Walla Walla County Community Development Department

310 W. Poplar Street, Suite 200, Walla Walla, WA 99362 / 509-524-2610 Main

File No. SDP22-001
SEPA22-012

NOTICE OF APPLICATION / ODNS

Notice is hereby given on this date, 7/28/2022, that the application/proposal described in this notice has been filed with the Walla Walla County Community Development Department (CDD). The application/proposal may be reviewed at the CDD office at 310 W Poplar St., Suite 200, Walla Walla, WA 99362. All interested persons and parties may comment on the application, appeal rights are outlined in Walla Walla County Code Chapter 14.11

The Department is using the optional threshold determination process under the State Environmental Policy Act (SEPA) authorized by WAC 197-11-355. The application comment period may be the only opportunity to comment on the environmental impacts of the proposal. A copy of the SEPA determination on the proposal may be obtained upon request. The proposal may include mitigation measures under applicable codes, and the project review process may incorporate or require mitigation measures regardless of whether an environmental impact statement is prepared. The SEPA Responsible Official has preliminarily determined that the proposal is:

[ ] categorically exempt under SEPA
[X] subject to SEPA threshold determination requirements and the responsible official expects to issue the following determination: Determination of Non Significance (DNS).

The following identified existing environmental documents are hereby incorporated by reference, and all or part of the documents may be used to evaluate the application/proposal:

- SEPA Checklist (SEPA22-012)
- Transportation Impact Analysis (SEPA22-012)
- Preliminary Plan Set (SDP22-001)
- Project Narrative (SDP22-001)

These documents are located at the office of the CDD at 310 W Poplar St., Suite 200, Walla Walla, WA, and shall be made available for public review during all applicable comment periods on the application/proposal. Preliminary determinations and information contained herein shall not bind the County and are subject to continuing review and modification.

1. File name/Docket #: Burbank Business Park Distribution Warehouse/SDP22-001/SEPA22-012
2. Applicant: SUNCAP PROPERTY GROUP attn Maxwell Mowry, 1125 17TH ST, SUITE 800, DENVER CO, 80202
3. Property Owners: WALLA WALLA PORT OF, 310 A. ST, WALLA WALLA, WA 99362
4. Application filing date: 4/12/2022
5. Date that application was determined to be substantially complete: 7/22/2022
6. Location and description of proposed action: The site is generally located at 2nd Ave and Poplar St in the Burbank Business Park on Lots 135-140 of Binding Site Plan 14/5 (APNs 300802580135, 300802580136, 300802580137, 300802580138, 300802580139, 300802580140). The property is located within the Industrial/Business Park zoning district in the Burbank Urban Growth Area.
   The Applicant proposes to construct a light industrial/distribution warehouse building with offices measuring 201' x 496', approximately 104,000 square feet in area, and a fleet service garage measuring 48' x 65', approximately 3,120 square feet in area.
7. Comprehensive plan map designation for the location: Industrial
8. Zoning map designation for the location: Industrial/Business Park
9. Shoreline Environment: Not Applicable
10. Required Permits: Commercial Building Permit, Critical Areas Permit
11. Development Regulations: Walla Walla County Code Chapters 18 & 17.17
12. Comments on this application must be submitted in writing to the CDD at 310 W Poplar St., Suite 200, Walla Walla, WA 99362. Any person desiring to submit written comments concerning an application, or desiring to receive notification of the final decision concerning the proposal as expeditiously as possible after the issuance of decision, may submit the comments or requests for decisions to the department within fourteen days following the date of final publication of the notice of application. **Comments must be received by the CDD before 5:00 PM on the following date: 8/11/2022.**
13. A public hearing will not be held on the proposal.

14. The decision on this application will be made by the CDD Director.
15. The Director's decision may be appealed by the applicant(s) or parties of record to the Walla Walla County Hearing Examiner pursuant to WWCC 14.11.010 and 14.11.030.

For additional information please contact the CDD at 310 W Poplar St., Suite 200, Walla Walla, WA 99362; 509-524-2610; commdev@co.walla-walla.wa.us.

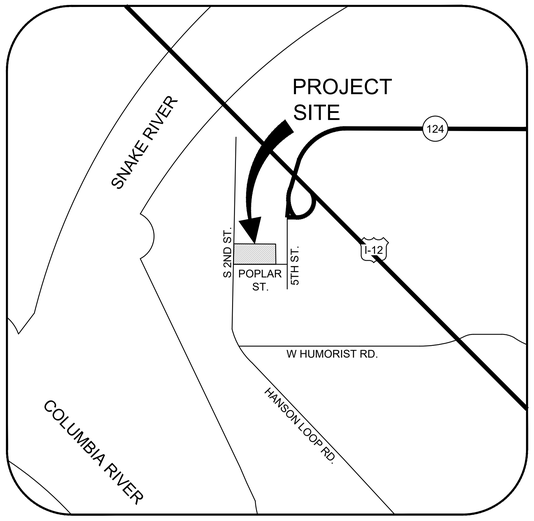
Staff Contact: Jennifer Ballard, Senior Planner, 509-524-2626.

This Notice of Application is required by RCW 36.70B.110 and Walla Walla County Code 14.07.080.

SUNCAP BURBANK INDUSTRIAL PARK

PRELIMINARY SET

BURBANK, WALLA WALLA, WASHINGTON
TAX LOT 300802580135, 300802580136, 300802580137, 300802580138, 300802580139, 300802580140
TOWNSHIP 08 NORTH, RANGE 30 EAST, SECTION 02

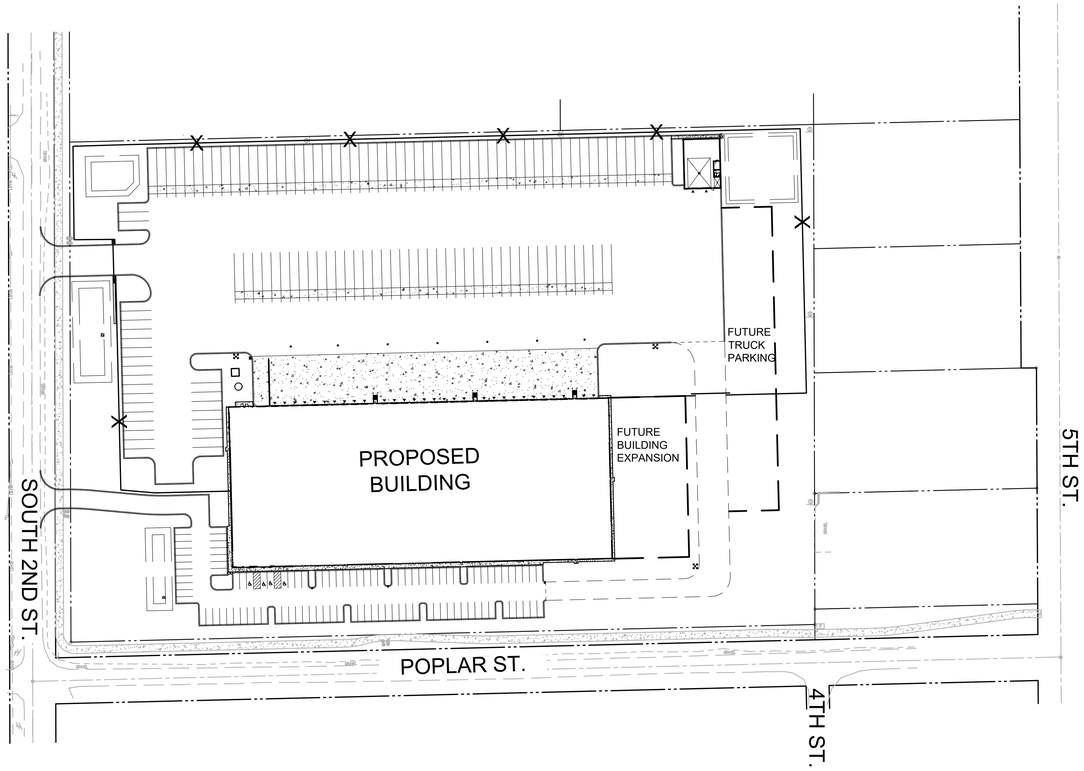


VICINITY MAP
SCALE: NTS

VERTICAL DATUM

VERTICAL DATUM FOR THIS SURVEY APPEARS TO BE NVAD 1988

ELEVATIONS ARE BASED ON SURVEY CONTROL FOR THE BURBANK BUSINESS PARK PROVIDED BY ANDERSON PERRY & ASSOCIATES, INC.



1 C0.00 SITE MAP
SCALE: 1"= 100'

100 0 50 100 200 400
(IN FEET)
1 inch = 100 ft.

SHEET INDEX

OWNER/DEVELOPER

PORT OF WALLA WALLA

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GEOTECHNICAL ENGINEER

NV5

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SURVEYOR

NORTHWEST SURVEYING

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Planning ▪ Engineering

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DESIGN DRIVEN | CLIENT FOCUSED

Client
SUNCAP PROPERTY GROUP

6101 CARNEGIE BLVD
SUITE 180
CHARLOTTE, NC
28209

Project
SUNCAP: BURBANK INDUSTRIAL PARK BTS

REVISION SCHEDULE

Delta	Issued As	Issue Date

SHEET TITLE:
COVER SHEET

DRAWN BY: CME

CHECKED BY: CTL

SHEET
C0.00

JOB NO. **2220091.00**

CIVIL SET 7/7/2022
22209100\DRAWINGS\CIVIL\091-C0.00.DWG CME 07/07/22 16:40 1:80

GENERAL NOTES

1. ALL WORK SHALL CONFORM TO THE CURRENT STANDARD SPECIFICATIONS AND REQUIREMENTS OF THE AUTHORITIES HAVING JURISDICTION AND THE CURRENT AMERICAN PUBLIC WORKS ASSOCIATION STANDARDS FOR PUBLIC WORKS CONSTRUCTION
2. THE SURVEY INFORMATION SHOWN AS A BACKGROUND SCREEN IS BASED ON A SURVEY BY OTHERS AND IS SHOWN FOR REFERENCE ONLY. CONTRACTOR TO VERIFY ALL EXISTING CONDITIONS WITH ITS OWN RESOURCES PRIOR TO START OF ANY CONSTRUCTION
3. CONTRACTOR MUST COMPLY WITH LOCAL AND STATE REQUIREMENTS TO NOTIFY ALL UTILITY COMPANIES FOR LINE LOCATIONS SEVENTY-TWO (72) HOURS (MINIMUM) PRIOR TO START OF WORK. DAMAGE TO UTILITIES SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE
4. CONTRACTOR SHALL ADJUST ALL STRUCTURES IMPACTED BY CONSTRUCTION IMPROVEMENTS TO NEW FINISH GRADES
5. REQUEST BY THE CONTRACTOR FOR CHANGES TO THE PLANS MUST BE APPROVED BY THE ENGINEER.
6. ALL WORK WITHIN THE PUBLIC RIGHT-OF-WAY REQUIRES A PUBLIC WORKS PERMIT
7. CONTRACTOR SHALL PROVIDE THE ENGINEER OF RECORD WITH AS-BUILT PLANS AT LEAST 2 WEEKS PRIOR TO REQUESTING AGENCY SIGN OFF ON PERMITS FOR OCCUPANCY
8. CONTRACTOR SHALL PERFORM ALL THE WORK SHOWN ON THE DRAWINGS AND ALL INCIDENTAL WORK NECESSARY TO COMPLETE THE PROJECT

SITE DEMOLITION NOTES

1. COMPLY WITH ALL APPLICABLE CODES AND REGULATIONS FOR DEMOLITION OPERATIONS AND SAFETY OF ADJACENT STRUCTURES AND THE PUBLIC
2. INSTALL EROSION CONTROL MEASURES AND TEMPORARY FENCING PRIOR TO ANY DEMOLITION ACTIVITIES
3. MITIGATE DUST POLLUTION DUE TO DEMOLITION ACTIVITIES
4. PROTECT ALL EXISTING STRUCTURES, UTILITIES, LANDSCAPE AND OTHER ELEMENTS THAT ARE NOT DESIGNATED FOR REMOVAL. ANY DAMAGE TO EXISTING IMPROVEMENTS NOT DESIGNATED FOR REMOVAL SHALL BE REPAIRED/REPLACED AT THE CONTRACTOR'S EXPENSE
5. DO NOT BEGIN REMOVAL UNTIL ITEMS TO BE SALVAGED OR RELOCATED HAVE BEEN REMOVED AS NOTED. IF REMOVED GRAVEL OR PAVEMENT MATERIALS ARE TO BE RECYCLED OR REUSED, PREVENT CONTAMINATION OF THESE MATERIALS FROM TOPSOIL OR OTHER DELETERIOUS MATERIAL
6. CONTRACTOR SHALL COORDINATE DEMOLITION WORK WITH AFFECTED UTILITY COMPANIES, OBTAIN ALL REQUIRED PERMITS, NOTIFY THEM PRIOR TO STARTING WORK, AND COMPLY WITH THEIR REQUIREMENTS. ADDITIONAL REMOVALS MAY BE REQUIRED BY THE AUTHORITIES HAVING JURISDICTION AND THE CONTRACTOR SHALL CONFIRM ACCORDINGLY PRIOR TO BID. ACCURATELY RECORD ACTUAL LOCATIONS OF CAPPED AND ACTIVE UTILITIES FOR AS-BUILT PURPOSES AND SUPPLY TO OWNER AND ARCHITECT/ENGINEER OF RECORD
7. DEMOLISH AND REMOVE ALL NON-BUILDING SITE STRUCTURES AND ASSOCIATED FEATURES (APPURTENANCES) AS SHOWN. WITHIN AREA OF NEW CONSTRUCTION, REMOVE DESIGNATED WALLS AND FOOTINGS TO 2 FEET MINIMUM BELOW FINISHED GRADE. DEMOLISH ALL PAVED AREAS DESIGNATED FOR REMOVAL DOWN TO NATIVE SUBGRADE
8. ALL VEGETATION AND DELETERIOUS MATERIALS WITHIN THE LIMITS OF WORK SHALL BE STRIPPED AND REMOVED FROM THE SITE PRIOR TO GRADING WORK UNLESS NOTED OTHERWISE (E.G. PROTECTED TREES)
9. IF HAZARDOUS MATERIALS ARE DISCOVERED DURING DEMOLITION, STOP WORK AND IMMEDIATELY NOTIFY THE OWNER AND ARCHITECT/ENGINEER OF RECORD

GRADING NOTES

1. ROUGH GRADING: ROUGH GRADE TO ALLOW FOR DEPTH OF BUILDING SLABS, PAVEMENTS, BASE COURSES, AND TOPSOIL PER DETAILS AND SPECIFICATIONS
2. FINISH GRADING: BRING ALL FINISH GRADES TO LEVELS INDICATED. WHERE GRADES ARE NOT OTHERWISE INDICATED, HARDSCAPE FINISH GRADES ARE TO BE THE SAME AS ADJACENT SIDEWALKS, CURBS, OR THE OBVIOUS GRADE OF ADJACENT STRUCTURE. SOFTSCAPE GRADES (INCLUDING ADDITIONAL DEPTH OF TOPSOIL) SHALL BE SET 6 INCHES BELOW BUILDING FINISHED FLOORS WHERE ABUTTING BUILDINGS, 1-2 INCHES WHERE ABUTTING WALKWAYS OR CURBS, OR MATCHING OTHER SOFTSCAPE GRADES. GRADE TO UNIFORM LEVELS OR SLOPES BETWEEN POINTS WHERE GRADES ARE GIVEN. ROUND OFF SURFACES, AVOID ABRUPT CHANGES IN LEVELS. AT COMPLETION OF JOB AND AFTER BACKFILLING BY OTHER TRADES HAS BEEN COMPLETED, REFILL AND COMPACT AREAS WHICH HAVE SETTLED OR ERODED TO BRING TO FINAL GRADES
3. EXCAVATION: EXCAVATE FOR SLABS, PAVING, AND OTHER IMPROVEMENTS TO SIZES AND LEVELS SHOWN OR REQUIRED. ALLOW FOR FORM CLEARANCE AND FOR PROPER COMPACTION OF REQUIRED BACKFILLING MATERIAL. DAMAGE TO UTILITIES SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE
4. EFFECTIVE EROSION PREVENTION AND SEDIMENT CONTROL IS REQUIRED. EROSION CONTROL DEVICES MUST BE INSTALLED AND MAINTAINED MEETING THE LOCAL AGENCY AND STATE AGENCY REQUIREMENTS. THE AUTHORITIES HAVING JURISDICTION MAY, AT ANY TIME, ORDER CORRECTIVE ACTION AND STOPPAGE OF WORK TO ACCOMPLISH EFFECTIVE EROSION CONTROL
5. DRAINAGE SHALL BE CONTROLLED WITHIN THE WORK SITE AND SHALL BE ROUTED SO THAT ADJACENT PRIVATE PROPERTY, PUBLIC PROPERTY, AND THE RECEIVING SYSTEM ARE NOT ADVERSELY IMPACTED. THE ENGINEER AND/OR AUTHORITIES HAVING JURISDICTION MAY, AT ANY TIME, ORDER CORRECTIVE ACTION AND STOPPAGE OF WORK TO ACCOMPLISH EFFECTIVE DRAINAGE CONTROL
6. SITE TOPSOIL STOCKPILED DURING CONSTRUCTION AND USED FOR LANDSCAPING SHALL BE APPROVED BY THE LANDSCAPE ARCHITECT
7. CONTRACTOR TO REVIEW AND CONFIRM GRADES AT JOIN POINTS, SUCH AS AT DAYLIGHT LIMITS AND BUILDING ENTRANCES, PRIOR TO CONSTRUCTION
8. ACCESSIBLE PARKING SPACES AND LOADING ZONES SHALL BE CONSTRUCTED AT 2% MAXIMUM SLOPE IN ALL DIRECTIONS
9. PEDESTRIAN SIDEWALK CONNECTIONS BETWEEN PUBLIC R.O.W. AND BUILDING ENTRANCES SHALL BE CONSTRUCTED AT AND 2% MAXIMUM CROSS SLOPE AND 5% MAXIMUM LONGITUDINAL SLOPE (8.33% FOR DESIGNATED RAMPS)

UTILITY NOTES

1. ALL WORK SHALL CONFORM TO THE CURRENT EDITIONS OF THE STATE PLUMBING AND BUILDING CODES WITH LOCAL AMENDMENTS AS APPLICABLE ALONG WITH ANY ADDITIONAL REQUIREMENTS OF THE AUTHORITIES HAVING JURISDICTION.
2. THE WORKING DRAWINGS ARE GENERALLY DIAGRAMMATIC. THEY DO NOT SHOW EVERY OFFSET, BEND OR ELBOW REQUIRED FOR INSTALLATION IN THE SPACE PROVIDED. THEY DO NOT SHOW EVERY DIMENSION, COMPONENT PIECE, SECTION, JOINT OR FITTING REQUIRED TO COMPLETE THE PROJECT. ALL LOCATIONS FOR WORK SHALL BE CHECKED AND COORDINATED WITH EXISTING CONDITIONS IN THE FIELD BEFORE BEGINNING CONSTRUCTION. EXISTING UNDERGROUND UTILITIES WITHIN THE LIMITS OF EXCAVATION SHALL BE VERIFIED AS TO CONDITION, SIZE AND LOCATION BY UNCOVERING (POTHOLING), PROVIDING SUCH IS PERMITTED BY THE AUTHORITIES HAVING JURISDICTION, BEFORE BEGINNING CONSTRUCTION. CONTRACTOR TO NOTIFY ENGINEER IF THERE ARE ANY DISCREPANCIES.
3. NOT ALL REQUIRED CLEANOUTS ARE SHOWN ON THE PLANS. PROVIDE CLEANOUTS PER DETAIL AS REQUIRED BY THE AUTHORITIES HAVING JURISDICTION AND THE CURRENT EDITION OF THE STATE PLUMBING CODE (E.G. UNIFORM PLUMBING CODE CHAPTER 7, SECTIONS 707 AND 719, AND CHAPTER 11, SECTION 1101.13).
4. ALL SANITARY AND STORM PIPING IS DESIGNED USING CONCENTRIC PIPE TO PIPE AND WYE FITTINGS, UNLESS OTHERWISE NOTED
5. ALL DOWNSPOUT LEADERS TO BE 6 INCHES AT 2.0% MINIMUM UNLESS NOTED OTHERWISE
6. IF APPLICABLE, PROVIDE 2 INCH PVC DRAIN LINE FROM DOMESTIC WATER METER VAULT AND BACKFLOW PREVENTER VAULT TO THE DOUBLE DETECTOR CHECK VALVE (FIRE) VAULT. PROVIDE 1/3 HP SUMP PUMP AT BASE OF FIRE VAULT AND INSTALL 2 INCH PVC DRAIN LINE WITH BACKFLOW VALVE FROM SUMP PUMP TO DAYLIGHT AT NEAREST CURB. FURNISH 3/4 INCH DIAMETER CONDUIT FROM BUILDING ELECTRICAL ROOM TO FIRE VAULT FOR SUMP PUMP ELECTRICAL SERVICE. NOTE: COORDINATE WITH FIRE PROTECTION CONTRACTOR FOR FLOW SENSOR INSTALLATION AND CONDUIT REQUIREMENTS
7. PREFABRICATED PLUMBING PRODUCTS USED SHALL BE LISTED ON THE IAPMO R&T PRODUCT LISTING DIRECTORY (pld.iapmo.org). ALL SUBMITTALS FOR REVIEW SHALL BE ACCOMPANIED BY MANUFACTURER'S LITERATURE CLEARLY STATING THIS CERTIFICATION AND/OR THE PRODUCT LISTING CERTIFICATE FROM THE IAPMO DIRECTORY WEBSITE
8. IF APPLICABLE, CONTRACTOR TO PROVIDE POWER TO IRRIGATION CONTROLLER. SEE LANDSCAPE PLANS AND SPECIFICATIONS
9. SEE BUILDING PLUMBING DRAWINGS FOR PIPING WITHIN THE BUILDING AND UP TO 5 FEET OUTSIDE THE BUILDING, INCLUDING ANY FOUNDATION DRAINAGE PIPING
10. CONTRACTOR TO MAINTAIN MINIMUM 3 FEET OF COVER OVER ALL UTILITY PIPING AND CONDUITS, UNLESS NOTED OTHERWISE
11. WHERE CONNECTING TO AN EXISTING PIPE, AND PRIOR TO ORDERING MATERIALS, THE CONTRACTOR SHALL EXPOSE THE EXISTING PIPE TO VERIFY THE LOCATION, SIZE, AND ELEVATION. NOTIFY ENGINEER OF ANY DISCREPANCIES
12. CONTRACTOR SHALL SCOPE ALL PRIVATE ONSITE GRAVITY SYSTEM LINES THAT ARE BEING CONNECTED TO FOR PROPOSED SERVICE. SCOPING SHALL OCCUR A MINIMUM OF 72 HOURS PRIOR TO CONSTRUCTION AND THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY DISCREPANCIES WITH AS-BUILT RECORDS/SURVEY FINDINGS OR IF THE EXISTING UTILITIES ARE DAMAGED OR SHOW SIGNS OF SIGNIFICANT DETERIORATION. CONTRACTOR SHALL PROVIDE THE ENGINEER WITH VIDEO RECORDS, ALONG WITH A SKETCH IF THE LOCATIONS DIFFER FROM AS-BUILT PLANS OR SURVEY FINDINGS
13. PRODUCT MATERIAL SUBMITTALS FOR REVIEW BY THE ENGINEER SHALL BE ACCOMPANIED BY A MANUFACTURER'S CERTIFICATION THAT THE PRODUCT IS CAPABLE OF MEETING PERFORMANCE EXPECTATIONS (I.E. - WATERTIGHT, MINIMUM/MAXIMUM BURIAL, PREVENTION OF GROUNDWATER INTRUSION, ETC.) BASED ON THEIR REVIEW OF THE PROJECT PLANS. IN THE ABSENCE OF A MANUFACTURER'S CERTIFICATION, THE GENERAL CONTRACTOR'S REVIEW STAMP SHALL CONSTITUTE THAT THEY HAVE PERFORMED THE NECESSARY REVIEW TO CERTIFY THE PRODUCT'S CONFORMANCE TO PROJECT SPECIFICATIONS AND GENERAL EXPECTATIONS
14. PIPE LENGTHS SHOWN ON PLANS ARE TWO DIMENSIONAL AND MEASURED FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE
15. MANHOLE RIM ELEVATIONS SHOWN ON PLANS REFERENCE THE CENTER OF THE STRUCTURE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RECONCILING LIDS/GRATES/ETC TO THE SLOPES OF THE SITE GRADING
16. MANHOLE OR VAULT RIM ELEVATIONS SHALL BE SET FLUSH IN PAVEMENT AREAS AND 3-4 INCHES ABOVE GRADE IN LANDSCAPE AREAS. RIMS IN PAVEMENT AREAS SHALL BE H-20 TRAFFIC RATED

EROSION CONTROL NOTES

1. HOLD A PRE-CONSTRUCTION MEETING OF PROJECT CONSTRUCTION PERSONNEL THAT INCLUDES THE LOCAL AGENCY INSPECTOR TO DISCUSS EROSION AND SEDIMENT CONTROL MEASURES AND CONSTRUCTION LIMITS
2. EROSION AND SEDIMENT CONTROL MEASURES MUST BE IN PLACE BEFORE ANY LAND IS DISTURBED AND MUST REMAIN IN PLACE AND BE MAINTAINED, REPAIRED, AND PROMPTLY IMPLEMENTED FOLLOWING PROCEDURES ESTABLISHED FOR THE DURATION OF CONSTRUCTION, INCLUDING APPROPRIATE NON-STORMWATER POLLUTION CONTROLS
3. THE EROSION CONTROL DRAWING IS FOR GENERAL GUIDANCE ONLY. THE CONTRACTOR SHALL KEEP THE PLAN CURRENT FOR ALL PHASES OF CONSTRUCTION AND MEET EROSION/SEDIMENT CONTROL REQUIREMENTS OF ALL AUTHORITIES HAVING JURISDICTION (AHJ). ALL EROSION CONTROL MEASURES SHALL CONFORM TO THE REQUIREMENTS OF THE AHJ, THE PLANS, AND THE PROJECT SPECIFICATIONS
4. CONSTRUCT EROSION CONTROL IN CONJUNCTION WITH ALL CLEARING AND GRADING ACTIVITIES, AND IN SUCH A MANNER AS TO ENSURE THAT SEDIMENT AND SEDIMENT LADEN WATER DO NOT ENTER THE DRAINAGE SYSTEM, ROADWAYS, OR VIOLATE APPLICABLE WATER STANDARDS
5. METHOD OF INSTALLATION FOR SEDIMENT FENCE SHALL NOT CAUSE DAMAGE TO VEGETATED SLOPE EXCEPT AT POINT OF INSTALLATION. SIDECAST MATERIAL SHALL BE KEPT TO A MINIMUM AND SHALL BE TO THE UPHILL SIDE OF THE SEDIMENT FENCE. THE FENCE SHALL BE INSTALLED AT LEAST 4 FEET FROM ADJACENT TREES
6. ALL EROSION CONTROL DEVICES SHALL BE EXAMINED AND REPAIRED AFTER EACH STORM OCCURRENCE, AND INLETS SHALL BE CLEANED OF SEDIMENT WHENEVER NECESSARY
7. HYDROSEED AND MULCH ALL DISTURBED AREAS UPON COMPLETION OF CONSTRUCTION OR AS DIRECTED BY THE AUTHORITIES HAVING JURISDICTION
8. THE CONTRACTOR SHALL LIMIT CONSTRUCTION TRAFFIC TO PAVED AREAS TO PREVENT AND MINIMIZE SEDIMENT TRACKING OFF-SITE. CONTRACTOR SHALL SWEEP OR VACUUM PAVED AREAS IF SEDIMENT ACCUMULATION OCCURS. DO NOT TRACK SEDIMENT TO THE PUBLIC STREET OR NEIGHBORING PROPERTIES
9. INSTALL TEMPORARY EROSION PREVENTION SUCH AS JUTE NETTING OR GEOTEXTILE ON DISTURBED AREAS STEEPER THAN 4H:1V
10. STAGING AND STOCKPILE AREAS TO BE DETERMINED BY CONTRACTOR AND ADJUSTED TO ACCOMMODATE THE PROGRESS OF CONSTRUCTION

SITE WORK NOTES

1. ALL CURB RADII TO BE 3 FEET UNLESS NOTED OTHERWISE
2. STAIR RISERS AND TREADS SHALL BE CONFORMANT WITH THE REQUIREMENTS OF THE AUTHORITIES HAVING JURISDICTION AND THE CURRENT EDITION OF THE STATE BUILDING CODE (E.G. INTERNATIONAL BUILDING CODE, CHAPTER 10, SECTION 1011.5)
3. WHEREVER A PEDESTRIAN WALKING PATH IS WITHIN 36 INCHES OF A VERTICAL DROP OF 30 INCHES OR GREATER, GUARDRAIL SHALL BE INSTALLED CONFORMANT WITH THE REQUIREMENTS OF THE AUTHORITIES HAVING JURISDICTION AND THE CURRENT EDITION OF THE STATE BUILDING CODE (E.G. INTERNATIONAL BUILDING CODE, CHAPTER 10, SECTION 1015)
4. PAVEMENTS WITH DEPRESSIONS OR BIRD BATHS, UNCONTROLLED CRACKS WHICH ARE VISIBLE WITHOUT MAGNIFICATION, AND/OR BONY OR OPEN GRADED SURFACES (EXCEPTING POROUS PAVEMENTS) WILL BE CONSIDERED UNACCEPTABLE. CONTRACTOR SHALL REVIEW PAVEMENT REPAIR OR REPLACEMENT ALTERNATIVES WITH THE OWNER AND ENGINEER PRIOR TO CONDUCTING THE REPAIR WORK.

LEGEND

	EXISTING	PROPOSED
RIGHT-OF-WAY LINE		
BOUNDARY LINE		
CENTERLINE		
PROPERTY LINE		
CURB		
WETLAND BOUNDARY	WTB	
EDGE OF PAVEMENT		
EASEMENT		
FENCE LINE		
GRAVEL EDGE		
POWER LINE	PWR	
OVERHEAD WIRE	OHW	
TRAFFIC SIGNAL WIRE	TS	
TELEPHONE LINE	TEL	
TELEVISION LINE	TV	
GAS LINE	GAS	
STORM SEWER LINE	STM	
SANITARY SEWER LINE	SAN	
WATER LINE	WAT	
TREE		
CONTROL MANHOLE		
DRYWELL		
FIRE DEPARTMENT CONNECTION	FDC	
FIRE HYDRANT		
WATER BLOWOFF/AIR RELEASE	WBO	
WATER METER	WM	
WATER VALVE	WV	
BACKFLOW PREVENTOR	BFP	
WATER VAULT	WV	
MONITORING WELL	MW	
STORM/SANITARY MANHOLE	S M	
STORM SEWER CATCH BASIN		
SANITARY CLEAN OUT	CO	
GAS VALVE	GV	
GAS METER	GM	
SIGN		
MAIL BOX	MB	
FOUND SURVEY MONUMENT		
GUY WIRE ANCHOR		
UTILITY POLE		
HVAC UNIT	AC	
POWER VAULT	P	
ELECTRICAL METER	EM	
POWER JUNCTION BOX	EB	
POWER TRANSFORMER	TPR	
LIGHT POLE		
TELEPHONE/TELEVISION VAULT	T	
TELEPHONE/TELEVISION JUNCTION BOX		
TELEPHONE/TELEVISION RISER	TR	
SIGNAL JUNCTION BOX	SIG	
BOLLARD		
ADA COMPLIANT CURB RAMP SLOPE ARROW		
SLOPE ARROW		

ABBREVIATIONS

℄	CENTER LINE
P	PROPERTY LINE
AC	ASPHALT CONCRETE
AHJ	AUTHORITY HAVING JURISDICTION
AWWA	AMERICAN WATER WORKS ASSOCIATION
BC	BOTTOM OF CURB
BCR	BEGIN CURB RETURN
BMP	BEST MANAGEMENT PRACTICE
BS	BOTTOM OF STEP
BW	BACK OF WALK
C	COMPACT
CB	CATCH BASIN
CI	CAST IRON
CIP	CAST IN PLACE
CO	CLEANOUT
CONC	CONCRETE
CLR	CLEAR
CVR	COVER
DI	DUCTILE IRON
DW	DOMESTIC WATER
ECR	END CURB RETURN
ELEV	ELEVATION
EP	EDGE OF PAVEMENT
ESC	EROSION/SEDIMENT CONTROL
EW	EACH WAY
EX	EXISTING
FDC	FIRE DEPARTMENT CONNECTION
FF	FINISH FLOOR
FG	FINISHED GRADE
FH	FIRE HYDRANT
FI	FIELD INLET
FL	FLOWLINE
FW	FIRE WATER/FACE OF WALL
G/GUT	GUTTER LINE
GB	GRADE BREAK
H	ACCESSIBLE STALL
HDPE	HIGH-DENSITY POLYETHYLENE
HMA	HOT MIX ASPHALT
IE	INVERT ELEVATION
LT	LEFT
ME	MATCH EXISTING
MH	MANHOLE
MJ	MECHANICAL JOINT
NTS	NOT TO SCALE
OC	ON CENTER
ODOT	OREGON DEPARTMENT OF TRANSPORTATION
OSHA	OREGON STATE HEALTH AUTHORITY
OSSC	OREGON STATE SPECIFICATIONS FOR CONSTRUCTION
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
PCCP	PORTLAND CEMENT CONCRETE PAVING
PR	PROPOSED
PRC	POINT OF REVERSE CURVATURE
PT	POINT OF TANGENCY
PVC	POLYVINYL CHLORIDE
RD	ROOF DRAIN
ROW	RIGHT OF WAY
RSGV	RESILIENT SEAT GATE VALVE
RT	RIGHT
S	STANDARD
SS	SANITARY SEWER
STA	STATION
SW	SIDEWALK
TC	TOP OF CURB
TH	THRESHOLD
TS	TOP OF STEP
TW	TOP OF WALL
TYP	TYPICAL
WC	WHEELCHAIR

PAVING LEGEND

PAVING SECTIONS PER REPORT OF GEOTECHNICAL ENGINEERING SERVICES BY NV5, DATED MARCH 17,2022

EXISTING	PROPOSED	
		AC AUTOMOBILE DRIVE AISLE AC PAVEMENT (2.0 INCHES AC, 6.0 INCHES AGGREGATE BASE)
		AC AUTOMOBILE PARKING AC PAVEMENT (2.0 INCHES AC, 6.0 INCHES AGGREGATE BASE)
		AC TRUCK AC PAVEMENT (4.0 INCHES AC, 8.0 INCHES AGGREGATE BASE)
		CONCRETE LOADING DOCK TRUCK PCC PAVEMENT (6.5 INCHES PCC, 6.75 INCHES AGGREGATE BASE)

Architecture ▪ Interiors
Planning ▪ Engineering

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SHEET TITLE:
CIVIL GENERAL NOTES, SYMBOLS AND ABBREVIATIONS

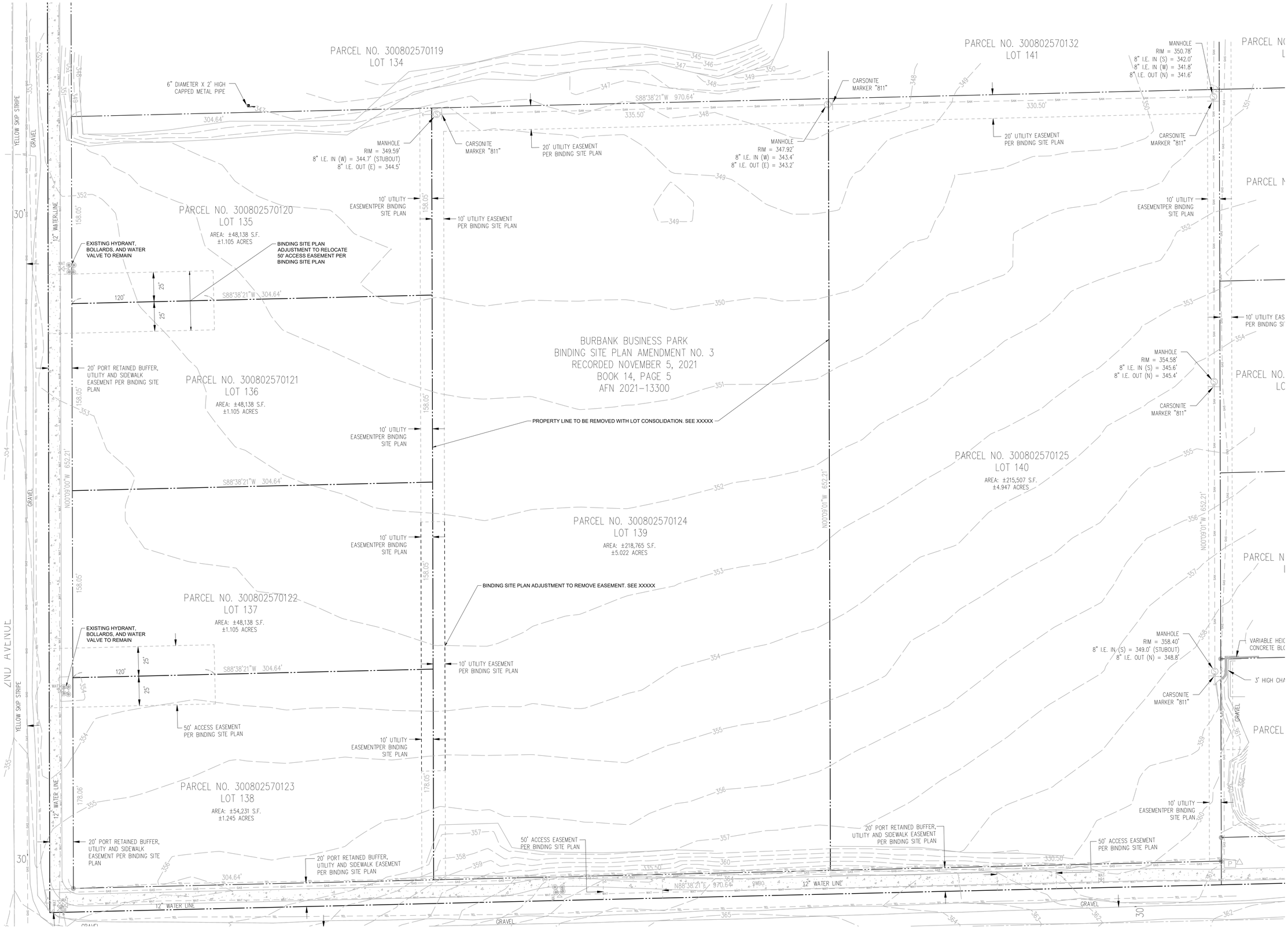
DRAWN BY: CME

CHECKED BY: CTL

SHEET
C0.01

JOB NO. **2220091.00**

CIVIL SET 7/7/2022



1 C1.01 EXISTING CONDITIONS AND DEMOLITIONS PLAN
SCALE: 1"= 30'

30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

THE SURVEY INFORMATION SHOWN AS A BACKGROUND SCREEN ON THIS SHEET IS SHOWN FOR REFERENCE ONLY AND IS BASED ON A SURVEY BY: HICKMAN & ASSOCIATES DATE:

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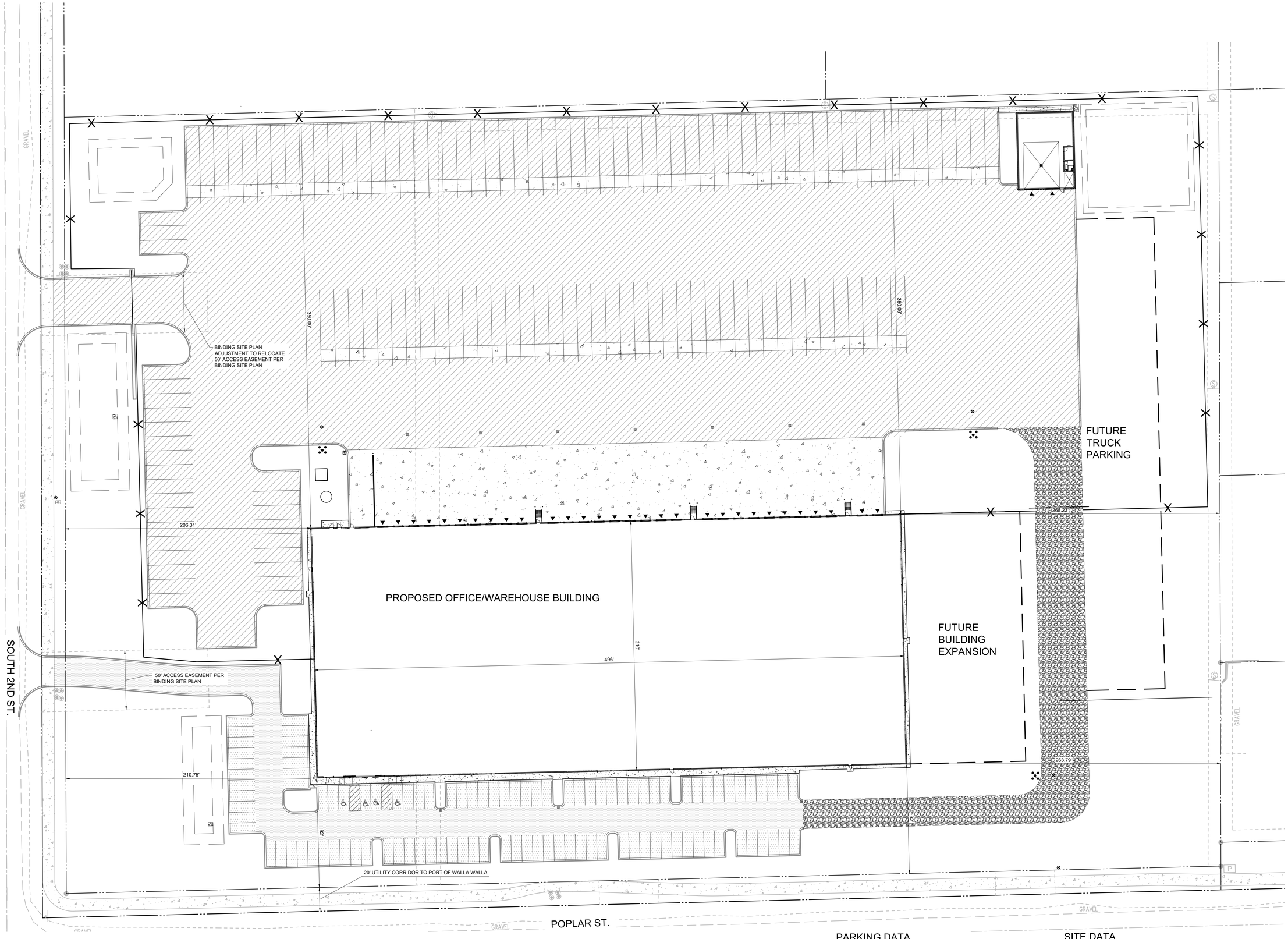
C1.01

JOB NO. **2220091.00**

CIVIL SET 7/7/2022



1 C1.10 OVERALL SITE PLAN
SCALE: 1"= 30'

30 0 15 30 60 120
(IN FEET)
1 inch = **30** ft.

PARKING DATA

PARKING TYPE	REQUIRED MINIMUM	REQUIRED MAXIMUM	PROVIDED
STANDARD	##	##	96
COMPACT	-	-	-
ACCESSIBLE	##	-	3
ACCESSIBLE (VAN)	##	-	1
TOTAL PARKING	#	-	100
PARKING RATIO	# SPACES / 1000 SF OF BLDG		
BICYCLE	###	-	###
LOADING	###	-	31
TRAILER PARKING 12'X40'	##	-	29
TRAILER PARKING 12'X65'	##	-	98

SITE DATA

	AREA (SF)	AREA (AC)	COVERAGE
GROSS PROPERTY AREA	632,920	14.53	
RIGHT-OF-WAY DEDICATION	0		
NET PROPERTY AREA	632,920		
AREA OF DISTURBANCE	632,920	14.53	100%
IMPERVIOUS AREA			
BUILDING AREA	107,296	2.46	16.95%
PAVED AREA	316,515	7.27	50.01%
TOTAL	423,811	9.73	66.96%
LANDSCAPE AREA	209,109	4.80	33.04%
PARKING AREA	##	#	
PARKING AREA LANDSCAPE	###	###	#####

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SHEET TITLE:
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JOB NO. **2220091.00**

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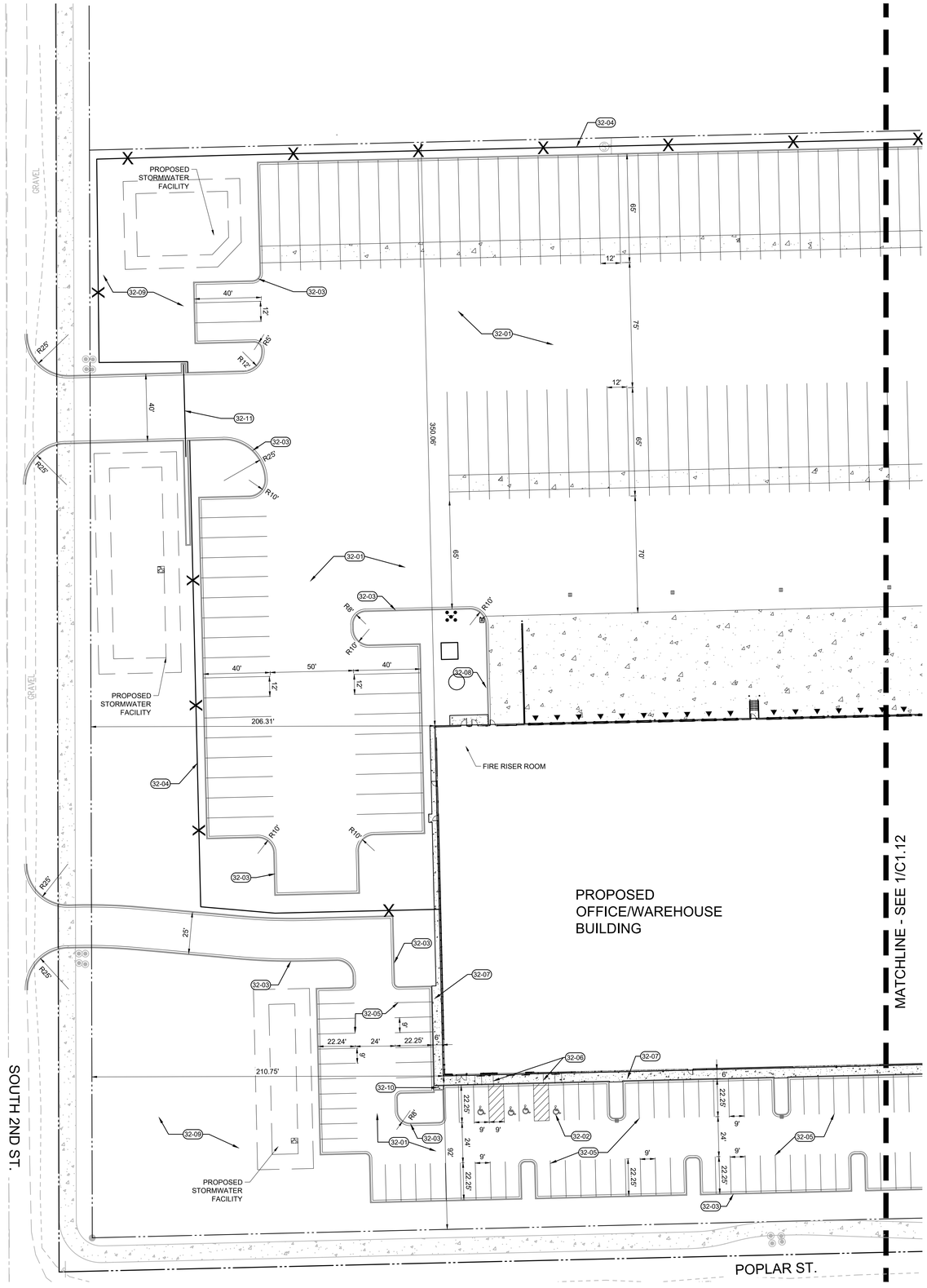


1 C1.11 SITE PLAN WEST
SCALE: 1"= 30'

30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

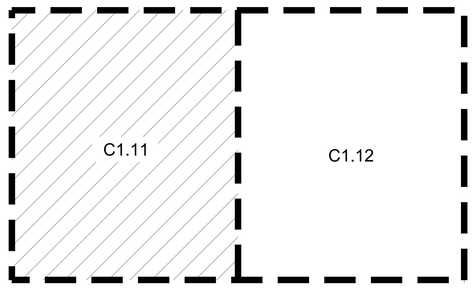
KEYNOTES

C1.11

32-01	ASPHALT PAVEMENT PER 1/C5.10
32-02	ACCESSIBLE PARKING STALL AND SIGNAGE TYP. PER 2/C5.10
32-03	VERTICAL CURB AND GUTTER TYP. PER 3/C5.10
32-04	8'-0" HIGH GALVANIZED CHAIN LINKED FENCE WITH 45-DEGREE, THREE STRAND BARBED WIRE PER 4/C5.10
32-05	PARKING STALL STRIPING TYP. PER 5/C5.10
32-06	PARALLEL CURB RAMP PER 6/C5.10
32-07	SIDEWALK PER 7/C5.10
32-08	10'X10' ELECTRICAL TRANSFORMER DESIGNED BY OTHERS
32-09	LANDSCAPE AREA PER LANDSCAPE PLANS
32-10	CONCRETE CURB CHANNEL PER 8/C5.10
32-11	MOTORIZED CANTILEVER SLIDING GATE

NOTES

1. INSERT NOTE
2. INSERT NOTE



KEY MAP
SCALE: NTS

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Delta	Issued As	Issue Date

SHEET TITLE:
SITE PLAN WEST

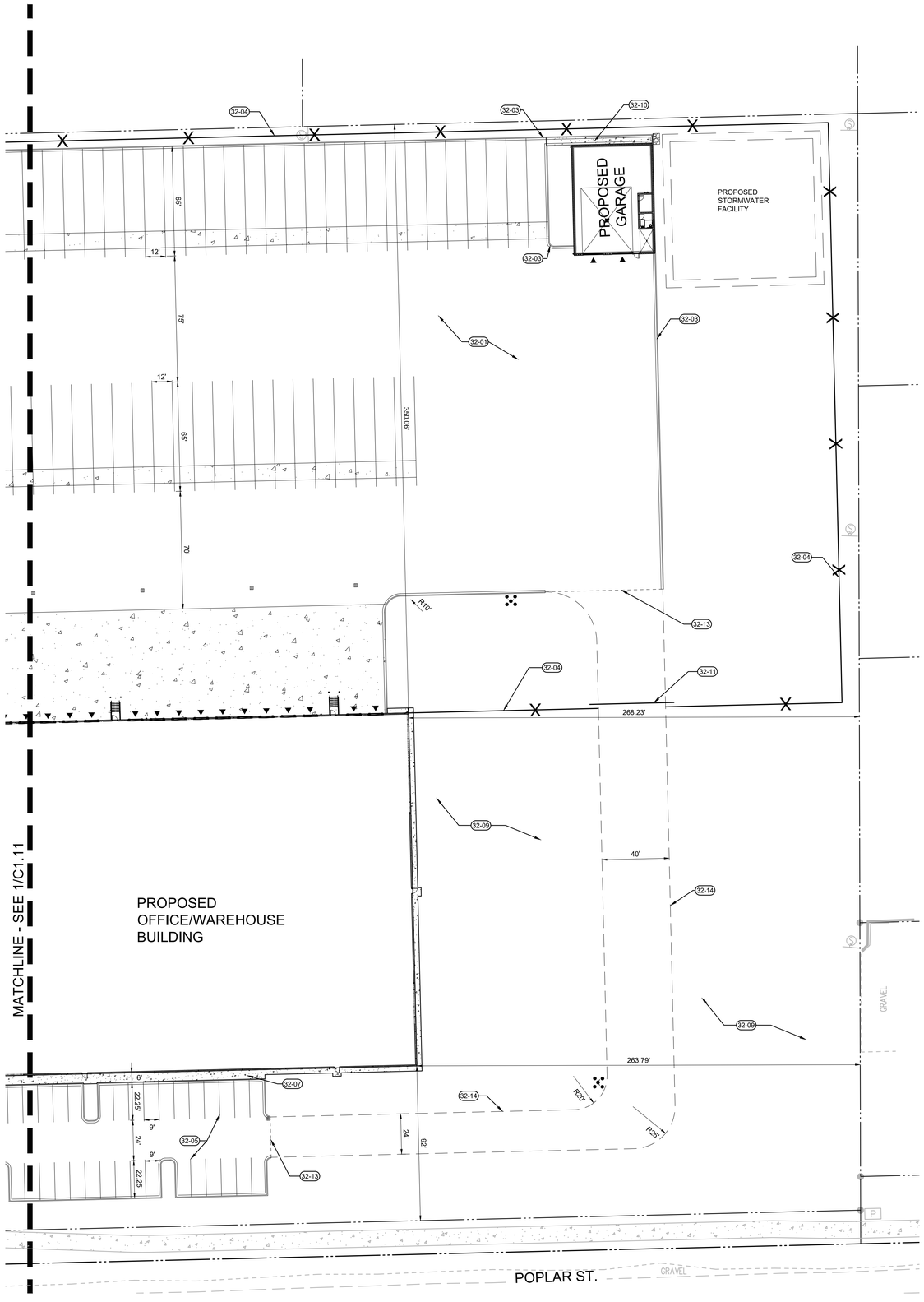
DRAWN BY: CME

CHECKED BY: CTL

SHEET
C1.11

JOB NO. **2220091.00**

CIVIL SET 7/7/2022



1 C1.12 SITE PLAN EAST
SCALE: 1"= 30'

30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

KEYNOTES

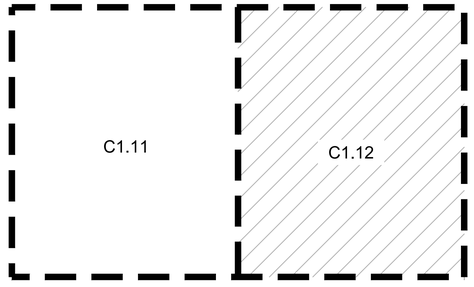
XX-XX

C1.12

32-01	ASPHALT PAVEMENT PER 1/C5.10
32-03	VERTICAL CURB AND GUTTER TYP. PER 3/C5.10
32-04	8'-0" HIGH GALVANIZED CHAIN LINKED FENCE WITH 45-DEGREE, THREE STRAND BARBED WIRE PER 4/C5.10
32-05	PARKING STALL STRIPING TYP. PER 5/C5.10
32-07	SIDEWALK PER 7/C5.10
32-09	LANDSCAPE AREA PER LANDSCAPE PLANS
32-10	CONCRETE CURB CHANNEL PER 8/C5.10
32-11	MOTORIZED CANTILEVER SLIDING GATE
32-13	EDGE OF PAVEMENT
32-14	GRAVEL ROADWAY

NOTES

1. INSERT NOTE
2. INSERT NOTE



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SCALE: NTS

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Delta	Issued As	Issue Date

SHEET TITLE:
SITE PLAN EAST

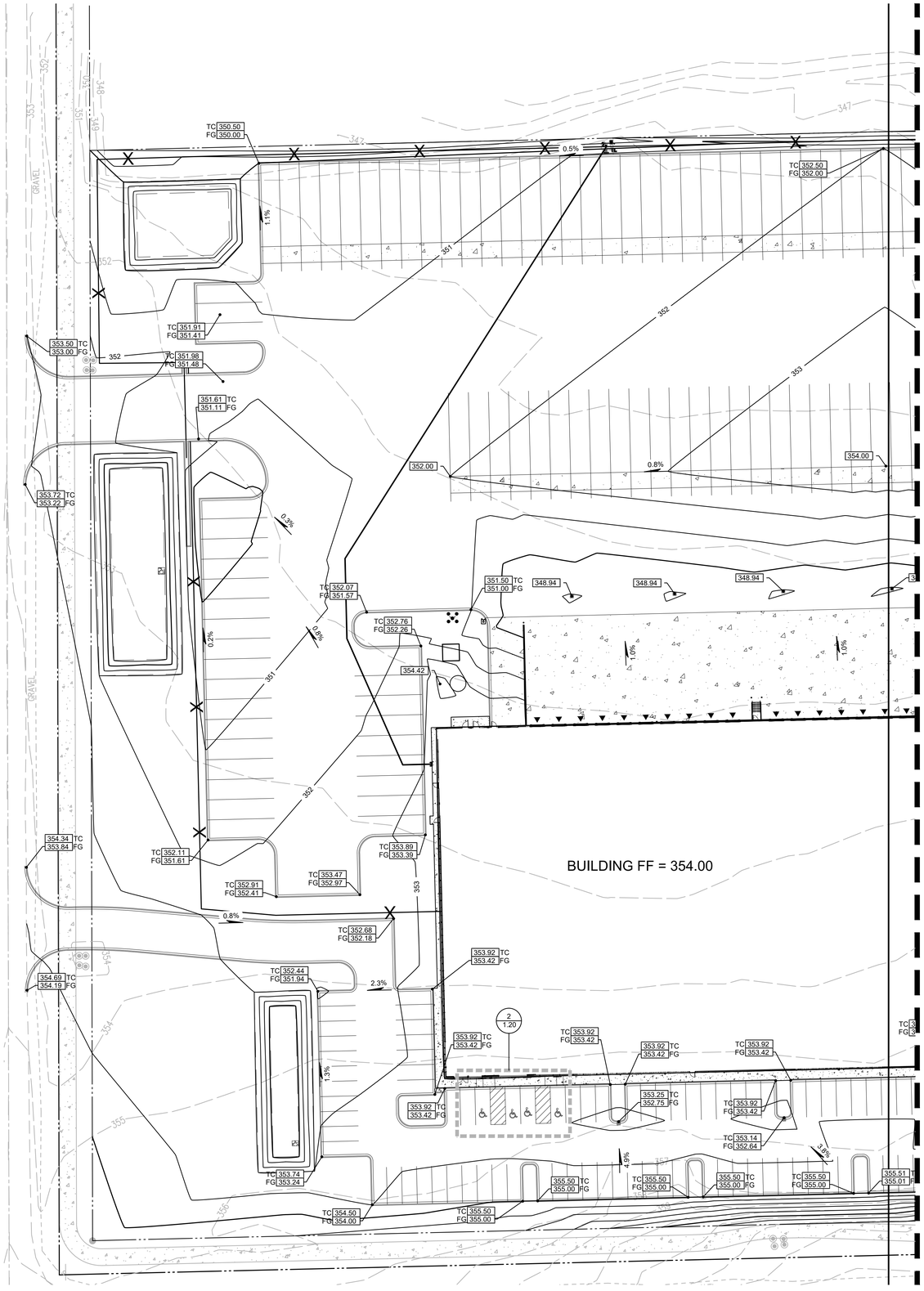
DRAWN BY: CME

CHECKED BY: CTL

SHEET
C1.12

JOB NO. **2220091.00**

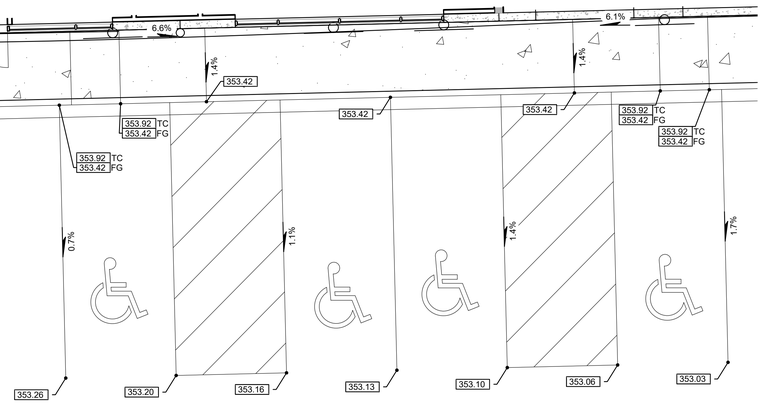
CIVIL SET 7/7/2022
2220091\00\DRAWINGS\CIVIL\091-C1.11.DWG CME 07/07/22 16:41 1:30



1 C1.20 GRADING PLAN - WEST
SCALE: 1"= 30'

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.



2 C1.20 ADA ENLARGEMENT
SCALE: 1"=5'

KEYNOTES

(XX-XX)

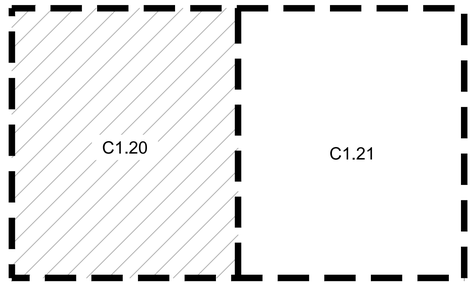
NOTES

6" STRIPPING = 12K CY (HAUL OFF)

CUT = 13K CY
FILL = 21K CY
NET = 8K FILL

*ASSUMES 10% SHRINKAGE FACTOR

FILL TO RAISE BUILDING/ADJACENT GROUND 1' = 8.5K CY



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SHEET TITLE:
GRADING PLAN WEST

DRAWN BY: CME

CHECKED BY: CTL

SHEET
C1.20

JOB NO. **2220091.00**

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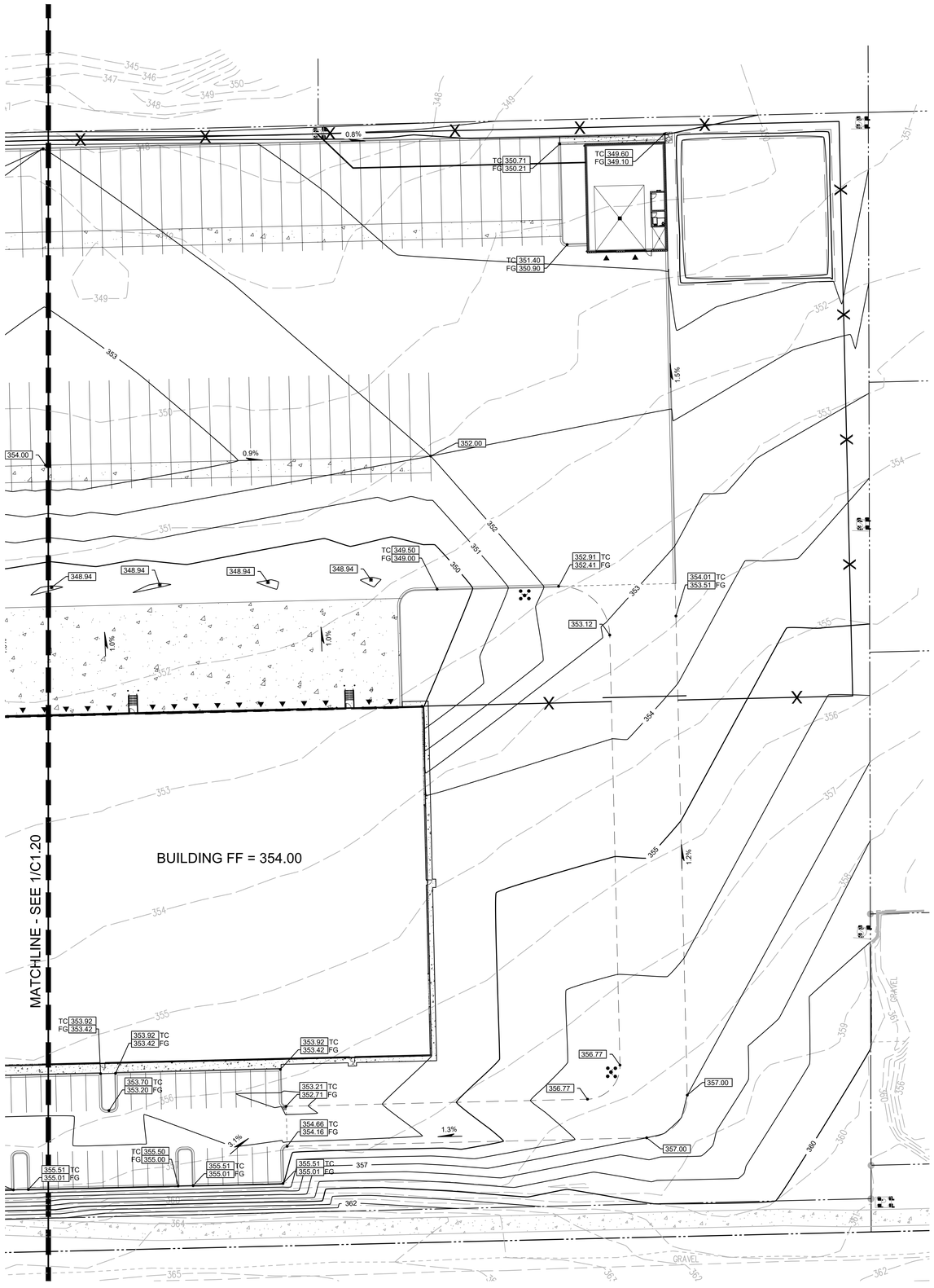


1 C1.21 GRADING PLAN - EAST
SCALE: 1"= 30'

30 0 15 30 60 120

(IN FEET)
1 inch = **30** ft.

KEYNOTES

XX-XX

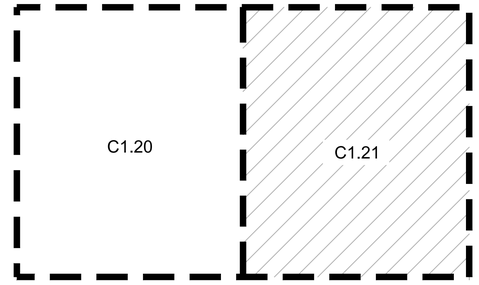
NOTES

6" STRIPPING = 12K CY (HAUL OFF)

CUT = 13K CY
FILL = 21K CY
NET = 8K FILL

*ASSUMES 10% SHRINKAGE FACTOR

FILL TO RAISE BUILDING/ADJACENT GROUND 1' = 8.5K CY



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SHEET TITLE:
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SHEET
C1.21

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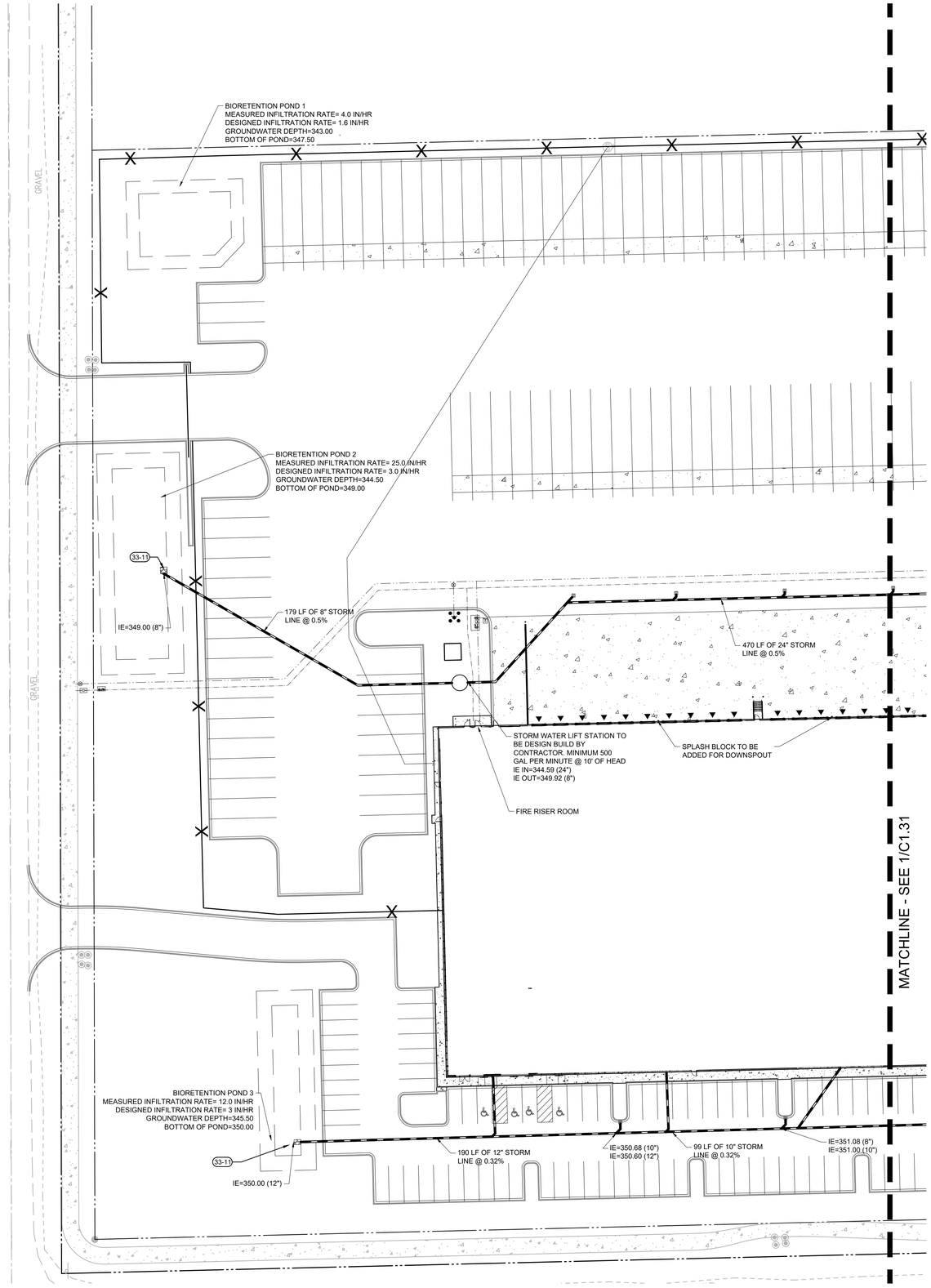


1 C1.30 STORM PLAN WEST
SCALE: 1"= 30'

30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

KEYNOTES

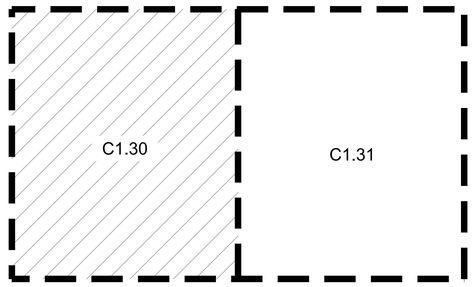
C1.30

33-11 RIP RAP PAD PER 3/C5.11

NOTES

1. INSERT NOTE
2. INSERT NOTE

STORM STRUCTURES TABLE



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STORM PLAN WEST

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C1.30

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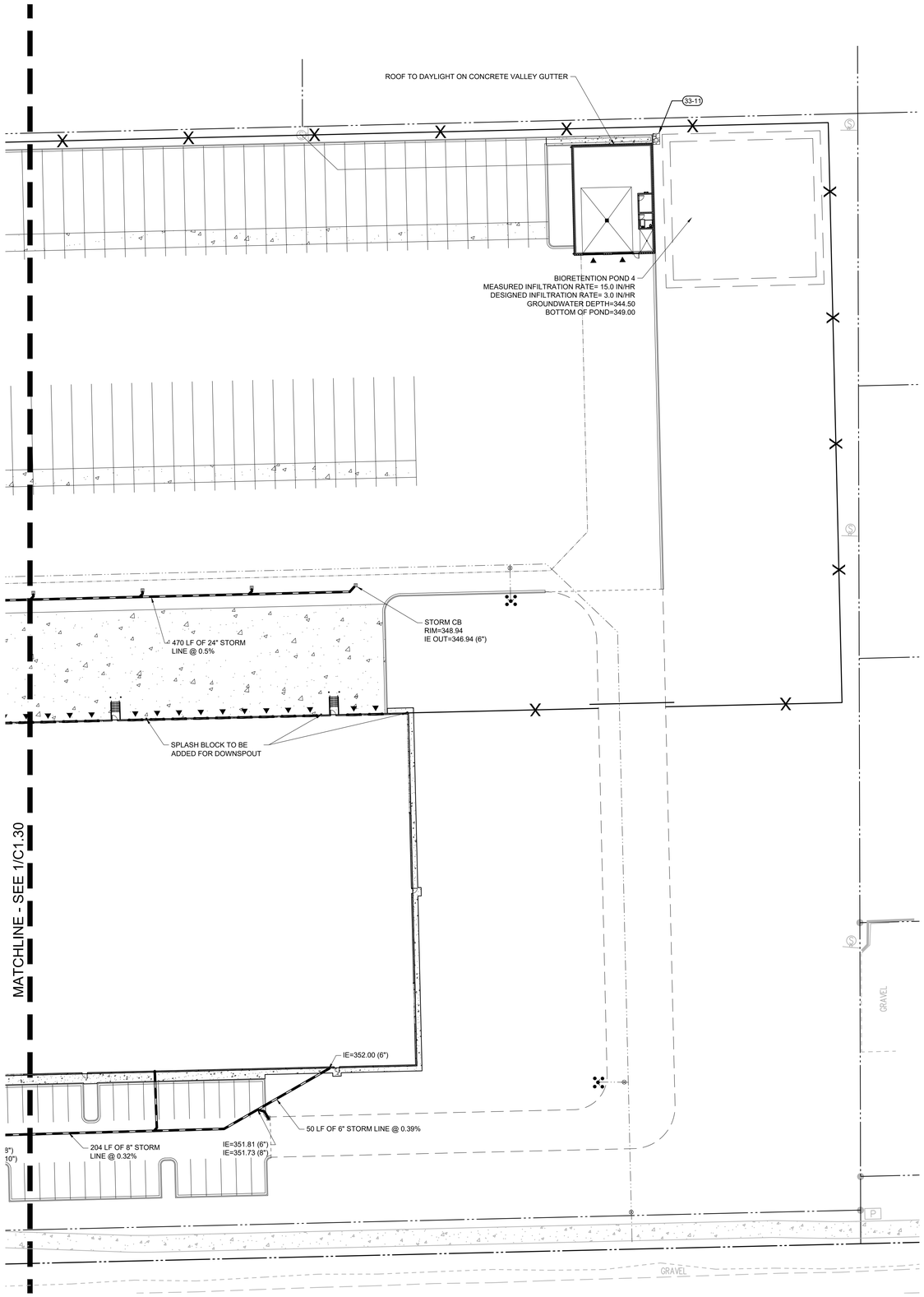


1 C1.31 STORM PLAN EAST
SCALE: 1"= 30'

30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

KEYNOTES

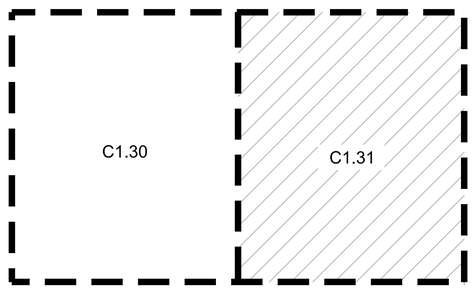
C1.31

33-11 RIP RAP PAD PER 3/C5.11

NOTES

1. INSERT NOTE
2. INSERT NOTE

STORM STRUCTURES TABLE



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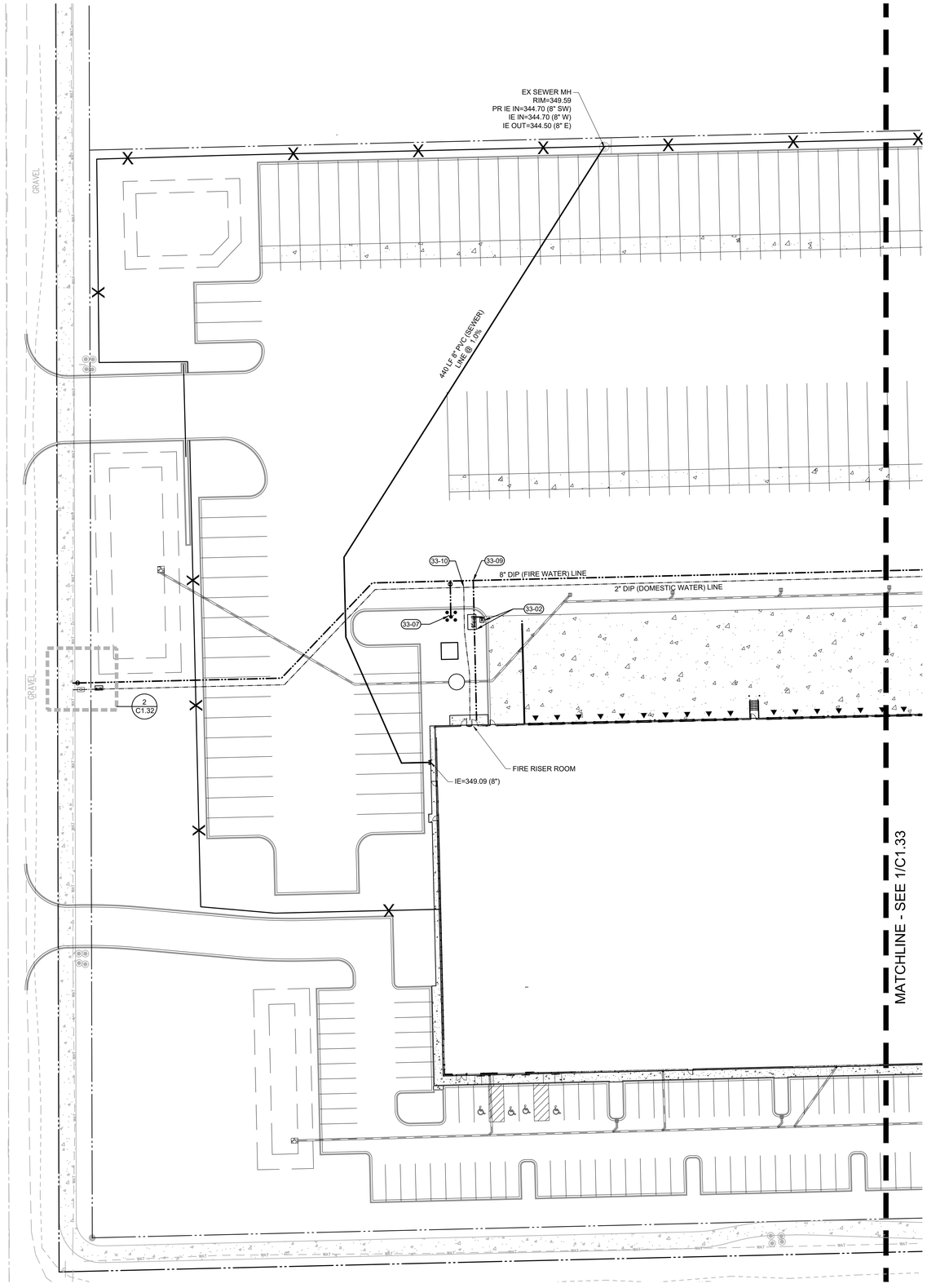


1 C1.32 SANITARY AND WATER PLAN WEST
SCALE: 1"= 30'

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

KEYNOTES

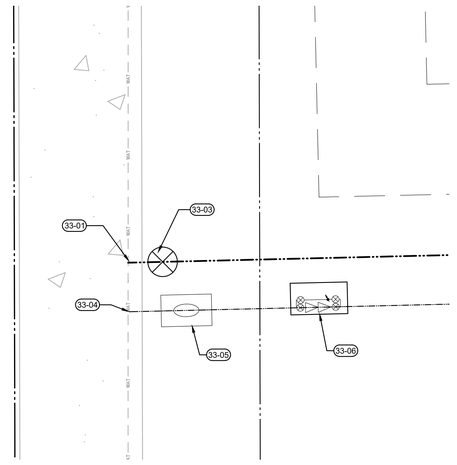
XX-XX

33-01	12"X8" LIVE TAP
33-02	8" BACKFLOW WITH FDC CONNECTION
33-03	8" MJ GATE VALVE
33-04	12"X2" LIVE TAP
33-05	2" DOMESTIC METER
33-06	2" BACKFLOW
33-07	FIRE HYDRANT CENTERED BETWEEN FOUR BOLLARDS
33-09	8"X8"X8" TEE
33-10	2" 90 DEGREE BEND

NOTES

1. INSERT NOTE
2. INSERT NOTE

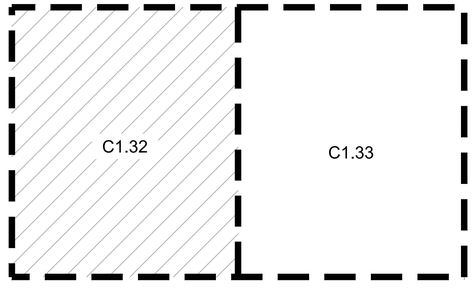
SANITARY STRUCTURES TABLE



2 C1.32 PUBLIC CONNECTION ENLARGEMENT
SCALE: 1"= 5'

5 0 2.5 5 10 20

(IN FEET)
1 inch = 5 ft.



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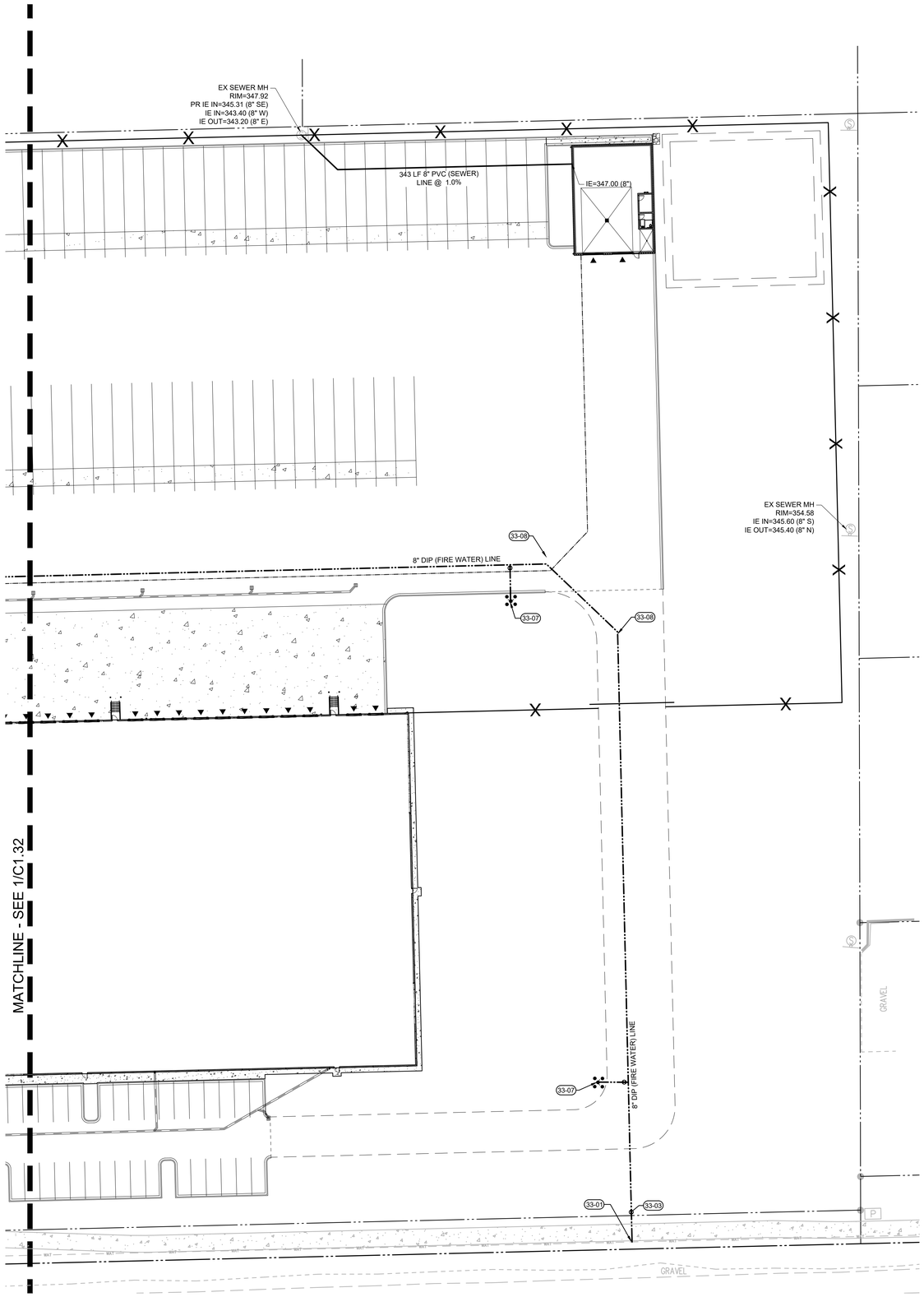


1 C1.33 SANITARY AND WATER PLAN EAST
SCALE: 1"= 30'

30 0 15 30 60 120
(IN FEET)
1 inch = **30** ft.

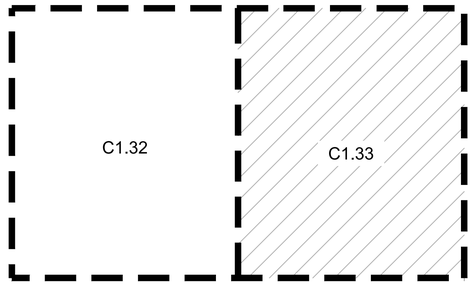
KEYNOTES

33-01	12"X8" LIVE TAP
33-03	8" MJ GATE VALVE
33-07	FIRE HYDRANT CENTERED BETWEEN FOUR BOLLARDS
33-08	8" 45 DEGREE BEND

NOTES

1. INSERT NOTE
2. INSERT NOTE

SANITARY STRUCTURES TABLE



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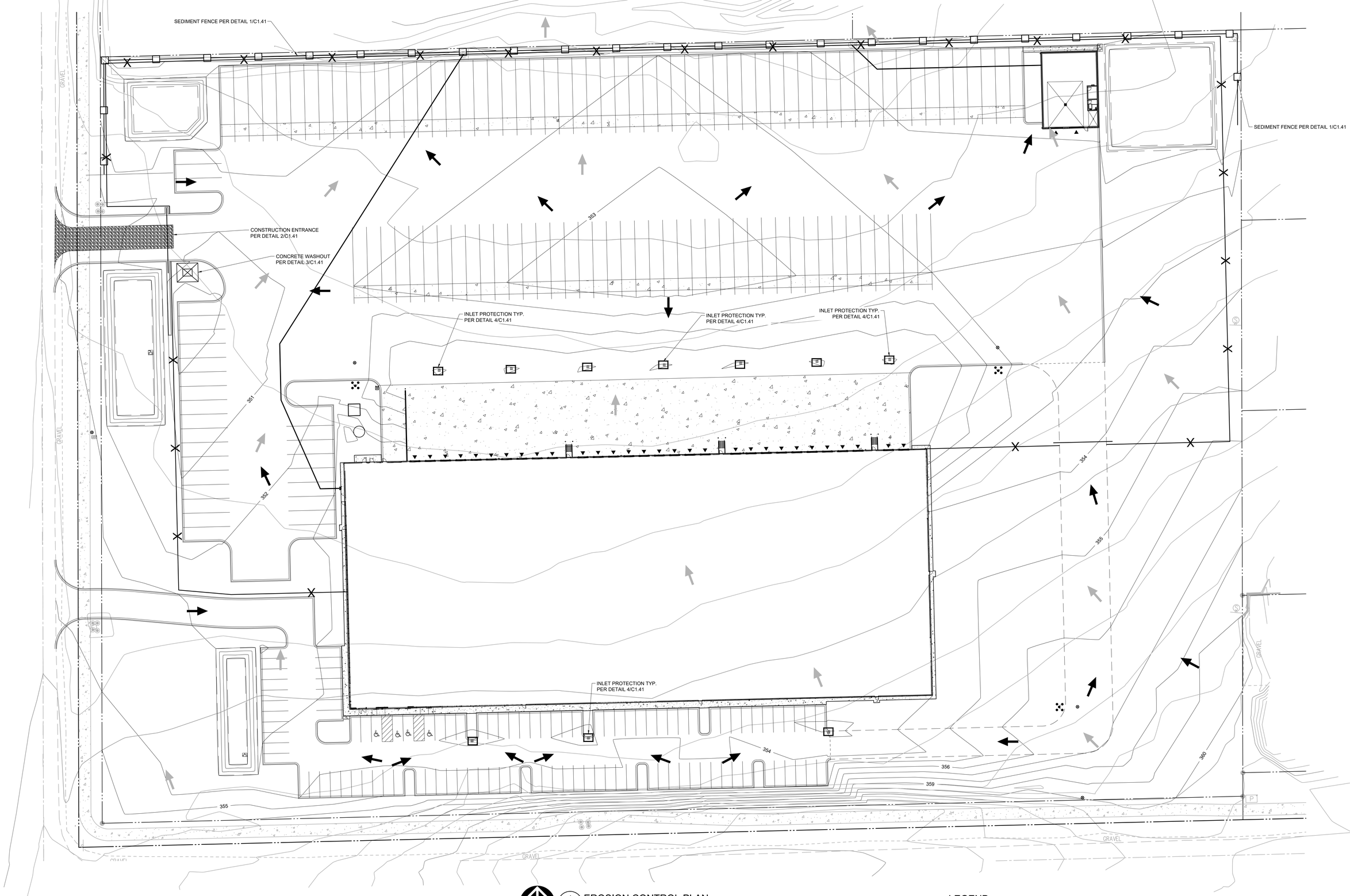

1 C1.40 EROSION CONTROL PLAN
SCALE: 1"= 30'

30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

LEGEND

- SEDIMENT FENCE
- LIMITS OF DISTURBANCE
- EXISTING DRAINAGE FLOW ARROW
- PROPOSED DRAINAGE FLOW ARROW
- INLET PROTECTION
- CONCRETE WASHOUT

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EROSION CONTROL PLAN

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CHECKED BY: CTL

SHEET
C1.40

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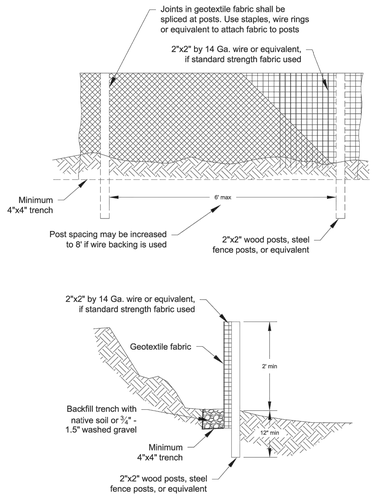
Figure 7.24: Silt Fence

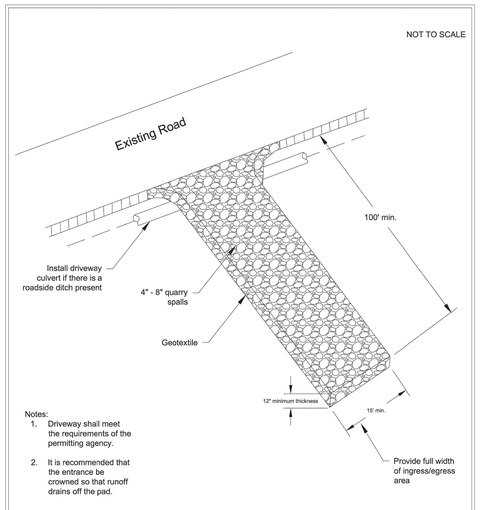


Silt Fence

DEPARTMENT OF ECOLOGY State of Washington

Revised June 2016

Figure 7.3: Stabilized Construction Entrance

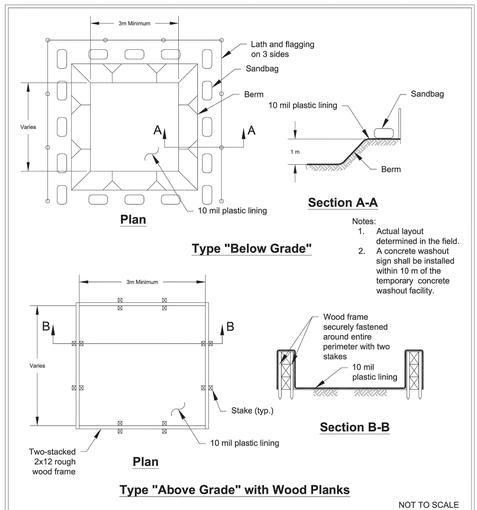


Stabilized Construction Entrance

DEPARTMENT OF ECOLOGY State of Washington

Revised June 2016

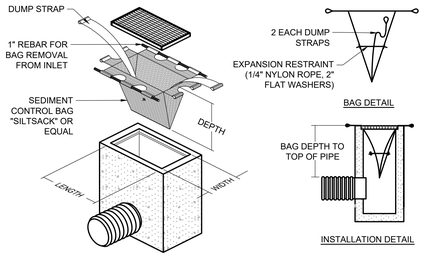
Figure 7.9: Concrete Washout Area with Wood Planks



Concrete Washout Area with Wood Planks

DEPARTMENT OF ECOLOGY State of Washington

Revised June 2016



NOTES:

A. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE CORRECT SIZE DEVICE FOR EACH INLET
B. THE INLET SEDIMENT CONTROL DEVICE SHALL BE OF NORMAL FLOW DESIGN, 40 GAL/MIN/SF WITH NO OVERFLOWS
C. THE SEDIMENT CONTROL DEVICE SHALL BE INSPECTED DAILY BY THE CONTRACTOR AND MAINTAINED A MINIMUM OF ONCE PER MONTH AND WITHIN THE 24 HOURS FOLLOWING A STORM EVENT
D. SUBSTITUTION OF A SHEET OF FILTER FABRIC PLACED OVER THE OPENING OF THE INLET IS NOT APPROVED

4 C1.41 CATCH BASIN SEDIMENT FILTER BAG

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28209

Project
SUNCAP: BURBANK INDUSTRIAL PARK BTS

REVISION SCHEDULE

Delta	Issued As	Issue Date

SHEET TITLE:
EROSION CONTROL DETAILS

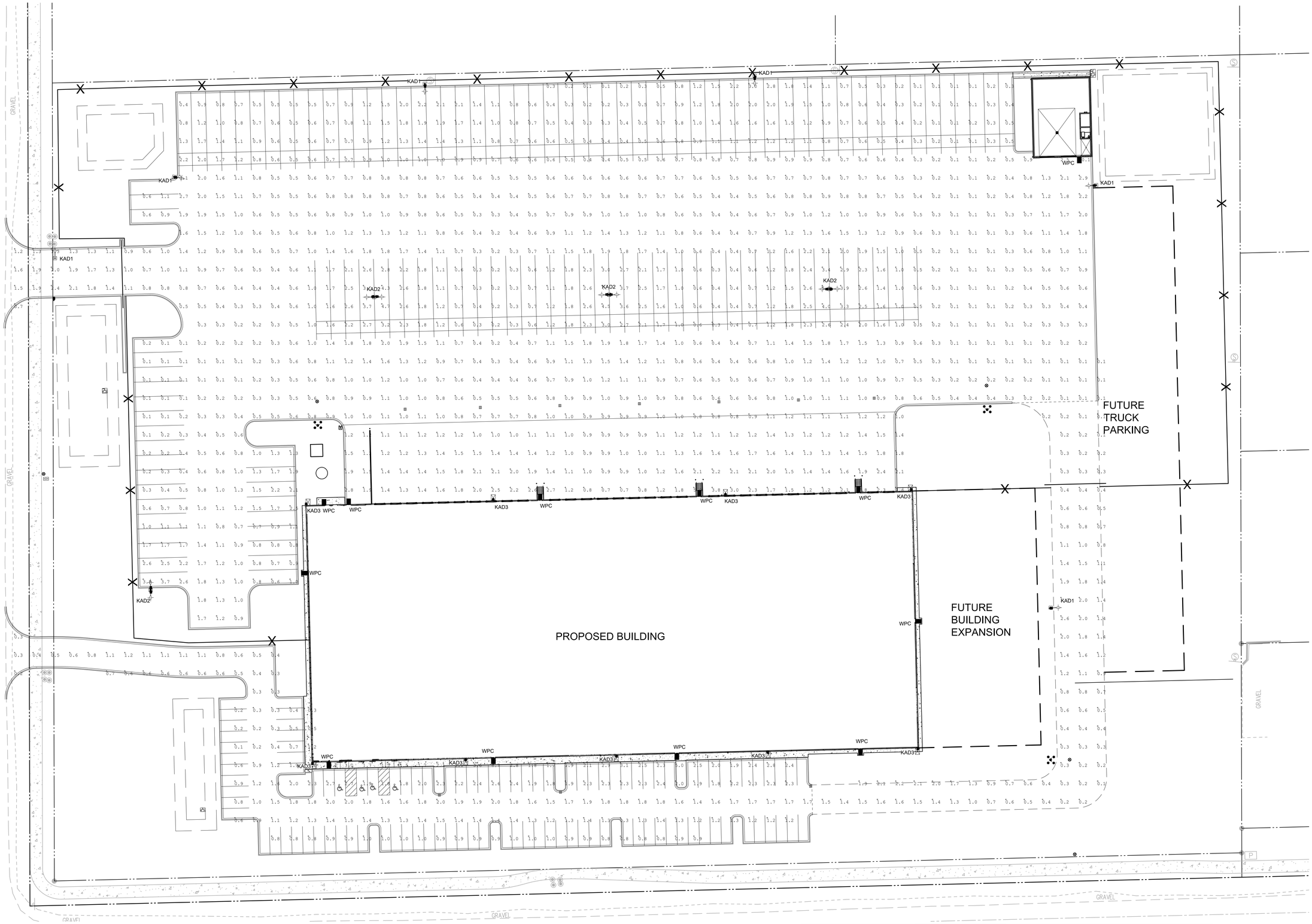
DRAWN BY:

CHECKED BY:

SHEET
C1.41

JOB NO. **2220091.00**

CIVIL SET 7/7/2022



1 C1.50 PHOTOMETRIC PLAN
SCALE: 1"= 30'

30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

STATISTICS - ONSITE						
DESCRIPTION	SYMBOL	AVG	MAX	MIN	MAX/MIN	AVG/MIN
ON-SITE LIGHTING	+	1.06 fc	10.2 fc	0.1 fc	102.0 fc	10.6 fc

LUMINAIRE SCHEDULE

SYMBOL	LABEL	QUANTITY	MANUFACTURER	CATALOG NUMBER	DESCRIPTION	NUMBER LAMPS	FILE NAME	CUTOFF CLASS	WATTAGE	HEIGHT	LUMINAIRES
	KAD1	6	LITHONIA	KAD LED 60C 1000 40K R3 MVOLT	KAD LED, SQUARE POLE MOUNTED, FULL CUTOFF	1	KAD_LED_60C_1000_40K_R3_MVOLT.IES	FULL CUTOFF	216	30FT	20,668
	KAD2	4	LITHONIA	KAD LED 60C 1000 40K R3 MVOLT	KAD LED, SQUARE POLE MOUNTED, FULL CUTOFF	1	KAD_LED_60C_1000_40K_R3_MVOLT.IES	FULL CUTOFF	216	30FT	20,668
	KAD3	9	LITHONIA	KAD LED 60C 1000 40K R3 MVOLT	KAD LED, WALL BRACKET MOUNTED, FULL CUTOFF	1	KAD_LED_60C_1000_40K_R3_MVOLT.IES	FULL CUTOFF	216	30FT	20,668
	WPC	12	DURAGUARD	WPC-12-Q-F-1X22-U-4K-C-Z-BU	LED WALLPACK	1	WPC12QF1X22U4KC.IES	FULL CUTOFF	23.7	10FT	2,334

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Delta	Issued As	Issue Date

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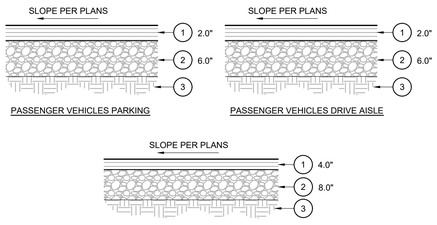
DRAWN BY: CME
CHECKED BY: CTL

SHEET
C1.50

JOB NO. **2220091.00**

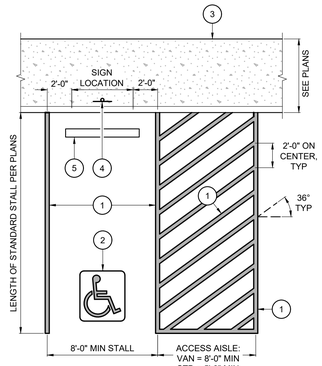
CIVIL SET 7/7/2022



KEYNOTES:
1. ASPHALT PAVEMENT SECTION PER PROJECT SPECIFICATIONS
2. CRUSHED ROCK BASE SECTION PER PROJECT SPECIFICATIONS
3. COMPACTED SUBGRADE PER GEOTECHNICAL RECOMMENDATIONS

NOTES:
A. SEE PLANS FOR LOCATIONS OF PAVEMENTS. IF NONE SPECIFIED, USE LIGHT DUTY IN PASSENGER VEHICLE PARKING STALLS ONLY AND HEAVY DUTY IN ALL OTHER LOCATIONS
B. SEE PROJECT GEOTECHNICAL REPORT FOR PAVEMENT AND SUBGRADE PREPARATION RECOMMENDATIONS

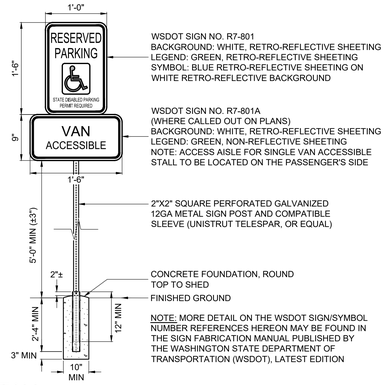
1 C5.10 ASPHALT PAVEMENT SECTION
NTS



KEYNOTES:
1. 4" WIDE WHITE STRIPE
2. WHITE RETROREFLECTIVE PAVEMENT MARKING SYMBOL (FHWA 3B-22) WITH BLUE RETROREFLECTIVE BACKGROUND (41" TALL x 36" WIDE WITH 4" STROKE WIDTH). OFFSET BACKGROUND LIMIT 4" FROM SYMBOL
3. SEE PLANS FOR PROPOSED CURB/SIDEWALK/RAMPS/ETC IMPROVEMENTS TO ACCOMMODATE ACCESSIBLE PARKING STALL ACCESS
4. ACCESSIBLE PARKING SPACE SIGNAGE PER DETAIL HEREON. MAINTAIN 48" CLEAR ACCESS AROUND SIGN. INSURE NO INTERFERENCE WITH PARKING STALL OVERHANG
5. WHEEL STOP PER DETAIL XX/CX.XX

NOTE: MORE DETAIL ON THE FHWA SYMBOL NUMBER REFERENCES HEREON MAY BE FOUND IN THE STANDARD HIGHWAY SIGNS BOOK PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION (FHWA), LATEST EDITION

2 C5.10 ACCESSIBLE PARKING STALL
NTS



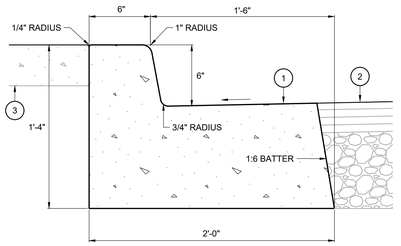
WSDOT SIGN NO. R7-801
BACKGROUND: WHITE, RETRO-REFLECTIVE SHEETING
LEGEND: GREEN, RETRO-REFLECTIVE SHEETING
SYMBOL: BLUE RETRO-REFLECTIVE SHEETING ON WHITE RETRO-REFLECTIVE BACKGROUND

WSDOT SIGN NO. R7-801A
(WHERE CALLED OUT ON PLANS)
BACKGROUND: WHITE, RETRO-REFLECTIVE SHEETING
LEGEND: GREEN, NON-REFLECTIVE SHEETING
NOTE: ACCESS AISLE FOR SINGLE VAN ACCESSIBLE STALL TO BE LOCATED ON THE PASSENGER'S SIDE

2"X2" SQUARE PERFORATED GALVANIZED 12GA METAL SIGN POST AND COMPATIBLE SLEEVE (UNISTRUT TELESPAR, OR EQUAL)

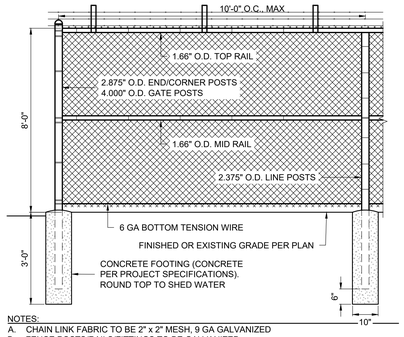
CONCRETE FOUNDATION, ROUND TOP TO SHED
FINISHED GROUND

NOTE: MORE DETAIL ON THE WSDOT SIGN/SYMBOL NUMBER REFERENCES HEREON MAY BE FOUND IN THE SIGN FABRICATION MANUAL PUBLISHED BY THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION (WSDOT), LATEST EDITION



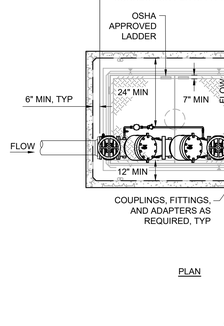
KEYNOTES:
1. CONCRETE FOR CURBING PER PROJECT SPECIFICATIONS. GUTTER PAN SHALL MATCH CROSS SLOPE OF ABUTTING PAVEMENT
2. PAVEMENT SECTION PER PLANS
3. SEE PLANS FOR IMPROVEMENTS AT BACK OF CURB. WHERE SIDEWALK OCCURS, THE SIDEWALK AND TOP OF CURB SHALL BE FLUSH. WHERE ABUTTING A PLANTER AREA, THE FINAL GRADE SHALL BE 1" MINIMUM BELOW TOP OF CURB, OR AS DIRECTED BY THE LANDSCAPE ARCHITECT

3 C5.10 VERTICAL CURB AND GUTTER
NTS



NOTES:
A. CHAIN LINK FABRIC TO BE 2" x 2" MESH, 9 GA GALVANIZED
B. FENCE POSTS/RAILS/FITTINGS TO BE GALVANIZED
C. FITTINGS TO BE HEAVY PRESSED GALVANIZED PER ASTM F626
D. FENCE MATERIALS AND CONSTRUCTION SHALL CONFORM WITH THE CHAIN LINK FENCE MANUFACTURER'S INSTITUTE (CLFMI) GUIDELINES FOR HEAVY INDUSTRIAL FENCE

4 C5.10 CHAIN LINK FENCE
NTS



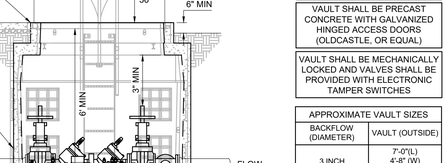
KEYNOTES:
1. 4" WIDE WHITE STRIPE
2. 8" (MIN) TALL WHITE PAVEMENT MARKING(S), 2" MIN STROKE, ORIENTED TO BOTTOM EDGE OF ZONE INDICATED, WHERE CALLED OUT ON PLANS. COMMON MARKINGS SHOWN BELOW
3. WHEEL STOP PER DETAIL XX/CX.XX, WHERE CALLED OUT ON PLANS

NOTES:
A. PAINT MATERIALS AND APPLICATION PER PROJECT SPECIFICATIONS

COMPACT
CARPOOL

COMMON PARKING STALL DESIGNATIONS

5 C5.10 PARKING STALL STRIPING
NTS



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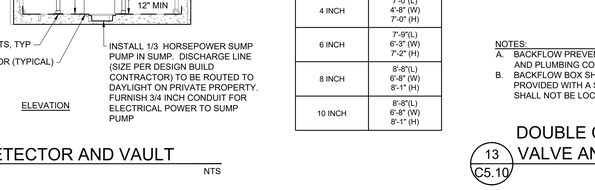

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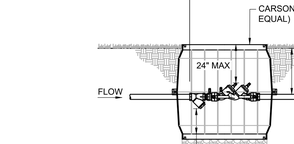
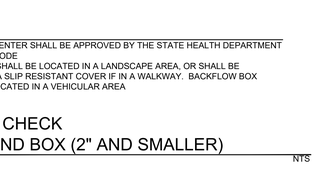


ISOMETRIC - HALF TYPE



ISOMETRIC - FULL TYPE

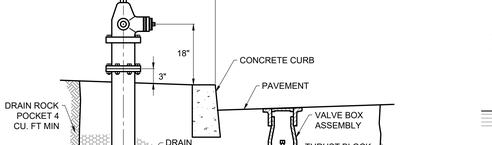
LEGEND
TURNING SPACE/LANDING MAX 2.0% FINISHED SLOPE IN ALL DIRECTIONS*

SLOPE 1.5% MAX* (MAX 2.0% FINISHED SURFACE SLOPE)

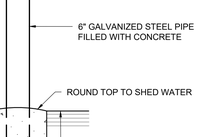
SLOPE 7.5% MAX* (MAX 8.3% FINISHED SLOPE)

*SLOPES GOVERN OVER ELEVATIONS

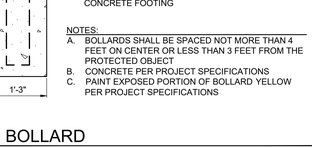
6 C5.10 PARALLEL CURB RAMPS
NTS



NOTES:
A. CONCRETE SIDEWALK SHALL BE BROOM FINISHED UNLESS OTHERWISE NOTED ON PLANS
B. SEE PROJECT SPECIFICATIONS FOR CONCRETE, AGGREGATE BASE, AND JOINT MATERIALS
C. WHERE SIDEWALK ABUTS CURBING, SURFACE SHALL BE FLUSH WITH TOP OF CURB UNLESS NOTED OTHERWISE ON PLANS. WHERE SIDEWALK ABUTS LANDSCAPE OR OTHER PERVIOUS AREA, GRADE SHALL BE RECESSED 1" MINIMUM OR AS OTHERWISE DICTATED BY THE LANDSCAPE ARCHITECT OR NOTED ON PROJECT PLANS
D. DO NOT USE SHINERS ON TOOLED EDGES UNLESS NOTED OTHERWISE
E. CONTROL JOINTS SHALL BE EVENLY SPACED AND LOCATED EVERY 5' MAXIMUM, WITH EXPANSION JOINTS EVERY FOURTH JOINT, OR PER PLAN. SIDEWALK JOINTS SHALL BE ALIGNED WITH CURB JOINTS OR WHERE PERPENDICULAR CURBING INTERSECTS.



CONTROL JOINT



EXPANSION JOINT

7 C5.10 CONCRETE SIDEWALK AND JOINTS
NTS

KEYNOTES:
1. 4" CONCRETE OVER 2" ROCK BASE. CONCRETE AND BASE PER SPECIFICATIONS
2. CONCRETE VERTICAL CURB PER 3/C5.10

NOTES:
A. CHANNEL SLOPE TO MATCH SLOPE OF ADJACENT PAVEMENT
B. WHERE CHANNEL IS IN-LINE WITH CURB AND GUTTER, CONTINUE CROSS SECTION OF CURB AND GUTTER THROUGH LENGTH OF CHANNEL
C. SECTION MAY BE CONSTRUCTED MONOLITHICALLY

8 C5.10 CONCRETE CURB CHANNEL
NTS

KEYNOTES:
1. SITE UTILITY PIPE PER PLANS
2. RESILIENT WEDGE GATE VALVE
3. PVC VALVE BOX EXTENSION, 8" MIN.
4. CAST IRON VALVE BOX
5. VALVE BOX COVER, MARKED ACCORDING TO UTILITY
6. ADJACENT PAVEMENT PER PLANS

NOTES:
A. CONTRACTOR SHALL SELECT GATE VALVE AND ALL APPURTENANCES TO ACCOMMODATE THE SIZE OF THE SITE PIPING
B. VALVE BOX COVER SHALL BE MARKED ACCORDING TO THE UTILITY IT SERVES
C. IF NOT INSTALLED IN A PAVED AREA, VALVE LID SHALL BE CAST INTO A 24" SQUARE OR ROUND CONCRETE COLLAR
D. INSTALL VALVE OPERATOR EXTENSION IF TOP VALVE OPERATOR NUT IS 48" OR MORE BELOW FINISHED GRADE
E. ALL MATERIALS AND INSTALLATION METHODS SHALL MEET THE PROJECT SPECIFICATIONS AND GOVERNING CODE REQUIREMENTS

9 C5.10 GATE VALVE
NTS

KEYNOTES:
1. INSTALL TRENCH STABILIZATION AS NECESSARY TO OBTAIN COMPACTION
2. TRENCH WIDTH SHALL ACCOMMODATE THE PIPE DIAMETER PLUS ONE ADDITIONAL PIPE DIAMETER ON EITHER SIDE OF THE PIPE, BUT IN NO CASE LESS THAN 6 INCHES OR MORE THAN 18 INCHES
3. PIPE ZONE TO CONSIST OF IMPORTED GRANULAR MATERIAL
4. TRACER WIRE PER PROJECT SPECIFICATIONS
5. BACKFILL IN PAVEMENT AREAS WITH IMPORTED GRANULAR MATERIAL TO PAVEMENT SUBGRADE ELEVATION
6. BACKFILL IN LANDSCAPE AREAS WITH NATIVE MATERIAL TO PLANTER SUBGRADE ELEVATION. MOUND TOP TO SHED AT 2% EACH DIRECTION

NOTES:
A. THIS DETAIL IS FOR USE ON PRIVATE PROPERTY ONLY. TRENCHING AND BACKFILL REQUIREMENTS FOR WORK IN THE PUBLIC RIGHT-OF-WAY SHALL BE COMPLIANT WITH THE STANDARDS OF THE AUTHORITY HAVING JURISDICTION
B. SEE GEOTECHNICAL REPORT AND PROJECT SPECIFICATIONS FOR RECOMMENDED MATERIALS AND FURTHER REQUIREMENTS (i.e. SIZE AND GRADATION OF GRANULAR MATERIALS, MINIMUM COMPACTION, MAXIMUM LIFT PLACEMENT, TRACER WIRE, ETC.)
C. IF GROUNDWATER IS ENCOUNTERED, CONSULT THE GEOTECHNICAL ENGINEER OF RECORD FOR ADDITIONAL RECOMMENDATIONS WITH REGARD TO TRENCHING, PIPE PLACEMENT, AND BACKFILL
D. REFER TO PROJECT SPECIFICATIONS FOR MINIMUM PIPE COVER AND ALTERNATE MATERIAL REQUIREMENTS. CONTRACTOR SHALL PREVENT CONSTRUCTION VEHICLES FROM DRIVING OVER PIPING WITH LESS THAN 12" COVER AT ANY POINT IN TIME DURING CONSTRUCTION

10 C5.10 UTILITY TRENCH BEDDING & BACKFILL
NTS

NOTES:
1. CONTRACTOR TO VERIFY FDC MATERIALS, FINISH, AND SIGN REQUIREMENTS (PER OFC 912.4 AND NFPA 16.12.5.8) WITH LOCAL FIRE MARSHAL
2. FDC SHALL BE PROTECTED BY ORANGE CONSTRUCTION FENCING DURING CONSTRUCTION

IF NEARBY BACKFLOW PREVENTOR VAULT, LOCATE AUTOMATIC BALL DRIP TOGETHER WITH CHECK VALVE IN VAULT. CHECK VALVE SHALL OTHERWISE BE LOCATED IN THE BUILDING

11 C5.10 FIRE DEPARTMENT CONNECTION
NTS

PLAN

ELEVATION

BACKFLOW PREVENTER SHALL BE APPROVED BY THE STATE HEALTH DEPARTMENT AND PLUMBING CODE

VAULT SHALL BE PRECAST CONCRETE WITH GALVANIZED HINGED ACCESS DOORS (OLDCASTLE, OR EQUAL)

VAULT SHALL BE MECHANICALLY LOCKED AND VALVES SHALL BE PROVIDED WITH ELECTRONIC TAMPER SWITCHES

APPROXIMATE VAULT SIZES	
BACKFLOW (DIAMETER)	VAULT (OUTSIDE)
3 INCH	7'-0"(L) 4'-8" (W) 7'-0" (H)
4 INCH	7'-0"(L) 4'-8" (W) 7'-0" (H)
6 INCH	7'-9"(L) 6'-3" (W) 7'-2" (H)
8 INCH	8'-8"(L) 6'-8" (W) 8'-1" (H)
10 INCH	8'-8"(L) 6'-8" (W) 8'-1" (H)

12 C5.10 DOUBLE CHECK DETECTOR AND VAULT
NTS

NOTES:
A. BACKFLOW PREVENTER SHALL BE APPROVED BY THE STATE HEALTH DEPARTMENT AND PLUMBING CODE
B. BACKFLOW BOX SHALL BE LOCATED IN A LANDSCAPE AREA, OR SHALL BE PROVIDED WITH A SLIP RESISTANT COVER IF IN A WALKWAY. BACKFLOW BOX SHALL NOT BE LOCATED IN A VEHICULAR AREA

13 C5.10 DOUBLE CHECK VALVE AND BOX (2" AND SMALLER)
NTS

14 C5.10 FIRE HYDRANT
NTS

NOTES:
A. BOLLARDS SHALL BE SPACED NOT MORE THAN 4 FEET ON CENTER OR LESS THAN 3 FEET FROM THE PROTECTED OBJECT
B. CONCRETE PER PROJECT SPECIFICATIONS
C. PAINT EXPOSED PORTION OF BOLLARD YELLOW PER PROJECT SPECIFICATIONS

15 C5.10 6" PIPE BOLLARD
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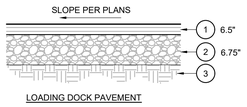

LOADING DOCK PAVEMENT

KEYNOTES:
1. CONCRETE PAVEMENT SECTION PER PROJECT SPECIFICATIONS
2. CRUSHED ROCK BASE SECTION PER PROJECT SPECIFICATIONS
3. COMPACTED SUBGRADE PER GEOTECHNICAL RECOMMENDATIONS

NOTES:
A. SEE PLANS FOR LOCATIONS OF LIGHT AND HEAVY DUTY PAVEMENTS. IF NONE SPECIFIED, USE LIGHT DUTY IN PASSENGER VEHICLE PARKING STALLS ONLY AND HEAVY DUTY IN ALL OTHER LOCATIONS
B. SEE PROJECT GEOTECHNICAL REPORT FOR PAVEMENT AND SUBGRADE PREPARATION RECOMMENDATIONS

1 C5.11 CONCRETE PAVEMENT SECTION
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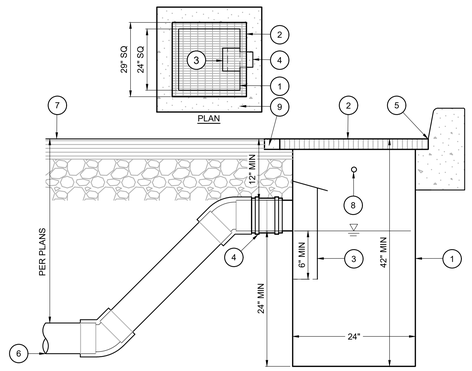
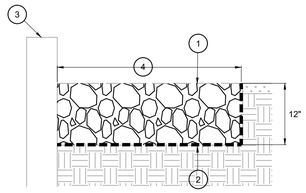


KEYNOTES:
1. PREFABRICATED, ASPHALT DIPPED, 10 GAUGE STEEL SUMPED CATCH BASIN WITH INTEGRAL GRATE FRAME
2. GRATE: HEAVY DUTY CAST IRON (ASTM A 48, CLASS 30B) BICYCLE SAFE
3. SEDIMENT TRAP WITH HINGED LID
4. INSTALL FLEXIBLE CLAMPED COUPLING ON INTEGRAL CATCH BASIN OUTLET. IMMEDIATELY TURN DOWN PIPING AT 45 DEGREES TO INTERSECT WITH THE SITE PIPING
5. LOCATE CATCH BASIN SUCH THAT THE EDGE OF GRATE FRAME IS INLINE WITH THE ABUTTING CURBLINE (WHERE APPLIES).
6. PIPE SIZE, INVERT, AND SLOPE PER PLANS
7. PAVING SECTION PER PLANS
8. 1/2 INCH TO 1 INCH DIAMETER WEEPHOLES, MINIMUM 1 PER SIDE. CONTRACTOR SHALL VERIFY COMPLIANCE WITH LOCAL JURISDICTION PRIOR TO PROCURING MATERIALS
9. 6" THICK CONCRETE COLLAR

NOTES:
A. ALL PRODUCTS USED SHALL BE COMPLIANT WITH BOTH THE UNIFORM AND LOCAL JURISDICTION PLUMBING CODES
B. WHERE ABUTTING CURBING, GRATE SHALL BE ORIENTED SO THAT THE ELONGATED PATTERN IS PERPENDICULAR TO THE CURB FACE

2 C5.11 STEEL CATCH BASIN
NTS



KEYNOTES:
1. CRUSHED, ANGULAR, 6"-10" DIAMETER ROCK (I.E. ODOT CLASS 50 RIP RAP). TOP OF RIP RAP LAYER TO BE FLUSH WITH ADJACENT GRADE
2. WOVEN FILTER FABRIC, ENCASING ALL BUT THE TOP SURFACE OF THE AGGREGATE
3. PIPE OUTFALL OR CURB BREAK LOCATION, WIDTH/DIAMATER, AND INVERT PER PLAN. CENTER RIP RAP PAD ON PIPE OUTFALL/CURB BREAK
4. RIP RAP PAD DIMENSIONS PER PLAN. IF NONE NOTED, INSTALL TO A MINIMUM WIDTH OF 12" TO EITHER SIDE OF A CURB BREAK OR PIPE OUTFALL AND 48" LONG

NOTES:
A. ALL FEATURES SHOWN OTHER THAN THE RIP RAP PAD ARE SHOWN FOR REFERENCE ONLY TO PROVIDE CONTEXT OF THE RIP RAP'S RELATIONSHIP TO ITS SURROUNDINGS. REFER TO THE PLANS FOR PROJECT SPECIFIC RELATIONSHIPS TO OTHER SITEWORK ELEMENTS

3 C5.11 RIP RAP PAD
NTS

4 C5.11 NOT USED
N.T.S.

CONTRACTOR SHALL PROTECT BIOFILTRATION BASINS BY INSTALLING ORANGE CONSTRUCTION FENCING AROUND THE PERIMETER FOLLOWING EXCAVATION TO AND PREVENT CONSTRUCTION TRAFFIC OTHER ACTIVITIES WHICH MAY POTENTIALLY REDUCE INFILTRATION. CEC >= 5 MEQ/100 GRAMS OF DRY SOIL; 8-10 PERCENT ORGANIC MATTER CONTENT; 2-5 PERCENT FINES PASSING THE 200 SIEVE

BIORETENTION SOIL AGGREGATE GRADATION	
SIEVE #	% PASSING
3/8"	100%
#4	95-100%
#10	75-90%
#40	25-40%
#100	4-10%
#200	2-5%

12" OF AMENDED SOIL MIXTURE CONTRACTOR TO USE GRADATION DETAILED IN ADJACENT BIORETENTION MINERAL AGGREGATION TABLE MEDIA SHALL HAVE A 6 IN/HR INFILTRATION RATE AND SHALL BE TESTED IN FIELD THE SOIL SHALL HAVE A K SAT RATE OF 30.48

NOTE:
SEE LANDSCAPE PLAN FOR PLANTING SCHEDULE

5 C5.11 POND SCHEMATIC
N.T.S.

KEYNOTES:
1. 4" WIDE WHITE STRIPE
2. 8" (MIN) TALL WHITE PAVEMENT NUMBERING, 2" MIN STROKE, ORIENTED TO BOTTOM RIGHT EDGE OF ZONE INDICATED

NOTES:
A. PAINT MATERIALS AND APPLICATION PER PROJECT SPECIFICATIONS
B. CONTRACTOR TO PROVIDE NUMBERING FOR ALL PEDESTRIAN, BOX TRUCK AND TRAILER STORAGE SPACES. COORDINATE WITH OWNER FOR LABELING STANDARDS.

6 C5.11 PARKING STALL NUMBERING
NTS

Architecture ▪ Interiors
Planning ▪ Engineering

Portland, OR
503.224.9560
Vancouver, WA
360.695.7879
Seattle, WA
206.749.9993
www.mcknze.com

MACKENZIE.
DESIGN DRIVEN | CLIENT FOCUSED

Client
SUNCAP PROPERTY GROUP

6101 CARNEGIE BLVD
SUITE 180
CHARLOTTE, NC
28209

Project
SUNCAP: BURBANK INDUSTRIAL PARK BTS

REVISION SCHEDULE		
Delta	Issued As	Issue Date

SHEET TITLE:
CIVIL DETAILS

DRAWN BY:

CHECKED BY:

SHEET
C5.11

JOB NO. **2220091.00**

CIVIL SET 7/7/2022

SEPA ENVIRONMENTAL CHECKLIST

Purpose of checklist:

Governmental agencies use this checklist to help determine whether the environmental impacts of your proposal are significant. This information is also helpful to determine if available avoidance, minimization or compensatory mitigation measures will address the probable significant impacts or if an environmental impact statement will be prepared to further analyze the proposal.

Instructions for applicants:

This environmental checklist asks you to describe some basic information about your proposal. Please answer each question accurately and carefully, to the best of your knowledge. You may need to consult with an agency specialist or private consultant for some questions. You may use "not applicable" or "does not apply" only when you can explain why it does not apply and not when the answer is unknown. You may also attach or incorporate by reference additional studies reports. Complete and accurate answers to these questions often avoid delays with the SEPA process as well as later in the decision-making process.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Instructions for Lead Agencies:

Please adjust the format of this template as needed. Additional information may be necessary to evaluate the existing environment, all interrelated aspects of the proposal and an analysis of adverse impacts. The checklist is considered the first but not necessarily the only source of information needed to make an adequate threshold determination. Once a threshold determination is made, the lead agency is responsible for the completeness and accuracy of the checklist and other supporting documents.

Use of checklist for nonproject proposals:

For nonproject proposals (such as ordinances, regulations, plans and programs), complete the applicable parts of sections A and B plus the SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS (part D). Please completely answer all questions that apply and note that the words "project," "applicant," and "property or site" should be read as "proposal," "proponent," and "affected geographic area," respectively. The lead agency may exclude (for non-projects) questions in Part B - Environmental Elements –that do not contribute meaningfully to the analysis of the proposal.

A. Background

1. Name of proposed project, if applicable:
   Burbank Distribution Center

2. Name of applicant:
   SunCap Property Group

3. Address and phone number of applicant and contact person:
   SunCap Property Group
   1125 17th Street, Suite 800, Denver, CO 80202
   Attn: Max Mowry Email:mmowry@suncappg.com

Date checklist prepared:
   March 21, 2022

5. Agency requesting checklist:
   Walla Walla Community Development

6. Proposed timing or schedule (including phasing, if applicable):
   The project will be designed and constructed in one phase. Construction is anticipated to take place 07/22 – 08/23.

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.
   No plans currently.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.
   A geotechnical report is currently being performed by NV5.

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.
   None are known.

10. List any government approvals or permits that will be needed for your proposal, if known.
   A Site Development Permit, building permit and addressing permit through Walla Walla County. Construction Stormwater General Permit though the Department of Ecology.

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)
   The project proposes to construct a 104,00 SQFT concrete tilt-up building consisting of a combined office and warehouse building. Site improvements to include pavement for parking and maneuvering, site lighting, storm water BMP's, utilities and landscaping. See Attachment A - Site Plan.

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.

The proposed development is located in the Burbank Business Park developed by the Port of Walla Walla. The site is located northeast of the intersection of 2nd Street and Poplar Road in Burbank, WA and consists of Lots 135, 136, 137, 138, 139 & 140 in the Burbank Business Park, as shown on the Burbank Business Park Binding Site Plan Amendment No.3. The site is in the northeast quarter of Section 2 of Township 8 North, Range 30 East of the Willamette Meridian. The lot is approximately 14.5 acres. The Port of Walla Walla is preparing a Binding Site Plan Amendment that will combine Lots, 135, 136, 137, 138, 139 & 140 into one (1) lot for development.

B. Environmental Elements

1.*Earth*

a. General description of the site:

(circle one): Flat, rolling, hilly, steep slopes, mountainous, other _____

b. What is the steepest slope on the site (approximate percent slope)?

The steepest slope is approximately 1.0%.

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils.

Quincy loamy fine sand, moderately deep over gravel per USGS Soils Maps.

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

None observed.

e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate source of fill.

The existing site is relatively flat. The goal is to have a balanced site and to grade the surfaces to direct stormwater flow away from the building.

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

The civil engineering plans will address temporary erosion and sediment control best management practices (BMPs) necessary to prevent sediment laden stormwater from discharging offsite.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

About 85 percent of the site will be covered with buildings or pavement.

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:

Temporary erosion and sediment control BMPs will be installed onsite to prevent sediment laden stormwater from discharging offsite.

2. Air

a. What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known.

Emissions from construction equipment during construction. Post construction emissions will be vehicles traveling on the site.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

No.

c. Proposed measures to reduce or control emissions or other impacts to air, if any:

None.

3. Water

a. Surface Water:

1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.

The confluence of the Columbia River and Snake River is approximately 2,500 feet west of the site.

2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.

No.

3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

N/A

4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.

No

5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.

This property is in Zone X of the Flood Insurance Rate Map, Community Panel No. 5301940175B, which bears an effective date of December 1, 1983, REVISED TO REFLECT LOMR EFFECTIVE APRIL 5, 2013. Zone X is the area determined to be outside the 500-year flood and protected by levee from 100-year flood.

6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

No. During construction, sediment laden Stormwater will be retained and infiltrated onsite. Post construction, Stormwater facilities will be designed per the Washington State Dept. of Ecology Stormwater Management Manual for Eastern Washington and Walla Walla County Standards.

b. Ground Water:

1) Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give general description, purpose, and approximate quantities if known.

No.

2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals. . . ; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

Not applicable, the site will connect to the existing sanitary sewer main.

c. Water runoff (including stormwater):

1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

Stormwater will be contained onsite. Runoff will sheet flow into curbs and conveyed into a stormwater retention basin located at the south end of the site. Stormwater facilities will be designed per the Washington State Dept. of Ecology Stormwater Management Manual for Eastern Washington and Walla Walla County Standards.

2) Could waste materials enter ground or surface waters? If so, generally describe.

No.

3) Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.

No, there are no regional drainage patterns affected by the development.

d. Proposed measures to reduce or control surface, ground, and runoff water, and drainage pattern impacts, if any:

Stormwater facilities will be designed per the Washington State Dept. of Ecology Stormwater Management Manual for Eastern Washington and Walla Walla County Standards.

4. Plants

a. Check the types of vegetation found on the site:

____deciduous tree: alder, maple, aspen, other
____evergreen tree: fir, cedar, pine, other
____shrubs
__x_grass
____pasture
____crop or grain
____ Orchards, vineyards or other permanent crops.
____ wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other
____water plants: water lily, eelgrass, milfoil, other
____other types of vegetation

b. What kind and amount of vegetation will be removed or altered?

Roughly 14.5 acres will be disturbed with the proposed construction. The existing sparse grass covering will be entirely removed and replaced with either impervious surface or new landscaping.

c. List threatened and endangered species known to be on or near the site.

None known.

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

The proposed landscaping will be typical of commercial sites in the Burbank Business Park.

e. List all noxious weeds and invasive species known to be on or near the site.

Noxious weeds and invasive species were not observed on or near the site.

5. Animals

a. List any birds and other animals which have been observed on or near the site or are known to be on or near the site.

Examples include:

birds: hawk, heron, eagle, songbirds, other:
mammals: deer, bear, elk, beaver, other:
fish: bass, salmon, trout, herring, shellfish, other _____

No animals have been observed within the project limits.

b. List any threatened and endangered species known to be on or near the site.

None known.

c. Is the site part of a migration route? If so, explain.

The site is within the Pacific flyway for migratory birds.

d. Proposed measures to preserve or enhance wildlife, if any:

None proposed.

e. List any invasive animal species known to be on or near the site.

None known.

6. Energy and Natural Resources

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

Underground electrical power and underground natural gas will be provided to the site to be used for lighting and climate control to the building.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

No.

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

The building will be constructed using material in compliance with the building code and energy requirements.

7. Environmental Health [help]

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.

1) Describe any known or possible contamination at the site from present or past uses.

None.

2) Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.

None known.

3) Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.

None.

4) Describe special emergency services that might be required.

None.

5) Proposed measures to reduce or control environmental health hazards, if any:

None proposed.

b. Noise

1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

None.

2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.

Short term construction noise. Upon development, vehicles driving on and off site, low onsite noise level.

3) Proposed measures to reduce or control noise impacts, if any:

None proposed.

8. Land and Shoreline Use

a. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe.

The site is currently vacant. Proposal will not impact any adjacent or nearby property land uses.

b. Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses as a result of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or nonforest use?

No.

1) Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how:

No.

c. Describe any structures on the site.

There are no existing structures on the site.

d. Will any structures be demolished? If so, what?

No.

e. What is the current zoning classification of the site?

IB – Industrial Business Park

f. What is the current comprehensive plan designation of the site?

Industrial

g. If applicable, what is the current shoreline master program designation of the site?

N/A

h. Has any part of the site been classified as a critical area by the city or county? If so, specify.

No.

i. Approximately how many people would reside or work in the completed project?

It is anticipated that there will be approximately 50 employees (including truck drivers).

j. Approximately how many people would the completed project displace?

None.

k. Proposed measures to avoid or reduce displacement impacts, if any:

N/A

L. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

The proposed project is in compliance with Walla Walla County standards and the Burbank Business Park restrictions.

m. Proposed measures to reduce or control impacts to agricultural and forest lands of long-term commercial significance, if any:

The proposed project is in compliance with Walla Walla County standards and the Burbank Business Park restrictions.

9. Housing

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

None.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

None.

c. Proposed measures to reduce or control housing impacts, if any:

N/A

10. Aesthetics

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

The maximum height of the building is 32 feet. The building exterior will be a beige painted concrete finish.

b. What views in the immediate vicinity would be altered or obstructed?

None.

b.P roposed measures to reduce or control aesthetic impacts, if any:

The building will be designed aesthetically similar to surrounding commercial/industrial developments.

11. Light and Glare

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

Indoor lighting, vehicle lights, site security lighting during nighttime hours.

b. Could light or glare from the finished project be a safety hazard or interfere with views?

No

c. What existing off-site sources of light or glare may affect your proposal?

None

d. Proposed measures to reduce or control light and glare impacts, if any:

The site lighting will have all LED full cut off fixtures to reduce light pollution and only direct light downward. A photometrics lighting analysis will be provided to ensure there will be no light spillage offsite.

12. Recreation

a. What designated and informal recreational opportunities are in the immediate vicinity?

The Columbia and Snake River are in the vicinity as well as Hood Park.

b. Would the proposed project displace any existing recreational uses? If so, describe.

No.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

None proposed.

13. Historic and cultural preservation

a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers ? If so, specifically describe.

No.

b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation?This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.

Several cultural resource reports, onsite monitoring work, summation reports have been completed for the Burbank Business Park infrastructure improvement (water, sewer, highway) and no items of significance were ever discovered. Enclosed as an Attachment B is a summation of the cultural resources investigation work completed on the subject site and Inadvertent Discovery Plan specific for this project.

c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc.

See above respsonse.

d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.

None. See above respsonse.

14. Transportation

a. Identify public streets and highways serving the site or affected geographic area and describe proposed access to the existing street system. Show on site plans, if any.

The site will be accessible from 2nd Avenue and runs along the west property line of the site. Walla Walla County - Public Works approved two (2) access points off 2nd Avenue for Lots 135,136,137 & 138 via a Binding Site Plan Amendment No. 3 (BSP21-001).

b. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop?

The Grape Line bus has a Burbank stop approximately a quarter mile southeast of the site.

c. How many additional parking spaces would the completed project or non-project proposal have? How many would the project or proposal eliminate?

There will be approximately 90 truck/trailer parking stalls and approximately 104 employee and visitor parking stalls. The project will not eliminate any existing stalls.

d. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private).

No

e. Will the project or proposal use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

No

f. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and nonpassenger vehicles). What data or transportation models were used to make these estimates?

Inbound and outbound trucks are expected to generate approximately 60 trips per day. Roughly 20 passenger trips per day are anticipated. A traffic impact analysis was done for the Burbank Business Park and this site is included in that study. A site specific study was not completed.

g. Will the proposal interfere with, affect or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.

No

h. Proposed measures to reduce or control transportation impacts, if any:

Enclosed as an Attachment C is the Traffic Impact Analysis prepared for the Burbank Business Park in 2013. Based on the current LOS levels and the proposed project trips, the proposed project will not have a transportation impact.

15. Public Services

a. Would the project result in an increased need for public services (for example: fire protection, police protection, public transit, health care, schools, other)? If so, generally describe.

No

Proposed measures to reduce or control direct impacts on public services, if any. N/A

16. Utilities

a. Circle utilities currently available at the site:
electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other _____

c.Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

The site utitlies needs include domestic water, fire suppression system water, sanitary sewer, telephone/communication, electricity, natural gas and garbase service. General construction activities include site work (excavation, paving, etc), onsite utility installation and typical building construction trades.

C. Signature

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature: Max Mowry

Name of signee Max Mowry

Position and Agency/Organization Development Associate

Date Submitted: 03/21/22

D. Supplemental sheet for nonproject actions

(**IT IS NOT NECESSARY** to use this sheet for project actions)

Because these questions are very general, it may be helpful to read them in conjunction with the list of the elements of the environment.

When answering these questions, be aware of the extent the proposal, or the types of activities likely to result from the proposal, would affect the item at a greater intensity or at a faster rate than if the proposal were not implemented. Respond briefly and in general terms.

1. How would the proposal be likely to increase discharge to water; emissions to air; production, storage, or release of toxic or hazardous substances; or production of noise?

Proposed measures to avoid or reduce such increases are:

2. How would the proposal be likely to affect plants, animals, fish, or marine life?

Proposed measures to protect or conserve plants, animals, fish, or marine life are:

3. How would the proposal be likely to deplete energy or natural resources?

Proposed measures to protect or conserve energy and natural resources are:

4. How would the proposal be likely to use or affect environmentally sensitive areas or areas designated (or eligible or under study) for governmental protection; such as parks, wilderness, wild and scenic rivers, threatened or endangered species habitat, historic or cultural sites, wetlands, floodplains, or prime farmlands?

Proposed measures to protect such resources or to avoid or reduce impacts are:

5. How would the proposal be likely to affect land and shoreline use, including whether it would allow or encourage land or shoreline uses incompatible with existing plans?

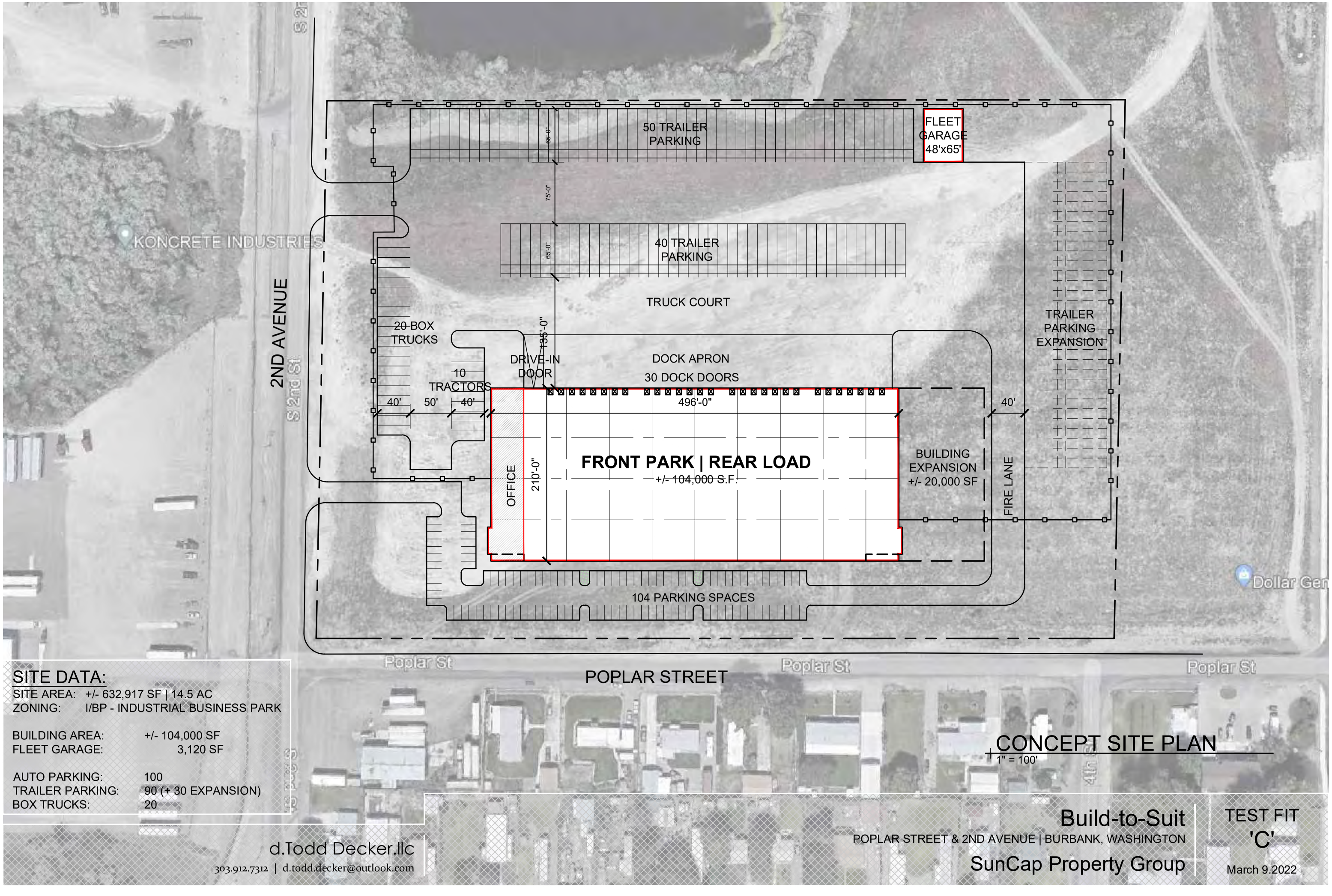
Proposed measures to avoid or reduce shoreline and land use impacts are:

6. How would the proposal be likely to increase demands on transportation or public services and utilities?

Proposed measures to reduce or respond to such demand(s) are:

7. Identify, if possible, whether the proposal may conflict with local, state, or federal laws or requirements for the protection of the environment.

Attachment A



SITE DATA:

SITE AREA: +/- 632,917 SF | 14.5 AC
ZONING: I/BP - INDUSTRIAL BUSINESS PARK

BUILDING AREA: +/- 104,000 SF
FLEET GARAGE: 3,120 SF

AUTO PARKING: 100
TRAILER PARKING: 90 (+ 30 EXPANSION)
BOX TRUCKS: 20

CONCEPT SITE PLAN

1" = 100'

d.Todd Decker.llc
303.912.7312 | d.todd.decker@outlook.com

Build-to-Suit
POPLAR STREET & 2ND AVENUE | BURBANK, WASHINGTON
SunCap Property Group

TEST FIT 'C'
March 9.2022

PORT of WALLA WALLA
JOB CREATION • TRANSPORTATION

Attachment B

310 A Street
Walla Walla Regional Airport
Walla Walla, WA 99362-2269

Phone (509 525-3100 • FAX (509) 525-3101 • www.portwallawalla.com • www.wallawallaairport.com

Port of Walla Walla - Burbank Business Park – Historical and Archeological

Several cultural resources investigation and archaeologist on-site monitoring have been conducted at the Port of Walla Walla's Burbank Business Park.

A cultural resources investigation was conducted by Plateau Archaeological Investigations, LLC (Plateau). Plateau conducted pre-field research, a pedestrian survey, and intensive subsurface investigations to determine whether impacts to historic and cultural resources would result from the proposed construction of the Port's wastewater transmission pipeline. Pre-field research included a review of known archaeological resources within a 1-mile radius of the proposed wastewater transmission pipeline as inventoried at the Washington State Department of Archaeology and Historic Preservation (DAHP). Plateau identified 27 previously recorded cultural sites and two archaeological districts located within 1 mile of the Port's wastewater transmission pipeline. One site was identified within the project area northwest of the Snake River; however, the subsurface investigations conducted by Plateau provided no evidence that the culturally significant site continues in the specific area of potential effect. In the report, Plateau concluded that the proposed wastewater transmission pipeline construction will result in no impacts to historic properties.

In 2006 and 2007, Landau Associates conducted a cultural resources investigation to determine the potential impacts associated with the installation of the Port's two water pipelines that were proposed within its Burbank Business Park. The investigation was documented in the report titled, Cultural Resources Report, Burbank Business Park Water System, Walla Walla County, Burbank, Washington, dated November 29, 2007. According to the report, Landau Associates conducted background research and a field assessment to determine whether impacts to historic and cultural resources would result from the project. In the report, Landau Associates indicated there were 22 cultural resources within a 1.5-mile radius of the proposed business park, including 14 prehistoric sites, 6 historic sites, and 2 sites that have both prehistoric and historic components. In the report, Landau Associates indicated that historic material was identified during the course of the investigation, including historic material associated with the Hood Park Farmstead, a prehistoric chert flake isolate, and a site consisting of a historic debris scatter. In the report, Landau Associates concluded that the historic material and the historic debris scatter would not be eligible for listing in the National Register of Historic Places and that the water pipeline project was not expected to disturb archaeological materials.

In April and May of 2011, a Plateau archaeologist was present during ground-disturbing activities for the U.S. 12/SR 124 Interchange Project. The Selland Construction, Inc. team excavated approximately 209,000 cubic yards of materials. Overall, the results of this project are in accordance with the expectations based on a literature review of known sites in the vicinity and previous work conducted by Landau Associates. The cultural resources monitoring resulted in the discovery of one new historic-era site, 45WW314, located in an area of stabilized sand dunes used for agriculture, located northwest of Maple Street and Columbia High School. A review of historical documents failed to reveal the presence of any historic structures or homesteading records for the location, indicating that this site neither consists of nor is associated with an historic occupation site. The site dates to circa 1910 to 1940 and was determined to be not eligible for the National Register of Historic Places. No other archaeological deposits were observed during the U.S. 12/SR 124 Interchange Project, and no further work was recommended unless the contractor chose to conduct ground-disturbing activities outside of the project area that might impact intact landforms.

Based on the investigation conducted by Plateau and Landau Associates as referenced above, two properties with archaeological significance are located in the immediate project vicinity, the Lower Snake River Archeological District and the Ainsworth Townsite. Additionally, there are two National Register Historic Property sites in the immediate vicinity of the project.

The Lower Snake River Archaeological District consists of 14 pre-contact sites that extend from the confluence of the Snake and Columbia rivers up the Snake River (both the east and west shores) for approximately 10 miles. The Ainsworth Townsite is the site of a historic-era town that occupies land north of Sacajawea State Park and on the Franklin County side of the Snake River. A pre-contact camp is located within the project area on the Franklin County side of the Snake River. In addition, Sacajawea State Park is the site of a pre-contact village and is located south of the project area on the Franklin County side of the Snake River.

Based on cultural resources investigations conducted in the project area, project construction activities are not expected to disturb archaeological materials. Additionally, Sacajawea State Park and the Ainsworth Townsite have been identified as being south of the proposed area of ground disturbance. Based on the available information, the portion of the project area including the proposed business park that is within the Lower Snake River Archaeological District would not impact any of the individual sites within that district.

In the event of an unanticipated discovery of cultural resources, the property owner and construction contractor, as well as any subsequent tenant or owner, would be governed by statutory provisions protecting cultural resources in chapter 27.53 RCW. An Inadvertent Discovery Plan will be provided to the construction contractor. Enclosed as an attachment is the draft Inadvertent Discovery Plan for your review and comment.

INADVERTENT DISCOVERY PLAN (IDP)
AND
PROCEDURES OF CULTURAL RESOURCES AND HUMAN SKELETAL REMAINS

PORT OF WALLA WALLA – BURBANK BUSINESS PARK

Inadvertent Discovery Plan (IDP) establishes protocols to be followed if potentially important archaeological materials or human remains are unearthed during the Project activities. These procedures are intended to provide compliance with applicable federal and state laws, preserve significant archaeological resources, and ensure that any human remains are appropriately treated.

1. **Project Description**
   Any project performed at the Port of Walla Walla's Burbank Business Park.

2. **Cultural Resources Orientation**
   The IDP and Procedures of Cultural Resources and Human Skeletal remains will be distributed and discussed at the project pre-construction meeting prior to initiation of construction.

3. **Recognizing Cultural Resources**
   A cultural resource discovery could be prehistoric or historic. Examples include, but are not limited to:
   - An accumulation of shells, burned rocks or other food related materials
   - Bones or small pieces of bone,
   - An area of charcoal or very dark stained soil with artifacts,
   - Stone tools or waste flakes (i.e. an arrowhead, or stone chips),
   - Clusters of tin cans or bottles, logging or agricultural equipment that appears to be older than 50 years,
   - Buried railroad tracks, decking, or other industrial materials.

   When in doubt, assume the material is a cultural resource.

4. **On-Site Responsibilities**

   STEP 1: Stop Work. If any employee, contractor or subcontractor believes that he or she has uncovered a cultural resource at any point in the project, all work adjacent to the discovery must stop. Do not pick up, inspect, or move artifacts or human remains and the discovery location should be secured at all times.

   STEP 2: Notify Monitor. If there is an archaeological monitor for the project, notify that person. If there is a monitoring plan in place, the monitor will follow its provisions.

   STEP 3: Notify Project Management: Contact the Project Manager. The Project will make all other calls and notifications. If human remains are encountered, treat them with dignity and respect at all times. Cover the remains with a tarp or other materials (not soil or rocks) for temporary protection in place and to shield them from being photographed. Do not call 911 or speak with the media.

5. **Further Contacts and Consultation**
   A. Project Manager's Responsibilities:
      (1) Protect Find: The Project Manager is responsible for taking appropriate steps to protect the discovery site. All work will stop in an area adequate to provide for the total security, protection,

and integrity of the resource. Vehicles, equipment, and unauthorized personnel will not be permitted to traverse the discovery site. Work in the immediate area will not resume until treatment of the discovery has been completed following provisions for treating the archaeological/cultural material as set forth in this document.

(2) Direct Construction Elsewhere On-site: The Project Manager may direct construction away from cultural resources to work in other areas prior to contacting the concerned parties.

(3) Identify Find: The Project Manager will ensure that a qualified professional archaeologist examines the find to determine if it is archaeological.
- If it is determined not archaeological, work may proceed with no further delay.
- If it is determined to be archaeological, the Project Manager will continue with notification.
- If the find may be human remains or funerary objects, the Project Manager will ensure that a qualified physical anthropologist examines the find. If it is determined to be human remains, the procedure described in Section 6 will be followed.

(4) Notify DAHP: The Project Manager will contact the Department of Archaeology and Historic Preservation (DAHP).

(5) Notify Tribes: If the discovery may relate to Native American interests, the Project Manager will contact the project's Tribal Liaison, or, if the project is not assigned a Liaison, the Executive Tribal Liaison.

General Contacts:

Department of Archaeology and Historic Preservation:

Dr. Allyson Brooks	Rob Whitlam, Ph.D.
State Historic Preservation Officer	Staff Archaeologist
360-480-6922	360-890-2615
Allyson.Brooks@dahp.wa.gov	Rob.Whitlam@dahp.wa.gov

The Project Manager will contact the interested and affected Tribes.

Confederated Tribes of Umatilla Indians
Teara Farrow Ferman
Cultural Resources Protection Program
Confederated Tribes of the Umatilla Indian Reservation
46411 Ti'mine Way, Pendleton, OR 97801
Main Office: (541) 276-3447
CulturalResources@ctuir.org

Further Activities

(1) Archaeological discoveries will be documented as described in Section 7.
(2) Construction in the discovery area may resume as described in Section 8.

6. Special Procedures for the Discovery of Human Skeletal Material

Any human skeletal remains, regardless of antiquity or ethnic origin, will be treated with dignity and respect at all times and will comply with applicable state and federal laws, and the following procedure:

A. Notify Law Enforcement Agency or Coroner's Office:
In addition to the actions described in Sections 4 and 5, the Project Manager will immediately notify the local law enforcement agency or coroner's office. The coroner (with the assistance of law enforcement personnel) will determine if the remains are human, whether the discovery site constitutes a crime scene, and will notify DAHP.

Agency: Walla Walla County Coroner's Office 509-524-2845

B. Further Activities:
(1) Documentation of human skeletal remains and funerary objects will be agreed upon through the consultation process described in RCW 27.44.055, RCW 68.50, and RCW 68.60.
(2) When consultation and documentation activities are complete, construction in the discovery area may resume as described in Section 8.

7. Documentation of Archaeological Materials

Archaeological deposits discovered during construction will be assumed eligible for inclusion in the National Register of Historic Places under Criterion D until a formal Determination of Eligibility is made. Cultural Resources Program staff will ensure the proper documentation and assessment of any discovered cultural resources in cooperation with the federal agencies, including the DAHP, affected tribes, and a contracted consultant (if any).

All prehistoric and historic cultural material discovered during project construction will be recorded by a professional archaeologist on State of Washington cultural resource site or isolate form using standard techniques. Site overviews, features, and artifacts will be photographed; stratigraphic profiles and soil/sediment descriptions will be prepared for subsurface exposures. Discovery locations will be documented on scaled site plans and site location maps.

Cultural features, horizons, and artifacts detected in buried sediments may require further evaluation using hand-dug test units. Units may be dug in a controlled fashion to expose features, collect samples from undisturbed contexts, or interpret complex stratigraphy. A test excavation unit or small trench might also be used to determine if an intact occupation surface is present. Test units will be used only when necessary to gather information on the nature, extent, and integrity of subsurface cultural deposits to evaluate the site's significance. Excavations will be conducted using state-of-the-art techniques for controlling provenience.

Spatial information, depth of excavation levels, natural and cultural stratigraphy, presence or absence of cultural material, and depth to sterile soil, regolith, or bedrock will be recorded for each probe on a standard form. Test excavation units will be recorded on unit-level forms, which include plan maps for each excavated level, and material type, number, and vertical provenience (depth below surface and stratum association where applicable) for all artifacts recovered from the level. A stratigraphic profile will be drawn for at least one wall of each test excavation unit.

Sediments excavated for purposes of cultural resources investigation will be screened through 1/8-inch mesh, unless soil conditions warrant ¼-inch mesh.

All prehistoric and historic artifacts collected from the surface and from probes and excavation units will be analyzed, catalogued, and temporarily curated. The ultimate disposition of cultural materials will be determined in consultation with the federal agencies, DAHP, and the affected tribes.

Within 90 days of concluding fieldwork, a technical report describing any and all monitoring and resultant archaeological excavations will be provided to the Project Manager, who will forward the report to SHPO, and the affected tribe(s).

If assessment activity exposes human remains (burials, isolated teeth, or bones), the process described in Section 6 above will be followed.

8. <u>Proceeding with Construction</u>

Project construction outside the discovery location may continue while documentation and assessment of the cultural resources proceed. A professional archaeologist must determine the boundaries of the discovery location. In consultation with DAHP and affected tribes, the Project Manager will determine the appropriate level of documentation and treatment of the resource. If federal agencies are involved, the agencies will make the final determinations about treatment and documentation.

Construction may continue at the discovery location only after the process outlined in this plan is followed and determine that compliance with state and federal laws is complete.

Attachment C

Transportation Impact Analysis

BURBANK BUSINESS PARK

Prepared for:
Port of Walla Walla

April 2013

Prepared by:

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Table of Contents

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Executive Summary

This section provides an overview of the Transportation Impact Analysis (TIA) prepared for the proposed Burbank Business Park through responses to frequently asked questions (FAQs).

Where is the project located?

The project is located south of SR 12 generally between 2nd Street and W Humorist Road in Burbank, WA. Primary regional access to the site is provided via the SR 124/SR 12 interchange.

What is the project land use and trip generation?

The Burbank Business Park is anticipated to include several land use types within the approximately 110 acres of development. Ultimately market demands will dictate the make-up. For purposes of this analysis the following assumptions were used to develop the forecast trip generation and assessment of impacts. The project would include the construction of a mixed use development that would include

- ~53 Acres of Industrial land use
- ~186,200 gsf of retail land use (17 Acres)
- ~434,400 gsf of Business Park land use (40 Acres)

Based on the land use assumptions above, the proposed development would to generate approximately 1,740 total trips during the weekday PM peak hour with 1,444 considered new trips to the area. During the weekday AM peak hour, the site would generate a total of approximately 1,130 with 1,057 new to the area. The impacts of the project are measured based on the anticipated trip generation. While an initial land use assumption has been made to develop a trip generation estimate, actual land uses may vary based on market conditions. Ultimately, the analysis is dependent on the number of trips generated by the project.

What are the existing and future without-project conditions in the study area?

All study intersections currently operate at LOS B or better during the weekday AM and PM peak hour. In 2033 without the proposed project, all study intersections will continue to operate at LOS B or better.

Would the project have any transportation impacts?

All study intersections are anticipated to operate at LOS B or better during the weekday AM and PM peak hour, with the exception of SR 124 / SR 12 EB Ramps and 5th Street / Jantz Road. At SR 124 / SR 12 EB Ramps LOS during the weekday AM and PM peak hours would be LOS D and LOS E, respectively.

What mitigation measures are recommended?

Several improvements and recommendations have been identified to address and mitigate the anticipated impacts of the project. Figure 6.within this report provides a summary of the intersection improvements and recommendations for the internal roadway cross-sections.

SR 124/SR 12 Eastbound Ramp
In 2033 with buildout of the site, intersection LOS and vehicle queuing on the off-ramp are expected to degrade to unacceptable levels. In an unmitigated scenario, consistent with current intersection geometry, vehicle queues will extend back onto the mainline portions of SR 12. Mitigation at this location that has been identified includes revisions to the roundabout that accommodate dual left-turn movements from the ramp to southbound 5th Street as well as the widening of the south leg to provide dual entry lanes. These revisions are not intended to modify the alignment of the ramps, but focus on the configuration of the roundabout only.

5th Street/Jantz Road
With the development anticipated east and west along Jantz Road, turning movements anticipated for this intersection exceed the capacity of the current configuration. Some form of advanced traffic control such as a roundabout or a traffic signal will be required. The analysis shows that either improvement type would accommodate the needs of the project. Given the relative close proximity of the SR 124/SR 12 EB ramp roundabout, traffic patterns at the intersection, and the different cross-sectional needs of 5th Street north and south of the intersection, we are recommending a roundabout be considered at this location. Between Jantz Road and the SR 12 eastbound ramps, the 5th Street/SR 124 section will need to be widened to 4 lanes to accommodate the necessary improvements at both intersections.

The specific timing of the improvements and when they will be triggered will be dependent on the location of the project within the larger site and nature of the incremental developments. As is the case of most large scale projects envisioned to develop over time, a monitoring program should be utilized to identify the need and timing of the recommended transportation improvements. This monitoring program would include the review of individual application as they are proposed. In each application, a smaller scale analysis should be prepared that provides an overview of the anticipated trip generation, comparison to the assumptions within this document and updated analysis of the two key locations described above. This analysis can also be used to monitor existing traffic levels so assumptions within this document can continue to be reviewed, validated or updated as necessary.

Introduction

The purpose of this transportation impact analysis (TIA) is to identify potential traffic-related impacts associated with the Burbank Business Park development in Burbank, WA. This TIA has been prepared as part of the Binding Site Plan application process currently underway with Walla Walla County. As necessary, mitigation measures are identified that would offset or reduce significant impacts.

Project Description

The project is located south of SR 12 generally between 2nd Street and W Humorist Road in Burbank, WA and would include a mixed use development that would be constructed over the next 20 years. The exact development land uses, quantities, location within the site, and timing is dependent on market conditions. A preliminary estimate was developed for this analysis and includes the following:

- ~53 Acres of Industrial land use
- ~186,200 gsf of retail land use (17 Acres)
- ~434,400 gsf of Business Park land use (40 Acres)

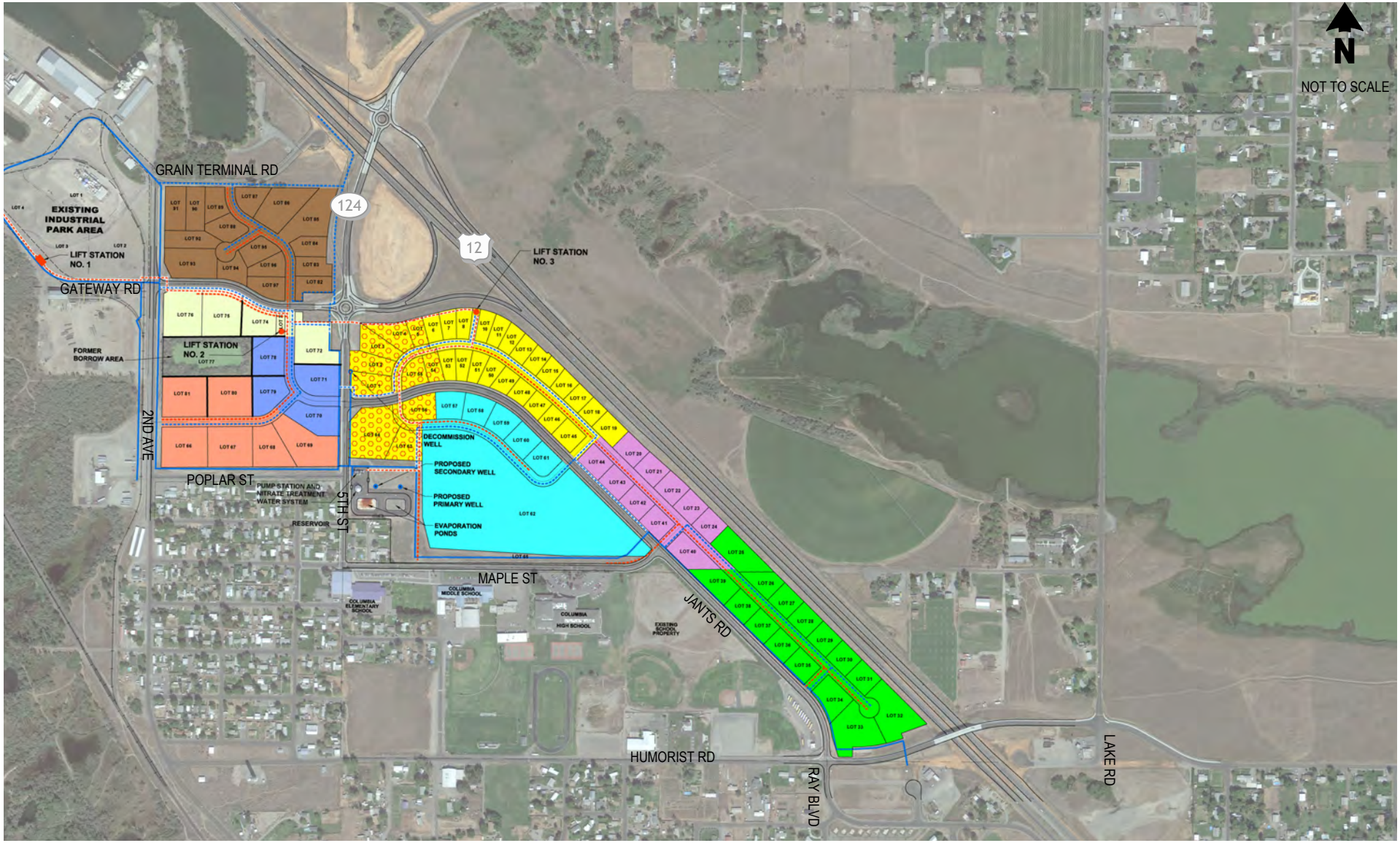
The site vicinity and the proposed site plan is illustrated in Figure 1.

Study Approach

The scope of the analysis is based on discussions with Walla Walla County staff and guidelines within the *Walla Walla County Traffic Impact Analysis Guidelines* (Appendix A). Based on discussions, the following study intersections were evaluated during the weekday AM and PM peak hour:

1. SR 124 / Hood Park Road
2. SR 124 / SR 12 WB Ramps
3. SR 124 / SR 12 EB Ramps
4. 5th Street / Jantz Road
5. 5th Street / Poplar Street
6. 5th Street / Maple Street
7. Jantz Road / Maple Street
8. Jantz Road / Humorist Road
9. Lake Road / Humorist Road

This analysis focuses on a 20 year horizon period based on the TIA requirements and conversations with County staff.



Site Plan and Site Vicinity

FIGURE
1

Burbank Business Park

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Existing and Future Without-Project Conditions

The following section describes both existing and 2033 without-project conditions within the identified study area. The review and assessment of the long-term conditions provides a frame of reference and baseline condition against which the project impacts are measured against. Study area characteristics are provided for the roadway network, planned improvements, existing and forecasted without-project volumes, and traffic operations.

Roadway Network

The existing roadway network is discussed along with planned improvements that would likely be complete before the proposed project horizon year, if any. In general, the roadway descriptions given apply to the portions of the roadways within the study area of the proposed project.

The street system providing access to the site includes two-way streets, with limited non-motorized facilities currently provided. The primary roadways within the vicinity of the site are described in Table 1.

Table 1. Roadway Network Existing Conditions Summary

Roadway	Arterial Classification	Posted Speed Limit	Number of Travel Lanes	Parking?	Sidewalks?	Bicycle Facilities?
SR 12	Freeway	60 mph	2	No	No	No
SR 124	Principal Arterial	40 mph	2	No	No	No
5th Street	Major Collector	25 mph	2	No	Yes[1]	No
Poplar Street	Local Street	25 mph	2	No	No	No
Maple Street	Local Street	25 mph	2	No	Yes[2]	No
Jantz Road	Local Street	25 mph	2	No	No	No
Humorist Road	Minor Arterial	40 mph	2	No	Yes[3]	No
Lake Road	Major Collector	40 mph	2	No	No	No

1. West side of N 5th Street
2. South side of Maple Street
3. North side of Humorist Road

Planned Improvements

A review of the WSDOT Capital Improvement Program (2013 – 2015) and Walla Walla County Priority Program (2013 – 2018) was completed to determine if any capacity improvement projects are identified within the study area. Based on this review, no planned capacity improvements were identified within the study area. In addition, no future unfunded projects were identified in the study area. Thus, the 2033 forecasted conditions are evaluated assuming the same roadway network as exists today.

Traffic Volumes

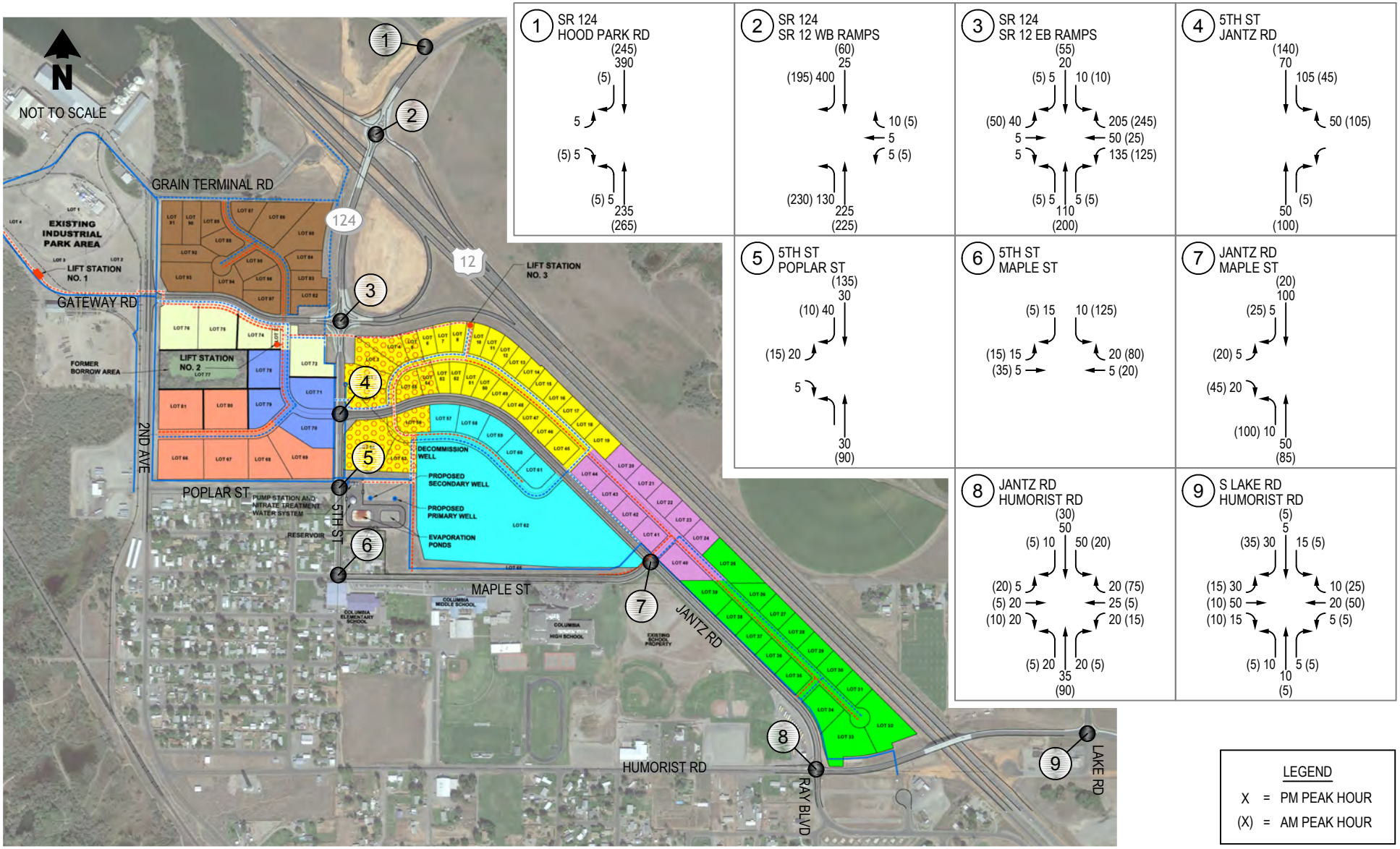
Existing weekday AM and PM peak hour traffic counts at the study intersections were collected in March 2013. The existing traffic volumes are shown in Figure 2. Detailed count worksheets are provided in Appendix B.

2033 without-project volumes were estimated by applying a general annual growth rate of 1.0-percent to existing volumes. This growth rate was determined using the Benton Franklin Council of Governments (BFCOG) transportation demand model growth estimates between

2010 and 2030. In addition, historical traffic volumes within the study area shows little to no growth in traffic has occurred over the last several years, so use of a one percent growth rate is likely conservative. Based on coordination with the County, no pipeline projects exist within the vicinity of the project. Figure 3 illustrates 2033 without-project weekday AM and PM peak hour traffic volumes at the study intersections.

In addition to a review of the BFCOG model, 2030 forecasts developed by WSDOT for the US 12/US 124 Interchange (US 12/SR 124 Interchange Study Traffic Analysis Report, August 2006) were reviewed. As noted in the WSDOT analysis these forecasts included some level of anticipated growth in the Burbank area associated with this proposed development. As will be discussed in the project impacts section the WSDOT forecasts underestimated the development potential and associated trip generation for this area. As such the determination was made to base without-project forecasts on the existing traffic counts plus an annual growth rate of one percent[1]. While this results in a lower "without-project" forecast then projected by WSDOT, the future with-project volumes exceed the WSDOT projection of the interchange.

[1] One percent based on BFCOG model and includes the impact of growth outside the vicinity of this project.



Existing Weekday AM and PM Peak Hour Traffic Volumes

FIGURE **2**

Burbank Business Park

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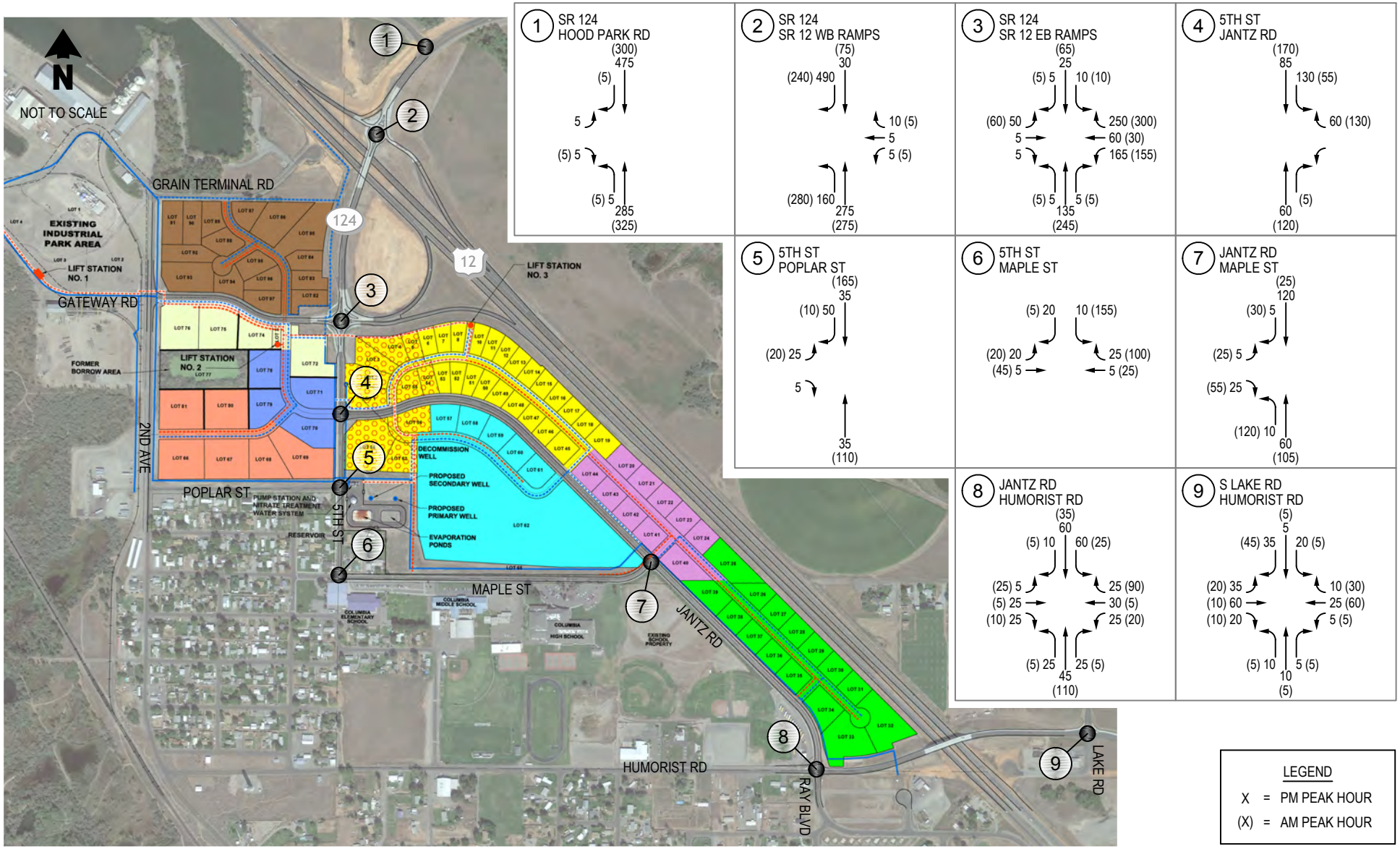

2033 Without-Project Weekday AM and PM Peak Hour Traffic Volumes

FIGURE 3

Burbank Business Park

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Traffic Operations

Existing and future traffic operations are evaluated based on conditions at intersections. Intersections typically control the capacity of road network, since these are the locations that process conflicting traffic flows.

The operational characteristics of an intersection are determined by calculating the intersection level of service (LOS). Level of service for intersection operations is described alphabetically (A through F). LOS is based on the calculated average control delay per vehicle and is typically reported for the whole intersection for signalized and all-way stop-controlled intersections, and by movement for two-way, stop-controlled intersections. Control delay is defined as the combination of initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. Appendix C provides a more detailed explanation of the LOS criteria.

Walla Walla County has established a LOS standard of LOS D at signalized and unsignalized intersections in urban areas and LOS C for any intersection in rural areas. WSDOT has established a standard of LOS C in rural areas and LOS D in urban areas. Existing and 2033 without-project peak hour level of service was calculated at study intersections based on methodologies contained in the *Highway Capacity Manual* (Transportation Research Board, 2000). *Synchro 8.0* and was used for the unsignalized intersection analysis and Sidra 5.0 was used for the roundabout intersection analysis. Results for the weekday AM and PM peak hour are summarized in Table 2. Detailed LOS worksheets are included in Appendix D.

Table 2. Existing and 2033 Without-Project LOS Summary

	Existing (2013)			2033 Without-Project		
Intersection	**LOS[1]**	**Delay[2]**	**V/C[3] or WM[4]**	**LOS**	**Delay**	**V/C or WM**
Weekday AM Peak Hour						
SR 124 / Hood Park Road	B	12	EB	B	13	EB
SR 124 / SR 12 WB Ramps	A	8	0.30	A	8	0.34
SR 124 / SR 12 EB Ramps	A	8	0.19	A	8	0.24
5th Street / Jantz Road	B	10	WB	B	11	WB
5th Street / Poplar Street	B	11	EB	B	12	EB
5th Street / Maple Street	B	11	SB	B	13	SB
Jantz Road / Maple Street	B	10	EB	B	11	EB
Jantz Road / Humorist Road	B	12	NB	B	13	NB
Lake Road / Humorist Road	A	10	NB	A	10	NB
Weekday PM Peak Hour						
SR 124 / Hood Park Road	B	13	EB	B	15	EB
SR 124 / SR 12 WB Ramps	A	7	0.31	A	7	0.34
SR 124 / SR 12 EB Ramps	A	8	0.19	A	8	0.19
5th Street / Jantz Road	A	9	WB	A	9	WB
5th Street / Poplar Street	A	9	EB	A	9	EB
5th Street / Maple Street	A	9	SB	A	9	SB
Jantz Road / Maple Street	A	9	EB	A	9	EB
Jantz Road / Humorist Road	B	11	SB	B	12	SB
Lake Road / Humorist Road	A	10	NB	B	10	NB

1. Level of Service as defined in the *Highway Capacity Manual* (TRB, 2000)
2. Average delay per vehicle in seconds.
3. Volume-to-capacity ratio reported for signalized intersections.
4. Worst movement or approach reported for unsignalized intersections.

As shown in Table 2, during the existing and 2033 without project weekday AM and PM peak hour, all study intersections currently operate at LOS B or better.

Traffic Safety

Collision records were reviewed within the study area to document existing traffic safety issues. The most recent summary of collision data from WSDOT is for the three-year period between January 1, 2009 and December 31, 2011. A historical review of the frequency of collisions was conducted at study intersections. Collisions per million entering vehicles (MEV) were also calculated; typically locations with more than one collisions per MEV should be considered for further study[2]. Based on a review of the data provided by WSDOT, there were no collisions reported at any of the study area intersections, with the exception of the Humorist Road/Lake Road intersection. A summary of the three year history of collisions at this location is provided in Table 3.

Table 3. Study Intersection Collision Data Summary

Intersection	Number of Reported Collisions				Average	Collision per MEV[1]
	2009	2010	2011	Total		
Humorist Road / Lake Road	0	1	1	2	0.67	0.90

1. MEV = Million Entering Vehicles.

As shown in Table 3, at the Humorist Road and Lake Road intersection, the average collision range was 0.67 collisions per year at that study intersection. It should be noted that SR 12 and SR 124 interchange was newly built as of May 2012 and no collision reports have been reported since then.

[2] Based on the Institute of Transportation Engineers Recommended Practice

Project Impacts

This section of the analysis documents project-generated impacts within the study area. First, peak hour traffic volumes are estimated for the project and then distributed and assigned to adjacent roadways and intersections within the study area. Next, project traffic is added to the 2033 forecast baseline volumes. The impact analysis then describes the impact to traffic volumes, traffic operations, and traffic safety.

Trip Generation

Project trip generation was estimated based on equations published by the Institute of Transportation Engineers (ITE) in *Trip Generation* (9th Edition, 2012). The trip generation estimate for the development is based on a mix of uses anticipated at full buildout. The trip generation was based on the site as a whole, although development will take place at a parcel level. The land uses include Shopping Center (LU 820), Business Park (LU 770), and Industrial Park (LU 130). Based on the mix of land uses both pass-by trips and internal trips were accounted for.

Pass-by trips represent trips that are currently passing by the site. With the addition of the proposed development, these trips would stop at the site before continuing on their way. As such, the trips do not represent new trips to the adjacent roadway system. Due to the limited traffic on the streets adjacent to the site, the majority of pass-by trips were *diverted* from SR 12. The assignment of traffic from SR 12 and the local streets adjacent to the site were based on the relative volumes on each of the adjacent roadways. Internal trips are those that occur between uses internal to the site. The *ITE Trip Generation Handbook* contains information related to potential internalization between uses. Based on the mix of land uses, ITE procedures suggest an internal capture rate of approximately five percent during the weekday PM peak hour. A five percent internal capture was also assumed for the weekday AM peak hour.

Table 4 shows the resulting weekday AM and PM peak hour vehicle trip generation for the business park.

Table 4. Trip Generation Summary – Weekday AM and PM Peak Hour

Land Use	Size	Trip Rate[1]	Internal Trips	Pass-by Trips	New Peak Hour Trips		
					Total	In	Out
Weekday AM Peak Hour							
Industrial (LU 130)	53.2 Acres	EQN	-20	0	352	299	53
Shopping Center (LU 820)	186,200 sf	EQN	-10	-72	146	99	47
Business Park (LU 770)	434,400 sf	EQN	-32	0	559	486	73
Total			**-62**	**-72**	**1,057**	**884**	**173**
Weekday PM Peak Hour							
Industrial (LU 130)	53.2 Acres	EQN	-20	0	352	68	284
Shopping Center (LU 820)	186,200 sf	EQN	-46	-296	567	264	303
Business Park (LU 770)	434,400 sf	EQN	-28	0	525	131	394
Total			**-94**	**-296**	**1,444**	**463**	**981**

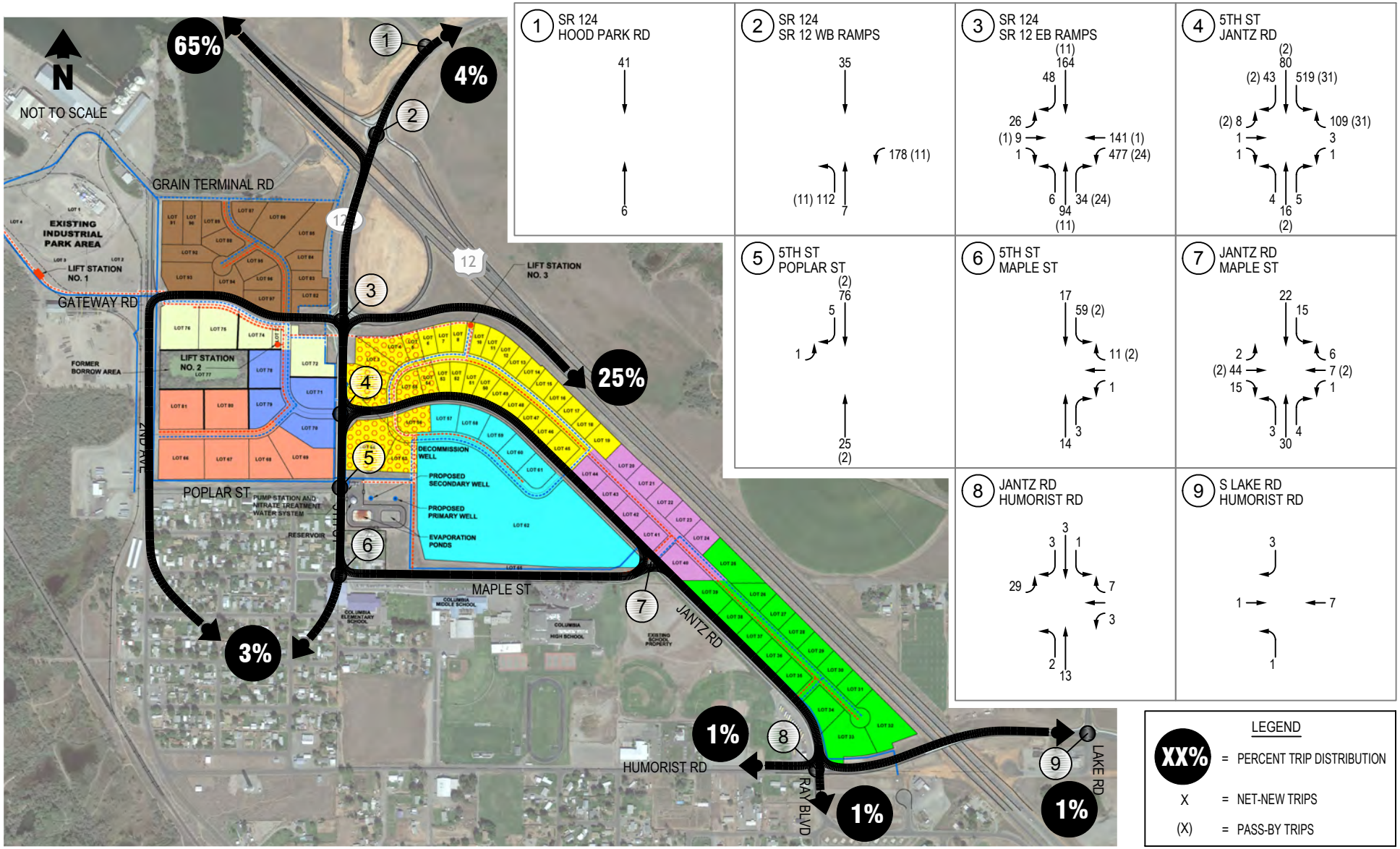
1. Trips rates from ITE Trip Generation Manual, 9th Edition.

As shown in Table 4, the development is anticipated to generate 1,057 net new weekday AM peak hour trips and 1,444 net new weekday PM peak hour trips.

Trip Distribution and Assignment

Project traffic was assigned to the surrounding roadway network based on the distribution patterns obtained from the BFCOG transportation demand model, existing traffic volumes on US 12, and projected growth areas in the region. The distribution for the weekday AM and PM peak hour is illustrated in Figure 4. The project distribution generally includes approximately 65 percent to/from the west via SR 12, 25 percent to/from the ease via SR 12, and 10 percent within the Burbank area and north of SR 12. Figure 4 also shows the resulting weekday AM and PM peak hour trip assignment.

The net new project-generated traffic was added to without project traffic volumes to obtain 2033 with-project weekday AM and PM peak hour traffic volumes for the study intersections. The 2033 weekday AM and PM peak hour traffic volumes are included in Figure 5. Relative to the SR 12 interchange volumes prepared by WSDOT, the projects are higher than forecasted. For example, the state volumes estimate approximately 1,350 PM peak hour and 17,000 daily volumes through SR 124 / SR 12 EB Ramps. Based on our forecasts we project approximately and 2,400 PM peak hour trips and 29,000 daily trips through the intersection. The primary difference is the number of vehicles traveling along 5th Street to/from the project site.



AM Project Trip Distribution and Assignment

FIGURE **4a**

Burbank Business Park

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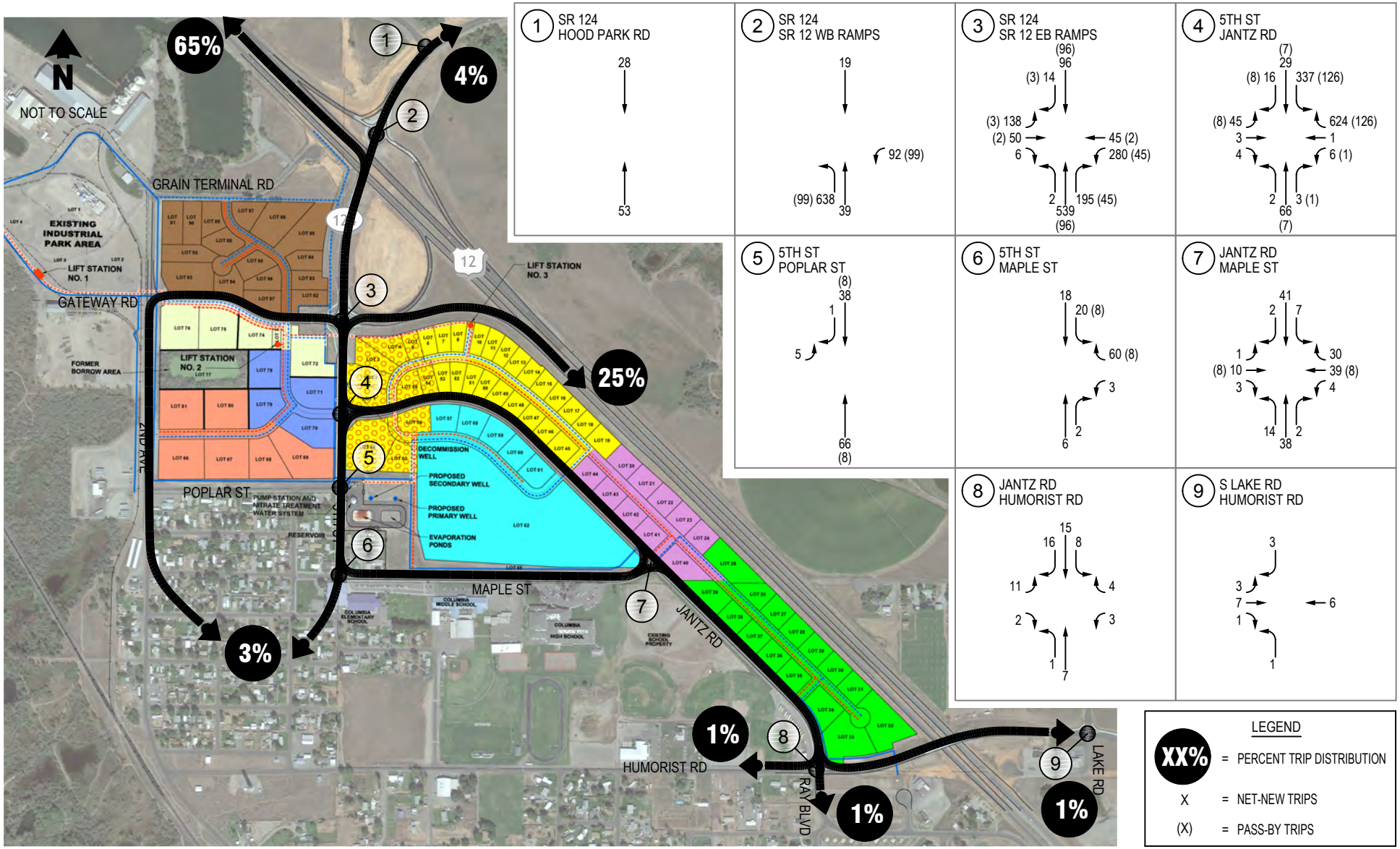

PM Project Trip Distribution and Assignment

FIGURE **4b**

Burbank Business Park

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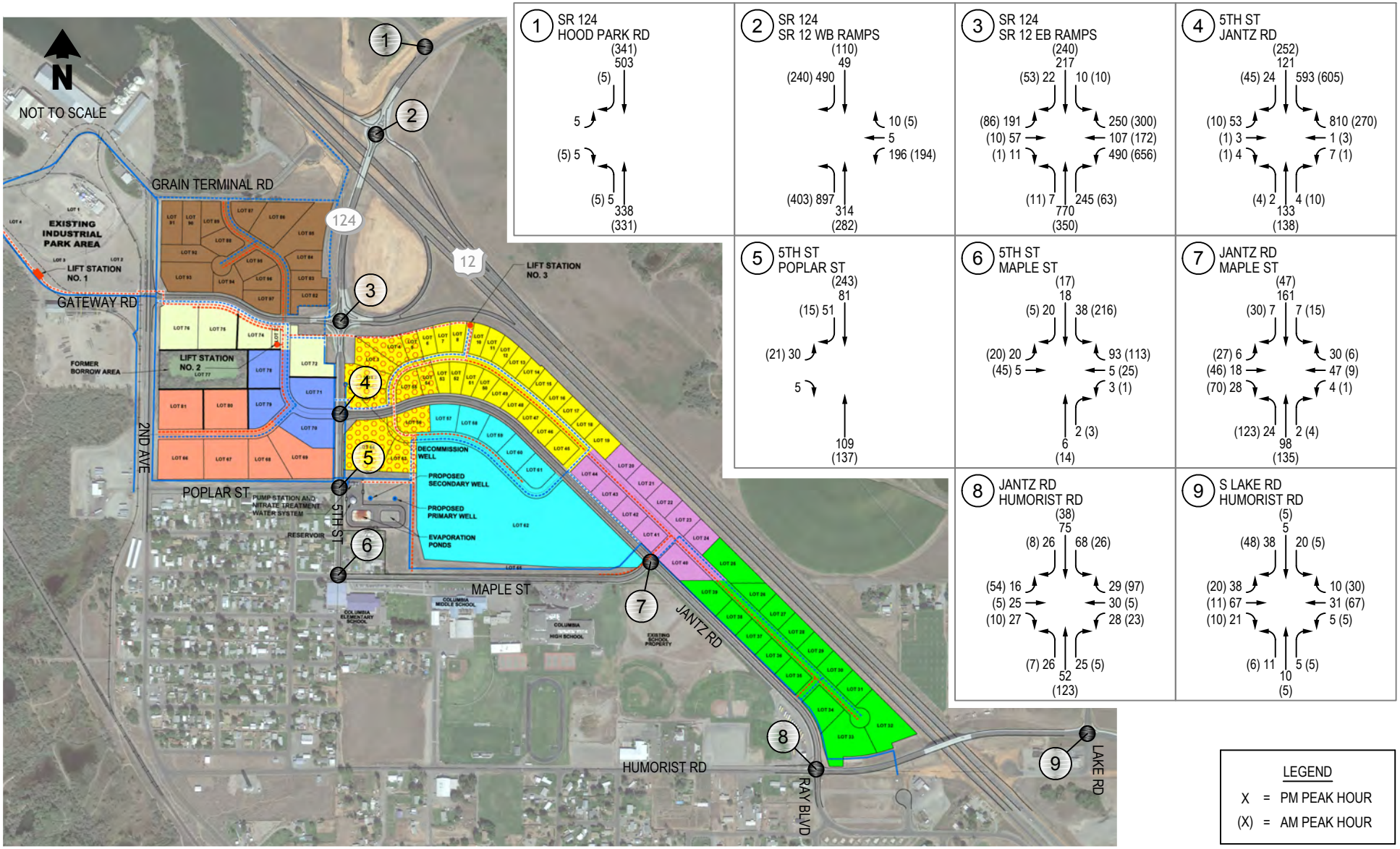

1 SR 124 / HOOD PARK RD

(341) 503
(5) 5
5 (5) 5
(5) 5 338 (331)

2 SR 124 / SR 12 WB RAMPS

(110) 49
(240) 490 10 (5)
5
196 (194)
(403) 897 314 (282)

3 SR 124 / SR 12 EB RAMPS

(240) 217
(53) 22 10 (10)
(86) 191 250 (300)
(10) 57 107 (172)
(1) 11 490 (656)
(11) 7 245 (63)
770 (350)

4 5TH ST / JANTZ RD

(252) 121
(45) 24 593 (605)
(10) 53 810 (270)
(1) 3 1 (3)
(1) 4 7 (1)
(4) 2 4 (10)
133 (138)

5 5TH ST / POPLAR ST

(243) 81
(15) 51
(21) 30
5
109 (137)

6 5TH ST / MAPLE ST

(17) 18
(5) 20 38 (216)
(20) 20 93 (113)
(45) 5 5 (25)
3 (1)
2 (3)
6 (14)

7 JANTZ RD / MAPLE ST

(47) 161
(30) 7 7 (15)
(27) 6 30 (6)
(46) 18 47 (9)
(70) 28 4 (1)
(123) 24 2 (4)
98 (135)

8 JANTZ RD / HUMORIST RD

(38) 75
(8) 26 68 (26)
(54) 16 29 (97)
(5) 25 30 (5)
(10) 27 28 (23)
(7) 26 25 (5)
52 (123)

9 S LAKE RD / HUMORIST RD

(5) 5
(48) 38 20 (5)
(20) 38 10 (30)
(11) 67 31 (67)
(10) 21 5 (5)
(6) 11 5 (5)
10 (5)

LEGEND
X = PM PEAK HOUR
(X) = AM PEAK HOUR

Future With-Project Weekday AM and PM Peak Hour Traffic Volumes

FIGURE 5

Burbank Business Park

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Traffic Operations Impact

This section of the analysis documents the LOS and vehicle queue analysis conducted for the with-project weekday AM and PM peak hour conditions.

Intersection LOS

Future with-project level of service analysis was conducted for the weekday AM and PM peak hour to analyze traffic impacts of the proposed project. Existing traffic volumes in the immediate vicinity of the project are fairly low. With the increased traffic in the area due to the project, several assumptions have been modified from the analysis of the existing and baseline conditions. These include:

- Intersection Peak Hour Factor (PHF) was increased to 0.92 to reflect the increase in traffic and disbursement over the peak hour to reflect a more consistent distribution of traffic throughout the peak hour.
- At intersections where no heavy vehicles were observed in the existing observations, a two percent heavy vehicle assumption was added to the calculations..
- At the SR 124/SR 12 ramp intersections, a high percentage of heavy vehicles were observed in existing conditions. The current higher percentage of heavy vehicles occurs because background traffic volumes are low. With increasing levels of non-truck traffic die to the project, the percentage of truck traffic to the overall traffic volumes will decrease. A four percent heavy vehicle assumption was made for all approaches to these two intersections.

Other parameters such as channelization and intersection control were held consistent with without project conditions. Table 5 compares the 2033 without- and with-project traffic operations during the weekday AM and PM peak hour. The detailed LOS worksheets are included in Appendix D.

As shown in Table 5, during the with-project weekday AM peak hour all study intersections would continue to operate at LOS B or better, with the exception of SR 124 / SR 12 EB Ramps and 5th Street / Jantz Road. At SR 124 / SR 12 EB Ramps LOS during the weekday AM and PM peak hours is LOS D and LOS F, respectively. This is primarily due to the high volume vehicles at the westbound approach traveling from the highway to the site during the weekday AM peak hour. At 5th Street / Jantz Road the failing level of service is due to limited gaps in thru traffic for vehicles making an eastbound left onto 5th Street as well as the high volume of vehicles anticipated to make a southbound left and westbound right at the intersection.

During the with-project weekday PM peak hour all study intersections are anticipated to operate at LOS B or better, with the exception of SR 124 / SR 12 EB Ramps and 5th Street / Jantz Road. At SR 124 / SR 12 EB Ramps LOS during the weekday AM and PM peak hours is LOS E and LOS F, respectively. This is primarily due to the high volume of vehicles at the northbound and westbound approach traveling to/from the site during the weekday PM peak hour. Consistent with the AM peak hour, the high volume of vehicles making a southbound left and westbound right at 5th Street / Jantz Road limit gaps for eastbound right-turning vehicles.

Table 5. Future Without- and With-Project LOS Summary - PM Peak Hour

Intersection	2033 Without-Project			2033 With-Project		
	LOS[1]	Delay[2]	V/C[3] or WM[4]	LOS	Delay	V/C or WM
Weekday AM Peak Hour						
SR 124 / Hood Park Road	B	13	EB	B	13	EB
SR 124 / SR 12 WB Ramps	A	8	0.34	A	10	0.42
SR 124 / SR 12 EB Ramps	A	8	0.24	D	53	1.17
5th Street / Jantz Road	B	11	WB	F	>200	EB
5th Street / Poplar Street	B	12	EB	B	11	EB
5th Street / Maple Street	B	13	SB	B	12	SB
Jantz Road / Maple Street	B	11	EB	B	14	EB
Jantz Road / Humorist Road	B	13	NB	B	13	NB
Lake Road / Humorist Road	A	10	NB	A	10	NB
Weekday PM Peak Hour						
SR 124 / Hood Park Road	B	15	EB	B	15	EB
SR 124 / SR 12 WB Ramps	A	7	0.34	B	13	0.77
SR 124 / SR 12 EB Ramps	A	8	0.19	E	60	1.35
5th Street / Jantz Road	A	9	WB	F	>200	EB
5th Street / Poplar Street	A	9	EB	A	10	EB
5th Street / Maple Street	A	9	SB	A	10	SB
Jantz Road / Maple Street	A	9	EB	B	11	WB
Jantz Road / Humorist Road	B	12	SB	B	12	SB
Lake Road / Humorist Road	B	10	NB	B	10	NB

1. Level of Service as defined by the *Highway Capacity Manual* (TRB, 2000)
2. Average delay per vehicle in seconds.
3. Volume-to-capacity ratio reported for signalized intersections.
4. Worst Movement reported for unsignalized intersections.

Vehicle Queuing Analysis

A vehicle queue analysis was conducted at the eastbound and westbound SR 12 roundabouts using Sidra 5.0. The purpose of this analysis was to determine if the 95th percentile queues are anticipated to impact the deceleration area of the eastbound and westbound off-ramps. Based on WSDOT Design Manual (Exhibit 1360-10) the minimum deceleration distance is approximately 460 feet assuming a highway speed of 60 mph and a ramp speed of 25 mph. The length of the deceleration lane for both the eastbound and westbound off-ramps is approximately 1,600 feet. A summary of the queuing results at the SR 124 / SR 12 WB ramp and SR 124 / SR 12 EB ramp is discussed below.

SR 124 / SR 12 WB Ramp (Westbound Approach):
During the weekday AM and PM peak hour the 95th percentile queues would be less than 200 feet for the westbound approach. This would not extend into the deceleration portion of the off-ramp.

SR 124 / SR 12 EB Ramp (Westbound Approach):
During the weekday AM and PM peak hour under the current configuration, the 95th percentile queues would be approximately 1,650 feet and 1,800 feet, respectively. Queues of this length would extend onto SR 12. Review of queues at the northbound approach indicate

95th percentile queues of 80 feet during the weekday AM peak hour and 580 feet during the weekday PM peak hour. PM peak hour queues would likely extend to the intersection of 5th Street / Jantz Road.

Mitigation

This section documents the recommended traffic mitigation to address impacts identified. The locations where traffic operations are forecasted to be impacted by the project include the SR 124 / SR 12 EB Ramp, the 5th Street / Jantz Road intersection, and the local roadway network. Specific details are discussed below and a master improvement figure illustrating the proposed mitigation is shown in Figure 6.

SR 124 / SR 12 EB Ramp

Based on the LOS and anticipated queue impacts at the intersection of SR 124 / SR 12 EB Ramp a review of potential mitigation was completed to improve LOS and reduce queues on the eastbound ramp during the weekday AM and PM peak hour. The following mitigation, would reduce queues to approximately 600 feet or less on the ramp and approximately 100 feet or less at the northbound approach during the peak periods:

- Re-configure roundabout to have two circulating lanes
- Add entry and exit lane at the northbound approach
- Re-configure off-ramp to allow for both lanes to circulate through the roundabout

These improvements would improve LOS at the intersection to LOS C during the weekday AM peak hour and LOS B during the weekday PM peak hour and reduce all forecasted queuing to a level that can be accommodated within the future capacity of the system.

5th Street / Jantz Road

As shown in Table 5, at full buildout high volumes of traffic, primarily at the southbound left-turn and westbound right-turn movements, would degrade LOS at 5th Street / Jantz Road to LOS F during the weekday AM and PM peak hour. Improvements at this intersection would be necessary to accommodate traffic volumes, although the timing and type of improvements are dependent on the type and location of development throughout the site. Based on the development assumptions the following improvements could be considered:

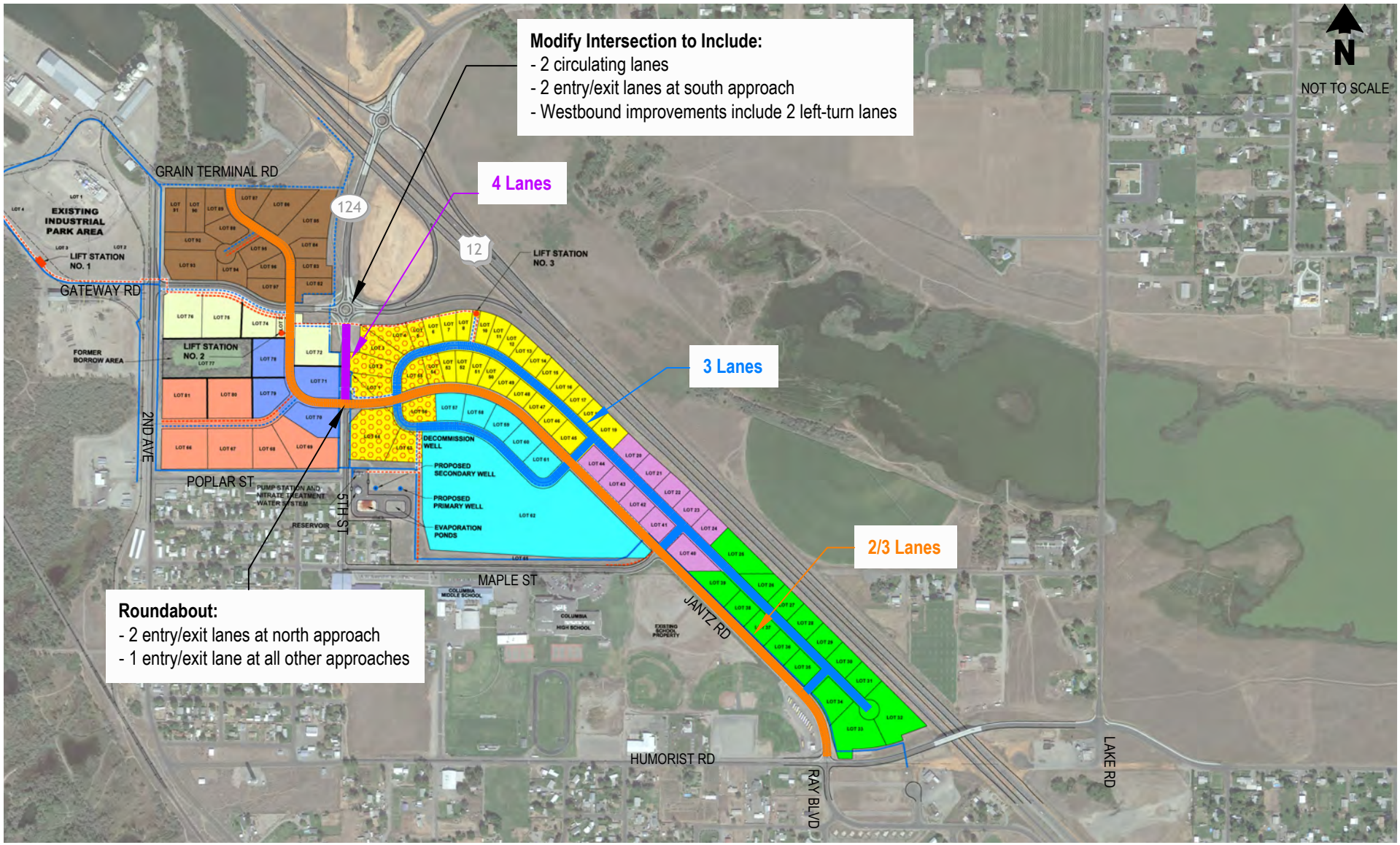
- Installation of a roundabout – This assumes two entry and exit lanes at the southbound approach to match improvements to the SR 124 / SR 12 EB Ramps discussed above. All other approaches are assumed to have one entry and exit lane. The resulting LOS during the weekday AM and PM peak hour is LOS A.
- Installation of a traffic signal – This assumes a southbound left-turn and through-right lane, westbound right-turn and through-left lane, and single lane approaches at the northbound and eastbound legs. With a signal installed at this location, the intersection LOS would improve to LOS A. Although a traffic signal results in an adequate level of service, the challenges associated with lane transitions between this intersection and the roundabout to the north, make this a more challenging and ROW intensive option.

Local Roadway Network

With the increased traffic demands associated with the proposed development the existing two-lane roadway network will need to be modified in some locations to accommodate the increase in future traffic volumes and provide access to the development parcels. Below is a list of improvements that have been identified to accommodate the development:

- Widen 5th Street to four lanes between Jantz Road and EB Ramps to accommodate intersection improvements at 5th Street / Jantz Road and SR 124 / SR 12 EB Ramps.

- Along Jantz Road east and west of 5th Street provide auxiliary turn lanes at internal roadways into the site. Also provide auxiliary turn lanes at the intersection of Maple Street / Jantz Road.
- All internal roadways within the development should provide three lanes to accommodate vehicle access to/from the development parcels.



2033 Master Improvements

Burbank Business Park

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FIGURE
6

Appendix A: Walla Walla County Traffic Study Guidelines

WALLA WALLA COUNTY

TRAFFIC IMPACT ANALYSIS GUIDELINES

Walla Walla County

PUBLIC WORKS

May 2010

Walla Walla County
Public Works Department
P.O. Box 813
Walla Walla, WA 99362
Phone (509) 524-2710
Fax (509) 524-2738

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WALLA WALLA COUNTY
TRAFFIC IMPACT ANALYSIS GUIDELINES

Overview

A Traffic Impact Analysis (TIA) is an objective engineering study addressing the impact of increased traffic volumes and potential changes in traffic operations due to land development, zone changes or other land use. The study examines existing and future transportation conditions and recommends improvements or changes to offset transportation impacts proportionate to the proposed land use. TIAs are an important part of the overall development planning and permitting process (residential, commercial, industrial, institutional, etc.) and provide decision makers information necessary to assess transportation issues associated with approving proposed developments.

TIAs shall be the responsibility of the applicant and will follow these guidelines as well as the most recent version of the ***Highway Capacity Manual*** (HCM) as published by the Transportation Research Board (TRB). These guidelines generally follow those presented in ***Transportation and Land Development,*** published by the Institute of Transportation Engineers (ITE) and have been modified for Walla Walla County as outlined below. The basic format and content of all reports shall follow those presented in ***Transportation and Land Development***. The County may request additional information for any type of TIA depending upon the characteristics of proposed development site.

A civil or transportation engineer, licensed in the State of Washington, shall prepare or be in responsible charge of any TIA, and shall stamp and sign the study. The County Engineer shall determine when the TIA has satisfied all requirements to adequately assess transportation impacts.

For purposes of clarification;

- Developments containing two residential lots are excluded from the TIA process but must secure the appropriate permits prior to construction of any access.
- Heavy vehicles are defined as those having more than four tires touching the roadway surface.

The following thresholds meet acceptable standards and do not require mitigation;

- LOS D is the minimum acceptable level of service for a signalized intersection, critical movement of an unsignalized intersection, or roadway segment within any urban area under the jurisdiction of Walla Walla County.
- In the urban area, an additional 10 second delay is the maximum allowed for any intersection currently operating at LOS D or lower.
- LOS C is the minimum acceptable level of service for any intersection or roadway segment within the rural areas of Walla Walla County

- The LOS of any intersection or roadway segment may drop more than two levels of service, provided final level of service is not below the minimum acceptable level of service.

Failure to meet acceptable thresholds during any year of the Build Condition will require mitigation. Mitigation for future roadway system deficiencies should be "fair and relative" to the impact of the proposed project within the designated study area. Intersections should be mitigated to operate at an acceptable level based on the calculated v/c ratio, LOS, and queue length of the overall intersection (signalized) and critical movements (unsignalized). The report shall recommend traffic mitigation to offset other safety and/or capacity issues, or specific neighborhood traffic impacts caused by an increase of 25% or greater average daily traffic (ADT) on adjacent streets due to the development.

Mitigation must include at least one, but preferably two, design alternatives with full analysis for horizon year Build Condition. Recommended improvements should be clearly described and include cost, location, and conceptual drawings. A suggested time schedule for all mitigation should also be included in the report.

General guidelines for Type-1, 2 and 3 TIAs are presented below. The County Engineer reserves the right to modify these requirements as necessary to address unusual situations and to require a traffic study for other conditions not covered below. Applicants are encouraged to contact the Department of Public Works to discuss specific TIA requirements applicable to any proposed development.

Type-1 TIA. Access Review.

A Type-1 TIA, also called an Access Review, is required when full build out meets at least one of the following conditions:

- Traffic generated will exceed 20 vehicle trips per hour for any one hour.
- Expected traffic generation is 101 to 500 trips in any one day. (A trip is defined as one direction)

A Type-1 TIA can be presented in the form of a memorandum from the engineer and shall include the following items:

1. **Project Description and Location.**
   Provide a full description of the site. Include location, type development, parcel size, general terrain features, available access, existing roads serving the site, existing use of the site, anticipated completion date and any construction phasing. Also include the use, number and size of proposed units along with any proposed parking, internal circulation and traffic flow. Attach a map of the proposed area showing the site, access roads, proposed traffic flow and other transportation related information. If specific use of the site is unknown, complete the study assuming the allowable land use resulting in the greatest overall traffic impact.

2. **Area Conditions.**
   The study area for a Type-I TIA is generally limited to intersections serving the development and the first intersections encountered in each direction from the proposed project site. Applicants should discuss proposed boundaries of the study area with the County Engineer. Existing traffic volumes must be reported, however, existing turn movements at the intersections are not required unless existing data is readily available. Include reasonable estimates of additional traffic the development will contribute to the intersections at build out, and identify the projected turn movements. A determination of each intersection LOS is required.

3. **Sight Access Evaluation.**
   Site accessibility should be discussed with the number, location and spacing of each access evaluated. Sight distance shall be evaluated and will be based on a driver eye height of 3.5 feet at 15 feet from the edge of pavement/travel lane or at the curb line, whichever is greater. An object height of 3.5 feet will be used for rural and 0.5 feet for urban locations. Access geometrics such as horizontal and vertical curves, grades should be mentioned if only to state they are adequate for the intended purpose.

4. **Trip Generation and Horizon Year.**
   Project site traffic and through traffic using the latest available edition of ITE ***Trip Generation***. Develop trip generation for the following conditions:

   - Existing
   - No Build (1 Year after Construction Year)
   - Build (1 Year after Construction Year)

   The intent of the short term analysis is to investigate the early impacts of the proposed project on the existing roadway network. The short term horizon year, referred to as the construction year, is defined as the calendar year after all construction is complete. The County Engineer may also require an analysis of a long term horizon year (up to 20 years after construction).

5. **Trip Distribution.**
   Use the concepts and procedures in the most current edition of the ***Highway Capacity Manual*** to determine trip distribution. Include traffic safety issues and on/off-site parking in the analysis.

6. **Summary and Conclusions.**
   Provide a clear and concise description of the study findings. Include a general description of the project's proposed use, existing conditions, traffic analysis results, probable traffic impacts, mitigation measures, conclusions and recommendations.

7. **Appendix.**
   Provide calculations, documentation, data reporting, and detailed design information as appropriate to support conclusions.

Type-2 TIA. Traffic Impact Analysis.

A Type-2 TIA includes a formal written report and is required when a proposed development, pending zone change or other proposed land use, at full build out, meets at least one of the following conditions:

- Expected traffic generation is 501 to 5000 vehicle trips per day.
- High accident history in the development area.

A Type-2 TIA shall include the following items in the report:

1. **Project Description and Location.**
   Same requirements as a Type-1 TIA.

2. **Area Conditions.**
   In addition to the intersections serving the project, the study area for a Type-2 TIA will also, at a minimum, include the first two intersections encountered in each direction from the proposed project site. Contact the County Engineer to determine if additional intersections, roadway segments or other study items such as pedestrian or bicycle traffic should be included in the report. Determine the existing intersection LOS for each intersection. Also address existing land use, zoning, and a listing of any "pipeline" projects or developments in the area. Existing average daily traffic volumes should be summarized in tabular form within the report with actual count summary sheets contained in the appendix. Existing peak hour traffic volumes and turning movements should be depicted graphically in the body of the report with the appropriate backup data in the appendix. An analysis of existing and potential future accident history should also be discussed.

   Existing daily traffic counts (ADT), peak hour counts and/or turning movements at intersections must be less than 5 years old for use in the study.

3. **Sight Access Evaluation.**
   Same requirements as a Type-1 TIA.

4. **Trip Generation and Horizon Year.**
   Project site traffic and through traffic for each horizon year using the latest available edition of ITE ***Trip Generation***. Develop trip generation for the following conditions:

   - Existing
   - No Build (Project Phase)
   - Build (Project Phase)
   - No Build (1 Year after Construction Year)

- Build (1 Year after Construction Year)
- No Build (5 Years after Construction Year)
- Build (5 Years after Construction Year)

The existing and the one (1) year build/no build conditions must be included in the report. The No Build condition evaluates future traffic without the proposed development. An annual growth rate is applied to the existing traffic and future traffic from other pipeline developments in the area. Project phase conditions are needed when staged construction is proposed and final build out (construction year) is not achieved until all phases are complete.

A minimum 5 year build/no build analysis (after construction) will provide a snapshot of expected future traffic conditions. This analysis should include both public improvements and private pipeline developments that could reasonably be expected to occur in the study area within that period of time. The County Engineer may also require an analysis of a long term horizon year (up to 20 years after construction).

5. **Trip Distribution.**
   Use the concepts and procedures in the most current edition of the ***Highway Capacity Manual*** to determine trip distribution. LOS of intersections will be based upon average vehicle delay during the peak hour, and LOS of roadway segments will be based on volume to capacity ratios (v/c). Include traffic safety issues and on/off-site parking in the analysis.

6. **Summary and Conclusions.**
   Same requirements as a Type-1 TIA.

7. **Appendix.**
   Same requirements as a Type-1 TIA.

Type-3 TIA. Traffic Impact Statement.

A Type-3 TIA is a complete and comprehensive traffic study required when the proposed development meets the following conditions:

- Expected traffic generation exceeds 5000 vehicle trips per day.

Required contents of a Type-3 TIA include:

1. **Project Description and Location.**
   Same requirements as a Type-1 TIA.

2. **Area Conditions.**
   The study area for a Type 3 TIA will include, at a minimum, the first major intersections encountered in each direction from the access to the proposed development site. Contact the County Engineer to determine if additional

intersections, roadway segments or other study items such as pedestrian or bicycle traffic should be included in the report. Determine the existing intersection LOS for each intersection. Also address existing land use, zoning, and a listing of any "pipeline" projects or developments in the area. Existing average daily traffic volumes should be summarized in tabular form within the report with actual count summary sheets contained in the appendix. Existing peak hour traffic volumes and turning movements should be depicted graphically in the body of the report with the appropriate backup data in the appendix. An analysis of existing and potential future accident history should also be discussed.

Existing daily traffic counts (ADT), peak hour counts and/or turning movements at intersections must be less than 5 years old for use in the study.

3. **Sight Access Evaluation.**
   Same requirements as a Type-1 TIA.

4. **Trip Generation and Horizon Year.**
   Project site traffic and through traffic for each horizon year using the latest available edition of ITE ***Trip Generation***. Develop trip generation for the following conditions:

   - Existing
   - No Build (Project Phase)
   - Build (Project Phase)
   - No Build (1 Year after Construction Year)
   - Build (1 Year after Construction Year)
   - No Build (10/20 Years after Construction Year)
   - Build (10/20 Years after Construction Year)

   The existing and the one (1) year build/no build conditions must be included in the report and provide a short term impact of the development. The No Build condition evaluates future traffic without the proposed development. An annual growth rate is applied to the existing traffic and future traffic from other pipeline developments in the area. Project phase conditions are needed when staged construction is proposed and final build out (construction year) is not achieved until all phases are complete.

   The long term horizon year analysis provides a snapshot of expected future traffic conditions and is set at 10 and 20 years from the year of construction (full build out). This analysis should include both public improvements and other private pipeline developments that could reasonably be expected to occur in the study area within that period of time. Include any proposed changes to the roadway network by any jurisdictions in the area to fully understand future traffic conditions.

5. **Trip Distribution.**
   Same requirements as a Type-2 TIA.

6. **Additional Analysis.**
   A Type-3 TIA must also address the following issues:
   - Acceleration and/or Deceleration Lanes – Acceleration and/or deceleration lanes may be needed in areas with significant grade change or along primary roadways. If an acceleration and/or deceleration lane is required, provide calculations for the proposed length of each lane.
   - Multi-Modal Access and Circulation – Identify practical methods to enhance circulation, increase pedestrian safety, increase bicycle mobility/safety, and enhance on-street and off-street parking access, efficiencies, and opportunities. Identify existing school, bicycle, and transit routes in the study area as well as associated impacts from the proposed development.
   - Collision History – Provide five years of the most current collision data e for intersections within the study area (can be obtained from the County or WSDOT). Existing intersection exhibiting high collision rates or an fatal accidents will require additional study.
   - Queuing and Blocking – In congested conditions or on roadways with coordinated signals, queuing and blocking must be analyzed and impacts addressed.
   - Signal Warrants – Unsignalized intersections experiencing significant deficiencies (delays) must be evaluated for potential signalization. Complete signal warrants for these locations using the latest edition of the ***Manual on Uniform Traffic Control Devices*** (MUTCD) published by the Federal Highway Administration.
   - Capacity Analysis of Roadway Segments – Although intersection LOS statistically takes precedence over the LOS of a roadway segment, further analysis of the roadway segments impacted by the development may be warranted.

7. **Summary and Conclusions.**
   Same requirements as a Type-1 TIA.

8. **Appendix.**
   Same requirements as a Type-1 TIA.

The County may require revisions to any type TIA. The need for revisions will be based on the completeness and accuracy of the traffic study, the thoroughness of impact evaluation and proposed mitigation, and the compatibility of the study with the proposed access and development plans.

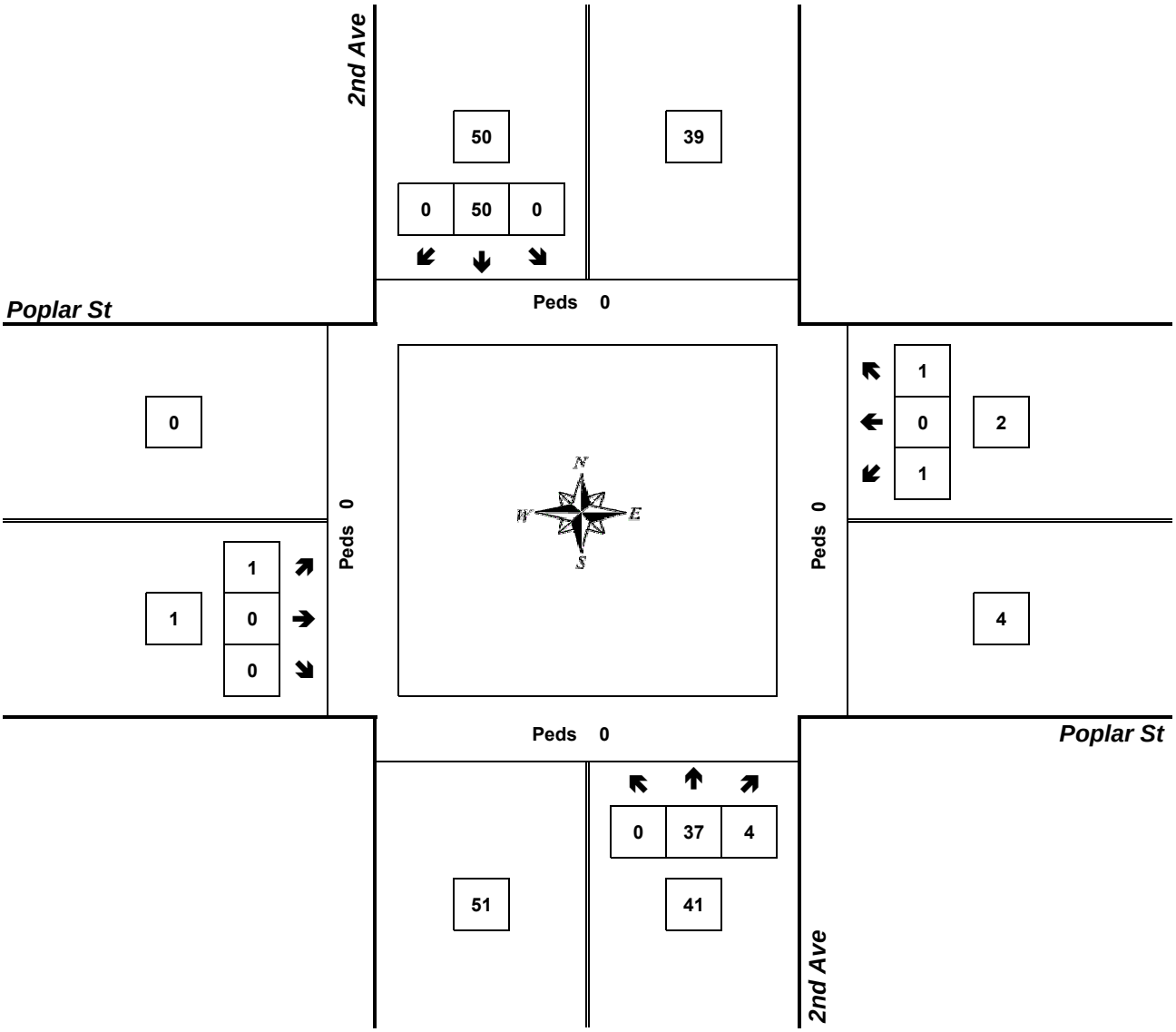
Appendix B: Traffic Count Summary

Peak Hour Summary

All Traffic Data Services Inc.
Mark Skaggs
(206) 251-0300

2nd Ave & Poplar St

4:30 PM to 5:30 PM
Thursday, March 21, 2013

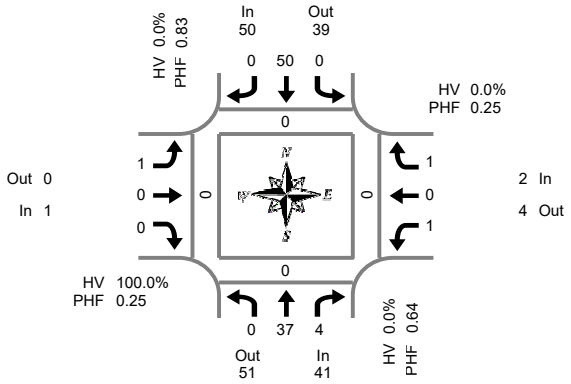


Approach	PHF	HV%	Volume
EB	0.25	100.0%	1
WB	0.25	0.0%	2
NB	0.64	0.0%	41
SB	0.83	0.0%	50
Intersection	0.87	1.1%	94

Count Period: 4:00 PM to 6:00 PM

Total Vehicle Summary

All Traffic Data Services Inc.
Mark Skaggs
(206) 251-0300



Peak Hour Summary
4:30 PM to 5:30 PM

2nd Ave & Poplar St

Thursday, March 21, 2013
4:00 PM to 6:00 PM

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound 2nd Ave				Southbound 2nd Ave				Eastbound Poplar St				Westbound Poplar St				Interval Total	Pedestrians Crosswalk			
	L	T	R	HV	L	T	R	HV	L	T	R	HV	L	T	R	HV		North	South	East	West
4:00 PM	0	3	0	0	0	13	0	0	0	0	0	0	2	0	0	0	18	0	0	0	0
4:15 PM	0	3	0	0	0	14	0	0	2	0	0	0	0	0	0	0	19	0	0	0	0
4:30 PM	0	7	2	0	0	15	0	0	1	0	0	1	0	0	0	0	25	0	0	0	0
4:45 PM	0	16	0	0	0	9	0	0	0	0	0	0	1	0	1	0	27	0	0	0	0
5:00 PM	0	6	0	0	0	14	0	0	0	0	0	0	0	0	0	0	20	0	0	0	0
5:15 PM	0	8	2	0	0	12	0	0	0	0	0	0	0	0	0	0	22	0	0	0	0
5:30 PM	0	1	1	0	0	12	1	1	0	0	0	0	0	0	0	0	15	0	0	0	0
5:45 PM	0	7	1	0	0	11	0	1	0	0	0	0	2	0	0	0	21	0	0	0	0
Total Survey	0	51	6	0	0	100	1	2	3	0	0	1	5	0	1	0	167	0	0	0	0

Peak Hour Summary
4:30 PM to 5:30 PM

By Approach	Northbound 2nd Ave				Southbound 2nd Ave				Eastbound Poplar St				Westbound Poplar St				Total	Pedestrians Crosswalk			
	In	Out	Total	HV	In	Out	Total	HV	In	Out	Total	HV	In	Out	Total	HV		North	South	East	West
Volume	41	51	92	0	50	39	89	0	1	0	1	1	2	4	6	0	94	0	0	0	0
%HV	0.0%				0.0%				100.0%				0.0%				1.1%				
PHF	0.64				0.83				0.25				0.25				0.87				

By Movement	Northbound 2nd Ave				Southbound 2nd Ave				Eastbound Poplar St				Westbound Poplar St				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	0	37	4	41	0	50	0	50	1	0	0	1	1	0	1	2	94
PHF	0.00	0.58	0.50	0.64	0.00	0.83	0.00	0.83	0.25	0.00	0.00	0.25	0.25	0.00	0.25	0.25	0.87

Rolling Hour Summary
4:00 PM to 6:00 PM

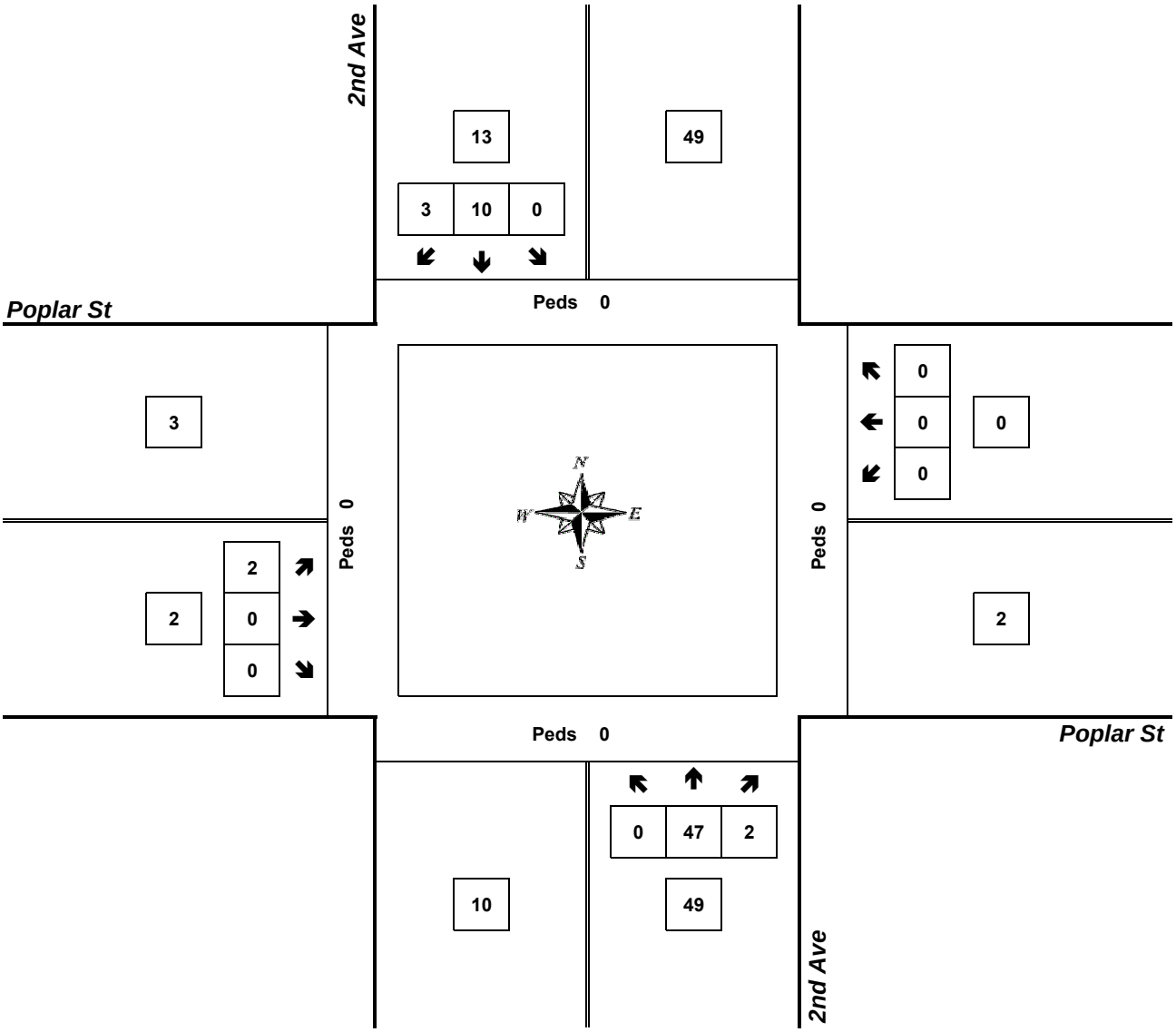
Interval Start Time	Northbound 2nd Ave				Southbound 2nd Ave				Eastbound Poplar St				Westbound Poplar St				Interval Total	Pedestrians Crosswalk			
	L	T	R	HV	L	T	R	HV	L	T	R	HV	L	T	R	HV		North	South	East	West
4:00 PM	0	29	2	0	0	51	0	0	3	0	0	1	3	0	1	0	89	0	0	0	0
4:15 PM	0	32	2	0	0	52	0	0	3	0	0	1	1	0	1	0	91	0	0	0	0
4:30 PM	0	37	4	0	0	50	0	0	1	0	0	1	1	0	1	0	94	0	0	0	0
4:45 PM	0	31	3	0	0	47	1	1	0	0	0	0	1	0	1	0	84	0	0	0	0
5:00 PM	0	22	4	0	0	49	1	2	0	0	0	0	2	0	0	0	78	0	0	0	0

Peak Hour Summary

All Traffic Data Services Inc.
Mark Skaggs
(206) 251-0300

2nd Ave & Poplar St

7:00 AM to 8:00 AM
Thursday, March 21, 2013

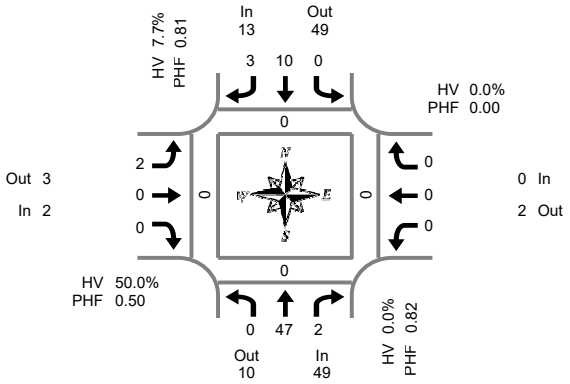


Approach	PHF	HV%	Volume
EB	0.50	50.0%	2
WB	0.00	0.0%	0
NB	0.82	0.0%	49
SB	0.81	7.7%	13
Intersection	0.89	4.7%	64

Count Period: 7:00 AM to 9:00 AM

Total Vehicle Summary

All Traffic Data Services Inc.
Mark Skaggs
(206) 251-0300



Peak Hour Summary
7:00 AM to 8:00 AM

2nd Ave & Poplar St

Thursday, March 21, 2013
7:00 AM to 9:00 AM

15-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound 2nd Ave				Southbound 2nd Ave				Eastbound Poplar St				Westbound Poplar St				Interval Total	Pedestrians Crosswalk			
	L	T	R	HV	L	T	R	HV	L	T	R	HV	L	T	R	HV		North	South	East	West
7:00 AM	0	10	1	0	0	2	1	1	0	0	0	0	0	0	0	1	14	0	0	0	0
7:15 AM	0	9	1	0	0	3	1	0	1	0	0	0	0	0	0	0	15	0	0	0	0
7:30 AM	0	15	0	0	0	2	1	0	0	0	0	0	0	0	0	0	18	0	0	0	0
7:45 AM	0	13	0	0	0	3	0	0	1	0	0	1	0	0	0	0	17	0	0	0	0
8:00 AM	0	11	0	0	1	1	0	0	0	0	0	0	0	0	0	0	13	0	0	0	0
8:15 AM	0	9	0	0	0	3	0	0	0	0	0	0	1	0	1	0	14	0	0	0	0
8:30 AM	0	7	0	0	0	2	0	0	0	0	0	0	1	0	0	0	10	0	0	0	0
8:45 AM	0	6	0	0	0	3	1	1	1	0	0	0	0	0	0	0	11	0	0	0	0
Total Survey	0	80	2	0	1	19	4	2	3	0	0	1	2	0	1	1	112	0	0	0	0

Peak Hour Summary
7:00 AM to 8:00 AM

By Approach	Northbound 2nd Ave				Southbound 2nd Ave				Eastbound Poplar St				Westbound Poplar St				Total	Pedestrians Crosswalk			
	In	Out	Total	HV	In	Out	Total	HV	In	Out	Total	HV	In	Out	Total	HV		North	South	East	West
Volume	49	10	59	0	13	49	62	1	2	3	5	1	0	2	2	1	64	0	0	0	0
%HV	0.0%				7.7%				50.0%				0.0%				4.7%				
PHF	0.82				0.81				0.50				0.00				0.89				

By Movement	Northbound 2nd Ave				Southbound 2nd Ave				Eastbound Poplar St				Westbound Poplar St				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	0	47	2	49	0	10	3	13	2	0	0	2	0	0	0	0	64
PHF	0.00	0.78	0.50	0.82	0.00	0.83	0.75	0.81	0.50	0.00	0.00	0.50	0.00	0.00	0.00	0.00	0.89

Rolling Hour Summary
7:00 AM to 9:00 AM

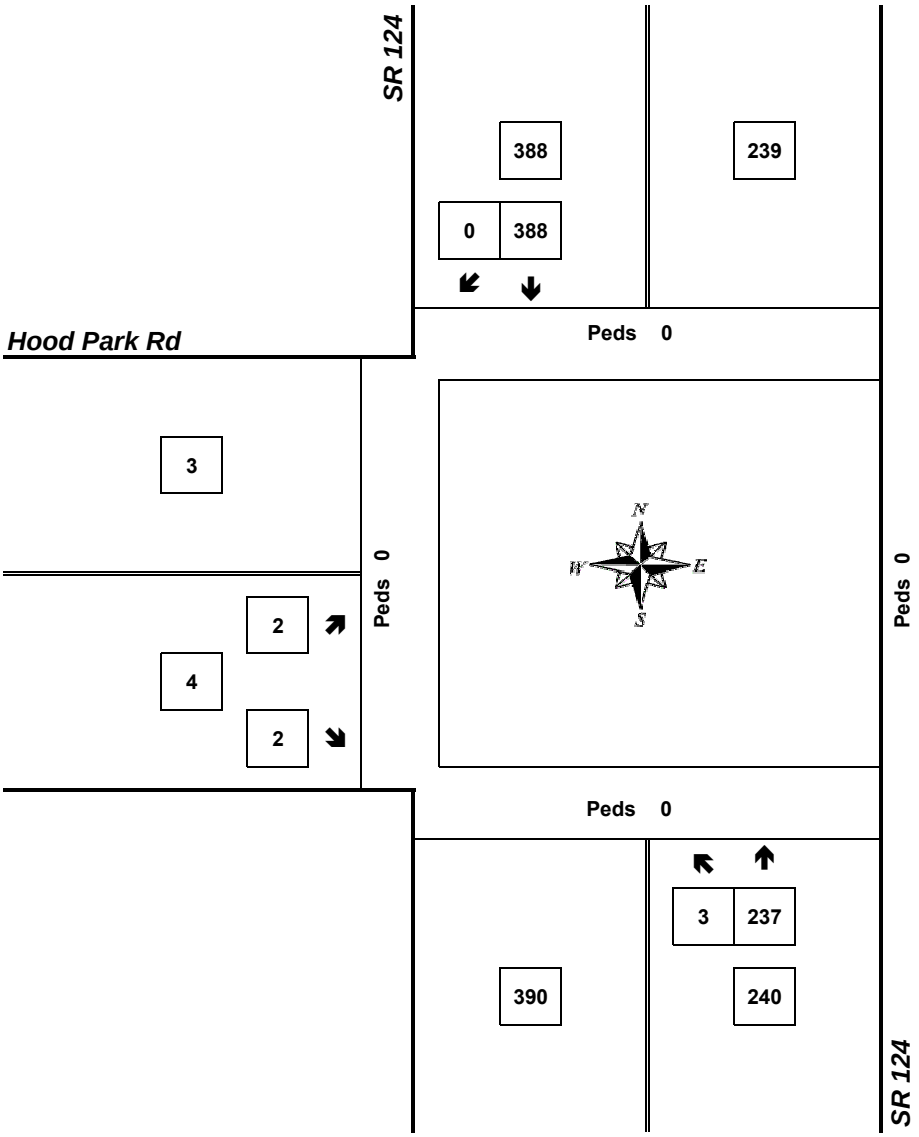
Interval Start Time	Northbound 2nd Ave				Southbound 2nd Ave				Eastbound Poplar St				Westbound Poplar St				Interval Total	Pedestrians Crosswalk			
	L	T	R	HV	L	T	R	HV	L	T	R	HV	L	T	R	HV		North	South	East	West
7:00 AM	0	47	2	0	0	10	3	1	2	0	0	1	0	0	0	1	64	0	0	0	0
7:15 AM	0	48	1	0	1	9	2	0	2	0	0	1	0	0	0	0	63	0	0	0	0
7:30 AM	0	48	0	0	1	9	1	0	1	0	0	1	1	0	1	0	62	0	0	0	0
7:45 AM	0	40	0	0	1	9	0	0	1	0	0	1	2	0	1	0	54	0	0	0	0
8:00 AM	0	33	0	0	1	9	1	1	1	0	0	0	2	0	1	0	48	0	0	0	0

Peak Hour Summary

All Traffic Data Services Inc.
Mark Skaggs
(206) 251-0300

SR 124 & Hood Park Rd

4:30 PM to 5:30 PM
Thursday, March 21, 2013

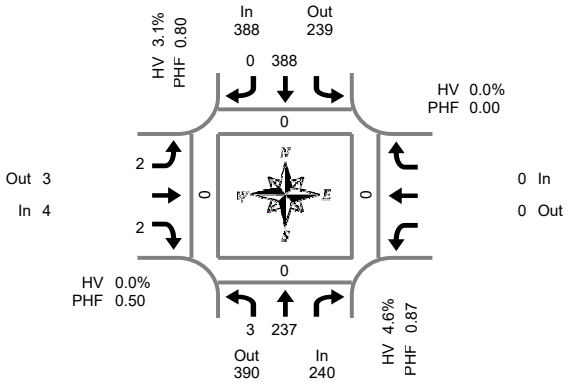


Approach	PHF	HV%	Volume
EB	0.50	0.0%	4
WB	0.00	0.0%	0
NB	0.87	4.6%	240
SB	0.80	3.1%	388
Intersection	0.84	3.6%	632

Count Period: 4:00 PM to 6:00 PM

Total Vehicle Summary

All Traffic Data Services Inc.
Mark Skaggs
(206) 251-0300



Peak Hour Summary
4:30 PM to 5:30 PM

SR 124 & Hood Park Rd

Thursday, March 21, 2013
4:00 PM to 6:00 PM

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound SR 124				Southbound SR 124				Eastbound Hood Park Rd				Westbound Hood Park Rd				Interval Total	Pedestrians Crosswalk			
	L	T		HV		T	R	HV	L		R	HV						North	South	East	West
4:00 PM	2	53		2		61	0	3	0		8	0					124	0	0	0	0
4:15 PM	2	36		1		59	1	5	2		2	0					102	0	0	0	0
4:30 PM	2	45		2		93	0	5	1		1	0					142	0	0	0	0
4:45 PM	1	68		4		111	0	1	0		0	0					180	0	0	0	0
5:00 PM	0	63		4		122	0	2	1		1	0					187	0	0	0	0
5:15 PM	0	61		1		62	0	4	0		0	0					123	0	0	0	0
5:30 PM	0	56		1		58	1	3	0		1	0					116	0	0	0	0
5:45 PM	0	41		4		60	0	6	0		1	0					102	0	0	0	0
Total Survey	7	423		19		626	2	29	4		14	0					1,076	0	0	0	0

Peak Hour Summary
4:30 PM to 5:30 PM

By Approach	Northbound SR 124				Southbound SR 124				Eastbound Hood Park Rd				Westbound Hood Park Rd				Total	Pedestrians Crosswalk			
	In	Out	Total	HV	In	Out	Total	HV	In	Out	Total	HV	In	Out	Total			North	South	East	West
Volume	240	390	630	11	388	239	627	12	4	3	7	0	0	0	0		632	0	0	0	0
%HV	4.6%				3.1%				0.0%				0.0%				3.6%				
PHF	0.87				0.80				0.50				0.00				0.84				

By Movement	Northbound SR 124				Southbound SR 124				Eastbound Hood Park Rd				Westbound Hood Park Rd				Total
	L	T		Total		T	R	Total	L		R	Total				Total	
Volume	3	237		240		388	0	388	2		2	4				0	632
PHF	0.38	0.87		0.87		0.80	0.00	0.80	0.50		0.50	0.50				0.00	0.84

Rolling Hour Summary
4:00 PM to 6:00 PM

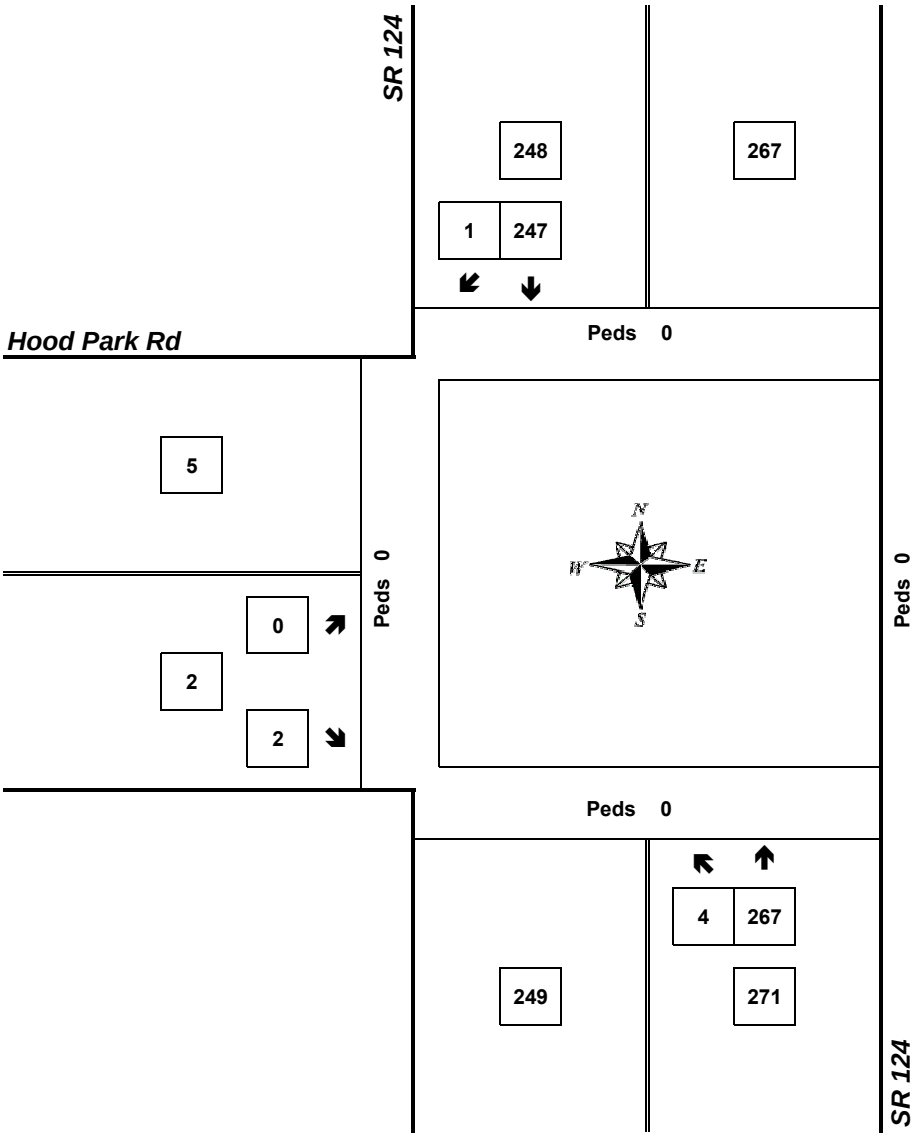
Interval Start Time	Northbound SR 124				Southbound SR 124				Eastbound Hood Park Rd				Westbound Hood Park Rd				Interval Total	Pedestrians Crosswalk			
	L	T		HV		T	R	HV	L		R	HV						North	South	East	West
4:00 PM	7	202		9		324	1	14	3		11	0					548	0	0	0	0
4:15 PM	5	212		11		385	1	13	4		4	0					611	0	0	0	0
4:30 PM	3	237		11		388	0	12	2		2	0					632	0	0	0	0
4:45 PM	1	248		10		353	1	10	1		2	0					606	0	0	0	0
5:00 PM	0	221		10		302	1	15	1		3	0					528	0	0	0	0

Peak Hour Summary

All Traffic Data Services Inc.
Mark Skaggs
(206) 251-0300

SR 124 & Hood Park Rd

7:00 AM to 8:00 AM
Thursday, March 21, 2013

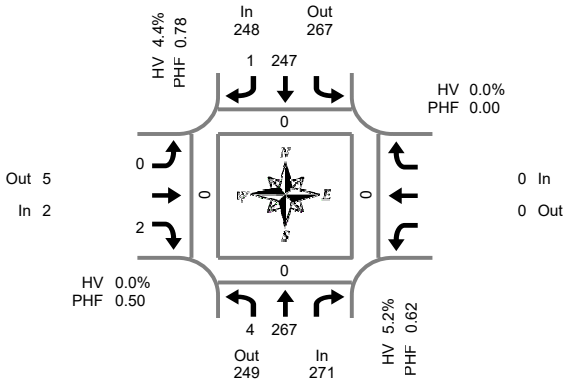


Approach	PHF	HV%	Volume
EB	0.50	0.0%	2
WB	0.00	0.0%	0
NB	0.62	5.2%	271
SB	0.78	4.4%	248
Intersection	0.81	4.8%	521

Count Period: 7:00 AM to 9:00 AM

Total Vehicle Summary

All Traffic Data Services Inc.
Mark Skaggs
(206) 251-0300



Peak Hour Summary
7:00 AM to 8:00 AM

SR 124 & Hood Park Rd

Thursday, March 21, 2013
7:00 AM to 9:00 AM

15-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound SR 124				Southbound SR 124				Eastbound Hood Park Rd				Westbound Hood Park Rd				Interval Total	Pedestrians Crosswalk			
	L	T		HV		T	R	HV	L		R	HV						North	South	East	West
7:00 AM	1	108		3		50	0	3	0		1	0					160	0	0	0	0
7:15 AM	1	71		3		63	0	2	0		1	0					136	0	0	0	0
7:30 AM	1	36		4		80	0	4	0		0	0					117	0	0	0	0
7:45 AM	1	52		4		54	1	2	0		0	0					108	0	0	0	0
8:00 AM	2	21		4		46	0	5	0		2	0					71	0	0	0	0
8:15 AM	1	21		3		34	1	3	1		0	0					58	0	0	0	0
8:30 AM	1	29		5		39	0	2	0		1	0					70	0	0	0	0
8:45 AM	2	34		8		36	0	3	1		2	0					75	0	0	0	0
Total Survey	10	372		34		402	2	24	2		7	0					795	0	0	0	0

Peak Hour Summary
7:00 AM to 8:00 AM

By Approach	Northbound SR 124				Southbound SR 124				Eastbound Hood Park Rd				Westbound Hood Park Rd				Total	Pedestrians Crosswalk			
	In	Out	Total	HV	In	Out	Total	HV	In	Out	Total	HV	In	Out	Total			North	South	East	West
Volume	271	249	520	14	248	267	515	11	2	5	7	0	0	0	0		521	0	0	0	0
%HV	5.2%				4.4%				0.0%				0.0%				4.8%				
PHF	0.62				0.78				0.50				0.00				0.81				

By Movement	Northbound SR 124				Southbound SR 124				Eastbound Hood Park Rd				Westbound Hood Park Rd				Total
	L	T		Total		T	R	Total	L		R	Total				Total	
Volume	4	267		271		247	1	248	0		2	2				0	521
PHF	1.00	0.62		0.62		0.77	0.25	0.78	0.00		0.50	0.50				0.00	0.81

Rolling Hour Summary
7:00 AM to 9:00 AM

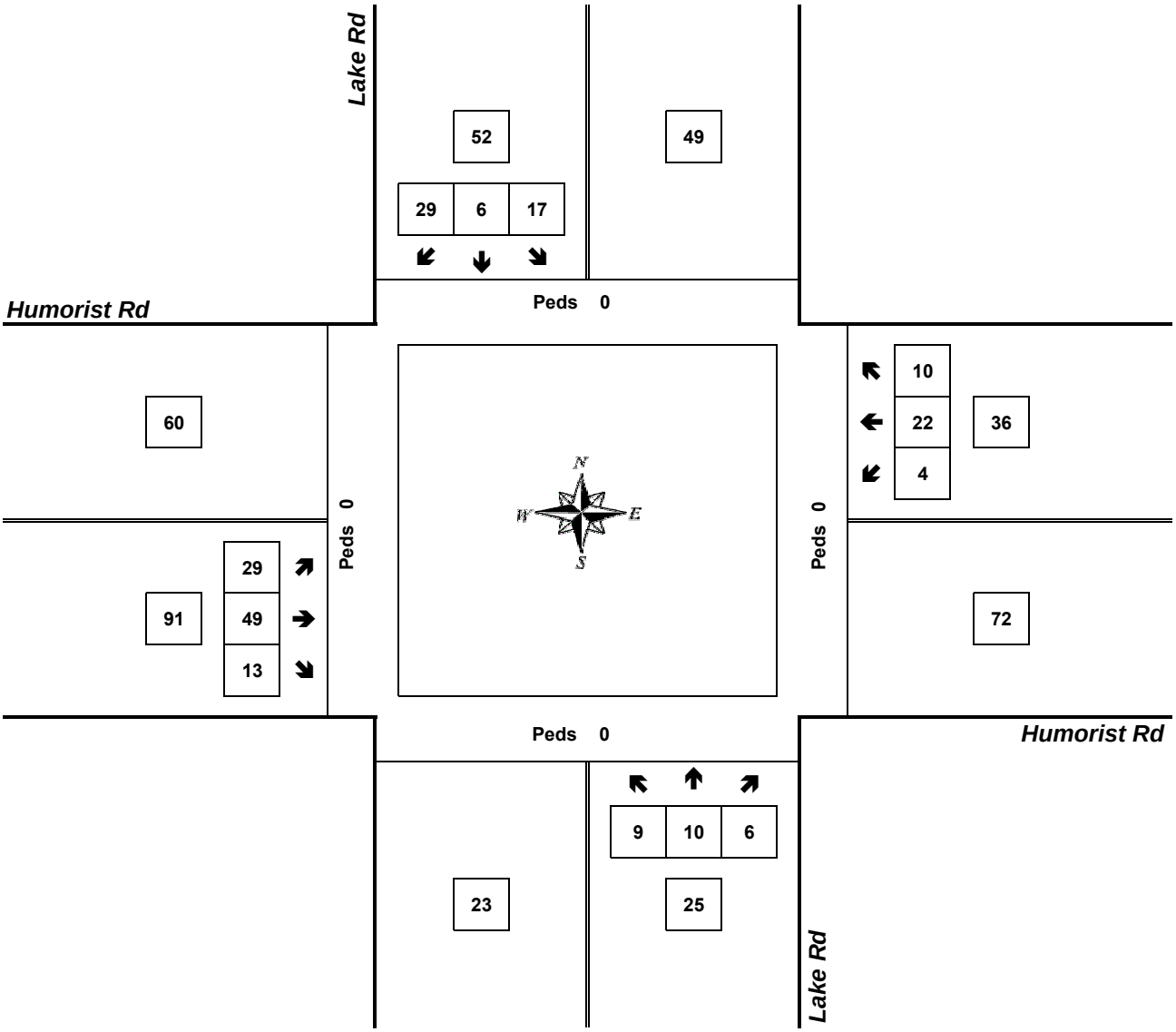
Interval Start Time	Northbound SR 124				Southbound SR 124				Eastbound Hood Park Rd				Westbound Hood Park Rd				Interval Total	Pedestrians Crosswalk			
	L	T		HV		T	R	HV	L		R	HV						North	South	East	West
7:00 AM	4	267		14		247	1	11	0		2	0					521	0	0	0	0
7:15 AM	5	180		15		243	1	13	0		3	0					432	0	0	0	0
7:30 AM	5	130		15		214	2	14	1		2	0					354	0	0	0	0
7:45 AM	5	123		16		173	2	12	1		3	0					307	0	0	0	0
8:00 AM	6	105		20		155	1	13	2		5	0					274	0	0	0	0

Peak Hour Summary

All Traffic Data Services Inc.
Mark Skaggs
(206) 251-0300

Lake Rd & Humorist Rd

5:00 PM to 6:00 PM
Thursday, March 21, 2013

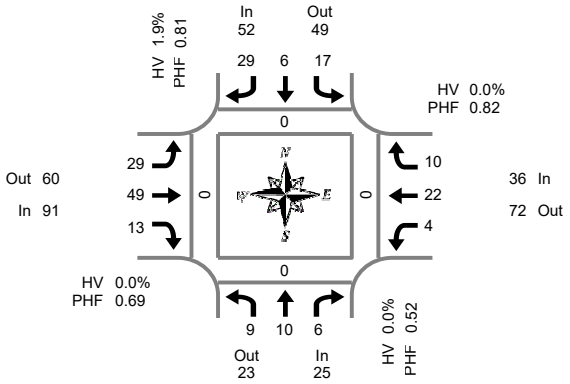


Approach	PHF	HV%	Volume
EB	0.69	0.0%	91
WB	0.82	0.0%	36
NB	0.52	0.0%	25
SB	0.81	1.9%	52
Intersection	0.88	0.5%	204

Count Period: 4:00 PM to 6:00 PM

Total Vehicle Summary

All Traffic Data Services Inc.
Mark Skaggs
(206) 251-0300



Peak Hour Summary
5:00 PM to 6:00 PM

Lake Rd & Humorist Rd

Thursday, March 21, 2013
4:00 PM to 6:00 PM

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Lake Rd				Southbound Lake Rd				Eastbound Humorist Rd				Westbound Humorist Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	HV	L	T	R	HV	L	T	R	HV	L	T	R	HV		North	South	East	West
4:00 PM	1	3	0	0	5	1	1	0	8	7	3	0	0	2	2	1	33	0	0	0	0
4:15 PM	3	3	1	0	1	4	2	0	18	7	4	0	0	1	5	0	49	0	0	0	0
4:30 PM	2	2	1	0	5	2	4	0	2	2	1	0	1	1	5	0	28	0	0	0	0
4:45 PM	1	1	0	0	6	1	6	0	11	7	2	0	2	7	4	0	48	0	0	0	0
5:00 PM	2	3	1	0	4	2	9	1	4	9	2	0	1	5	4	0	46	0	0	0	0
5:15 PM	1	1	0	0	7	1	8	0	10	19	4	0	0	6	1	0	58	0	0	0	0
5:30 PM	3	1	1	0	1	2	9	0	6	9	2	0	2	6	3	0	45	0	0	0	0
5:45 PM	3	5	4	0	5	1	3	0	9	12	5	0	1	5	2	0	55	0	0	0	0
Total Survey	16	19	8	0	34	14	42	1	68	72	23	0	7	33	26	1	362	0	0	0	0

Peak Hour Summary
5:00 PM to 6:00 PM

By Approach	Northbound Lake Rd				Southbound Lake Rd				Eastbound Humorist Rd				Westbound Humorist Rd				Total	Pedestrians Crosswalk			
	In	Out	Total	HV	In	Out	Total	HV	In	Out	Total	HV	In	Out	Total	HV		North	South	East	West
Volume	25	23	48	0	52	49	101	1	91	60	151	0	36	72	108	0	204	0	0	0	0
%HV	0.0%				1.9%				0.0%				0.0%				0.5%				
PHF	0.52				0.81				0.69				0.82				0.88				

By Movement	Northbound Lake Rd				Southbound Lake Rd				Eastbound Humorist Rd				Westbound Humorist Rd				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	9	10	6	25	17	6	29	52	29	49	13	91	4	22	10	36	204
PHF	0.75	0.50	0.38	0.52	0.61	0.75	0.81	0.81	0.73	0.64	0.65	0.69	0.50	0.92	0.63	0.82	0.88

Rolling Hour Summary
4:00 PM to 6:00 PM

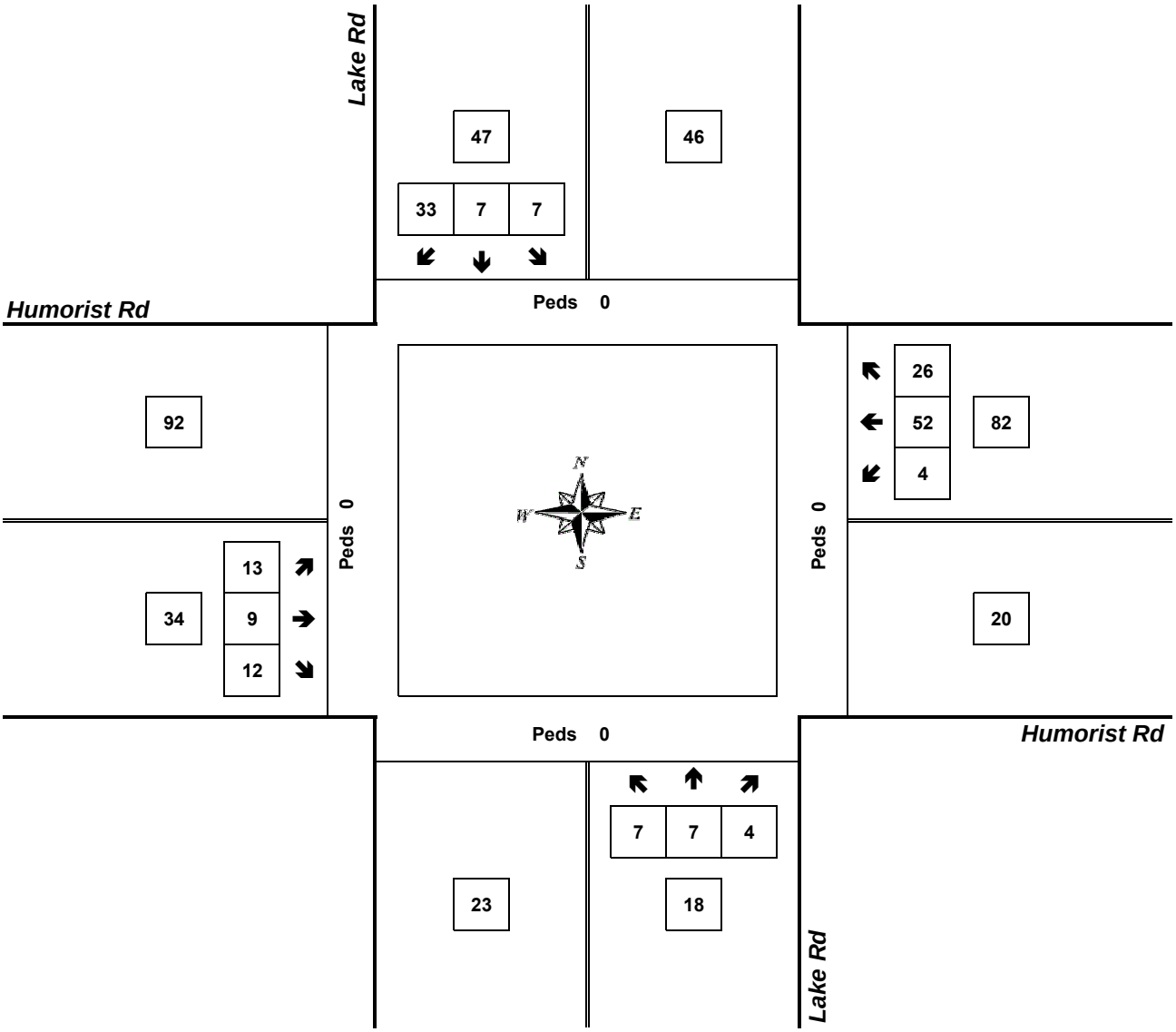
Interval Start Time	Northbound Lake Rd				Southbound Lake Rd				Eastbound Humorist Rd				Westbound Humorist Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	HV	L	T	R	HV	L	T	R	HV	L	T	R	HV		North	South	East	West
4:00 PM	7	9	2	0	17	8	13	0	39	23	10	0	3	11	16	1	158	0	0	0	0
4:15 PM	8	9	3	0	16	9	21	1	35	25	9	0	4	14	18	0	171	0	0	0	0
4:30 PM	6	7	2	0	22	6	27	1	27	37	9	0	4	19	14	0	180	0	0	0	0
4:45 PM	7	6	2	0	18	6	32	1	31	44	10	0	5	24	12	0	197	0	0	0	0
5:00 PM	9	10	6	0	17	6	29	1	29	49	13	0	4	22	10	0	204	0	0	0	0

Peak Hour Summary

All Traffic Data Services Inc.
Mark Skaggs
(206) 251-0300

Lake Rd & Humorist Rd

7:15 AM to 8:15 AM
Thursday, March 21, 2013

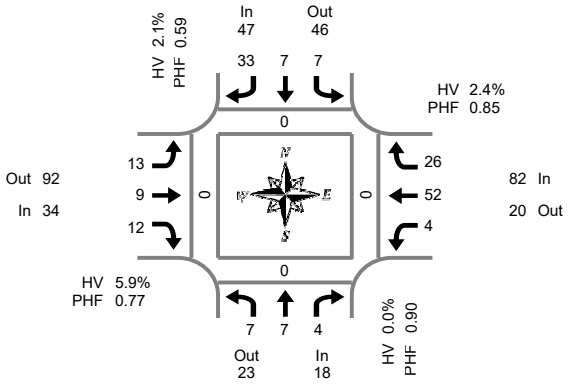


Approach	PHF	HV%	Volume
EB	0.77	5.9%	34
WB	0.85	2.4%	82
NB	0.90	0.0%	18
SB	0.59	2.1%	47
Intersection	0.78	2.8%	181

Count Period: 7:00 AM to 9:00 AM

Total Vehicle Summary

All Traffic Data Services Inc.
Mark Skaggs
(206) 251-0300



Peak Hour Summary
7:15 AM to 8:15 AM

Lake Rd & Humorist Rd

Thursday, March 21, 2013
7:00 AM to 9:00 AM

15-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Lake Rd				Southbound Lake Rd				Eastbound Humorist Rd				Westbound Humorist Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	HV	L	T	R	HV	L	T	R	HV	L	T	R	HV		North	South	East	West
7:00 AM	3	6	0	1	1	1	6	0	1	1	1	0	0	6	3	0	29	0	0	0	0
7:15 AM	1	2	0	0	4	2	14	1	3	1	3	0	0	18	5	2	53	0	0	0	0
7:30 AM	0	3	2	0	1	3	14	0	2	5	4	0	1	14	9	0	58	0	0	0	0
7:45 AM	3	1	1	0	1	0	5	0	2	3	2	0	3	13	6	0	40	0	0	0	0
8:00 AM	3	1	1	0	1	2	0	0	6	0	3	2	0	7	6	0	30	0	0	0	0
8:15 AM	2	1	0	0	2	3	1	0	5	3	0	0	0	1	2	0	20	0	0	0	0
8:30 AM	1	3	0	0	1	3	2	1	1	2	0	0	0	2	7	0	22	0	0	0	0
8:45 AM	0	3	0	0	3	0	3	0	3	1	1	0	1	8	3	0	26	0	0	0	0
Total Survey	13	20	4	1	14	14	45	2	23	16	14	2	5	69	41	2	278	0	0	0	0

Peak Hour Summary
7:15 AM to 8:15 AM

By Approach	Northbound Lake Rd				Southbound Lake Rd				Eastbound Humorist Rd				Westbound Humorist Rd				Total	Pedestrians Crosswalk			
	In	Out	Total	HV	In	Out	Total	HV	In	Out	Total	HV	In	Out	Total	HV		North	South	East	West
Volume	18	23	41	0	47	46	93	1	34	92	126	2	82	20	102	2	181	0	0	0	0
%HV	0.0%				2.1%				5.9%				2.4%				2.8%				
PHF	0.90				0.59				0.77				0.85				0.78				

By Movement	Northbound Lake Rd				Southbound Lake Rd				Eastbound Humorist Rd				Westbound Humorist Rd				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	7	7	4	18	7	7	33	47	13	9	12	34	4	52	26	82	181
PHF	0.58	0.58	0.50	0.90	0.44	0.58	0.59	0.59	0.54	0.45	0.75	0.77	0.33	0.72	0.72	0.85	0.78

Rolling Hour Summary
7:00 AM to 9:00 AM

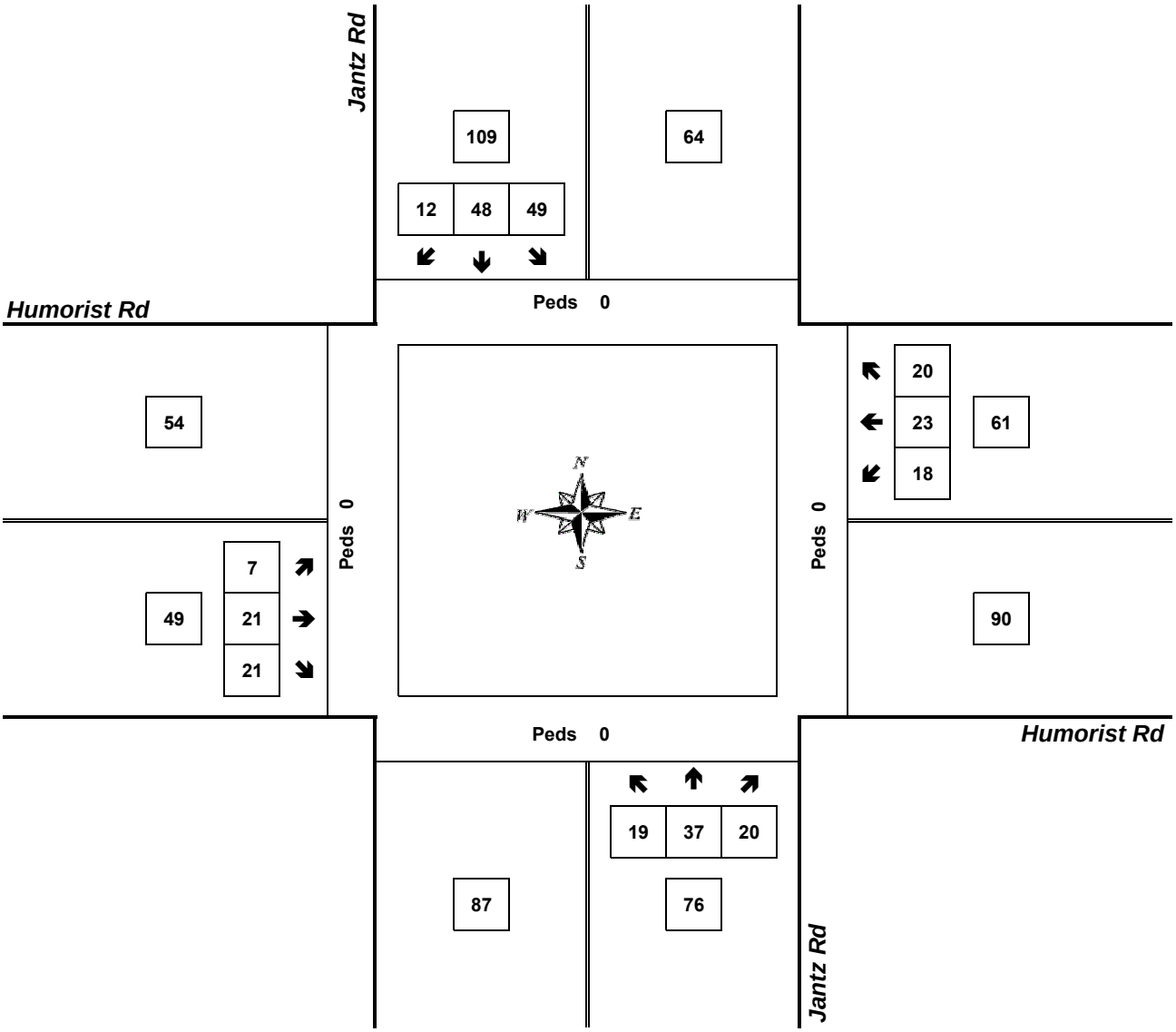
Interval Start Time	Northbound Lake Rd				Southbound Lake Rd				Eastbound Humorist Rd				Westbound Humorist Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	HV	L	T	R	HV	L	T	R	HV	L	T	R	HV		North	South	East	West
7:00 AM	7	12	3	1	7	6	39	1	8	10	10	0	4	51	23	2	180	0	0	0	0
7:15 AM	7	7	4	0	7	7	33	1	13	9	12	2	4	52	26	2	181	0	0	0	0
7:30 AM	8	6	4	0	5	8	20	0	15	11	9	2	4	35	23	0	148	0	0	0	0
7:45 AM	9	6	2	0	5	8	8	1	14	8	5	2	3	23	21	0	112	0	0	0	0
8:00 AM	6	8	1	0	7	8	6	1	15	6	4	2	1	18	18	0	98	0	0	0	0

Peak Hour Summary

All Traffic Data Services Inc.
Mark Skaggs
(206) 251-0300

Jantz Rd & Humorist Rd

5:00 PM to 6:00 PM
Thursday, March 21, 2013

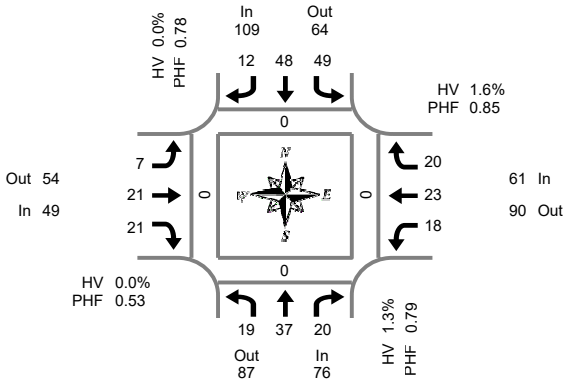


Approach	PHF	HV%	Volume
EB	0.53	0.0%	49
WB	0.85	1.6%	61
NB	0.79	1.3%	76
SB	0.78	0.0%	109
Intersection	0.76	0.7%	295

Count Period: 4:00 PM to 6:00 PM

Total Vehicle Summary

All Traffic Data Services Inc.
Mark Skaggs
(206) 251-0300



Peak Hour Summary
5:00 PM to 6:00 PM

Jantz Rd & Humorist Rd

Thursday, March 21, 2013
4:00 PM to 6:00 PM

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Jantz Rd				Southbound Jantz Rd				Eastbound Humorist Rd				Westbound Humorist Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	HV	L	T	R	HV	L	T	R	HV	L	T	R	HV		North	South	East	West
4:00 PM	3	9	5	0	9	17	0	0	1	4	5	1	3	0	2	0	58	0	0	0	0
4:15 PM	2	7	4	0	26	17	3	0	4	1	6	1	2	1	2	0	75	0	0	0	0
4:30 PM	2	8	0	0	5	9	2	0	2	0	4	0	3	0	4	0	39	0	0	0	0
4:45 PM	4	5	2	0	7	10	3	0	4	10	7	0	7	3	4	0	66	0	0	0	0
5:00 PM	6	8	3	1	7	8	7	0	2	4	3	0	7	3	7	1	65	0	0	0	0
5:15 PM	5	14	5	0	19	15	1	0	2	10	11	0	3	8	4	0	97	0	0	0	0
5:30 PM	4	6	3	0	9	10	1	0	3	5	3	0	6	5	7	0	62	0	0	0	0
5:45 PM	4	9	9	0	14	15	3	0	0	2	4	0	2	7	2	0	71	0	0	0	0
Total Survey	30	66	31	1	96	101	20	0	18	36	43	2	33	27	32	1	533	0	0	0	0

Peak Hour Summary
5:00 PM to 6:00 PM

By Approach	Northbound Jantz Rd				Southbound Jantz Rd				Eastbound Humorist Rd				Westbound Humorist Rd				Total	Pedestrians Crosswalk			
	In	Out	Total	HV	In	Out	Total	HV	In	Out	Total	HV	In	Out	Total	HV		North	South	East	West
Volume	76	87	163	1	109	64	173	0	49	54	103	0	61	90	151	1	295	0	0	0	0
%HV	1.3%				0.0%				0.0%				1.6%				0.7%				
PHF	0.79				0.78				0.53				0.85				0.76				

By Movement	Northbound Jantz Rd				Southbound Jantz Rd				Eastbound Humorist Rd				Westbound Humorist Rd				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	19	37	20	76	49	48	12	109	7	21	21	49	18	23	20	61	295
PHF	0.79	0.66	0.56	0.79	0.64	0.80	0.43	0.78	0.58	0.53	0.48	0.53	0.64	0.72	0.71	0.85	0.76

Rolling Hour Summary
4:00 PM to 6:00 PM

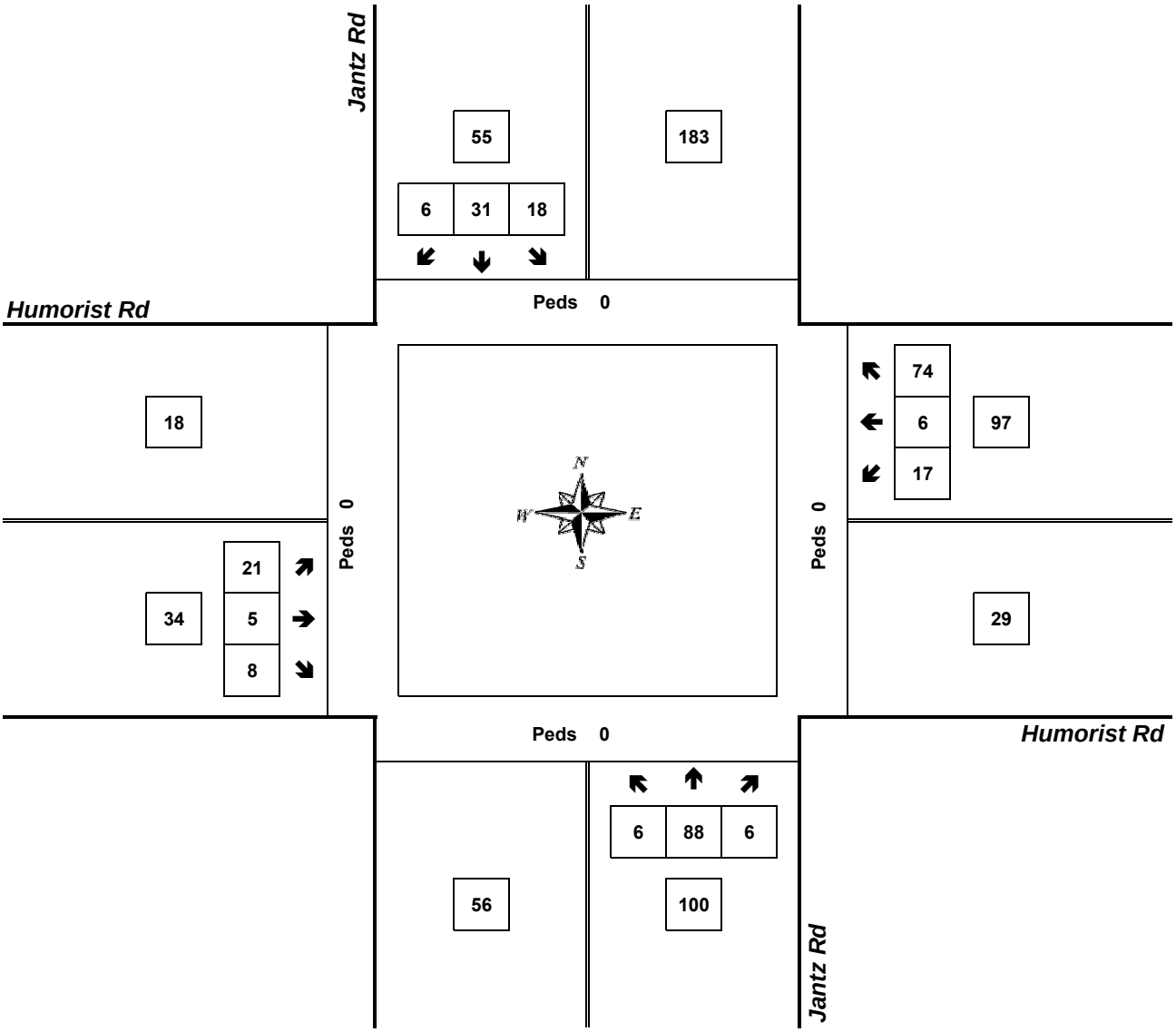
Interval Start Time	Northbound Jantz Rd				Southbound Jantz Rd				Eastbound Humorist Rd				Westbound Humorist Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	HV	L	T	R	HV	L	T	R	HV	L	T	R	HV		North	South	East	West
4:00 PM	11	29	11	0	47	53	8	0	11	15	22	2	15	4	12	0	238	0	0	0	0
4:15 PM	14	28	9	1	45	44	15	0	12	15	20	1	19	7	17	1	245	0	0	0	0
4:30 PM	17	35	10	1	38	42	13	0	10	24	25	0	20	14	19	1	267	0	0	0	0
4:45 PM	19	33	13	1	42	43	12	0	11	29	24	0	23	19	22	1	290	0	0	0	0
5:00 PM	19	37	20	1	49	48	12	0	7	21	21	0	18	23	20	1	295	0	0	0	0

Peak Hour Summary

All Traffic Data Services Inc.
Mark Skaggs
(206) 251-0300

Jantz Rd & Humorist Rd

7:00 AM to 8:00 AM
Thursday, March 21, 2013

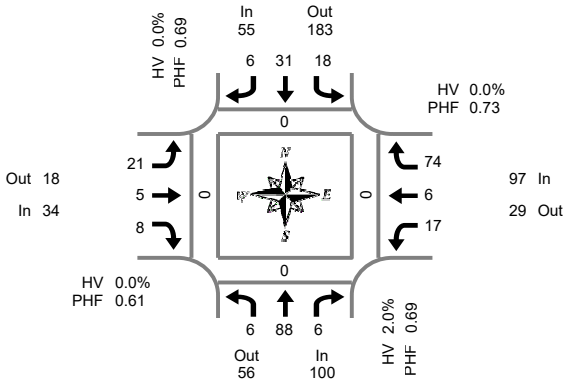


Approach	PHF	HV%	Volume
EB	0.61	0.0%	34
WB	0.73	0.0%	97
NB	0.69	2.0%	100
SB	0.69	0.0%	55
Intersection	0.73	0.7%	286

Count Period: 7:00 AM to 9:00 AM

Total Vehicle Summary

All Traffic Data Services Inc.
Mark Skaggs
(206) 251-0300



Peak Hour Summary
7:00 AM to 8:00 AM

Jantz Rd & Humorist Rd

Thursday, March 21, 2013
7:00 AM to 9:00 AM

15-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Jantz Rd				Southbound Jantz Rd				Eastbound Humorist Rd				Westbound Humorist Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	HV	L	T	R	HV	L	T	R	HV	L	T	R	HV		North	South	East	West
7:00 AM	1	9	0	0	2	2	0	0	4	1	2	0	5	2	8	0	36	0	0	0	0
7:15 AM	0	23	3	0	5	9	2	0	5	0	1	0	7	1	25	0	81	0	0	0	0
7:30 AM	1	33	2	2	5	11	4	0	8	2	4	0	4	1	23	0	98	0	0	0	0
7:45 AM	4	23	1	0	6	9	0	0	4	2	1	0	1	2	18	0	71	0	0	0	0
8:00 AM	2	5	4	0	0	5	0	0	3	4	1	2	2	3	6	1	35	0	0	0	0
8:15 AM	0	6	3	0	4	3	0	0	0	1	0	0	1	1	2	1	21	0	0	0	0
8:30 AM	2	13	1	0	3	2	6	0	5	0	1	0	3	0	3	0	39	0	0	0	0
8:45 AM	0	10	2	1	2	3	1	1	1	2	0	1	3	0	8	0	32	0	0	0	0
Total Survey	10	122	16	3	27	44	13	1	30	12	10	3	26	10	93	2	413	0	0	0	0

Peak Hour Summary
7:00 AM to 8:00 AM

By Approach	Northbound Jantz Rd				Southbound Jantz Rd				Eastbound Humorist Rd				Westbound Humorist Rd				Total	Pedestrians Crosswalk			
	In	Out	Total	HV	In	Out	Total	HV	In	Out	Total	HV	In	Out	Total	HV		North	South	East	West
Volume	100	56	156	2	55	183	238	0	34	18	52	0	97	29	126	0	286	0	0	0	0
%HV	2.0%				0.0%				0.0%				0.0%				0.7%				
PHF	0.69				0.69				0.61				0.73				0.73				

By Movement	Northbound Jantz Rd				Southbound Jantz Rd				Eastbound Humorist Rd				Westbound Humorist Rd				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	6	88	6	100	18	31	6	55	21	5	8	34	17	6	74	97	286
PHF	0.38	0.67	0.50	0.69	0.75	0.70	0.38	0.69	0.66	0.63	0.50	0.61	0.61	0.75	0.74	0.73	0.73

Rolling Hour Summary
7:00 AM to 9:00 AM

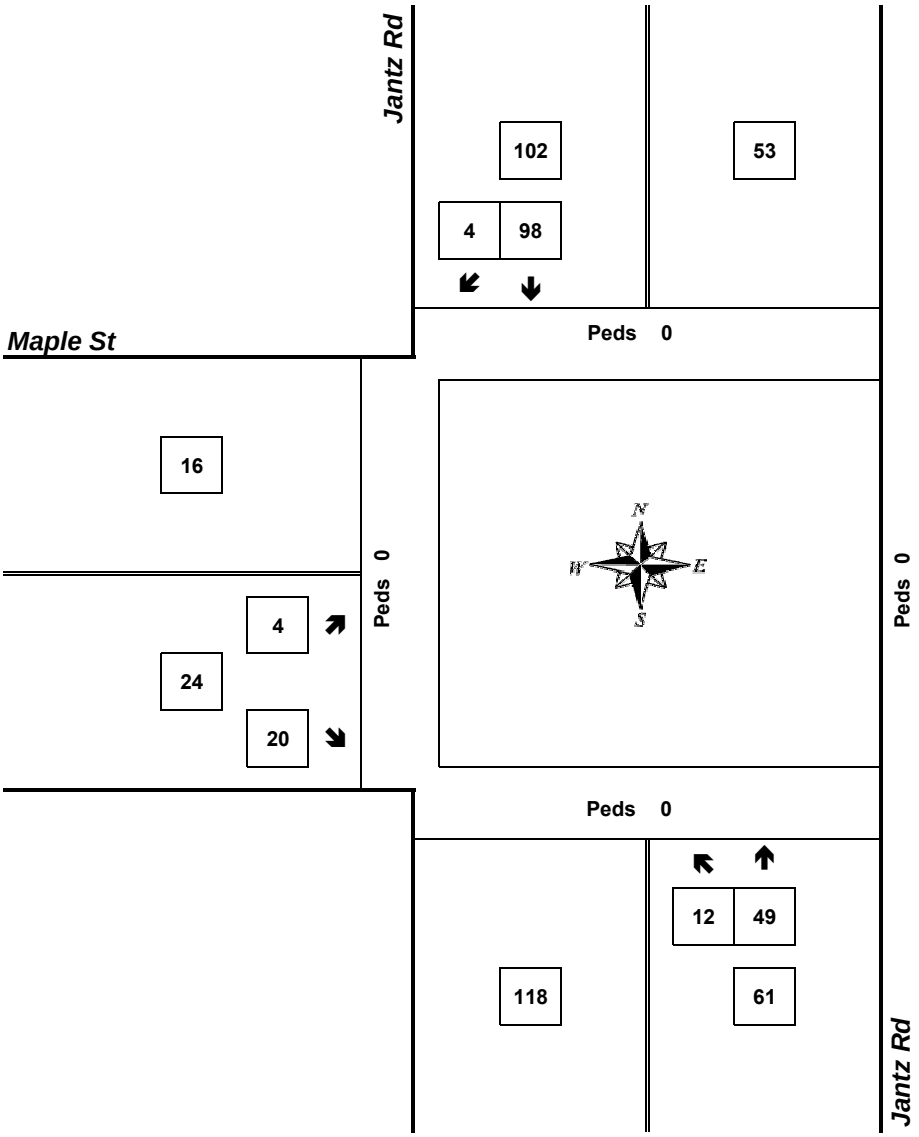
Interval Start Time	Northbound Jantz Rd				Southbound Jantz Rd				Eastbound Humorist Rd				Westbound Humorist Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	HV	L	T	R	HV	L	T	R	HV	L	T	R	HV		North	South	East	West
7:00 AM	6	88	6	2	18	31	6	0	21	5	8	0	17	6	74	0	286	0	0	0	0
7:15 AM	7	84	10	2	16	34	6	0	20	8	7	2	14	7	72	1	285	0	0	0	0
7:30 AM	7	67	10	2	15	28	4	0	15	9	6	2	8	7	49	2	225	0	0	0	0
7:45 AM	8	47	9	0	13	19	6	0	12	7	3	2	7	6	29	2	166	0	0	0	0
8:00 AM	4	34	10	1	9	13	7	1	9	7	2	3	9	4	19	2	127	0	0	0	0

Peak Hour Summary

Mark Skaggs
(206) 251-0300

Jantz Rd & Maple St

5:00 PM to 6:00 PM
Thursday, March 21, 2013

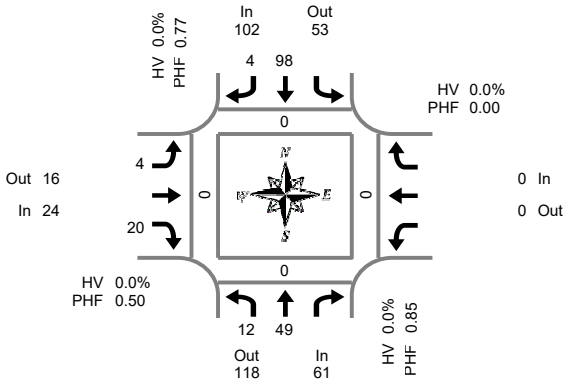


Approach	PHF	HV%	Volume
EB	0.50	0.0%	24
WB	0.00	0.0%	0
NB	0.85	0.0%	61
SB	0.77	0.0%	102
Intersection	0.78	0.0%	187

Count Period: 4:00 PM to 6:00 PM

Total Vehicle Summary

Mark Skaggs
(206) 251-0300



Peak Hour Summary
5:00 PM to 6:00 PM

Jantz Rd & Maple St

Thursday, March 21, 2013
4:00 PM to 6:00 PM

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Jantz Rd				Southbound Jantz Rd				Eastbound Maple St				Westbound Maple St				Interval Total	Pedestrians Crosswalk			
	L	T		HV		T	R	HV	L		R	HV						North	South	East	West
4:00 PM	2	10		2		28	0	0	2		3	0					45	0	0	0	0
4:15 PM	4	11		1		33	0	0	0		7	0					55	0	0	0	0
4:30 PM	5	8		0		11	0	0	1		7	0					32	0	0	0	0
4:45 PM	5	7		0		14	3	0	1		2	0					32	0	0	0	0
5:00 PM	2	13		0		16	0	0	1		7	0					39	0	0	0	0
5:15 PM	3	15		0		28	2	0	3		9	0					60	0	0	0	0
5:30 PM	4	13		0		21	2	0	0		1	0					41	0	0	0	0
5:45 PM	3	8		0		33	0	0	0		3	0					47	0	0	0	0
Total Survey	28	85		3		184	7	0	8		39	0					351	0	0	0	0

Peak Hour Summary
5:00 PM to 6:00 PM

By Approach	Northbound Jantz Rd				Southbound Jantz Rd				Eastbound Maple St				Westbound Maple St				Total	Pedestrians Crosswalk			
	In	Out	Total	HV	In	Out	Total	HV	In	Out	Total	HV	In	Out	Total			North	South	East	West
Volume	61	118	179	0	102	53	155	0	24	16	40	0	0	0	0		187	0	0	0	0
%HV	0.0%				0.0%				0.0%				0.0%				0.0%				
PHF	0.85				0.77				0.50				0.00				0.78				

By Movement	Northbound Jantz Rd				Southbound Jantz Rd				Eastbound Maple St				Westbound Maple St				Total
	L	T		Total		T	R	Total	L		R	Total				Total	
Volume	12	49		61		98	4	102	4		20	24				0	187
PHF	0.75	0.82		0.85		0.74	0.50	0.77	0.33		0.56	0.50				0.00	0.78

Rolling Hour Summary
4:00 PM to 6:00 PM

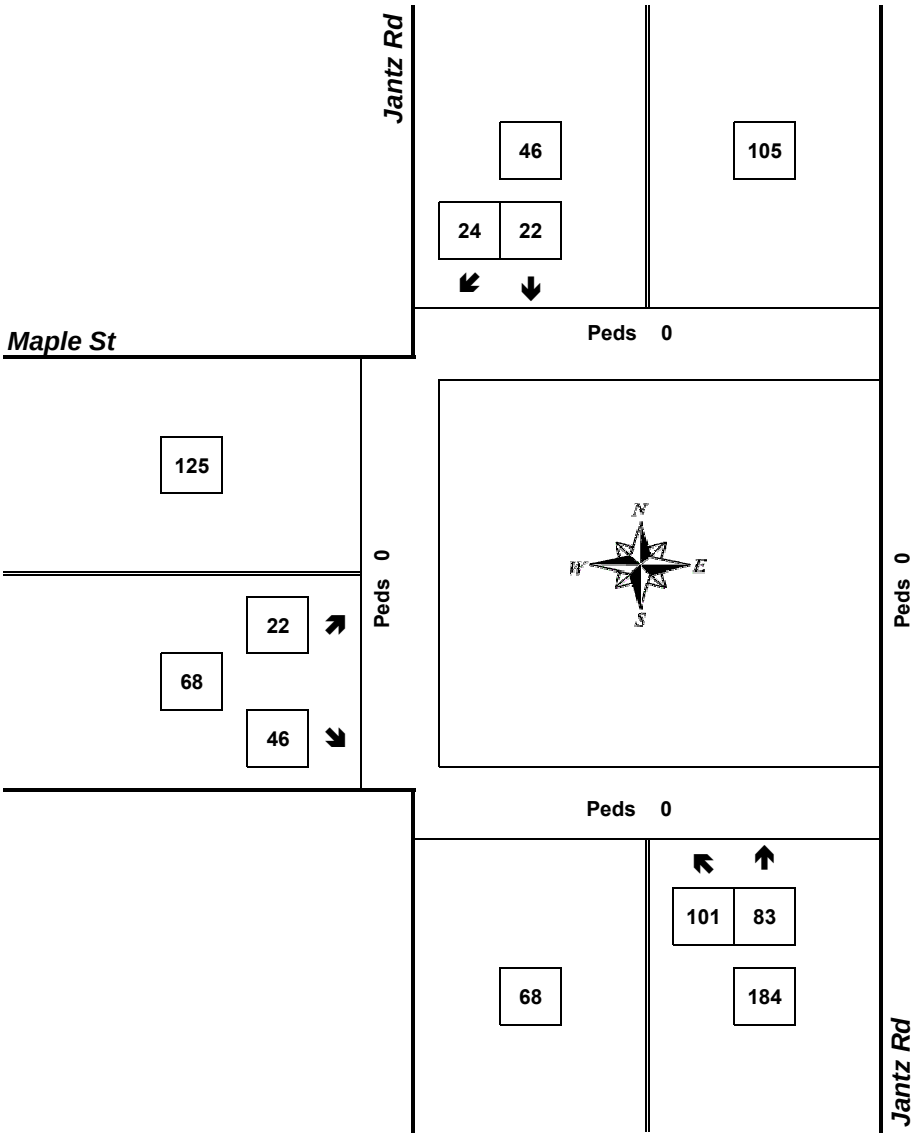
Interval Start Time	Northbound Jantz Rd				Southbound Jantz Rd				Eastbound Maple St				Westbound Maple St				Interval Total	Pedestrians Crosswalk			
	L	T		HV		T	R	HV	L		R	HV						North	South	East	West
4:00 PM	16	36		3		86	3	0	4		19	0					164	0	0	0	0
4:15 PM	16	39		1		74	3	0	3		23	0					158	0	0	0	0
4:30 PM	15	43		0		69	5	0	6		25	0					163	0	0	0	0
4:45 PM	14	48		0		79	7	0	5		19	0					172	0	0	0	0
5:00 PM	12	49		0		98	4	0	4		20	0					187	0	0	0	0

Peak Hour Summary

All Traffic Data Services Inc.
Mark Skaggs
(206) 251-0300

Jantz Rd & Maple St

7:00 AM to 8:00 AM
Thursday, March 21, 2013

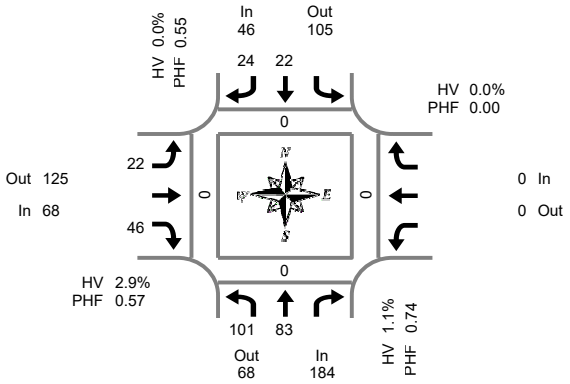


Approach	PHF	HV%	Volume
EB	0.57	2.9%	68
WB	0.00	0.0%	0
NB	0.74	1.1%	184
SB	0.55	0.0%	46
Intersection	0.66	1.3%	298

Count Period: 7:00 AM to 9:00 AM

Total Vehicle Summary

All Traffic Data Services Inc.
Mark Skaggs
(206) 251-0300



Peak Hour Summary
7:00 AM to 8:00 AM

Jantz Rd & Maple St

Thursday, March 21, 2013
7:00 AM to 9:00 AM

15-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Jantz Rd				Southbound Jantz Rd				Eastbound Maple St				Westbound Maple St				Interval Total	Pedestrians Crosswalk			
	L	T		HV		T	R	HV	L		R	HV						North	South	East	West
7:00 AM	6	13		0		4	0	0	0		2	0					25	0	0	0	0
7:15 AM	33	18		0		7	6	0	2		10	0					76	0	0	0	0
7:30 AM	39	23		2		7	14	0	13		17	0					113	0	0	0	0
7:45 AM	23	29		0		4	4	0	7		17	2					84	0	0	0	0
8:00 AM	4	10		0		2	0	0	0		3	7					19	0	0	0	0
8:15 AM	2	8		0		7	0	1	0		2	7					19	0	0	0	0
8:30 AM	2	11		0		8	0	0	0		0	2					21	0	0	0	0
8:45 AM	6	12		0		6	0	1	4		1	0					29	0	0	0	0
Total Survey	115	124		2		45	24	2	26		52	18					386	0	0	0	0

Peak Hour Summary
7:00 AM to 8:00 AM

By Approach	Northbound Jantz Rd				Southbound Jantz Rd				Eastbound Maple St				Westbound Maple St				Total	Pedestrians Crosswalk			
	In	Out	Total	HV	In	Out	Total	HV	In	Out	Total	HV	In	Out	Total			North	South	East	West
Volume	184	68	252	2	46	105	151	0	68	125	193	2	0	0	0		298	0	0	0	0
%HV	1.1%				0.0%				2.9%				0.0%				1.3%				
PHF	0.74				0.55				0.57				0.00				0.66				

By Movement	Northbound Jantz Rd				Southbound Jantz Rd				Eastbound Maple St				Westbound Maple St				Total
	L	T		Total		T	R	Total	L		R	Total				Total	
Volume	101	83		184		22	24	46	22		46	68				0	298
PHF	0.65	0.72		0.74		0.79	0.43	0.55	0.42		0.68	0.57				0.00	0.66

Rolling Hour Summary
7:00 AM to 9:00 AM

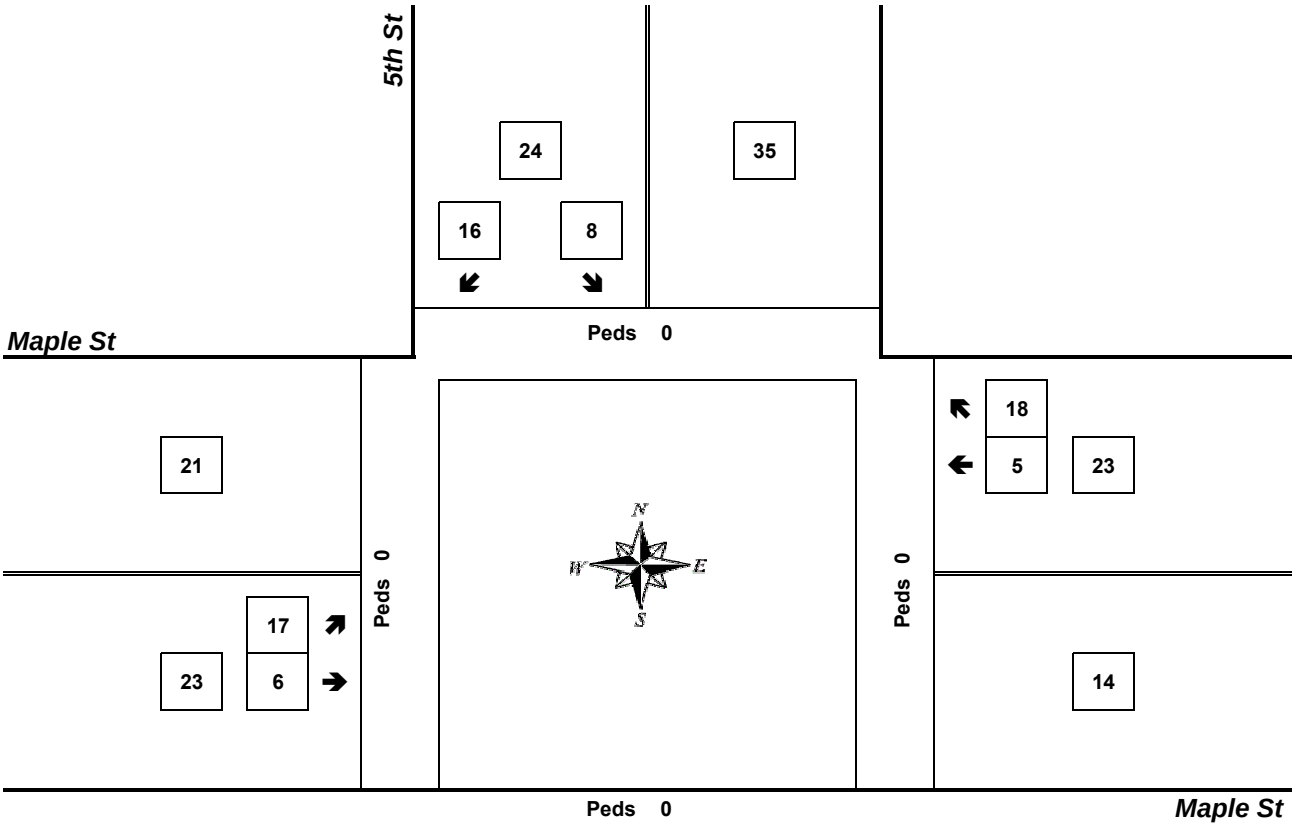
Interval Start Time	Northbound Jantz Rd				Southbound Jantz Rd				Eastbound Maple St				Westbound Maple St				Interval Total	Pedestrians Crosswalk			
	L	T		HV		T	R	HV	L		R	HV						North	South	East	West
7:00 AM	101	83		2		22	24	0	22		46	2					298	0	0	0	0
7:15 AM	99	80		2		20	24	0	22		47	9					292	0	0	0	0
7:30 AM	68	70		2		20	18	1	20		39	16					235	0	0	0	0
7:45 AM	31	58		0		21	4	1	7		22	18					143	0	0	0	0
8:00 AM	14	41		0		23	0	2	4		6	16					88	0	0	0	0

Peak Hour Summary

All Traffic Data Services Inc.
Mark Skaggs
(206) 251-0300

5th St & Maple St

4:30 PM to 5:30 PM
Thursday, March 21, 2013

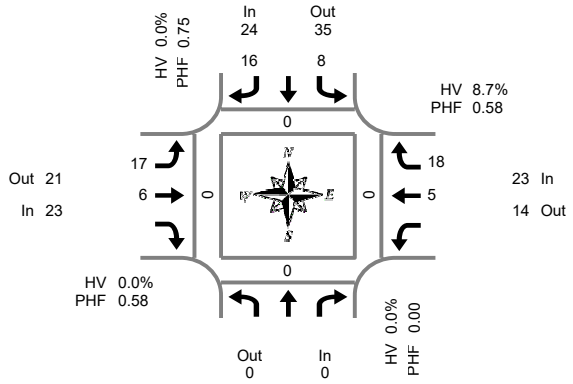


Approach	PHF	HV%	Volume
EB	0.58	0.0%	23
WB	0.58	8.7%	23
NB	0.00	0.0%	0
SB	0.75	0.0%	24
Intersection	0.80	2.9%	70

Count Period: 4:00 PM to 6:00 PM

Total Vehicle Summary

All Traffic Data Services Inc.
Mark Skaggs
(206) 251-0300



5th St & Maple St

Thursday, March 21, 2013
4:00 PM to 6:00 PM

Peak Hour Summary
4:30 PM to 5:30 PM

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound 5th St				Southbound 5th St				Eastbound Maple St				Westbound Maple St				Interval Total	Pedestrians Crosswalk			
					L		R	HV	L	T		HV		T	R	HV		North	South	East	West
4:00 PM					2		1	0	1	3		0		1	5	0	13	0	0	0	0
4:15 PM					1		4	0	1	1		0		0	4	0	11	0	0	0	1
4:30 PM					3		4	0	5	0		0		3	7	2	22	0	0	0	0
4:45 PM					4		4	0	3	1		0		0	7	0	19	0	0	0	0
5:00 PM					0		5	0	4	0		0		1	1	0	11	0	0	0	0
5:15 PM					1		3	0	5	5		0		1	3	0	18	0	0	0	0
5:30 PM					3		5	0	5	1		0		2	0	0	16	0	0	0	0
5:45 PM					5		2	0	6	0		0		0	2	0	15	0	0	0	0
Total Survey					19		28	0	30	11		0		8	29	2	125	0	0	0	1

Peak Hour Summary
4:30 PM to 5:30 PM

By Approach	Northbound 5th St				Southbound 5th St				Eastbound Maple St				Westbound Maple St				Total	Pedestrians Crosswalk			
	In	Out	Total		In	Out	Total	HV	In	Out	Total	HV	In	Out	Total	HV		North	South	East	West
Volume	0	0	0		24	35	59	0	23	21	44	0	23	14	37	2	70	0	0	0	0
%HV	0.0%				0.0%				0.0%				8.7%				2.9%				
PHF	0.00				0.75				0.58				0.58				0.80				

By Movement	Northbound 5th St				Southbound 5th St				Eastbound Maple St				Westbound Maple St				Total
				Total	L		R	Total	L	T		Total		T	R	Total	
Volume				0	8		16	24	17	6		23		5	18	23	70
PHF				0.00	0.50		0.80	0.75	0.85	0.30		0.58		0.42	0.64	0.58	0.80

Rolling Hour Summary
4:00 PM to 6:00 PM

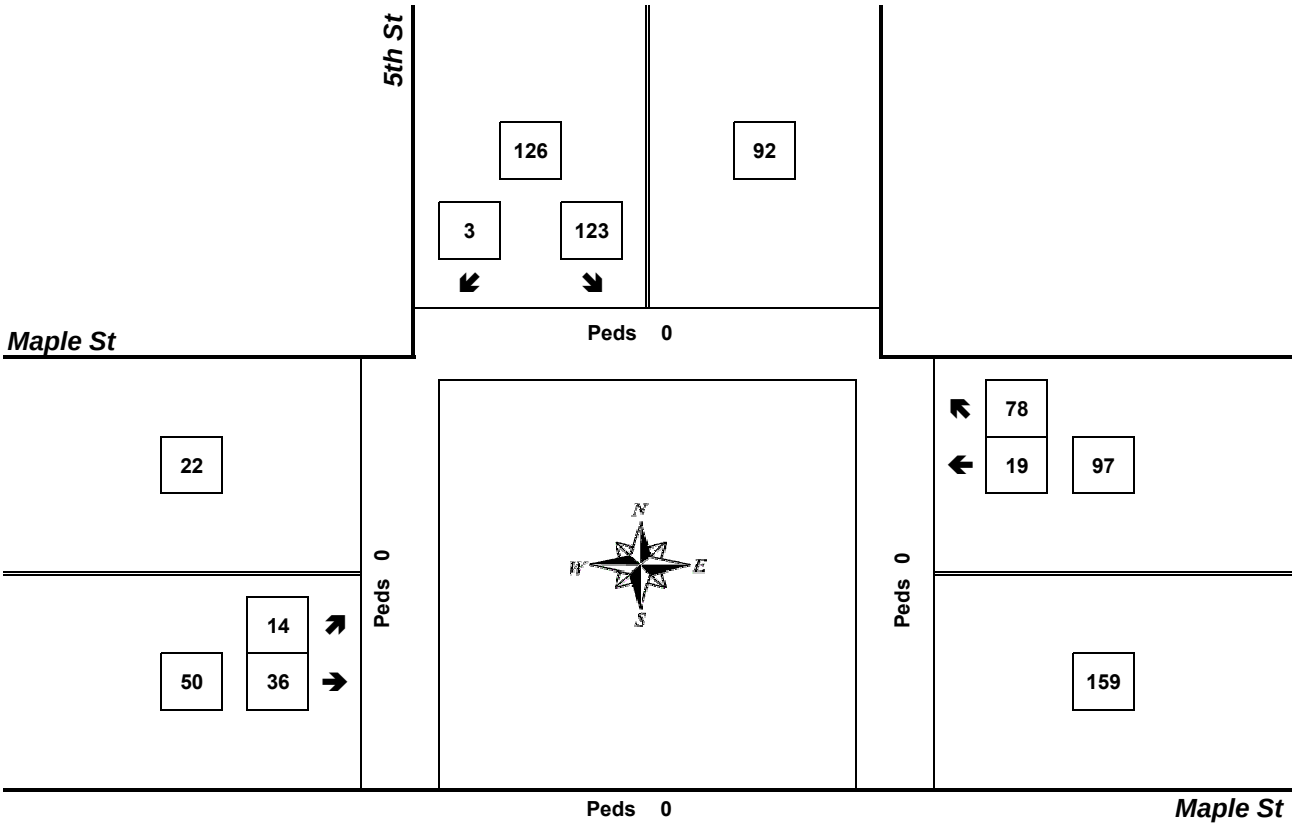
Interval Start Time	Northbound 5th St				Southbound 5th St				Eastbound Maple St				Westbound Maple St				Interval Total	Pedestrians Crosswalk			
					L		R	HV	L	T		HV		T	R	HV		North	South	East	West
4:00 PM					10		13	0	10	5		0		4	23	2	65	0	0	0	1
4:15 PM					8		17	0	13	2		0		4	19	2	63	0	0	0	1
4:30 PM					8		16	0	17	6		0		5	18	2	70	0	0	0	0
4:45 PM					8		17	0	17	7		0		4	11	0	64	0	0	0	0
5:00 PM					9		15	0	20	6		0		4	6	0	60	0	0	0	0

Peak Hour Summary

Mark Skaggs
(206) 251-0300

5th St & Maple St

7:00 AM to 8:00 AM
Thursday, March 21, 2013

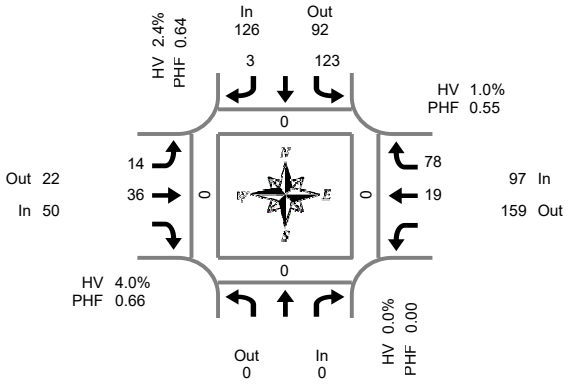


Approach	PHF	HV%	Volume
EB	0.66	4.0%	50
WB	0.55	1.0%	97
NB	0.00	0.0%	0
SB	0.64	2.4%	126
Intersection	0.61	2.2%	273

Count Period: 7:00 AM to 9:00 AM

Total Vehicle Summary

All Traffic Data Services Inc.
Mark Skaggs
(206) 251-0300



Peak Hour Summary
7:00 AM to 8:00 AM

5th St & Maple St

Thursday, March 21, 2013
7:00 AM to 9:00 AM

15-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound 5th St				Southbound 5th St				Eastbound Maple St				Westbound Maple St				Interval Total	Pedestrians Crosswalk			
					L		R	HV	L	T		HV		T	R	HV		North	South	East	West
7:00 AM					10		2	0	2	4		0		0	5	1	23	0	0	0	0
7:15 AM					39		1	1	3	13		1		5	8	0	69	0	0	0	0
7:30 AM					49		0	2	6	13		1		6	38	0	112	0	0	0	0
7:45 AM					25		0	0	3	6		0		8	27	0	69	0	0	0	0
8:00 AM					6		1	0	5	2		0		3	5	0	22	0	0	0	0
8:15 AM					4		2	0	4	1		0		1	3	0	15	0	0	0	0
8:30 AM					1		1	0	2	3		0		2	1	0	10	0	0	0	0
8:45 AM					4		1	0	1	0		0		2	0	0	8	0	0	0	0
Total Survey					138		8	3	26	42		2		27	87	1	328	0	0	0	0

Peak Hour Summary
7:00 AM to 8:00 AM

By Approach	Northbound 5th St				Southbound 5th St				Eastbound Maple St				Westbound Maple St				Total	Pedestrians Crosswalk			
	In	Out	Total		In	Out	Total	HV	In	Out	Total	HV	In	Out	Total	HV		North	South	East	West
Volume	0	0	0		126	92	218	3	50	22	72	2	97	159	256	1	273	0	0	0	0
%HV	0.0%				2.4%				4.0%				1.0%				2.2%				
PHF	0.00				0.64				0.66				0.55				0.61				

By Movement	Northbound 5th St				Southbound 5th St				Eastbound Maple St				Westbound Maple St				Total
				Total	L		R	Total	L	T		Total		T	R	Total	
Volume				0	123		3	126	14	36		50		19	78	97	273
PHF				0.00	0.63		0.38	0.64	0.58	0.69		0.66		0.59	0.51	0.55	0.61

Rolling Hour Summary
7:00 AM to 9:00 AM

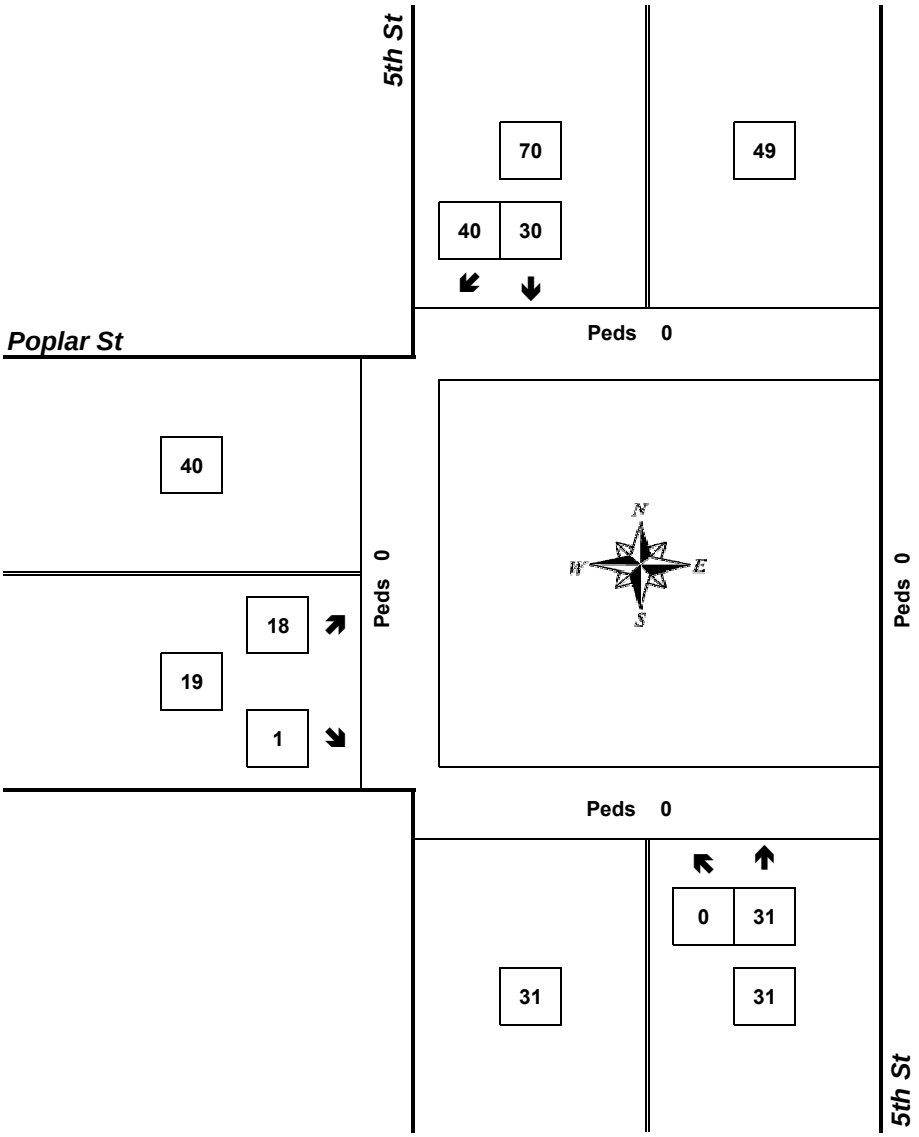
Interval Start Time	Northbound 5th St				Southbound 5th St				Eastbound Maple St				Westbound Maple St				Interval Total	Pedestrians Crosswalk			
					L		R	HV	L	T		HV		T	R	HV		North	South	East	West
7:00 AM					123		3	3	14	36		2		19	78	1	273	0	0	0	0
7:15 AM					119		2	3	17	34		2		22	78	0	272	0	0	0	0
7:30 AM					84		3	2	18	22		1		18	73	0	218	0	0	0	0
7:45 AM					36		4	0	14	12		0		14	36	0	116	0	0	0	0
8:00 AM					15		5	0	12	6		0		8	9	0	55	0	0	0	0

Peak Hour Summary

All Traffic Data Services Inc.
Mark Skaggs
(206) 251-0300

5th St & Poplar St

5:00 PM to 6:00 PM
Thursday, March 21, 2013

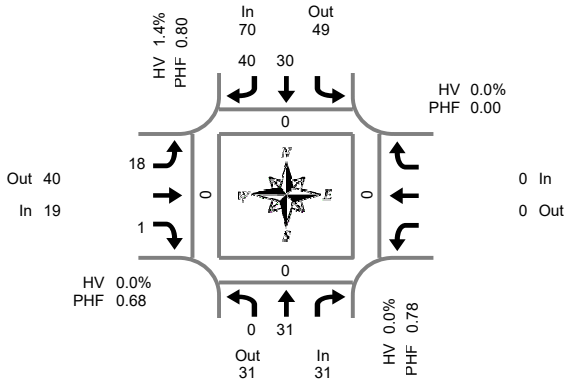


Approach	PHF	HV%	Volume
EB	0.68	0.0%	19
WB	0.00	0.0%	0
NB	0.78	0.0%	31
SB	0.80	1.4%	70
Intersection	0.97	0.8%	120

Count Period: 4:00 PM to 6:00 PM

Total Vehicle Summary

Mark Skaggs
(206) 251-0300



Peak Hour Summary
5:00 PM to 6:00 PM

5th St & Poplar St

Thursday, March 21, 2013
4:00 PM to 6:00 PM

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound 5th St				Southbound 5th St				Eastbound Poplar St				Westbound Poplar St				Interval Total	Pedestrians Crosswalk			
	L	T		HV		T	R	HV	L		R	HV						North	South	East	West
4:00 PM	0	4		0		5	6	0	3		0	0					18	0	0	0	0
4:15 PM	0	7		0		7	7	0	2		0	0					23	0	0	0	0
4:30 PM	0	14		2		8	7	0	2		0	0					31	0	0	0	0
4:45 PM	0	11		0		8	7	0	1		0	0					27	0	0	0	0
5:00 PM	0	6		0		7	15	1	2		0	0					30	0	0	0	0
5:15 PM	0	8		0		5	11	0	6		1	0					31	0	0	0	0
5:30 PM	0	7		0		9	9	0	5		0	0					30	0	0	0	0
5:45 PM	0	10		0		9	5	0	5		0	0					29	0	0	0	0
Total Survey	0	67		2		58	67	1	26		1	0					219	0	0	0	0

Peak Hour Summary
5:00 PM to 6:00 PM

By Approach	Northbound 5th St				Southbound 5th St				Eastbound Poplar St				Westbound Poplar St				Total	Pedestrians Crosswalk			
	In	Out	Total	HV	In	Out	Total	HV	In	Out	Total	HV	In	Out	Total			North	South	East	West
Volume	31	31	62	0	70	49	119	1	19	40	59	0	0	0	0		120	0	0	0	0
%HV	0.0%				1.4%				0.0%				0.0%				0.8%				
PHF	0.78				0.80				0.68				0.00				0.97				

By Movement	Northbound 5th St				Southbound 5th St				Eastbound Poplar St				Westbound Poplar St				Total
	L	T		Total		T	R	Total	L		R	Total				Total	
Volume	0	31		31		30	40	70	18		1	19				0	120
PHF	0.00	0.78		0.78		0.83	0.67	0.80	0.75		0.25	0.68				0.00	0.97

Rolling Hour Summary
4:00 PM to 6:00 PM

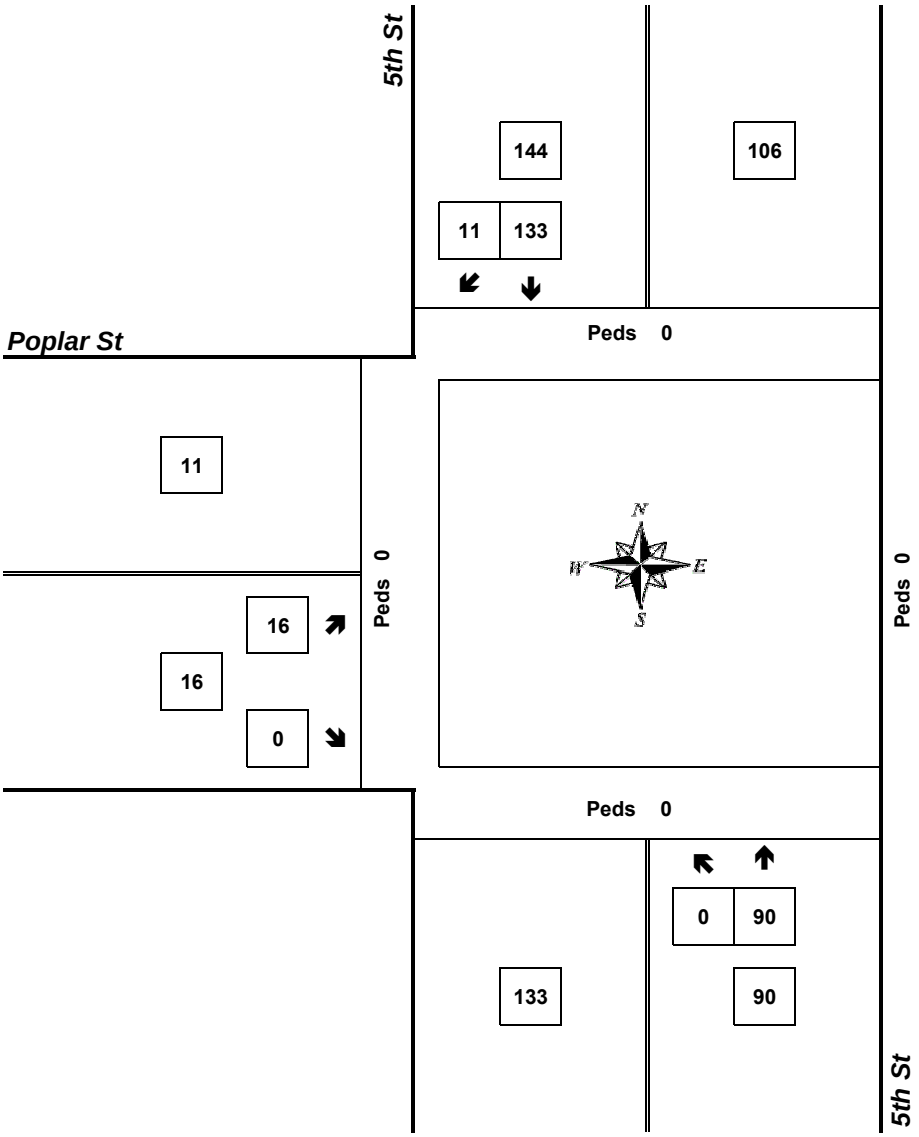
Interval Start Time	Northbound 5th St				Southbound 5th St				Eastbound Poplar St				Westbound Poplar St				Interval Total	Pedestrians Crosswalk			
	L	T		HV		T	R	HV	L		R	HV						North	South	East	West
4:00 PM	0	36		2		28	27	0	8		0	0					99	0	0	0	0
4:15 PM	0	38		2		30	36	1	7		0	0					111	0	0	0	0
4:30 PM	0	39		2		28	40	1	11		1	0					119	0	0	0	0
4:45 PM	0	32		0		29	42	1	14		1	0					118	0	0	0	0
5:00 PM	0	31		0		30	40	1	18		1	0					120	0	0	0	0

Peak Hour Summary

All Traffic Data Services Inc.
Mark Skaggs
(206) 251-0300

5th St & Poplar St

7:00 AM to 8:00 AM
Thursday, March 21, 2013

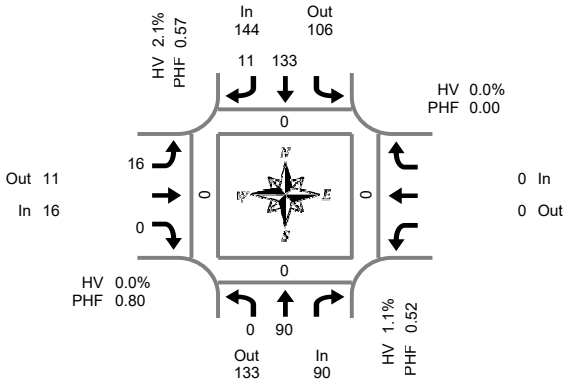


Approach	PHF	HV%	Volume
EB	0.80	0.0%	16
WB	0.00	0.0%	0
NB	0.52	1.1%	90
SB	0.57	2.1%	144
Intersection	0.57	1.6%	250

Count Period: 7:00 AM to 9:00 AM

Total Vehicle Summary

Mark Skaggs
(206) 251-0300



5th St & Poplar St

Thursday, March 21, 2013
7:00 AM to 9:00 AM

Peak Hour Summary
7:00 AM to 8:00 AM

15-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound 5th St				Southbound 5th St				Eastbound Poplar St				Westbound Poplar St				Interval Total	Pedestrians Crosswalk			
	L	T		HV	T	R	HV		L	R	HV							North	South	East	West
7:00 AM	0	6		1	12	1	0		5	0	0						24	0	0	0	0
7:15 AM	0	10		0	38	3	2		4	0	0						55	0	0	0	0
7:30 AM	0	43		0	58	5	1		4	0	0						110	0	0	0	0
7:45 AM	0	31		0	25	2	0		3	0	0						61	0	0	0	0
8:00 AM	0	10		0	7	2	0		1	0	0						20	0	0	0	0
8:15 AM	0	9		0	7	4	0		3	0	0						23	0	0	0	0
8:30 AM	0	3		0	3	2	0		2	0	0						10	0	0	0	0
8:45 AM	0	4		0	3	0	0		1	0	0						8	0	0	0	0
Total Survey	0	116		1	153	19	3		23	0	0						311	0	0	0	0

Peak Hour Summary
7:00 AM to 8:00 AM

By Approach	Northbound 5th St				Southbound 5th St				Eastbound Poplar St				Westbound Poplar St				Total	Pedestrians Crosswalk			
	In	Out	Total	HV	In	Out	Total	HV	In	Out	Total	HV	In	Out	Total			North	South	East	West
Volume	90	133	223	1	144	106	250	3	16	11	27	0	0	0	0		250	0	0	0	0
%HV	1.1%				2.1%				0.0%				0.0%				1.6%				
PHF	0.52				0.57				0.80				0.00				0.57				

By Movement	Northbound 5th St				Southbound 5th St				Eastbound Poplar St				Westbound Poplar St				Total
	L	T		Total	T	R	Total		L	R	Total					Total	
Volume	0	90		90	133	11	144		16	0	16					0	250
PHF	0.00	0.52		0.52	0.57	0.55	0.57		0.80	0.00	0.80					0.00	0.57

Rolling Hour Summary
7:00 AM to 9:00 AM

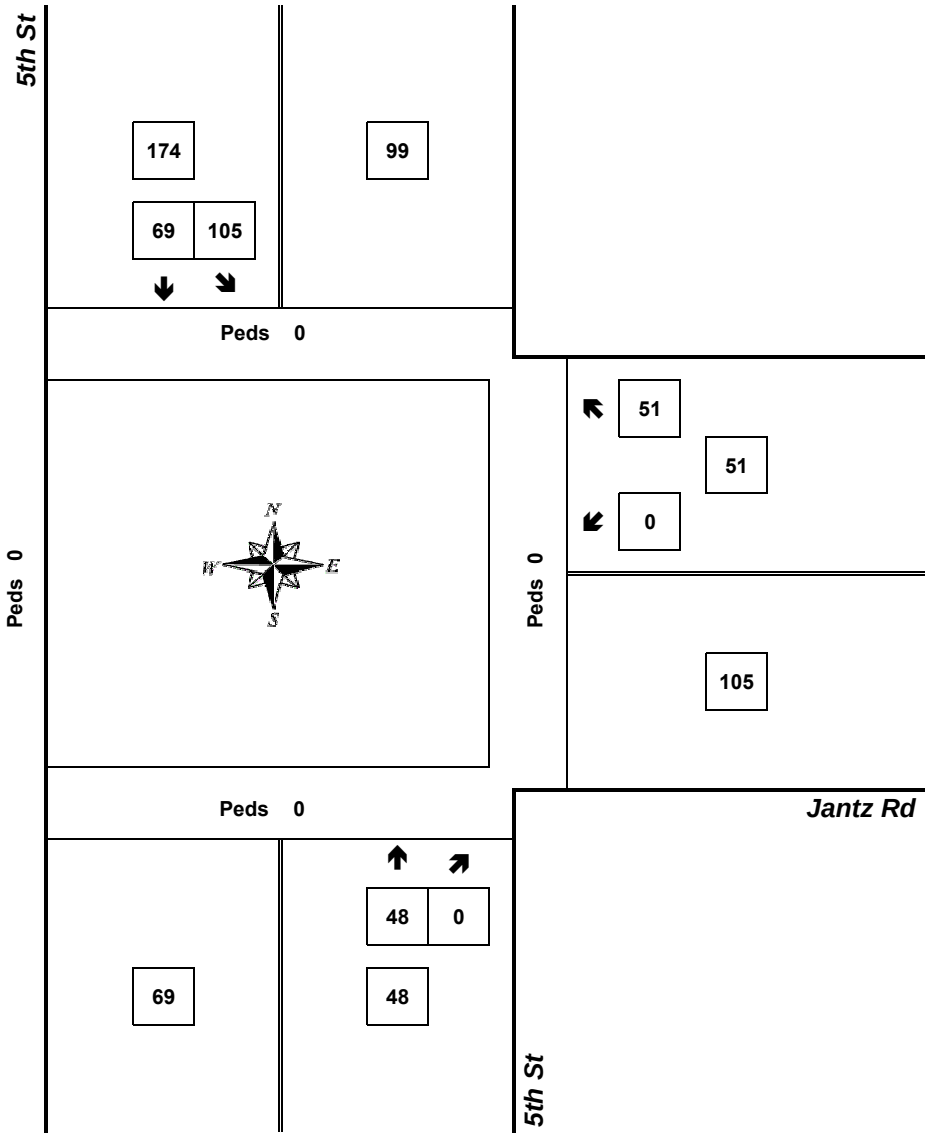
Interval Start Time	Northbound 5th St				Southbound 5th St				Eastbound Poplar St				Westbound Poplar St				Interval Total	Pedestrians Crosswalk			
	L	T		HV	T	R	HV		L	R	HV							North	South	East	West
7:00 AM	0	90		1	133	11	3		16	0	0						250	0	0	0	0
7:15 AM	0	94		0	128	12	3		12	0	0						246	0	0	0	0
7:30 AM	0	93		0	97	13	1		11	0	0						214	0	0	0	0
7:45 AM	0	53		0	42	10	0		9	0	0						114	0	0	0	0
8:00 AM	0	26		0	20	8	0		7	0	0						61	0	0	0	0

Peak Hour Summary

All Traffic Data Services Inc.
Mark Skaggs
(206) 251-0300

5th St & Jantz Rd

5:00 PM to 6:00 PM
Thursday, March 21, 2013

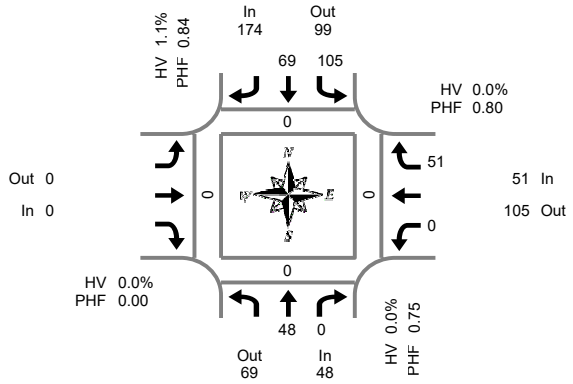


Approach	PHF	HV%	Volume
EB	0.00	0.0%	0
WB	0.80	0.0%	51
NB	0.75	0.0%	48
SB	0.84	1.1%	174
Intersection	0.90	0.7%	273

Count Period: 4:00 PM to 6:00 PM

Total Vehicle Summary

All Traffic Data Services Inc.
Mark Skaggs
(206) 251-0300



Peak Hour Summary
5:00 PM to 6:00 PM

5th St & Jantz Rd

Thursday, March 21, 2013
4:00 PM to 6:00 PM

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound 5th St				Southbound 5th St				Eastbound Jantz Rd				Westbound Jantz Rd				Interval Total	Pedestrians Crosswalk			
		T	R	HV	L	T		HV					L		R	HV		North	South	East	West
4:00 PM		6	0	0	30	11		0					0		12	0	59	0	0	0	0
4:15 PM		8	0	0	34	14		0					0		13	0	69	0	0	0	0
4:30 PM		15	0	2	11	15		0					0		9	0	50	0	0	0	0
4:45 PM		12	1	0	15	14		0					0		7	0	49	0	0	0	0
5:00 PM		7	0	0	16	21		1					0		14	0	58	0	0	0	0
5:15 PM		14	0	0	31	15		0					0		16	0	76	0	0	0	0
5:30 PM		11	0	0	22	17		0					0		13	0	63	0	0	0	0
5:45 PM		16	0	0	36	16		1					0		8	0	76	0	0	0	0
Total Survey		89	1	2	195	123		2					0		92	0	500	0	0	0	0

Peak Hour Summary
5:00 PM to 6:00 PM

By Approach	Northbound 5th St				Southbound 5th St				Eastbound Jantz Rd				Westbound Jantz Rd				Total	Pedestrians Crosswalk			
	In	Out	Total	HV	In	Out	Total	HV	In	Out	Total		In	Out	Total	HV		North	South	East	West
Volume	48	69	117	0	174	99	273	2	0	0	0		51	105	156	0	273	0	0	0	0
%HV	0.0%				1.1%				0.0%				0.0%				0.7%				
PHF	0.75				0.84				0.00				0.80				0.90				

By Movement	Northbound 5th St				Southbound 5th St				Eastbound Jantz Rd				Westbound Jantz Rd				Total
		T	R	Total	L	T		Total				Total	L		R	Total	
Volume		48	0	48	105	69		174				0	0		51	51	273
PHF		0.75	0.00	0.75	0.73	0.82		0.84				0.00	0.00		0.80	0.80	0.90

Rolling Hour Summary
4:00 PM to 6:00 PM

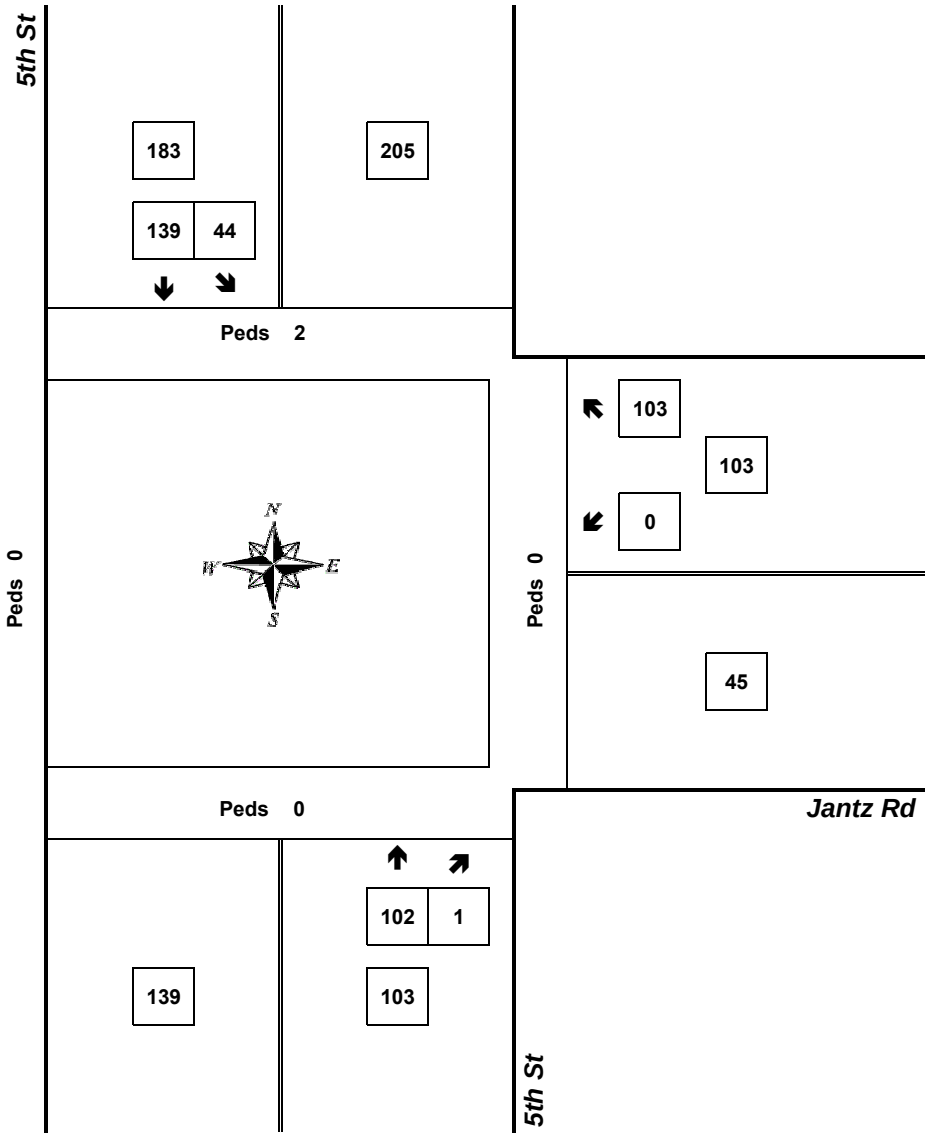
Interval Start Time	Northbound 5th St				Southbound 5th St				Eastbound Jantz Rd				Westbound Jantz Rd				Interval Total	Pedestrians Crosswalk			
		T	R	HV	L	T		HV					L		R	HV		North	South	East	West
4:00 PM		41	1	2	90	54		0					0		41	0	227	0	0	0	0
4:15 PM		42	1	2	76	64		1					0		43	0	226	0	0	0	0
4:30 PM		48	1	2	73	65		1					0		46	0	233	0	0	0	0
4:45 PM		44	1	0	84	67		1					0		50	0	246	0	0	0	0
5:00 PM		48	0	0	105	69		2					0		51	0	273	0	0	0	0

Peak Hour Summary

All Traffic Data Services Inc.
Mark Skaggs
(206) 251-0300

5th St & Jantz Rd

7:00 AM to 8:00 AM
Thursday, March 21, 2013

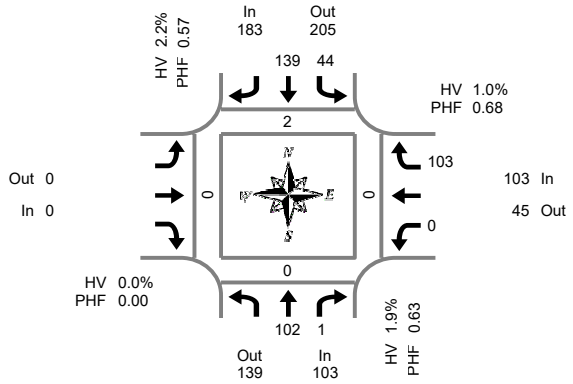


Approach	PHF	HV%	Volume
EB	0.00	0.0%	0
WB	0.68	1.0%	103
NB	0.63	1.9%	103
SB	0.57	2.2%	183
Intersection	0.64	1.8%	389

Count Period: 7:00 AM to 9:00 AM

Total Vehicle Summary

All Traffic Data Services Inc.
Mark Skaggs
(206) 251-0300



Peak Hour Summary
7:00 AM to 8:00 AM

5th St & Jantz Rd

Thursday, March 21, 2013
7:00 AM to 9:00 AM

15-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound 5th St				Southbound 5th St				Eastbound Jantz Rd				Westbound Jantz Rd				Interval Total	Pedestrians Crosswalk			
		T	R	HV	L	T		HV					L		R	HV		North	South	East	West
7:00 AM		9	0	1	4	11		0					0		12	0	36	2	0	0	0
7:15 AM		13	0	0	16	37		1					0		21	0	87	0	0	0	0
7:30 AM		40	1	1	20	60		3					0		32	1	153	0	0	0	0
7:45 AM		40	0	0	4	31		0					0		38	0	113	0	0	0	0
8:00 AM		11	0	0	2	10		0					0		11	0	34	0	0	0	0
8:15 AM		14	1	0	5	9		1					0		8	0	37	0	0	0	0
8:30 AM		6	0	0	12	6		0					0		10	0	34	0	0	0	0
8:45 AM		6	0	0	4	3		1					0		18	1	31	0	0	0	0
Total Survey		139	2	2	67	167		6					0		150	2	525	2	0	0	0

Peak Hour Summary
7:00 AM to 8:00 AM

By Approach	Northbound 5th St				Southbound 5th St				Eastbound Jantz Rd				Westbound Jantz Rd				Total	Pedestrians Crosswalk			
	In	Out	Total	HV	In	Out	Total	HV	In	Out	Total		In	Out	Total	HV		North	South	East	West
Volume	103	139	242	2	183	205	388	4	0	0	0		103	45	148	1	389	2	0	0	0
%HV	1.9%				2.2%				0.0%				1.0%				1.8%				
PHF	0.63				0.57				0.00				0.68				0.64				

By Movement	Northbound 5th St				Southbound 5th St				Eastbound Jantz Rd				Westbound Jantz Rd				Total
		T	R	Total	L	T		Total				Total	L		R	Total	
Volume		102	1	103	44	139		183				0	0		103	103	389
PHF		0.64	0.25	0.63	0.55	0.58		0.57				0.00	0.00		0.68	0.68	0.64

Rolling Hour Summary
7:00 AM to 9:00 AM

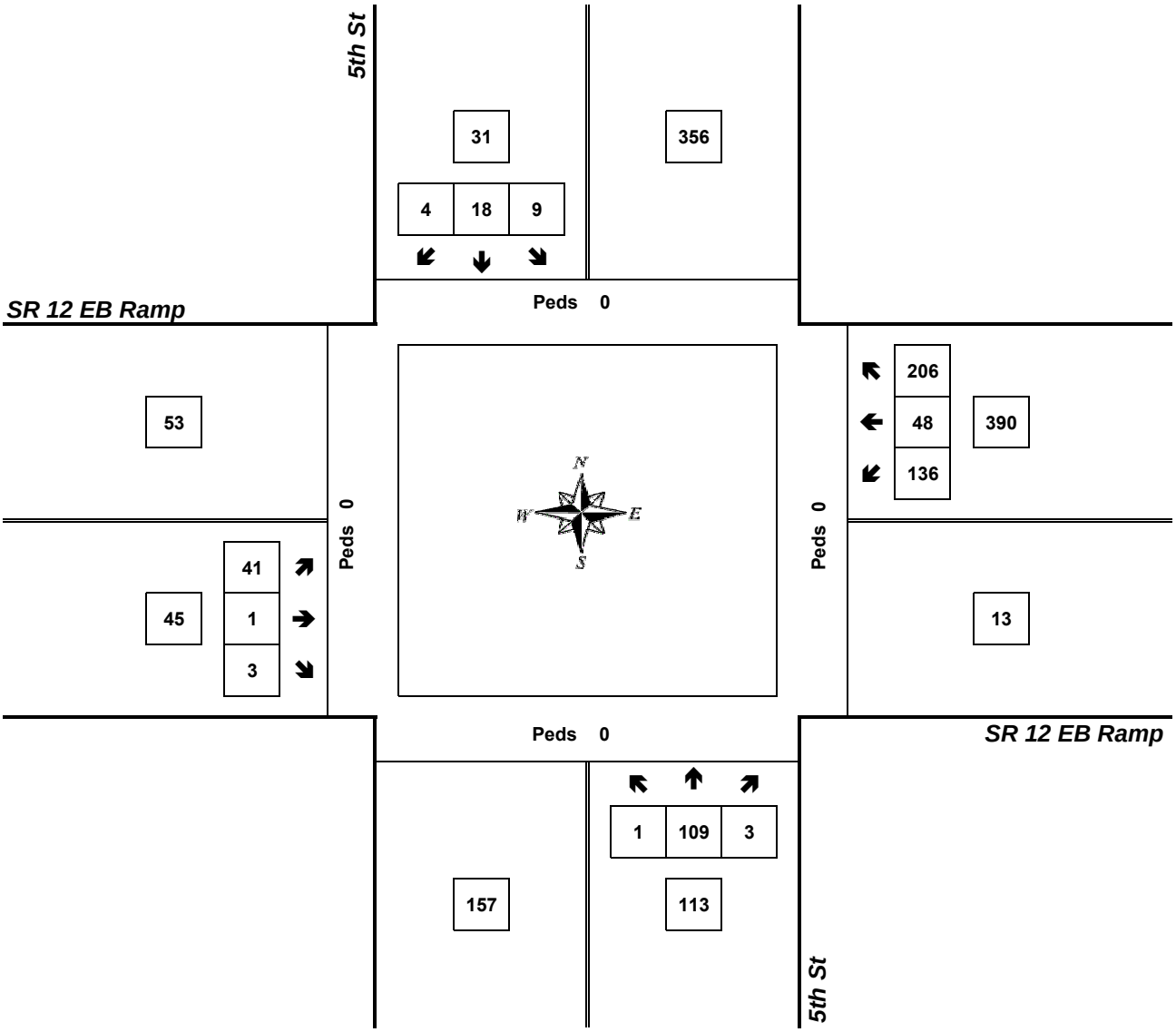
Interval Start Time	Northbound 5th St				Southbound 5th St				Eastbound Jantz Rd				Westbound Jantz Rd				Interval Total	Pedestrians Crosswalk			
		T	R	HV	L	T		HV					L		R	HV		North	South	East	West
7:00 AM		102	1	2	44	139		4					0		103	1	389	2	0	0	0
7:15 AM		104	1	1	42	138		4					0		102	1	387	0	0	0	0
7:30 AM		105	2	1	31	110		4					0		89	1	337	0	0	0	0
7:45 AM		71	1	0	23	56		1					0		67	0	218	0	0	0	0
8:00 AM		37	1	0	23	28		2					0		47	1	136	0	0	0	0

Peak Hour Summary

All Traffic Data Services Inc.
Mark Skaggs
(206) 251-0300

5th St & SR 12 EB Ramp

4:30 PM to 5:30 PM
Thursday, March 21, 2013

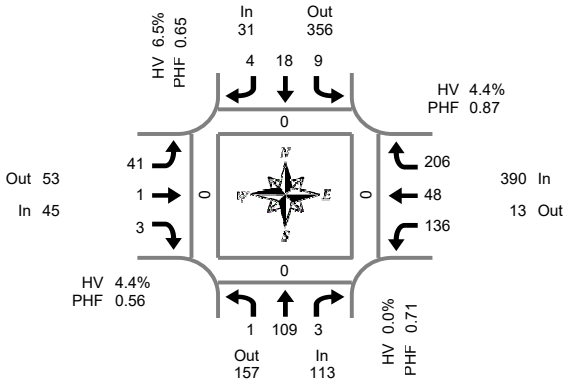


Approach	PHF	HV%	Volume
EB	0.56	4.4%	45
WB	0.87	4.4%	390
NB	0.71	0.0%	113
SB	0.65	6.5%	31
Intersection	0.97	3.6%	579

Count Period: 4:00 PM to 6:00 PM

Total Vehicle Summary

All Traffic Data Services Inc.
Mark Skaggs
(206) 251-0300



Peak Hour Summary
4:30 PM to 5:30 PM

5th St & SR 12 EB Ramp

Thursday, March 21, 2013
4:00 PM to 6:00 PM

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound 5th St				Southbound 5th St				Eastbound SR 12 EB Ramp				Westbound SR 12 EB Ramp				Interval Total	Pedestrians Crosswalk			
	L	T	R	HV	L	T	R	HV	L	T	R	HV	L	T	R	HV		North	South	East	West
4:00 PM	0	21	1	1	4	4	0	2	5	0	0	0	32	13	44	4	124	0	0	2	0
4:15 PM	0	15	0	1	2	2	2	1	11	2	0	1	28	15	35	1	112	0	0	0	0
4:30 PM	0	37	3	0	3	3	0	1	8	0	0	1	35	14	47	4	150	0	0	0	0
4:45 PM	0	22	0	0	5	4	2	0	17	1	2	0	25	9	60	6	147	0	0	0	0
5:00 PM	1	21	0	0	1	10	1	1	9	0	1	0	30	13	45	4	132	0	0	0	0
5:15 PM	0	29	0	0	0	1	1	0	7	0	0	1	46	12	54	3	150	0	0	0	0
5:30 PM	0	25	0	0	4	1	0	0	2	1	0	0	42	13	52	4	140	0	0	0	0
5:45 PM	1	12	3	0	0	2	0	0	8	0	0	0	27	9	36	5	98	0	0	0	0
Total Survey	2	182	7	2	19	27	6	5	67	4	3	3	265	98	373	31	1,053	0	0	2	0

Peak Hour Summary
4:30 PM to 5:30 PM

By Approach	Northbound 5th St				Southbound 5th St				Eastbound SR 12 EB Ramp				Westbound SR 12 EB Ramp				Total	Pedestrians Crosswalk			
	In	Out	Total	HV	In	Out	Total	HV	In	Out	Total	HV	In	Out	Total	HV		North	South	East	West
Volume	113	157	270	0	31	356	387	2	45	53	98	2	390	13	403	17	579	0	0	0	0
%HV	0.0%				6.5%				4.4%				4.4%				3.6%				
PHF	0.71				0.65				0.56				0.87				0.97				

By Movement	Northbound 5th St				Southbound 5th St				Eastbound SR 12 EB Ramp				Westbound SR 12 EB Ramp				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	1	109	3	113	9	18	4	31	41	1	3	45	136	48	206	390	579
PHF	0.25	0.74	0.25	0.71	0.45	0.45	0.50	0.65	0.60	0.25	0.38	0.56	0.74	0.86	0.86	0.87	0.97

Rolling Hour Summary
4:00 PM to 6:00 PM

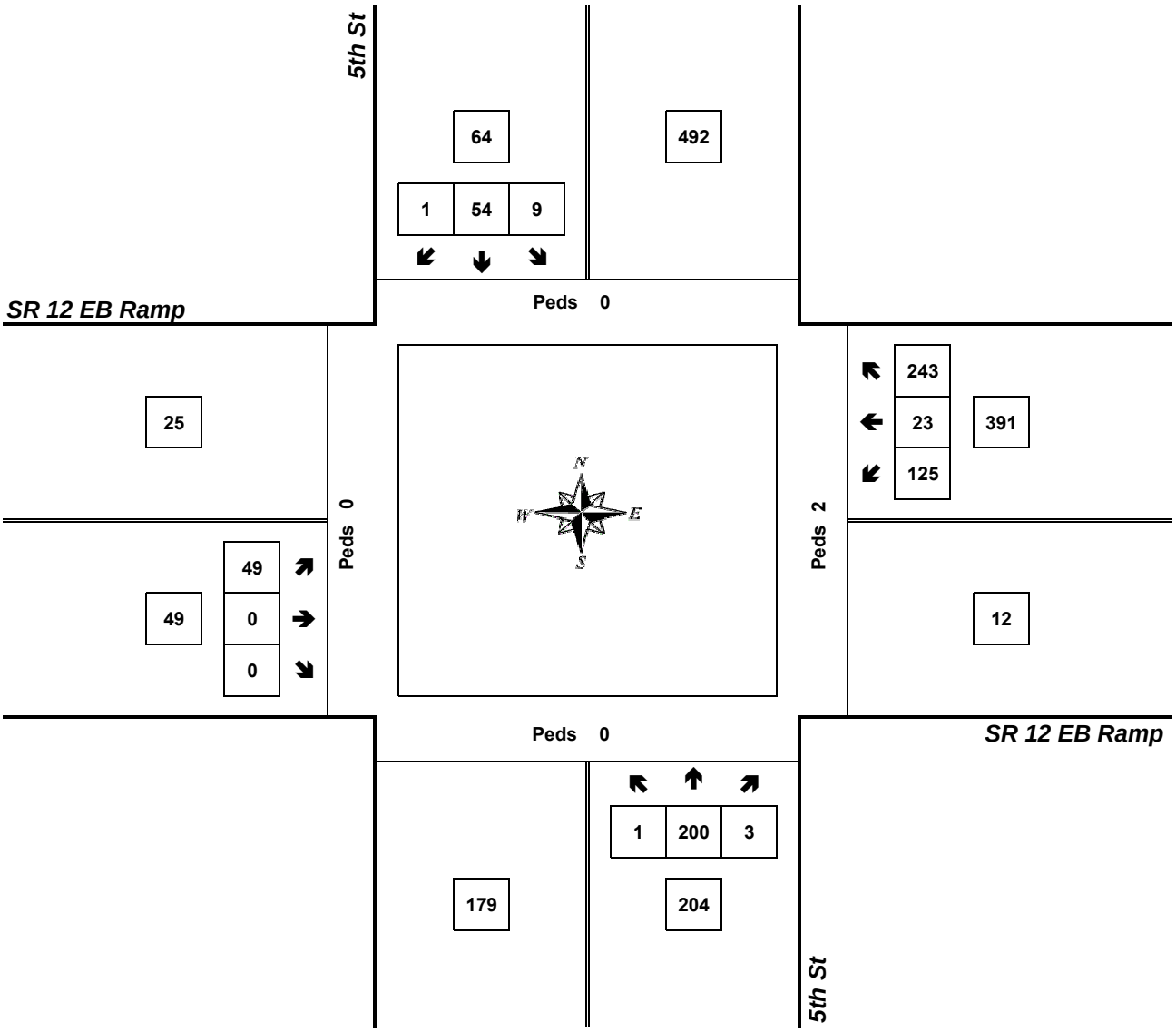
Interval Start Time	Northbound 5th St				Southbound 5th St				Eastbound SR 12 EB Ramp				Westbound SR 12 EB Ramp				Interval Total	Pedestrians Crosswalk			
	L	T	R	HV	L	T	R	HV	L	T	R	HV	L	T	R	HV		North	South	East	West
4:00 PM	0	95	4	2	14	13	4	4	41	3	2	2	120	51	186	15	533	0	0	2	0
4:15 PM	1	95	3	1	11	19	5	3	45	3	3	2	118	51	187	15	541	0	0	0	0
4:30 PM	1	109	3	0	9	18	4	2	41	1	3	2	136	48	206	17	579	0	0	0	0
4:45 PM	1	97	0	0	10	16	4	1	35	2	3	1	143	47	211	17	569	0	0	0	0
5:00 PM	2	87	3	0	5	14	2	1	26	1	1	1	145	47	187	16	520	0	0	0	0

Peak Hour Summary

All Traffic Data Services Inc.
Mark Skaggs
(206) 251-0300

5th St & SR 12 EB Ramp

7:00 AM to 8:00 AM
Thursday, March 21, 2013

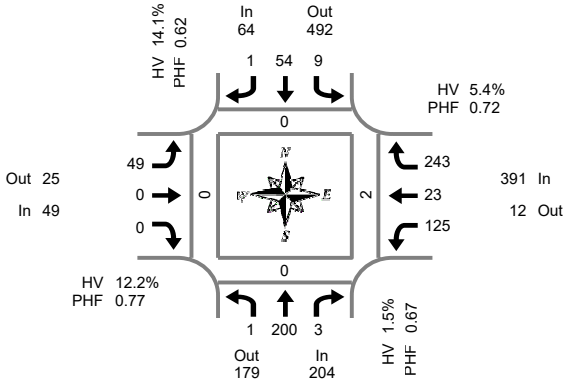


Approach	PHF	HV%	Volume
EB	0.77	12.2%	49
WB	0.72	5.4%	391
NB	0.67	1.5%	204
SB	0.62	14.1%	64
Intersection	0.92	5.5%	708

Count Period: 7:00 AM to 9:00 AM

Total Vehicle Summary

All Traffic Data Services Inc.
Mark Skaggs
(206) 251-0300



5th St & SR 12 EB Ramp

Thursday, March 21, 2013
7:00 AM to 9:00 AM

Peak Hour Summary
7:00 AM to 8:00 AM

15-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound 5th St				Southbound 5th St				Eastbound SR 12 EB Ramp				Westbound SR 12 EB Ramp				Interval Total	Pedestrians Crosswalk			
	L	T	R	HV	L	T	R	HV	L	T	R	HV	L	T	R	HV		North	South	East	West
7:00 AM	0	22	0	1	4	4	0	2	10	0	0	0	11	5	119	7	175	0	0	2	0
7:15 AM	1	33	1	0	1	17	0	3	9	0	0	1	37	8	56	5	163	0	0	0	0
7:30 AM	0	70	1	2	1	24	1	3	14	0	0	1	51	3	27	4	192	0	0	0	0
7:45 AM	0	75	1	0	3	9	0	1	16	0	0	4	26	7	41	5	178	0	0	0	0
8:00 AM	0	24	0	0	1	3	0	2	13	0	0	1	9	4	17	6	71	0	0	0	0
8:15 AM	0	23	0	0	1	1	0	2	9	0	0	0	13	3	22	4	72	0	0	0	0
8:30 AM	0	16	0	0	2	1	0	1	7	0	0	2	17	3	20	5	66	0	0	0	0
8:45 AM	0	24	0	1	0	3	0	2	5	0	0	1	3	3	23	10	61	0	0	0	0
Total Survey	1	287	3	4	13	62	1	16	83	0	0	10	167	36	325	46	978	0	0	2	0

Peak Hour Summary
7:00 AM to 8:00 AM

By Approach	Northbound 5th St				Southbound 5th St				Eastbound SR 12 EB Ramp				Westbound SR 12 EB Ramp				Total	Pedestrians Crosswalk			
	In	Out	Total	HV	In	Out	Total	HV	In	Out	Total	HV	In	Out	Total	HV		North	South	East	West
Volume	204	179	383	3	64	492	556	9	49	25	74	6	391	12	403	21	708	0	0	2	0
%HV	1.5%				14.1%				12.2%				5.4%				5.5%				
PHF	0.67				0.62				0.77				0.72				0.92				

By Movement	Northbound 5th St				Southbound 5th St				Eastbound SR 12 EB Ramp				Westbound SR 12 EB Ramp				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	1	200	3	204	9	54	1	64	49	0	0	49	125	23	243	391	708
PHF	0.25	0.67	0.75	0.67	0.56	0.56	0.25	0.62	0.77	0.00	0.00	0.77	0.61	0.72	0.51	0.72	0.92

Rolling Hour Summary
7:00 AM to 9:00 AM

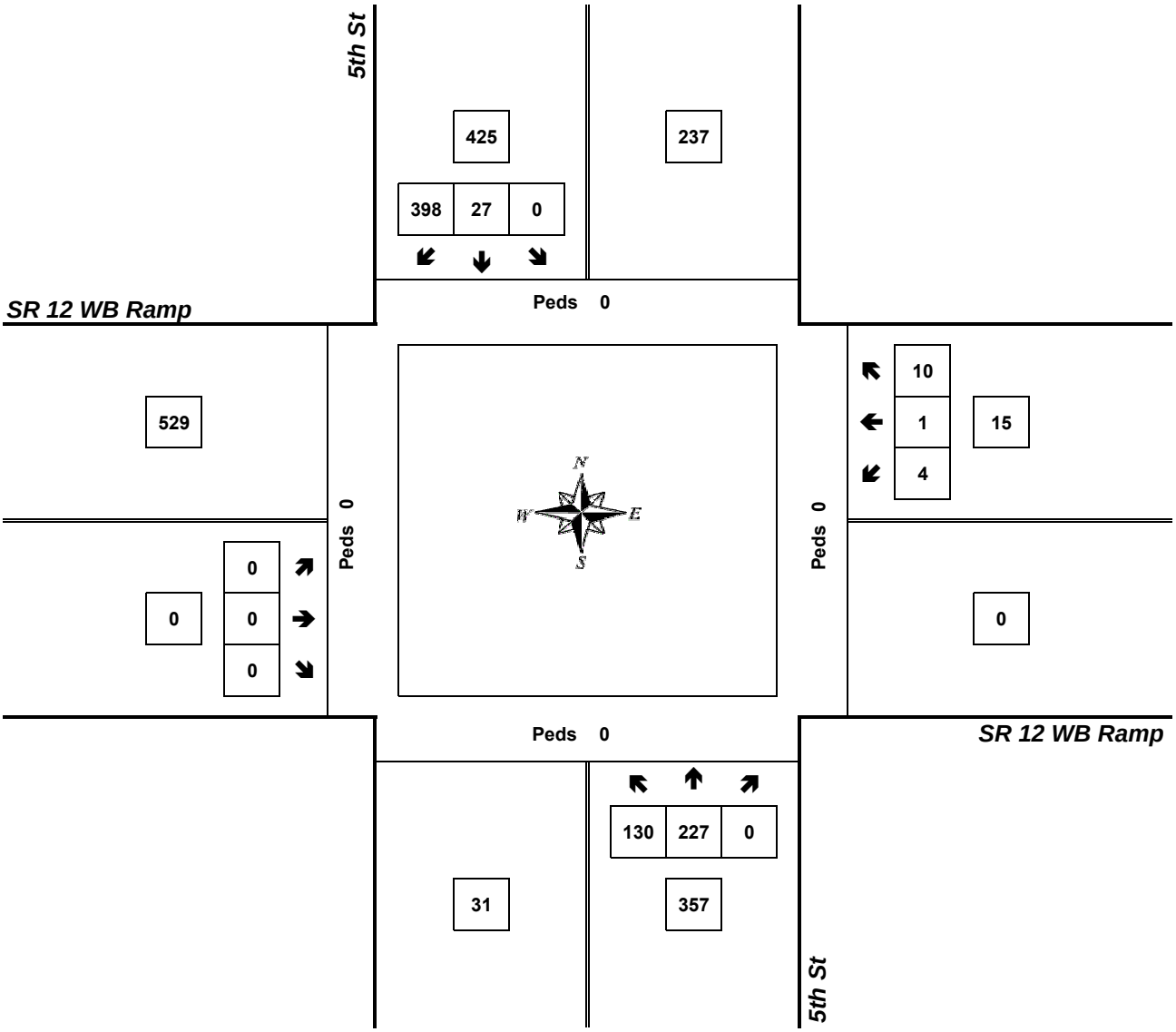
Interval Start Time	Northbound 5th St				Southbound 5th St				Eastbound SR 12 EB Ramp				Westbound SR 12 EB Ramp				Interval Total	Pedestrians Crosswalk			
	L	T	R	HV	L	T	R	HV	L	T	R	HV	L	T	R	HV		North	South	East	West
7:00 AM	1	200	3	3	9	54	1	9	49	0	0	6	125	23	243	21	708	0	0	2	0
7:15 AM	1	202	3	2	6	53	1	9	52	0	0	7	123	22	141	20	604	0	0	0	0
7:30 AM	0	192	2	2	6	37	1	8	52	0	0	6	99	17	107	19	513	0	0	0	0
7:45 AM	0	138	1	0	7	14	0	6	45	0	0	7	65	17	100	20	387	0	0	0	0
8:00 AM	0	87	0	1	4	8	0	7	34	0	0	4	42	13	82	25	270	0	0	0	0

Peak Hour Summary

All Traffic Data Services Inc.
Mark Skaggs
(206) 251-0300

5th St & SR 12 WB Ramp

4:30 PM to 5:30 PM
Thursday, March 21, 2013

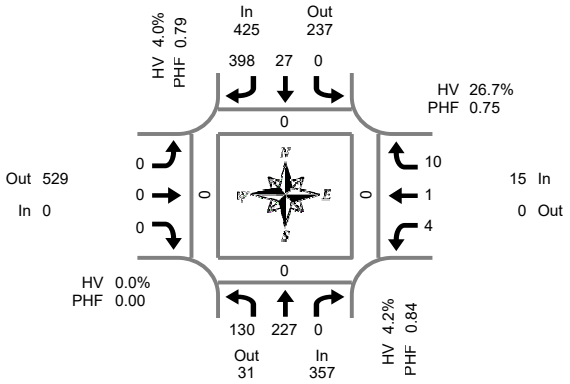


Approach	PHF	HV%	Volume
EB	0.00	0.0%	0
WB	0.75	26.7%	15
NB	0.84	4.2%	357
SB	0.79	4.0%	425
Intersection	0.82	4.5%	797

Count Period: 4:00 PM to 6:00 PM

Total Vehicle Summary

All Traffic Data Services Inc.
Mark Skaggs
(206) 251-0300



Peak Hour Summary
4:30 PM to 5:30 PM

5th St & SR 12 WB Ramp

Thursday, March 21, 2013
4:00 PM to 6:00 PM

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound 5th St				Southbound 5th St				Eastbound SR 12 WB Ramp				Westbound SR 12 WB Ramp				Interval Total	Pedestrians Crosswalk			
	L	T	R	HV	L	T	R	HV	L	T	R	HV	L	T	R	HV		North	South	East	West
4:00 PM	19	51	0	4	0	8	60	6	0	0	0	0	0	1	6	1	145	0	1	0	0
4:15 PM	21	41	0	3	0	4	50	4	0	0	0	0	0	0	4	0	120	0	0	0	0
4:30 PM	41	42	0	4	0	7	92	6	0	0	0	0	1	0	2	0	185	0	0	0	0
4:45 PM	31	75	0	5	0	10	121	2	0	0	0	0	1	0	4	0	242	0	0	0	0
5:00 PM	26	49	0	2	0	9	125	4	0	0	0	0	1	1	2	3	213	0	0	0	0
5:15 PM	32	61	0	4	0	1	60	5	0	0	0	0	1	0	2	1	157	0	0	0	0
5:30 PM	25	55	0	2	0	4	47	8	0	0	0	0	1	0	1	0	133	0	0	0	0
5:45 PM	20	35	0	4	0	2	42	6	0	0	0	0	0	0	3	2	102	0	0	0	0
Total Survey	215	409	0	28	0	45	597	41	0	0	0	0	5	2	24	7	1,297	0	1	0	0

Peak Hour Summary
4:30 PM to 5:30 PM

By Approach	Northbound 5th St				Southbound 5th St				Eastbound SR 12 WB Ramp				Westbound SR 12 WB Ramp				Total	Pedestrians Crosswalk			
	In	Out	Total	HV	In	Out	Total	HV	In	Out	Total	HV	In	Out	Total	HV		North	South	East	West
Volume	357	31	388	15	425	237	662	17	0	529	529	0	15	0	15	4	797	0	0	0	0
%HV	4.2%				4.0%				0.0%				26.7%				4.5%				
PHF	0.84				0.79				0.00				0.75				0.82				

By Movement	Northbound 5th St				Southbound 5th St				Eastbound SR 12 WB Ramp				Westbound SR 12 WB Ramp				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	130	227	0	357	0	27	398	425	0	0	0	0	4	1	10	15	797
PHF	0.79	0.76	0.00	0.84	0.00	0.68	0.80	0.79	0.00	0.00	0.00	0.00	1.00	0.25	0.63	0.75	0.82

Rolling Hour Summary
4:00 PM to 6:00 PM

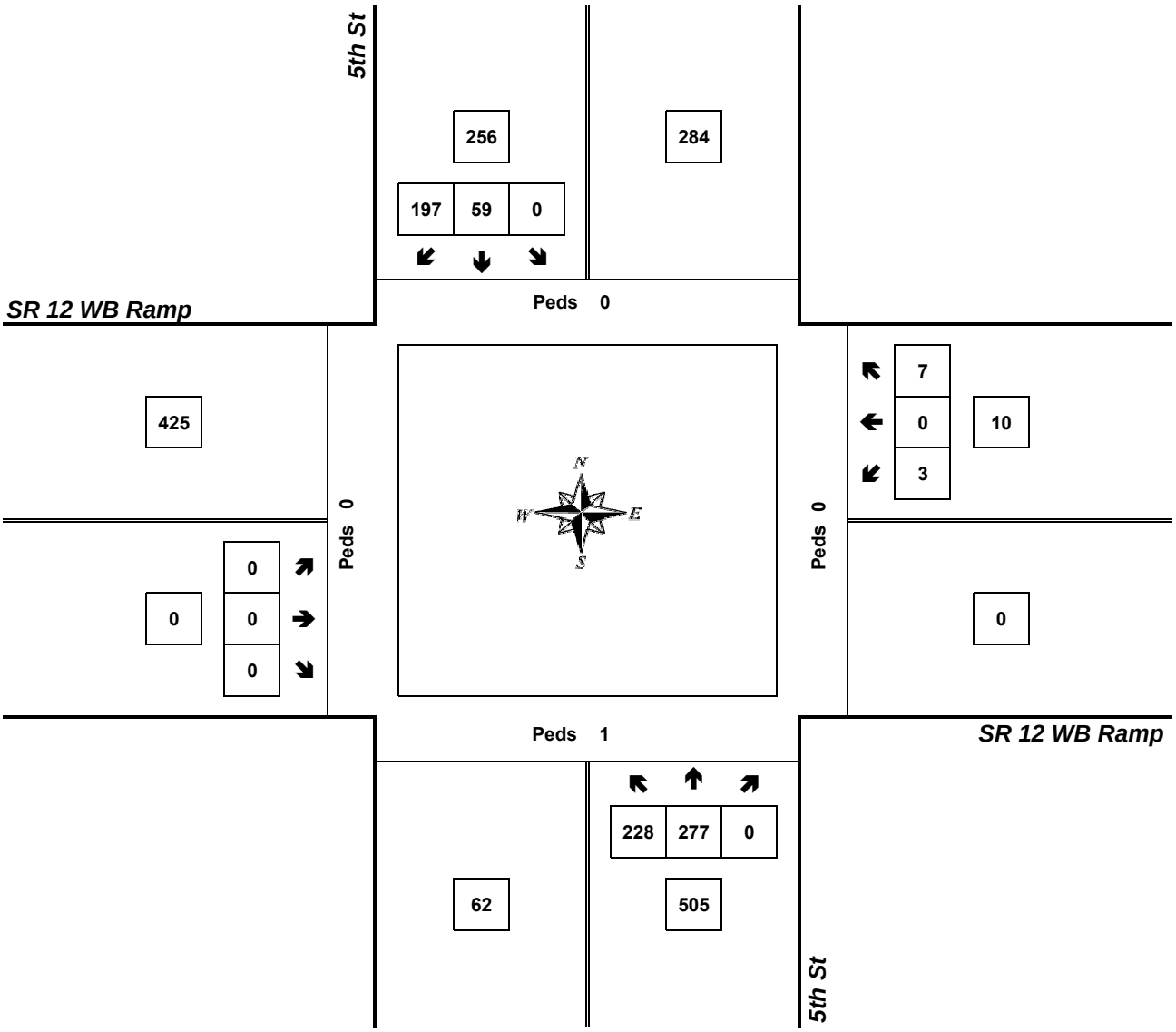
Interval Start Time	Northbound 5th St				Southbound 5th St				Eastbound SR 12 WB Ramp				Westbound SR 12 WB Ramp				Interval Total	Pedestrians Crosswalk			
	L	T	R	HV	L	T	R	HV	L	T	R	HV	L	T	R	HV		North	South	East	West
4:00 PM	112	209	0	16	0	29	323	18	0	0	0	0	2	1	16	1	692	0	1	0	0
4:15 PM	119	207	0	14	0	30	388	16	0	0	0	0	3	1	12	3	760	0	0	0	0
4:30 PM	130	227	0	15	0	27	398	17	0	0	0	0	4	1	10	4	797	0	0	0	0
4:45 PM	114	240	0	13	0	24	353	19	0	0	0	0	4	1	9	4	745	0	0	0	0
5:00 PM	103	200	0	12	0	16	274	23	0	0	0	0	3	1	8	6	605	0	0	0	0

Peak Hour Summary

All Traffic Data Services Inc.
Mark Skaggs
(206) 251-0300

5th St & SR 12 WB Ramp

7:00 AM to 8:00 AM
Thursday, March 21, 2013

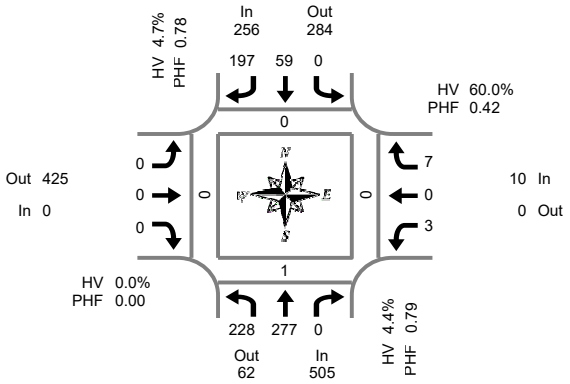


Approach	PHF	HV%	Volume
EB	0.00	0.0%	0
WB	0.42	60.0%	10
NB	0.79	4.4%	505
SB	0.78	4.7%	256
Intersection	0.94	5.2%	771

Count Period: 7:00 AM to 9:00 AM

Total Vehicle Summary

All Traffic Data Services Inc.
Mark Skaggs
(206) 251-0300



Peak Hour Summary
7:00 AM to 8:00 AM

5th St & SR 12 WB Ramp

Thursday, March 21, 2013
7:00 AM to 9:00 AM

15-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound 5th St				Southbound 5th St				Eastbound SR 12 WB Ramp				Westbound SR 12 WB Ramp				Interval Total	Pedestrians Crosswalk			
	L	T	R	HV	L	T	R	HV	L	T	R	HV	L	T	R	HV		North	South	East	West
7:00 AM	34	126	0	6	0	7	37	2	0	0	0	0	0	0	1	1	205	0	0	0	0
7:15 AM	38	64	0	5	0	16	50	2	0	0	0	0	2	0	4	2	174	0	1	0	0
7:30 AM	78	33	0	4	0	26	56	3	0	0	0	0	1	0	0	1	194	0	0	0	0
7:45 AM	78	54	0	7	0	10	54	5	0	0	0	0	0	0	2	2	198	0	0	0	0
8:00 AM	39	17	0	8	0	3	40	8	0	0	0	0	0	0	1	1	100	0	0	0	0
8:15 AM	30	23	0	2	0	2	27	4	0	0	0	0	0	0	1	1	83	0	0	0	0
8:30 AM	20	25	0	7	0	2	40	4	0	0	0	0	1	0	4	1	92	0	0	0	0
8:45 AM	28	23	0	8	0	3	34	2	0	0	0	0	1	0	2	3	91	0	0	0	0
Total Survey	345	365	0	47	0	69	338	30	0	0	0	0	5	0	15	12	1,137	0	1	0	0

Peak Hour Summary
7:00 AM to 8:00 AM

By Approach	Northbound 5th St				Southbound 5th St				Eastbound SR 12 WB Ramp				Westbound SR 12 WB Ramp				Total	Pedestrians Crosswalk			
	In	Out	Total	HV	In	Out	Total	HV	In	Out	Total	HV	In	Out	Total	HV		North	South	East	West
Volume	505	62	567	22	256	284	540	12	0	425	425	0	10	0	10	6	771	0	1	0	0
%HV	4.4%				4.7%				0.0%				60.0%				5.2%				
PHF	0.79				0.78				0.00				0.42				0.94				

By Movement	Northbound 5th St				Southbound 5th St				Eastbound SR 12 WB Ramp				Westbound SR 12 WB Ramp				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	228	277	0	505	0	59	197	256	0	0	0	0	3	0	7	10	771
PHF	0.73	0.55	0.00	0.79	0.00	0.57	0.88	0.78	0.00	0.00	0.00	0.00	0.38	0.00	0.44	0.42	0.94

Rolling Hour Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound 5th St				Southbound 5th St				Eastbound SR 12 WB Ramp				Westbound SR 12 WB Ramp				Interval Total	Pedestrians Crosswalk			
	L	T	R	HV	L	T	R	HV	L	T	R	HV	L	T	R	HV		North	South	East	West
7:00 AM	228	277	0	22	0	59	197	12	0	0	0	0	3	0	7	6	771	0	1	0	0
7:15 AM	233	168	0	24	0	55	200	18	0	0	0	0	3	0	7	6	666	0	1	0	0
7:30 AM	225	127	0	21	0	41	177	20	0	0	0	0	1	0	4	5	575	0	0	0	0
7:45 AM	167	119	0	24	0	17	161	21	0	0	0	0	1	0	8	5	473	0	0	0	0
8:00 AM	117	88	0	25	0	10	141	18	0	0	0	0	2	0	8	6	366	0	0	0	0

Appendix C: LOS Criteria

Highway Capacity Manual, 2000

Signalized intersection level of service (LOS) is defined in terms of the average total vehicle delay of all movements through an intersection. Vehicle delay is a method of quantifying several intangible factors, including driver discomfort, frustration, and lost travel time. Specifically, LOS criteria are stated in terms of average delay per vehicle during a specified time period (for example, the PM peak hour). Vehicle delay is a complex measure based on many variables, including signal phasing (i.e., progression of movements through the intersection), signal cycle length, and traffic volumes with respect to intersection capacity. Table 1 shows LOS criteria for signalized intersections, as described in the *Highway Capacity Manual* (Transportation Research Board, Special Report 209, 2000).

Table 1. Level of Service Criteria for Signalized Intersections

Level of Service	Average Control Delay (sec/veh)	General Description (Signalized Intersections)
A	≤10	Free Flow
B	>10 - 20	Stable Flow (slight delays)
C	>20 - 35	Stable flow (acceptable delays)
D	>35 - 55	Approaching unstable flow (tolerable delay, occasionally wait through more than one signal cycle before proceeding)
E	>55 - 80	Unstable flow (intolerable delay)
F	>80	Forced flow (jammed)

Source: *Highway Capacity Manual*, Transportation Research Board, Special Report 209, 2000.

Unsignalized intersection LOS criteria can be further reduced into two intersection types: all-way stop-controlled and two-way stop-controlled. All-way, stop-controlled intersection LOS is expressed in terms of the average vehicle delay of all of the movements, much like that of a signalized intersection. Two-way, stop-controlled intersection LOS is defined in terms of the average vehicle delay of an individual movement(s). This is because the performance of a two-way, stop-controlled intersection is more closely reflected in terms of its individual movements, rather than its performance overall. For this reason, LOS for a two-way, stop-controlled intersection is defined in terms of its individual movements. With this in mind, total average vehicle delay (i.e., average delay of all movements) for a two-way, stop-controlled intersection should be viewed with discretion. Table 2 shows LOS criteria for unsignalized intersections (both all-way and two-way, stop-controlled).

Table 2. Level of Service Criteria for Unsignalized Intersections

Level of Service	Average Control Delay (sec/veh)
A	0 - 10
B	>10 - 15
C	>15 - 25
D	>25 - 35
E	>35 - 50
F	>50

Source: *Highway Capacity Manual*, Transportation Research Board, Special Report 209, 2000.

Appendix D: LOS Worksheets

MOVEMENT SUMMARY

Site: Rou 4-way 1-Lane (MUTCD 2B-22) US

Existing Conditions - PM Peak Hour
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: SR 124											
3L	L	159	4.0	0.272	12.3	LOS B	0.0	0.0	0.00	0.89	30.1
8T	T	274	4.0	0.272	5.2	LOS A	0.0	0.0	0.00	0.40	34.8
Approach		433	4.0	0.272	7.8	LOS B	0.0	0.0	0.00	0.58	32.8
East: SR 12 WB Ramps											
1L	L	6	27.0	0.040	16.7	LOS B	0.2	6.5	0.53	0.80	28.3
6T	T	6	27.0	0.040	9.5	LOS A	0.2	6.5	0.53	0.58	31.4
6R	R	12	27.0	0.040	10.8	LOS B	0.2	6.5	0.53	0.64	31.0
Approach		24	27.0	0.040	11.9	LOS B	0.2	6.5	0.53	0.67	30.3
North: SR 124											
4T	T	30	4.0	0.031	6.1	LOS A	0.2	4.3	0.32	0.46	33.0
4R	R	488	4.0	0.311	6.0	NA[9]	NA[9]	NA[9]	NA[9]	0.49	34.1
Approach		518	4.0	0.311	6.0	LOS A	0.2	4.3	0.02	0.49	34.0
All Vehicles		976	4.6	0.311	7.0	LOS A	0.2	6.5	0.02	0.53	33.4

Level of Service (Aver. Int. Delay): LOS A. Based on average delay for all vehicle movements. LOS Method: Delay (HCM).
Level of Service (Worst Movement): LOS B. LOS Method for individual vehicle movements: Delay (HCM).
Approach LOS values are based on the worst delay for any vehicle movement.
Roundabout LOS Method: Same as Signalised Intersections.
Roundabout Capacity Model: SIDRA Standard.

9 Continuous movement

SIDRA INTERSECTION

MOVEMENT SUMMARY

Site: Rou 4-way 1-Lane (MUTCD 2B-22) US

Existing Conditions - AM Peak Hour
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: SR 124											
3L	L	245	4.0	0.304	12.3	LOS B	0.0	0.0	0.00	0.85	30.1
8T	T	239	4.0	0.305	5.2	LOS A	0.0	0.0	0.00	0.39	34.8
Approach		484	4.0	0.304	8.8	LOS B	0.0	0.0	0.00	0.62	32.2
East: SR 12 WB Ramps											
1L	L	5	60.0	0.032	19.2	LOS B	0.2	5.6	0.57	0.83	27.5
6T	T	5	0.0	0.032	10.2	LOS B	0.2	5.6	0.57	0.57	30.3
6R	R	5	60.0	0.032	13.4	LOS B	0.2	5.6	0.57	0.69	30.0
Approach		16	40.0	0.032	14.3	LOS B	0.2	5.6	0.57	0.69	29.2
North: SR 124											
4T	T	64	5.0	0.070	6.8	LOS A	0.4	10.2	0.40	0.52	32.6
4R	R	207	5.0	0.133	6.0	NA[9]	NA[9]	NA[9]	NA[9]	0.49	34.1
Approach		271	5.0	0.133	6.2	LOS A	0.4	10.2	0.10	0.50	33.8
All Vehicles		771	5.1	0.304	8.0	LOS A	0.4	10.2	0.05	0.58	32.6

Level of Service (Aver. Int. Delay): LOS A. Based on average delay for all vehicle movements. LOS Method: Delay (HCM).
Level of Service (Worst Movement): LOS B. LOS Method for individual vehicle movements: Delay (HCM).
Approach LOS values are based on the worst delay for any vehicle movement.
Roundabout LOS Method: Same as Signalised Intersections.
Roundabout Capacity Model: SIDRA Standard.

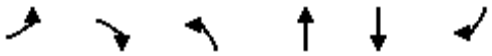
9 Continuous movement

SIDRA INTERSECTION

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	5	50	50	5	105	70
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	56	56	6	117	78
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	369	58			61	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	369	58			61	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	95			92	
cM capacity (veh/h)	587	1013			1549	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	61	61	194
Volume Left	6	0	117
Volume Right	56	6	0
cSH	951	1700	1549
Volume to Capacity	0.06	0.04	0.08
Queue Length 95th (ft)	5	0	6
Control Delay (s)	9.0	0.0	4.7
Lane LOS	A		A
Approach Delay (s)	9.0	0.0	4.7
Approach LOS	A		

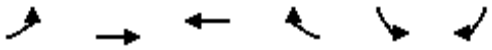
Intersection Summary			
Average Delay	4.7		
Intersection Capacity Utilization	26.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	20	5	5	30	30	40
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	21	5	5	31	31	41
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	93	52	72			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	93	52	72			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	99	100			
cM capacity (veh/h)	909	1022	1541			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	26	36	72
Volume Left	21	5	0
Volume Right	5	0	41
cSH	930	1541	1700
Volume to Capacity	0.03	0.00	0.04
Queue Length 95th (ft)	2	0	0
Control Delay (s)	9.0	1.1	0.0
Lane LOS	A	A	
Approach Delay (s)	9.0	1.1	0.0
Approach LOS	A		

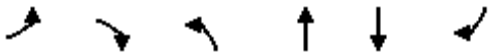
Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	15.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	15	5	5	20	10	15
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	19	6	6	25	12	19
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	31				62	19
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	31				62	19
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				99	98
cM capacity (veh/h)	1594				937	1065

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	25	31	31
Volume Left	19	0	12
Volume Right	0	25	19
cSH	1594	1700	1010
Volume to Capacity	0.01	0.02	0.03
Queue Length 95th (ft)	1	0	2
Control Delay (s)	5.5	0.0	8.7
Lane LOS	A		A
Approach Delay (s)	5.5	0.0	8.7
Approach LOS			A

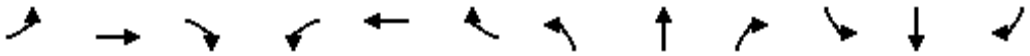
Intersection Summary			
Average Delay	4.7		
Intersection Capacity Utilization	17.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	5	20	10	50	100	5
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	6	26	13	64	128	6
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	221	131	135			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	221	131	135			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	97	99			
cM capacity (veh/h)	765	923	1462			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	32	77	135
Volume Left	6	13	0
Volume Right	26	0	6
cSH	887	1462	1700
Volume to Capacity	0.04	0.01	0.08
Queue Length 95th (ft)	3	1	0
Control Delay (s)	9.2	1.3	0.0
Lane LOS	A	A	
Approach Delay (s)	9.2	1.3	0.0
Approach LOS	A		

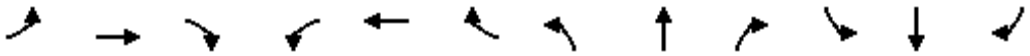
Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	19.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	5	20	20	20	25	20	20	35	20	50	50	10
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Hourly flow rate (vph)	7	26	26	26	33	26	26	46	26	66	66	13
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	59			53			197	164	39	201	164	46
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	59			53			197	164	39	201	164	46
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			96	94	97	91	91	99
cM capacity (veh/h)	1557			1553			690	715	1035	695	716	1029

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	59	86	99	145
Volume Left	7	26	26	66
Volume Right	26	26	26	13
cSH	1557	1553	771	726
Volume to Capacity	0.00	0.02	0.13	0.20
Queue Length 95th (ft)	0	1	11	18
Control Delay (s)	0.8	2.4	10.4	11.2
Lane LOS	A	A	B	B
Approach Delay (s)	0.8	2.4	10.4	11.2
Approach LOS			B	B

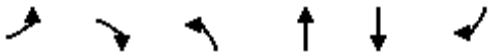
Intersection Summary			
Average Delay	7.5		
Intersection Capacity Utilization	24.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	30	50	15	5	20	10	10	10	5	15	5	30
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	34	57	17	6	23	11	11	11	6	17	6	34
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	34			74			210	179	65	185	182	28
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	34			74			210	179	65	185	182	28
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			98	98	99	98	99	97
cM capacity (veh/h)	1591			1539			708	700	1004	748	694	1047

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	108	40	28	57
Volume Left	34	6	11	17
Volume Right	17	11	6	34
cSH	1591	1539	749	894
Volume to Capacity	0.02	0.00	0.04	0.06
Queue Length 95th (ft)	2	0	3	5
Control Delay (s)	2.4	1.1	10.0	9.3
Lane LOS	A	A	A	A
Approach Delay (s)	2.4	1.1	10.0	9.3
Approach LOS			A	A

Intersection Summary				
Average Delay	4.8			
Intersection Capacity Utilization	20.1%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	5	5	5	235	390	5
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	6	6	6	280	464	6
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	756	464	470			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	756	464	470			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	99	99			
cM capacity (veh/h)	377	602	1076			

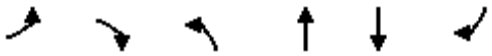
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	12	6	280	464	6
Volume Left	6	6	0	0	0
Volume Right	6	0	0	0	6
cSH	463	1076	1700	1700	1700
Volume to Capacity	0.03	0.01	0.16	0.27	0.00
Queue Length 95th (ft)	2	0	0	0	0
Control Delay (s)	13.0	8.4	0.0	0.0	0.0
Lane LOS	B	A			
Approach Delay (s)	13.0	0.2		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	30.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	5	105	100	5	45	140
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.64	0.64	0.64	0.64	0.64	0.64
Hourly flow rate (vph)	8	164	156	8	70	219
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	520	160			164	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	520	160			164	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	98	82			95	
cM capacity (veh/h)	493	888			1414	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	172	164	289
Volume Left	8	0	70
Volume Right	164	8	0
cSH	856	1700	1414
Volume to Capacity	0.20	0.10	0.05
Queue Length 95th (ft)	19	0	4
Control Delay (s)	10.3	0.0	2.2
Lane LOS	B		A
Approach Delay (s)	10.3	0.0	2.2
Approach LOS	B		

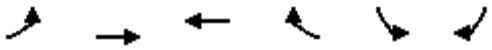
Intersection Summary			
Average Delay	3.8		
Intersection Capacity Utilization	30.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	15	5	5	90	135	10
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.57	0.57	0.57	0.57	0.57	0.57
Hourly flow rate (vph)	26	9	9	158	237	18
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	421	246	254			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	421	246	254			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	96	99	99			
cM capacity (veh/h)	589	798	1317			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	35	167	254
Volume Left	26	9	0
Volume Right	9	0	18
cSH	630	1317	1700
Volume to Capacity	0.06	0.01	0.15
Queue Length 95th (ft)	4	1	0
Control Delay (s)	11.0	0.5	0.0
Lane LOS	B	A	
Approach Delay (s)	11.0	0.5	0.0
Approach LOS	B		

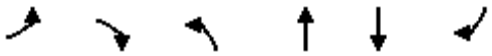
Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	18.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	15	35	20	80	125	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.61	0.61	0.61	0.61	0.61	0.61
Hourly flow rate (vph)	25	57	33	131	205	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	164				205	98
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	164				205	98
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				73	99
cM capacity (veh/h)	1402				770	958

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	82	164	213
Volume Left	25	0	205
Volume Right	0	131	8
cSH	1402	1700	776
Volume to Capacity	0.02	0.10	0.27
Queue Length 95th (ft)	1	0	28
Control Delay (s)	2.4	0.0	11.4
Lane LOS	A		B
Approach Delay (s)	2.4	0.0	11.4
Approach LOS			B

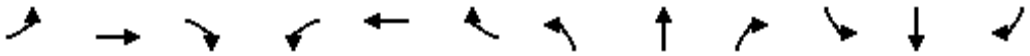
Intersection Summary			
Average Delay	5.7		
Intersection Capacity Utilization	23.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	20	45	100	85	20	25
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.66	0.66	0.66	0.66	0.66	0.66
Hourly flow rate (vph)	30	68	152	129	30	38
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	481	49	68			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	481	49	68			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	94	93	90			
cM capacity (veh/h)	489	1016	1539			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	98	280	68
Volume Left	30	152	0
Volume Right	68	0	38
cSH	763	1539	1700
Volume to Capacity	0.13	0.10	0.04
Queue Length 95th (ft)	11	8	0
Control Delay (s)	10.4	4.5	0.0
Lane LOS	B	A	
Approach Delay (s)	10.4	4.5	0.0
Approach LOS	B		

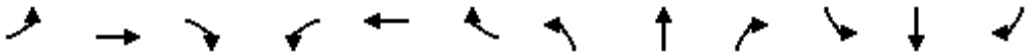
Intersection Summary			
Average Delay	5.1		
Intersection Capacity Utilization	27.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	20	5	10	15	5	75	5	90	5	20	30	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Hourly flow rate (vph)	27	7	14	21	7	103	7	123	7	27	41	7
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	110			21			195	219	14	236	175	58
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	110			21			195	219	14	236	175	58
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			99			99	81	99	95	94	99
cM capacity (veh/h)	1493			1609			708	658	1066	600	700	1013

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	48	130	137	75
Volume Left	27	21	7	27
Volume Right	14	103	7	7
cSH	1493	1609	673	678
Volume to Capacity	0.02	0.01	0.20	0.11
Queue Length 95th (ft)	1	1	19	9
Control Delay (s)	4.3	1.2	11.7	11.0
Lane LOS	A	A	B	B
Approach Delay (s)	4.3	1.2	11.7	11.0
Approach LOS			B	B

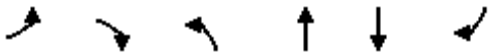
Intersection Summary				
Average Delay	7.2			
Intersection Capacity Utilization	22.1%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	15	10	10	5	50	25	5	5	5	5	5	35
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	19	13	13	6	64	32	6	6	6	6	6	45
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	96			26			199	167	19	160	157	80
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	96			26			199	167	19	160	157	80
tC, single (s)	4.2			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.3			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			99	99	99	99	99	95
cM capacity (veh/h)	1473			1589			715	717	1065	785	722	980

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	45	103	19	58
Volume Left	19	6	6	6
Volume Right	13	32	6	45
cSH	1473	1589	804	918
Volume to Capacity	0.01	0.00	0.02	0.06
Queue Length 95th (ft)	1	0	2	5
Control Delay (s)	3.3	0.5	9.6	9.2
Lane LOS	A	A	A	A
Approach Delay (s)	3.3	0.5	9.6	9.2
Approach LOS			A	A

Intersection Summary				
Average Delay	4.1			
Intersection Capacity Utilization	17.2%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	5	5	5	265	245	5
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	6	6	6	327	302	6
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	642	302	309			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	642	302	309			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	99	100			
cM capacity (veh/h)	439	742	1235			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	12	6	327	302	6
Volume Left	6	6	0	0	0
Volume Right	6	0	0	0	6
cSH	552	1235	1700	1700	1700
Volume to Capacity	0.02	0.00	0.19	0.18	0.00
Queue Length 95th (ft)	2	0	0	0	0
Control Delay (s)	11.7	7.9	0.0	0.0	0.0
Lane LOS	B	A			
Approach Delay (s)	11.7	0.1		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	23.9%	ICU Level of Service	A
Analysis Period (min)	15		

MOVEMENT SUMMARY

Site: Rou 4-way 1-Lane (MUTCD 2B-22) US

Existing Conditions - PM Peak Hour
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: SR 124											
3L	L	5	0.0	0.103	12.5	LOS B	0.6	15.6	0.19	0.88	30.0
8T	T	113	0.0	0.103	5.4	LOS A	0.6	15.6	0.19	0.42	33.7
8R	R	5	0.0	0.103	6.5	LOS A	0.6	15.6	0.19	0.52	33.0
Approach		124	0.0	0.103	5.7	LOS B	0.6	15.6	0.19	0.44	33.5
East: SR 12 EB Ramps											
1L	L	139	4.0	0.188	13.3	LOS B	1.2	30.3	0.35	0.72	29.4
6T	T	52	4.0	0.188	6.2	LOS A	1.2	30.3	0.35	0.46	32.4
6R	R	211	4.0	0.135	6.0	NA[9]	NA[9]	NA[9]	NA[9]	0.49	34.1
Approach		402	4.0	0.188	8.6	LOS B	1.2	30.3	0.17	0.57	32.0
North: SR 124											
7L	L	10	7.0	0.039	13.6	LOS B	0.2	5.9	0.37	0.77	29.7
4T	T	21	7.0	0.039	6.4	LOS A	0.2	5.9	0.37	0.46	32.5
4R	R	5	7.0	0.039	7.6	LOS A	0.2	5.9	0.37	0.54	32.1
Approach		36	7.0	0.039	8.6	LOS B	0.2	5.9	0.37	0.56	31.6
West: SR 12 EB Ramps											
5L	L	41	4.0	0.052	13.3	LOS B	0.3	7.8	0.34	0.69	29.3
2T	T	5	4.0	0.052	6.2	LOS A	0.3	7.8	0.34	0.43	32.4
2R	R	5	4.0	0.052	7.3	LOS A	0.3	7.8	0.34	0.50	32.0
Approach		52	4.0	0.052	12.0	LOS B	0.3	7.8	0.34	0.64	29.8
All Vehicles		613	3.4	0.188	8.3	LOS A	1.2	30.3	0.20	0.55	32.1

Level of Service (Aver. Int. Delay): LOS A. Based on average delay for all vehicle movements. LOS Method: Delay (HCM).
Level of Service (Worst Movement): LOS B. LOS Method for individual vehicle movements: Delay (HCM).
Approach LOS values are based on the worst delay for any vehicle movement.
Roundabout LOS Method: Same as Signalised Intersections.
Roundabout Capacity Model: SIDRA Standard.

9 Continuous movement

SIDRA INTERSECTION

MOVEMENT SUMMARY

Site: Rou 4-way 1-Lane (MUTCD 2B-22) US

Existing Conditions - AM Peak Hour
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: SR 124											
3L	L	5	2.0	0.194	12.7	LOS B	1.3	32.5	0.25	0.87	30.1
8T	T	217	2.0	0.193	5.6	LOS A	1.3	32.5	0.25	0.44	33.4
8R	R	5	2.0	0.194	6.7	LOS A	1.3	32.5	0.25	0.53	32.8
Approach		228	2.0	0.193	5.8	LOS B	1.3	32.5	0.25	0.45	33.3
East: SR 12 EB Ramps											
1L	L	136	5.0	0.183	14.2	LOS B	1.1	29.7	0.47	0.75	29.0
6T	T	27	5.0	0.182	7.1	LOS A	1.1	29.7	0.47	0.54	31.6
6R	R	266	5.0	0.171	6.0	NA[9]	NA[9]	NA[9]	NA[9]	0.49	34.1
Approach		429	5.0	0.183	8.7	LOS B	1.1	29.7	0.18	0.57	32.1
North: SR 124											
7L	L	11	14.0	0.086	13.8	LOS B	0.5	14.4	0.37	0.82	29.8
4T	T	60	14.0	0.086	6.7	LOS A	0.5	14.4	0.37	0.48	32.7
4R	R	5	14.0	0.086	7.9	LOS A	0.5	14.4	0.37	0.56	32.3
Approach		76	14.0	0.086	7.8	LOS B	0.5	14.4	0.37	0.54	32.1
West: SR 12 EB Ramps											
5L	L	54	12.0	0.074	14.0	LOS B	0.4	11.6	0.40	0.70	29.1
2T	T	5	0.0	0.073	6.5	LOS A	0.4	11.6	0.40	0.46	32.0
2R	R	5	0.0	0.073	7.6	LOS A	0.4	11.6	0.40	0.53	31.7
Approach		65	10.0	0.074	12.8	LOS B	0.4	11.6	0.40	0.67	29.5
All Vehicles		799	5.4	0.193	8.1	LOS A	1.3	32.5	0.23	0.54	32.2

Level of Service (Aver. Int. Delay): LOS A. Based on average delay for all vehicle movements. LOS Method: Delay (HCM).
Level of Service (Worst Movement): LOS B. LOS Method for individual vehicle movements: Delay (HCM).
Approach LOS values are based on the worst delay for any vehicle movement.
Roundabout LOS Method: Same as Signalised Intersections.
Roundabout Capacity Model: SIDRA Standard.

9 Continuous movement

SIDRA INTERSECTION

MOVEMENT SUMMARY

Site: Rou 4-way 1-Lane (MUTCD 2B-22) US

2033 Without-Project - PM Peak Hour
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: SR 124											
3L	L	174	4.0	0.275	12.3	LOS B	0.0	0.0	0.00	0.89	30.1
8T	T	299	4.0	0.275	5.2	LOS A	0.0	0.0	0.00	0.40	34.8
Approach		473	4.0	0.275	7.8	LOS B	0.0	0.0	0.00	0.58	32.8
East: SR 12 WB Ramps											
1L	L	5	4.0	0.021	14.3	LOS B	0.1	3.3	0.49	0.75	29.2
6T	T	5	4.0	0.021	7.2	LOS A	0.1	3.3	0.49	0.51	31.8
6R	R	11	4.0	0.021	8.4	LOS A	0.1	3.3	0.49	0.57	31.5
Approach		22	4.0	0.021	9.6	LOS B	0.1	3.3	0.49	0.60	30.9
North: SR 124											
4T	T	33	4.0	0.027	5.9	LOS A	0.1	3.8	0.30	0.45	33.1
4R	R	533	4.0	0.339	6.0	NA[9]	NA[9]	NA[9]	NA[9]	0.49	34.1
Approach		565	4.0	0.339	6.0	LOS A	0.1	3.8	0.02	0.48	34.0
All Vehicles		1060	4.0	0.339	6.9	LOS A	0.1	3.8	0.02	0.53	33.4

Level of Service (Aver. Int. Delay): LOS A. Based on average delay for all vehicle movements. LOS Method: Delay (HCM).
Level of Service (Worst Movement): LOS B. LOS Method for individual vehicle movements: Delay (HCM).
Approach LOS values are based on the worst delay for any vehicle movement.
Roundabout LOS Method: Same as Signalised Intersections.
Roundabout Capacity Model: SIDRA Standard.

9 Continuous movement

MOVEMENT SUMMARY

Site: Rou 4-way 1-Lane (MUTCD 2B-22) US

2033 Without-Project - AM Peak Hour
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: SR 124											
3L	L	298	4.0	0.344	12.3	LOS B	0.0	0.0	0.00	0.85	30.1
8T	T	293	4.0	0.343	5.2	LOS A	0.0	0.0	0.00	0.39	34.8
Approach		590	4.0	0.343	8.8	LOS B	0.0	0.0	0.00	0.62	32.2
East: SR 12 WB Ramps											
1L	L	5	4.0	0.017	15.0	LOS B	0.1	2.7	0.55	0.74	28.9
6T	T	5	0.0	0.017	7.8	LOS A	0.1	2.7	0.55	0.53	31.4
6R	R	5	4.0	0.017	9.0	LOS A	0.1	2.7	0.55	0.59	31.3
Approach		16	2.7	0.017	10.6	LOS B	0.1	2.7	0.55	0.62	30.4
North: SR 124											
4T	T	80	4.0	0.071	6.5	LOS A	0.4	10.7	0.41	0.52	32.6
4R	R	255	4.0	0.163	6.0	NA[9]	NA[9]	NA[9]	NA[9]	0.49	34.1
Approach		335	4.0	0.163	6.1	LOS A	0.4	10.7	0.10	0.49	33.7
All Vehicles		941	4.0	0.343	7.9	LOS A	0.4	10.7	0.04	0.58	32.7

Level of Service (Aver. Int. Delay): LOS A. Based on average delay for all vehicle movements. LOS Method: Delay (HCM).
Level of Service (Worst Movement): LOS B. LOS Method for individual vehicle movements: Delay (HCM).
Approach LOS values are based on the worst delay for any vehicle movement.
Roundabout LOS Method: Same as Signalised Intersections.
Roundabout Capacity Model: SIDRA Standard.

9 Continuous movement

MOVEMENT SUMMARY

Site: Rou 4-way 1-Lane (MUTCD 2B-22) US

2033 Without-Project - PM Peak Hour
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: SR 124											
3L	L	5	4.0	0.110	12.6	LOS B	0.7	17.4	0.20	0.88	30.1
8T	T	139	4.0	0.109	5.5	LOS A	0.7	17.4	0.20	0.42	33.7
8R	R	5	4.0	0.110	6.6	LOS A	0.7	17.4	0.20	0.52	33.0
Approach		149	4.0	0.109	5.7	LOS B	0.7	17.4	0.20	0.44	33.5
East: SR 12 EB Ramps											
1L	L	170	4.0	0.191	13.2	LOS B	1.2	31.7	0.37	0.72	29.3
6T	T	62	4.0	0.191	6.1	LOS A	1.2	31.7	0.37	0.46	32.3
6R	R	258	4.0	0.164	6.0	NA[9]	NA[9]	NA[9]	NA[9]	0.49	34.1
Approach		490	4.0	0.191	8.5	LOS B	1.2	31.7	0.17	0.57	32.0
North: SR 124											
7L	L	10	4.0	0.035	13.2	LOS B	0.2	5.5	0.38	0.78	29.8
4T	T	26	4.0	0.035	6.1	LOS A	0.2	5.5	0.38	0.46	32.5
4R	R	5	4.0	0.036	7.3	LOS A	0.2	5.5	0.38	0.53	32.1
Approach		41	4.0	0.035	8.1	LOS B	0.2	5.5	0.38	0.55	31.7
West: SR 12 EB Ramps											
5L	L	52	4.0	0.052	13.1	LOS B	0.3	8.0	0.35	0.68	29.2
2T	T	5	4.0	0.052	6.0	LOS A	0.3	8.0	0.35	0.43	32.3
2R	R	5	4.0	0.052	7.2	LOS A	0.3	8.0	0.35	0.50	31.9
Approach		62	4.0	0.052	12.0	LOS B	0.3	8.0	0.35	0.64	29.6
All Vehicles		742	4.0	0.191	8.2	LOS A	1.2	31.7	0.20	0.55	32.0

Level of Service (Aver. Int. Delay): LOS A. Based on average delay for all vehicle movements. LOS Method: Delay (HCM).
Level of Service (Worst Movement): LOS B. LOS Method for individual vehicle movements: Delay (HCM).
Approach LOS values are based on the worst delay for any vehicle movement.
Roundabout LOS Method: Same as Signalised Intersections.
Roundabout Capacity Model: SIDRA Standard.

9 Continuous movement

SIDRA INTERSECTION

MOVEMENT SUMMARY

Site: Rou 4-way 1-Lane (MUTCD 2B-22) US

2033 Without-Project - AM Peak

Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: SR 124											
3L	L	5	4.0	0.201	12.7	LOS B	1.4	35.5	0.24	0.87	30.1
8T	T	266	4.0	0.201	5.5	LOS A	1.4	35.5	0.24	0.43	33.5
8R	R	5	4.0	0.201	6.7	LOS A	1.4	35.5	0.24	0.53	32.9
Approach		277	4.0	0.200	5.7	LOS B	1.4	35.5	0.24	0.44	33.4
East: SR 12 EB Ramps											
1L	L	168	4.0	0.235	14.7	LOS B	1.5	39.5	0.53	0.77	28.8
6T	T	33	4.0	0.235	7.6	LOS A	1.5	39.5	0.53	0.59	31.2
6R	R	326	4.0	0.208	6.0	NA[9]	NA[9]	NA[9]	NA[9]	0.49	34.1
Approach		527	4.0	0.235	8.9	LOS B	1.5	39.5	0.20	0.59	31.9
North: SR 124											
7L	L	11	4.0	0.092	13.5	LOS B	0.6	14.7	0.40	0.82	29.8
4T	T	71	4.0	0.092	6.4	LOS A	0.6	14.7	0.40	0.50	32.5
4R	R	5	4.0	0.092	7.6	LOS A	0.6	14.7	0.40	0.57	32.2
Approach		87	4.0	0.092	7.4	LOS B	0.6	14.7	0.40	0.55	32.1
West: SR 12 EB Ramps											
5L	L	65	4.0	0.083	13.8	LOS B	0.5	12.9	0.43	0.71	29.0
2T	T	5	4.0	0.084	6.7	LOS A	0.5	12.9	0.43	0.49	31.8
2R	R	5	4.0	0.084	7.8	LOS A	0.5	12.9	0.43	0.55	31.5
Approach		76	4.0	0.083	12.9	LOS B	0.5	12.9	0.43	0.68	29.3
All Vehicles		967	4.0	0.235	8.2	LOS A	1.5	39.5	0.25	0.55	32.1

Level of Service (Aver. Int. Delay): LOS A. Based on average delay for all vehicle movements. LOS Method: Delay (HCM).
Level of Service (Worst Movement): LOS B. LOS Method for individual vehicle movements: Delay (HCM).
Approach LOS values are based on the worst delay for any vehicle movement.
Roundabout LOS Method: Same as Signalised Intersections.
Roundabout Capacity Model: SIDRA Standard.

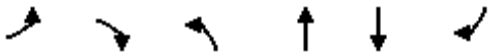
9 Continuous movement

SIDRA INTERSECTION

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	5	60	60	5	130	85
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	67	67	6	144	94
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	453	69			72	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	453	69			72	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	93			91	
cM capacity (veh/h)	511	993			1528	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	72	72	239
Volume Left	6	0	144
Volume Right	67	6	0
cSH	926	1700	1528
Volume to Capacity	0.08	0.04	0.09
Queue Length 95th (ft)	6	0	8
Control Delay (s)	9.2	0.0	4.9
Lane LOS	A		A
Approach Delay (s)	9.2	0.0	4.9
Approach LOS	A		

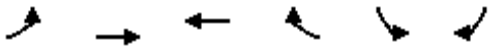
Intersection Summary			
Average Delay	4.8		
Intersection Capacity Utilization	29.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	25	5	5	35	35	50
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	26	5	5	36	36	52
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	108	62	88			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	108	62	88			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	97	99	100			
cM capacity (veh/h)	886	1003	1508			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	31	41	88
Volume Left	26	5	0
Volume Right	5	0	52
cSH	904	1508	1700
Volume to Capacity	0.03	0.00	0.05
Queue Length 95th (ft)	3	0	0
Control Delay (s)	9.1	0.9	0.0
Lane LOS	A	A	
Approach Delay (s)	9.1	0.9	0.0
Approach LOS	A		

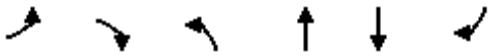
Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	16.1%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	20	5	5	25	10	20
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	25	6	6	31	12	25
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	38				78	22
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	38				78	22
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				99	98
cM capacity (veh/h)	1573				910	1055

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	31	38	38
Volume Left	25	0	12
Volume Right	0	31	25
cSH	1573	1700	1002
Volume to Capacity	0.02	0.02	0.04
Queue Length 95th (ft)	1	0	3
Control Delay (s)	5.9	0.0	8.7
Lane LOS	A		A
Approach Delay (s)	5.9	0.0	8.7
Approach LOS			A

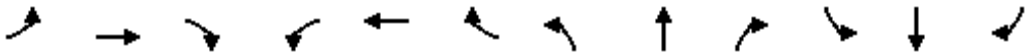
Intersection Summary			
Average Delay	4.8		
Intersection Capacity Utilization	18.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	5	25	10	60	120	5
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	6	32	13	77	154	6
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					1015	
pX, platoon unblocked						
vC, conflicting volume	260	157	160			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	260	157	160			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	96	99			
cM capacity (veh/h)	723	888	1419			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	38	90	160
Volume Left	6	13	0
Volume Right	32	0	6
cSH	856	1419	1700
Volume to Capacity	0.04	0.01	0.09
Queue Length 95th (ft)	4	1	0
Control Delay (s)	9.4	1.1	0.0
Lane LOS	A	A	
Approach Delay (s)	9.4	1.1	0.0
Approach LOS	A		

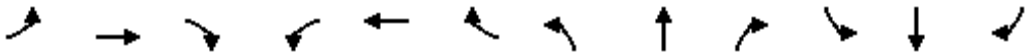
Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	21.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	5	25	25	25	30	25	25	45	25	60	60	10
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Hourly flow rate (vph)	7	33	33	33	39	33	33	59	33	79	79	13
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	72			66			237	201	49	247	201	56
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	72			66			237	201	49	247	201	56
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			95	91	97	87	88	99
cM capacity (veh/h)	1528			1536			633	678	1019	626	678	1011

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	72	105	125	171
Volume Left	7	33	33	79
Volume Right	33	33	33	13
cSH	1528	1536	728	669
Volume to Capacity	0.00	0.02	0.17	0.26
Queue Length 95th (ft)	0	2	15	25
Control Delay (s)	0.7	2.4	11.0	12.2
Lane LOS	A	A	B	B
Approach Delay (s)	0.7	2.4	11.0	12.2
Approach LOS			B	B

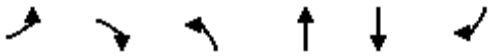
Intersection Summary			
Average Delay	8.0		
Intersection Capacity Utilization	29.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	35	60	20	5	25	10	10	10	5	20	5	35
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	40	68	23	6	28	11	11	11	6	23	6	40
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	40			91			247	210	80	216	216	34
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	40			91			247	210	80	216	216	34
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			98	98	99	97	99	96
cM capacity (veh/h)	1570			1504			660	667	981	711	662	1039

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	131	45	28	68
Volume Left	40	6	11	23
Volume Right	23	11	6	40
cSH	1570	1504	709	865
Volume to Capacity	0.03	0.00	0.04	0.08
Queue Length 95th (ft)	2	0	3	6
Control Delay (s)	2.4	1.0	10.3	9.5
Lane LOS	A	A	B	A
Approach Delay (s)	2.4	1.0	10.3	9.5
Approach LOS			B	A

Intersection Summary				
Average Delay	4.7			
Intersection Capacity Utilization	23.5%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	5	5	5	285	475	5
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	6	6	6	339	565	6
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	917	565	571			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	917	565	571			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	99	99			
cM capacity (veh/h)	300	524	986			

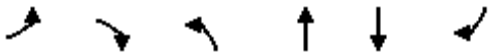
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	12	6	339	565	6
Volume Left	6	6	0	0	0
Volume Right	6	0	0	0	6
cSH	382	986	1700	1700	1700
Volume to Capacity	0.03	0.01	0.20	0.33	0.00
Queue Length 95th (ft)	2	0	0	0	0
Control Delay (s)	14.7	8.7	0.0	0.0	0.0
Lane LOS	B	A			
Approach Delay (s)	14.7	0.1		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	35.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	5	130	120	5	55	170
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.64	0.64	0.64	0.64	0.64	0.64
Hourly flow rate (vph)	8	203	188	8	86	266
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	629	191			195	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	629	191			195	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	98	76			94	
cM capacity (veh/h)	418	850			1378	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	211	195	352
Volume Left	8	0	86
Volume Right	203	8	0
cSH	819	1700	1378
Volume to Capacity	0.26	0.11	0.06
Queue Length 95th (ft)	26	0	5
Control Delay (s)	10.9	0.0	2.3
Lane LOS	B		A
Approach Delay (s)	10.9	0.0	2.3
Approach LOS	B		

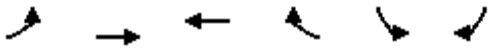
Intersection Summary			
Average Delay	4.1		
Intersection Capacity Utilization	36.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	20	5	5	110	165	10
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.57	0.57	0.57	0.57	0.57	0.57
Hourly flow rate (vph)	35	9	9	193	289	18
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	509	298	307			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	509	298	307			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	93	99	99			
cM capacity (veh/h)	520	741	1254			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	44	202	307
Volume Left	35	9	0
Volume Right	9	0	18
cSH	553	1254	1700
Volume to Capacity	0.08	0.01	0.18
Queue Length 95th (ft)	6	1	0
Control Delay (s)	12.1	0.4	0.0
Lane LOS	B	A	
Approach Delay (s)	12.1	0.4	0.0
Approach LOS	B		

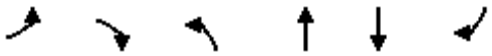
Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	19.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	20	45	25	100	155	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.61	0.61	0.61	0.61	0.61	0.61
Hourly flow rate (vph)	33	74	41	164	254	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	205				262	123
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	205				262	123
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				64	99
cM capacity (veh/h)	1355				709	928

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	107	205	262
Volume Left	33	0	254
Volume Right	0	164	8
cSH	1355	1700	714
Volume to Capacity	0.02	0.12	0.37
Queue Length 95th (ft)	2	0	42
Control Delay (s)	2.5	0.0	12.9
Lane LOS	A		B
Approach Delay (s)	2.5	0.0	12.9
Approach LOS			B

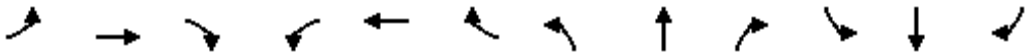
Intersection Summary			
Average Delay	6.4		
Intersection Capacity Utilization	29.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	25	55	120	105	25	30
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.66	0.66	0.66	0.66	0.66	0.66
Hourly flow rate (vph)	38	83	182	159	38	45
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					1015	
pX, platoon unblocked						
vC, conflicting volume	583	61	83			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	583	61	83			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	91	92	88			
cM capacity (veh/h)	416	1002	1514			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	121	341	83
Volume Left	38	182	0
Volume Right	83	0	45
cSH	696	1514	1700
Volume to Capacity	0.17	0.12	0.05
Queue Length 95th (ft)	16	10	0
Control Delay (s)	11.3	4.6	0.0
Lane LOS	B	A	
Approach Delay (s)	11.3	4.6	0.0
Approach LOS	B		

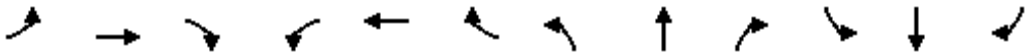
Intersection Summary			
Average Delay	5.4		
Intersection Capacity Utilization	30.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	25	5	10	20	5	90	5	110	5	25	35	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Hourly flow rate (vph)	34	7	14	27	7	123	7	151	7	34	48	7
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	130			21			236	267	14	288	212	68
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	130			21			236	267	14	288	212	68
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			98			99	75	99	93	93	99
cM capacity (veh/h)	1455			1595			653	613	1066	519	657	995

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	55	158	164	89
Volume Left	34	27	7	34
Volume Right	14	123	7	7
cSH	1455	1595	626	611
Volume to Capacity	0.02	0.02	0.26	0.15
Queue Length 95th (ft)	2	1	26	13
Control Delay (s)	4.8	1.4	12.8	11.9
Lane LOS	A	A	B	B
Approach Delay (s)	4.8	1.4	12.8	11.9
Approach LOS			B	B

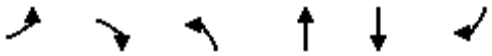
Intersection Summary			
Average Delay	7.8		
Intersection Capacity Utilization	23.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	20	10	10	5	60	30	5	5	5	5	5	45
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	26	13	13	6	77	38	6	6	6	6	6	58
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	115			26			240	199	19	189	186	96
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	115			26			240	199	19	189	186	96
tC, single (s)	4.2			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.3			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			99	99	99	99	99	94
cM capacity (veh/h)	1449			1589			655	682	1059	748	693	960

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	51	122	19	71
Volume Left	26	6	6	6
Volume Right	13	38	6	58
cSH	1449	1589	762	905
Volume to Capacity	0.02	0.00	0.03	0.08
Queue Length 95th (ft)	1	0	2	6
Control Delay (s)	3.8	0.4	9.8	9.3
Lane LOS	A	A	A	A
Approach Delay (s)	3.8	0.4	9.8	9.3
Approach LOS			A	A

Intersection Summary				
Average Delay	4.2			
Intersection Capacity Utilization	19.1%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	5	5	5	325	300	5
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	6	6	6	401	370	6
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	784	370	377			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	784	370	377			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	99	99			
cM capacity (veh/h)	360	675	1166			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	12	6	401	370	6
Volume Left	6	6	0	0	0
Volume Right	6	0	0	0	6
cSH	470	1166	1700	1700	1700
Volume to Capacity	0.03	0.01	0.24	0.22	0.00
Queue Length 95th (ft)	2	0	0	0	0
Control Delay (s)	12.9	8.1	0.0	0.0	0.0
Lane LOS	B	A			
Approach Delay (s)	12.9	0.1		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	27.1%	ICU Level of Service	A
Analysis Period (min)	15		

MOVEMENT SUMMARY

Site: Rou 4-way 1-Lane (MUTCD 2B-22) US

2033 With-Project - PM Peak Hour

Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: SR 124											
3L	L	975	4.0	0.766	12.3	LOS B	0.0	0.0	0.00	0.78	30.1
8T	T	341	4.0	0.765	5.2	LOS A	0.0	0.0	0.00	0.37	34.8
Approach		1316	4.0	0.766	10.5	LOS B	0.0	0.0	0.00	0.68	31.1
East: SR 12 WB Ramps											
1L	L	213	4.0	0.552	45.6	LOS D	7.0	180.5	1.00	1.23	17.9
6T	T	5	4.0	0.543	38.5	LOS D	7.0	180.5	1.00	1.23	18.3
6R	R	11	4.0	0.543	39.6	LOS D	7.0	180.5	1.00	1.23	18.2
Approach		229	4.0	0.552	45.1	LOS D	7.0	180.5	1.00	1.23	17.9
North: SR 124											
4T	T	53	4.0	0.112	17.7	LOS B	1.0	24.9	0.91	0.84	26.4
4R	R	533	4.0	0.339	6.0	NA[9]	NA[9]	NA[9]	NA[9]	0.49	34.1
Approach		586	4.0	0.339	7.1	LOS B	1.0	24.9	0.08	0.52	33.2
All Vehicles		2132	4.0	0.766	13.3	LOS B	7.0	180.5	0.13	0.69	29.2

Level of Service (Aver. Int. Delay): LOS B. Based on average delay for all vehicle movements. LOS Method: Delay (HCM).
Level of Service (Worst Movement): LOS D. LOS Method for individual vehicle movements: Delay (HCM).
Approach LOS values are based on the worst delay for any vehicle movement.
Roundabout LOS Method: Same as Signalised Intersections.
Roundabout Capacity Model: SIDRA Standard.

9 Continuous movement

SIDRA INTERSECTION

MOVEMENT SUMMARY

Site: Rou 4-way 1-Lane (MUTCD 2B-22) US

2033 With-Project - AM Peak Hour
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: SR 124											
3L	L	429	4.0	0.424	12.3	LOS B	0.0	0.0	0.00	0.83	30.1
8T	T	300	4.0	0.424	5.2	LOS A	0.0	0.0	0.00	0.38	34.8
Approach		729	4.0	0.424	9.4	LOS B	0.0	0.0	0.00	0.64	31.8
East: SR 12 WB Ramps											
1L	L	206	4.0	0.255	17.0	LOS B	1.9	47.9	0.70	0.84	27.5
6T	T	5	0.0	0.253	9.7	LOS A	1.9	47.9	0.70	0.72	30.1
6R	R	5	4.0	0.253	11.0	LOS B	1.9	47.9	0.70	0.76	29.8
Approach		217	3.9	0.255	16.6	LOS B	1.9	47.9	0.70	0.83	27.6
North: SR 124											
4T	T	117	4.0	0.135	8.6	LOS A	1.0	24.8	0.65	0.68	31.4
4R	R	255	4.0	0.163	6.0	NA[9]	NA[9]	NA[9]	NA[9]	0.49	34.1
Approach		372	4.0	0.163	6.8	LOS A	1.0	24.8	0.20	0.55	33.2
All Vehicles		1318	4.0	0.424	9.8	LOS A	1.9	47.9	0.17	0.65	31.3

Level of Service (Aver. Int. Delay): LOS A. Based on average delay for all vehicle movements. LOS Method: Delay (HCM).
Level of Service (Worst Movement): LOS B. LOS Method for individual vehicle movements: Delay (HCM).
Approach LOS values are based on the worst delay for any vehicle movement.
Roundabout LOS Method: Same as Signalised Intersections.
Roundabout Capacity Model: SIDRA Standard.

9 Continuous movement

MOVEMENT SUMMARY

Site: Rou 4-way 1-Lane (MUTCD 2B-22) US

2033 With-Project - PM Peak Hour

Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: SR 124											
3L	L	7	4.0	0.902	21.6	LOS C	22.5	580.5	1.00	0.97	26.2
8T	T	794	4.0	0.902	14.4	LOS B	22.5	580.5	1.00	0.97	28.0
8R	R	253	4.0	0.902	15.6	LOS B	22.5	580.5	1.00	0.97	28.0
Approach		1054	4.0	0.902	14.8	LOS C	22.5	580.5	1.00	0.97	28.0
East: SR 12 EB Ramps											
1L	L	505	4.0	1.354	202.0	LOS F	69.6	1795.2	1.00	2.96	6.2
6T	T	110	4.0	1.345	194.9	LOS F	69.6	1795.2	1.00	2.96	5.9
6R	R	258	4.0	0.164	6.0	NA[9]	NA[9]	NA[9]	NA[9]	0.49	34.1
Approach		873	4.0	1.353	143.2	LOS F	69.6	1795.2	0.70	2.23	8.0
North: SR 124											
7L	L	10	4.0	0.286	14.8	LOS B	2.4	62.2	0.70	0.87	29.5
4T	T	224	4.0	0.286	7.7	LOS A	2.4	62.2	0.70	0.65	31.1
4R	R	23	4.0	0.287	8.9	LOS A	2.4	62.2	0.70	0.72	31.1
Approach		257	4.0	0.286	8.1	LOS B	2.4	62.2	0.70	0.66	31.0
West: SR 12 EB Ramps											
5L	L	197	4.0	0.325	16.0	LOS B	2.7	70.0	0.76	0.86	28.2
2T	T	59	4.0	0.325	8.8	LOS A	2.7	70.0	0.76	0.75	29.9
2R	R	11	4.0	0.324	10.0	LOS B	2.7	70.0	0.76	0.78	30.0
Approach		267	4.0	0.325	14.1	LOS B	2.7	70.0	0.76	0.83	28.6
All Vehicles		2451	4.0	1.353	59.8	LOS E	69.6	1795.2	0.84	1.37	14.7

Level of Service (Aver. Int. Delay): LOS E. Based on average delay for all vehicle movements. LOS Method: Delay (HCM).
Level of Service (Worst Movement): LOS F. LOS Method for individual vehicle movements: Delay (HCM).
Approach LOS values are based on the worst delay for any vehicle movement.
Roundabout LOS Method: Same as Signalised Intersections.
Roundabout Capacity Model: SIDRA Standard.

9 Continuous movement

SIDRA INTERSECTION

MOVEMENT SUMMARY

Site: Rou 4-way 1-Lane (MUTCD 2B-22) US

2033 With-Project - AM Peak

Roundabout

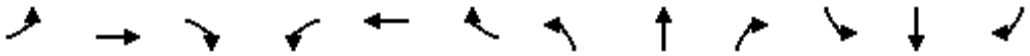
Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: SR 124											
3L	L	12	4.0	0.342	12.9	LOS B	3.0	76.9	0.37	0.82	30.0
8T	T	380	4.0	0.345	5.8	LOS A	3.0	76.9	0.37	0.47	32.7
8R	R	68	4.0	0.346	7.0	LOS A	3.0	76.9	0.37	0.54	32.3
Approach		461	4.0	0.345	6.1	LOS B	3.0	76.9	0.37	0.49	32.6
East: SR 12 EB Ramps											
1L	L	713	4.0	1.175	109.2	LOS F	64.2	1656.9	1.00	2.76	10.1
6T	T	187	4.0	1.176	102.1	LOS F	64.2	1656.9	1.00	2.76	9.9
6R	R	326	4.0	0.208	6.0	NA[9]	NA[9]	NA[9]	NA[9]	0.49	34.1
Approach		1226	4.0	1.174	80.7	LOS F	64.2	1656.9	0.73	2.15	12.3
North: SR 124											
7L	L	11	4.0	0.725	30.6	LOS C	9.6	247.0	1.00	1.20	22.6
4T	T	261	4.0	0.750	23.5	LOS C	9.6	247.0	1.00	1.20	23.7
4R	R	58	4.0	0.748	24.6	LOS C	9.6	247.0	1.00	1.20	23.6
Approach		329	4.0	0.749	23.9	LOS C	9.6	247.0	1.00	1.20	23.6
West: SR 12 EB Ramps											
5L	L	93	4.0	0.248	20.2	LOS C	1.9	49.8	0.87	0.95	26.0
2T	T	11	4.0	0.247	13.1	LOS B	1.9	49.8	0.87	0.90	27.9
2R	R	1	4.0	0.272	14.1	LOS B	1.9	49.8	0.87	0.91	27.7
Approach		105	4.0	0.248	19.4	LOS C	1.9	49.8	0.87	0.95	26.2
All Vehicles		2122	4.0	1.174	52.6	LOS D	64.2	1656.9	0.70	1.58	16.0

Level of Service (Aver. Int. Delay): LOS D. Based on average delay for all vehicle movements. LOS Method: Delay (HCM).
Level of Service (Worst Movement): LOS F. LOS Method for individual vehicle movements: Delay (HCM).
Approach LOS values are based on the worst delay for any vehicle movement.
Roundabout LOS Method: Same as Signalised Intersections.
Roundabout Capacity Model: SIDRA Standard.

9 Continuous movement

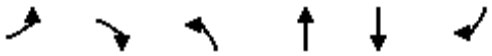
SIDRA INTERSECTION



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	53	3	4	7	1	810	2	133	4	593	121	24
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	58	3	4	8	1	880	2	145	4	645	132	26
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2466	1587	145	1591	1598	147	158			149		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2466	1587	145	1591	1598	147	158			149		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	95	100	86	98	2	100			55		
cM capacity (veh/h)	0	59	903	54	58	900	1422			1433		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	65	889	151	802
Volume Left	58	8	2	645
Volume Right	4	880	4	26
cSH	0	781	1422	1433
Volume to Capacity	198.72	1.14	0.00	0.45
Queue Length 95th (ft)	Err	655	0	60
Control Delay (s)	Err	98.4	0.1	8.6
Lane LOS	F	F	A	A
Approach Delay (s)	Err	98.4	0.1	8.6
Approach LOS	F	F		

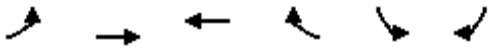
Intersection Summary				
Average Delay	391.3			
Intersection Capacity Utilization	108.4%	ICU Level of Service	G	
Analysis Period (min)	15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	30	5	5	109	81	51
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	31	5	5	112	84	53
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	232	110	136			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	232	110	136			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	96	99	100			
cM capacity (veh/h)	753	944	1448			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	36	118	136
Volume Left	31	5	0
Volume Right	5	0	53
cSH	775	1448	1700
Volume to Capacity	0.05	0.00	0.08
Queue Length 95th (ft)	4	0	0
Control Delay (s)	9.9	0.4	0.0
Lane LOS	A	A	
Approach Delay (s)	9.9	0.4	0.0
Approach LOS	A		

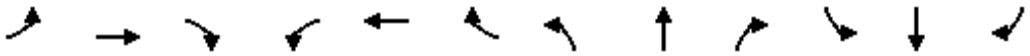
Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	19.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	26	5	5	100	56	42
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	28	5	5	109	61	46
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	114				122	60
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	114				122	60
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				93	95
cM capacity (veh/h)	1475				857	1006

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	34	114	107
Volume Left	28	0	61
Volume Right	0	109	46
cSH	1475	1700	915
Volume to Capacity	0.02	0.07	0.12
Queue Length 95th (ft)	1	0	10
Control Delay (s)	6.3	0.0	9.5
Lane LOS	A		A
Approach Delay (s)	6.3	0.0	9.5
Approach LOS			A

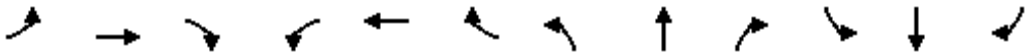
Intersection Summary			
Average Delay	4.8		
Intersection Capacity Utilization	20.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	6	18	28	4	47	30	24	98	2	7	161	7
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	20	30	4	51	33	26	107	2	8	175	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											1015	
pX, platoon unblocked												
vC, conflicting volume	412	355	179	394	358	108	183			109		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	412	355	179	394	358	108	183			109		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	96	96	99	91	97	98			99		
cM capacity (veh/h)	485	557	864	521	555	946	1392			1482		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	57	88	135	190
Volume Left	7	4	26	8
Volume Right	30	33	2	8
cSH	675	653	1392	1482
Volume to Capacity	0.08	0.13	0.02	0.01
Queue Length 95th (ft)	7	12	1	0
Control Delay (s)	10.8	11.4	1.6	0.3
Lane LOS	B	B	A	A
Approach Delay (s)	10.8	11.4	1.6	0.3
Approach LOS	B	B		

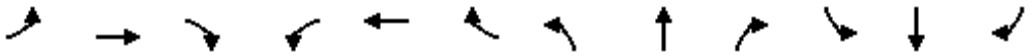
Intersection Summary				
Average Delay			4.0	
Intersection Capacity Utilization			27.4%	ICU Level of Service
Analysis Period (min)			15	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	16	25	27	28	30	29	26	52	25	68	75	26
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	17	27	29	30	33	32	28	57	27	74	82	28
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	64			57			255	202	42	241	201	48
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	64			57			255	202	42	241	201	48
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			98			95	92	97	88	88	97
cM capacity (veh/h)	1538			1548			602	673	1029	634	674	1020

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	74	95	112	184
Volume Left	17	30	28	74
Volume Right	29	32	27	28
cSH	1538	1548	712	693
Volume to Capacity	0.01	0.02	0.16	0.27
Queue Length 95th (ft)	1	2	14	27
Control Delay (s)	1.8	2.5	11.0	12.1
Lane LOS	A	A	B	B
Approach Delay (s)	1.8	2.5	11.0	12.1
Approach LOS			B	B

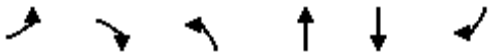
Intersection Summary				
Average Delay	8.2			
Intersection Capacity Utilization	29.3%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	38	67	21	5	31	10	11	10	5	20	5	38
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	41	73	23	5	34	11	12	11	5	22	5	41
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	45			96			261	222	84	228	228	39
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	45			96			261	222	84	228	228	39
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			98	98	99	97	99	96
cM capacity (veh/h)	1564			1498			645	656	975	698	651	1032

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	137	50	28	68
Volume Left	41	5	12	22
Volume Right	23	11	5	41
cSH	1564	1498	695	861
Volume to Capacity	0.03	0.00	0.04	0.08
Queue Length 95th (ft)	2	0	3	6
Control Delay (s)	2.4	0.8	10.4	9.5
Lane LOS	A	A	B	A
Approach Delay (s)	2.4	0.8	10.4	9.5
Approach LOS			B	A

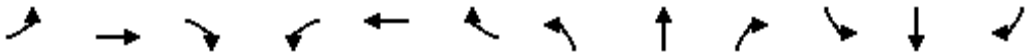
Intersection Summary				
Average Delay	4.6			
Intersection Capacity Utilization	24.6%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	5	5	5	338	503	5
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	5	5	367	547	5
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	925	547	552			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	925	547	552			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	99	99			
cM capacity (veh/h)	297	537	1003			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	11	5	367	547	5
Volume Left	5	5	0	0	0
Volume Right	5	0	0	0	5
cSH	383	1003	1700	1700	1700
Volume to Capacity	0.03	0.01	0.22	0.32	0.00
Queue Length 95th (ft)	2	0	0	0	0
Control Delay (s)	14.7	8.6	0.0	0.0	0.0
Lane LOS	B	A			
Approach Delay (s)	14.7	0.1		0.0	
Approach LOS	B				

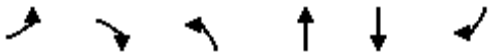
Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	36.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	1	1	6	3	270	4	138	10	605	252	45
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	1	1	7	3	293	4	150	11	658	274	49
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2073	1783	298	1779	1802	155	323			161		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2073	1783	298	1779	1802	155	323			161		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	32	98	100	84	92	67	100			54		
cM capacity (veh/h)	16	44	741	40	43	890	1237			1418		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	13	303	165	980
Volume Left	11	7	4	658
Volume Right	1	293	11	49
cSH	18	532	1237	1418
Volume to Capacity	0.71	0.57	0.00	0.46
Queue Length 95th (ft)	48	88	0	63
Control Delay (s)	392.6	20.4	0.2	8.3
Lane LOS	F	C	A	A
Approach Delay (s)	392.6	20.4	0.2	8.3
Approach LOS	F	C		

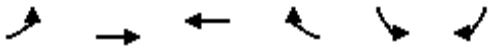
Intersection Summary				
Average Delay	13.4			
Intersection Capacity Utilization	84.6%	ICU Level of Service	E	
Analysis Period (min)	15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	21	5	5	137	243	15
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	23	5	5	149	264	16
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	432	272	280			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	432	272	280			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	96	99	100			
cM capacity (veh/h)	578	766	1282			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	28	154	280
Volume Left	23	5	0
Volume Right	5	0	16
cSH	607	1282	1700
Volume to Capacity	0.05	0.00	0.16
Queue Length 95th (ft)	4	0	0
Control Delay (s)	11.2	0.3	0.0
Lane LOS	B	A	
Approach Delay (s)	11.2	0.3	0.0
Approach LOS	B		

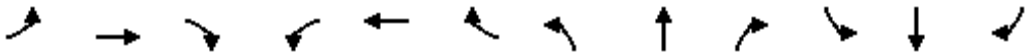
Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	23.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	20	45	25	114	233	25
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	49	27	124	253	27
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	151				182	89
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	151				182	89
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				68	97
cM capacity (veh/h)	1418				796	969

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	71	151	280
Volume Left	22	0	253
Volume Right	0	124	27
cSH	1418	1700	810
Volume to Capacity	0.02	0.09	0.35
Queue Length 95th (ft)	1	0	39
Control Delay (s)	2.4	0.0	11.8
Lane LOS	A		B
Approach Delay (s)	2.4	0.0	11.8
Approach LOS			B

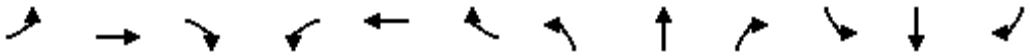
Intersection Summary			
Average Delay	6.9		
Intersection Capacity Utilization	36.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	27	46	70	1	9	6	123	135	4	15	47	30
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	29	50	76	1	10	7	134	147	4	16	51	33
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											1015	
pX, platoon unblocked												
vC, conflicting volume	528	518	67	617	533	149	84			151		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	528	518	67	617	533	149	84			151		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	93	88	92	100	98	99	91			99		
cM capacity (veh/h)	414	415	993	312	408	898	1513			1430		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	155	17	285	100
Volume Left	29	1	134	16
Volume Right	76	7	4	33
cSH	580	501	1513	1430
Volume to Capacity	0.27	0.03	0.09	0.01
Queue Length 95th (ft)	27	3	7	1
Control Delay (s)	13.5	12.4	4.0	1.3
Lane LOS	B	B	A	A
Approach Delay (s)	13.5	12.4	4.0	1.3
Approach LOS	B	B		

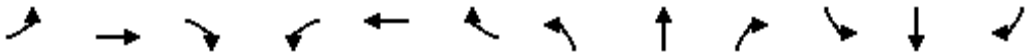
Intersection Summary				
Average Delay	6.4			
Intersection Capacity Utilization	42.4%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	54	5	10	23	5	97	7	123	5	26	38	8
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	59	5	11	25	5	105	8	134	5	28	41	9
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	111			16			266	289	11	309	242	58
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	111			16			266	289	11	309	242	58
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			98			99	77	99	94	93	99
cM capacity (veh/h)	1479			1601			620	587	1070	507	624	1008

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	75	136	147	78
Volume Left	59	25	8	28
Volume Right	11	105	5	9
cSH	1479	1601	599	599
Volume to Capacity	0.04	0.02	0.25	0.13
Queue Length 95th (ft)	3	1	24	11
Control Delay (s)	6.0	1.4	13.0	11.9
Lane LOS	A	A	B	B
Approach Delay (s)	6.0	1.4	13.0	11.9
Approach LOS			B	B

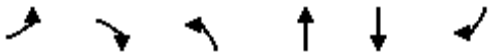
Intersection Summary				
Average Delay	8.0			
Intersection Capacity Utilization	30.6%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	20	11	10	5	67	30	6	5	5	5	5	48
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	12	11	5	73	33	7	5	5	5	5	52
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	105			23			216	177	17	169	166	89
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	105			23			216	177	17	169	166	89
tC, single (s)	4.2			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.3			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			99	99	99	99	99	95
cM capacity (veh/h)	1461			1592			687	703	1061	775	713	969

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	45	111	17	63
Volume Left	22	5	7	5
Volume Right	11	33	5	52
cSH	1461	1592	778	921
Volume to Capacity	0.01	0.00	0.02	0.07
Queue Length 95th (ft)	1	0	2	6
Control Delay (s)	3.7	0.4	9.7	9.2
Lane LOS	A	A	A	A
Approach Delay (s)	3.7	0.4	9.7	9.2
Approach LOS			A	A

Intersection Summary				
Average Delay	4.1			
Intersection Capacity Utilization	19.2%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	5	5	5	331	341	5
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	5	5	360	371	5
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	741	371	376			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	741	371	376			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	99	100			
cM capacity (veh/h)	382	675	1166			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	11	5	360	371	5
Volume Left	5	5	0	0	0
Volume Right	5	0	0	0	5
cSH	488	1166	1700	1700	1700
Volume to Capacity	0.02	0.00	0.21	0.22	0.00
Queue Length 95th (ft)	2	0	0	0	0
Control Delay (s)	12.6	8.1	0.0	0.0	0.0
Lane LOS	B	A			
Approach Delay (s)	12.6	0.1		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	27.9%	ICU Level of Service	A
Analysis Period (min)	15		

MOVEMENT SUMMARY

Site: Rou 4-way 1-Lane (MUTCD 2B-22) US

2033 With-Project - PM Peak Hour (Mitigated)

Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: SR 124											
3L	L	7	4.0	0.451	13.7	LOS B	3.8	96.8	0.55	0.87	30.0
8T	T	794	4.0	0.465	6.6	LOS A	3.9	99.8	0.55	0.55	31.8
8R	R	253	4.0	0.465	7.9	LOS A	3.9	99.8	0.54	0.64	31.5
Approach		1054	4.0	0.465	6.9	LOS B	3.9	99.8	0.55	0.57	31.7
East: SR 12 EB Ramps											
1L	L	505	4.0	0.850	41.9	LOS D	19.6	506.3	1.00	1.50	18.8
6T	T	110	4.0	0.849	34.7	LOS C	19.6	506.3	1.00	1.50	19.3
6R	R	258	4.0	0.493	19.1	LOS B	5.1	132.4	0.97	1.07	25.7
Approach		873	4.0	0.850	34.2	LOS D	19.6	506.3	0.99	1.37	20.4
North: SR 124											
7L	L	10	4.0	0.344	16.1	LOS B	3.1	81.0	0.83	0.91	28.9
4T	T	224	4.0	0.347	9.0	LOS A	3.1	81.0	0.83	0.76	30.4
4R	R	23	4.0	0.349	10.1	LOS B	3.1	81.0	0.83	0.82	30.6
Approach		257	4.0	0.347	9.3	LOS B	3.1	81.0	0.83	0.77	30.4
West: SR 12 EB Ramps											
5L	L	197	4.0	0.385	17.3	LOS B	3.4	88.8	0.87	0.91	27.5
2T	T	59	4.0	0.384	10.2	LOS B	3.4	88.8	0.87	0.86	29.4
2R	R	11	4.0	0.391	11.3	LOS B	3.4	88.8	0.87	0.87	29.6
Approach		267	4.0	0.385	15.5	LOS B	3.4	88.8	0.87	0.90	28.0
All Vehicles		2451	4.0	0.850	17.8	LOS B	19.6	506.3	0.77	0.91	26.0

Level of Service (Aver. Int. Delay): LOS B. Based on average delay for all vehicle movements. LOS Method: Delay (HCM).
Level of Service (Worst Movement): LOS D. LOS Method for individual vehicle movements: Delay (HCM).
Approach LOS values are based on the worst delay for any vehicle movement.
Roundabout LOS Method: Same as Signalised Intersections.
Roundabout Capacity Model: SIDRA Standard.

MOVEMENT SUMMARY

Site: Rou 4-way 1-Lane (MUTCD 2B-22) US

2033 With-Project - AM Peak (Mitigated)

Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: SR 124											
3L	L	12	4.0	0.178	12.7	LOS B	1.1	29.0	0.28	0.86	30.0
8T	T	380	4.0	0.180	5.6	LOS A	1.1	29.5	0.28	0.45	33.2
8R	R	68	4.0	0.180	7.0	LOS A	1.1	29.5	0.27	0.56	32.5
Approach		461	4.0	0.180	6.0	LOS B	1.1	29.5	0.28	0.47	33.0
East: SR 12 EB Ramps											
1L	L	713	4.0	0.930	31.7	LOS C	24.5	633.4	1.00	1.39	21.7
6T	T	187	4.0	0.930	24.6	LOS C	24.5	633.4	1.00	1.39	22.6
6R	R	326	4.0	0.491	12.7	LOS B	4.1	106.8	0.74	0.89	29.2
Approach		1226	4.0	0.930	25.6	LOS C	24.5	633.4	0.93	1.26	23.3
North: SR 124											
7L	L	11	4.0	0.988	61.2	LOS E	17.0	438.7	1.00	1.48	15.4
4T	T	261	4.0	0.945	54.1	LOS D	17.0	438.7	1.00	1.48	15.5
4R	R	58	4.0	0.944	55.3	LOS E	17.0	438.7	1.00	1.48	15.4
Approach		329	4.0	0.946	54.6	LOS E	17.0	438.7	1.00	1.48	15.5
West: SR 12 EB Ramps											
5L	L	93	4.0	0.297	22.3	LOS C	2.4	61.5	0.92	0.98	25.0
2T	T	11	4.0	0.294	15.2	LOS B	2.4	61.5	0.92	0.95	26.7
2R	R	1	4.0	0.272	16.2	LOS B	2.4	61.5	0.92	0.96	26.6
Approach		105	4.0	0.297	21.5	LOS C	2.4	61.5	0.92	0.98	25.2
All Vehicles		2122	4.0	0.946	25.6	LOS C	24.5	633.4	0.80	1.11	23.1

Level of Service (Aver. Int. Delay): LOS C. Based on average delay for all vehicle movements. LOS Method: Delay (HCM).
Level of Service (Worst Movement): LOS E. LOS Method for individual vehicle movements: Delay (HCM).
Approach LOS values are based on the worst delay for any vehicle movement.
Roundabout LOS Method: Same as Signalised Intersections.
Roundabout Capacity Model: SIDRA Standard.