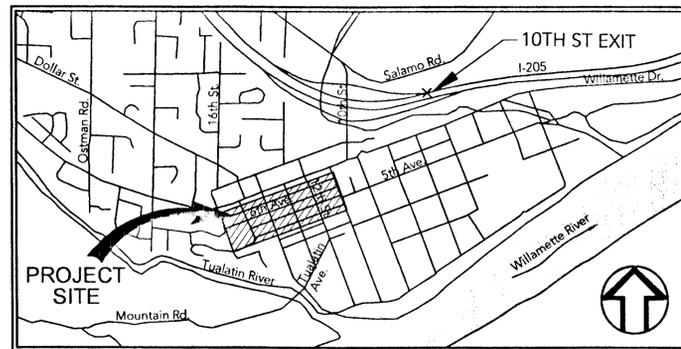
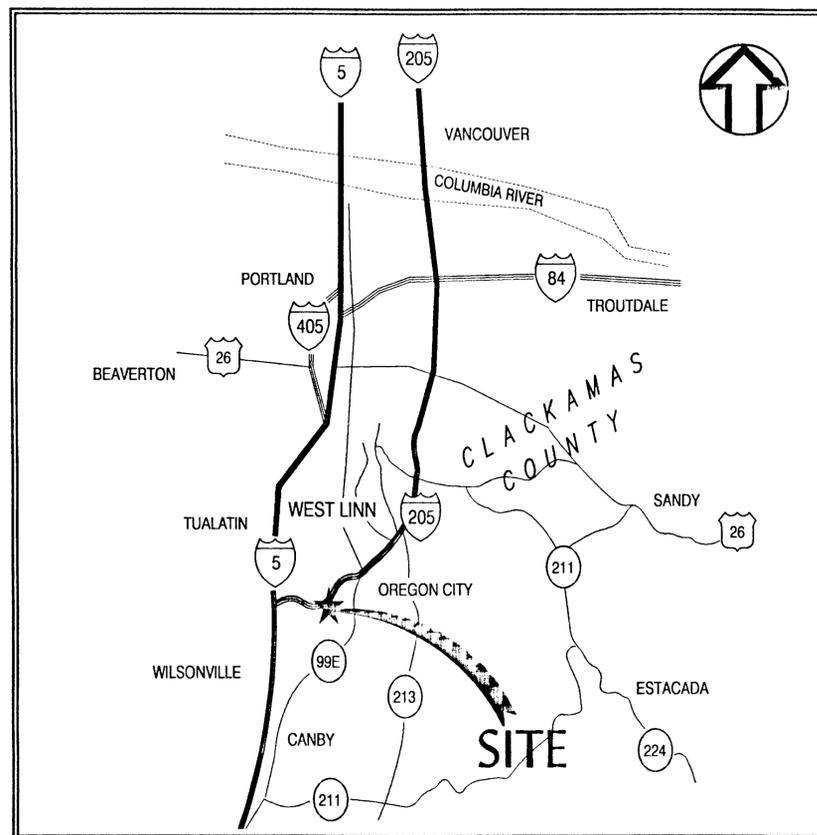


ENGINEERING DRAWINGS

WILLAMETTE NEIGHBORHOOD UTILITY REPLACEMENT - PHASE 1



PROJECT SITE MAP
NOT TO SCALE



LOCATION MAP
NOT TO SCALE

West Linn

INDEX TO DRAWINGS

- C1. COVER SHEET
- C2. NOTES, DETAILS & LEGEND
- C3. 12TH STREET PLAN & PROFILE
STA 10+00 ~ STA 18+75
- C4. ALLEY BETWEEN 4TH AVE & 5TH AVE
PLAN & PROFILE
STA 0+00 ~ STA 7+41
- C5. ALLEY BETWEEN 5TH AVE & 6TH AVE
PLAN & PROFILE
STA 0+00 ~ STA 11+04
- C6. KNAPPS ALLEY PLAN & PROFILE
STA 0+00 ~ STA 14+66
- C7. SANITARY SEWER DETAILS - 1
- C8. SANITARY SEWER DETAILS - 2
- C9. EROSION CONTROL DETAILS

MAYOR

DAVID DODDS

CITY COUNCIL

BOB ADAMS
MICHAEL KAPIGIAN
NORMAN KING
DAVID TRIPP

DIRECTOR OF PUBLIC WORKS

RON HUDSON, P.E.

PROJECT MANAGER

KELLI GROVER, P.E.



NO.	REVISION	BY	DATE

**WALLIS
ENGINEERING**
317 COLUMBIA STREET
VANCOUVER, WASHINGTON 98660
(360) 695-7041

WE PROJECT #
1138A
WEST LINN PROJ #
PW0311
DATE
08/03

THIS BAR IS ONE INCH
AT FULL SIZE.
IF NOT ONE INCH,
SCALE ACCORDINGLY

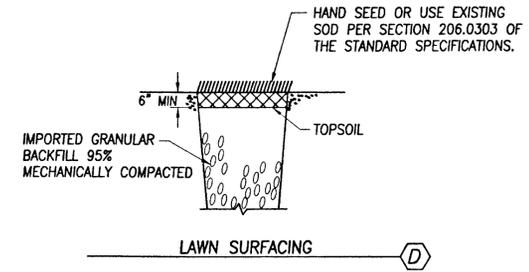
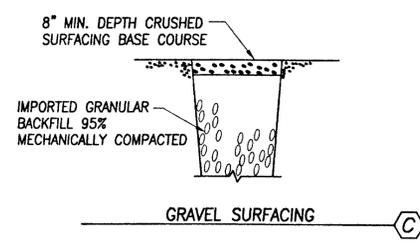
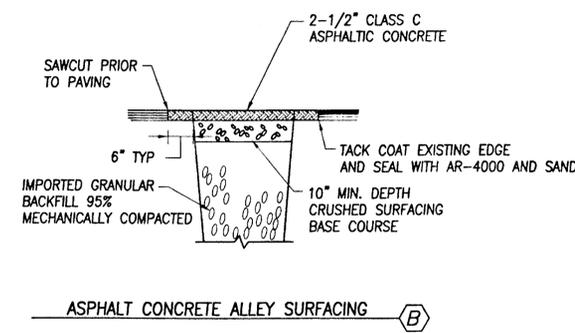
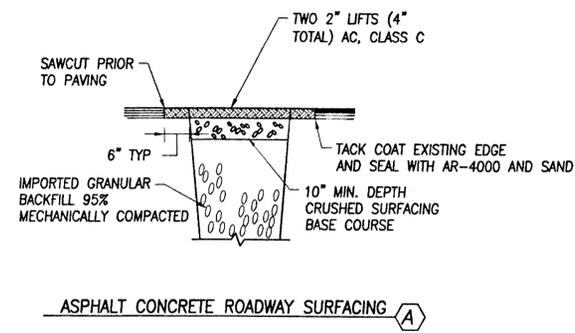
CITY OF WEST LINN
WILLAMETTE NEIGHBORHOOD
UTILITY REPLACEMENT - PHASE 1

COVER SHEET

DRAWING NO.
C1
SHEET NO.
1 of 9

GENERAL CONSTRUCTION NOTES

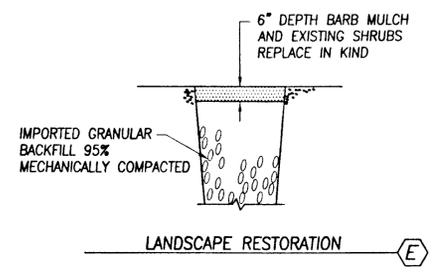
- ALL CONSTRUCTION, MATERIALS, AND WORKMANSHIP SHALL CONFORM TO THE "CITY OF WEST LINN PUBLIC WORKS STANDARDS" AS PREPARED BY THE CITY OF WEST LINN PUBLIC WORKS DEPARTMENT AND THE CURRENT EDITION OF "OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION" AS PREPARED BY ODOT AND APWA.
- THE CONTRACTOR SHALL COORDINATE AND ATTEND A PRE-CONSTRUCTION CONFERENCE WITH THE CITY OF WEST LINN PUBLIC WORKS PRIOR TO COMMENCING CONSTRUCTION, AS PER ODOT SPECIFICATION 00180.42 PRECONSTRUCTION CONFERENCE.
- ALL TESTING AND CONNECTIONS TO EXISTING STRUCTURES SHALL BE DONE IN THE PRESENCE OF A REPRESENTATIVE OF THE CITY OF WEST LINN PUBLIC WORKS DEPARTMENT. ADVANCE NOTIFICATION OF INSPECTION SHALL BE PER THE CONTRACT DOCUMENTS.
- WHERE EXISTING SERVICES MUST BE INTERRUPTED, THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE CITY OF WEST LINN PROJECT MANAGER AT LEAST 3 BUSINESS DAYS PRIOR TO ANY AND ALL CONSTRUCTION ACTIVITY.
- ANY DEVIATION FROM THE PLANS WILL REQUIRE AN APPROVAL FROM THE ENGINEER.
- ALL CONSTRUCTION WITHIN THE CITY OF WEST LINN OR CLACKAMAS COUNTY RIGHT-OF-WAY SHALL HAVE AN APPROVED TRAFFIC CONTROL PLAN RIGHT-OF-WAY PERMIT PRIOR TO ANY ON-SITE CONSTRUCTION ACTIVITY, AS PER CITY SPECIFICATION 202 TEMPORARY TRAFFIC CONTROL.
- THE CONTRACTOR IS TO LEAVE ALL AREAS OF THE PROJECT FREE OF DEBRIS AND UNUSED CONSTRUCTION MATERIAL.
- EXISTING SEWER LATERALS, WATER SERVICE LINES, GAS SERVICES, AND UNDERGROUND UTILITY LINES ARE NOT SHOWN ON THE CONTRACT DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO THE START OF CONSTRUCTION AND SHALL NOTIFY THE ENGINEER OF ANY POTENTIAL CONFLICTS. THE CONTRACTOR SHALL EXCAVATE TEST HOLES OVER ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION TO DETERMINE THEIR EXACT LOCATION. CALL 800-332-2344 FOR UTILITIES LOCATE A MINIMUM OF 48 HOURS PRIOR TO ANY START OF CONSTRUCTION.
- THE LOCATION OF EXISTING UTILITIES SHOWN ON THE PLANS ARE COMPILED FROM AVAILABLE RECORDS. THIS DOES NOT GUARANTEE THE ACCURACY OR THE COMPLETENESS OF SUCH RECORDS. THE CONTRACTOR IS TO FIELD VERIFY LOCATIONS OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
- ALL LATERALS SHALL END AT THE RIGHT-OF-WAY LINE OR WHERE DIRECTED BY THE OWNER. A CLEAN-OUT SHALL BE PLACED IN ACCORDANCE WITH THE STANDARD DETAILS.



TRENCH BACKFILL AND SURFACE RESTORATION

LEGEND

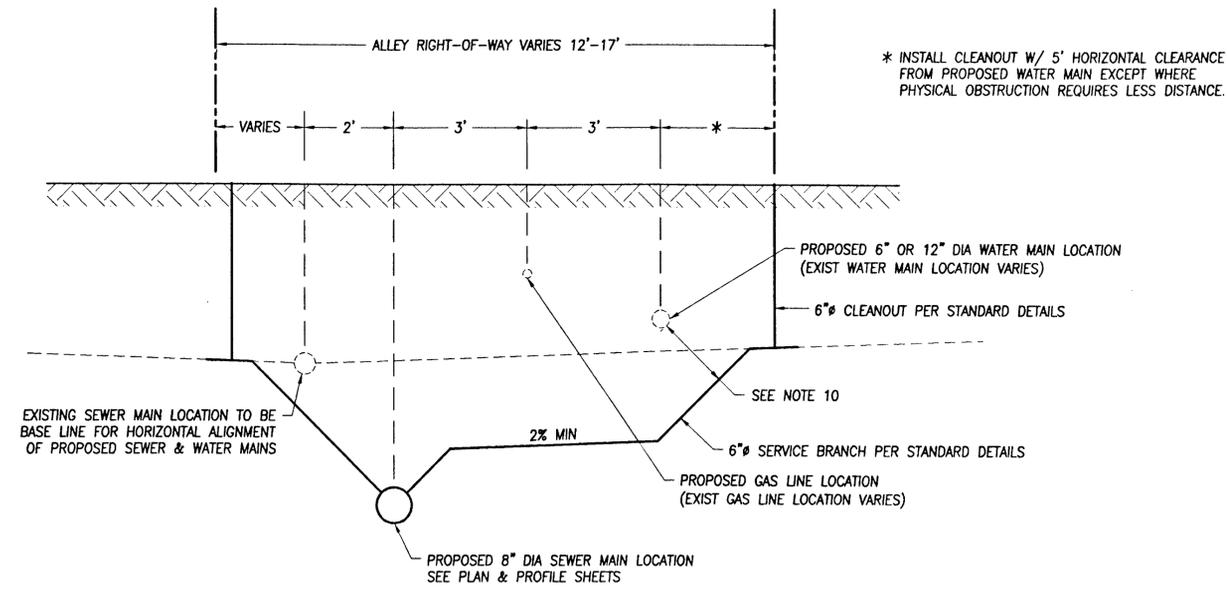
- EXISTING PAVEMENT/GRAVEL
- EXISTING STRUCTURES
- EXISTING CONTOURS
- EXISTING SANITARY SEWER MAIN
- EXISTING WATER MAIN
- EXISTING GAS MAIN
- EXISTING WATER VALVE
- EXISTING MANHOLE
- EXISTING CATCH BASIN
- PROPOSED SANITARY SEWER MAIN
- PROPOSED WATER MAIN
- PROPOSED MANHOLE
- PROPOSED WATER VALVE



- LANDSCAPE RESTORATION NOT SHOWN ON THE SEWER MAIN PROFILES BECAUSE IT IS LIMITED TO THE WATER MAIN.
- PAYMENT LIMITS FOR SURFACE RESTORATION ARE SPECIFIED. WHERE DIRECTED BY THE OWNER IN WRITING - EXTEND LIMITS OF SURFACING FOR ADJUSTED PAYMENT LIMITS. SURFACE RESTORATIONS REQUIRED OUTSIDE OF PAYMENT LIMITS SPECIFIED SHALL BE WHERE NOT DIRECTED BY THE OWNER, SHALL NOT BE PAID FOR UNDER SURFACE RESTORATION BID ITEMS.

SEQUENCING NOTES

- SEQUENCE CONSTRUCTION TO HAVE GAS MAINS RELOCATED, THEN SEWER MAINS AND LATERALS CONSTRUCTED, AND FINALLY WATER MAINS AND SERVICES ALL PER THE FOLLOWING REQUIREMENTS:
- THE CONTRACTOR SHALL COORDINATE WITH NORTHWEST NATURAL GAS TO HAVE GAS LINES RELOCATED IN ADVANCE OF SEWER AND WATER MAIN CONSTRUCTION. GAS SERVICE LINE LOCATIONS ARE NOT SHOWN ON THE CONTRACT DOCUMENTS.
- WATER SERVICE LINES AND METERS ARE NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL FIELD LOCATE MAIN & SERVICE LINES PRIOR TO CONSTRUCTION.
- PROVIDE ADVANCE NOTIFICATION TO PROPERTY OWNERS ALONG SEWER AND WATER MAIN SEGMENT PROPOSED FOR CONSTRUCTION.
- STAKE ALL LATERAL LOCATIONS IN ADVANCE OF CONSTRUCTION AT LEAST FIVE (5) WORKING DAYS PRIOR TO CONSTRUCTION OF THAT SEGMENT OF MAIN LINE SEWER TO PROVIDE THE OWNER WITH THE OPPORTUNITY TO RESOLVE ILICIT CONNECTIONS TO THE SANITARY SEWER.
- CONSTRUCT SANITARY SEWER IN 12TH STREET, AND TEST ENTIRE SEGMENT PRIOR TO CONSTRUCTING WATER OR SEWER MAINS IN ALLEYS.
- CONTRACTOR SHALL CONSTRUCT WATER AND SEWER MAINS AND SERVICES THAT ARE LOCATED IN ALLEYS INCREMENTALLY IN SEGMENTS, ON A BLOCK BY BLOCK BASIS. SEWER AND WATER MAINS AND SERVICES ALONG ONE BLOCK SHALL BE CONSTRUCTED, TESTED, AND ACCEPTED PRIOR TO MOVING TO THE NEXT BLOCK.
- ON A BLOCK BY BLOCK BASIS, SEWER MAINS IN THE ALLEYS SHALL BE CONSTRUCTED PRIOR TO WATER MAINS. THE CONTRACTOR SHALL PROVIDE TEMPORARY WATER SERVICE TO EACH METER, PRIOR TO CONSTRUCTION OF SANITARY SEWER PER THE CONTRACT DOCUMENTS.
- FOLLOWING INSTALLATION AND BACKFILL OF MAINLINE SEWER, UPSTREAM MANHOLE, LATERALS, AND LATERAL CLEANOUTS ALONG ENTIRE BLOCK OF MAINLINE MAINLINE SEWER SEGMENT, PLUG MAINLINE SEWER AT MANHOLES AND LATERALS AT UPSTREAM SIDE OF LATERAL CLEANOUT, AND TEST THE ENTIRE BLOCK SEGMENT OF MAINLINE SEWER AND LATERALS PER THE CONTRACT DOCUMENTS. FOLLOWING OWNER APPROVAL OF TEST, CONNECT CLEANOUT TO EXISTING LATERALS IN PRESENCE OF OWNER'S REPRESENTATIVE.
- PROVIDE 2' VERTICAL SEPARATION BETWEEN THE WATER MAIN AND THE SEWER LATERALS.
- WHERE WATER METERS ARE LOCATED WITHIN TEN (10) FEET OF SEWER LATERALS, WATER METERS SHALL BE RELOCATED TO PROVIDE 10-FOOT CLEAR DISTANCE FROM WATER SERVICE TO SEWER LATERAL. FOLLOWING CONTRACTOR STAKING OF SEWER LATERAL, THE OWNER WILL DESIGNATE THE LOCATIONS OF WATER METERS TO BE RELOCATED.



SEQUENCING DETAIL



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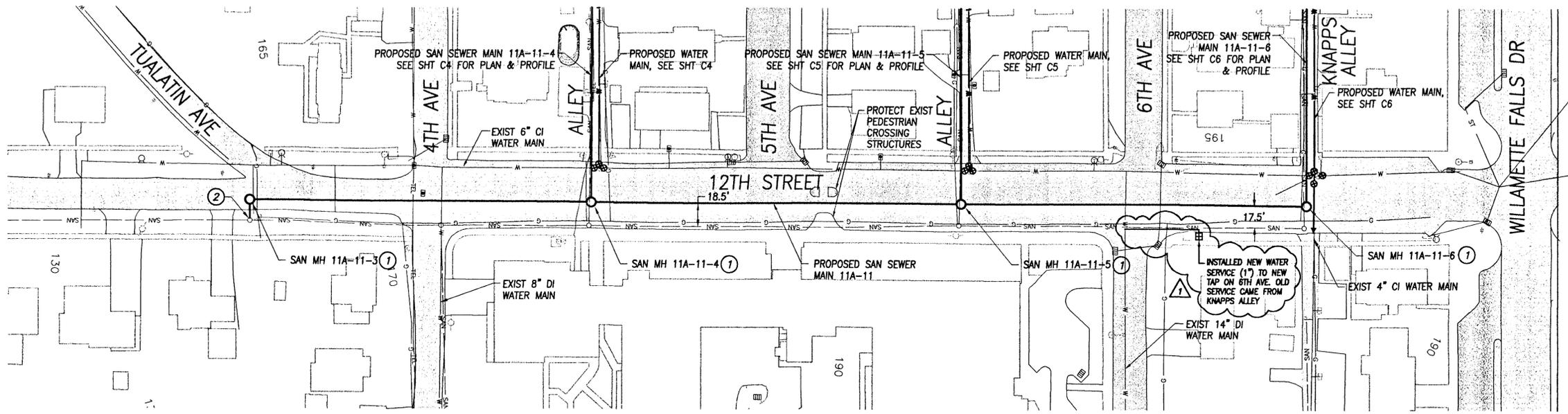
WE PROJECT # 11384
 WEST LINN PROJ # PW0311
 DATE 08/03

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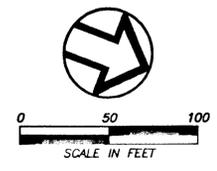
CITY OF WEST LINN
 WILLAMETTE NEIGHBORHOOD
 UTILITY REPLACEMENT - PHASE 1

NOTES, DETAILS AND LEGEND

DRAWING NO. C2
 SHEET NO. 2 OF 9

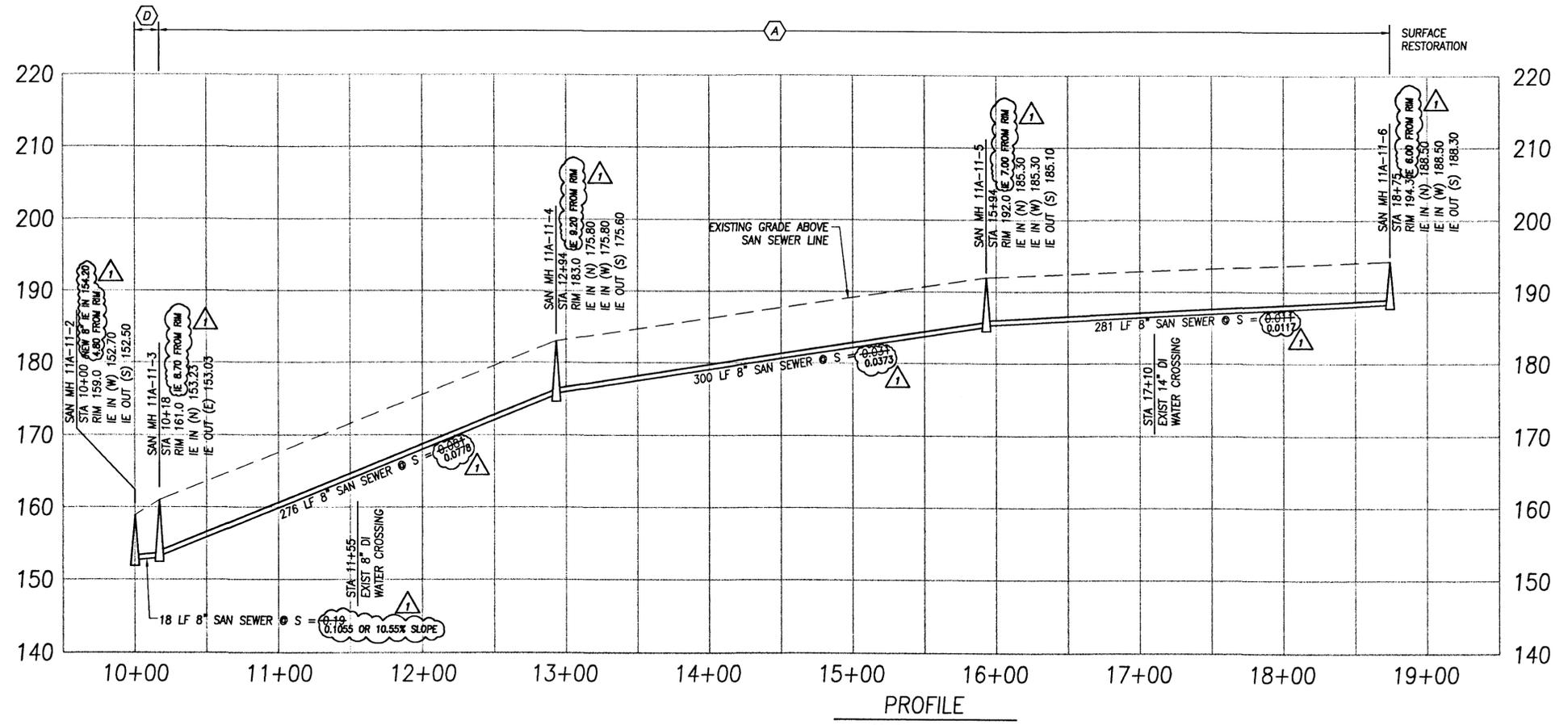


PLAN



SANITARY NOTES:

- ① INSTALL TYPE 1 48" DIA SANITARY MANHOLE.
- ② CONNECT TO EXISTING MANHOLE.
- ③ SEE SCHEMATIC DETAIL SHT 2 FOR SEWER & WATER MAIN LOCATIONS AND SERVICE EXTENSION REQUIREMENTS.
- ④ NW NATURAL GAS RECORDS INDICATE 4 CROSSINGS ALONG 12TH STREET.
- ⑤ EXISTING SERVICE LINES TO BE ABANDONED SHALL BE PLUGGED. EXISTING SEWERS TO BE ABANDONED SHALL BE CRUSHED IN PLACE. REMOVE ALL EXISTING MANHOLES AND CLEANOUTS THAT ARE CONNECTED TO SEWERS PROPOSED FOR ABANDONMENT.
- ⑥ HORIZONTAL ALIGNMENT OF PROPOSED MAINLINE SEWERS IN ALLEYS SHALL BE ESTABLISHED BY EXISTING MAINLINE SEWER TO BE ABANDONED. SEE SHEET 2 - SEQUENCING DETAIL.



PROFILE

SCALE: 1"=50' HORZ
1"=10' VERT



NO.	REVISION	BY	DATE
1	ASBUILTS	BDS	11/04

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(360) 695-7041

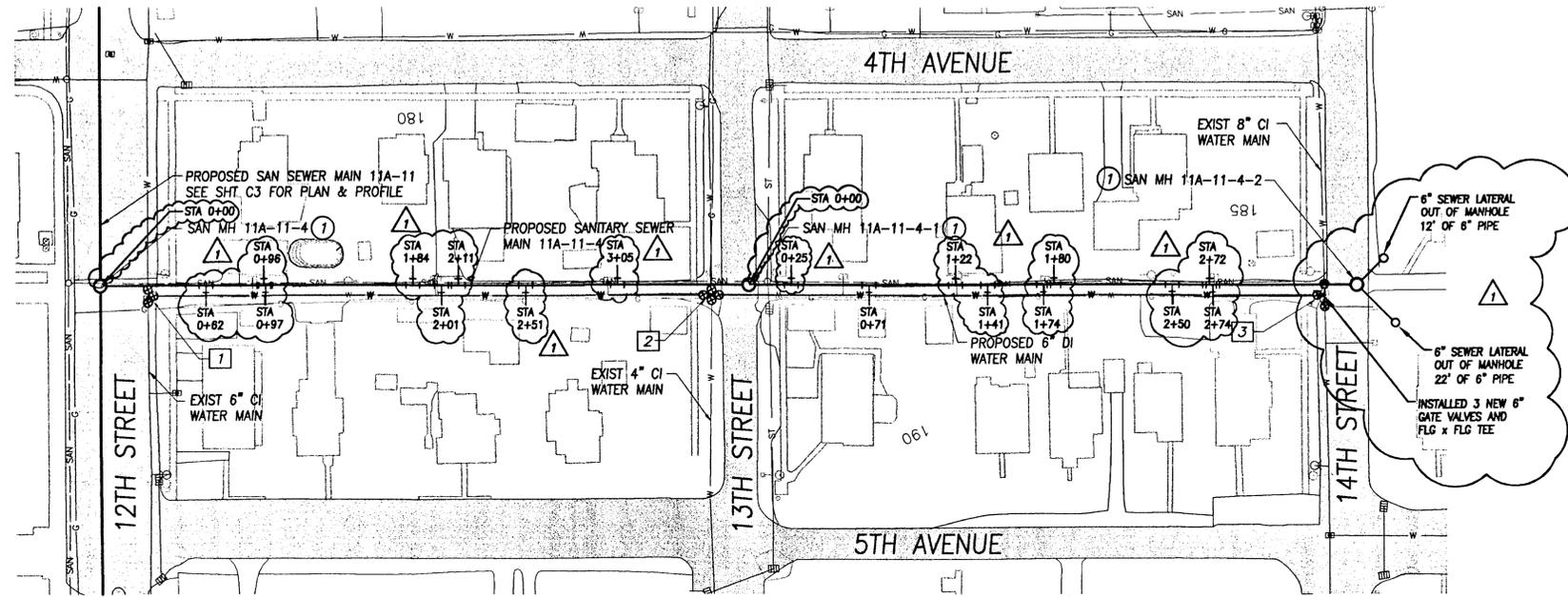
WE PROJECT # 1138A
WEST LINN PROJ # PWO311
DATE 08/03

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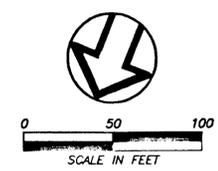
CITY OF WEST LINN
WILLAMETTE NEIGHBORHOOD
UTILITY REPLACEMENT - PHASE 1

12TH STREET PLAN & PROFILE
STA 10+00 TO STA 18+75

DRAWING NO. C3
SHEET NO. 3 OF 9



PLAN

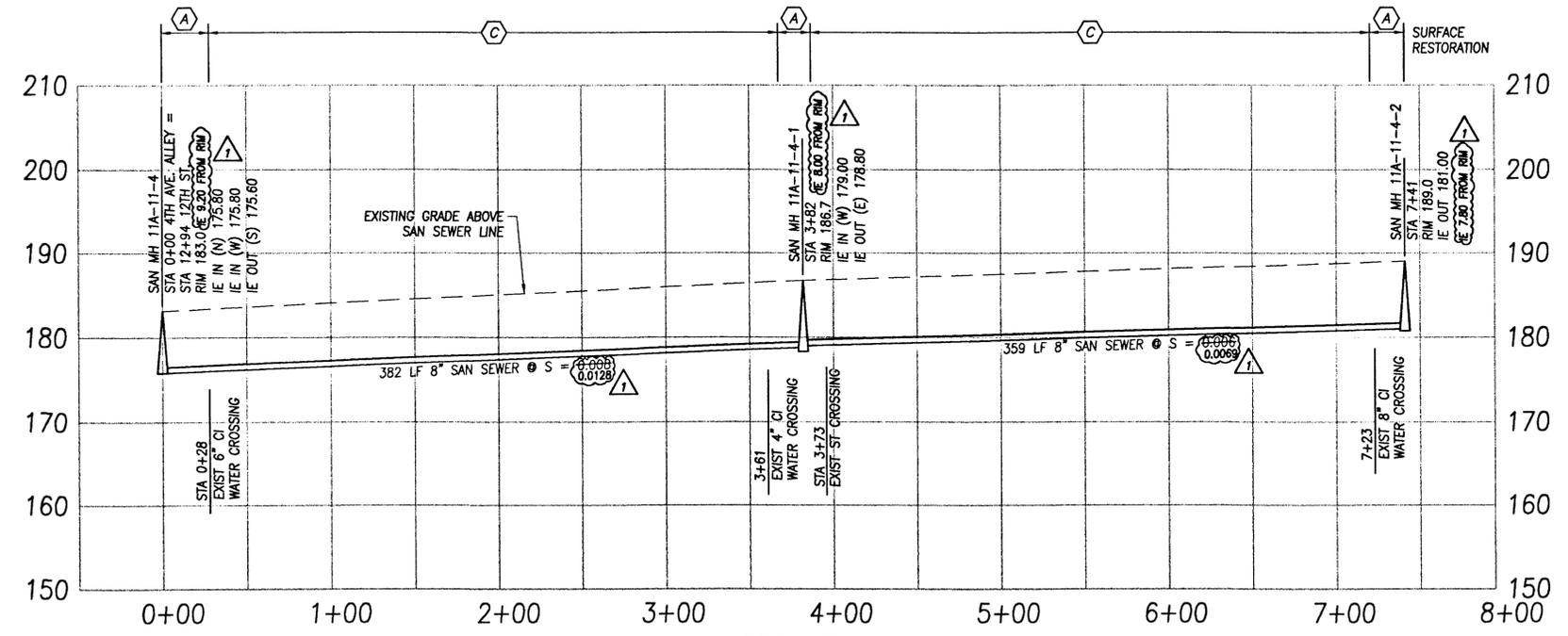


SANITARY NOTES:

- ① INSTALL TYPE 1 48" DIA SANITARY MANHOLE.
- ② SEE SCHEMATIC DETAIL SHT 2 FOR SEWER & WATER MAIN LOCATIONS AND SERVICE EXTENSION REQUIREMENTS.
- ③ NW NATURAL GAS RECORDS INDICATE 14 CROSSINGS ALONG THE ALLEY.
- ④ EXISTING SERVICE LINES TO BE ABANDONED SHALL BE PLUGGED. EXISTING SEWERS TO BE ABANDONED SHALL BE CRUSHED IN PLACE. REMOVE ALL EXISTING MANHOLES AND CLEANOUTS THAT ARE CONNECTED TO SEWERS PROPOSED FOR ABANDONMENT.
- ⑤ HORIZONTAL ALIGNMENT OF PROPOSED MAINLINE SEWERS IN ALLEYS SHALL BE ESTABLISHED BY EXISTING MAINLINE SEWER TO BE ABANDONED. SEE SHEET 2 - SEQUENCING DETAIL.

WATER NOTES:

- ① INSTALL:
 - 1 ~ 6" FLG X 6" FLG TEE
 - 3 ~ 6" FLG X MJ GATE VALVES
 - 1 ~ THRUST BLOCK
- ② INSTALL:
 - 1 ~ 6" FLG X 4" FLG CROSS
 - 2 ~ 6" FLG X MJ GATE VALVES
 - 2 ~ 4" FLG X MJ GATE VALVES
- ③ INSTALL:
 - 1 ~ 6" FLG X 8" FLG TEE
 - ① ③ ~ 6" FLG X MJ GATE VALVE
 - ~ THRUST BLOCK



PROFILE

SCALE: 1"=50' HORIZ
1"=10' VERT



ASBULLTS	BDS	11/04
NO.	REVISION	BY DATE

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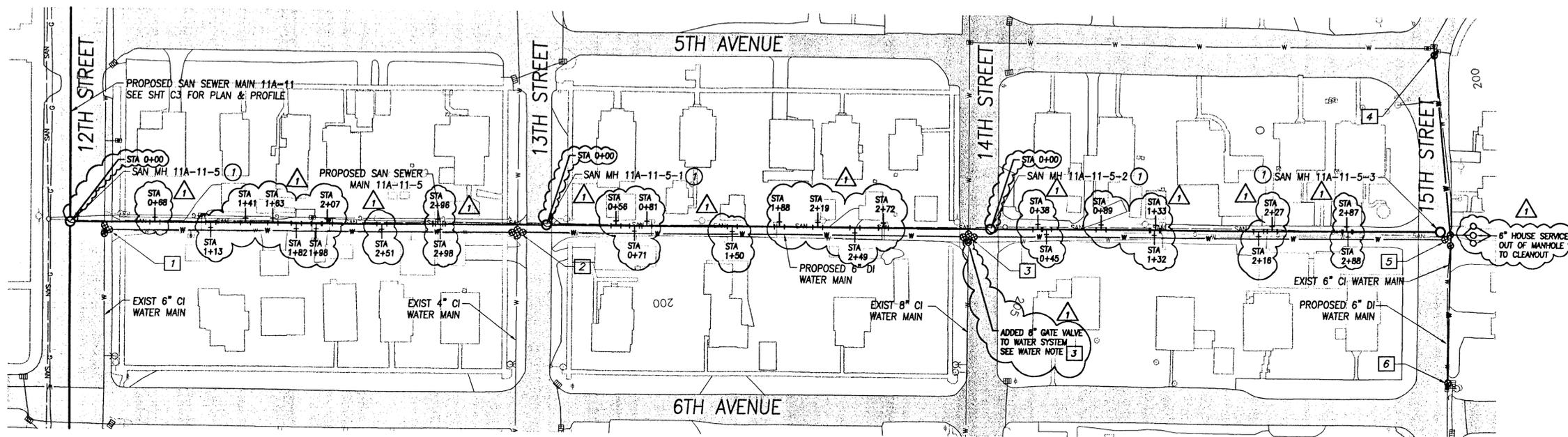
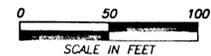
WE PROJECT # 1138A
WEST LINN PROJ # PWD0311
DATE 08/03

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CITY OF WEST LINN
WILLAMETTE NEIGHBORHOOD
UTILITY REPLACEMENT - PHASE 1

ALLEY BETWEEN 4TH AVE & 5TH AVE
PLAN & PROFILE
STA 0+00 TO STA 7+41

DRAWING NO. C4
SHEET NO. 4 of 9



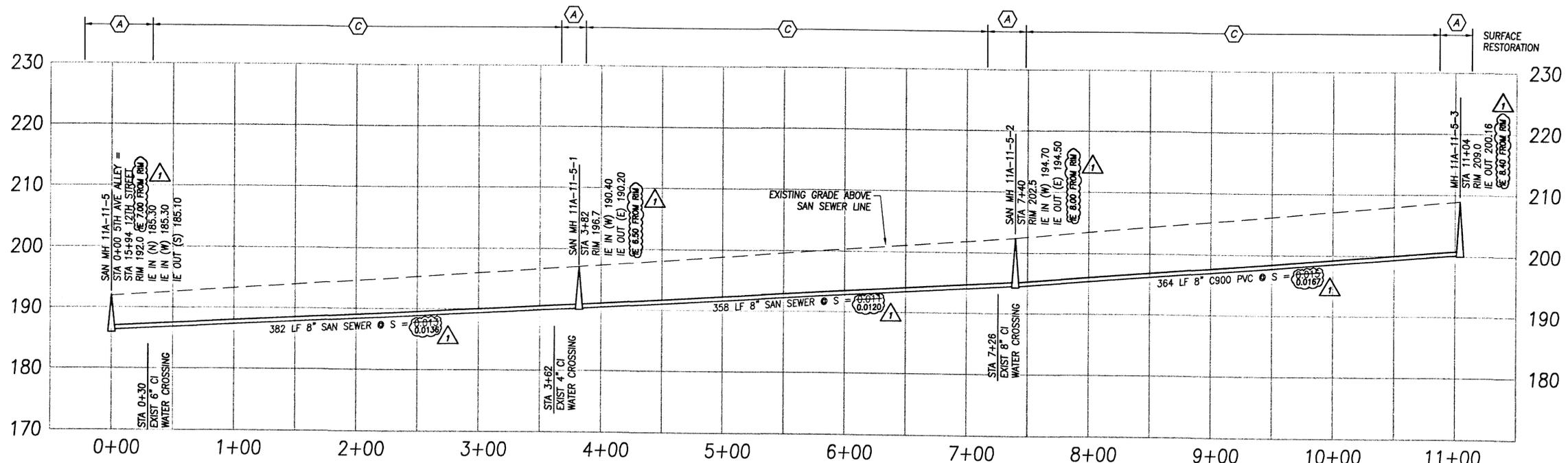
PLAN

SANITARY NOTES:

- ① INSTALL TYPE 1 48" DIA SANITARY MANHOLE.
- ② SEE SCHEMATIC DETAIL SHT 2 FOR SEWER & WATER MAIN LOCATIONS AND SERVICE EXTENSION REQUIREMENTS.
- ③ NW NATURAL GAS RECORDS INDICATE 19 CROSSINGS ALONG THE ALLEY.
- ④ EXISTING SERVICE LINES TO BE ABANDONED SHALL BE PLUGGED. EXISTING SEWERS TO BE ABANDONED SHALL BE CRUSHED IN PLACE. REMOVE ALL EXISTING MANHOLES AND CLEANOUTS THAT ARE CONNECTED TO SEWERS PROPOSED FOR ABANDONMENT.
- ⑤ HORIZONTAL ALIGNMENT OF PROPOSED MAINLINE SEWERS IN ALLEYS SHALL BE ESTABLISHED BY EXISTING MAINLINE SEWER TO BE ABANDONED. SEE SHEET 2 - SEQUENCING DETAIL.

WATER NOTES:

- ① INSTALL:
1 ~ 6" FLG X 6" FLG TEE
3 ~ 6" FLG X MJ GATE VALVES
1 ~ THRUST BLOCK
- ② INSTALL:
1 ~ 6" FLG X 4" FLG CROSS
2 ~ 6" FLG X MJ GATE VALVES
2 ~ 4" FLG X MJ GATE VALVES
- ③ INSTALL:
1 ~ 8" FLG X 6" FLG CROSS
① 2 ~ 8" FLG X MJ GATE VALVE
② 2 ~ 6" FLG X MJ GATE VALVE
2 ~ 8" GATE VALVES
- ④ INSTALL:
1 ~ 6" FLG X 6" FLG TEE
1 ~ 6" FLG X MJ GATE VALVE
1 ~ THRUST BLOCK
- ⑤ INSTALL:
1 ~ 6" FLG X 6" FLG TEE
3 ~ 6" FLG X MJ GATE VALVES
1 ~ THRUST BLOCK
- ⑥ INSTALL:
1 ~ 6" FLG X 6" FLG TEE
2 ~ 6" FLG X MJ GATE VALVES
1 ~ THRUST BLOCK



PROFILE

SCALE: 1"=50' HORIZ
1"=10' VERT



NO.	REVISION	BY	DATE
1	ASBULTS	BDS	11/04

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317 COLUMBIA STREET
VANCOUVER, WASHINGTON 98660
(360) 695-7041

WE PROJECT # 1138A
WEST LINN PROJ # FW0311
DATE 08/03

THIS BAR IS ONE INCH
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SCALE ACCORDINGLY

CITY OF WEST LINN
WILLAMETTE NEIGHBORHOOD
UTILITY REPLACEMENT - PHASE 1

ALLEY BETWEEN 5TH AVE & 6TH AVE
PLAN & PROFILE
STA. 0+00 TO 11+04

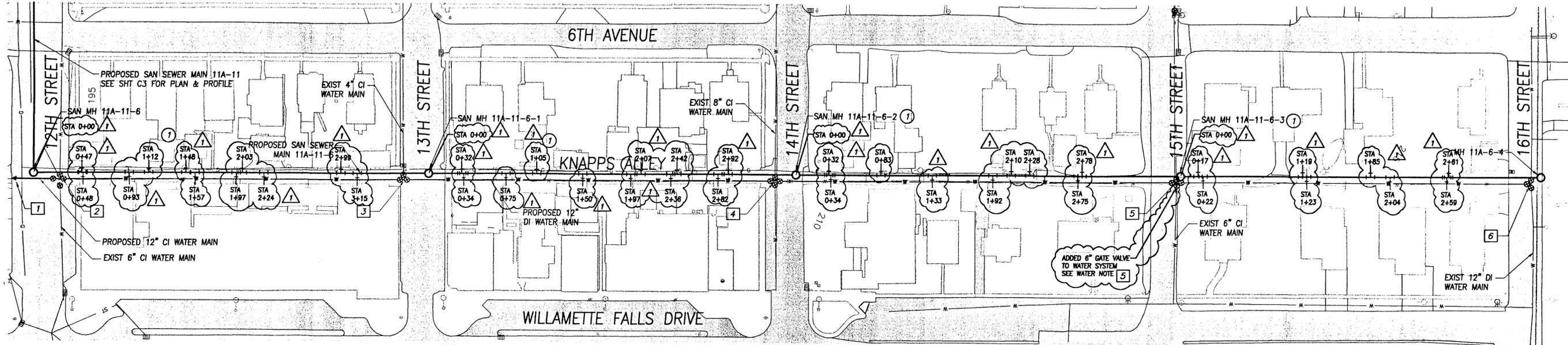
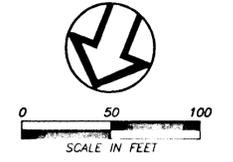
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SHEET NO. 5 of 9

SANITARY NOTES:

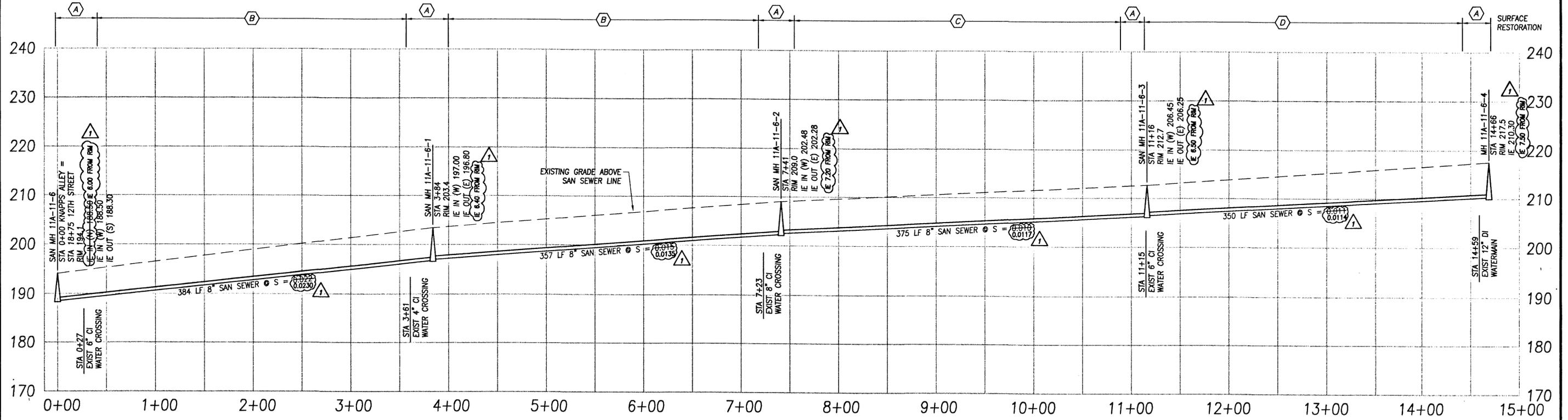
- 1 INSTALL TYPE 1 48" DIA SANITARY MANHOLE.
- 2 SEE SCHEMATIC DETAIL SHT 2 FOR SEWER & WATER MAIN LOCATIONS AND SERVICE EXTENSION REQUIREMENTS.
- 3 NW NATURAL GAS RECORDS INDICATE 24 CROSSINGS ALONG KNAPPS ALLEY.
- 4 EXISTING SERVICE LINES TO BE ABANDONED SHALL BE PLUGGED. EXISTING SEWERS TO BE ABANDONED SHALL BE CRUSHED IN PLACE. REMOVE ALL EXISTING MANHOLES AND CLEANOUTS THAT ARE CONNECTED TO SEWERS PROPOSED FOR ABANDONMENT.
- 5 HORIZONTAL ALIGNMENT OF PROPOSED MAINLINE SEWERS IN ALLEYS SHALL BE ESTABLISHED BY EXISTING MAINLINE SEWER TO BE ABANDONED. SEE SHEET 2 - SEQUENCING DETAIL.

WATER NOTES:

- 1 INSTALL:
1 ~ 12" X 4" MJ REDUCER
1 ~ THRUST BLOCK - STRADDLE BLOCK TYPE (PER STANDARD DETAIL SHEET) W/BOLTS THROUGH 12" SIDE OF MJ USING STAR BOLTS.
- 2 INSTALL:
1 ~ 12" FLG X 6" FLG CROSS
2 ~ 12" FLG X MJ BUTTERFLY VALVE
2 ~ 6" FLG X MJ GATE VALVE
- 3 INSTALL:
1 ~ 12" FLG X 4" FLG TEE
2 ~ 12" FLG X MJ BUTTERFLY VALVES
1 ~ 4" FLG X MJ GATE VALVE
1 ~ THRUST BLOCK
- 4 INSTALL:
1 ~ 12" FLG X 8" FLG CROSS
2 ~ 12" FLG X MJ BUTTERFLY VALVES
2 ~ 8" FLG X MJ GATE VALVES
- 5 INSTALL:
1 ~ 12" FLG X 6" FLG CROSS
2 ~ 12" FLG X MJ BUTTERFLY VALVES
2 ~ 6" FLG X MJ GATE VALVE
- 6 INSTALL:
1 ~ 12" FLG X 12" FLG TEE
3 ~ 12" FLG X MJ BUTTERFLY VALVES
1 ~ THRUST BLOCK



PLAN



PROFILE

SCALE: 1"=50' HORZ
1"=10' VERT



NO.	REVISION	BY	DATE

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VANCOUVER, WASHINGTON 98660
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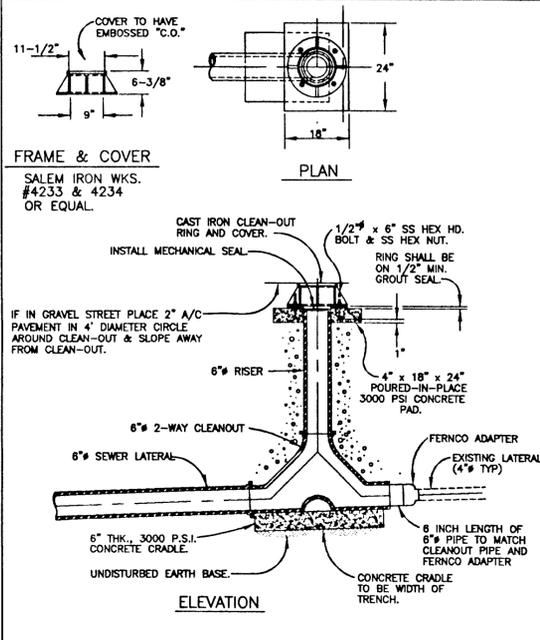
WE PROJECT #	11384
WEST LINN PROJ #	PW0311
DATE	08/03

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CITY OF WEST LINN
WILLAMETTE NEIGHBORHOOD
UTILITY REPLACEMENT - PHASE 1

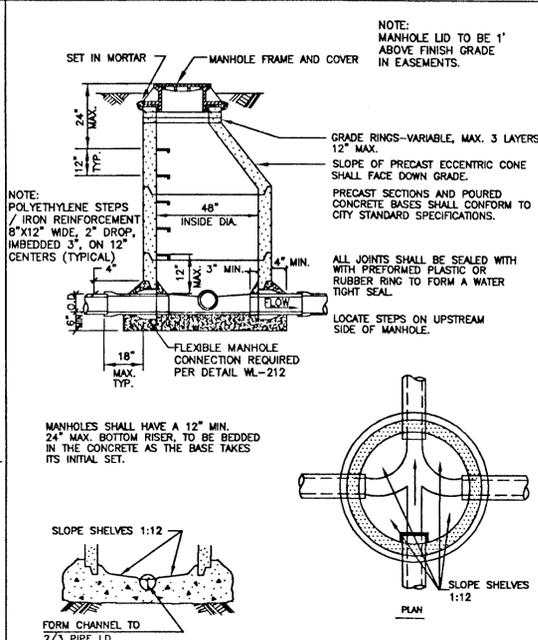
KNAPPS ALLEY PLAN & PROFILE
STA. 0+00 TO 14+66

DRAWING NO.	C6
SHEET NO.	6 OF 9



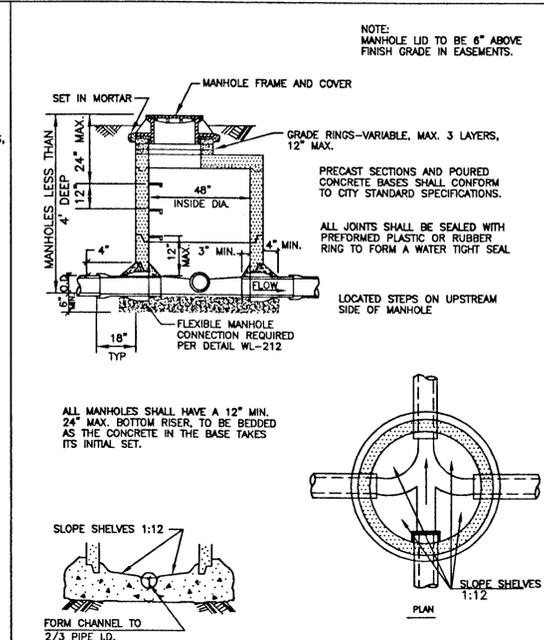
Standard Clean Out

DATE: JAN 2000
DRAWING NO: WL-206
FILE NO: 00-206



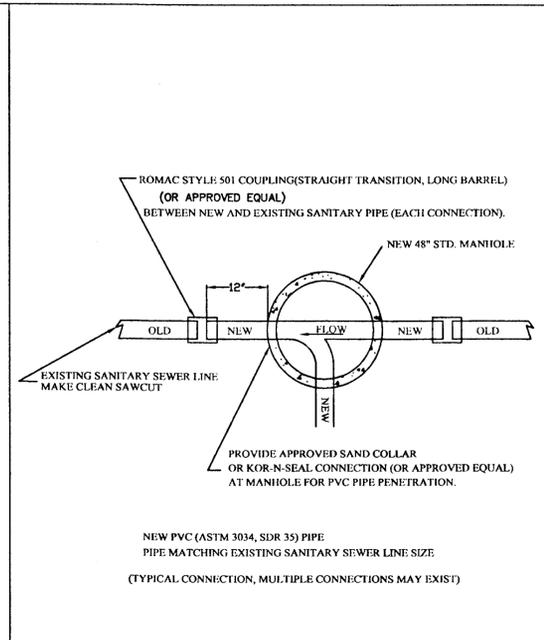
Standard Manhole for Less than 36" Pipe

DATE: JAN 2000
DRAWING NO: WL-207
FILE NO: 00-207



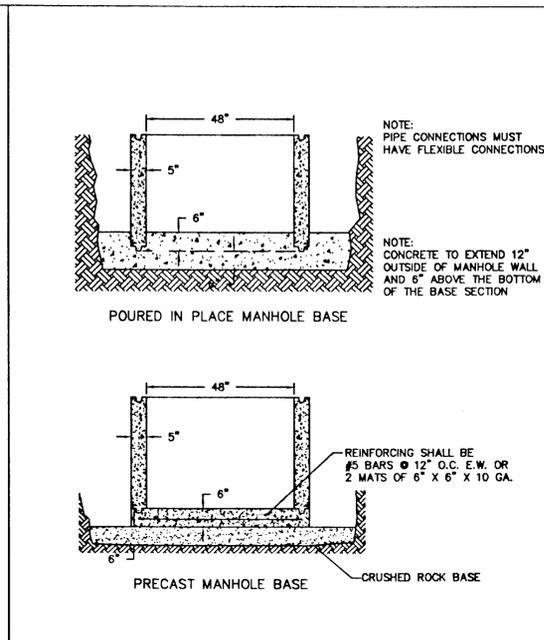
Shallow Manhole for Less than 36" Pipe

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FILE NO: 00-208



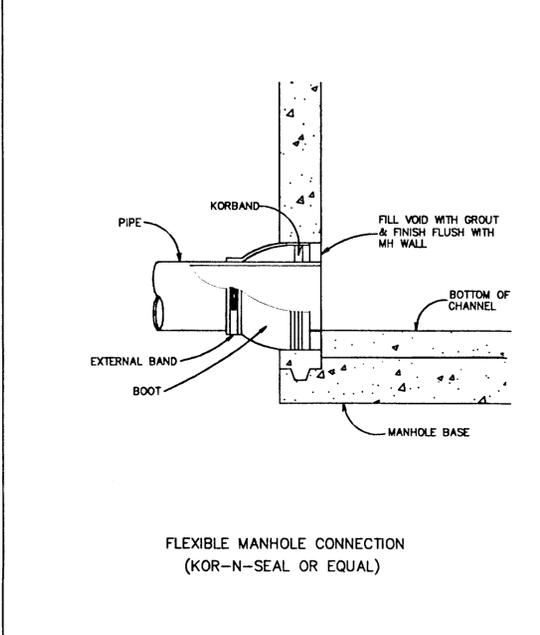
Manhole Detail-Plan View New Manhole to Existing Sewer Line Connection

DATE: JAN 2000
DRAWING NO: WL-210
FILE NO: 00-210



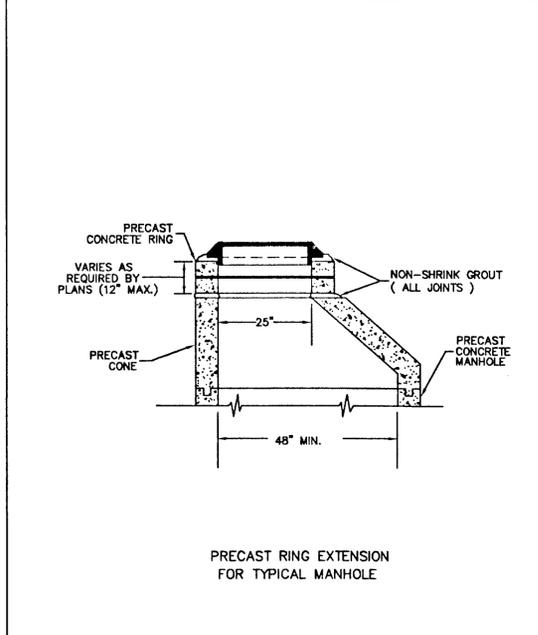
Manhole Base

DATE: JAN 2000
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FILE NO: 00-211



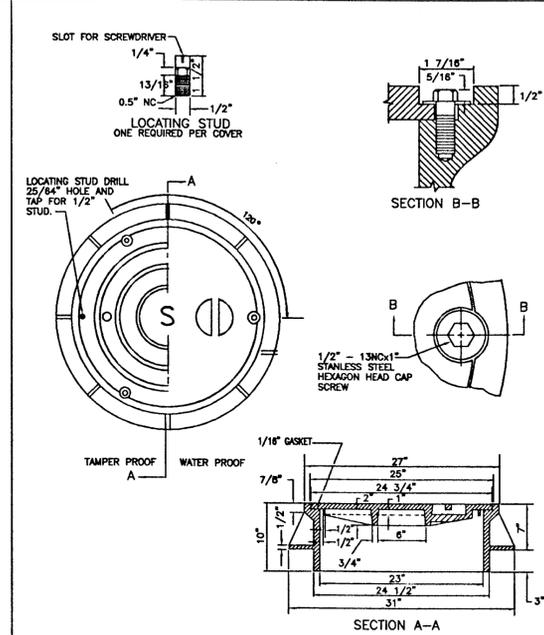
Flexible Manhole Connection

DATE: JAN 2000
DRAWING NO: WL-212
FILE NO: 00-212



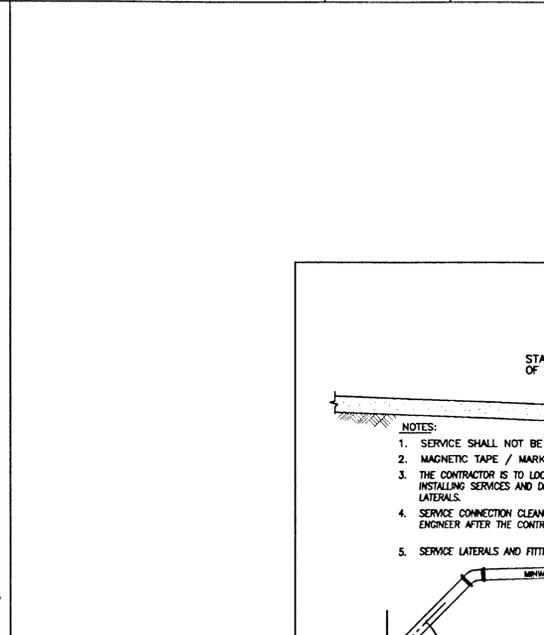
Precast Ring Extension

DATE: JAN 2000
DRAWING NO: WL-213
FILE NO: 00-213



Waterproof and Tamperproof Manhole Frame and Cover

DATE: JAN 2000
DRAWING NO: WL-214
FILE NO: 00-214



Service Branch

DATE: JAN 2000
DRAWING NO: WL-218
FILE NO: 00-218



NO.	REVISION	BY	DATE

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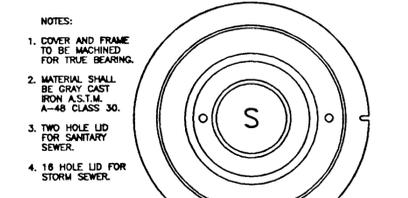
WE PROJECT # 11384
WEST LINN PROJ # PW0311
DATE 08/03

THIS BAR IS ONE INCH AT FULL SIZE. IF NOT ONE INCH, SCALE ACCORDINGLY

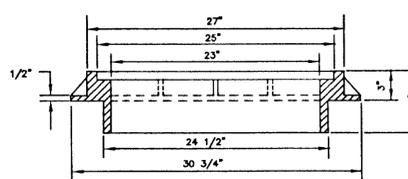
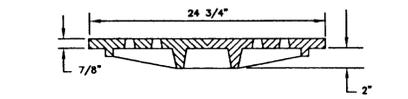
CITY OF WEST LINN
WILLAMETTE NEIGHBORHOOD
UTILITY REPLACEMENT - PHASE 1

STANDARD SEWER DETAILS - 1
C7
7 OF 9

DRAWING NO. C7
SHEET NO. 7 OF 9

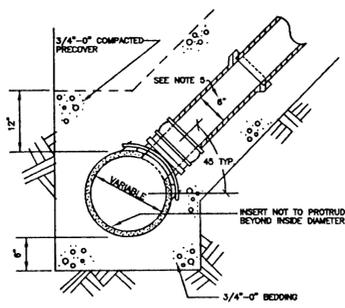


- NOTES:
- COVER AND FRAME TO BE MACHINED FOR TRUE BEARING.
 - MATERIAL SHALL BE GRAY CAST IRON A.S.T.M. A-48 CLASS 30.
 - TWO HOLE LID FOR SANITARY SEWER.
 - 18 HOLE LID FOR STORM SEWER.



Suburban Manhole Frame and Cover 3" Depth

DATE: JAN 2000
DRAWING NO: WL-300
FILE NO: 00-300



- NOTES:
- A MINIMUM OF 24 HOURS NOTICE IS REQUIRED PRIOR TO A TAP INSPECTION. ALL TRENCHES SHALL BE SHORED IN COMPLIANCE WITH OR-OSHA EXCAVATION RULES, CHAPTER 437, DIVISION "3", SUBDIVISION "1", ADOPTED SEPTEMBER 1, 1990. PUBLIC WORKS INSPECTORS WILL NOT INSPECT A TAP IN A TRENCH WITHOUT LEGAL SHORING.
 - THE TAP SHALL BE INSPECTED BEFORE BACKFILL IS ALLOWED AND BEFORE THE SIDE SEWER CONNECTION IS MADE. THE CORE DRILLED "SLUG" IS TO BE SHOWN TO THE INSPECTOR TO INSURE IT WAS REMOVED FROM THE SEWER LINE.
 - ALL SERVICE LINE CONNECTIONS SHALL BE MADE WITH AN APPROVED CONNECTOR MANUFACTURED AND DESIGNED TO CONNECT TO A CORE DRILLED PIPE, FOWLER INSURT-A-TEE, SEAL TIGHT SADDLE, TAP TITE TEE, OR AN APPROVED EQUAL COMMERCIAL TAP.
 - THE CENTERLINE OF TAP IS TO BE ABOVE THE SPRINGLINE.
 - 4" MAXIMUM TAP FOR 8" MAIN (CUT-IN TEE TO BE USED FOR 6" HOUSE BRANCH ON 8" MAIN).
 - 4" HOUSE BRANCH MAY BE USED FOR SINGLE FAMILY LOTS ONLY.

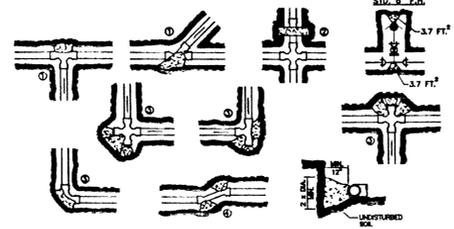
Sewer Service Tap to Existing Sewers for House Laterals

DATE: JAN 2000
DRAWING NO: WL-303
FILE NO: 00-303

FITTING SIZE (Inches)	TEE WYE HYDRANTS	STRADDLE BLOCK	90° BEND PLUGGED CROSS TEE	45° BEND	22 1/2° BEND	11 1/2° BEND
2	1.7	2.1	2.4	1.3	1.5	1.5
4	3.7	4.9	5.3	2.9	3.5	3.5
6	6.7	8.7	9.5	5.1	6.1	6.1
8	10.3	13.6	14.8	8	9.5	9.5
10	15.1	19.8	21.3	11.8	13.9	13.9
12	20.8	27.6	29.8	16.4	19.4	19.4
14	26.8	34.6	37.8	20.5	24.4	24.4
16	33.9	44	47.8	25.9	30.8	30.8
LARGER	**	**	**	**	**	**

BEARING AREA OF THRUST BLOCKS (sq. ft.)

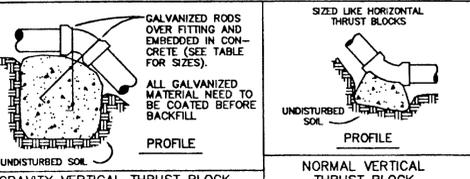
- ALL VALUES ARE BASED ON THE FOLLOWING ASSUMPTIONS: AVG. PRESSURE = 100 PSI X 2 (safety factor); 1500 P.S.F. SOIL BEARING CAPACITY; NORMAL DISTRIBUTION DESIGN VELOCITY NOT TO EXCEED 5 F/S.
 - ALL FITTINGS SHALL BE WRAPPED IN PLASTIC PRIOR TO PLACEMENT OF CONCRETE.
 - BEARING SURFACE OF THRUST BLOCKING SHALL BE AGAINST UNDISTURBED SOIL.
 - ALL CONCRETE MIX SHALL HAVE A MIN. 28 DAY STRENGTH OF 3000 PSI.
 - ALL PIPE ZONES SHALL BE GRAVEL FILLED AND COMPACTED.
 - THRUST BLOCKS FOR PLUGGED CROSS AND PLUGGED TEE SHALL HAVE #4 REBAR LIFTING LOOPS INSTALLED AS SHOWN.
 - VERTICAL THRUST DETAILS-SEE DWG. WL-407.
 - STRADDLE BLOCK DETAILS-SEE DWG. WL-408.
- * BLOCK TO UNDISTURBED TRENCH WALLS
 - ** THRUST BLOCKS FOR PIPES LARGER THAN 18" WILL BE INDIVIDUALLY DESIGNED BY THE ENGINEER.



Horizontal Thrust Blocking

DATE: JAN 2000
DRAWING NO: WL-406
FILE NO: 00-406

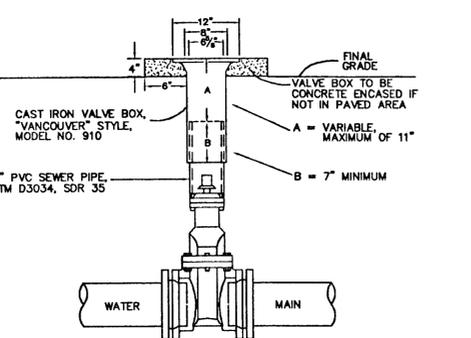
- NOTES:
- GRAVITY VERTICAL THRUST BLOCKS SHALL BE DESIGNED BY THE ENGINEER.
 - KEEP CONCRETE CLEAR OF JOINT AND JOINT ACCESSORIES. FITTINGS SHALL BE WRAPPED IN PLASTIC PRIOR TO PLACEMENT OF CONCRETE.
 - CONCRETE THRUST BLOCKING SHALL BE POURED AGAINST UNDISTURBED EARTH.
 - CONCRETE MIX SHALL HAVE A MIN. 28 DAY STRENGTH OF 3300 P.S.I.
 - THRUST BLOCK VOLUMES FOR VERTICAL BENDS HAVING UPWARD RESULTANT THRUSTS ARE BASED ON TEST PRESSURE OF 150 P.S.I.G. AND THE WEIGHT OF CONCRETE = 4050 LBS./CU.YD.
 - VERTICAL BENDS THAT REQUIRE A THRUST BLOCK VOLUME EXCEEDING 5 CUBIC YARDS REQUIRE SPECIAL BLOCKING DETAILS. SEE PLANS FOR VOLUMES SHOWN INSIDE HEAVY LINE IN TABLE.
 - PAYMENT SHALL BE THE SAME AS FOR HORIZONTAL THRUST BLOCKS.
 - ALL REBAR SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM-123 (MIN. 3.4 MIL). REBAR SHALL BE BENT BEFORE GALVANIZATION, AND LAST 4" OF BAR SHALL BE BENT 90 DEGREES WITH A 1/2" RADIUS BEND. REBAR SHALL BE TIGHTLY FIT TO RESTRAINED FITTING.
 - FOR HORIZONTAL THRUST BLOCK DETAILS SEE DWG. NO. WL-406.



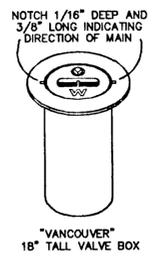
VOLUME OF THRUST BLOCK IN CUBIC YARDS (VERTICAL BENDS)		FITTING SIZE		ROD SIZE		EMBED-MENT	
FITTING SIZE	BEND ANGLE	12" AND LESS	14" - 16"	#6	#8	30"	36"
4	45°	1.1	0.4	0.2			
6	2.7	1.0	0.4				
8	4.0	1.5	0.6				
10	6.0	2.3	0.9				
12	8.5	3.2	1.3				
14	11.5	4.3	1.8				
16	14.8	5.6	2.3				

Vertical Thrust Blocking

DATE: JAN 2000
DRAWING NO: WL-407
FILE NO: 00-407

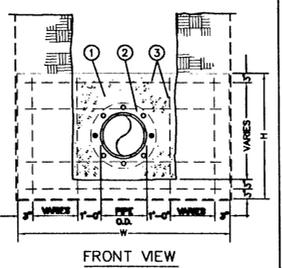
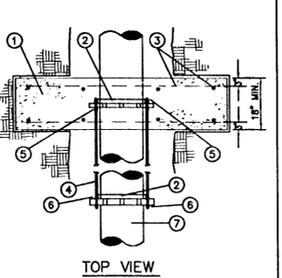


- NOTES:
- VALVE BOXES SHALL BE CENTERED DIRECTLY OVER THE VALVE NUT IN A VERTICAL POSITION.
 - VALVE BOX TOP SHALL BE ADJUSTED TO MEET FINISHED GRADE.
 - PVC SHALL BE ONE CONTINUOUS PIECE- NO BELLS OR COUPLERS.
 - ON VALVES 8" AND LARGER, PVC SHALL BE NOTCHED OVER VALVE PACKING BOLTS SO PVC SITS ON BONNET.



Standard Valve Box Detail

DATE: JAN 2000
DRAWING NO: WL-411
FILE NO: 00-411

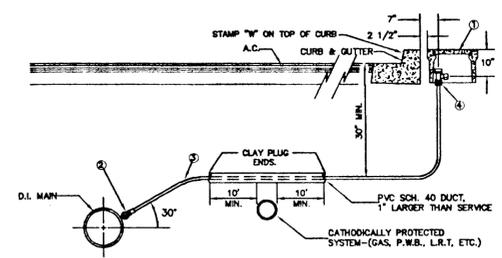


- MATERIALS:
- CONCRETE STRADDLE BLOCK.
 - UNI-FLANGE, SERIES 4000, CLASS 125
 - #4 REBAR EACH WAY, 12" O/C.
 - 3/4" ALL THREAD GALVANIZED STEEL TIE RODS, QUANTITY PER ENGINEER.
 - 3/4" GALVANIZED NUTS, 2-EACH SIDE
 - 3/4" GALVANIZED NUTS, 1-EACH SIDE
 - FLANGED FITTING

- NOTES:
- STRADDLE BLOCKS SHALL BE DESIGNED INDIVIDUALLY BY THE ENGINEER AND SHALL BE BASED ON THE FOLLOWING: a) 200 PSI WATER PRESSURE b) SOIL BRC. CAPACITY, STEEL SIZE AND SPACING BY THE ENGINEER.
 - BEARING AREA OF BLOCK SHALL BE AGAINST UNDISTURBED SOIL.
 - STRADDLE BLOCK SHALL HAVE A MINIMUM OF 18" COVER.
 - CONCRETE SHALL HAVE A MIN. 28-DAY STRENGTH OF 3300 PSI
 - ALL FITTINGS WITHIN THE CONC. SHALL BE WRAPPED IN PLASTIC OR BE COATED W/ KOPPERT'S #50.
 - STRADDLE BLOCK HEIGHT(H) & WIDTH(W) SHALL BE DETERMINED BY THE ENGINEER.

Standard Straddle Block

DATE: JAN 2000
DRAWING NO: WL-408
FILE NO: 00-408

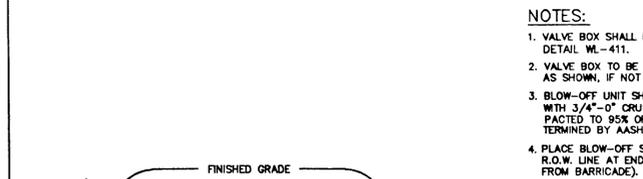


- MATERIALS:
- BROOKS METER BOX, BODY NO. 37, LID AND COVER NO. 37-S.
 - MUELLER CORP. STOP NO. H-15008 OR FORD F1000-4Q SET CORP. STOP WITH OPERATING NUT AT 3 OR 9 O'CLOCK.
 - 1" SOFT TEMPER. TYPE 'K' COPPER TUBING COMPLYING WITH ASTM B-88.
 - MUELLER ANGLE METER STOP NO. H-14258 (FORD NO. KV43-444W-Q).

- NOTES:
- SUBSTITUTES FOR ANY MATERIALS SHOWN SHALL BE APPROVED BY THE CITY ENGINEER.
 - ALL PIPE AND STRUCTURE ZONES SHALL BE BACKFILLED USING 3/4" MINUS CRUSHED AGG. AND COMPACTED TO 95% MAX DENSITY AS DETERMINED BY AASHTO T-180.
 - WHEN AN ACTIVE CATHODIC PROTECTED SYSTEM IS ENCOUNTERED, SCH. 40 PVC SHALL BE INSTALLED AS SHOWN ABOVE WITH CLAY PLUG.
 - METER BOX SHALL BE CENTERED OVER THE COMPLETED METER ASSEMBLY.
 - FOR VACANT RESIDENTIAL LOTS, LOCATE SINGLE SERVICE 18" INSIDE SIDE LOT LINE.
 - TAPS INTO MAIN TO BE AT 18" CENTERLINE MIN.
 - ANGLE METER STOPS TO BE 18" FROM PROPERTY LINE AND NOT IN DRIVEWAY APPROACH.

Standard 1" Water Service

DATE: JAN 2000
DRAWING NO: WL-402
FILE NO: 00-402



- NOTES:
- VALVE BOX SHALL BE PER STANDARD DETAIL WL-411.
 - VALVE BOX TO BE ASPHALT ENCASED AS SHOWN, IF NOT IN PAVED AREA.
 - BLOW-OFF UNIT SHALL BE BACKFILLED WITH 3/4"-0" CRUSHED ROCK AND COMPACTED TO 95% OF MAX. DENSITY DETERMINED BY AASHTO T-180.
 - PLACE BLOW-OFF STANDPIPE 3 FT. INSIDE R.O.W. LINE AT END OF STREET (2 FT. FROM BARRICADE).

Standard 2" Blow-off Assembly

DATE: JAN 2000
DRAWING NO: WL-404A
FILE NO: 00-404A



WALLIS ENGINEERING
317 COLUMBIA STREET
VANCOUVER, WASHINGTON 98660
(360) 695-7041

WE PROJECT # 1138A
WEST LINN PROJ # PW0311
DATE 08/03

THIS BAR IS ONE INCH AT FULL SIZE. IF NOT ONE INCH, SCALE ACCORDINGLY

CITY OF WEST LINN
WILLAMETTE NEIGHBORHOOD
UTILITY REPLACEMENT - PHASE 1

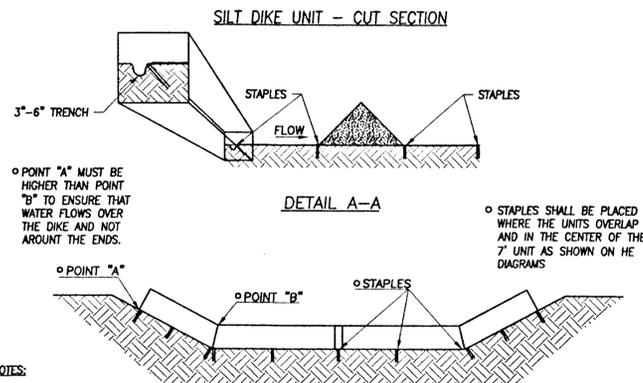
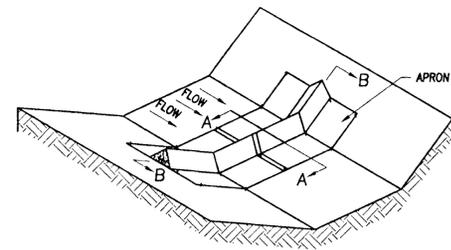
STANDARD SEWER DETAILS - 2

DRAWING NO. C8
SHEET NO. 8 of 9

NO.	REVISION	BY	DATE

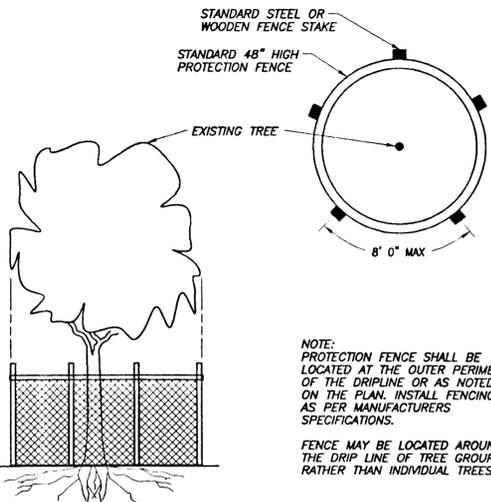
EROSION AND POLLUTION CONTROL GENERAL NOTES:

1. ALL EROSION AND POLLUTION CONTROL MEASURES ARE TO BE PLACED PRIOR TO ANY DISTURBANCE CAUSED BY CLEARING OR GRADING AND SHALL CONFORM TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS AND TO THE STANDARD DETAILS ATTACHED TO THIS SET OF PLANS. NEWLY CONSTRUCTED OR MODIFIED INLETS AND CATCH BASINS ARE TO BE PROTECTED IMMEDIATELY UPON INSTALLATION. TEMPORARY SEEDING AND MULCHING OF FILL SLOPES AND DIVERSION DIKES SHALL BE COMPLETED WITHIN ONE WEEK AFTER ROUGH GRADING. ALL EXPOSED AND UNWORKED SOILS SHALL BE STABILIZED BY THE APPROPRIATE BMP. DURING THE PERIOD FROM OCTOBER 1 TO APRIL 30 NO SOIL SHALL BE EXPOSED FOR MORE THAN TWO (2) DAYS. FROM MAY 1 TO SEPTEMBER 30 NO SOIL SHALL BE EXPOSED FOR MORE THAN SEVEN (7) DAYS.
2. IN THE EVENT OF ANY EROSION AND POLLUTION CONTROL MEASURE FAILURE, IMMEDIATE ACTION SHALL BE TAKEN TO REPAIR, REPLACE, OR CONSTRUCT ADDITIONAL MEASURES AS REQUIRED TO ENSURE ADEQUATE EROSION AND POLLUTION CONTROL PROTECTION.
3. ALL EROSION AND POLLUTION CONTROL MEASURES SHALL BE INSPECTED AFTER EACH RAINFALL EVENT THAT PRODUCES RUNOFF AND AT LEAST ONE TIME PER MONTH. A MAINTENANCE LOG SHALL BE KEPT AND SHALL BE MADE AVAILABLE TO THE CITY OF WEST LINN. SHOULD SPECIFIED EROSION AND POLLUTION CONTROL BMP'S FAIL OR PROVE TO BE INADEQUATE, THE CITY MAY REQUIRE ADDITIONAL BMP'S TO BE INSTALLED.
4. PROTECTION OF SURFACES:
 - A. INSTALL STORM DRAIN INLET PROTECTION AS SHOWN ON THE EROSION CONTROL STANDARD DETAILS TO PREVENT EROSION AND POLLUTION FROM ENTERING THE STORM DRAINAGE SYSTEM. CLEAN THE FILTER AS NECESSARY TO MAINTAIN DRAINAGE AND PROVIDE APPROVED TRAFFIC CONTROL DEVICES AS NECESSARY FOR THE PROTECTION DEVICES. REMOVE FILTER AND CLEAN CATCH BASINS FOLLOWING COMPLETION OF SITEWORK.
 - B. INSTALL SILT FENCE PRIOR TO EXCAVATION AS SHOWN ON THE EROSION CONTROL STANDARD DETAIL TO PREVENT SILT INTRUSION UPON ADJACENT LAND. FOR MAINTENANCE AND REMOVAL OF SILT FENCE, SEE THE SILT FENCE GENERAL NOTES.
5. PRIOR TO ANY SITE EXCAVATION, ALL CATCH BASINS IN THE VICINITY OF THE PROJECT SHALL BE PROTECTED FROM SILT INTRUSION IN ACCORDANCE WITH THE EROSION CONTROL DETAILS. REMOVE INLET PROTECTION AND CLEAN THE CATCH BASINS FOLLOWING COMPLETION OF SITEWORK.
6. MAINTAIN ALL EROSION CONTROLS AS SPECIFIED ON THE STANDARD EROSION CONTROL DETAIL SHEET. THE CONTRACTOR SHALL REMOVE ALL ACCUMULATED SEDIMENT FROM THE CATCH BASINS, DRYWELLS, AND STORM PIPES PRIOR TO ACCEPTANCE BY THE CITY. ALL TEMPORARY EROSION AND POLLUTION CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER SITE STABILIZATION IS ACHIEVED OR AFTER TEMPORARY BMP'S ARE NO LONGER NEEDED AS APPROVED BY THE CITY. TRAPPED SEDIMENT SHALL BE REMOVED OR STABILIZED ON SITE. DISTURBED SOIL AREAS RESULTING FROM REMOVAL SHALL BE PERMANENTLY STABILIZED.
7. IN AREAS SUBJECT TO SURFACE AND AIR MOVEMENT OF DUST, WHERE ON-SITE OR OFF-SITE DAMAGE IS LIKELY TO OCCUR, ONE OR MORE OF THE FOLLOWING PREVENTIVE MEASURES SHALL BE TAKEN FOR DUST CONTROL:
 - A. MINIMIZE THE PERIOD OF SOIL EXPOSURE THROUGH THE USE OF TEMPORARY GROUND COVER AND OTHER TEMPORARY STABILIZATION PRACTICES.
 - B. SPRINKLE THE SITE WITH WATER UNTIL SURFACE IS WET. REPEAT AS NEEDED. PROVIDE A STABILIZED CONSTRUCTION ENTRANCE TO PREVENT CARRY OUT OF SEDIMENT OFF SITE.
 - C. SPRAY EXPOSED SOIL AREAS WITH DUST PALLIATIVE. USED OIL IS STRICTLY PROHIBITED FOR USE AS A PALLIATIVE.
8. TEMPORARY SEEDING SHALL BE PLACED ON EXPOSED SURFACES THAT WILL NOT BE BROUGHT TO FINAL GRADING OR PERMANENT COVER TREATMENT OR VEGETATION WITHIN 7 DAYS OF THE EXPOSURE TO REDUCE EROSION AND SEDIMENTATION BY STABILIZING EXPOSED SOILS. DURING THE TIME PERIOD OCTOBER 1 THROUGH APRIL 30, NO SOILS SHALL BE EXPOSED FOR MORE THAN 2 DAYS. SEEDING AREAS SHALL BE CHECKED REGULARLY TO ASSURE A GOOD STAND OF GRASS IS BEING MAINTAINED. AREAS THAT FAIL TO ESTABLISH VEGETATION COVER ADEQUATE TO PREVENT SOIL EROSION WILL BE RESEEDING AS SOON AS SUCH AREAS ARE IDENTIFIED.
9. EROSION CONTROL NETS AND BLANKETS SHALL BE INSTALLED ON EXPOSED SLOPES 2H:1V OR GREATER AND/OR ON EXPOSED SLOPES WITH MORE THAN 10 FEET OF VERTICAL RELIEF.
10. CLEARING LIMITS AND WORK AREA LIMITS SHALL BE DELINEATED AND MARKED. DO NOT DISTURB MORE AREA THAN NEEDED FOR CONSTRUCTION REQUIREMENTS.
11. DEWATERING DEVICES MUST DISCHARGE INTO A SEDIMENT TRAP OR POND. THERE SHALL BE NO DISCHARGE TO A PAVED STREET OR STORMWATER COLLECTION SYSTEM WITHOUT FIRST REMOVING SEDIMENT.

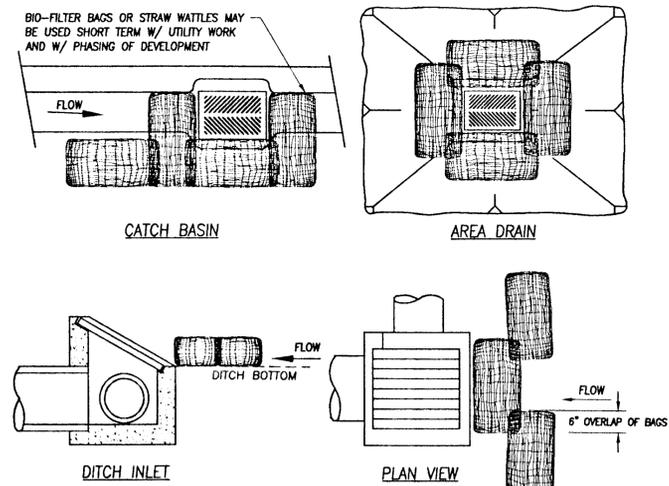


NOTES:

1. THE DIKES SHALL BE ATTACHED TO THE GROUND WITH WIRE STAPLES. THE STAPLES SHALL BE NO. 11 GAUGE WIRE AND BE AT LEAST 6" TO 8" LONG.
2. STAPLES SHALL BE PLACED AS INDICATED ON THE INSTALLATION DETAIL.
3. CAN BE USED FOR DITCH CHECK DAMS, DIVERSION DIKES, DROP INLET PROTECTION, TEMPORARY DITCH LINER, SILT FENCE IN SOME APPLICATIONS.



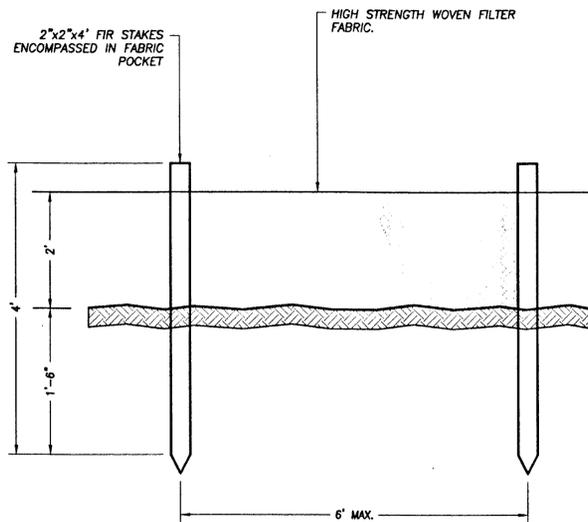
TREE PROTECTION FENCING DETAIL
NTS



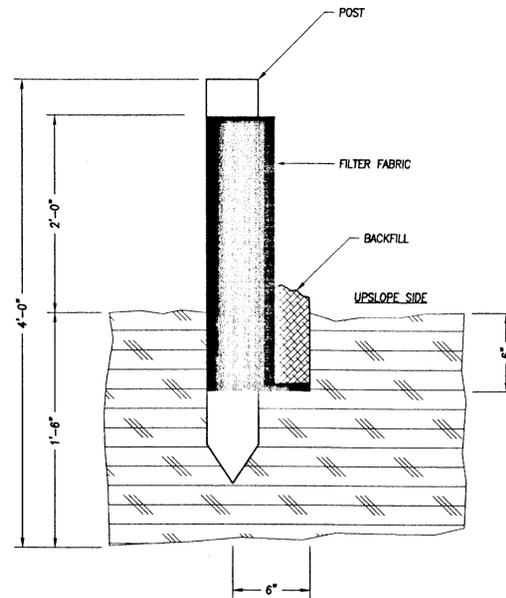
NOTES:

1. ADDITIONAL MEASURES MUST BE CONSIDERED DEPENDING ON SOIL TYPE.
2. BIO-FILTER BAGS SHOULD BE STAKED WHERE APPLICABLE USING (2) 1"x2" WOODEN STAKES OR APPROVED EQUAL PER BAG.
3. STRAW WATTLES MUST BE STABILIZED BY ATTACHING WIRE CLIPS TO THE CATCH BASIN PER MANUFACTURERS SPECIFICATIONS.
4. INLET PROTECTION MUST BE REGULARLY INSPECTED BY THE EROSION CONTROL INDIVIDUAL TO INSURE PROPER PLACEMENT/FUNCTION AND MAINTENANCE.
5. BIO-FILTER BAGS SHALL BE CSI GEOSYNTHETICS (800)426-7976 JUNIPER PILLOWS OR AN APPROVED EQUAL. STANDARD SIZES: 16"x26" ~ 30"x36 ~ 48"x48"
6. STRAW WATTLES USED FOR INLET PROTECTION SHALL BE HELD IN PLACE BY SAND BAGS.

INLET PROTECTION - BIOFILTER BAGS
NTS



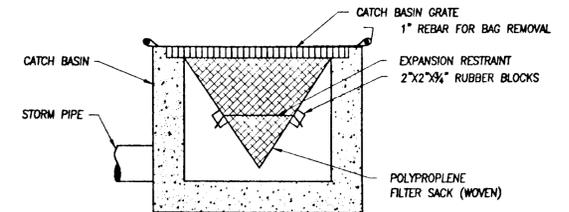
SILT FENCE DETAIL
NTS



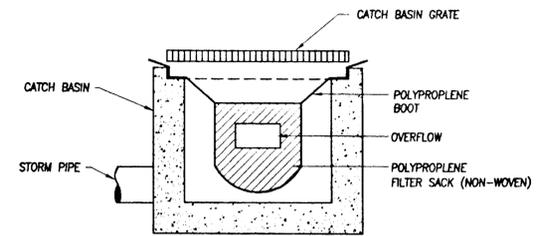
SILT FENCE INSTALLATION
NTS

SILT FENCE GENERAL NOTES:

1. THIS SEDIMENT BARRIER UTILIZES HIGH STRENGTH SYNTHETIC FILTER FABRICS. IT IS DESIGNED FOR SITUATIONS IN WHICH ONLY SHEET OR OVERLAND FLOWS ARE EXPECTED.
 2. THE HEIGHT OF A SILT FENCE SHALL NOT EXCEED 36 INCHES (HIGHER FENCES MAY IMPOUND VOLUMES OF WATER SUFFICIENT TO CAUSE FAILURE OF THE STRUCTURE).
 3. THE FILTER FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID THE USE OF JOINTS. WHEN JOINTS ARE NECESSARY, FILTER CLOTH SHALL BE SPliced TOGETHER ONLY AT A SUPPORT POST, AND SECURELY SEALED.
 4. POSTS SHALL BE SPACED A MAXIMUM OF 6 FEET APART AT THE BARRIER LOCATION AND DRIVEN SECURELY INTO THE GROUND. WHEN EXTRA STRENGTH
 5. A TRENCH SHALL BE EXCAVATED 8 TO 12 INCHES WIDE AND 12 INCHES DEEP ALONG THE LINE OF POSTS AND UPSLOPE FROM THE BARRIER. THE TRENCH SHALL BE BACKFILLED WITH NATIVE SOIL.
 6. SILT FENCES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY STABILIZED.
- SILT FENCE MAINTENANCE:**
1. SILT FENCES AND FILTER BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
 2. SHOULD THE FABRIC ON A SILT FENCE OF FILTER BARRIER DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER STILL BE NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY.
 3. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER.
 4. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE OR FILTER BARRIER IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM WITH THE EXISTING GRADE, PREPARED AND SEEDED.



WOVEN POLYPROPYLENE SACK

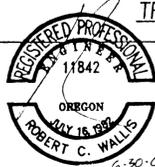


NON-WOVEN POLYPROPYLENE SACK

NOTES:

1. RECESSED CURB INLET CATCH BASINS MUST BE BLOCKED WHEN USING FILTER FABRIC INLET SACKS. SIZE OF FILTER INLET SACK TO BE DETERMINED BY MANUFACTURER.
2. THE CONTRACTOR SHALL INSPECT THE FILTER WEEKLY AND DAILY DURING PERIODS OF FREQUENT RAIN.
3. FILTER SHALL BE CLEANED IN A MANNER WHICH ENSURES THAT ALL SEDIMENT REMAINS ON SITE.
4. THE FILTER SHALL BE REPLACED OR CLEANED WHEN THE BAG BECOMES HALF FULL.
5. FILTER SHALL BE FOSS ENVIRONMENTAL SERVICES "STREAMGUARD TYPE II-S CBF" OR EQUIVALENT.

INLET PROTECTION CATCH BASIN INSERT
NTS



NO.	REVISION	BY	DATE

WALLIS ENGINEERING
317 COLUMBIA STREET
VANCOUVER, WASHINGTON 98660
(360) 695-7041

WE PROJECT # 1138A
WEST LINN PROJ # PW0311
DATE 08/03

THIS BAR IS ONE INCH
AT FULL SIZE.
IF NOT ONE INCH,
SCALE ACCORDINGLY

CITY OF WEST LINN
WILLAMETTE NEIGHBORHOOD
UTILITY REPLACEMENT - PHASE 1

EROSION CONTROL DETAILS

DRAWING NO. C9
SHEET NO. 9 of 9