCHEDULE
    A. Change Request/Question Deadline – 10/28/22, 5:00 PM
    B. Addenda Issuance Deadline – 10/31/22, 5:00 PM
    C. Proposal Due Date – 11/3/22, 4:00 PM
    D. Notice of Intent to Award – 11/16/22
    E. City Council Award – 12/19/22
    F. Notice of Award – 12/20/22

3. PROJECT BACKGROUND
    A. Review of RFP Attachment B

4. SCOPE OF WORK
    A. Review of RFP Section 2

5. TERM OF SERVICE
    A. Final Completion Date: October 10, 2025

6. OTHER TOPICS AND QUESTIONS

7. OPTIONAL SITE VISIT – 2:00 PM
    A. 12771 SW Tooze Road, Sherwood, OR 97140

Attachment C

West Side Level 'B' Reservoir and 24" Transmission Main

Pre-Proposal Meeting
October 13, 2022

Mike Nacrelli, Senior Civil Engineer
mnacrelli@ci.Wilsonville.or.us

WILSONVILLE
OREGON

Meeting Agenda

- Sign-Ins (all attendees)
- City's Project Team Introductions
  - Mike Nacrelli, Senior Civil Engineer
  - Andrew Barrett, Capital Projects Engineering Manager
  - Sarah Alton, Civil Engineer
- Proposal Schedule
- Project Overview
- Scope of Work
- Questions
- Site Visit – 12771 SW Tooze Rd, Sherwood, OR 97140

Proposal Schedule

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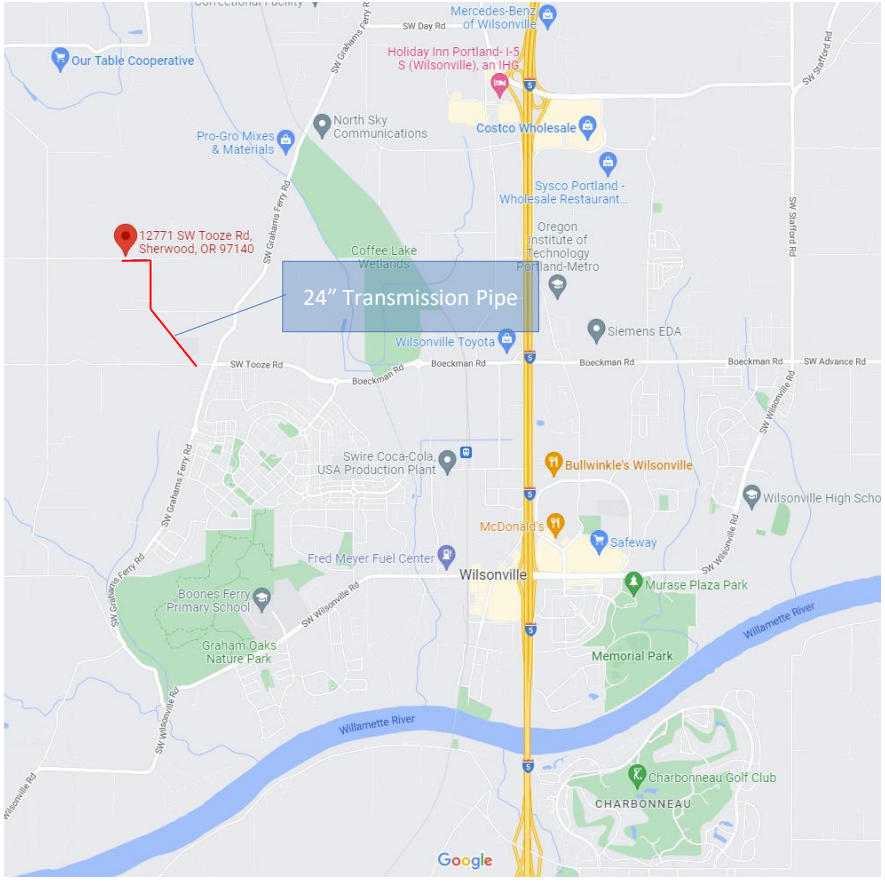
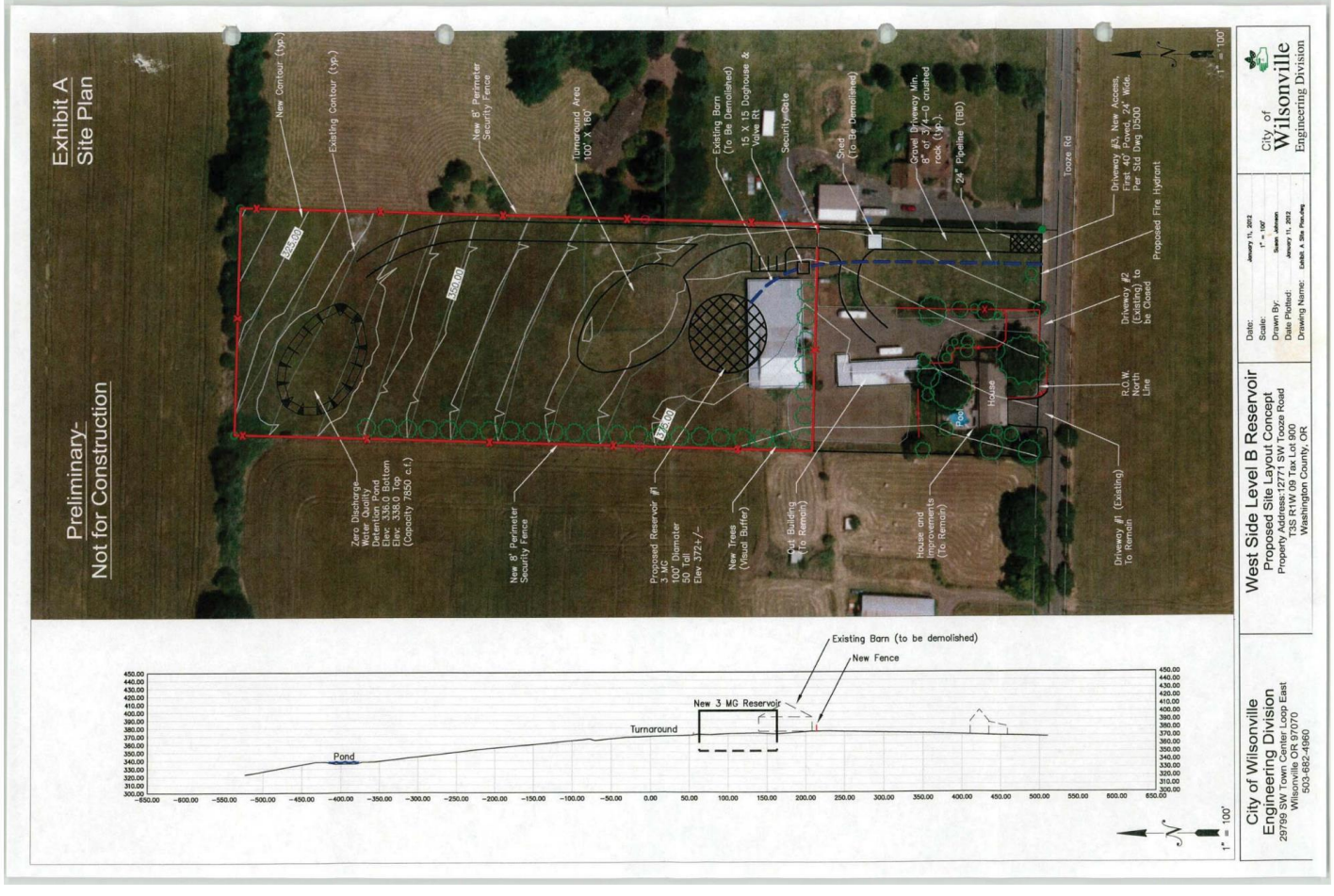
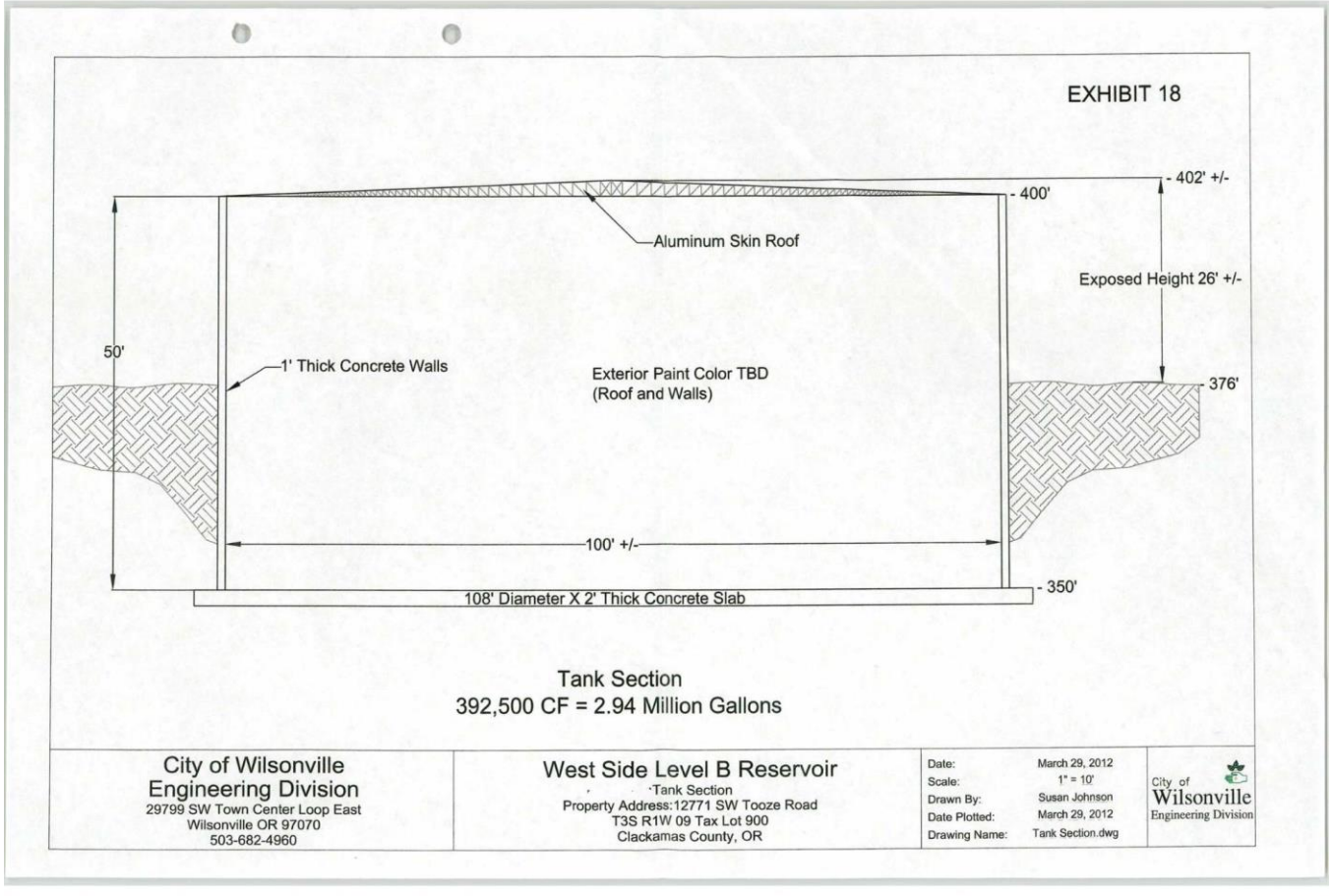
Project Overview



Project Overview

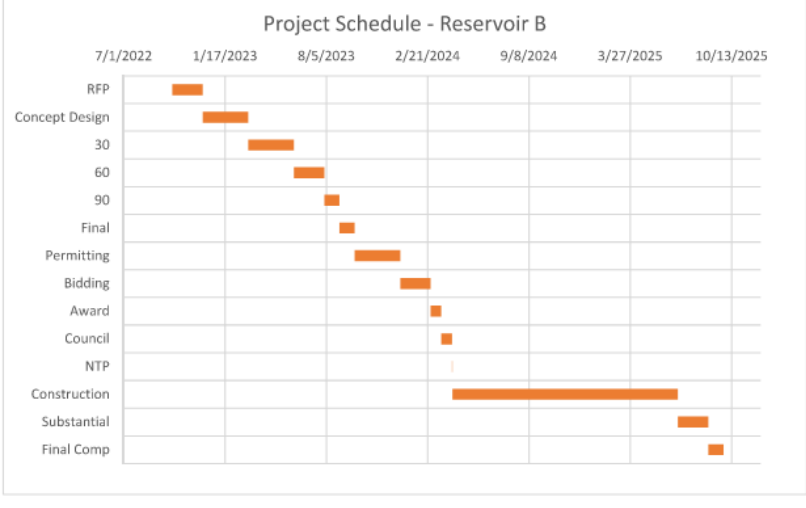


Project Overview



Scope of Work

- Goal: A new 3.0 MG D-110 reservoir and associated 24” transmission piping, completed by October 2025.
- Phase 1: Preliminary Analysis & Investigation:
  - “Mini Master Plan” – need to verify the 2015 assumptions and update if necessary
  - Pre-design work: reports, site plans, cost estimates for alternatives
- Phase 2: Final Analyses, Design, & Construction:
  - Design – Bid – Build project delivery method
  - 30%, 60%, 90%, and 100% design levels



Questions

WILSONVILLE
OREGON

Attachment D

DRAFT

WILSONVILLE
OREGON

'C' Level
507.5
463.0
2.0 MG

Elligsen 1
XXX
344.0
2.2 MG

Elligsen 2
400.5
350.0
3.0 MG

Elligsen

506
275 410

Canyon Creek

Burns Way (N/C)

Gesellschaft

Nike

Charbonneau 1 & 2

400
100 104

320
100 170

Charbonneau
125.0
105.0
0.75 MG

City of Tualatin

N/C

506

18" DI

400

400

Parkway/ Elligsen

400

Wiedemann

16" DI

14" DI

12" & 18" DI

14" DI

Boone Bridge

12" STL

INTERSTATE 5

Boeckman

N/C

450

450

63" STL

450

Boeckman

Barber

Wilsonville

Brockway

Willamette Intake

WTP Clearwell
123.0
103.0
At 15 MGD

400

Rest Area

450

City of Sherwood

450

48" STL

Tooze/Westfalls (N/C)

Oakleaf

Future Reservoir

N/C

400

400
100 285

308
168 172

Willamette River

Legend

- X / Y — Overflow Elevation (ft) / Base Elevation (ft)
- 450 — Pressure Zone HGL (ft)
- MIN MAX — Zone Elevation Range (ft)
- Pressure Reducing Station
- Pump Station
- Groundwater Well

NORTH

CONFIDENTIAL

SEPTEMBER 2022—Water System Schematic

N:\Engineering\Water System\System Map - Draft\COW-Water Schematic.pub

Attachment E

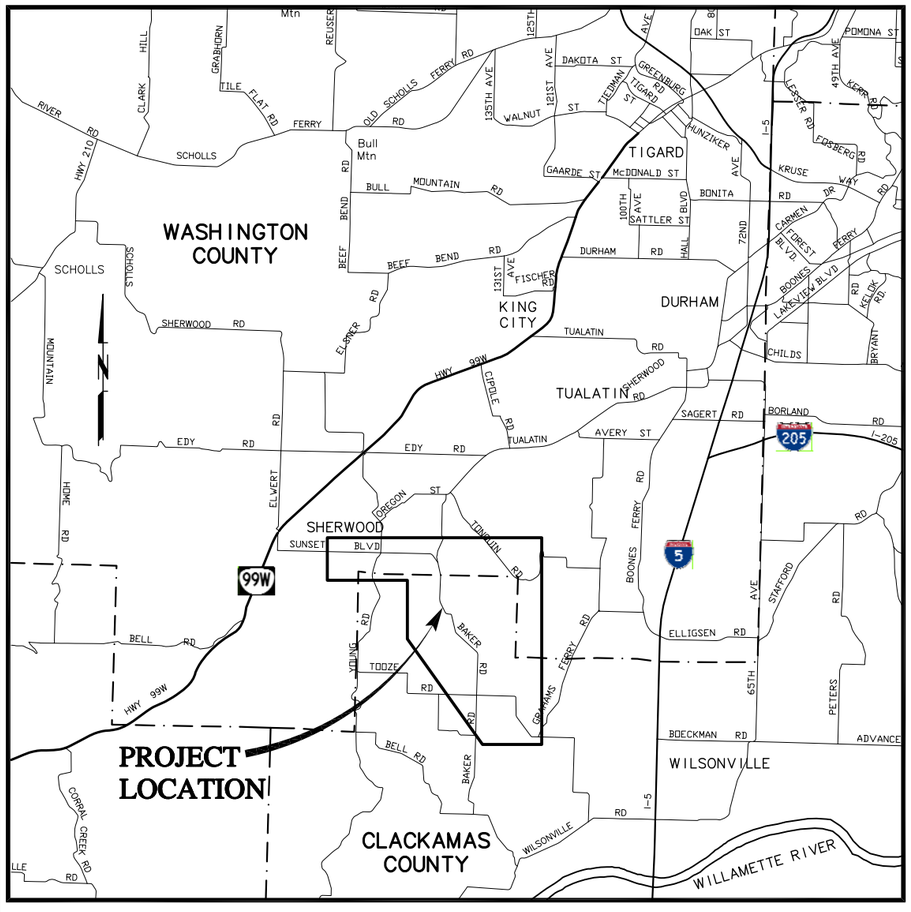
CITY OF SHERWOOD
WATER SUPPLY IMPROVEMENT PROJECT
TRANSMISSION PIPELINE
VOLUME 3 OF 3

JUNE 2009

RECORD DRAWINGS

THIS DRAWING IS FOR RECORD PURPOSES ONLY, AND HAS BEEN PREPARED BASED IN PART ON INFORMATION PROVIDED BY OTHERS RELATIVE TO REPORTED CONSTRUCTED CONDITIONS. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, MURRAY, SMITH & ASSOCIATES, INC. MAKES NO ASSURANCES, STATED OR IMPLIED, AS TO THE ACCURACY OF THIS DRAWING. THOSE RELYING ON THIS RECORD DRAWING FOR ANY PURPOSE ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY. CONTRACT MODIFICATION INFORMATION, FABRICATOR'S SHOP DRAWINGS AND OTHER PROJECT SUBMITTAL INFORMATION PROVIDED BY THE CONTRACTOR WHICH FURTHER CLARIFY DETAILS OF CONSTRUCTION MAY BE ON FILE. SEE ORIGINAL CONTRACT DRAWINGS FOR ENGINEER'S SEAL AND SIGNATURES.

VERSION 4.0 12-9-97

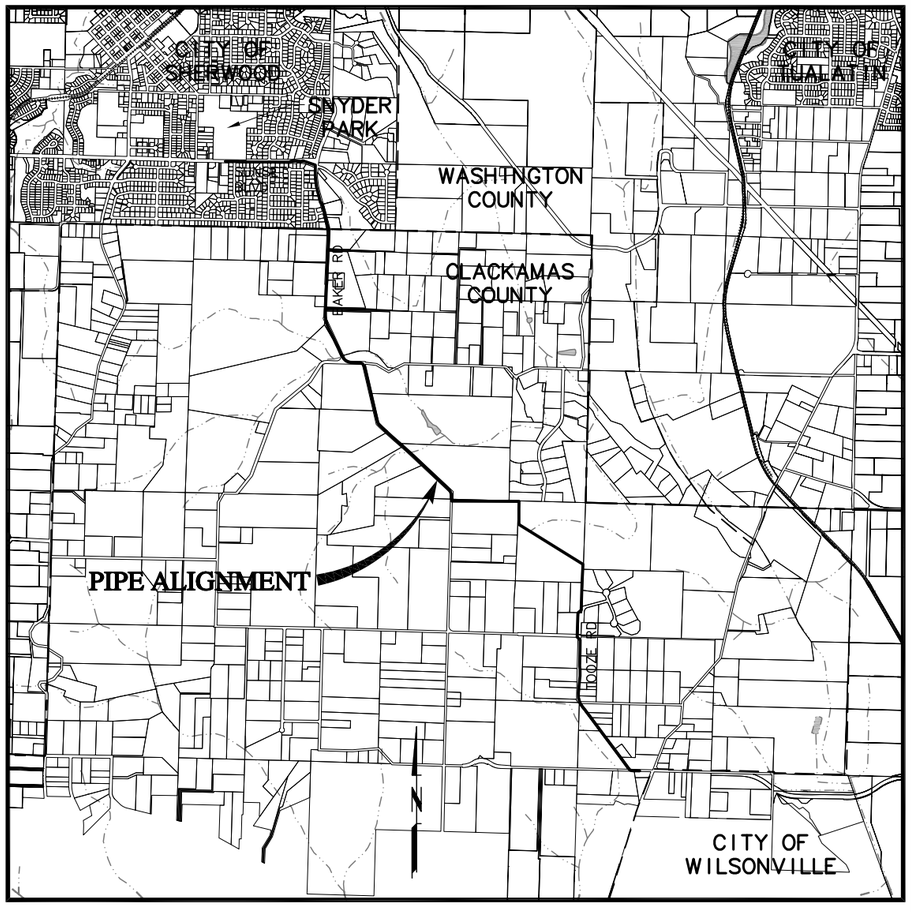


VICINITY MAP
SCALE: 1"=5000'

City of
Sherwood
Oregon

SureWater
Building a water system for a livable Sherwood

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



LOCATION MAP
SCALE: 1"=1500'

07-0873.207

INDEX OF DRAWINGS

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

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

NO.	DATE	BY	REVISION
⚠3	08/22/11	BVO	RECORD DRAWING
⚠2	07/23/10	SMG	REVISED 48" PIPE ALIGNMENT
⚠1	09/14/09	SMG	RFI #1

NOTICE
0 ½ 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

SMG DESIGNED
DAK DRAWN
MLH CHECKED

RECORD DRAWING
SEE DISCLAIMER, SHEET 1.
VERSION 4.1
12-9-97

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

City of Sherwood Oregon

WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

INDEX OF DRAWINGS

PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

SHEET G-2
2 of 79

G:\PDX_Projects\07\0873\207 Design-Final Plans\CAD\DOR\07-0873-207-OR-G-2-R.dwg G-2 9/2/2011 12:08 PM DAK 18.1s (LMS Tech)

GENERAL NOTES:

1. ALL DI PIPING TO BE RESTRAINED JOINT PIPING (R) UNLESS OTHERWISE SPECIFICALLY IDENTIFIED AS (SP) FOR STANDARD PUSH-ON JOINT PIPING. SEE SPECS FOR APPROVED TYPES OF RESTRAINT.

2. PROBES AND BORE HOLES ARE REFERENCED IN GEOTECHNICAL INVESTIGATION REPORTS OF JANUARY 3, 2007, AND FEBRUARY 6, 2009, ISSUED BY GRI. THIS REPORT IS INCLUDED AS SUPPLEMENTARY INFORMATION AND IS FOR CONTRACTOR REFERENCE ONLY AND IS NOT A PART OF THE CONTRACT DOCUMENTS.

3. LOCATIONS OF EXISTING UTILITIES ARE BASED ON INFORMATION SUPPLIED BY THE UTILITIES AND CONSIDERED APPROXIMATE ONLY. WORK FOR THIS CONTRACT MAY BE LOCATED IN CLOSE PROXIMITY TO EXIST UTILITIES. SEE SECTION 02222. THE CONTRACTOR SHALL POTHOLE AND VERIFY LOCATIONS, ELEVATIONS, TYPES AND SIZES OF EXISTING UTILITIES PRIOR TO CONSTRUCTING NEW PIPING FAR ENOUGH IN ADVANCE TO ALLOW NECESSARY ADJUSTMENTS IN GRADE AND SHALL NOTIFY ENGINEER OF NEED TO ADJUST PIPING INSTALLATION ACCORDINGLY. POTHOLING SHALL SUFFICIENTLY PRECEDE LAYING OF PIPE TO ALLOW REQUIRED ELEVATION ADJUSTMENTS TO BE ACCOMPLISHED WITHOUT REWORK. ELEVATION ADJUSTMENTS SHALL BE EXPECTED AND ARE INCIDENTAL TO THE WORK. DEFLECT PIPE AS REQUIRED AND WITHIN MANUFACTURER'S TOLERANCES TO AVOID EXISTING UTILITIES AND COMPLETE TIE-INS.

4. RESTRAIN ALL VALVES, TEES, BENDS, AND FITTINGS UNLESS OTHERWISE NOTED. ALL DI FITTINGS TO BE RESTRAINED MECHANICAL JOINT UNLESS OTHERWISE NOTED.

5. ALL FLANGED CONNECTIONS SHALL CONFORM TO THE REQUIREMENTS OF AWWA C115 AND C207, LATEST EDITION.

6. PROVIDE POLYETHYLENE ENCASEMENT FOR ALL DI PIPING WITHIN TEN (10) FEET OF EXISTING GAS MAIN ACCORDING TO ANSI/AWWA C105/A21.5.

7. TEST PRESSURE FOR DI WATER PIPING TO BE 150 PSI UNLESS OTHERWISE NOTED.

8. TEST PRESSURE FOR STEEL WATER PIPING TO BE 1.25 X WORKING PRESSURE OR 150 PSI WHICHEVER IS GREATER, UNLESS OTHERWISE NOTED.

9. HYDROSTATIC FIELD TEST PRESSURE SHALL BE AS SPECIFIED IN SECTION 01650.

10. UNLESS NOTED ON THE DRAWINGS OR SPECIFIED OTHERWISE, ALL WORK IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE MOST RECENT VERSION OF CITY OF SHERWOOD PUBLIC WORKS AND CLEAN WATER SERVICES STANDARDS AND THE OREGON ADMINISTRATIVE RULES (OAR), CHAPTER 333.

11. CONTRACTOR SHALL PROVIDE TEMPORARY TAPS AND BLOWOFFS AND THRUST BLOCKING AS REQUIRED TO FACILITATE FLUSHING, TESTING AND DISINFECTION OF WATERLINES. AT COMPLETION OF DISINFECTION, REMOVE TEMPORARY TEST TAPS AND REPLACE WITH PERMANENT DUCTILE IRON, STEEL OR BRASS PLUGS.

12. ALL EXISTING FEATURES INCLUDING BUT NOT LIMITED TO ROADWAYS, STRUCTURES, LOTS, CURBS, SIDEWALKS, FENCES, WALLS, PLANTING, DITCHES, MAILBOXES, SIGNS, PIPING AND UTILITIES DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO EXISTING CONDITION UNLESS OTHERWISE SPECIFIED. CONTRACTOR SHALL REPAIR ALL UTILITY SERVICES DAMAGED DURING CONSTRUCTION AND SUCH REPAIRS SHALL BE CONSIDERED INCIDENTAL.

13. CONTRACTOR TO OBTAIN AND COMPLY WITH CITY OF SHERWOOD AND CLACKAMAS COUNTY PERMITS AND REQUIREMENTS FOR WORK IN, AND RESTORATION OF, CITY AND COUNTY ROADWAYS.

14. ALL WATER PIPING SHALL HAVE A MINIMUM OF 3 FEET OF COVER FROM TOP OF PIPE BELL TO STREET GRADE OR OTHER FINISH GRADE, UNLESS OTHERWISE SHOWN OR APPROVED BY ENGINEER.

15. DO NOT REMOVE TREES UNLESS THEY HAVE BEEN PREVIOUSLY IDENTIFIED IN THE FIELD FOR REMOVAL PER ENGINEER.

16. FINAL LOCATIONS OF ALL VALVE BOXES, TEST STATIONS, AIR RELEASE VALVES AND BLOWOFFS, SHALL BE FIELD VERIFIED PRIOR TO CONSTRUCTION PER ENGINEER.

17. PROVIDE "AS CONSTRUCTED" DRAWINGS INDICATING ALL CHANGES IN GRADE, ALIGNMENT, FITTINGS AND MATERIALS INSTALLED AND ANY OTHER UTILITIES OR OBSTACLES NOT SO INDICATED ON THESE PLANS.

18. AT THE END OF EACH WORK DAY ALL OPEN TRENCHES SHALL BE BACKFILLED TO GRADE OR PLATED. SEE SECTION 02222.

19. CONTRACTOR SHALL COMPLY WITH ALL OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY (DEQ) REQUIREMENTS IN THE DISPOSAL OF CHLORINATED WATER. SEE SPECIFICATIONS.

20. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING CONSTRUCTION SURVEYS. PRIOR TO CONSTRUCTION, FIELD LAYOUT SHALL BE APPROVED BY ENGINEER. SEE CONTRACT DOCUMENTS FOR SURVEY REQUIREMENTS.

21. WHERE A WATERLINE CROSSES A SANITARY SEWER LINE, ONE PIPE LENGTH OF THE WATERLINE MUST BE CENTERED AT THE CROSSING. COMPLY W/ OAR CHAPTER 333 RULES FOR REQUIRED WATERLINE-SEWERLINE SEPARATION AND CROSSING REQUIRED.

22. PIPE DEFLECTION OF DUCTILE IRON PIPE LIMITED TO ONE-HALF MANUFACTURER'S RECOMMENDATIONS.

23. HORIZ BEND COORDINATES REPRESENT THE CENTERLINE POINT OF INTERSECTION.

24. MAINLINE VALVE OPERATOR NUTS TO BE PLACED ON SIDE CLOSEST TO EDGE OF PAYMENT.

25. MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH CLEAN WATER SERVICES STANDARD PLANS AND SPECIFICATIONS.

26. MANHOLE COVERS SHALL BE SET FLUSH WITH FINISH GRADE. ALL MANHOLE COVERS OUT OF ROADWAYS SHALL BE TAMPER PROOF UNLESS OTHERWISE NOTED.

GENERAL NOTES CONT.:

27. SEE SPECIAL PROVISIONS OF SPECIFICATIONS FOR SPECIAL CONSTRUCTION SEQUENCING FOR PIPELINE CONSTRUCTION.

28. CONTRACTOR IS TO POTHOLE AND VERIFY EXACT DEPTHS AND LOCATIONS OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.

29. EXISTING UTILITIES, NOT INTENDED FOR REPLACEMENT, ARE TO BE PROTECTED AND PRESERVED DURING CONSTRUCTION.

30. SOME EXISTING UTILITIES SHOWN ON THESE PLANS MAY BE RELOCATED PRIOR TO CONSTRUCTION. UTILITY LOCATES PERFORMED PRIOR TO CONSTRUCTION SHOULD REPRESENT NEW LOCATION OF RELOCATED UTILITIES.

31. NOTIFY PGE PRIOR TO WORK IMPACTING UTILITY POLES. COORDINATE PROTECTION, RELOCATION, OR REPLACEMENT OF UTILITY POLES WITH PGE.

32. CONNECTIONS TO EXISTING WATERLINES MAY REQUIRE TEMPORARY SHUTDOWNS OF EXISTING FACILITIES. THE CONTRACTOR SHALL COORDINATE THIS WORK WITH THE CITY OF SHERWOOD AND PROVIDE A MINIMUM OF 72 HOURS ADVANCE NOTICE PRIOR TO PERFORMING WATERLINE TIE-IN WORK. SEE SPECIFICATIONS FOR SEQUENCE OF CONSTRUCTION REQUIREMENTS. OPERATION OF VALVES SHALL BE BY CITY OF SHERWOOD PERSONNEL ONLY.

33. FOR CLARITY, OVERHEAD LINES ARE NOT SHOWN ON THE DWGS. NUMEROUS EXIST. OVERHEAD LINES OCCUR ALONG THE PIPE ALIGNMENT. CONTRACTOR TO CONFIRM CONDITIONS IN VICINITY OF OVERHEAD LINES.

34. THE FIRST LENGTH OF 48-INCH STEEL PIPE INSTALLED AT THE BEGINNING OF EACH WORK DAY SHALL BE INSTALLED SUCH THAT THE JOINT IS STABBED AN ADDITIONAL DEPTH TO ALLOW FOR CONTRACTION OF THE PIPE AS IT COOLS ONCE PLACED IN THE GROUND AND BACKFILLED. THE JOINT SHALL NOT BE WELDED UNTIL NEAR THE END OF THE WORK DAY OR UNTIL THE BEGINNING OF THE NEXT DAY. ONCE THE PIPE SEGMENTS INSTALLED IN THE TRENCH FOR THAT DAY ARE BACKFILLED, ARE WITHIN 10 DEGREES OF AMBIENT GROUND TEMPERATURE AND ARE FULLY CONTRACTED, THE FIRST PIPE JOINT CAN BE WELDED. THIS PROCEDURE SHALL BE FOLLOWED IN ADDITION TO THE SPECIFICATION REQUIREMENT TO COVER THE PIPE TO AVOID DIRECT SUNLIGHT ON THE PIPE.

CITY OF SHERWOOD STANDARD NOTES:

1. CONTRACTOR SHALL NOTIFY CITY OF SHERWOOD ENGINEERING DEPARTMENT AT 503-925-2306 TWO (2) BUSINESS DAYS PRIOR TO COMMENCEMENT OF WORK ON GRADING, PUBLIC IMPROVEMENTS, OR STORM WATER TREATMENT FACILITIES.

2. ALL CONSTRUCTION SHALL CONFORM TO CITY OF SHERWOOD STANDARD CONSTRUCTION SPECIFICATIONS. CONTRACTOR AND SUBCONTRACTOR(S) SHALL HAVE A MINIMUM OF ONE SET OF APPROVED PLANS AND CITY OF SHERWOOD STANDARD CONSTRUCTION SPECIFICATIONS ON THE JOB SITE AT ALL TIMES DURING CONSTRUCTION.

3. CITY OF SHERWOOD MAINTAINS THE ENDS OF HOUSE LATERALS AT THE CURB LINE IN RIGHT OF WAY AND AT THE END OF THE TEE IN EASEMENTS.

4. CITY OF SHERWOOD BUILDING DEPARTMENT APPROVALS AND PERMITS ARE REQUIRED FOR PRIVATELY MAINTAINED SEWER, INLETS, INLET LEADS, AND SERVICE LATERALS CONSTRUCTED OUTSIDE OF PUBLIC RIGHT-OF-WAY OR SEWER EASEMENT. ALL WORK APPROVED UNDER PLUMBING PERMITS SHALL BE PRIVATELY OWNED AND MAINTAINED.

5. ATTENTION EXCAVATORS: OREGON LAW REQUIRES YOU TO FOLLOW RULES ADOPTED BY OREGON UTILITY NOTIFICATION CENTER. THOSE RULES ARE SET FORTH IN OAR 952-001-0010 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 CALL CENTER. YOU MUST NOTIFY THE CENTER AT LEAST 2 BUSINESS DAYS, BUT NOT MORE THAN 10 BUSINESS DAYS, BEFORE COMMENCING EXCAVATION. CALL 503-246-6699.

6. MARK ENDS OF ALL STUB OUTS AND LATERALS WITH CONTINUOUS PRESSURE TREATED 2"x4". TOP 12" TO BE PAINTED WHITE FOR STORM AND STENCILED WITH BLACK "ST", PAINTED GREEN FOR SANITARY AND STENCILED WITH BLACK "SS". ALSO INCLUDE PIPE SIZE, MATERIAL TYPE, AND PIPE DEPTH. BURY 2"x4" TO I.E. OF STUB OR LATERAL.

7. ALL TRENCH LINES AND EXCAVATIONS SHALL BE PROPERLY SHORED AND BRACED TO PREVENT CAVING. UNUSUALLY DEEP EXCAVATIONS MAY REQUIRE EXTRA SHORING AND BRACING. ALL SHEETING, SHORING, AND BRACING OF TRENCHES SHALL CONFORM TO OREGON OCCUPATIONAL SAFETY AND HEALTH DIVISION (OSHA) REGULATIONS AND CITY OF SHERWOOD STANDARD CONSTRUCTION SPECIFICATIONS. SEE SECTION 02222.

EROSION CONTROL NOTES:

1. ALL EROSION CONTROL MEASURES SHALL BE IN ACCORDANCE WITH THE WES/CWS EROSION PREVENTION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL (REV. DECEMBER 2008) EXCEPT AS SPECIFICALLY REQUESTED BY OR APPROVED BY WES/CWS. THIS MANUAL IS AVAILABLE FOR FREE BY DOWNLOADING FROM THE WES WEBSITE AT:
HTTP://WWW.CO.CLACKAMAS.OR.US/WES/

2. APPROVAL OF THIS EROSION SEDIMENTATION CONTROL (ESC) PLAN DOES NOT CONSTITUTE AN APPROVAL OF PERMANENT ROAD OR DRAINAGE DESIGN (E.G.: SIZE AND LOCATION OF ROADS, PIPES, RESTRICTIONS, CHANNELS, RETENTION FACILITIES, UTILITIES, ETC.).

3. THE IMPLEMENTATION OF THESE EROSION/SEDIMENTATION CONTROL (ESC) PLANS AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF THESE ESC FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR UNTIL ALL CONSTRUCTION IS COMPLETED AND APPROVED AND VEGETATION/LANDSCAPING IS ESTABLISHED.

4. THE BOUNDARIES OF THE CLEARING LIMITS SHOWN ON THESE PLANS SHALL BE CLEARLY FLAGGED IN THE FIELD PRIOR TO CONSTRUCTION. DURING THE CONSTRUCTION PERIOD, NO DISTURBANCE BEYOND THE FLAGGED CLEARING LIMITS SHALL BE PERMITTED. THE FLAGGING SHALL BE MAINTAINED BY THE CONTRACTOR FOR THE DURATION OF CONSTRUCTION.

EROSION CONTROL NOTES CONT.:

5. THE ESC FACILITIES SHOWN ON THESE PLANS MUST BE CONSTRUCTED IN CONJUNCTION WITH ALL CLEARING AND GRADING ACTIVITIES, AND IN SUCH A MANNER AS TO ENSURE THAT SEDIMENT AND SEDIMENT LADEN WATER DO NOT ENTER THE DRAINAGE SYSTEM, ROADWAYS, OR VIOLATE APPLICABLE WATER STANDARDS.

6. THE ESC FACILITIES SHOWN ON THESE PLANS ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, THE ESC FACILITIES SHALL BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND TO ENSURE THAT SEDIMENT AND SEDIMENT LADEN WATER DO NOT LEAVE THE SITE.

7. THE ESC FACILITIES SHALL BE INSPECTED DAILY BY THE CONTRACTOR AND MAINTAINED AS NECESSARY TO ENSURE THEIR CONTINUED FUNCTIONALITY.

8. DURING INACTIVE PERIODS ON THE SITE OF GREATER THAN SEVEN (7) CONSECUTIVE CALENDAR DAYS, INSPECTIONS SHALL BE REQUIRED ONCE EVERY TWO (2) WEEKS.

9. FOR EACH CATCH BASIN PROTECTION, CLEANING MUST OCCUR WHEN DESIGN CAPACITY HAS BEEN REDUCED BY FIFTY PERCENT. ALL CATCH BASINS AND CONVEYANCE LINES SHALL BE CLEANED PRIOR TO PAVING. THE CLEANING OPERATION SHALL NOT FLUSH SEDIMENT LADEN WATER INTO THE DOWN STREAM SYSTEM.

10. CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. SEE PLANS FOR GRAVEL CONSTRUCTION ENTRANCE. ADDITIONAL MEASURES MAY BE REQUIRED TO ENSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT. TRUCKS ENTERING PAVEMENT FROM UNPAVED AREAS SHALL BE FREE OF MUD AND DEBRIS. SEE REQM'T OF 1200-C PERMIT.

11. FILTER FABRIC INLET BARRIERS SHALL BE INSTALLED AT NEW AND EXISTING STORM INLETS TO PREVENT SEDIMENT AND SEDIMENT LADEN WATER FROM ENTERING THE STORM DRAINAGE SYSTEM.

12. CONTRACTOR SHALL PROVIDE DUST CONTROL AS REQUIRED, SEE SPECIFICATIONS AND PERMIT REQUIREMENTS.

13. PAVEMENT SURFACES AND VEGETATION ARE TO BE PLACED AS RAPIDLY AS POSSIBLE.

14. SEEDING SHALL BE PERFORMED NO LATER THAN SEPTEMBER 1 FOR EACH PHASE OF CONSTRUCTION.

15. IF THERE ARE EXPOSED SOILS OR SOILS NOT FULLY STABILIZED FROM OCTOBER 1 THROUGH MAY 31, THE WET WEATHER EROSION CONTROL MEASURES WILL BE IN EFFECT ACCORDING TO WES/CWS EROSION PREVENTION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL (REV. DECEMBER 2008).

16. ESC MEASURES SHALL BE REMOVED BY THE CONTRACTOR WHEN VEGETATION IS FULLY ESTABLISHED, AS APPROVED BY THE ENGINEER.

17. NOTIFY ENGINEER 24 HOURS PRIOR TO ANY WORK ON SITE.

SEDIMENT FENCE NOTES:

18. STANDARD OR HEAVY-DUTY SEDIMENT FENCE FILTER FABRIC SHALL HAVE MANUFACTURED STITCHED LOOPS WITH 2"X2"X4' POSTS. STITCHED LOOPS SHALL BE INSTALLED ON THE UPHILL SIDE OF THE SLOPED AREA.

19. THE FILTER FABRIC FENCE SHALL BE INSTALLED TO FOLLOW THE CONTOURS WHERE FEASIBLE. THE FENCE POSTS SHALL BE SPACED A MAXIMUM OF 6 FEET APART AND DRIVEN SECURELY INTO THE GROUND A MINIMUM OF 12 INCHES.

20. SEDIMENT FENCES SHOULD BE INSTALLED A MINIMUM OF 3 FEET FROM TOE OF SLOPE IN ORDER TO MAXIMIZE STORAGE.

21. A TRENCH SHOULD BE EXCAVATED 6 INCHES DEEP ALONG THE LINE OF POSTS. TRENCH SHOULD BE BACKFILLED AND THE SOIL COMPACTED ON BOTH SIDES OF THE SEDIMENT FENCE.

22. ALL SEDIMENT FENCING MATERIAL AND PLACEMENT SHALL BE IN ACCORDANCE WITH THE WES/CWS EROSION PREVENTION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL (REV. DECEMBER 2008).

23. SEDIMENT FENCES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY STABILIZED.

24. WHEN JOINING TWO OR MORE SEDIMENT FENCES TOGETHER, JOIN THE TWO END STAKES BY WRAPPING THE TWO ENDS AT LEAST ONE AND ONE HALF TURNS AND DRIVING THE JOINED STAKES INTO THE GROUND TOGETHER.

25. WHEN SEDIMENT FENCE APPROACHES ITS TERMINATION POINT, TURN FENCE UPHILL AND EXTEND ON FULL PANEL (6 FT). HEIGHT OF A SEDIMENT FENCE SHOULD NOT EXCEED 3 FEET. STORAGE HEIGHT AND PONDING HEIGHT SHOULD NEVER EXCEED 1.5 FEET.

BIO-FILTER BAG NOTES:

26. BIO-FILTER BAGS SHOULD BE CLEAN 100% RECYCLED WOOD PRODUCT WASTE.

27. BIO-FILTER BAGS SHALL BE STANDARD SIZE 10" x 8" x 30", WEIGHING APPROXIMATELY 45 POUNDS WITH ½" PLASTIC NETTING.

28. USE 2 - 1" x 2" STAKES PER BAG, DRIVEN 12-INCHES INTO GROUND.

29. OVERLAP ENDS OF ADJACENT BAGS 6-INCHES TO PREVENT PIPING BETWEEN JOINTS.

30. ROUTINELY INSPECT BAGS. CHECK THAT STAKES ARE SECURE, ENDS OF BAGS ARE OVERLAPPED AND PLASTIC MESH BAGS HAVE NO TEARS.

31. REMOVE SEDIMENT WHEN IT HAS ACCUMULATED TO ⅓ HEIGHT OF BAG.

NO.	DATE	BY	REVISION
4	08/22/11	BVO	RECORD DRAWING

NOTICE
0 ½ 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

SMG DESIGNED
DAK DRAWN
MLH CHECKED

RECORD DRAWING
SEE DISCLAIMER, SHEET 1.
VERSION 4.1
12-9-97

MSA Murray, Smith & Associates, Inc.
Engineers/Planners
121 S.W. Salmon, Suite 900 PHONE 503-225-9010
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City of Sherwood Oregon

WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

GENERAL NOTES/ EROSION CONTROL NOTES

PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

SHEET
G-3
3 of 79

PIPE SYMBOLS

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

VALVE SYMBOLS

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

TOPOGRAPHIC LEGEND & NOTES

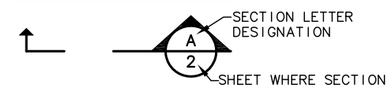
	EXISTING	PROPOSED
WATERLINE	16"W	16"W
		48"STL
FUTURE PIPELINE		16"W
ELECTRICITY	E	
GAS	4"G	
TELEPHONE/TELEMETRY	T	
CABLE TELEVISION	CATV	
SANITARY SEWER LINE	8"SS	
STORM DRAIN	8"SD	8"SD
CULVERT		
ABANDON PIPE		
DRAINAGE DITCH		
BARBWIRE FENCE		
CHAIN LINK FENCE		
WOODEN FENCE		
ROCK WALL		
TREE/BUSH LINE		
CENTERLINE		
EASEMENT/PROPERTY LINE		
EDGE OF PAVEMENT/AC		
EDGE OF GRAVEL		
CURB		
SIDEWALK	S/W	S/W
STRUCTURE OR FACILITY		
CONTOUR MINOR		
CONTOUR MAJOR	360	360
ASPHALT DRIVEWAY		
GRAVEL DRIVEWAY		

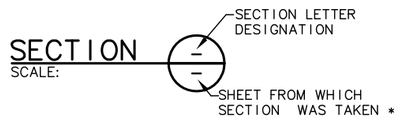
TOPOGRAPHIC LEGEND & NOTES CONTINUE

	EXISTING	PROPOSED
MANHOLE		
CLEAN-OUT		
CATCH BASIN/FIELD INLET		
THRUST BLOCK		
VALVE		
AIR INJECTION ASSEMBLY		
PERMANENT BLOW-OFF ASSEMBLY		
TF500 BLOW-OFF ASSEMBLY		
TEMPORARY BLOW-OFF ASSEMBLY		
AIR RELEASE ASSEMBLY		
FIRE HYDRANT ASSEMBLY		
WATER METER		
BOLLARD		
PULL BOX/JUNCTION BOX		
CATHODIC PROTECTION TEST STATION		
INSULATION JOINT		
DISMANTLING JOINT		
UTILITY POLE		
GUY WIRE		
MAIL BOX		
SIGN		
BENCH MARK		
TREE DECIDUOUS		
TREE CONIFEROUS		
TREE TO BE REMOVED		
TREE TO BE PROTECTED WITH FENCING		
LIGHT POST		
SURFACE ELEVATION	+ 385.33	+ 385.33
FINAL GRADING SLOPES	4H:1V	4H:1V
CARSONITE MARKER		
MANWAY VAULT		
TRENCH DAM		

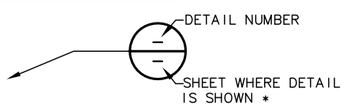
SECTION AND DETAIL DESIGNATIONS

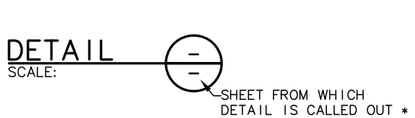
SECTION DESIGNATIONS





DETAIL DESIGNATIONS





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

MISCELLANEOUS PIPING SYMBOLS

	STRAINER
	SIGHT GLASS
	PRESSURE GAUGE W/COCK
S	PRESSURE SWITCH W/COCK
	THERMOMETER
	ROTAMETER
M	METER

CALLOUT SYMBOLS

SP	SLIP ON JOINT PIPE
R	RESTRAINED JOINT PIPE
N	COMPACTED NATIVE BACKFILL & NATIVE SURFACE RESTORATION
G	COMPACTED GRANULAR BACKFILL & GRANULAR SURFACE RESTORATION
AC	COMPACTED GRANULAR BACKFILL & AC SURFACE RESTORATION

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City of Sherwood Oregon

WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

SYMBOLS AND LEGEND

PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

SHEET G-4

@	AT
AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY & TRANSPORTATION OFFICIALS
AB	ANCHOR BOLT
ABAN (D)	ABANDON (ED)
ABS	ACRYLONITRILE BUTADIENE STYRENE
ABV	ABOVE
AC	ASPHALTIC CONCRETE
ACI	AMERICAN CONCRETE INSTITUTE
ACP	ASPHALTIC CONCRETE PAVING
ADJ	ADJUSTABLE
ADJC	ADJACENT
ADPTR	ADAPTOR
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHR	ANCHOR
AL	ALUMINUM
ALT	ALTERNATE
AMP	AMPERE
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APPROX	APPROXIMATE
APPVD	APPROVED
APWA	AMERICAN PUBLIC WORKS ASSOCIATION
ARCH	ARCHITECTURAL
ARV	AIRE RELEASE VALVE
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS
ASSN	ASSOCIATION
ASSY	ASSEMBLY
ASTM	AMERICAN SOCIETY FOR TESTING & MATERIALS
ATM	ATMOSPHERE
AUTO	AUTOMATIC
AUX	AUXILIARY
AVE	AVENUE
AVG	AVERAGE
AWG	AMERICAN WIRE GAUGE
AWWA	AMERICAN WATER WORKS ASSOCIATION
B&S	BELL & SPIGOT
BC	BOLT CIRCLE
BD	BOARD
BTWN	BETWEEN
BF	BOTH FACE
BFD	BACKFLOW PREVENTION DEVICE
BFILL	BACKFILL
BFV	BUTTERFLY VALVE
BHP	BRAKE HORSEPOWER
BKGD	BACKGROUND
BLDG	BUILDING
BLK	BLOCK
BLVD	BOULEVARD
BM	BENCH MARK / BEAM
BMP	BEST MANAGEMENT PRACTICE
BO	BLOWOFF
BOC	BACK OF CURB
BS	BOTH SIDES
BSMT	BASEMENT
BTF	BOTTOM FACE
BTU	BRITISH THERMAL UNIT
BTWN	BETWEEN
BV	BALL VALVE
BW	BOTH WAYS
C	CELSIUS
CARV	COMBINATION AIR RELEASE VALVE
CATV	CABLE TELEVISION
CB	CATCH BASIN
CC	CENTER TO CENTER
CCP	CONCRETE CYLINDER PIPE
CCW	COUNTER CLOCKWISE
CFM	CUBIC FEET PER MINUTE
CFS	CUBIC FEET PER SECOND
CHAN	CHANNEL
CHEM	CHEMICAL
CHFR	CHAMFER
CHKV	CHECK VALVE
CI	CAST IRON
CIP	CAST IRON PIPE
CIPC	CAST IN PLACE CONCRETE
CIV	CAST IRON VALVE
CISP	CAST IRON SOIL PIPE
CJ	CONSTRUCTION JOINT
CL or ℄	CENTER LINE
CL2	CHLORINE
CLG	CEILING
CLJ	CONTROL JOINT
CLR	CLEAR
CLSM	CONTROLLED LOW STRENGTH MATERIAL
CMP	CORRUGATED METAL PIPE
CMU	CONCRETE MASONRY UNIT
CND	CONDUIT
CO	CLEANOUT
COL	COLUMN
COMB	COMBINATION
CONC	CONCRETE
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUOUS
CONTR	CONTRACT (OR)
COORD	COORDINATE
COP	COPPER
CORP	CORPORATION
CORR	CORRUGATED
CP	CONTROL POINT
CPLG	COUPLING
CPVC	CHLORINATED POLYVINYL CHLORIDE
CR	CRUSHED ROCK
CS	COMBINED SEWER
CSP	CONCRETE SEWER PIPE
CT	COURT
CTR	CENTER
CU	CUBIC
CULV	CULVERT
CV	CONTROL VALVE
CW	CLOCKWISE / COLD WATER
CWS	CLEAN WATER SERVICES
CY	CUBIC YARDS
CYL	CYLINDER LOCK
D	DRAIN
DBL	DOUBLE
DC	DIRECT CURRENT
DEFL	DEFLECTION
DEG	DEGREE
DET	DETAIL
DI	DUCTILE IRON
DIA	DIAMETER
DIM	DIMENSION
DIR	DIRECTION
DIST	DISTANCE
DN	DOWN
DR	DRIVE
DS	DOWNSPOUT
DWG	DRAWING
DWL	DOWEL
DWV	DRAIN WASTE AND VENT
DWY	DRIVEWAY
E	EAST
EA	EACH
ECC	ECCENTRIC
EF	EACH FACE
EL	ELEVATION
E.G.	EXAMPLE
ELB	ELBOW
ELEC	ELECTRICAL
ENCL	ENCLOSURE
ENGR	ENGINEER
EOP	EDGE OF PAVEMENT
EQ or EQL	EQUAL
EQL SP	EQUALLY SPACED
EQUIP	EQUIPMENT
EW	EACH WAY
EXC	EXCAVATE
EXIST	EXISTING
EXIST GR	EXISTING GRADE
EXP	EXPANSION
EXP BT	EXPANSION BOLT
EXP JT	EXPANSION JOINT
EXT	EXTERIOR
F	FAHRENHEIT
F TO F	FACE TO FACE
FAB	FABRICATE
FB	FLAT BAR
FCA	FLANGED COUPLING ADAPTER
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FDN	FOUNDATION
FEXT	FIRE EXTINGUISHER
FF	FAR FACE
FGL	FIBERGLASS
FH	FIRE HYDRANT
FIN FL	FINISH FLOOR
FIN GR	FINISH GRADE
FIPT	FEMALE IRON PIPE THREAD
FITG	FITTING
FL	FLOOR LINE
FLEX	FLEXIBLE
FLG	FLANGE
FLL	FLOW LINE
FLR	FLOOR
FM	FORCE MAIN
FO	FIBER OPTIC
FOC	FACE OF CONCRETE
FOF	FACE OF FINISH
FOM	FACE OF MASONRY
FOS	FACE OF STUDS
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FRP	FIBERGLASS REINFORCED PLASTIC
FT	FEET / FOOT
FTG	FOOTING
FUT	FUTURE
FXTR	FIXTURE
G	GAS
GA	GAUGE
GAL	GALLON
GALV	GALVANIZED
GC	GROOVED COUPLING
GFA	GROOVED FLANGE ADAPTER
GI	GALVANIZED IRON
GIP	GALVANIZED IRON PIPE
GJ	GRIP JOINT
GL	GLASS
GLV	GLOBE VALVE
GND	GROUND
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GPS	GALLONS PER SECOND
GR	GRADE
GR LN	GRADE LINE
GRTG	GRATING
GV	GATE VALVE
GRVL	GRAVEL
GYP	GYPSUM
HB	HOSE BIBB
HC	HOLLOW CORE
HDPE	HIGH DENSITY POLYETHYLENE
HDR	HEADER
HDWE	HARDWARE
HGR	HANGER
HGT	HEIGHT
HH	HANDHOLD
HM	HOLLOW METAL
HNDRL	HAND RAIL
HOA	HAND-OFF-AUTO
HOR	HAND-OFF-REMOTE
HORIZ	HORIZONTAL
HP	HIGH PRESSURE / HORSEPOWER
HPG	HIGH PRESSURE GAS
HPT	HIGH POINT
HR	HOUR
HSB	HIGH STRENGTH BOLT
HV	HOSE VALVE
HVAC	HEATING, VENTILATION, AIR CONDITIONING
HWL	HIGH WATER LINE
HWY	HIGHWAY
HYD	HYDRANT
HYDR	HYDRAULIC
I&C	INSTRUMENTATION & CONTROL
IAW	IN ACCORDANCE WITH
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
IF	INSIDE FACE
IMPVT	IMPROVEMENT
IN	INCH
INCC	INCLUDE (D) (ING)
INFL	INFLUENT
INJ	INJECTION
INSTL	INSTALLATION / INSTALL
INSUL	INSULATION
INTER	INTERCEPTOR
INTR	INTERIOR
INV	INVERT
IP	IRON PIPE
IPT	IRON PIPE THREAD
IR	IRON ROD
IRRIG	IRRIGATION
JT	JOINT
JUNC	JUNCTION
KPL	KICK PLATE
KVA	KILOVOLT AMPERE
KW	KILOWATT
KWY	KEYWAY
L	LENGTH OF CURVE
LAB	LABORATORY
LAT	LATERAL
LAV	LAVATORY
LB	POUND
LF	LINEAL FOOT
LIN	LINEAL / LINEAR
LN	LANE
LOC	LOCATION
LONG	LONGITUDINAL
LP	LOW PRESSURE
LPT	LOW POINT
LRG	LARGE
LS	LONG SLEEVE / LUMP SUM
LT	LEFT
LVL	LEVEL
LWL	LOW WATER LINE
MAN	MANUAL
MATL	MATERIAL
MAX	MAXIMUM
MB	MAIL BOX
MCC	MOTOR CONTROL CENTER
MCP	MASTER CONTROL PANEL
MECH	MECHANICAL
MET	METAL
MFR	MANUFACTURER
MGD	MILLION GALLONS PER DAY
MH	MANHOLE
MIN	MINIMUM
MIPT	MALE IRON PIPE THREAD
MISC	MISCELLANEOUS
MJ	MECHANICAL JOINT
MON	MONUMENT / MONOLITHIC
MOT	MOTOR
MP	MILEPOST
MSL	MEAN SEA LEVEL
MTD	MOUNTED
MUTCD	MANUAL ON UNIFORM TRAFFIC CONTROL DEFICES
N	NORTH
NA	NOT APPLICABLE
NC	NORMALLY CLOSED
NF	NEAR FACE
NIC	NOT IN CONTRACT
NO / NO.	NORMALLY OPEN / NUMBER
NOM	NOMINAL
NORM	NORMAL
NP	NON PAVE
NRS	NON-RISING STEM
NTS	NOT TO SCALE
O TO O	OUT TO OUT
OC	ON CENTER
OD	OUTSIDE DIAMETER
ODOT	OREGON DEPARTMENT OF TRANSPORTATION
OF	OVERFLOW / OUTSIDE FACE
OPNG	OPENING
OPP	OPPOSITE
ORIG	ORIGINAL
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
OVHD	OVERHEAD
P&ID	PROCESS & INSTRUMENTATION DIAGRAM
PC	POINT OF CURVE
PCC	POINT OF COMPOUND CURVE
PCVC	POINT OF CURVATURE ON VERTICAL CURVE
PE	PLAIN END
PERF	PERFORATED
PERM	PERMANENT
PERP	PERPENDICULAR
PG	PRESSURE GAGE
PGE	PORTLAND GENERAL ELECTRIC
PH	PIPE HANGER
PI	POINT OF INTERSECTION
PIVC	POINT OF INTERSECTION ON VERTICAL CURVE
PL or ℙ	PROPERTY LINE / PLATE / PLASTIC
PLBG	PLUMBING
PNL	PANEL
POC	POINT ON CURVE
POLY	POLYETHYLENE
POT	POINT ON TANGENCY
PP	POWER POLE
PRC	POINT OF REVERSE CURVE
PRCST	PRECAST
PREP	PREPARATION
PRESS	PRESSURE
PRKG	PARKING
PROP	PROPERTY
PRV	PRESSURE REDUCING VALVE
PS	PUMP STATION
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH GAGE
PSL	PIPE SLEEVE
PSPT	PIPE SUPPORT
PT	POINT OF TANGENCY
PTVC	POINT OF TANGENCY ON VERTICAL CURVE
PV	PLUG VALVE
PVC	POLYVINYL CHLORIDE
PVMT	PAVEMENT
PWR	POWER
QTY	QUANTITY
RAD	RADIUS
RC	REINFORCED CONCRETE
RCP	REINFORCED CONCRETE PIPE
RD	ROAD / ROOF DRAIN
RDCR	REDUCER
REF	REFERENCE
REINF	REINFORCE (D) (ING) (MENT)
REQD or REQ'D	REQUIRED
RESTR	RESTRAINED
RFCA	RESTRAINED FLANGE COUPLING ADAPTER
RM	ROOM
RND	ROUND
RO	ROUGH OPENING
ROW or R/W	RIGHT OF WAY
RPBPD	REDUCED PRESSURE BACKFLOW PREVENTION DEVICE
RPM	REVOLUTIONS PER MINUTE
RR	RAILROAD
RST	REINFORCING STEEL
RT	RIGHT
S	SOUTH
SALV	SALVAGE
SAN	SANITARY
SC	SOLID CORE
SCH(ED)	SCHEDULE
SDL	SADDLE
SDMH	STORM DRAIN MANHOLE
SDR	STANDARD DIMENSION RATIO
SECT	SECTION
SHLDR	SHOULDER
SHT	SHEET
SIM	SIMILAR
SLP	SLOPE
SLV	SLEEVE
SOLN	SOLUTION
SP	SOIL PIPE / SEWER PIPE
SPCL	SPECIAL
SPEC (S)	SPECIFICATION (S)
SPG	SPACING
SPL	SPOOL
SPRT	SUPPORT
SQ	SQUARE
SQ FT	SQUARE FOOT
SQ IN	SQUARE INCH
SQ YD	SQUARE YARD
SS	SANITARY SEWER
SST	STAINLESS STEEL
ST	STREET
STA	STATION
STDS	STANDARD
STL	STEEL
STOR	STORAGE
STR	STRAIGHT
STRUCT	STRUCTURE / STRUCTURAL
SUBMG	SUBMERGED
SUCT	SUCTION
SV	SOLENOID VALVE
SVC	SERVICE
SW	SOUTHWEST
S/W	SIDEWALK
SWD	SIDEWATER DEPTH
SWGR	SWITCH GEAR
SYMM	SYMMETRICAL
SYS	SYSTEM
T	TANGENT
T&B	TOP & BOTTOM
TB	THRUST BLOCK
TBM	TEMPORARY BENCH MARK
TC	TOP OF CONCRETE / TOP OF CURB
TDH	TOTAL DYNAMIC HEAD
TEL	TELEPHONE
TEMP	TEMPERATURE / TEMPORARY
T&G	TONGUE & GROOVE
THK	THICKNESS
THRD	THREAD(ED)
THRU	THROUGH
TP	TEST PIT/TOP OF PAVEMENT/TURNING POINT
TRANS	TRANSITION
TSP	TRI-SODIUM PHOSPHATE
TST	TOP OF STEEL
TTO	TANGENTIAL TURN OUT
TVWD	TUALATIN VALLEY WATER DISTRICT
TW	TOP OF WALL
TYP	TYPICAL
UG	UNDERGROUND
UH	UNIT HEATER
UN	UNION
UON	UNLESS OTHERWISE NOTED
US	UNITED STATES
USGS	UNITED STATES GEOLOGIC SURVEY
V	VENT / VOLT
VAC	VACUUM
VB	VACUUM BREAKER
VBOX	VALVE BOX
VC	VERTICAL CURVE
VERT	VERTICAL
VFD	VARIABLE FREQUENCY DRIVE
VLT	VAULT
VB	VERTICAL BEND
VCP	VITRIFIED CLAY PIPE
VOL	VOLUME
VTR	VENT THROUGH ROOF
W	WEST
W/	WITH
W/O	WITHOUT
W/W	WALL TO WALL
WD	WOOD
WF	WIDE FLANGE
WH	WALL HYDRANT
WHTR	WATER HEATER
WI	WROUGHT IRON
WM	WATER METER
WP	WORKING POINT / WATERPROOFING
WS	WATER SERVICE
WSDOT	WASHINGTON STATE DEPARTMENT OF TRANSPORTATION
WT	WEIGHT
WTP	WATER TREATMENT PLANT
WTR	WATER
WES	WATER ENVIRONMENT SERVICES
WTRT	WATERTIGHT
WWF	WELDED WIRE FABRIC
WWTF	WASTEWATER TREATMENT FACILITY
WWTP	WASTEWATER TREATMENT PLANT
X SECT	CROSS SECTION
XFMR	TRANSFORMER
YD	YARD DRAIN/YARD
YH	YARD HYDRANT
YR	YEAR
ZN	ZINC

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NOTICE

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VERSION 4.1
12-9-97

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

City of Sherwood Oregon

WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

ABBREVIATIONS

PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

SHEET G-5

EXIST VAULT AT RESERVOIR SITE
ALTITUDE VALVE, SEE SHT DT-2

CITY OF SHERWOOD

WASHINGTON COUNTY
CLACKAMAS COUNTY

NOTE:
KEY MAP IS PROVIDED AS AN INDEX FOR THE PLAN SHEET LAYOUT ONLY AND DOES NOT IDENTIFY WORK OR MATERIALS REQUIRED FOR CONSTRUCTION.

SNYDER PARK

SCH A

SCH A ◀▶ SCH B

CITY OF SHERWOOD
CITY LIMITS

SCHEDULE A
SUNSET BLVD TO
CITY OF SHERWOOD
CITY LIMITS

SCHEDULE B
CITY OF SHERWOOD
CITY LIMITS TO
APPROXIMATELY 1.3
MILES SOUTH OF
CITY LIMITS.

SCH B ◀▶ SCH C

SCHEDULE C
PIPE ALIGNMENT
TRAVERSES
PRIVATE PROPERTY

SCH C ◀▶ SCH D

SCHEDULE D
KAME TERRACE TO
APPROXIMATELY 262' WEST OF
SW TOOZE RD AND GRAHAM'S
FERRY INTERSECTION

PLAN
SCALE: 1"=500'

NO.	DATE	BY	REVISION
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City of Sherwood Oregon

WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

PLAN SHEET KEY MAP

PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

SHEET
G-6
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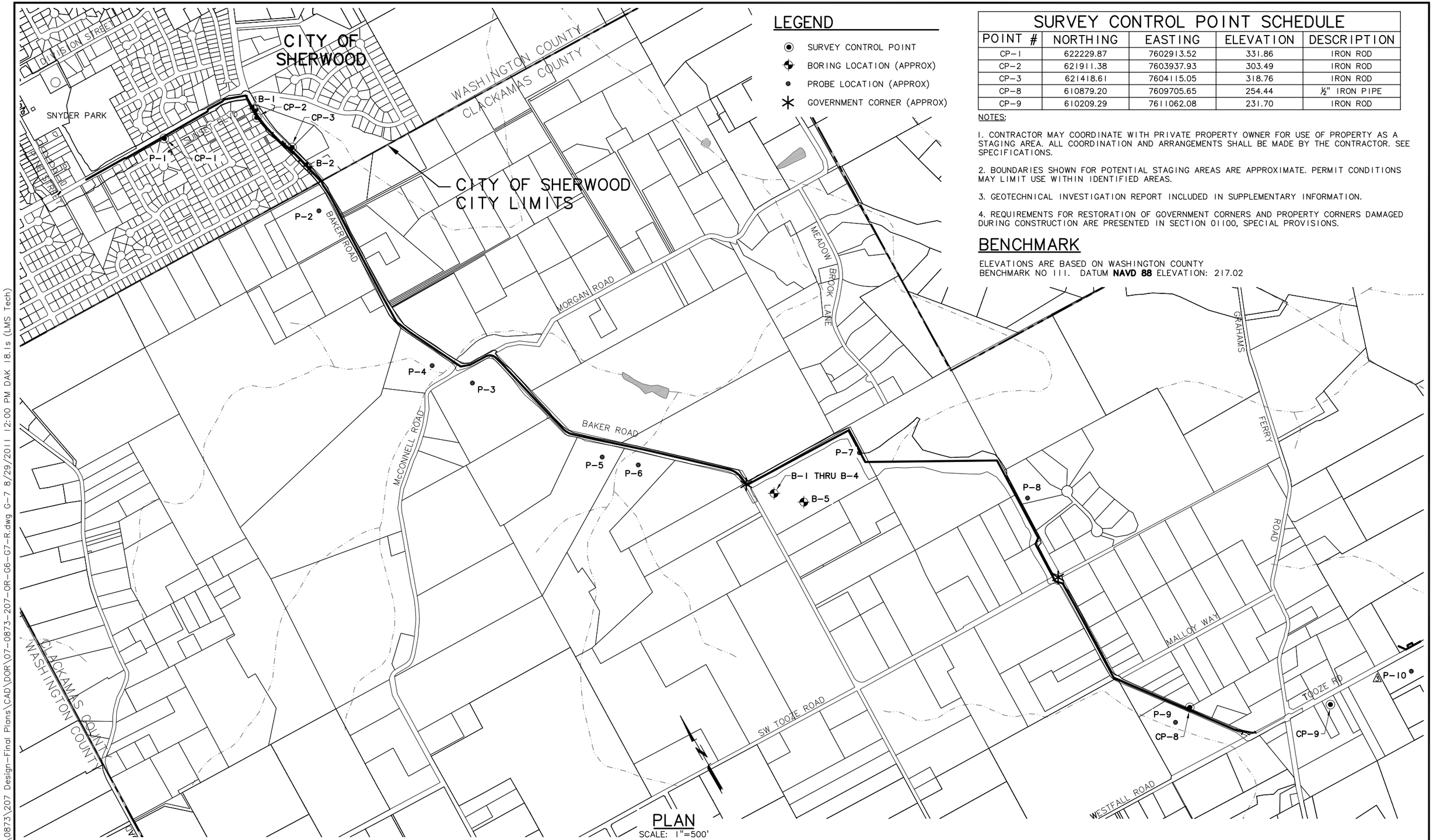

PLAN
SCALE: 1"=500'

LEGEND

- SURVEY CONTROL POINT
- BORING LOCATION (APPROX)
- PROBE LOCATION (APPROX)
- GOVERNMENT CORNER (APPROX)

SURVEY CONTROL POINT SCHEDULE

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
CP-1	622229.87	7602913.52	331.86	IRON ROD
CP-2	621911.38	7603937.93	303.49	IRON ROD
CP-3	621418.61	7604115.05	318.76	IRON ROD
CP-8	610879.20	7609705.65	254.44	½" IRON PIPE
CP-9	610209.29	7611062.08	231.70	IRON ROD

NOTES:

1. CONTRACTOR MAY COORDINATE WITH PRIVATE PROPERTY OWNER FOR USE OF PROPERTY AS A STAGING AREA. ALL COORDINATION AND ARRANGEMENTS SHALL BE MADE BY THE CONTRACTOR. SEE SPECIFICATIONS.

2. BOUNDARIES SHOWN FOR POTENTIAL STAGING AREAS ARE APPROXIMATE. PERMIT CONDITIONS MAY LIMIT USE WITHIN IDENTIFIED AREAS.

3. GEOTECHNICAL INVESTIGATION REPORT INCLUDED IN SUPPLEMENTARY INFORMATION.

4. REQUIREMENTS FOR RESTORATION OF GOVERNMENT CORNERS AND PROPERTY CORNERS DAMAGED DURING CONSTRUCTION ARE PRESENTED IN SECTION 01100, SPECIAL PROVISIONS.

BENCHMARK

ELEVATIONS ARE BASED ON WASHINGTON COUNTY
BENCHMARK NO 111. DATUM **NAVD 88** ELEVATION: 217.02

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City of Sherwood Oregon

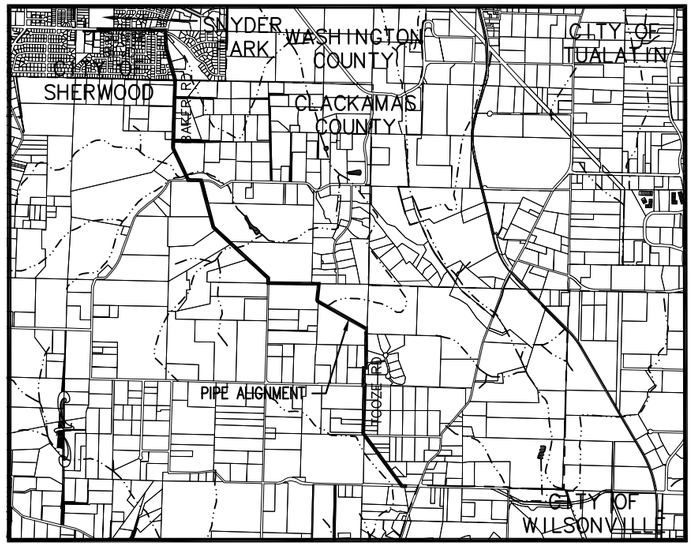
WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

SURVEY CONTROL / GEOTECHNICAL EXPLORATION

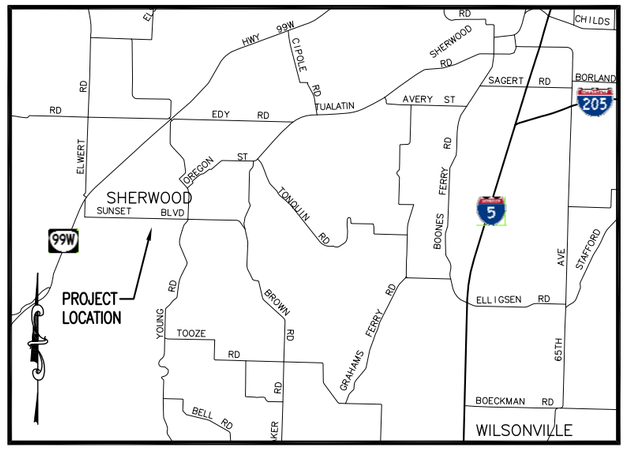
PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

SHEET G-7
7 of 79

EROSION AND SEDIMENT CONTROL PLANS



SITE MAP
SCALE: 1"=2000'



VICINITY MAP
SCALE: 1"=5000'

PROJECT LOCATION:
15365 SW SUNSET BLVD., SHERWOOD,
WASHINGTON COUNTY, OREGON
LATTIDUDE = 45° 21' 07" N, LONGITUDE = 122° 50' 03" W

PROPERTY DESCRIPTION:
TAX LOT TL 21W32DB 0088-10
LOCATED IN THE SOUTHWEST CORNER OF NW 1/4
SECTION 32 T2S R1W WILLAMETTE MERIDIAN,
WASHINGTON COUNTY, OREGON

ATTENTION EXCAVATORS:
OREGON LAW REQUIRES YOU 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. 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 TWO BUSINESS DAYS, BEFORE COMMENCING AN EXCAVATION. CALL 503-246-6699.

DEVELOPER NAME
CITY OF SHERWOOD
CONTACT: TOM PESSEMIER, P.E.
22560 SW PINE STREET
SHERWOOD, OR 97140
PHONE: (503) 625-5522
FAX: (503) 625-0629

PLANNING / ENGINEERING / SURVEYING FIRM
MURRAY, SMITH & ASSOCIATES
CONTACT: MATT L. HICKEY, P.E.
121 SW SALMON (SUITE 900)
PORTLAND, OR 97204
PHONE: (503) 225-9010
FAX: (503) 225-9022

NARRATIVE DESCRIPTIONS

EXISTING SITE CONDITIONS

* CLACKAMAS COUNTY, WASHINGTON COUNTY & CITY OF SHERWOOD ROADWAY AND RIGHT-OF-WAY

DEVELOPED CONDITIONS

* BURIED 48" DIAMETER STEEL PIPELINE WATER SYSTEM IMPROVEMENTS, ROADWAY

NATURE OF CONSTRUCTION ACTIVITY AND ESTIMATED TIME TABLE

* CLEARING (APRIL 1ST, 2009 – APRIL 15TH, 2009)
* MASS GRADING (APRIL 15TH, 2009 – MAY 15TH, 2009)
* UTILITY INSTALLATION (APRIL 15TH, 2009 – FEBRUARY 15TH, 2010)
* RESERVOIR/ PUMP STATION CONSTRUCTION (JUNE 15TH, 2011 – MARCH 1ST, 2012)
* STREET CONSTRUCTION (MAY 1ST, 2009 – JULY 15TH, 2009)
* FINAL TANK START UP (MARCH 15TH, 2012 – APRIL 1ST, 2012)
* FINAL GRADING (JUNE 1ST, 2012 – AUGUST 1ST, 2012)
* FINAL STABILIZATION (AUGUST 2ND – SEPTEMBER 30TH)

TOTAL SITE AREA = 1,010,700 SF = 23.2 ACRES

TOTAL DISTURBED AREA = 152,500 SF = 3.5 ACRES

SITE SOIL CLASSIFICATION:

11C – CORNELIUS AND KINTON SILT LOAMS 7 TO 12%

ON-SITE SOILS HAVE A MODERATE EROSION POTENTIAL. UTILITY TRENCH AND SUBGRADE MATERIAL SHALL BE APPROVED CRUSHED ROCK FROM AN APPROVED SOURCE.

RECEIVING WATER BODIES:

ROCK CREEK

PERMITTEE'S SITE INSPECTOR: DAVE SADLER
COMPANY/AGENCY: CITY OF SHERWOOD / HOPPER DENNIS JELLISON
PHONE: 503-572-3425
FAX: 503-625-0679
E-MAIL: sdp@hdjengineers.com
DESCRIPTION OF EXPERIENCE: 22 YEARS OF ODOT CONSTRUCTION AND EROSION CONTROL INSPECTION EXPERIENCE, 7 YEARS AS CITY CONSTRUCTION INSPECTOR, MULTIPLE EPSC CERTIFICATE HOURS.

INSPECTION FREQUENCY:

SITE CONDITION	MINIMUM FREQUENCY
1. ACTIVE PERIOD	DAILY WHEN STORMWATER RUNOFF, INCLUDING RUNOFF FROM SNOWMELT, IS OCCURING.
2. PRIOR TO THE SITE BECOMING INACTIVE OR IN ANTICIPATION OF SITE INACCESSIBILITY.	ONCE TO ENSURE THAT EROSION AND SEDIMENT CONTROL MEASURES ARE IN WORKING ORDER. ANY NECESSARY MAINTENANCE AND REPAIR MUST BE MADE PRIOR TO LEAVING THE SITE.
3. INACTIVE PERIODS GREATER THAN SEVEN (7) CONSECUTIVE CALENDAR DAYS.	ONCE EVERY TWO (2) WEEKS.
4. PERIODS DURING WHICH THE SITE IINACCESSIBLE DUE TO INCLEMENT WEATHER.	IF PRACTICAL, INSPECTIONS MUST OCCUR DAILY AT A RELEVEANT AND ACCESSIBLE DISCHARGE POINT OR DOWNSTREAM LOCATION.

* HOLD A PRE-CON MEETING OF PROJECT CONSTRUCTION PERSONNEL THAT INCLUDES THE EC INSPECTOR.
* ALL INSPECTIONS MUST BE MADE IN ACCORDANCE WITH DEQ 1200 C PERMIT REQUIREMENTS.
* INSPECTION LOGS MUST BE KEPT IN ACCORDANCE WITH DEQ'S 1200 C PERMIT REQUIREMENTS.
* CHANGES TO THE APPROVED ESC PLAN MUST BE SUBMITTED TO DEQ IN THE FORM OF AN ACTION PLAN.

THE PERMITTEE IS REQUIRED TO MEET ALL THE CONDITIONS OF THE 1200C PERMIT. THIS ESCP AND GENERAL CONDITIONS HAVE BEEN DEVELOPED TO FACILITATE COMPLIANCE WITH THE 1200C PERMIT REQUIREMENTS. IN CASES OF DISCREPANCIES OR OMISSIONS, THE 1200C PERMIT REQUIREMENTS SUPERCEDE REQUIREMENTS OF THIS PLAN.

STANDARD EROSION AND SEDIMENT CONTROL PLAN DRAWING NOTES:

1. APPLY TEMPORARY AND PERMANENT SOIL STABILIZATION MEASURES ON ALL DISTURBED AREAS AS GRADING PROGRESSES. (SCH A.5.b.ii.6.)
2. CONSTRUCTION ACTIVITIES MUST AVOID OR MINIMIZE EXCAVATION AND CREATION OF BARE GROUND FROM OCTOBER 1 THROUGH MAY 31 EACH YEAR. (SCH A.7.a.i.)
3. DURING WET WEATHER PERIODS TEMPORARY STABILIZATION OF THE SITE MUST OCCUR AT THE END OF EACH WORK DAY IF RAINFALL IS FORECAST IN THE NEXT 24 HOURS. (SCH A.7.a.ii.)
4. ALL EROSION AND SEDIMENT CONTROLS NOT IN THE DIRECT PATH OF WORK MUST BE INSTALLED PRIOR TO ANY LAND DISTURBANCE. (SCH A.7.c.ii.)
5. PRESERVE EXISTING VEGETATION AND RE-VEGETATE OPEN AREAS WHEN PRACTICABLE BEFORE AND AFTER GRADING OR CONSTRUCTION (SCHA.7.c.iii.1)
6. ALL TEMPORARY SEDIMENT CONTROLS MUST REMAIN IN PLACE UNTIL PERMANENT VEGETATION OR OTHER PERMANENT COVERING OF EXPOSED SOIL IS ESTABLISHED. (SCH A.7.c.iii.3.)
7. SEDIMENT CONTROLS MUST BE INSTALLED AND MAINTAINED ON ALL DOWN GRADIENT SIDES OF THE CONSTRUCTION SITE AT ALL TIMES DURING CONSTRUCTION. (SCH A.7.d.i.(1))
8. ALL ACTIVE CATCH BASINS MUST HAVE SEDIMENT CONTROLS INSTALLED AND MAINTAINED AT ALL TIMES DURING CONSTRUCTION. (SCH A.7.d.i.(2))
9. WATER-TIGHT TRUCKS MUST BE USED TO TRANSPORT SATURATED SOILS FROM THE CONSTRUCTION SITE. AN APPROVED EQUIVALENT IS TO DRAIN THE SOIL ON-SITE AT A DESIGNATED LOCATION USING APPROPRIATE BMP's; SOIL MUST BE DRAINED SUFFICIENTLY FOR MINIMAL SPILLAGE. (SCH A.7.d.iii.3)
10. TEMPORARY STABILIZATION OR COVERING OF SOIL STOCKPILES MUST OCCUR AT THE END OF EACH WORK DAY OR OTHER BMP'S MUST BE IMPLEMENTED TO PREVENT TURBID DISCHARGES TO SURFACE WATERS. (SCH A.7.e.ii.2.)
11. DEVELOP AND MAINTAIN ONSITE A WRITTEN SPILL PREVENTION AND RESPONSE PROCEDURE. (SCH A.7.e.iii.3)
12. ANY USE OF TOXIC OR OTHER HAZARDOUS MATERIALS MUST INCLUDE PROPER STORAGE, APPLICATION, AND DISPOSAL. (SCH A.7.e.iii.(2))
13. THE PERMITTEE MUST PROPERLY PREVENT AND MANAGE HAZARDOUS WASTE, USED OILS, CONTAMINATED SOILS, CONCRETE WASTE, SANITARY WASTE, LIQUID WASTE, OR OTHER TOXIC SUBSTANCES DISCOVERED OR GENERATED DURING CONSTRUCTION. (SCH A.7.e.i.1 AND SCH A.7.e.iii.4)
14. SIGNIFICANT AMOUNTS OF SEDIMENT WHICH LEAVE THE SITE MUST BE CLEANED UP WITHIN 24 HOURS AND PLACED BACK ON THE SITE AND STABILIZED OR PROPERLY DISPOSED. THE CAUSE OF THE SEDIMENT RELEASE MUST BE FOUND AND PREVENTED FROM CAUSING A REOCCURRENCE OF THE DISCHARGED WITHIN THE SAME 24 HOURS. ANY IN-STREAM CLEAN UP OF SEDIMENT SHALL BE PERFORMED ACCORDING TO THE OREGON DIVISION OF STATE LANDS REQUIRED TIME FRAME. (SCH A.7.f.i.1)
15. SEDIMENT MUST NOT BE INTENTIONALLY WASHED INTO STORM SEWERS, DRAINAGE WAYS, OR WATERBODIES. DRY SWEEPING MUST BE USED TO CLEAN UP RELEASED SEDIMENTS. (SCH A.7.f.i.2)
16. THE APPLICATION RATE OF FERTILIZERS USED TO REESTABLISH VEGETATION MUST FOLLOW THE MANUFACTURER'S RECOMMENDATIONS. NUTRIENT RELEASES FROM FERTILIZERS TO SURFACE WATERS MUST BE MINIMIZED. TIME RELEASE FERTILIZERS SHOULD BE USED AND CARE SHOULD BE TAKEN IN THE APPLICATION OF FERTILIZERS WITHIN ANY WATER WAY RIPARIAN ZONE. (SCH A.7.f.i.3.)
17. SEDIMENT MUST BE REMOVED FROM BEHIND SEDIMENT FENCE WHEN IT HAS REACHED A HEIGHT OF $\frac{1}{3}$ THE HEIGHT OF THE FENCE ABOVE THE GROUND, AND BEFORE FENCE REMOVAL. (SCH A.7.f.ii.1.)
18. SEDIMENT MUST BE REMOVED FROM BEHIND BIO BAGS AND OTHER BARRIERS WHEN IT HAS REACHED A HEIGHT OF TWO (2) INCHES AND BEFORE BMP REMOVAL. (SCH A.7.f.ii.2.)
19. CLEANING OF TRAPPED CATCH BASINS MUST OCCUR WHEN THE SEDIMENT RETENTION CAPACITY HAS BEEN REDUCED BY FIFTY (50) PERCENT, AND AT COMPLETION OF PROJECT. (SCH A.7.f.ii.3.)
20. REMOVAL OF TRAPPED SEDIMENT IN A SEDIMENT BASIN OR SEDIMENT TRAP MUST OCCUR WHEN THE SEDIMENT RETENTION CAPACITY HAS BEEN REDUCED BY FIFTY (50) PERCENT, AND AT COMPLETION OF PROJECT. (SCH A.7.f.ii.3&4)
21. DEQ MUST APPROVE OF ANY TREATMENT SYSTEM AND OPERATIONAL PLAN THAT MAY BE NECESSARY TO TREAT CONTAMINATED CONSTRUCTION DEWATERING OR SEDIMENT AND TURBIDITY IN STORMWATER RUNOFF. (SCH A.7.f.iii.)
22. SHOULD ALL CONSTRUCTION ACTIVITIES CEASE FOR THIRTY (30) DAYS OR MORE, THE ENTIRE SITE MUST BE TEMPORARILY STABILIZED USING VEGETATION OR A HEAVY MULCH LAYER, TEMPORARY SEEDING, OR OTHER METHOD. (SCH A.8.a.)
23. SHOULD CONSTRUCTION ACTIVITIES CEASE FOR FIFTEEN (15) DAYS OR MORE ON ANY SIGNIFICANT PORTION OF A CONSTRUCTION SITE, TEMPORARY STABILIZATION IS REQUIRED FOR THAT PORTION OF THE SITE WITH STRAW, COMPOST, OR OTHER TACKIFIED COVERING THAT WILL PREVENT SOIL OR WIND EROSION UNTIL WORK RESUMES ON THAT PORTION OF THE SITE. (SCH A.8.b.)

LOCAL AGENCY-SPECIFIC EROSION CONTROL NOTES:

1. OWNER OR DESIGNATED PERSON SHALL BE RESPONSIBLE FOR PROPER INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL MEASURES, IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS.
2. PRIOR TO ANY LAND DISTURBING ACTIVITIES, THE BOUNDARIES OF THE CLEARING LIMITS, VEGETATED BUFFERS, AND ANY SENSITIVE AREAS SHOWN ON THIS PLAN SHALL BE CLEARLY DELINEATED IN THE FIELD. DURING THE CONSTRUCTION PERIOD, NO DISTURBANCE IS PERMITTED BEYOND THE CLEARING LIMITS. THE OWNER/PERMITTEE MUST MAINTAIN THE DELINEATION FOR THE DURATION OF THE PROJECT. NOTE: VEGETATED CORRIDORS TO BE DELINEATED WITH ORANGE CONSTRUCTION FENCE OR APPROVED EQUAL.
3. PRIOR TO ANY LAND DISTURBING ACTIVITIES, THE BMP's THAT MUST BE INSTALLED ARE A GRAVEL CONSTRUCTION ENTRANCE, PERIMETER SEDIMENT CONTROL, AND INLET PROTECTION. THESE BMP's MUST BE MAINTAINED FOR THE DURATION OF THE PROJECT.
4. IF VEGETATIVE SEED MIXES ARE SPECIFIED, SEEDING MUST TAKE PLACE NO LATER THAT SEPTEMBER 1; THE TYPE AND PERCENTAGES OF SEED IN THE MIX MUST BE IDENTIFIED ON THE PLANS.
5. ALL PUMPING OF SEDIMENT LADEN WATER SHALL BE DISCHARGED OVER AN UNDISTURBED, PREFERABLY VEGETATED AREA, AND THROUGH A SEDIMENT CONTROL BMP i.e. (FILTER BAG).
6. THE ESC PLAN MUST BE KEPT ON SITE. ALL MEASURES SHOWN ON THE PLAN MUST BE INSTALLED PROPERLY TO ENSURE THAT SEDIMENT OR SEDIMENT LADEN WATER DOES NOT ENTER A SURFACE WATER SYSTEM, ROADWAY, OR OTHER PROPERTIES.
7. THE ESC MEASURES SHOWN ON THIS PLAN ARE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, THESE MEASURES SHALL BE UPGRADED AS NEEDED TO COMPLY WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL EROSION CONTROL REGULATIONS. CHANGES TO THE APPROVED ESC PLAN MUST BE SUBMITTED IN THE FORM OF AN ACTION PLAN TO DEQ PER THE 1200 C PERMIT.
8. IN AREAS SUBJECT TO WIND EROSION, APPROPRIATE BMP's MUST BE USED WHICH MAY INCLUDE THE APPLICATION OF FINE WATER SPRAYING, PLASTIC SHEETING, MULCHING, OR OTHER APPROVED MEASURES.
9. ALL EXPOSED SOILS MUST BE COVERED DURING THE WET WEATHER PERIOD.

BMP MATRIX FOR CONSTRUCTION PHASES

REFER TO DEQ GUIDANCE MANUAL FOR A COMPREHENSIVE LIST OF AVAILABLE BMP'S.

	UTILITY INSTALLATION	STREET CONSTRUCTION	FINAL START UP	FINAL GRADING	WET WEATHER (OCT. 1-MAY 31ST)
EROSION PREVENTION					
PRESERVE NATURAL VEGETATION	X	X	X	X	X
GROUND COVER		X		X	X
PLASTIC SHEETING					X
MATTING			X	X	X
DUST CONTROL	X	X	X	X	X
TEMPORARY/ PERMANENT SEEDING	X			X	X
OTHER:					
SEDIMENT CONTROL					
SEDIMENT FENCE (PERIMETER)	X	X	X	X	X
SEDIMENT FENCE (INTERIOR)			X	X	X
BIO BAGS	X			X	X
INLET PROTECTION	X	X	X	X	X
DEWATERING (GENERAL)	X	X	X	X	
DEWATERING (ROCK CREEK BORE PITS)					X
TEMPORARY SEDIMENT BASIN			X		X
OTHER:					
RUN-OFF CONTROL					
CONSTRUCTION ENTRANCE	X	X	X	X	X
OUTLET PROTECTION	X	X		X	X
SURFACE ROUGHENING				X	
CHECK DAMS	X	X		X	
OTHER:					
POLLUTION PREVENTION					
PROPER SIGNAGE	X	X	X	X	X
HAZ WASTE MGMT	X	X	X	X	X
SPILL KIT ON-SITE	X	X	X	X	X
OTHER:					

** SIGNIFIES BMP THAT WILL BE INSTALLED PRIOR TO ANY GROUND DISTURBING ACTIVITY.

RATIONALE STATEMENT

A COMPREHENSIVE LIST OF AVAILABLE BEST MANAGEMENT PRACTICES (BMP) OPTIONS BASED ON DEQ's GUIDANCE MANUAL HAS BEEN REVIEWED TO COMPLETE THIS EROSION AND SEDIMENT CONTROL PLAN. SOME OF THE ABOVE LISTED BMP's WERE NOT CHOSEN BECAUSE THEY WERE DETERMINED TO NOT EFFECTIVELY MANAGE EROSION PREVENTION AND SEDIMENT CONTROL FOR THIS PROJECT BASED ON SPECIFIC SITE CONDITIONS, INCLUDING SOIL CONDITIONS TOPOGRAPHIC CONSTRAINTS, ACCESSIBILITY TO THE SITE, AND OTHER RELATED CONDITIONS, AS THE PROJECT PROGRESSES AND THERE IS A NEED TO REVISE THE ESC PLAN, AN ACTION PLAN WILL BE SUBMITTED.

MLH
INITIAL

SHEET INDEX

EROSION AND SEDIMENT CONTROL PLANS

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121 S.W. Salmon, Suite 900 Portland, Oregon 97204
PHONE 503-225-9010 FAX 503-225-9022

City of Sherwood Oregon

WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

EROSION AND SEDIMENT CONTROL COVER SHEET

PROJECT NO.: 07-0873.209 | SCALE: AS SHOWN | DATE: JUNE 2009

SHEET
ESC-1
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PRE-CONSTRUCTION EROSION & SEDIMENTATION CONTROL NOTES:

1. ALL BASE ESC MEASURES (INLET PROTECTION, PERIMETER SEDIMENT CONTROL, GRAVEL CONSTRUCTION ENTRANCES, ETC.) MUST BE IN PLACE, FUNCTIONAL, AND APPROVED IN AN INITIAL INSPECTION, PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.

2. SEDIMENT BARRIERS APPROVED FOR USE INCLUDE SEDIMENT FENCE, BERMS CONSTRUCTED OUT OF MULCH, CHIPPINGS, OR OTHER SUITABLE MATERIAL, STRAW WATTLES, OR OTHER APPROVED MATERIALS.

3. SENSITIVE RESOURCES INCLUDING, BUT NOT LIMITED TO, TREES, WETLANDS, AND RIPARIAN PROTECTION AREAS SHALL BE CLEARLY DELINEATED WITH ORANGE CONSTRUCTION FENCING OR CHAIN LINK FENCING IN A MANNER THAT IS CLEARLY VISIBLE TO ANYONE IN THE AREA. NO ACTIVITIES ARE PERMITTED TO OCCUR BEYOND THE CONSTRUCTION BARRIER.

4. CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES INCLUDING, BUT NOT LIMITED TO, STREET SWEEPING, AND VACUUMING, MAY BE REQUIRED TO INSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.

5. RUN-ON AND RUN-OFF CONTROLS SHALL BE IN PLACE AND FUNCTIONING PRIOR TO BEGINNING SUBSTANTIAL CONSTRUCTION ACTIVITIES. RUN-ON AND RUN-OFF CONTROL MEASURES INCLUDE: SLOPE DRAINS (WITH OUTLET PROTECTION), CHECK DAMS, SURFACE ROUGHENING, AND BANK STABILIZATION.

6. LIMIT SPEED OF VEHICLES ON SITE AND MOISTEN HAUL ROADS AS NECESSARY TO CONTROL DUST.

GRADING, STREET AND UTILITY EROSION AND SEDIMENT CONSTRUCTION NOTES:

1. SEED USED FOR TEMPORARY OR PERMANENT SEEDING SHALL BE COMPOSED OF ONE OF THE FOLLOWING MIXTURES, UNLESS OTHERWISE AUTHORIZED:
   A. DWARF GRASS MIX (MIN. 100 LB./AC.)
      1. DWARF PERENNIAL RYEGRASS (80% BY WEIGHT)
      2. CREEPING RED FESCUE (20% BY WEIGHT)
   B. STANDARD HEIGHT GRASS MIX (MIN. 100LB./AC.)
      1. ANNUAL RYEGRASS (40% BY WEIGHT)
      2. TURF-TYPE FESCUE (60% BY WEIGHT)

2. SLOPE TO RECEIVE TEMPORARY OR PERMANENT SEEDING SHALL HAVE THE SURFACE ROUGHENED BY MEANS OF TRACK-WALKING OR THE USE OF OTHER APPROVED IMPLEMENTS. SURFACE ROUGHENING IMPROVES SEED BEDDING AND REDUCES RUN-OFF VELOCITY.

3. LONG TERM SLOPE STABILIZATION MEASURES SHALL INCLUDE THE ESTABLISHMENT OF PERMANENT VEGETATIVE COVER VIA SEEDING WITH APPROVED MIX AND APPLICATION RATE.

4. TEMPORARY SLOPE STABILIZATION MEASURES SHALL INCLUDE: COVERING EXPOSED SOIL WITH PLASTIC SHEETING, STRAW MULCHING, WOOD CHIPS, OR OTHER APPROVED MEASURES.

5. STOCKPILED SOIL OR STRIPPINGS SHALL BE PLACED IN A STABLE LOCATION AND CONFIGURATION. DURING "WET WEATHER" PERIODS, STOCKPILES SHALL BE COVERED WITH PLASTIC SHEETING OR STRAW MULCH. SEDIMENT FENCE IS REQUIRED AROUND THE PERIMETER OF THE STOCKPILE.

6. EXPOSED CUT OR FILL AREAS SHALL BE STABILIZED THROUGH THE USE OF TEMPORARY SEEDING AND MULCHING, EROSION CONTROL BLANKETS OR MATS, MID-SLOPE SEDIMENT FENCES OR WATTLES, OR OTHER APPROPRIATE MEASURES. SLOPES EXCEEDING 25% MAY REQUIRE ADDITIONAL EROSION CONTROL MEASURES.

7. AREAS SUBJECT TO WIND EROSION SHALL USE APPROPRIATE DUST CONTROL MEASURES INCLUDING THE APPLICATION OF A FINE SPRAY OF WATER, PLASTIC SHEETING, STRAW MULCHING, OR OTHER APPROVED MEASURES.

8. CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES INCLUDING, BUT NOT LIMITED TO, TIRE WASHES, STREET SWEEPING, AND VACUUMING MAY BE BE REQUIRED TO INSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.

9. ACTIVE INLETS TO STORM WATER SYSTEMS SHALL BE PROTECTED THROUGH THE USE OF APPROVED INLET PROTECTION MEASURES. ALL INLET PROTECTION MEASURES ARE TO BE REGULARLY INSPECTED AND MAINTAINED AS NEEDED.

10. SATURATED MATERIALS THAT ARE HAULED OFF-SITE MUST BE TRANSPORTED IN WATER-TIGHT TRUCKS TO ELIMINATE SPILLAGE OF SEDIMENT AND SEDIMENT-LADEN WATER.

11. AN AREA SHALL BE PROVIDED FOR THE WASHING OUT OF CONCRETE TRUCKS IN A LOCATION THAT DOES NOT PROVIDE RUN-OFF THAT CAN ENTER THE STORM WATER SYSTEM. IF THE CONCRETE WASH-OUT AREA CAN NOT BE CONSTRUCTED GREATER THAN 50' FROM ANY DISCHARGE POINT, SECONDARY MEASURES SUCH AS BERMS OR TEMPORARY SETTLING PITS MAY BE REQUIRED. THE WASH-OUT SHALL BE LOCATED WITHIN SIX FEET OF TRUCK ACCESS AND BE CLEANED WHEN IT REACHES 50% OF THE CAPACITY. SUITABLE CONCRETE WASH-OUT AREAS WILL BE IDENTIFIED BY CONTRACTOR AND APPROVED BY EROSION CONTROL INSPECTOR.

12. SWEEPINGS FROM EXPOSED AGGREGATE CONCRETE SHALL NOT BE TRANSFERRED TO THE STORM WATER SYSTEM. SWEEPINGS SHALL BE PICKED UP AND DISPOSED IN THE TRASH.

13. AVOID PAVING IN WET WEATHER WHEN PAVING CHEMICALS CAN RUN-OFF INTO THE STORM WATER SYSTEM.

14. USE BMPs SUCH AS CHECK-DAMS, BERMS, AND INLET PROTECTION TO PREVENT RUN-OFF FROM REACHING DISCHARGE POINTS.

15. COVER CATCH BASINS, MANHOLES, AND OTHER DISCHARGE POINTS WHEN APPLYING SEAL COAT, TACK COAT, ETC. TO PREVENT INTRODUCING THESE MATERIALS TO THE STORM WATER SYSTEM.

16. INLET PROTECTION SHALL BE IN-PLACE IMMEDIATELY FOLLOWING PAVING ACTIVITIES.

LEGEND

- EXISTING CONTOURS (1')
- EXISTING CONTOURS (5') — 355
- INLET PROTECTION
- DRAINAGE FLOW DIRECTION
- SEDIMENT FENCING
- CONSTRUCTION FENCING (ORANGE)
- CHECK DAM
- WATTLES
- PROPOSED WATERLINE — 48"STL

NO.	DATE	BY	REVISION
1	08/22/11	BVO	RECORD DRAWING

NOTICE
0 ½ 1
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RECORD DRAWING
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12-9-97

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Engineers/Planners
121 S.W. Salmon, Suite 900 PHONE 503-225-9010
Portland, Oregon 97204 FAX 503-225-9022

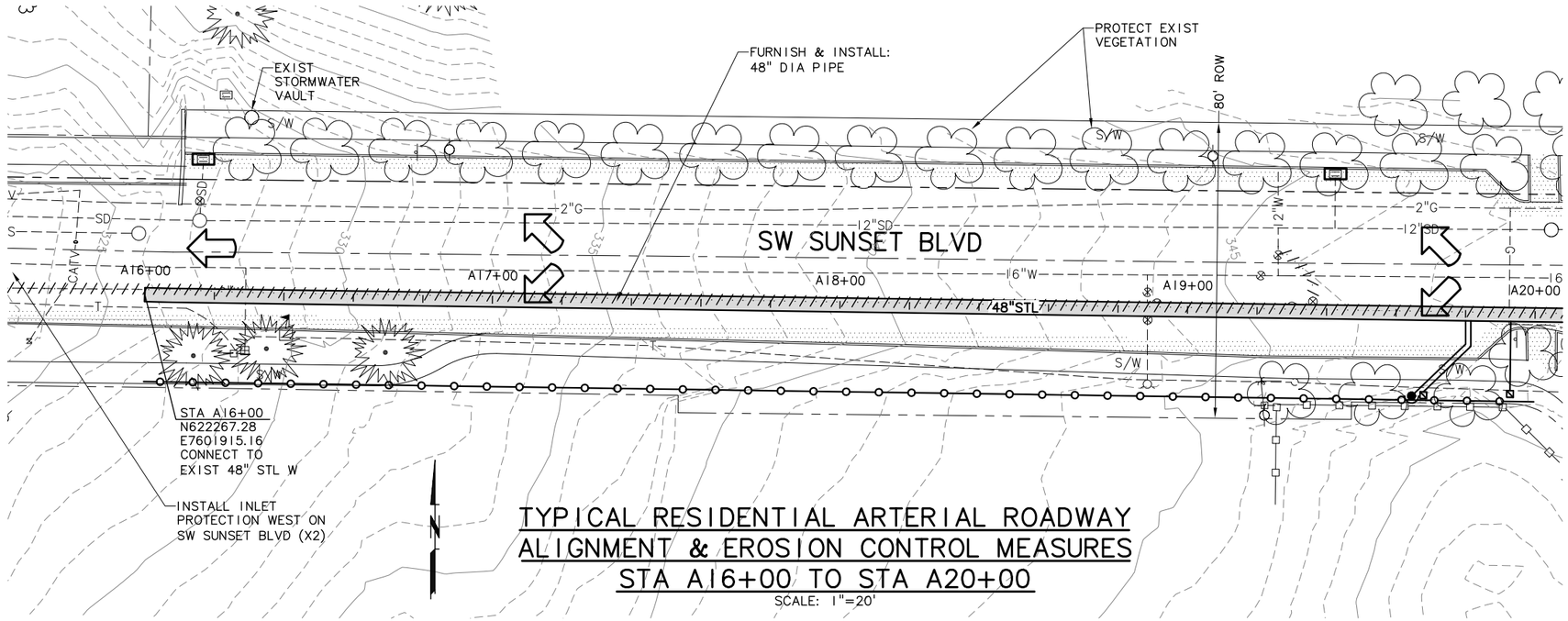
City of Sherwood Oregon

WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

EROSION AND SEDIMENT CONTROL NOTES AND LEGEND

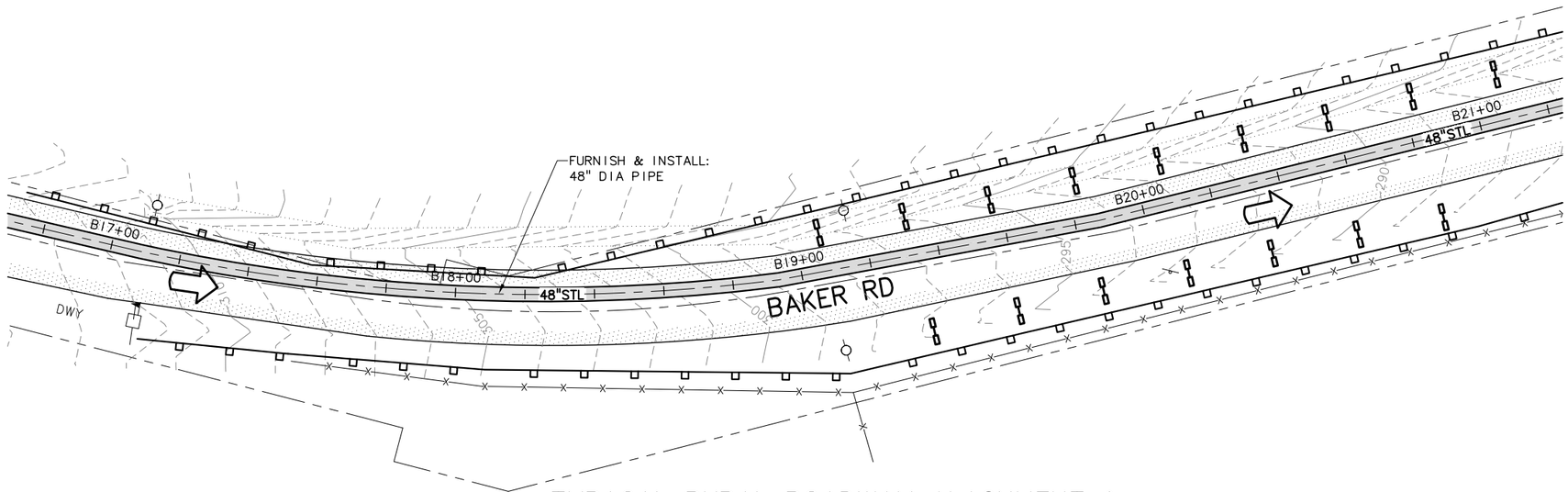
PROJECT NO.: 07-0873.209 | SCALE: AS SHOWN | DATE: JUNE 2009

SHEET
ESC-2
15 of 79



TYPICAL RESIDENTIAL ARTERIAL ROADWAY ALIGNMENT & EROSION CONTROL MEASURES STA A16+00 TO STA A20+00

SCALE: 1"=20'



TYPICAL RURAL ROADWAY ALIGNMENT & EROSION CONTROL MEASURES STA B16+40 TO STA B22+00

SCALE: 1"=20'

NOTE:

1. ROADWAY TO BE CLOSED TO TRAFFIC DURING CONSTRUCTION

NO.	DATE	BY	REVISION
4	08/22/11	BVO	RECORD DRAWING

NOTICE: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

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City of Sherwood Oregon

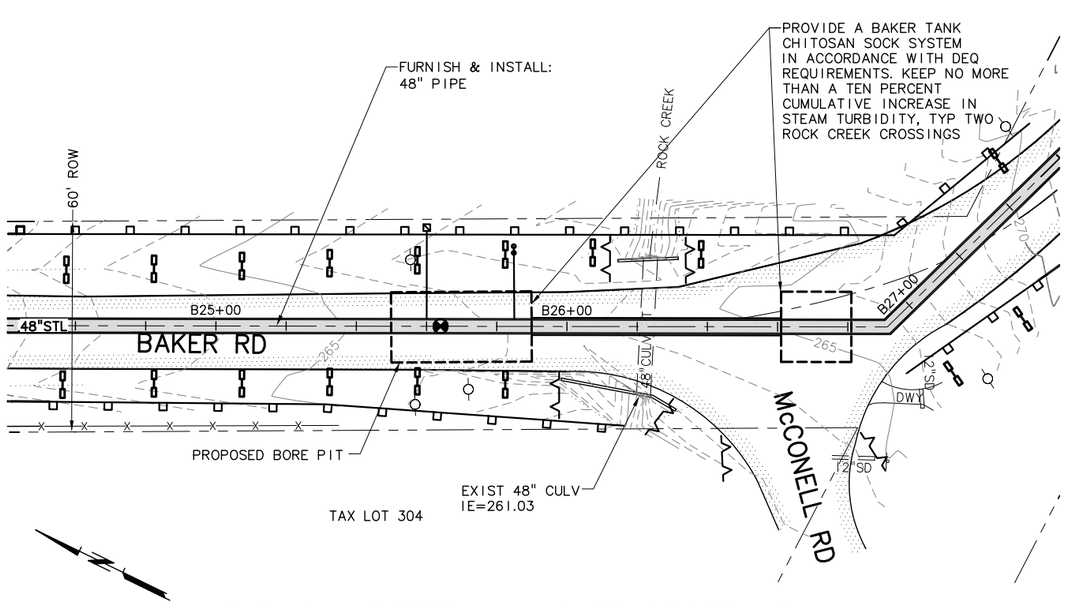
WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

EROSION AND SEDIMENT CONTROL MEASURES-1

PROJECT NO.: 07-0873.209 | SCALE: AS SHOWN | DATE: JUNE 2009

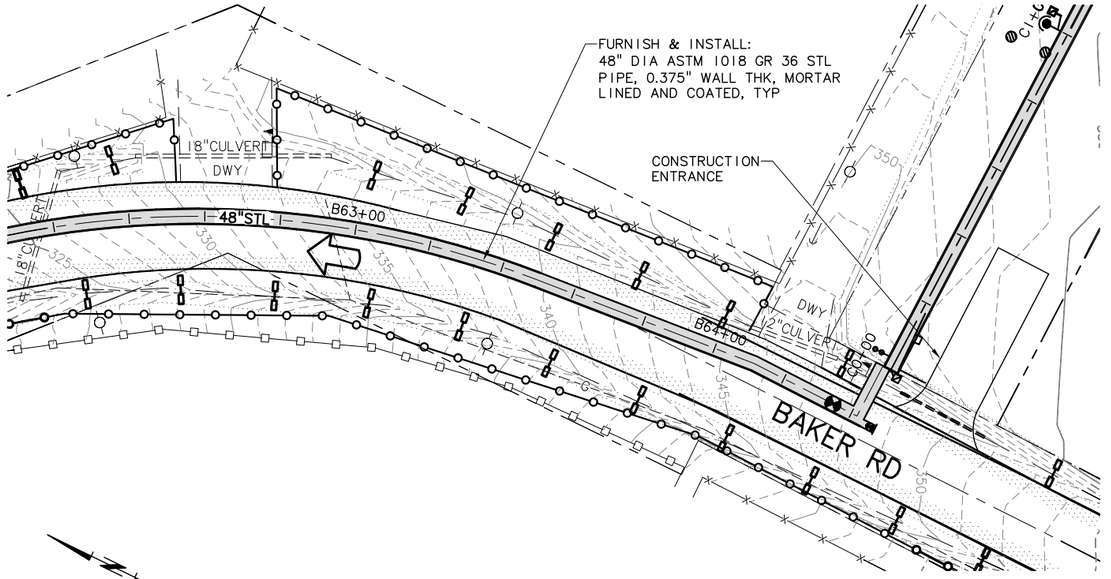
SHEET ESC-3

16 of 79



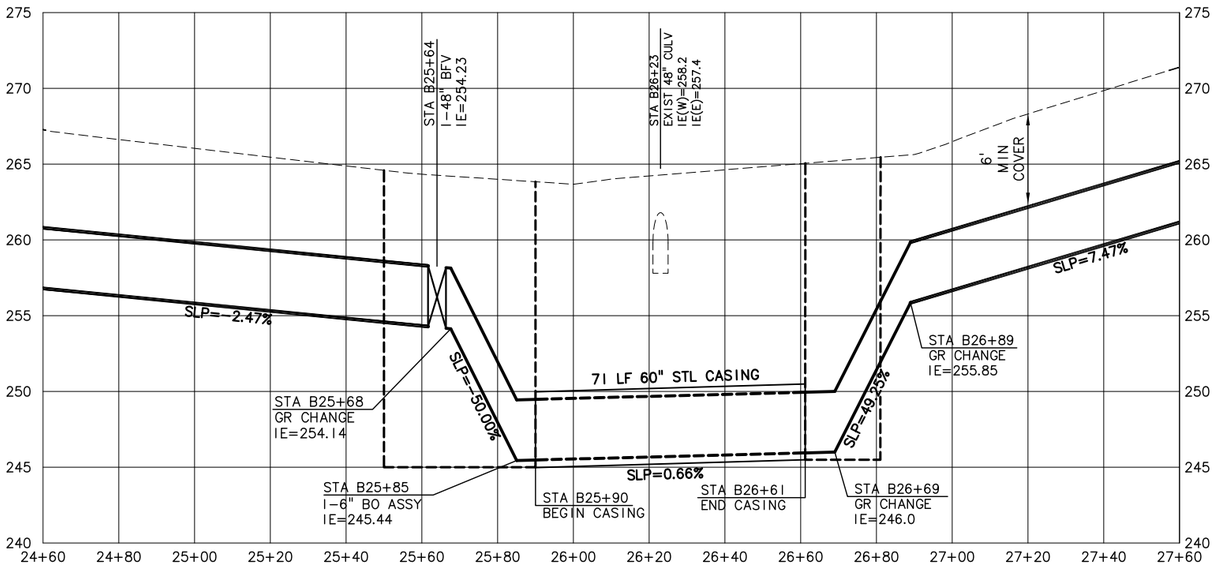
TYPICAL BORED & JACKED CROSSING AND EROSION CONTROL MEASURE STA B24+60 TO STA B27+60

SCALE: 1"=20'



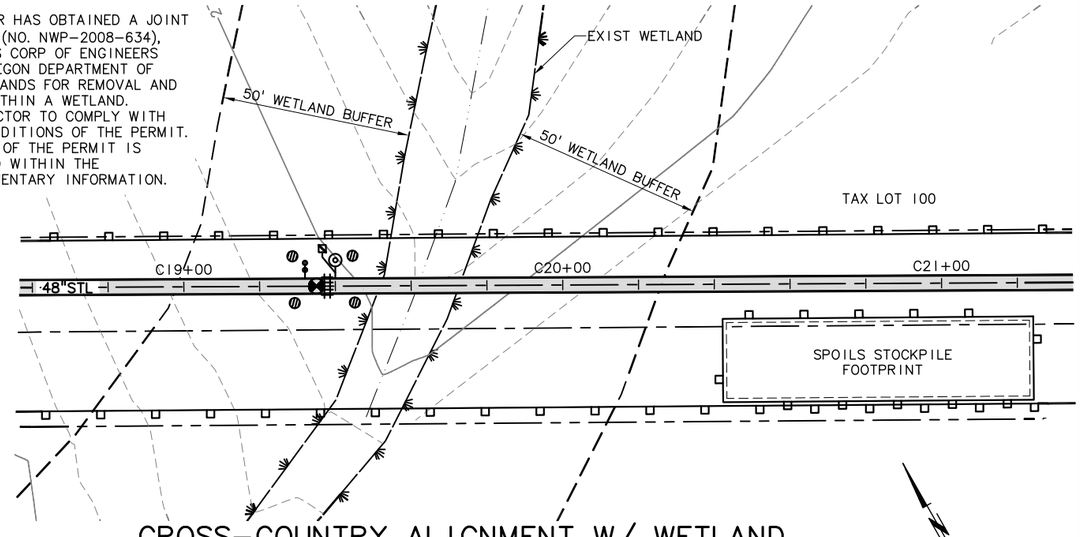
TYPICAL CONSTRUCTION ACCESS TO CROSS-COUNTRY ALIGNMENT & EROSION STA B62+10 TO STA B64+70

SCALE: 1"=20'



NOTES:

⚠ 1. OWNER HAS OBTAINED A JOINT PERMIT (NO. NWP-2008-634), FROM US CORP OF ENGINEERS AND OREGON DEPARTMENT OF STATE LANDS FOR REMOVAL AND FILL WITHIN A WETLAND. CONTRACTOR TO COMPLY WITH ALL CONDITIONS OF THE PERMIT. A COPY OF THE PERMIT IS LOCATED WITHIN THE SUPPLEMENTARY INFORMATION.



CROSS-COUNTRY ALIGNMENT W/ WETLAND CROSSING & EROSION CONTROL MEASURES STA C18+60 TO STA C21+30

SCALE: 1"=20'

NO.	DATE	BY	REVISION
⚠	08/22/11	BVO	RECORD DRAWING

NOTICE
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City of Sherwood Oregon

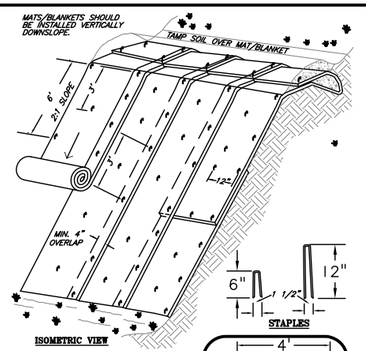
WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

EROSION AND SEDIMENT CONTROL MEAURES-2

PROJECT NO.: 07-0873.209 | SCALE: AS SHOWN | DATE: JUNE 2009

SHEET
ESC-4
17 of 79

C:\Users\dak\appdata\local\temp\AcPublish_3656\07-0873-207-OR-ESC-2-6-R.dwg ESC-4 8/29/2011 2:22 PM DAK 18.1s (LMS Tech)



TYPICAL SLOPE SOIL STABILIZATION

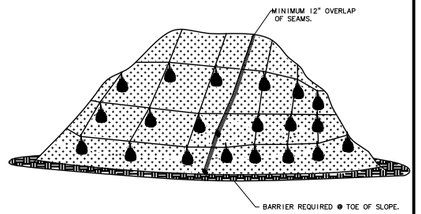
NOTES:
1. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS AND GRASS. MATS/BLANKETS SHALL HAVE GOOD SOIL CONTACT.
2. APPLY PERMANENT SEEDING BEFORE PLACING BLANKETS.
3. LAY BLANKETS LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH THE SOIL. DO NOT STRETCH.
4. STAKING OR STAPLING LAYOUT PER MANUFACTURERS SPECIFICATIONS.

MATTING SLOPE INSTALLATION

DRAWING NO. 805 REVISED 12-06

CleanWater Services Our commitment is clear.

FOR FURTHER INFORMATION ON DESIGN CRITERIA SEE CHAPTER 4 OF CLEAN WATER SERVICES EROSION PREVENTION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL.



PLASTIC SHEETING

NOTES:
1. MINIMUM 12" OVERLAP OF ALL SEAMS REQUIRED.
2. BARRIER REQUIRED @ TOE OF STOCK PILE.
3. COVERING MAINTAINED TIGHTLY IN PLACE BY USING SANDBAGS OR TIRES ON ROPES WITH A MAXIMUM 10' GRID SPACING IN ALL DIRECTIONS.

PLASTIC SHEETING

DRAWING NO. 810 REVISED 12-06

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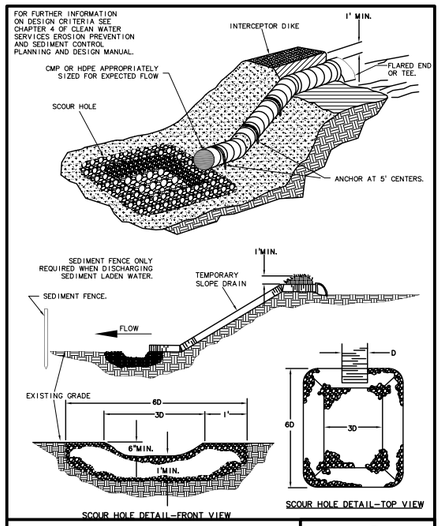

PIPE SLOPE DRAIN

DRAWING NO. 815 REVISED 12-06

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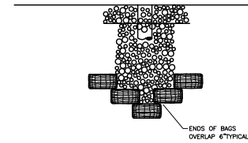

PLAN VIEW

NTS

PROFILE

NOTE:
1. BIO BAGS ONLY REQUIRED WHEN DISCHARGING SEDIMENT LADEN WATER.
2. STAKING OF BAGS REQUIRED WITH EITHER METHOD USING (2) 1"x 2" WOOD STAKES OR APPROVED EQUAL PER BAG.

FOR FURTHER INFORMATION ON DESIGN CRITERIA SEE CHAPTER 4 OF CLEAN WATER SERVICES EROSION PREVENTION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL.

OUTLET PROTECTION RIP RAP

Detail Drawing 820 REVISED 12-06

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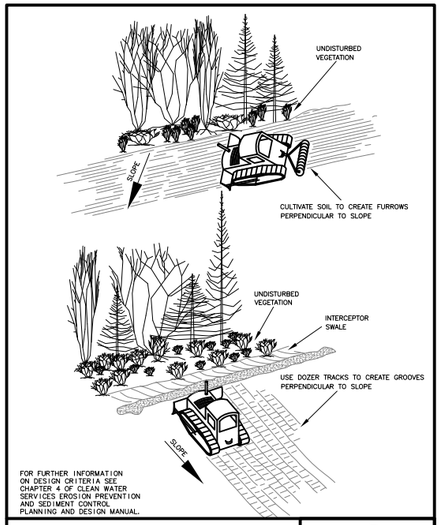

FOR FURTHER INFORMATION ON DESIGN CRITERIA SEE CHAPTER 4 OF CLEAN WATER SERVICES EROSION PREVENTION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL.

SURFACE ROUGHENING CAT TRACKING

DRAWING NO. 830 REVISED 12-06

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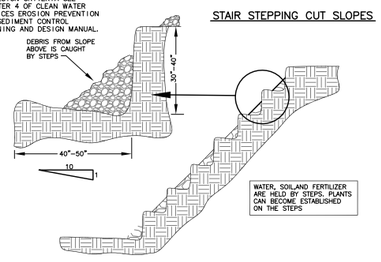
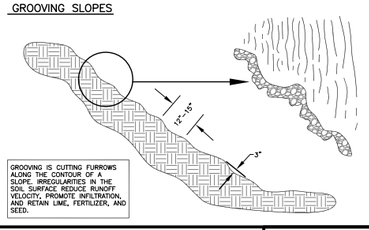
FOR FURTHER INFORMATION ON DESIGN CRITERIA SEE CHAPTER 4 OF CLEAN WATER SERVICES EROSION PREVENTION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL.

STAIR STEPPING CUT SLOPES



GROOVING SLOPES



SURFACE ROUGHENING STAIR STEPPING/GROOVING SLOPES

DRAWING NO. 835 REVISED 12-06

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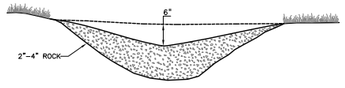
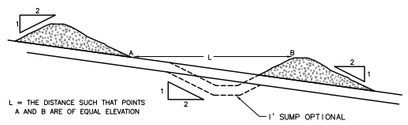


ROCK CHECK DAM



L = THE DISTANCE SUCH THAT POINTS A AND B ARE OF EQUAL ELEVATION

SPACING BETWEEN CHECK DAMS

CHECK DAM ROCK

DRAWING NO. 840 REVISED 12-06

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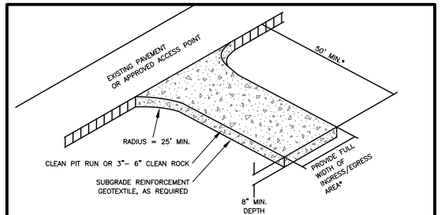

NOTES:
1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF- WAY.
3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.
4. WHERE RUNOFF CONTAINING SEDIMENT LADEN WATER IS LEAVING THE SITE VIA THE CONSTRUCTION ENTRANCE, OTHER MEASURES SHALL BE IMPLEMENTED TO DIVERT RUNOFF THROUGH AN APPROVED FILTERING SYSTEM.
5. DIMENSIONS
   SINGLE FAMILY
   20' LONG BY 20' WIDE 8" DEEP OF ¾" MINUS CLEAN ROCK.
   COMMERCIAL
   50' LONG BY 20' WIDE 3-6" CLEAN ROCK, GOVERNING AUTHORITY MAY REQUIRE GEOTEXTILE FABRIC TO PREVENT SUB-SOIL PUMPING.

FOR FURTHER INFORMATION ON DESIGN CRITERIA SEE CHAPTER 4 OF CLEAN WATER SERVICES EROSION PREVENTION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL.

CONSTRUCTION ENTRANCE

Detail Drawing 855 REVISED 12-06

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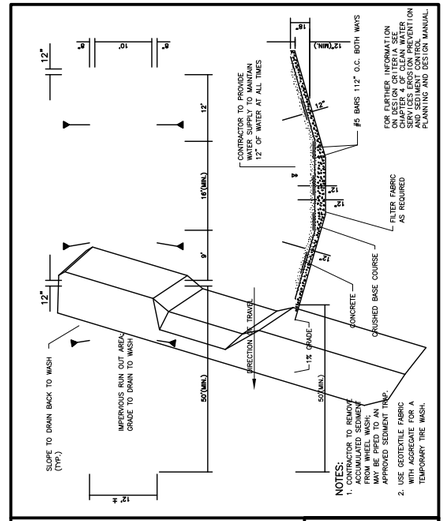

TIRE WASH-(DRIVE-THROUGH)

DRAWING NO. 870 REVISED 12-06

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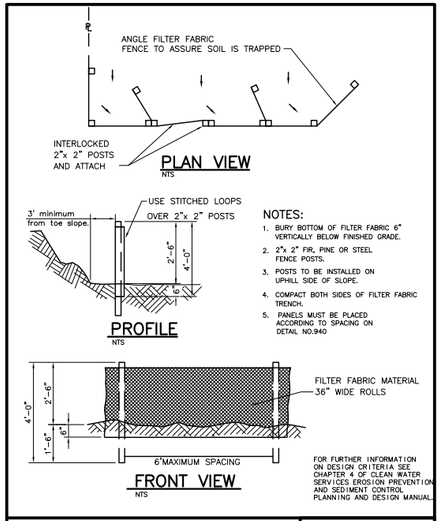

PLAN VIEW

NTS

PROFILE

NTS

NOTES:
1. BURY BOTTOM OF FILTER FABRIC 6" VERTICALLY BELOW FINISHED GRADE.
2. 2"x 2" FIR, PINE OR STEEL FENCE POSTS.
3. POSTS TO BE INSTALLED ON UPHILL SIDE OF SLOPE.
4. COMPACT BOTH SIDES OF FILTER FABRIC TRENCH.
5. PANELS MUST BE PLACED ACCORDING TO SPACING ON DETAIL NO.940

FRONT VIEW

NTS

FOR FURTHER INFORMATION ON DESIGN CRITERIA SEE CHAPTER 4 OF CLEAN WATER SERVICES EROSION PREVENTION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL.

SEDIMENT FENCE

DRAWING NO. 875 REVISED 12-06

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NO.	DATE	BY	REVISION
3	08/22/11	BVO	RECORD DRAWING

NOTICE
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12-9-97

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121 S.W. Salmon, Suite 900 Portland, Oregon 97204
PHONE 503-225-9010 FAX 503-225-9022

City of Sherwood Oregon

WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

EROSION AND SEDIMENT CONTROL DETAILS-1

PROJECT NO.: 07-0873.209 | SCALE: AS SHOWN | DATE: JUNE 2009

SHEET
ESC-5
18 of 79

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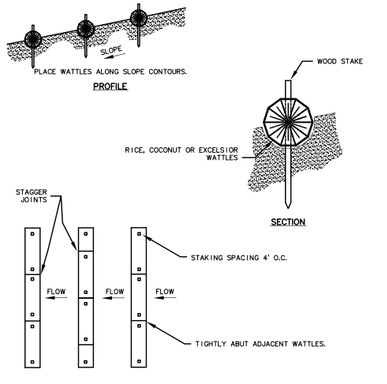
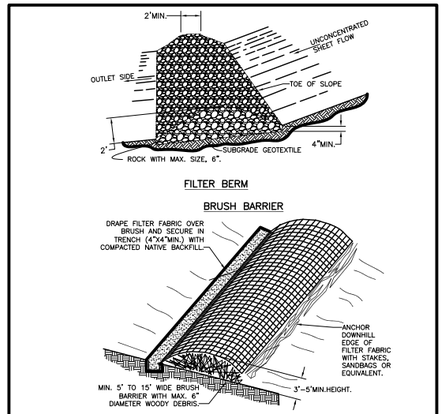


NOTES:
1. STAKING SPECIFICATIONS:
   a. 1"X2" WOODEN STAKES
   b. ADDITIONAL STAKES MAY BE INSTALLED ON DOWNHILL SIDE OF WATTLES, ON STEEP SLOPE OR HIGHLY ERODIBLE SOILS.
2. SPACING IN ACCORDANCE WITH DETAIL 940.

FOR FURTHER INFORMATION ON DESIGN CRITERIA SEE CHAPTER 4 OF CLEAN WATER SERVICES EROSION PREVENTION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL.

WATTLES

DRAWING NO. 880 — REVISED 12-06

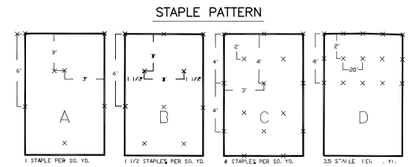


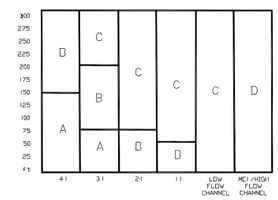
NOTES:
1. DIRECT THE OUTLET SIDE OF THE ROCK FILTER BERM/DAMS ONTO A STABILIZED AREA, SUCH AS VEGETATION AND OR ROCK.
2. EMBED A MIN. OF 4" INTO THE EXISTING GROUND/EMBANKMENT.
3. USE 3:1 OR FLATTER SIDE SLOPES.
   WITHIN THE SAFETY CLEAR ZONE. USE 6:1 OR FLATTER SIDE SLOPES.

FOR FURTHER INFORMATION ON DESIGN CRITERIA SEE CHAPTER 4 OF CLEAN WATER SERVICES EROSION PREVENTION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL.

FILTER BERMS ROCK/BRUSH

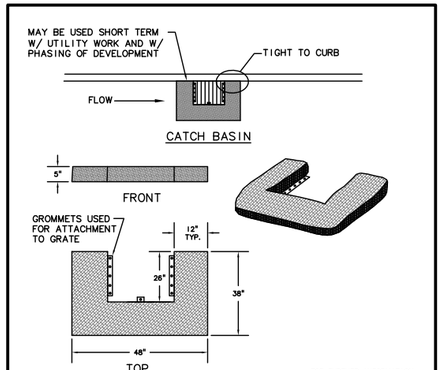
DRAWING NO. 890 — REVISED 12-06





MINIMUM STAPLE PATTERN GUIDE AND RECOMMENDATION FOR SLOPE AND CHANNEL APPLICATION.

STAPLE TABLE	Detail Drawing 4-3



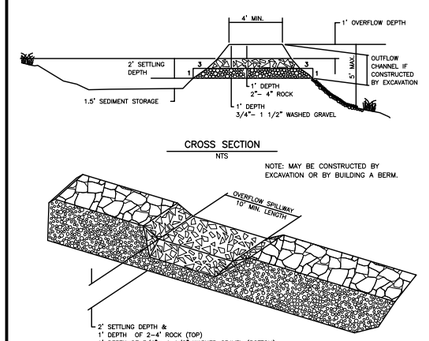
FOR FURTHER INFORMATION ON DESIGN CRITERIA SEE CHAPTER 4 OF CLEAN WATER SERVICES EROSION PREVENTION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL.

INSTALLATION NOTES:
1. INSTALL SOLID FABRIC SIDE DOWN MESH SIDE UP.
2. ATTACH TO CATCH BASIN GRATE AT A MINIMUM OF 3 LOCATIONS TIGHT TO CURB WITH 1/4" ZIP TIES.

MAINTENANCE NOTES:
1. ANY VISIBLE SIGN OF SEDIMENT ACCUMULATION TO BE CLEANED UP AT THE END OF EACH WORKDAY.
2. REPLACE U - SHAPED FILTER BAG AS NECESSARY TO PREVENT WOOD CHIPS FROM ENTERING THE STORM SYSTEM.

INLET PROTECTION TYPE 6

DRAWING NO. 925 — REVISED 12-06

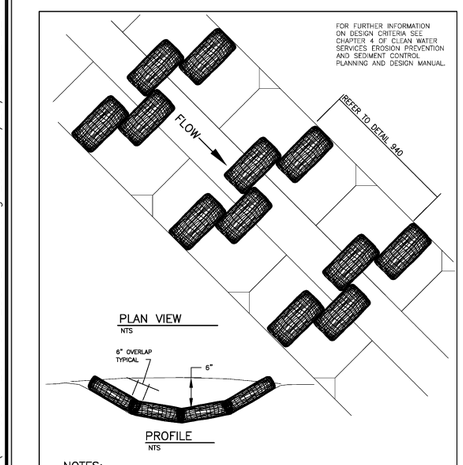


NOTE:
A FILTER FABRIC FENCE OR SIMILAR FILTER MUST BE CONSTRUCTED TO FILTER RUNOFF FROM THE SEDIMENT TRAP PRIOR TO DISCHARGE FROM THE CONSTRUCTION SITE.

FOR FURTHER INFORMATION ON DESIGN CRITERIA SEE CHAPTER 4 OF CLEAN WATER SERVICES EROSION PREVENTION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL.

SEDIMENT TRAP

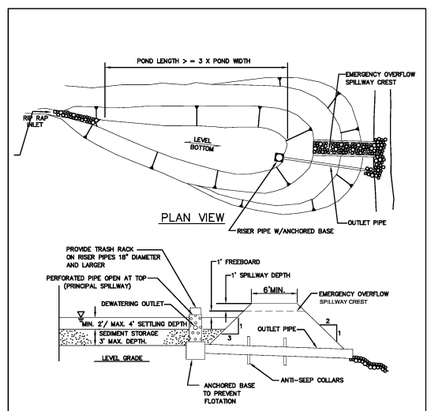
DRAWING NO. 930 — REVISED 12-06



NOTES:
1. STAKING OF BAGS REQUIRED USING (2) 1"X2" WOOD STAKES OR APPROVED EQUAL PER BAG.
2. SURFACE MUST BE SMOOTH BEFORE APPLICATION.
3. CHECK DAMS CAN BE CONSTRUCTED USING STRAW WATTLES OR OTHER MATERIALS AS APPROVED BY THE DISTRICT OR CITY.

CHECK DAM BIO-FILTER BAG

DRAWING NO. 845 — REVISED 12-06



NOTE:
50' MINIMUM OF HIGHLY VEGETATED AREA AND OR SEDIMENT FENCE IS REQUIRED PRIOR TO DISCHARGING TO STREAM OR WETLAND.

FOR FURTHER INFORMATION ON DESIGN CRITERIA SEE CHAPTER 4 OF CLEAN WATER SERVICES EROSION PREVENTION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL.

SEDIMENT BASIN

DRAWING NO. 935 — REVISED 12-06

FOR FURTHER INFORMATION ON DESIGN CRITERIA SEE CHAPTER 4 OF CLEAN WATER SERVICES EROSION PREVENTION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL.

SPACING FOR CHECK DAMS

DITCH GRADE	6 INCH	12 INCH	18 INCH
6%	NOT ALLOWED	16 FT O.C.	26 FT O.C.
5%	NOT ALLOWED	20 FT	30 FT
4%	NOT ALLOWED	26 FT	40 FT
3%	15 FT	33 FT	50 FT
2%	25 FT	50 FT	80 FT

BARRIER SPACING FOR GENERAL APPLICATION

INSTALL PARALLEL ALONG CONTOURS AS FOLLOWS

% SLOPE	SLOPE	MAXIMUM SPACING ON SLOPE
10% OR FLATTER	10:1 OR FLATTER	300 FT
>10% OR <15%	>10:1 OR <7.5:1	150 FT
>15% OR <20%	>7.5:1 OR <5:1	100 FT
>20% OR <30%	>5:1 OR <3.5:1	50 FT
>30% OR <50%	>3.5:1 OR <2:1	25 FT

FOR MORE INFORMATION REGARDING THESE TABLES SEE CHAPTER 4 TABLES 4-3 AND 4-7 OF CLEAN WATER SERVICES EROSION PREVENTION AND SEDIMENT CONTROL DESIGN MANUAL.

SPACING TABLES

DRAWING NO. 940 — REVISED 12-06

NO.	DATE	BY	REVISION
2	08/22/11	BVO	RECORD DRAWING

NOTICE
0 ½ 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

LLA DESIGNED
DAK DRAWN
MLH CHECKED

RECORD DRAWING
SEE DISCLAIMER, SHEET 1.
VERSION 4.1
12-9-97

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

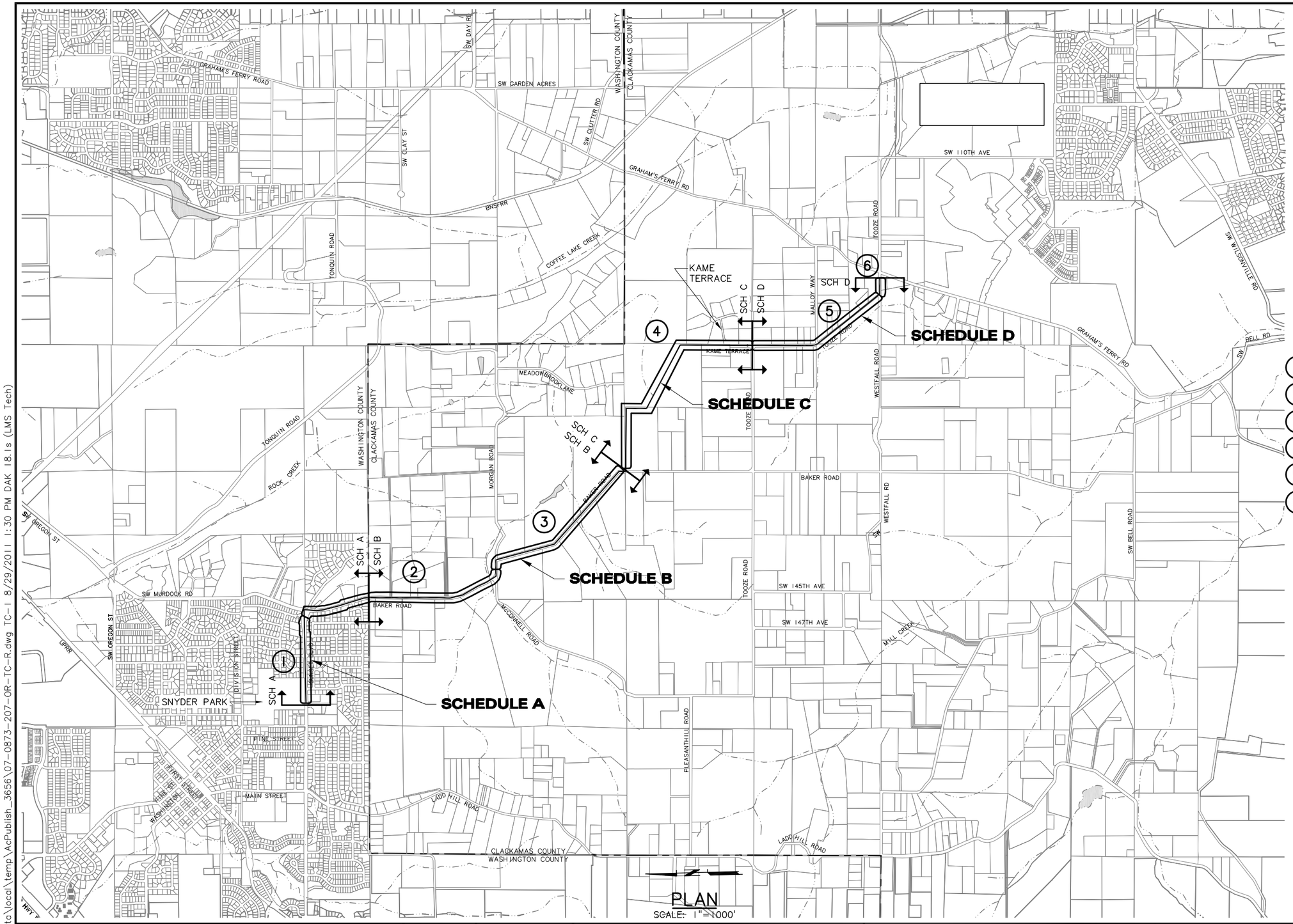
City of Sherwood Oregon

WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

EROSION AND SEDIMENT CONTROL DETAILS-2

PROJECT NO.: 07-0873.209 | SCALE: AS SHOWN | DATE: JUNE 2009

SHEET ESC-6



PLAN
SCALE: 1"=1000'

NOTES:

1. TEMPORARY TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH THESE PLANS, CITY AND COUNTY REQUIREMENTS AND THE LATEST VERSION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD)

CONSTRUCTION SCHEDULES:

SCHEDULE A: FROM PINE ST AT SNYDER PARK, TO BAKER/MURDOCK ROAD AT THE CITY LIMITS/COUNTY LINE

SCHEDULE B: BAKER/MURDOCK ROAD FROM CITY LIMITS/ COUNTY LINE TO 1.3 MILES SOUTH OF THE COUNTY LINE

SCHEDULE C: PRIVATE PROPERTY

SCHEDULE D: TOOZE RD FROM KAME TERRACE TO 262' WEST OF INTERSECTION WITH GRAHAM'S FERRY ROAD

2. COUNTY ROADS SHALL NOT BE SHUT DOWN TO THROUGH TRAFFIC FOR MORE THAN SIX MONTHS CONSECUTIVELY. CONTRACTOR TO COMPLY BY CLACKAMAS COUNTY REQUIREMENTS. CLOSURE FOR MORE THAN SIX MONTHS CONSECUTIVELY WILL REQUIRE APPROVAL OF THE CLACKAMAS COUNTY BOARD OF COMMISSIONERS.

STREET CLOSURE/DETOUR PHASING:

1. SUNSET BLVD – REF. TC-2
2. BAKER ROAD NORTH OF MCCONNELL – REF. TC-3
3. BAKER ROAD – SOUTH OF MCCONNELL – REF. TC-4
4. PRIVATE PROPERTY (NO ROAD CLOSURE)
5. TOOZE ROAD NORTH OF WESTFALL ROAD – REF. TC-5
6. TOOZE ROAD EAST OF WESTFALL ROAD – REF. TC-6

NO.	DATE	BY	REVISION
3	08/22/11	BVO	RECORD DRAWING

NOTICE
0 ½ 1
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SMG DESIGNED
DAK DRAWN
MLH CHECKED

RECORD DRAWING
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City of Sherwood Oregon

WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

PRELIMINARY TRAFFIC CONTROL PLAN OVERVIEW

PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

SHEET
TC-1
8 of 79

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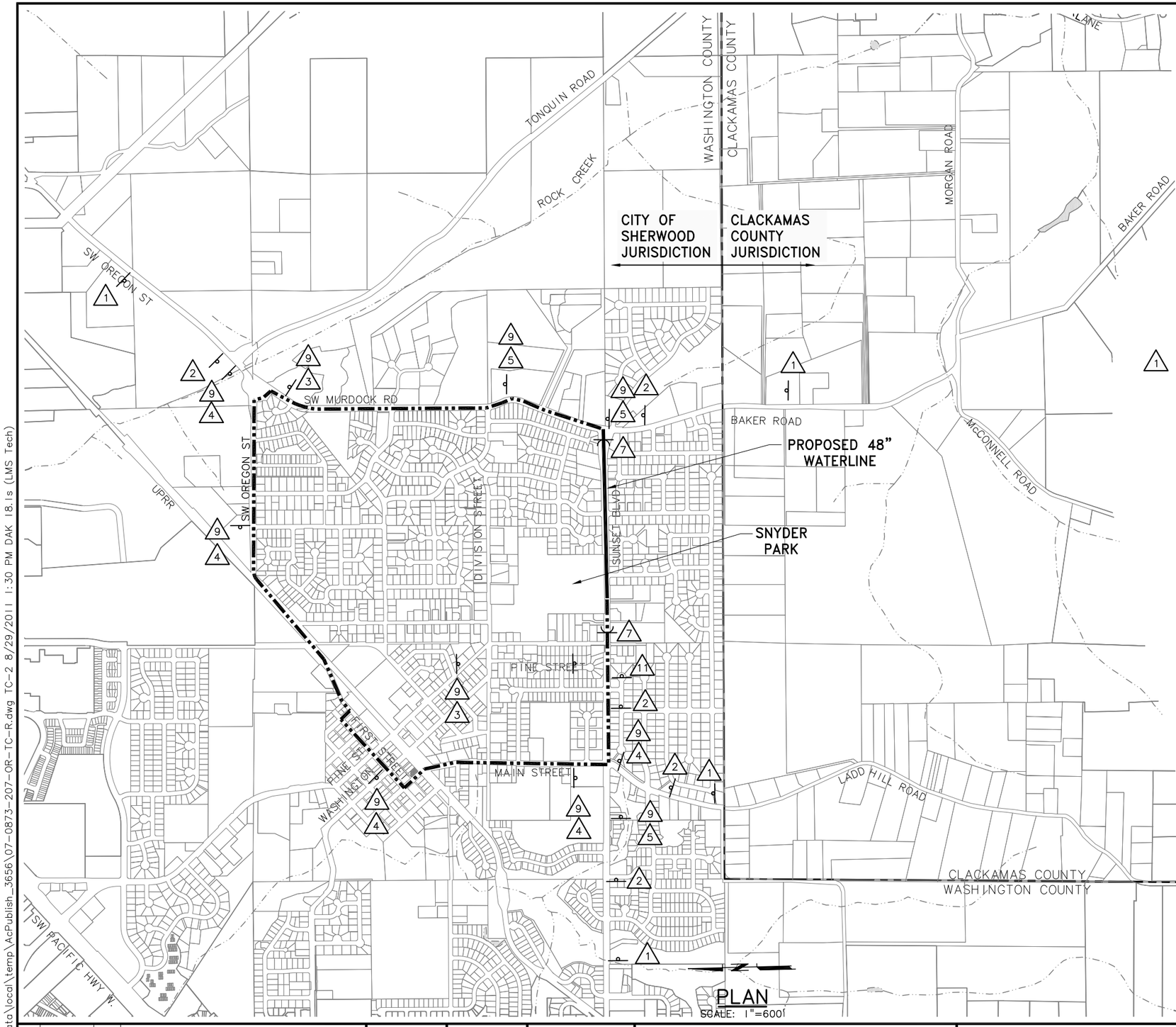
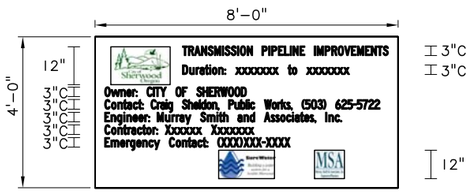


PLAN
SCALE: 1"=600'

TEMPORARY TYPE 3 BARRICADE
SCALE: NTS



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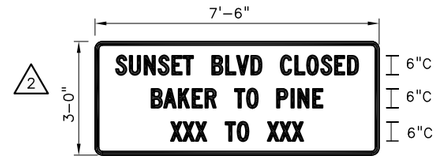

2

NOTE:

PROVIDE FLAGGING TO PROMOTE TRAFFIC MOVEMENT AT 4-WAY STOPS ON SW FIRST STREET AT PINE, WASHINGTON AND MAIN DURING HEAVY TRAFFIC TIMES BETWEEN 7:00 AM AND 9:00 AM AND 3:00 PM AND 6:00 PM ON WEEKDAYS.

LEGEND

- PIPE INSTALLATION
- DETOUR ROUTE
- TEMP TRAFFIC CONTROL SIGN
- TEMP TYPE III BARRICADE. SEE DETAIL THIS SHT.

SIGN LEGEND

3 — DETOUR — M4-9L 30"x24"

4 — DETOUR — M4-9R 30"x24"

5 — DETOUR — M3 30"x36"

6 — END DETOUR — M4-8a 30"x24"

7 — ROAD CLOSED LOCAL ACCESS ONLY — R11-3a 60"x30"

8 — ROAD CLOSED ½ MILES AHEAD LOCAL ACCESS ONLY — R11-3a 60"x30"

9 — 3'-0" — SUNSET BLVD — 6"C — 4'-6"

10 — DETOUR AHEAD — W 20-2 36"x36"

11 — ROAD CLOSED AHEAD — W 20-3 36"x36"

NO.	DATE	BY	REVISION
3	08/22/11	BVO	RECORD DRAWING

NOTICE: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

SMG DESIGNED | DAK DRAWN | MLH CHECKED

RECORD DRAWING
SEE DISCLAIMER, SHEET 1.
VERSION 4.1
12-9-97

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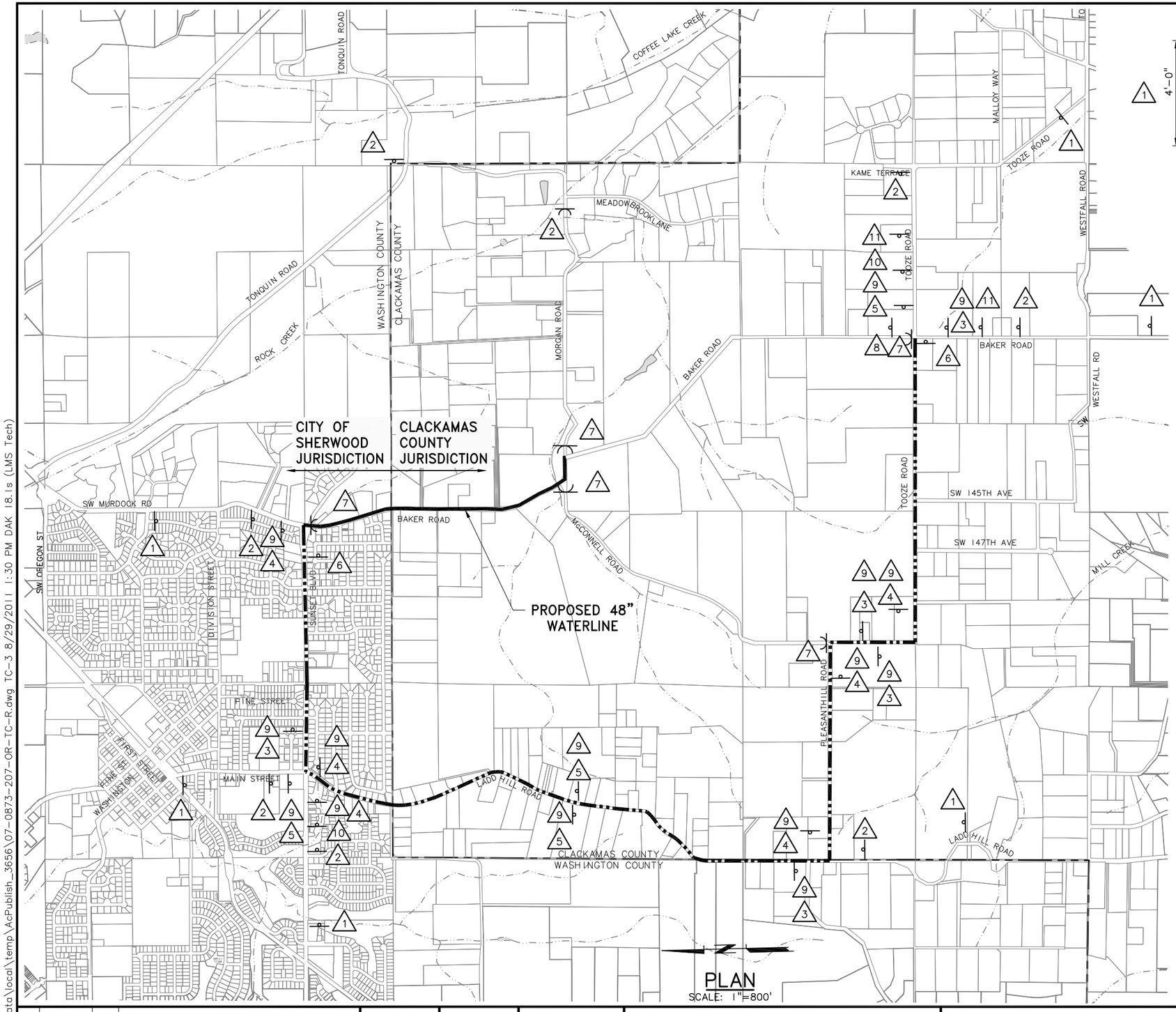
City of Sherwood Oregon

WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

PRELIMINARY TRAFFIC CONTROL PLAN SUNSET BLVD CLOSURE

PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

SHEET TC-2



PLAN
SCALE: 1"=800'

8'-0"
4'-0"
12"
3"C
3"C
3"C
3"C
3"C
3"C
12"

TRANSMISSION PIPELINE IMPROVEMENTS
Duration: xxxxxxx to xxxxxxx
Owner: CITY OF SHERWOOD
Contact: Craig Sheldon, Public Works, (503) 625-5722
Engineer: Murray Smith and Associates, Inc.
Contractor: Xxxxxx Xxxxxxx
Emergency Contact: (000)XXX-XXXX

7'-6"
3'-0"
BAKER RD CLOSED
MCCONNELL TO SUNSET
XXX TO XXX
6"C
6"C
6"C

NOTE:

DURATION OF ROAD CLOSURE NOT TO EXCEED SIX (6) CONSECUTIVE MONTHS WITHOUT PRIOR WRITTEN APPROVAL FROM COUNTY.

SIGN LEGEND

3 — DETOUR — M4-9L 30"x24"

4 — DETOUR — M4-9R 30"x24"

5 — DETOUR — M3 30"x36"

6 — END DETOUR — M4-8a 30"x24"

7 — ROAD CLOSED LOCAL ACCESS ONLY — R11-3a 60"x30"

8 — ROAD CLOSED ½ MILES AHEAD LOCAL ACCESS ONLY — R11-3a 60"x30"

9 — BAKER RD — 1'-0" x 3'-6" — 6"C

10 — DETOUR AHEAD — W 20-2 36"x36"

11 — ROAD CLOSED AHEAD — W 20-3 36"x36"

LEGEND

- PIPE INSTALLATION
- DETOUR ROUTE
- TEMP TRAFFIC CONTROL SIGN
- TEMP TYPE III BARRICADE. (SEE TC-2 FOR DETAILS.)

NO.	DATE	BY	REVISION
1	08/22/11	BVO	RECORD DRAWING

NOTICE
0 ½ 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

SMG DESIGNED
DAK DRAWN
MLH CHECKED

RECORD DRAWING
SEE DISCLAIMER, SHEET 1.
VERSION 4.1
12-9-97

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Engineers/Planners
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Portland, Oregon 97204
PHONE 503-225-9010
FAX 503-225-9022

City of Sherwood Oregon

WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

PRELIMINARY TRAFFIC CONTROL PLAN BAKER ROAD NORTH OF McCONNELL CLOSURE

PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

SHEET
TC-3
10 of 79

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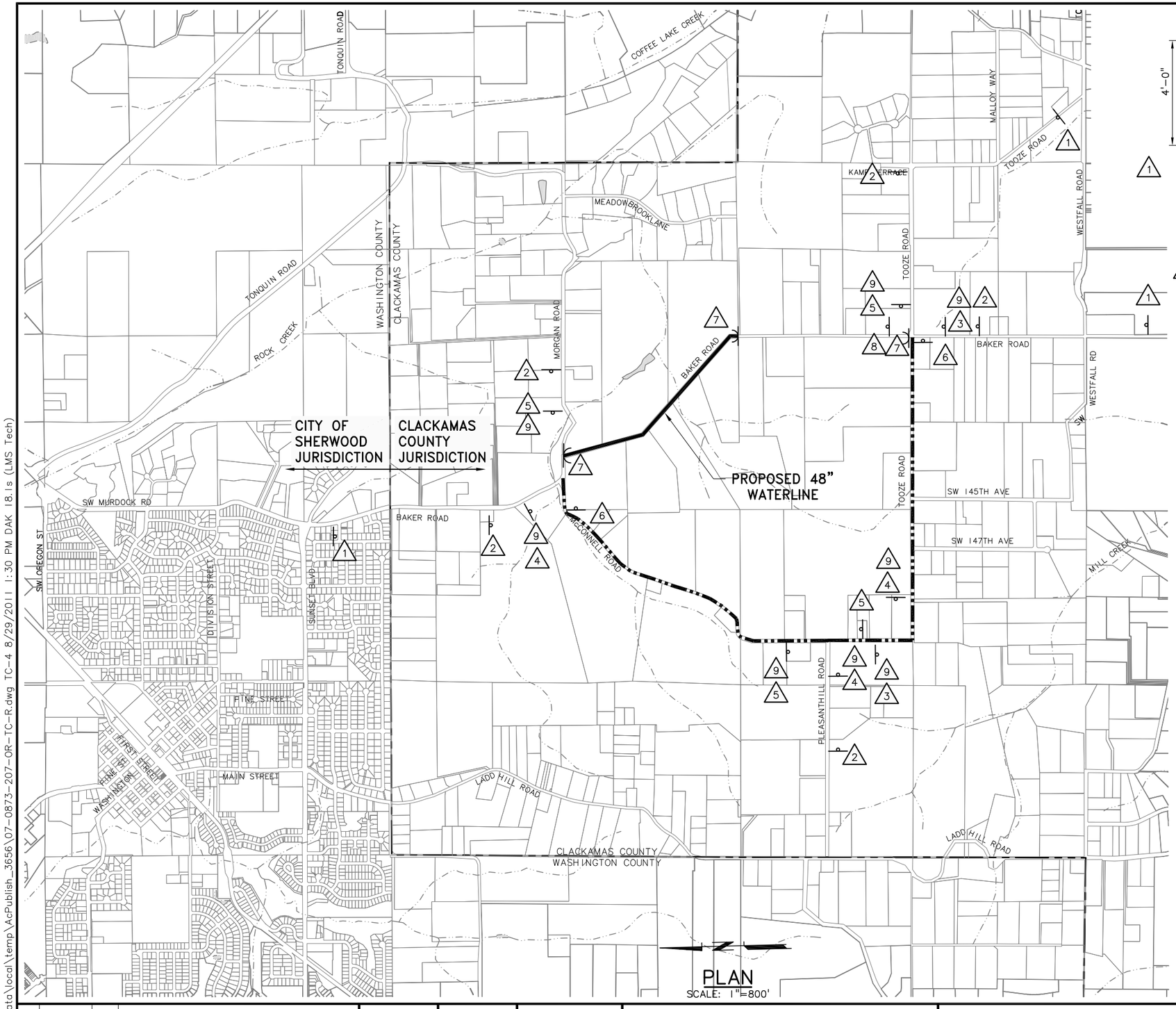
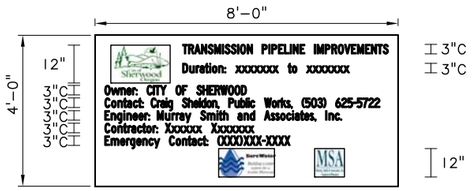
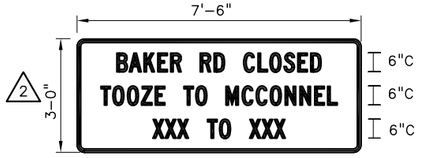


PLAN
SCALE: 1"=800'





NOTE:

DURATION OF ROAD CLOSURE NOT TO EXCEED SIX (6) CONSECUTIVE MONTHS WITHOUT PRIOR WRITTEN APPROVAL FROM COUNTY.

SIGN LEGEND

3 — DETOUR — M4-9L 30"x24"

4 — DETOUR — M4-9R 30"x24"

5 — DETOUR — M3 30"x36"

6 — END DETOUR — M4-8a 30"x24"

7 — ROAD CLOSED LOCAL ACCESS ONLY — R11-3a 60"x30"

8 — ROAD CLOSED ½ MILES AHEAD LOCAL ACCESS ONLY — R11-3a 60"x30"

9 — BAKER RD — 1'-0" x 3'-6" — 6"C

10 — DETOUR AHEAD — W 20-2 36"x36"

11 — ROAD CLOSED AHEAD — W 20-3 36"x36"

LEGEND

- PIPE INSTALLATION
- DETOUR ROUTE
- TEMP TRAFFIC CONTROL SIGN
- TEMP TYPE III BARRICADE. (SEE TC-2 FOR DETAILS.)

NO.	DATE	BY	REVISION
1	08/22/11	BVO	RECORD DRAWING

NOTICE: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

SMG DESIGNED | DAK DRAWN | MLH CHECKED

RECORD DRAWING
SEE DISCLAIMER, SHEET 1.
VERSION 4.1
12-9-97

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

City of Sherwood Oregon

WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

PRELIMINARY TRAFFIC CONTROL PLAN BAKER ROAD SOUTH OF McCONNELL CLOSURE

PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

SHEET TC-4
11 of 79

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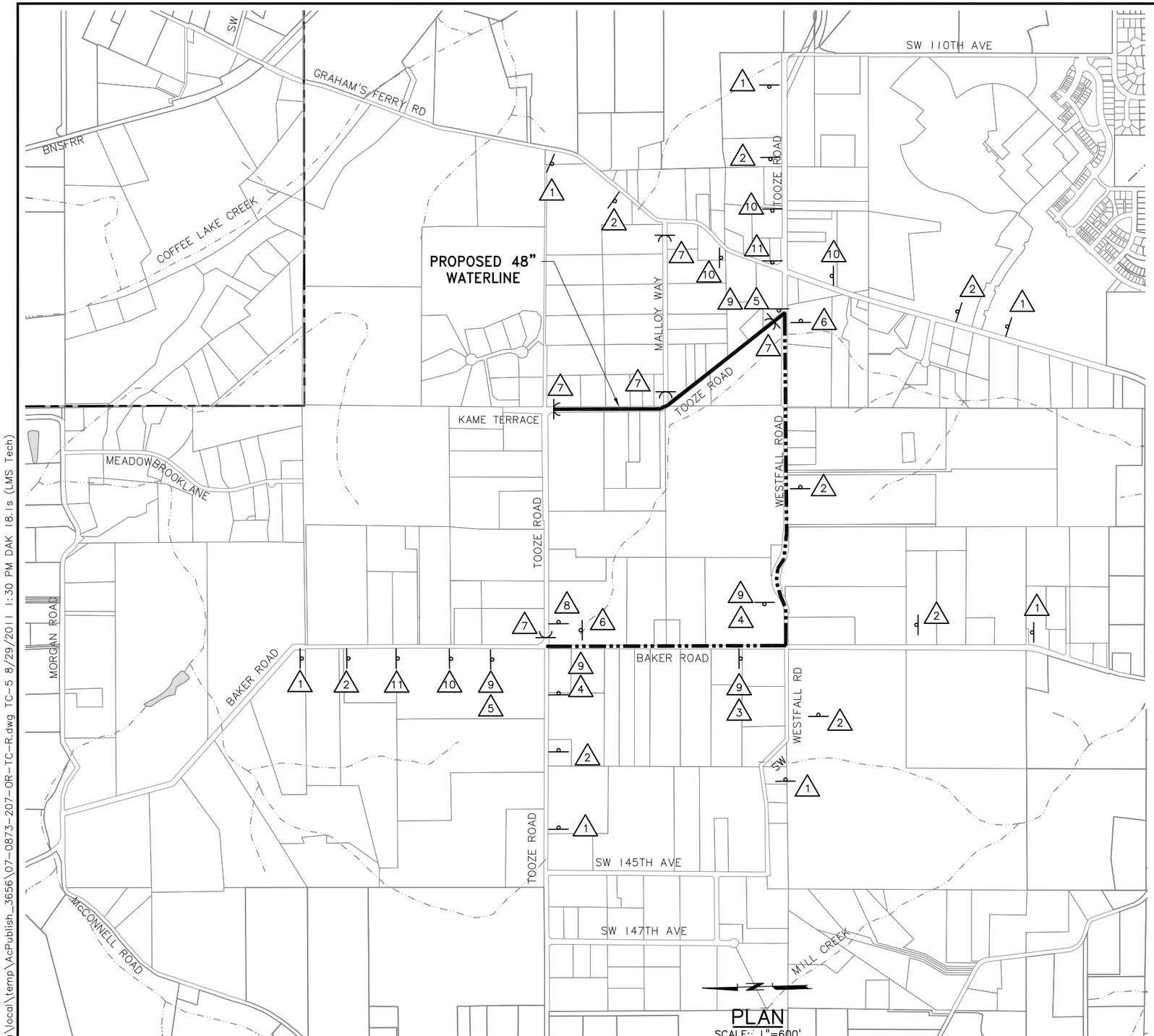

PLAN
SCALE: 1"=600'

8'-0"

4'-0"

12"

3"C
3"C
3"C
3"C
3"C

TRANSMISSION PIPELINE IMPROVEMENTS
Duration: xxxxxxx to xxxxxxx
Owner: CITY OF SHERWOOD
Contact: Craig Sheldon, Public Works, (503) 625-5722
Engineer: Murray Smith and Associates, Inc.
Contractor: Xxxxxx Xxxxxxx
Emergency Contact: (000)XXX-XXXX

3"C
3"C
12"

1

7'-0"

3'-0"

TOOZE RD CLOSED
WESTFALL TO BAKER
XXX TO XXX

6"C
6"C
6"C

2

NOTE:

DURATION OF ROAD CLOSURE NOT TO EXCEED SIX (6) CONSECUTIVE MONTHS WITHOUT PRIOR WRITTEN APPROVAL FROM COUNTY.

SIGN LEGEND

3 — DETOUR — M4-9L 30"x24"

4 — DETOUR — M4-9R 30"x24"

5 — DETOUR — M3 30"x36"

6 — END DETOUR — M4-8a 30"x24"

7 — ROAD CLOSED LOCAL ACCESS ONLY — R11-3a 60"x30"

8 — ROAD CLOSED ½ MILES AHEAD LOCAL ACCESS ONLY — R11-3a 60"x30"

9 — TOOZE RD — 1'-0" x 3'-6" — 6"C

10 — DETOUR AHEAD — W 20-2 36"x36"

11 — ROAD CLOSED AHEAD — W 20-3 36"x36"

LEGEND

- PIPE INSTALLATION
- DETOUR ROUTE
- TEMP TRAFFIC CONTROL SIGN
- TEMP TYPE III BARRICADE. (SEE TC-2 FOR DETAILS.)

NO.	DATE	BY	REVISION
1	08/22/11	BVO	RECORD DRAWING

NOTICE
0 ½ 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

SMG DESIGNED
DAK DRAWN
MLH CHECKED

RECORD DRAWING
SEE DISCLAIMER, SHEET 1.
VERSION 4.1
12-9-97

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

City of Sherwood Oregon

WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

PRELIMINARY TRAFFIC CONTROL PLAN TOOZE ROAD NORTH OF WESTFALL CLOSURE

PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

SHEET TC-5
12 of 79

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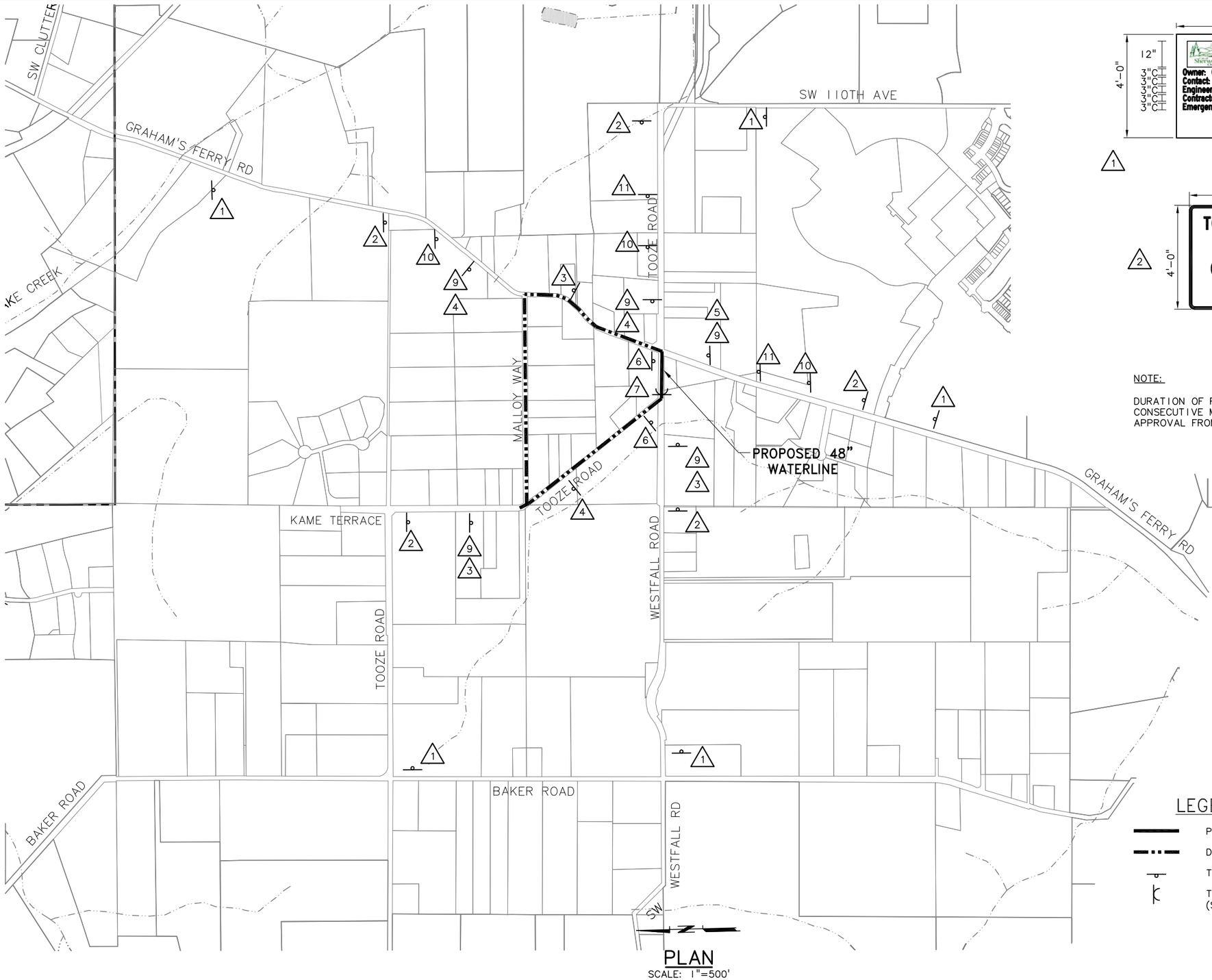
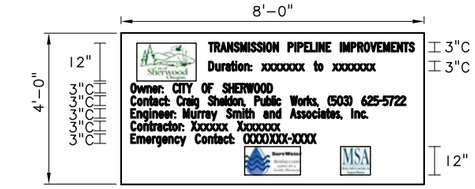


PLAN
SCALE: 1"=500'



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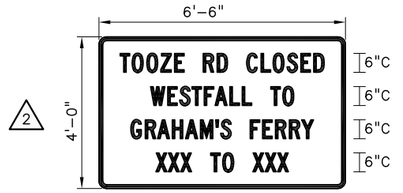

2

NOTE:

DURATION OF ROAD CLOSURE NOT TO EXCEED SIX (6) CONSECUTIVE MONTHS WITHOUT PRIOR WRITTEN APPROVAL FROM COUNTY.

SIGN LEGEND

3 — DETOUR — M4-9L 30"x24"

4 — DETOUR — M4-9R 30"x24"

5 — DETOUR — M3 30"x36"

6 — END DETOUR — M4-8a 30"x24"

7 — ROAD CLOSED LOCAL ACCESS ONLY — R11-3a 60"x30"

8 — ROAD CLOSED ½ MILES AHEAD LOCAL ACCESS ONLY — R11-3a 60"x30"

9 — 1'-0" — TOOZE RD — 6"C — 3'-6"

10 — DETOUR AHEAD — W 20-2 36"x36"

11 — ROAD CLOSED AHEAD — W 20-3 36"x36"

LEGEND

- PIPE INSTALLATION
- DETOUR ROUTE
- TEMP TRAFFIC CONTROL SIGN
- TEMP TYPE III BARRICADE. (SEE TC-2 FOR DETAILS.)

NO.	DATE	BY	REVISION
4	08/22/11	BVO	RECORD DRAWING

NOTICE: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

SMG DESIGNED | DAK DRAWN | MLH CHECKED

RECORD DRAWING
SEE DISCLAIMER, SHEET 1.
VERSION 4.1
12-9-97

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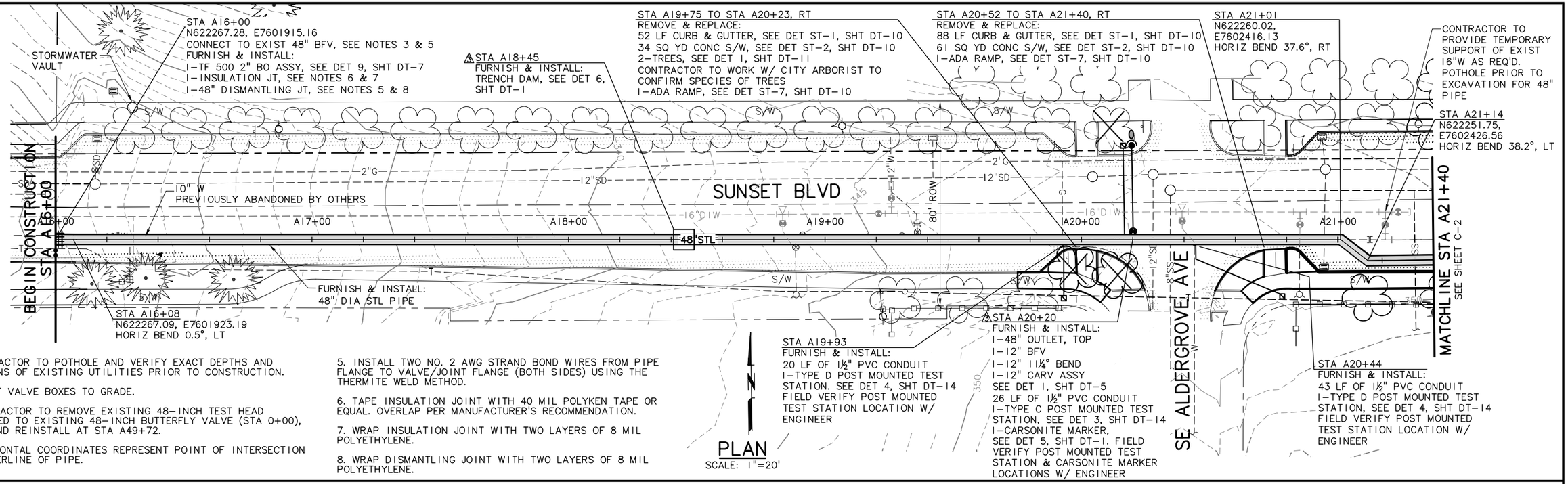
City of Sherwood Oregon

WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

PRELIMINARY TRAFFIC CONTROL PLAN TOOZE ROAD EAST OF WESTFALL CLOSURE

PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

SHEET TC-6



NOTES:

1. CONTRACTOR TO POTHOLE AND VERIFY EXACT DEPTHS AND LOCATIONS OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.

2. ADJUST VALVE BOXES TO GRADE.

3. CONTRACTOR TO REMOVE EXISTING 48-INCH TEST HEAD CONNECTED TO EXISTING 48-INCH BUTTERFLY VALVE (STA 0+00), STORE AND REINSTALL AT STA A49+72.

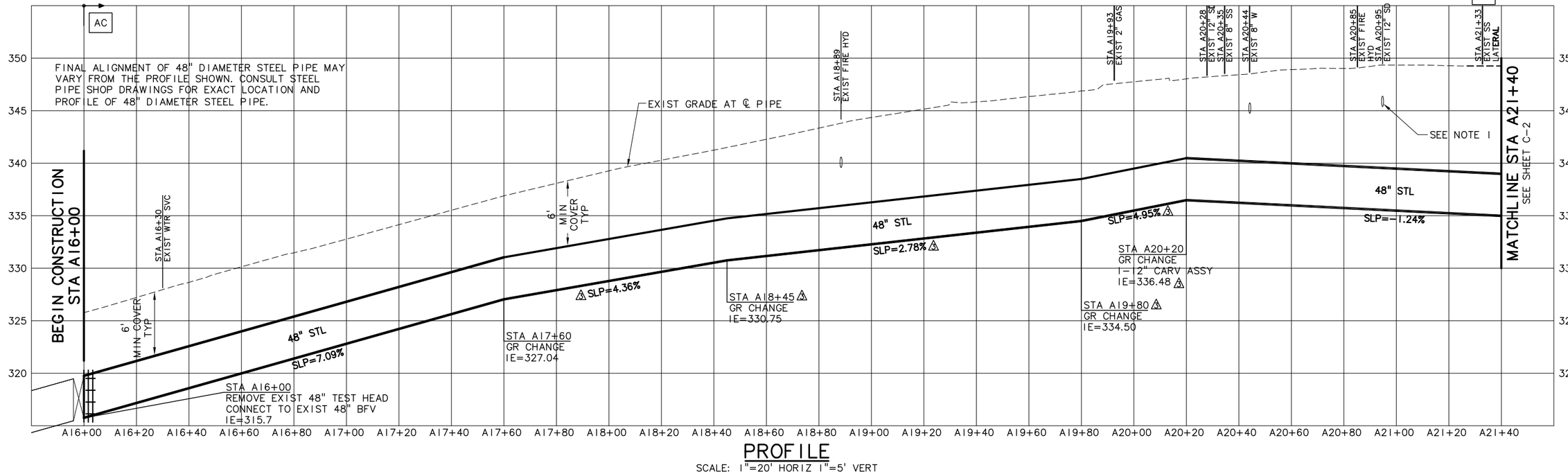
4. HORIZONTAL COORDINATES REPRESENT POINT OF INTERSECTION OF CENTERLINE OF PIPE.

5. INSTALL TWO NO. 2 AWG STRAND BOND WIRES FROM PIPE FLANGE TO VALVE/JOINT FLANGE (BOTH SIDES) USING THE THERMITE WELD METHOD.

6. TAPE INSULATION JOINT WITH 40 MIL POLYKEN TAPE OR EQUAL. OVERLAP PER MANUFACTURER'S RECOMMENDATION.

7. WRAP INSULATION JOINT WITH TWO LAYERS OF 8 MIL POLYETHYLENE.

8. WRAP DISMANTLING JOINT WITH TWO LAYERS OF 8 MIL POLYETHYLENE.



PROFILE
SCALE: 1"=20' HORIZ 1"=5' VERT

NO.	DATE	BY	REVISION
1	08/22/11	BVO	RECORD DRAWING

NOTICE
0 ½ 1
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SMG DESIGNED
DAK DRAWN
MLH CHECKED

RECORD DRAWING
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City of Sherwood Oregon

WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

WATERLINE SCHEDULE A PLAN AND PROFILE STA A16+00 TO STA A21+40

PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

SHEET C-1
20 of 79

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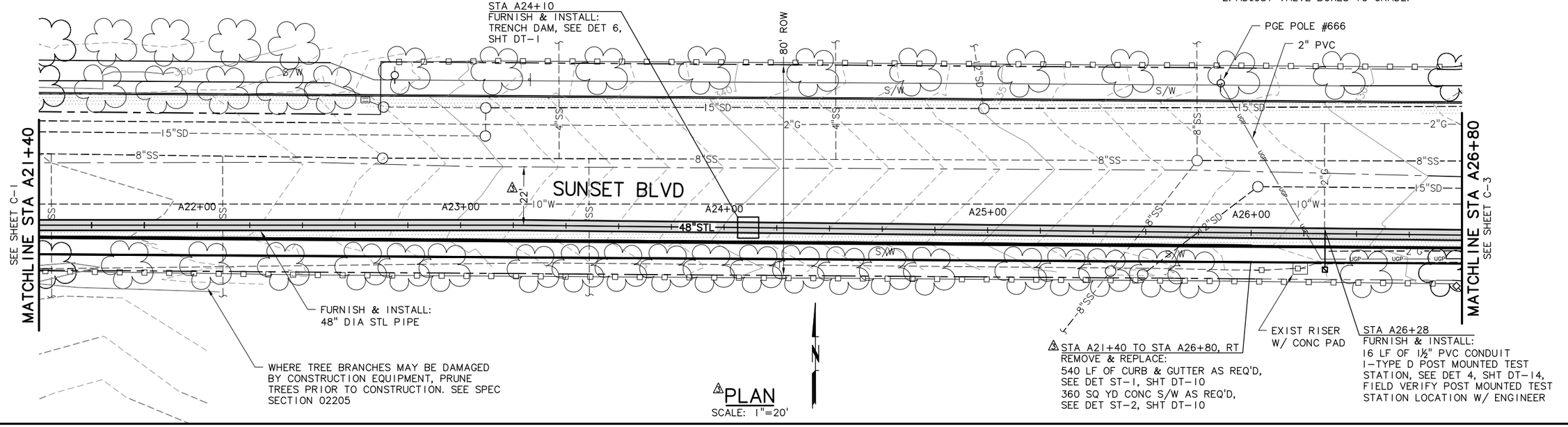
NOTES:

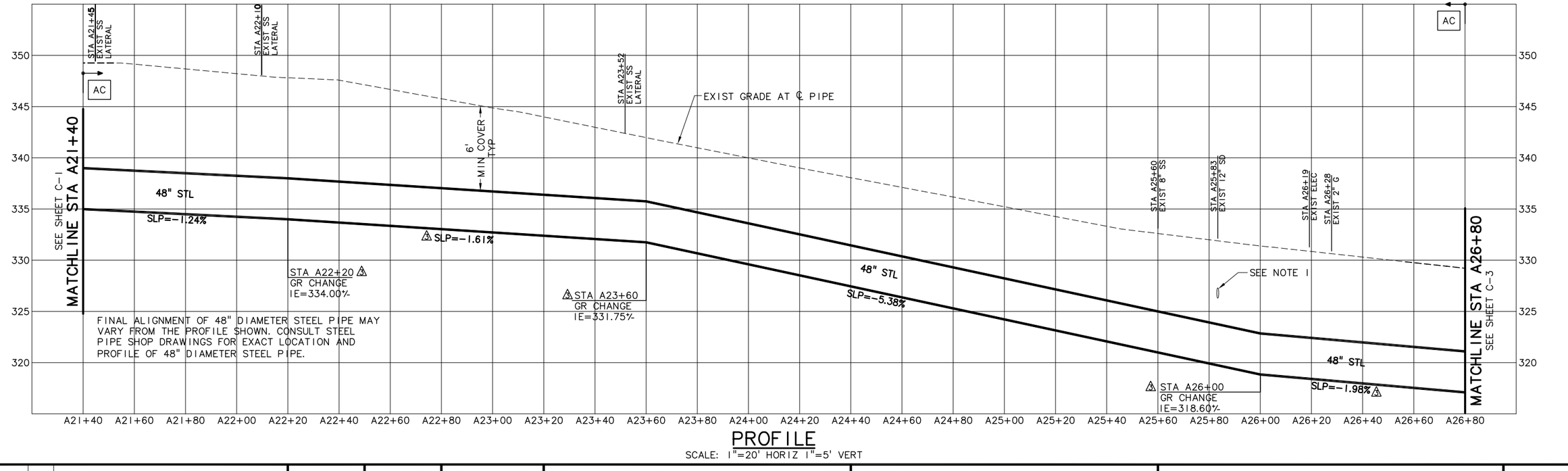
1. CONTRACTOR TO POTHOLE AND VERIFY EXACT DEPTHS AND LOCATIONS OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.

2. ADJUST VALVE BOXES TO GRADE.



PLAN

SCALE: 1"=20'



PROFILE

SCALE: 1"=20' HORIZ 1"=5' VERT

NO.	DATE	BY	REVISION
3	08/22/11	BVO	RECORD DRAWING

NOTICE
0 ½ 1
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SMG DESIGNED
DAK DRAWN
MLH CHECKED

RECORD DRAWING
SEE DISCLAIMER, SHEET 1.
VERSION 4.1
12-9-97

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

City of Sherwood Oregon

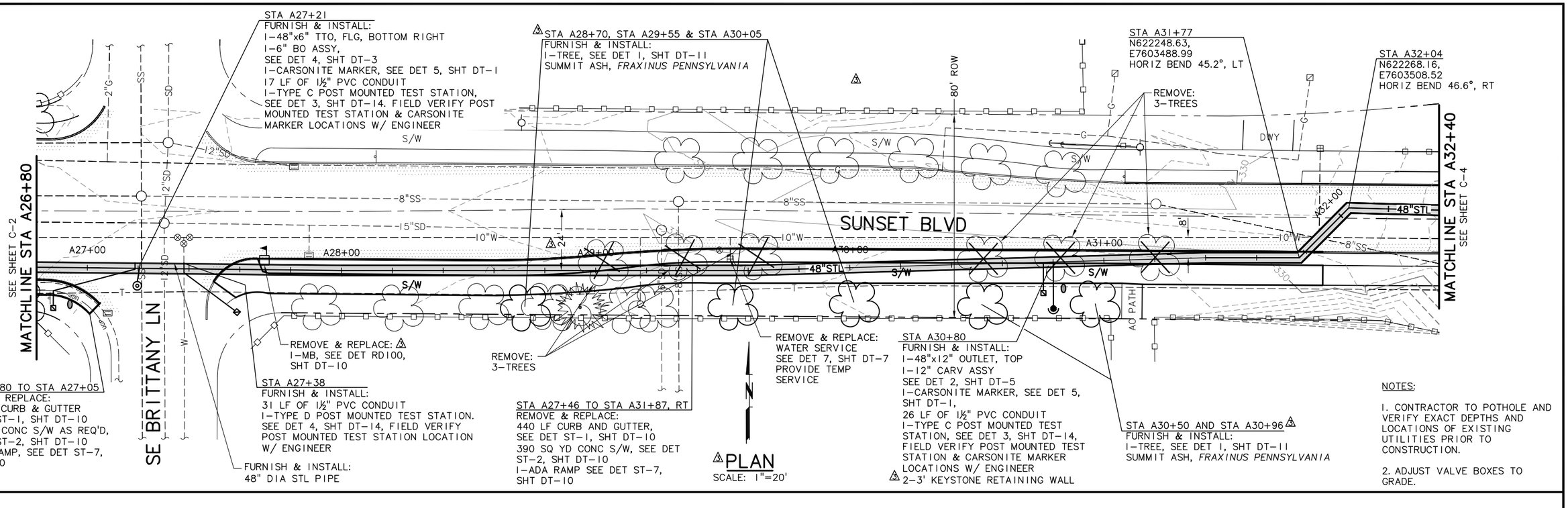
WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

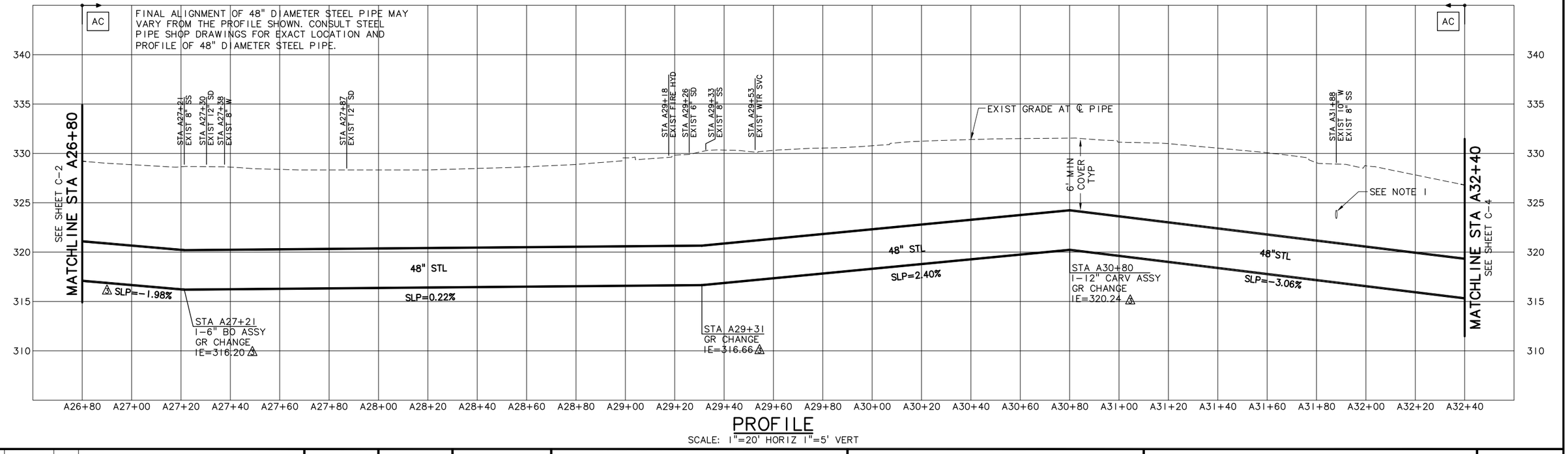
WATERLINE SCHEDULE A PLAN AND PROFILE STA A21+40 TO STA A26+80

PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

SHEET C-2

G:\PDX_Projects\07\0873\207 Design-Final Plans\CAD\DOR\07-0873-207-OR-CIVIL A-R.dwg C-2 9/12/2011 4:11 PM DAK 18.1s (LMS Tech)





PROFILE
SCALE: 1"=20' HORIZ 1"=5' VERT

NO.	DATE	BY	REVISION
1	08/22/11	BVO	RECORD DRAWING

NOTICE
0 ½ 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

SMG DESIGNED
DAK DRAWN
MLH CHECKED

RECORD DRAWING
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City of Sherwood Oregon

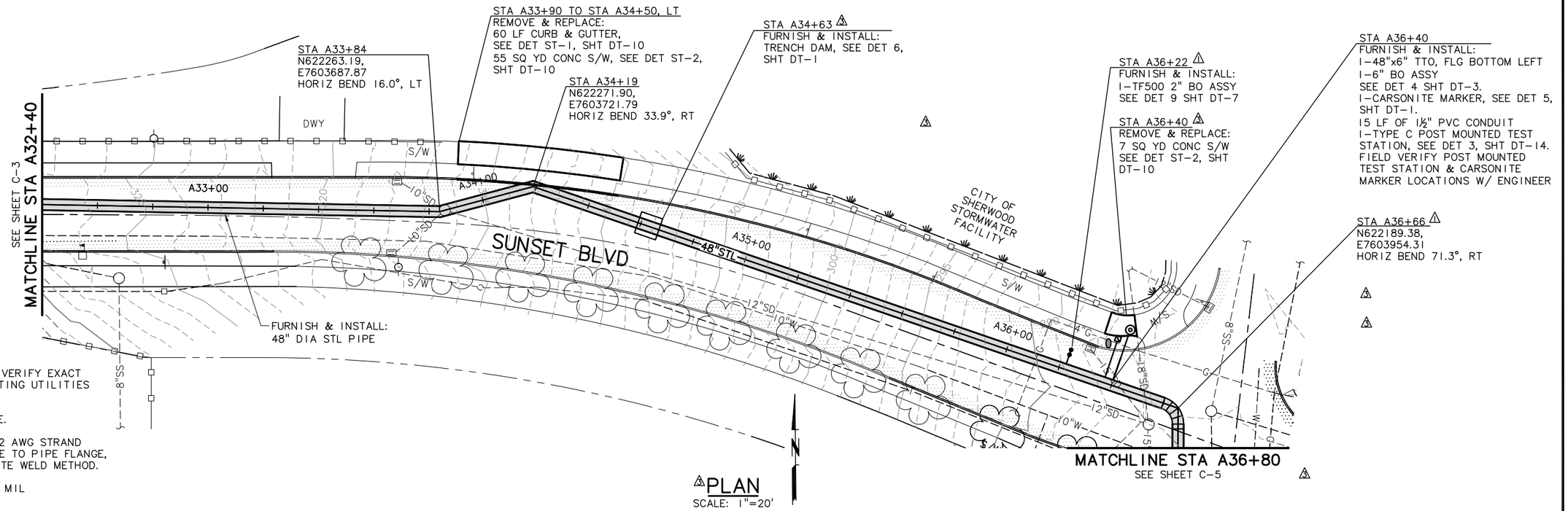
WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

WATERLINE SCHEDULE A PLAN AND PROFILE STA A26+80 TO STA A32+40

PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

SHEET C-3
22 of 79

G:\PDX_Projects\07\0873\207 Design-Final Plans\CAD\DOR\07-0873-207-OR-CIVIL A-R.dwg C-3 9/12/2011 4:13 PM DAK 18.1s (LMS Tech)



NOTES:

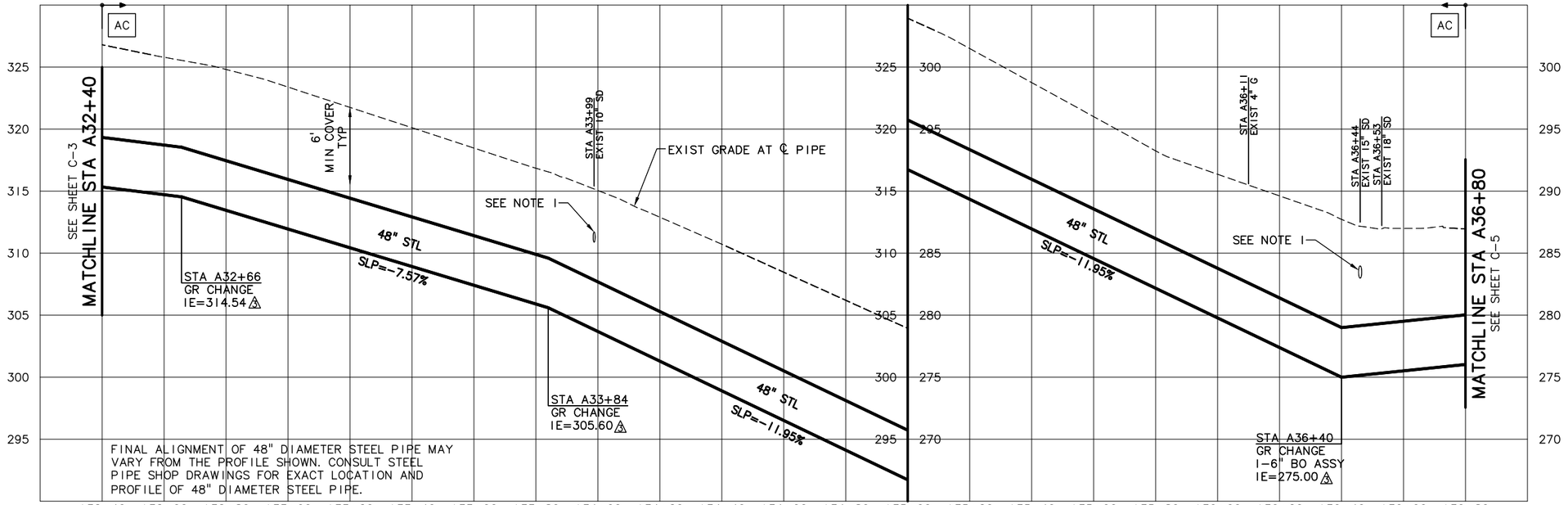
1. CONTRACTOR TO POTHOLE AND VERIFY EXACT DEPTHS AND LOCATIONS OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.

2. ADJUST VALVE BOXES TO GRADE.

3. FURNISH & INSTALL TWO NO. 2 AWG STRAND WIRES FROM VALVE/JOINT FLANGE TO PIPE FLANGE, (BOTH SIDES) USING THE THERMITE WELD METHOD.

4. WRAP WITH TWO LAYERS OF 8 MIL POLYETHYLENE.

⚠ PLAN
SCALE: 1"=20'



FINAL ALIGNMENT OF 48" DIAMETER STEEL PIPE MAY VARY FROM THE PROFILE SHOWN. CONSULT STEEL PIPE SHOP DRAWINGS FOR EXACT LOCATION AND PROFILE OF 48" DIAMETER STEEL PIPE.

⚠ PROFILE
SCALE: 1"=20' HORIZ 1"=5' VERT

NO.	DATE	BY	REVISION
⚠	08/22/11	BVO	RECORD DRAWING
⚠	09/14/09	SMG	RFI #1

NOTICE
0 ½ 1
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SMG DESIGNED
DAK DRAWN
MLH CHECKED

RECORD DRAWING
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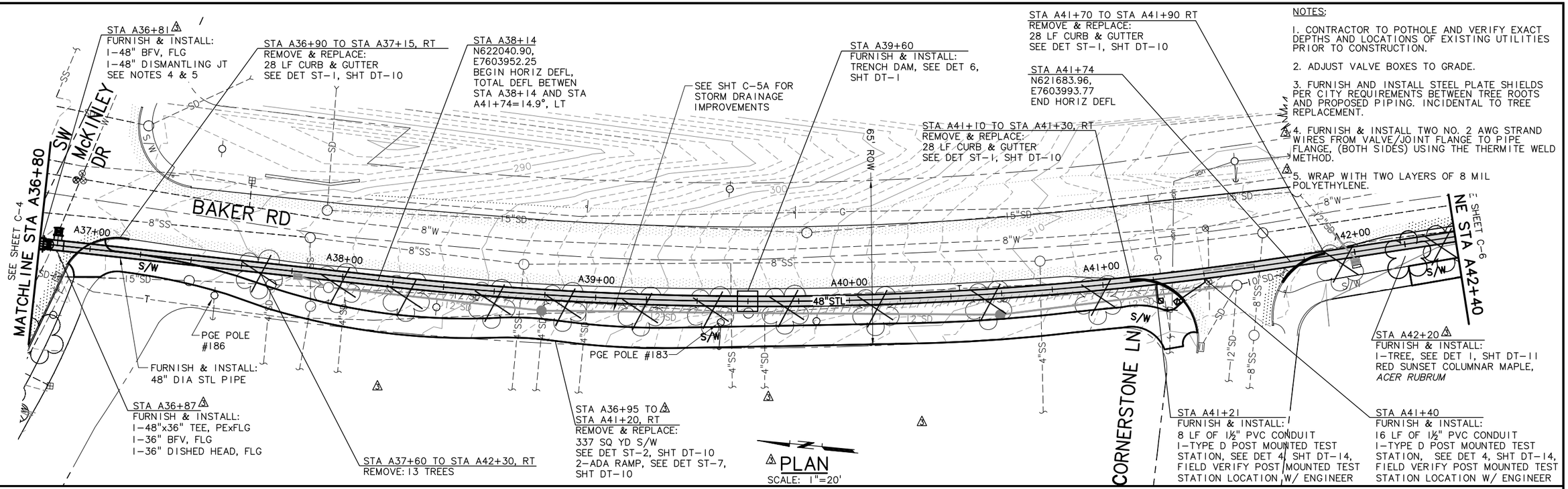
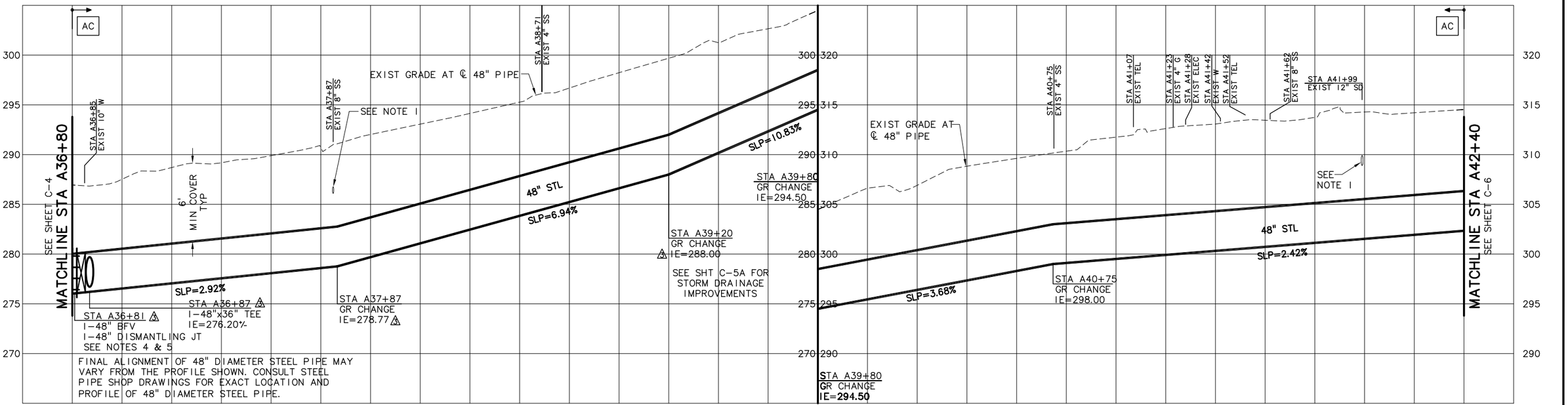
WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

WATERLINE SCHEDULE A PLAN AND PROFILE STA A32+40 TO STA A36+80

PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

SHEET
C-4
23 of 79





PROFILE
SCALE: 1"=20' HORIZ 1"=5' VERT

NO.	DATE	BY	REVISION
1	08/22/11	BVO	RECORD DRAWING

NOTICE
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SMG DESIGNED
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MLH CHECKED

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WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

WATERLINE SCHEDULE A
48" WATER PLAN AND PROFILE
STA A36+80 TO STA A42+40

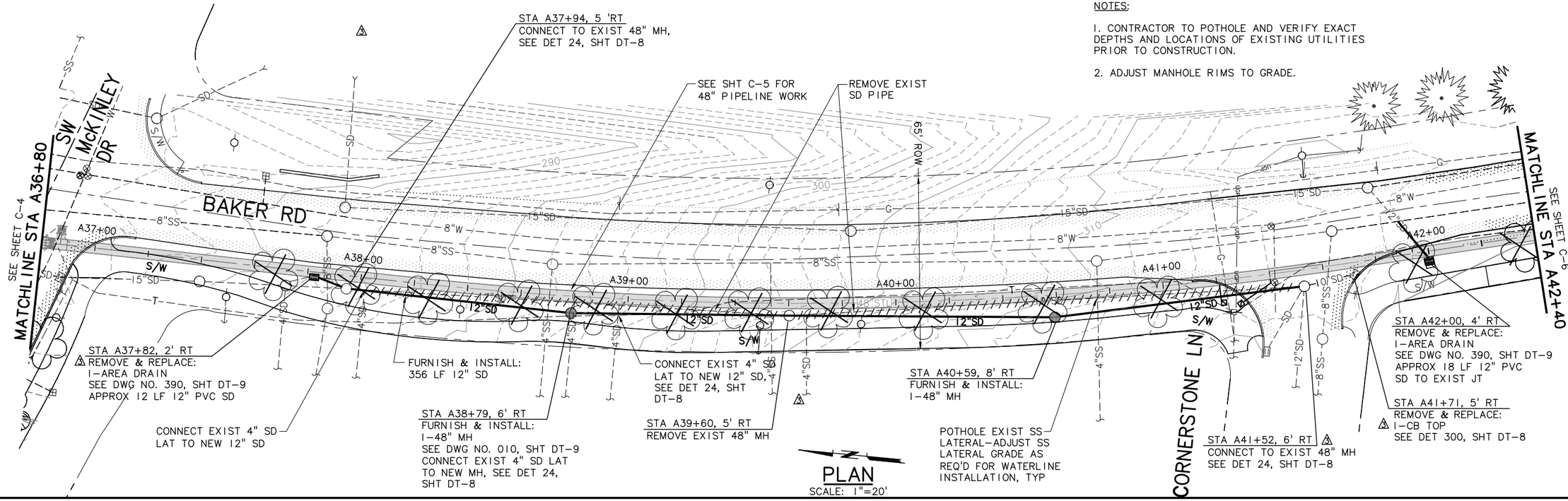
PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

SHEET C-5
24 of 79

NOTES:

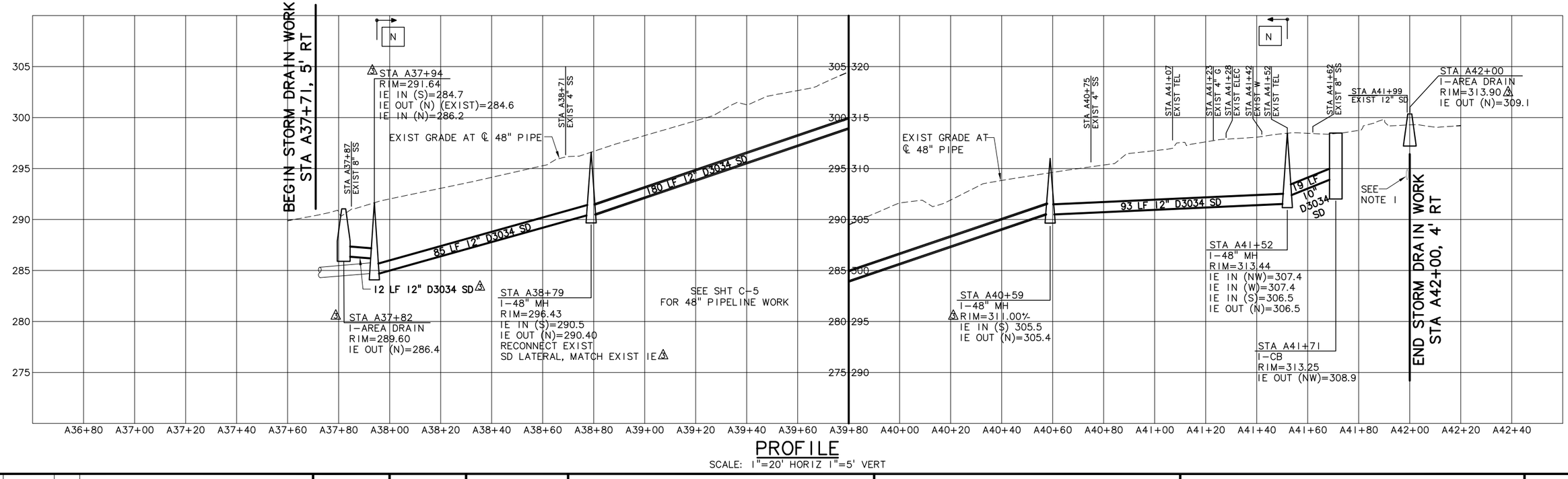
1. CONTRACTOR TO POTHOLE AND VERIFY EXACT DEPTHS AND LOCATIONS OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.

2. ADJUST MANHOLE RIMS TO GRADE.



PLAN

SCALE: 1"=20'



PROFILE

SCALE: 1"=20' HORIZ 1"=5' VERT

NO.	DATE	BY	REVISION
1	08/22/11	BVO	RECORD DRAWING

NOTICE
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SMG DESIGNED
DAK DRAWN
MLH CHECKED

RECORD DRAWING
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City of Sherwood Oregon

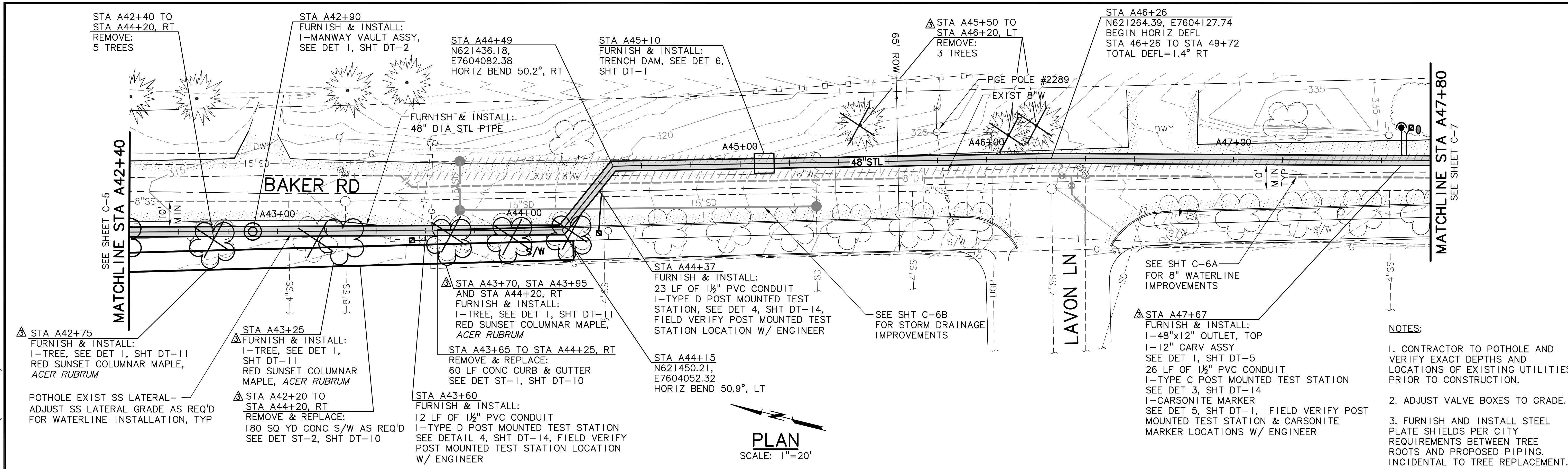
WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

WATERLINE SCHEDULE A
12" SD PLAN AND PROFILE
STA A37+95 TO STA A41+52

PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

SHEET C-5A

25 of 79

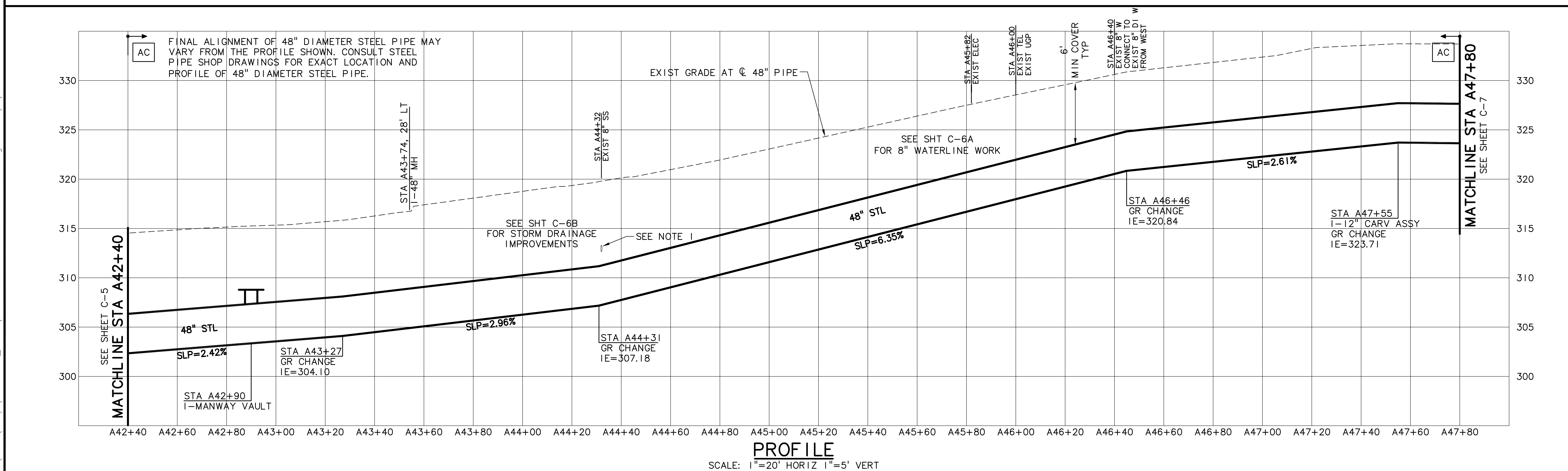

STA A42+40 TO
STA A44+20, RT
REMOVE:
5 TREES
STA A42+90
FURNISH & INSTALL:
I-MANWAY VAULT ASSY,
SEE DET I, SHT DT-2
STA A44+49
N621436.18,
E7604082.38
HORIZ BEND 50.2°, RT
STA A45+10
FURNISH & INSTALL:
TRENCH DAM, SEE DET 6,
SHT DT-I
65' ROW
STA A45+50 TO
STA A46+20, LT
REMOVE:
3 TREES
STA A46+26
N621264.39, E7604127.74
BEGIN HORIZ DEFL
STA 46+26 TO STA 49+72
TOTAL DEFL=1.4° RT
PGE POLE #2289
EXIST 8"W
FURNISH & INSTALL:
48" DIA STL PIPE
MATCHLINE STA A42+40
SEE SHEET C-5
MATCHLINE STA A47+80
SEE SHEET C-7
BAKER RD
LAVON LN
A43+00
A44+00
A45+00
A46+00
A47+00
48"STL
EXIST 8"W
15"SD
8"SS
10' MIN
10' MIN TYP
STA A42+75
FURNISH & INSTALL:
I-TREE, SEE DET I, SHT DT-II
RED SUNSET COLUMNAR MAPLE,
ACER RUBRUM
POTHOLE EXIST SS LATERAL-
ADJUST SS LATERAL GRADE AS REQ'D
FOR WATERLINE INSTALLATION, TYP
STA A43+25
FURNISH & INSTALL:
I-TREE, SEE DET I,
SHT DT-II
RED SUNSET COLUMNAR
MAPLE, ACER RUBRUM
STA A42+20 TO
STA A44+20, RT
REMOVE & REPLACE:
180 SQ YD CONC S/W AS REQ'D
SEE DET ST-2, SHT DT-10
STA A43+70, STA A43+95
AND STA A44+20, RT
FURNISH & INSTALL:
I-TREE, SEE DET I, SHT DT-II
RED SUNSET COLUMNAR MAPLE,
ACER RUBRUM
STA A43+65 TO STA A44+25, RT
REMOVE & REPLACE:
60 LF CONC CURB & GUTTER
SEE DET ST-1, SHT DT-10
STA A43+60
FURNISH & INSTALL:
12 LF OF 1½" PVC CONDUIT
I-TYPE D POST MOUNTED TEST STATION
SEE DETAIL 4, SHT DT-14, FIELD VERIFY
POST MOUNTED TEST STATION LOCATION
W/ ENGINEER
STA A44+37
FURNISH & INSTALL:
23 LF OF 1½" PVC CONDUIT
I-TYPE D POST MOUNTED TEST
STATION, SEE DET 4, SHT DT-14,
FIELD VERIFY POST MOUNTED TEST
STATION LOCATION W/ ENGINEER
STA A44+15
N621450.21,
E7604052.32
HORIZ BEND 50.9°, LT
SEE SHT C-6B
FOR STORM DRAINAGE
IMPROVEMENTS
SEE SHT C-6A
FOR 8" WATERLINE
IMPROVEMENTS
STA A47+67
FURNISH & INSTALL:
I-48"x12" OUTLET, TOP
I-12" CARV ASSY
SEE DET I, SHT DT-5
26 LF OF 1½" PVC CONDUIT
I-TYPE C POST MOUNTED TEST STATION
SEE DET 3, SHT DT-14
I-CARSONITE MARKER
SEE DET 5, SHT DT-I, FIELD VERIFY POST
MOUNTED TEST STATION & CARSONITE
MARKER LOCATIONS W/ ENGINEER
PLAN
SCALE: 1"=20'

NOTES:

1. CONTRACTOR TO POTHOLE AND VERIFY EXACT DEPTHS AND LOCATIONS OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.

2. ADJUST VALVE BOXES TO GRADE.

3. FURNISH AND INSTALL STEEL PLATE SHIELDS PER CITY REQUIREMENTS BETWEEN TREE ROOTS AND PROPOSED PIPING. INCIDENTAL TO TREE REPLACEMENT.


FINAL ALIGNMENT OF 48" DIAMETER STEEL PIPE MAY
VARY FROM THE PROFILE SHOWN. CONSULT STEEL
PIPE SHOP DRAWINGS FOR EXACT LOCATION AND
PROFILE OF 48" DIAMETER STEEL PIPE.
AC
EXIST GRADE AT ℄ 48" PIPE
STA A43+74, 28' LT
I-48" MH
STA A44+32
EXIST 8" SS
STA A45+82
EXIST ELEC
STA A46+00
EXIST TEL
EXIST UGP
6' MIN COVER TYP
STA A46+40
EXIST 8" W
CONNECT TO
EXIST 8" DI W
FROM WEST
SEE SHT C-6A
FOR 8" WATERLINE WORK
SEE SHT C-6B
FOR STORM DRAINAGE
IMPROVEMENTS
SEE NOTE 1
48" STL
SLP=2.42%
SLP=2.96%
SLP=6.35%
SLP=2.61%
STA A42+90
I-MANWAY VAULT
STA A43+27
GR CHANGE
IE=304.10
STA A44+31
GR CHANGE
IE=307.18
STA A46+46
GR CHANGE
IE=320.84
STA A47+55
I-12" CARV ASSY
GR CHANGE
IE=323.71
MATCHLINE STA A42+40
SEE SHEET C-5
MATCHLINE STA A47+80
SEE SHEET C-7
330
325
320
315
310
305
300
A42+40 A42+60 A42+80 A43+00 A43+20 A43+40 A43+60 A43+80 A44+00 A44+20 A44+40 A44+60 A44+80 A45+00 A45+20 A45+40 A45+60 A45+80 A46+00 A46+20 A46+40 A46+60 A46+80 A47+00 A47+20 A47+40 A47+60 A47+80
PROFILE
SCALE: 1"=20' HORIZ 1"=5' VERT

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NO.	DATE	BY	REVISION
3	08/22/11	BVO	RECORD DRAWING

NOTICE: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

SMG — DESIGNED
DAK — DRAWN
MLH — CHECKED

RECORD DRAWING
SEE DISCLAIMER, SHEET 1.
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12-9-97

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PHONE 503-225-9010 FAX 503-225-9022

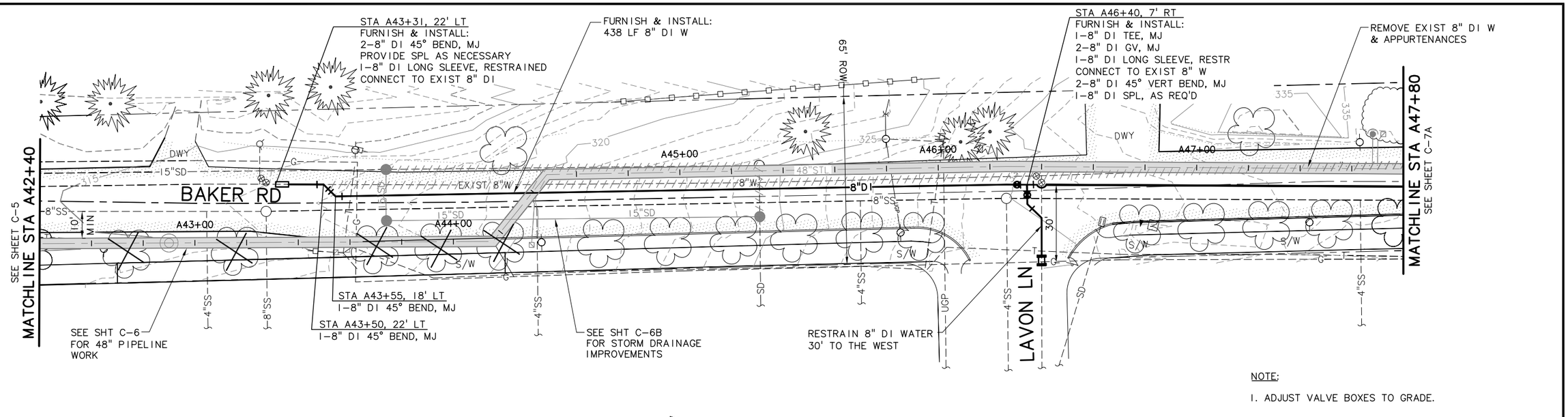
City of Sherwood Oregon

WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

WATERLINE SCHEDULE A
48" WATER PLAN AND PROFILE
STA A42+40 TO STA A47+80

PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

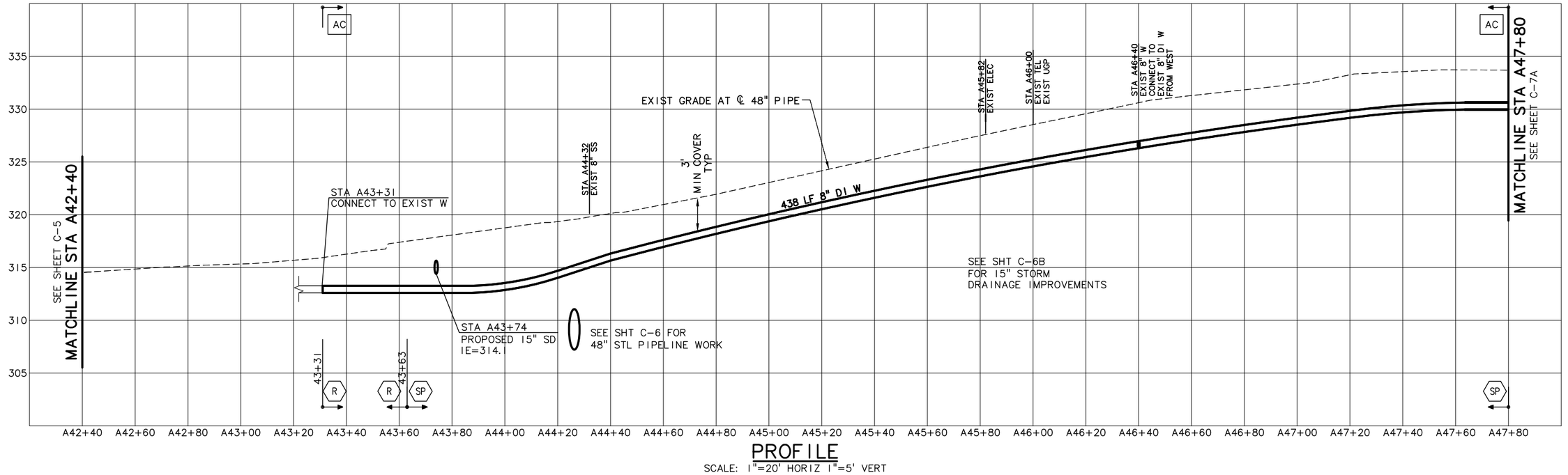
SHEET C-6



NOTE:

1. ADJUST VALVE BOXES TO GRADE.

PLAN
SCALE: 1"=20'



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City of Sherwood Oregon

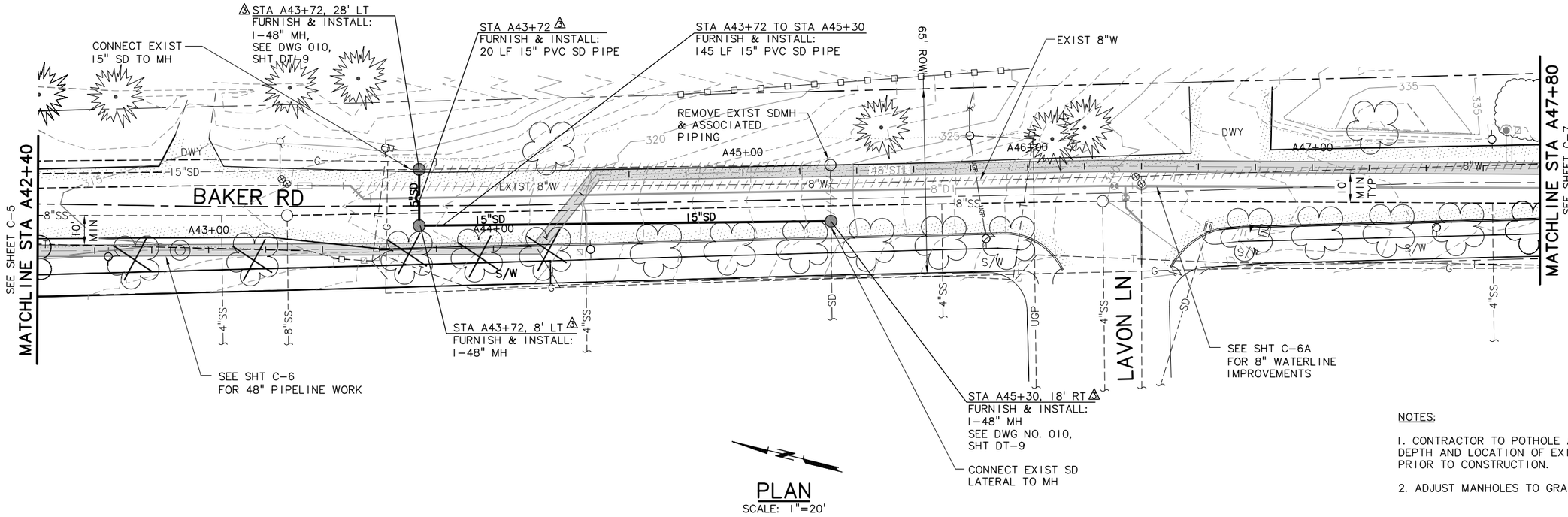
WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

WATERLINE SCHEDULE A
8" WATER PLAN AND PROFILE
STA A43+92 TO STA A47+80

PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

SHEET
C-6A
27 of 79

G:\PDX_Projects\07\0873\207 Design-Final Plans\CAD\DOR\07-0873-207-OR-CIVIL A - C-6A_C-7A-R.dwg C-6A 9/8/2011 10:08 AM DAK 18.1s (LMS Tech)

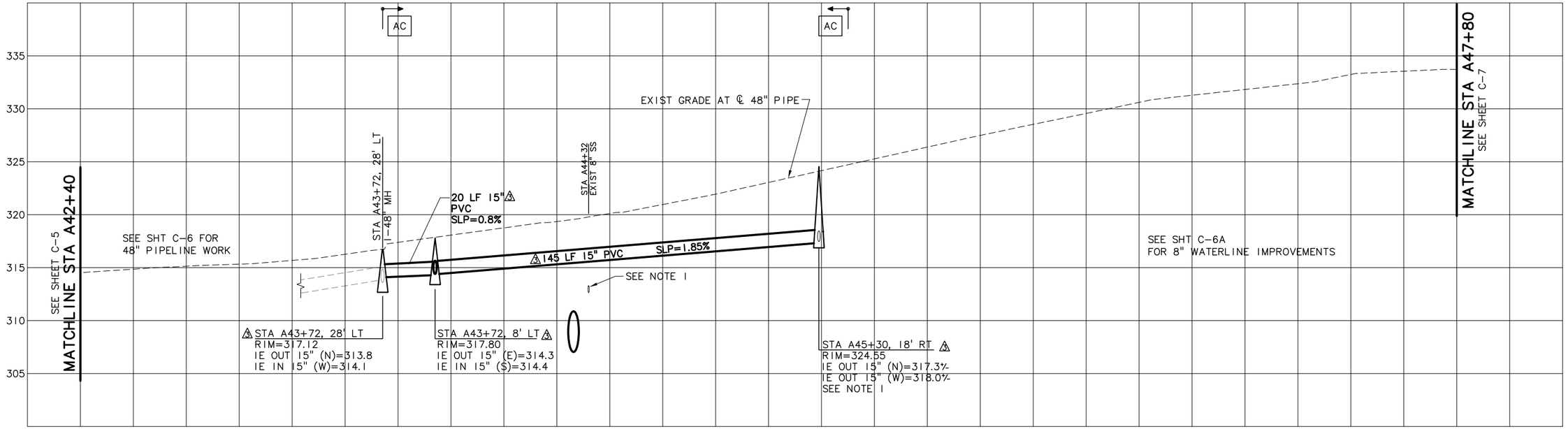


PLAN
SCALE: 1"=20'

NOTES:

1. CONTRACTOR TO POTHOLE AND VERIFY EXACT DEPTH AND LOCATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.

2. ADJUST MANHOLES TO GRADE.



PROFILE
SCALE: 1"=20' HORIZ 1"=5' VERT

NO.	DATE	BY	REVISION
3	08/22/11	BVO	RECORD DRAWING

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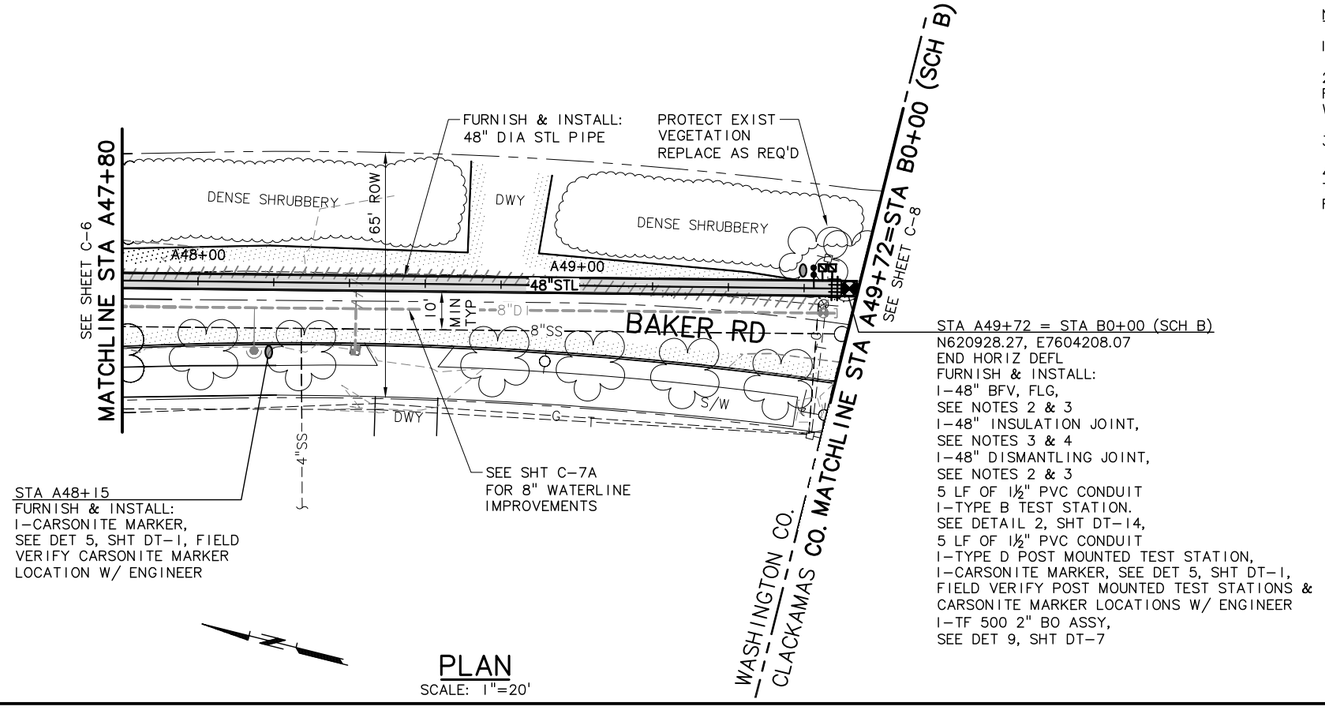
City of Sherwood Oregon

WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

WATERLINE SCHEDULE A
15" SD PLAN AND PROFILE
STA A43+74 TO STA A45+31

PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

SHEET
C-6B
28 of 79



PLAN
SCALE: 1"=20'

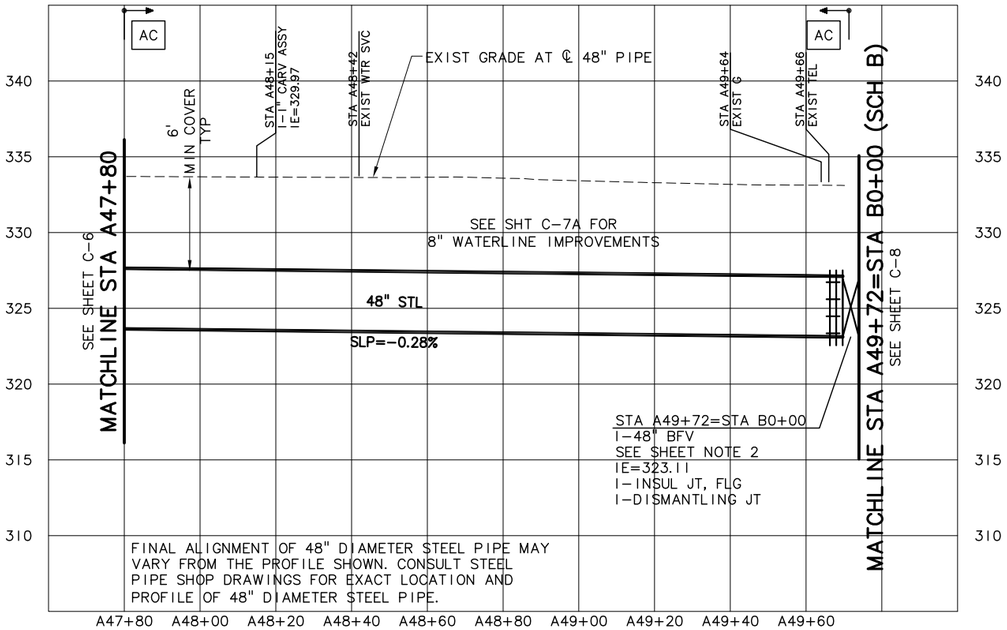
NOTES:

1. ADJUST VALVE BOXES TO GRADE.

2. INSTALL TWO NO. 2 AWG STRAND WIRES FROM PIPE FLANGE TO VALVE/JOINT FLANGE USING THE THERMITE WELD METHOD.

3. WRAP WITH 2 LAYERS OF 8 MIL POLYETHELENE.

4. TAPE INSULATION JOINT WITH 40 MIL POLYKEN TAPE, OR EQUAL. OVERLAP PER MANUFACTURER'S RECOMMENDATION.



PROFILE
SCALE: 1"=20' HORIZ 1"=5' VERT

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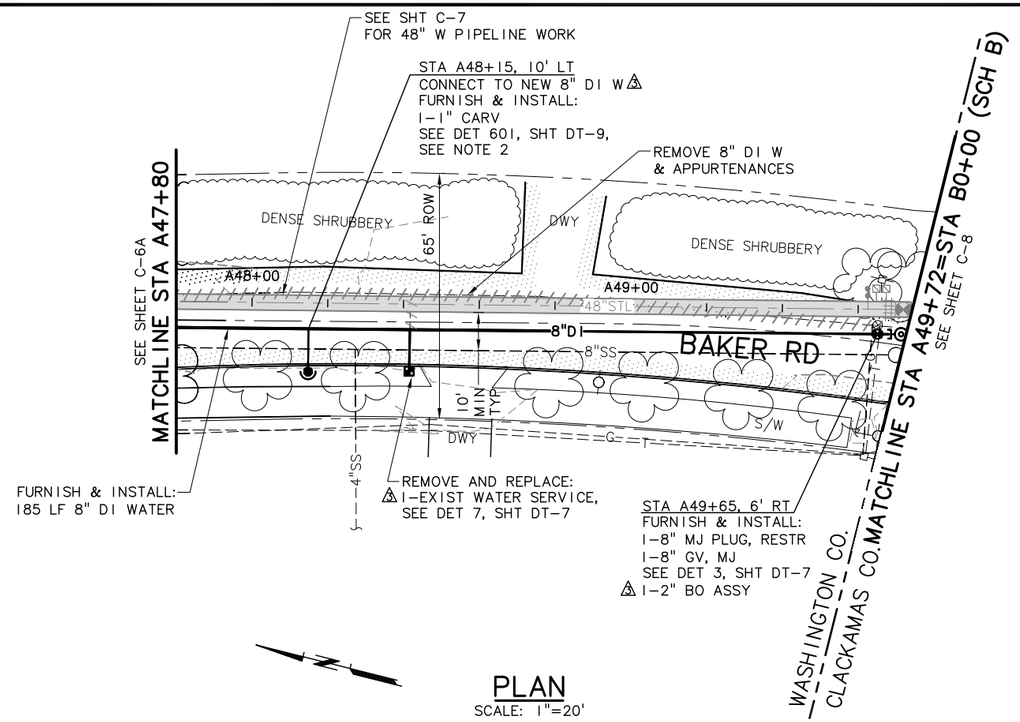
City of Sherwood Oregon

WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

WATERLINE SCHEDULE A
48" WATER PLAN AND PROFILE
STA A47+80 TO STA A49+72

PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

SHEET
C-7
29 of 79

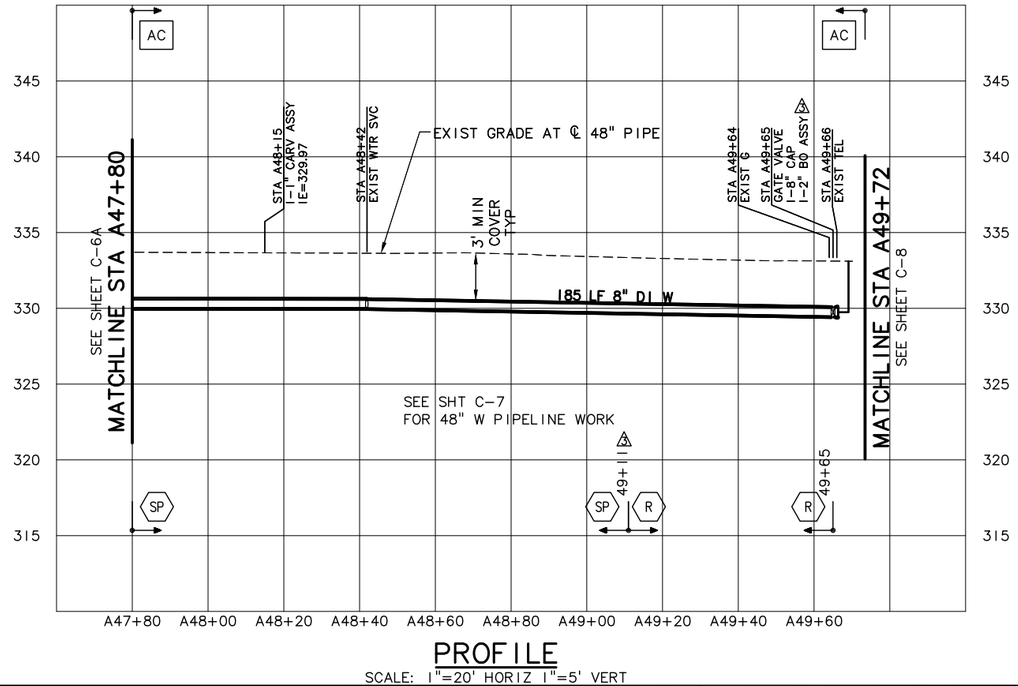


PLAN
SCALE: 1"=20'

NOTES:

1. ADJUST VALVE BOXES TO GRADE.

2. PLACE AIR RELEASE VALVE PIPING IN SERVICE LINE TRENCH



PROFILE
SCALE: 1"=20' HORIZ 1"=5' VERT

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WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

WATERLINE SCHEDULE A
8" WATER PLAN AND PROFILE
STA A47+80 TO STA A49+72

PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

SHEET
C-7A
30 of 79

NOTES:

1. REMOVE AND REPLACE EXISTING 12" DIAMETER CONCRETE CULVERT. MATCH EXISTING SLOPE.

2. HORIZONTAL COORDINATES REPRESENT POINT OF INTERSECTION OF CENTERLINE OF PIPE.

3. DRIVEWAYS TO BE REPAIRED WHERE NECESSARY PER DET 3 OR DET 4, SHT DT-15.

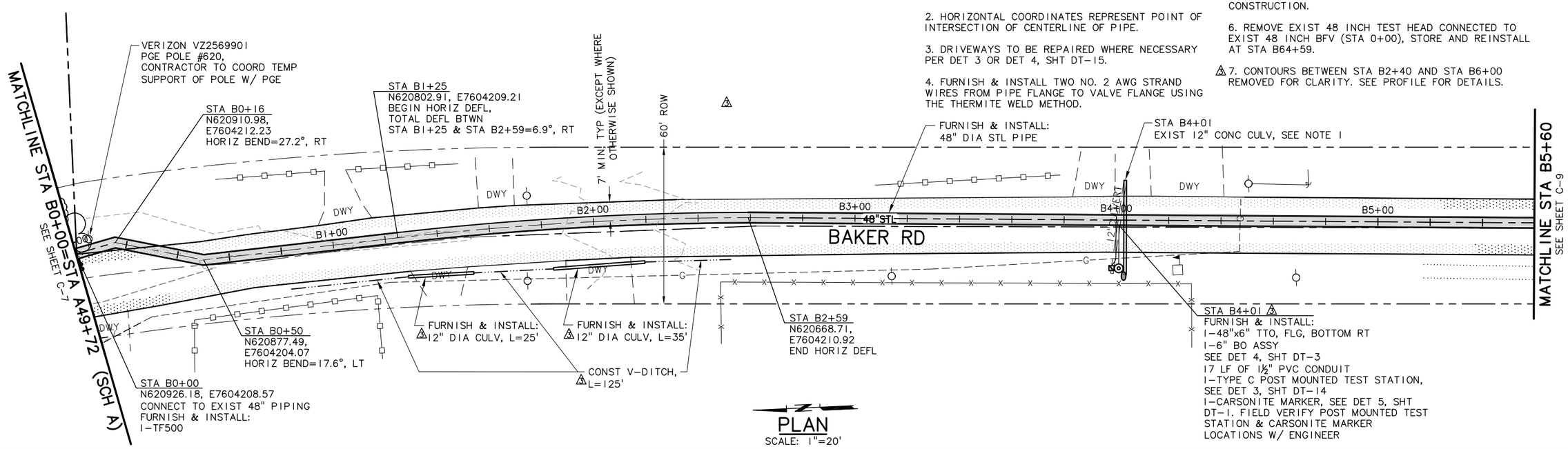
4. FURNISH & INSTALL TWO NO. 2 AWG STRAND WIRES FROM PIPE FLANGE TO VALVE FLANGE USING THE THERMITE WELD METHOD.

NOTES (CONT):

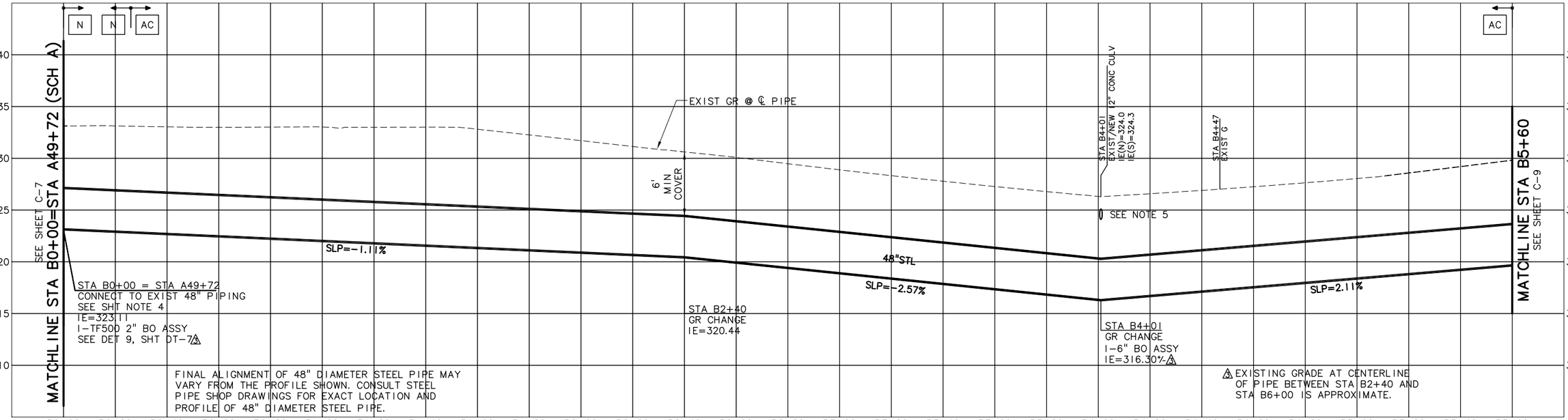
5. CONTRACTOR TO POTHOLE AND VERIFY EXACT DEPTH AND LOCATION OF EXIST UTILITIES PRIOR TO CONSTRUCTION.

6. REMOVE EXIST 48 INCH TEST HEAD CONNECTED TO EXIST 48 INCH BFV (STA 0+00), STORE AND REINSTALL AT STA B64+59.

⚠7. CONTOURS BETWEEN STA B2+40 AND STA B6+00 REMOVED FOR CLARITY. SEE PROFILE FOR DETAILS.



PLAN
SCALE: 1"=20'



PROFILE
SCALE: 1"=20' HORIZ 1"=5' VERT

NO.	DATE	BY	REVISION
⚠	08/22/11	BVO	RECORD DRAWING

NOTICE
0 ½ 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

SMG DESIGNED
DAK DRAWN
MLH CHECKED

RECORD DRAWING
SEE DISCLAIMER, SHEET 1.
VERSION 4.1
12-9-97

MSA Murray, Smith & Associates, Inc.
Engineers/Planners
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City of Sherwood Oregon

WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

WATERLINE SCHEDULE B
PLAN AND PROFILE
STA B0+00 TO STA B5+60

PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

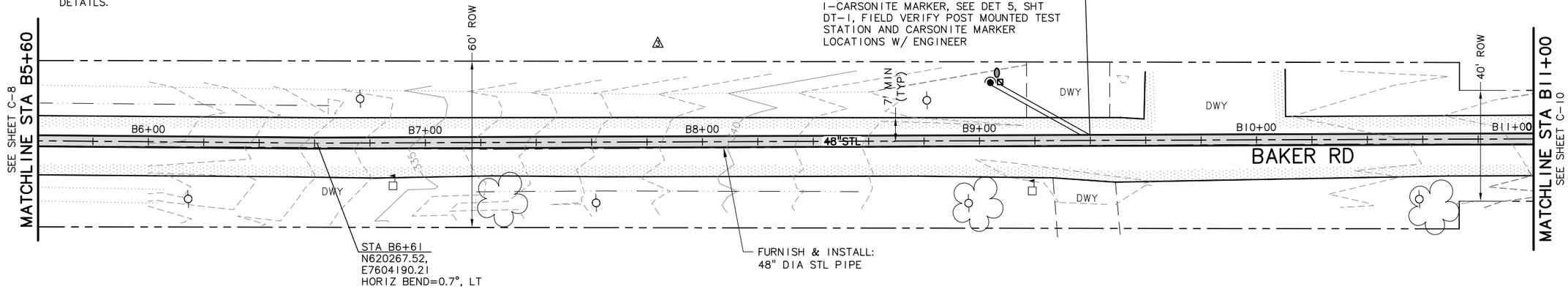
SHEET
C-8
31 of 79

NOTES:

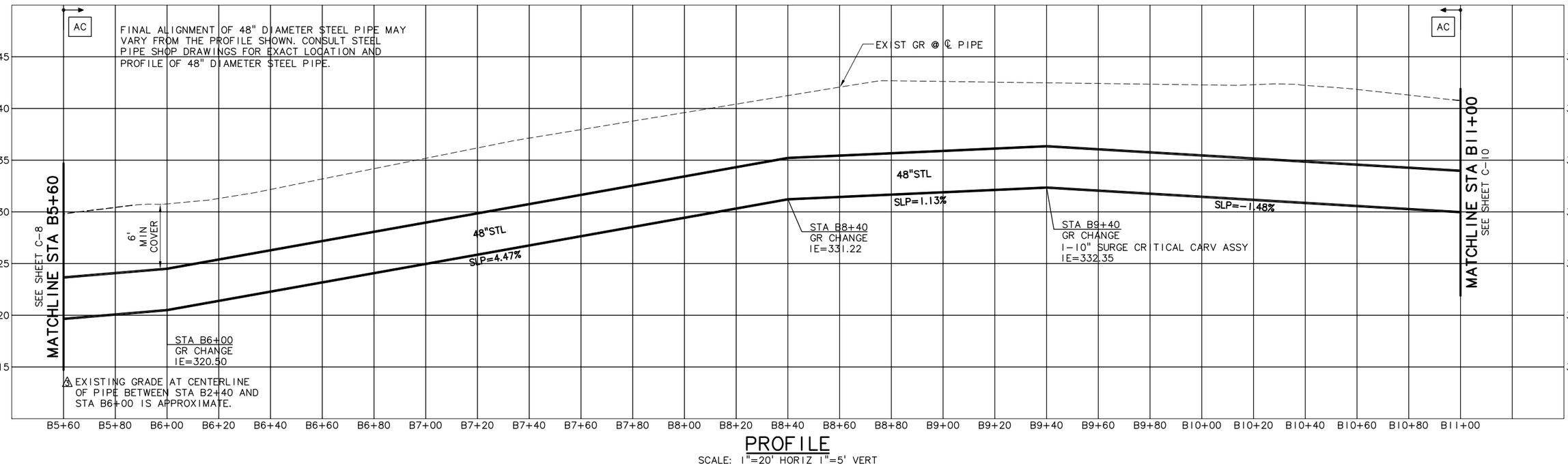
1. HORIZONTAL COORDINATES REPRESENT POINT OF INTERSECTION OF CENTERLINE OF PIPE.

2. DRIVEWAYS TO BE REPAIRED WHERE NECESSARY PER DET 3 OR DET 4, SHT DT-15.

△3 3. CONTOURS BETWEEN STA B2+40 AND STA B6+00 REMOVED FOR CLARITY. SEE PROFILE FOR DETAILS.



PLAN
SCALE: 1"=20'



PROFILE
SCALE: 1"=20' HORIZ 1"=5' VERT

NO.	DATE	BY	REVISION
△	08/22/11	BVO	RECORD DRAWING

NOTICE
0 ½ 1
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WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

WATERLINE SCHEDULE B
PLAN AND PROFILE
STA B5+60 TO STA B11+00

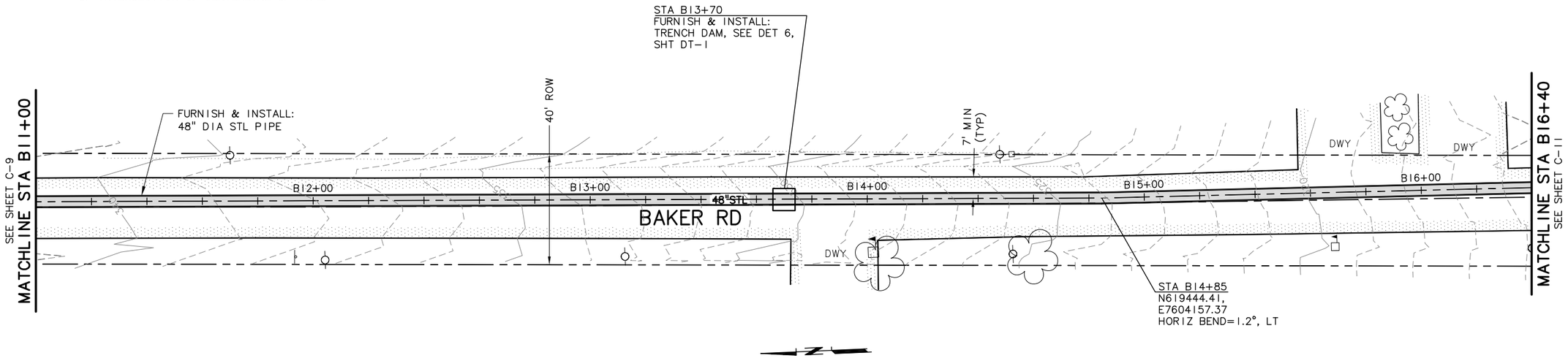
PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

SHEET
C-9
32 of 79

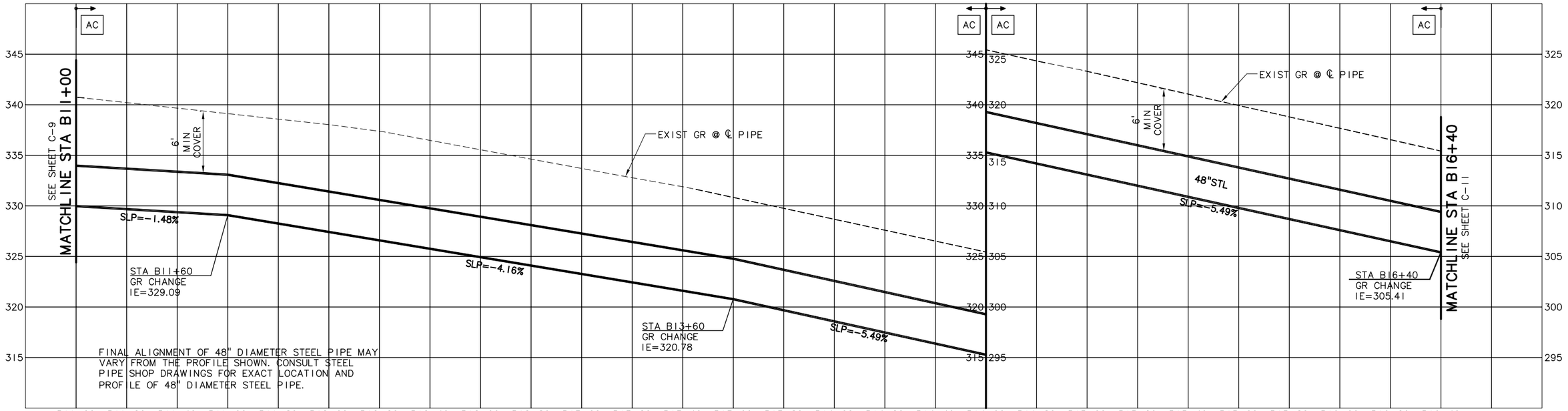
NOTES:

1. DRIVEWAYS TO BE REPAIRED WHERE NECESSARY PER DET 3 OR DET 4, SHT DT-15.

2. HORIZONTAL COORDINATES REPRESENT POINT OF INTERSECTION OF CENTERLINE OF PIPE.



PLAN
SCALE: 1"=20'



PROFILE
SCALE: 1"=20' HORIZ 1"=5' VERT

NO.	DATE	BY	REVISION
1	08/22/11	BVO	RECORD DRAWING

NOTICE
0 ½ 1
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SMG DESIGNED
DAK DRAWN
MLH CHECKED

RECORD DRAWING
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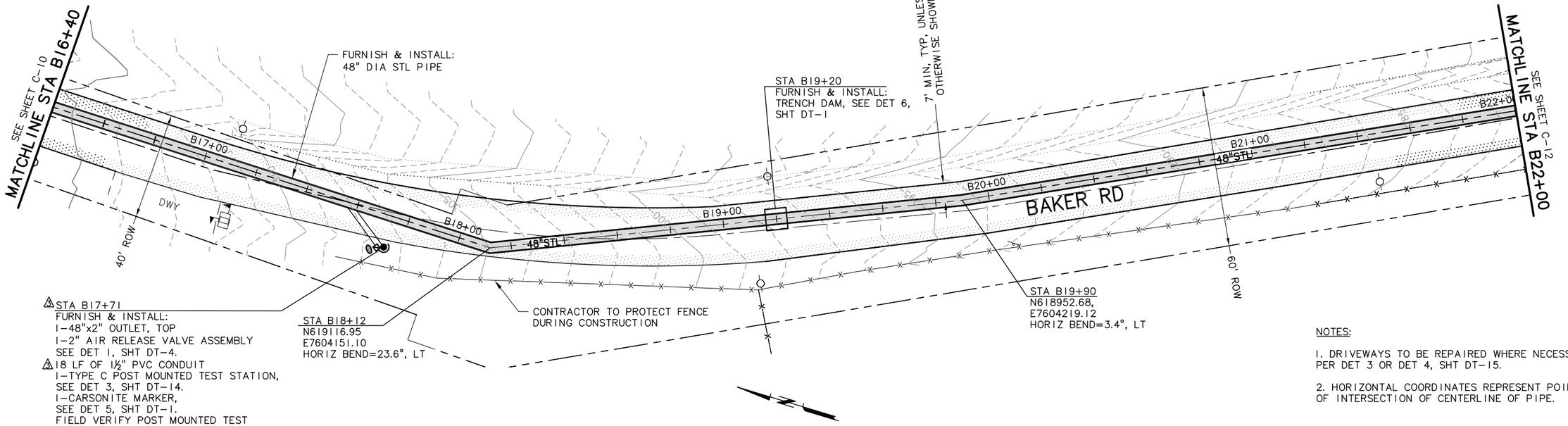
WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

WATERLINE SCHEDULE B PLAN AND PROFILE STA B11+00 TO STA B16+40

PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

SHEET
C-10
33 of 79



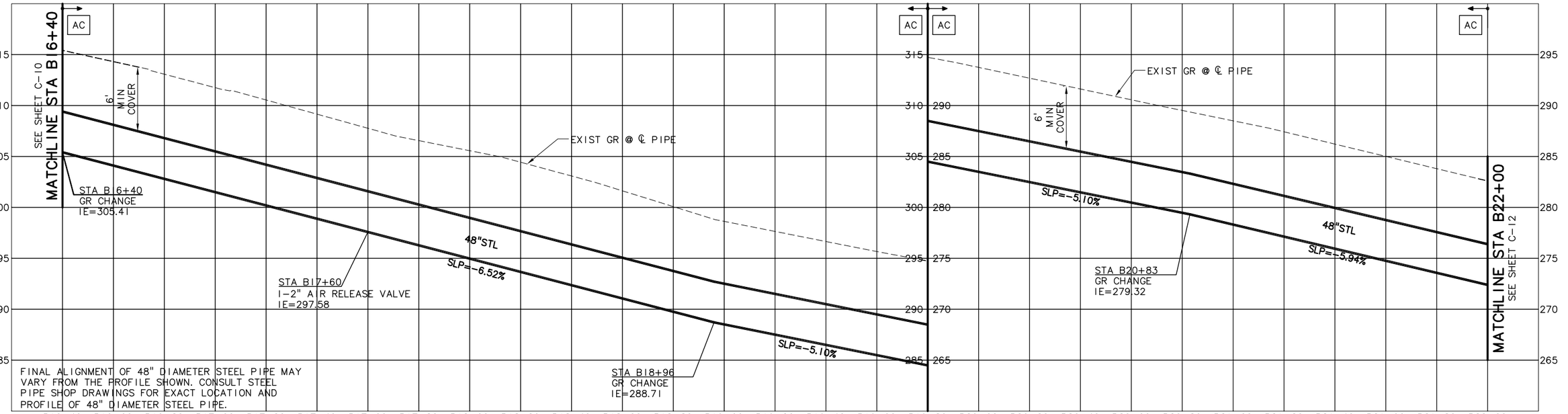
NOTES:

1. DRIVEWAYS TO BE REPAIRED WHERE NECESSARY PER DET 3 OR DET 4, SHT DT-15.

2. HORIZONTAL COORDINATES REPRESENT POINT OF INTERSECTION OF CENTERLINE OF PIPE.

PLAN

SCALE: 1"=20'



FINAL ALIGNMENT OF 48" DIAMETER STEEL PIPE MAY VARY FROM THE PROFILE SHOWN. CONSULT STEEL PIPE SHOP DRAWINGS FOR EXACT LOCATION AND PROFILE OF 48" DIAMETER STEEL PIPE.

PROFILE

SCALE: 1"=20' HORIZ 1"=5' VERT

NO.	DATE	BY	REVISION
1	08/22/11	BVO	RECORD DRAWING

NOTICE: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

SMG DESIGNED | DAK DRAWN | MLH CHECKED

RECORD DRAWING
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City of Sherwood Oregon

WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

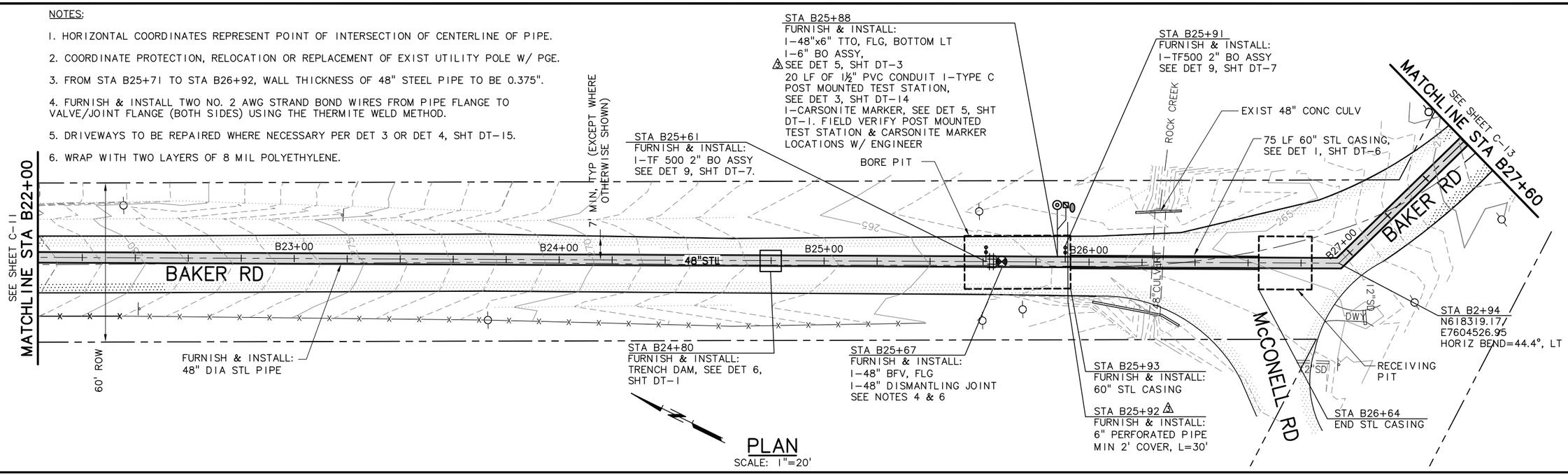
WATERLINE SCHEDULE B PLAN AND PROFILE STA B16+40 TO STA B22+00

PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

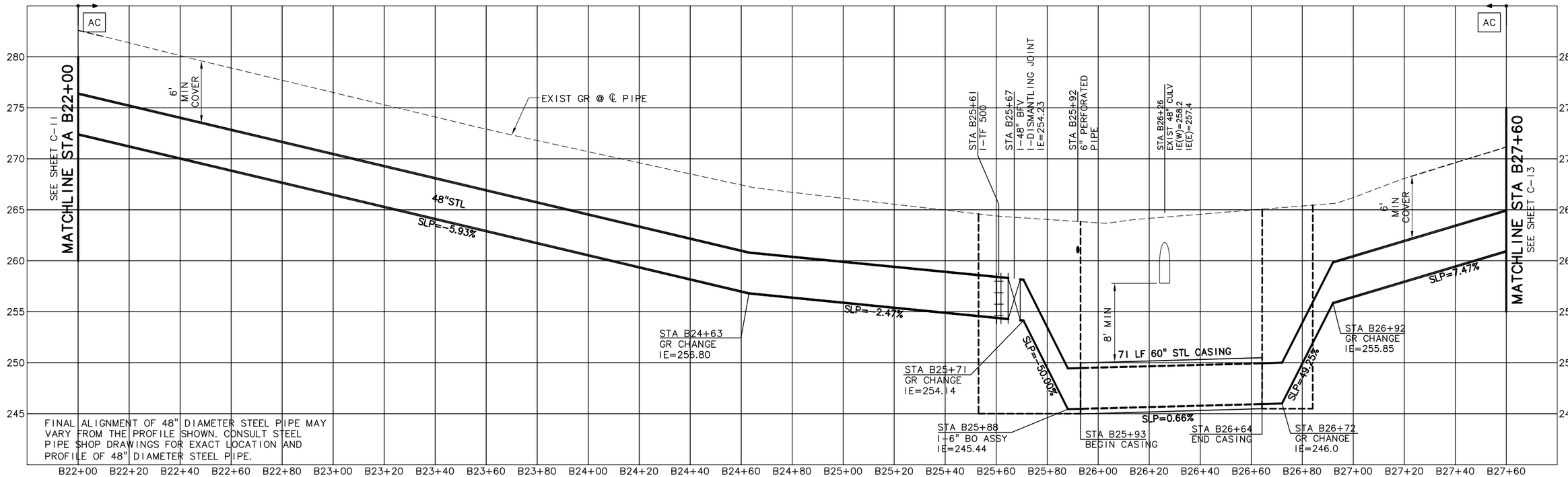
SHEET C-11

NOTES:

1. HORIZONTAL COORDINATES REPRESENT POINT OF INTERSECTION OF CENTERLINE OF PIPE.
2. COORDINATE PROTECTION, RELOCATION OR REPLACEMENT OF EXIST UTILITY POLE W/ PGE.
3. FROM STA B25+71 TO STA B26+92, WALL THICKNESS OF 48" STEEL PIPE TO BE 0.375".
4. FURNISH & INSTALL TWO NO. 2 AWG STRAND BOND WIRES FROM PIPE FLANGE TO VALVE/JOINT FLANGE (BOTH SIDES) USING THE THERMITE WELD METHOD.
5. DRIVEWAYS TO BE REPAIRED WHERE NECESSARY PER DET 3 OR DET 4, SHT DT-15.
6. WRAP WITH TWO LAYERS OF 8 MIL POLYETHYLENE.



PLAN
SCALE: 1"=20'



PROFILE
SCALE: 1"=20' HORIZ 1"=5' VERT

NO.	DATE	BY	REVISION
1	08/22/11	BVO	RECORD DRAWING

NOTICE
0 ½ 1
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SMG DESIGNED
DAK DRAWN
MLH CHECKED

RECORD DRAWING
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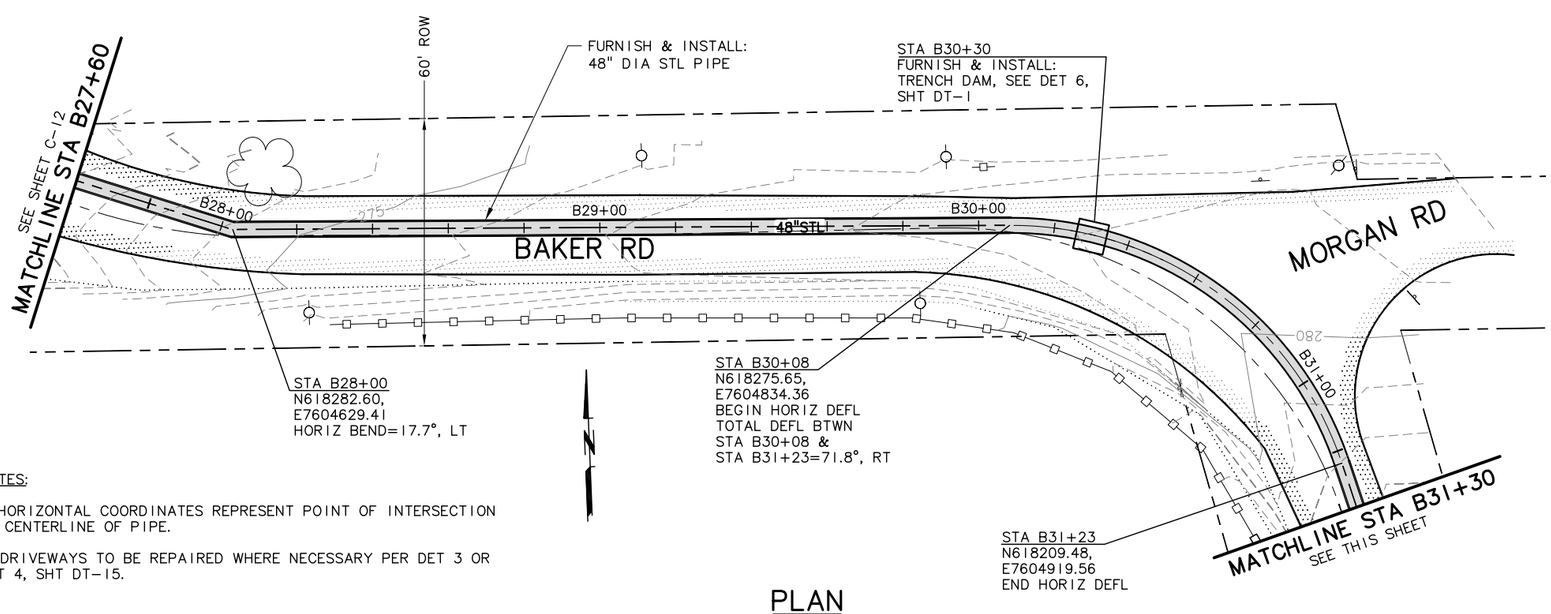
WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

WATERLINE SCHEDULE B PLAN AND PROFILE STA B22+00 TO STA B27+60

PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

SHEET C-12
35 of 79

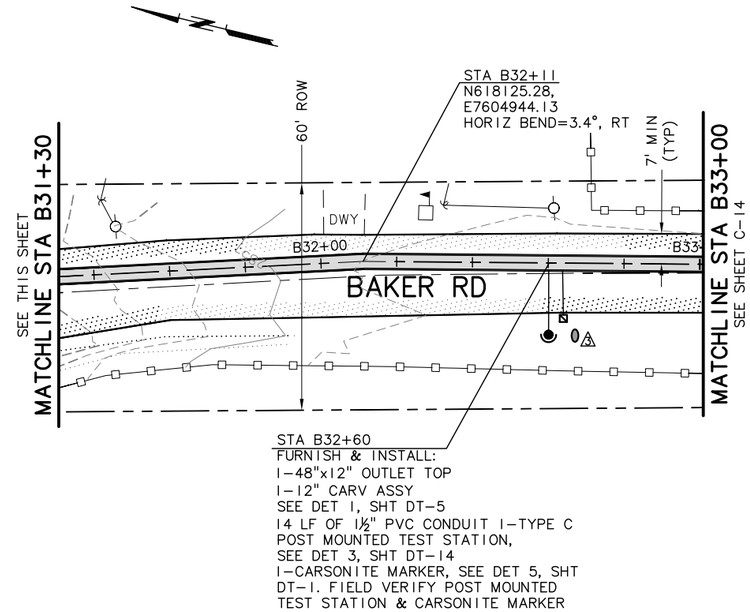


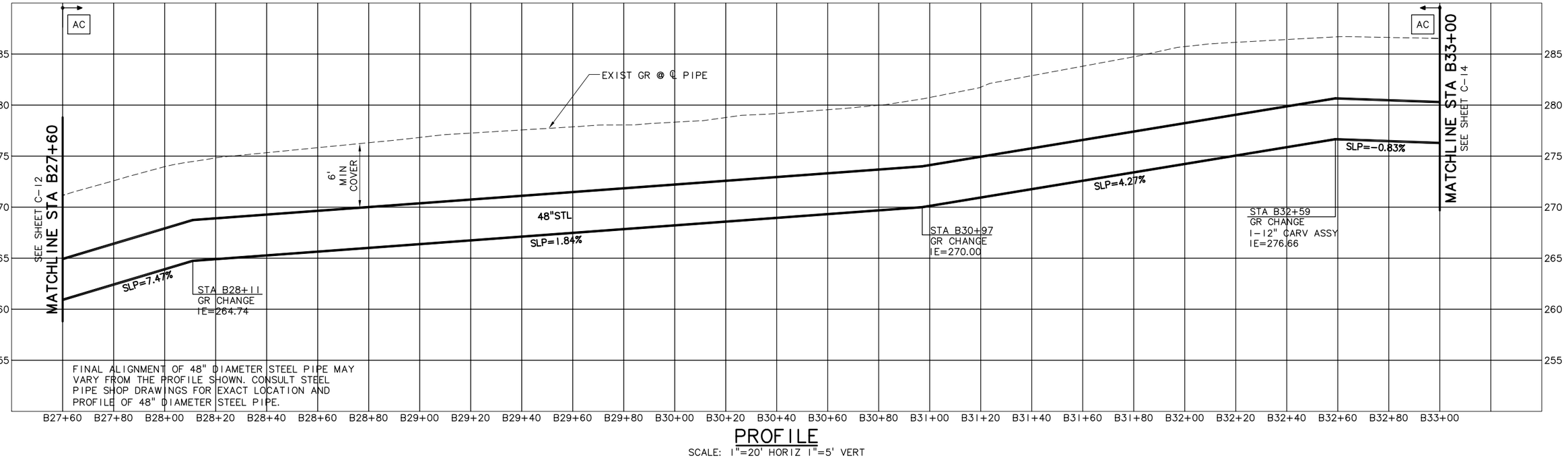
NOTES:

1. HORIZONTAL COORDINATES REPRESENT POINT OF INTERSECTION OF CENTERLINE OF PIPE.

2. DRIVEWAYS TO BE REPAIRED WHERE NECESSARY PER DET 3 OR DET 4, SHT DT-15.

PLAN
SCALE: 1"=20'





PROFILE
SCALE: 1"=20' HORIZ 1"=5' VERT

NO.	DATE	BY	REVISION
1	08/22/11	BVO	RECORD DRAWING

NOTICE
0 ½ 1
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SMG DESIGNED
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RECORD DRAWING
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WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

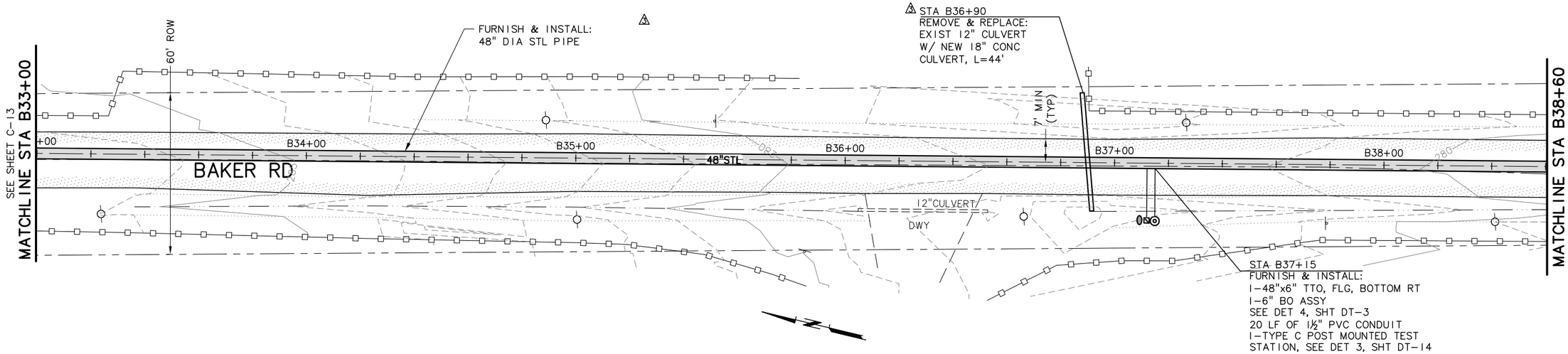
WATERLINE SCHEDULE B
PLAN AND PROFILE
STA B27+60 TO STA B33+00

PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

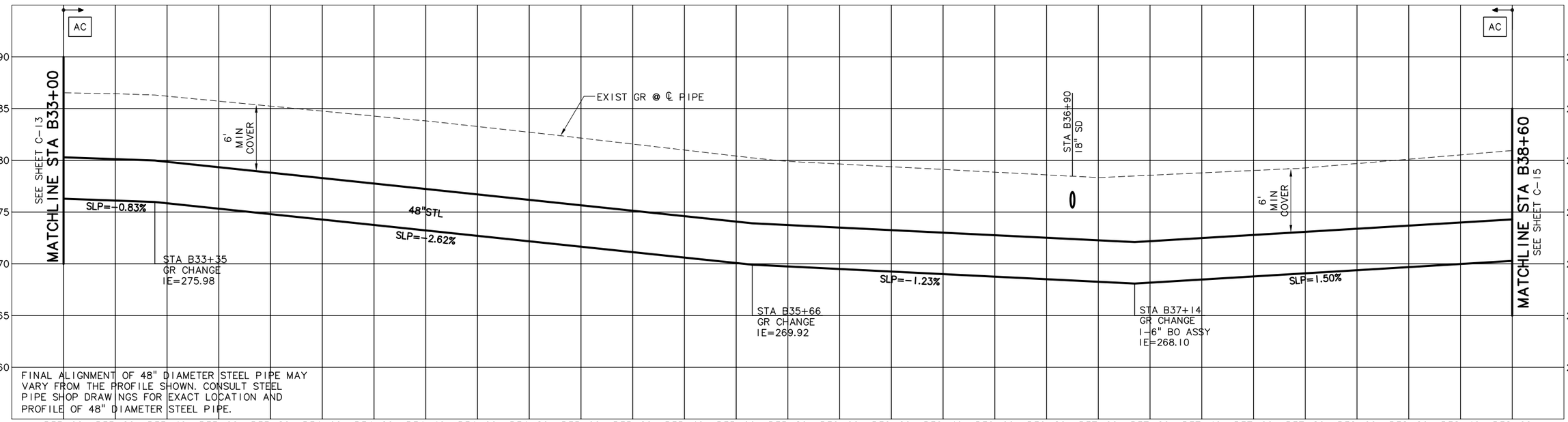
SHEET
C-13
36 of 79

NOTE:

1. DRIVEWAYS TO BE REPAIRED WHERE NECESSARY PER DET 3 OR DET 4, SHT DT-15.



PLAN
SCALE: 1"=20'



FINAL ALIGNMENT OF 48" DIAMETER STEEL PIPE MAY VARY FROM THE PROFILE SHOWN. CONSULT STEEL PIPE SHOP DRAWINGS FOR EXACT LOCATION AND PROFILE OF 48" DIAMETER STEEL PIPE.

PROFILE
SCALE: 1"=20' HORIZ 1"=5' VERT

NO.	DATE	BY	REVISION
1	08/22/11	BVO	RECORD DRAWING

NOTICE
0 ½ 1
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SMG DESIGNED
DAK DRAWN
MLH CHECKED

RECORD DRAWING
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City of Sherwood Oregon

WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

WATERLINE SCHEDULE B
PLAN AND PROFILE
STA B33+00 TO STA B38+60

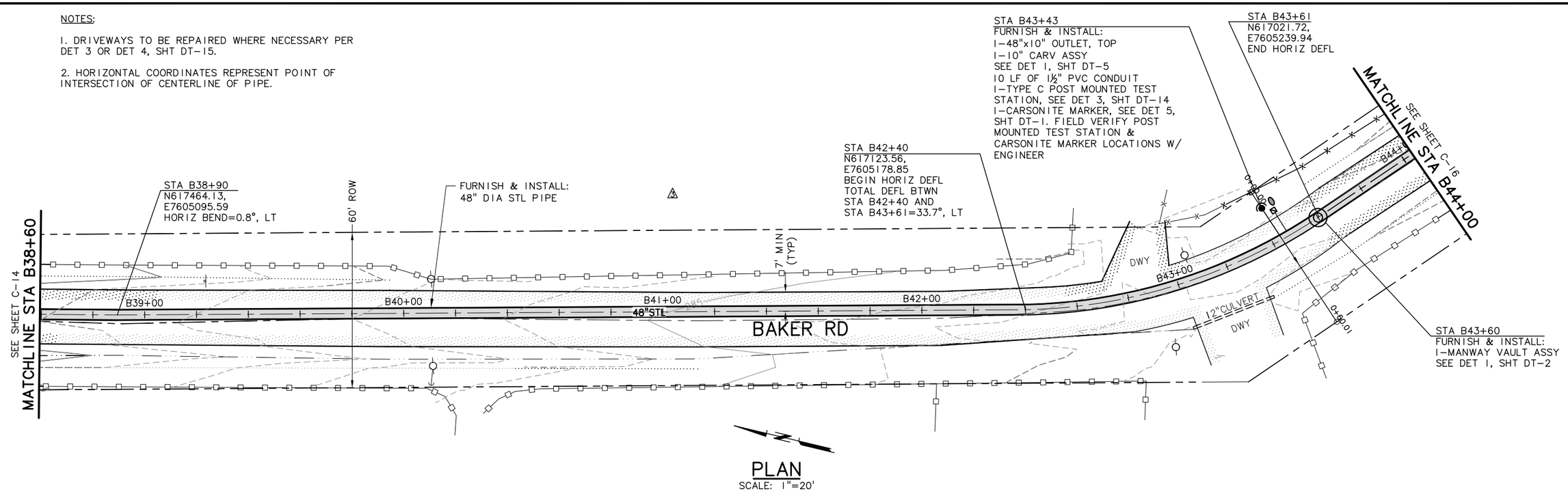
PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

SHEET
C-14
37 of 79

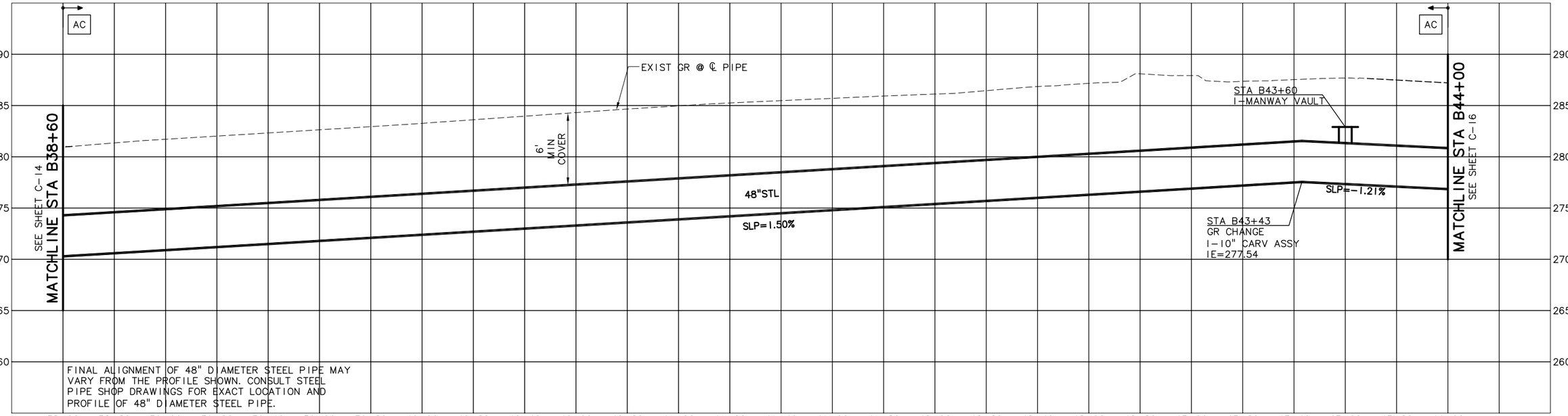
NOTES:

1. DRIVEWAYS TO BE REPAIRED WHERE NECESSARY PER DET 3 OR DET 4, SHT DT-15.

2. HORIZONTAL COORDINATES REPRESENT POINT OF INTERSECTION OF CENTERLINE OF PIPE.



PLAN
SCALE: 1"=20'



PROFILE
SCALE: 1"=20' HORIZ 1"=5' VERT

NO.	DATE	BY	REVISION
1	08/22/11	BVO	RECORD DRAWING

NOTICE
0 ½ 1
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SMG DESIGNED
DAK DRAWN
MLH CHECKED

RECORD DRAWING
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City of Sherwood Oregon

WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

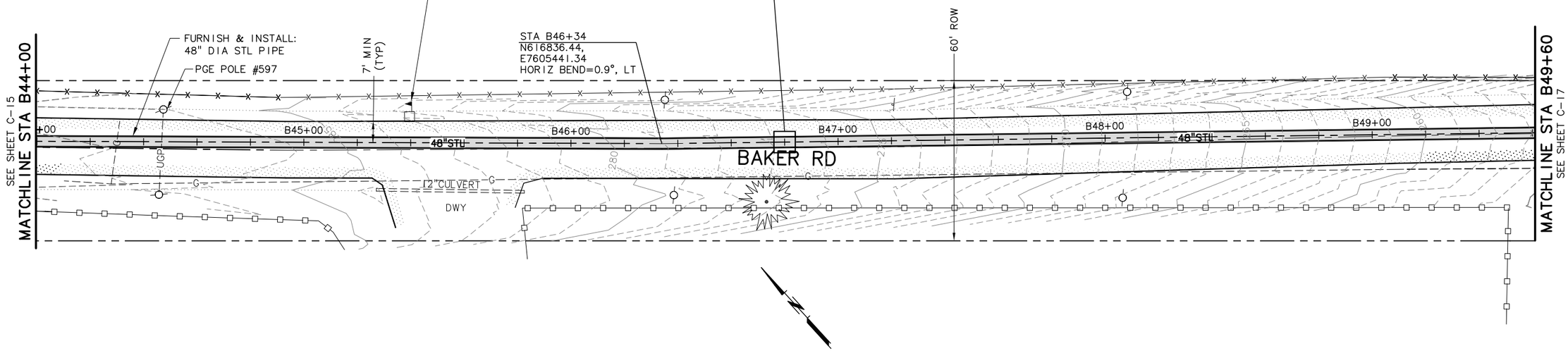
WATERLINE SCHEDULE B PLAN AND PROFILE STA B38+60 TO STA B44+00

PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

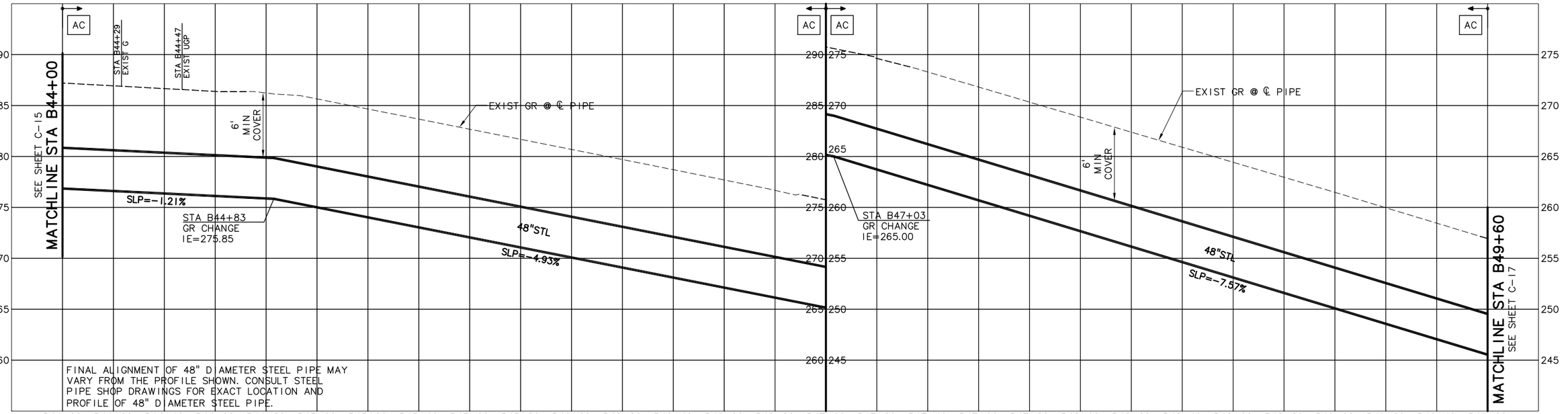
SHEET
C-15
38 of 79

NOTES:

1. DRIVEWAYS TO BE REPAIRED WHERE NECESSARY PER DET 3 OR DET 4, SHT DT-15.
2. HORIZONTAL COORDINATES REPRESENT POINT OF INTERSECTION OF CENTERLINE OF PIPE.



PLAN
SCALE: 1"=20'



PROFILE
SCALE: 1"=20' HORIZ 1"=5' VERT

NO.	DATE	BY	REVISION
1	08/22/11	BVO	RECORD DRAWING

NOTICE
0 ½ 1
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SMG DESIGNED
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MLH CHECKED

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WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

WATERLINE SCHEDULE B PLAN AND PROFILE STA B44+00 TO STA B49+60

PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

SHEET
C-16
39 of 79

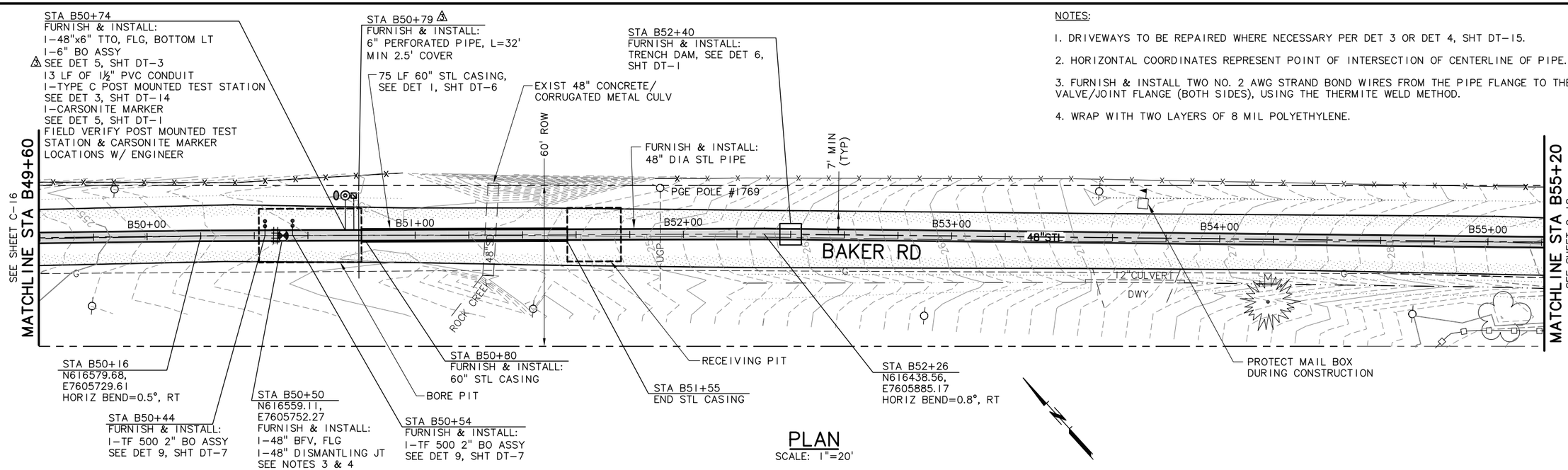
NOTES:

1. DRIVEWAYS TO BE REPAIRED WHERE NECESSARY PER DET 3 OR DET 4, SHT DT-15.

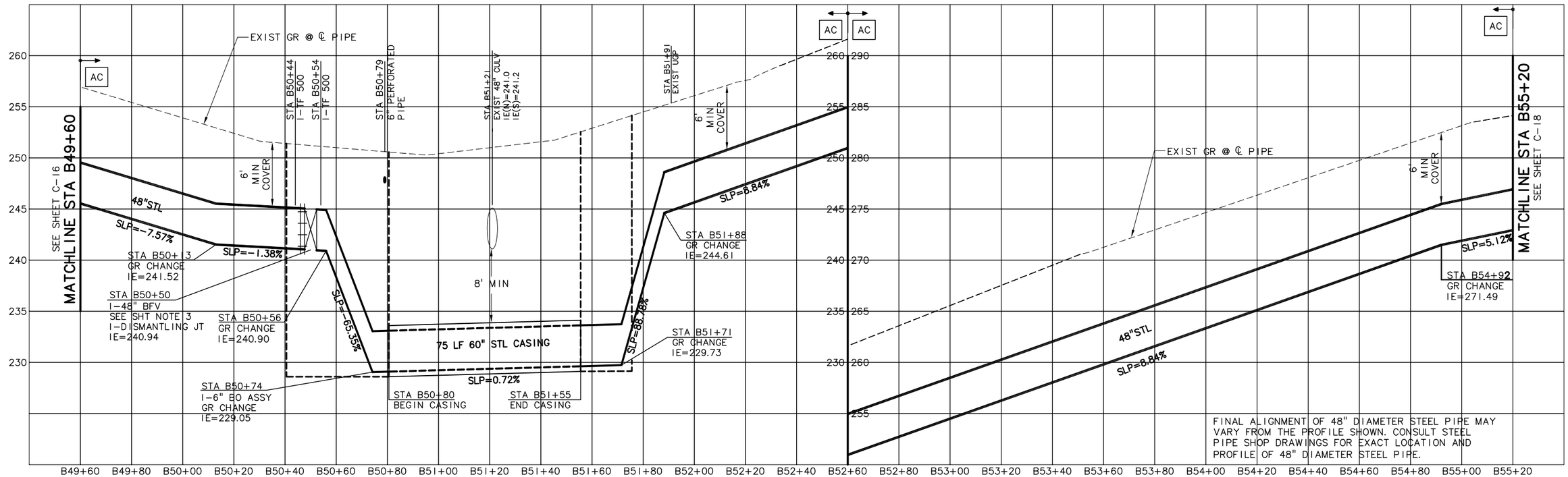
2. HORIZONTAL COORDINATES REPRESENT POINT OF INTERSECTION OF CENTERLINE OF PIPE.

3. FURNISH & INSTALL TWO NO. 2 AWG STRAND BOND WIRES FROM THE PIPE FLANGE TO THE VALVE/JOINT FLANGE (BOTH SIDES), USING THE THERMITE WELD METHOD.

4. WRAP WITH TWO LAYERS OF 8 MIL POLYETHYLENE.



PLAN
SCALE: 1"=20'



PROFILE
SCALE: 1"=20' HORIZ 1"=5' VERT

NO.	DATE	BY	REVISION
4	08/22/11	BVO	RECORD DRAWING

NOTICE
0 ½ 1
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SMG DESIGNED
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MLH CHECKED

RECORD DRAWING
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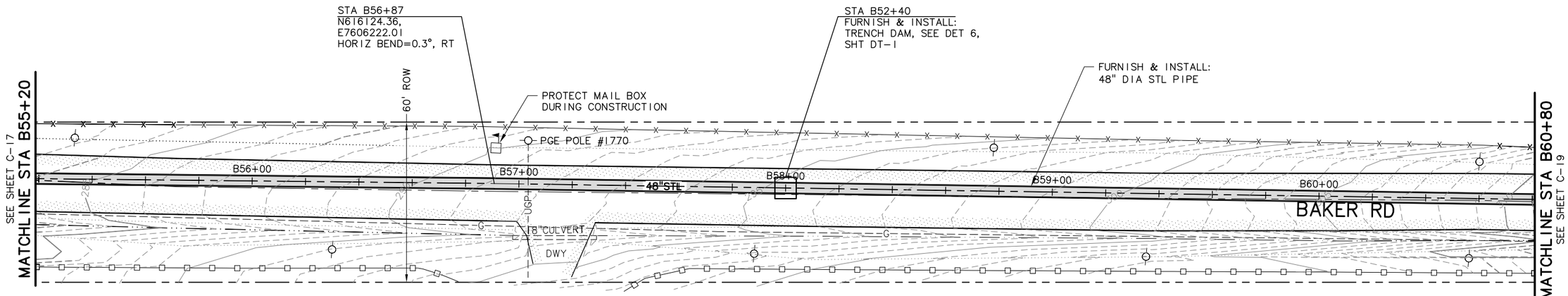
WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

WATERLINE SCHEDULE B PLAN AND PROFILE STA B49+60 TO STA B55+20

PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

SHEET C-17

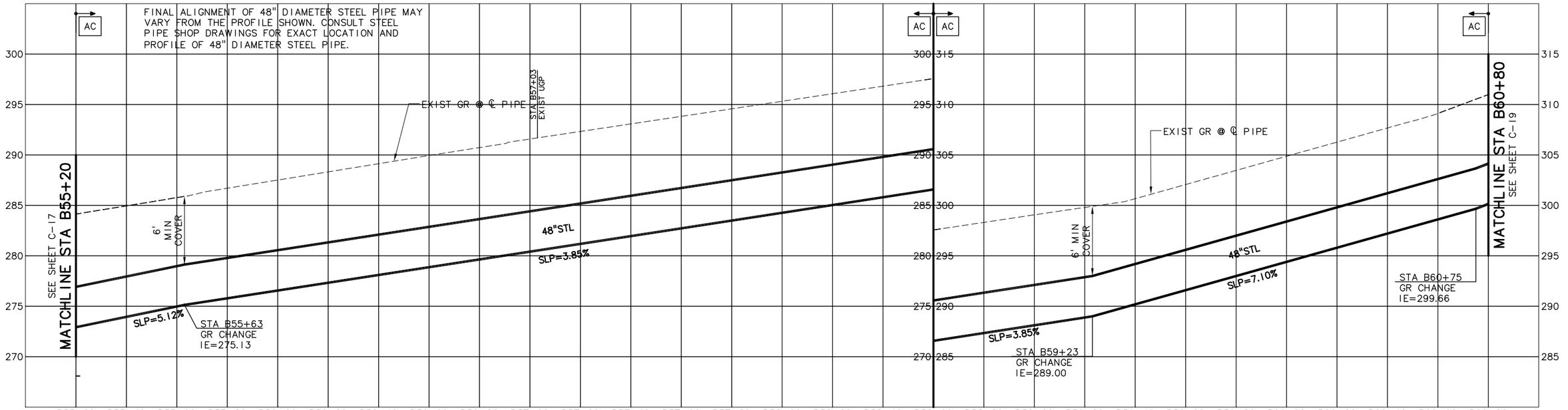


NOTES:

1. DRIVEWAYS TO BE REPAIRED WHERE NECESSARY PER DET 3 OR DET 4, SHT DT-15.

2. HORIZONTAL COORDINATES REPRESENT POINT OF INTERSECTION OF CENTERLINE OF PIPE.

PLAN
SCALE: 1"=20'



PROFILE
SCALE: 1"=20' HORIZ 1"=5' VERT

NO.	DATE	BY	REVISION
1	08/22/11	BVO	RECORD DRAWING

NOTICE
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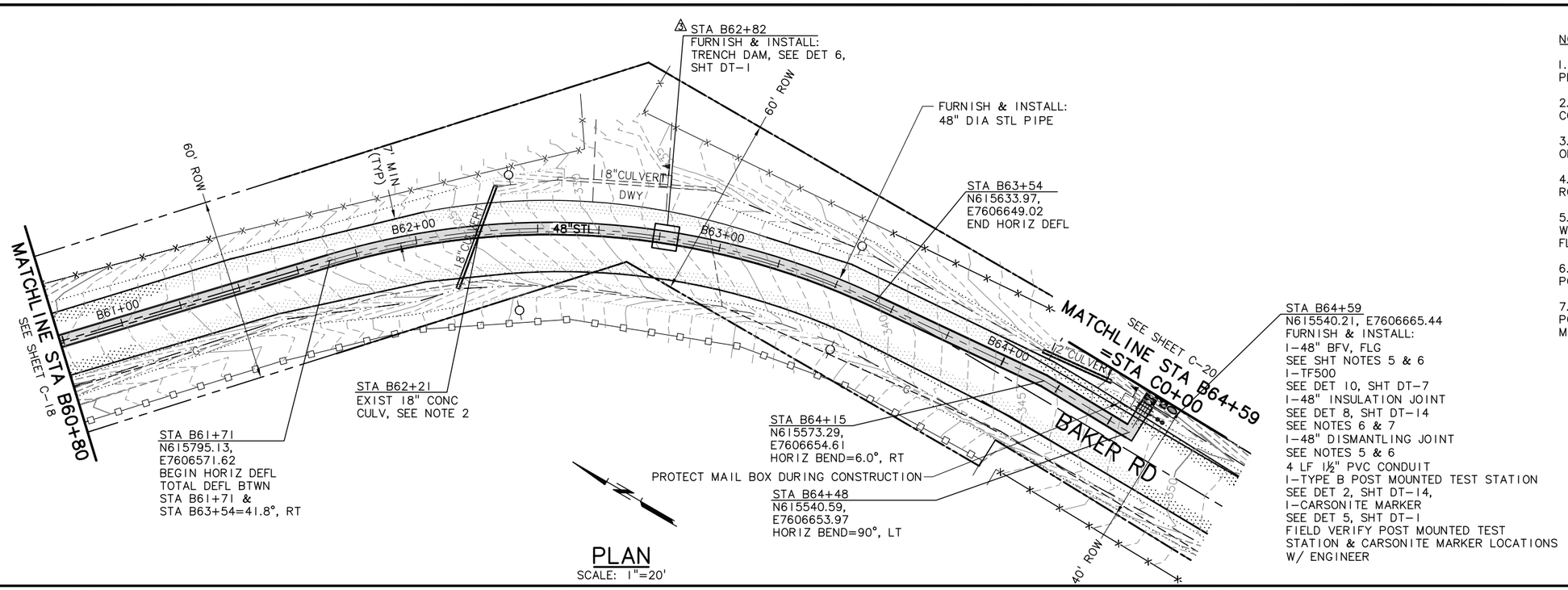
WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

WATERLINE SCHEDULE B
PLAN AND PROFILE
STA B55+20 TO STA B60+80

PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

SHEET
C-18
41 of 79



PLAN

SCALE: 1"=20'

NOTES:

1. DRIVEWAYS TO BE REPAIRED WHERE NECESSARY PER DET 3 OR DET 4, SHT DT-15.

2. REMOVE AND REPLACE EXISTING 18" DIAMETER CONCRETE CULVERT. MATCH EXISTING SLOPE.

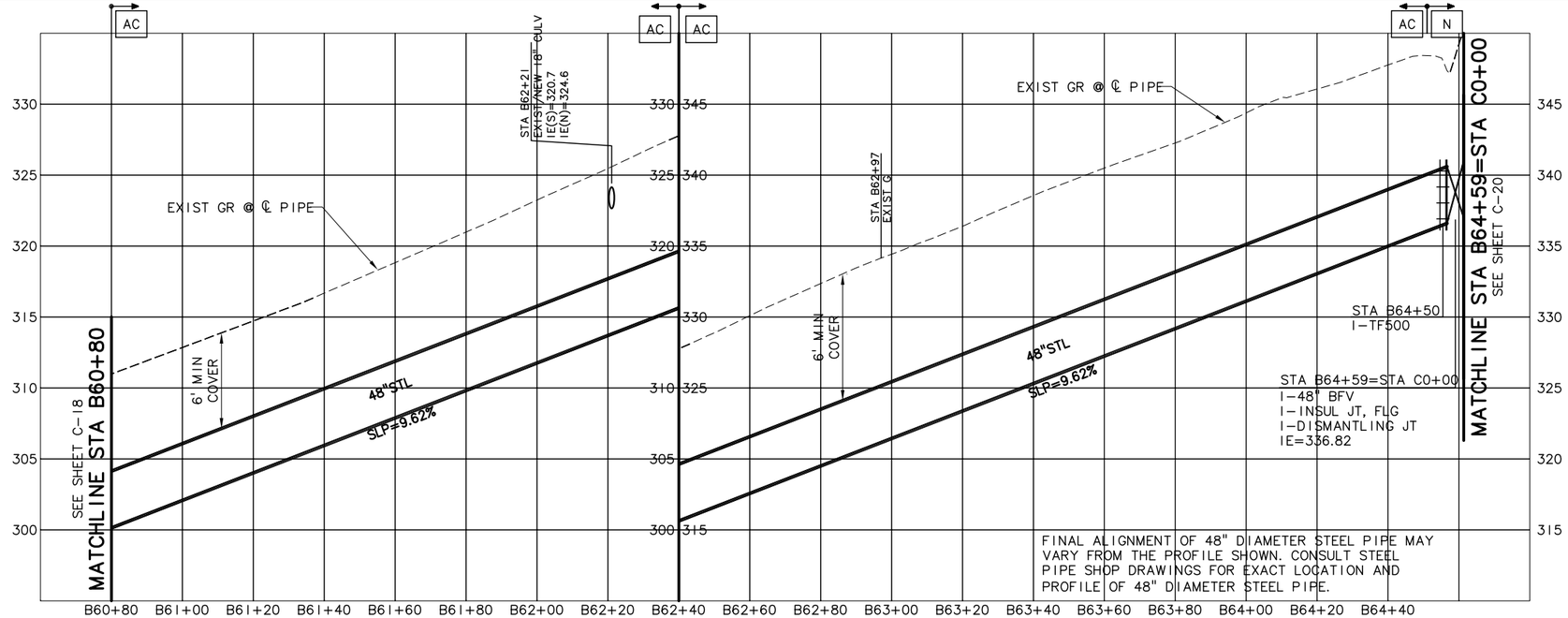
3. HORIZONTAL COORDINATES REPRESENT POINT OF INTERSECTION OF CENTERLINE OF PIPE.

4. BACKING OF TRUCKS OR EQUIPMENT ONTO ROADWAY IS PROHIBITED.

5. FURNISH & INSTALL TWO NO. 2 AWG STRAND WIRES FROM PIPE FLANGE TO VALVE/JOINT FLANGE, USING THE THERMITE WELD METHOD.

6. WRAP WITH TWO LAYERS OF 8 MIL POLYETHYLENE.

7. TAPE INSULATION JOINT WITH 40 MIL POLYKEN TAPE OR EQUAL. OVERLAP PER MANUFACTURER'S RECOMMENDATIONS.



FINAL ALIGNMENT OF 48" DIAMETER STEEL PIPE MAY VARY FROM THE PROFILE SHOWN. CONSULT STEEL PIPE SHOP DRAWINGS FOR EXACT LOCATION AND PROFILE OF 48" DIAMETER STEEL PIPE.

PROFILE

SCALE: 1"=20' HORIZ 1"=5' VERT

NO.	DATE	BY	REVISION
1	08/22/11	BVO	RECORD DRAWING

NOTICE
0 ½ 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

SMG DESIGNED
DAK DRAWN
MLH CHECKED

RECORD DRAWING
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WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

WATERLINE SCHEDULE B
PLAN AND PROFILE
STA B60+80 TO STA B64+59

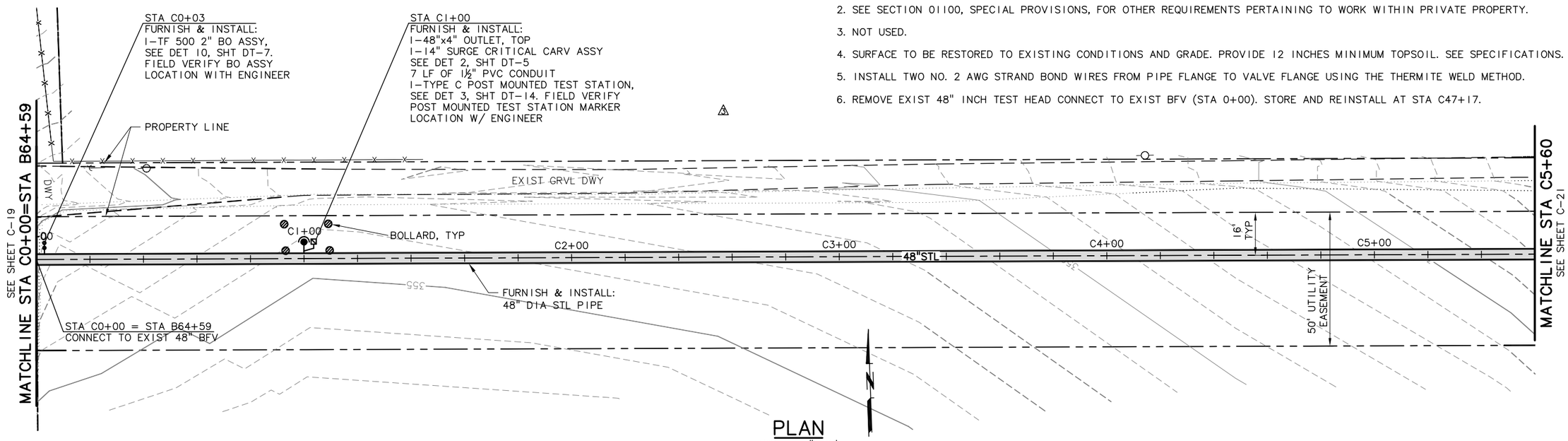
PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

SHEET C-19

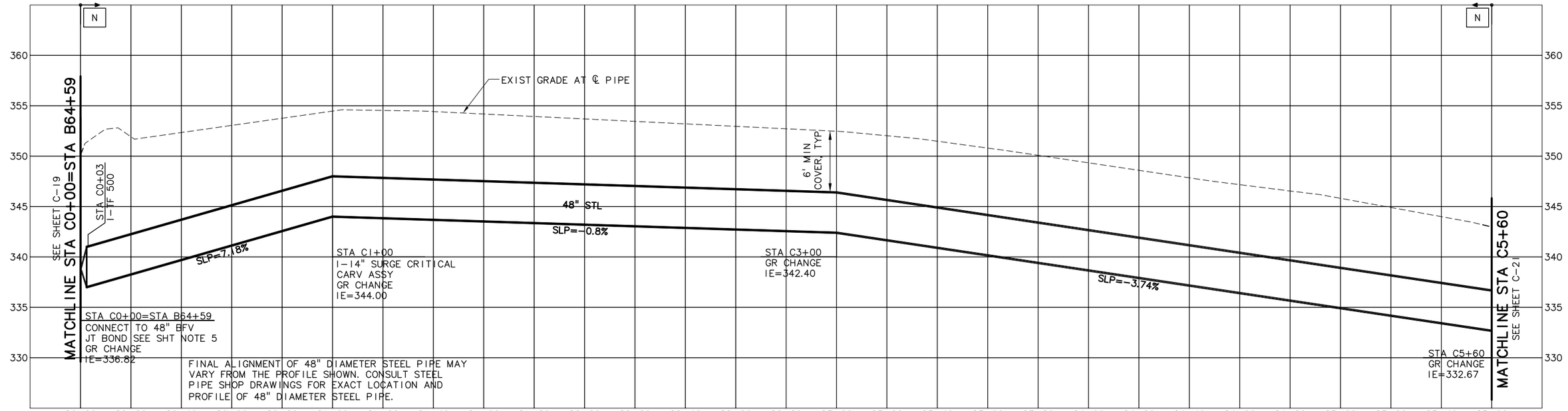
42 of 79

NOTES:

1. CONTRACTOR TO STOCKPILE AND REUSE TOPSOIL STA C0+00 TO STA C5+60, SEE TRENCH DET 3, SHT DT-1.
2. SEE SECTION 01100, SPECIAL PROVISIONS, FOR OTHER REQUIREMENTS PERTAINING TO WORK WITHIN PRIVATE PROPERTY.
3. NOT USED.
4. SURFACE TO BE RESTORED TO EXISTING CONDITIONS AND GRADE. PROVIDE 12 INCHES MINIMUM TOPSOIL. SEE SPECIFICATIONS.
5. INSTALL TWO NO. 2 AWG STRAND BOND WIRES FROM PIPE FLANGE TO VALVE FLANGE USING THE THERMITE WELD METHOD.
6. REMOVE EXIST 48" INCH TEST HEAD CONNECT TO EXIST BFV (STA 0+00). STORE AND REINSTALL AT STA C47+17.



PLAN
SCALE: 1"=20'



PROFILE
SCALE: 1"=20' HORIZ, 1"=5' VERT

NO.	DATE	BY	REVISION
1	08/22/11	BVO	RECORD DRAWING

NOTICE
0 ½ 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

SMG DESIGNED
DAK DRAWN
MLH CHECKED

RECORD DRAWING
SEE DISCLAIMER, SHEET 1.
VERSION 4.1
12-9-97

MSA Murray, Smith & Associates, Inc.
Engineers/Planners
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Portland, Oregon 97204 FAX 503-225-9022

City of Sherwood Oregon

WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

WATERLINE SCHEDULE C PLAN AND PROFILE STA C0+00 TO STA C5+60

PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

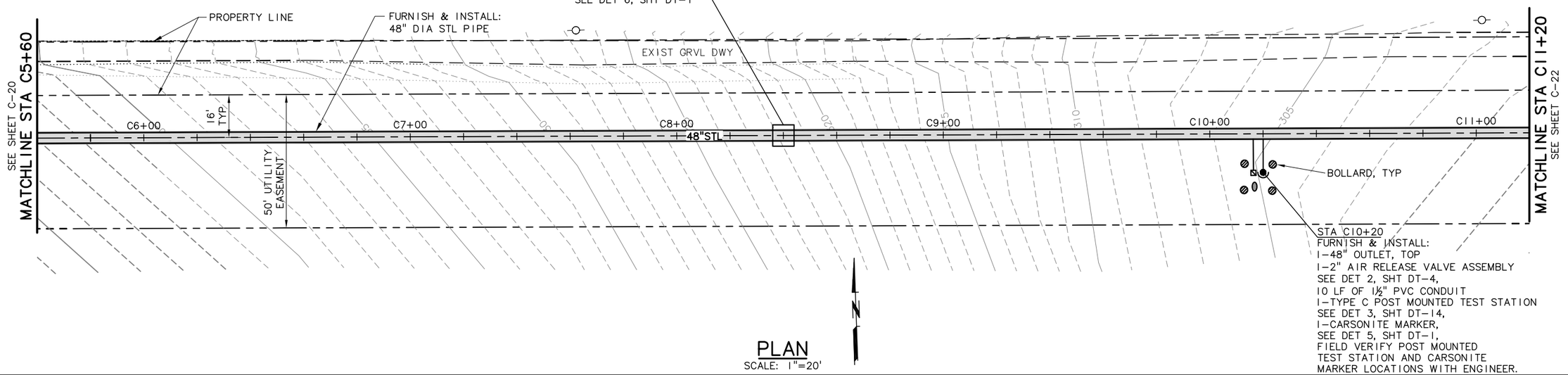
SHEET
C-20
43 of 79

NOTES:

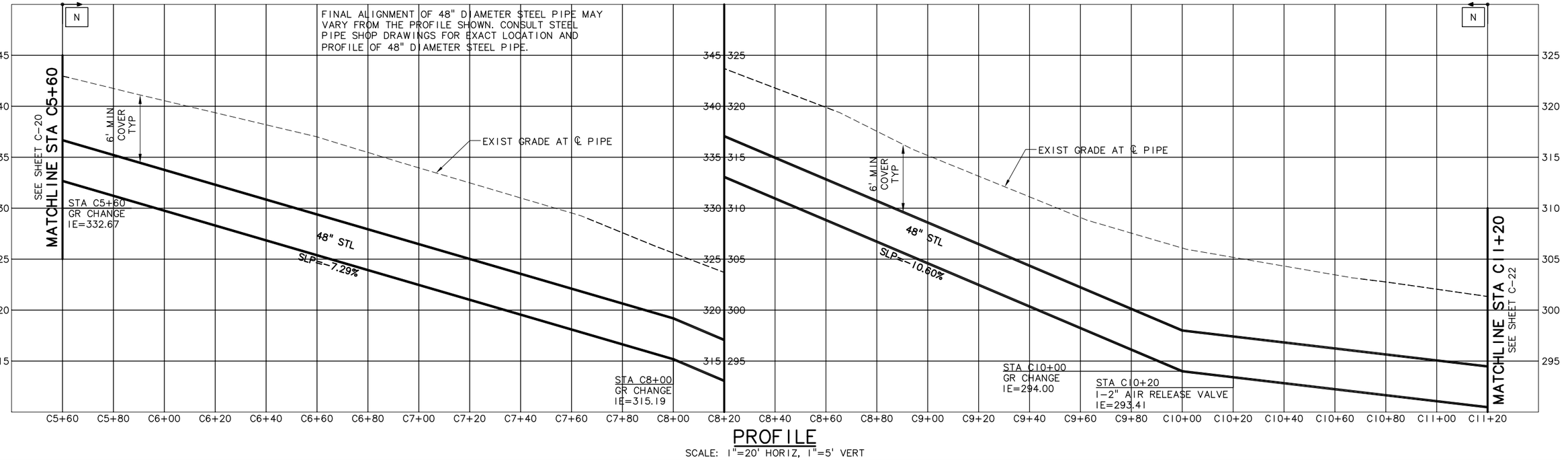
1. CONTRACTOR TO STOCKPILE AND REUSE TOPSOIL STA C5+60 TO STA C11+20, SEE TRENCH DET 3, SHT DT-1.

2. SEE SPECIFICATION REQUIREMENTS PERTAINING TO WORK WITHIN PRIVATE PROPERTY.

3. SURFACE TO BE RESTORED TO EQUIVALENT CONDITION AND GRADE AS PRIOR TO CONSTRUCTION. PROVIDE 12 INCHES MINIMUM TOPSOIL. SEE SPECIFICATIONS.



PLAN
SCALE: 1"=20'



PROFILE
SCALE: 1"=20' HORIZ, 1"=5' VERT

NO.	DATE	BY	REVISION
3	08/22/11	BVO	RECORD DRAWING

NOTICE
0 ½ 1
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SMG DESIGNED
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WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

WATERLINE SCHEDULE C
PLAN AND PROFILE
STA C 5+60 TO STA C11+20

PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

SHEET
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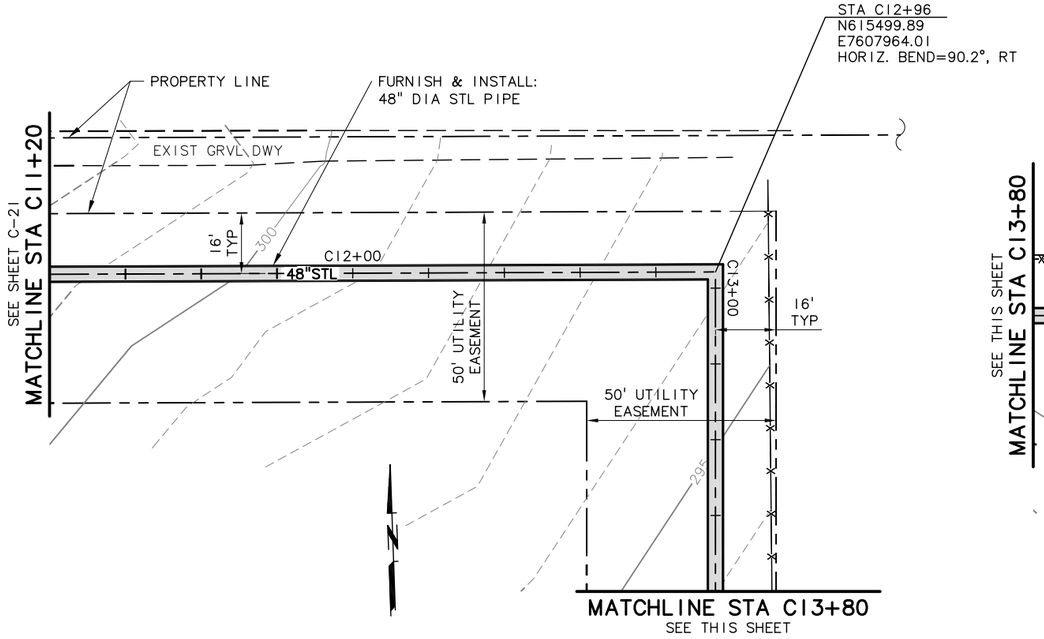
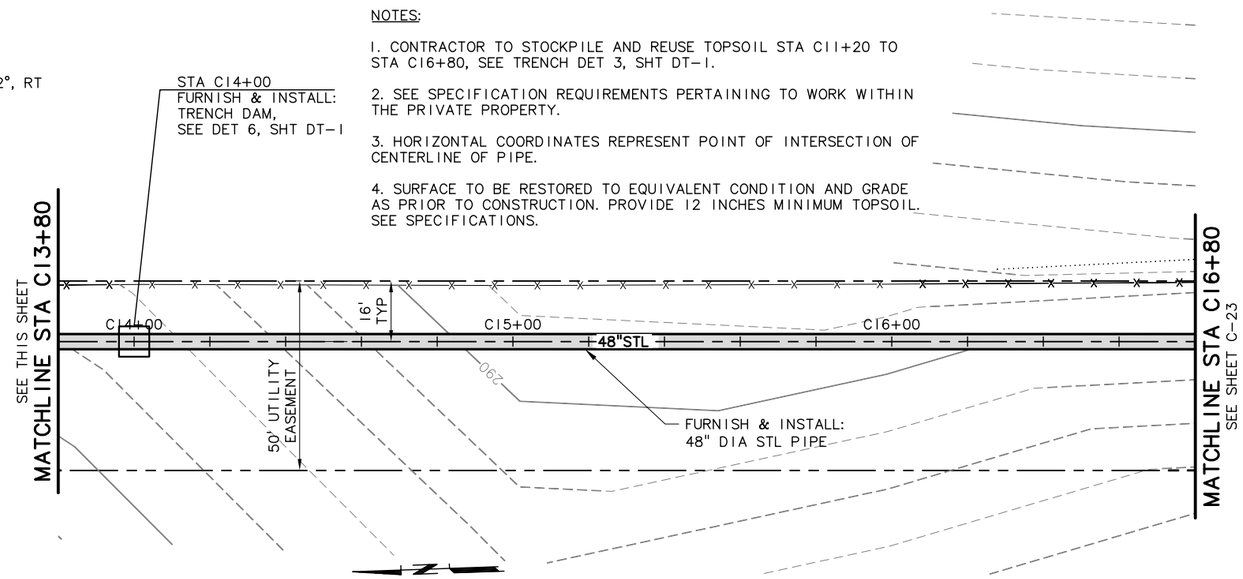
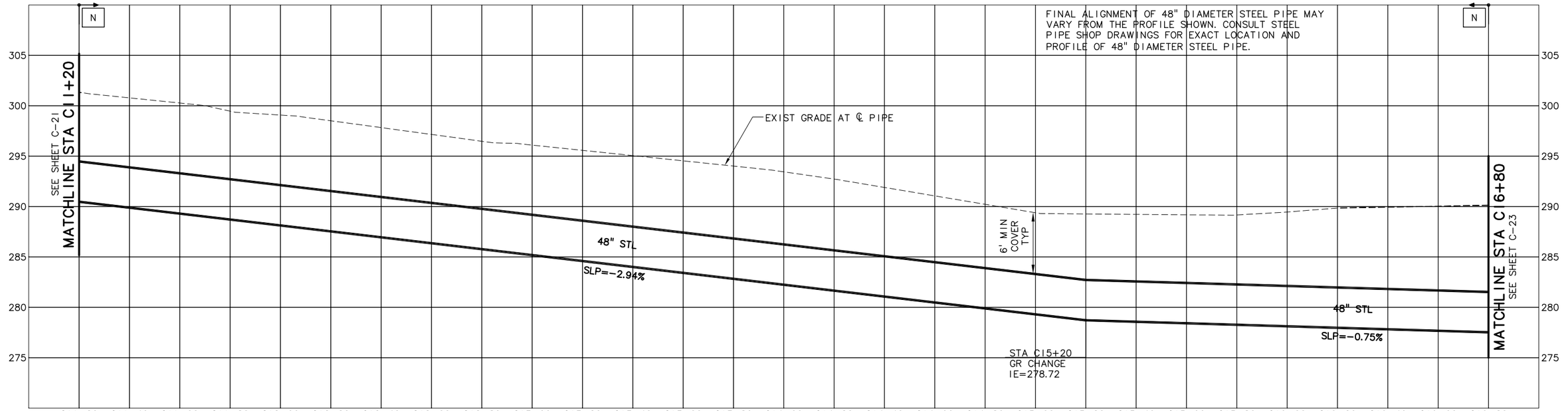




NOTES:

1. CONTRACTOR TO STOCKPILE AND REUSE TOPSOIL STA C11+20 TO STA C16+80, SEE TRENCH DET 3, SHT DT-1.
2. SEE SPECIFICATION REQUIREMENTS PERTAINING TO WORK WITHIN THE PRIVATE PROPERTY.
3. HORIZONTAL COORDINATES REPRESENT POINT OF INTERSECTION OF CENTERLINE OF PIPE.
4. SURFACE TO BE RESTORED TO EQUIVALENT CONDITION AND GRADE AS PRIOR TO CONSTRUCTION. PROVIDE 12 INCHES MINIMUM TOPSOIL. SEE SPECIFICATIONS.

PLAN
SCALE: 1"=20'



PROFILE
SCALE: 1"=20' HORIZ, 1"=5' VERT

NO.	DATE	BY	REVISION
3	08/22/11	BVO	RECORD DRAWING

NOTICE
0 ½ 1
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SMG DESIGNED
DAK DRAWN
MLH CHECKED

RECORD DRAWING
SEE DISCLAIMER, SHEET 1.
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City of Sherwood Oregon

WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

WATERLINE SCHEDULE C PLAN AND PROFILE STA C11+20 TO STA C16+80

PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

SHEET C-22

STA C19+32
FURNISH & INSTALL:
1-TF 500 2" BO ASSY
SEE DET 10, SHT DT-7
FIELD VERIFY BO
LOCATION W/ ENGINEER

STA C19+40
FURNISH & INSTALL:
1-48"x6" TTO, FLG, BOTTOM LEFT
1-6" BO ASSY
SEE DET 5, SHT DT-3
10 LF OF 1½" PVC CONDUIT
1-TYPE C POST MOUNTED TEST STATION
SEE DET 3, SHT DT-14
FIELD VERIFY POST MOUNTED TEST
STATION LOCATION W/ ENGINEER

NOTES:

1. OWNER HAS OBTAINED A JOINT PERMIT (NO NWP 2008-634) FROM US CORP OF ENGINEERS AND OREGON DEPARTMENT OF STATE LANDS FOR REMOVAL AND FILL WITHIN A WETLAND. CONTRACTOR TO COMPLY WITH ALL CONDITIONS OF THE PERMIT. A COPY OF THE PERMIT IS LOCATED WITHIN THE SUPPLEMENTARY INFORMATION. WATER WORK MUST OCCUR BETWEEN JULY 15 AND AUGUST 31.

2. SURFACE TO BE RESTORED TO EQUIVALENT CONDITION AND GRADE AS PRIOR TO CONSTRUCTION. PROVIDE 12" MINIMUM TOPSOIL. SEE SPECS.

3. CONTRACTOR TO STOCKPILE AND REUSE TOPSOIL STA C16+80 TO STA C22+40, SEE TRENCH DET 3, SHT DT-1.

NOTES CONT:

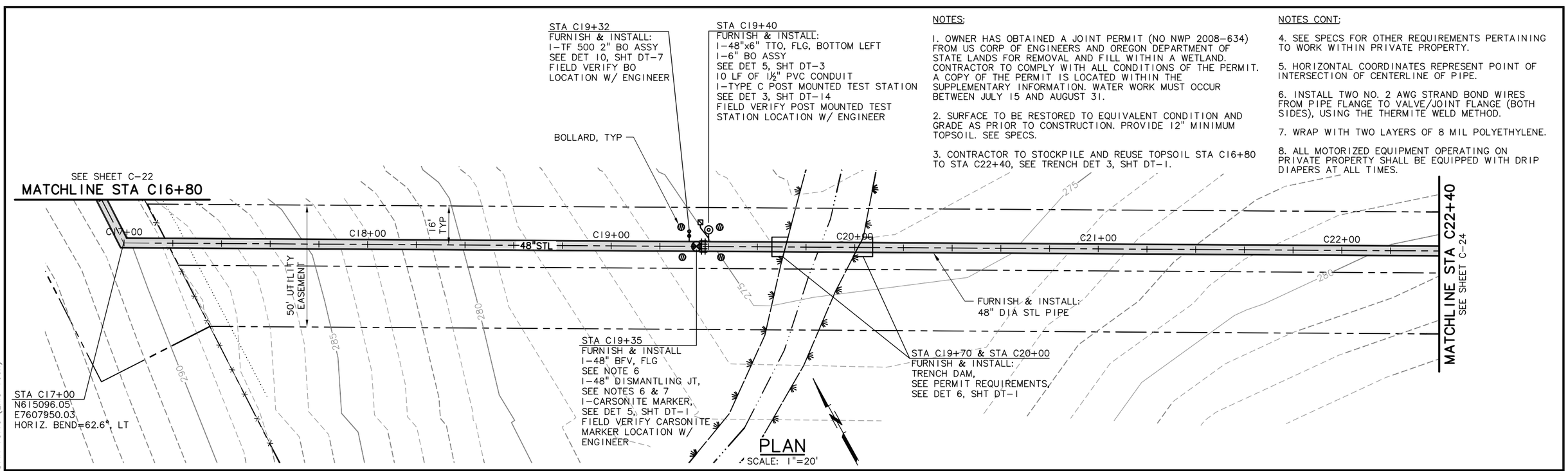
4. SEE SPECS FOR OTHER REQUIREMENTS PERTAINING TO WORK WITHIN PRIVATE PROPERTY.

5. HORIZONTAL COORDINATES REPRESENT POINT OF INTERSECTION OF CENTERLINE OF PIPE.

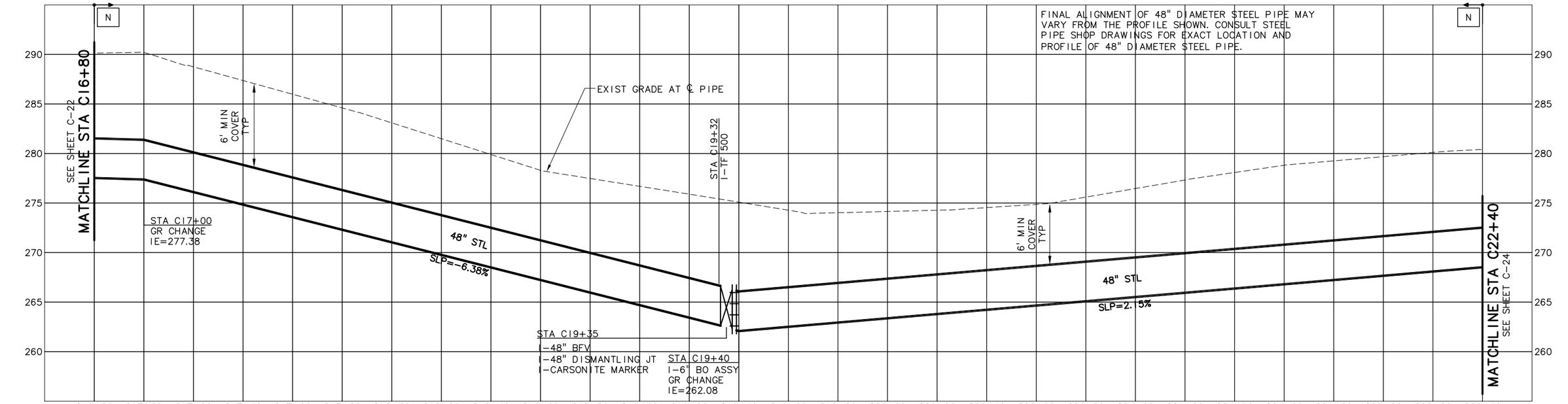
6. INSTALL TWO NO. 2 AWG STRAND BOND WIRES FROM PIPE FLANGE TO VALVE/JOINT FLANGE (BOTH SIDES), USING THE THERMITE WELD METHOD.

7. WRAP WITH TWO LAYERS OF 8 MIL POLYETHYLENE.

8. ALL MOTORIZED EQUIPMENT OPERATING ON PRIVATE PROPERTY SHALL BE EQUIPPED WITH DRIP DIAPERS AT ALL TIMES.



PLAN
SCALE: 1"=20'



PROFILE
SCALE: 1"=20' HORIZ, 1"=5' VERT

NO.	DATE	BY	REVISION
1	08/22/11	BVO	RECORD DRAWING

NOTICE
0 ½ 1
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SMG DESIGNED
DAK DRAWN
MLH CHECKED

RECORD DRAWING
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City of Sherwood Oregon

WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

WATERLINE SCHEDULE C
PLAN AND PROFILE
STA C16+80 TO STA C22+40

PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

SHEET
C-23
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STA C22+80
FURNISH & INSTALL:
1-48" x 4" OUTLET, TOP
1-12" CARV ASSY
SEE DET 2, SHT DT-5
7 LF OF 1½" PVC CONDUIT
1-TYPE C POST MOUNTED TEST STATION
SEE DET 3, SHT DT-14,
FIELD VERIFY POST MOUNTED TEST
STATION LOCATION W/ ENGINEER

BOLLARD, TYP

FURNISH & INSTALL:
48" DIA STL PIPE

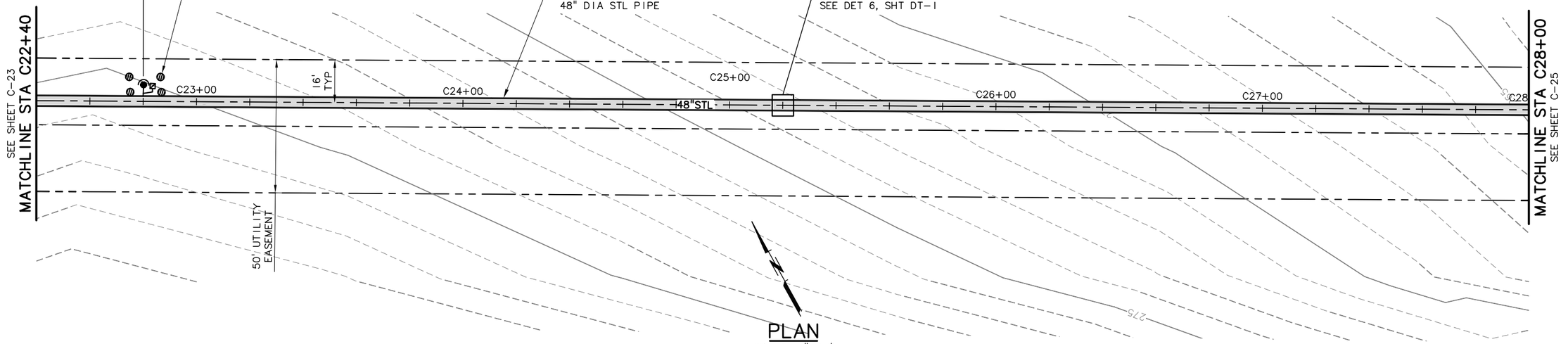
STA C25+20
FURNISH & INSTALL:
TRENCH DAM,
SEE DET 6, SHT DT-1

NOTES:

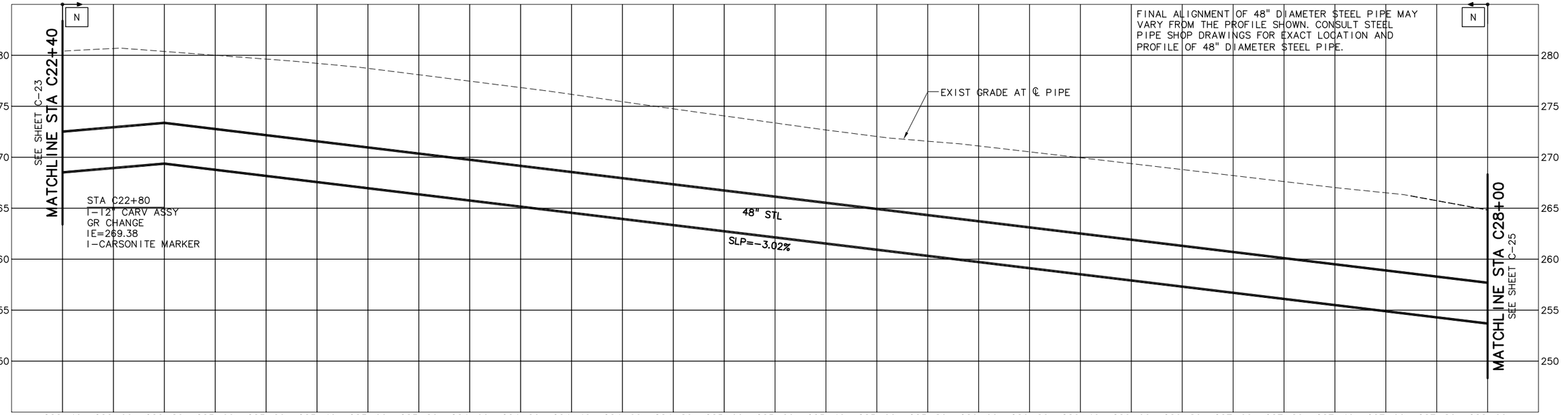
1. CONTRACTOR TO STOCKPILE AND REUSE TOPSOIL STA C22+40 TO STA C28+00, SEE TRENCH DET 3, SHT DT-1.

2. SEE SPECS FOR OTHER REQUIREMENTS PERTAINING TO WORK WITHIN PRIVATE PROPERTY.

3. SURFACE TO BE RESTORED TO EQUIVALENT CONDITION AND GRADE AS PRIOR TO CONSTRUCTION. PROVIDE 12 INCHES MINIMUM TOPSOIL, SEE SPECS.



PLAN
SCALE: 1"=20'



PROFILE
SCALE: 1"=20' HORIZ, 1"=5' VERT

NO.	DATE	BY	REVISION
3	08/22/11	BVO	RECORD DRAWING

NOTICE
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RECORD DRAWING
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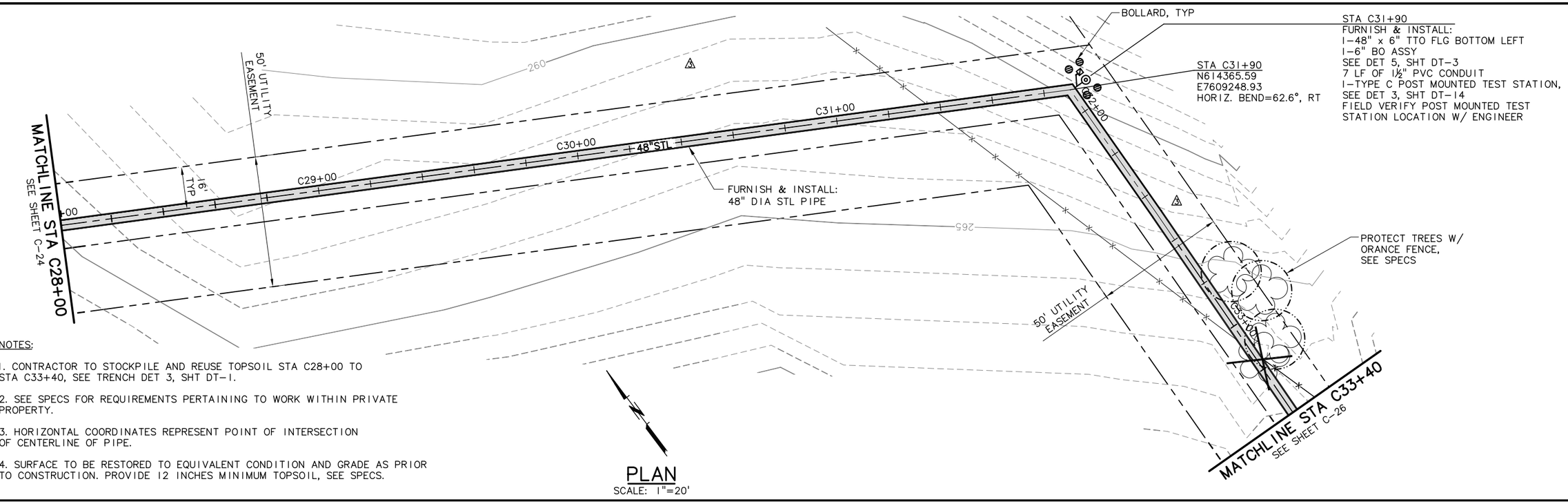
WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

WATERLINE SCHEDULE C
PLAN AND PROFILE
STA C22+40 TO STA C28+00

PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

SHEET
C-24
47 of 79



NOTES:

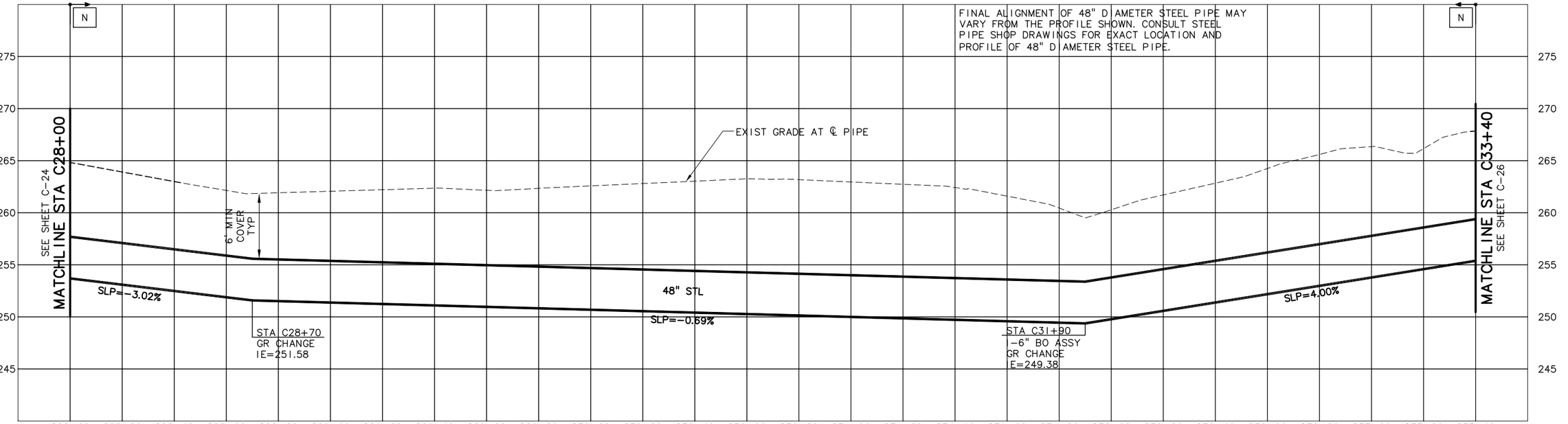
1. CONTRACTOR TO STOCKPILE AND REUSE TOPSOIL STA C28+00 TO STA C33+40, SEE TRENCH DET 3, SHT DT-1.

2. SEE SPECS FOR REQUIREMENTS PERTAINING TO WORK WITHIN PRIVATE PROPERTY.

3. HORIZONTAL COORDINATES REPRESENT POINT OF INTERSECTION OF CENTERLINE OF PIPE.

4. SURFACE TO BE RESTORED TO EQUIVALENT CONDITION AND GRADE AS PRIOR TO CONSTRUCTION. PROVIDE 12 INCHES MINIMUM TOPSOIL, SEE SPECS.

PLAN
SCALE: 1"=20'



PROFILE
SCALE: 1"=20' HORIZ, 1"=5' VERT

NO.	DATE	BY	REVISION
3	08/22/11	BVO	RECORD DRAWING

NOTICE
0 ½ 1
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SMG DESIGNED
DAK DRAWN
MLH CHECKED

RECORD DRAWING
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VERSION 4.1
12-9-97

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City of Sherwood Oregon

WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

WATERLINE SCHEDULE C
PLAN AND PROFILE
STA C28+00 TO STA C33+40

PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

SHEET
C-25
48 of 79

NOTES:

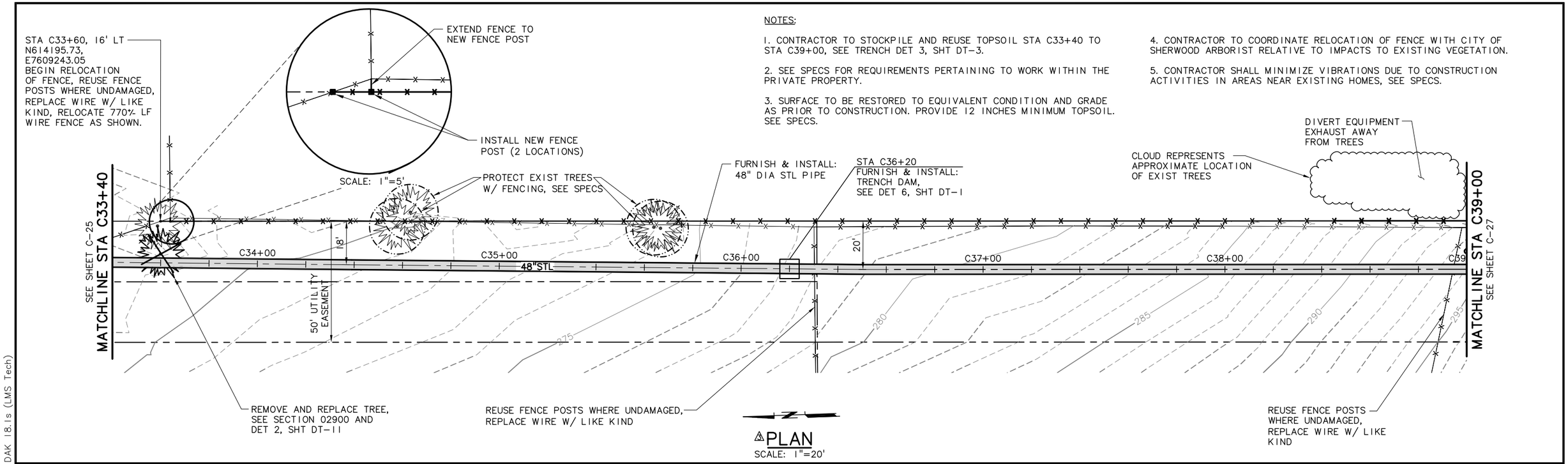
1. CONTRACTOR TO STOCKPILE AND REUSE TOPSOIL STA C33+40 TO STA C39+00, SEE TRENCH DET 3, SHT DT-3.

2. SEE SPECS FOR REQUIREMENTS PERTAINING TO WORK WITHIN THE PRIVATE PROPERTY.

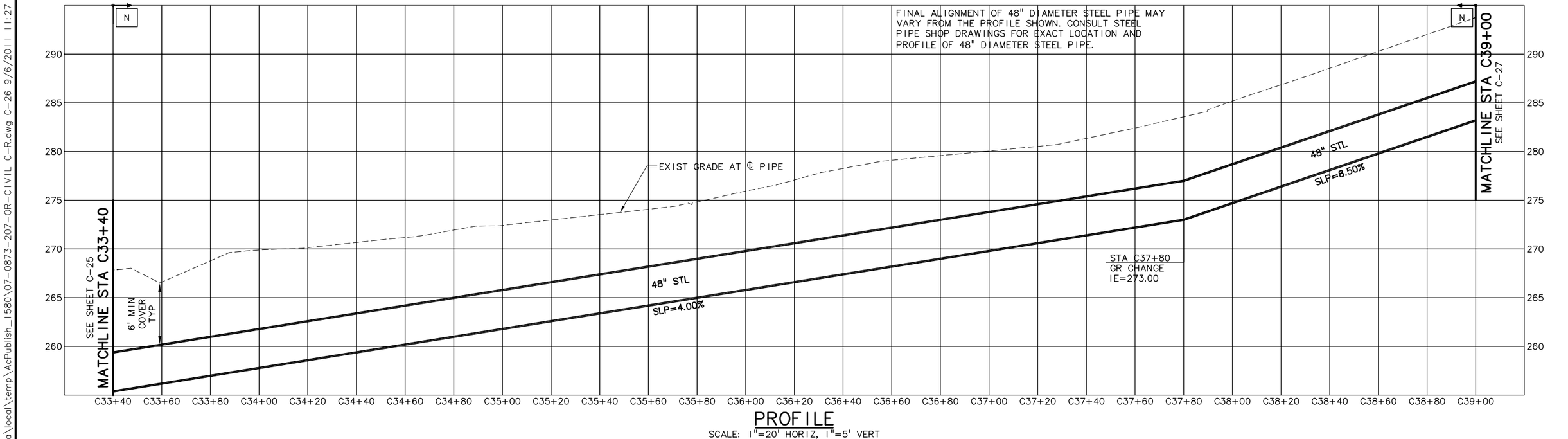
3. SURFACE TO BE RESTORED TO EQUIVALENT CONDITION AND GRADE AS PRIOR TO CONSTRUCTION. PROVIDE 12 INCHES MINIMUM TOPSOIL. SEE SPECS.

4. CONTRACTOR TO COORDINATE RELOCATION OF FENCE WITH CITY OF SHERWOOD ARBORIST RELATIVE TO IMPACTS TO EXISTING VEGETATION.

5. CONTRACTOR SHALL MINIMIZE VIBRATIONS DUE TO CONSTRUCTION ACTIVITIES IN AREAS NEAR EXISTING HOMES, SEE SPECS.



PLAN
SCALE: 1"=20'



PROFILE
SCALE: 1"=20' HORIZ, 1"=5' VERT

NO.	DATE	BY	REVISION
3	08/22/11	BVO	RECORD DRAWING

NOTICE
0 ½ 1
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SMG DESIGNED
DAK DRAWN
MLH CHECKED

RECORD DRAWING
SEE DISCLAIMER, SHEET 1.
VERSION 4.1
12-9-97

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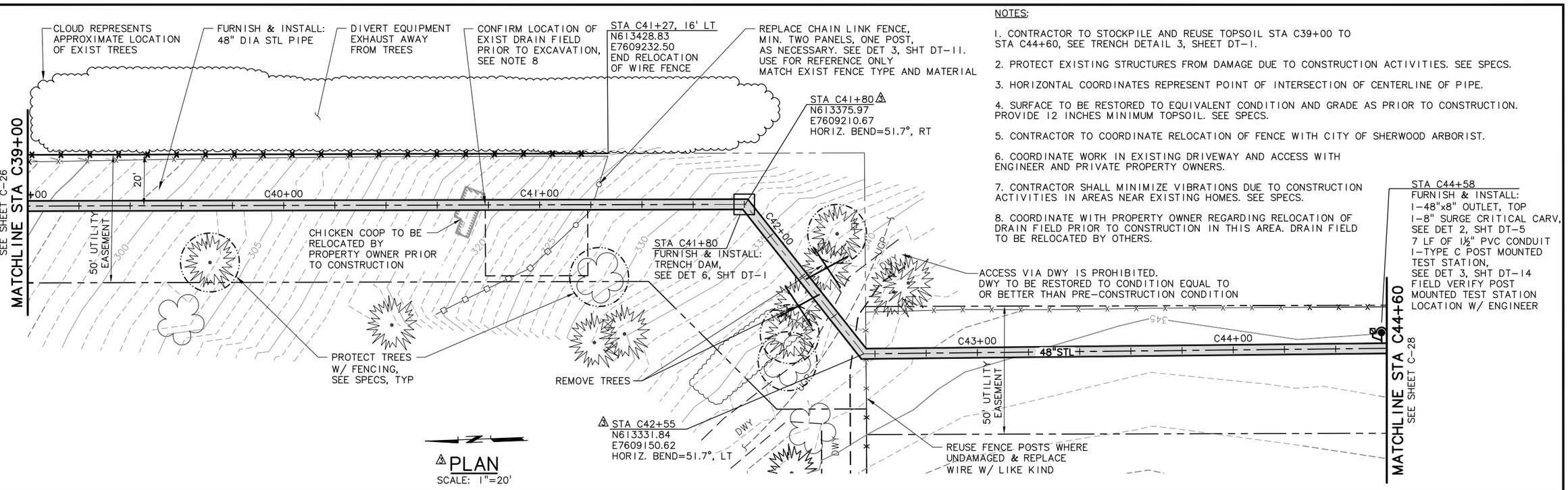
City of Sherwood Oregon

WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

WATERLINE SCHEDULE C PLAN AND PROFILE STA C33+40 TO STA C39+00

PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

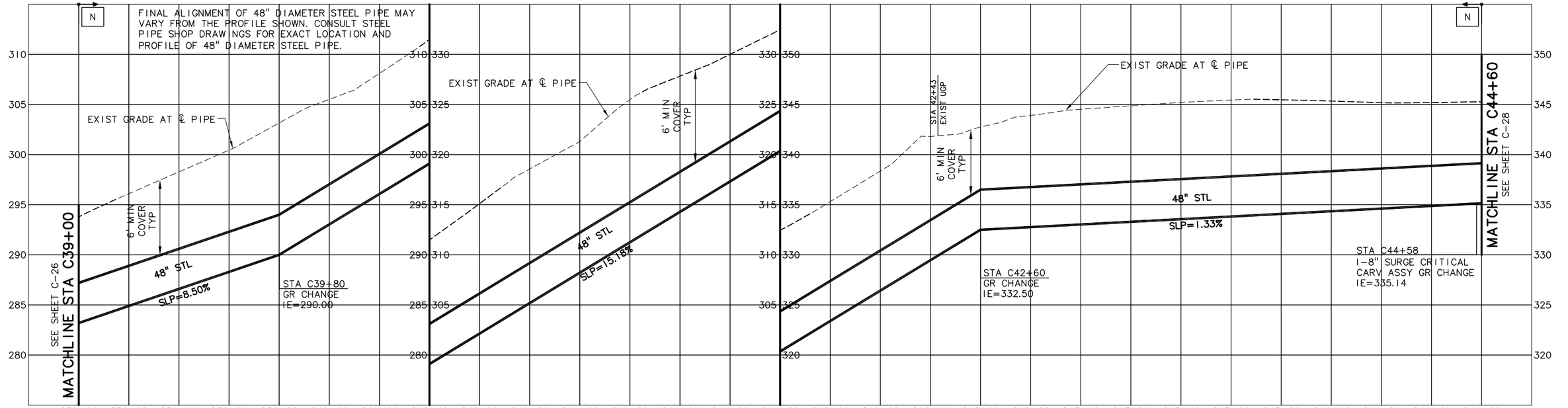
SHEET C-26



PLAN
SCALE: 1"=20'

NOTES:

1. CONTRACTOR TO STOCKPILE AND REUSE TOPSOIL STA C39+00 TO STA C44+60, SEE TRENCH DETAIL 3, SHEET DT-1.
2. PROTECT EXISTING STRUCTURES FROM DAMAGE DUE TO CONSTRUCTION ACTIVITIES. SEE SPECS.
3. HORIZONTAL COORDINATES REPRESENT POINT OF INTERSECTION OF CENTERLINE OF PIPE.
4. SURFACE TO BE RESTORED TO EQUIVALENT CONDITION AND GRADE AS PRIOR TO CONSTRUCTION. PROVIDE 12 INCHES MINIMUM TOPSOIL. SEE SPECS.
5. CONTRACTOR TO COORDINATE RELOCATION OF FENCE WITH CITY OF SHERWOOD ARBORIST.
6. COORDINATE WORK IN EXISTING DRIVEWAY AND ACCESS WITH ENGINEER AND PRIVATE PROPERTY OWNERS.
7. CONTRACTOR SHALL MINIMIZE VIBRATIONS DUE TO CONSTRUCTION ACTIVITIES IN AREAS NEAR EXISTING HOMES. SEE SPECS.
8. COORDINATE WITH PROPERTY OWNER REGARDING RELOCATION OF DRAIN FIELD PRIOR TO CONSTRUCTION IN THIS AREA. DRAIN FIELD TO BE RELOCATED BY OTHERS.



PROFILE
SCALE: 1"=20' HORIZ, 1"=5' VERT

NO.	DATE	BY	REVISION
3	08/22/11	BVO	RECORD DRAWING

NOTICE: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

SMG DESIGNED
DAK DRAWN
MLH CHECKED

RECORD DRAWING
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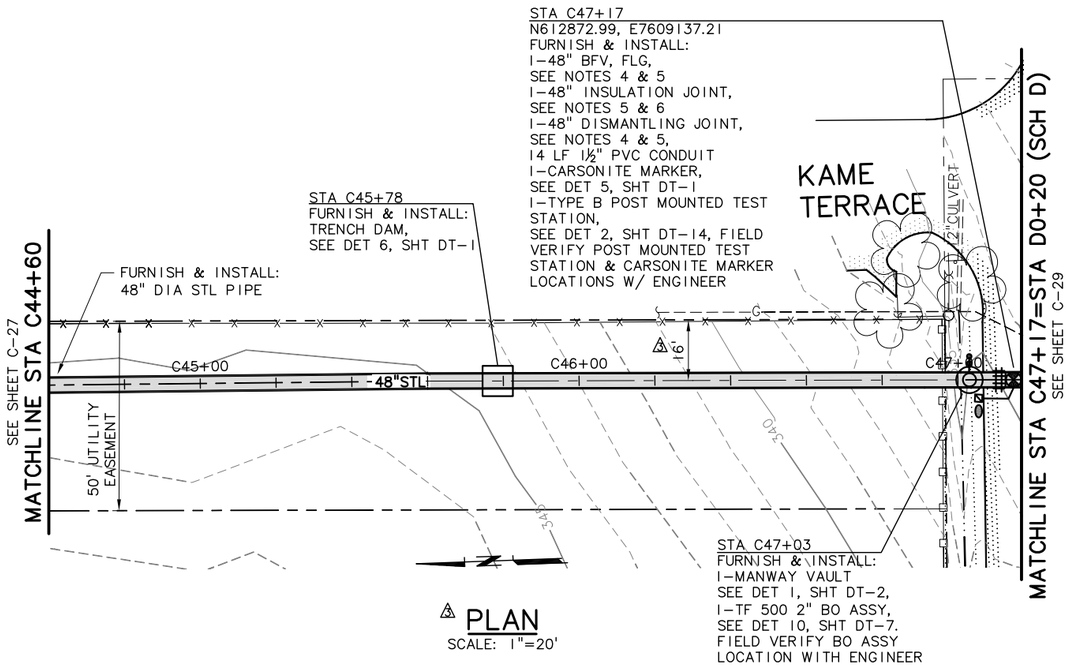
WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

WATERLINE SCHEDULE C PLAN AND PROFILE STA C39+00 TO STA C44+60

PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

SHEET C-27



PLAN
SCALE: 1"=20'

NOTES:

1. CONTRACTOR TO STOCKPILE AND REUSE TOPSOIL STA C44+60 TO STA C46+97, SEE TRENCH DET 3, SHT DT-1.

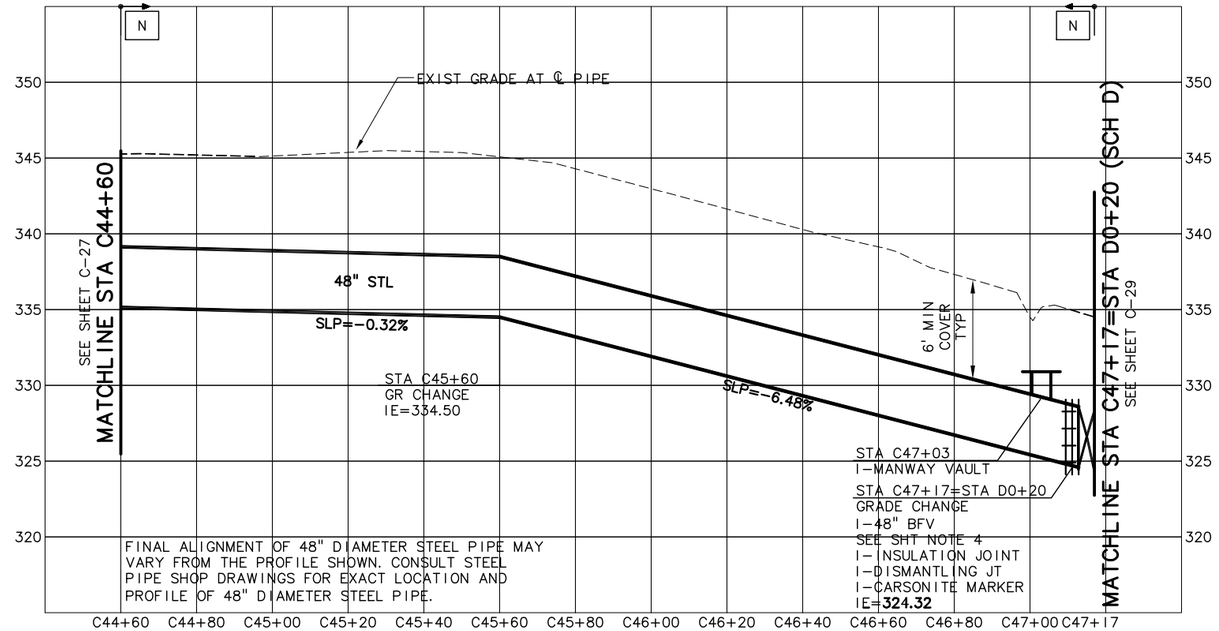
2. SEE SPECS FOR REQUIREMENTS PERTAINING TO WORK WITHIN THE PRIVATE PROPERTY.

3. SURFACE TO BE RESTORED TO EXISTING CONDITIONS AND GRADE. PROVIDE 12 INCHES MINIMUM TOPSOIL. SEE SPECS.

4. INSTALL TWO NO. 2 AWG STRAND BOND WIRES FROM PIPE FLANGE TO VALVE/JOINT FLANGE USING THE THERMITE WELD METHOD.

5. WRAP WITH TWO LAYERS OF 8 MIL POLYETHYLENE.

6. TAPE INSULATION JOINT WITH 40 MIL POLYKEN TAPE, OR EQUAL. OVERLAP PER MANUFACTURER'S RECOMMENDATIONS.



PROFILE
SCALE: 1"=20' HORIZ, 1"=5' VERT

NO.	DATE	BY	REVISION
3	08/22/11	BVO	RECORD DRAWING

NOTICE
0 ½ 1
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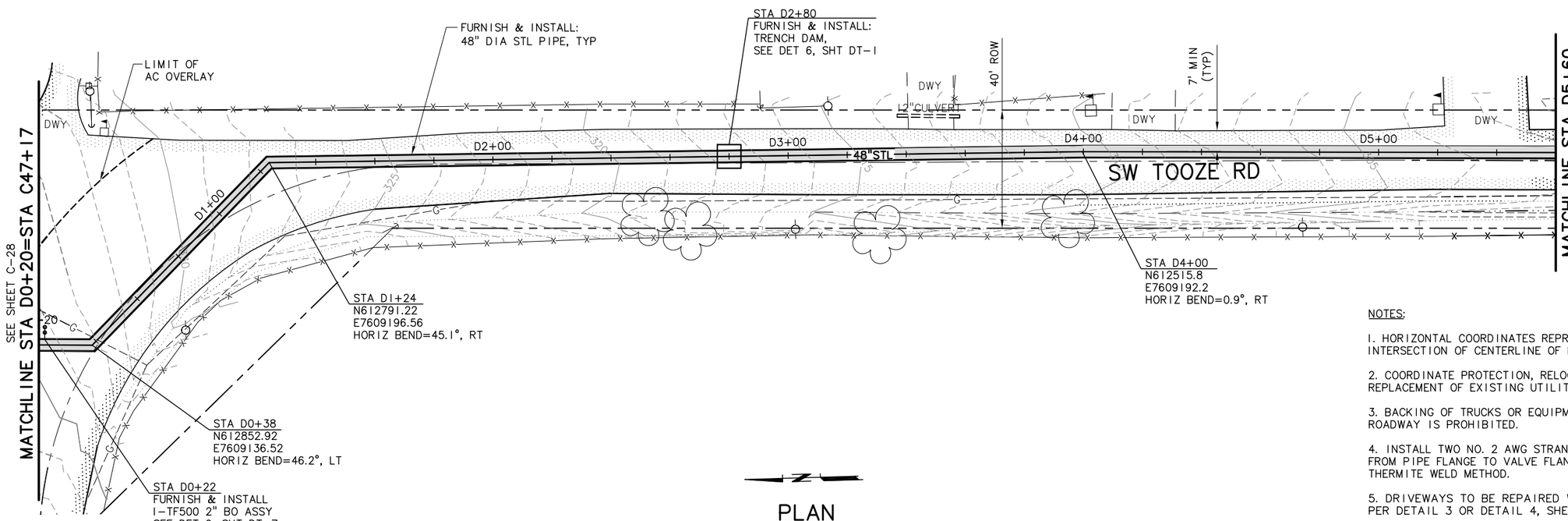
WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

WATERLINE SCHEDULE C
PLAN AND PROFILE
STA C44+60 TO STA C47+17

PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

SHEET
C-28
51 of 79



PLAN
SCALE: 1"=20'

NOTES:

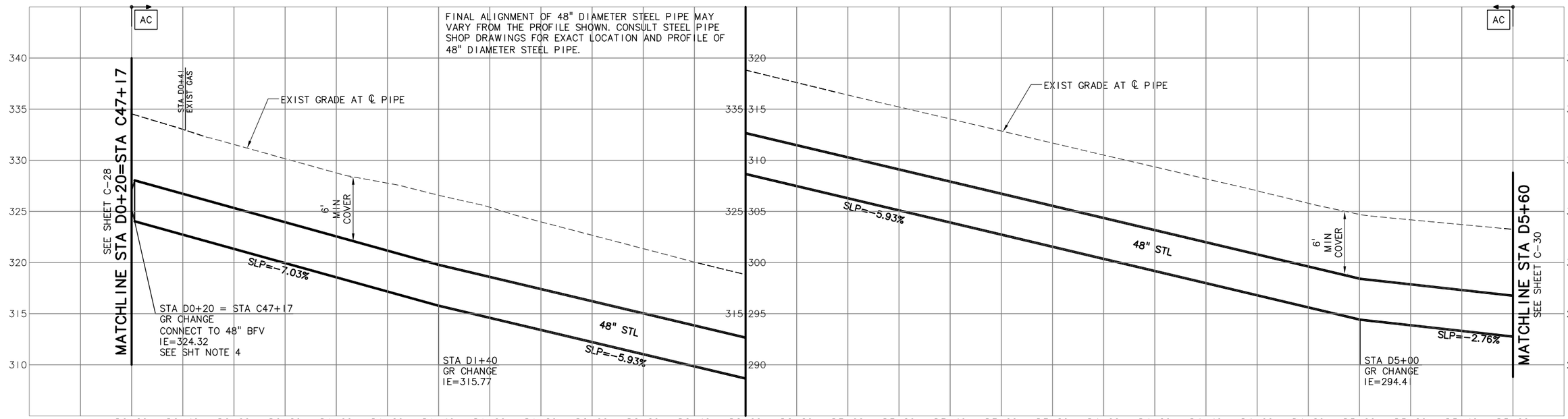
1. HORIZONTAL COORDINATES REPRESENT POINT OF INTERSECTION OF CENTERLINE OF PIPE.

2. COORDINATE PROTECTION, RELOCATION OR REPLACEMENT OF EXISTING UTILITY POLE WITH PGE.

3. BACKING OF TRUCKS OR EQUIPMENT ONTO ROADWAY IS PROHIBITED.

4. INSTALL TWO NO. 2 AWG STRAND BOND WIRES FROM PIPE FLANGE TO VALVE FLANGE USING THE THERMITE WELD METHOD.

5. DRIVEWAYS TO BE REPAIRED WHERE NECESSARY PER DETAIL 3 OR DETAIL 4, SHEET DT-15.



PROFILE
SCALE: 1"=20' HORIZ 1"=5' VERT

NO.	DATE	BY	REVISION
1	08/22/11	BVO	RECORD DRAWING

NOTICE
0 ½ 1
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SMG DESIGNED
DAK DRAWN
MLH CHECKED

RECORD DRAWING
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City of Sherwood Oregon

WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

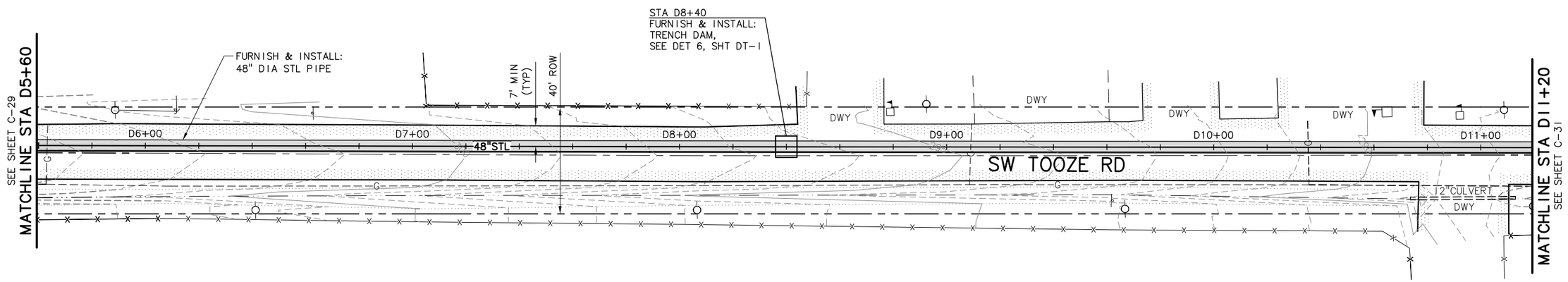
WATERLINE SCHEDULE D PLAN AND PROFILE STA D0+20 TO STA D5+60

PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

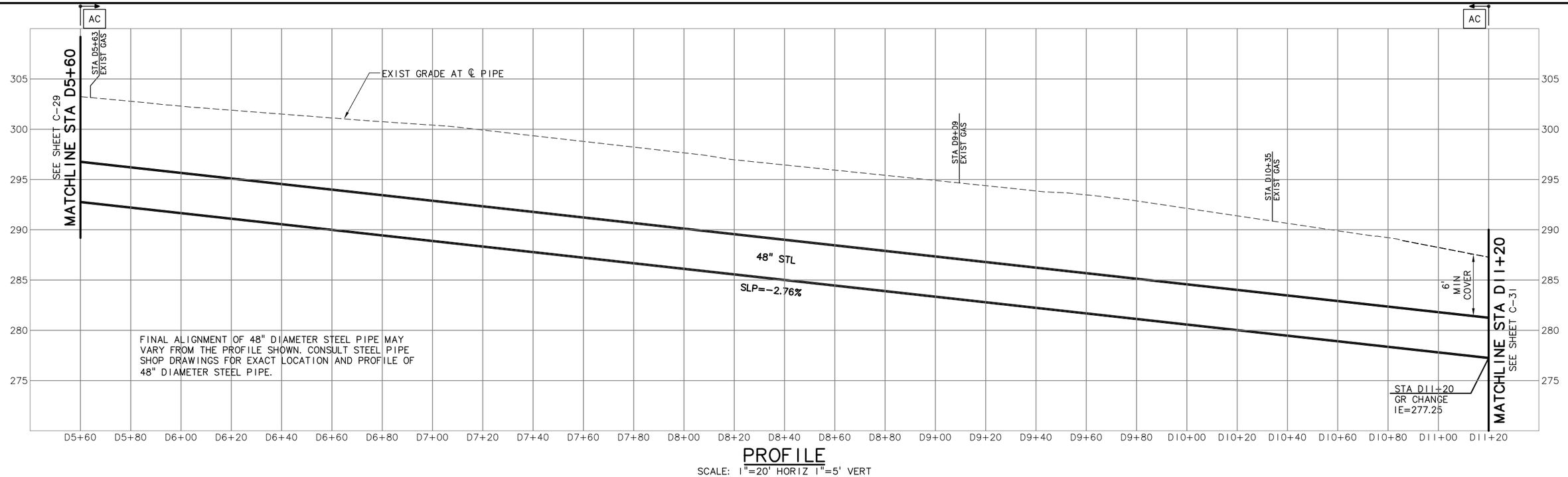
SHEET
C-29
52 of 79

NOTE:

1. DRIVEWAYS TO BE REPAIRED WHERE NECESSARY PER DETAIL 3 OR DETAIL 4, SHEET DT-15.



PLAN
SCALE: 1"=20'



PROFILE
SCALE: 1"=20' HORIZ 1"=5' VERT

NO.	DATE	BY	REVISION
3	08/22/11	BVO	RECORD DRAWING

NOTICE
0 ½ 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

SMG DESIGNED
DAK DRAWN
MLH CHECKED

RECORD DRAWING
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VERSION 4.1
12-9-97

MSA Murray, Smith & Associates, Inc.
Engineers/Planners
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Portland, Oregon 97204 FAX 503-225-9022

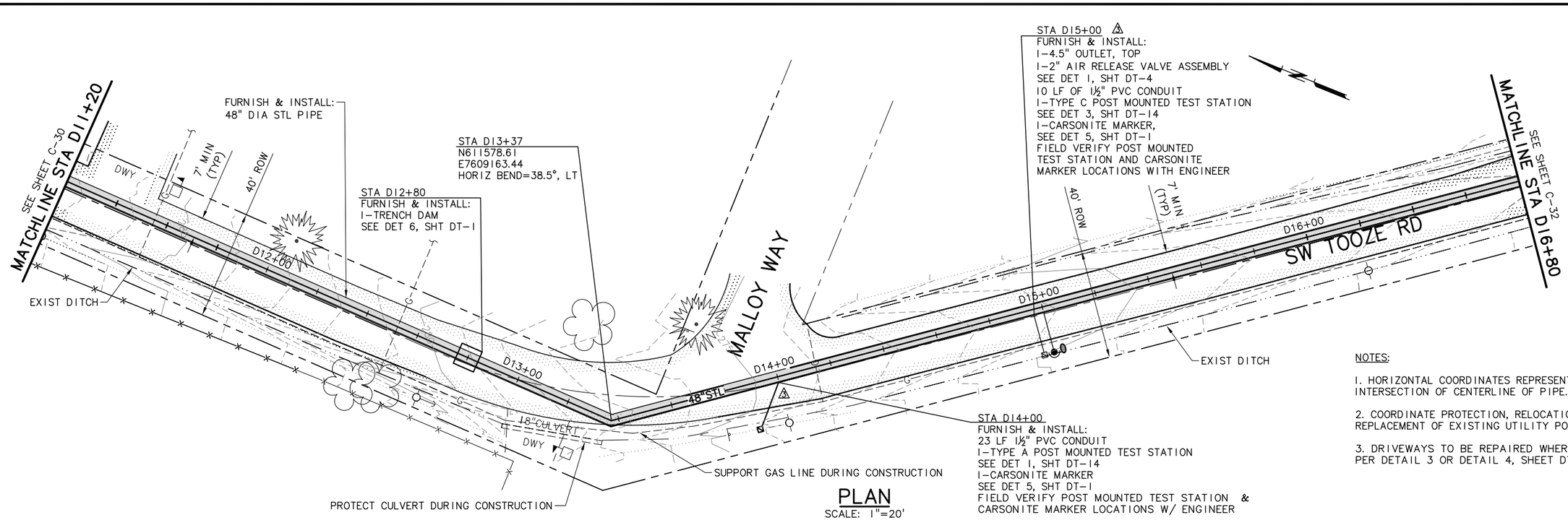
City of Sherwood Oregon

WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

WATERLINE SCHEDULE D
PLAN AND PROFILE
STA D5+60 TO STA D11+20

PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

SHEET
C-30
53 of 79



PLAN

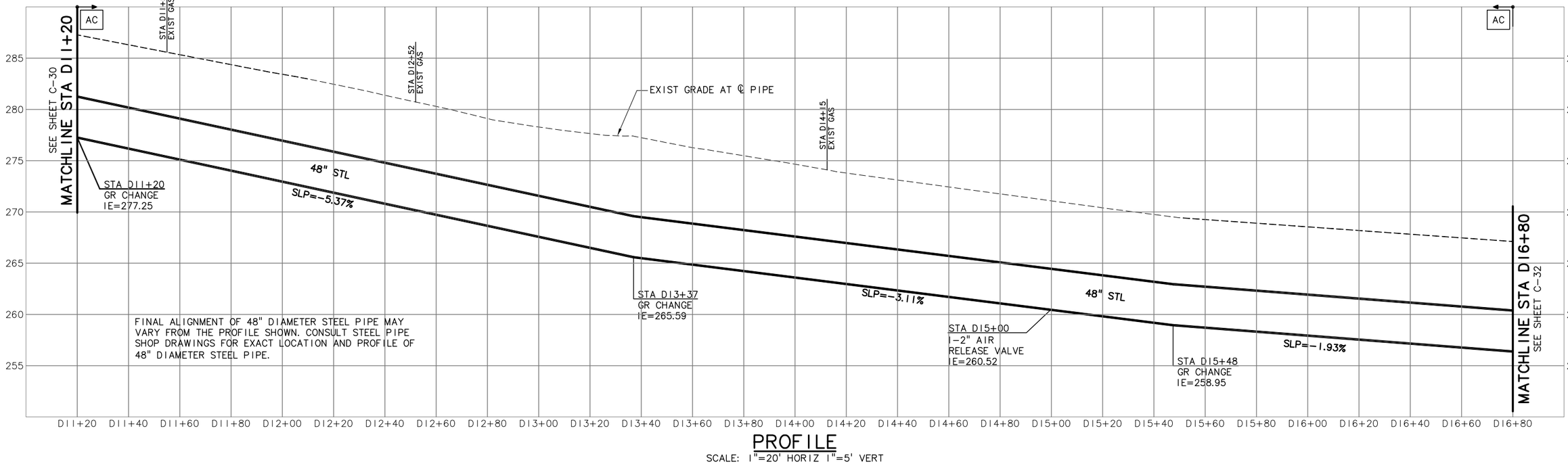
SCALE: 1"=20'

NOTES:

1. HORIZONTAL COORDINATES REPRESENT POINT OF INTERSECTION OF CENTERLINE OF PIPE.

2. COORDINATE PROTECTION, RELOCATION OR REPLACEMENT OF EXISTING UTILITY POLE WITH PGE.

3. DRIVEWAYS TO BE REPAIRED WHERE NECESSARY PER DETAIL 3 OR DETAIL 4, SHEET DT-15.



PROFILE

SCALE: 1"=20' HORIZ 1"=5' VERT

NO.	DATE	BY	REVISION
1	08/22/11	BVO	RECORD DRAWING

NOTICE
0 ½ 1
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City of Sherwood Oregon

WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

WATERLINE SCHEDULE D PLAN AND PROFILE STA D11+20 TO STA D16+80

PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

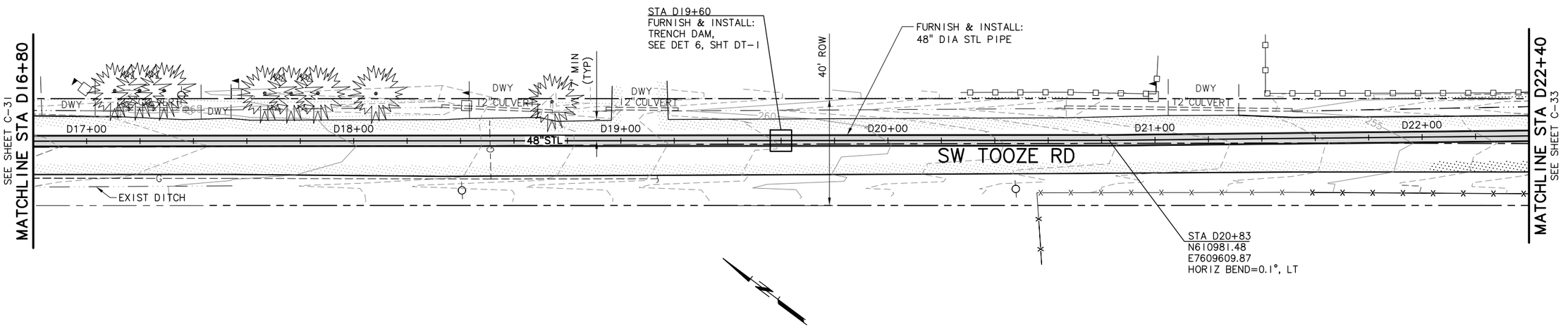
SHEET C-31

NOTES:

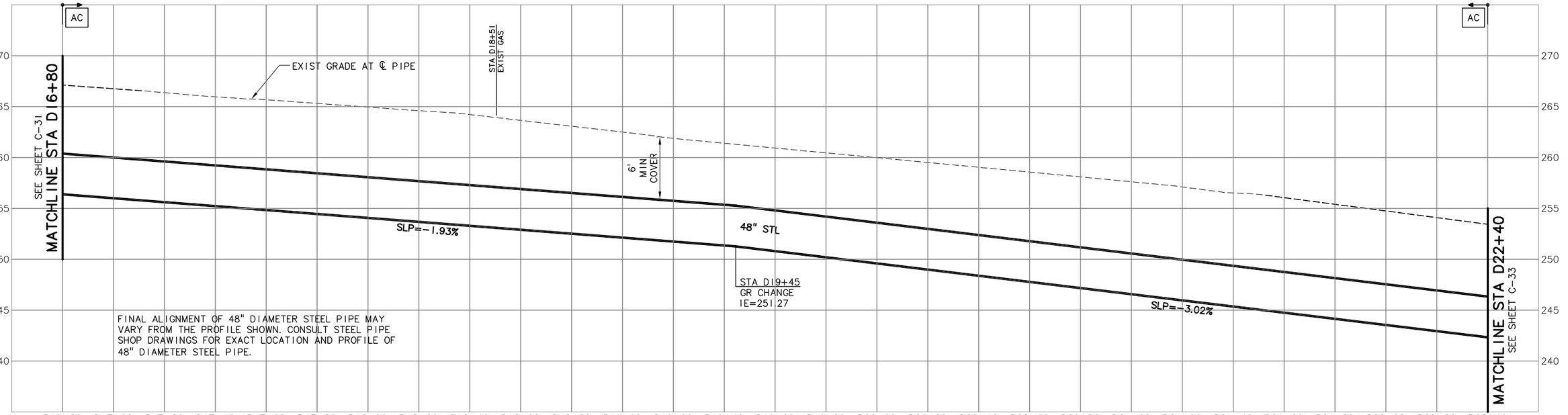
1. HORIZONTAL COORDINATES REPRESENT POINT OF INTERSECTION OF CENTERLINE OF PIPE.

2. COORDINATE PROTECTION, RELOCATION OR REPLACEMENT OF EXISTING UTILITY POLE WITH PGE.

3. DRIVEWAYS TO BE REPAIRED WHERE NECESSARY PER DETAIL 3 OR DETAIL 4, SHEET DT-15.



PLAN
SCALE: 1"=20'



PROFILE
SCALE: 1"=20' HORIZ 1"=5' VERT

NO.	DATE	BY	REVISION
1	08/22/11	BVO	RECORD DRAWING

NOTICE
0 ½ 1
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City of Sherwood Oregon

WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

WATERLINE SCHEDULE D PLAN AND PROFILE STA D16+80 TO STA D22+40

PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

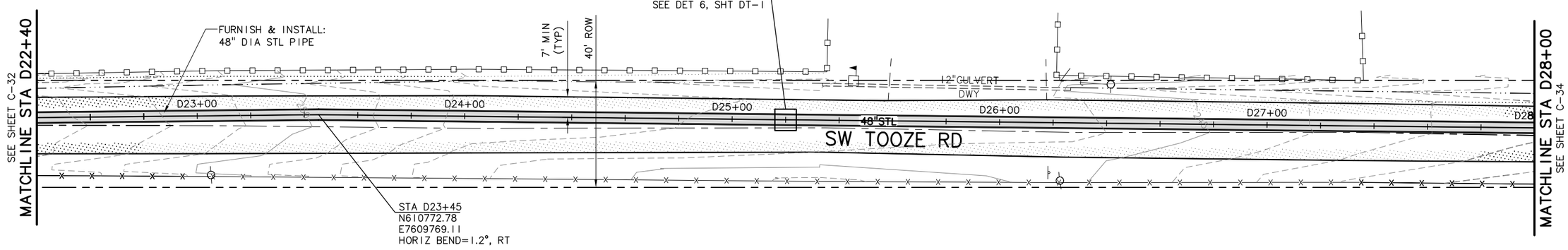
SHEET
C-32
55 of 79

NOTES:

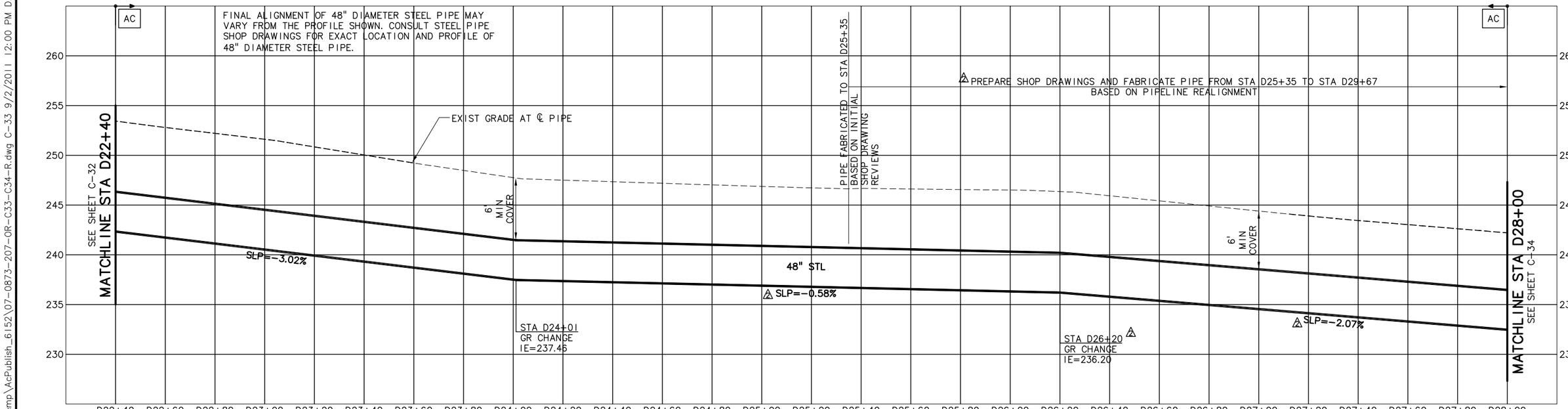
1. HORIZONTAL COORDINATES REPRESENT POINT OF INTERSECTION OF CENTERLINE OF PIPE.

2. COORDINATE PROTECTION, RELOCATION OR REPLACEMENT OF EXISTING UTILITY POLE WITH PGE.

3. DRIVEWAYS TO BE REPAIRED WHERE NECESSARY PER DETAIL 3 OR DETAIL 4, SHEET DT-15.



PLAN
SCALE: 1"=20'



PROFILE
SCALE: 1"=20' HORIZ 1"=5' VERT

NO.	DATE	BY	REVISION
3	08/22/11	BVO	RECORD DRAWING
2	07/23/10	SMG	REVISED 48" PIPE ALIGNMENT

NOTICE
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WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

WATERLINE SCHEDULE D
PLAN AND PROFILE
STA D22+40 TO STA D28+00

PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

SHEET
C-33
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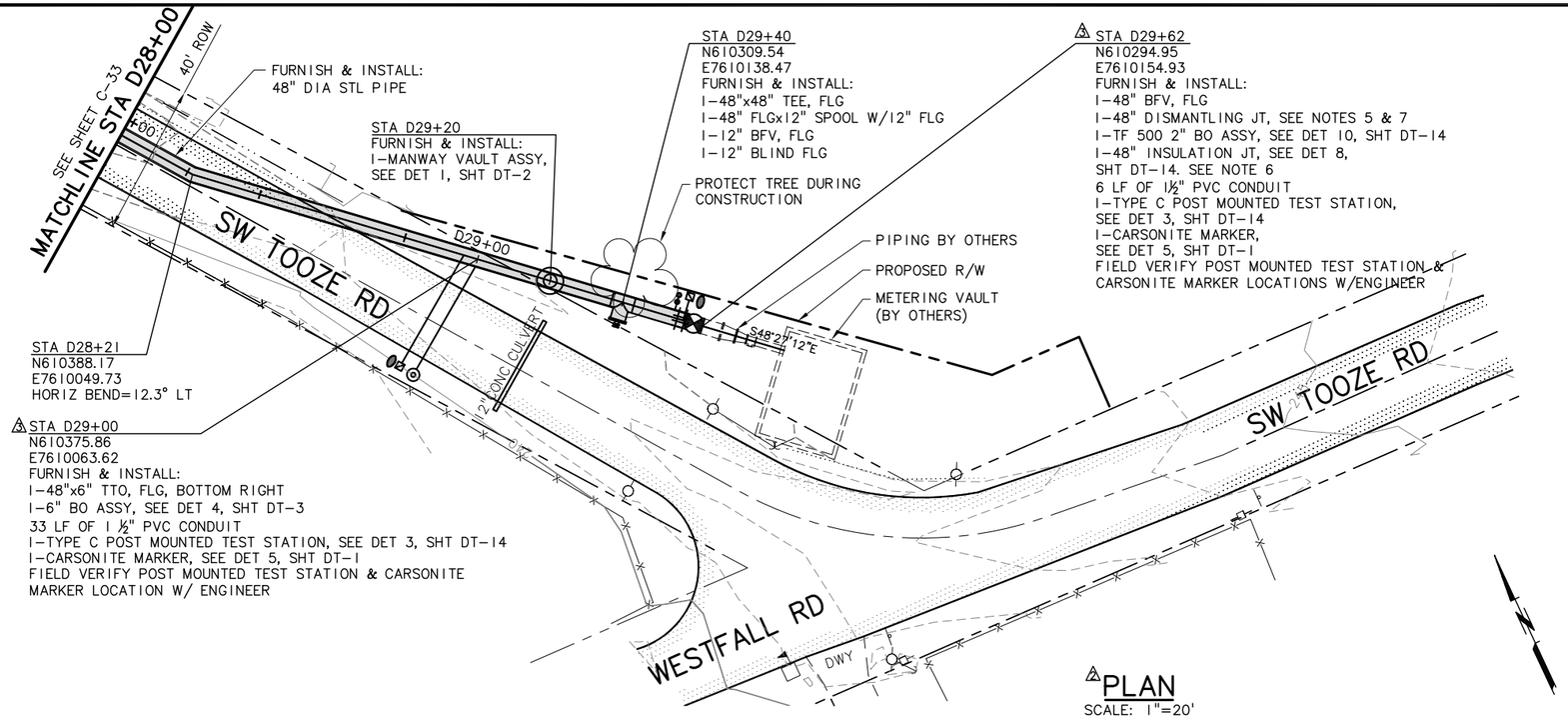
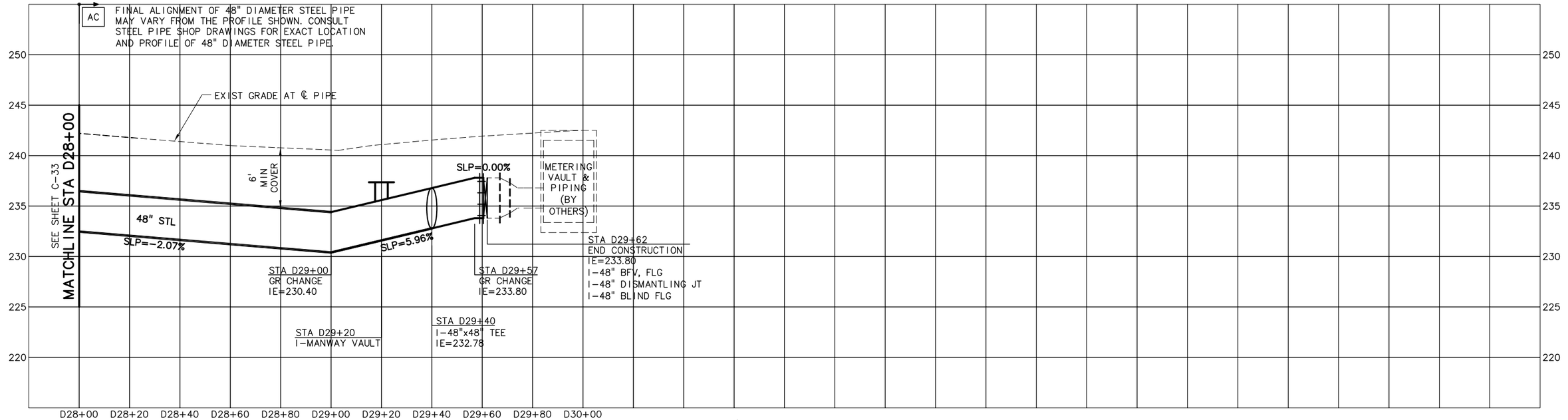


PLAN
SCALE: 1"=20'

NOTES:

1. CONTRACTOR TO POTHOLE AND VERIFY DEPTH AND LOCATION PRIOR TO CONSTRUCTION.
2. ALL DUCTILE IRON FITTINGS TO BE RESTRAINED UNLESS OTHERWISE SHOWN.
3. HORIZONTAL COORDINATES REPRESENT POINT OF INTERSECTION OF CENTERLINE OF PIPE.
4. NOT USED.
5. FURNISH & INSTALL TWO NO. 2 AWG STRAND BOND WIRES FROM PIPE FLANGE TO VALVE/JOINT FLANGE USING THE THERMITE WELD METHOD.
6. TAPE ISOLATION JOINT WITH 40 MIL POLYKEN TAPE, OR EQUAL. OVERLAP PER MANUFACTURER'S RECOMMENDATION.
7. WRAP WITH 2 LAYERS OF 8 MIL POLYETHELENE.
8. COORDINATE PIPE CONNECTION PLANS WITH FINAL 48-INCH PIPE INSTALLATION SOUTHEAST OF STATION D29+67, BY OTHERS.



PROFILE
SCALE: 1"=20' HORIZ 1"=5' VERT

NO.	DATE	BY	REVISION
2	08/22/11	BVO	RECORD DRAWING
1	07/23/10	SMG	REVISED 48" PIPE ALIGNMENT

NOTICE
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RECORD DRAWING
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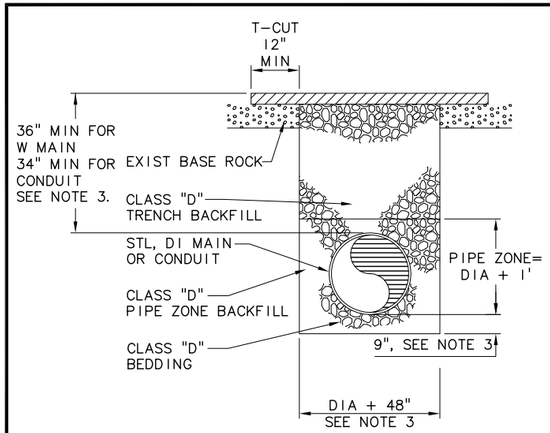
City of Sherwood Oregon

WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

WATERLINE SCHEDULE D PLAN AND PROFILE STA D28+00 TO STA D29+62

PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

SHEET C-34
57 of 79



NOTES:

1. REPLACE REMOVED ASPHALT W/ A MIN OF 4" LEVEL 2 AC OR EXIST PAVEMENT DEPTH WHICHEVER IS GREATER.

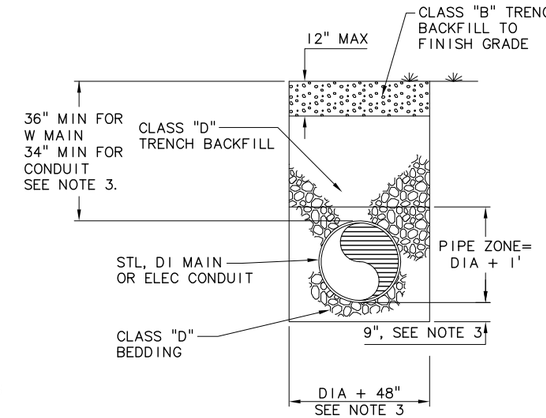
2. FURNISH & INSTALL CLASS "D" BEDDING, PIPE ZONE & TRENCH BACKFILL, TO PAVEMENT BASE. COMPACT MATERIAL IN LIFTS TO ACHIEVE 95% OF MAX DENSITY IN ACCORDANCE W/ AASHTO T-180.

3. FOR ALL PIPES AND CONDUITS OTHER THAN 48 INCH DIAMETER STEEL PIPE, TRENCH WIDTH IS DIA + 24 INCHES AND BEDDING IS 6 INCHES.

4. MIN AC REPLACEMENT WIDTH IS 3'-0".

5. WHERE CONSTRUCTION IMPACTS ROAD SHOULDER, REGRADE TO MATCH EXIST.

PIPE TRENCH DETAIL - IN ROADWAY (1)
SCALE: NTS



NOTES:

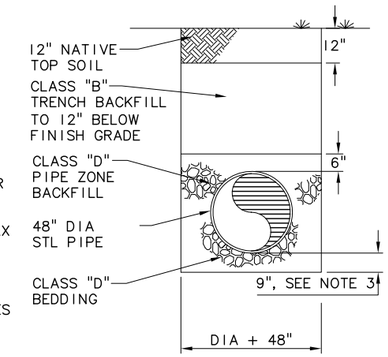
1. NON AC SURFACES SHALL BE RESURFACED TO MATCH EXIST FOR GRAVEL RESURFACING, SEE SPECS. REPLACE TOPSOIL AND BACKFILL W/ CLASS "B" NATIVE MATERIAL. FINISH TRENCH SURFACE TO MATCH ORIGINAL CONTOURS. REPLACE EXIST LANDSCAPING.

2. FURNISH AND INSTALL CLASS "D" BEDDING AND PIPE ZONE BACKFILL COMPACTED TO 95% OF MAX. DENSITY PER AASHTO T-180. FURNISH AND INSTALL CLASS "B" NATIVE TRENCH BACKFILL TO FINISH GRADE COMPACTED TO 95% MAX DENSITY PER AASHTO T-180.

3. FOR ALL PIPES AND CONDUITS OTHER THAN 48 INCH DIAMETER STEEL PIPE, TRENCH WIDTH IS DIAMETER + 24 INCHES AND BEDDING DEPTH IS 6- INCHES.

4. MIN AC REPLACEMENT WIDTH IS 3'-0".

PIPE TRENCH DETAIL - OUTSIDE OF ROADWAY (2)
SCALE: NTS



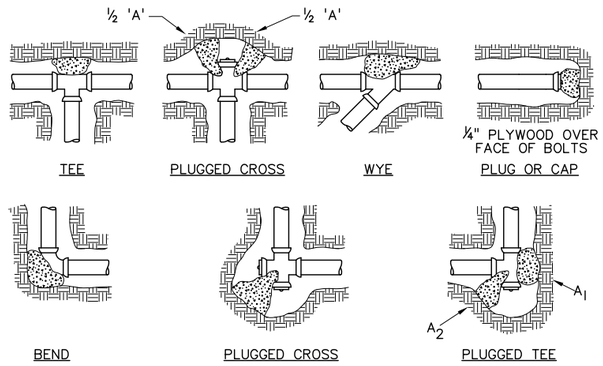
NOTES:

1. STOCKPILE AND REUSE TOPSOIL. SEE 02900, PLANTING, AND 01100, SPECIAL PROVISIONS, FOR ADDITIONAL REQM'TS WITHIN THE AGRICULTURAL AREAS.

2. FURNISH AND INSTALL CLASS "D" BEDDING AND PIPE ZONE BACKFILL COMPACTED TO 95% OF MAX DENSITY PER AASHTO T-180. FURNISH AND INSTALL CLASS "B" NATIVE TRENCH BACKFILL TO 12" BELOW FINISH GRADE COMPACTED TO 95% MAX DENSITY PER AASHTO T-180. REPLACE 12" OF ORIGINAL TOPSOIL TO FINISH GRADE COMPACTED TO 95% MAX DENSITY PER AASHTO T-180.

3. FINISH TRENCH SURFACE TO MATCH ORIGINAL CONTOURS. REPLACE EXISTING LANDSCAPING.

PIPE TRENCH DETAIL - IN AGRICULTURAL AREAS (3)
SCALE: NTS



BEARING AREA, 'A', OF THRUST BLOCKS IN SQUARE FEET *							
FITTING SIZE	TEE, WYE, PLUG OR CAP	90°BEND, PLUGGED CROSS	TEE PLUGGED ON RUN		45° BEND	22½° BEND	11¼° BEND
	A	A	A_1	A_2	A	A	A
4	1.4	1.9	2.7	1.9	1.0	–	–
6	2.8	4.0	5.6	4.0	2.1	1.1	–
8	4.8	6.8	9.6	6.8	3.7	1.9	0.9
10	7.3	10.3	14.5	10.3	5.6	2.8	1.4
12	10.3	14.5	20.4	14.5	7.9	4.0	2.0
14	13.8	19.5	27.5	19.5	10.6	5.4	2.7
16	17.8	25.2	35.5	25.2	13.6	7.0	3.5
18	22.4	31.7	44.7	31.7	17.1	8.7	4.4
20	27.5	38.9	54.8	38.9	21.0	10.7	5.4
24	39.2	55.5	78.3	55.5	30.0	15.3	7.7

*ABOVE BEARING AREAS BASED UPON TEST PRESSURE OF 150 P.S.I. AND AN ALLOWABLE SOIL BEARING STRESS OF 2000 POUNDS PER SQUARE FOOT. TO COMPUTE BEARING AREAS FOR DIFFERENT TEST PRESSURES AND SOIL BEARING STRESSES, USE THE FOLLOWING EQUATION: BEARING AREA=(TEST PRESSURE/150) X (2000/SOIL BEARING STRESS) X (TABLE VALUE).

STANDARD THRUST BLOCK DETAILS (4)
SCALE: NTS

NOTES:

1. CONCRETE THRUST BLOCKING SHALL BE POURED AGAINST UNDISTURBED EARTH.

2. KEEP CONCRETE CLEAR OF JOINT AND ACCESSORIES. INSTALL ISOLATION MATERIAL BETWEEN PIPE AND/OR FITTINGS BEFORE POURING BLOCKING.

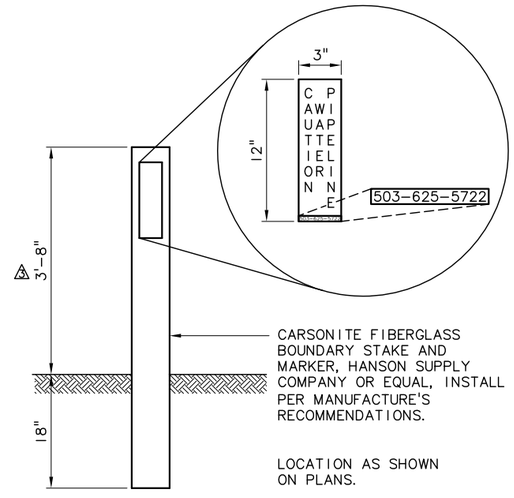
3. THE REQUIRED THRUST BEARING AREAS FOR SPECIAL CONNECTIONS ARE SHOWN ENCIRCLED ON THE PLANS; e.g. (15) INDICATES 15 SQUARE FEET BEARING AREA REQUIRED

4. IF NOT SHOWN ON PLANS, REQUIRED BEARING AREAS AT FITTING SHALL BE AS INDICATED IN TABLE, ADJUSTED IF NECESSARY, TO CONFORM TO THE TEST PRESSURE(S) AND ALLOWABLE SOIL BEARING STRESS(ES) STATED IN THE SPECIFICATIONS.

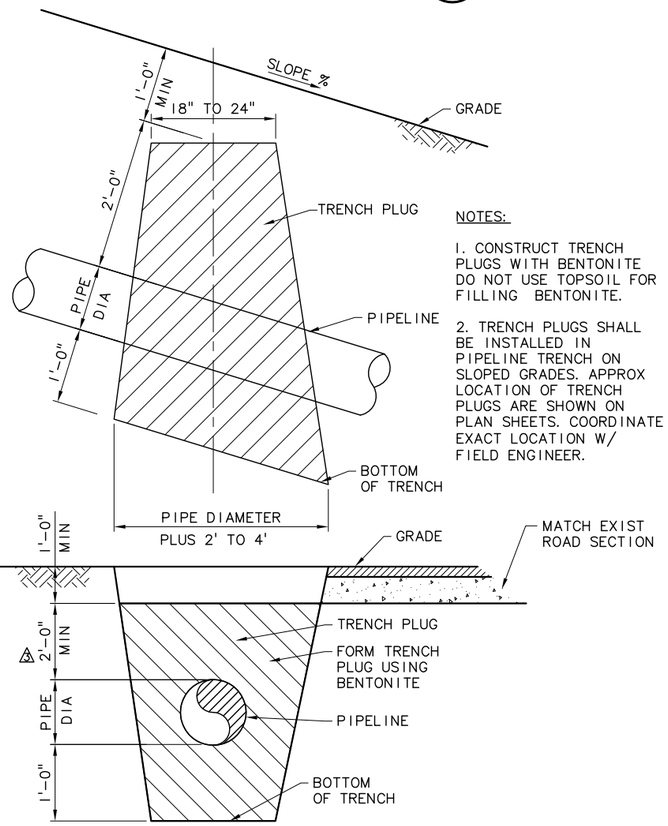
5. BEARING AREAS AND SPECIAL BLOCKING DETAILS SHOWN ON PLANS TAKE PRECEDENCE OVER BEARING AREAS AND BLOCKING DETAILS SHOWN ON THIS DETAIL.

6. CONCRETE SHALL BE 3000 PSI MIN 28 DAY COMPRESSIVE STRENGTH.

7. BEARING AREAS WHERE EXISTING PIPE WILL BE ABANDONED IN PLACE, AS SHOWN ON PLAN, SHALL INCLUDE 1/2" STL PLATE AT THE BASE OF THE THRUST BLOCK. THE MIN BEARING AREA OF THE STL PLATE SHALL BE BASED ON DATA FROM THE TABLE.



CARSONITE MARKER DETAIL (5)
SCALE: NTS



NOTES:

1. CONSTRUCT TRENCH PLUGS WITH BENTONITE DO NOT USE TOPSOIL FOR FILLING BENTONITE.

2. TRENCH PLUGS SHALL BE INSTALLED IN PIPELINE TRENCH ON SLOPED GRADES. APPROX LOCATION OF TRENCH PLUGS ARE SHOWN ON PLAN SHEETS. COORDINATE EXACT LOCATION W/ FIELD ENGINEER.

TYPICAL TRENCH DAM (6)
SCALE: 1/2"=1'-0"

NO.	DATE	BY	REVISION
1	08/22/11	BVO	RECORD DRAWING

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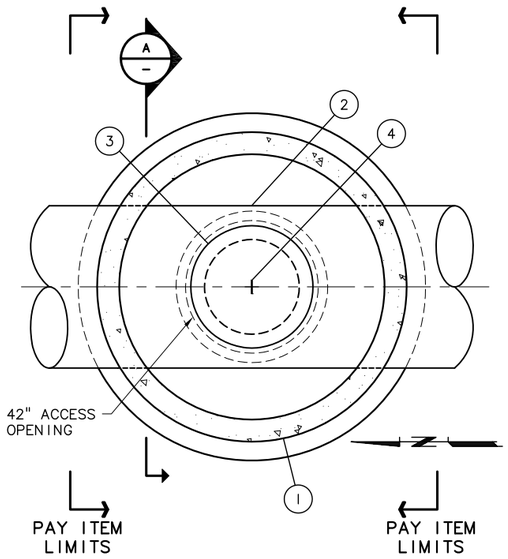
WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

PIPELINE DETAILS-1

PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

SHEET DT-1
58 of 79

C:\Users\dak\appdata\local\temp\AcPublish_6152\07-0873-207-OR-DETS-R.dwg DT-1 9/2/2011 12:06 PM DAK 18.1s (LMS Tech)



ACCESS MANHOLE MATERIAL LIST

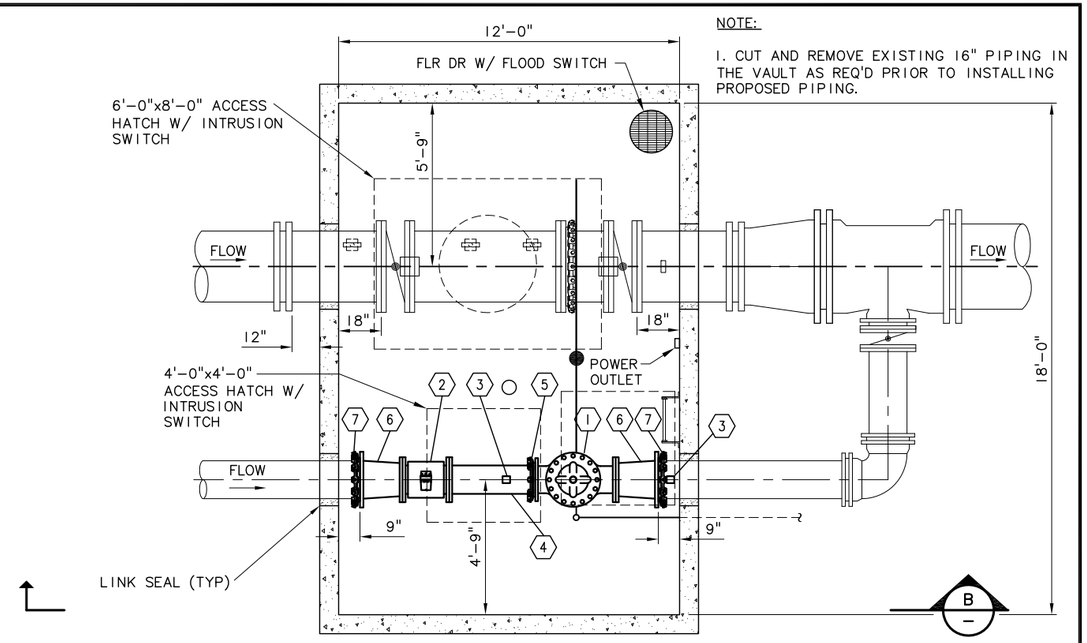
1. 84" DIA PRECAST MANHOLE
2. 48" DIA STL PIPE W/ 30" DIA MANWAY ACCESS
3. 30" DIA BLIND FLG
4. LIFTING EYE, 750 LB RATED
5. TRAFFIC RATED TAMPER PROOF 42" MH COVER & FRAME

NOTES:

△1 1. 53" DIA BLOCKOUT FOR STEEL PIPE SHALL BE PREFORMED BY MANUFACTURER. CONTRACTOR TO INSTALL 4" DIA POLYETHYLENE CLOSED CELL FOAM CYLINDERS TO FILL ANNULAR SPACE ON TOP OF PIPE AND GROUT OVER FOAM.

2. PIPE BEDDING AND BACKFILL WITHIN VAULT SHALL BE ¾"–0" CRUSHED ROCK.

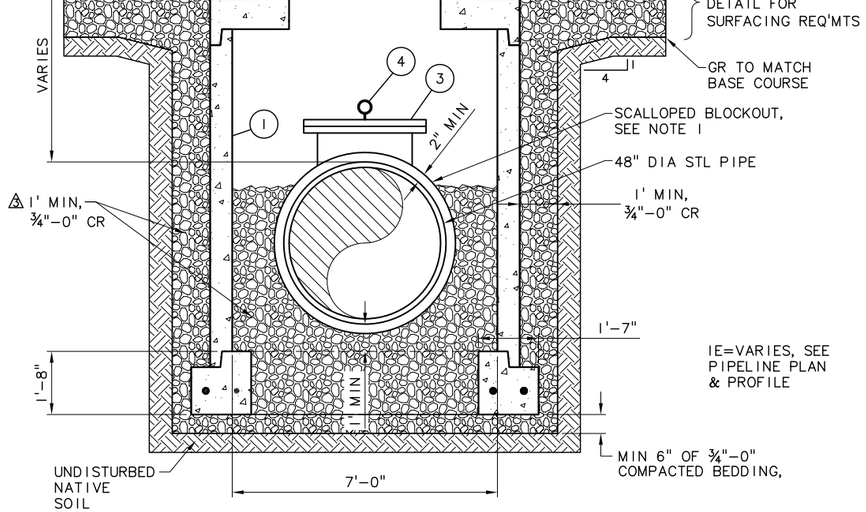
ACCESS MANHOLE (1/–)
SCALE: 1/2"=1'–0"



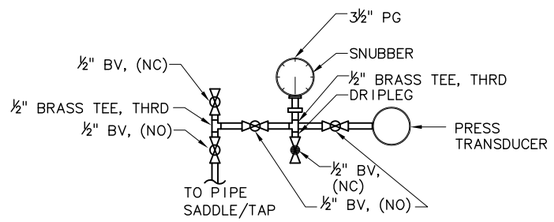
CONTROL VALVE VAULT PLAN (2/–)
SCALE: ⅜"=1'–0"

CONTROL VALVE VAULT MATERIAL LIST

1. 12" ELECTRICALLY CONTROLLED VALVE, FLG, SEE SPECS
2. 12" MAG METER, FLG
3. PRESSURE GAUGE ASSY, SEE DET 3, THIS SHEET
4. 12" SPL, FLGxPE, LENGTH AS REQUIRED
5. 12" MEGA FLG
6. 16"x12" RDCR, FLG
7. 16" MEGA FLG ADPTR
8. ADJUSTABLE PIPE SUPPORT, BOLT TO FLOOR (STANDON MODEL S96 OR APPVD EQ)



SECTION (A/–)
SCALE: 1/2"=1'–0"

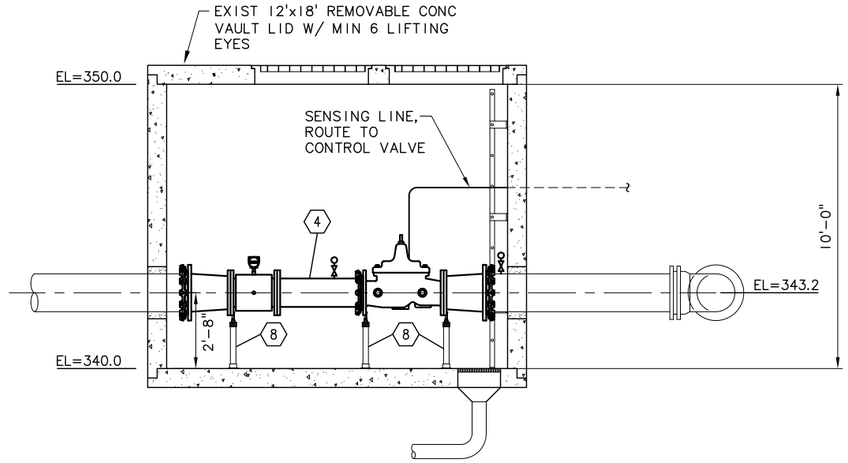


NOTES:

△1 1. INSTALL PRESSURE GAUGE ASSEMBLY AS SHOWN.

2. ALL ½" PIPE SHALL BE COPPER.

PRESSURE GAUGE ASSEMBLY (3/–)
SCALE: 1/2"=1'–0"



SECTION (B/–)
SCALE: ⅜"=1'–0"

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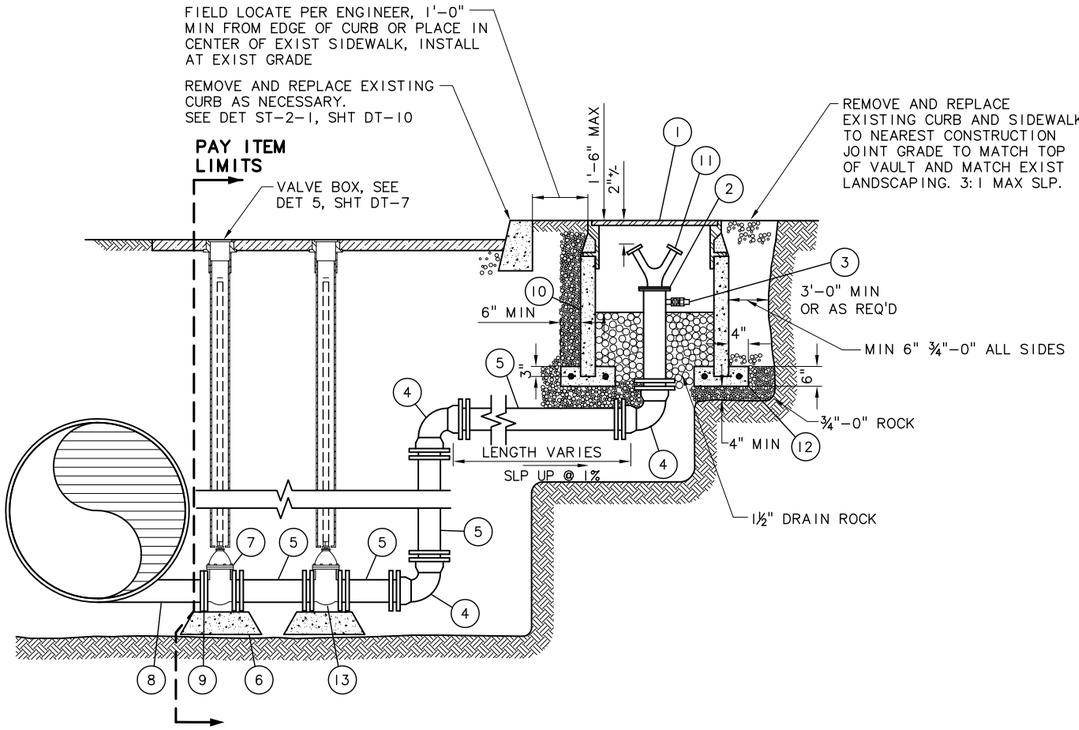
WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

PIPELINE DETAILS-2

PROJECT NO.: 07–0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

SHEET DT–2
59 of 79



NOTES:

1. ALL DUCTILE IRON FITTINGS TO BE RESTRAINED JOINT.

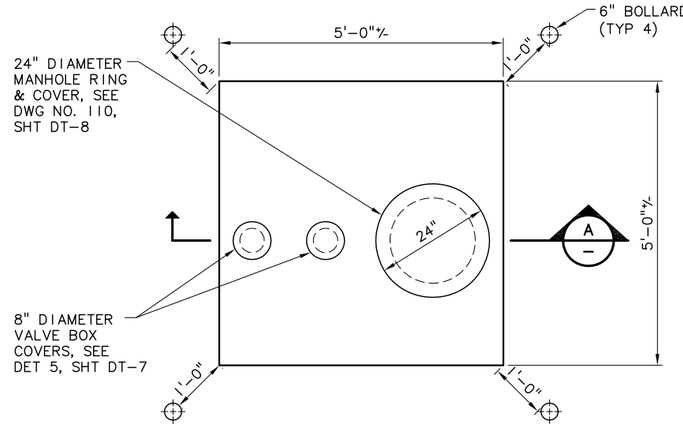
2. FOR STEEL PIPE, USE 6" TANGENTIAL OUTLET, 6" RESTRAINED DUCTILE IRON PIPE AND 6" GATE VALVE, RESTRAINED.

6" BLOW-OFF LOCATED IN ROADWAY (4)

SCALE: NTS

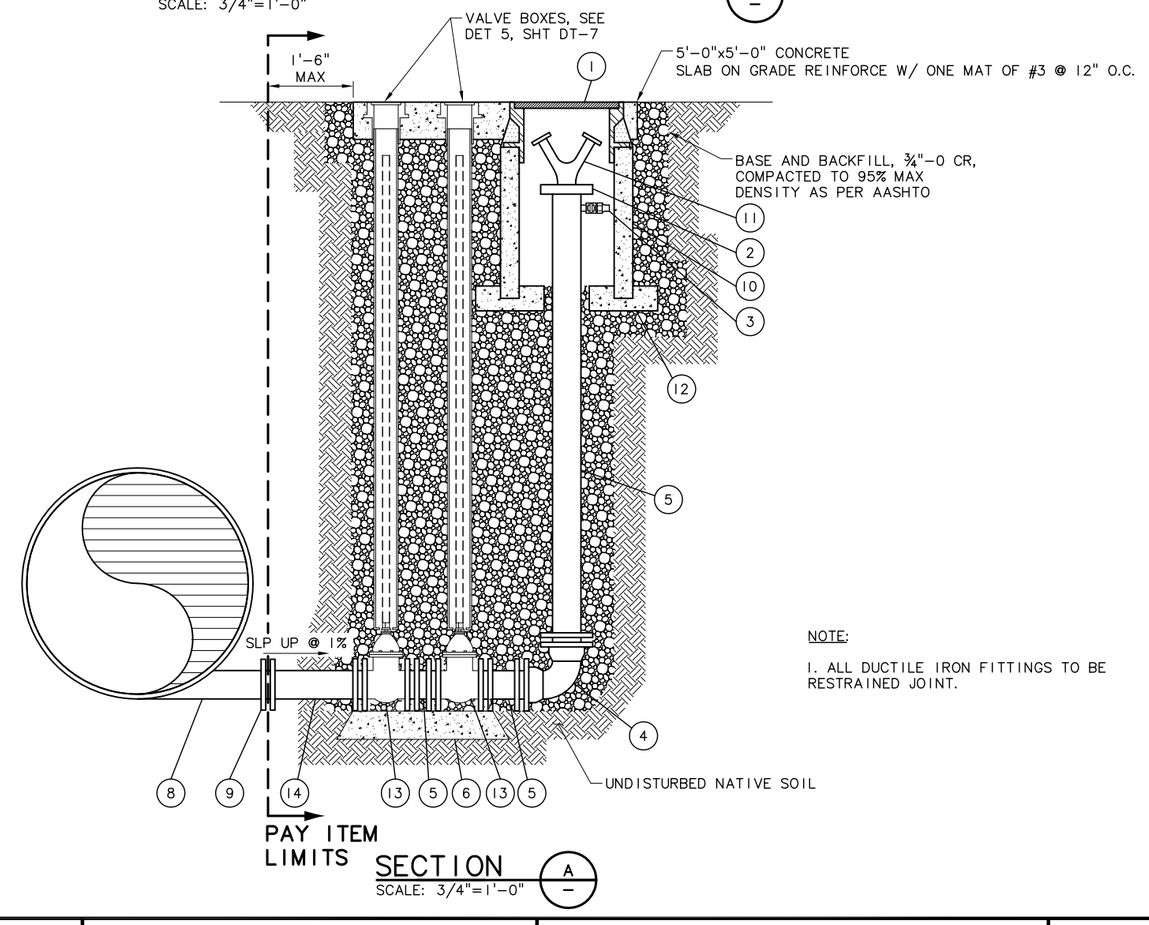
MATERIAL LIST:

1. 24" H-20 TRAFFIC RATED TAMPER-PROOF MH COVER & FRAME
2. 6" BLIND FLG TAPPED FOR 4" NPT CONNECTION
3. ¾" CORP STOP
4. 6" 90° BEND, MJ
5. 6" DI SPL, PExPE, LENGTH AS REQ'D
6. CONC PIER BLOCK
7. 6" GV, FLGXMJ
8. 48"x6" TANGENTIAL TEE, PExFLG
9. INSULATED FLG JT, SEE DET 8, SHT DT-14
10. 27" CONC PIPE C-76 CLASS III
11. 4"x2.5"x2.5" NPT ROOF MANIFOLD, MODEL FRC 4025 BY DIXON VALVE, OR EQUAL
12. 3000 PSI CONC CONTINUOUS FOOTING W/ 2 #5 REBAR ALL AROUND
13. 6" GV, MJxMJ
14. 6" SPL, FLGxPE, LENGTH AS REQD



6" BLOW OFF LOCATED IN AGRICULTURAL AREA - PLAN VIEW (5)

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



SECTION (A)

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

NOTE:

1. ALL DUCTILE IRON FITTINGS TO BE RESTRAINED JOINT.

NO.	DATE	BY	REVISION
3	08/22/11	BVO	RECORD DRAWING

NOTICE: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

SMG DESIGNED | DAK DRAWN | MLH CHECKED

RECORD DRAWING
SEE DISCLAIMER, SHEET 1.
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12-9-97

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PHONE 503-225-9010 FAX 503-225-9022

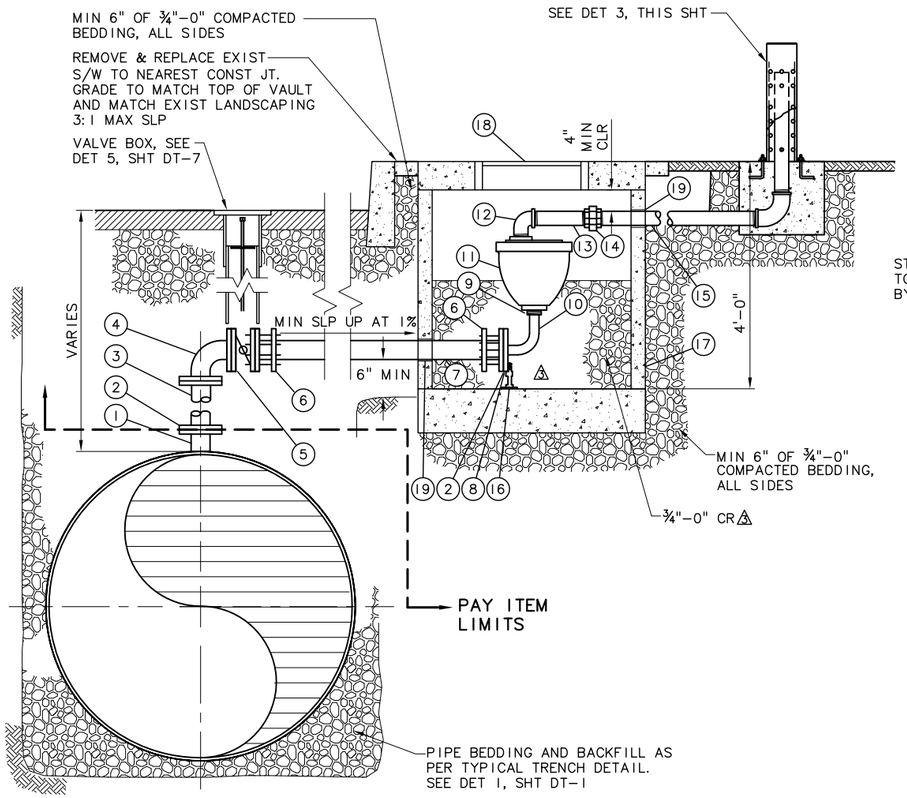
City of Sherwood Oregon

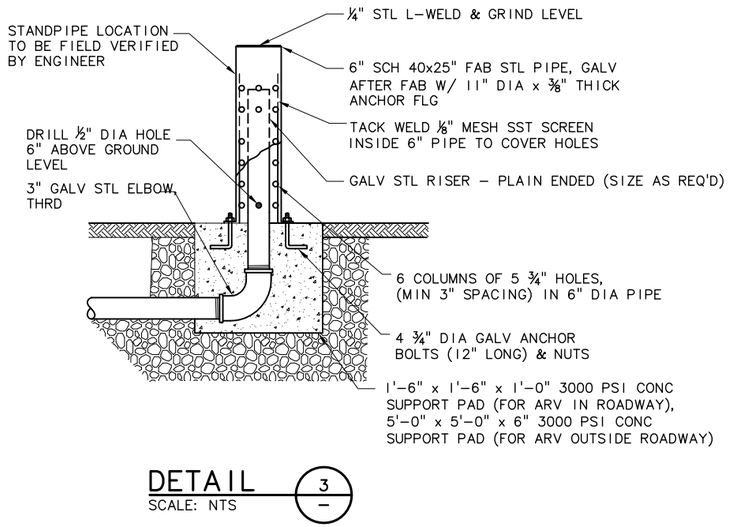
WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

PIPELINE DETAILS-3

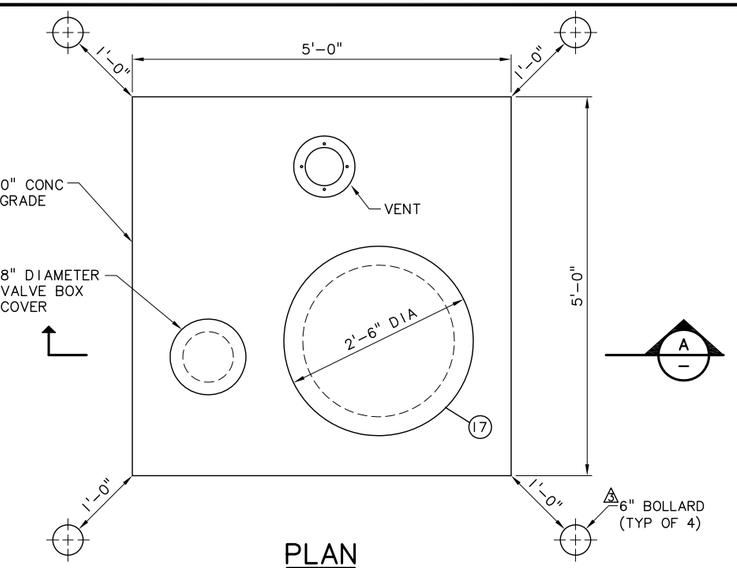
PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

SHEET DT-3 60 of 79

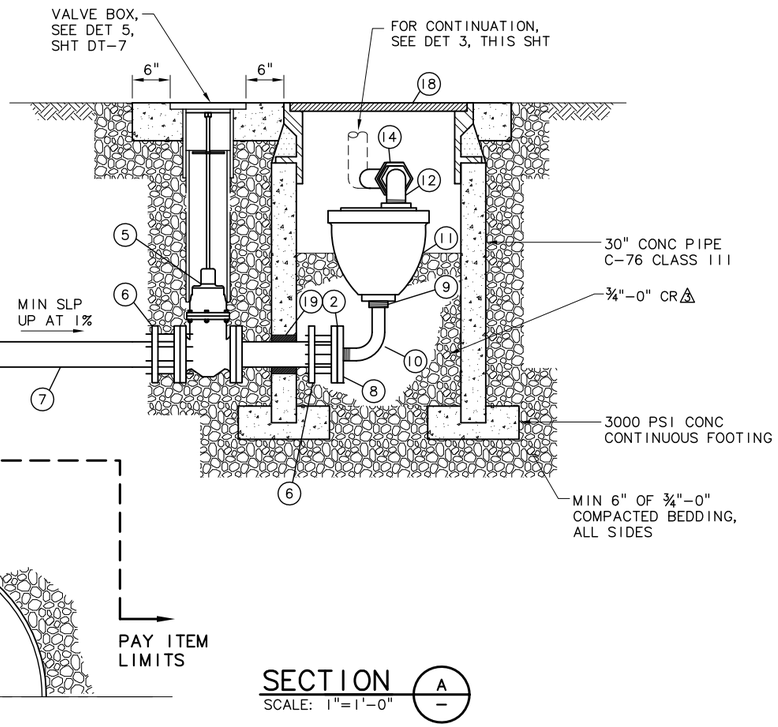




DETAIL 3
SCALE: NTS



PLAN



SECTION A
SCALE: 1"=1'–0"

MATERIAL LIST:

1. 48"x4" TEE, PExFLG
2. INSULATED FLG JT, SEE DET 8, SHT DT–14
3. 4" DI SPL, FLG, LENGTH AS REQ'D
4. 4" DI 90° BEND, FLG
5. 4" GV, FLG
6. 4" RFCA
7. 4" DI SPL, PE, LENGTH AS REQ'D
8. 4"x2" BRONZE COMPANION FLG
9. 2" BRONZE NIPPLE, THRD
10. 2" BRONZE 90° BEND, THRD
11. 2" AIR RELEASE VALVE, APCO 200A, OR EQUAL
12. 3" GALV STL ELBOW, THRD
13. 3" GALV STL NIPPLE, THRD
14. 3" GALV STL UNION, THRD
15. 3" GALV STL PIPING, THRD
16. FLG PIPE SUPPORT (STANDON S–89)
17. UTILITY VAULT NO. 444–LA
18. 30" H–20 TRAFFIC RATED TAMPER–PROOF MH COVER AND FRAME
19. ALL VAULT PENETRATIONS SHALL BE SEALED WITH WALL SLEEVE SEALS. USE LINK SEAL IN HOLES AROUND PIPE

NOTES:

1. ALL PIPE AND FITTINGS SHALL BE RESTRAINED.
2. VERIFY LOCATION ON OF VAULT AND STAND PIPE WITH ENGINEER.
3. INSTALL TWO BENDS AS REQUIRED BETWEEN GATE VALVE AND CARV TO FACILITATE CONNECTION.

AIR RELEASE VALVE SCHEDULE		
STA	SIZE (INCHES)	APCO MODEL NO.
B17+60	2	200A
C10+20	2	200A
D15+00	2	200A

2" AIR RELEASE VALVE IN ROADWAY 1
SCALE: NTS

2" AIR RELEASE VALVE OUTSIDE ROADWAY 2
SCALE: 1"=1'–0"

NO.	DATE	BY	REVISION
1	08/22/11	BVO	RECORD DRAWING

NOTICE
0 ½ 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

SMG DESIGNED
DAK DRAWN
MLH CHECKED

RECORD DRAWING
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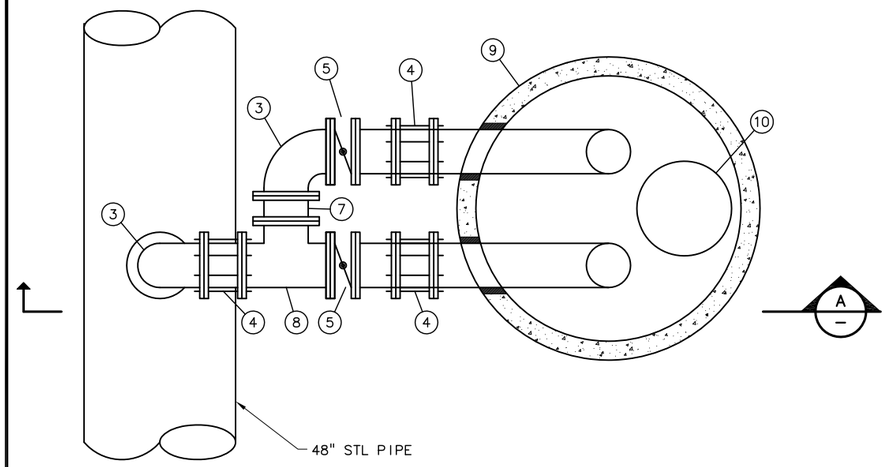
City of Sherwood Oregon

WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

PIPELINE DETAILS - 4

PROJECT NO.: 07–0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

SHEET DT–4
61 of 79

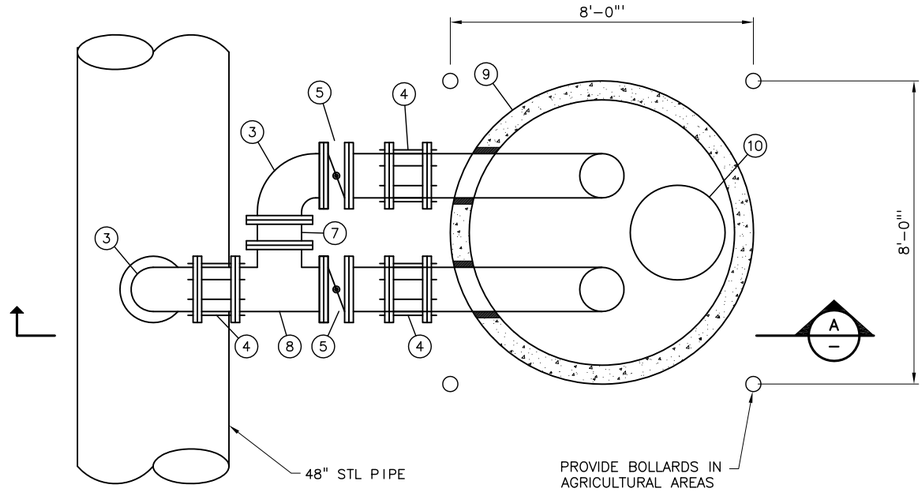


NOTE:

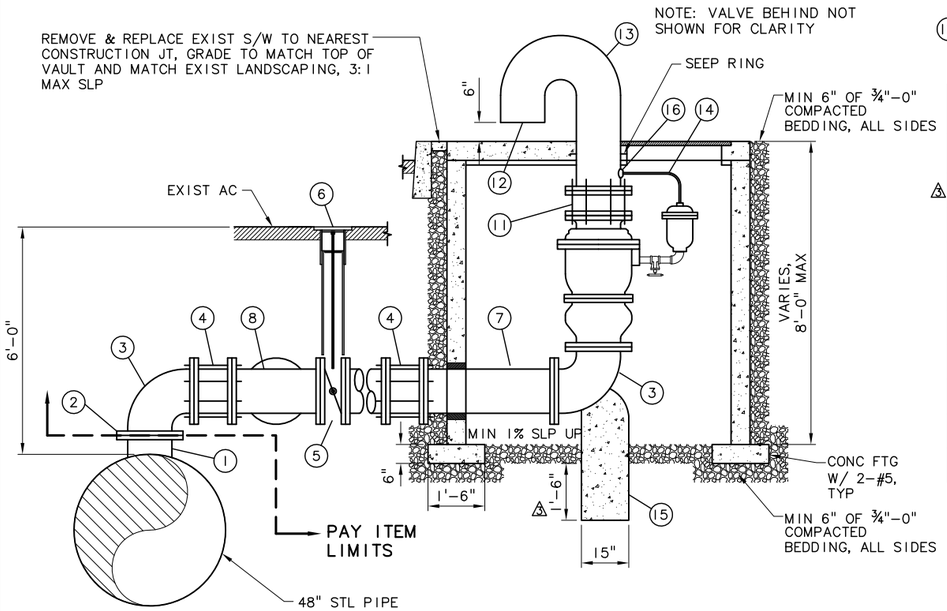
1. ALL VAULT PENETRATIONS SHALL BE SEALED WITH WALL SEALS. USE LINK SEAL IN HOLES AROUND PIPE.

PIPING SCHEDULE:

1. 48"x_" TEE, PExFLG*
2. INSULATED FLG JT, SEE DET_, SHT_
3. _" DI 90° BEND, FLG*
4. _" RFCA*
5. _" BFV, FLG*
6. VALVE BOX, SEE DET _, SHT _
7. _" DI SPL, FLG, LENGTH AS REQ'D*
8. _" DI TEE, FLG*
9. 84" STD MH
10. STD APWA 30" MH COVER & FRAME
11. _" FCA*
12. EXPANDED METAL SCREEN, WELD IN PLACE
13. CAST IN SLAB _" SCHED 40 STL PIPE W/ RETURN BEND, GALV AFTER FAB (TYP OF 2)*
14. 1" COPPER TUBING
15. 12" ADS PIPE FILLED W/ 3000 PSI CONC, WRAP FITTING IN POLYETHYLENE PLASTIC TO PROTECT FROM CONC, PROVIDE 18" EMBEDMENT
16. 1" WELD-O-LET



PLAN



SECTION

AIR/VACUUM VALVE IN ROADWAY (1)

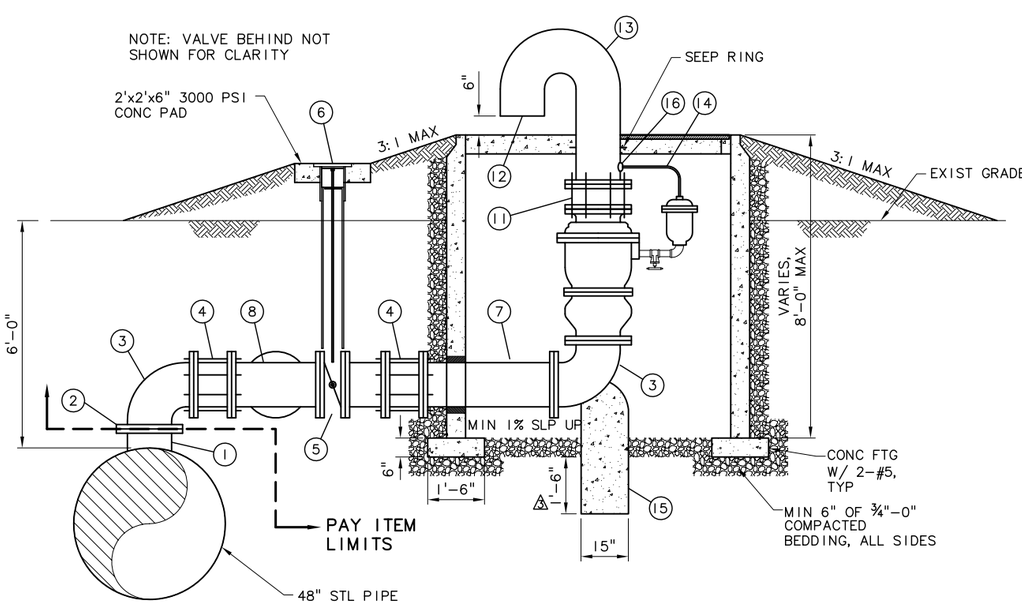
SCALE: ½" = 1'-0"

*SEE AIR/VACUUM VALVE SCHEDULE FOR SIZE

AIR/VACUUM VALVE SCHEDULE

STA	SIZE (INCHES)	TYPE	APCO MODEL NO.
A20+20	12	COMBINATION	1812
A30+80	12	COMBINATION	1812
A47+67	12	COMBINATION	1812
B9+40	10	SURGE CRITICAL	1710
B32+59	12	COMBINATION	1812
B43+43	10	COMBINATION	1810
C1+00	14	SURGE CRITICAL	1714
C22+80	12	COMBINATION	1812
C44+58	8	SURGE CRITICAL	1708

PLAN



SECTION

AIR/VACUUM VALVE OUTSIDE ROADWAY (2)

SCALE: ½" = 1'-0"

NO.	DATE	BY	REVISION
1	08/22/11	BVO	RECORD DRAWING

NOTICE: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

SMG DESIGNED | DAK DRAWN | MLH CHECKED

RECORD DRAWING
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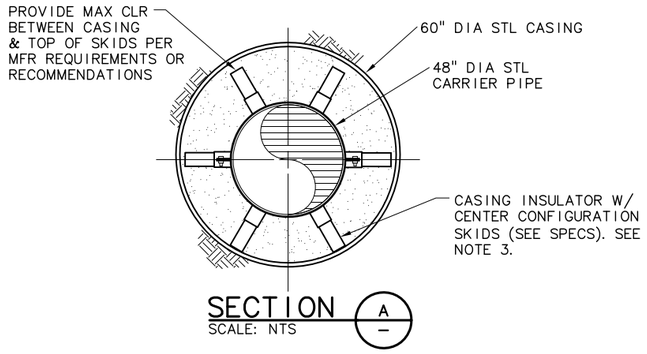
City of Sherwood Oregon

WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

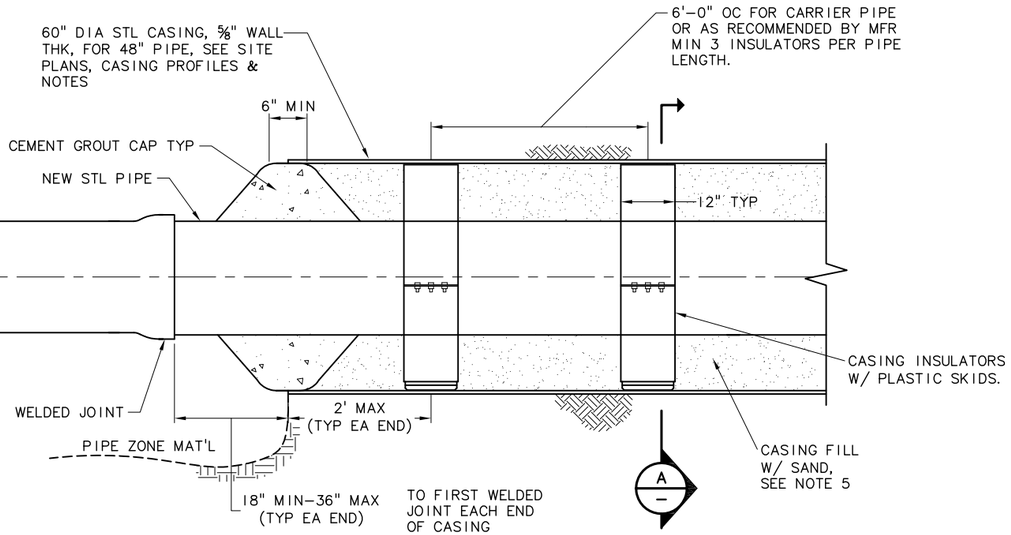
PIPELINE DETAILS-5

PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

SHEET DT-5



SECTION A/–
SCALE: NTS



CASING NOTES:

1. 60" ANSI/AWWA C200 STEEL CASING, AS REQUIRED.

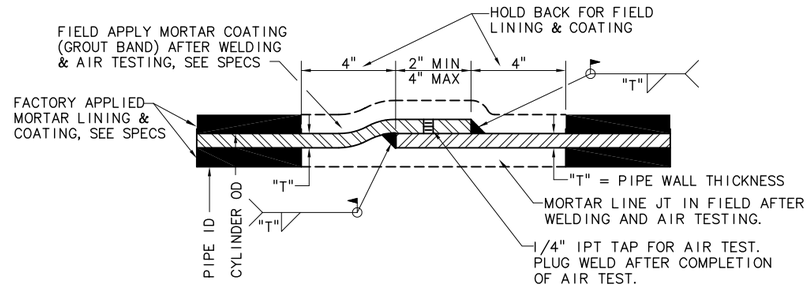
2. PROVIDE 2" MINIMUM CLEARANCE BETWEEN CASING AND CARRIER PIPE BELLS AND APPURTENANCES.

3. CONTRACTOR TO VERIFY CASING SIZES PRIOR TO SIZING AND ORDERING CASING INSULATORS.

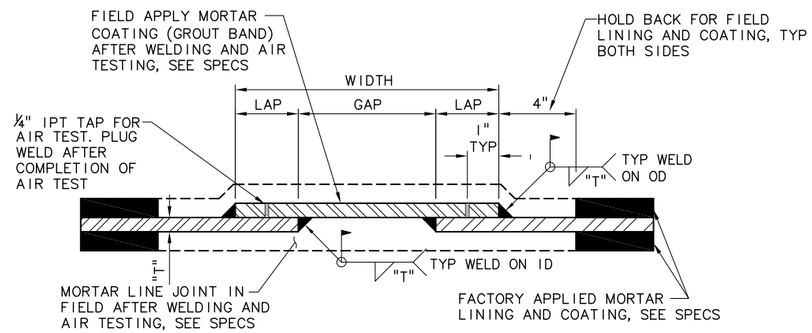
4. CASING SHALL BE FILLED WITH FINE CLEAN DRY SAND CAREFULLY AIR BLOWN IN SUCH A WAY AS TO ELIMINATE ANY VOIDS.

5. CARRIER PIPE INSTALLED WITHIN BORE PITS SHALL BE INSTALLED WITH THE SAME BEDDING AND BACKFILL REQUIREMENTS AS PIPELINES SEE TYPICAL TRENCH SECTION.

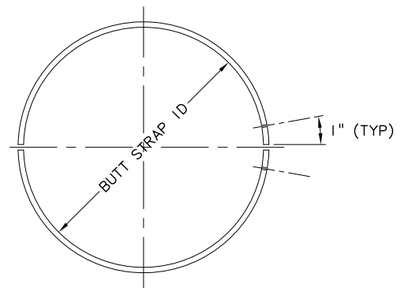
CASING DETAIL 1/–
SCALE: NTS



DOUBLE FILLET WELDED LAP JOINT 2/–
SCALE: NTS



BUTT STRAP JOINT 3/–
SCALE: NTS



BUTT STRAP DETAIL 4/–
SCALE: NTS

NO.	DATE	BY	REVISION
1	08/22/11	BVO	RECORD DRAWING

NOTICE: IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE (0, ½, 1)

SMG DESIGNED
DAK DRAWN
MLH CHECKED

RECORD DRAWING
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City of Sherwood Oregon

WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

PIPING DETAILS-6

PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

SHEET DT-6
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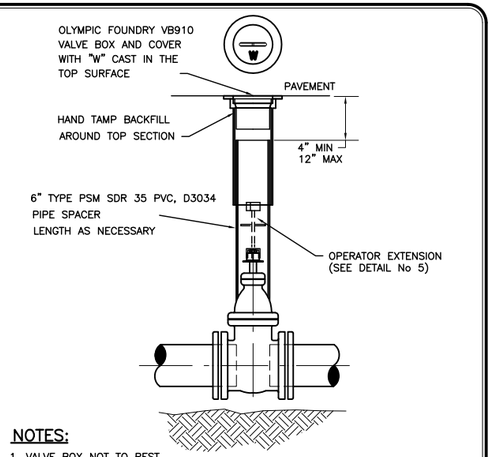
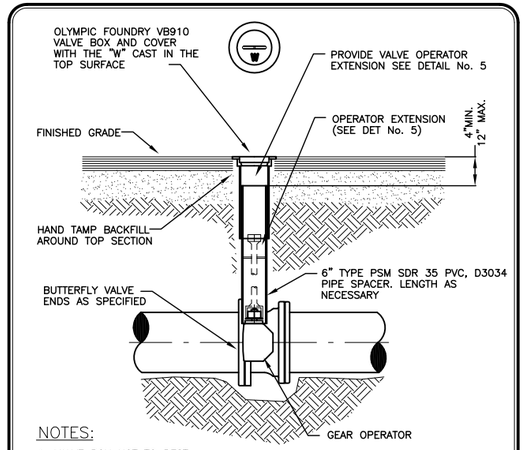


NOTES:

1. VALVE BOX NOT TO REST ON OPERATING ASSEMBLY
2. OPERATOR EXTENSION REQUIRED WHEN VALVE NUT IS DEEPER THAN 3 FEET FROM FINISHED GRADE
3. CENTER VALVE BOX ON AXIS OF OPER NUT
4. PROVIDE 24" SQUARE BY 4" THICK CONCRETE PAD AROUND VALVE BOX OUTSIDE OF PAVED AREAS
5. VALVE BOX COVER SHALL BE A MINIMUM OF 2½ " IN LENGTH

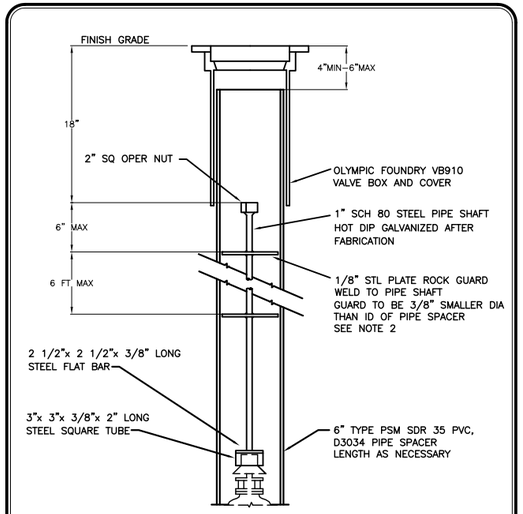
Tualatin Valley Water District | TYPICAL GATE VALVE SETTING DETAIL | DETAIL No. 3



NOTES:

1. VALVE BOX NOT TO REST ON OPERATING ASSEMBLY.
2. OPERATOR EXTENSION REQUIRED WHEN VALVE NUT IS DEEPER THAN 3 FEET FROM FINISHED GRADE.
3. CENTER VALVE BOX ON AXIS OF OPER. NUT.
4. PROVIDE 24" SQUARE BY 4" THICK CONCRETE PAD OUTSIDE OF PAVED AREAS
5. VALVE BOX COVER SHALL BE A MINIMUM OF 2½" IN LENGTH

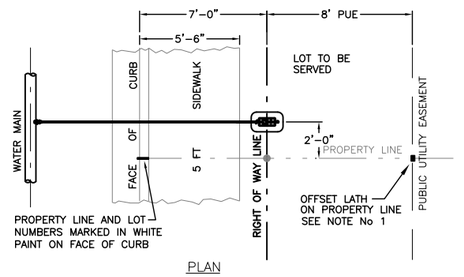
Tualatin Valley Water District | BUTTERFLY VALVE SETTING DETAIL | DETAIL No. 4



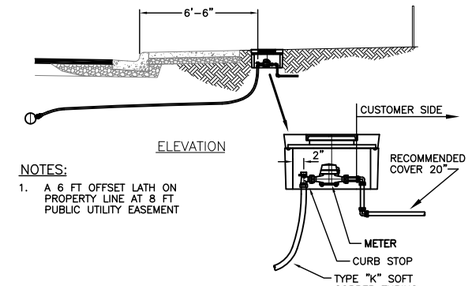
NOTES:

1. EXTEND 2" NUT TO WITHIN 18" OF FINISH GRADE WHEN VALVE NUT IS DEEPER THAN 3 FEET FROM FINISHED GRADE
2. WHERE DEPTH IS OVER 6 FEET. A SECOND PLATE WILL BE INSTALLED EQUALLY BETWEEN ROCK GUARD AND 2" VALVE NUT.

Tualatin Valley Water District | VALVE OPERATOR EXTENSION | DETAIL No. 5



PLAN

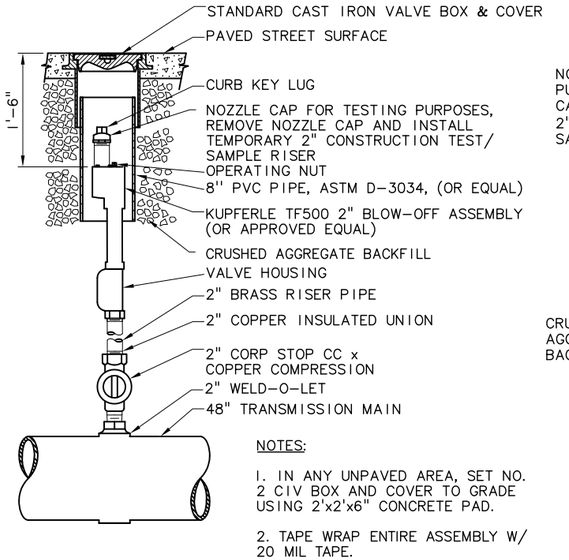


ELEVATION

NOTES:

1. A 6 FT OFFSET LATH ON PROPERTY LINE AT 8 FT PUBLIC UTILITY EASEMENT

Tualatin Valley Water District | SINGLE WATER SERVICE TYPICAL INSTALLATION | DETAIL No. 7

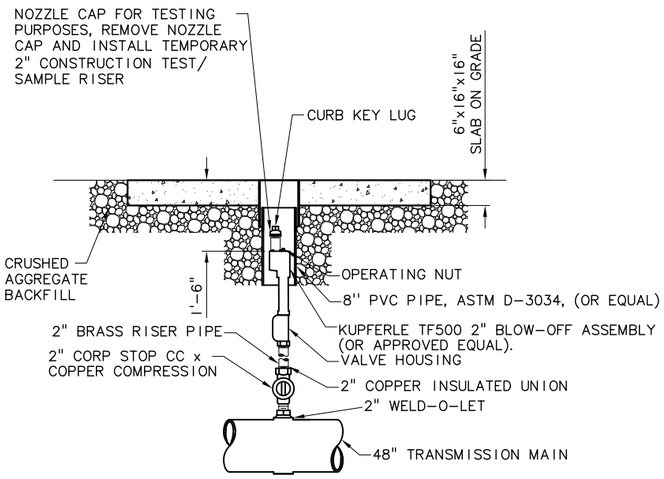


NOTES:

1. IN ANY UNPAVED AREA, SET NO. 2 CIV BOX AND COVER TO GRADE USING 2'x2'x6" CONCRETE PAD.
2. TAPE WRAP ENTIRE ASSEMBLY W/ 20 MIL TAPE.

TF500 AIR RELEASE AND BLOW-OFF ASSEMBLY (9)

SCALE: NTS



TF500 AIR RELEASE AND BLOW-OFF ASSEMBLY - AGRICULTURAL AREA (10)

SCALE: NTS

NO.	DATE	BY	REVISION
3	08/22/11	BVO	RECORD DRAWING

NOTICE: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

SMG DESIGNED | DAK DRAWN | MLH CHECKED

RECORD DRAWING
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WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

MISC DETAILS

PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

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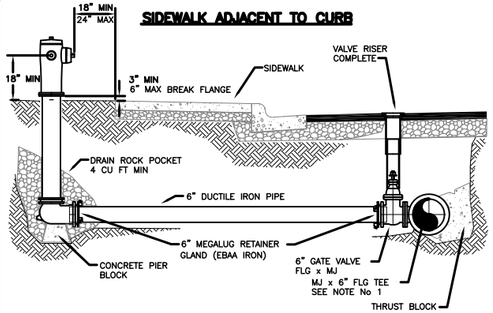
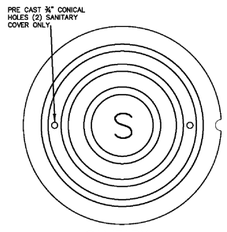
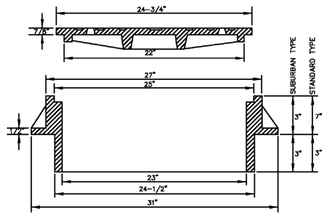


NOTES:

1. FOR CONNECTION TO EXISTING MAINS USE TAPPING SLEEVE IN ACCORDANCE WITH DISTRICT CONSTRUCTION SPECIFICATIONS.
2. PROVIDE A 3 FT CLEAR SPACE AROUND CIRCUMFERENCE OF FIRE HYDRANT.
3. PLACEMENT OF CONC. AROUND FH IS PROHIBITED.

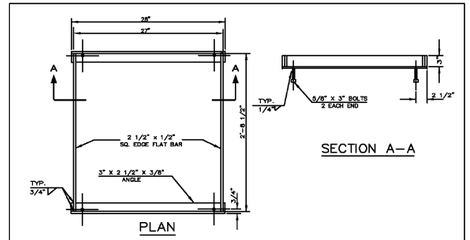
Tualatin Valley Water District | **FIRE HYDRANT STANDARD INSTALLATION** | DETAIL No. **101**

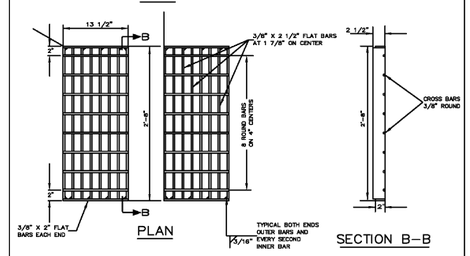




NOTES:
1. SUBURBAN TYPE NOT FOR USE IN TRAFFIC AREAS OF COLLECTOR AND ARTERIAL STREETS
2. COVER AND FRAME SHALL BE GRAY CAST IRON ASTM A-48 CLASS 30.
3. COVER AND FRAME TO BE MACHINED TO A TRUE BEARING ALL AROUND.
4. NOTCH LID FOR LIFTING HOOK.

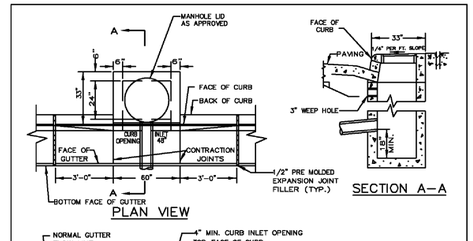
SUBURBAN AND STANDARD MANHOLE FRAME AND COVER SANITARY — DRAWING NO. 110 — REVISED 12-06 — Clean Water Services, Our commitment is clear.

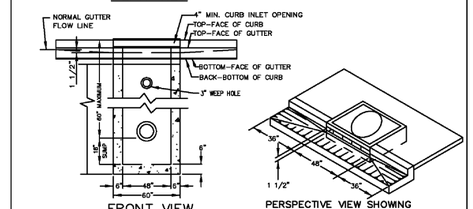




NOTE:
FRAME AND GRATE TO BE NEW STRUCTURAL ASTM A-36 FLAT BAR STEEL OR APPROVED EQUAL. ADDITIONAL THICKNESS AND REINFORCEMENT SHALL BE REQUIRED FOR STATE HIGHWAY APPLICATIONS.

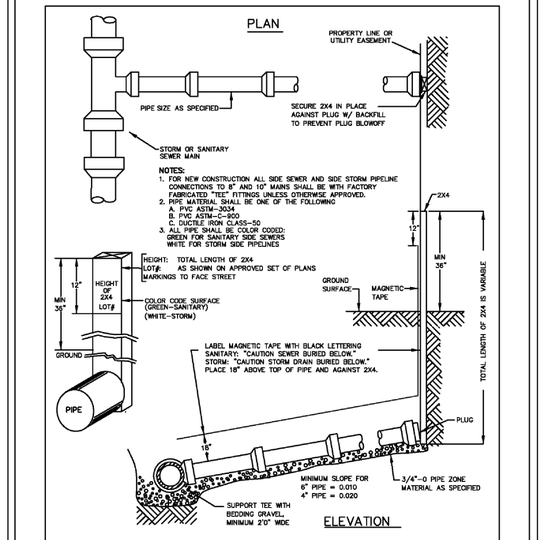
CATCH BASIN FRAME AND GRATE (CG-2) — DRAWING NO. 320 — REVISED 12-06 — Clean Water Services, Our commitment is clear.



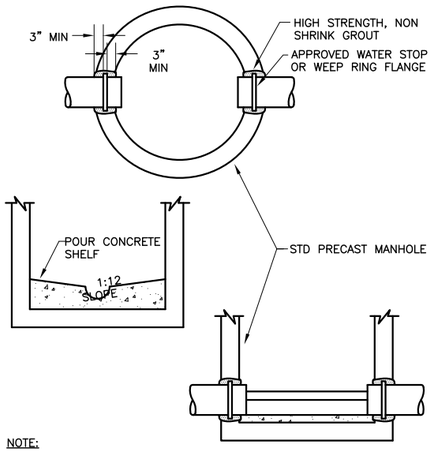


NOTES:
1. ALL FABRICATED METAL PARTS SHALL BE NEW STRUCTURAL, ASTM A-36 STEEL, AND BE HOT-DIPPED GALVANIZED AFTER FABRICATION.
2. ALL POURED IN PLACE CONCRETE SHALL HAVE A 28 DAY STRENGTH OF 3000 P.S.I. AND A SLUMP OF 2" TO 4".
3. INSTALL STEPS WHEN DISTANCE FROM TOP OF LID TO FLOW LINE IS GREATER THAN 48". SEE STD. DRAWING NO. 100. SET FIRST STEP 12" FROM TOP OF GRATE AND ALIGN WITH LID OPENING.
4. INSTALL STRUCTURE ON MINIMUM OF 8" OF ¾" TO 0" COMPACTED BASE MATERIAL.

INLET CATCH BASIN (CG-48) — DRAWING NO. 340 — REVISED 12-06 — Clean Water Services, Our commitment is clear.



SIDE SEWER / SIDE STORM PIPELINE — DRAWING NO. 520 — REVISED 12-06 — Clean Water Services, Our commitment is clear.



NOTE:

WHERE ALIGNMENT OR GRADE CHANGES EXCEED 7 1/2° OR THERE ARE DROPS THROUGH THE MANHOLE, THE PIPE MAY TERMINATE 2" INSIDE THE MANHOLE WALL. FORM SMOOTH CHANNEL TO 1/2 DEPTH OF PIPE THROUGH THE MANHOLE.

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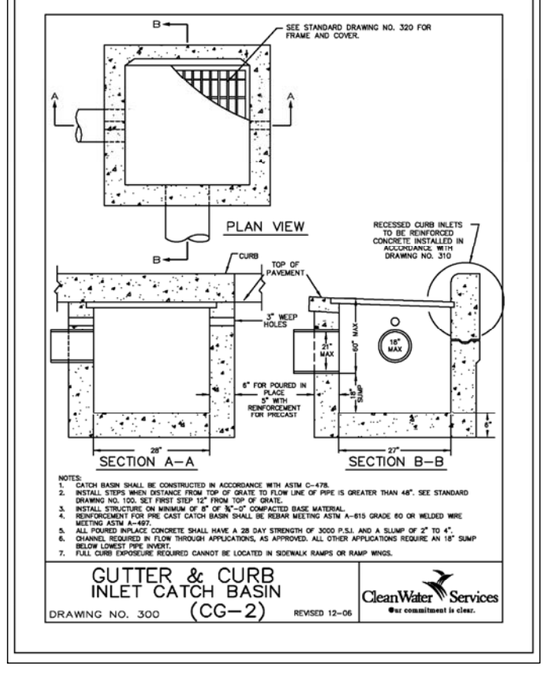
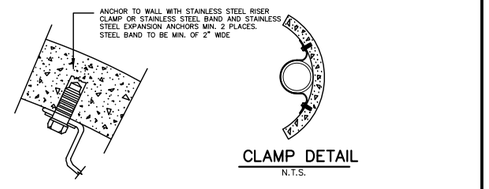
TYPICAL HDPE PIPE TO MANHOLE CONNECTION

SCALE: N.T.S | APPVD: – | DATE: 10-23-00 | DWG NO.: 24

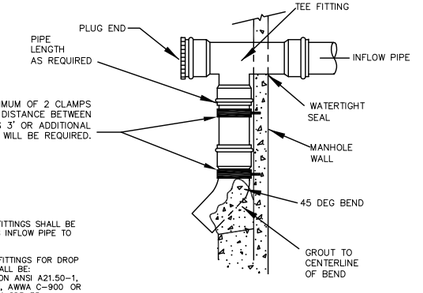


NOTES:
1. CATCH BASIN SHALL BE CONSTRUCTED IN ACCORDANCE WITH ASTM C-478.
2. INSTALL STEPS WHEN DISTANCE FROM TOP OF GRATE TO FLOW LINE OF PIPE IS GREATER THAN 48". SEE STANDARD DRAWING NO. 100. SET FIRST STEP 12" FROM TOP OF GRATE.
3. INSTALL STRUCTURE ON MINIMUM OF 8" OF ¾"-0" COMPACTED BASE MATERIAL.
4. REINFORCEMENT FOR PRE CAST CATCH BASIN SHALL BE REBAR MEETING ASTM A-615 GRADE 60 OR WELDED WIRE MEETING ASTM A-497.
5. ALL POURED INPLACE CONCRETE SHALL HAVE A 28 DAY STRENGTH OF 3000 P.S.I. AND A SLUMP OF 2" TO 4".
6. CHANNEL REQUIRED IN FLOW THROUGH APPLICATIONS, AS APPROVED. ALL OTHER APPLICATIONS REQUIRE AN 18" SUMP BELOW LOWEST PIPE INVERT.
7. FULL CURB EXPOSEURE REQUIRED CANNOT BE LOCATED IN SIDEWALK RAMPS OR RAMP WINGS.

GUTTER & CURB INLET CATCH BASIN (CG-2) — DRAWING NO. 300 — REVISED 12-06 — Clean Water Services, Our commitment is clear.



MECHANICAL INSIDE DROP (OPTIONAL)



NOTES:

1. PIPE AND FITTINGS SHALL BE SAME SIZE AS INFLOW PIPE TO MANHOLE.
2. PIPE AND FITTINGS FOR DROP ASSEMBLY SHALL BE: DUCTILE IRON ANSI A21.50-1, AWWA C150-1, AWWA C-900 OR PVCASTM 3034 SDR 35.

MECHANICAL INSIDE DROP MANHOLE — DRAWING NO. 060 — REVISED 12-06 — Clean Water Services, Our commitment is clear.

NO.	DATE	BY	REVISION
4	08/22/11	BVO	RECORD DRAWING

NOTICE: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

SMG DESIGNED | DAK DRAWN | MLH CHECKED

RECORD DRAWING SEE DISCLAIMER, SHEET 1. VERSION 4.1 12-9-97

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

City of Sherwood Oregon

WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

MISC DETAILS

PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

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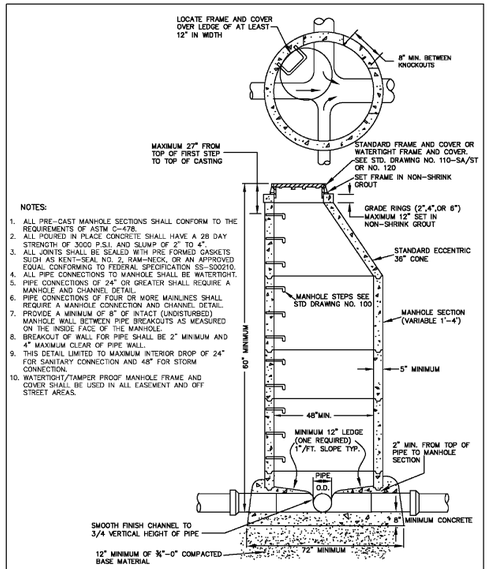


NOTES:

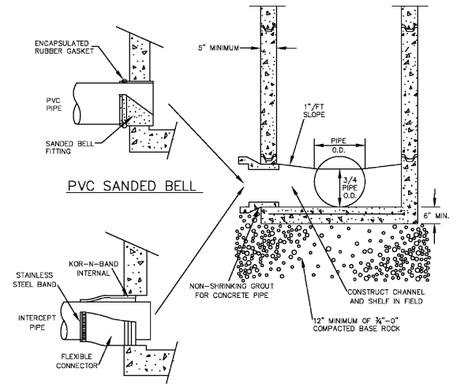
1. ALL PRE-CAST MANHOLE SECTIONS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C-478.
2. ALL POURED IN PLACE CONCRETE SHALL HAVE A 28 DAY STRENGTH OF 3000 P.S.I. AND SLUMP OF 2" TO 4".
3. ALL JOINTS SHALL BE SEALED WITH PRE FORMED GASKETS SUCH AS KENT-SEAL NO. 2, RAM-NECK, OR AN APPROVED EQUAL CONFORMING TO FEDERAL SPECIFICATION SS-S00210.
4. ALL PIPE CONNECTIONS TO MANHOLE SHALL BE WATERTIGHT.
5. PIPE CONNECTIONS OF 24" OR GREATER SHALL REQUIRE A MANHOLE AND CHANNEL DETAIL.
6. PIPE CONNECTIONS OF FOUR OR MORE MAINLINES SHALL REQUIRE A MANHOLE CONNECTION AND CHANNEL DETAIL.
7. PROVIDE A MINIMUM OF 8" OF INTACT (UNDISTURBED) MANHOLE WALL BETWEEN PIPE BREAKOUTS AS MEASURED ON THE INSIDE FACE OF THE MANHOLE.
8. BREAKOUT OF WALL FOR PIPE SHALL BE 2" MINIMUM AND 4" MAXIMUM CLEAR OF PIPE WALL.
9. THIS DETAIL LIMITED TO MAXIMUM INTERIOR DROP OF 24" FOR SANITARY CONNECTION AND 48" FOR STORM CONNECTION.
10. WATERTIGHT/TAMPER PROOF MANHOLE FRAME AND COVER SHALL BE USED IN ALL EASEMENT AND OFF STREET AREAS.

STANDARD MANHOLE

DRAWING NO. 010 REVISED 02-03

CleanWater Services — Our commitment is clear.

NOTES:
ALL PRE-CAST MANHOLE SECTIONS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C-478 AND APPLICABLE PROVISIONS OF STANDARD DRAWING NO. 010.



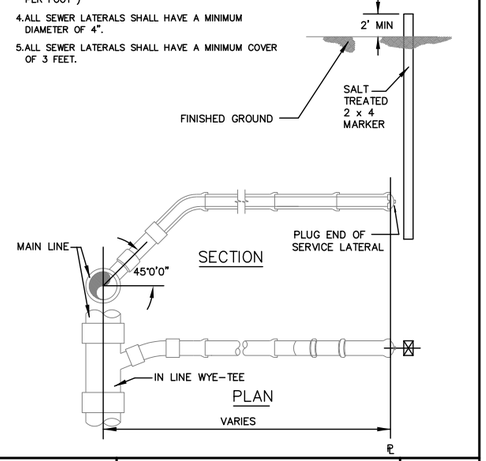
PRECAST CONCRETE MANHOLE BASE

DRAWING NO. 020 REVISED 05-07

CleanWater Services — Our commitment is clear.

SEWER SERVICE LATERAL CONNECTION NOTES :

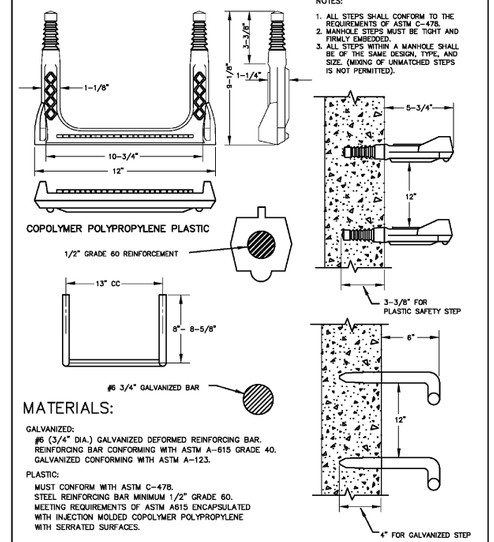
1. WHERE A SEWER SERVICE LATERAL CONNECTS TO A MANHOLE AND NO INVERT ELEVATION FOR THE SERVICE LATERAL IS INDICATED , THE TOP (CROWN) ELEVATION OF THE SERVICE LATERAL PIPE SHALL BE AT LEAST 0.2' HIGHER THAN THE TOP (CROWN) ELEVATION OF THE THE LOWEST PIPE CONNECTED TO THE MANHOLE.
2. SEWER LATERALS TAPPED INTO AN EXISTING SEWER MAIN SHALL BE CONNECTED USING A PIPE SADDLE AS MANUFACTURED BY "SEALTITE", OR AN APPROVED EQUAL.
3. MINIMUM GRADE FOR SEWER SERVICE CONNECTION SHALL BE 2% (1/4" PER FOOT)
4. ALL SEWER LATERALS SHALL HAVE A MINIMUM DIAMETER OF 4".
5. ALL SEWER LATERALS SHALL HAVE A MINIMUM COVER OF 3 FEET.



Murray, Smith & Associates, Inc. Engineers/Planners — 121 S.W. Salmon, Suite 900, Portland, Oregon 97204 — PHONE 503-225-9010 FAX 503-225-9022	SEWER SERVICE LATERAL CONNECTION	SCALE: N.T.S APPVD: – DATE: 10-23-00 DWG NO.: S-2

NOTES:

1. ALL STEPS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C-478.
2. MANHOLE STEPS MUST BE TIGHT AND FIRMLY EMBEDDED.
3. ALL STEPS WITHIN A MANHOLE SHALL BE OF THE SAME DESIGN, TYPE, AND SIZE. (MIXING OF UNMATCHED STEPS IS NOT PERMITTED).



MATERIALS:

GALVANIZED:
#6 (3/4" DIA.) GALVANIZED DEFORMED REINFORCING BAR. REINFORCING BAR CONFORMING WITH ASTM A-615 GRADE 40. GALVANIZED CONFORMING WITH ASTM A-123.

PLASTIC:
MUST CONFORM WITH ASTM C-478. STEEL REINFORCING BAR MINIMUM 1/2" GRADE 60. MEETING REQUIREMENTS OF ASTM A615 ENCAPSULATED WITH INJECTION MOLDED COPOLYMER POLYPROPYLENE WITH SERRATED SURFACES.

MANHOLE STEP

DRAWING NO. 100 REVISED 02-03

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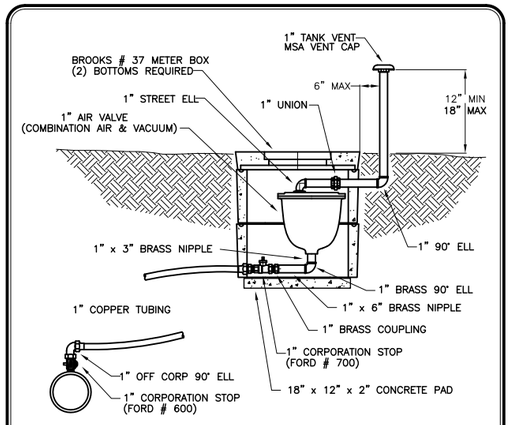
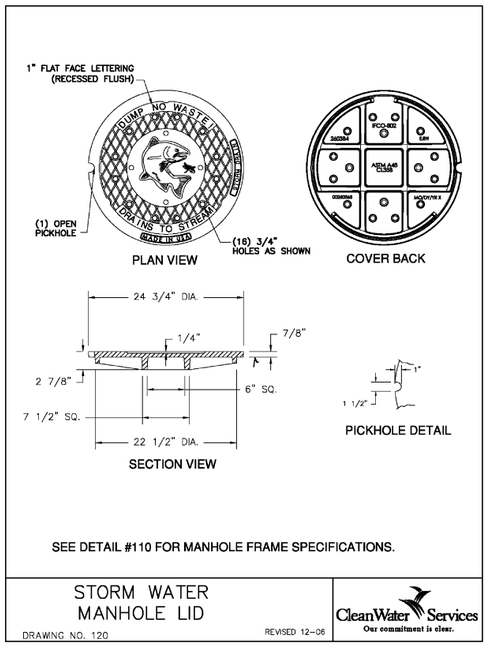


NOTES:

1. FOR 12" AND SMALLER WATER MAINS
2. VENT PIPING TO BE GALVANIZED
3. SLOPE COPPER TUBING FROM MAIN UP TO AIR VALVE 1% MIN
4. LOCATION SIMILAR TO METER BOX DETAIL NO 7 SEE
5. SEE WATER SYSTEM STANDARDS FOR CORPORATION STOPS, FLARE OR COMPRESSION AS SPECIFIED

Tualatin Valley Water District	1" COMBINATION AIR & VACUUM VALVE	DETAIL No. 601



SEE DETAIL #110 FOR MANHOLE FRAME SPECIFICATIONS.

STORM WATER MANHOLE LID

DRAWING NO. 120 REVISED 12-06

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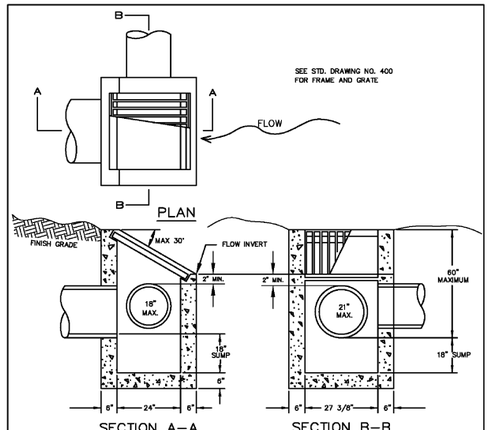

NOTES:

1. ALL PRE CAST SECTIONS SHALL CONFORM TO REQUIREMENTS OF ASTM C-478.
2. INSTALL STRUCTURE ON MINIMUM OF 8" OF 3/4" - 0" COMPACTED BASE MATERIAL.
3. PRE CAST REINFORCEMENT SHALL BE REBAR MEETING ASTM A615 GRADE 60 OR WELDED WIRE MEETING ASTM A497
4. ALL POURED IN PLACE CONCRETE SHALL HAVE A 28 DAY STRENGTH OF 3000 PSI AND SLUMP OF 2" TO 4".
5. PRE-CAST STRUCTURE'S CONFORMING TO O.D.O.T. TYPE G-2 CATCH BASIN DESIGN/WITH DITCH INLET TOP ARE AN ACCEPTABLE ALTERNATE. ALL GRATE MATERIALS SHALL MEET C.W.S. STANDARDS AS SHOWN ON DETAIL #400

DITCH INLET

DRAWING NO. 390 REVISED 12-06

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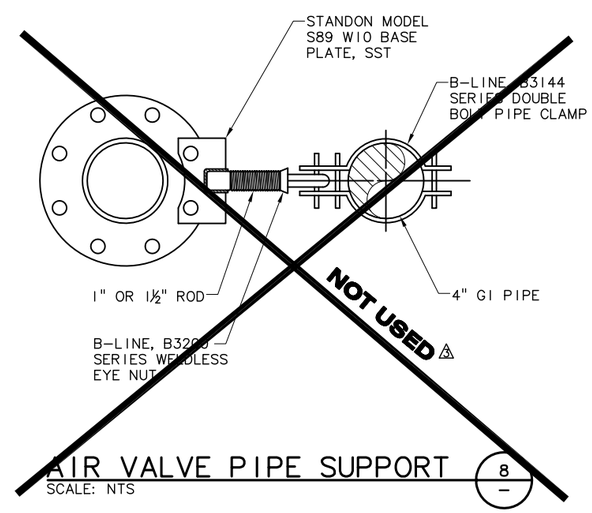

AIR VALVE PIPE SUPPORT

SCALE: NTS

8 –

NO.	DATE	BY	REVISION
4	08/22/11	BVO	RECORD DRAWING

NOTICE
0 ½ 1
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MLH CHECKED

RECORD DRAWING
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12-9-97

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City of Sherwood Oregon

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MISC DETAILS

PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

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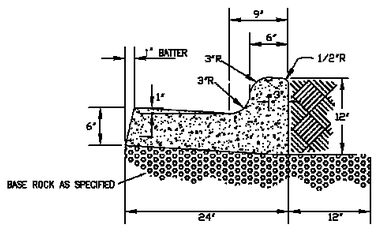
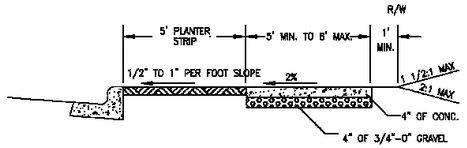
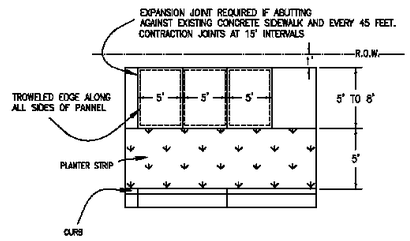


REVISIONS	DATE	STANDARD DRAWING TITLE	DRAWING NUMBER
R-0	11-09-98	CURB AND GUTTER	ST-1
R-1, Revised Title Block	08-01-06		
R-2, Revised Title	12-12-06	APPROVED BY	DATE

12

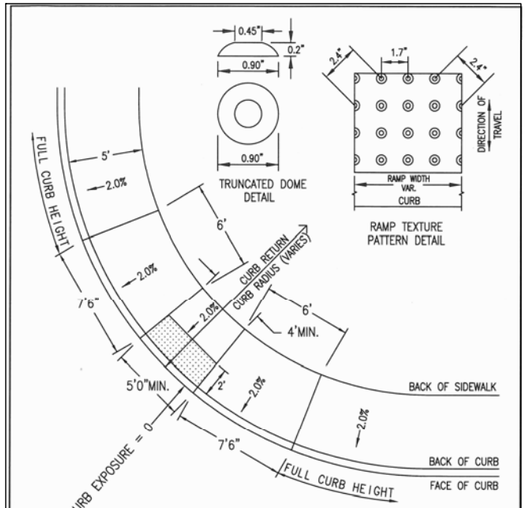


STANDARD PROPERTY LINE TYPE



REVISIONS	DATE	STANDARD DRAWING TITLE	DRAWING NUMBER
R-0	08-01-06	TYPICAL SIDEWALK	ST-2
R-1, Revised Title/Notes	08-01-06		
R-2, Revised Title	12-12-06	APPROVED BY	DATE

18



NOTES:
1. PLANTER STRIP DETAIL – REFER TO ODOT STANDARD DRAWING RD 755 (SIDEWALK RAMP DETAIL)
2. PLACE TRUNCATED DOME DETECTABLE WARNING TEXTURE IN THE LOWER 24" OF THE THROAT OF THE RAMP ONLY. ARRANGE DOMES USING IN-LINE PATTERN ONLY AS SHOWN IN DETAIL RIGHT. COLOR OF TEXTURE TO BE SAFETY YELLOW. FOR CONSTRUCTION OF SIDEWALK RAMPS OUTSIDE OF PUBLIC RIGHT-OF-WAY, CHECK WITH STATE BUILDING CODES.

REVISIONS	DATE	STANDARD DRAWING TITLE	DRAWING NUMBER
R-0	12-12-06	WHEELCHAIR / BIKE RAMP Attached Sidewalk	ST-7
		APPROVED BY	DATE

NOTES:

1. CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH OF 3300 PSI @ 28 DAYS.
2. EXPANSION JOINTS SHALL BE PROVIDED AT:
   A. AT EACH POINT OF TANGENCY OF THE CURB.
   B. AT EACH COLD JOINT.
   C. AT EACH SIDE OF STRUCTURES.
   D. AT EACH SIDE OF DRIVEWAYS.
   E. AT LOCATIONS NECESSARY TO LIMIT SPACING TO 45 FEET.
3. EXPANSION JOINT MATERIAL SHALL BE PREFORMED FILLER TYPE, NON-EXTRUDING MATERIAL OR EQUAL, EXTENDING FROM SUBGRADE TO NOT LESS THAN 1/8" WITHIN FINISH GRADE. EXPANSION JOINT SHALL BE NOT LESS THAN 1/2" WIDE.
4. CONTRACTION JOINTS:
   A. SPACING TO BE NOT MORE THAN 15 FEET.
   B. JOINT DEPTH SHALL BE ONE-THIRD OF THE THICKNESS OF THE CONCRETE AND A MINIMUM OF 1 1/2".
   C. JOINT SHALL BE NOT LESS THAN 1/8 INCH NOR MORE THAN 1/4 INCH WIDE.
5. BASE ROCK TO MATCH STREET SECTION. BASE ROCK UNDER CURB SHALL BE TO SUBGRADE OF STREET STRUCTURE OR 10 INCHES IN DEPTH, WHICHEVER IS GREATER.
6. CONTRACTION JOINTS IN CURB AND SIDEWALK SHALL ALIGN.
7. CURING COMPOUND MUST BE VISIBLE AND BE SPREAD EVENLY.
8. CONCRETE TESTS SHALL BE PERFORMED DURING CURB PLACEMENT. ONE SET OF 3 CYLINDERS SHALL BE CAST FOR EACH 300 L.F. OF CURB OR 20 C.Y. OF CONCRETE. MAXIMUM 1 SET PER DAY. FOR EACH SET OF 3 CYLINDERS TEST FOR SLUMP, AIR CONTENT AND CONCRETE TEMPERATURE.
9. CONCRETE TO HAVE ENTRAINED AIR, 5% TO 7%, MAXIMUM.
10. BEFORE CURBS ARE INSTALLED A WHEEL ROLL TEST CONSISTING OF A FULLY LOADED TANDEM AXLE TRUCK OF APPROXIMATELY 50,000 LBS WILL BE WITNESSED BY THE CITY INSPECTOR AND A REPRESENTATIVE OF THE ENGINEERING GROUP THAT DESIGNED THE PROJECT.
11. ALL PUBLIC AND PRIVATE UTILITIES (CONDUITS) SHALL BE IN PLACE BEFORE CURBS ARE INSTALLED.
12. DRAINAGE BLOCKOUT –
    A. BLOCKOUTS ALLOWED BY VARIANCE ONLY, FOR EXISTING STRUCTURES, WHERE LATERAL CONNECTION TO EXISTING STORM DRAINAGE SYSTEM IS NOT FEASIBLE
    B. 3" I.D. ABS PLASTIC PIPE WITH COUPLING
    C. DRAINAGE ACCESS THROUGH EXISTING CURB SHALL BE CORE DRILLED

REVISIONS	DATE	STANDARD DRAWING TITLE	DRAWING NUMBER
R-0	11-09-98	CURB NOTES	ST-1-1
R-1, Revised Notes	08-01-06		
R-2, Revised Title	12-12-06	APPROVED BY	DATE

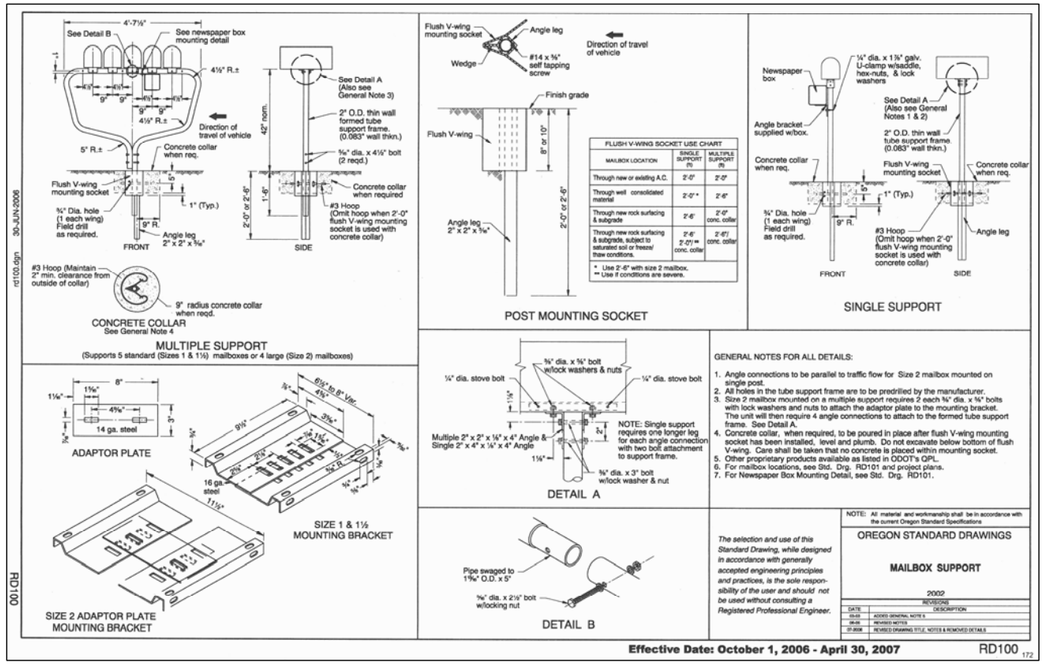
13

NOTES:

1. CONCRETE SHALL BE A MINIMUM 3300 PSI AT 28 DAYS.
2. EXPANSION JOINT MATERIAL SHALL BE PREFORMED FILLER TYPE, NON EXTRUDING MATERIAL OR EQUAL, EXTENDING FROM SUBGRADE TO NOT LESS THAN 1/8" WITHIN FINISH GRADE. EXPANSION JOINT MATERIAL SHALL BE NOT LESS THAN 1/2" WIDE. MATCH ALL SIDEWALK JOINTS WITH CURB JOINTS.
3. CONTRACTION JOINTS:
   A. SPACING TO BE NOT MORE THAN 15 FEET.
   B. THE DEPTH OF THE JOINT SHALL BE ONE-THIRD THE THICKNESS OF THE CONCRETE.
   C. JOINT SHALL BE NOT LESS THAN 1/8 INCH NOR MORE THAN 1/4 INCH WIDE.
4. SIDEWALK SHALL HAVE A MINIMUM THICKNESS OF 6" WHEN PART OF A RESIDENTIAL DRIVEWAY AND A MINIMUM THICKNESS OF 8" WHEN PART OF A COMMERCIAL DRIVEWAY, OTHERWISE SIDEWALK SHALL HAVE MINIMUM THICKNESS OF 4".
5. ALL SIDEWALKS SHALL HAVE A BROOMED SURFACE UNLESS OTHERWISE SPECIFIED. FINISHED SURFACES SHALL BE FREE OF HUMPS, SAGS, OTHER IRREGULARITIES. ALL SURFACES SHALL BE BROOMED TRANSVERSE TO THE DIRECTION OF TRAFFIC. THE EDGES SHALL BE FINISHED WITH A 3" SHINE ON ALL EDGES.
6. TOOLED "DUMMY" JOINTS AT 5' NOMINAL INTERVALS.
7. IF DRAIN BLOCKOUTS IN CURBS ARE APPROVED, THEY SHALL BE EXTENDED PERPENDICULAR TO CURB TO 1' PAST BACK OF SIDEWALK WITH A 3" DIAMETER ABS PIPE. CONTRACTION JOINT SHALL BE PLACED OVER PIPE.

REVISIONS	DATE	STANDARD DRAWING TITLE	DRAWING NUMBER
R-0	08-01-06	SIDEWALK NOTES	ST-2-1
R-1, Note 4/Rev Title	12-12-06		
		APPROVED BY	DATE

17



Effective Date: October 1, 2006 - April 30, 2007 RD100 172

NO.	DATE	BY	REVISION
A	08/22/11	BVO	RECORD DRAWING

NOTICE
0 ½ 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

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DAK DRAWN
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RECORD DRAWING
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City of Sherwood Oregon

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MISC DETAILS

PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

SHEET
DT-10
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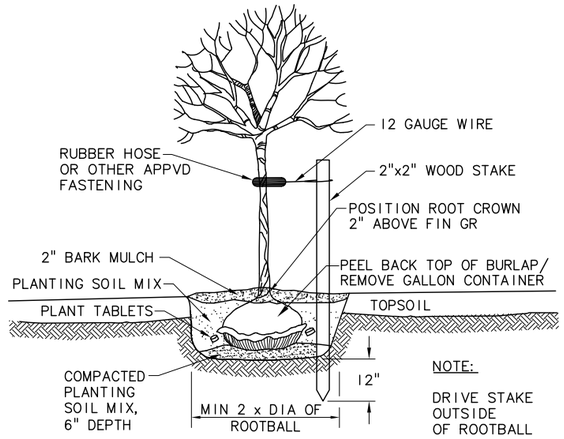
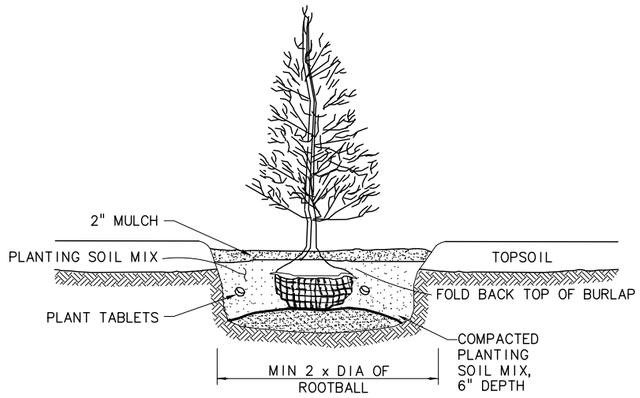
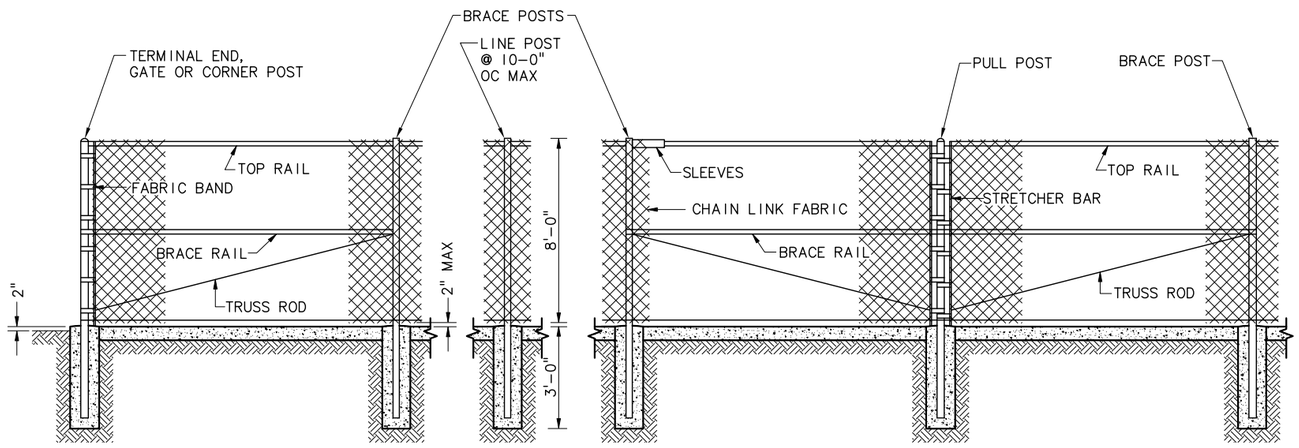


DECIDUOUS TREE PLANTING (1)
SCALE: NTS



EVERGREEN TREE PLANTING (2)
SCALE: NTS



CHAIN LINK FENCE (3)
SCALE: NTS

NO.	DATE	BY	REVISION
2	08/22/11	BVO	RECORD DRAWING

NOTICE
0 ½ 1
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RECORD DRAWING
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WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

MISC DETAILS

PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

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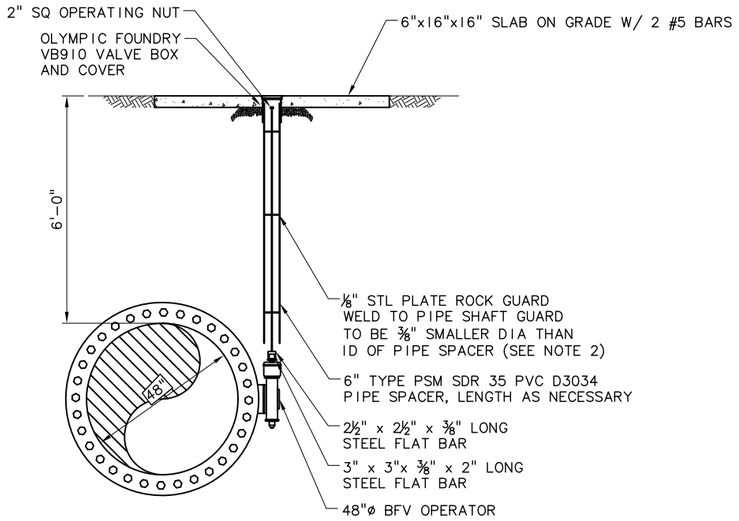


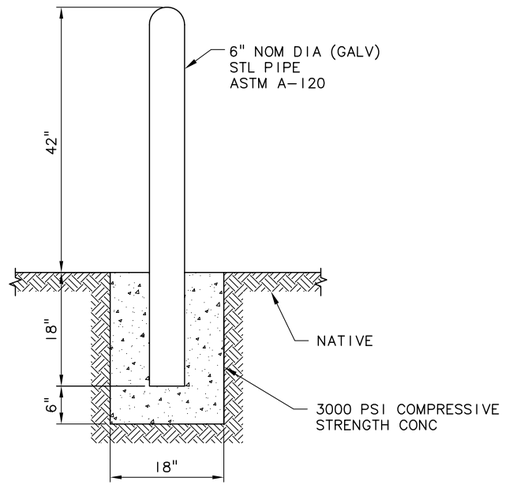
NOTES:

1. EXTEND 2" NUT TO WITHIN 18" OF FINISH GRADE WHEN VALVE NUT IS DEEPER THAN 3 FEET FROM FINISHED GRADE.

2. WHERE DEPTH IS OVER 6 FEET, A SECOND PLATE WILL BE INSTALLED EQUALLY BETWEEN ROCK GUARD AND 2" VALVE NUT.

48" BFV BOX IN AGRICULTURAL AREA (1/–)

SCALE: NTS



BOLLARD DETAIL (2/–)

SCALE: NTS

NO.	DATE	BY	REVISION
1	08/22/11	BVO	RECORD DRAWING

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City of Sherwood Oregon

WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

MISC DETAILS

PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

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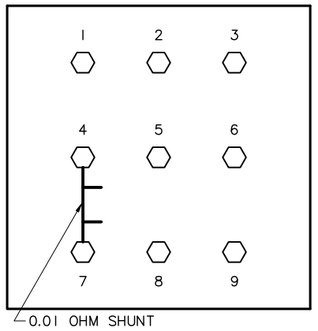

TYPE A
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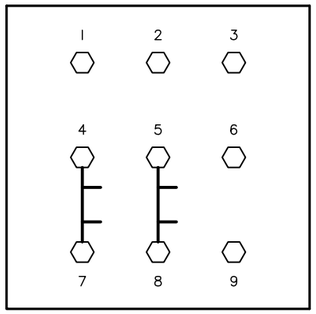

TYPE B
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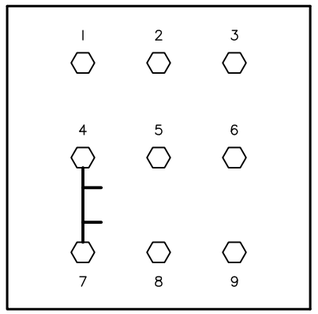
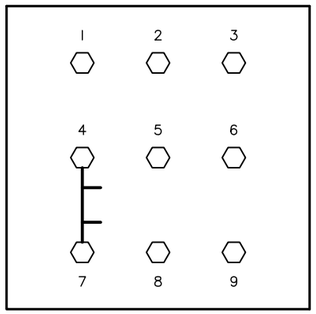
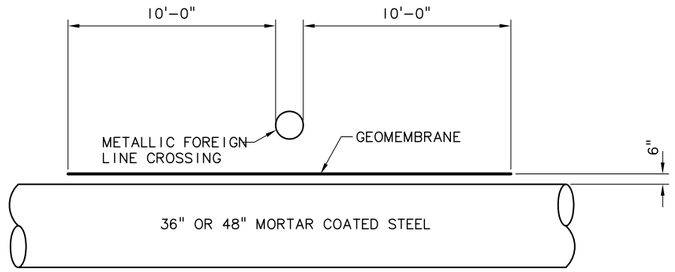
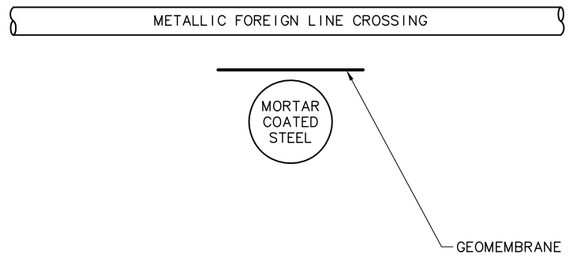


TYPE C
(INSULATION JOINT)



TYPE D
(FOREIGN LINE CROSSING)





NOTE: GEOMEMBRANE TO BE 6 FEET WIDE.

TS TYPE	#1			#2			#3			#4			#5			#6			#7			#8			#9		
	IDENTIFICATION	WIRE SIZE	COLOR CODE	IDENTIFICATION	WIRE SIZE	COLOR CODE	IDENTIFICATION	WIRE SIZE	COLOR CODE	IDENTIFICATION	WIRE SIZE	COLOR CODE	IDENTIFICATION	WIRE SIZE	COLOR CODE	IDENTIFICATION	WIRE SIZE	COLOR CODE	IDENTIFICATION	WIRE SIZE	COLOR CODE	IDENTIFICATION	WIRE SIZE	COLOR CODE	IDENTIFICATION	WIRE SIZE	COLOR CODE
A	N	12	BL							N	8	BL							A	12	BK				R	12	Y
B	N/US	12	BL	N/DS	12	W	N/US	6	BL	N/US	8	BL	N/DS	8	W	N/DS	6	W	A	12	BK	A	12	BK	R	12	Y
C	N	12	BL	NP	12	G				N	8	BL	NP	8	G				A	12	BK				R	12	Y
D	N	12	BL	F G/W	12	O				N	8	BL	F G/W	8	O				A	12	BK				R	12	Y

IDENTIFICATION

N = NEW PIPE
N/US = NEW PIPE (UP STATION)
N/DS = NEW PIPE (DOWN STATION)
E = EXISTING PIPE
NP = NON-PROTECTED
F = FOREIGN PIPE (G=GAS, W=WATER)
A = ANODE
R = REFERENCE ELECTRODE

WIRE SIZE

#8 & 12
#6, 8, & 12
#6, 8, & 12
#8 & 12
#8 & 12
#8 & 12
#12
#12

COLOR CODE

BL = BLUE
BL = BLUE
W = WHITE
G = GREEN
G = GREEN
O = ORANGE
BK = BLACK
Y = YELLOW

TEST STATION WIRING (1/-)
SCALE: NTS

GEOMEMBRANE INSTALLATION (2/-)
SCALE: NTS

TEST STATION IDENTIFICATION & COLOR CODE (3/-)
SCALE: NTS

NO.	DATE	BY	REVISION
1	08/22/11	BVO	RECORD DRAWING

NOTICE
0 ½ 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

SMG DESIGNED
DAK DRAWN
MLH CHECKED

RECORD DRAWING
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VERSION 4.1
12-9-97

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Engineers/Planners
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Portland, Oregon 97204 FAX 503-225-9022

City of Sherwood Oregon

WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

CORROSION CONTROL DETAILS-1

PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

SHEET
DT-13
70 of 79

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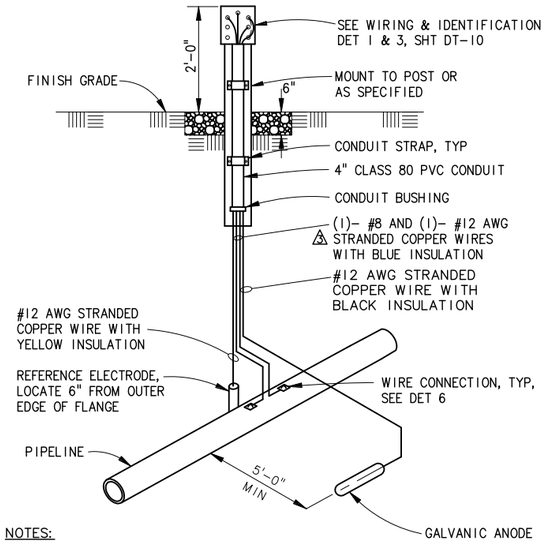


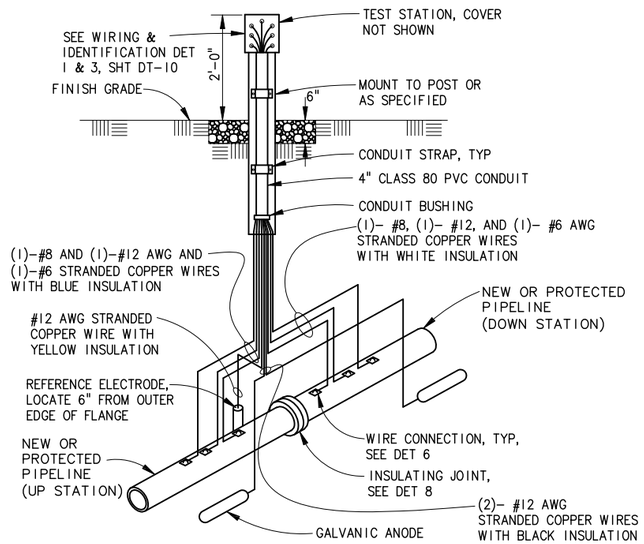
NOTES:

1. INSTALL GALVANIC ANODE 1'-0" BELOW PIPE INVERT ELEVATION.
2. INSTALL 2½" SQUARE ¾"-0" ROCK BLANKET AROUND ALL TEST STATION POSTS.

POST MOUNTED TEST STATION (TS) TYPE A – STANDARD

1 / –

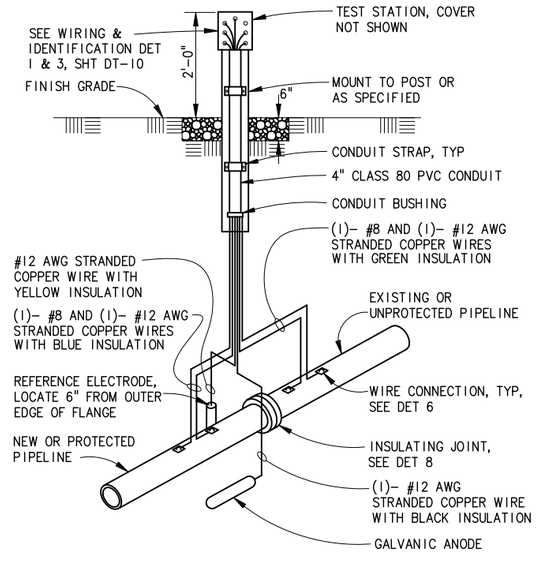
SCALE: NTS



POST MOUNTED TEST STATION (TS) TYPE B – INLINE INSULATION JOINT

2 / –

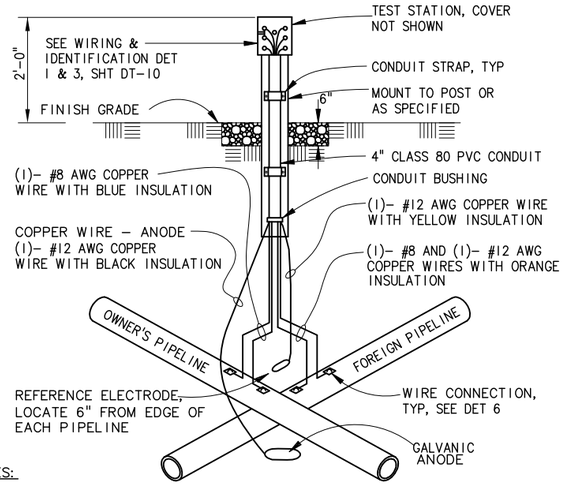
SCALE: NTS



POST MOUNTED TEST STATION (TS) TYPE C – INSULATION JOINT

3 / –

SCALE: NTS



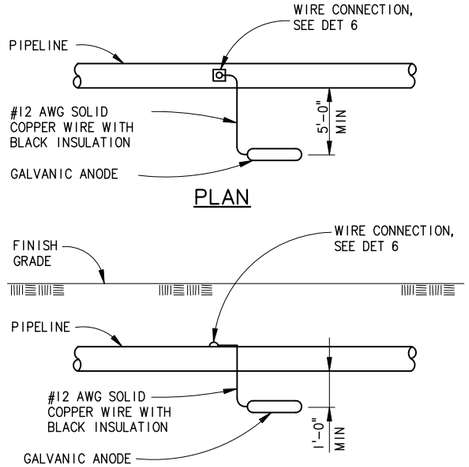
NOTES:

1. OBTAIN APPROVAL OF FOREIGN PIPELINE OWNER PRIOR TO EXCAVATION.
2. WIRE CONNECTIONS TO FOREIGN PIPELINE SHALL BE MADE BY FOREIGN PIPELINE REPRESENTATIVE.
3. INSTALL REFERENCE ELECTRODE OR COUPONS (2 EA) ONLY AT TEST STATIONS INDICATED ON TEST STATION LOCATION SCHEDULE OR DRAWINGS.
4. COLOR CODE WIRES ACCORDING TO WIRE COLOR CODE, SEE DETAIL 3, SHT D-10.

POST MOUNTED TEST STATION (TS) TYPE D – FOREIGN LINE CROSSING

4 / –

SCALE: NTS



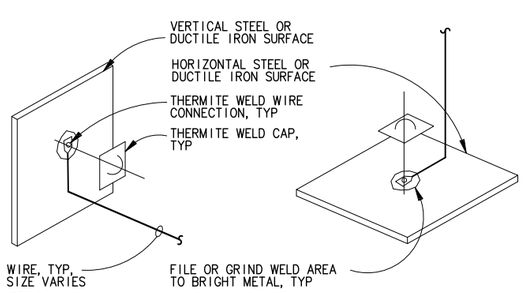
NOTES:

1. GALVANIC ANODE TO BE INSTALLED IN NATIVE SOIL.
2. ANODE TO BE SUBMERGED IN WATER FOR 1 HOUR PRIOR TO INSTALLATION.
3. SEE SPECIFICATION 13989 FOR REQUIRED NUMBER AND LOCATION OF ANODES.

GALVANIC ANODE INSTALLATION

5 / –

SCALE: NTS



NOTES:

1. COPPER SLEEVE REQUIRED FOR THERMITE WELDING OF #10 AWG AND SMALLER WIRE.
2. USE COPPER SLEEVE FOR THERMITE WELDING OF #2 AWG WIRES.
3. WELDER AND CARTRIDGE SIZE VARIES ACCORDING TO SURFACE SHAPE, MATERIAL, AND HORIZONTAL OR VERTICAL SURFACE. CONSULT WELDER MANUFACTURER FOR RECOMMENDED WELDER AND CARTRIDGE.
4. FOR MULTIPLE WIRE CONNECTIONS TO PIPE SEPARATE THERMITE WELD WIRE CONNECTIONS BY ONE PIPE DIAMETER MINIMUM, 2'-0" MAXIMUM.
5. THERMITE WELD CAP NOT REQUIRED FOR CEMENT COATED SURFACES OR ABOVE GRADE WIRE CONNECTIONS. COAT COMPLETED THERMITE WELD CONNECTIONS AS SPECIFIED.
6. EXOTHERMIC WELD TO BE PERFORMED AT JOINTS. CONNECTION TO BE COATED WITH MORTAR WHEN COMPLETED.

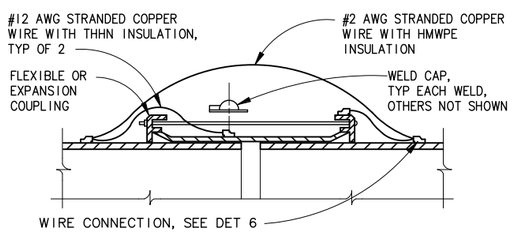
EXOTHERMIC WELD CONNECTION PIPE CABLE CONNECTION

6 / –

SCALE: NTS

SHEET NOTE:

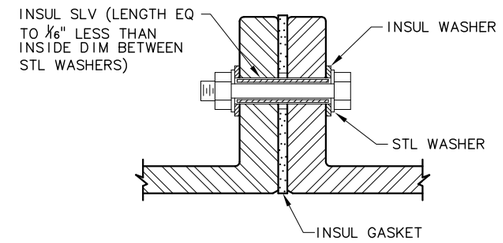
1. STEEL PIPE MANUFACTURER TO PROVIDE WELDING LUGS FOR ALL WELDED CONNECTIONS.



JOINT BOND

7 / –

SCALE: NTS



NOTES:

1. FOR BURIED OR SUBMERGED INSULATING FLANGE INSTALLATION, DO NOT INSTALL INSULATING WASHER ON PROTECTED SIDE OF INSULATING FLANGE.
2. COAT BURIED OR SUBMERGED INSULATING FLANGES WITH COLD APPLIED COAL TAR MASTIC AFTER ASSEMBLING JOINT AND WRAP WITH A BUTYL RUBBER ADHESIVE, POLYETHYLENE BACKED TAPE.

INSULATION JOINT

8 / –

SCALE: NTS

NO.	DATE	BY	REVISION
1	08/22/11	BVO	RECORD DRAWING

NOTICE: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

SMG DESIGNED | DAK DRAWN | MLH CHECKED

RECORD DRAWING
SEE DISCLAIMER, SHEET 1.
VERSION 4.1
12-9-97

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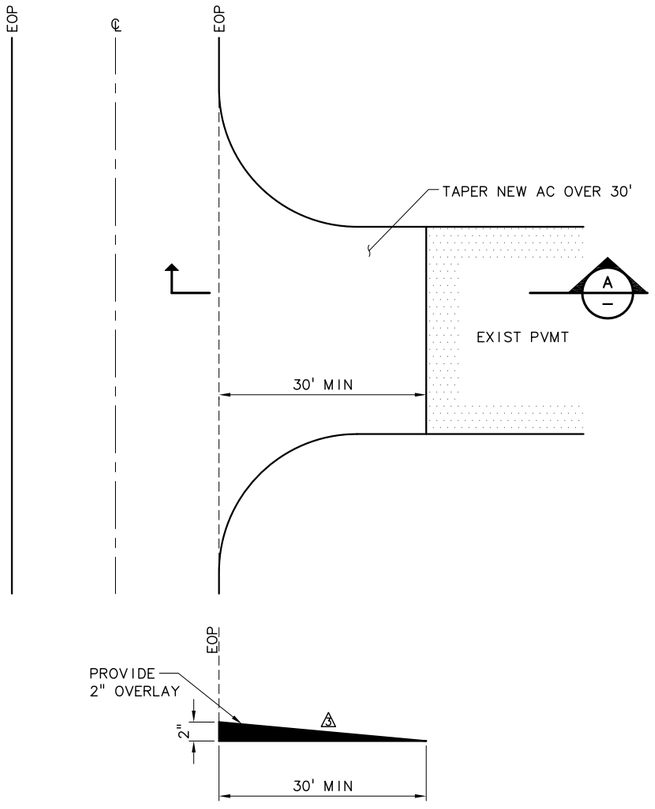
City of Sherwood Oregon

WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

CORROSION CONTROL DETAILS-2

PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

SHEET DT-14



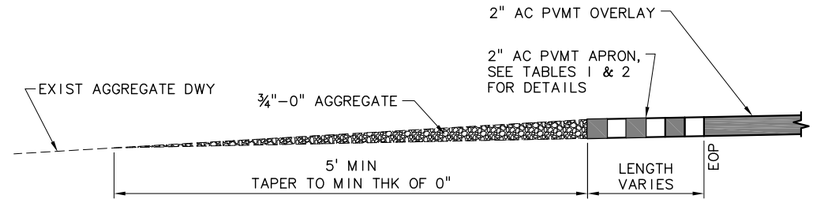


TABLE 1: BAKER ROAD

PRIMARY & SECONDARY DRIVEWAY APRONS				
STA	SHT	LT/RT	APPROX WIDTH	LENGTH
B1+05	C-8	LT	21'	1'
B1+40	C-8	RT	22'	3'
B1+64	C-8	LT	19'	1'
B2+02	C-8	RT	25'	3'
B3+92	C-8	LT	16'	3'
B4+28	C-8	LT	23'	3'
B6+67	C-9	RT	35'	3'
B9+32	C-9	LT	30'	3'
B9+38	C-9	RT	22'	3'
B11+20	C-10	RT	10'	1'
B13+30	C-10	RT	10'	1'
B16+92	C-11	RT	40'	3'
B19+00	C-11	RT	12'	1'
B27+85	C-12	RT	7'	1'
B32+06	C-13	LT	10'	3'
B32+40	C-13	RT	15'	1'
B36+30	C-14	RT	43'	3'
B50+00	C-17	LT	10'	1'
B57+80	C-18	LT	15'	1'
B62+70	C-19	LT	24'	3'
B64+23	C-19	LT	20'	3'

TABLE 2: TOOZE ROAD

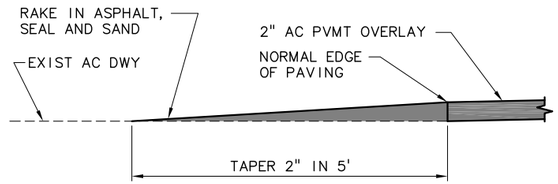
PRIMARY & SECONDARY DRIVEWAY APRONS				
STA	SHT	LT/RT	APPROX WIDTH	LENGTH
D1+60	C-29	LT	16'	1'
D3+49	C-29	LT	12'	1'
D4+21	C-29	LT	22'	3'
D7+64	C-30	LT	20'	1'
D9+35	C-30	LT	50'	1'
D13+13	C-31	RT	23'	3'
D16+94	C-32	LT	20'	3'
D17+49	C-32	LT	12'	3'
D18+56	C-32	LT	25'	3'
D21+19	C-32	LT	26'	3'
D25+88	C-33	LT	59'	3'
D27+17	C-33	LT	32'	1'

NOTE:

1. PER CLACKAMAS COUNTY, PRIMARY AND SECONDARY DRIVEWAYS SHALL BE 3' AND 1' IN LENGTH, RESPECTIVELY.

⚠3 DRIVEWAY APPROACH – AGGREGATE (3/–)

SCALE: NTS



DRIVEWAY APPROACH – ASPHALT (4/–)

SCALE: NTS

STREET CONNECTION TABLE					
STA	LT	RT	EXIST APPROACH TYPE	WIDTH AT GRIND LIMITS	COMMENTS
"A" 20+40		X	ASPHALT	25'	SE ALDERGROVE AVE
"A" 27+20		X	ASPHALT	34'	SE BRITTANY LN
"A" 36+70	X		ASPHALT	30'	BAKER RD
"A" 41+60		X	ASPHALT	30'	CORNERSTONE LN
"A" 46+20		X	ASPHALT	30'	LAVON LN
"B" 26+50		X	ASPHALT	25'	McCONNELL RD
"B" 30+60	X		ASPHALT	25'	MORGAN RD
"D" 0+70	X		ASPHALT	60'	KAME TERRACE
"D" 13+70	X		ASPHALT	22'	MALLOY WAY
"D" 30+25		X	ASPHALT	26'	WESTFALL RD

STREET CONNECTION (1/–)

SCALE: NTS

NO.	DATE	BY	REVISION
⚠3	08/22/11	BVO	RECORD DRAWING

NOTICE
0 ½ 1
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SMG DESIGNED
DAK DRAWN
WSE CHECKED

RECORD DRAWING
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12-9-97

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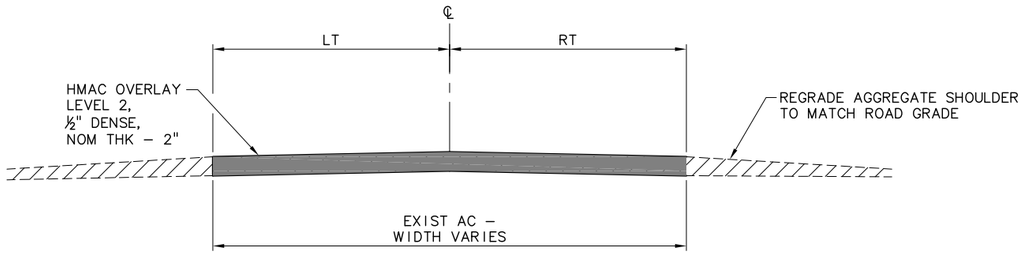
City of Sherwood Oregon

WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

ROADWAY SECTIONS & DETAILS-1

PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

SHEET DT-15

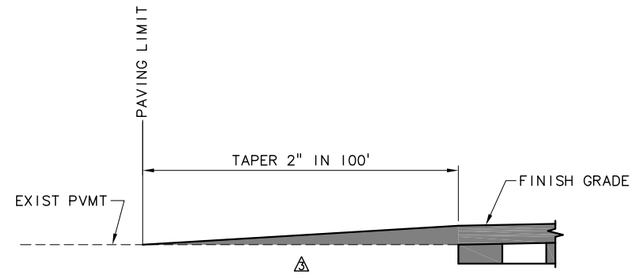


TYPICAL SECTION TABLE			
BEGIN STA	END STA	NORTHBOUND	SOUTHBOUND
"B" 0+00	"B" 64+59	10'–11'	10'–11'
"D" 0+00	"D" 32+40	10'–11'	10'–11'

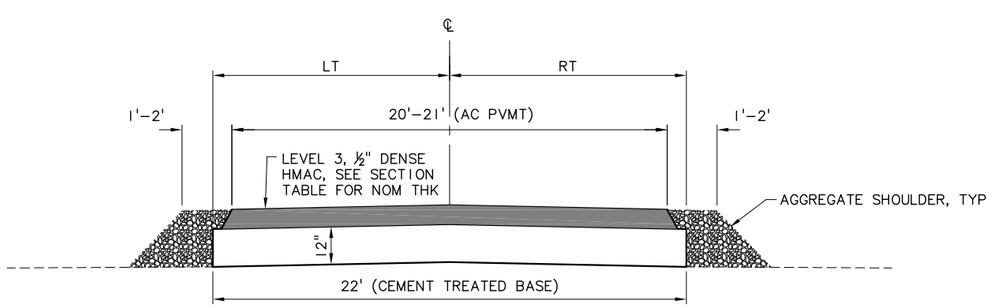
NOTE:

1. SEE TYPICAL TRENCH SECTION FOR SURFACING REQUIREMENT.

2" OVERLAY TYPICAL SECTION (1/–)
SCALE: NTS



MATCHING PAVEMENT AT PROJECT ENDS (2/–)
SCALE: NTS



STA B0+00 TO STA B64+59 (BAKER ROAD)
STA D0+00 TO STA D29+29 (TOOZE ROAD)

SECTION TABLE		
HMAC COURSE	BAKER ROAD	TOOZE ROAD
WEARING	1½"	2"
BASE	2"	2½"

NOTE:

1. ON LEFT SIDE OF ROADWAY, 5% CEMENT BY WEIGHT WAS MIXED WITH 12" OF ¾"–0" FROM PIPE TRENCH. ON RIGHT SIDE OF ROADWAY, 5% CEMENT BY WEIGHT WAS MIXED WITH 12" OF BASE MATERIAL CONSISTING OF PULVERIZED ASPHALT CONCRETE AND NATIVE SOIL FOUND BENEATH EXISTING ASPHALT CONCRETE.

A CLACKAMAS COUNTY ROADWAY SECTION (3/–)
SCALE: NTS

NO.	DATE	BY	REVISION
A	08/22/11	BVO	RECORD DRAWING

NOTICE
0 ½ 1
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SMG DESIGNED
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12–9–97

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City of Sherwood Oregon

WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

ROADWAY SECTIONS & DETAILS-2

PROJECT NO.: 07–0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

SHEET
DT–16
73 of 79

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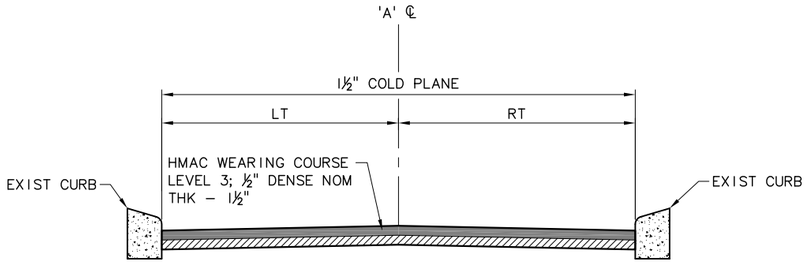
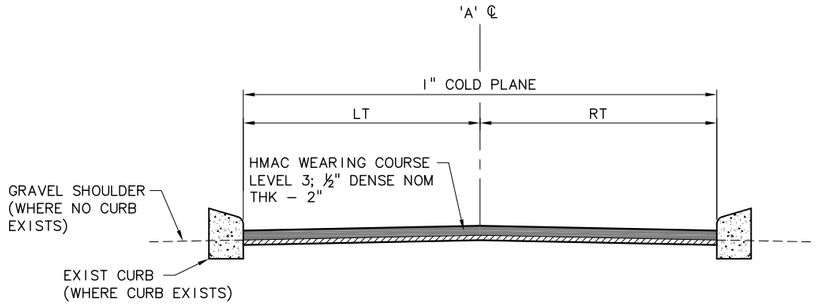


STA A16+00 TO STA A36+45 (SUNSET BLVD)
STA A43+70 TO STA A47+60 (BAKER ROAD)

1½" COLD PLANE AND 1½" INLAY (1/–)

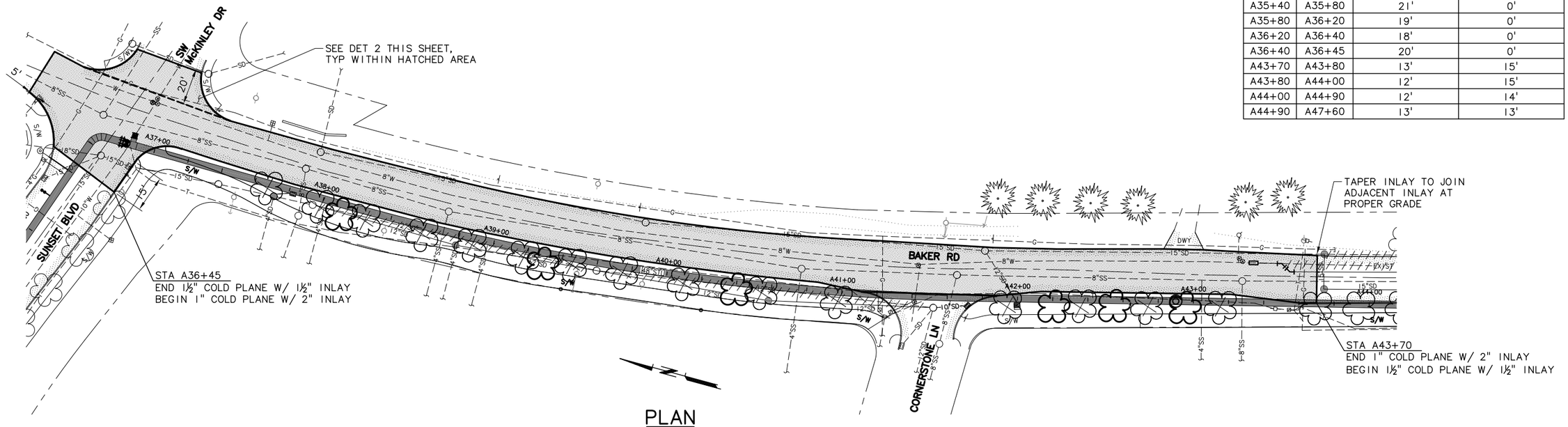
SCALE: NTS



1" COLD PLANE AND 2" INLAY (BAKER RD) (2/–)

SCALE: NTS

LIMITS OF 1 1/2" COLD PLANE AND 1 1/2" INLAY			
BEG STA	END STA	WESTBOUND	EASTBOUND
A16+00	A16+50	0'	21'
A16+50	A17+10	0'	22'
A17+10	A17+90	0'	24'
A17+90	A18+50	0'	25'
A18+50	A19+90	0'	26'
A19+90	A20+90	0'	18'
A20+90	A21+20	0'	27'
A21+20	A21+40	0'	28'
A21+40	A21+70	0'	29'
A21+70	A25+70	0'	28'
A25+70	A26+50	0'	27'
A26+50	A26+80	0'	26'
A26+80	A27+00	0'	25'
A27+00	A27+20	0'	24'
A27+20	A27+40	0'	23'
A27+40	A28+80	0'	20'
A28+80	A29+00	0'	17'
A29+00	A29+40	0'	16'
A29+40	A30+90	0'	15'
A30+90	A31+60	0'	14'
A31+60	A32+20	13'	13'
A32+20	A32+40	13'	0'
A32+40	A33+30	14'	0'
A33+30	A33+70	15'	0'
3 A33+70	A34+40	16'	0'
3 A34+40	A35+00	17'	0'
A35+00	A35+20	19'	0'
A35+20	A35+40	20'	0'
A35+40	A35+80	21'	0'
A35+80	A36+20	19'	0'
A36+20	A36+40	18'	0'
A36+40	A36+45	20'	0'
A43+70	A43+80	13'	15'
A43+80	A44+00	12'	15'
A44+00	A44+90	12'	14'
A44+90	A47+60	13'	13'



PLAN

SCALE: 1"=30'

NO.	DATE	BY	REVISION
3	08/22/11	BVO	RECORD DRAWING

NOTICE
0 ½ 1
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WSE CHECKED

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WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

ROADWAY SECTIONS & DETAILS-3

PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

SHEET DT-17

G:\PDX_Projects\07\0873\207 Design-Final Plans\CAD\DOR\07-0873-207-OR-DETS-R.dwg DT-17 9/8/2011 1:15 PM DAK 18.1s (LMS Tech)

NOTES:

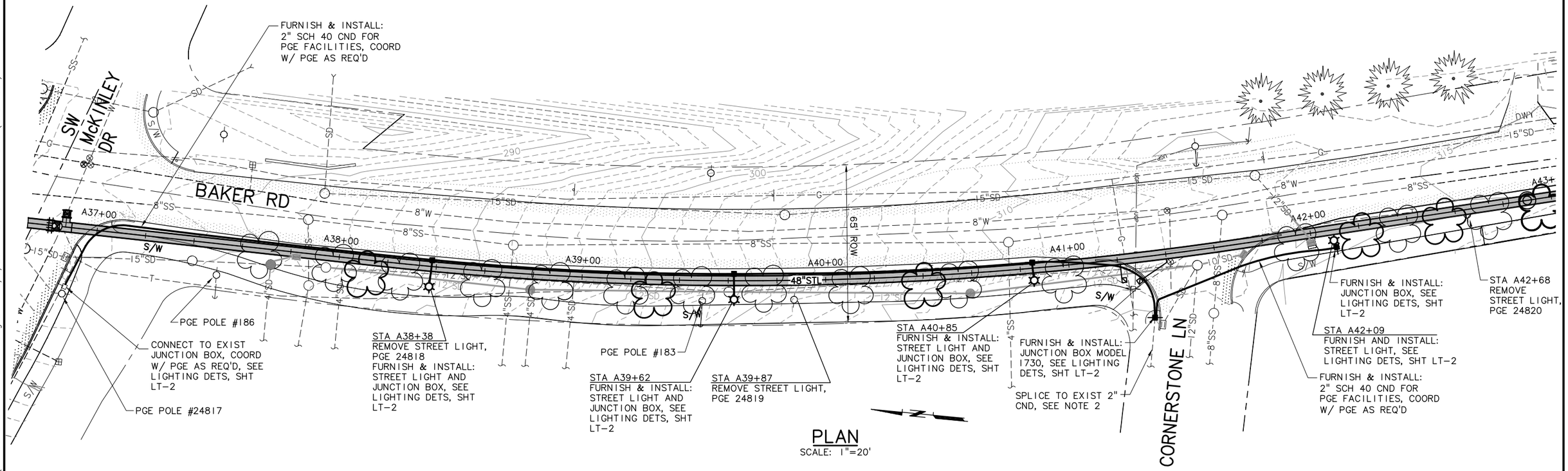
1. INSTALL 2" PVC SCH 40 CONDUIT BETWEEN JUNCTION BOXES. PROVIDE MINIMUM 36" COVER. SWEEPS TO BE 36" RADIUS, MINIMUM. NUMBER OF BENDS PER RUN CANNOT EXCEED THREE.

2. POTHOLE TO LOCATE EXISTING 2" CONDUIT FROM WEST. SPLICE NEW 2" CONDUIT TO EXISTING 2" CONDUIT AND EXTEND TO NEW JUNCTION BOX. STUB ALL 3 CONDUITS INTO NEW JUNCTION BOX.

3. CONDUIT LOCATION SHOWN SCHEMATICALLY FOR CLARITY. ACTUAL CONDUIT LOCATIONS MAY VARY.

4. ALL JUNCTION BOXES SHALL BE INSTALLED PERPENDICULAR/PARALLEL TO THE EXISTING/PROPOSED SIDEWALK.

5. DISPOSE OF STREET LIGHTS INCLUDING POLES, FIXTURES AND APPURTENANCES PER SPECIFICATIONS.



PLAN
SCALE: 1"=20'

NO.	DATE	BY	REVISION
1	08/22/11	BVO	RECORD DRAWING

NOTICE
0 ½ 1
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RECORD DRAWING
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12-9-97

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PHONE 503-225-9010 FAX 503-225-9022

City of Sherwood Oregon

WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

BAKER ROAD
STREET LIGHTING PLAN

PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

SHEET
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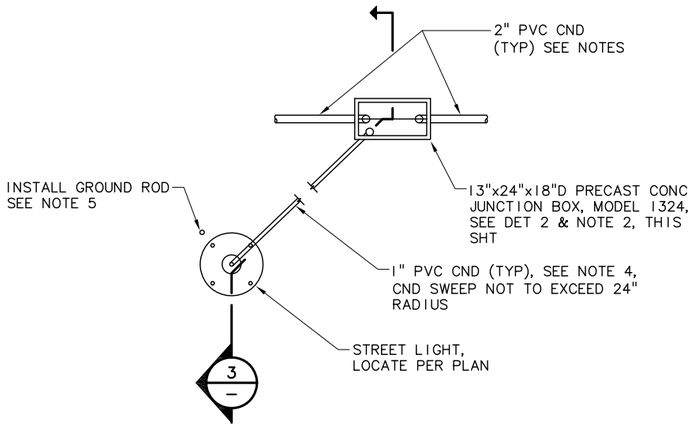
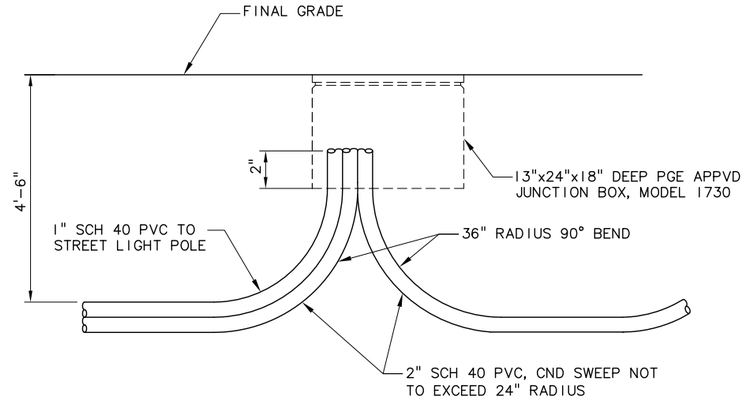


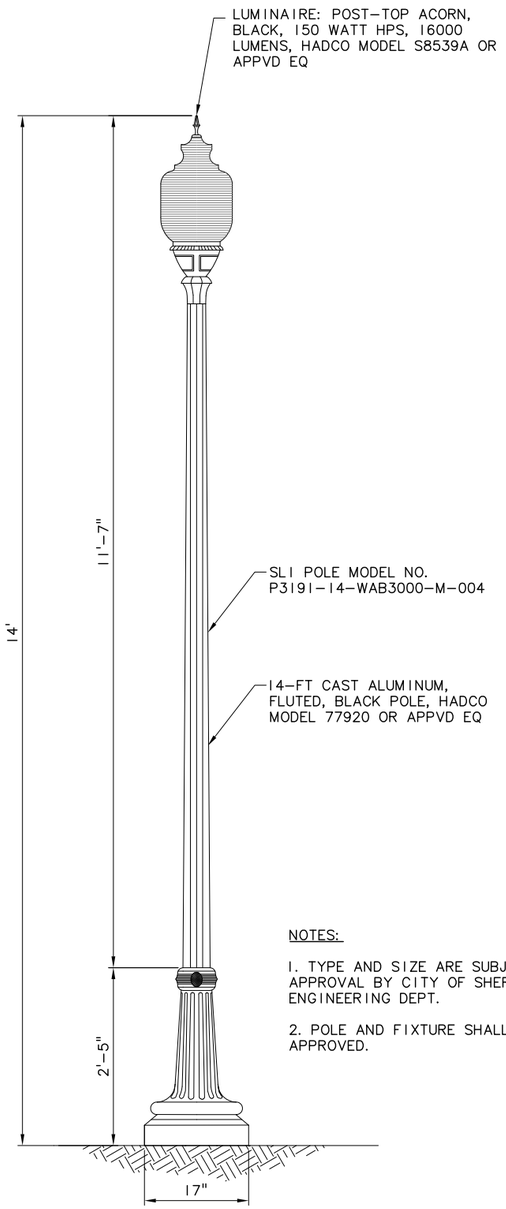
STREET LIGHT FOUNDATION AND JUNCTION BOX LOCATION (TYP) 1 —

SCALE: NTS



STREET LIGHT CONDUIT/ JUNCTION BOX SYSTEM 2 —

SCALE: NTS



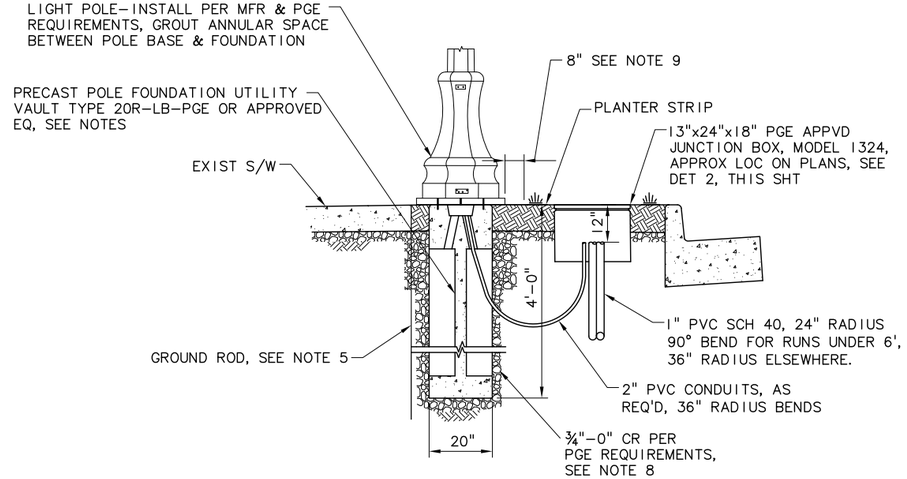
NOTES:

1. TYPE AND SIZE ARE SUBJECT TO APPROVAL BY CITY OF SHERWOOD ENGINEERING DEPT.

2. POLE AND FIXTURE SHALL BE PGE APPROVED.

STREET LIGHT POLE 4 —

SCALE: NTS



POLE BASE AND FOOTING DETAIL (TYP) 3 —

SCALE: NTS

NOTES:

1. LOCATION OF POLES, JUNCTION BOXES, AND CONDUIT SHALL BE INSTALLED AS SHOWN ON DRAWINGS OR AS OTHERWISE SPECIFIED BY THE ENGINEER. ALL LIGHTING EQUIPMENT MUST BE PLACED WITHIN THE RIGHT-OF-WAY. PLACE LIGHTING CONDUIT IN COMMON UTILITY TRENCH WHENEVER POSSIBLE.

2. FURNISH AND INSTALL FLUTED ALUMINUM POLE WITH WIDE REFRACTIVE GLOBE AND 150W LAMP.

3. FURNISH AND INSTALL PGE APPROVED JUNCTION BOXES. FIELD LOCATE TO ACCOMMODATE 24" OR 36" RADIUS 90° BEND AS REQUIRED BY PGE.

4. ALL BENDS SHALL BE FACTORY MADE. TRENCH AND ELBOW CONFIGURATIONS MUST BE INSPECTED BY PGE PRIOR TO BACKFILLING. CONTRACTOR TO CALL PGE TWO DAYS PRIOR TO INSPECTION. CONTACT JEFF STEIGLEDER AT 503-570-4404.

5. FURNISH AND INSTALL ⅝" DIAMETER x 8 FOOT LONG GALVANIZED GROUND ROD, AND ⅝" DIAMETER GROUND ROD CLAMP PER PGE REQUIREMENTS. ATTACH GROUND ROD TO POLE WITH #6 SOLID COPPER WIRE.

6. ALL CONDUIT SHALL BE GRAY SCHEDULE 40, ELECTRICAL GRADE PVC CONDUIT WITH NYLON PULL LINE (500 LBS TEST). INSTALL CONDUIT PER TYPICAL TRENCH DETAIL.

7. INSTALL PRECAST POLE FOUNDATIONS SUCH THAT TOP OF FOUNDATION IS FLUSH WITH TOP OF PROPOSED SIDEWALK.

8. BACKFILL PRECAST POLE FOUNDATIONS WITH ¾"-MINUS CRUSHED ROCK. COMPACT TO 95% MAXIMUM DENSITY. EXTEND CRUSHED ROCK BACKFILL TO EXCAVATION SIDE SLOPES. MINIMUM 1 FOOT THICK ALL AROUND FOUNDATION.

9. STREETLIGHT WIRE SHALL BE #10 AWG, 600 VOLT, 3 CONDUCTOR, CLASS B STRANDING, TYPE TC WITH SUNLIGHT RESISTANT 45-MIL PVC JACKET PER PGE SPECIFICATIONS.

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City of Sherwood Oregon

WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

LIGHTING DETAILS

PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: JUNE 2009

SHEET
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SYMBOLS

PLAN

GROUND BUS

BARE COPPER GROUND TO GROUND WIRE IN SLAB, OR UNDERGROUND GROUND GRID, SIZE AS NOTED

EXPOSED CONDUIT

CONDUIT RUN UNDERGROUND OR IN CONCRETE

(T) UNDERGROUND TELEMETRY CONDUIT

HOME RUN TO PANEL "LP1", CIRCUITS #1, 3, 7. CROSS MARKS INDICATE NUMBER OF CONDUCTORS, LONGER MARK INDICATES NEUTRAL. CONDUCTORS SHALL BE #12 UNLESS OTHERWISE NOTED.
LP1–1, 3, 7

T TELEPHONE CONDUIT ONLY UNLESS OTHERWISE NOTED

CONDUIT RUN – CHANGE IN ELEVATION

CONDUIT BENDS TOWARD OBSERVER

CONDUIT BENDS AWAY FROM OBSERVER

CONDUIT CAPPED, OR SEALED

FLEXIBLE LIQUID – TIGHT CONDUIT CONNECTION

P–012 3/4"/1" INDICATES CABLE NUMBER: P=POWER, C=CONTROL, S=SIGNAL; 012=NUMBER. 3/4"=MINIMUM CONDUIT SIZE IN EXPOSED LOCATIONS; 1"=MINIMUM CONDUIT SIZE IN CONCEALED OR BURIED LOCATIONS

E–308 DETAIL CALLOUT. SEE SHEET GE–3 FOR DETAIL.

A / 1 9' LIGHT FIXTURE CALLOUT, "A" = TYPE, "1" – NUMBER OF LAMPS IN FIXTURES, 9' = APPROX. MOUNTING HEIGHT ABOVE FINISHED FLOOR OR GRADE. MS = MOTION SENSOR. PC = PHOTOCELL CONTROL.

SEE SHEET GE–2 FOR LIGHT FIXTURE SYMBOLS AND SPECIFICATIONS. THE LIGHT FIXTURE SYMBOLS BELOW ARE EXAMPLES ONLY OF HOW INDIVIDUAL LIGHT FIXTURE INSTALLATIONS ARE TYPICALLY MODIFIED FOR WIRING METHODS. FLUORESCENT LIGHT FIXTURES SHOWN.

O 2a FLUORESCENT LIGHTING FIXTURE ON NORMAL POWER. "2" INDICATES CIRCUIT NUMBER (OR MAY BE DESCRIBED BY LOCATION ON PANELBOARD CIRCUIT LAYOUT. "a" INDICATES FIXTURE CONTROLLED BY SWITCH "a", SEE PLAN DRAWING(S) FOR SWITCH LOCATION.

FLUORESCENT LIGHTING FIXTURE, UNSWITCHED FOR NIGHT LIGHT (SWITCHED BY CIRCUIT BREAKER AT LIGHTING PANEL ONLY)

EO FLUORESCENT LIGHTING FIXTURE, ON EMERGENCY CIRCUIT

E● FLUORESCENT LIGHTING FIXTURE, ON EMERGENCY CIRCUIT, UNSWITCHED (SWITCHED BY CIRCUIT BREAKER AT LIGHTING PANEL ONLY)

WALL	FLOOR	
		120V SINGLE RECEPTACLE, NEMA CONFIGURATION 5–20.
		120V DUPLEX RECEPTACLE, NEMA CONFIGURATION 5–20
		240V DUPLEX RECEPTACLE, NEMA CONFIGURATION 6–20
		120V DUPLEX RECEPTACLE, NEMA 5–15 (DEDICATED CIRCUIT)
		WELDING RECEPTACLE (RATED AS NOTED)
		LIGHTING PANEL
		POWER PANEL
		PUBLIC TELEPHONE SYSTEM DEVICE
		SPECIAL TELEPHONE SYSTEM DEVICE E = ETHERNET M = MODEM
		GROUND ROD AND GROUND WELL
		GROUND CONNECTION BOLTED TYPE
		GROUND ROD 3/4" x 10'–0" (UNLESS OTHERWISE NOTED)
		GROUND CONNECTION – EXOTHERMIC TYPE
		GROUND CONDUCTOR PIGTAIL 6' LONG UNLESS NOTED OTHERWISE
		DISCONNECT SWITCH
		MOTOR STARTER
		(M) MOTOR
	SS	PUSHBUTTON STATION "SS" START–STOP, "LOS" LOCKOUT–STOP, "SLOS" START–LOCKOUT–STOP
	JB	CONDUIT BODY/ RACEWAY BOX "JB" JUNCTION BOX, "MH" MANHOLE, "HH" HANDHOLE, "PB" PULLBOX, "TB" TERMINAL BOX
	(J)	JUNCTION BOX OR FITTING
	(T)	TEE FITTING
	PSL–1	FIELD INSTRUMENT OR DEVICE "SV" SOLENOID VALVE, "LSH" LEVEL SWITCH HIGH, "LSL" LEVEL SWITCH LOW, "LSLL" LEVEL SWITCH LOW LOW, "PSL" PRESSURE SWITCH LOW
	(T)	THERMOSTAT c = COOLING, h = HEATING
	(H)	HEATER
		HORN
	(SD)	SMOKE DETECTOR
	(1)	DENOTES REFERENCE TO NOTE 1 I.E. – " SEE NOTE 1 "
	$a	SINGLE POLE SWITCH. "a" INDICATES CIRCUIT CONTROLLED
	$2	DOUBLE POLE SWITCH
	$3	THREE–WAY SWITCH
	$4	FOUR–WAY SWITCH
	$M	MANUAL MOTOR STARTER
	$ WP	WEATHERPROOF SWITCH
	$ Da	SWITCH "a" DIMMER CONTROLLED

MWH

SINGLE LINE DIAGRAM

BUS

II ACROSS–THE–LINE, NON–REVERSING NEMA RATED MAGNETIC STARTER, SIZE 2 SHOWN

IV PW NEMA RATED MAGNETIC STARTER, SIZE 4 SHOWN
PW – PART WINDING, REV – REVERSING
RV – REDUCED VOLTAGE, AUTO–AUTO TRANSFORMER
2SP–2W – TWO SPEED, TWO WINDING

30A CONTACTOR, SIZE AS NOTED

50A MOLDED CASE CIRCUIT BREAKER, 3 POLE UNLESS OTHERWISE NOTED: 50A.–TRIP RATING IN AMPERE
NA–NON–AUTOMATIC
OR
225AF 125AT MCP – MOTOR CIRCUIT PROTECTOR
AF–FRAME SIZE (225 AMPS NOTED)
AT–TRIP RATING (125 AMPS NOTED)

SURGE ARRESTOR

10 TH MWH MOTOR, 10 HP NOTED
TH = MOTOR WINDING THERMOSTAT
MWH = MOTOR WINDING HEATER
SEE SPEC 16460 FOR ADDITIONAL REQUIREMENTS

(M) SMALL MOTOR, 120VAC 1 PHASE OR AS SHOWN

(BR) MOTOR BRAKE

TRANSFORMER WITH GROUNDED SECONDARY, KVA SIZE & VOLTAGE RATIO AS NOTED

PT 480/120V (2) POTENTIAL TRANSFORMER, RATIO AND NUMBER OF PT'S AS NOTED

CT 100/5 (3) CURRENT TRANSFORMER, RATIO AND NUMBER OF CT'S AS NOTED

ELECTRICAL INTERLOCK

ELECTRICAL ENCLOSURE OUTLINE

DISCONNECT SWITCH, SIZE AS NOTED

FUSED DISCONNECT SWITCH

KWH DM KILOWATTHOUR METER WITH DEMAND REGISTER

SCHEMATIC DIAGRAM

CONTROL RELAY OR COIL

EXAMPLE * { TD2 TIME DELAY RELAY NO. 2; CR1 CONTROL RELAY; 1M STARTER NO. 1 MAIN COIL

(M) SMALL MOTOR, 120VAC 1 PHASE OR AS SHOWN

SOLENOID

NORMALLY OPEN CONTACT

NORMALLY CLOSED CONTACT

TORQUE SWITCH (SPECIFY WHEN OPEN)

NORMALLY OPEN LIMIT SWITCH

NORMALLY CLOSED LIMIT SWITCH

FLOAT TYPE LIQUID LEVEL SWITCH, CLOSING ON RISING LEVEL

FLOAT TYPE LIQUID LEVEL SWITCH, OPENING ON RISING LEVEL

VACUUM OR PRESSURE SWITCH, CLOSING ON RISING PRESSURE

VACUUM OR PRESSURE SWITCH, OPENING ON RISING PRESSURE

TEMPERATURE ACTUATED SWITCH; CLOSING ON RISING TEMPERATURE

TEMPERATURE ACTUATED SWITCH; OPENING ON RISING TEMPERATURE

FLOW SWITCH (AIR, WATER, ETC.); CLOSING ON FLOW INCREASE

FLOW SWITCH (AIR, WATER, ETC.); OPENING ON FLOW INCREASE

NORMALLY OPEN PUSHBUTTON, MOMENTARY CLOSE

LOS NORMALLY CLOSED PUSHBUTTON, MOMENTARY OPEN, LOS – LOCKOUT STOP

NO/NC MAINTAINED PUSHBUTTON

ON OFF TWO–POSITION SELECTOR SWITCH:
H = HAND, M = MANUAL, R = REMOTE,
L = LOCAL, A = AUTOMATIC, O = OFF, T = TEST,
DN = DOWNSTREAM, UP = UPSTREAM,
OP = OPEN, CL = CLOSE

H O A THREE–POSITION SELECTOR SWITCH. (SAME AS ABOVE)

THREE–POSITION SPRING RETURN–TO–CENTER MOMENTARY CONTACT SWITCH ("LATCH–UNLATCH," "ON–OFF," ETC.)

SWITCH CONTACT WHICH IS CLOSED IN THE INDICATED POSITION (NORMALLY OPEN)

SWITCH CONTACT WHICH IS OPEN IN THE INDICATED POSITION (NORMALLY CLOSED)

SINGLE POLE TOGGLE SWITCH ("ON–OFF", ETC.)

OL OVERLOAD RELAY CONTACTS (MAGNETIC)

M MOTOR OPERATOR, PART OF AN ASSEMBLY SUCH AS A VALVE

S SOLENOID, PART OF AN ASSEMBLY SUCH AS A VALVE

MANUAL MOTOR STARTER WITH OVERLOAD PROTECTION

FUSE

RES RESISTOR (FIXED)

POTENTIOMETER TYPE RESISTOR (CONTINUOUSLY ADJUSTABLE)

R PUSH–TO–TEST INDICATING LIGHT
"R" RED LENS
"A" AMBER LENS
"G" GREEN LENS
"W" WHITE LENS
"B" BLUE LENS

ETM ELAPSED TIME METER

CNT OPERATIONS COUNTER

HEATER

CONDUCTORS INSIDE MCC/LCP/ENCLOSURE/ETC.

FIELD WIRING/CONDUCTORS BETWEEN ENCLOSURES

CROSSING OF CONDUCTORS–NOT CONNECTED

CONNECTION OF CONDUCTORS, FITTING AS REQUIRED

DISCONNECT SWITCH

ELECTRODE LEVEL PROBES

GROUND CONNECTION

VOLTAGE SURGE SUPPRESSOR

FUSE WITH BLOWN FUSE INDICATOR

TIMED CONTACTS – CONTACT ACTION DELAYED AFTER COIL IS:

ENERGIZED

NORMALLY OPEN WITH TIME DELAY CLOSING

NORMALLY CLOSED WITH TIME DELAY OPENING

DE–ENERGIZED

NORMALLY OPEN WITH INSTANT CLOSING AND TIME DELAY OPENING

NORMALLY CLOSED WITH INSTANT OPENING AND TIME DELAY CLOSING

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City of Sherwood Oregon

WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

ELECTRICAL GENERAL SYMBOLS

PROJECT NO.: 07–0873.207 | SCALE: NONE | DATE: MAY 2009

GE–1

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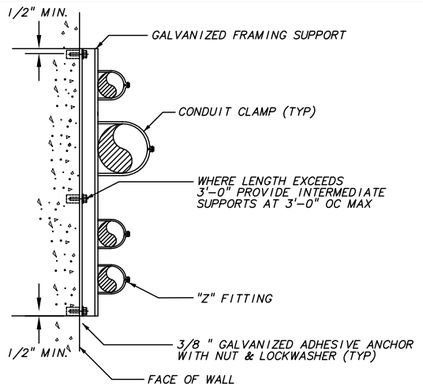

CONDUIT SUPPORT
FLUSH MOUNT

E-212

ABBREVIATIONS

1P = ONE POLE
1PH = ONE PHASE
24PS = 24 VOLT DC POWER SUPPLY (REDUNDANT)
2P = TWO POLE
2SP-2W = TWO SPEED, TWO WINDING (MOTOR OR STARTER)
3P = THREE POLE
3PH = THREE PHASE
3W = THREE WIRE
4W = FOUR WIRE
52 = AC CIRCUIT BREAKER (POWER)
A = AMPS/AMPERE RATING
AFF = ABOVE FINISHED FLOOR
AFR = AMPERE FRAME RATING
AH = ALARM HORN
AIC = AMPERE INTERRUPTING CURRENT (SYMMETRICAL)
AIT = ANALYZER INDICATING TRANSMITTER
AL = ALARM LIGHT
AT = AMPERE TRIP RATING
BC = BARE COPPER (CONDUCTOR)
BLDG = BUILDING
BP = BYPASS CONTACTOR (FVNR RATED)
CAP = CAPACITOR (PF CORRECTION)
CB = CIRCUIT BREAKER, THERMAL MAGNETIC
CL = CLOSING LIGHT
COM = COMMON
COMM = COMMUNICATION
CPT = CONTROL POWER TRANSFORMER
CT = CURRENT TRANSFORMER
DISC = DISCONNECT
DS = DISCONNECT
(E) = EXISTING (EQUIPMENT, BLDG, ETC.)
EQPT = EQUIPMENT
ETC = ET CETERA
FIT = FLOW INDICATING TRANSMITTER
FT = FLOW TRANSMITTER
FLEX = LIQUID TIGHT FLEXIBLE CONDUIT
FS = FLOW SWITCH
FVNR = FULL VOLTAGE NON-REVERSING
FVR = FULL VOLTAGE REVERSING
G = (IF EQPT NAME = GATE, SEE MECHANICAL SCHEDULES. IF WIRE OR PIN = GROUND)
GFCI = GROUND-FAULT CIRCUIT-INTERRUPTER
GND = GROUNDING WIRE OR CONNECTION
H/O/A = HAND/OFF/AUTO (SELECTOR SWITCH)
HMI = HUMAN-MACHINE INTERFACE (SCADA COMPUTER)
HP = HORSEPOWER
HS = HAND SWITCH
IC = IN-LINE CONTACTOR
JL = POWER LIGHT
k = KILO (THOUSAND)
L/O/R = LOCAL/OFF/REMOTE (SELECTOR SWITCH)
LCP = LOCAL CONTROL PANEL (FURNISHED BY CONTRACTOR)
LI = LEVEL INDICATOR (DIGITAL PANEL METER)
LLH = LEVEL LIGHT, HIGH
LLHH = LEVEL LIGHT, HIGH HIGH
LLHHH = LEVEL LIGHT, HIGH HIGH HIGH
LLLL = LEVEL LIGHT, LOW LOW
LSH = LEVEL SWITCH, HIGH
LSHH = LEVEL SWITCH, HIGH HIGH
LSL = LEVEL SWITCH, LOW
LSLL = LEVEL SWITCH, LOW LOW
LP = LIGHTING PANELBOARD
LT = LEVEL TRANSDUCER
MCB = MAIN CONTROL BOARD (EXISTING)
MCC = MOTOR CONTROL CENTER
MCP = MOTOR CIRCUIT PROTECTOR, SHORT CIRCUIT
ME = (IF EQPT NAME = MECHANICAL EQUIPMENT, SEE MECHANICAL SCHEDULES)
MFR = MANUFACTURER
MISC = MISCELLANEOUS
MS = MOTOR STARTER (FVNR/FVR RATED)
MWH = MOTOR WINDING HEATER
N/A = NOT APPLICABLE
N/B = NORMAL/BYPASS (SELECTOR SWITCH)
NEC = NATIONAL ELECTRICAL CODE
NEMA = NATIONAL ELECTRICAL MFR. ASSOC.
OL = OVERLOAD (THERMAL OR ELECTRONIC) OR OPENING LIGHT
PB = PUSHBUTTON
PF = POWER FACTOR
PG = PRESSURE GAUGE
PIT = PRESSURE INDICATING TRANSMITTER
PLC = PROGRAMMABLE LOGIC CONTROLLER
PM = POWER MONITOR (DIGITAL METER)
PNL = PANELBOARD
POT = POTENTIOMETER
PP = POWER PANELBOARD
PRGS = PVC COATED RGS (CONDUIT)
PSH = PRESSURE SWITCH, HIGH
PSL = PRESSURE SWITCH, LOW
PIT = PRESSURE INDICATING TRANSMITTER
PT = POTENTIAL (VOLTAGE) TRANSFORMER
PVC = POLYVINYL CHLORIDE (CONDUIT)
RGS = RIGID GALVANIZED STEEL (CONDUIT)
RIO = REMOTE INPUT/OUTPUT (SIMILAR TO PLC)
RTD = RESISTANCE TEMPERATURE DETECTOR
RVSS = REDUCED VOLTAGE SOLID STATE (STARTER)
SC = SHORTING CONTACTOR (NOT FVNR RATED)
SCADA = SUPERVISORY CONTROL AND DATA ACQUISITION
SCH = SCHEDULE
SS = (IF MATERIAL = STAINLESS STEEL, IF DEVICE = SURGE SUPPRESSOR)
SV = SOLENOID VALVE
TE = TEMPERATURE ELEMENT (RTD)
TH = THERMOSTAT
TLH = TEMPERATURE LIGHT, HIGH
TP = TELEPHONE PANEL
TSH = TEMPERATURE SWITCH, HIGH
TSC = TORQUE SWITCH, CLOSED
TSO = TORQUE SWITCH, OPEN
TSP = TWISTED SHIELDED PAIR (SIGNAL CABLE)
TST = TWISTED SHIELDED TRIAD (SIGNAL CABLE)
TT = TEMPERATURE TRANSMITTER
TVSS = TRANSIENT VOLTAGE SURGE SUPPRESSOR
UPS = UNINTERRUPTIBLE POWER SUPPLY
VCP = VENDOR CONTROL PANEL (FURNISHED BY EQPT. MFR.)
VFD = VARIABLE FREQUENCY DRIVE
W/ = WITH
WP = WEATHER-PROOF
XFMR = TRANSFORMER
YI = STATUS INDICATOR (RUN CONTACT, ETC.)
YA = STATUS ALARM (TROUBLE CONTACT)
ZCL = POSITION LIGHT, CLOSED
ZL = POSITION LIGHT
ZOL = POSITION LIGHT, OPEN
ZS = POSITION (LIMIT OR PROXIMITY) SWITCH
ZSC = POSITION SWITCH, CLOSED
ZSO = POSITION SWITCH, OPEN

GENERAL NOTES

1. ALL ITEMS ARE NEW UNDER THIS CONTRACT UNLESS OTHERWISE NOTED. ITEMS SHOWN AS "SCREENED" (LIGHTER GRAY TONE OR LIGHT WEIGHT) ARE EXISTING. SCREENED ELECTRICAL OR MECHANICAL EQUIPMENT OR DEVICES SHOULD ALSO BE NOTED AS "EXISTING" OR "(E)". IF EQUIPMENT OR DEVICES ARE NOT SO NOTED THE CONTRACTOR SHALL OBTAIN CLARIFICATION FROM THE OWNER BEFORE BIDDING THAT PORTION OF THE WORK.
2. GROUND ALL ELECTRICAL EQUIPMENT, ENCLOSURES, RACEWAYS, EXPOSED METAL, PER NATIONAL ELECTRIC CODE (NEC). THIS PROJECT WAS DESIGNED UNDER THE 2008 NEC.
3. FURNISH, INSTALL AND CONNECT CONDUIT AND WIRE FOR ALL PANELBOARD AND MISCELLANEOUS LOADS. CONDUIT AND WIRE SHALL BE INSTALLED IN ACCORDANCE WITH THE SPECIFICATIONS AND APPLICABLE CODES. MINIMUM CONDUIT SIZE FOR PANELBOARD LOADS SHALL BE 3/4" FOR SURFACE MOUNTED AND 1" FOR ENCASED CONDUITS IN ACCORDANCE WITH SECTION 16110. MINIMUM WIRE FILL SHALL BE 3#12, #12 GROUND FOR 3 PHASE LOADS AND 2#12, #12 GROUND FOR 1 PHASE LOADS, OR LARGER AS SHOWN OR REQUIRED BY CODE IN ACCORDANCE WITH SECTION 16120. LAST TWO DIGITS OF CABLE NUMBER FOR LOADS FED FROM PANELBOARDS SHALL BE THE CIRCUIT/POLE NUMBER.
4. FURNISH, INSTALL AND CONNECT CONDUIT AND WIRE FOR ALL EQUIPMENT. SEE ELECTRICAL DRAWINGS FOR CONDUIT AND CONDUCTORS TO BE ROUTED BETWEEN EQUIPMENT. CABLE NUMBERS FOR EQUIPMENT SHALL BE THE NUMBER SHOWN ON THE DRAWINGS.
5. THE OWNERS SYSTEM INTEGRATOR S&B INC. WILL FURNISH THE FLOW METER AND CONTROL VALVE. THE CONTRACTOR SHALL INSTALL AND CONNECT ALL THIS EQUIPMENT, AND SHALL INCLUDE THOSE COSTS IN THEIR BID. THE CONTRACTOR SHALL COORDINATE WITH S&B INC. TO ENSURE THAT NO OVERLAPS OR OMISSIONS OCCUR IN THEIR BID. S&B INC. WILL PROGRAM THE REMOTE TERMINAL UNIT (RTU – TELEMETRY) EQUIPMENT.

VERY IMPORTANT

CABLE NUMBER LEGEND

XXX = 3 DIGIT CIRCUIT NUMBER (SAME AS EQPT TAG/LOOP NUMBER)

T-XXX = TELEPHONE

P-1XXX = 12.47kVAC POWER
P-2XXX = 4.16kVAC POWER
P-3XXX = 480VAC POWER
P-4XXX = 120/208/240VAC POWER

C-5XXX = 120VAC CONTROL
C-6XXX = 24VDC CONTROL

S-7XXX = 4-20mA SIGNAL
S-8XXX = OTHER SIGNAL(S)

D-9XXX = DATA COMM/NETWORK

MWH

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WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

ELECTRICAL GENERAL ABBREVIATIONS AND NOTES

PROJECT NO.: 07-0873.207 | SCALE: NONE | DATE: MAY 2009

GE-2

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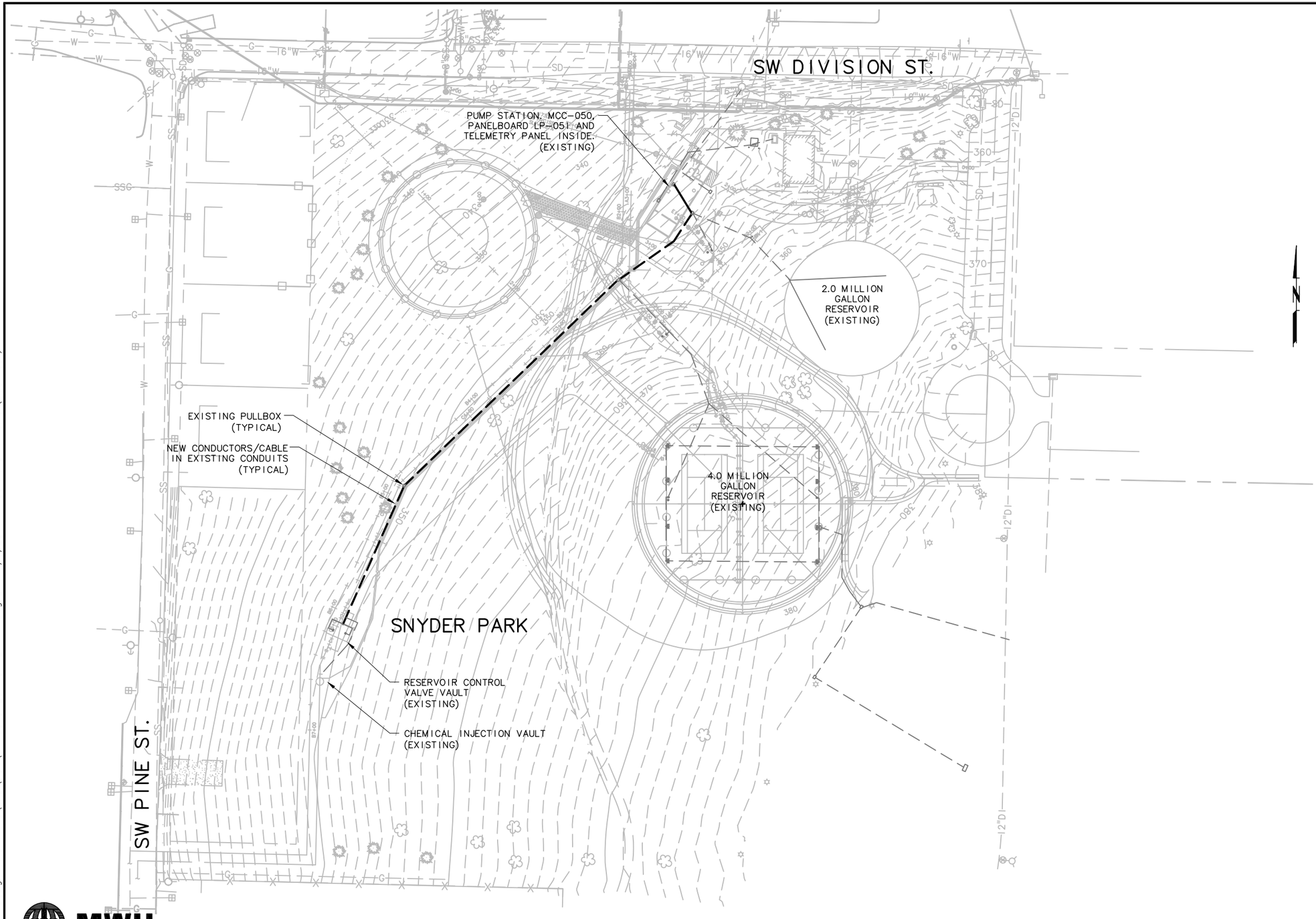

NOTES:

1. SEE GENERAL NOTES ON SHEET GE-2.
2. WORK CONSISTS OF THE FOLLOWING TASKS:
   A. PULLING NEW CABLES IN EXISTING EMPTY CONDUITS FROM THE EXISTING TELEMETRY PANEL IN THE EXISTING PUMP STATION TO THE EXISTING TERMINAL BOX IN THE EXISTING RESERVOIR CONTROL VALVE VAULT.
   B. PROVIDING NEW CABLES AND RACEWAYS FROM THE EXISTING TERMINAL BOX TO THE NEW CONTROL VALVE AND FLOWMETER IN THE EXISTING RESERVOIR CONTROL VALVE VAULT.
   C. TERMINATING CABLES AT EACH LOCATION AS DIRECTED BY THE OWNER'S SYSTEM INTEGRATOR. ALL SPARE CONDUCTORS IN THE TERMINAL BOX SHALL BE TERMINATED ON TERMINALS.
   D. TESTING PER THE SPECIFICATIONS AND AS REQUIRED BY THE OWNER'S SYSTEM INTEGRATOR.
3. PROVIDE 4 NEW #16TSP (TWISTED SHIELDED PAIR) SIGNAL CABLES AND 2 NEW #16TST (TWISTED SHIELDED TRIAD) SIGNAL CABLES IN EXISTING CONDUIT S-6211 FROM THE EXISITNG TELEMETRY PANEL TO THE EXISTING TERMINAL BOX IN THE EXISTING RESERVOIR CONTROL VALVE VAULT.
4. PROVIDE 12 NEW #10 120VAC POWER CONDUCTORS IN EXISTING CONDUIT P-4211 FROM THE EXISITNG TELEMETRY PANEL TO THE EXISTING TERMINAL BOX IN THE EXISTING RESERVOIR CONTROL VALVE VAULT.
5. PROVIDE NEW #16TSP AND/OR TST SIGNAL, #14 CONTROL AND #12 POWER CONDUCTORS/ CABLES IN NEW RACEWAYS FROM THE EXISTING TERMINAL BOX IN THE EXISTING RESERVOIR CONTROL VALVE VAULT TO THE NEW FLOW METER AND CONTROL VALVE AS DIRECTED BY THE OWNER'S SYSTEM INTEGRATOR.

SITE PLAN

SCALE: 1"=40'

MWH

NO.	DATE	BY	REVISION
3	08/22/11	BVO	RECORD DRAWING

NOTICE
0 ½ 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

JCD DESIGNED
JCD DRAWN
SNH CHECKED

RECORD DRAWING
SEE DISCLAIMER, SHEET 1.
VERSION 4.1
12-9-97

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City of Sherwood Oregon

WATER SUPPLY IMPROVEMENT PROJECT TRANSMISSION PIPELINE

ELECTRICAL SITE LAYOUT PLAN

PROJECT NO.: 07-0873.207 | SCALE: AS SHOWN | DATE: MAY 2009

E-1

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