Tillamook County

DEPARTMENT OF COMMUNITY DEVELOPMENT
BUILDING, PLANNING & ON-SITE SANITATION SECTIONS

1510 – B Third Street
Tillamook, Oregon 97141
www.tillamook.or.us

Land of Cheese, Trees and Ocean Breeze

MEMO

Date: October 13, 2022
To: Tillamook County Planning Commission
From: Sarah Absher, CFM, Director
Subject: Riverview Meadows Phase 2 Subdivision Request #851-21-000415-PLNG

Included with this memorandum are copies of updated information requested by the County to continue review of Riverview Meadows Phase 2. Updated information is as follows:

- Public Commentary
- Recommended Conditions of Approval
- Updated plat sheets- Riverview Meadows Phase 2
- Updated street design review and stormwater infrastructure information- Riverview Meadows Phase 2
- December 13, 2021, Incomplete Application Letter from Department
- May 12, 2022, Response from Applicant
- May 12, 2021, Letter to Deem Application Complete from Applicant
- ARD Engineering Traffic Impact Study
- Updated Utility Service Provider Letters
- Riverview Meadow Phase 1 CCRs (Will Apply to Phase 2)
- Clerk's Instrument #2022-06056 Dillard to Dillard
- Addendum to Geologic Hazard Report dated May 12, 2022, prepared by Morgan Civil Engineering, Inc.
- "Tract A", Riverview Meadows Phase 1, Legal Description
- Wendie Kellington Email Dated October 10, 2022
- Ray Moore, PE, PLS, Email Dated October 7, 2022 & Fire Flow Sketch
- Morgan Civil Engineering Letter Dated August 9, 2022, re: Water System Improvement & Attachment
- City of Nehalem Letter Dated October 12, 2022
- Kyle Ayers, PE, Nehalem City Engineer, Email Dated October 13, 2022
- Tillamook County Public Works Email Dated October 13, 2022

Ownership and access concerns continue to be addressed. Applicant and staff will provide updates at the October 20, 2022, public hearing. Given the date received of the information outlined above, there was inadequate time to prepare a supplemental staff report. Staff will be prepared to speak to the information outlined above at the October 20, 2022, hearing.

If you have any questions about the information received, please do not hesitate to contact me.

Thank You,

Sarah Absher

TILLAMOOK COUNTY PLANNING COMMISSION

LOCATION
Port of Tillamook Bay Conference Center
4000 Blimp Boulevard, Tillamook, OR 97141

HEARING DATE
October 20, 2022- Beginning at 7:00p.m.

VIRTUAL & TELECONFERENCE MEETING INFORMATION

For teleconference access the evening of the hearing, please call 971-254-3149. Conference ID: 887 242 77#. Virtual Meeting Access: https://www.co.tillamook.or.us/commdev. *Click on Virtual Teams Link. *Microsoft Teams Meeting Format.*

I. **CALL TO ORDER**

II. **ROLL CALL**

III. **OLD BUSINESS:**

#851-21-000415-PLNG: Request for tentative subdivision plat approval of "Riverview Meadows Phase 2", a 38-lot subdivision proposed on a property located within the City of Nehalem Urban Growth Boundary together with Geologic Hazard Report for Riverview Meadows Phase 2, #851-21-000414-PLNG. The subject property is zoned Nehalem Medium-Density Residential (NH_R1) and Nehalem Residential Trailer (NH_Rt). The subject property is accessed via Riverview Meadows Lane, a private road, and designated as Tax Lot 3600 of Section 23B, Township 3 North, Range 10 West of the Willamette Meridian, Tillamook County, Oregon.

IV. **NEW BUSINESS: NONE**

V. **AUTHORIZATION FOR CHAIR TO SIGN APPROPRIATE ORDERS, IF NECESSARY**

VI. **ADMINISTRATIVE DECISIONS:** Administrative Decisions are available for public review on the Tillamook County Department of Community Development website: https://www.co.tillamook.or.us/commdev/landuseapps

VII. **HOUSING COMMISSION UPDATE**

VIII. **DEPARTMENT OF COMMUNITY DEVELOPMENT REPORT**

IX. **ADJOURNMENT**

The Port of Tillamook Bay Conference Center is accessible to citizens with disabilities. If special accommodations are needed for persons with hearing, visual, or manual impairments that wish to participate in the meeting, please contact 1-800-488-8280x3423 at least 24 hours prior to the meeting in order that appropriate communications assistance can be arranged.

Lynn Tone

From: Nancy Bond/Dan Koniuck <hapa3838@nehalemtel.net>
Sent: Monday, September 5, 2022 5:46 PM
To: Sarah Absher
Cc: Lynn Tone
Subject: EXTERNAL: Addendum to our 6 Jul 2022 letter re: 851-21-000415-PLNG, Tillamook County

Sarah and Lynn:

Here are a letter with relevant photos as part of our addendum to above Planning Commission project. Thank you in advance. Dan Koniuck

September

Tillamook County Planning Commission
1510-B Third Street
Tillamook, Oregon 97141

Addendum to 6 Jul 2022 letter from owners of TL1100

Dear Chairperson and Commission:
Re: #851-21-000415-PLNG

Refer to Item #2:

A traffic survey was performed by Michael Ard, PE, of Ard Engineering, dated 9 Aug 2022. traffic entering and exiting Riverview Meadows Ln from the south only. Daily traffic occurs well (see photo #1)

On Aug 30, A flatbed Parr Lumber delivery truck exited Riverview Meadows Ln, heading nc Fork. A captured video (see photo #1 and #2) shows that his exiting pattern was off the ro typical during the past 12 years under Phase 1 construction.

This survey reveals that this development could create a potential traffic flow of 850-100(Riverview Meadows Ln. (See Ard Engineering Traffic Impact Study photo # 3). Presently, v the services needed, there are up to 150 trips per day. This is in contrast to the south acc even though the grade is 6% over a distance of 2000 feet.

Ard Engineering also confirmed that the incline of Riverview Meadows Ln was steep at 17% feet. We estimated it at 12%. We agree with Ard Engineering's findings in this instance

The eastern edge of Riverview Meadows Ln. has a road shoulder of 4 feet before it drops 2 degrees. Since there are no guard rails, if a vehicle were to meet another vehicle, they wou over, leaving the road surface. The car would then roll down the hillside into our home buil only the car occupants, but any of our family present. With the excessive downhill speed (road, it is an accident waiting to happen. (see photo # 5)

Refer to Item #4:

During the rainy season, water will run through the properties(TL 3500, 401, 405, 1100, 10(roadway and ditches. It then goes under North Fork Road and into a wetlands adjacent to t Morgan Engineering (see report of 12 Aug 2022) did not consider this concern (see photo#

2

directions the narrow width of this roadway may require similar slowing t
times. Accordingly, the carrying capacity of this roadway is expected to be
residential queuing street, at approximately 1,000 vehicles per day. With c
development, it is projected that the roadway will carry approximately 850
within the capacity of the roadway.

It is anticipated that the new south access roadway will be constructed in a
site trips in lieu of River View Meadows Lane through the use of monume
wider, more accommodating road design. This may reduce the traffic level
Lane. Regardless, larger trucks should be directed to use the new south site

#3

12

(approximately 1.5 percent of exiting vehicles would be expected to turn onto Nort a vehicle is approaching and may be subject to delay.

Based on the negligible calculated induced delays of 3 seconds per day, any requir mitigation for the limited sight distance would be expected to result in costs exceed benefits. Accordingly, the available intersection sight distance is adequate for the I Meadows Lane approach to Northfork Road and no operational or safety mitigatio recommended.

River View Meadows Lane - Roadway Geometry

In addition to examination of sight distance for the intersection of Northfork Neha River View Meadows Lane, the roadway geometry was evaluated to determine ho cross-section and steep grades may impact operation and capacity of the roadway.

River View Meadows Lane has an initial width of approximately 20 feet in the im Northfork Road; however, it narrows to a width of approximately 18 feet as it exte Roadway grades on River View Meadows Lane were measured to be up to 17 per immediate vicinity of the intersection.

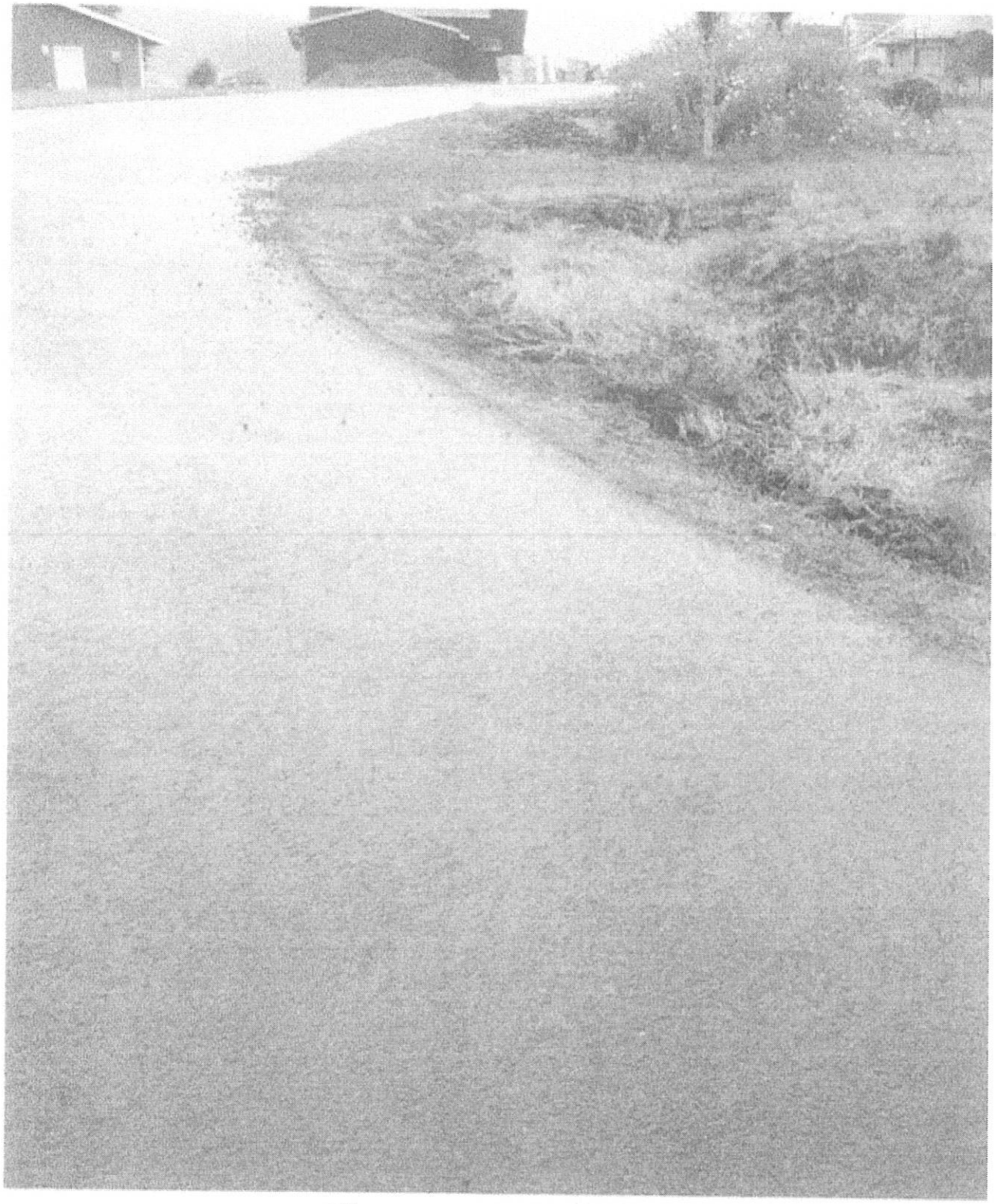
A 20-foot width is commonly used as a minimum width for roadways, primarily i code requirements. Although a roadway can function with lesser width, the carryi roadway is reduced both for passenger cars and for larger vehicles.

In particular, tractor-trailer vehicles and large trucks may have difficulty navigatir are likely to need to cross the roadway centerline on curves. Based on an AutoTur interstate trucks (WB-67) would not be expected to be able to stay within the pave even when taking both travel lanes. These vehicles would be expected to trailer ov surface, crossing through the area where a stop sign is located. Evidence that such previously occurred was present at the intersection upon our site visit, since the st snapped off and a temporary stop sign on an A-frame stand was deployed at the ir

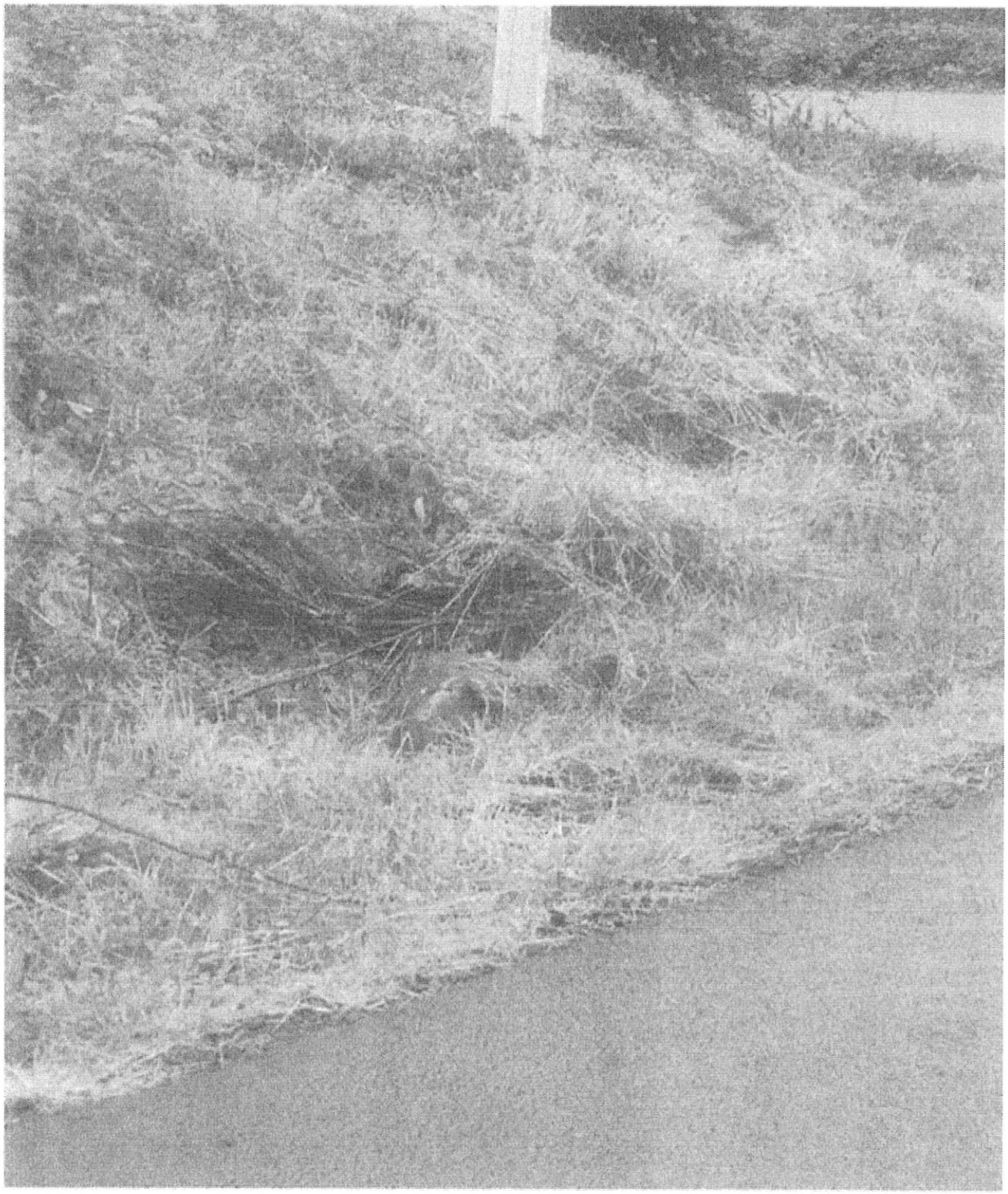
An analysis of other vehicle types also demonstrated that:

1) WB-40 tractor-trailer trucks, SU-40 single-unit trucks, garbage trucks and stay within the paved road surface area, but require the full width of River Lane for maneuvering in the vicinity of Northfork Road;
2) The roadway width can accommodate continuous two-way travel of passe

TLOT 1100 #5



Lot 3500 #6



TLOT 3500 #8 3S

TLOT 405 #9 3SE

TLOT 3500 #7

Lynn Tone

From: Nancy Bond/Dan Koniuck <hapa3838@nehalemtel.net>
Sent: Monday, September 5, 2022 5:55 PM
To: Sarah Absher
Cc: Lynn Tone
Subject: EXTERNAL: Recent Incident at Riverview Meadows Ln and Development

This just happened on 4 Sep 2022 and confirmed some of the points that we had made in our letters. Thanks, Dan

Fire Department Visit

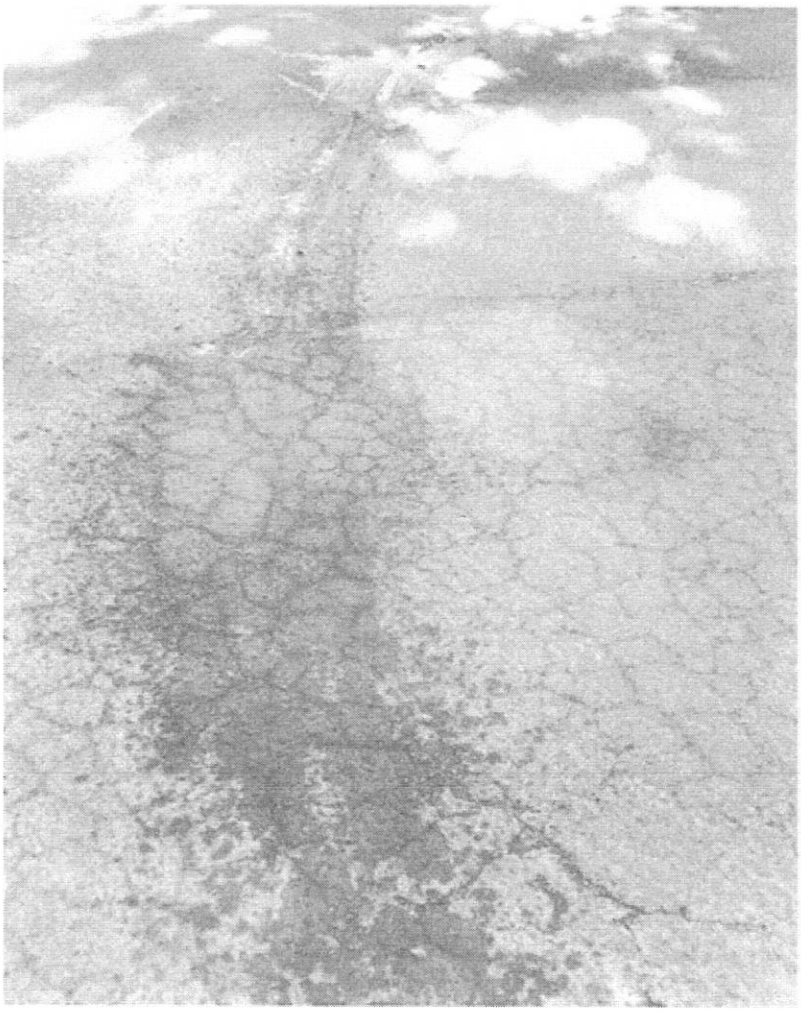
During the last week of Aug, 2022, I met with Fire Captain Frankie Knight III of The Nehalem Fire District. We discussed the approach to Riverview Meadows Development via Riverview Meadows Ln. He told me that fire and emergency crews will be using the south access road (9 % grade incline) to the development. I suggested doing a "dry run" with fire truck(s) to experience the route. Surprisingly, he did so on Sep 4 2022 around 10 am, but he used the private road of Riverview Meadows Ln. Coincidently, I happened to be in my driveway watching his approach and at the same time, my neighbor was recording this also, although I wasn't aware until of it later.

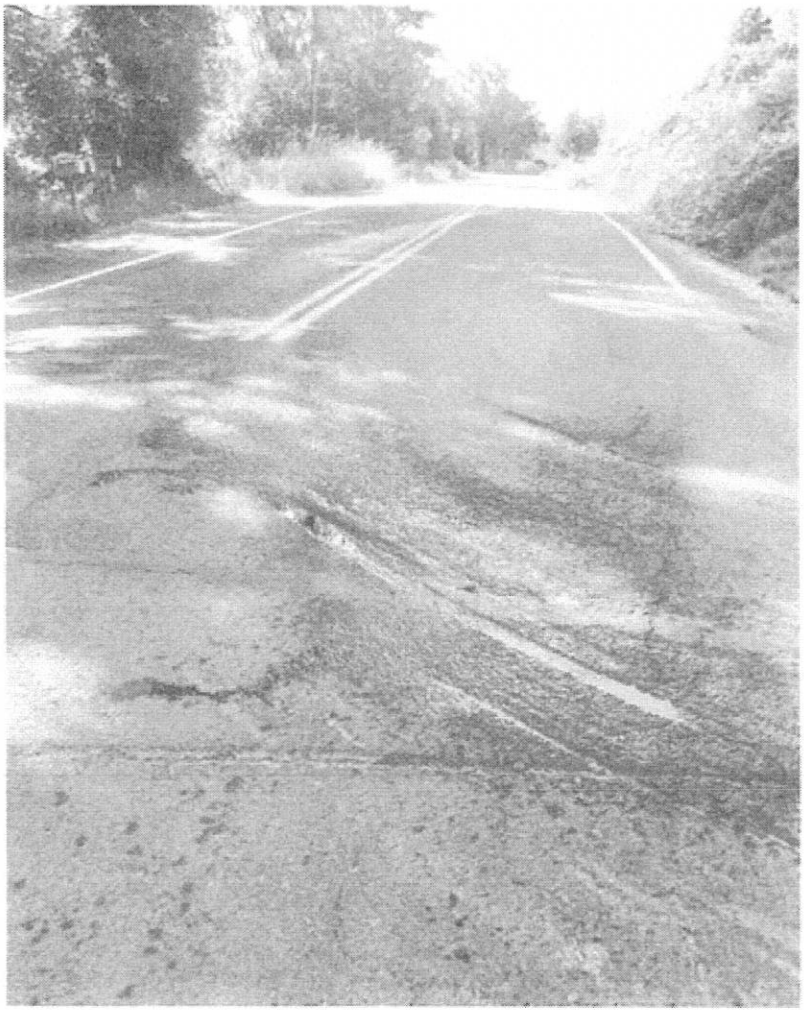
When I met the captain, at the "top" of the development, he told me that they would not be using the south access road until it was asphalted (paved). Coming up the road was tight but doable he said. Ten minutes after I left him, he was descending (17% grade) Riverview Meadows Ln and onto NorthFork Rd, southbound. The front end of the firetruck struck the roadway, as he was crossing over the road, onto the east shoulder, before he proceeded straight. We witnessed water leaking from the truck as he left and photos were taken immediately. This is more proof of the incidents that are to come with any future residential development. Most of the residents here are senior citizens, 70's to 80's plus, and I imagine that there will come a time when 911 will be called and their approach will be on Riverview Meadows Ln.

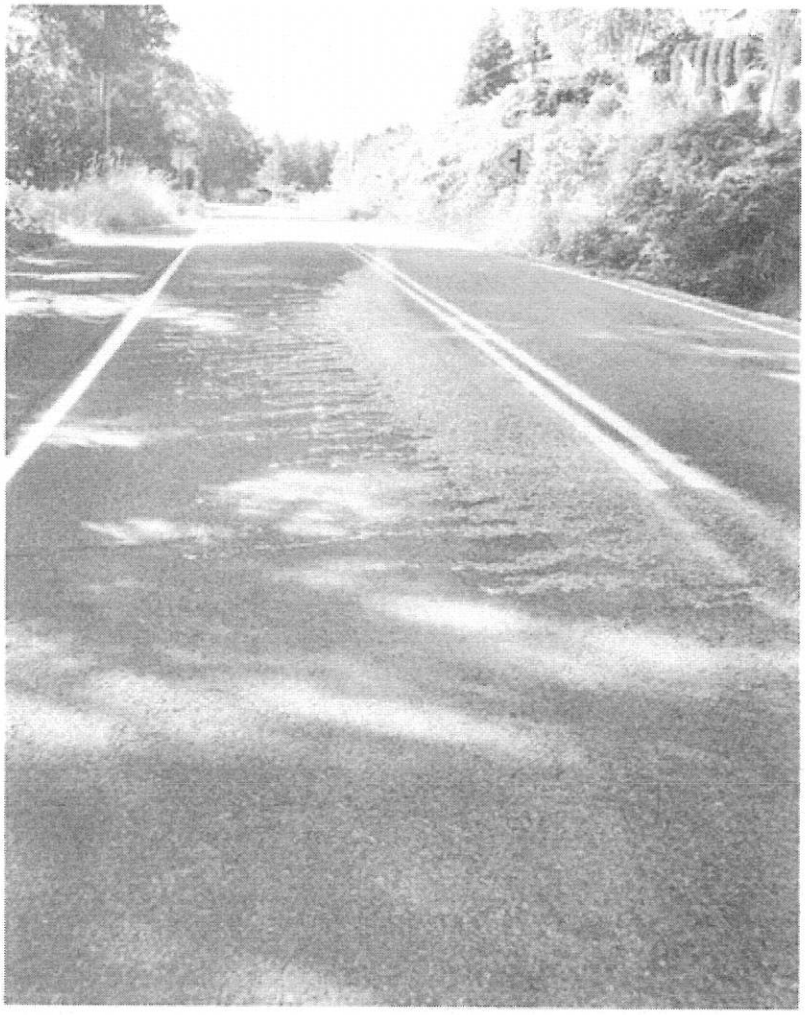
Thank you

Dan Koniuck at 14145 Riverview Meadows Ln
503-368-5853

Koniuck







Tillamook County

DEPARTMENT OF COMMUNITY DEVELOPMENT
BUILDING, PLANNING & ON-SITE SANITATION SECTIONS

1510 – B Third Street
Tillamook, Oregon 97141
www.tillamook.or.us

Land of Cheese, Trees and Ocean Breeze

Should the Planning Commission choose to approve the "Riverview Meadows Phase 2" Tentative Plat, the following draft Conditions of Approval are recommended by the Department and the City of Nehalem.

Tentative Subdivision Approval Request #851-21-000415-PLNG Together with Geologic Hazard Report Review #851-21-000414-PLNG:

Chapter 156.022 SUBMISSION OF FINAL PLAT limits this approval to 12 months. Within one year after approval of the tentative plan, the subdivider or expedited land divider shall cause the proposed subdivision, or any part thereof, to be surveyed and a plat thereof prepared in conformance with the tentative plan as approved or conditionally approved; unless an extension is requested in writing and granted by the Planning Commission. A request for extension must be submitted prior to the expiration of one year.

1. By accepting this approval the applicant/owner agree to indemnify, defend, save and hold harmless Tillamook County, and its officers, agents, and employees from any claim, suit, action or activity undertaken under this approval, including construction under a Building Permit approved subject to this approval.

2. The applicant/owner shall obtain all local, state and federal permits prior to construction and/or development.

3. Prior to final plat approval, any significant modifications made to the tentative plat, such as density, lot alignment, and lot size shall require approval from the Tillamook County Planning Commission for those adjustments.

4. All taxes owed shall be paid in full.

5. All easements shall be identified on the final plat. Easements shall have an indicated recorded reference and/or reference the owner's certification of dedication on the final plat.

6. Prior to final plat approval, a copy of the updated Conditions, Covenants and Restrictions shall be provided to the Department of Community Development for review.

7. The applicant/owner shall meet the requirements of the City of Nehalem for water supply system design & construction as set forth in the City of Nehalem letter dated October 12, 2022. A letter of final approval from the City of Nehalem confirming satisfaction with construction of utility improvements is required for Final Plat approval. Letters of water service availability will be required at the time of development of each individual lot.

8. The applicant/owner shall meet the requirements of the Nehalem Bay Wastewater Authority for sanitary sewer system design & construction. A letter of final approval from the Nehalem Bay Wastewater Agency confirming satisfaction with construction of utility improvements is required for Final Plat approval. Letters of sewer service availability will be required at the time of development of each individual lot.

9. The applicant/owner shall obtain necessary permits and authorizations from the Tillamook County Public Works Department, and shall comply with applicable AASHTO standards for road construction and design, utility installation and stormwater facility design requirements deemed necessary to serve the development. A letter of final approval from the Tillamook County Public Works Department confirming improvements have been inspected and satisfactorily constructed is required for Final Plat approval. This includes the following requirements:

    a) Construction of a second primary access way through "Tract A" of Riverview Meadows Phase 1 as depicted on the Riverview Meadows Phase 2 tentative plat.
    b) Submittal of a detailed stormwater management plan to the Tillamook County Public Works Department for review and approval. All storm drainage easements shall be recorded on the final plat and shall be of adequate width for access and maintenance of drainage facilities.
    c) Maintenance responsibilities for the stormwater management facilities is the responsibility of the developer and HOA, and continued maintenance responsibilities shall be included in the Conditions, Covenants and Restrictions for "Riverview Meadows Phase 2".
    d) Approval of proposed street names by the Department of Community Development and the Public Works Department.

10. The applicant/owner shall submit an updated riparian corridor mitigation and protection plan for Bob's Creek. The updated plan shall be implemented prior to final plat approval.

11. The applicant/owner shall submit a statement from the project engineer, certifying Phase 2 subdivision facility improvements were constructed in a manner consistent with the requirements and recommendations outlined in Geologic Hazard Report #851-21-000414-PLNG. Certification is required for Final Plat approval.

12. The property owner shall submit a statement or geologic hazard report addendum from the project engineer, certifying the proposed development plans for each individual lot meet the mandatory development requirements of the geologic hazard report at the time of consolidated zoning and building permit application submittal. Building permits shall not be issued until evidence is submitted to the Department confirming the proposed development plans, including accessory structures, meet the requirements of Geologic Hazard Report #851-21-000414-PLNG.

13. The property owner shall have all foundation, footing and other grading preparation activities for structural improvements inspected and approved by a registered geotechnical professional or their designee. A letter from the geotechnical professional or their designee shall be submitted to the Tillamook County Department of Community Development **prior to** a footing inspection by the local building inspector.

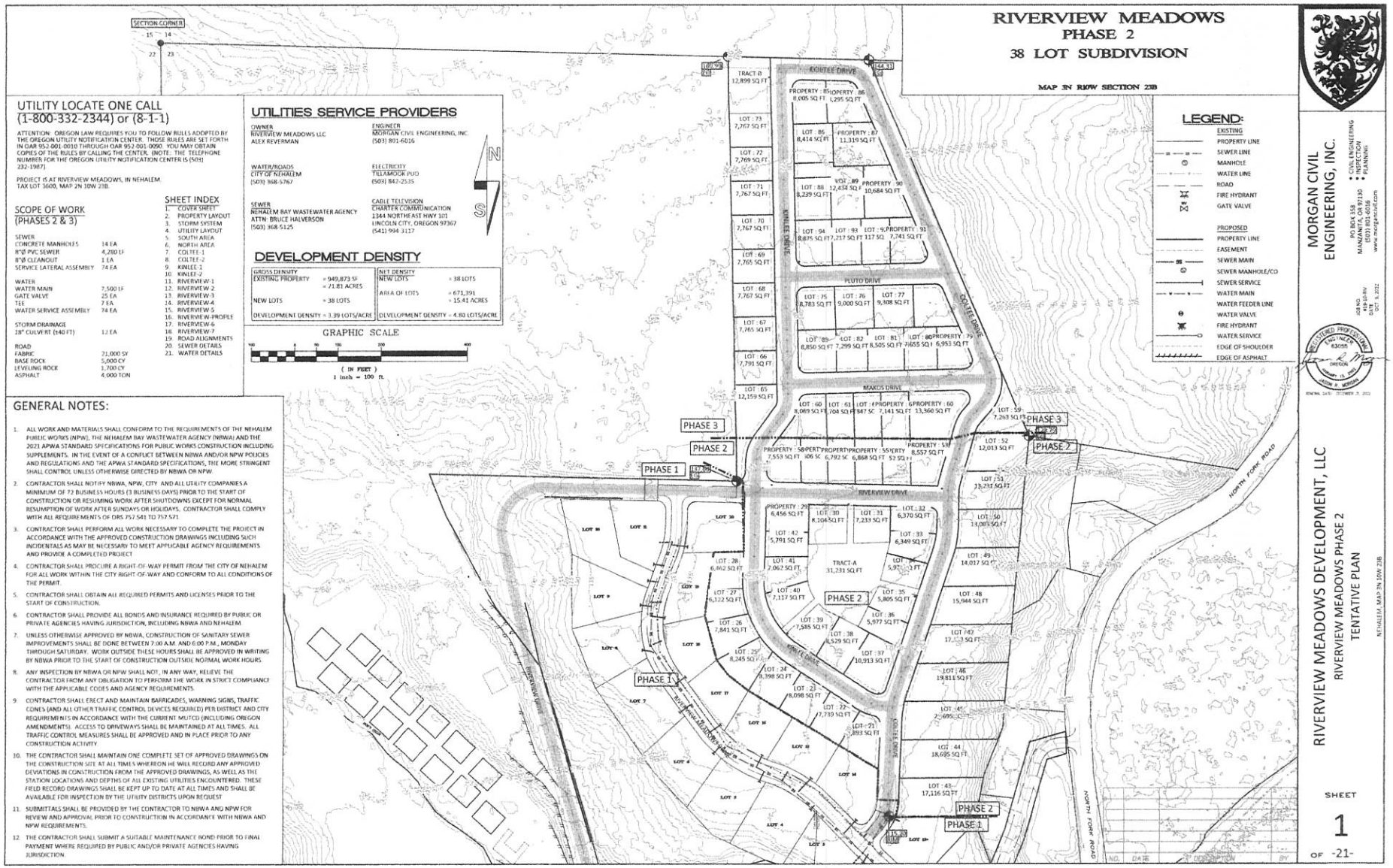
14. The property owner shall remove only that vegetation necessary to accommodate the proposed development. Natural vegetation shall remain on all areas not required for construction. Revegetation of all disturbed areas shall occur immediately following completion of any approved site development. All bare slopes shall be promptly revegetated to avoid erosion and sloughing. An appropriate fertilizer shall be used to speed the establishment of the cover material. A jute matting, straw cover, or other stabilization product shall be placed over the soil to protect against erosion, before the seeds are allowed to germinate. Native shrubs and trees shall be planted to contribute to the long-term stability of the site.

15. All excavated material shall be hauled off site to an approved upland location or place behind a retaining wall. No excavated material shall be used as sidehill fill.

16. The property owner shall periodically monitor site conditions and take actions to ensure individual lot development standards outlined in Geologic Hazard Report review #851-21-000414-PLNG are implemented and that these Conditions of Approval are met. The property owner shall supply the general contractor or builder with a copy of the Geologic Hazard Report at the time of development.

RIVERVIEW MEADOWS
PHASE 2
38 LOT SUBDIVISION

MAP 3N R10W SECTION 23B



UTILITY LOCATE ONE CALL
(1-800-332-2344) or (8-1-1)

ATTENTION: 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 THE RULES BY CALLING THE CENTER. (NOTE: THE TELEPHONE NUMBER FOR THE OREGON UTILITY NOTIFICATION CENTER IS (503) 232-1987)

PROJECT IS AT RIVERVIEW MEADOWS, IN NEHALEM.
TAX LOT 3600, MAP 2N 10W 23B.

SCOPE OF WORK
(PHASES 2 & 3)

SEWER	
CONCRETE MANHOLES	14 EA
8"Ø PVC SEWER	4,280 LF
8"Ø CLEANOUT	1 EA
SERVICE LATERAL ASSEMBLY	74 EA
WATER	
WATER MAIN	7,500 LF
GATE VALVE	25 EA
TEE	7 EA
WATER SERVICE ASSEMBLY	74 EA
STORM DRAINAGE	
18" CULVERT (±40 FT)	1.2 EA
ROAD	
FABRIC	21,000 SY
BASE ROCK	5,000 CY
LEVELING ROCK	1,700 CY
ASPHALT	4,000 TON

SHEET INDEX

UTILITIES SERVICE PROVIDERS

OWNER RIVERVIEW MEADOWS LLC ALEX REVERMAN	ENGINEER MORGAN CIVIL ENGINEERING, INC. (503) 801-6016
WATER/ROADS CITY OF NEHALEM (503) 368-5767	ELECTRICITY TILLAMOOK PUD (503) 842-2535
SEWER NEHALEM BAY WASTEWATER AGENCY ATTN: BRUCE HALVERSON (503) 368-5125	CABLE TELEVISION CHARTER COMMUNICATION 1344 NORTHEAST HWY 101 LINCOLN CITY, OREGON 97367 (541) 994-3117

DEVELOPMENT DENSITY

GROSS DENSITY EXISTING PROPERTY = 949,873 SF = 21.81 ACRES NEW LOTS = 38 LOTS DEVELOPMENT DENSITY = 3.39 LOTS/ACRE	NET DENSITY NEW LOTS = 38 LOTS AREA OF LOTS = 671,391 = 15.41 ACRES DEVELOPMENT DENSITY = 4.80 LOTS/ACRE

GRAPHIC SCALE

(IN FEET)
1 inch = 100 ft.

LEGEND:

EXISTING
- PROPERTY LINE
- SEWER LINE
- MANHOLE
- WATER LINE
- ROAD
- FIRE HYDRANT
- GATE VALVE

PROPOSED
- PROPERTY LINE
- EASEMENT
- SEWER MAIN
- SEWER MANHOLE/CO
- SEWER SERVICE
- WATER MAIN
- WATER FEEDER LINE
- WATER VALVE
- FIRE HYDRANT
- WATER SERVICE
- EDGE OF SHOULDER
- EDGE OF ASPHALT

GENERAL NOTES:

1. ALL WORK AND MATERIALS SHALL CONFORM TO THE REQUIREMENTS OF THE NEHALEM PUBLIC WORKS (NPW), THE NEHALEM BAY WASTEWATER AGENCY (NBWA) AND THE 2021 APWA STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION INCLUDING SUPPLEMENTS. IN THE EVENT OF A CONFLICT BETWEEN NBWA AND/OR NPW POLICIES AND REGULATIONS AND THE APWA STANDARD SPECIFICATIONS, THE MORE STRINGENT SHALL CONTROL UNLESS OTHERWISE DIRECTED BY NBWA OR NPW.
2. CONTRACTOR SHALL NOTIFY NBWA, NPW, CITY AND ALL UTILITY COMPANIES A MINIMUM OF 72 BUSINESS HOURS (3 BUSINESS DAYS) PRIOR TO THE START OF CONSTRUCTION OR RESUMING WORK AFTER SHUTDOWNS EXCEPT FOR NORMAL RESUMPTION OF WORK AFTER SUNDAYS OR HOLIDAYS. CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF ORS 757.541 TO 757.571.
3. CONTRACTOR SHALL PERFORM ALL WORK NECESSARY TO COMPLETE THE PROJECT IN ACCORDANCE WITH THE APPROVED CONSTRUCTION DRAWINGS INCLUDING SUCH INCIDENTALS AS MAY BE NECESSARY TO MEET APPLICABLE AGENCY REQUIREMENTS AND PROVIDE A COMPLETED PROJECT.
4. CONTRACTOR SHALL PROCURE A RIGHT-OF-WAY PERMIT FROM THE CITY OF NEHALEM FOR ALL WORK WITHIN THE CITY RIGHT-OF-WAY AND CONFORM TO ALL CONDITIONS OF THE PERMIT.
5. CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS AND LICENSES PRIOR TO THE START OF CONSTRUCTION.
6. CONTRACTOR SHALL PROVIDE ALL BONDS AND INSURANCE REQUIRED BY PUBLIC OR PRIVATE AGENCIES HAVING JURISDICTION, INCLUDING NBWA AND NEHALEM.
7. UNLESS OTHERWISE APPROVED BY NBWA, CONSTRUCTION OF SANITARY SEWER IMPROVEMENTS SHALL BE DONE BETWEEN 7:00 A.M. AND 6:00 P.M., MONDAY THROUGH SATURDAY. WORK OUTSIDE THESE HOURS SHALL BE APPROVED IN WRITING BY NBWA PRIOR TO THE START OF CONSTRUCTION OUTSIDE NORMAL WORK HOURS.
8. ANY INSPECTION BY NBWA OR NPW SHALL NOT, IN ANY WAY, RELIEVE THE CONTRACTOR FROM ANY OBLIGATION TO PERFORM THE WORK IN STRICT COMPLIANCE WITH THE APPLICABLE CODES AND AGENCY REQUIREMENTS.
9. CONTRACTOR SHALL ERECT AND MAINTAIN BARRICADES, WARNING SIGNS, TRAFFIC CONES (AND ALL OTHER TRAFFIC CONTROL DEVICES REQUIRED) PER DISTRICT AND CITY REQUIREMENTS IN ACCORDANCE WITH THE CURRENT MUTCD (INCLUDING OREGON AMENDMENTS). ACCESS TO DRIVEWAYS SHALL BE MAINTAINED AT ALL TIMES. ALL TRAFFIC CONTROL MEASURES SHALL BE APPROVED AND IN PLACE PRIOR TO ANY CONSTRUCTION ACTIVITY.
10. THE CONTRACTOR SHALL MAINTAIN ONE COMPLETE SET OF APPROVED DRAWINGS ON THE CONSTRUCTION SITE AT ALL TIMES WHEREON HE WILL RECORD ANY APPROVED DEVIATIONS IN CONSTRUCTION FROM THE APPROVED DRAWINGS, AS WELL AS THE STATION LOCATIONS AND DEPTHS OF ALL EXISTING UTILITIES ENCOUNTERED. THESE FIELD RECORD DRAWINGS SHALL BE KEPT UP TO DATE AT ALL TIMES AND SHALL BE AVAILABLE FOR INSPECTION BY THE UTILITY DISTRICTS UPON REQUEST.
11. SUBMITTALS SHALL BE PROVIDED BY THE CONTRACTOR TO NBWA AND NPW FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION IN ACCORDANCE WITH NBWA AND NPW REQUIREMENTS.
12. THE CONTRACTOR SHALL SUBMIT A SUITABLE MAINTENANCE BOND PRIOR TO FINAL PAYMENT WHERE REQUIRED BY PUBLIC AND/OR PRIVATE AGENCIES HAVING JURISDICTION.

MORGAN CIVIL ENGINEERING, INC.
• CIVIL ENGINEERING • SURVEYING • PLANNING
PO BOX 358
MANZANITA, OR 97130
(503) 368-5666
www.morgancivil.com

REGISTERED PROFESSIONAL ENGINEER
OREGON
JANUARY 15, 2008
JASON R. MORGAN
RENEWAL DATE: DECEMBER 31, 2022

RIVERVIEW MEADOWS DEVELOPMENT, LLC
RIVERVIEW MEADOWS PHASE 2
TENTATIVE PLAN

NEHALEM, MAP 3N 10W 23B

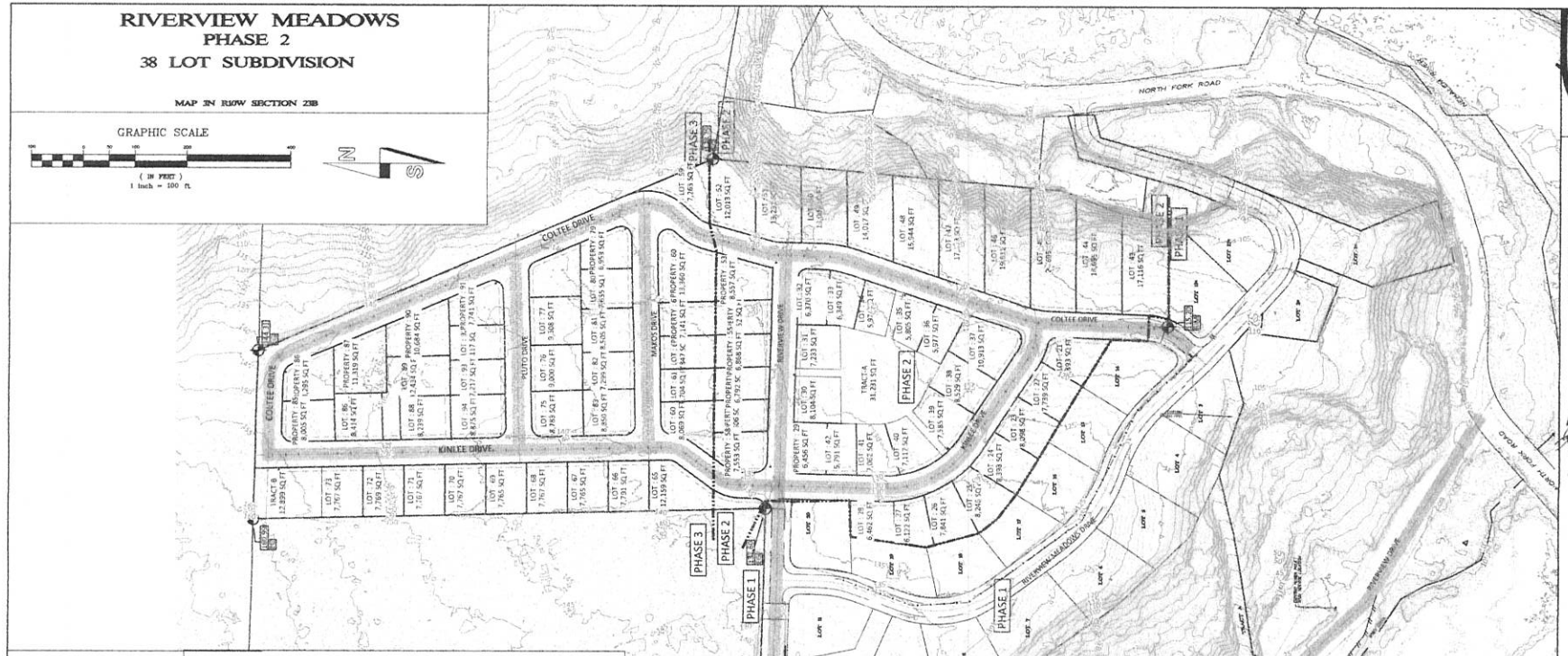
SHEET 1 OF -21-

RIVERVIEW MEADOWS
PHASE 2
38 LOT SUBDIVISION

MAP 3N R10W SECTION 23B

GRAPHIC SCALE

(IN FEET)
1 inch = 100 ft



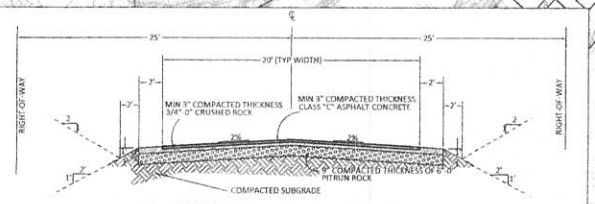
LEGEND:

EXISTING
- PROPERTY LINE
- SEWER LINE
- MANHOLE
- WATER LINE
- ROAD
- FIRE HYDRANT
- GATE VALVE

PROPOSED
- PROPERTY LINE
- EASEMENT
- SEWER MAIN
- SEWER MANHOLE/CO
- SEWER SERVICE
- WATER MAIN
- WATER FEEDER LINE
- WATER VALVE
- FIRE HYDRANT
- WATER SERVICE
- EDGE OF SHOULDER
- EDGE OF ASPHALT
- GRAVEL CHECK DAM

EXISTING UTILITIES AND FACILITIES:

1. CONTRACTOR SHALL LOCATE AND MARK ALL EXISTING PROPERTY AND STREET MONUMENTS PRIOR TO CONSTRUCTION. ANY MONUMENTS DISTURBED DURING CONSTRUCTION OF THE SANITARY SEWERAGE IMPROVEMENTS SHALL BE REPLACED BY A REGISTERED LAND SURVEYOR AT THE CONTRACTOR'S EXPENSE. THE MONUMENTS SHALL BE REPLACED WITHIN A MAXIMUM OF 90 DAYS, AND THE CITY SURVEYOR SHALL BE NOTIFIED IN WRITING AS REQUIRED BY ORS 209.150.
2. THE LOCATION AND DESCRIPTION OF EXISTING NBWA AND NPW FACILITIES SHOWN ON THE DRAWINGS ARE COMPILED FROM AVAILABLE RECORDS AND/OR FIELD SURVEYS. NBWA AND NPW DO NOT GUARANTEE THE ACCURACY OR THE COMPLETENESS OF SUCH RECORDS. CONTRACTOR SHALL FIELD VERIFY SIZES AND LOCATIONS OF ALL EXISTING NBWA FACILITIES PRIOR TO CONSTRUCTION.
3. ATTENTION: 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 952-0010090. YOU MAY OBTAIN COPIES OF THE RULES BY CALLING THE CENTER. (NOTE: THE TELEPHONE NUMBER FOR THE OREGON UTILITY NOTIFICATION CENTER IS (503) 232-1987).
4. CONTRACTOR SHALL FIELD VERIFY THE LOCATION AND DEPTH OF ALL EXISTING UTILITIES WHERE NEW FACILITIES CROSS OR ARE CLOSELY PARALLEL TO THE EXISTING FACILITIES. ALL UTILITY CROSSINGS MARKED OR SHOWN ON THE DRAWINGS SHALL BE POTHOLED USING HAND TOOLS OR OTHER NON-INVASIVE METHODS PRIOR TO EXCAVATING OR BORING. CONTRACTOR SHALL BE RESPONSIBLE FOR EXPOSING POTENTIAL UTILITY CONFLICTS FAR ENOUGH AHEAD OF CONSTRUCTION TO MAKE NECESSARY GRADE MODIFICATIONS WITHOUT DELAYING THE WORK. IF GRADE MODIFICATION IS NECESSARY, CONTRACTOR SHALL NOTIFY THE DEVELOPER'S ENGINEER, AND THE DEVELOPER'S ENGINEER SHALL OBTAIN APPROVAL FROM NBWA AND/OR NPW PRIOR TO CONSTRUCTION. ALL UTILITY CROSSINGS SHALL BE POTHOLED AS NECESSARY PRIOR TO EXCAVATING OR BORING TO ALLOW THE CONTRACTOR TO PREVENT GRADE OR ALIGNMENT CONFLICTS.
5. ALL EXISTING NBWA AND NPW FACILITIES SHALL BE MAINTAINED IN-PLACE BY THE CONTRACTOR UNLESS OTHERWISE SHOWN OR DIRECTED BY NBWA OR NPW. CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO SUPPORT, MAINTAIN OR OTHERWISE PROTECT EXISTING FACILITIES AT ALL TIMES DURING CONSTRUCTION. CONTRACTOR SHALL LEAVE EXISTING FACILITIES IN AN EQUAL OR BETTER-THAN-ORIGINAL CONDITION AND TO THE SATISFACTION OF NBWA AND/OR NPW.
6. NBWA OR NPW UTILITIES, OR INTERFERING PORTIONS OF NBWA OR NPW FACILITIES, THAT ARE ABANDONED IN PLACE SHALL BE REMOVED BY THE CONTRACTOR TO THE EXTENT NECESSARY TO ACCOMPLISH THE WORK. THE CONTRACTOR SHALL PLUG THE REMAINING EXPOSED ENDS OF THE ABANDONED UTILITIES.



1/2 TYPICAL CROSS-SECTION
NTS

MORGAN CIVIL ENGINEERING, INC.
• CIVIL ENGINEERING
• SURVEYING
• PLANNING
PO BOX 358
MANZANITA, OR 97130
503.368.4636
www.morgancivil.com

JOB NO. 419-13-HV
DATE OCT. 8, 2022

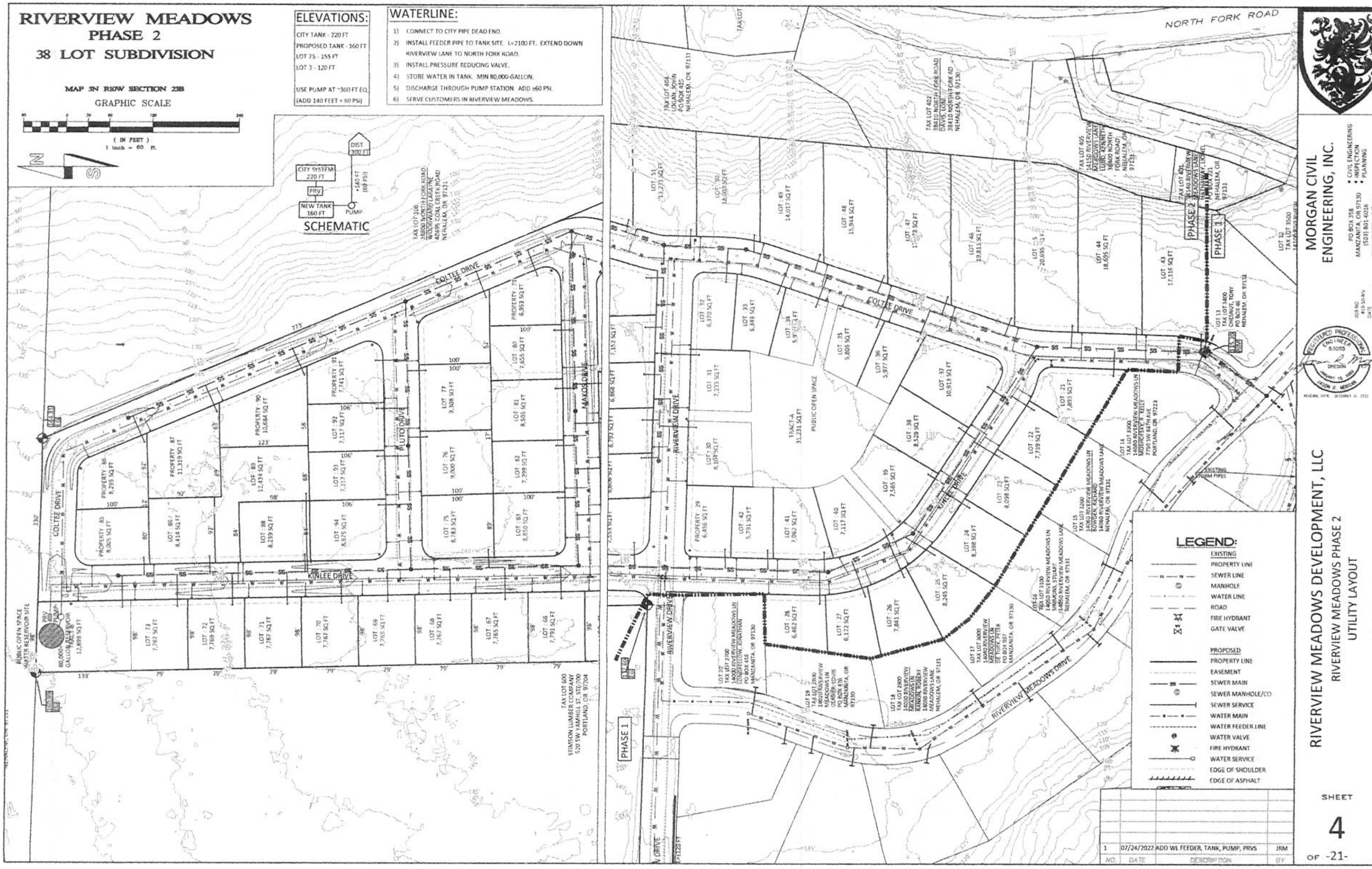
RENEWAL DATE: DECEMBER 31, 2023

RIVERVIEW MEADOWS DEVELOPMENT, LLC
RIVERVIEW MEADOWS PHASE 2
TENTATIVE PLAN

NEHALEM, MAP 3N 10W 23B

SHEET 2 OF -21-

RIVERVIEW MEADOWS DEVELOPMENT, LLC
RIVERVIEW MEADOWS PHASE 2
DRAINAGE LAYOUT
SHEET 3 OF -21-
MORGAN CIVIL ENGINEERING, INC.
RIVERVIEW MEADOWS PHASE 2
38 LOT SUBDIVISION
MAP 3N R5W SECTION 23B
GRAPHIC SCALE
1 inch = 60 ft
PHASE 1
PHASE 2
PHASE 3
RIVERVIEW DRIVE
COLLIE DRIVE
MAROS DRIVE
PLUTO DRIVE
KINLEE DRIVE
STORMWATER NARRATIVE
EXISTING DITCH LINE
PROPOSED DITCH LINE
PROPOSED CULVERT
FLOW DIRECTION


RIVERVIEW MEADOWS
PHASE 2
38 LOT SUBDIVISION
MAP 3N R10W SECTION 23B
GRAPHIC SCALE
(IN FEET)
1 inch = 60 ft.
ELEVATIONS:
CITY TANK - 220 FT
PROPOSED TANK - 160 FT
LOT 75 - 155 FT
LOT 3 - 120 FT
USE PUMP AT ~300 FT EQ
(ADD 140 FEET = 60 PSI)
WATERLINE:
1) CONNECT TO CITY PIPE DEAD END.
2) INSTALL FEEDER PIPE TO TANK SITE. L=2100 FT. EXTEND DOWN RIVERVIEW LANE TO NORTH FORK ROAD.
3) INSTALL PRESSURE REDUCING VALVE.
4) STORE WATER IN TANK. MIN 80,000-GALLON.
5) DISCHARGE THROUGH PUMP STATION. ADD ±60 PSI.
6) SERVE CUSTOMERS IN RIVERVIEW MEADOWS.
SCHEMATIC
CITY SYSTEM 220 FT
PRV
NEW TANK 160 FT
PUMP
+140 FT (60 PSI)
DIST 300 FT
NORTH FORK ROAD
COLTEE DRIVE
KINLEE DRIVE
PLUTO DRIVE
MAKOS DRIVE
RIVERVIEW DRIVE
RIVERVIEW MEADOWS DRIVE
PHASE 1
PHASE 2
PUBLIC OPEN SPACE
TRACT-A
31,231 SQ FT
PUBLIC OPEN SPACE WATER RESERVOIR SITE
TAX LOT 600
STIMSON LUMBER COMPANY
520 SW YAMHILL ST, STE700
PORTLAND, OR 97204
MORGAN CIVIL ENGINEERING, INC.
• CIVIL ENGINEERING
• INSPECTION
• PLANNING
PO BOX 358
MANZANITA, OR 97130
(503) 801-6016
www.morgancivil.com
RIVERVIEW MEADOWS DEVELOPMENT, LLC
RIVERVIEW MEADOWS PHASE 2
UTILITY LAYOUT
NEHALEM, MAP 3N 10W 23B
LEGEND:
EXISTING
PROPERTY LINE
SEWER LINE
MANHOLE
WATER LINE
ROAD
FIRE HYDRANT
GATE VALVE
PROPOSED
PROPERTY LINE
EASEMENT
SEWER MAIN
SEWER MANHOLE/CO
SEWER SERVICE
WATER MAIN
WATER FEEDER LINE
WATER VALVE
FIRE HYDRANT
WATER SERVICE
EDGE OF SHOULDER
EDGE OF ASPHALT
1 07/24/2022 ADD WL FEEDER, TANK, PUMP, PRVS JRM
NO. DATE DESCRIPTION BY
SHEET
4
OF -21-

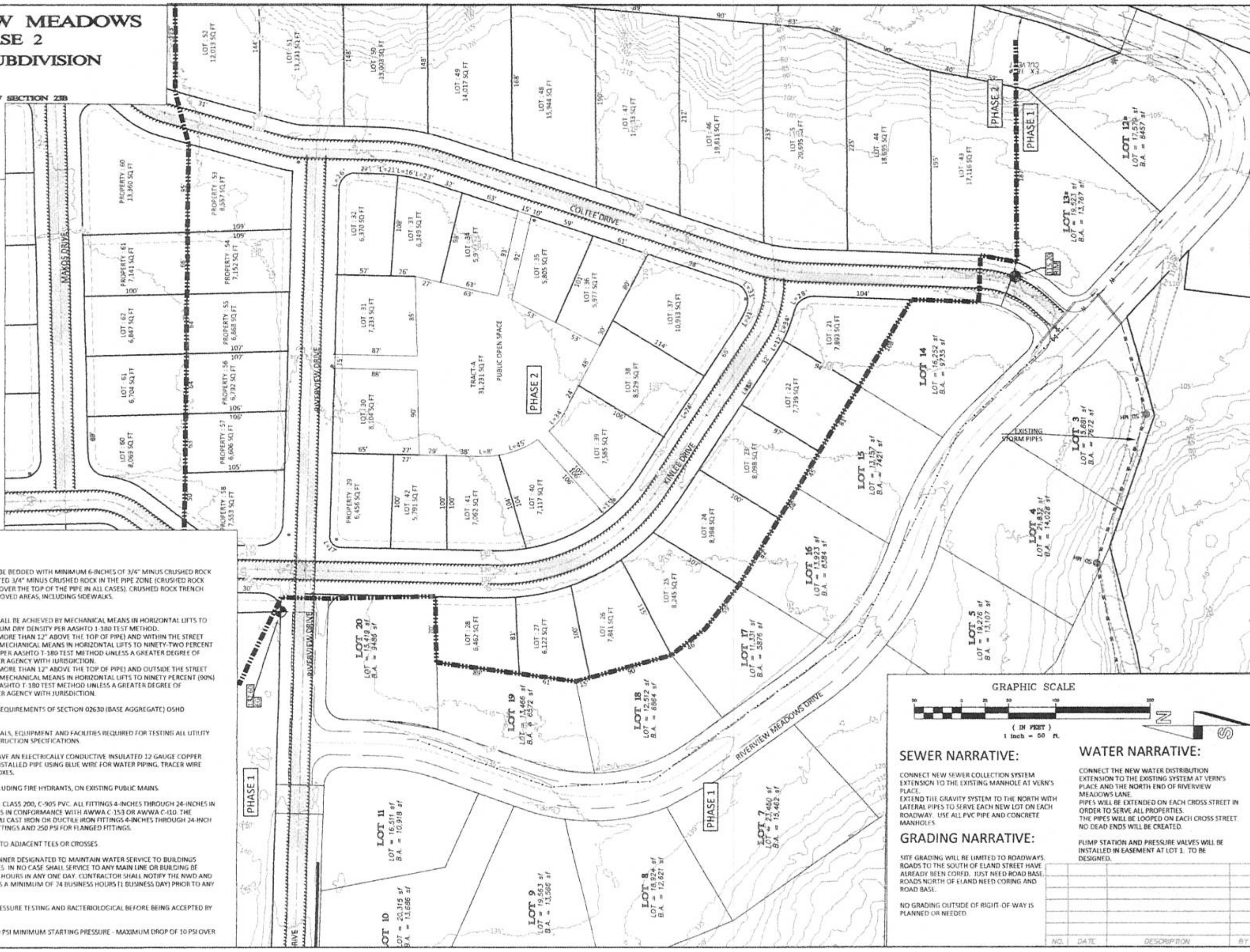
RIVERVIEW MEADOWS
PHASE 2
38 LOT SUBDIVISION

MAP 3N R10W SECTION 23B

LEGEND:

EXISTING
- PROPERTY LINE
- SEWER LINE
- MANHOLE
- WATER LINE
- ROAD
- FIRE HYDRANT
- GATE VALVE

PROPOSED
- PROPERTY LINE
- EASEMENT
- SEWER MAIN
- SEWER MANHOLE/CO
- SEWER SERVICE
- WATER MAIN
- WATER FEEDER LINE
- WATER VALVE
- FIRE HYDRANT
- WATER SERVICE
- EDGE OF SHOULDER
- EDGE OF ASPHALT
- GRAVEL CHECK DAM



WATER UTILITIES:

1. BEDDING AND BACKFILL. ALL PIPES SHALL BE BEDDED WITH MINIMUM 6-INCHES OF 3/4" MINUS CRUSHED ROCK BEDDING AND BACKFILLED WITH COMPACTED 3/4" MINUS CRUSHED ROCK IN THE PIPE ZONE (CRUSHED ROCK SHALL EXTEND A MINIMUM OF 12-INCHES OVER THE TOP OF THE PIPE IN ALL CASES). CRUSHED ROCK TRENCH BACKFILL SHALL BE USED UNDER ALL IMPROVED AREAS, INCLUDING SIDEWALKS.
2. COMPACTION REQUIREMENTS.
   A. TRENCH BACKFILL IN THE PIPE ZONE SHALL BE ACHIEVED BY MECHANICAL MEANS IN HORIZONTAL LIFTS TO NINETY PERCENT (90%) OF THE MAXIMUM DRY DENSITY PER AASHTO 1-180 TEST METHOD.
   B. COMPACTION IN THE BACKFILL ZONE (MORE THAN 12" ABOVE THE TOP OF PIPE) AND WITHIN THE STREET RIGHT OF WAY SHALL BE ACHIEVED BY MECHANICAL MEANS IN HORIZONTAL LIFTS TO NINETY-TWO PERCENT (92%) OF THE MAXIMUM DRY DENSITY PER AASHTO T-180 TEST METHOD UNLESS A GREATER DEGREE OF COMPACTION IS REQUIRED BY ANOTHER AGENCY WITH JURISDICTION.
   C. COMPACTION IN THE BACKFILL ZONE (MORE THAN 12" ABOVE THE TOP OF PIPE) AND OUTSIDE THE STREET RIGHT OF WAY SHALL BE ACHIEVED BY MECHANICAL MEANS IN HORIZONTAL LIFTS TO NINETY PERCENT (90%) OF THE MAXIMUM DRY DENSITY PER AASHTO T-180 TEST METHOD UNLESS A GREATER DEGREE OF COMPACTION IS REQUIRED BY ANOTHER AGENCY WITH JURISDICTION.
3. CRUSHED ROCK SHALL CONFORM TO THE REQUIREMENTS OF SECTION 02630 (BASE AGGREGATE) OSHD STANDARD SPECIFICATIONS.
4. CONTRACTOR SHALL PROVIDE ALL MATERIALS, EQUIPMENT AND FACILITIES REQUIRED FOR TESTING ALL UTILITY PIPING IN ACCORDANCE WITH NWD CONSTRUCTION SPECIFICATIONS.
5. TRACER WIRE. ALL WATER PIPING SHALL HAVE AN ELECTRICALLY CONDUCTIVE INSULATED 12 GAUGE COPPER TRACER WIRE THE FULL LENGTH OF THE INSTALLED PIPE USING BLUE WIRE FOR WATER PIPING. TRACER WIRE SHALL BE EXTENDED UP INTO ALL VALVE BOXES.
6. NWD STAFF TO OPERATE ALL VALVES, INCLUDING FIRE HYDRANTS, ON EXISTING PUBLIC MAINS.
7. ALL WATER MAINS SHALL BE ASTM D-2241 CLASS 200, C-905 PVC. ALL FITTINGS 4-INCHES THROUGH 24-INCHES IN DIAMETER SHALL BE DUCTILE IRON FITTINGS IN CONFORMANCE WITH AWWA C-153 OR AWWA C-110. THE MINIMUM WORKING PRESSURE FOR ALL MJ CAST IRON OR DUCTILE IRON FITTINGS 4-INCHES THROUGH 24-INCH IN DIAMETER SHALL BE 350 PSI FOR M3 FITTINGS AND 250 PSI FOR FLANGED FITTINGS.
8. ALL VALVES SHALL BE FLANGE CONNECTED TO ADJACENT TEES OR CROSSES.
9. THE WORK SHALL BE PERFORMED IN A MANNER DESIGNATED TO MAINTAIN WATER SERVICE TO BUILDINGS SUPPLIED FROM THE EXISTING WATERLINES. IN NO CASE SHALL SERVICE TO ANY MAIN LINE OR BUILDING BE INTERRUPTED FORM MORE THAN FOUR (4) HOURS IN ANY ONE DAY. CONTRACTOR SHALL NOTIFY THE NWD AND ALL AFFECTED RESIDENTS AND BUSINESSES A MINIMUM OF 24 BUSINESS HOURS (1 BUSINESS DAY) PRIOR TO ANY INTERRUPTION OF SERVICE.
10. ALL WATERLINE SEGMENTS SUBJECT TO PRESSURE TESTING AND BACTERIOLOGICAL BEFORE BEING ACCEPTED BY NWD. COORDINATE WITH NWD.
11. PRESSURE TEST: 2 HOURS MINIMUM. 150 PSI MINIMUM STARTING PRESSURE - MAXIMUM DROP OF 10 PSI OVER DURATION OF TEST.

GRAPHIC SCALE

(IN FEET)
1 inch = 50 ft.

SEWER NARRATIVE:

CONNECT NEW SEWER COLLECTION SYSTEM EXTENSION TO THE EXISTING MANHOLE AT VERN'S PLACE.
EXTEND THE GRAVITY SYSTEM TO THE NORTH WITH LATERAL PIPES TO SERVE EACH NEW LOT ON EACH ROADWAY. USE ALL PVC PIPE AND CONCRETE MANHOLES.

GRADING NARRATIVE:

SITE GRADING WILL BE LIMITED TO ROADWAYS. ROADS TO THE SOUTH OF ELAND STREET HAVE ALREADY BEEN CORED. JUST NEED ROAD BASE. ROADS NORTH OF ELAND NEED CORING AND ROAD BASE.

NO GRADING OUTSIDE OF RIGHT-OF-WAY IS PLANNED OR NEEDED.

WATER NARRATIVE:

CONNECT THE NEW WATER DISTRIBUTION EXTENSION TO THE EXISTING SYSTEM AT VERN'S PLACE AND THE NORTH END OF RIVERVIEW MEADOWS LANE.
PIPES WILL BE EXTENDED ON EACH CROSS STREET IN ORDER TO SERVE ALL PROPERTIES.
THE PIPES WILL BE LOOPED ON EACH CROSS STREET. NO DEAD ENDS WILL BE CREATED.

PUMP STATION AND PRESSURE VALVES WILL BE INSTALLED IN EASEMENT AT LOT 1. TO BE DESIGNED.

NO.	DATE	DESCRIPTION	BY

MORGAN CIVIL ENGINEERING, INC.

PO BOX 358
MANZANITA, OR 97130
(503) 801-6016
www.morgancivil.com

- CIVIL ENGINEERING
- INSPECTION
- PLANNING

JOB NO. #19-10-RV
DATE OCT. 9, 2022

REGISTERED PROFESSIONAL ENGINEER 83085 OREGON JANUARY 15, 2003 JASON R. MORGAN

RENEWAL DATE: DECEMBER 31, 2022

RIVERVIEW MEADOWS DEVELOPMENT, LLC

RIVERVIEW MEADOWS PHASE 2

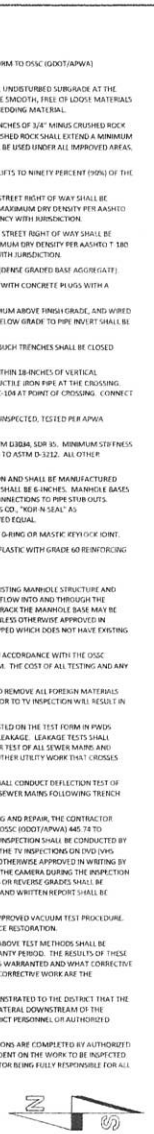
TENTATIVE PLAN - SOUTHERN PORTION

NEHALEM, MAP 3N 10W 23B

SHEET 5 OF -21-

SANITARY SEWAGE FACILITIES:

1. UNLESS OTHERWISE NOTED, MATERIALS AND WORKMANSHIP FOR SANITARY SEWER SHALL CONFORM TO OSSC (ODOT/APWA) SPECIFICATIONS, 2021 EDITION.
2. THE CONTRACTOR SHALL HAVE APPROPRIATE EQUIPMENT ON SITE TO PRODUCE A FIRM, SMOOTH, UNDISTURBED SUBGRADE AT THE TRENCH BOTTOM, TRUE TO GRADE. THE BOTTOM OF THE TRENCH EXCAVATION SHALL BE SHALL BE SMOOTH, FREE OF LOOSE MATERIALS OR TOOTH GROOVES FOR THE ENTIRE WIDTH OF THE TRENCH PRIOR TO PLACING THE GRANULAR BEDDING MATERIAL.
3. BEDDING AND BACKFILL. ALL SANITARY SEWER PIPES SHALL BE BEDDED WITH A MINIMUM OF 4-INCHES OF 3/4" MINUS CRUSHED ROCK BEDDING AND BACKFILLED WITH COMPACTED 3/4" MINUS CRUSHED ROCK IN THE PIPE ZONE (CRUSHED ROCK SHALL EXTEND A MINIMUM OF 12-INCHES OVER THE TOP OF THE PIPE IN ALL CASES). CRUSHED ROCK TRENCH BACKFILL SHALL BE USED UNDER ALL IMPROVED AREAS, INCLUDING SIDEWALKS.
4. TRENCH BACKFILL IN THE PIPE ZONE SHALL BE ACHIEVED BY MECHANICAL MEANS IN HORIZONTAL LIFTS TO NINETY PERCENT (90%) OF THE MAXIMUM DRY DENSITY PER AASHTO T-180 TEST METHOD.
5. COMPACTION IN THE BACKFILL ZONE (MORE THAN 12" ABOVE THE TOP OF PIPE) AND WITHIN THE STREET RIGHT OF WAY SHALL BE ACHIEVED BY MECHANICAL MEANS IN HORIZONTAL LIFTS TO NINETY-TWO PERCENT (92%) OF THE MAXIMUM DRY DENSITY PER AASHTO T-180 TEST METHOD UNLESS A GREATER DEGREE OF COMPACTION IS REQUIRED BY ANOTHER AGENCY WITH JURISDICTION.
6. COMPACTION IN THE BACKFILL ZONE (MORE THAN 12" ABOVE THE TOP OF PIPE) AND OUTSIDE THE STREET RIGHT OF WAY SHALL BE ACHIEVED BY MECHANICAL MEANS IN HORIZONTAL LIFTS TO NINETY PERCENT (90%) OF THE MAXIMUM DRY DENSITY PER AASHTO T-180 TEST METHOD UNLESS A GREATER DEGREE OF COMPACTION IS REQUIRED BY ANOTHER AGENCY WITH JURISDICTION.
7. CRUSHED ROCK SHALL CONFORM TO THE REQUIREMENTS OF OSSC (2021 ODOT/APWA) 02630.10 (DENSE GRADED BASE AGGREGATE)
8. ALL CITY OF NEHALEM PIPED FACILITIES ABANDONED IN PLACE SHALL HAVE ALL OPENINGS CLOSED WITH CONCRETE PLUGS WITH A MINIMUM LENGTH EQUAL TO TWO (2) TIMES THE DIAMETER OF THE ABANDONED PIPE.
9. THE END OF ALL UTILITY STUBS SHALL BE MARKED WITH A PAINTED 2x4, EXTENDING 2 FEET MINIMUM ABOVE FINISH GRADE, AND WIRED TO PIPE STUB (PAINTED WHITE FOR SANITARY SEWER). TYPE OF UTILITY (IE. SEWER) AND DEPTH BELOW GRADE TO PIPE INVERT SHALL BE CLEARLY & PERMANENTLY LABELED ON THE MARKER POST.
10. NO TRENCHES IN ROADS OR DRIVEWAYS SHALL BE LEFT IN AN OPEN CONDITION OVERNIGHT. ALL SUCH TRENCHES SHALL BE CLOSED BEFORE THE END OF EACH WORK DAY AND NORMAL TRAFFIC FLOWS RESTORED.
11. SANITARY SEWER & WATERLINE CROSSINGS. WHERE SANITARY SEWER LINES CROSS ABOVE OR WITHIN 18-INCHES OF VERTICAL SEPARATION BELOW A WATERLINE, SEWER MAINS AND/OR LATERALS SHALL BE REPLACED WITH DUCTILE IRON PIPE AT THE CROSSING. CENTER ONE FULL LENGTH OF CLASS 50 DUCTILE IRON PIPE CONFORMING TO AWWA C-151 AND C-104 AT POINT OF CROSSING. CONNECT TO EXISTING SEWER LINES WITH APPROVED RUBBER COUPLINGS.
12. PER DEQ REQUIREMENTS, DEVELOPER/CONTRACTOR SHALL HAVE SANITARY SEWERAGE FACILITIES INSPECTED, TESTED PER APWA PROCEDURES AND CERTIFIED BY A LICENSED ENGINEER.
13. UNLESS OTHERWISE SPECIFIED, SANITARY SEWER PIPE SHALL BE PVC IN CONFORMANCE WITH ASTM D3034, SDR 35. MINIMUM STIFFNESS SHALL BE 46 PSI PER ASTM D-2412 AND JOINT TYPE SHALL BE ELASTOMERIC GASKET CONFORMING TO ASTM D-3212. ALL OTHER APPURTENANCES AND INSTALLATION SHALL CONFORM TO CITY OF NEHALEM REQUIREMENTS.
14. SANITARY SEWER MANHOLES SHALL HAVE PRECAST BASE SECTIONS OF MONOLITHIC CONSTRUCTION AND SHALL BE MANUFACTURED SUCH THAT THE BASE SECTION IS INTEGRAL WITH THE BASE SLAB. THE MINIMUM BASE THICKNESS SHALL BE 6-INCHES. MANHOLE BASES SHALL HAVE CORE DRILLED OPENINGS AND FLEXIBLE MANHOLE TO PIPE CONNECTORS FOR THE CONNECTIONS TO PIPE STUB OUTS. FLEXIBLE JOINTS FOR PIPE OPENINGS SHALL BE "RES-SEAL" AS MANUFACTURED BY PRICE BROTHERS CO., "KOR-N-SEAL" AS MANUFACTURED BY NATIONAL POLLUTION CONTROL SYSTEMS, INC. OR CITY OF NEHALEM APPROVED EQUAL.
15. MANHOLE PRECAST SECTIONS SHALL MEET OR EXCEED ASTM C-478 AND SHALL HAVE WATERTIGHT O-RING OR MASTIC KEYLOCK JOINT.
16. MANHOLES SHALL BE INSTALLED WITH STEPS. STEPS TO BE FACTORY INSTALLED POLYPROPYLENE PLASTIC WITH GRADE 60 REINFORCING ROD.
17. FLAT TOP MANHOLES SHALL BE USED FOR ALL MANHOLES LESS THAN 6 FEET RIM TO INVERT.
18. OPENINGS FOR CONNECTIONS TO EXISTING MANHOLES SHALL BE MADE BY CORE-DRILLING THE EXISTING MANHOLE STRUCTURE AND INSTALLING A RUBBER BOOT. CONNECTIONS TO BE WATERTIGHT AND SHALL PROVIDE A SMOOTH FLOW INTO AND THROUGH THE MANHOLE. SMALL CHIPPING HAMMERS OR SIMILAR LIGHT TOOLS WHICH WILL NOT DAMAGE OR CRACK THE MANHOLE BASE MAY BE USED TO SHAPE CHANNELS. USE OF LARGE PNEUMATIC JACKHAMMERS SHALL BE PROHIBITED. UNLESS OTHERWISE APPROVED IN WRITING BY THE DISTRICT ENGINEER, MANHOLE STEPS SHALL BE INSTALLED IN ANY MANHOLE TAPPED WHICH DOES NOT HAVE EXISTING STEPS.
19. SANITARY SEWER TESTING. SANITARY SEWERS AND RELATED APPURTENANCES SHALL BE TESTED IN ACCORDANCE WITH THE OSSC (ODOT/APWA) SPECIFICATIONS, 2021 EDITION UNLESS OTHERWISE REQUIRED BY CITY OF NEHALEM. THE COST OF ALL TESTING AND ANY CORRECTIVE WORK ARE THE RESPONSIBILITY OF THE DEVELOPER.
20. SANITARY PIPE CLEANING. PRIOR TO MANDREL OR AIR TESTING, FLUSH AND CLEAN ALL SEWERS TO REMOVE ALL FOREIGN MATERIALS FROM MAINLINES AND MANHOLES. FAILURE TO CLEAN ALL DIRT AND DEBRIS FROM PIPELINES PRIOR TO TV INSPECTION WILL RESULT IN THE NEED TO RE-CLEAN AND RE-TV THE LINES.
21. SEWER PIPE AIR TESTING. CONFORM TO OSSC (ODOT/APWA) 00455.72.C AND THE PROCEDURE LISTED ON THE TEST FORM IN PWDS APPENDIX A. ALL SANITARY SEWER MAINS, SERVICES AND APPURTENANCES SHALL BE TESTED FOR LEAKAGE. LEAKAGE TESTS SHALL INCLUDE AN AIR TEST OF ALL SEWER MAINS AND LATERALS PRIOR TO PAVING, AND A SEPARATE AIR TEST OF ALL SEWER MAINS AND LATERALS FOLLOWING EXCAVATION AND BACKFILLING OF ANY FRANCHISE UTILITY TRENCHES OR OTHER UTILITY WORK THAT CROSSES SANITARY SEWER LATERALS.
22. SEWER PIPE DEFLECTION TESTING. CONFORM TO OSSC (ODOT/APWA) 00445.73. CONTRACTOR SHALL CONDUCT DEFLECTION TEST OF FLEXIBLE SANITARY SEWER PIPES BY PULLING AN APPROVED MANDREL THROUGH ALL COMPLETED SEWER MAINS FOLLOWING TRENCH COMPACTION. THE DIAMETER OF THE MANDREL SHALL BE 95% OF THE INITIAL PIPE DIAMETER.
23. TV INSPECTION OF SANITARY SEWERS. UPON COMPLETION OF ALL SEWER CONSTRUCTION, TESTING AND REPAIR, THE CONTRACTOR SHALL CONDUCT A COLOR TV ACCEPTANCE INSPECTION OF ALL MAINLINES IN ACCORDANCE WITH OSSC (ODOT/APWA) 445.74 TO DETERMINE COMPLIANCE WITH GRADE REQUIREMENTS OF OSSC (ODOT/APWA) 445.80.B. THE TV INSPECTION SHALL BE CONDUCTED BY AN APPROVED TECHNICAL SERVICE WHICH IS EQUIPPED TO MAKE AUDIO-VISUAL RECORDINGS OF THE TV INSPECTIONS ON DVD (VHS VIDEO TAPE ACCEPTABLE ONLY UPON PRIOR WRITTEN APPROVAL BY CITY OF NEHALEM). UNLESS OTHERWISE APPROVED IN WRITING BY THE DISTRICT ENGINEER, A STANDARD 1-INCH DIAMETER BALL SHALL BE SUSPENDED IN FRONT OF THE CAMERA DURING THE INSPECTION TO DETERMINE THE DEPTH OF ANY STANDING WATER. SUFFICIENT WATER TO REVEAL LOW AREAS OR REVERSE GRADES SHALL BE DISCHARGED INTO THE PIPE IMMEDIATELY PRIOR TO INITIATION OF THE TV INSPECTION. THE DVD AND WRITTEN REPORT SHALL BE DELIVERED TO THE DISTRICT ENGINEER.
24. MANHOLE TESTING. CONFORM TO SECTION OSSC (ODOT/APWA) 00473.B OR CITY OF NEHALEM APPROVED VACUUM TEST PROCEDURE. ALL MANHOLES SHALL BE VACUUM TESTED FOLLOWING COMPLETION OF PAVING OR FINAL SURFACE RESTORATION.
25. RE-INSPECTION OF THE SANITARY SEWER SYSTEM USING TV INSPECTION PLUS ANY OR ALL OF THE ABOVE TEST METHODS SHALL BE PERFORMED AS REQUIRED BY CITY OF NEHALEM NEAR THE COMPLETION OF THE 18 MONTH WARRANTY PERIOD. THE RESULTS OF THESE TEST(S) WILL BE USED BY CITY OF NEHALEM TO DETERMINE IF FINAL ACCEPTANCE OF THE SYSTEM IS WARRANTED AND WHAT CORRECTIVE WORK IS REQUIRED PRIOR TO FINAL ACCEPTANCE. THE COST OF THESE RE-INSPECTIONS AND ANY CORRECTIVE WORK ARE THE RESPONSIBILITY OF THE DEVELOPER.
26. PRIOR TO OR CONCURRENT WITH CONNECTION TO A SANITARY SEWER LATERAL, IT SHALL BE DEMONSTRATED TO THE DISTRICT THAT THE SEWER LATERAL IS NOT OBSTRUCTED. THIS SHALL BE ACCOMPLISHED BY "SNAKING" THE SERVICE LATERAL DOWNSTREAM OF THE CONNECTION POINT TO THE MAINLINE, OR SIMILAR METHOD ACCEPTABLE TO THE DISTRICT. DISTRICT PERSONNEL OR AUTHORIZED AGENT SHALL BE PRESENT DURING THE "SNAKING" OR OTHER DEMONSTRATION METHOD.
27. THE CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE THAT ALL REQUIRED OR NECESSARY INSPECTIONS ARE COMPLETED BY AUTHORIZED INSPECTORS PRIOR TO PROCEEDING WITH SUBSEQUENT WORK WHICH COVERS OR THAT IS DEPENDENT ON THE WORK TO BE INSPECTED. FAILURE TO OBTAIN NECESSARY INSPECTION(S) AND APPROVAL(S) SHALL RESULT IN THE CONTRACTOR BEING FULLY RESPONSIBLE FOR ALL PROBLEMS AND/OR CORRECTIVE MEASURES ARISING FROM UNINSPECTED WORK.



RIVERVIEW MEADOWS
PHASE 3
36 LOT SUBDIVISION

MAP 3N 10W 23B

MORGAN CIVIL ENGINEERING, INC.
PO BOX 358
MANZANITA, OR 97130
(503) 801-6016
www.morgancivil.com
• CIVIL ENGINEERING
• INSPECTION
• PLANNING

JOB NO.
21-51-sv
DATE
OCT. 5, 2021

RENEWAL DATE: DECEMBER 31, 2022

RIVERVIEW MEADOWS DEVELOPMENT, LLC
RIVERVIEW MEADOWS PHASE 2
TENTATIVE PLAN - NORTHERN PORTION

NEHALEM, MAP 3N 10W 23B

SHEET
6
OF -21-

SEWER NOTES:

ALL CRUSHED ROCK BEDDING AND BACKFILL 92% COMPACTION.

COORDINATE WORK WITH NBWA.

101 CONNECT TO EXISTING STUB
102 INSTALL NEW MANHOLE
103 INSTALL NEW 8" SEWER PIPE
104 INSTALL NEW SEWER SERVICE ASSEMBLY
105 INSTALL NEW END OF LINE CLEANOUT

DEFLECTION TESTING, PRESSURE TESTING, AND VIDEO INSPECTION REQUIRED.

WATER NOTES:

ALL CRUSHED ROCK BEDDING AND BACKFILL 92% COMPACTION.

COORDINATE WORK WITH CITY OF NEHALEM. 36" COVER OVER PIPES. 18" MIN VERTICAL SEPARATION FROM SEWER LINE AT CROSSINGS.

201 CONNECT TO EXISTING WATER
202 INSTALL 6" TEE WITH GATE VALVES
203 INSTALL PVC PIPE
204 INSTALL FIRE HYDRANT ASSEMBLY
205 INSTALL D.I. BENDS, AS NEEDED
206 INSTALL WATER SERVICE ASSEMBLY

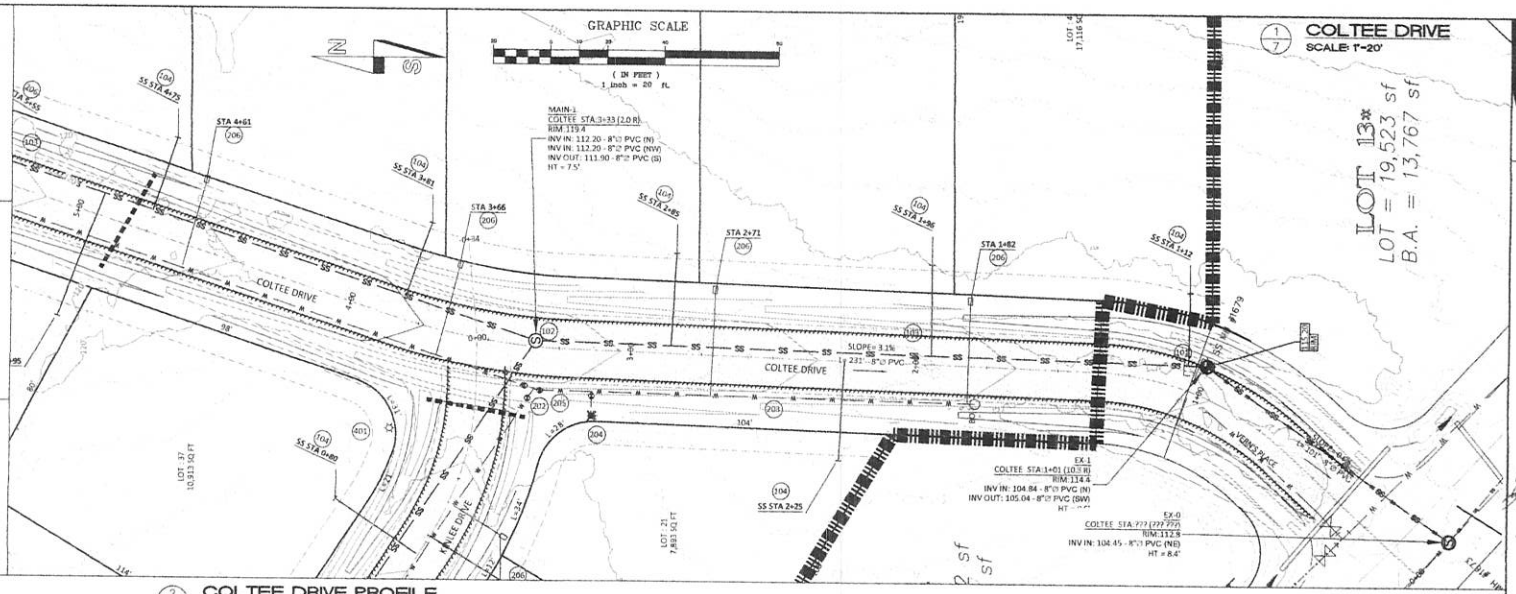
PRESSURE TESTING, AND BACTERIOLOGICAL TESTING REQUIRED.

STORM NOTES:

ALL CRUSHED ROCK BEDDING AND BACKFILL 92% COMPACTION.

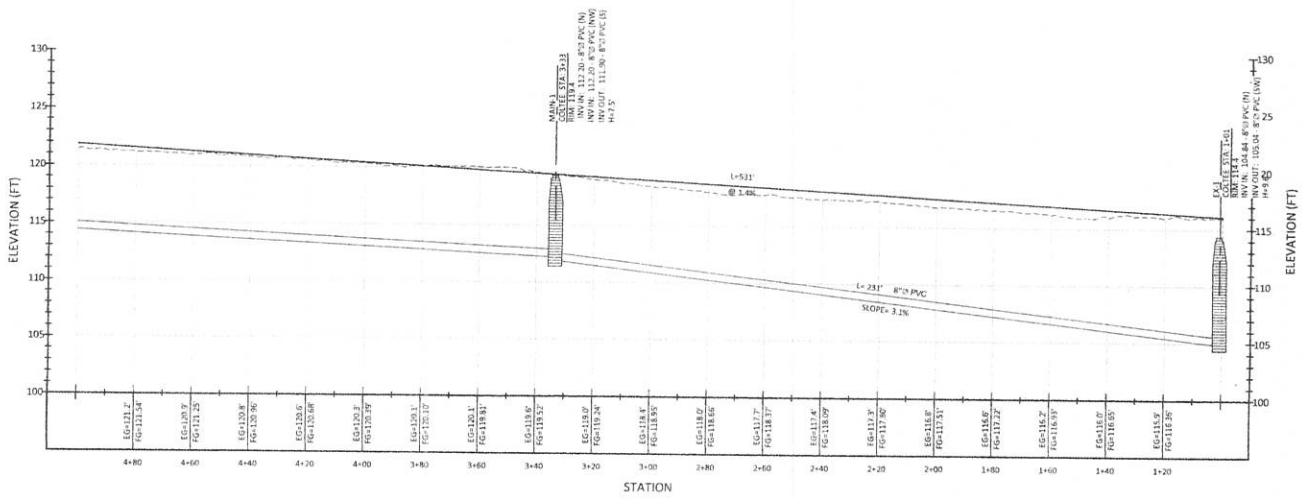
COORDINATE WORK WITH COUNTY PUBLIC WORKS.

301 ROADSIDE DITCH
302 18" CULVERT



COLTEE DRIVE PROFILE

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



LEGEND:

EXISTING
- PROPERTY LINE
- SEWER LINE
- MANHOLE
- WATER LINE
- ROAD
- FIRE HYDRANT
- GATE VALVE

PROPOSED
- PROPERTY LINE
- EASEMENT
- SEWER MAIN
- SEWER MANHOLE/CO
- SEWER SERVICE
- WATER MAIN
- WATER FEEDER LINE
- WATER VALVE
- FIRE HYDRANT
- WATER SERVICE
- EDGE OF SHOULDER
- EDGE OF ASPHALT
- GRAVEL CHECK DAM

PROFILE
- EXISTING GRADE
- FINISHED GRADE

MORGAN CIVIL ENGINEERING, INC.
• CIVIL ENGINEERING
• SURVEYING
• PLANNING
PO BOX 358
MANZANITA, OR 97130
(503) 801-0116
www.morgancivil.com

JOB NO.
EG-10-RV
DATE
OCT. 5, 2021

REGISTERED PROFESSIONAL ENGINEER
OREGON
JANUARY 15, 1981
JASON R. MORGAN
RENEWAL DATE: DECEMBER 31, 2021

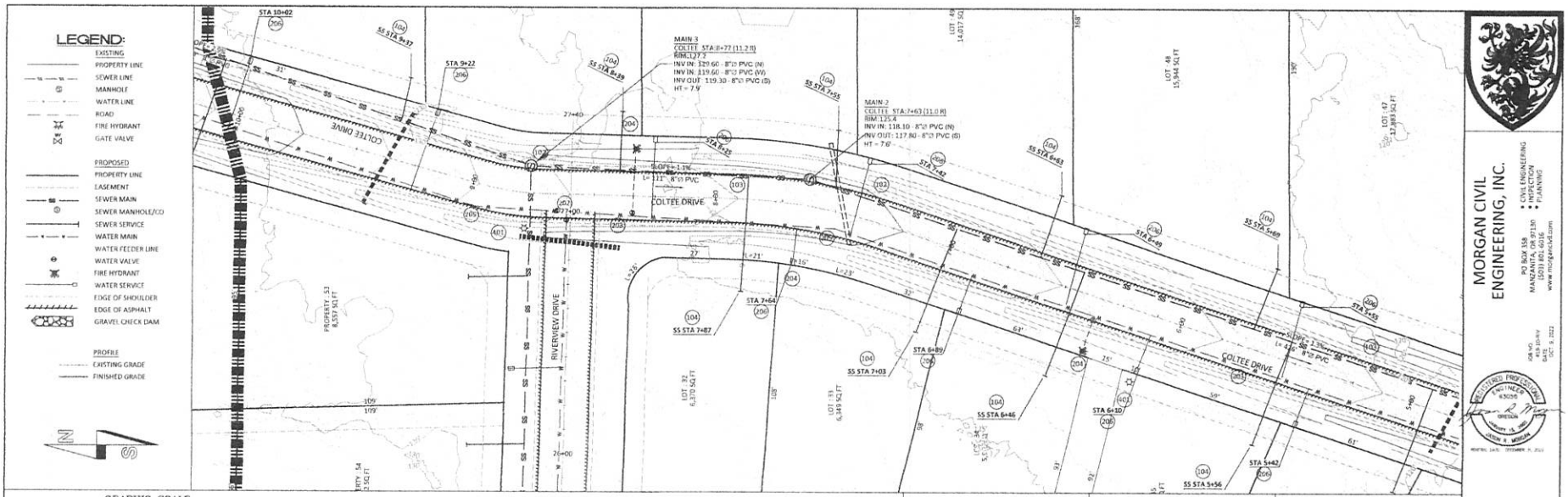
RIVERVIEW MEADOWS DEVELOPMENT, LLC

RIVERVIEW MEADOWS PHASE 2

UTILITY LAYOUT - COLTEE DRIVE

NEHALEM, MAP 3N 10W 23B

SHEET 7 OF -21-



GRAPHIC SCALE

(IN FEET)
1 inch = 20 ft.

COLTEE DRIVE

SCALE: 1"=20'

WATER NOTES:

ALL CRUSHED ROCK BEDDING AND BACKFILL 92% COMPACTION.

COORDINATE WORK WITH CITY OF NEHALEM.
36" COVER OVER PIPES. 18" MIN VERTICAL SEPARATION FROM SEWER LINE AT CROSSINGS.

201 CONNECT TO EXISTING WATER
202 INSTALL 6" TEE WITH GATE VALVES
203 INSTALL PVC PIPE
204 INSTALL FIRE HYDRANT ASSEMBLY
205 INSTALL D.I. BENDS, AS NEEDED
206 INSTALL WATER SERVICE ASSEMBLY

PRESSURE TESTING, AND BACTERIOLOGICAL TESTING REQUIRED.

SEWER NOTES:

ALL CRUSHED ROCK BEDDING AND BACKFILL 92% COMPACTION.

COORDINATE WORK WITH NBWA.

101 CONNECT TO EXISTING STUB
102 INSTALL NEW MANHOLE
103 INSTALL NEW 8" SEWER PIPE
104 INSTALL NEW SEWER SERVICE ASSEMBLY
105 INSTALL NEW END OF LINE CLEANOUT

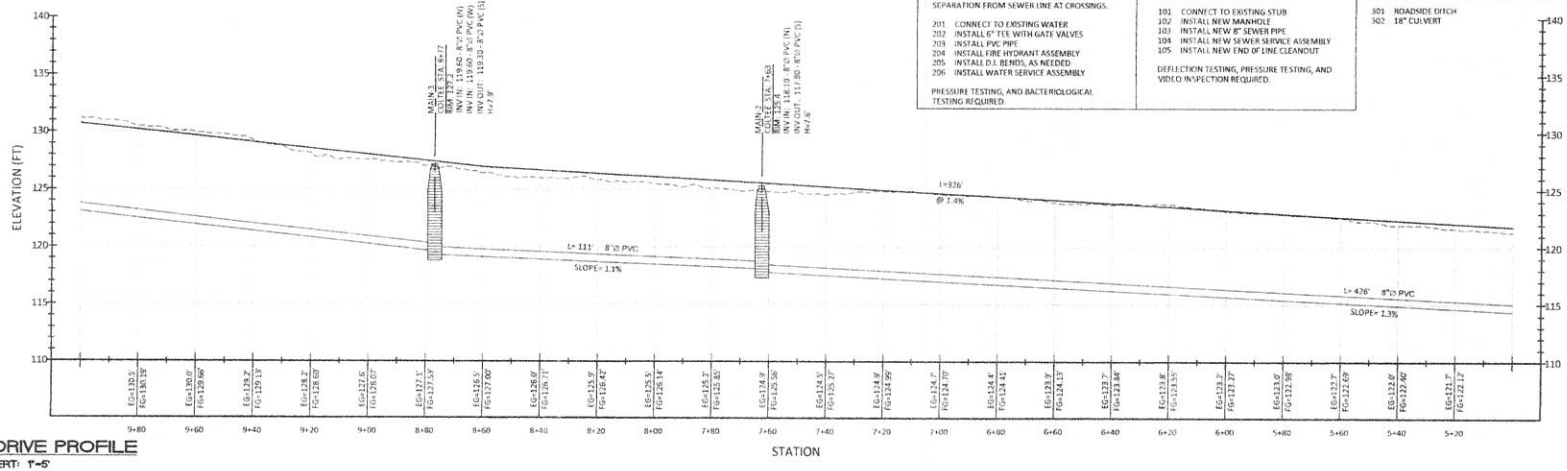
DEFLECTION TESTING, PRESSURE TESTING, AND VIDEO INSPECTION REQUIRED.

STORM NOTES:

ALL CRUSHED ROCK BEDDING AND BACKFILL 92% COMPACTION.

COORDINATE WORK WITH COUNTY PUBLIC WORKS.

301 ROADSIDE DITCH
302 18" CULVERT



COLTEE DRIVE PROFILE

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

MORGAN CIVIL ENGINEERING, INC.
PO BOX 158
MANZANITA, OR 97130
(503) 805-6016
www.morgancivil.com
• CIVIL ENGINEERING
• LAND SURVEY
• PLANNING

OREGON JANUARY 15, 1985 JASON K. MORGAN

RENEWAL DATE: SEPTEMBER 30, 2023

OR NO. #19 10490
DATE: OCT. 5, 2022

RIVERVIEW MEADOWS DEVELOPMENT, LLC
RIVERVIEW MEADOWS PHASE 2
UTILITY LAYOUT - COLTEE DRIVE

NEHALEM, MAP 3N 10W 28B

SHEET
8
OF -21-

SEWER NOTES:

ALL CRUSHED ROCK BEDDING AND BACKFILL 92% COMPACTION.

COORDINATE WORK WITH NBWA.

101 CONNECT TO EXISTING STUB
102 INSTALL NEW MANHOLE
103 INSTALL NEW 8" SEWER PIPE
104 INSTALL NEW SEWER SERVICE ASSEMBLY
105 INSTALL NEW END OF LINE CLEANOUT

DEFLECTION TESTING, PRESSURE TESTING, AND VIDEO INSPECTION REQUIRED.

WATER NOTES:

ALL CRUSHED ROCK BEDDING AND BACKFILL 92% COMPACTION.

COORDINATE WORK WITH CITY OF NEHALEM. 36" COVER OVER PIPES. 18" MIN VERTICAL SEPARATION FROM SEWER LINE AT CROSSINGS.

201 CONNECT TO EXISTING WATER
202 INSTALL 6" TEE WITH GATE VALVES
203 INSTALL PVC PIPE
204 INSTALL FIRE HYDRANT ASSEMBLY
205 INSTALL D.I. BENDS, AS NEEDED
206 INSTALL WATER SERVICE ASSEMBLY

PRESSURE TESTING, AND BACTERIOLOGICAL TESTING REQUIRED.

STORM NOTES:

ALL CRUSHED ROCK BEDDING AND BACKFILL 92% COMPACTION.

COORDINATE WORK WITH COUNTY PUBLIC WORKS.

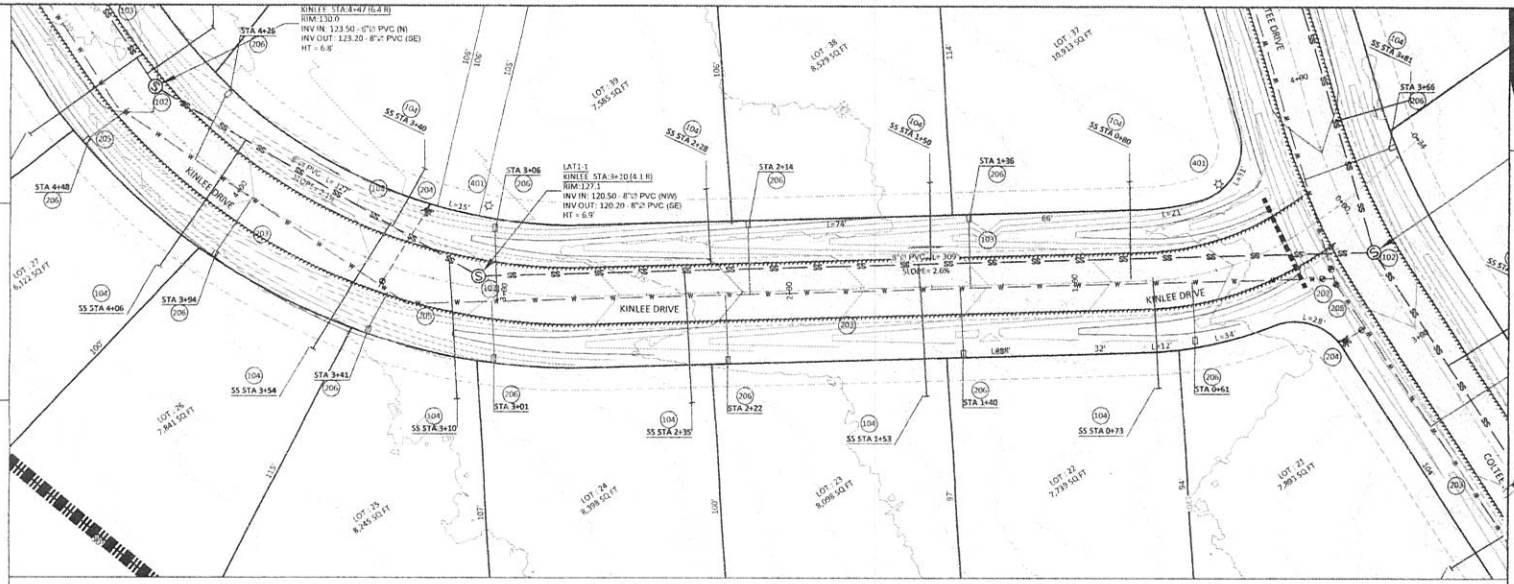
301 ROADSIDE DITCH
302 18" CULVERT

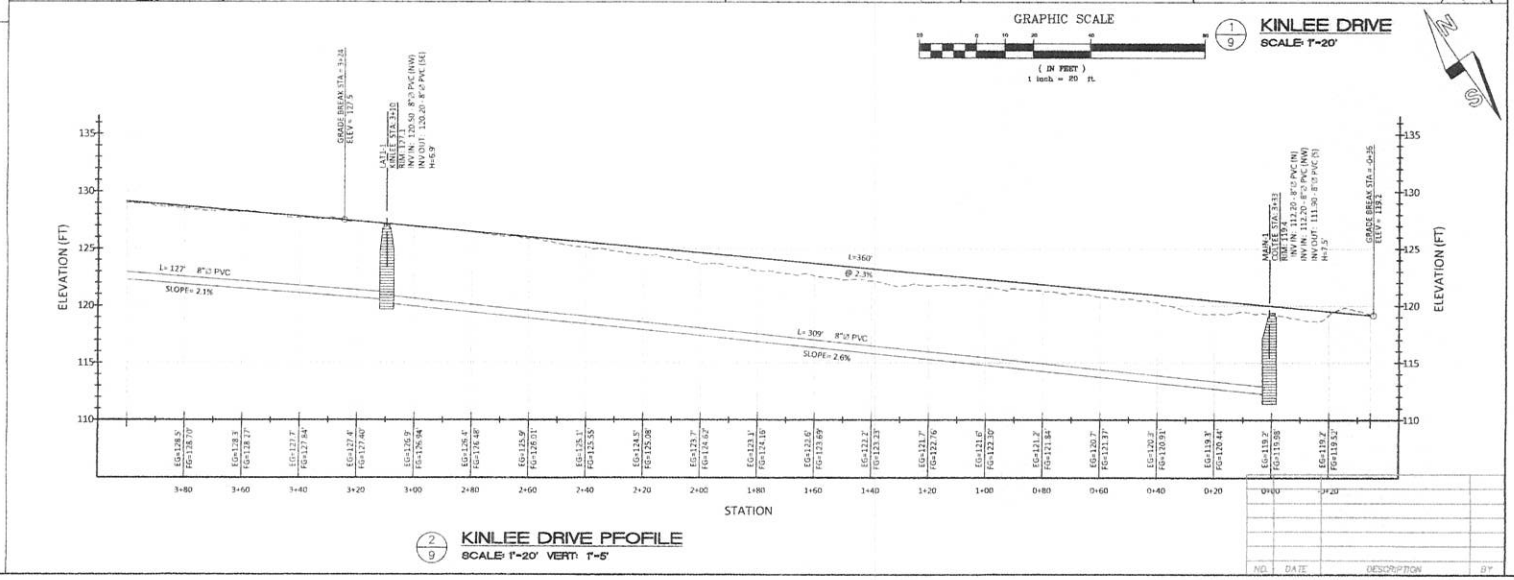
LEGEND:

EXISTING
- PROPERTY LINE
- SEWER LINE
- MANHOLE
- WATER LINE
- ROAD
- FIRE HYDRANT
- GATE VALVE

PROPOSED
- PROPERTY LINE
- EASEMENT
- SEWER MAIN
- SEWER MANHOLE/CO
- SEWER SERVICE
- WATER MAIN
- WATER FEEDER LINE
- WATER VALVE
- FIRE HYDRANT
- WATER SERVICE
- EDGE OF SHOULDER
- EDGE OF ASPHALT
- GRAVEL CHECK DAM

PROFILE
- EXISTING GRADE
- FINISHED GRADE





2/9 KINLEE DRIVE PFOFILE
SCALE: 1"=20' VERT: 1"=5'

MORGAN CIVIL ENGINEERING, INC.
• CIVIL ENGINEERING
• INSPECTION
• PLANNING
PO BOX 358
MANZANITA, OR 97130
(503) 801-6016
www.morganciviI.com

JOB NO. 21-10-01
DATE: OCT. 4, 2022

REGISTERED PROFESSIONAL ENGINEER
OREGON
JANUARY 19, 2021
JASON B. MORGAN
RENEWAL DATE: DECEMBER 31, 2022

RIVERVIEW MEADOWS DEVELOPMENT, LLC
RIVERVIEW MEADOWS PHASE 2
UTILITY LAYOUT - KINLEE DRIVE

NEHALEM, MAP 3N 10W 23B

NO.	DATE	DESCRIPTION	BY

SHEET 9 OF -21-

SEWER NOTES:

ALL CRUSHED ROCK BEDDING AND BACKFILL. 92% COMPACTION.

COORDINATE WORK WITH NIWA.

101 CONNECT TO EXISTING STUB
102 INSTALL NEW MANHOLE
103 INSTALL NEW 8" SEWER PIPE
104 INSTALL NEW SEWER SERVICE ASSEMBLY
105 INSTALL NEW END OF LINE CLEANOUT

DEFLECTION TESTING, PRESSURE TESTING, AND VIDEO INSPECTION REQUIRED.

WATER NOTES:

ALL CRUSHED ROCK BEDDING AND BACKFILL. 92% COMPACTION.

COORDINATE WORK WITH CITY OF NEHALEM. 36" COVER OVER PIPES. 18" MIN VERTICAL SEPARATION FROM SEWER LINE AT CROSSINGS.

201 CONNECT TO EXISTING WATER
202 INSTALL 6" TEE WITH GATE VALVES
203 INSTALL PVC PIPE
204 INSTALL FIRE HYDRANT ASSEMBLY
205 INSTALL D.I. BENDS, AS NEEDED
206 INSTALL WATER SERVICE ASSEMBLY

PRESSURE TESTING, AND BACTERIOLOGICAL TESTING REQUIRED.

STORM NOTES:

ALL CRUSHED ROCK BEDDING AND BACKFILL. 92% COMPACTION.

COORDINATE WORK WITH COUNTY PUBLIC WORKS.

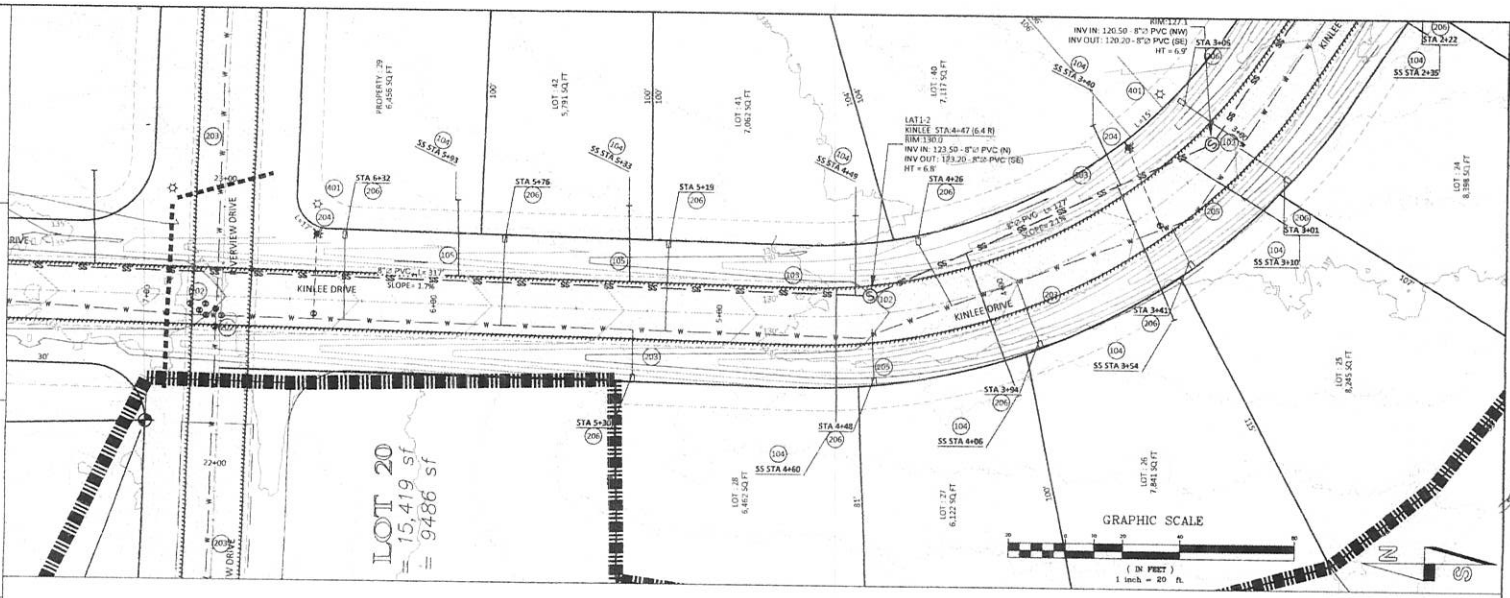
301 ROADSIDE DITCH
302 18" CULVERT

LEGEND:

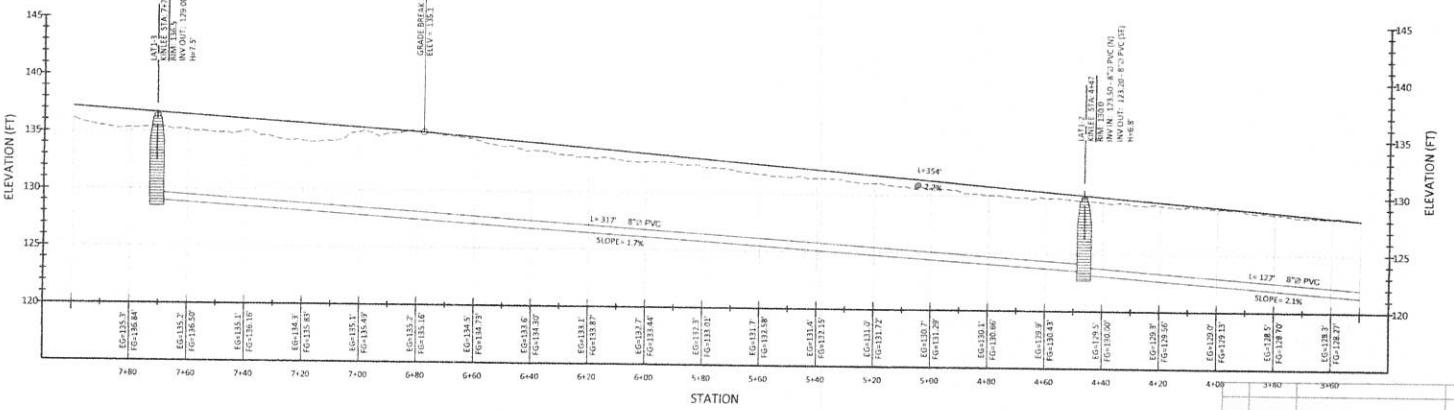
EXISTING
- PROPERTY LINE
- SEWER LINE
- MANHOLE
- WATER LINE
- ROAD
- FIRE HYDRANT
- GATE VALVE

PROPOSED
- PROPERTY LINE
- EASEMENT
- SEWER MAIN
- SEWER MANHOLE/CO
- SEWER SERVICE
- WATER MAIN
- WATER FEEDER LINE
- WATER VALVE
- FIRE HYDRANT
- WATER SERVICE
- EDGE OF SHOULDER
- EDGE OF ASPHALT
- GRAVEL CHECK DAM

PROFILE
- EXISTING GRADE
- FINISHED GRADE



1/10 KINLEE DRIVE
SCALE: 1"=20'



2/10 KINLEE DRIVE PROFILE
SCALE: 1"=20' VERT: 1"=5'

MORGAN CIVIL ENGINEERING, INC.
PO BOX 358
MANZANITA, OR 97130
(503) 368-5135
www.morgancivil.com
• CIVIL ENGINEERING
• INSPECTION
• PLANNING

JOB NO. RIS-19-01
DATE 9, 2022

REGISTERED PROFESSIONAL ENGINEER
63059
OREGON
JANUARY 15, 1980
JASON R. MORGAN
RENEWAL DATE: OCTOBER 31, 2023

RIVERVIEW MEADOWS DEVELOPMENT, LLC
RIVERVIEW MEADOWS PHASE 2
UTILITY LAYOUT - KINLEE DRIVE
NEHALEM, MAP 3N 10W 23B

NO.	DATE	DESCRIPTION	BY

SHEET
10
OF -21-

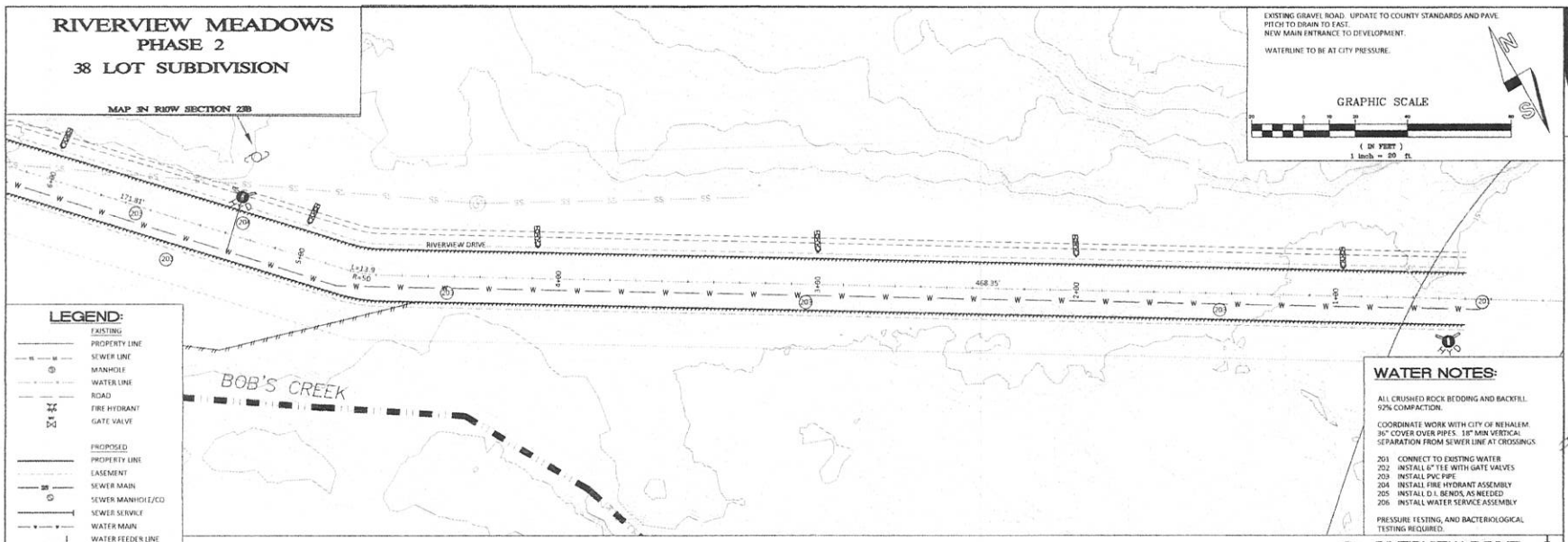
RIVERVIEW MEADOWS
PHASE 2
38 LOT SUBDIVISION

MAP 3N R10W SECTION 23B

EXISTING GRAVEL ROAD. UPDATE TO COUNTY STANDARDS AND PAVE.
PITCH TO DRAIN TO EAST.
NEW MAIN ENTRANCE TO DEVELOPMENT.

WATERLINE TO BE AT CITY PRESSURE.

GRAPHIC SCALE
(IN FEET)
1 inch = 20 ft.



LEGEND:

EXISTING
- PROPERTY LINE
- SEWER LINE
- MANHOLE
- WATER LINE
- ROAD
- FIRE HYDRANT
- GATE VALVE

PROPOSED
- PROPERTY LINE
- EASEMENT
- SEWER MAIN
- SEWER MANHOLE/CO
- SEWER SERVICE
- WATER MAIN
- WATER FEEDER LINE
- WATER VALVE
- FIRE HYDRANT
- WATER SERVICE
- EDGE OF SHOULDER
- EDGE OF ASPHALT
- GRAVEL CHECK DAM

WATER NOTES:

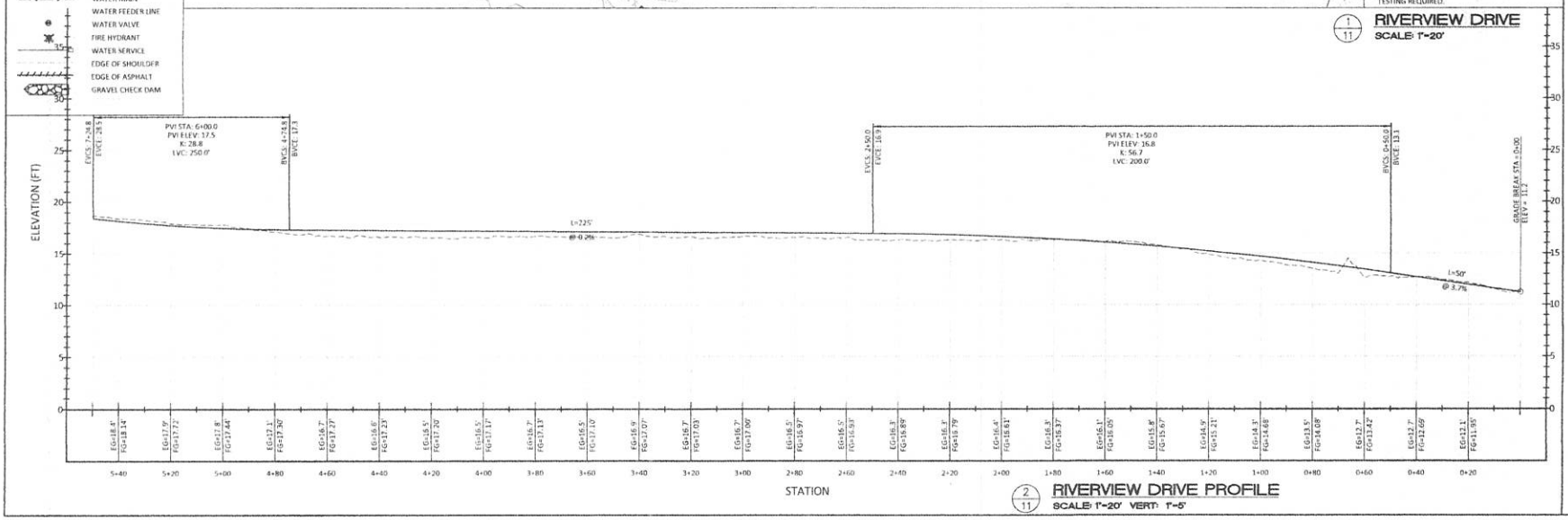
ALL CRUSHED ROCK BEDDING AND BACKFILL 92% COMPACTION.

COORDINATE WORK WITH CITY OF NEHALEM. 36" COVER OVER PIPES. 18" MIN VERTICAL SEPARATION FROM SEWER LINE AT CROSSINGS.

201 CONNECT TO EXISTING WATER
202 INSTALL 6" TEE WITH GATE VALVES
203 INSTALL PVC PIPE
204 INSTALL FIRE HYDRANT ASSEMBLY
205 INSTALL D.I. BENDS, AS NEEDED
206 INSTALL WATER SERVICE ASSEMBLY

PRESSURE TESTING, AND BACTERIOLOGICAL TESTING REQUIRED.

1/11 RIVERVIEW DRIVE
SCALE: 1"=20'



2/11 RIVERVIEW DRIVE PROFILE
SCALE: 1"=20' VERT: 1"=5'

MORGAN CIVIL ENGINEERING, INC.
• CIVIL ENGINEERING
• INSPECTION
• PLANNING
PO BOX 368
MANZANITA, OR 97130
(503) 801-5016
www.morgancivil.com

JOB NO. 19-34-01
DATE: OCT. 9, 2021

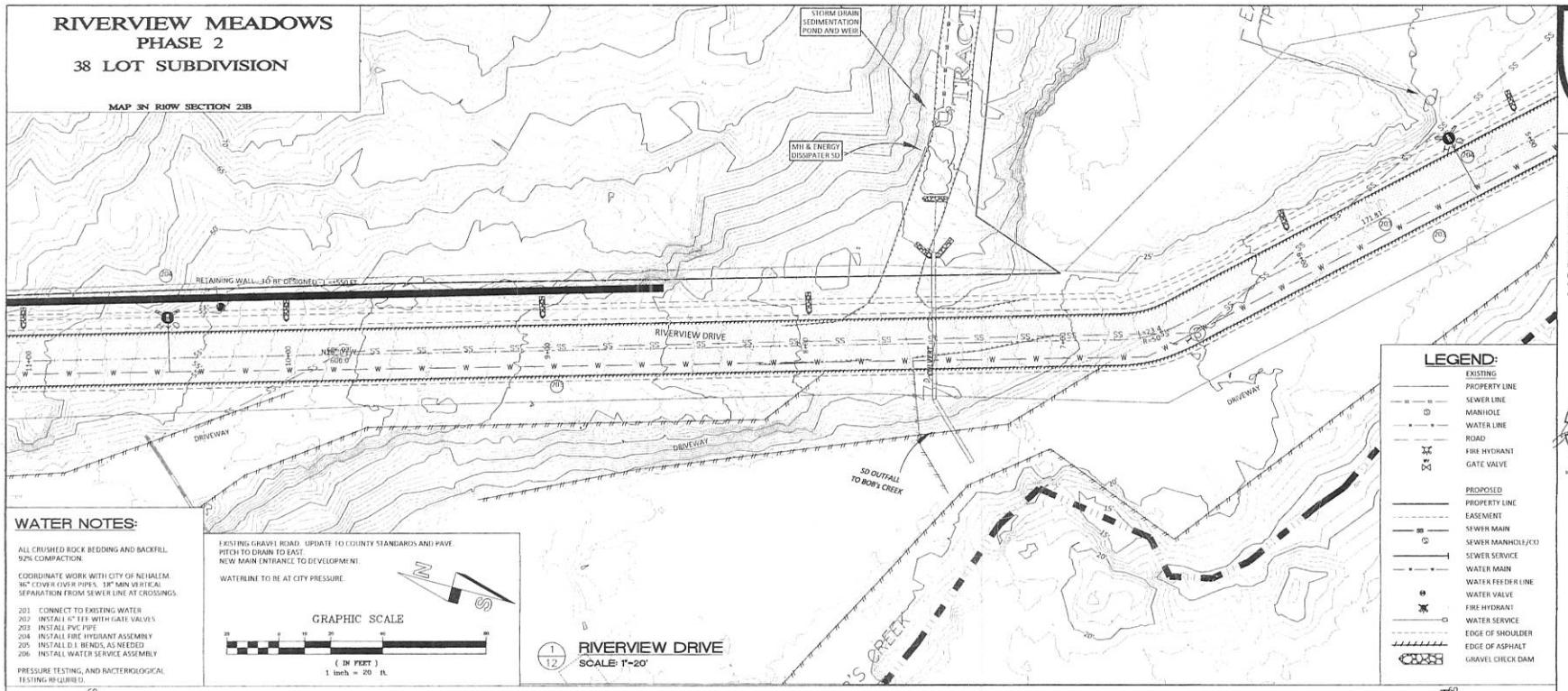
REGISTERED PROFESSIONAL ENGINEER
OREGON
JANUARY 15, 1999
JASON R. MORGAN
RENEWAL DATE: DECEMBER 31, 2022

RIVERVIEW MEADOWS DEVELOPMENT, LLC
RIVERVIEW MEADOWS PHASE 2
ENTRANCE ROAD
NEHALEM, MAP 3N 10W 23B

SHEET
11
OF -21-

RIVERVIEW MEADOWS
PHASE 2
38 LOT SUBDIVISION

MAP 3N R10W SECTION 23B



WATER NOTES:

ALL CRUSHED ROCK BEDDING AND BACKFILL 92% COMPACTION.

COORDINATE WORK WITH CITY OF NEHALEM. 36" COVER OVER PIPES. 18" MIN VERTICAL SEPARATION FROM SEWER LINE AT CROSSINGS.

201 CONNECT TO EXISTING WATER
202 INSTALL 6" TEE WITH GATE VALVES
203 INSTALL PVC PIPE
204 INSTALL FIRE HYDRANT ASSEMBLY
205 INSTALL D.I. BENDS, AS NEEDED
206 INSTALL WATER SERVICE ASSEMBLY

PRESSURE TESTING, AND BACTERIOLOGICAL TESTING REQUIRED.

EXISTING GRAVEL ROAD. UPDATE TO COUNTY STANDARDS AND PAVE.
PITCH TO DRAIN TO EAST.
NEW MAIN ENTRANCE TO DEVELOPMENT.

WATERLINE TO BE AT CITY PRESSURE.

GRAPHIC SCALE

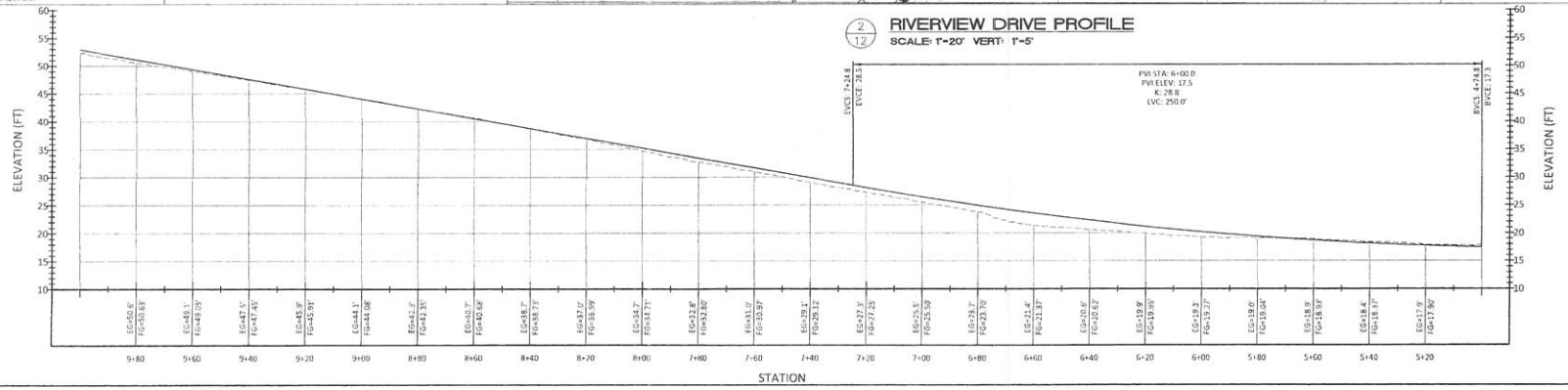
(IN FEET)
1 inch = 20 ft.

1/12 RIVERVIEW DRIVE
SCALE: 1"=20'

LEGEND:

EXISTING
- PROPERTY LINE
- SEWER LINE
- MANHOLE
- WATER LINE
- ROAD
- FIRE HYDRANT
- GATE VALVE

PROPOSED
- PROPERTY LINE
- EASEMENT
- SEWER MAIN
- SEWER MANHOLE/CO
- SEWER SERVICE
- WATER MAIN
- WATER FEEDER LINE
- WATER VALVE
- FIRE HYDRANT
- WATER SERVICE
- EDGE OF SHOULDER
- EDGE OF ASPHALT
- GRAVEL CHECK DAM



MORGAN CIVIL ENGINEERING, INC.
PO BOX 358
MANZANITA, OR 97130
(503) 801-6016
www.morgancivil.com
• CIVIL ENGINEERING
• INSPECTION
• PLANNING

JOB NO
819-19-KV
DATE
OCT. 4, 2022

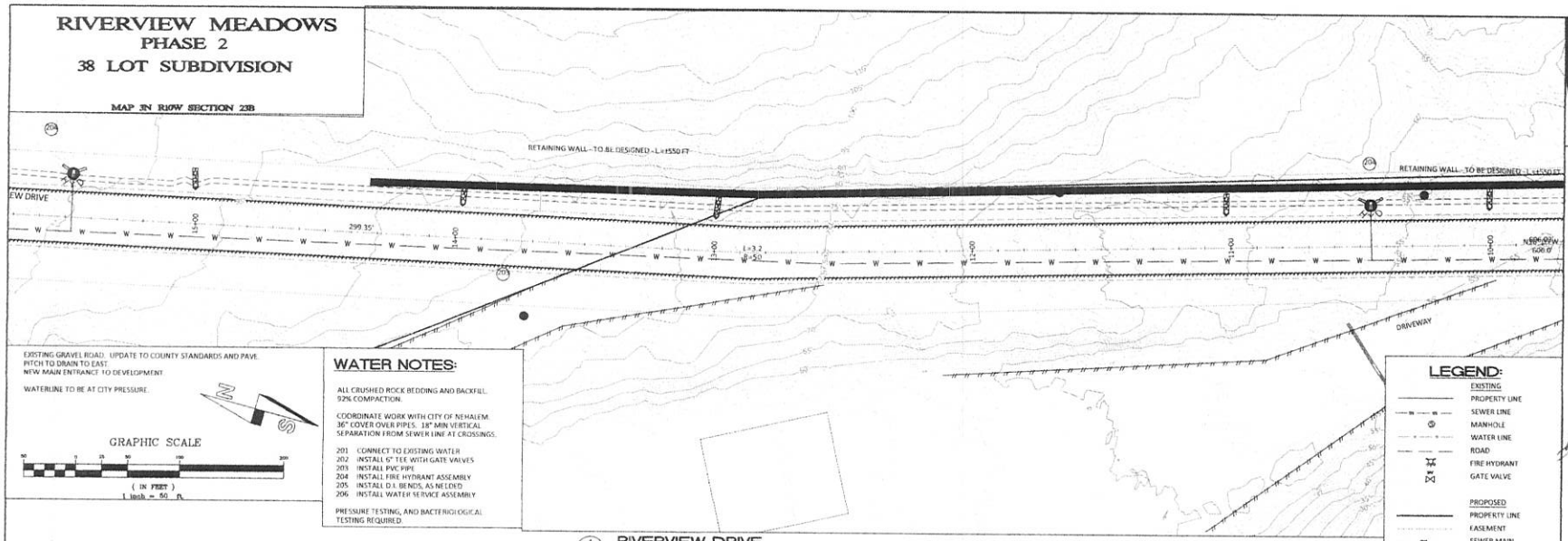
REGISTERED PROFESSIONAL ENGINEER
93059
OREGON
JANUARY 15, 1971
JASON R. MORGAN
RENEWAL DATE: DECEMBER 31, 2022

RIVERVIEW MEADOWS DEVELOPMENT, LLC
RIVERVIEW MEADOWS PHASE 2
ENTRANCE ROAD-2
NEHALEM, MAP 3N 10W 23B

SHEET
12
OF -21-

RIVERVIEW MEADOWS
PHASE 2
38 LOT SUBDIVISION

MAP 3N R10W SECTION 23B



EXISTING GRAVEL ROAD. UPDATE TO COUNTY STANDARDS AND PAVE. PITCH TO DRAIN TO EAST.
NEW MAIN ENTRANCE TO DEVELOPMENT.

WATERLINE TO BE AT CITY PRESSURE.

GRAPHIC SCALE

(IN FEET)
1 inch = 50 ft.

WATER NOTES:

ALL CRUSHED ROCK BEDDING AND BACKFILL 92% COMPACTION.

COORDINATE WORK WITH CITY OF NEHALEM.
36" COVER OVER PIPES. 18" MIN VERTICAL SEPARATION FROM SEWER LINE AT CROSSINGS.

201 CONNECT TO EXISTING WATER
202 INSTALL 6" TEE WITH GATE VALVES
203 INSTALL PVC PIPE
204 INSTALL FIRE HYDRANT ASSEMBLY
205 INSTALL D.I. BENDS, AS NEEDED
206 INSTALL WATER SERVICE ASSEMBLY

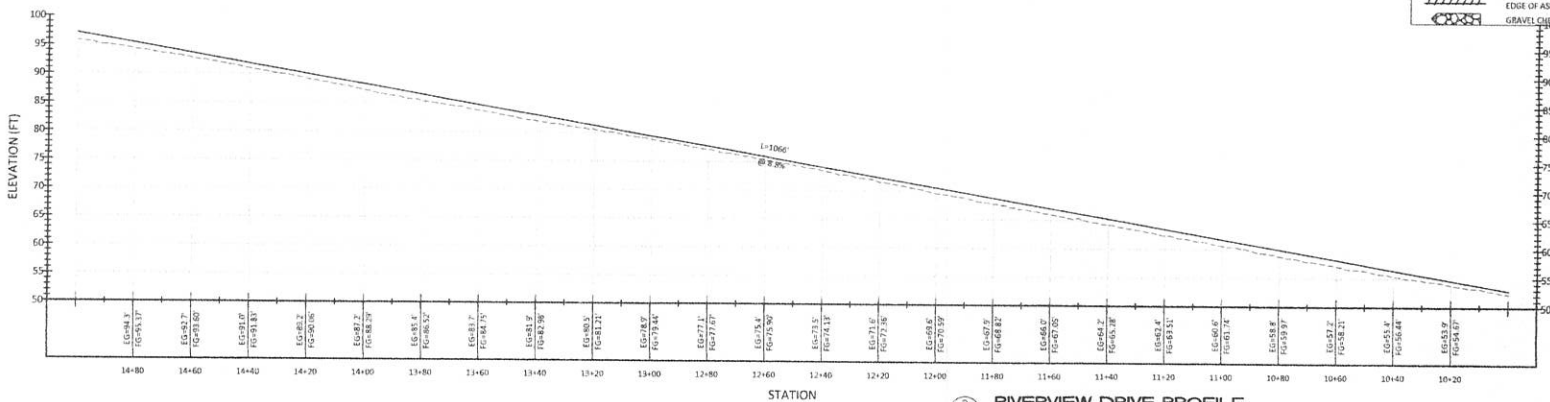
PRESSURE TESTING, AND BACTERIOLOGICAL TESTING REQUIRED.

LEGEND:

EXISTING
- PROPERTY LINE
- SEWER LINE
- MANHOLE
- WATER LINE
- ROAD
- FIRE HYDRANT
- GATE VALVE

PROPOSED
- PROPERTY LINE
- EASEMENT
- SEWER MAIN
- SEWER MANHOLE/CO
- SEWER SERVICE
- WATER MAIN
- WATER FEEDER LINE
- WATER VALVE
- FIRE HYDRANT
- WATER SERVICE
- EDGE OF SHOULDER
- EDGE OF ASPHALT
- GRAVEL CHECK DAM

1/13 RIVERVIEW DRIVE
SCALE: 1"=20'



2/13 RIVERVIEW DRIVE PROFILE
SCALE: 1"=20' VERT: 1"=5'

MORGAN CIVIL ENGINEERING, INC.
PO BOX 358
MANZANITA, OR 97130
(503) 801-6016
www.morgancivil.com
• CIVIL ENGINEERING
• INSPECTION
• PLANNING

JOB NO. 419-10-Priv
DATE: OCT. 3, 2022

REGISTERED PROFESSIONAL ENGINEER
83055
OREGON JULY 28, 2000
JASON R. MORGAN
RENEWAL DATE: DECEMBER 31, 2022

RIVERVIEW MEADOWS DEVELOPMENT, LLC
RIVERVIEW MEADOWS PHASE 2
ENTRANCE ROAD-3
NEHALEM, MAP 3N 10W 23B

SHEET
13
OF -21-

RIVERVIEW MEADOWS
PHASE 2
38 LOT SUBDIVISION

MAP 3N R10W SECTION 23B

LEGEND:

EXISTING
- PROPERTY LINE
- SEWER LINE
- MANHOLE
- WATER LINE
- ROAD
- FIRE HYDRANT
- GATE VALVE

PROPOSED
- PROPERTY LINE
- EASEMENT
- SEWER MAIN
- SEWER MANHOLE/CO
- SEWER SERVICE
- WATER MAIN
- WATER FEEDER LINE
- WATER VALVE
- FIRE HYDRANT
- WATER SERVICE
- EDGE OF SHOULDER
- EDGE OF ASPHALT
- GRAVEL CHECK DAM

WATER NOTES:

ALL CRUSHED ROCK BEDDING AND BACKFILL. 92% COMPACTION.

COORDINATE WORK WITH CITY OF NEHALEM. 36" COVER OVER PIPES. 18" MIN VERTICAL SEPARATION FROM SEWER LINE AT CROSSINGS.

201 CONNECT TO EXISTING WATER
202 INSTALL 6" TEE WITH GATE VALVES
203 INSTALL PVC PIPE
204 INSTALL FIRE HYDRANT ASSEMBLY
205 INSTALL D.I. BENDS, AS NEEDED
206 INSTALL WATER SERVICE ASSEMBLY

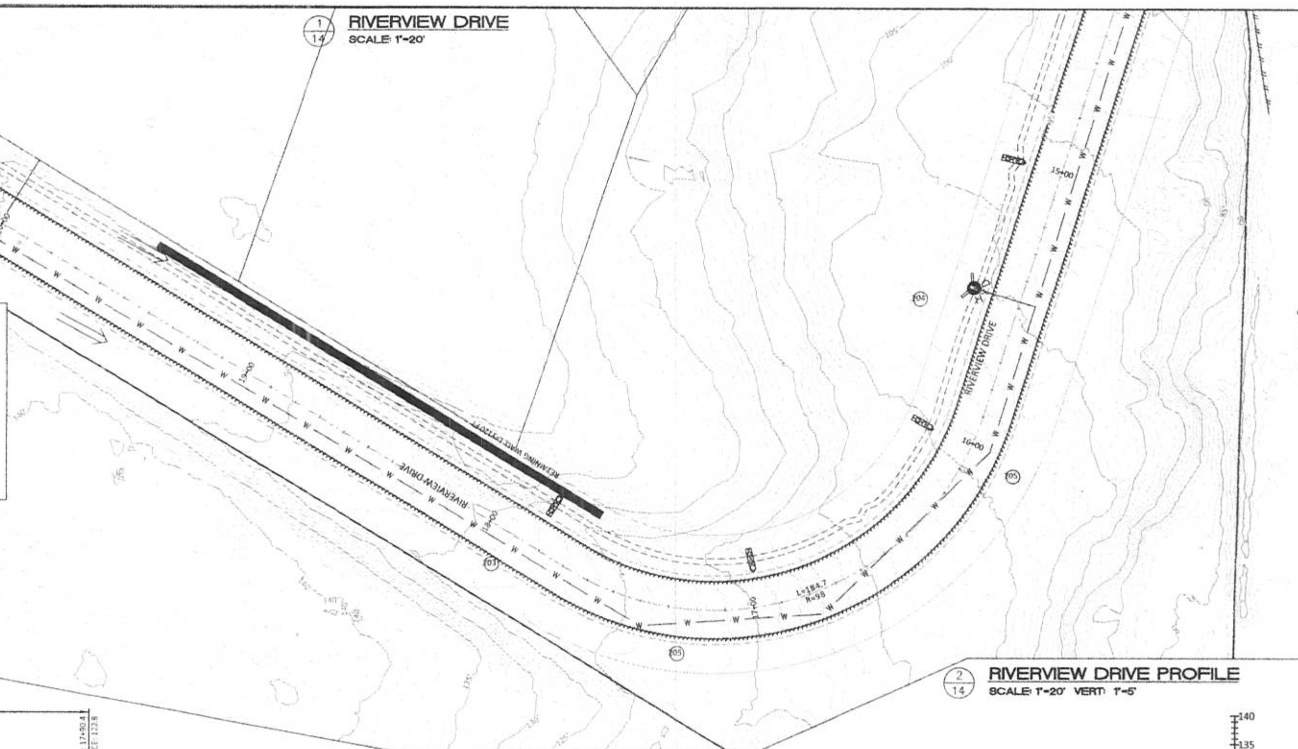
PRESSURE TESTING, AND BACTERIOLOGICAL TESTING REQUIRED.

EXISTING GRAVEL ROAD. UPDATE TO COUNTY STANDARDS AND PAVE. PITCH TO DRAIN TO EAST.
NEW MAIN ENTRANCE TO DEVELOPMENT.

WATERLINE TO BE AT CITY PRESSURE.

GRAPHIC SCALE

(IN FEET)
1 inch = 50 ft.



STATION	EG	FG
18+80	EG=130.0'	FG=129.67'
18+60	EG=129.0'	FG=128.33'
18+40	EG=127.6'	FG=126.89'
18+20	EG=126.1'	FG=125.34'
18+00	EG=124.7'	FG=123.67'
17+80	EG=123.1'	FG=121.92'
17+60	EG=121.4'	FG=120.15'
17+40	EG=119.5'	FG=118.38'
17+20	EG=117.2'	FG=116.61'
17+00	EG=114.9'	FG=114.84'
16+80	EG=112.6'	FG=113.07'
16+60	EG=110.2'	FG=111.30'
16+40	EG=108.0'	FG=109.53'
16+20	EG=105.9'	FG=107.76'
16+00	EG=104.3'	FG=105.99'
15+80	EG=102.3'	FG=104.27'
15+60	EG=100.6'	FG=102.45'
15+40	EG=99.3'	FG=100.68'
15+20	EG=97.5'	FG=98.91'
15+00	EG=95.8'	FG=97.14'
14+80	EG=94.3'	FG=95.37'
14+60	EG=92.7'	FG=93.60'
14+40	EG=91.0'	FG=91.83'
14+20	EG=89.2'	FG=90.06'

MORGAN CIVIL ENGINEERING, INC.

PO BOX 358
MANZANITA, OR 97130
(503) 801-6016
www.morgancivil.com

- CIVIL ENGINEERING
- INSPECTION
- PLANNING

JOB NO. #19-10-RV
DATE OCT. 9, 2022

REGISTERED PROFESSIONAL ENGINEER 83055 OREGON JANUARY 15, 2005 JASON R. MORGAN

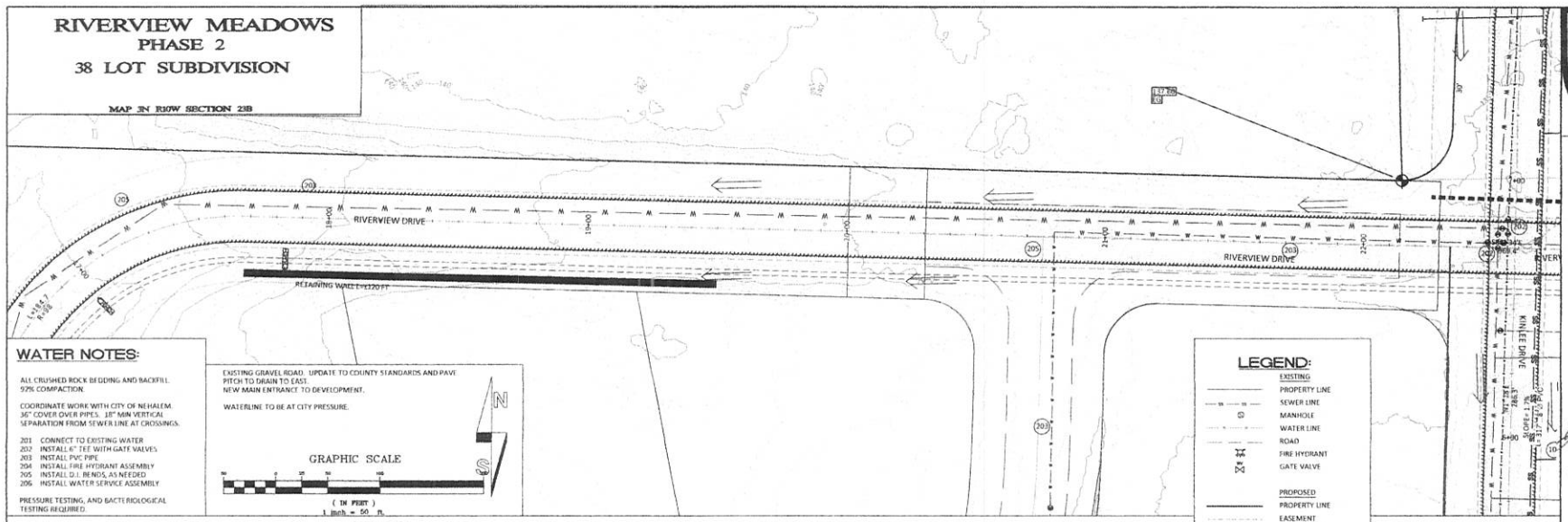
RIVERVIEW MEADOWS DEVELOPMENT, LLC
RIVERVIEW MEADOWS PHASE 2
ENTRANCE ROAD-4

NEHALEM, MAP 3N 10W 23B

SHEET 14 OF -21-

RIVERVIEW MEADOWS
PHASE 2
38 LOT SUBDIVISION

MAP 3N R10W SECTION 23B



WATER NOTES:

ALL CRUSHED ROCK BEDDING AND BACKFILL 92% COMPACTION.

COORDINATE WORK WITH CITY OF NEHALEM. 36" COVER OVER PIPES. 18" MIN VERTICAL SEPARATION FROM SEWER LINE AT CROSSINGS.

201 CONNECT TO EXISTING WATER
202 INSTALL 6" TEE WITH GATE VALVES
203 INSTALL PVC PIPE
204 INSTALL FIRE HYDRANT ASSEMBLY
205 INSTALL D.I. BENDS, AS NEEDED
206 INSTALL WATER SERVICE ASSEMBLY

PRESSURE TESTING, AND BACTERIOLOGICAL TESTING REQUIRED.

EXISTING GRAVEL ROAD. UPDATE TO COUNTY STANDARDS AND PAVE
PITCH TO DRAIN TO EAST.
NEW MAIN ENTRANCE TO DEVELOPMENT.

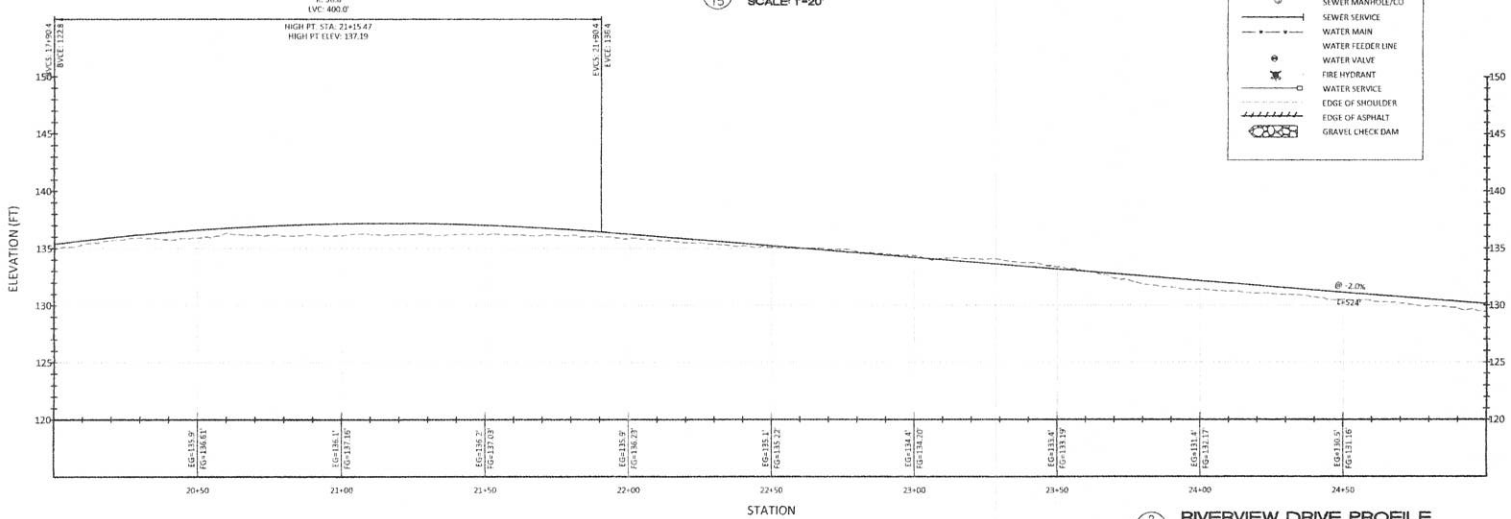
WATERLINE TO BE AT CITY PRESSURE.

LEGEND:

EXISTING
- PROPERTY LINE
- SEWER LINE
- MANHOLE
- WATER LINE
- ROAD
- FIRE HYDRANT
- GATE VALVE

PROPOSED
- PROPERTY LINE
- EASEMENT
- SEWER MAIN
- SEWER MANHOLE/CO
- SEWER SERVICE
- WATER MAIN
- WATER FEEDER LINE
- WATER VALVE
- FIRE HYDRANT
- WATER SERVICE
- EDGE OF SHOULDER
- EDGE OF ASPHALT
- GRAVEL CHECK DAM

1/15 RIVERVIEW DRIVE
SCALE: 1"=20'



2/15 RIVERVIEW DRIVE PROFILE
SCALE: 1"=20' VERT: 1"=5'

MORGAN CIVIL ENGINEERING, INC.
• CIVIL ENGINEERING
• INSPECTION
• PLANNING
PO BOX 358
MANZANITA, OR 97130
(503) 801-6016
www.morgancivil.com

REGISTERED PROFESSIONAL ENGINEER
OREGON
JANUARY 14, 1992
JASON R. MORGAN

RIVERVIEW MEADOWS DEVELOPMENT, LLC
RIVERVIEW MEADOWS PHASE 2
ENTRANCE ROAD-5
NEHALEM, MAP 3N 10W 23B

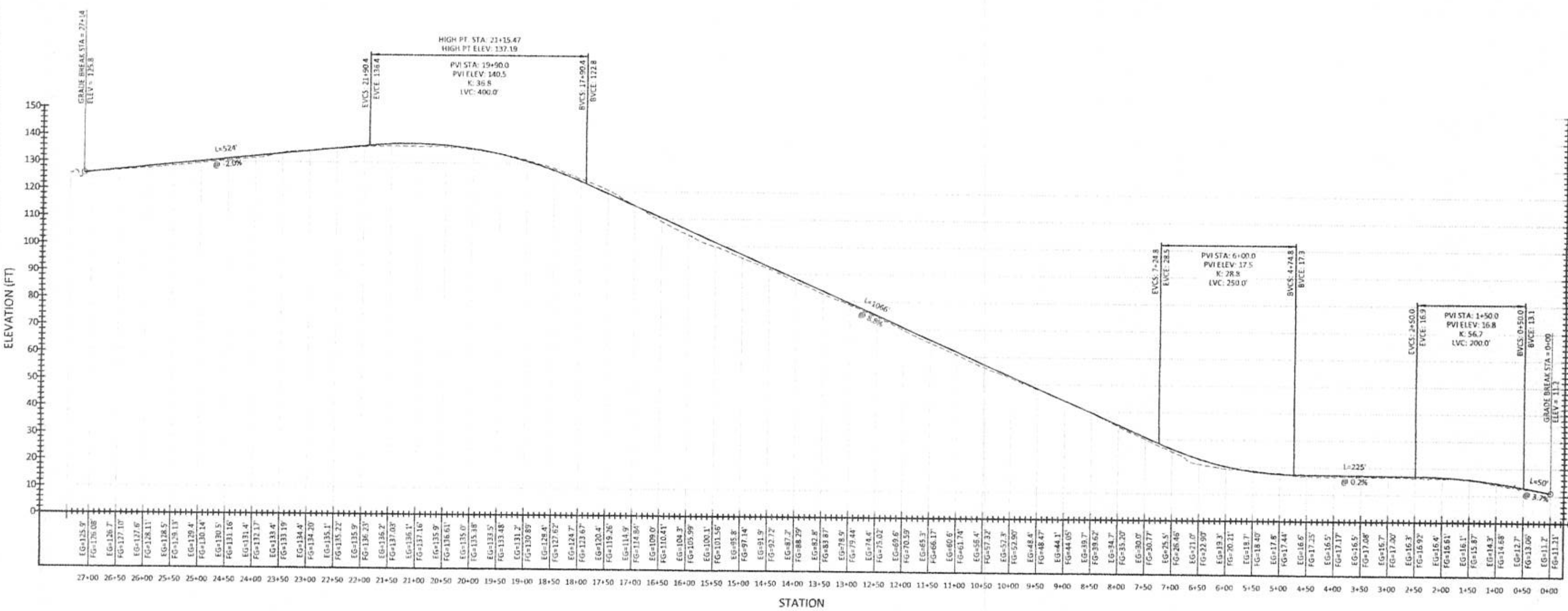
SHEET
15
OF -21-

RIVERVIEW MEADOWS
PHASE 2
38 LOT SUBDIVISION

MAP 3N R10W SECTION 23B

ENTRANCE ROAD PROFILE

1/16 SCALE: 1"=100' VERT: 1"=20' (5 X EXAGGERATION)



MORGAN CIVIL ENGINEERING, INC.

PO BOX 358
MANZANITA, OR 97130
(503) 801-6016
www.morgancivil.com

- CIVIL ENGINEERING
- INSPECTION
- PLANNING

RIVERVIEW MEADOWS DEVELOPMENT, LLC
RIVERVIEW MEADOWS PHASE 2
ENTRANCE ROAD PROFILE
NEHALEM, MAP 3N 10W 23B

SHEET
16
OF -21-

SEWER NOTES:

ALL CRUSHED ROCK BEDDING AND BACKFILL. 92% COMPACTION.

COORDINATE WORK WITH NBWA.

101 CONNECT TO EXISTING STUB
102 INSTALL NEW MANHOLE
103 INSTALL NEW 8" SEWER PIPE
104 INSTALL NEW SEWER SERVICE ASSEMBLY
105 INSTALL NEW END OF LINE CLEANOUT

DEFLECTION TESTING, PRESSURE TESTING, AND VIDEO INSPECTION REQUIRED.

WATER NOTES:

ALL CRUSHED ROCK BEDDING AND BACKFILL. 92% COMPACTION.

COORDINATE WORK WITH CITY OF NEHALEM. 36" COVER OVER PIPES. 18" MIN VERTICAL SEPARATION FROM SEWER LINE AT CROSSINGS.

201 CONNECT TO EXISTING WATER
202 INSTALL 6" TEE WITH GATE VALVES
203 INSTALL PVC PIPE
204 INSTALL FIRE HYDRANT ASSEMBLY
205 INSTALL D.I. BENDS, AS NEEDED
206 INSTALL WATER SERVICE ASSEMBLY

PRESSURE TESTING, AND BACTERIOLOGICAL TESTING REQUIRED

STORM NOTES:

ALL CRUSHED ROCK BEDDING AND BACKFILL. 92% COMPACTION

COORDINATE WORK WITH COUNTY PUBLIC WORKS.

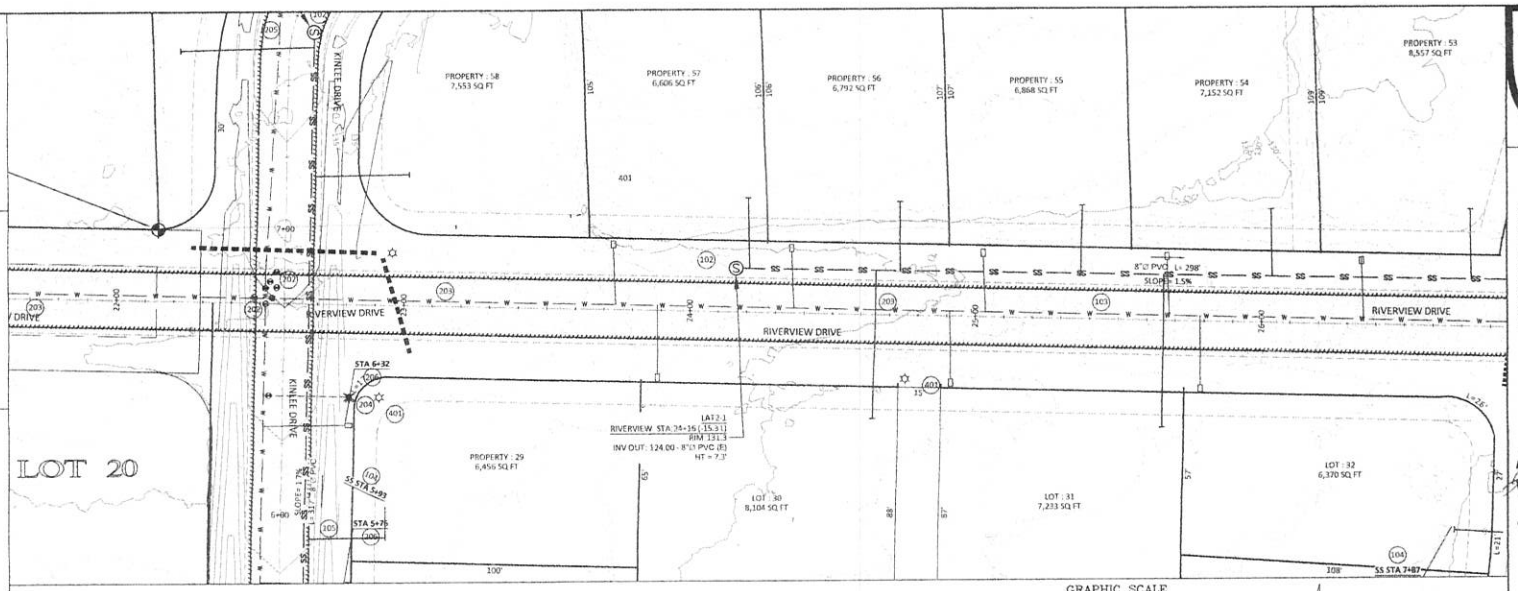
301 ROADSIDE DITCH
302 18" CULVERT

LEGEND:

EXISTING
- PROPERTY LINE
- SEWER LINE
- MANHOLE
- WATER LINE
- ROAD
- FIRE HYDRANT
- GATE VALVE

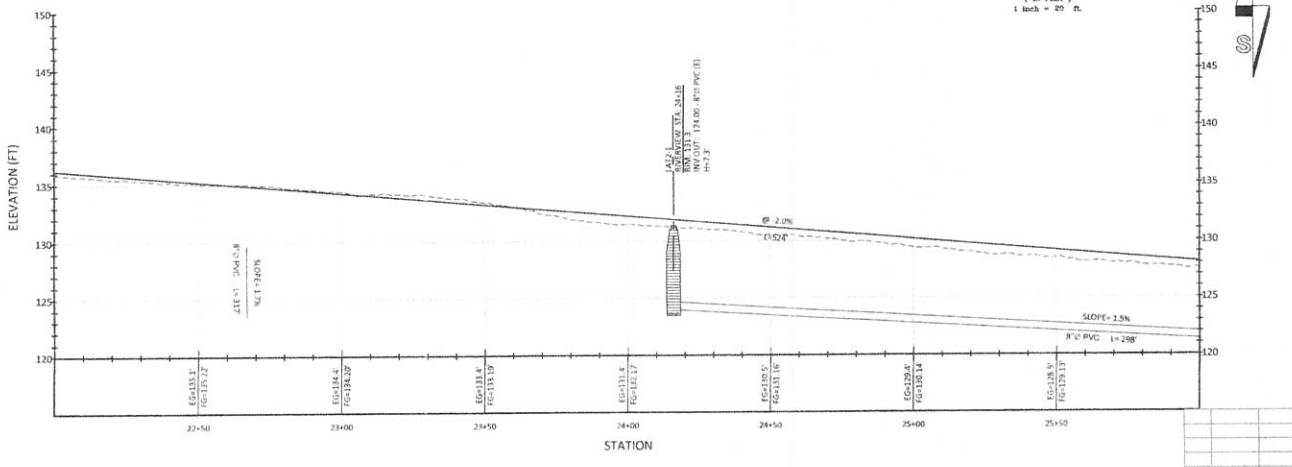
PROPOSED
- PROPERTY LINE
- EASEMENT
- SEWER MAIN
- SEWER MANHOLE/CO
- SEWER SERVICE
- WATER MAIN
- WATER FEEDER LINE
- WATER VALVE
- FIRE HYDRANT
- WATER SERVICE
- EDGE OF SHOULDER
- EDGE OF ASPHALT
- GRAVEL CHECK DAM

PROFILE
- EXISTING GRADE
- FINISHED GRADE



1/17 RIVERVIEW DRIVE
SCALE: 1"=20'

GRAPHIC SCALE
(IN FEET)
1 inch = 20 ft.



2/17 RIVERVIEW DRIVE PROFILE
SCALE: 1"=20' VERT: 1"=5'

NO.	DATE	DESCRIPTION	BY

MORGAN CIVIL ENGINEERING, INC.
• CIVIL ENGINEERING
• INSPECTION
• PLANNING
PO BOX 358
MANZANITA, OR 97130
(503) 801-6516
www.morgancivil.com

JOB NO. 21-10-V
DATE OCT. 8, 2021

REGISTERED PROFESSIONAL ENGINEER
83025
OREGON
JULY 15, 1994
JASON M. MORGAN
RENEWAL: Jun 30, 2023

RIVERVIEW MEADOWS DEVELOPMENT, LLC
RIVERVIEW MEADOWS PHASE 2
UTILITY LAYOUT - RIVERVIEW DRIVE
NEHALEM, MAP 3N 10W 23B

SHEET
17
OF -21-

SEWER NOTES:

ALL CRUSHED ROCK BEDDING AND BACKFILL. 92% COMPACTION.

COORDINATE WORK WITH NBWA.

101 CONNECT TO EXISTING STUB
102 INSTALL NEW MANHOLE
103 INSTALL NEW 8" SEWER PIPE
104 INSTALL NEW SEWER SERVICE ASSEMBLY
105 INSTALL NEW END OF LINE CLEANOUT

DEFLECTION TESTING, PRESSURE TESTING, AND VIDEO INSPECTION REQUIRED.

WATER NOTES:

ALL CRUSHED ROCK BEDDING AND BACKFILL. 92% COMPACTION.

COORDINATE WORK WITH CITY OF NEHALEM. 36" COVER OVER PIPES. 18" MIN VERTICAL SEPARATION FROM SEWER LINE AT CROSSINGS.

201 CONNECT TO EXISTING WATER
202 INSTALL 6" TEE WITH GATE VALVES
203 INSTALL PVC PIPE
204 INSTALL FIRE HYDRANT ASSEMBLY
205 INSTALL D.I. BENDS, AS NEEDED
206 INSTALL WATER SERVICE ASSEMBLY

PRESSURE TESTING, AND BACTERIOLOGICAL TESTING REQUIRED.

STORM NOTES:

ALL CRUSHED ROCK BEDDING AND BACKFILL. 92% COMPACTION.

COORDINATE WORK WITH COUNTY PUBLIC WORKS.

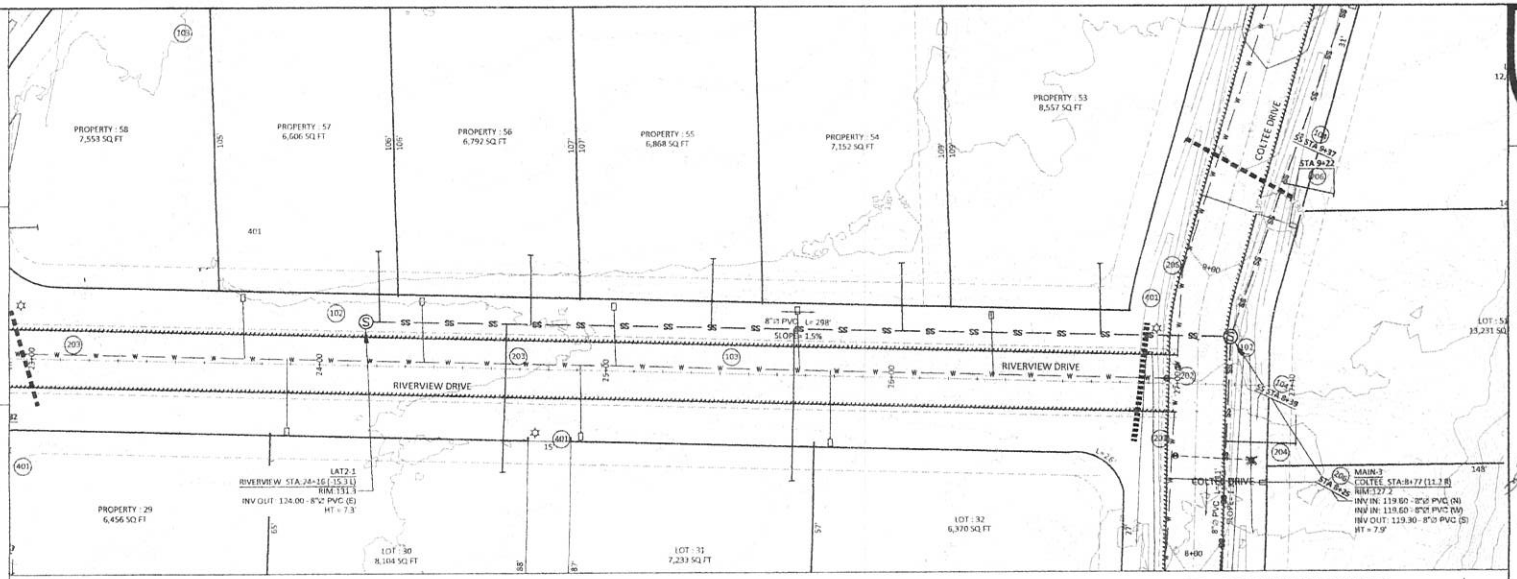
301 ROADSIDE DITCH
302 18" CULVERT

LEGEND:

EXISTING
- PROPERTY LINE
- SEWER LINE
- MANHOLE
- WATER LINE
- ROAD
- FIRE HYDRANT
- GATE VALVE

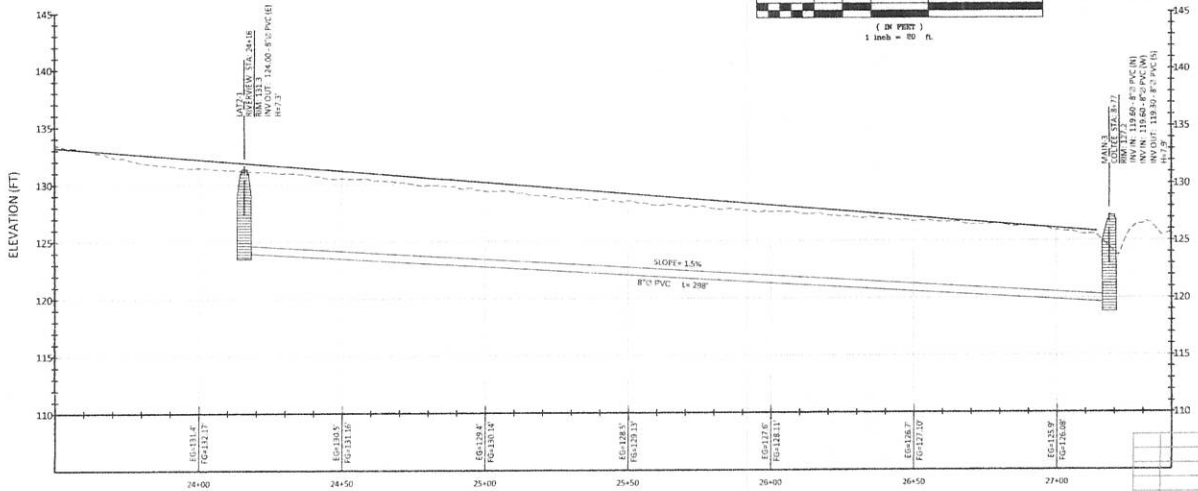
PROPOSED
- PROPERTY LINE
- EASEMENT
- SEWER MAIN
- SEWER MANHOLE/CO
- SEWER SERVICE
- WATER MAIN
- WATER FEEDER LINE
- WATER VALVE
- FIRE HYDRANT
- WATER SERVICE
- EDGE OF SHOULDER
- EDGE OF ASPHALT
- GRAVEL CHECK DAM

PROFILE
- EXISTING GRADE
- FINISHED GRADE



GRAPHIC SCALE
(IN FEET)
1 inch = 80 ft.

1/18 RIVERVIEW DRIVE
SCALE: 1"=20'



2/18 RIVERVIEW DRIVE PROFILE
SCALE: 1"=20' VERT: 1"=5'

MORGAN CIVIL ENGINEERING, INC.
• CIVIL ENGINEERING • SURVEYING • PLANNING
PO BOX 358
MANZANITA, OR 97130
503-812-0960
www.morgancivil.com

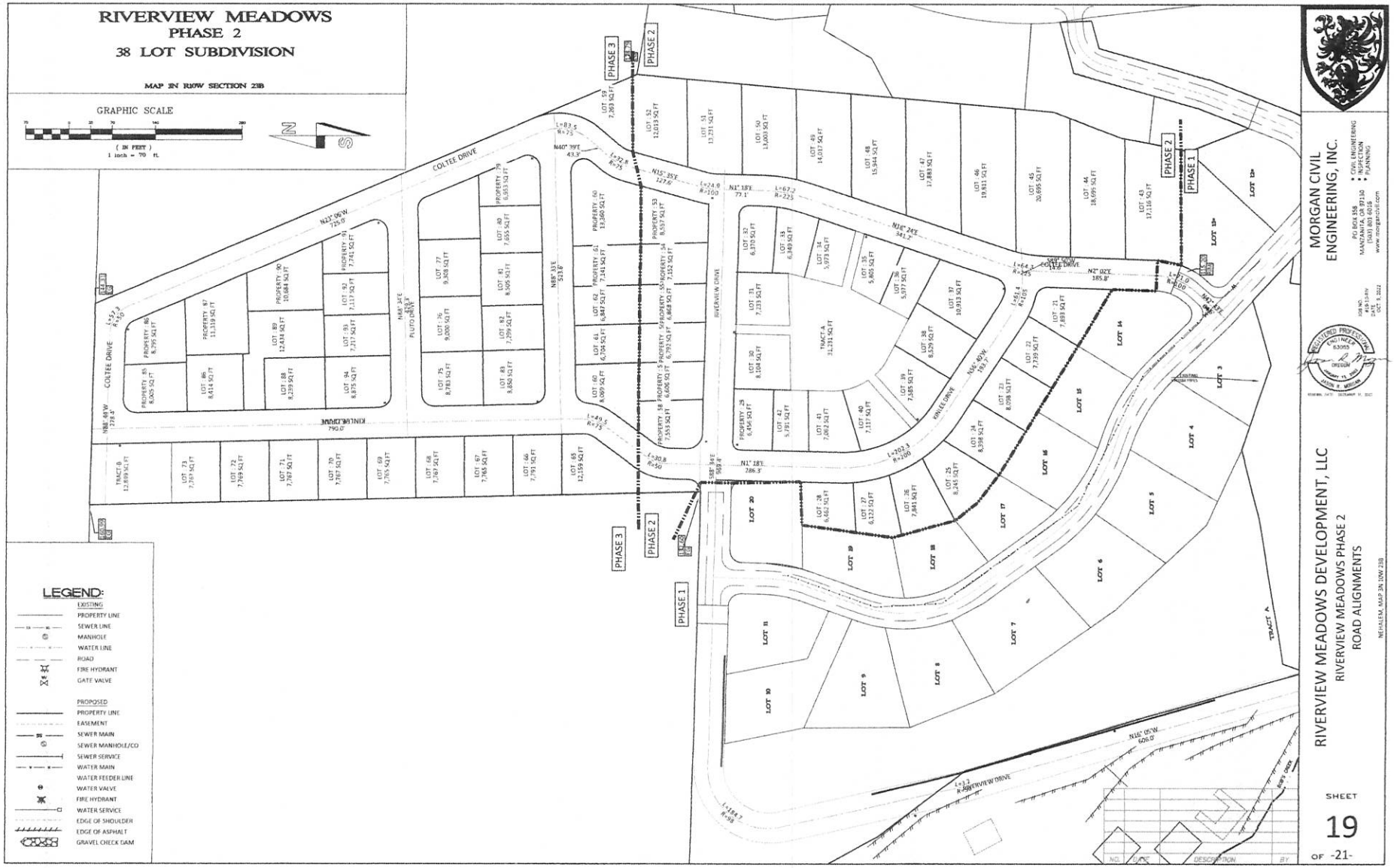
REGISTERED PROFESSIONAL ENGINEER
OREGON
JANUARY 15, 2008
JASON R. MORGAN

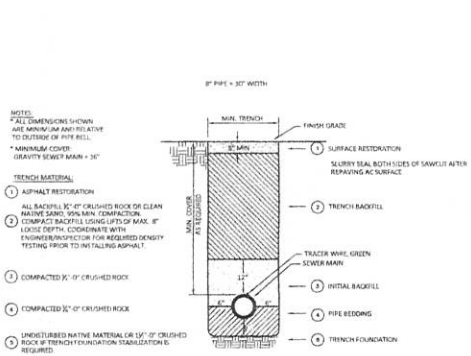
RIVERVIEW MEADOWS DEVELOPMENT, LLC
RIVERVIEW MEADOWS PHASE 2
UTILITY LAYOUT - RIVERVIEW DRIVE

NEHALEM, MAP 3N 10W 23B

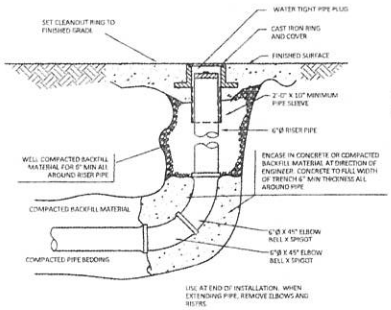
NO.	DATE	DESCRIPTION	BY

SHEET
18
OF -21-

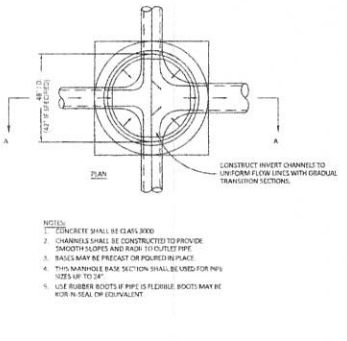

RIVERVIEW MEADOWS
PHASE 2
38 LOT SUBDIVISION
MAP 3N R10W SECTION 23B
GRAPHIC SCALE
(IN FEET)
1 inch = 70 ft.
N
COLTEE DRIVE
RIVERVIEW DRIVE
KINLEE DRIVE
PLUTO DRIVE
PHASE 1
PHASE 2
PHASE 3
TRACT A
TRACT B
LEGEND:
EXISTING
PROPERTY LINE
SEWER LINE
MANHOLE
WATER LINE
ROAD
FIRE HYDRANT
GATE VALVE
PROPOSED
PROPERTY LINE
EASEMENT
SEWER MAIN
SEWER MANHOLE/CO
SEWER SERVICE
WATER MAIN
WATER FEEDER LINE
WATER VALVE
FIRE HYDRANT
WATER SERVICE
EDGE OF SHOULDER
EDGE OF ASPHALT
GRAVEL CHECK DAM
MORGAN CIVIL ENGINEERING, INC.
• CIVIL ENGINEERING
• INSPECTION
• PLANNING
PO BOX 556
MANZANITA, OR 97130
(503) 803 6018
www.morgancivil.com
JOB NO.
DATE
OCT 5, 2022
REGISTERED PROFESSIONAL ENGINEER
OREGON
JANUARY 15, 2008
JASON R. MORGAN
RENEWAL DATE: DECEMBER 31, 2022
RIVERVIEW MEADOWS DEVELOPMENT, LLC
RIVERVIEW MEADOWS PHASE 2
ROAD ALIGNMENTS
NEHALEM, MAP 3N, 10W, 23B
SHEET
19
OF -21-



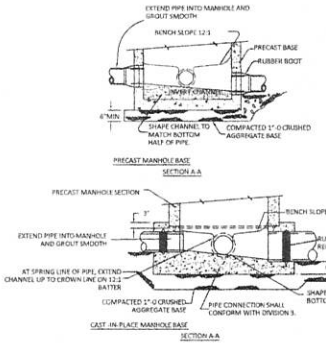
1/20 **SEWER MAIN TRENCH DETAIL**
NO SCALE



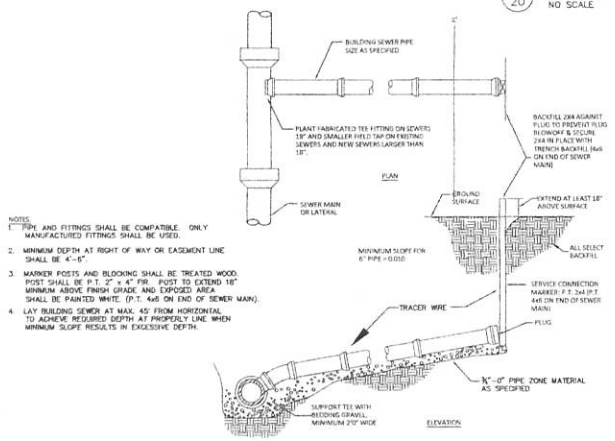
2/20 **END OF LINE CLEANOUT**
NO SCALE



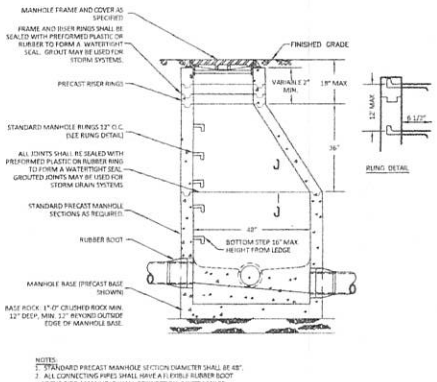
3/20 **MANHOLE BASE PLAN**
NO SCALE



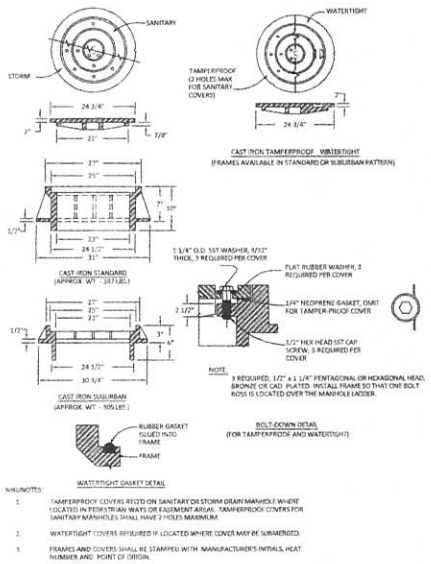
4/20 **MANHOLE BASE SECTION**
NO SCALE



5/20 **SANITARY SEWER SERVICE CONNECTION**
NO SCALE



6/20 **STANDARD SANITARY SEWER MANHOLE**
NO SCALE



MANUNOTES:
1. TAMPERPROOF COVERS REQ'D ON SANITARY OR STORM DRAIN MANHOLE WHERE LOCATED IN PEDESTRIAN WAYS OR EASEMENT AREAS. TAMPERPROOF COVERS FOR SANITARY MANHOLES SHALL HAVE 2 HOLES MAXIMUM.
2. WATERTIGHT COVERS REQUIRED IF LOCATED WHERE COVER MAY BE SUBMERGED.
3. FRAMES AND COVERS SHALL BE STAMPED WITH MANUFACTURER'S INITIALS, HEAT NUMBER AND POINT OF ORIGIN.

7/20 **MANHOLE COVER AND FRAME DETAIL**
NO SCALE

NO.	DATE	DESCRIPTION	BY

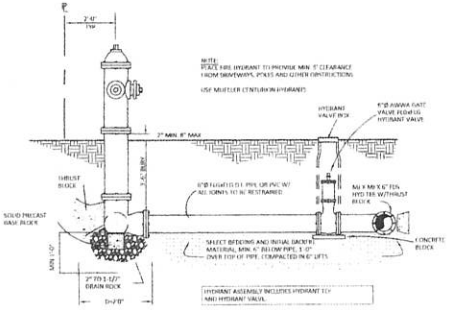
MORGAN CIVIL ENGINEERING, INC.
• CIVIL ENGINEERING • INSPECTION • PLANNING
PO BOX 258
MARION, OREGON 97351
(503) 801-4035
www.morganciv.com

JOB NO. 419-10-IIV
DATE: OCT. 5, 2021

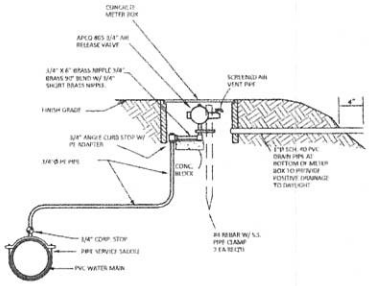
RENEWAL DATE: DECEMBER 31, 2022

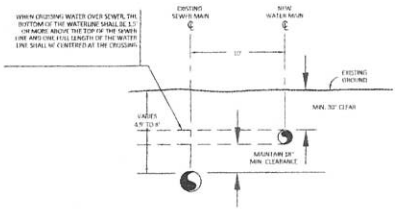
RIVERVIEW MEADOWS DEVELOPMENT, LLC
RIVERVIEW MEADOWS PHASE 2
SEWER SYSTEM DETAILS
NEHALEM, MAP 3N 10W 23B

SHEET
20
OF -21-

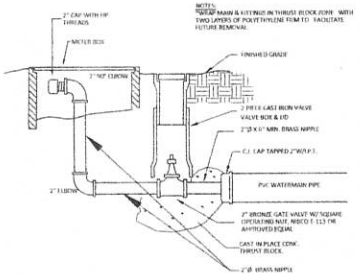


1/21 FIRE HYDRANT ASSEMBLY
NO SCALE

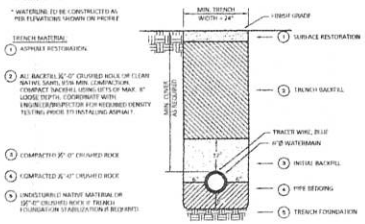




2/21 WATER LINE - SEWER LINE SEPARATION
NO SCALE

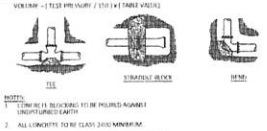


3/21 WATER BLOWOFF DETAIL
NO SCALE

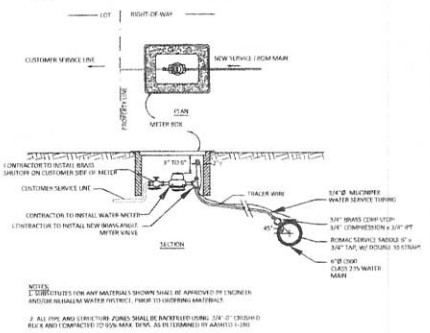


4/21 WATERMAIN TRENCH DETAIL
NO SCALE

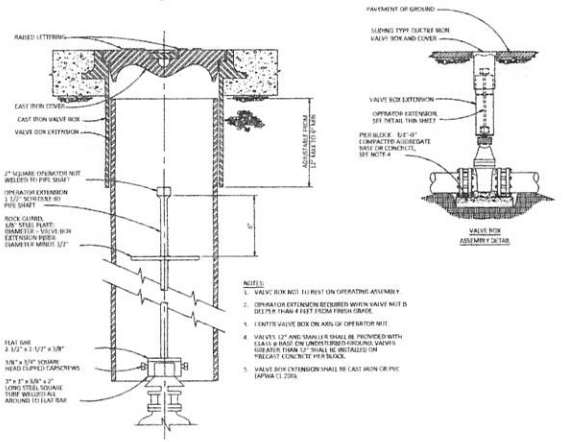
FITTING SIZE	TEE, WYE, DEAD END AND HYDRANT	STRADDLE BLOCK	90° BEND PLUGGED CROSS	90° BEND ON RUN A-1	90° BEND ON RUN A-7	45° BEND	22-1/2° BEND	11-1/4° BEND
4	2.0	3.2	2.8	3.8	2.8	2.0	---	---
6	4.2	7.4	6.0	8.6	6.0	4.2	2.0	---



5/21 THRUST BLOCKING
NO SCALE



6/21 WATER SERVICE DETAIL
NO SCALE



7/21 TYPICAL VALVE
NO SCALE

VALVE BOX EXTENSION SECTION

NO.	DATE	DESCRIPTION	BY

MORGAN CIVIL ENGINEERING, INC.
• CIVIL ENGINEERING
• INSPECTION
• PLANNING
PO BOX 368
MANZANITA, OR 97130
(503) 801-6016
www.morganciv.com

JOB NO. 21-03-xx
DATE OCT. 6, 2021

REGISTERED PROFESSIONAL ENGINEER
67010
OREGON
JANUARY 15, 1982
JASON R. MORGAN
RENEWAL DATE: DECEMBER 31, 2022

RIVERVIEW MEADOWS DEVELOPMENT, LLC
RIVERVIEW MEADOWS PHASE 2
WATER SYSTEM DETAILS
REVALEX, MAP 3N 10W 25B

SHEET
21
OF -21-

Tillamook County

DEPARTMENT OF COMMUNITY DEVELOPMENT
BUILDING, PLANNING & ON-SITE SANITATION SECTIONS

1510 – B Third Street
Tillamook, Oregon 97141
www.tillamook.or.us

Building (503) 842-3407
Planning (503) 842-3408
On-Site Sanitation (503) 842-3409
FAX (503) 842-1819
Toll Free 1 (800) 488-8280

December 13, 2021

Vern Scovell
PO Box 151
Nehalem, OR 97131

Carey Sheldon
PO Box 883
Fairview, OR 97024

RE: Incomplete Application for Tentative Subdivision, "Riverview Meadows Phase II", on a parcel designated as Tax Lot 3600 of Township 3 North, Section 23B, Range 10 West of the Willamette Meridian.

Dear Applicant:

In reviewing the above-listed Tentative Subdivision application, we have determined that the application is incomplete.

Items missing as required by the City of Nehalem Code of Ordinances (CNCO) are addressed by section below:

CNCO 156.017 Information in the tentative plan:

J. *Names of the record owners of all contiguous land* – missing.

K. *The approximate location and character of all existing and proposed easements and public utility facilities including water and sewer lines in the subdivision or adjacent thereto, storm water drainage facilities and utility lines*

The tentative plat does not adequately illustrate proposed storm water abatement. Details such as sheet-flow directions, swales, infiltration, and detention areas are missing or insufficient. The project Statement does not adequately address all the elements of CNCO 157.261(H)1-6 The project Statement should specifically address each element (1-6) individually or be done so in a detailed storm water management plan developed and reviewed by a qualified professional for adherence to the Geological Hazard Report and the requirements of CNCO Section 157.261 *et.al.*

L. *The location and approximate dimension of each lot, with each lot numbered.*

The Geologic Hazard Report and the tentative plat do not match. The GeoHaz report references Lots 39-48 however, they are designated 43-52 on the tentative plat. Please provide clarity to this discrepancy in the updated project Statement.

Q. *If impracticable to show on the tentative plan, a key map showing the location of the tract in relationship to section and township lines and to adjacent property and major physical features such as streets, railroads and watercourses...* missing.

Additionally, the tentative plat does not identify a benchmark or datum.

Please provide a key map with the information required pursuant to CNCO 156.017(Q).

R. *The net density of the subdivision, the total acreage of land, square footage of each lot and square footage of open areas or common open space.*

The required information noted in CNCO 156.017(R) must be addressed individually and in detail on the face of the plat or in the report provided by the Applicant. The written project Statement lacks detail or does not address the required elements.

CNCO 156.019 Information in statement:

A. *A general explanation of the improvements and public utilities, including water supply and sewage disposal proposed to be installed.*

The project Statement provided does not specifically address each of the required elements specified in CNCO 156.019(A). Specifically, attached approval letters, emails and other correspondence is not sufficient. Furthermore, there are specific challenges known to the Applicant and the County such as water availability, water pressure, and fire suppression that should be addressed in detail in the Statement. Please provide a revised project Statement that addresses all subjects as required and specified by the CNCO.

B. *Requested variances.*

None proposed.

C. *Public areas proposed*

None identified or addressed.

D. *Open space, landscaped areas, tree planting proposed and means of maintaining such improvements*

There appear to be open areas on the tentative map however, open areas illustrated are not clearly identified as to use and have no specified landscape plan or maintenance schedule. Additionally, landscaped areas and proposed vegetation (Trees) are typically associated with a Storm Water Management Plan (SWMP) and if so, should be addressed specifically in the project Statement and SWMP, and clearly illustrated on the tentative plat. Please provide a revised project Statement and plat that addresses and clearly illustrates all subjects as required and specified by CNCO Section: 156.019 *et al* & 157.261(G)(7) & (H)(3)&(4).

E. *A preliminary draft of restrictive covenants proposed...*

The project Statement provided intimates that CC&R's will be recorded with the subdivision however a copy of such was not provided. Please provide a draft of the CC&R's as required.

F. *Information showing areas to be cut or filled.*

There is some discussion regarding cuts & fills in the Geologic Hazard Report provided however, the tentative plat does not contain a clearing and grading plan, nor does it provide adequate detailed information regarding road construction. Please provide a revised project Statement and plat that addresses and clearly illustrates all subjects as required and specified by the CNCO Section: 157.261(G)3 & (6).

CNCO 156.020 Supplemental Information.

B. *A plan for domestic water lines and related water service facilities.*

As noted above, there are issues pertaining to water accessibility and pressure to the development. Fire suppression and water supply infrastructure issues are not resolved in the project Statement provided, nor illustrated on the tentative plat. Please provide a revised project Statement and plat that addresses and clearly illustrates all subjects as required and specified by the CNCO.

C. *Approval for sewage disposal, storm water drainage or flood control.*

As discussed above, a detailed storm water management, clearing and grading, and vegetative management plan should be provided. The engineering report provided for the Geo-Hazard Report (851-21-000414-PLNG) provides some details for individual site development and road grading however, the report does not specify, nor illustrate, detailed construction or large-scale storm water control measures that apply to the development as a whole (i.e. swales, ditches, retention ponds, sheet flow direction storm drains etc.). All elements of CNCO Section: 157.261(G)7 & (H)1-6 should be addressed specifically. Please provide a revised project Statement and plat that addresses and clearly illustrates all subjects

as required and specified by the CNCO.

D. *Proposal for other improvements such as electric utilities and sidewalks, fire hydrants and street lights.*

The tentative plat submitted does not illustrate the location of fire-hydrants or street lights. A symbol for such is provided in the legend however, locations are not provided on the face of the tentative plat. Furthermore, water supply and pressure issues are discussed in correspondence with Nehalem Bay Fire and Rescue, but a resolution or approval is not addressed in the project Statement nor illustrated on the tentative plat. Please provide a revised project Statement and plat that addresses and clearly illustrates all subjects as required and specified by the CNCO.

The Applicant is directed to correspond with Tillamook County Public Works and the Nehalem Bay Fire and Rescue regarding this submittal.

Additionally, the Tillamook County Surveyor requests an e-mail to verify the approval of the Plat Name.

Please read and complete the enclosed form, indicating whether or not you intend to complete the application.

If you have any questions regarding these issues, please call me at (503) 842-3408.

Sincerely,
Tillamook County Department of Community Development

Christopher S. Laws
Land Use Planner II

Sarah Absher, Director, CFM

Enclosure: Acknowledgment Form
City of Nehalem Code of Ordinances 156.018, 156.019, 156.020, 157.261

4/10

Date: December 13, 2021

RE: Incomplete Application for Tentative Subdivision, 851-21-000415-PLNG "Riverview Meadows Phase II", on a parcel designate as Tax Lot 3600 of Township 3 North, Section 23B, Range 10 West of the Willamette Meridian.

Dear Applicant:

As indicated in the attached correspondence, your applications have been deemed to be **incomplete.**

You must acknowledge, in writing, your intent to provide the material required to complete the application, as identified in the attached correspondence. To do this, please sign below and return this acknowledgment by **December 13, 2021** to:

Tillamook County Department of Community Development
1510 B Third Street
Tillamook, OR 97141

If you indicate your intent to complete the application, you will have 180 days from the date the application was originally submitted **November 15, 2021** to submit the required material. If you fail to submit the material within 180 days, your application will be deemed void. The casefile regarding the application will then be closed.

If you do not return this acknowledgment, by the above date, such action will be considered to be a refusal to complete the application under the meaning accorded in ORS 215.428. Your application will then be processed based upon the information you have previously submitted. Note that failure to submit sufficient evidence or material to demonstrate compliance with the applicable criteria is grounds for denial of the application.

ACKNOWLEDGMENT

[ ] I intend to provide the additional material identified in the attached correspondence from the Department of Community Development.

[ ] I refuse to provide the additional material identified in the attached correspondence from the Department of Community Development.

_____
Signed and Acknowledged (Applicant)

_____
Date

5/10

156.017Information in the tentative plan.

The tentative plan shall contain the following information:

(A) Proposed name, date, north-point and scale of drawing;

(B) Tentative plans shall be to a scale of one inch equals 50 feet or better, except tracts over ten acres which may be to a scale of one inch equals 100 feet and shall be clearly and legibly produced;

(C) Location of the subdivision sufficient to define its location and boundaries, and a legal description as well;

(D) Name and address of the owner and/or authorized agent;

(E) Appropriate identification of the drawing as a tentative plan;

(F) Names, business address and number of the registered engineer and licensed surveyor who prepared the plan of the proposed subdivision;

(G) Location of natural features; such as streams, trees and rock outcroppings;

(H) Contour lines at 20-foot contour intervals;

(I) The locations, names, widths, approximate radii of the curves and grades of all existing and proposed streets and easements in the proposed subdivision and along the boundaries thereof, and the names of adjoining platted subdivisions and portions of the subdivisions as shall be necessary to show the alignment of the streets and alleys therein with the streets and alleys in the proposed subdivision;

(J) Names of the record owners of all contiguous land;

(K) The approximate location and character of all existing and proposed easements and public utility facilities including water and sewer lines in the subdivision or adjacent thereto, storm water drainage facilities and utility lines;

(L) The location and approximate dimensions of each lot, with each lot numbered;

(M) The outline of any existing buildings and their use showing those that will remain;

(N) The location of at least one temporary benchmark within the subdivision boundaries;

(O) City boundary lines crossing or bounding the subdivision;

(P) Approximate location of all areas subject to inundation of storm water overflow and location, width, known high water elevation, flood flow and direction of flow of watercourses;

(Q) If impracticable to show on the tentative plan, a key map showing the location of the tract in relationship to section and township lines and to adjacent property and major physical features such as streets, railroads and watercourses; and

(R) The net density of the subdivision, the total acreage of land, square footage of each lot and square footage of open areas or common open space. (Ord. 80-3, passed 04/12/2004)

156.018Partial development.

If the subdivision proposal pertains to only part of the tract owned or controlled by the subdivider, the Planning Commission may require a sketch of a tentative layout for streets in the unsubdivided portion. (Ord. 80-3, passed 04/12/2004)

156.019Information in statement.

(A) A general explanation of the improvements and public utilities, including water supply and sewage disposal proposed to be installed;

(B) Requested variances;

(C) Public areas proposed;

(D) Open space, landscaped areas, tree planting proposed and means of maintaining such improvements;

(E) A preliminary draft of restrictive covenants proposed, if any; and

(F) Information showing areas to be cut or filled. (Ord. 80-3, passed 04/12/2004)

156.020Supplemental information.

Any of the following may be required by the Planning Commission to supplement the plan of subdivision:

(A) Approximate centerline profiles with extensions for a reasonable distance beyond the limits of the proposed subdivision showing the finished grade of streets and the nature and extent of street construction;

(B) A plan for domestic water service lines and related water service facilities;

(C) Approval for sewage disposal, storm water drainage or flood control;

(D) Proposals for other improvements such as electric utilities and sidewalks, fire hydrants and street lights;

(E) An engineering geologist or soils engineering report of the stability of slopes when the average slope of created parcels is 20% or greater; and

(F) Other information as necessary. (Ord. 80-3, passed 04/12/2004)

157.261Geologic investigation.

(A) The following are geologic hazard areas to which the standards of this section apply:

(1) Active landslides identified in State Department of Geology and Mineral Industries (DOGMI) Bulletins 74 and 79;

(2) Inactive landslides, landslide topography and mass movement topography, identified in DOGMI Bulletins 74 and 79 where slopes are greater than 20%;

(3) Areas prone to mudflows identified in DOGMI Bulletin 79;

(4) Brallier peat soils identified in Soil Survey, Tillamook Area, Oregon (USDA, Soil Conservation Service, 1964) and the unpublished Soil Conservation Service soils survey for coastal Tillamook County; or

(5) Other locally known areas of geologic hazard based on evidence of past occurrences.

(B) All development within geologic hazard areas shall comply with the following standards.

(1) Vegetation removal shall be the minimum necessary to accommodate the use.

(2) Temporary measures shall be taken to control runoff and erosion of soils during construction. Such measures include temporary stabilization (mulching or sodding), sediment basins or other performance equivalent structures required by the city.

(3) Exposed areas shall be planted in permanent cover as soon as possible after construction.

(4) Storm water shall be directed into drainages with adequate capacity so as not to flood adjacent downstream properties. Finished grades should preferably be designed to direct water flows along natural drainage courses.

(5) Additional requirements contained in a geologic report required by this section shall be followed.

(C) A geologic hazard report is required prior to approval of planned developments, subdivisions and partitions governed by Ch. 156 of this code of ordinances, building permits, manufactured home permits, mining and excavation occurring in areas identified in division (A) above.

(D) A report prepared for a subdivision, planned development or partition pursuant to the requirements of this section, may be used to satisfy these requirements for subsequent building, mobile home or manufactured home permits; providing that, the original report provided recommendations on building placement and construction and that these recommendations are followed.

(E) The geologic hazard report shall be prepared by a geologist, engineer, engineering geologist or other person having professional experience analyzing the relevant geologic hazards.

(1) Structural recommendations must be stamped by a registered professional engineer.

(2) The boundaries of the study area shall be determined by the city.

(3) It shall be prepared in a format easily understood by a "lay-person" and shall include plan and sectional diagrams of the area showing property boundaries and the geographic information required by division (F) below.

(F) The geologic hazard analysis shall include the following:

(1) In landslide areas (divisions (A)(1) and (A)(2) above):

(a) Soils and bedrock type;

(b) Slope;

(c) Orientation of bedding planes in relation to the dip of the surface slope;

(d) Soil depth;

(e) Other relevant soils engineering data;

(f) Water drainage patterns; and

(g) Identification of visible landslide activity in the immediate area.

(2) In areas prone to mudflow (division (A)(3) above):

(a) History of mud or debris flow; and

(b) Areas likely to be affected by future mudflow.

(3) In Brallier peat soils (division (A)(4) above):

(a) Boring log or other similar measure;

(b) Bearing capacity; and

(c) Drainage patterns.

(G) The geologic hazards report shall recommend development standards that will protect development on the property and surrounding properties. These should include standards for:

(1) Development density (when more than one use is possible);

(2) Locations for structures and roads;

(3) Land grading practices, including standards for cuts and fills;

(4) Vegetation removal and re-vegetation practices;

(5) Foundation design (if special design is necessary);

(6) Road design (if applicable); and

(7) Management of storm water runoff during and after construction.

(H) The geologic hazard report shall include the following summary findings and conclusions:

(1) The type of use proposed and the adverse effects it might have on adjacent areas;

(2) Hazards to life, public and private property, and the natural environment which may be caused by the proposed use;

(3) Methods for protecting the surrounding area from any adverse effects of the development;

(4) Temporary and permanent stabilization programs and the planned maintenance of new and existing vegetation;

(5) The proposed development is adequately protected from any reasonably foreseeable hazards including, but not limited to, geologic hazards, wind erosion, undercutting and flooding; and

(6) The proposed development is designed to minimize adverse environmental effects. (Ord. 80-2, passed 06/14/2010)

Date: May 12, 2022

Sarah Absher
Christopher Laws
Tillamook County Planning
1510-B Third Street
Tillamook, OR. 97141

Re: Riverview Meadows Phase II - Response to 12/13/21 Incompleteness Letter

Dear Sarah and Christopher:

This letter responds to each of the items contained in your incompleteness letter for the above project. As shown on the revised plan set, the proposal now includes 74 lots and two tracts in a single phase. All lots exceed the 5,000 square foot minimum lot size and dimensions required in the RT zoning district. With the attached additional information and responses below, the applicant requests the application be deemed complete.

1. CNCO 156.017 (J) - Names of record owners of contiguous land.
   Response: *This information is included on Sheet 3 of the Revised Plan set.*

2. CNCO 156.017 (K) - Stormwater design
   Response: *Sheet 3 of the plan set shows the proposed stormwater conveyance and discharge plan. The plan utilizes a combination of existing ditches, newly constructed roadside ditches, and culverts to convey stormwater to existing stormwater discharge points established with Phase I. Arrows on the plan show the proposed direction of stormwater flow. In addition, a road cross-section has been added to the plan set showing roadside ditches are proposed along both sides of roads.*

3. CNCO 156.017 (L) - Lot dimensions
   Response: *Each proposed lot and tract contains dimensions and the area calculated. An addendum to the Geotechnical Report is included addressing the lot number issue noted in your letter.*

4. CNCO 156.017 (Q). - Provide benchmark or datum
   Response: *All property corners are clearly identified and the requested datum has been added to the plan set.*

5. CNCO 156.017 (R) - Include net density, total area, area of each lot and open spaces.
   Response: *All of this information is shown on the revised plat. The proposal contains 74 residential lots and two tracts. Tract A is proposed as a private tract to be owned and maintained by a homeowner's association. This tract will*

include a dog park to be for the use and enjoyment of residents of the development. Tract B shown is proposed as a public utility tract to contain a future public water reservoir. The site contains a gross site area 21.81 acres. After deducting the proposed roads, the site contains 16.298 net acres. The net density is 4.54 units/acre (74 lots/16.298 = 4.54 units/net acre).

6. CNCO 156.019 (A) - Explanation of public improvements (water and sewer)
   Response: *A detailed discussion of these facilities is included on the plan set. Regarding water service, the applicant is working with the city of Nehalem to resolve domestic and fire protection water pressure needs. The preferred solution is the construction of a new water reservoir on the high point of the subject property. Tract B shown on the Preliminary Plat has been identified as a suitable location for this facility. The applicant is working closely with the city's Engineering consultant to design a mutually workable facility. Because all the details of this system have not been fully designed at this time, the applicant requests a Condition of Approval be included with the preliminary plat approval requiring the applicant to receive City approval and acceptance of a water design prior to Final Plat approval. The applicant is comfortable with the timing of this condition.*

7. CNCO 156.019 (D) - Open space, landscaped areas, etc.
   Response: *Tract A identified as private open space is proposed to be used as a dog park for the residents of the development. This facility will be owned and maintained by a homeowner's association established for this purpose.*

8. CNCO 156.019 (E) - Preliminary draft of CC&R.
   Response: *The applicant proposes using the CC&R recorded with the Riverview Meadows Phase I plat as a starting point for the proposed development. This document is included with the re-submittal package.*

9. CNCO 156.019 (F) - Information regarding cuts and fills
   Response: *The subject property is generally flat with the exception of steep slopes located along the southern portion of the property. Site grading will be limited to the minimum necessary to construct proposed roads as shown on Sheets 6 - 18 of the revised plan set. A typical road cross-section has also been added to the plan set.*

10. CNCO 156.020 (B) - Plan for domestic water lines and water facilities
    Response: *Sheets 6 - 18 of the plan set show the location of proposed water lines. The proposed development intends to connect to the end of existing lines constructed with Phase I. As noted above, the applicant is currently working with the city to design a water reservoir on Tract B of the proposed subdivision. This facility is intended to resolve water pressure issues for the proposed development in addition to properties outside the development.*

11. CNCO 156.020 (C) - Sewage disposal, storm water drainage or flood control

Response: *Sheets 6 - 18 of the plan set show the location of the proposed sanitary sewer system, As noted in item 2 above, the proposed stormwater design is shown on Sheet 3 of the revised plan set.*

12. CNCO 156.020 (D) - Proposal for other electric utilities and sidewalks, fire hydrants and street lights.
    Response: *Sheets 6 - 18 of the plan set show the proposed location of fire hydrants and street lights. The electric facility design will be coordinated with the utility provider following preliminary plat approval. As shown on the provided road cross-section, no sidewalks are proposed.*

13. Coordination with County Public Works and Fire and Rescue
    Response: *Letters from the Nehalem Bay Wastewater Agency, Tillamook Peoples Utility District and Nehalem Bay Fire were provided with the initial submittal. Updated letters are included with the supplemental submittal.*

14. Plat name with County Surveyor
    Response: *The project Engineer has emailed the Surveyors Office and we are awaiting a response. The name of the plat is tentatively known as "Riverview Meadows Phase II". The plat name will be confirmed with final platting.*

With the above responses and the additional attached information, the applicant requests the application be deemed complete as submitted. Please let use know if you need anything else.

Sincerely,

Tracy A. Brown

Tracy Brown
Tracy Brown Planning Consultants, LLC

Cc via Email:
Alex Reverman, Riverview Meadows, LLC
Carey Sheldon, Riverview Meadows, LLC

Attachments:
- Revised Preliminary Plat Plan Set
- Addendum to Geotechnical Report
- Riverview Meadows Phase I CC&R
- Updated Provider Letters

May 12, 2021

Sarah Absher
Christopher Laws
Tillamook County Planning
1510-B Third Street
Tillamook, OR. 97141

Re: Riverview Meadows Phase II - Response to 12/13/21 Incompleteness Letter

Dear Sarah and Christopher:

With the submitted application package the applicant is providing all of the missing materials identified in the Incompleteness Letter dated December 13, 2021. This Application has been made complete within 180 days of the submittal date of November 15, 2021. The applicant requests the application be deemed complete and the processing timeline started.

Please let me know if you have any questions.

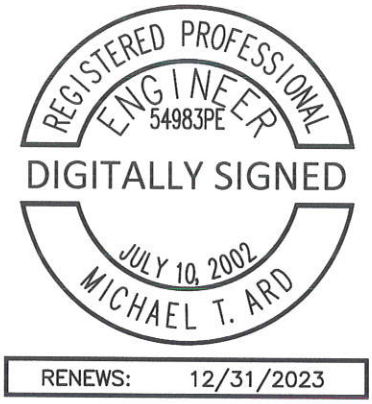
Sincerely,

Alex Reverman
Riverview Meadows, LLC

ARD ENGINEERING

RIVERVIEW MEADOWS
TRAFFIC IMPACT STUDY

TILLAMOOK COUNTY, OREGON



PREPARED FOR:
Riverview Meadows, LLC

PREPARED BY:
Michael Ard, PE
Ard Engineering

DATE:
October 7, 2022

21370 SW Langer Farms Parkway, Suite 142, Sherwood, OR 97140 - (503)862-6960

TABLE OF CONTENTS

EXECUTIVE SUMMARY

1. A residential development is proposed on the west side of Nehalem River Road near McDonald Road in Tillamook County, Oregon. The previously approved phase 1 development within the site consists of 20 homes on the subject property. This analysis addresses the potential transportation impacts resulting from adding 74 additional single-family homes in phases 2 and 3 of the development. The subject property currently takes access via River View Meadows Lane. With the proposed expansion, a second access is proposed which will intersect McDonald Road at an existing access driveway located approximately 900 feet south of McDonald Road.

2. Upon completion of proposed development, the subject property is projected to generate 52 new site trips during the morning peak hour, 70 trips during the evening peak hour, and 698 new daily site trips.

3. Based on the operational analysis, the study intersections currently operate acceptably and are projected to continue to operate acceptably under year 2025 traffic conditions either with or without the addition of site trips from the proposed development.

4. The most recent five years of crash history on Northfork Road showed no crashes at the study intersections. No significant safety hazards are evident based on the crash history.

5. Based on the detailed warrant analysis, no new traffic signals or turn lanes are recommended in conjunction with the proposed development.

6. Although intersection sight distances are limited by horizontal curves in the vicinity of the site access locations, a detailed analysis shows that the available sight distances are adequate to ensure safe operation of the area intersections, and the delays to through traffic that slows to avoid conflicts will be negligible. Accordingly, no sight distance improvements are necessary or recommended in conjunction with the proposed development.

7. Based on the analysis of River View Meadows Lane's road width and geometry, large vehicles may have difficulty navigating the roadway and require both travel lanes to negotiate the curves in the vicinity of Northfork Road. Very large trucks may also trailer off the roadway surface. However, the road width is sufficient to approximately 1,000 passenger vehicles per day despite the narrow width, similar to the capacity of a residential queuing street. The projected future traffic volumes on this roadway are within this effective roadway capacity. Planned monumentation and improvements to the new south site access roadway may help further reduce traffic volumes on River View Meadows Lane. It is recommended that large trucks be directed to use the new south site access roadway.

PROJECT DESCRIPTION & LOCATION

INTRODUCTION

A residential development is proposed on the west side of Nehalem River Road near McDonald Road in Tillamook County, Oregon.

The previously approved phase 1 development within the site consists of 20 homes on the subject property. Under the current proposal, 74 additional single-family homes would be constructed as part of phases 2 and 3 of the development.

The subject property currently takes access via River View Meadows Lane. With the proposed expansion, a second access is proposed which will intersect McDonald Road at an existing access driveway located approximately 900 feet south of McDonald Road.

This report addresses the impacts of the proposed development on the surrounding street system. The purpose of this analysis is to determine whether the surrounding transportation system is capable of safely and efficiently supporting the proposed use and to identify any necessary improvements and mitigations.

SITE LOCATION AND STUDY AREA DESCRIPTION

The subject property is surrounded by existing residential and agricultural land uses. Phase 1 development is currently underway within the site and will conclude with completion of the 20 previously approved homes within the phase limits.

Northfork Nehalem River Road has a two-lane cross-section with one through lane in each direction. It has a posted speed limit of 45 mph in the site vicinity; however, curve warning signs are also posted in the vicinity with recommended speeds of 25 to 30 mph for the curves.

McDonald Dike Road also has a two-lane cross-section with one through lane in each direction. It has a posted speed limit of 35 mph in the vicinity of Nehalem River Road.

River View Meadows Lane is a local street which provides access to the subject property and some surrounding parcels. It has a paved width of 18 feet in the vicinity of Nehalem River Road. The roadway is subject to Oregon's statutory residential speed limit of 25 mph.

EXISTING CONDITIONS

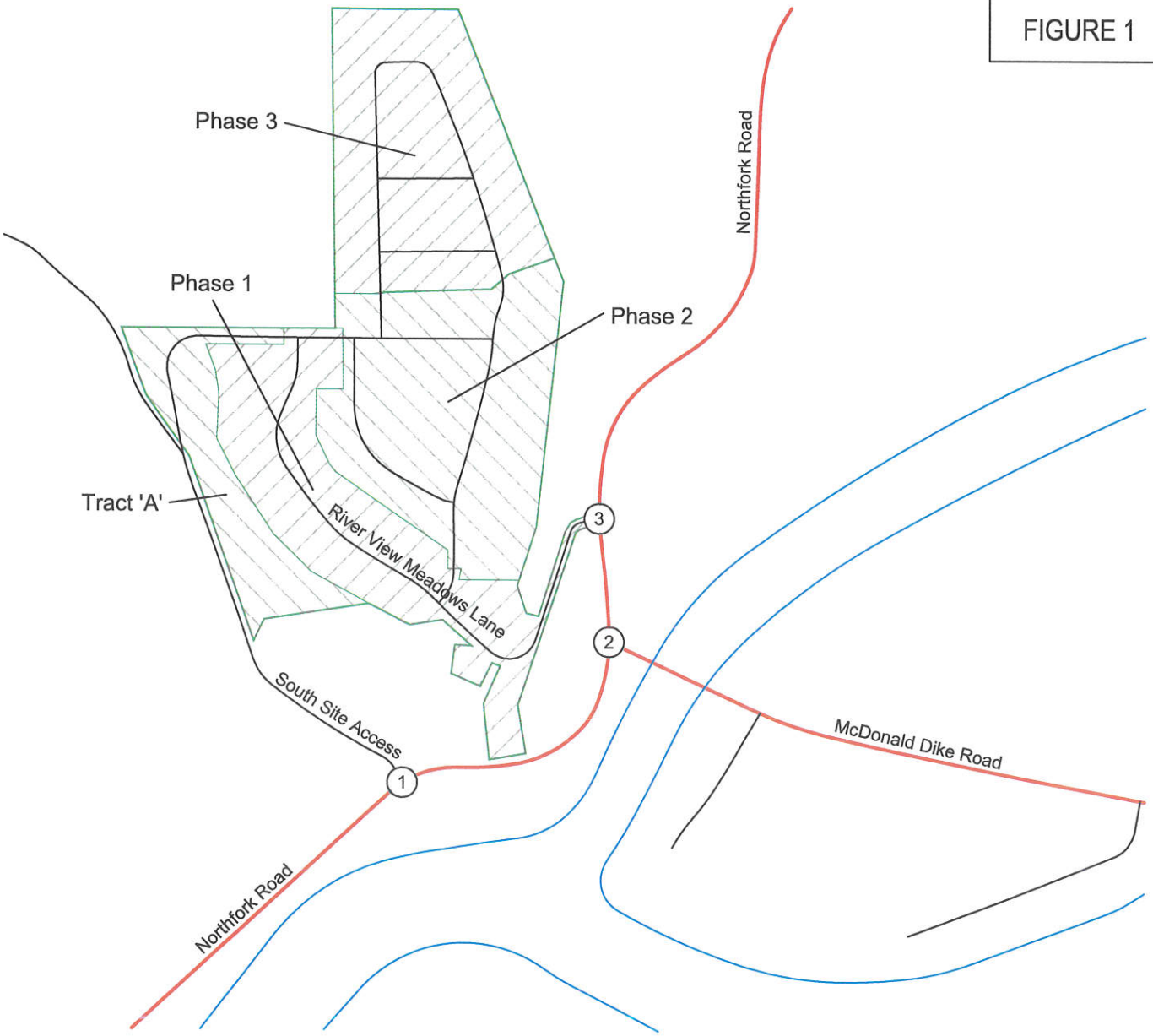
The intersection of Northfork Nehalem River Road at River View Meadows Lane is a T-intersection controlled by a stop sign on the eastbound River View Meadows Lane approach. Each approach has a single, shared lane for all turning movements. Through traffic traveling along Northfork Road does not stop.

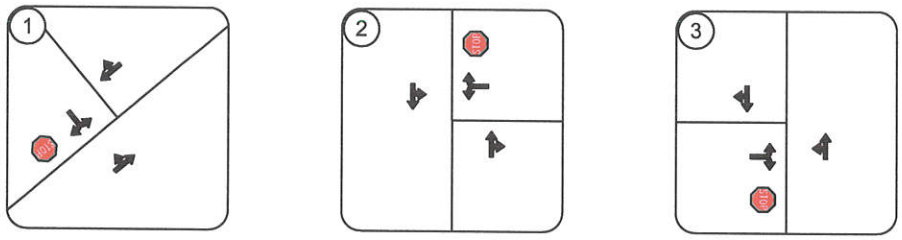
The intersection of Northfork Nehalem River Road at McDonald Dike Road is also a T-intersection. It is controlled by a stop sign on the westbound McDonald Road approach. Again, through traffic traveling along Northfork Road does not stop, and each approach has a single, shared lane for all turning movements.

The intersection of Northfork Nehalem River Road at the proposed south site access is a T-intersection controlled by a stop sign on the eastbound approach to Northfork Road. Through traffic on Northfork Road does not stop.

A vicinity map displaying the project site, vicinity streets, and the study intersections including lane configurations is provided in Figure 1 on page 6.

FIGURE 1





LEGEND

(#) Study Intersection #

STOP Stop Sign

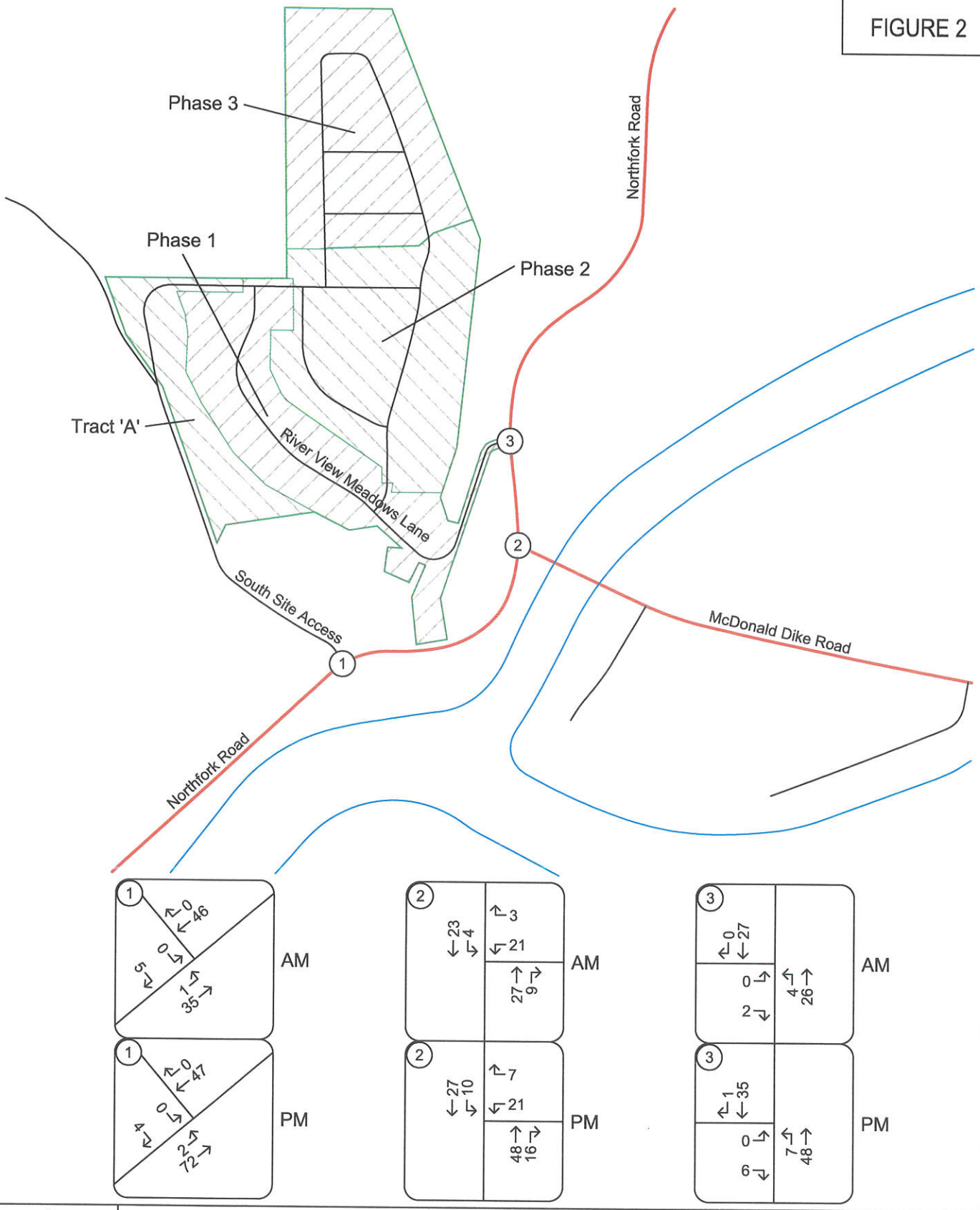
VICINITY MAP
Study Intersections
Lane Configurations and Traffic Control

TRAFFIC COUNT DATA

Turning movement counts were conducted at the three study intersections from 4:00 to 6:00 PM on Tuesday August 9, 2022, and from 7:00 to 9:00 AM on Wednesday August 10, 2022. These count periods correspond to the typical morning and evening peak commute periods and are therefore used to represent traffic conditions typical of the study intersections.

Figure 2 on page 8 shows the existing year 2022 traffic volumes for the morning and evening peak hours at the study intersections.

FIGURE 2



TURNING MOVEMENT VOLUMES
2022 Existing Conditions
Morning and Evening Peak Hours

OPERATIONAL ANALYSIS

An operational analysis was conducted for the study intersections using Synchro 10 software, with outputs calculated based on the *HIGHWAY CAPACITY MANUAL, 6th Edition.* The analysis was conducted for the weekday morning and evening peak hours.

The purpose of the existing conditions analysis is to establish how the study area intersections operate currently and allow for calibration of the operational analysis if required.

The results of the operational analysis are reported based on delay, Level of Service (LOS), and volume-to-capacity ratio (v/c). Delays are reported in seconds. Level of service is reported as a letter grade and can range from A to F, with level of service A representing nearly free-flow conditions and level of service F representing high delays and severe congestion. A report of level of service D generally indicates moderately high but tolerable delays, and typically occurs prior to reaching intersection capacity. For unsignalized intersections, the v/c represents the portion of the available intersection capacity that is being utilized on the worst intersection approach. A v/c ratio of 1.0 would indicate that the approach is operating at capacity.

A summary of the existing conditions operational analysis is provided in Table 1 below. The reported delays and levels-of-service represent the approach lane which experiences the highest delays, while the reported v/c ratios represent the highest ratio for the major-street and minor-street movements.

Based on the analysis, the study intersections are currently operating acceptably. Detailed capacity analysis worksheets are provided in the technical appendix.

Table 1 - Operational Analysis Summary: 2022 Existing Peak Hour Conditions

Intersection	AM Peak Hour			PM Peak Hour		
	Delay	LOS	v/c	Delay	LOS	v/c
Northfork Rd at West Site Access	8.9	A	0.01	8.6	A	0.01
Northfork Rd at McDonald Dike Rd	9.1	A	0.03	9.1	A	0.03
Northfork Rd at Riverview Meadows Ln	8.7	A	0.01	8.5	A	0.01

SITE TRIPS

Proposed Development

The proposed new development will consist of 74 additional single-family homes. To estimate the number of trips that will be generated by the proposed development, trip rates from the *TRIP GENERATION MANUAL, 10th EDITION* were used. Data from land-use code 210, *Single-Family Detached Housing*, were used. The trip estimates are based on the number of dwelling units.

A summary of the trip generation calculations is provided in Table 2 below. A detailed trip generation worksheet is also included in the technical appendix.

Table 2 - Proposed Development Trip Generation Summary

	AM Peak Hour			PM Peak Hour			Daily
	In	Out	Total	In	Out	Total	Total
74 Single-Family Homes	14	38	52	44	26	70	698

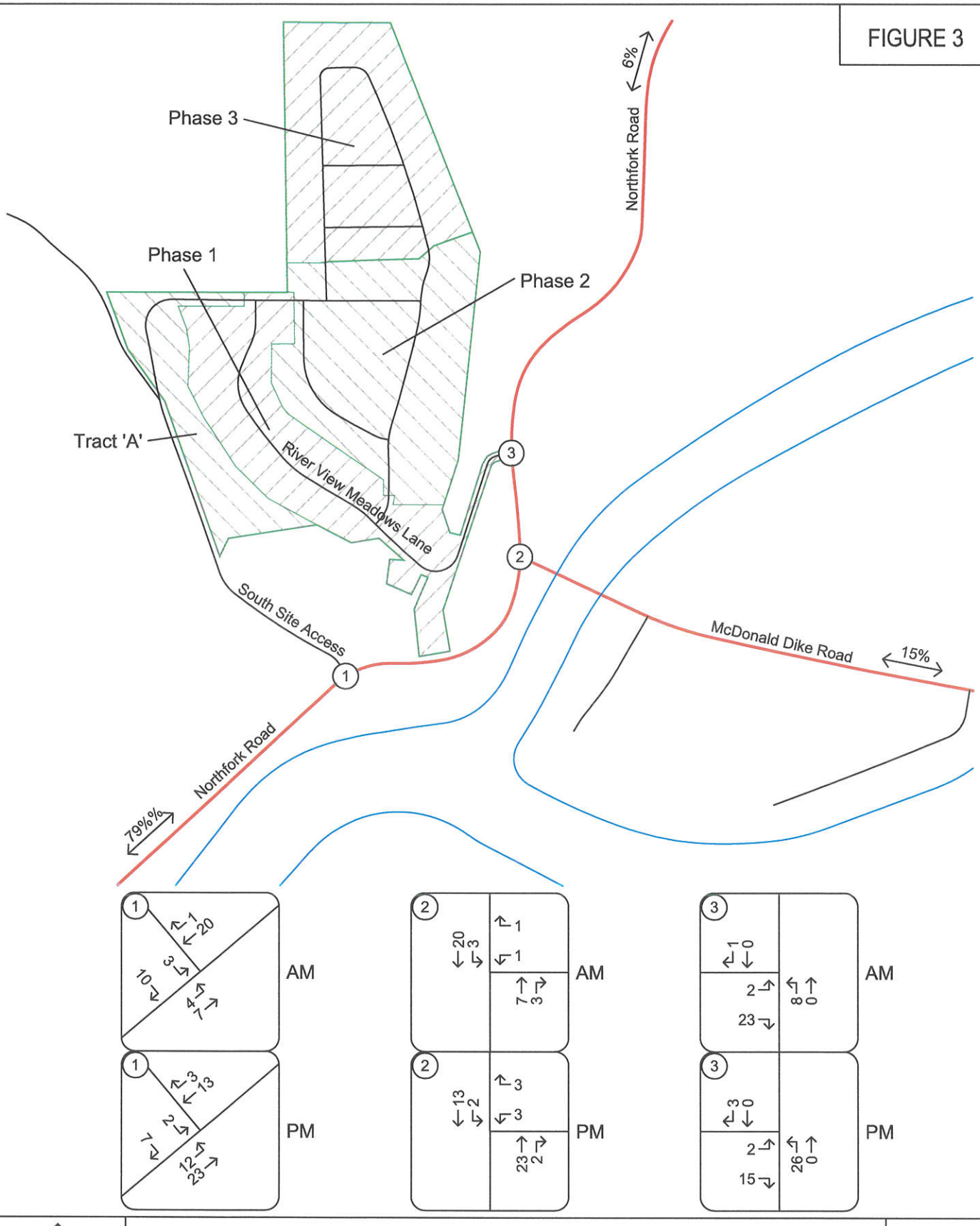
TRIP DISTRIBUTION

The directional distribution of site trips to and from the project site was estimated based the existing travel patterns in the site vicinity, as well as the locations of likely trip destinations and major transportation routes. Overall, 79 percent of the anticipated site trips are projected to travel to and from the south on Northfork Nehalem River Road, 15 percent are projected to travel to and from the east on McDonald Dike Road, and 6 percent are projected to travel to and from the north on Northfork Nehalem River Road.

Based on the layout of the site and the alignments of the respective access roads, it is expected that approximately two thirds of future site trips will utilize the existing River View Meadows Lane alignment to access the site. A more detailed discussion of traffic volumes and operations on this access roadway is provided in the safety analysis section of this report on page 19.

The trip distribution percentages and trip assignment for the proposed development are shown in Figure 3 on page 11.

FIGURE 3



TURNING MOVEMENT VOLUMES
Proposed Development - Site Trips
Morning and Evening Peak Hours

FUTURE CONDITIONS ANALYSIS

BACKGROUND VOLUMES

In order to determine the expected impact of site trips on the study area intersections, it is necessary to compare traffic conditions both with and without the addition of the projected traffic from the proposed development. Since the proposed use cannot be constructed and occupied immediately, the comparison is made for future traffic conditions at the time of project completion. It is anticipated that the proposed use will be completed and occupied by 2025. Accordingly, the analysis was conducted for year 2025 traffic conditions.

Some general traffic growth is expected to occur in the vicinity as a result of development outside the project area that nevertheless travels through the site vicinity while moving to and from farther destinations. To account for this background growth, the observed year 2022 traffic volumes were increased by 2 percent per year over a period of three years to estimate the year 2025 traffic volumes.

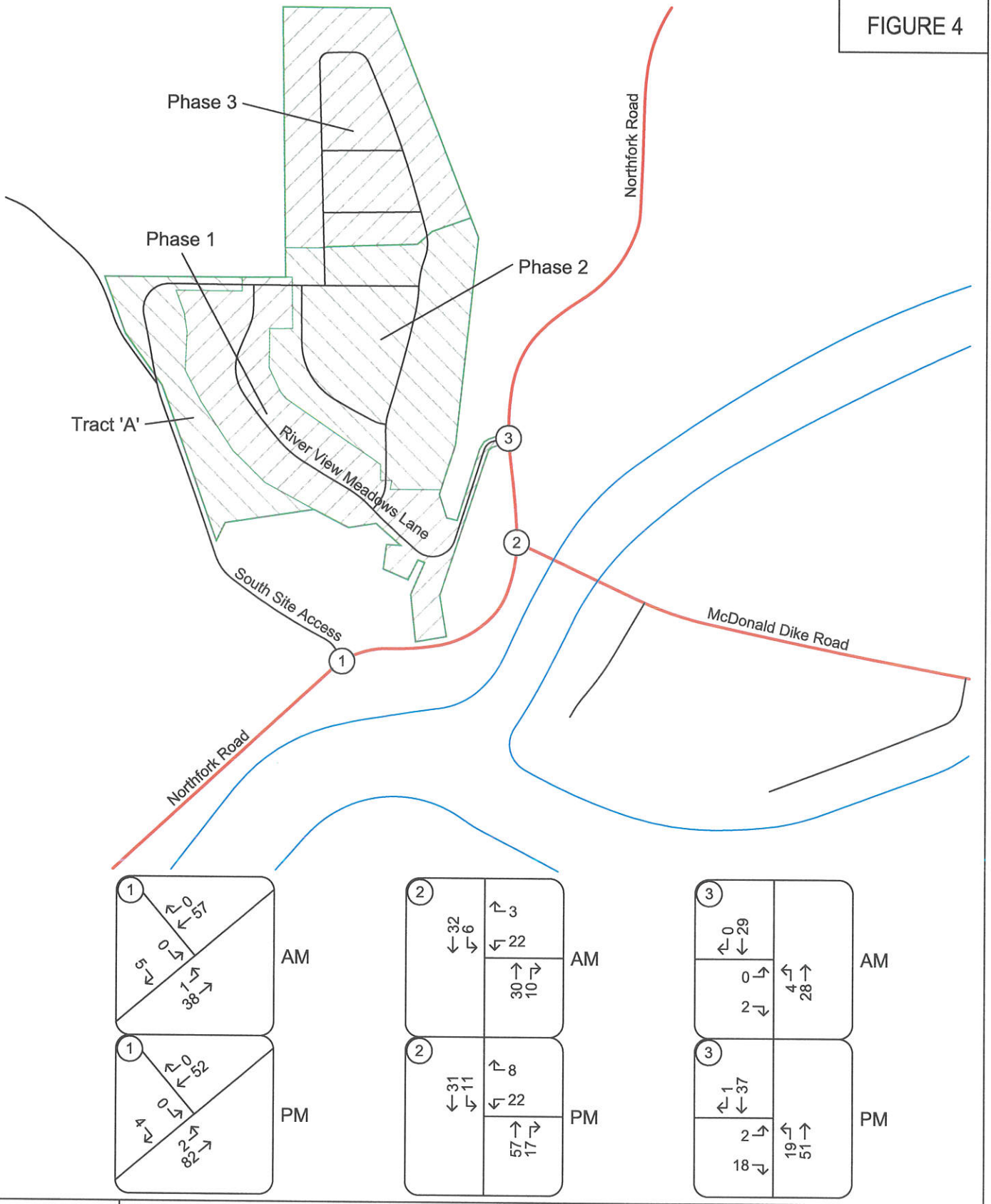
In addition to anticipated growth in the area, it was noted that the phase 1 development is not yet complete within the existing approved subdivision. Accordingly, the expected future site trips associated with completion of the current subdivision were also added to the background traffic volumes. These added "in-process" trips are shown in Figure 6 in the attached technical appendix.

Figure 4 on page 13 shows the projected year 2025 background traffic volumes at the study intersections during the morning and evening peak hours.

BACKGROUND VOLUMES PLUS SITE TRIPS

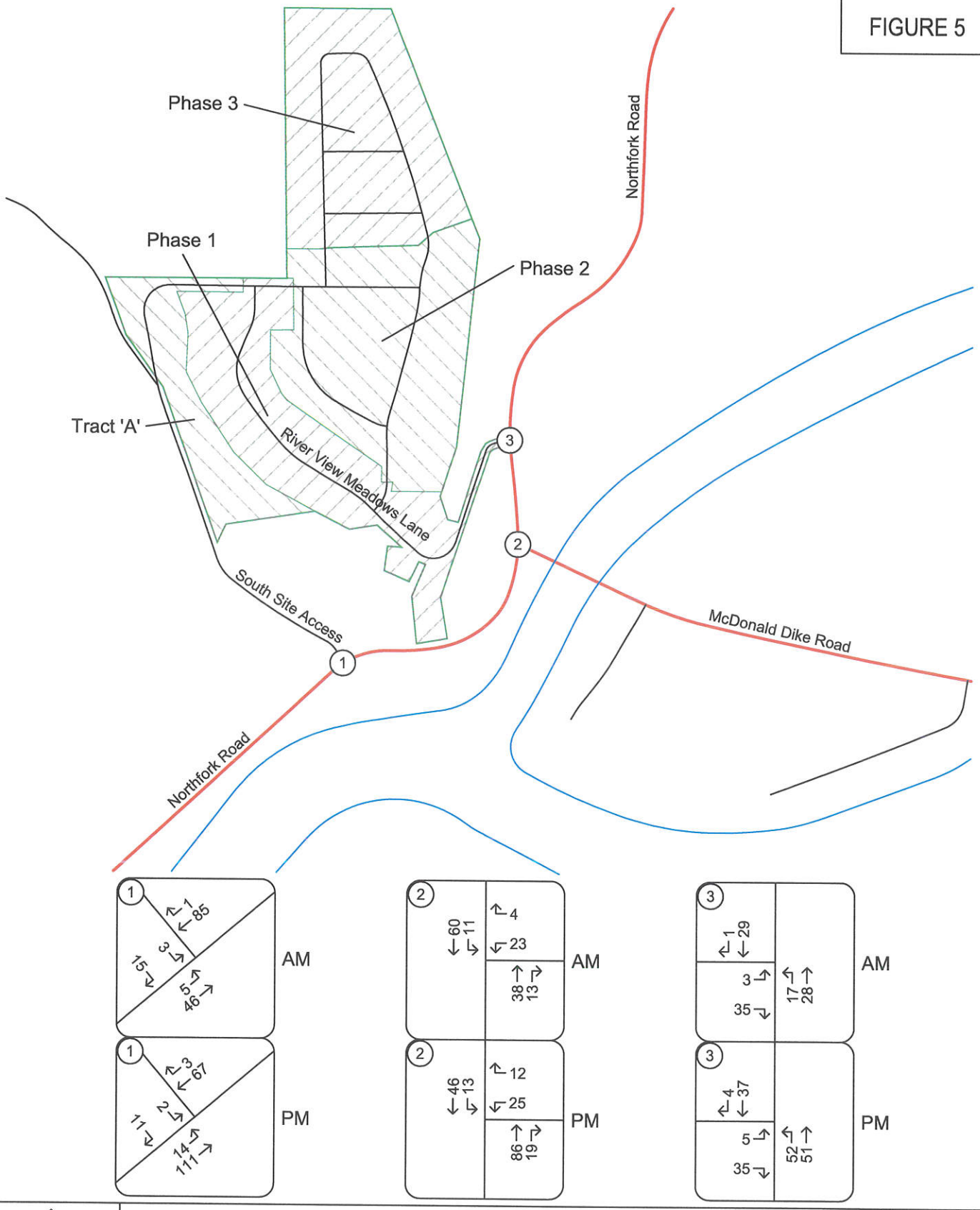
Peak hour trips calculated to be generated by the proposed development were added to the projected year 2023 background traffic volumes to obtain the year 2023 total traffic volumes following completion of the proposed residential development. The resulting total traffic volumes are shown in figure 5 on page 14.

FIGURE 4



TURNING MOVEMENT VOLUMES
2025 Background Traffic Volumes
Morning and Evening Peak Hours

FIGURE 5



TURNING MOVEMENT VOLUMES
2025 Background plus Site Trips
Morning and Evening Peak Hours

OPERATIONAL ANALYSIS

The operational analysis for future traffic conditions was again conducted using Synchro analysis software, with outputs based on the analysis methodologies contained in the *HIGHWAY CAPACITY MANUAL, 6th Edition*. The analysis was prepared for the intersections' morning and evening peak hours.

The results of the operational analysis are summarized in Table 3 below. Detailed analysis worksheets are also included in the technical appendix.

Table 3 - Operational Analysis Summary: Year 2023 Future Conditions

Intersection	AM Peak Hour			PM Peak Hour		
	Delay	LOS	v/c	Delay	LOS	v/c
Northfork Rd at South Site Access						
2025 Background Conditions	8.9	A	0.01	8.6	A	0.01
2025 Background plus Site	9.3	A	0.02	8.9	A	0.02
Northfork Rd at McDonald Dike Rd						
2025 Background Conditions	9.2	A	0.03	9.2	A	0.04
2025 Background Plus Site	9.5	A	0.04	9.5	A	0.05
Northfork Rd at Riverview Meadows Ln						
2025 Background Conditions	8.7	A	0.01	8.7	A	0.03
2025 Background plus Site	8.9	A	0.05	8.9	A	0.05

Based on the results of the operational analysis, the study intersections are projected to operate acceptably either with or without the addition of site trips from the proposed development. No operational mitigations are necessary or recommended in conjunction with the proposed development.

SAFETY ANALYSIS

CRASH DATA ANALYSIS

Using data obtained from the Oregon Department of Transportation, a review of the five most recent years of available crash history (from January 2016 through December 2020) was performed. The crash data showed a total of five crashes along Northfork Road during the five-year analysis period. These included four fixed-object (run-off-road) collisions and one animal collision. None of the reported crashes were intersection-related, and none occurred at the study area intersections.

Based on the crash data, no significant existing safety hazards were identified in the site vicinity.

WARRANT ANALYSIS

Traffic signal and turn-lane warrants were examined for the study intersections.

Based on the projected side-street traffic volumes, traffic signal warrants are not projected to be met at any of the unsignalized study intersections under any of the analysis scenarios. Additionally, the intersections are projected to operate at level of service "A" through project completion while retaining the existing stop control. Accordingly, no new traffic signals are recommended in conjunction with the proposed development.

Left-turn lane warrants were examined for the major-street approaches to the unsignalized study intersections. Left-turn lane warrants are intended to evaluate whether a meaningful safety benefit may be expected if the turning vehicles are provided with turn lane within the street, allowing left-turning drivers to move out of the through travel lane so that following vehicles may pass without conflicts. The left-turn lane warrant analysis methodology utilizes the number of travel lanes in conjunction with the volume of advancing and opposing traffic to determine the minimum number of left-turning vehicles which would result in a meaningful safety benefit.

Based on the analysis, even when conservatively using the posted 45 mph speed limit for design rather than the lower actual traffic speeds which are limited by horizontal curves in the site vicinity, the projected turning movement volumes at the time of project completion are too low to warrant installation of left-turn lanes at the study area intersections.

Right-turn lane warrants were also examined for the major-street approaches to the unsignalized study intersections. Right-turn lanes reduce the likelihood of rear-end collisions as vehicles slow or stop to turn right from a free-flowing through travel lane.

Again, based on the analysis and conservatively using the posted 45 mph speed limit for design, the projected turning movement volumes at the time of project completion are too low to warrant installation of dedicated right-turn lanes at the study area intersections.

Based on the detailed warrant analysis, no new traffic signals or turn lanes are recommended in conjunction with the proposed development.

INTERSECTION SIGHT DISTANCE

Based on the posted speed limit of 45 mph on Northfork Nehalem River Road, a minimum of 500 feet of intersection sight distance is generally desired in each direction for each point of access. However, horizontal curves in the site vicinity limit both the available sight lines and the approach speeds of vehicles at the limits of sight distance. Because sight lines are generally less than 500 feet, a detailed discussion and analysis of actual approach speeds and sight distances is appropriate.

In accordance with the procedures described in *A Policy on Geometric Design of Highways and Streets*, published by the American Association of State Highway and Transportation Officials, intersection sight distance was measured from a driver's eye position within the minor street approach 14.5 feet behind the edge of the traveled way and 3.5 feet above the driveway surface. The available intersection sight distances in each direction were measured to the oncoming driver's eye position within the oncoming travel lane 3.5 feet above the roadway surface.

At the proposed south site access location on Northfork Road, intersection sight distance was measured to be well in excess of 500 feet to the south and 451 feet to the north. The available intersection sight distance to the north was limited by vegetation and an embankment within the inside of a horizontal curve.

Speed data was collected for vehicles approaching the proposed south site access location along Northfork Road to determine an appropriate design speed. Typically, the 85th percentile speed is used for design. This is the speed at or below which 85 percent of drivers were travelling. It is generally assumed that 85 percent of drivers travel at a "reasonable and prudent" speed, and that enforcement should be used to encourage better driving habits among the 15 percent of fastest drivers. For this location, the 85th percentile speed was determined to be 39 mph, resulting in a desired intersection sight distance of 430 feet. Since the available intersection sight distance is in excess of this minimum, the proposed south site access is projected to operate safely and efficiently.

For the existing site access on River View Meadows Lane, the available intersection sight distance was measured to be 428 feet to the north and 378 feet to the south. Again, these distances were less than the 500 feet of sight distance desired for a design speed of 45 mph, and again speed data was collected to determine an appropriate design speed.

For the southbound Northfork Road approach to River View Meadows Lane, the 85th percentile speed was determined to be 41 mph. Based on this design speed, the desired intersection sight distance was calculated to be 452 feet. In this instance, the available intersection sight distance was less than the desired intersection sight distance.

For the northbound Northfork Road approach to River View Meadows Lane, the 85th percentile speed was determined to be 40 mph. Based on this design speed, the desired intersection sight distance was calculated to be 441 feet. Again, the available intersection sight distance was less than the desired intersection sight distance.

Since sight lines at the existing site access on River View Meadows Lane are less than the full desired sight lines, a detailed operational and safety analysis was undertaken to determine what impacts might be expected as a result of the limited sight lines at the intersection.

According to "*A Policy on Geometric Design of Highways and Streets*" published by the American Association of State Highway and Transportation Officials,

> "*Stopping sight distance is providing continuously along each roadway so that drivers have a view of the roadway ahead that is sufficient to allow drivers to stop. The provision of stopping sight distance at all locations along each roadway, including intersection approaches, is fundamental to intersection operation.*" (p. 9-35)

It further states,

> "*If the available sight distance for an entering or crossing vehicle is at least equal to the appropriate stopping sight distance for the major road, then drivers have sufficient sight distance to anticipate and avoid collisions. However, in some cases, a major-road vehicle may need to slow or stop to accommodate the maneuver by a minor-road vehicle. To enhance traffic operations, intersection sight distances that exceed stopping sight distances are desirable along the major road.*" (p. 9-35)

Since the minimum intersection sight distance needed for safety is based on stopping sight distance, the measured design speeds were used to calculate the required stopping sight distance for each approach direction. For southbound traffic approaching River View Meadows Lane, the 41-mph 85th percentile design speed requires a minimum of 315 feet of stopping sight distance. Since the actual intersection sight distance available is 428 feet to the north, the available sight distance is adequate for safe operation of the intersection. Similarly, for northbound traffic approaching River View Meadows Lane, the 40-mph 85th percentile design speed requires a minimum of 305 feet of stopping sight distance. Since the actual intersection sight distance available is 378 feet to the north, the available sight distance is again adequate for safe operation of the intersection.

Having determined that the intersection can operate safely, albeit with some potential for interruptions to the flow of through traffic along Northfork Road, it is appropriate to determine the likely impacts on operation if the intersection continues to operate with limited sight distances in each direction.

Induced delays to through traffic would occur when a driver turns from River View Meadows Lane onto Northfork Road while an approaching vehicle is closer than the desired intersection stopping sight distance, but farther than the available sight distance. The amount of delay to through traffic can be calculated as the time required to traverse the distance between the desired intersection sight distance and the actual location of the approaching vehicle. Since the maximum such distance is 63 feet traversed at a speed of 40 mph, the maximum induced delay would be 1.07 seconds per vehicle when a conflict occurs.

Based on the volume of traffic entering Northfork Road from River View Meadows Lane as well as the traffic volumes on Northfork Road, the expected total induced delay per day would be approximately 3 seconds per day. The total induced delays are very low because the amount of induced delay per vehicle is low (between 0.0 and 1.07 seconds) and because the odds of a conflict occurring with a vehicle just beyond the limits of the available sight distance are also low

(approximately 1.5 percent of exiting vehicles would be expected to turn onto Northfork Road while a vehicle is approaching and may be subject to delay.

Based on the negligible calculated induced delays of 3 seconds per day, any requirement for mitigation for the limited sight distance would be expected to result in costs exceeding the resulting benefits. Accordingly, the available intersection sight distance is adequate for the River View Meadows Lane approach to Northfork Road and no operational or safety mitigations are recommended.

River View Meadows Lane - Roadway Geometry

In addition to examination of sight distance for the intersection of Northfork Nehalem River Road at River View Meadows Lane, the roadway geometry was evaluated to determine how the narrow cross-section and steep grades may impact operation and capacity of the roadway and intersection.

River View Meadows Lane has an initial width of approximately 20 feet in the immediate vicinity of Northfork Road; however, it narrows to a width of approximately 18 feet as it extends up the hill. Roadway grades on River View Meadows Lane were measured to be up to 17 percent in the immediate vicinity of the intersection.

A 20-foot width is commonly used as a minimum width for roadways, primarily in response to fire code requirements. Although a roadway can function with lesser width, the carrying capacity of the roadway is reduced both for passenger cars and for larger vehicles.

In particular, tractor-trailer vehicles and large trucks may have difficulty navigating the roadway and are likely to need to cross the roadway centerline on curves. Based on an AutoTurn analysis, large interstate trucks (WB-67) would not be expected to be able to stay within the paved roadway width even when taking both travel lanes. These vehicles would be expected to trailer outside the road surface, crossing through the area where a stop sign is located. Evidence that such trailering has previously occurred was present at the intersection upon our site visit, since the stop sign post was snapped off and a temporary stop sign on an A-frame stand was deployed at the intersection.

An analysis of other vehicle types also demonstrated that:

1) WB-40 tractor-trailer trucks, SU-40 single-unit trucks, garbage trucks and fire apparatus can stay within the paved road surface area, but require the full width of River View Meadows Lane for maneuvering in the vicinity of Northfork Road;
2) The roadway width can accommodate continuous two-way travel of passenger vehicles provided that the drivers pull to the side and drive slowly.

Diagrams showing the swept path of these vehicles are included in the technical appendix.

It should be noted that due to the narrow width of the roadway, it is expected to function in a manner similar to a residential queuing street. These streets generally have a width of up to 28 feet but are narrowed by on-street parking on one or both sides. Where drivers must pass parked vehicles, the roadway only has sufficient width for one travel direction at a time, so drivers must proceed with caution and yield to oncoming traffic. Although passenger vehicles can continuously travel in both

directions, the narrow width of this roadway may require similar slowing and yielding behavior at times. Accordingly, the carrying capacity of this roadway is expected to be similar to that of a residential queuing street, at approximately 1,000 vehicles per day. With completion of the proposed development, it is projected that the roadway will carry approximately 870 vehicles per day, which is within the capacity of the roadway.

It is anticipated that the new south access roadway will be constructed in a manner intended to attract site trips in lieu of River View Meadows Lane through the use of monumentation signage and a wider, more accommodating road design. This may reduce the traffic levels on River View Meadows Lane. Regardless, larger trucks should be directed to use the new south site access roadway.

CONCLUSIONS

Based on the operational analysis, the study intersections currently operate acceptably and are projected to continue to operate acceptably under year 2025 traffic conditions either with or without the addition of site trips from the proposed development.

The most recent five years of crash history on Northfork Road showed no crashes at the study intersections. No significant safety hazards are evident based on the crash history.

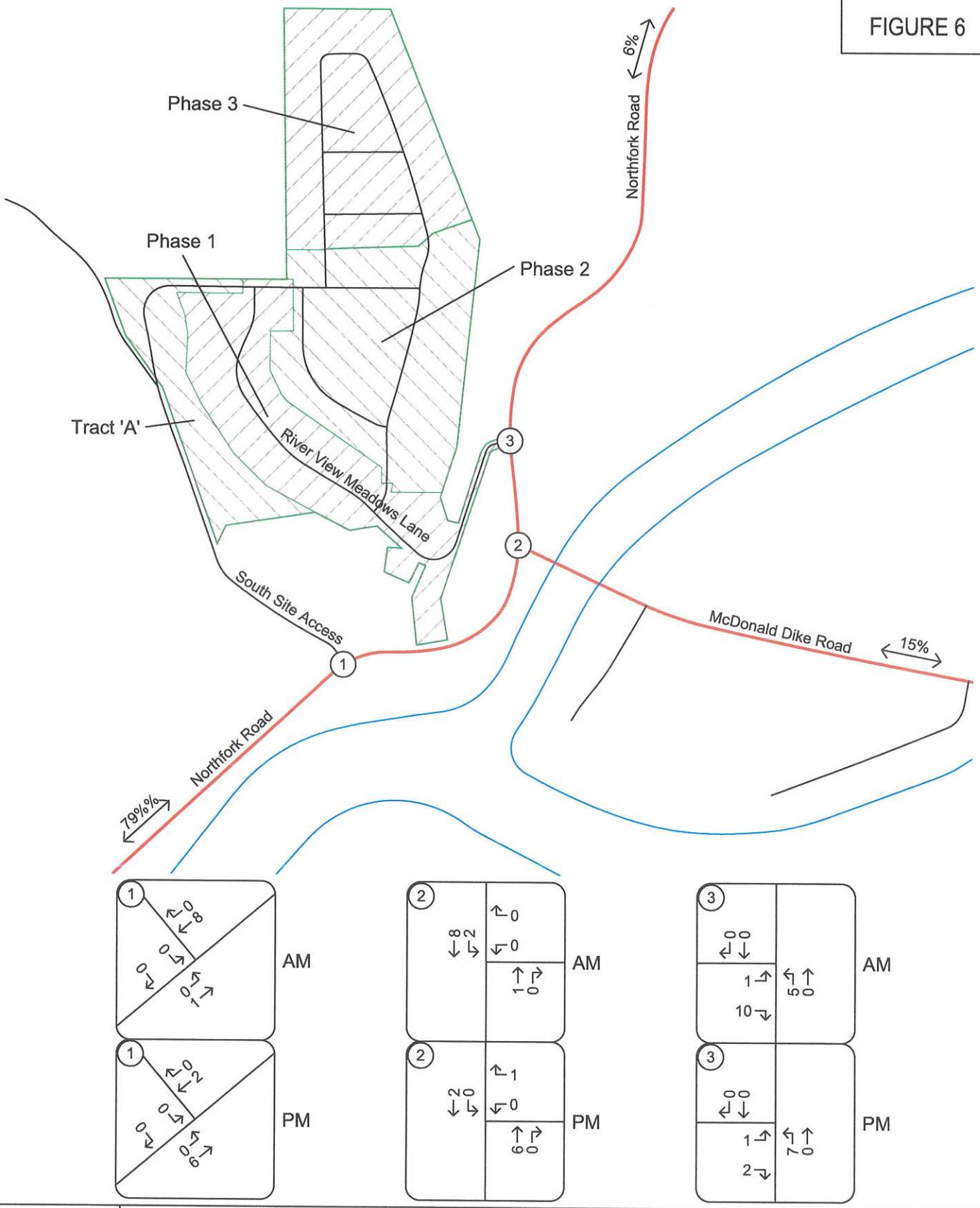
Based on the detailed warrant analysis, no new traffic signals or turn lanes are recommended in conjunction with the proposed development.

Although intersection sight distances are limited by horizontal curves in the vicinity of the site access locations, a detailed analysis shows that the available sight distances are adequate to ensure safe operation of the area intersections, and the delays to through traffic that slows to avoid conflicts will be negligible. Accordingly, no sight distance improvements are necessary or recommended in conjunction with the proposed development.

Based on the analysis of River View Meadows Lane's road width and geometry, large vehicles may have difficulty navigating the roadway and require both travel lanes to negotiate the curves in the vicinity of Northfork Road. Very large trucks may also trailer off the roadway surface. However, the road width is sufficient to approximately 1,000 passenger vehicles per day despite the narrow width, similar to the capacity of a residential queuing street. The projected future traffic volumes on this roadway are within this effective roadway capacity. Planned monumentation and improvements to the new south site access roadway may help further reduce traffic volumes on River View Meadows Lane. It is recommended that large trucks be directed to use the new south site access roadway.

APPENDIX

FIGURE 6



TRAFFIC VOLUMES
In-Process Trips
Morning and Evening Peak Hours

PAGE
APP1

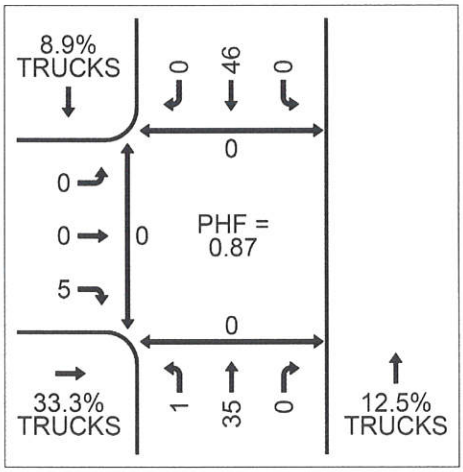
Intersection Count Summary (2-Hour Count)

Ard Engineering, LLC

Intersection: Nehalem River Road at Proposed South Access

Date: 8/10/2022 Time: 7:00 AM to 9:00 AM

Weather: Overcast



PEAK HOUR DIAGRAM: 8:00 - 9:00 AM

Count Data: 5-Minute Intervals

Start Time	Northbound Nehalem River Rd				Southbound Nehalem River Rd				Eastbound South Site Access				Westbound South Site Access				Interval Total	Pedestrian Crossings			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:05 AM	1	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0
7:10 AM	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0
7:15 AM	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0
7:20 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0
7:25 AM	1	2	0	0	0	11	0	0	0	0	0	0	0	0	0	0	14	0	0	0	0
7:30 AM	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0
7:35 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
7:40 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
7:45 AM	0	3	0	0	0	4	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0
7:50 AM	1	5	0	0	0	2	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0
7:55 AM	0	2	0	0	0	3	1	0	1	0	0	0	0	0	0	0	7	0	0	0	0
8:00 AM	0	8	0	0	0	2	0	0	0	0	0	0	0	0	0	0	10	0	0	0	0
8:05 AM	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0
8:10 AM	0	2	0	0	0	4	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0
8:15 AM	0	4	0	0	0	1	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0
8:20 AM	0	0	0	0	0	4	0	0	0	0	2	0	0	0	0	0	6	0	0	0	0
8:25 AM	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0
8:30 AM	0	2	0	0	0	5	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0
8:35 AM	1	3	0	0	0	4	0	0	0	0	1	0	0	0	0	0	9	0	0	0	0
8:40 AM	0	3	0	0	0	2	0	0	0	0	1	0	0	0	0	0	6	0	0	0	0
8:45 AM	0	2	0	0	0	4	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0
8:50 AM	0	6	0	0	0	5	0	0	0	0	1	0	0	0	0	0	12	0	0	0	0
8:55 AM	0	2	0	0	0	5	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0
Total	4	52	0	0	0	78	1	0	1	0	5	0	0	0	0	0	141	0	0	0	0

Peak Hour Summary: 8:00-9:00 AM PHF = 0.87

	Northbound Nehalem River Rd				Southbound Nehalem River Rd				Eastbound South Site Access				Westbound South Site Access				Interval Total	Pedestrians			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
Peak Hour	1	35	0	0	0	46	0	0	0	0	5	0	0	0	0	0	87	0	0	0	0
% Trucks	12.5%				8.9%				33.3%				#DIV/0!								

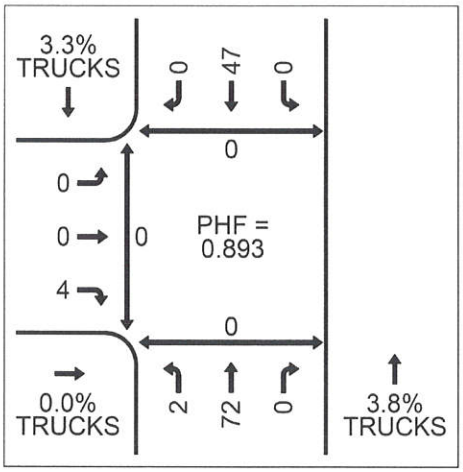
Intersection Count Summary (2-Hour Count)

Ard Engineering, LLC

Intersection: Nehalem River Road at Proposed South Access

Date: 8/9/2022 Time: 4:00 PM to 6:00 PM

Weather: Clear and Dry



PEAK HOUR DIAGRAM: 4:25 - 5:25 PM

Count Data: 5-Minute Intervals

Start Time	Northbound Nehalem River Rd				Southbound Nehalem River Rd				Eastbound South Site Access				Westbound South Site Access				Interval Total	Pedestrian Crossings			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	0	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0
4:05 PM	0	4	0	0	0	2	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0
4:10 PM	1	3	0	0	0	2	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0
4:15 PM	0	1	0	0	0	5	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0
4:20 PM	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	10	0	0	0	0
4:25 PM	0	10	0	0	0	5	0	0	0	0	1	0	0	0	0	0	16	0	0	0	0
4:30 PM	0	5	0	0	0	2	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0
4:35 PM	0	2	0	0	0	6	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0
4:40 PM	0	8	0	0	0	7	0	0	0	0	1	0	0	0	0	0	16	0	0	0	0
4:45 PM	0	5	0	0	0	3	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0
4:50 PM	0	3	0	0	0	5	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0
4:55 PM	0	2	0	0	0	3	0	1	0	0	0	0	0	0	0	0	5	0	0	0	0
5:00 PM	0	7	0	0	0	4	0	0	0	0	0	0	0	0	0	0	11	0	0	0	0
5:05 PM	1	8	0	0	0	2	0	0	0	0	0	0	0	0	0	0	11	0	0	0	0
5:10 PM	1	7	0	0	0	2	0	0	0	0	0	0	0	0	0	0	10	0	0	0	0
5:15 PM	0	7	0	0	0	4	0	0	0	0	1	0	0	0	0	0	12	0	0	0	0
5:20 PM	0	8	0	0	0	4	0	0	0	0	1	0	0	0	0	0	13	0	0	0	0
5:25 PM	0	7	0	0	0	3	0	0	0	0	0	0	0	0	0	0	10	0	0	0	0
5:30 PM	0	1	0	0	0	6	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0
5:35 PM	0	6	0	0	0	4	0	0	0	0	1	0	0	0	0	0	11	0	0	0	0
5:40 PM	0	6	0	0	0	3	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0
5:45 PM	1	9	0	0	0	5	0	0	0	0	0	0	0	0	0	0	15	0	0	0	0
5:50 PM	0	6	0	0	0	3	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0
5:55 PM	0	3	0	0	0	2	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0
Total	4	127	0	0	0	91	0	1	0	0	5	0	0	0	0	0	227	0	0	0	0

Peak Hour Summary: 4:25-5:25 PM PHF = 0.893

	Northbound Nehalem River Rd				Southbound Nehalem River Rd				Eastbound South Site Access				Westbound South Site Access				Interval Total	Pedestrians			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
Peak Hour	2	72	0	0	0	47	0	1	0	0	4	0	0	0	0	0	125	0	0	0	0
% Trucks	3.8%				3.3%				0.0%				#DIV/0!								

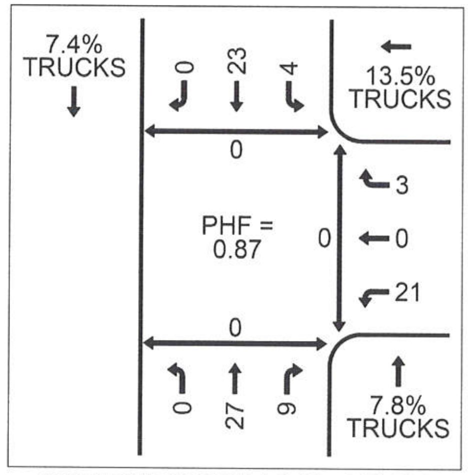
Intersection Count Summary (2-Hour Count)

Ard Engineering, LLC

Intersection: Nehalem River Road at McDonald Road

Date: 8/10/2022 Time: 7:00 AM to 9:00 AM

Weather: Overcast



PEAK HOUR DIAGRAM: 8:00 - 9:00 AM

Count Data: 5-Minute Intervals

Start Time	Northbound Nehalem River Rd				Southbound Nehalem River Rd				Eastbound McDonald Road				Westbound McDonald Road				Interval Total	Pedestrian Crossings			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:05 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	2	0	4	0	0	0	0
7:10 AM	0	0	1	0	0	0	0	0	0	0	0	0	2	0	0	0	3	0	0	0	0
7:15 AM	0	1	0	0	1	2	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0
7:20 AM	0	2	0	0	1	1	0	0	0	0	0	0	0	0	1	0	5	0	0	0	0
7:25 AM	0	1	0	0	0	10	0	0	0	0	0	0	1	0	0	0	12	0	0	0	0
7:30 AM	0	0	0	0	0	3	0	0	0	0	0	0	2	0	0	0	5	0	0	0	0
7:35 AM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0
7:40 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
7:45 AM	0	2	1	0	0	3	0	0	0	0	0	0	1	0	0	0	7	0	0	0	0
7:50 AM	0	3	0	0	0	1	0	0	0	0	0	0	2	0	0	0	6	0	0	0	0
7:55 AM	0	2	0	0	0	3	0	0	0	0	0	0	1	0	0	0	6	0	0	0	0
8:00 AM	0	4	1	0	1	1	0	0	0	0	0	0	2	0	0	0	9	0	0	0	0
8:05 AM	0	3	0	0	0	2	0	0	0	0	0	0	6	0	0	0	11	0	0	0	0
8:10 AM	0	1	0	0	0	1	0	0	0	0	0	0	1	0	1	0	4	0	0	0	0
8:15 AM	0	5	1	0	0	0	0	0	0	0	0	0	1	0	0	0	7	0	0	0	0
8:20 AM	0	0	0	0	0	2	0	0	0	0	0	0	2	0	0	0	4	0	0	0	0
8:25 AM	0	2	1	0	1	2	0	0	0	0	0	0	1	0	0	0	7	0	0	0	0
8:30 AM	0	1	1	0	1	3	0	0	0	0	0	0	2	0	0	0	8	0	0	0	0
8:35 AM	0	2	1	0	0	3	0	0	0	0	0	0	1	0	0	0	7	0	0	0	0
8:40 AM	0	2	1	0	0	1	0	0	0	0	0	0	1	0	0	0	5	0	0	0	0
8:45 AM	0	1	0	0	0	1	0	0	0	0	0	0	2	0	1	0	5	0	0	0	0
8:50 AM	0	5	2	0	0	4	0	0	0	0	0	0	2	0	0	0	13	0	0	0	0
8:55 AM	0	1	1	0	1	3	0	0	0	0	0	0	0	0	1	0	7	0	0	0	0
Total	0	39	12	0	7	47	0	0	0	0	0	0	31	0	6	0	142	0	0	0	0

Peak Hour Summary: 8:00-9:00 AM PHF = 0.87

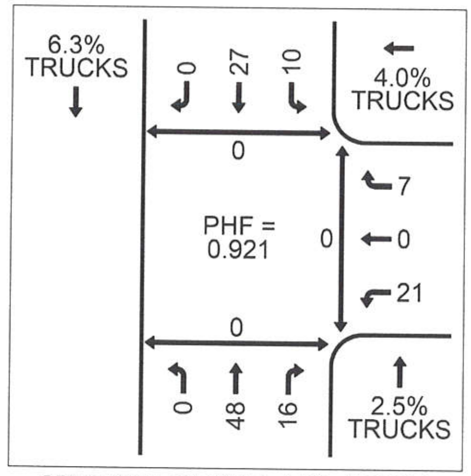
	Northbound Nehalem River Rd				Southbound Nehalem River Rd				Eastbound McDonald Road				Westbound McDonald Road				Interval Total	Pedestrians			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
Peak Hour	0	27	9	0	4	23	0	0	0	0	0	0	21	0	3	0	87	0	0	0	0
% Trucks	7.8%				7.4%				#DIV/0!				13.5%								

Intersection Count Summary (2-Hour Count)
Ard Engineering, LLC

Intersection: Nehalem River Road at McDonald Road

Date: 8/9/2022 Time: 4:00 PM to 6:00 PM

Weather: Clear and Dry



PEAK HOUR DIAGRAM: 4:20 - 5:20 PM

Count Data: 5-Minute Intervals

Start Time	Northbound Nehalem River Rd				Southbound Nehalem River Rd				Eastbound McDonald Road				Westbound McDonald Road				Interval Total	Pedestrian Crossings			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	0	1	2	0	0	1	0	0	0	0	0	0	2	0	1	0	7	0	0	0	0
4:05 PM	0	1	4	0	1	1	0	0	0	0	0	0	0	0	1	0	8	0	0	0	0
4:10 PM	0	2	1	0	0	1	0	0	0	0	0	0	1	0	0	0	5	0	0	0	0
4:15 PM	0	1	0	0	0	2	0	0	0	0	0	0	4	0	1	0	8	0	0	0	0
4:20 PM	0	4	1	0	1	4	0	0	0	0	0	0	3	0	1	0	14	0	0	0	0
4:25 PM	0	5	2	0	1	1	0	0	0	0	0	0	3	0	0	0	12	0	0	0	0
4:30 PM	0	3	1	0	0	1	0	0	0	0	0	0	1	0	1	0	7	0	0	0	0
4:35 PM	0	2	0	0	0	1	0	0	0	0	0	0	4	0	1	0	8	0	0	0	0
4:40 PM	0	4	3	0	1	4	0	0	0	0	0	0	3	0	1	0	16	0	0	0	0
4:45 PM	0	3	1	0	1	1	0	0	0	0	0	0	2	0	0	0	8	0	0	0	0
4:50 PM	0	4	1	0	2	1	0	0	0	0	0	0	1	0	2	0	11	0	0	0	0
4:55 PM	0	1	0	0	1	3	0	1	0	0	0	0	0	0	1	0	6	0	0	0	0
5:00 PM	0	6	1	0	2	3	0	0	0	0	0	0	1	0	0	0	13	0	0	0	0
5:05 PM	0	5	2	0	0	1	0	0	0	0	0	0	1	0	0	0	9	0	0	0	0
5:10 PM	0	4	4	0	1	2	0	0	0	0	0	0	0	0	0	0	11	0	0	0	0
5:15 PM	0	7	0	0	0	5	0	0	0	0	0	0	2	0	0	0	14	0	0	0	0
5:20 PM	0	5	1	0	1	3	0	0	0	0	0	0	0	0	0	0	10	0	0	0	0
5:25 PM	0	6	2	0	0	2	0	0	0	0	0	0	1	0	1	0	12	0	0	0	0
5:30 PM	0	1	0	0	1	5	0	0	0	0	0	0	1	0	0	0	8	0	0	0	0
5:35 PM	0	3	1	0	1	0	0	0	0	0	0	0	1	0	1	0	7	0	0	0	0
5:40 PM	0	2	3	0	0	2	0	0	0	0	0	0	2	0	1	0	10	0	0	0	0
5:45 PM	0	4	4	0	0	1	0	0	0	0	0	0	3	0	0	0	12	0	0	0	0
5:50 PM	0	3	4	0	1	4	0	0	0	0	0	0	0	0	0	0	12	0	0	0	0
5:55 PM	0	1	2	0	0	0	0	0	0	0	0	0	1	0	0	0	4	0	0	0	0
Total	0	78	40	0	15	49	0	1	0	0	0	0	37	0	13	0	232	0	0	0	0

Peak Hour Summary: 4:20-5:20 PM PHF = 0.921

	Northbound Nehalem River Rd				Southbound Nehalem River Rd				Eastbound McDonald Road				Westbound McDonald Road				Interval Total	Pedestrians			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
Peak Hour	0	48	16	0	10	27	0	1	0	0	0	0	21	0	7	0	129	0	0	0	0
% Trucks	2.5%				6.3%				0.0%				4.0%								

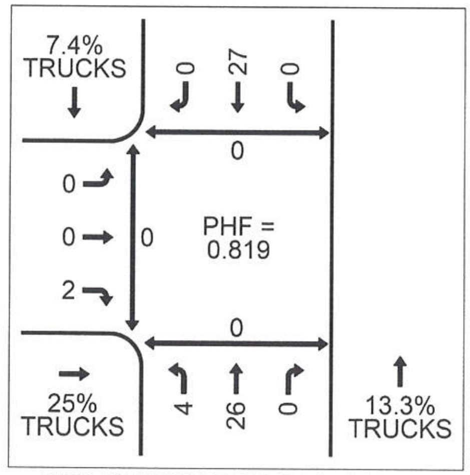
Intersection Count Summary (2-Hour Count)

Ard Engineering, LLC

Intersection: Nehalem River Road at River View Meadows Lane

Date: 8/10/2022 Time: 7:00 AM to 9:00 AM

Weather: Overcast



PEAK HOUR DIAGRAM: 8:00 - 9:00 AM

Count Data: 5-Minute Intervals

Start Time	Northbound Nehalem River Rd				Southbound Nehalem River Rd				Eastbound River View Meadows Ln				Westbound River View Meadows Ln				Interval Total	Pedestrian Crossings			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:05 AM	1	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0
7:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	1	0	0	0	0	3	0	0	1	0	0	0	0	0	0	0	5	0	0	0	0
7:20 AM	0	3	0	0	0	2	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0
7:25 AM	0	1	0	0	0	10	0	0	0	0	1	0	0	0	0	0	12	0	0	0	0
7:30 AM	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0
7:35 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
7:40 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	2	0	0	0	3	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0
7:50 AM	0	3	0	0	0	1	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0
7:55 AM	2	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0
8:00 AM	0	4	0	0	0	2	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0
8:05 AM	1	2	0	0	0	2	0	0	0	0	1	0	0	0	0	0	6	0	0	0	0
8:10 AM	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0
8:15 AM	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0
8:20 AM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0
8:25 AM	1	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0
8:30 AM	0	1	0	0	0	4	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0
8:35 AM	0	2	0	0	0	3	0	0	0	0	1	0	0	0	0	0	6	0	0	0	0
8:40 AM	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0
8:45 AM	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0
8:50 AM	1	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0
8:55 AM	0	2	0	0	0	4	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0
Total	8	37	0	0	0	54	0	0	1	0	3	0	0	0	0	0	103	0	0	0	0

Peak Hour Summary: 8:00-9:00 AM PHF = 0.819

	Northbound Nehalem River Rd				Southbound Nehalem River Rd				Eastbound River View Meadows Ln				Westbound River View Meadows				Interval Total	Pedestrians			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
Peak Hour	4	26	0	0	0	27	0	0	0	0	2	0	0	0	0	0	59	0	0	0	0
% Trucks	13.3%				7.4%				25.0%				#DIV/0!								

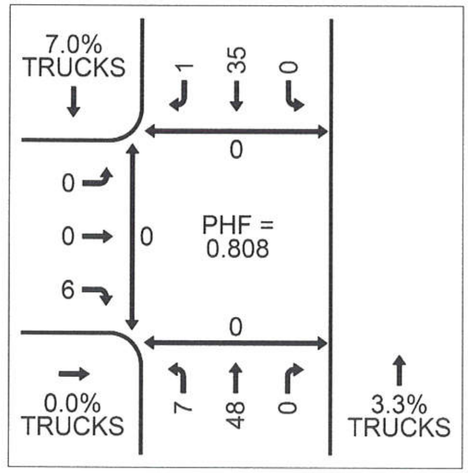
Intersection Count Summary (2-Hour Count)

Ard Engineering, LLC

Intersection: Nehalem River Road at River View Meadows Lane

Date: 8/9/2022 Time: 4:00 PM to 6:00 PM

Weather: Clear and Dry



PEAK HOUR DIAGRAM: 4:40 - 5:40 PM

Count Data: 5-Minute Intervals

Start Time	Northbound Nehalem River Rd				Southbound Nehalem River Rd				Eastbound RiverView Meadows Ln				Westbound RiverView Meadows Ln				Interval Total	Pedestrian Crossings			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	0	2	0	0	0	0	0	0	0	0	2	0	0	0	0	0	4	0	0	0	0
4:05 PM	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0
4:10 PM	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0
4:15 PM	1	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0
4:20 PM	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	10	0	0	0	0
4:25 PM	1	4	0	0	0	2	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0
4:30 PM	2	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0
4:35 PM	1	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0
4:40 PM	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	10	0	0	0	0
4:45 PM	1	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0
4:50 PM	1	5	0	0	0	3	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0
4:55 PM	0	2	0	0	0	4	1	1	0	0	0	0	0	0	0	0	7	0	0	0	0
5:00 PM	1	5	0	0	0	2	0	0	0	0	3	0	0	0	0	0	11	0	0	0	0
5:05 PM	0	5	0	0	0	1	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0
5:10 PM	0	4	0	0	0	2	0	0	0	0	1	0	0	0	0	0	7	0	0	0	0
5:15 PM	1	6	0	0	0	5	0	0	0	0	0	0	0	0	0	0	12	0	0	0	0
5:20 PM	1	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0
5:25 PM	1	6	0	0	0	2	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0
5:30 PM	0	1	0	0	0	4	0	0	0	0	2	0	0	0	0	0	7	0	0	0	0
5:35 PM	1	3	0	0	0	1	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0
5:40 PM	0	3	0	0	0	2	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0
5:45 PM	0	4	0	0	0	1	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0
5:50 PM	0	3	0	0	0	4	0	0	0	0	1	0	0	0	0	0	8	0	0	0	0
5:55 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Total	12	79	0	0	0	56	1	1	0	0	9	0	0	0	0	0	157	0	0	0	0

Peak Hour Summary: 4:40-5:40 PM PHF = 0.808

	Northbound Nehalem River Rd				Southbound Nehalem River Rd				Eastbound RiverView Meadows Ln				Westbound RiverView Meadows Ln				Interval Total	Pedestrians			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
Peak Hour	7	48	0	0	0	35	1	1	0	0	6	0	0	0	0	0	93	0	0	0	0
% Trucks	3.3%				7.0%				0.0%				#DIV/0!								

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	5	1	35	46	0
Future Vol, veh/h	0	5	1	35	46	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	33	33	13	13	9	9
Mvmt Flow	0	6	1	40	53	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	95	53	53	0	-	0
Stage 1	53	-	-	-	-	-
Stage 2	42	-	-	-	-	-
Critical Hdwy	6.73	6.53	4.23	-	-	-
Critical Hdwy Stg 1	5.73	-	-	-	-	-
Critical Hdwy Stg 2	5.73	-	-	-	-	-
Follow-up Hdwy	3.797	3.597	2.317	-	-	-
Pot Cap-1 Maneuver	834	933	1485	-	-	-
Stage 1	896	-	-	-	-	-
Stage 2	907	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	833	933	1485	-	-	-
Mov Cap-2 Maneuver	833	-	-	-	-	-
Stage 1	895	-	-	-	-	-
Stage 2	907	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.9	0.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1485	-	933	-	-
HCM Lane V/C Ratio	0.001	-	0.006	-	-
HCM Control Delay (s)	7.4	0	8.9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	2.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	21	3	27	9	4	23
Future Vol, veh/h	21	3	27	9	4	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	14	14	8	8	7	7
Mvmt Flow	24	3	31	10	5	26

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	72	36	0	0	41	0
Stage 1	36	-	-	-	-	-
Stage 2	36	-	-	-	-	-
Critical Hdwy	6.54	6.34	-	-	4.17	-
Critical Hdwy Stg 1	5.54	-	-	-	-	-
Critical Hdwy Stg 2	5.54	-	-	-	-	-
Follow-up Hdwy	3.626	3.426	-	-	2.263	-
Pot Cap-1 Maneuver	903	1003	-	-	1537	-
Stage 1	956	-	-	-	-	-
Stage 2	956	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	900	1003	-	-	1537	-
Mov Cap-2 Maneuver	900	-	-	-	-	-
Stage 1	956	-	-	-	-	-
Stage 2	953	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.1	0	1.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	912	1537	-
HCM Lane V/C Ratio	-	-	0.03	0.003	-
HCM Control Delay (s)	-	-	9.1	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	2	4	26	27	0
Future Vol, veh/h	0	2	4	26	27	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	25	25	13	13	7	7
Mvmt Flow	0	2	5	32	33	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	75	33	33	0	-	0
Stage 1	33	-	-	-	-	-
Stage 2	42	-	-	-	-	-
Critical Hdwy	6.65	6.45	4.23	-	-	-
Critical Hdwy Stg 1	5.65	-	-	-	-	-
Critical Hdwy Stg 2	5.65	-	-	-	-	-
Follow-up Hdwy	3.725	3.525	2.317	-	-	-
Pot Cap-1 Maneuver	874	978	1511	-	-	-
Stage 1	933	-	-	-	-	-
Stage 2	925	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	871	978	1511	-	-	-
Mov Cap-2 Maneuver	871	-	-	-	-	-
Stage 1	930	-	-	-	-	-
Stage 2	925	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.7	1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1511	-	978	-	-
HCM Lane V/C Ratio	0.003	-	0.002	-	-
HCM Control Delay (s)	7.4	0	8.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	4	2	72	47	0
Future Vol, veh/h	0	4	2	72	47	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	2	4	4	3	3
Mvmt Flow	0	4	2	81	53	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	138	53	53	0	-	0
Stage 1	53	-	-	-	-	-
Stage 2	85	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.14	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.236	-	-	-
Pot Cap-1 Maneuver	855	1014	1540	-	-	-
Stage 1	970	-	-	-	-	-
Stage 2	938	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	854	1014	1540	-	-	-
Mov Cap-2 Maneuver	854	-	-	-	-	-
Stage 1	969	-	-	-	-	-
Stage 2	938	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.6	0.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1540	-	1014	-	-
HCM Lane V/C Ratio	0.001	-	0.004	-	-
HCM Control Delay (s)	7.3	0	8.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	2.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	21	7	48	16	10	27
Future Vol, veh/h	21	7	48	16	10	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	4	4	3	3	6	6
Mvmt Flow	23	8	52	17	11	29

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	112	61	0	0	69	0
Stage 1	61	-	-	-	-	-
Stage 2	51	-	-	-	-	-
Critical Hdwy	6.44	6.24	-	-	4.16	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.336	-	-	2.254	-
Pot Cap-1 Maneuver	880	999	-	-	1507	-
Stage 1	957	-	-	-	-	-
Stage 2	966	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	874	999	-	-	1507	-
Mov Cap-2 Maneuver	874	-	-	-	-	-
Stage 1	957	-	-	-	-	-
Stage 2	959	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.1	0	2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	902	1507	-
HCM Lane V/C Ratio	-	-	0.034	0.007	-
HCM Control Delay (s)	-	-	9.1	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	6	7	48	35	1
Future Vol, veh/h	0	6	7	48	35	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	2	2	3	3	7	7
Mvmt Flow	0	7	9	59	43	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	121	44	44	0	-	0
Stage 1	44	-	-	-	-	-
Stage 2	77	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.13	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.227	-	-	-
Pot Cap-1 Maneuver	874	1026	1558	-	-	-
Stage 1	978	-	-	-	-	-
Stage 2	946	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	869	1026	1558	-	-	-
Mov Cap-2 Maneuver	869	-	-	-	-	-
Stage 1	972	-	-	-	-	-
Stage 2	946	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.5	0.9	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1558	-	1026	-	-
HCM Lane V/C Ratio	0.006	-	0.007	-	-
HCM Control Delay (s)	7.3	0	8.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Trip Generation Calculation Worksheet

Land Use Description: Single-Family Detached Housing
ITE Land Use Code: 210
Independent Variable: Dwelling Units
Quantity: 74 Dwelling Units
Setting: General Urban/Suburban and Rural

Summary of ITE Trip Generation Data

AM Peak Hour of Adjacent Street Traffic
Trip Rate: 0.70 trips per dwelling unit
Directional Distribution: 26% Entering 74% Exiting

PM Peak Hour of Adjacent Street Traffic
Trip Rate: 0.94 trips per dwelling unit
Directional Distribution: 63% Entering 37% Exiting

Total Weekday Traffic
Trip Rate: 9.43 trips per dwelling unit
Directional Distribution: 50% Entering 50% Exiting

Site Trip Generation Calculations

74 Dwelling Units

	Entering	Exiting	Total
AM Peak Hour	14	38	52
PM Peak Hour	44	26	70
Weekday	349	349	698

Data Source: *Trip Generation Manual, 11th Edition* , Institute of Transportation Engineers, 2021

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	5	1	38	57	0
Future Vol, veh/h	0	5	1	38	57	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	33	33	13	13	9	9
Mvmt Flow	0	6	1	44	66	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	112	66	66	0	-	0
Stage 1	66	-	-	-	-	-
Stage 2	46	-	-	-	-	-
Critical Hdwy	6.73	6.53	4.23	-	-	-
Critical Hdwy Stg 1	5.73	-	-	-	-	-
Critical Hdwy Stg 2	5.73	-	-	-	-	-
Follow-up Hdwy	3.797	3.597	2.317	-	-	-
Pot Cap-1 Maneuver	815	918	1469	-	-	-
Stage 1	884	-	-	-	-	-
Stage 2	903	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	814	918	1469	-	-	-
Mov Cap-2 Maneuver	814	-	-	-	-	-
Stage 1	883	-	-	-	-	-
Stage 2	903	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.9	0.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1469	-	918	-	-
HCM Lane V/C Ratio	0.001	-	0.006	-	-
HCM Control Delay (s)	7.5	0	8.9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	2.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	22	3	30	10	6	32
Future Vol, veh/h	22	3	30	10	6	32
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	14	14	8	8	7	7
Mvmt Flow	25	3	34	11	7	37

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	91	40	0	0	45	0
Stage 1	40	-	-	-	-	-
Stage 2	51	-	-	-	-	-
Critical Hdwy	6.54	6.34	-	-	4.17	-
Critical Hdwy Stg 1	5.54	-	-	-	-	-
Critical Hdwy Stg 2	5.54	-	-	-	-	-
Follow-up Hdwy	3.626	3.426	-	-	2.263	-
Pot Cap-1 Maneuver	881	998	-	-	1531	-
Stage 1	952	-	-	-	-	-
Stage 2	942	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	877	998	-	-	1531	-
Mov Cap-2 Maneuver	877	-	-	-	-	-
Stage 1	952	-	-	-	-	-
Stage 2	937	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.2	0	1.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	890	1531	-
HCM Lane V/C Ratio	-	-	0.032	0.005	-
HCM Control Delay (s)	-	-	9.2	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	2	4	28	29	0
Future Vol, veh/h	0	2	4	28	29	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	25	25	13	13	7	7
Mvmt Flow	0	2	5	34	35	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	79	35	35	0	-	0
Stage 1	35	-	-	-	-	-
Stage 2	44	-	-	-	-	-
Critical Hdwy	6.65	6.45	4.23	-	-	-
Critical Hdwy Stg 1	5.65	-	-	-	-	-
Critical Hdwy Stg 2	5.65	-	-	-	-	-
Follow-up Hdwy	3.725	3.525	2.317	-	-	-
Pot Cap-1 Maneuver	870	976	1508	-	-	-
Stage 1	931	-	-	-	-	-
Stage 2	923	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	867	976	1508	-	-	-
Mov Cap-2 Maneuver	867	-	-	-	-	-
Stage 1	928	-	-	-	-	-
Stage 2	923	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.7	0.9	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1508	-	976	-	-
HCM Lane V/C Ratio	0.003	-	0.002	-	-
HCM Control Delay (s)	7.4	0	8.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	4	2	82	52	0
Future Vol, veh/h	0	4	2	82	52	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	2	4	4	3	3
Mvmt Flow	0	4	2	92	58	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	154	58	58	0	-	0
Stage 1	58	-	-	-	-	-
Stage 2	96	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.14	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.236	-	-	-
Pot Cap-1 Maneuver	838	1008	1533	-	-	-
Stage 1	965	-	-	-	-	-
Stage 2	928	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	837	1008	1533	-	-	-
Mov Cap-2 Maneuver	837	-	-	-	-	-
Stage 1	964	-	-	-	-	-
Stage 2	928	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.6	0.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1533	-	1008	-	-
HCM Lane V/C Ratio	0.001	-	0.004	-	-
HCM Control Delay (s)	7.4	0	8.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	2.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	22	8	57	17	11	31
Future Vol, veh/h	22	8	57	17	11	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	4	4	3	3	6	6
Mvmt Flow	24	9	62	18	12	34

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	129	71	0	0	80	0
Stage 1	71	-	-	-	-	-
Stage 2	58	-	-	-	-	-
Critical Hdwy	6.44	6.24	-	-	4.16	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.336	-	-	2.254	-
Pot Cap-1 Maneuver	861	986	-	-	1493	-
Stage 1	947	-	-	-	-	-
Stage 2	959	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	854	986	-	-	1493	-
Mov Cap-2 Maneuver	854	-	-	-	-	-
Stage 1	947	-	-	-	-	-
Stage 2	951	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.2	0	1.9
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	886	1493	-
HCM Lane V/C Ratio	-	-	0.037	0.008	-
HCM Control Delay (s)	-	-	9.2	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	18	19	51	37	1
Future Vol, veh/h	2	18	19	51	37	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	2	2	3	3	7	7
Mvmt Flow	2	22	23	63	46	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	156	47	47	0	-	0
Stage 1	47	-	-	-	-	-
Stage 2	109	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.13	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.227	-	-	-
Pot Cap-1 Maneuver	835	1022	1554	-	-	-
Stage 1	975	-	-	-	-	-
Stage 2	916	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	822	1022	1554	-	-	-
Mov Cap-2 Maneuver	822	-	-	-	-	-
Stage 1	960	-	-	-	-	-
Stage 2	916	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.7	2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1554	-	998	-	-
HCM Lane V/C Ratio	0.015	-	0.025	-	-
HCM Control Delay (s)	7.4	0	8.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	15	5	46	85	1
Future Vol, veh/h	3	15	5	46	85	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	33	33	13	13	9	9
Mvmt Flow	3	17	6	53	98	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	164	99	99	0	-	0
Stage 1	99	-	-	-	-	-
Stage 2	65	-	-	-	-	-
Critical Hdwy	6.73	6.53	4.23	-	-	-
Critical Hdwy Stg 1	5.73	-	-	-	-	-
Critical Hdwy Stg 2	5.73	-	-	-	-	-
Follow-up Hdwy	3.797	3.597	2.317	-	-	-
Pot Cap-1 Maneuver	760	878	1428	-	-	-
Stage 1	853	-	-	-	-	-
Stage 2	885	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	757	878	1428	-	-	-
Mov Cap-2 Maneuver	757	-	-	-	-	-
Stage 1	850	-	-	-	-	-
Stage 2	885	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.3	0.7	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1428	-	855	-	-
HCM Lane V/C Ratio	0.004	-	0.024	-	-
HCM Control Delay (s)	7.5	0	9.3	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	2.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	23	4	38	13	11	60
Future Vol, veh/h	23	4	38	13	11	60
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	14	14	8	8	7	7
Mvmt Flow	26	5	44	15	13	69

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	147	52	0	0	59	0
Stage 1	52	-	-	-	-	-
Stage 2	95	-	-	-	-	-
Critical Hdwy	6.54	6.34	-	-	4.17	-
Critical Hdwy Stg 1	5.54	-	-	-	-	-
Critical Hdwy Stg 2	5.54	-	-	-	-	-
Follow-up Hdwy	3.626	3.426	-	-	2.263	-
Pot Cap-1 Maneuver	818	983	-	-	1513	-
Stage 1	941	-	-	-	-	-
Stage 2	899	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	811	983	-	-	1513	-
Mov Cap-2 Maneuver	811	-	-	-	-	-
Stage 1	941	-	-	-	-	-
Stage 2	891	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.5	0	1.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	833	1513	-
HCM Lane V/C Ratio	-	-	0.037	0.008	-
HCM Control Delay (s)	-	-	9.5	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	4.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	35	17	28	29	1
Future Vol, veh/h	3	35	17	28	29	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	25	25	13	13	7	7
Mvmt Flow	4	43	21	34	35	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	112	36	36	0	-	0
Stage 1	36	-	-	-	-	-
Stage 2	76	-	-	-	-	-
Critical Hdwy	6.65	6.45	4.23	-	-	-
Critical Hdwy Stg 1	5.65	-	-	-	-	-
Critical Hdwy Stg 2	5.65	-	-	-	-	-
Follow-up Hdwy	3.725	3.525	2.317	-	-	-
Pot Cap-1 Maneuver	832	974	1507	-	-	-
Stage 1	930	-	-	-	-	-
Stage 2	892	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	820	974	1507	-	-	-
Mov Cap-2 Maneuver	820	-	-	-	-	-
Stage 1	917	-	-	-	-	-
Stage 2	892	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.9	2.8	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1507	-	960	-	-
HCM Lane V/C Ratio	0.014	-	0.048	-	-
HCM Control Delay (s)	7.4	0	8.9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	11	14	111	67	3
Future Vol, veh/h	2	11	14	111	67	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	2	4	4	3	3
Mvmt Flow	2	12	16	125	75	3

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	234	77	78	0	-	0
Stage 1	77	-	-	-	-	-
Stage 2	157	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.14	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.236	-	-	-
Pot Cap-1 Maneuver	754	984	1508	-	-	-
Stage 1	946	-	-	-	-	-
Stage 2	871	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	746	984	1508	-	-	-
Mov Cap-2 Maneuver	746	-	-	-	-	-
Stage 1	936	-	-	-	-	-
Stage 2	871	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.9	0.8	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1508	-	938	-	-
HCM Lane V/C Ratio	0.01	-	0.016	-	-
HCM Control Delay (s)	7.4	0	8.9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	2.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	25	12	86	19	13	46
Future Vol, veh/h	25	12	86	19	13	46
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	4	4	3	3	6	6
Mvmt Flow	27	13	93	21	14	50

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	182	104	0	0	114	0
Stage 1	104	-	-	-	-	-
Stage 2	78	-	-	-	-	-
Critical Hdwy	6.44	6.24	-	-	4.16	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.336	-	-	2.254	-
Pot Cap-1 Maneuver	803	945	-	-	1451	-
Stage 1	915	-	-	-	-	-
Stage 2	940	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	795	945	-	-	1451	-
Mov Cap-2 Maneuver	795	-	-	-	-	-
Stage 1	915	-	-	-	-	-
Stage 2	931	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.5	0	1.7
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	838	1451	-
HCM Lane V/C Ratio	-	-	0.048	0.01	-
HCM Control Delay (s)	-	-	9.5	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	35	52	51	37	4
Future Vol, veh/h	5	35	52	51	37	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	2	2	3	3	7	7
Mvmt Flow	6	43	64	63	46	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	240	49	51	0	-	0
Stage 1	49	-	-	-	-	-
Stage 2	191	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.13	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.227	-	-	-
Pot Cap-1 Maneuver	748	1020	1549	-	-	-
Stage 1	973	-	-	-	-	-
Stage 2	841	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	716	1020	1549	-	-	-
Mov Cap-2 Maneuver	716	-	-	-	-	-
Stage 1	931	-	-	-	-	-
Stage 2	841	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.9	3.7	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1549	-	969	-	-
HCM Lane V/C Ratio	0.041	-	0.051	-	-
HCM Control Delay (s)	7.4	0	8.9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANAYLYSIS AND REPORTING UNIT
COUNTY ROAD CRASH LISTING

NORTH FORK NEHLM RD, MP -999.99 to 999.99, 01/01/2016 to 12/31/2020

1 - 5 of 5 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P / E / D	A / L / C	U / G / S	I / N / V	C / H / L	S / R / K	W	DATE / DAY / TIME / LAT	MILEPNT / DIST FROM / INTERSECT / LONG	COUNTY ROADS / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
00050	N	N	N					02/20/2020	0.32	NORTH FORK NEHLM RD	STRGHT		N	N	CLR	ANIMAL	01	NONE 9	STRGHT										035	12
COUNTY								TH			UN	(NONE)	NONE	N	DRY	OTH		N/A	E -W									000		00
N								10A			03			N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N								45 43 23.18	-123 53 28.22			(02)													UNK					
00110	N	N	N		N	N		04/17/2019	1.44	NORTH FORK NEHLM RD	CURVE		N	Y	RAIN	FIX OBJ	01	NONE 9	STRGHT										045,091	10
COUNTY								WE			UN	(NONE)	NONE	N	WET	FIX		N/A	S -N									000		00
Y								10A			06			N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N								45 44 1.16	-123 52 38.33			(02)													UNK					
00183	N	Y	N		N	N		06/20/2018	1.66	NORTH FORK NEHLM RD	CURVE		N	Y	CLR	FIX OBJ	01	NONE 0	STRGHT										035,079,091	32
COUNTY								WE			UN	(NONE)	NONE	N	DRY	FIX		PRVTE	N -S									007	079,091	00
Y								2A			07			N	DARK	INJ		PSNGR CAR		01	DRVR	INJB	28	F	N-VAL		052,080,081	088		32
N								45 44 11.32	-123 52 34.03			(02)													OR<25					
00136	Y	N	N		N	N		05/11/2019	2.90	NORTH FORK NEHLM RD	CURVE		N	Y	UNK	FIX OBJ	01	NONE 0	STRGHT										058,010	01
COUNTY								SA			UN	(NONE)	CURVE	N	DRY	FIX		PRVTE	UN-UN									000	058,010	00
Y								12A			07			N	DARK	INJ		PSNGR CAR		01	DRVR	INJC	20	F	OR-Y		047,080,081	017		01
N								45 44 53.16	-123 51 26.61			(02)													OR<25					
00055	N	N	N		N	N		03/07/2018	3.47	NORTH FORK NEHLM RD	CURVE		N	Y	CLR	FIX OBJ	01	NONE 0	STRGHT										092,079,010	26
COUNTY								WE			UN	(NONE)	NONE	N	DRY	FIX		PRVTE	S -N									007	092,079,010	26
Y								4P			01			N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	48	M	OR-Y		080,081	000		00
N								45 45 8.15	-123 50 56.15			(02)													OR>25					

Preliminary Traffic Signal Warrant Analysis

Project Name: Riverview Meadows
Intersection: Northfork Road at South Site Access
Scenario: 2025 Background Plus Site Trips

Number of Major Street Lanes: 1
Number of Minor Street Lanes 1
Posted or 85th percentile speed > 40 mph: Yes
Isolated Population Less than 10,000: Yes

PM Peak Hour Volume 195 (sum of both approaches)
PM Peak Hour Volume 10 (highest-volume approach)[a]

Warrant 1, Eight-Hour Vehicular Volume

Condition A - Minimum Vehicular Volume

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on minor street (total of both approaches)			
Major Street	Minor Street	100%	80%	70%	56%	100%	80%	70%	56%
1	1	500	400	350	280	150	120	105	84
2 or more	1	600	480	420	336	150	120	105	84
2 or more	2 or more	600	480	420	336	200	160	140	112
1	2 or more	500	400	350	280	200	160	140	112

Condition B - Interruption of Continuous Traffic

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on minor street (total of both approaches)			
Major Street	Minor Street	100%	80%	70%	56%	100%	80%	70%	56%
1	1	750	600	525	420	75	60	53	42
2 or more	1	900	720	630	504	75	60	53	42
2 or more	2 or more	900	720	630	504	100	80	70	56
1	2 or more	750	600	525	420	100	80	70	56

Warrant Anaylsis Calculations	8th Highest Hour[b]	Minimum Volume	Warrant Satisfied?
Condition A - Minimum Vehicular Volume			
Major Street Volume	110	350	
Minor Street Volume	6	105	**No**
Condition B - Interruption of Continuous Traffic			
Major Street Volume	110	525	
Minor Street Volume	6	53	**No**
Combination Warrant[c]			
Major Street Volume	110	420	
Minor Street Volume	6	84	**No**

[a] Minor-Street right turn volumes are reduced to account for the impact of right-turns on red.

[b] Eighth-highest hour volumes are calculated as 5.65 percent of the expected daily traffic volume.

[c] This warrant should be used only after adequate trial of other alternatives has failed to solve traffic problems.

Preliminary Traffic Signal Warrant Analysis

Project Name: Riverview Meadows
Intersection: Northfork Road at McDonald Dike Road
Scenario: 2025 Background Plus Site Trips

Number of Major Street Lanes: 1 — PM Peak Hour Volume 164 (sum of both approaches)
Number of Minor Street Lanes 1 — PM Peak Hour Volume 34 (highest-volume approach)[a]
Posted or 85th percentile speed > 40 mph: Yes
Isolated Population Less than 10,000: Yes

Warrant 1, Eight-Hour Vehicular Volume

Condition A - Minimum Vehicular Volume

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on minor street (total of both approaches)			
Major Street	Minor Street	100%	80%	70%	56%	100%	80%	70%	56%
1	1	500	400	350	280	150	120	105	84
2 or more	1	600	480	420	336	150	120	105	84
2 or more	2 or more	600	480	420	336	200	160	140	112
1	2 or more	500	400	350	280	200	160	140	112

Condition B - Interruption of Continuous Traffic

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on minor street (total of both approaches)			
Major Street	Minor Street	100%	80%	70%	56%	100%	80%	70%	56%
1	1	750	600	525	420	75	60	53	42
2 or more	1	900	720	630	504	75	60	53	42
2 or more	2 or more	900	720	630	504	100	80	70	56
1	2 or more	750	600	525	420	100	80	70	56

Warrant Anaylsis Calculations	8th Highest Hour[b]	Minimum Volume	Warrant Satisfied?
Condition A - Minimum Vehicular Volume			
Major Street Volume	93	350	
Minor Street Volume	19	105	**No**
Condition B - Interruption of Continuous Traffic			
Major Street Volume	93	525	
Minor Street Volume	19	53	**No**
Combination Warrant[c]			
Major Street Volume	93	420	
Minor Street Volume	19	84	**No**

[a] Minor-Street right turn volumes are reduced to account for the impact of right-turns on red.

[b] Eighth-highest hour volumes are calculated as 5.65 percent of the expected daily traffic volume.

[c] This warrant should be used only after adequate trial of other alternatives has failed to solve traffic problems.

Preliminary Traffic Signal Warrant Analysis

Project Name: Riverview Meadows
Intersection: Northfork Road at River View Meadows Lane
Scenario: 2025 Background Plus Site Trips
Number of Major Street Lanes: 1
Number of Minor Street Lanes 1
Posted or 85th percentile speed > 40 mph: Yes
Isolated Population Less than 10,000: Yes

PM Peak Hour Volume 144 (sum of both approaches)
PM Peak Hour Volume 31 (highest-volume approach)[a]

Warrant 1, Eight-Hour Vehicular Volume

Condition A - Minimum Vehicular Volume

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on minor street (total of both approaches)			
Major Street	Minor Street	100%	80%	70%	56%	100%	80%	70%	56%
1	1	500	400	350	280	150	120	105	84
2 or more	1	600	480	420	336	150	120	105	84
2 or more	2 or more	600	480	420	336	200	160	140	112
1	2 or more	500	400	350	280	200	160	140	112

Condition B - Interruption of Continuous Traffic

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on minor street (total of both approaches)			
Major Street	Minor Street	100%	80%	70%	56%	100%	80%	70%	56%
1	1	750	600	525	420	75	60	53	42
2 or more	1	900	720	630	504	75	60	53	42
2 or more	2 or more	900	720	630	504	100	80	70	56
1	2 or more	750	600	525	420	100	80	70	56

Warrant Anaylsis Calculations	8th Highest Hour[b]	Minimum Volume	Warrant Satisfied?
Condition A - Minimum Vehicular Volume			
Major Street Volume	81	350	
Minor Street Volume	18	105	**No**
Condition B - Interruption of Continuous Traffic			
Major Street Volume	81	525	
Minor Street Volume	18	53	**No**
Combination Warrant[c]			
Major Street Volume	81	420	
Minor Street Volume	18	84	**No**

[a] Minor-Street right turn volumes are reduced to account for the impact of right-turns on red.
[b] Eighth-highest hour volumes are calculated as 5.65 percent of the expected daily traffic volume.
[c] This warrant should be used only after adequate trial of other alternatives has failed to solve traffic problems.

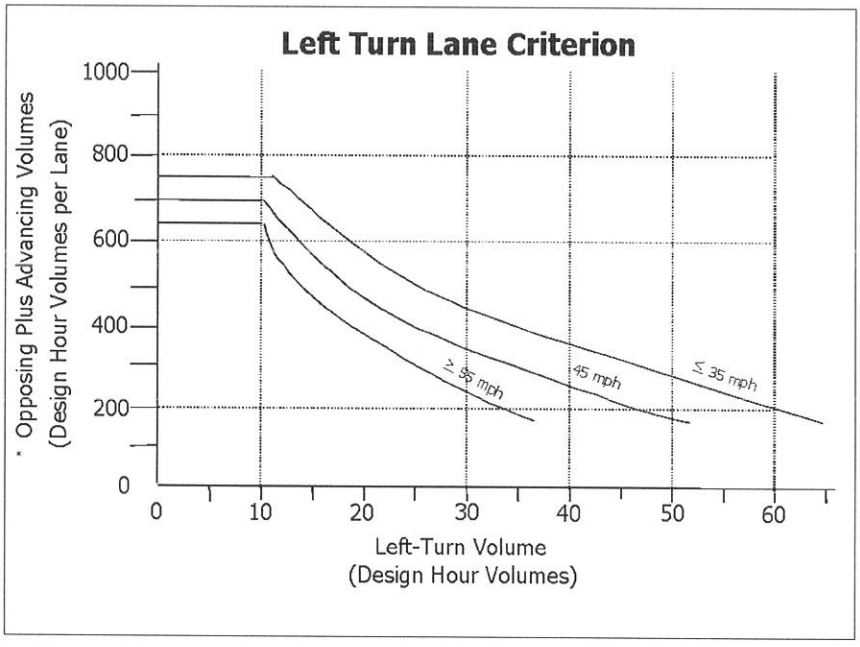
Left-Turn Lane Warrant Analysis (ODOT Methodology)

Project Name: Riverview Meadows
Approach: Northbound Northfork Road at South Site Access
Scenario: 2025 Background Plus Site Trips

Number of Advancing Lanes: 1
Number of Opposing Lanes: 1
Major-Street Design Speed: 45 mph

	AM Volume	PM Volume
Advancing Volume for Design Hour:	51	125
Opposing Volume for Design Hour:	86	70
Design Hour Volume Per Lane:	137	195
Number of Left Turns per Hour:	5	14
Left-turn lane warrants satisfied?	**NO**	**NO**

Exhibit 7-1 Left Turn Lane Criterion (TTI)



*(Advancing Volume/Number of Advancing Through Lanes) + (Opposing Volume/Number of Opposing Through Lanes)

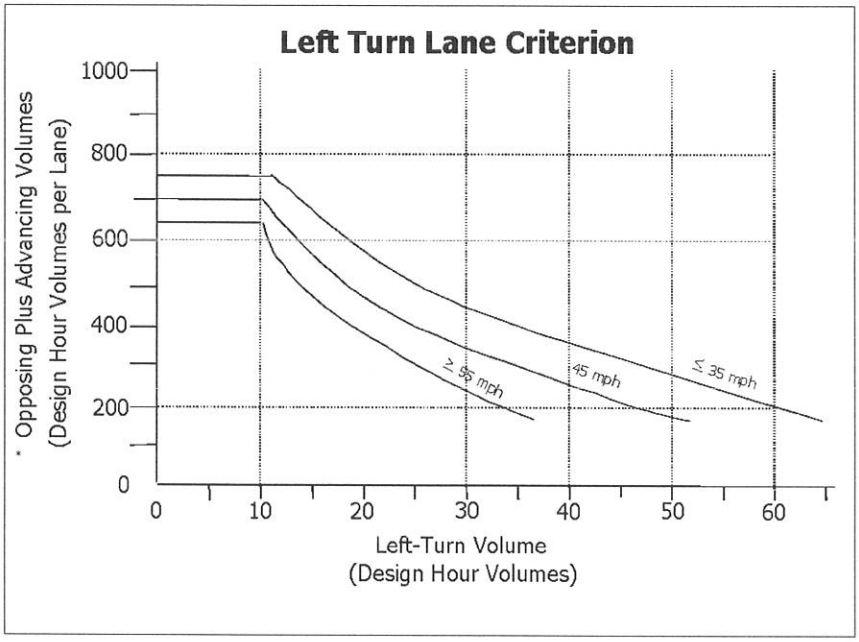
Left-Turn Lane Warrant Analysis (ODOT Methodology)

Project Name: Riverview Meadows
Approach: Sourthbound Northfork Road at McDonald Dike Road
Scenario: 2025 Background Plus Site Trips

Number of Advancing Lanes: 1
Number of Opposing Lanes: 1
Major-Street Design Speed: 45 mph

	AM Volume	PM Volume
Advancing Volume for Design Hour:	71	59
Opposing Volume for Design Hour:	51	105
Design Hour Volume Per Lane:	122	164
Number of Left Turns per Hour:	11	13
Left-turn lane warrants satisfied?	**NO**	**NO**

Exhibit 7-1 Left Turn Lane Criterion (TTI)



*(Advancing Volume/Number of Advancing Through Lanes) + (Opposing Volume/Number of Opposing Through Lanes)

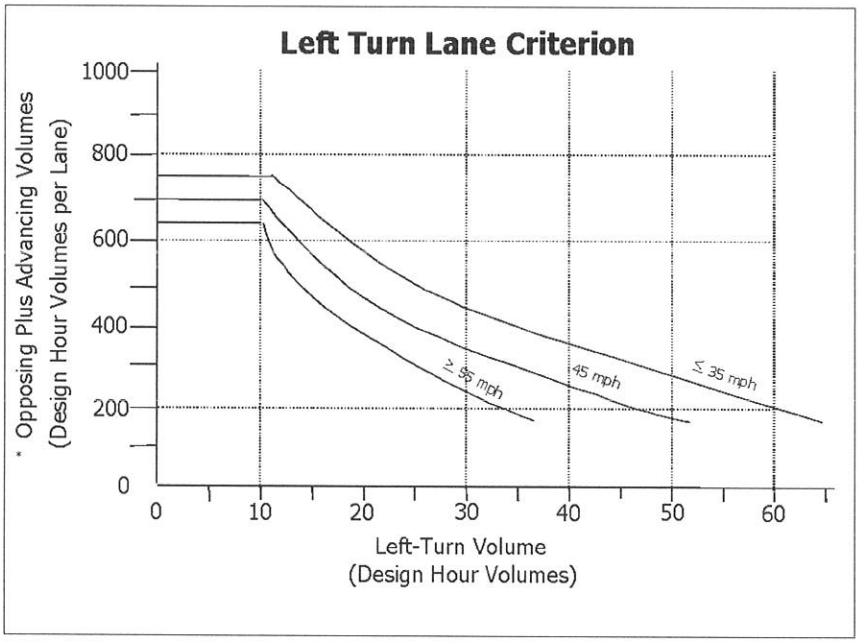
Left-Turn Lane Warrant Analysis (ODOT Methodology)

Project Name: Riverview Meadows
Approach: Northbound Northfork Road at River View Meadows Lane
Scenario: 2025 Background Plus Site Trips

Number of Advancing Lanes: 1
Number of Opposing Lanes: 1
Major-Street Design Speed: 45 mph

	AM Volume	PM Volume
Advancing Volume for Design Hour:	45	103
Opposing Volume for Design Hour:	30	41
Design Hour Volume Per Lane:	75	144
Number of Left Turns per Hour:	17	52
Left-turn lane warrants satisfied?	**NO**	**NO**

Exhibit 7-1 Left Turn Lane Criterion (TTI)



*(Advancing Volume/Number of Advancing Through Lanes) + (Opposing Volume/Number of Opposing Through Lanes)

Right-Turn Lane Warrant Analysis (ODOT Methodology)

Project Name: Riverview Meadows
Approach: Southbound Northfork Road at South Site Access
Scenario: 2025 Background plus Site Trips

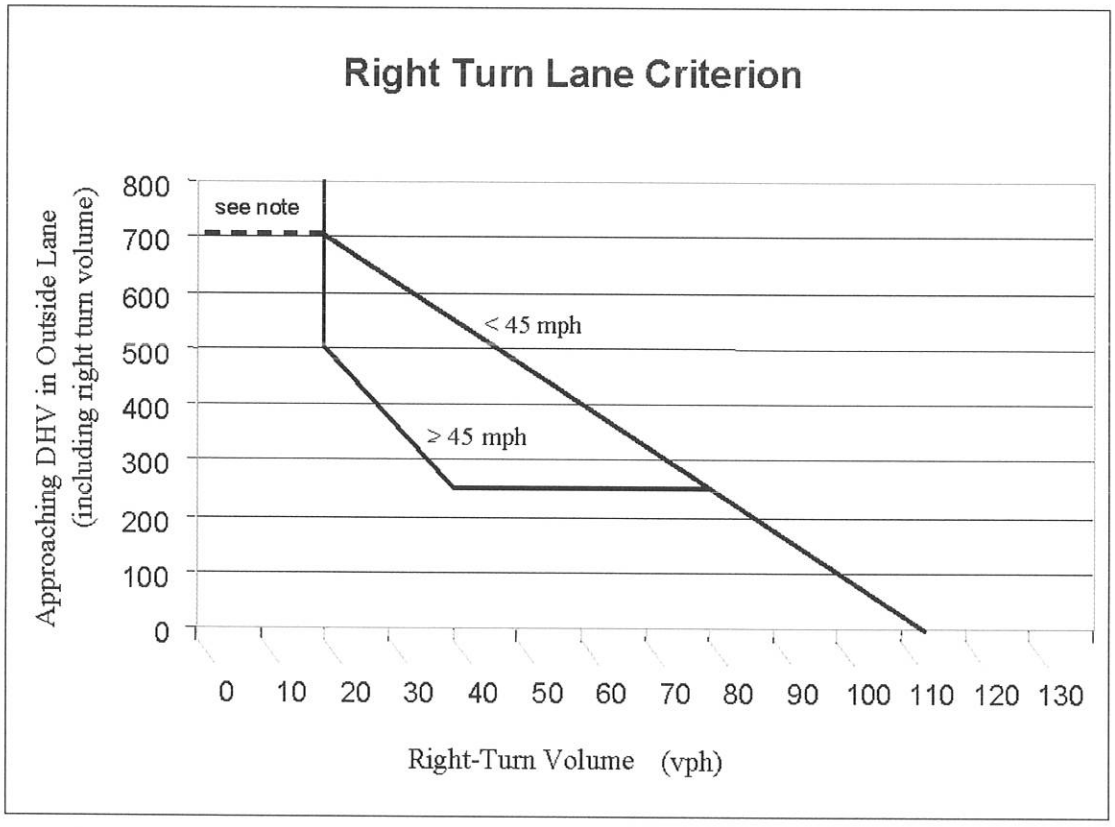
Major-Street Design Speed: 45 mph

	AM Volume	PM Volume
Number of Right Turns per Hour:	1	3
Approaching DVH in Outside Lane:	86	70
Calculated Turn Volume Threshold:	102	104
Right Turn Volume Exceeds Threshold?	**NO**	**NO**

Criterion 1: Vehicular Volume

The vehicular volume criterion is intended for application where the volume of intersecting traffic is the principal reason for considering installation of a right turn lane. The vehicular volume criteria are determined using the curve in Exhibit 7-2.

Exhibit 7-2 Right Turn Lane Criterion



Note: If there is no right turn lane, a shoulder needs to be provided. If this intersection is in a rural area and is a connection to a public street, a right turn lane is needed.

Right-Turn Lane Warrant Analysis (ODOT Methodology)

Project Name: Riverview Meadows
Approach: Northbound Northfork Road at McDonald Dike Road
Scenario: 2025 Background plus Site Trips

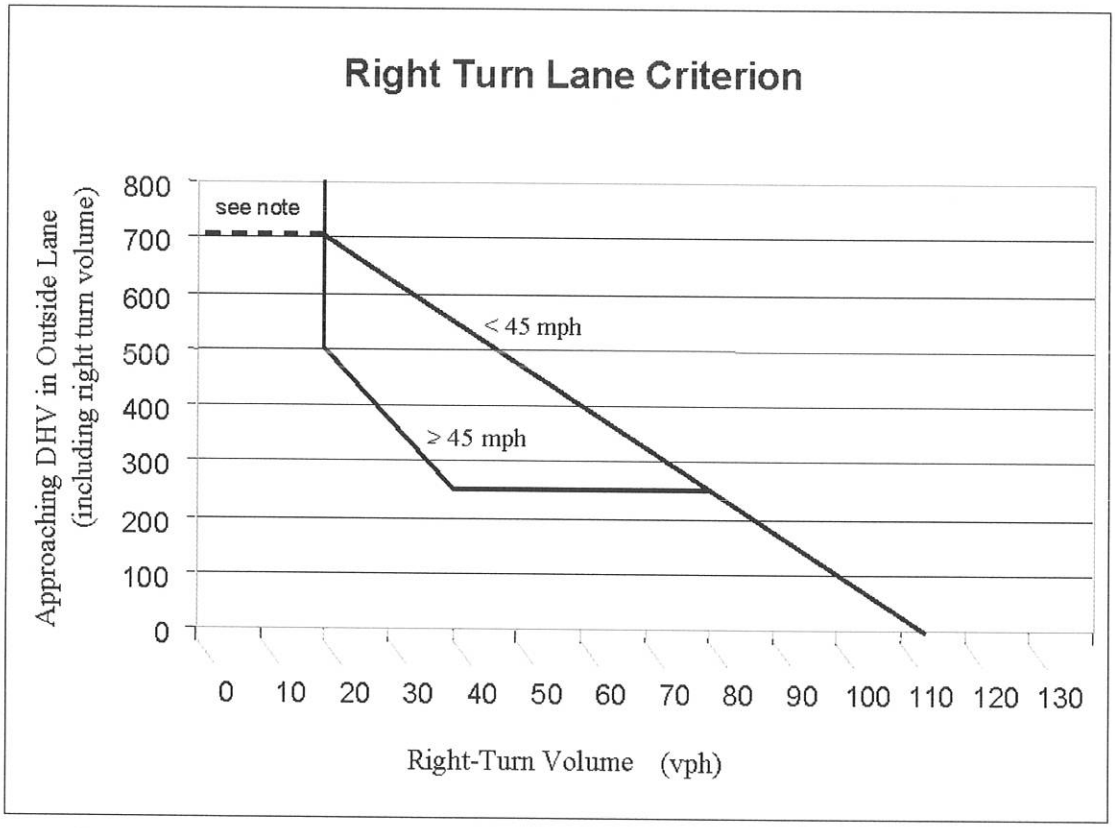
Major-Street Design Speed: 45 mph

	AM Volume	PM Volume
Number of Right Turns per Hour:	13	19
Approaching DVH in Outside Lane:	51	105
Calculated Turn Volume Threshold:	106	99
Right Turn Volume Exceeds Threshold?	**NO**	**NO**

Criterion 1: Vehicular Volume

The vehicular volume criterion is intended for application where the volume of intersecting traffic is the principal reason for considering installation of a right turn lane. The vehicular volume criteria are determined using the curve in Exhibit 7-2.

Exhibit 7-2 Right Turn Lane Criterion



Note: If there is no right turn lane, a shoulder needs to be provided. If this intersection is in a rural area and is a connection to a public street, a right turn lane is needed.

Right-Turn Lane Warrant Analysis (ODOT Methodology)

Project Name: Riverview Meadows
Approach: Southbound Northfork Road at River View Meadows Lane
Scenario: 2025 Background plus Site Trips

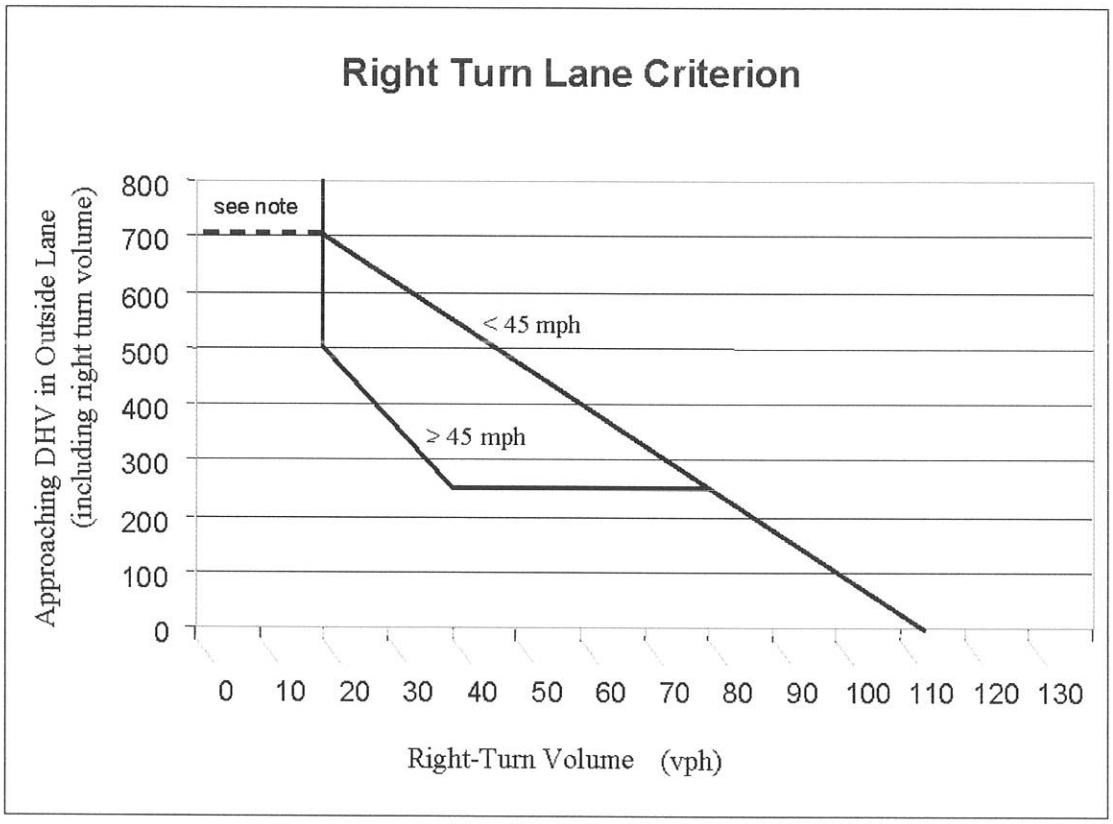
Major-Street Design Speed: 45 mph

	AM Volume	PM Volume
Number of Right Turns per Hour:	1	4
Approaching DVH in Outside Lane:	30	41
Calculated Turn Volume Threshold:	109	108
Right Turn Volume Exceeds Threshold?	**NO**	**NO**

Criterion 1: Vehicular Volume

The vehicular volume criterion is intended for application where the volume of intersecting traffic is the principal reason for considering installation of a right turn lane. The vehicular volume criteria are determined using the curve in Exhibit 7-2.

Exhibit 7-2 Right Turn Lane Criterion



Note: If there is no right turn lane, a shoulder needs to be provided. If this intersection is in a rural area and is a connection to a public street, a right turn lane is needed.

Speed Study Summary - Radar Data

Location: Northfork Nehalem River Road at South Site Access
Direction: Southbound
Date: August 10, 2022
Time: 7:00 AM
Weather: Overcast
Notes: None

85th Percentile Speed **39 mph**
Average Speed: 34 mph

Recorded Speeds:*

1 mph ------- 0	26 mph ------- 0	51 mph ------- 0
2 mph ------- 0	27 mph ------- 2	52 mph ------- 0
3 mph ------- 0	28 mph ------- 0	53 mph ------- 0
4 mph ------- 0	29 mph ------- 1	54 mph ------- 0
5 mph ------- 0	30 mph ------- 2	55 mph ------- 0
6 mph ------- 0	31 mph ------- 4	56 mph ------- 0
7 mph ------- 0	32 mph ------- 8	57 mph ------- 0
8 mph ------- 0	33 mph ------- 10	58 mph ------- 0
9 mph ------- 0	34 mph ------- 10	59 mph ------- 0
10 mph ------- 0	35 mph ------- 7	60 mph ------- 0
11 mph ------- 0	36 mph ------- 14	61 mph ------- 0
12 mph ------- 0	37 mph ------- 4	62 mph ------- 0
13 mph ------- 0	38 mph ------- 2	63 mph ------- 0
14 mph ------- 0	39 mph ------- 2	64 mph ------- 0
15 mph ------- 0	40 mph ------- 1	65 mph ------- 0
16 mph ------- 0	41 mph ------- 1	66 mph ------- 0
17 mph ------- 0	42 mph ------- 0	67 mph ------- 0
18 mph ------- 0	43 mph ------- 6	68 mph ------- 0
19 mph ------- 2	44 mph ------- 0	69 mph ------- 0
20 mph ------- 0	45 mph ------- 0	70 mph ------- 0
21 mph ------- 0	46 mph ------- 2	71 mph ------- 0
22 mph ------- 0	47 mph ------- 0	72 mph ------- 0
23 mph ------- 2	48 mph ------- 0	73 mph ------- 0
24 mph ------- 0	49 mph ------- 0	74 mph ------- 0
25 mph ------- 0	50 mph ------- 0	75+ mph ------- 0

* Speed data observations include free-flowing traffic only (i.e. no following vehicles)

Speed Study Summary - Radar Data

Location: Northfork Road at River View Meadows Lane
Direction: Southbound
Date: August 9, 2022
Time: 4:00 PM
Weather: Clear/Dry
Notes: None

85th Percentile Speed **41 mph**
Average Speed: 36 mph

Recorded Speeds:*

1 mph ------- 0	26 mph ------- 2	51 mph ------- 0
2 mph ------- 0	27 mph ------- 0	52 mph ------- 0
3 mph ------- 0	28 mph ------- 1	53 mph ------- 0
4 mph ------- 0	29 mph ------- 0	54 mph ------- 0
5 mph ------- 0	30 mph ------- 4	55 mph ------- 0
6 mph ------- 0	31 mph ------- 0	56 mph ------- 0
7 mph ------- 0	32 mph ------- 1	57 mph ------- 0
8 mph ------- 0	33 mph ------- 4	58 mph ------- 0
9 mph ------- 0	34 mph ------- 10	59 mph ------- 0
10 mph ------- 0	35 mph ------- 10	60 mph ------- 0
11 mph ------- 0	36 mph ------- 12	61 mph ------- 0
12 mph ------- 0	37 mph ------- 3	62 mph ------- 0
13 mph ------- 0	38 mph ------- 4	63 mph ------- 0
14 mph ------- 0	39 mph ------- 8	64 mph ------- 0
15 mph ------- 0	40 mph ------- 2	65 mph ------- 0
16 mph ------- 0	41 mph ------- 8	66 mph ------- 0
17 mph ------- 0	42 mph ------- 2	67 mph ------- 0
18 mph ------- 0	43 mph ------- 3	68 mph ------- 0
19 mph ------- 0	44 mph ------- 1	69 mph ------- 0
20 mph ------- 0	45 mph ------- 2	70 mph ------- 0
21 mph ------- 0	46 mph ------- 0	71 mph ------- 0
22 mph ------- 0	47 mph ------- 0	72 mph ------- 0
23 mph ------- 0	48 mph ------- 0	73 mph ------- 0
24 mph ------- 3	49 mph ------- 0	74 mph ------- 0
25 mph ------- 0	50 mph ------- 0	75+ mph ------- 0

* Speed data observations include free-flowing traffic only (i.e. no following vehicles)

Speed Study Summary - Radar Data

Location: Northfork Road at River View Meadows Lane
Direction: Northbound
Date: August 9, 2022
Time: 4:00 PM
Weather: Clear/Dry
Notes: None

85th Percentile Speed **40 mph**
Average Speed: 35 mph

Recorded Speeds:*

1 mph ------- 0	26 mph ------- 1	51 mph ------- 0
2 mph ------- 0	27 mph ------- 0	52 mph ------- 0
3 mph ------- 0	28 mph ------- 1	53 mph ------- 0
4 mph ------- 0	29 mph ------- 3	54 mph ------- 0
5 mph ------- 0	30 mph ------- 8	55 mph ------- 0
6 mph ------- 0	31 mph ------- 7	56 mph ------- 0
7 mph ------- 0	32 mph ------- 7	57 mph ------- 0
8 mph ------- 0	33 mph ------- 6	58 mph ------- 0
9 mph ------- 0	34 mph ------- 10	59 mph ------- 0
10 mph ------- 0	35 mph ------- 6	60 mph ------- 0
11 mph ------- 0	36 mph ------- 3	61 mph ------- 0
12 mph ------- 0	37 mph ------- 0	62 mph ------- 0
13 mph ------- 0	38 mph ------- 5	63 mph ------- 0
14 mph ------- 0	39 mph ------- 7	64 mph ------- 0
15 mph ------- 0	40 mph ------- 4	65 mph ------- 0
16 mph ------- 0	41 mph ------- 2	66 mph ------- 0
17 mph ------- 0	42 mph ------- 2	67 mph ------- 0
18 mph ------- 0	43 mph ------- 2	68 mph ------- 0
19 mph ------- 0	44 mph ------- 1	69 mph ------- 0
20 mph ------- 0	45 mph ------- 0	70 mph ------- 0
21 mph ------- 0	46 mph ------- 0	71 mph ------- 0
22 mph ------- 0	47 mph ------- 4	72 mph ------- 0
23 mph ------- 1	48 mph ------- 0	73 mph ------- 0
24 mph ------- 0	49 mph ------- 0	74 mph ------- 0
25 mph ------- 0	50 mph ------- 0	75+ mph ------- 0

* Speed data observations include free-flowing traffic only (i.e. no following vehicles)

WB-67 Interstate Truck Offtracking (Uphill)

WB-40 Tractor Trailer Using Both Travel Lanes (Uphill)

WB-40 Tractor Trailer Using Both Lanes (Downhill)

SU-40 Single-Unit Truck Using Both Lanes (Uphill)

SU-40 Single-Unit Truck Using Both Lanes (Downhill)

Fire Apparatus Using Both Lanes (Uphill)

Fire Apparatus Using Both Lanes (Downhill)

Passenger Cars with Two-Way Traffic

Riverview Meadows Development, LLC.

503.453.5599 alex@trevallygroup.us. PO Box 151 Nehalem, OR 97131-0151

May 13, 2022

Tillamook County Planning
1510 B Third Street
Tillamook, OR 97141

Tillamook County Planning,

We went to the City of Nehalem's Office today to update our water letter to explain that we are working towards a water solution. Unfortunately, Melissa is out of the office until Tuesday May 17, 2022. For the last two years we have been designing three options of water solutions for our site at Riverview Meadows with Kyle Aryes the city contracted engineer to fix the City of Nehalem's water system to the east side of town. We feel we are close to a resolution with one of the possible methods we are working on. We hope to have the preliminary engineering within the next 60 days.

Regards,

Alex S. Reverman

Riverview Meadows Development, LLC

Nehalem Bay Wastewater Agency

Date: 5-13-22

To: Tillamook County Building Department (Fax# 503-842-1819)

From: Nehalem Bay Wastewater Agency

Re: Sewer Availability

I confirm that sewer is available to the following lot within our district:

3N 10 23B Tax Lot # Riverview Meadows, Phase II TL 3600

Owner of Record (If Known): Vern Scovell

Other Information: Single Family/Duplex/Other - Explain 76 Lots

This letter shall not create a liability on the part of Nehalem Bay Wastewater Agency, or by an officer, or employee thereof, for the services described above.

Bradley S. Thayer
Signature of Authorized Representative

System Worker II 503-801-0753
Title and Phone Number

Tillamook
People's Utility District

A Customer-Owned Electric Utility

Office: 503.842.2535 • Toll-free: 800.422.2535 • Fax: 503.842.4161

www.tpud.org

May 12, 2022

Vern Scovell
Alex Reverman
PO Box 151
Nehalem, OR 97131

RE: Work Order No. 151514
Property Located at Riverview Meadows Subdivision, Phases 1 and 2

Dear Mr. Scovell and Mr. Reverman:

This letter is to certify that the Tillamook People's Utility District will extend electrical service to the above referenced facility in accordance with PUD Policy 4-2 which is in effect at the time service is extended.

Sincerely,

TILLAMOOK PEOPLE'S UTILITY DISTRICT

Tony MacDonald
Engineering Field Representative
503-815-8629

TM:ja

Enclosure

Date: 05/23/2022

To: TILLAMOOK COUNTY BUILDING DEPARTMENT

Re: WATER SERVICE AVAILABILITY

Attn: Building Department

I confirm that the property listed below is within the City's water service area, and may be served water through the City's Water System under the Terms and Conditions governed by the latest version of the City's Water Ordinance. Please note: This Water Service Availability letter does not certify, approve or acknowledge any specific development plans, water or other utility installations that may be necessary for the subject property to actually physically connect to the City's water system to receive service. This letter only certifies that the subject property may receive (or may already receive) water from the City's Water System.

TOWNSHIP 3N RANGE 10 SECTION 23B TAX LOT(S) 03600

~~SITUS ADDRESS~~: Tract B of Riverview Meadows Subdivision Phase 1

NAME: Riverview Meadows Development LLC PHONE: 503.453.5599

MAILING ADDRESS: 23765 SE HWY 212

Damascus, OR 97089

Single Family ☐ Duplex/Multi-Family ☐ Other ☑

Comments: SUBJECT TO ANY NECESSARY IMPROVEMENTS

Signed: Melissa Thompson Kuzo City Manager
Name Title

Nehalem Bay Fire & Rescue District
36375 Hwy 101 N.
Nehalem, OR 97131
(503) 368-7590 Bus.
(503) 368-7580 Fax
www.nehalembayfirerescue.org

May 12, 2022

Re: Riverview Meadows Phase II

Dear Ms. Asher,

This letter is to acknowledge that I have reviewed the secondary access road for the proposed phase II development of Riverview Meadows and find it adequate for the emergency access needs.

The water system is serviced by the city of Nehalem; however, prior to final plans approval the District would like to have input on the final placement of fire hydrants and any other emergency access requirements.

If you have any questions, please don't hesitate to call me.

Sincerely,

Chris Beswick
Fire Chief

CC&R's to be carried over to Phase 2 KM 10/7/22

Tillamook County, Oregon
01/21/2010 09:53:19 AM
DEED-CCR
$40.00 $11.00 $16.00 $10.00 - Total = $77.00

2010-000375

00092375201000003750080086

I hereby certify that the within instrument was received for record and recorded in the County of Tillamook, State of Oregon.

Tassi O'Neil, Tillamook County Clerk

After Recording Please Return To:
Vern Scovell
P.O. Box 151
Nehalem, OR 97131

OCT 05 2022

DECLARATIONS OF CONDITIONS AND RESTRICTIONS AFFECTING LAND LOCATED IN TILLAMOOK COUNTY, OREGON

The undersigned (hereafter "Declarants") being the owners in fee simple of that real property located in Tillamook County, Oregon, described in the attached Exhibit A(hereafter referred to as "Riverview Meadows Phase 1") incorporated herein by reference, do hereby make the following declaration of conditions, covenants, and restrictions (hereafter "CCR's") covering the above described property, specifying that this declaration shall constitute covenants to run with all of the land and shall be binding on all persons claiming under and through them and these conditions and restrictions shall be for the benefit of and limitations upon all future owners of said real property;

Where used herein, the term "Declarants" unless specified otherwise, shall mean the undersigned, their successors, heirs and assigns. Where used herein the term "lot" shall mean one of the lots 1 through 20 of Riverview Meadows Phase 1. Where used herein the term "owner" shall mean the owner of a lot within Riverview Meadows Phase 1 whether that owner be one or more persons, trust(s), corporation(s), limited liability company(ies), similar entity, or group or combination of entities.

1. USE OF LOT. No lot shall be used except for single-family residential purposes, or except for the placement of an accessory storage structure to benefit an adjoining lot in common ownership.

2. HEIGHT RESTRICTIONS. Notwithstanding paragraph 17 below, Declarants expressly reserve solely to themselves the right to impose building height restrictions on any lot within Riverview Meadows Phase 1, and or such further property annexed pursuant to paragraph 14 below, for so long as Declarants, or either of them, are an owner of a lot therein. For purposes of the foregoing sentence, Declarants shall not include their heirs, successors, or assigns. Such restrictions shall be imposed by recorded declaration in the Tillamook County Clerk's office in deed records and shall specifically reference these CCR's and the Declarants' right reserved by this paragraph. For purposes of these CCR's, " height" shall mean the vertical distance of a building measured from grade to the highest point of the roof; and "grade" shall mean the average elevation of the existing ground at the centers of all walls of a building.

3. SQUARE FOOTAGE. The minimum square footage of any residence on any lot shall be no less than 1200 square feet for a single level residence and no less than 1600 square feet for a multi-level residence. These square footage restrictions shall not apply to accessory structures, nor shall the square footage of any accessory structure be counted in determining the square footage of a residence.

4. TYPES OF STRUCTURES. Mobile homes, trailers, metal sheds, and pole buildings shall not be placed nor constructed on any lot. Pre-built modular and manufactured homes, as those terms are commonly used, shall be permitted. No structure erected on a lot shall possess aluminum or other metal siding. Roofing may be of wood, tile, metal, or composite material.

5. TIME FOR COMPLETION OF CONSTRUCTION. The construction of any residential structure shall, insofar as the exterior thereof is concerned, be completed within one (1) year from the date construction commences. All landscaping shall be completed within six months of substantial completion of any residential structure erected upon a lot.

6. TEMPORARY STRUCTURES. No temporary structure, excepting a recreational vehicle, shall be erected or placed upon the premises, except that a temporary structure shall be permitted on a lot during the period of construction of a single family dwelling, but such temporary structure shall be removed within thirty (30) days of completion of said dwelling house or within eighteen (18) months after the date said temporary structure was erected, whichever period expires first.

7. ANIMALS. No animals, livestock or poultry of any kind shall be raised, bred or kept on any lot excepting any dog, cat or household pets may be kept provided that they are not kept, bred or maintained for commercial purposes.

8. BUSINESS ACTIVITY. No business, trade or manufacture of any sort shall be conducted upon any of the above described property save and except for a home businesses wherein no signs, structures or other indicia of the business are apparent from outside any dwelling and such business does not result in any traffic to and from the property in excess of ordinary residential traffic. However, this paragraph shall not prohibit an owner from renting a dwelling to a third party, but under no circumstances shall such rental be for a rental term of less than 30 days. No signs shall be erected or maintained on any lot, save and except that one "for sale" or "for rent" sign not more than 24 inches high and 36 inches wide may be placed on a property on a temporary basis. The foregoing sign restrictions shall not apply to Declarants advertising lots for sale.

9. UPKEEP OF LOT. Each lot shall be maintained in a good and clean condition and free of hazards to the adjacent property and to the occupants thereof. All weeds and brush including but not limited to tansy, ragwort and blackberries shall be cut, poisoned or otherwise controlled and kept down. All garbage and other waste and debris shall be kept in appropriate sanitary containers for proper disposal and out of public view. Yard raking and dirt resulting from landscaping work shall not be dumped onto streets, roads, or other owner's lots. No noxious or offensive activity shall be carried on upon any lot, nor shall anything be done, grown or placed upon any lot which interferes with or jeopardizes the enjoyment of other lot owners within the property affected by these CCR's.

10. FENCES. No fence or wall shall be erected or placed on any lot in the above

described subdivision exceeding four (4) feet in height. However, chain-link fences or similar fencing which does not completely obscure a view may be a maximum of six (6) feet in height.

11. UTILITIES. No outdoor overhead wire or service drop for the distribution of electric energy or for telecommunication purposes, nor any pole, tower or other structure supporting said overhead wire shall be erected within the property affected by these CCR's. All owners shall use underground wires to connect their residences and any accessory structures built upon any lots to power, television, and any other utilities.

12. VEHICLES. No owner shall permit any vehicle which is in a state of visible disrepair to be abandoned or to remain parked upon any lot or parcel or on any street for a period in excess of forty-eight (48) hours. All boats, trailers, motor homes, motorcycles, trucks, truck campers and like equipment shall be kept in an enclosed garage when not in actual use. Each lot shall contain parking area for at least three vehicles. Garage or accessory structure bays shall be counted fo the purposes of meeting this requirement.

13. MAINTENANCE AND IMPROVEMENT OF ACCESS ROAD. Access to the lots affected by these CCR's is served by private paved roads owned by Declarants over which owners have rights of ingress and egress. As a part of these conditions, covenants and restrictions, and notwithstanding the location of individual lots nor the use made by the respective owners of any lots, owners of property affected by these CCR's shall in the cost of routine maintenance and repair of said roadway and paving. Further, upon the unanimous decision of 75% of the owners of lots within the property affected by these CCR's improvements may be made to said roads, and each owner will likewise share an equal responsibility and liability for the costs of such improvement. Each owner's percentage share of the cost of maintenance, repair, and improvement, if applicable, shall be equal to the ratio which the number of lots owned by an owner bears to the total number of lots affected by these CCR's.

14. DRIVEWAYS. All driveways serving a residence on any property subject to this declaration shall be paved with asphalt, concrete, or stone no later than the date of completion of the construction of a residence on a lot, and the owner thereof shall keep any such driveway in good and workmanlike repair. Said driveway shall at a minimum reach from the property line of a lot to the paved edge of the road providing access to a lot and shall be a minimum of thirty (30) feet in width where it connects to the pavement on the access road, and a minimum of twenty-two (22) feet elsewhere. All driveways shall incorporate a minimum eighteen (18) inch culvert for drainage.

15. ANNEXATION. If, within 20 years of the recording of these CCR's, Declarants, their successors and assigns, shall develop additional land within the vicinity of the real property affected by these CCR's, such additional land may be annexed by Declarant, its successors and assigns, to the real property by filing a plat of the property(ies) to be annexed and adopting all declarations of the protective restrictions affecting Riverview Meadows Phase 1 in effect at the time and thereby making the same applicable to the annexed properties. There is no limitation on the number of additional lots, Phases, tracts, private tracts or common properties which may

be created or annexed to the real property under this paragraph by Declarant, its successors or assigns.

16. SEVERABILITY. Invalidation of any of these covenants shall in no way affect any of the other provisions, which shall remain in full force and effect.

17. DURATION/AMENDMENT/REVOCATION. All of the conditions, covenants, restrictions and reservations set forth in this declaration are imposed upon the property covered hereby for the direct benefit thereof and of the owners thereof. Such conditions and restrictions shall run with the land and shall be binding upon any person who shall acquire any interest in the property covered hereby. Said conditions, covenants, restrictions and reservations shall remain in effect for a period of thirty (30) years from the date of this declaration. These conditions, covenants and restrictions may be amended or revoked by written document signed by the owners of seventy-five percent (75%) of the lots within the subdivision, but in no event may they be amended or revoked without the written consent of Declarants so long as Declarants, or either one of them, own a lot or lots affected by these CCR's. For purposes of the foregoing sentence, Declarants shall not include their heirs, successors, or assigns.

18. BREACH AS NUISANCE. The result of every act of omission or commission or the violation hereof, whether such condition, covenant, restriction or reservation is violated in whole or in part, is hereby declared to be and to constitute a nuisance, which may prohibited and enjoined by an injunction. Such remedy shall be deemed cumulative and not exclusive of any and every other remedy allowed by law or equity against such a nuisance, whether public or private.

19. INUREMENT OF BENEFIT. The provisions contained in this declaration shall inure to the benefit of and be enforceable by any owner or the owners of any portion of the property covered hereby, and each of their legal representatives, heirs, successors and assigns. Failure by any property owner or their legal representatives, heirs, successors or assigns to enforce any of said conditions, covenants or restrictions herein contained shall in no event be deemed a waiver or failure of the right to do so thereafter.

20. ENFORCEMENT. Should suit or action be instituted to enforce any of the foregoing restrictions or covenants after written demand for the discontinuance of a violation thereof and failure to comply, then, whether said suit be reduced to judgment or decree or not, the owners seeking to enforce or to restrain any such violation shall be entitled to have and recover from such defendants in addition to the costs and disbursements allowed by law, such sum as the court may adjudge reasonable as attorney fees in such suit or action. In the event of any appeal, such parties shall be entitled to recover from the defendants on such appeal, such further sum as the court shall adjudge reasonable attorney fees.

21. EFFECT OF BREACH. The breach of any of the foregoing shall not defeat or render invalid, the lien of any mortgage or deed of trust made in good faith for value as to any of the said lots, provided, however, that the breach of any of the said conditions or restrictions may

be enjoined, abated or redressed by appropriate proceedings against any owner of the premises to which such violation applies, whether such ownership is acquired by purchase, foreclosure, devise, inheritance or in any other manner.

IN WITNESS WHEREOF, Declarants have executed this instrument this 20 day of January, 2010.

RIVERVIEW MEADOWS, LLC
an Oregon Limited Liability Company.

By: Vern Scovell, Member
DECARANT

VERN SCOVELL
DECLARANT

STATE OF OREGON)
) ss.
County of Tillamook)

January 20, 2010 Personally appeared the above named Vern Scovell, Member of Riverview Meadows, LLC, an Oregon Limited Liability Company, and acknowledged the foregoing instrument to be his voluntary act and deed. Before me:

Janet L Lease
Notary Public for Oregon

OFFICIAL SEAL
JANET L LEASE
NOTARY PUBLIC-OREGON
COMMISSION NO. 437751
MY COMMISSION EXPIRES MAY 25, 2013

STATE OF OREGON)
) ss.
County of Tillamook)

January 20, 2010. Personally appeared the above named Vern Scovell, individually, and acknowledged the foregoing instrument to be his voluntary act and deed. Before me:

Janet L Lease
Notary Public for Oregon

OFFICIAL SEAL
JANET L LEASE
NOTARY PUBLIC-OREGON
COMMISSION NO. 437751
MY COMMISSION EXPIRES MAY 25, 2013

EXHIBIT A

Riverview Meadows Phase 1 subdivision located in Tillamook County, Oregon, described as follows:

COMMENCING AT A FOUND THREE INCH BRASS DISC COMMON TO SECTIONS 14, 15, 22 AND 23, TOWNSHIP 3 NORTH, RANGE 10 WEST OF THE WILLAMETTE MERIDIAN; THENCE, SOUTH 01°03'16" EAST ALONG THE WEST LINE OF SAID NORTHWEST ONE-QUARTER OF SECTION 23 ALSO THE WEST LINE OF THAT TRACT OF LAND FOUND IN BOOK 203, PAGE 253, TILLAMOOK COUNTY DEED RECORDS, A DISTANCE OF 990.70 FEET TO A FOUND 5/8 INCH IRON ROD AT THE SOUTHWEST CORNER OF SAID TRACT OF LAND FOUND IN BOOK 203, PAGE 253; THENCE, SOUTH 88°34'29" EAST ALONG THE SOUTH LINE OF SAID TRACT OF LAND FOUND IN BOOK 203, PAGE 253, A DISTANCE OF 605.46 FEET TO A FOUND 5/8 INCH IRON ROD WITH A YELLOW PLASTIC CAP STAMPED "PLS 2351", SAID POINT BEING THE INITIAL POINT AND THE POINT OF BEGINNING; THENCE, SOUTH 21°14'48" EAST, A DISTANCE OF 104.78 FEET TO A FOUND 5/8 INCH IRON ROD WITH A YELLOW PLASTIC CAP STAMPED "PLS 2351"; THENCE SOUTH 28°36'50" EAST, A DISTANCE OF 239.81 FEET TO A FOUND 5/8 INCH IRON ROD WITH A YELLOW PLASTIC CAP STAMPED "PLS 2351"; THENCE SOUTH 36°55'01" EAST, A DISTANCE OF 177.89 FEET TO A FOUND 5/8 INCH IRON ROD WITH A YELLOW PLASTIC CAP STAMPED "PLS 2351"; THENCE, SOUTH 16°45'30" EAST, A DISTANCE OF 313.23 FEET TO A FOUND 5/8 INCH IRON ROD WITH A YELLOW PLASTIC CAP STAMPED "PLS 2351"; THENCE, SOUTH 15°49'59" EAST, A DISTANCE OF 262.73 FEET TO A FOUND 5/8 INCH IRON ROD WITH A YELLOW PLASTIC CAP STAMPED "PLS 2351" AT THE MOST WESTERLY CORNER OF THAT TRACT OF LAND FOUND IN BOOK 614, PAGE 807, TILLAMOOK COUNTY DEED RECORDS; THENCE, NORTH 19°12'43" EAST ALONG THE NORTH LINE OF SAID BOOK 614, PAGE 807, A DISTANCE OF 39.77 FEET TO A FOUND 3/4 INCH IRON PIPE; THENCE, NORTH 80°3404" EAST ALONG SAID NORTH LINE, A DISTANCE OF 238.43 FEET TO A FOUND 5/8 INCH IRON ROD WITH A YELLOW PLASTIC CAP STAMPED "PLS 2351"; THENCE, NORTH 75°38'04" EAST ALONG SAID NORTH LINE A DISTANCE OF 116.76 FEET TO A FOUND 1/2 INCH IRON PIPE; THENCE, SOUTH 71°12'17" EAST ALONG SAID NORTH LINE, A DISTANCE OF 146.57 FEET TO A FOUND 1/2 INCH IRON PIPE AT THE NORTHEAST CORNER OF SAID BOOK 614, PAGE 807, ALSO THE NORTHWEST CORNER OF A TRACT OF LAND FOUND IN BOOK 356, PAGE 435, TILLAMOOK COUNTY DEED RECORDS; THENCE, NORTH 74°16'15" EAST ALONG THE NORTH LINE OF SAID BOOK 356, PAGE 435, A DISTANCE OF 93.46 FEET TO A FOUND 1/2 INCH IRON PIPE; THENCE, NORTH 74°25'07" EAST ALONG SAID NORTH LINE, A DISTANCE OF 15.95 FEET TO A FOUND 5/8 INCH IRON ROD WITH YELLOW PLASTIC CAP STAMPED "HLB INC"; THENCE, SOUTH 47°28'10" EAST ALONG SAID NORTH LINE, A DISTANCE OF 44.90 FEET TO A FOUND 1/2 INCH IRON PIPE; THENCE, SOUTH 47°28'10" EAST ALONG SAID NORTH LINE, A DISTANCE OF 51.70 FEET TO A FOUND

5/8 INCH IRON ROD WITH AN ILLEGIBLE YELLOW PLASTIC CAP; THENCE, NORTH 83°25'29" WEST ALONG SAID NORTH LINE, A DISTANCE OF 41.96 FEET TO A FOUND 5/8 INCH IRON ROD; THENCE, SOUTH 07°04'58" WEST ALONG SAID NORTH LINE, A DISTANCE OF 110.20 FEET TO A FOUND 5/8 INCH IRON ROD WITH YELLOW PLASTIC CAP STAMPED "PLS 2351" ON THE NORTH LINE OF PARCEL 3, PARTITION PLAT 1993-46, TILLAMOOK COUNTY PLAT RECORDS; THENCE, SOUTH 68°36'58" EAST ALONG SAID NORTH LINE, A DISTANCE OF 112.89 FEET TO A FOUND 5/8 INCH IRON ROD WITH YELLOW PLASTIC CAP STAMPED "HLB INC"; THENCE, NORTH 21°36'13" EAST ALONG SAID NORTH LINE, A DISTANCE OF 88.16 FEET TO A NON-TANGENT 120.00 FOOT RADIUS CURVE TO THE LEFT; THENCE, 25.27 FEET ALONG SAID NON-TANGENT CURVE, THROUGH AN INTERNAL ANGLE OF 12°03'52", THE CHORD OF WHICH BEARS SOUTH 75°24'03" EAST 25.22 FEET; THENCE, SOUTH 21°37'18" WEST ALONG THE EAST LINE OF SAID PARTITION PLAT, A DISTANCE OF 152.44 FEET TO A FOUND 5/8 INCH IRON ROD WITH A YELLOW PLASTIC CAP STAMPED "HLB INC"; THENCE, SOUTH 16°35'20" EAST ALONG SAID EAST LINE, A DISTANCE OF 165.14 FEET TO THE NORTH LINE OF NORTH FORK COUNTY ROAD AND THE SOUTHEAST CORNER OF PARCEL 1 OF SAID PARTITION PLAT; THENCE, ALONG A 328.10 FOOT RADIUS NON-TANGENT CURVE TO THE LEFT, THROUGH AN INTERNAL ANGLE OF 4°52'13", THE LONG CHORD OF WHICH BEARS NORTH 75°40'49" EAST 27.88 FEET, A LENGTH OF 27.89 FEET ALONG THE NORTH LINE OF SAID NORTH FORK COUNTY ROAD; THENCE, NORTH 73°14'42" EAST ALONG SAID NORTH LINE OF NORTH FORK COUNTY ROAD, A DISTANCE OF 98.34 FEET TO A FOUND 5/8 INCH IRON ROD WITH A YELLOW PLASTIC CAP STAMPED "PLS 2351" AT THE SOUTH CORNER OF PARCEL 2 OF PARTITION PLAT 1999-38, TILLAMOOK COUNTY PLAT RECORDS; THENCE, NORTH 18°47'00" WEST ALONG THE WEST LINE OF SAID PARCEL 2, A DISTANCE OF 47.50 FEET TO A FOUND 1/2 INCH IRON PIPE; THENCE, NORTH 23°21'56" WEST ALONG THE WEST LINE OF THAT TRACT OF LAND FOUND IN BOOK 140, PAGE 98, TILLAMOOK COUNTY DEED RECORDS, A DISTANCE OF 110.08 FEET TO A FOUND 5/8 INCH IRON ROD WITH A YELLOW PLASTIC CAP STAMPED "PLS 2351"; THENCE, NORTH 21°32'12" EAST ALONG SAID WEST LINE, A DISTANCE OF 262.71 FEET TO A FOUND 3/4 INCH IRON PIPE; THENCE, NORTH 21°22'37" EAST ALONG SAID WEST LINE, A DISTANCE OF 88.69 FEET TO A FOUND 1/2 INCH IRON PIPE AT THE NORTHWEST CORNER OF SAID TRACT OF LAND FOUND IN BOOK 140, PAGE 98, ALSO THE SOUTHWEST CORNER OF THAT TRACT OF LAND FOUND IN BOOK 383, PAGE 513, TILLAMOOK COUNTY DEED RECORDS; THENCE, NORTH 15°53'25" EAST ALONG THE WEST LINE OF SAID BOOK 383, PAGE 513, A DISTANCE OF 185.86 FEET TO A FOUND 5/8 INCH IRON ROD WITH A YELLOW PLASTIC STAMPED "PLS 2351"; THENCE, NORTH 74°50'00" EAST ALONG SAID WEST LINE, A DISTANCE OF 46.37 FEET TO A FOUND 5/8 INCH IRON PIPE WITH A YELLOW PLASTIC CAP STAMPED "PLS 2351" ON THE WEST LINE OF SAID NORTH FORK COUNTY ROAD AND AN 848.51 FOOT RADIUS CURVE; THENCE, 51.28 FEET ALONG SAID CURVE TO THE RIGHT, WITH AN INTERNAL ANGLE OF 3°27'46", THE CHORD OF WHICH BEARS NORTH 02°22'26" WEST 51.27 FEET TO A FOUND 5/8 INCH IRON ROD WITH A YELLOW PLASTIC CAP STAMPED "PLS 2351"; THENCE, SOUTH 74°50'00" WEST, A DISTANCE OF 85.98 FEET TO A FOUND 5/8 INCH IRON ROD WITH A YELLOW PLASTIC CAP

STAMPED "PLS 2351"; THENCE, SOUTH 15°53'25" WEST ALONG THE EAST LINE OF THAT TRACT OF LAND FOUND IN BOOK 345, PAGE 264, TILLAMOOK COUNTY DEED RECORDS, A DISTANCE OF 211.72 FEET TO A FOUND 5/8 INCH IRON ROD WITH A YELLOW PLASTIC CAP STAMPED "PLS 2351"; THENCE, SOUTH 21°22'37" WEST ALONG SAID EAST LINE, A DISTANCE OF 86.45 FEET TO A 5/8 INCH IRON ROD WITH A YELLOW PLASTIC CAP STAMPED "PLS 1205"; THENCE, NORTH 21°54'58" WEST ALONG THE WEST LINE OF SAID TRACT OF LAND FOUND IN BOOK 345, PAGE 264, A DISTANCE OF 103.87 FEET TO A FOUND 5/8 INCH IRON ROD WITH A YELLOW PLASTIC CAP STAMPED "PLS 2351"; THENCE, NORTH 11°34'37" EAST ALONG SAID WEST LINE, A DISTANCE OF 66.30 FEET TO A FOUND 5/8 INCH IRON ROD WITH A YELLOW PLASTIC CAP STAMPED "PLS 1205"; THENCE, NORTH 10°27'18" EAST ALONG SAID WEST LINE, A DISTANCE OF 45.08 FEET TO A FOUND 5/8 INCH IRON ROD WITH A YELLOW PLASTIC CAP STAMPED "PLS 1205"; THENCE, NORTH 21°10'46" EAST ALONG SAID WEST LINE, A DISTANCE OF 118.36 FEET TO A FOUND 5/8 INCH IRON ROD WITH A YELLOW PLASTIC CAP STAMPED "PLS 1205"; THENCE, NORTH 05°06'03" EAST ALONG THE WEST LINE OF THOSE TRACTS OF LAND FOUND IN BOOK 359, PAGE 431, TILLAMOOK COUNTY DEED RECORDS, AND BOOK 369, PAGE 459, TILLAMOOK COUNTY DEED RECORDS, A DISTANCE OF 681.37 FEET TO A FOUND 5/8 INCH IRON ROD WITH A YELLOW PLASTIC CAP STAMPED "PLS 2351"; THENCE, NORTH 23°06'19" WEST ALONG THE WEST LINE OF THAT TRACT OF LAND FOUND IN INSTRUMENT NUMBER 2000-388797, TILLAMOOK COUNTY DEED RECORDS, A DISTANCE OF 953.20 FEET TO A FOUND 5/8" IRON ROD WITH A YELLOW PLASTIC CAP STAMPED "PLS 2351"; THENCE, NORTH 88°34'19" WEST ALONG THE SOUTH LINE OF SAID INSTRUMENT, ALSO BEING THE NORTH LINE OF SAID SECTION 23, A DISTANCE OF 328.04 FEET TO A 5/8 INCH IRON ROD WITH A YELLOW PLASTIC CAP STAMPED "HLB INC"; THENCE SOUTH 01°17'07" EAST ALONG THE EAST LINE OF THAT TRACT OF LAND FOUND IN BOOK 203, PAGE 253, TILLAMOOK COUNTY DEED RECORDS, A DISTANCE OF 990.84 FEET TO A 5/8 INCH IRON ROD WITH AN ILLEGIBLE YELLOW PLASTIC CAP; THENCE, NORTH 88°34'29" WEST ALONG THE SOUTH LINE OF SAID TRACT OF LAND FOUND IN BOOK 203, PAGE 253, A DISTANCE OF 714.57 FEET TO THE INITIAL POINT AND THE POINT OF BEGINNING.

RECORDING REQUESTED BY:
TICOR TITLE Company of Oregon

507 Laneda Ave, Ste 3, PO Box 1089
Manzanita, OR 97130

Tillamook County, Oregon
09/27/2022 12:59:01 PM **2022-06056**
DEED-DWARR
$20.00 $11.00 $10.00 $61.00 - Total =$102.00
I hereby certify that the within instrument was received for record and recorded in the County of Tillamook, State of Oregon.
Tassi O'Neil, Tillamook County Clerk

GRANTOR'S NAME:
William L. Dillard and Victoria S. Dillard

GRANTEE'S NAME:
Donald E. Dillard

AFTER RECORDING RETURN TO:
Order No.: 360422004728-JT
Donald E. Dillard
14015 Riverview Meadows Lane
Nehalem, OR 97131

OCT 03 2022

SEND TAX STATEMENTS TO:
Donald E. Dillard
14015 Riverview Meadows Lane
Nehalem, OR 97131

APN: 54915
407830
Map: 3N10 23B 01400
3N10 23B 01400
Vacant Land near North Fork Road, Tillamook, OR 97141

Recorded By Ticor Title Ins. Co 360422004728

SPACE ABOVE THIS LINE FOR RECORDER'S USE

STATUTORY WARRANTY DEED

William L. Dillard and Victoria S. Dillard, Grantor, conveys and warrants to **Donald E. Dillard**, Grantee, the following described real property, free and clear of encumbrances except as specifically set forth below, situated in the County of Tillamook, State of Oregon:

Tract A, RIVERVIEW MEADOWS PHASE I, in the County of Tillamook, State of Oregon, recorded July 26, 2010 in Plat Cabinet B1142-0, Tillamook County Records.

THE TRUE AND ACTUAL CONSIDERATION FOR THIS CONVEYANCE IS ONE HUNDRED FIFTEEN THOUSAND AND NO/100 DOLLARS **($115,000.00)**. (See ORS 93.030).

Subject to:

SEE EXHIBIT "A" ATTACHED HERETO AND MADE A PART HEREOF

BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON TRANSFERRING FEE TITLE SHOULD INQUIRE ABOUT THE PERSON'S RIGHTS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009, AND SECTIONS 2 TO 7, CHAPTER 8, OREGON LAWS 2010. THIS INSTRUMENT DOES NOT ALLOW USE OF THE PROPERTY DESCRIBED IN THIS INSTRUMENT IN VIOLATION OF APPLICABLE LAND USE LAWS AND REGULATIONS. BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON ACQUIRING FEE TITLE TO THE PROPERTY SHOULD CHECK WITH THE APPROPRIATE CITY OR COUNTY PLANNING DEPARTMENT TO VERIFY THAT THE UNIT OF LAND BEING TRANSFERRED IS A LAWFULLY ESTABLISHED LOT OR PARCEL, AS DEFINED IN ORS 92.010 OR 215.010, TO VERIFY THE APPROVED USES OF THE LOT OR PARCEL, TO DETERMINE ANY LIMITS ON LAWSUITS AGAINST FARMING OR FOREST PRACTICES, AS DEFINED IN ORS 30.930, AND TO INQUIRE ABOUT THE RIGHTS OF NEIGHBORING PROPERTY OWNERS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009, AND SECTIONS 2 TO 7, CHAPTER 8, OREGON LAWS 2010.

STATUTORY WARRANTY DEED
(continued)

IN WITNESS WHEREOF, the undersigned have executed this document on the date(s) set forth below.

Dated: 09.26.2022

William L. Dillard

Victoria S. Dillard

State of OREGON
County of Tillamook

This instrument was acknowledged before me on 09.26.22 by William L. Dillard and Victoria S. Dillard.

Notary Public - State of Oregon

My Commission Expires: 07.19.2025

OFFICIAL STAMP
JENNI MELISSA TOWNSEND
NOTARY PUBLIC - OREGON
COMMISSION NO. 1012170
MY COMMISSION EXPIRES JULY 19, 2025

EXHIBIT "A"
Exceptions

Subject to:

Regulations, levies, liens, assessments, rights of way and easements of Nehalem Bay Wastewater Agency. None found as of September 7, 2022.

Rights of the public to any portion of the Land lying within the area commonly known as streets, roads, and highways.

Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to:	Elmer L. Lundberg, Jr. and Genevieve M. Lundberg
Purpose:	Ingress and egress
Recording Date:	December 19, 1967
Recording No:	Book 210, page 520
Affects:	Reference is hereby made to said document for full particulars
and Re-Recording Date:	January 9, 1968
and Re-Recording No:	Book 211, page 52

Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to:	North Tillamook County Sanitary Authority
Purpose:	Public utilities
Recording Date:	March 15, 1973
Recording No:	Book 231, page 167
Affects:	Reference is hereby made to said document for full particulars

Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to:	Tillamook People's Utility District
Purpose:	Public utilities
Recording Date:	February 22, 1977
Recording No:	Book 249, page 249
Affects:	Reference is hereby made to said document for full particulars

Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to:	James J. Ward and Hattie Mae Ward
Purpose:	Ingress and egress
Recording Date:	April 22, 1977
Recording No:	Book 250, page 151
Affects:	Reference is hereby made to said document for full particulars

Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to:	Raymond White Thorn
Purpose:	Ingress and egress
Recording Date:	August 5, 1977
Recording No:	Book 252, page 54
Affects:	Reference is hereby made to said document for full particulars

Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to:	Robert B. Boggs and Margaret L. Boggs
Purpose:	Access and utilities
Recording Date:	September 6, 1979
Recording No:	Book 265, page 77
Affects:	Reference is hereby made to said document for full particulars

Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to:	Lionel R. Hathaway and Lisa K. Hathaway
Purpose:	Access and utilities
Recording Date:	September 22, 1992
Recording No:	Book 345, page 264
Affects:	Reference is hereby made to said document for full particulars

EXHIBIT "A"
Exceptions

Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to:	Jan Thorne and Linda Thorne
Purpose:	Access and utilities
Recording Date:	December 14, 1993
Recording No:	Book 356, page 436
Affects:	Reference is hereby made to said document for full particulars

Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to:	Tillamook People's Utility District
Purpose:	Public utilities
Recording Date:	April 27, 2009
Recording No:	2009-002964
Affects:	Reference is hereby made to said document for full particulars

Emergency Access Easement Agreement, including the terms and provisions thereof,

Executed by:	Vern Scovell; and Vern Scovell and Riverview Meadows, LLC
Recording Date:	May 21, 2009
Recording No.:	2009-003657

Drainage Easement Agreement, including the terms and provisions thereof,

Executed by:	Vern Scovell; and Vern Scovell and Riverview Meadows, LLC
Recording Date:	May 21, 2009
Recording No.:	2009-003658

Covenants, conditions, restrictions and easements but omitting any covenants or restrictions, if any, including but not limited to those based upon race, color, religion, sex, sexual orientation, familial status, marital status, disability, handicap, national origin, ancestry, source of income, gender, gender identity, gender expression, medical condition or genetic information, as set forth in applicable state or federal laws, except to the extent that said covenant or restriction is permitted by applicable law, as set forth in the document

Recording Date:	January 21, 2010
Recording No:	2010-000375

Restrictions, but omitting restrictions, if any, based upon race, color, religion, sex, sexual orientation, familial status, marital status, disability, handicap, national origin, ancestry, or source of income, as set forth in applicable state or federal laws, except to the extent that said restriction is permitted by applicable law, as shown on that certain plat

Name of Plat:	Riverview Meadows Phase 1
Recording Date:	July 26, 2010
Recording No:	2010-004288

Easement(s) for the purpose(s) shown below and rights incidental thereto as delineated or as offered for dedication, on the Plat of Riverview Meadows Phase 1;

Purpose:	Utilities
Recording Date:	July 26, 2010
Recording No:	2010-004288
Affects:	Reference is hereby made to said document for full particulars

MORGAN CIVIL ENGINEERING, INC.

PO Box 358, Manzanita, OR 97130
ph: 503-801-6016
www.morgancivil.com

May 12, 2022

Riverview Meadows Development, LLC
Alex Reverman areverman@gmail.com

RE: Addendum No. 1 to Geologic Hazard Report for Road and Utility Development of a portion of Tax Lot 3600, Map 03N 10W 23B, Nehalem, Tillamook County, Oregon (Riverview Meadows, Phase 2)
Project #19-10-Riv

Dear Mr. Reverman:

At your request, I have prepared this addendum report in order to update the Geologic Hazard Report for this project, referenced above. The original report was completed by Morgan Civil Engineering, Inc. on February 4, 2021, and Warren Krager, Certified Engineering Geologist, dated February 25, 2020.

Since those reports were prepared, the lot numbering has been revised. On page 7 of his report, Mr. Krager referred to Lots 39 through 47 has requiring additional investigations at the time of development. These lots are now designated as Lots 43 through 52.

The 2021 report from Morgan Civil Engineering specifically states that for construction within 30 feet of a steep slope, an individual site-specific geologic hazard report should be prepared. This is the requirement that I recommend be incorporated with the subdivision Conditions of Approval. The only lots which contain a steep slope are 43 through 52. The remaining properties in the development are practically flat.

If you have any questions, please contact me at jason@morgancivil.com or 503-801-6016.

Sincerely,

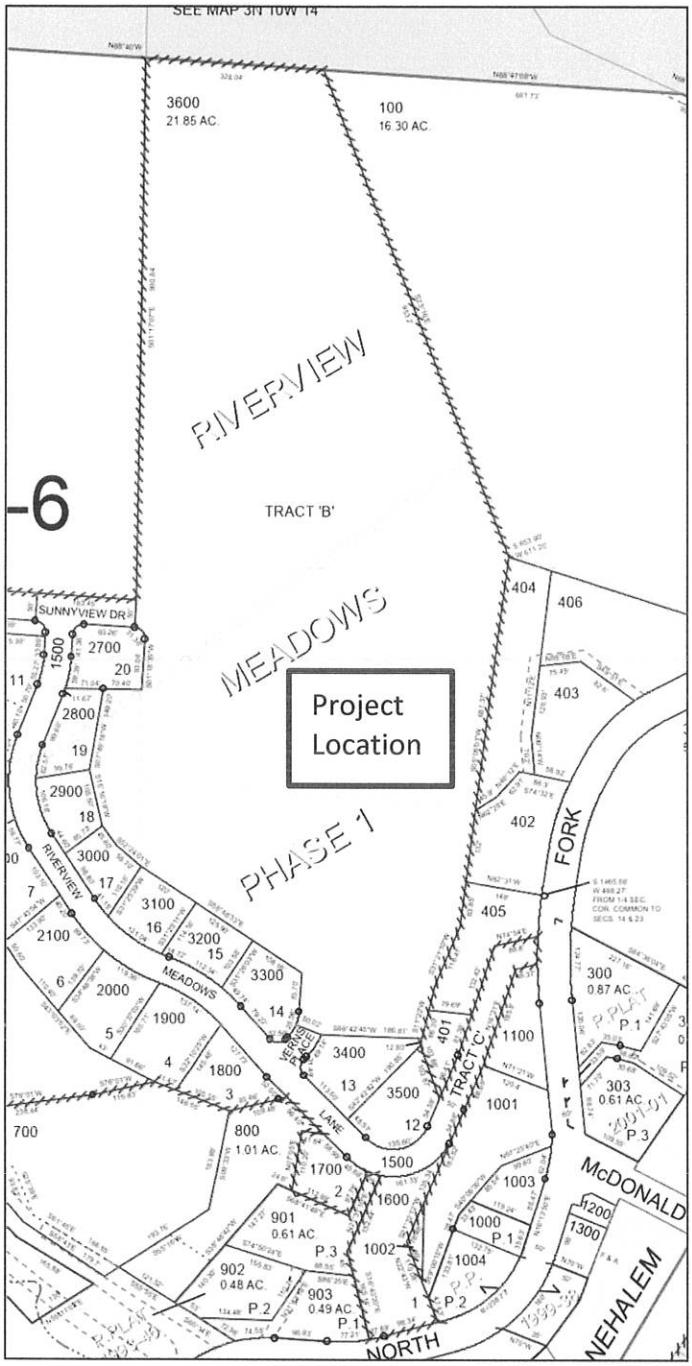
MORGAN CIVIL ENGINEERING, INC.

Jason R. Morgan, PE
Professional Engineer

RENEWAL DATE: DECEMBER 31, 2022

cc: Project File #19-10-Riv

<V:\19-10-Riv\Reports\Riverview Meadows-2 addendum.docx>



Tax Lot 3800, Map 3N 10W 23B
RIVERVIEW MEADOWS PHASE 2
Nehalem, Tillamook County Oregon

All County Surveyors & Planners, Inc.

PO Box 955 • Sandy, Oregon 97055 • Phone: 503-668-3151 • Fax: 503- 668-4730

OCT 09 2022

EXHIBIT "A"

Legal Description over a portion of Tract 'A', "Riverview Meadows Phase 1"

A TRACT OF LAND SITUATED IN THE NW 1/4 OF SECTION 23, TOWNSHIP 3 NORTH, RANGE 10 WEST, W.M., SHOWN AS AN "EMERGENCY VEHICLE ACCESS EASEMENT" IN "RIVERVIEW MEADOWS PHASE 1", RECORDED AS DOCUMENT NUMBER 2010-4288, TILLAMOOK COUNTY PLAT RECORDS, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

Commencing at the Northwest corner of Tract 'A' of "Riverview Meadows Phase 1"; thence South 88°34'29" East, along the North line of said Tract 'A' of said "Riverview Meadows Phase 1", a distance of 531.12 feet, to the most Northeasterly corner of said Tract 'A' of said "Riverview Meadows Phase 1", said point also being the most Northwesterly corner of the right of way of Sunnyview Drive, as dedicated in said "Riverview Meadows Phase 1", said point also being the **True Point of Beginning**; thence South 01°25'31" West, along the West line of the said right of way of said Sunnyview Drive, a distance of 50.00 feet, to the Southwesterly corner of the said right of way of said Sunnyview Drive, said point also being on the North line of Lot 11 of said "Riverview Meadows Phase 1"; thence North 88°34'29" West, along the North line of said Lot 11 and the North line of Lot 10 of said "Riverview Meadows Phase 1" and the westerly extension thereof, a distance of 245.17 feet, to a point of curvature, said point is the beginning of a curve that will be referred to as Curve 1 from hereon; thence along said Curve 1, an 86.29 foot radius tangent curve to the left, an arc distance of 155.19 feet through a central angle of 103°02'41" (chord bears South 39°54'11" West 135.10 feet) to a point of tangency, said point is the beginning of a line that will be referred to as Line 1 from hereon; thence along said Line 1, South 11°37'10" East, a distance of 272.73 feet, to an angle point; thence leaving said Line 1, South 16°45'30" East, a distance of 23.52 feet more or less, to a point on the West line of said Tract 'A' of said "Riverview Meadows Phase 1", said point being marked with a 5/8" iron rod with a yellow plastic cap marked "PLS 2351"; thence North 36°55'01" West, along the said West line of said Tract 'A' of said "Riverview Meadows Phase 1", a distance of 121.86 feet more or less, to a point that is 50 feet from, when measured at right angles to, the previously described Line 1; thence leaving the said West line of said Tract 'A' of said "Riverview Meadows Phase 1", 50 feet from and parallel with said Line 1, North 11°37'10" West, a distance of 185.81 feet to a point of curvature; thence along a 136.29 foot radius tangent curve to the right, 50 feet from and parallel with said Curve 1, an arc distance of 245.11 feet through a central angle of 103°02'36" (long chord bears North 39°54'08" East 213.39 feet), to a point on the said North line of said Tract 'A' of said "Riverview Meadows Phase 1"; thence South 88°34'29" East, along the said North line of said Tract 'A' of said "Riverview Meadows Phase 1", a distance of 245.17 feet, to the **True Point of Beginning**.
Containing 32,711 square feet, more or less.

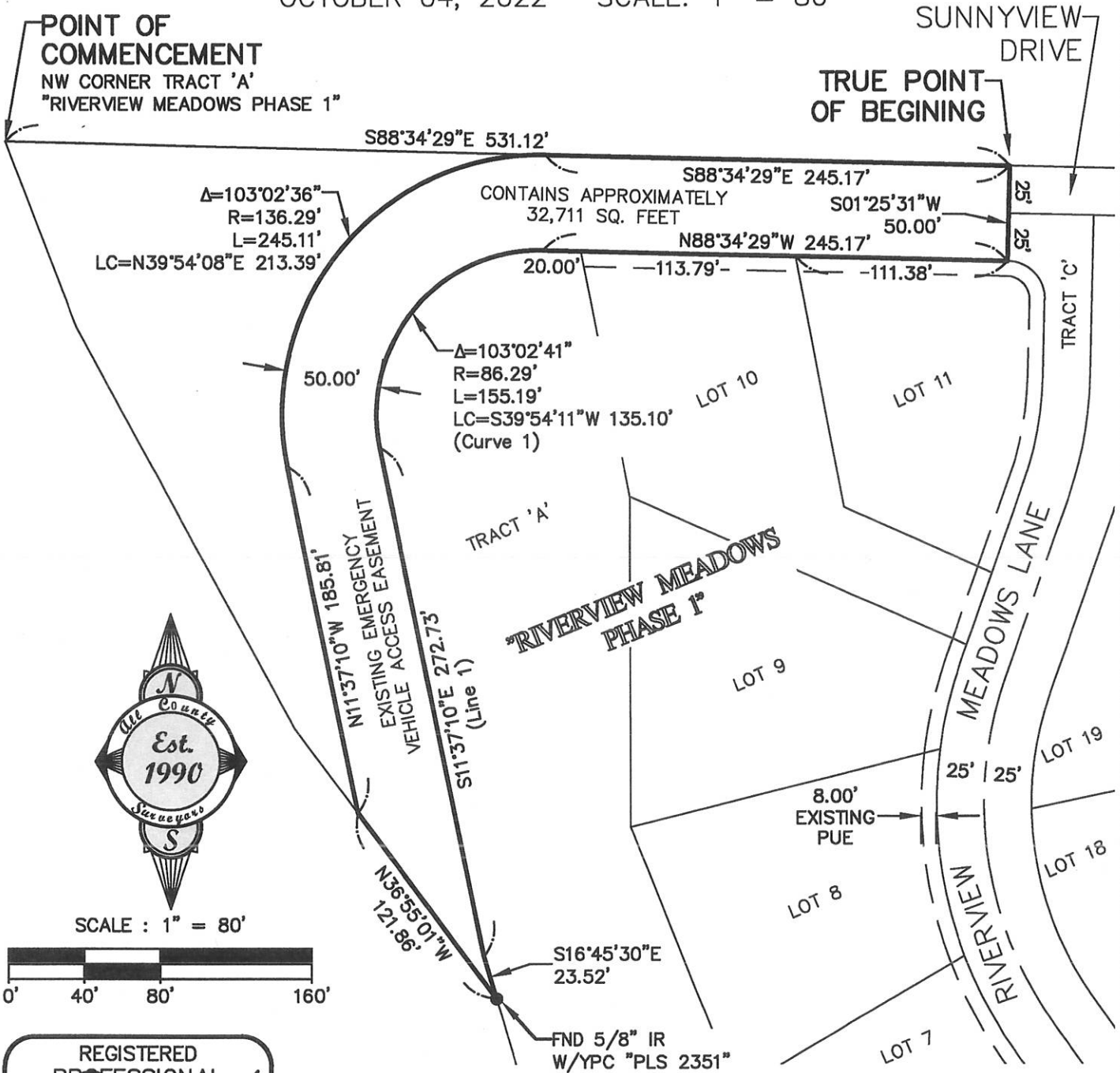
Basis of bearings for this description is from Document Number 2010-4288, Tillamook County Plat Records.

RENEWS 07/01/23

EXHIBIT "B"

SITUATED IN THE N.W. 1/4 OF SECTION 23, TOWNSHIP 3 NORTH, RANGE 10 WEST, W.M., CITY OF NEHALEM, TILLAMOOK COUNTY OREGON

OCTOBER 04, 2022 SCALE: 1" = 80'



SCALE : 1" = 80'

0' 40' 80' 160'

REGISTERED PROFESSIONAL LAND SURVEYOR

OREGON
JANUARY 23, 1990
DALE L. HULT
2427

RENEWS 07/01/23

DATE OF PLOT: 10-04-22
DRAWING NO.: 22-181.dwg

LEGEND

●	FOUND MONUMENT AS NOTED HEREON
W/YPC	INDICATES WITH YELLOW PLASTIC CAP, MARKED
IR	INDICATES IRON ROD, OUTER DIAMETER

Easement Agreement

Parties: Donald Dillard, Grantor; and
Riverview Meadows Development, LLC. an Oregon Limited Liability Company. Grantees;

It is my understanding that both parties have come to an agreement on September 20, 2022 regarding the emergency access of Tract A. The Grantor is willing to deed Tract A, also known as Tax lot 1400 for Public Easement Access to the residents of Riverview Meadows Development, LLC. Phase 1 and 2. In exchange the Grantee agrees to pay the Grantor monetary value of 25,000.00 upon a legal signing of the public easement access. The Grantee also agrees to install two access gates for security of the residents of Riverview Meadows Development, LLC. Phase 1 and 2. Subject to approval of the Tillamook County and the Fire District. Should the gates not be approved by the Tillamook County or the Fire Department and the Grantee cannot legally install the two gates. The Grantee agrees to pay an additional monetary amount of 25,000.00 to Donald Dillard from the sale of the 1st lot in phase 2. Lastly, the Grantee agrees to the use of the CCR's from Riverview Meadows Phase 1 in Phase 2.

Upon acceptance of this agreement Sheldon Development/Riverview Meadows Development, LLC's attorney Kevin Preston with PM Law will work with Donald Dillard's attorney Jeremy Rust with Seaside Attorneys to draft and finalize the Public Easement documents for recording.

Donald E Dillard — 9/20/2022

DONALD DILLARD

Prini Lee McCord — 9/20/2022

PRINI LEE MCCORD / RIVERVIEW MEADOWS DEVELOPMENT, LLC

Lynn Tone

From: Sarah Absher
Sent: Monday, October 10, 2022 5:58 PM
To: Lynn Tone
Cc: Wendie Kellington
Subject: Riverview Meadows 2
Attachments: RE: Water Model - Meeting ; riverviewwatersystem.zip

Please make copies of email below and attachments for the upcoming Planning Commission hearing next week on October 20th.

Sincerely,

Sarah Absher, CBO, CFM, Director
TILLAMOOK COUNTY | Community Development
1510-B Third Street
Tillamook, OR 97141
Phone (503) 842-3408 x3317
sabsher@co.tillamook.or.us

From: Wendie Kellington <wk@klgpc.com>
Sent: Sunday, October 9, 2022 3:11 PM
To: Sarah Absher <sabsher@co.tillamook.or.us>
Cc: 'Carey Sheldon' <careysheldon17@yahoo.com>; PriniLee McCord <prinilee@trevallygroup.us>
Subject: EXTERNAL: Riverview Meadows 2

Hi Sarah,

As you know, we represent Sheldon Development and Carey Sheldon (SD) in their effort to receive approval of the next phases of the residential subdivision known as Riverview Meadows(RVM) – a housing development proposal on land in the UGB zoned for residential use in which residences are uses permitted outright. Please include this email and its attachment in the record of that RVM2 matter. As you know, because we are talking about the development of housing, only clear and objective approval standards may be applied and the standards have to be clear and objective on their face. ORS 215.416(4)(b) and (8)(b). To the extent that commentors wish to have subjective value laden or ambiguous standards be applied, that is inappropriate as you know. *Nieto v. City of Talent*, ___ Or LUBA ___ (LUBA No. 2020-100, March 10, 2021); *Walter v. City of Eugene*, 73 Or LUBA 356, 360-64 (2016). Also, as you know, the standards that are applied to the subdivision must be codified in the county (or city's as appropriate)

code. ORS 215.416(8)(a); *Waveseer v. Deschutes County*, 308 Or App 494 (2021); *Nehmzow v. Deschutes County*; 308 Or App 533 (2021); *Jones v. Clackamas County*, 307 Or App 502, 514 (2020).

RVM2, composed of 38 residential lots, is currently pending before the county for approval, with a planning commission hearing next week. SD intends to submit the application for RVM3 (36 more residential lots) following approval of RVM2. In total, there will ultimately be 74 lots in the combined RVM2 and 3 residential subdivision developments. But for now, pending before the county is an application for a 38-lot residential subdivision for RVM2.

There have been some issues raised, that would benefit from response. Because ORS 197.522(2) requires the county to approve the application if it meets all clear and objective standards for approval, and ORS 197.522(3) authorizes the applicant to submit proposed conditions of approval as needed to demonstrate such compliance, the following is a suggested conditions of approval that ensure the proposal (RVM2) complies with relevant standards, addresses concerns and so can be approved.

The suggested condition regards water service. The City of Nehalem has raised concerns about whether the water system for the proposed subdivision will provide adequate water to ensure that fire flow of 1000 gmp in an hour and 20psi is maintained. As explained in the attached correspondence between project engineer Ray Moore and city engineer Kyle Ayers (please also include those attachments in the record), the water system that is proposed for RVM2 (and ultimately RVM3 as well), ensures that water delivery provide 1000 gpm fire flow over an hour and 20 psi. Earlier, transmitted to you was the water distribution plan appended to an August 9, 2022 letter from engineer Jason Moore (also attached), which is what Mr. Moore discusses and proves up on, in the attached correspondence with the city's engineer.

As you know, its been a process to show the city that the proposed water system for RVM2 and ultimately RVM3, meets all standards that can be applied to RVM2. For a long time, as you know, the city demanded not only that RVM2 meet all water standards that applied to that subdivision, but also demanded that RVM's owner solve other problems in the city's water distribution infrastructure elsewhere, which of course sought an unconstitutional condition lacking any connection to a relevant approval standard for RVM2 and lacking any rough proportionality between the impacts of RVM2 and the wished for exaction. As you know both federal authorities and state authorities have unequivocally held that any local standard that itself requires or is interpreted to require exactions that do not meet the "*Nollan*" test of an essential nexus to a relevant approval standard and the "*Dolan*" requirement for rough proportionality, simply cannot be applied. *Hill v. City of Portland*, 293 Or App 283 (2018) has a good explanation of these principles. Further, the city made resolution of its city-wide solution and unlawful exaction demand challenging for SD, because the city refused to share its city-wide water model so RVM's owner had no way to even understand the city's larger concern.

However, SD persevered and the city is now satisfied that the water delivery system for RVM2 meets relevant standards (1000 gpm per 1 hour fire flow and 20 psi) and, at least so far as we know, the city's concerns are resolved as outlined in Mr. Moore's attached confirming email to the city engineer. We understand that the city has now abandoned its demand for unconstitutional conditions/exactions and is satisfied with the proposed water delivery system. However, because of that controversy, SD wishes the approval of RVM2 and ultimately RVM3 to provide assurance to the city that those subdivisions will meet the applicable approval standards. Therefore, the following condition is requested and will ensure that the RV2 (and ultimately the RV3 subdivision, if and when it is approved), will meet all relevant standards:

1. Applicant shall install a water distribution system to serve RVM2 that substantially complies with the narrative dated August 9, 2022 and its attached plan entitled "Riverview Meadows Phase 2 Tentative Plan" dated May 12, 2022 and updated "7/24/22 Add WL Feeder, Tank, Pump, PRVS" (called in this condition for simplicity "Water Plan"), authored by engineer, Jason Morgan. No certificates of occupancy for RVM2 shall be issued until that infrastructure shown on the Water Plan is installed in substantial conformity with that Water Plan. The water system shown on the Water Plan shall also serve RVM3 substantially as it is shown on the Water Plan if and when RVM3 is approved and developed and, similarly, no certificates of occupancy for RVM3 shall issue unless and until that infrastructure shown on the Water Plan is installed in substantial conformity with the Water Plan. This condition does not imply that RVM3 must be approved. Such implication cannot be drawn because no application for RVM3 has been submitted. Rather, this condition is designed to respond to, and assuage, city concerns that a water distribution system substantially complying with the Water Plan will be installed for RVM 2 and ultimately 3 and so provide the agreed-upon adequate water service capacity to serve the entire 74-lot subdivision that is contemplated for the RVM 2 and 3 property.

There was also a concern raised about access. As you know, RVM1 abuts the subject property and is approved for 20 lots and largely is developed with houses. RVM1 has existing public access that serves it and can serve proposed RVM2. A traffic study (TIA) was prepared by Ard Engineering, Mike Ard, to analyze traffic impacts of the proposed development which abuts RVM1 and then some – specifically the project's TIA evaluates traffic impacts from a total of 74 lots for RVM phases 2 and 3. The conclusion is that the LOS resulting from the proposal's addition to the transportation system maintains a LOS A – the best there is. The Ard TIA estimates and, in fact nearly doubles and overestimates, the traffic impacts from RVM2's 38 lots. As such there can be no dispute that the Ard TIA is adequate to estimate the impacts of the RVM2 38-lot subdivision.

The Ard TIA assumes, but does not require, a full public secondary access being developed from a driveway that intersects to the south with McDonald Rd. His TIA makes reasonably clear that the secondary full public access is a "nice to have" and not a "need to have" under any standard. In that regard, to clarify matters, Mr. Ard is writing a supplemental letter for the record, explaining that no applicable traffic standard requires a secondary full public access in fact, that the existing full public access and emergency access to be provided via the existing emergency access easement is adequate to meet all applicable standards. While the public works director in his July 25, 2022 comments asked for a secondary access, the basis for the same was a citation to "(LDO Section 160(4): Street Improvements, Dead End Streets", however, that provision does not require a full public secondary access and we are unaware of any standard that does. Regardless, please know that SD is working to obtain an easement for a full public access at the secondary access location – the south McDonald Driveway because SD believes if it can be obtained, it improves the subdivision. Toward that end, SD has offered $50,000 to the grantor for the privilege of converting that existing emergency access easement to a full public access easement and understands that the grantor (the Dillard's - the mayor of Nehalem's family) will be willing to expand that existing easement from emergency, to full public, access. But SD cannot control whether the Dillard's are in fact willing to do so. And should the Dillard's decline to allow the existing emergency access easement to be converted to a full public access easement, such cannot be a basis to deny the proposal. Because, again, the proposal can only be denied if it does not meet clear and objective standards that are codified in

the applicable code and, at least so far as we can tell, there is no such standard requiring a second full public access. If you aware of a standard otherwise, please do let us know.

Thank you, Sarah for your time and courtesies. Please feel free to email ro call to discuss any of these concerns/suggestions. All the best, Wendie

KELLINGTON
LAW GROUP

Wendie L. Kellington | Attorney at Law.
Please note our firm's NEW MAILING ADDRESS:
P.O. Box 2209
Lake Oswego, OR 97035
Please note our firms new PHYSICAL ADDRESS
4500 Kruse Way, # 340
Lake Oswego Or 97035
(503) 636-0069 office
(503) 636-0102 fax
wk@klgpc.com
www.wkellington.com

Lynn Tone

From: raym@allcountysurveyors.com
Sent: Friday, October 7, 2022 5:02 PM
To: 'Kyle Ayers'; 'Jason Morgan'
Subject: RE: Water Model - Meeting
Attachments: FIRE FLOW SKETCH MAP.pdf

Hi Kyle, thanks for meeting with Jason and I yesterday. I have put together the attached exhibit documenting the results of our modeling.

As you can see the new 80,000 gallon reservoir and piping will increase the fire flow that is available at node 22, from 560 gpm to 1,500 gpm. I see this project as a win win for the City and the Developer.

With the new reservoir and booster pump, the Riverview Meadows phase 1 (38 lots) and the future phases (74 lots) can be developed to meet the City standards and should not be part of the moratorium.

Please let me know if you have any questions. Thanks again for your help. Have a good weekend.

Thanks,

Ray Moore, PE, PLS.
All County Surveyors & Planners, Inc.
PO Box 955, Sandy, OR 97055
Phone: 503-668-3151
email: raym@allcountysurveyors.com

From: raym@allcountysurveyors.com <raym@allcountysurveyors.com>
Sent: Wednesday, October 5, 2022 11:33 AM
To: 'Kyle Ayers' <kyle@nccivil.com>; 'Jason Morgan' <jason@morgancivil.com>
Subject: RE: Water Model - Meeting

Why do you need to strip out anything in the model? If you are not going to share the model, then just build onto the one you have.

You will have a much better feel for how the new reservoir will interact with the existing system. It will be important to see how the fire flow will affect all of the nodes in the City with the proposed improvements.

Ray Moore, PE, PLS.
All County Surveyors & Planners, Inc.
PO Box 955, Sandy, OR 97055
Phone: 503-668-3151
email: raym@allcountysurveyors.com

From: Kyle Ayers <kyle@nccivil.com>
Sent: Wednesday, October 5, 2022 11:26 AM
To: raym@allcountysurveyors.com; 'Jason Morgan' <jason@morgancivil.com>
Subject: RE: Water Model - Meeting

Correct, we're not using the NC Civil model. As mentioned in the last meeting, it's quicker to start a new model than strip out the other water systems.

Also, with attorneys involved, this is the only path forward.

Thank you,
Kyle Ayers

KYLE AYERS, PE *Principal-in-Charge*
North Coast Civil Design, LLC
503.812.3732 503.440.1088
kyle@nccivil.com www.nccivil.com
35240 Tohl Ave, Nehalem, OR 97131

From: raym@allcountysurveyors.com <raym@allcountysurveyors.com>
Sent: Wednesday, October 5, 2022 11:20 AM
To: Kyle Ayers <kyle@nccivil.com>; 'Jason Morgan' <jason@morgancivil.com>
Subject: RE: Water Model - Meeting

So, we are not going to use the model you have already started?

Why not just build on to the existing model?

Ray Moore, PE, PLS.
All County Surveyors & Planners, Inc.
PO Box 955, Sandy, OR 97055
Phone: 503-668-3151
email: raym@allcountysurveyors.com

From: Kyle Ayers <kyle@nccivil.com>
Sent: Wednesday, October 5, 2022 11:18 AM
To: raym@allcountysurveyors.com; 'Jason Morgan' <jason@morgancivil.com>
Subject: RE: Water Model - Meeting

The purpose of tomorrow's meeting is to assemble the water model. We will start with a blank model and I'll have the water system drawing inserted as the background, to scale.

Thank you,
Kyle Ayers

KYLE AYERS, PE *Principal-in-Charge*
North Coast Civil Design, LLC
503.812.3732 503.440.1088
kyle@nccivil.com www.nccivil.com
35240 Tohl Ave, Nehalem, OR 97131

From: raym@allcountysurveyors.com <raym@allcountysurveyors.com>
Sent: Wednesday, October 5, 2022 11:09 AM
To: 'Jason Morgan' <jason@morgancivil.com>; Kyle Ayers <kyle@nccivil.com>
Subject: RE: Water Model - Meeting

Hi Kyle, can you please send me the model now and I can update it with the proposed reservoir. Then we can discuss the results at our meeting tomorrow.

Thanks,

Ray Moore, PE, PLS.
All County Surveyors & Planners, Inc.
PO Box 955, Sandy, OR 97055
Phone: 503-668-3151
email: raym@allcountysurveyors.com

From: Jason Morgan <jason@morgancivil.com>
Sent: Monday, October 3, 2022 11:51 AM
To: Kyle Ayers <kyle@nccivil.com>; Ray <raym@allcountysurveyors.com>
Subject: RE: Water Model - Meeting

Wednesday does not work for me at all.
Late Thursday is okay, like 1pm.

Friday, I am open during those times.

Jason Morgan, PE
Morgan Civil Engineering, inc.
503-801-6016

From: Kyle Ayers <kyle@nccivil.com>
Sent: Monday, October 3, 2022 11:47 AM
To: Jason Morgan <jason@morgancivil.com>; Ray <raym@allcountysurveyors.com>
Subject: Water Model - Meeting

Gentlemen,
Is there a time that will work for the both of you to sit down and assemble the water model for RVM? We likely don't need to more than 1 or 2 hours to start it and then we can meet again as necessary to finish it up.

This week, I have the following availability:

- Wednesday 1pm – 4pm
- Thursday 10am – 2pm
- Friday 10am – 1pm

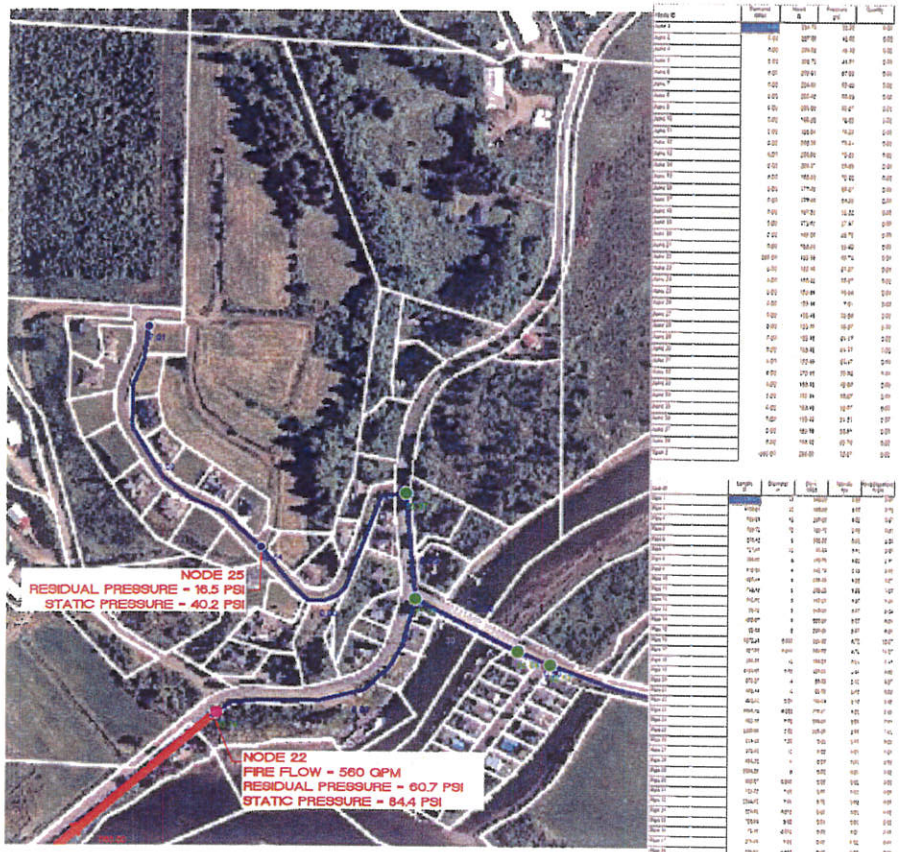
Please let me know your availability.

Thank you,
Kyle

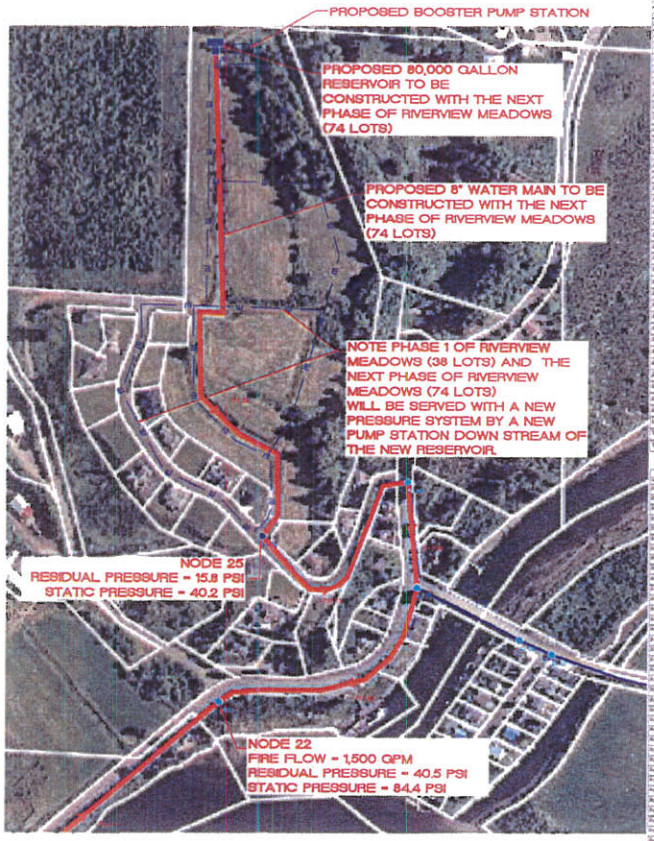
KYLE AYERS, PE *Principal-in-Charge*
North Coast Civil Design, LLC
503.812.3732 503.440.1088
kyle@nccivil.com www.nccivil.com
35240 Tohl Ave, Nehalem, OR 97131


N
NORTH COAST
CIVIL DESIGN

RUN 1
(EXISTING SYSTEM)



RUN 2
(NEW RIVERVIEW MEADOWS RESERVOIR)



NOTE: THIS DRAWING REPRESENTS THE RESULTS OF A HYDRAULIC MODEL PREPARED BY KYLE AYERS DURING A MEETING WITH JASON FORDAN AND RAY MOORE ON OCTOBER 6, 2022

RUN 'I' IS A MODEL OF THE EXISTING CITY PIPES BETWEEN THE EXISTING RESERVOIR TO RIVERVIEW MEADOWS PHASE 1. THE RESULTS SHOWN ABOVE ARE BASED ON A FIRE FLOW OF 560 GPM APPLIED TO NODE 22 A RESIDUAL PRESSURE OF 60 PSI IS CALCULATED AT NODE 25. 560 IS SIMILAR TO AN ACTUAL FLOW TEST COMPLETED BY THE CITY AND IS A GOOD CHECK OF THE MODEL.

RUN 'II' IS THE SAME MODEL WITH A NEW 80,000 GALLON RESERVOIR AND 8" WATERLINE ADDED TO THE SYSTEM. A FIRE FLOW OF 1500 GPM WAS APPLIED TO THE SAME NODE 22 WITH A RESIDUAL PRESSURE OF 60 PSI AT NODE 25.

AS DEMONSTRATED ABOVE THE NEW RESERVOIR AND PIPE THAT WILL BE INSTALLED WITH THE NEXT PHASE OF RIVERVIEW MEADOWS ON LOTS WILL BRING A PORTION OF THE EXISTING CITY WATER SYSTEM IN COMPLIANCE WITH THE FIRE FLOW REQUIREMENTS (1,500 GPM)

NOTE: THIS DRAWING ALSO SHOWS AN SCHEMATIC LAKE WORK IN ORDER TO PROVIDE NEW / EXISTING PIPES AND BOOSTER PUMP NEEDED TO SERVE RIVERVIEW MEADOWS PHASE I (38 LOTS) AND THE FUTURE PHASES (74 LOTS)

THIS NEW BOOSTER PUMP STATION AND PIPING WILL BE DESIGNED TO PROVIDE THE REQUIRED 1,500 GPM WITH A RESIDUAL PRESSURE OF 20 PSI OR GREATER TO SERVE ALL OF THE LOTS IN ALL PHASES OF RIVERVIEW MEADOWS. THE NEW 80,000 GALLON RESERVOIR WILL PROVIDE MORE THAN SUFFICIENT WATER FOR THE 1 HOUR FIRE EVENT NEEDED.

THIS IS A SCHEMATIC DRAWING ONLY NOT INTENDED FOR CONSTRUCTION

All Counties
Surveyors & Planners, Inc.
Surveying, Planning and Civil Engineering
P.O. Box 325 Sandy, OR 97055
Phone: (503) 668-3151
Fax: (503) 668-4730

DATE OF PLOT 10-07-22

FILE: 22-116-Water.dwg

MORGAN CIVIL ENGINEERING, INC.

PO Box 358, Manzanita, OR 97130
ph: 503-801-6016
www.morgancivil.com

August 9, 2022

Riverview Meadows Development, LLC
Alex Reverman areverman@gmail.com

RE: Water System Improvements for Tax Lot 3600, Map 03N 10W 23B, Nehalem, Tillamook County, Oregon (Riverview Meadows, Phase 2)
Project #19-10-Riv

Dear Mr. Reverman:

At your request, I have prepared a preliminary design for the water distribution system to be serving the proposed subdivision of Riverview Meadows Phase 2.

Storage

We propose to install a new storage tank at the northwestern corner of the new development, with a ground elevation of about 160 feet. The City tank is at an elevation of 220 feet, so the new tank can be fed by gravity.

The proposed tank will include 60,000 gallons of water storage for fire-fighting (1000 gpm for 60 minutes) and about 20,000 for domestic use (240 gallons per house for 90 homes). The average City residential usage is 141 gallons per day. The total tank size will be about 80,000 gallons.

The new tank will be filled with treated water from the City System, with a dedicated feed line beginning near Lot 13. The feeding pipe will be in a shared trench with a new distribution pipe. A pressure reducing valve (PRV) will need to be installed at the tank in order to prevent overflowing.

The feeder line, tank, and PRV are shown on the attached drawing in red.

Distribution

Water from the new reservoir will be pumped to a pressure of about 60 psi (140 ft gauge pressure/300 feet total pressure). The water will then be distributed in a looped system in order to serve the residents of Phase 2 and Phase 1 of the subdivision (not including Lots 1-2, and 12-13).

Lot 75 is located at elevation 155 feet. Lot 14 is at elevation of 120 feet. Therefore, the service pressure will be between roughly 60 psi and 85 psi.

Connection

In the roadway near Lot 14, a second PRV will be used in order to connect to the City system. The pressurized system will tie into the city system in order to allow flow when needed. This PRV is shown in red on the drawing.

There is a gap in the map in order to show both ends of the new system. Further design of these improvements will be necessary before construction.

If you have any questions, please contact me at jason@morgancivil.com or 503-801-6016.

Sincerely,

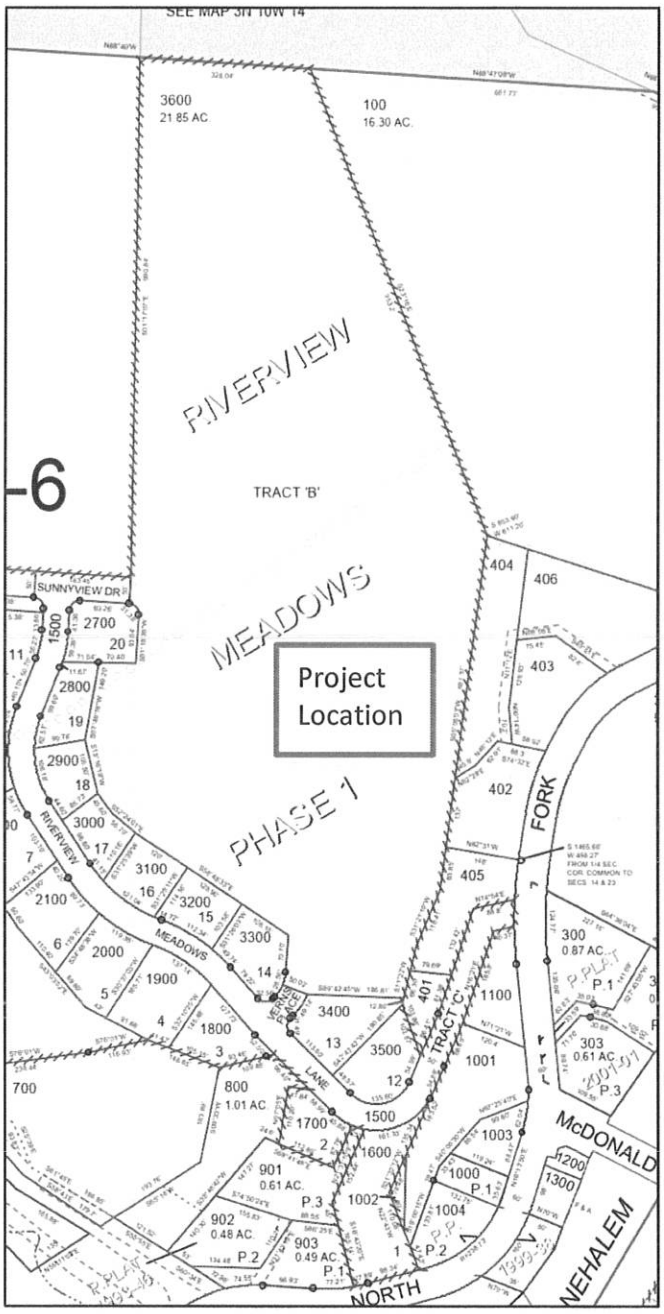
MORGAN CIVIL ENGINEERING, INC.

Jason R. Morgan, PE
Professional Engineer

RENEWAL DATE: DECEMBER 31, 2022

cc: Project File #19-10-Riv

<V:\19-10-Riv\Reports\Riverview Meadows-2 Water System.docx>



Tax Lot 3600, Map 3N 10W 23B
RIVERVIEW MEADOWS PHASE 2
Nehalem, Tillamook County Oregon

RIVERVIEW MEADOWS
PHASE 2
74 LOT SUBDIVISION
TENTATIVE PLAN

MAP 3N R5W SECTION 23B

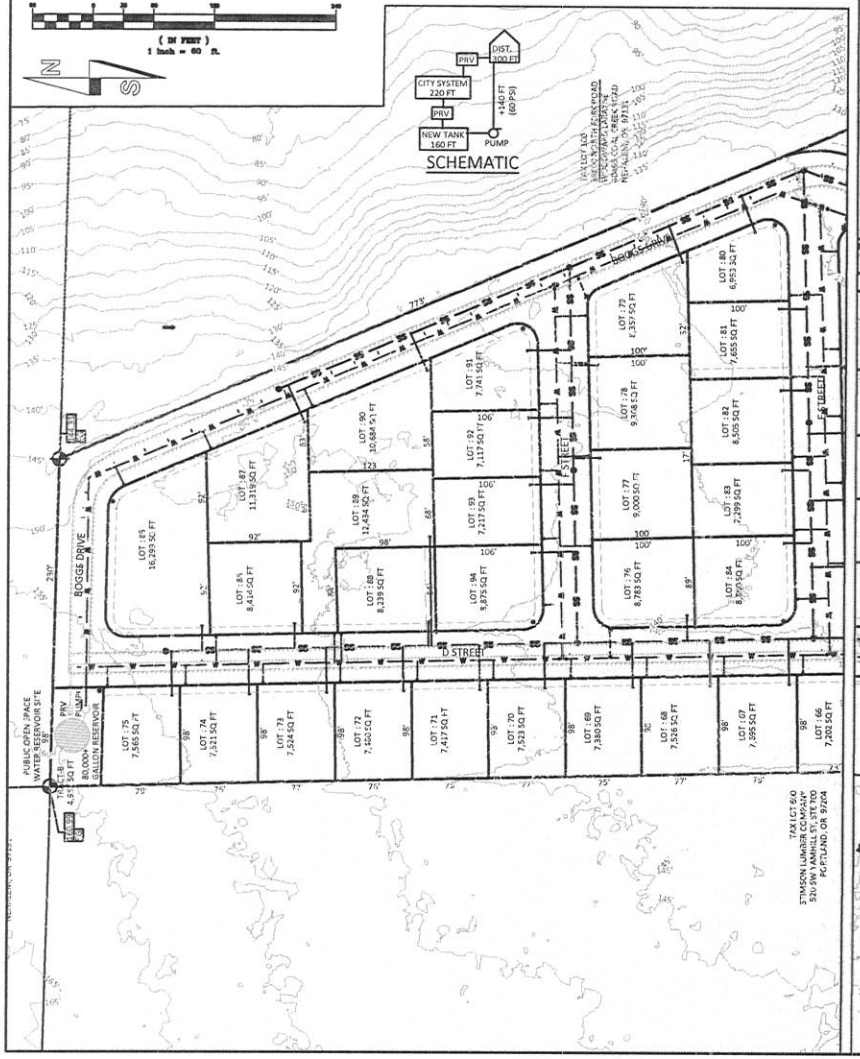
GRAPHIC SCALE

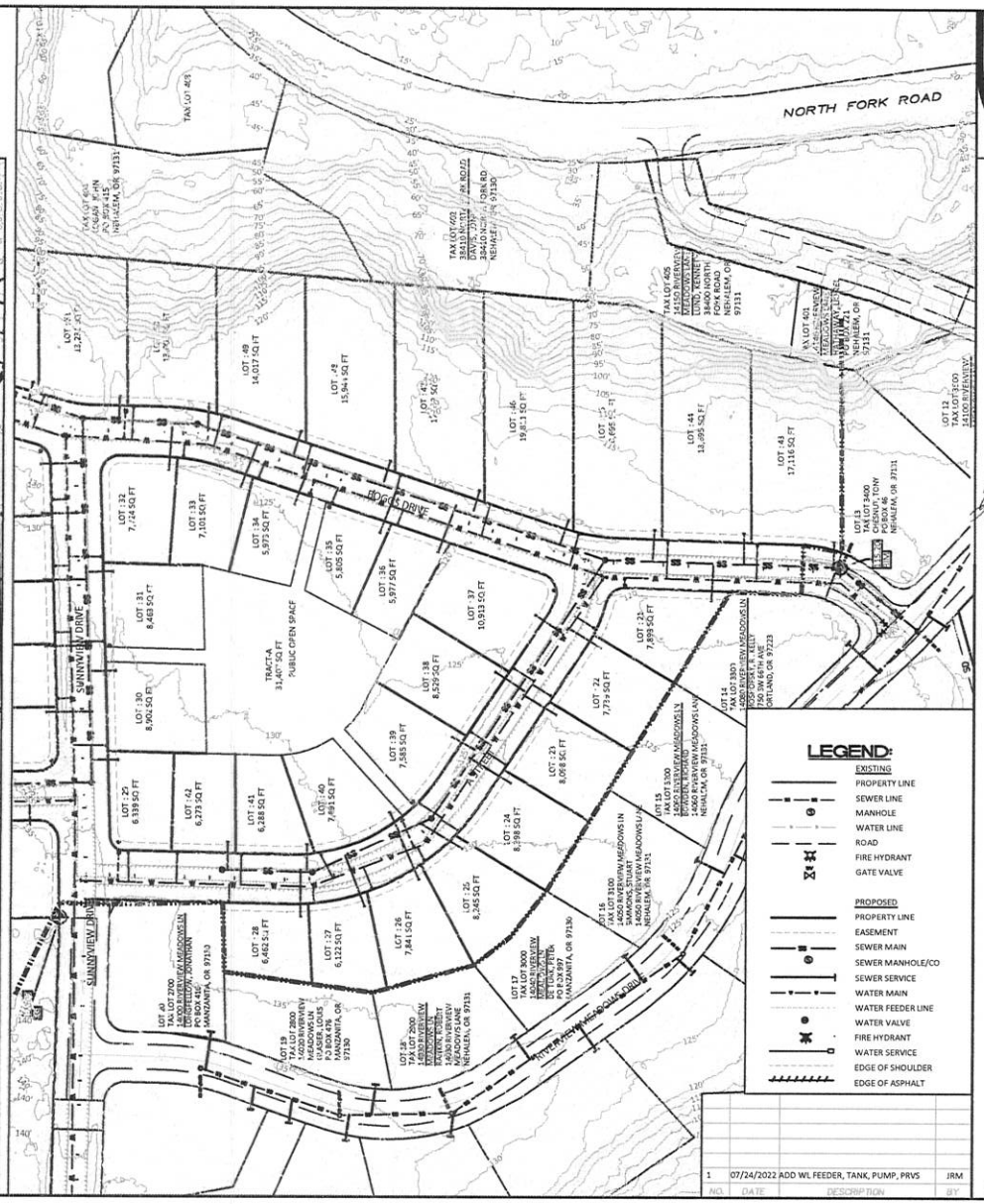
(IN FEET)
1 inch = 60 ft.

ELEVATIONS:
CITY TANK - 220 FT
PROPOSED TANK - 160 FT
LOT 75 - 155 FT
LOT 3 - 120 FT
USE PUMP AT ~300 FT EQ. (ADD 140 FEET = 60 PSI)

WATERLINE:

1) INSTALL NEW TEE ON MAINLINE AT LOT 14.
2) INSTALL FEEDER PIPE TO TANK SITE. L=2100 FT.
3) INSTALL PRESSURE REDUCING VALVE.
4) STORE WATER IN TANK. MIN 80,000-GALLON.
5) DISCHARGE THROUGH PUMP STATION. ADD ±60 PSI.
6) AT LOT 14, INSTALL PRV TO REDUCE TO CITY PRESSURE.





LEGEND:

EXISTING
- PROPERTY LINE
- SEWER LINE
- MANHOLE
- WATER LINE
- ROAD
- FIRE HYDRANT
- GATE VALVE

PROPOSED
- PROPERTY LINE
- EASEMENT
- SEWER MAIN
- SEWER MANHOLE/CO
- SEWER SERVICE
- WATER MAIN
- WATER FEEDER LINE
- WATER VALVE
- FIRE HYDRANT
- WATER SERVICE
- EDGE OF SHOULDER
- EDGE OF ASPHALT

NO.	DATE	DESCRIPTION	BY
1	07/24/2022	ADD WL FEEDER, TANK, PUMP, PRVS	JRM

MORGAN CIVIL ENGINEERING, INC.
• CIVIL ENGINEERING
• SURVEYING
• PLANNING
PO BOX 358
MANZANITA, OR 97130
(503) 368-4555
www.morgancivil.com

REGISTERED PROFESSIONAL ENGINEER
OREGON
JANUARY 15, 2008
JASON R. MORGAN
RENEWAL DATE: DECEMBER 31, 2022

JOB NO. #19-16-RIV
DATE: MAY 10, 2022

RIVERVIEW MEADOWS DEVELOPMENT, LLC
RIVERVIEW MEADOWS PHASE 2
UTILITY LAYOUT
NEHALEM, MAP 3N 10W 23B

SHEET
3b
OF TWENTY

October 12, 2022

To: Tillamook County Community Development Department
Sarah Absher, CFM, Director

Re: Riverview Meadows Phase 2 – County File #851-21-000414 PLNG and #851-21-000415 PLNG

Dear Ms. Absher:

The City of Nehalem offers the following additional comments on the above-referenced application.

Domestic water service extension improvements can be approved if they are "adequate to serve the subdivision." Nehalem City Code 51.09(B)(1). An evaluation for "adequacy" requires, among other things, a finding that they will "maintain a pressure of at least 20 pounds per square inch (psi) at all service connections at all times." OAR 333-061-0025. In addition, the fire flow availability serving each of the new single-family dwellings must meet or exceed 1000 gallons per minute. 2019 Oregon Fire Code, Appendix B; NCC 51.10(F)(1); Water Master Plan.

The City's Engineer Kyle Ayers has reviewed that applicant's proposed tentative plan for the provision of water improvements necessary to serve the Riverview Meadows 2 development dated August 9, 2022 and supplemental data and has determined that with periodic testing throughout the construction project, these improvements are likely to satisfy the City standards. As such, the City recommends that the County approve the Riverview Meadows 2 subdivisions subject to the following conditions:

> Applicant shall install a water distribution system to serve Riverview Meadows Phase 2 "RVM2" that substantially complies with the narrative dated August 9, 2022 and its attached plan entitled "Riverview Meadows Phase 2 Tentative Plan" dated May 12, 2022 and updated "7/24/22 Add WL Feeder, Tank, Pump, PRVS" (called in this condition for simplicity "Riverview Water Plan"), authored by engineer, Jason Morgan.
>
> a. Coupled with submission of its Schematic Design plans, the applicant shall submit a pre-design report for the reservoir, pump station and components for the high pressure zone indicating that all connections will maintain adequate pressure.
> b. Prior to completing any road paving, the new water infrastructure shall be tested to verify that improvements comply with the City's requirements and standards and where those standards are not met, pipelines shall be repaired or replaced, and tested. These findings shall be provided to the City Engineer.
> c. Prior to recording the final plat for RVM2, the Applicant shall secure the City's acceptance for the water distribution improvements in substantial conformity with that Riverview Water Plan.

d. Similarly, prior to recording the final plat for RVM3, the Applicant shall install to City standards and secure the City's acceptance for the water distribution improvements in substantial conformity with that Riverview Water Plan, subject to periodic testing during installation. This condition does not imply that RVM3 must be approved with respect to water system adequacy or otherwise. Such implication cannot be drawn because no application for RVM3 has been submitted. Rather, this condition is designed to respond to, and assuage, city concerns that a water distribution system substantially complying with the Riverview Water Plan will be installed for RVM 2 and ultimately 3 and so provide the agreed-upon adequate water service capacity to serve the entire 74-lot subdivision that is contemplated for the RVM 2 and 3 property.
e. The Applicant, its principles and its subsequent owners in interest, shall not make any applications for new water service for RVM2 or RVM3 until the Riverview Water Plan improvements have been accepted by the City.

Thank you for the opportunity to comment on this application.

Sincerely,

Melissa Thompson-Kiefer

Melissa Thompson-Kiefer
City Manager

Lynn Tone

From: Sarah Absher
Sent: Thursday, October 13, 2022 2:39 PM
To: Lynn Tone
Subject: RE: Riverview Meadows PC Packet

From: Kyle Ayers <kyle@nccivil.com>
Sent: Thursday, October 13, 2022 2:37 PM
To: Sarah Absher <sabsher@co.tillamook.or.us>; Ron Newton <rnewton@co.tillamook.or.us>
Cc: Melissa Thompson-Kiefer <mthompson@nehalem.gov>
Subject: EXTERNAL: RE: Riverview Meadows PC Packet

Good Afternoon Sarah,
My input, as the Engineer of Record for the City of Nehalem, has been requested regarding the need for a secondary access for the proposed Riverview Meadows Phase 2.

Upon review of the stated requirements set forth by Tillamook County, specified in your Wednesday, 7/20/2022, email, I am in full agreement with Tillamook County's findings and requirements for the necessity of a fully developed, secondary access to serve the new development. My findings are based upon the requirements set forth in the City and County development standards along with analysis of the existing access. The existing access from Northfork Road fails to meet AASHTO intersection requirements for vehicular turning angles, transition grades, overall geometry and most importantly, sight distance along Northfork Road.

Also, based upon antecedent testimony and eyewitness, construction vehicles have damaged adjacent private property and stop signs attempting to maneuver the intersection. We must consider, not only the safety of the new residents of Riverview Meadows, but also the safety of the existing residents with driveways that would have to contend with the vehicles from the 74 new homes.

Please feel free to contact me with any questions.

Thank you,
Kyle Ayers, PE, Nehalem City Engineer

KYLE AYERS, Professional Engineer
Principal-in-Charge
North Coast Civil Design, LLC
503.812.3732 503.440.1088
kyle@nccivil.com www.nccivil.com
35240 Tohl Ave, Nehalem, OR 97131

Tillamook County Public Works
503 Marolf Loop Road, Tillamook, OR 97141
County Road Phone: 503-842-3419
Solid Waste Phone: 503-815-3975
Fax: 503-842-6473
Email: pubwks@co.tillamook.or.us
TTY Oregon Relay Service

Trees, Cheese, and Ocean Breeze

October 13, 2022

To: Sarah Absher, Planning Department Director
Tillamook County Planning Department
From: Ronald E. Newton, Engineering Technician III
Tillamook County Public Works

Subject: Partition Request #851-21-000415-PLNG
Sheldon Development, Inc.

Sarah,

Recently received correspondence from counsel advising Riverview Meadows Inc. indicates some question of authority to require a fully functional secondary access road to support future development of the planned unit development known as River View Meadows.

As you now, the proposed development is located outside the city limits of The City of Nehalem, but within the associated Urban Growth Boundary, (UGB). This presents the situation where city ordinance language is based on development within the grid system of the city street plan and will not provide adequate safe transportation planning to the limits of the UGB. In these situations, authority is supported by Oregon Revised Statute, (ORS) Chapter 368. ORS chapter 368.016 provides for the County Engineer to take action in regards to local city streets at times when the city consents to the action. In this case, city ordinance does not provide adequate transportation design guidance, and both city and county agree that county standards should be applied. The result is that the County Engineer's evaluation of transportation requirements becomes the controlling authority.

ORS Ch. 368.039 provides that county has the authority to require design standards that *"shall supersede and prevail over any specifications and standards for roads and streets that are set forth in a uniform fire code adopted by the State Fire Marshal, a municipal fire department or a county firefighting agency."* This clearly provides the County Engineer authority to require safe, effective public transportation in situations where otherwise inadequate or nonexistent options otherwise exist.

Tillamook County Ordinance #55 references the Oregon Department of Transportation *Standard Specifications for Highway Construction,* The American Association of State Highway Transportation Officials Manual *A Policy on Geometric Design of Highways and Streets* and the Federal Highway Administrations *Manual on Uniform Traffic Control Devices* as adopted by the Oregon Department of Transportation. These documents become the controlling standards and specifications adopted by Tillamook County.

The section of Riverview Meadows Drive adjacent to North Fork Nehalem River Road represents little more than a single lane paved alignment and fails to meet any applicable AASHTO standard for lane width, shoulder width, adjacency of immovable obstructions, etc. In

this first section of roadway there are four private residences located at the very edge of the existing Right of Way line. Please note the aerial image below to assist in viewing the limited width of the existing roadway showing a single vehicle traveling through this section. This image provides evidence of the inadequate capacity of the existing roadway.

The Traffic Impact Study, (TIS), provided by the applicants suggest that the intersection at the end of this section of roadway contains adequate carrying capacity to support the full buildout of the Riverview Meadows development. The TIS suggests that there will be times when vehicles leaving the development will queue in this same section of roadway. It is the determination of the County Engineer that this creates an unsafe point of congestion even in normal daily traffic. With commuters queued to enter the North Fork County Road, there is no safe way for vehicular movement by adjacent land owners to enter or leave the existing roadway.

Public Works finds additional issues with the TIS. Section 160(1)(a). identifies that the standard to be used is "A Policy on Geometric Design on Highway and Streets" (referred hereinafter as the Green Book). The "Riverview Meadows Traffic Impact Study" dated August 12. 2022 (hereinafter referred to as the Study) used these standards. The Intersection Sight Distance section of the report identifies that the standards are not met.

The Study reported "… a minimum of 500 ft of intersection sight distance is generally desired in each direction for each point of access. However, horizontal curves in the site vicinity limit both the available sight lines and the approach speeds of vehicles at the limits of sight distance." The 500 ft distance listed is published sight distance using a Design Speed of 45 mph and passenger cars.

Per the Study: "For the existing site access on River View Meadows Lane, the available intersection sight distance was measured to be 428 feet to the north and 378 feet to the south."

The study uses a speed study to lower the acceptable sight distance. Please note the following excerpts from the Green Book:

"Posted speed limits, as a matter of policy, are not the highest speeds that might be used by drivers. Instead, such limits are usually set to approximate the 85th percentile speed of traffic as determined by measuring the speeds of a sizeable sample of vehicles."

"Operating speed is the speed at which drivers are observed operating their vehicles during free-flow conditions. The 85th percentile of the distribution of observed speeds is the most frequently used measure of the operating speed associated with a particular speed associated with a particular location or geometric feature."
"Design speed is the selected speed used to determine the various geometric design features of the roadway. The selected design speed should be a logical one with respect to the anticipated operating speed, topography, the adjacent land use, and the functional classification of the highway."

The Study states *"Typically, the 85th percentile speed is used for design."* is not correct. However, the Study did identify that reducing the design speeds to match the 85th percentile speed did not produce an acceptable sight distance. *"Again, the available intersection sight distance was less than the desired intersection distance."* The Study then deviates from utilizing the intersection sight distance standard and uses stopping sight distance and the 85th percentile speed.

The proposed project does not meet the standard for Intersection Sight Distance. Please note 500-ft is based on a Design Speed of 45 mph and passenger cars. The distance increases to 630-ft for single unit trucks.

In the River View Meadows Lane – Roadway Geometry section, the Study identifies that *"...single-unit trucks, garbage trucks, and fire apparatus... require the full width of River View Meadows Lane for maneuvering in the vicinity of North Fork Road."* It is not acceptable to place additional traffic on this road as the risk of collision increases.
The combination of the lack of sight distance and the above-described vehicle maneuvering issues in the vicinity of North Fork Road is not acceptable.

Based on the above, and in concurrence with the City of Nehalem, Tillamook County Public Works will require that a full developed, two-lane roadway built to county road standards shall be a requirement for approval of any future buildout of the Riverview Meadows residential development.

Please feel free to contact we directly with any questions.

Thank you,

Ronald E. Newton

Ronald E. Newton, *LSI*
Eng. Tech. III, Tillamook County Public Works