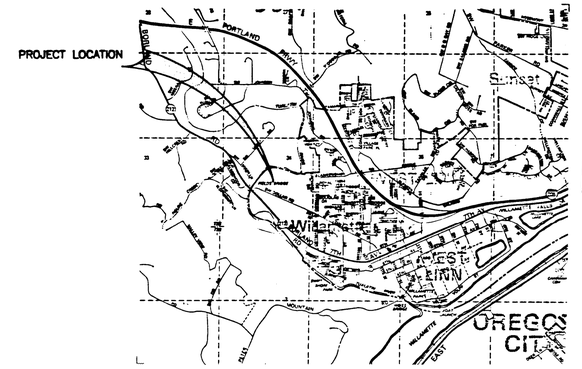
CONSTRUCTION PLANS FOR STREET & UTILITY IMPROVEMENTS

RIVER HEIGHTS 4

WEST LINN, OREGON



VICINITY MAP
N.T.S.

CONSTRUCTION NOTES:

A. GENERAL

1. ALL PUBLIC IMPROVEMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF WEST LINN CONSTRUCTION STANDARDS.
2. ELEVATION DATUM: CITY OF WEST LINN TBM NUMBER 7, 1/2-INCH PIPE IN MONUMENT BOX IN CENTERLINE OF DOLLAR STREET AT INTERSECTION WITH EAST LINE OF RIVER HEIGHTS. ELEVATION 202.59.
3. THE CONTRACTOR SHALL PERFORM ALL THE WORK SHOWN ON THE DRAWINGS AND ALL INCIDENTAL WORK NECESSARY TO COMPLETE THE PROJECT IN AN ACCEPTABLE MANNER. ALL INCIDENTAL WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE ITEMS OF WORK LISTED IN THE PROPOSAL. ANY ITEM NOT LISTED IN THE PROPOSAL IS CONSIDERED INCIDENTAL.
4. THE CONTRACTOR AND/OR SUB-CONTRACTORS SHALL HAVE A MINIMUM OF ONE (1) SET OF APPROVED CONSTRUCTION PLANS ON THE JOB SITE AT ALL TIMES DURING CONSTRUCTION PHASES.
5. ALL MATERIAL SUPPLIER(S) SHALL, UPON REQUEST, SUBMIT TO THE ENGINEER PROOF OF MATERIAL(S) TESTED IN ACCORDANCE WITH THE SPECIFICATIONS. BY ACCEPTANCE OF THE CONTRACT WITH THE OWNER/DEVELOPER, THE CONTRACTOR CERTIFIES THAT ALL MATERIALS DELIVERED TO THE JOB SITE OR INCORPORATED INTO THE WORK WILL MEET OR EXCEED SPECIFICATIONS. ANY MATERIAL NOT CONFORMING SHALL BE REMOVED AT NO ADDITIONAL COST TO THE OWNER.
6. CONTRACTOR SHALL VERIFY LOCATION OF ALL UTILITIES PRIOR TO BEGINNING CONSTRUCTION AND NOTIFY THE ENGINEER OF ANY SIGNIFICANT DISCREPANCIES. UTILITIES HAVE BEEN LOCATED FROM AVAILABLE RECORDS AND MAY NOT BE AS SHOWN HEREON. CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES AT 48 HOURS PRIOR TO BEGINNING EXCAVATION.

B. STREETS AND STRUCTURAL FILLS

1. ALL TREES, BRUSH AND DEBRIS WITHIN LIMITS OF THE RIGHT-OF-WAY AND ON THE AREAS TO BE FILLED SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR UNLESS OTHERWISE NOTED ON THE PLANS.
2. ALL AREAS OF CONSTRUCTION SHALL BE STRIPPED. STRIPPING SHALL CONSIST OF REMOVING THE TOPSOIL HUMUS. STRIPPING MATERIALS MAY BE PLACED ON LOT AREAS UP TO A MAXIMUM OF 12 INCHES IN DEPTH, WITHIN THE BUILDING ENVELOPE. EXCESS STRIPPING MATERIALS SHALL BE DISPOSED OF BY THE CONTRACTOR, OFF-SITE.
3. EMBANKMENTS OR STRUCTURAL FILLS FOR STREET CONSTRUCTION OR FILLS TO BE CONSTRUCTED ON BUILDABLE AREAS SHALL BE CONSTRUCTED FROM EXCAVATED MATERIALS ACCEPTABLE TO THE ENGINEER AND SHALL BE BROUGHT TO GRADE IN LIFTS NOT TO EXCEED 8" LOOSE MEASURE. EACH LIFT SHALL BE COMPACTED TO 95 PERCENT OF MAXIMUM DENSITY AS OBTAINED BY AASHTO T-99 COMPACTION TEST.

   FILLS SHALL NOT BE CONSTRUCTED ON NATURAL SLOPES STEEPER THAN TWO HORIZONTAL TO ONE VERTICAL. ALL FILL SLOPES SHALL NOT EXCEED TWO HORIZONTAL TO ONE VERTICAL. NO ROCK OR SIMILAR IRREDUCIBLE MATERIAL WITH A MAXIMUM DIMENSION GREATER THAN 12" SHALL BE BURIED OR PLACED IN THE FILLS.

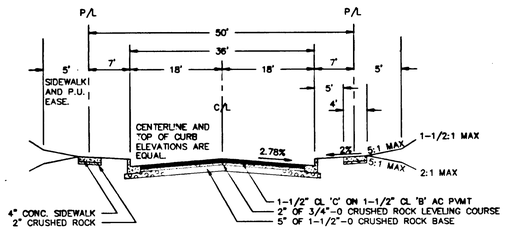
   IF SPRINGS OR GROUND WATER ARE ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL ADVISE THE ENGINEER OF THE CONDITION FOUND AND COORDINATE HIS ACTIVITIES IN A MANNER THAT WILL ALLOW THE ENGINEER TIME TO REVIEW THE SITUATION AND PREPARE A PLAN TO PROPERLY DISPOSE OF THE WATER ENCOUNTERED.
4. ROCK BASE, ASPHALTIC CONCRETE PAVEMENT, CURB AND SIDEWALK CONSTRUCTION SHALL BE AS SHOWN ON THE TYPICAL SECTIONS AND IN ACCORDANCE WITH THE ABOVE REFERENCED SPECIFICATIONS.
5. PROVIDE A MINIMUM OF TWO 3-INCH PLASTIC PIPES PER LOT DURING CURB AND GUTTER CONSTRUCTION PER DETAIL SHOWN ON PLANS.
6. CONTRACTOR TO STAMP CURBS DURING CURB CONSTRUCTION WITH "W" TO DENOTE WATER SERVICE AND "S" TO DENOTE SANITARY SEWER SERVICE LOCATIONS.

C. UTILITIES

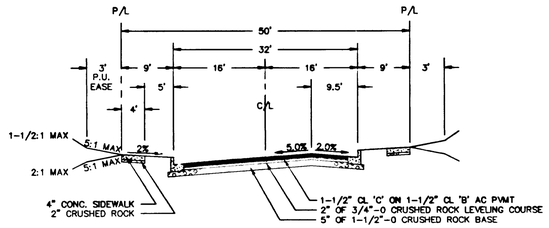
1. ALL TRENCH BACKFILL WITHIN RIGHT-OF-WAY AREAS SHALL BE CLASS 'B' (GRANULAR). TRENCH BACKFILL OUTSIDE OF RIGHT-OF-WAY AREAS SHALL BE CLASS 'A' (NATIVE).
2. STORM SEWER PIPE SHALL BE OF THE SIZE NOTED ON THE PLANS. PVC STORM SEWER SHALL CONFORM TO ASTM D-3034 WITH RUBBER GASKETS. CORRUGATED POLYETHLENE (CPE) SHALL BE SMOOTHED LINED, CONFORMING TO AASHTO M-294 & ASTM D-1248, CLASS 'C'.
3. SANITARY SEWER SHALL BE OF THE SIZE NOTED ON THE PLANS. PVC SANITARY SEWERS SHALL CONFORM TO ASTM D-3034 WITH RUBBER GASKETS. SANITARY SEWERS SHALL BE AIR TESTED IN ACCORDANCE WITH CITY OF WEST LINN STANDARDS.
4. SANITARY SEWER SERVICE LATERALS SHALL BE 4-INCH PVC AND SHALL BE INSTALLED AT 2% MINIMUM SLOPE UNLESS OTHERWISE NOTED ON THE PLANS. MARK ALL LATERAL ENDS WITH 2"x4" MARKER THAT IS LABELED TO INDICATE DEPTH.
5. ALL SANITARY SEWER MANHOLES WILL BE HYDROSTATICALLY TESTED. TEST PROCEDURES SHALL CONFORM TO THE CITY OF WEST LINN STANDARDS.
6. TELEVISION INSPECTION OF UNDERGROUND PIPING IS REQUIRED. CONTRACTOR SHALL OBTAIN TELEVISION INSPECTION SERVICES FROM A QUALIFIED INDEPENDENT COMPANY. THE CONTRACTOR SHALL SUPPLY BOTH COLOR VIDEO AND WRITTEN REPORTS PER THE REQUIREMENTS OF THE LOCAL AGENCY, STATE AND ENGINEER.
7. WATERLINE SHALL BE OF THE SIZE NOTED ON THE PLANS. DUCTILE IRON PIPE SHALL BE CLASS 52, CEMENT LINED CONFORMING TO ANSI A21.51, WITH PUSH-ON TYPE JOINTS. CAST IRON FITTINGS SHALL BE MECHANICAL JOINT CONFORMING TO ANSI A-21.10. ALL WATER PIPE SHALL HAVE A MINIMUM 36" OF COVER MEASURED FROM FINISHED GRADE.
8. ALL WATERLINE SERVICES SHALL BE 1-INCH OR 1 1/2-INCH COPPER, TYPE K AS NOTED ON THE PLANS. ALL CORPORATION STOPS, TEES AND ANGLE METER STOPS SHALL BE COMPRESSION FITTINGS.
9. ALL TEES, BENDS, ELBOWS AND CHANGES IN DIRECTION OF MORE THAN 11 1/4 DEGREES SHALL BE SECURELY THRUST BLOCKED USING 3000 PSI CONCRETE POURED AGAINST UNDISTURBED GROUND, OR APPROVED ALTERNATE.
10. TESTING, FLUSHING AND STERILIZATION OF ALL NEW WATERLINE IMPROVEMENTS SHALL BE APPROVED BY THE CITY OF WEST LINN PRIOR TO ANY PHYSICAL CONNECTION OF THE NEW WATERLINE TO THE EXISTING CITY WATERLINE. THE CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF THE CITY OF WEST LINN FOR ANY USE OF CITY WATER SYSTEM FOR TESTING, FLUSHING AND STERILIZATION.

D. APPROVALS

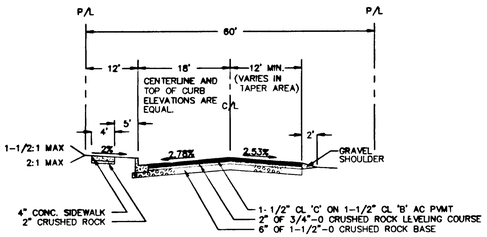
1. CHANGES TO THESE PLANS MUST BE APPROVED BY THE CITY OF WEST LINN AND THE ENGINEER PRIOR TO IMPLEMENTATION.
2. CONTRACTOR TO ACQUIRE ALL REQUIRED PERMITS BEFORE WORKING IN THE PUBLIC RIGHT OF WAY.



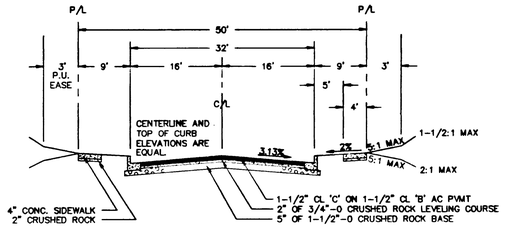
RIVER HEIGHTS CIRCLE
TYPICAL SECTION
NTS



BRANDON PLACE
TYPICAL SECTION
NTS



DOLLAR STREET
TYPICAL SECTION
NTS



NICOLE DRIVE
TYPICAL SECTION
NTS

REGISTERED PROFESSIONAL ENGINEER
14061
OREGON
JULY 26, 1985
ANTHONY R. WELLER
EXP. 12/31/94

THESE "AS BUILT" PLANS ARE COMPILED FROM DATA COLLECTED FROM THE CONTRACTOR, PERIODIC FIELD OBSERVATIONS DURING CONSTRUCTION AND SURVEY DATA. WE SUGGEST THAT THESE PLANS BE USED IN CONJUNCTION WITH FIELD VERIFICATION OF LOCATION AND ELEVATION OF IMPROVEMENTS IN QUESTION. TO THE BEST OF MY INFORMATION, KNOWLEDGE, AND BELIEF, THESE PLANS ARE AN ACCURATE RECORD OF THE SUBJECT IMPROVEMENTS.

Anthony R. Weller
ANTHONY R. WELLER
DATE: 1/6/93

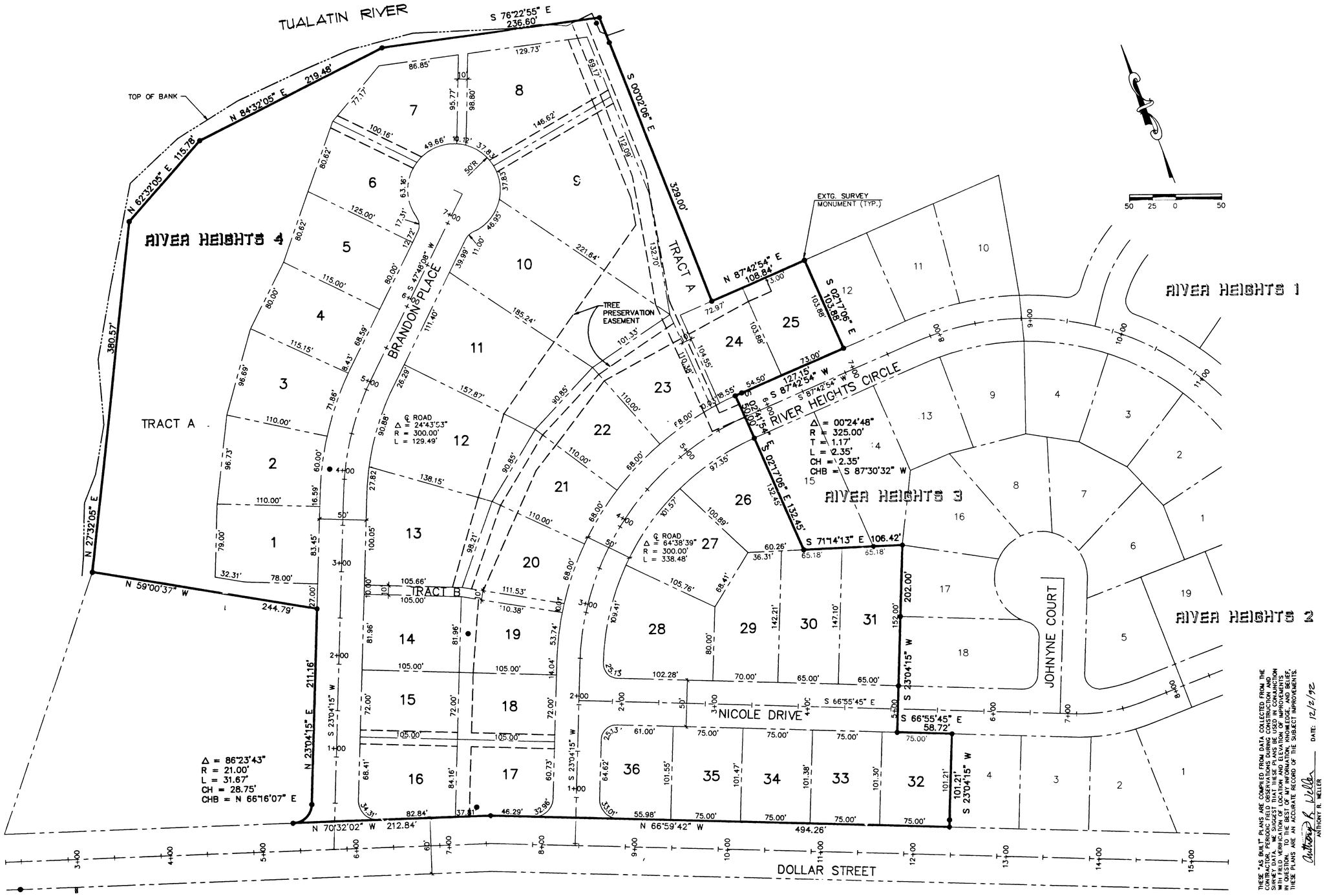
PREPARED FOR:
RIVER HEIGHTS JOINT VENTURE
P.O. BOX 758
BORING, OREGON 97009 (503) 658-6440

PREPARED BY:
CONSULTING ENGINEERING SERVICES, INC.
14780 SW OSPREY DRIVE, SUITE 395
BEAVERTON, OREGON 97007 646-4509

SHEET LEGEND

NO.	DESCRIPTION
1	TITLE SHEET
2	SITE PLAN
3	GRADING & EROSION CONTROL PLAN
4	STREET PLAN
5 - 7	STREET PROFILES
8	STORM SEWER PLAN
9 - 11	STORM SEWER PROFILES
12	SANITARY SEWER PLAN
13 - 15	SANITARY SEWER PROFILES
16	WATERLINE PLAN
17	PUMP STATION
18	DETAILS
19	DETAILS

River Hts #4



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Anthony R. Weller
ANTHONY R. WELLER
DATE: 12/2/92

REGISTERED PROFESSIONAL ENGINEER 14061 OREGON JULY 26, 1988 ANTHONY R. WELLER

RIVER HEIGHTS 4

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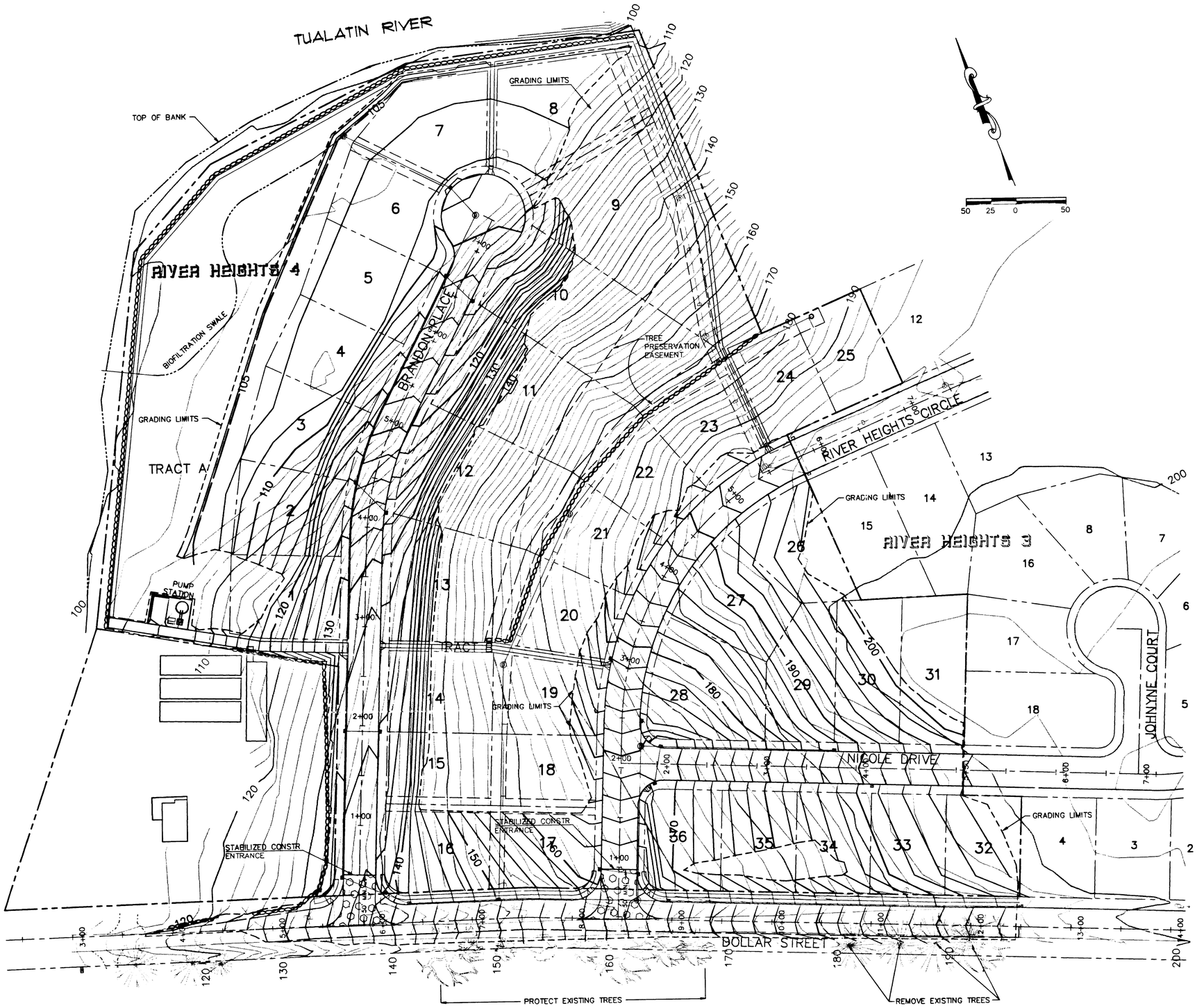
CONSULTING ENGINEERING SERVICES, INC.
14780 S.W. OSPREY DRIVE, SUITE 395
BEAVERTON, OR 97007 (503) 646-4509

534-SH2

PROJECT NO.: 91-534 DATE: JULY 29, 1992
DESIGNED BY: ARW DRAWN BY: SBM

SITE PLAN

SHEET 2 OF 19

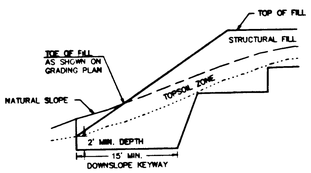


EROSION CONTROL NOTES

1. ALL EROSION CONTROL MEASURES SHALL BE IN ACCORDANCE WITH OAR 340-41-55 AND THE "EROSION CONTROL PLANS TECHNICAL GUIDANCE HANDBOOK" DATED JANUARY 1991.
2. APPROVAL OF THIS EROSION/SEDIMENTATION CONTROL (ESC) PLAN DOES NOT CONSTITUTE AN APPROVAL OF ANY OTHER PROPOSED PROJECT DESIGN ELEMENT.
3. THE IMPLEMENTATION OF THESE ESC PLANS AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF THESE ESC FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR UNTIL ALL CONSTRUCTION IS COMPLETE AND APPROVED, AND VEGETATION/LANDSCAPING IS ESTABLISHED.
4. THE BOUNDARIES OF THE CLEARING LIMITS SHOWN ON THIS PLAN SHALL BE CLEARLY FLAGGED 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 CONSTR.
5. THE ESC FACILITIES SHOWN ON THIS PLAN MUST BE CONSTRUCTED IN CONJUNCTION WITH ALL CLEARING AND GRADING ACTIVITIES, AND IN SUCH A MANNER AS TO INSURE THAT SEDIMENT LADEN WATER DOES NOT ENTER THE DRAINAGE SYSTEM OR VIOLATE APPLICABLE WATER STANDARDS.
6. THE ESC FACILITIES SHOWN ON THIS PLAN ARE THE MINIMUM REQUIREMENTS FOR THE ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, THESE ESC FACILITIES SHALL BE UPGRADED AS NEEDED FOR EXPECTED STORM EVENTS AND TO ENSURE THAT SEDIMENT LADEN WATER DOES NOT LEAVE THE SITE.
7. THE ESC FACILITIES SHALL BE INSPECTED DAILY BY THE CONTRACTOR AND MAINTAINED AS NECESSARY TO ENSURE THEIR CONTINUED FUNCTIONING.
8. STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES MAY BE REQUIRED TO INSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.
9. THE ESC FACILITIES ON INACTIVE SITES SHALL BE INSPECTED AND MAINTAINED A MINIMUM OF ONCE A MONTH OR WITHIN 48 HOURS FOLLOWING A STORM EVENT.
10. AT NO TIME SHALL MORE THAN ONE FOOT OF SEDIMENT BE ALLOWED TO ACCUMULATE WITHIN A TRAPPED CATCH BASIN OR SILTATION MANHOLE. ALL CATCH BASINS, MANHOLES AND CONVEYANCE LINES SHALL BE CLEANED PRIOR TO PAVING. THE CLEANING OPERATION SHALL NOT FLUSH SEDIMENT-LADEN WATER INTO THE DOWNSTREAM SYSTEM.
11. PLACE GRASS SEED OVER BARREN SOIL: 60/40 BLEND OF PERENNIAL RYE AND CHEWING FESCUE, 5#/1500 SF. APPLY 20-10-10 FERTILIZER EVENLY AT 10#/1500 SF. SEEDING TO BE COMPLETED BY SEPTEMBER 15TH OR SOONER IF WEATHER PERMITS.
12. CLEARING LIMITS TO BE EQUAL TO THE GRADING LIMITS SHOWN ON THE DRAWINGS AND ALSO INCLUDE THE UTILITY EASEMENTS AND PROPOSED PATHWAYS. THE LOCATION OF THE PROPOSED PATHWAYS TO BE FIELD DETERMINED WITHIN TRACT 'A'.

REVEGETATION NOTES:

1. REVEGETATION OF AREAS (WITHIN PROPOSED LOTS) WILL CONSIST OF EROSION CONTROL SEEDING OF ALL DISTRUBED AREAS DURING CONSTRUCTION AND ADDITIONAL LANSCAPING AFTER HOME CONSTRUCTION.
2. REVEGETATION OF WATER QUALITY AREA WILL CONSIST OF DENSE GRASS PLANTING ESPECIALLY DESIGNED TO FILTER POLLUTANTS AND SEDIMENT FROM STORM WATER, PER BIO SWALE DETAIL.
3. REVEGETATION OF TRACT A BETWEEN TUALATIN RIVER AND LOTS 1 THROUGH 8, WILL CONSIST OF RESEEDING ALL DISTRUBED AREAS WITH ORCHARD SEED AS APPROVED BY THE CITY.
4. PLANT FIVE GROUPS OF FIVE TREES EACH IN TRACT A BETWEEN THE TUALATIN RIVER AND LOTS 1 THROUGH 6. TREES TO BE MINIMUM 2-INCH CALIPER (CONIFER, ALDER AND MAPLE) PLANTED AT RANDOM LOCATIONS. TREES AND PLANTING LOCATIONS TO BE APPROVED BY THE CITY.



NOTE: WHERE THE NATURAL SLOPE GRADIENT IS 5H:1V OR FLATTER BENCHING IS NOT REQUIRED. FILL CAN NOT BE PLACED ON COMPRESSIBLE OR UNSUITABLE MATERIAL.

STRUCTURAL FILL
NTS

THESE "AS BUILT" PLANS ARE COMPILED FROM DATA COLLECTED FROM THE CONTRACTOR, PERIODIC FIELD OBSERVATIONS DURING CONSTRUCTION AND SURVEY DATA. WE SUGGEST THAT THESE PLANS BE USED IN CONJUNCTION WITH FIELD VERIFICATION OF LOCATION AND ELEVATION OF IMPROVEMENTS IN QUESTION. TO THE BEST OF MY INFORMATION, KNOWLEDGE, AND BELIEF, THESE PLANS ARE AN ACCURATE RECORD OF THE SUBJECT IMPROVEMENTS.

ANTHONY R. WELLER DATE: 12/2/92

REGISTERED PROFESSIONAL ENGINEER 14051 OREGON JULY 26, 1989 ANTHONY R. WELLER

RIVER HEIGHTS 4

RIVER HEIGHTS JOINT VENTURE
P.O. BOX 758
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(503) 658-8440

CONSULTING ENGINEERING SERVICES, INC.
17880 S.W. OSPREY DRIVE, SUITE 365
BEAVERTON, OR 97007 (503) 646-4509

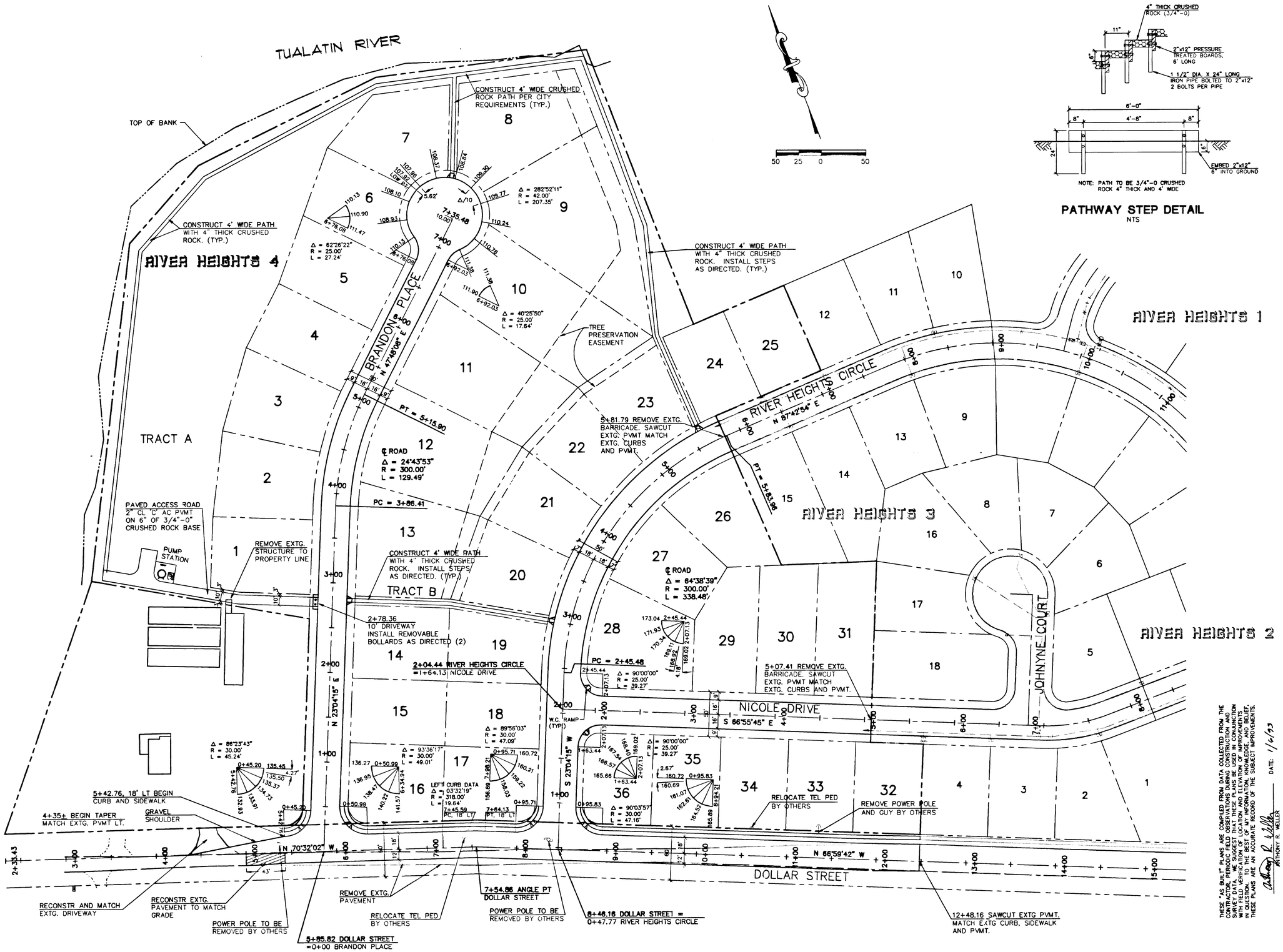
REVISIONS
1. ADDED TWO FOOT CONTOURS AND REVISED GRADING LIMITS. 8-5-92 A.R.W.

534-SH3.DWG

PROJECT NO:	91-534
DESIGNED BY:	ARW/SGF
DRAWN BY:	SGF
DATE:	JULY 28, 1992

GRADING & EROSION CONTROL PLAN

SHEET 3
OF 19



PATHWAY STEP DETAIL
NTS

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ANTHONY R. WELLER DATE: 1/6/93

REGISTERED PROFESSIONAL ENGINEER 14061 OREGON JULY 26, 1988 ANTHONY R. WELLER
Exp. 12/31/94

RIVER HEIGHTS 4

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CONSULTING ENGINEERING SERVICES, INC.
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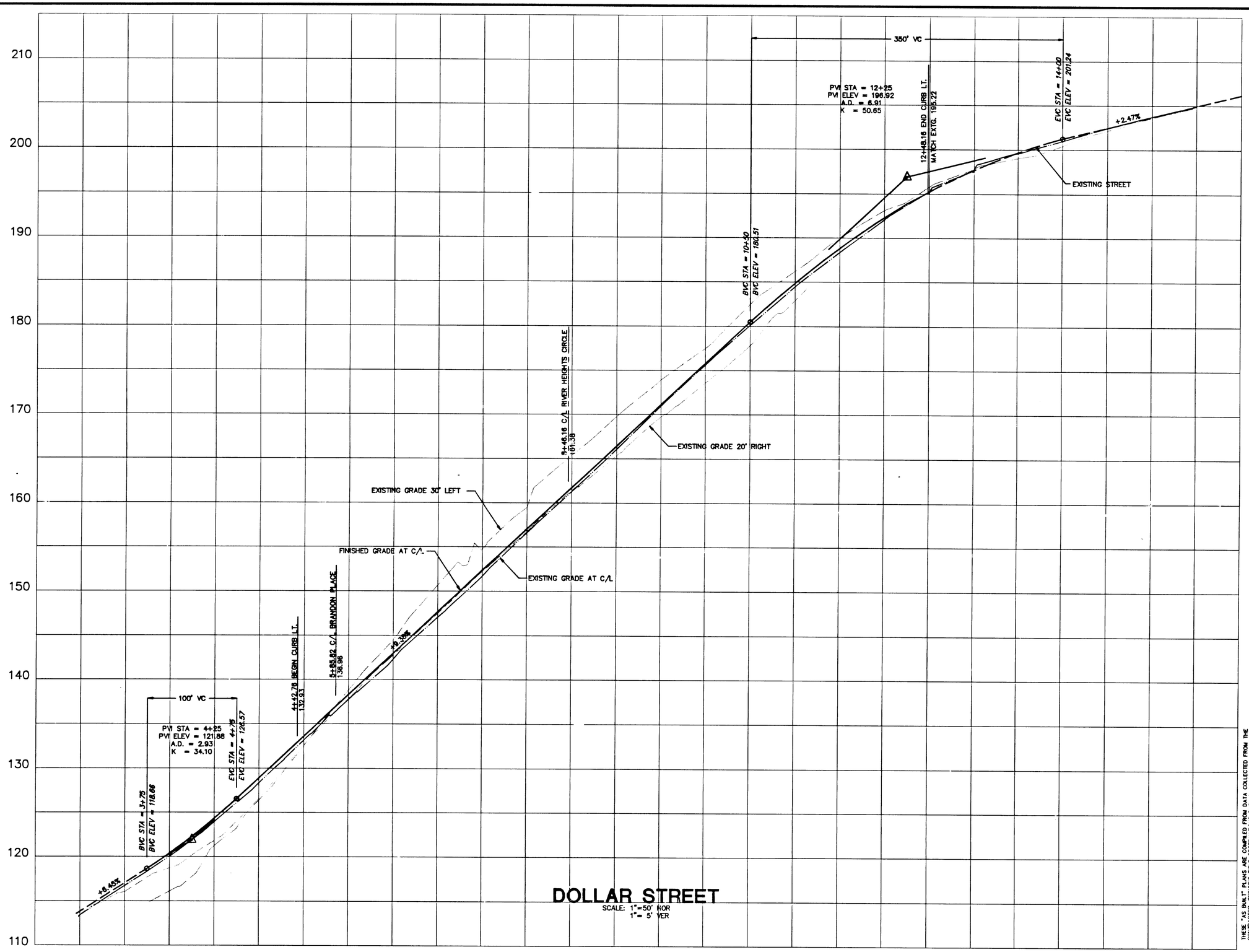
1. AS BUILTS 12/02/92 SRM

534-AB04.DWG

PROJECT NO.: 91-534 DATE: JULY 29, 1992
DESIGNED BY: ARW/SGF DRAWN BY: SGF

STREET PLAN

SHEET 4 OF 19



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ANTHONY R. WELLER DATE: 12/2/92

REGISTERED PROFESSIONAL ENGINEER
14061
OREGON
MAY 26, 1989
ANTHONY R. WELLER

RIVER HEIGHTS 4

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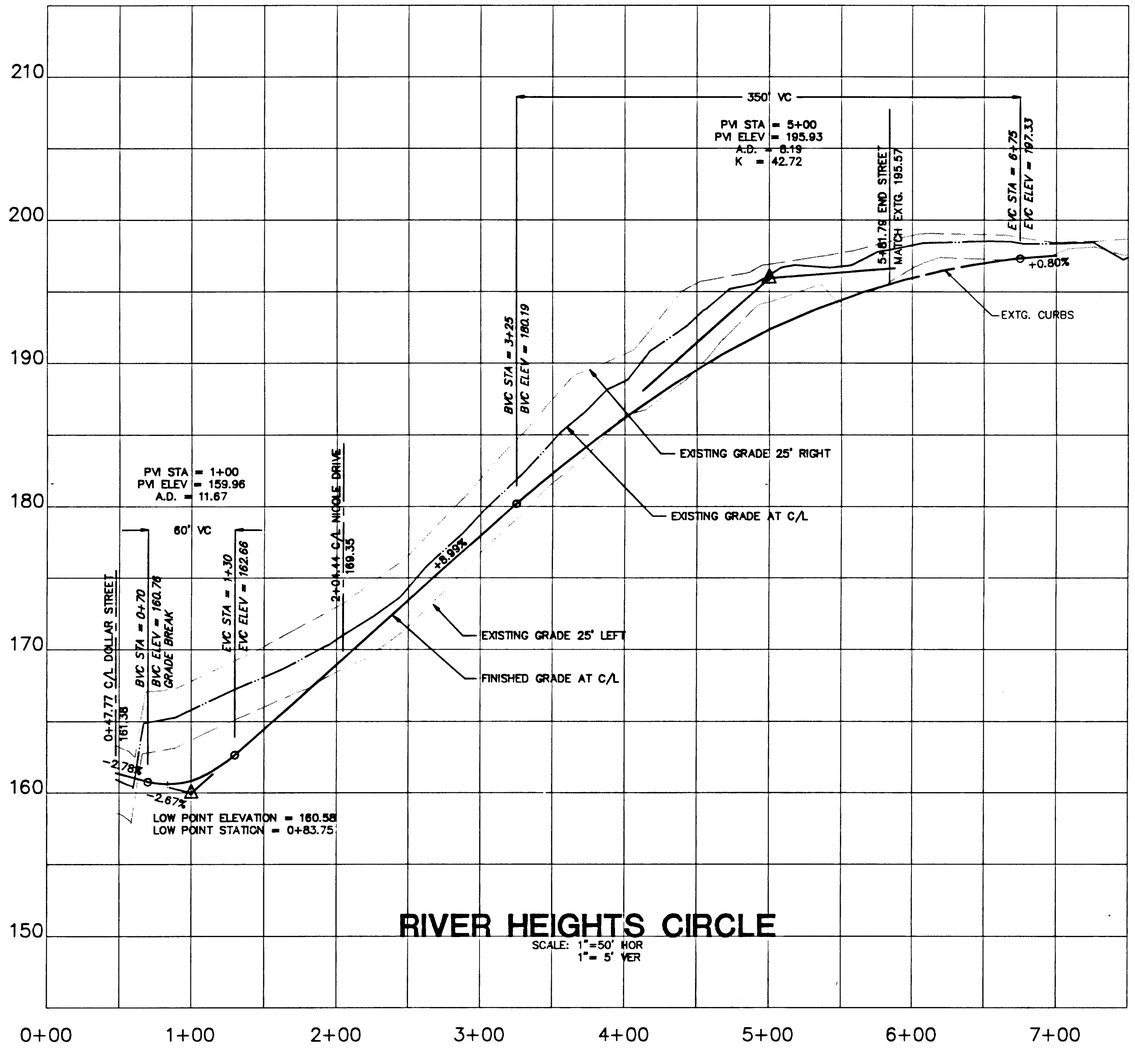
BEAVERTON, OR 97007 (503) 646-4509

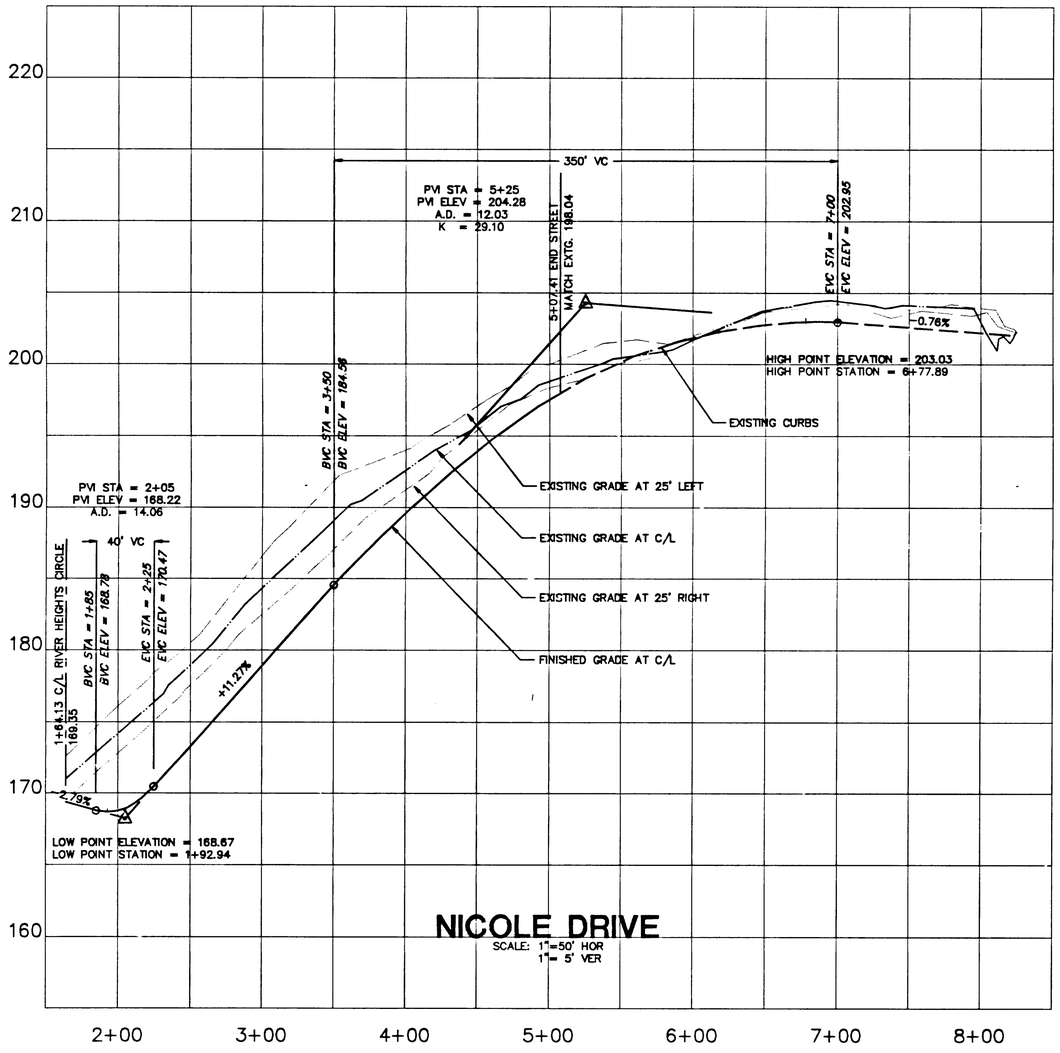
534-SHS

PROJECT NO: 91-534 DATE: JULY 29, 1992
DESIGNED BY: ARW DRAWN BY: SBM

STREET PROFILE
DOLLAR STREET

SHEET 5
OF 19





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Anthony R. Weller
ANTHONY R. WELLER DATE: 12/2/92

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 26, 1985
ANTHONY R. WELLER
14061

RIVER HEIGHTS 4

RIVER HEIGHTS JOINT VENTURE
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CONSULTING ENGINEERING SERVICES, INC.
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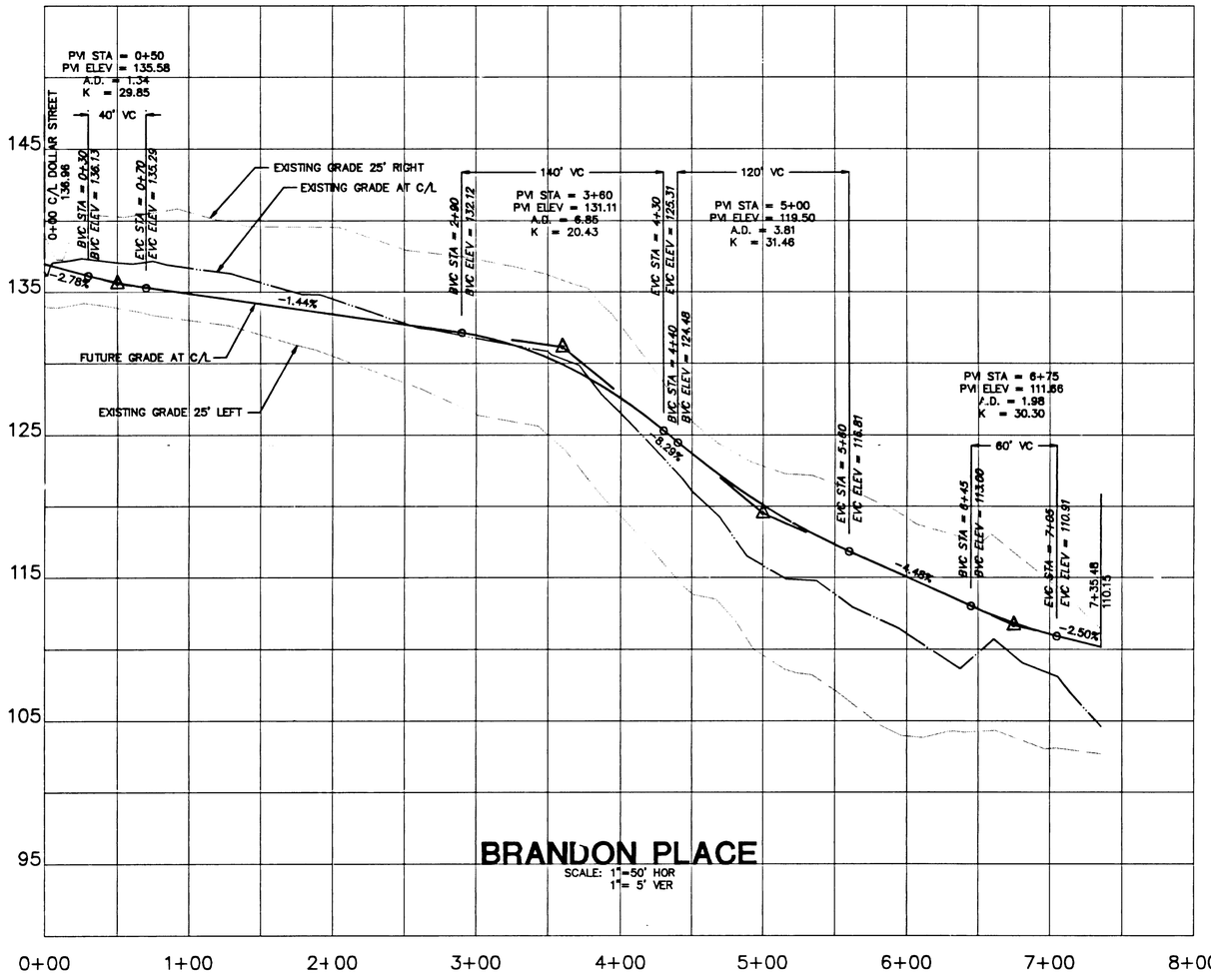
BEAVERTON, OR 97007 (503) 646-4509

534-SH6

PROJECT NO. 91-534 DATE: JULY 28, 1992
DESIGNED BY: DRAWN BY: SBU

STREET PROFILE
RIVER HEIGHTS CIRCLE AND NICOLE DRIVE

SHEET 6
OF 19



BRANDON PLACE

SCALE: 1"=50' HOR
1"= 5' VER

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ANTHONY R. WELLER DATE: 12/2/92

REGISTERED PROFESSIONAL ENGINEER 14061 OREGON JULY 26, 1988 ANTHONY R. WELLER

RIVER HEIGHTS 4

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(503) 658-6440

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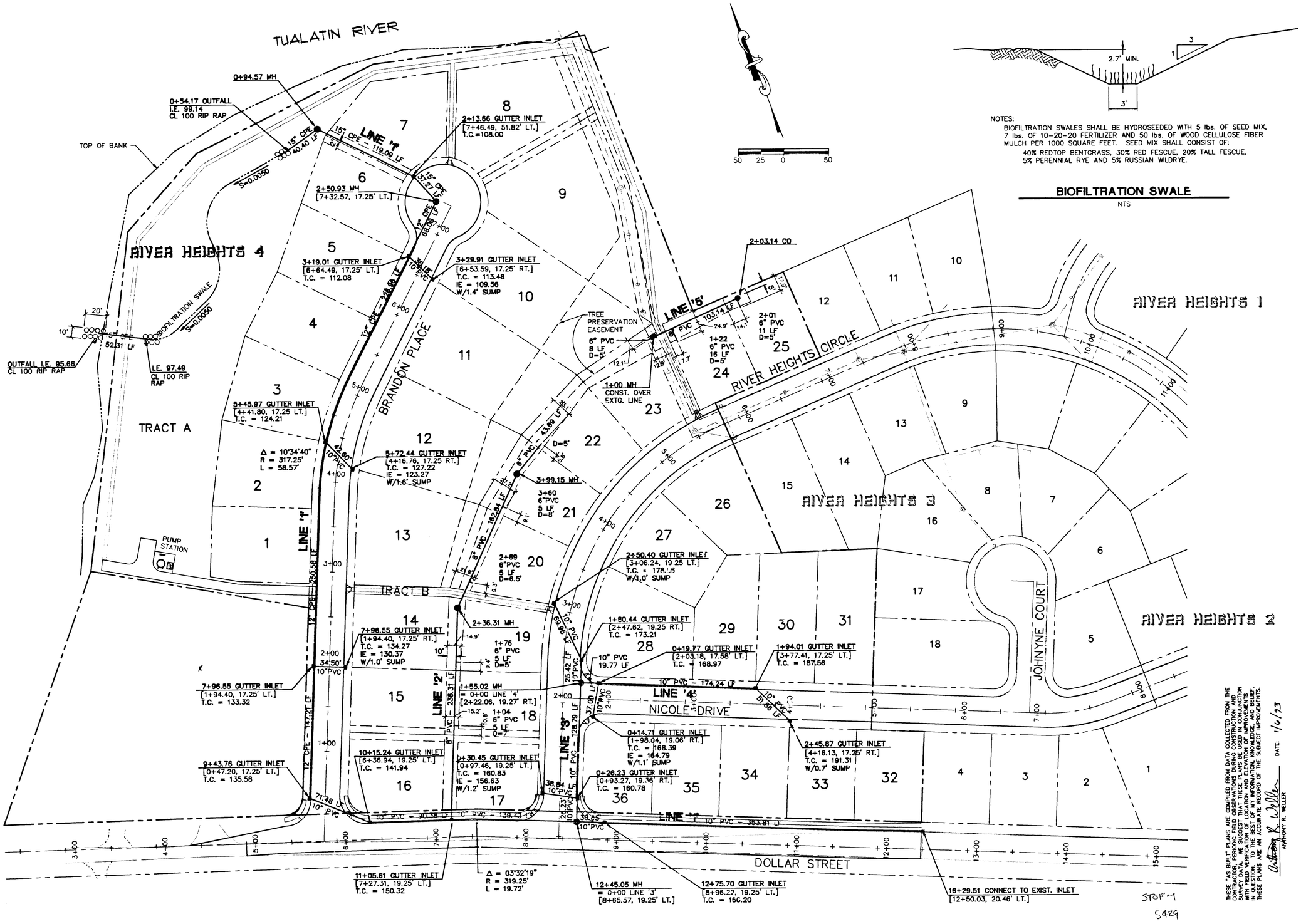
BEAVERTON, OR 97007 (503) 646-4509

534-SH7

PROJECT NO.: 91-534 DATE: JUNE 15, 1992
DESIGNED BY: ARW DRAWN BY: SBM

STREET PROFILES
BRANDON PLACE

SHEET 7 OF 19



NOTES:
BIOFILTRATION SWALES SHALL BE HYDROSEEDED WITH 5 lbs. OF SEED MIX, 7 lbs. OF 10-20-20 FERTILIZER AND 50 lbs. OF WOOD CELLULOSE FIBER MULCH PER 1000 SQUARE FEET. SEED MIX SHALL CONSIST OF:
40% REDTOP BENTGRASS, 30% RED FESCUE, 20% TALL FESCUE, 5% PERENNIAL RYE AND 5% RUSSIAN WILDRYE.

BIOFILTRATION SWALE
NTS

STORM
5429

THESE "AS BUILT" PLANS ARE COMPILED FROM DATA COLLECTED FROM THE CONTRACTOR, PERIODIC FIELD OBSERVATIONS DURING CONSTRUCTION AND SURVEY DATA. WE SUGGEST THAT THESE PLANS BE USED WITH CAUTION WITHOUT FURTHER FIELD VERIFICATION AS TO THE ACCURACY OF THE INFORMATION IN QUESTION. TO THE BEST OF MY INFORMATION, KNOWLEDGE, AND BELIEF, THESE PLANS ARE AN ACCURATE RECORD OF THE SUBJECT IMPROVEMENTS.
ANTHONY R. WELLER DATE: 1/6/13

REGISTERED PROFESSIONAL ENGINEER
14061
OREGON
JULY 26, 1988
ANTHONY R. WELLER
EXP: 12/31/94

RIVER HEIGHTS 4

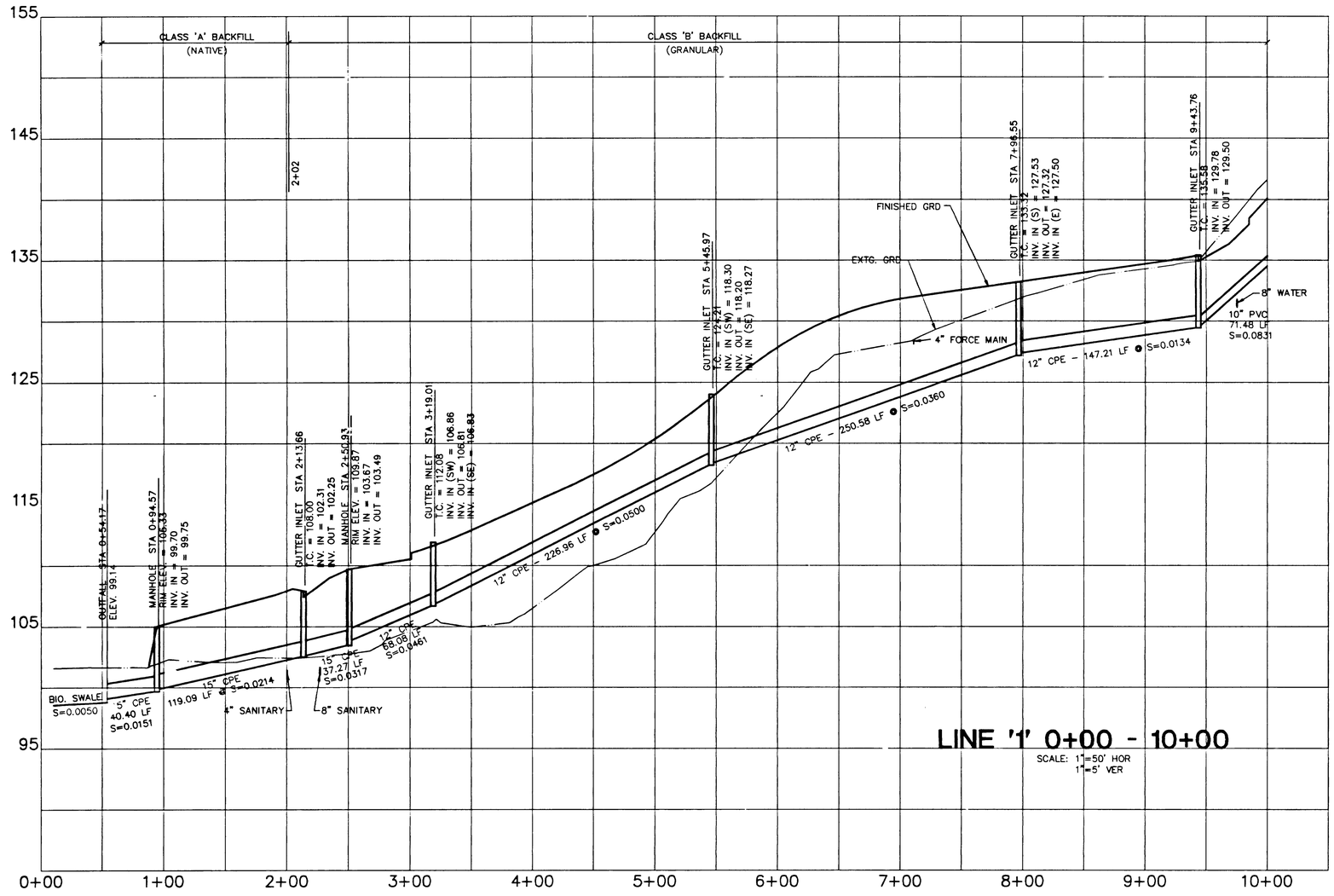
RIVER HEIGHTS JOINT VENTURE
P.O. BOX 758
BORING, OR 97009
(503) 658-6440

CONSULTING ENGINEERING SERVICES, INC.
14780 S.W. OSPREY DRIVE, SUITE 395
BEAVERTON, OR 97007 (503) 646-4509

1. AS BUILT 12/2/92 SRM	
PROJECT NO.	91-534
DESIGNED BY:	ARW
DRAWN BY:	
DATE:	JULY 29, 1992 SRM
534-4808	

STORM SEWER PLAN

SHEET 8
OF 19



THESE "AS BUILT" PLANS ARE COMPILED FROM DATA COLLECTED FROM THE CONTRACTOR, PERIODIC FIELD OBSERVATIONS DURING CONSTRUCTION AND SURVEY DATA. WE SUGGEST THAT THESE PLANS BE USED IN CONJUNCTION WITH FIELD VERIFICATION OF LOCATION AND ELEVATION OF IMPROVEMENTS IN QUESTION. TO THE BEST OF MY INFORMATION, KNOWLEDGE, AND BELIEF, THESE PLANS ARE AN ACCURATE RECORD OF THE SUBJECT IMPROVEMENTS.

Anthony R. Weller
ANTHONY R. WELLER
DATE: 12/2/92

REGISTERED PROFESSIONAL ENGINEER 14061 OREGON JULY 26, 1988 ANTHONY R. WELLER

RIVER HEIGHTS 4

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CONSULTING ENGINEERING SERVICES, INC.
14780 S.W. OSPREY DRIVE, SUITE 395
BEAVERTON, OR 97007 (503) 646-4509

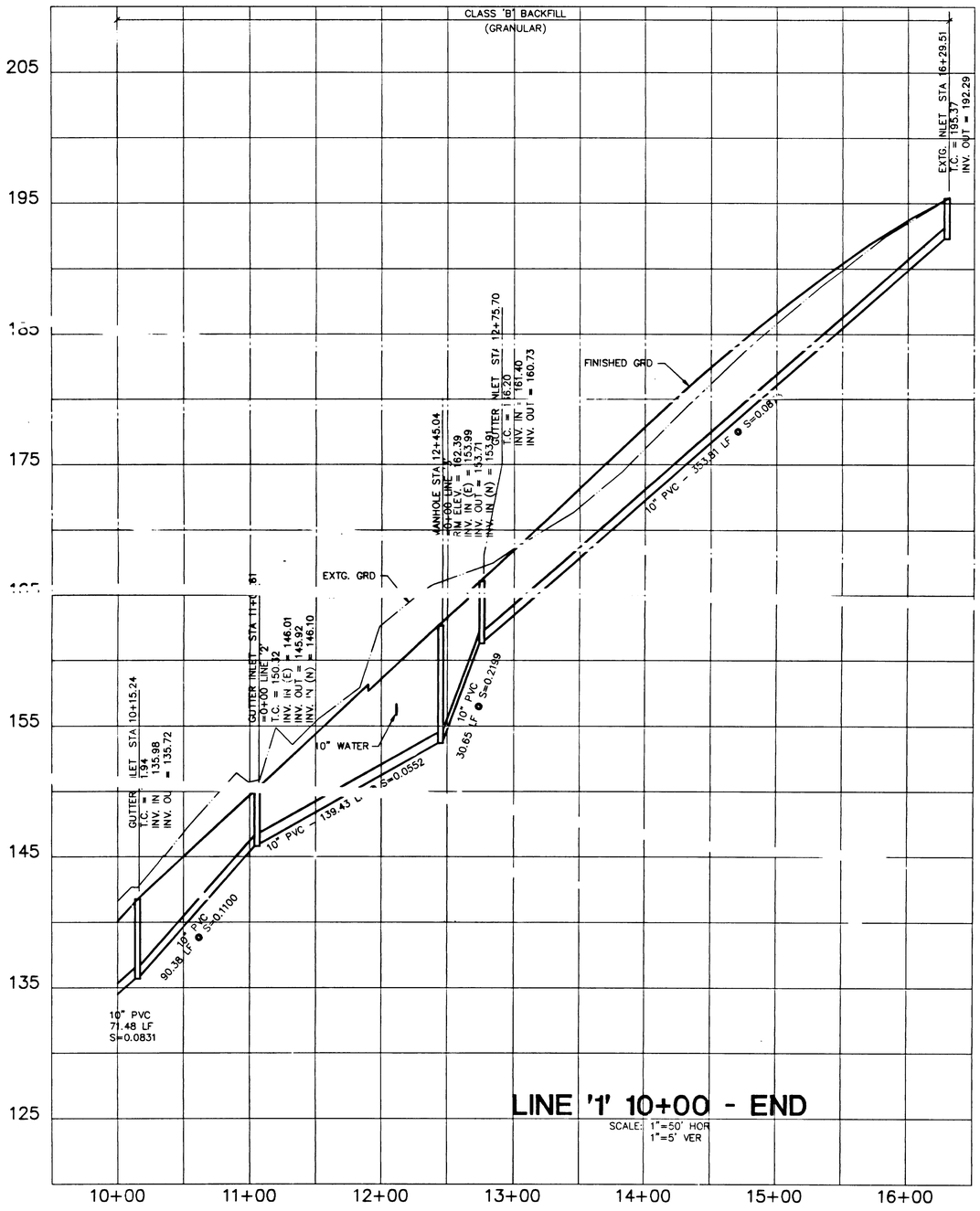
1. AS BUILTS 12/02/92 SRM

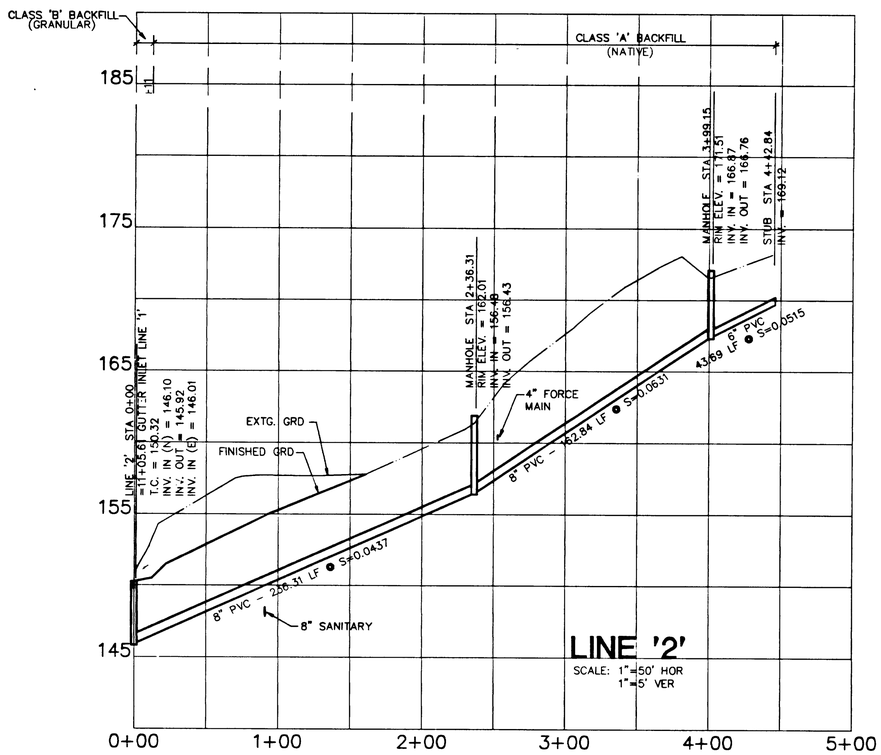
534-AB09

PROJECT NO.: 91-534 DATE: JULY 29, 1992
DESIGNED BY: ARW DRAWN BY: SBM

STORM SEWER PROFILES
LINE '1' 0+00 - 10+00

SHEET 9 OF 19





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Anthony R. Weller
ANTHONY R. WELLER

DATE: 12/2/92

REGISTERED PROFESSIONAL ENGINEER
14061
OREGON
JULY 26, 1988
ANTHONY R. WELLER

RIVER HEIGHTS 4

RIVER HEIGHTS JOINT VENTURE
P.O. BOX 758
BORING, OR 97009
(503) 658-6440

CONSULTING ENGINEERING SERVICES, INC.
14780 S.W. OSPREY DRIVE, SUITE 395
BEAVERTON, OR 97007 (503) 646-4509

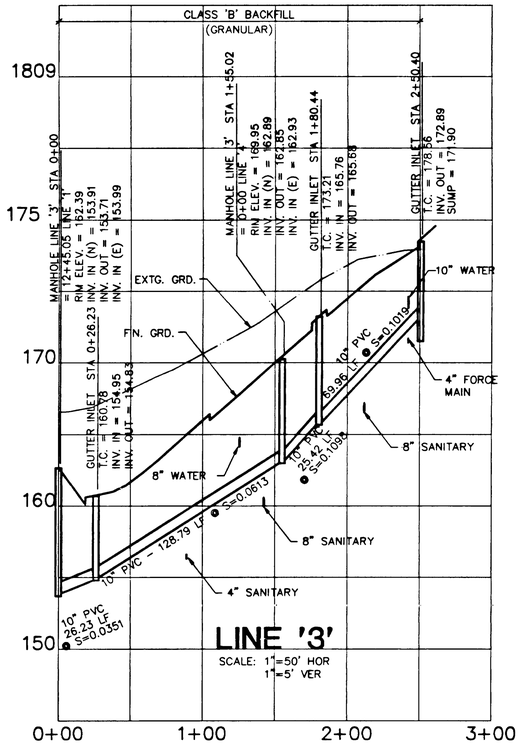
1.	AS BUILTS	12/02/92	SPM

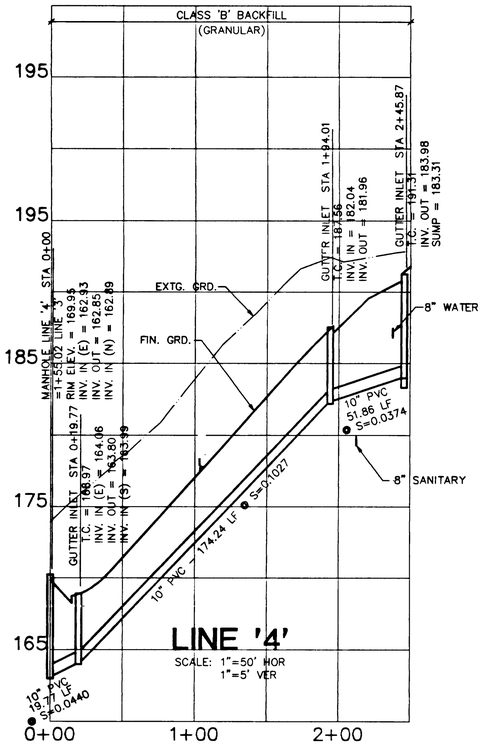
534-4810

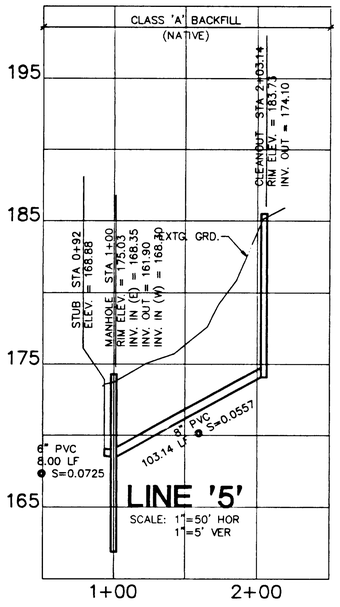
PROJECT NO.: 91-534
DESIGNED BY: ARW
DRAWN BY: SPM
DATE: JULY 28, 1992

STORM SEWER PROFILES
LINE '1' 10+00 - END AND LINE '2'

SHEET 10
OF 19







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Anthony R. Weller
ANTHONY R. WELLER
DATE: 12/2/92

REGISTERED PROFESSIONAL ENGINEER
14061
OREGON
JULY 26, 1988
ANTHONY R. WELLER

RIVER HEIGHTS 4

RIVER HEIGHTS JOINT VENTURE
P.O. BOX 758
BORING, OR 97009
(503) 658-6440

CONSULTING ENGINEERING SERVICES, INC.
14730 S.W. OSPREY DRIVE, SUITE 395
BEAVERTON, OR 97007 (503) 646-4509

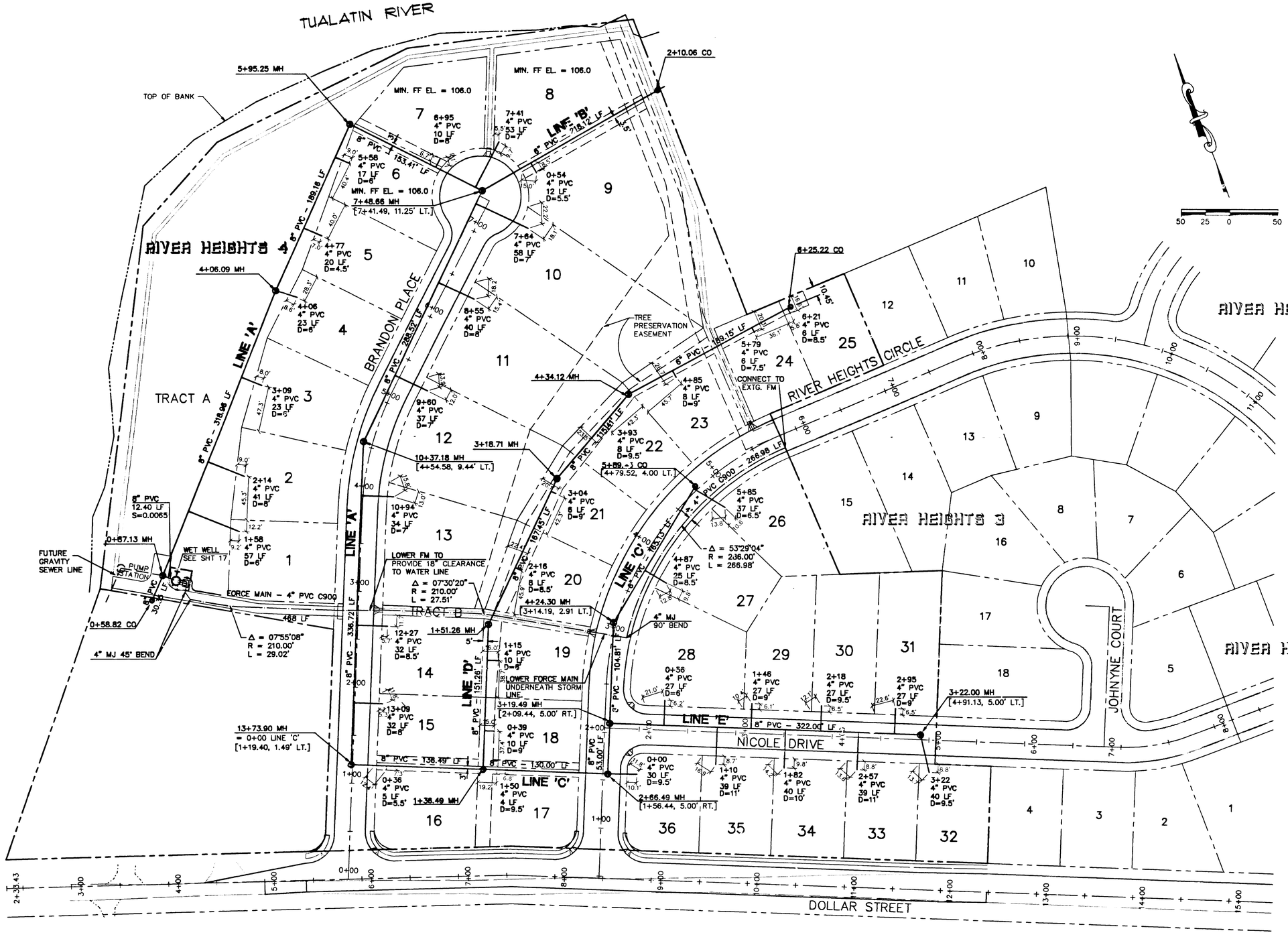
1. AS BUILTS 12/02/92 SRM

534-AB11

PROJECT NO.: 91-534 DATE: JULY 29, 1992
DESIGNED BY: ARW DRAWN BY: SBM

STORM SEWER PROFILES
LINE '2', LINE '3', LINE '4' AND LINE '5'

SHEET 11 OF 19



SS
5429

THESE "AS BUILT" PLANS ARE COMPILED FROM DATA COLLECTED FROM THE CONTRACTOR, PERIODIC FIELD OBSERVATIONS DURING CONSTRUCTION AND SURVEY DATA. WE SUGGEST THAT THESE PLANS BE USED IN CONJUNCTION WITH FIELD VERIFICATION OF LOCATION AND ELEVATION OF IMPROVEMENTS IN QUESTION. TO THE BEST OF MY INFORMATION, KNOWLEDGE, AND BELIEF, THESE PLANS ARE AN ACCURATE RECORD OF THE SUBJECT IMPROVEMENTS.

ANTHONY R. WELLER DATE: 1/6/93

REGISTERED PROFESSIONAL ENGINEER 14061 OREGON JULY 26, 1988 ANTHONY R. WELLER
EXP. 12/31/93

RIVER HEIGHTS 4

RIVER HEIGHTS JOINT VENTURE
P.O. BOX 758
BORING, OR 97009
(503) 658-6440

CONSULTING ENGINEERING SERVICES, INC.
14780 S.W. OSPREY DRIVE, SUITE 395
BEAVERTON, OR 97007 (503) 646-4509

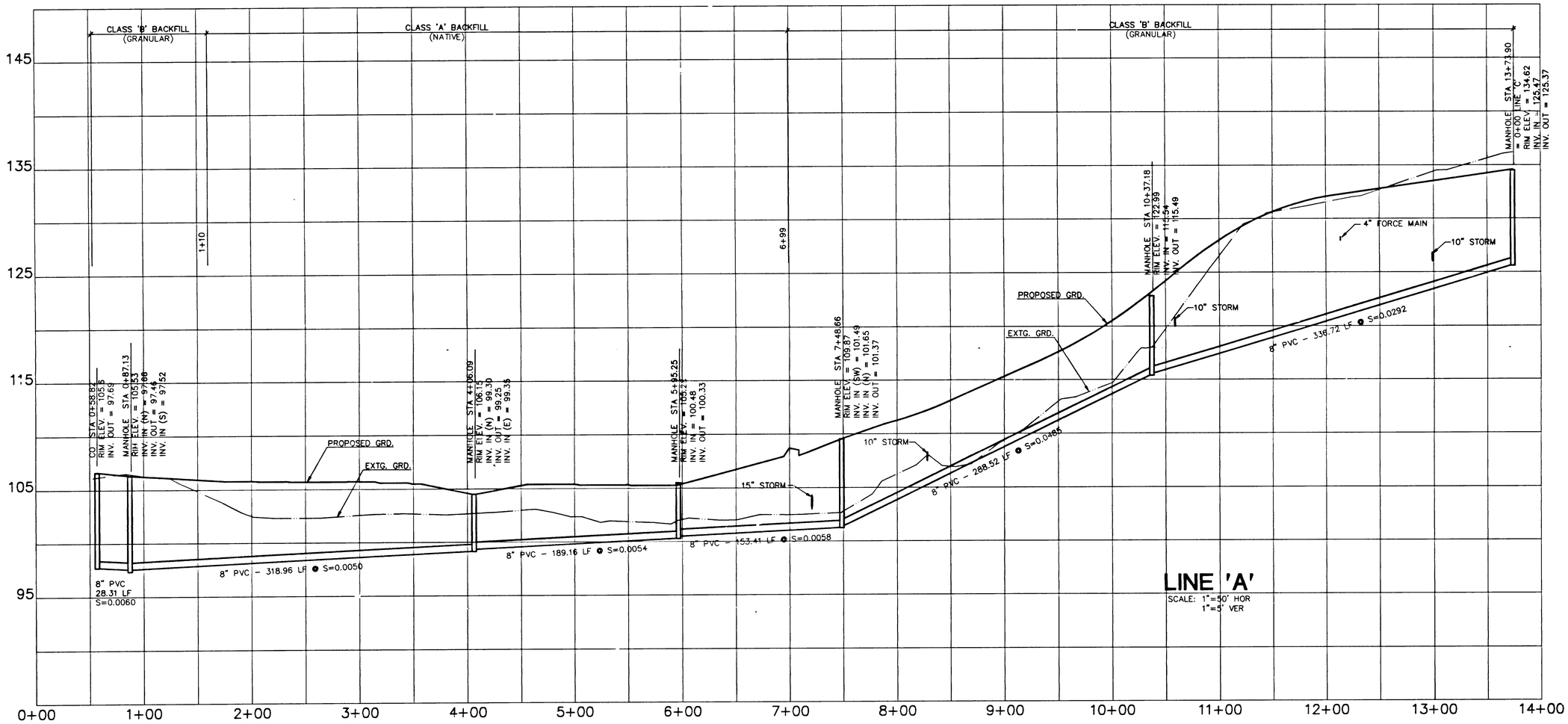
REVISIONS
1. REVISED PUMP STATION AREA PER CITY AND DEQ REQUIREMENTS. SFG 8-21-92
2. AS BUILTS 12/02/92 SRM

534-AB12

PROJECT NO.: 91-534 DATE: JULY 29, 1992
DESIGNED BY: ARW DRAWN BY: SBM

SANITARY SEWER PLAN

SHEET 12 OF 19



LINE 'A'

SCALE: 1"=50' HOR
1"=5' VER

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Anthony R. Weller
ANTHONY R. WELLER

DATE: 12/2/92

REGISTERED PROFESSIONAL ENGINEER
14061
OREGON
JULY 26, 1988
ANTHONY R. WELLER

RIVER HEIGHTS 4

RIVER HEIGHTS JOINT VENTURE
P.O. BOX 758
BORING, OR 97009
(503) 658-8440

CONSULTING ENGINEERING SERVICES, INC.
14780 S.W. OSPREY DRIVE, SUITE 395
BEAVERTON, OR 97007 (503) 646-4508

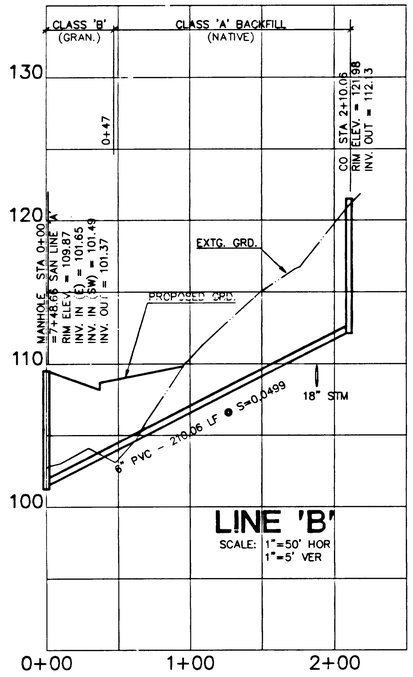
REVISIONS:
1. REVISED PUMP STATION AREA PER CITY AND DEQ REQUIREMENTS. S.F.G. 8-21-92
2. AS BUILTS 12/02/92 SRM

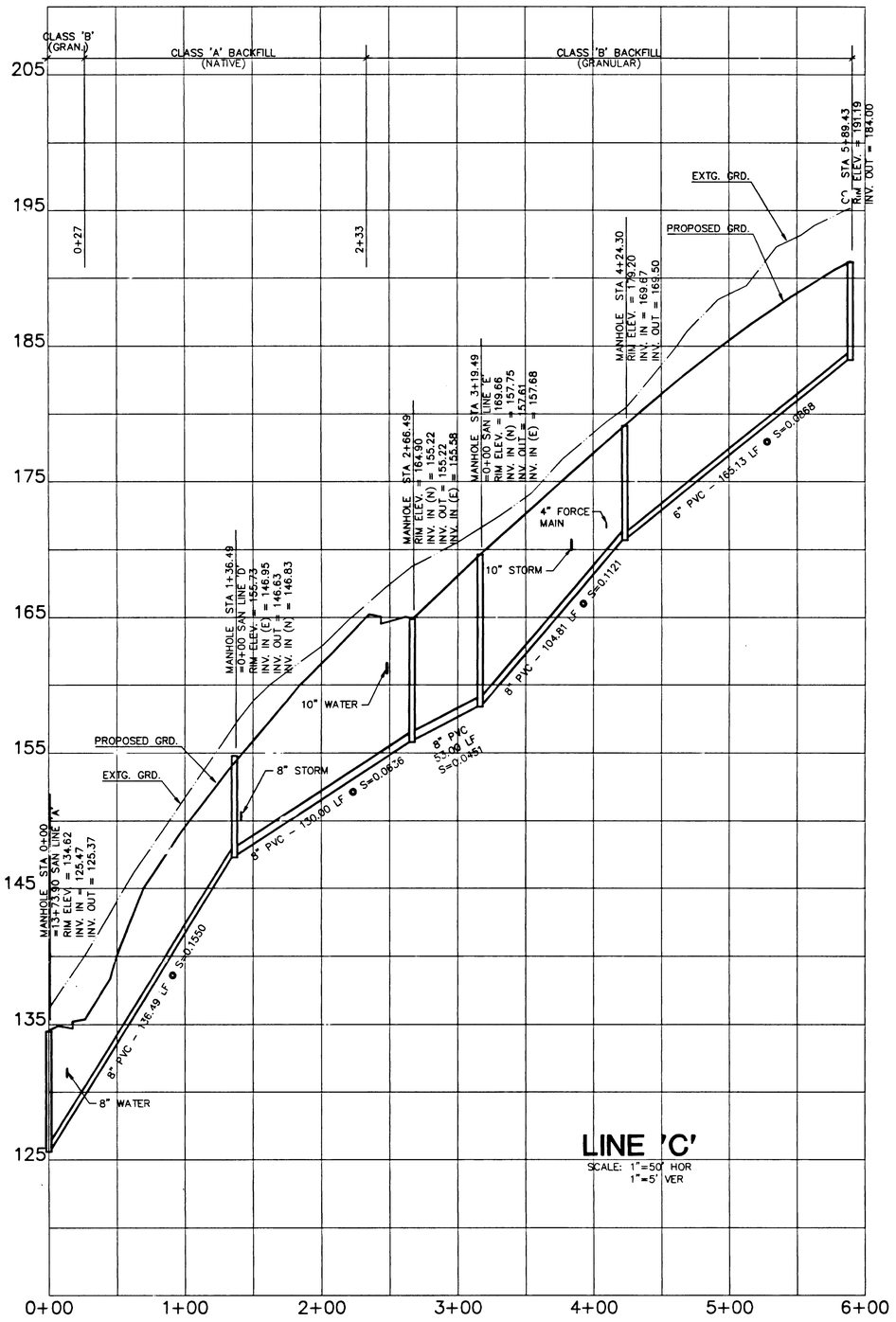
534-4813

PROJECT NO.: 91-534
DESIGNED BY: CBJ
DRAWN BY: SGF
DATE: JULY 28, 1992

SANITARY SEWER PROFILE LINE 'A'

SHEET 13
OF 19





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Anthony R. Weller

DATE: 12/1/92

ANTHONY R. WELLER

REGISTERED PROFESSIONAL ENGINEER
14061
OREGON
JULY 28, 1989
ANTHONY R. WELLER

RIVER HEIGHTS 4

RIVER HEIGHTS JOINT VENTURE
P.O. BOX 758
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(503) 658-6440

CONSULTING ENGINEERING SERVICES, INC.
14780 S.W. OSPREY DRIVE, SUITE 395
BEAVERTON, OR 97007 (503) 646-4559

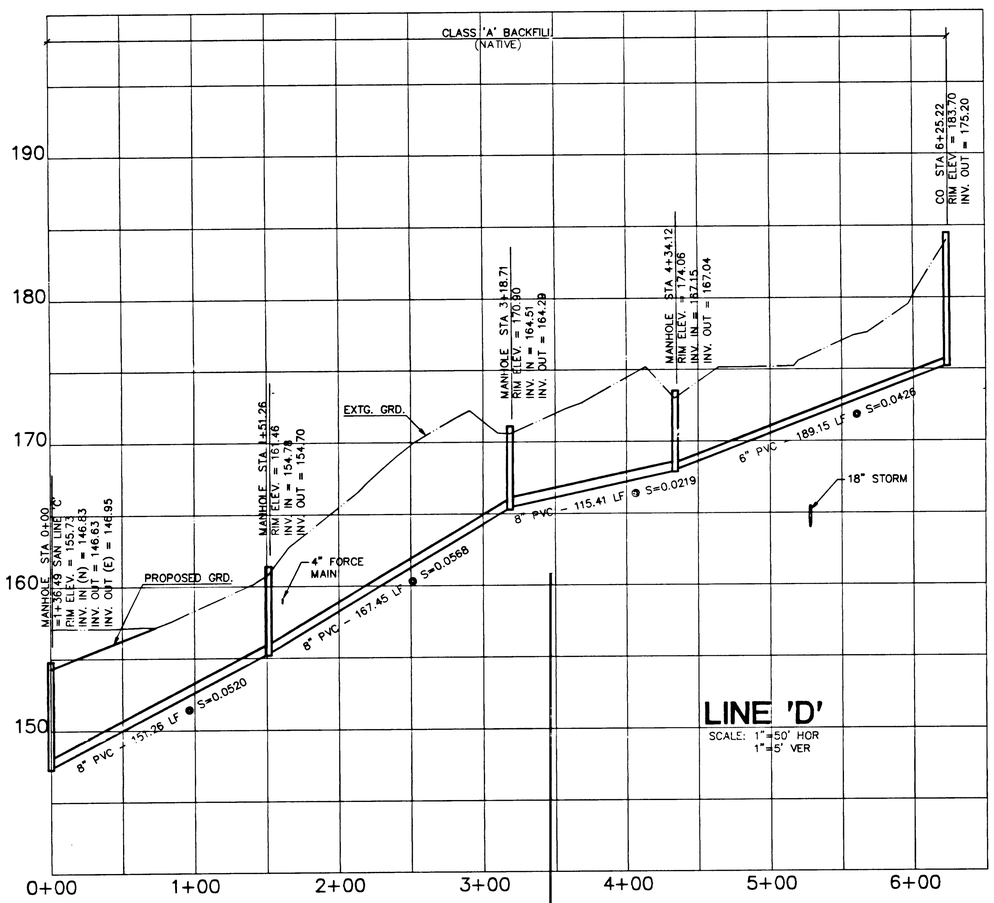
PROJECT NO.:	91-534	DATE:	JULY 28, 1992
DESIGNED BY:	CBJ	DRAWN BY:	SGF

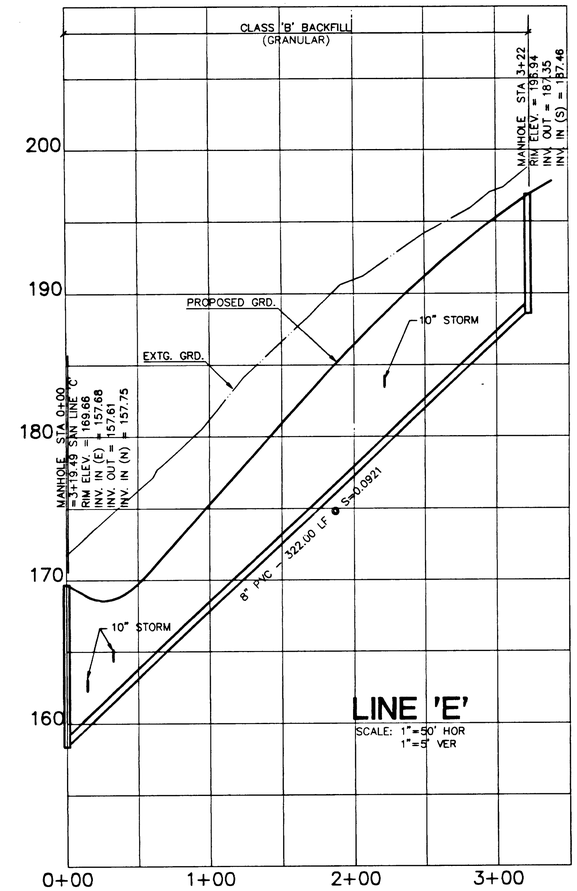
SANITARY SEWER PROFILES
LINES 'B' & 'C'

1. AS BUILTS 12/02/92 SRW

534-4814

SHEET 14
OF 19





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Anthony R. Weller
ANTHONY R. WELLER
DATE: 12/2/92

REGISTERED PROFESSIONAL ENGINEER
14061
OREGON
JULY 26, 1988
ANTHONY R. WELLER

RIVER HEIGHTS 4

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P.O. BOX 758
BORING, OR 97009
(503) 658-6440

CONSULTING ENGINEERING SERVICES, INC.
14780 S.W. OSPREY DRIVE, SUITE 395
BEAVERTON, OR 97007 (503) 646-4509

1. AS BUILTS 12/02/92 SRM

534-AB15

PROJECT NO.: 91-534 DATE: JULY 29, 1992
DESIGNED BY: CBJ DRAWN BY: SGF

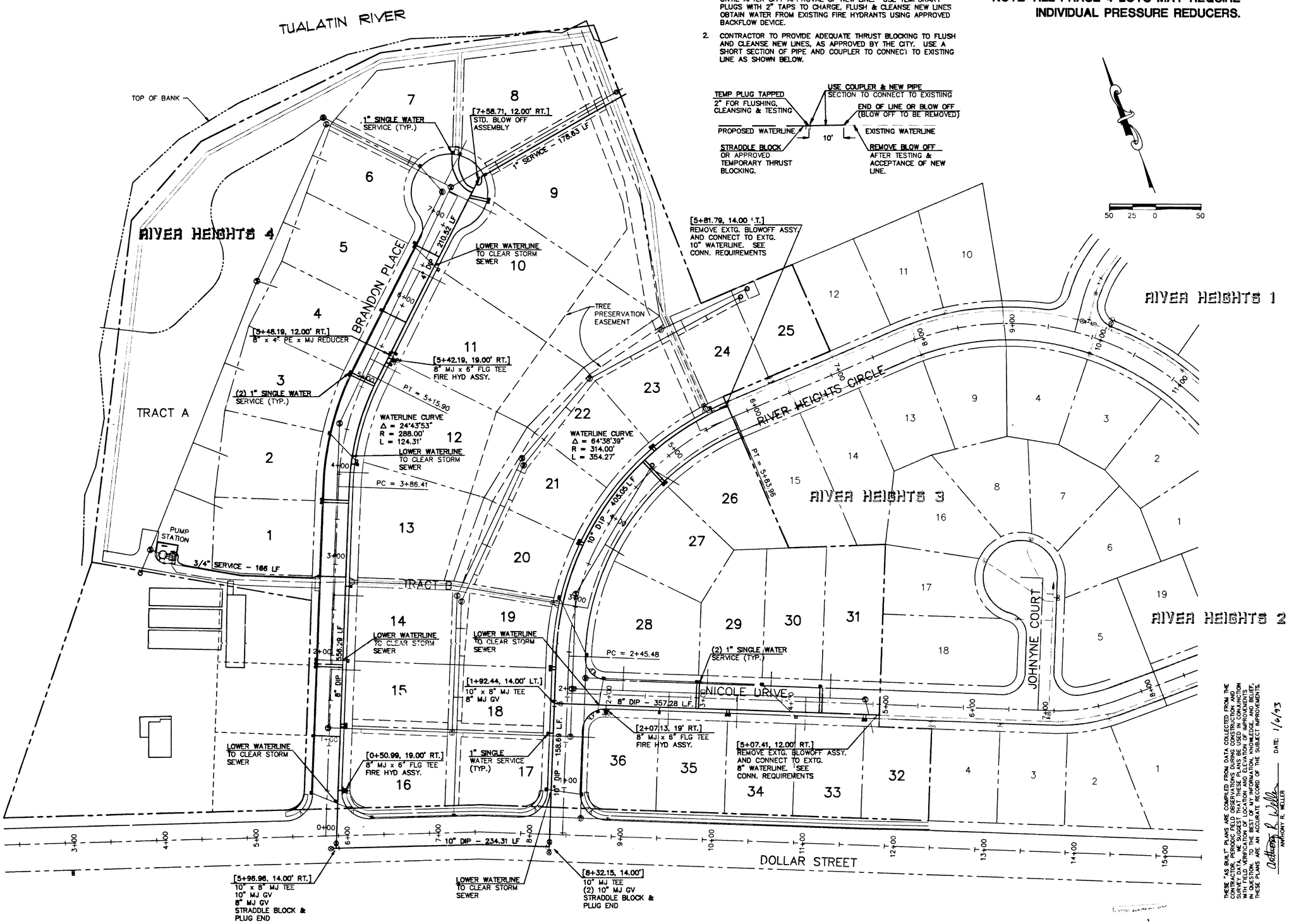
SANITARY SEWER PROFILES
LINES 'D' & 'E'

SHEET 15 OF 19

CONNECTION REQUIREMENTS:

1. CONTRACTOR SHALL NOT CONNECT TO EXISTING WATERLINES UNTIL AFTER CITY APPROVAL OF NEW LINE. USE TEMPORARY PLUGS WITH 2" TAPS TO CHARGE, FLUSH & CLEANSE NEW LINES OBTAIN WATER FROM EXISTING FIRE HYDRANTS USING APPROVED BACKFLOW DEVICE.
2. CONTRACTOR TO PROVIDE ADEQUATE THRUST BLOCKING TO FLUSH AND CLEANSE NEW LINES, AS APPROVED BY THE CITY. USE A SHORT SECTION OF PIPE AND COUPLER TO CONNECT TO EXISTING LINE AS SHOWN BELOW.

NOTE: ALL PHASE 4 LOTS MAY REQUIRE INDIVIDUAL PRESSURE REDUCERS.



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ANTHONY R. WELLER DATE: 1/6/93

REGISTERED PROFESSIONAL ENGINEER 14061 OREGON JULY 26, 1988 ANTHONY R. WELLER

EXP. 12/31/94

RIVER HEIGHTS 4

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CONSULTING ENGINEERING SERVICES, INC.
14780 S.W. OSPREY DRIVE, SUITE 395
BEAVERTON, OR 97007 (503) 646-4509

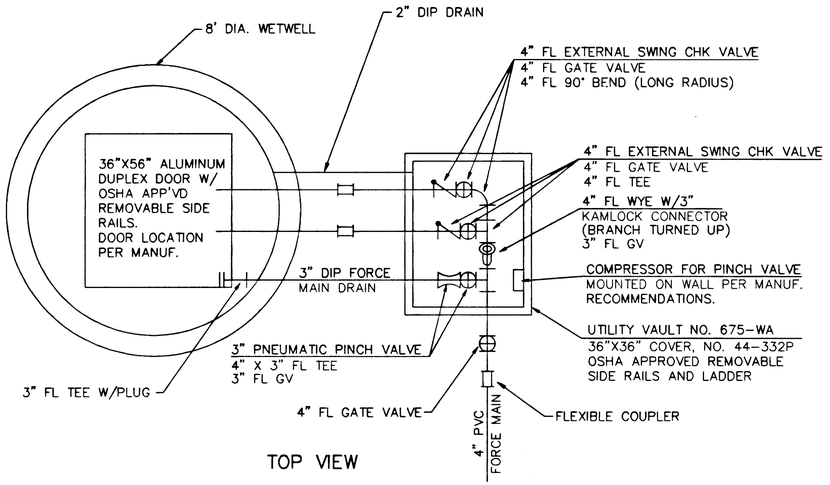
1.	AS BUILT	12/02/92	SRM

534-AB16

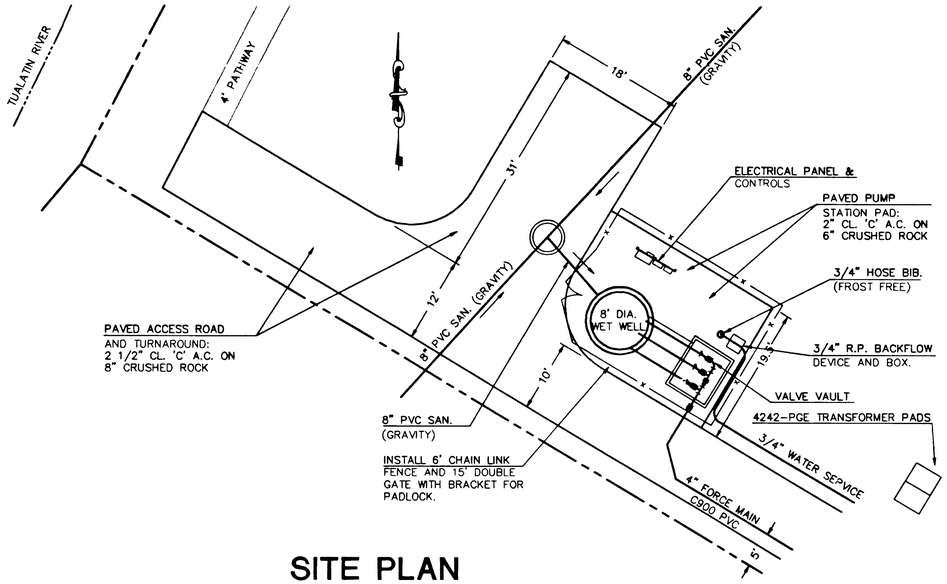
PROJECT NO.: 91-534 DATE: JULY 29, 1992
DESIGNED BY: ARW DRAWN BY: SBM

WATERLINE PLAN

SHEET 16 OF 19

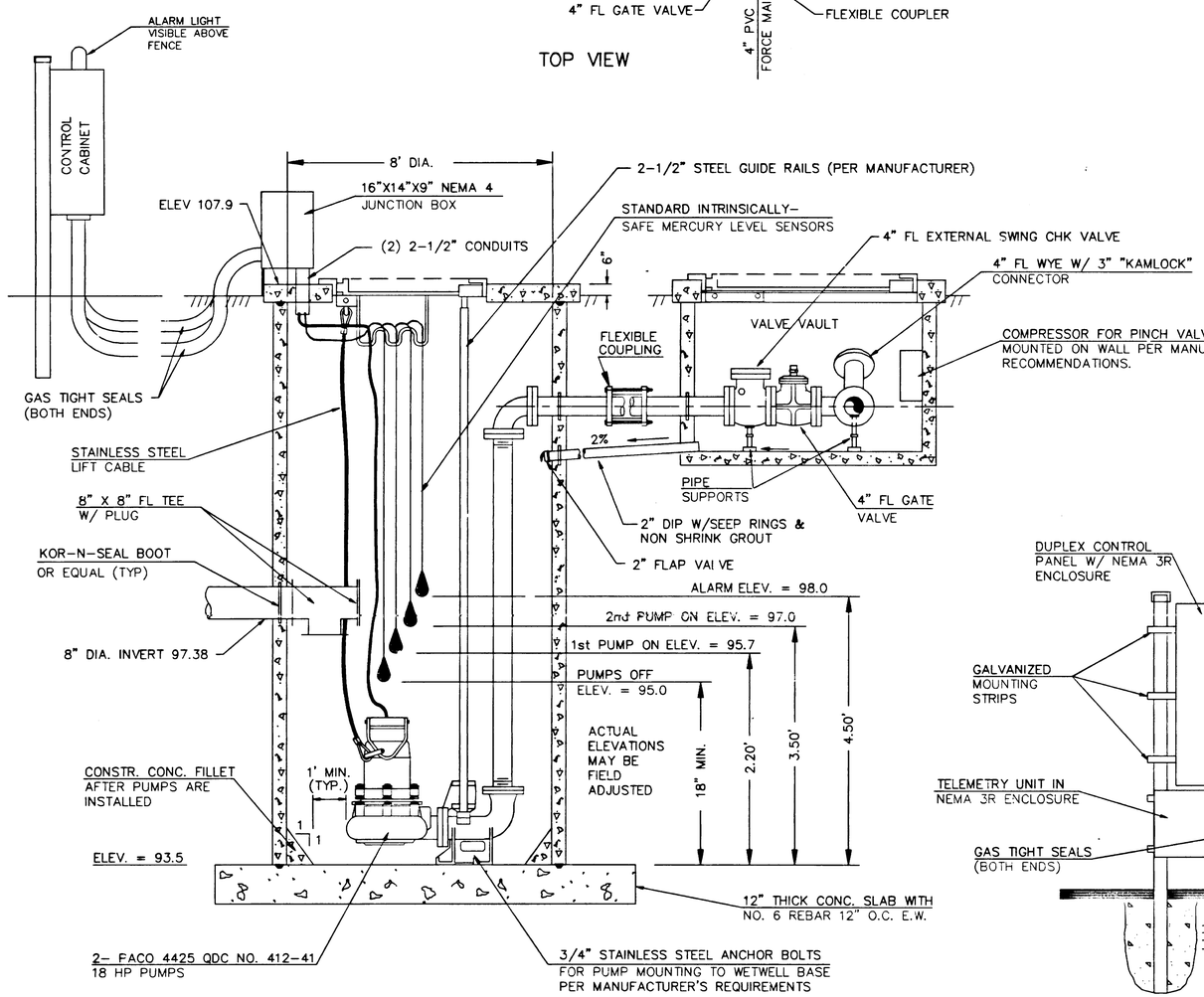


TOP VIEW

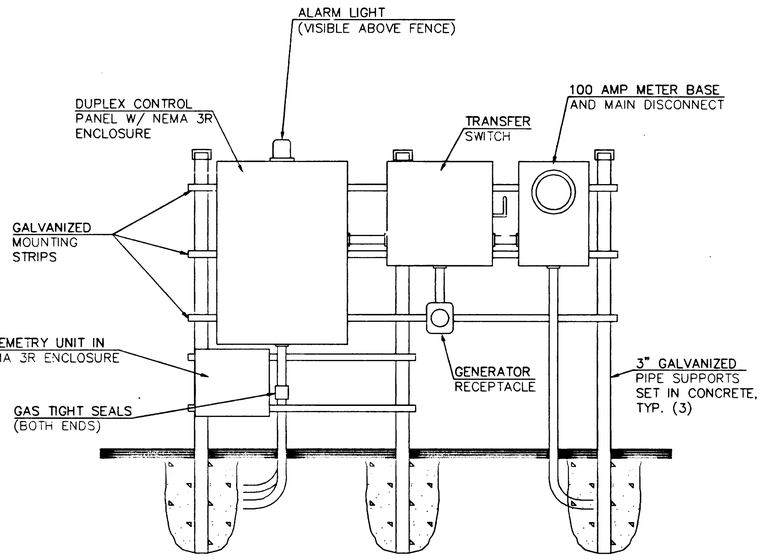


SITE PLAN

SCALE 1"=10'



SECTION VIEW



CONTROL PANEL

THESE "AS BUILT" PLANS ARE COMPILED FROM DATA COLLECTED FROM THE CONTRACTOR, PERIODIC FIELD OBSERVATIONS DURING CONSTRUCTION AND SURVEY DATA. WE SUGGEST THAT THESE PLANS BE USED IN CONJUNCTION WITH FIELD VERIFICATION OF LOCATION AND ELEVATION OF IMPROVEMENTS IN QUESTION. TO THE BEST OF MY INFORMATION, KNOWLEDGE, AND BELIEF, THESE PLANS ARE AN ACCURATE RECORD OF THE SUBJECT IMPROVEMENTS.

Anthony R Weller DATE: 1/6/93
ANTHONY R. WELLER

PUMP STATION NOTES:

DESIGN CRITERIA:

SERVICE AREA: 13.90 ACRES, 45 UNITS
FLOW RATES: 80 GPCD DOMESTIC AND 1500 GPAD I & I
3.1 PERSONS/UNIT WITH 3.0 PEAKING FACTOR
AVERAGE FLOW: 22 GPM
PEAK FLOW: 38 GPM

GENERAL:

VERIFY ALL MATERIALS AND DIMENSIONS WITH SUPPLIERS PRIOR TO CONSTRUCTION OR DELIVERY ON SITE.

ALL PUMP STATION MECHANICAL ITEMS SHALL HAVE SHOP DRAWINGS SUBMITTED TO ENGINEER FOR REVIEW AND APPROVAL PRIOR TO FABRICATION AND/OR DELIVERY TO SITE.

CONTRACTOR SHALL SUBMIT FOR APPROVAL ELECTRICAL SHOP DRAWINGS INCLUDING BUT NOT LIMITED TO LINE DIAGRAMS, CONTROL LOGIC, CONTROL ENCLOSURE, JUNCTION BOX, TRANSFER SWITCH, DUPLEX CONTROL PANEL, LEVEL SENSORS, ALARM LIGHTS, EMERGENCY GENERATOR HOOK-UPS, AND TELEMETERING. CONTRACTOR SHALL ALLOW AT LEAST TWO WEEKS FOR REVIEW AND APPROVAL OF SHOP DRAWINGS.

PUMPS:

(2) PACO 4425 QDC NO. 412-41, 18 HP, 3-PHASE, 60 HERTZ, 460 VOLT, OPERATING AT 1750 RPM. PUMPS PROVIDE 118 GPM EACH AT 116' TDH. ALL PIPING TO BE DIP, CLASS 52, UNLESS SPECIFIED OTHERWISE.

WETWELL:

8' DIAMETER, 14' TOTAL DEPTH INCLUDING 18" DEAD STORAGE, OVERFLOW ELEV. = 105 AT LINE 'A' MANHOLE STA 5+95.25. 4 HOUR EMERGENCY STORAGE VOLUME = 706 CU. FT. (AVERAGE FLOW)

CONCRETE WETWELL AND LID TO COMPLY WITH ASTM C478. CONTRACTOR SHALL TEST WETWELL FOR WATER-TIGHTNESS AFTER ALL PIPING PENETRATIONS ARE COMPLETED IN ACCORDANCE WITH 1990 APWA SPECIFICATIONS.

INSTALL 3/4-INCH STAINLESS STEEL ACHOR BOLTS IN WETWELL BASE IN ACCORDANCE WITH ALL MANUFACTURER'S REQUIREMENTS.

FORCE MAIN:

4" AWWA C900 PVC WITH CAST IRON FITTINGS - 900 LF. MINIMUM COVER SHALL BE 3 FEET. ALL FITTINGS TO BE THRUST BLOCKED.

ELECTRICAL:

100 AMP METER BASE WITH MAIN DISCONNECT.

100 AMP TRANSFER SWITCH FOR GENERATOR CONNECTION IN NEMA 3R ENCLOSURE.

STAND-BY GENERATOR RECEPTACLE: CROUSE HINDS AR1041 100 AMP 4 POLE

TELEMETRY UNIT: MOTOROLA INTRAC 2000 RADIO #C7143A W/DB-230 ANTENNA

DULPLEX AUTOMATIC PUMPING PLANT CONTROL PANEL: NEMA 3R ENCLOSURE, CIRCUIT BREAKERS, ACROSS-THE-LINE STARTERS, 3RD LEG OVERLOAD PROTECTION, CONTROL TRANSFORMERS, ALL NECESSARY RELAYS AND CONTACTS, H.O.A. SELECTOR SWITCHES, MOTOR RUN INDICATING LIGHTS, (2) RUN-TIME METERS, (2) AUXILIARY CONTACTS, 110 VOLT GFI CONVENIENCE OUTLET, HIGH WATER ALARM CONTACT AND PANEL MOUNTED ALARM LIGHT.

ALL ELECTRICAL CONSTRUCTION WORK SHALL BE IN ACCORDANCE WITH THE 1992 NATIONAL ELECTRICAL CODE. FINAL APPROVAL WILL NOT BE MADE UNTIL ALL ELECTRICAL ITEMS PASS STATE ELECTRICAL INSPECTION.

REGISTERED PROFESSIONAL ENGINEER 14061 OREGON JULY 26, 1985 ANTHONY R. WELLER
EXP. 12/31/94

RIVER HEIGHTS 4

RIVER HEIGHTS JOINT VENTURE
P.O. BOX 758
BORING, OR 97009
(503) 658-8440

CONSULTING ENGINEERING SERVICES, INC.
14760 S.W. OSPREY DRIVE, SUITE 395
BEAVERTON, OR 97007 (503) 646-4509

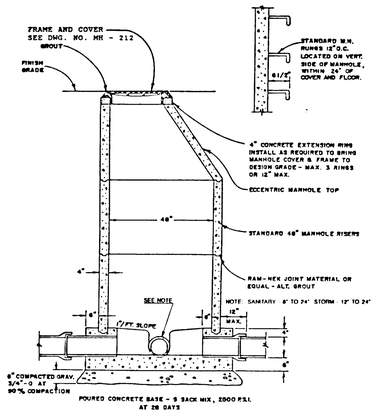
REVISIONS	DATE:	DRAWN BY:
1. REVISED PUMP STATION PER CITY AND DEQ REQUIREMENTS. S.G.F. 8-21-92	JUNE 15, 1992	ARW
2. REVISED ANTENNA SPECIFICATION. A.R.W. 9-10-92		
3. AS BUILTS 12/02/92 SRW		

534-4817

PROJECT NO: 91-534
DESIGNED BY: ARW

PUMP STATION

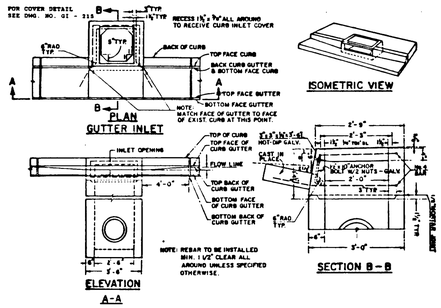
SHEET 17
OF 19



STANDARD MANHOLE

CITY OF WEST LINN DWG NO MH-209

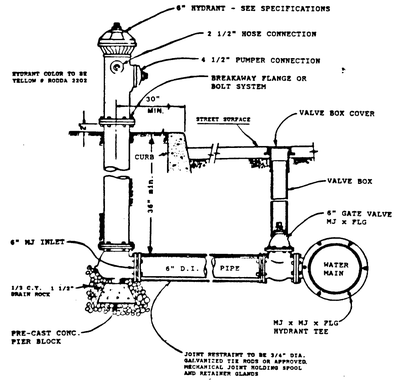
NTS



GUTTER INLET 2-1/2A

CITY OF WEST LINN DWG NO GI-214

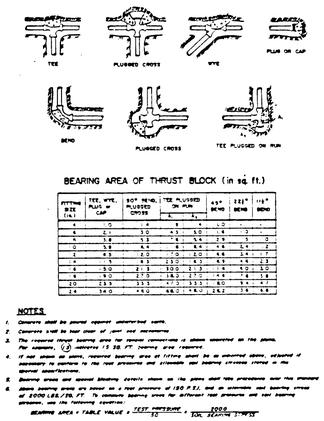
NTS



FIRE HYDRANT

CITY OF WEST LINN DWG NO FH-300

NTS



BEARING AREA OF THRUST BLOCK (in sq. ft.)

FITTING SIZE (in.)	TEE, WYE, PLUG or CAP	90° BEND, PLUGGED CROSS	TEE PLUGGED ON RUN		45° BEND	22½° BEND	11¼° BEND
			A	B			
4	1.0	1.0	1.0	1.0	1.0		
6	2.1	3.0	4.5	3.0	1.4	1.1	
8	3.8	5.3	7.0	5.3	2.5	1.1	.6
10	5.9	8.4	8.4	8.4	3.9	1.7	.9
12	8.5	12.0	12.0	12.0	5.6	2.4	1.2
14	11.5	13.0	16.5	16.5	7.6	3.3	1.7
16	15.0	13.0	21.5	21.5	9.9	4.3	2.2
18	19.0	18.0	27.0	27.0	12.5	5.4	2.8
20	23.5	23.5	33.5	33.5	15.4	6.7	3.4
24	34.0	44.0	48.0	44.0	22.2	9.6	4.8

NOTES

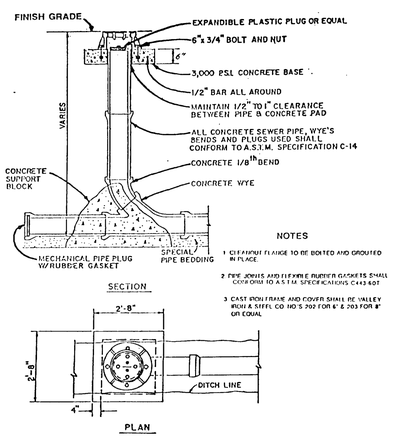
1. Concrete shall be placed against undisturbed earth.
2. Concrete is not to foul joint or joint restrictions.
3. The required thrust bearing areas for various combinations of fittings are listed in the table. For example, (2) 45° elbows is 2(2.2) = 4.4 sq. ft. bearing area required.
4. If soil shown on plans, required bearing area of fitting shall be as otherwise shown, reference is necessary to perform to the test pressures and allowable soil bearing pressures listed in the special specifications.
5. Bearing areas are against bearing faces shown on the plans and the pressures over the pressure shown bearing areas are based on a test pressure of 150 P.S.I. and an allowable soil bearing stress of 2000 LBS./SQ. FT. To determine bearing areas for different test pressures and test bearing pressures, use the following equation:

$$\text{BEARING AREA} = \text{TABLE VALUE} \times \frac{\text{TEST PRESSURE}}{150} \times \frac{2000}{\text{SOIL BEARING STRESS}}$$

THRUST BLOCKING

CITY OF WEST LINN DWG NO TB-302

NTS



NOTES

1 CLEANOUT FLANGE TO BE BOLTED AND GROUTED IN PLACE.

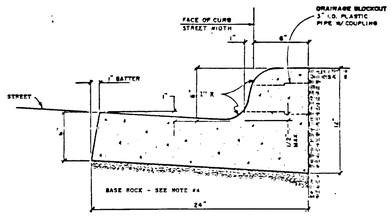
2 PIPE JOINTS AND FLEXIBLE RUBBER GASKETS SHALL CONFORM TO A.S.T.M. SPECIFICATIONS C443-80T

3 CAST IRON FRAME AND COVER SHALL BE VALLEY IRON & STEEL CO. NO.'S 202 FOR 6" & 203 FOR 8" OR EQUAL

SANITARY SEWER CLEANOUT

CITY OF WEST LINN DWG NO SS-4

NTS

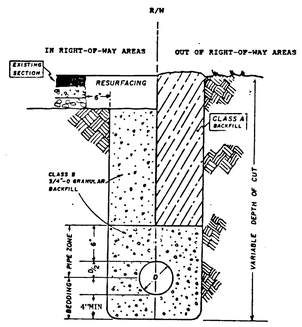


1. When used along medians, gutters may be reduced with prior approval from the City Engineer.
2. Concrete shall have a breaking strength of 3000 PSI after 28 days.
3. CONTRACTION JOINTS
   A. To be provided:
      1) at each point of tangency of the curb.
      2) at each cold joint.
      3) at each side of inlet structures.
      4) at both sided of an approach.
   B. Spacing to be not more than 15 feet.
   C. The depth of the joint shall be at leas= 1 1/2".
4. Base rock - 1 1/2" minus, 95% compaction. Rock shall be to subgrade of street structure or 4" in depth, whichever is greater.
5. Drainage block - 3" dia. plastic pipe.
   A. Drainage access through existing curbs shall be by the following:
      1) core drilling.
      2) vertical saw-cut of curb 18" each side of drain & repoured to full depth of curb.

CURB & GUTTER

CITY OF WEST LINN DWG NO CG-265

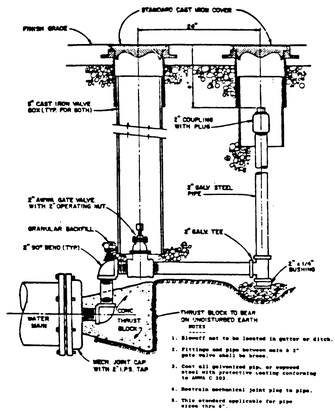
NTS



PIPE BEDDING & BACKFILL

CITY OF WEST LINN DWG NO PB-280

NTS



NOTES

1. Blowoff not to be located in gutter or ditch.
2. Fittings and pipe between main & 2" gate valve shall be brass.
3. Coat all galvanized pip, or exposed steel with protective coating conforming to AWWA C 203.
4. Restrain mechanical joint plug to pipe.
5. This standard applicable for pipe sizes thru 8".

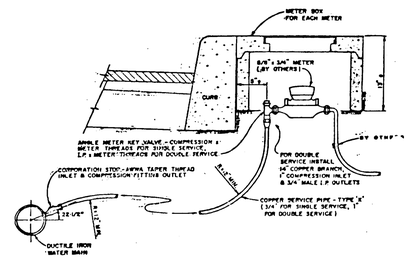
BLOWOFF

CITY OF WEST LINN DWG NO BO-301

NTS

NOTE

IN NEIGHBORHOODS WITHOUT PLANTER STRIPS, INSTALL THE METER BOXES OUT OF THE SIDEWALK AREA.



WATER METER

CITY OF WEST LINN DWG NO WM-304

NTS

REGISTERED PROFESSIONAL ENGINEER 14061 OREGON JULY 26, 1988 ANTHONY R. WELLER

RIVER HEIGHTS 4
RIVER HEIGHTS JOINT VENTURE
P.O. BOX 758
BORING, OR 97009
(503) 658-6440

CONSULTING ENGINEERING SERVICES, INC.
14760 S.W. OSPREY DRIVE, SUITE 385
BEAVERTON, OR 97007 (503) 646-4509

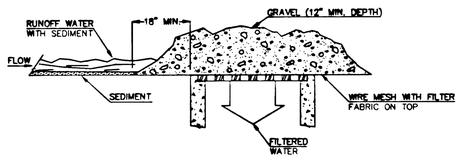
PROJECT NO.: 91-534
DESIGNED BY: ARW
DRAWN BY: SGF
DATE: JUNE 15, 1992

534-SH18

DETAILS

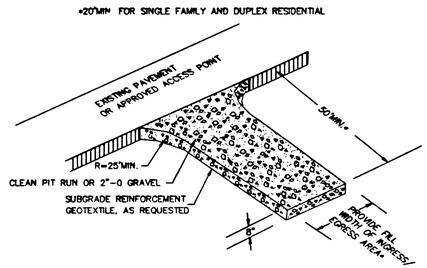
SHEET 18

OF 19



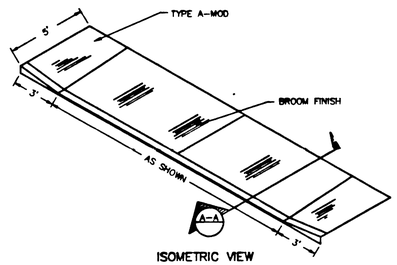
GRAVEL INLET BARRIER

NTS

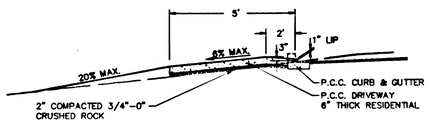


STABILIZED CONSTRUCTION ENTRANCE

N.T.S.



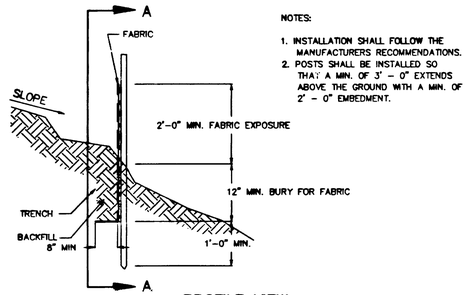
ISOMETRIC VIEW



SECTION A-A

DRIVEWAY & APPROACHES

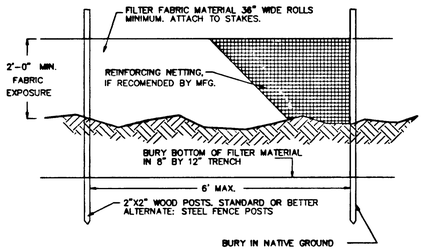
NTS



NOTES:

1. INSTALLATION SHALL FOLLOW THE MANUFACTURERS RECOMMENDATIONS.
2. POSTS SHALL BE INSTALLED SO THAT A MIN. OF 3' - 0" EXTENDS ABOVE THE GROUND WITH A MIN. OF 2' - 0" EMBEDMENT.

PROFILE VIEW



SECTION A-A

SEDIMENT FENCE DETAIL

N.T.S.

REGISTERED PROFESSIONAL ENGINEER 14061 OREGON JULY 26, 1985 ANTHONY R. WELLER

RIVER HEIGHTS 4

RIVER HEIGHTS JOINT VENTURE
P.O. BOX 758
BORING, OR 97009
(503) 668-6440

CONSULTING ENGINEERING SERVICES, INC.
14780 S.W. OSPREY DRIVE, SUITE 395
BEAVERTON, OR 97007 (503) 646-4509

534-SH19

PROJECT NO.: 91-534 | DATE: JUNE 15, 1992
DESIGNED BY: ARW | DRAWN BY: SGF

DETAILS

SHEET 19

OF 19