PRIOR TO ANY CONSTRUCTION, LOCATIONS OF EXISTING UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR. WHEN ACTUAL CONDITIONS DIFFER FROM THOSE SHOWN ON THE PLANS, THE

CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO PROCEEDING WITH CONSTRUCTION. ORGANIC AND NON-DESIRABLE MATERIALS SHALL BE REMOVED FROM THE CONSTRUCTION AREA AS DIRECTED BY THE GEOTECHNICAL ENGINEER.

4. ALL FILL AREAS SHALL BE STRIPPED OF ORGANIC MATERIAL. SUBGRADE SHALL BE INSPECTED AND ACCEPTED BY THE CITY OF WEST LINN. FILL WILL BE PLACED IN 6-INCH LAYERS AND COMPACTED TO 95 PERCENT RELATIVE MAXIMUM DENSITY ACCORDING TO AASHTO T-180 STANDARDS. LANDSCAPE AREAS SHALL BE COMPACTED TO 90 PERCENT. THE CONTRACTOR SHALL PROVIDE COMPACTION TESTING, ONE FOR EVERY 10,000 SQUARE FEET OF AREA AND FOR EVERY 2 LAYERS OR 16" AND EVERY 100 LINEAR FEET OF FILL PLACED. DAILY COMPACTION REPORTS FROM AN APPROVED NATIONALLY ACCREDITED TESTING LAB SHALL BE PROVIDED TO THE ENGINEER WITHIN 24 HOURS. A COPY OF THE REPORTS SHALL BE GIVEN TO THE

CONTRACTOR SHALL LEAVE ALL AREAS OF THE PROJECT FREE OF DEBRIS AND UNUSED CONSTRUCTION MATERIALS.

a. Areas to be landscaped shall be smoothed and left to the grades

INDICATED ON THE GRADING PLAN, PLUS OR MINUS O.I FOOT. ALL DISTURBED AREAS NOT TO BE LANDSCAPED SHALL BE SEEDED PER EROSION CONTROL NOTES ON APPROVED PERMIT SET.

c. ALL EXCESS/EXTRA MATERIAL SHALL BE REMOVED FROM THE SITE.

6. ANY CHANGES FROM THE APPROVED PLANS SHALL BE REQUESTED BY THE CONTRACTOR IN WRITING. THE DESIGN ENGINEER AND THE CITY OF WEST LINN'S PROJECT ENGINEER MUST APPROVE THE CHANGE PRIOR TO ITS IMPLEMENTATION. COMPLEXITY OF MODIFICATION WILL DETERMINE IF REVISED PLANS ARE REQUIRED.

7. CITY OF WEST LINN DETAILS SHALL BE USED AT LOCATIONS AS SPECIFIED IN THE PLANS, SEE DETAIL SHEETS.

8. DURING CONSTRUCTION, ALL EROSION CONTROL MEASURES SHALL CONFORM TO CLACKAMAS COUNTY EROSION CONTROL STANDARDS.

9. IN CASE OF A DISCREPANCY BETWEEN THE DRAWINGS AND THE FIGURES WRITTEN THEREON. THE FIGURES SHALL BE DEEMED TO GOVERN.

 THE OWNER WILL SUPPLY ONE SET OF STAKES FOR EACH CONSTRUCTION OPERATION AS DESCRIBED IN THE CONTRACT DOCUMENTS AND SPECIFICATIONS. THE CONTRACTOR SHALL DESIGNATE A REPRESENTATIVE OR REPRESENTATIVES WHO ARE AUTHORIZED TO REQUEST STAKES. STAKING REQUESTS FROM AUTHORIZED REPRESENTATIVE SHALL BE MADE TO DAVE LIDEN AT OTAK (503-699-2401) AT LEAST 48 HOURS IN ADVANCE OF THE NEED FOR SAID STAKES. ONLY REQUESTS FROM AUTHORIZED REPRESENTATIVES WILL BE HONORED. ANY RESTAKING WILL BE DONE AT THE EXPENSE OF THE CONTRACTOR.

11. WEEK DAY WORK HOURS ARE 7:00 AM TO 6:00 PM; SATURDAY, SUNDAY AND HOLIDAY WORK HOURS ARE LIMITED TO 9:00 AM TO 6:00 PM.

12. THE CITY OF WEST LINN SHALL BE PRESENT WHEN TESTING IS PERFORMED AND SUPPLIED WITH A COPY OF TEST RESULTS. ALL FACILITIES WILL BE ACCEPTED BY THE CITY PRIOR TO CONNECTION TO EXISTING SYSTEMS.

13. ALL FEES FOR STREET TREES SHALL BE PAID TO THE CITY OF WEST LINN PARKS AND RECREATION DEPT.

14. NO BUILDING PERMITS SHALL BE ISSUED UNTIL ALL REQUIRED IMPROVEMENTS HAVE BEEN DEEMED SUBSTANTIALLY COMPLETE.

15. THE CONTRACTOR SHALL REMOVE ALL SOFT OR OTHERWISE UNSUITABLE MATERIAL AT SUBGRADE AND REPLACE WITH APPROVED MATERIAL AT THE DIRECTION OF THE PROJECT GEOTECHNICAL ENGINEER. THE CONTRACTOR SHALL COMPACT TO A LINE ONE FOOT BEHIND THE CURB.

16. FINAL SUBGRADE PROOF-ROLL WITH 10 CY TRUCK LOADED WITH ROCK IS REQUIRED PRIOR TO PLACING AGGREGATE BASE.

17. FINAL BASE ROCK PROOF ROLL WITH 10 CY TRUCK LOADED WITH ROCK IS REQUIRED PRIOR TO PAVING. BASE ROCK TO BE COMPACTED TO 95 PERCENT RELATIVE MAXIMUM DENSITY ACCORDING TO AASHTO T-180

18. PLEASE NOTE CITY OF WEST LINN STANDARD CONSTRUCTION SPECIFICATION SECTION 505.03.11 FOR WEATHER RELATED LIMITATIONS ON THE PLACEMENT OF ASPHALTIC CONCRETE.

19. THE DENSITY OF THE COMPACTED BASE AND TOP LIFT OF AC SHALL BE AT LEAST 92% OF RICE IN CONFORMANCE WITH AASHTO T209 AS MODIFIED BY THE OREGON STATE HIGHWAY DEPARTMENT

20. DENSITY TESTS WILL BE REQUIRED FOR TRENCH BACKFILL AND ALPHALT, PER THE CITY OF WEST LINN STANDARD CONSTRUCTION SPECIFICATIONS. COPIES OF ALL REPORTS ARE TO BE SUPPLIED TO THE CITY INSPECTOR AND DESIGN

21. CONTRACTOR SHALL SUBMIT SCHEDULE DETAILING SEQUENCE OF CONSTRUCTION PRIOR TO THE PRE-CONSTRUCTION

22. THE STRENGTH OF CONCRETE USED FOR CURBS, GUTTERS AND SIDEWALKS SHALL BE 3300 psi.

23. CITY ABORIST TO INSPECT AND APPROVE OF ALL TREE PROTECTION MEASURES PRIOR TO STARTING CONSTRUCTION.

(503) 246-6699

(503) 243-7491

HOODVIEW TOWNHOMES II

WEST LINN, OREGON STORM AND SANITARY SEWER NOTES

MANHOLE CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF WEST LINN'S PUBLIC WORKS STANDARDS. MANHOLES SHALL CONFORM TO ASTM C-478.

TRENCH BEDDING, PIPE ZONE AND BACKFILL IN PAVED AREAS WILL BE 3/4-INCH MINUS CRUSHED AGGREGATE COMPACTED TO 95 PERCENT RELATIVE MAXIMUM DENSITY, AASHTO T-180. CLASS A NATIVE BACKFILL WHERE SPECIFIED, WHERE SPECIFIED TO BE COMPACTED TO A MINIMUM OF 95 PERCENT OF THE MAXIMUM DRY DENSITY, AASHTO T-180.

ALL PUBLIC STORM DRAINS SHALL BE CONSTRUCTED WITH PVC ASTM F794 (ULTRA-RIB OR EQUAL), EXCEPT CULVERTS AS SPECIFIED.

ALL PUBLIC SANITARY SEWERS SHALL BE CONSTRUCTED WITH PVC D3034 PIPE.

PRIOR TO ACCEPTANCE, ALL PUBLIC SANITARY SEWERS SHALL BE TV, PRESSURE, AND DEFLECTION TESTED IN ACCORDANCE WITH THE CITY OF WEST LINN'S REQUIREMENTS. ALL PUBLIC STORM

SEWERS SHALL BE TV AND DEFLECTION TESTED.

WATER TIGHT PLUGS SHALL BE INSTALLED IN THE ENDS OF SANITARY AND STORM LATERALS AND A 2" X 4" WOOD MARKER PLACED AT THE LATERAL END FROM PIPE INVERT TO AT LEAST 36" ABOVE THE FINISH GRADE. THE 2" X 4" TOP SHALL BE PAINTED (GREEN FOR SANITARY) AND (WHITE FOR STORM) AND MARKED WITH THE DEPTH OF THE LATERAL MEASURED FROM THE FINISHED GROUND ELEVATION TO THE INVERT OF PIPE AT THE TIME THE CURBS ARE POURED, AN (S FOR SANITARY) AND (SD FOR STORM) SHALL BE STAMPED IN THE TOP OF THE CURB AT EACH POINT A LATERAL CROSSES BENEATH THE CURB LINE. SANITARY LATERALS TO BE 4" DIA PVC D3034 PIPE, STORM LATERALS TO BE 6" DIA PVC D3034 PIPE. ALL LATERALS TO BE CLASS B BACKFILL TO END OF LATERAL UNLESS OTHERWISE NOTED.

ALL SANITARY SEWER MANHOLES SHALL BE VACUUM TESTED.

CONSTRUCTION NOTES FOR STORM AND SANITARY SEWERS ARE ON SHEET C4.0 AND C3.0 RESPECTIVELY.

PRIOR TO MAKING THE CONNECTION TO THE EXISTING SYSTEMS, THE SANITARY SEWER AND STORM SEWER SHALL BE ACCEPTED

WATER NOTES

ALL WATER PIPE AND FITTINGS SHALL BE DUCTILE IRON CLASS 52 AND CONFORM TO STANDARD CITY SPECIFICATIONS AND DETAILS. ALL WATER SERVICE LINES TO BE TYPE K COPPER PIPE PER CITY OF WEST LINN SPECIFICATIONS.

WATERLINES SHALL BE PRESSURE TESTED FOLLOWING COMPLETION. PRESSURE TESTS SHALL BE IN ACCORDANCE TO THE CITY OF WEST LINN'S STANDARDS WITH A MINIMUM TEST PRESSURE OF 180 PSI. WHEN THE PRESSURE TEST IS PERFORMED. THE TEST PRESSURE OF 180 PSI SHALL STABILIZE BEFORE THE TEST BEGINS. SERVICE LINES WILL ALSO BE TESTED TO THE METER LOCATION.

PRIOR TO BEING PLACED INTO SERVICE, THE WATERLINE SHALL BE FLUSHED, STERILIZED AND FLUSHED AGAIN ALL IN ACCORDANCE WITH STANDARD METHODS OF THE HEALTH DIVISION, DEPARTMENT OF HUMAN RESOURCES, STATE OF OREGON.

PRIOR TO CONNECTION TO EXISTING WATERLINE, A SAMPLE SHALL BE TAKEN AND TESTED FOR BACTERIOLOGICAL QUALITY. RESULTS MUST BE WITHIN STANDARDS OF THE STATE OF OREGON.

CONCRETE THRUST BLOCKING SHALL BE PROVIDED AT ALL WATERLINE FITTINGS AS REQUIRED BY CITY STANDARDS. BLOCKING SHALL BE 3000 PSI CONCRETE PLACED AGAINST UNDISTURBED EARTH AND CLEAR OF JOINT ACCESSORIES. BEARING AREA OF THRUST BLOCK SHALL BE COMPUTED ON THE BASIS OF ALLOWABLE SOIL BEARING PRESSURE. ALL PIPE FITTINGS IN CONTACT WITH CONCRETE SHALL BE WRAPPED IN PLASTIC.

MINIMUM COVER OVER WATERLINES IS TO BE 36" AS MEASURED FROM FINISH GRADE TO TOP OF PIPE. MINIMUM VERTICAL SEPARATION BETWEEN WATERLINE AND SANITARY SEWER AT A CROSSING IS 18". SANITARY SEWER AT WATERLINE CROSSINGS WITH LESS THAN THE MINIMUM VERTICAL SEPARATION SHALL BE CONSTRUCTED OF DUCTILE IRON PIPE WITH WATERTIGHT JOINTS. IN SUCH CASES THE 18-FOOT LENGTH OF SANITARY SEWER SHALL BE CENTERED AT THE CROSSING.

ALL WATER SERVICES SHALL BE SEPARATED BY A MINIMUM HORIZONTAL DISTANCE OF 2' AT THE MAINLINE.

FIRE HYDRANT ASSEMBLIES TO BE MUELLER CENTURION A-423 OR CLOW MEDALLION F-2545 AND ARE TO BE INSTALLED PER CITY OF WEST LINN STANDARD SPECIFICATIONS AND DETAILS

TRENCH BEDDING, PIPE ZONE AND BACKFILL IN PAVED AREAS WILL BE 3/4-INCH MINUS CRUSHED AGGREGATE COMPACTED TO 95 PERCENT RELATIVE MAXIMUM DENSITY, AASHTO T-180. UNPAVED AREAS OUTSIDE ROW TO BE CLASS A NATIVE BACKFILL MATERIAL EXCEPT BEDDING AND PIPE ZONE MATERIAL (SEE WEST LINN DETAIL WL-200 ON SHEET C7.1) UNLESS OTHERWISE NOTED. CLASS A NATIVE BACKFILL TO BE COMPACTED TO A MINIMUM OF 95 PERCENT OF THE MAXIMUM DRY DENSITY. AASHTO T-180.

WIO. GATE VALVES SHALL BE RESILIENT SEAL, NOT RISING STEM WITH "O" RING PACKING, COMPLYING WITH AWWA CLASS "C" SPECIFICATIONS. THE VALVES SHALL BE DESIGNED TO WITHSTAND A WORKING PRESSURE OF 150 PSI. VAVLE BOXES SHALL BE "VANCOUVER" PATTERN.

WII. ALL WATER LINE PRESSURE AND CHLORINATION TESTING SHALL BE PERFORMED WITH THE CITY PRESENT.

WI2. CONSTRUCTION NOTES FOR WATERLINE ARE ON SHEET C5.0.

ASBUILT NOTES:

AS OF 10-11-02 THE FOLLOWING ITEMS HAVE NOT BEEN COMPLETED.

LANDSCAPING (EXCEPT EROSION CONTROL) FINAL I 1/2" LIFT OF ASPHALT PAVING ON STREET AREAS ONLY.

STRIPING AND SIGNAGE.

MAILBOX PAD(S).

These As-built Plans were compiled from survey data, data collected from others, and periodic observation during construction. It is suggested that these plans be used in conjunction with field verification of location and elevations of improvements in question. These plans are an accurate record of public improvements to the best of my information, knowledge and belief.



SHEET INDEX

CI.O COVER SHEET, PROJECT MAP, VICINITY MAP, PROJECT TEAM

CI.I CONDITIONS OF APPROVAL C1.2 EXISTING CONDITIONS; DEMOLITION PLAN; TREE PRESERVATION PLAN

CI.3 COMPOSITE GRADING AND EROSION CONTROL PLAN

CI.4 EROSION CONTROL NOTES AND DETAILS

CI.5 COMPOSITE UTILITY PLAN CI.6 RETAINING WALL NOTES AND DETAILS.

C2.0 STREET PLAN - VIEWPOINT LANE & TYPICAL SECTIONS C2.1 STREET PROFILE - VIEWPOINT LANE

C3.0 SANITARY SEWER PLAN C3.1 SANITARY SEWER PROFILE

C4.0 STORM DRAIN PLAN C4.1 STORM DRAIN PROFILE

C4.2 STORM DRAIN TREATMENT FACILITY

C5.0 WATER PLAN C5.1 WATER PROFILE

NOT BUILT-CO.O STREET TREE LANDSCAPING PLAN

NOT BUILT-CO.I DETENTION POND LANDSCAPING PLAN

C7.0 STREET AND STORM DETAILS C7.1 STORM AND SANITARY DETAILS

C7.2 STORM DRAIN DETAILS C7.3 WATER DETAILS

OWNER/APPLICANT

Craftsman Development, LLC PO Box 484

Lake Oswego, Oregon 97034 Jim Morton

(503) 675-6736 Phone: (503) 699-9699

CIVIL ENGINEER/SURVEYOR/ LANDSCAPE ARCHITECT

Otak Incorporated 17355 S.W. Boones Ferry Road Lake Oswego, Oregon 97035

Scott Shumaker (503) 635 - 3618Phone: (503) 635-5395

SITE INFORMATION

Proposed Use

Contact:

1.74 Acres Site Size: Zoning:

Single Residence with Out-buildings Existing Use of Property

Clackamas County Assesor Map 2S1E26 Tax Lot 401 and 14100

Clackamas County R-3 Subdivision for 20 Single Family Attached Residential Units

BENCHMARK

ONE CALL SYSTEM

TCI CABLE TELEVISION

CITY OF WEST LINN BENCHMARK "B" IS 93.5' EAST AND 17.0' SOUTH OF EDGE OF PAVEMENT FROM 5-WAY INTERSECTION OF ROSEMONT/SANTA ANA. 3" CAP ON PIPE WITH YELLOW WATER **WORKS LID. ELEV.=667.22.**

LOCATING EXISTING UTILITIES

--- 48 HOUR NOTICE REQUIRED PRIOR TO EXCAVATION ---

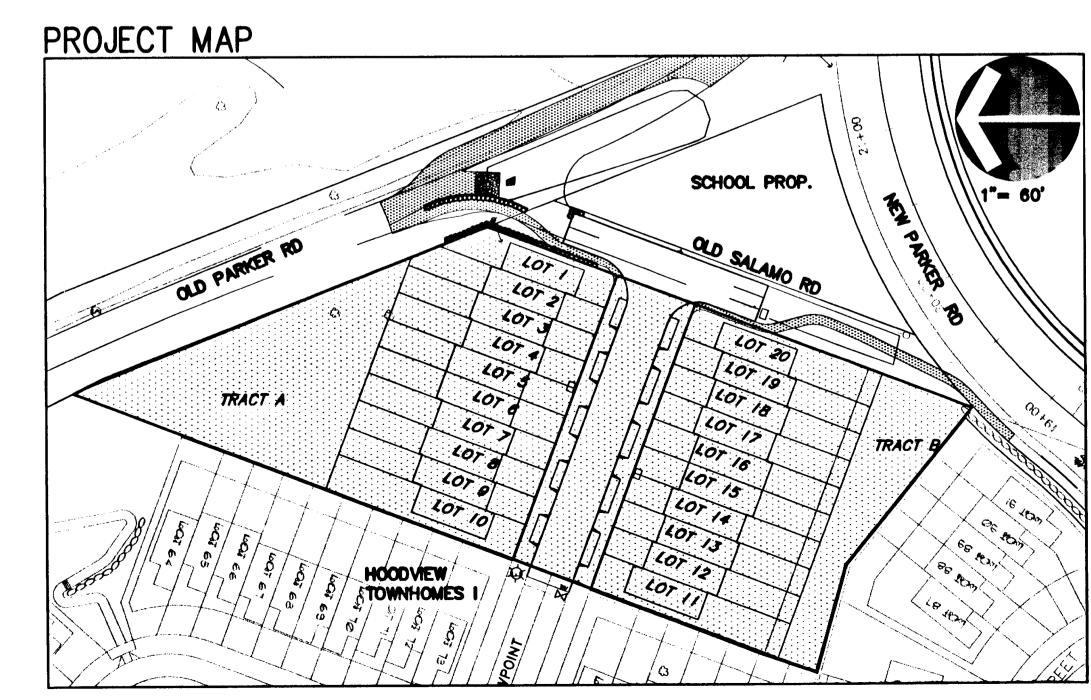
(GENERAL TELEPHONE, NORTHWEST NATURAL GAS, U.S. WEST, U.S. SPRINT) (503) 643-5454, EXT. 312, 313, 314 PORTLAND GENERAL ELECTRIC

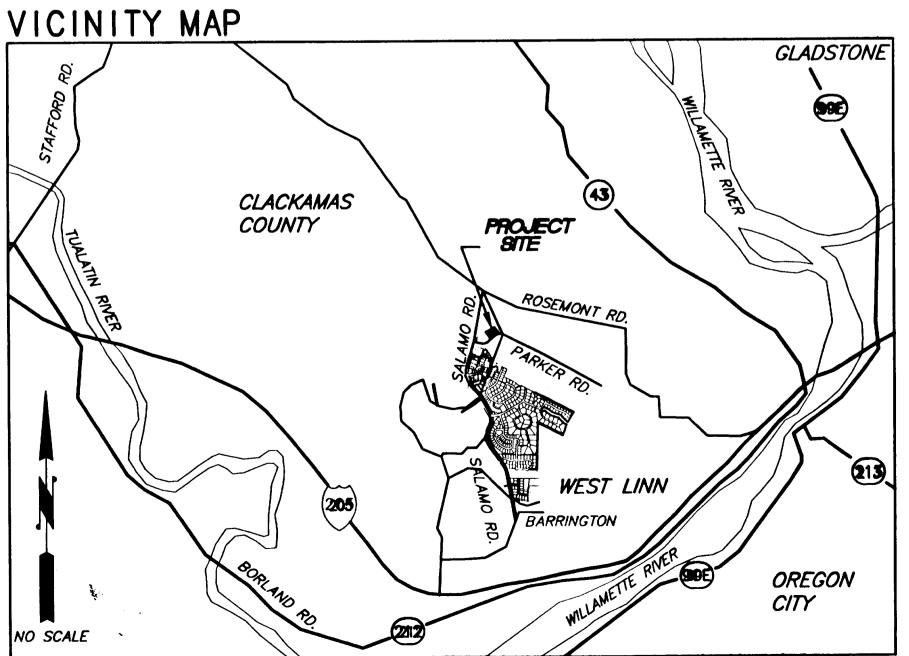
REPAIR EMERGENCIES (503) 226-4211, EXT. 4413 NORTHWEST NATURAL GAS

CITY OF WEST LINN WATER OPERATIONS (503) 656-3535 SANITARY SEWER OPERATIONS

THE CONTRACTOR, IN LOCATING AND PROTECTING UNDERGROUND UTILITIES. MUST COMPLY WITH THE REGULATIONS OF O.R.S. 757.541 TO 757.571

ATTENTION EXCAVATORS: Oregon law requires you to follow rules adopted by the Oregon Utility Notification Center. Those rules are set forth in OAR 952-001-0010 through OAR 952-001-0090. You may obtain copies of these rules from the Center by calling (503) 232-1987. If you have any questions about the rules, you may contact the call Center. YOU MUST NOTIFY THE CENTER AT LEAST 2 BUSINESS DAYS, BUT NOT MORE THAN 10 BUSINESS DAYS, BEFORE COMMENCING AN EXCAVATION. CALL (503) 246-6699.





P Incorporated Internet: S heet No. Copyright 2002 🔘 22 SHEETS

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EXPIRES: 06/30/2006

CRAFTSMAN EVELOPMENT, LLC

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7355 SW Boones Ferry Rd. Lake Oswego, Oregon 97035 (503) 635-3618 (503) 635-5395 WWW.Otak.COM

Project No. Drawing No.

TO:

City Record

Planning Staff (Gordon Howard, Senior Planner) FROM:

January 15, 2002

FILE NO.: SUB-01-02/DR-01-26/ZC-01-01

Twenty-lot Subdivision, Planned Unit Development, and Design Review

processed under the expedited review procedures.

SPECIFIC DATA

OWNER/ APPLICANT:

Jim Morton, Morton Properties LLC, P.O. Box 484

Lake Oswego, OR 97034

CONSULTANT: OTAK, 17355 SW Boones Ferry Road, Lake Oswego, OR 97035

At the east end of Viewpoint Drive, south of Old Parker Road, west of Old LOCATION:

Salamo Road, north and west of New Parker Road

SITE SIZE: 1.74 acres

LEGAL

DESCRIPTION: Assessor's Map 2S 1E 26, Tax Lots 401 and 14100

ZONING:

R-3 Attached residential

COMP PLAN DESIGNATION:

APPROVAL

Medium-High Density Residential

CRITERIA: CDC Chapter 85, Land Division; Chapter 55, Design Review; and Chapter 24, Planned Unit Development

EXPEDITED REVIEW:

The expedited review process allows the local jurisdiction 63 days to issue a decision on an application once it is complete. This application was

deemed complete on November 21, 2001; therefore, the 63-day period lapses on January 23, 2002.

PUBLIC NOTICE: Mailed public notice to property owners within a 100-foot radius of the site on December 13, 2001. Therefore, the public notice requirements of the West Linn Community Development Code and the expedited review process have been met. In addition, notice was mailed to all property

owners within 500 feet of the site on December 13, 2001.

SPECIFIC PROPOSAL

The applicant is proposing approval of a 20-lot attached townhome residential subdivision on 1.74 acres. The homes would be arrayed along both sides of a southward extension of Viewpoint Drive, and would terminate at a temporary turnaround on the south end of the property. The 10 townhomes on each side of the street would be attached together in one building. Each unit would be 18 feet wide, and lot sizes would range from 2,250 to 2,865 square feet. Approximately 1/4 of the site at the north and south ends would be preserved as open space. Two significant Douglas fir trees on the south end of the property would be preserved.

MAJOR ISSUES

PARKING

This project, named Hoodview Townhomes II, is proposed as an extension of the existing townhome development pattern in the Hoodview Townhomes project to the west (although this applicant is not the developer of the Hoodview Townhomes I project). The 140-unit project has been developed in such a way that curb cuts use up virtually the entire street, severely restricting on-street parking. In the few places where on-street parking is allowed, the 28-foot wide streets preclude it on one side, further limiting parking opportunities. Most of the units were built with one-car garages. The resulting parking shortage is a problem for the residents of the Hoodview Townhomes development and city government, which must weigh the competing interests of emergency service provision and available parking.

Given this backdrop, the Hoodview Townhomes II development has been devised to, if not solve the problems created with the earlier development, at least not exacerbate them. The following modifications to the development pattern are proposed to alleviate parking issues:

- The units are arrayed in such a manner so as to put the garages and driveways of two adjoining units adjacent, so as to create an on-street parking space between pairs of driveways. In this way five on-street parking spaces are created on one side of the street.
- The applicant is proposing a "T" shaped temporary emergency vehicle turnaround at the south end of Viewpoint Drive. Staff is adding a condition of approval that requires these turnarounds to be extended an additional 18 feet so as to provide for four additional parking spaces (two on each side of Viewpoint Drive). This not only provides additional parking, it also helps in the provision of emergency services, since a lack of parking would probably

result in cars parking in this area anyway, hampering the turnaround capabilities of emergency service vehicles.

• The applicant is proposing "tandem" garages in his units. These garages, while being only one car wide, are deep enough for two vehicles. Along with the driveway, this will provide up to three vehicle spaces per unit.

Staff also looked at the possibility of widening Viewpoint Drive to provide for parking on both sides of the street. However, this proved infeasible because Viewpoint Drive is already built to a 28-foot width to the north, and widening the street in mid-block would prove awkward. Also, a 32-foot width would still be inadequate for emergency vehicles to pass (20-foot unobstructed width is necessary) because cars parked on both sides of the street would limit passage to a 16foot width (32 feet - 8 feet on each side for parked vehicles). Finally, two of the five spaces created would be prohibited for parking because of the provision of mailboxes and a fire hydrant. Given these limitations, staff believes that the other measures, which produce units with more private parking (3 spaces) and 9 on-street parking spaces, are adequate to provide extra parking for these 20 units which will, at minimum, avoid exacerbating the parking problem facing the Hoodview neighborhood.

PUBLIC COMMENTS

In reponse to the public notice of this application, staff received one comment letter from Ms. Reba Hirsch of 20305 Hoodview Lane. She expressed three concerns: 1) that a large off-street parking area be designed as part of this project; 2) green areas be retained for recreation; and, 3) a belief that the number of homes proposed is too many.

In response to her comments: off-street parking is being maximized on the site so as to prevent problems occurring as in the Hoodview I subdivision. See the discussion under major issues above. As for open space, the applicant is preserving 25% of the site as open area, and while this area is not appropriate for active recreation, it does provide space for adults and children to recreate in a natural setting. Finally, the applicant's proposal for 20 homes is within the maximum allowed by the site's zoning. This number can be reduced only if it can be shown that the applicant does not meet an approval criterion of the Community Development Code. In staff's analysis, all criteria in the code have been met by this application.

DECISION

Based upon the applicant's response to the approval criteria contained within the applicant's submittal, and staff's supplemental findings of both the Planning and Engineering Departments attached, staff finds that there are sufficient grounds for the Planning Director and City Engineer to approve the application as a 20-lot subdivision with the following conditions of approval.

The design of the public improvements shall conform to the City of West Linn design standards and all other applicable codes and regulations unless specifically addressed in these conditions of approval.

2. The applicant shall be responsible for obtaining all necessary permits and easements. City staff needs to review the permits in relation to the proposed improvements to insure the proposed improvements meet the permit requirements.

- Storm drainage detention and treatment shall be required and constructed in accordance with the City of Portland Stormwater Management Manual and the West Linn Design Standards with the exception that the drainage swale may be located in the detention
- The storm drainage ditch between the detention pond and Parker Road shall be improved. This shall at minimum include establishment of the channel and removal of non-native invasive plants.
- The sanitary sewer that is located under the storm detention pond shall have a minimum of three feet of cover, shall be ductile iron pipe, and shall be encased in control density
- The location of the trees to be planted as part of the stormwater facilities shall not be planted near the existing or proposed sanitary sewer lines.
- The access road on the east side of the proposed storm detention pond shall be sufficient for fire access. The access road shall meet the following parameters: less than 15% grade, a minimum of 15 feet wide, minimum inside radius is 25 feet, and designed for 80,000 pound vehicles. Removable bollards shall be placed at the south end of the access
- Regarding tree preservation:
 - a. The tree protection easement(s) shall cover the dripline plus 10-foot radius for the
 - Chain link fencing shall be installed at the boundary of the tree conservation
 - c. The City Arborist shall inspect and approve all on-site tree protection measures, and tree pruning, including placement of protection fences prior to the start of site work. It is the applicant's responsibility to contact the City Arborist and arrange for this approval to take place. No permits from Engineering, Planning or Building Departments shall be issued without approval from the City Arborist regarding tree protection measures, and regarding proposed tree pruning of "trees to remain" on the site.
 - All tree protection measures shall remain in place and fully functional for the entire time that site work and construction is taking place.
- 9. The fire turnarounds shall be modified as follows:
 - a. The northerly fire turnaround shall be widened to a 22-foot width, shall be extended 18 feet to the north and the area of extension shall be striped for two parking spaces, each 9 feet wide and 18 feet deep. The remaining four feet

adjacent to the parking spaces shall be raised above the asphalt level of the parking area and reserved for pedestrians. This four-foot width area shall be located on the side of the turnaround nearest the proposed dwellings.

b. The southerly fire turnaround shall be widened to a 24-foot width, shall be extended 16 feet to the south, and the area of extension shall be striped for three parking spaces, each 8 feet wide and 16 feet deep. A 4-foot wide asphalt trail shall be located adjacent to the parking areas and on the side of the turnaround nearest the proposed dwellings.

I/We declare to have no interest in the outcome of this decision due to some past or present involvement with the applicant, the subject property, or surrounding properties, and therefore, can render an impartial decision. The provisions of the Community Development Code Chapter 99 have been met.

identifying themselves.

DEVINIS WRIGHT, Acting City Engineer Appeals to this decision must be filed with the West Linn Planning Department within 14 days of date of mailing. Appeal cost is \$250 and must include specific grounds or basis for appeal. The appeal must be filed by an individual who has established standing by submitting written

DAN DRENTLAW, Planning Director

Approval will lapse three years from the effective date of approval unless an extension is

testimony or comments, meeting in person with Planning staff, or discussing issues by phone and

Mailed this 18th day of January 2002.

M ME 2

OREGON

Sec. 11.20

EXPIRES: 06/30/2006

CRAFTSMAN EVELOPMENT, LLC

SOTT SHUMP

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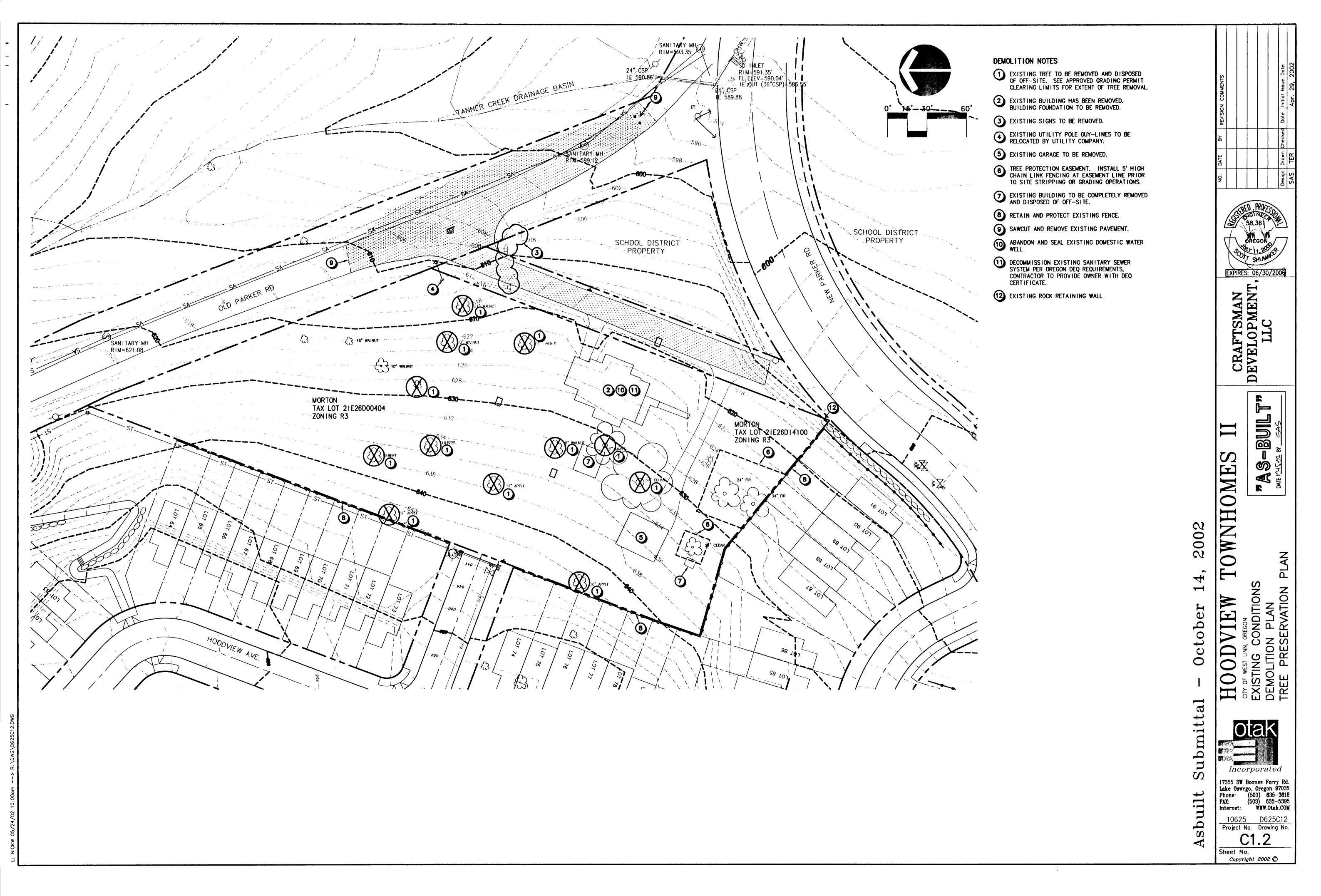
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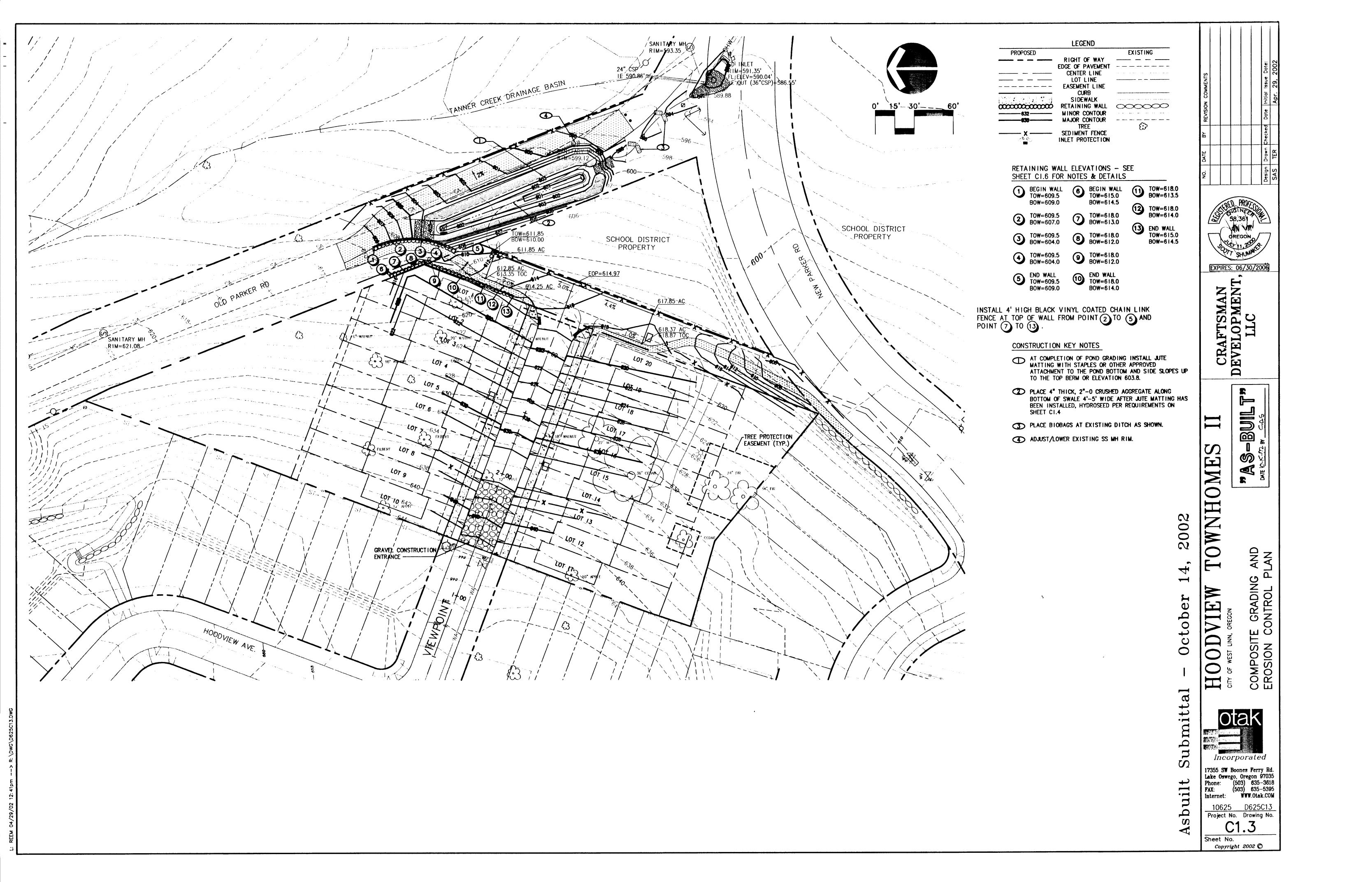
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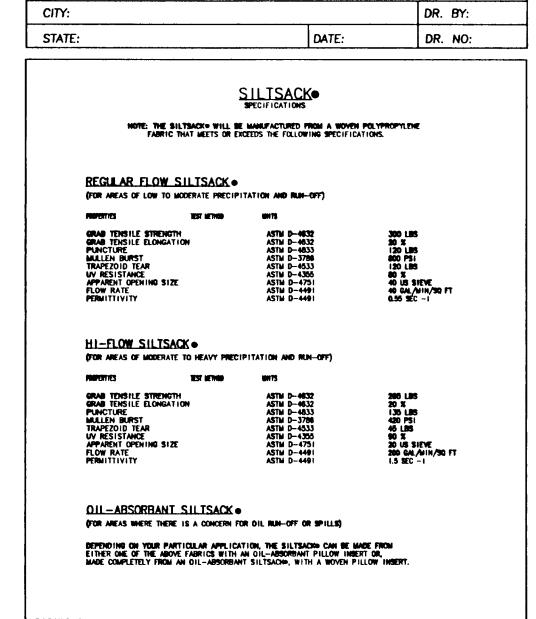
17355 SW Boones Ferry Rd. Lake Oswego, Oregon 97035 Phone: (503) 635-3618 FAX: (503) 635-5395 WWW.Otak.COM Internet:

Project No. Drawing No.





PROJECT:



EROSION CONTROL GENERAL NOTES

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

THE IMPLEMENTATION OF THESE ESC PLANS AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF THESE ESC FACILITIES IS THE RESPONSIBILITY OF THE APPLICANT/CONTRACTOR UNTIL ALL CONSTRUCTION IS COMPLETED AND APPROVED AND VEGETATION/LANDSCAPING IS ESTABLISHED.

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

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.

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

THE ESC FACILITIES SHALL BE INSPECTED DAILY BY THE APPLICANT/CONTRACTOR AND MAINTAINED AS NECESSARY TO ENSURE THEIR CONTINUED FUNCTIONING.

THE ESC FACILITIES ON INACTIVE SITES SHALL BE INSPECTED AND MAINTAINED A MINIMUM OF ONCE EVERY 2 WEEKS OR WITHIN THE 24 HOURS FOLLOWING A 1/2" STORM EVENT.

AT NO TIME SHALL MORE THAN 50% OF THE CAPACITY OF A CATCH BASIN BE ALLOWED TO ACCUMULATE WITH SEDIMENT. ALL CATCH BASINS AND CONVEYANCE LINES SHALL BE CLEANED PRIOR TO PAVING. THE CLEANING OPERATION SHALL NOT FLUSH SEDIMENT LADEN WATER INTO THE DOWNSTREAM

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.

AFTER THE FIRST LIFT OF PAVEMENT HAS BEEN INSTALLED ALL CATCH BASINS TO HAVE A "SILT SACK" OR EQUIVALENT INLET PROTECTION INSTALLED.

EROSION CONTROL AND POLLUTION CONTROL MEASURE EROSION CONTROL MEASURES FOR DISTURBED AREAS:

ALL DISTURBED SLOPES GREATER THAN 3: I HAVE BEEN GRADED AND COMPACTED PRIOR TO OCTOBER IST SHALL BE HYDROSEEDED USING THE FOLLOWING SPECIFICATIONS:

SEEDING SHALL NOT BE DONE DURING WINDY WEATHER OR WHEN THE GROUND IS FROZEN, EXCESSIVELY WET OR OTHERWISE UNTILLABLE. THE SLOPED AREAS ARE TO BE "CAT-TRACKED" TO PROVIDE TERRACED AREAS FOR THE SEED TO ESTABLISH.

SEED MAY BE SOWN BY THE FOLLOWING METHOD:

CREEPING RED FESCUE, 20% BY WEIGHT

HYDROSEEDED WHICH UTILIZED WATER AS THE CARRYING AGENT, AND MAINTAINS CONTINUOUS AGITATION THROUGH PADDLE BLADES. IT SHALL HAVE AN OPERATING CAPACITY SUFFICIENT TO AGITATE, SUSPEND AND MIX INTO A HOMOGENEOUS SLURRY OF THE SPECIFIED AMOUNT OF SEED AND WATER OR OTHER MATERIAL. DISTRIBUTION AND DISCHARGE LINES SHALL BE LARGE ENOUGH TO PREVENT STOPPAGE AND SHALL BE EQUIPPED WITH A SET OF HYDRAULIC DISCHARGE SPRAY NOZZLES WHICH WILL PROVIDE A UNIFORM DISTRIBUTION OF THE SLURRY.

GRASS SHALL BE SEEDED AT THE RATE OF NOT LESS THAN ONE HUNDRED THIRTY (130) POUNDS PER ACRE. SEED MIX SHALL INCLUDE:

STATE HIGHWAY ROADSIDE SEEDING MIX AS DESCRIBED BELOW OR APPROVED EQUAL.

1. DWARF GRASS MIX (LOW HEIGHT, LOW MAINTENANCE)

DWARF PERENNIAL RYEGRASS, 80% BY WEIGHT

FERTILIZER SHALL BE APPLIED AT THE RATE OF 300 POUNDS PER ACRE.

NITROGEN - 22%

PHOSPHORIC ACID - 16%

SOLUBLE POTASH - 8%

WOOD CELLULOSE FIBER SHALL BE APPLIED AT THE RATE OF ONE AND ONE (1-1/2) TONS PER ACRE.

THE EXACT TIME FOR SEEDING WILL BE DETERMINED BY ACTUAL WEATHER CONDITIONS. THE NORMAL SATISFACTORY PERIOD FOR SEEDING SHALL BE CONSIDERED BETWEEN MARCH I TO JUNE I AND SEPTEMBER I TO OCTOBER I UNLESS OTHERWISE AUTHORIZED BY THE OWNER EXCEPT THAT CONTRACTOR MAY PERFORM SEEDING OPERATIONS FROM JUNE I TO SEPTEMBER I PROVIDED THAT HE WATERS THE NEW GRASS TO THE SATISFACTION OF THE OWNER.
WHEN DELAYS IN OPERATIONS CARRY THE WORK BEYOND THE MOST FAVORABLE PLANTING SEASON, OR WHEN WEATHER CONDITIONS ARE SUCH THAT SATISFACTORY RESULTS ARE NOT LIKELY TO BE OBTAINED FOR ANY STAGE OF THE SEEDING OPERATIONS, THE CONTRACTOR WILL STOP THE WORK AND IT SHALL BE RESUMED ONLY WHEN THE DESIRED RESULTS ARE LIKELY TO BE OBTAINED. IF OPERATIONS EXTEND PAST OCTOBER I ALTERNATE HAY PLACEMENT AND SPRING SEEDING SHALL BE SUBSTITUTED.

THE CONTRACTOR SHALL PROTECT ALL SEEDED AREAS FROM EROSION UNTIL FINAL INSPECTION AND ACCEPTANCE HAS BEEN MADE. AREAS DAMAGED BY EROSION SHALL BE REPAIRED BY THE CONTRACTOR AT HIS OWN EXPENSE.

ALL DISTURBED AREAS WITH SLOPES LESS THAN 3:1 THAT HAVE BEEN GRADED AND COMPACTED SHALL BE SEEDED PRIOR TO OCTOBER 1, WITH THE SAME SEED AND FERTILIZER MIX AS USED IN HYDROSEEDING AND SPREAD EVENLY OVER THE SITE.

ALL DISTURBED AREAS NOT GRADED AND COMPACTED PRIOR TO OCTOBER I, SHALL BE SEEDED WITH 200 LBS PER ACRE OF HIGHWAY MIX AND SPREAD WITH A HAY MULCH LAYER I 1/2" TO 2" THICK.

EROSION CONTROL PROTECTION SHALL BE CONSIDERED COMPLETE AND SUCCESSFUL WHEN A GRASS MAT HAS BEEN ESTABLISHED.

ADDITIONAL TEMPORARY EROSION CONTROL (DURING CONSTRUCTION)

TEMPORARY DITCHES WILL BE CONSTRUCTED AS NECESSARY TO ASSURE DRAINAGE IS CHANNELED TO THE FACILITIES BEING PROVIDED. DITCHES TO BE LINED WITH JUTE MATTING FABRIC AND HELD IN PLACE WITH GRAVEL OR STAPLES.

SEDIMENT FENCES

THE FILTER FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID USE OF JOINTS. WHEN JOINTS ARE NECESSARY, FILTER CLOTH SHALL BE SPLICED TOGETHER ONLY AT A SUPPORT POST, WITH A MINIMUM 6-INCH OVERLAP, AND BOTH ENDS SECURELY FASTENED TO THE POST.

THE FILTER FABRIC FENCE SHALL BE INSTALLED TO FOLLOW THE CONTOURS WHERE FEASIBLE. THE FENCE POSTS SHALL BE SPACED A MAXIMUM OF 6 FEET APART AND DRIVEN SECURELY INTO THE GROUND A MINIMUM OF 18 INCHES.

A TRENCH SHALL BE EXCAVATED, ROUGHLY 8 INCHES WIDE BY 12 INCHES DEEP AND ADJACENT TO THE WOOD POST TO ALLOW THE FILTER FABRIC TO BE BURIED A MINIMUM OF 6 INCHES. THE FABRIC SHALL NOT EXTEND MORE THAN 30 INCHES ABOVE THE ORIGINAL GROUND SURFACE. THE STITCHED LOOPS WILL BE ON THE UPHILL SIDE.

THE FILTER FABRIC SHALL BE STAPLED OR WIRED TO THE FENCE, AND 6 INCHES OF THE FABRIC SHALL BE EXTENDED INTO THE TRENCH. FILTER FABRIC SHALL NOT BE STAPLED TO EXISTING TREES.

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

SEDIMENT FENCES SHALL BE INSPECTED BY APPLICANT/CONTRACTOR IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.

(SEEDING PRIOR TO SEPTEMBER I)

| EROSION CONTROL M | AT | RIX | (| | | | | | | | | | | |
|--|------------------------------|--|---|---|---|---|------------|--------------------------------------|---------------------------|----------------------------|-----------------|-------------------------------|-----------------------|---|
| EROSION MEASURES | ı | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| SITE SITUATION | GRAVEL CONSTRUCTION ENTRANCE | SEDIMENT FENCE/BARRIER AT TOE OF DISTURBED AREA OR STOCKPILE | SIDEWALK SUBGRADE GRAVEL BARRIER (SITE SLOPES TO STREET AT <5% GRADE) ALTERNATE TO #2 | UNDISTURBED BUFFER AT TOE OF DISTURBED AREAS (ALTERNATE TO #2) (SITE SLOPES <10%) | SEDIMENT FENCE OR BARRIER INSTALLED ON CONTOURS (SPACING) | TEMP. INTERCEPTOR DIKES/SWALES AROUND ACTIVE WORK AREAS | CHECK DAMS | STORM DRAIN INLET PROTECTION BARRIER | 6-MIL PLASTIC SHEET COVER | 2"- MIN. STRAW MULCH COVER | ESTABLISH GRASS | EROSION BLANKETS WITH ANCHORS | SEDIMENT TRAP OR POND | RE-ESTABLISH VEGETATION OR LANDSCAPE PRIOR TO REMOVAL OF EROSION CONTROL MEASURES |
| SINGLE FAMILY/ DUPLEX RESIDENTIAL SLOPE <2% SLOPE >2% STOCK PILES | × | X X | A(2) | A(2) X | | | | | • | 0 | | | | × |
| COMMERCIAL, SUBDIVISION LARGE SITE CONSTRUCTION SITE SLOPE <2% SITE SLOPE <10% SITE SLOPE <15% SITE SLOPE <20% SITE SLOPE <30% SITE SLOPE <50% STOCK PILE SLOPE >50% | ××××× | × × × × × | | | X300' X150' X100' X 50' X 25' X 25' | ***** | | | 0000 + + | 000000 | | 00000 | 0000 | × × × × × |
| UTILITIES CONSTRUCTION CATCH BASIN DRAINAGE DITCH DRAINAGE | | 2 | | | | | × | x | | | | | | X X |
| STOCK PILES STOCK PILES | | | | | | | | | • | 0 | | | | |
| DITCHES/SWALES (CONSTRUCTION/PROTECTION) | | x | | | | | x | | | • | 0 | 0 | | X |
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MEASURE TO .

ROL NOTES AND DETAILS

TOUDVIEW TOWN

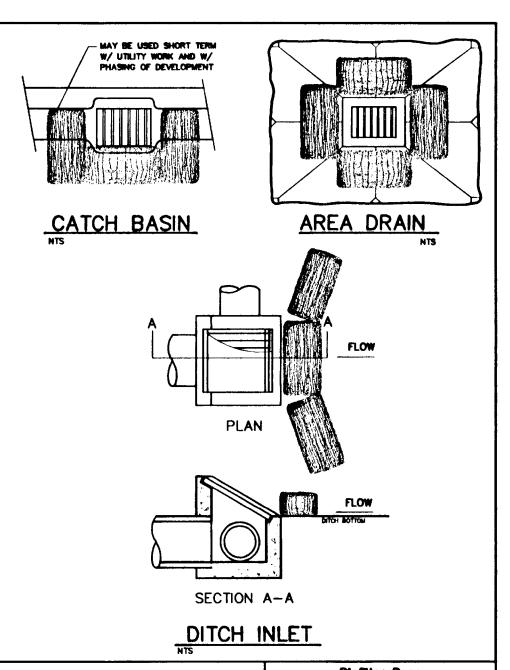
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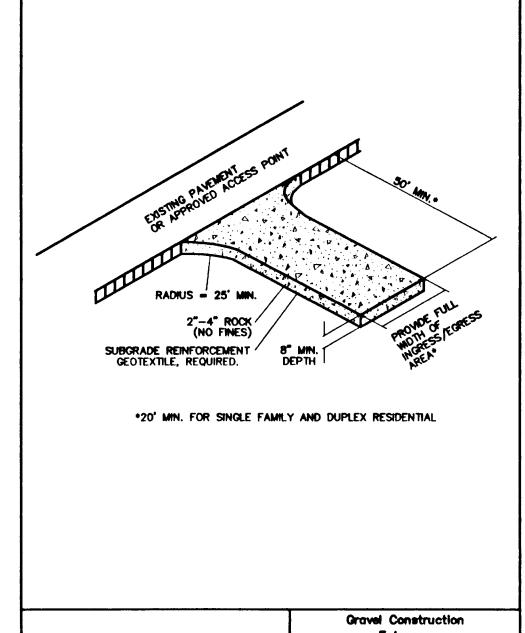
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Lake Oswego, Oregon 97035
Phone: (503) 635-3618
FAX: (503) 635-5395
Internet: WWW.Otak.COM

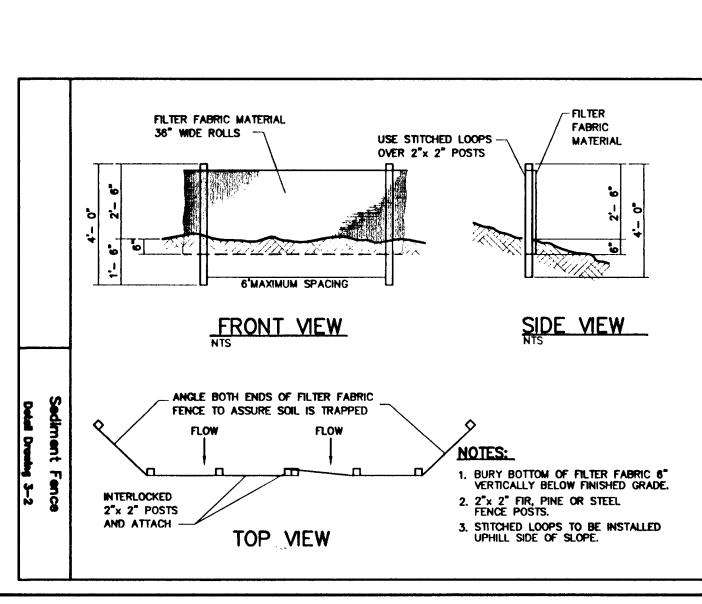
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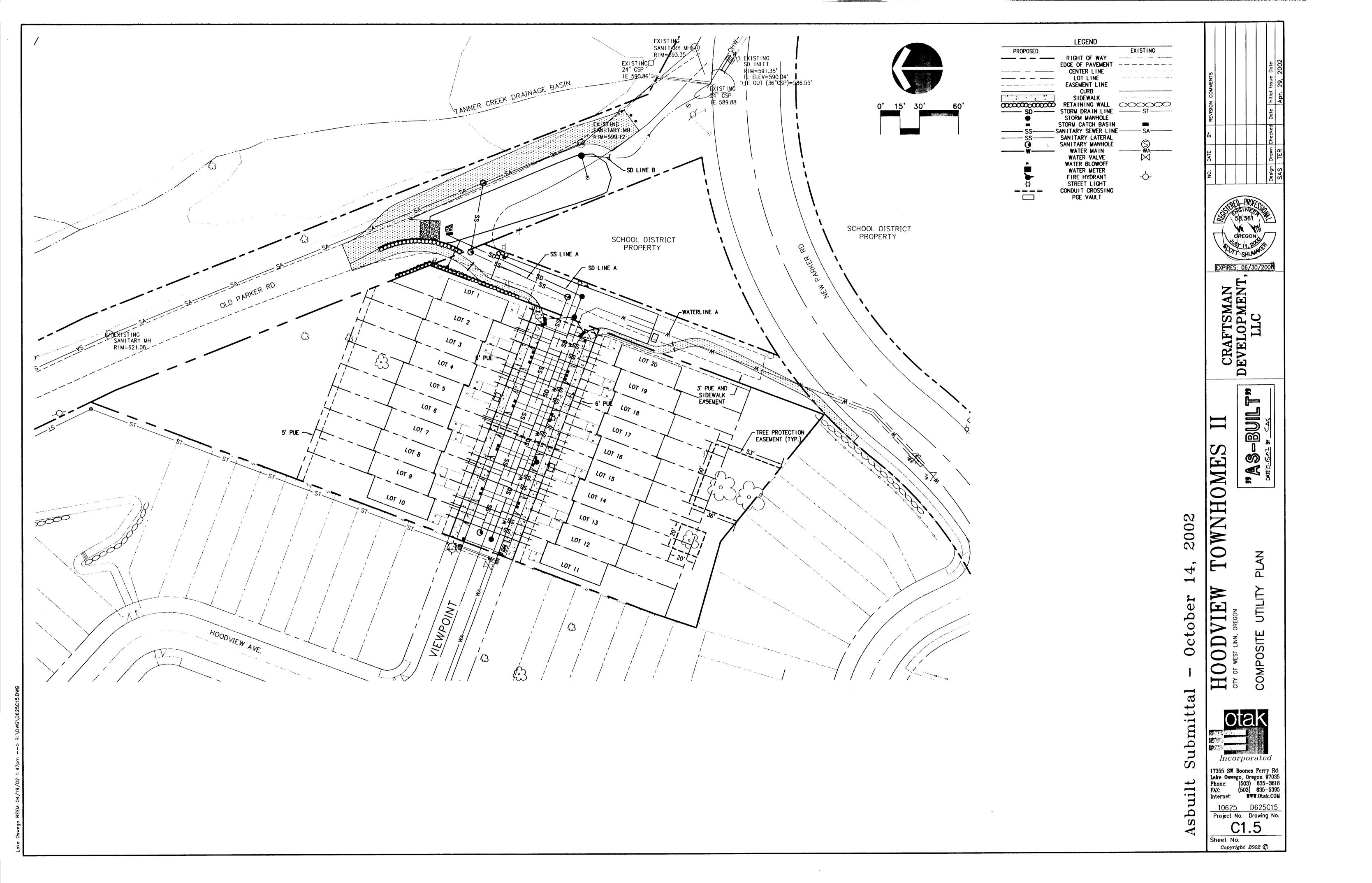
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Temporary (Prior to paving)







April 15, 2002

Morton Properties, LLC P O Box 484 Lake Oswego, OR 97034

Attn: Mr. Jim Morton

Re: GEOTECHNICAL CONSULTING THE HOODVIEW TOWNHOMES II- BOULDER WALLS CLACKAMAS COUNTY, OREGON

In general accordance with our proposal of March 19, 2002, and your authorization of April 9, West Coast Geotech, Inc., is pleased to provide you with geotechnical design recommendations concerning the proposed houlder retaining walls and grading operations at the above-referenced project in Clackamas County. We also provided a "keystone type" retaining wall design as an alternative as per the request of your Civil Engineer, Mr. Scott Shumaker, P.E., OTAK, Inc.

As per your request, a field exploration program, in advance of wall construction, was not conducted for this project. Hence, our recommendations are based on assumed soil conditions which should be verified during the early stages of wall construction in order for these recommendations to become valid. Also, we may need to make additional recommendations concerning the footing embedment of the nearby structures during footing excavation after the wall is constructed. We assume that the wall will be constructed prior to footing excavations. This report should not be used for contractual purposes as a warranty of interpreted subsurface conditions discussed herein.

SITE AND PROJECT INFORMATION

We understand that the proposed project consists of the construction of a two-tiered wall system that separates the proposed townhomes from the nearby drainage retention swale/pond. A 11-foot wide public pathway separates the two walls from each other. The maximum wall heights vary from 5 to 6 feet, more or less.

P. O. Box 388 West Linn, Oregon 97068 503/655-2347 FAX 503/655-0642

Morton Properties, LLC April 15, 2002

> The upper wall appears to be located within about 6 feet from a proposed townhome in an area that will receive about 4 to 5 feet of engineered fill. The lower wall appears to be located in an area that will be cut down for the full height of the wall adjacent to a shallow sloping retention swale/pond bottom.

> The existing ground surface appears to slope gently downhill at an approximate 25 percent slope based on our interpolation of the topographic map provided by your Civil Engineer for our use.

> We assume that the subsurface soils will generally consist of medium stiff to stiff, overburden silt soil over a highly weathered, decomposed basalt/residual stiff clay. We strongly advise that we be allowed to visit the site early in the construction process to verify the subsurface soils in order to make the following recommendations valid.

RECOMMENDATIONS

Boulder Walls

We recommend that 1 to 1-1/2 ton angular boulders with a typical size of 2 to 3 feet in diameter, more or less, be used for the walls planned for this project, and should be selectively placed to fit snugly with surrounding boulders.

We recommend that the bottom row be at least 2 stones wide, more or less (for a minimum base width of 4 feet wide) for walls over 4 feet high and less than 6-1/2 feet high for the lower boulder wall. For the upper boulder wall in close proximity of any portion of a nearby building (within about 8 feet of a foundation), the bottom 2 rows should be 2 stones wide, more or less (for a minimum base width of 5 feet wide for 6-foot high walls).

Boulder Row Construction

The bottom row of stones should be embedded approximately 18 inches deep, more or less, below lowest adjacent grade which should be taken as the final grade on the outside portion of the wall. The subgrade should be excavated using a smooth bucket trackhoe and should be sloped inward slightly (say, less than five degrees from horizontal) in order to aid to the overall stability of the boulder wall.

The lowest level of stones should be founded on firm, native, approved silt subgrade after all the unsuitable fill/topsoil, if any, has been satisfactorily removed or upon engineered fill that has been satisfactorily placed, compacted and tested in lifts beginning on an approved native subgrade. Bench cuts should be excavated in terraced areas where fills will be placed. The purpose of bench cuts is to "key-in" the new engineered fill to the native soils in order to promote stability.

Morton Properties, LLC April 15, 2002

A relatively clean, uniform crushed rock (on the order of 1 to 2-inches in typical diameter with little, if any, fines) should be used to help "seat" the boulder stones in place and to backfill behind the boulder walls. A four inch diameter perforated drainline should also be considered for installation behind the wall, in our opinion, to intercept any water seepage within the drain blanket and transport the intercepted water to the stormdrain system.

A nonwoven geotextile such as Mirafi 140N, or equivalent, should be placed against the exposed clay/silt slope during boulder wall construction so as to separate the silt subgrade from the drain rock blanket adjacent to the boulder wall. In this way, the geotextile will help minimize the transport of fines into the drain blanket which could cause subsidence to occur above the boulder wall if the fines did migrate into the drain blanket behind the boulder wall.

You should be aware that although boulders are often used to construct walls to support slopes and retain fill, there still is some risk associated with these type walls. If the boulders do not fit well (or "knit" together) or stand too vertical at slope, there will be a risk that a boulder(s) can dislodge and fall off the wall and cause damage downhill of the boulder wall. The better that the boulders fit with each other (and incorporating an inward slope of the boulder wall during construction), the lower the danger; however, there will always be some risk of falling boulders no matter how well the boulders fit.

A typical boulder wall is presented in Figure 1 and should be used for your general information in conjunction with recommendations contained herein.

"Keystone Type Retaining Wall" A "keystone-type retaining wall system" also appears to be an economically feasible alternative especially for the upper wall location where substantial fill is anticipated. Such a retaining wall system generally consists of a stacked, block wall with geotextile reinforcement/grids that extend back into the backfill at certain depth intervals and lengths. The geotextile reinforcement/grids are installed as the wall is raised and backfilled and compacted.

For a 6-foot high wall, we recommend geotextile reinforcement/grids that are 6 feet long and installed in the following locations:

First reinforcement layer installed 1 foot above base elevation of wall. Second reinforcement layer installed 3-1/2 feet above base elevation of wall.

The blocks shall be placed such that a 10.6 degree slope from vertical is maintained at the front of the wall. The first set of blocks should be installed upon a crushed rock base layer that is at least 6 inches thick and at least 18 inches below lowest adjacent grade which should be considered to be the outside

Morton Properties, LLC April 15, 2002

grade of the wall. The block wall shall be erected in accordance with the specifications provided by the

A minimum 12-inch thick clean, granular drain blanket and 4-inch perforated pipe is recommended behind the inside face of the block retaining wall for the full height of the retaining wall (See previous section for description of drain rock size). A reasonably well-graded crushed rock (3/4-inch minus with not more than 5 percent passing the No. 200 sieve) should be used for backfill over the geotextile reinformement/grid layers.

Grading Operations

Subgrade Preparation, The subgrade preparation should include the stripping and removal of all surficial organic soil (sod, topsoil, duff) and unsuitable fill and pavement debris, if any is found, from the boulder wall and new pavement areas as determined by a qualified representative of the Client (preferably, the Geotechnical Engineer). After excavation to reasonably level, required subgrade elevation, the wall area should be proof-rolled, in our opinion, with a loaded dump truck or similar vehicle in the presence of a qualified representative of the Client (preferably, the Geotechnical Engineer). Any soft or disturbed areas that are detected by the proof-rolling should be removed and backfilled with engineered fill. The actual amount of material to be excavated may need to be determined in the field, and we recommend that the specifications, if any are written, include a unit cost bid item for any over excavation beyond that excavation normally required by the Contract.

Construction operations may need to be modified to minimize site disturbance especially during wet weather conditions when soil moistures are above optimum moisture content such that pumping or rutting of the subgrade is observed by the Client's representative. Any disturbed soil shall either be compacted to acceptable standards or removed and replaced with engineered fill. Due to the nature of the underlying soils, we recommend that the site work be conducted during the normal summer/fall construction season when subgrade and fill moisture contents are typically at their lowest and extended periods of dry, warm weather are usually common.

If construction cannot be conducted during the normal summer/fall construction season and/or if pumping/rutting due to construction traffic begins to occur as observed by your representative, the subgrade should be protected and additional costs should be anticipated (See next section, Wet Weather Construction, for additional recommendations). Your Contractor should be made responsible for developing an adequate workpad for construction access roads and major staging areas for construction

Morton Properties, LLC April 15, 2002

> The Excavator should be made aware of the possibility of difficult excavations and should select the appropriate excavation equipment and methods at no additional cost to the Owner should any excavation be made anywhere where embedded boulders are encountered, in our opinion.

> Wet Weather Construction. If construction cannot be conducted during the normal summer/fall construction season and/or if pumping/rutting due to construction traffic begins to occur as observed by your representative, the subgrade should be protected with a workpad and geotextile fabric, and additional costs should be anticipated.

> In addition, wet weather construction typically requires more subgrade excavation in pavement areas. The upper surficial soils (for typical depths anywhere from 12 to 18 inches, more or less) are likely to quickly absorb soil moisture and, usually, will not be able to satisfactorily sustain a proof-roll test using a loaded dump truck

> Hence, more of the subgrade (that is wet of optimum moisture and pumping) will usually need to be excavated and removed during wet weather/winter prior to continuing with the grading operations (raising the site with engineered fill and/or placement of the rock pad) in the wet season. The amount to remove may be need to be determined in the field during excavation with a smooth bucket trackhoe in the presence of the Geotechnical Engineer.

> Also, during the wet season, the soils are likely to be moisture-sensitive to construction traffic. Hence, the subgrade soils will usually need to be protected from the construction traffic by placing workpad rock over a suitable woven geotextile such as Mirafi 600X, or equivalent. The thickness of the workpad rock will vary depending upon the construction traffic and the number of trips across designated travel lanes. Where construction traffic is concentrated in lanes, the workpad rock is typically 18 to 24 inches thick. Elsewhere on the site, workpad rock thicknesses can usually be reduced to about 12 inches thick for those areas of the building site where the traffic generally consists of light backhoe traffic that is not concentrated down lanes but distributed over across the building site

Not placing a workpad down at pavement areas may cause rutting of the soil subgrade due to the passage of construction vehicles (especially during wet periods). Disturbed soil/disturbed workpad will need to be removed and replaced or fixed/recompacted with engineered fill.

The workpad should consist of a relatively uniform crushed rock with a maximum particle size of 2 to 4 inches to be placed and nominally roller compacted with a self-propelled roller.

All in all, wet season construction typically requires additional costs that are not normally encountered during normal, dry season construction.

Morton Properties, LLC April 15, 2002

Of churse, the alternative to paying a premium cost for wet weather construction is to wait until er/early fall when extended periods of dry, warm weather are usually common (dry weather construction). If the winters are somewhat dry, soil treatment with either lime or cement may also be feasible and may provide an intermediate cost option instead of a premium cost. If soil treatment appears feasible, we recommend that we be allowed to provide geotechnical comment.

Engineered Fill. Any reasonably graded, on-site soil that is free of organic or other deleterious matter or oversized material (larger than 2 to 3 inches) would be suitable as engineered backfill (outside of the geotextile reinforcement/grid layers) if the backfill is placed during dry warm weather on a dry subgrade surface and it is properly moisture-conditioned to within 2 percent of optimum moisture (i.e. aerated to lower the moisture content or moistened to raise the moisture content depending upon existing field moisture and optimum moisture content) before and during placement. In all likelihood, because of the clay/silt content of the surface soils, some drying of the on-site soils will probably be necessary prior to their use as engineered fill especially for those moist soils that are excavated at depth.

Any surficial organic strippings/organic clay or debris laden fill, if any is found, should not be used for engineered backfill purposes inside building and pavement areas, in our opinion. This unsuitable material may be used for landscape fill if desired. Otherwise, this material should be properly disposed

We recommend that a clean (not more than 5 percent passing the No. 200 sieve based on a wet sieve analysis) reasonably well-graded granular material such as a sand and gravel or crushed rock be especially used for engineered backfill for the following situations:

o during the wet periods when there is insufficient time or dry hot weather to dry the soil

o when excess moisture that is present in the subgrade is observed to be migrating to the fill layer during compaction such that pumping is observed or specified compaction levels cannot be achieved using on-site soils.

The gradation of the any granular import material selected should be checked to determine its compatibility for use adjacent to on-site soils. The maximum particle size of the granular engineered backfill should not exceed 1-1/2 inches for testing purposes. We also recommend that samples of backfill material intended for use as engineered fill be submitted for approval prior to carthwork construction.

Morton Properties, LLC April 15, 2002

Engineered fills/backfills should be placed in about 9 to 12-inch loose lifts for areas that are compacted with large self-propelled rollers, and should be compacted to a dry density of at least 97 percent of the standard Proctor maximum dry density (ASTM D698) or as approved by the Geotechnical Engineer within the proposed pavement areas, if any. Landscape fills outside of the pavement areas, if any, may be compacted to 95 percent. Lift sizes for small vibrating plates typically used in trenches vary from 6 to 8 inches. The size of the lifts and the number of passes of the compactor may need to be modified to achieve the desired results using the equipment selected for compacting. The engineered fill should be placed in horizontal lifts commencing on a relatively level, approved native subgrade surface.

Dewatering. Groundwater, if any, or any surface water flow should be controlled in a manner that will not affect excavation or fill construction. The underlying soils will likely slough into any excavations especially when wet. You should excavate in such a manner that nearby footings, slabs, pavements and utilities designated to remain are not undermined by potential sloughing. Water should not be allowed to pond in the bottoms of the footings/slab/pavement areas. Exposed subgrade or fill softened by ponded water, if any, should be removed and replaced with engineered fill.

Cut and Fill Slopes. All permanent cut and fill slopes, if any, should be groomed to slopes no steeper than 2 Horizontal (H): 1 Vertical (V) for stability purposes. Flatter slopes may be necessary for ground cover and maintenance operations.

Because of safety considerations and the nature of temporary excavations, you should be responsible for maintaining safe cut excavations and supports. We recommend that the Excavator incorporate all pertinent safety codes during construction including the latest edition of the OR-OSHA Standards for Construction Industry (Type C Soil). This classification should be verified during excavation by a "competent person" as defined by OR-OSHA.

Underground Fuel Tanks. Underground fuel tanks or contaminated soil, if any are known to be present or are found during excavation, should be removed in accordance with Oregon Department of Environmental Quality requirements and backfilled with engineered fill.

LIMITATIONS

It is recommended that close quality control be exercised during the preparation and construction of retaining wall sections and asphalt pavements.

If there is a substantial lapse of time between the submission of this report and the start of work at the site, if conditions have changed due to natural causes of construction operations at or adjacent to the site,

Morton Properties, LLC April 15, 2002

or if the basic project scheme is significantly modified from that assumed, it is recommended that this report be reviewed to determine the applicability of the conclusions and recommendations considering the changed conditions and time lapse.

Unanticipated soil conditions are commonly encountered and cannot be fully determined by mercly by conducting a site visit and observing exposed soils on cut slopes. Such unexpected conditions frequently require that additional expenditures be made to attain a properly constructed project. Therefore, a contingency fund is recommended to accommodate such potential extra cost.

Be advised that the Local Governing Agency may sometimes require additional geotechnical or other studies in order to approve the development as part of the planning approval process. Our Geotechnical Report(s) does not guarantee that the development will be approved by the Local Governing Agency without these additional studies, if required by the Local Governing Agency, being performed. Expenses incurred in reliance upon our Report(s) prior to final approval of the Local Governing Agency are the exclusive responsibility of the Developer. In no event shall West Coast Geotech, Inc., be responsible for any delays in approval which are not exclusively caused by West Coast Geotech, Inc..

We trust that this letter-report is sufficient to meet your current needs. If you have any questions, please call at your convenience.

Sincerely,

WEST COAST GEOTECH, INC.

Michael F. Schrieber, P.E. Geotechnical Engineer President

Cc: Mr. Scott Shumaker, P.E., OTAK, Inc B:W1628.DOC



DOWHNILL SIDE.

FRACTION).

2. USE CRUSHEDROCK (TYPICAL SIZE OF 1 TO 2

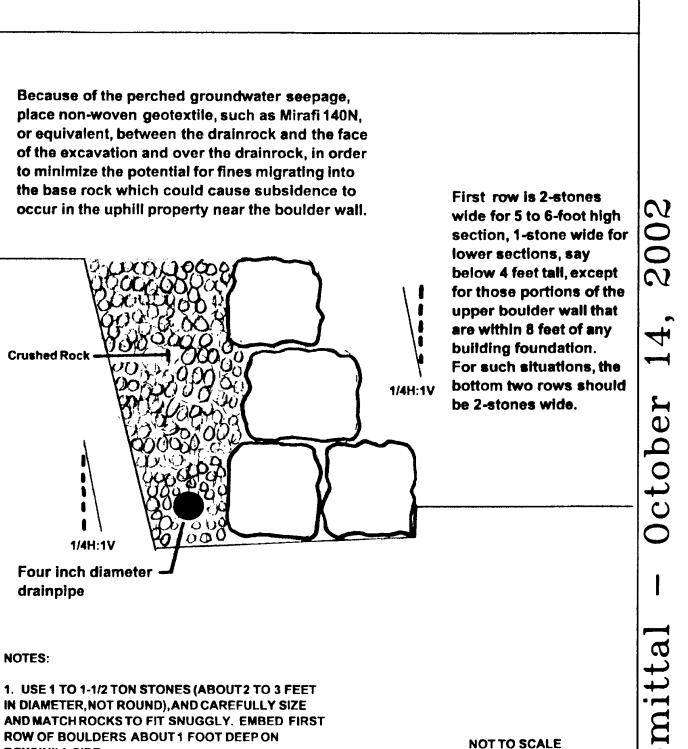
INCH, IN DIAMETER, WITH LITTLE IF ANY FINE

3. EXCAVATE AND CREATE A SLIGHTLY IN-

TO OBSERVE SUBGRADE AFTER EXCAVATING

4. CALL GEOTECHNICAL ENGINEER FOR SITE VISIT

SLOPING BENCH IN FIRM, NATIVE SOIL,



NOT TO SCALE

HOODVIEW PROJECT WALLS

West Linn, Oregon

TYPICAL BOULDER WALL

CROSS-SECTION (5 to 6-ft. High)

Apr.,2002

WEST COAST GEOTECH,

West Linn, Oregon

W-1629

FIG.

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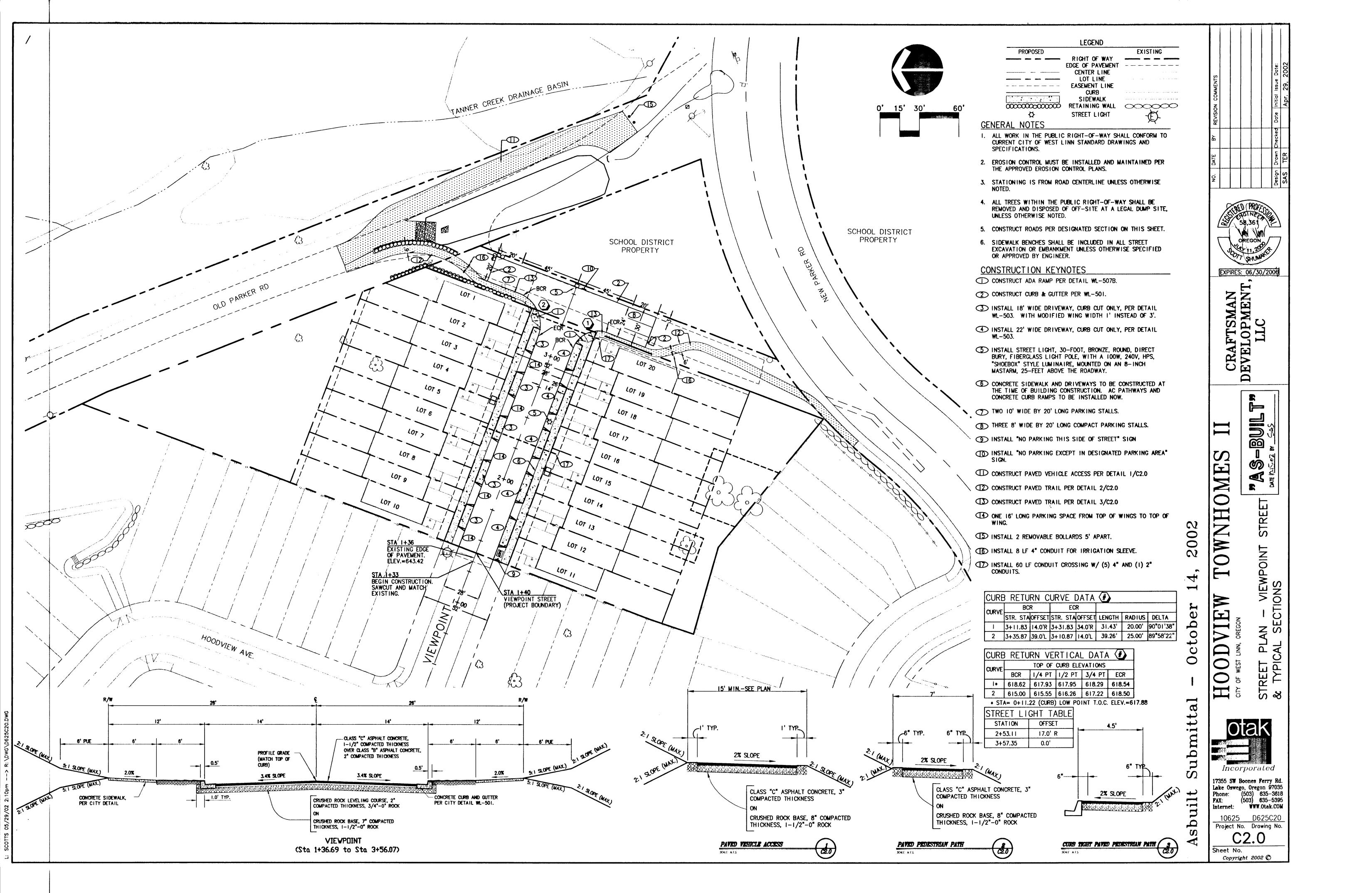
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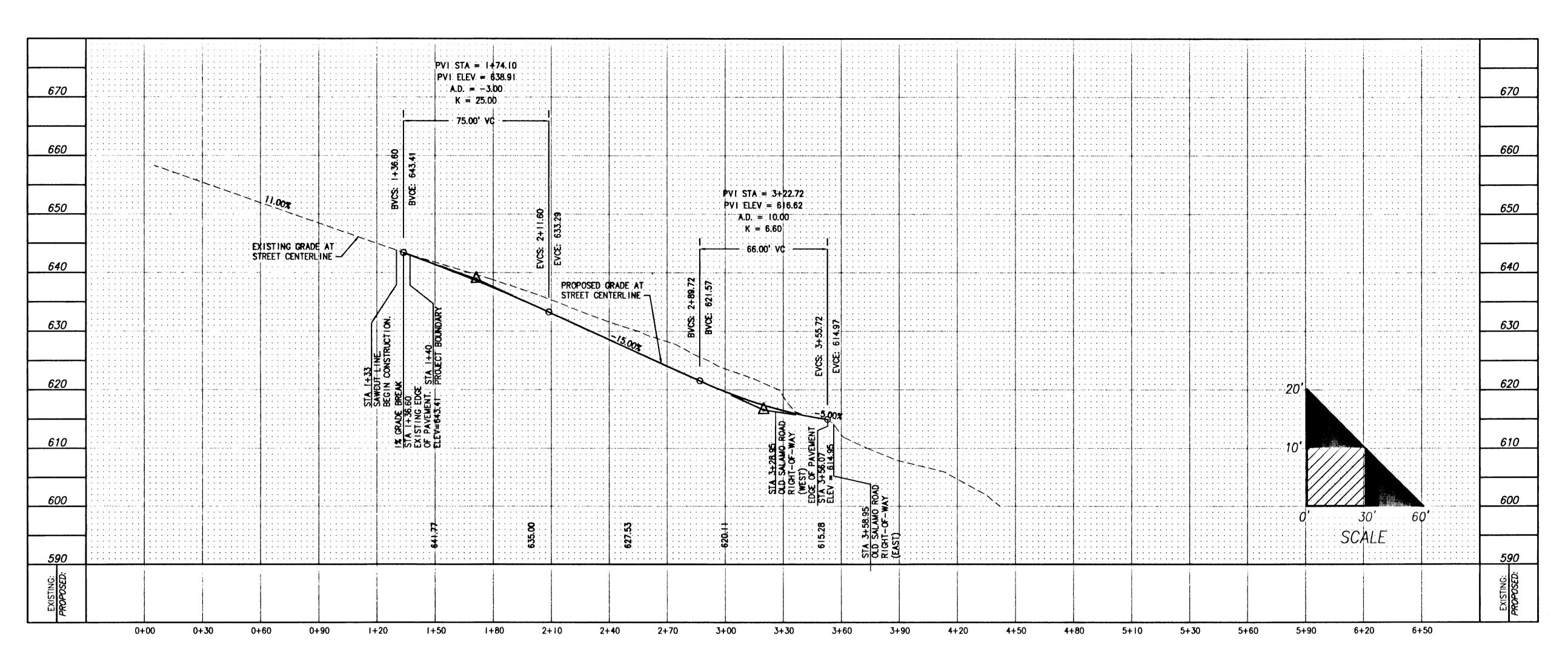
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VIEWPOINT STREET

SCALE: | "= 30' HORZ.
| "= 10' VERT.

2002 October Asbuilt

STREET PROFILE — VIEWPOINT STREET

EXPIRES: 06/30/2006

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DEVELOPMENT,

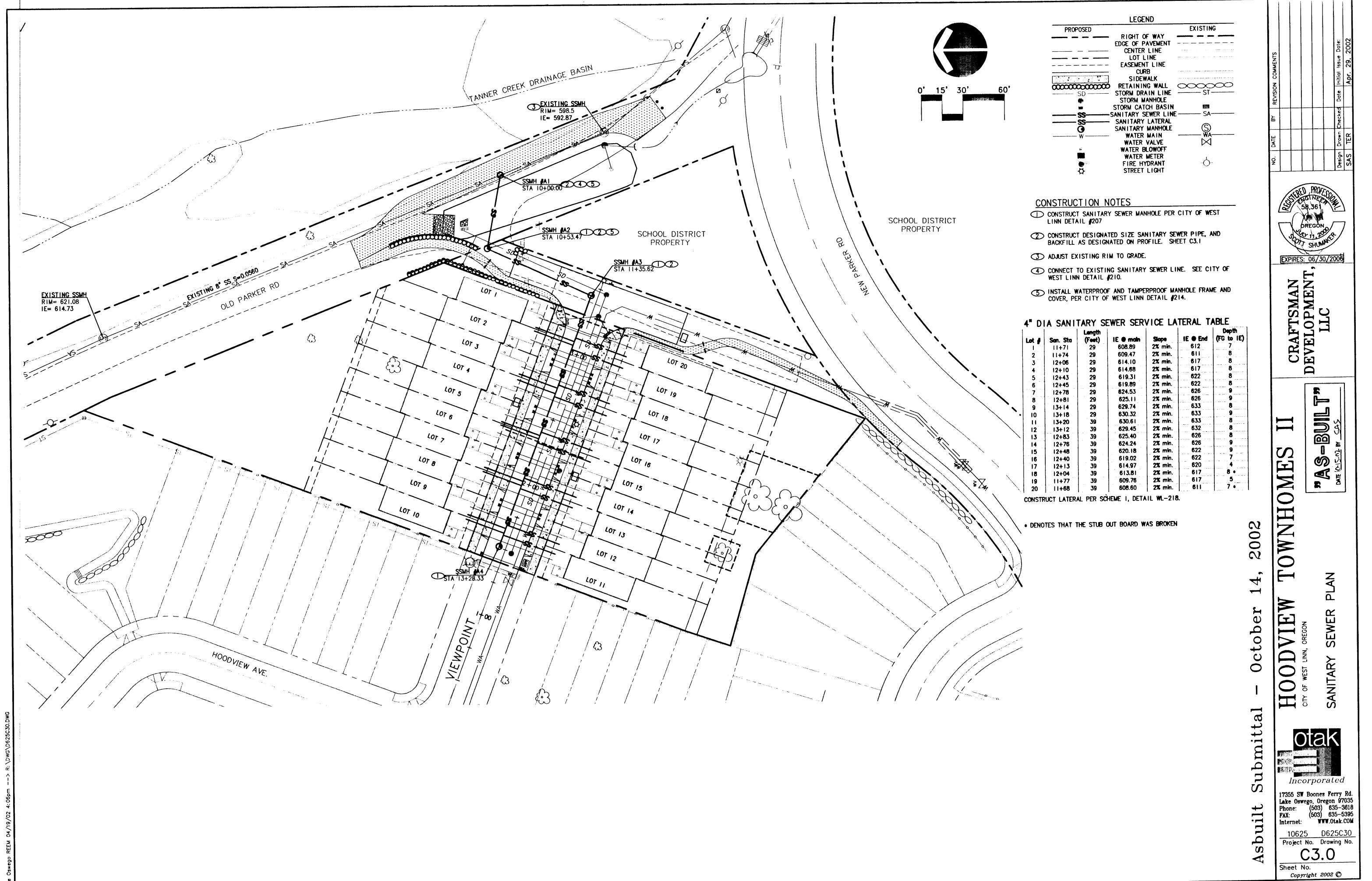
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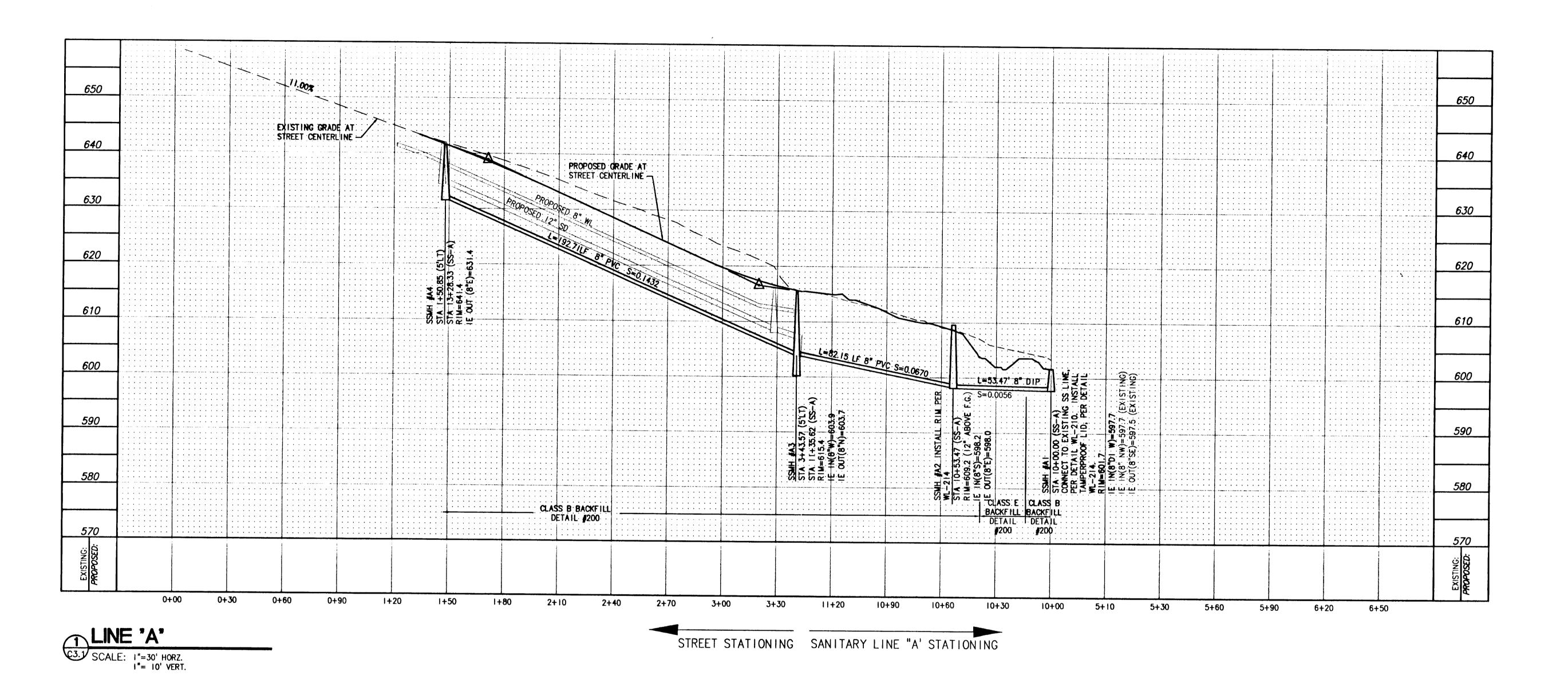
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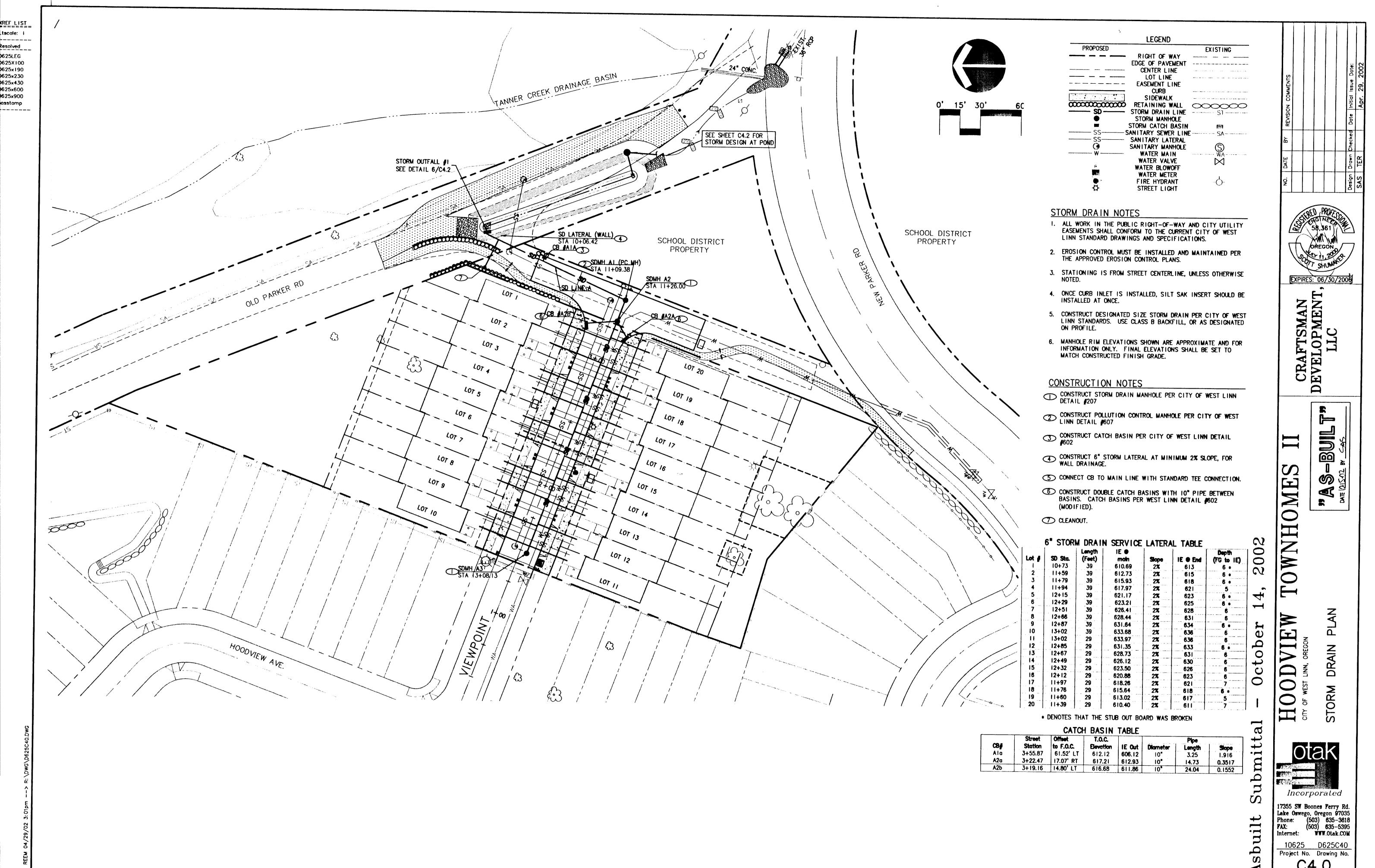
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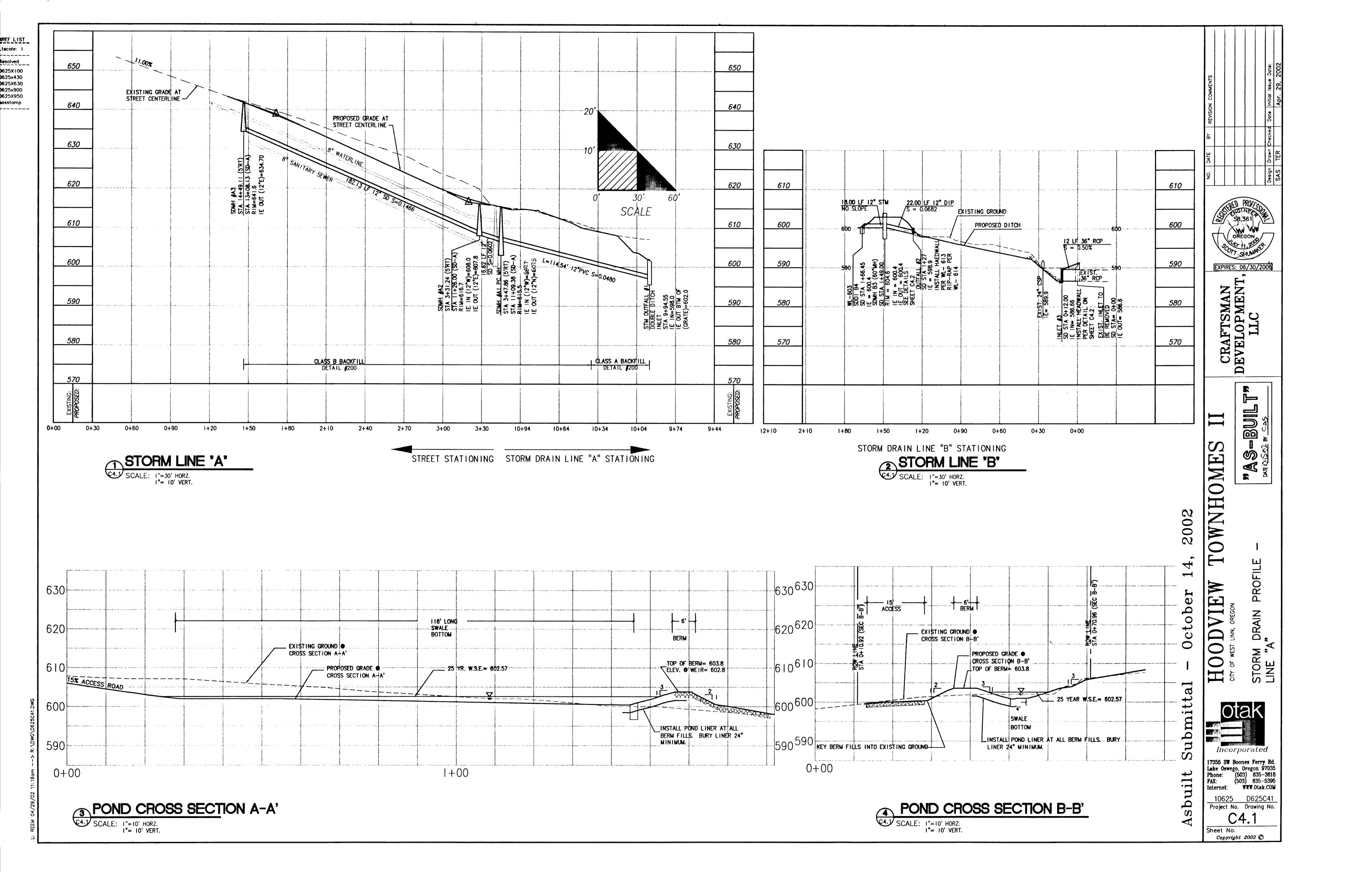
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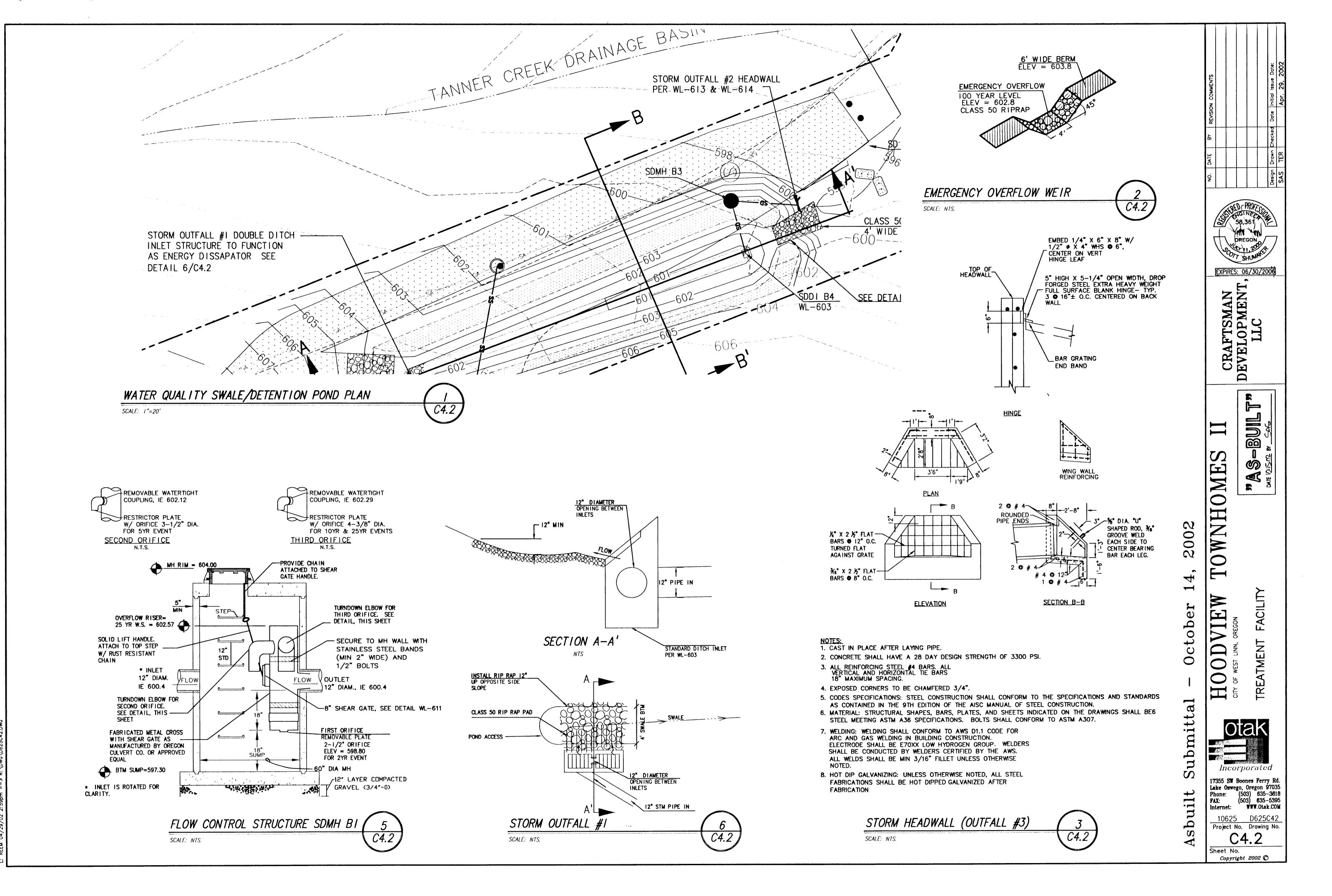
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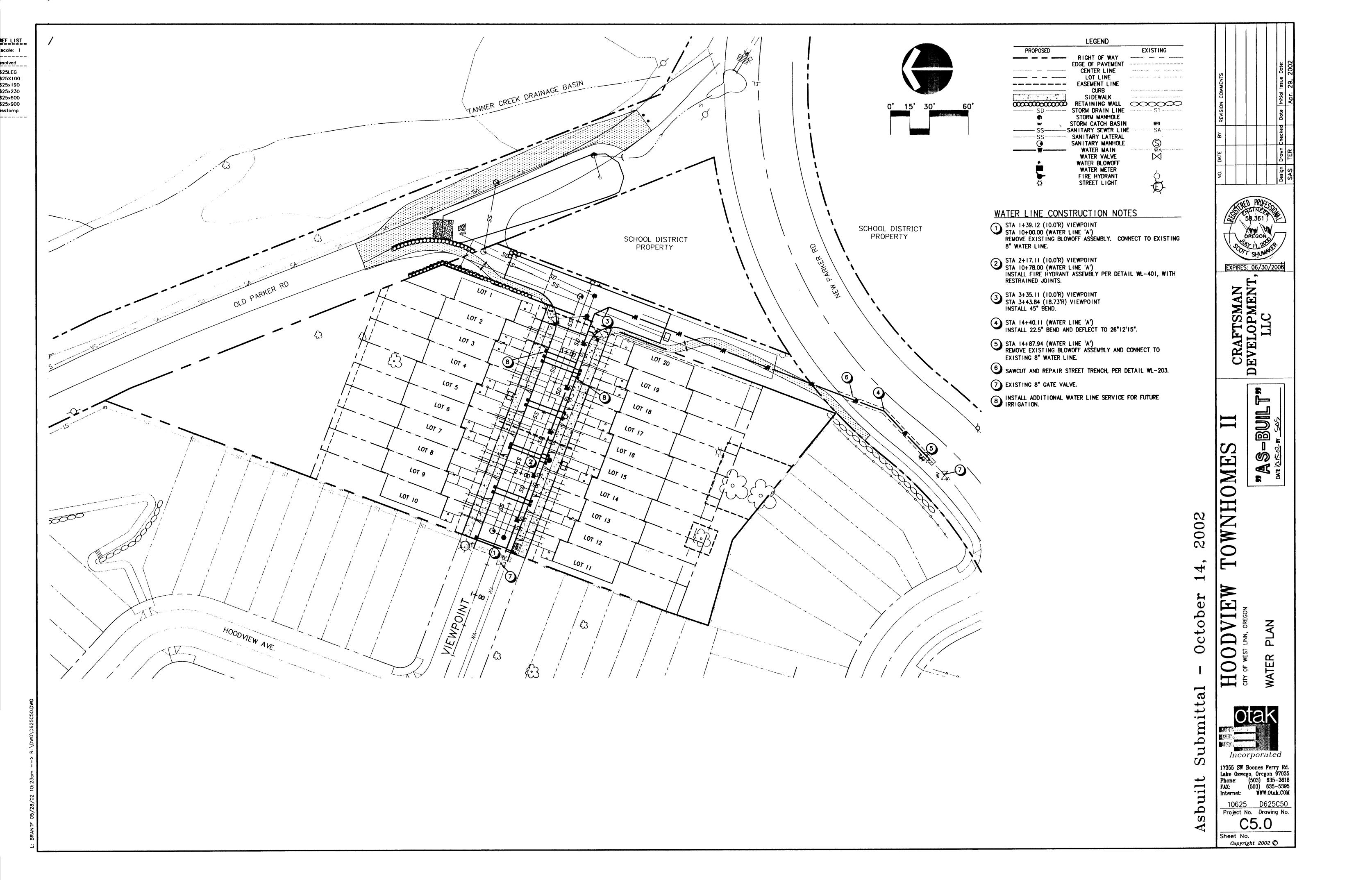
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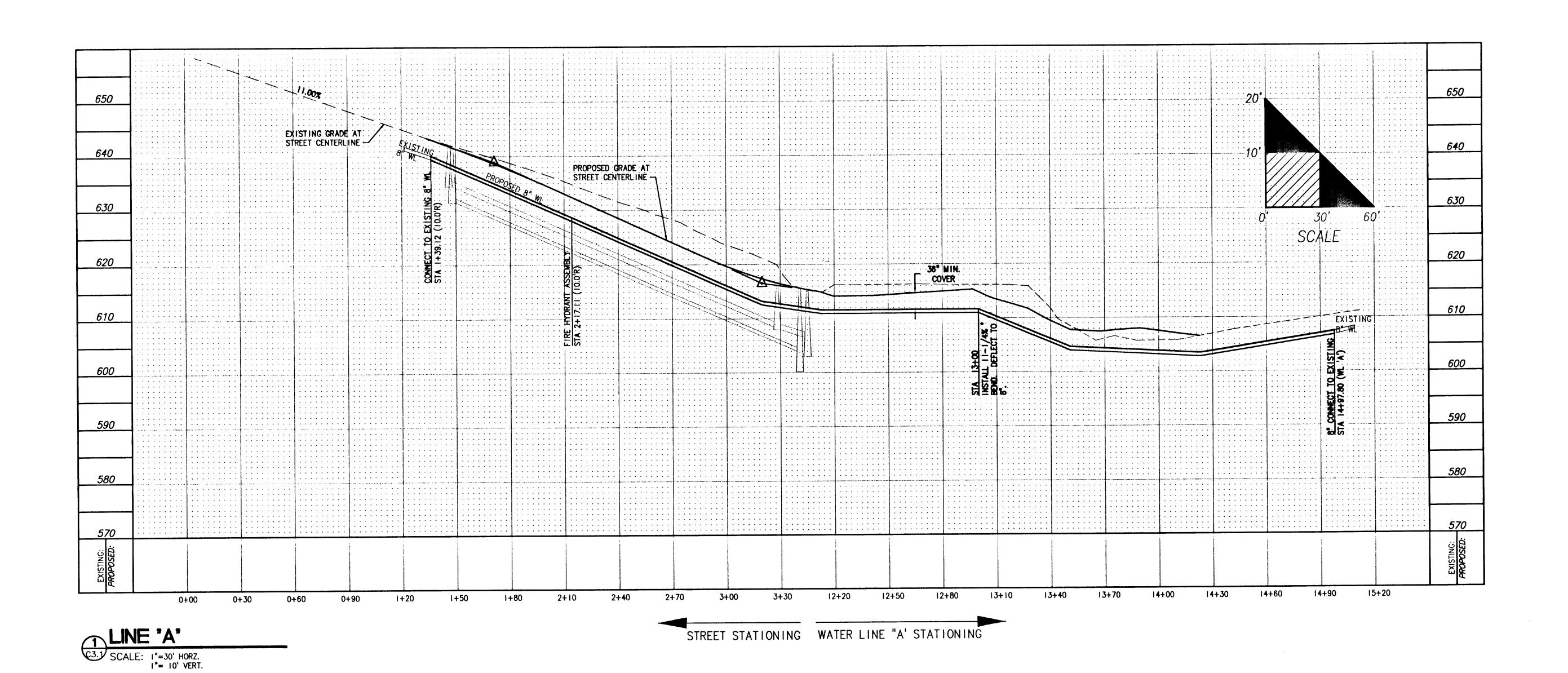
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2002 October Submittal Asbuilt

WATER LINE LINE "A"

CRAFTSMAN
DEVELOPMENT, 122

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PROFILE

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VIEW

Incorporated 17355 SW Boones Ferry Rd.
Lake Oswego, Oregon 97035
Phone: (503) 635-3618
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Internet: WWW.0tak.COM

10625 D625C51
Project No. Drawing No. C5.1

PLANT MATERIAL LEGEND (STREET TREES) EVERGREEN TREES NAME SIZE AT PLANTING CONDITION QUANTITY 2" CAL. B & B 13 FRAXINUS OXYCARPA 'RAYWOOD' CRAFTSMAN DEVELOPMENT, LLC GALV STEEL WIRE; LOOSE TO ALLOW 4" OF MOVEMENT IN ALL DIRECTIONS FINISH GRADE MULCH AS SPECIFIED CUT AND REMOVE TWINE, (KEEP MULCH CLEAR BURLAP, AND WIRE BASKET FROM TOP AND SIDES OF OF TRUNK BASE) 2"X 2"X 8' WOOD STAKES SET OUTSIDE ROOTBALL - 3" UNDER FIRST LIMBS OR 5' HIGH, ON WINDWARD AXIS WHICH EVER IS LOWEST. (REMOVE AFTER ONE YEAR) BACKFILL SOIL NOTE: STAKE ALL EVERGREEN TREES 8' AND SHORTER AND DECIDUOUS TREES LESS THAN 4" CALIPER. DO NOT STAKE VINE MAPLES. TREES 1 1/2" CALIPER AND LESS SHALL BE STAKED WITH A SINGLE WOOD STAKE UNLESS OTHERWISE SPECIFIED. TREE STAKING DETAIL NOTES: 200% 1. SEE ENGINEERING DRAWINGS FOR EROSION CONTROL FENCING AND DETAILS. 2. THE LANDSCAPE CONTRACTOR IS TO THOROUGHLY REVIEW THE SITE. IF THERE ARE ANY DISCREPANCIES BETWEEN THE PLAN AND THE EXISTING CONDITIONS THE LANDSCAPE ARCHITECT IS TO BE NOTIFIED IMMEDIATELY. 3. IF THE LANDSCAPE CONTRACTOR STARTS WORK BEFORE SITE CONDITIONS ARE READY, THEY WILL BE RESPONSIBLE FOR ANY ADDITIONAL COSTS RELATING TO THE CONDITION. 4. IF AN AREA IS LARGER THAN THAT SCALED ON DRAWING REQUIRING MORE OR LESS MATERIAL, THE LANDSCAPE ARCHITECT IS TO BE INFORMED AND COSTS VIE MAY BE ADJUSTED. COST ADJUSTMENTS WILL BE BASED UPON UNIT COSTS NOTED AS PART OF THE CONTRACT. 5. TOPSOIL: ALL SEEDED AREAS SHALL HAVE A MINIMUM DEPTH OF 6" OF TOPSOIL. ALL SHRUB BEDS SHALL HAVE A MINIMUM DEPTH OF 6" OF TOPSOIL. TOPSOIL SHALL BE OVER ROCK-FREE SUBGRADE. TOPSOIL TO BE RIPPED AND TILLED 6" INTO SUBGRADE. 9 6. MOUND PLANTING BED AREAS 3% GRADE FOR POSITIVE DRAINAGE AND AESTHETICS. 7. SOIL AMENDMENTS: ADD 2" 'GARDEN CARE' COMPOST TO TOPSOIL (TILL IN 6") FOR ALL PLANT BEDS. 8. BARK MULCH: SPREAD 2" DEEP FINE GRADE FIR/HEMLOCK BARK OVER ALL SHRUB BEDS. KEEP BARK CLEAR OF SHRUB STEM BASE. 9. PROVIDE A 36" DIAMETER LAWN CUT-OUT AROUND TRUNKS OF ALL TREES. PUT BARK MULCH IN TREE CUTOUT. 10. PLANTING POCKETS: MIX 2" OF 'GARDEN CARE' COMPOST INTO BACKFILL OF EACH PLANT AND TREE 5 GALLON CAN OR LARGER. MIX 1" OF 'GARDEN CARE' COMPOST IN 1 TO 3 GALLON CAN SHRUBS. MIX THOROUGHLY BEFORE BACK FILLING. 11. SEE NOTE #13 ON SHEET C1.0. DEVELOPER TO PAY THE CITY OF WEST LINN PARKS DEPT. Incorporated FOR 13 STREET TREES IN THE AMOUNT OF \$150 PER TREE. 17355 SW Boones Ferry Rd. Lake Oswego, Oregon 97035 Phone: (503) 635-3618 FAX: (503) 635-5395 12. WARRANT ALL MATERIALS AND WORKMANSHIP FOR ALL CAUSES UNTIL FINAL ACCEPTANCE. AFTER FINAL ACCEPTANCE WARRANT ALL MATERIALS AND WORKMANSHIP FOR ALL CAUSES EXCEPT FOR DEFECTS RESULTING FROM NEGLECT, Internet: WWW.Otak.COM ABUSE OR DAMAGE BY THE OWNER, FOR A PERIOD OF ONE YEAR. 10625 C625C60 Project No. Drawing No. 13. PLANT ESTABLISHMENT - WATER AND MAINTAIN THE PLANTED SHRUBS UNTIL COMPLETION OF THE CONTRACT. THE CONTRACTOR WILL BE RESPONSIBLE

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FOR REPLACING DAMAGED, UNHEALTHY, OR DEAD SHRUBS.

PLANT MATERIAL LEGEND (OLD PARKER RD. POND) CONDITION QUANTITY EVERGREEN TREES NAME SIZE AT PLANTING B & B 9 4' HEIGHT PSEUDOTSUGA MENZIESII B & B 8 4' HEIGHT - THUJA PLICATA WESTERN RED CEDAR 17 TOTAL DECIDUOUS TREES CRATAEGUS DOUGLASII VAR. DOUGLASII B & B 7 CONT. 4 SCOULER WILLOW SALIX SCOULERIANA \otimes SAMBUCUS RACEMOSA/ RED ELDERBERRY CORNUS SERICEA SSP. SERICEA (F. STOLONIFERA)/ RED-OSIER DOGWOOD 1 GALLON SPIRAEA DOUGLASII/ DOUGLAS' SPIREA 1 GALLON SYMPHORICARPOS ALBUS/ SNOWBERRY NATIVE CRASS SEED MIX PRO-TIME COMPANION CRAFTSMAN DEVELOPMENT, LLC ELKA PERENNIAL RYE GRASS CREEPING RED FESCUE EMERGENTS COMMON CATTAIL / TYPHA LATIFOLIA: 10 PLANTS PER CLUMP 12" O.C. SOFT RUSH / JUNCUS EFFUSES: 4" DIA RHIZOME CLUMP WITH FULL FOLIAGE 10 PLANTS PER CLUMP 12" O.C. SLOUGH SEDGE / CAREX OBNUPTA: 4" DIA RHIZOME CLUMP WITH GREEN FOLIAGE 10 PLANTS PER CLUMP 12" O.C. 50 "GROW STRAIGHT" TREE TIES TO ALLOW 4" OF MOVEMENT IN ALL DIRECTIONS MULCH AS SPECIFIED (KEEP MULCH CLEAR BURLAP, AND WIRE BASKET OF TRUNK BASE) FROM TOP AND SIDES OF 2"X 2"X 8' WOOD STAKES SET OUTSIDE ROOTBALL - 3" UNDER FIRST LIMBS OR 5' HIGH, ON WINDWARD AXIS 2002 WHICH EVER IS LOWEST. (REMOVE AFTER ONE YEAR) NOTE: STAKE ALL EVERGREEN TREES 8' AND SHORTER AND DECIDUOUS TREES LESS THAN ***** BACKFILL SOIL 4" CALIPER. DO NOT STAKE VINE MAPLES. TREES 1 1/2" CALIPER AND LESS SHALL BE STAKED WITH A SINGLE WOOD STAKE UNLESS OTHERWISE SPECIFIED. 4 DIAMETER OF ROOTBALL + 12" TREE STAKING DETAIL VIE -- 1 " ■ WOOD STAKE, PAINTED WHITE - (WETLAND PLANTINGS ONLY). HO CITY OF W -SHRUB ROOT CROWN TO BE SET 1" ABOVE SURROUNDING GRADE. mittal - MULCH FABRIC AS SPECIFIED -KEEP MULCH FABRIC CLEAR OF SHRUB STEM BASE. SCARIFY EDGES AND BOTTOM DIAMETER OF ROOTBALL + 6" 2 SECTION - SHRUB PLANTING Asp

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LANDSCAPING

POND

DETENTION

Project No. Drawing No. C6.1

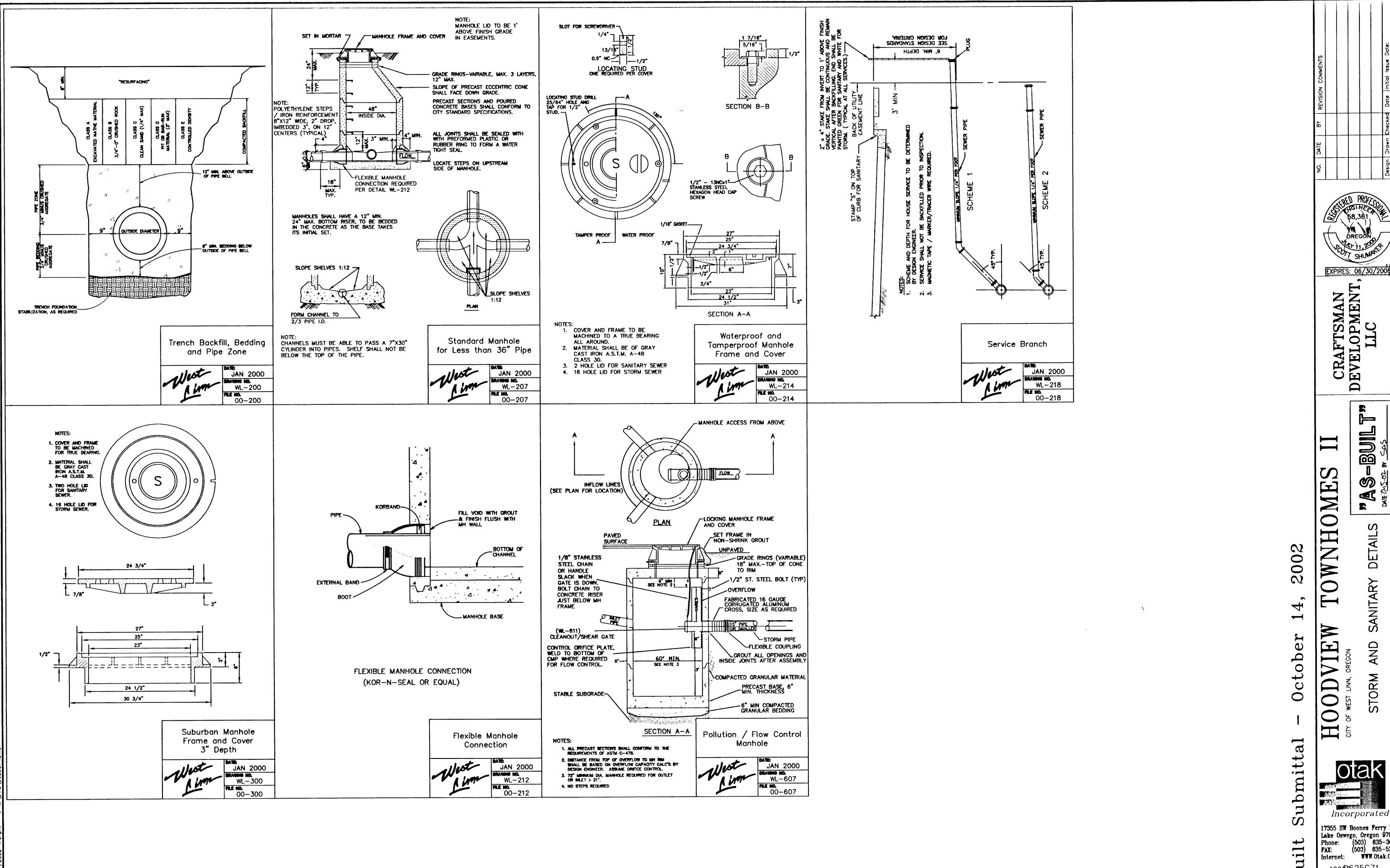
DRAINAGE BLOCKOUT 3" I.D. PLASTIC PIPE WITH COUPLING Ltscale: 40 SIDEWALK ADJACENT TO CURB **BOLLARD** -_____ BOLLARD 3" I.P.S. SCHED. 40 GALV.

STL. PIPE W/ .125 BLK. STL. CAP FILLET
WELDED TO TOP W/ 5/8"W x 2 1/2"L
SLOT CUT (ON CTR) @ BOTTOM ON SIDE
& W/ LOCK HOOK (SEE NOTE 5) Resolved 30'-0" MAX. 10'-0" MIN. D625X100 **s**asstamp WL-210 COVER LID (4 5/8" #)

.125 BLK. STL. W/ 1 1/2" S.S. PIANO
HINGE FILLET WELDED ALL AROUND TO
TOP PL. (ON CTR) TO FIT INTO NOTCH
CUT ON TOP PL. & FILLET WELDED TO
TOP PL. W/ 9" (1 1/4" x 1 1/4") STL.
HINGE CHAIN WELDED TO LINDER SIDE WL-616 CONTRACTION_ DEPRESSED CURB FOR-LINK CHAIN WELDED TO UNDER SIDE (ON CTR) DRIVEWAY (1" LIP MAX) / JOINT BASE ROCK-SEE NOTE - LOCK HOOK 1 1/4"X1 1/2"X2" STEÉL PLATÉ W/ 3/4° ø HOLE DEPRESSED CURB FOR WHEELCHAIR COVER - TOP PLATE (8" x 8") .125 - BLK, STL. W/ 4 3/4" # HOLE (CENTERED) W/ 2"W x 1 1/4" CUT NOTCH (ON CTR) OPPOSITE SIDE OF STL. ROD & 3/4" RAD. NOTCH (ON CTR) SAME SIDE AS STI DOD TOD FUEL W RAMP 2% MAX SLOPE TYPICAL CURB & GUTTER (ON EAL SIDE) DEPRESSED CURB-SLEEVE) COVER - LOWER PLATE
(8" x 8") 125 BLK. STL. W/
4" # HOLE (CENTERED) FILLET
WELD TO PIPE SLEEVE ALL FOR DRIVEWAY SIDEWALK AWAY FROM CURB (1" LIP MAX) -PAVEMENT 40 PIPE SLEEVE 3 1/2" L.P.S. SCHED. 40 PIPE BLK. STL. (12 3/8" LONG)
W/ 5/16" STL. ROD X 1 /14" L.
WELDED THRU SLEEVE (1" UP . CONCRETE SHALL HAVE A BREAKING -DEPRESSED CURB STRENGTH OF 3300 PSI AFTER 28 DAYS FOR WHEELCHAIR DRIVEWAY (1" MAX, LIP) FROM BOTTOM PL. OPPOSITE SIDE OF HINGED COVER LID. . CONTRACTION JOINTS (2% MAX SLOPE) 2% SLOPE A) TO BE PROVIDED -AT EACH POINT OF TANGENCY BOTTOM PLATE 5" x 5" .125 BLK. STL. W/ 3/4" # HOLE IN CTR -AT EACH COLD JOINT -AT EACH SIDE OF INLET STRUCTURES FILLET WELD ALL AROUND TO TYPICAL STRAIGHT CURB -AT BOTH SIDES OF AN APPROACH B) SPACING TO BE NOT MORE THAN 15 FEET C) THE DEPTH OF THE JOINT SHALL BE AT EXPIRES: 06/30/2006 -- 2" OF 3/4" MINUS LEAST 1/3 OF THE THICKNESS OF CONCRETE D) EXPANSION JOINTS SHALL NOT BE USED SECTION A-A . BASE ROCK - 1-1/2"-0", 95% COMPACTION ROCK SHALL BE TO SUBGRADE OF THE FTSMAN LOPMENT LLC COMPACTED SUBGRADE 1. HOT-DIP GALVANIZE ALL STEEL PARTS AFTER FABRICATION STREET SECTION OR 4" IN DEPTH, WHICHEVER IN ACCORDANCE WITH ASTM A123-59 OR ENTIRE SLEEVE ASSEMBLY CAN BE PAINTED (SEE NOTE 4) . Drainage block - 3" Dia. Plastic Pipe A) DRAINAGE ACCESS THROUGH EXISTING 2. MIN. ULTIMATE 28 DAYS COMPRESSIVE STRENGTH OF CURBS SHALL BE DONE BY: CONCRETE 2,500 PSI 1. CONCRETE SHALL HAVE A MINIMUM BREAKING Typical Utility -VERTICAL SAWCUT OF CURB 18" EACH SIDE STRENGTH OF 3300 PSI AFTER 28 DAYS, Residential Driveway Typical Curbs OF DRAIN AND RE-POURED TO FULL DEPTH 3. BOLLARD AND SLEEVE TO BE PRIMED AND PAINTED Placement Detail 6 SACK MIX. "TRAFFIC YELLOW" COLOR EXTERIOR ENAMEL 2. CURB SHALL BE TROWELED JOINT WITH A STAMP TOP OF CURB WITH "W" AT WATER MIN. 1/2" RADIUS ALONG BACK OF CURB. D E JAN 2000 SERVICE CROSSING AND "S" AT SANITARY REMOVABLE BOLLARD 3. DRIVEWAY SHALL BE A MINIMUM 6" THICK. LATERAL CROSSING WL-503 WL-501 WL-500 00-503 00-501 00-500 R/W THIS SURFACE WATER CONTROL FACILITY
18 IN YOUR CARE PLAT OF (MERT PLAT NAME) -ROMAC STYLE 501 COUPLING(STRAIGHT TRANSITION, LONG BARREL) MIN. 2" OF 3/4"-0 (OR APPROVED EQUAL) CRUSHED AGGREGATE BASE BETWEEN NEW AND EXISTING SANITARY PIPE (EACH CONNECTION). TYPICAL SIDEWALK ABUTTING CURB NEW 48" STD. MANHOLE 3 FT. (TYP.) SIDEWALK WIDTH 200 __FLOW 6' PLANTER OLD NEW EXISTING SANITARY SEWER LINE MAKE CLEAN SAWCUT ORM MIN. 2" OF 3/4"-0 CRUSHED AGGREGATE BASE SIDEWALK AWAY FROM CURB PROVIDE APPROVED SAND COLLAR L OR KOR-N-SEAL CONNECTION (OR APPROVED EQUAL) SPECIFICATIONS: AT MANHOLE FOR PVC PIPE PENETRATION. 1. CONCRETE SHALL BE 3300 PSI AT 28 DAYS, 6 SACK MIX, SLUMP RANGE OF 1 1/2" TO 3". SIZE: 48" BY 24" 2. PANEL LENGTHS SHALL BE EQUAL TO THE SIDEWALK WIDTH, BUT MAY BE ADJUSTED WITH THE CITY ENGINEER'S APPROVAL. MATERIAL: GRADE "B" OR BETTER EXTERIOR PLYWOOD 田 PAINT: FACE - 3 COATS OUTDOOR ENAMEL (SPRAYED). 3. CONTRACTION JOINTS (1/3RD OF THE THICKNESS OF CONCRETE) SHALL BE PLACED EVERY THIRD PANEL, qo BACK - 1 COAT OUTDOOR ENAMEL (SPRAYED). WITH A MAX. SPACING OF 18 FEET. NEW PVC (ASTM 3034, SDR 35) PIPE JOINTS SHALL ALSO BE PLACED AT THE SIDES OF DRIVEWAY APPROACHES, UTILITY VAULTS, AND LETTERING: SILK SCREEN ENAMEL WHERE POSSIBLE, OR HAND PAINTED ENAMELS. PIPE MATCHING EXISTING SANITARY SEWER LINE SIZE WHEELCHAIR RAMPS. COLORS: BLACK AND WHITE. WHITE BACKGROUND, LETTERING AND BORDER IN 4. A CURING COMPOUND SHALL BE USED. WHITE REFLECTIVE SHEETING SHALL BE USED IN CASE OF RAIN. BLACK ct(TYPICAL CONNECTION, MULTIPLE CONNECTIONS MAY EXIST) B. FOR SIDEWALKS ADJACENT TO THE CURB AND POURED AT THE SAME TIME AS THE CURB, THE JOINT TYPE FACE: HELVETICA. 1 1/2" TALL WITH 7/8" SPACING BETWEEN LETTERS AND BETWEEN THEM SHALL BE A TROWELED JOINT WITH A MIN. 1/2" RADIUS. OUTER BORDER. OUTER BORDER 1/2" WIDTH RAMP TEXTURE DETAIL 8. THE SIDEWALK SHALL HAVE A MIN. THICKNESS OF 6" IF MOUNTABLE CURB IS USED OR IF THE INSTALLATION: SECURED TO CHAIN LINK FENCE IF AVAILABLE, OTHERWISE INSTALL ON SIDEWALK IS INTENDED AS A PORTION OF THE DRIVEWAY. OTHERWISE, THE SIDEWALK SMALL HAVE TWO 8 FT. LONG 4" X 4" POSTS, PRESSURE TREATED, INSTALLED IN 3 FT. NOTES:

1. THE "AMERICANS WITH DISBILITIES ACT" (ADA) REQUIRES THAT
ACCESS RAMPS TO SIDEWALKS CONFORM TO ALL FEDERAL GUIDE—
LINES. EXCEPTIONS TO THE REQUIREMENTS IN THIS DRAWING MUST
BE APPROVED BY THE CITY ENGINEER. 7. DRAIN BLOCKOUTS IN THE CURB SHALL BE EXTENDED TO THE BACK OF THE SIDEWALK WITH A DEEP CONCRETE FILLED POST HOLES (8" MIN. DIA.) 3" DIA. PLASTIC PIPE AT A 2% SLOPE. A CONTRACTION JOINT SHALL BE PLACED OVER THE PIPE. Single Curb Ramp Manhole Detail-Plan View NO ABOVE GROUND UTILITIES ARE PERMITTED WITHIN RAMP AREA. Surface Water Facility Concrete Sidewalk (For Use At Intersection New Manhole to Existing RAMP SURFACE SHALL BE TEXTURED WITH RAISED DIAMOND TEXTURE. Cross Section (2) Local Streets Only) TEXTURING SHALL BE DONE WITH AN EXPANDED METAL GRATE STAMPED INTO THE CONCRETE. Sewer Line Connection . CONCRETE STRENGTH SHALL BE 3300 PSI. JAN 2000 JAN 2000 JAN 2000 5. PLACE CONTRACTION JOINTS AS SHOWN ABOVE. WL-210 00-507A 00-210 Incorporated 7355 SW Boones Ferry Rd Lake Oswego, Oregon 97035 Phone: (503) 635-3618 FAX: (503) 635-5395 WWW.Otak.COM Internet: Project No. Drawing No. S Sheet No.

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STORM

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NOTES:
1. CONCRETE STRENGTH SHALL SE 3300 PSI. B¬ 2. PRECAST BASE WALLS SHALL BE A MINIMUM 4" THICK. CAST-IN-PLACE BASE WALLS SHALL BE 6" THICK. TOP VIEW STEEL FRAME CAST IN TOP SLAB OR BASIN (IF TOP SLAB IS CAST-IN-PLACE) 6" -2'-3 3/8"--6" |----3'-3 3/8'----| SECTION B-B SECTION A-A 2" X 3/8" FLAT BARS 5/8" X 2 1/2" SQ. EDGE FLAT BAR 5/8" X 2 1/2" -X 2'-6 1/4" SQ. EDGE FLAT BARS OPTIONAL:
INSTALL 3" WEEP HOLES
WITH FIELD INSTALLED
MESH SCREEN FOR
SUBGRADE DRAINAGE PLAN PLAN SQ. EDGE FLAT BARS 18" SUMP TYPE DIA. PIPE W STANDARD 10"-12" 1'-10 3/4" 1'-9 3/8" STANDARD 1'-9" 1'-8 1/4" 1 1/2" | SPACING 3" ON CENTER | -1 1/2" 2'-8 - 1'-8 7/8" -- 2'-8 7/8" -SECTION A-A SECTION_B-B NOTE:
3/8" ROUND OR
RECTANGULAR
CROSS BARS
SHALL BE FILLET
WELDED RESISTANCE
WELDED OR
ELECTROFORGED
TO BEARING BARS 3/16" BOTH ENDS DITCH INLET PLAN 5/8' X 3' BOLT I. CONCRETE STRENGTH SHALL BE 3300 PSI. 1/2" X 2 1/2" SQ EDGE FLAT BARS 2. CATCH BASIN, FRAME, AND GRATES SHALL MEET H20 LOADING. SECTION A-A' 3. INSIDE FRAME DIMENSIONS: 2'-3 3/8", 2'-8 1/2". 3/16' V SECTION B-B 1-2 1/2" 3/4" J 5" X 2 1/2" X 3/8" Standard Ditch Frame & Grate Type G-1 Catch Basin PRECAST TOP SLAB SHOWN WITH GUTTER TRANSITION FLARE IF THE TOP SLAB IS CAST-IN-PLACE, NO FLARE IS REQUIRED IN THE TRANSITION SECTION: MATCH THE TOP FRONT EDGE OF THE FRAME AND THE TOP FRONT EDGE OF THE CAST-IN-PLACE TOP SLAB TO THE NORMAL PAVEMENT GRADE. for Gutter & Curb Inlets with Sump NOTE:
USE VERTICAL BEADS IN CORNERS,
FILLET WELD JOINT ON BOTOM OF
FRAME. GRATE MUST REST FLAT ON
FRAME SURFACE. JAN 2000 WL-603 DRAWNS NO. WL-602A WL-602 NO. OF BARS D 2'-4 3/4" 2'-3 3/6" 2'-3" 9 00-603 00-602A D - PIPE DIAMETER W = BOTTOM WIDTH OF CHANNEL P = WETTED PERIMETER OF CHANNEL 2D OR P ENDWALL (TYPICAL) ROCK CLASSIFICATION BY WEIGHT 6 - 10 10 - 12 12 - 14 200 LBS. 1/4 TON 1/2 TON 14 - 16 16 - 18 1 TON 2 YON SELECTION OF RIP RAP STORM GRATE (SEE NOTE 1) ILES:

1. DIMENSIONS FOR RIP RAP APPLY TO FLOWS

< 2 CFS RIP RAP FOR FLOWS

> 2 CFS MUST BE DESIGNED BY AN ENGINEER
FLOWS > 20 FPS SHALL USE ENERGY DISSIPATOR 0=1=== REGERR 2. TYPE OF INP RAP A. REGULAR QUARRY STONE CLASS 50-200 B. COBBLESTONE
C. CONCRETE (ONLY ALLOWED UPON APPROVAL
OF THE DISTRICT) 3D OR 3W 6 FT. MIN. 1. USE CONCRETE HAVING A 28 DAY DESIGN STRENGTH OF 3300 PSI. 3. PLACEMENT 2. OUTLET WING WALL SHALL BE USED FOR ALL OUTFALL PIPES FROM A. MINIMUM DEPTH = 1 1/2 TIMES AVERAGE STONE SIZE B. ROCKS SHALL BE PLACED TO PROVIDE A 3. THIS DETAIL REPRESENTS THE MINIMUM REQUIREMENT. THE NEED FOR ADDITIONAL STEEL, A FOOTING AND DRAINAGE BEHIND THE WALL SHALL BE INVESTIGATED BY THE DESIGN ENGINEER. MINIMUM OF VOIDS.
C. SURFACE ROCKS OR CONCRETE SHALL PROTRUDE AT LEAST 1/2 THEIR VERTICAL DIMENSION. DIMENSION.

D. RIP RAP IS TO BE PLACED OVER A NATURAL BEDDING, OR IT MAY BE GROUTED OR PLACED OVER A GRAVEL BEDDING AS REQUIRED BY THE CITY. 4. FOR PIPES LARGER THAN 33" OR MULTIPLE PIPE OUTLETS, USE DETAIL WL-612. 5. CONCRETE REINFORCEMENT SHALL CONSIST OF: A) ADDING A POLY-FIBER MESH TO THE CONCRETE MIX OR
B) USE (2) #4 BARS ABOVE AND BELOW PIPE AND #4 BARS
AT 6" O.C. VERTICALLY. NOTES:

1. USE SUBURBAN TYPE ONLY IN NON-TRAFFIC AREAS, AND ONLY WITH APPROVAL BY THE CITY. 2. COVER AND FRAME SHALL BE GRAY CAST IRON ASTM A-48 CLASS 30.
3. COVER AND FRAME TO BE MACHINED TO A TRUE BEARING ALL AROUND. 4. NOTCH LID FOR LIFTING HOOK.
5. OPEN GRATES REQUIRE APPROVAL BY CITY, AND MUST BE BICYCLE SAFE IF USED IN TRAFFIC AREAS. Outlet Headwall (For Outlet Pipes of Storm Sewer Outfall Cleanout / Shear Gate Manhole Covers SUBURBAN AND STANDARD 10" to 33") MANHOLE FRAME AND COVER JAN 2000 WL-614 WL-613 WL-611

2002 ctob

MES M VIE

EXPIRES: 06/30/2006

CRAFTSMAN DEVELOPMENT, LLC

STORM



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NOTES: 4. ALL FITTINGS IN CONTACT W/CONCRETE SHALL BE WRAPPED IN PLASTIC. HYDRANT DRAIN HOLES TO REMAIN OPEN TO DRAIN ROCK AND OPERATIONAL. HYDRANTS TO BE MUELLER CENTURION
MDL A-423 ONLY WITH 1 1/2" OPER. NUTS
OR CLOW MEDDALION F-2545. S. MIN. 4 CU. FT. OF 1 1/2"-3/4" CLEAN DRAIN ROCK SHALL BE PLACED AROUND SHOE UP TO 1. GRAVITY VERTICAL THRUST BLOCKS SHALL BE DESIGNED BY THE ENGINEER. 2. KEEP CONCRETE CLEAR OF JOINT AND JOINT ACCESSORIES. FITTINGS SHALL BE A MIN. OF 6" ABOVE DRAIN OUTLETS. 2. HYDRANT COLOR TO BE MILLER EQUIP. WRAPPED IN PLASTIC PRIOR TO PLACEMENT OF CONCRETE. ENAMEL O E 40 (SAFETY YELLOW). 6. WHERE PLANTER STRIP EXISTS, HYDRANT SHALL BE PLACED SO FRONT PORT IS A 3. CONCRETE THRUST BLOCKING SHALL BE POURED AGAINST UNDISTURBED EARTH. 3. JOINTS TO BE RESTRAINED BY 3/4" DIA. 4. CONCRETE MIX SHALL HAVE A MIN. 28 DAY STRENGTH OF 3300 P.S.I. MINIMUM OF 24" BEHIND FACE OF CURB. GALVANIZED STEEL RODS AND THRUST 5. THRUST BLOCK VOLUMES FOR VERTICAL BENDS HAVING UPWARD RESULTANT THRUSTS BLOCKS OR MEGA LUGS AND THRUST 7. WHERE INTEGRAL S/W & CURB EDSTS, HYD. SHALL BE PLACED AT BACK OF SIDEWALK, OR AS DIRECTED BY ENGINEER. ARE BASED ON TEST PRESSURE OF 150 P.S.I.G. AND THE WEIGHT OF CONCRETE = 6. VERTICAL BENDS THAT REQUIRE A THRUST BLOCK VOLUME EXCEEDING 5 CUBIC YARDS REQUIRE SPECIAL BLOCKING DETAILS. SEE PLANS FOR VOLUMES SHOWN INSIDE 8. BURY OF HYDRANT SHALL BE MEASURED FROM FINISHED GRADE TO BOTTOM OF CONNECTING PIPE. 1-4 1/2" PUMPER 9. THRUST BLOCK AT FIRE HYDRANT TEE SHALL HAVE A 3.7 SQ. FT. BEARING AREA. NOZZLE -7. PAYMENT SHALL BE THE SAME AS FOR HORIZONTAL THRUST BLOCKS. 8. ALL REBAR SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM-123 (MIN. 3.4 MIL). 10. HYDRANT VALVE SHALL BE MUELLER RESILIENT WEDGE GATE VALVE #A-2360-16 ONLY. 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 11. WHERE NO SIDEWALK EXISTS, PLACE A 6'x 6'x 4'' THICK A.C. OR CONC. APRON AROUND HYDRANT, RESTRAINED FITTING. 9. FOR HORIZONTAL THRUST BLOCK DETAILS SEE DWG NO. WL-406. 12. NO EXTENTIONS ALLOWED. HOSE -SIZED LIKE HORIZONTAL THRUST BLOCKS -GALVANIZED RODS OVER FITTING AND CAST IRON VALVE BOX, VALVE BOX TO BE LID, & EXTENSION A.C. ENCASED IF EMBEDDED IN CON-LID, & EXTENSION
(SEE STND. DTL.'S
WL-411 & WL-412)
AREA CRETE (SEE TABLE FOR SIZES). MATERIAL NEED TO BE COATED BEFORE BACKFILL THRUST BLOCK PROFILE PROFILE BEARING AREA TO BE EQUIV. UNDISTURBED SOIL ~ NORMAL VERTICAL TO SIZING GRAVITY VERTICAL THRUST BLOCK THRUST BLOCK UNDISTURBED EARTH FITTING ROD EMBED—
SIZE SIZE MENT

12" AND LESS #6 30" VOLUME OF THRUST BLOCK 6" D.I. PIPE IN CUBIC YARDS (VERTICAL BENDS) UN-DISTURBED EARTH CONC. BLOCK HAVING MIN.
1.75 SQ. FT. BEARING AREA,
AND MIN. 8" THICKNESS. 6" SIDE OUTLET Standard Fire Hydrant Standard 1" Water Service Vertical Thust Blocking Assembly JAN 2000 JAN 2000 JAN 2000 WL-401 WL-402 WL-407 FITTING TEE, WYE, STRADDLE 90° BEND ① 45° 22 1/2° 11 1/2° SIZE & ① BLOCK PLUGGED CROSS BEND BEND (Inches) HYDRANTS ② TEE PLUGGED—RUNS ④ ④ -6%-VALVE BOX TO BE CONCRETE ENCASED IF --6--NOT IN PAVED AREA CAST IRON VALVE BOX, • • "VANCOUVER" STYLE, MODEL NO. 910 A = VARIABLE. MAXIMUM OF 11" . ALL VALUES ARE BASED ON THE FOLLOWING ASSUMPTIONS: AVG. PRESSURE = 100 PSI X 2 (safety factor); 1500 PSF SOIL BEARING 6" PVC SEWER PIPE, ASTM D3034, SDR 35 B = 7 MINIMUM 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. 6. THRUST BLOCKS FOR PLUGGED CROSS AND PLUGGED TEE SHALL HAVE #4 REBAR LIFTING LOOPS INSTALLED AS SHOWN. VERTICAL THRUST DETAILS-SEE DWG. WL-407. 8. 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. STD. 6 F.H. NOTES: 1. VALVE BOXES SHALL BE CENTERED DIRECTLY OVER THE VALVE NUT IN A NOTCH 1/16" DEEP AND 3/8" LONG INDICATING VERTICAL POSITION. 2. VALVE BOX TOP SHALL BE ADJUSTED DIRECTION OF MAIN TO MEET FINISHED GRADE. 3. PVC SHALL BE ONE CONTINUOUS PIECE- NO BELLS OR COUPLERS. 4. ON VALVES 8" AND LARGER, PVC SHALL BE NOTCHED OVER VALVE PACKING BOLTS SO PVC SITS ON BONNET. Standard Valve Box Horizontal Thrust Blocking Detail "VANCOUVER" 18" TALL VALVE BOX JAN 2000 WL-411 00-411

KREF LIST

Ltscale: 40

D625X100

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2002 qs. ME 2 M VIE D 0

COTT SHUMP

EXPIRES: 06/30/2006

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Project No. Drawing No.