GRADING AND PAVING

- ALL GRADING OUTSIDE THE BUILDING LINES SHALL BE DONE ACCORDING TO THE APPROVED PLANS.
- GRADES INDICATED ON THE GRADING PLAN ARE TO BE THE FINISH SURFACE. THE CONTRACTOR SHALL MAKE ADJUSTMENTS AS NECESSARY WHEN PREPARING THE SUBGRADE.
- AREAS REQUIRING FILL SHALL BE STRIPPED OF ORGANIC AND UNSUITABLE MATERIALS. FILL SHALL BE CLEAN NON-ORGANIC MATERIAL PLACED IN 8-INCH LAYERS AND COMPACTED TO 95 PERCENT RELATIVE MAXIMUM DENSITY OF AASHTO T99.
- NO SLOPE SHALL BE CONSTRUCTED STEEPER THAN 2 HORIZONTAL TO 1 VERTICAL WITHOUT APPROVAL OF THE ENGINEER.
- ORGANIC MATERIALS, TOPSOIL, AND EXCESS MATERIALS MAY BE LEFT ON SITE IN AREAS OUTSIDE THE FUTURE BUILDING ENVELOPES.
- MATERIALS IN SOFT SPOTS WITHIN THE ROADWAY SHALL BE REMOVED TO THE DEPTH REQUIRED TO PROVIDE A FIRM FOUNDATION AND SHALL BE REPLACED WITH PIT RUN CRUSHED ROCK. THE ENTIRE SUBGRADE SHALL BE THOROUGHLY COMPACTED.
- EXISTING PAVEMENT SHALL BE SAW-CUT FOR UTILITY TRENCHES AND AT THE EDGES OF NEW PAVEMENT EXTENSIONS AS SHOWN ON THE DRAWINGS OR AS DIRECTED BY THE ENGINEER. THE EDGES SHALL BE PAINTED WITH HOT LIQUID ASPHALT AND SAND SEALED WHEN NEW PAVEMENTS ARE PLACED.
- CONTRACTOR SHALL NOTIFY THE ENGINEER AND THE GOVERNING AGENCY WHEN THE SUBGRADE IS COMPLETE AND 24-HOURS PRIOR TO PLACEMENT OF ROCK BASE MATERIAL AND 24-HOURS PRIOR TO PAVING FOR AN INSPECTION OF THE WORK.
- ASPHALTIC CONCRETE PAVEMENT SHALL CONFORM TO THE REQUIREMENTS AND SPECIFICATIONS OREGON STATE HIGHWAY DIVISION CLASS B.
- CONCRETE SHALL HAVE A DESIGN MIX TO PROVIDE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4000 psi AND CONFORMING TO THE REQUIREMENTS OF ASTM C94 SPECIFICATIONS FOR READY-MIXED CONCRETE.

STORM SEWER CONSTRUCTION

- ALL WORK AND MATERIALS TO BE IN ACCORDANCE WITH THE CITY OF WEST LINN AND THE STATE OF OREGON PLUMBING CODE.
- MATERIALS:
  CONCRETE CULVERT PIPE (CCP) SHALL CONFORM TO THE REQUIREMENTS OF ASTM C14, CLASS 3, NONREINFORCED CONCRETE PIPE.
  POLYVINYL CHLORIDE PIPE (PVC) SHALL CONFORM TO ASTM 3034 FOR MANUFACTURE AND TESTING AND ASTM 2321 FOR INSTALLATION.
  DUCTILE IRON PIPE (DI) THE DUCTILE IRON PIPE SHALL CLASS 52, PUSH-ON JOINT PIPE.
  CATCH BASINS (RIVERVIEW HEIGHTS) SHALL CONFORM TO THE REQUIREMENTS OF THE CITY OF WEST LINN STANDARD DRAWING GI-214.
  CATCH BASINS (TANWILER DRIVE) SHALL CONFORM TO THE DETAILS SHOWN ON THE DRAWINGS.
  MANHOLES SHALL BE 48-INCH PRECAST CONCRETE WITH STANDARD GRAY CAST IRON FRAME AND COVER, AND STEPS IF OVER 4' DEEP.
- CONNECTIONS TO THE EXISTING STORM SEWER SYSTEM TO BE TO THE REQUIREMENTS OF THE CITY OF WEST LINN.
- STORM SEWER PIPING SHALL BE INSTALLED WITH GRANULAR PIPE BEDDING AND BACKFILL WITHIN THE PUBLIC RIGHT-OF-WAY TO THE REQUIREMENTS OF CLASS B BACKFILL (APWA 301.2.04B), AND THE CITY OF WEST LINN STANDARD DETAIL PB-280.

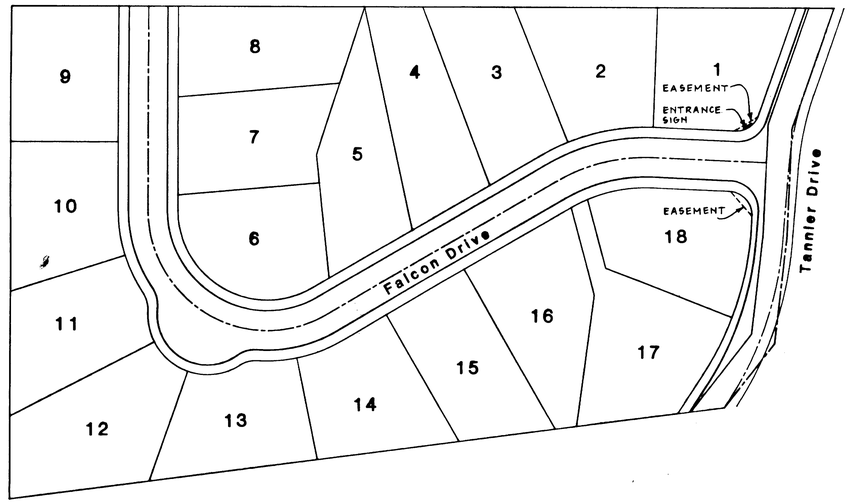
SANITARY SEWER CONSTRUCTION

- ALL CONSTRUCTION OF PUBLIC SANITARY SEWERS SHALL CONFORM TO THE CITY OF WEST LINN STANDARDS AND SPECIFICATIONS.*
- POLYVINYL CHLORIDE PIPE (PVC) SHALL CONFORM TO THE REQUIREMENTS OF ASTM D-3034. PIPE INSTALLATIONS SHALL CONFORM TO REQUIREMENTS OF ASTM D-2321. JOINTS AND 'O' RINGS FOR PVC SEWER PIPE SHALL CONFORM TO THE REQUIREMENTS OF ASTM D-3212.
- SANITARY SEWER PIPING SHALL BE INSTALLED WITH GRANULAR PIPE BEDDING AND BACKFILL WITHIN THE PUBLIC RIGHT-OF-WAY, AND WITHIN PAVED AREAS ON THE SITE TO THE REQUIREMENTS OF CLASS B BACKFILL (APWA 301.2.04B), AND THE CITY OF WEST LINN STANDARD DETAIL PB-280.
- ALL SANITARY SEWER LATERALS ARE TO BE LAID AT A MINIMUM SLOPE OF TWO PERCENT (2%) UNLESS OTHERWISE INDICATED ON THE PLANS.

WATERLINE CONSTRUCTION

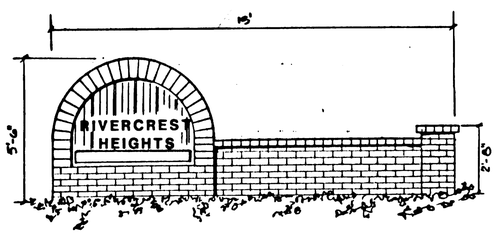
- ALL WORK AND MATERIALS TO BE IN ACCORDANCE WITH THE CITY OF WEST LINN, STATE OF OREGON PLUMBING CODE, THE OREGON DEPARTMENT OF HEALTH, AWWA STANDARDS.
- ALL PIPE AND FITTINGS FOR THE EXTENSION OF THE PUBLIC SYSTEM WILL BE DUCTILE IRON, CEMENT-LINED, TYTON JOINT CLASS 52 PIPE. PRIVATELY MAINTAINED SYSTEMS SHALL BE POLYVINYL CHLORIDE PIPE (PVC) SCH. 80 CLASSIFICATION.
- WATER LINES SHALL HAVE A MINIMUM COVER OF 36-INCHES AS MEASURED FROM THE TOP OF PIPE TO THE FINISH GRADE.
- THRUST BLOCKS: ALL TEES, PLUGS, CAPS, BENDS, AND AT ALL OTHER LOCATIONS WHERE UNBALANCED FORCES EXIST SHALL REQUIRE SUITABLE THRUST BLOCKING. CONCRETE TO BE POURED AGAINST UNDISTURBED EARTH AND SHALL HAVE A 28-DAY COMPRESSIVE STRENGTH OF 3000psi.
- ALL MAINS SHALL BE HYDROSTATIC TESTED AT 150psi FOR ONE HOUR TO CHECK FOR LEAKAGE PER THE STANDARDS OF THE CITY OF WEST LINN. TESTS TO BE WITNESSED BY THE CITY OF WEST LINN. STERILIZATION: ALL PIPE LINES SHALL BE FLUSHED AND STERILIZED PRIOR TO PLACING INTO SERVICE. STERILIZATION PROCEDURES SHALL CONFORM TO AWWA C601 OR AS MODIFIED OR EXPANDED BY THE CITY OF WEST LINN.
- DISPOSAL OF THE STERILIZATION WATER SHALL BE DONE IN SUCH A WAY AS TO NOT CAUSE DAMAGE OR INJURY.

* City of West Linn uses APWA specifications for Sanitary Sewer Construction. See Sheet 4/4 for modifications per DEQ.



Plan

scale: 1" = 60'

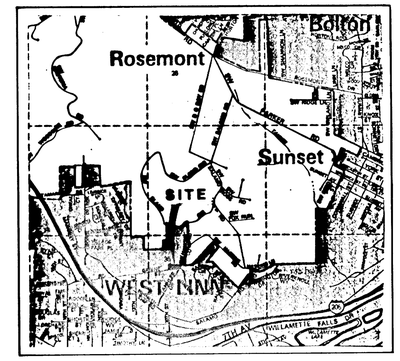


ELEVATION

3/8" = 1'-0"

NOTES:

1. THE COLOR, SIZE AND TEXTURE OF MASONRY TO BE COORDINATED WITH THE OWNER AND CONTRACTOR.
2. FOUNDATION DETAILS TO BE SUBMITTED TO OWNER AND ENGINEER PRIOR TO CONSTRUCTION.



Vicinity Map

n. t. s.

GENERAL NOTES

ALL WORK AND MATERIALS TO BE IN ACCORDANCE WITH THE CITY OF WEST LINN PUBLIC WORKS DEPARTMENT, O. S. H. D., AND 1980 APWA OREGON CHAPTER SPECIFICATIONS.

CONTRACTOR TO VERIFY ALL UTILITY LOCATIONS PRIOR TO CONSTRUCTION AND SHALL ARRANGE FOR THE RELOCATION OF ANY IN CONFLICT WITH THE PROPOSED CONSTRUCTION.

CONTRACTOR TO OBTAIN ALL REQUIRED PERMITS AND LICENSES BEFORE STARTING CONSTRUCTION.

EXISTING UTILITY LOCATIONS SHOWN ARE APPROXIMATE ONLY AND MUST BE VERIFIED BY THE CONTRACTOR. ADDITIONAL UNDERGROUND UTILITIES MAY EXIST.

THE ENGINEER HAS NOT BEEN RETAINED OR COMPENSATED TO PROVIDE CONTRACTOR'S SAFETY PRECAUTIONS OR TO MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES REQUIRED FOR THE CONTRACTOR TO PERFORM HIS WORK.

CONTRACTOR SHALL REMOVE AND DISPOSE OF TREES, STUMPS, BRUSH, ROOTS AND OTHER MATERIAL IN THE ROADWAY AND WHERE INDICATED ON THE PLANS. MATERIALS SHALL BE DISPOSED OF IN SUCH A MANNER AS TO MEET LOCAL REGULATIONS. MATERIAL TO BE DISPOSED OF OFF-SITE. NO ONSITE BURIAL ALLOWED.

REGISTERED PROFESSIONAL ENGINEER 7120 JULY 16, 1971 BRUCE D. GOLDSON

DATE	NO.	REVISION

DRAWN MMM | DESIGNED BDG | CHECKED
SCALE as noted | DATE Feb., 1990
FILE 89-2149-1356

COMPASS CORPORATION
ENGINEERING – SURVEYING – PLANNING
6564 S.E. LAKE ROAD
MILWAUKIE, OREGON 97222
(503) 222-4652
(503) 653-9093

Mr. Timothy Norton
T&K Properties
5014 S.E. MIDDLE WAY
VANCOUVER, WASHINGTON 98664

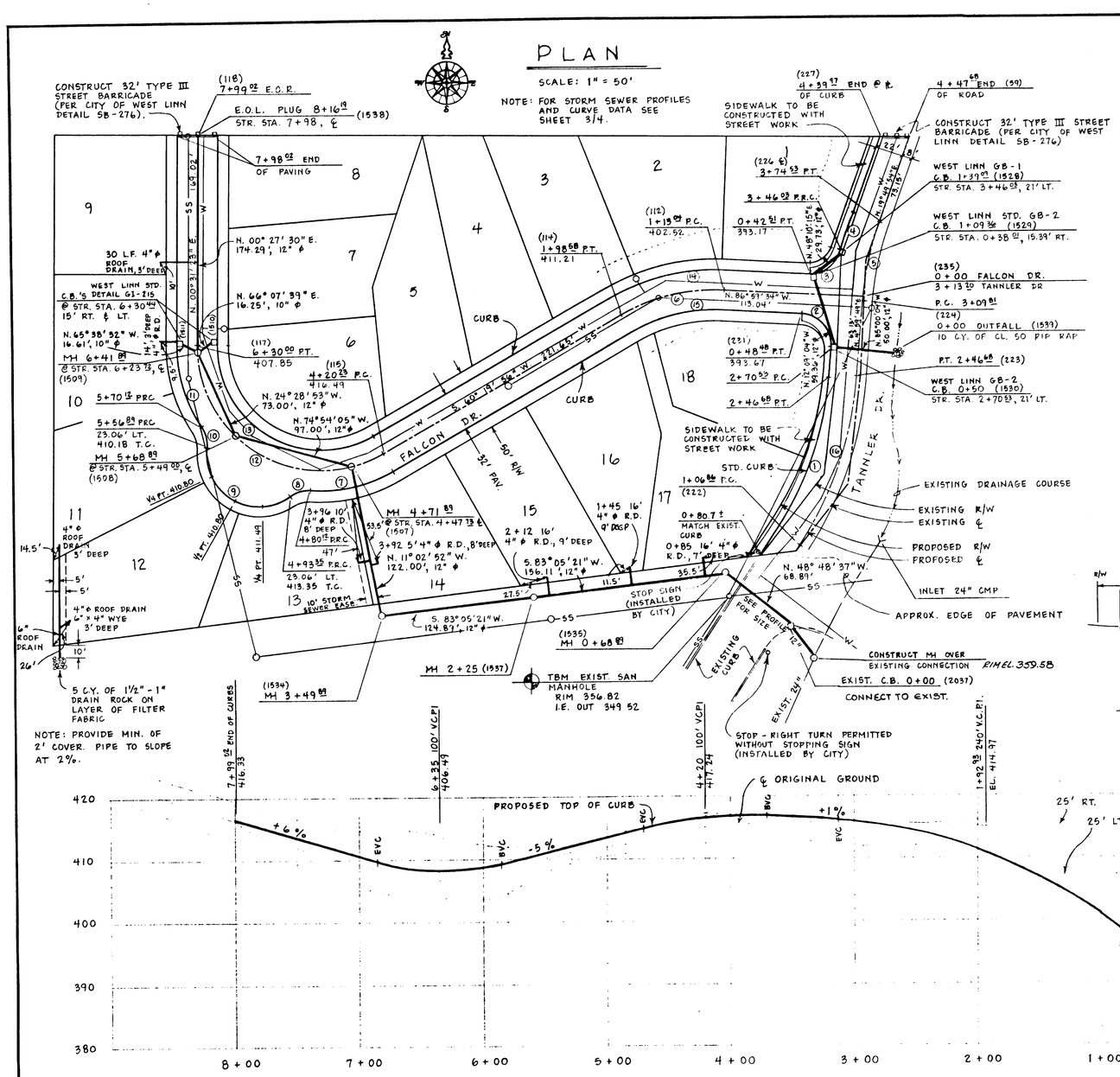
Mr. Darrel Wallace
Wallace Construction Co.
14886 S.E. HENRICI ROAD
OREGON CITY, OREGON 97045

RIVERCREST HEIGHTS
(FORMERLY "RIVERVIEW HEIGHTS")

1/4

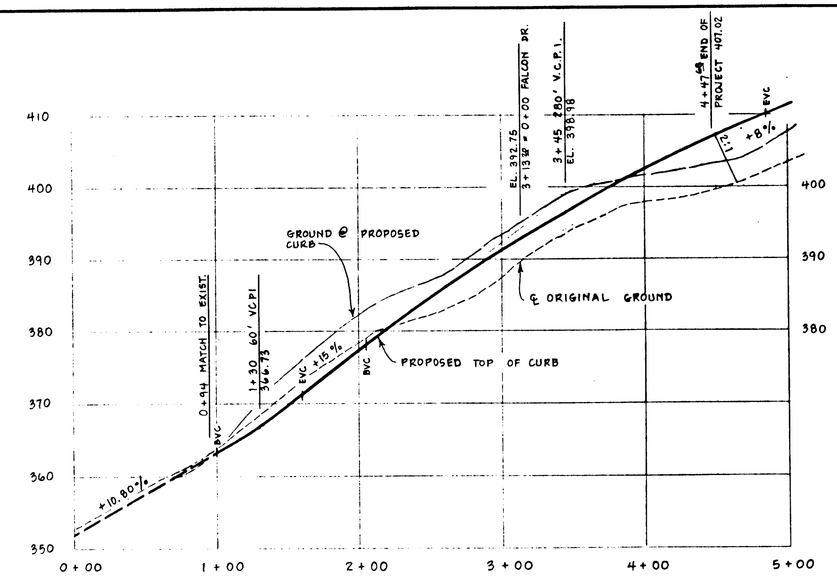
Willamette Print & Blueprint Company P-2695

RIVERCREST HEIGHTS '90



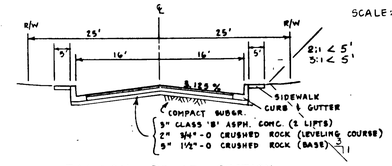
FALCON DRIVE

SCALE: 1" = 50' HOR., 1" = 10' VER.



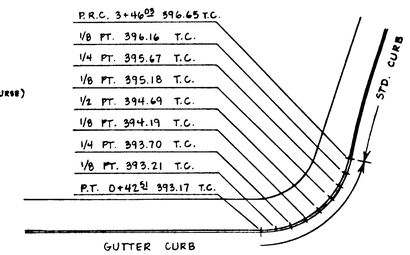
TANNLER DRIVE

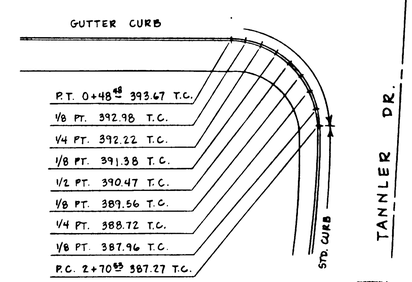
SCALE: 1" = 50' HOR., 1" = 10' VER.



FALCON DRIVE SECTION

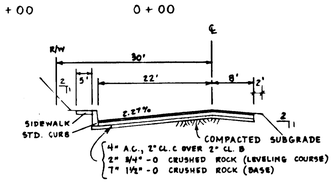
N. T. S.





FALCON DRIVE/ TANNLER DRIVE INTERSECTION DETAIL

SCALE: 1" = 20'



TANNLER DRIVE SECTION

N. T. S.

THESE AS-BUILTS REFLECT DATA COMPILED FROM SURVEY AND CONTRACTOR NOTES, INSPECTION BY THE CITY AND PERIODIC OBSERVATIONS BY COMPASS ENGINEERING DURING CONSTRUCTION. FIELD VERIFICATION OF IMPROVEMENTS IN QUESTION IS RECOMMENDED WHEN USING THESE PLANS.

Bruce D. Goldson DATE 10/25/90

REGISTERED PROFESSIONAL ENGINEER 7120 July 16, 1971 BRUCE D. GOLDSON

RIVERCREST HEIGHTS

DATE	NO.	REVISION
10/24/90	5	"AS BUILT" STORM
8/31/90	4	AS BUILT WATER (TANNLER DR.)
4/25/90	3	REVISED PER CITY REVIEW
4/16/90	2	REVISED ROAD STA.
3/27/90	1	REVISED PER CITY COND. OF APPR.

DRAWN MMM | DESIGNED BDG | CHECKED
SCALE as noted | DATE Feb., 1990
FILE 89-2149-1356

COMPASS CORPORATION
ENGINEERING - SURVEYING - PLANNING
8564 S.E. LAKE ROAD, MILWAUKIE, OREGON 97222
(503) 222-4652, (503) 653-9093

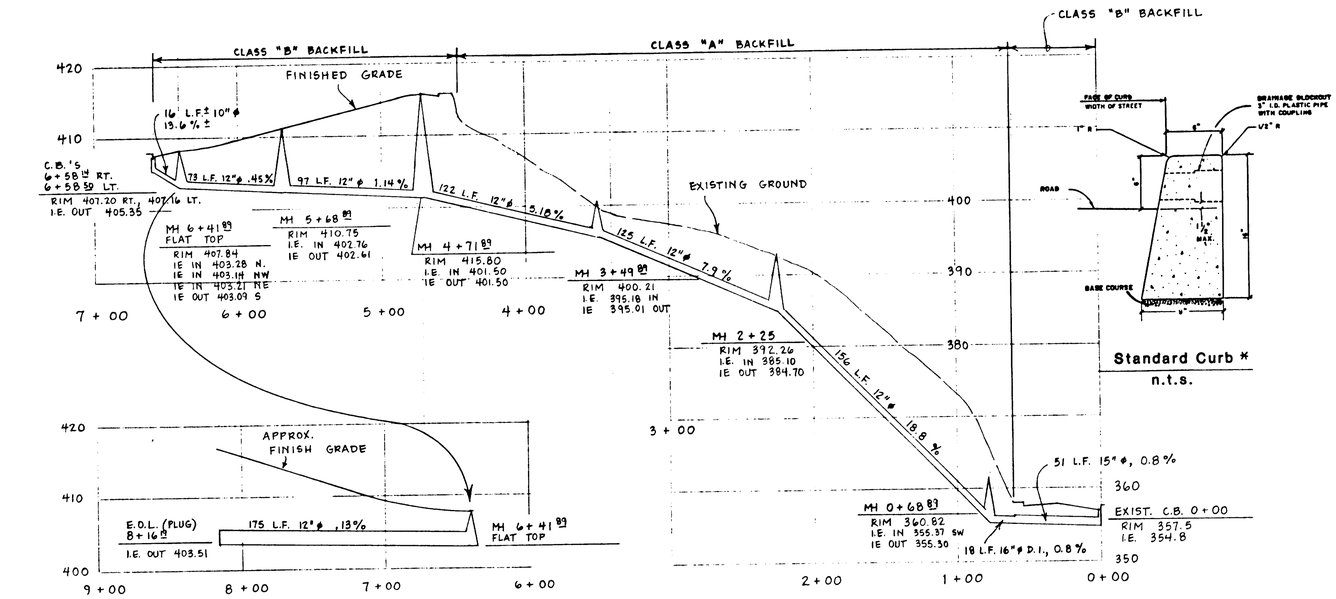
Mr. Timothy Norton
T & K Properties
8014 S.E. MIDDLE WAY
VANCOUVER, WASHINGTON 98664

Mr. Darrel Wallace
Wallace Construction Co.
14866 S.E. HENRICI ROAD
OREGON CITY, OREGON 97045

ROAD AND STORM SEWER IMPROVEMENTS
PLAN AND PROFILES

2/4

Willamette Print & Blueprint Company P-2895

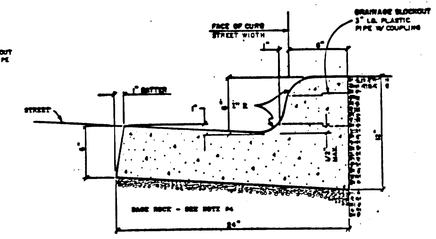


STORM SEWER PROFILE

SCALE: 1" = 50' HOR., 1" = 10' VER.

Standard Curb *

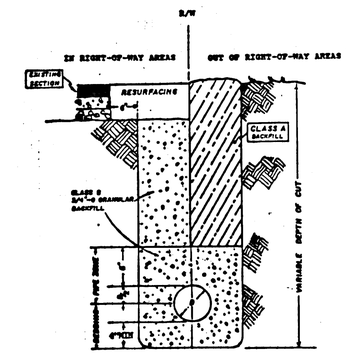
n.t.s.



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 least 1 1/2".
4. Base rock - 1 1/2" minus, 90% 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 canvas 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 and Gutter *

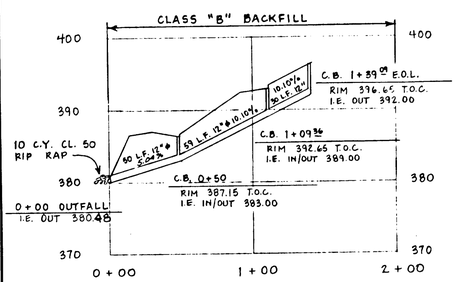
n.t.s.



Pipe Bedding and Backfill

n.t.s.

*NOTE: CURBS TO BE BRANDED W/ "W" & "S" FOR WATER AND SANITARY SERVICES

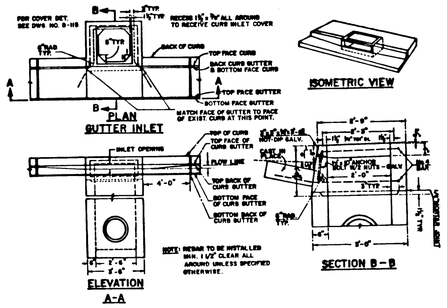


STORM SEWER PROFILE

SCALE: 1" = 50' HOR., 1" = 10' VER.

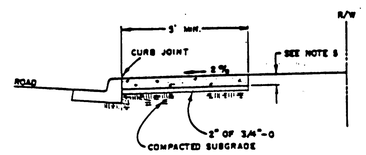
Curve Data

No.	Radius	Delta	Length	Location
1	258.00'	28 36' 37"	128.83'	curb line face
2	25.00'	91 59' 23"	40.14'	curb line face
3	25.00'	79 42' 29"	34.76'	curb line face
4	272.00'	6 31' 57"	31.01'	curb line face
5	250.00'	14 50' 05"	64.73'	centerline road
6	150.00'	32 40' 30"	85.54'	centerline road
7	116.00'	34 18' 34"	69.46'	curb line face
8	25.00'	40 29' 11"	17.67'	curb line face
9	42.00'	132 32' 42"	97.16'	curb line face
10	25.00'	40 29' 11"	17.67'	curb line face
11	116.00'	34 18' 35"	69.46'	curb line face
12	100.00'	120 11' 27"	209.77'	centerline road
13	84.00'	120 11' 27"	176.21'	curb line face
14	166.00'	32 40' 30"	94.67'	curb line face
15	134.00'	32 40' 30"	76.42'	curb line face
16	280.00'	28 36' 37"	139.82'	centerline road



Gutter Inlet

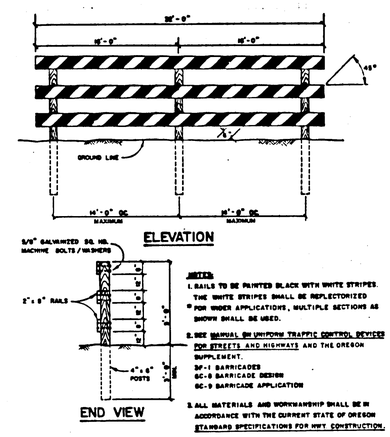
n.t.s.



1. Concrete shall be 3000 PSI at 28 days. 6 sack min. slump range of 1 1/2" to 3".
2. Panel lengths shall be equal to the sidewalk width, but may be adjusted with the City Engineers approval.
3. Contraction joints (1 1/2" deep) shall be placed every third panel, with a max. spacing of 15 feet.
   Joints shall also be placed at the sides of driveway approaches, utility vaults, and wheelchair ramps.
4. A curing compound shall be used. White reflective sheeting shall be used in case of rain.
5. For sidewalks adjacent to the curb & poured at the same time as the curb, the joint between them shall be a troweled joint with a min. 1/2" radius.
6. The sidewalk shall have a min. thickness of 6" if mountable curb is used or if the sidewalk is intended as a portion of the driveway. Otherwise, the sidewalk shall have a min. thickness of 4".
7. Drain blockouts in the curb shall be extended to the back of the sidewalk with a 3" dia. plastic pipe at a 1% slope. A contraction joint shall be placed over the pipe.

Concrete Sidewalk

n.t.s.



Street Barricade - Type III

n.t.s.

THESE AS-BUILTS REFLECT DATA COMPILED FROM SURVEY AND CONTRACTOR NOTES, INSPECTION BY THE CITY AND PERIODIC OBSERVATIONS BY COMPASS ENGINEERING DURING CONSTRUCTION. FIELD VERIFICATION OF IMPROVEMENTS IN QUESTION IS RECOMMENDED WHEN USING THESE PLANS.

Bruce D. Goldson DATE 10/25/90

REGISTERED PROFESSIONAL ENGINEER 7120 OREGON July 16, 1971 BRUCE D. GOLDSON

RIVERCREST HEIGHTS

DATE	NO.	REVISION
10/24/90	4	*AS BUILT*
4/25/90	3	REVISED PER CITY REVIEW
4/16/90	2	REVISED STORM
3/27/90	1	REVISED PER CITY COND. OF APPR

DRAWN MMM | DESIGNED BDG | CHECKED
SCALE as noted | DATE Feb., 1990
FILE 89-2149-1356

COMPASS CORPORATION
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Mr. Darrel Wallace
Wallace Construction Co.
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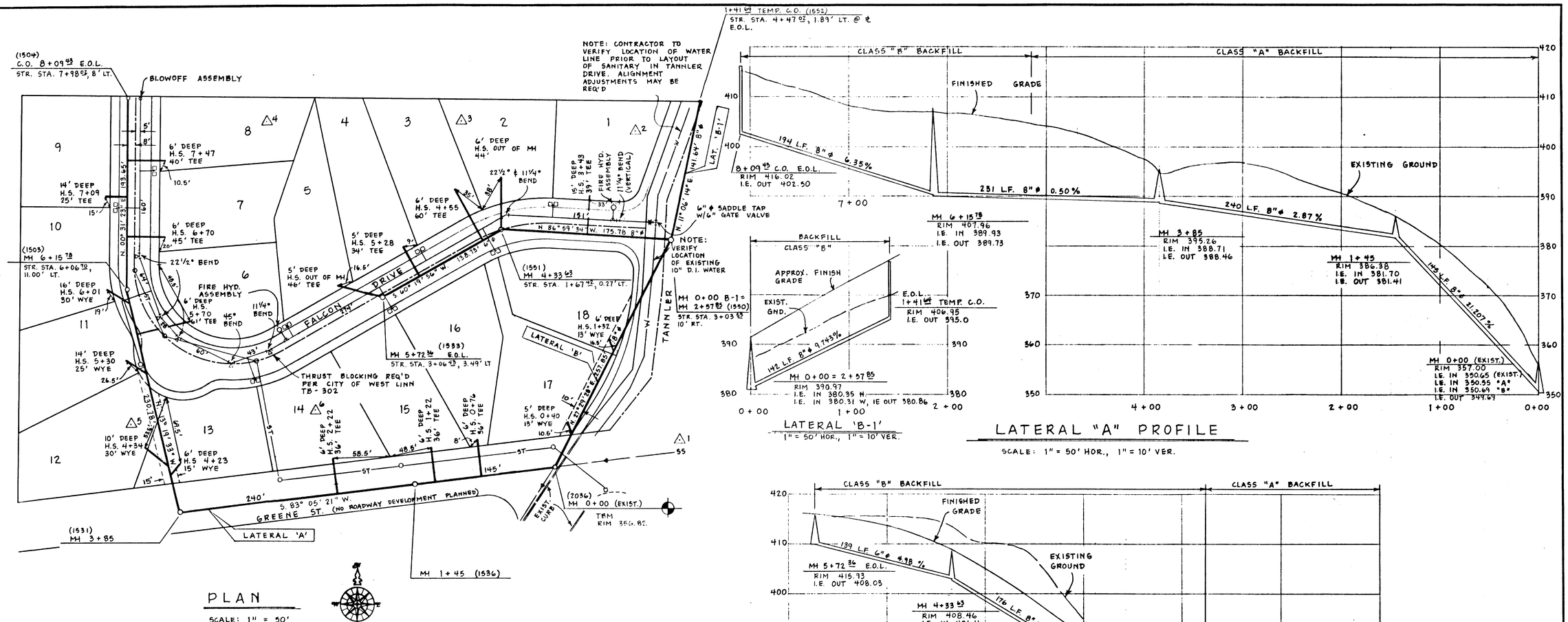
OREGON CITY, OREGON 97045

STORM SEWER IMPROVEMENTS
PROFILE AND DETAILS

3/4

Willamette Print & Blueprint Company P-2895



PLAN

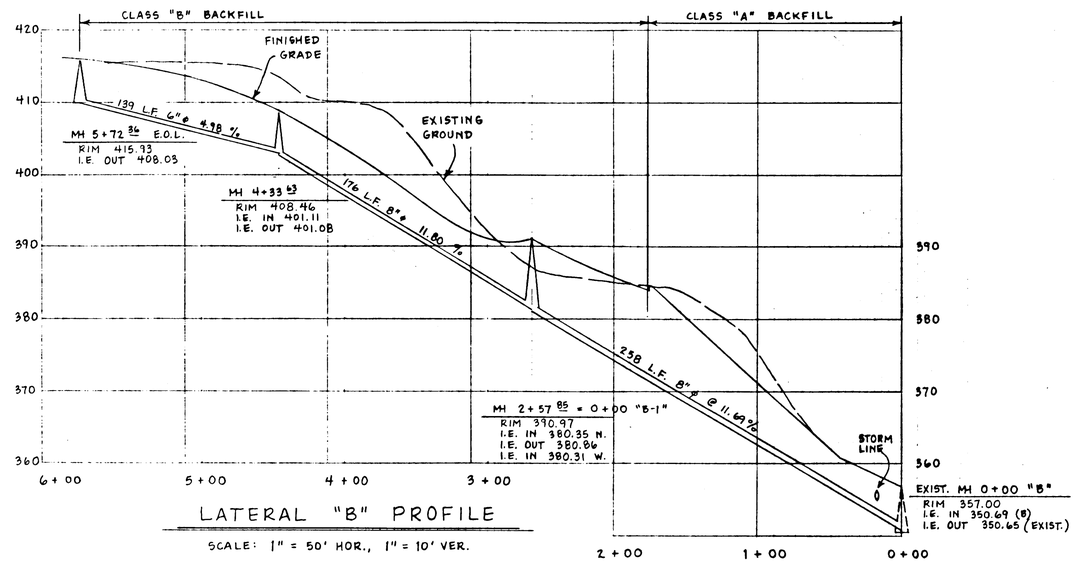
SCALE: 1" = 50'

LATERAL "A" PROFILE

SCALE: 1" = 50' HOR., 1" = 10' VER.

LATERAL 'B-1'

1" = 50' HOR., 1" = 10' VER.



LATERAL "B" PROFILE

SCALE: 1" = 50' HOR., 1" = 10' VER.

AMENDMENTS TO APWA BY DEQ

CONDITIONAL APPROVAL, 1980 OREGON STANDARDS SPECIFICATIONS FOR SANITARY SEWER CONSTRUCTION, DIVISION III:

The Oregon APWA standard specifications for sewer construction are approved for use on this project, with the following exceptions. These exceptions are numerically referenced to Sections in Division III of the 1980 Standard Specifications and Drawings for Public Works Construction, as published by the Oregon Chapter APWA.

a) Section 303.2.10 PVC: The wall thickness class of PVC pipe, fittings, and cleanouts shall be SDR 35 or heavier.

b) Section 303.2.15 Hydrostatic Testing of Sewer Pipe: Regardless of pipe material installed, the maximum allowable leakage shall be 0.04 gph, instead of 0.3. (This corresponds to 50 gpd per inch diameter mile, as recommended in UNI-B-5-86.) The APWA hydrostatic test criteria are not approved for this project because of the high potential for groundwater infiltration.

c) Section 306.2.02B PVC Pipe Connections to Manholes: Regardless of the pipe or manhole manufacturer's recommendations, adapters for connecting PVC pipe to existing manholes shall be approved commercial adapters manufactured specifically for the intended use. Field-fabricated waterstops or improvised adapters such as a gasket stretched over the pipe will not be allowed.

Adapters requiring the use of grout for installation shall be anchored and finished using an approved non-shrink grout. Standard grout is not acceptable. All grout to be placed in contact with cured concrete shall placed with the use of an approved concrete bonding agent.

Materials shall be as approved by the project engineer.

d) Section 306.3.01C Manhole Testing: The first three sanitary sewer manholes built by each manhole construction crew on the project shall be immediately proof tested. No additional manholes shall be constructed until three successful proof tests have demonstrated satisfactory workmanship and materials.

Unless otherwise approved by the engineer, acceptance tests shall be conducted on a random sample of 15% of sanitary sewer manholes selected by the engineer. Each manhole which fails acceptance testing shall obligate the contractor to test 3 more manholes as selected by the engineer, in addition to the random sample, up to the total project manholes.

To the extent practicable, sanitary sewer manholes shall be tested for acceptance after backfilling, compaction, and all surface restoration including paving. However the contractor may test prior to backfilling or paving for his own information or for proof testing. Acceptance tests shall be logged and documented as to location, time, depth, whether paved, volume to refill, etc.

The test shall consist of plugging all inlets and outlets and filling the manhole with water. Each manhole shall be filled to the rim at the start of test. Leakage in each manhole shall not exceed 0.1 gallons per hour per foot of head above the invert. Leakage shall be determined by refilling to the rim using a calibrated or known-volume container. Manholes may be filled 24 hours prior to the time of testing to permit normal absorption into the manhole walls. Comparable vacuum testing procedures may be substituted for hydrostatic testing with approval of the engineer, provided grade rings and manhole frame are also subjected to the test.

e) Section 306.3.02B Risers: Manhole riser and grade ring joints made with mortar shall be constructed using an approved commercial concrete bonding agent applied to all cured concrete surfaces being mortared.

f) Section 306.3.05 Manholes over Existing Sewers: Manholes shall be constructed over existing concrete sewers after first cleaning and applying approved concrete bonding agent to the portions of pipe that will be in contact with the manhole.

Prior to constructing a manhole over an existing PVC pipe, the pipe shall be prepared for bonding to the concrete by applying a dense coating of clean mortar sand to the pipe that will be in contact with the concrete. Sand shall be applied using PVC solvent adhesive. After curing, the sand coating shall be prepared with approved concrete bonding agent prior to concrete placement.

Prior to severing the existing pipe within the manhole, the manhole shall be tested per paragraph d) above.

g) Section 303.3.11 Television Inspection of Sanitary Sewers: Upon completion of all sanitary sewer construction, testing, and repairs, the contractor shall conduct a color or b/w acceptance TV inspection of all installed lines 8 to 72 inches where required by the city or the engineer as a condition of acceptance.

Unless otherwise authorized by the engineer, the contractor shall subsequently conduct a warranty TV inspection of all installed lines. Warranty TV inspections shall be in color and shall be conducted during the warranty period in a season of high groundwater conditions defined by the engineer. Unless otherwise authorized by the engineer, these inspections shall be conducted by an approved technical service which is equipped to make an audio-visual tape recording of the televised inspection.

Audio-visual recording shall be compatible with the owner's playback equipment. The contractor shall ensure that the recording is functioning properly and that a clear and usable record is made of all possible defects. The equipment used for recording shall be equipped with a footage meter which records a visual record on the tape. A voice accounting of suspected deficiencies shall be made on the sound track. Warranty inspection tapes shall also include an accounting of all groundwater infiltration sources such as sewer laterals and building sewers in addition to infiltration due to project construction deficiencies.

A written report shall be made at the time of each television inspection. This report shall be made on a form approved by the engineer. The video record and the written report shall be submitted to the engineer and will become the property of the city.

THESE AS-BUILTS REFLECT DATA COMPILED FROM SURVEY AND CONTRACTOR NOTES, INSPECTION BY THE CITY AND PERIODIC OBSERVATIONS BY COMPASS ENGINEERING DURING CONSTRUCTION. FIELD VERIFICATION OF IMPROVEMENTS IN QUESTION IS RECOMMENDED WHEN USING THESE PLANS.

Bruce D. Goldson DATE 10/15/90

REGISTERED PROFESSIONAL ENGINEER 7129 BRUCE D. GOLDSON JULY 16, 1974

RIVERCREST HEIGHTS

DATE	NO.	REVISION
10/24/90		AS BUILT SEWER
5/3/90	5	AS-BUILT WATER (TANNLER RD.)
4/26/90	4	REVISED PER CITY REVIEW
4/16/90	3	REVISED SAN. ALIGNMENT
3/27/90	2	ADDED F.H.'S PER CITY REQ.
3/16/90	1	REVISED PER D.E.Q.

DRAWN MMM | DESIGNED BDG | CHECKED
SCALE as noted | DATE Feb.,1990
FILE 89-2149-1356

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ENGINEERING - SURVEYING - PLANNING
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T & K Properties
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VANCOUVER, WASHINGTON 98664

Mr. Darrel Wallace
Wallace Construction Co.
14886 S.E. HENRICI ROAD
OREGON CITY, OREGON 97045

SANITARY SEWER AND WATER IMPROVEMENTS
PLAN AND PROFILES

4/4

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