

*City of Florence*  
Community Development Department  
250 Highway 101  
Florence, OR 97439  
Phone: (541) 997 - 8237  
Fax: (541) 997 - 4109  
[www.ci.florence.or.us](http://www.ci.florence.or.us)

### Type of Request

#### THIS SECTION FOR OFFICE USE ONLY

☐ Type I ☐ Type II ☐ Type III ☐ Type IV

Proposal: \_\_\_\_\_

### Applicant Information

Name: Sean Randle

E-mail Address: randlebros@gmail.com

Phone 2: \_\_\_\_\_

Address: \_\_\_\_\_

Signature: \_\_\_\_\_

Applicant's Representative (if any): GMA Architects

### Property Owner Information

Name: Sean Randle

Phone 1: (541) 404-1298

E-mail: \_\_\_\_\_

Address: \_\_\_\_\_

Signature: [Signature]

Date: 3-20-20

Applicant's Representative (if any): Sean Randle

NOTE: If applicant and property owner are not the same individual, a signed letter of authorization from the property owner which allows the applicant to act as the agent for the property owner must be submitted to the City along with this application. The property owner agrees to allow the Planning Staff and the Planning Commission onto the property. Please inform Planning Staff if prior notification or special arrangements are necessary.

### For Office Use Only:

Received

Approved

Exhibit

**Exhibit B**

**Property Description**

Site Address: 586 HWY 101, Florence, OR 97439

General Description: Drive-through Coffee kiosk

Assessor's Map No. 18-12-27-44 Tax lot(s): 06600

Zoning District: Mainstreet Area A

Conditions & land uses within 300 feet of the proposed site that is one-acre or larger and within 100 feet of the site that is less than an acre OR add this information to the off-site conditions map

(FCC 10-1-1-4-B-3): Information added to off-site conditions map

**Project Description**

Square feet of new: +/- 400 SF

Square feet of existing: 0

Hours of operation: \_\_\_\_\_

Existing parking spaces: 0

Is any project phasing anticipated? (Check One): Yes ☐ No ☒

Timetable of proposed improvements: \_\_\_\_\_

Will there be impacts such as noise, dust, or outdoor storage? Yes ☒ No ☐

If yes, please describe: Construction will include site work and building assembly, causing temporary noise, dust, and outdoor storage. Proposed ongoing use will not create such impacts.

Proposal: (Describe the project in detail, what is being proposed, size, objectives, and what is desired by the project. Attach additional sheets as necessary)

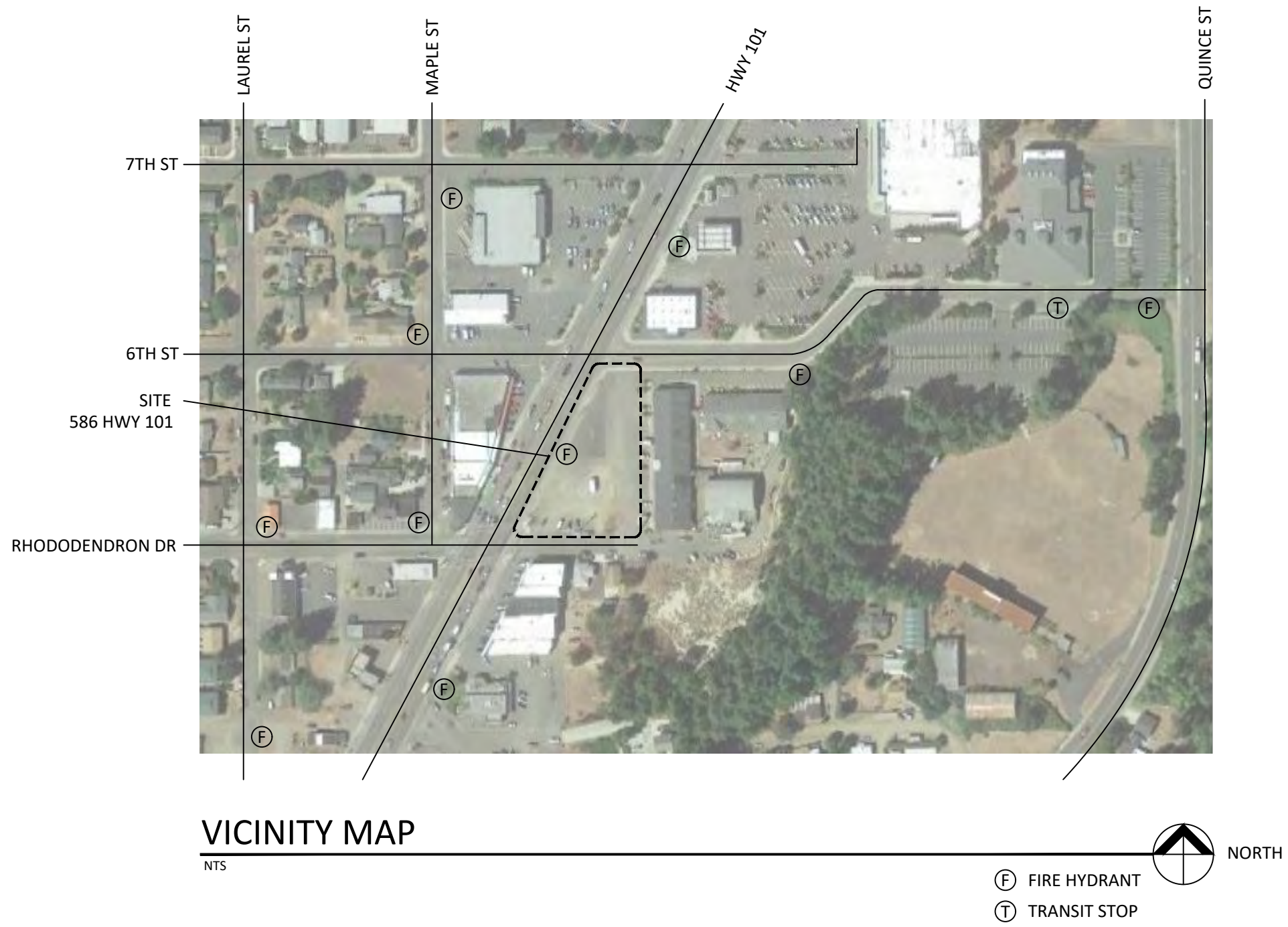
Applicant is requesting Design Review for parcel 06600 of 18-12-27-44. The application describes a +/- 400 SF drive-through coffee kiosk. Application includes associated driveway, parking, landscaping, stormwater management, and other site improvements. Site is being developed along with adjoining parcel 06601. Parcel previously has gone through CUP - PC 19 11 CUP 04 & Variance - PC 19 09 VAR 02.

**For Office Use Only:**

Date Submitted: \_\_\_\_\_ Fee: \_\_\_\_\_

Received by: \_\_\_\_\_

Paid



PROJECT INFORMATION

SITE ADDRESS  
586 HWY 101, FLORENCE, OR 97439

MAP + TAXLOT  
18122744-6600

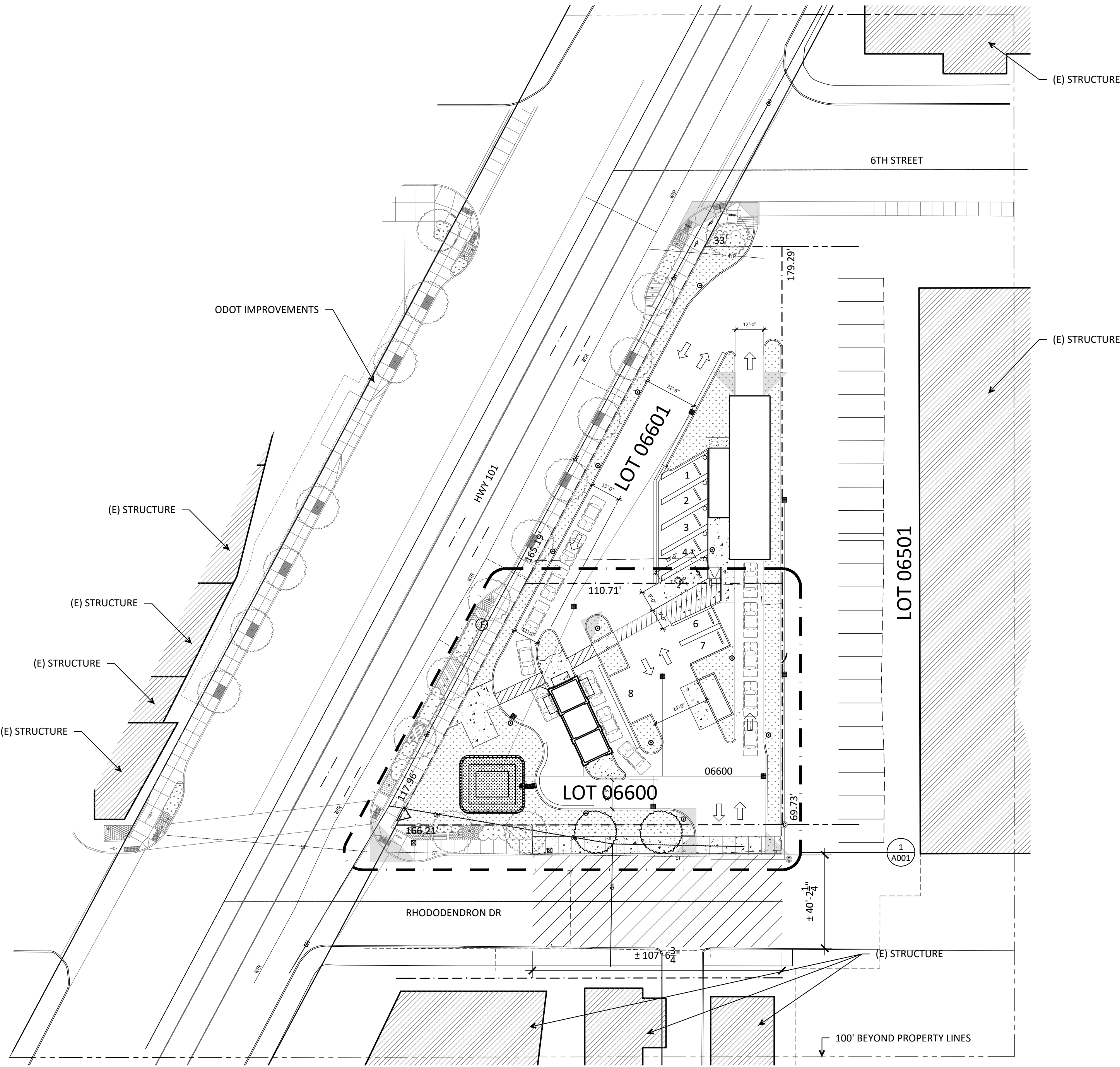
OWNER  
RANDLE DEVELOPING LLC  
2201 14TH CT  
NORTH BEND, OR 97459  
541.404.1298  
DIAMONDSHINEOREGON@GMAIL.COM

ARCHITECT  
GMA ARCHITECTS  
860 W PARK STREET, SUITE 300  
EUGENE, OREGON, 97401  
541.344.9157  
POC:  
JOSEPH E. MOORE, AIA  
JMOORE@GMA-ARCH.COM

CIVIL ENGINEER  
OLSON & MORRIS  
380 Q STREET, SUITE 200  
SPRINGFIELD, OREGON, 97477  
541.302.9790  
POC:  
KYLE MORRIS, EIT  
KYLEM@AO-ENGR.COM

SHEET LIST

|       |                                         |
|-------|-----------------------------------------|
| G000  | COVER SHEET                             |
| A001  | EXISTING CONDITIONS SURVEY              |
| A010  | SITE PLAN                               |
| A120  | LANDSCAPE PLAN                          |
| A130  | FLOOR PLAN & ELEVATIONS                 |
|       | TRASH ENCLOSURE FLOOR PLAN & ELEVATIONS |
| C-2.0 | PAVING AND GRADING PLAN                 |
| C-3.0 | UTILITY PLAN                            |
| C-4.0 | CIVIL DETAILS                           |
| C-5.0 | STREET IMPROVEMENT PLAN                 |
| L130  | SITE LIGHTING PLAN                      |



1 OVERALL SITE PLAN

1/32"=1'-0"

FIRE HYDRANT

NORTH

Exhibit C



GMA ARCHITECTS  
860 West Park Street / Ste 300  
Eugene / Oregon / 97401  
p 541.344.9157  
gma-arch.com

NOT FOR CONSTRUCTION

REVISIONS

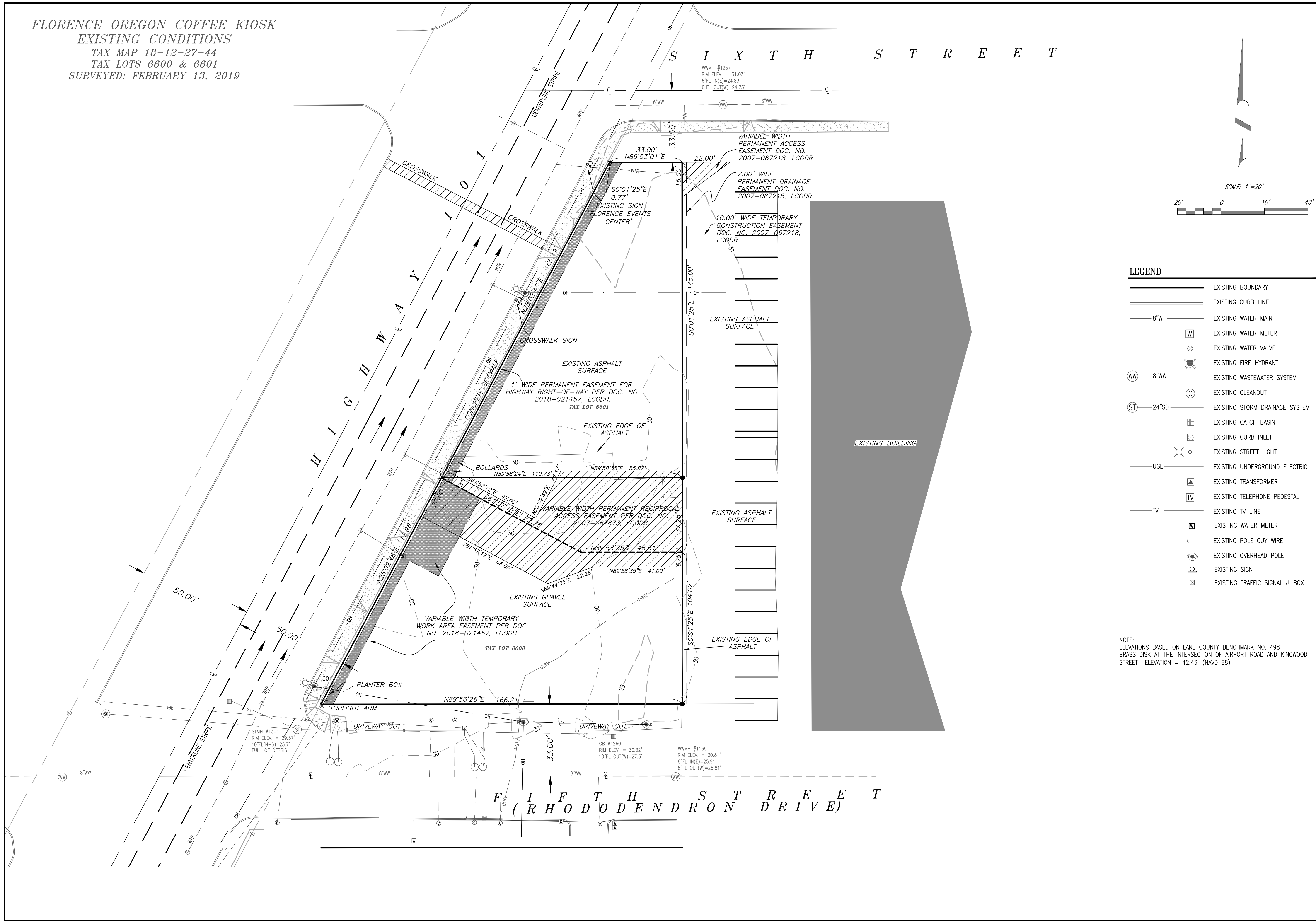
FLORENCE DESIGN REVIEW  
LOT 06600 - COFFEE KIOSK  
586 HWY 101, FLORENCE, OR 97439  
DESIGN REVIEW

JOB NO: 19199  
ISSUE DATE: 08 MAY 2020

COVER SHEET

G000

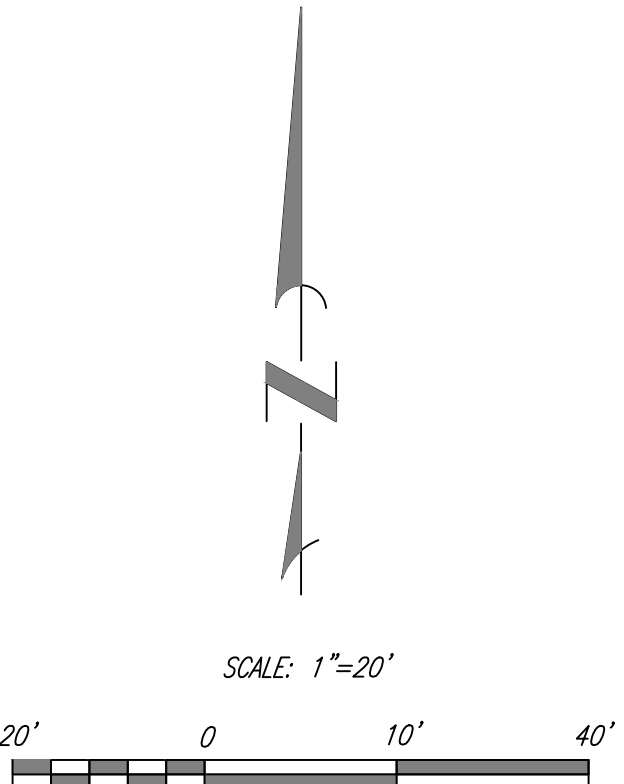
FLORENCE OREGON COFFEE KIOSK  
EXISTING CONDITIONS  
TAX MAP 18-12-27-44  
TAX LOTS 6600 & 6601  
SURVEYED: FEBRUARY 13, 2019



**LEGEND**

|  |                                |
|--|--------------------------------|
|  | EXISTING BOUNDARY              |
|  | EXISTING CURB LINE             |
|  | EXISTING WATER MAIN            |
|  | EXISTING WATER METER           |
|  | EXISTING WATER VALVE           |
|  | EXISTING FIRE HYDRANT          |
|  | EXISTING WASTEWATER SYSTEM     |
|  | EXISTING CLEANOUT              |
|  | EXISTING STORM DRAINAGE SYSTEM |
|  | EXISTING CATCH BASIN           |
|  | EXISTING CURB INLET            |
|  | EXISTING STREET LIGHT          |
|  | EXISTING UNDERGROUND ELECTRIC  |
|  | EXISTING TRANSFORMER           |
|  | EXISTING TELEPHONE PEDESTAL    |
|  | EXISTING TV LINE               |
|  | EXISTING WATER METER           |
|  | EXISTING POLE GUY WIRE         |
|  | EXISTING OVERHEAD POLE         |
|  | EXISTING SIGN                  |
|  | EXISTING TRAFFIC SIGNAL J-BOX  |

NOTE:  
ELEVATIONS BASED ON LANE COUNTY BENCHMARK NO. 498  
BRASS DISK AT THE INTERSECTION OF AIRPORT ROAD AND KINGWOOD  
STREET ELEVATION = 42.43' (NAVD 88)



Olson & Morris  
DBA of  
A & O Engineering LLC

Civil Engineering  
Land Surveying  
& Site Planning

3800 ST. SUITE 200  
SPRINGFIELD, OR 97477  
PHONE: (541) 302-9790  
scott@aoengineering.biz

REGISTERED  
PROFESSIONAL  
LAND SURVEYOR

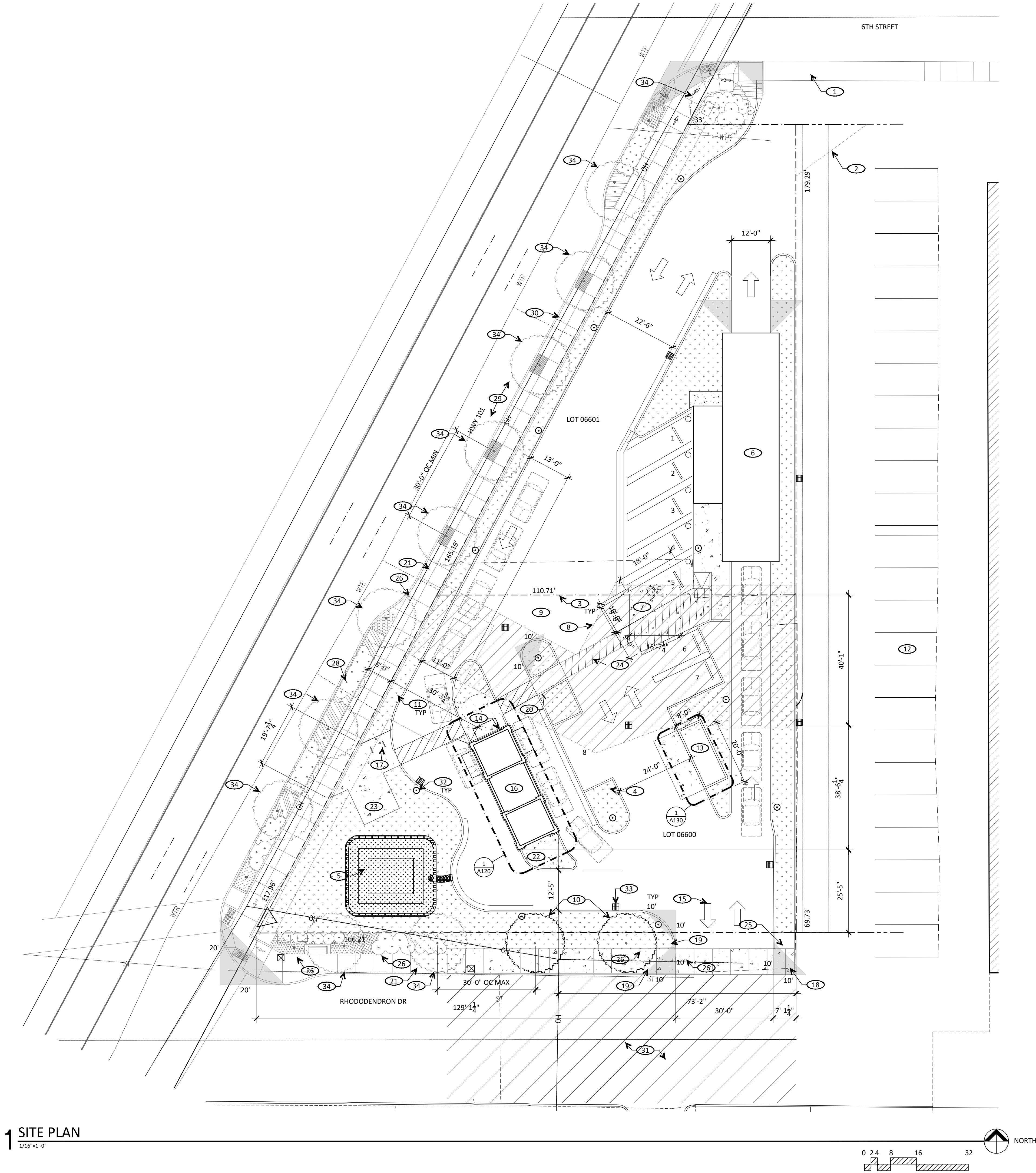
*Lawrence B. Olson*

OREGON  
JULY 10, 1964  
LAWRENCE B. OLSON  
655  
RENEWS: 12-31-2020

FLORENCE COFFEE KIOSK  
EXISTING CONDITIONS  
FLORENCE, LANE COUNTY, OREGON

|              |                   |
|--------------|-------------------|
| DATE:        | FEBRUARY 13, 2019 |
| PROJECT No:  | 5168              |
| SCALE:       | HORIZ 1"=20'      |
| DRAWN BY:    | NRC               |
| DESIGNED BY: |                   |
| REVIEWED BY: | LBO               |

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1 SITE PLAN  
1/16"=1'-0"

### GENERAL NOTES

1. NO EXISTING VEGETATION OR FENCES ON LOT
2. 100' QUEUE LENGTH ON WEST SIDE OF COFFEE KIOSK, 50' QUEUE LENGTH ON EAST SIDE OF COFFEE KIOSK

### KEY NOTES

1. MAINTAIN (E) DRIVEWAY EASEMENT
2. SHARED DRIVEWAY ACCESS EASEMENT
3. PROPERTY LINE
4. LANDSCAPE AREA, W/ AUTOMATIC IRRIGATION SYSTEM
5. STORMWATER TREATMENT FACILITY, SEE CIVIL
6. DRIVE-THROUGH CAR WASH
7. ADA PARKING SPACE W/ ACCESS AISLE
8. EASEMENT TO BE VACATED, SEE SURVEY
9. MAINTAIN 24' WIDE TRAVEL LANE
10. STREET TREE, SEE LANDSCAPE PLAN
11. LANDSCAPE, SEE LANDSCAPE PLAN
12. EXISTING PARKING
13. TRASH ENCLOSURE
14. WALK-UP WINDOW FOR PEDESTRIAN ACCESS
15. DIRECTIONAL TRAFFIC ARROW PAVEMENT MARKING
16. COFFEE KIOSK
17. SHORT TERM BIKE PARKING
18. VISION CLEARANCE AREA - NO VISUAL OBSTRUCTION BETWEEN 2'-6" & 8'-0" IN HEIGHT
19. POLE MOUNT STOP SIGN
20. POLE MOUNT PEDESTRIAN CROSSING SIGN
21. STREET PROFILE, LANDSCAPING, AND SIDEWALK DESIGN AS SHOWN ARE APPROXIMATE - PUBLIC IMPROVEMENTS UNDERWAY AT HIGHWAY 101 AT TIME DRAWING PREPARED
22. CONCRETE LANDING AT EMPLOYEE ACCESS
23. PEDESTRIAN SEATING AREA
24. STRIPED PEDESTRIAN CROSSING
25. RELOCATE LIGHT POLE
26. DASHED LINE INDICATES ABANDONED DRIVEWAY ACCESS
27. SIDEWALK RAMPS: MAX SLOPE: 1:12 (8.3%) CROSS SLOPE MAX: 1:50 (2%)
28. DASHED LINE INDICATES ABANDONED DRIVEWAY ACCESS AS PART OF HIGHWAY 101 IMPROVEMENTS
29. ON-STREET PARKING
30. POWER LINE TO BE DEMOLISHED
31. SEE CIVIL FOR WORK IN PUBLIC WAY
32. POLE MOUNT SITE LIGHT FIXTURE ON CONCRETE BASE, SEE LIGHTING PLAN
33. CATCH BASIN, SEE CIVIL
34. (E) STREET TREE

### LEGEND

- LANDSCAPE AREA
- CONCRETE FILL

NOT FOR CONSTRUCTION

### REVISIONS

## FLORENCE DESIGN REVIEW

LOT 06600 - COFFEE KIOSK  
586 HWY 101, FLORENCE, OR 97439  
DESIGN REVIEW

JOB NO: 19199  
ISSUE DATE: 08 MAY 2020

### SITE PLAN

A001



NOT FOR CONSTRUCTION

1. NO EXISTING VEGETATION OR FENCES ON LOT.
2. TOP SOIL MIX FOR ALL PLANTS, UON
3. PLANT SPECIES, SIZES, QUANTITIES AND LOCATIONS ARE CONCEPTUAL AND GENERALLY PROVIDED TO ADDRESS DESIGN REVIEW AND ARE NOT PROVIDED FOR REFERENCE ONLY. FINAL PLANTING PLANS WILL BE PROVIDED AT THE TIME OF THE BUILDING PERMIT SUBMITTAL IN COMPLIANCE WITH ALL APPLICABLE CODE REQUIREMENTS AND CONDITIONS OF APPROVAL.
4. SEE CIVIL PLANS FOR GRADING AND STORMWATER FACILITY DOCUMENTATION
5. FINAL PLANTING DESIGN SUBJECT TO PLANT AVAILABILITY FROM LOCAL AREA NURSERIES

1 (N) STREET TREES TO MATCH ODOT IMPROVEMENT SPECIES. MINIMUM 2" THICK CALIPER MEASURED 6' ABOVE GRADE AT TIME OF PLANTING

2 EXISTING STREET TREES PER ODOT IMPROVEMENT

## REVISIONS

1. AUTOMATIC, UNDERGROUND IRRIGATION SYSTEM WILL BE PROVIDED FOR ALL LAWN AND PLANT BED AREAS
2. SYSTEM WILL PROVIDE HEAD TO HEAD COVERAGE
3. SYSTEM WILL PROVIDE SEPERATE ZONES FOR LAWN AND SCRUB AREAS
4. HEAD LAYOUT WILL MINIMIZE OVERSPRAY ONTO PAVED SURFACES

| KEY  | COMMON NAME      | MIN. SIZE |
|------|------------------|-----------|
| PIER | PIERIS           | 3 GAL     |
| BAR  | BARBERRY         | 5 GAL     |
| RTD  | RED TWIG DOGWOOD | 3 GAL     |
| LITH | LITHODORA        | 4" POT\$  |
| ALR  | RED ALDER        | 2" CAL.   |

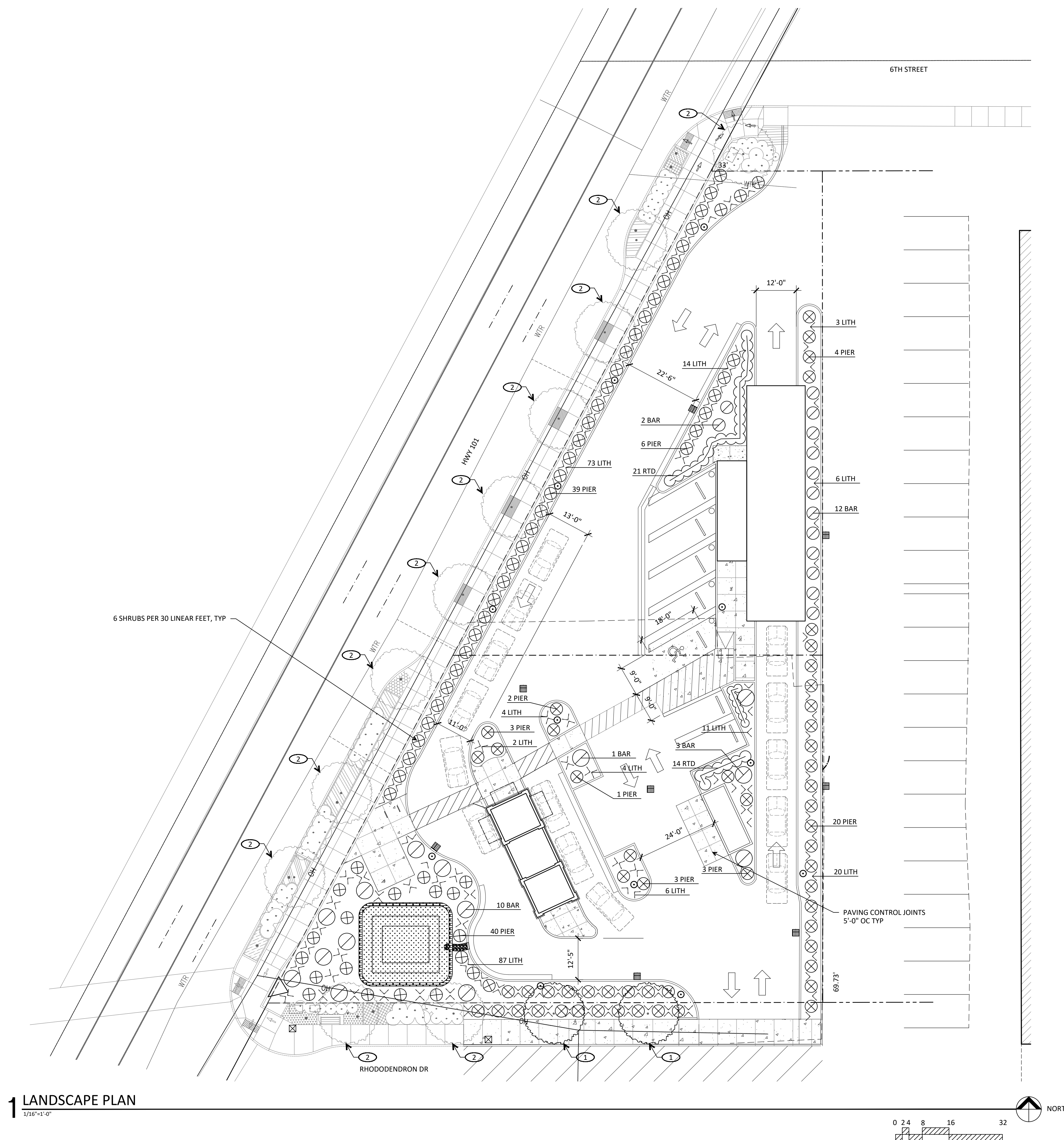
 PIERIS  
 BARBERRY  
 RED TWIG DOGWOOD  
 LITHODORA

586 HWY 101, FLORENCE, OR 97439  
DESIGN REVIEW

LANDSCAPE PLAN

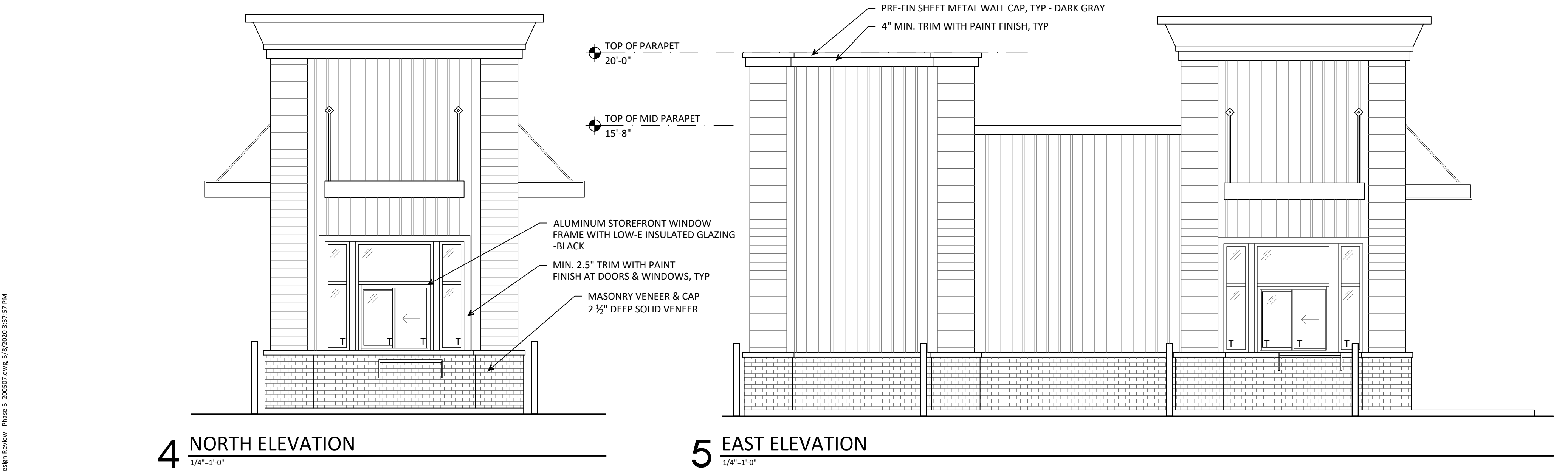
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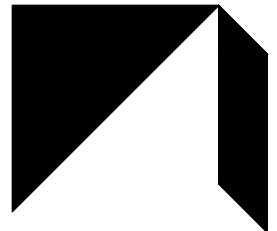
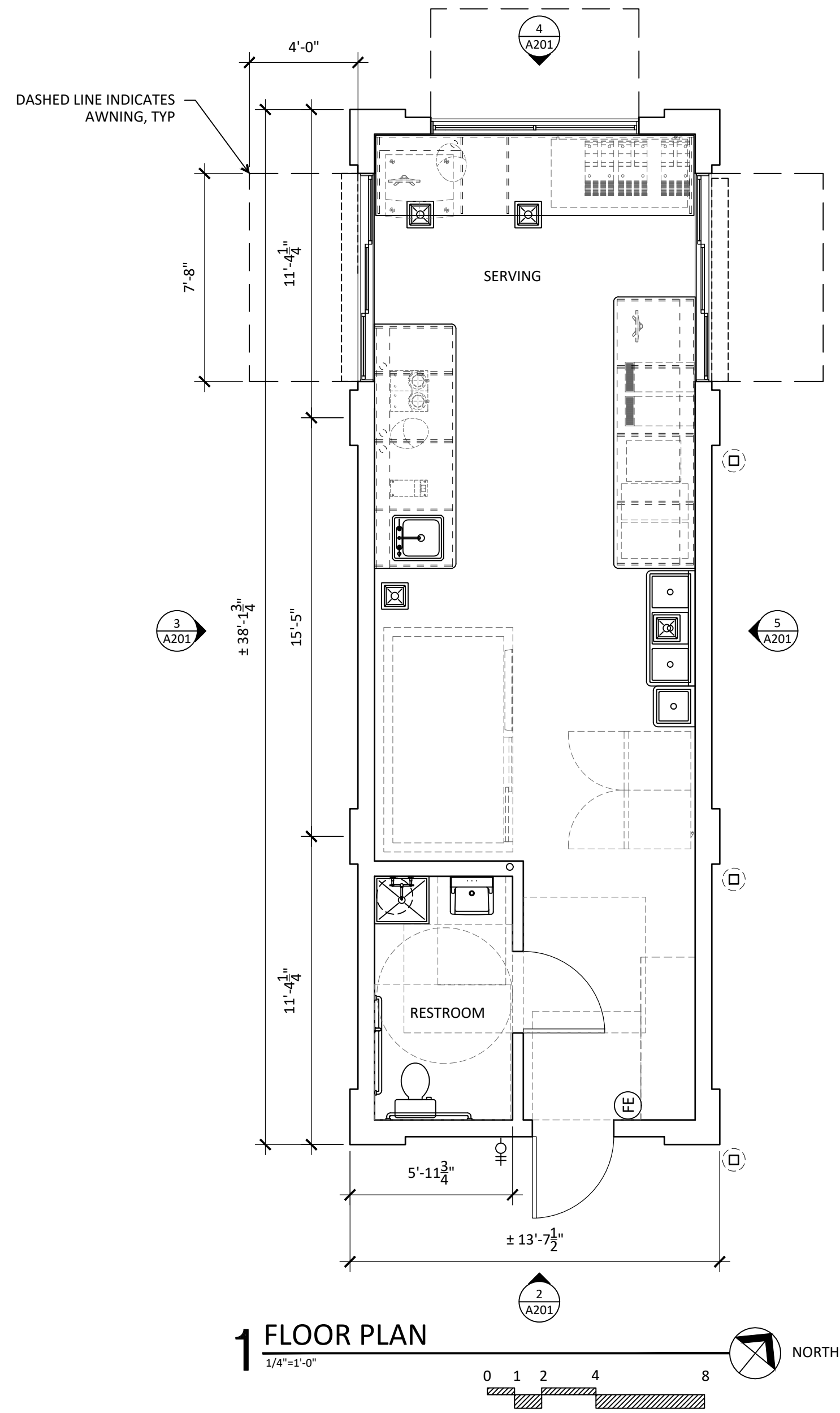


# 1 LANDSCAPE PLAN

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MUTED EARTH-TONE COASTAL PACIFIC NORTHWEST PALETTE  
(FCC 10-6-6-4.G.). EXAMPLES BELOW



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p 541.344.9157  
gma-arch.com

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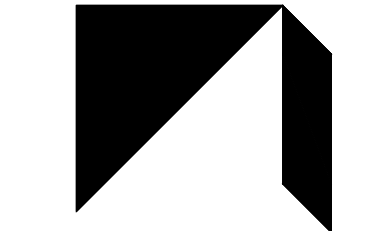
REVISIONS

FLORENCE DESIGN REVIEW  
LOT 06600 - COFFEE KIOSK  
586 HWY 101, FLORENCE, OR 97439  
DESIGN REVIEW

JOB NO: 19199  
ISSUE DATE: 08 MAY 2020

FLOOR PLAN  
&  
ELEVATIONS

A120



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Eugene / Oregon / 97401  
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gma-arch.com

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REVISIONS

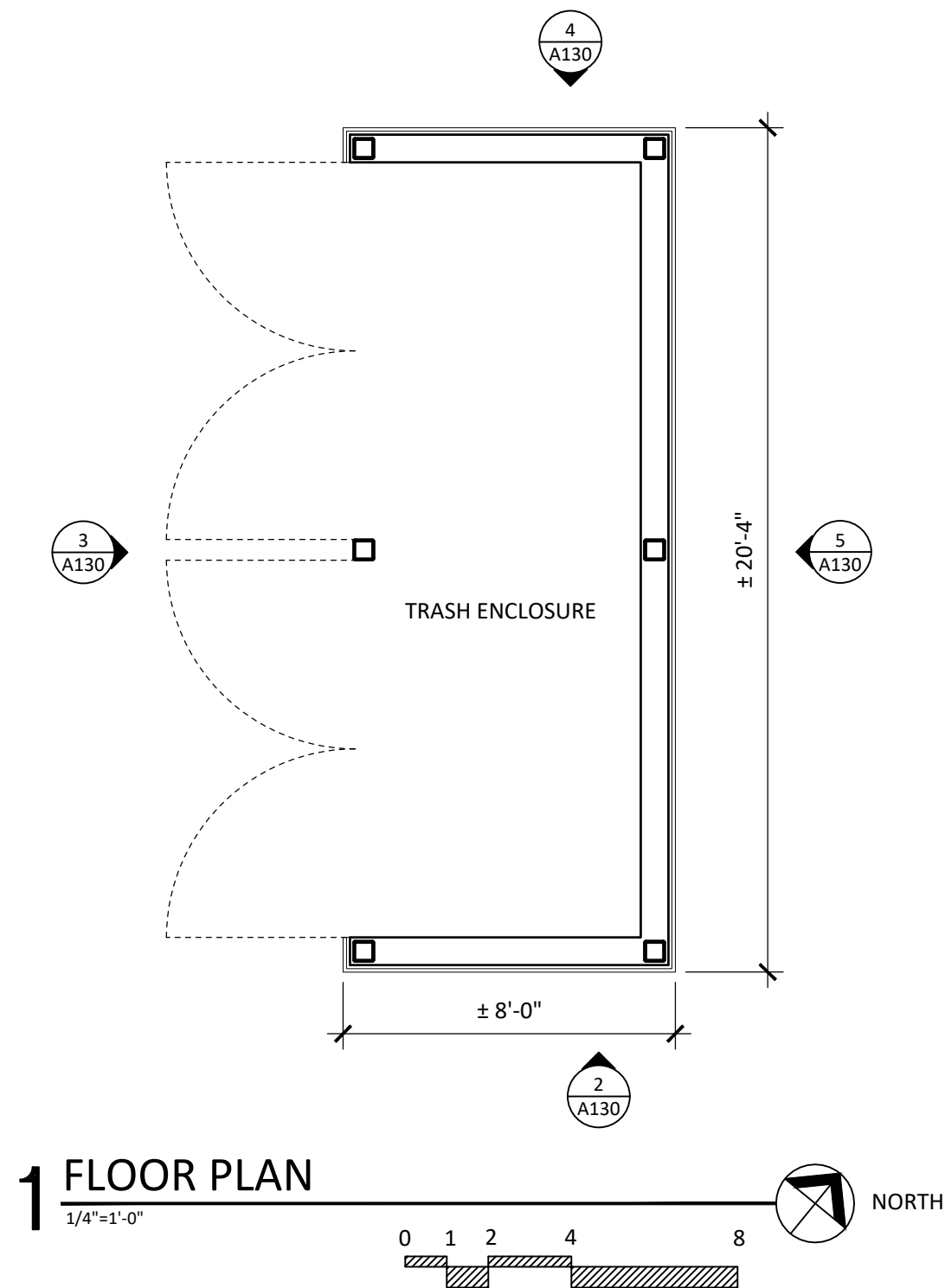
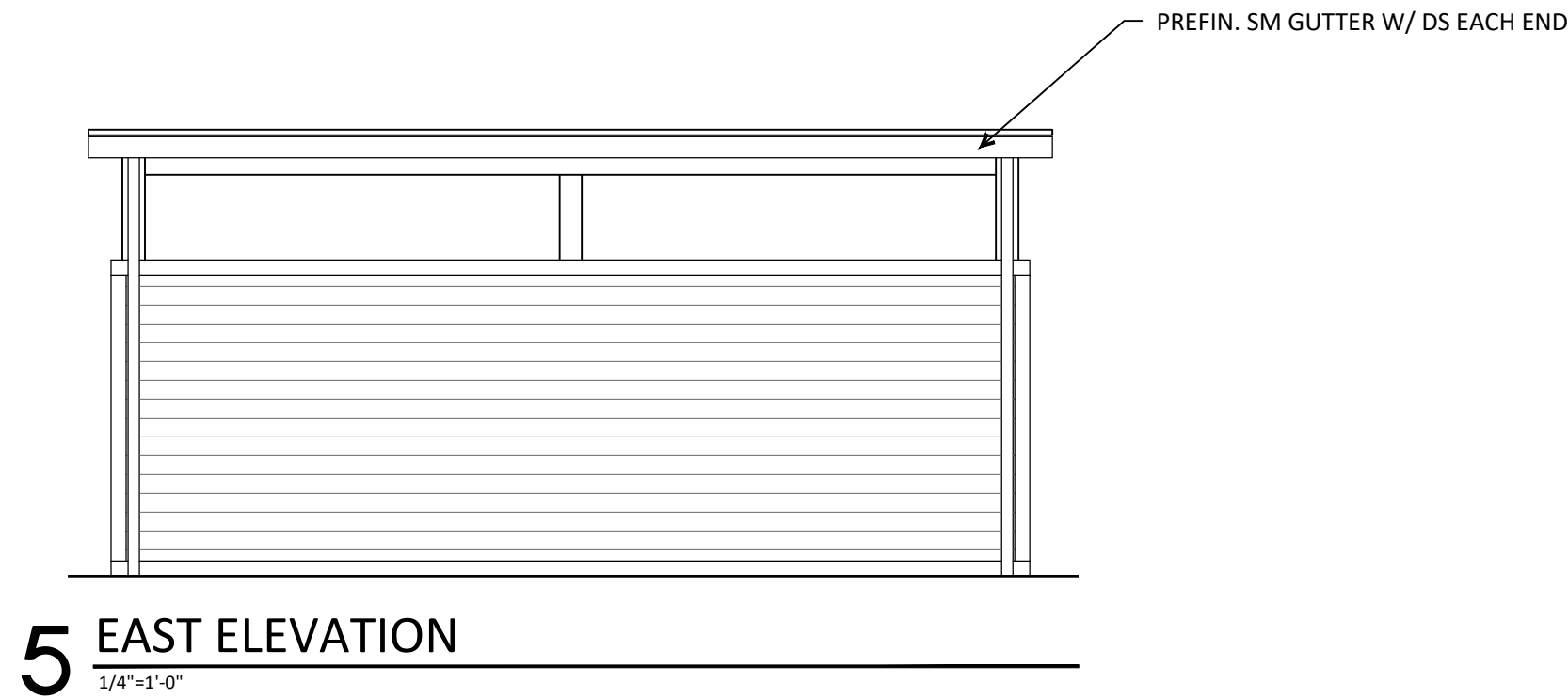
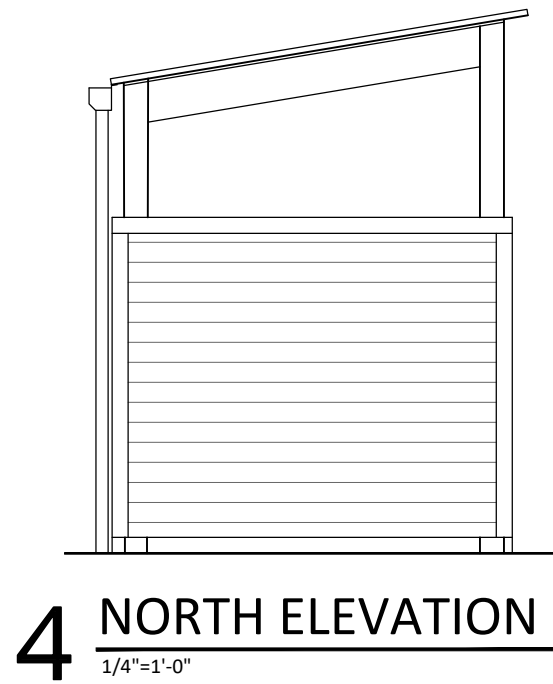
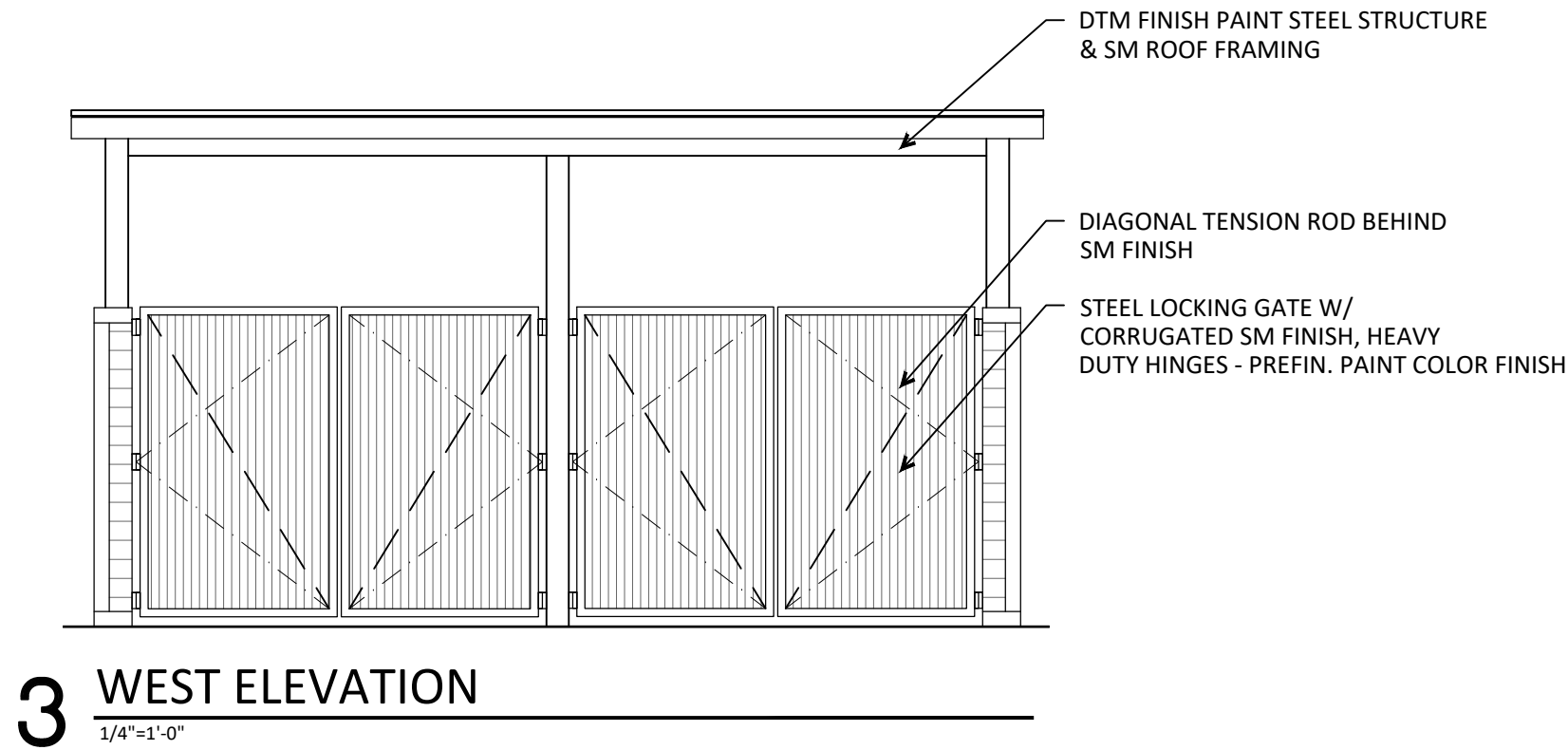
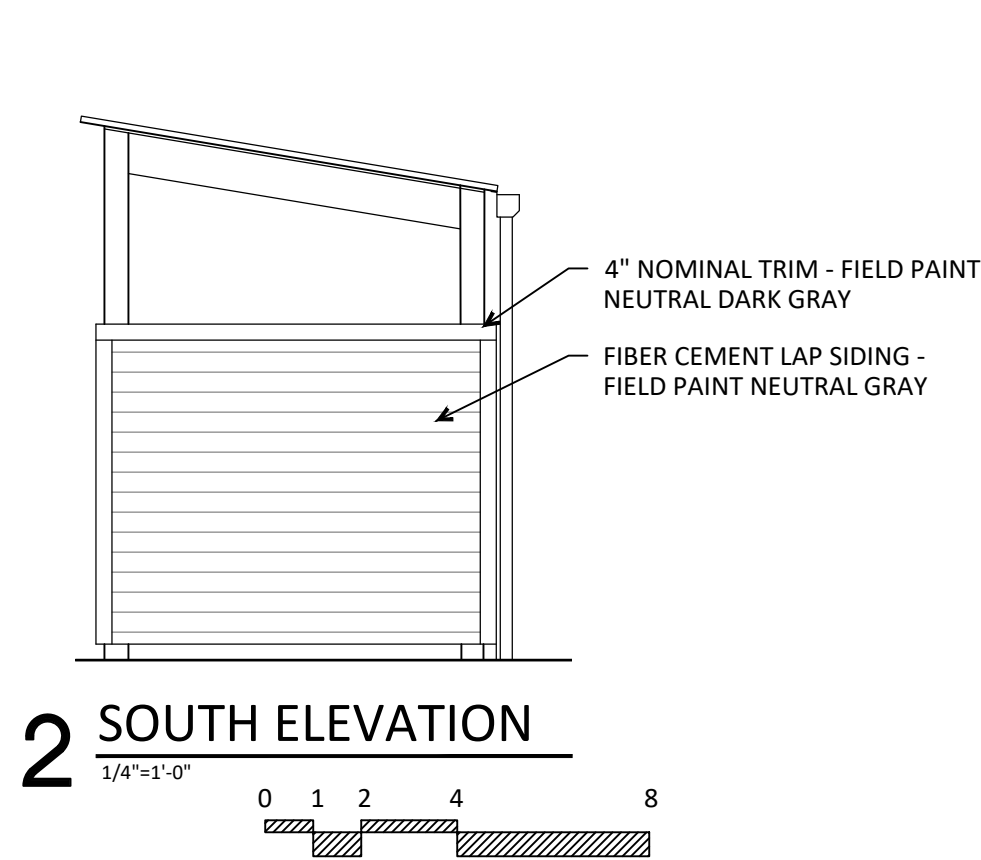
FLORENCE DESIGN REVIEW  
LOT 06600 - COFFEE KIOSK  
586 HWY 101, FLORENCE, OR 97439  
DESIGN REVIEW

JOB NO: 19199  
ISSUE DATE: 08 MAY 2020

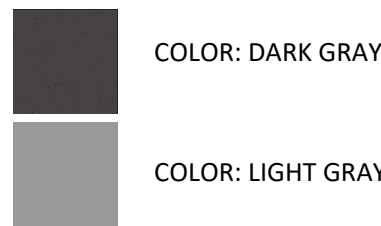
TRASH  
ENCLOSURE  
FLOOR PLAN  
&  
ELEVATIONS

A130

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MUTED EARTH-TONE COASTAL PACIFIC NORTHWEST PALETTE  
(FCC 10-6-6-4.G.). EXAMPLES BELOW



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PAVING & GRADING PLAN  
FOR  
FLORENCE COFFEE KIOSK & CAR WASH DEVELOPMENT  
TAX MAP 18-12-27-44  
TAX LOTS 6600 AND 6601  
FLORENCE, LANE COUNTY, OREGON

GENERAL NOTES:

1. THESE PLANS ARE PRELIMINARY AND ARE NOT TO BE USED FOR CONSTRUCTION IN THE FIELD.

2. SURVEY AND TOPO INFORMATION SHOWN WERE GATHERED BY OLSON & MORRIS. ELEVATIONS ARE BASED UPON LANE COUNTY BENCHMARK NO. 498 BRASS DISK AT THE INTERSECTION OF AIRPORT ROAD AND KINGWOOD STREET WITH A PUBLISHED ELEVATION 42.43' (NAVD88).

3. THIS MAP SHOULD NOT BE CONSIDERED A BOUNDARY SURVEY.

4. SIDEWALKS AND PLANTERS SHOWN ALONG HIGHWAY 101 ARE CURRENTLY UNDER CONSTRUCTION UNDER SEPARATE PROJECT NOT BY APPLICANT. APPLICANT PROPOSES TO CONSTRUCT SIDEWALK AND DRIVEWAY ON RHODODENDRON STREET WITHIN LIMITS SHOWN ON PLAN. SEE SHEET C-5.0 FOR DETAILS

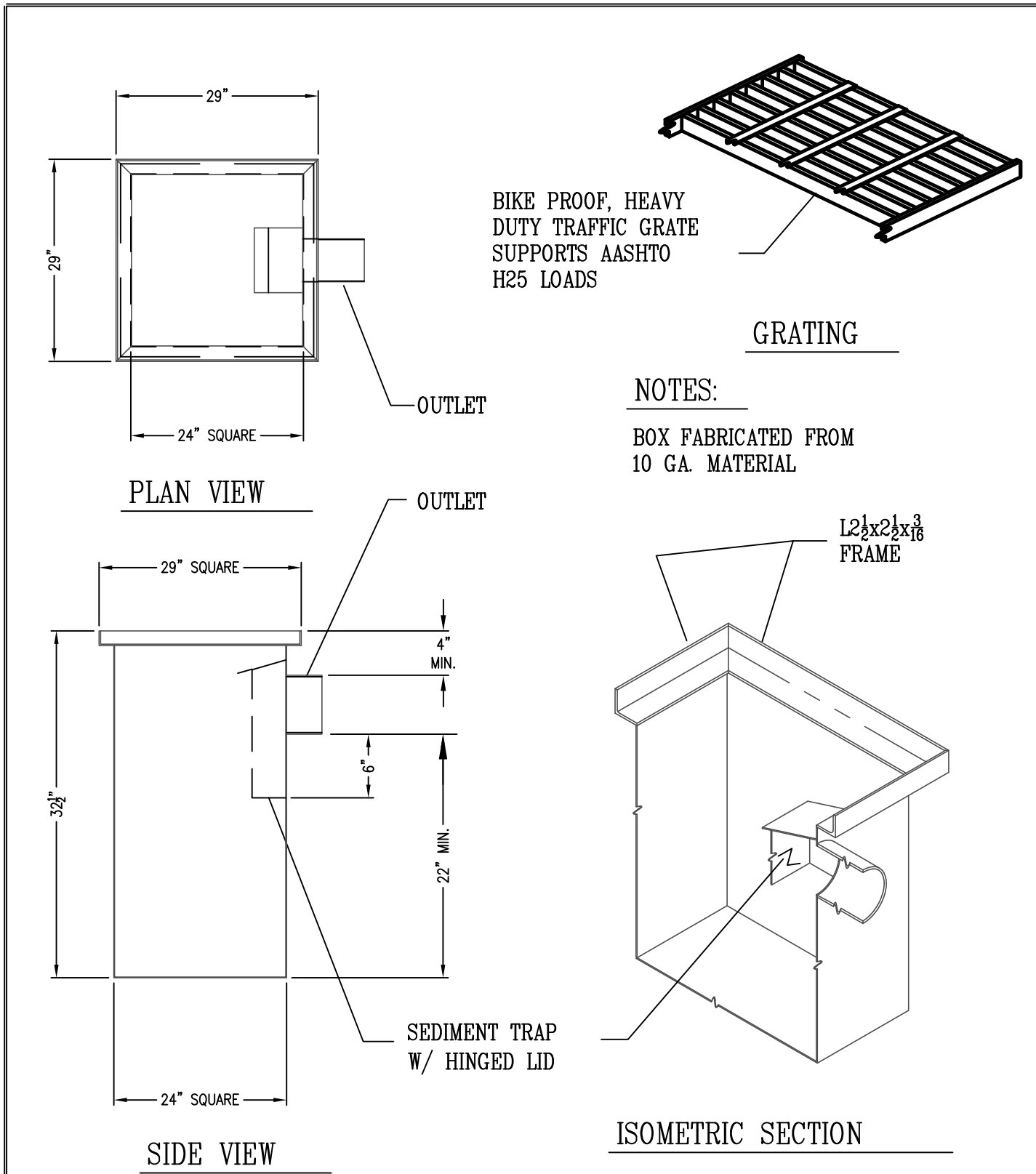
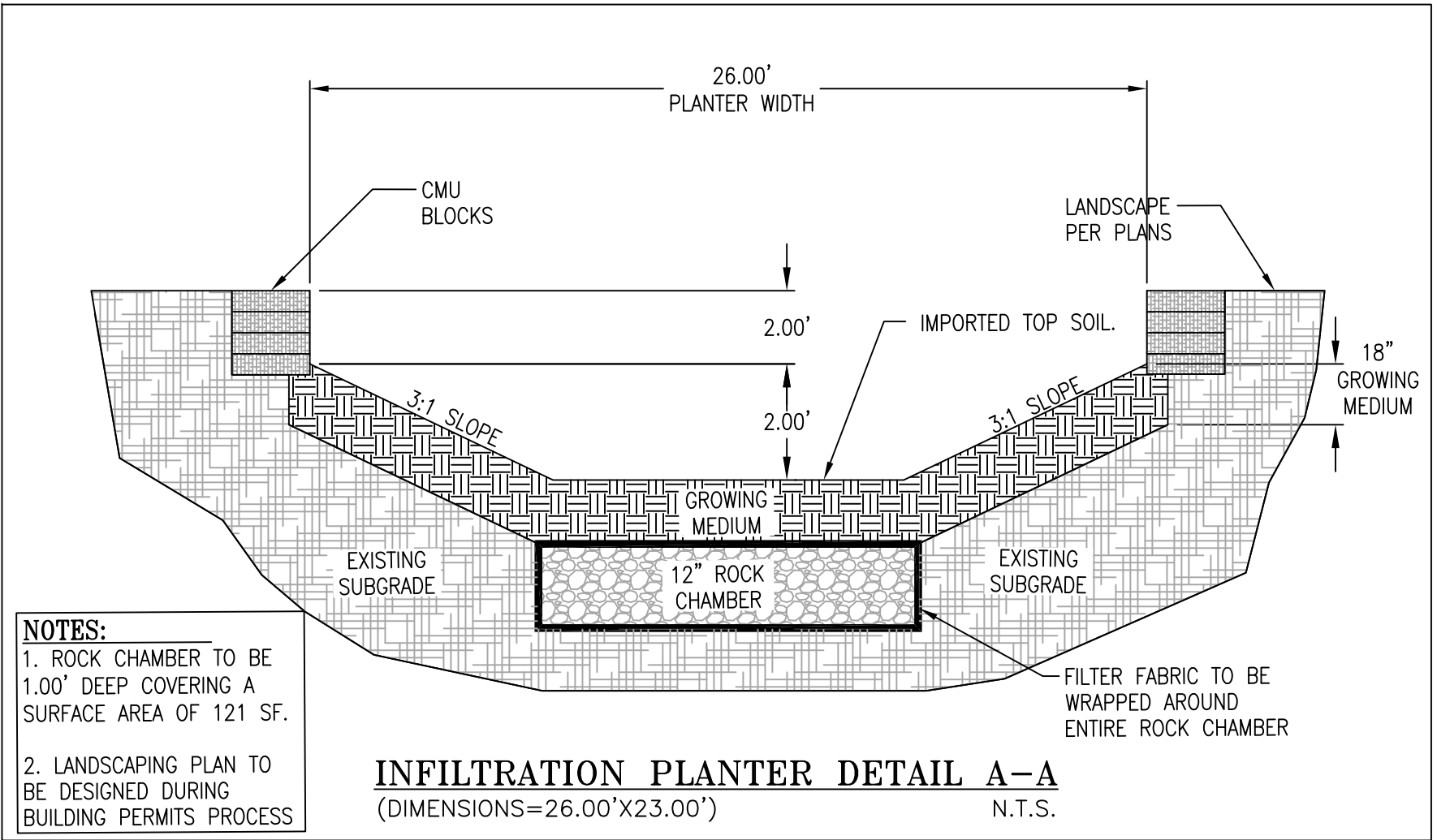
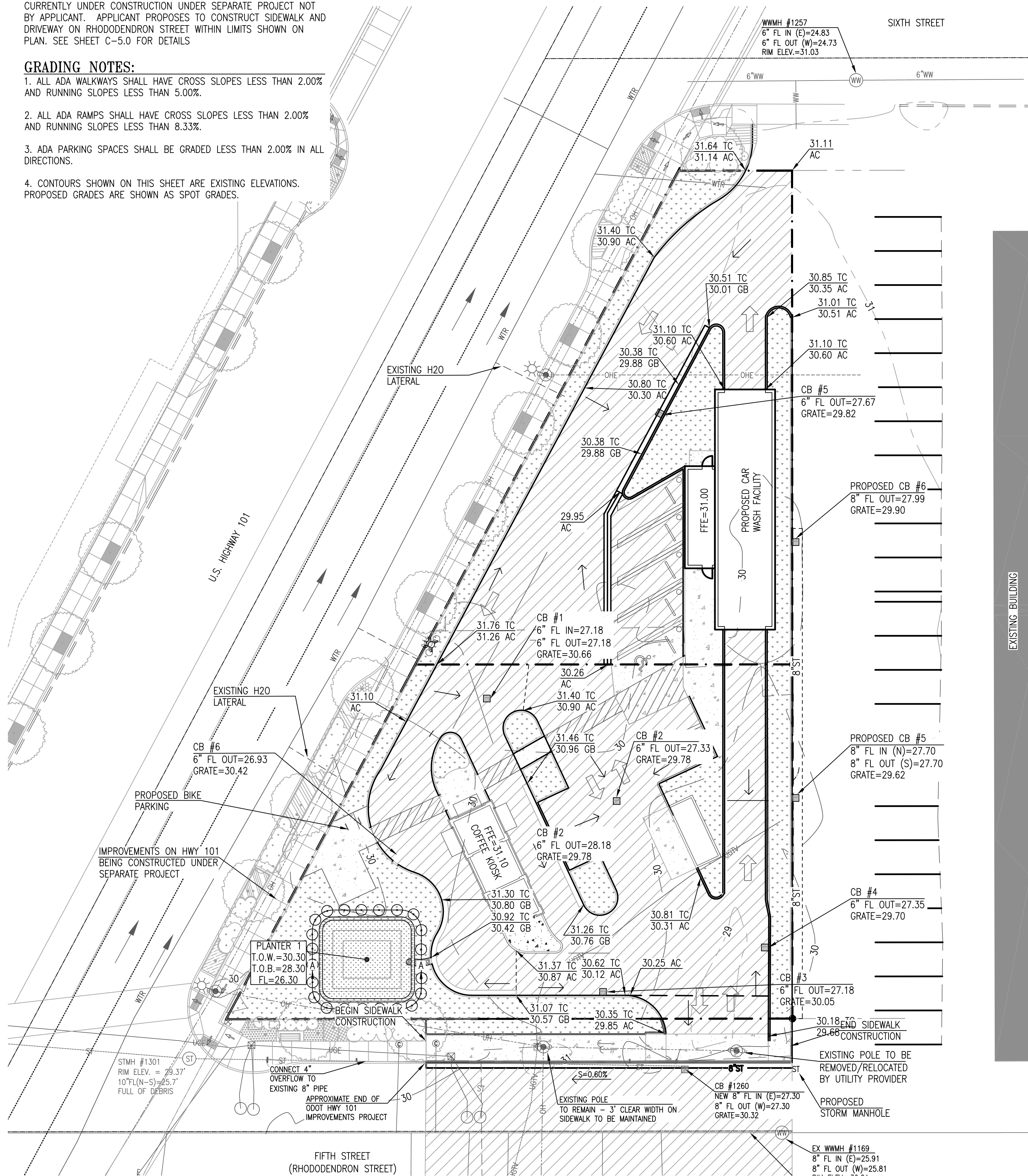
GRADING NOTES:

1. ALL ADA WALKWAYS SHALL HAVE CROSS SLOPES LESS THAN 2.00% AND RUNNING SLOPES LESS THAN 5.00%.

2. ALL ADA RAMPS SHALL HAVE CROSS SLOPES LESS THAN 2.00% AND RUNNING SLOPES LESS THAN 8.33%.

3. ADA PARKING SPACES SHALL BE GRADED LESS THAN 2.00% IN ALL DIRECTIONS.

4. CONTOURS SHOWN ON THIS SHEET ARE EXISTING ELEVATIONS. PROPOSED GRADES ARE SHOWN AS SPOT GRADES.



GRADING LEGEND

AC ASPHALT/CONCRETE  
CB CATCH BASIN  
CONC CONCRETE  
EG EXISTING GROUND  
FFE FINISH FLOOR ELEVATION  
FL FLOWLINE  
GB GUTTER BAR  
TC TOP OF CURB  
TOB TOP OF BANK  
VG VALLEY GUTTER  
DRAINAGE ARROWS

LEGEND

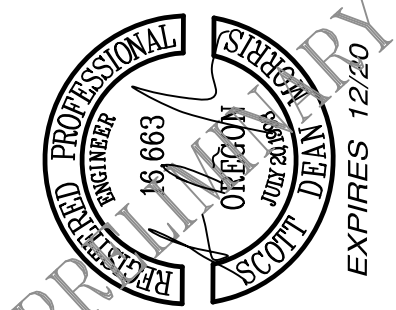
--- EXISTING BOUNDARY  
--- ADJACENT PROPERTIES  
--- EXISTING CURB LINE  
--- EXISTING FENCE  
8"W EXISTING WATER MAIN  
--- EXISTING WATER METER  
--- EXISTING WATER VALVE  
--- EXISTING FIRE HYDRANT  
8"WW EXISTING WASTEWATER SYSTEM  
C EXISTING CLEANOUT  
ST 24"SD EXISTING STORM DRAINAGE SYSTEM  
--- EXISTING CATCH BASIN  
--- EXISTING CURB INLET  
--- EXISTING STREET LIGHT  
--- UGE EXISTING UNDERGROUND ELECTRIC  
--- EXISTING TRANSFORMER  
--- PHN EXISTING TELEPHONE LINE  
--- 2"G EXISTING GAS MAIN  
--- EXISTING GAS VALVE  
--- PROPOSED WATER METER  
8"WW PROPOSED WASTEWATER LINE  
--- PROPOSED WASTEWATER MANHOLE  
--- PROPOSED WASTEWATER CLEANOUT  
--- PROPOSED STORM LINE  
--- PROPOSED STORM MANHOLE  
--- PROPOSED STORM CLEANOUT  
--- PROPOSED CURB INLET  
--- PROPOSED PAVED AREA  
--- PROPOSED CONCRETE  
--- PROPOSED LANDSCAPE BED

DESIGN REVIEW PLAN SET  
-NOT FOR CONSTRUCTION

A & O Engineering L.L.C.

CONSULTING ENGINEERS & SITE PLANNING

380 Q ST. SUITE 200  
SPRINGFIELD, OR 97477  
PHONE: (541) 302-9790  
info@aaoe-engine.com



Paving & Grading Plan

FOR  
Coffee Kiosk & Car Wash Dev.

Florence LANE COUNTY OREGON

PROJECT No. 5168

DRAWN BY: WAM

REVIEWED BY: KOM, SDM

PROJECT DATES:

1. 6-28-19

2. SR 4-2-20

SHEET

C-2.0

1. THESE PLANS ARE PRELIMINARY AND ARE NOT TO BE USED FOR CONSTRUCTION IN THE FIELD.

FLORENCE, LANE COUNTY, OREGON



1. ALL STORMWATER RUNOFF FROM NEW IMPERVIOUS SURFACES ON SUBJECT PROPERTIES TO BE TREATED VIA STORMWATER PLANTERS AS SHOWN ON PLAN.

2. SOILS ON SITE ARE WALDPORT-URBAN LAND COMPLEX WITH 0-12% SLOPES AND ARE CLASSIFIED AS HYDROLOGIC SOIL GROUP A PER WEB SOIL SURVEY.
3. INFILTRATION RATES ARE ESTIMATED TO BE GREATER THAN 20 IN/HR AT A DEPTH OF 5"-60" BELOW GROUND SURFACE PER WEB SOIL SURVEY.
4. AN INFILTRATION TEST SHALL BE PERFORMED ON-SITE AT BEGINNING OF CONSTRUCTION WHEN EQUIPMENT IS ON-SITE TO VERIFY ASSUMED INFILTRATION RATES. FACILITY SIZES WILL BE ADJUSTED AT THIS TIME IF NEEDED.
5. STORMWATER FROM PROPERTY TO EAST OF SITE IS PROPOSED TO BE COLLECTED AND ROUTED VIA CATCH BASINS EAST OF EASTERN PROPERTY LINE.

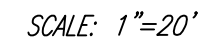
1. WATER LATERALS ARE EXISTING AND AVAILABLE TO THE PROPERTIES AS SHOWN ON THE PLANS.

2. WATER PIPE SIZES ARE PRELIMINARY AND FINAL DESIGNS WILL BE COMPLETED DURING THE BUILDING PERMIT PROCESS.
3. ALL PIPING WILL BE REQUIRED TO FOLLOW 2017 OREGON STATE PLUMBING SPECIALTY CODE.

1. IT IS PROPOSED TO CONNECT TO EXISTING SEWER LATERALS AS SHOWN TO SERVE COFFEE KIOSK AND TRASH ENCLOSURE.

2. NEW LATERAL IS PROPOSED TO SERVE CAR WASH FACILITY.
3. FINAL SEWER DESIGN WILL OCCUR DURING THE BUILDING PERMIT PROCESS.
4. ALL PIPING WILL BE REQUIRED TO FOLLOW 2017 OREGON STATE PLUMBING SPECIALTY CODE.

1. FRANCHISE UTILITIES WILL BE DESIGNED BY FRANCHISE UTILITY PROVIDERS DURING BUILDING PERMIT PROCESS.



|      |                        |
|------|------------------------|
| AC   | ASPHALT/CONCRETE       |
| CB   | CATCH BASIN            |
| CONC | CONCRETE               |
| EG   | EXISTING GROUND        |
| FFE  | FINISH FLOOR ELEVATION |
| FL   | FLOWLINE               |
| GB   | GUTTER BAR             |
| TC   | TOP OF CURB            |
| TOB  | TOP OF BANK            |
| VG   | VALLEY GUTTER          |
| TOW  | TOP OF WALL            |
| ←    | DRAINAGE ARROWS        |

|                                                                                                                   |                                |
|-------------------------------------------------------------------------------------------------------------------|--------------------------------|
|                                | EXISTING BOUNDARY              |
|                                | ADJACENT PROPERTIES            |
|                                | EXISTING CURB LINE             |
|                                | EXISTING FENCE                 |
|                                | EXISTING WATER MAIN            |
|                              | EXISTING WATER METER           |
|                              | EXISTING WATER VALVE           |
|                              | EXISTING FIRE HYDRANT          |
|                              | EXISTING WASTEWATER SYSTEM     |
|                              | EXISTING CLEANOUT              |
|                              | EXISTING STORM DRAINAGE SYSTEM |
|                              | EXISTING CATCH BASIN           |
|                              | EXISTING CURB INLET            |
|                              | EXISTING STREET LIGHT          |
|                              | EXISTING UNDERGROUND ELECTRIC  |
|                              | EXISTING TRANSFORMER           |
|                              | EXISTING TELEPHONE PEDESTAL    |
|                              | EXISTING TELEPHONE LINE        |
|   | EXISTING GAS MAIN              |
|                              | EXISTING GAS VALVE             |
|                              | PROPOSED WATER METER           |
|  | PROPOSED WASTEWATER LINE       |
|                              | PROPOSED WASTEWATER MANHOLE    |
|                              | PROPOSED WASTEWATER CLEANOUT   |
|  | PROPOSED STORM LINE            |
|                              | PROPOSED STORM MANHOLE         |
|                              | PROPOSED STORM CLEANOUT        |
|                              | PROPOSED CURB INLET            |
|                              | PROPOSED PAVED AREA            |
|                              | PROPOSED SIDEWALK              |

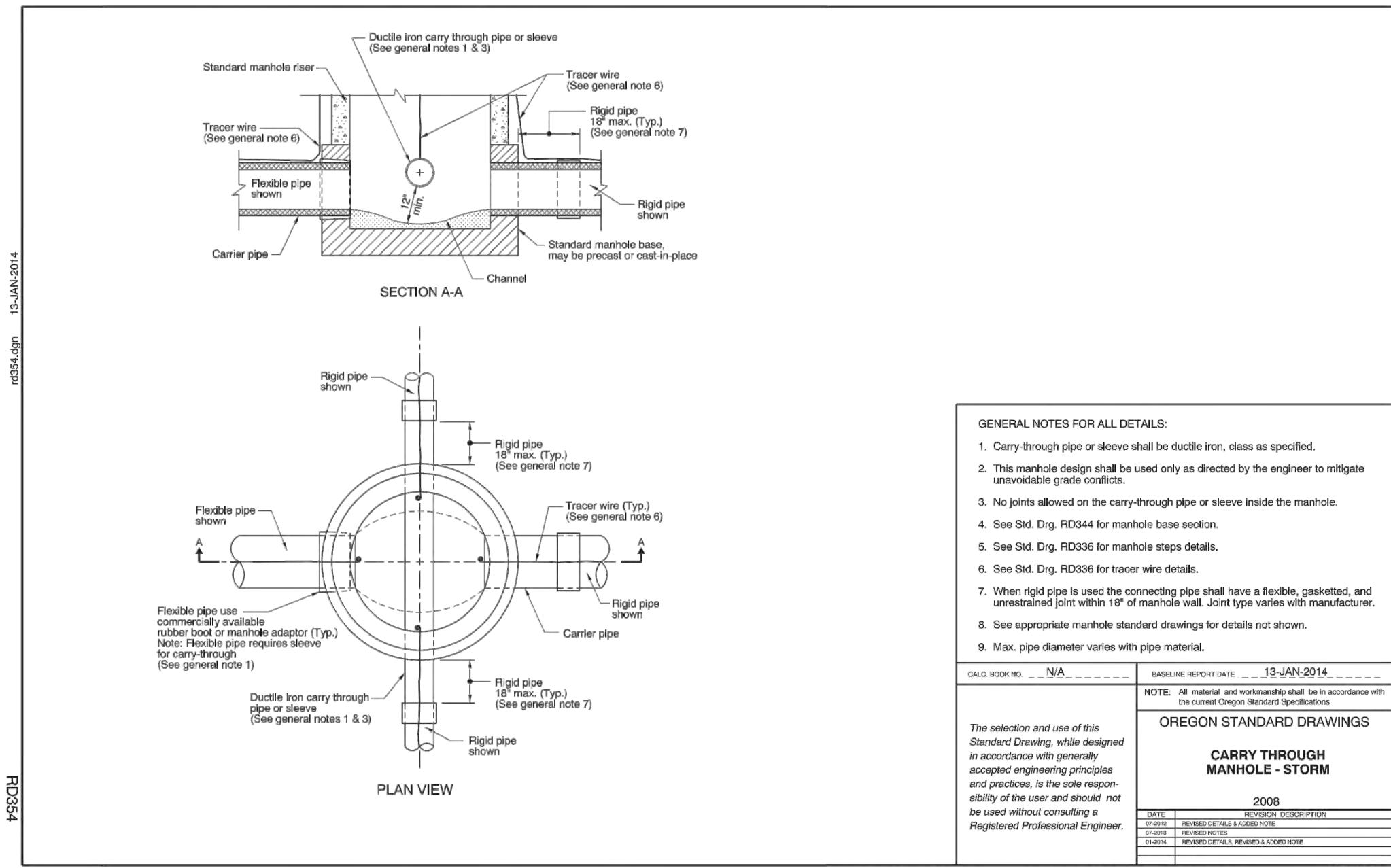
DESIGN REVIEW PLAN SET  
-NOT FOR CONSTRUCTION



Utility Plan  
FOR  
Coffee Kiosk & Car Wash Dev.  
Florence LANE COUNTY OREGON

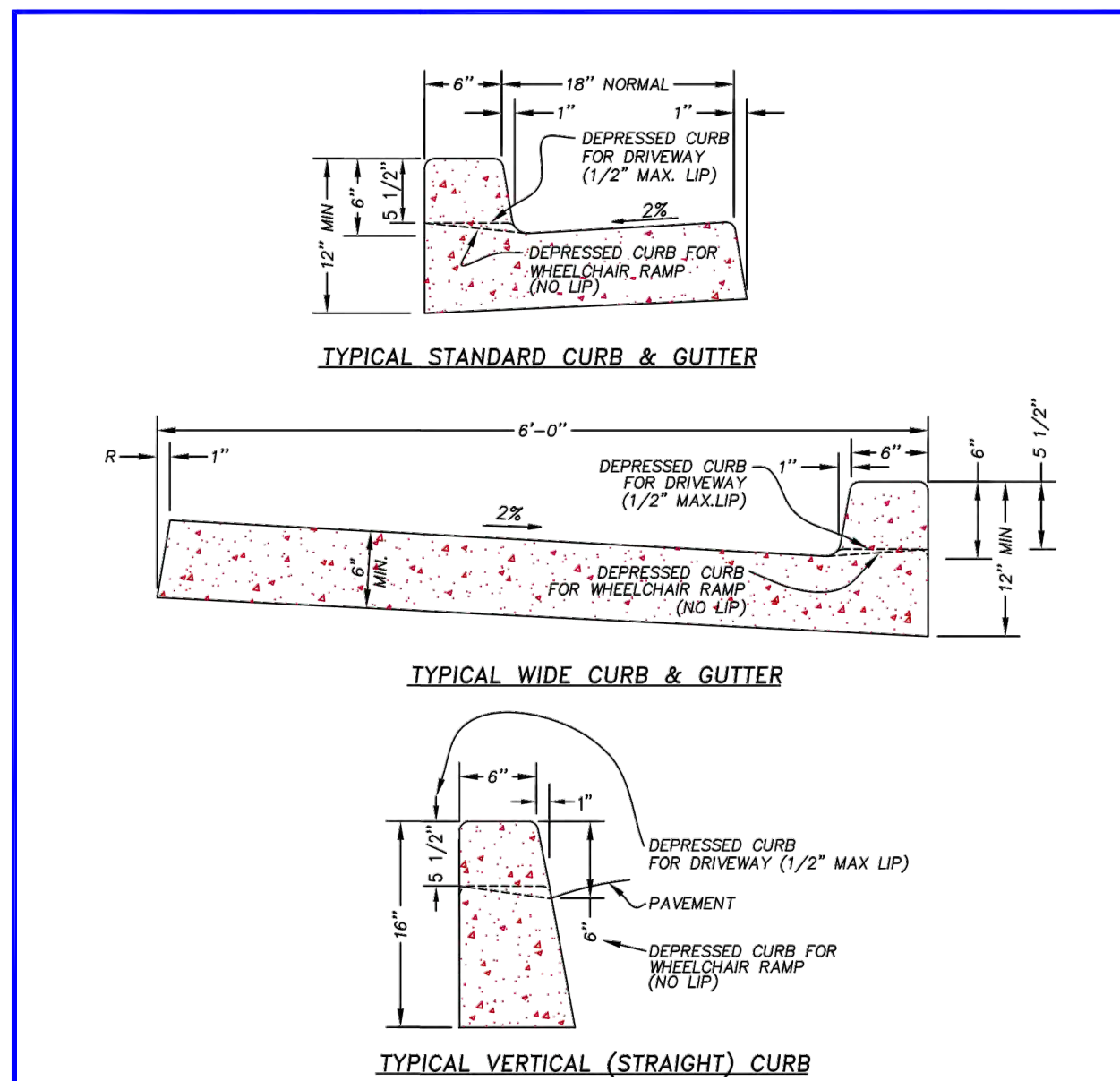
|                |              |
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| PROJECT No.    | 5168         |
| DRAWN BY:      | MAM          |
| REVIEWED BY:   | KDM, S       |
| PROJECT DATES: |              |
|                | 1. 6-26-19   |
|                | 2. SR 4-2-20 |

C-3.0



Effective Date: June 1, 2014 - November 30, 2014

RD354



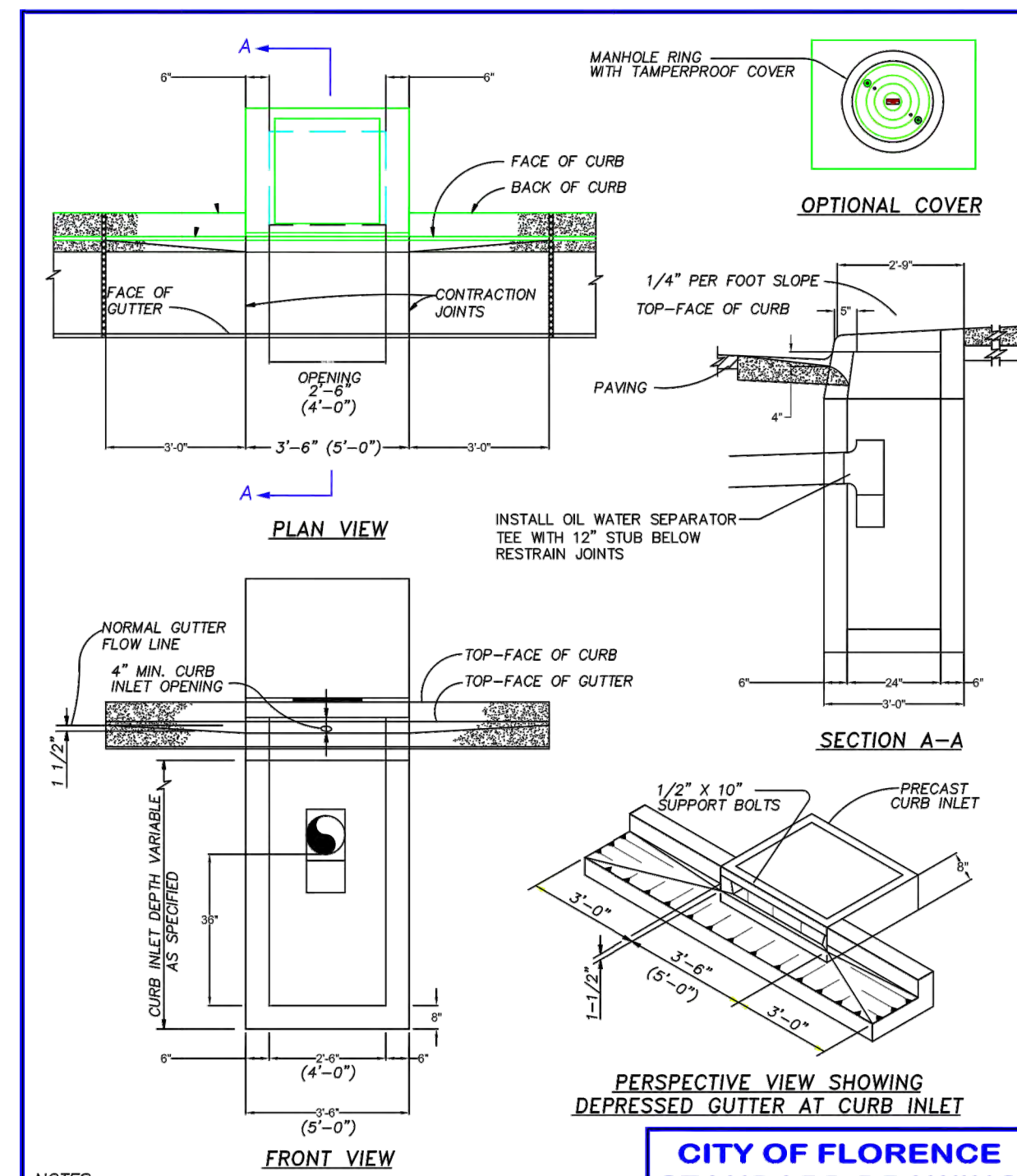
**CITY OF FLORENCE  
STANDARD DRAWING**

**CURB AND GUTTER**

DATE: REV-10-25-12

DRAWING NO. F-203

FILENAME: F-203.DWG

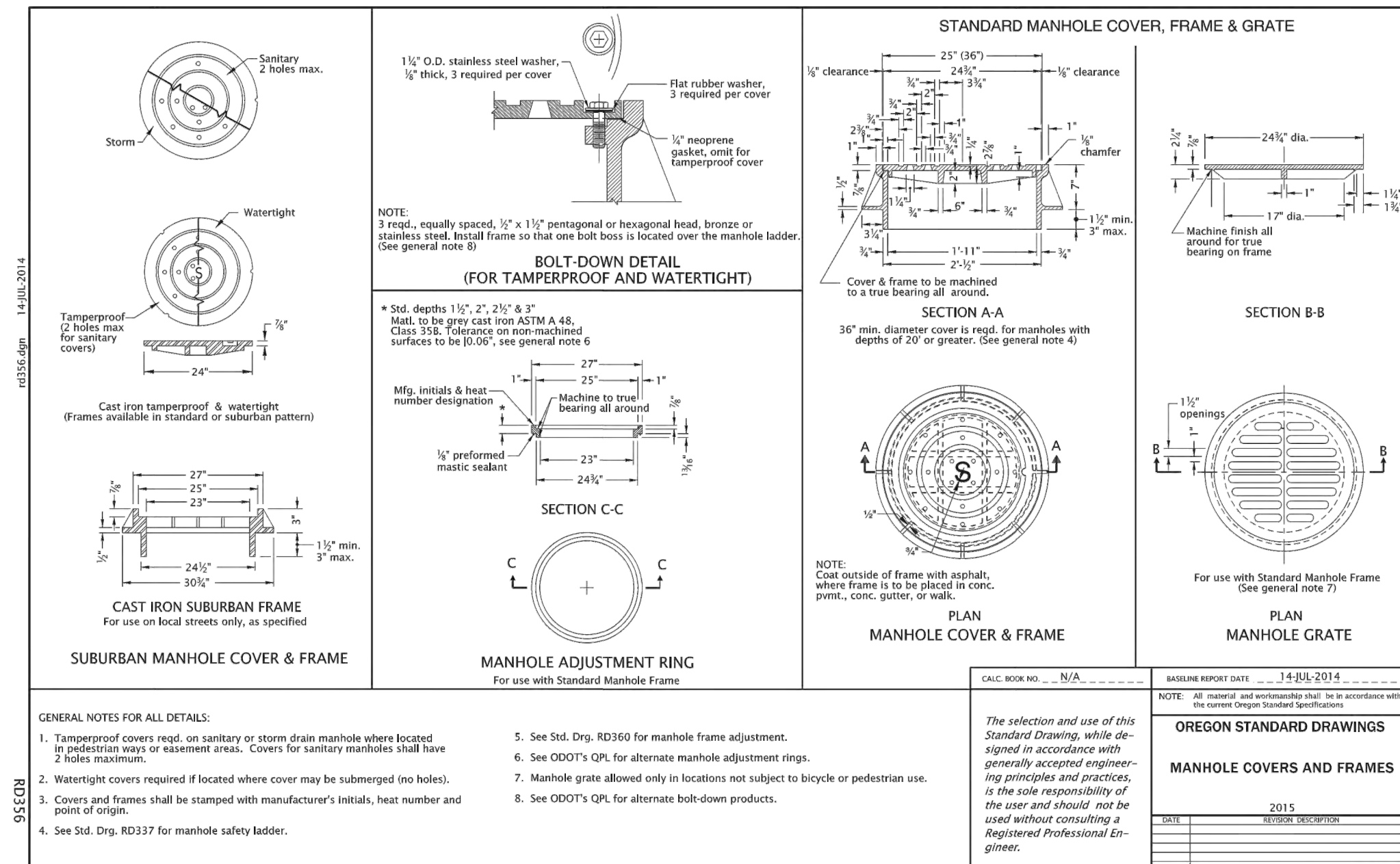


**CITY OF FLORENCE  
STANDARD DRAWING**

**PRECAST CURB INLET 1-1/2A, 2-1/2A 4A**

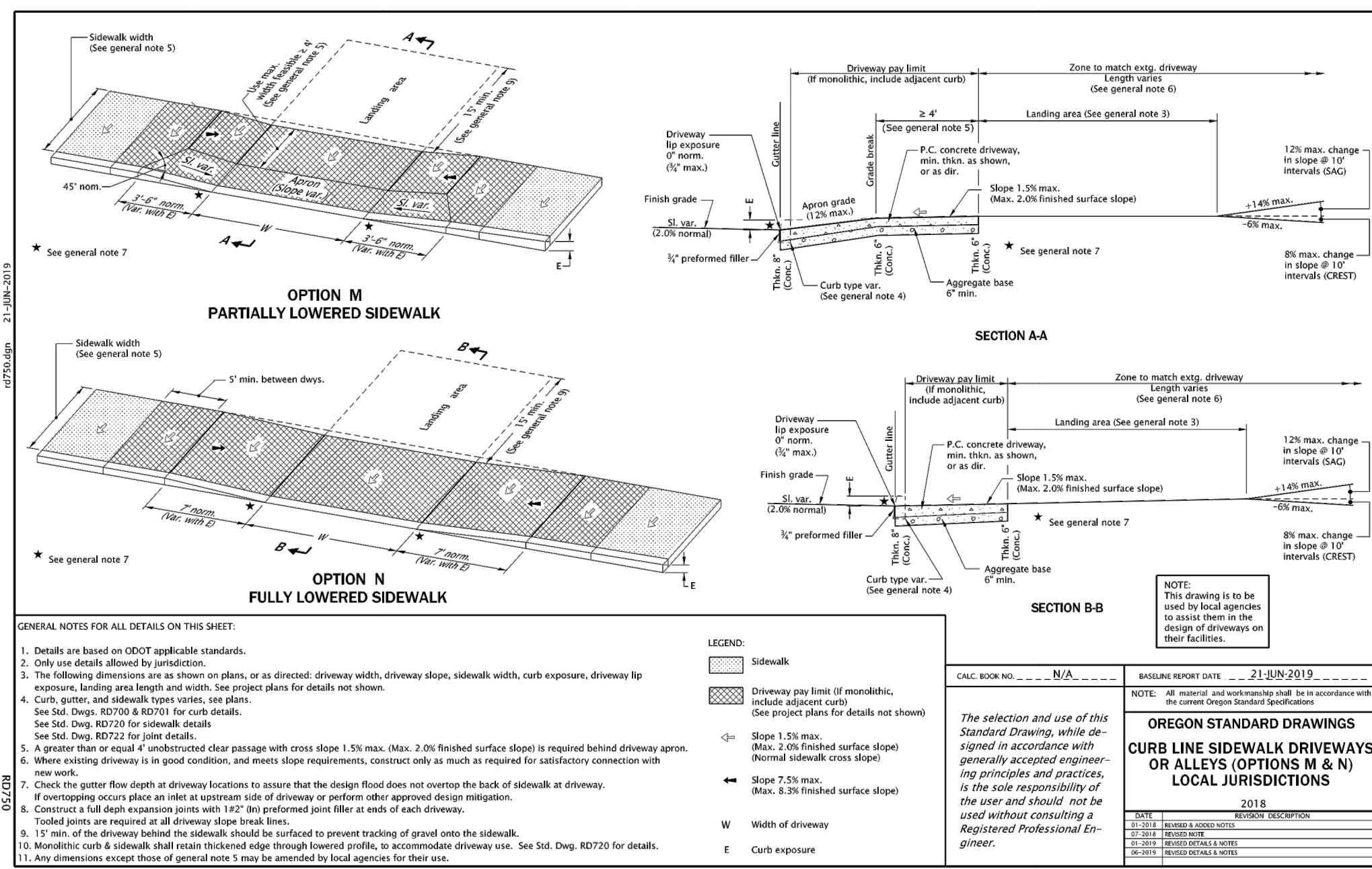
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DRAWING NO. F-304



Effective Date: June 1, 2017 - November 30, 2017

RD356



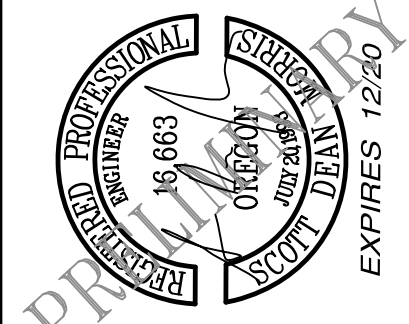
Effective Date: June 1, 2020 - November 30, 2020

RD750

A & O Engineering L.L.C.

CONSULTING ENGINEERS & SITE PLANNING

380 Q ST. SUITE 200  
SPRINGFIELD, OR 97477  
PHONE: (541) 302-9790  
info@a-o-engine.com



Civil Details

FOR

Coffee Kiosk & Car Wash Dev.

Florence

LANE COUNTY

OREGON

PROJECT No. 5168

DRAWN BY: MAM

REVIEWED BY: KOM, SDM

PROJECT DATES:

1. 6-28-19

2. SR 4-2-20

SHEET

C-4.0

STREET IMPROVEMENT PLAN  
FOR  
FLORENCE COFFEE KIOSK & CAR WASH DEVELOPMENT  
TAX MAP 18-12-27-44  
TAX LOTS 6600 AND 6601  
FLORENCE, LANE COUNTY, OREGON

# ROAD CONSTRUCTION NOTES:

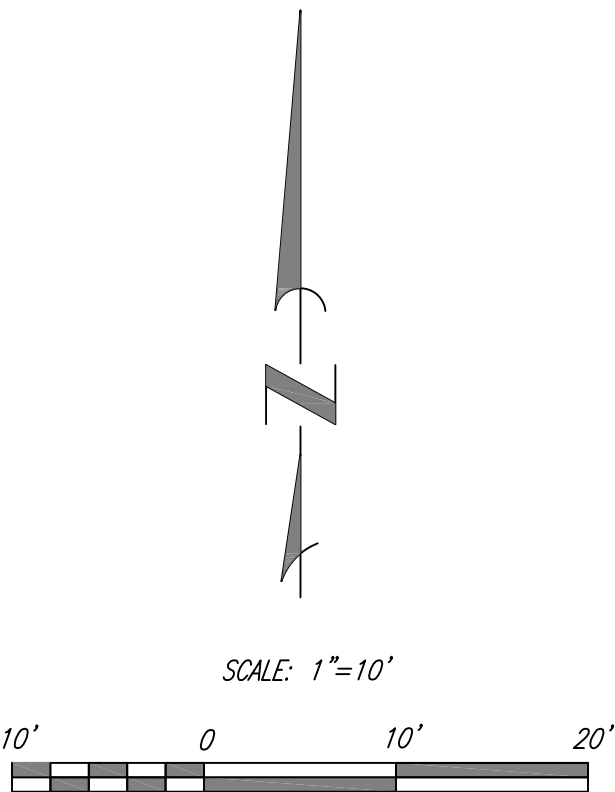
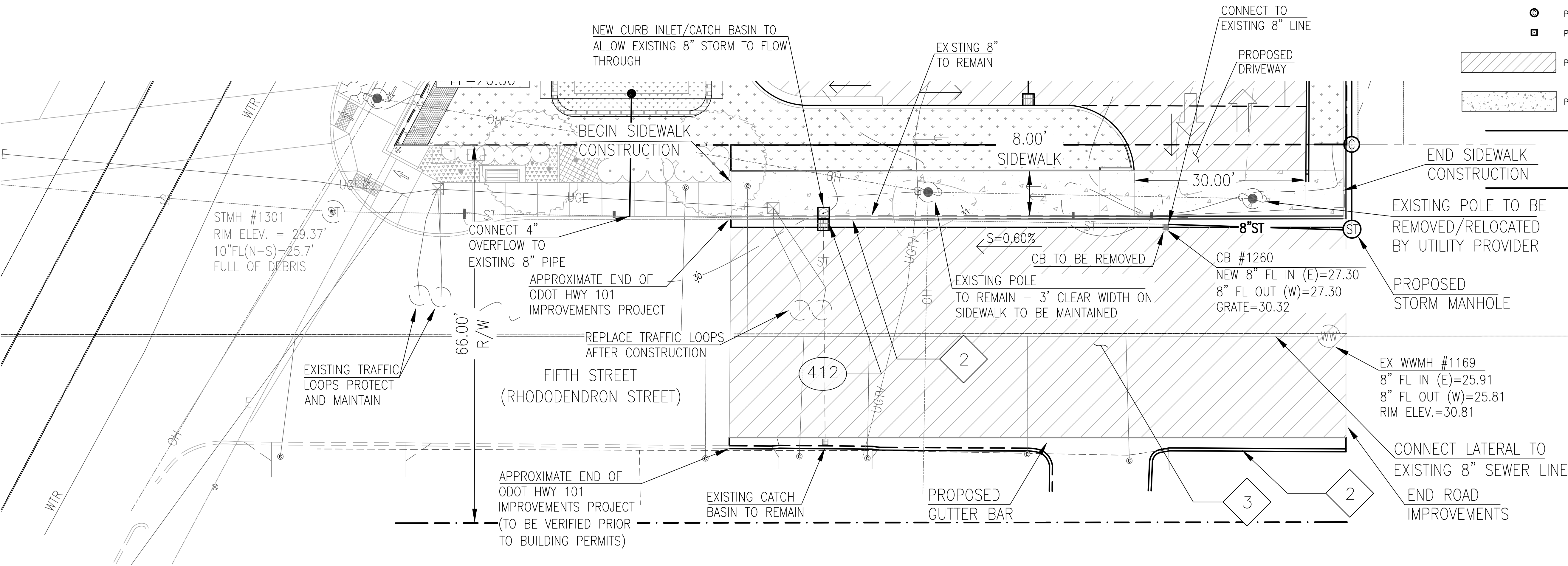
2. CONST. STANDARD CURB AND GUTTER PER CITY OF FLORENCE  
STANDARD DWG F-203. SEE SHEET C-4.0
3. REMOVE EXISTING AC, RE-GRADE AND COMPACT EXISTING ROCK  
BASE AND PAVE 3" AC.

# STORM CONSTRUCTION NOTES:

412. CONST. CURB INLET PER CITY OF FLORENCE STD.  
DRAWING F-304. SEE SHEET C-4.0

PUBLIC ROAD IMPROVEMENTS:

1. END OF HWY 101 IMPROVEMENTS PROJECT SHOWN ARE  
APPROXIMATE. SURVEY INFORMATION WILL BE GATHERED PRIOR TO  
BUILDING PERMITS TO ACCURATELY SHOW EXISTING IMPROVEMENTS.
2. PROPOSAL IS TO REPLACE CURB AND GUTTER ON BOTH SIDES OF  
ROADWAY. CITY OF FLORENCE TO SHARE IN THE COST FOR THE  
SOUTHERN HALF OF ROADWAY.
3. PER DISCUSSION WITH CITY STAFF, ROAD STRUCTURE UNDER 5TH  
STREET WILL BE ASSESSED BY CITY STAFF DURING CONSTRUCTION. IF  
SUITABLE STRUCTURE IS FOUND, EXISTING ROCK CAN BE RE-GRADED,  
COMPACTED, AND UTILIZED AS PAVEMENT BASES STRUCTURE. IF ROCK  
IS NOT SUITABLE FULL 3" AC OVER 8" OF ROCK WILL BE REQUIRED.
4. TRAFFIC LOOPS SHOWN WILL NEED TO BE REPLACED. CONTRACTOR  
SHALL COORDINATE WITH ODOT.



LEGEND

|           |                                |
|-----------|--------------------------------|
| ---       | EXISTING BOUNDARY              |
| - - - - - | ADJACENT PROPERTIES            |
| ---       | EXISTING CURB LINE             |
| -x-x-     | EXISTING FENCE                 |
| 8"W       | EXISTING WATER MAIN            |
|           | EXISTING WATER METER           |
|           | EXISTING WATER VALVE           |
|           | EXISTING FIRE HYDRANT          |
| 8"WW      | EXISTING WASTEWATER SYSTEM     |
| C         | EXISTING CLEANOUT              |
| ST        | EXISTING STORM DRAINAGE SYSTEM |
|           | EXISTING CATCH BASIN           |
|           | EXISTING CURB INLET            |
|           | EXISTING STREET LIGHT          |
| UGE       | EXISTING UNDERGROUND ELECTRIC  |
|           | EXISTING TRANSFORMER           |
| P         | EXISTING TELEPHONE PEDESTAL    |
| PHN       | EXISTING TELEPHONE LINE        |
| 2"G       | EXISTING GAS MAIN              |
|           | EXISTING GAS VALVE             |
| W         | PROPOSED WATER METER           |
| 8"WW      | PROPOSED WASTEWATER LINE       |
| WM        | PROPOSED WASTEWATER MANHOLE    |
| C         | PROPOSED WASTEWATER CLEANOUT   |
| 12"ST     | PROPOSED STORM LINE            |
| SM        | PROPOSED STORM MANHOLE         |
| C         | PROPOSED STORM CLEANOUT        |
|           | PROPOSED CURB INLET            |
|           | PROPOSED PAVED AREA            |
|           | PROPOSED SIDEWALK              |

DESIGN REVIEW PLAN SET  
-NOT FOR CONSTRUCTION

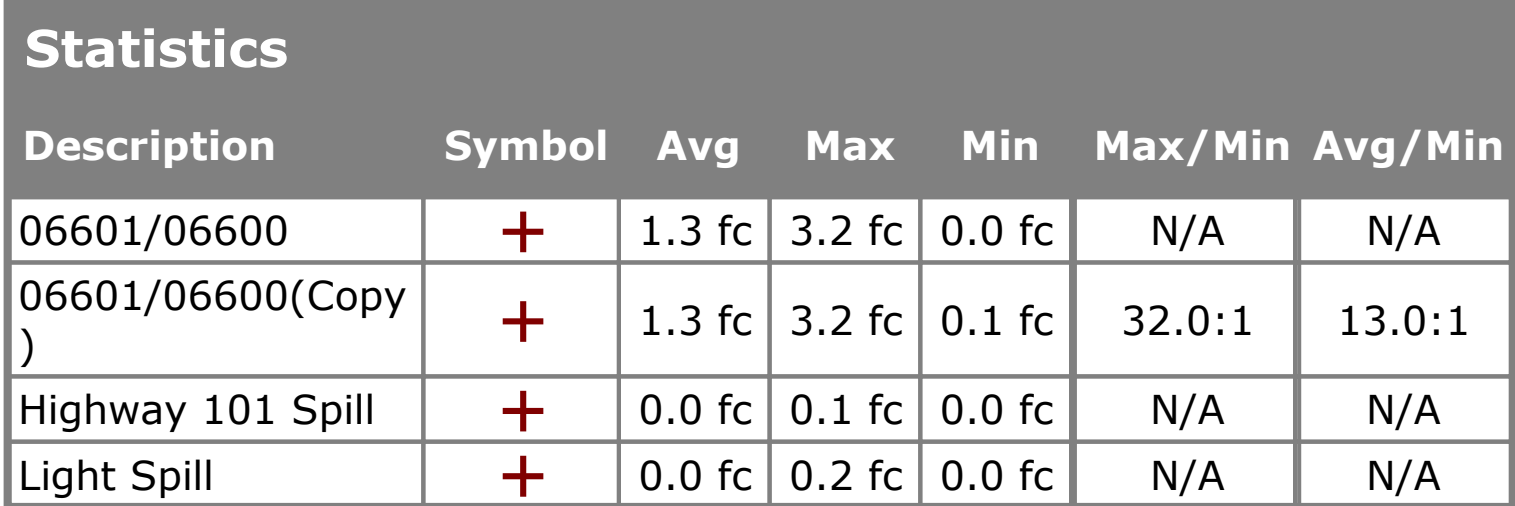
A & O Engineering L.L.C.



Street Improvement Plan  
FOR  
Coffee Kiosk & Car Wash Dev.  
Florence LANE COUNTY OREGON

|                       |
|-----------------------|
| PROJECT No. 5168      |
| DRAWN BY: WAM         |
| REVIEWED BY: KOM, SDM |
| PROJECT DATES:        |
| 1. 6-28-19            |
| 2. SR 4-2-20          |

SHEET  
C-5.0





PROJECT INFORMATION

SITE ADDRESS  
586 HWY 101, FLORENCE, OR 97439

MAP + TAXLOT  
18122744-6601

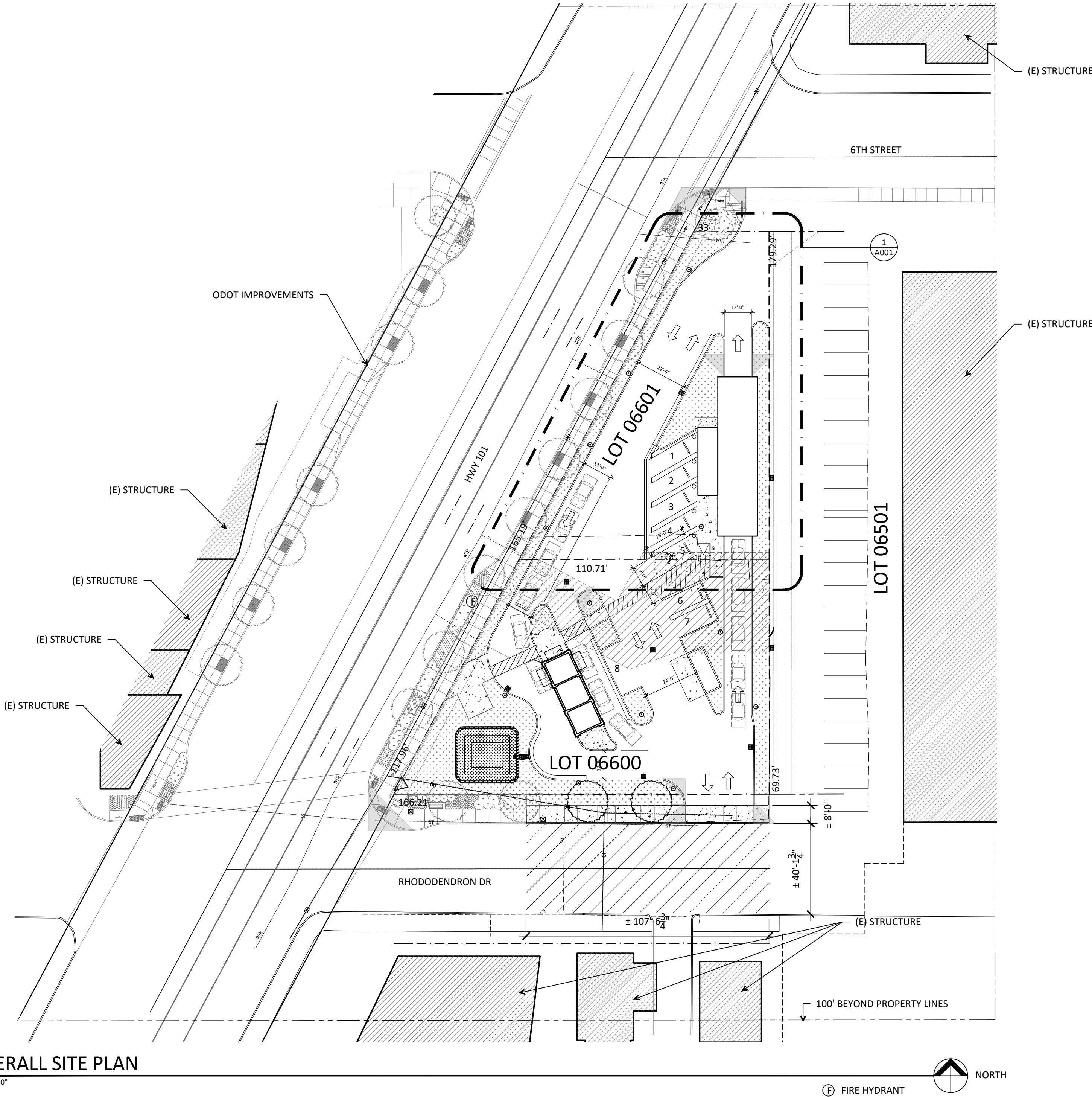
OWNER  
RANDLE DEVELOPING LLC  
2201 14TH CT  
NORTH BEND, OR 97459  
541.404.1298  
DIAMONDSHINEOREGON@GMAIL.COM

ARCHITECT  
GMA ARCHITECTS  
860 W PARK STREET, SUITE 300  
EUGENE, OREGON, 97401  
541.344.9157  
POC:  
JOSEPH E. MOORE, AIA  
JMOORE@GMA-ARCH.COM

CIVIL ENGINEER  
OLSON & MORRIS  
380 Q STREET, SUITE 200  
SPRINGFIELD, OREGON, 97477  
541.302.9790  
POC:  
KYLE MORRIS, EIT  
KYLEM@AO-ENGR.COM

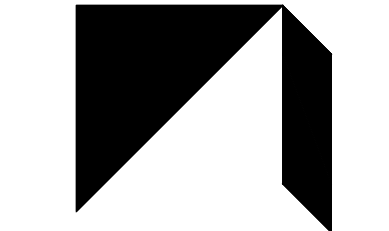
SHEET LIST

|       |                            |
|-------|----------------------------|
| G000  | COVER SHEET                |
| A001  | EXISTING CONDITIONS SURVEY |
| A010  | SITE PLAN                  |
| A120  | LANDSCAPE PLAN             |
|       | FLOOR PLAN & ELEVATIONS    |
| C-2.0 | PAVING AND GRADING PLAN    |
| C-3.0 | UTILITY PLAN               |
| C-4.0 | CIVIL DETAILS              |
| C-5.0 | STREET IMPROVEMENT PLAN    |
| L120  | SITE LIGHTING PLAN         |



1 OVERALL SITE PLAN

Exhibit D



GMA ARCHITECTS  
860 West Park Street / Ste 300  
Eugene / Oregon / 97401  
p 541.344.9157  
gma-arch.com

NOT FOR CONSTRUCTION

REVISIONS

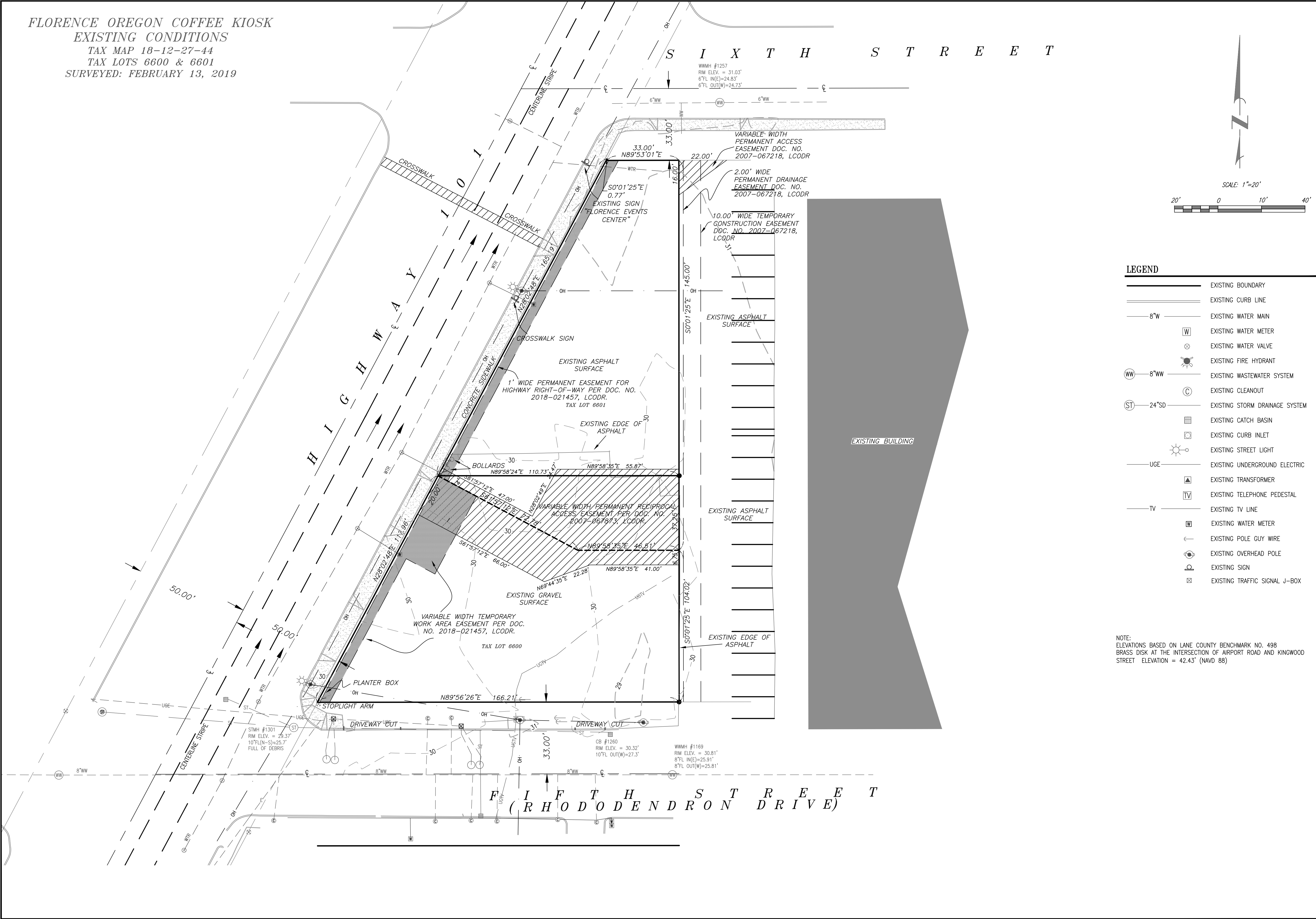
FLORENCE DESIGN REVIEW  
LOT 06601 - CARWASH  
586 HWY 101, FLORENCE, OR 97439  
DESIGN REVIEW

JOB NO: 19199  
ISSUE DATE: 08 MAY 2020

COVER SHEET

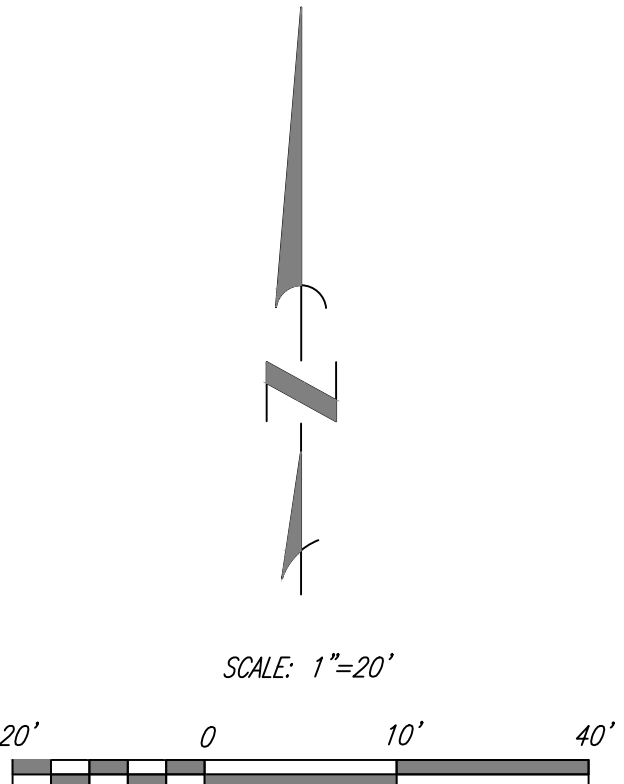
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FLORENCE OREGON COFFEE KIOSK  
EXISTING CONDITIONS  
TAX MAP 18-12-27-44  
TAX LOTS 6600 & 6601  
SURVEYED: FEBRUARY 13, 2019



| LEGEND |                                |
|--------|--------------------------------|
|        | EXISTING BOUNDARY              |
|        | EXISTING CURB LINE             |
|        | EXISTING WATER MAIN            |
|        | EXISTING WATER METER           |
|        | EXISTING WATER VALVE           |
|        | EXISTING FIRE HYDRANT          |
|        | EXISTING WASTEWATER SYSTEM     |
|        | EXISTING CLEANOUT              |
|        | EXISTING STORM DRAINAGE SYSTEM |
|        | EXISTING CATCH BASIN           |
|        | EXISTING CURB INLET            |
|        | EXISTING STREET LIGHT          |
|        | EXISTING UNDERGROUND ELECTRIC  |
|        | EXISTING TRANSFORMER           |
|        | EXISTING TELEPHONE PEDESTAL    |
|        | EXISTING TV LINE               |
|        | EXISTING WATER METER           |
|        | EXISTING POLE GUY WIRE         |
|        | EXISTING OVERHEAD POLE         |
|        | EXISTING SIGN                  |
|        | EXISTING TRAFFIC SIGNAL J-BOX  |

NOTE:  
ELEVATIONS BASED ON LANE COUNTY BENCHMARK NO. 498  
BRASS DISK AT THE INTERSECTION OF AIRPORT ROAD AND KINGWOOD  
STREET ELEVATION = 42.43' (NAVD 88)



Civil Engineering  
Land Surveying  
& Site Planning

REGISTERED  
PROFESSIONAL  
LAND SURVEYOR

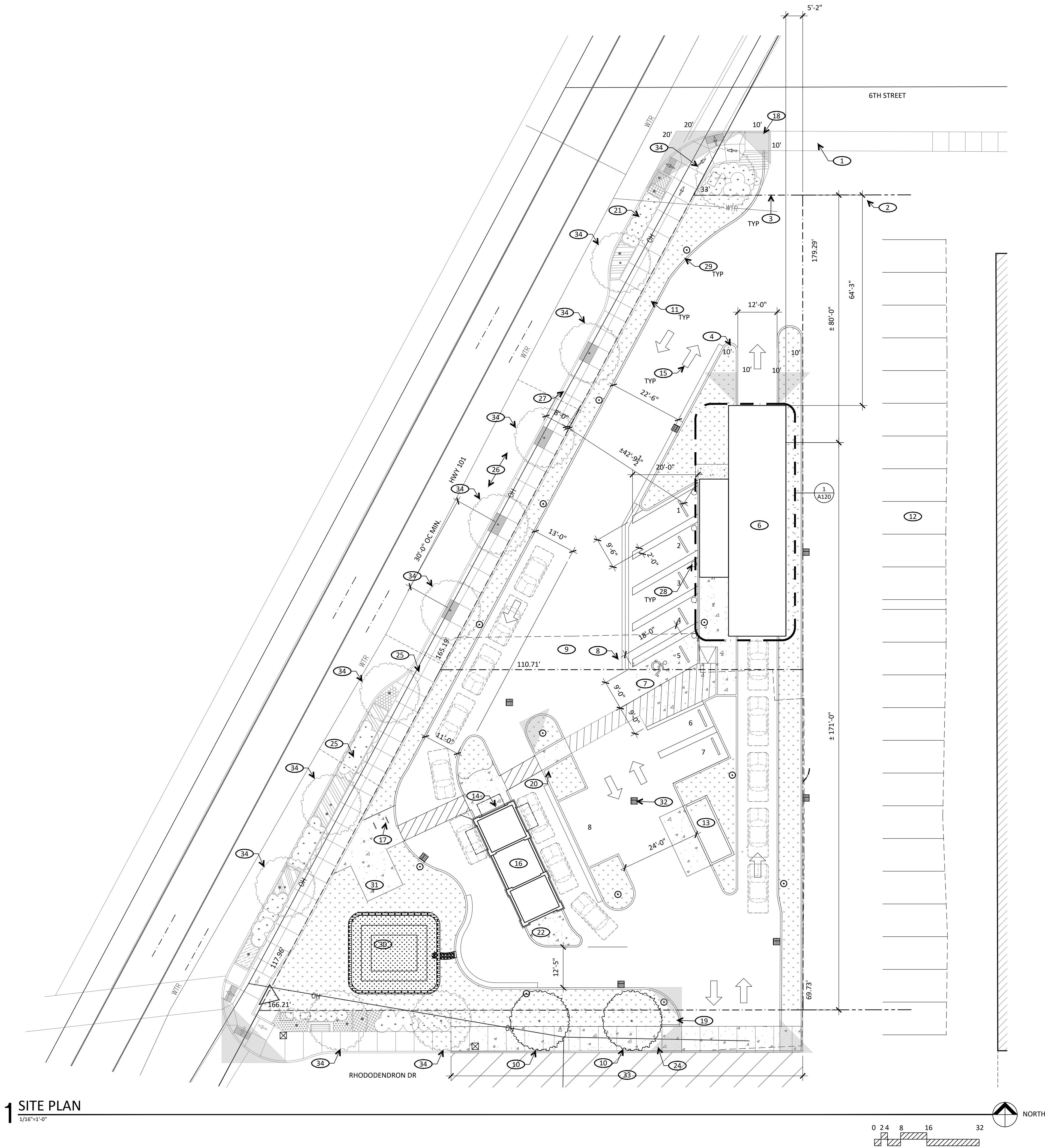
*James B. Olson*

OREGON  
JULY 10, 1964  
LAWRENCE B. OLSON  
655  
RENEWS: 12-31-2020

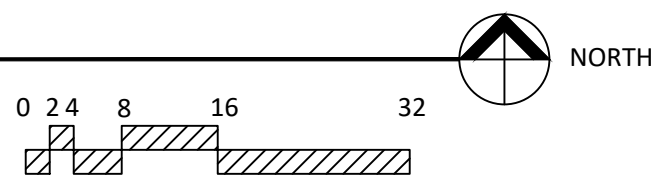
FLORENCE COFFEE KIOSK  
EXISTING CONDITIONS  
FLORENCE, LANE COUNTY, OREGON

|              |                   |
|--------------|-------------------|
| DATE:        | FEBRUARY 13, 2019 |
| PROJECT No:  | 5168              |
| SCALE:       | HORIZ 1"=20'      |
| DRAWN BY:    | NRC               |
| DESIGNED BY: |                   |
| REVIEWED BY: | LBO               |

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1 SITE PLAN  
1/16"=1'-0"



GENERAL NOTES

1. NO EXISTING VEGETATION OR FENCES ON LOT
2. 85'-0" QUEUE LENGTH AT CARWASH

KEY NOTES

1. MAINTAIN (E) DRIVEWAY EASEMENT
2. SHARED DRIVEWAY ACCESS EASEMENT
3. PROPERTY LINE
4. LANDSCAPE AREA, W/  
AUTOMATIC IRRIGATION SYSTEM
5. STORMWATER TREATMENT FACILITY, SEE CIVIL
6. DRIVE-THROUGH CAR WASH
7. ADA PARKING W/ ACCESS AISLE
8. EASEMENT TO BE VACATED, SEE SURVEY
9. MAINTAIN 24' WIDE TRAVEL LANE
10. STREET TREE, SEE LANDSCAPE PLAN
11. LANDSCAPING, SEE LANDSCAPE PLAN

12. EXISTING PARKING
13. TRASH ENCLOSURE
14. WALK-UP WINDOW FOR PEDESTRIAN ACCESS
15. DIRECTIONAL TRAFFIC ARROW PAVEMENT MARKING
16. COFFEE KIOSK
17. SHORT TERM BIKE PARKING
18. VISION CLEARANCE AREA - NO VISUAL OBSTRUCTION BETWEEN 2'-6" & 8'-0" IN HEIGHT
19. POLE MOUNT STOP SIGN
20. POLE MOUNT PEDESTRIAN CROSSING SIGN
21. STREET PROFILE, LANDSCAPING, AND SIDEWALK DESIGN AS SHOWN ARE APPROXIMATE - PUBLIC IMPROVEMENTS UNDERWAY AT HIGHWAY 101 AT TIME DRAWING PREPARED

22. CONCRETE LANDING AT EMPLOYEE ACCESS
23. DASHED LINED INDICATES ABANDONED DRIVEWAY ACCESS
24. SIDEWALK RAMPS:  
MAX SLOPE: 1:12 (8.3%)  
CROSS SLOPE MAX: 1:50 (2%)
25. DASHED LINE INDICATES ABANDONED DRIVEWAY ACCESS AS PART OF HIGHWAY 101 IMPROVEMENTS
26. ON-STREET PARKING
27. POWER LINE TO BE DEMOLISHED
28. CAR VACUUM
29. POLE MOUNT SITE LIGHT FIXTURE ON CONCRETE BASE, SEE LIGHTING PLAN
30. STORM WATER TREATMENT FACILITY, SEE CIVIL
31. PEDESTRIAN SEATING AREA
32. CATCH BASIN, SEE CIVIL
33. SEE CIVIL FOR WORK IN PUBLIC WAY
34. EXISTING STREET TREE

LEGEND

- LANDSCAPE AREA
- CONCRETE FILL

NOT FOR CONSTRUCTION

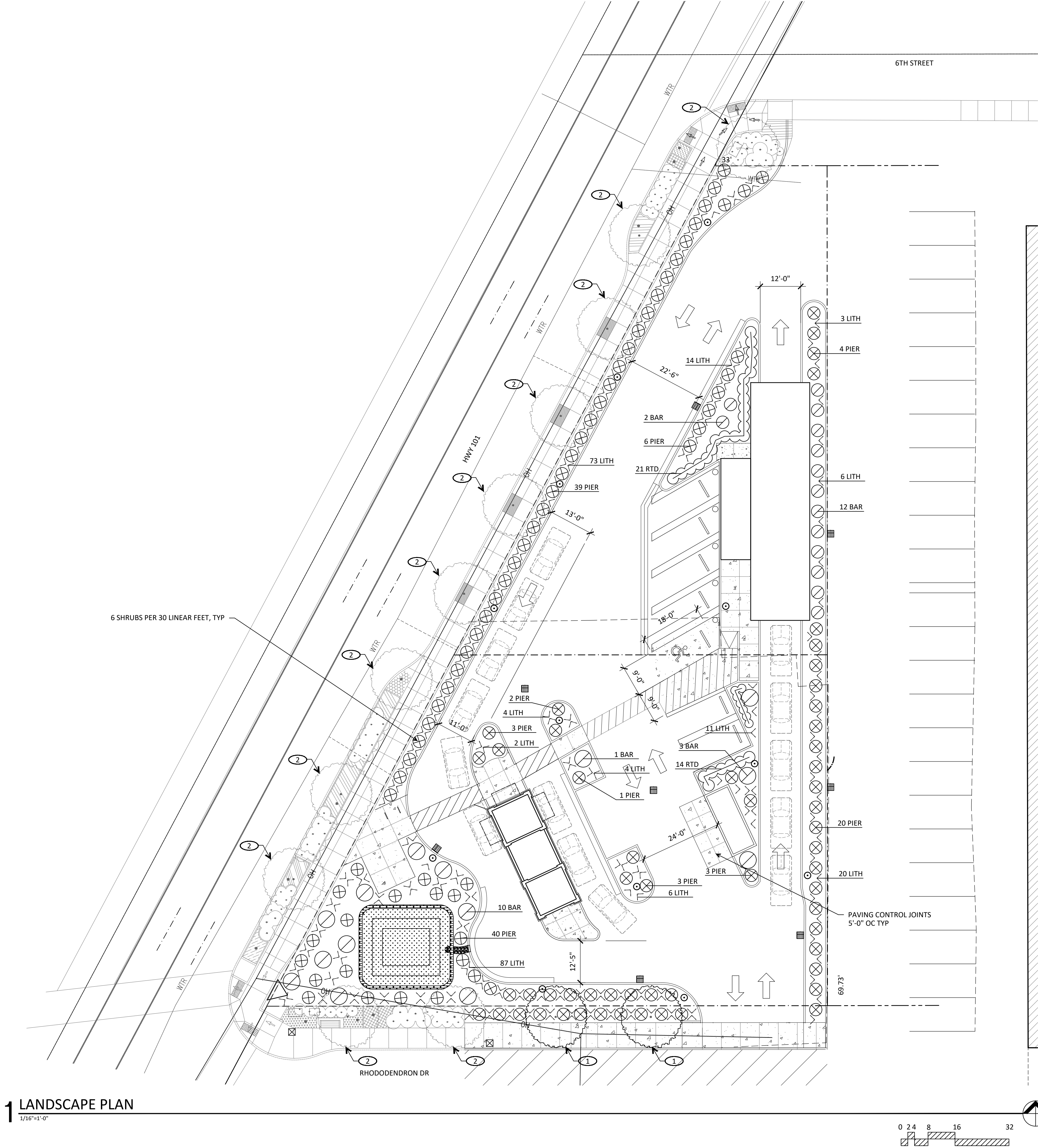
REVISIONS

FLORENCE DESIGN REVIEW  
LOT 06601 - CARWASH  
586 HWY 101, FLORENCE, OR 97439  
DESIGN REVIEW

JOB NO: 19199  
ISSUE DATE: 08 MAY 2020

SITE PLAN

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1 LANDSCAPE PLAN  
1/16"=1'-0"

GENERAL NOTES

1. NO EXISTING VEGETATION OR FENCES ON LOT.
2. TOP SOIL MIX FOR ALL PLANTS, UON
3. PLANT SPECIES, SIZES, QUANTITIES AND LOCATIONS ARE CONCEPTUAL AND GENERALLY PROVIDED TO ADDRESS DESIGN REVIEW AND ARE PROVIDED FOR REFERENCE ONLY. FINAL PLANTING PLANS WILL BE PROVIDED AT THE TIME OF THE BUILDING PERMIT SUBMITTAL IN COMPLIANCE WITH ALL APPLICABLE CODE REQUIREMENTS AND CONDITIONS OF APPROVAL.
4. SEE CIVIL PLANS FOR GRADING AND STORMWATER FACILITY DOCUMENTATION
5. FINAL PLANTING DESIGN SUBJECT TO PLANT AVAILABILITY FROM LOCAL AREA NURSERIES

KEYNOTES

- 1 (N) STREET TREES TO MATCH ODOT IMPROVEMENT SPECIES. MINIMUM 2" THICK CALIPER MEASURED 6" ABOVE GRADE AT TIME OF PLANTING
- 2 EXISTING STREET TREES PER ODOT IMPROVEMENT

IRRIGATION SYSTEM

1. AUTOMATIC, UNDERGROUND IRRIGATION SYSTEM WILL BE PROVIDED FOR ALL LAWN AND PLANT BED AREAS
2. SYSTEM WILL PROVIDE HEAD TO HEAD COVERAGE
3. SYSTEM WILL PROVIDE SEPERATE ZONES FOR LAWN AND SCRUB AREAS
4. HEAD LAYOUT WILL MINIMIZE OVERSPRAY ONTO PAVED SURFACES

PLANTING SCHEDULE

| KEY  | COMMON NAME      | MIN. SIZE |
|------|------------------|-----------|
| PIER | PIERIS           | 3 GAL     |
| BAR  | BARBERRY         | 5 GAL     |
| RTD  | RED TWIG DOGWOOD | 3 GAL     |
| LITH | LITHODORA        | 4" POTS   |
| ALR  | RED ALDER        | 2" CAL.   |

LEGEND

- PIERIS
- BARBERRY
- RED TWIG DOGWOOD
- LITHODORA

FLORENCE DESIGN REVIEW  
586 HWY 101, FLORENCE, OR 97439  
DESIGN REVIEW

JOB NO: 19199  
ISSUE DATE: 07 MAY 2020

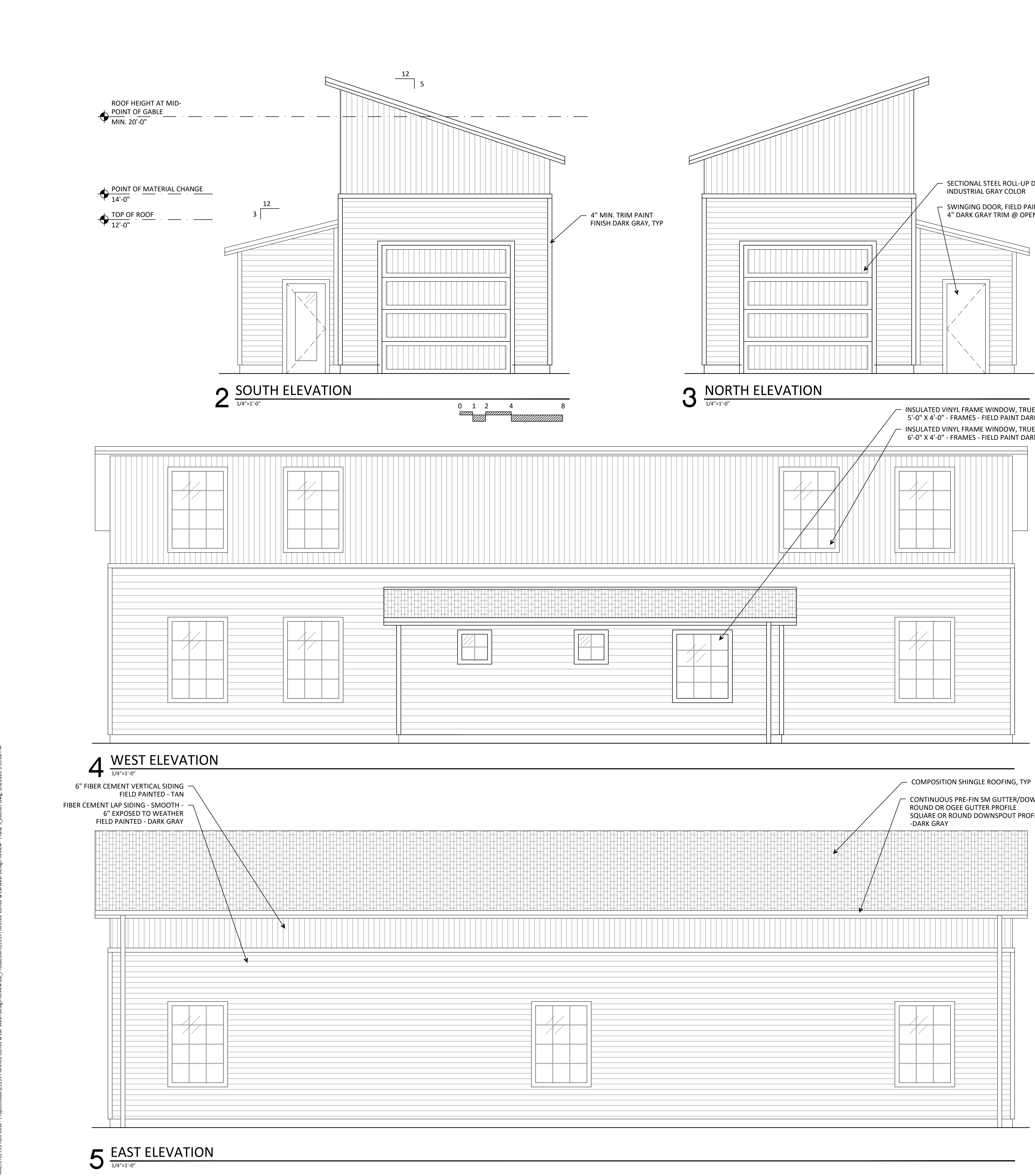
LANDSCAPE PLAN

A010

NOT FOR CONSTRUCTION

REVISIONS

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NOT FOR CONSTRUCTION

REVISIONS

# FLORENCE DESIGN REVIEW

LOT 06601 - CARWASH  
586 HWY 101, FLORENCE, OR 97439  
DESIGN REVIEW

JOB NO: 19199  
ISSUE DATE: 08 MAY 2020

FLOOR PLAN  
&  
ELEVATIONS

A120

PAVING & GRADING PLAN  
FOR  
FLORENCE COFFEE KIOSK & CAR WASH DEVELOPMENT  
TAX MAP 18-12-27-44  
TAX LOTS 6600 AND 6601  
FLORENCE, LANE COUNTY, OREGON

GENERAL NOTES:

1. THESE PLANS ARE PRELIMINARY AND ARE NOT TO BE USED FOR CONSTRUCTION IN THE FIELD.

2. SURVEY AND TOPO INFORMATION SHOWN WERE GATHERED BY OLSON & MORRIS. ELEVATIONS ARE BASED UPON LANE COUNTY BENCHMARK NO. 498 BRASS DISK AT THE INTERSECTION OF AIRPORT ROAD AND KINGWOOD STREET WITH A PUBLISHED ELEVATION 42.43' (NAVD88).

3. THIS MAP SHOULD NOT BE CONSIDERED A BOUNDARY SURVEY.

4. SIDEWALKS AND PLANTERS SHOWN ALONG HIGHWAY 101 ARE CURRENTLY UNDER CONSTRUCTION UNDER SEPARATE PROJECT NOT BY APPLICANT. APPLICANT PROPOSES TO CONSTRUCT SIDEWALK AND DRIVEWAY ON RHODODENDRON STREET WITHIN LIMITS SHOWN ON PLAN. SEE SHEET C-5.0 FOR DETAILS

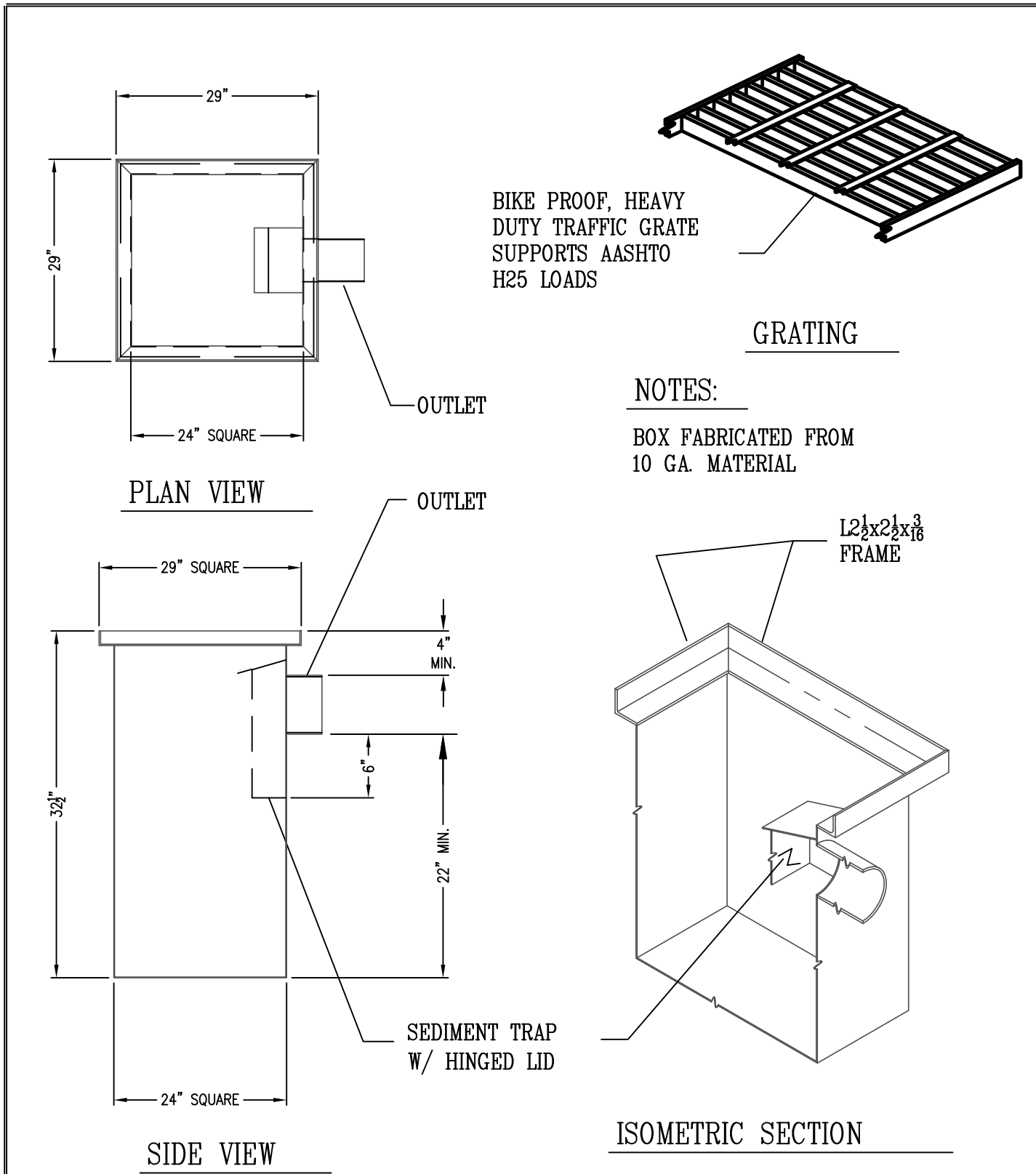
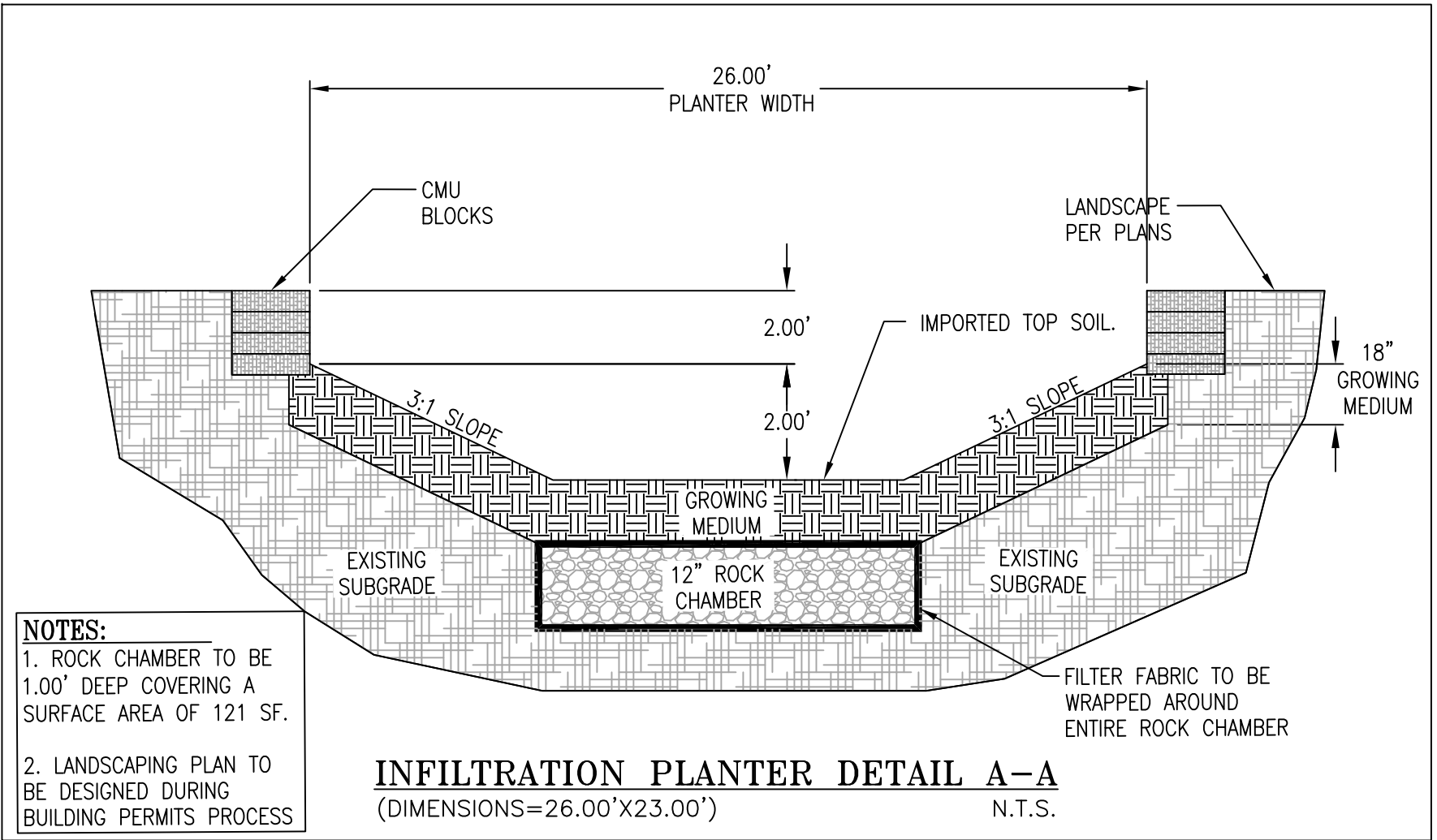
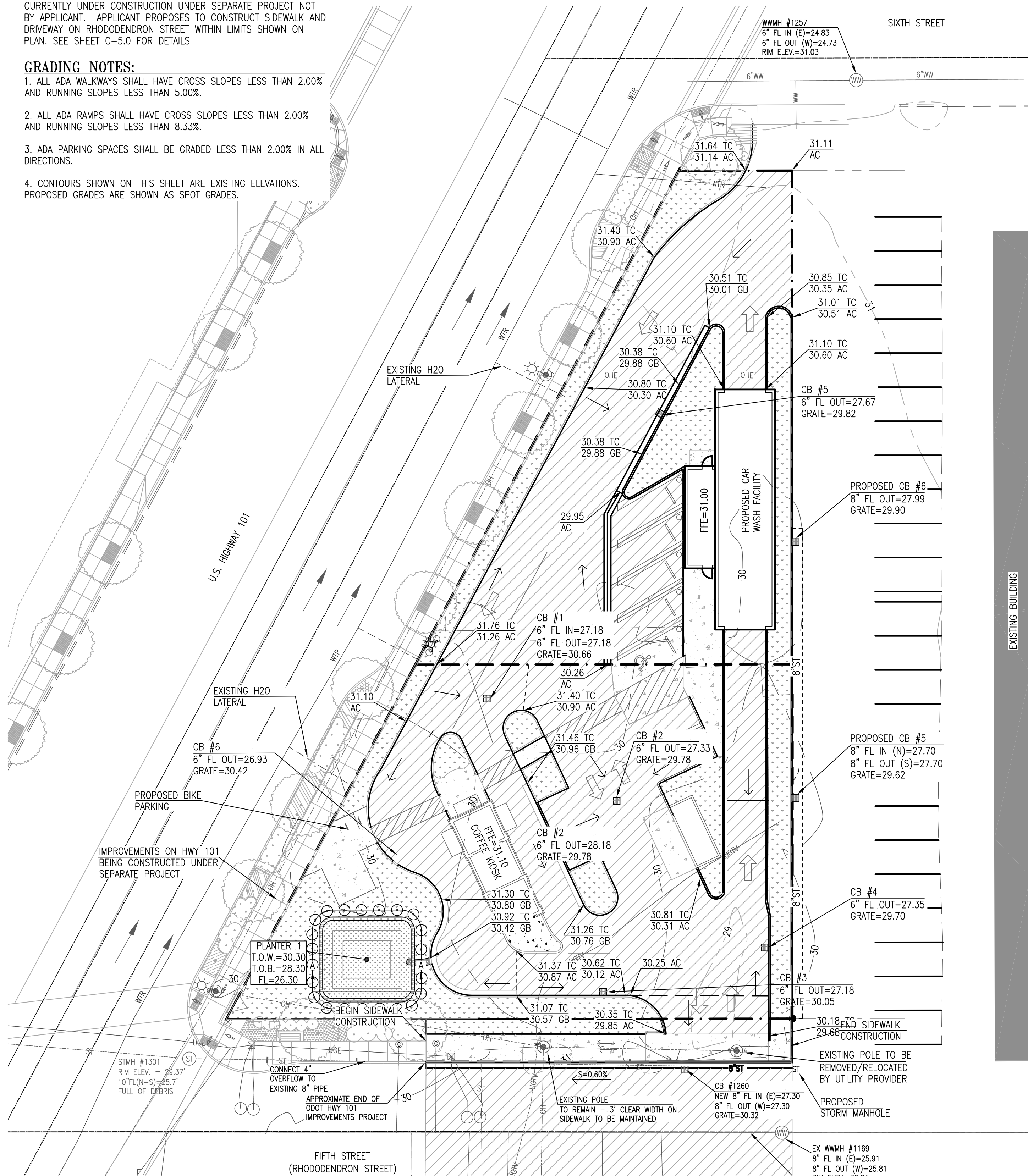
GRADING NOTES:

1. ALL ADA WALKWAYS SHALL HAVE CROSS SLOPES LESS THAN 2.00% AND RUNNING SLOPES LESS THAN 5.00%.

2. ALL ADA RAMPS SHALL HAVE CROSS SLOPES LESS THAN 2.00% AND RUNNING SLOPES LESS THAN 8.33%.

3. ADA PARKING SPACES SHALL BE GRADED LESS THAN 2.00% IN ALL DIRECTIONS.

4. CONTOURS SHOWN ON THIS SHEET ARE EXISTING ELEVATIONS. PROPOSED GRADES ARE SHOWN AS SPOT GRADES.



**G****S****B**  
Gibson Steel Basins  
SINCE 1972  
247 Washington St. Eugene, Or. 97401 ph:(541) 687 - 8672 fax:344-0207

STATE APPROVED - ASPHALT DIPPED

24" SQUARE - 4"Ø OR 6"Ø OUTLET

STORM WATER CATCH BASIN

PROJ. MAN. DOUG P. DWN. PAUL G. SCALE NONE  
DATE: JAN. 23, 06 MODEL: GCB10-30HB-4&6

DWG #  
**S1**

GRADING LEGEND

AC ASPHALT/CONCRETE  
CB CATCH BASIN  
CONC CONCRETE  
EG EXISTING GROUND  
FFE FINISH FLOOR ELEVATION  
FL FLOWLINE  
GB GUTTER BAR  
TC TOP OF CURB  
TOB TOP OF BANK  
VG VALLEY GUTTER  
DRAINAGE ARROWS

LEGEND

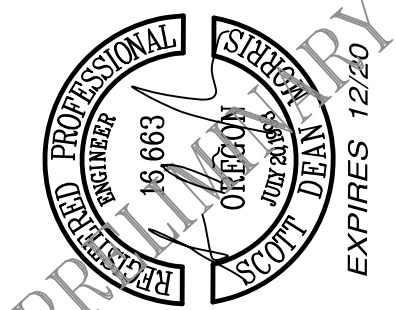
--- EXISTING BOUNDARY  
--- ADJACENT PROPERTIES  
--- EXISTING CURB LINE  
--- EXISTING FENCE  
8"W EXISTING WATER MAIN  
--- EXISTING WATER METER  
--- EXISTING WATER VALVE  
--- EXISTING FIRE HYDRANT  
--- EXISTING WASTEWATER SYSTEM  
--- EXISTING CLEANOUT  
--- EXISTING STORM DRAINAGE SYSTEM  
--- EXISTING CATCH BASIN  
--- EXISTING CURB INLET  
--- EXISTING STREET LIGHT  
--- EXISTING UNDERGROUND ELECTRIC  
--- EXISTING TRANSFORMER  
--- EXISTING TELEPHONE PEDestal  
--- PHN --- EXISTING TELEPHONE LINE  
--- 2"G --- EXISTING GAS MAIN  
--- EXISTING GAS VALVE  
--- PROPOSED WATER METER  
--- 8"W --- PROPOSED WASTEWATER LINE  
--- PROPOSED WASTEWATER MANHOLE  
--- PROPOSED WASTEWATER CLEANOUT  
--- 12"ST --- PROPOSED STORM LINE  
--- PROPOSED STORM MANHOLE  
--- PROPOSED STORM CLEANOUT  
--- PROPOSED CURB INLET  
--- PROPOSED PAVED AREA  
--- PROPOSED CONCRETE  
--- PROPOSED LANDSCAPE BED

DESIGN REVIEW PLAN SET  
-NOT FOR CONSTRUCTION

A & O Engineering L.L.C.

CONSULTING ENGINEERS & SITE PLANNING

380 Q ST. SUITE 200  
SPRINGFIELD, OR. 97477  
PHONE: (541) 302-9790  
info@aaoe-engine.com



Paving & Grading Plan

FOR  
Coffee Kiosk & Car Wash Dev.

Florence LANE COUNTY OREGON

PROJECT No. 5168

DRAWN BY: WAM

REVIEWED BY: KOM, SDM

PROJECT DATES:

1. 6-28-19

2. SR 4-2-20

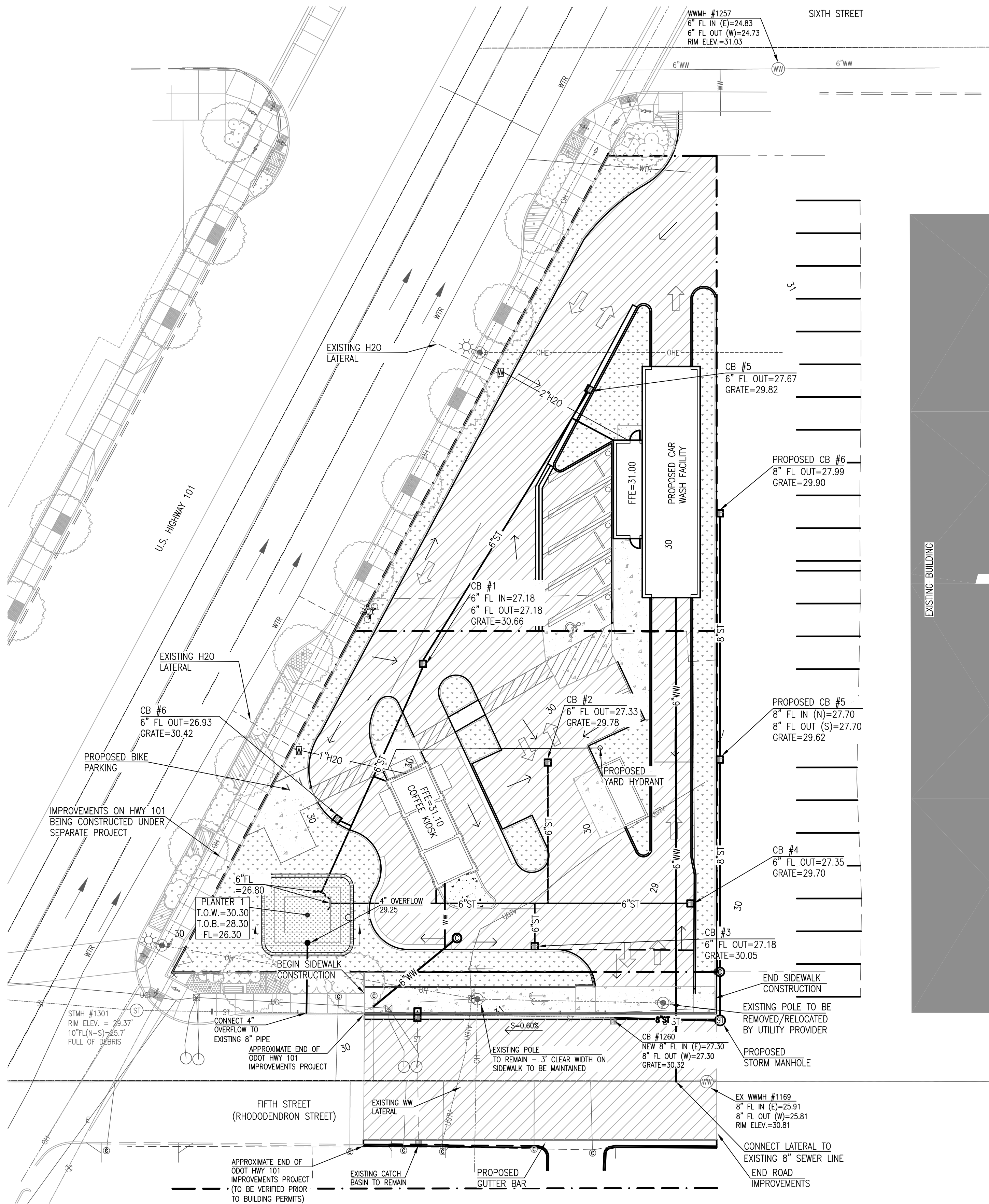
SHEET

C-2.0

GENERAL NOTES:

1. THESE PLANS ARE PRELIMINARY AND ARE NOT TO BE USED FOR CONSTRUCTION IN THE FIELD.

UTILITY PLAN  
FOR  
FLORENCE COFFEE KIOSK & CAR WASH DEVELOPMENT  
TAX MAP 18-12-27-44  
TAX LOTS 6600 AND 6601  
FLORENCE, LANE COUNTY, OREGON



STORMWATER NOTES:

1. ALL STORMWATER RUNOFF FROM NEW IMPERVIOUS SURFACES ON SUBJECT PROPERTIES TO BE TREATED VIA STORMWATER PLANTERS AS SHOWN ON PLAN.
2. SOILS ON SITE ARE WALDPOR-T-URBAN LAND COMPLEX WITH 0-12% SLOPES AND ARE CLASSIFIED AS HYDROLOGIC SOIL GROUP A PER WEB SOIL SURVEY.
3. INFILTRATION RATES ARE ESTIMATED TO BE GREATER THAN 20 IN/HR AT A DEPTH OF 5"-60" BELOW GROUND SURFACE PER WEB SOIL SURVEY.
4. AN INFILTRATION TEST SHALL BE PERFORMED ON-SITE AT BEGINNING OF CONSTRUCTION WHEN EQUIPMENT IS ON-SITE TO VERIFY ASSUMED INFILTRATION RATES. FACILITY SIZES WILL BE ADJUSTED AT THIS TIME IF NEEDED.
5. STORMWATER FROM PROPERTY TO EAST OF SITE IS PROPOSED TO BE COLLECTED AND ROUTED VIA CATCH BASINS EAST OF EASTERN PROPERTY LINE.

WATER NOTES:

1. WATER LATERALS ARE EXISTING AND AVAILABLE TO THE PROPERTIES AS SHOWN ON THE PLANS.
2. WATER PIPE SIZES ARE PRELIMINARY AND FINAL DESIGNS WILL BE COMPLETED DURING THE BUILDING PERMIT PROCESS.
3. ALL PIPING WILL BE REQUIRED TO FOLLOW 2017 OREGON STATE PLUMBING SPECIALTY CODE.

WASTEWATER NOTES:

1. IT IS PROPOSED TO CONNECT TO EXISTING SEWER LATERALS AS SHOWN TO SERVE COFFEE KIOSK AND TRASH ENCLOSURE.
2. NEW LATERAL IS PROPOSED TO SERVE CAR WASH FACILITY.
3. FINAL SEWER DESIGN WILL OCCUR DURING THE BUILDING PERMIT PROCESS.
4. ALL PIPING WILL BE REQUIRED TO FOLLOW 2017 OREGON STATE PLUMBING SPECIALTY CODE.

FRANCHISE UTILITY NOTES:

1. FRANCHISE UTILITIES WILL BE DESIGNED BY FRANCHISE UTILITY PROVIDERS DURING BUILDING PERMIT PROCESS.

GRADING LEGEND

|      |                        |
|------|------------------------|
| AC   | ASPHALT/CONCRETE       |
| CB   | CATCH BASIN            |
| CONC | CONCRETE               |
| EG   | EXISTING GROUND        |
| FFE  | FINISH FLOOR ELEVATION |
| FL   | FLOWLINE               |
| GB   | GUTTER BAR             |
| TC   | TOP OF CURB            |
| TOB  | TOP OF BANK            |
| VG   | VALLEY GUTTER          |
| TOW  | TOP OF WALL            |
| ←    | DRAINAGE ARROWS        |

LEGEND

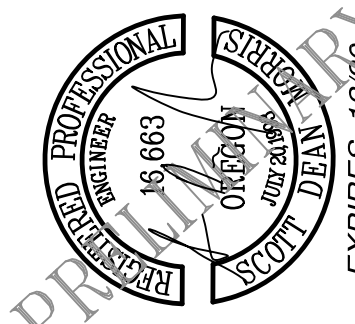
|          |                                |
|----------|--------------------------------|
| ---      | EXISTING BOUNDARY              |
| ---      | ADJACENT PROPERTIES            |
| ---      | EXISTING CURB LINE             |
| ---      | EXISTING FENCE                 |
| 8"W      | EXISTING WATER MAIN            |
| ---      | EXISTING WATER METER           |
| ---      | EXISTING WATER VALVE           |
| ---      | EXISTING FIRE HYDRANT          |
| WW 8"WW  | EXISTING WASTEWATER SYSTEM     |
| C        | EXISTING CLEANOUT              |
| ST 24"SD | EXISTING STORM DRAINAGE SYSTEM |
| ---      | EXISTING CATCH BASIN           |
| ---      | EXISTING CURB INLET            |
| ---      | EXISTING STREET LIGHT          |
| UGE      | EXISTING UNDERGROUND ELECTRIC  |
| ---      | EXISTING TRANSFORMER           |
| ---      | EXISTING TELEPHONE PEDSTAL     |
| PHN      | EXISTING TELEPHONE LINE        |
| 2"G      | EXISTING GAS MAIN              |
| ---      | EXISTING GAS VALVE             |
| ---      | PROPOSED WATER METER           |
| 8"WW     | PROPOSED WASTEWATER LINE       |
| WW       | PROPOSED WASTEWATER MANHOLE    |
| o        | PROPOSED WASTEWATER CLEANOUT   |
| ST       | PROPOSED STORM LINE            |
| o        | PROPOSED STORM MANHOLE         |
| o        | PROPOSED STORM CLEANOUT        |
| o        | PROPOSED CURB INLET            |
| ---      | PROPOSED PAVED AREA            |
| ---      | PROPOSED SIDEWALK              |

DESIGN REVIEW PLAN SET  
-NOT FOR CONSTRUCTION

A & O Engineering L.L.C.

CONSULTING ENGINEERS & SITE PLANNING

380 Q ST. SUITE 300  
SPRINGFIELD, OR 97477  
PHONE: (541) 302-9790  
info@aaoe-engine.com

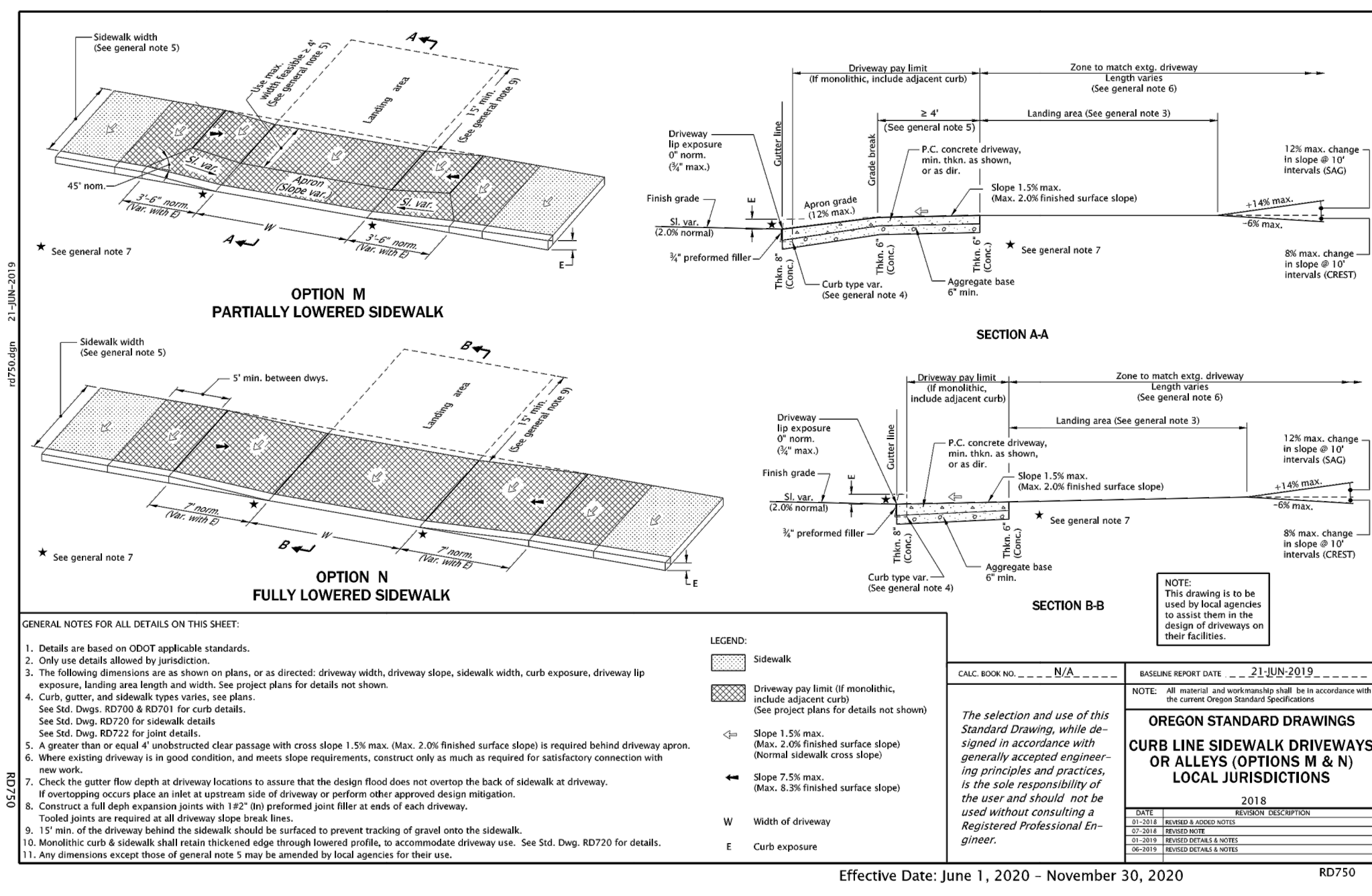
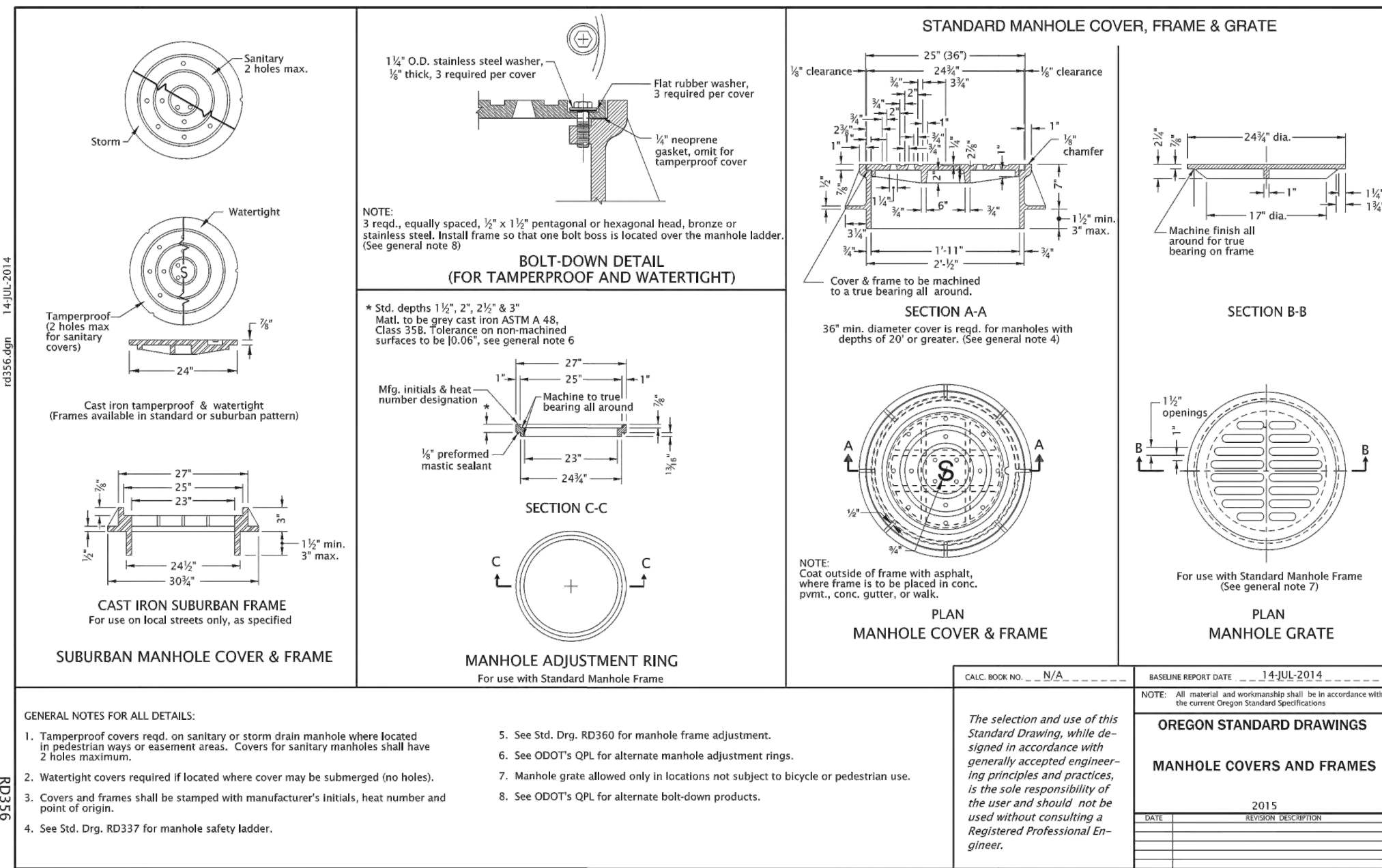
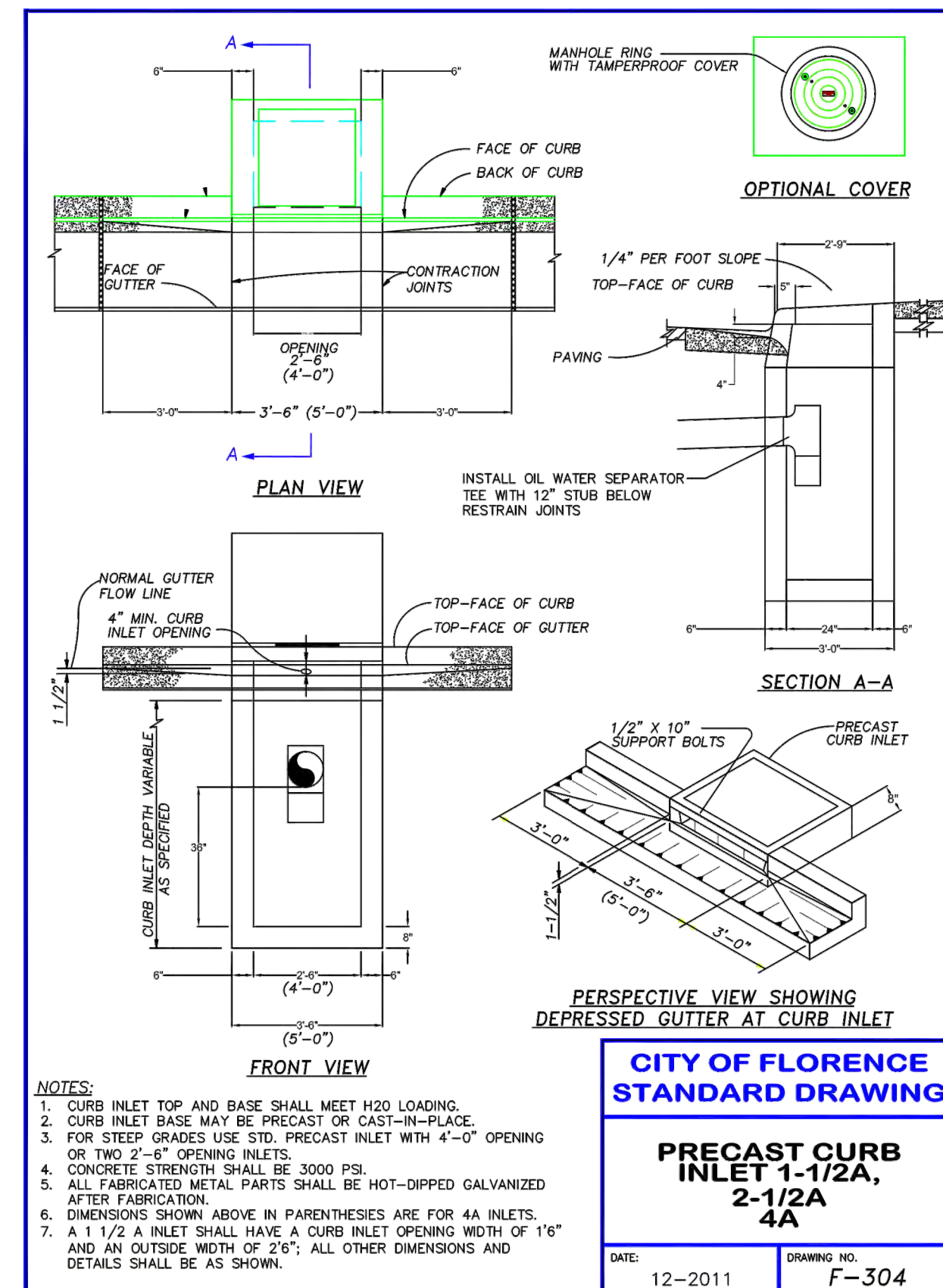
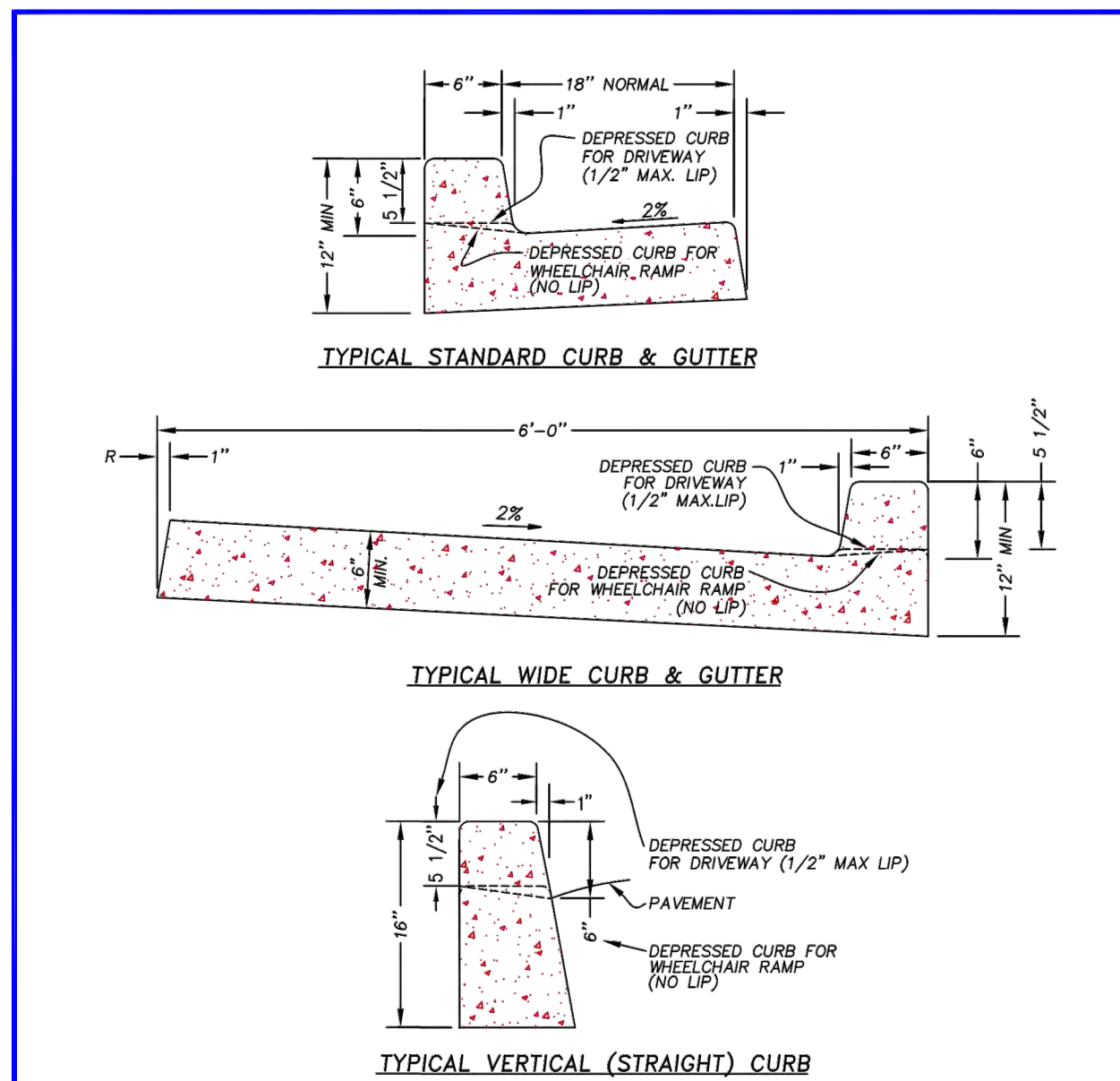
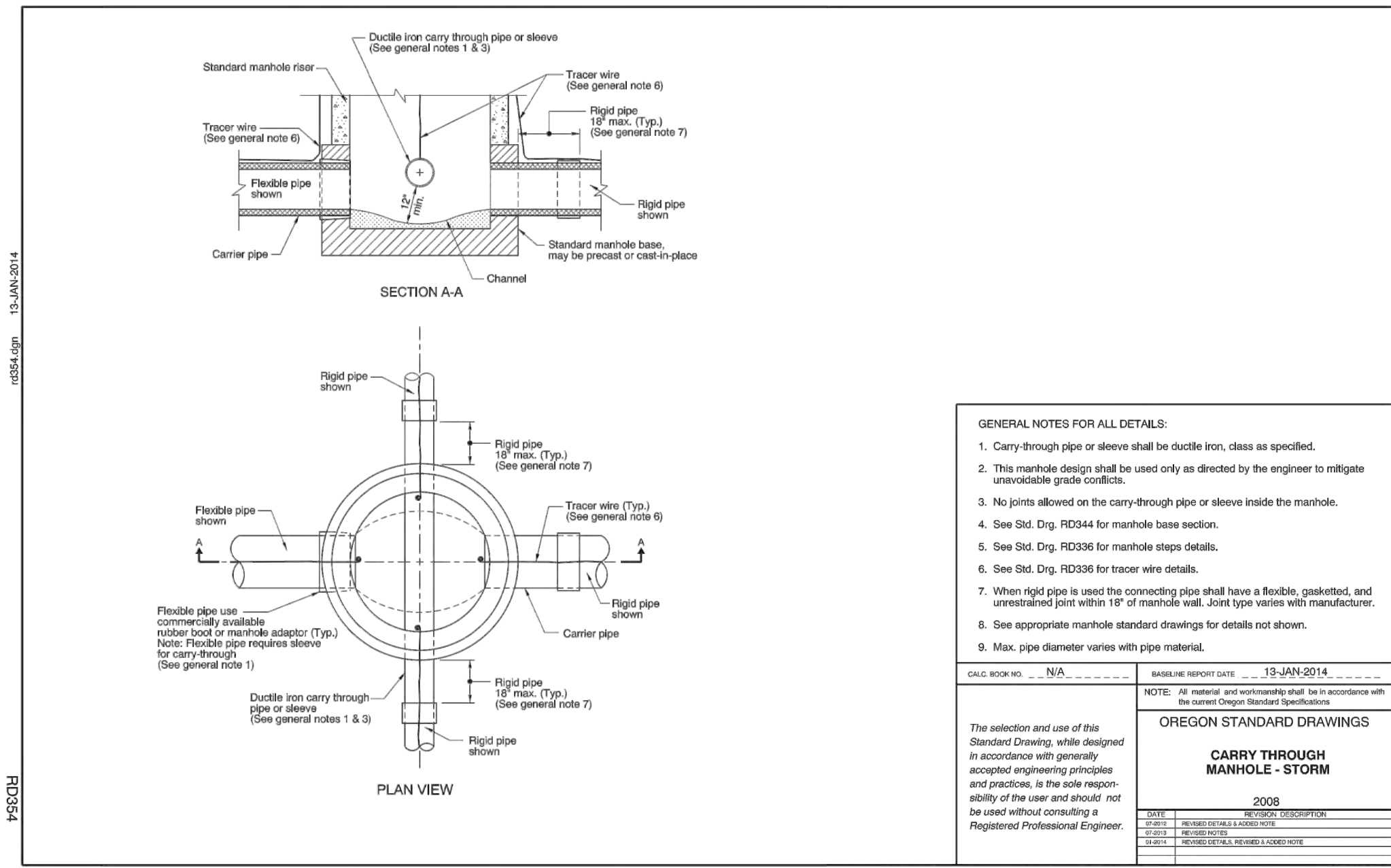


Utility Plan  
FOR  
Coffee Kiosk & Car Wash Dev.  
Florence  
LANE COUNTY  
OREGON

PROJECT No. 5168  
DRAWN BY: WAM  
REVIEWED BY: KOM, SDM  
PROJECT DATES:  
1. 6-28-19  
2. SR 4-2-20

SHEET

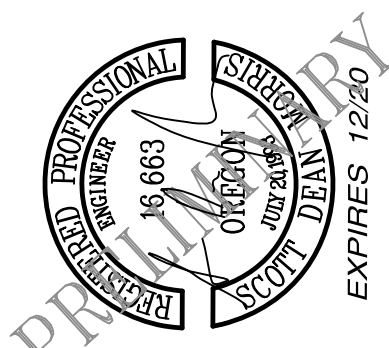
C-3.0



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Civil Details  
FOR  
Coffee Kiosk & Car Wash Dev.  
Florence  
LANE COUNTY OREGON

PROJECT NO. 5168  
DRAWN BY: MAM  
REVIEWED BY: KOM, SDM  
PROJECT DATES:  
1. 6-28-19  
2. SR 4-2-20

SHEET  
C-4.0

STREET IMPROVEMENT PLAN  
FOR  
FLORENCE COFFEE KIOSK & CAR WASH DEVELOPMENT  
TAX MAP 18-12-27-44  
TAX LOTS 6600 AND 6601  
FLORENCE, LANE COUNTY, OREGON

# ROAD CONSTRUCTION NOTES:

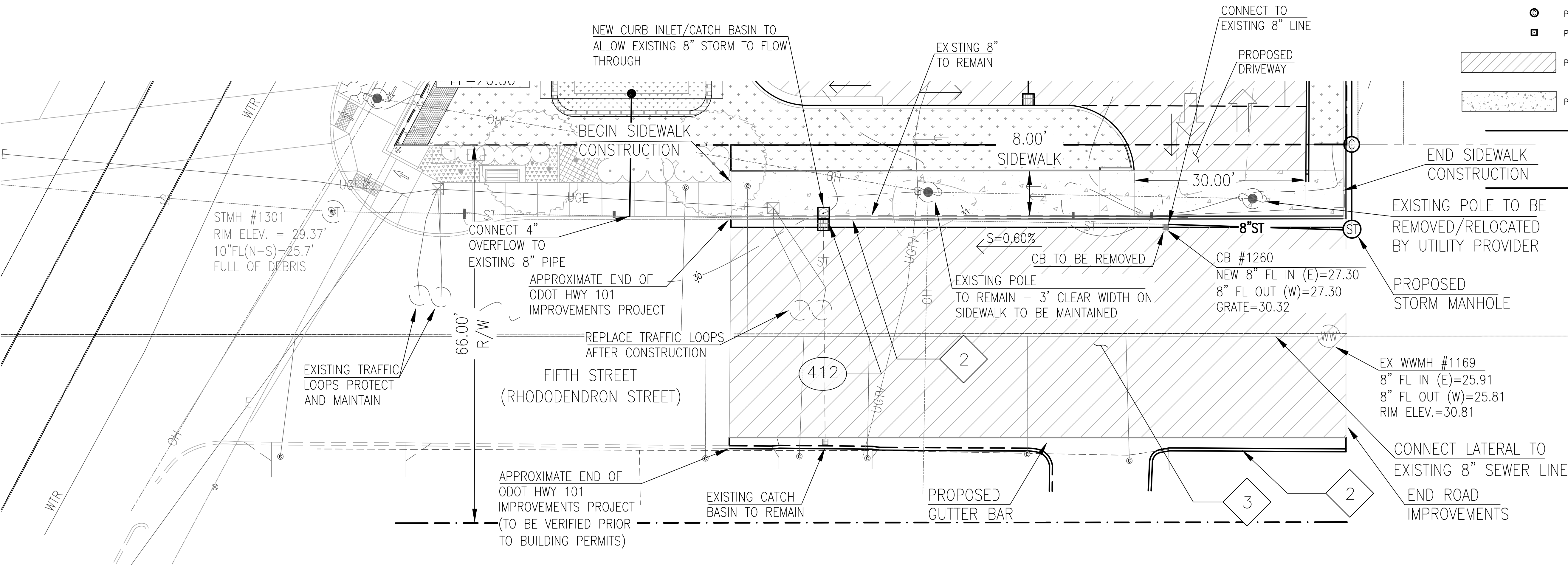
2. CONST. STANDARD CURB AND GUTTER PER CITY OF FLORENCE  
STANDARD DWG F-203. SEE SHEET C-4.0
3. REMOVE EXISTING AC, RE-GRADE AND COMPACT EXISTING ROCK  
BASE AND PAVE 3" AC.

# STORM CONSTRUCTION NOTES:

412. CONST. CURB INLET PER CITY OF FLORENCE STD.  
DRAWING F-304. SEE SHEET C-4.0

PUBLIC ROAD IMPROVEMENTS:

1. END OF HWY 101 IMPROVEMENTS PROJECT SHOWN ARE  
APPROXIMATE. SURVEY INFORMATION WILL BE GATHERED PRIOR TO  
BUILDING PERMITS TO ACCURATELY SHOW EXISTING IMPROVEMENTS.
2. PROPOSAL IS TO REPLACE CURB AND GUTTER ON BOTH SIDES OF  
ROADWAY. CITY OF FLORENCE TO SHARE IN THE COST FOR THE  
SOUTHERN HALF OF ROADWAY.
3. PER DISCUSSION WITH CITY STAFF, ROAD STRUCTURE UNDER 5TH  
STREET WILL BE ASSESSED BY CITY STAFF DURING CONSTRUCTION. IF  
SUITABLE STRUCTURE IS FOUND, EXISTING ROCK CAN BE RE-GRADED,  
COMPACTED, AND UTILIZED AS PAVEMENT BASES STRUCTURE. IF ROCK  
IS NOT SUITABLE FULL 3" AC OVER 8" OF ROCK WILL BE REQUIRED.
4. TRAFFIC LOOPS SHOWN WILL NEED TO BE REPLACED. CONTRACTOR  
SHALL COORDINATE WITH ODOT.

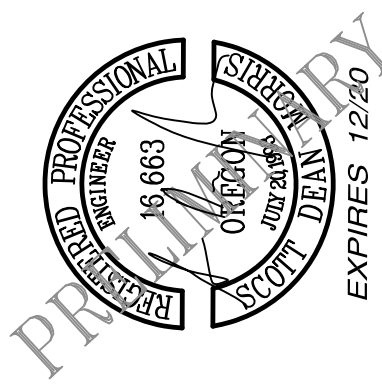


LEGEND

- EXISTING BOUNDARY
- ADJACENT PROPERTIES
- EXISTING CURB LINE
- EXISTING FENCE
- 8"W
- EXISTING WATER MAIN
- EXISTING WATER METER
- EXISTING WATER VALVE
- EXISTING FIRE HYDRANT
- EXISTING WASTEWATER SYSTEM
- 8"WW
- EXISTING CLEANOUT
- 24"SD
- EXISTING STORM DRAINAGE SYSTEM
- EXISTING CATCH BASIN
- EXISTING CURB INLET
- EXISTING STREET LIGHT
- UGE
- EXISTING UNDERGROUND ELECTRIC
- EXISTING TRANSFORMER
- EXISTING TELEPHONE PEDESTAL
- PHN
- EXISTING TELEPHONE LINE
- 2"G
- EXISTING GAS MAIN
- EXISTING GAS VALVE
- PROPOSED WATER METER
- 8"WW
- PROPOSED WASTEWATER LINE
- PROPOSED WASTEWATER MANHOLE
- PROPOSED WASTEWATER CLEANOUT
- 12"ST
- PROPOSED STORM LINE
- PROPOSED STORM MANHOLE
- PROPOSED STORM CLEANOUT
- PROPOSED CURB INLET
- PROPOSED PAVED AREA
- PROPOSED SIDEWALK

DESIGN REVIEW PLAN SET  
-NOT FOR CONSTRUCTION

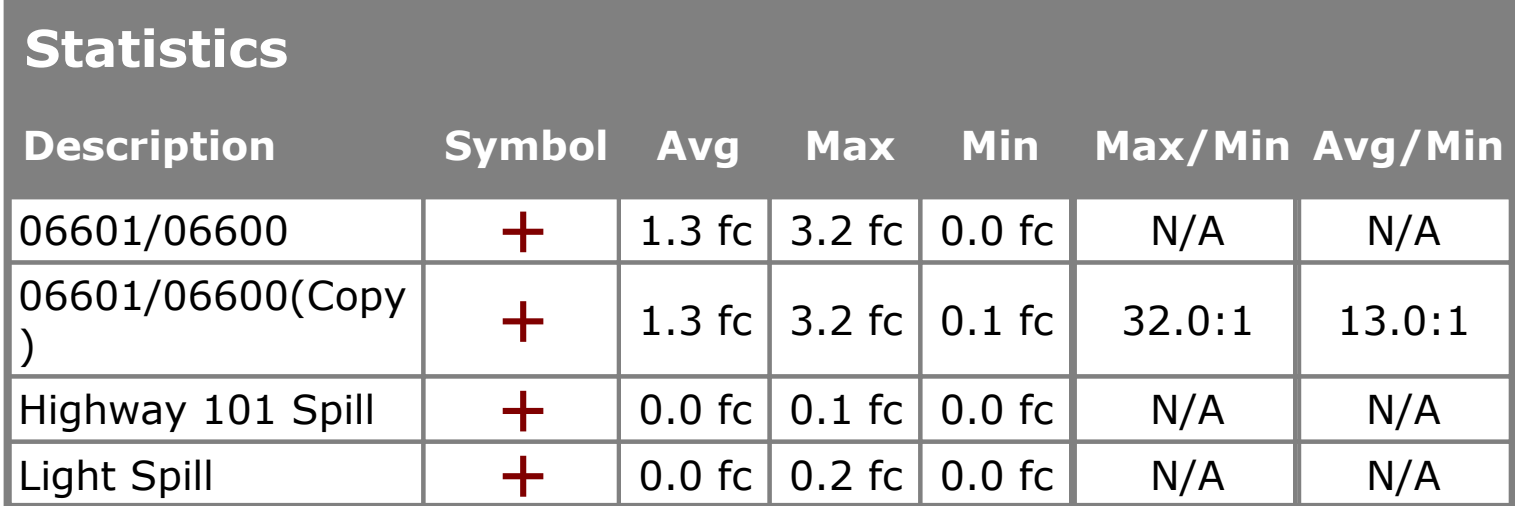
A & O Engineering L.L.C.



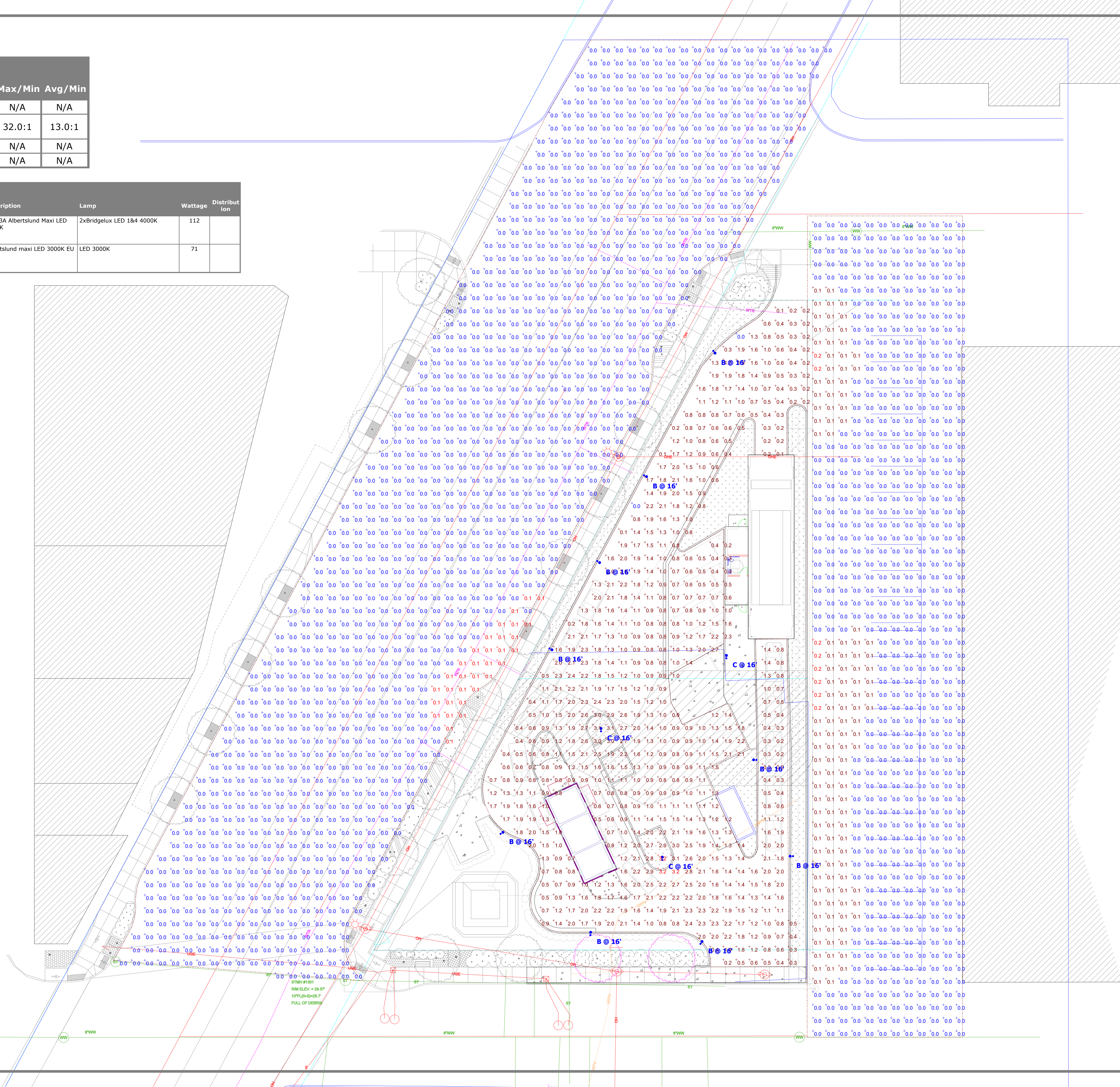
Street Improvement Plan  
FOR  
Coffee Kiosk & Car Wash Dev.  
Florence LANE COUNTY OREGON

|                |           |
|----------------|-----------|
| PROJECT No.    | 5168      |
| DRAWN BY:      | WAM       |
| REVIEWED BY:   | KOM, SDM  |
| PROJECT DATES: |           |
| 1.             | 6-28-19   |
| 2.             | SR 4-2-20 |

SHEET  
C-5.0



| Schedule                            |       |     |                            |                |                                   |                           |         |              |
|-------------------------------------|-------|-----|----------------------------|----------------|-----------------------------------|---------------------------|---------|--------------|
| Symbol                              | Label | QTY | Manufacturer               | Catalog Number | Description                       | Lamp                      | Wattage | Distribution |
| <div><div>○</div><div>□</div></div> | B     | 18  | Louis Poulsen Lighting A/S | L7933A         | L7933A Albertslund Maxi LED 3000K | 2xBridgelux LED 1&4 4000K | 112     |              |
| <div><div>○</div><div>□</div></div> | C     | 6   | Louis Poulsen              |                | Albertslund maxi LED 3000K EU     | LED 3000K                 | 71      |              |



2 of 2

## DESIGN REVIEW NARRATIVE

**PROJECT:** Coffee Kiosk

**LOCATION:** Address: 586 HWY 101, Florence, OR 97439

Tax Map 18122744, Lot 06600

**ZONING:** Mainstreet Area A

**COMPREHENSIVE PLAN DESIGNATION:** Downtown

### Design Review Request:

The applicant is requesting approval of a design review for the development of parcel 06600 of 18-12-27-44 into a +/- 400 sf drive-through Coffee Kiosk. Design includes associated driveway, parking, landscaping, stormwater management, and other site improvements. Prior Land Use approvals include Conditional Use Permit PC 19 11 CUP 04 to allow proposed use and Variance PC 19 08 VAR 02 to increase maximum setback.

Development proposal includes structure with two drive-through lanes and a walk-up window with seating patio. Café will offer coffee, smoothies, lattes, teas, and pre-packaged baked goods such as bagels and cookies. Café will be open 5:00 am – 9:30 pm daily, except closed on Christmas Day. Company will staff approximately 13-15 employees total, of which approximately five (5) will be full time, and the remainder part-time 12-25 hours per week. During peak operation, up to four (4) employees will be on-site.

Within 300 feet of development site, property is Zoned Mainstreet A and Mainstreet B. Uses within this area include tattoo shop, antique store, restaurant, hair salon, retail dispensary, furniture store, saw equipment shop, bank, gas station, appliance repair and sales, printing, gun sales, stamp and coin sales, clock repair, pest technician, and residential.

Applicant intends to begin construction as soon as possible, preferably in Summer 2020, and complete within approximately 4-5 months.

### Conditions of Approval from CUP & VAR:

1. List of Drawings. **N/A.**
2. Applicant shall submit to the Community Development Department a signed "Agreement of acceptance" of all conditions of approval prior to issuance of a building permit. ***Applicant assumes this will be Condition of Approval of Design Review.***

3. Authorization of CUP shall be void after October 22, 2020, unless a building permit has been issued and substantial construction has taken place. ***Applicant assumes this will be Condition of Approval of Design Review.***
4. Prior to building permit issuance the applicant is required to sign a non-remonstrance agreement regarding improvements to the driveway access on 6<sup>th</sup> street. ***Applicant assumes this will be Condition of Approval of Design Review.***
5. Sidewalk extension on 6<sup>th</sup> street will be required in conjunction with relocation of the 6<sup>th</sup> street driveway. ***Applicant assumes this will be Condition of Approval of Design Review.***
6. Easements are required to implement the access management plan shared access between this development site and the Old School Furniture site. Once cross easements are made by the eastern property owner, a maintenance agreement would be required. ***Applicant assumes this will be Condition of Approval of Design Review.***
7. If the sewer service line is to come from 5<sup>th</sup> street a private utility easement will be required because it crosses one property to another – Applicant assumes this will be Condition of Approval of Design Review.
8. Proposed catch basin at southeastern edge of property, along 5<sup>th</sup> street, must be a storm inlet. Must be a manhole added at the proposed 90 degree bend connecting the 8" storm line and the proposed line that runs east-west along 5<sup>th</sup> street. City Plans show 8" storm line that runs east to west along 5<sup>th</sup> street, applicant shows 10". It is unclear if the applicant plans to upsize, or if the label is incorrect. ***Applicant has addressed this Condition in Design Review Submittal.***
9. Overhead line extending from highway 101 east across tax lot 6601 – site plan proposes to remove the overhead wire. No other overhead wire are illustrated and labeled. All new utilities required to be underground. ***Applicant has addressed this Condition in Design Review Submittal.***
10. 5<sup>th</sup> street roadway to be reconstructed to handle increased traffic. ***Applicant has addressed this Condition in Design Review Submittal.***

Informational Items:

1. Traffic impact study to be analyzed during design review. ***Traffic Impact Study submitted herewith.***
2. Construction of coffee stand and drive through car wash will be contingent on completed design review approved by planning. ***Design Review approval requested herewith.***
3. Construction plans for new driveway approach and installation of sidewalks will be required to be submitted in conjunction with building permit. Dimensioned plans will be required with Design review. ***Applicant assumes this will be Condition of Approval of Design Review.***

Criteria Applying to this Matter for the application include:

Florence City Code, Title 10:

Chapter 1, Zoning Administration: 10-1-1-4E Traffic Impact Studies, 10-1-6-3 Type III Review

Chapter 6, Design Review

Chapter 27, Mainstreet District: Sections 1, 3 through 5

Chapter 34, Landscaping: 10-34-3-2 Landscaping Plan Required, 10-34-3 Landscaping, 10-34-4 Street Trees

Chapter 35, Access and Circulation: 10-35-2-5 Traffic Study Requirements

Chapter 37, Lighting: 10-37-3 Lighting Plans Required

## **FCC TITLE 10, CHAPTER 1 – ZONING ADMINISTRATION**

### **10-1-1-4-2: Criteria for Warranting a Traffic Impact Study.**

*All traffic impact studies shall be prepared by a professional engineer in accordance with the requirements of the road authority. The City shall require a Traffic Impact Study (TIS) as part of an application for development; a proposed amendment to the Comprehensive Plan, zoning map, or zoning regulations; a change in use, or a change in access, if any of the following conditions are met:*

- c. The addition of twenty-five (25) or more single family dwellings, or an intensification or change in land use that is estimated to increase traffic volume by 250 Average Daily Trips (ADT) or more, per the ITE Trip Generation Manual.*

Findings: The Applicant has provided a Traffic Impact Study in accordance with this criterion.

### **10-1-1-6-3: Type III Reviews – Quasi-judicial land use hearings.**

- A. Hearings are required for Type III (quasi-judicial) land use matters requiring Planning Commission review. Type III applications include, but are not limited to:*

- 5. New construction requiring Design Review by the Planning Commission.*

Findings: The Applicant requests a Hearing in accordance with FCC Title 10 for the Development proposed.

## **FCC TITLE 10, CHAPTER 6 – DESIGN REVIEW**

### **10-6-5-1 General Criteria for Non-Residential Development**

*Nonresidential projects shall meet the following criteria. The Planning Commission or Planning Commission or their designee may require any of the following conditions it deems necessary to secure the purpose and intent of this Chapter. The Commission or their designee shall consider the following criteria reviewing applications and may set conditions or standards which regulate and limit the following:*

- A. Setbacks, yards, height, density and similar design features according to the underlying zoning district.*

Findings: The proposed development meets zoning district requirements with Setback Variance PC 19 09 VAR 02.

- B. Lot area, dimensions and percentage of coverage according to the underlying zoning district.*

Findings: The proposed development occurs on an existing Lot and meets lot area, dimensions, and percentage of coverage according to the underlying zoning district. See Section FCC Title 10, Chapter 27 – Mainstreet District of this narrative.

- C. *Installation and maintenance of fences, walls, hedges, screens and landscaping according to standards set forth in FCC 10-34 Landscaping, and any requirements of the underlying zoning district.***

Findings: Refer to Sections 10-27 and 10-34 of this Narrative.

- D. *The location and design of access and egress points for vehicles and pedestrians, including access points along State highways according to standards set forth in FCC 10-35 Access and Circulation, and any requirements of the underlying zoning district.***

Findings: Refer to Sections 10-27 and 10-35 of this Narrative.

- E. *Noise, vibration, smoke, dust, odor, light intensity and electrical interferences.***

Findings: Screening proposed between Hwy 101 and Kiosk according to Conditions of VAR and CUP approvals. Refer to Section 10-34 10-37 of this Narrative.

- F. *Parking and outside display areas, dimensions, surfacing and on-site traffic circulation according to standards set forth in FCC 10-3 Parking and Loading.***

Findings: Parking and on-site traffic circulation are shared between Lots 06600 and 06601. Eight (8) parking spaces are provided between both lots. According to 10-3-4, each development site is required a minimum no less than two (2) spaces for non-residential uses. Additional spaces are not required by proposed uses. Minimum dimensions indicated on Drawings comply with standards set forth in 10-3. Additional street parking available at Hwy 101 immediately adjacent to development site. No outside display areas proposed.

- G. *Architectural quality and aesthetic appearance, including compatibility with adjacent buildings***

Findings: Proposed design utilizes horizontal and vertical siding materials and commercial quality windows and doors, similar in scale and aesthetic appearance to surrounding buildings.

- H. *Color, building materials and exterior appearance in accordance with the policies established by the City in the Downtown Implementation Plan, and in applicable zoning districts.***

Findings: Design elements including siding and trim details, awnings, scale of openings, and landscaping reference the historic character of Oldtown and Mainstreet neighborhoods. The proposed Development maintains sight lines through the development to encourage visual connections between Highway 101 and the old elementary school site, as well as pedestrian connectivity. Buildings will top out at 20 feet minimum above grade (top of parapet wall or midpoint of sloped roof). See also Section 10-6-6 and 10-27 of this Narrative.

- I. *Exterior lighting and security.***

Findings: Refer to Section 10-37 of this Narrative.

- J. *Public health, safety and general welfare.***

Findings: The proposed development encourages safe pedestrian, bike, and vehicle access and use.

***K. Provision of public facilities and infrastructure according to standards set forth in FCC 10-36  
Public Facilities.***

Findings: Approximately 100' of Fifth Street will be reconstructed as part of proposed development.

***L. Requiring a time period within which the proposed use or portions thereof shall be developed.***

Findings: Conditions of VAR and CUP approval indicate expiration one (1) year after date of approval.

***M. Requiring bonds to insure performance of special conditions. (Ord. 625, 6-30-80)***

Findings: Applicant requests any required bonds are condition of approval for Building Permit issuance.

***N. Such other conditions as are necessary***

Findings: Applicant will respond to other conditions Planning Director deems necessary.

***10-6-6 Downtown Architectural Design***

***10-6-6-1: Building Type***

***These types of buildings currently exist within the applicable zoning districts and are compatible with each other, despite being different in their massing and form. The following building types are permitted in future development and infill. Other building types not listed which are compatible with the surrounding area and buildings and are compatible with the historic nature of the zoning district are also permitted. Not all types may be permitted or regulated in all zoning districts.***

- A. Residential Type, single-family, duplex (attached & detached), or multi-family***
- B. Commercial Storefront Type***
- C. Mixed-Use House Type***
- D. Community Building Type***

Findings: Building is Commercial Storefront Type.

***10-6-6-2 Building Style***

- B. Historic Style Compatibility: New and existing building design shall be consistent with the regional and local historical traditions. Where historic ornament and detail is not feasible, historic compatibility shall be achieved through the relation of vertical proportions of historic façades, windows and doors, and the simple vertical massing of historical buildings. Some examples of architectural styles currently or historically present in the Florence area are: Queen Anne, Shingle Style, Second Empire, Victorian, Italianate, Tudor Style, Craftsman Bungalow, American Foursquare, and Vernacular.***
- 2. New Buildings: Design shall be compatible with adjacent historic buildings.***

Findings: Proposed building design includes multiple elements consistent with regional and local historical traditions. In addition to historical ornament such as emphasized cornice lines and traditional façade delineations of base, middle, and top of wall, craftsman elements such as siding details and trims are

included. Vertical emphasis and building height of 22 feet reference historical Florence context and goals of Downtown Plan.

#### **10-6-6-3 Building Facades**

- A. Horizontal Design Elements:** *Multi-story commercial storefront buildings shall have a distinctive horizontal base; second floor; and eave, cornice and/or parapet line; creating visual interest and relief. Horizontal articulations shall be made with features such as awnings, overhanging eaves, symmetrical gable roofs, material changes, or applied fascia detail. New buildings and exterior remodels shall generally follow the prominent horizontal lines existing on adjacent buildings at similar levels along the street frontage. Examples of such horizontal lines include but are not limited to: the base below a series of storefront windows; an existing awning or canopy line, or belt course between building stories; and/or an existing cornice or parapet line. Where existing adjacent buildings do not meet the City's current building design standards, a new building may establish new horizontal lines.*

Findings: Proposed building design includes horizontal articulations such as a distinctive horizontal base below storefront windows and a featured cornice line, as well as awnings and material changes.

- B. Vertical Design Elements:** *Commercial storefront building faces shall have distinctive vertical lines of emphasis spaced at relatively even intervals. Vertical articulations may be made by material changes, variations in roof heights, applied fascia, columns, bay windows, etc. The maximum spacing of vertical articulations on long, uninterrupted building elevations shall be not less than one break for every 30 to 40 feet.*

Findings: Proposed building is less than 40 feet in any direction. In addition, vertical articulations including material changes and columns are incorporated in the façade design.

- C. Articulation and Detailing:** *All building elevations that orient to a street or civic space must have breaks in the wall plane (articulation) of not less than one break for every 30 feet of building length or width, as applicable, as follows:*
- a.** *Recess (e.g., porch, courtyard, entrance balcony, or similar feature) that has a minimum depth of 4 feet;*
  - b.** *Extension (e.g., floor area, porch, entrance, balcony, overhang, or similar feature) that projects a minimum of 2 feet and runs horizontally for a minimum length of 4 feet; and/or*
  - c.** *Offsets or breaks in roof elevation of 2 feet or greater in height.*
  - d.** *A "break," for the purposes of this subsection, is a change in wall plane of not less than 24 inches in depth. Breaks may include, but are not limited to, an offset, recess, window reveal, pilaster, frieze, pediment, cornice, parapet, gable, dormer, eave, coursing, canopy, awning, column, building base, balcony, permanent awning or canopy, marquee, or similar architectural feature.*

Findings: Proposed building design has three (3) street-facing facades, two (2) of which are less than 30 feet long. The third street facing façade includes a permanent awning that projects more than 2 feet and runs more than 4 feet horizontally. This awning occurs on three (3) sides of the building as well. In addition, the roof elevation (parapet wall) includes two offsets on this wall.

#### **10-6-6-4 Permitted Visible Building Materials**

***Building materials which have the same or better performance may be substituted for the materials below provided that they have the same appearance as the listed materials.***

##### **A. Exterior Building Walls**

Findings: Proposed building design incorporates board and batten siding with paint finish as dominant finish. In addition, the design incorporates lap siding with paint finish, 4-inch minimum painted eave trims, and 2.5-inch thick masonry veneer.

##### **B. Roofs, Awnings, Gutters, and Visible Roofing Components**

Findings: Proposed building design incorporates a flat roof concealed by a parapet with a visibly concealed single-ply roofing. Roof mounted mechanical equipment is concealed behind parapets.

##### **D. Windows, Entrances, and Accessories**

Findings: Proposed building design incorporates pre-finish storefront windows and painted steel door with vision lite.

##### **G. Building and Site Material Colors: Color finishes on all building exteriors shall be approved by the City and be of a muted coastal Pacific Northwest palette. Reflective, luminescent, sparkling, primary, and “day-glow” colors and finishes are prohibited. The Planning Commission/Planning Commission or their designee may approve adjustments to the standards as part of a site Design Review approval.**

Findings: Proposed building color palette consists of a muted coastal Pacific Northwest palette of warm neutral colors.

#### **10-6-6-5 Material Applications and Configurations**

##### **A. Building Walls**

Findings: Proposed building design incorporates board and batten siding with paint finish as dominant finish. In addition, the design incorporates lap siding with paint finish, 4-inch minimum painted eave trims, and 2.5-inch thick masonry veneer.

##### **B. Roofs, Awnings, Gutters and Roofing Accessories**

Findings: Proposed building design incorporates a flat roof concealed by a parapet with a visibly concealed single-ply roofing. Roof mounted mechanical equipment is concealed behind parapets.

##### **D. Visible Windows, Glazing, and Entrances**

Findings: Proposed building design incorporates pre-finish storefront windows with clear low-e glazing and painted steel door with vision lite. Openings are surrounded by 2.5-inch minimum painted trim.

**G. Mechanical Equipment:**

- 2. Rooftops. Except as provided below, rooftop mechanical units shall be setback and/or screened behind a parapet wall so that they are not visible from any public right-of-way or civic space.**

Findings: Proposed building design incorporates roof mount mechanical equipment concealed behind parapet walls.

**10-6-8 Drawing Submittal**

***In addition to information required by FCC 10-1-1-4, the owner or authorized agent shall submit the following drawings to the City for review:***

Findings: Drawings submitted herewith.

**FCC TITLE 10, CHAPTER 27 – MAINSTREET DISTRICT**

**10-27-5 Site and Development Provisions A.**

**A. Building or Structural Height Limitations Area “A”:**

***Buildings shall be a minimum of 20’ in height. This measurement may include a building façade as opposed to a total building height of 20’. If a façade is used, it must be designed so that it is not readily apparent that it is only a façade.***

Findings: The proposed building design tops out at approximately 22 feet above grade.

**B. Fences, Hedges, Walls and Landscaping: Landscaping shall be in accordance with FCC 10-34, except as modified by the following specific standards:**

***Area “A”:***

***A minimum of 10% landscaping is required. The calculation of the required minimum may include street trees installed and maintained by the applicant, planters and window boxes which are the property of the applicant/owner, as well as plantings within courtyard areas. All landscaping included within the 10% calculation must be installed and maintained by the applicant or his/her successors.***

***Interior parking lots may be separated from rear courtyards by walls, fences or hedges 4’ in height or less. Eating establishments may separate outdoor eating areas from parking lots and adjacent buildings or structures by a fence, wall or hedge not to exceed 6’ in height. Pedestrian walkways may be separated from abutting uses by plantings or fences which allow visual surveillance of the walkway and surrounding areas. Where a commercial use abuts a residential district, see FCC 10-34-3-7-D.***

Findings: The proposed development includes approximately 3,500 square feet of landscape area, equivalent to approximately 24% of the lot. Site does not abut residentially zoned property. Refer also to Section 10-34 of this Narrative.

**C. Access and Circulation. Refer to Section 10-35 Access and Circulation of this Title for Requirements.**

- 2. Sidewalks abutting buildings on Highway 101, Highway 126, and local streets within the Mainstreet District shall be at least 8' in width, except collector streets within the Mainstreet District without on-street parking as described below. Sidewalk area beyond the standard 6' sidewalk width may be surfaced with pavers, brick or other similar materials. Maintenance and repair of pavers, brick, etc. are the responsibility of the business/property owner.**

Findings: Sidewalks adjacent to development site have been recently reconstructed as part of Hwy 101 project. New sidewalks will be at least 8' in width.

**D. Parking and Loading Spaces**

**Area "A":**

***Parking spaces may be located on-street in front of the front yard of the lot (if approved by ODOT on Highways 101/126) and/or may be in interior shared parking lots within the block where the applicant's lot is located, or in a shared lot in another block. Business/property owners are strongly encouraged to cooperate in proposing joint parking agreement areas as part of development or redevelopment proposals. Parking will not be permitted in front yards. The Planning Commission may grant parking under a temporary arrangement if an interior or off-site shared parking lot is planned and approved, but not yet constructed, and/or may require the applicant or owner to sign a non-remonstrance agreement for parking improvements. Parking standards in Chapter 3 of this Title shall be used as a guideline for determining parking need.***

***Bicycle racks shall be provided either in the interior parking lot, or by an entrance if located outside the required minimum 6' pedestrian walkway.***

Findings: Access to parking areas is shared with adjacent property. Parking is not proposed in front yard. Bicycle parking is proposed adjacent to the sidewalk along Highway 101, outside the required minimum walkway widths.

**G. Lighting.**

***Street lighting, building lighting and lighting of parking lots and walkways shall conform to the following lighting standards:***

- 1. Light fixtures shall conform to the lighting styles in the Architectural Guidelines.**
- 2. Lighting shall be pedestrian scaled.**
- 3. Refer to Section 10-37 of this Title for additional requirements.**
- 4. Wiring for historic fixtures shall be underground. Other overhead wiring shall be placed underground, where possible.**

Findings: Site and building lighting is compatible with local historical traditions and is pedestrian scaled. Maximum height of pole-mount site lighting is 16 feet above grade. Wiring to site lights proposed underground. Refer also to Section 10-37 of this Narrative.

- H Design Review. All uses except single family and residential duplex units shall be subject to Design Review criteria contained within FCC 10-6 to insure compatibility and integration with the Mainstreet character, and to encourage revitalization. Architectural design shall be reviewed against the Architectural Design code contained within FCC 10-6-6 to determine compatibility, with the exception of solar photovoltaic and solar thermal energy systems as allowed by HB3516.***

Findings: Proposed development is subject to Design Review criteria. Refer to Section 10-6 of this Narrative.

- I. Trash Enclosures. All trash enclosures shall be located in side or rear yards, and shall be screened from street or pedestrian courtyard view with a permanent solid fence or wall at least 6' high. Service shall be from an abutting alley or interior parking lot where possible. Gates opening to non-street faces may be slatted chain link.***

Findings: Proposed design includes screened trash enclosure serviced from interior parking lot. Enclosure is shared between both Lots.

## **FCC TITLE 10, CHAPTER 34 – LANDSCAPING**

### **10-34-3-2: Landscaping Plan Required.**

***A landscape plan is required.***

Findings: Landscape Plan submitted herewith.

***10-34-3-3: Landscape Area and Planting Standards. The minimum landscaping area is 15% of the lot area, unless specified otherwise in the applicable zoning district for the proposed use. This required minimum landscaping area may be reduced if preservation credits are earned as specified in Section 10-34-2-4.***

Findings: The proposed development includes approximately 3,500 square feet of landscape area, equivalent to approximately 24% of the lot.

- A. Landscaping shall include planting and maintenance of the following:***
- 1. One tree per 30 lineal feet as measured along all lot lines that are adjacent to a street.***

Findings: The proposed landscape design includes street trees spaced maximum 30-feet on center. Street trees planted as part of Hwy 101 project proposed to remain.

- 2. Six shrubs per 30 lineal feet as measured along all lot lines that are adjacent to a street.***

Findings: The proposed landscape design includes shrubs spaced maximum 5-feet on center at lot lines adjacent to street.

3. *Living plant materials shall cover a minimum of 70 percent of the required landscape area within 5 years of planting.*

Findings: The proposed landscape design includes plant species with growth characteristics to cover the minimum area required.

4. *Except for preservation of existing significant vegetation, the required plant materials on-site shall be located in areas within the first 20 feet of any lot line that abuts a street. Exceptions may be granted where impracticable to meet this requirement or the intent is better served. Required trees may be located within the right-of-way and must comply with Section 10-34-4. Plant materials may be installed in any arrangement and do not need to be equally spaced nor linear in design. Plantings and maintenance shall comply with the vision clearance standards of FCC 10-35-2-13.*

Findings: The proposed development landscape design is consistent across the entire property.

**10-34-3-4: Landscape Materials.**

*Permitted landscape materials include trees, shrubs, ground cover plants, non-plant ground covers, existing native vegetation, outdoor hardscape features and storm water features, as described below.*

- A. *Plant Selection. A combination of deciduous and evergreen trees, shrubs, and ground covers shall be used, consistent with the purpose of this Chapter.*

*A suggested Tree and Plant List for the City of Florence and the Sunset Western Garden Book are available at City Hall. The selection of plant and tree species shall be based upon site conditions such as wind and sun exposure, space limitations, water availability, and drainage conditions. The use of indigenous plants is encouraged, and may be required where exposure, slope or soil conditions warrant.*

Findings: The proposed development landscape design incorporates plants selected from the suggested reference guides.

**10-34-3-6: Parking Lot Landscape Standards.** *All parking lots shall meet Parking Area Improvement Standards set forth in FCC 10-3-8. Parking areas with more than twenty (20) spaces shall include interior landscaped "islands" to break up the parking area. Interior parking lot landscaping shall count toward the minimum landscaping requirement of Section 10-34-3-3. The following standards apply:*

- A. *For every parking space, 10 square feet of interior parking lot landscaping shall be provided;*

Findings: The proposed development landscape design exceeds 10 square feet of interior parking lot landscaping for every parking space.

- D. *Irrigation is required for interior parking lot landscaping to ensure plant survival; E. Living plant material shall cover a minimum of 70% of the required interior parking lot landscaping within 5 years of planting; and*

Findings: The proposed development landscape design includes automatic irrigation throughout planting areas.

- F. *Species selection for trees and shrubs shall consider vision clearance safety requirements and trees shall have a high graft (lowest limb a minimum of 5 feet high from the ground) to ensure pedestrian access.***

Findings: The proposed development landscape design maintains vision clearance requirements with low shrubs or paving in required vision areas.

**10-34-3-7: Buffering and Screening.**

***Buffering and screening are required under the conditions listed below. Walls, fences, and hedges shall comply with the vision clearance requirements and provide for pedestrian circulation, in accordance with FCC 10-35-2-13. (See Section 10-34-5 for standards specific to fences and walls.)***

- A. *Parking/Maneuvering Area Adjacent to Streets and Drives. Where a parking or maneuvering area is adjacent and parallel to a street or driveway, a berm; an evergreen hedge; decorative wall (masonry or similar quality material) with openings; arcade; trellis; or similar partially opaque structure 3-4 feet in height shall be established between street and driveway or parking area. See also FCC 10-3-7-D for standards specific to parking lots adjacent to the street. The required screening shall have breaks or portals to allow visibility (natural surveillance) into the site and to allow pedestrian access to any adjoining walkways. Hedges used to comply with this standard shall be a minimum of 36 inches in height at maturity, and shall be of such species, number, and spacing to provide year-round screening within five (5) years after planting. Vegetative ground cover is required on all surfaces between the wall/hedge and the street/driveway line.***

Findings: Evergreen hedge proposed along driveway parallel to Hwy 101 with groundcover between hedge and street/driveway line.

- B. *Parking/Maneuvering Area Adjacent to Building. Where a parking or maneuvering area or driveway is adjacent to a building, the area shall be separated from the building by a curb and a raised walkway, plaza, or landscaped buffer not less than five (5) feet in width. Raised curbs, bollards, wheel stops, or other design features shall be used to protect pedestrians, landscaping, and buildings from being damaged by vehicles.***

Findings: Parking and maneuvering areas are separated from buildings by raised walkways and planting areas, except at drive-through lane. Wheel stops proposed to protect pedestrians, landscaping, and buildings.

**10-34-4: Street trees.**

***Street trees are trees located within the right-of-way.***

- A. *Street Tree List. Trees shall be selected from the Tree and Plant List for the City of Florence based on climate zone, growth characteristics and site conditions, including***

*available space, overhead clearance, soil conditions, exposure, and desired color and appearance. Other tree species are allowed with City approval.*

- B. Caliper Size.** *The minimum diameter or caliper size at planting, as measured six (6) inches above grade, is one and one half (1 ½ ) inches with a high graft (lowest limb a minimum of 5 foot high from the ground) to ensure pedestrian access.*
- C. Spacing and Location.** *Street trees shall be planted within the street right-of-way within existing and proposed planting strips or in sidewalk tree wells on streets without planting strips, except when utility easements occupy these areas, in accordance with the requirements of FCC 10-35-2-3 and 10-36-2-16. Street tree spacing shall be based upon the type of tree(s) selected and the canopy size at maturity and, at a minimum, the planting area shall contain sixteen (16) square feet, or typically, a four (4) foot by four (4) foot square. In general, trees shall be spaced no more than thirty (30) feet apart, except where planting a tree would conflict with existing trees, retaining walls, utilities and similar physical barriers. All street trees shall be placed outside utility easements, and shall comply with the vision clearance standards of FCC 10-35-2-14.*

Findings: New street trees proposed at Fifth Street to match trees recently installed at Hwy 101, 2-inch minimum caliper. Existing street trees installed during Hwy 101 project proposed to remain.

#### **FCC TITLE 10, CHAPTER 35 – ACCESS AND CIRCULATION**

##### **10-35-2-5: Traffic Study Requirements.**

*The City may require a traffic study prepared by an Oregon registered professional engineer with transportation expertise to determine access, circulation, and other transportation requirements in conformance with FCC 10-1-1-4-E, Traffic Impact Studies.*

Findings: Applicant has consulted with City staff to determine level of analysis required by development proposed, and traffic study is submitted herewith.

#### **FCC TITLE 10, CHAPTER 37 – LIGHTING**

##### **10-37-3: Lighting plans required.**

*All applications for building permits and land use planning review which include installation of exterior lighting fixtures, not exempted, shall include the number of luminaires, the number of lamps in each luminaire, a photometric report for each type of luminaire and a site plan with the photometric plan of the lumen output.*

Findings: Proposed lighting design includes pole mount site lighting with full cut-off luminaires. Lighting plan indicating lumen output submitted herewith.

## DESIGN REVIEW NARRATIVE

**PROJECT:** Drive-Through Car Wash

**LOCATION:** Address: 586 HWY 101, Florence, OR 97439

Tax Map 18122744, Lot 06601

**ZONING:** Mainstreet Area A

**COMPREHENSIVE PLAN DESIGNATION:** Downtown

### Design Review Request:

The applicant is requesting approval of a design review for the development of parcel 06601 of 18-12-27-44 into a +/- 1,400 sf drive-through Car Wash. Design includes associated driveway, parking, landscaping, stormwater management, and other site improvements. Prior Land Use approvals include Conditional Use Permit PC 19 10 CUP 03 to allow proposed use and Variance PC 19 08 VAR 01 to increase maximum setback.

Development proposal includes automated drive-through car wash lane, office, restroom, and equipment room. Operations will include fully automated system capable of touchless (water pressure) and soft touch (cloth) car wash options. In addition, there will be four (4) commercial vacuum cleaners. Facility will operate 24 hours per day with one full-time staff on site as service technician and groundskeeper. The car wash will use highly efficient reclaim water system that recovers and reuses 90% of wash water.

Within 300 feet of development site, property is Zoned Mainstreet A and Mainstreet B. Uses within this area include tattoo shop, antique store, restaurant, hair salon, retail dispensary, furniture store, saw equipment shop, bank, gas station, appliance repair and sales, printing, gun sales, stamp and coin sales, clock repair, pest technician, and residential.

Applicant intends to begin construction as soon as possible, preferably in Summer 2020, and complete within approximately 4-5 months.

### Conditions of Approval from CUP & VAR:

1. List of Drawings. **N/A.**
2. Applicant shall submit to the Community Development Department a signed "Agreement of acceptance" of all conditions of approval prior to issuance of a building permit. ***Applicant assumes this will be Condition of Approval of Design Review.***

3. Authorization of CUP shall be void after October 22, 2020, unless a building permit has been issued and substantial construction has taken place. ***Applicant assumes this will be Condition of Approval of Design Review.***
4. Prior to building permit issuance the applicant is required to sign a non-remonstrance agreement regarding improvements to the driveway access on 6<sup>th</sup> street. ***Applicant assumes this will be Condition of Approval of Design Review.***
5. Sidewalk extension on 6<sup>th</sup> street will be required in conjunction with relocation of the 6<sup>th</sup> street driveway. ***Applicant assumes this will be Condition of Approval of Design Review.***
6. Easements are required to implement the access management plan shared access between this development site and the Old School Furniture site. Once cross easements are made by the eastern property owner, a maintenance agreement would be required. ***Applicant assumes this will be Condition of Approval of Design Review.***
7. If the sewer service line is to come from 5<sup>th</sup> street a private utility easement will be required because it crosses one property to another – Applicant assumes this will be Condition of Approval of Design Review.
8. Proposed catch basin at southeastern edge of property, along 5<sup>th</sup> street, must be a storm inlet. Must be a manhole added at the proposed 90 degree bend connecting the 8" storm line and the proposed line that runs east-west along 5<sup>th</sup> street. City Plans show 8" storm line that runs east to west along 5<sup>th</sup> street, applicant shows 10". It is unclear if the applicant plans to upsize, or if the label is incorrect. ***Applicant has addressed this Condition in Design Review Submittal.***
9. Overhead line extending from highway 101 east across tax lot 6601 – site plan proposes to remove the overhead wire. No other overhead wire are illustrated and labeled. All new utilities required to be underground. ***Applicant has addressed this Condition in Design Review Submittal.***
10. 5<sup>th</sup> street roadway to be reconstructed to handle increased traffic. ***Applicant has addressed this Condition in Design Review Submittal.***
11. Proposed noise levels from car wash dryer, vacuum cleaners, and speakers shall be required at design review. ***Applicant has addressed this Condition in Design Review Submittal.***

Informational Items:

1. Traffic impact study to be analyzed during design review. ***Traffic Impact Study submitted herewith.***
2. Construction of coffee stand and drive through car wash will be contingent on completed design review approved by planning. ***Design Review approval requested herewith.***
3. Construction plans for new driveway approach and installation of sidewalks will be required to be submitted in conjunction with building permit. Dimensioned plans will be required with Design review. ***Applicant assumes this will be Condition of Approval of Design Review.***

Criteria Applying to this Matter for the application include:

Florence City Code, Title 10:

Chapter 1, Zoning Administration: 10-1-1-4E Traffic Impact Studies, 10-1-6-3 Type III Review

Chapter 4, Conditional Uses: 10-4-12-D-6 Hazards and Nuisances

Chapter 6, Design Review

Chapter 27, Mainstreet District: Sections 1, 3 through 5

Chapter 34, Landscaping: 10-34-3-2 Landscaping Plan Required, 10-34-3 Landscaping, 10-34-4 Street Trees

Chapter 35, Access and Circulation: 10-35-2-5 Traffic Study Requirements

Chapter 37, Lighting: 10-37-3 Lighting Plans Required

#### **FCC TITLE 10, CHAPTER 1 – ZONING ADMINISTRATION**

##### **10-1-1-4-2: Criteria for Warranting a Traffic Impact Study.**

***All traffic impact studies shall be prepared by a professional engineer in accordance with the requirements of the road authority. The City shall require a Traffic Impact Study (TIS) as part of an application for development; a proposed amendment to the Comprehensive Plan, zoning map, or zoning regulations; a change in use, or a change in access, if any of the following conditions are met:***

- c. The addition of twenty-five (25) or more single family dwellings, or an intensification or change in land use that is estimated to increase traffic volume by 250 Average Daily Trips (ADT) or more, per the ITE Trip Generation Manual.***

Findings: The Applicant has provided a Traffic Impact Study in accordance with this criterion.

##### **10-1-1-6-3: Type III Reviews – Quasi-judicial land use hearings.**

- A. Hearings are required for Type III (quasi-judicial) land use matters requiring Planning Commission review. Type III applications include, but are not limited to:***

- 5. New construction requiring Design Review by the Planning Commission.***

Findings: The Applicant requests a Hearing in accordance with FCC Title 10 for the Development proposed.

#### **FCC TITLE 10, CHAPTER 4 – CONDITIONAL USES**

##### **10-4-12-D-6 Hazards and Nuisances**

***Noise shall be controlled so as not to exceed the normal ground level of adjacent uses. Lighting shall be in accordance with Section 10-37 of this Title.***

Findings: Primary noise producing equipment of car wash is the Dryer. Per manufacturer's product data for equipment proposed in the design – Proto-vest S130 Dryer with Silence – dB is approximately 76.9 measured at 10 feet from dryer without any obstruction. According to the MAS Environmental Calculations below, dB at north and south property lines (Lot 06600) are approximately 43 dB and 35 dB respectively. Proposed building design includes insulated concrete form construction wall structure with approximate Sound Transmission Class rating of 55. Outside the east and west walls, dB outside walls will be approximately 22 dB.



## **FCC TITLE 10, CHAPTER 6 – DESIGN REVIEW**

### **10-6-5-1 General Criteria for Non-Residential Development**

***Nonresidential projects shall meet the following criteria. The Planning Commission or Planning Commission or their designee may require any of the following conditions it deems necessary to secure the purpose and intent of this Chapter. The Commission or their designee shall consider the following criteria reviewing applications and may set conditions or standards which regulate and limit the following:***

- A.        *Setbacks, yards, height, density and similar design features according to the underlying zoning district.***

Findings: The proposed development meets zoning district requirements with Setback Variance PC PC 19 08 VAR 01.

- B.        *Lot area, dimensions and percentage of coverage according to the underlying zoning district.***

Findings: The proposed development occurs on an existing Lot and meets lot area, dimensions, and percentage of coverage according to the underlying zoning district. See Section FCC Title 10, Chapter 27 – Mainstreet District of this narrative.

- C.        *Installation and maintenance of fences, walls, hedges, screens and landscaping according to standards set forth in FCC 10-34 Landscaping, and any requirements of the underlying zoning district.***

Findings: Refer to Sections 10-27 and 10-34 of this Narrative.

- D.        *The location and design of access and egress points for vehicles and pedestrians, including access points along State highways according to standards set forth in FCC 10-35 Access and Circulation, and any requirements of the underlying zoning district.***

Findings: Refer to Sections 10-27 and 10-35 of this Narrative.

- E.        *Noise, vibration, smoke, dust, odor, light intensity and electrical interferences.***

Findings: Screening proposed between Hwy 101 and Kiosk according to Conditions of VAR and CUP approvals. Major noise producing equipment (dryer) located within concrete masonry building and central to site, away from property lines. Refer to Sections 10-6, 10-34, and 10-37 of this Narrative for additional clarification.

- F.        *Parking and outside display areas, dimensions, surfacing and on-site traffic circulation according to standards set forth in FCC 10-3 Parking and Loading.***

Findings: Parking and on-site traffic circulation are shared between Lots 06600 and 06601. Eight (8) parking spaces are provided between both lots. According to 10-3-4, each development site is required a minimum no less than two (2) spaces for non-residential uses. Additional spaces are not required by proposed uses. Minimum dimensions indicated on Drawings comply with standards set forth in 10-3. Additional street parking available at Hwy 101 immediately adjacent to development site. No outside display areas proposed.

**G        *Architectural quality and aesthetic appearance, including compatibility with adjacent buildings***

Findings: Proposed design utilizes horizontal and vertical siding materials and commercial quality windows and doors, similar in scale and aesthetic appearance to surrounding buildings.

**H.        *Color, building materials and exterior appearance in accordance with the policies established by the City in the Downtown Implementation Plan, and in applicable zoning districts.***

Findings: Design elements including siding and trim details, eaves, scale of openings, and landscaping reference the historic character of Oldtown and Mainstreet neighborhoods. The proposed Development maintains sight lines through the development to encourage visual connections between Highway 101 and the old elementary school site, as well as pedestrian connectivity. Buildings will top out at 20 feet minimum above grade (top of parapet wall or midpoint of sloped roof). See also Section 10-6-6 and 10-27 of this Narrative.

**I. *Exterior lighting and security.***

Findings: Refer to Section 10-37 of this Narrative.

**J. *Public health, safety and general welfare.***

Findings: The proposed development encourages safe pedestrian, bike, and vehicle access and use.

**K. *Provision of public facilities and infrastructure according to standards set forth in FCC 10-36 Public Facilities.***

Findings: Approximately 100' of Fifth Street will be reconstructed as part of proposed development.

**L. *Requiring a time period within which the proposed use or portions thereof shall be developed.***

Findings: Conditions of VAR and CUP approval indicate expiration one (1) year after date of approval.

**M. *Requiring bonds to insure performance of special conditions. (Ord. 625, 6-30-80)***

Findings: Applicant requests any required bonds are condition of approval for Building Permit issuance.

**N. *Such other conditions as are necessary***

Findings: Applicant will respond to other conditions Planning Director deems necessary.

**10-6-6 Downtown Architectural Design**

**10-6-6-1: Building Type**

***These types of buildings currently exist within the applicable zoning districts and are compatible with each other, despite being different in their massing and form. The following building types are permitted in future development and infill. Other building types not listed which are compatible with the surrounding area and buildings and are compatible with the historic nature of the zoning district are also permitted. Not all types may be permitted or regulated in all zoning districts.***

**A.        *Residential Type, single-family, duplex (attached & detached), or multi-family***

- B. Commercial Storefront Type**
- C. Mixed-Use House Type**
- D. Community Building Type**

Findings: Building is Commercial Storefront Type.

#### **10-6-6-2 Building Style**

- B. Historic Style Compatibility:** *New and existing building design shall be consistent with the regional and local historical traditions. Where historic ornament and detail is not feasible, historic compatibility shall be achieved through the relation of vertical proportions of historic façades, windows and doors, and the simple vertical massing of historical buildings. Some examples of architectural styles currently or historically present in the Florence area are: Queen Anne, Shingle Style, Second Empire, Victorian, Italianate, Tudor Style, Craftsman Bungalow, American Foursquare, and Vernacular.*
- 2. New Buildings:** *Design shall be compatible with adjacent historic buildings.*

Findings: Proposed building design includes multiple elements consistent with regional and local historical traditions. In addition to traditional façade delineations of base, middle, and top of wall, craftsman elements such as siding details and trims are included. Regional northwest coastal vernacular referenced with shed roof and divided-lite windows. Vertical emphasis and building height of 20 feet at mid-point of slope reference historical Florence context and goals of Downtown Plan.

#### **10-6-6-3 Building Facades**

- A. Horizontal Design Elements:** *Multi-story commercial storefront buildings shall have a distinctive horizontal base; second floor; and eave, cornice and/or parapet line; creating visual interest and relief. Horizontal articulations shall be made with features such as awnings, overhanging eaves, symmetrical gable roofs, material changes, or applied fascia detail. New buildings and exterior remodels shall generally follow the prominent horizontal lines existing on adjacent buildings at similar levels along the street frontage. Examples of such horizontal lines include but are not limited to: the base below a series of storefront windows; an existing awning or canopy line, or belt course between building stories; and/or an existing cornice or parapet line. Where existing adjacent buildings do not meet the City's current building design standards, a new building may establish new horizontal lines.*

Findings: Proposed building design includes horizontal articulations such as a distinctive horizontal base that relates to existing structures on adjacent properties and material changes.

- B. Vertical Design Elements:** *Commercial storefront building faces shall have distinctive vertical lines of emphasis spaced at relatively even intervals. Vertical articulations may be made by material changes, variations in roof heights, applied fascia, columns, bay windows, etc. The maximum spacing of vertical articulations on long, uninterrupted building elevations shall be not less than one break for every 30 to 40 feet.*

Findings: Street facing building face includes variation in roof height, and emphasized corners, reducing maximum length of façade to less than 30 feet.

- C.      *Articulation and Detailing: All building elevations that orient to a street or civic space must have breaks in the wall plane (articulation) of not less than one break for every 30 feet of building length or width, as applicable, as follows:***
- a.      *Recess (e.g., porch, courtyard, entrance balcony, or similar feature) that has a minimum depth of 4 feet;***
  - b.      *Extension (e.g., floor area, porch, entrance, balcony, overhang, or similar feature) that projects a minimum of 2 feet and runs horizontally for a minimum length of 4 feet; and/or***
  - c.      *Offsets or breaks in roof elevation of 2 feet or greater in height.***
  - d.      *A “break,” for the purposes of this subsection, is a change in wall plane of not less than 24 inches in depth. Breaks may include, but are not limited to, an offset, recess, window reveal, pilaster, frieze, pediment, cornice, parapet, gable, dormer, eave, coursing, canopy, awning, column, building base, balcony, permanent awning or canopy, marquee, or similar architectural feature.***

Findings: Proposed building design includes offset in plan that reduces length of wall at street facing façade to less than 30 feet.

#### **10-6-6-4 Permitted Visible Building Materials**

***Building materials which have the same or better performance may be substituted for the materials below provided that they have the same appearance as the listed materials.***

**A.      *Exterior Building Walls***

Findings: Proposed building design incorporates horizontal lap siding with paint finish as dominant finish. In addition, the design incorporates vertical batt siding with paint finish and 4-inch minimum painted trims.

**B.      *Roofs, Awnings, Gutters, and Visible Roofing Components***

Findings: Proposed building design incorporates composition shingle roofing with pre-finish sheet metal gutters and downspouts.

**D.      *Windows, Entrances, and Accessories***

Findings: Proposed building design incorporates vinyl storefront windows and painted steel doors with vision lite at primary entrance door.

- G.      *Building and Site Material Colors: Color finishes on all building exteriors shall be approved by the City and be of a muted coastal Pacific Northwest palette. Reflective, luminescent, sparkling, primary, and “day-glow” colors and finishes are prohibited. The Planning Commission/Planning Commission or their designee may approve adjustments to the standards as part of a site Design Review approval.***

Findings: Proposed building color palette consists of a muted coastal Pacific Northwest palette of warm neutral colors.

#### **10-6-6-5 Material Applications and Configurations**

##### **A. Building Walls**

Findings: Proposed building design incorporates horizontal lap siding with paint finish as dominant finish. In addition, the design incorporates vertical batt siding with paint finish and 4-inch minimum painted trims.

##### **B. Roofs, Awnings, Gutters and Roofing Accessories**

Findings: Proposed building design incorporates a shed roof with continuous eaves and ogee or round gutters to square or round downspouts. Shed roof slope minimum of 3:12 where attached to building, 5:12 slope at primary roof.

##### **D. Visible Windows, Glazing, and Entrances**

Findings: Proposed building design incorporates vinyl storefront windows and painted steel doors with vision lite at primary entrance door. Openings are surrounded by 2.5-inch minimum painted trim. Maximum window lite is 24 square feet, and are divided by simulated divided lite muntins.

##### **G. Mechanical Equipment:**

Findings: Proposed building design incorporates mechanical equipment internal to building.

#### **10-6-8 Drawing Submittal**

***In addition to information required by FCC 10-1-1-4, the owner or authorized agent shall submit the following drawings to the City for review:***

Findings: Drawings submitted herewith.

### **FCC TITLE 10, CHAPTER 27 – MAINSTREET DISTRICT**

#### **10-27-5 Site and Development Provisions A.**

##### **A. Building or Structural Height Limitations Area “A”:**

***Buildings shall be a minimum of 20’ in height. This measurement may include a building façade as opposed to a total building height of 20’. If a façade is used, it must be designed so that it is not readily apparent that it is only a façade.***

Findings: The proposed building design tops out at approximately 22 feet above grade.

##### **B. Fences, Hedges, Walls and Landscaping: Landscaping shall be in accordance with FCC 10-34, except as modified by the following specific standards:**

***Area “A”:***

*A minimum of 10% landscaping is required. The calculation of the required minimum may include street trees installed and maintained by the applicant, planters and window boxes which are the property of the applicant/owner, as well as plantings within courtyard areas. All landscaping included within the 10% calculation must be installed and maintained by the applicant or his/her successors.*

*Interior parking lots may be separated from rear courtyards by walls, fences or hedges 4' in height or less. Eating establishments may separate outdoor eating areas from parking lots and adjacent buildings or structures by a fence, wall or hedge not to exceed 6' in height. Pedestrian walkways may be separated from abutting uses by plantings or fences which allow visual surveillance of the walkway and surrounding areas. Where a commercial use abuts a residential district, see FCC 10-34-3-7-D.*

Findings: The proposed development includes approximately 2,044 square feet of landscape area, equivalent to approximately 19% of the lot. Site does not abut residentially zoned property. Refer also to Section 10-34 of this Narrative.

- C. Access and Circulation. Refer to Section 10-35 Access and Circulation of this Title for Requirements.**
- 2. Sidewalks abutting buildings on Highway 101, Highway 126, and local streets within the Mainstreet District shall be at least 8' in width, except collector streets within the Mainstreet District without on-street parking as described below. Sidewalk area beyond the standard 6' sidewalk width may be surfaced with pavers, brick or other similar materials. Maintenance and repair of pavers, brick, etc. are the responsibility of the business/property owner.**

Findings: Sidewalks adjacent to development site have been recently reconstructed as part of Hwy 101 project. New sidewalks will be at least 8' in width.

**D. Parking and Loading Spaces**

**Area "A":**

*Parking spaces may be located on-street in front of the front yard of the lot (if approved by ODOT on Highways 101/126) and/or may be in interior shared parking lots within the block where the applicant's lot is located, or in a shared lot in another block. Business/property owners are strongly encouraged to cooperate in proposing joint parking agreement areas as part of development or redevelopment proposals. Parking will not be permitted in front yards. The Planning Commission may grant parking under a temporary arrangement if an interior or off-site shared parking lot is planned and approved, but not yet constructed, and/or may require the applicant or owner to sign a non-remonstrance agreement for parking improvements. Parking standards in Chapter 3 of this Title shall be used as a guideline for determining parking need.*

*Bicycle racks shall be provided either in the interior parking lot, or by an entrance if located outside the required minimum 6' pedestrian walkway.*

Findings: Access to parking areas is shared with adjacent property. Parking is not proposed in front yard. Bicycle parking is proposed adjacent to the sidewalk along Highway 101, outside the required minimum walkway widths.

**G. Lighting.**

***Street lighting, building lighting and lighting of parking lots and walkways shall conform to the following lighting standards:***

- 1. Light fixtures shall conform to the lighting styles in the Architectural Guidelines.***
- 2. Lighting shall be pedestrian scaled.***
- 3. Refer to Section 10-37 of this Title for additional requirements.***
- 4. Wiring for historic fixtures shall be underground. Other overhead wiring shall be placed underground, where possible.***

Findings: Site and building lighting is compatible with local historical traditions and is pedestrian scaled. Maximum height of pole-mount site lighting is 16 feet above grade. Wiring to site lights proposed underground. Refer also to Section 10-37 of this Narrative.

**H Design Review. All uses except single family and residential duplex units shall be subject to Design Review criteria contained within FCC 10-6 to insure compatibility and integration with the Mainstreet character, and to encourage revitalization. Architectural design shall be reviewed against the Architectural Design code contained within FCC 10-6-6 to determine compatibility, with the exception of solar photovoltaic and solar thermal energy systems as allowed by HB3516.**

Findings: Proposed development is subject to Design Review criteria. Refer to Section 10-6 of this Narrative.

**I. Trash Enclosures. All trash enclosures shall be located in side or rear yards, and shall be screened from street or pedestrian courtyard view with a permanent solid fence or wall at least 6' high. Service shall be from an abutting alley or interior parking lot where possible. Gates opening to non-street faces may be slatted chain link.**

Findings: Proposed design includes screened trash enclosure serviced from interior parking lot. Enclosure is shared between both Lots.

**FCC TITLE 10, CHAPTER 34 – LANDSCAPING**

**10-34-3-2: Landscaping Plan Required.**

***A landscape plan is required.***

Findings: Landscape Plan submitted herewith.

**10-34-3-3: Landscape Area and Planting Standards.** *The minimum landscaping area is 15% of the lot area, unless specified otherwise in the applicable zoning district for the proposed use. This required minimum landscaping area may be reduced if preservation credits are earned as specified in Section 10-34-2-4.*

Findings: The proposed development includes approximately 2,044 square feet of landscape area, equivalent to approximately 19% of the lot.

**A. Landscaping shall include planting and maintenance of the following:**

- 1. One tree per 30 lineal feet as measured along all lot lines that are adjacent to a street.**

Findings: Street trees planted as part of Hwy 101 project proposed to remain.

- 2. Six shrubs per 30 lineal feet as measured along all lot lines that are adjacent to a street.**

Findings: The proposed landscape design includes shrubs spaced maximum 5-feet on center at lot lines adjacent to street.

- 3. Living plant materials shall cover a minimum of 70 percent of the required landscape area within 5 years of planting.**

Findings: The proposed landscape design includes plant species with growth characteristics to cover the minimum area required.

- 4. Except for preservation of existing significant vegetation, the required plant materials on-site shall be located in areas within the first 20 feet of any lot line that abuts a street. Exceptions may be granted where impracticable to meet this requirement or the intent is better served. Required trees may be located within the right-of-way and must comply with Section 10-34-4. Plant materials may be installed in any arrangement and do not need to be equally spaced nor linear in design. Plantings and maintenance shall comply with the vision clearance standards of FCC 10-35-2-13.**

Findings: The proposed development landscape design is consistent across the entire property.

**10-34-3-4: Landscape Materials.**

**Permitted landscape materials include trees, shrubs, ground cover plants, non-plant ground covers, existing native vegetation, outdoor hardscape features and storm water features, as described below.**

- A. Plant Selection.** *A combination of deciduous and evergreen trees, shrubs, and ground covers shall be used, consistent with the purpose of this Chapter.*

*A suggested Tree and Plant List for the City of Florence and the Sunset Western Garden Book are available at City Hall. The selection of plant and tree species shall be based upon site conditions such as wind and sun exposure, space limitations, water availability, and drainage conditions. The use of indigenous plants is encouraged, and may be required where exposure, slope or soil conditions warrant.*

Findings: The proposed development landscape design incorporates plants selected from the suggested reference guides.

**10-34-3-6: Parking Lot Landscape Standards. All parking lots shall meet Parking Area Improvement Standards set forth in FCC 10-3-8. Parking areas with more than twenty (20) spaces shall include interior landscaped “islands” to break up the parking area. Interior parking lot landscaping shall count toward the minimum landscaping requirement of Section 10-34-3-3. The following standards apply:**

- A. For every parking space, 10 square feet of interior parking lot landscaping shall be provided;**

Findings: The proposed development landscape design exceeds 10 square feet of interior parking lot landscaping for every parking space.

- D. Irrigation is required for interior parking lot landscaping to ensure plant survival; E. Living plant material shall cover a minimum of 70% of the required interior parking lot landscaping within 5 years of planting; and**

Findings: The proposed development landscape design includes automatic irrigation throughout planting areas.

- F. Species selection for trees and shrubs shall consider vision clearance safety requirements and trees shall have a high graft (lowest limb a minimum of 5 feet high from the ground) to ensure pedestrian access.**

Findings: The proposed development landscape design maintains vision clearance requirements with low shrubs or paving in required vision areas.

**10-34-3-7: Buffering and Screening.**

**Buffering and screening are required under the conditions listed below. Walls, fences, and hedges shall comply with the vision clearance requirements and provide for pedestrian circulation, in accordance with FCC 10-35-2-13. (See Section 10-34-5 for standards specific to fences and walls.)**

- A. Parking/Maneuvering Area Adjacent to Streets and Drives. Where a parking or maneuvering area is adjacent and parallel to a street or driveway, a berm; an evergreen hedge; decorative wall (masonry or similar quality material) with openings; arcade; trellis; or similar partially opaque structure 3-4 feet in height shall be established between street and driveway or parking area. See also FCC 10-3-7-D for standards specific to parking lots adjacent to the street. The required screening shall have breaks or portals to allow visibility (natural surveillance) into the site and to allow pedestrian access to any adjoining walkways. Hedges used to comply with this standard shall be a minimum of 36 inches in height at maturity, and shall be of such species, number, and spacing to provide year-round screening within five (5) years after planting. Vegetative ground cover is required on all surfaces between the wall/hedge and the street/driveway line.**

Findings: Evergreen hedge proposed along driveway parallel to Hwy 101 with groundcover between hedge and street/driveway line.

- B. *Parking/Maneuvering Area Adjacent to Building.* Where a parking or maneuvering area or driveway is adjacent to a building, the area shall be separated from the building by a curb and a raised walkway, plaza, or landscaped buffer not less than five (5) feet in width. Raised curbs, bollards, wheel stops, or other design features shall be used to protect pedestrians, landscaping, and buildings from being damaged by vehicles.**

Findings: Parking and maneuvering areas are separated from buildings by raised walkways and planting areas, except at vacuum stations where access to equipment is needed to operate. Wheel stops proposed to protect pedestrians, landscaping, and buildings.

**10-34-4: Street trees.**

***Street trees are trees located within the right-of-way.***

- A. *Street Tree List.* Trees shall be selected from the Tree and Plant List for the City of Florence based on climate zone, growth characteristics and site conditions, including available space, overhead clearance, soil conditions, exposure, and desired color and appearance. Other tree species are allowed with City approval.**
- B. *Caliper Size.* The minimum diameter or caliper size at planting, as measured six (6) inches above grade, is one and one half (1 ½ ) inches with a high graft (lowest limb a minimum of 5 foot high from the ground) to ensure pedestrian access.**
- C. *Spacing and Location.* Street trees shall be planted within the street right-of-way within existing and proposed planting strips or in sidewalk tree wells on streets without planting strips, except when utility easements occupy these areas, in accordance with the requirements of FCC 10-35-2-3 and 10-36-2-16. Street tree spacing shall be based upon the type of tree(s) selected and the canopy size at maturity and, at a minimum, the planting area shall contain sixteen (16) square feet, or typically, a four (4) foot by four (4) foot square. In general, trees shall be spaced no more than thirty (30) feet apart, except where planting a tree would conflict with existing trees, retaining walls, utilities and similar physical barriers. All street trees shall be placed outside utility easements, and shall comply with the vision clearance standards of FCC 10-35-2-14.**

Findings: Existing street trees installed during Hwy 101 project proposed to remain.

**FCC TITLE 10, CHAPTER 35 – ACCESS AND CIRCULATION**

**10-35-2-5: Traffic Study Requirements.**

***The City may require a traffic study prepared by an Oregon registered professional engineer with transportation expertise to determine access, circulation, and other transportation requirements in conformance with FCC 10-1-1-4-E, Traffic Impact Studies.***

Findings: Applicant has consulted with City staff to determine level of analysis required by development proposed, and traffic study is submitted herewith.

**FCC TITLE 10, CHAPTER 37 – LIGHTING**

***10-37-3: Lighting plans required.***

***All applications for building permits and land use planning review which include installation of exterior lighting fixtures, not exempted, shall include the number of luminaires, the number of lamps in each luminaire, a photometric report for each type of luminaire and a site plan with the photometric plan of the lumen output.***

Findings: Proposed lighting design includes pole mount site lighting with full cut-off luminaires. Lighting plan indicating lumen output submitted herewith.



# **CAR WASH AND COFFEE KIOSK TRAFFIC IMPACT ANALYSIS**



Florence, Oregon

April 3, 2020

160 Madison Street, Suite A  
Eugene, Oregon 97402  
541.513.3376

**SANDOW**  
**ENGINEERING**

# Traffic Impact Analysis

## Car Wash and Coffee Kiosk



Florence, Oregon  
April 6, 2019

Kelly Sandow PE

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## EXECUTIVE SUMMARY

This report describes the Traffic Impact Analysis and findings prepared for the proposed development of Tax Lot 6600 and 6601 in Florence, Oregon. More specifically, the project site is located adjacent to Highway 101, on the east side, between 6<sup>th</sup> Street and Rhododendron Drive. The site is vacant and is contained within 0.57 acres. The development proposal is a 400 SF drive-through coffee stand and a single lane drive-through automated car wash. The development is proposed to be completed in the year 2020.

The development is proposing two-access connections. The southern access will be a direct connection to Rhododendron Drive at the east edge of the property. The northern access will be shared access with the adjacent property to the east and connect to the existing 6<sup>th</sup> St full movement access.

The impacts of the development are evaluated for the year of completion, year 2020, and a 5-year horizon, year 2025.

## FINDINGS

The analysis concludes the following findings:

- All studied intersections will operate within the mobility standards with the completion of the development, the year 2020, and the year 2025. No off-site intersection improvements are necessary.
- The addition of development traffic will not substantially increase queueing conditions over the background conditions.
- All site driveways will operate safely and efficiently.
- The site as designed, is sufficient to hold the typical daily queue for the coffee shop usage.

## CONTENTS

|                                         |    |
|-----------------------------------------|----|
| EXECUTIVE SUMMARY .....                 | 2  |
| FINDINGS.....                           | 2  |
| 1.0 INTRODUCTION .....                  | 5  |
| 2.0 PROPOSED SITE USAGE .....           | 7  |
| 2.1 TRIP GENERATION .....               | 7  |
| 2.2 TRIP DISTRIBUTION .....             | 8  |
| 3.0 EXISTING ROADWAY CONDITIONS.....    | 12 |
| 3.1 STUDY AREA .....                    | 12 |
| 3.2 STREET NETWORK.....                 | 12 |
| 3.3 INTERSECTION COUNTS .....           | 14 |
| 3.4 SEASONAL ADJUSTMENT .....           | 14 |
| 3.5 CRASH ANALYSIS .....                | 16 |
| 3.6 TRANSIT SERVICE.....                | 16 |
| 4.0 FUTURE STREET DESIGN.....           | 16 |
| 5.0 FUTURE YEAR TRAFFIC VOLUMES.....    | 17 |
| 5.1 FUTURE YEAR BACKGROUND VOLUMES..... | 17 |
| 5.2 FUTURE YEAR BUILD-OUT VOLUMES.....  | 17 |
| 6.0 INTERSECTION EVALUATION.....        | 22 |
| 6.1 PERFORMANCE MEASURES .....          | 22 |
| 6.2 INTERSECTION ANALYSIS RESULTS.....  | 22 |
| 7.0 QUEUE ANALYSIS .....                | 23 |
| 8.0 DRIVEWAY QUEUING .....              | 25 |
| 9.0 IMPROVEMENT PROPORTIONALITY .....   | 26 |
| 10.0 CONCLUSION.....                    | 27 |
| 10.1 FINDINGS.....                      | 27 |

## LIST OF TABLES

|                                                          |    |
|----------------------------------------------------------|----|
| TABLE 1: TRIP GENERATION .....                           | 8  |
| TABLE 2: ROADWAY CHARACTERISTICS WITHIN STUDY AREA ..... | 12 |
| TABLE 3: ROADWAY CRASH INFORMATION .....                 | 16 |
| TABLE 4: INTERSECTION PERFORMANCE: AM PEAK HOUR .....    | 23 |
| TABLE 5: INTERSECTION QUEUING: AM PEAK HOUR .....        | 24 |
| TABLE 6: DRIVE-THRU QUEUING ANALYSIS .....               | 26 |

## LIST OF FIGURES

|                                                                          |    |
|--------------------------------------------------------------------------|----|
| FIGURE 1 – SITE LOCATION AND VICINITY MAP .....                          | 6  |
| FIGURE 2 – AM PEAK HOUR DEVELOPMENT TRIP DISTRIBUTION .....              | 10 |
| FIGURE 3- PM PEAK HOUR DEVELOPMENT TRIP DISTRIBUTION.....                | 11 |
| FIGURE 4 – INTERSECTION GEOMETRY AND CONTROL .....                       | 13 |
| FIGURE 5 – EXISTING 2019 AM PEAK HOUR TRAFFIC VOLUMES.....               | 15 |
| FIGURE 6 – YEAR 2020 AM PEAK HOUR BACKGROUND TRAFFIC VOLUMES.....        | 18 |
| FIGURE 7 – YEAR 2025 AM PEAK HOUR BACKGROUND TRAFFIC VOLUMES.....        | 19 |
| FIGURE 8– YEAR 2020 AM PEAK-HOUR TRAFFIC VOLUMES WITH DEVELOPMENT .....  | 20 |
| FIGURE 9 – YEAR 2025 AM PEAK HOUR TRAFFIC VOLUMES WITH DEVELOPMENT ..... | 21 |

## LIST OF APPENDICES

|                                   |
|-----------------------------------|
| APPENDIX A: SITE PLAN             |
| APPENDIX B: TRAFFIC COUNT DATA    |
| APPENDIX C: CRASH DATA            |
| APPENDIX D: SYNCHRO OUTPUT        |
| APPENDIX E: QUEUING OUTPUT        |
| APPENDIX F: DRIVE THROUGH QUEUING |

## 1.0 INTRODUCTION

This report describes the Traffic Impact Analysis and findings prepared for the proposed Diamond Car Wash and Human Bean Coffee Drive-Through, located in Florence, Oregon. The project site is located to the East of Highway 101 between 6<sup>th</sup> Street and Rhododendron Drive on Tax Lots 6600 and 6601.

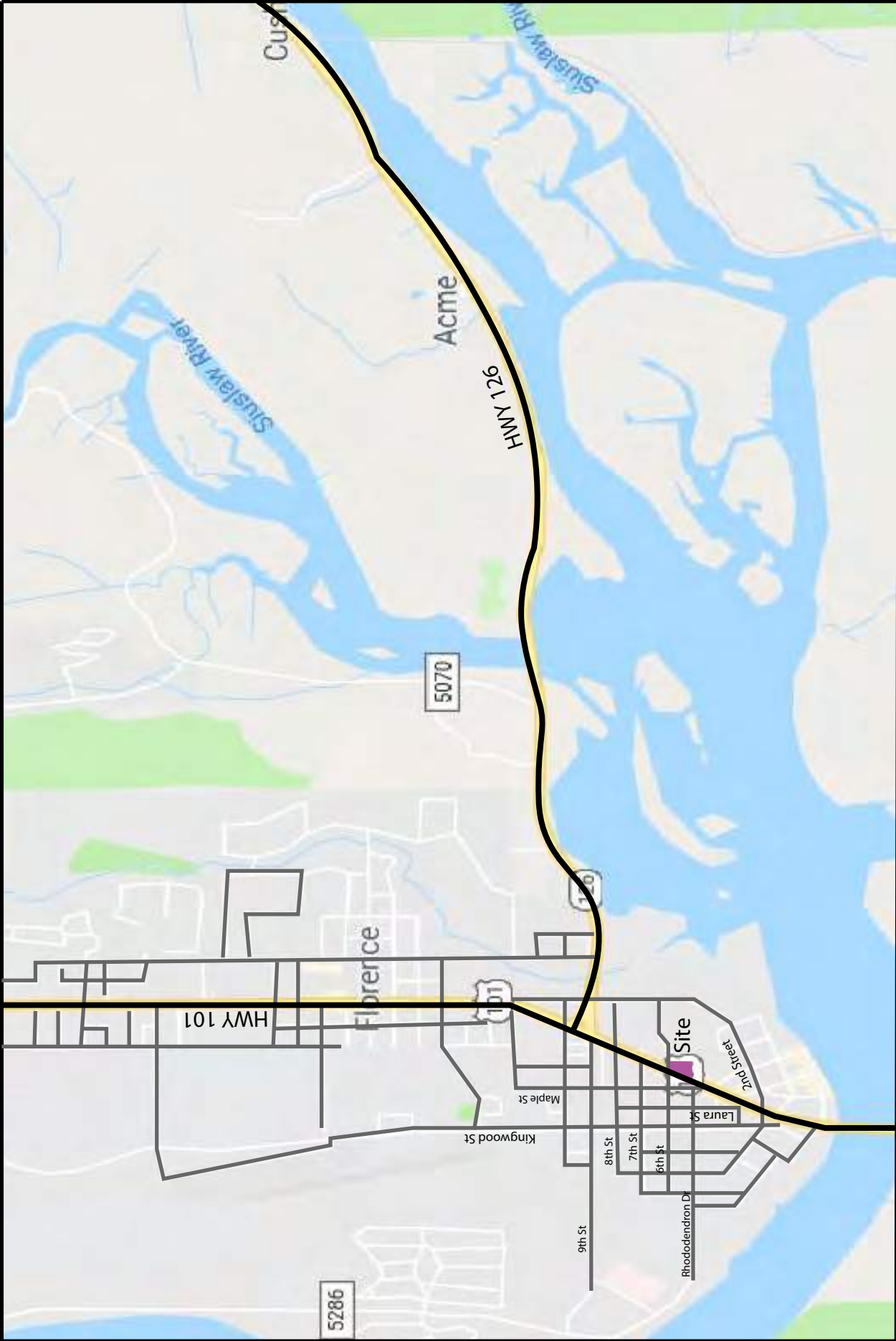
Currently, the site is vacant and is contained within 0.57 acres. The development proposal is a 400 SF drive-through coffee stand and a single lane drive-through automated car wash. The development is proposed to be completed in 2020.

The development is proposing two-access connections. The southern access will be a direct connection to Rhododendron Drive at the east edge of the property. The northern access will be a shared access with the adjacent property to the east and connect to the existing 6<sup>th</sup> St full movement access.

The site plan is included in Appendix A. Figure 1 illustrates the site location.

The traffic study is performed in accordance with the City of Florence and ODOT criteria. The traffic impacts were evaluated for the weekday AM peak hour. The operational analysis is performed for the following conditions:

- Existing year 2019
- Year 2020 with and without the proposed development
- Year 2025 with and without the proposed development



Coffee Shop and Car Wash Florence, Oregon

Figure 1: Vicinity Map and Site Location

## 2.0 PROPOSED SITE USAGE

The development proposal is a 400 square foot Drive-Thru coffee stand and a single lane automated car wash.

The site will have two full movement access points. One will be located off 6<sup>th</sup> Street and will be combined with the existing access connection shared with the adjacent property to the east. The other access is located off Rhododendron Drive and is closely located to the existing access to the adjacent site occupied by Old School Furniture to the east.

The coffee shop will be located at the south end of the site. It will have dual-sided drive-up windows and the space to accommodate 10 vehicles without impacting on-site circulation and approximately 16 vehicles before extending on to the adjacent roadway.

### 2.1 TRIP GENERATION

The trip generation for each use on-site is estimated using the information contained within the Institute of Transportation Engineers (ITE) Trip Generation Manual 10<sup>th</sup> Edition. The trip generation for each use on-site is described in the following.

#### Coffee Stand:

The trips generated by the coffee shop are estimated using ITE Land Use 938 – Coffee/Donut Shop with Drive-Through Window/No indoor seating.

The vehicle trips to the site are categorized as “primary trips” and “pass-by trips.” Primary trips are vehicle trips with the study area for the specific purpose of visiting the site being studied. Pass-by trips are traffic already on the way from an origin to a primary trip destination that will make an intermediate stop at the site being studied without a route diversion. In this case, pass-by trips are those already on Highway 101 and stop at the Human Bean on the way. Pass-by trips are trips that are already on the roadway before the development occurs and therefore are not considered new trips on the system. Data contained within the ITE Trip Generation Handbook 3rd Edition estimates approximately 83% of trips to the drive-up coffee kiosks are pass-by trips. The site generated trips for the AM and PM peak hours are shown in Table 1.

#### Car Wash:

The trips generated by the car wash are estimated using ITE Land Use 948- Automated Car Wash, as this land use more closely describes the proposed use on site. This land use, however, does not contain AM Peak Hour trip generation information. Therefore, the ITE Land Use 979- Car Wash and Detail Center was used for the AM rate. Table 1 illustrates the trip generation estimate.

TABLE 1: TRIP GENERATION

| ITE Land Use                                                        | Size      | Trip Generation |       |      |       |          |           |
|---------------------------------------------------------------------|-----------|-----------------|-------|------|-------|----------|-----------|
|                                                                     |           | Rate            | Trips | % In | % Out | Trips In | Trips Out |
| AM Peak Hour                                                        |           |                 |       |      |       |          |           |
| 938 – Coffee/Donut Shop with Drive-Through Window/No indoor seating | 400 (KSF) | 337.04*         | 135   | 50%  | 50%   | 67       | 67        |
| Pass-by Trips                                                       |           | 83%             | 112   |      |       | 56       | 56        |
| Primary Trips                                                       |           |                 | 23    |      |       | 11       | 12        |
| 948- Automated Car Wash                                             | 1 (lane)  | 8.60*           | 9     | 50%  | 50%   | 4        | 5         |
| Total New Trips                                                     |           |                 |       |      |       | 16       | 16        |
| PM Peak Hour                                                        |           |                 |       |      |       |          |           |
| 937 – Coffee/Donut Shop with Drive-Through Window/No indoor seating | 400 (KSF) | 83.33           | 33    | 50%  | 50%   | 16       | 17        |
| Pass-by Trips                                                       |           | 83%             | 28    |      |       | 14       | 14        |
| Primary Trips                                                       |           |                 | 5     |      |       | 2        | 3         |
| 948- Automated Car Wash                                             | 1 (lane)  | 14.12*          | 14    | 50%  | 50%   | 7        | 7         |
| Total New Trips                                                     |           |                 |       |      |       | 9        | 10        |
|                                                                     |           |                 |       |      |       |          |           |

\*trips/thousand square feet    \*\* trips/lane

The proposed development is expected to generate 32 new trips during the AM peak hour and 19 new trips during the PM peak hour.

## 2.2 TRIP DISTRIBUTION

The development trips were distributed through the study area network using the existing observed travel patterns as a base, with modifications as per reasonable origins and destinations within the city. The existing traffic counts illustrate that during the Am Peak Hour within the study area, 40% of traffic is southbound on Hwy 101, 55% is northbound on Highway 101, and the remaining 5% is from the side streets. During the PM Peak Hour 46% of vehicles come from the north, 45% from the south, and 9% from the side streets. As the coffee shop is primarily pass-by the trip generation followed the existing traffic pattern.

The trip distribution for the PM peak hour is as follows:

- 46% to/from the north via Highway 101
- 45% to/from the south via Highway 101
- 9% to/from side streets

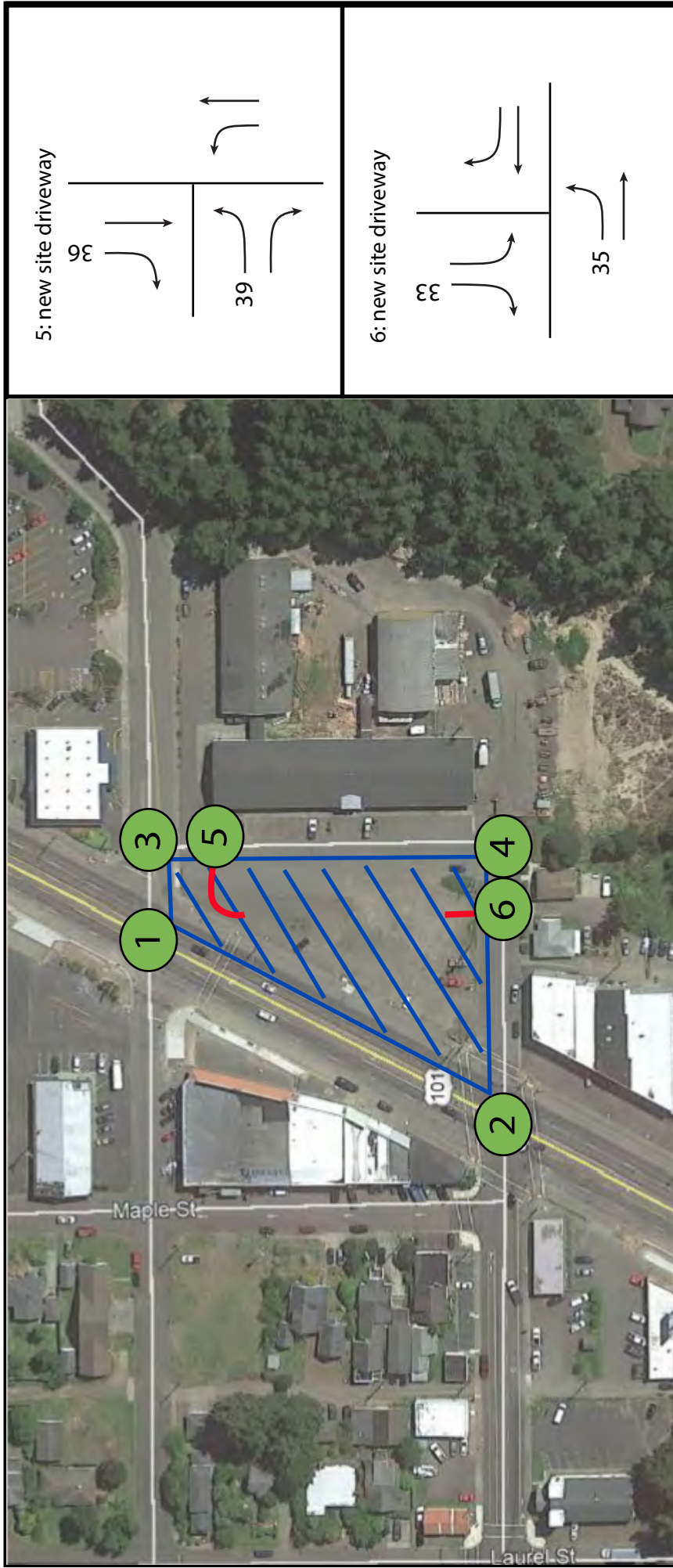
The trip distribution for the AM peak hour is as follows:

- 40% from the north via Hwy 101
- 55% from the south via Hwy 101
- 5% from the side streets

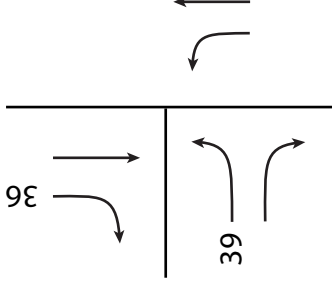
Figure 2 contains the trip distribution for the AM peak hour.

Figure 3 contains the trip distribution for the PM Peak Hour.

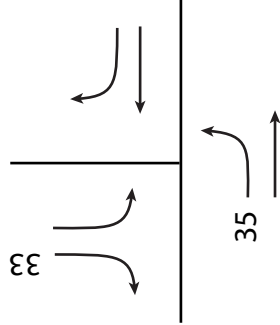
As demonstrated in Table 1, the site is anticipated to generate only 19 new trips in the PM peak hour. With the distribution to the north and south, there will not be more than 9 trips added to any intersection during the PM peak hour. As the AM generated substantially more trips than the PM peak hour, the evaluation was performed for only the AM peak hour.



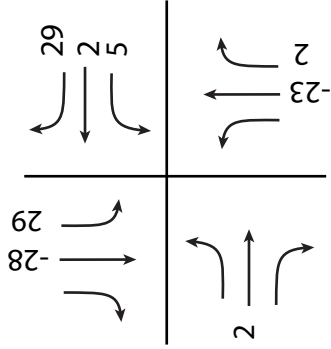
5: new site driveway



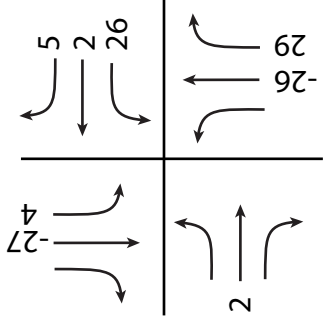
6: new site driveway



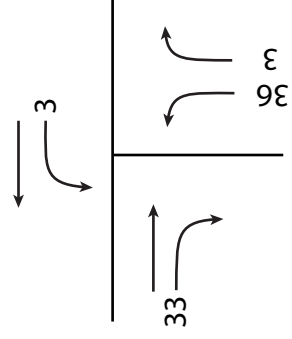
1: Hwy 101 @ 6th Street



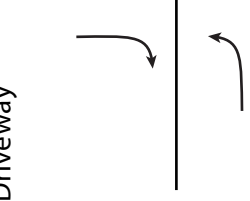
2: Hwy 101 @ Rhododendron Dr



3: 6th St Background Driveway

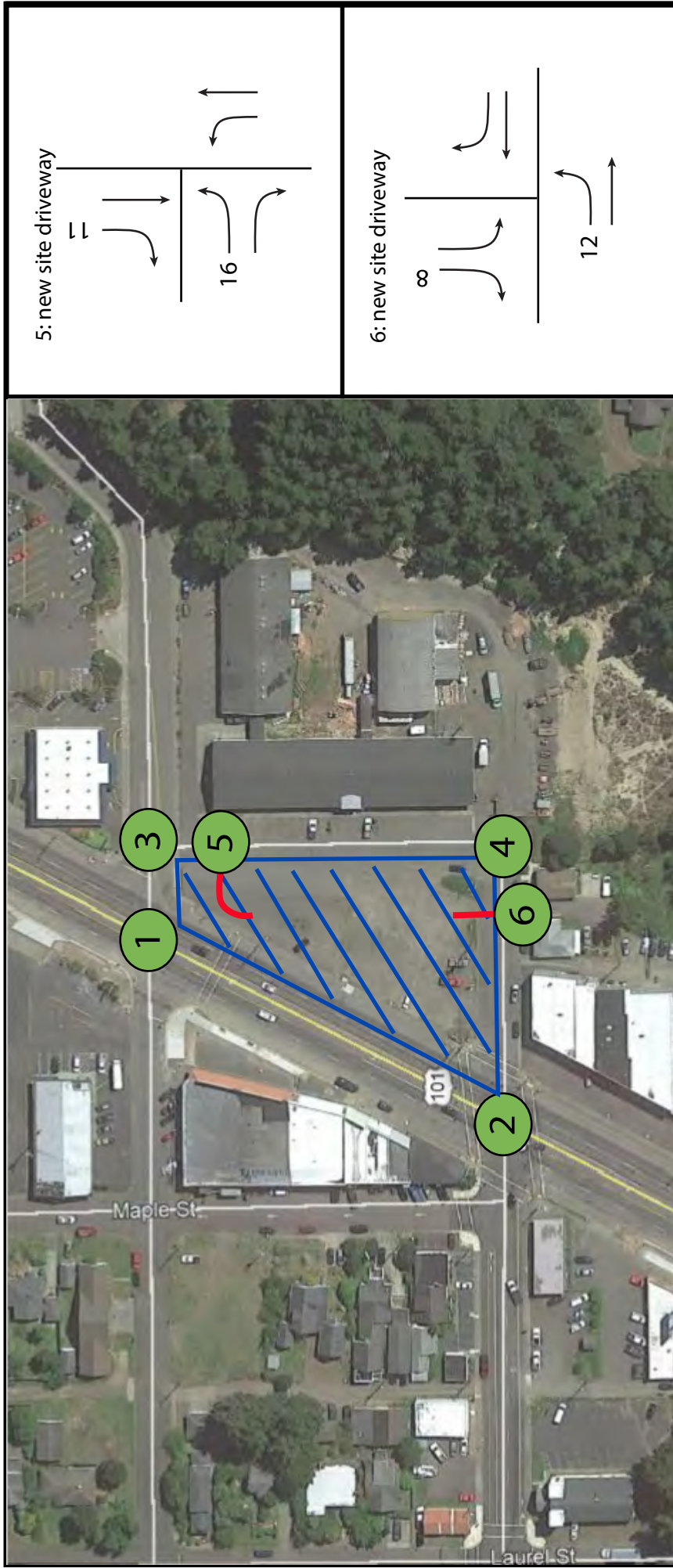


4: Rhododendron Dr Background Driveway

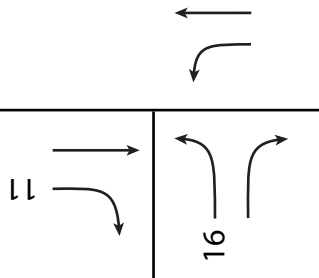


Florence Car Wash and Coffee Kiosk

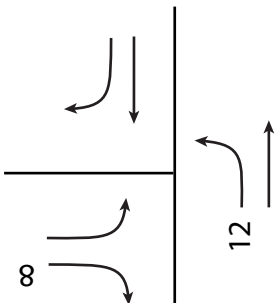
Figure 2: 2019 Development AM Trip Distribution Volumes



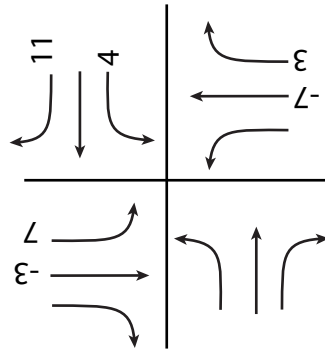
5: new site driveway



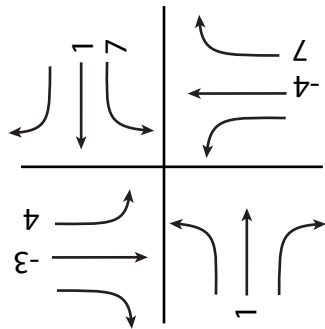
6: new site driveway



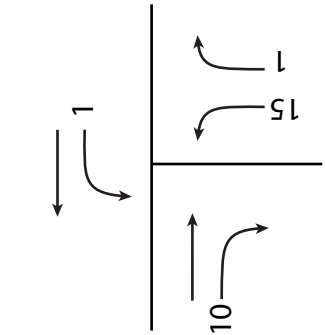
1: Hwy 101 @ 6th Street



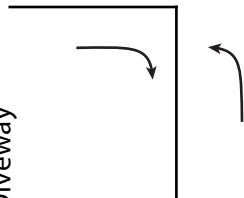
2: Hwy 101 @ Rhododendron Dr



3: 6th St @



4: Existing Rhododendron Dr Diveway



Florence Car Wash and Coffee Kiosk

Figure 3: 2019 Development PM Trip Distribution Volumes

## 3.0 EXISTING ROADWAY CONDITIONS

### 3.1 STUDY AREA

The study area consists of the flowing intersections:

- Highway 101 at Rhododendron Drive
- Highway 101 at 6<sup>th</sup> Street
- Rhododendron Drive @ Site Access
- 6<sup>th</sup> Street @ Site Access

Figure 4 contains the intersection geometry and control.

### 3.2 STREET NETWORK

The site abuts State Highway 101, which is an ODOT Highway. Rhododendron Drive and 6<sup>th</sup> Street are the City of Florence streets. Table 2 provides the study area roadway characteristics for these streets.

Highway Hwy 101 is a five-lane, two-way state highway with two northbound lanes, two southbound lanes, and a two-way left-turn lane (TWLTL) in front of the development. Highway 101 along the site frontage is currently being improved as part of the Revision Florence project. As part of this project, this roadway has recently been improved to include sidewalks, planter strips, bike lanes, on-street parking bays, and enhanced pedestrian crossings.

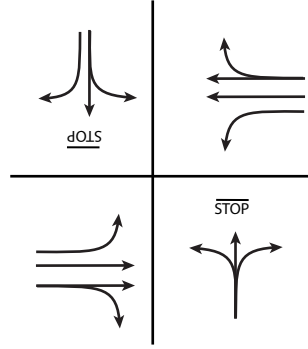
6<sup>th</sup> Street along the frontage has sidewalks on both sides. Rhododendron Drive along the site frontage is unimproved. However, the sidewalks will be installed along the north side as part of this development.

TABLE 2: ROADWAY CHARACTERISTICS WITHIN STUDY AREA

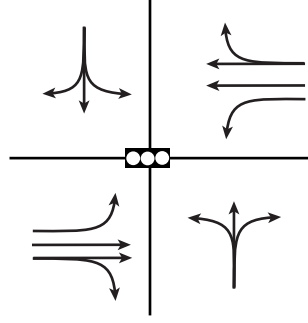
| Roadway                | Classification                          | Speed | Lanes per Direction | Sidewalk | Curb/Gutter | Bike Lanes |
|------------------------|-----------------------------------------|-------|---------------------|----------|-------------|------------|
| Highway 101            | Statewide Highway<br>Principal Arterial | 35    | 1-2                 | Y        | Y           | Y          |
| Rhododendron Drive     | Collector                               | 25    | 1                   | N        | N           | N          |
| 6 <sup>th</sup> Street | Local                                   | 25    | 1                   | Y        | Y           | N          |



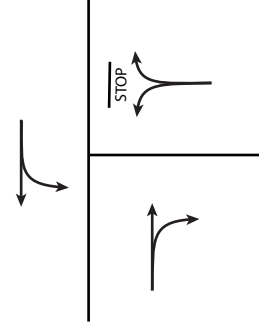
1: Hwy 101 @ 6th Street



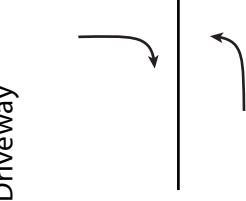
2: Hwy 101 @ Rhododendron Dr



3: Existing 6th St driveway



4: Existing Rhododendron Dr Driveway



Florence Car Wash and Coffee Kiosk

Figure 4: Intersection Geometry and Control

### 3.3 INTERSECTION COUNTS

As part of the analysis, weekday AM peak hour turning movement counts were taken by Sandow Engineering for this project. The counts were taken on December 19, 2019, from 7:00 AM to 9:00 AM. The counts show the overall peak hour from 7:45 AM to 8:45 AM. Count data is provided in Appendix B.

The traffic counts were taken on a day when school is in session, and there were no holidays affecting typical commuter traffic. Additionally, the counts were taken when there were very little restrictions to free flow movements due to the Highway 101 construction.

### 3.4 SEASONAL ADJUSTMENT

Traffic counts are often taken during the time period in which traffic on the roadway is not at the levels seen during the peak season/month. To account for this, the traffic volumes are adjusted using traffic volume data collected by ODOT, and methodology approved by ODOT and described in the ODOT Analysis Procedures Manual. ODOT has collected daily traffic volumes along Highway 101 for many years. From this data, they have determined trends of traffic volumes for different months of the year. This data has been compiled into the Seasonal Adjustment Table (SAT). The SAT provides the ratio of traffic volumes of any given month to the peak season of the year. This ratio is known as the Seasonal Adjustment Factor.

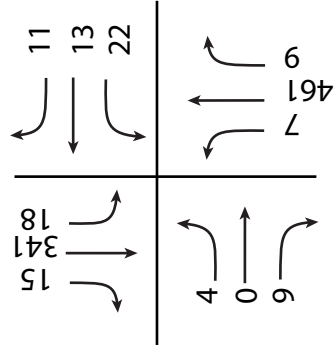
ODOT has an Automatic Traffic Recorder (ATR) located about 3 miles north of the project site (ATR 20-026). The Seasonal Adjustment Table methodology for determining the seasonal adjustment factor was chosen over the ODOT ATR method. The ATR is located at MP 186.46. The project is located at MP 190.50. There is a significant difference in traffic flow between the project site and the ATR. Traffic from Heceta Beach Road at MP 187.2 to the south is relatively urban in nature. The ODOT ADT data shows that just south of Munsel Lake Road at MP 187.8 the AADT is 10,600, at the ATR the AADT is 7,000, and the AADT at the project site is approximately 12,800. The study area ADT is 82% higher than the AADT at the ATR. This means that the traffic variation between the low season and peak season is going to be higher than they would be south of Heceta Beach Road. Due to these factors, strictly applying the factor associated with the seasonal fluctuation from the ATR to the project site will inaccurately overestimate the traffic flow. The more appropriate method is to take into consideration the more urban non-seasonal traffic flow associated with the uses within and adjacent to the site as well as the seasonal fluctuation with tourist activities associated with Highway 101 coastal use.

The data within the SAT for Commuter trend and Coastal Destination route was calculated and averaged. The averaged value of 1.32 was applied to the existing traffic volumes to represent the peak month of July.

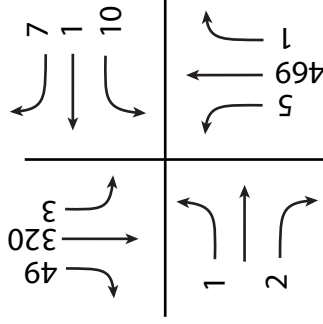
The existing seasonally adjusted and balanced traffic volumes are shown in Figure 5.



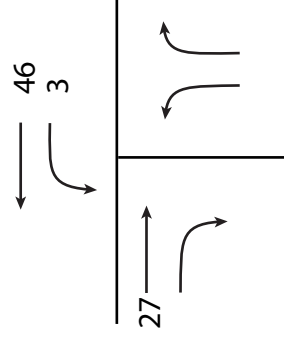
1: Hwy 101 @ 6th Street



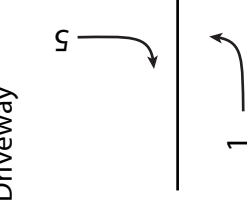
2: Hwy 101 @ Rhododendron Dr



3: Existing 6th St Driveway



4: Existing Rhododendron Dr Driveway



Florence Car Wash and Coffee Kiosk

Figure 5: Existing 2019 Peak Hour Background Traffic Volumes

### 3.5 CRASH ANALYSIS

A crash investigation was performed for the existing study area intersections of Highway 101 at 6<sup>th</sup> Street and Highway 101 at Rhododendron Drive. The analysis investigates crashes that have been reported to the state for the most recent 5 years, 2013-2017, to determine a crash rate in crashes per million vehicles entering the intersection and the types of crashes that occurred. Crash data beyond the year 2017 has not been compiled and published by ODOT. Therefore it is not available. The crash rate is compared to the statewide 90<sup>th</sup> percentile crash rate. If the calculated crash rate exceeds the 90<sup>th</sup> percentile crash rate or there is a high percentage of a certain crash type, the location should be investigated for further mitigation measures. The results of the crash analysis are provided in Table 3. The crash analysis data is in Appendix C.

TABLE 3: ROADWAY CRASH INFORMATION

| Location on US 101                   | Number of Crashes | Types of Crashes |      |       |      |       |           | ADT    | Crash Rate* | 90 <sup>th</sup> Percentile Crash rate |
|--------------------------------------|-------------------|------------------|------|-------|------|-------|-----------|--------|-------------|----------------------------------------|
|                                      |                   | Head             | Rear | Angle | Turn | Other | Ped/ Bike |        |             |                                        |
| Highway 101 @ 6 <sup>th</sup> Street | 1                 | 0                | 0    | 1     | 0    | 0     | 0         | 10,060 | .05         | 0.860                                  |
| Highway 101 @ Rhododendron Drive     | 4                 | 0                | 2    | 0     | 2    | 0     | 0         | 893    | .25         | 0.408                                  |

\*crashes per million entering vehicles

The crash rates at intersections are below the statewide crash rate and therefore, no further evaluation is necessary.

### 3.6 TRANSIT SERVICE

Rhody Express operated by Lane Transit District, provides transit service within the city. Busses run on a 60-minute route Monday through Friday, 10:00 a.m. to 6:00 p.m. Two routes North and South are provided. The south route runs along Highway 101 and 6<sup>th</sup> Street in front of the proposed development. The nearest bus stop is located on 6<sup>th</sup> St east of the site at the Events Center.

## 4.0 FUTURE STREET DESIGN

The City Florence Transportation System Plan has identified the following roadway projects for Highway 101 near the project site:

- PRJ-18: Provide bike lanes between Siuslaw Bridge and Highway 126. This project is part of the Revision Florence project (currently in progress).

## 5.0 FUTURE YEAR TRAFFIC VOLUMES

### 5.1 FUTURE YEAR BACKGROUND VOLUMES

The evaluation considers traffic levels at the completion of the project in the year 2020 and for the year 2025. To account for the traffic growth between the count year and future analysis years, an annual growth rate was applied.

Initially, the ODOT historic trend table method was investigated. However, the growth shown was 0.04%. Instead, the City of Florence Transportation System Plan was used to identify growth patterns. The TSP estimates a growth rate of 1.5% per year on Highway 101 and 2.3% per year on the side streets. Traffic volumes were adjusted using a straight-line growth rate between volumes shown in the base year 2009 and the end of the planning horizon 2035.

The existing seasonally-adjusted traffic volumes were adjusted according to the methodology described above. Figures 6 and 7 illustrate the AM peak hour year 2020 and 2025 traffic volumes, respectively. Appendix B contains the traffic volume calculations.

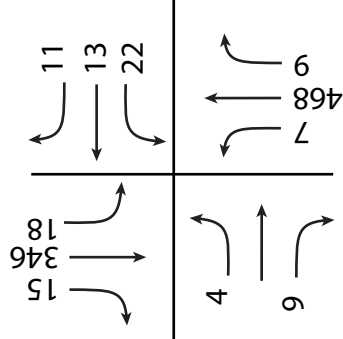
### 5.2 FUTURE YEAR BUILD-OUT VOLUMES

The development trips are added to the Year 2020 background traffic volumes to determine build-out volumes. Figure 8 illustrates the AM peak hour traffic volumes with the development in place.

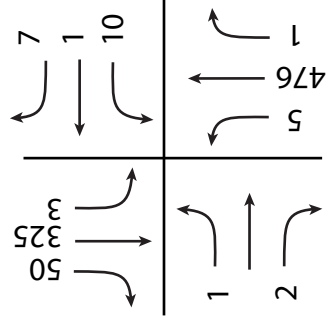
The development trips are added to the Year 2025 background traffic volumes to determine build-out volumes. Figure 9 illustrates the AM peak hour traffic volumes with the development in place.



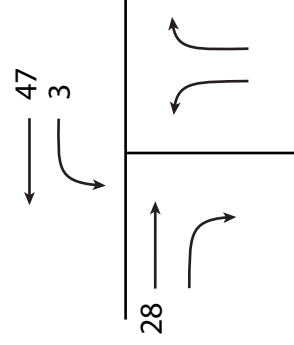
1: Hwy 101 @ 6th Street



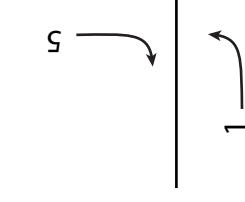
2: Hwy 101 @ Rhododendron Dr



3: 6th St Background Driveway



4: Rhododendron Dr @

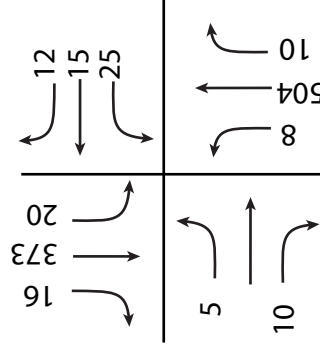


Florence Car Wash and Coffee Kiosk

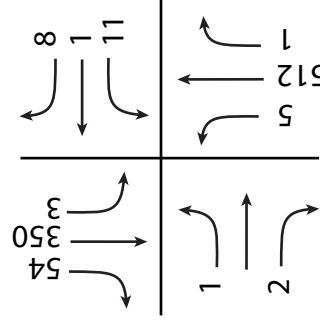
Figure 6: 2020 AM Peak Hour Background Traffic Volumes



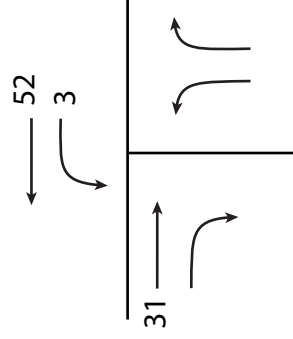
1: Hwy 101 @ 6th Street



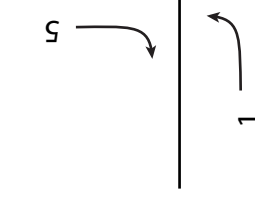
2: Hwy 101 @ Rhododendron Dr



3: 6th St Background Driveway



4: Rhododendron Dr Background Driveway



Florence Car Wash and Coffee Kiosk

Figure 7: Year 2025 AM Peak Hour Background Traffic Volumes

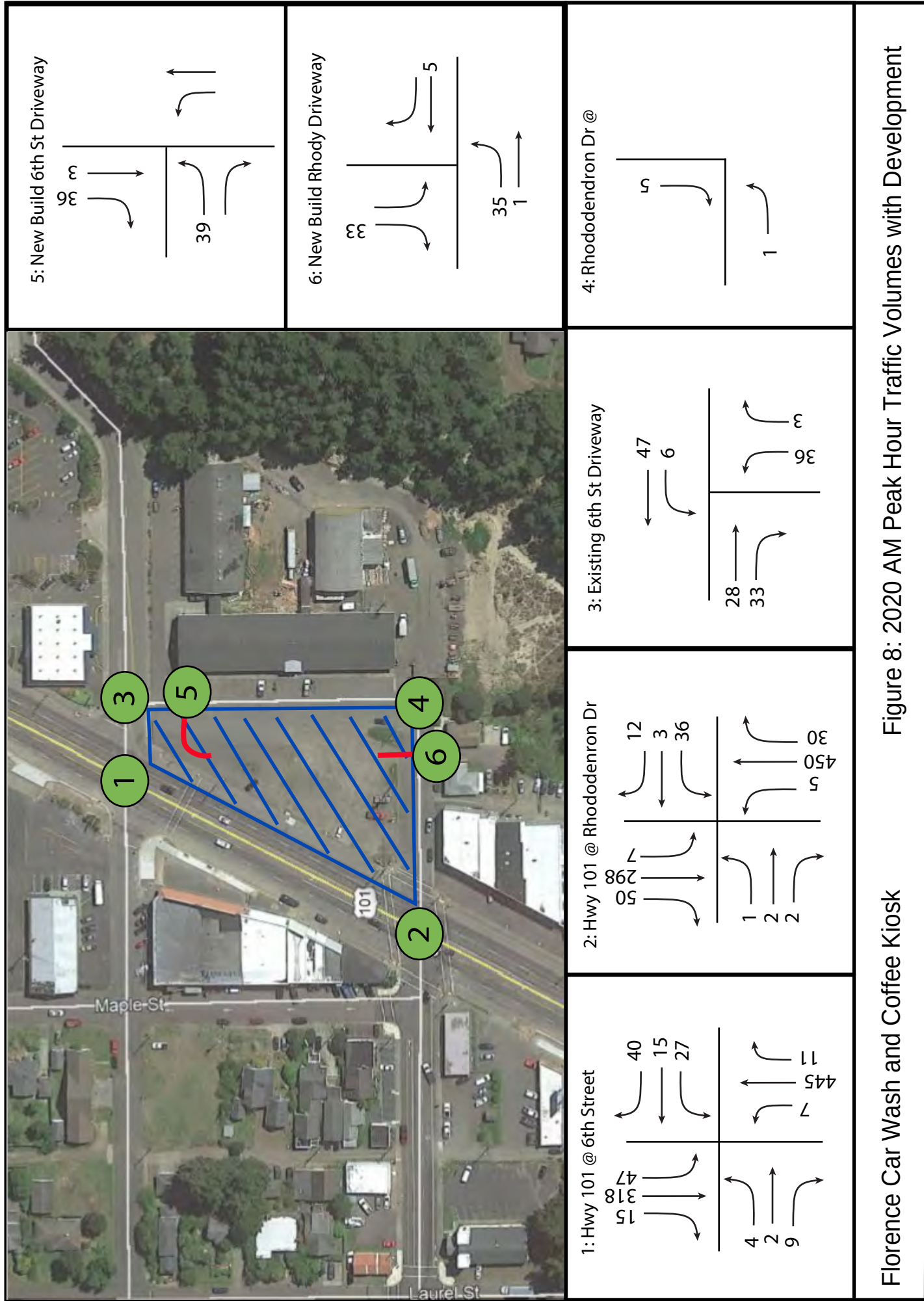
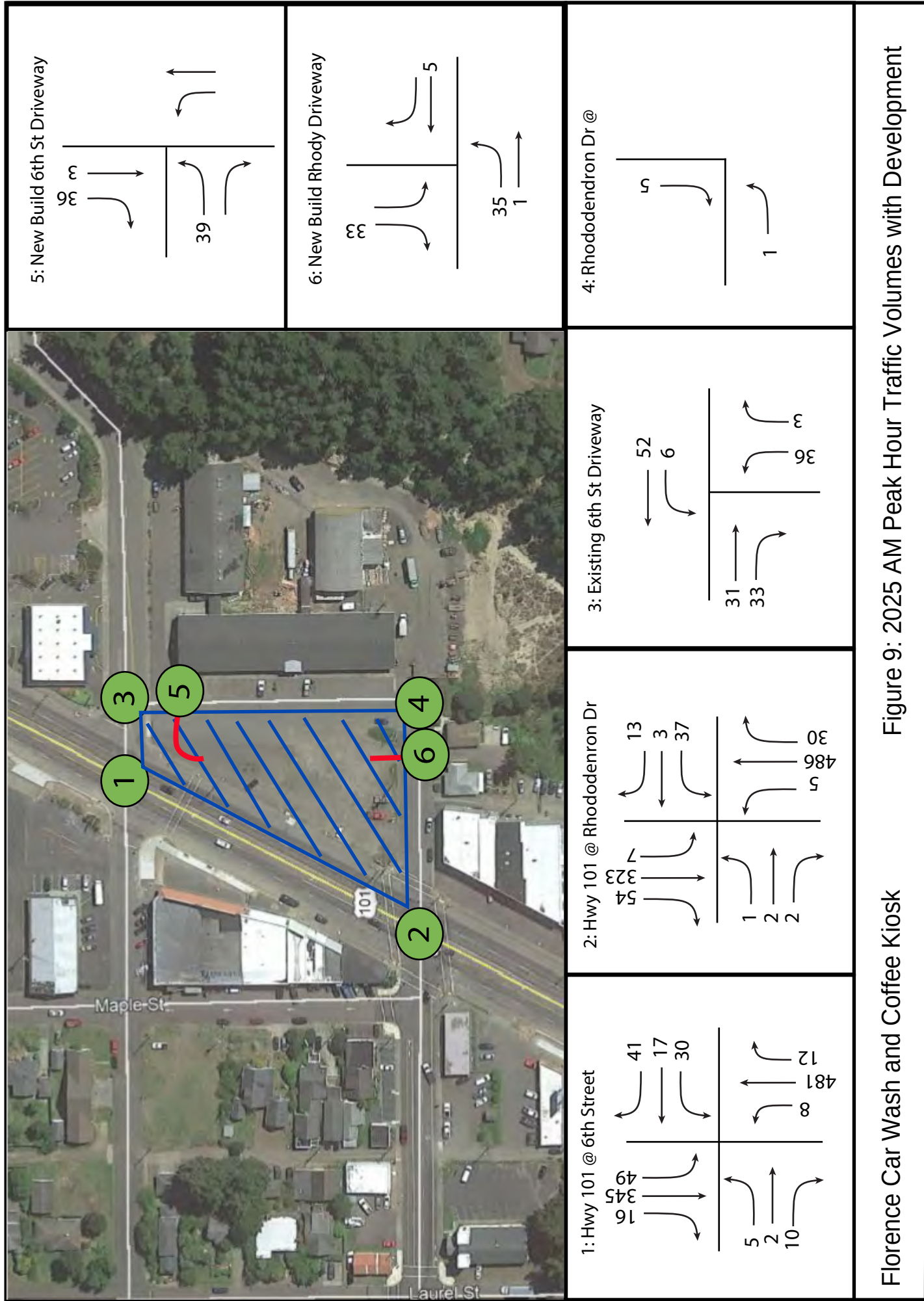


Figure 8: 2020 AM Peak Hour Traffic Volumes with Development

Florence Car Wash and Coffee Kiosk



## 6.0 INTERSECTION EVALUATION

### 6.1 PERFORMANCE MEASURES

The primary performance measure is the volume-to-capacity ratio (v/c). Volume-to-capacity ratio describes the capability of an intersection to meet volume demand based upon the maximum number of vehicles that could be served in an hour. V/C is the threshold for which ODOT evaluates the operation of intersections, as defined by the Oregon Highway Plan. V/C thresholds are defined based on roadway classification and speed. Highway 101 is designated as a Statewide Highway and Freight Route, with a speed of 30 mph within the study area. The v/c threshold for a facility of this type is 0.85 for the mainline and 0.95 for stopped approaches at unsignalized intersections and is 0.85 for signalized intersections.

The secondary measure of performance for intersections in this analysis is based on the Highway Capacity Manual (HCM) defined level of service (LOS). LOS is a concept developed to quantify the degree of comfort (including such elements as travel time, number of stops, total amount of stopped delay, and impediments caused by other vehicles) afforded to drivers as they travel through an intersection or along a roadway segment. It was developed to quantify the quality of service of transportation facilities. The City of Florence has a standard of LOS D for signalized and all-way stop-controlled intersections and LOS E for two-way stop-controlled intersections.

### 6.2 INTERSECTION ANALYSIS RESULTS

A performance analysis was conducted for the study area intersections intersection for the following conditions:

- Existing Year 2019 AM Peak hour
- Year 2020 AM Peak hour with and without the proposed development
- year 2025 AM Peak hour with and without the proposed development

The results of the AM peak analysis are shown in Table 4. The SYNCHRO outputs are provided in Appendix D.

TABLE 4: INTERSECTION PERFORMANCE: AM PEAK HOUR

| Intersection                       | Mobility<br>Standard<br>V/C/LOS* | 2019<br>Existing | 2020<br>Background | 2020<br>Build | 2025<br>Background | 2025<br>Build |
|------------------------------------|----------------------------------|------------------|--------------------|---------------|--------------------|---------------|
| <b>101 @ Rhododendron Drive</b>    | <b>0.85/D*</b>                   | 0.23/A           | 0.23/A             | 0.26/C        | 0.25/A             | 0.28/C        |
| <b>101 @ 6<sup>th</sup> Street</b> |                                  |                  |                    |               |                    |               |
| SB Left                            | <b>0.95/E*</b>                   | 0.02/A           | 0.02/A             | 0.06/A        | 0.03/A             | 0.06/A        |
| WB Left                            | <b>0.85/E*</b>                   | 0.2/D            | 0.2/D              | 0.26/D        | 0.27/D             | 0.33/D        |
| WB Right                           | <b>0.85/E*</b>                   | 0.02/B           | 0.02/B             | 0.07/B        | 0.02/B             | 0.08/B        |
| EB LTR                             | <b>0.85/E*</b>                   | 0.05/B           | 0.05/B             | 0.08/B        | 0.07/B             | 0.10/C        |
| NBL                                | <b>0.95/E*</b>                   | 0.01/A           | 0.01/A             | 0.01/A        | 0.01/A             | 0.01/A        |
| <b>6<sup>th</sup> @ Driveway</b>   |                                  |                  |                    |               |                    |               |
| NB Left                            | <b>E*</b>                        | A                | A                  | A             | A                  | A             |
| EB Left                            | <b>E*</b>                        | A                | A                  | A             | A                  | A             |
| EB Right                           | <b>E*</b>                        | A                | A                  | A             | A                  | A             |
| <b>5<sup>th</sup> @ Driveway</b>   |                                  |                  |                    |               |                    |               |
| NB Left-Right                      | <b>E*</b>                        | A                | A                  | A             | A                  | A             |
| EB Through-Right                   | <b>E*</b>                        | A                | A                  | A             | A                  | A             |
| WB Through-Left                    | <b>E*</b>                        | A                | A                  | A             | A                  | A             |

\*LOS City Standard

As illustrated in Table 4, all studied intersections operate better than the mobility standard under both existing and build conditions. There are no off-site improvements needed to offset the impact of development trips.

## 7.0 QUEUE ANALYSIS

A queuing analysis was conducted for the studied intersections for the Years 2020 and 2025. The analysis was performed using SimTraffic, a microsimulation software tool that uses the HCM defined criteria to estimate the queuing of vehicles within the study area. The average and 95<sup>th</sup> percentile queuing results are illustrated in Table 5. All results are rounded to 25 feet to better represent the total number of vehicles in the queue, as one vehicle typically occupies 25 feet of space. The 25 feet assumes the length of vehicle and space usually allotted between vehicles while queued at intersections. The SimTraffic outputs are provided in Appendix E.

TABLE 5: INTERSECTION QUEUING: AM PEAK HOUR

| Movement                              | Available Storage | 2020 Background |                 | 2020 Build |                 | 2025 Background |                 | 2025 Build |                 |
|---------------------------------------|-------------------|-----------------|-----------------|------------|-----------------|-----------------|-----------------|------------|-----------------|
|                                       |                   | Avg             | 95th Percentile | Avg        | 95th Percentile | Avg             | 95th Percentile | Avg        | 95th Percentile |
| Highway 101 at 6 <sup>th</sup> Street |                   |                 |                 |            |                 |                 |                 |            |                 |
| SB L                                  | 370               | 25              | 25              | 25         | 25              | 25              | 25              | 25         | 50              |
| SB TR                                 | 370               | n/a             | n/a             | 0          | 0               | 0               | 0               | 0          | 25              |
| WB LT                                 | 1000              | 25              | 50              | 25         | 50              | 25              | 50              | 25         | 75              |
| WB R                                  | 1000              | 25              | 50              | 25         | 50              | 25              | 50              | 25         | 50              |
| EB LTR                                | 180               | 25              | 50              | 25         | 50              | 25              | 50              | 25         | 50              |
| NB L                                  | 250               | 25              | 25              | 0          | 25              | 25              | 25              | 0          | 25              |
| NB T                                  | 250               | 0               | 0               | 0          | 25              | 0               | 0               | 0          | 25              |
| Highway 101 at Rhododendron Drive     |                   |                 |                 |            |                 |                 |                 |            |                 |
| SB L                                  | 250               | 25              | 25              | 25         | 25              | 25              | 25              | 25         | 25              |
| SB T                                  | 260               | 75              | 150             | 50         | 100             | 100             | 150             | 75         | 125             |
| SB TR                                 | 280               | 50              | 100             | 50         | 100             | 75              | 175             | 50         | 100             |
| NB L                                  | 230               | 25              | 25              | 25         | 25              | 25              | 25              | 25         | 25              |
| NB T                                  | 245               | 150             | 200             | 125        | 225             | 150             | 225             | 150        | 225             |
| NB TR                                 | 260               | 75              | 175             | 75         | 175             | 75              | 175             | 100        | 175             |
| EB LTR                                | 302               | 25              | 25              | 25         | 25              | 25              | 25              | 25         | 25              |
| WB LTR                                | 195               | 25              | 50              | 25         | 50              | 25              | 50              | 25         | 50              |
| 6 <sup>th</sup> Street @ Driveway     |                   |                 |                 |            |                 |                 |                 |            |                 |
| WB LT                                 | 980               | 25              | 25              | 0          | 0               | 0               | 25              | 25         | 25              |
| NB LR                                 | 260               | 0               | 0               | 25         | 50              | 0               | 0               | 25         | 50              |
| EB TR                                 | 25                | 0               | 0               | 0          | 0               | 0               | 0               | 25         | 25              |
| Rhododendron Drive @ Driveway         |                   |                 |                 |            |                 |                 |                 |            |                 |
| SB LR                                 | 260               | n/a             | n/a             | 25         | 50              | n/a             | n/a             | 25         | 50              |

As demonstrated in Table 5, the development will not create significant queuing concerns during the weekday AM peak hour.

Additionally, the queueing for the southbound through movement is shown to be shorter in the build condition. This is due to pass-by trips. As detailed previously, the site will have a significant number of pass-by trips, pass-by trips are those that would be in the southbound through movement, instead of going through the vehicles divert from the through movement and move to the left-turn movement. Therefore, there would be less through trips and subsequently, a shorter queue length.

## 8.0 DRIVEWAY QUEUING

A queuing analysis was performed to estimate the average and 95<sup>th</sup> percentile queues that will occur in the drive-through lane during the AM and PM peak hours.

Field measurements were performed by Sandow Engineering in the Eugene area at local area drive-through coffee establishments to verify assumptions in drive-thru usage and service rates. The data collection was performed for the AM peak hour as it has the highest trip generation and drive-thru use. The data collection included counting the total number of vehicles through the drive-thru and service time of each vehicle at the pick-up window during the peak hour. The data collection indicates the average service time during the AM peak hour is approximately 38 seconds per vehicle, the average queue is 7 vehicles, the 95<sup>th</sup> percentile queue was 11 vehicles, and the peak hour of trips to the site was from 7:30 – 8:30 AM with the highest drive-thru usage occurring between 8:00 AM and 8:15 AM. Appendix F contains the study data.

A variety of queuing models were researched, and it was determined that an M/D/1 queuing model provides results that most closely match field observations. The M/D/1 model assumes that the arrival rate of customers follows a Poisson distribution and that the service rate is constant. It should be noted that the service rate does vary with each customer; however, assuming a constant service rate provides results that matched field observations. The M/D/1 model was used to estimate average and 95<sup>th</sup> percentile queues during the AM and PM peak hours. Table 6 illustrates the results of the drive-thru queuing analysis and the following sections describe the results. Appendix F contains the analysis.

TABLE 6: DRIVE-THRU QUEUING ANALYSIS

|                                        | AM PEAK HOUR          | PM PEAK HOUR          |
|----------------------------------------|-----------------------|-----------------------|
| <b>Average Queue (vehicles)</b>        | 7                     | 1                     |
| <b>95% Queue (vehicles)</b>            | 11                    | 2                     |
| <b>Max Queue (vehicles)</b>            | 13                    | 4                     |
| <b>Average time in Queue (minutes)</b> | 4.9 minutes           | 1.0 minutes           |
| <b>% of hour at 95% queue</b>          | 15.53% (9.32 minutes) | 4.19 % (2.52 minutes) |
| <b>% of hour at max queue</b>          | 4.61% (2.77 minutes)  | <1% (<1 minute)       |

The anticipated queuing during the AM peak hour is an average of 7 vehicles and 95<sup>th</sup> percentile of 11 vehicles. In a drive-thru queuing lane, the average vehicle takes up about 20 feet of space while queued in a drive-thru. This length is the average length of a car and the space between cars. In a drive-thru, the space between cars is generally shorter than the space between cars queued at intersections. Therefore, the length in the drive-thru needs to accommodate the average queue of 140 feet. The 95<sup>th</sup> percentile queue of 220 feet can be safely accommodated on-site without causing backups onto the adjacent roadways. A majority of the time the drive-thru is expected to have 7 vehicles in the queue with the 95% queue occurring no more than 15% of the time.

The design of the proposed Human Bean includes approximately 160 feet of designated drive-thru lane with an additional 150 feet of internal space available for storage before the driveways are obstructed. There is sufficient room on-site to allow for storage needed to accommodate the 95% queue.

## 9.0 IMPROVEMENT PROPORTIONALITY

### Rhododendron Drive:

Rhododendron Drive is classified as a local street within the City's Transportation System Plan. Local streets carry about 1,000 ADT. The street is one lane in each direction with on-street parking on both sides. During the traffic count, it was observed that most of the available parking was occupied and was occupied by users of the business/housing on the south side. The proposed development is not anticipated to use any of the on-street parking along Rhododendron Drive. The existing traffic on this section is 35 peak hour trips and 350 daily trips.

The proposed development is anticipated to add 67 peak hour trips and 400 daily trips between the site access point and Highway 101, which is within the typical daily usage of a local street. Therefore, reconstruction of Rhododendron to offset the impact of the added development traffic is not needed. Additionally, the development will not use the available on-street parking. This is due to the drive-through usage and on-site available parking for employees. Therefore, the overall impacts of the development to Rhododendron Drive are minimal. Any street improvements should align with the impacts of the development. This should follow a proportionality assessment of the actual impacts of

the development. The recommended proportionality is the total added traffic to total traffic that a local street could handle. This is 400 development ADT/1000 total ADT or 40% of reconstruction costs.

#### **6<sup>th</sup> Street:**

The City has requested that the applicant provide a proportional share of the costs of the reconstruction of the shared access to 6<sup>th</sup> Street when the property to the east redevelops (Tax Lot #6501). It is anticipated that the redevelopment of Tax Lot #6501 will trigger the relocation of the shared access to 6<sup>th</sup> Street to provide greater spacing between the shared access and Hwy 101. There is no current development plan for this property. Therefore, it is difficult to assess what the impacts are and what the feasible proportion share of traffic would be. As an example, if the site was to redevelop as a large commercial development with a high trip attractor (like a popular restaurant), then the proportion of impact from this development would be small. Contrary, if the adjacent development was a lower trip generator, then the proportion of impact from this development would be larger.

Additionally, the actual design and location will be based on the type and layout of the development on that property. This condition should be modified to require an easement to be provided between sites to allow the shared access in the future with an agreement of proportional costs to be decided up when the application is filed.

## **10.0 CONCLUSION**

This report describes the Traffic Impact Analysis and findings prepared for the proposed Diamond Car Wash and Human Bean Coffee Drive-Through, located in Florence, Oregon. The project site is located to the East of Highway 101 between 6<sup>th</sup> Street and Rhododendron Drive on Tax Lots 6600 and 6601. Currently, the site is vacant and is contained within 0.57 acres. The development proposal is a 400 SF drive-through coffee stand and a single lane drive-through automated car wash. The development is proposed to be completed in 2020.

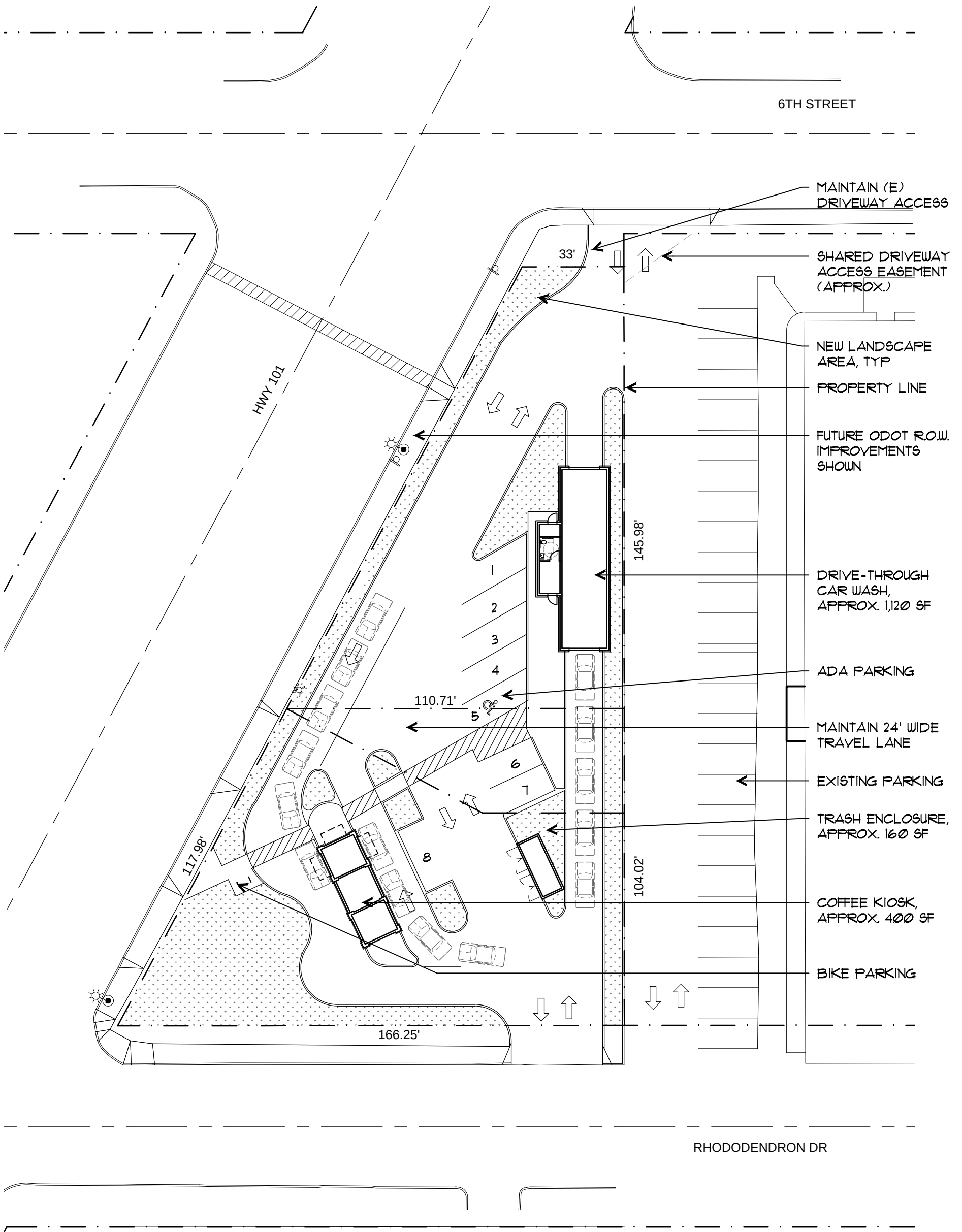
The analysis evaluates the operation of the site entrance and adjacent intersections. The following findings and recommendations are based on the information and analysis contained within this report.

### **10.1 FINDINGS**

The analysis concludes the following findings:

- All studied intersections will operate within the mobility standards with the completion of the development, year 2020, and the year 2025. No off-site intersection improvements are necessary.
- The addition of development traffic will not substantially increase queueing conditions over the background conditions.
- All site driveways are projected to operate safely and efficiently.
- The site as designed is sufficient to hold the typical daily queue for the coffee shop usage.

## Florence Car Wash and Coffee Kiosk



# 1 SITE PLAN

1/32" = 1'-0"



©21 MARCH 19



880 WEST PARK, SUITE 300  
EUGENE, OREGON 97401 (541) 344-9157

SHEET

A-1

FLORENCE, OR CARWASH

PROJECT NUMBER: 18036  
586 HWY 101, FLORENCE, OR, 97439

## Florence Car Wash and Coffee Kiosk

| Intersection: 1: Hwy 101 @ 6th Street |            |      |           |                |       |            |            |                |           | City: Florence, OR                |          |                |                  |             |          |             |      |      |    |
|---------------------------------------|------------|------|-----------|----------------|-------|------------|------------|----------------|-----------|-----------------------------------|----------|----------------|------------------|-------------|----------|-------------|------|------|----|
| Counter: Sandow Engineering           |            |      |           |                |       |            |            |                |           | Date: Thursday, December 19, 2019 |          |                |                  |             |          |             |      |      |    |
| Total of All Vehicles                 |            |      |           |                |       |            |            |                |           |                                   |          |                |                  |             |          |             |      |      |    |
| Time Period                           | Southbound |      |           | Westbound      |       |            | Northbound |                |           | Eastbound                         |          |                | 15 Minute Volume | Pedestrians |          |             |      |      |    |
|                                       | Right      | Thru | Left      | Approach Total | Right | Thru       | Left       | Approach Total | Right     | Thru                              | Left     | Approach Total |                  | SB          | WB       | NB          | EB   |      |    |
| 7:00                                  | 7:15       | 1    | 35        | 1              | 37    | 0          | 0          | 0              | 44        | 1                                 | 45       | 0              | 0                | 0           | 0        | 0           | 0    |      |    |
| 7:15                                  | 7:30       | 1    | 30        | 1              | 32    | 1          | 1          | 2              | 4         | 36                                | 0        | 46             | 0                | 0           | 0        | 0           | 82   |      |    |
| 7:30                                  | 7:45       | 1    | 44        | 1              | 46    | 2          | 1          | 3              | 4         | 74                                | 1        | 79             | 0                | 1           | 2        | 0           | 0    |      |    |
| 7:45                                  | 8:00       | 2    | 81        | 4              | 87    | 2          | 2          | 4              | 3         | 121                               | 1        | 132            | 5                | 0           | 0        | 5           | 538  |      |    |
| 8:00                                  | 8:15       | 2    | 66        | 5              | 74    | 1          | 7          | 10             | 0         | 111                               | 0        | 113            | 0                | 1           | 1        | 197         | 643  |      |    |
| 8:15                                  | 8:30       | 4    | 70        | 3              | 77    | 2          | 5          | 4              | 11        | 60                                | 0        | 60             | 0                | 0           | 0        | 148         | 599  |      |    |
| 8:30                                  | 8:45       | 3    | 85        | 1              | 89    | 2          | 2          | 6              | 4         | 86                                | 2        | 92             | 2                | 4           | 191      | 762         | 0    |      |    |
| 8:45                                  | 9:00       | 4    | 94        | 2              | 100   | 4          | 2          | 5              | 11        | 92                                | 7        | 106            | 1                | 1           | 3        | 220         | 756  |      |    |
| 9:00                                  | 9:15       | 0    | 0         | 0              | 0     | 0          | 0          | 0              | 0         | 0                                 | 0        | 0              | 0                | 0           | 0        | 0           | 0    |      |    |
| 9:15                                  | 9:30       | 0    | 0         | 0              | 0     | 0          | 0          | 0              | 0         | 0                                 | 0        | 0              | 0                | 0           | 0        | 0           | 0    |      |    |
| 9:30                                  | 9:45       | 0    | 0         | 0              | 0     | 0          | 0          | 0              | 0         | 0                                 | 0        | 0              | 0                | 0           | 0        | 0           | 0    |      |    |
| 9:45                                  | 10:00      | 0    | 0         | 0              | 0     | 0          | 0          | 0              | 0         | 0                                 | 0        | 0              | 0                | 0           | 0        | 0           | 0    |      |    |
| Count Period Total                    |            | 18   | 505       | 18             |       | 15         | 14         | 22             |           | 18                                | 644      | 14             |                  | 8           | 2        | 6           | 1284 | 0    |    |
| AM Peak Hour Count Summary            |            |      |           |                |       |            |            |                |           |                                   |          |                |                  |             |          |             |      |      |    |
| Southbound                            |            |      | Westbound |                |       | Northbound |            |                | Eastbound |                                   |          | Approach       |                  |             |          | Pedestrians |      |      |    |
| Right                                 | Thru       | Left | Approach  | Right          | Thru  | Left       | Approach   | Right          | Thru      | Left                              | Approach | Right          | Thru             | Left        | Approach | SB          | WB   | NB   | EB |
| Peak Volumes                          | 11         | 302  | 14        | 327            | 8     | 17         | 35         | 7              | 378       | 5                                 | 390      | 7              | 0                | 3           | 10       | 762         | 0    | 0    | 0  |
| PHF                                   | 0.69       | 0.89 | 0.58      | 0.92           | 1.00  | 0.50       | 0.61       | 0.80           | 0.44      | 0.78                              | 0.63     | 0.35           | 0.00             | 0.38        | 0.50     | 0.35        | 0.00 | 0.84 | 0  |
| Trucks                                | 1          | 9    | 2         |                | 0     | 2          | 1          |                | 0         | 4                                 | 0        | 0.77           | 1                | 0           | 0.50     | 0           | 0    | 0    |    |
| % Trucks                              | 9%         | 3%   | 14%       |                | 0%    | 20%        | 6%         |                | 0%        | 1%                                | 0%       | 14%            | 0%               | 0%          |          |             |      |      |    |

| Seasonally Adjusted Peak Hour |    |    |        |       |            |     |     |        |     |
|-------------------------------|----|----|--------|-------|------------|-----|-----|--------|-----|
| 3%                            | 48 | 35 | %      | Ped   | 0          | 0   | 7   | 499    | 9   |
|                               |    |    | 30.77% | L     | 4          |     |     |        |     |
|                               |    |    | 0.00%  | T     | 0          |     |     |        |     |
| 1%                            | 13 |    | 69.23% | R     | 9          |     |     |        |     |
| Eastbound                     |    |    |        |       | Westbound  |     |     |        |     |
|                               |    |    |        |       | 11         | ↑   | R   | 23.91% | 46  |
|                               |    |    |        |       | 13         | ←   | L   | 28.26% | 73  |
|                               |    |    |        |       | 22         | ↓   | R   | 47.83% | 27  |
|                               |    |    |        |       | 0          |     | Ped | %      | 3%  |
| 1: Hwy 101 @ 6th Street       |    |    |        |       |            |     |     |        |     |
| Southbound                    |    |    |        |       | Northbound |     |     |        |     |
|                               |    |    | 3.47%  | R     | ←          | T   | ↓   | PED    |     |
|                               |    |    | 92.36% | 4.17% | %          |     |     |        |     |
|                               |    |    |        |       | 15         | 399 | 18  | 0      |     |
|                               |    |    |        |       | 432        | ↓   | 946 | ↑      | 514 |
|                               |    |    |        |       |            |     |     |        | 51% |
| Seasonal Adjustment Factor    |    |    |        |       |            |     |     |        |     |
| 1.320                         |    |    |        |       |            |     |     |        |     |
| 1006                          |    |    |        |       |            |     |     |        |     |

1: Hwy 101 @ 6th Street

Pedestrians and Cars

| Time Period | Southbound |       |      | Westbound |      |       | Northbound |      |      | Eastbound |      |      | 15 Minute Volume | Hourly Volume |
|-------------|------------|-------|------|-----------|------|-------|------------|------|------|-----------|------|------|------------------|---------------|
|             | Peds       | Right | Thru | Left      | Peds | Right | Thru       | Left | Peds | Right     | Thru | Left |                  |               |
| 7:00 AM     |            | 1     | 26   | 1         |      |       |            |      |      |           |      |      | 73               |               |
| 7:15 AM     |            | 1     | 28   |           |      |       | 1          |      |      |           |      | 1    | 86               |               |
| 7:30 AM     |            |       | 40   |           |      | 2     | 1          |      |      |           |      |      | 121              |               |
| 7:45 AM     |            | 1     | 78   | 4         |      | 2     | 2          | 4    |      |           |      |      | 219              | 499           |
| 8:00 AM     |            | 2     | 65   | 5         |      | 2     | 1          | 7    |      |           |      | 1    | 193              | 619           |
| 8:15 AM     |            | 4     | 65   | 3         |      | 2     | 3          | 3    |      |           |      |      | 140              | 673           |
| 8:30 AM     |            | 3     | 85   |           |      | 2     | 2          | 2    |      |           |      | 2    | 190              | 742           |
| 8:45 AM     |            | 4     | 91   | 2         |      | 4     | 2          | 5    |      |           |      | 1    | 213              | 536           |
| 9:00 AM     |            |       |      |           |      |       |            |      |      |           |      |      | 52               | 158           |
| 9:15 AM     |            |       |      |           |      | 0     |            | 0    |      |           |      |      | 0                | 403           |
| 9:30 AM     |            |       |      |           |      |       |            |      |      |           |      |      | 0                | 213           |
| 9:45 AM     |            |       |      |           |      |       |            |      |      |           |      |      | 0                | 0             |
| Total       | 0          | 16    | 478  | 15        | 0    | 14    | 12         | 21   | 0    | 16        | 635  | 14   |                  |               |
| Peak Hour   | 0          | 10    | 293  | 12        | 0    | 8     | 8          | 16   | 0    | 7         | 374  | 5    | 742              |               |

Trucks

| Time Period | Southbound |      |      | Westbound |      |      | Northbound |      |      | Eastbound |      |      | 15 Minute Volume | Hourly Volume |
|-------------|------------|------|------|-----------|------|------|------------|------|------|-----------|------|------|------------------|---------------|
|             | Right      | Thru | Left | Right     | Thru | Left | Right      | Thru | Left | Right     | Thru | Left |                  |               |
| 7:00 AM     |            | 3    | 1    |           |      |      |            |      |      |           |      |      | 4                | 24            |
| 7:15 AM     |            | 2    | 4    |           |      | 1    |            |      |      |           |      | 1    | 7                |               |
| 7:30 AM     | 1          | 4    |      |           |      |      |            |      |      |           |      |      | 7                | 29            |
| 7:45 AM     | 1          | 3    |      |           |      |      |            |      |      |           |      |      | 7                | 29            |
| 8:00 AM     |            | 1    | 1    |           |      |      |            |      |      |           |      |      | 4                | 24            |
| 8:15 AM     |            | 5    |      |           | 2    |      |            |      |      |           |      |      | 8                | 26            |
| 8:30 AM     |            |      | 1    |           |      |      |            |      |      |           |      |      | 1                | 20            |
| 8:45 AM     |            | 3    |      |           |      |      |            |      |      |           |      |      | 7                | 20            |
| 9:00 AM     |            |      |      |           |      |      |            |      |      |           |      |      | 0                | 16            |
| 9:15 AM     |            |      |      |           |      |      |            |      |      |           |      |      | 0                | 8             |
| 9:30 AM     |            |      |      |           |      |      |            |      |      |           |      |      | 0                | 7             |
| 9:45 AM     |            |      |      |           |      |      |            |      |      |           |      |      | 0                | 0             |
| Total       | 2          | 27   | 3    | 0         | 1    | 2    | 1          | 0    | 2    | 9         | 0    | 1    |                  |               |
| Peak Hour   | 1          | 9    | 2    | 0         | 0    | 2    | 1          | 0    | 0    | 4         | 0    | 1    | 20               |               |

Bikes

| Time Period | Southbound |      |      | Westbound |      |      | Northbound |      |      | Eastbound |      |      | SB | WB | NB | EB |
|-------------|------------|------|------|-----------|------|------|------------|------|------|-----------|------|------|----|----|----|----|
|             | Right      | Thru | Left | Right     | Thru | Left | Right      | Thru | Left | Right     | Thru | Left |    |    |    |    |
| 7:00 AM     |            |      |      |           |      |      |            |      |      |           |      |      | 0  | 0  | 0  | 0  |
| 7:15 AM     |            |      |      |           |      |      |            |      |      |           |      |      | 0  | 0  | 0  | 0  |
| 7:30 AM     |            |      |      |           |      |      |            |      |      |           |      |      | 0  | 0  | 0  | 0  |
| 7:45 AM     |            |      |      |           |      |      |            |      |      |           |      |      | 0  | 0  | 0  | 0  |
| 8:00 AM     |            |      |      |           |      |      |            |      |      |           |      |      | 0  | 0  | 0  | 0  |
| 8:15 AM     |            |      |      |           |      |      |            |      |      |           |      |      | 0  | 0  | 0  | 0  |
| 8:30 AM     |            |      |      |           |      |      |            |      |      |           |      |      | 0  | 0  | 0  | 0  |
| 8:45 AM     |            |      |      |           |      |      |            |      |      |           |      |      | 0  | 0  | 0  | 0  |
| 9:00 AM     |            |      |      |           |      |      |            |      |      |           |      |      | 0  | 0  | 0  | 0  |
| 9:15 AM     |            |      |      |           |      |      |            |      |      |           |      |      | 0  | 0  | 0  | 0  |
| 9:30 AM     |            |      |      |           |      |      |            |      |      |           |      |      | 0  | 0  | 0  | 0  |
| 9:45 AM     |            |      |      |           |      |      |            |      |      |           |      |      | 0  | 0  | 0  | 0  |
| Total       | 0          | 0    | 0    | 0         | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    |    |    |    |    |
| Peak Hour   | 0          | 0    | 0    | 0         | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    |    |    |    |    |

Pedestrians

| Time Period | NE   |       |       | NW   |       |       | SW   |       |       | SE   |       |       | SB | WB | NB | EB |
|-------------|------|-------|-------|------|-------|-------|------|-------|-------|------|-------|-------|----|----|----|----|
|             | Left | Right | Total | Left | Right | Total | Left | Right | Total | Left | Right | Total |    |    |    |    |
| 7:00 AM     |      |       |       |      |       |       |      |       |       |      |       |       | 0  | 0  | 0  | 0  |
| 7:15 AM     |      |       |       |      |       |       |      |       |       |      |       |       | 0  | 0  | 0  | 0  |
| 7:30 AM     |      |       |       |      |       |       |      |       |       |      |       |       | 0  | 0  | 0  | 0  |
| 7:45 AM     |      |       |       |      |       |       |      |       |       |      |       |       | 0  | 0  | 0  | 0  |
| 8:00 AM     |      |       |       |      |       |       |      |       |       |      |       |       | 0  | 0  | 0  | 0  |
| 8:15 AM     |      |       |       |      |       |       |      |       |       |      |       |       | 0  | 0  | 0  | 0  |
| 8:30 AM     |      |       |       |      |       |       |      |       |       |      |       |       | 0  | 0  | 0  | 0  |
| 8:45 AM     |      |       |       |      |       |       |      |       |       |      |       |       | 0  | 0  | 0  | 0  |
| 9:00 AM     |      |       |       |      |       |       |      |       |       |      |       |       | 0  | 0  | 0  | 0  |
| 9:15 AM     |      |       |       |      |       |       |      |       |       |      |       |       | 0  | 0  | 0  | 0  |
| 9:30 AM     |      |       |       |      |       |       |      |       |       |      |       |       | 0  | 0  | 0  | 0  |
| 9:45 AM     |      |       |       |      |       |       |      |       |       |      |       |       | 0  | 0  | 0  | 0  |
| Total       | 0    | 0     | 0     | 0    | 0     | 0     | 0    | 0     | 0     | 0    | 0     | 0     |    |    |    |    |
| Peak Hour   | 0    | 0     | 0     | 0    | 0     | 0     | 0    | 0     | 0     | 0    | 0     | 0     |    |    |    |    |

| Intersection: 2: Hwy 101 @ Rhododendron Drive      City: Florence, OR |            |      |      |                |       |      |            |                |       |           |      |                |            |             |      |                |      |    |           |    |   |  |                  |               |  |  |  |
|-----------------------------------------------------------------------|------------|------|------|----------------|-------|------|------------|----------------|-------|-----------|------|----------------|------------|-------------|------|----------------|------|----|-----------|----|---|--|------------------|---------------|--|--|--|
| Counter: Sandow Engineering      Date: Thursday, December 19, 2019    |            |      |      |                |       |      |            |                |       |           |      |                |            |             |      |                |      |    |           |    |   |  |                  |               |  |  |  |
| Total of All Vehicles                                                 |            |      |      |                |       |      |            |                |       |           |      |                |            |             |      |                |      |    |           |    |   |  |                  |               |  |  |  |
| Time Period                                                           | Southbound |      |      |                |       |      | Westbound  |                |       |           |      |                | Northbound |             |      |                |      |    | Eastbound |    |   |  | 15 Minute Volume | Hourly Volume |  |  |  |
|                                                                       | Right      | Thru | Left | Approach Total | Right | Thru | Left       | Approach Total | Right | Thru      | Left | Approach Total | Right      | Thru        | Left | Approach Total | SB   | WB | NB        | EB |   |  |                  |               |  |  |  |
|                                                                       |            |      |      |                |       |      |            |                |       |           |      |                |            |             |      |                |      |    |           |    |   |  |                  |               |  |  |  |
| 7:00-7:15                                                             | 5          | 26   | 0    | 31             | 1     | 0    | 0          | 1              | 0     | 43        | 1    | 44             | 0          | 0           | 2    | 2              | 78   | 0  | 0         | 0  | 0 |  |                  |               |  |  |  |
| 7:15-7:30                                                             | 3          | 32   | 0    | 35             | 0     | 0    | 0          | 0              | 2     | 52        | 3    | 57             | 1          | 0           | 3    | 4              | 96   | 0  | 0         | 0  | 0 |  |                  |               |  |  |  |
| 7:30-7:45                                                             | 6          | 36   | 0    | 42             | 0     | 0    | 0          | 0              | 0     | 69        | 3    | 72             | 2          | 0           | 4    | 6              | 120  | 0  | 0         | 1  | 0 |  |                  |               |  |  |  |
| 7:45-8:00                                                             | 14         | 57   | 0    | 71             | 2     | 0    | 1          | 3              | 0     | 112       | 7    | 119            | 3          | 0           | 5    | 8              | 201  | 0  | 0         | 0  | 0 |  |                  |               |  |  |  |
| 8:00-8:15                                                             | 12         | 54   | 1    | 67             | 0     | 1    | 0          | 1              | 0     | 103       | 2    | 105            | 1          | 0           | 3    | 4              | 177  | 0  | 0         | 0  | 0 |  |                  |               |  |  |  |
| 8:15-8:30                                                             | 4          | 73   | 0    | 77             | 0     | 0    | 1          | 1              | 0     | 65        | 3    | 68             | 1          | 0           | 2    | 3              | 149  | 0  | 0         | 1  | 0 |  |                  |               |  |  |  |
| 8:30-8:45                                                             | 8          | 62   | 1    | 71             | 1     | 0    | 0          | 1              | 1     | 81        | 1    | 83             | 2          | 0           | 3    | 5              | 160  | 0  | 0         | 0  | 0 |  |                  |               |  |  |  |
| 8:45-9:00                                                             | 5          | 80   | 0    | 85             | 2     | 1    | 0          | 3              | 0     | 81        | 4    | 85             | 3          | 0           | 7    | 10             | 183  | 0  | 0         | 0  | 0 |  |                  |               |  |  |  |
| 9:00-9:15                                                             | 9          | 1    | 0    | 10             | 0     | 0    | 0          | 0              | 0     | 0         | 0    | 0              | 0          | 0           | 0    | 0              | 10   | 0  | 0         | 0  | 0 |  |                  |               |  |  |  |
| 9:15-9:30                                                             | 0          | 0    | 0    | 0              | 0     | 0    | 0          | 0              | 0     | 0         | 0    | 0              | 0          | 0           | 0    | 0              | 0    | 0  | 0         | 0  | 0 |  |                  |               |  |  |  |
| 9:30-9:45                                                             | 0          | 0    | 0    | 0              | 0     | 0    | 0          | 0              | 0     | 0         | 0    | 0              | 0          | 0           | 0    | 0              | 0    | 0  | 0         | 0  | 0 |  |                  |               |  |  |  |
| 9:45-10:00                                                            | 0          | 0    | 0    | 0              | 0     | 0    | 0          | 0              | 0     | 0         | 0    | 0              | 0          | 0           | 0    | 0              | 10   | 0  | 0         | 0  | 0 |  |                  |               |  |  |  |
| Count Period Total                                                    | 66         | 421  | 2    |                | 6     | 2    | 2          |                | 3     | 606       | 24   |                | 13         | 0           | 29   |                | 1174 | 0  | 0         | 2  | 0 |  |                  |               |  |  |  |
| AM Peak Hour Count Summary                                            |            |      |      |                |       |      |            |                |       |           |      |                |            |             |      |                |      |    |           |    |   |  |                  |               |  |  |  |
| Peak Volumes                                                          | Southbound |      |      | Westbound      |       |      | Northbound |                |       | Eastbound |      |                | Approach   | Pedestrians |      |                |      | EB |           |    |   |  |                  |               |  |  |  |
|                                                                       | Right      | Thru | Left | Approach       | Right | Thru | Left       | Approach       | Right | Thru      | Left | Approach       |            | SB          | WB   | NB             | EB   |    |           |    |   |  |                  |               |  |  |  |
|                                                                       |            |      |      |                |       |      |            |                |       |           |      |                |            |             |      |                |      |    |           |    |   |  |                  |               |  |  |  |
| PHF                                                                   | 0.68       | 0.84 | 0.50 | 0.93           | 0.38  | 0.25 | 0.50       | 0.50           | 0.25  | 0.81      | 0.46 | 0.79           | 0.63       | 0           | 0    | 1              | 0    |    |           |    |   |  |                  |               |  |  |  |
| % Trucks                                                              | 1          | 8    | 0    | 0              | 0     | 0    | 0          | 0              | 0     | 6         | 1    | 0              | 0.65       |             |      |                | 0.85 |    |           |    |   |  |                  |               |  |  |  |
| % Trucks                                                              | 3%         | 3%   | 0%   |                | 0%    | 0%   | 0%         |                | 0%    | 2%        | 8%   |                | 0%         |             |      |                |      |    |           |    |   |  |                  |               |  |  |  |

[illegible]

Seasonal Adjustment Factor

1.300

2: Hwy 101 @ Rhodrendron Drive

Pedestrians and Cars

| Time Period | Southbound |       |      | Westbound |      |       | Northbound |      |      | Eastbound |      |      | 15 Minute Volume | Hourly Volume |
|-------------|------------|-------|------|-----------|------|-------|------------|------|------|-----------|------|------|------------------|---------------|
|             | Peds       | Right | Thru | Left      | Peds | Right | Thru       | Left | Peds | Right     | Thru | Left |                  |               |
| 7:00 AM     |            | 5     | 19   |           |      |       |            | 43   | 1    |           | 0    | 2    | 71               |               |
| 7:15 AM     |            | 2     | 32   |           |      |       |            | 52   | 3    |           | 1    | 3    | 95               |               |
| 7:30 AM     |            | 6     | 33   |           |      |       |            | 67   | 3    |           | 2    | 4    | 115              |               |
| 7:45 AM     |            | 14    | 55   |           |      |       |            | 110  | 7    |           | 2    | 5    | 196              | 477           |
| 8:00 AM     |            | 12    | 53   | 1         |      |       | 1          | 102  | 2    |           | 1    | 3    | 175              | 581           |
| 8:15 AM     |            | 3     | 69   |           |      |       |            | 63   | 2    |           | 1    | 2    | 141              | 627           |
| 8:30 AM     |            | 8     | 64   | 1         |      |       |            | 80   | 1    |           | 2    | 2    | 157              | 669           |
| 8:45 AM     |            | 5     | 78   |           |      |       |            | 76   | 4    |           | 3    | 7    | 175              | 648           |
| 9:00 AM     |            | 9     | 1    |           |      |       |            |      |      |           |      |      | 10               | 483           |
| 9:15 AM     |            |       |      |           |      |       |            |      |      |           |      |      | 0                | 342           |
| 9:30 AM     |            |       |      |           |      |       |            |      |      |           |      |      | 0                | 185           |
| 9:45 AM     |            |       |      |           |      |       |            |      |      |           |      |      | 0                | 10            |
| Total       | 0          | 64    | 401  | 2         |      |       | 2          | 593  | 23   |           | 12   | 0    | 669              | 2354          |
| Peak Hour   | 0          | 37    | 238  | 2         |      |       | 1          | 355  | 12   |           | 6    | 0    | 12               |               |

Trucks

| Time Period | Southbound |      |      | Westbound |      |      | Northbound |      |      | Eastbound |      |      | 15 Minute Volume | Hourly Volume |
|-------------|------------|------|------|-----------|------|------|------------|------|------|-----------|------|------|------------------|---------------|
|             | Right      | Thru | Left | Right     | Thru | Left | Right      | Thru | Left | Right     | Thru | Left |                  |               |
| 7:00 AM     |            | 7    |      |           |      |      |            |      |      |           |      |      | 7                |               |
| 7:15 AM     | 1          |      |      |           |      |      |            |      |      |           |      |      | 1                |               |
| 7:30 AM     |            | 3    |      |           |      |      |            | 2    |      |           |      |      | 5                |               |
| 7:45 AM     |            | 2    |      |           |      |      |            | 2    |      |           |      |      | 5                | 18            |
| 8:00 AM     |            | 1    |      |           |      |      |            | 1    |      |           |      |      | 2                | 13            |
| 8:15 AM     | 1          | 4    |      |           |      | 1    |            | 2    |      |           |      |      | 8                | 20            |
| 8:30 AM     |            | 1    |      |           |      |      |            | 1    |      |           |      | 1    | 3                | 18            |
| 8:45 AM     |            | 2    |      |           |      |      |            | 5    |      |           |      |      | 8                | 21            |
| 9:00 AM     |            |      |      |           |      |      |            |      |      |           |      |      | 0                | 19            |
| 9:15 AM     |            |      |      |           |      |      |            |      |      |           |      |      | 0                | 11            |
| 9:30 AM     |            |      |      |           |      |      |            |      |      |           |      |      | 0                | 8             |
| 9:45 AM     |            |      |      |           |      |      |            |      |      |           |      |      | 0                | 0             |
| Total       | 2          | 20   | 0    |           |      |      |            | 13   | 1    |           | 1    | 0    | 1                |               |
| Peak Hour   | 1          | 8    | 0    |           |      |      |            | 6    | 1    |           | 1    | 0    | 1                |               |

Bikes

| Time Period | Southbound |      |      | Westbound |      |      | Northbound |      |      | Eastbound |      |      | SB | WB | NB | EB |
|-------------|------------|------|------|-----------|------|------|------------|------|------|-----------|------|------|----|----|----|----|
|             | Right      | Thru | Left | Right     | Thru | Left | Right      | Thru | Left | Right     | Thru | Left |    |    |    |    |
| 7:00 AM     |            |      |      |           |      |      |            |      |      |           |      |      | 0  | 0  | 0  | 0  |
| 7:15 AM     |            |      |      |           |      |      |            |      |      |           |      |      | 0  | 0  | 0  | 0  |
| 7:30 AM     |            |      |      |           |      |      |            |      |      |           |      |      | 0  | 0  | 0  | 0  |
| 7:45 AM     |            |      |      |           |      |      |            |      |      |           |      |      | 0  | 0  | 0  | 0  |
| 8:00 AM     |            |      |      |           |      |      |            |      |      |           |      |      | 0  | 0  | 0  | 0  |
| 8:15 AM     |            |      |      |           |      |      |            |      |      |           |      |      | 0  | 0  | 0  | 0  |
| 8:30 AM     |            |      |      |           |      |      |            |      |      |           |      |      | 0  | 0  | 0  | 0  |
| 8:45 AM     |            |      |      |           |      |      |            |      |      |           |      |      | 0  | 0  | 0  | 0  |
| 9:00 AM     |            |      |      |           |      |      |            |      |      |           |      |      | 0  | 0  | 0  | 0  |
| 9:15 AM     |            |      |      |           |      |      |            |      |      |           |      |      | 0  | 0  | 0  | 0  |
| 9:30 AM     |            |      |      |           |      |      |            |      |      |           |      |      | 0  | 0  | 0  | 0  |
| 9:45 AM     |            |      |      |           |      |      |            |      |      |           |      |      | 0  | 0  | 0  | 0  |
| Total       | 0          | 0    | 0    |           |      |      |            | 0    | 0    |           | 0    | 0    | 0  | 0  | 0  | 0  |
| Peak Hour   | 0          | 0    | 0    |           |      |      |            | 0    | 0    |           | 0    | 0    | 0  | 0  | 0  | 0  |

| SEASONAL TREND TABLE (Updated: 6/28/19) |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        | Seasonal |
|-----------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|----------|
| TREND                                   | 1-Jan  | 15-Jan | 1-Feb  | 15-Feb | 1-Mar  | 15-Mar | 1-Apr  | 15-Apr | 1-May  | 15-May | 1-Jun  | 15-Jun | 1-Jul  | 15-Jul | 1-Aug  | 15-Aug | 1-Sep  | 15-Sep | 1-Oct  | 15-Oct | 1-Nov  | 15-Nov | 1-Dec  | 15-Dec | Trend  |          |
| INTERSTA                                | 1.0415 | 1.0728 | 1.0640 | 1.0552 | 1.0259 | 0.9965 | 0.9696 | 0.9625 | 0.9786 | 0.9711 | 0.9538 | 0.9404 | 0.9561 | 0.9718 | 0.9804 | 0.9890 | 0.9860 | 0.9820 | 0.9864 | 0.9807 | 1.0355 | 1.0213 | 1.0436 | 1.0659 | 0.9404 |          |
| INTERSTA                                | 1.2583 | 1.3379 | 1.2962 | 1.2545 | 1.1572 | 1.0600 | 1.0383 | 1.0166 | 0.9863 | 0.9561 | 0.9075 | 0.8588 | 0.8422 | 0.8256 | 0.8325 | 0.8394 | 0.8806 | 0.9218 | 0.9559 | 0.9900 | 1.0158 | 1.0416 | 1.1192 | 1.1969 | 0.8256 |          |
| COMMUTE                                 | 1.0577 | 1.1050 | 1.0844 | 1.0638 | 1.0406 | 1.0173 | 0.9975 | 0.9777 | 0.9711 | 0.9645 | 0.9542 | 0.9438 | 0.9544 | 0.9649 | 0.9592 | 0.9535 | 0.9637 | 0.9738 | 0.9737 | 0.9737 | 0.9976 | 1.0215 | 1.0520 | 1.0825 | 0.9438 |          |
| COASTAL                                 | 1.2069 | 1.2238 | 1.1889 | 1.1540 | 1.1006 | 1.0472 | 1.0504 | 1.0536 | 1.0125 | 0.9714 | 0.9394 | 0.9074 | 0.8574 | 0.8074 | 0.8100 | 0.8126 | 0.8635 | 0.9145 | 0.9648 | 1.0152 | 1.0683 | 1.1214 | 1.1636 | 1.2058 | 0.8074 |          |
| COASTAL                                 | 1.3738 | 1.4039 | 1.3653 | 1.3267 | 1.2468 | 1.1268 | 1.1203 | 1.1138 | 1.0368 | 0.9478 | 0.9031 | 0.8584 | 0.7761 | 0.6978 | 0.7080 | 0.7162 | 0.7932 | 0.8662 | 0.9574 | 1.0466 | 1.1246 | 1.2030 | 1.2836 | 1.3642 | 0.6978 |          |
| AGRICULT                                | 1.4390 | 1.5042 | 1.4606 | 1.4171 | 1.3208 | 1.2246 | 1.1445 | 1.0643 | 0.9843 | 0.9043 | 0.8736 | 0.8429 | 0.8259 | 0.8089 | 0.8114 | 0.8140 | 0.7847 | 0.7554 | 0.8267 | 0.8990 | 0.9879 | 1.0778 | 1.2559 | 1.4339 | 0.7554 |          |
| RECREATI                                | 1.6714 | 1.6739 | 1.6571 | 1.6403 | 1.4889 | 1.3375 | 1.2642 | 1.1909 | 1.0325 | 0.8742 | 0.8177 | 0.7611 | 0.7119 | 0.6626 | 0.6933 | 0.7239 | 0.7598 | 0.7957 | 0.8898 | 0.9838 | 1.1028 | 1.2218 | 1.3720 | 1.5221 | 0.6626 |          |
| RECREATI                                | 1.0752 | 0.9963 | 1.0200 | 1.0437 | 1.0500 | 1.0563 | 1.1766 | 1.2970 | 1.1496 | 1.0021 | 0.9514 | 0.9006 | 0.8005 | 0.7005 | 0.7590 | 0.8176 | 0.9133 | 1.0091 | 1.1812 | 1.3532 | 1.4605 | 1.5677 | 1.2312 | 0.8948 | 0.7005 |          |
| RECREATI                                | 0.8178 | 0.6528 | 0.7315 | 0.8102 | 0.8326 | 0.8549 | 1.0558 | 1.2566 | 1.1918 | 1.1270 | 1.1295 | 1.1321 | 1.0004 | 0.8687 | 0.9344 | 1.0001 | 1.0823 | 1.1646 | 1.2984 | 1.4323 | 1.7695 | 2.1047 | 1.4326 | 0.7605 | 0.6528 |          |
| SUMMER                                  | 1.2307 | 1.2609 | 1.2367 | 1.2175 | 1.1528 | 1.0932 | 1.0592 | 1.0252 | 0.9810 | 0.9368 | 0.9061 | 0.8753 | 0.8535 | 0.8317 | 0.8437 | 0.8557 | 0.8872 | 0.9188 | 0.9502 | 0.9816 | 1.0276 | 1.0737 | 1.1341 | 1.1945 | 0.8317 |          |
| SUMMER                                  | 1.2437 | 1.3130 | 1.2858 | 1.2586 | 1.1886 | 1.1186 | 1.0667 | 1.0147 | 0.9592 | 0.9036 | 0.8816 | 0.8595 | 0.8489 | 0.8382 | 0.8564 | 0.8746 | 0.8721 | 0.8696 | 0.9094 | 0.9491 | 1.0234 | 1.0977 | 1.1930 | 1.2883 | 0.8382 |          |

\*Seasonal Trend Table factors are based on previous year ATR data. The table is updated yearly.

\*Grey shading indicates months were seasonal factor is greater than or less than 30%

Commuter Coastal  
Count 1.0825 1.2058  
0.9438 0.8074  
1.146959 1.493436 1.320197

Existing 2019 AM Volumes

|     |    |     |                                 |       |
|-----|----|-----|---------------------------------|-------|
| 432 |    |     |                                 |       |
| R   | T  | L   | PED                             |       |
| 1   | 15 | 38  | 18                              | 0     |
| Ped | 0  |     |                                 | 11 R  |
| 35  | L  | 4   | 1 Hwy 101 @ 6th Street          | 13 T  |
| T   | 0  |     |                                 | 22 L  |
| 13  | R  | 9   |                                 | 0 Ped |
| Ped | L  | T   | R                               | 515   |
| 430 |    |     |                                 |       |
| R   | T  | L   | PED                             |       |
| 2   | 49 | 320 | 3                               | 0     |
| Ped | 0  |     |                                 | 7 R   |
| 55  | L  | 1   | 2: Hwy 101 @ Rhodabrendon Drive | 11 T  |
| T   | 0  |     |                                 | 10 L  |
| 3   | R  | 2   |                                 | 0 Ped |
| Ped | L  | T   | R                               | 475   |

46

27

Existing 2019 AM Volumes

|     |    |     |                                 |       |
|-----|----|-----|---------------------------------|-------|
| 374 |    |     |                                 |       |
| R   | T  | L   | PED                             |       |
| 1   | 15 | 341 | 18                              | 0     |
| Ped | 0  |     |                                 | 11 R  |
| 35  | L  | 4   | 1: Hwy 101 @ 6th Street         | 13 T  |
| T   | 0  |     |                                 | 22 L  |
| 13  | R  | 9   |                                 | 0 Ped |
| Ped | L  | T   | R                               | 477   |
| 372 |    |     |                                 |       |
| R   | T  | L   | PED                             |       |
| 2   | 49 | 320 | 3                               | 0     |
| Ped | 0  |     |                                 | 7 R   |
| 55  | L  | 1   | 2: Hwy 101 @ Rhodabrendon Drive | 11 T  |
| T   | 0  |     |                                 | 10 L  |
| 3   | R  | 2   |                                 | 0 Ped |
| Ped | L  | T   | R                               | 475   |

46

27

EDIT Highlighted

|                      |      |      |
|----------------------|------|------|
| Base Year            | 2019 | 2019 |
| Target Year          | 2020 | 2020 |
| Years of Growth      | 1    | 0.02 |
| Growth Rate Per Year | 0.02 | 1.02 |
| Growth Factor        | 1.02 | 1.02 |

2020 AM Volumes Background

|     |    |     |                                 |       |
|-----|----|-----|---------------------------------|-------|
| 380 |    |     |                                 |       |
| R   | T  | L   | PED                             |       |
| 1   | 15 | 346 | 18                              | 0     |
| Ped | 0  |     |                                 | 11 R  |
| 36  | L  | 4   | 1: Hwy 101 @ 6th Street         | 13 T  |
| T   | 0  |     |                                 | 22 L  |
| 13  | R  | 9   |                                 | 0 Ped |
| Ped | L  | T   | R                               | 484   |
| 378 |    |     |                                 |       |
| R   | T  | L   | PED                             |       |
| 2   | 50 | 325 | 3                               | 0     |
| Ped | 0  |     |                                 | 7 R   |
| 56  | L  | 1   | 2: Hwy 101 @ Rhodabrendon Drive | 11 T  |
| 3   | R  | 2   |                                 | 0 Ped |
| Ped | L  | T   | R                               | 482   |

18.3356

4.0616

EDIT Highlighted

|                      |      |      |
|----------------------|------|------|
| Base Year            | 2019 | 2019 |
| Target Year          | 2020 | 2020 |
| Years of Growth      | 1    | 0.02 |
| Growth Rate Per Year | 0.02 | 1.02 |
| Growth Factor        | 1.02 | 1.02 |

2025 AM Volumes Background

|      |    |     |                                 |       |
|------|----|-----|---------------------------------|-------|
| 409  |    |     |                                 |       |
| R    | T  | L   | PED                             |       |
| 1    | 16 | 373 | 20                              | 0     |
| Ped  | 0  |     |                                 | 13 R  |
| 38.8 | L  | 5   | 1: Hwy 101 @ 6th Street         | 25 T  |
| T    | 0  |     |                                 | 25 L  |
| 14.8 | R  | 10  |                                 | 0 Ped |
| Ped  | L  | T   | R                               | 521   |
| 408  |    |     |                                 |       |
| R    | T  | L   | PED                             |       |
| 2    | 54 | 350 | 3                               | 0     |
| Ped  | 0  |     |                                 | 8 R   |
| 60   | L  | 1   | 2: Hwy 101 @ Rhodabrendon Drive | 11 T  |
| 3    | R  | 2   |                                 | 0 Ped |
| Ped  | L  | T   | R                               | 519   |

20.45

4.37

0

|      |    |   |                              |       |
|------|----|---|------------------------------|-------|
| 0    |    |   |                              |       |
| R    | T  | L | PED                          |       |
| 0    | 0  | 0 |                              | 0     |
| Ped  | 0  |   |                              | 0 R   |
| 47   | L  | 0 | 3:6th St Background Driveway | 47 T  |
| T    | 28 |   |                              | 3 L   |
| 27.6 | R  | 0 |                              | 0 Ped |
| Ped  | L  | T | R                            | 0     |

50.1123

27.0.29

|      |    |   |                              |       |
|------|----|---|------------------------------|-------|
| 0    |    |   |                              |       |
| R    | T  | L | PED                          |       |
| 0    | 0  | 0 |                              | 0     |
| Ped  | 0  |   |                              | 0 R   |
| 52.3 | L  | 0 | 3:6th St Background Driveway | 52 T  |
| T    | 31 |   |                              | 3 L   |
| 30.7 | R  | 0 |                              | 0 Ped |
| Ped  | L  | T | R                            | 0     |

55.67

30.68

EDIT Highlighted

|                      |      |      |
|----------------------|------|------|
| Base Year            | 2019 | 2019 |
| Target Year          | 2020 | 2020 |
| Years of Growth      | 1    | 0.02 |
| Growth Rate Per Year | 0.02 | 1.02 |
| Growth Factor        | 1.02 | 1.02 |

|      |    |   |                                       |       |
|------|----|---|---------------------------------------|-------|
| 5    |    |   |                                       |       |
| R    | T  | L | PED                                   |       |
| 5    | 51 | 0 |                                       | 0     |
| Ped  | 0  |   |                                       | 0 R   |
| 5.08 | L  | 1 | 4:Rhodabrendon Dr Background Driveway | 0 T   |
| 1.02 | R  | 0 |                                       | 0 Ped |
| Ped  | L  | T | R                                     | 0     |

0

0

|      |    |   |                                       |       |
|------|----|---|---------------------------------------|-------|
| 5    |    |   |                                       |       |
| R    | T  | L | PED                                   |       |
| 5    | 51 | 0 |                                       | 0     |
| Ped  | 0  |   |                                       | 0 R   |
| 5.46 | L  | 1 | 4:Rhodabrendon Dr Background Driveway | 0 T   |
| 1.14 | R  | 0 |                                       | 0 Ped |
| Ped  | L  | T | R                                     | 0     |

0

0

[illegible][illegible][illegible][illegible]

4: existing driveway on R

[illegible]



## 2020 Build Volumes

AM

|                                  |    |     |     |     |  |  |  |
|----------------------------------|----|-----|-----|-----|--|--|--|
| 381                              |    | 489 |     |     |  |  |  |
| R                                | T  | L   | PED |     |  |  |  |
| 1                                | 15 | 318 | 47  | 0   |  |  |  |
| Ped                              | 0  |     |     |     |  |  |  |
| 38                               | L  | 4   |     |     |  |  |  |
| T                                | 2  |     |     |     |  |  |  |
| 15                               | R  | 9   |     |     |  |  |  |
| 1: Hwy 101 @ 6th Street          |    |     |     |     |  |  |  |
| 0                                | 7  | 445 | 11  |     |  |  |  |
| Ped                              | L  | T   | R   |     |  |  |  |
| 355                              |    |     |     | 463 |  |  |  |
| 355                              |    | 463 |     |     |  |  |  |
| R                                | T  | L   | PED |     |  |  |  |
| 2                                | 50 | 298 | 7   | 0   |  |  |  |
| Ped                              | 0  |     |     |     |  |  |  |
| 58                               | L  | 1   |     |     |  |  |  |
| T                                | 2  |     |     |     |  |  |  |
| 5                                | R  | 2   |     |     |  |  |  |
| 2: Hwy 101 @ Rhododrendron Drive |    |     |     |     |  |  |  |
| 1                                | 5  | 450 | 30  |     |  |  |  |
| Ped                              | L  | T   | R   |     |  |  |  |
| 336                              |    |     |     | 485 |  |  |  |
| 381                              |    | 489 |     |     |  |  |  |
| R                                | T  | L   | PED |     |  |  |  |
| 1                                | 15 | 318 | 47  | 0   |  |  |  |
| Ped                              | 0  |     |     |     |  |  |  |
| 38                               | L  | 4   |     |     |  |  |  |
| T                                | 2  |     |     |     |  |  |  |
| 15                               | R  | 9   |     |     |  |  |  |
| 1: Hwy 101 @ 6th Street          |    |     |     |     |  |  |  |
| 0                                | 7  | 445 | 11  |     |  |  |  |
| Ped                              | L  | T   | R   |     |  |  |  |
| 355                              |    |     |     | 463 |  |  |  |
| 355                              |    | 463 |     |     |  |  |  |
| R                                | T  | L   | PED |     |  |  |  |
| 2                                | 50 | 298 | 7   | 0   |  |  |  |
| Ped                              | 0  |     |     |     |  |  |  |
| 58                               | L  | 1   |     |     |  |  |  |
| T                                | 2  |     |     |     |  |  |  |
| 5                                | R  | 2   |     |     |  |  |  |
| 2: Hwy 101 @ Rhododrendron Drive |    |     |     |     |  |  |  |
| 1                                | 5  | 450 | 30  |     |  |  |  |
| Ped                              | L  | T   | R   |     |  |  |  |
| 336                              |    |     |     | 485 |  |  |  |
| 381                              |    | 489 |     |     |  |  |  |
| R                                | T  | L   | PED |     |  |  |  |
| 1                                | 15 | 318 | 47  | 0   |  |  |  |
| Ped                              | 0  |     |     |     |  |  |  |
| 38                               | L  | 4   |     |     |  |  |  |
| T                                | 2  |     |     |     |  |  |  |
| 15                               | R  | 9   |     |     |  |  |  |
| 1: Hwy 101 @ 6th Street          |    |     |     |     |  |  |  |
| 0                                | 7  | 445 | 11  |     |  |  |  |
| Ped                              | L  | T   | R   |     |  |  |  |
| 355                              |    |     |     | 463 |  |  |  |
| 355                              |    | 463 |     |     |  |  |  |
| R                                | T  | L   | PED |     |  |  |  |
| 2                                | 50 | 298 | 7   | 0   |  |  |  |
| Ped                              | 0  |     |     |     |  |  |  |
| 58                               | L  | 1   |     |     |  |  |  |
| T                                | 2  |     |     |     |  |  |  |
| 5                                | R  | 2   |     |     |  |  |  |
| 2: Hwy 101 @ Rhododrendron Drive |    |     |     |     |  |  |  |
| 1                                | 5  | 450 | 30  |     |  |  |  |
| Ped                              | L  | T   | R   |     |  |  |  |
| 336                              |    |     |     | 485 |  |  |  |

## 2025 Build Volumes

O

Diagram illustrating a four-way intersection with four T-intersections. The intersection is labeled "1: Hwy 101 @ 6th Street". The four approaches are:

- North Approach (Hwy 101, 410, 527):** Traffic signal 16, 345, 49. Pedestrian crossing 41, 17. Lane markings: 41 L, 17 R. Pedestrian crossing 41 L, 17 R.
- South Approach (Hwy 101, 410, 527):** Traffic signal 16, 345, 49. Pedestrian crossing 41, 17. Lane markings: 41 L, 17 R. Pedestrian crossing 41 L, 17 R.
- East Approach (6th St, 360, 390):** Traffic signal 36, 39. Pedestrian crossing 36 L, 39 R. Lane markings: 36 L, 39 R. Pedestrian crossing 36 L, 39 R.
- West Approach (Rhododendron Drive, 383, 500):** Traffic signal 54, 323, 7. Pedestrian crossing 53, 39. Lane markings: 53 L, 39 R. Pedestrian crossing 53 L, 39 R.

The intersection is a four-way stop with a central island. The intersection is labeled "1: Hwy 101 @ 6th Street".

## Florence Car Wash and Coffee Kiosk

## HWY 101 @ 6TH

|       |    |    |    |    |    |
|-------|----|----|----|----|----|
| CHECK | OK | OK | OK | OK | OK |
|-------|----|----|----|----|----|

| YEAR    | PDO | INJURY | FATAL | HEAD | REAR | SIDE | TURN | ANGLE | OTHER | PED | BIKE | TOTAL |
|---------|-----|--------|-------|------|------|------|------|-------|-------|-----|------|-------|
| 2013    | 1   |        |       |      | 1    |      |      |       |       |     |      | 1     |
| 2014    | 1   |        |       |      |      |      | 1    |       |       |     |      | 1     |
| 2015    |     |        |       |      |      |      |      |       |       |     |      | 0     |
| 2016    |     |        |       |      |      |      |      |       |       |     |      | 0     |
| 2017    | 2   |        |       |      | 1    |      | 1    |       |       |     |      | 2     |
| TOTALS: | 4   | 0      | 0     | 0    | 2    | 0    | 2    | 0     | 0     | 0   | 0    | 4     |

|       |    |    |    |    |    |
|-------|----|----|----|----|----|
| CHECK | OK | OK | OK | OK | OK |
|-------|----|----|----|----|----|

| P.M. PEAK HOUR | Number of Years, n | ADT                   | AVG. ANNUAL MILES (MILLIONS) | AVG. YEARLY CRASHES | CRASH RATE/ MILLION MILES |
|----------------|--------------------|-----------------------|------------------------------|---------------------|---------------------------|
| 893            | 5                  | 8,930                 | 3,259,450                    | 800,000             | 0.25                      |
| TURN           | E-NE & SW-NE       | NE-SW & W-NE          |                              |                     |                           |
| REAR           | NE-SW & E-SW       | SW-NE, SW-NE, & SW-NE |                              |                     |                           |

## Florence Car Wash and Coffee Kiosk

# HCM Signalized Intersection Capacity Analysis

## 6: Hwy 101 & Rhododendron Dr

04/03/2020

|                                   |  |      |       |      |       |      |       |       |      |       |      |      |
|-----------------------------------|------------------------------------------------------------------------------------|------|-------|------|-------|------|-------|-------|------|-------|------|------|
| Movement                          | EBL                                                                                | EBT  | EBR   | WBL  | WBT   | WBR  | NBL   | NBT   | NBR  | SBL   | SBT  | SBR  |
| Lane Configurations               |                                                                                    | ↕    |       |      | ↕     |      | ↙     | ↕     |      | ↙     | ↕    |      |
| Traffic Volume (vph)              | 1                                                                                  | 0    | 2     | 10   | 1     | 7    | 5     | 469   | 1    | 3     | 320  | 49   |
| Future Volume (vph)               | 1                                                                                  | 0    | 2     | 10   | 1     | 7    | 5     | 469   | 1    | 3     | 320  | 49   |
| Ideal Flow (vphpl)                | 1750                                                                               | 1750 | 1750  | 1750 | 1750  | 1750 | 1750  | 1750  | 1750 | 1750  | 1750 | 1750 |
| Total Lost time (s)               |                                                                                    | 4.5  |       |      | 4.5   |      | 4.5   | 4.5   |      | 4.5   | 4.5  |      |
| Lane Util. Factor                 |                                                                                    | 1.00 |       |      | 1.00  |      | 1.00  | 0.95  |      | 1.00  | 0.95 |      |
| Frt                               |                                                                                    | 0.91 |       |      | 0.95  |      | 1.00  | 1.00  |      | 1.00  | 0.98 |      |
| Flt Protected                     |                                                                                    | 0.98 |       |      | 0.97  |      | 0.95  | 1.00  |      | 0.95  | 1.00 |      |
| Satd. Flow (prot)                 |                                                                                    | 1536 |       |      | 1582  |      | 1630  | 3259  |      | 1630  | 3194 |      |
| Flt Permitted                     |                                                                                    | 1.00 |       |      | 1.00  |      | 0.50  | 1.00  |      | 0.45  | 1.00 |      |
| Satd. Flow (perm)                 |                                                                                    | 1561 |       |      | 1627  |      | 857   | 3259  |      | 764   | 3194 |      |
| Peak-hour factor, PHF             | 0.85                                                                               | 0.85 | 0.85  | 0.85 | 0.85  | 0.85 | 0.85  | 0.85  | 0.85 | 0.85  | 0.85 | 0.85 |
| Adj. Flow (vph)                   | 1                                                                                  | 0    | 2     | 12   | 1     | 8    | 6     | 552   | 1    | 4     | 376  | 58   |
| RTOR Reduction (vph)              | 0                                                                                  | 3    | 0     | 0    | 8     | 0    | 0     | 0     | 0    | 0     | 5    | 0    |
| Lane Group Flow (vph)             | 0                                                                                  | 0    | 0     | 0    | 13    | 0    | 6     | 553   | 0    | 4     | 429  | 0    |
| Turn Type                         | Perm                                                                               | NA   |       | Perm | NA    |      | pm+pt | NA    |      | pm+pt | NA   |      |
| Protected Phases                  |                                                                                    | 4    |       |      | 8     |      | 5     | 2     |      | 1     | 6    |      |
| Permitted Phases                  | 4                                                                                  |      |       | 8    |       |      | 2     |       |      | 6     |      |      |
| Actuated Green, G (s)             |                                                                                    | 1.3  |       |      | 1.3   |      | 46.5  | 45.5  |      | 46.5  | 45.5 |      |
| Effective Green, g (s)            |                                                                                    | 1.3  |       |      | 1.3   |      | 46.5  | 45.5  |      | 46.5  | 45.5 |      |
| Actuated g/C Ratio                |                                                                                    | 0.02 |       |      | 0.02  |      | 0.76  | 0.74  |      | 0.76  | 0.74 |      |
| Clearance Time (s)                |                                                                                    | 4.5  |       |      | 4.5   |      | 4.5   | 4.5   |      | 4.5   | 4.5  |      |
| Vehicle Extension (s)             |                                                                                    | 3.0  |       |      | 3.0   |      | 3.0   | 3.0   |      | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)                |                                                                                    | 33   |       |      | 34    |      | 662   | 2418  |      | 593   | 2370 |      |
| v/s Ratio Prot                    |                                                                                    |      |       |      |       |      | c0.00 | c0.17 |      | 0.00  | 0.13 |      |
| v/s Ratio Perm                    |                                                                                    | 0.00 |       |      | c0.01 |      | 0.01  |       |      | 0.01  |      |      |
| v/c Ratio                         |                                                                                    | 0.00 |       |      | 0.39  |      | 0.01  | 0.23  |      | 0.01  | 0.18 |      |
| Uniform Delay, d1                 |                                                                                    | 29.4 |       |      | 29.6  |      | 1.8   | 2.5   |      | 1.8   | 2.4  |      |
| Progression Factor                |                                                                                    | 1.00 |       |      | 1.00  |      | 1.00  | 1.00  |      | 1.00  | 1.00 |      |
| Incremental Delay, d2             |                                                                                    | 0.0  |       |      | 7.2   |      | 0.0   | 0.2   |      | 0.0   | 0.2  |      |
| Delay (s)                         |                                                                                    | 29.4 |       |      | 36.8  |      | 1.8   | 2.7   |      | 1.8   | 2.5  |      |
| Level of Service                  |                                                                                    | C    |       |      | D     |      | A     | A     |      | A     | A    |      |
| Approach Delay (s)                |                                                                                    | 29.4 |       |      | 36.8  |      |       | 2.7   |      |       | 2.5  |      |
| Approach LOS                      |                                                                                    | C    |       |      | D     |      |       | A     |      |       | A    |      |
| <b>Intersection Summary</b>       |                                                                                    |      |       |      |       |      |       |       |      |       |      |      |
| HCM 2000 Control Delay            |                                                                                    |      | 3.4   |      |       |      |       |       |      |       |      |      |
| HCM 2000 Volume to Capacity ratio |                                                                                    |      | 0.23  |      |       |      |       |       |      |       |      |      |
| Actuated Cycle Length (s)         |                                                                                    |      | 61.3  |      |       |      |       |       |      |       |      |      |
| Intersection Capacity Utilization |                                                                                    |      | 25.8% |      |       |      |       |       |      |       |      |      |
| Analysis Period (min)             |                                                                                    |      | 15    |      |       |      |       |       |      |       |      |      |
| c Critical Lane Group             |                                                                                    |      |       |      |       |      |       |       |      |       |      |      |

| Intersection             |        |      |        |                  |        |      |        |      |      |      |      |      |
|--------------------------|--------|------|--------|------------------|--------|------|--------|------|------|------|------|------|
| Int Delay, s/veh         | 1.6    |      |        |                  |        |      |        |      |      |      |      |      |
| Movement                 | EBL    | EBT  | EBR    | WBL              | WBT    | WBR  | NBL    | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations      |        | ↕    |        |                  | ↕      | ↕    | ↕      | ↕↕   |      | ↕    | ↕↕   |      |
| Traffic Vol, veh/h       | 4      | 0    | 9      | 22               | 13     | 11   | 7      | 468  | 9    | 18   | 346  | 15   |
| Future Vol, veh/h        | 4      | 0    | 9      | 22               | 13     | 11   | 7      | 468  | 9    | 18   | 346  | 15   |
| Conflicting Peds, #/hr   | 0      | 0    | 0      | 0                | 0      | 0    | 0      | 0    | 0    | 0    | 0    | 0    |
| Sign Control             | Stop   | Stop | Stop   | Stop             | Stop   | Stop | Free   | Free | Free | Free | Free | Free |
| RT Channelized           | -      | -    | None   | -                | -      | None | -      | -    | None | -    | -    | None |
| Storage Length           | -      | -    | -      | -                | -      | 0    | 85     | -    | -    | 150  | -    | -    |
| Veh in Median Storage, # | -      | 0    | -      | -                | 0      | -    | -      | 0    | -    | -    | 0    | -    |
| Grade, %                 | -      | 0    | -      | -                | 0      | -    | -      | 0    | -    | -    | 0    | -    |
| Peak Hour Factor         | 50     | 50   | 50     | 80               | 80     | 80   | 77     | 77   | 77   | 92   | 92   | 92   |
| Heavy Vehicles, %        | 0      | 0    | 14     | 6                | 20     | 0    | 0      | 1    | 0    | 14   | 3    | 9    |
| Mvmt Flow                | 8      | 0    | 18     | 28               | 16     | 14   | 9      | 608  | 12   | 20   | 376  | 16   |
|                          |        |      |        |                  |        |      |        |      |      |      |      |      |
| Major/Minor              | Minor2 |      | Minor1 |                  | Major1 |      | Major2 |      |      |      |      |      |
| Conflicting Flow All     | 754    | 1062 | 196    | 860              | 1064   | 310  | 392    | 0    | 0    | 620  | 0    | 0    |
| Stage 1                  | 424    | 424  | -      | 632              | 632    | -    | -      | -    | -    | -    | -    | -    |
| Stage 2                  | 330    | 638  | -      | 228              | 432    | -    | -      | -    | -    | -    | -    | -    |
| Critical Hdwy            | 7.5    | 6.5  | 7.18   | 7.62             | 6.9    | 6.9  | 4.1    | -    | -    | 4.38 | -    | -    |
| Critical Hdwy Stg 1      | 6.5    | 5.5  | -      | 6.62             | 5.9    | -    | -      | -    | -    | -    | -    | -    |
| Critical Hdwy Stg 2      | 6.5    | 5.5  | -      | 6.62             | 5.9    | -    | -      | -    | -    | -    | -    | -    |
| Follow-up Hdwy           | 3.5    | 4    | 3.44   | 3.56             | 4.2    | 3.3  | 2.2    | -    | -    | 2.34 | -    | -    |
| Pot Cap-1 Maneuver       | 302    | 225  | 776    | 243              | 195    | 692  | 1178   | -    | -    | 879  | -    | -    |
| Stage 1                  | 584    | 590  | -      | 425              | 430    | -    | -      | -    | -    | -    | -    | -    |
| Stage 2                  | 663    | 474  | -      | 743              | 538    | -    | -      | -    | -    | -    | -    | -    |
| Platoon blocked, %       |        |      |        |                  |        |      |        | -    | -    |      | -    | -    |
| Mov Cap-1 Maneuver       | 270    | 218  | 776    | 232              | 189    | 692  | 1178   | -    | -    | 879  | -    | -    |
| Mov Cap-2 Maneuver       | 270    | 218  | -      | 232              | 189    | -    | -      | -    | -    | -    | -    | -    |
| Stage 1                  | 579    | 576  | -      | 422              | 427    | -    | -      | -    | -    | -    | -    | -    |
| Stage 2                  | 620    | 470  | -      | 709              | 526    | -    | -      | -    | -    | -    | -    | -    |
|                          |        |      |        |                  |        |      |        |      |      |      |      |      |
|                          |        |      |        |                  |        |      |        |      |      |      |      |      |
| Approach                 | EB     |      | WB     |                  | NB     |      | SB     |      |      |      |      |      |
| HCM Control Delay, s     | 12.7   |      | 22.3   |                  | 0.1    |      | 0.4    |      |      |      |      |      |
| HCM LOS                  | B      |      | C      |                  |        |      |        |      |      |      |      |      |
|                          |        |      |        |                  |        |      |        |      |      |      |      |      |
| Minor Lane/Major Mvmt    | NBL    | NBT  | NBR    | EBLn1WBLn1WBLn2  | SBL    | SBT  | SBR    |      |      |      |      |      |
| Capacity (veh/h)         | 1178   | -    | -      | 492 214 692      | 879    | -    | -      |      |      |      |      |      |
| HCM Lane V/C Ratio       | 0.008  | -    | -      | 0.053 0.204 0.02 | 0.022  | -    | -      |      |      |      |      |      |
| HCM Control Delay (s)    | 8.1    | -    | -      | 12.7 26.1 10.3   | 9.2    | -    | -      |      |      |      |      |      |
| HCM Lane LOS             | A      | -    | -      | B D B            | A      | -    | -      |      |      |      |      |      |
| HCM 95th %tile Q(veh)    | 0      | -    | -      | 0.2 0.7 0.1      | 0.1    | -    | -      |      |      |      |      |      |

# HCM Signalized Intersection Capacity Analysis

## 6: Hwy 101 & Rhododendron Dr

04/03/2020

|                                   |  |  |  |  |  |  |   |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |  |  |                                                                                     |  |  |                                                                                     |
| Traffic Volume (vph)              | 1                                                                                 | 0                                                                                 | 2                                                                                 | 10                                                                                | 1                                                                                 | 7                                                                                 | 5                                                                                   | 476                                                                                 | 1                                                                                   | 3                                                                                   | 325                                                                                 | 50                                                                                  |
| Future Volume (vph)               | 1                                                                                 | 0                                                                                 | 2                                                                                 | 10                                                                                | 1                                                                                 | 7                                                                                 | 5                                                                                   | 476                                                                                 | 1                                                                                   | 3                                                                                   | 325                                                                                 | 50                                                                                  |
| Ideal Flow (vphpl)                | 1750                                                                              | 1750                                                                              | 1750                                                                              | 1750                                                                              | 1750                                                                              | 1750                                                                              | 1750                                                                                | 1750                                                                                | 1750                                                                                | 1750                                                                                | 1750                                                                                | 1750                                                                                |
| Total Lost time (s)               |                                                                                   | 4.5                                                                               |                                                                                   |                                                                                   | 4.5                                                                               |                                                                                   | 4.5                                                                                 | 4.5                                                                                 |                                                                                     | 4.5                                                                                 | 4.5                                                                                 |                                                                                     |
| Lane Util. Factor                 |                                                                                   | 1.00                                                                              |                                                                                   |                                                                                   | 1.00                                                                              |                                                                                   | 1.00                                                                                | 0.95                                                                                |                                                                                     | 1.00                                                                                | 0.95                                                                                |                                                                                     |
| Frt                               |                                                                                   | 0.91                                                                              |                                                                                   |                                                                                   | 0.95                                                                              |                                                                                   | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                | 0.98                                                                                |                                                                                     |
| Flt Protected                     |                                                                                   | 0.98                                                                              |                                                                                   |                                                                                   | 0.97                                                                              |                                                                                   | 0.95                                                                                | 1.00                                                                                |                                                                                     | 0.95                                                                                | 1.00                                                                                |                                                                                     |
| Satd. Flow (prot)                 |                                                                                   | 1536                                                                              |                                                                                   |                                                                                   | 1582                                                                              |                                                                                   | 1630                                                                                | 3259                                                                                |                                                                                     | 1630                                                                                | 3194                                                                                |                                                                                     |
| Flt Permitted                     |                                                                                   | 1.00                                                                              |                                                                                   |                                                                                   | 1.00                                                                              |                                                                                   | 0.50                                                                                | 1.00                                                                                |                                                                                     | 0.44                                                                                | 1.00                                                                                |                                                                                     |
| Satd. Flow (perm)                 |                                                                                   | 1561                                                                              |                                                                                   |                                                                                   | 1627                                                                              |                                                                                   | 851                                                                                 | 3259                                                                                |                                                                                     | 758                                                                                 | 3194                                                                                |                                                                                     |
| Peak-hour factor, PHF             | 0.85                                                                              | 0.85                                                                              | 0.85                                                                              | 0.85                                                                              | 0.85                                                                              | 0.85                                                                              | 0.85                                                                                | 0.85                                                                                | 0.85                                                                                | 0.85                                                                                | 0.85                                                                                | 0.85                                                                                |
| Adj. Flow (vph)                   | 1                                                                                 | 0                                                                                 | 2                                                                                 | 12                                                                                | 1                                                                                 | 8                                                                                 | 6                                                                                   | 560                                                                                 | 1                                                                                   | 4                                                                                   | 382                                                                                 | 59                                                                                  |
| RTOR Reduction (vph)              | 0                                                                                 | 3                                                                                 | 0                                                                                 | 0                                                                                 | 8                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 5                                                                                   | 0                                                                                   |
| Lane Group Flow (vph)             | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 13                                                                                | 0                                                                                 | 6                                                                                   | 561                                                                                 | 0                                                                                   | 4                                                                                   | 436                                                                                 | 0                                                                                   |
| Turn Type                         | Perm                                                                              | NA                                                                                |                                                                                   | Perm                                                                              | NA                                                                                |                                                                                   | pm+pt                                                                               | NA                                                                                  |                                                                                     | pm+pt                                                                               | NA                                                                                  |                                                                                     |
| Protected Phases                  |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   | 8                                                                                 |                                                                                   | 5                                                                                   | 2                                                                                   |                                                                                     | 1                                                                                   | 6                                                                                   |                                                                                     |
| Permitted Phases                  | 4                                                                                 |                                                                                   |                                                                                   | 8                                                                                 |                                                                                   |                                                                                   | 2                                                                                   |                                                                                     |                                                                                     | 6                                                                                   |                                                                                     |                                                                                     |
| Actuated Green, G (s)             |                                                                                   | 1.3                                                                               |                                                                                   |                                                                                   | 1.3                                                                               |                                                                                   | 46.5                                                                                | 45.5                                                                                |                                                                                     | 46.5                                                                                | 45.5                                                                                |                                                                                     |
| Effective Green, g (s)            |                                                                                   | 1.3                                                                               |                                                                                   |                                                                                   | 1.3                                                                               |                                                                                   | 46.5                                                                                | 45.5                                                                                |                                                                                     | 46.5                                                                                | 45.5                                                                                |                                                                                     |
| Actuated g/C Ratio                |                                                                                   | 0.02                                                                              |                                                                                   |                                                                                   | 0.02                                                                              |                                                                                   | 0.76                                                                                | 0.74                                                                                |                                                                                     | 0.76                                                                                | 0.74                                                                                |                                                                                     |
| Clearance Time (s)                |                                                                                   | 4.5                                                                               |                                                                                   |                                                                                   | 4.5                                                                               |                                                                                   | 4.5                                                                                 | 4.5                                                                                 |                                                                                     | 4.5                                                                                 | 4.5                                                                                 |                                                                                     |
| Vehicle Extension (s)             |                                                                                   | 3.0                                                                               |                                                                                   |                                                                                   | 3.0                                                                               |                                                                                   | 3.0                                                                                 | 3.0                                                                                 |                                                                                     | 3.0                                                                                 | 3.0                                                                                 |                                                                                     |
| Lane Grp Cap (vph)                |                                                                                   | 33                                                                                |                                                                                   |                                                                                   | 34                                                                                |                                                                                   | 658                                                                                 | 2418                                                                                |                                                                                     | 589                                                                                 | 2370                                                                                |                                                                                     |
| v/s Ratio Prot                    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | c0.00                                                                               | c0.17                                                                               |                                                                                     | 0.00                                                                                | 0.14                                                                                |                                                                                     |
| v/s Ratio Perm                    |                                                                                   | 0.00                                                                              |                                                                                   |                                                                                   | c0.01                                                                             |                                                                                   | 0.01                                                                                |                                                                                     |                                                                                     | 0.01                                                                                |                                                                                     |                                                                                     |
| v/c Ratio                         |                                                                                   | 0.00                                                                              |                                                                                   |                                                                                   | 0.39                                                                              |                                                                                   | 0.01                                                                                | 0.23                                                                                |                                                                                     | 0.01                                                                                | 0.18                                                                                |                                                                                     |
| Uniform Delay, d1                 |                                                                                   | 29.4                                                                              |                                                                                   |                                                                                   | 29.6                                                                              |                                                                                   | 1.8                                                                                 | 2.5                                                                                 |                                                                                     | 1.8                                                                                 | 2.4                                                                                 |                                                                                     |
| Progression Factor                |                                                                                   | 1.00                                                                              |                                                                                   |                                                                                   | 1.00                                                                              |                                                                                   | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     |
| Incremental Delay, d2             |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   | 7.2                                                                               |                                                                                   | 0.0                                                                                 | 0.2                                                                                 |                                                                                     | 0.0                                                                                 | 0.2                                                                                 |                                                                                     |
| Delay (s)                         |                                                                                   | 29.4                                                                              |                                                                                   |                                                                                   | 36.8                                                                              |                                                                                   | 1.8                                                                                 | 2.7                                                                                 |                                                                                     | 1.8                                                                                 | 2.5                                                                                 |                                                                                     |
| Level of Service                  |                                                                                   | C                                                                                 |                                                                                   |                                                                                   | D                                                                                 |                                                                                   | A                                                                                   | A                                                                                   |                                                                                     | A                                                                                   | A                                                                                   |                                                                                     |
| Approach Delay (s)                |                                                                                   | 29.4                                                                              |                                                                                   |                                                                                   | 36.8                                                                              |                                                                                   |                                                                                     | 2.7                                                                                 |                                                                                     |                                                                                     | 2.5                                                                                 |                                                                                     |
| Approach LOS                      |                                                                                   | C                                                                                 |                                                                                   |                                                                                   | D                                                                                 |                                                                                   |                                                                                     | A                                                                                   |                                                                                     |                                                                                     | A                                                                                   |                                                                                     |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   | 3.4                                                                               |                                                                                   |                                                                                   | HCM 2000 Level of Service                                                         |                                                                                   |                                                                                     | A                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   | 0.23                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   | 61.3                                                                              |                                                                                   |                                                                                   | Sum of lost time (s)                                                              |                                                                                   |                                                                                     | 13.5                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   | 26.0%                                                                             |                                                                                   |                                                                                   | ICU Level of Service                                                              |                                                                                   |                                                                                     | A                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

| Intersection             |                                                                                   |        |       |                                                                                   |                                                                                   |       |
|--------------------------|-----------------------------------------------------------------------------------|--------|-------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------|
| Int Delay, s/veh         | 0.3                                                                               |        |       |                                                                                   |                                                                                   |       |
| Movement                 | EBT                                                                               | EBR    | WBL   | WBT                                                                               | NBL                                                                               | NBR   |
| Lane Configurations      |  |        |       |  |  |       |
| Traffic Vol, veh/h       | 28                                                                                | 0      | 3     | 47                                                                                | 0                                                                                 | 0     |
| Future Vol, veh/h        | 28                                                                                | 0      | 3     | 47                                                                                | 0                                                                                 | 0     |
| Conflicting Peds, #/hr   | 0                                                                                 | 0      | 0     | 0                                                                                 | 0                                                                                 | 0     |
| Sign Control             | Free                                                                              | Free   | Free  | Free                                                                              | Stop                                                                              | Stop  |
| 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, %        | 2                                                                                 | 2      | 2     | 2                                                                                 | 2                                                                                 | 2     |
| Mvmt Flow                | 30                                                                                | 0      | 3     | 51                                                                                | 0                                                                                 | 0     |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
| Major/Minor              | Major1                                                                            | Major2 |       | Minor1                                                                            |                                                                                   |       |
| Conflicting Flow All     | 0                                                                                 | 0      | 30    | 0                                                                                 | 87                                                                                | 30    |
| Stage 1                  | -                                                                                 | -      | -     | -                                                                                 | 30                                                                                | -     |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                 | 57                                                                                | -     |
| Critical Hdwy            | -                                                                                 | -      | 4.12  | -                                                                                 | 6.42                                                                              | 6.22  |
| Critical Hdwy Stg 1      | -                                                                                 | -      | -     | -                                                                                 | 5.42                                                                              | -     |
| Critical Hdwy Stg 2      | -                                                                                 | -      | -     | -                                                                                 | 5.42                                                                              | -     |
| Follow-up Hdwy           | -                                                                                 | -      | 2.218 | -                                                                                 | 3.518                                                                             | 3.318 |
| Pot Cap-1 Maneuver       | -                                                                                 | -      | 1583  | -                                                                                 | 914                                                                               | 1044  |
| Stage 1                  | -                                                                                 | -      | -     | -                                                                                 | 993                                                                               | -     |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                 | 966                                                                               | -     |
| Platoon blocked, %       | -                                                                                 | -      |       | -                                                                                 |                                                                                   |       |
| Mov Cap-1 Maneuver       | -                                                                                 | -      | 1583  | -                                                                                 | 912                                                                               | 1044  |
| Mov Cap-2 Maneuver       | -                                                                                 | -      | -     | -                                                                                 | 912                                                                               | -     |
| Stage 1                  | -                                                                                 | -      | -     | -                                                                                 | 993                                                                               | -     |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                 | 964                                                                               | -     |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
| Approach                 | EB                                                                                | WB     |       | NB                                                                                |                                                                                   |       |
| HCM Control Delay, s     | 0                                                                                 | 0.4    |       | 0                                                                                 |                                                                                   |       |
| HCM LOS                  | A                                                                                 |        |       |                                                                                   |                                                                                   |       |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
| Minor Lane/Major Mvmt    | NBLn1                                                                             | EBT    | EBR   | WBL                                                                               | WBT                                                                               |       |
| Capacity (veh/h)         | -                                                                                 | -      | -     | 1583                                                                              | -                                                                                 |       |
| HCM Lane V/C Ratio       | -                                                                                 | -      | -     | 0.002                                                                             | -                                                                                 |       |
| HCM Control Delay (s)    | 0                                                                                 | -      | -     | 7.3                                                                               | 0                                                                                 |       |
| HCM Lane LOS             | A                                                                                 | -      | -     | A                                                                                 | A                                                                                 |       |
| HCM 95th %tile Q(veh)    | -                                                                                 | -      | -     | 0                                                                                 | -                                                                                 |       |

HCM 2010 TWSC  
1: Hwy 101 & 6th St

04/03/2020

| Intersection             |        |      |        |                 |        |       |        |      |      |      |      |      |
|--------------------------|--------|------|--------|-----------------|--------|-------|--------|------|------|------|------|------|
| Int Delay, s/veh         | 2.6    |      |        |                 |        |       |        |      |      |      |      |      |
| Movement                 | EBL    | EBT  | EBR    | WBL             | WBT    | WBR   | NBL    | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations      |        | ↕    |        |                 | ↕      | ↕     | ↕      | ↕↕   |      | ↕    | ↕↕   |      |
| Traffic Vol, veh/h       | 4      | 2    | 9      | 27              | 15     | 40    | 7      | 445  | 11   | 47   | 318  | 15   |
| Future Vol, veh/h        | 4      | 2    | 9      | 27              | 15     | 40    | 7      | 445  | 11   | 47   | 318  | 15   |
| Conflicting Peds, #/hr   | 0      | 0    | 0      | 0               | 0      | 0     | 0      | 0    | 0    | 0    | 0    | 0    |
| Sign Control             | Stop   | Stop | Stop   | Stop            | Stop   | Stop  | Free   | Free | Free | Free | Free | Free |
| RT Channelized           | -      | -    | None   | -               | -      | None  | -      | -    | None | -    | -    | None |
| Storage Length           | -      | -    | -      | -               | -      | 0     | 85     | -    | -    | 150  | -    | -    |
| Veh in Median Storage, # | -      | 0    | -      | -               | 0      | -     | -      | 0    | -    | -    | 0    | -    |
| Grade, %                 | -      | 0    | -      | -               | 0      | -     | -      | 0    | -    | -    | 0    | -    |
| Peak Hour Factor         | 50     | 50   | 50     | 80              | 80     | 80    | 77     | 77   | 77   | 92   | 92   | 92   |
| Heavy Vehicles, %        | 0      | 0    | 14     | 6               | 20     | 0     | 0      | 1    | 0    | 14   | 3    | 9    |
| Mvmt Flow                | 8      | 4    | 18     | 34              | 19     | 50    | 9      | 578  | 14   | 51   | 346  | 16   |
|                          |        |      |        |                 |        |       |        |      |      |      |      |      |
| Major/Minor              | Minor2 |      | Minor1 |                 | Major1 |       | Major2 |      |      |      |      |      |
| Conflicting Flow All     | 773    | 1066 | 181    | 880             | 1067   | 296   | 362    | 0    | 0    | 592  | 0    | 0    |
| Stage 1                  | 456    | 456  | -      | 603             | 603    | -     | -      | -    | -    | -    | -    | -    |
| Stage 2                  | 317    | 610  | -      | 277             | 464    | -     | -      | -    | -    | -    | -    | -    |
| Critical Hdwy            | 7.5    | 6.5  | 7.18   | 7.62            | 6.9    | 6.9   | 4.1    | -    | -    | 4.38 | -    | -    |
| Critical Hdwy Stg 1      | 6.5    | 5.5  | -      | 6.62            | 5.9    | -     | -      | -    | -    | -    | -    | -    |
| Critical Hdwy Stg 2      | 6.5    | 5.5  | -      | 6.62            | 5.9    | -     | -      | -    | -    | -    | -    | -    |
| Follow-up Hdwy           | 3.5    | 4    | 3.44   | 3.56            | 4.2    | 3.3   | 2.2    | -    | -    | 2.34 | -    | -    |
| Pot Cap-1 Maneuver       | 292    | 224  | 794    | 235             | 194    | 706   | 1208   | -    | -    | 902  | -    | -    |
| Stage 1                  | 559    | 572  | -      | 443             | 444    | -     | -      | -    | -    | -    | -    | -    |
| Stage 2                  | 674    | 488  | -      | 695             | 519    | -     | -      | -    | -    | -    | -    | -    |
| Platoon blocked, %       |        |      |        |                 |        |       |        | -    | -    |      | -    | -    |
| Mov Cap-1 Maneuver       | 238    | 210  | 794    | 215             | 182    | 706   | 1208   | -    | -    | 902  | -    | -    |
| Mov Cap-2 Maneuver       | 238    | 210  | -      | 215             | 182    | -     | -      | -    | -    | -    | -    | -    |
| Stage 1                  | 555    | 539  | -      | 440             | 441    | -     | -      | -    | -    | -    | -    | -    |
| Stage 2                  | 595    | 485  | -      | 636             | 489    | -     | -      | -    | -    | -    | -    | -    |
|                          |        |      |        |                 |        |       |        |      |      |      |      |      |
|                          |        |      |        |                 |        |       |        |      |      |      |      |      |
| Approach                 | EB     |      | WB     |                 | NB     |       | SB     |      |      |      |      |      |
| HCM Control Delay, s     | 14.8   |      | 20     |                 | 0.1    |       | 1.1    |      |      |      |      |      |
| HCM LOS                  | B      |      | C      |                 |        |       |        |      |      |      |      |      |
|                          |        |      |        |                 |        |       |        |      |      |      |      |      |
| Minor Lane/Major Mvmt    | NBL    | NBT  | NBR    | EBLn1WBLn1WBLn2 | SBL    | SBT   | SBR    |      |      |      |      |      |
| Capacity (veh/h)         | 1208   | -    | -      | 398             | 202    | 706   | 902    | -    | -    |      |      |      |
| HCM Lane V/C Ratio       | 0.008  | -    | -      | 0.075           | 0.26   | 0.071 | 0.057  | -    | -    |      |      |      |
| HCM Control Delay (s)    | 8      | -    | -      | 14.8            | 29     | 10.5  | 9.2    | -    | -    |      |      |      |
| HCM Lane LOS             | A      | -    | -      | B               | D      | B     | A      | -    | -    |      |      |      |
| HCM 95th %tile Q(veh)    | 0      | -    | -      | 0.2             | 1      | 0.2   | 0.2    | -    | -    |      |      |      |

**Intersection**

Int Delay, s/veh 2.7

| Movement                 | EBT                                                                               | EBR  | WBL  | WBT                                                                               | NBL                                                                               | NBR  |
|--------------------------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Lane Configurations      |  |      |      |  |  |      |
| Traffic Vol, veh/h       | 28                                                                                | 33   | 6    | 47                                                                                | 36                                                                                | 3    |
| Future Vol, veh/h        | 28                                                                                | 33   | 6    | 47                                                                                | 36                                                                                | 3    |
| Conflicting Peds, #/hr   | 0                                                                                 | 0    | 0    | 0                                                                                 | 0                                                                                 | 0    |
| Sign Control             | Free                                                                              | Free | Free | Free                                                                              | Stop                                                                              | Stop |
| RT Channelized           | -                                                                                 | None | -    | None                                                                              | -                                                                                 | None |
| Storage Length           | -                                                                                 | -    | -    | -                                                                                 | 0                                                                                 | -    |
| Veh in Median Storage, # | 0                                                                                 | -    | -    | 0                                                                                 | 0                                                                                 | -    |
| Grade, %                 | 0                                                                                 | -    | -    | 0                                                                                 | 0                                                                                 | -    |
| Peak Hour Factor         | 80                                                                                | 80   | 80   | 80                                                                                | 80                                                                                | 80   |
| Heavy Vehicles, %        | 2                                                                                 | 2    | 2    | 2                                                                                 | 2                                                                                 | 2    |
| Mvmt Flow                | 35                                                                                | 41   | 8    | 59                                                                                | 45                                                                                | 4    |

| Major/Minor          | Major1 | Major2 | Minor1 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 0      | 0      | 76     |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |
| Critical Hdwy        | -      | -      | 4.12   |
| Critical Hdwy Stg 1  | -      | -      | -      |
| Critical Hdwy Stg 2  | -      | -      | -      |
| Follow-up Hdwy       | -      | -      | 2.218  |
| Pot Cap-1 Maneuver   | -      | -      | 1523   |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |
| Platoon blocked, %   | -      | -      | -      |
| Mov Cap-1 Maneuver   | -      | -      | 1523   |
| Mov Cap-2 Maneuver   | -      | -      | -      |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |

| Approach             | EB | WB  | NB  |
|----------------------|----|-----|-----|
| HCM Control Delay, s | 0  | 0.8 | 9.4 |
| HCM LOS              |    |     | A   |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL   | WBT |
|-----------------------|-------|-----|-----|-------|-----|
| Capacity (veh/h)      | 869   | -   | -   | 1523  | -   |
| HCM Lane V/C Ratio    | 0.056 | -   | -   | 0.005 | -   |
| HCM Control Delay (s) | 9.4   | -   | -   | 7.4   | 0   |
| HCM Lane LOS          | A     | -   | -   | A     | A   |
| HCM 95th %tile Q(veh) | 0.2   | -   | -   | 0     | -   |

| Intersection             |                                                                                   |        |       |                                                                                   |                                                                                   |      |
|--------------------------|-----------------------------------------------------------------------------------|--------|-------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Int Delay, s/veh         | 4.4                                                                               |        |       |                                                                                   |                                                                                   |      |
| Movement                 | EBL                                                                               | EBR    | NBL   | NBT                                                                               | SBT                                                                               | SBR  |
| Lane Configurations      |  |        |       |  |  |      |
| Traffic Vol, veh/h       | 39                                                                                | 0      | 0     | 0                                                                                 | 3                                                                                 | 36   |
| Future Vol, veh/h        | 39                                                                                | 0      | 0     | 0                                                                                 | 3                                                                                 | 36   |
| 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         | 85                                                                                | 85     | 85    | 85                                                                                | 85                                                                                | 85   |
| Heavy Vehicles, %        | 2                                                                                 | 2      | 2     | 2                                                                                 | 2                                                                                 | 2    |
| Mvmt Flow                | 46                                                                                | 0      | 0     | 0                                                                                 | 4                                                                                 | 42   |
| Major/Minor              | Minor2                                                                            | Major1 |       | Major2                                                                            |                                                                                   |      |
| Conflicting Flow All     | 25                                                                                | 25     | 46    | 0                                                                                 | -                                                                                 | 0    |
| Stage 1                  | 25                                                                                | -      | -     | -                                                                                 | -                                                                                 | -    |
| Stage 2                  | 0                                                                                 | -      | -     | -                                                                                 | -                                                                                 | -    |
| Critical Hdwy            | 6.42                                                                              | 6.22   | 4.12  | -                                                                                 | -                                                                                 | -    |
| Critical Hdwy Stg 1      | 5.42                                                                              | -      | -     | -                                                                                 | -                                                                                 | -    |
| Critical Hdwy Stg 2      | 5.42                                                                              | -      | -     | -                                                                                 | -                                                                                 | -    |
| Follow-up Hdwy           | 3.518                                                                             | 3.318  | 2.218 | -                                                                                 | -                                                                                 | -    |
| Pot Cap-1 Maneuver       | 991                                                                               | 1051   | 1562  | -                                                                                 | -                                                                                 | -    |
| Stage 1                  | 998                                                                               | -      | -     | -                                                                                 | -                                                                                 | -    |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                 | -                                                                                 | -    |
| Platoon blocked, %       |                                                                                   |        |       | -                                                                                 | -                                                                                 | -    |
| Mov Cap-1 Maneuver       | 991                                                                               | 1051   | 1562  | -                                                                                 | -                                                                                 | -    |
| Mov Cap-2 Maneuver       | 991                                                                               | -      | -     | -                                                                                 | -                                                                                 | -    |
| Stage 1                  | 998                                                                               | -      | -     | -                                                                                 | -                                                                                 | -    |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                 | -                                                                                 | -    |
| Approach                 | EB                                                                                | NB     |       | SB                                                                                |                                                                                   |      |
| HCM Control Delay, s     | 8.8                                                                               | 0      |       | 0                                                                                 |                                                                                   |      |
| HCM LOS                  | A                                                                                 |        |       |                                                                                   |                                                                                   |      |
| Minor Lane/Major Mvmt    | NBL                                                                               | NBT    | EBLn1 | SBT                                                                               | SBR                                                                               |      |
| Capacity (veh/h)         | 1562                                                                              | -      | 991   | -                                                                                 | -                                                                                 |      |
| HCM Lane V/C Ratio       | -                                                                                 | -      | 0.046 | -                                                                                 | -                                                                                 |      |
| HCM Control Delay (s)    | 0                                                                                 | -      | 8.8   | -                                                                                 | -                                                                                 |      |
| HCM Lane LOS             | A                                                                                 | -      | A     | -                                                                                 | -                                                                                 |      |
| HCM 95th %tile Q(veh)    | 0                                                                                 | -      | 0.1   | -                                                                                 | -                                                                                 |      |

# HCM Signalized Intersection Capacity Analysis

## 6: Hwy 101 & Rhododendron Dr

04/03/2020

|                                   |  |  |  |  |  |  |   |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |  |  |                                                                                     |  |  |                                                                                     |
| Traffic Volume (vph)              | 1                                                                                 | 2                                                                                 | 2                                                                                 | 36                                                                                | 3                                                                                 | 12                                                                                | 5                                                                                   | 450                                                                                 | 30                                                                                  | 7                                                                                   | 298                                                                                 | 50                                                                                  |
| Future Volume (vph)               | 1                                                                                 | 2                                                                                 | 2                                                                                 | 36                                                                                | 3                                                                                 | 12                                                                                | 5                                                                                   | 450                                                                                 | 30                                                                                  | 7                                                                                   | 298                                                                                 | 50                                                                                  |
| Ideal Flow (vphpl)                | 1750                                                                              | 1750                                                                              | 1750                                                                              | 1750                                                                              | 1750                                                                              | 1750                                                                              | 1750                                                                                | 1750                                                                                | 1750                                                                                | 1750                                                                                | 1750                                                                                | 1750                                                                                |
| Total Lost time (s)               |                                                                                   | 4.5                                                                               |                                                                                   |                                                                                   | 4.5                                                                               |                                                                                   | 4.5                                                                                 | 4.5                                                                                 |                                                                                     | 4.5                                                                                 | 4.5                                                                                 |                                                                                     |
| Lane Util. Factor                 |                                                                                   | 1.00                                                                              |                                                                                   |                                                                                   | 1.00                                                                              |                                                                                   | 1.00                                                                                | 0.95                                                                                |                                                                                     | 1.00                                                                                | 0.95                                                                                |                                                                                     |
| Frpb, ped/bikes                   |                                                                                   | 1.00                                                                              |                                                                                   |                                                                                   | 1.00                                                                              |                                                                                   | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     |
| Flpb, ped/bikes                   |                                                                                   | 1.00                                                                              |                                                                                   |                                                                                   | 1.00                                                                              |                                                                                   | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     |
| Frt                               |                                                                                   | 0.95                                                                              |                                                                                   |                                                                                   | 0.97                                                                              |                                                                                   | 1.00                                                                                | 0.99                                                                                |                                                                                     | 1.00                                                                                | 0.98                                                                                |                                                                                     |
| Flt Protected                     |                                                                                   | 0.99                                                                              |                                                                                   |                                                                                   | 0.97                                                                              |                                                                                   | 0.95                                                                                | 1.00                                                                                |                                                                                     | 0.95                                                                                | 1.00                                                                                |                                                                                     |
| Satd. Flow (prot)                 |                                                                                   | 1529                                                                              |                                                                                   |                                                                                   | 1638                                                                              |                                                                                   | 1630                                                                                | 3060                                                                                |                                                                                     | 1662                                                                                | 3158                                                                                |                                                                                     |
| Flt Permitted                     |                                                                                   | 0.98                                                                              |                                                                                   |                                                                                   | 0.85                                                                              |                                                                                   | 0.46                                                                                | 1.00                                                                                |                                                                                     | 0.35                                                                                | 1.00                                                                                |                                                                                     |
| Satd. Flow (perm)                 |                                                                                   | 1518                                                                              |                                                                                   |                                                                                   | 1441                                                                              |                                                                                   | 794                                                                                 | 3060                                                                                |                                                                                     | 617                                                                                 | 3158                                                                                |                                                                                     |
| Peak-hour factor, PHF             | 0.85                                                                              | 0.85                                                                              | 0.85                                                                              | 0.85                                                                              | 0.85                                                                              | 0.85                                                                              | 0.85                                                                                | 0.85                                                                                | 0.85                                                                                | 0.85                                                                                | 0.85                                                                                | 0.85                                                                                |
| Adj. Flow (vph)                   | 1                                                                                 | 2                                                                                 | 2                                                                                 | 42                                                                                | 4                                                                                 | 14                                                                                | 6                                                                                   | 529                                                                                 | 35                                                                                  | 8                                                                                   | 351                                                                                 | 59                                                                                  |
| RTOR Reduction (vph)              | 0                                                                                 | 1                                                                                 | 0                                                                                 | 0                                                                                 | 8                                                                                 | 0                                                                                 | 0                                                                                   | 6                                                                                   | 0                                                                                   | 0                                                                                   | 15                                                                                  | 0                                                                                   |
| Lane Group Flow (vph)             | 0                                                                                 | 4                                                                                 | 0                                                                                 | 0                                                                                 | 52                                                                                | 0                                                                                 | 6                                                                                   | 558                                                                                 | 0                                                                                   | 8                                                                                   | 395                                                                                 | 0                                                                                   |
| Confl. Peds. (#/hr)               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     | 1                                                                                   | 1                                                                                   |                                                                                     |                                                                                     |
| Heavy Vehicles (%)                | 8%                                                                                | 0%                                                                                | 14%                                                                               | 0%                                                                                | 0%                                                                                | 0%                                                                                | 2%                                                                                  | 8%                                                                                  | 0%                                                                                  | 0%                                                                                  | 3%                                                                                  | 3%                                                                                  |
| Turn Type                         | Perm                                                                              | NA                                                                                |                                                                                   | Perm                                                                              | NA                                                                                |                                                                                   | pm+pt                                                                               | NA                                                                                  |                                                                                     | pm+pt                                                                               | NA                                                                                  |                                                                                     |
| Protected Phases                  |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   | 8                                                                                 |                                                                                   | 5                                                                                   | 2                                                                                   |                                                                                     | 1                                                                                   | 6                                                                                   |                                                                                     |
| Permitted Phases                  | 4                                                                                 |                                                                                   |                                                                                   | 8                                                                                 |                                                                                   |                                                                                   | 2                                                                                   |                                                                                     |                                                                                     | 6                                                                                   |                                                                                     |                                                                                     |
| Actuated Green, G (s)             |                                                                                   | 37.5                                                                              |                                                                                   |                                                                                   | 37.5                                                                              |                                                                                   | 39.0                                                                                | 33.5                                                                                |                                                                                     | 39.0                                                                                | 33.5                                                                                |                                                                                     |
| Effective Green, g (s)            |                                                                                   | 37.5                                                                              |                                                                                   |                                                                                   | 37.5                                                                              |                                                                                   | 39.0                                                                                | 33.5                                                                                |                                                                                     | 39.0                                                                                | 33.5                                                                                |                                                                                     |
| Actuated g/C Ratio                |                                                                                   | 0.42                                                                              |                                                                                   |                                                                                   | 0.42                                                                              |                                                                                   | 0.43                                                                                | 0.37                                                                                |                                                                                     | 0.43                                                                                | 0.37                                                                                |                                                                                     |
| Clearance Time (s)                |                                                                                   | 4.5                                                                               |                                                                                   |                                                                                   | 4.5                                                                               |                                                                                   | 4.5                                                                                 | 4.5                                                                                 |                                                                                     | 4.5                                                                                 | 4.5                                                                                 |                                                                                     |
| Lane Grp Cap (vph)                |                                                                                   | 632                                                                               |                                                                                   |                                                                                   | 600                                                                               |                                                                                   | 395                                                                                 | 1139                                                                                |                                                                                     | 331                                                                                 | 1175                                                                                |                                                                                     |
| v/s Ratio Prot                    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 0.00                                                                                | c0.18                                                                               |                                                                                     | c0.00                                                                               | 0.13                                                                                |                                                                                     |
| v/s Ratio Perm                    |                                                                                   | 0.00                                                                              |                                                                                   |                                                                                   | c0.04                                                                             |                                                                                   | 0.01                                                                                |                                                                                     |                                                                                     | 0.01                                                                                |                                                                                     |                                                                                     |
| v/c Ratio                         |                                                                                   | 0.01                                                                              |                                                                                   |                                                                                   | 0.09                                                                              |                                                                                   | 0.02                                                                                | 0.49                                                                                |                                                                                     | 0.02                                                                                | 0.34                                                                                |                                                                                     |
| Uniform Delay, d1                 |                                                                                   | 15.4                                                                              |                                                                                   |                                                                                   | 15.9                                                                              |                                                                                   | 14.6                                                                                | 21.7                                                                                |                                                                                     | 14.8                                                                                | 20.3                                                                                |                                                                                     |
| Progression Factor                |                                                                                   | 1.00                                                                              |                                                                                   |                                                                                   | 1.00                                                                              |                                                                                   | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     |
| Incremental Delay, d2             |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   | 0.3                                                                               |                                                                                   | 0.1                                                                                 | 1.5                                                                                 |                                                                                     | 0.1                                                                                 | 0.8                                                                                 |                                                                                     |
| Delay (s)                         |                                                                                   | 15.4                                                                              |                                                                                   |                                                                                   | 16.2                                                                              |                                                                                   | 14.6                                                                                | 23.2                                                                                |                                                                                     | 14.9                                                                                | 21.0                                                                                |                                                                                     |
| Level of Service                  |                                                                                   | B                                                                                 |                                                                                   |                                                                                   | B                                                                                 |                                                                                   | B                                                                                   | C                                                                                   |                                                                                     | B                                                                                   | C                                                                                   |                                                                                     |
| Approach Delay (s)                |                                                                                   | 15.4                                                                              |                                                                                   |                                                                                   | 16.2                                                                              |                                                                                   |                                                                                     | 23.1                                                                                |                                                                                     |                                                                                     | 20.9                                                                                |                                                                                     |
| Approach LOS                      |                                                                                   | B                                                                                 |                                                                                   |                                                                                   | B                                                                                 |                                                                                   |                                                                                     | C                                                                                   |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   | 21.8                                                                              |                                                                                   |                                                                                   | HCM 2000 Level of Service                                                         |                                                                                   |                                                                                     | C                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   | 0.26                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   | 90.0                                                                              |                                                                                   |                                                                                   | Sum of lost time (s)                                                              |                                                                                   |                                                                                     | 13.5                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   | 33.3%                                                                             |                                                                                   |                                                                                   | ICU Level of Service                                                              |                                                                                   |                                                                                     | A                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

HCM 2010 TWSC  
13: Rhododendron Dr & South Access

04/03/2020

| Intersection             |        |                                                                                   |                                                                                   |        |                                                                                   |       |
|--------------------------|--------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------|-----------------------------------------------------------------------------------|-------|
| Int Delay, s/veh         | 7.6    |                                                                                   |                                                                                   |        |                                                                                   |       |
| Movement                 | EBL    | EBT                                                                               | WBT                                                                               | WBR    | SBL                                                                               | SBR   |
| Lane Configurations      |        |  |  |        |  |       |
| Traffic Vol, veh/h       | 35     | 1                                                                                 | 0                                                                                 | 0      | 0                                                                                 | 33    |
| Future Vol, veh/h        | 35     | 1                                                                                 | 0                                                                                 | 0      | 0                                                                                 | 33    |
| Conflicting Peds, #/hr   | 0      | 0                                                                                 | 0                                                                                 | 0      | 0                                                                                 | 0     |
| Sign Control             | Free   | Free                                                                              | Free                                                                              | Free   | Stop                                                                              | Stop  |
| RT Channelized           | -      | None                                                                              | -                                                                                 | None   | -                                                                                 | None  |
| Storage Length           | -      | -                                                                                 | -                                                                                 | -      | 0                                                                                 | -     |
| Veh in Median Storage, # | -      | 0                                                                                 | 0                                                                                 | -      | 0                                                                                 | -     |
| Grade, %                 | -      | 0                                                                                 | 0                                                                                 | -      | 0                                                                                 | -     |
| Peak Hour Factor         | 85     | 85                                                                                | 85                                                                                | 85     | 85                                                                                | 85    |
| Heavy Vehicles, %        | 2      | 2                                                                                 | 2                                                                                 | 2      | 2                                                                                 | 2     |
| Mvmt Flow                | 41     | 1                                                                                 | 0                                                                                 | 0      | 0                                                                                 | 39    |
|                          |        |                                                                                   |                                                                                   |        |                                                                                   |       |
| Major/Minor              | Major1 | Major2                                                                            |                                                                                   | Minor2 |                                                                                   |       |
| Conflicting Flow All     | 1      | 0                                                                                 | -                                                                                 | 0      | 84                                                                                | 1     |
| Stage 1                  | -      | -                                                                                 | -                                                                                 | -      | 1                                                                                 | -     |
| Stage 2                  | -      | -                                                                                 | -                                                                                 | -      | 83                                                                                | -     |
| Critical Hdwy            | 4.12   | -                                                                                 | -                                                                                 | -      | 6.42                                                                              | 6.22  |
| Critical Hdwy Stg 1      | -      | -                                                                                 | -                                                                                 | -      | 5.42                                                                              | -     |
| Critical Hdwy Stg 2      | -      | -                                                                                 | -                                                                                 | -      | 5.42                                                                              | -     |
| Follow-up Hdwy           | 2.218  | -                                                                                 | -                                                                                 | -      | 3.518                                                                             | 3.318 |
| Pot Cap-1 Maneuver       | 1622   | -                                                                                 | -                                                                                 | -      | 918                                                                               | 1084  |
| Stage 1                  | -      | -                                                                                 | -                                                                                 | -      | 1022                                                                              | -     |
| Stage 2                  | -      | -                                                                                 | -                                                                                 | -      | 940                                                                               | -     |
| Platoon blocked, %       |        | -                                                                                 | -                                                                                 | -      |                                                                                   |       |
| Mov Cap-1 Maneuver       | 1622   | -                                                                                 | -                                                                                 | -      | 895                                                                               | 1084  |
| Mov Cap-2 Maneuver       | -      | -                                                                                 | -                                                                                 | -      | 895                                                                               | -     |
| Stage 1                  | -      | -                                                                                 | -                                                                                 | -      | 996                                                                               | -     |
| Stage 2                  | -      | -                                                                                 | -                                                                                 | -      | 940                                                                               | -     |
|                          |        |                                                                                   |                                                                                   |        |                                                                                   |       |
|                          |        |                                                                                   |                                                                                   |        |                                                                                   |       |
| Approach                 | EB     | WB                                                                                |                                                                                   | SB     |                                                                                   |       |
| HCM Control Delay, s     | 7.1    | 0                                                                                 |                                                                                   | 8.4    |                                                                                   |       |
| HCM LOS                  | A      |                                                                                   |                                                                                   |        |                                                                                   |       |
|                          |        |                                                                                   |                                                                                   |        |                                                                                   |       |
| Minor Lane/Major Mvmt    | EBL    | EBT                                                                               | WBT                                                                               | WBR    | SBLn1                                                                             |       |
| Capacity (veh/h)         | 1622   | -                                                                                 | -                                                                                 | -      | -                                                                                 | 1084  |
| HCM Lane V/C Ratio       | 0.025  | -                                                                                 | -                                                                                 | -      | -                                                                                 | 0.036 |
| HCM Control Delay (s)    | 7.3    | 0                                                                                 | -                                                                                 | -      | -                                                                                 | 8.4   |
| HCM Lane LOS             | A      | A                                                                                 | -                                                                                 | -      | -                                                                                 | A     |
| HCM 95th %tile Q(veh)    | 0.1    | -                                                                                 | -                                                                                 | -      | -                                                                                 | 0.1   |

HCM 2010 TWSC  
3: Hwy 101 & 6th St

04/03/2020

| Intersection             |        |      |        |                 |        |       |        |      |      |      |      |      |
|--------------------------|--------|------|--------|-----------------|--------|-------|--------|------|------|------|------|------|
| Int Delay, s/veh         | 2      |      |        |                 |        |       |        |      |      |      |      |      |
| Movement                 | EBL    | EBT  | EBR    | WBL             | WBT    | WBR   | NBL    | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations      |        | ↕    |        |                 | ↕      | ↕     | ↕      | ↕↕   |      | ↕    | ↕↕   |      |
| Traffic Vol, veh/h       | 5      | 0    | 10     | 25              | 15     | 12    | 8      | 504  | 10   | 20   | 373  | 16   |
| Future Vol, veh/h        | 5      | 0    | 10     | 25              | 15     | 12    | 8      | 504  | 10   | 20   | 373  | 16   |
| Conflicting Peds, #/hr   | 0      | 0    | 0      | 0               | 0      | 0     | 0      | 0    | 0    | 0    | 0    | 0    |
| Sign Control             | Stop   | Stop | Stop   | Stop            | Stop   | Stop  | Free   | Free | Free | Free | Free | Free |
| RT Channelized           | -      | -    | None   | -               | -      | None  | -      | -    | None | -    | -    | None |
| Storage Length           | -      | -    | -      | -               | -      | 0     | 85     | -    | -    | 150  | -    | -    |
| Veh in Median Storage, # | -      | 0    | -      | -               | 0      | -     | -      | 0    | -    | -    | 0    | -    |
| Grade, %                 | -      | 0    | -      | -               | 0      | -     | -      | 0    | -    | -    | 0    | -    |
| Peak Hour Factor         | 50     | 50   | 50     | 80              | 80     | 80    | 77     | 77   | 77   | 92   | 92   | 92   |
| Heavy Vehicles, %        | 0      | 0    | 14     | 6               | 20     | 0     | 0      | 1    | 0    | 14   | 3    | 9    |
| Mvmt Flow                | 10     | 0    | 20     | 31              | 19     | 15    | 10     | 655  | 13   | 22   | 405  | 17   |
|                          |        |      |        |                 |        |       |        |      |      |      |      |      |
| Major/Minor              | Minor2 |      | Minor1 |                 | Major1 |       | Major2 |      |      |      |      |      |
| Conflicting Flow All     | 815    | 1146 | 211    | 929             | 1148   | 334   | 422    | 0    | 0    | 668  | 0    | 0    |
| Stage 1                  | 458    | 458  | -      | 682             | 682    | -     | -      | -    | -    | -    | -    | -    |
| Stage 2                  | 357    | 688  | -      | 247             | 466    | -     | -      | -    | -    | -    | -    | -    |
| Critical Hdwy            | 7.5    | 6.5  | 7.18   | 7.62            | 6.9    | 6.9   | 4.1    | -    | -    | 4.38 | -    | -    |
| Critical Hdwy Stg 1      | 6.5    | 5.5  | -      | 6.62            | 5.9    | -     | -      | -    | -    | -    | -    | -    |
| Critical Hdwy Stg 2      | 6.5    | 5.5  | -      | 6.62            | 5.9    | -     | -      | -    | -    | -    | -    | -    |
| Follow-up Hdwy           | 3.5    | 4    | 3.44   | 3.56            | 4.2    | 3.3   | 2.2    | -    | -    | 2.34 | -    | -    |
| Pot Cap-1 Maneuver       | 273    | 201  | 759    | 216             | 172    | 668   | 1148   | -    | -    | 841  | -    | -    |
| Stage 1                  | 557    | 570  | -      | 397             | 406    | -     | -      | -    | -    | -    | -    | -    |
| Stage 2                  | 639    | 450  | -      | 724             | 518    | -     | -      | -    | -    | -    | -    | -    |
| Platoon blocked, %       |        |      |        |                 |        |       |        | -    | -    |      | -    | -    |
| Mov Cap-1 Maneuver       | 238    | 194  | 759    | 205             | 166    | 668   | 1148   | -    | -    | 841  | -    | -    |
| Mov Cap-2 Maneuver       | 238    | 194  | -      | 205             | 166    | -     | -      | -    | -    | -    | -    | -    |
| Stage 1                  | 552    | 555  | -      | 393             | 402    | -     | -      | -    | -    | -    | -    | -    |
| Stage 2                  | 590    | 446  | -      | 686             | 505    | -     | -      | -    | -    | -    | -    | -    |
|                          |        |      |        |                 |        |       |        |      |      |      |      |      |
|                          |        |      |        |                 |        |       |        |      |      |      |      |      |
| Approach                 | EB     |      | WB     |                 | NB     |       | SB     |      |      |      |      |      |
| HCM Control Delay, s     | 13.8   |      | 26.2   |                 | 0.1    |       | 0.5    |      |      |      |      |      |
| HCM LOS                  | B      |      | D      |                 |        |       |        |      |      |      |      |      |
|                          |        |      |        |                 |        |       |        |      |      |      |      |      |
| Minor Lane/Major Mvmt    | NBL    | NBT  | NBR    | EBLn1WBLn1WBLn2 | SBL    | SBT   | SBR    |      |      |      |      |      |
| Capacity (veh/h)         | 1148   | -    | -      | 439             | 188    | 668   | 841    | -    | -    |      |      |      |
| HCM Lane V/C Ratio       | 0.009  | -    | -      | 0.068           | 0.266  | 0.022 | 0.026  | -    | -    |      |      |      |
| HCM Control Delay (s)    | 8.2    | -    | -      | 13.8            | 30.9   | 10.5  | 9.4    | -    | -    |      |      |      |
| HCM Lane LOS             | A      | -    | -      | B               | D      | B     | A      | -    | -    |      |      |      |
| HCM 95th %tile Q(veh)    | 0      | -    | -      | 0.2             | 1      | 0.1   | 0.1    | -    | -    |      |      |      |

# HCM Signalized Intersection Capacity Analysis

## 6: Hwy 101 & Rhododendron Dr

04/03/2020

|                                   |  |      |       |      |       |      |       |       |      |       |      |      |
|-----------------------------------|------------------------------------------------------------------------------------|------|-------|------|-------|------|-------|-------|------|-------|------|------|
| Movement                          | EBL                                                                                | EBT  | EBR   | WBL  | WBT   | WBR  | NBL   | NBT   | NBR  | SBL   | SBT  | SBR  |
| Lane Configurations               |                                                                                    | ↕    |       |      | ↕     |      | ↙     | ↕     |      | ↙     | ↕    |      |
| Traffic Volume (vph)              | 1                                                                                  | 0    | 2     | 11   | 1     | 8    | 5     | 512   | 1    | 3     | 350  | 54   |
| Future Volume (vph)               | 1                                                                                  | 0    | 2     | 11   | 1     | 8    | 5     | 512   | 1    | 3     | 350  | 54   |
| Ideal Flow (vphpl)                | 1750                                                                               | 1750 | 1750  | 1750 | 1750  | 1750 | 1750  | 1750  | 1750 | 1750  | 1750 | 1750 |
| Total Lost time (s)               |                                                                                    | 4.5  |       |      | 4.5   |      | 4.5   | 4.5   |      | 4.5   | 4.5  |      |
| Lane Util. Factor                 |                                                                                    | 1.00 |       |      | 1.00  |      | 1.00  | 0.95  |      | 1.00  | 0.95 |      |
| Frt                               |                                                                                    | 0.91 |       |      | 0.95  |      | 1.00  | 1.00  |      | 1.00  | 0.98 |      |
| Flt Protected                     |                                                                                    | 0.98 |       |      | 0.97  |      | 0.95  | 1.00  |      | 0.95  | 1.00 |      |
| Satd. Flow (prot)                 |                                                                                    | 1536 |       |      | 1580  |      | 1630  | 3259  |      | 1630  | 3194 |      |
| Flt Permitted                     |                                                                                    | 1.00 |       |      | 1.00  |      | 0.48  | 1.00  |      | 0.42  | 1.00 |      |
| Satd. Flow (perm)                 |                                                                                    | 1561 |       |      | 1625  |      | 823   | 3259  |      | 727   | 3194 |      |
| Peak-hour factor, PHF             | 0.85                                                                               | 0.85 | 0.85  | 0.85 | 0.85  | 0.85 | 0.85  | 0.85  | 0.85 | 0.85  | 0.85 | 0.85 |
| Adj. Flow (vph)                   | 1                                                                                  | 0    | 2     | 13   | 1     | 9    | 6     | 602   | 1    | 4     | 412  | 64   |
| RTOR Reduction (vph)              | 0                                                                                  | 3    | 0     | 0    | 9     | 0    | 0     | 0     | 0    | 0     | 6    | 0    |
| Lane Group Flow (vph)             | 0                                                                                  | 0    | 0     | 0    | 14    | 0    | 6     | 603   | 0    | 4     | 470  | 0    |
| Turn Type                         | Perm                                                                               | NA   |       | Perm | NA    |      | pm+pt | NA    |      | pm+pt | NA   |      |
| Protected Phases                  |                                                                                    | 4    |       |      | 8     |      | 5     | 2     |      | 1     | 6    |      |
| Permitted Phases                  | 4                                                                                  |      |       | 8    |       |      | 2     |       |      | 6     |      |      |
| Actuated Green, G (s)             |                                                                                    | 1.4  |       |      | 1.4   |      | 47.3  | 46.3  |      | 47.3  | 46.3 |      |
| Effective Green, g (s)            |                                                                                    | 1.4  |       |      | 1.4   |      | 47.3  | 46.3  |      | 47.3  | 46.3 |      |
| Actuated g/C Ratio                |                                                                                    | 0.02 |       |      | 0.02  |      | 0.76  | 0.74  |      | 0.76  | 0.74 |      |
| Clearance Time (s)                |                                                                                    | 4.5  |       |      | 4.5   |      | 4.5   | 4.5   |      | 4.5   | 4.5  |      |
| Vehicle Extension (s)             |                                                                                    | 3.0  |       |      | 3.0   |      | 3.0   | 3.0   |      | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)                |                                                                                    | 35   |       |      | 36    |      | 638   | 2425  |      | 567   | 2377 |      |
| v/s Ratio Prot                    |                                                                                    |      |       |      |       |      | c0.00 | c0.19 |      | 0.00  | 0.15 |      |
| v/s Ratio Perm                    |                                                                                    | 0.00 |       |      | c0.01 |      | 0.01  |       |      | 0.01  |      |      |
| v/c Ratio                         |                                                                                    | 0.00 |       |      | 0.39  |      | 0.01  | 0.25  |      | 0.01  | 0.20 |      |
| Uniform Delay, d1                 |                                                                                    | 29.7 |       |      | 30.0  |      | 1.8   | 2.5   |      | 1.8   | 2.4  |      |
| Progression Factor                |                                                                                    | 1.00 |       |      | 1.00  |      | 1.00  | 1.00  |      | 1.00  | 1.00 |      |
| Incremental Delay, d2             |                                                                                    | 0.0  |       |      | 7.0   |      | 0.0   | 0.2   |      | 0.0   | 0.2  |      |
| Delay (s)                         |                                                                                    | 29.7 |       |      | 37.0  |      | 1.8   | 2.7   |      | 1.8   | 2.6  |      |
| Level of Service                  |                                                                                    | C    |       |      | D     |      | A     | A     |      | A     | A    |      |
| Approach Delay (s)                |                                                                                    | 29.7 |       |      | 37.0  |      |       | 2.7   |      |       | 2.6  |      |
| Approach LOS                      |                                                                                    | C    |       |      | D     |      |       | A     |      |       | A    |      |
| <b>Intersection Summary</b>       |                                                                                    |      |       |      |       |      |       |       |      |       |      |      |
| HCM 2000 Control Delay            |                                                                                    |      | 3.4   |      |       |      |       |       |      |       |      |      |
| HCM 2000 Volume to Capacity ratio |                                                                                    |      | 0.25  |      |       |      |       |       |      |       |      |      |
| Actuated Cycle Length (s)         |                                                                                    |      | 62.2  |      |       |      |       |       |      |       |      |      |
| Intersection Capacity Utilization |                                                                                    |      | 27.1% |      |       |      |       |       |      |       |      |      |
| Analysis Period (min)             |                                                                                    |      | 15    |      |       |      |       |       |      |       |      |      |
| c Critical Lane Group             |                                                                                    |      |       |      |       |      |       |       |      |       |      |      |

**Intersection**

Int Delay, s/veh 0.3

| Movement                 | EBT                                                                               | EBR  | WBL  | WBT                                                                               | NBL                                                                               | NBR  |
|--------------------------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Lane Configurations      |  |      |      |  |  |      |
| Traffic Vol, veh/h       | 28                                                                                | 0    | 3    | 47                                                                                | 0                                                                                 | 0    |
| Future Vol, veh/h        | 28                                                                                | 0    | 3    | 47                                                                                | 0                                                                                 | 0    |
| Conflicting Peds, #/hr   | 0                                                                                 | 0    | 0    | 0                                                                                 | 0                                                                                 | 0    |
| Sign Control             | Free                                                                              | Free | Free | Free                                                                              | Stop                                                                              | Stop |
| 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, %        | 2                                                                                 | 2    | 2    | 2                                                                                 | 2                                                                                 | 2    |
| Mvmt Flow                | 30                                                                                | 0    | 3    | 51                                                                                | 0                                                                                 | 0    |

| Major/Minor          | Major1 | Major2 | Minor1 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 0      | 0      | 30     |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |
| Critical Hdwy        | -      | -      | 4.12   |
| Critical Hdwy Stg 1  | -      | -      | -      |
| Critical Hdwy Stg 2  | -      | -      | -      |
| Follow-up Hdwy       | -      | -      | 2.218  |
| Pot Cap-1 Maneuver   | -      | -      | 1583   |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |
| Platoon blocked, %   | -      | -      | -      |
| Mov Cap-1 Maneuver   | -      | -      | 1583   |
| Mov Cap-2 Maneuver   | -      | -      | -      |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |

| Approach             | EB | WB  | NB |
|----------------------|----|-----|----|
| HCM Control Delay, s | 0  | 0.4 | 0  |
| HCM LOS              |    |     | A  |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL   | WBT |
|-----------------------|-------|-----|-----|-------|-----|
| Capacity (veh/h)      | -     | -   | -   | 1583  | -   |
| HCM Lane V/C Ratio    | -     | -   | -   | 0.002 | -   |
| HCM Control Delay (s) | 0     | -   | -   | 7.3   | 0   |
| HCM Lane LOS          | A     | -   | -   | A     | A   |
| HCM 95th %tile Q(veh) | -     | -   | -   | 0     | -   |

| Intersection             |        |                                                                                   |        |                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |
|--------------------------|--------|-----------------------------------------------------------------------------------|--------|-----------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Int Delay, s/veh         | 3      |                                                                                   |        |                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Movement                 | EBL    | EBT                                                                               | EBR    | WBL             | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations      |        |  |        |                 |  |  |  |  |  |  |  |  |
| Traffic Vol, veh/h       | 5      | 2                                                                                 | 10     | 30              | 17                                                                                | 41                                                                                | 8                                                                                 | 481                                                                               | 12                                                                                | 49                                                                                  | 345                                                                                 | 16                                                                                  |
| Future Vol, veh/h        | 5      | 2                                                                                 | 10     | 30              | 17                                                                                | 41                                                                                | 8                                                                                 | 481                                                                               | 12                                                                                | 49                                                                                  | 345                                                                                 | 16                                                                                  |
| Conflicting Peds, #/hr   | 0      | 0                                                                                 | 0      | 0               | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Sign Control             | Stop   | Stop                                                                              | Stop   | Stop            | Stop                                                                              | Stop                                                                              | Free                                                                              | Free                                                                              | Free                                                                              | Free                                                                                | Free                                                                                | Free                                                                                |
| RT Channelized           | -      | -                                                                                 | None   | -               | -                                                                                 | None                                                                              | -                                                                                 | -                                                                                 | None                                                                              | -                                                                                   | -                                                                                   | None                                                                                |
| Storage Length           | -      | -                                                                                 | -      | -               | -                                                                                 | 0                                                                                 | 85                                                                                | -                                                                                 | -                                                                                 | 150                                                                                 | -                                                                                   | -                                                                                   |
| Veh in Median Storage, # | -      | 0                                                                                 | -      | -               | 0                                                                                 | -                                                                                 | -                                                                                 | 0                                                                                 | -                                                                                 | -                                                                                   | 0                                                                                   | -                                                                                   |
| Grade, %                 | -      | 0                                                                                 | -      | -               | 0                                                                                 | -                                                                                 | -                                                                                 | 0                                                                                 | -                                                                                 | -                                                                                   | 0                                                                                   | -                                                                                   |
| Peak Hour Factor         | 50     | 50                                                                                | 50     | 80              | 80                                                                                | 80                                                                                | 77                                                                                | 77                                                                                | 77                                                                                | 92                                                                                  | 92                                                                                  | 92                                                                                  |
| Heavy Vehicles, %        | 0      | 0                                                                                 | 14     | 6               | 20                                                                                | 0                                                                                 | 0                                                                                 | 1                                                                                 | 0                                                                                 | 14                                                                                  | 3                                                                                   | 9                                                                                   |
| Mvmt Flow                | 10     | 4                                                                                 | 20     | 38              | 21                                                                                | 51                                                                                | 10                                                                                | 625                                                                               | 16                                                                                | 53                                                                                  | 375                                                                                 | 17                                                                                  |
|                          |        |                                                                                   |        |                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Major/Minor              | Minor2 |                                                                                   | Minor1 |                 | Major1                                                                            |                                                                                   | Major2                                                                            |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Conflicting Flow All     | 833    | 1151                                                                              | 196    | 949             | 1151                                                                              | 321                                                                               | 392                                                                               | 0                                                                                 | 0                                                                                 | 641                                                                                 | 0                                                                                   | 0                                                                                   |
| Stage 1                  | 490    | 490                                                                               | -      | 653             | 653                                                                               | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                   | -                                                                                   | -                                                                                   |
| Stage 2                  | 343    | 661                                                                               | -      | 296             | 498                                                                               | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                   | -                                                                                   | -                                                                                   |
| Critical Hdwy            | 7.5    | 6.5                                                                               | 7.18   | 7.62            | 6.9                                                                               | 6.9                                                                               | 4.1                                                                               | -                                                                                 | -                                                                                 | 4.38                                                                                | -                                                                                   | -                                                                                   |
| Critical Hdwy Stg 1      | 6.5    | 5.5                                                                               | -      | 6.62            | 5.9                                                                               | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                   | -                                                                                   | -                                                                                   |
| Critical Hdwy Stg 2      | 6.5    | 5.5                                                                               | -      | 6.62            | 5.9                                                                               | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                   | -                                                                                   | -                                                                                   |
| Follow-up Hdwy           | 3.5    | 4                                                                                 | 3.44   | 3.56            | 4.2                                                                               | 3.3                                                                               | 2.2                                                                               | -                                                                                 | -                                                                                 | 2.34                                                                                | -                                                                                   | -                                                                                   |
| Pot Cap-1 Maneuver       | 265    | 200                                                                               | 776    | 209             | 172                                                                               | 681                                                                               | 1178                                                                              | -                                                                                 | -                                                                                 | 862                                                                                 | -                                                                                   | -                                                                                   |
| Stage 1                  | 534    | 552                                                                               | -      | 413             | 420                                                                               | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                   | -                                                                                   | -                                                                                   |
| Stage 2                  | 651    | 463                                                                               | -      | 677             | 500                                                                               | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                   | -                                                                                   | -                                                                                   |
| Platoon blocked, %       |        |                                                                                   |        |                 |                                                                                   |                                                                                   |                                                                                   | -                                                                                 | -                                                                                 |                                                                                     | -                                                                                   | -                                                                                   |
| Mov Cap-1 Maneuver       | 209    | 186                                                                               | 776    | 190             | 160                                                                               | 681                                                                               | 1178                                                                              | -                                                                                 | -                                                                                 | 862                                                                                 | -                                                                                   | -                                                                                   |
| Mov Cap-2 Maneuver       | 209    | 186                                                                               | -      | 190             | 160                                                                               | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                   | -                                                                                   | -                                                                                   |
| Stage 1                  | 530    | 518                                                                               | -      | 410             | 417                                                                               | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                   | -                                                                                   | -                                                                                   |
| Stage 2                  | 566    | 459                                                                               | -      | 614             | 470                                                                               | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                   | -                                                                                   | -                                                                                   |
|                          |        |                                                                                   |        |                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |
|                          |        |                                                                                   |        |                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Approach                 | EB     |                                                                                   | WB     |                 | NB                                                                                |                                                                                   | SB                                                                                |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| HCM Control Delay, s     | 16.1   |                                                                                   | 23.6   |                 | 0.1                                                                               |                                                                                   | 1.1                                                                               |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| HCM LOS                  | C      |                                                                                   | C      |                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |
|                          |        |                                                                                   |        |                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Minor Lane/Major Mvmt    | NBL    | NBT                                                                               | NBR    | EBLn1WBLn1WBLn2 | SBL                                                                               | SBT                                                                               | SBR                                                                               |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Capacity (veh/h)         | 1178   | -                                                                                 | -      | 357             | 178                                                                               | 681                                                                               | 862                                                                               | -                                                                                 | -                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| HCM Lane V/C Ratio       | 0.009  | -                                                                                 | -      | 0.095           | 0.33                                                                              | 0.075                                                                             | 0.062                                                                             | -                                                                                 | -                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| HCM Control Delay (s)    | 8.1    | -                                                                                 | -      | 16.1            | 34.9                                                                              | 10.7                                                                              | 9.5                                                                               | -                                                                                 | -                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| HCM Lane LOS             | A      | -                                                                                 | -      | C               | D                                                                                 | B                                                                                 | A                                                                                 | -                                                                                 | -                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| HCM 95th %tile O(veh)    | 0      | -                                                                                 | -      | 0.3             | 1.4                                                                               | 0.2                                                                               | 0.2                                                                               | -                                                                                 | -                                                                                 |                                                                                     |                                                                                     |                                                                                     |

**Intersection**

Int Delay, s/veh 2.6

| Movement                 | EBT                                                                               | EBR  | WBL  | WBT                                                                               | NBL                                                                               | NBR  |
|--------------------------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Lane Configurations      |  |      |      |  |  |      |
| Traffic Vol, veh/h       | 31                                                                                | 33   | 6    | 52                                                                                | 36                                                                                | 3    |
| Future Vol, veh/h        | 31                                                                                | 33   | 6    | 52                                                                                | 36                                                                                | 3    |
| Conflicting Peds, #/hr   | 0                                                                                 | 0    | 0    | 0                                                                                 | 0                                                                                 | 0    |
| Sign Control             | Free                                                                              | Free | Free | Free                                                                              | Stop                                                                              | Stop |
| RT Channelized           | -                                                                                 | None | -    | None                                                                              | -                                                                                 | None |
| Storage Length           | -                                                                                 | -    | -    | -                                                                                 | 0                                                                                 | -    |
| Veh in Median Storage, # | 0                                                                                 | -    | -    | 0                                                                                 | 0                                                                                 | -    |
| Grade, %                 | 0                                                                                 | -    | -    | 0                                                                                 | 0                                                                                 | -    |
| Peak Hour Factor         | 80                                                                                | 80   | 80   | 80                                                                                | 80                                                                                | 80   |
| Heavy Vehicles, %        | 2                                                                                 | 2    | 2    | 2                                                                                 | 2                                                                                 | 2    |
| Mvmt Flow                | 39                                                                                | 41   | 8    | 65                                                                                | 45                                                                                | 4    |

| Major/Minor          | Major1 | Major2 | Minor1 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 0      | 0      | 80     |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |
| Critical Hdwy        | -      | -      | 4.12   |
| Critical Hdwy Stg 1  | -      | -      | -      |
| Critical Hdwy Stg 2  | -      | -      | -      |
| Follow-up Hdwy       | -      | -      | 2.218  |
| Pot Cap-1 Maneuver   | -      | -      | 1518   |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |
| Platoon blocked, %   | -      | -      | -      |
| Mov Cap-1 Maneuver   | -      | -      | 1518   |
| Mov Cap-2 Maneuver   | -      | -      | -      |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |

| Approach             | EB | WB  | NB  |
|----------------------|----|-----|-----|
| HCM Control Delay, s | 0  | 0.8 | 9.4 |
| HCM LOS              |    |     | A   |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL   | WBT |
|-----------------------|-------|-----|-----|-------|-----|
| Capacity (veh/h)      | 858   | -   | -   | 1518  | -   |
| HCM Lane V/C Ratio    | 0.057 | -   | -   | 0.005 | -   |
| HCM Control Delay (s) | 9.4   | -   | -   | 7.4   | 0   |
| HCM Lane LOS          | A     | -   | -   | A     | A   |
| HCM 95th %tile Q(veh) | 0.2   | -   | -   | 0     | -   |

| Intersection             |                                                                                   |        |       |                                                                                   |                                                                                   |      |
|--------------------------|-----------------------------------------------------------------------------------|--------|-------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Int Delay, s/veh         | 4.4                                                                               |        |       |                                                                                   |                                                                                   |      |
| Movement                 | EBL                                                                               | EBR    | NBL   | NBT                                                                               | SBT                                                                               | SBR  |
| Lane Configurations      |  |        |       |  |  |      |
| Traffic Vol, veh/h       | 39                                                                                | 0      | 0     | 0                                                                                 | 3                                                                                 | 36   |
| Future Vol, veh/h        | 39                                                                                | 0      | 0     | 0                                                                                 | 3                                                                                 | 36   |
| 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         | 85                                                                                | 85     | 85    | 85                                                                                | 85                                                                                | 85   |
| Heavy Vehicles, %        | 2                                                                                 | 2      | 2     | 2                                                                                 | 2                                                                                 | 2    |
| Mvmt Flow                | 46                                                                                | 0      | 0     | 0                                                                                 | 4                                                                                 | 42   |
| Major/Minor              | Minor2                                                                            | Major1 |       | Major2                                                                            |                                                                                   |      |
| Conflicting Flow All     | 25                                                                                | 25     | 46    | 0                                                                                 | -                                                                                 | 0    |
| Stage 1                  | 25                                                                                | -      | -     | -                                                                                 | -                                                                                 | -    |
| Stage 2                  | 0                                                                                 | -      | -     | -                                                                                 | -                                                                                 | -    |
| Critical Hdwy            | 6.42                                                                              | 6.22   | 4.12  | -                                                                                 | -                                                                                 | -    |
| Critical Hdwy Stg 1      | 5.42                                                                              | -      | -     | -                                                                                 | -                                                                                 | -    |
| Critical Hdwy Stg 2      | 5.42                                                                              | -      | -     | -                                                                                 | -                                                                                 | -    |
| Follow-up Hdwy           | 3.518                                                                             | 3.318  | 2.218 | -                                                                                 | -                                                                                 | -    |
| Pot Cap-1 Maneuver       | 991                                                                               | 1051   | 1562  | -                                                                                 | -                                                                                 | -    |
| Stage 1                  | 998                                                                               | -      | -     | -                                                                                 | -                                                                                 | -    |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                 | -                                                                                 | -    |
| Platoon blocked, %       |                                                                                   |        |       | -                                                                                 | -                                                                                 | -    |
| Mov Cap-1 Maneuver       | 991                                                                               | 1051   | 1562  | -                                                                                 | -                                                                                 | -    |
| Mov Cap-2 Maneuver       | 991                                                                               | -      | -     | -                                                                                 | -                                                                                 | -    |
| Stage 1                  | 998                                                                               | -      | -     | -                                                                                 | -                                                                                 | -    |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                 | -                                                                                 | -    |
| Approach                 | EB                                                                                | NB     |       | SB                                                                                |                                                                                   |      |
| HCM Control Delay, s     | 8.8                                                                               | 0      |       | 0                                                                                 |                                                                                   |      |
| HCM LOS                  | A                                                                                 |        |       |                                                                                   |                                                                                   |      |
| Minor Lane/Major Mvmt    | NBL                                                                               | NBT    | EBLn1 | SBT                                                                               | SBR                                                                               |      |
| Capacity (veh/h)         | 1562                                                                              | -      | 991   | -                                                                                 | -                                                                                 |      |
| HCM Lane V/C Ratio       | -                                                                                 | -      | 0.046 | -                                                                                 | -                                                                                 |      |
| HCM Control Delay (s)    | 0                                                                                 | -      | 8.8   | -                                                                                 | -                                                                                 |      |
| HCM Lane LOS             | A                                                                                 | -      | A     | -                                                                                 | -                                                                                 |      |
| HCM 95th %tile Q(veh)    | 0                                                                                 | -      | 0.1   | -                                                                                 | -                                                                                 |      |

# HCM Signalized Intersection Capacity Analysis

## 6: Hwy 101 & Rhododendron Dr

04/03/2020

| Movement                          | EBL  | EBT   | EBR  | WBL  | WBT                       | WBR  | NBL   | NBT   | NBR  | SBL   | SBT  | SBR  |
|-----------------------------------|------|-------|------|------|---------------------------|------|-------|-------|------|-------|------|------|
| Lane Configurations               |      | ↔     |      |      | ↔                         |      | ↔     | ↔     |      | ↔     | ↔    |      |
| Traffic Volume (vph)              | 1    | 2     | 2    | 37   | 3                         | 13   | 5     | 486   | 30   | 7     | 323  | 54   |
| Future Volume (vph)               | 1    | 2     | 2    | 37   | 3                         | 13   | 5     | 486   | 30   | 7     | 323  | 54   |
| Ideal Flow (vphpl)                | 1750 | 1750  | 1750 | 1750 | 1750                      | 1750 | 1750  | 1750  | 1750 | 1750  | 1750 | 1750 |
| Total Lost time (s)               |      | 4.5   |      |      | 4.5                       |      | 4.5   | 4.5   |      | 4.5   | 4.5  |      |
| Lane Util. Factor                 |      | 1.00  |      |      | 1.00                      |      | 1.00  | 0.95  |      | 1.00  | 0.95 |      |
| Frpb, ped/bikes                   |      | 1.00  |      |      | 1.00                      |      | 1.00  | 1.00  |      | 1.00  | 1.00 |      |
| Flpb, ped/bikes                   |      | 1.00  |      |      | 1.00                      |      | 1.00  | 1.00  |      | 1.00  | 1.00 |      |
| Frt                               |      | 0.95  |      |      | 0.97                      |      | 1.00  | 0.99  |      | 1.00  | 0.98 |      |
| Flt Protected                     |      | 0.99  |      |      | 0.97                      |      | 0.95  | 1.00  |      | 0.95  | 1.00 |      |
| Satd. Flow (prot)                 |      | 1529  |      |      | 1637                      |      | 1630  | 3061  |      | 1662  | 3158 |      |
| Flt Permitted                     |      | 0.98  |      |      | 0.85                      |      | 0.44  | 1.00  |      | 0.33  | 1.00 |      |
| Satd. Flow (perm)                 |      | 1518  |      |      | 1437                      |      | 749   | 3061  |      | 569   | 3158 |      |
| Peak-hour factor, PHF             | 0.85 | 0.85  | 0.85 | 0.85 | 0.85                      | 0.85 | 0.85  | 0.85  | 0.85 | 0.85  | 0.85 | 0.85 |
| Adj. Flow (vph)                   | 1    | 2     | 2    | 44   | 4                         | 15   | 6     | 572   | 35   | 8     | 380  | 64   |
| RTOR Reduction (vph)              | 0    | 1     | 0    | 0    | 9                         | 0    | 0     | 5     | 0    | 0     | 15   | 0    |
| Lane Group Flow (vph)             | 0    | 4     | 0    | 0    | 54                        | 0    | 6     | 602   | 0    | 8     | 429  | 0    |
| Confl. Peds. (#/hr)               |      |       |      |      |                           |      |       |       | 1    | 1     |      |      |
| Heavy Vehicles (%)                | 8%   | 0%    | 14%  | 0%   | 0%                        | 0%   | 2%    | 8%    | 0%   | 0%    | 3%   | 3%   |
| Turn Type                         | Perm | NA    |      | Perm | NA                        |      | pm+pt | NA    |      | pm+pt | NA   |      |
| Protected Phases                  |      | 4     |      |      | 8                         |      | 5     | 2     |      | 1     | 6    |      |
| Permitted Phases                  | 4    |       |      | 8    |                           |      | 2     |       |      | 6     |      |      |
| Actuated Green, G (s)             |      | 37.5  |      |      | 37.5                      |      | 39.0  | 33.5  |      | 39.0  | 33.5 |      |
| Effective Green, g (s)            |      | 37.5  |      |      | 37.5                      |      | 39.0  | 33.5  |      | 39.0  | 33.5 |      |
| Actuated g/C Ratio                |      | 0.42  |      |      | 0.42                      |      | 0.43  | 0.37  |      | 0.43  | 0.37 |      |
| Clearance Time (s)                |      | 4.5   |      |      | 4.5                       |      | 4.5   | 4.5   |      | 4.5   | 4.5  |      |
| Lane Grp Cap (vph)                |      | 632   |      |      | 598                       |      | 378   | 1139  |      | 313   | 1175 |      |
| v/s Ratio Prot                    |      |       |      |      |                           |      | 0.00  | c0.20 |      | c0.00 | 0.14 |      |
| v/s Ratio Perm                    |      | 0.00  |      |      | c0.04                     |      | 0.01  |       |      | 0.01  |      |      |
| v/c Ratio                         |      | 0.01  |      |      | 0.09                      |      | 0.02  | 0.53  |      | 0.03  | 0.37 |      |
| Uniform Delay, d1                 |      | 15.4  |      |      | 15.9                      |      | 14.6  | 22.1  |      | 14.9  | 20.5 |      |
| Progression Factor                |      | 1.00  |      |      | 1.00                      |      | 1.00  | 1.00  |      | 1.00  | 1.00 |      |
| Incremental Delay, d2             |      | 0.0   |      |      | 0.3                       |      | 0.1   | 1.8   |      | 0.2   | 0.9  |      |
| Delay (s)                         |      | 15.4  |      |      | 16.2                      |      | 14.7  | 23.8  |      | 15.0  | 21.4 |      |
| Level of Service                  |      | B     |      |      | B                         |      | B     | C     |      | B     | C    |      |
| Approach Delay (s)                |      | 15.4  |      |      | 16.2                      |      |       | 23.7  |      |       | 21.3 |      |
| Approach LOS                      |      | B     |      |      | B                         |      |       | C     |      |       | C    |      |
| <b>Intersection Summary</b>       |      |       |      |      |                           |      |       |       |      |       |      |      |
| HCM 2000 Control Delay            |      | 22.3  |      |      | HCM 2000 Level of Service |      |       | C     |      |       |      |      |
| HCM 2000 Volume to Capacity ratio |      | 0.28  |      |      |                           |      |       |       |      |       |      |      |
| Actuated Cycle Length (s)         |      | 90.0  |      |      | Sum of lost time (s)      |      |       | 13.5  |      |       |      |      |
| Intersection Capacity Utilization |      | 33.6% |      |      | ICU Level of Service      |      |       | A     |      |       |      |      |
| Analysis Period (min)             |      | 15    |      |      |                           |      |       |       |      |       |      |      |
| c Critical Lane Group             |      |       |      |      |                           |      |       |       |      |       |      |      |

HCM 2010 TWSC  
13: Rhododendron Dr & South Access

04/03/2020

| Intersection             |        |                                                                                   |                                                                                   |        |                                                                                   |       |
|--------------------------|--------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------|-----------------------------------------------------------------------------------|-------|
| Int Delay, s/veh         | 7.6    |                                                                                   |                                                                                   |        |                                                                                   |       |
| Movement                 | EBL    | EBT                                                                               | WBT                                                                               | WBR    | SBL                                                                               | SBR   |
| Lane Configurations      |        |  |  |        |  |       |
| Traffic Vol, veh/h       | 35     | 1                                                                                 | 0                                                                                 | 0      | 0                                                                                 | 33    |
| Future Vol, veh/h        | 35     | 1                                                                                 | 0                                                                                 | 0      | 0                                                                                 | 33    |
| Conflicting Peds, #/hr   | 0      | 0                                                                                 | 0                                                                                 | 0      | 0                                                                                 | 0     |
| Sign Control             | Free   | Free                                                                              | Free                                                                              | Free   | Stop                                                                              | Stop  |
| RT Channelized           | -      | None                                                                              | -                                                                                 | None   | -                                                                                 | None  |
| Storage Length           | -      | -                                                                                 | -                                                                                 | -      | 0                                                                                 | -     |
| Veh in Median Storage, # | -      | 0                                                                                 | 0                                                                                 | -      | 0                                                                                 | -     |
| Grade, %                 | -      | 0                                                                                 | 0                                                                                 | -      | 0                                                                                 | -     |
| Peak Hour Factor         | 85     | 85                                                                                | 85                                                                                | 85     | 85                                                                                | 85    |
| Heavy Vehicles, %        | 2      | 2                                                                                 | 2                                                                                 | 2      | 2                                                                                 | 2     |
| Mvmt Flow                | 41     | 1                                                                                 | 0                                                                                 | 0      | 0                                                                                 | 39    |
|                          |        |                                                                                   |                                                                                   |        |                                                                                   |       |
| Major/Minor              | Major1 | Major2                                                                            |                                                                                   | Minor2 |                                                                                   |       |
| Conflicting Flow All     | 1      | 0                                                                                 | -                                                                                 | 0      | 84                                                                                | 1     |
| Stage 1                  | -      | -                                                                                 | -                                                                                 | -      | 1                                                                                 | -     |
| Stage 2                  | -      | -                                                                                 | -                                                                                 | -      | 83                                                                                | -     |
| Critical Hdwy            | 4.12   | -                                                                                 | -                                                                                 | -      | 6.42                                                                              | 6.22  |
| Critical Hdwy Stg 1      | -      | -                                                                                 | -                                                                                 | -      | 5.42                                                                              | -     |
| Critical Hdwy Stg 2      | -      | -                                                                                 | -                                                                                 | -      | 5.42                                                                              | -     |
| Follow-up Hdwy           | 2.218  | -                                                                                 | -                                                                                 | -      | 3.518                                                                             | 3.318 |
| Pot Cap-1 Maneuver       | 1622   | -                                                                                 | -                                                                                 | -      | 918                                                                               | 1084  |
| Stage 1                  | -      | -                                                                                 | -                                                                                 | -      | 1022                                                                              | -     |
| Stage 2                  | -      | -                                                                                 | -                                                                                 | -      | 940                                                                               | -     |
| Platoon blocked, %       |        | -                                                                                 | -                                                                                 | -      |                                                                                   |       |
| Mov Cap-1 Maneuver       | 1622   | -                                                                                 | -                                                                                 | -      | 895                                                                               | 1084  |
| Mov Cap-2 Maneuver       | -      | -                                                                                 | -                                                                                 | -      | 895                                                                               | -     |
| Stage 1                  | -      | -                                                                                 | -                                                                                 | -      | 996                                                                               | -     |
| Stage 2                  | -      | -                                                                                 | -                                                                                 | -      | 940                                                                               | -     |
|                          |        |                                                                                   |                                                                                   |        |                                                                                   |       |
|                          |        |                                                                                   |                                                                                   |        |                                                                                   |       |
| Approach                 | EB     | WB                                                                                |                                                                                   | SB     |                                                                                   |       |
| HCM Control Delay, s     | 7.1    | 0                                                                                 |                                                                                   | 8.4    |                                                                                   |       |
| HCM LOS                  | A      |                                                                                   |                                                                                   |        |                                                                                   |       |
|                          |        |                                                                                   |                                                                                   |        |                                                                                   |       |
| Minor Lane/Major Mvmt    | EBL    | EBT                                                                               | WBT                                                                               | WBR    | SBLn1                                                                             |       |
| Capacity (veh/h)         | 1622   | -                                                                                 | -                                                                                 | -      | -                                                                                 | 1084  |
| HCM Lane V/C Ratio       | 0.025  | -                                                                                 | -                                                                                 | -      | -                                                                                 | 0.036 |
| HCM Control Delay (s)    | 7.3    | 0                                                                                 | -                                                                                 | -      | -                                                                                 | 8.4   |
| HCM Lane LOS             | A      | A                                                                                 | -                                                                                 | -      | -                                                                                 | A     |
| HCM 95th %tile Q(veh)    | 0.1    | -                                                                                 | -                                                                                 | -      | -                                                                                 | 0.1   |

## Florence Car Wash and Coffee Kiosk

Intersection: 3: Hwy 101 & 6th St, Interval #1

| Movement              | EB  | WB | WB | NB | SB  |
|-----------------------|-----|----|----|----|-----|
| Directions Served     | LTR | LT | R  | L  | L   |
| Maximum Queue (ft)    | 37  | 52 | 27 | 15 | 19  |
| Average Queue (ft)    | 19  | 22 | 14 | 3  | 6   |
| 95th Queue (ft)       | 44  | 50 | 36 | 15 | 23  |
| Link Distance (ft)    | 531 | 98 | 98 |    |     |
| Upstream Blk Time (%) |     |    |    |    |     |
| Queuing Penalty (veh) |     |    |    |    |     |
| Storage Bay Dist (ft) |     |    |    | 85 | 150 |
| Storage Blk Time (%)  |     |    |    |    |     |
| Queuing Penalty (veh) |     |    |    |    |     |

Intersection: 3: Hwy 101 & 6th St, Interval #2

| Movement              | EB  | WB | WB | NB | NB  | SB  |
|-----------------------|-----|----|----|----|-----|-----|
| Directions Served     | LTR | LT | R  | L  | T   | L   |
| Maximum Queue (ft)    | 41  | 51 | 29 | 10 | 7   | 22  |
| Average Queue (ft)    | 8   | 16 | 9  | 1  | 0   | 2   |
| 95th Queue (ft)       | 31  | 39 | 29 | 7  | 6   | 12  |
| Link Distance (ft)    | 531 | 98 | 98 |    | 260 |     |
| Upstream Blk Time (%) |     |    |    |    |     |     |
| Queuing Penalty (veh) |     |    |    |    |     |     |
| Storage Bay Dist (ft) |     |    |    | 85 |     | 150 |
| Storage Blk Time (%)  |     |    |    |    |     |     |
| Queuing Penalty (veh) |     |    |    |    |     |     |

Intersection: 3: Hwy 101 & 6th St, All Intervals

| Movement              | EB  | WB | WB | NB | NB  | SB  |
|-----------------------|-----|----|----|----|-----|-----|
| Directions Served     | LTR | LT | R  | L  | T   | L   |
| Maximum Queue (ft)    | 46  | 57 | 29 | 18 | 7   | 28  |
| Average Queue (ft)    | 11  | 18 | 10 | 2  | 0   | 3   |
| 95th Queue (ft)       | 35  | 42 | 31 | 9  | 5   | 15  |
| Link Distance (ft)    | 531 | 98 | 98 |    | 260 |     |
| Upstream Blk Time (%) |     |    |    |    |     |     |
| Queuing Penalty (veh) |     |    |    |    |     |     |
| Storage Bay Dist (ft) |     |    |    | 85 |     | 150 |
| Storage Blk Time (%)  |     |    |    |    |     |     |
| Queuing Penalty (veh) |     |    |    |    |     |     |

Intersection: 6: Hwy 101 & Rhododendron Dr, Interval #1

| Movement              | EB  | WB  | NB  | NB  | NB  | SB  | SB  | SB  |
|-----------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| Directions Served     | LTR | LTR | L   | T   | TR  | L   | T   | TR  |
| Maximum Queue (ft)    | 9   | 30  | 11  | 208 | 161 | 8   | 120 | 81  |
| Average Queue (ft)    | 1   | 12  | 3   | 144 | 85  | 2   | 79  | 46  |
| 95th Queue (ft)       | 10  | 35  | 11  | 213 | 171 | 9   | 125 | 91  |
| Link Distance (ft)    | 338 | 283 |     | 470 | 470 |     | 260 | 260 |
| Upstream Blk Time (%) |     |     |     |     |     |     |     |     |
| Queuing Penalty (veh) |     |     |     |     |     |     |     |     |
| Storage Bay Dist (ft) |     |     | 160 |     |     | 150 |     |     |
| Storage Blk Time (%)  |     |     |     | 4   |     |     | 0   |     |
| Queuing Penalty (veh) |     |     |     | 0   |     |     | 0   |     |

Intersection: 6: Hwy 101 & Rhododendron Dr, Interval #2

| Movement              | EB  | WB  | NB  | NB  | NB  | SB  | SB  | SB  |
|-----------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| Directions Served     | LTR | LTR | L   | T   | TR  | L   | T   | TR  |
| Maximum Queue (ft)    | 16  | 32  | 16  | 226 | 184 | 12  | 153 | 114 |
| Average Queue (ft)    | 1   | 7   | 2   | 122 | 54  | 1   | 79  | 47  |
| 95th Queue (ft)       | 9   | 28  | 10  | 190 | 142 | 8   | 133 | 102 |
| Link Distance (ft)    | 338 | 283 |     | 470 | 470 |     | 260 | 260 |
| Upstream Blk Time (%) |     |     |     |     |     |     |     |     |
| Queuing Penalty (veh) |     |     |     |     |     |     |     |     |
| Storage Bay Dist (ft) |     |     | 160 |     |     | 150 |     |     |
| Storage Blk Time (%)  |     |     |     | 2   |     |     | 0   |     |
| Queuing Penalty (veh) |     |     |     | 0   |     |     | 0   |     |

Intersection: 6: Hwy 101 & Rhododendron Dr, All Intervals

| Movement              | EB  | WB  | NB  | NB  | NB  | SB  | SB  | SB  |
|-----------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| Directions Served     | LTR | LTR | L   | T   | TR  | L   | T   | TR  |
| Maximum Queue (ft)    | 16  | 36  | 16  | 228 | 184 | 12  | 153 | 114 |
| Average Queue (ft)    | 1   | 8   | 2   | 127 | 62  | 1   | 79  | 46  |
| 95th Queue (ft)       | 9   | 30  | 10  | 198 | 152 | 8   | 132 | 100 |
| Link Distance (ft)    | 338 | 283 |     | 470 | 470 |     | 260 | 260 |
| Upstream Blk Time (%) |     |     |     |     |     |     |     |     |
| Queuing Penalty (veh) |     |     |     |     |     |     |     |     |
| Storage Bay Dist (ft) |     |     | 160 |     |     | 150 |     |     |
| Storage Blk Time (%)  |     |     |     | 3   |     |     | 0   |     |
| Queuing Penalty (veh) |     |     |     | 0   |     |     | 0   |     |

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Intersection: 9: 6th St, Interval #1

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Movement

Directions Served  
Maximum Queue (ft)  
Average Queue (ft)  
95th Queue (ft)  
Link Distance (ft)  
Upstream Blk Time (%)  
Queuing Penalty (veh)  
Storage Bay Dist (ft)  
Storage Blk Time (%)  
Queuing Penalty (veh)

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Intersection: 9: 6th St, Interval #2

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Movement

Directions Served  
Maximum Queue (ft)  
Average Queue (ft)  
95th Queue (ft)  
Link Distance (ft)  
Upstream Blk Time (%)  
Queuing Penalty (veh)  
Storage Bay Dist (ft)  
Storage Blk Time (%)  
Queuing Penalty (veh)

---

Intersection: 9: 6th St, All Intervals

---

Movement

Directions Served  
Maximum Queue (ft)  
Average Queue (ft)  
95th Queue (ft)  
Link Distance (ft)  
Upstream Blk Time (%)  
Queuing Penalty (veh)  
Storage Bay Dist (ft)  
Storage Blk Time (%)  
Queuing Penalty (veh)

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Network Summary

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Network wide Queuing Penalty, Interval #1: 0  
Network wide Queuing Penalty, Interval #2: 0  
Network wide Queuing Penalty, All Intervals: 0

Intersection: 3: Hwy 101 & 6th St, Interval #1

| Movement              | EB  | WB | WB  | SB |
|-----------------------|-----|----|-----|----|
| Directions Served     | LTR | LT | R   | L  |
| Maximum Queue (ft)    | 55  | 41 | 30  | 15 |
| Average Queue (ft)    | 29  | 21 | 13  | 4  |
| 95th Queue (ft)       | 61  | 44 | 35  | 16 |
| Link Distance (ft)    | 531 | 98 | 98  |    |
| Upstream Blk Time (%) |     |    |     |    |
| Queuing Penalty (veh) |     |    |     |    |
| Storage Bay Dist (ft) |     |    | 150 |    |
| Storage Blk Time (%)  |     |    |     |    |
| Queuing Penalty (veh) |     |    |     |    |

Intersection: 3: Hwy 101 & 6th St, Interval #2

| Movement              | EB  | WB | WB | NB  | SB |
|-----------------------|-----|----|----|-----|----|
| Directions Served     | LTR | LT | R  | L   | L  |
| Maximum Queue (ft)    | 37  | 54 | 30 | 13  | 12 |
| Average Queue (ft)    | 11  | 15 | 7  | 1   | 2  |
| 95th Queue (ft)       | 34  | 38 | 26 | 6   | 9  |
| Link Distance (ft)    | 531 | 98 | 98 |     |    |
| Upstream Blk Time (%) |     |    |    |     |    |
| Queuing Penalty (veh) |     |    |    |     |    |
| Storage Bay Dist (ft) |     |    | 85 | 150 |    |
| Storage Blk Time (%)  |     |    |    |     |    |
| Queuing Penalty (veh) |     |    |    |     |    |

Intersection: 3: Hwy 101 & 6th St, All Intervals

| Movement              | EB  | WB | WB | NB  | SB |
|-----------------------|-----|----|----|-----|----|
| Directions Served     | LTR | LT | R  | L   | L  |
| Maximum Queue (ft)    | 58  | 55 | 30 | 13  | 17 |
| Average Queue (ft)    | 16  | 16 | 8  | 1   | 2  |
| 95th Queue (ft)       | 44  | 40 | 29 | 5   | 11 |
| Link Distance (ft)    | 531 | 98 | 98 |     |    |
| Upstream Blk Time (%) |     |    |    |     |    |
| Queuing Penalty (veh) |     |    |    |     |    |
| Storage Bay Dist (ft) |     |    | 85 | 150 |    |
| Storage Blk Time (%)  |     |    |    |     |    |
| Queuing Penalty (veh) |     |    |    |     |    |

Intersection: 6: Hwy 101 & Rhododendron Dr, Interval #1

| Movement              | EB  | WB  | NB  | NB  | NB  | SB  | SB  | SB  |
|-----------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| Directions Served     | LTR | LTR | L   | T   | TR  | L   | T   | TR  |
| Maximum Queue (ft)    | 4   | 36  | 4   | 217 | 174 | 8   | 152 | 114 |
| Average Queue (ft)    | 1   | 10  | 1   | 147 | 95  | 1   | 83  | 57  |
| 95th Queue (ft)       | 7   | 37  | 5   | 228 | 197 | 8   | 151 | 118 |
| Link Distance (ft)    | 338 | 283 |     | 470 | 470 |     | 260 | 260 |
| Upstream Blk Time (%) |     |     |     |     |     |     |     |     |
| Queuing Penalty (veh) |     |     |     |     |     |     |     |     |
| Storage Bay Dist (ft) |     |     | 160 |     |     | 150 |     |     |
| Storage Blk Time (%)  |     |     |     | 5   |     |     | 1   |     |
| Queuing Penalty (veh) |     |     |     | 0   |     |     | 0   |     |

Intersection: 6: Hwy 101 & Rhododendron Dr, Interval #2

| Movement              | EB  | WB  | NB  | NB  | NB  | SB  | SB  | SB  |
|-----------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| Directions Served     | LTR | LTR | L   | T   | TR  | L   | T   | TR  |
| Maximum Queue (ft)    | 24  | 33  | 19  | 196 | 176 | 17  | 141 | 101 |
| Average Queue (ft)    | 2   | 7   | 2   | 123 | 64  | 1   | 72  | 40  |
| 95th Queue (ft)       | 11  | 26  | 10  | 188 | 160 | 9   | 125 | 90  |
| Link Distance (ft)    | 338 | 283 |     | 470 | 470 |     | 260 | 260 |
| Upstream Blk Time (%) |     |     |     |     |     |     |     |     |
| Queuing Penalty (veh) |     |     |     |     |     |     |     |     |
| Storage Bay Dist (ft) |     |     | 160 |     |     | 150 |     |     |
| Storage Blk Time (%)  |     |     |     | 2   |     |     | 0   |     |
| Queuing Penalty (veh) |     |     |     | 0   |     |     | 0   |     |

Intersection: 6: Hwy 101 & Rhododendron Dr, All Intervals

| Movement              | EB  | WB  | NB  | NB  | NB  | SB  | SB  | SB  |
|-----------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| Directions Served     | LTR | LTR | L   | T   | TR  | L   | T   | TR  |
| Maximum Queue (ft)    | 24  | 38  | 19  | 220 | 197 | 17  | 163 | 118 |
| Average Queue (ft)    | 1   | 8   | 1   | 129 | 71  | 1   | 75  | 44  |
| 95th Queue (ft)       | 10  | 29  | 9   | 200 | 171 | 9   | 132 | 99  |
| Link Distance (ft)    | 338 | 283 |     | 470 | 470 |     | 260 | 260 |
| Upstream Blk Time (%) |     |     |     |     |     |     |     |     |
| Queuing Penalty (veh) |     |     |     |     |     |     |     |     |
| Storage Bay Dist (ft) |     |     | 160 |     |     | 150 |     |     |
| Storage Blk Time (%)  |     |     |     | 3   |     |     | 0   |     |
| Queuing Penalty (veh) |     |     |     | 0   |     |     | 0   |     |

Intersection: 9: 6th St, Interval #1

| Movement              | WB  |
|-----------------------|-----|
| Directions Served     | LT  |
| Maximum Queue (ft)    | 6   |
| Average Queue (ft)    | 1   |
| 95th Queue (ft)       | 9   |
| Link Distance (ft)    | 289 |
| Upstream Blk Time (%) |     |
| Queuing Penalty (veh) |     |
| Storage Bay Dist (ft) |     |
| Storage Blk Time (%)  |     |
| Queuing Penalty (veh) |     |

Intersection: 9: 6th St, Interval #2

| Movement              |  |
|-----------------------|--|
| Directions Served     |  |
| Maximum Queue (ft)    |  |
| Average Queue (ft)    |  |
| 95th Queue (ft)       |  |
| Link Distance (ft)    |  |
| Upstream Blk Time (%) |  |
| Queuing Penalty (veh) |  |
| Storage Bay Dist (ft) |  |
| Storage Blk Time (%)  |  |
| Queuing Penalty (veh) |  |

Intersection: 9: 6th St, All Intervals

| Movement              | WB  |
|-----------------------|-----|
| Directions Served     | LT  |
| Maximum Queue (ft)    | 6   |
| Average Queue (ft)    | 0   |
| 95th Queue (ft)       | 4   |
| Link Distance (ft)    | 289 |
| Upstream Blk Time (%) |     |
| Queuing Penalty (veh) |     |
| Storage Bay Dist (ft) |     |
| Storage Blk Time (%)  |     |
| Queuing Penalty (veh) |     |

Network Summary

|                                                |
|------------------------------------------------|
| Network wide Queuing Penalty, Interval #1: 0   |
| Network wide Queuing Penalty, Interval #2: 0   |
| Network wide Queuing Penalty, All Intervals: 0 |

Intersection: 1: Hwy 101 & 6th St, Interval #1

| Movement              | EB  | WB  | WB  | NB | SB  |
|-----------------------|-----|-----|-----|----|-----|
| Directions Served     | LTR | LT  | R   | L  | L   |
| Maximum Queue (ft)    | 56  | 44  | 34  | 3  | 22  |
| Average Queue (ft)    | 28  | 23  | 26  | 1  | 5   |
| 95th Queue (ft)       | 59  | 49  | 39  | 3  | 22  |
| Link Distance (ft)    | 518 | 245 | 245 |    |     |
| Upstream Blk Time (%) |     |     |     |    |     |
| Queuing Penalty (veh) |     |     |     |    |     |
| Storage Bay Dist (ft) |     |     |     | 85 | 150 |
| Storage Blk Time (%)  |     |     |     |    |     |
| Queuing Penalty (veh) |     |     |     |    |     |

Intersection: 1: Hwy 101 & 6th St, Interval #2

| Movement              | EB  | WB  | WB  | NB | NB  | SB  |
|-----------------------|-----|-----|-----|----|-----|-----|
| Directions Served     | LTR | LT  | R   | L  | T   | L   |
| Maximum Queue (ft)    | 36  | 45  | 30  | 4  | 3   | 14  |
| Average Queue (ft)    | 7   | 17  | 19  | 0  | 0   | 3   |
| 95th Queue (ft)       | 28  | 39  | 39  | 2  | 3   | 11  |
| Link Distance (ft)    | 518 | 245 | 245 |    | 247 |     |
| Upstream Blk Time (%) |     |     |     |    |     |     |
| Queuing Penalty (veh) |     |     |     |    |     |     |
| Storage Bay Dist (ft) |     |     |     | 85 |     | 150 |
| Storage Blk Time (%)  |     |     |     |    |     |     |
| Queuing Penalty (veh) |     |     |     |    |     |     |

Intersection: 1: Hwy 101 & 6th St, All Intervals

| Movement              | EB  | WB  | WB  | NB | NB  | SB  |
|-----------------------|-----|-----|-----|----|-----|-----|
| Directions Served     | LTR | LT  | R   | L  | T   | L   |
| Maximum Queue (ft)    | 56  | 49  | 35  | 5  | 3   | 26  |
| Average Queue (ft)    | 12  | 18  | 21  | 0  | 0   | 3   |
| 95th Queue (ft)       | 40  | 42  | 40  | 3  | 2   | 14  |
| Link Distance (ft)    | 518 | 245 | 245 |    | 247 |     |
| Upstream Blk Time (%) |     |     |     |    |     |     |
| Queuing Penalty (veh) |     |     |     |    |     |     |
| Storage Bay Dist (ft) |     |     |     | 85 |     | 150 |
| Storage Blk Time (%)  |     |     |     |    |     |     |
| Queuing Penalty (veh) |     |     |     |    |     |     |

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Intersection: 3: 6th St, Interval #1

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| Movement              | NB |
|-----------------------|----|
| Directions Served     | LR |
| Maximum Queue (ft)    | 23 |
| Average Queue (ft)    | 15 |
| 95th Queue (ft)       | 27 |
| Link Distance (ft)    | 46 |
| Upstream Blk Time (%) | 0  |
| Queuing Penalty (veh) | 0  |
| Storage Bay Dist (ft) |    |
| Storage Blk Time (%)  |    |
| Queuing Penalty (veh) |    |

---

Intersection: 3: 6th St, Interval #2

---

| Movement              | NB |
|-----------------------|----|
| Directions Served     | LR |
| Maximum Queue (ft)    | 25 |
| Average Queue (ft)    | 13 |
| 95th Queue (ft)       | 27 |
| Link Distance (ft)    | 46 |
| Upstream Blk Time (%) | 0  |
| Queuing Penalty (veh) | 0  |
| Storage Bay Dist (ft) |    |
| Storage Blk Time (%)  |    |
| Queuing Penalty (veh) |    |

---

Intersection: 3: 6th St, All Intervals

---

| Movement              | NB |
|-----------------------|----|
| Directions Served     | LR |
| Maximum Queue (ft)    | 29 |
| Average Queue (ft)    | 13 |
| 95th Queue (ft)       | 27 |
| Link Distance (ft)    | 46 |
| Upstream Blk Time (%) | 0  |
| Queuing Penalty (veh) | 0  |
| Storage Bay Dist (ft) |    |
| Storage Blk Time (%)  |    |
| Queuing Penalty (veh) |    |

---

Intersection: 5: , Interval #1

---

| Movement              | EB  |
|-----------------------|-----|
| Directions Served     | LR  |
| Maximum Queue (ft)    | 35  |
| Average Queue (ft)    | 24  |
| 95th Queue (ft)       | 42  |
| Link Distance (ft)    | 120 |
| Upstream Blk Time (%) |     |
| Queuing Penalty (veh) |     |
| Storage Bay Dist (ft) |     |
| Storage Blk Time (%)  |     |
| Queuing Penalty (veh) |     |

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Intersection: 5: , Interval #2

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| Movement              | EB  |
|-----------------------|-----|
| Directions Served     | LR  |
| Maximum Queue (ft)    | 47  |
| Average Queue (ft)    | 22  |
| 95th Queue (ft)       | 44  |
| Link Distance (ft)    | 120 |
| Upstream Blk Time (%) |     |
| Queuing Penalty (veh) |     |
| Storage Bay Dist (ft) |     |
| Storage Blk Time (%)  |     |
| Queuing Penalty (veh) |     |

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Intersection: 5: , All Intervals

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| Movement              | EB  |
|-----------------------|-----|
| Directions Served     | LR  |
| Maximum Queue (ft)    | 47  |
| Average Queue (ft)    | 22  |
| 95th Queue (ft)       | 44  |
| Link Distance (ft)    | 120 |
| Upstream Blk Time (%) |     |
| Queuing Penalty (veh) |     |
| Storage Bay Dist (ft) |     |
| Storage Blk Time (%)  |     |
| Queuing Penalty (veh) |     |

Intersection: 6: Hwy 101 & Rhododendron Dr, Interval #1

| Movement              | EB  | WB  | NB  | NB  | NB  | SB  | SB  | SB  |
|-----------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| Directions Served     | LTR | LTR | L   | T   | TR  | L   | T   | TR  |
| Maximum Queue (ft)    | 20  | 50  | 7   | 241 | 196 | 10  | 87  | 82  |
| Average Queue (ft)    | 7   | 26  | 2   | 154 | 103 | 2   | 50  | 39  |
| 95th Queue (ft)       | 28  | 55  | 8   | 238 | 203 | 10  | 89  | 86  |
| Link Distance (ft)    | 332 | 157 |     | 652 | 652 | 247 | 247 | 247 |
| Upstream Blk Time (%) |     |     |     |     |     |     |     |     |
| Queuing Penalty (veh) |     |     |     |     |     |     |     |     |
| Storage Bay Dist (ft) |     |     | 160 |     |     |     |     |     |
| Storage Blk Time (%)  |     |     |     | 7   |     |     |     |     |
| Queuing Penalty (veh) |     |     |     | 0   |     |     |     |     |

Intersection: 6: Hwy 101 & Rhododendron Dr, Interval #2

| Movement              | EB  | WB  | NB  | NB  | NB  | SB  | SB  | SB  |
|-----------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| Directions Served     | LTR | LTR | L   | T   | TR  | L   | T   | TR  |
| Maximum Queue (ft)    | 28  | 45  | 10  | 202 | 168 | 12  | 109 | 102 |
| Average Queue (ft)    | 3   | 14  | 1   | 105 | 57  | 1   | 49  | 34  |
| 95th Queue (ft)       | 17  | 38  | 7   | 179 | 144 | 7   | 90  | 83  |
| Link Distance (ft)    | 332 | 157 |     | 652 | 652 | 247 | 247 | 247 |
| Upstream Blk Time (%) |     |     |     |     |     |     |     |     |
| Queuing Penalty (veh) |     |     |     |     |     |     |     |     |
| Storage Bay Dist (ft) |     |     | 160 |     |     |     |     |     |
| Storage Blk Time (%)  |     |     |     | 1   |     |     |     |     |
| Queuing Penalty (veh) |     |     |     | 0   |     |     |     |     |

Intersection: 6: Hwy 101 & Rhododendron Dr, All Intervals

| Movement              | EB  | WB  | NB  | NB  | NB  | SB  | SB  | SB  |
|-----------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| Directions Served     | LTR | LTR | L   | T   | TR  | L   | T   | TR  |
| Maximum Queue (ft)    | 33  | 55  | 13  | 241 | 204 | 15  | 109 | 104 |
| Average Queue (ft)    | 4   | 17  | 1   | 117 | 68  | 1   | 49  | 35  |
| 95th Queue (ft)       | 20  | 44  | 7   | 201 | 164 | 8   | 90  | 84  |
| Link Distance (ft)    | 332 | 157 |     | 652 | 652 | 247 | 247 | 247 |
| Upstream Blk Time (%) |     |     |     |     |     |     |     |     |
| Queuing Penalty (veh) |     |     |     |     |     |     |     |     |
| Storage Bay Dist (ft) |     |     | 160 |     |     |     |     |     |
| Storage Blk Time (%)  |     |     |     | 3   |     |     |     |     |
| Queuing Penalty (veh) |     |     |     | 0   |     |     |     |     |

---

Intersection: 13: Rhododendron Dr, Interval #1

---

| Movement              | SB  |
|-----------------------|-----|
| Directions Served     | LR  |
| Maximum Queue (ft)    | 37  |
| Average Queue (ft)    | 22  |
| 95th Queue (ft)       | 45  |
| Link Distance (ft)    | 130 |
| Upstream Blk Time (%) |     |
| Queuing Penalty (veh) |     |
| Storage Bay Dist (ft) |     |
| Storage Blk Time (%)  |     |
| Queuing Penalty (veh) |     |

---

Intersection: 13: Rhododendron Dr, Interval #2

---

| Movement              | SB  |
|-----------------------|-----|
| Directions Served     | LR  |
| Maximum Queue (ft)    | 44  |
| Average Queue (ft)    | 18  |
| 95th Queue (ft)       | 42  |
| Link Distance (ft)    | 130 |
| Upstream Blk Time (%) |     |
| Queuing Penalty (veh) |     |
| Storage Bay Dist (ft) |     |
| Storage Blk Time (%)  |     |
| Queuing Penalty (veh) |     |

---

Intersection: 13: Rhododendron Dr, All Intervals

---

| Movement              | SB  |
|-----------------------|-----|
| Directions Served     | LR  |
| Maximum Queue (ft)    | 49  |
| Average Queue (ft)    | 19  |
| 95th Queue (ft)       | 43  |
| Link Distance (ft)    | 130 |
| Upstream Blk Time (%) |     |
| Queuing Penalty (veh) |     |
| Storage Bay Dist (ft) |     |
| Storage Blk Time (%)  |     |
| Queuing Penalty (veh) |     |

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Network Summary

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|                                                |
|------------------------------------------------|
| Network wide Queuing Penalty, Interval #1: 0   |
| Network wide Queuing Penalty, Interval #2: 0   |
| Network wide Queuing Penalty, All Intervals: 0 |

# Queuing and Blocking Report

## 2025 Background

01/08/2020

### Intersection: 3: Hwy 101 & 6th St, Interval #1

| Movement              | EB  | WB | WB | NB | SB  |
|-----------------------|-----|----|----|----|-----|
| Directions Served     | LTR | LT | R  | L  | L   |
| Maximum Queue (ft)    | 53  | 54 | 29 | 9  | 15  |
| Average Queue (ft)    | 22  | 29 | 13 | 1  | 4   |
| 95th Queue (ft)       | 57  | 61 | 35 | 6  | 14  |
| Link Distance (ft)    | 531 | 98 | 98 |    |     |
| Upstream Blk Time (%) |     | 0  |    |    |     |
| Queuing Penalty (veh) |     | 0  |    |    |     |
| Storage Bay Dist (ft) |     |    |    | 85 | 150 |
| Storage Blk Time (%)  |     |    |    |    |     |
| Queuing Penalty (veh) |     |    |    |    |     |

### Intersection: 3: Hwy 101 & 6th St, Interval #2

| Movement              | EB  | WB | WB | NB | SB  | SB  |
|-----------------------|-----|----|----|----|-----|-----|
| Directions Served     | LTR | LT | R  | L  | L   | T   |
| Maximum Queue (ft)    | 33  | 51 | 34 | 16 | 27  | 0   |
| Average Queue (ft)    | 8   | 17 | 9  | 2  | 3   | 0   |
| 95th Queue (ft)       | 28  | 40 | 30 | 9  | 15  | 0   |
| Link Distance (ft)    | 531 | 98 | 98 |    |     | 318 |
| Upstream Blk Time (%) |     |    |    |    |     |     |
| Queuing Penalty (veh) |     |    |    |    |     |     |
| Storage Bay Dist (ft) |     |    |    | 85 | 150 |     |
| Storage Blk Time (%)  |     |    |    |    |     |     |
| Queuing Penalty (veh) |     |    |    |    |     |     |

### Intersection: 3: Hwy 101 & 6th St, All Intervals

| Movement              | EB  | WB | WB | NB | SB  | SB  |
|-----------------------|-----|----|----|----|-----|-----|
| Directions Served     | LTR | LT | R  | L  | L   | T   |
| Maximum Queue (ft)    | 55  | 57 | 34 | 16 | 30  | 0   |
| Average Queue (ft)    | 11  | 20 | 10 | 1  | 3   | 0   |
| 95th Queue (ft)       | 38  | 47 | 32 | 9  | 15  | 0   |
| Link Distance (ft)    | 531 | 98 | 98 |    |     | 318 |
| Upstream Blk Time (%) |     | 0  |    |    |     |     |
| Queuing Penalty (veh) |     | 0  |    |    |     |     |
| Storage Bay Dist (ft) |     |    |    | 85 | 150 |     |
| Storage Blk Time (%)  |     |    |    |    |     |     |
| Queuing Penalty (veh) |     |    |    |    |     |     |

# Queuing and Blocking Report

## 2025 Background

01/08/2020

### Intersection: 6: Hwy 101 & Rhododendron Dr, Interval #1

| Movement              | EB  | WB  | NB  | NB  | NB  | SB  | SB  | SB  |
|-----------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| Directions Served     | LTR | LTR | L   | T   | TR  | L   | T   | TR  |
| Maximum Queue (ft)    | 5   | 26  | 7   | 208 | 174 | 2   | 136 | 114 |
| Average Queue (ft)    | 1   | 10  | 1   | 144 | 91  | 0   | 84  | 61  |
| 95th Queue (ft)       | 11  | 33  | 7   | 221 | 190 | 4   | 132 | 125 |
| Link Distance (ft)    | 338 | 283 |     | 470 | 470 |     | 260 | 260 |
| Upstream Blk Time (%) |     |     |     |     |     |     |     |     |
| Queuing Penalty (veh) |     |     |     |     |     |     |     |     |
| Storage Bay Dist (ft) |     |     | 160 |     |     | 150 |     |     |
| Storage Blk Time (%)  |     |     |     | 5   |     |     | 0   |     |
| Queuing Penalty (veh) |     |     |     | 0   |     |     | 0   |     |

### Intersection: 6: Hwy 101 & Rhododendron Dr, Interval #2

| Movement              | EB  | WB  | NB  | NB  | NB  | SB  | SB  | SB  |
|-----------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| Directions Served     | LTR | LTR | L   | T   | TR  | L   | T   | TR  |
| Maximum Queue (ft)    | 20  | 40  | 21  | 218 | 170 | 12  | 137 | 110 |
| Average Queue (ft)    | 1   | 10  | 2   | 135 | 68  | 1   | 77  | 45  |
| 95th Queue (ft)       | 10  | 33  | 13  | 201 | 162 | 7   | 125 | 101 |
| Link Distance (ft)    | 338 | 283 |     | 470 | 470 |     | 260 | 260 |
| Upstream Blk Time (%) |     |     |     |     |     |     |     |     |
| Queuing Penalty (veh) |     |     |     |     |     |     |     |     |
| Storage Bay Dist (ft) |     |     | 160 |     |     | 150 |     |     |
| Storage Blk Time (%)  |     |     |     | 3   |     |     | 0   |     |
| Queuing Penalty (veh) |     |     |     | 0   |     |     | 0   |     |

### Intersection: 6: Hwy 101 & Rhododendron Dr, All Intervals

| Movement              | EB  | WB  | NB  | NB  | NB  | SB  | SB  | SB  |
|-----------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| Directions Served     | LTR | LTR | L   | T   | TR  | L   | T   | TR  |
| Maximum Queue (ft)    | 20  | 42  | 21  | 241 | 181 | 12  | 149 | 124 |
| Average Queue (ft)    | 1   | 10  | 2   | 137 | 74  | 1   | 79  | 49  |
| 95th Queue (ft)       | 10  | 33  | 11  | 207 | 170 | 6   | 127 | 108 |
| Link Distance (ft)    | 338 | 283 |     | 470 | 470 |     | 260 | 260 |
| Upstream Blk Time (%) |     |     |     |     |     |     |     |     |
| Queuing Penalty (veh) |     |     |     |     |     |     |     |     |
| Storage Bay Dist (ft) |     |     | 160 |     |     | 150 |     |     |
| Storage Blk Time (%)  |     |     |     | 4   |     |     | 0   |     |
| Queuing Penalty (veh) |     |     |     | 0   |     |     | 0   |     |

## Queuing and Blocking Report 2025 Background

01/08/2020

### Intersection: 9: 6th St, Interval #1

#### Movement

Directions Served  
Maximum Queue (ft)  
Average Queue (ft)  
95th Queue (ft)  
Link Distance (ft)  
Upstream Blk Time (%)  
Queuing Penalty (veh)  
Storage Bay Dist (ft)  
Storage Blk Time (%)  
Queuing Penalty (veh)

### Intersection: 9: 6th St, Interval #2

#### Movement

WB

Directions Served LT  
Maximum Queue (ft) 6  
Average Queue (ft) 0  
95th Queue (ft) 5  
Link Distance (ft) 289  
Upstream Blk Time (%)  
Queuing Penalty (veh)  
Storage Bay Dist (ft)  
Storage Blk Time (%)  
Queuing Penalty (veh)

### Intersection: 9: 6th St, All Intervals

#### Movement

WB

Directions Served LT  
Maximum Queue (ft) 6  
Average Queue (ft) 0  
95th Queue (ft) 4  
Link Distance (ft) 289  
Upstream Blk Time (%)  
Queuing Penalty (veh)  
Storage Bay Dist (ft)  
Storage Blk Time (%)  
Queuing Penalty (veh)

### Network Summary

Network wide Queuing Penalty, Interval #1: 0  
Network wide Queuing Penalty, Interval #2: 0  
Network wide Queuing Penalty, All Intervals: 0

# Queuing and Blocking Report

## 2025 BUILD

01/08/2020

### Intersection: 1: Hwy 101 & 6th St, Interval #1

| Movement              | EB  | WB  | WB  | NB | NB  | SB  |
|-----------------------|-----|-----|-----|----|-----|-----|
| Directions Served     | LTR | LT  | R   | L  | T   | L   |
| Maximum Queue (ft)    | 52  | 60  | 38  | 1  | 2   | 21  |
| Average Queue (ft)    | 29  | 27  | 25  | 0  | 0   | 6   |
| 95th Queue (ft)       | 56  | 62  | 42  | 2  | 3   | 25  |
| Link Distance (ft)    | 518 | 245 | 245 |    | 247 |     |
| Upstream Blk Time (%) |     |     |     |    |     |     |
| Queuing Penalty (veh) |     |     |     |    |     |     |
| Storage Bay Dist (ft) |     |     |     | 85 |     | 150 |
| Storage Blk Time (%)  |     |     |     |    |     |     |
| Queuing Penalty (veh) |     |     |     |    |     |     |

### Intersection: 1: Hwy 101 & 6th St, Interval #2

| Movement              | EB  | WB  | WB  | NB | SB  | SB  |
|-----------------------|-----|-----|-----|----|-----|-----|
| Directions Served     | LTR | LT  | R   | L  | L   | TR  |
| Maximum Queue (ft)    | 40  | 61  | 38  | 4  | 53  | 4   |
| Average Queue (ft)    | 12  | 21  | 21  | 0  | 7   | 0   |
| 95th Queue (ft)       | 35  | 50  | 42  | 3  | 30  | 4   |
| Link Distance (ft)    | 518 | 245 | 245 |    |     | 318 |
| Upstream Blk Time (%) |     |     |     |    |     |     |
| Queuing Penalty (veh) |     |     |     |    |     |     |
| Storage Bay Dist (ft) |     |     |     | 85 | 150 |     |
| Storage Blk Time (%)  |     |     |     |    |     |     |
| Queuing Penalty (veh) |     |     |     |    |     |     |

### Intersection: 1: Hwy 101 & 6th St, All Intervals

| Movement              | EB  | WB  | WB  | NB | NB  | SB  | SB  |
|-----------------------|-----|-----|-----|----|-----|-----|-----|
| Directions Served     | LTR | LT  | R   | L  | T   | L   | TR  |
| Maximum Queue (ft)    | 56  | 67  | 42  | 5  | 2   | 53  | 4   |
| Average Queue (ft)    | 16  | 22  | 22  | 0  | 0   | 7   | 0   |
| 95th Queue (ft)       | 43  | 53  | 43  | 3  | 1   | 29  | 3   |
| Link Distance (ft)    | 518 | 245 | 245 |    | 247 |     | 318 |
| Upstream Blk Time (%) |     |     |     |    |     |     |     |
| Queuing Penalty (veh) |     |     |     |    |     |     |     |
| Storage Bay Dist (ft) |     |     |     | 85 |     | 150 |     |
| Storage Blk Time (%)  |     |     |     |    |     |     |     |
| Queuing Penalty (veh) |     |     |     |    |     |     |     |

Queuing and Blocking Report  
2025 BUILD

01/08/2020

Intersection: 3: 6th St, Interval #1

| Movement              | NB |
|-----------------------|----|
| Directions Served     | LR |
| Maximum Queue (ft)    | 28 |
| Average Queue (ft)    | 16 |
| 95th Queue (ft)       | 31 |
| Link Distance (ft)    | 46 |
| Upstream Blk Time (%) | 0  |
| Queuing Penalty (veh) | 0  |
| Storage Bay Dist (ft) |    |
| Storage Blk Time (%)  |    |
| Queuing Penalty (veh) |    |

Intersection: 3: 6th St, Interval #2

| Movement              | EB  | WB  | NB |
|-----------------------|-----|-----|----|
| Directions Served     | TR  | LT  | LR |
| Maximum Queue (ft)    | 10  | 6   | 35 |
| Average Queue (ft)    | 0   | 0   | 14 |
| 95th Queue (ft)       | 8   | 5   | 29 |
| Link Distance (ft)    | 245 | 295 | 46 |
| Upstream Blk Time (%) |     |     | 0  |
| Queuing Penalty (veh) |     |     | 0  |
| Storage Bay Dist (ft) |     |     |    |
| Storage Blk Time (%)  |     |     |    |
| Queuing Penalty (veh) |     |     |    |

Intersection: 3: 6th St, All Intervals

| Movement              | EB  | WB  | NB |
|-----------------------|-----|-----|----|
| Directions Served     | TR  | LT  | LR |
| Maximum Queue (ft)    | 10  | 6   | 36 |
| Average Queue (ft)    | 0   | 0   | 15 |
| 95th Queue (ft)       | 7   | 4   | 30 |
| Link Distance (ft)    | 245 | 295 | 46 |
| Upstream Blk Time (%) |     |     | 0  |
| Queuing Penalty (veh) |     |     | 0  |
| Storage Bay Dist (ft) |     |     |    |
| Storage Blk Time (%)  |     |     |    |
| Queuing Penalty (veh) |     |     |    |

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Intersection: 5: , Interval #1

---

| Movement              | EB  |
|-----------------------|-----|
| Directions Served     | LR  |
| Maximum Queue (ft)    | 36  |
| Average Queue (ft)    | 22  |
| 95th Queue (ft)       | 43  |
| Link Distance (ft)    | 120 |
| Upstream Blk Time (%) |     |
| Queuing Penalty (veh) |     |
| Storage Bay Dist (ft) |     |
| Storage Blk Time (%)  |     |
| Queuing Penalty (veh) |     |

---

Intersection: 5: , Interval #2

---

| Movement              | EB  |
|-----------------------|-----|
| Directions Served     | LR  |
| Maximum Queue (ft)    | 53  |
| Average Queue (ft)    | 24  |
| 95th Queue (ft)       | 47  |
| Link Distance (ft)    | 120 |
| Upstream Blk Time (%) |     |
| Queuing Penalty (veh) |     |
| Storage Bay Dist (ft) |     |
| Storage Blk Time (%)  |     |
| Queuing Penalty (veh) |     |

---

Intersection: 5: , All Intervals

---

| Movement              | EB  |
|-----------------------|-----|
| Directions Served     | LR  |
| Maximum Queue (ft)    | 53  |
| Average Queue (ft)    | 24  |
| 95th Queue (ft)       | 46  |
| Link Distance (ft)    | 120 |
| Upstream Blk Time (%) |     |
| Queuing Penalty (veh) |     |
| Storage Bay Dist (ft) |     |
| Storage Blk Time (%)  |     |
| Queuing Penalty (veh) |     |

Intersection: 6: Hwy 101 & Rhododendron Dr, Interval #1

| Movement              | EB  | WB  | NB  | NB  | NB  | SB  | SB  | SB  |
|-----------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| Directions Served     | LTR | LTR | L   | T   | TR  | L   | T   | TR  |
| Maximum Queue (ft)    | 34  | 61  | 4   | 212 | 161 | 12  | 92  | 108 |
| Average Queue (ft)    | 11  | 35  | 1   | 149 | 107 | 2   | 55  | 52  |
| 95th Queue (ft)       | 35  | 66  | 5   | 223 | 190 | 13  | 94  | 103 |
| Link Distance (ft)    | 332 | 157 |     | 652 | 652 | 247 | 247 | 247 |
| Upstream Blk Time (%) |     |     |     |     |     |     |     |     |
| Queuing Penalty (veh) |     |     |     |     |     |     |     |     |
| Storage Bay Dist (ft) |     |     | 160 |     |     |     |     |     |
| Storage Blk Time (%)  |     |     |     | 6   |     |     |     |     |
| Queuing Penalty (veh) |     |     |     | 0   |     |     |     |     |

Intersection: 6: Hwy 101 & Rhododendron Dr, Interval #2

| Movement              | EB  | WB  | NB  | NB  | NB  | SB  | SB  | SB  |
|-----------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| Directions Served     | LTR | LTR | L   | T   | TR  | L   | T   | TR  |
| Maximum Queue (ft)    | 28  | 42  | 8   | 223 | 187 | 17  | 118 | 116 |
| Average Queue (ft)    | 4   | 12  | 1   | 123 | 70  | 2   | 54  | 39  |
| 95th Queue (ft)       | 18  | 38  | 5   | 204 | 164 | 10  | 108 | 92  |
| Link Distance (ft)    | 332 | 157 |     | 652 | 652 | 247 | 247 | 247 |
| Upstream Blk Time (%) |     |     |     |     |     |     |     |     |
| Queuing Penalty (veh) |     |     |     |     |     |     |     |     |
| Storage Bay Dist (ft) |     |     | 160 |     |     |     |     |     |
| Storage Blk Time (%)  |     |     |     | 2   |     |     |     |     |
| Queuing Penalty (veh) |     |     |     | 0   |     |     |     |     |

Intersection: 6: Hwy 101 & Rhododendron Dr, All Intervals

| Movement              | EB  | WB  | NB  | NB  | NB  | SB  | SB  | SB  |
|-----------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| Directions Served     | LTR | LTR | L   | T   | TR  | L   | T   | TR  |
| Maximum Queue (ft)    | 36  | 61  | 9   | 239 | 193 | 24  | 123 | 122 |
| Average Queue (ft)    | 5   | 18  | 1   | 130 | 79  | 2   | 54  | 42  |
| 95th Queue (ft)       | 24  | 49  | 5   | 210 | 174 | 11  | 105 | 96  |
| Link Distance (ft)    | 332 | 157 |     | 652 | 652 | 247 | 247 | 247 |
| Upstream Blk Time (%) |     |     |     |     |     |     |     |     |
| Queuing Penalty (veh) |     |     |     |     |     |     |     |     |
| Storage Bay Dist (ft) |     |     | 160 |     |     |     |     |     |
| Storage Blk Time (%)  |     |     |     | 3   |     |     |     |     |
| Queuing Penalty (veh) |     |     |     | 0   |     |     |     |     |

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Intersection: 13: Rhododendron Dr, Interval #1

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| Movement              | SB  |
|-----------------------|-----|
| Directions Served     | LR  |
| Maximum Queue (ft)    | 43  |
| Average Queue (ft)    | 24  |
| 95th Queue (ft)       | 46  |
| Link Distance (ft)    | 130 |
| Upstream Blk Time (%) |     |
| Queuing Penalty (veh) |     |
| Storage Bay Dist (ft) |     |
| Storage Blk Time (%)  |     |
| Queuing Penalty (veh) |     |

---

Intersection: 13: Rhododendron Dr, Interval #2

---

| Movement              | SB  |
|-----------------------|-----|
| Directions Served     | LR  |
| Maximum Queue (ft)    | 51  |
| Average Queue (ft)    | 18  |
| 95th Queue (ft)       | 44  |
| Link Distance (ft)    | 130 |
| Upstream Blk Time (%) |     |
| Queuing Penalty (veh) |     |
| Storage Bay Dist (ft) |     |
| Storage Blk Time (%)  |     |
| Queuing Penalty (veh) |     |

---

Intersection: 13: Rhododendron Dr, All Intervals

---

| Movement              | SB  |
|-----------------------|-----|
| Directions Served     | LR  |
| Maximum Queue (ft)    | 52  |
| Average Queue (ft)    | 19  |
| 95th Queue (ft)       | 45  |
| Link Distance (ft)    | 130 |
| Upstream Blk Time (%) |     |
| Queuing Penalty (veh) |     |
| Storage Bay Dist (ft) |     |
| Storage Blk Time (%)  |     |
| Queuing Penalty (veh) |     |

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Network Summary

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|                                                |
|------------------------------------------------|
| Network wide Queuing Penalty, Interval #1: 0   |
| Network wide Queuing Penalty, Interval #2: 0   |
| Network wide Queuing Penalty, All Intervals: 0 |

## Florence Car Wash and Coffee Kiosk

# AM Queuing Analysis

Human Bean Florence Oregon

## Inputs

|   |                              |    |
|---|------------------------------|----|
| T | Analysis Period (h)          | 1  |
| v | Arrival Volume (VPH)         | 62 |
| c | Hourly Throughput (VPH)      | 86 |
| n | Number of Toll Service Lanes | 1  |

## Traffic Volume

|                 |     |
|-----------------|-----|
| Entering        | 89  |
| % Drive through | 70% |
| Total In        | 62  |

|                     |            |
|---------------------|------------|
| Time per vehicle    | 42 seconds |
| # of vehicles /Hour | 86         |

|                   |     |      |
|-------------------|-----|------|
| Traffic Intensity | $p$ | 0.73 |
|-------------------|-----|------|

## M/D/1

### Constant Service Time

|                |             |
|----------------|-------------|
| Average Q      | 1           |
| Time in system | 0.9 minutes |

### Percent Time full

|                   |              |
|-------------------|--------------|
| Arrival           | 62 veh/hour  |
| Departure         | 86 veh/hour  |
| Storage Length    | 135 feet     |
| Length of vehicle | 16.5 feet    |
| # vehicles stored | 8.2 vehicles |

### % Time Full

|                   |       |              |
|-------------------|-------|--------------|
| $p$               | 0.73  |              |
| % time at full    | 2.12% | 1.27 Minutes |
| 95th %            | 11    |              |
| % time at 95%     | 0.84% | 0.50 Minutes |
| Max               | 13    |              |
| % time at Max     | 0.44% | 0.26 Minutes |
| Average           | 6     |              |
| % time at Average | 4.51% | 2.71 Minutes |

### Vehicles Time at Vehicle

|    |       |              |             |
|----|-------|--------------|-------------|
| 6  | 4.51% | 2.71 Minutes |             |
| 7  | 3.17% | 1.90 Minutes |             |
| 8  | 2.26% | 1.35 Minutes |             |
| 9  | 1.61% | 0.97 Minutes |             |
| 10 | 1.16% | 0.70 Minutes |             |
| 11 | 0.84% | 0.50 Minutes |             |
| 12 | 0.60% | 0.36 Minutes | % time full |
| 13 | 0.44% | 0.26 Minutes | 8%          |

4.81 minutes

## PM Peak Hour Queuing

## Human Bean Florence Oregon

## Inputs

|   |                              |    |
|---|------------------------------|----|
| T | Analysis Period (h)          | 1  |
| v | Arrival Volume (VPH)         | 62 |
| c | Hourly Throughput (VPH)      | 86 |
| n | Number of Toll Service Lanes | 1  |

## Traffic Volume

|                 |     |
|-----------------|-----|
| Entering        | 89  |
| % Drive through | 70% |
| Total In        | 62  |

|                     |            |
|---------------------|------------|
| Time per vehicle    | 42 seconds |
| # of vehicles /Hour | 86         |

|                   |      |                          |
|-------------------|------|--------------------------|
| Traffic Intensity | $p$  | 0.73                     |
| Average Q         | Q    | 3                        |
| Probability of Q  | P(Q) | 0.116879 0.8831206       |
| Average Q Time    |      | 2.562538 Minutes/vehicle |

## 95Th Percentile Queue

## # Vehicles

|   |          |       |
|---|----------|-------|
| 0 | 0.273167 | 0.273 |
| 1 | 0.198547 | 0.472 |
| 2 | 0.14431  | 0.616 |
| 3 | 0.10489  | 0.721 |
| 4 | 0.076237 | 0.797 |
| 5 | 0.055412 | 0.853 |
| 6 | 0.040275 | 0.893 |
| 7 | 0.029273 | 0.922 |
| 8 | 0.021277 | 0.943 |

|       |                       |             |
|-------|-----------------------|-------------|
| M/D/1 | Constant Service Time |             |
|       | Average Q             | 1           |
|       | Time in system        | 0.9 minutes |

|       |           |                |
|-------|-----------|----------------|
| M/G/1 | $\rho$    | 0.73           |
|       | $\lambda$ | 89             |
|       | $\sigma$  | 20.3 0.0056389 |
|       | $\Theta$  | 1              |
|       | Time      | 1.0 minutes    |

## Percent Time full

|                   |              |
|-------------------|--------------|
| Arrival           | 62 veh/hour  |
| Departure         | 86 veh/hour  |
| Storage Length    | 135 feet     |
| Length of vehicle | 16 feet      |
| # vehicles stored | 8.4 vehicles |

|                   |        |               |
|-------------------|--------|---------------|
| % Time Full       |        |               |
| $p$               | 0.73   |               |
| % of time full    | 1.95%  | 1.17 Minutes  |
| 95th %            | 3      |               |
| % time at 95%     | 14.55% | 8.73 Minutes  |
| Max               | 7      |               |
| % time at Max     | 3.17%  | 1.90 Minutes  |
| Average           | 1      |               |
| % time at Average | 42.09% | 25.25 Minutes |

# SANDOW ENGINEERING

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## Drainage Memorandum

Project: Florence Coffee Kiosk – Taxmap & TL 18-12-27-44-6600 & 6601  
Prepared by: Kyle D. Morris, EIT **Scott**  
Reviewed by: Scott D. Morris, PE **Morris, PE**  
Re: Stormwater Analysis for Coffee Kiosk & Car Wash Development  
Date: Tuesday, July 23, 2019

Digitally signed by  
Scott Morris, PE  
Date: 2019.07.24  
11:50:21 -07'00'



### Project Overview

The applicant is proposing to develop the subject properties with a Car Wash facility and a Human Bean Coffee Kiosk. The development is to span two properties as listed above; the southern property will house the Coffee Kiosk and the car wash will occupy the northern property. Each property will share access. Associated paving and infrastructure will be constructed to provide a safe and functional development. Stormwater infrastructure will be constructed to meet City of Florence requirements. A planter with block walls is proposed to both treat and detain stormwater runoff from all newly replaced impervious surfaces.

### Existing Conditions

Currently the site consists primarily of paving with some compacted gravel on the southern property. No buildings or structures are present on either property. From site observations and survey topo data the site naturally slopes to the southeast corner of the development site. Stormwater runoff from the site overflows into a public catch basin within Rhododendron Drive with a small amount of infiltration through the gravel occurring. Below is a table summary of the land types:

Table 1: Existing Site Land Type

| Land Type                                  | Curve Number | Area [sq ft] |
|--------------------------------------------|--------------|--------------|
| Paved Parking - Asphalt and Gravel Surface | 96           | 24,782       |

East of the subject properties there is another commercial building and drive aisle. This property's access drive runs along the eastern property line of the proposed development property. Current slopes of the parking lot to the east routes stormwater runoff from the eastern property parking lot onto the subject property and follow the natural drainage pattern to the southeast. Existing stormwater runoff from the east will be addressed in a manner that prevents flooding after development.

To classify on-site soils the Web Soil Survey was utilized. Per the Web Soil Survey, soil is classified as 133C Waldport-Urban Land Complex, 0 to 12 percent slopes with a Hydrologic Soil Group rating A. Groundwater is estimated to be more than 80 inches deep and the Florence Stormwater Design Manual does not list this soil type as being prone to shallow groundwater.

### **Infiltration**

The Web Soil Survey was used to estimate infiltration rates that are present on the site. For the given soils, the limiting layer is estimated to be 5.95 to 99.90 in/hr. Given the presence of sandy soils in the Florence area this seems reasonable. Per the Florence Stormwater Design Manual the maximum allowable infiltration rates through imported growing media within stormwater facilities is 4 in/hr. Given both of these parameters, a factor of Safety of 2 will be applied to the lower limit of native soil rate. Therefore, the design infiltration rate that will be used for all facilities on-site will be **3 in/hr.**

### **Stormwater Calculation Parameters**

To perform hydraulic calculations for this development the Santa Barbara Urban Hydrograph (SBUH) method was utilized. HydroCAD software was used for all calculations. City of Florence requires that post-development peak flowrates be less than or equal to pre-development peak flowrates for the 2-year through 25-year storm events. All stormwater facilities are required to adequately process the 25-year storm event. The following parameters taken from the Florence Stormwater Design Manual were used. All rainfall amounts are for 24-hour duration storm.

|                                |             |
|--------------------------------|-------------|
| Water Quality – Rainfall depth | 0.83 inches |
| 2-Year – Rainfall depth        | 3.46 inches |

|                          |                       |
|--------------------------|-----------------------|
| 10-Year – Rainfall depth | 4.48 inches           |
| 25-Year – Rainfall depth | 5.06 inches           |
| Storm Distribution Type  | IA – 24 hour Duration |
| Impervious Curve Number  | 98                    |

### **Proposed Stormwater System**

One stormwater planter is proposed to treat and detain stormwater runoff from the newly replaced impervious surfaces. To process runoff from the neighboring property to the east, catch basins are proposed to be installed east of the proposed curb line. These catch basins would route stormwater runoff into the public storm system in Rhododendron Drive in an existing stormwater easement.

The southern property will utilize a stormwater planter (Stormwater Planter 1) on the southwest portion of the property. Runoff will be routed to the planter via catch basins and piping for processing. Since this planter meets the minimum offset requirements from proposed structures and property lines Infiltration will be the only outflow. No overflow is proposed as the planter is large enough to process the entire 25-year storm event. Block walls will function as the planter walls with the lower portion of the planter sloping to the flowline. Underneath the open storage 18” of growing media is proposed over top of a 12” deep rock chamber. All plantings within the planter will be specified per the Florence Stormwater Design Manual to ensure treatment requirements are met. See Table 1 below for physical dimensions of the planter. As a factor of safety, should the planter have an unlikely overflow, it would surcharge through a proposed catch basin in the southeast corner of the development. Overflow from this catch basin then would flow into Fifth Street and be processed by an existing catch basin.

*Table 2: Stormwater Planter Physical Dimensions*

| <b>Facility</b>      | <b>FL Elev [ft]</b> | <b>Bottom Area [SF]</b> | <b>Top Elev [ft]</b> | <b>Top Area [SF]</b> | <b>Growing Media Area [SF]</b> | <b>Rock Chamber Area [SF]</b> |
|----------------------|---------------------|-------------------------|----------------------|----------------------|--------------------------------|-------------------------------|
| Stormwater Planter 1 | 26.30               | 154                     | 30.30                | 590                  | 590                            | 154                           |

For the eastern property catch basins are proposed to be installed east of the property lines along the curb to prevent ponding. These catch basins would then be routed south to the public system in Rhododendron Drive.

### **Hydraulic Calculations**

To ensure that City of Florence Stormwater standards are met and that the public safety is maintained hydraulic calculations for the proposed stormwater system were performed utilizing HydroCAD software. To begin the calculations existing peak flowrates from the site were calculated:

*Table 3: Existing Site Peak Flowrates*

| <b>Storm Event</b> | <b>Peak Flowrate [cfs]</b> |
|--------------------|----------------------------|
| Water Quality      | 0.06                       |
| 2-Year             | 0.42                       |
| 10-Year            | 0.55                       |
| 25-Year            | 0.63                       |

Since the only proposed outlet for stormwater runoff from the proposed site is infiltration, the post-construction peak flowrate from the site is 0 cfs for the above analyzed storm events.

Peak water elevations were also verified to ensure that no flooding of surrounding infrastructure occurred. The table below summarizes the peak elevations:

*Table 4: Hydraulic Elevations*

| <b>Facility</b>      | <b>FL El [ft]</b> | <b>Overflow El [ft]</b> | <b>Flood El [ft]</b> | <b>WQ El [ft]</b> | <b>2-Year El [ft]</b> | <b>10-Year El [ft]</b> | <b>25-Year El [ft]</b> |
|----------------------|-------------------|-------------------------|----------------------|-------------------|-----------------------|------------------------|------------------------|
| Stormwater Planter 1 | 26.30             | N/A                     | 30.30                | 24.98             | 28.34                 | 29.29                  | 29.95                  |

Full HydroCAD calculations are attached in the appendix with this memorandum.

### **Stormwater Quality**

Florence Design Standards require that stormwater runoff from impervious surfaces be treated, preferably by vegetative means. The proposed development will achieve this via the stormwater planter.

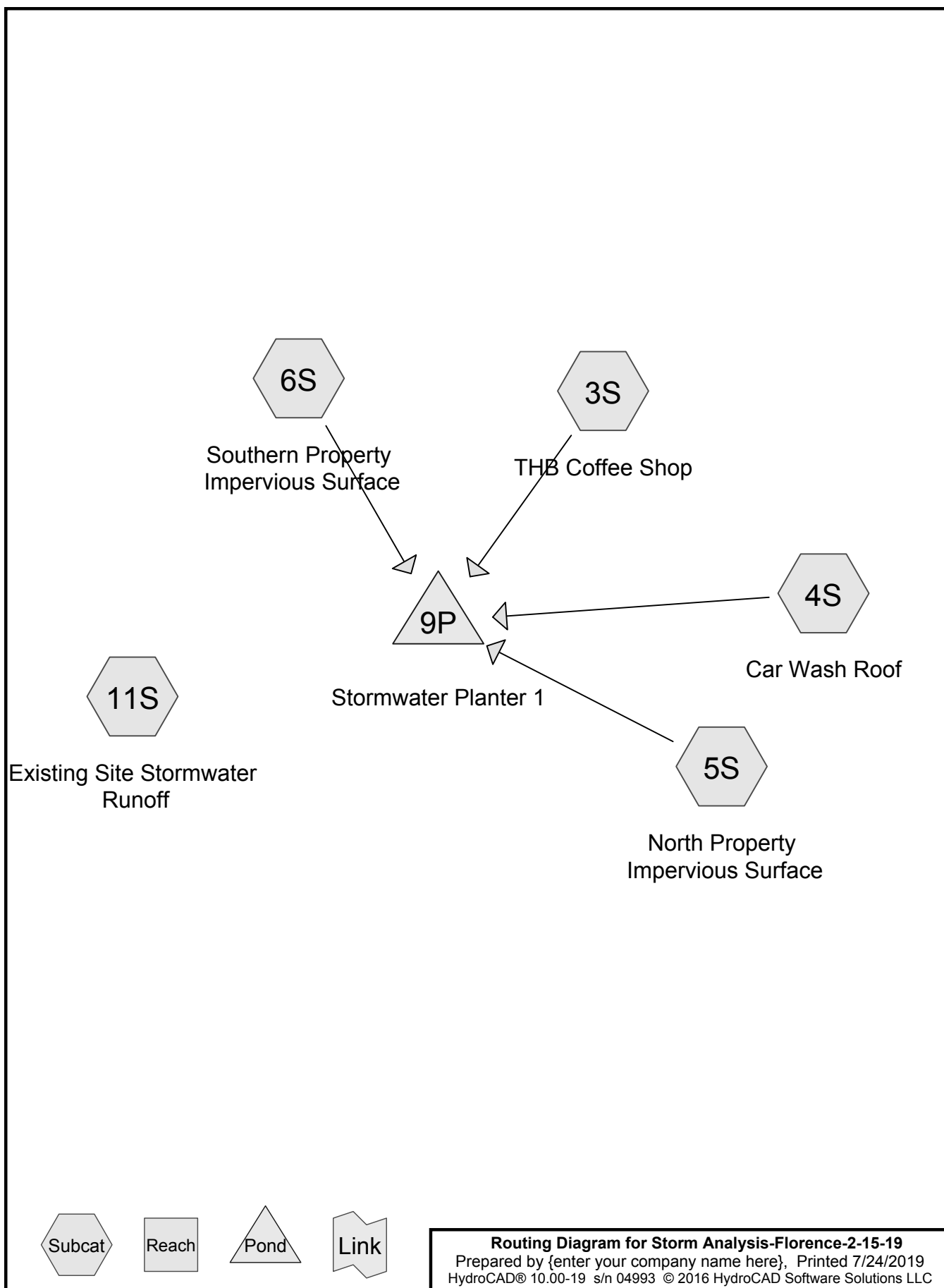
Since outflow from Stormwater Planter 1 is solely infiltration, the 18" growing media and plants within the facility will treat stormwater runoff per Florence standards.

### **Conclusion**

The proposed stormwater system will adequately detain runoff to below existing peak flowrates into the public stormwater system. Also, runoff from the new development will receive treatment thus meeting Florence standards. The proposed system will safely serve the development while meeting Florence Standards. We recommend performing a field infiltration test at location of storm facility at bottom elevation of rock chamber prior to construction.

### **Appendix**

- Florence Stormwater Analysis – HydroCAD results



## Storm Analysis-Florence-2-15-19

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Page 2

### Area Listing (selected nodes)

| Area<br>(acres) | CN        | Description<br>(subcatchment-numbers) |
|-----------------|-----------|---------------------------------------|
| 0.569           | 96        | Gravel surface, HSG A (11S)           |
| 0.371           | 98        | Impervious Pavement (5S, 6S)          |
| 0.038           | 98        | Impervious Roof (3S, 4S)              |
| <b>0.978</b>    | <b>97</b> | <b>TOTAL AREA</b>                     |

## Storm Analysis-Florence-2-15-19

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Page 3

### Soil Listing (selected nodes)

| Area<br>(acres) | Soil<br>Group | Subcatchment<br>Numbers |
|-----------------|---------------|-------------------------|
| 0.569           | HSG A         | 11S                     |
| 0.000           | HSG B         |                         |
| 0.000           | HSG C         |                         |
| 0.000           | HSG D         |                         |
| 0.409           | Other         | 3S, 4S, 5S, 6S          |
| <b>0.978</b>    |               | <b>TOTAL AREA</b>       |

## Storm Analysis-Florence-2-15-19

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Page 4

### Ground Covers (selected nodes)

| HSG-A<br>(acres) | HSG-B<br>(acres) | HSG-C<br>(acres) | HSG-D<br>(acres) | Other<br>(acres) | Total<br>(acres) | Ground<br>Cover     | Subcatchment<br>Numbers |
|------------------|------------------|------------------|------------------|------------------|------------------|---------------------|-------------------------|
| 0.569            | 0.000            | 0.000            | 0.000            | 0.000            | 0.569            | Gravel surface      | 11S                     |
| 0.000            | 0.000            | 0.000            | 0.000            | 0.371            | 0.371            | Impervious Pavement | 5S, 6S                  |
| 0.000            | 0.000            | 0.000            | 0.000            | 0.038            | 0.038            | Impervious Roof     | 3S, 4S                  |
| <b>0.569</b>     | <b>0.000</b>     | <b>0.000</b>     | <b>0.000</b>     | <b>0.409</b>     | <b>0.978</b>     | <b>TOTAL AREA</b>   |                         |

**Storm Analysis-Florence-2-15-19***Type IA 24-hr 01-WQ Rainfall=0.83"*

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Page 5

Time span=0.00-32.00 hrs, dt=0.05 hrs, 641 points

Runoff by SBUH method, Split Pervious/Imperv.

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**Subcatchment3S: THB Coffee Shop**Runoff Area=524 sf 100.00% Impervious Runoff Depth=0.63"  
Tc=10.0 min CN=0/98 Runoff=0.00 cfs 0.001 af**Subcatchment4S: Car Wash Roof**Runoff Area=1,138 sf 100.00% Impervious Runoff Depth=0.63"  
Tc=10.0 min CN=0/98 Runoff=0.00 cfs 0.001 af**Subcatchment5S: North Property**Runoff Area=6,943 sf 100.00% Impervious Runoff Depth=0.63"  
Tc=10.0 min CN=0/98 Runoff=0.02 cfs 0.008 af**Subcatchment6S: Southern Property**Runoff Area=9,200 sf 100.00% Impervious Runoff Depth=0.63"  
Tc=10.0 min CN=0/98 Runoff=0.03 cfs 0.011 af**Subcatchment11S: Existing Site**Runoff Area=24,782 sf 0.00% Impervious Runoff Depth=0.48"  
Tc=10.0 min CN=96/0 Runoff=0.06 cfs 0.023 af**Pond 9P: Stormwater Planter 1**Peak Elev=24.98' Storage=65 cf Inflow=0.06 cfs 0.021 af  
Outflow=0.05 cfs 0.021 af**Total Runoff Area = 0.978 ac Runoff Volume = 0.044 af Average Runoff Depth = 0.54"**  
**58.19% Pervious = 0.569 ac 41.81% Impervious = 0.409 ac**

**Storm Analysis-Florence-2-15-19**

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Type IA 24-hr 01-WQ Rainfall=0.83"

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Page 6

**Summary for Subcatchment 3S: THB Coffee Shop**

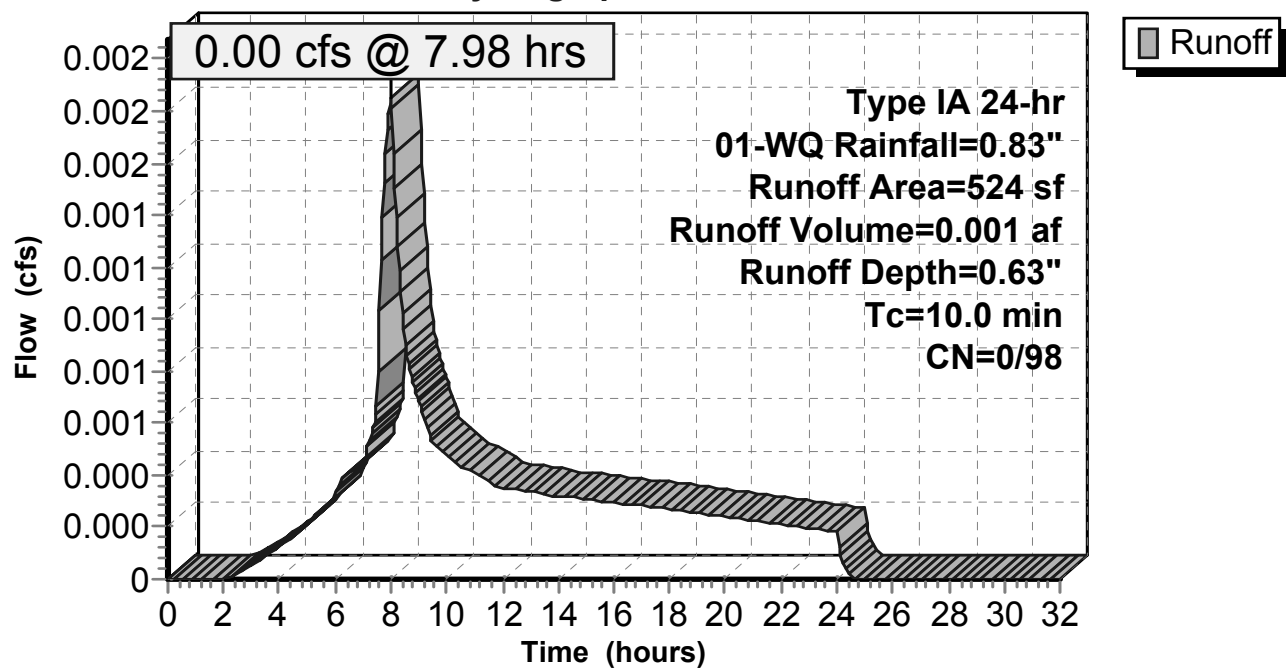
Runoff from THB Coffee Shop Roof. To be collected via roof drains and routed to planter via underground piping.

Runoff = 0.00 cfs @ 7.98 hrs, Volume= 0.001 af, Depth= 0.63"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs  
Type IA 24-hr 01-WQ Rainfall=0.83"

| Area (sf) | CN | Description             |
|-----------|----|-------------------------|
| * 524     | 98 | Impervious Roof         |
| 524       | 98 | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 10.0     |               |               |                   |                | Direct Entry, |

**Subcatchment 3S: THB Coffee Shop****Hydrograph**

**Storm Analysis-Florence-2-15-19**

Type IA 24-hr 01-WQ Rainfall=0.83"

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Page 7

**Summary for Subcatchment 4S: Car Wash Roof**

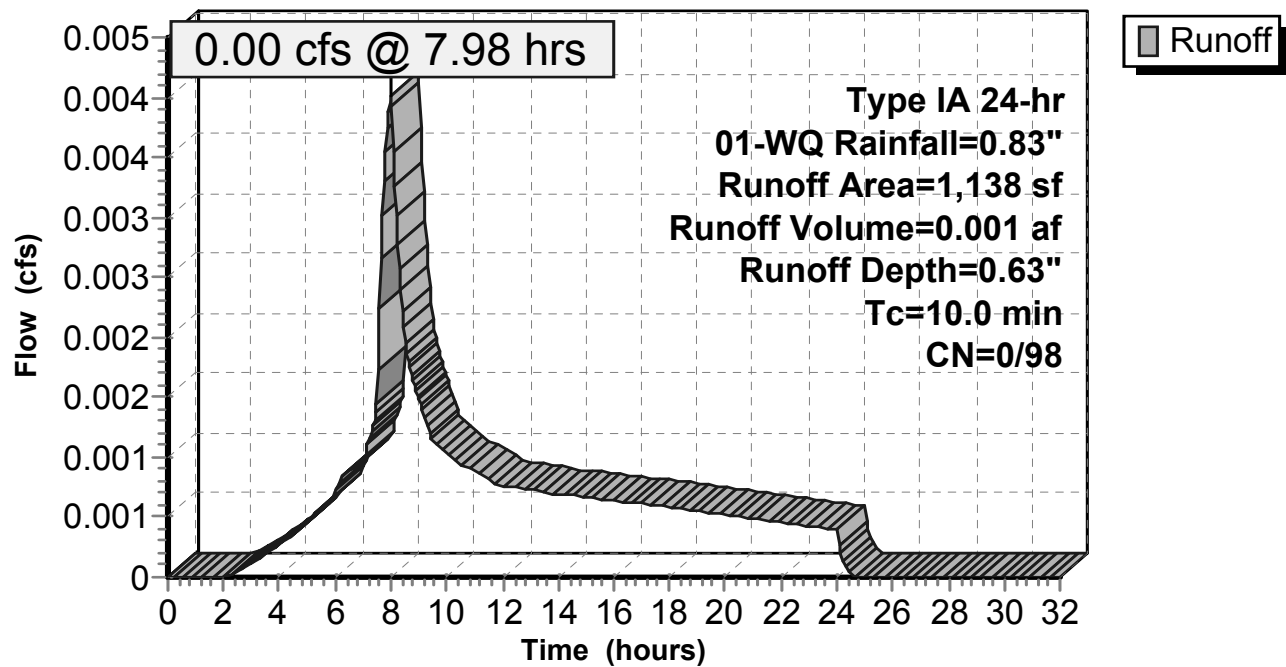
Runoff from Car Wash roof. Runoff to be collected via roof drains and routed to planter via underground piping.

Runoff = 0.00 cfs @ 7.98 hrs, Volume= 0.001 af, Depth= 0.63"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs  
Type IA 24-hr 01-WQ Rainfall=0.83"

|   | Area (sf) | CN | Description             |
|---|-----------|----|-------------------------|
| * | 1,138     | 98 | Impervious Roof         |
|   | 1,138     | 98 | 100.00% Impervious Area |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description   |
|-------------|------------------|------------------|----------------------|-------------------|---------------|
| 10.0        |                  |                  |                      |                   | Direct Entry, |

**Subcatchment 4S: Car Wash Roof****Hydrograph**

**Storm Analysis-Florence-2-15-19**

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Type IA 24-hr 01-WQ Rainfall=0.83"

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Page 8

**Summary for Subcatchment 5S: North Property Impervious Surface**

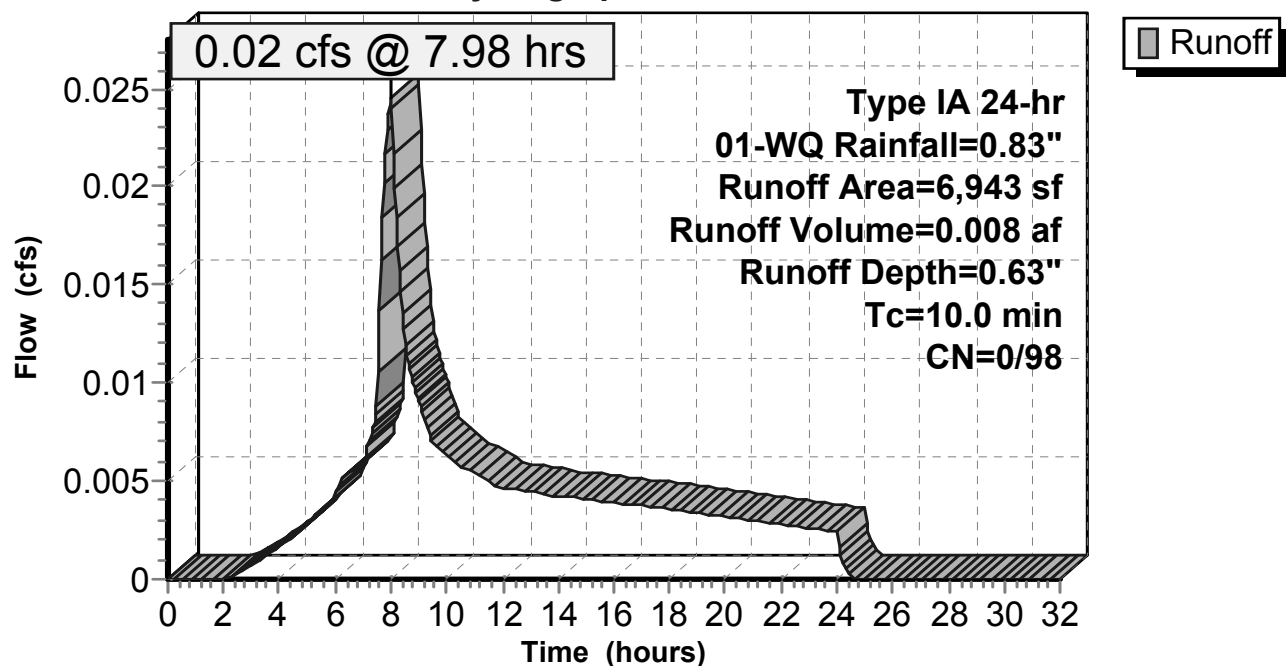
Runoff from Impervious pavement on northern property. To be collected via catch basins and routed underground to planter for treatment.

Runoff = 0.02 cfs @ 7.98 hrs, Volume= 0.008 af, Depth= 0.63"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs  
Type IA 24-hr 01-WQ Rainfall=0.83"

|   | Area (sf) | CN | Description             |
|---|-----------|----|-------------------------|
| * | 6,943     | 98 | Impervious Pavement     |
|   | 6,943     | 98 | 100.00% Impervious Area |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description   |
|-------------|------------------|------------------|----------------------|-------------------|---------------|
| 10.0        |                  |                  |                      |                   | Direct Entry, |

**Subcatchment 5S: North Property Impervious Surface****Hydrograph**

**Storm Analysis-Florence-2-15-19**

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Type IA 24-hr 01-WQ Rainfall=0.83"

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Page 9

**Summary for Subcatchment 6S: Southern Property Impervious Surface**

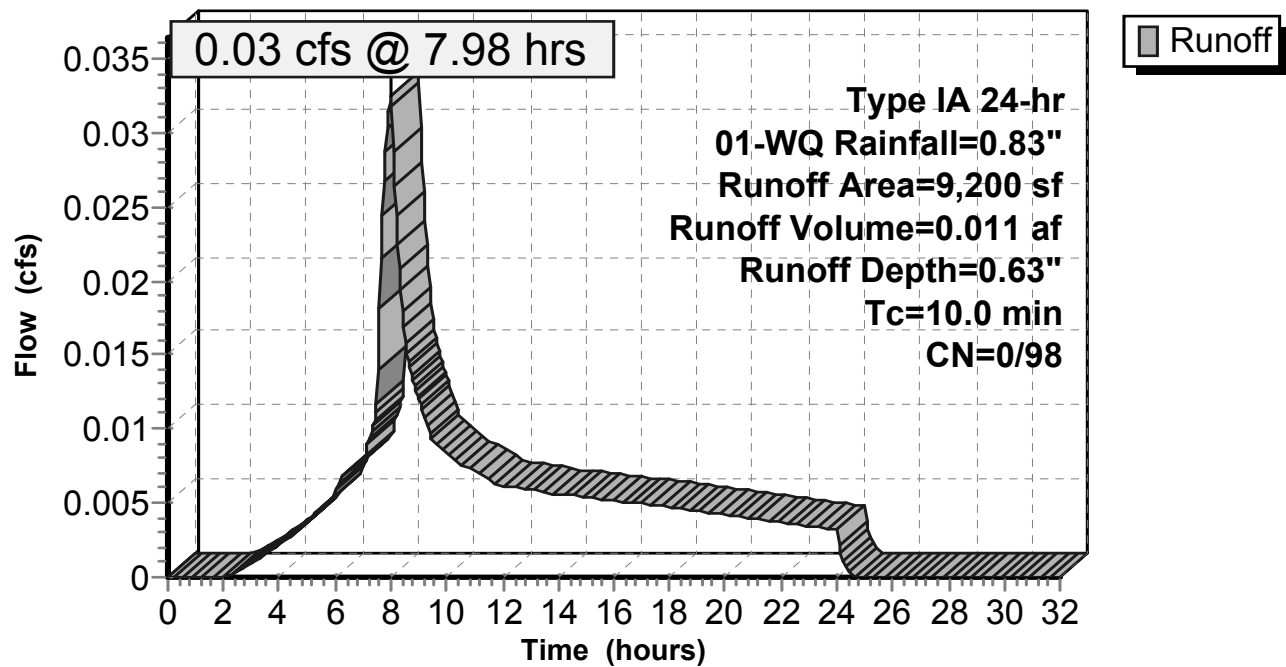
Runoff from impervious surface on southern property. To be collected via catch basins and routed via underground piping to planter for treatment.

Runoff = 0.03 cfs @ 7.98 hrs, Volume= 0.011 af, Depth= 0.63"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs  
Type IA 24-hr 01-WQ Rainfall=0.83"

|   | Area (sf) | CN | Description             |
|---|-----------|----|-------------------------|
| * | 9,200     | 98 | Impervious Pavement     |
|   | 9,200     | 98 | 100.00% Impervious Area |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description   |
|-------------|------------------|------------------|----------------------|-------------------|---------------|
| 10.0        |                  |                  |                      |                   | Direct Entry, |

**Subcatchment 6S: Southern Property Impervious Surface****Hydrograph**

**Storm Analysis-Florence-2-15-19**

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Type IA 24-hr 01-WQ Rainfall=0.83"

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Page 10

**Summary for Subcatchment 11S: Existing Site Stormwater Runoff**

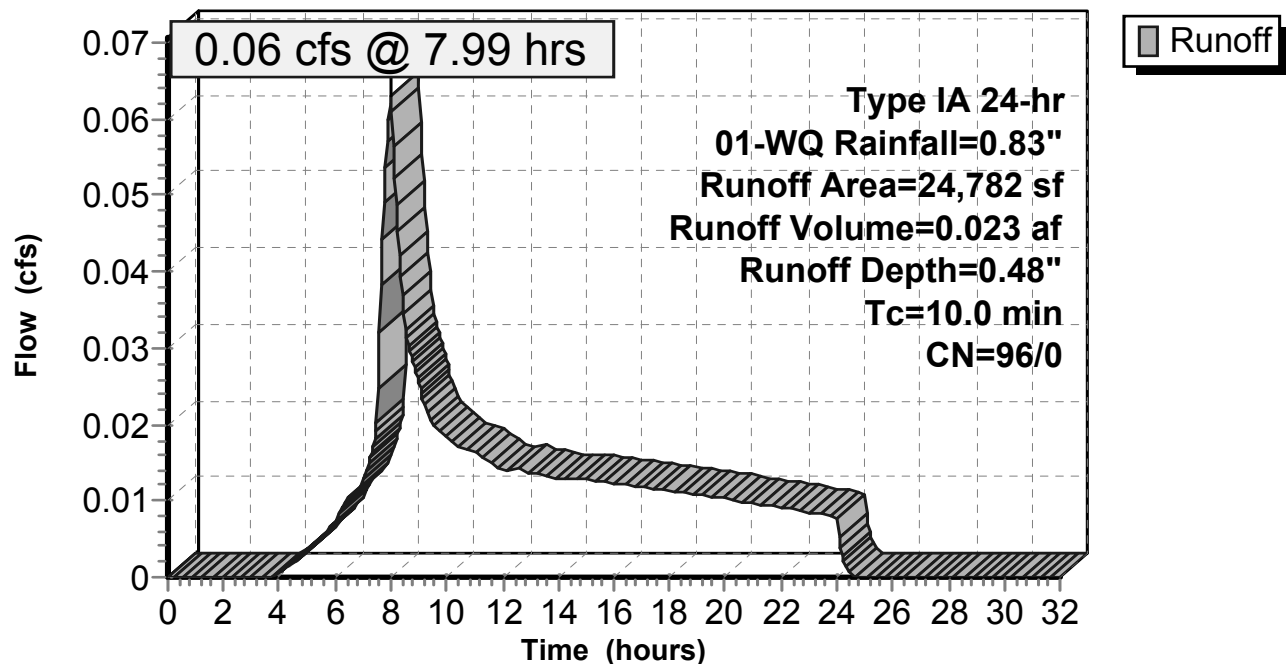
Existing site consists of impervious pavement and gravel. Site slopes to south with stormwater flowing into existing catch basin in Rhododendron Drive.

Runoff = 0.06 cfs @ 7.99 hrs, Volume= 0.023 af, Depth= 0.48"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs  
Type IA 24-hr 01-WQ Rainfall=0.83"

| Area (sf) | CN | Description           |
|-----------|----|-----------------------|
| 24,782    | 96 | Gravel surface, HSG A |
| 24,782    | 96 | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 10.0     |               |               |                   |                | Direct Entry, |

**Subcatchment 11S: Existing Site Stormwater Runoff****Hydrograph**

**Storm Analysis-Florence-2-15-19**

Type IA 24-hr 01-WQ Rainfall=0.83"

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Page 11

**Summary for Pond 9P: Stormwater Planter 1**

Inflow Area = 0.409 ac, 100.00% Impervious, Inflow Depth = 0.63" for 01-WQ event  
 Inflow = 0.06 cfs @ 7.98 hrs, Volume= 0.021 af  
 Outflow = 0.05 cfs @ 7.85 hrs, Volume= 0.021 af, Atten= 18%, Lag= 0.0 min  
 Discarded = 0.05 cfs @ 7.85 hrs, Volume= 0.021 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs  
 Peak Elev= 24.98' @ 8.14 hrs Surf.Area= 744 sf Storage= 65 cf  
 Flood Elev= 30.30' Surf.Area= 1,334 sf Storage= 2,023 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)  
 Center-of-Mass det. time= 43.7 min ( 773.6 - 729.9 )

| Volume | Invert | Avail.Storage | Storage Description                                |
|--------|--------|---------------|----------------------------------------------------|
| #1     | 26.30' | 1,880 cf      | <b>Open Storage (Conic)</b> Listed below (Recalc)  |
| #2     | 24.80' | 89 cf         | <b>Growing Media (Conic)</b> Listed below (Recalc) |
|        |        |               | 885 cf Overall x 10.0% Voids                       |
| #3     | 23.80' | 54 cf         | <b>Rock Chamber (Conic)</b> Listed below (Recalc)  |
|        |        |               | 154 cf Overall x 35.0% Voids                       |
|        |        | 2,023 cf      | Total Available Storage                            |

| Elevation<br>(feet) | Surf.Area<br>(sq-ft) | Inc.Store<br>(cubic-feet) | Cum.Store<br>(cubic-feet) | Wet.Area<br>(sq-ft) |
|---------------------|----------------------|---------------------------|---------------------------|---------------------|
| 26.30               | 154                  | 0                         | 0                         | 154                 |
| 27.30               | 340                  | 241                       | 241                       | 348                 |
| 28.30               | 590                  | 459                       | 700                       | 609                 |
| 30.30               | 590                  | 1,180                     | 1,880                     | 781                 |

| Elevation<br>(feet) | Surf.Area<br>(sq-ft) | Inc.Store<br>(cubic-feet) | Cum.Store<br>(cubic-feet) | Wet.Area<br>(sq-ft) |
|---------------------|----------------------|---------------------------|---------------------------|---------------------|
| 24.80               | 590                  | 0                         | 0                         | 590                 |
| 26.30               | 590                  | 885                       | 885                       | 719                 |

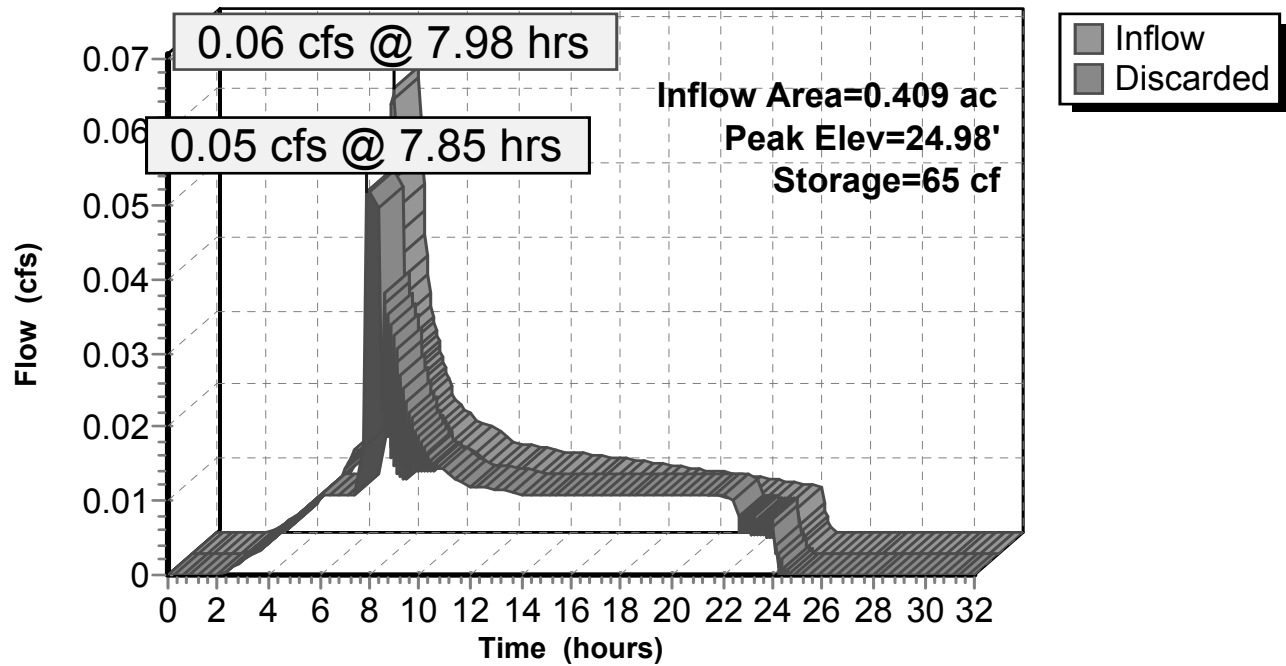
| Elevation<br>(feet) | Surf.Area<br>(sq-ft) | Inc.Store<br>(cubic-feet) | Cum.Store<br>(cubic-feet) | Wet.Area<br>(sq-ft) |
|---------------------|----------------------|---------------------------|---------------------------|---------------------|
| 23.80               | 154                  | 0                         | 0                         | 154                 |
| 24.80               | 154                  | 154                       | 154                       | 198                 |

| Device | Routing   | Invert | Outlet Devices                                       |
|--------|-----------|--------|------------------------------------------------------|
| #1     | Discarded | 23.80' | <b>3.000 in/hr Infiltration over Horizontal area</b> |

**Discarded OutFlow** Max=0.05 cfs @ 7.85 hrs HW=24.84' (Free Discharge)  
 ↑1=Infiltration (Exfiltration Controls 0.05 cfs)

**Pond 9P: Stormwater Planter 1**

**Hydrograph**



**Storm Analysis-Florence-2-15-19**

Type IA 24-hr 02-2 YR Rainfall=3.46"

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Page 13

Time span=0.00-32.00 hrs, dt=0.05 hrs, 641 points

Runoff by SBUH method, Split Pervious/Imperv.

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**Subcatchment3S: THB Coffee Shop**Runoff Area=524 sf 100.00% Impervious Runoff Depth=3.23"  
Tc=10.0 min CN=0/98 Runoff=0.01 cfs 0.003 af**Subcatchment4S: Car Wash Roof**Runoff Area=1,138 sf 100.00% Impervious Runoff Depth=3.23"  
Tc=10.0 min CN=0/98 Runoff=0.02 cfs 0.007 af**Subcatchment5S: North Property**Runoff Area=6,943 sf 100.00% Impervious Runoff Depth=3.23"  
Tc=10.0 min CN=0/98 Runoff=0.12 cfs 0.043 af**Subcatchment6S: Southern Property**Runoff Area=9,200 sf 100.00% Impervious Runoff Depth=3.23"  
Tc=10.0 min CN=0/98 Runoff=0.16 cfs 0.057 af**Subcatchment11S: Existing Site**Runoff Area=24,782 sf 0.00% Impervious Runoff Depth=3.01"  
Tc=10.0 min CN=96/0 Runoff=0.42 cfs 0.143 af**Pond 9P: Stormwater Planter 1**Peak Elev=28.34' Storage=866 cf Inflow=0.31 cfs 0.110 af  
Outflow=0.09 cfs 0.110 af**Total Runoff Area = 0.978 ac Runoff Volume = 0.252 af Average Runoff Depth = 3.10"**  
**58.19% Pervious = 0.569 ac 41.81% Impervious = 0.409 ac**

**Storm Analysis-Florence-2-15-19**

Type IA 24-hr 02-2 YR Rainfall=3.46"

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Page 14

**Summary for Subcatchment 3S: THB Coffee Shop**

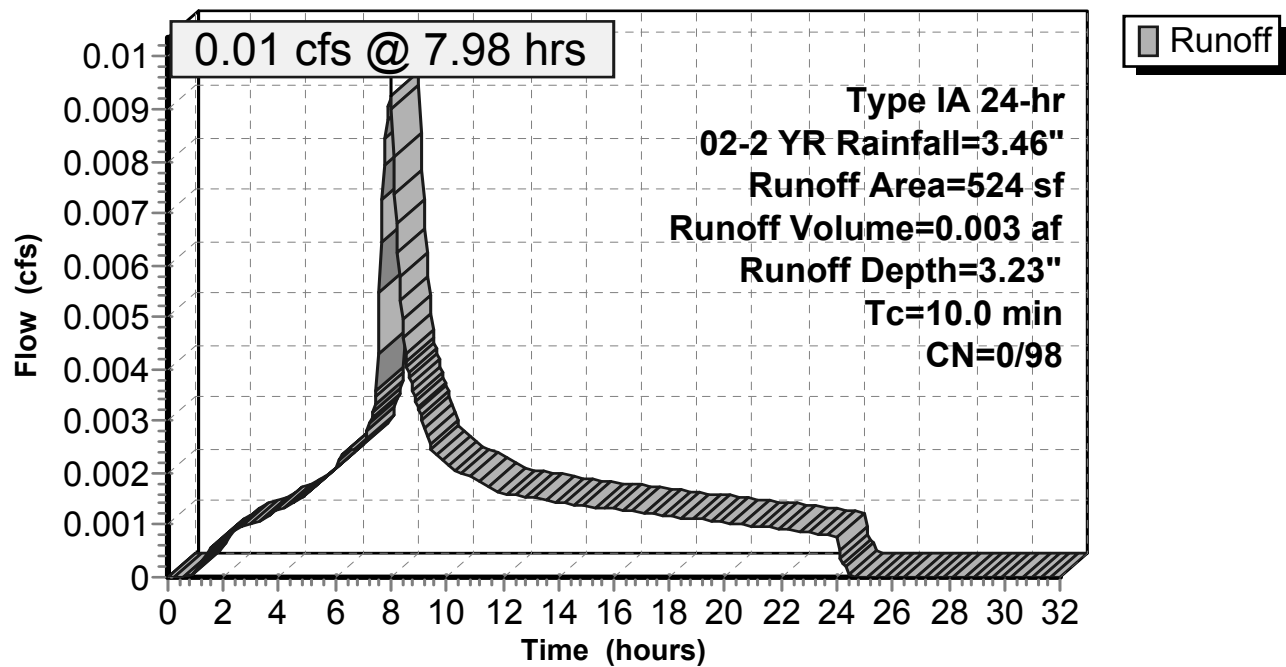
Runoff from THB Coffee Shop Roof. To be collected via roof drains and routed to planter via underground piping.

Runoff = 0.01 cfs @ 7.98 hrs, Volume= 0.003 af, Depth= 3.23"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs  
Type IA 24-hr 02-2 YR Rainfall=3.46"

|   | Area (sf) | CN | Description             |
|---|-----------|----|-------------------------|
| * | 524       | 98 | Impervious Roof         |
|   | 524       | 98 | 100.00% Impervious Area |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description   |
|-------------|------------------|------------------|----------------------|-------------------|---------------|
| 10.0        |                  |                  |                      |                   | Direct Entry, |

**Subcatchment 3S: THB Coffee Shop****Hydrograph**

**Storm Analysis-Florence-2-15-19**

Type IA 24-hr 02-2 YR Rainfall=3.46"

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Page 15

**Summary for Subcatchment 4S: Car Wash Roof**

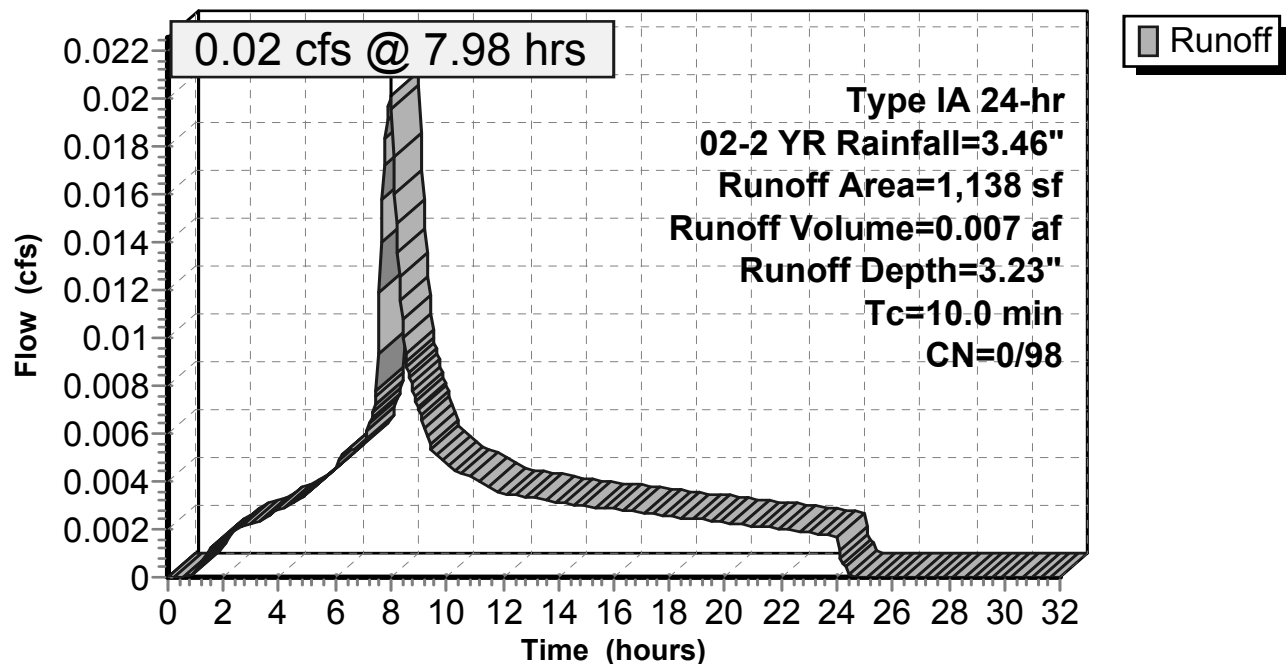
Runoff from Car Wash roof. Runoff to be collected via roof drains and routed to planter via underground piping.

Runoff = 0.02 cfs @ 7.98 hrs, Volume= 0.007 af, Depth= 3.23"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs  
Type IA 24-hr 02-2 YR Rainfall=3.46"

|   | Area (sf) | CN | Description             |
|---|-----------|----|-------------------------|
| * | 1,138     | 98 | Impervious Roof         |
|   | 1,138     | 98 | 100.00% Impervious Area |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description   |
|-------------|------------------|------------------|----------------------|-------------------|---------------|
| 10.0        |                  |                  |                      |                   | Direct Entry, |

**Subcatchment 4S: Car Wash Roof****Hydrograph**

**Storm Analysis-Florence-2-15-19**

Type IA 24-hr 02-2 YR Rainfall=3.46"

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Page 16

**Summary for Subcatchment 5S: North Property Impervious Surface**

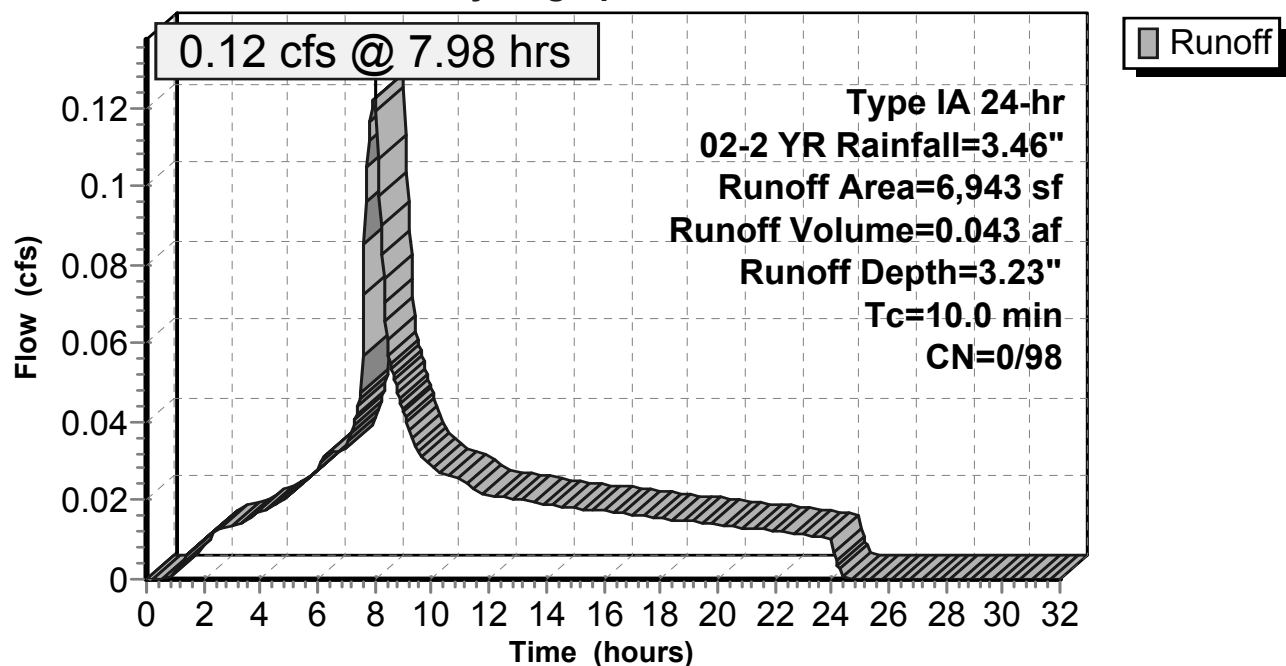
Runoff from Impervious pavement on northern property. To be collected via catch basins and routed underground to planter for treatment.

Runoff = 0.12 cfs @ 7.98 hrs, Volume= 0.043 af, Depth= 3.23"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs  
Type IA 24-hr 02-2 YR Rainfall=3.46"

|   | Area (sf) | CN | Description             |
|---|-----------|----|-------------------------|
| * | 6,943     | 98 | Impervious Pavement     |
|   | 6,943     | 98 | 100.00% Impervious Area |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description   |
|-------------|------------------|------------------|----------------------|-------------------|---------------|
| 10.0        |                  |                  |                      |                   | Direct Entry, |

**Subcatchment 5S: North Property Impervious Surface****Hydrograph**

**Storm Analysis-Florence-2-15-19**

Type IA 24-hr 02-2 YR Rainfall=3.46"

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Page 17

**Summary for Subcatchment 6S: Southern Property Impervious Surface**

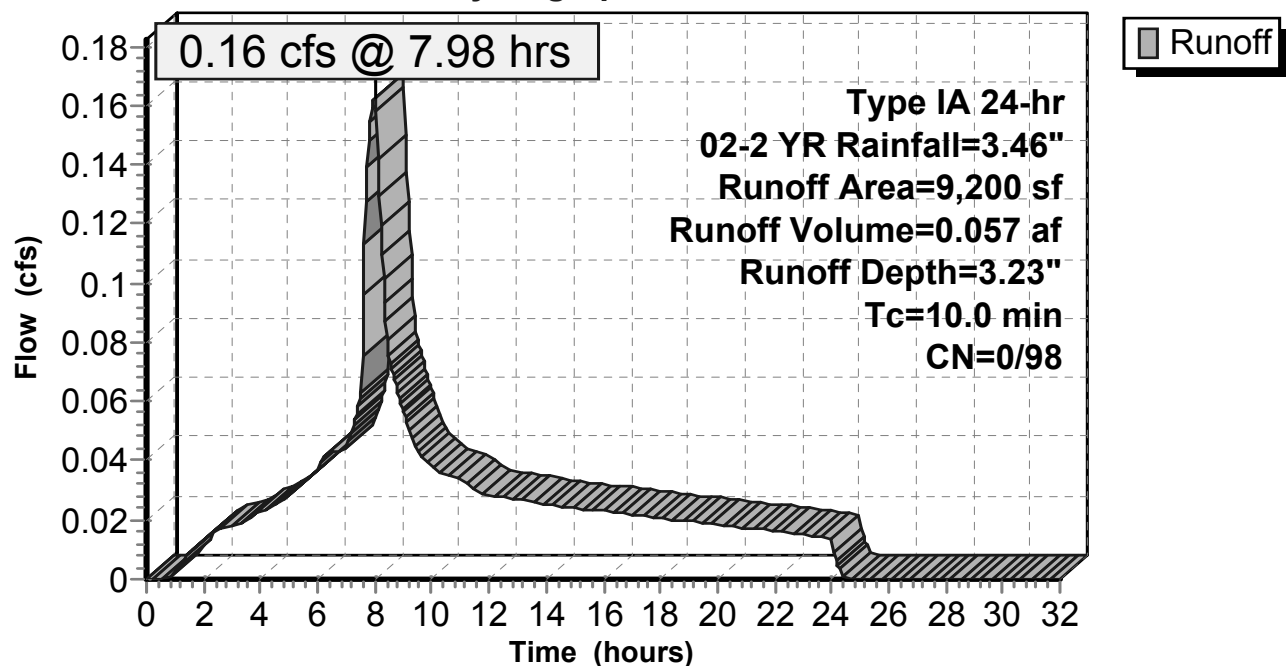
Runoff from impervious surface on southern property. To be collected via catch basins and routed via underground piping to planter for treatment.

Runoff = 0.16 cfs @ 7.98 hrs, Volume= 0.057 af, Depth= 3.23"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs  
Type IA 24-hr 02-2 YR Rainfall=3.46"

|   | Area (sf) | CN | Description             |
|---|-----------|----|-------------------------|
| * | 9,200     | 98 | Impervious Pavement     |
|   | 9,200     | 98 | 100.00% Impervious Area |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description   |
|-------------|------------------|------------------|----------------------|-------------------|---------------|
| 10.0        |                  |                  |                      |                   | Direct Entry, |

**Subcatchment 6S: Southern Property Impervious Surface****Hydrograph**

**Storm Analysis-Florence-2-15-19**

Type IA 24-hr 02-2 YR Rainfall=3.46"

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Page 18

**Summary for Subcatchment 11S: Existing Site Stormwater Runoff**

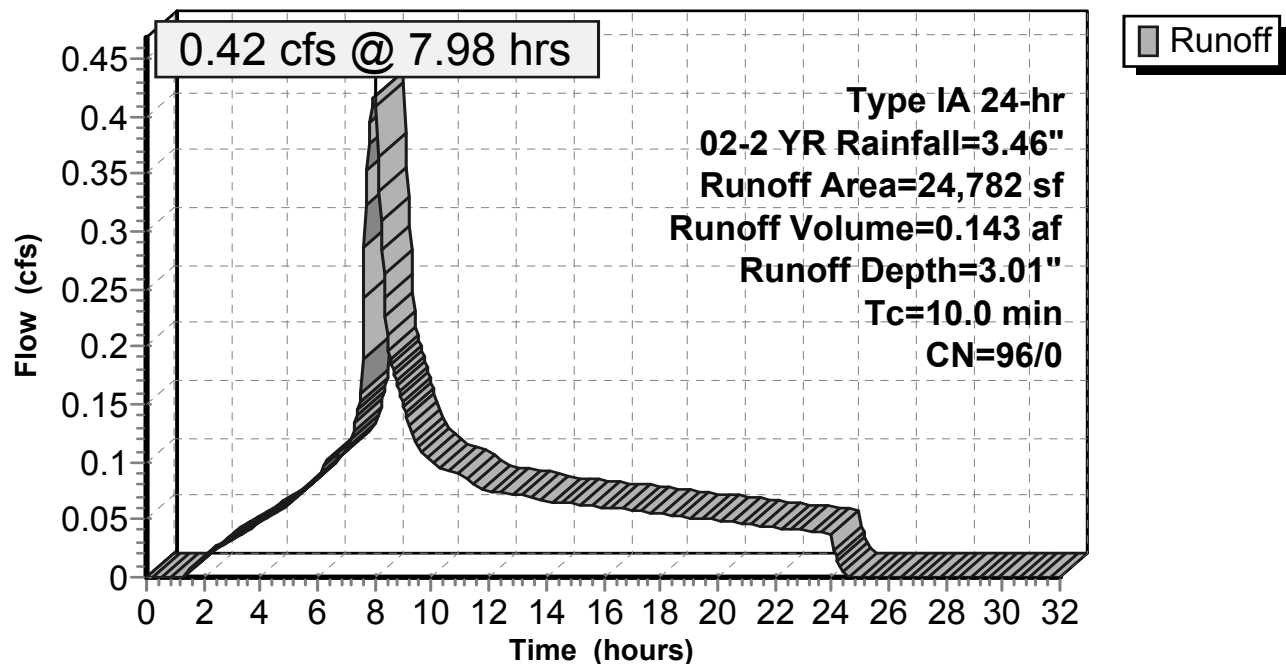
Existing site consists of impervious pavement and gravel. Site slopes to south with stormwater flowing into existing catch basin in Rhododendron Drive.

Runoff = 0.42 cfs @ 7.98 hrs, Volume= 0.143 af, Depth= 3.01"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs  
Type IA 24-hr 02-2 YR Rainfall=3.46"

| Area (sf) | CN | Description           |
|-----------|----|-----------------------|
| 24,782    | 96 | Gravel surface, HSG A |
| 24,782    | 96 | 100.00% Pervious Area |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description   |
|-------------|------------------|------------------|----------------------|-------------------|---------------|
| 10.0        |                  |                  |                      |                   | Direct Entry, |

**Subcatchment 11S: Existing Site Stormwater Runoff****Hydrograph**

**Storm Analysis-Florence-2-15-19**

Type IA 24-hr 02-2 YR Rainfall=3.46"

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Page 19

**Summary for Pond 9P: Stormwater Planter 1**

Inflow Area = 0.409 ac, 100.00% Impervious, Inflow Depth = 3.23" for 02-2 YR event  
 Inflow = 0.31 cfs @ 7.98 hrs, Volume= 0.110 af  
 Outflow = 0.09 cfs @ 8.85 hrs, Volume= 0.110 af, Atten= 71%, Lag= 52.4 min  
 Discarded = 0.09 cfs @ 8.85 hrs, Volume= 0.110 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs

Peak Elev= 28.34' @ 9.27 hrs Surf.Area= 1,334 sf Storage= 866 cf

Flood Elev= 30.30' Surf.Area= 1,334 sf Storage= 2,023 cf

Plug-Flow detention time= 79.0 min calculated for 0.110 af (100% of inflow)

Center-of-Mass det. time= 79.0 min ( 748.4 - 669.3 )

| Volume | Invert | Avail.Storage | Storage Description                                |
|--------|--------|---------------|----------------------------------------------------|
| #1     | 26.30' | 1,880 cf      | <b>Open Storage (Conic)</b> Listed below (Recalc)  |
| #2     | 24.80' | 89 cf         | <b>Growing Media (Conic)</b> Listed below (Recalc) |
|        |        |               | 885 cf Overall x 10.0% Voids                       |
| #3     | 23.80' | 54 cf         | <b>Rock Chamber (Conic)</b> Listed below (Recalc)  |
|        |        |               | 154 cf Overall x 35.0% Voids                       |
|        |        | 2,023 cf      | Total Available Storage                            |

| Elevation<br>(feet) | Surf.Area<br>(sq-ft) | Inc.Store<br>(cubic-feet) | Cum.Store<br>(cubic-feet) | Wet.Area<br>(sq-ft) |
|---------------------|----------------------|---------------------------|---------------------------|---------------------|
| 26.30               | 154                  | 0                         | 0                         | 154                 |
| 27.30               | 340                  | 241                       | 241                       | 348                 |
| 28.30               | 590                  | 459                       | 700                       | 609                 |
| 30.30               | 590                  | 1,180                     | 1,880                     | 781                 |

| Elevation<br>(feet) | Surf.Area<br>(sq-ft) | Inc.Store<br>(cubic-feet) | Cum.Store<br>(cubic-feet) | Wet.Area<br>(sq-ft) |
|---------------------|----------------------|---------------------------|---------------------------|---------------------|
| 24.80               | 590                  | 0                         | 0                         | 590                 |
| 26.30               | 590                  | 885                       | 885                       | 719                 |

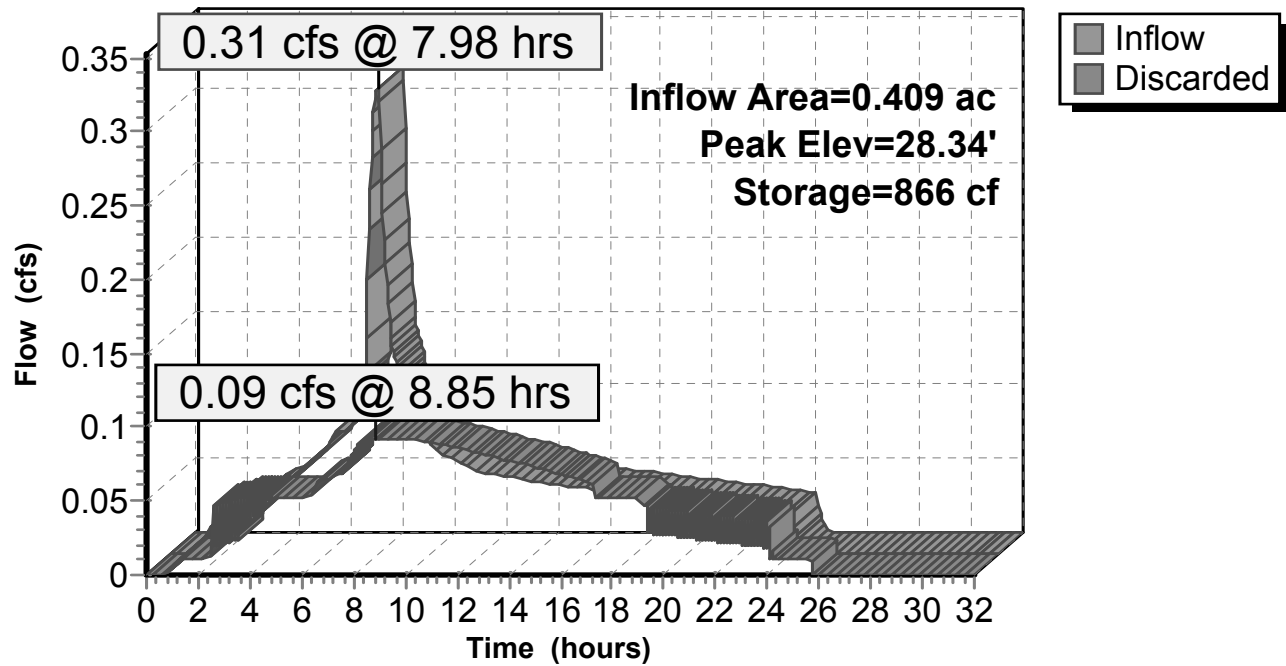
| Elevation<br>(feet) | Surf.Area<br>(sq-ft) | Inc.Store<br>(cubic-feet) | Cum.Store<br>(cubic-feet) | Wet.Area<br>(sq-ft) |
|---------------------|----------------------|---------------------------|---------------------------|---------------------|
| 23.80               | 154                  | 0                         | 0                         | 154                 |
| 24.80               | 154                  | 154                       | 154                       | 198                 |

| Device | Routing   | Invert | Outlet Devices                                       |
|--------|-----------|--------|------------------------------------------------------|
| #1     | Discarded | 23.80' | <b>3.000 in/hr Infiltration over Horizontal area</b> |

**Discarded OutFlow** Max=0.09 cfs @ 8.85 hrs HW=28.31' (Free Discharge)↑ **1=Infiltration** (Exfiltration Controls 0.09 cfs)

**Pond 9P: Stormwater Planter 1**

**Hydrograph**



**Storm Analysis-Florence-2-15-19**

Type IA 24-hr 03-10 YR Rainfall=4.48"

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Page 21

Time span=0.00-32.00 hrs, dt=0.05 hrs, 641 points

Runoff by SBUH method, Split Pervious/Imperv.

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**Subcatchment3S: THB Coffee Shop**Runoff Area=524 sf 100.00% Impervious Runoff Depth=4.24"  
Tc=10.0 min CN=0/98 Runoff=0.01 cfs 0.004 af**Subcatchment4S: Car Wash Roof**Runoff Area=1,138 sf 100.00% Impervious Runoff Depth=4.24"  
Tc=10.0 min CN=0/98 Runoff=0.03 cfs 0.009 af**Subcatchment5S: North Property**Runoff Area=6,943 sf 100.00% Impervious Runoff Depth=4.24"  
Tc=10.0 min CN=0/98 Runoff=0.16 cfs 0.056 af**Subcatchment6S: Southern Property**Runoff Area=9,200 sf 100.00% Impervious Runoff Depth=4.24"  
Tc=10.0 min CN=0/98 Runoff=0.21 cfs 0.075 af**Subcatchment11S: Existing Site**Runoff Area=24,782 sf 0.00% Impervious Runoff Depth=4.02"  
Tc=10.0 min CN=96/0 Runoff=0.55 cfs 0.190 af**Pond 9P: Stormwater Planter 1**Peak Elev=29.29' Storage=1,428 cf Inflow=0.41 cfs 0.145 af  
Outflow=0.09 cfs 0.145 af**Total Runoff Area = 0.978 ac Runoff Volume = 0.335 af Average Runoff Depth = 4.11"**  
**58.19% Pervious = 0.569 ac 41.81% Impervious = 0.409 ac**

**Storm Analysis-Florence-2-15-19**

Type IA 24-hr 03-10 YR Rainfall=4.48"

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Page 22

**Summary for Subcatchment 3S: THB Coffee Shop**

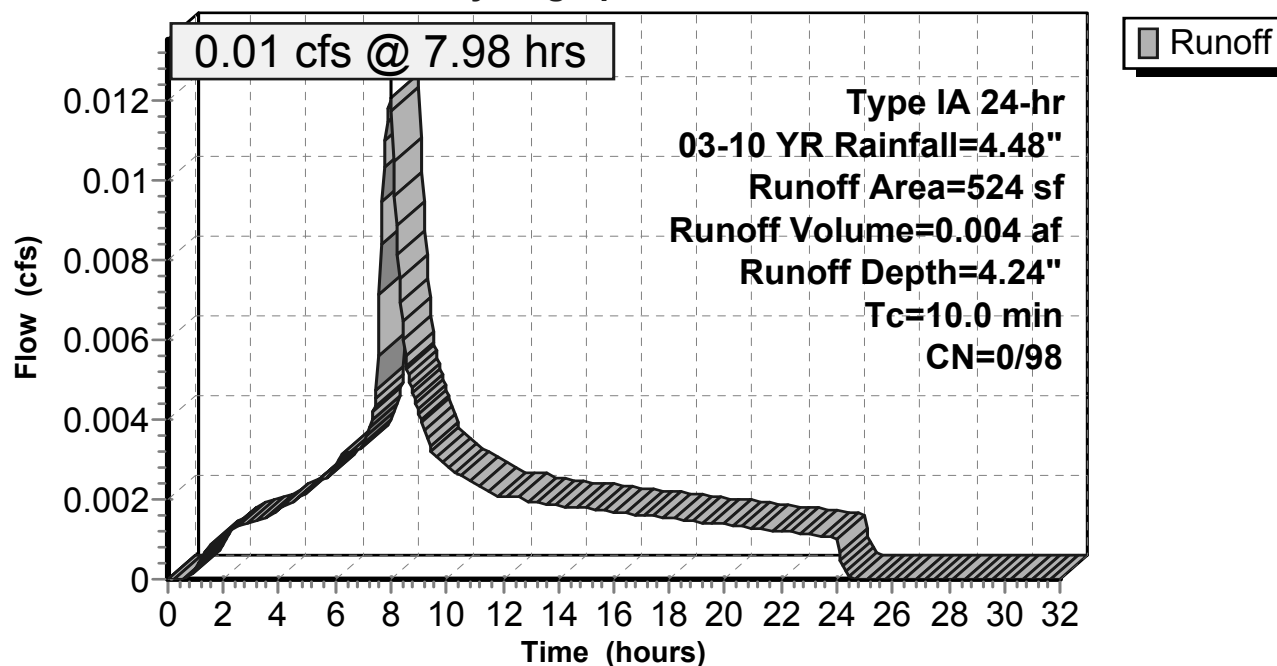
Runoff from THB Coffee Shop Roof. To be collected via roof drains and routed to planter via underground piping.

Runoff = 0.01 cfs @ 7.98 hrs, Volume= 0.004 af, Depth= 4.24"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs  
Type IA 24-hr 03-10 YR Rainfall=4.48"

| Area (sf) | CN | Description             |
|-----------|----|-------------------------|
| * 524     | 98 | Impervious Roof         |
| 524       | 98 | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 10.0     |               |               |                   |                | Direct Entry, |

**Subcatchment 3S: THB Coffee Shop****Hydrograph**

**Storm Analysis-Florence-2-15-19**

Type IA 24-hr 03-10 YR Rainfall=4.48"

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Page 23

**Summary for Subcatchment 4S: Car Wash Roof**

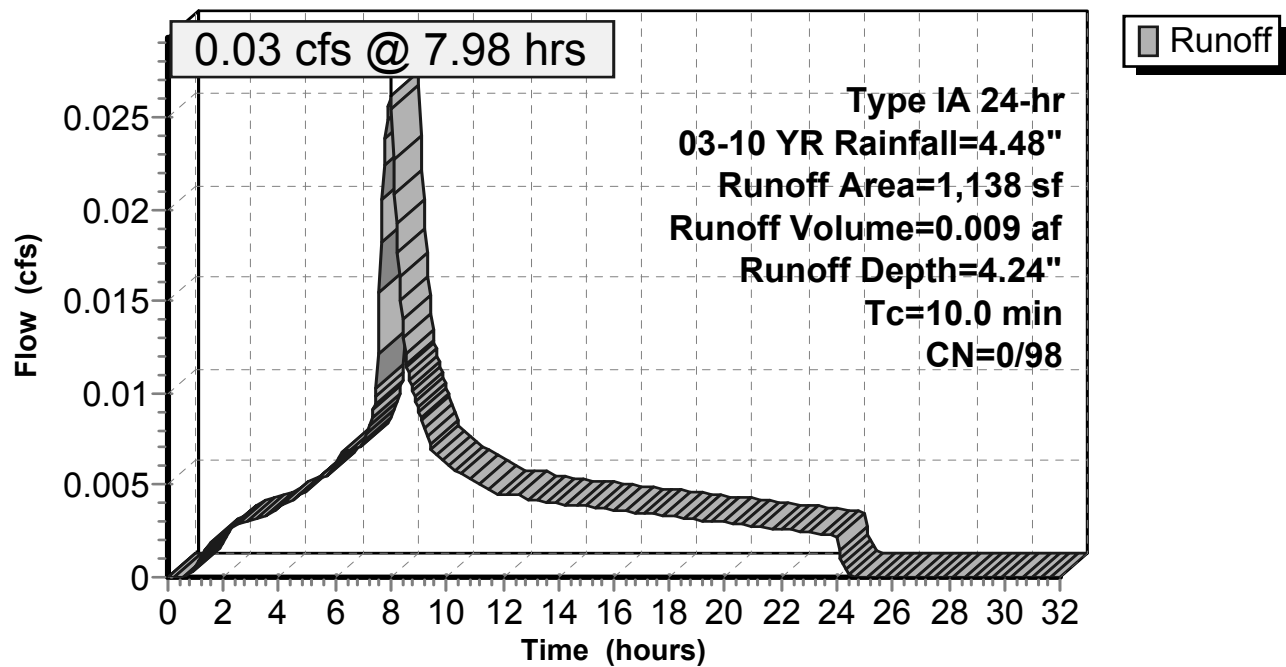
Runoff from Car Wash roof. Runoff to be collected via roof drains and routed to planter via underground piping.

Runoff = 0.03 cfs @ 7.98 hrs, Volume= 0.009 af, Depth= 4.24"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs  
Type IA 24-hr 03-10 YR Rainfall=4.48"

|   | Area (sf) | CN | Description             |
|---|-----------|----|-------------------------|
| * | 1,138     | 98 | Impervious Roof         |
|   | 1,138     | 98 | 100.00% Impervious Area |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description   |
|-------------|------------------|------------------|----------------------|-------------------|---------------|
| 10.0        |                  |                  |                      |                   | Direct Entry, |

**Subcatchment 4S: Car Wash Roof****Hydrograph**

**Storm Analysis-Florence-2-15-19**

Type IA 24-hr 03-10 YR Rainfall=4.48"

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Page 24

**Summary for Subcatchment 5S: North Property Impervious Surface**

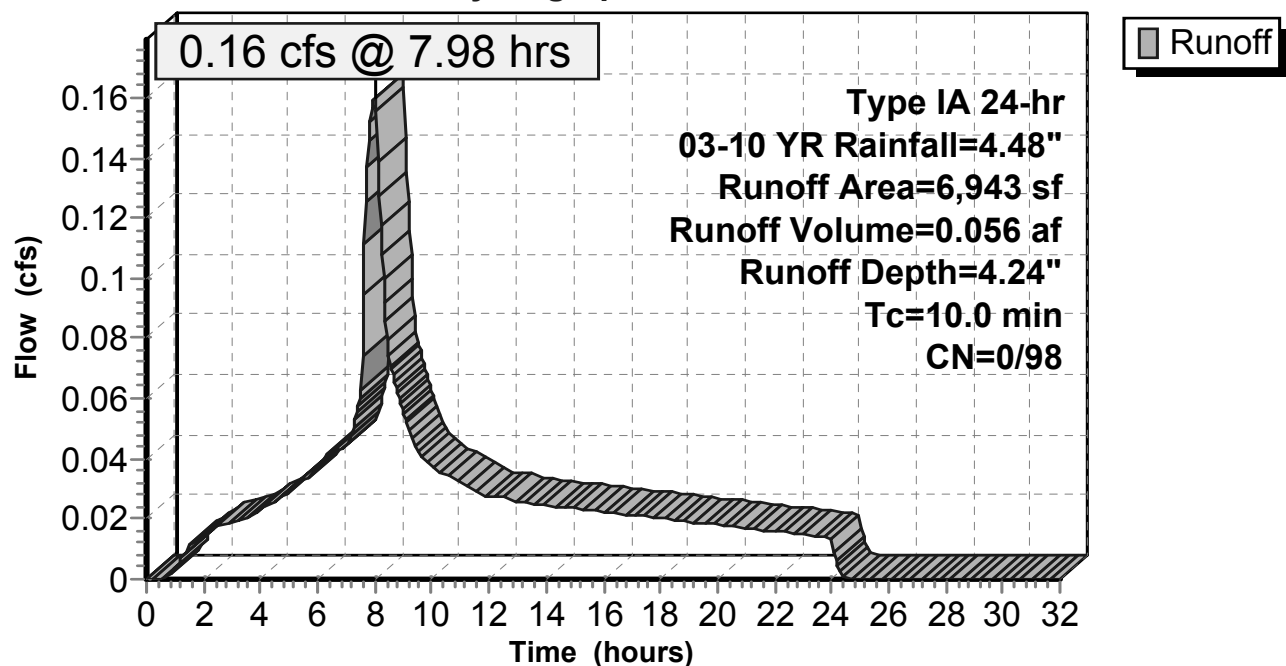
Runoff from Impervious pavement on northern property. To be collected via catch basins and routed underground to planter for treatment.

Runoff = 0.16 cfs @ 7.98 hrs, Volume= 0.056 af, Depth= 4.24"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs  
Type IA 24-hr 03-10 YR Rainfall=4.48"

|   | Area (sf) | CN | Description             |
|---|-----------|----|-------------------------|
| * | 6,943     | 98 | Impervious Pavement     |
|   | 6,943     | 98 | 100.00% Impervious Area |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description   |
|-------------|------------------|------------------|----------------------|-------------------|---------------|
| 10.0        |                  |                  |                      |                   | Direct Entry, |

**Subcatchment 5S: North Property Impervious Surface****Hydrograph**

**Storm Analysis-Florence-2-15-19**

Type IA 24-hr 03-10 YR Rainfall=4.48"

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Page 25

**Summary for Subcatchment 6S: Southern Property Impervious Surface**

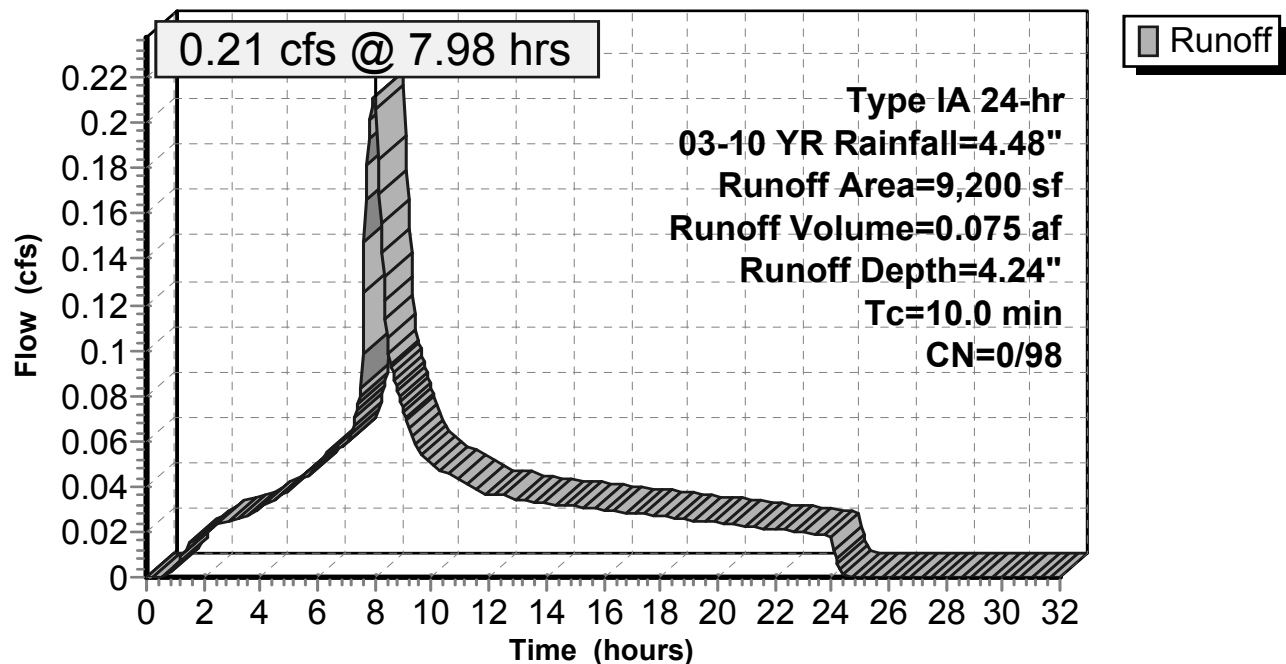
Runoff from impervious surface on southern property. To be collected via catch basins and routed via underground piping to planter for treatment.

Runoff = 0.21 cfs @ 7.98 hrs, Volume= 0.075 af, Depth= 4.24"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs  
Type IA 24-hr 03-10 YR Rainfall=4.48"

|   | Area (sf) | CN | Description             |
|---|-----------|----|-------------------------|
| * | 9,200     | 98 | Impervious Pavement     |
|   | 9,200     | 98 | 100.00% Impervious Area |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description   |
|-------------|------------------|------------------|----------------------|-------------------|---------------|
| 10.0        |                  |                  |                      |                   | Direct Entry, |

**Subcatchment 6S: Southern Property Impervious Surface****Hydrograph**

**Storm Analysis-Florence-2-15-19**

Type IA 24-hr 03-10 YR Rainfall=4.48"

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Page 26

**Summary for Subcatchment 11S: Existing Site Stormwater Runoff**

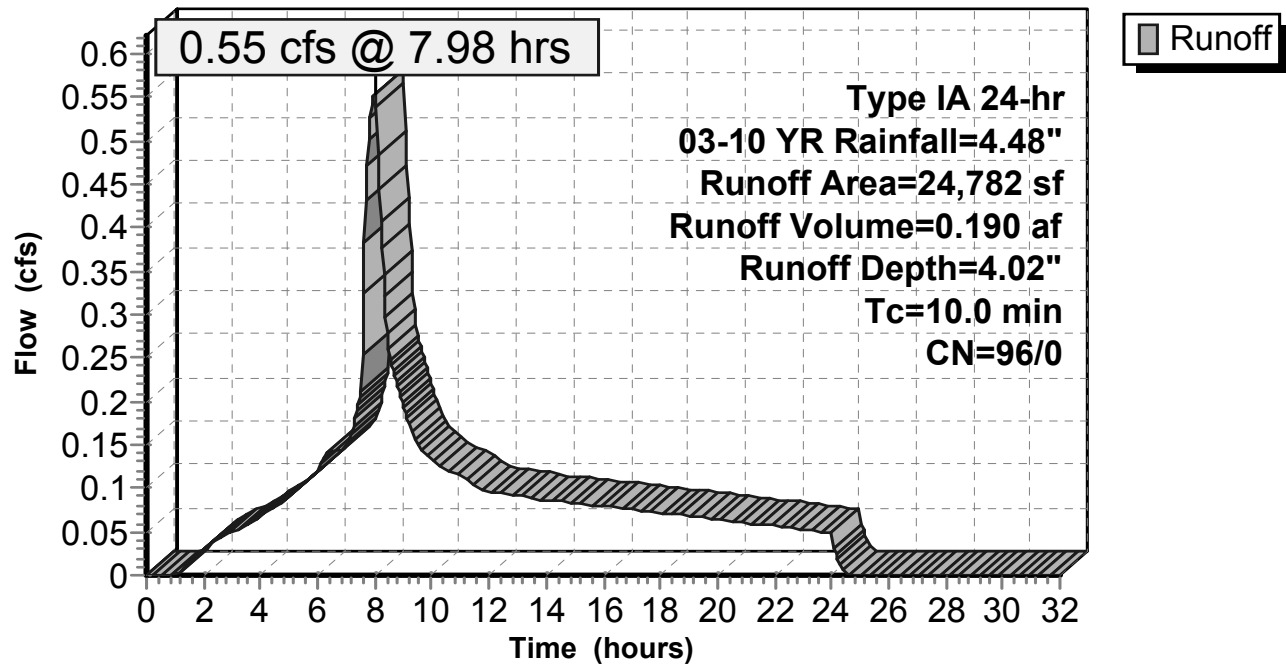
Existing site consists of impervious pavement and gravel. Site slopes to south with stormwater flowing into existing catch basin in Rhododendron Drive.

Runoff = 0.55 cfs @ 7.98 hrs, Volume= 0.190 af, Depth= 4.02"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs  
Type IA 24-hr 03-10 YR Rainfall=4.48"

| Area (sf) | CN | Description           |
|-----------|----|-----------------------|
| 24,782    | 96 | Gravel surface, HSG A |
| 24,782    | 96 | 100.00% Pervious Area |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description   |
|-------------|------------------|------------------|----------------------|-------------------|---------------|
| 10.0        |                  |                  |                      |                   | Direct Entry, |

**Subcatchment 11S: Existing Site Stormwater Runoff****Hydrograph**

**Storm Analysis-Florence-2-15-19**

Type IA 24-hr 03-10 YR Rainfall=4.48"

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Page 27

**Summary for Pond 9P: Stormwater Planter 1**

Inflow Area = 0.409 ac, 100.00% Impervious, Inflow Depth = 4.24" for 03-10 YR event  
 Inflow = 0.41 cfs @ 7.98 hrs, Volume= 0.145 af  
 Outflow = 0.09 cfs @ 8.00 hrs, Volume= 0.145 af, Atten= 77%, Lag= 1.4 min  
 Discarded = 0.09 cfs @ 8.00 hrs, Volume= 0.145 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs  
 Peak Elev= 29.29' @ 10.21 hrs Surf.Area= 1,334 sf Storage= 1,428 cf  
 Flood Elev= 30.30' Surf.Area= 1,334 sf Storage= 2,023 cf

Plug-Flow detention time= 142.3 min calculated for 0.144 af (100% of inflow)  
 Center-of-Mass det. time= 142.2 min ( 805.4 - 663.2 )

| Volume | Invert | Avail.Storage | Storage Description                                |
|--------|--------|---------------|----------------------------------------------------|
| #1     | 26.30' | 1,880 cf      | <b>Open Storage (Conic)</b> Listed below (Recalc)  |
| #2     | 24.80' | 89 cf         | <b>Growing Media (Conic)</b> Listed below (Recalc) |
|        |        |               | 885 cf Overall x 10.0% Voids                       |
| #3     | 23.80' | 54 cf         | <b>Rock Chamber (Conic)</b> Listed below (Recalc)  |
|        |        |               | 154 cf Overall x 35.0% Voids                       |
|        |        | 2,023 cf      | Total Available Storage                            |

| Elevation<br>(feet) | Surf.Area<br>(sq-ft) | Inc.Store<br>(cubic-feet) | Cum.Store<br>(cubic-feet) | Wet.Area<br>(sq-ft) |
|---------------------|----------------------|---------------------------|---------------------------|---------------------|
| 26.30               | 154                  | 0                         | 0                         | 154                 |
| 27.30               | 340                  | 241                       | 241                       | 348                 |
| 28.30               | 590                  | 459                       | 700                       | 609                 |
| 30.30               | 590                  | 1,180                     | 1,880                     | 781                 |

| Elevation<br>(feet) | Surf.Area<br>(sq-ft) | Inc.Store<br>(cubic-feet) | Cum.Store<br>(cubic-feet) | Wet.Area<br>(sq-ft) |
|---------------------|----------------------|---------------------------|---------------------------|---------------------|
| 24.80               | 590                  | 0                         | 0                         | 590                 |
| 26.30               | 590                  | 885                       | 885                       | 719                 |

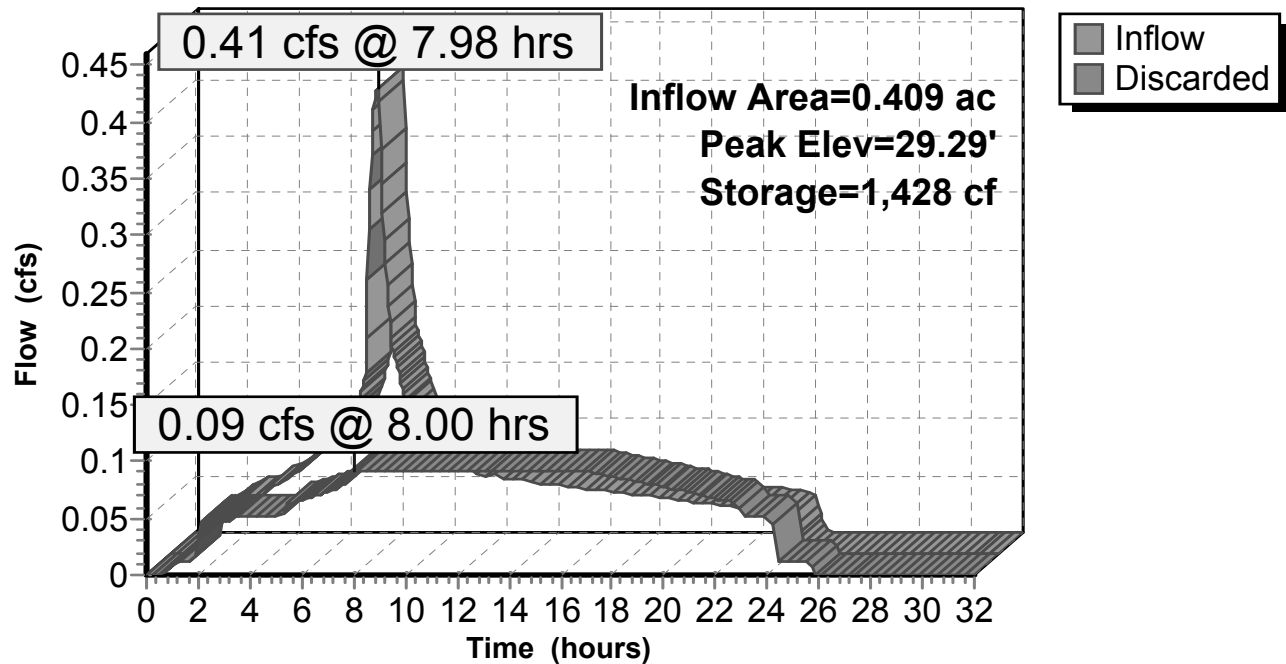
| Elevation<br>(feet) | Surf.Area<br>(sq-ft) | Inc.Store<br>(cubic-feet) | Cum.Store<br>(cubic-feet) | Wet.Area<br>(sq-ft) |
|---------------------|----------------------|---------------------------|---------------------------|---------------------|
| 23.80               | 154                  | 0                         | 0                         | 154                 |
| 24.80               | 154                  | 154                       | 154                       | 198                 |

| Device | Routing   | Invert | Outlet Devices                                       |
|--------|-----------|--------|------------------------------------------------------|
| #1     | Discarded | 23.80' | <b>3.000 in/hr Infiltration over Horizontal area</b> |

**Discarded OutFlow** Max=0.09 cfs @ 8.00 hrs HW=28.36' (Free Discharge)  
 ↑1=Infiltration (Exfiltration Controls 0.09 cfs)

**Pond 9P: Stormwater Planter 1**

**Hydrograph**



**Storm Analysis-Florence-2-15-19**

Type IA 24-hr 04-25 YR Rainfall=5.06"

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Printed 7/24/2019

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Page 29

Time span=0.00-32.00 hrs, dt=0.05 hrs, 641 points

Runoff by SBUH method, Split Pervious/Imperv.

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**Subcatchment3S: THB Coffee Shop**Runoff Area=524 sf 100.00% Impervious Runoff Depth=4.82"  
Tc=10.0 min CN=0/98 Runoff=0.01 cfs 0.005 af**Subcatchment4S: Car Wash Roof**Runoff Area=1,138 sf 100.00% Impervious Runoff Depth=4.82"  
Tc=10.0 min CN=0/98 Runoff=0.03 cfs 0.011 af**Subcatchment5S: North Property**Runoff Area=6,943 sf 100.00% Impervious Runoff Depth=4.82"  
Tc=10.0 min CN=0/98 Runoff=0.18 cfs 0.064 af**Subcatchment6S: Southern Property**Runoff Area=9,200 sf 100.00% Impervious Runoff Depth=4.82"  
Tc=10.0 min CN=0/98 Runoff=0.24 cfs 0.085 af**Subcatchment11S: Existing Site**Runoff Area=24,782 sf 0.00% Impervious Runoff Depth=4.59"  
Tc=10.0 min CN=96/0 Runoff=0.63 cfs 0.218 af**Pond 9P: Stormwater Planter 1**Peak Elev=29.95' Storage=1,817 cf Inflow=0.47 cfs 0.164 af  
Outflow=0.09 cfs 0.164 af**Total Runoff Area = 0.978 ac Runoff Volume = 0.382 af Average Runoff Depth = 4.69"**  
**58.19% Pervious = 0.569 ac 41.81% Impervious = 0.409 ac**

**Storm Analysis-Florence-2-15-19**

Type IA 24-hr 04-25 YR Rainfall=5.06"

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Page 30

**Summary for Subcatchment 3S: THB Coffee Shop**

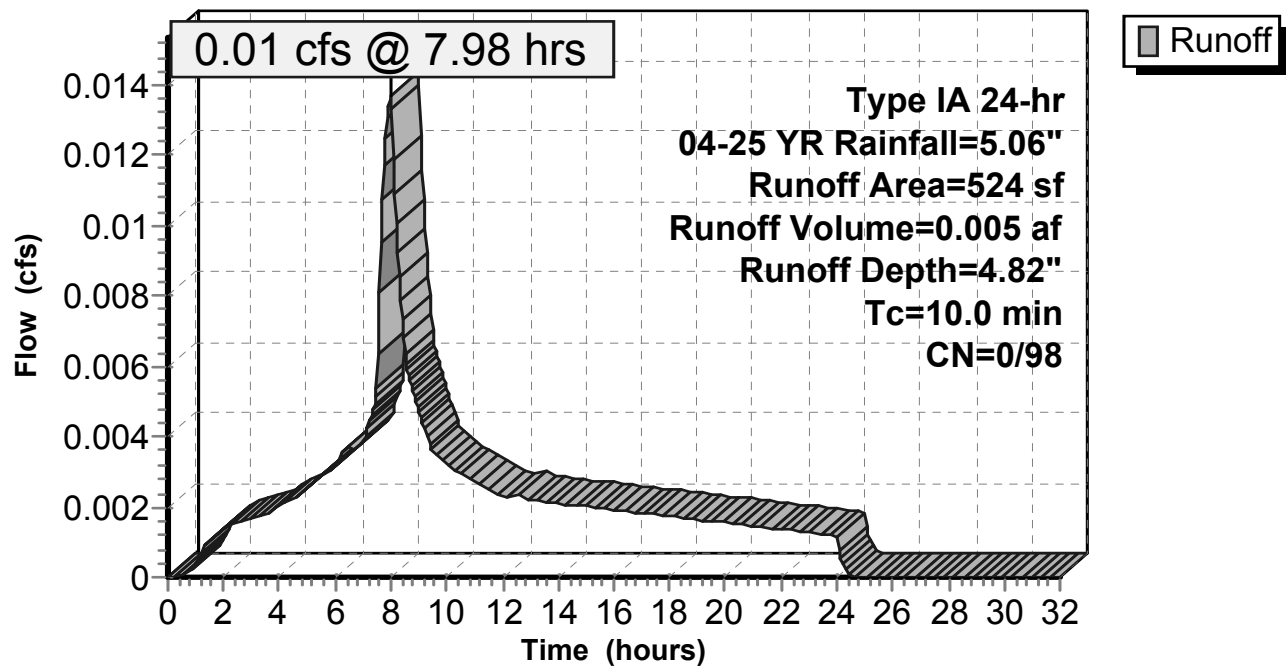
Runoff from THB Coffee Shop Roof. To be collected via roof drains and routed to planter via underground piping.

Runoff = 0.01 cfs @ 7.98 hrs, Volume= 0.005 af, Depth= 4.82"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs  
Type IA 24-hr 04-25 YR Rainfall=5.06"

|   | Area (sf) | CN | Description             |
|---|-----------|----|-------------------------|
| * | 524       | 98 | Impervious Roof         |
|   | 524       | 98 | 100.00% Impervious Area |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description   |
|-------------|------------------|------------------|----------------------|-------------------|---------------|
| 10.0        |                  |                  |                      |                   | Direct Entry, |

**Subcatchment 3S: THB Coffee Shop****Hydrograph**

**Storm Analysis-Florence-2-15-19**

Type IA 24-hr 04-25 YR Rainfall=5.06"

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Page 31

**Summary for Subcatchment 4S: Car Wash Roof**

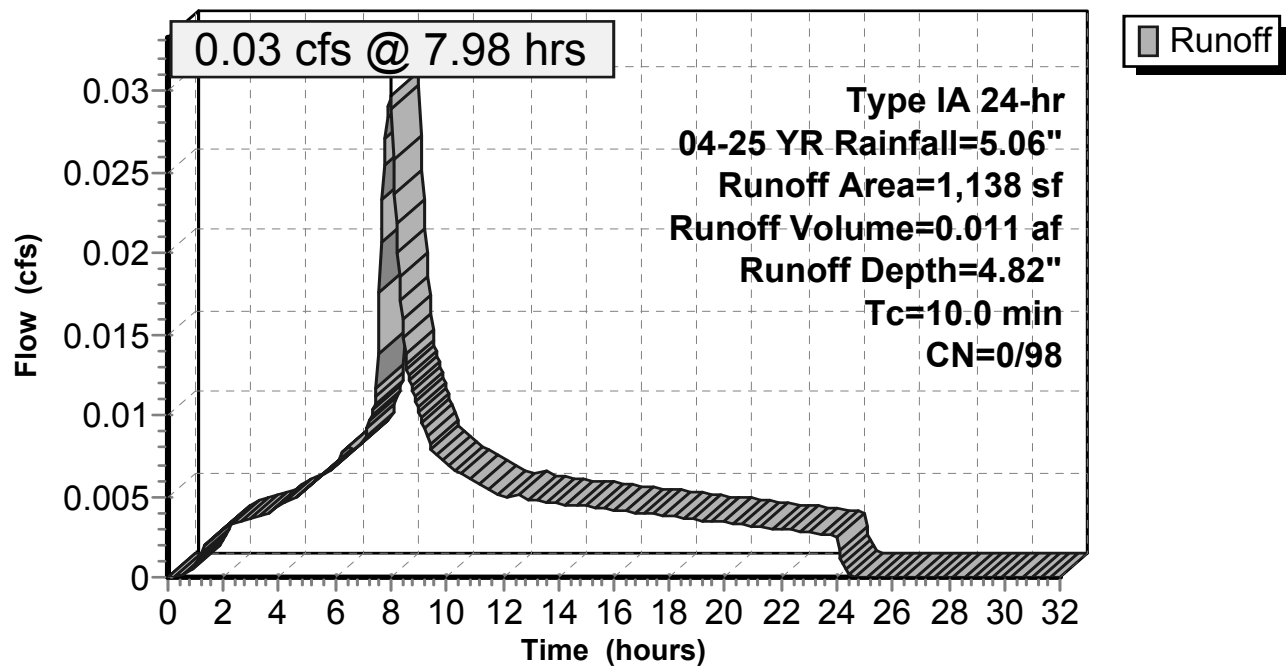
Runoff from Car Wash roof. Runoff to be collected via roof drains and routed to planter via underground piping.

Runoff = 0.03 cfs @ 7.98 hrs, Volume= 0.011 af, Depth= 4.82"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs  
Type IA 24-hr 04-25 YR Rainfall=5.06"

|   | Area (sf) | CN | Description             |
|---|-----------|----|-------------------------|
| * | 1,138     | 98 | Impervious Roof         |
|   | 1,138     | 98 | 100.00% Impervious Area |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description   |
|-------------|------------------|------------------|----------------------|-------------------|---------------|
| 10.0        |                  |                  |                      |                   | Direct Entry, |

**Subcatchment 4S: Car Wash Roof****Hydrograph**

**Storm Analysis-Florence-2-15-19**

Type IA 24-hr 04-25 YR Rainfall=5.06"

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Page 32

**Summary for Subcatchment 5S: North Property Impervious Surface**

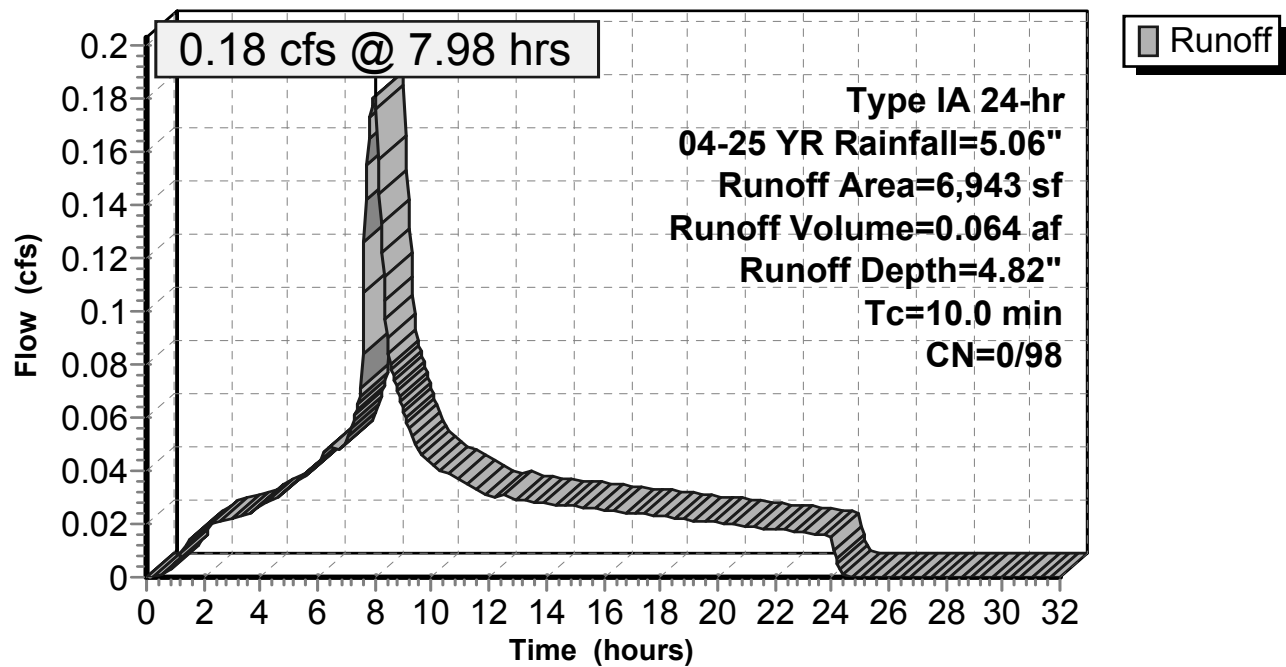
Runoff from Impervious pavement on northern property. To be collected via catch basins and routed underground to planter for treatment.

Runoff = 0.18 cfs @ 7.98 hrs, Volume= 0.064 af, Depth= 4.82"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs  
Type IA 24-hr 04-25 YR Rainfall=5.06"

|   | Area (sf) | CN | Description             |
|---|-----------|----|-------------------------|
| * | 6,943     | 98 | Impervious Pavement     |
|   | 6,943     | 98 | 100.00% Impervious Area |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description   |
|-------------|------------------|------------------|----------------------|-------------------|---------------|
| 10.0        |                  |                  |                      |                   | Direct Entry, |

**Subcatchment 5S: North Property Impervious Surface****Hydrograph**

**Storm Analysis-Florence-2-15-19**

Type IA 24-hr 04-25 YR Rainfall=5.06"

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Page 33

**Summary for Subcatchment 6S: Southern Property Impervious Surface**

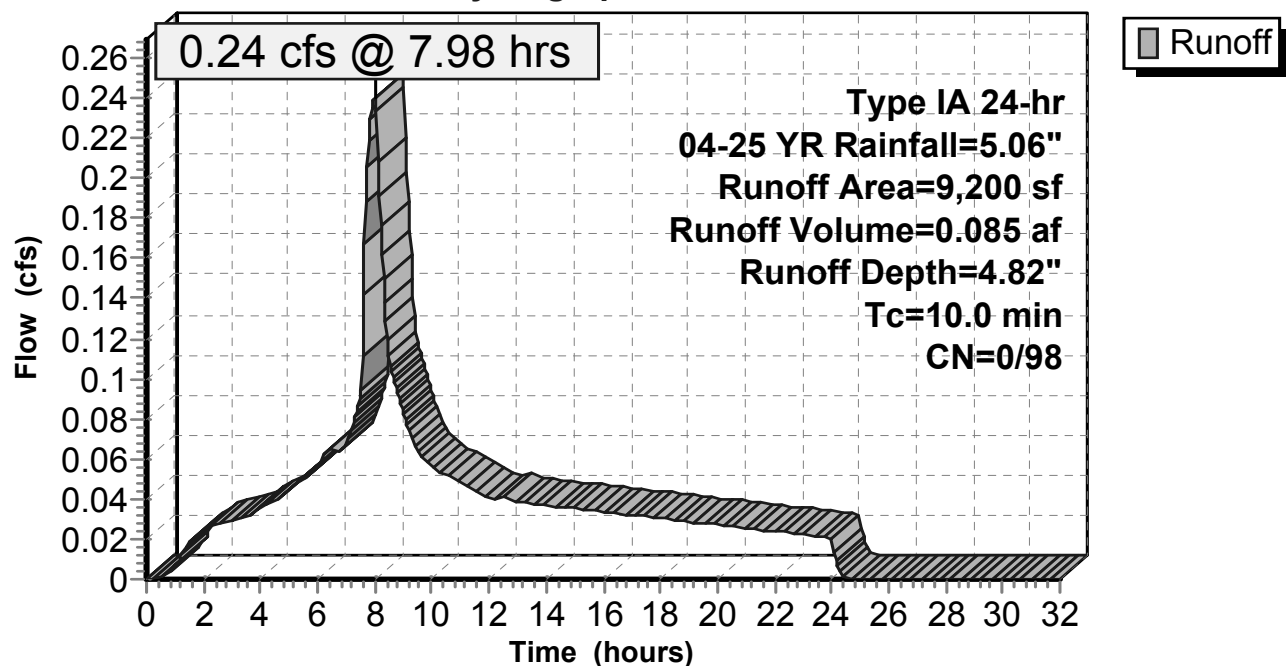
Runoff from impervious surface on southern property. To be collected via catch basins and routed via underground piping to planter for treatment.

Runoff = 0.24 cfs @ 7.98 hrs, Volume= 0.085 af, Depth= 4.82"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs  
Type IA 24-hr 04-25 YR Rainfall=5.06"

| Area (sf) | CN | Description             |
|-----------|----|-------------------------|
| * 9,200   | 98 | Impervious Pavement     |
| 9,200     | 98 | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 10.0     |               |               |                   |                | Direct Entry, |

**Subcatchment 6S: Southern Property Impervious Surface****Hydrograph**

**Storm Analysis-Florence-2-15-19**

Type IA 24-hr 04-25 YR Rainfall=5.06"

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Page 34

**Summary for Subcatchment 11S: Existing Site Stormwater Runoff**

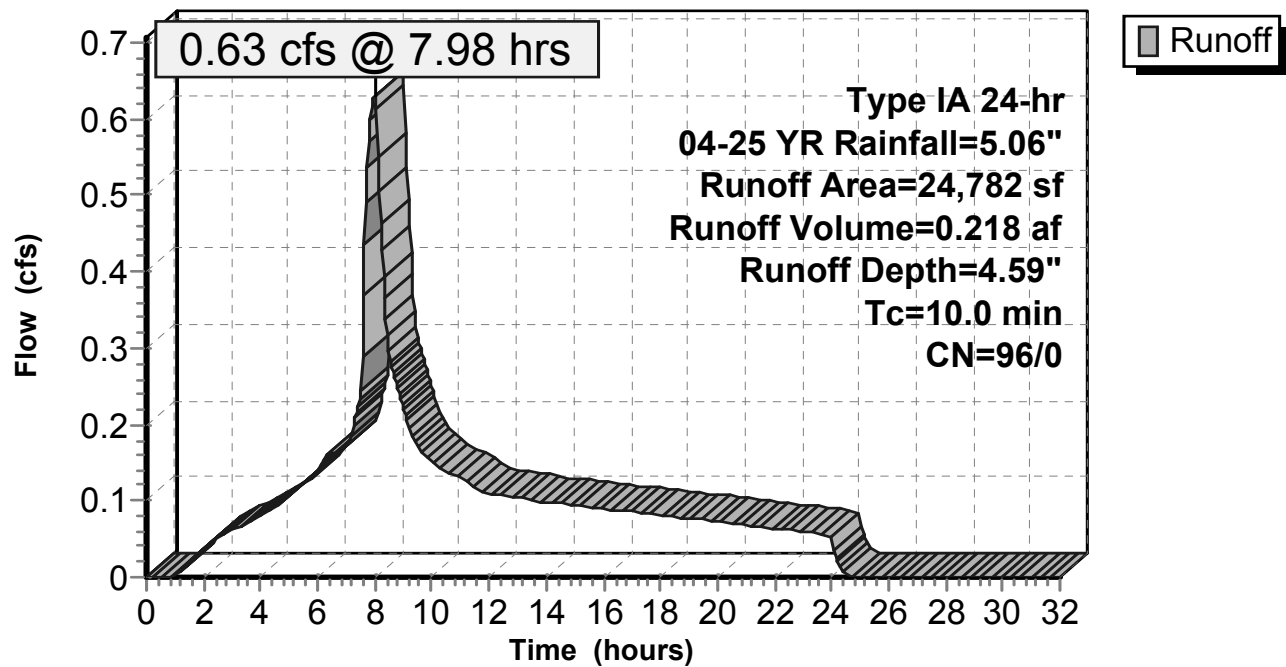
Existing site consists of impervious pavement and gravel. Site slopes to south with stormwater flowing into existing catch basin in Rhododendron Drive.

Runoff = 0.63 cfs @ 7.98 hrs, Volume= 0.218 af, Depth= 4.59"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-32.00 hrs, dt= 0.05 hrs  
Type IA 24-hr 04-25 YR Rainfall=5.06"

| Area (sf) | CN | Description           |
|-----------|----|-----------------------|
| 24,782    | 96 | Gravel surface, HSG A |
| 24,782    | 96 | 100.00% Pervious Area |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description   |
|-------------|------------------|------------------|----------------------|-------------------|---------------|
| 10.0        |                  |                  |                      |                   | Direct Entry, |

**Subcatchment 11S: Existing Site Stormwater Runoff****Hydrograph**

**Storm Analysis-Florence-2-15-19**

Type IA 24-hr 04-25 YR Rainfall=5.06"

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Page 35

**Summary for Pond 9P: Stormwater Planter 1**

Inflow Area = 0.409 ac, 100.00% Impervious, Inflow Depth = 4.82" for 04-25 YR event  
 Inflow = 0.47 cfs @ 7.98 hrs, Volume= 0.164 af  
 Outflow = 0.09 cfs @ 7.85 hrs, Volume= 0.164 af, Atten= 80%, Lag= 0.0 min  
 Discarded = 0.09 cfs @ 7.85 hrs, Volume= 0.164 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.00 hrs, dt= 0.05 hrs  
 Peak Elev= 29.95' @ 11.11 hrs Surf.Area= 1,334 sf Storage= 1,817 cf  
 Flood Elev= 30.30' Surf.Area= 1,334 sf Storage= 2,023 cf

Plug-Flow detention time= 195.1 min calculated for 0.164 af (100% of inflow)  
 Center-of-Mass det. time= 195.1 min ( 855.7 - 660.7 )

| Volume | Invert | Avail.Storage | Storage Description                                |
|--------|--------|---------------|----------------------------------------------------|
| #1     | 26.30' | 1,880 cf      | <b>Open Storage (Conic)</b> Listed below (Recalc)  |
| #2     | 24.80' | 89 cf         | <b>Growing Media (Conic)</b> Listed below (Recalc) |
|        |        |               | 885 cf Overall x 10.0% Voids                       |
| #3     | 23.80' | 54 cf         | <b>Rock Chamber (Conic)</b> Listed below (Recalc)  |
|        |        |               | 154 cf Overall x 35.0% Voids                       |
|        |        | 2,023 cf      | Total Available Storage                            |

| Elevation<br>(feet) | Surf.Area<br>(sq-ft) | Inc.Store<br>(cubic-feet) | Cum.Store<br>(cubic-feet) | Wet.Area<br>(sq-ft) |
|---------------------|----------------------|---------------------------|---------------------------|---------------------|
| 26.30               | 154                  | 0                         | 0                         | 154                 |
| 27.30               | 340                  | 241                       | 241                       | 348                 |
| 28.30               | 590                  | 459                       | 700                       | 609                 |
| 30.30               | 590                  | 1,180                     | 1,880                     | 781                 |

| Elevation<br>(feet) | Surf.Area<br>(sq-ft) | Inc.Store<br>(cubic-feet) | Cum.Store<br>(cubic-feet) | Wet.Area<br>(sq-ft) |
|---------------------|----------------------|---------------------------|---------------------------|---------------------|
| 24.80               | 590                  | 0                         | 0                         | 590                 |
| 26.30               | 590                  | 885                       | 885                       | 719                 |

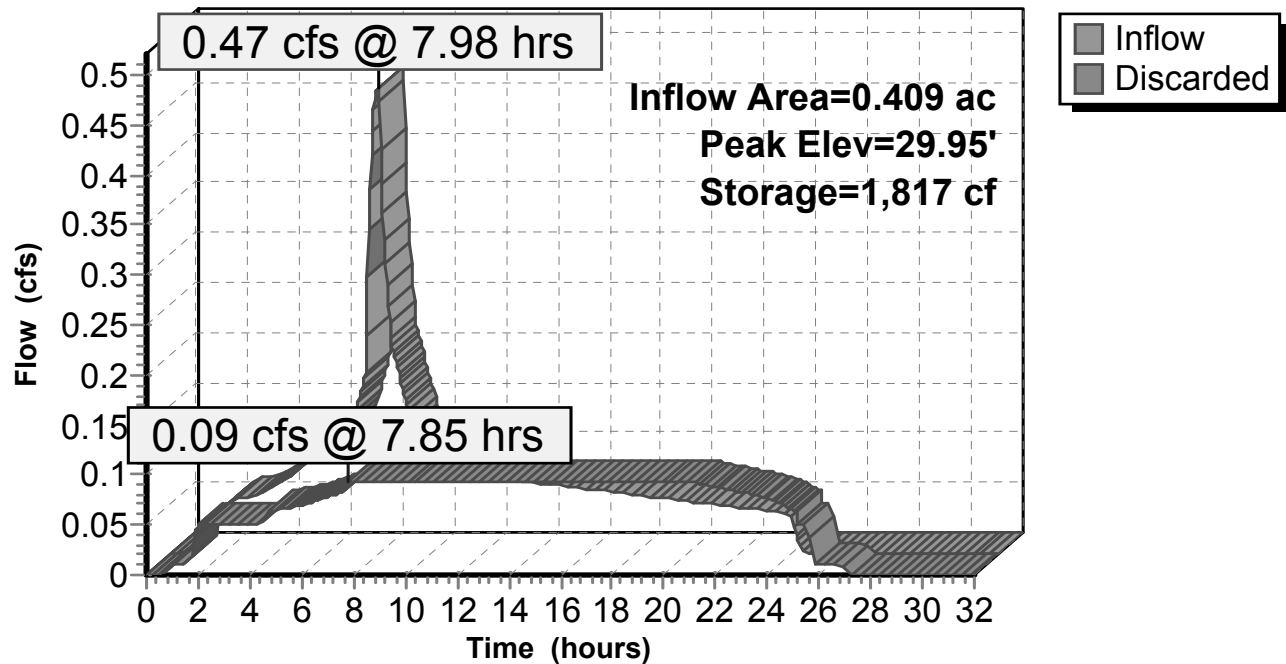
| Elevation<br>(feet) | Surf.Area<br>(sq-ft) | Inc.Store<br>(cubic-feet) | Cum.Store<br>(cubic-feet) | Wet.Area<br>(sq-ft) |
|---------------------|----------------------|---------------------------|---------------------------|---------------------|
| 23.80               | 154                  | 0                         | 0                         | 154                 |
| 24.80               | 154                  | 154                       | 154                       | 198                 |

| Device | Routing   | Invert | Outlet Devices                                       |
|--------|-----------|--------|------------------------------------------------------|
| #1     | Discarded | 23.80' | <b>3.000 in/hr Infiltration over Horizontal area</b> |

**Discarded OutFlow** Max=0.09 cfs @ 7.85 hrs HW=28.36' (Free Discharge)  
 ↑1=Infiltration (Exfiltration Controls 0.09 cfs)

**Pond 9P: Stormwater Planter 1**

**Hydrograph**



**CITY OF FLORENCE  
PLANNING COMMISSION**

**RESOLUTION PC 19 10 CUP 03**

A REQUEST FOR A CONDITIONAL USE PERMIT TO DEVELOP A DRIVE-THRU CAR WASH IN THE MAINSTREET AREA "A" ZONE, ON HWY 101, BETWEEN 6TH AND 5TH STREETS (LOT 06601).

**WHEREAS**, application was made by Sean Randle, for a conditional use permit as required by FCC 10-1-1-4, and FCC 10-1-1-6-3 and FCC 10-4-4; and

**WHEREAS**, the Planning Commission met in a public hearing on October 22, 2019 as outlined in Florence City Code 10-1-1-6-3, to consider the application, evidence in the record, and testimony received, and

**WHEREAS**, the Planning Commission determined per FCC 10-4-6, after review of the application, testimony and evidence in the record, that the application meets the criteria through compliance with certain Conditions of Approval; and

**WHEREAS**, the Planning Commission of the City of Florence finds, based on the Findings of Fact, application, staff recommendation, evidence and testimony presented to them, that the application meets the applicable criteria through compliance with certain Conditions of Approval.

**NOW THEREFORE BE IT RESOLVED** that the Planning Commission of the City of Florence finds, based on the Findings of Fact and the evidence in record that:

The request for a Conditional Use Permit meets the applicable criteria in Florence City Code and the Florence Realization 2020 Comprehensive Plan with the conditions of approval as listed below.

**Conditions of Approval:**

1. Approval for shall be shown on:

| PC 19 10 CUP 03-Car Wash Conditional Use Permit |
|-------------------------------------------------|
| "A" Findings of Fact                            |
| "B-3" Land Use Application & Narrative          |
| "C" Site Plan, A102                             |
| "D" Elevations, A201                            |
| "E" Vicinity Map, A001                          |
| "F" Access Management Plan Figure 2b            |
| "G" Stormwater & Grading Plan, C-1.0            |
| "H" Stormwater Memorandum                       |
| "I" ODOT Referral Comments                      |
| "J" PW Referral Comments                        |

*Resolution PC 19 10 CUP 03  
586 Hwy 101 Drive-Thru Car Wash*

|                                  |
|----------------------------------|
| "K" Civil West Referral Comments |
|----------------------------------|

Findings of Fact attached as Exhibit "A" are incorporated by reference and adopted in support of this decision. Any modifications to the approved plans or changes of use, except those changes relating to Building Codes, will require approval by the Community Development Director or Planning Commission/Design Review Board.

2. Regardless of the content of material presented for this Planning Commission, including application text and exhibits, staff reports, testimony and/or discussions, the applicant agrees to comply with all regulations and requirements of the Florence City Code which are current on this date, EXCEPT where variance or deviation from such regulations and requirements has been specifically approved by formal Planning Commission action as documented by the records of this decision and/or the associated Conditions of Approval. The applicant shall submit to the Community Development Department a signed "Agreement of Acceptance" of all conditions of approval prior to issuance of a building permit.
3. The authorization for a Conditional Use Permit shall be void after October 22, 2020 unless a building permit has been issued and substantial construction has taken place.
4. Prior to issuance of a building permit for this site the applicant is required to sign a non-remonstrance agreement with the City regarding improvements to the driveway access on 6<sup>th</sup> Street. In accordance with the Access Management Plan, the shared driveway along 6<sup>th</sup> Street must be located further to the east. Non-remonstrance will be executed in conjunction with the development of the property to the east and include financial participation and easements as needed for the shared access reconstruction at 6<sup>th</sup> Street.
5. Sidewalk extension on 6th Street will be required in conjunction with the relocation of the 6th Street driveway.
6. Easements are required to implement the Access Management Plan shared access between this development site and the Old School Furniture Site to the east. Once cross easements are made by the eastern property owner, a maintenance agreement would be required.
7. If the sewer service is to come from 5th Street, a private utility easement for the sewer line, to service the car wash, will be necessary, because the line crosses one property to serve the other. (If sewer service for the car wash comes from 6th Street: cutting of the new pavement that is installed as part of Revision Florence will not be allowed without a significant paving patch (full street width to match what was completed by the Revision Florence project).
8. The applicant must modify or clarify their proposed stormwater plan as follows: (1) the proposed catch basin at the southeastern edge of the property, along 5th

Street, must be a storm inlet (catch basins are not allowed). (2) There must be a manhole added at the proposed 90 degree bend connecting the 8-inch storm line running north-south along the eastern boundary of the property, and the proposed line that runs east-west along 5th Street. (3) The City's records show the existing storm line that runs east-west along 5th Street is an 8-inch line; the applicants plan show it as a 10-inch line. It is unclear if that applicant plans to upsize the line, or if their label is incorrect.

9. There is an overhead wire extending from Highway 101 east across Tax Lot 6601 (northern lot). The site plans propose to remove the overhead wire. No other overhead wires are illustrated and labeled. All new utilities will be required to be undergrounded.
10. The 5<sup>th</sup> Street roadway will need to be reconstructed to handle the increased traffic resulting from the new development.
11. Proposed noise levels from the car wash dryer, vacuum cleaners and speakers shall be provided with the Design Review applications. Mitigation measures are recommended to accompany applications.

#### **Informational**

1. A traffic impact study is being performed by Sandow Engineering. The proposed new development will be contingent upon an adequate illustration of circulation into and on the site for the intended uses. The TIS must be completed and submitted with the Design Review application and will be analyzed during Design Review.
2. The applicant is requesting Design Review be conducted separate from the applications for a Conditional Use Permit. There is no policy that disallows this proposed order of review. Construction of the coffee stand and drive-thru carwash will be contingent on completed Design Reviews approved by the Planning Commission.
3. Applicant proposes both a new driveway approach and installation of sidewalks along public right-of-ways. Construction plans for these improvements will be required to be submitted in conjunction with a building permit. Dimensioned plans will be required with Design Review for these improvements.

**ADOPTED BY THE FLORENCE PLANNING COMMISSION/DESIGN REVIEW BOARD**  
the 22<sup>nd</sup> day of October, 2019.

  
\_\_\_\_\_  
JOHN MURPHEY, Chairperson  
Florence Planning Commission

10-23-19  
DATE

**CITY OF FLORENCE  
PLANNING COMMISSION**

**RESOLUTION PC 19 11 CUP 04**

A REQUEST FOR A CONDITIONAL USE PERMIT TO DEVELOP A DRIVE-THRU COFFEE KIOSK IN THE MAINSTREET AREA "A" ZONE, ON HWY 101, BETWEEN 6TH AND 5TH STREETS (LOT 06600).

**WHEREAS**, application was made by Sean Randle, for a conditional use permit as required by FCC 10-1-1-4, and FCC 10-1-1-6-3 and FCC 10-4-4; and

**WHEREAS**, the Planning Commission met in a public hearing on October 22, 2019 as outlined in Florence City Code 10-1-1-6-3, to consider the application, evidence in the record, and testimony received, and

**WHEREAS**, the Planning Commission determined per FCC 10-4-6, after review of the application, testimony and evidence in the record, that the application meets the criteria through compliance with certain Conditions of Approval; and

**WHEREAS**, the Planning Commission of the City of Florence, based on the Findings of Fact, application, staff recommendation, evidence and testimony presented to them, that the application meets the applicable criteria through compliance with certain Conditions of Approval.

**NOW THEREFORE BE IT RESOLVED** that the Planning Commission of the City of Florence finds, based on the Findings of Fact and the evidence in record that:

The request for a Conditional Use Permit meets the applicable criteria in Florence City Code and the Florence Realization 2020 Comprehensive Plan with the conditions of approval as listed below.

**Conditions of Approval:**

1. Approval for shall be shown on:

| PC 19 11 CUP 04-Coffee Drive-Through Conditional Use Permit |
|-------------------------------------------------------------|
| "A" Findings of Fact                                        |
| "B-4" Land Use Application & Narrative                      |
| "C" Site Plan, A102                                         |
| "D" Elevations, A201                                        |
| "E" Vicinity Map, A001                                      |
| "F" Access Management Plan Figure 2b                        |
| "G" Stormwater & Grading Plan, C-1.0                        |
| "H" Stormwater Memorandum                                   |
| "I" ODOT Referral Comments                                  |
| "J" PW Referral Comments                                    |

|                                  |
|----------------------------------|
| "K" Civil West Referral Comments |
|----------------------------------|

Findings of Fact attached as Exhibit "A" are incorporated by reference and adopted in support of this decision. Any modifications to the approved plans or changes of use, except those changes relating to Building Codes, will require approval by the Community Development Director or Planning Commission/Design Review Board.

2. Regardless of the content of material presented for this Planning Commission, including application text and exhibits, staff reports, testimony and/or discussions, the applicant agrees to comply with all regulations and requirements of the Florence City Code which are current on this date, EXCEPT where variance or deviation from such regulations and requirements has been specifically approved by formal Planning Commission action as documented by the records of this decision and/or the associated Conditions of Approval. The applicant shall submit to the Community Development Department a signed "Agreement of Acceptance" of all conditions of approval prior to issuance of a building permit.
3. The authorization for a Conditional Use Permit shall be void after October 22, 2020 unless a building permit has been issued and substantial construction has taken place.
4. Prior to issuance of a building permit for this site the applicant is required to sign a non-remonstrance agreement with the City regarding improvements to the driveway access on 6<sup>th</sup> Street. In accordance with the Access Management Plan, the shared driveway along 6<sup>th</sup> Street must be located further to the east. Non-remonstrance will be executed in conjunction with the development of the property to the east and include financial participation and easements as needed for the shared access reconstruction at 6<sup>th</sup> Street.
5. Sidewalk extension on 6th Street will be required in conjunction with the relocation of the 6th Street driveway.
6. Easements are required to implement the Access Management Plan shared access between this development site and the Old School Furniture Site to the east. Once cross easements are made by the eastern property owner, a maintenance agreement would be required.
7. If the sewer service is to come from 5th Street, a private utility easement for the sewer line, to service the car wash, will be necessary, because the line crosses one property to serve the other. (If sewer service for the car wash comes from 6th Street: cutting of the new pavement that is installed as part of Revision Florence will not be allowed without a significant paving patch (full street width to match what was completed by the Revision Florence project).
8. The applicant must modify or clarify their proposed stormwater plan as follows: (1) the proposed catch basin at the southeastern edge of the property, along 5th Street, must be a storm inlet (catch basins are not allowed). (2) There must be a

manhole added at the proposed 90 degree bend connecting the 8-inch storm line running north-south along the eastern boundary of the property, and the proposed line that runs east-west along 5th Street. (3) The City's records show the existing storm line that runs east-west along 5th Street is an 8-inch line; the applicants plan show it as a 10-inch line. It is unclear if that applicant plans to upsize the line, or if their label is incorrect.

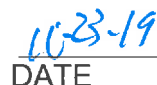
9. There is an overhead wire extending from Highway 101 east across Tax Lot 6601 (northern lot). The site plans propose to remove the overhead wire. No other overhead wires are illustrated and labeled. All new utilities will be required to be undergrounded.
10. The 5th Street roadway will need to be reconstructed to handle the increased traffic resulting from the new development.

#### **Informational**

1. A traffic impact study is being performed by Sandow Engineering. The proposed new development will be contingent upon an adequate illustration of circulation into and on the site for the intended uses. The TIS must be completed and submitted with the Design Review application and will be analyzed during Design Review.
2. The applicant is requesting Design Review be conducted separate from the applications for a Conditional Use Permit. There is no policy that disallows this proposed order of review. Construction of the coffee stand and drive-thru carwash will be contingent on completed Design Reviews approved by the Planning Commission.
3. Applicant proposes both a new driveway approach and installation of sidewalks along public right-of-ways. Construction plans for these improvements will be required to be submitted in conjunction with a building permit. Dimensioned plans will be required with Design Review for these improvements.

**ADOPTED BY THE FLORENCE PLANNING COMMISSION/DESIGN REVIEW BOARD**  
the 22<sup>nd</sup> day of October, 2019.

  
\_\_\_\_\_  
JOHN MURPHEY, Chairperson  
Florence Planning Commission

  
\_\_\_\_\_  
DATE

**CITY OF FLORENCE  
PLANNING COMMISSION**

**RESOLUTION PC 19 08 VAR 01**

A REQUEST FOR A VARIANCE TO ALLOW A FRONT YARD SETBACK OF APPROXIMATELY 65 FEET FROM HWY 101, FOR A DRIVE-THRU CAR WASH PROPOSED BETWEEN 6TH AND 5TH STREETS ON HWY 101 (LOT 06600).

**WHEREAS**, application was made by Sean Randle, for a variance as required by FCC 10-1-1-4, and FCC 10-1-1-6-3 and FCC 10-5-3; and

**WHEREAS**, the Planning Commission met in a public hearing on October 22, 2019 as outlined in Florence City Code 10-1-1-6-3, to consider the application, evidence in the record, and testimony received, and

**WHEREAS**, the Planning Commission of the City of Florence, per FCC 10-5-4 and FCC 10-5-5, finds, based on the Findings of Fact, application, staff recommendation, evidence and testimony presented to them, that the application meets the applicable criteria through compliance with certain Conditions of Approval.

**NOW THEREFORE BE IT RESOLVED** that the Planning Commission of the City of Florence finds, based on the Findings of Fact and the evidence in record that:

The request for an extension of the front yard setback requirement meets the applicable criteria in Florence City Code and the Florence Realization 2020 Comprehensive Plan with the conditions of approval as listed below.

**Conditions of Approval:**

1. Approval for shall be shown on:

|                                        |
|----------------------------------------|
| "A" Findings of Fact                   |
| "B-1" Land Use Application & Narrative |
| "C" Site Plan, A102                    |
| "D" Elevations, A201                   |
| "E" Vicinity Map, A001                 |
| "F" Access Management Plan Figure 2b   |

Findings of Fact attached as Exhibit "A" are incorporated by reference and adopted in support of this decision. Any modifications to the approved plans or changes of use, except those changes relating to Building Codes, will require approval by the Community Development Director or Planning Commission/Design Review Board.

2. Regardless of the content of material presented for this Planning Commission, including application text and exhibits, staff reports, testimony and/or discussions,

the applicant agrees to comply with all regulations and requirements of the Florence City Code which are current on this date, EXCEPT where variance or deviation from such regulations and requirements has been specifically approved by formal Planning Commission action as documented by the records of this decision and/or the associated Conditions of Approval. The applicant shall submit to the Community Development Department a signed "Agreement of Acceptance" of all conditions of approval prior to issuance of a building permit.

- 3-1. At the close of the appeal period, the variance shall become effective. The authorization for a variance shall be void after October 22, 2020 unless a building permit has been issued and substantial construction has taken place.

#### **Informational**

1. A traffic impact study is being performed by Sandow Engineering. The proposed new development will be contingent upon an adequate illustration of circulation into and on the site for the intended uses. The TIS must be completed and submitted with the Design Review application and will be analyzed during Design Review.
2. The applicant is requesting Design Review be conducted separate from the applications for a Conditional Use Permit. There is no policy that disallows this proposed order of review. Construction of the coffee stand and drive-thru carwash will be contingent on completed Design Reviews approved by the Planning Commission.
3. Applicant proposes both a new driveway approach and installation of sidewalks along public right-of-ways. Construction plans for these improvements will be required to be submitted in conjunction with a building permit. Dimensioned plans will be required with Design Review for these improvements.

**ADOPTED BY THE FLORENCE PLANNING COMMISSION/DESIGN REVIEW BOARD**  
the 22<sup>nd</sup> day of October, 2019.

|                                                                                                                                                           |                                     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| <br>_____<br>JOHN MURPHEY, Chairperson<br>Florence Planning Commission | <div>10-23-19</div> <div>DATE</div> |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|

**CITY OF FLORENCE  
PLANNING COMMISSION**

**RESOLUTION PC 19 09 VAR 02**

A REQUEST FOR A VARIANCE TO ALLOW A FRONT YARD SETBACK OF APPROXIMATELY 31 FEET FROM HWY 101, FOR A DRIVE-THRU COFFEE KIOSK PROPOSED BETWEEN 6<sup>TH</sup> AND 5<sup>TH</sup> STREETS ON HWY 101 (LOT 06600).

**WHEREAS**, application was made by Sean Randle, for a variance as required by FCC 10-1-1-4, and FCC 10-1-1-6-3 and FCC 10-5-3; and

**WHEREAS**, the Planning Commission met in a public hearing on October 22, 2019 as outlined in Florence City Code 10-1-1-6-3, to consider the application, evidence in the record, and testimony received, and

**WHEREAS**, the Planning Commission of the City of Florence, per FCC 10-5-4 and FCC 10-5-5, finds, based on the Findings of Fact, application, staff recommendation, evidence and testimony presented to them, that the application meets the applicable criteria through compliance with certain Conditions of Approval.

**NOW THEREFORE BE IT RESOLVED** that the Planning Commission of the City of Florence finds, based on the Findings of Fact and the evidence in record that:

The request for an extension of the front yard setback requirement meets the applicable criteria in Florence City Code and the Florence Realization 2020 Comprehensive Plan with the conditions of approval as listed below.

**Conditions of Approval:**

1. Approval for shall be shown on:

|                                        |
|----------------------------------------|
| "A" Findings of Fact                   |
| "B-2" Land Use Application & Narrative |
| "C" Site Plan, A102                    |
| "D" Elevations, A201                   |
| "E" Vicinity Map, A001                 |
| "F" Access Management Plan Figure 2b   |

Findings of Fact attached as Exhibit "A" are incorporated by reference and adopted in support of this decision. Any modifications to the approved plans or changes of use, except those changes relating to Building Codes, will require approval by the Community Development Director or Planning Commission/Design Review Board.

2. Regardless of the content of material presented for this Planning Commission, including application text and exhibits, staff reports, testimony and/or discussions,

the applicant agrees to comply with all regulations and requirements of the Florence City Code which are current on this date, EXCEPT where variance or deviation from such regulations and requirements has been specifically approved by formal Planning Commission action as documented by the records of this decision and/or the associated Conditions of Approval. The applicant shall submit to the Community Development Department a signed "Agreement of Acceptance" of all conditions of approval prior to issuance of a building permit.

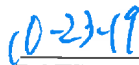
- 3-1. At the close of the appeal period, the variance shall become effective. The authorization for a variance shall be void after October 22, 2020 unless a building permit has been issued and substantial construction has taken place.

### **Informational**

1. A traffic impact study is being performed by Sandow Engineering. The proposed new development will be contingent upon an adequate illustration of circulation into and on the site for the intended uses. The TIS must be completed and submitted with the Design Review application and will be analyzed during Design Review.
2. The applicant is requesting Design Review be conducted separate from the applications for a Conditional Use Permit. There is no policy that disallows this proposed order of review. Construction of the coffee stand and drive-thru carwash will be contingent on completed Design Reviews approved by the Planning Commission.
3. Applicant proposes both a new driveway approach and installation of sidewalks along public right-of-ways. Construction plans for these improvements will be required to be submitted in conjunction with a building permit. Dimensioned plans will be required with Design Review for these improvements.

**ADOPTED BY THE FLORENCE PLANNING COMMISSION/DESIGN REVIEW BOARD**  
the 22<sup>nd</sup> day of October, 2019.

  
\_\_\_\_\_  
JOHN MURPHEY, Chairperson  
Florence Planning Commission

  
\_\_\_\_\_  
DATE