

**MEETING OF THE
MAYOR AND BOARD OF ALDERMAN OF THE
CITY OF RIDGELAND, MISSISSIPPI
June 7, 2016
6:00 PM**

INVOCATION

PLEDGE OF ALLEGIANCE

CONSIDERATION OF MINUTES FROM PRIOR BOARD MEETING

Minutes of May 17, 2016 Mayor & Board of Aldermen Meeting

CONSIDERATION OF MINUTES FROM PRIOR WORK SESSION

Minutes of May 16, 2016 Work Session

1. AGENDA ITEMS

- a) Approve Site Plan / Architectural Review for Renaissance Phase III and Costco Wholesale including Approval of the project as a Large Master Planned Commercial Development with certain Conditions and Restrictions
- b) Approve Dewey Knight & Associates, Inc. Surveying Ridgeland City Hall Property (304 Highway 51)

2. CONSENT ITEMS

- a) Approve Solid Waste Grant Agreement
- b) Approve Waste Management Recycling Contract One Year Renewal
- c) Approve County Line Road Landscaping Contract with U.S. Lawns
- d) Approve Advertisement for Term Bids for Public Works Department
- e) Accept Donation from the City of Ridgeland Chamber of Commerce for Law Enforcement Appreciation Week
- f) Approve Special Event Permit for 100 Miles of Mayhem
- g) Declare 2009 Dodge Ram as Surplus Property
- h) Declare Glock Handgun as Surplus Property and Authorize Sale to Frank Dillard

- i) Approve Renewal of Lease Agreement with Mag-Ridge Bicycle Motocross
- j) Approve Agreement with City of Canton for Mississippi Championship Hot Air Balloon Festival
- k) Receive May 2016 Privilege License Report
- l) Approve Architecture for Charlie Grainger at Renaissance
- m) Approve Petition to Amend the Subdivision Plat of Gallagher's Pass Subdivision - James E. Poole, Jr. of Empress Properties, LLC, Turner A. Luttrell, and Gallagher's Pass Homeowners Association, Inc.

3. PAYMENT OF CLAIMS

- a) Payment of Claims 130977-131314 and May 27, 2016 Payroll (\$1,516,760.35) with Claim 131174 Removed and Excluding \$5,194.40 Relating to Costco Included In Claim 131238
- b) Payment of Costco Related Charges Contained in Claim 131238 (\$5,194.40)
- c) Payment of Claim 131314 (Yelverton Consulting) \$3,000.00

4. EXECUTIVE SESSION

ADJOURNMENT

INFORMATION FOR MAYOR AND BOARD

CITY ATTORNEY STATEMENT

**MEETING OF THE
MAYOR AND BOARD OF ALDERMAN OF THE
CITY OF RIDGELAND, MISSISSIPPI
May 17, 2016
6:00 PM**

The Mayor opened the second regular May 2016 meeting of the Mayor and Board of Aldermen to order. Present were Mayor Gene F. McGee, Alderman D. I. Smith, Alderman Ken Heard, Alderman Kevin Holder, Alderman Wes Hamlin, Alderman Chuck Gautier, Alderman Brian Ramsey, Alderman Scott Jones, City Attorney Jerry Mills, City Attorney John Scanlon and City Clerk Paula Tierce. The meeting was opened with an invocation by Boy Scout Parker Kyle followed by the pledge of allegiance led by Boy Scout Grayson Edwards.

Mayor McGee announced that Boy Scout Troop 178 from Oakdale Baptist Church was present working on their Citizenship in the Community Badge. Present were: Aiden Connelly, Blake Champney, Nathan Harlan, Conner Hawkins, Grayson Edards, Sawyer McGehee, Will Dear, Harrison Brady, Parker Kyle, Callum Palmer, Cameron Palmer, and Paxton Herndon. Mayor McGee also introduced Scoutmaster Dan Edwards and Scout Leaders John Wakeland, Danny Hawkins, and Patrick Kyle and thanked them for their service to the Boy Scouts.

Next came the recognition of Officer Matthew Witt for being selected Officer of the Month for April 2016. Mayor McGee informed the Board of Aldermen that on April 19, 2016 Officer Matthew Witt took a report of a missing juvenile who was last seen on the doorstep of her residence. During the following week, the juvenile female would call her father from various locations asking him to come get her. The father would immediately rush to these locations to find his daughter nowhere in sight. The juvenile’s father was able to gain access to his daughter’s social media web pages, which he provided to Officer Witt. Upon further investigation, Officer Witt discovered that the juvenile was working as a prostitute in Jackson, MS at a hotel near the fairgrounds. Officer Witt devised a plan, made contact with officers from Jackson Police Department and worked on his day off to bring the juvenile back to her father. Due to Officer Matthew Witt’s dedication and commitment to duty, a missing juvenile was located and returned home safely to her father. Mayor McGee thanked Officer Matthew Witt for a job well done, his dedication to the citizens of Ridgeland, and encouraged him to continue his hard work. Officer Matthew Witt provided a letter of thanks for the Mayor and Board of Aldermen, which is attached hereto as Exhibit “A”.

The Mayor and Board of Aldermen were provided the April 2016 Financial Statement and the May 2016 Sales Tax Report.

Next came the matter of accepting the Minutes of the May 2, 2016 Work Session and the May 3, 2016 Mayor and Board of Aldermen Meeting. The Minutes were accepted with no corrections noted.

Next came consideration of a Petition and Application to Rezone Real Property submitted by Bennett Enterprises/2, LLC on behalf of Smokin South BBQ for their property located at 681 South Pear Orchard, Ridgeland, Madison County, Mississippi. Alderman Scott Jones moved to approve the rezoning of the real property located at 681 South Pear Orchard Road, Ridgeland, Mississippi. The Motion was seconded by Alderman Chuck Gautier and a vote was taken thereon as follows:

Alderman D. I. Smith	Aye
Alderman Ken Heard	Aye
Alderman Chuck Gautier	Aye
Alderman Kevin Holder	Aye
Alderman Brian Ramsey	Aye
Alderman Scott Jones	Aye
Alderman Wes Hamlin	Aye

The Mayor declared the motion carried. A copy of the Ordinance is attached hereto as Exhibit “B”.

Next came the consideration of a Petition and Application for a Conditional Use Permit submitted by Bennett Enterprises/2, LLC on behalf of Smokin South BBQ for the property located at 681 South Pear Orchard, Ridgeland, Madison County, Mississippi. Alderman Brian Ramsey moved to grant the Conditional Use Permit with the provision that the conditional use will run with the business and not with the property and that a site plan be submitted to the Architectural Review Committee for review and approval. The Motion was seconded by Alderman Chuck Gautier and a vote was taken thereon as follows:

Alderman D. I. Smith	Aye
Alderman Ken Heard	Aye
Alderman Chuck Gautier	Aye
Alderman Kevin Holder	Aye
Alderman Brian Ramsey	Aye
Alderman Scott Jones	Aye
Alderman Wes Hamlin	Aye

The Mayor declared the motion carried. A copy of the Ordinance is attached hereto as Exhibit “C”.

Next came the consideration of a Petition and Application for Conditional Use submitted by Keith Brown for the property located at 816 North Agency Lane, Ridgeland, Madison County, Mississippi. Alderman Ken Heard moved to grant the Conditional Use, contingent upon general conformity to the original site plan as attached hereto as Exhibit “D”, for the property located at 816 North Agency Lane, Ridgeland, Madison County, Mississippi. The Motion was seconded by Alderman D. I. Smith and a vote was taken thereon as follows:

Alderman D. I. Smith	Aye
Alderman Ken Heard	Aye
Alderman Chuck Gautier	Aye
Alderman Kevin Holder	Aye
Alderman Brian Ramsey	Aye
Alderman Scott Jones	Aye
Alderman Wes Hamlin	Aye

The Mayor declared the motion carried. A copy of the Ordinance is attached hereto as Exhibit “E”.

Next came the consideration of a Petition and Application for Conditional Use submitted by True Vine Christian Ministries for the property located at 270 Highpoint Drive, Ridgeland, Madison County, Mississippi. Alderman Kevin Holder moved to grant the Conditional Use for the property located at 270 Highpoint Drive, Ridgeland, Madison County, Mississippi. The Motion was seconded by Alderman Brian Ramsey and a vote was taken thereon as follows:

Alderman D. I. Smith	Aye
Alderman Ken Heard	Aye
Alderman Chuck Gautier	Aye
Alderman Kevin Holder	Aye
Alderman Brian Ramsey	Aye
Alderman Scott Jones	Aye
Alderman Wes Hamlin	Aye

The Mayor declared the motion carried. A copy of the Ordinance is attached hereto as Exhibit “F”.

Next came the matter of the items set out on the Consent Agenda. Alderman Chuck Gautier moved to approve the Consent Agenda:

- a) Approve Architectural Improvements for Results Physiotherapy at Renaissance – *Order Attached Hereto As Exhibit “G”*
- b) Approve Architectural Improvements for Soft Surroundings at Renaissance – *Order Attached Hereto As Exhibit “H”*

- c) Designation of Voting Delegate and Alternates for MML 2016 Election of President & 2nd Vice President – *Order Attached Hereto As Exhibit “I”*
- d) Resolution Declaring Property Surplus – *Resolution Attached Hereto As Exhibit “J”*
- e) Resolution Approving Budget Transfers – *Resolution Attached Hereto As Exhibit “K”*
- f) Amended Contract with Southern Financial Services for Collection of Bad Debts – *Order Attached Hereto As Exhibit “L”*
- g) Special Event Permit – Race the Renaissance – *Order Attached Hereto As Exhibit “M”*
- h) Special Event Permit – Heatwave Triathlon – *Order Attached Hereto As Exhibit “N”*
- i) Budget Amendment – MCOPS Grant – *Resolution Attached Hereto As Exhibit “O”*
- j) Approve Colony Park Boulevard Utility Agreement with Entergy – *Order Attached Hereto As Exhibit “P”*
- k) Approve Sole Source Letter for CC Lynch & Associates – *Order Attached Hereto As Exhibit “Q”*
- l) Approve Samuels Lane Well Pay Request #5 DWSIFLF & EPA Reimbursements – *Order Attached Hereto As Exhibit “R”*
- m) Approve Lake Harbour Drive Extension AT&T Utility Reimbursement Agreement – *Order Attached Hereto As Exhibit “S”*
- n) Receive April 2016 Privilege License Report – *Order Attached Hereto As Exhibit “T”*

The Motion was seconded by Alderman D. I. Smith and a vote was taken thereon as follows:

Alderman D. I. Smith	Aye
Alderman Ken Heard	Aye
Alderman Chuck Gautier	Aye
Alderman Kevin Holder	Aye
Alderman Brian Ramsey	Aye
Alderman Scott Jones	Aye
Alderman Wes Hamlin	Aye

The Mayor then declared the Motion carried.

PAYMENT OF CLAIMS

Next came for consideration the payment of claims. Alderman Scott Jones moved that claim numbers 130571 through 130976, with claim number 130595 being removed, and May 13, 2016 Payroll be approved and paid. The Motion was seconded by Alderman D. I. Smith and a vote was taken thereon as follows:

Alderman D. I. Smith	Aye
Alderman Ken Heard	Aye
Alderman Chuck Gautier	Aye
Alderman Kevin Holder	Aye
Alderman Brian Ramsey	Aye
Alderman Scott Jones	Aye
Alderman Wes Hamlin	Aye

The Mayor then declared the Motion carried.

The Mayor then announced the need to go into Closed Session to discuss the need to going into Executive Session to discuss pending and potential litigation. Alderman Brian Ramsey moved to go into Closed Session to discuss the need of going into Executive Session to discuss pending and potential litigation. The Motion was seconded by Alderman Kevin Holder and a vote was taken thereon as follows:

Alderman D. I. Smith	Aye
Alderman Ken Heard	Aye
Alderman Chuck Gautier	Aye
Alderman Kevin Holder	Aye
Alderman Brian Ramsey	Aye
Alderman Scott Jones	Aye
Alderman Wes Hamlin	Aye

The Mayor then declared the Motion carried.

CLOSED SESSION

Alderman Kevin Holder moved to go into Executive Session to discuss pending and potential litigation. The Motion was seconded by Alderman Wes Hamlin and a vote was taken thereon as follows:

Alderman D. I. Smith	Aye
Alderman Ken Heard	Aye
Alderman Chuck Gautier	Aye
Alderman Kevin Holder	Aye
Alderman Brian Ramsey	Aye
Alderman Scott Jones	Aye
Alderman Wes Hamlin	Aye

The Mayor then declared the Motion carried.

The Mayor reopened the meeting and announced that the Board of Aldermen was going into Executive Session to discuss pending and potential litigation.

EXECUTIVE SESSION

(Alderman Brian Ramsey departed the meeting at 7:58 pm)

Alderman Scott Jones moved to leave Executive Session. The Motion was seconded by Alderman Chuck Gautier and a vote was taken thereon as follows:

Alderman D. I. Smith	Aye
Alderman Ken Heard	Aye
Alderman Chuck Gautier	Aye
Alderman Kevin Holder	Aye
Alderman Brian Ramsey	Absent
Alderman Scott Jones	Aye
Alderman Wes Hamlin	Aye

The Mayor then declared the Motion carried.

The Mayor reopened the meeting and announced that no action was taken by the Board of Aldermen during Executive Session.

There being no further business before the Mayor and Board of Aldermen, the Mayor adjourned the meeting at 8:00 pm.

WITNESS MY SIGNATURE, this the _____ day of May, 2016.

GENE F. MCGEE, MAYOR

ATTEST:

PAULA TIERCE, CITY CLERK

**MINUTES OF THE WORK SESSION
OF THE MAYOR AND BOARD OF ALDERMEN
OF THE CITY OF RIDGELAND
MAY 16, 2016
6:00 P.M.**

The Mayor opened the work session of May 16, 2016 of the Mayor and Board of Aldermen. Present were Mayor Gene McGee, Alderman D. I. Smith, Alderman Chuck Gautier, Alderman Scott Jones, Alderman Kevin Holder, Alderman Wes Hamlin, Alderman Brian Ramsey, Alderman Ken Heard, City Attorney Jerry Mills, City Attorney John Scanlon, and City Clerk Paula Tierce.

Theresa Kennedy spoke to the Mayor and Board of Aldermen about her candidacy for House of Representatives, District 72.

The Ridgeland Chamber of Commerce President, John Dorsa, presented Chief John Neal with twelve (12) \$100 gift cards to be presented to officers of the month beginning in October 2016. Samantha Lofton presented a check in the amount of \$5,000 from Barnett's Body Shop to Chief John Neal for the purchase of five (5) tasers. Also present from the Ridgeland Chamber of Commerce was Linda Bynum and Christie Daniels. Linda Bynum also provided the Mayor and Board of Aldermen with a list of activities being held for the Madison County Law Enforcement Appreciation Week, which is May 15 – 21, 2016.

The Mayor presented the proposed agenda, attached hereto as Exhibit "A". Alderman Ken Heard departed the meeting at 6:22 pm. Each item was discussed with no action being taken by the Mayor & Board of Aldermen.

The meeting concluded at 6:22 p.m.

WITNESS MY SIGNATURE, this the _____ day of May, 2016.

Mayor Gene F. McGee

ATTEST:

Paula Tierce, City Clerk

**MINUTES OF A MEETING OF THE ARCHITECTURAL REVIEW BOARD
OF THE CITY OF RIDGELAND, MISSISSIPPI**

A meeting of the Architectural Review Board of the City of Ridgeland, Mississippi, (the "Board"), was duly called, held, and conducted on Tuesday May 24, 2016 at 6:00 o'clock P.M. in the Ridgeland City Hall in the City of Ridgeland, Madison County, Mississippi.

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The following members were present, to-wit:

Bill Dicken, Chairman
Alex Ross
Randy Knouse
Glenn Ray
Connie Suber
Ron Blaylock

Members Absent:

Donald Pendergrast
Tom Bobbitt

Also attending:

Matt Dodd, City Planner
Alan Hart, Director of Community Development
Jerry Mills, City Attorney

The meeting was called to order by Chairman Dicken. Chairman Dicken led the invocation. It was determined by the members present that there was a quorum.

The first item on the agenda was **MED GRILLE**. The project was presented by **Mr. Clay Emerich of Northpark Mall**. The project is located in **Northpark Mall**. The applicant is requesting approval to install a new storefront and awning.

Chairman Dicken opened the floor for a motion. Randy Knouse made a motion to approve the project as a "minor" agenda item. Ron Blaylock seconded the motion and a vote was taken thereon as follows:

Alex Ross	Aye
Tom Bobbitt	Absent
Ron Blaylock	Aye
Donald Pendergrast	Absent
Randy Knouse	Aye
Glenn Ray	Aye
Connie Suber	Aye

Chairman Dicken then declared the motion to approve the project carried.

The second item on the agenda was **MT. CHARITY CHURCH**. The project was presented by **Mr. Brooks** with **Siding with Strength**. The project is located at **954 Lake Harbour Drive**. The applicant is requesting approval to install a new roof and soffit.

Chairman Dicken opened the floor for a motion. Glenn Ray made a motion to approve the project as a “minor” agenda item contingent upon the roof being the ‘burnished slate’ bronze color. Randy Knouse seconded the motion and a vote was taken thereon as follows:

Alex Ross	Aye
Tom Bobbitt	Absent
Ron Blaylock	Aye
Donald Pendergrast	Absent
Randy Knouse	Aye
Glenn Ray	Aye
Connie Suber	Aye

Chairman Dicken then declared the motion to approve the project carried.

The next item on the agenda was **CHARLIE GRAINGERS**. The project was presented by **Mr. Kirk Carraway**. The project is located in the **Renaissance at Colony Park Development**. The applicant is requesting approval to construct an outdoor patio area.

Chairman Dicken opened the floor for a motion. Alex Ross made a motion to approve the project as a “major” agenda item. Ron Blaylock seconded the motion and a vote was taken thereon as follows:

Alex Ross	Aye
Tom Bobbitt	Absent
Ron Blaylock	Aye
Donald Pendergrast	Absent
Randy Knouse	Aye
Glenn Ray	Aye
Connie Suber	Aye

Chairman Dicken then declared the motion to approve the project carried.

The last item on the agenda was **RENAISSANCE PHASE III / COSTCO**. The project was presented by **Mr. Keith O’Keefe, Mrs. Julie Miller, and Mr. Brian Kendell**. The project is located off of **Highland Colony Parkway**. The applicant is requesting approval to construct a new large master planned commercial development.

Following the applicants presentation, Ken Heard, Alderman Ward 1, requested that the Board allow for public comment. Chairman Dicken then opened the meeting for public comment. Gerald Beard, resident of Montrachet voiced concerns regarding the new development. Karen Bush, resident of Greenwood Plantation voiced concerns regarding the new development.

With there being no further public comment, Chairman Dicken opened the floor for a motion. Randy Knouse made a motion to approve the project as a "major" agenda item contingent upon: a) the applicant revising the fuel center canopy to match the architecture of the Costco building by bricking the columns and adding a decorative cap to the canopy; b) the applicant will adjust the berm and landscape along Highland Colony Parkway to ensure better screening of the fuel center and parking lot, the revised plan will be reviewed by Community Development to determine if it is adequately screened; c) Trees located on the church property will be protected and if any are removed during construction will be mitigated and replanted to ensure that a buffer and screen are maintained between the Costco and church property. Ron Blaylock seconded the motion and a vote was taken thereon as follows:

Alex Ross	Aye
Tom Bobbitt	Absent
Ron Blaylock	Aye
Donald Pendergrast	Absent
Randy Knouse	Aye
Glenn Ray	Aye
Connie Suber	Aye

Chairman Dicken then declared the motion to approve the project carried.

The minutes from the May 10, 2016 meeting were then read and approved by the board. There being no further business to come before the board, the meeting was adjourned.

Bill Dicken, Chairman

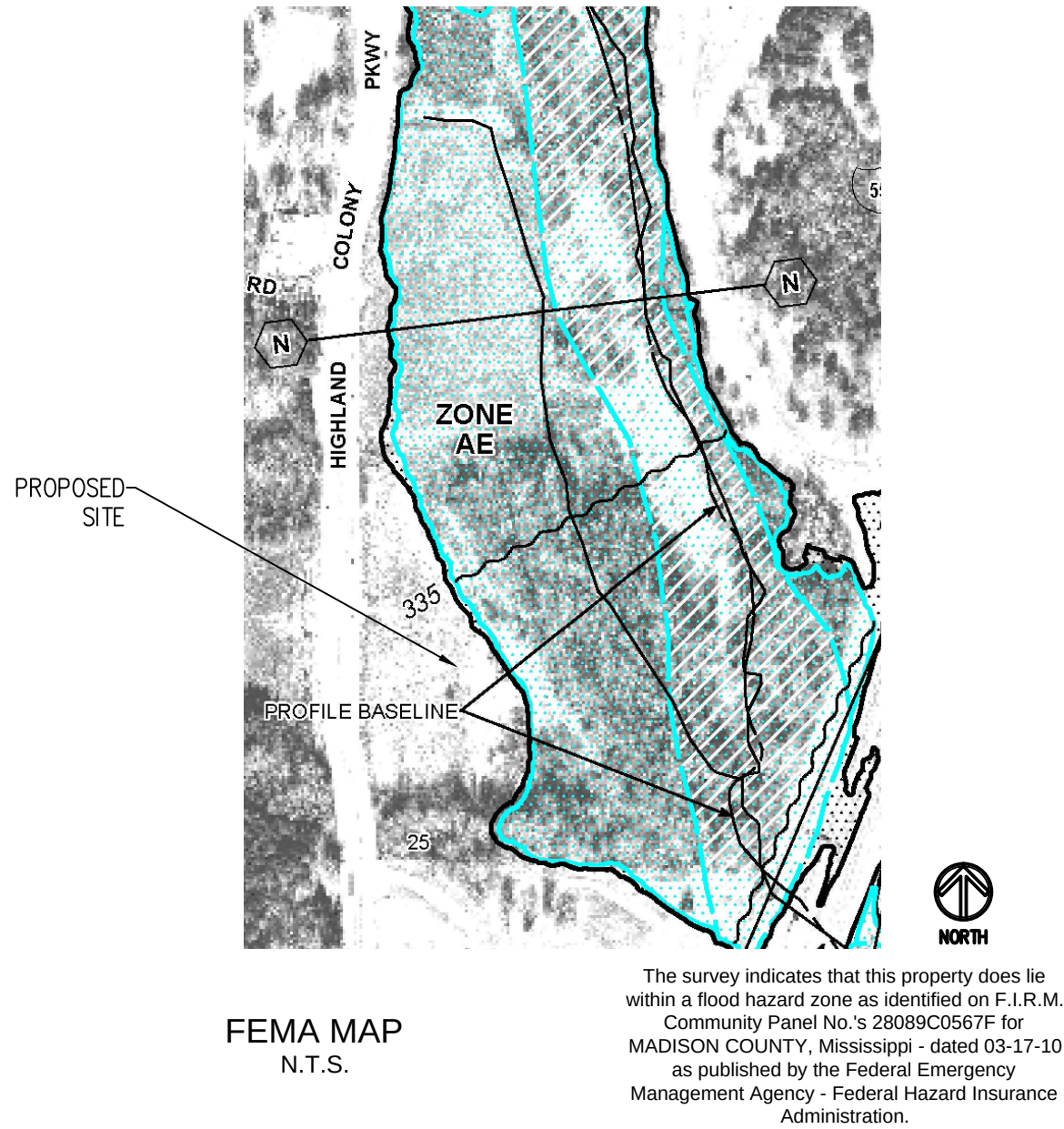
ATTEST:

Connie Suber, Secretary

SITE DEVELOPMENT PLANS

FOR

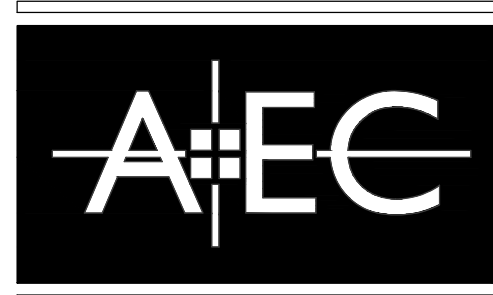
HIGHLAND COLONY PARKIWAY
RIDGELAND, MS



DEVELOPER(S):
RENAISSANCE PHASE III, LLC
COSTCO WHOLESALE CORPORATION

[illegible]

ENGINEER:



Civil Engineering	Water Resources
Land Planning	Property Services
Landscape Architecture	Arborist Services

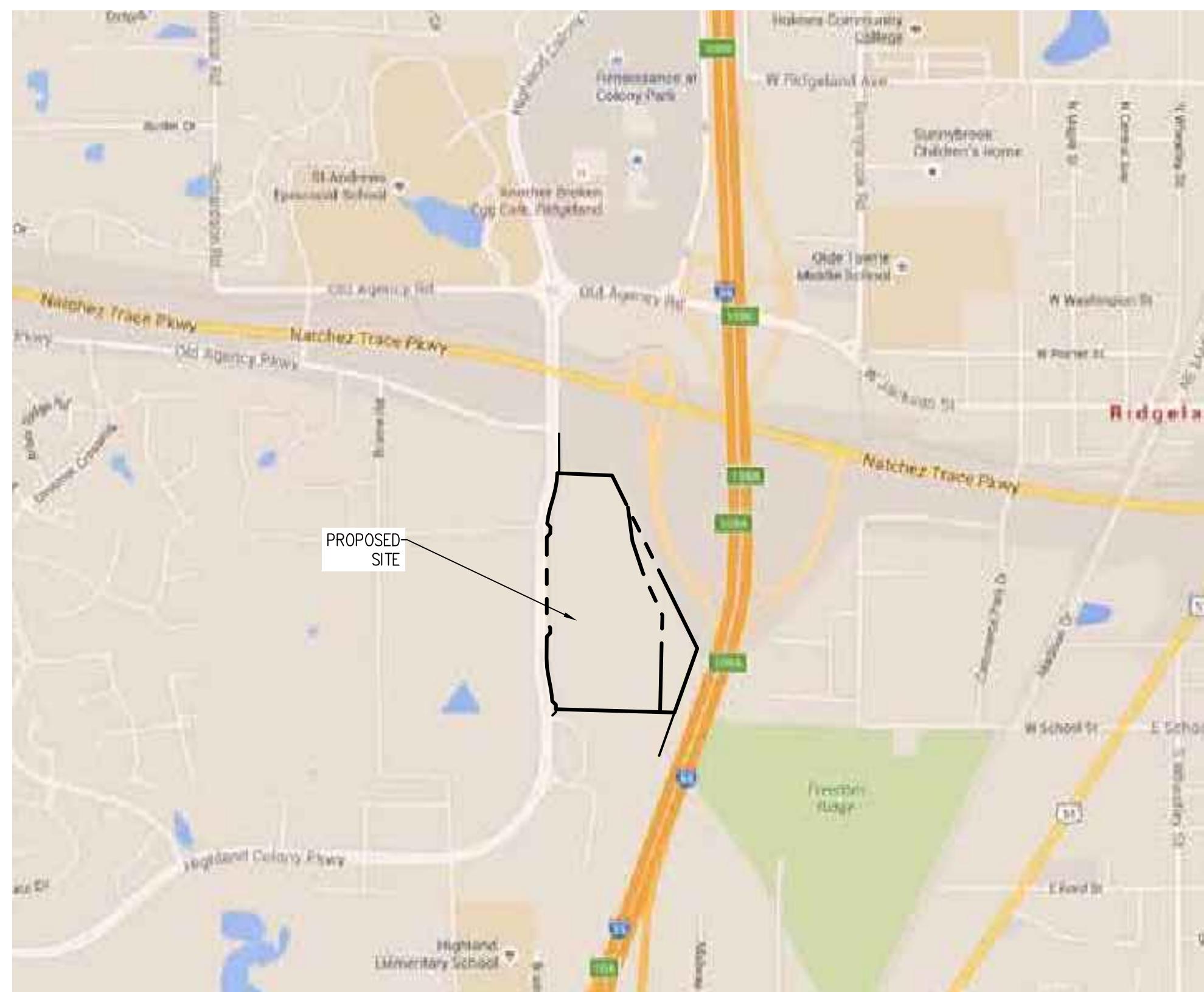
50 Warm Springs Circle
Roswell • Georgia • 30075
(770)641-1942 • www.aecat1.com



ENGINEERING CONTACT: JULIA MILLER, P.E.
PHONE: (770) 641-1942
AEC JOB # 14-3602

ENGINEERING CONTACT: DANNY RYALS, P.E.
PHONE: (601) 898-3358

INITIAL SUBMITTAL: 05-17-2016
REVISED SUBMITTAL: 05-24-2016
REVISED SUBMITTAL: 06-01-2016



LOCATION MAP (1" = 1000')



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A0.2	RENAISSANCE AT COLONY PARK PHASE 3 PHASING PLAN - ALTERNATE
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C2.0b	ALTA+ACSM BOUNDARY SURVEY (2 OF 3)
C2.0c	ALTA+ACSM BOUNDARY SURVEY (3 OF 3)
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C3.0	SITE DEMOLITION PLAN
C4.0	OVERALL SITE LAYOUT
C4.1	SITE LAYOUT PLAN
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CD1.2	CONSTRUCTION DETAILS
CD2.0	UTILITY DETAILS
CD2.1	UTILITY DETAILS
CD2.2	UTILITY DETAILS
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CL2.0	OVERALL LANDSCAPE PLAN
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CL2.2	LANDSCAPE ENLARGEMENT PLAN
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R1.3	SITE GRADING AND DRAINAGE PLAN
R1.4	SITE GRADING AND DRAINAGE PLAN
R2.0	EAST GABION WALL PLAN AND PROFILE
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R4.0	WEIR WALL PLAN AND WEIR WALL DETAILS
R5.0	SANITARY SEWER CASING PLAN AND PROFILE
R6.0	EASEMENTS

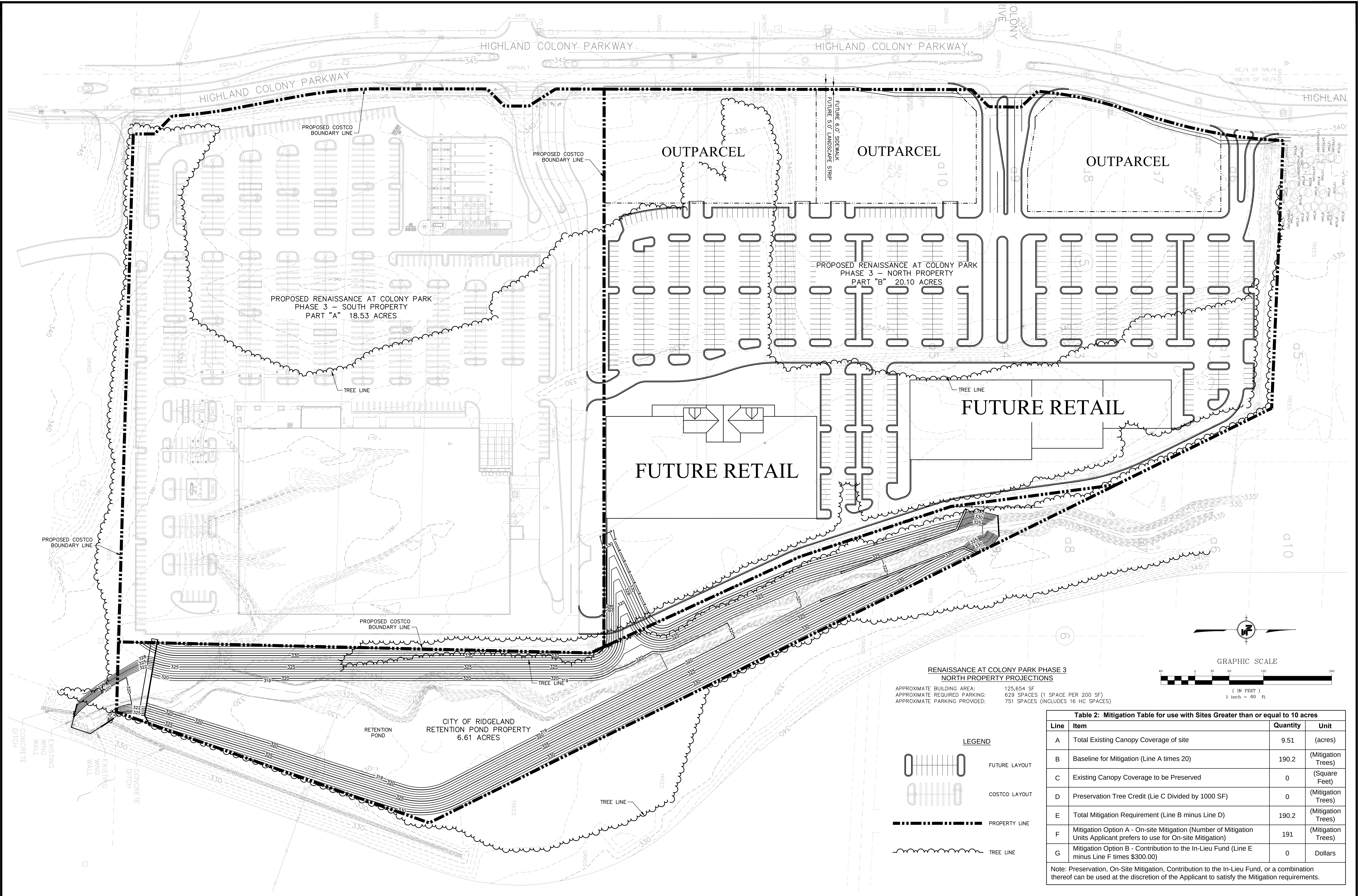
COVER

[illegible]

AEC JOB #: 14-3686.00
CIVIL DRAWN BY: JWM
CIVIL DESIGNED BY: JWM/MDV
LANDSCAPE DRAWN BY: JAP
LANDSCAPE DESIGNED BY: SLR
CHECK BY: CJF
DATE: 05-17-16

SHEET NUMBER

CI.0



RENAISSANCE AT COLONY PARK PHASE 3
NORTH PROPERTY PROJECTIONS

APPROXIMATE BUILDING AREA: 125,654 SF
APPROXIMATE REQUIRED PARKING: 629 SPACES (1 SPACE PER 200 SF)
APPROXIMATE PARKING PROVIDED: 751 SPACES (INCLUDES 16 HC SPACES)

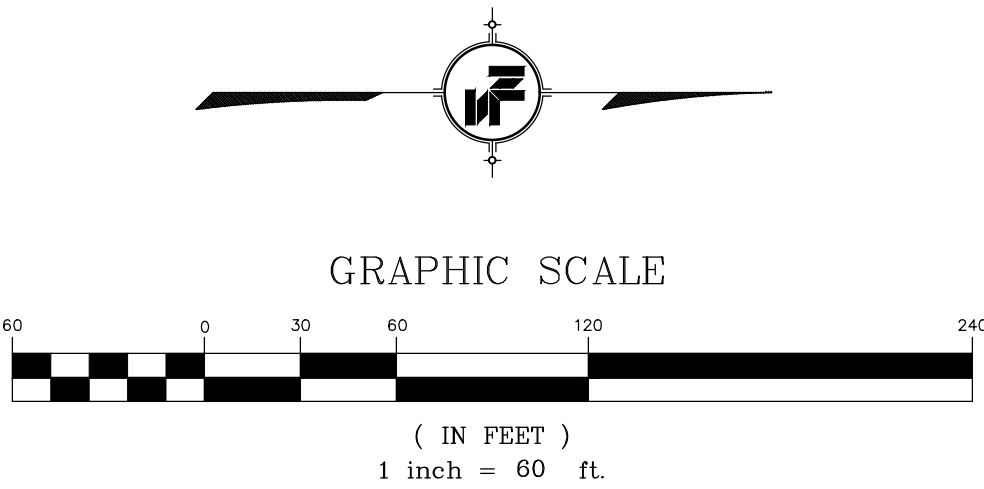


Table 2: Mitigation Table for use with Sites Greater than or equal to 10 acres			
Line	Item	Quantity	Unit
A	Total Existing Canopy Coverage of site	9.51	(acres)
B	Baseline for Mitigation (Line A times 20)	190.2	(Mitigation Trees)
C	Existing Canopy Coverage to be Preserved	0	(Square Feet)
D	Preservation Tree Credit (Lie C Divided by 1000 SF)	0	(Mitigation Trees)
E	Total Mitigation Requirement (Line B minus Line D)	190.2	(Mitigation Trees)
F	Mitigation Option A - On-site Mitigation (Number of Mitigation Units Applicant prefers to use for On-site Mitigation)	191	(Mitigation Trees)
G	Mitigation Option B - Contribution to the In-Lieu Fund (Line E minus Line F times \$300.00)	0	Dollars
Note: Preservation, On-Site Mitigation, Contribution to the In-Lieu Fund, or a combination thereof can be used at the discretion of the Applicant to satisfy the Mitigation requirements.			

NOTICE TO DRAWING HOLDER

NEEL-SCHAFFER, INC., HERINAFTER REFERRED TO AS THE ENGINEER, HAS PREPARED AND FURNISHED THIS DRAWING TO THE OWNER FOR USE ON THIS PROJECT ONLY. THIS DRAWING SHOULD NOT BE USED ON EXTENSIONS OF THIS PROJECT OR ON ANY OTHER PROJECT. ANY REUSE OF THIS DRAWING, WITHOUT WRITTEN VERIFICATION OR ADAPTION BY THE ENGINEER, SHALL BE AT THE REUSER'S SOLE RISK AND THE REUSER SHALL INDEMNIFY AND HOLD HARMLESS THE ENGINEER FROM ALL CLAIMS, DAMAGES, LOSSES AND EXPENSES, INCLUDING ATTORNEY'S FEES ARISING OUT OF OR RESULTING THEREFROM.

REVISIONS			DESCRIPTION
NO.	DATE	BY	
	05/24/16	DMR	REVISED PER CITY COMMENTS
	06/01/16	DMR	REVISED PER CITY COMMENTS

DRAWING INFORMATION	
N-S PROJECT NO.: NS.12665.001	
FILENAME: 12665-Phasing.dwg	
SCALE: 1" = 60'	
SURVEYED BY: MapTech, Inc.	
DSGN: D.M.R.	DATE: 05/20/16
DRWN: C.A.J.	DATE: 06/20/16
CHKD: D.M.R.	DATE: 06/20/16
QA/QC: ---	DATE: ---/2016

RENAISSANCE at COLONY PARK

PHASE 3

RIDGELAND, MISSISSIPPI

SEAL:

NEEL-SCHAFFER

Solutions you can build upon

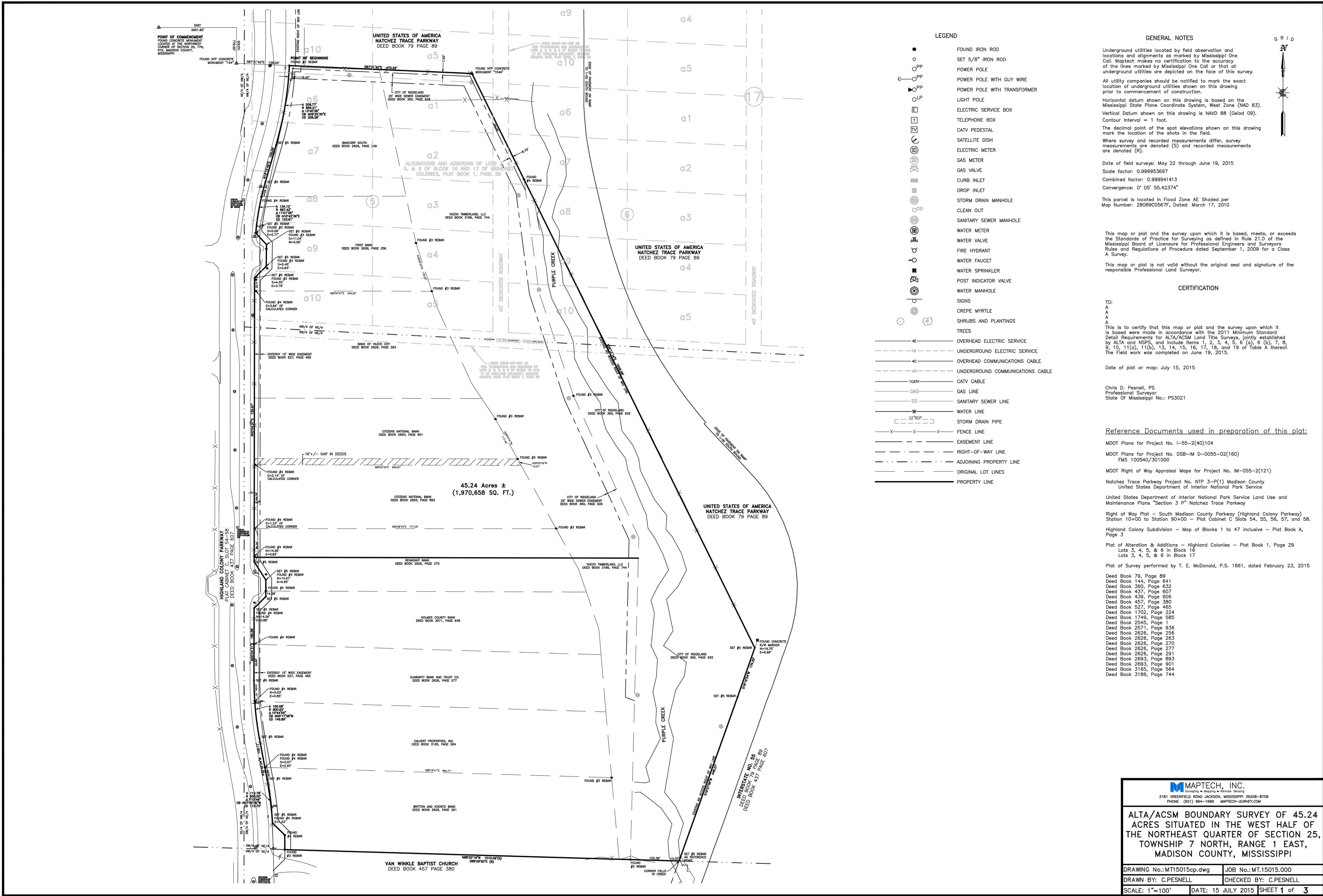
RENAISSANCE AT COLONY PARK

PHASE 3

PHASING PLAN

WORKING NUMBER: A0.1

DRAWING NUMBER: A0.1



EAST
2691.85'

POINT OF COMMENCEMENT
FOUND CONCRETE MONUMENT
LOCATED AT THE NORTHWEST
CORNER OF SECTION 25, T7N,
R1E, MADISON COUNTY,
MISSISSIPPI

FOUND NTP CONCRETE
MONUMENT "154"

S87°31'40"E 136.00'

POINT OF BEGINNING
FOUND #3 REBAR

UNITED STATES OF AMERICA
NATCHEZ TRACE PARKWAY
DEED BOOK 79 PAGE 89

S87°31'40"E 470.29'

FOUND NTP CONCRETE
MONUMENT "154A"

ROAD RIGHT-OF-WAY AS
PER "ALTERATIONS AND ADDITIONS OF
LOTS 3, 4, 5, & 6 OF BLOCK 16 AND
17 OF HIGHLAND COLONIES", MADISON
COUNTY, MISS, PLAT BOOK 1, PAGE 29

EDGE OF PAVEMENT ON RAMP
TO I-55 SOUTH BOUND

NE/4 OF NW/4

NW/4 OF NE/4

NE/4 OF NW/4

NW/4 OF NE/4

NE/4 OF NW/4

NW/4 OF NE/4

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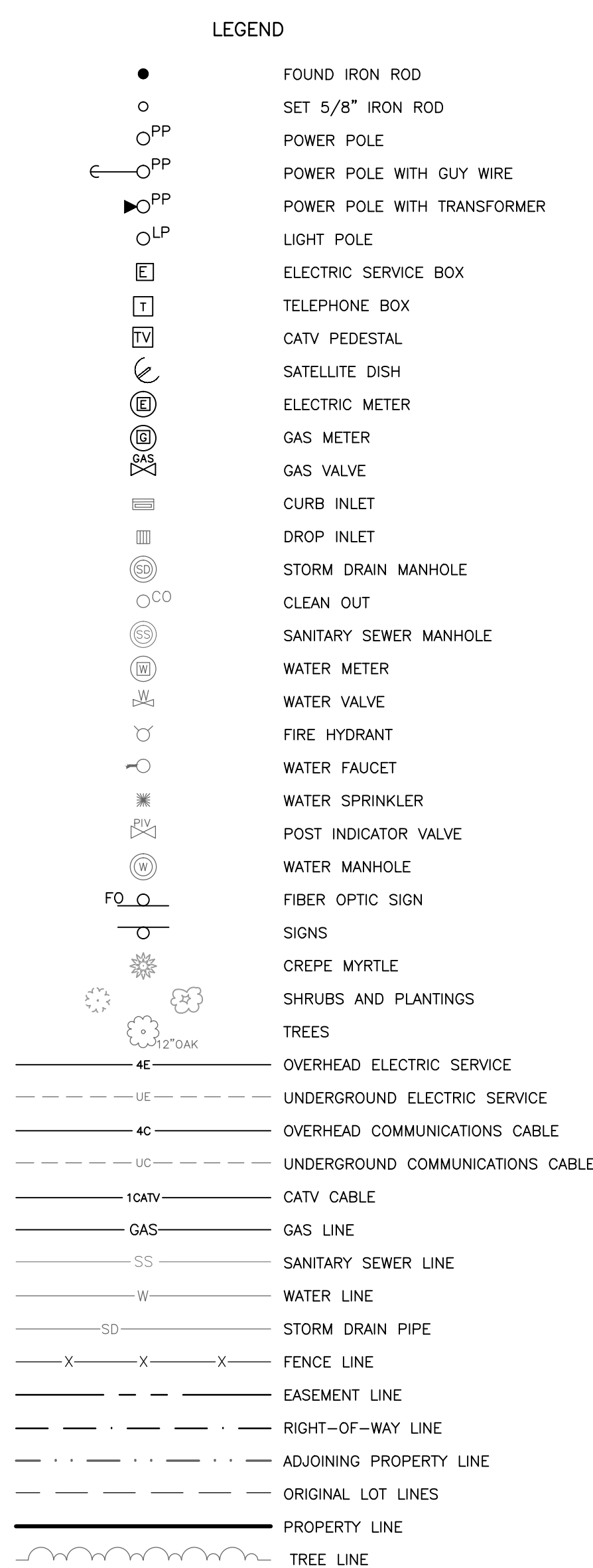
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NW





Underground utilities located by field observation and locations and alignments as marked by Mississippi One Call. Maptech makes no certification to the accuracy of the lines marked by Mississippi One Call or that all underground utilities are depicted on the face of this survey.

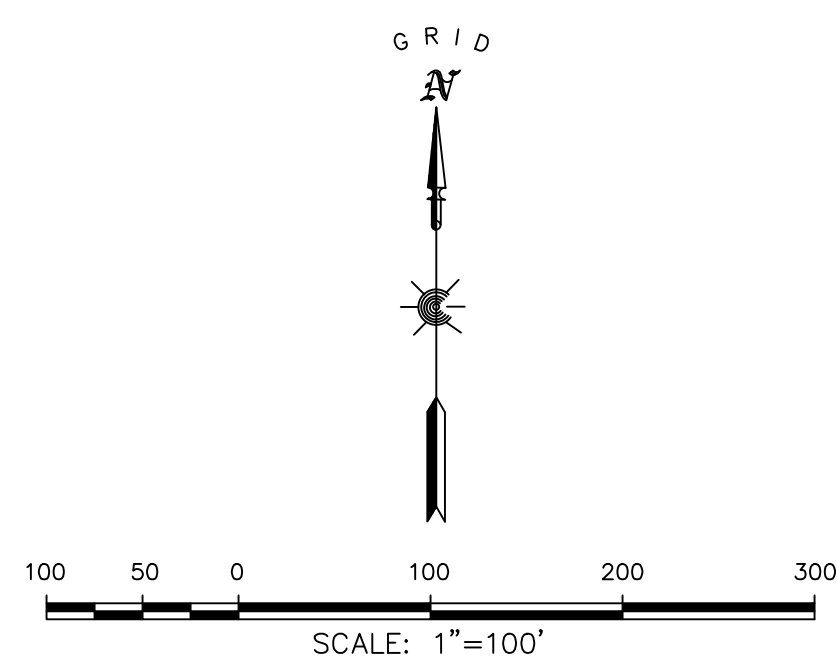
All utility companies should be notified to mark the exact location of underground utilities shown on this drawing prior to commencement of construction.

Horizontal datum shown on this drawing is based on the Mississippi State Plane Coordinate System, West Zone (NAD 83)

Vertical Datum shown on this drawing is NAVD 88 based on

Contour Interval = 1 foot.

Date of field surveys: June 2015



 MMPAPEX, INC. <i>Surveying • Mapping • Aerial Services</i>	
3181 GREENFIELD ROAD JACKSON, MISSISSIPPI 39208-8706 PHONE (601) 684-1666 MAPINFO@MMPAPEX.COM	
EXISTING TOPOGRAPHIC MAPPING OF A 45.24 ACRE SITE AT RENAISSANCE PHASE 3, SECTION 25, TOWNSHIP 7 NORTH, RANGE 1 EAST, MADISON COUNTY, MS	
DRAWING NO.: C2.1	JOB NO.: MT.15015.000
DRAWN BY: T.HANEY	CHECKED BY: C.PESNEL
SCALE: 1" = 100'	DATE: JUNE 2015 SHEET 1 of 1



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CORPORATION

ENGINEER:



ENGINEERS SEAL:



REC JOB #: 14-3686.00
CIVIL DRAWN BY: JWM
CIVIL DESIGNED BY: JWM/MDV
LANDSCAPE DRAWN BY: JAP
LANDSCAPE DESIGNED BY: SLR
CHECK BY: CJF
DATE: 05-17-16

C3.0



*NOTE: THE DEVELOPER IS MAKING AN APPLICATION FOR APPROVAL AS A "LARGE MASTER PLANNED COMMERCIAL DEVELOPMENT".



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CORPORATION

ENGINEER:



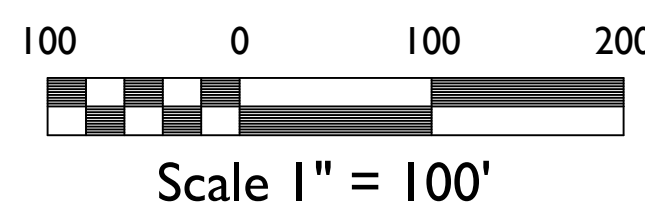
ENGINEERS SEAL:

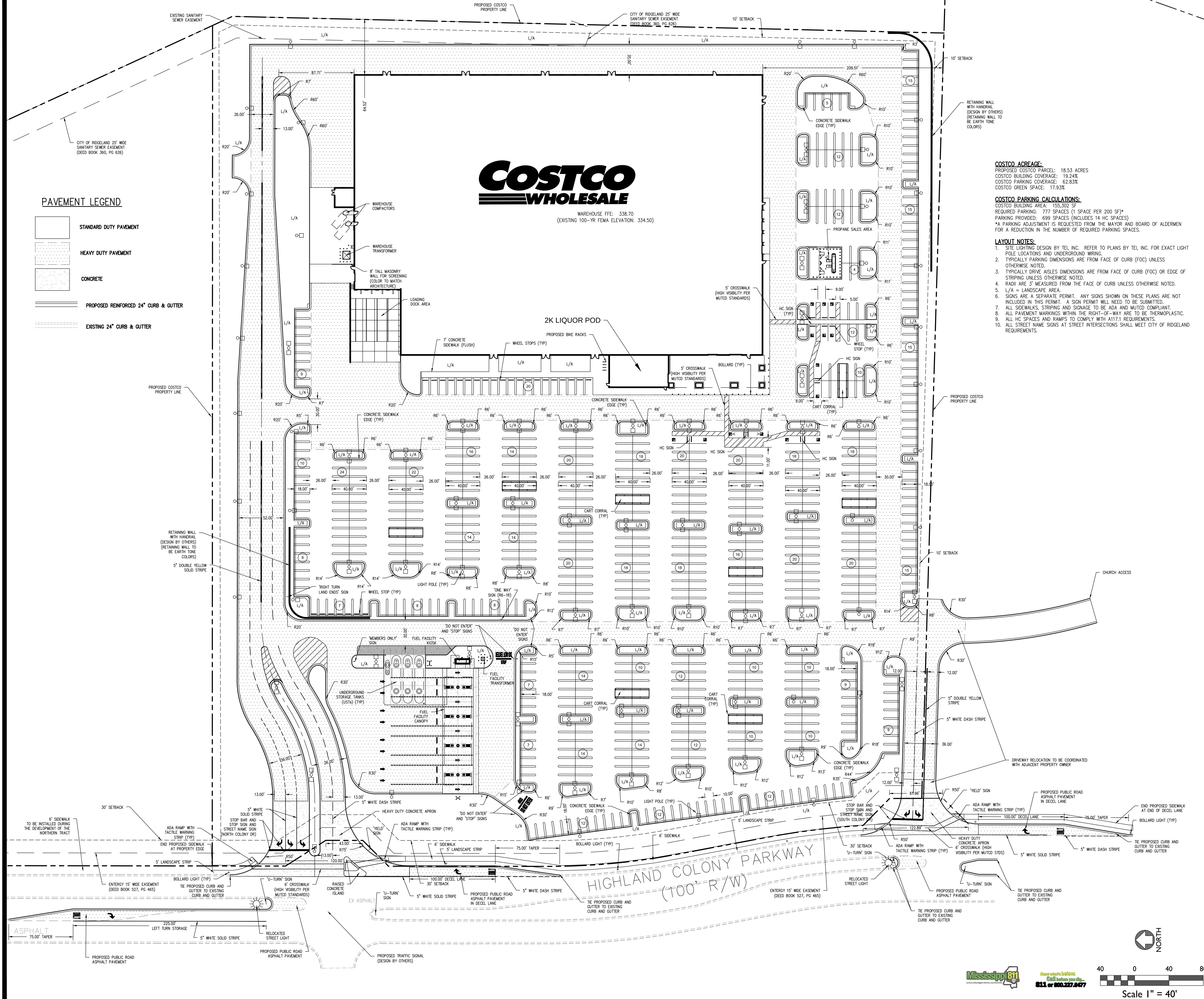


L:\14-3686 Costco Ridgeland MS\Civil\14-3686 Costco Ridgeland MS - C01.dwg, 6/3/2016 4:11:44 PM, jlw, 1:1

SHEET NUMBER

C4.0





PAVEMENT LEGEND

- STANDARD DUTY PAVEMENT
- HEAVY DUTY PAVEMENT
- CONCRETE
- PROPOSED REINFORCED 24" CURB & GUTTER
- EXISTING 24" CURB & GUTTER



WAREHOUSE FFE: 338.70
(EXISTING 100-YR FEMA ELEVATION: 334.50)

- COSTCO ACREAGE:**
PROPOSED COSTCO PARCEL: 18.53 ACRES
COSTCO BUILDING COVERAGE: 19.24%
COSTCO PARKING COVERAGE: 62.83%
COSTCO GREEN SPACE: 17.93%
- COSTCO PARKING CALCULATIONS:**
COSTCO BUILDING AREA: 155,302 SF
REQUIRED PARKING: 777 SPACES (1 SPACE PER 200 SF)*
PARKING PROVIDED: 699 SPACES (INCLUDES 14 HC SPACES)
*A PARKING ADJUSTMENT IS REQUESTED FROM THE MAYOR AND BOARD OF ALDERMEN FOR A REDUCTION IN THE NUMBER OF REQUIRED PARKING SPACES.
- LAYOUT NOTES:**
1. SITE LIGHTING DESIGN BY TEL, INC. REFER TO PLANS BY TEL, INC. FOR EXACT LIGHT POLE LOCATIONS AND UNDERGROUND WIRING.
2. TYPICALLY PARKING DIMENSIONS ARE FROM FACE OF CURB (FOC) UNLESS OTHERWISE NOTED.
3. TYPICALLY DRIVE AISLES DIMENSIONS ARE FROM FACE OF CURB (FOC) OR EDGE OF STRIPING UNLESS OTHERWISE NOTED.
4. RADI ARE 3' MEASURED FROM THE FACE OF CURB UNLESS OTHERWISE NOTED.
5. SIGNS ARE A SEPARATE PERMIT. ANY SIGNS SHOWN ON THESE PLANS ARE NOT INCLUDED IN THIS PERMIT. A SIGN PERMIT WILL NEED TO BE SUBMITTED.
6. ALL SIDEWALKS, STRIPING AND SIGNAGE TO BE ADA AND MUTCD COMPLIANT.
7. ALL PAVEMENT MARKINGS WITHIN THE RIGHT-OF-WAY ARE TO BE THERMOPLASTIC.
8. ALL HC SPACES AND RAMPS TO COMPLY WITH #117.1 REQUIREMENTS.
9. ALL STREET NAME SIGNS AT STREET INTERSECTIONS SHALL MEET CITY OF RIDGELAND REQUIREMENTS.



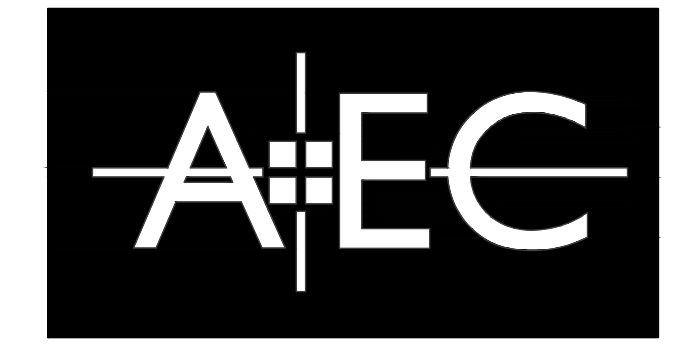
Ridgeland, MS

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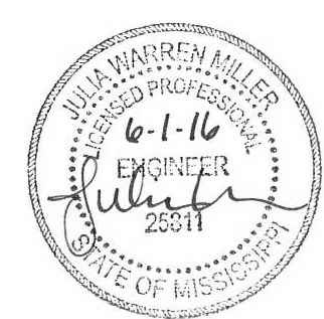


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SITE LAYOUT PLAN

DATE	DESCRIPTION
05/24/16	REVISED PER CITY COMMENTS
06/01/16	REVISED PER CITY COMMENTS

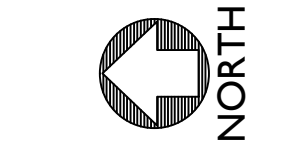
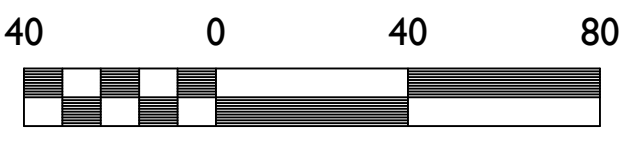
AEC JOB #: 14-3686.00
CIVIL DRAWN BY: JWM
CIVIL DESIGNED BY: JWM/MDV
LANDSCAPE DRAWN BY: JAP
LANDSCAPE DESIGNED BY: SLR
CHECK BY: CJF
DATE: 05-17-16

SHEET NUMBER

C4.I



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Scale 1" = 40'



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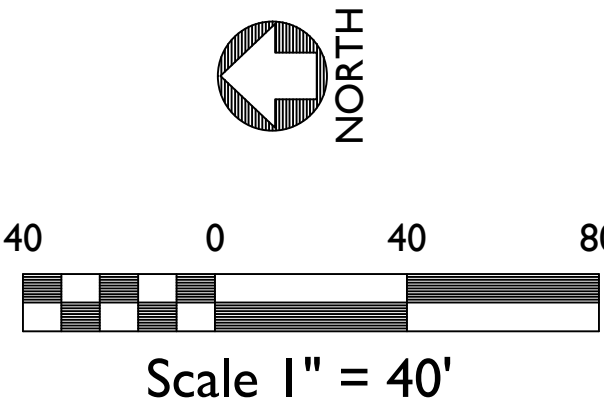
AEC JOB #: 14-3686.00
CIVIL DRAWN BY: JWM
CIVIL DESIGNED BY: J
LANDSCAPE DRAWN B
LANDSCAPE DESIGNED
CHECK BY: CJF
DATE: 05-17-16

SHEET NUMBER

C5.0



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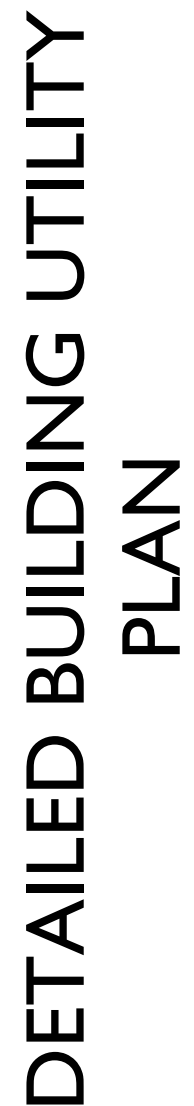
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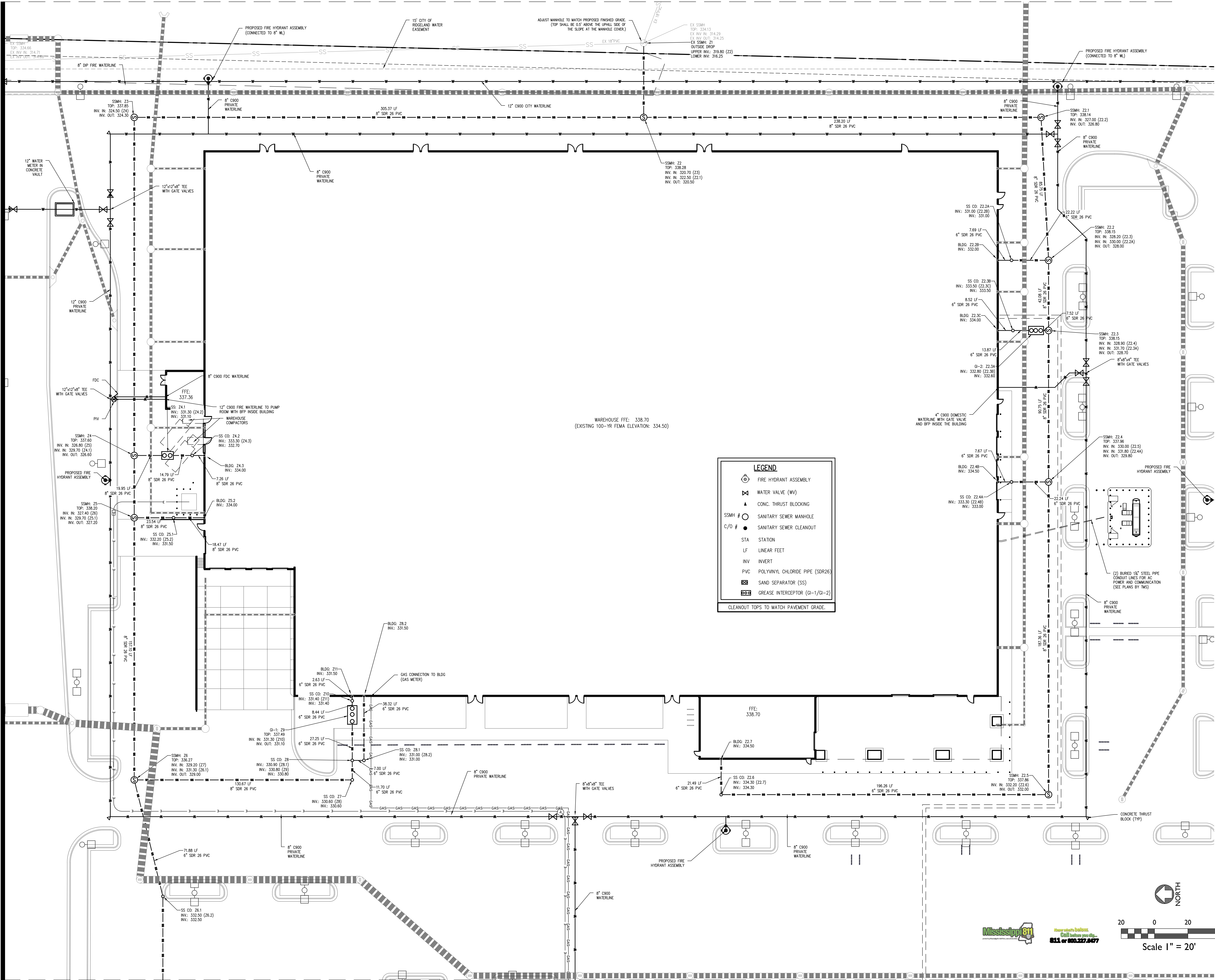
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05/24/16	REVISED PER CITY COMMENTS
06/01/16	REVISED PER CITY COMMENTS

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LANDSCAPE DESIGNED BY: SLR
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SHEET NUMBER

C5.1





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DETAILED FUEL FACILITY UTILITY PLAN

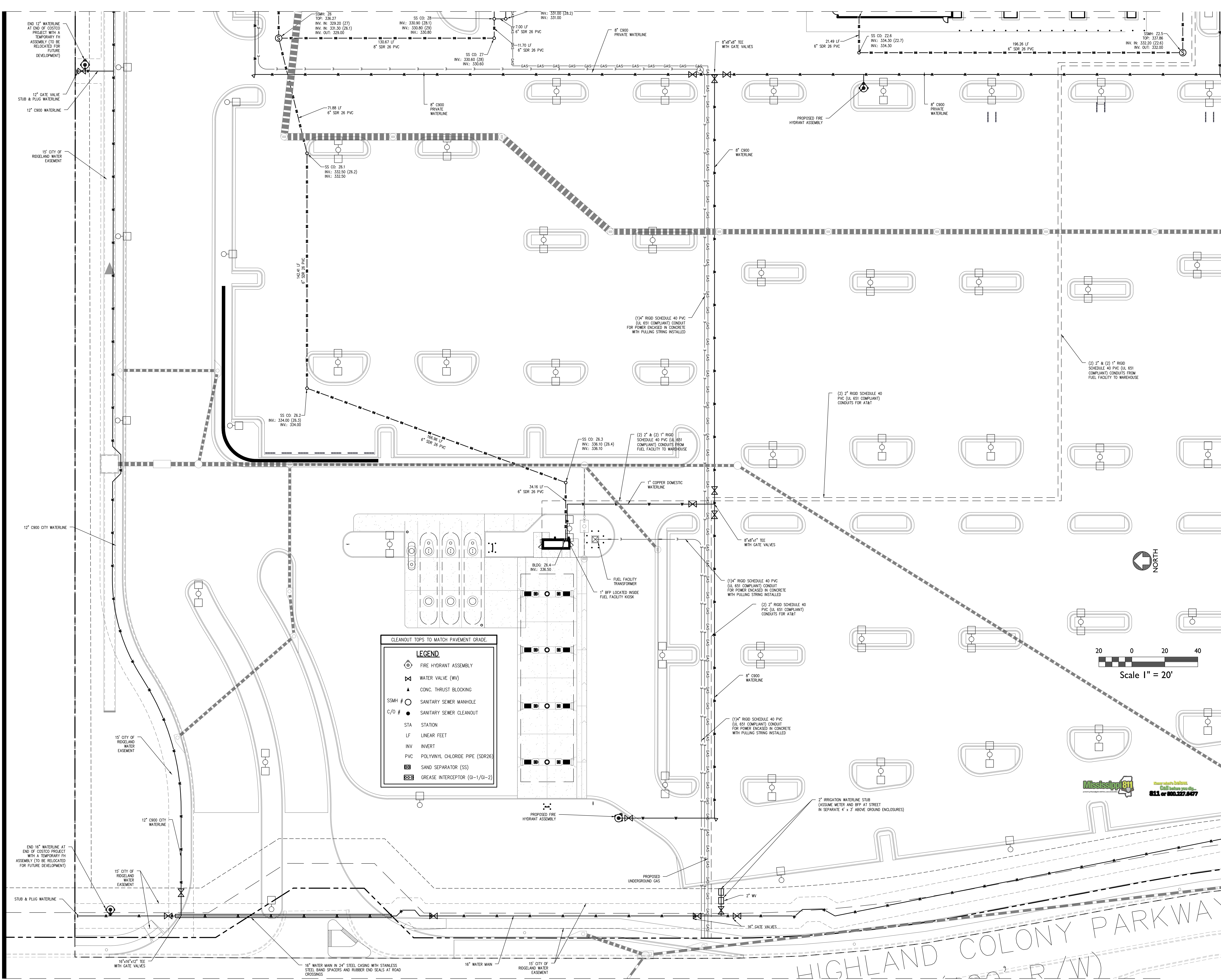
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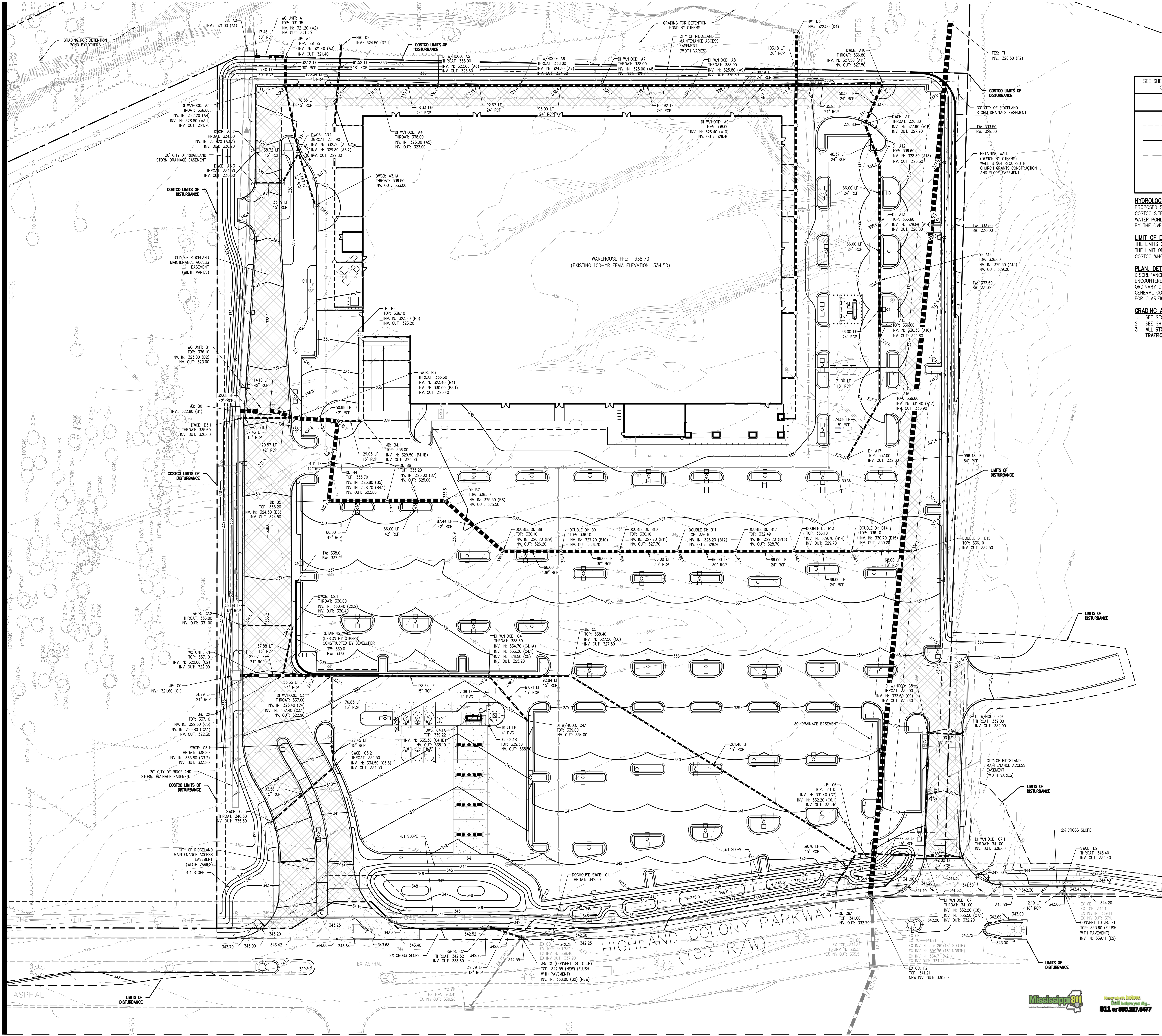
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06/01/16	REVISED PER CITY COMMENTS

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CIVIL DRAWN BY: JWM
CIVIL DESIGNED BY: JWM/MDV
LANDSCAPE DRAWN BY: JAP
LANDSCAPE DESIGNED BY: SLR
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DATE: 05-17-16

SHEET NUMBER

C5.2





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**SITE GRADING AND DRAINAGE
PLAN**

DATE	DESCRIPTION
05/24/16	REVISED PER CITY COMMENTS
06/01/16	REVISED PER CITY COMMENTS

AEC JOB #: 14-3686.00
CIVIL DRAWN BY: JMM
CIVIL DESIGNED BY: JMM/MJV
LANDSCAPE DRAWN BY: JAP
LANDSCAPE DESIGNED BY: SLR
CHECK BY: CJF
DATE: 05-17-16

SHEET NUMBER

C6.0

SEE SHEET C6.1 AND C6.2 FOR DETAILED STORM CONNECTIONS FOR BUILDING/FUEL

GRADING LEGEND

- EXISTING CONTOUR
- COSTCO PROPOSED CONTOUR
- LIMITS OF DISTURBANCE

HYDROLOGY NOTE:
PROPOSED STORMWATER MANAGEMENT FOR THE PROPOSED COSTCO SITE WILL BE PROVIDED BY ONE (1) COMMON STORM WATER POND, LOCATED OFFSITE TO THE EAST, AND CONSTRUCTED BY THE OVERALL DEVELOPER.

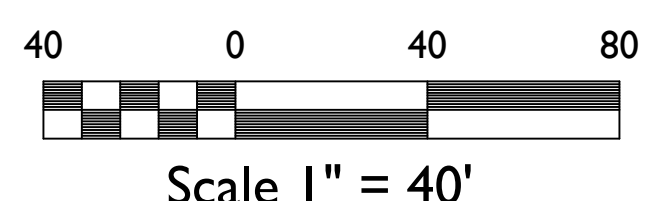
LIMIT OF DISTURBANCE NOTE:
THE LIMITS OF DISTURBANCE SHOWN ON THIS PLAN REPRESENTS THE LIMIT OF THE LAND DISTURBANCE PERMIT (LDP) FOR THE COSTCO WHOLESALE AND ITS ASSOCIATED INFRASTRUCTURE.

PLAN, DETAIL, AND PROFILE NOTES:
DISCREPANCIES BETWEEN PLAN AND PROFILES MAY BE ENCOUNTERED. IF A DISCREPANCY OR INFORMATION OUT OF THE ORDINARY OCCURS ON ANY PLANS, PROFILES OR DETAILS THE GENERAL CONTRACTOR IS TO CONTACT THE PROJECT ENGINEER FOR CLARIFICATION PRIOR TO ANY INSTALLATION.

GRADING AND STORM DRAINAGE NOTES:
1. SEE STORM GRATE DETAIL. MAXIMUM GRATE OPENING IS 1".
2. SEE SHEETS CD3.0-CD3.1 FOR STORM DRAINAGE DETAILS.
3. ALL STORM CLEAN OUTS WITHIN PAVEMENT AREAS TO HAVE TRAFFIC RATED BOXES.



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DETAILED BUILDING GRADING
AND DRAINAGE PLAN

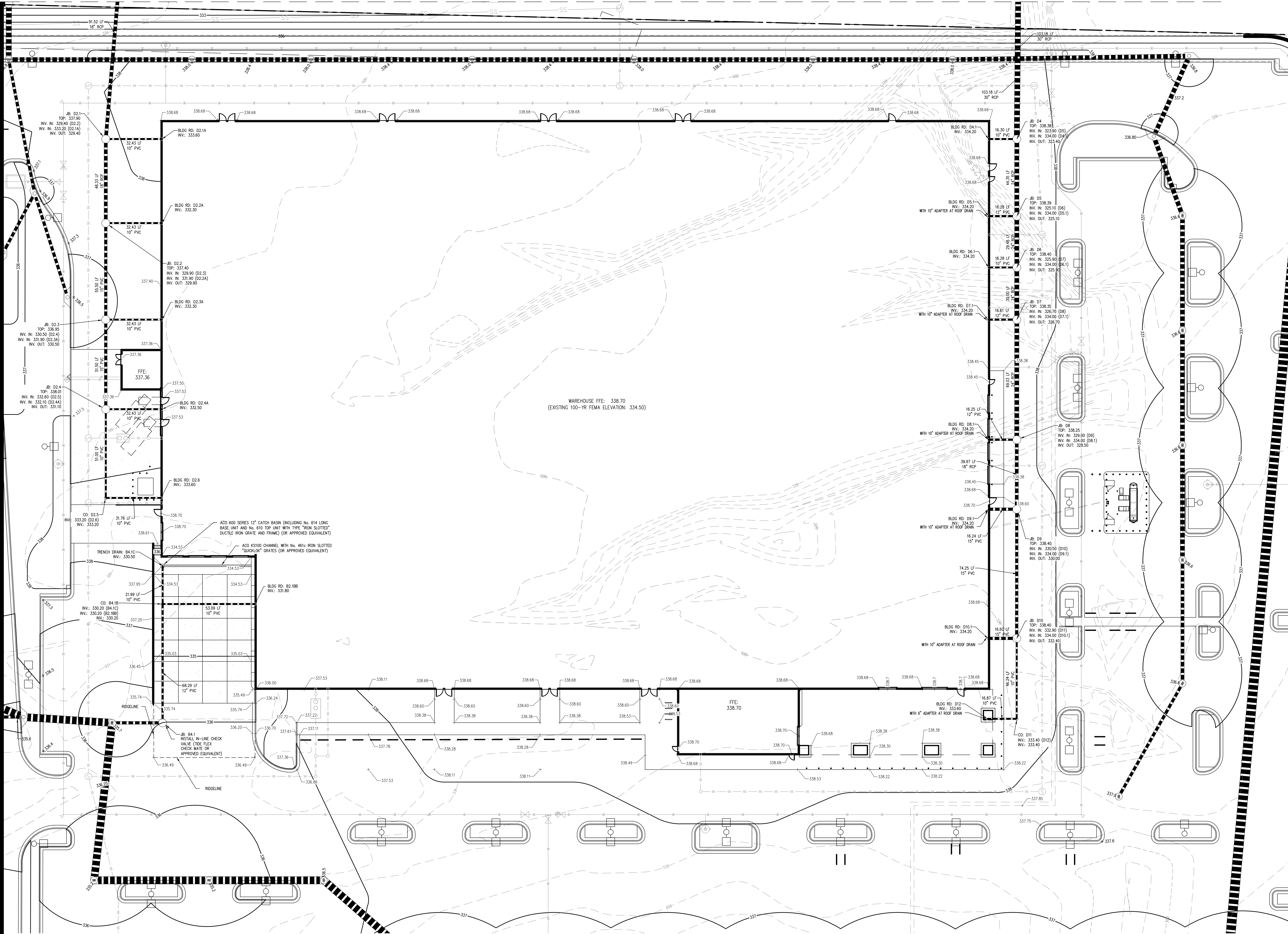
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	06/01/16	REVISED PER CITY COMMENTS

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CIVIL DESIGNED BY: JWM/MDV
LANDSCAPE DRAWN BY: JAP
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SHEET NUMBER

C6.I



Scale 1" = 20'



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DETAILED FUEL FACILITY GRADING AND DRAINAGE PLAN

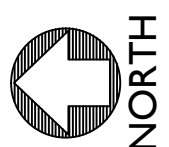
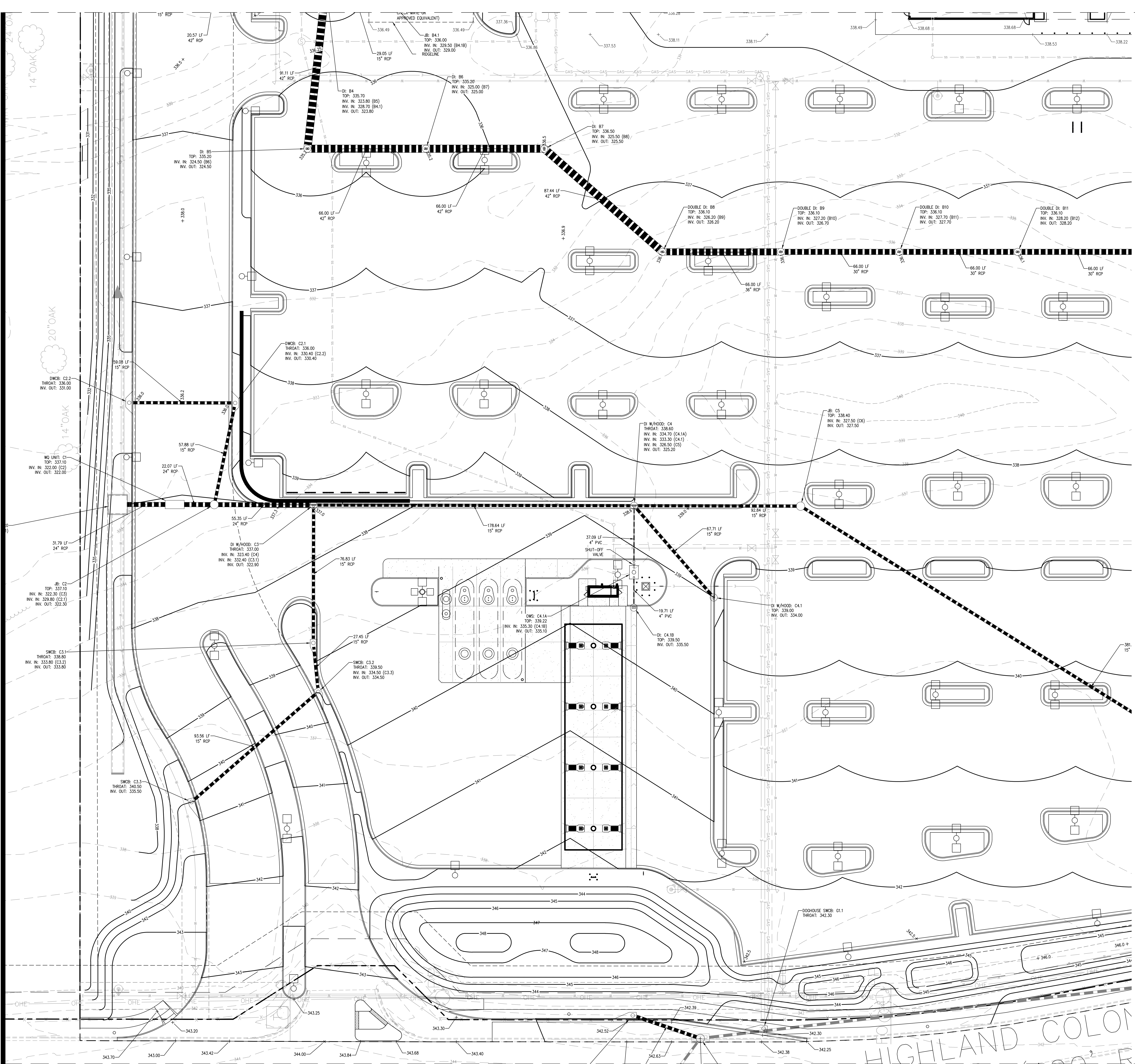
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CIVIL DRAWN BY: JWM
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LANDSCAPE DRAWN BY: JAP
LANDSCAPE DESIGNED BY: SLR
CHECK BY: CJF
DATE: 05-17-16

SHEET NUMBER

C6.2



Scale 1" = 20'

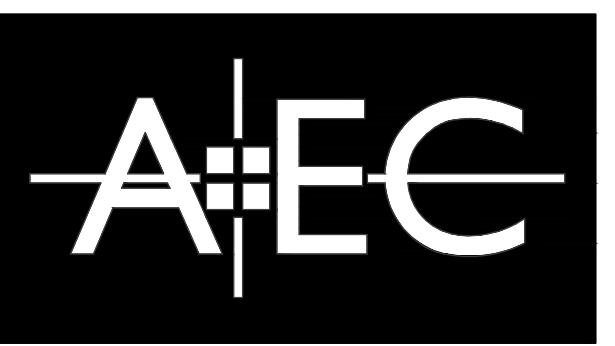
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SITE EROSION CONTROL PLAN - PHASE I

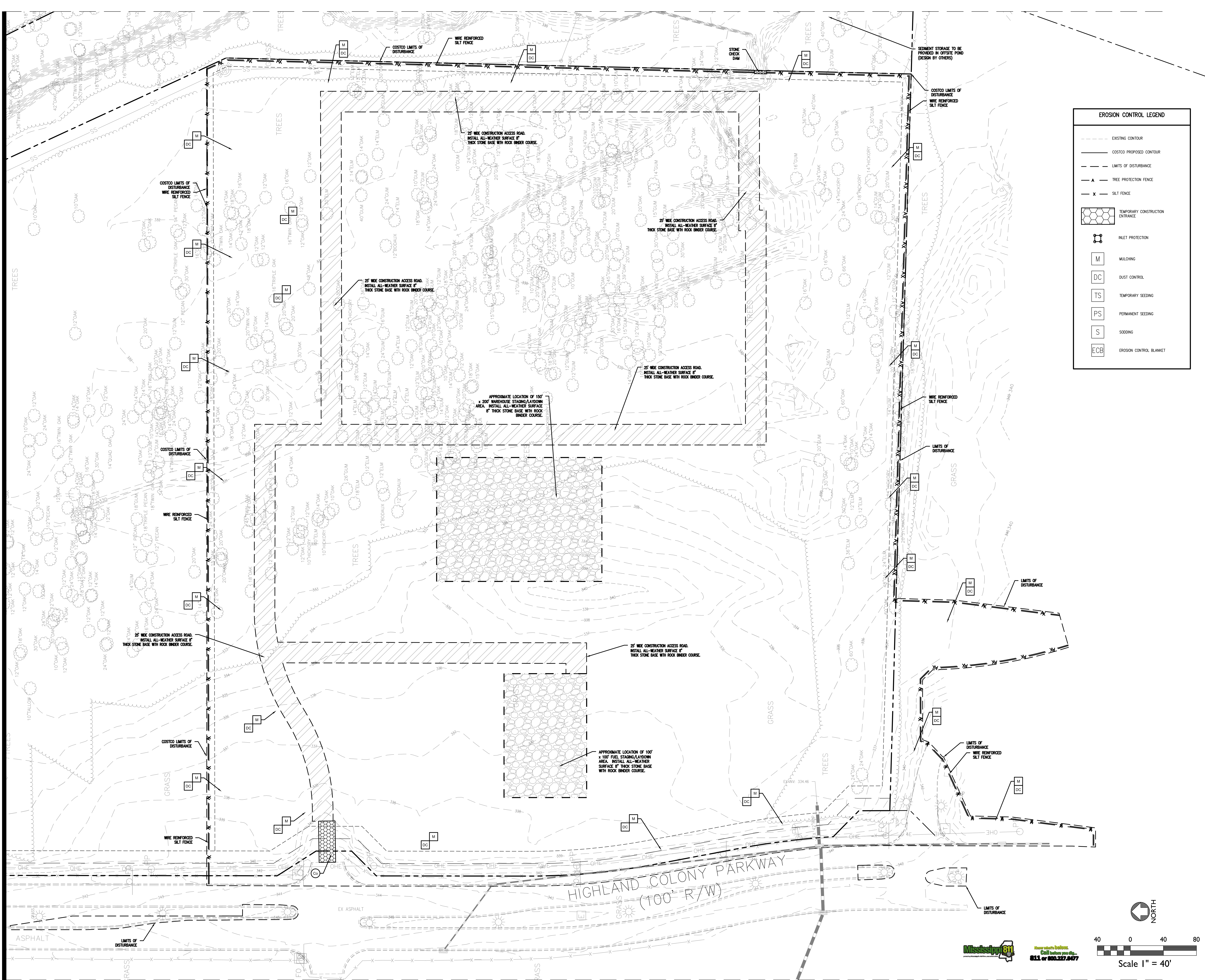
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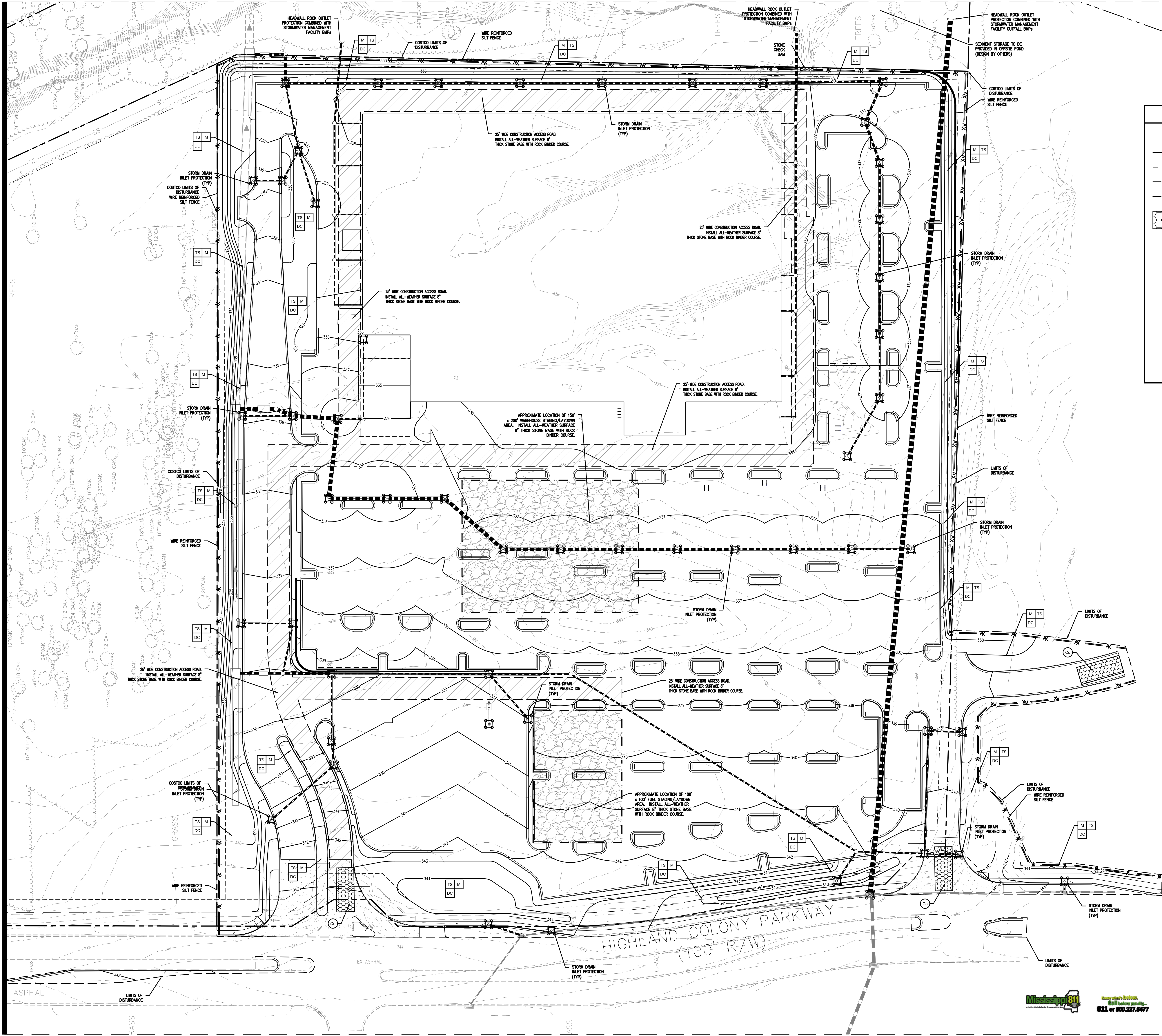
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LANDSCAPE DRAWN BY: JAP
LANDSCAPE DESIGNED BY: SLR
CHECK BY: CJF
DATE: 05-17-16

SHEET NUMBER

C7.1





EROSION CONTROL LEGEND

- EXISTING CONTOUR
- COSTCO PROPOSED CONTOUR
- LIMITS OF DISTURBANCE
- A- TREE PROTECTION FENCE
- X- SILT FENCE
- [Pattern] TEMPORARY CONSTRUCTION ENTRANCE
- [Symbol] INLET PROTECTION
- [M] MULCHING
- [DC] DUST CONTROL
- [TS] TEMPORARY SEEDING
- [PS] PERMANENT SEEDING
- [S] SOODING
- [ECB] EROSION CONTROL BLANKET



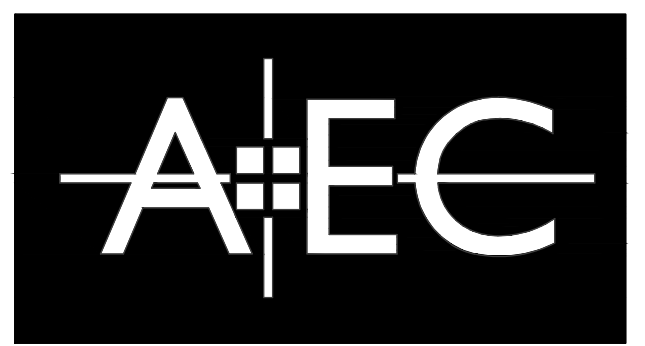
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ENGINEERS SEAL:



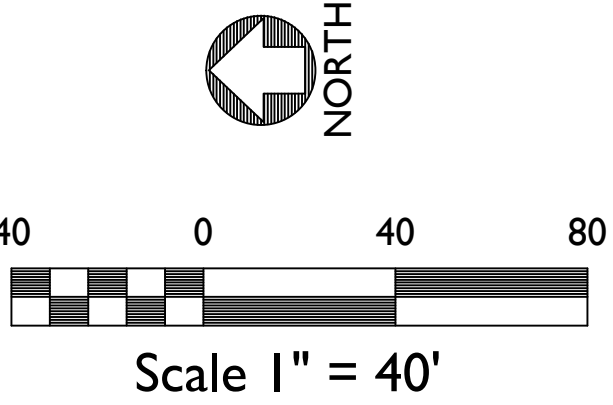
**SITE EROSION CONTROL PLAN
- PHASE 2**

DATE	DESCRIPTION
05/24/16	REVISED PER CITY COMMENTS
06/01/16	REVISED PER CITY COMMENTS

AEC JOB #: 14-3686.00
CIVIL DRAWN BY: JWM
CIVIL DESIGNED BY: JWM/MDV
LANDSCAPE DRAWN BY: JAP
LANDSCAPE DESIGNED BY: SLR
CHECK BY: CJF
DATE: 05-17-16

SHEET NUMBER

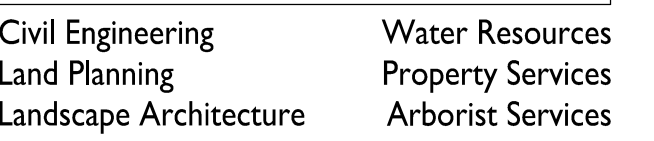
C7.2





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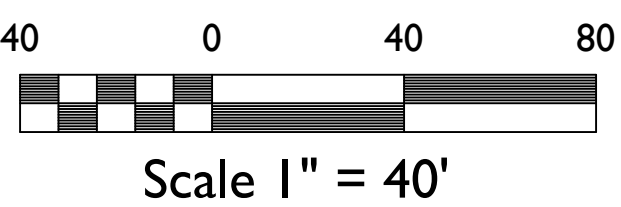


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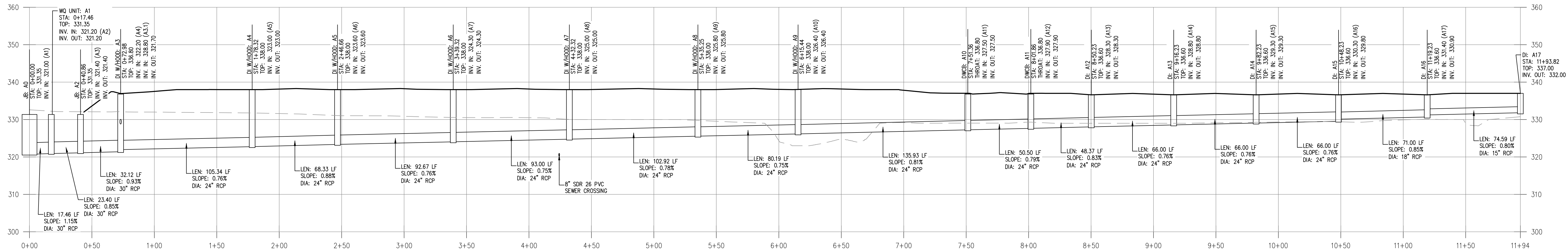


AEC JOB #: 14-3686.00
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CIVIL DESIGNED BY: JWM/MDV
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LANDSCAPE DESIGNED BY: SLR
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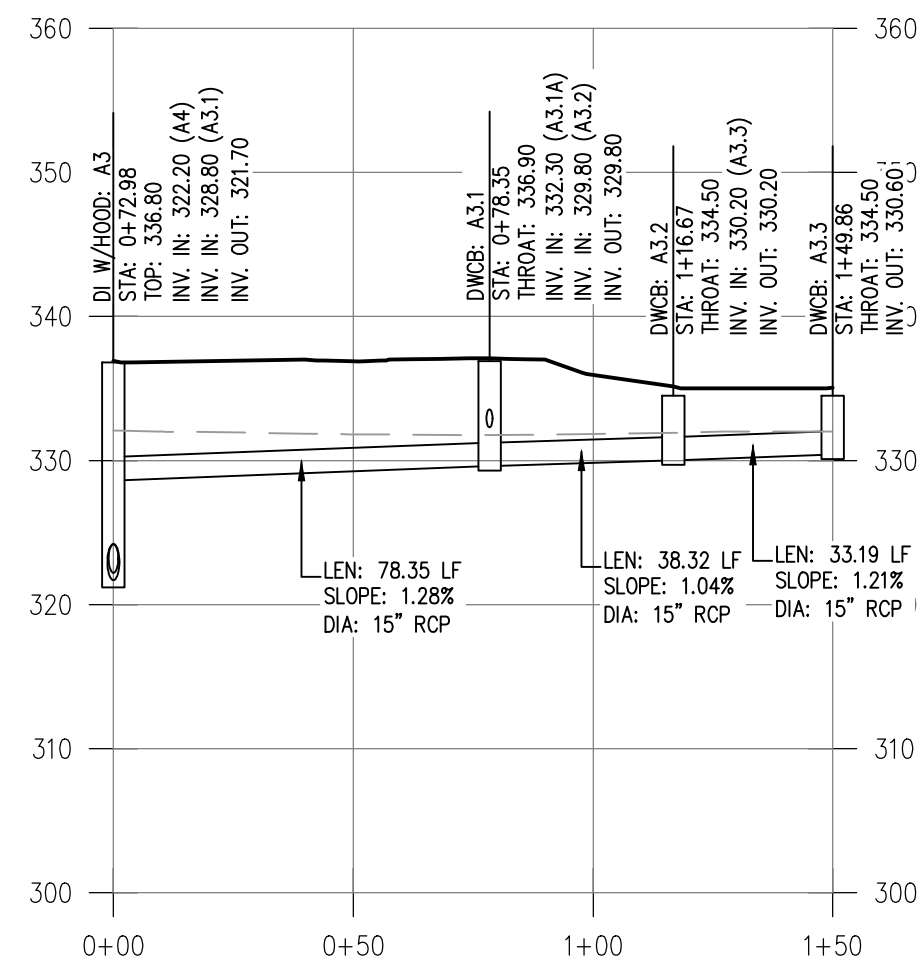
C7.3



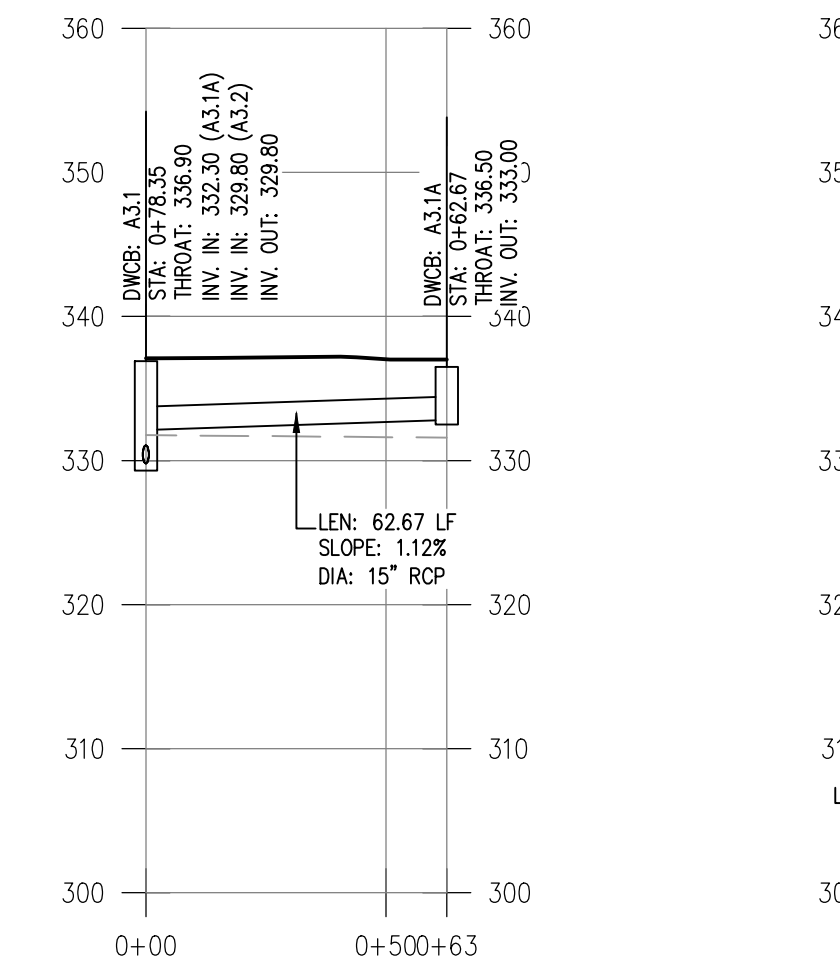
STORM A0-A17



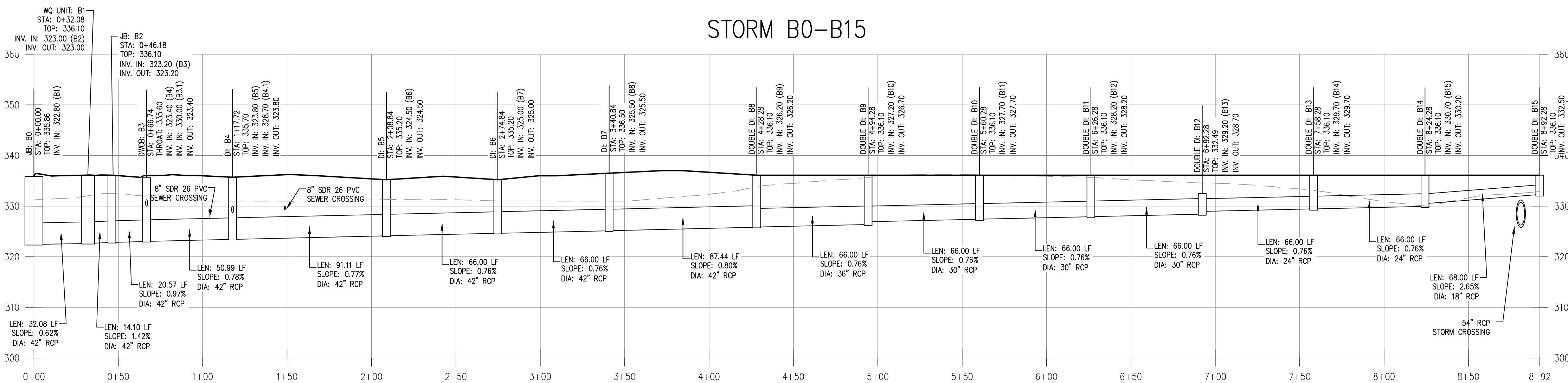
STORM A3-A3.3



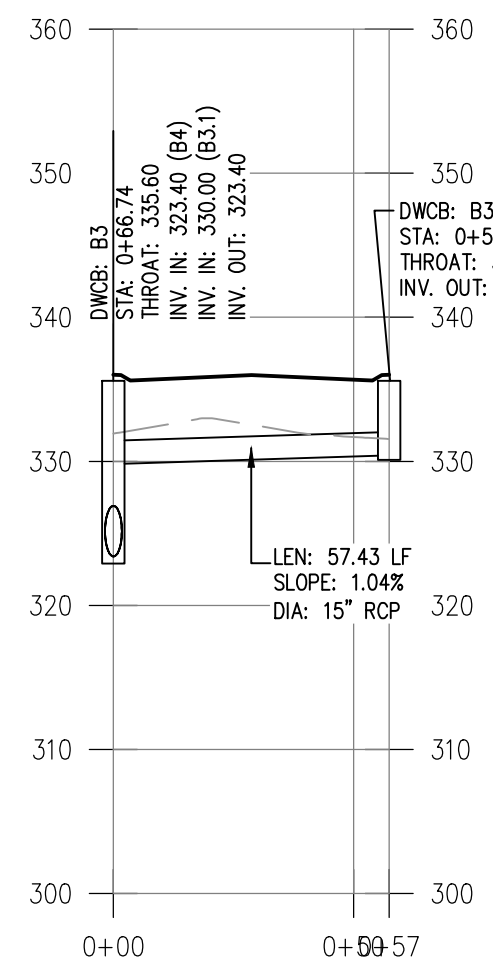
STORM A3.1-A3.1A



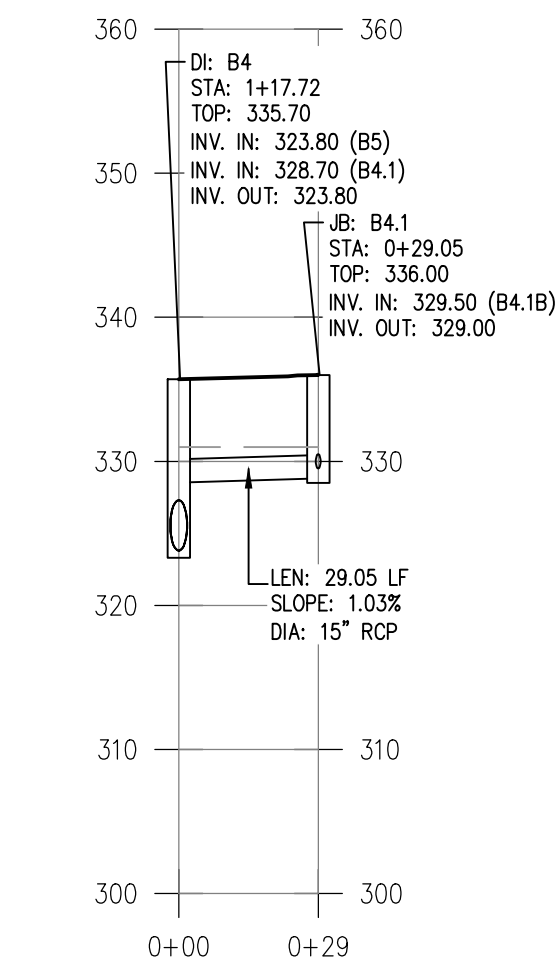
STORM B0-B15



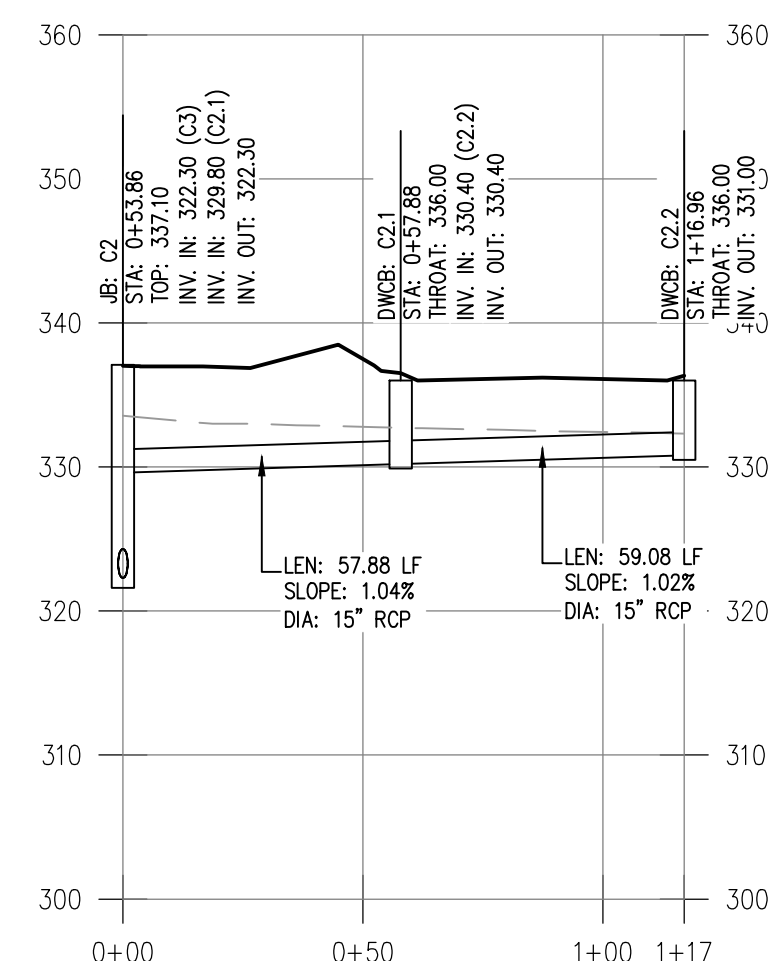
STORM B3-B3.1



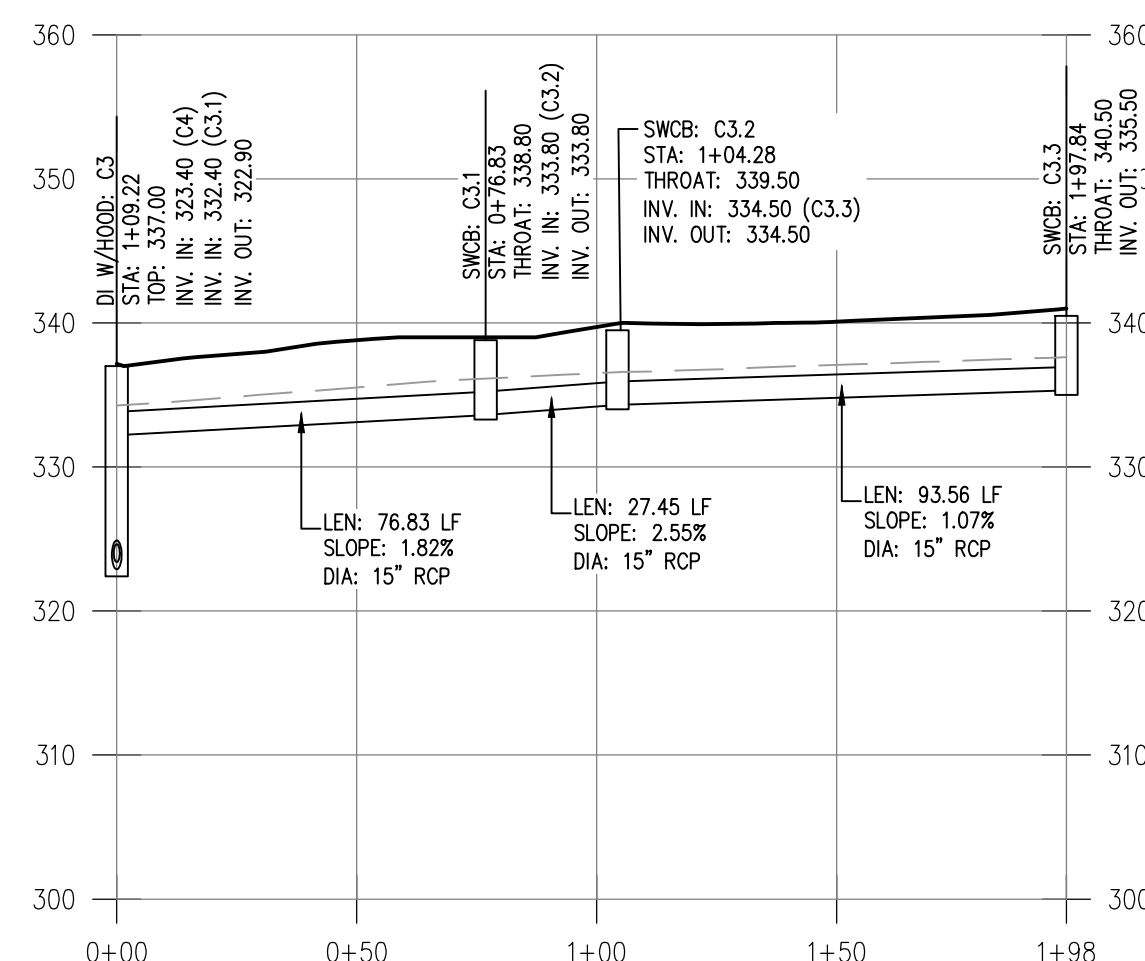
STORM B4-B4.1



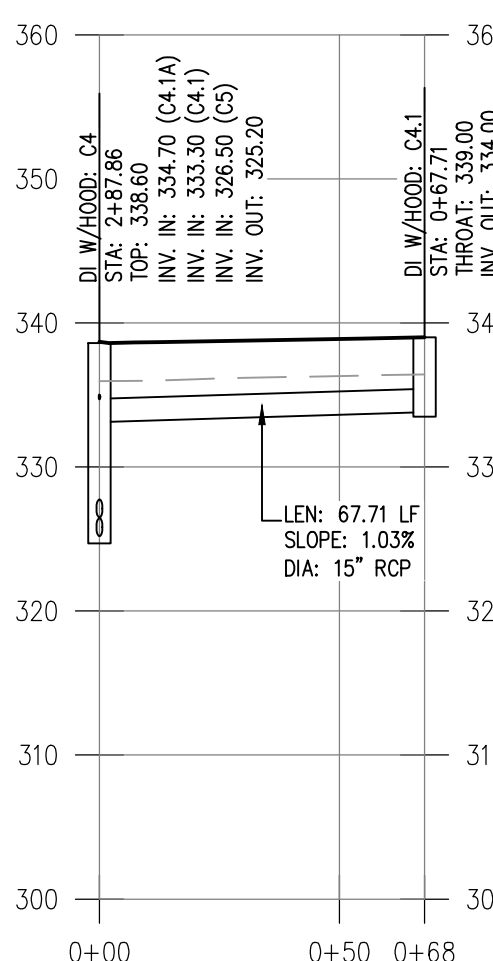
STORM C2-C2.2



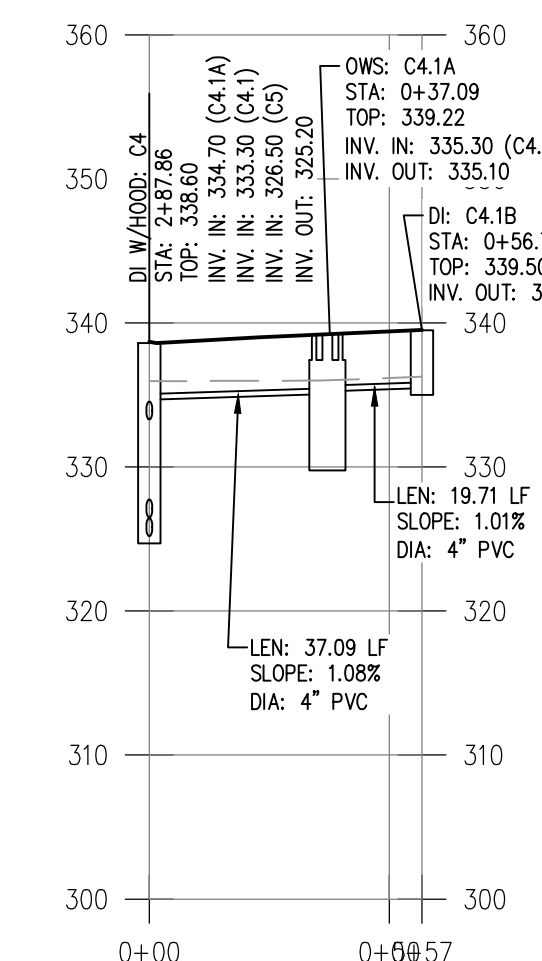
STORM C2-C2.3



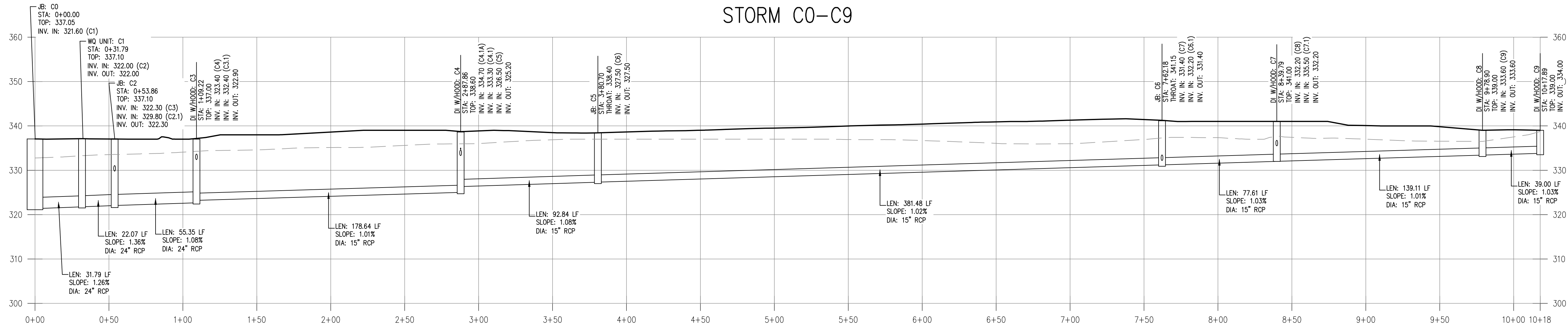
STORM C4-C4.1



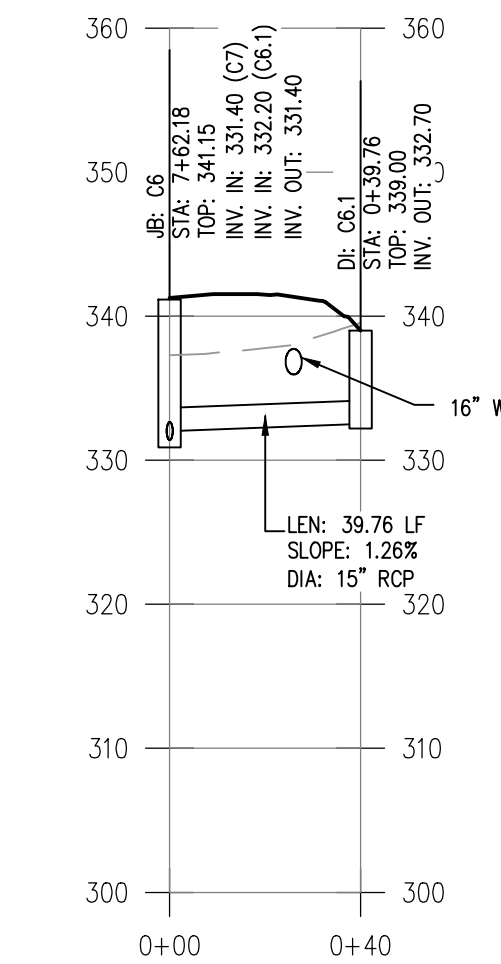
STORM C4-C4.1B



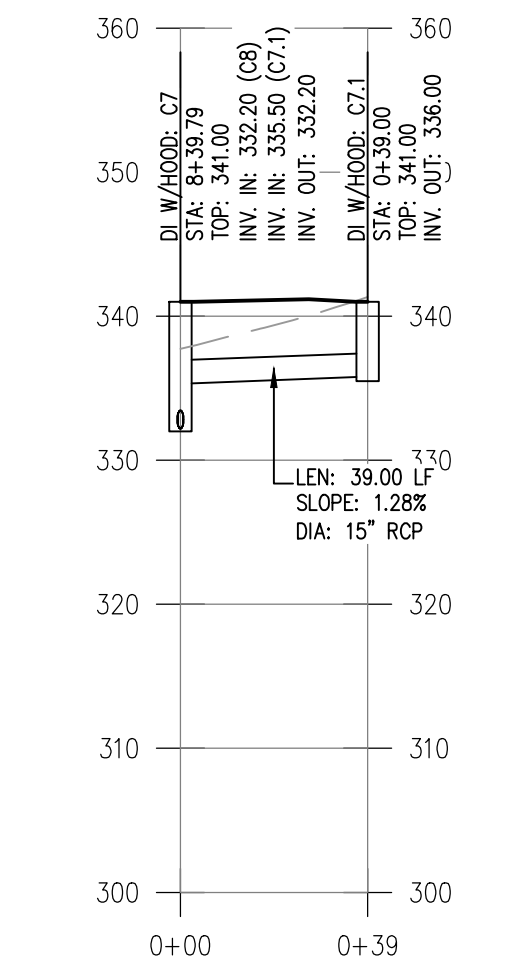
STORM C0-C9



STORM C6-C6.1



STORM C7-C7.1



STORM DRAINAGE LEGEND:

DI - DROP INLET
DHI - HOODED INLET
PI - PEDESTAL INLET
YI - YARD INLET
JB - JUNCTION BOX
SWCB - SINGLE WING CATCH BASIN
DWCB - DOUBLE WING CATCH BASIN
RCP - REINFORCED CONCRETE PIPE
DIP - DUCTILE IRON PIPE
PVC - POLYVINYL CHLORIDE PIPE
HDPE - HIGH-DENSITY POLYETHYLENE PIPE
(N-12 SMOOTH INTERIOR PIPE BY NYLOPLAST)

LINE TYPE LEGEND

EXISTING GRADE
PROPOSED GRADE

SCALE

1" = 40' HORIZONTAL
1" = 10' VERTICAL



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STORM DRAINAGE PROFILES

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SHEET NUMBER

C8.0



Profile view of a 16' wide crossing. The vertical axis shows elevations from 300 to 360. The horizontal axis shows stationing from 0+00 to 0+40. The profile includes a 16' wide crossing with a 15" RCP pipe. The crossing is supported by a 30" x 30" x 8' concrete structure. The profile shows the existing ground (OG) and the proposed structure (AN). The structure has a top elevation of 351.15 and a bottom elevation of 351.40. The crossing is 16' wide and has a 15" RCP pipe. The profile also shows the existing ground (OG) and the proposed structure (AN). The structure has a top elevation of 351.15 and a bottom elevation of 351.40. The crossing is 16' wide and has a 15" RCP pipe.

360
350
340
330
320
310
300

0+00 0+40

OG AN
TOP 351.15
INV N. 331.40 (C)
INV N. 331.40 (C)
INV O.C. 351.40
16' WIDE CROSSING
15" RCP
30" x 30" x 8'
L.DEN: 39.76 LF
SLOPE: 1.26%
DIA: 15" RCP

Profile view of a pipe section. The vertical axis represents elevation in feet, ranging from 300 to 360. The horizontal axis represents stationing, with labels 0+00 and 0+39. The pipe is shown as a horizontal cylinder with a diameter of 15" RCP. The invert elevation at station 0+39 is 332.20. The slope is 1.28%. The length of the section is 39.00 feet. The profile shows the pipe is installed in a trench with a sloped bottom. The top of the pipe is at an elevation of 340.00. The bottom of the pipe is at an elevation of 332.20. The invert elevation at station 0+00 is 332.20. The profile shows the pipe is installed in a trench with a sloped bottom. The top of the pipe is at an elevation of 340.00. The bottom of the pipe is at an elevation of 332.20. The invert elevation at station 0+00 is 332.20.

Profile view of the proposed 36-inch sewer line from station 0+00 to 3+90. The profile shows the sewer line with various manholes (MH 01 to MH 06) and sewer crossings. The vertical axis represents elevation in feet, ranging from 300 to 360. The horizontal axis represents stationing. Key data points include:

- STA: 0+00.00, TOP: 322.50 (04)
- STA: 0+75.00, TOP: 336.38 (05)
- STA: 1+43.18, TOP: 336.38 (05)
- STA: 1+43.18, INV. IN.: 334.00 (04.1)
- STA: 1+43.18, INV. OUT.: 323.40
- STA: 1+50.00, TOP: 336.38 (05)
- STA: 1+50.00, INV. IN.: 334.00 (04.1)
- STA: 1+50.00, INV. OUT.: 323.40
- STA: 2+07.01, TOP: 336.38 (05)
- STA: 2+07.01, INV. IN.: 334.00 (04.1)
- STA: 2+07.01, INV. OUT.: 323.40
- STA: 2+47.01, TOP: 336.38 (05)
- STA: 2+47.01, INV. IN.: 334.00 (04.1)
- STA: 2+47.01, INV. OUT.: 323.40
- STA: 3+00.00, TOP: 336.38 (05)
- STA: 3+00.00, INV. IN.: 334.00 (04.1)
- STA: 3+00.00, INV. OUT.: 323.40
- STA: 3+40.00, TOP: 336.38 (05)
- STA: 3+40.00, INV. IN.: 334.00 (04.1)
- STA: 3+40.00, INV. OUT.: 323.40

The sewer line has a length of 103.18 LF with a slope of 0.87% and a 30' RCP. The sewer crossings have lengths of 103.18 LF, 44.35 LF, 30.00 LF, 29.48 LF, 24.76 LF, and 74.25 LF, with slopes of 0.87%, 2.71%, 2.61%, 2.71%, 2.61%, and 15' PVC respectively. The manholes have diameters of 30' RCP, 24' RCP, 24' RCP, 24' RCP, 24' RCP, and 15' PVC.

DI - DROP INLET
DIWH - HOODED INLET
PI - PEDESTAL INLET
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HDPE - HIGH-DENSITY POLYETHYLENE PIPE
(N-12 SMOOTH INTERIOR PIPE BY NYLOPLAST)

EXISTING GRADE — — — — —
PROPOSED GRADE — — — — —

1" = 40' HORIZONTAL
1" = 10' VERTICAL

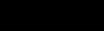


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STORM DRAINAGE PROFILES

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LANDSCAPE DESIGNED BY: SLR
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DATE: 05-17-16

SHEET NUMBER

C8.1

360
 SSW: 22.4
 STA: +456.78
 TOP: 337.96
 INV. IN: 330.00 (22.5)
 INV. IN: 331.80 (22.4A)
 INV. OUT: 329.80
 360
 SSW: 22.4
 STA: +456.78
 TOP: 337.96
 INV. IN: 330.00 (22.5)
 INV. IN: 331.80 (22.4A)
 INV. OUT: 329.80
 340
 330
 18" RCP
 STORM CROSSING
 320
 LEN: 22.24 LF
 SLOPE: 5.40%
 DIA. 6" SDR 26 PVC
 310
 300
 0+00 0+22

360

SSW: Z5
STA: 5+89.80
TOP: 338.20
INV. INT: 327.40 (26)
IN: 329.70 (25.1)
INV. QUT: 327.20

360

SS CO: Z5.1
STA: 0+235.4
TOP: 338.46
INV. IN: 332.20 (25.2)
INV. QUT: 331.50

340

340

330

330

LEN: 23.54 LF
SLOPE: 7.65%
DA: 8" SDR 28 PVC

320

310

300

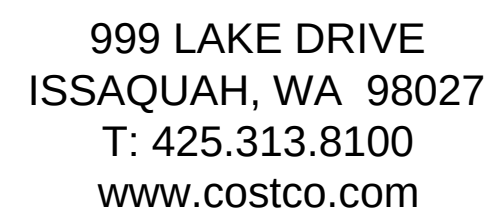
0+00

0+24

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YI = YARD INLET
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(N-12 SMOOTH INTERIOR PIPE BY NYLO)

1" = 40' HORIZONTAL
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C9.0

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CONSTRUCTION AND DELIVERY ROUTE PLAN

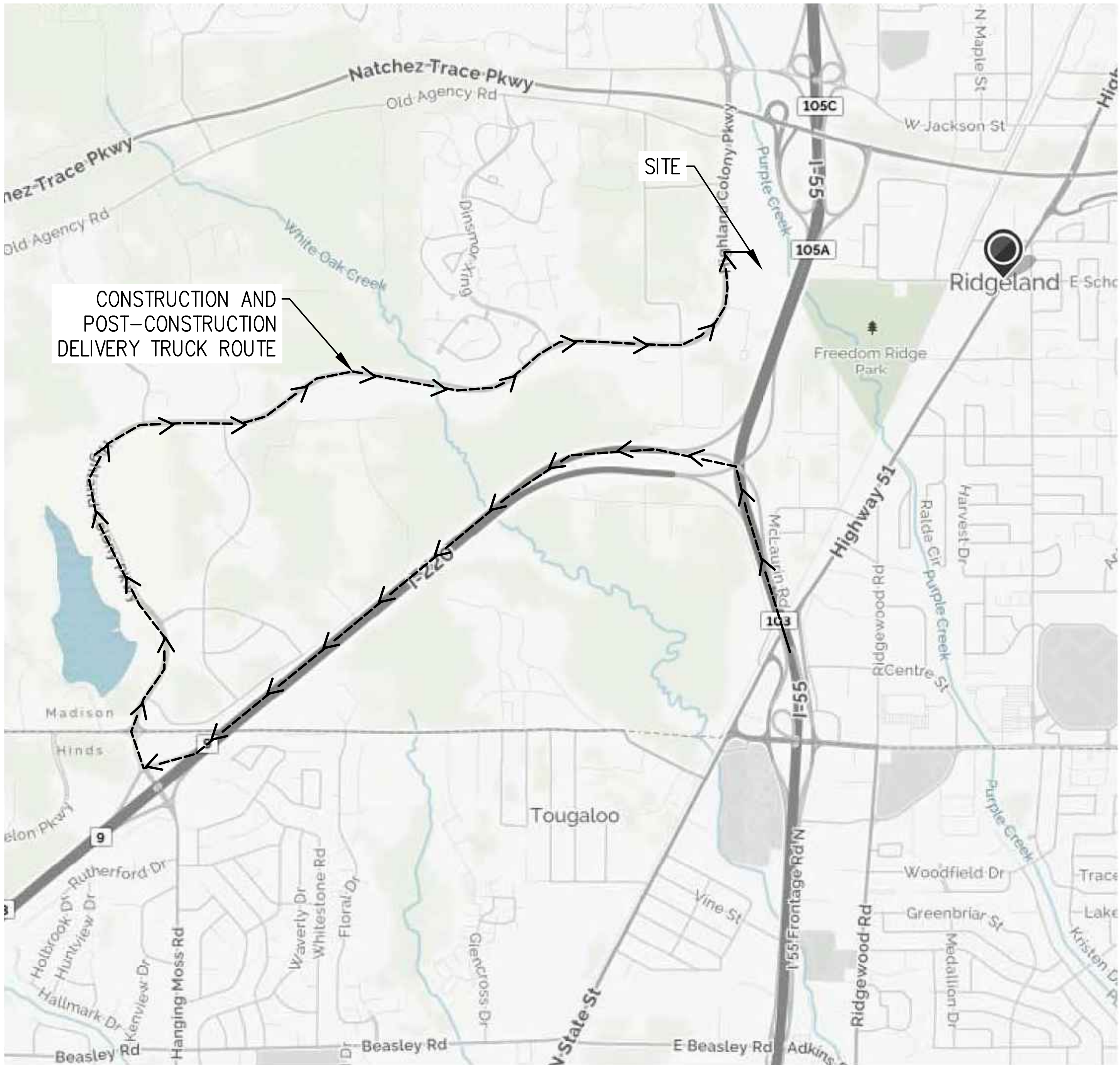
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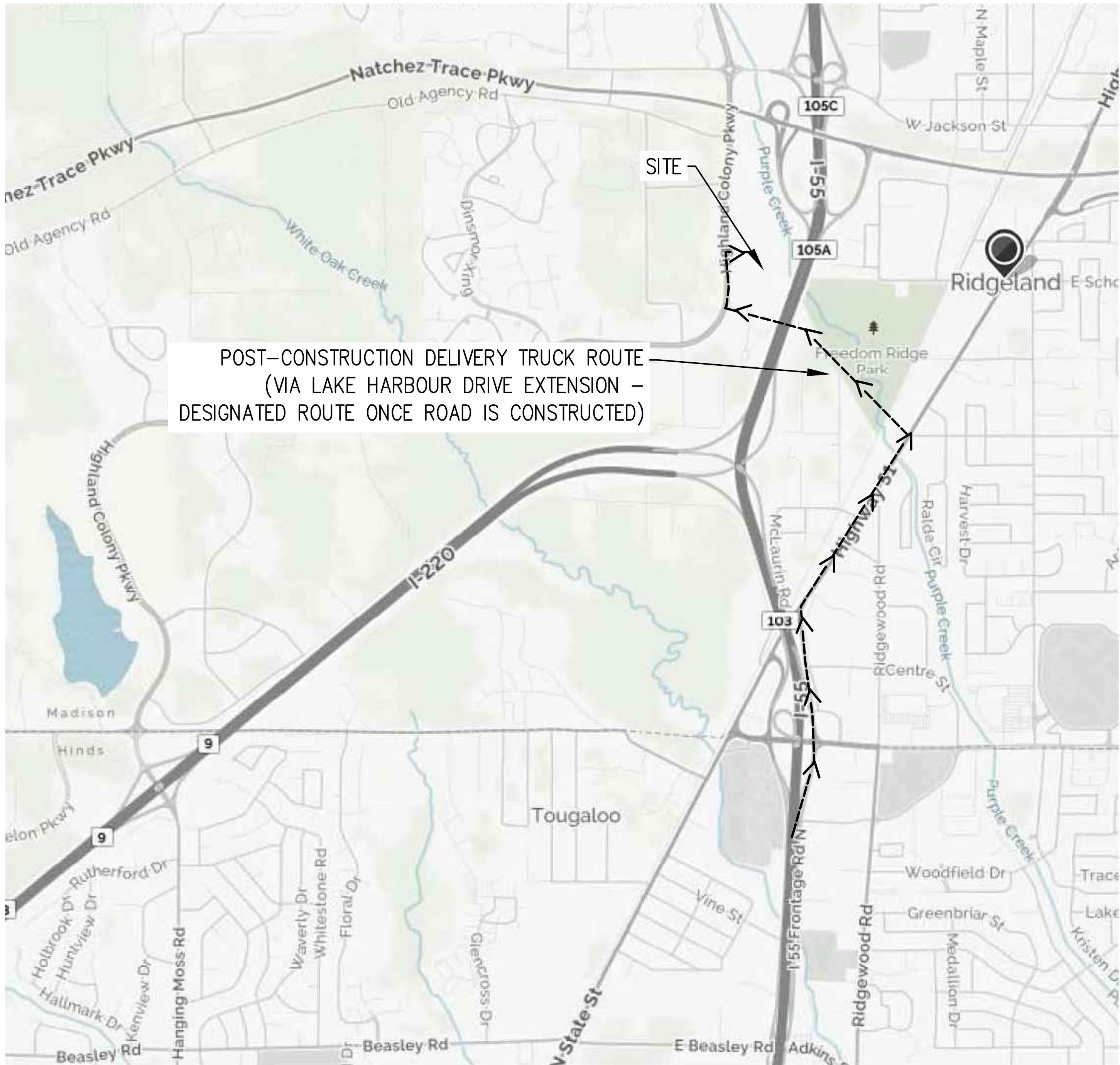
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SHEET NUMBER

C10.0



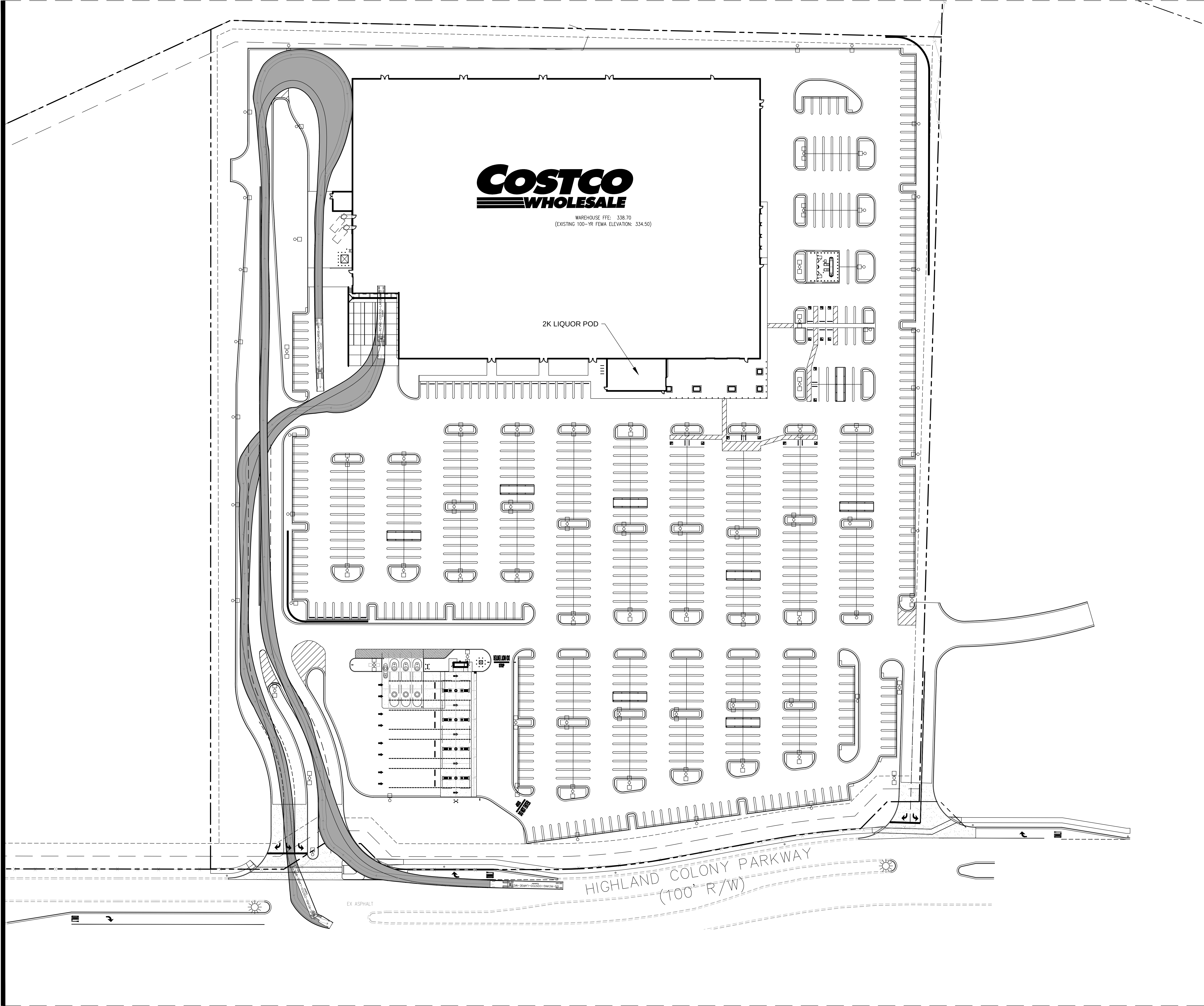
LOCATION MAP (N.T.S.)



LOCATION MAP (N.T.S.)



NO CONSTRUCTION EQUIPMENT
IS ALLOWED BEYOND THE WORK
ZONE BARRICADES. FAILURE TO
COMPLY WILL RESULT IN POLICE
DEPARTMENT ACTION AND/OR
FINES



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COSTCO RECEIVING TRUCK
ROUTE PLAN

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C10.1



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COSTCO FUEL DELIVERY TRUCK ROUTE PLAN

[illegible]

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LANDSCAPE DESIGNED BY: SLR
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SHEET NUMBER

C10.2

L:\4-3686 Costco Ridgeland MS\Green Ink\4-3686 Costco Ridgeland MS - G12.dwg, 6/3/2016 5:36:27 PM, i:jw, 1:1



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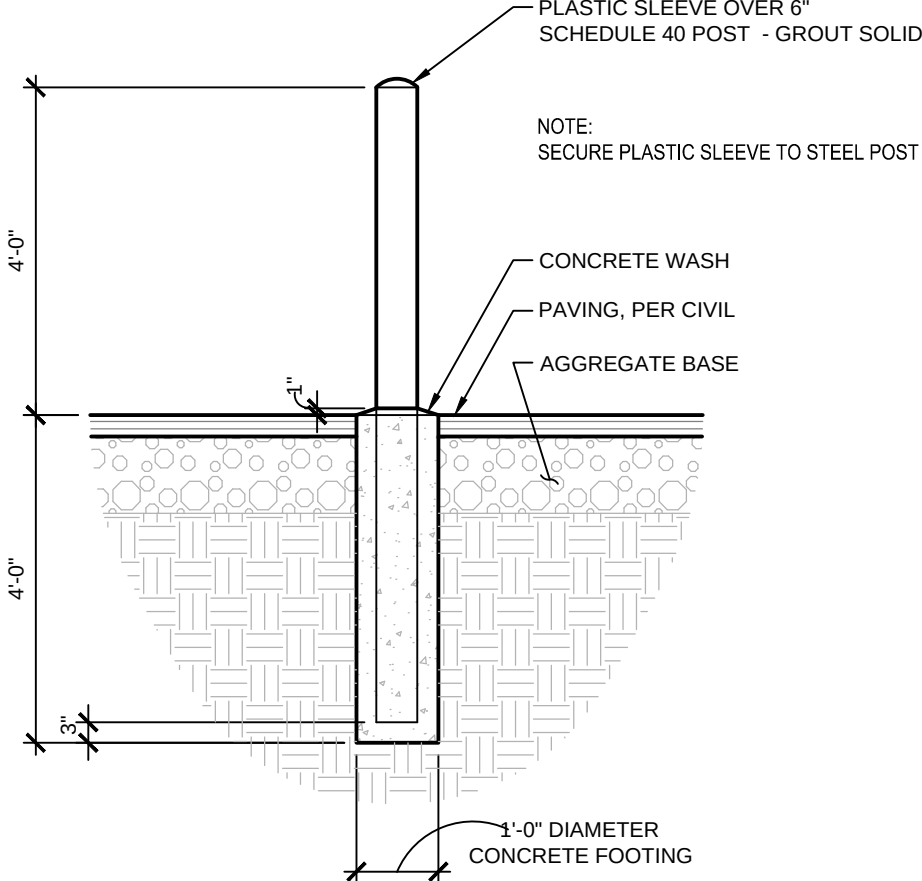
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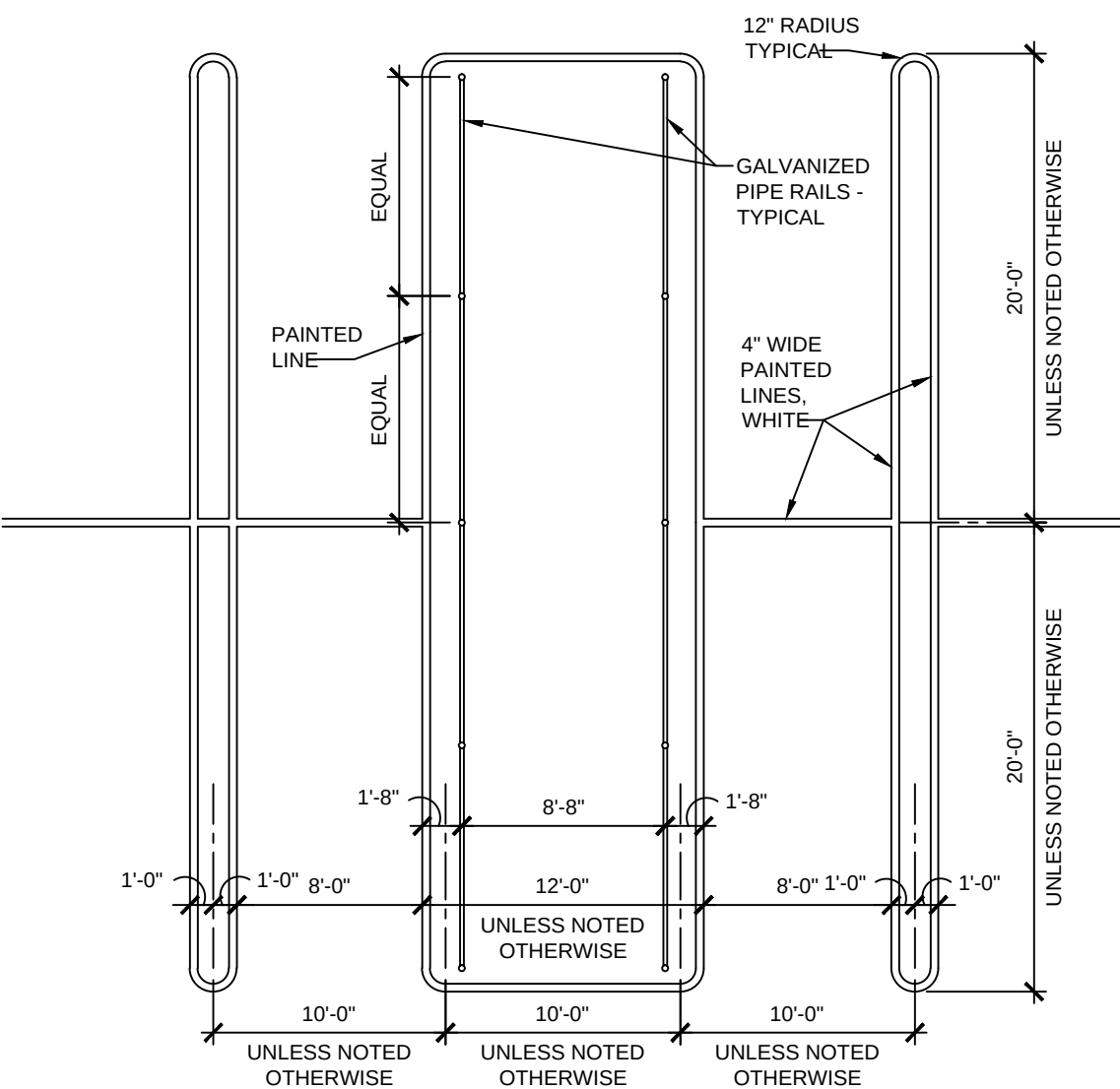
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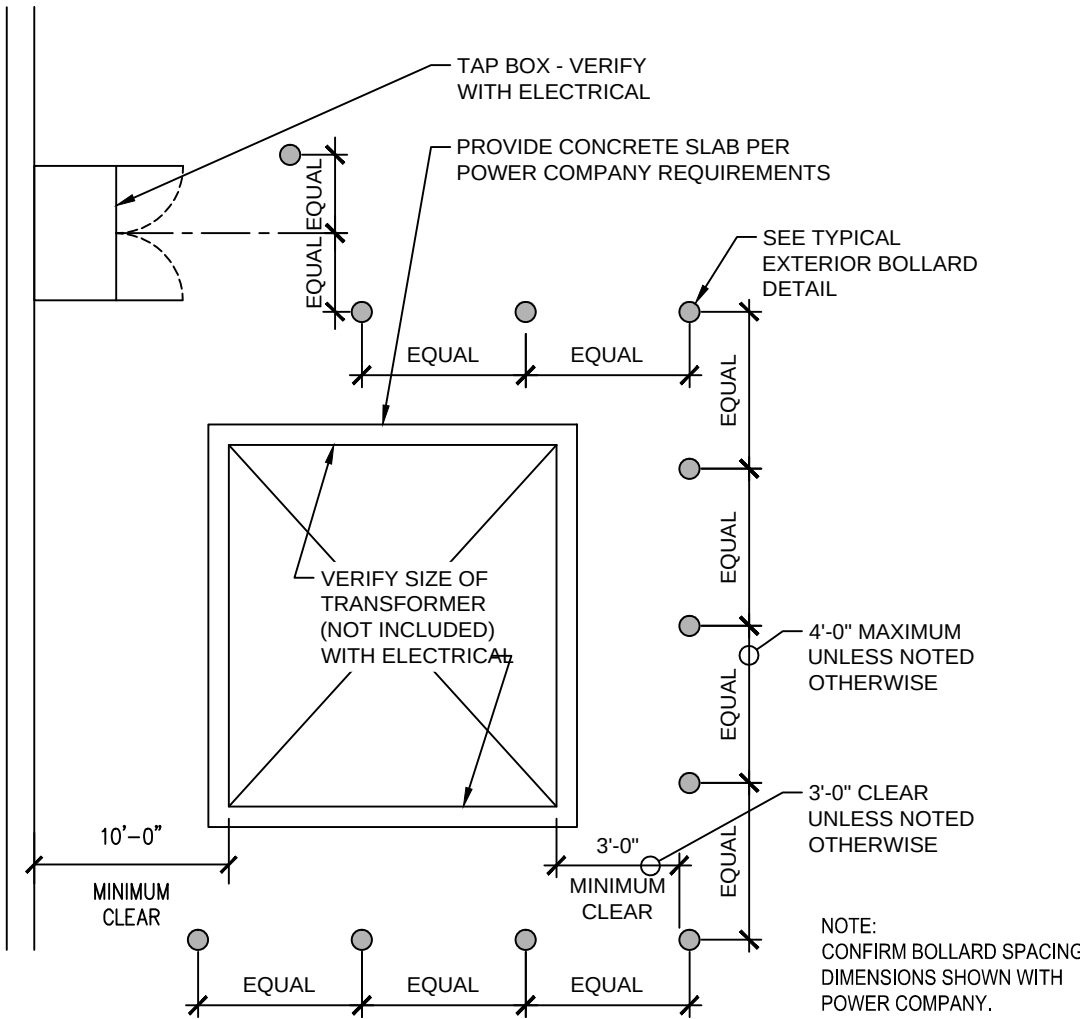
CONSTRUCTION DETAILS



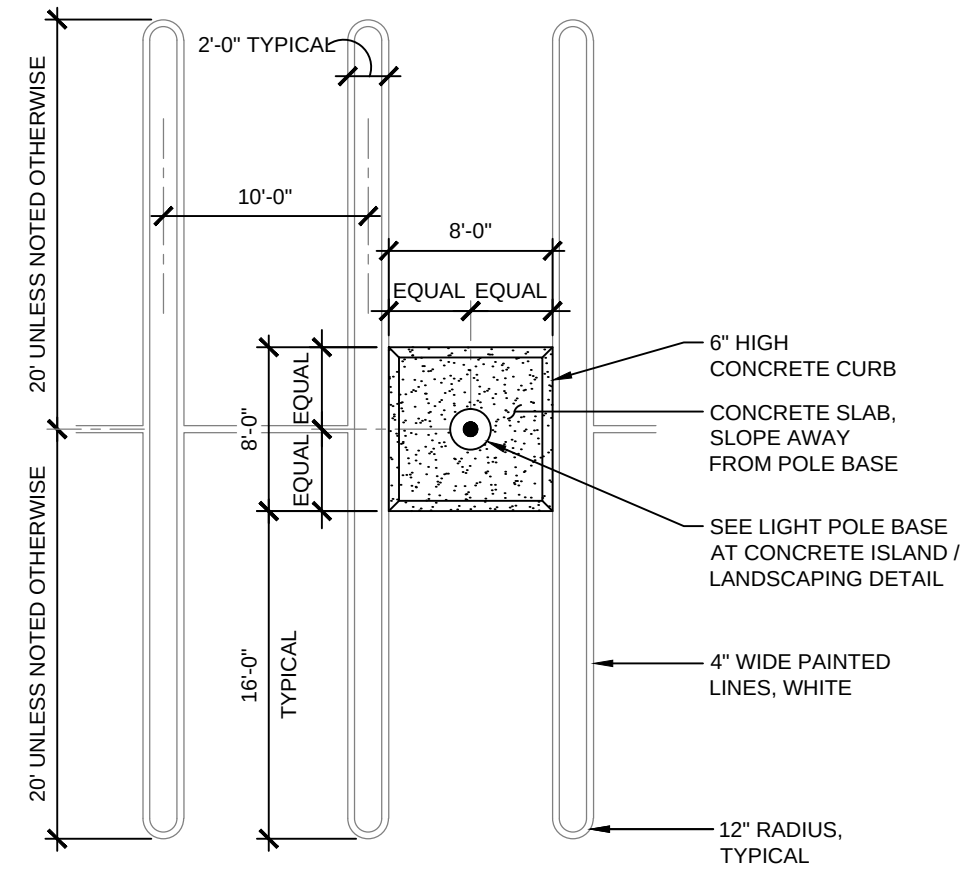
TYPICAL EXTERIOR BOLLARD



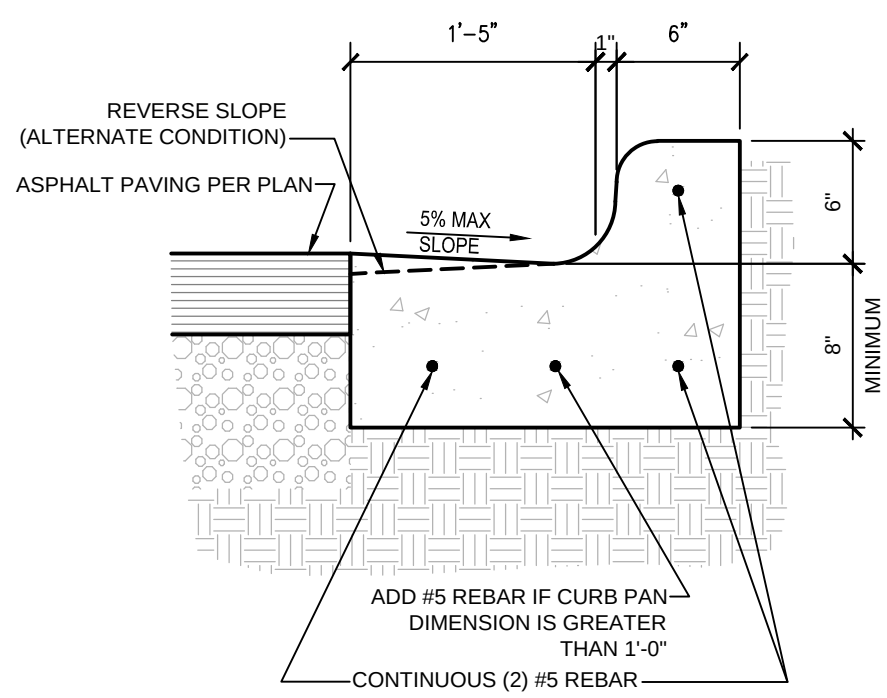
CART CORRAL AND
TYPICAL PARKING STALL



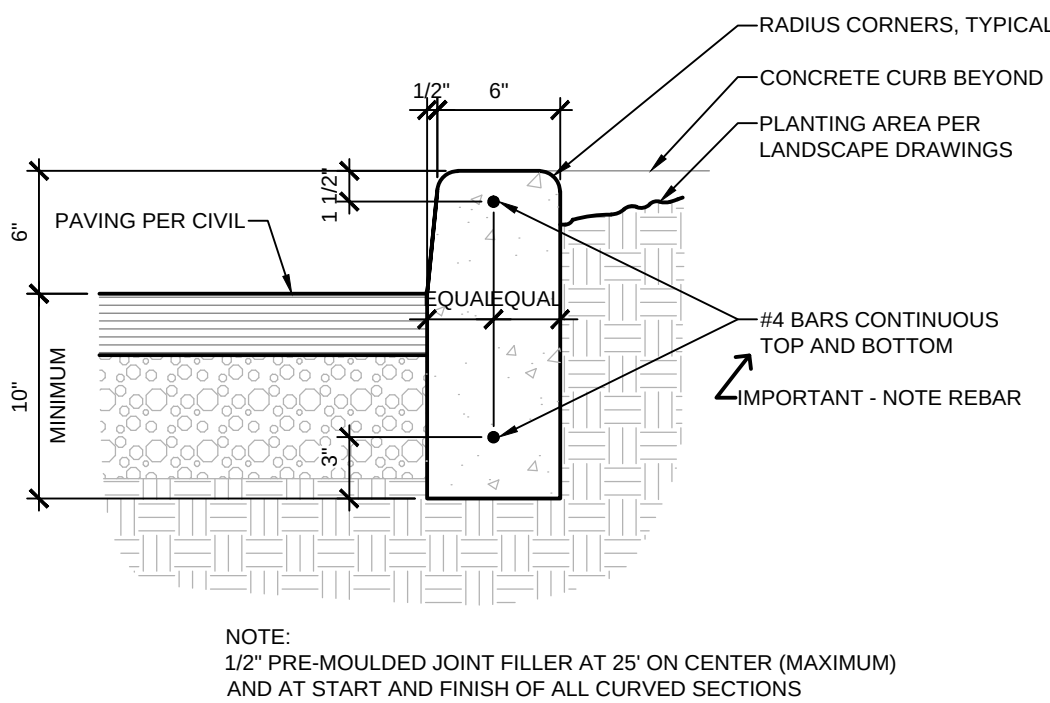
BOLLARDS AT TRANSFORMER



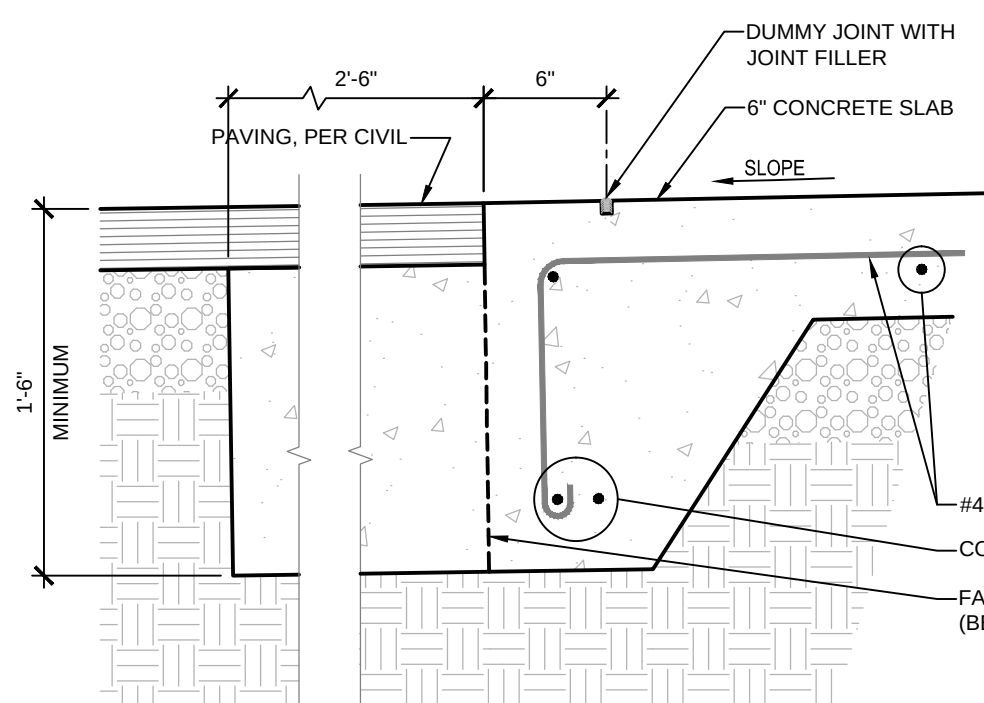
ISLAND AT LIGHT POLE BASE



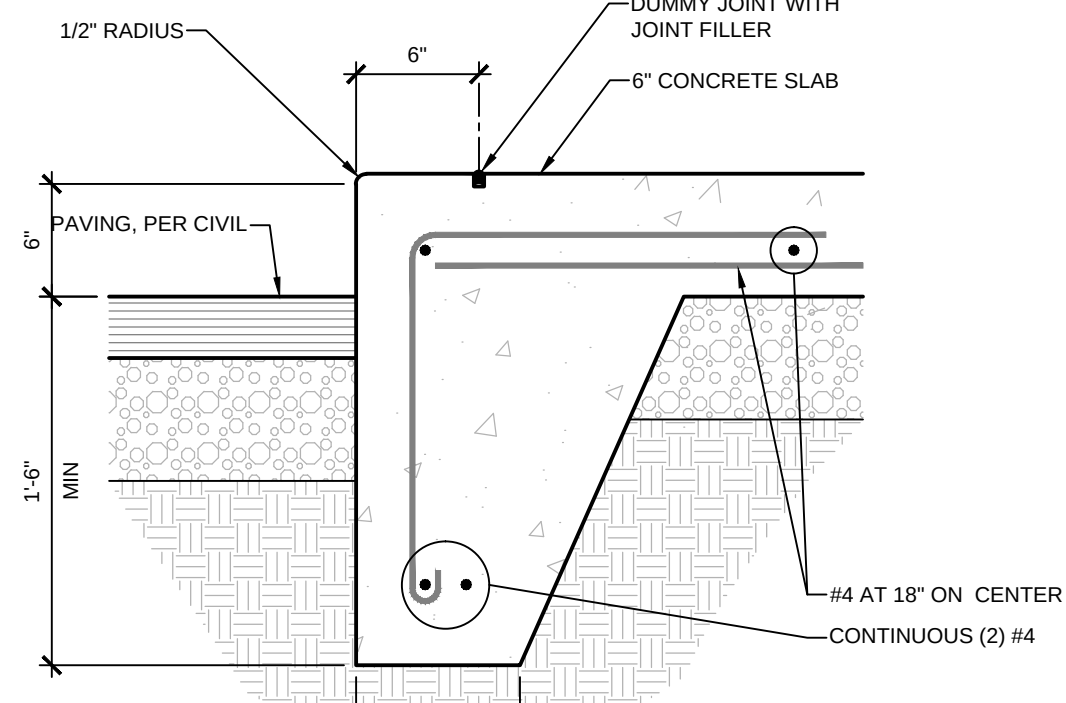
CONCRETE CURB AND GUTTER



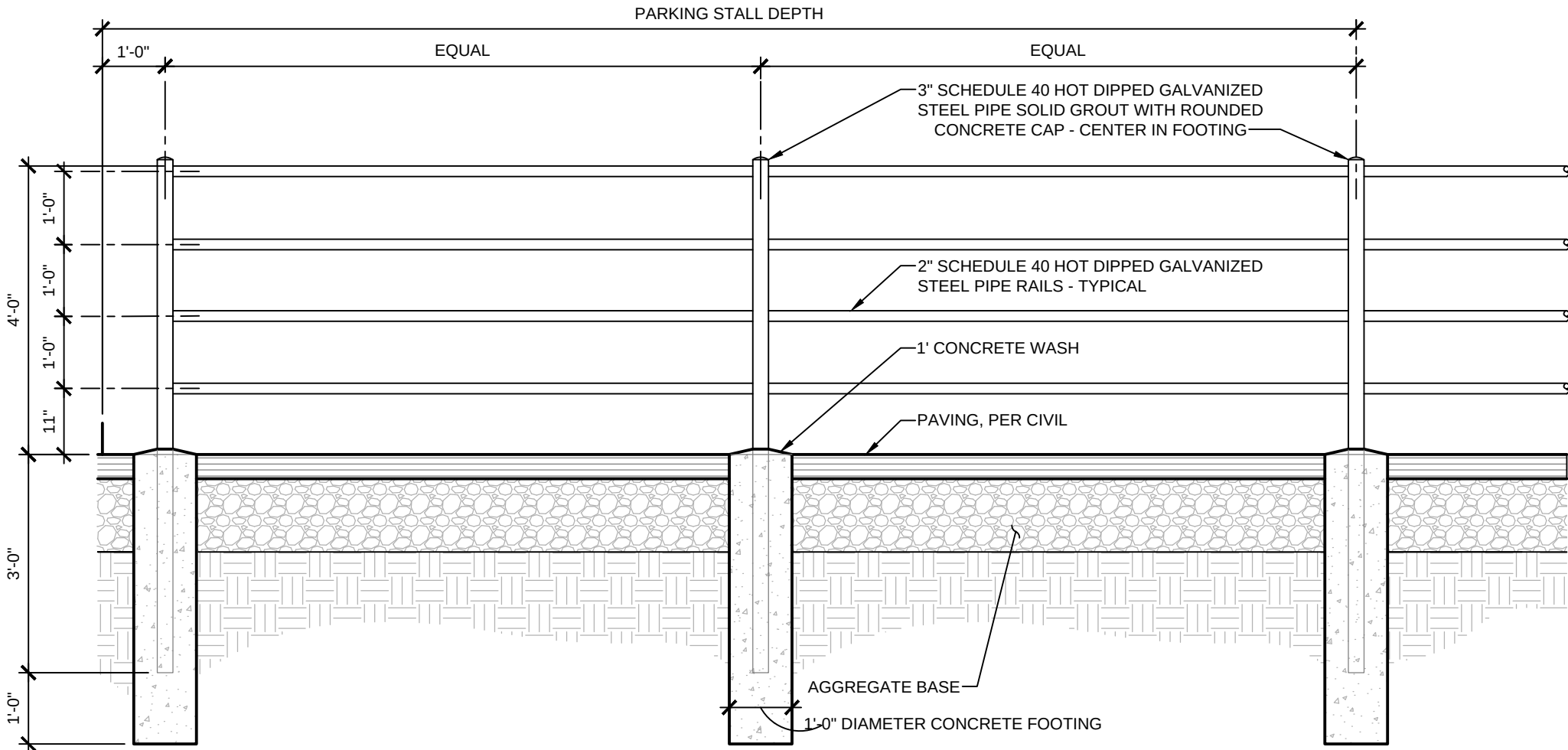
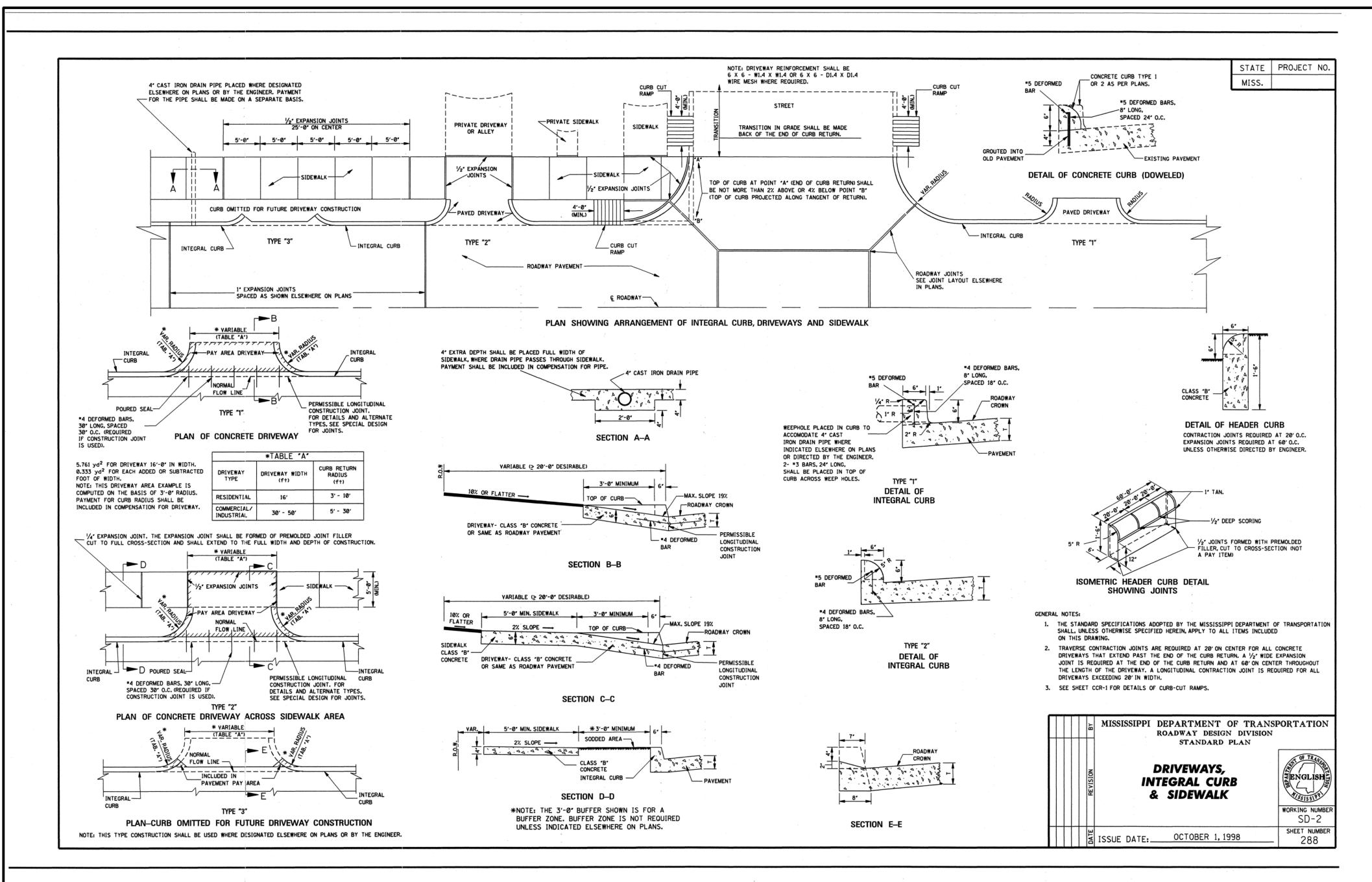
CAST-IN-PLACE CONCRETE CURB



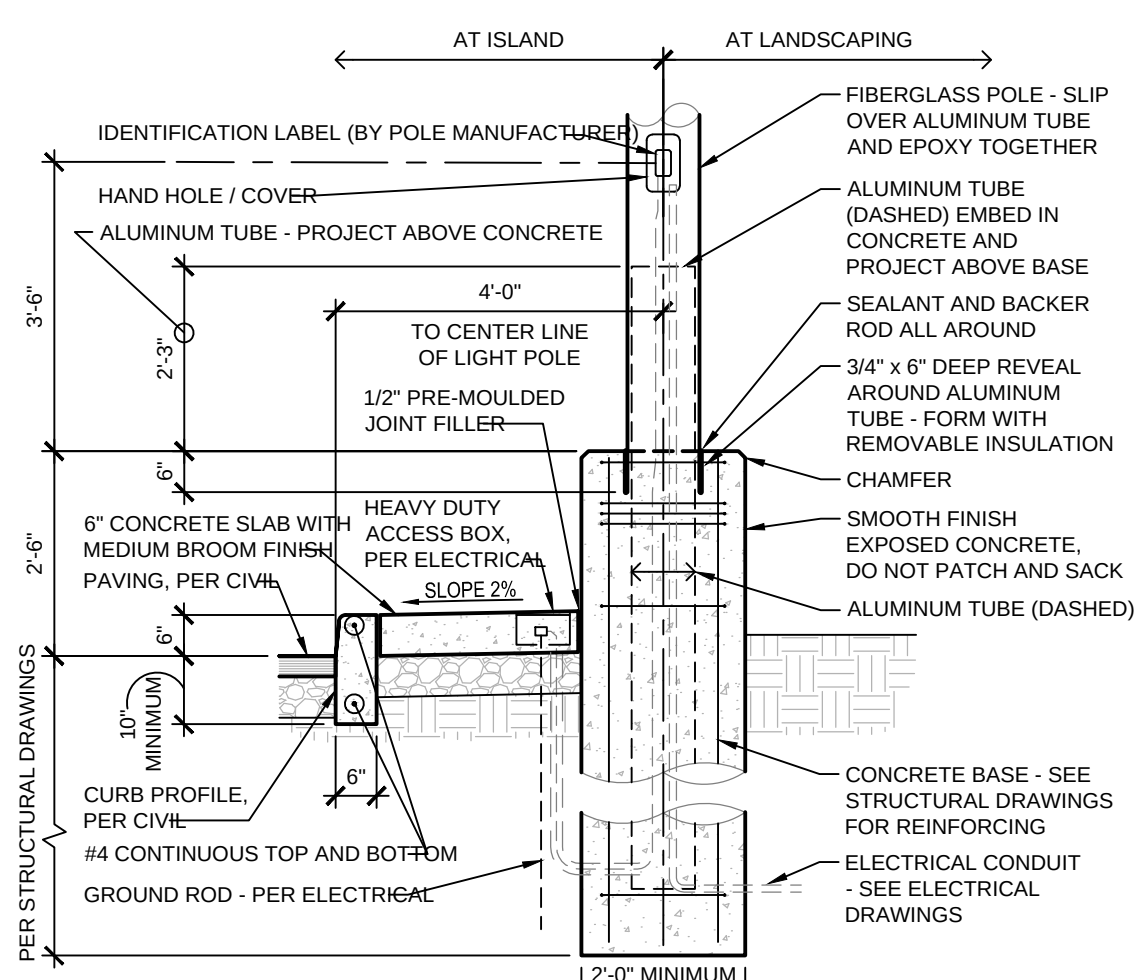
FLUSH CURB AT PAVEMENT



EDGE OF SIDEWALK AT PAVEMENT



CART STORAGE



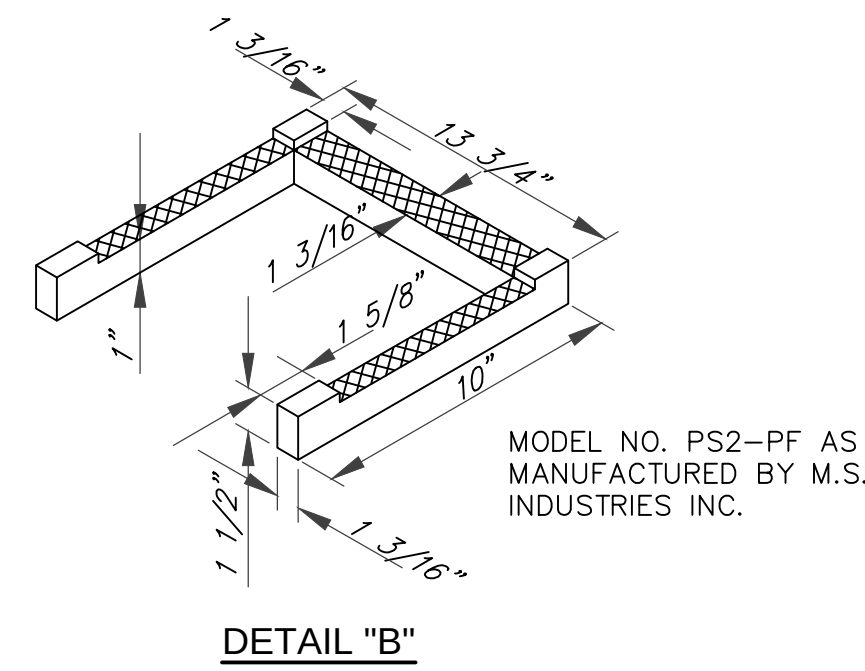
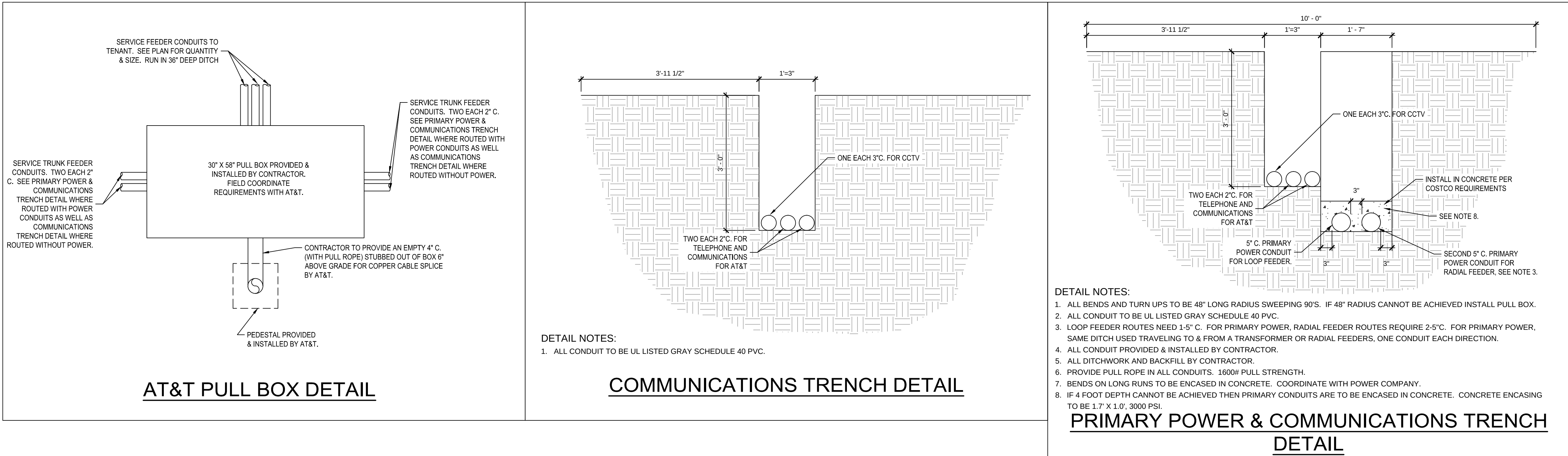
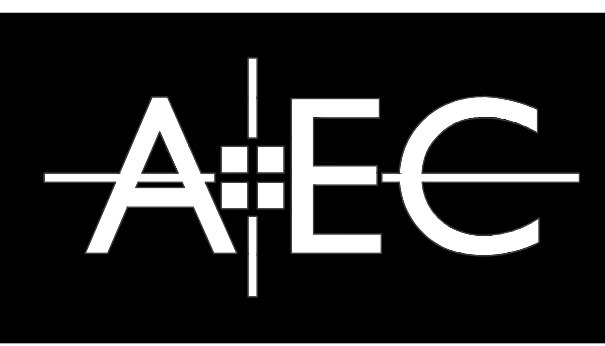
LIGHT POLE BASE AT
CONCRETE ISLAND / LANDSCAPING

DATE	DESCRIPTION
05/24/16	REVISED PER CITY COMMENTS
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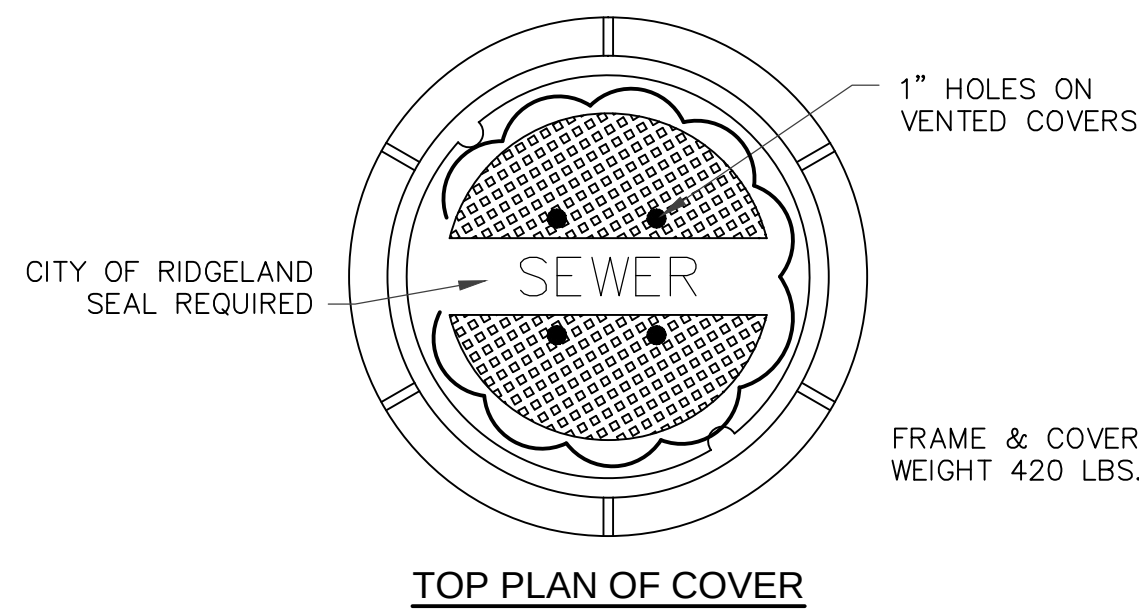
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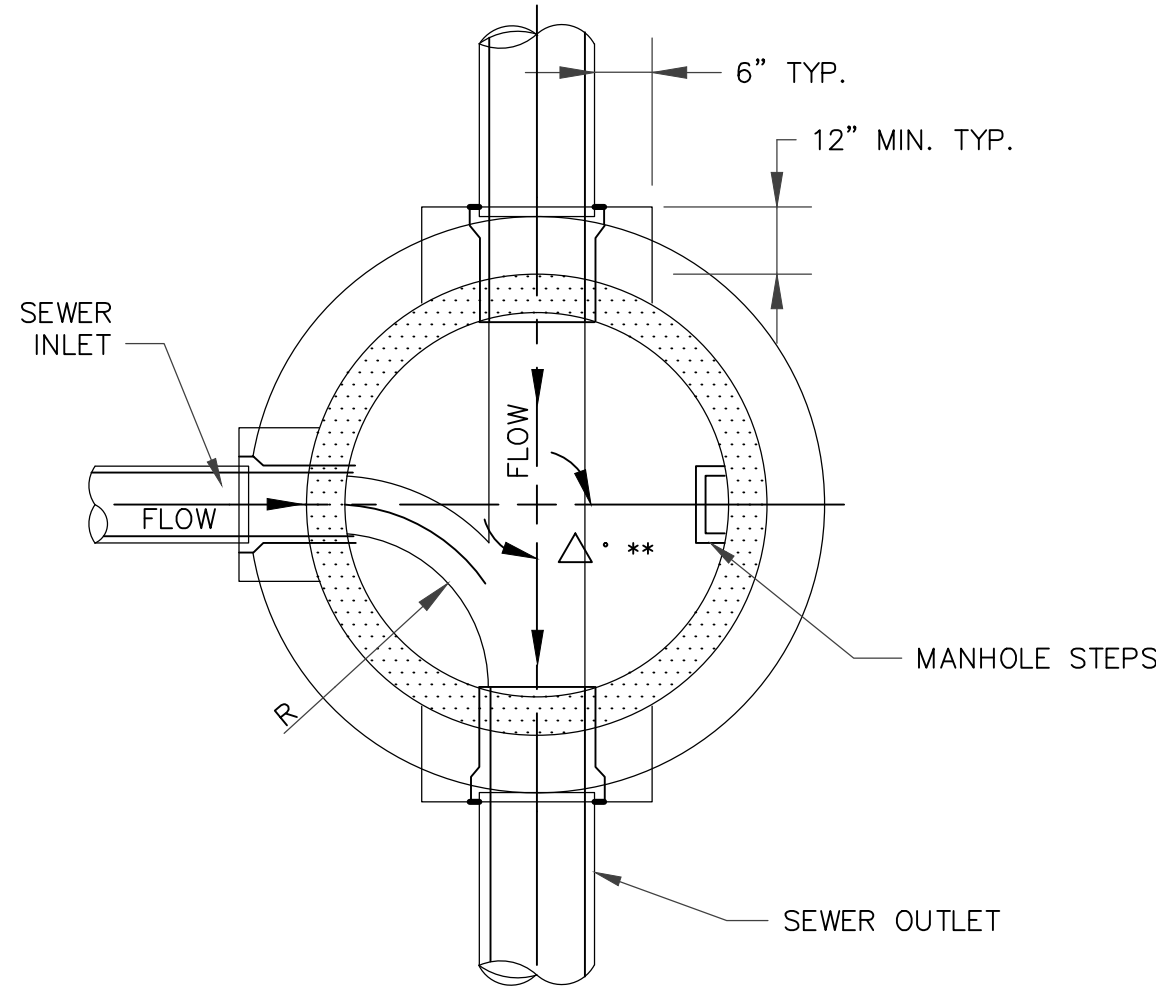
CD1.2



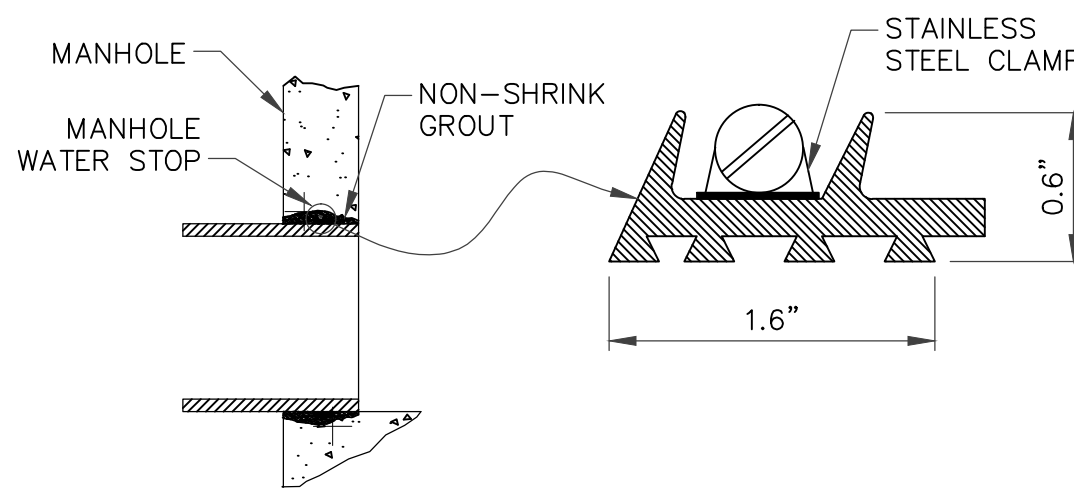
TYPICAL PRECAST CONCRETE
MANHOLE JOINT DETAIL



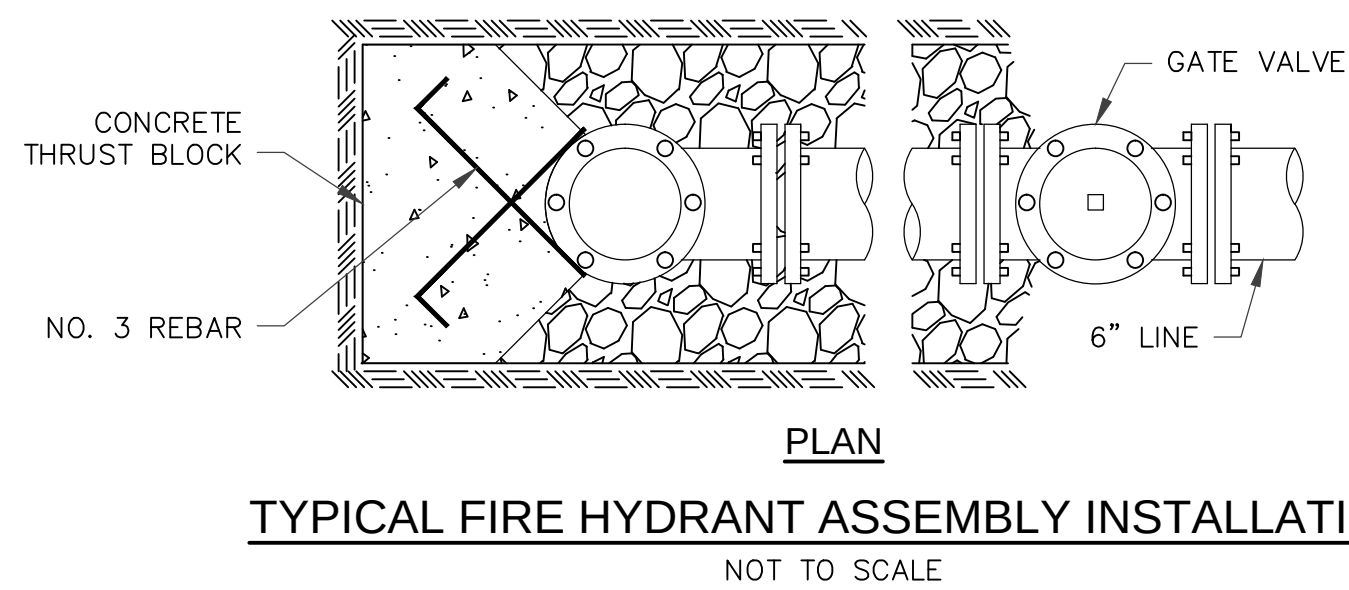
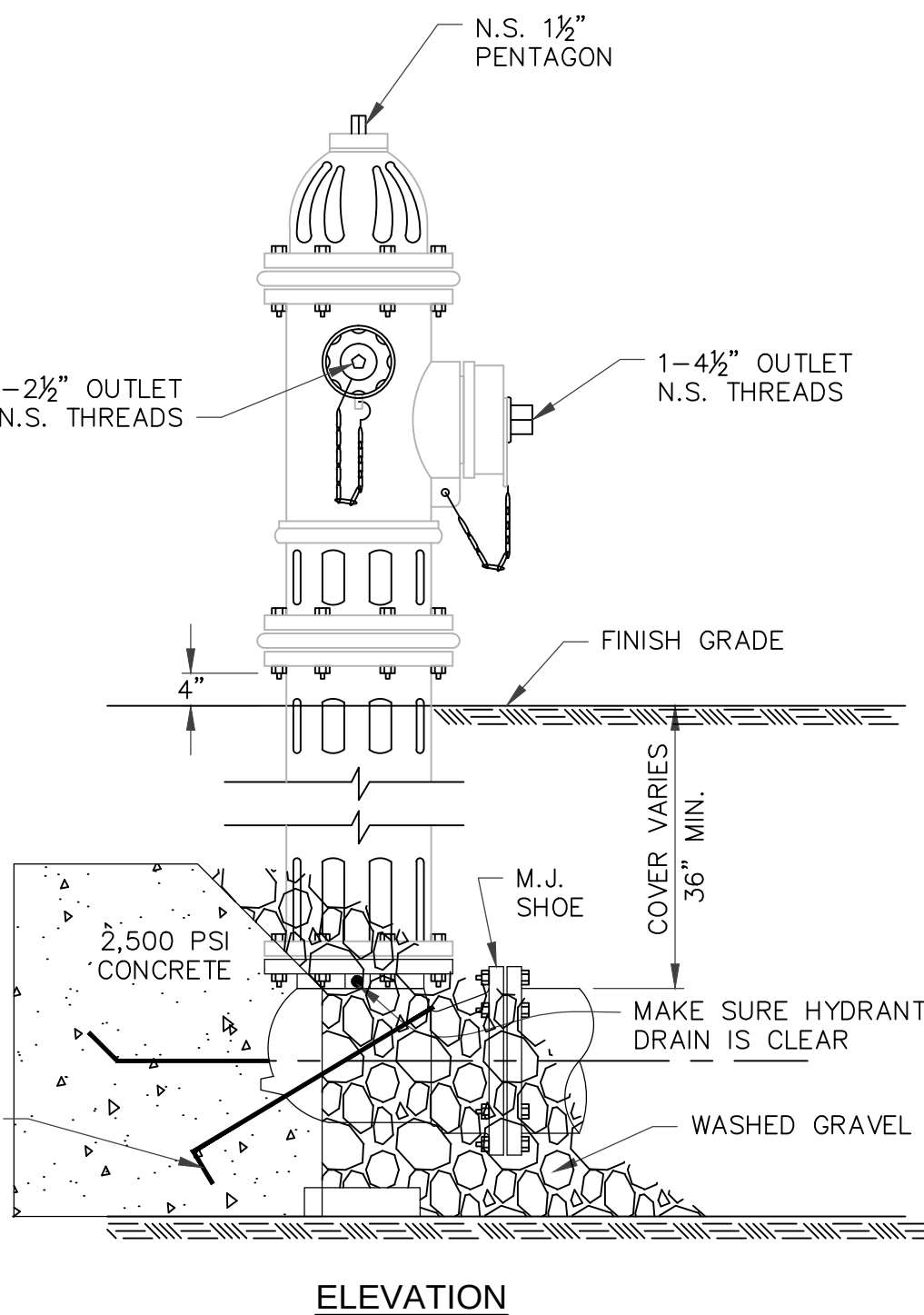
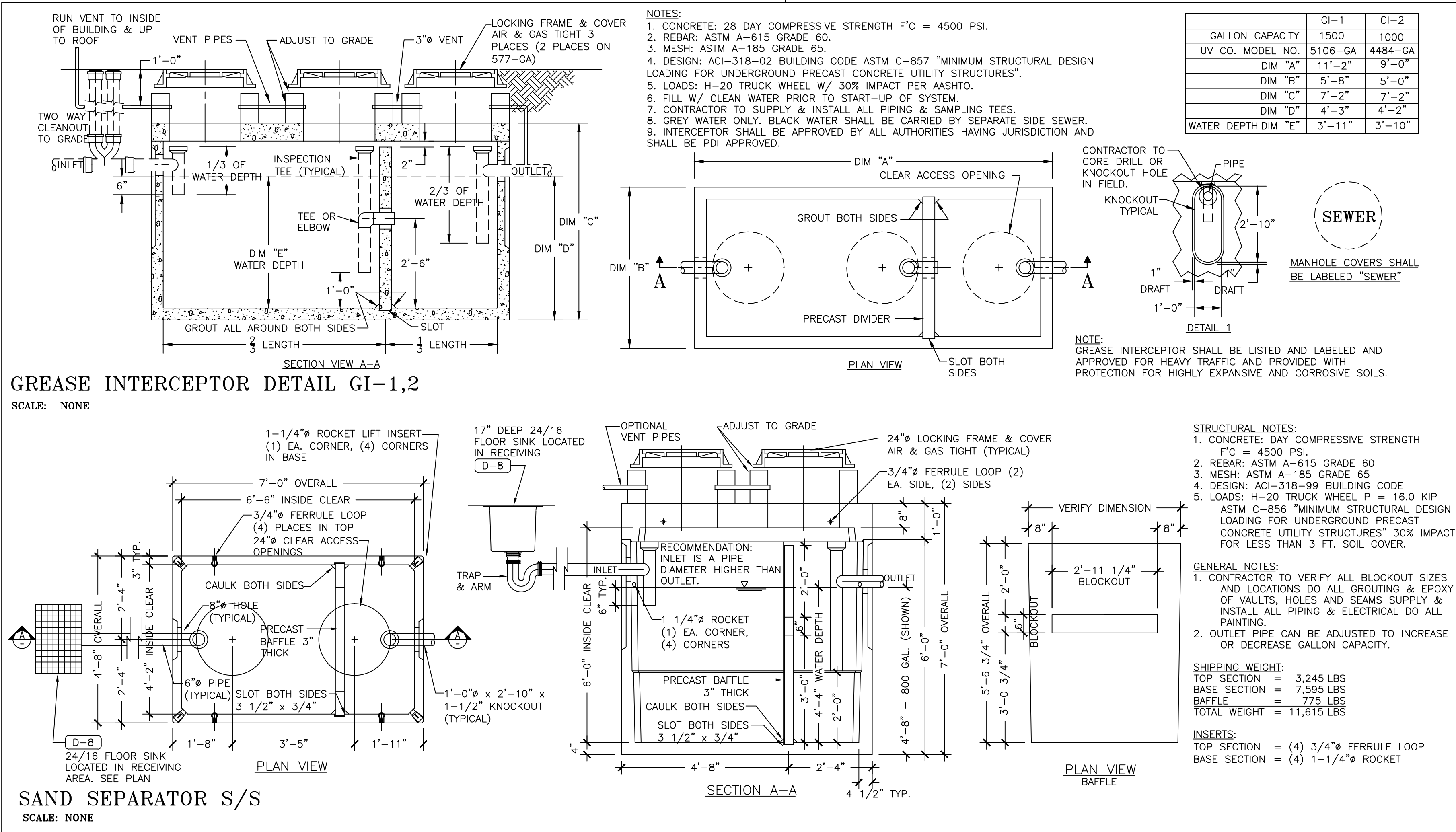
STANDARD MANHOLE FRAME AND COVER



SECTIONAL PLAN
STANDARD MANHOLE



TYPICAL MANHOLE WATER STOP



DATE	DESCRIPTION
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06/01/16	REVISED PER CITY COMMENTS

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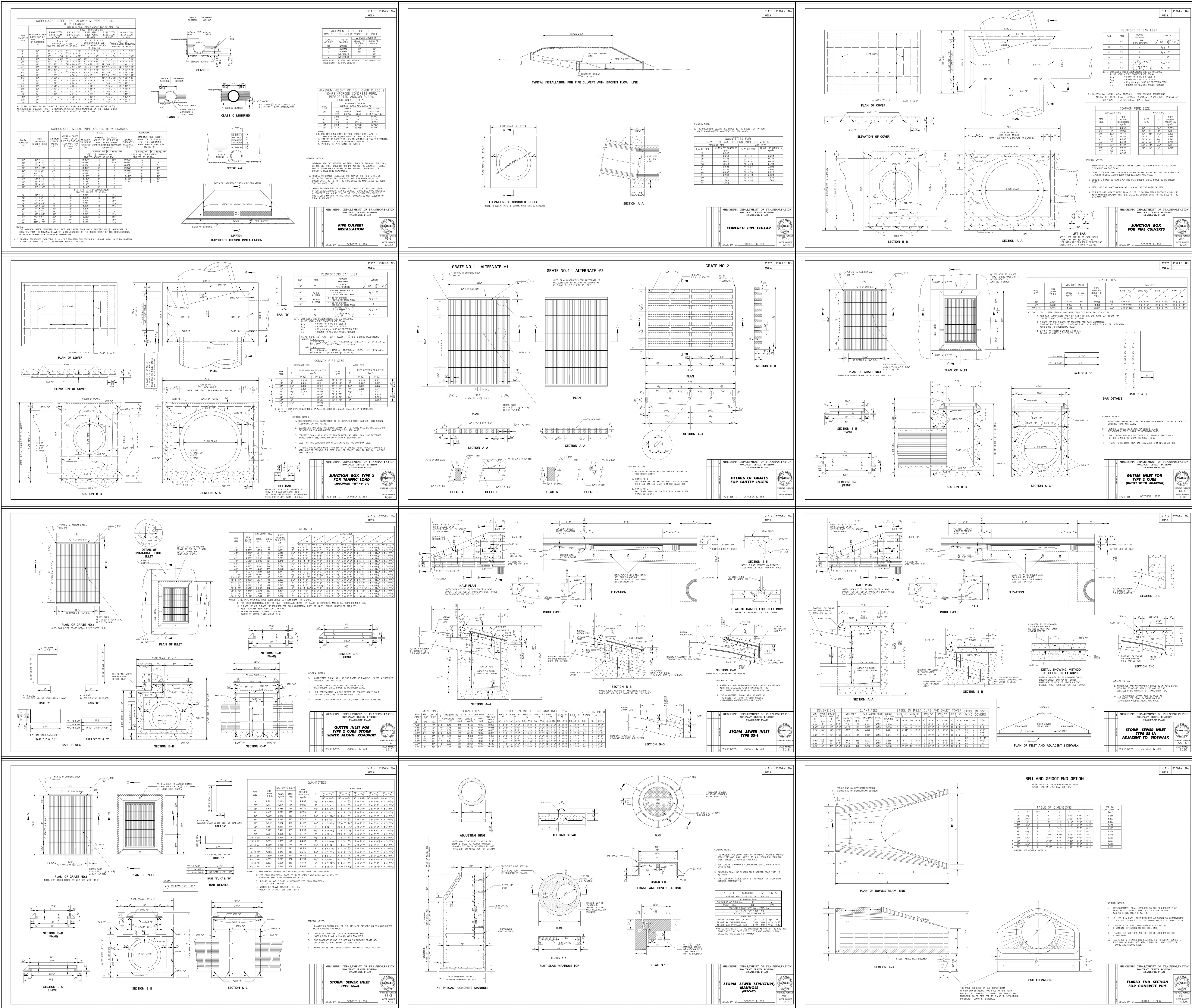
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AEC JOB #: 14-3686.00
CIVIL DRAWN BY: JWM
CIVIL DESIGNED BY: JWM/MDV
LANDSCAPE DRAWN BY: JAP
LANDSCAPE DESIGNED BY: SLF
CHECK BY: CJF
DATE: 05-17-16

SHEET NUMBER

CD2.2







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EROSION CONTROL AND TRAFFIC CONTROL DETAILS

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[illegible]

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DATE: 05-17-16

SHEET NUMBER

CD4.0

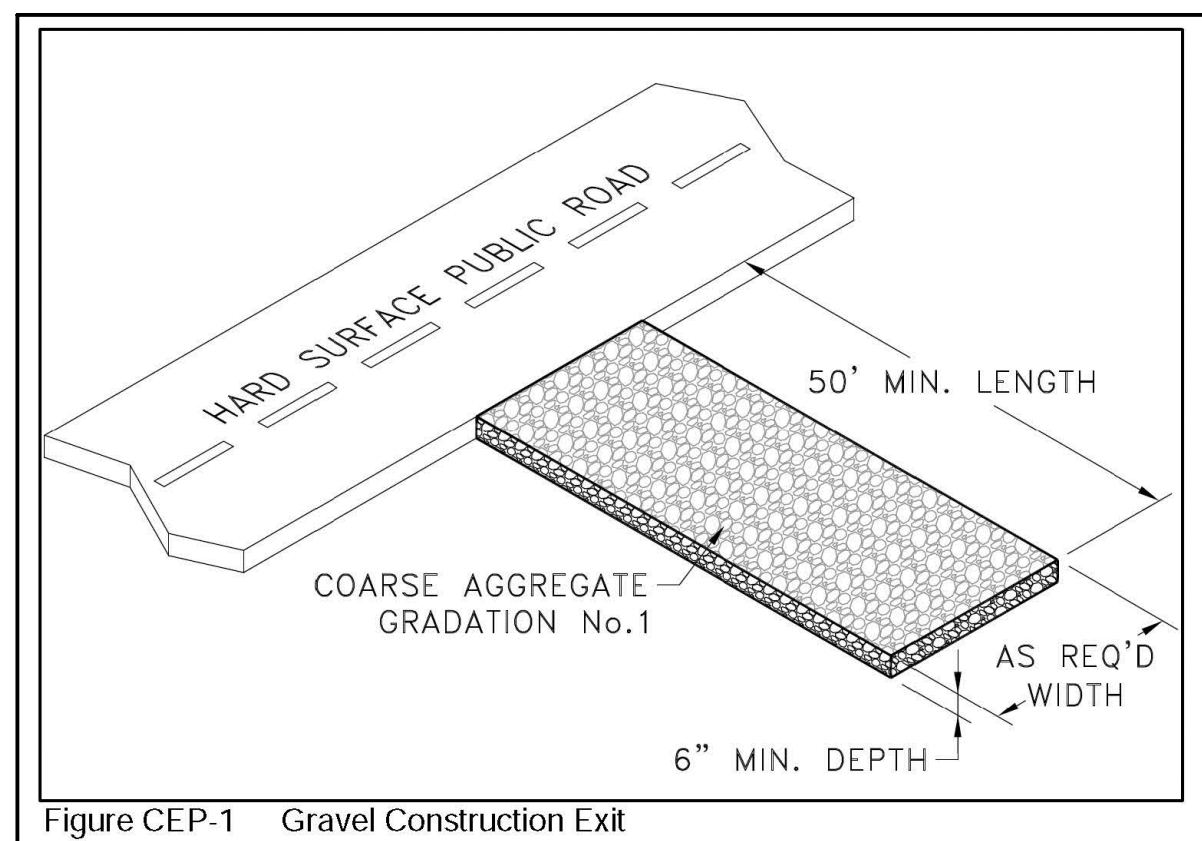
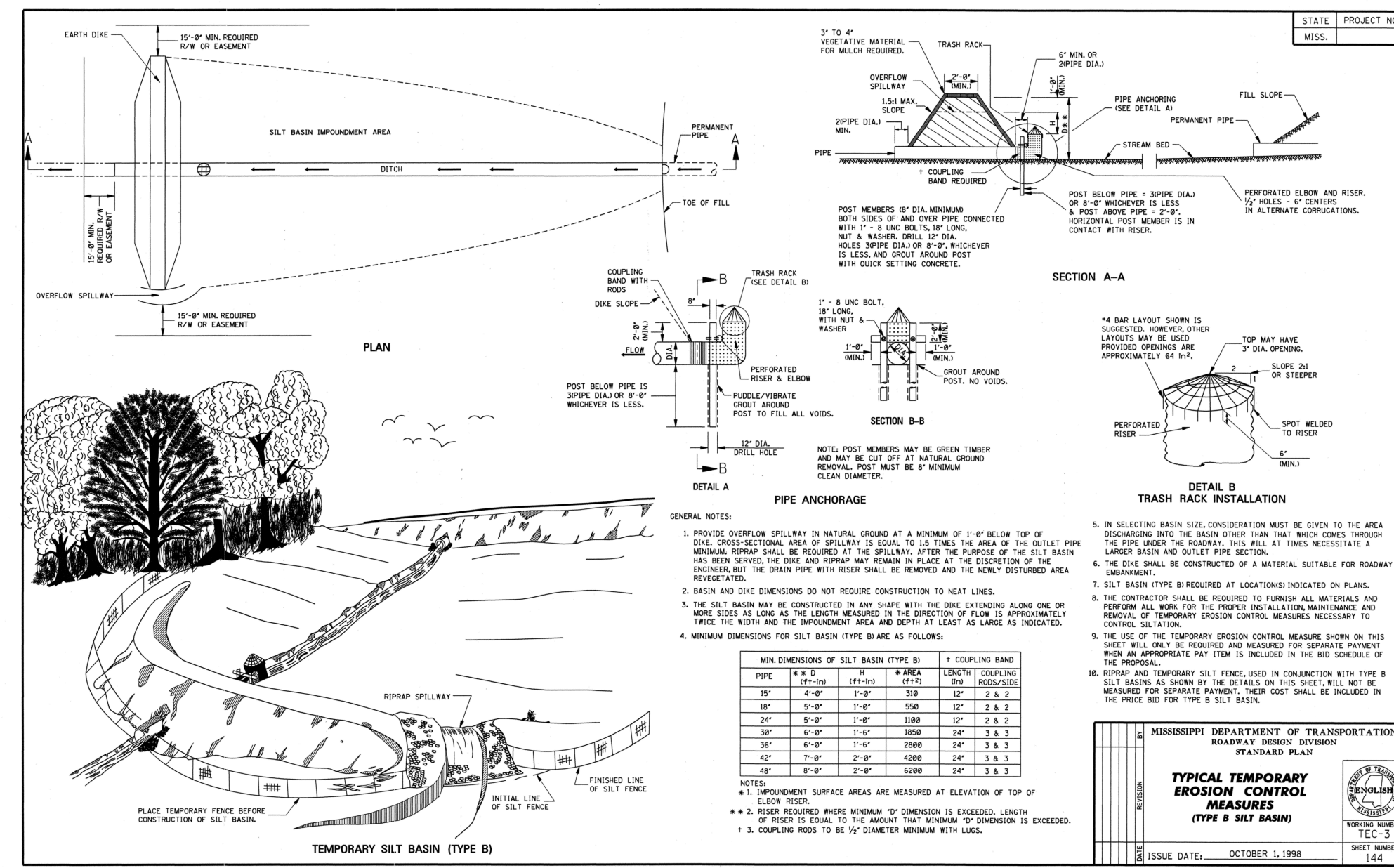
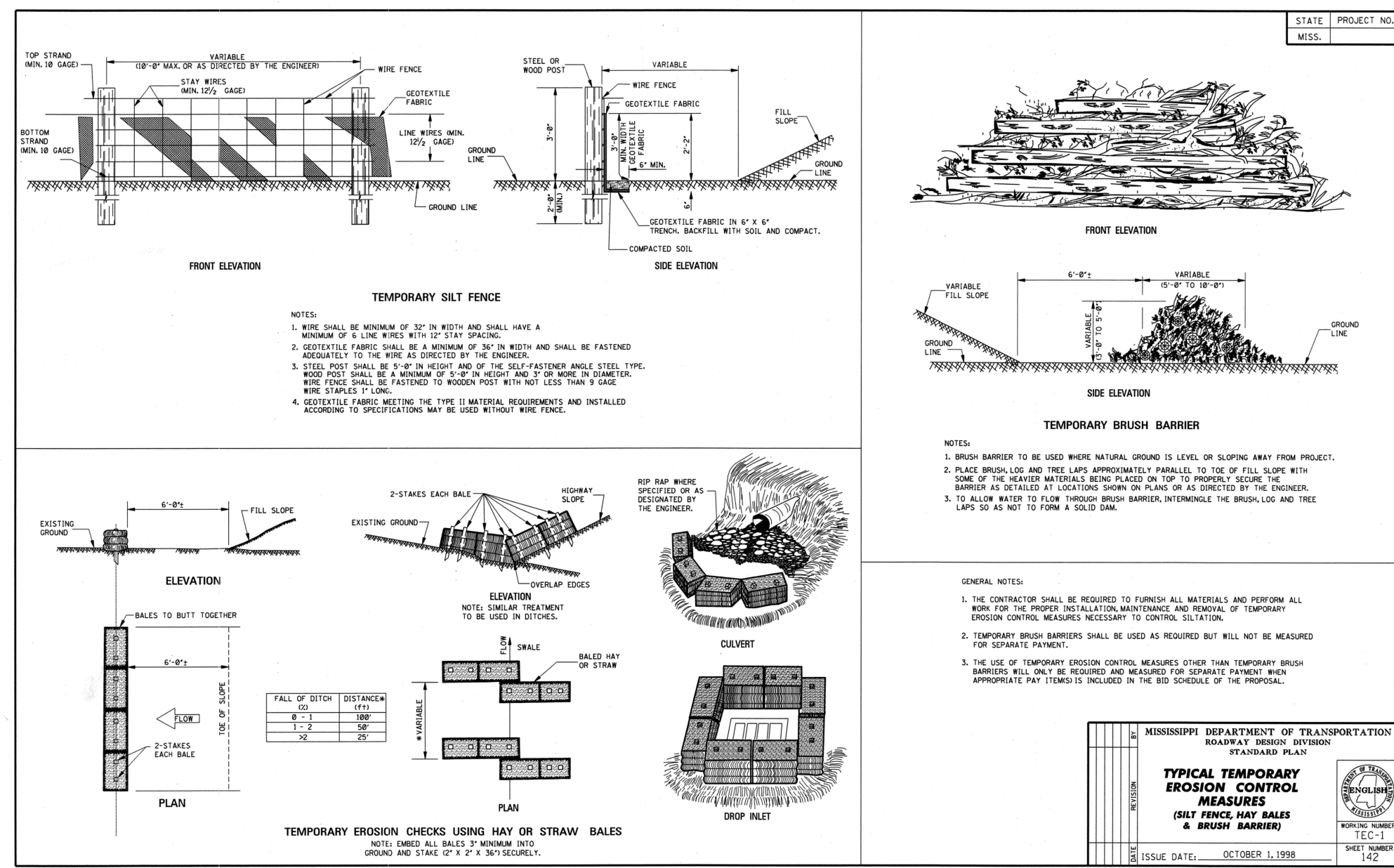


Figure CEP-1 Gravel Construction Exit

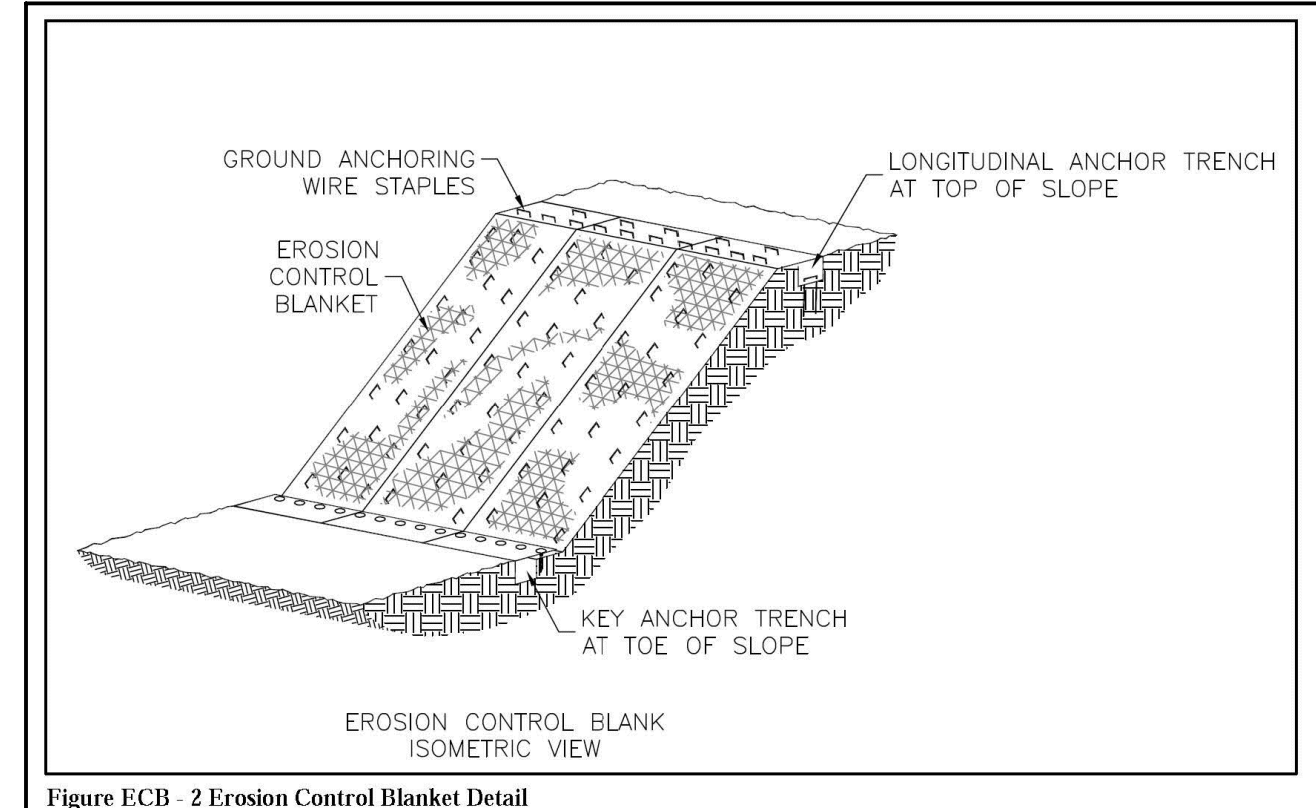
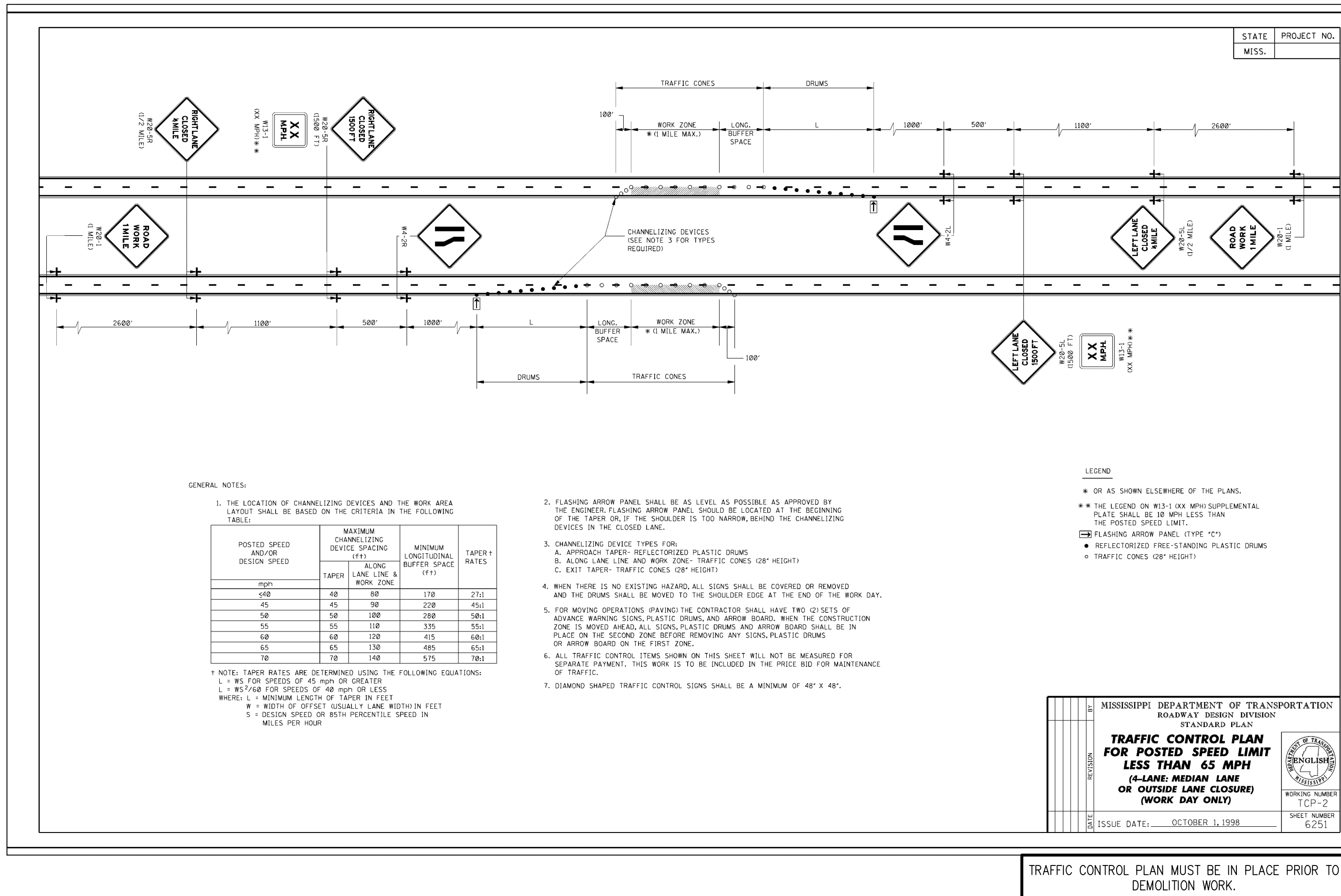
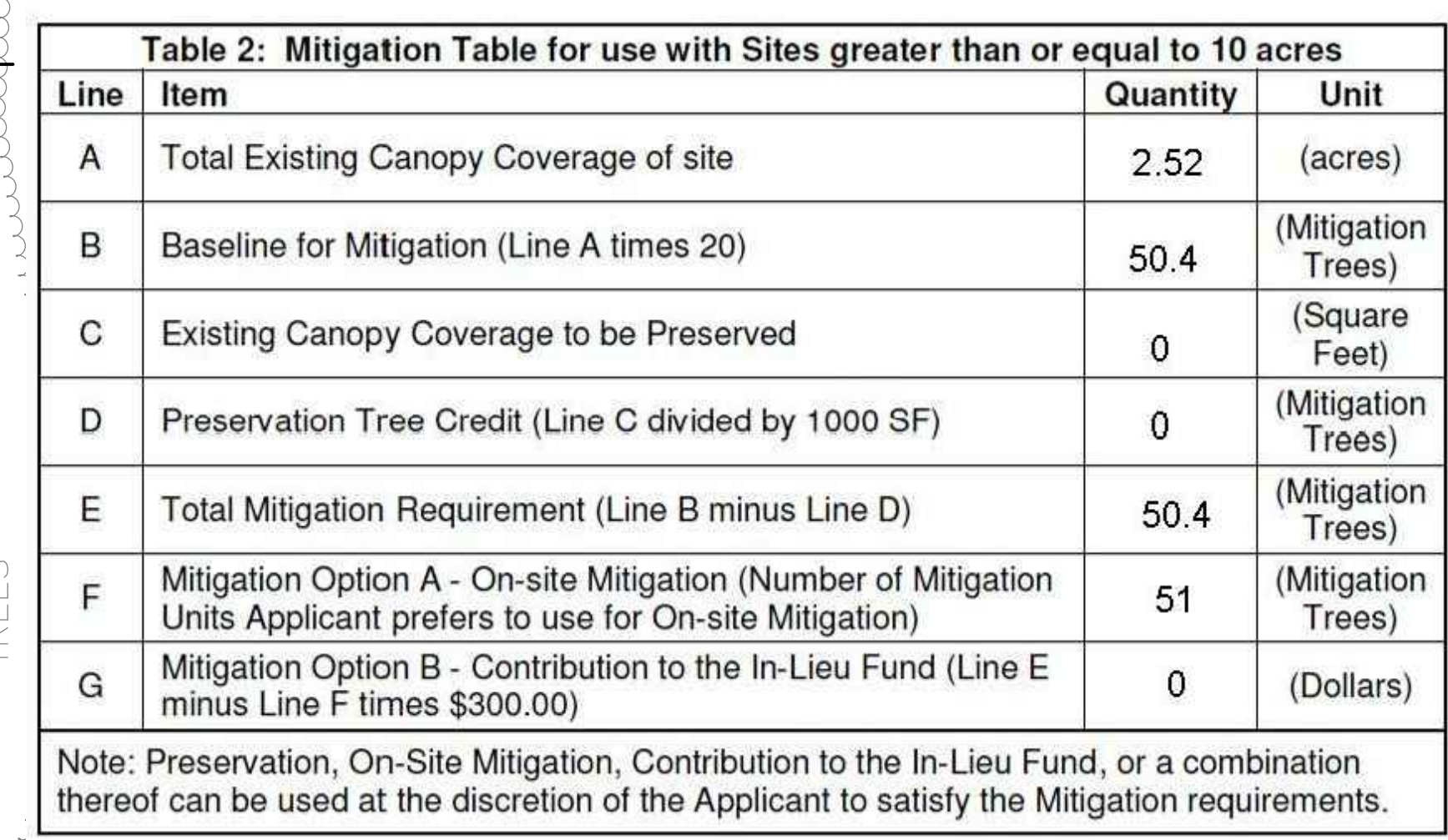


Figure ECB - 2 Erosion Control Blanket Detail



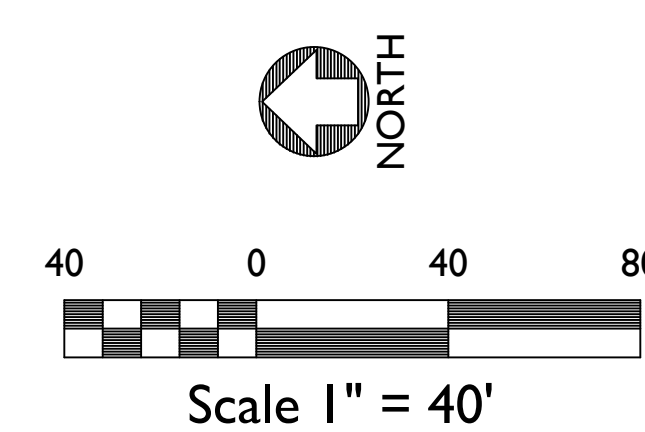


○ -CANOPY TREE DRIPLINE
X -TREE REMOVED

1. IN COMPLIANCE WITH SECTION 6, LETTER D OF THE CITY OF RIDGELAND TREE PROTECTION AND REMOVAL ORDINANCE, THE AREAS OF TREE CANOPY TO BE REMOVED HAVE BEEN GRAPHICALLY DEMONSTRATED ON THIS TREE REMOVAL EXHIBIT (CL1.0). THE PROVIDED TABLE SHOWS THE REQUIRED TABULATED AREAS.
2. TREE CANOPY DRIPLINES HAVE BEEN CALCULATED BASED ON THE SURVEYED EXISTING TREE CALIPER SIZE AT A 1:1 RATIO.
3. ALL TREES 10" AND LARGER HAVE BEEN SURVEYED ON THE PROJECT SITE
4. REFERENCE SHEET C2.1 FOR TOPOGRAPHIC SURVEY

TREE REMOVAL PLAN

CLI.0



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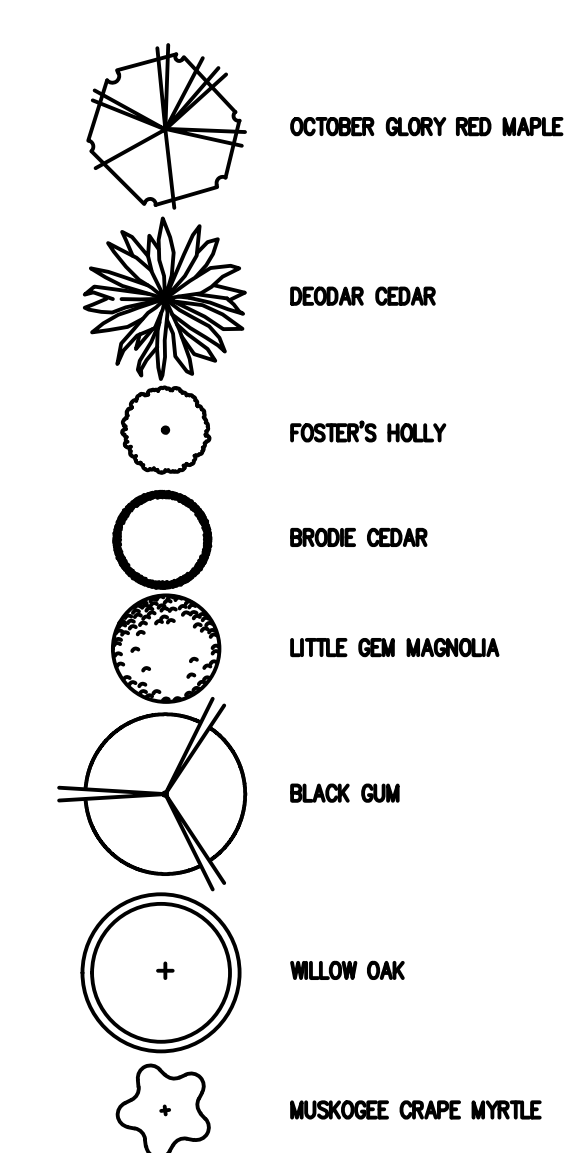
ENGINEERS SEAL



MITIGATION TREE PLANTING LIST					
Quantity	Botanical Name	Common Name	Minimum Size	Spacing	Specifications
10	Acer rubrum 'October Glory'	October Glory Red Maple	3" Cal.	As Shown	Straight leader. Free from pests & disease
32	Nyssa sylvatica	Black Gum	3" Cal.	As Shown	Straight leader. Free from pests & disease
9	Quercus phellos	Willow Oak	3" Cal.	As Shown	Straight leader. Free from pests & disease

* NOTES:

1. TREE MITIGATION IS BEING PLANTED AT 3" CALIPER RATHER THAN THE MINIMUM REQUIRED 2" CALIPER REPLACEMENT.
2. SHADED TREES REPRESENT TREES TO BE COUNTED TOWARD CANOPY MITIGATION REQUIREMENTS (SHOWN ON "MITIGATION TREE PLANTING LIST"). THESE TREE QUANTITIES ARE IN ADDITION TO TREES REQUIRED FOR THE RIDGELAND LANDSCAPE ORDINANCE (SHOWN ON "SITE TREE PLANTING LIST").
3. IRRIGATION WILL BE PROVIDED FOR COSTCO SITE. (DESIGNED BY OTHERS)
4. LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR ACCURATE PLANT COUNTS PRIOR TO PRICING OF TREE, SHRUBS, PERENNIALS, ANNUALS, GROUND COVERS, SOD, SEED AND PINE STRAW. QUANTITIES ARE GIVEN FOR CONVENIENCE ONLY. LANDSCAPE CONTRACTOR SHALL VERIFY PLANT COUNT FROM PLAN, AND SHALL PROVIDE AND INSTALL ALL PLANT MATERIAL SHOWN ON THE PLAN. CONTRACTOR SHALL NOTIFY LANDSCAPE ARCHITECT OF ANY DISCREPANCIES.



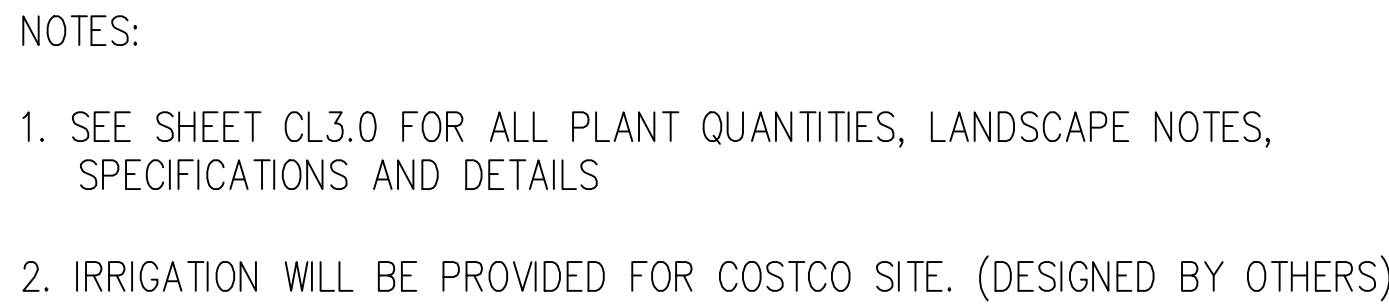
TREE REPLACEMENT PLAN

[illegible]

AEC JOB #: 14-3686.00
CIVIL DRAWN BY: JWM
CIVIL DESIGNED BY: JWM/MDV
LANDSCAPE DRAWN BY: JAP
LANDSCAPE DESIGNED BY: SLR
CHECK BY: CJF
DATE: 05-17-16

SHEET NUMBER

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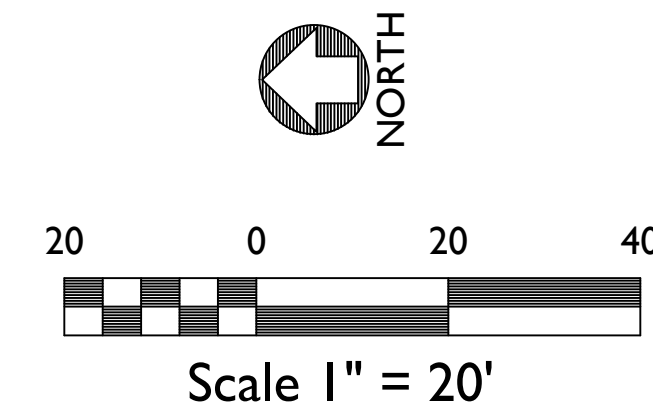
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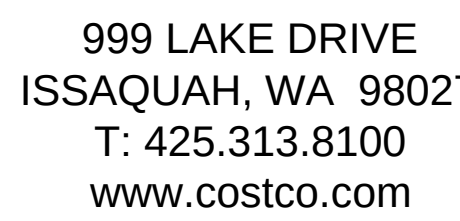
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CIVIL DESIGNED BY: JWM/MDV
LANDSCAPE DRAWN BY: JAP
LANDSCAPE DESIGNED BY: SLR
CHECK BY: CJF
DATE: 05-17-16

SHEET NUMBER

CL2.1



1. SEE SHEET CL3.0 FOR ALL PLANT QUANTITIES, LANDSCAPE NOTES, SPECIFICATIONS AND DETAILS
2. IRRIGATION WILL BE PROVIDED FOR COSTCO SITE. (DESIGNED BY OTHERS)



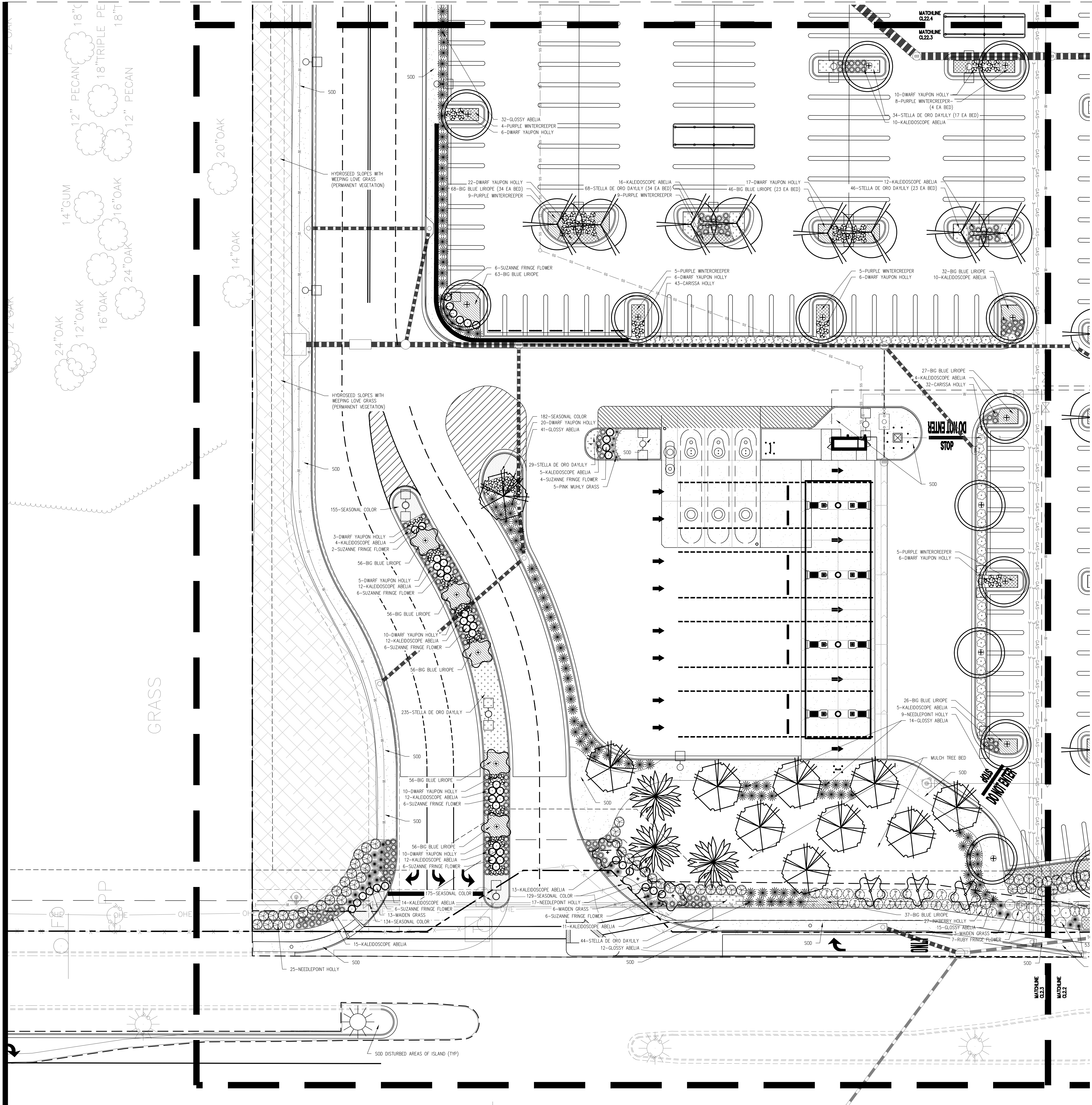
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LANDSCAPE ENLARGEMENT PLAN

[illegible]

SHEET NUMBER

CL2.2



- NOTES:
1. SEE SHEET CL3.0 FOR ALL PLANT QUANTITIES, LANDSCAPE NOTES, SPECIFICATIONS AND DETAILS
 2. IRRIGATION WILL BE PROVIDED FOR COSTCO SITE. (DESIGNED BY OTHERS)



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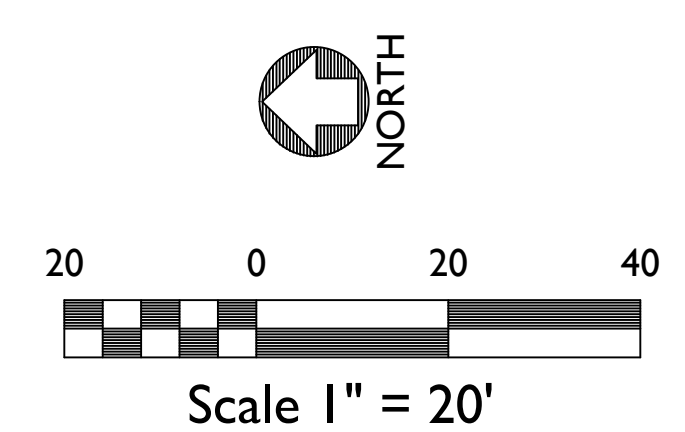
LANDSCAPE ENLARGEMENT
PLAN

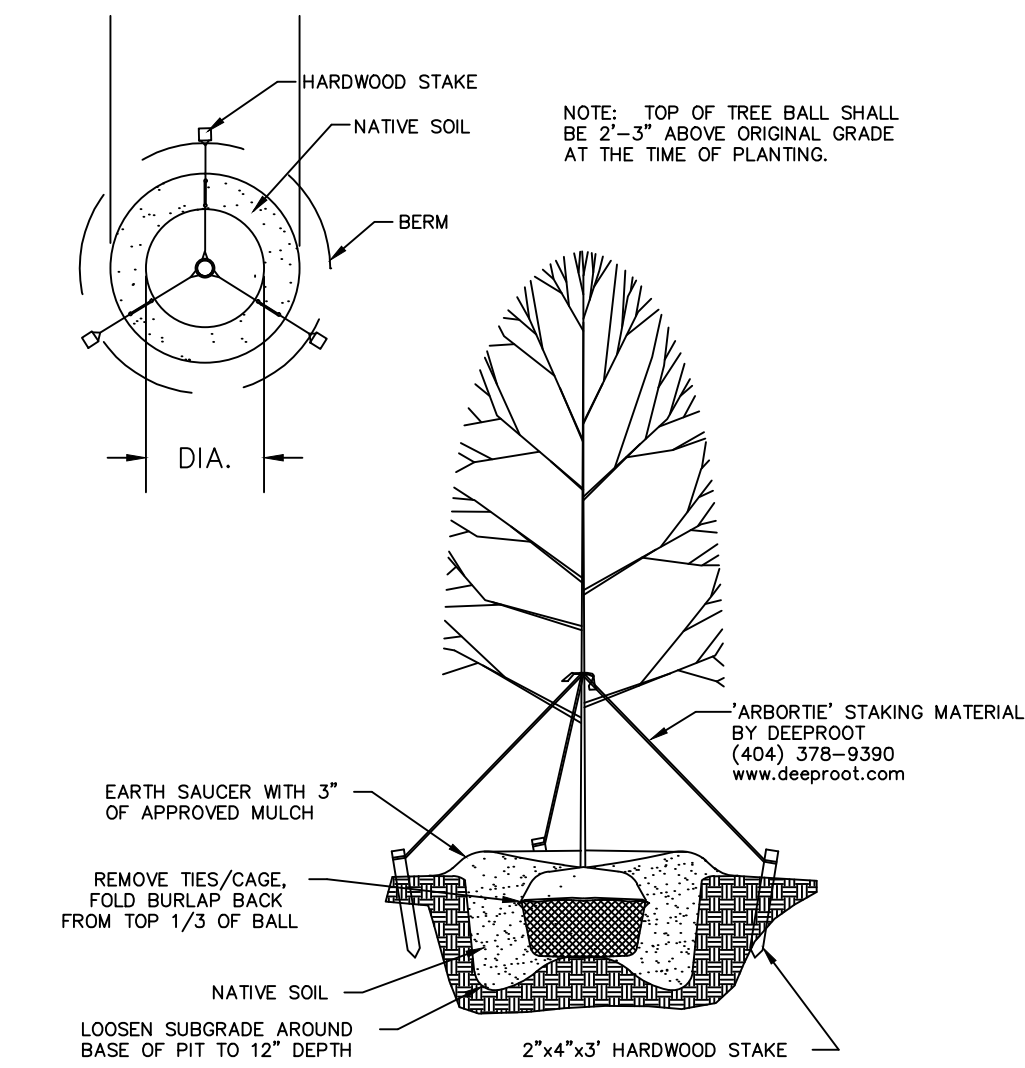
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DATE	DESCRIPTION
05/24/16	REVISED PER CITY COMMENTS
06/01/16	REVISED PER CITY COMMENTS

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CIVIL DESIGNED BY: JWM/MDV
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LANDSCAPE DESIGNED BY: SLR
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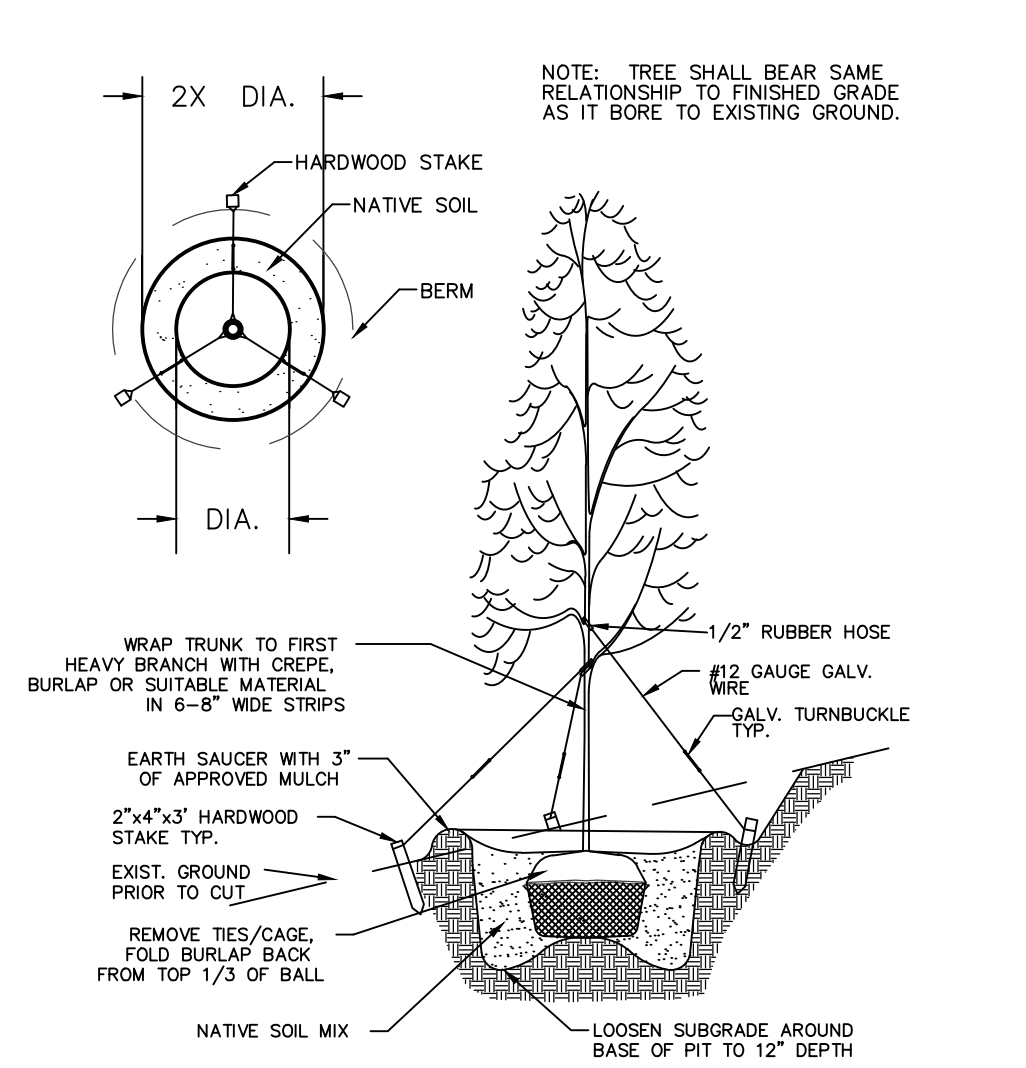
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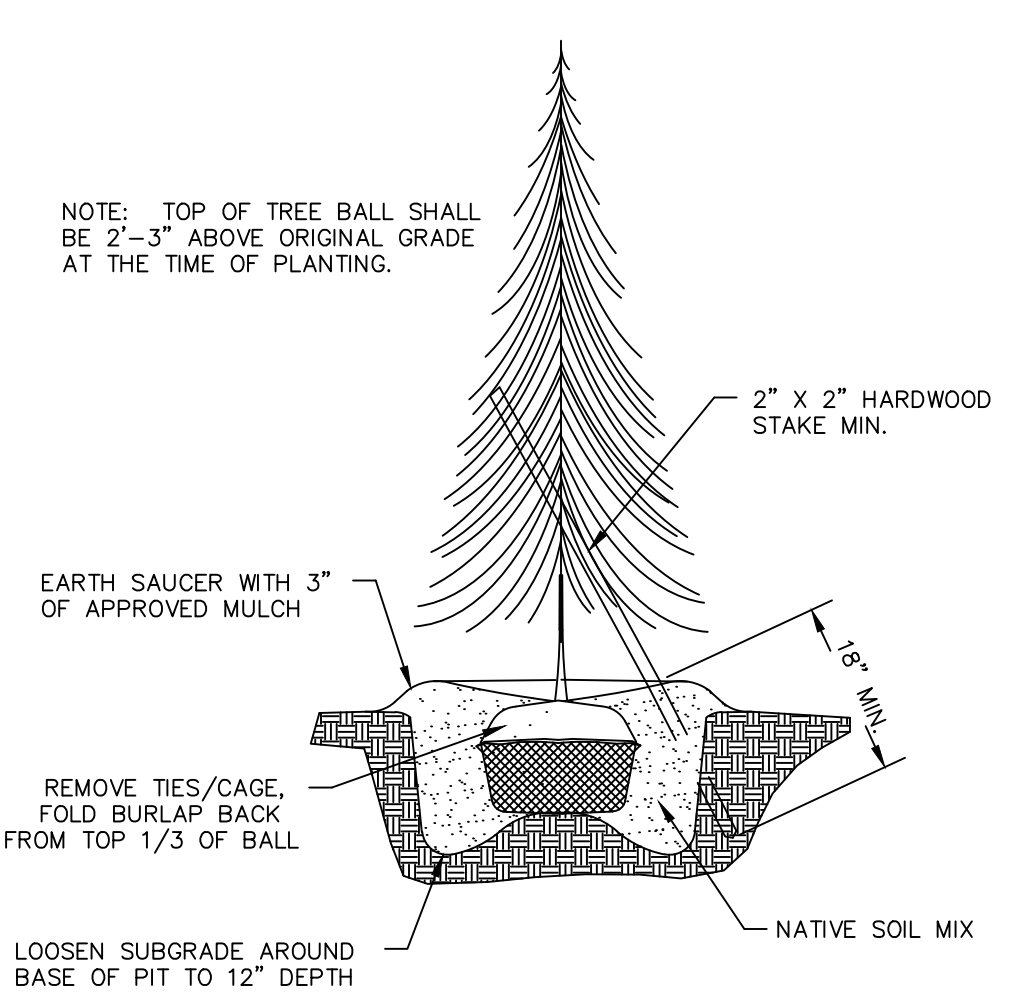




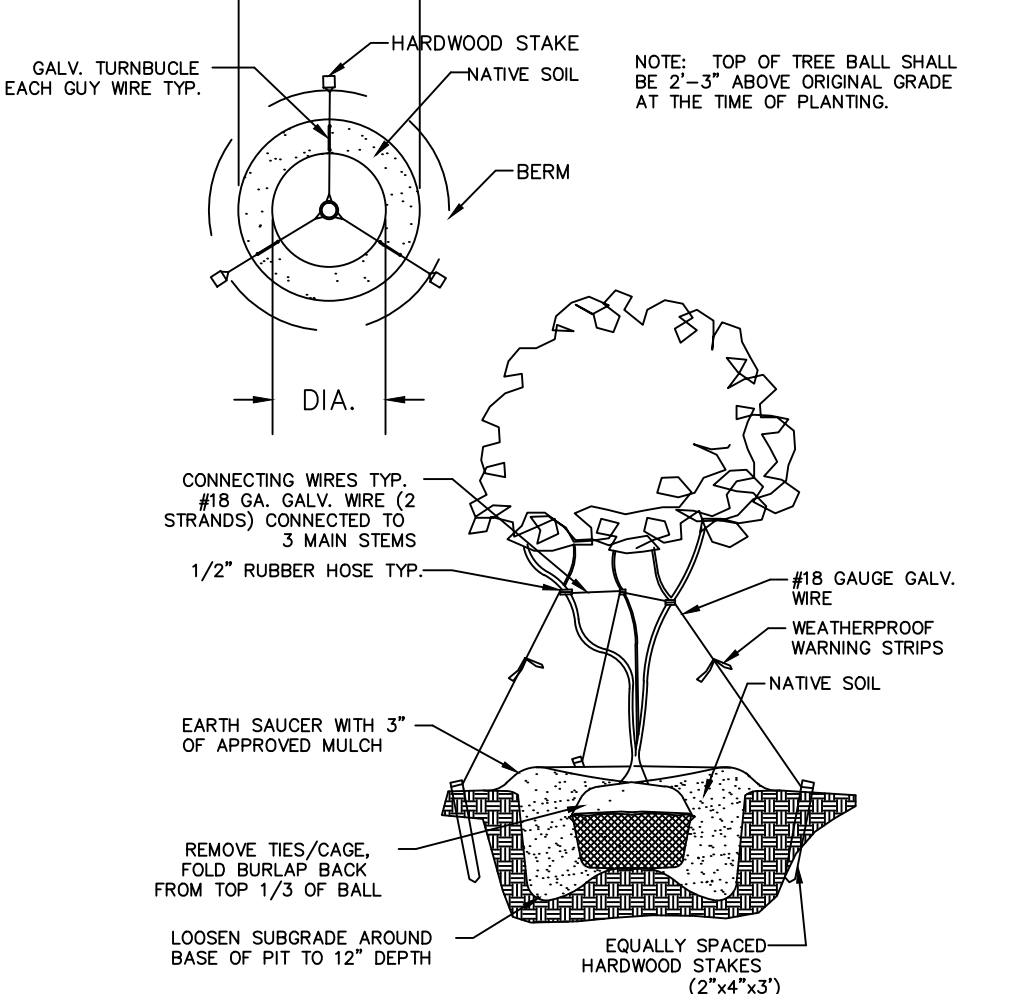
TREE GUYING DETAIL
NOT TO SCALE



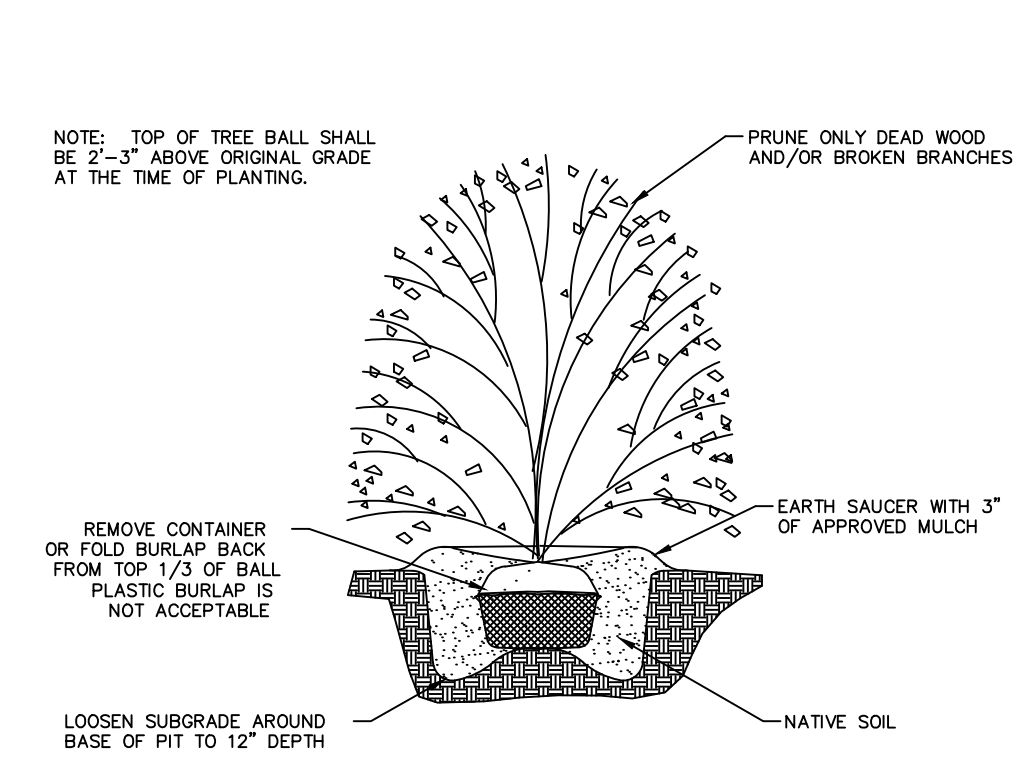
TREE PLANTING & STAKING ON SLOPES
NOT TO SCALE



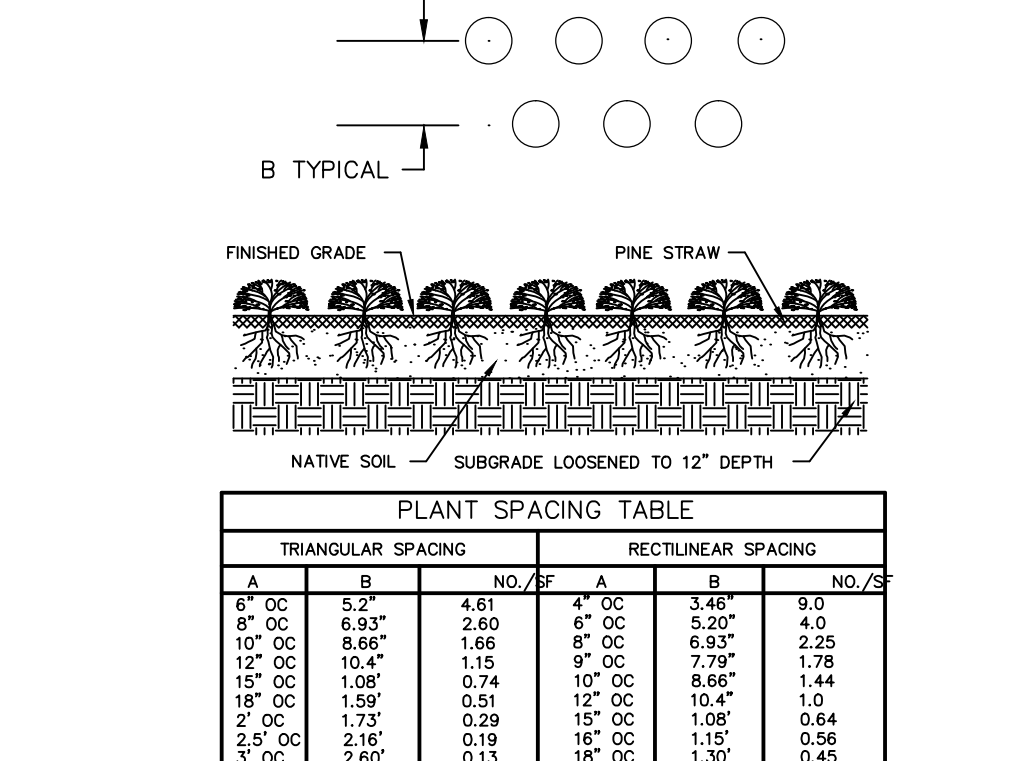
CONIFER PLANTING DETAIL
NOT TO SCALE



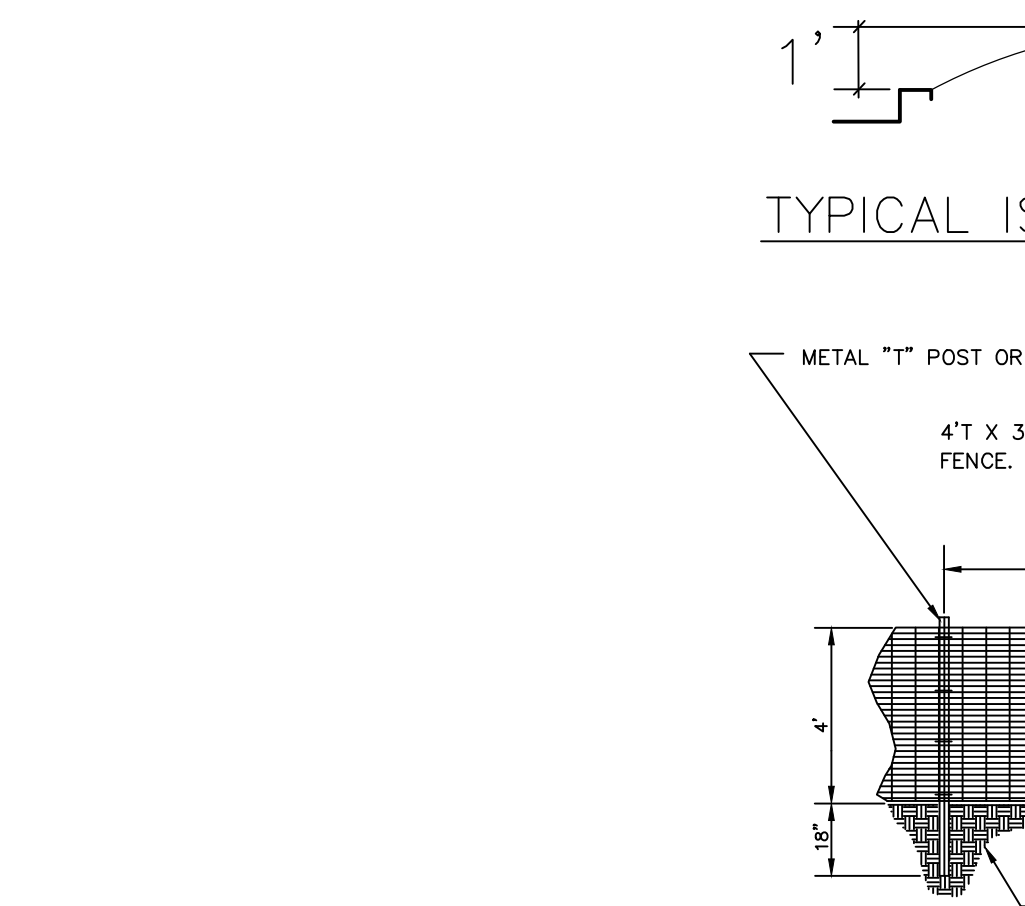
MULTIPLE STEM PLANTING DETAIL
NOT TO SCALE



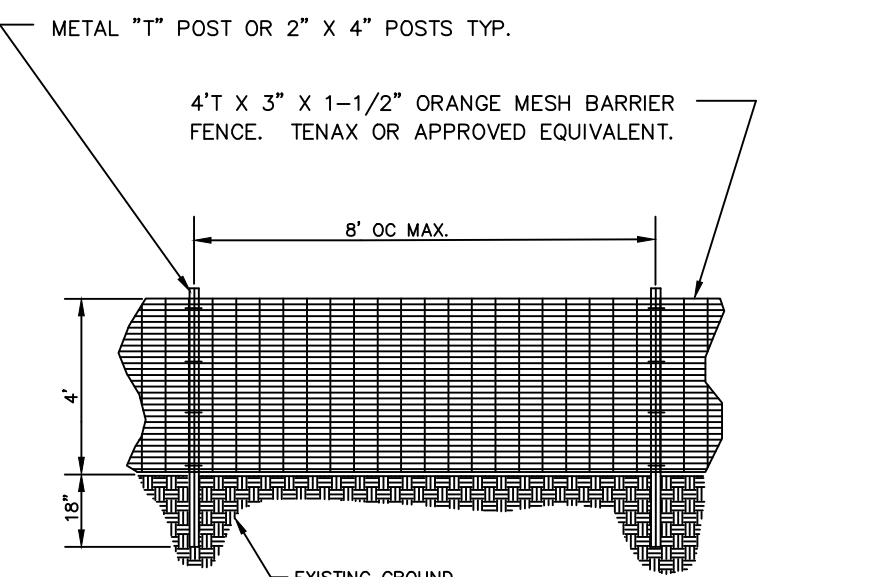
SHRUB PLANTING DETAIL
NOT TO SCALE



GROUND COVER DETAIL
NOT TO SCALE



TYPICAL ISLAND BED SECTION
NOT TO SCALE



ACTIVE TREE PROTECTION FENCE
NOT TO SCALE

GENERAL NOTES:

1. PRIOR TO CONSTRUCTION, THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES & SHALL AVOID DAMAGE TO ALL UTILITIES DURING THE COURSE OF THE WORK. THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY & ALL DAMAGE TO UTILITIES, STRUCTURES, SITE APPURTENANCES, ETC. WHICH OCCURS AS A RESULT OF THE LANDSCAPE CONSTRUCTION.
2. LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR ACCURATE PLANT COUNTS PRIOR TO PRICING OF TREE, SHRUBS, PERENNIALS, ANNUALS, GROUND COVERS, SOD, SEED AND PINE STRAW. QUANTITIES ARE GIVEN FOR CONVENIENCE ONLY. LANDSCAPE CONTRACTOR SHALL VERIFY PLANT COUNT FROM PLAN, AND SHALL PROVIDE AND INSTALL ALL PLANT MATERIAL SHOWN ON THE PLAN. CONTRACTOR SHALL NOTIFY LANDSCAPE ARCHITECT OF ANY DISCREPANCIES.
3. ALL PLANT MATERIAL CHOSEN MUST BE FREE OF DISEASE AND PESTS, BE OF GOOD QUALITY AND WELL SHAPED AND BRANCHED.
4. ALL TREES IN LAWN AREA TO HAVE A 4" DIAMETER MULCH BED.
5. NO PLANTING BED EDGE SHALL BE CLOSER THAN 21" FROM THE BACK OF CURB OR SIDEWALK.
6. PLANTING BED LINES, TREE, SHRUB, GROUNDCOVER, & SEASONAL COLOR PLACEMENT SHALL BE APPROVED BY THE PROJECT LANDSCAPE ARCHITECT OR OWNERS REPRESENTATIVE, PRIOR TO INSTALLATION.
7. LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING POSITIVE DRAINAGE AT 2% MINIMUM IN ALL PLANTED AREAS.
8. O. C. = ON CENTER, & S.A.S = SPACE AS SHOWN.
9. ALL PLANTS MUST BE CONTAINER-GROWN OR BALLED & BURLAPPED (B&B) AS INDICATED IN THE PLANT LIST.
10. ALL TREES MUST BE STRAIGHT TRUNKED, FULL HEADED & MEET ALL REQUIREMENTS SPECIFIED.
11. ALL PLANTS ARE SUBJECT TO THE APPROVAL OF THE LANDSCAPE ARCHITECT & THE OWNER BEFORE, DURING & AFTER INSTALLATION.
12. ALL TREES MUST BE GUYED OR STAKED AS SHOWN IN THE DETAILS.
13. ALL PLANTS & PLANTING AREAS MUST BE COMPLETELY MULCHED AND WATER IMMEDIATELY AFTER PLANTING AS SPECIFIED.
14. THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR FULLY MAINTAINING ALL PLANTINGS (INCLUDING, BUT NOT LIMITED TO: WATERING, SPRAYING, MULCHING, FERTILIZING, ETC.) UNTIL THE WORK IS ACCEPTED IN TOTAL BY THE LANDSCAPE ARCHITECT & THE OWNER.
15. THE LANDSCAPE CONTRACTOR SHALL COMPLETELY GUARANTEE ALL PLANT MATERIAL FOR A PERIOD OF ONE (1) YEAR BEGINNING AT THE DATE OF FINAL ACCEPTANCE. THE LANDSCAPE CONTRACTOR SHALL PROMPTLY MAKE ALL REPLACEMENTS BEFORE OR AT THE END OF THE GUARANTEE PERIOD (AS PER DIRECTION OF THE OWNER).
16. THE OWNER AGREES TO PERFORM ALL LANDSCAPE MAINTENANCE (INCLUDING WATERING) THROUGHOUT THE ONE YEAR GUARANTEE PERIOD UNLESS OTHERWISE DETERMINED.
17. THE LANDSCAPE ARCHITECT WILL APPROVE THE STAKED LOCATION OF ALL PLANT MATERIAL PRIOR TO INSTALLATION.
18. AFTER BEING DUG AT THE NURSERY SOURCE, ALL TREES IN LEAF SHALL BE ACCLIMATED FOR TWO (2) WEEKS UNDER A MIST SYSTEM PRIOR TO INSTALLATION.
19. ANY PLANT MATERIAL WHICH DIES, TURNS BROWN OR DEFLOLIATES (PRIOR TO TOTAL ACCEPTANCE OF THE WORK) SHALL BE PROMPTLY REMOVED FROM THE SITE & REPLACED WITH MATERIAL OF THE SAME SPECIES, QUANTITY, SIZE AND MEETING ALL PLANT LIST SPECIFICATIONS.
20. STANDARDS SET FORTH IN 'AMERICAN STANDARDS FOR NURSERY STOCK' REPRESENT GUIDELINE SPECIFICATIONS ONLY AND CONSTITUTE MINIMUM QUALITY REQUIREMENTS FOR PLANT MATERIAL.
21. IRRIGATION WILL BE PROVIDED FOR SITE, (DESIGNED BY OTHERS)

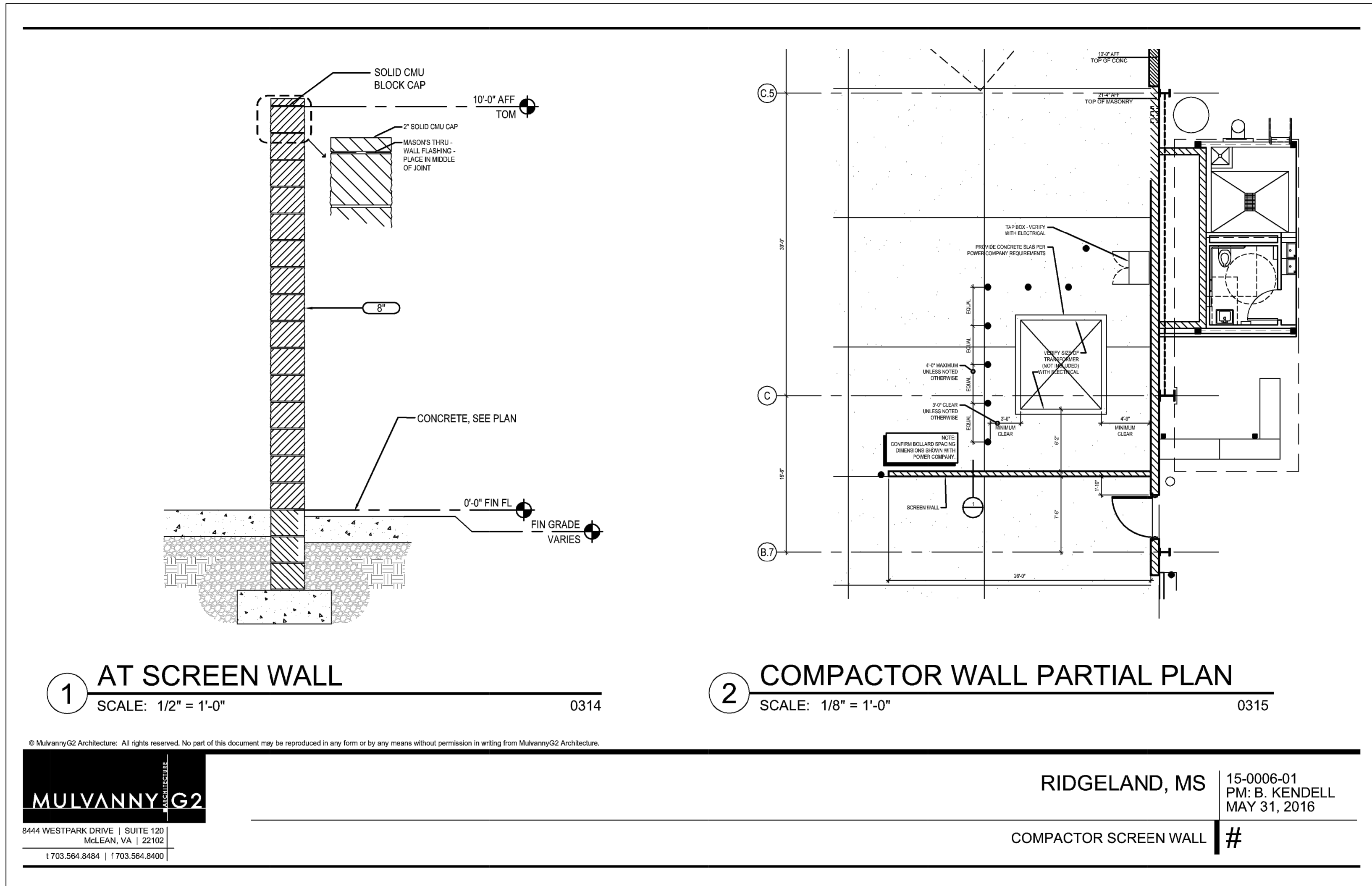
SITE TREE PLANTING LIST (DOES NOT INCLUDE MITIGATION TREES)					
Quantity	Botanical Name	Common Name	Minimum Size	Spacing	Specifications
7	Cedrus deodara	Deodar Cedar	8-10' Ht. B&B	As Shown	Straight leader. Full to base. Free from pests and disease
5	Ilex x attenuata 'Foster's'	Foster's Holly	8-10' Ht. B&B	As Shown	Straight leader. Full to base. Free from pests and disease
6	Juniperus virginiana 'Brodie'	Brodie Eastern Red Cedar	8-10' Ht. B&B	As Shown	Straight leader. Full to base. Free from pests and disease
3	Magnolia grandiflora 'Little Gem'	Little Gem Magnolia	8-10' Ht. B&B	As Shown	Straight leader. Full to base. Free from pests and disease
35	Nyssa sylvatica	Black Gum	3" Cal. B&B	As Shown	Straight leader. Free from pests & disease
41	Quercus phellos	Willow Oak	3" Cal. B&B	As Shown	Straight leader. Free from pests & disease
10	Lagerstroemia indica 'Natchez'	Natchez Crape Myrtle	3" Cal. B&B	As Shown	Multi-stem. Free from pests & disease
16	Lagerstroemia indica 'Muscogee'	Muscogee Crape Myrtle	3" Cal. B&B	As Shown	Multi-stem. Free from pests & disease

MITIGATION TREE PLANTING LIST					
Quantity	Botanical Name	Common Name	Minimum Size	Spacing	Specifications
10	Acer rubrum 'October Glory'	October Glory Red Maple	3" Cal.	As Shown	Straight leader. Free from pests & disease
32	Nyssa sylvatica	Black Gum	3" Cal.	As Shown	Straight leader. Free from pests & disease
9	Quercus phellos	Willow Oak	3" Cal.	As Shown	Straight leader. Free from pests & disease

Shrub & Groundcover Plant List						
Qty.	Botanical Name	Common Name	Type	Minimum Size	Spacing	Specifications
154	Achela grandiflora	Glossy Achela	Large Shrub	7 Gal, 24" ht.	As Shown	Full, Free of Pests and disease
12	Eustoma fortunei 'Canadian Gold'	Canadian Gold Wintercreeper	Large Shrub	7 Gal, 24" ht.	As Shown	Full, Free of Pests and disease
200	Ilex cornuta 'Carissa'	Carissa Holly	Large Shrub	7 Gal, 24" ht.	As Shown	Full, Free of Pests and disease
231	Ilex cornuta 'Needlepoint'	Needlepoint Holly	Large Shrub	7 Gal, 24" ht.	As Shown	Full, Free of Pests and disease
183	Ilex glabra	Dinkers Holly	Large Shrub	7 Gal, 24" ht.	As Shown	Full, Free of Pests and disease
53	Loxopteleum chinensis 'Ruby'	Ruby Fringe Flower	Large Shrub	7 Gal, 24" ht.	As Shown	Full, Free of Pests and disease
49	Miscanthus sinensis 'Gracillimus'	Maiden Grass	Large Shrub	7 Gal, 24" ht.	As Shown	Full, Free of Pests and disease
590	Achela grandiflora x Kalidoscope	Kalidoscope Achela	Small Shrub	3 Gal, 18" ht.	As Shown	Full, Free of Pests and disease
676	Ilex vomitoria 'Stoke's Dwarf'	Stoke's Dwarf Yaupon Holly	Small Shrub	3 Gal, 18" ht.	As Shown	Full, Free of Pests and disease
151	Loxopteleum chinensis 'Suzanne'	Suzanne Fringe Flower	Small Shrub	3 Gal, 18" ht.	As Shown	Full, Free of Pests and disease
53	Muhlenbergia capillaris	Pink Muhly Grass	Small Shrub	3 Gal, 18" ht.	As Shown	Full, Free of Pests and disease
2128	Hemerocallis x 'Stella de Oro'	Stella de Oro Dwarf Daylily	Perennial	1 Gal	18" OC x 18" Stag Row	Full, Free of Pests and disease
2520	Liriodendron muscari 'Big Blue'	Big Blue Liriodendron	Groundcover	4" pot	18" OC x 18" Stag Row	Full, Free of Pests and disease
720	Eustoma fortunei 'Coloratus'	Purple Wintercreeper	Groundcover	4" pot	24" OC x 24" Stag Row	Full, Free of Pests and disease
1304	Seasonal Color	Seasonal Color	Seasonal Color	4" pot	12" OC x 12" Stag Row	Full, Free of Pests and disease
	Eragrostis curvula	Weeping Lovegrass	Hydroseed			
	Tifway 419 Bermuda sod	Tifway 419 Bermuda sod	Sod			Qty to be determined by Contractor
	Hardwood Mulch	Hardwood Mulch	Mulch			All Landscape Beds to be mulched

NOTES:

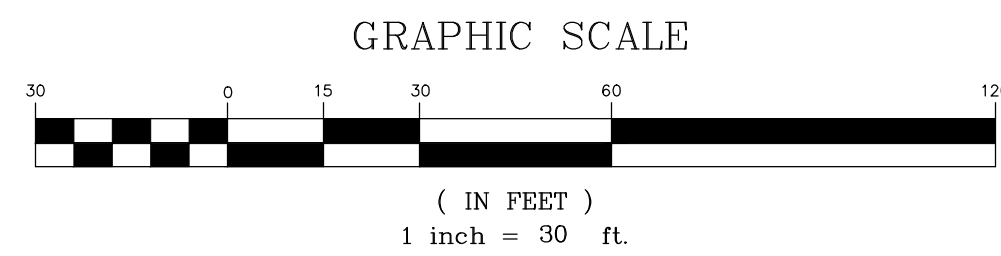
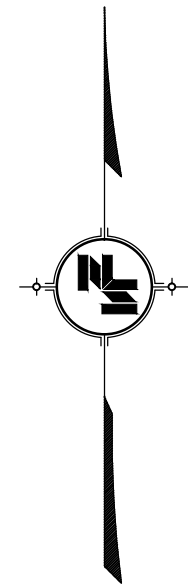
1. SEE SHEET CL3.0 FOR ALL PLANT QUANTITIES, LANDSCAPE NOTES, SPECIFICATIONS AND DETAILS
2. IRRIGATION WILL BE PROVIDED FOR COSTCO SITE. (DESIGNED BY OTHERS)
3. LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR ACCURATE PLANT COUNTS PRIOR TO PRICING OF TREE, SHRUBS, PERENNIALS, ANNUALS, GROUND COVERS, SOD, SEED AND PINE STRAW. QUANTITIES ARE GIVEN FOR CONVENIENCE ONLY. LANDSCAPE CONTRACTOR SHALL VERIFY PLANT COUNT FROM PLAN, AND SHALL PROVIDE AND INSTALL ALL PLANT MATERIAL SHOWN ON THE PLAN. CONTRACTOR SHALL NOTIFY LANDSCAPE ARCHITECT OF ANY DISCREPANCIES.



1 AT SCREEN WALL
SCALE: 1/2" = 1'-0" 0314

2 COMPACTOR WALL PARTIAL PLAN
SCALE: 1/8" = 1'-0" 0315

MATCH LINE SEE DRAWING NO. R1.2



LEGEND

- 330 --- EXISTING CONTOURS
- 320 --- FINISHED GRADE CONTOURS
- 320 --- COSTCO FINISHED GRADE CONTOURS (SEE ARCHITECTURAL C DRAWINGS)
- 320 --- COSTCO STORM PIPE (SEE ARCHITECTURAL C DRAWINGS)
- 320 --- COSTCO RETAINING WALL (SEE ARCHITECTURAL C DRAWINGS)
- 320 --- PROPERTY LINE
- 320 --- 200 LB. RIPRAP WITH FILTER FABRIC REQ'D.

NOTES:

MAINTENANCE PLAN

BOTH THE SHORT-TERM (DURING CONSTRUCTION) AND LONG TERM (AFTER CONSTRUCTION) MAINTENANCE NEEDS MUST BE ADDRESSED.

SHORT TERM
ALL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CHECKED FOR STABILITY AND OPERATION FOLLOWING EVERY RUNOFF PRODUCING RAINFALL BUT IN NO CASE, LESS THAN EVERY WEEK. ANY NEEDED REPAIRS WILL BE MADE IMMEDIATELY TO MAINTAIN THE PRACTICE PERFORMANCE AS DESIGNED.

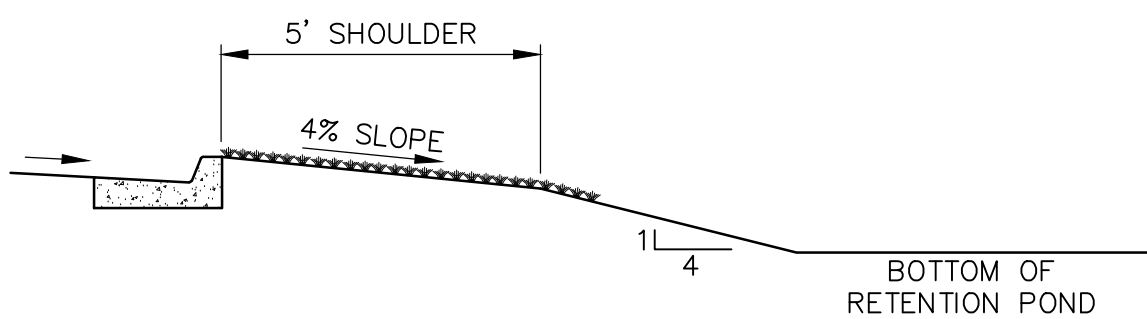
SEDIMENT WILL BE REMOVED FROM THE UPSTREAM FACE OF THE SILT FENCE WHEN IT INCREASES TO ABOUT A 6-INCH DEPTH AT THE FENCE. THE SILT FENCE WILL BE REPLACED AS NECESSARY TO MAINTAIN A BARRIER.

ALL DISTURBED AREAS WILL RECEIVE A MINIMUM OF 4 INCHES OF TOPSOIL AND BE PLANTED WITH BERMUDA SEEDS.

ALL VEGETATED AREAS WILL BE FERTILIZED, WATERED, HERBICIDE SPRAYED AND RE-VEGETATED AS NEEDED TO MAINTAIN A VIGOROUS AND DENSE VEGETATIVE COVER.

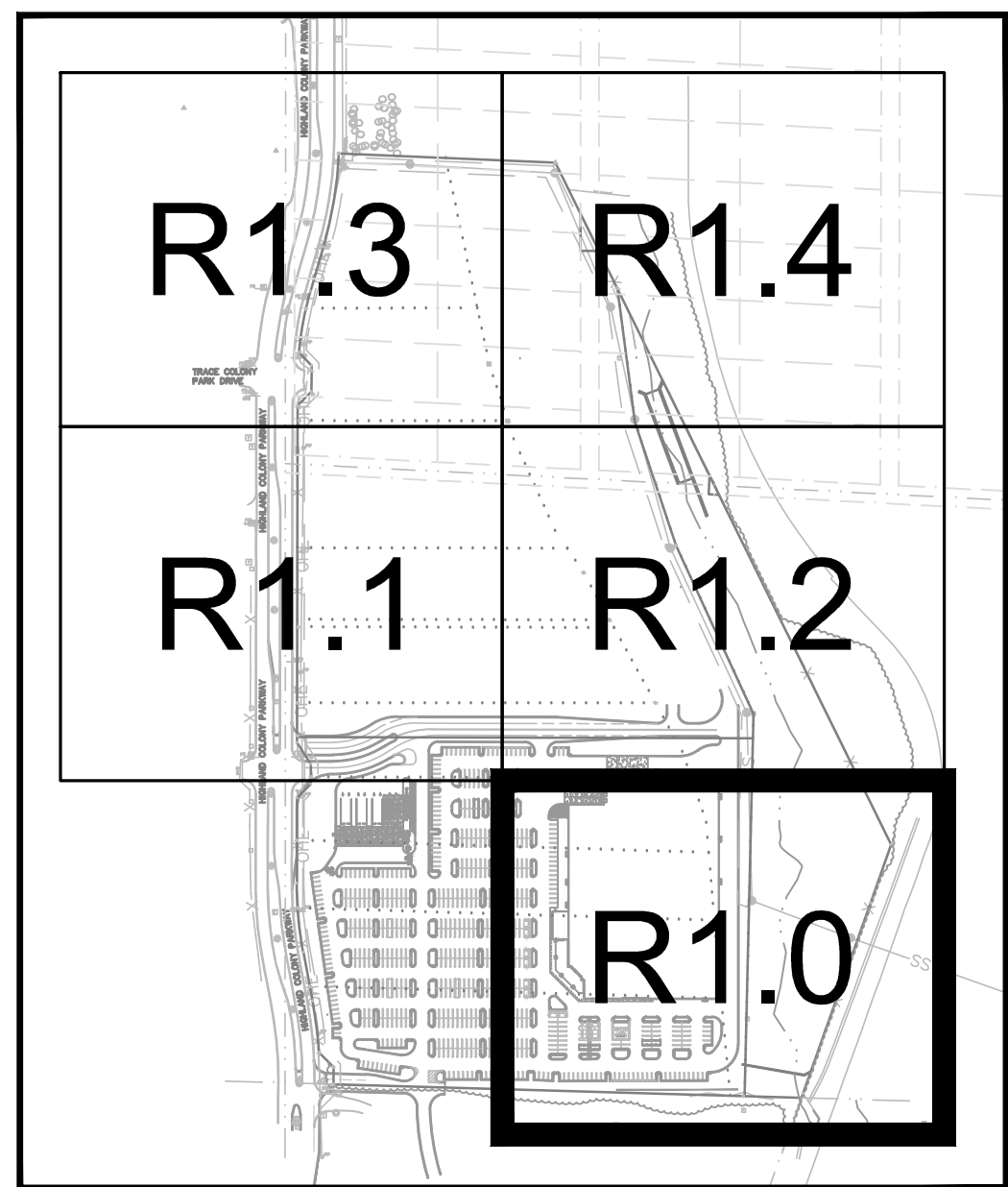
LONG TERM
ALL VEGETATED AREAS WILL BE MAINTAINED IN ADEQUATE CONDITION TO PROVIDE PROPER GROUND COVER AND REDUCE ANY AREAS OF POTENTIAL EROSION. WHERE VEGETATION IS LOST, THE AREA WILL BE FERTILIZED AND SEEDED OR OTHER ACCEPTABLE METHODS USED TO RESTORE PROPER COVER.

THE RETENTION POND AREAS AND THE DISTURBED AREAS WITH IN THE CITY OF RIDGELAND PROPERTY SHALL BE MAINTAINED AS DESCRIBED ABOVE UNTIL ACCEPTED BY THE CITY OF RIDGELAND.



SECTION A-A

NOT TO SCALE



KEY MAP
SCALE: 1" = 400'

ADJUST MANHOLE TO MATCH PROPOSED FINISHED GRADE. (TOP SHALL BE 0.5' ABOVE THE UPHILL SIDE OF THE SLOPE AT THE MANHOLE COVER.)

8" TALL VINYL COATED CHAIN LINK FENCE (BLACK)

PROPOSED COSTCO BOUNDARY LINE

10' WIDE DOUBLE GATE FOR MAINTENANCE ACCESS

PROPOSED COSTCO BOUNDARY LINE

CITY OF RIDGELAND
RETENTION POND PROPERTY

WATER SURFACE
ELEV.=323.00

RETENTION POND

BOTTOM OF
RETENTION POND
ELEV.=319.00

1,135 TONS 200 LB
2' MIN. THICKNESS
RIPRAP REQ'D.

SEE SECTION A-A
THIS DRAWING.

WEIR WALL
(SEE DRAWING NO.
R4.0 FOR DETAILS.)

10' CONCRETE
SPLASH PAD

15.00' EL. 327.00

15.00' EL. 327.00

15.00' EL. 327.00

15.00' EL. 327.00

15.00' EL. 327.00

15.00' EL. 327.00

15.00' EL. 327.00

15.00' EL. 327.00

15.00' EL. 327.00

15.00' EL. 327.00

15.00' EL. 327.00

15.00' EL. 327.00

15.00' EL. 327.00

15.00' EL. 327.00

15.00' EL. 327.00

15.00' EL. 327.00

SOUTH WING WALL
(SEE DRAWING NOS. R3.1
FOR PLAN AND PROFILE
AND R3.2 FOR DETAILS.)

NORTH WING WALL
(SEE DRAWING NOS. R3.0
FOR PLAN AND PROFILE
AND R3.2 FOR DETAILS.)

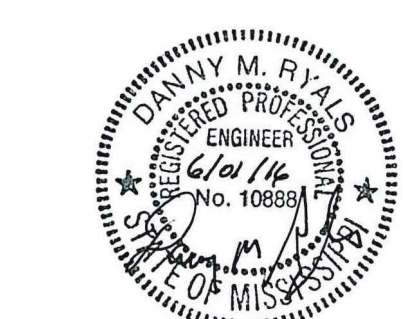
RIPRAP SECTION TYPICAL
NOT TO SCALE

NOTICE TO DRAWING HOLDER

NEEL-SCHAFFER, INC., HERINAFTER REFERRED TO AS THE ENGINEER, HAS PREPARED AND FURNISHED THIS DRAWING TO THE OWNER FOR USE ON THIS PROJECT ONLY. THIS DRAWING SHOULD NOT BE USED ON EXTENSIONS OF THIS PROJECT OR ON ANY OTHER PROJECT. ANY REUSE OF THIS DRAWING, WITHOUT WRITTEN VERIFICATION OR ADAPTION BY THE ENGINEER, SHALL BE AT THE REUSER'S SOLE RISK AND THE REUSER SHALL INDEMNIFY AND HOLD HARMLESS THE ENGINEER FROM ALL CLAIMS, DAMAGES, LOSSES AND EXPENSES, INCLUDING ATTORNEY'S FEES ARISING OUT OF OR RESULTING THEREFROM.

REVISIONS			DRAWING INFORMATION	
NO.	DATE	BY	DESCRIPTION	
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06/01/16	DMR		REVISED PER CITY COMMENTS	FILENAME: 12665-Grading.dwg
				SCALE: 1" = 30'
				SURVEYED BY: Maptech, Inc.
				DSGN: D.M.R. DATE: 05/20/16
				DRWN: G.B.B. DATE: 06/20/16
				CHKD: D.M.R. DATE: 06/20/16
				QA/QC: DATE: 06/20/16

RENAISSANCE at COLONY PARK
PHASE 3
RIDGELAND, MISSISSIPPI



SEAL:

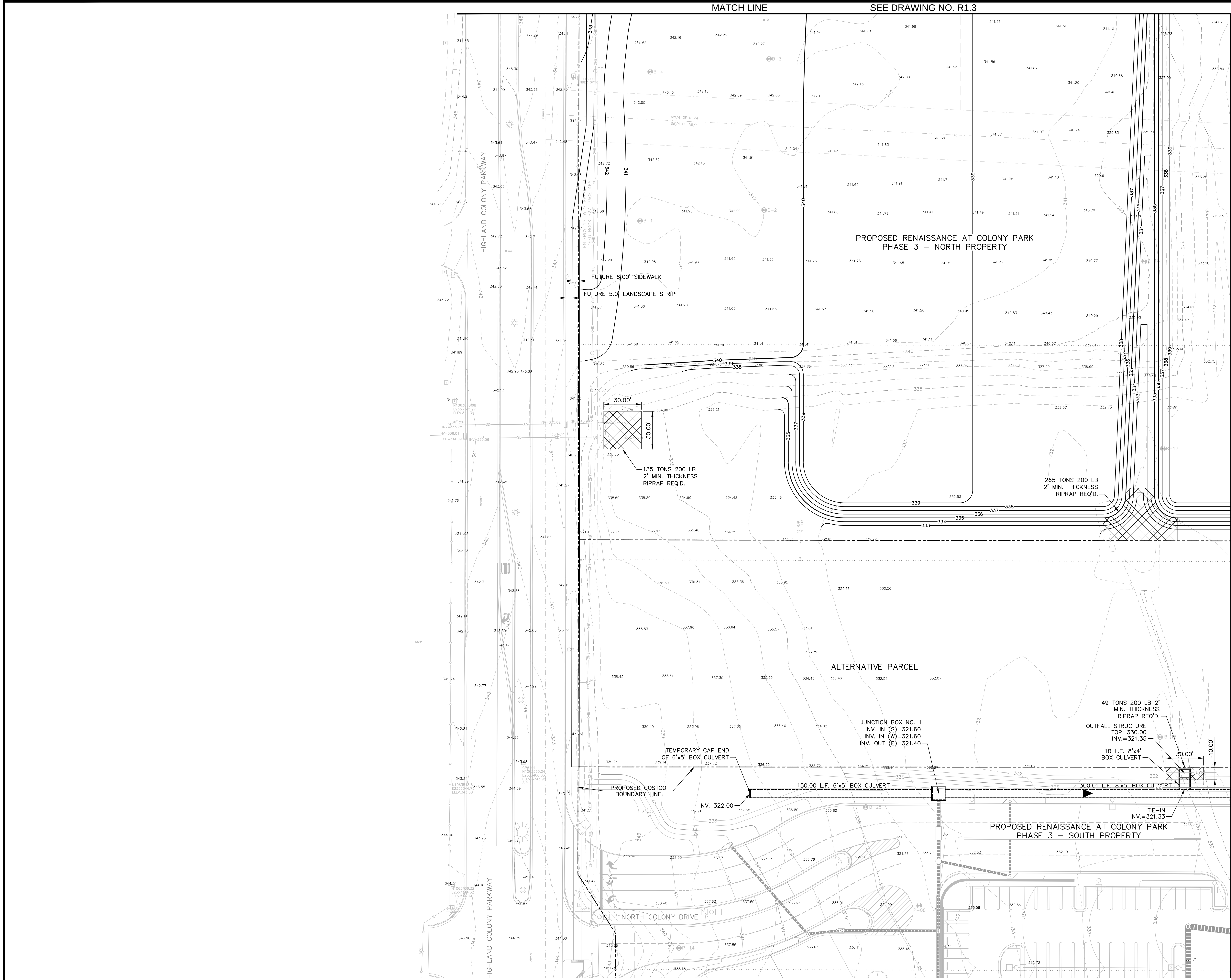


GRADING AND DRAINAGE PLAN

WORKING NUMBER:

DRAWING NUMBER:

R1.0



GRAPHIC SCALE
(IN FEET)
1 inch = 30 ft.

LEGEND

- EXISTING CONTOURS
- FINISHED GRADE CONTOURS
- COSTCO FINISHED GRADE CONTOURS (SEE ARCHITECTURAL C DRAWINGS)
- COSTCO STORM PIPE (SEE ARCHITECTURAL C DRAWINGS)
- BOX CULVERT AND JUNCTION BOX
- COSTCO RETAINING WALL (SEE ARCHITECTURAL C DRAWINGS)
- PROPERTY LINE
- 200 LB. RIPRAP WITH FILTER FABRIC REQ'D.

NOTES:

MAINTENANCE PLAN

BOTH THE SHORT-TERM (DURING CONSTRUCTION) AND LONG TERM (AFTER CONSTRUCTION) MAINTENANCE NEEDS MUST BE ADDRESSED.

SHORT TERM
ALL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CHECKED FOR STABILITY AND OPERATION FOLLOWING EVERY RUNOFF PRODUCING RAINFALL BUT IN NO CASE, LESS THAN EVERY WEEK. ANY NEEDED REPAIRS WILL BE MADE IMMEDIATELY TO MAINTAIN THE PRACTICE PERFORMANCE AS DESIGNED.

SEDIMENT WILL BE REMOVED FROM THE UPSTREAM FACE OF THE SILT FENCE WHEN IT INCREASES TO ABOUT A 6-INCH DEPTH AT THE FENCE. THE SILT FENCE WILL BE REPLACED AS NECESSARY TO MAINTAIN A BARRIER.

ALL DISTURBED AREAS WILL RECEIVE A MINIMUM OF 4 INCHES OF TOPSOIL AND BE PLANTED WITH BERMUDA SEEDS.

ALL VEGETATED AREAS WILL BE FERTILIZED, WATERED, HERBICIDE SPRAYED AND RE-VEGETATED AS NEEDED TO MAINTAIN A VIGOROUS AND DENSE VEGETATIVE COVER.

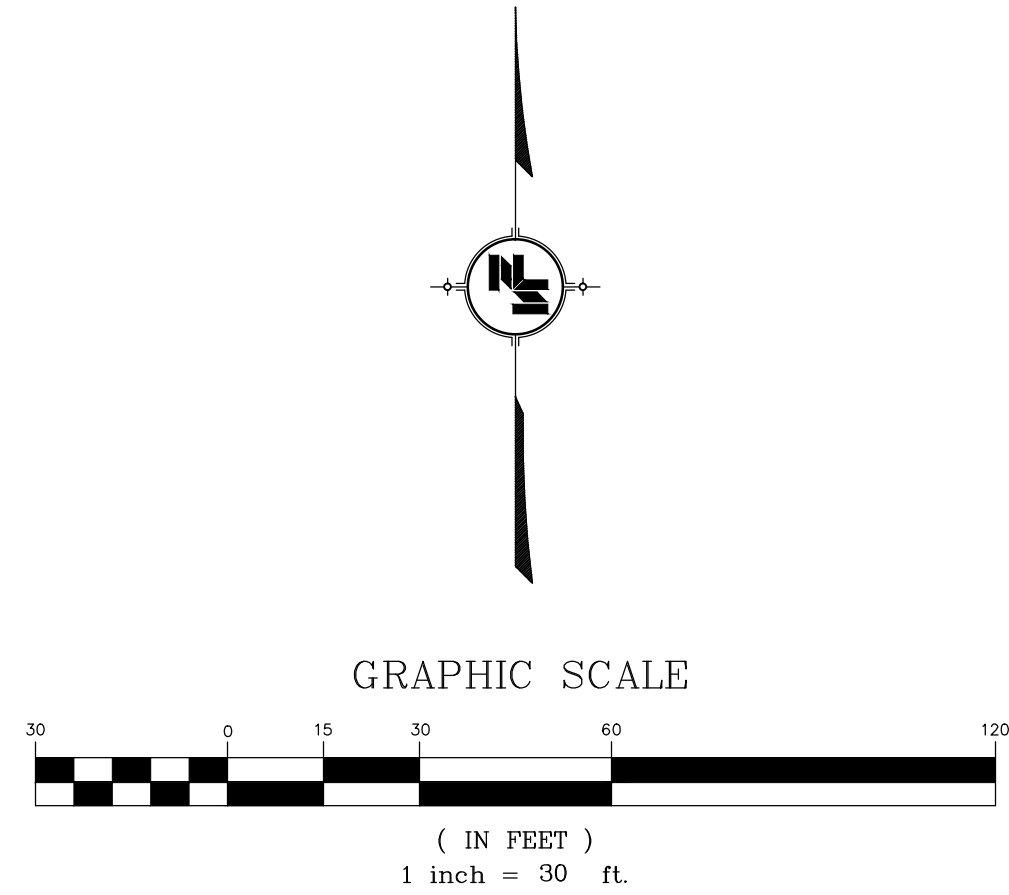
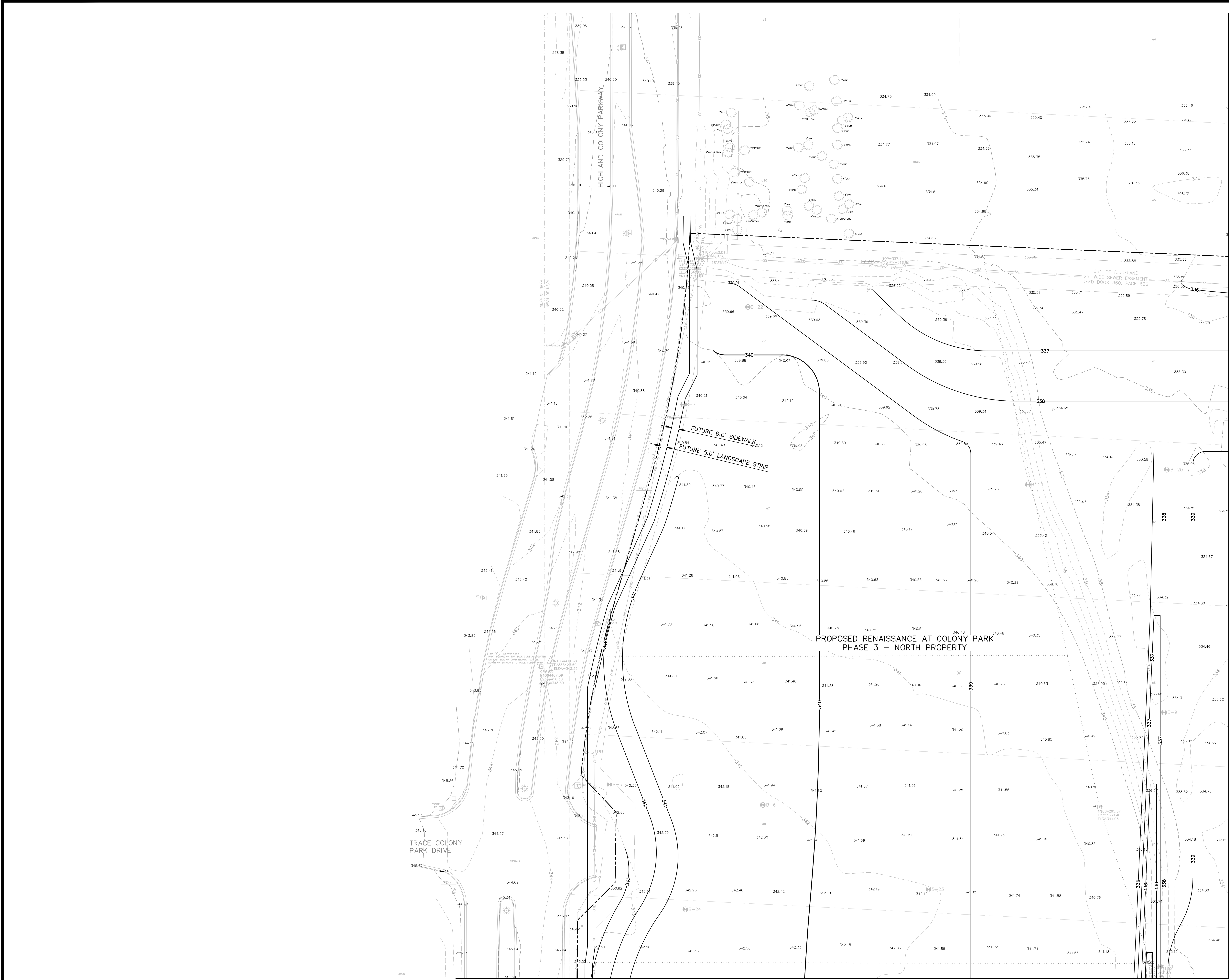
LONG TERM
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THE RETENTION POND AREAS AND THE DISTURBED AREAS WITH IN THE CITY OF RIDGELAND PROPERTY SHALL BE MAINTAINED AS DESCRIBED ABOVE UNTIL ACCEPTED BY THE CITY OF RIDGELAND.

MATCH LINE SEE DRAWING NO. R1.2

KEY MAP
SCALE: 1" = 400'

NOTICE TO DRAWING HOLDER				REVISIONS				DRAWING INFORMATION				RENAISSANCE at COLONY PARK PHASE 3 RIDGELAND, MISSISSIPPI								GRADING AND DRAINAGE PLAN			
NEEL-SCHAFER, INC., HERINAFTER REFERRED TO AS THE ENGINEER, HAS PREPARED AND FURNISHED THIS DRAWING TO THE OWNER FOR USE ON THIS PROJECT ONLY. THIS DRAWING SHOULD NOT BE USED ON EXTENSIONS OF THIS PROJECT OR ON ANY OTHER PROJECT. ANY REUSE OF THIS DRAWING, WITHOUT WRITTEN VERIFICATION OR ADAPTION BY THE ENGINEER, SHALL BE AT THE REUSER'S SOLE RISK AND THE REUSER SHALL INDEMNIFY AND HOLD HARMLESS THE ENGINEER FROM ALL CLAIMS, DAMAGES, LOSSES AND EXPENSES, INCLUDING ATTORNEY'S FEES ARISING OUT OF OR RESULTING THEREFROM.				NO.	DATE	BY	DESCRIPTION	N-S PROJECT NO.: NS-12665-001												WORKING NUMBER:		DRAWING NUMBER:	
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					06/01/16	DMR	REVISED PER CITY COMMENTS	SCALE: 1" = 30'															
								SURVEYED BY: Maptech, Inc.															
								DSGN: D.M.R. DATE: 05/20/16															
								DRWN: G.B.B. DATE: 05/20/16															
								CHKD: D.M.R. DATE: 05/20/16															
								QA/QC: ----- DATE: 05/20/16															



LEGEND	
	EXISTING CONTOURS
	FINISHED GRADE CONTOURS
	PROPERTY LINE

NOTES:

MAINTENANCE PLAN

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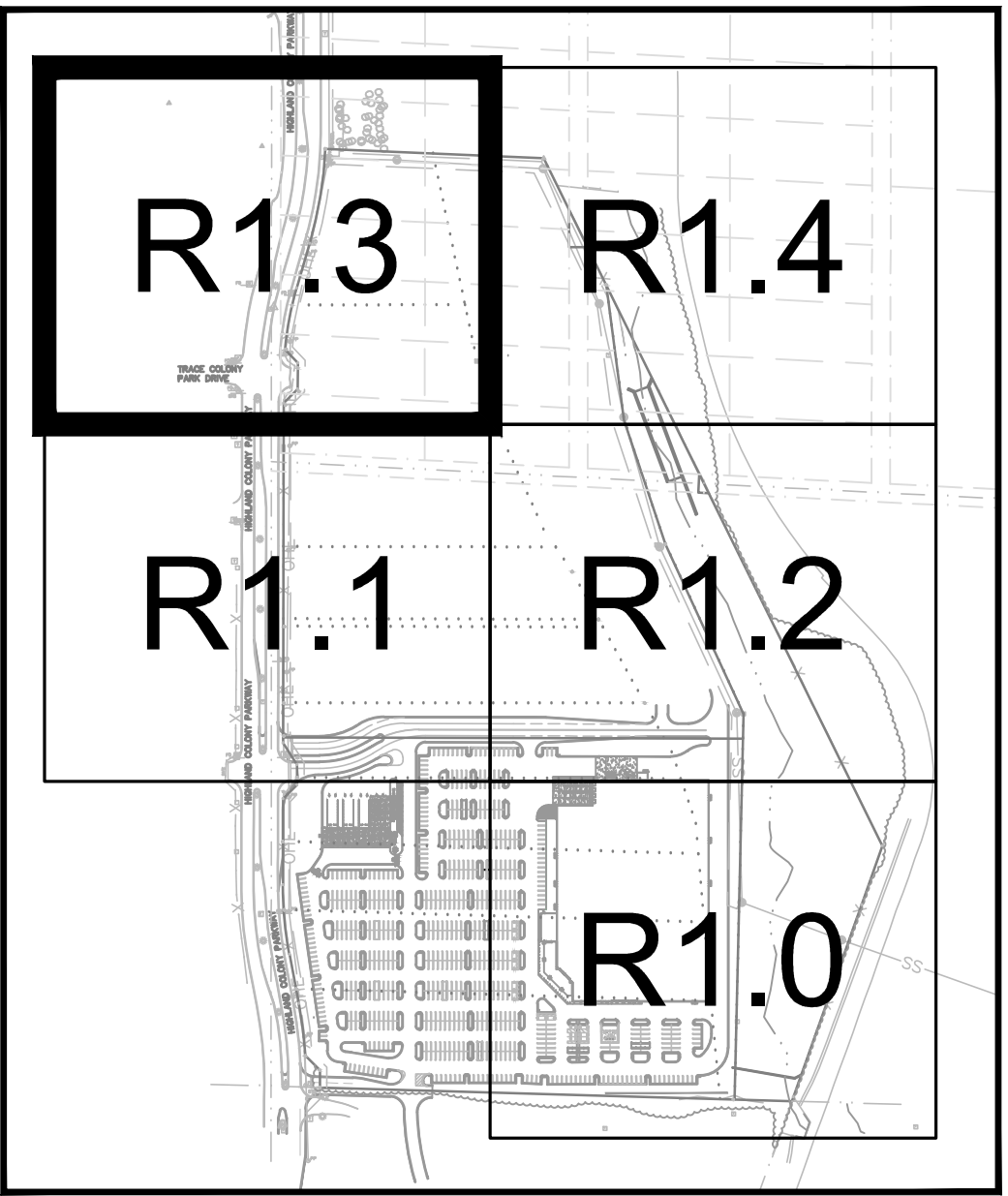
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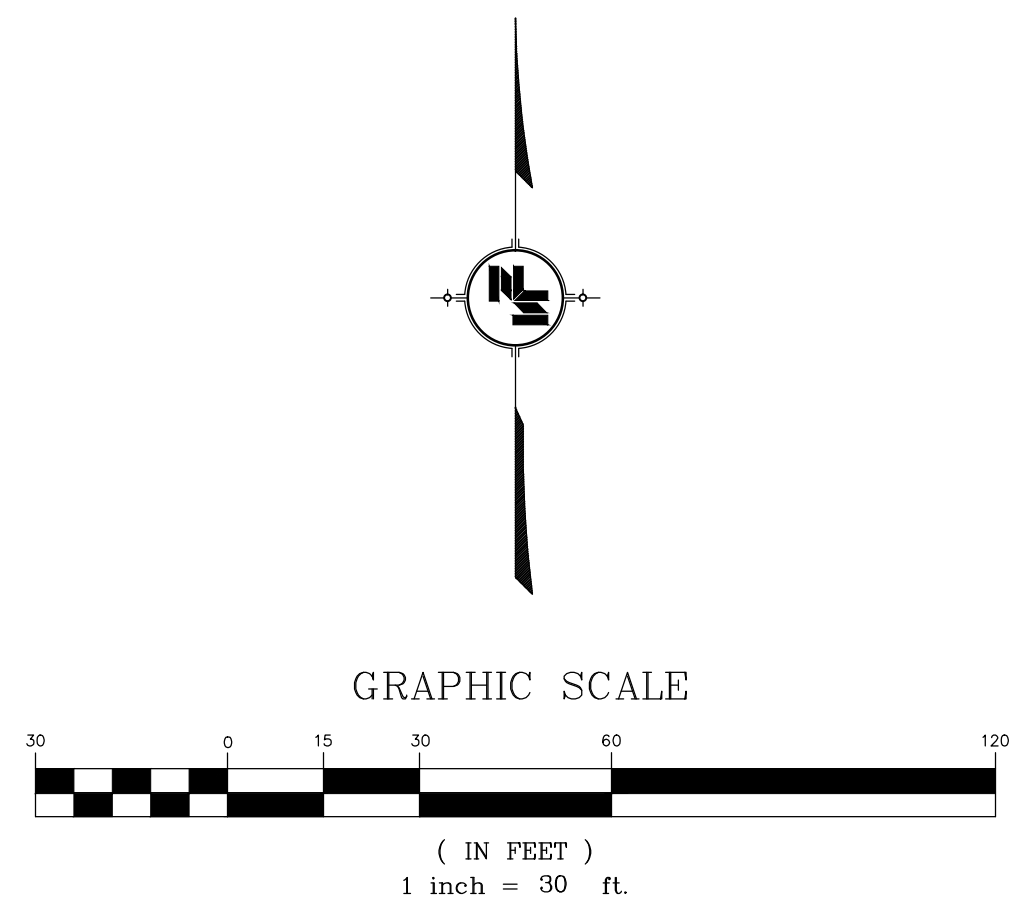
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NOTICE TO DRAWING HOLDER		REVISIONS				DRAWING INFORMATION				RENAISSANCE at COLONY PARK PHASE 3 RIDGELAND, MISSISSIPPI						GRADING AND DRAINAGE PLAN	
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					DSGN: D.M.R.	DATE: 05/2016											
					DRWN: G.B.B.	DATE: 06/2016											
					CHKD: D.M.R.	DATE: 06/2016											
					QA/QC: -----	DATE: 06/2016											



LEGEND


 - - - - - 330 - - - - - EXISTING CONTOURS
 _____ 320 _____ FINISHED GRADE CONTOURS
 - - - - - PROPERTY LINE
 200 LB. RIPRAP WITH FILTER FABRIC REQ'D.

NOTES:

MAINTENANCE PLAN

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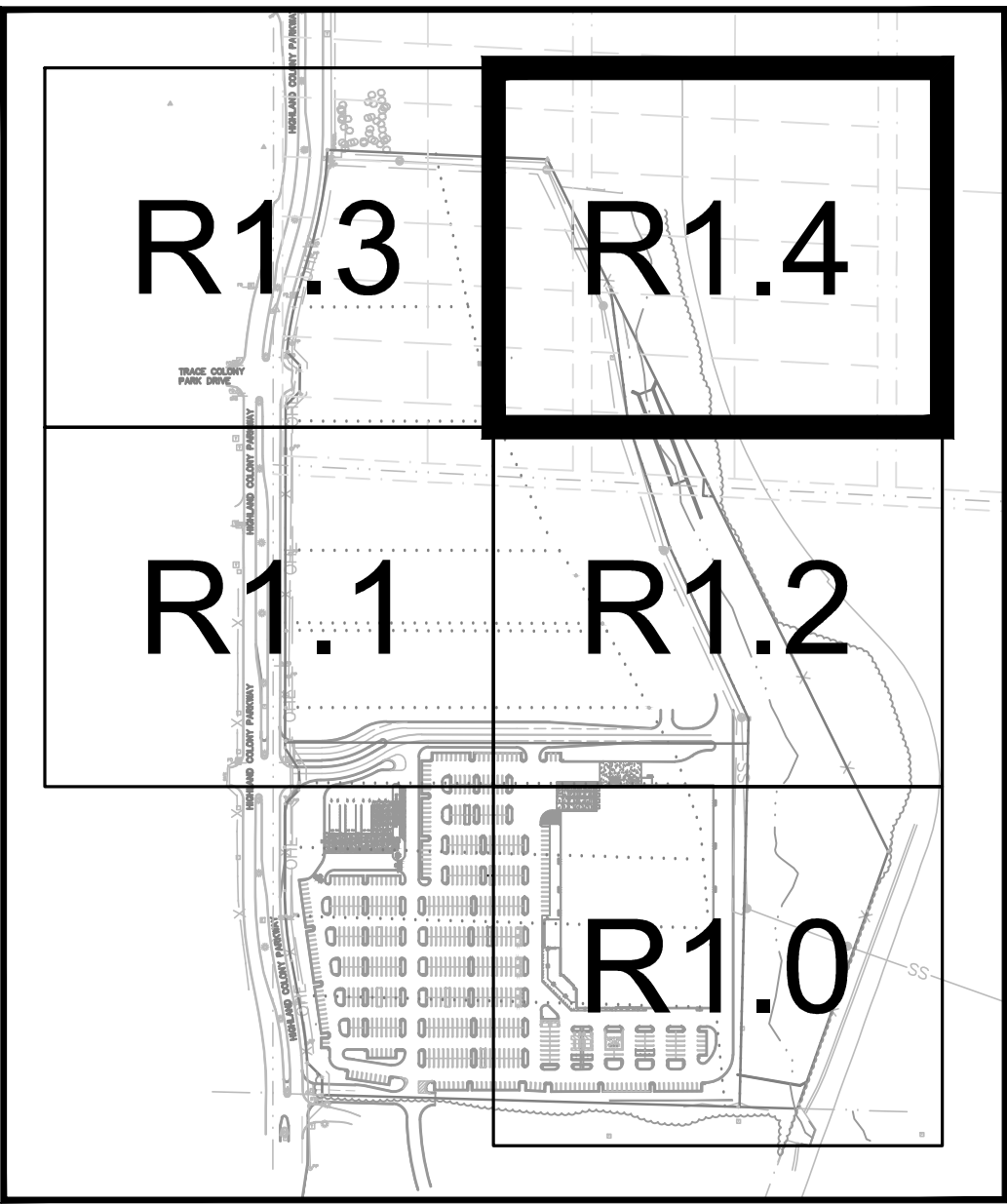
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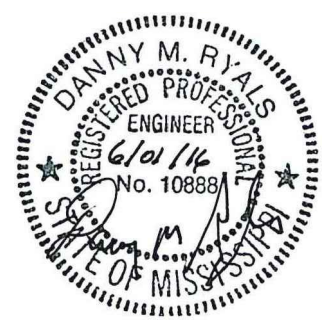
KEY MAP
SCALE: 1" = 400'

MATCH LINE SEE DRAWING NO. R1.2

<u>NOTICE TO DRAWING HOLDER</u> NEEL-SCHAFFER, INC., HEREINAFTER REFERRED TO AS THE ENGINEER, HAS PREPARED AND FURNISHED THIS DRAWING TO THE OWNER FOR USE ON THIS PROJECT ONLY. THIS DRAWING SHOULD NOT BE USED ON EXTENSIONS OF THIS PROJECT OR ON ANY OTHER PROJECT. ANY REUSE OF THIS DRAWING, WITHOUT WRITTEN VERIFICATION OR ADAPTION BY THE ENGINEER, SHALL BE AT THE REUSER'S SOLE RISK AND THE REUSER SHALL INDEMNIFY AND HOLD HARMLESS THE ENGINEER FROM ALL CLAIMS, DAMAGES, LOSSES AND EXPENSES, INCLUDING ATTORNEY'S FEES ARISING OUT OF OR RESULTING THEREFROM.	REVISIONS				DRAWING INFORMATION	
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		06/01/16	DMR	REVISED PER CITY COMMENTS	SCALE: <i>1" = 30'</i>	
					SURVEYED BY: <i>Maptech, Inc.</i>	
					DSGN: <i>D.M.R.</i>	DATE: <i>05/2016</i>
					DRWN: <i>G.B.B.</i>	DATE: <i>06/2016</i>
					CHKD: <i>D.M.R.</i>	DATE: <i>05/2016</i>
				QA/QC: <i>-----</i>	DATE: <i>06/2016</i>	

REVISONS			DRAWING INFORMATION	
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				DSGN: D.M.R. DATE: 05/20/16
				DRWN: G.B.B. DATE: 05/20/16
				CHKD: D.M.R. DATE: 05/20/16
				QA/QC: --- DATE: ---/---/2016

RENAISSANCE at COLONY PARK
PHASE 3
RIDGELAND, MISSISSIPPI



SEAL:

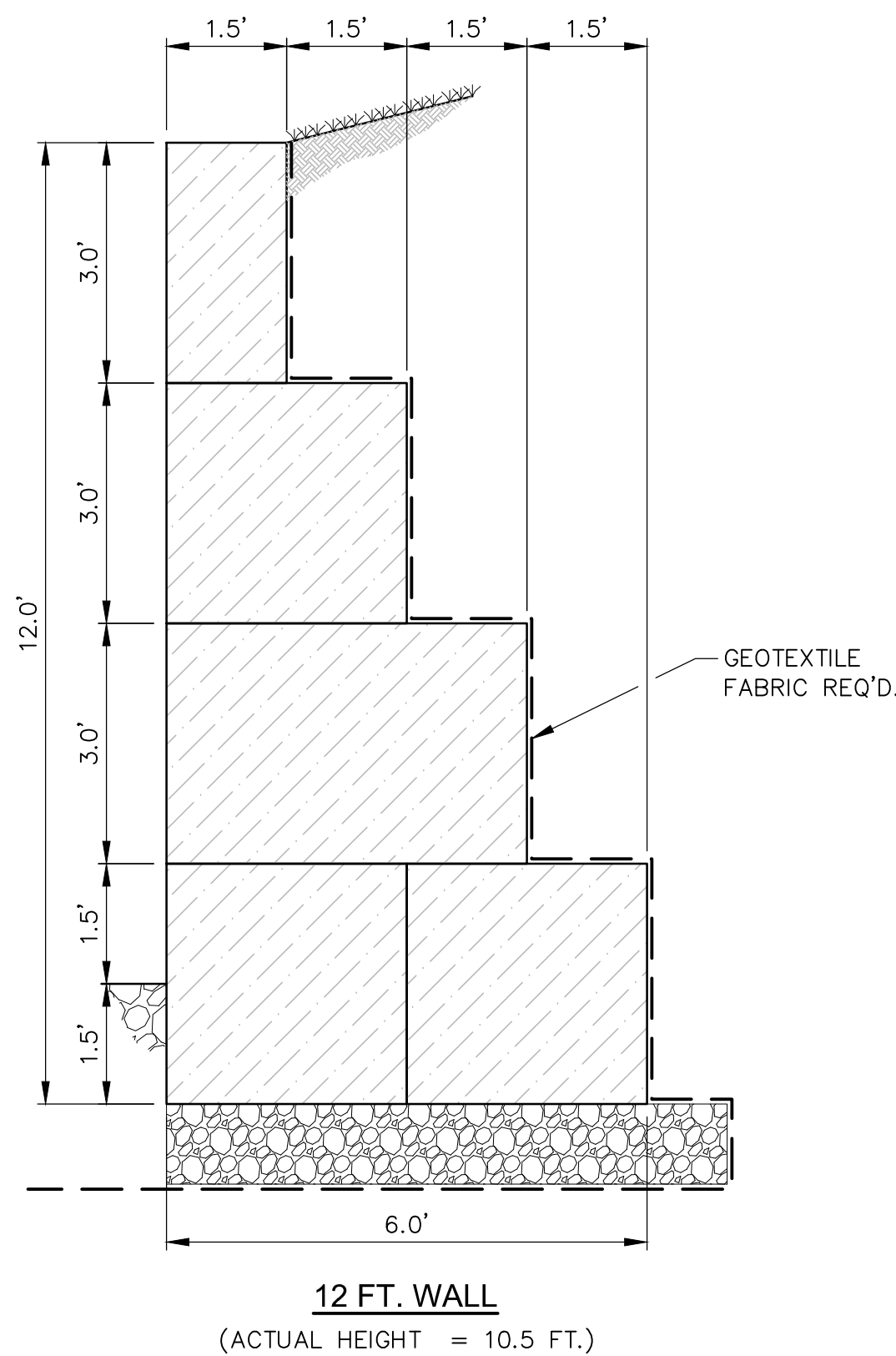
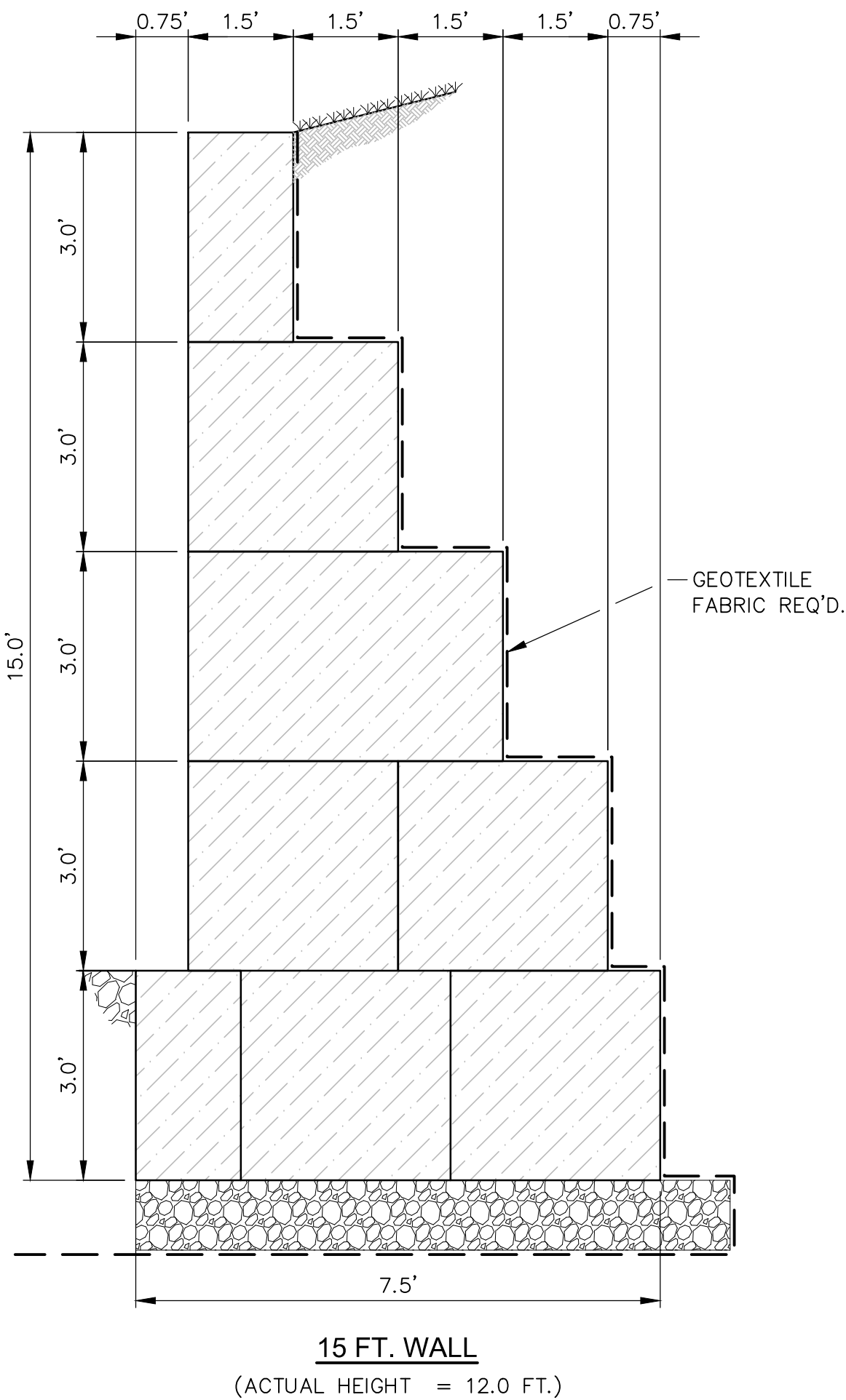
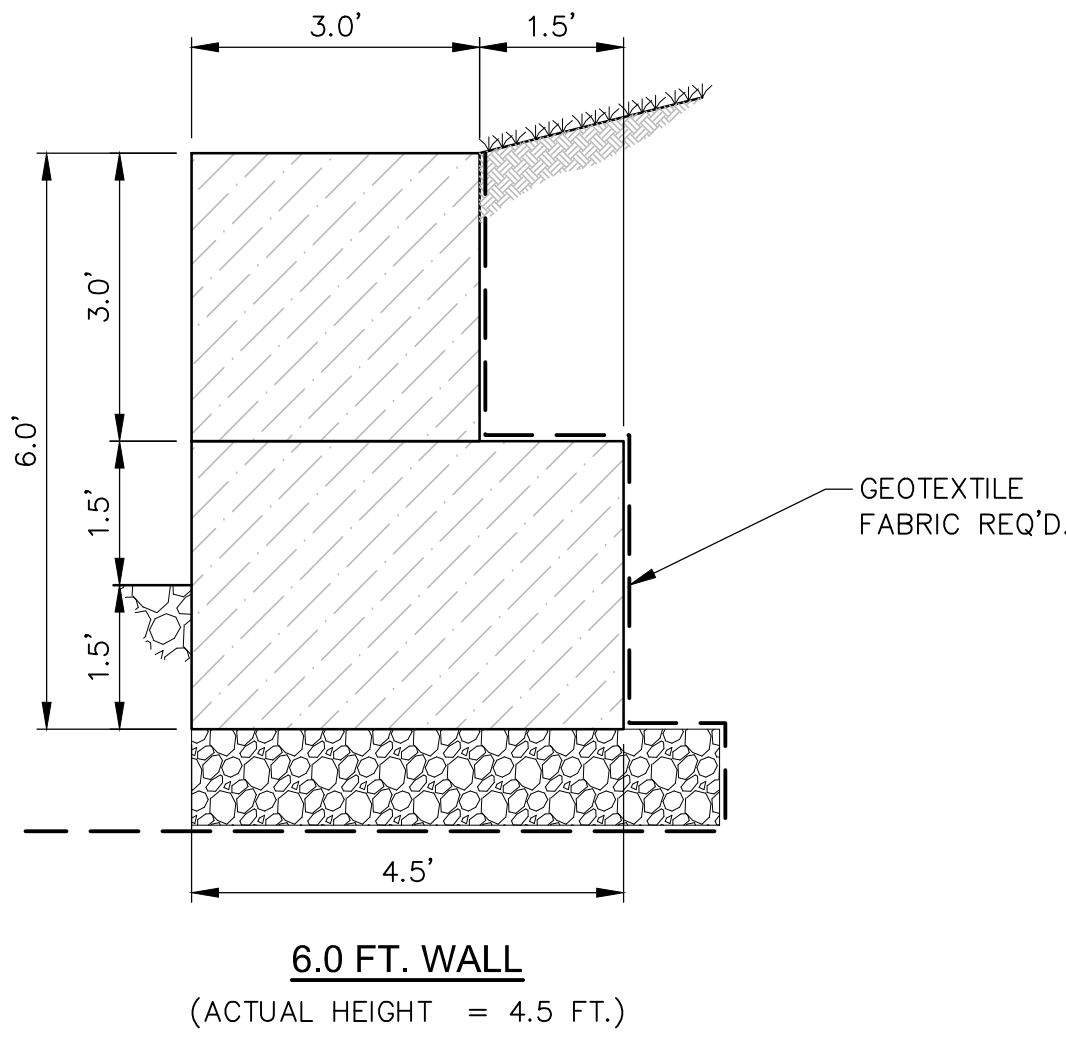
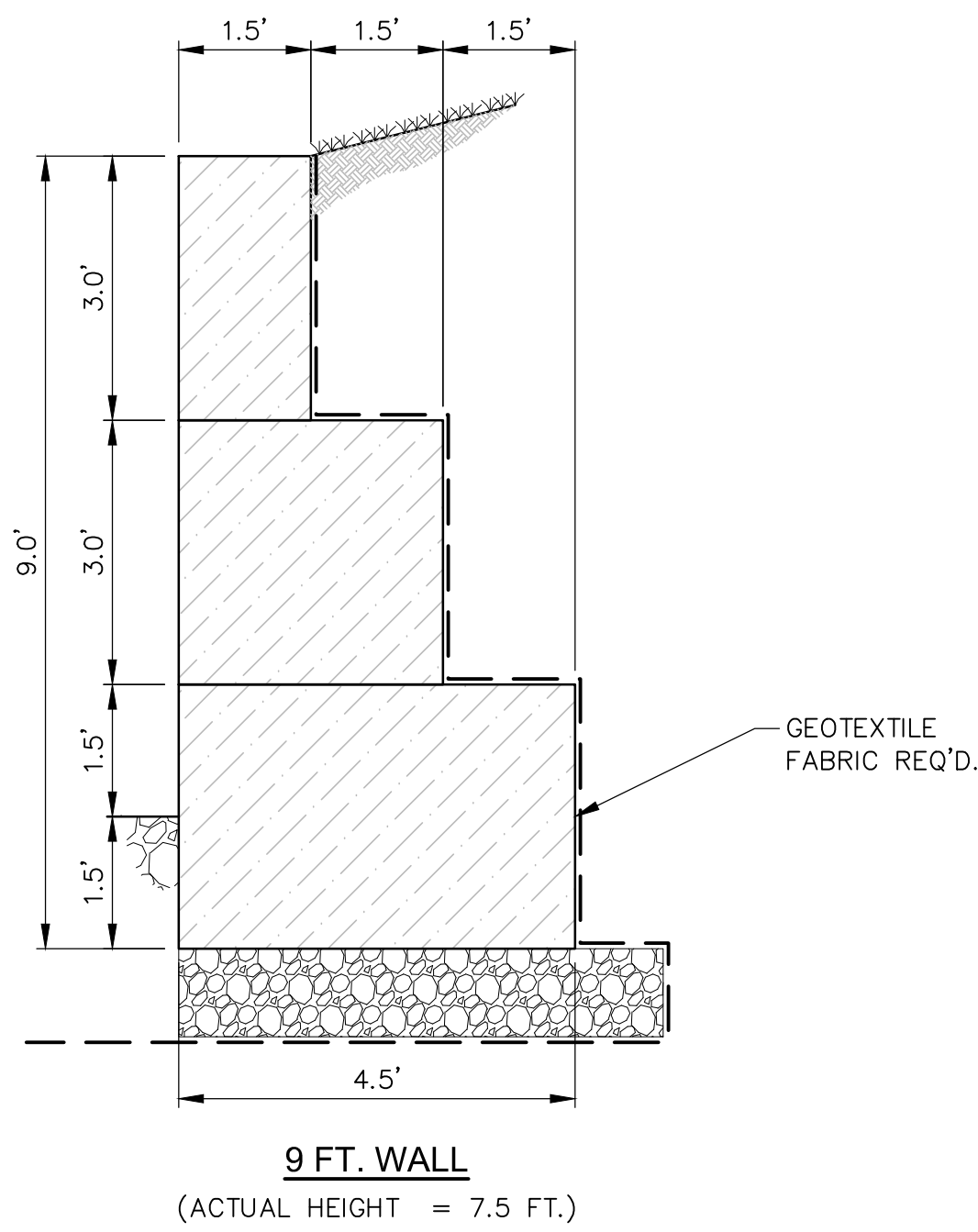


GRADING AND DRAINAGE PLAN

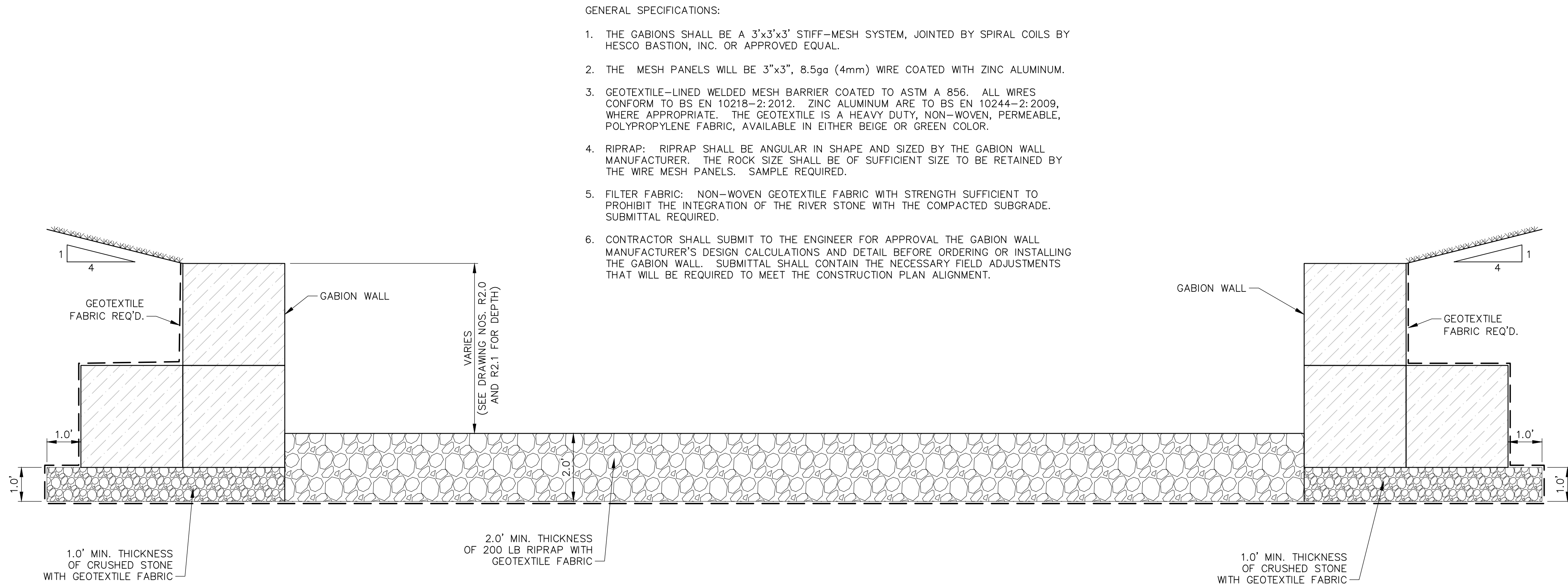
WORKING NUMBER:

DRAWING NUMBER

R1.4



GABION WALL SECTION DETAILS
SCALE: 1" = 2'



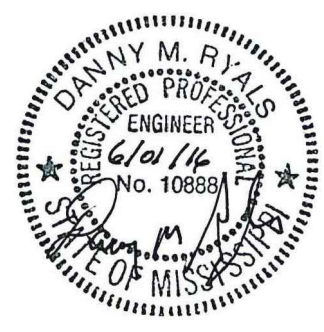
SECTION A-A
GABION CHANNEL AND BASE DETAIL
SCALE: 1" = 2'

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REVISIONS				DRAWING INFORMATION	
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				DRWN: G.B.B. DATE: 06/2016	
				CHKD: D.M.R. DATE: 06/2016	
				QA/QC: ---/2016	

RENAISSANCE at COLONY PARK
PHASE 3
RIDGELAND, MISSISSIPPI



SEAL:

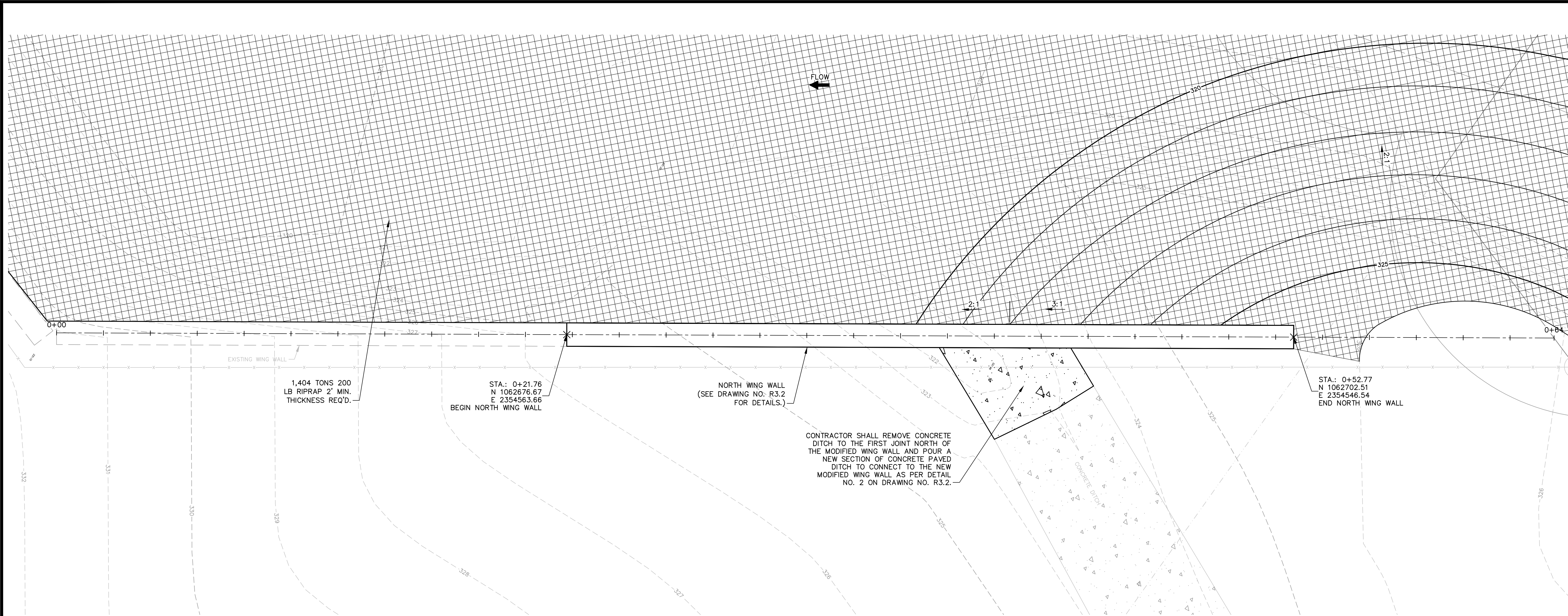


GABION WALL DETAILS

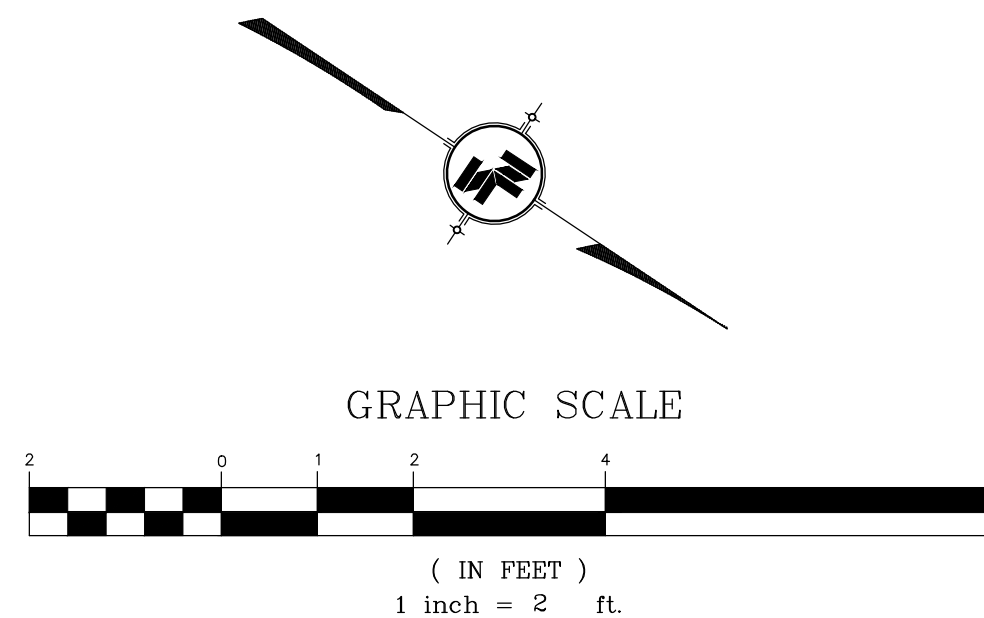
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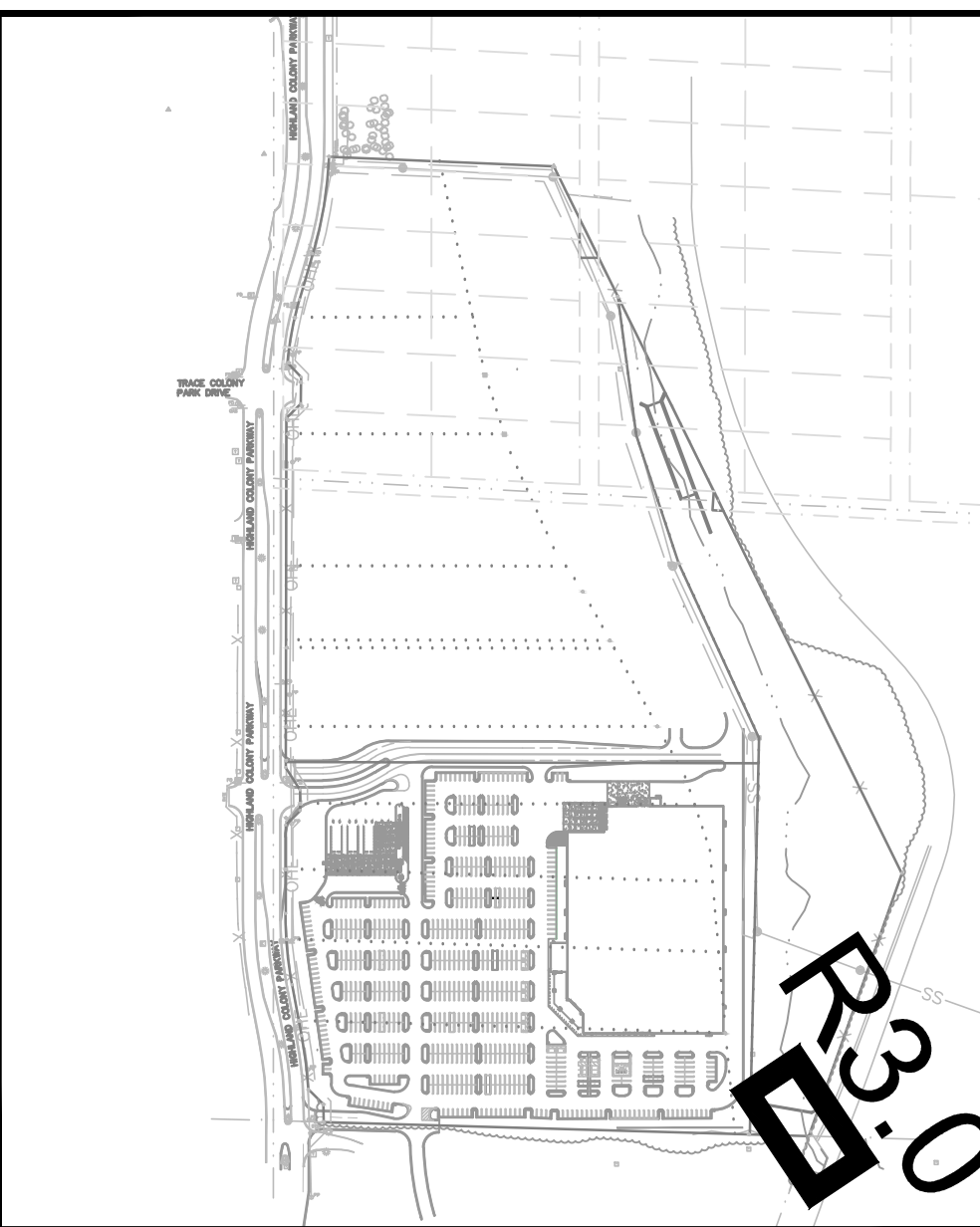
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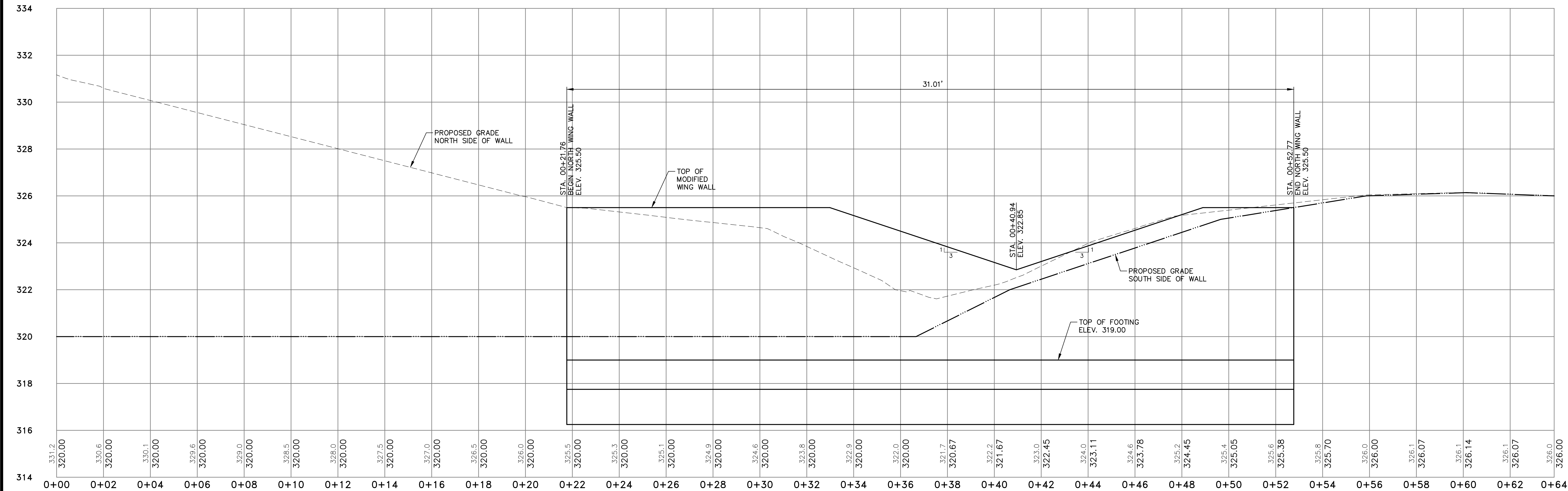
NORTH WING WALL PLAN
SCALE: 1"=2'



LEGEND	
---	EXISTING CONTOURS
---	FINISHED GRADE CONTOURS
---	PROPERTY LINE
XXXXXX	200 LB. RIPRAP WITH FILTER FABRIC REQ'D.



KEY MAP
SCALE: 1" = 400'

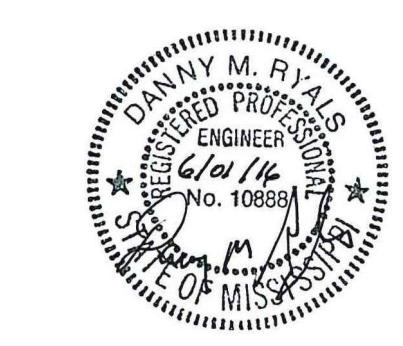


NORTH WING WALL PROFILE
SCALE: HORIZ.: 1"=2'
VERT.: 1"=2'

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REVISIONS				DRAWING INFORMATION	
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RENAISSANCE at COLONY PARK
PHASE 3
RIDGELAND, MISSISSIPPI

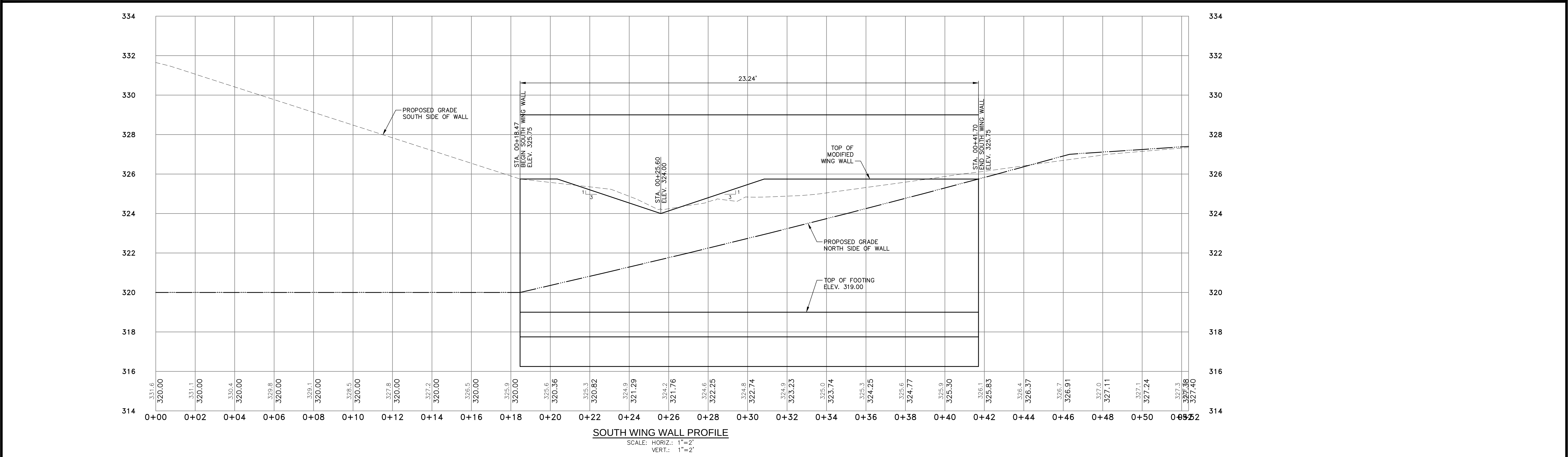
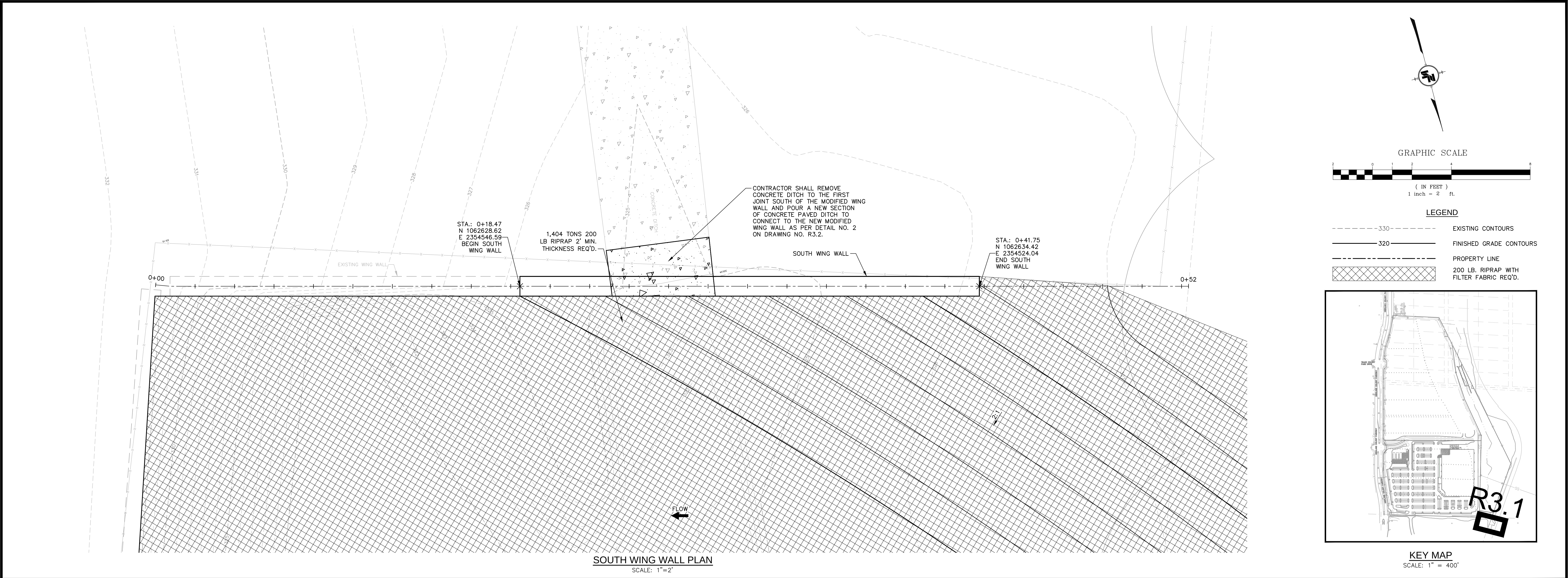


NORTH WING WALL
PLAN AND PROFILE

WORKING NUMBER:

DRAWING NUMBER:

R3.0



NOTICE TO DRAWING HOLDER NEEL-SCHAFER, INC., HEREINAFTER REFERRED TO AS THE ENGINEER, HAS PREPARED AND FURNISHED THIS DRAWING TO THE OWNER FOR USE ON THIS PROJECT ONLY. THIS DRAWING SHOULD NOT BE USED ON EXTENSIONS OF THIS PROJECT OR ON ANY OTHER PROJECT. ANY REUSE OF THIS DRAWING, WITHOUT WRITTEN VERIFICATION OR ADAPTION BY THE ENGINEER, SHALL BE AT THE REUSER'S SOLE RISK AND THE REUSER SHALL INDEMNIFY AND HOLD HARMLESS THE ENGINEER FROM ALL CLAIMS, DAMAGES, LOSSES AND EXPENSES, INCLUDING ATTORNEY'S FEES ARISING OUT OF OR RESULTING THEREFROM.	REVISIONS		DRAWING INFORMATION	
	NO.	DATE	BY	DESCRIPTION
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				DSGN: D.M.R. DATE: 05/2016
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				CHKD: D.M.R. DATE: 06/2016
				QA/QC: DATE: 06/2016

RENAISSANCE at COLONY PARK

PHASE 3

RIDGELAND, MISSISSIPPI

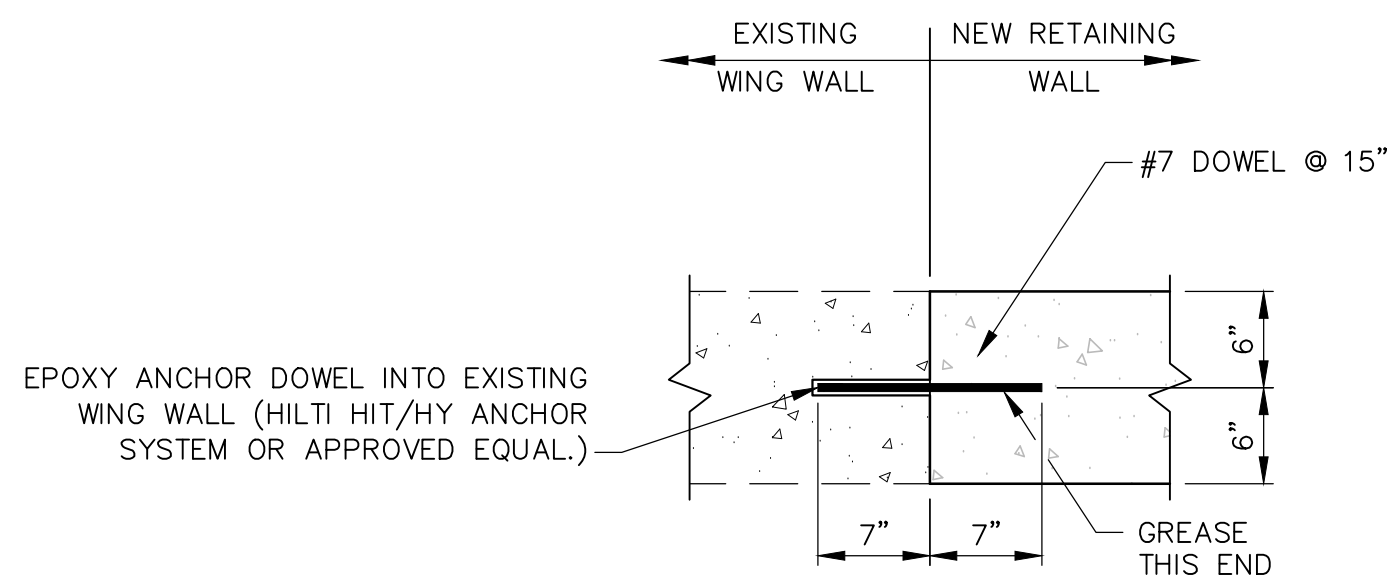
SEAL:

NEEL-SCHAFER

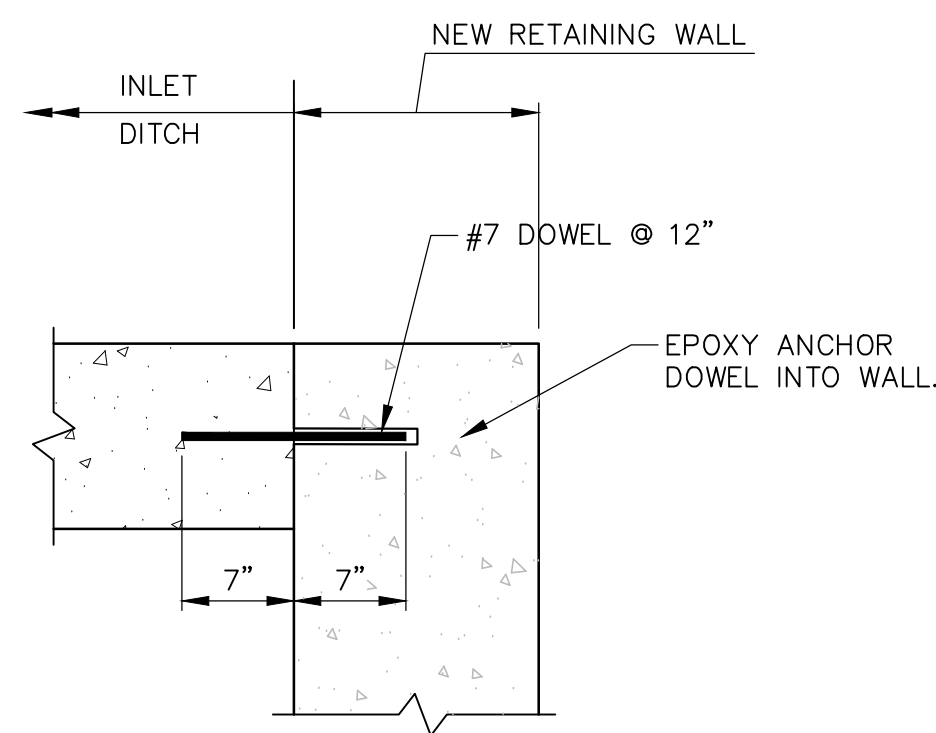
Solutions you can build upon

SOUTH WING WALL PLAN AND PROFILE	
WORKING NUMBER:	DRAWING NUMBER:
	R3.1

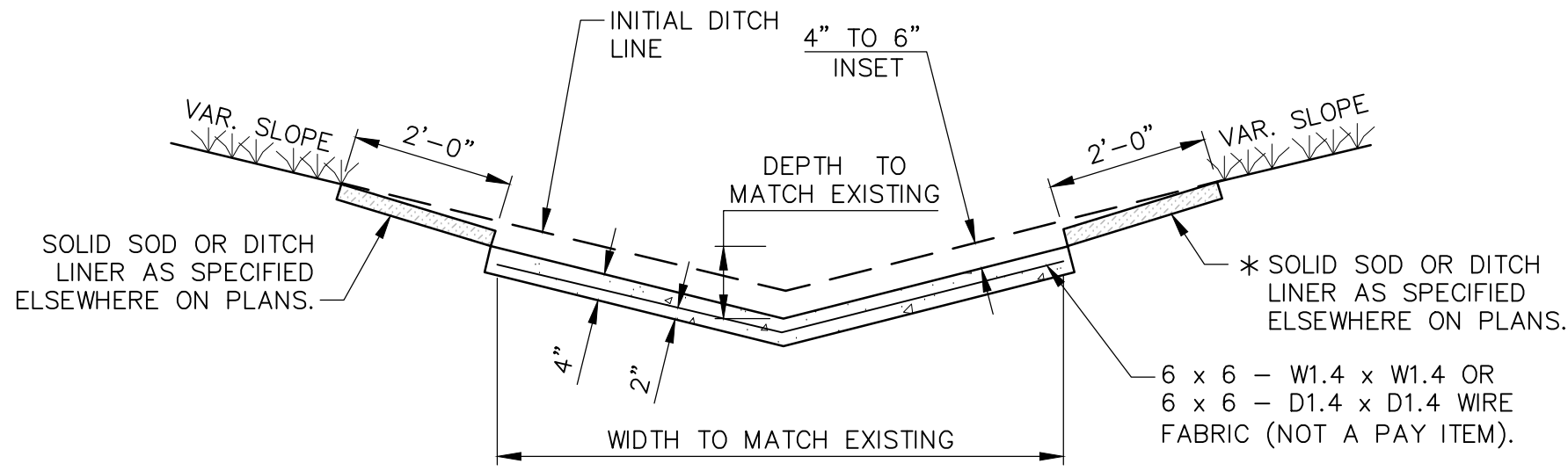
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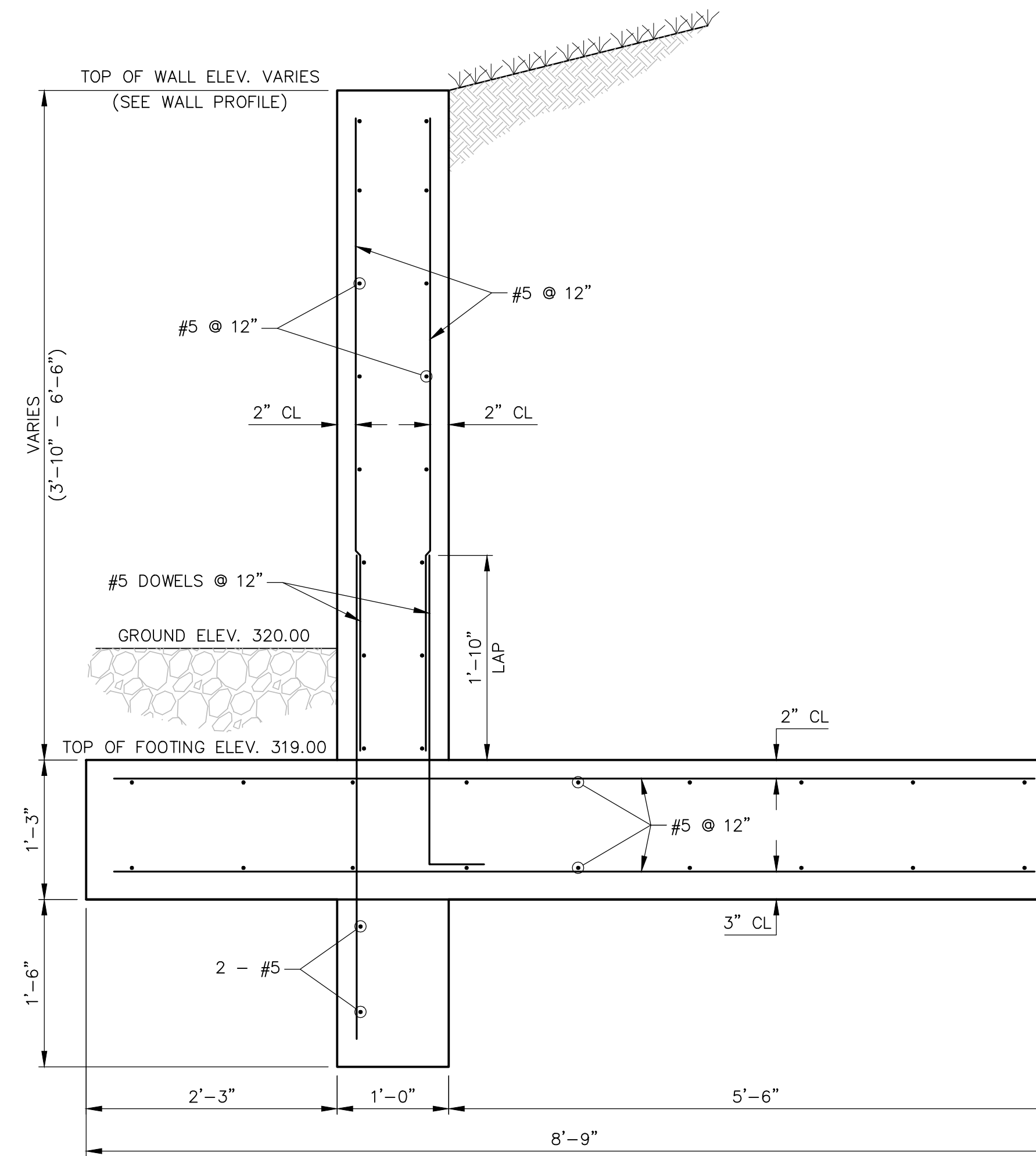
DETAIL 1
(WING WALL EXTENSION)
NOT TO SCALE



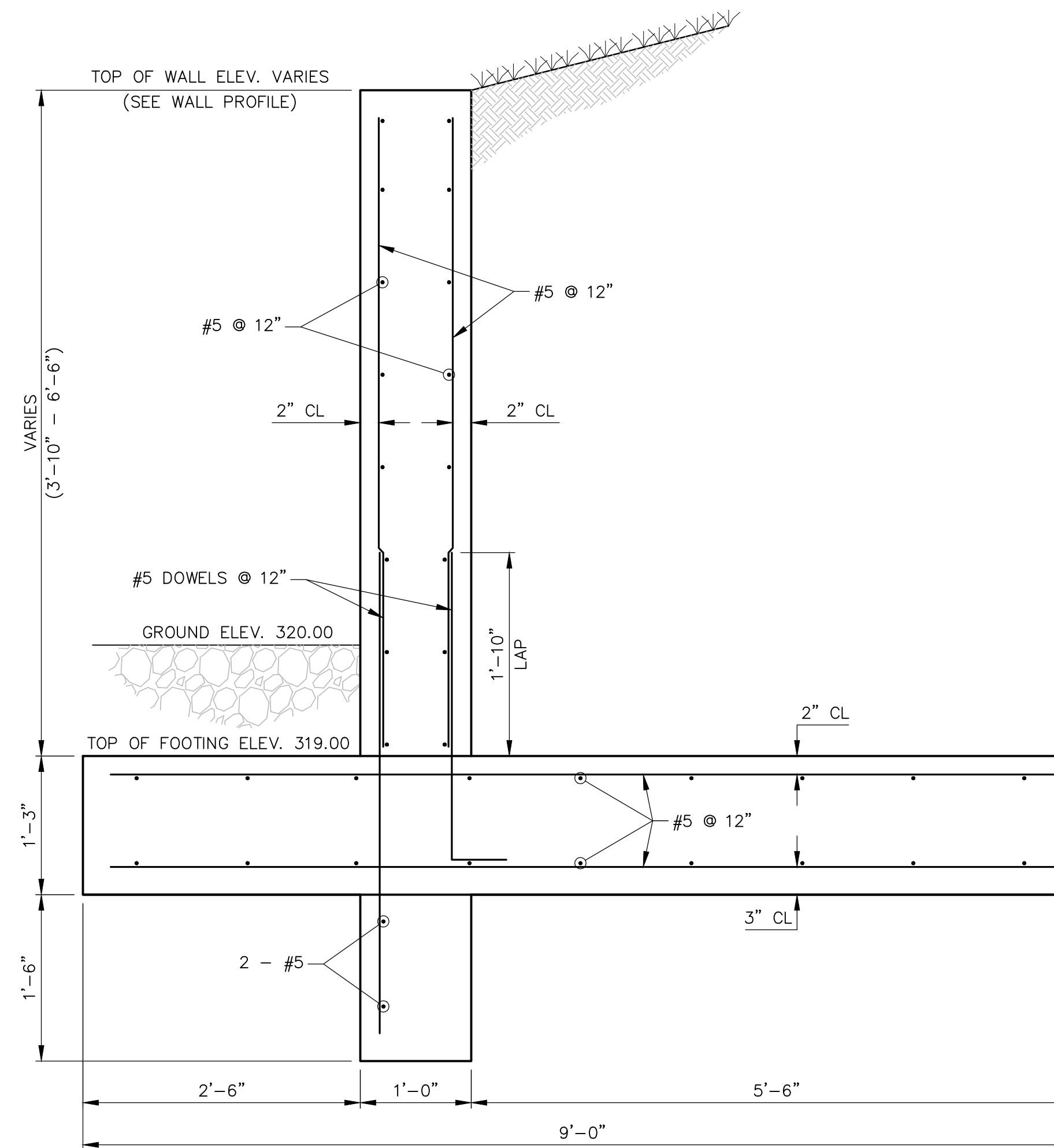
DETAIL 2
(PAVED DITCH CONNECTION TO NEW MODIFIED WING WALL)
NOT TO SCALE



NEW CONCRETE PAVED DITCH SECTION
NOT TO SCALE



TYPICAL SECTION - NORTH WALL
SCALE: 1" = 1'



TYPICAL SECTION - SOUTH WALL
SCALE: 1" = 1'

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06/01/16	DMR		REVISED PER CITY COMMENTS	SCALE: As Noted	
				SURVEYED BY:	
				DSGN: D.M.R. DATE: 05/2016	
				DRWN: G.B.B. DATE: 06/2016	
				CHKD: D.M.R. DATE: 06/2016	
				QA/QC: --- DATE: ---/2016	

RENAISSANCE at COLONY PARK
PHASE 3
RIDGELAND, MISSISSIPPI



SEAL:

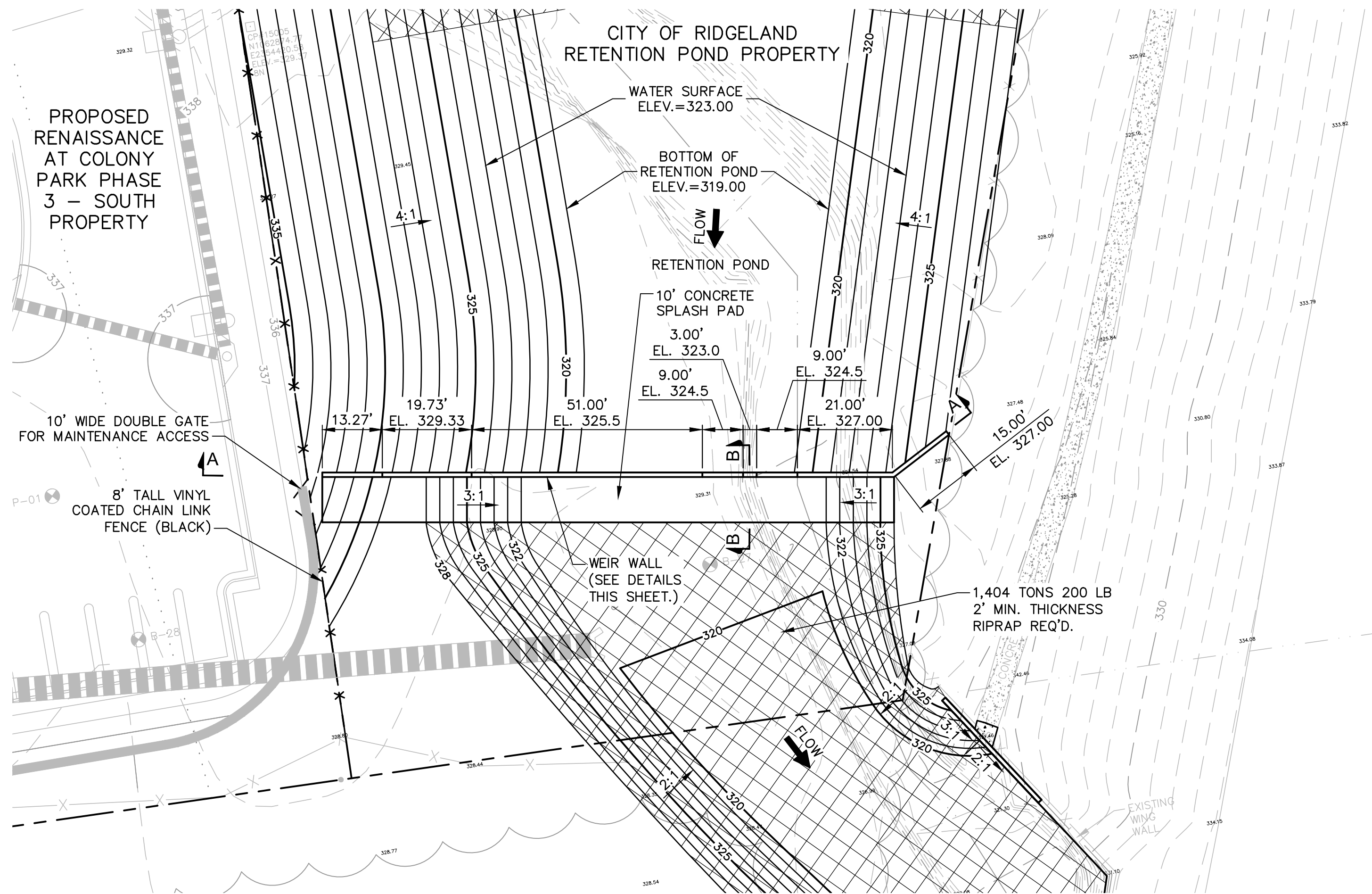


WING WALL DETAILS

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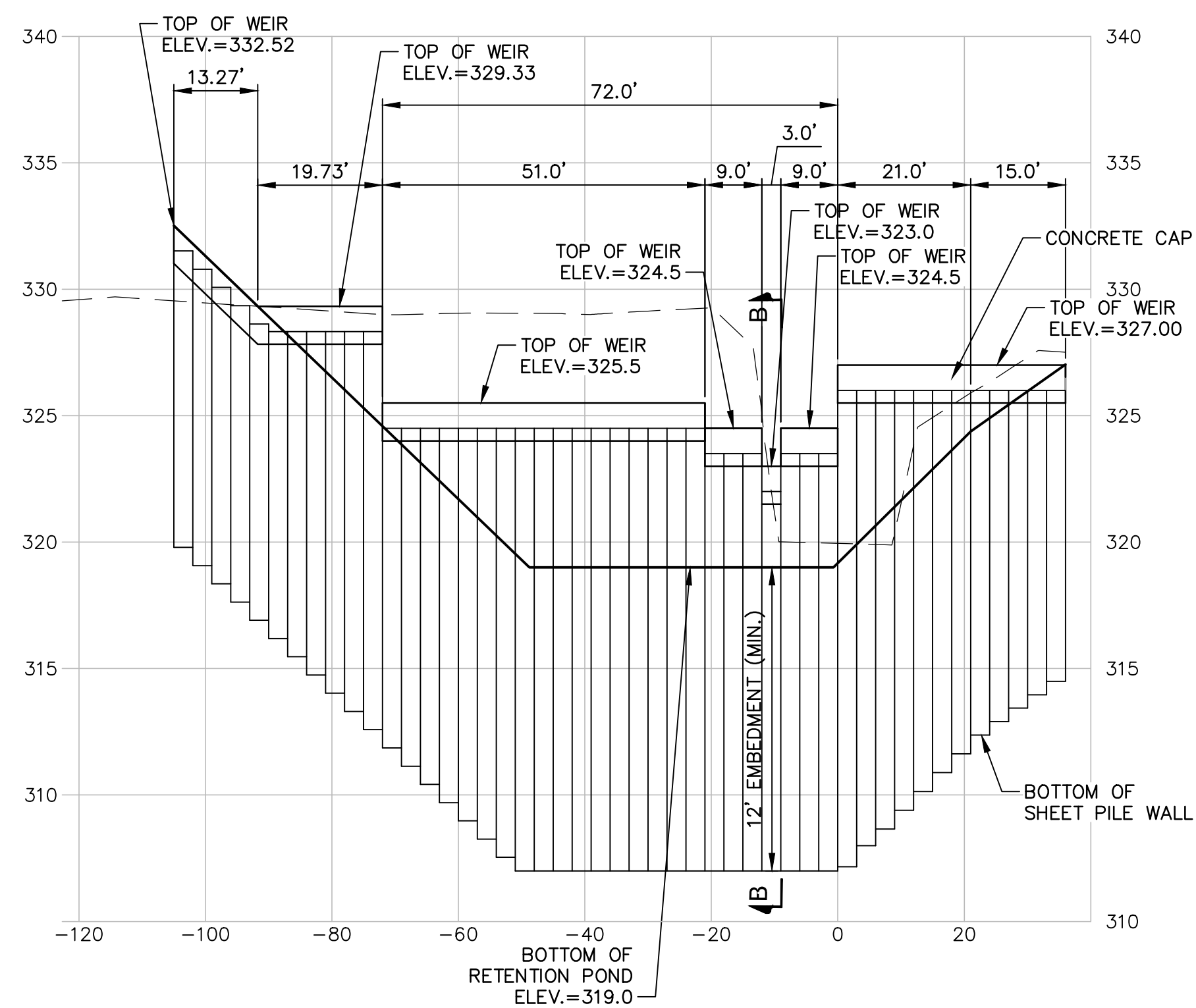
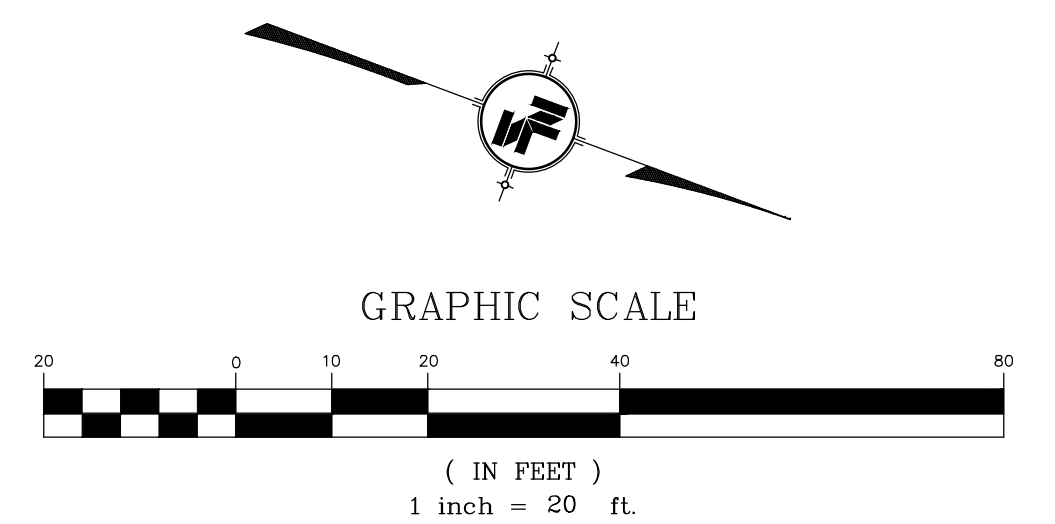
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R3.2

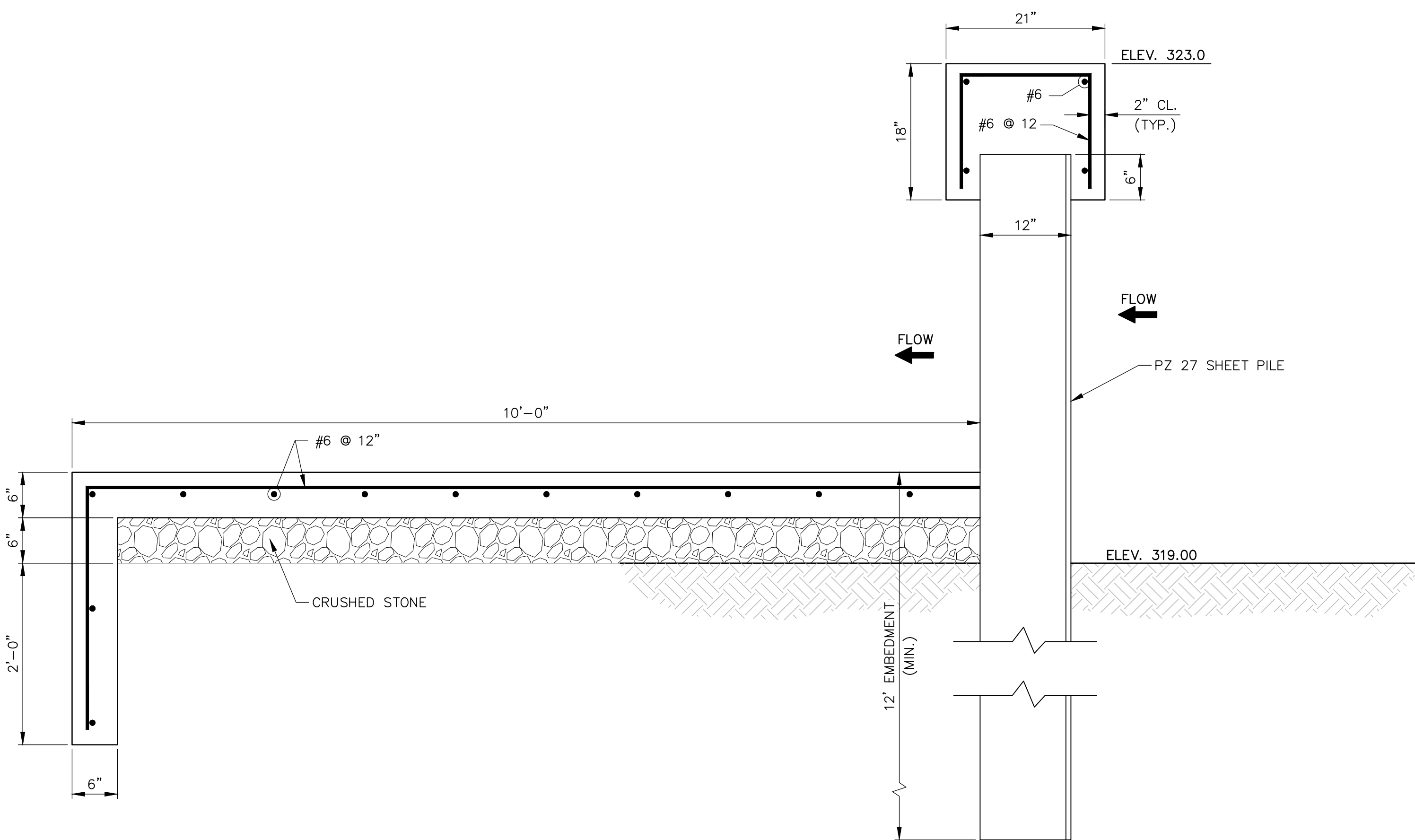


PZ 27 WEIR WALL PLAN
SCALE: 1"=20'

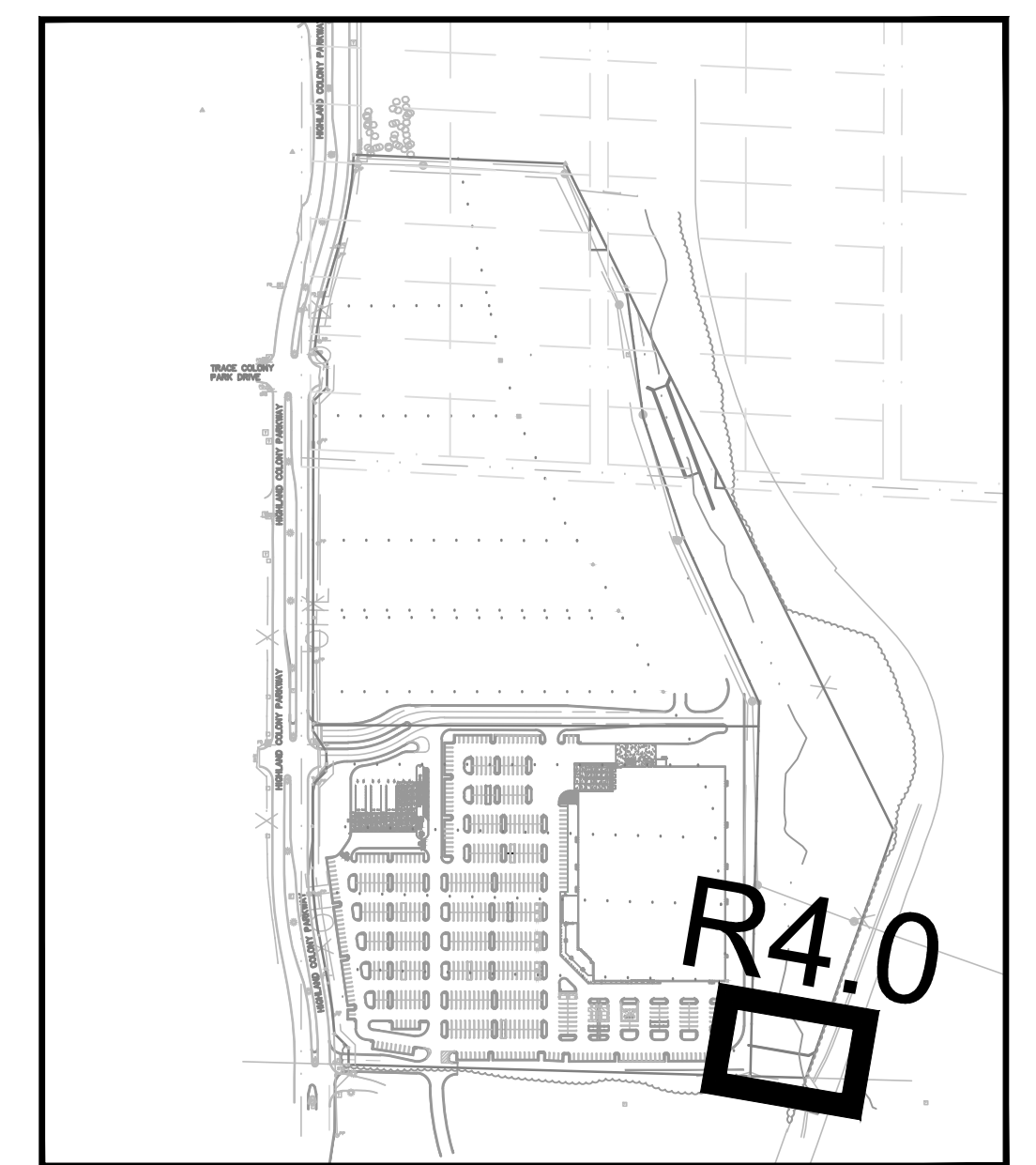
- LEGEND
- 330 --- EXISTING CONTOURS
 - 320 --- FINISHED GRADE CONTOURS
 - PROPERTY LINE
 - 200 LB. RIPRAP WITH FILTER FABRIC REQ'D.



SECTION A-A
WEIR WALL DETAIL
SCALE: HORIZ.: 1" = 20'
VERT.: 1" = 5'



SECTION B-B
PZ 27 WEIR WALL EMBEDMENT DETAIL
SCALE: 1" = 1'



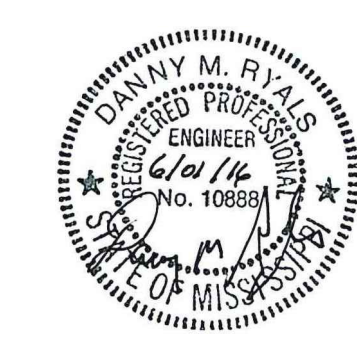
KEY MAP
SCALE: 1" = 400'

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REVISIONS				DRAWING INFORMATION	
NO.	DATE	BY	DESCRIPTION	N-S PROJECT NO.: NS.12665.001	
05/24/16	DMR	REVISED PER CITY COMMENTS		FILENAME: 12665-GW-Weir.dwg	
06/01/16	DMR	REVISED PER CITY COMMENTS		SCALE: As Noted	
				SURVEYED BY:	
				DSGN: D.M.R. DATE: 05/2016	
				DRWN: G.B.B. DATE: 06/2016	
				CHKD: D.M.R. DATE: 06/2016	
				QA/QC: --- DATE: ---/2016	

RENAISSANCE at COLONY PARK
PHASE 3
RIDGELAND, MISSISSIPPI



SEAL:

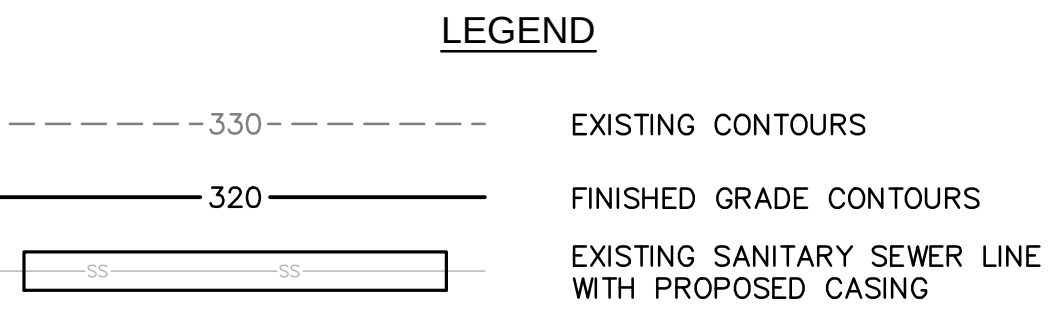
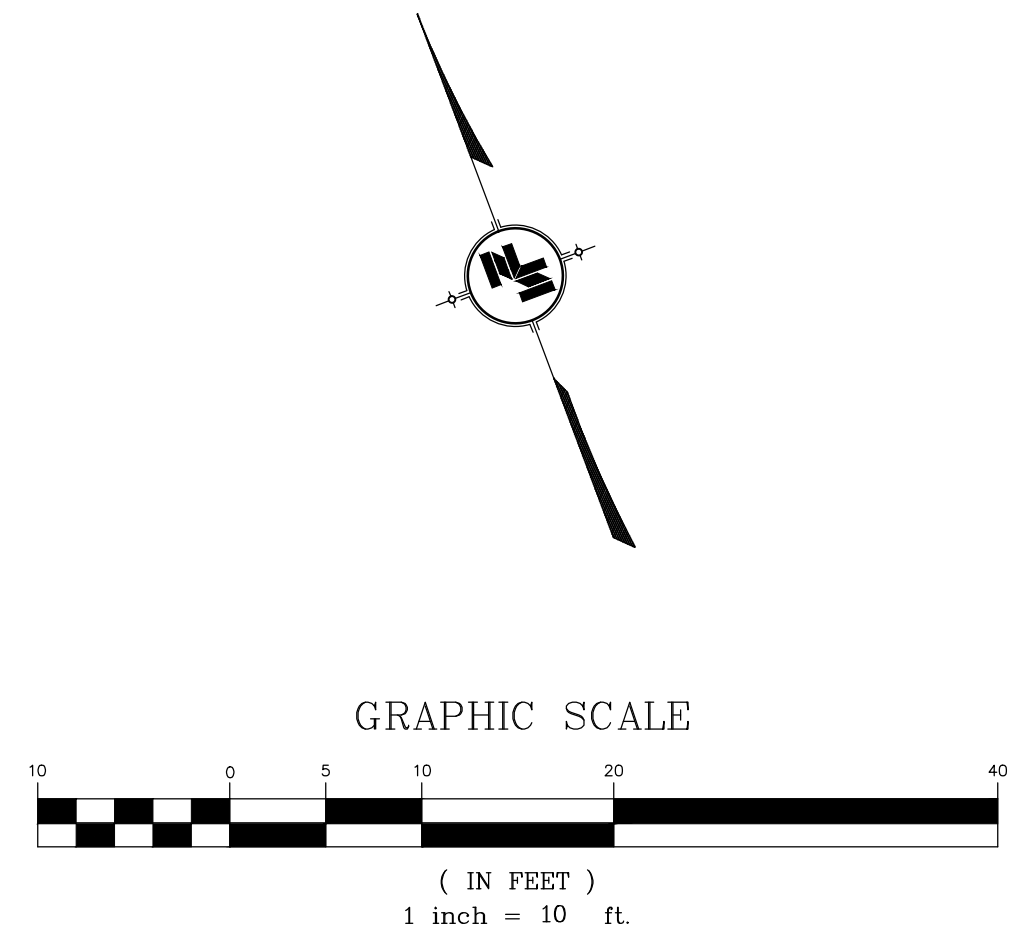
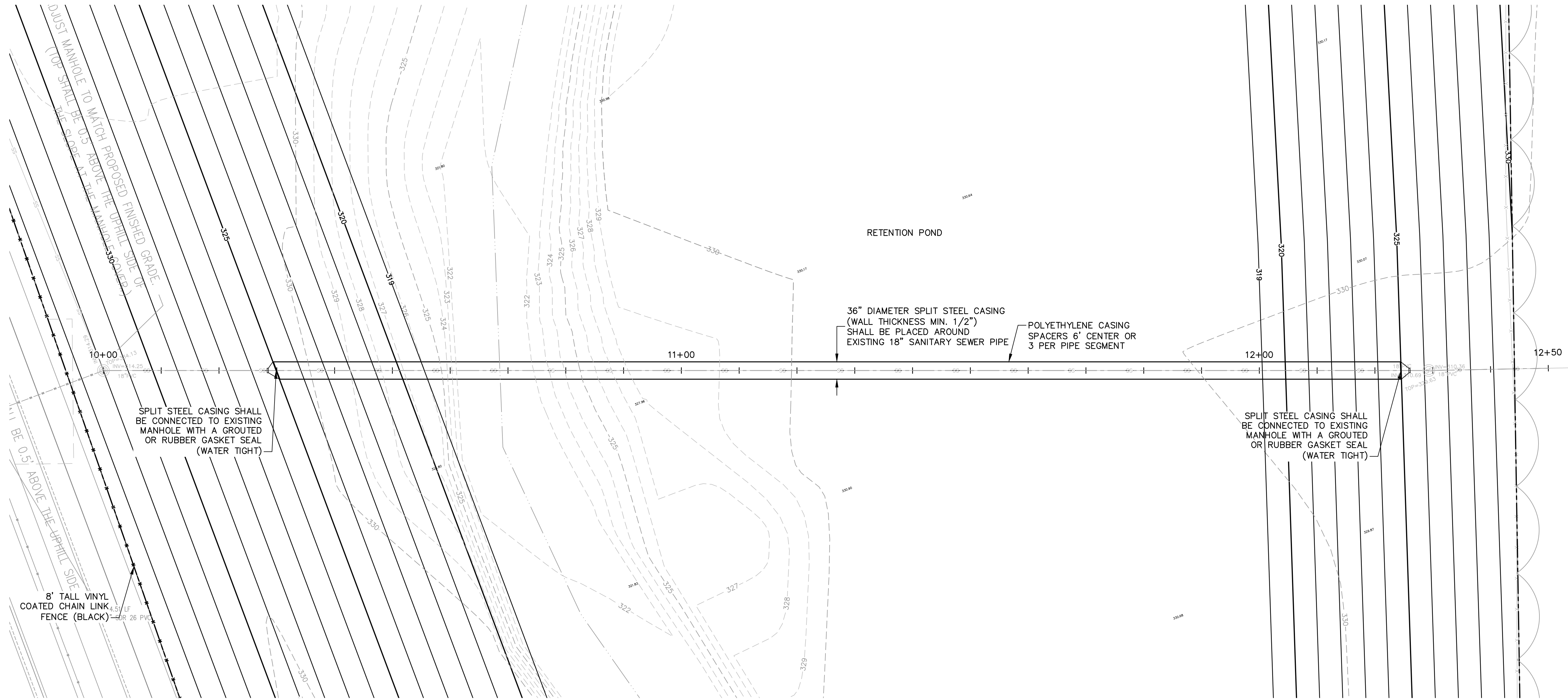


WEIR WALL AND
WEIR WALL DETAILS

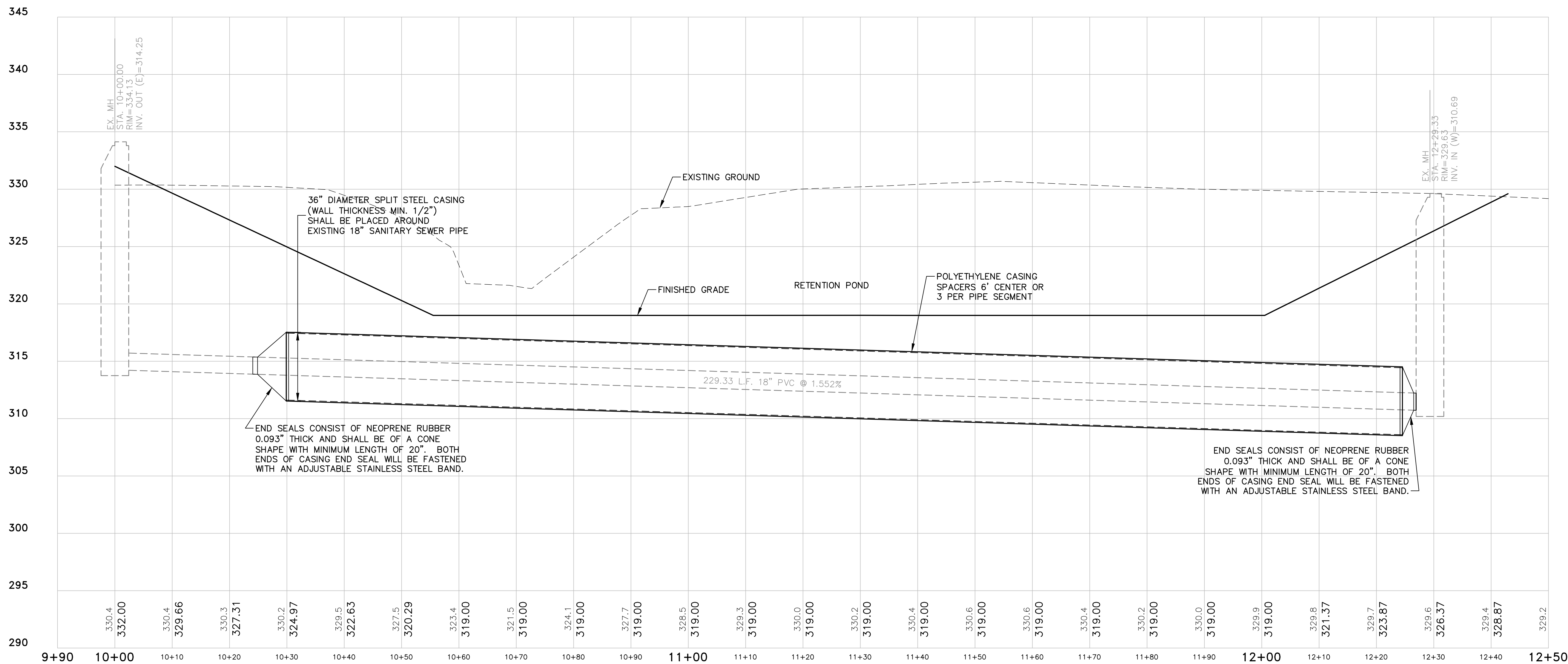
WORKING NUMBER:

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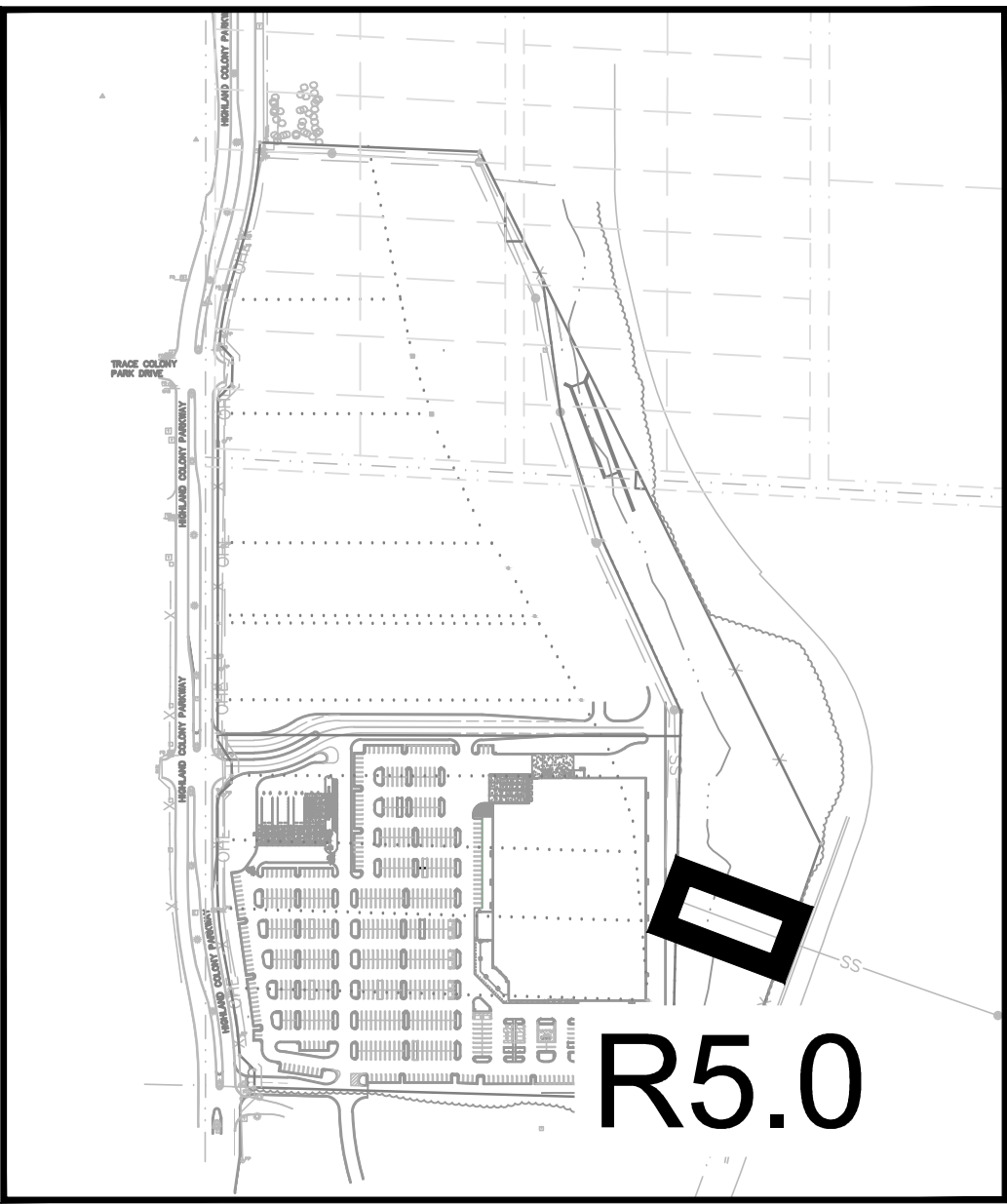
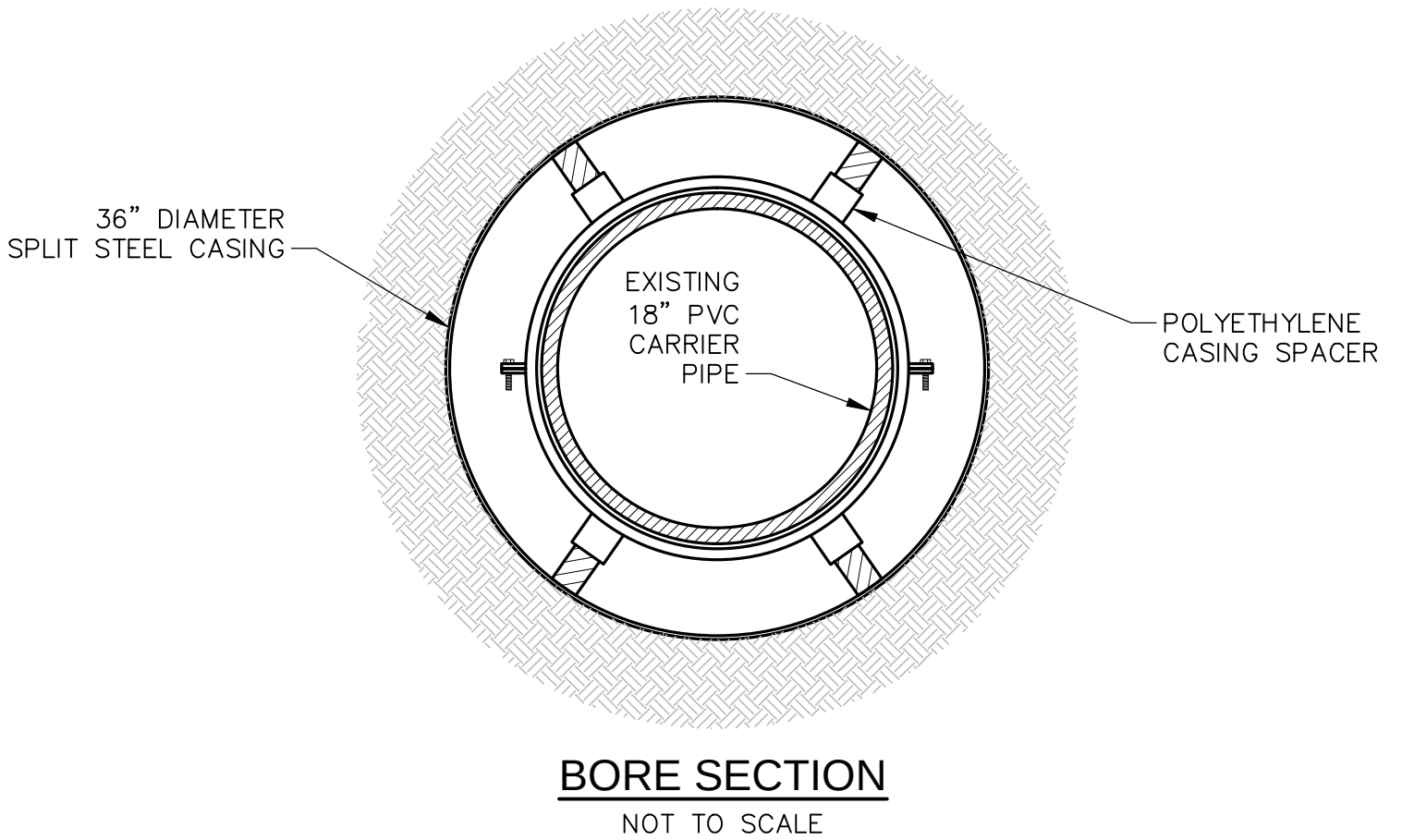
R4.0



SANITARY SEWER CASING PLAN
SCALE: 1" = 10'



SANITARY SEWER CASING PROFILE
SCALE: HORIZ. 1" = 10'
VERT. 1" = 5'



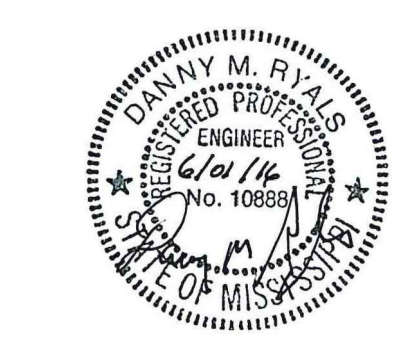
KEY PLAN
SCALE: 1" = 400'

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REVISIONS				DRAWING INFORMATION	
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06/01/16	DMR		REVISED PER CITY COMMENTS	SCALE: Horiz.: 1" = 10'; Vert.: 1" = 5'	
				SURVEYED BY: Maptech, Inc.	
				DSGN: D.M.R. DATE: 05/2016	
				DRWN: G.B.B. DATE: 06/2016	
				CHKD: D.M.R. DATE: 06/2016	
				QA/QC: DATE: 06/2016	

RENAISSANCE at COLONY PARK
PHASE 3
RIDGELAND, MISSISSIPPI



SEAL:

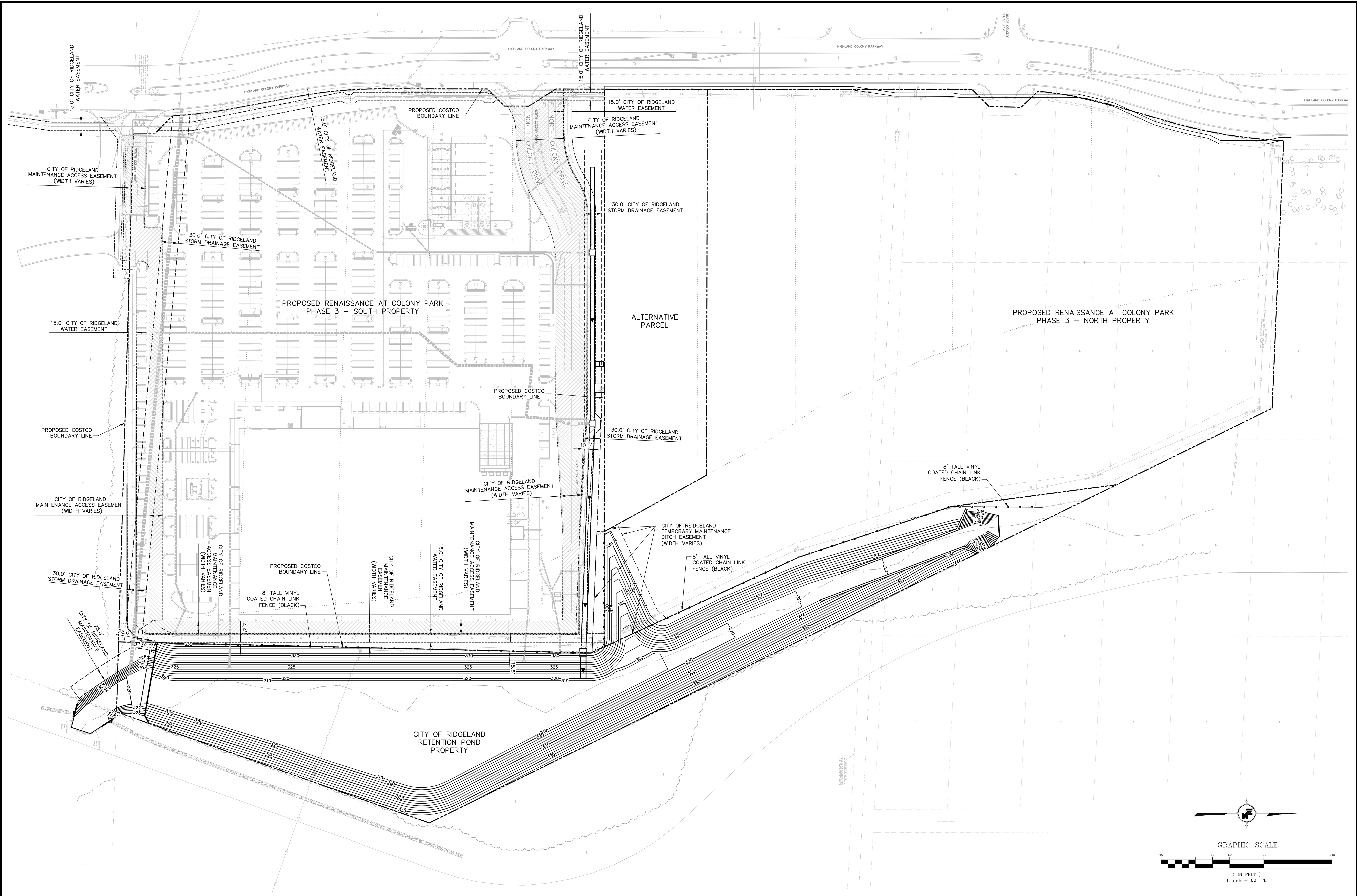


SANITARY SEWER CASING
PLAN AND PROFILE

WORKING NUMBER:

DRAWING NUMBER:

R5.0

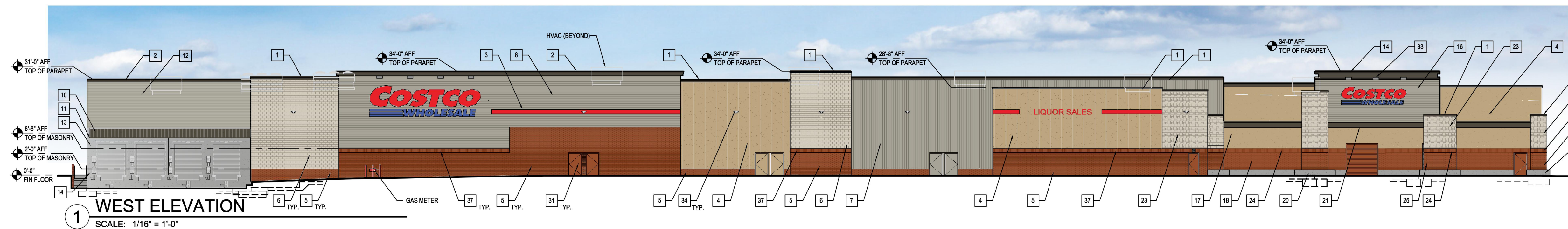


NOTICE TO DRAWING HOLDER NEEL-SCHAFFER, INC., HEREINAFTER REFERRED TO AS THE ENGINEER, HAS PREPARED AND FURNISHED THIS DRAWING TO THE OWNER FOR USE ON THIS PROJECT ONLY. THIS DRAWING SHOULD NOT BE USED ON EXTENSIONS OF THIS PROJECT OR ON ANY OTHER PROJECT. ANY REUSE OF THIS DRAWING, WITHOUT WRITTEN VERIFICATION OR ADAPTION BY THE ENGINEER, SHALL BE AT THE REUSER'S SOLE RISK AND THE REUSER SHALL INDEMNIFY AND HOLD HARMLESS THE ENGINEER FROM ALL CLAIMS, DAMAGES, LOSSES AND EXPENSES, INCLUDING ATTORNEY'S FEES ARISING OUT OF OR RESULTING THEREFROM.	REVISIONS		DRAWING INFORMATION	
	NO.	DATE	BY	DESCRIPTION
RENAISSANCE at COLONY PARK PHASE 3 RIDGELAND, MISSISSIPPI SEAL: NEEL-SCHAFFER Solutions you can build upon EASEMENTS WORKING NUMBER: DRAWING NUMBER: R6.0				



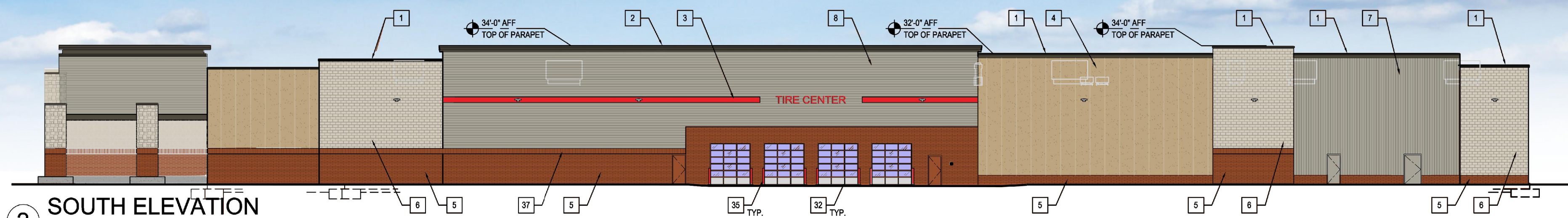






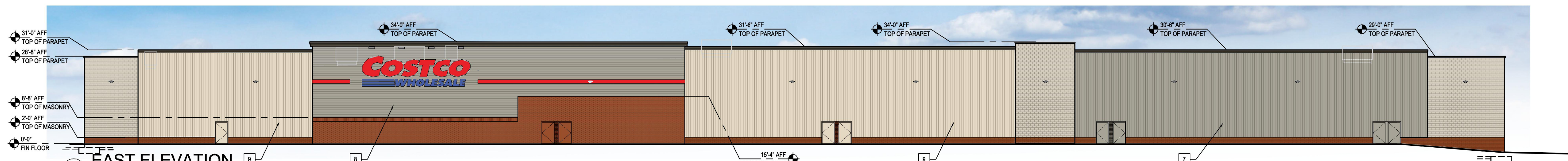
1 WEST ELEVATION

SCALE: 1/16" = 1'-0"



2 SOUTH ELEVATION

SCALE: 1/16" = 1'-0" (SEE ELEVATION 1 ABOVE FOR ADDITIONAL NOTES)



3 EAST ELEVATION

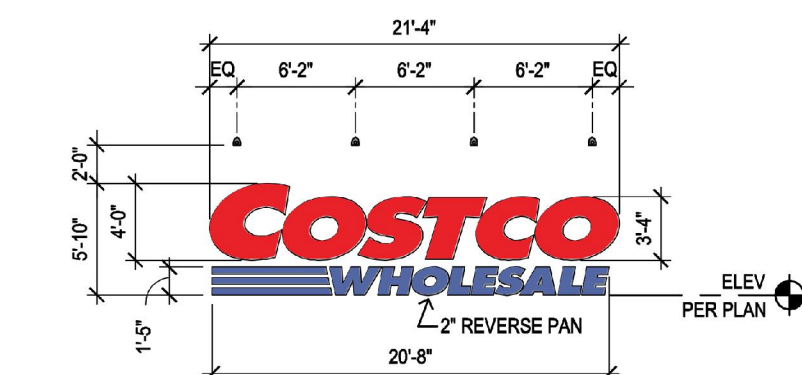
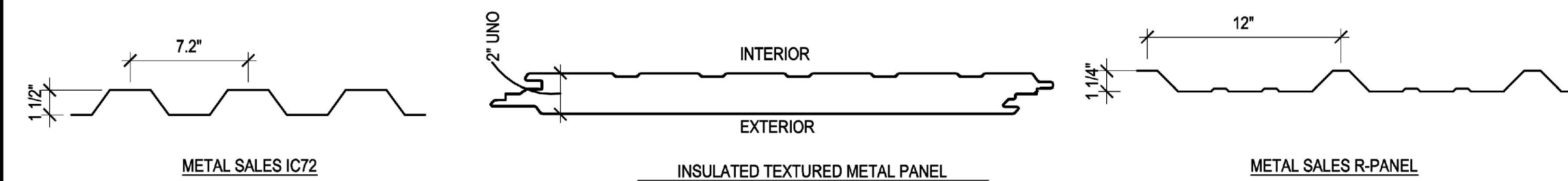
SCALE: 1/16" = 1'-0" (SEE ELEVATION 1 ABOVE FOR ADDITIONAL NOTES)



4 NORTH ELEVATION

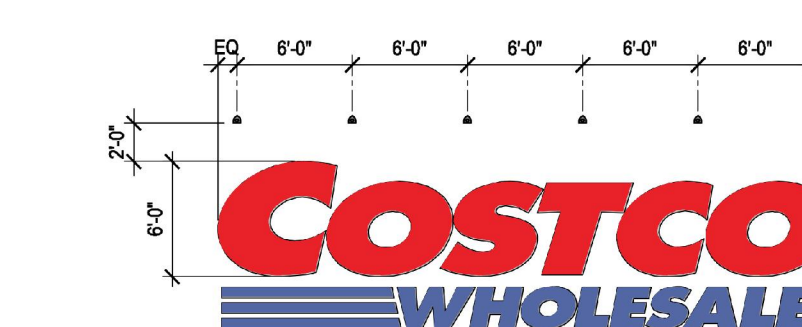
SCALE: 1/16" = 1'-0" (SEE ELEVATION 1 ABOVE FOR ADDITIONAL NOTES)

SIDING PROFILE



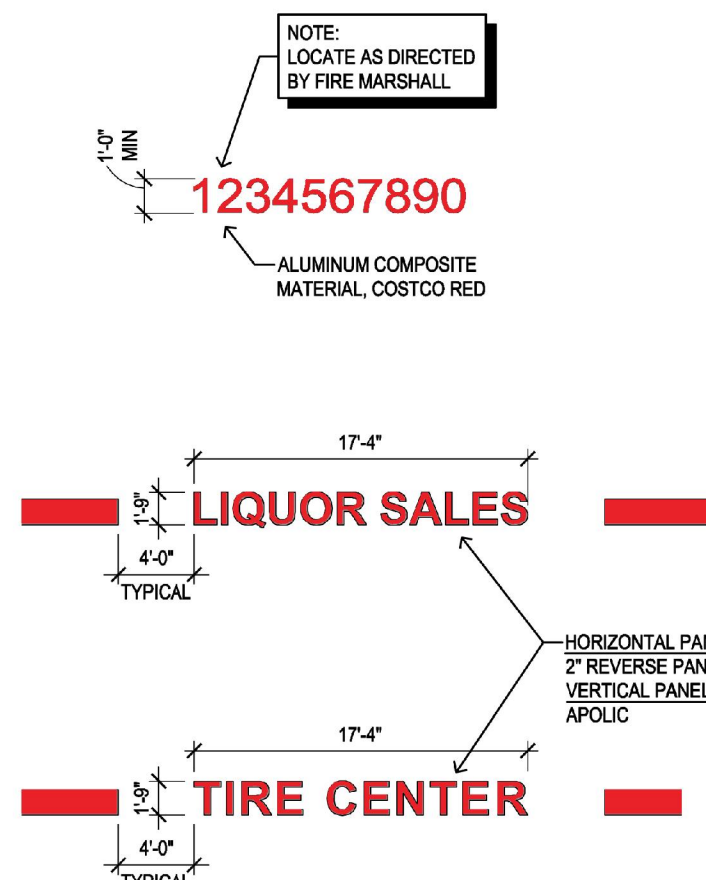
8 CANOPY SIGNAGE

SCALE: 1/8" = 1'-0" (SUPPLIED AND INSTALLED BY MBS) 0615



9 BUILDING SIGNAGE

SCALE: 1/8" = 1'-0" (SUPPLIED AND INSTALLED BY MBS) 0615

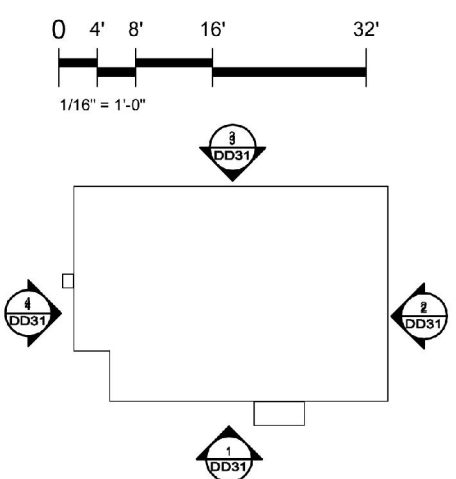


10 LOCATION SIGNAGE

(SUPPLIED AND INSTALLED BY MBS) 0615

SIGNAGE AREA TABULATION (WALL SIGNS)

QTY	SIGN	SIZE	AREA (SF) EA	TOTAL SF
2	COSTCO WHOLESALE	6'-0" "C"	280 SF	560 SF
1	COSTCO WHOLESALE	4'-0" "C"	124 SF	124 SF
1	LIQUOR SALES	17'-4" X 1'-9"	31 SF	31 SF
1	TIRE CENTER	17'-4" X 1'-9"	31 SF	31 SF
			TOTAL SIGNAGE AREA	746 SF



148K + 2K LIQUOR SALES

3444 Westpark Dr, Ste 120
McLean, VA 22102
703 564 8484
MG2.com



15-0006-01
MAY 30, 2016

BUILDING
ELEVATIONS

DD3.1-11

EXTERIOR FINISH SCHEDULE																		
#						#						#						
#	ITEM	MATERIAL	FINISH	COLOR	MFR \ NOTES	#	ITEM	MATERIAL	FINISH	COLOR	MFR \ NOTES	#	ITEM	MATERIAL	FINISH	COLOR	MFR \ NOTES	
WALLS (1-9)	1	COPING 1X6	METAL	KYNAR 500	COOL HARVEST	BY MBS	15	CANOPY FACADE	HORIZONTAL METAL IC72	KYNAR 500	CHAMPAGNE METALLIC	METAL SALES	31	EGRESS DOOR AND FRAME	METAL	FIELD PAINT, BY GC	COLOR TO MATCH CHAMPAGNE METALLIC	DOOR AND FRAME, BY MBS
	2	CORNICE A	METAL	KYNAR 500	COOL HARVEST	BY MBS	17	WALLS INSIDE CANOPY UPPER	'STUCCO' FINISHED PANEL	PRE-FINISHED	MEDIUM BEIGE	KING SPAN	32	GLAZED SERVICE DOORS	METAL	PRE-FINISHED	BRONZE	BY MBS
	3	ACCENT BAND	PRE-FINISHED METAL PANELS	KYNAR 500	SAFETY RED	BY MBS	18	WALLS INSIDE CANOPY LOWER	MASONRY 'QUIK-BRIK'	SMOOTH FACED	'HERITAGE'	OLD CASTLE	33	LIGHTING FIXTURE ENTRY SIGN	METAL	PRE-FINISHED	TECHLIGHT BRONZE	SEE ELECTRICAL DWGS
	4	WALL PANEL	'STUCCO' FINISHED PANEL	PRE-FINISHED	MEDIUM BEIGE	KING SPAN	19	CORNICE B	METAL	KYNAR 500	COOL HARVEST	BY MBS	34	WALLPACK LIGHTING FIXTURE	METAL	PRE-FINISHED	BRONZE	SEE ELECTRICAL DWGS
	5	STEM WALL	MASONRY 'QUIK-BRIK'	SMOOTH FACE	'HERITAGE'	OLD CASTLE	20	BENCH	CONCRETE C.I.P.	SEALED	NATURAL		35	ROLL-UP SERVICE DOOR	METAL	PAINT	COLOR TO MATCH CHAMPAGNE METALLIC	
	6	PILASTER	MASONRY CMU	SPLIT FACE	4310	ADAMS	21	CANOPY	METAL, BY MBS	PAINT, BY GC	SW 7020 BLACKFOX		36	MASONRY ACCENT	MASONRY 'QUIK-BRIK'	SMOOTH FACE	'HERITAGE'	OLD CASTLE SOLDIER COURSE
	7	WALL SIDING	VERTICAL METAL IC72	KYNAR 500	CHAMPAGNE METALLIC	METAL SALES	22	CANOPY UNDERSIDE	METAL, BY MBS	PAINT, BY GC	SW 7020 BLACKFOX	SEE A801 ROOM FINISH SCHEDULE - REMARKS	37	SCUPPER	METAL, BY MBS	FIELD PAINT, BY GC	PAINT, BY GC	SW 7020 BLACKFOX
	8	WALL SIDING	HORIZONTAL METAL IC72	KYNAR 500	CHAMPAGNE METALLIC	METAL SALES	23	COLUMN UPPER	STONE VENEER	NATURAL	GOLDEN BUCKEYE LIMESTONE	BORAL	38	METAL STAIR	STEEL	PAINT, BY GC		
	9	WALL SIDING	VERTICAL METAL R-PANEL	KYNAR 500	BIRCH WHITE	METAL SALES	24	COLUMN ACCENT	MASONRY 'QUIK-BRIK'	SMOOTH FACE	'HERITAGE'	OLD CASTLE SOLDIER COURSE	39	SCREEN WALL	CMU	SPLIT FACED	4310	
LOADING DOCK (10-15)	10	CANOPY ROOFING	METAL - VSR	PRE-FINISHED	CHAMPAGNE METALLIC	GABLE CLOSURE, BY MBS	25	COLUMN LOWER	MASONRY 'QUIK-BRIK'	SMOOTH FACE	'HERITAGE'	OLD CASTLE	40	EMERGENCY LIGHT				SUPPORT BRACKET - MATCH WALL, BY MBS
	11	CANOPY FRAMING	METAL	PAINT, BY GC	SW 7020 BLACKFOX	FRAME BY MBS PAINT BY GC	26	ROOF	METAL	PRE-FINISHED	CHAMPAGNE METALLIC	VSR STANDING SEAM, BY MBS	41	EGRESS DOOR AND FRAME	METAL	FIELD PAINT	COLOR TO MATCH CHAMPAGNE METALLIC	DOOR AND FRAME, BY MBS
	12	WALL SIDING	HORIZONTAL METAL IC72	KYNAR 500	CHAMPAGNE METALLIC	METAL SALES	27	WALL SIDING	METAL	KYNAR 500	CHAMPAGNE METALLIC	BY MBS						
	13	LOWER WALL	CAST IN PLACE CONCRETE	WATER REPELLANT		SMOOTH FINISH DO NOT PATCH AND SACK	28	GUTTER	METAL		CHAMPAGNE METALLIC	BY MBS						
	14	WALL BELOW FLOOR	CAST IN-PLACE CONCRETE	WATER REPELLANT		SMOOTH FINISH DO NOT PATCH AND SACK	29	DOWNSPOUT	METAL	PRE-FINISHED	CHAMPAGNE METALLIC	BY MBS						
	15						30	STEM WALL	CMU	SPLIT FACE	4310	ADAMS						
CANOPY (16-25)						PUMP ROOM (26-30)						MISCELLANEOUS (31-45)						

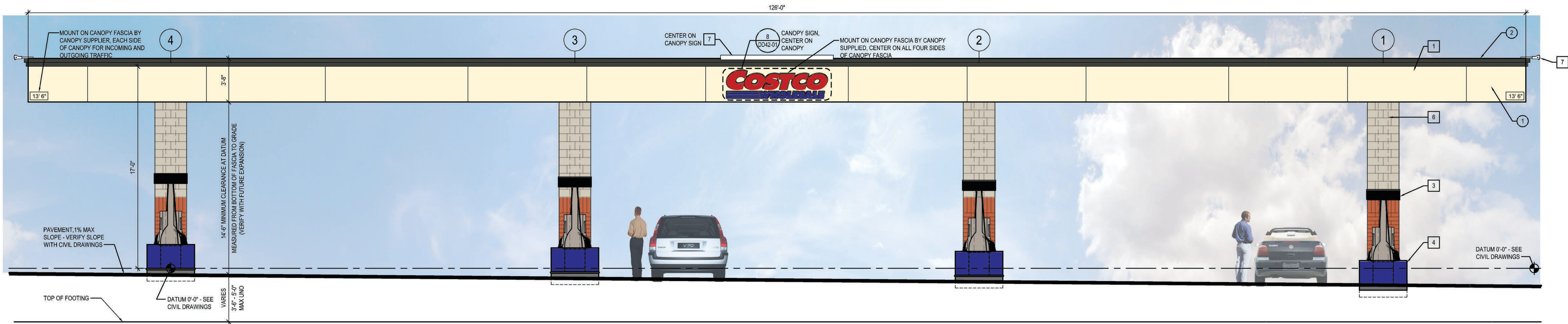
COSTCO WHOLESALE

RIDGELAND, MISSISSIPPI

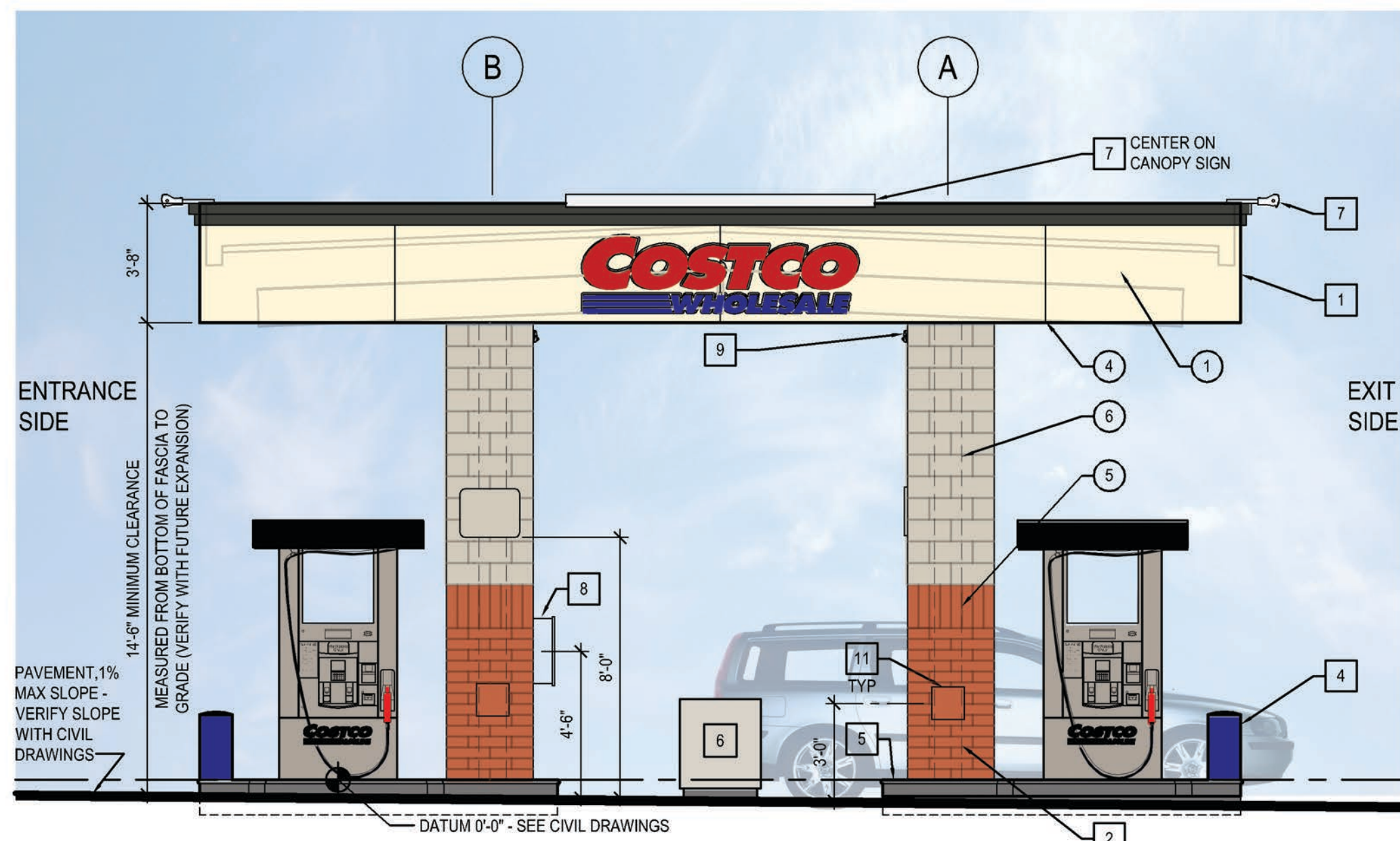
BUILDING ELEVATIONS

MAY 30, 2016

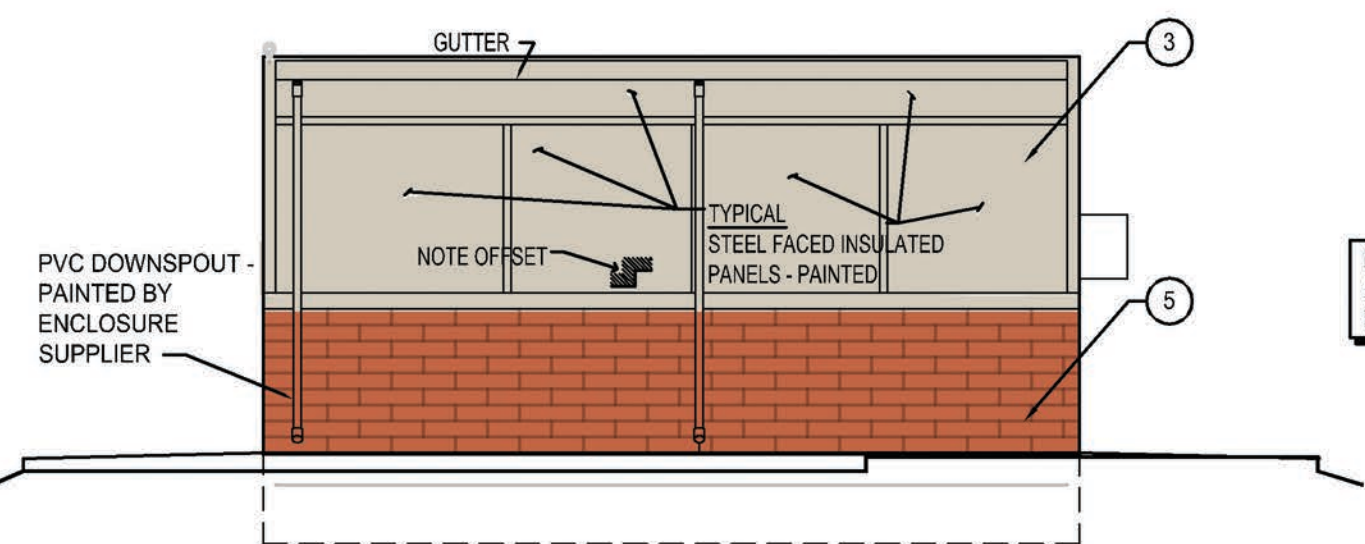
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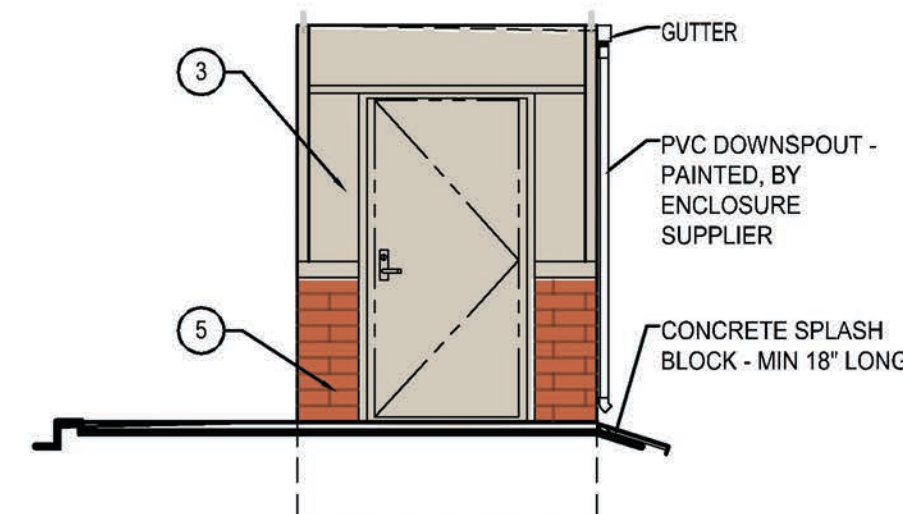
1 EAST AND WEST END ELEVATIONS
SCALE: 1/4" = 1'-0"



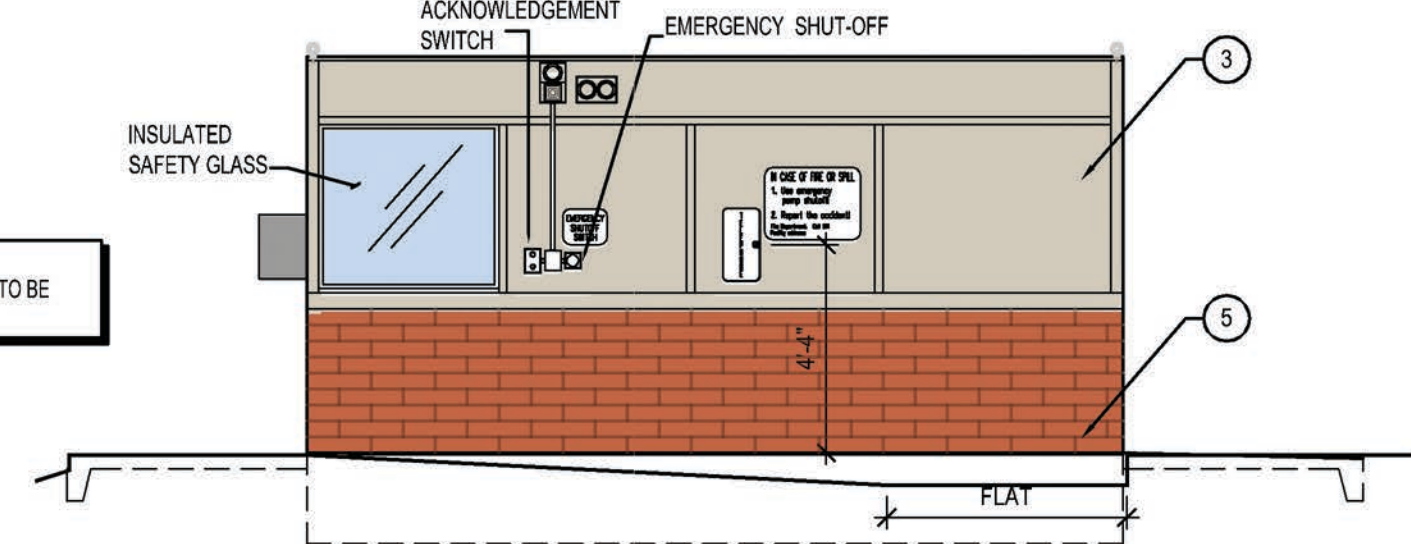
2 CANOPY AND DISPENSER ISLANDS
SCALE: 1/4" = 1'-0"



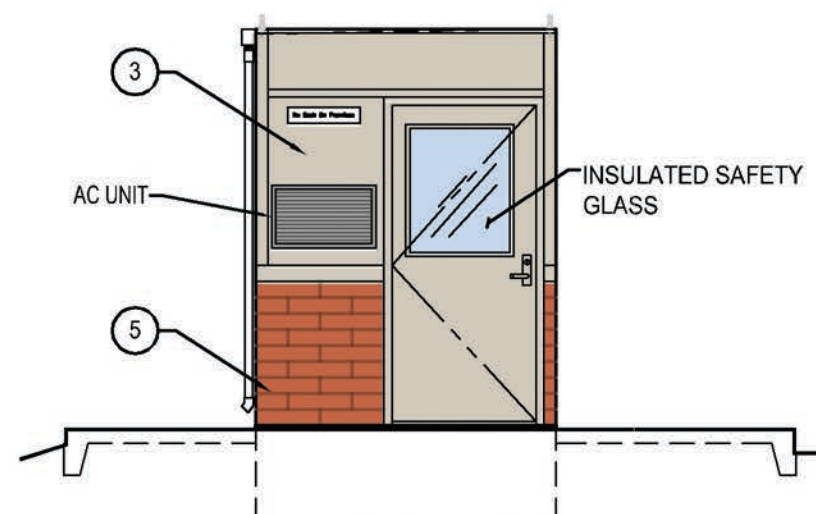
4 SIDE FACING AWAY FROM CANOPY
SCALE: 1/4" = 1'-0"



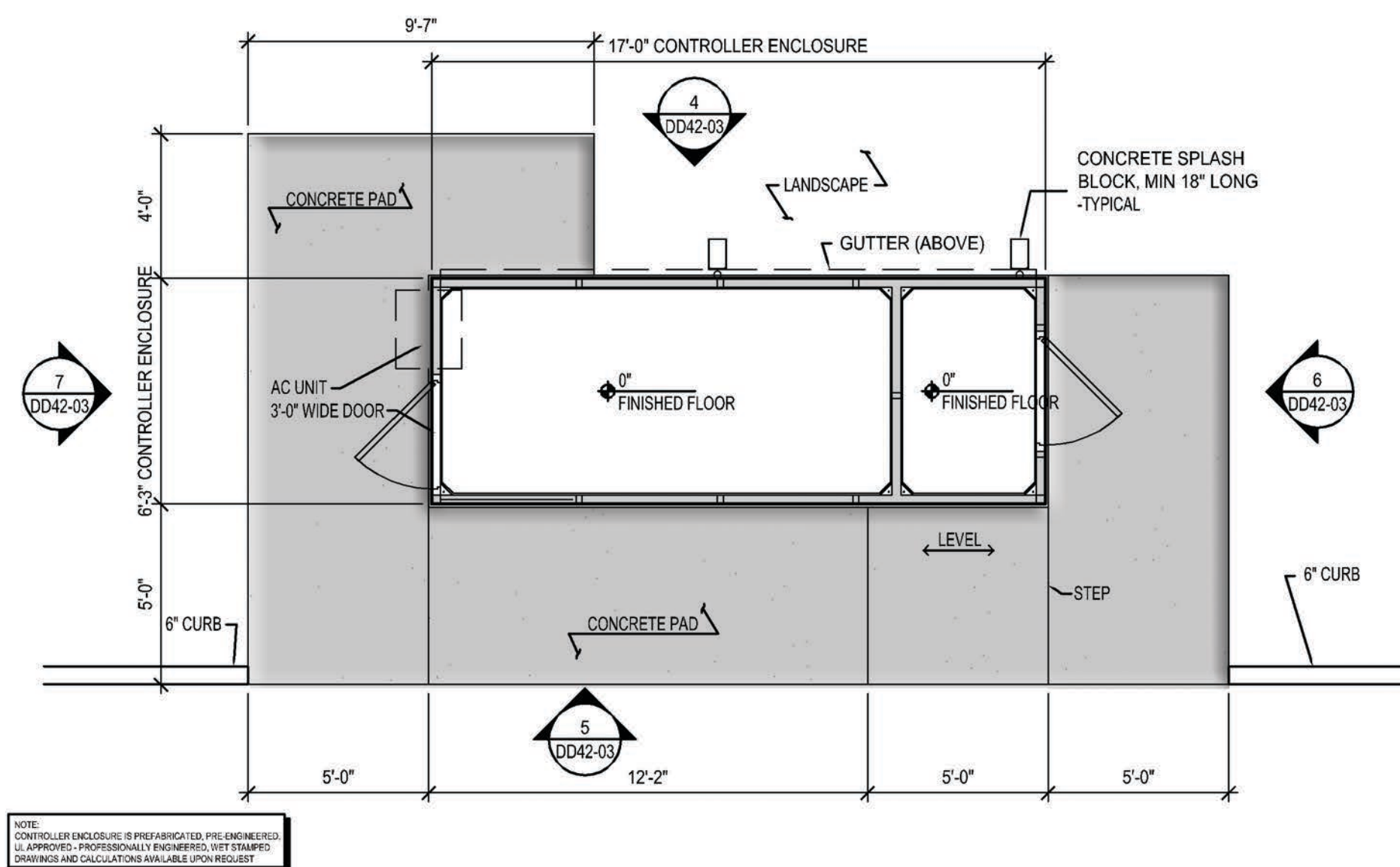
6 STORAGE ENTRY
SCALE: 1/4" = 1'-0"



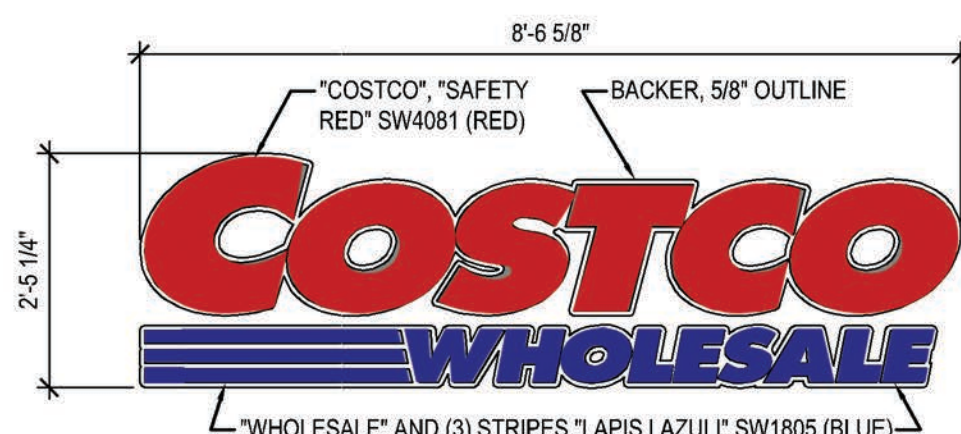
5 SIDE FACING CANOPY
SCALE: 1/4" = 1'-0"



7 ENCLOSURE ENTRY
SCALE: 1/4" = 1'-0"



3 CONTROLLER ENCLOSURE LAYOUT
SCALE: 1/4" = 1'-0"



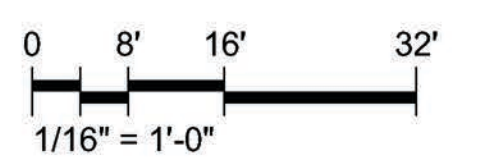
8 CANOPY SIGN
SCALE: 1/2" = 1'-0"

SIGNAGE AREA TABULATION (CANOPY SIGNS)					
QTY.	SIGN	DETAIL	SIZE	AREA (S.F.) EA.	TOTAL S.F.
1	COSTCO GASOLINE (EAST FACADE)	9-DD4.2-02	2'-4" x 8'-5 3/8"	19.70 S.F.	19.70 S.F.
1	COSTCO GASOLINE (WEST FACADE)	9-DD4.2-02	2'-4" x 8'-5 3/8"	19.70 S.F.	19.70 S.F.
1	COSTCO GASOLINE (NORTH FACADE)	9-DD4.2-02	2'-4" x 8'-5 3/8"	19.70 S.F.	19.70 S.F.
1	COSTCO GASOLINE (SOUTH FACADE)	9-DD4.2-02	2'-4" x 8'-5 3/8"	19.70 S.F.	19.70 S.F.
4	TOTAL SIGNAGE AREA				78.80 S.F.

EXTERIOR FINISH SCHEDULE					
#	ITEM	MATERIAL	FINISH	COLOR	MANUFACTURER \ NOTES
1	FASCIA	METAL	POWDER COATED	IVORY PU72262	SPRAYLAT
2	CORNICE	METAL	PRE-FINISHED	HERITAGE COPPER	BY MBS
3	CONTROLLER ENCLOSURE	METAL	POWDER COATED	TALUPE HC PU 96161	SPRAYLAT
4	CANOPY CEILING	METAL	KYNAR 500	WHITE	APCO
5	COLUMNWALL	QUICK-BRICK	SMOOTH	HERITAGE	SOLDIER COURSE
6	COLUMN	CMU	SPLIT FACE	4310	ADAMS

KEY NOTES	
1	PRE-FINISHED METAL FASCIA PANEL - SUPPLIED AND INSTALLED BY CANOPY SUPPLIER UNDER SEPARATE CONTRACT
2	COLUMN WITH CMU COLUMN WRAP - SEE STRUCTURAL DRAWINGS - SUPPLIED AND INSTALLED BY CANOPY SUPPLIER UNDER SEPARATE CONTRACT
3	MULTIPRODUCT DISPENSER
4	CONCRETE FILLED METAL FORMED GUARD AT ENDS OF ISLANDS - TOP OF GUARD AT 30" ABOVE TRAFFIC SURFACE - PAINT SIDES ONLY WITH GLOSS BLUE, REFER TO SPECIFICATION
5	RAISED CONCRETE ISLAND WITH METAL EDGE FORM - PAINT SIDES ONLY WITH GLOSS BLACK, REFER TO SPECIFICATION
6	WASTE RECEPTOR, BOLT DOWN, CENTER OF EACH ISLAND (SOIC)
7	CANOPY FASCIA SIGN LIGHT FIXTURE (SOLC) - REFER TO DETAIL
8	FIRE EXTINGUISHER AND CABINETS MOUNTED ON ENTRANCE SIDE OF COLUMNS - FIRE EXTINGUISHER CABINET TO BE: BROOKS MODEL # MARK II, RED CABINET WITH CLEAR COVER (OR EQUAL) - FIRE EXTINGUISHER AND CABINET, BY GC
9	VIDEO CAMERA - VERIFY LOCATION WITH OWNER CONSTRUCTION PROJECT MANAGER. GC SHALL RUN CONDUIT AND INSTALL J-BOX FOR MOUNTING CAMERAS - SEE ELECTRICAL DRAWINGS
10	CAULK PERIMETER OF DISPENSER BASE WITH TYPE NS SEALANT, TYPICAL
11	ELECTRICAL ACCESS PANELS, BY CANOPY SUPPLIER UNDER SEPARATE CONTRACT

GENERAL NOTES	
A.	SEE ENLARGED SITE PLAN FOR ADDITIONAL GENERAL NOTES AND ADDITIONAL DETAIL REFERENCES.



8444 Westpark Dr, Ste 120
McLean, VA 22102
703 564 8484
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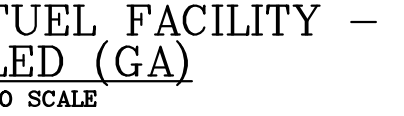


15-0006-01
MAY 26, 2016

FUEL FACILITY
ELEVATIONS

DD42-03

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FIXTURE DESCRIPTION	
(P)	COOPER GALLEON GLEON-AE-4-LED-E1-SWO-BZ, 213W TYPE 5 DISTRIBUTION, FIBERGLASS POLE 24'-0" ABOVE GRADE, WITH 2'-6" BASE.
(P1)	COOPER GALLEON GLEON-AE-8-LED-E1-SL3-BZ, 213W TYPE 3 DISTRIBUTION, FIBERGLASS POLE 24'-0" ABOVE GRADE, WITH 2'-6" BASE.
(P2)	COOPER GALLEON GLEON-AE-4-LED-E1-SMO-BZ, 213W TYPE 5 DISTRIBUTION, FIBERGLASS POLE 24'-0" ABOVE GRADE, WITH 2'-6" BASE.
(P3)	COOPER GALLEON GLEON-AE-8-LED-E1-SL4-BZ, 213W TYPE 4 DISTRIBUTION, FIBERGLASS POLE 24'-0" ABOVE GRADE, WITH 2'-6" BASE.
(W)	LITHIONA DSWX2 LED 40K 30C 1000 T2M, 109W LED, 20' MOUNTING HEIGHT
(W1)	LITHIONA DSWX1 LED 40K 30C 1000 T4FT, 109W LED, 20' MOUNTING HEIGHT
(W2)	LITHIONA DSWX2 LED 40K 30C 530 T2M, 54W LED, 20'/15' MOUNTING HEIGHT
(GA)	120W LED, SURFACE SYMETRIC DOWN LIGHT, FLAT LENS, 18' MOUNTING HEIGHT

DESCRIPTION

The Galleon™ LED luminaire delivers exceptional performance in a highly scalable, low-profile design. Patented, high-efficiency AccuLED Optics™ system provides uniform and energy conscious illumination to walkways, parking lots, roadways, building areas and security lighting applications. IP66 rated and UL/cUL Listed for wet locations.

SPECIFICATION FEATURES

Construction

Extruded aluminum driver enclosure thermally isolated from Light Squares for optimal thermal performance. Heavy-wall, die-cast aluminum end caps enclose housing and die-cast aluminum heat sinks. A unique, patent pending interlocking housing and heat sink provides scalability with superior structural rigidity. 3G vibration tested. Optional tool-less hardware available for ease of entry into electrical chamber. Housing is IP66 rated.

Optics

Patented, high-efficiency injection-molded AccuLED Optics technology. Optics are precisely designed to shape the distribution maximizing efficiency and application spacing. AccuLED Optics create consistent distributions with the scalability to meet customized application requirements. Offered standard in 4000K (+/- 275K) CCT 70 CRI. Optional 6000K CCT and 3000K CCT.

Electrical

LED drivers are mounted to removable tray assembly for ease of maintenance. 120-277V 50/60Hz, 347V 60Hz or 480V 60Hz operation. 480V is compatible for use with 480V Wye systems only. Standard with 0-10V dimming. Shipped standard with Eaton proprietary circuit module designed to withstand 10kV of transient line surge. The Galleon LED luminaire is suitable for operation in -40°C to 40°C ambient environments. For applications with ambient temperatures exceeding 40°C, specify the HA (High Ambient) option. Light Squares are IP66 rated. Greater than 90% lumen maintenance expected at 60,000 hours. Available in standard 1A drive current and optional 530mA and 700mA drive currents.

Mounting

STANDARD ARM MOUNT: Extruded aluminum arm includes internal bolt guides allowing for easy positioning of fixture during assembly. When mounting two or more luminaires at 90° and 120° apart, the EA extended arm may be required. Refer to the arm mounting requirement table.

Round pole adapter included.

For wall mounting, specify wall mount bracket option. 3G vibration rated. **QUICK MOUNT ARM:** Arm is bolted directly to the pole and the fixture slides onto the quick mount arm and is secured via a single fastener, facilitating quick and easy installation. The versatile, patent pending, quick mount arm accommodates multiple drill patterns ranging from 1-1/2" to 4-7/8". Removal of the door on the quick mount arm enables wiring of the fixture without having to access the driver compartment. A knock-out enables round pole mounting.

Finish

Housing finished in super durable TGIC polyester powder coat paint, 2.5 mil nominal thickness for superior protection against fade and wear. Heat sink is powder coated black. Standard colors include black, bronze, grey, white, dark platinum and graphite metallic. RAL and custom color matches available.

Warranty

Five-year warranty.

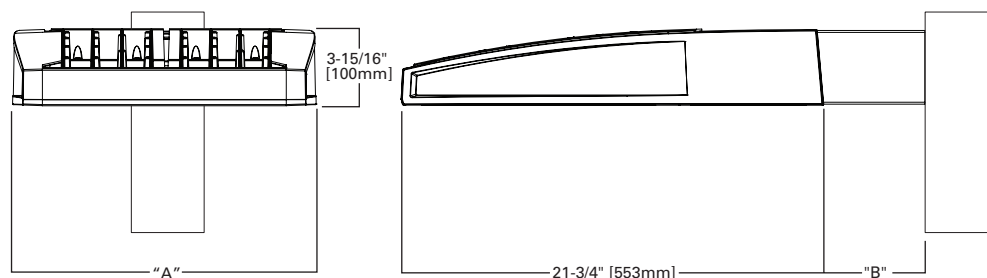


GLEON GALLEON LED

1-10 Light Squares
Solid State LED

AREA/SITE LUMINAIRE

DIMENSIONS



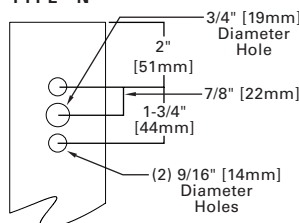
DIMENSION DATA

Number of Light Squares	"A" Width	"B" Standard Arm Length	"B" Optional Arm Length ¹	Weight with Arm (lbs.)	EPA with Arm ² (Sq. Ft.)
1-4	15-1/2" (394mm)	7" (178mm)	10" (254mm)	33 (15.0 kgs.)	0.96
5-6	21-5/8" (549mm)	7" (178mm)	10" (254mm)	44 (20.0 kgs.)	1.00
7-8	27-5/8" (702mm)	7" (178mm)	13" (330mm)	54 (24.5 kgs.)	1.07
9-10	33-3/4" (857mm)	7" (178mm)	16" (406mm)	63 (28.6 kgs.)	1.12

NOTES: 1. Optional arm length to be used when mounting two fixtures at 90° on a single pole. 2. EPA calculated with optional arm length.

DRILLING PATTERN

TYPE "N"



CERTIFICATION DATA

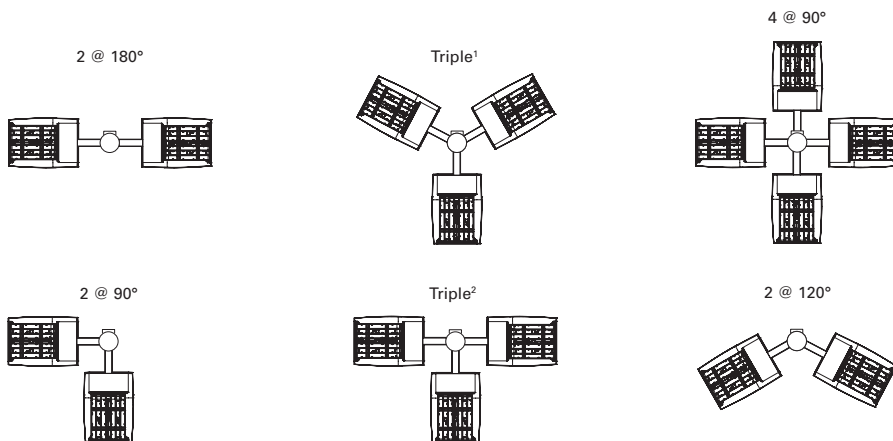
UL/cUL Wet Location Listed
ISO 9001
LM79 / LM80 Compliant
3G Vibration Rated
IP66 Rated
DesignLights Consortium™ Qualified*

ENERGY DATA

Electronic LED Driver
>0.9 Power Factor
<20% Total Harmonic Distortion
120V-277V 50/60Hz
347V & 480V 60Hz
-40°C Min. Temperature
40°C Max. Temperature
50°C Max. Temperature (HA Option)

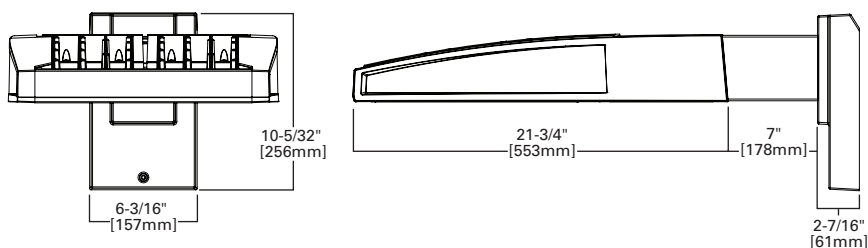
ARM MOUNTING REQUIREMENTS

Configuration	90° Apart	120° Apart
GLEON-AE-01	7" Arm (Standard)	7" Arm (Standard)
GLEON-AE-02	7" Arm (Standard)	7" Arm (Standard)
GLEON-AE-03	7" Arm (Standard)	7" Arm (Standard)
GLEON-AE-04	7" Arm (Standard)	7" Arm (Standard)
GLEON-AE-05	10" Extended Arm (Required)	7" Arm (Standard)
GLEON-AE-06	10" Extended Arm (Required)	7" Arm (Standard)
GLEON-AE-07	13" Extended Arm (Required)	13" Extended Arm (Required)
GLEON-AE-08	13" Extended Arm (Required)	13" Extended Arm (Required)
GLEON-AE-09	16" Extended Arm (Required)	16" Extended Arm (Required)
GLEON-AE-10	16" Extended Arm (Required)	16" Extended Arm (Required)

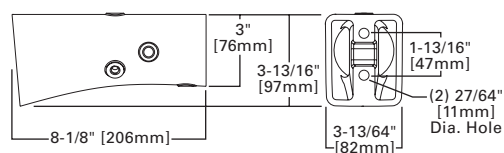


NOTES: 1 Round poles are 3 @ 120°. Square poles are 3 @ 90°. 2 Round poles are 3 @ 90°.

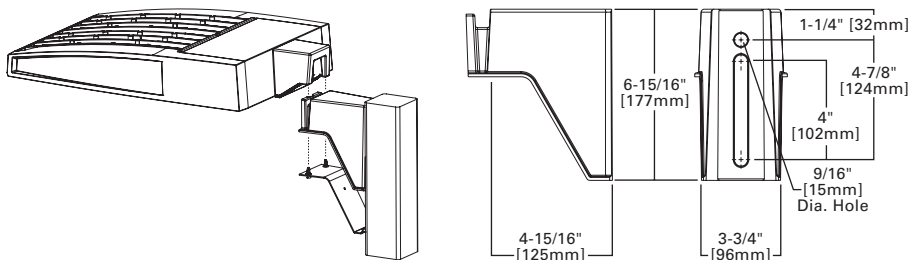
STANDARD WALL MOUNT



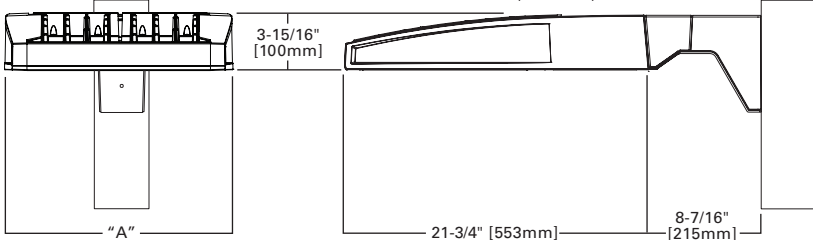
MAST ARM MOUNT



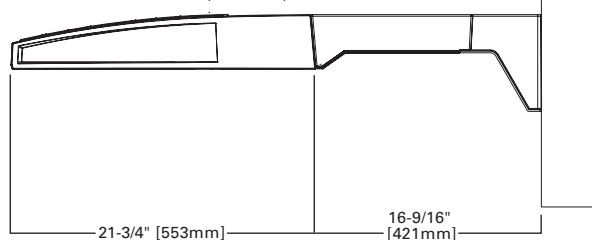
QUICK MOUNT ARM (INCLUDES FIXTURE ADAPTER)



QM Quick Mount Arm (Standard)



QMEA Quick Mount Arm (Extended)

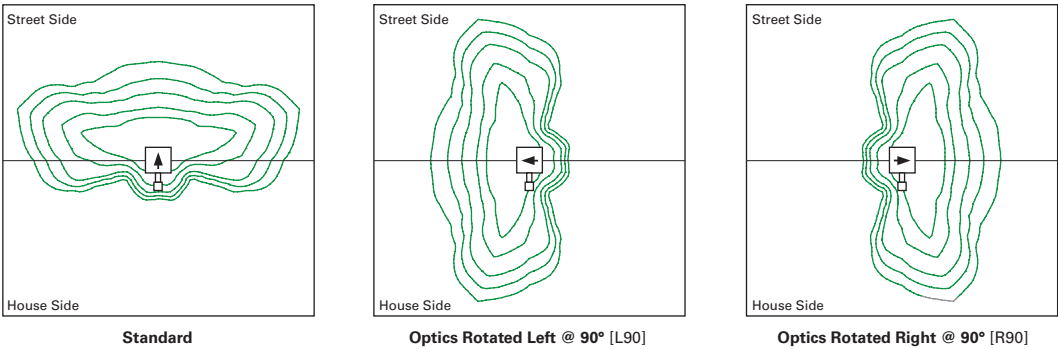


QUICK MOUNT ARM DATA

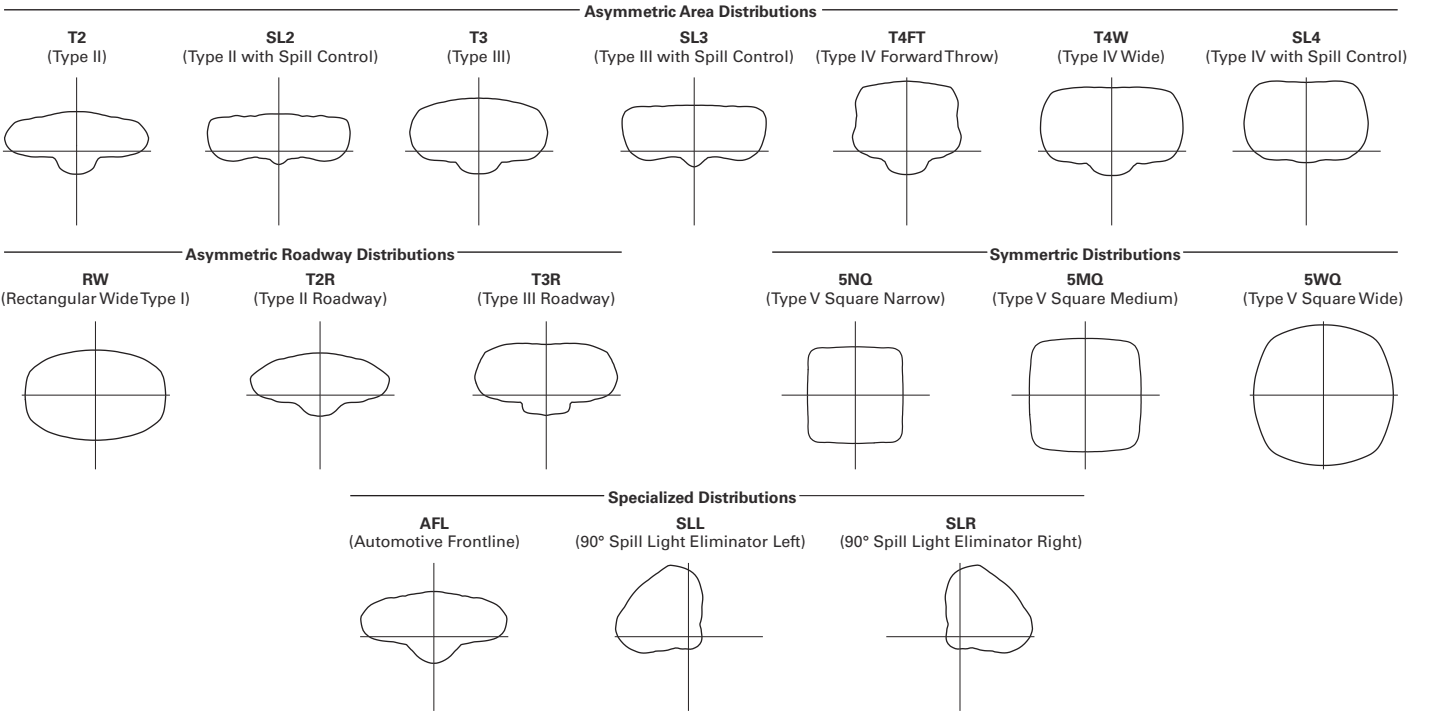
Number of Light Squares ^{1,2}	"A" Width	Weight with QM Arm (lbs.)	Weight with QMEA Arm (lbs.)	EPA (Sq. Ft.)
1-4	15-1/2" (394mm)	35 (15.91 kgs.)	38 (17.27 kgs.)	1.11
5-6 ³	21-5/8" (549mm)	46 (20.91 kgs.)	49 (22.27 kgs.)	
7-8	27-5/8" (702mm)	56 (25.45 kgs.)	59 (26.82 kgs.)	

NOTES: 1 QM option available with 1-8 light square configurations. 2 QMEA option available with 1-6 light square configurations. 3 QMEA arm to be used when mounting two fixtures at 90° on a single pole.

OPTIC ORIENTATION



OPTICAL DISTRIBUTIONS



NOMINAL POWER AND LUMENS (1A)

Number of Light Squares		1	2	3	4	5	6	7	8	9	10
Drive Current		1A	1A	1A	1A	1A	1A	1A	1A	1A	1A
Nominal Power (Watts)		56	107	157	213	264	315	370	421	475	528
Input Current @ 120V (A)		0.47	0.90	1.31	1.79	2.21	2.64	3.09	3.51	3.96	4.41
Input Current @ 208V (A)		0.28	0.51	0.74	1.02	1.25	1.48	1.76	1.99	2.22	2.50
Input Current @ 240V (A)		0.25	0.45	0.65	0.90	1.10	1.30	1.55	1.75	1.95	2.20
Input Current @ 277V (A)		0.23	0.41	0.59	0.82	1.00	1.18	1.41	1.59	1.77	2.00
Optics											
T2	Lumens	5,272	10,303	15,373	20,313	25,168	30,118	35,618	40,357	45,018	49,842
	BUG Rating	B1-U0-G1	B2-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5
T2R	Lumens	5,597	10,938	16,321	21,565	26,719	31,974	37,813	42,844	47,792	52,914
	BUG Rating	B1-U0-G1	B2-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B4-U0-G4	B4-U0-G5
T3	Lumens	5,374	10,501	15,669	20,704	25,652	30,697	36,303	41,134	45,884	50,802
	BUG Rating	B1-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5
T3R	Lumens	5,493	10,735	16,017	21,164	26,222	31,379	37,110	42,048	46,904	51,930
	BUG Rating	B1-U0-G2	B1-U0-G2	B2-U0-G3	B2-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5
T4FT	Lumens	5,405	10,562	15,760	20,824	25,801	30,875	36,514	41,372	46,150	51,096
	BUG Rating	B1-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5
T4W	Lumens	5,335	10,426	15,556	20,555	25,468	30,476	36,042	40,838	45,554	50,436
	BUG Rating	B1-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
SL2	Lumens	5,263	10,285	15,347	20,278	25,124	30,066	35,556	40,288	44,940	49,756
	BUG Rating	B1-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5
SL3	Lumens	5,373	10,500	15,667	20,701	25,649	30,693	36,298	41,128	45,878	50,794
	BUG Rating	B1-U0-G2	B2-U0-G3	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5
SL4	Lumens	5,105	9,976	14,886	19,669	24,370	29,163	34,488	39,078	43,591	48,262
	BUG Rating	B1-U0-G2	B1-U0-G3	B1-U0-G3	B2-U0-G4	B2-U0-G4	B2-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5
5NQ	Lumens	5,542	10,830	16,160	21,352	26,455	31,658	37,439	42,421	47,320	52,392
	BUG Rating	B2-U0-G1	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G3	B5-U0-G4
5MQ	Lumens	5,644	11,029	16,457	21,745	26,942	32,241	38,128	43,202	48,191	53,356
	BUG Rating	B3-U0-G1	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G5
5WQ	Lumens	5,659	11,059	16,501	21,803	27,014	32,327	38,230	43,317	48,320	53,498
	BUG Rating	B3-U0-G1	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G5	B5-U0-G5	B5-U0-G5
SLL/SLR	Lumens	4,722	9,227	13,767	18,191	22,539	26,971	31,897	36,141	40,315	44,635
	BUG Rating	B1-U0-G2	B1-U0-G3	B2-U0-G3	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5
RW	Lumens	5,492	10,732	16,014	21,159	26,216	31,372	37,101	42,038	46,893	51,918
	BUG Rating	B2-U0-G1	B3-U0-G1	B4-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4
AFL	Lumens	5,512	10,771	16,072	21,236	26,311	31,486	37,236	42,191	47,063	52,107
	BUG Rating	B1-U0-G1	B1-U0-G1	B2-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G3	B3-U0-G3	B3-U0-G3	B3-U0-G4

* Nominal data for 4000K CCT.

LUMEN MULTIPLIER

Ambient Temperature	Lumen Multiplier
0°C	1.02
10°C	1.01
25°C	1.00
40°C	0.99
50°C	0.97

LUMEN MAINTENANCE

Ambient Temperature	TM-21 Lumen Maintenance (60,000 Hours)	Theoretical L70 (Hours)
25°C	> 94%	> 350,000
40°C	> 93%	> 250,000
50°C*	> 90%	> 170,000

* 50°C lumen maintenance data applies to 530mA and 700mA drive currents.

NOMINAL POWER AND LUMENS (700MA)

Number of Light Squares		1	2	3	4	5	6	7	8	9	10
Drive Current		700mA	700mA	700mA	700mA	700mA	700mA	700mA	700mA	700mA	700mA
Nominal Power (Watts)		38	72	105	138	176	210	243	276	314	348
Input Current @ 120V (A)		0.32	0.59	0.86	1.14	1.45	1.72	2	2.28	2.58	2.86
Input Current @ 208V (A)		0.21	0.36	0.51	0.67	0.87	1.02	1.18	1.34	1.53	1.69
Input Current @ 240V (A)		0.19	0.32	0.45	0.59	0.77	0.90	1.04	1.18	1.35	1.49
Input Current @ 277V (A)		0.20	0.29	0.40	0.51	0.69	0.80	0.91	1.02	1.20	1.31
Optics											
T2	Lumens	3,854	7,531	11,237	14,847	18,395	22,013	26,033	29,497	32,904	36,430
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G4
T2R	Lumens	4,091	7,995	11,929	15,762	19,529	23,370	27,638	31,316	34,932	38,676
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4
T3	Lumens	3,928	7,676	11,453	15,133	18,750	22,437	26,534	30,065	33,537	37,132
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5
T3R	Lumens	4,015	7,846	11,707	15,469	19,166	22,936	27,124	30,733	34,283	37,957
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G2	B2-U0-G3	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5
T4FT	Lumens	3,951	7,720	11,519	15,221	18,858	22,567	26,688	30,240	33,732	37,347
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G2	B2-U0-G3	B2-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5
T4W	Lumens	3,900	7,620	11,370	15,024	18,615	22,276	26,343	29,849	33,296	36,864
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5
SL2	Lumens	3,847	7,518	11,217	14,821	18,364	21,975	25,988	29,447	32,847	36,368
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G3	B2-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5
SL3	Lumens	3,927	7,675	11,451	15,131	18,747	22,434	26,531	30,061	33,533	37,126
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G3	B2-U0-G3	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5
SL4	Lumens	3,731	7,292	10,880	14,376	17,812	21,315	25,208	28,562	31,861	35,275
	BUG Rating	B1-U0-G2	B1-U0-G2	B1-U0-G3	B1-U0-G3	B2-U0-G4	B2-U0-G4	B2-U0-G4	B2-U0-G5	B2-U0-G5	B3-U0-G5
5NQ	Lumens	4,051	7,916	11,811	15,606	19,336	23,139	27,365	31,006	34,587	38,294
	BUG Rating	B2-U0-G1	B3-U0-G1	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G2	B5-U0-G3	B5-U0-G3
5MQ	Lumens	4,125	8,062	12,029	15,894	19,692	23,565	27,869	31,577	35,224	38,999
	BUG Rating	B2-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4
5WQ	Lumens	4,136	8,083	12,061	15,936	19,745	23,628	27,943	31,661	35,318	39,103
	BUG Rating	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G4
SLL/SLR	Lumens	3,451	6,744	10,063	13,296	16,474	19,714	23,314	26,416	29,467	32,625
	BUG Rating	B1-U0-G1	B1-U0-G2	B1-U0-G3	B2-U0-G3	B2-U0-G3	B2-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5
RW	Lumens	4,014	7,844	11,704	15,465	19,162	22,930	27,118	30,726	34,274	37,948
	BUG Rating	B2-U0-G1	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G3
AFL	Lumens	4,029	7,873	11,747	15,522	19,231	23,014	27,216	30,838	34,399	38,086
	BUG Rating	B1-U0-G1	B1-U0-G1	B2-U0-G2	B2-U0-G2	B2-U0-G2	B3-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G3	B3-U0-G3

* Nominal data for 4000K CCT.

LUMEN MULTIPLIER

Ambient Temperature	Lumen Multiplier
0°C	1.02
10°C	1.01
25°C	1.00
40°C	0.99
50°C	0.97

LUMEN MAINTENANCE

Ambient Temperature	TM-21 Lumen Maintenance (60,000 Hours)	Theoretical L70 (Hours)
25°C	> 94%	> 350,000
40°C	> 93%	> 250,000
50°C*	> 90%	> 170,000

* 50°C lumen maintenance data applies to 530mA and 700mA drive currents.

NOMINAL POWER AND LUMENS (530mA)

Number of Light Squares		1	2	3	4	5	6	7	8	9	10
Drive Current		530mA	530mA	530mA	530mA	530mA	530mA	530mA	530mA	530mA	530mA
Nominal Power (Watts)		30	54	80	105	130	159	184	209	234	259
Input Current @ 120V (A)		0.25	0.45	0.66	0.86	1.07	1.32	1.52	1.72	1.93	2.14
Input Current @ 208V (A)		0.17	0.28	0.39	0.51	0.63	0.78	0.9	1.02	1.14	1.26
Input Current @ 240V (A)		0.17	0.25	0.35	0.45	0.55	0.70	0.80	0.90	1.00	1.10
Input Current @ 277V (A)		0.19	0.24	0.32	0.40	0.49	0.64	0.72	0.80	0.89	0.98
Optics											
T2	Lumens	3,079	6,017	8,978	11,862	14,697	17,588	20,800	23,567	26,289	29,106
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G2	B2-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4
T2R	Lumens	3,269	6,388	9,531	12,593	15,603	18,672	22,082	25,020	27,909	30,900
	BUG Rating	B1-U0-G1	B1-U0-G1	B1-U0-G2	B2-U0-G2	B2-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G3	B3-U0-G4
T3	Lumens	3,138	6,133	9,150	12,091	14,980	17,926	21,200	24,021	26,795	29,667
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4
T3R	Lumens	3,208	6,269	9,354	12,359	15,313	18,325	21,671	24,555	27,390	30,326
	BUG Rating	B1-U0-G1	B1-U0-G2	B1-U0-G2	B2-U0-G2	B2-U0-G3	B2-U0-G3	B2-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G4
T4FT	Lumens	3,156	6,168	9,203	12,161	15,067	18,030	21,323	24,160	26,950	29,839
	BUG Rating	B1-U0-G1	B1-U0-G2	B1-U0-G2	B2-U0-G2	B2-U0-G3	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5
T4W	Lumens	3,116	6,088	9,084	12,004	14,872	17,797	21,047	23,848	26,602	29,453
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5
SL2	Lumens	3,074	6,006	8,962	11,842	14,672	17,558	20,764	23,527	26,244	29,056
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G2	B2-U0-G3	B2-U0-G3	B3-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4
SL3	Lumens	3,138	6,132	9,149	12,089	14,978	17,924	21,197	24,018	26,791	29,662
	BUG Rating	B1-U0-G1	B1-U0-G2	B1-U0-G2	B2-U0-G3	B2-U0-G3	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G4
SL4	Lumens	2,981	5,826	8,693	11,486	14,231	17,030	20,140	22,820	25,456	28,184
	BUG Rating	B0-U0-G1	B1-U0-G2	B1-U0-G3	B1-U0-G3	B1-U0-G3	B2-U0-G3	B2-U0-G4	B2-U0-G4	B2-U0-G4	B2-U0-G5
5NQ	Lumens	3,236	6,324	9,437	12,469	15,449	18,487	21,863	24,773	27,634	30,595
	BUG Rating	B1-U0-G0	B2-U0-G1	B3-U0-G1	B3-U0-G2	B3-U0-G2	B4-U0-G2	B4-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G2
5MQ	Lumens	3,296	6,441	9,610	12,698	15,733	18,828	22,266	25,229	28,142	31,158
	BUG Rating	B2-U0-G1	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G3	B5-U0-G3
5WQ	Lumens	3,305	6,458	9,636	12,732	15,775	18,878	22,325	25,296	28,217	31,241
	BUG Rating	B2-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4
SLL/SLR	Lumens	2,757	5,388	8,040	10,623	13,162	15,751	18,627	21,105	23,543	26,066
	BUG Rating	B1-U0-G1	B1-U0-G2	B1-U0-G2	B1-U0-G3	B2-U0-G3	B2-U0-G3	B2-U0-G3	B2-U0-G4	B3-U0-G4	B3-U0-G4
RW	Lumens	3,207	6,267	9,351	12,356	15,309	18,320	21,666	24,549	27,384	30,319
	BUG Rating	B2-U0-G1	B3-U0-G1	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B4-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3
AFL	Lumens	3,219	6,290	9,385	12,401	15,365	18,387	21,745	24,638	27,484	30,429
	BUG Rating	B1-U0-G1	B1-U0-G1	B1-U0-G1	B2-U0-G2	B2-U0-G2	B2-U0-G2	B2-U0-G2	B3-U0-G2	B3-U0-G3	B3-U0-G3

* Nominal data for 4000K CCT.

LUMEN MULTIPLIER

Ambient Temperature	Lumen Multiplier
0°C	1.02
10°C	1.01
25°C	1.00
40°C	0.99
50°C	0.97

LUMEN MAINTENANCE

Ambient Temperature	TM-21 Lumen Maintenance (60,000 Hours)	Theoretical L70 (Hours)
25°C	> 94%	> 350,000
40°C	> 93%	> 250,000
50°C*	> 90%	> 170,000

* 50°C lumen maintenance data applies to 530mA and 700mA drive currents.

ORDERING INFORMATION

Sample Number: GLEON-AE-04-LED-E1-T3-GM-700

Product Family ^{1,2}	Light Engine	Number of Light Squares ³	Lamp Type	Voltage	Distribution	Color	Mounting
GLEON=Galleon	AE=1A Drive Current	01=1 02=2 03=3 04=4 05=5 06=6 07=7 ⁴ 08=8 ⁴ 09=9 ⁵ 10=10 ⁵	LED=Solid State Light Emitting Diodes	E1=(120-277V) 347=347V ⁶ 480=480V ^{6,7}	T2=Type II T2R=Type II Roadway T3=Type III T3R=Type III Roadway T4FT=Type IV Forward Throw T4W=Type IV Wide 5NQ=Type V Narrow 5MQ=Type V Square Medium 5WQ=Type V Square Wide SL2=Type II w/Spill Control SL3=Type III w/Spill Control SL4=Type IV w/Spill Control SLL=90° Spill Light Eliminator Left SLR=90° Spill Light Eliminator Right RW=Rectangular Wide Type I AFL=Automotive Frontline	AP=Grey BZ=Bronze BK=Black DP=Dark Platinum GM=Graphite Metallic WH=White	[Blank]=Arm for Round or Square Pole EA=Extended Arm ⁸ MA=Mast Arm Adapter ⁹ WM=Wall Mount QM=Quick Mount Arm (Standard Length) ¹⁰ QMEA=Quick Mount Arm (Extended Length) ¹¹
Options (Add as Suffix)					Accessories (Order Separately)		
2L=Two Circuits ^{12,13} 7030=70 CRI / 3000K ¹⁴ 8030=80 CRI / 3000K ¹⁵ 7050=70 CRI / 5000K ¹⁵ 7060=70 CRI / 6000K ¹⁴ 530=Drive Current Factory Set to 530mA ¹⁶ 700=Drive Current Factory Set to 700mA ¹⁶ P=Button Type Photocontrol (120, 208, 240 or 277V) PER7=NEMA 7-PIN Twistlock Photocontrol Receptacle R=NEMA Twistlock Photocontrol Receptacle HA=50°C High Ambient ^{13,17} MS/DIM-L08=Motion Sensor for Dimming Operation, Maximum 8' Mounting Height ^{18,19,20,21,22} MS/DIM-L20=Motion Sensor for Dimming Operation, 9' - 20' Mounting Height ^{18,19,20,21,22} MS/DIM-L40=Motion Sensor for Dimming Operation, 21' - 40' Mounting Height ^{18,19,20,21} MS/DIM-L40W=Motion Sensor for Dimming Operation, 21' - 40' Mounting Height (Wide Range) ^{18,19,20,21,25} MS/X-L08=Bi-Level Motion Sensor, Maximum 8' Mounting Height ^{18,19,20,21,22,26} MS/X-L20=Bi-Level Motion Sensor, 9' - 20' Mounting Height ^{18,19,20,21,23,26} MS/X-L40=Bi-Level Motion Sensor, 21' - 40' Mounting Height ^{18,19,20,21,24,26} MS/X-L40W=Bi-Level Motion Sensor, 21' - 40' Mounting Height (Wide Range) ^{18,19,20,21,25,26} MS-L08=Motion Sensor for ON/OFF Operation, Maximum 8' Mounting Height ^{18,19,20,21,22} MS-L20=Motion Sensor for ON/OFF Operation, 9' - 20' Mounting Height ^{18,19,20,21,23} MS-L40=Motion Sensor for ON/OFF Operation, 21' - 40' Mounting Height ^{18,19,20,21,24} MS-L40W=Motion Sensor for ON/OFF Operation, 21' - 40' Mounting Height (Wide Range) ^{18,19,20,25} DIMRF-LW=LumaWatt Wireless Sensor, Wide Lens for 8' - 16' Mounting Height ²⁷ DIMRF-LN=LumaWatt Wireless Sensor, Narrow Lens for 16' - 40' Mounting Height ²⁷ L90=Optics Rotated 90° Left R90=Optics Rotated 90° Right MT=Factory Installed Mesh Top TH=Tool-less Door Hardware LCF=Light Square Trim Plate Painted to Match Housing ²⁸ HSS=Factory Installed House Side Shield ²⁹ CE=CE Marking ³⁰					OA/RA1016=NEMA Photocontrol Multi-Tap - 105-285V OA/RA1027=NEMA Photocontrol - 480V OA/RA1201=NEMA Photocontrol - 347V OA/RA1013=Photocontrol Shorting Cap OA/RA1014=120V Photocontrol MA1252=10kV Surge Module Replacement MA1036-XX=Single Tenon Adapter for 2-3/8" O.D. Tenon MA1037-XX=2 @ 180° Tenon Adapter for 2-3/8" O.D. Tenon MA1197-XX=3 @ 120° Tenon Adapter for 2-3/8" O.D. Tenon MA1188-XX=4 @ 90° Tenon Adapter for 2-3/8" O.D. Tenon MA1189-XX=2 @ 90° Tenon Adapter for 2-3/8" O.D. Tenon MA1190-XX=3 @ 90° Tenon Adapter for 2-3/8" O.D. Tenon MA1191-XX=2 @ 120° Tenon Adapter for 2-3/8" O.D. Tenon MA1038-XX=Single Tenon Adapter for 3-1/2" O.D. Tenon MA1039-XX=2 @ 180° Tenon Adapter for 3-1/2" O.D. Tenon MA1192-XX=3 @ 120° Tenon Adapter for 3-1/2" O.D. Tenon MA1193-XX=4 @ 90° Tenon Adapter for 3-1/2" O.D. Tenon MA1194-XX=2 @ 90° Tenon Adapter for 3-1/2" O.D. Tenon MA1195-XX=3 @ 90° Tenon Adapter for 3-1/2" O.D. Tenon FSIR-100=Wireless Configuration Tool for Occupancy Sensor ³¹ GLEON-MT1=Field Installed Mesh Top for 1-4 Light Squares GLEON-MT2=Field Installed Mesh Top for 5-6 Light Squares GLEON-MT3=Field Installed Mesh Top for 7-8 Light Squares GLEON-MT4=Field Installed Mesh Top for 9-10 Light Squares GLEON-QM=Quick Mount Arm Kit ¹⁰ GLEON-QM-EA=Quick Mount Extended Length Arm Kit ¹¹ LS/HSS=Field Installed House Side Shield ^{28,32}		

NOTES:

- Customer is responsible for engineering analysis to confirm pole and fixture compatibility for all applications. Refer to our white paper WP513001EN for additional support information.
- DesignLights Consortium™ Qualified. Refer to www.designlights.org Qualified Products List under Family Models for details.
- Standard 4000K CCT and minimum 70 CRI.
- Not compatible with extended quick mount arm (QMEA).
- Not compatible with standard quick mount arm (QM) or extended quick mount arm (QMEA).
- Requires the use of a step down transformer when combined with MS/DIM, MS/X or DIMRF.
- Only for use with 480V Wye systems. Per NEC, not for use with ungrounded systems, impedance grounded systems or corner grounded systems (commonly known as Three Phase Three Wire Delta, Three Phase High Leg Delta and Three Phase Corner Grounded Delta systems).
- May be required when two or more luminaires are oriented on a 90° or 120° drilling pattern. Refer to arm mounting requirement table.
- Factory installed.
- Maximum 8 light squares.
- Maximum 6 light squares.
- 2L is not available with MS/X or MS/DIM at 347V or 480V. 2L in AE-02 through AE-04 requires a larger housing, normally used for AE-05 or AE-06. Extended arm option may be required when mounting two or more fixtures per pole at 90° or 120°. Refer to arm mounting requirement table.
- Not available with LumaWatt wireless sensors.
- Extended lead times apply. Use dedicated IES files for 3000K and 6000K when performing layouts. These files are published on the Galleon luminaire product page on the website.
- Extended lead times apply. For 8030, factor 7030 IES files x .92 (8% lumen loss). For 7050, use 7060 IES files.
- 1 Amp standard. Use dedicated IES files for 530mA and 700mA when performing layouts. These files are published on the Galleon luminaire product page on the website.
- 50°C lumen maintenance data applies to 530mA and 700mA drive currents.
- Consult factory for more information.
- Utilizes internal step-down transformer when 347V or 480V is selected.
- The FSIR-100 accessory is required to adjust parameters including high and low modes, sensitivity, time delay, cutoff and more. Consult your lighting representative at Eaton for more information.
- Not available with HA option.
- Approximately 22' detection diameter at 8' mounting height.
- Approximately 40' detection diameter at 20' mounting height.
- Approximately 60' detection diameter at 40' mounting height.
- Approximately 100' detection diameter at 40' mounting height.
- Replace X with number of light squares operating in low output mode.
- LumaWatt wireless sensors are factory installed only requiring network components RF-EM-1, RF-GW-1 and RF-ROUT-1 in appropriate quantities. See www.eaton.com/lighting for LumaWatt application information.
- Not available with house side shield (HSS).
- Only for use with SL2, SL3, SL4 and AFL distributions. The Light Square trim plate is painted black when the HSS option is selected.
- CE is not available with the DIMRF, MS, MS/X, MS/DIM, P, R or PER7 options. Available in 120-277V only.
- This tool enables adjustment of parameters including high and low modes, sensitivity, time delay, cutoff and more. Consult your lighting representative at Eaton for more information.
- One required for each Light Square.



D-Series Size 1 LED Wall Luminaire



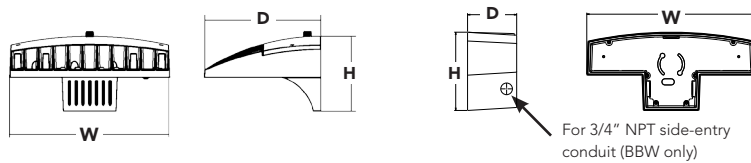
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Specifications Luminaire

Width:	13-3/4" (34.9 cm)	Weight:	12 lbs (5.4 kg)
Depth:	10" (25.4 cm)		
Height:	6-3/8" (16.2 cm)		

Back Box (BBW, ELCW)

Width:	13-3/4" (34.9 cm)	BBW Weight:	5 lbs (2.3 kg)
Depth:	4" (10.2 cm)	ELCW Weight:	10 lbs (4.5 kg)
Height:	6-3/8" (16.2 cm)		



Catalog
Number

Notes

Type

Hit the Tab key or mouse over the page to see all interactive elements.

Introduction

The D-Series Wall luminaire is a stylish, fully integrated LED solution for building-mount applications. It features a sleek, modern design and is carefully engineered to provide long-lasting, energy-efficient lighting with a variety of optical and control options for customized performance.

With an expected service life of over 20 years of nighttime use and up to 74% in energy savings over comparable 250W metal halide luminaires, the D-Series Wall is a reliable, low-maintenance lighting solution that produces sites that are exceptionally illuminated.

Ordering Information

EXAMPLE: DSXW1 LED 20C 1000 40K T3M MVOLT DDBTXD

Series	LEDs	Drive Current	Color temperature	Distribution	Voltage	Mounting	Control Options
DSXW1 LED	10C 10 LEDs (one engine) 20C 20 LEDs (two engines)	350 350 mA 530 530 mA 700 700 mA 1000 1000 mA (1 A)	30K 3000 K 40K 4000 K 50K 5000 K AMBPC Amber phosphor converted	T2S Type II Short T2M Type II Medium T3S Type III Short T3M Type III Medium T4M Type IV Medium TFTM Forward Throw Medium ASYDF Asymmetric diffuse	MVOLT ¹ 120 ¹ 208 ¹ 240 ¹ 277 ¹ 347 ² 480 ²	Shipped included (blank) Surface mounting bracket BBW Surface-mounted back box (for conduit entry) ³	Shipped installed PE Photoelectric cell, button type ⁴ DMG 0-10V dimming driver (no controls) PIR 180° motion/ambient light sensor, <15' mtg ht ⁵ PIRH 180° motion/ambient light sensor, 15-30' mtg ht ⁵ PIR1FC3V Motion/ambient sensor, 8-15' mounting height, ambient sensor enabled at 1fc ² PIRH1FC3V Motion/ambient sensor, 15-30' mounting height, ambient sensor enabled at 1fc ² ELCW Emergency battery backup (includes external component enclosure) ⁶

Other Options

Finish (required)

Shipped installed

SF	Single fuse (120, 277 or 347V) ⁷
DF	Double fuse (208, 240 or 480V) ⁷
HS	House-side shield ⁸
SPD	Separate surge protection ⁹

Shipped separately⁸

BSW	Bird-deterrent spikes
WG	Wire guard
VG	Vandal guard
DDL	Diffused drop lens

DDBXD	Dark bronze	DSSXD	Sandstone	DWHGXD	Textured white
DBLXD	Black	DBTDXD	Textured dark bronze	DSSTXD	Textured sandstone
DNAXD	Natural aluminum	DBLBXD	Textured black		
DWHXD	White	DNATXD	Textured natural aluminum		

NOTES

- MVOLT driver operates on any line voltage from 120-277V (50/60 Hz). Specify 120, 208, 240 or 277 options only when ordering with fusing (SF, DF options), or photocontrol (PE option).
- Only available with 20C, 700mA or 1000mA. Not available with PIR or PIRH.
- Back box ships installed on fixture. Cannot be field installed. Cannot be ordered as an accessory.
- Photocontrol (PE) requires 120, 208, 240, 277 or 347 voltage option. Not available with motion/ambient light sensors (PIR or PIRH).
- PIR and PIR1FC3V specifies the [Sensor Switch SBGR-10-ODP](#) control; PIRH specifies the [Sensor Switch SBGR-6-ODP](#) control; see [Motion Sensor Guide](#) for details. Includes ambient light sensor. Not available with "PE" option (button type photocell). Dimming driver standard. Not available with 20 LED/1000 mA configuration (DSXW1 LED 20C 1000).
- Cold weather (-20C) rated. Not compatible with conduit entry applications. Not available with BBW mounting option. Not available with fusing. Not available with 347 or 480 voltage options. Emergency components located in back box housing. Emergency mode IES files located on product page at www.lithonia.com
- Single fuse (SF) requires 120, 277 or 347 voltage option. Double fuse (DF) requires 208, 240 or 480 voltage option. Not available with ELCW.
- Also available as a separate accessory; see Accessories information.
- See the electrical section on page 3 for more details.

Accessories

Ordered and shipped separately.

DSXWHS U	House-side shield (one per light engine)
DSXWBSW U	Bird-deterrent spikes
DSXW1WG U	Wire guard accessory
DSXW1VG U	Vandal guard accessory



Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts. Contact factory for performance data on any configurations not shown here.

LEDs	Drive Current (mA)	System Watts	Dist. Type	30K					40K					50K					AMBER				
				Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW
(10 LEDs)	350mA	14W	T2S	1,415	0	0	1	101	1,520	0	0	1	109	1,529	0	0	1	109	894	0	0	1	64
			T2M	1,349	0	0	1	96	1,449	0	0	1	104	1,458	0	0	1	104	852	0	0	1	61
			T3S	1,400	0	0	1	100	1,503	0	0	1	107	1,512	0	0	1	108	884	0	0	1	63
			T3M	1,386	0	0	1	99	1,488	0	0	1	106	1,497	0	0	1	107	876	0	0	1	63
			T4M	1,358	0	0	1	97	1,458	0	0	1	104	1,467	0	0	1	105	858	0	0	1	61
			TFTM	1,411	0	0	1	101	1,515	0	0	1	108	1,525	0	0	1	109	892	0	0	1	64
			ASYDF	1,262	0	0	1	90	1,355	1	0	1	97	1,363	1	0	1	97	797	0	0	1	57
	530 mA	20W	T2S	2,054	1	0	1	103	2,205	1	0	1	110	2,219	1	0	1	111	1,264	0	0	1	63
			T2M	1,957	1	0	1	98	2,102	1	0	1	105	2,115	1	0	1	106	1,205	0	0	1	60
			T3S	2,031	0	0	1	102	2,181	0	0	1	109	2,195	0	0	1	110	1,250	0	0	1	63
			T3M	2,010	1	0	1	101	2,159	1	0	1	108	2,172	1	0	1	109	1,237	0	0	1	62
			T4M	1,970	1	0	1	99	2,115	1	0	1	106	2,128	0	0	1	106	1,212	0	0	1	61
			TFTM	2,047	0	0	1	102	2,198	0	0	1	110	2,212	0	0	1	111	1,260	0	0	1	63
			ASYDF	1,830	1	0	1	92	1,966	1	0	1	98	1,978	1	0	1	99	1,127	0	0	1	56
	700 mA	27W	T2S	2,623	1	0	1	97	2,816	1	0	1	104	2,834	1	0	1	105	1,544	0	0	1	57
			T2M	2,499	1	0	1	93	2,684	1	0	1	99	2,701	1	0	1	100	1,472	0	0	1	55
			T3S	2,593	1	0	1	96	2,785	1	0	1	103	2,802	1	0	1	104	1,527	0	0	1	57
			T3M	2,567	1	0	1	95	2,757	1	0	1	102	2,774	1	0	1	103	1,512	0	0	1	56
			T4M	2,515	1	0	1	93	2,701	1	0	1	100	2,718	1	0	1	101	1,481	0	0	1	55
			TFTM	2,614	1	0	1	97	2,807	1	0	1	104	2,825	1	0	1	105	1,539	0	0	1	57
			ASYDF	2,337	1	0	1	87	2,510	1	0	1	93	2,526	1	0	1	94	1,376	0	0	1	51
	1000 mA	40W	T2S	3,685	1	0	1	92	3,957	1	0	1	99	3,982	1	0	1	100	2,235	1	0	1	58
			T2M	3,512	1	0	1	88	3,771	1	0	1	94	3,795	1	0	1	95	2,130	1	0	2	55
			T3S	3,644	1	0	1	91	3,913	1	0	1	98	3,938	1	0	1	98	2,210	1	0	2	57
			T3M	3,607	1	0	1	90	3,874	1	0	1	97	3,898	1	0	1	97	2,187	1	0	2	56
			T4M	3,534	1	0	1	88	3,795	1	0	1	95	3,819	1	0	1	95	2,143	1	0	2	55
			TFTM	3,674	1	0	1	92	3,945	1	0	1	99	3,969	1	0	1	99	2,228	1	0	2	57
ASYDF			3,284	1	0	1	82	3,527	1	0	1	88	3,549	1	0	1	89	1,991	1	0	2	51	
(20 LEDs)	350mA	24W	T2S	2,820	1	0	1	118	3,028	1	0	1	126	3,047	1	0	1	127	1,777	1	0	1	74
			T2M	2,688	1	0	1	112	2,886	1	0	1	120	2,904	1	0	1	121	1,693	1	0	1	71
			T3S	2,789	1	0	1	116	2,995	1	0	2	125	3,013	1	0	2	126	1,757	0	0	1	73
			T3M	2,761	1	0	1	115	2,964	1	0	2	124	2,983	1	0	2	124	1,739	1	0	1	72
			T4M	2,705	1	0	1	113	2,904	1	0	2	121	2,922	1	0	2	122	1,704	1	0	1	71
			TFTM	2,811	1	0	1	117	3,019	1	0	2	126	3,038	1	0	2	127	1,771	0	0	1	74
			ASYDF	2,513	1	0	1	105	2,699	1	0	2	112	2,716	1	0	2	113	1,584	1	0	1	66
	530 mA	36W	T2S	4,079	1	0	1	113	4,380	1	0	1	122	4,408	1	0	1	122	2,504	1	0	1	70
			T2M	3,887	1	0	1	108	4,174	1	0	1	116	4,200	1	0	1	117	2,387	1	0	1	66
			T3S	4,034	1	0	1	112	4,332	1	0	1	120	4,359	1	0	1	121	2,477	1	0	1	69
			T3M	3,993	1	0	1	111	4,288	1	0	1	119	4,315	1	0	1	120	2,451	1	0	2	68
			T4M	3,912	1	0	2	109	4,201	1	0	2	117	4,227	1	0	1	117	2,402	1	0	1	67
			TFTM	4,066	1	0	1	113	4,367	1	0	1	121	4,394	1	0	1	122	2,496	1	0	1	69
			ASYDF	3,635	1	0	2	101	3,904	1	0	2	108	3,928	1	0	2	109	2,232	1	0	1	62
	700 mA	47W	T2S	5,188	1	0	1	110	5,571	1	0	1	119	5,606	1	0	1	119	3,065	1	0	1	65
			T2M	4,945	1	0	1	105	5,310	1	0	1	113	5,343	1	0	1	114	2,921	1	0	1	62
			T3S	5,131	1	0	1	109	5,510	1	0	2	117	5,544	1	0	2	118	3,031	1	0	1	64
			T3M	5,079	1	0	2	108	5,454	1	0	2	116	5,488	1	0	2	117	3,000	1	0	1	64
			T4M	4,976	1	0	2	106	5,343	1	0	2	114	5,377	1	0	2	114	2,939	1	0	1	63
			TFTM	5,172	1	0	2	110	5,554	1	0	2	118	5,589	1	0	2	119	3,055	1	0	1	65
			ASYDF	4,624	1	0	2	98	4,966	1	0	2	106	4,997	1	0	2	106	2,732	1	0	1	58
	1000 mA	74W	T2S	7,205	1	0	1	97	7,736	1	0	1	105	7,785	1	0	1	105	4,429	1	0	1	61
			T2M	6,866	1	0	2	93	7,373	1	0	2	100	7,419	1	0	2	100	4,221	1	0	2	58
			T3S	7,124	1	0	2	96	7,650	1	0	2	103	7,698	1	0	2	104	4,380	1	0	2	60
			T3M	7,052	1	0	2	95	7,736	1	0	2	105	7,620	1	0	2	103	4,335	1	0	2	59
			T4M	6,910	1	0	2	93	7,420	1	0	2	100	7,466	1	0	2	101	4,248	1	0	2	58
			TFTM	7,182	1	0	2	97	7,712	1	0	2	104	7,760	1	0	2	105	4,415	1	0	2	60
ASYDF			6,421	1	0	2	87	6,895	2	0	2	93	6,938	2	0	2	94	3,947	1	0	2	54	

Performance Data

Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

Ambient		Lumen Multiplier
0°C	32°F	1.02
10°C	50°F	1.01
20°C	68°F	1.00
25°C	77°F	1.00
30°C	86°F	1.00
40°C	104°F	0.98

Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the **DSXW1 LED 20C 1000** platform in a **25°C ambient**, based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	0	25,000	50,000	100,000
Lumen Maintenance Factor	1.0	0.95	0.93	0.88

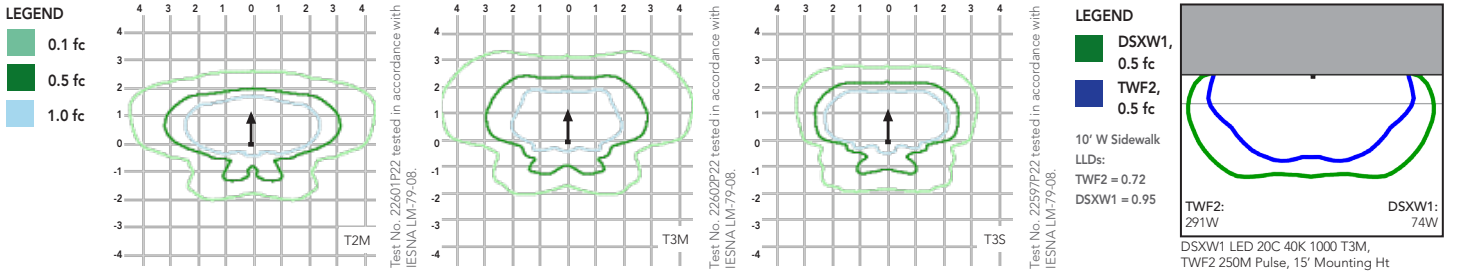
Electrical Load

LEDs	Drive Current (mA)	System Watts	Current (A)					
			120V	208V	240V	277V	347V	480V
10C	350	14 W	0.13	0.07	0.06	0.06	-	-
	530	20 W	0.19	0.11	0.09	0.08	-	-
	700	27 W	0.25	0.14	0.13	0.11	-	-
	1000	40 W	0.37	0.21	0.19	0.16	-	-
20C	350	24 W	0.23	0.13	0.12	0.10	-	-
	530	36 W	0.33	0.19	0.17	0.14	-	-
	700	47 W	0.44	0.25	0.22	0.19	0.15	0.11
	1000	74 W	0.69	0.40	0.35	0.30	0.23	0.17

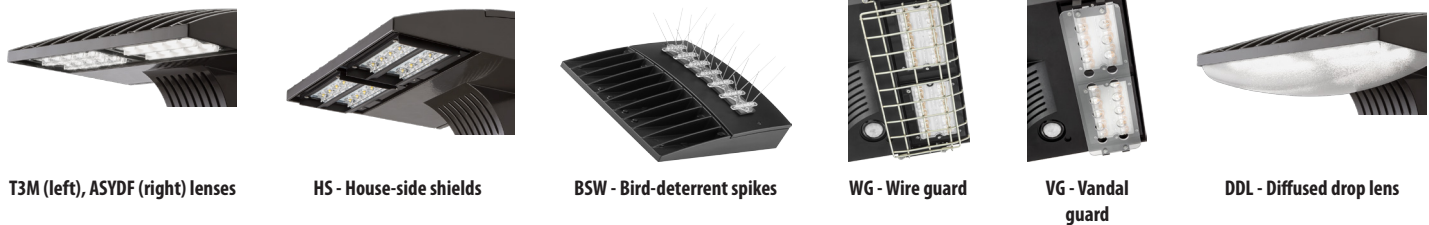
Photometric Diagrams

To see complete photometric reports or download .ies files for this product, visit Lithonia Lighting's [D-Series Wall Size 1 homepage](#).

Isfootcandle plots for the DSXW1 LED 20C 1000 40K. Distances are in units of mounting height (15').



Options and Accessories



FEATURES & SPECIFICATIONS

INTENDED USE

The energy savings, long life and easy-to-install design of the D-Series Wall Size 1 make it the smart choice for building-mounted doorway and pathway illumination for nearly any facility.

CONSTRUCTION

Two-piece die-cast aluminum housing has integral heat sink fins to optimize thermal management through conductive and convective cooling. Modular design allows for ease of maintenance. The LED driver is mounted to the door to thermally isolate it from the light engines for low operating temperature and long life. Housing is completely sealed against moisture and environmental contaminants (IP65).

FINISH

Exterior parts are protected by a zinc-infused Super Durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures a minimum 3 mils thickness for a finish that can withstand extreme climate changes without cracking or peeling. Available in textured and non-textured finishes.

OPTICS

Precision-molded proprietary acrylic lenses provide multiple photometric distributions tailored specifically to building mounted applications. Light engines are available in 3000 K (80 min. CRI), 4000 K (70 min. CRI) or 5000 K (70 CRI) configurations.

ELECTRICAL

Light engine(s) consist of 10 high-efficacy LEDs mounted to a metal-core circuit board to maximize heat dissipation and promote long life (L88/100,000 hrs at 25°C). Class 1 electronic drivers have a

power factor >90%, THD <20%, and a minimum 2.5KV surge rating. When ordering the SPD option, a separate surge protection device is installed within the luminaire which meets a minimum Category C Low (per ANSI/IEEE C62.41.2).

INSTALLATION

Included universal mounting bracket attaches securely to any 4" round or square outlet box for quick and easy installation. Luminaire has a slotted gasket wireway and attaches to the mounting bracket via corrosion-resistant screws.

LISTINGS

CSA certified to U.S. and Canadian standards. Rated for -40°C minimum ambient.

DesignLights Consortium® (DLC) qualified product. Not all versions of this product may be DLC qualified. Please check the DLC Qualified Products List at www.designlights.org to confirm which versions are qualified.

WARRANTY

Five-year limited warranty. Complete warranty terms located at www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx.

Note: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.



STORM DRAINAGE DESIGN AND ANALYSIS

COSTCO SITE

RENAISSANCE AT COLONY PARK
PHASE 3



STORM DRAINAGE AREAS

CITY OF RIDGELAND
MADISON COUNTY

COSTCO
WHOLESALE
CORPORATION

999 LAKE DRIVE
ISSAQUAH, WA 98027
T: 425.313.8100
www.costco.com

ENGINEER:



50 Warm Springs Circle
Roswell • Georgia • 30075
(770)641-1942 • www.aecat1.com

ENGINEERS SEAL:



COSTCO SITE STORM DRAINAGE BASIN MAP

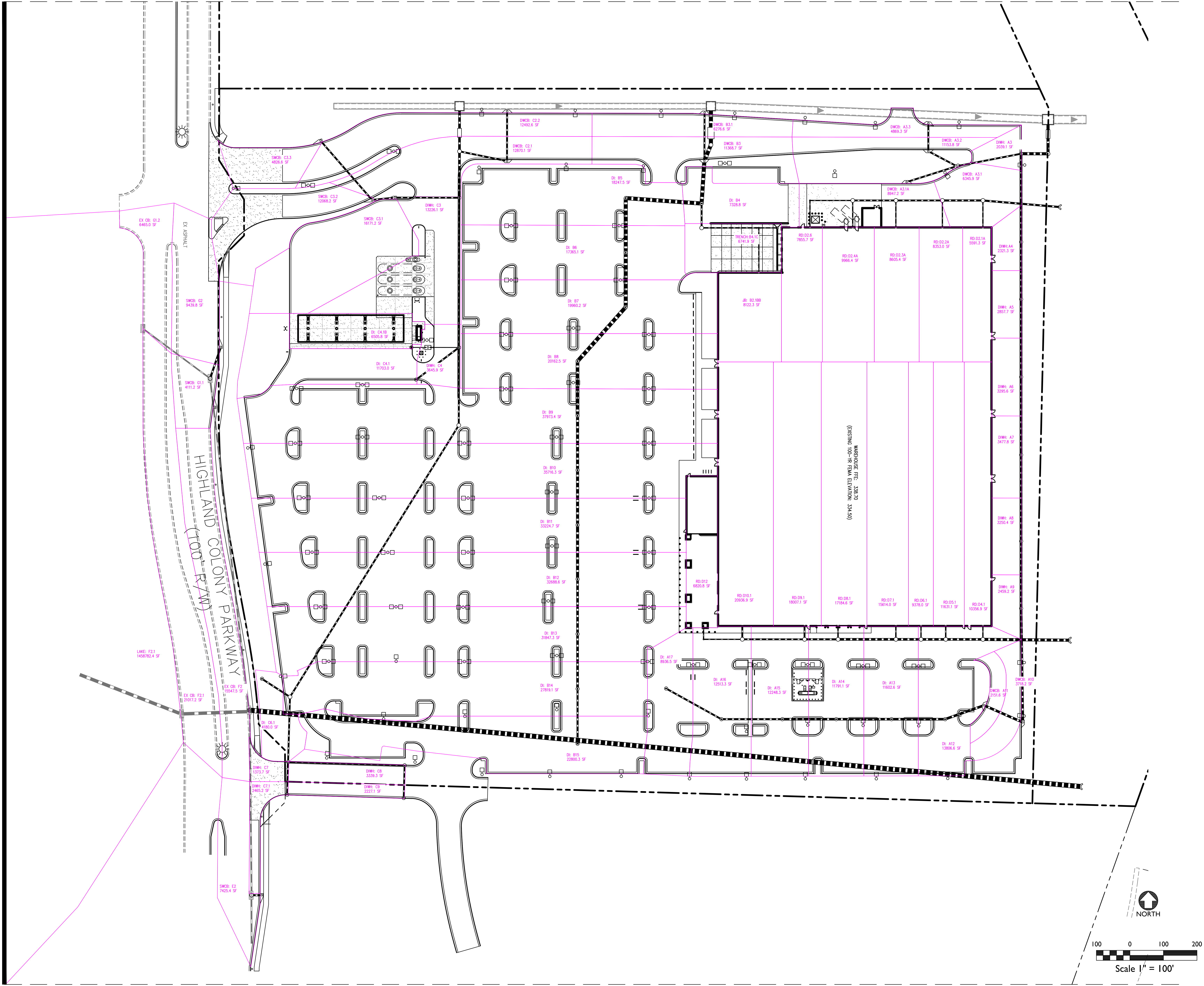
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[illegible]

AEC JOB #: 14-3686.00
CIVIL DRAWN BY: JWM
CIVIL DESIGNED BY: JWM/MDV
LANDSCAPE DRAWN BY: JAP
LANDSCAPE DESIGNED BY: SLR
CHECK BY: CJF
DATE: 05-17-16

SHEET NUMBER

EXHIBIT B



Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID	
Line	To Line		Incr	Total		Incr	Total	Inlet	Syst					Size	Slope	Dn	Up	Dn	Up	Dn	Up		
		(ft)	(ac)	(ac)	(C)			(min)	(min)	(in/hr)	(cfs)	(cfs)	(ft/s)	(in)	(%)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)		
1	End	17.460	0.00	2.97	0.00	0.00	2.82	0.0	9.8	8.6	24.36	47.55	6.37	30	1.15	321.00	321.20	323.00	322.88	324.29	331.35	A0-A1	
2	1	23.400	0.00	2.97	0.00	0.00	2.82	0.0	9.7	8.7	24.45	41.07	6.96	30	0.85	321.20	321.40	322.88	323.08	331.35	331.35	A1-A2	
3	2	32.120	0.05	2.97	0.95	0.05	2.82	5.0	9.6	8.7	24.57	42.94	6.98	30	0.93	321.40	321.70	323.08	323.39	331.35	336.80	A2-A3	
4	3	78.350	0.15	0.73	0.95	0.14	0.69	5.0	5.8	10.5	7.30	7.90	6.90	15	1.28	328.80	329.80	329.75	330.88	336.80	337.09	A3-A3.1	
5	4	62.670	0.21	0.21	0.95	0.20	0.20	5.0	5.0	11.0	2.20	7.39	4.55	15	1.12	332.30	333.00	332.77	333.59	337.09	336.70	A3.1-A3.1A	
6	3	105.340	0.05	2.19	0.95	0.05	2.08	5.0	9.3	8.8	18.37	21.35	7.36	24	0.76	322.20	323.00	323.63	324.54	336.80	338.00	A3-A4	
7	6	68.330	0.07	2.14	0.95	0.07	2.03	5.0	9.1	8.9	18.12	22.96	6.99	24	0.88	323.00	323.60	324.54	325.13	338.00	338.00	A4-A5	
8	7	92.670	0.08	2.07	0.95	0.08	1.97	5.0	8.8	9.0	17.75	21.30	6.91	24	0.76	323.60	324.30	325.13	325.82	338.00	338.04	A5-A6	
9	8	93.000	0.08	1.99	0.95	0.08	1.89	5.0	8.5	9.2	17.30	21.26	6.81	24	0.75	324.30	325.00	325.82	326.50	338.04	338.04	A6-A7	
10	9	102.920	0.07	1.91	0.95	0.07	1.81	5.0	8.2	9.3	16.86	21.60	6.72	24	0.78	325.00	325.80	326.50	327.28	338.04	338.00	A7-A8	
11	10	80.190	0.06	1.84	0.95	0.06	1.75	5.0	7.9	9.4	16.45	21.19	6.64	24	0.75	325.80	326.40	327.28	327.86	338.00	338.04	A8-A9	
12	11	135.930	0.09	1.78	0.95	0.09	1.69	5.0	7.5	9.6	16.26	22.04	6.63	24	0.81	326.40	327.50	327.86	328.95	338.04	336.80	A9-A10	
13	12	50.500	0.05	1.69	0.95	0.05	1.61	5.0	7.3	9.7	15.57	21.81	6.44	24	0.79	327.50	327.90	328.95	329.32	336.80	336.80	A10-A11	
14	13	48.370	0.32	1.64	0.95	0.30	1.56	5.0	7.2	9.8	15.23	22.28	6.42	24	0.83	327.90	328.30	329.32	329.71	336.80	336.60	A1-A12	
15	14	66.000	0.27	1.32	0.95	0.26	1.25	5.0	6.9	9.9	12.44	21.33	5.60	24	0.76	328.30	328.80	329.71	330.07	336.60	336.60	A12-A13	
16	15	66.000	0.27	1.05	0.95	0.26	1.00	5.0	6.5	10.1	10.07	21.33	5.14	24	0.76	328.80	329.30	330.07	330.43	336.60	336.60	A13-A14	
17	16	66.000	0.28	0.78	0.95	0.27	0.74	5.0	6.1	10.3	7.67	21.33	4.58	24	0.76	329.30	329.80	330.43	330.78	336.60	336.60	A14-A15	
18	17	71.000	0.29	0.50	0.95	0.28	0.48	5.0	5.7	10.6	5.03	10.46	5.32	18	0.85	330.30	330.90	331.03	331.76	336.60	336.60	A15-A16	
19	18	74.590	0.21	0.21	0.95	0.20	0.20	5.0	5.0	11.0	2.20	6.27	4.25	15	0.80	331.40	332.00	331.91	332.59	336.60	337.00	A16-A17	
20	4	38.320	0.26	0.37	0.95	0.25	0.35	5.0	5.6	10.7	3.74	7.15	3.98	15	1.04	329.80	330.20	330.88	330.98	337.09	334.65	A3.1-A3.2	
21	20	33.190	0.11	0.11	0.95	0.10	0.10	5.0	5.0	11.0	1.15	7.68	2.29	15	1.21	330.20	330.60	330.98	331.02	334.65	334.50	A3.2-A3.3	
Project File: 14-3686 Storm Line A-4.stm																Number of lines: 21				Run Date: 6/1/2016			
NOTES:Intensity = 54.79 / (Inlet time + 5.90) ^ 0.67; Return period =Yrs. 25 ; c = cir e = ellip b = box																							

Inlet Report

Line No	Inlet ID	Q = CIA (cfs)	Q carry (cfs)	Q capt (cfs)	Q Byp (cfs)	Junc Type	Curb Inlet		Grate Inlet			Gutter							Inlet			Byp Line No
							Ht (in)	L (ft)	Area (sqft)	L (ft)	W (ft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)	Depr (in)	
1	A1	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
2	A2	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
3	A3	0.52	0.00	0.52	0.00	Comb	4.0	4.00	4.00	2.00	2.00	Sag	1.50	0.060	0.020	0.000	0.14	3.95	0.14	3.95	0.0	Off
4	A3.1	1.57	0.00	1.57	0.00	Curb	4.0	13.00	0.00	0.00	0.00	Sag	1.50	0.060	0.020	0.000	0.12	2.87	0.12	2.87	0.0	Off
5	A3.1A	2.20	0.00	2.20	0.00	Curb	4.0	13.00	0.00	0.00	0.00	Sag	1.50	0.060	0.020	0.000	0.15	4.35	0.15	4.35	0.0	Off
6	A4	0.52	0.00	0.52	0.00	Comb	4.0	4.00	4.00	2.00	2.00	Sag	1.50	0.060	0.020	0.000	0.14	3.95	0.14	3.95	0.0	Off
7	A5	0.73	0.00	0.73	0.00	Comb	4.0	4.00	4.00	2.00	2.00	Sag	1.50	0.060	0.020	0.000	0.16	4.90	0.16	4.90	0.0	Off
8	A6	0.84	0.00	0.84	0.00	Comb	4.0	4.00	4.00	2.00	2.00	Sag	1.50	0.060	0.020	0.000	0.17	5.35	0.17	5.35	0.0	Off
9	A7	0.84	0.00	0.84	0.00	Comb	4.0	4.00	4.00	2.00	2.00	Sag	1.50	0.060	0.020	0.000	0.17	5.35	0.17	5.35	0.0	Off
10	A8	0.73	0.00	0.73	0.00	Comb	4.0	4.00	4.00	2.00	2.00	Sag	1.50	0.060	0.020	0.000	0.16	4.90	0.16	4.90	0.0	Off
11	A9	0.63	0.00	0.63	0.00	Comb	4.0	4.00	4.00	2.00	2.00	Sag	1.50	0.060	0.020	0.000	0.15	4.45	0.15	4.45	0.0	Off
12	A10	0.94	0.00	0.94	0.00	Curb	4.0	13.00	0.00	0.00	0.00	Sag	1.50	0.060	0.020	0.000	0.08	1.39	0.08	1.39	0.0	Off
13	A11	0.52	0.00	0.52	0.00	Curb	4.0	13.00	0.00	0.00	0.00	Sag	1.50	0.060	0.020	0.000	0.06	0.94	0.06	0.94	0.0	Off
14	A12	3.35	0.00	3.35	0.00	DrGrt	0.0	0.00	6.00	3.00	2.00	Sag	1.50	0.020	0.020	0.000	0.23	25.19	0.23	25.19	0.0	Off
15	A13	2.83	0.00	2.83	0.00	DrGrt	0.0	0.00	6.00	3.00	2.00	Sag	1.50	0.020	0.020	0.000	0.21	22.71	0.21	22.71	0.0	Off
16	A14	2.83	0.00	2.83	0.00	DrGrt	0.0	0.00	6.00	3.00	2.00	Sag	1.50	0.020	0.020	0.000	0.21	22.71	0.21	22.71	0.0	Off
17	A15	2.94	0.00	2.94	0.00	DrGrt	0.0	0.00	6.00	3.00	2.00	Sag	1.50	0.020	0.020	0.000	0.21	23.22	0.21	23.22	0.0	Off
18	A16	3.04	0.00	3.04	0.00	DrGrt	0.0	0.00	6.00	3.00	2.00	Sag	1.50	0.020	0.020	0.000	0.22	23.72	0.22	23.72	0.0	Off
19	A17	2.20	0.00	2.20	0.00	DrGrt	0.0	0.00	6.00	3.00	2.00	Sag	1.50	0.020	0.020	0.000	0.18	19.51	0.18	19.51	0.0	Off
20	A3.2	2.73	0.00	2.73	0.00	Curb	4.0	13.00	0.00	0.00	0.00	Sag	1.50	0.060	0.020	0.000	0.17	5.48	0.17	5.48	0.0	Off
21	A3.3	1.15	0.00	1.15	0.00	Curb	4.0	13.00	0.00	0.00	0.00	Sag	1.50	0.060	0.020	0.000	0.10	1.78	0.10	1.78	0.0	Off
Project File: 14-3686 Storm Line A-4.stm														Number of lines: 21				Run Date: 6/1/2016				
NOTES: Inlet N-Values = 0.016; Intensity = 54.79 / (Inlet time + 5.90) ^ 0.67; Return period = 25 Yrs. ; * Indicates Known Q added. All curb inlets are throat.																						

Hydraulic Grade Line Computations

Line	Size (in)	Q (cfs)	Downstream								Len (ft)	Upstream								Check		JL coeff (K)	Minor loss (ft)
			Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)		Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)	Ave Sf (%)	Enrgy loss (ft)		
1	30	24.36	321.00	323.00	2.00	3.51	5.79	0.75	323.75	0.000	17.460	321.20	322.88 j	1.68**	3.51	6.95	0.75	323.63	0.000	0.000	n/a	0.15	0.11
2	30	24.45	321.20	322.88	1.68	3.51	6.97	0.75	323.63	0.000	23.400	321.40	323.08	1.68**	3.51	6.96	0.75	323.84	0.000	0.000	n/a	1.00	0.75
3	30	24.57	321.40	323.08	1.68	3.51	6.99	0.76	323.84	0.000	32.120	321.70	323.39	1.69**	3.52	6.97	0.76	324.14	0.000	0.000	n/a	1.50	n/a
4	15	7.30	328.80	329.75	0.95*	1.00	7.31	0.66	330.40	0.000	78.350	329.80	330.88	1.08**	1.12	6.49	0.66	331.53	0.000	0.000	n/a	1.02	n/a
5	15	2.20	332.30	332.77	0.47*	0.42	5.25	0.23	333.00	0.000	62.670	333.00	333.59	0.59**	0.57	3.85	0.23	333.82	0.000	0.000	n/a	1.00	0.23
6	24	18.37	322.20	323.63	1.43*	2.40	7.64	0.78	324.41	0.000	105.340	323.00	324.54	1.54**	2.60	7.07	0.78	325.32	0.000	0.000	n/a	0.50	n/a
7	24	18.12	323.00	324.54	1.54	2.58	6.97	0.77	325.31	0.000	68.330	323.60	325.13 j	1.53**	2.58	7.02	0.77	325.90	0.000	0.000	n/a	0.50	0.38
8	24	17.75	323.60	325.13	1.53	2.56	6.88	0.75	325.88	0.000	92.670	324.30	325.82 j	1.52**	2.56	6.95	0.75	326.57	0.000	0.000	n/a	0.50	n/a
9	24	17.30	324.30	325.82	1.52	2.52	6.77	0.73	326.55	0.000	93.000	325.00	326.50 j	1.50**	2.52	6.85	0.73	327.23	0.000	0.000	n/a	0.50	n/a
10	24	16.86	325.00	326.50	1.50	2.49	6.68	0.71	327.21	0.000	102.920	325.80	327.28 j	1.48**	2.49	6.77	0.71	327.99	0.000	0.000	n/a	0.50	0.36
11	24	16.45	325.80	327.28	1.48	2.46	6.60	0.70	327.97	0.000	80.190	326.40	327.86 j	1.46**	2.46	6.69	0.70	328.56	0.000	0.000	n/a	0.50	0.35
12	24	16.26	326.40	327.86	1.46	2.44	6.61	0.69	328.55	0.000	135.930	327.50	328.95 j	1.45**	2.44	6.65	0.69	329.64	0.000	0.000	n/a	1.50	1.03
13	24	15.57	327.50	328.95	1.45	2.39	6.37	0.66	329.61	0.000	50.500	327.90	329.32 j	1.42**	2.39	6.52	0.66	329.98	0.000	0.000	n/a	1.11	n/a
14	24	15.23	327.90	329.32	1.42	2.36	6.38	0.65	329.97	0.000	48.370	328.30	329.71 j	1.41**	2.36	6.46	0.65	330.35	0.000	0.000	n/a	0.58	n/a
15	24	12.44	328.30	329.71	1.41	2.10	5.27	0.55	330.25	0.000	66.000	328.80	330.07 j	1.27**	2.10	5.93	0.55	330.61	0.000	0.000	n/a	0.50	0.27
16	24	10.07	328.80	330.07	1.27	1.84	4.80	0.47	330.53	0.000	66.000	329.30	330.43 j	1.13**	1.84	5.47	0.47	330.90	0.000	0.000	n/a	0.50	0.23
17	24	7.67	329.30	330.43	1.13	1.54	4.17	0.39	330.82	0.000	66.000	329.80	330.78 j	0.98**	1.54	4.98	0.39	331.17	0.000	0.000	n/a	0.50	n/a
18	18	5.03	330.30	331.03	0.73*	0.86	5.86	0.36	331.39	0.000	71.000	330.90	331.76	0.86**	1.05	4.78	0.36	332.12	0.000	0.000	n/a	0.81	0.29
19	15	2.20	331.40	331.91	0.51*	0.47	4.66	0.23	332.14	0.000	74.590	332.00	332.59	0.59**	0.57	3.85	0.23	332.82	0.000	0.000	n/a	1.00	0.23
20	15	3.74	329.80	330.88	1.08	0.81	3.33	0.33	331.21	0.000	38.320	330.20	330.98 j	0.78**	0.81	4.64	0.33	331.32	0.000	0.000	n/a	1.36	0.46
21	15	1.15	330.20	330.98	0.78	0.37	1.43	0.16	331.14	0.000	33.190	330.60	331.02 j	0.42**	0.37	3.16	0.16	331.18	0.000	0.000	n/a	1.00	0.16

Project File: 14-3686 Storm Line A-4.stm

Number of lines: 21

Run Date: 6/1/2016

Notes: * depth assumed.; ** Critical depth.; j-Line contains hyd. jump. ; c = cir e = ellip b = box

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID	
Line	To Line		Incr	Total		Incr	Total	Inlet	Syst					Size	Slope	Dn	Up	Dn	Up	Dn	Up		
		(ft)	(ac)	(ac)	(C)			(min)	(min)	(in/hr)	(cfs)	(cfs)	(ft/s)	(in)	(%)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)		
1	End	17.460	0.00	2.97	0.00	0.00	2.82	0.0	9.4	9.7	27.43	47.55	6.92	30	1.15	321.00	321.20	323.00	322.98	324.29	331.35	A0-A1	
2	1	23.400	0.00	2.97	0.00	0.00	2.82	0.0	9.3	9.8	27.52	41.07	7.34	30	0.85	321.20	321.40	322.98	323.19	331.35	331.35	A1-A2	
3	2	32.120	0.05	2.97	0.95	0.05	2.82	5.0	9.2	9.8	27.64	42.94	7.35	30	0.93	321.40	321.70	323.19	323.49	331.35	336.80	A2-A3	
4	3	78.350	0.15	0.73	0.95	0.14	0.69	5.0	5.7	11.5	8.00	7.90	7.13	15	1.28	328.80	329.80	329.84	330.91	336.80	337.09	A3-A3.1	
5	4	62.670	0.21	0.21	0.95	0.20	0.20	5.0	5.0	12.0	2.39	7.39	4.66	15	1.12	332.30	333.00	332.79	333.62	337.09	336.70	A3.1-A3.1A	
6	3	105.340	0.05	2.19	0.95	0.05	2.08	5.0	8.9	9.9	20.63	21.35	7.64	24	0.76	322.20	323.00	323.78	324.63	336.80	338.00	A3-A4	
7	6	68.330	0.07	2.14	0.95	0.07	2.03	5.0	8.7	10.0	20.33	22.96	7.45	24	0.88	323.00	323.60	324.63	325.22	338.00	338.00	A4-A5	
8	7	92.670	0.08	2.07	0.95	0.08	1.97	5.0	8.5	10.1	19.89	21.30	7.34	24	0.76	323.60	324.30	325.22	325.90	338.00	338.04	A5-A6	
9	8	93.000	0.08	1.99	0.95	0.08	1.89	5.0	8.2	10.2	19.34	21.26	7.22	24	0.75	324.30	325.00	325.90	326.58	338.04	338.04	A6-A7	
10	9	102.920	0.07	1.91	0.95	0.07	1.81	5.0	7.9	10.4	18.82	21.60	7.11	24	0.78	325.00	325.80	326.58	327.36	338.04	338.00	A7-A8	
11	10	80.190	0.06	1.84	0.95	0.06	1.75	5.0	7.7	10.5	18.32	21.19	7.01	24	0.75	325.80	326.40	327.36	327.94	338.00	338.04	A8-A9	
12	11	135.930	0.09	1.78	0.95	0.09	1.69	5.0	7.3	10.7	18.06	22.04	6.98	24	0.81	326.40	327.50	327.94	329.03	338.04	336.80	A9-A10	
13	12	50.500	0.05	1.69	0.95	0.05	1.61	5.0	7.1	10.8	17.27	21.81	6.78	24	0.79	327.50	327.90	329.03	329.40	336.80	336.80	A10-A11	
14	13	48.370	0.32	1.64	0.95	0.30	1.56	5.0	7.0	10.8	16.88	22.28	6.73	24	0.83	327.90	328.30	329.40	329.78	336.80	336.60	A1-A12	
15	14	66.000	0.27	1.32	0.95	0.26	1.25	5.0	6.7	11.0	13.75	21.33	5.85	24	0.76	328.30	328.80	329.78	330.13	336.60	336.60	A12-A13	
16	15	66.000	0.27	1.05	0.95	0.26	1.00	5.0	6.4	11.1	11.11	21.33	5.33	24	0.76	328.80	329.30	330.13	330.49	336.60	336.60	A13-A14	
17	16	66.000	0.28	0.78	0.95	0.27	0.74	5.0	6.0	11.4	8.42	21.33	4.72	24	0.76	329.30	329.80	330.49	330.83	336.60	336.60	A14-A15	
18	17	71.000	0.29	0.50	0.95	0.28	0.48	5.0	5.6	11.6	5.50	10.46	5.47	18	0.85	330.30	330.90	331.07	331.80	336.60	336.60	A15-A16	
19	18	74.590	0.21	0.21	0.95	0.20	0.20	5.0	5.0	12.0	2.39	6.27	4.36	15	0.80	331.40	332.00	331.94	332.62	336.60	337.00	A16-A17	
20	4	38.320	0.26	0.37	0.95	0.25	0.35	5.0	5.5	11.6	4.09	7.15	4.18	15	1.04	329.80	330.20	330.91	331.02	337.09	334.65	A3.1-A3.2	
21	20	33.190	0.11	0.11	0.95	0.10	0.10	5.0	5.0	12.0	1.25	7.68	2.35	15	1.21	330.20	330.60	331.02	331.04	334.65	334.50	A3.2-A3.3	
Project File: 14-3686 Storm Line A-4.stm																Number of lines: 21				Run Date: 6/1/2016			
NOTES:Intensity = 102.31 / (Inlet time + 9.60) ^ 0.80; Return period =Yrs. 50 ; c = cir e = ellip b = box																							

Inlet Report

Line No	Inlet ID	Q = CIA (cfs)	Q carry (cfs)	Q capt (cfs)	Q Byp (cfs)	Junc Type	Curb Inlet		Grate Inlet			Gutter							Inlet			Byp Line No
							Ht (in)	L (ft)	Area (sqft)	L (ft)	W (ft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)	Depr (in)	
1	A1	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
2	A2	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
3	A3	0.57	0.00	0.57	0.00	Comb	4.0	4.00	4.00	2.00	2.00	Sag	1.50	0.060	0.020	0.000	0.14	4.15	0.14	4.15	0.0	Off
4	A3.1	1.71	0.00	1.71	0.00	Curb	4.0	13.00	0.00	0.00	0.00	Sag	1.50	0.060	0.020	0.000	0.12	3.21	0.12	3.21	0.0	Off
5	A3.1A	2.39	0.00	2.39	0.00	Curb	4.0	13.00	0.00	0.00	0.00	Sag	1.50	0.060	0.020	0.000	0.16	4.77	0.16	4.77	0.0	Off
6	A4	0.57	0.00	0.57	0.00	Comb	4.0	4.00	4.00	2.00	2.00	Sag	1.50	0.060	0.020	0.000	0.14	4.15	0.14	4.15	0.0	Off
7	A5	0.80	0.00	0.80	0.00	Comb	4.0	4.00	4.00	2.00	2.00	Sag	1.50	0.060	0.020	0.000	0.16	5.20	0.16	5.20	0.0	Off
8	A6	0.91	0.00	0.91	0.00	Comb	4.0	4.00	4.00	2.00	2.00	Sag	1.50	0.060	0.020	0.000	0.17	5.65	0.17	5.65	0.0	Off
9	A7	0.91	0.00	0.91	0.00	Comb	4.0	4.00	4.00	2.00	2.00	Sag	1.50	0.060	0.020	0.000	0.17	5.65	0.17	5.65	0.0	Off
10	A8	0.80	0.00	0.80	0.00	Comb	4.0	4.00	4.00	2.00	2.00	Sag	1.50	0.060	0.020	0.000	0.16	5.20	0.16	5.20	0.0	Off
11	A9	0.68	0.00	0.68	0.00	Comb	4.0	4.00	4.00	2.00	2.00	Sag	1.50	0.060	0.020	0.000	0.15	4.70	0.15	4.70	0.0	Off
12	A10	1.03	0.00	1.03	0.00	Curb	4.0	13.00	0.00	0.00	0.00	Sag	1.50	0.060	0.020	0.000	0.09	1.47	0.09	1.47	0.0	Off
13	A11	0.57	0.00	0.57	0.00	Curb	4.0	13.00	0.00	0.00	0.00	Sag	1.50	0.060	0.020	0.000	0.06	0.99	0.06	0.99	0.0	Off
14	A12	3.65	0.00	3.65	0.00	DrGrt	0.0	0.00	6.00	3.00	2.00	Sag	1.50	0.020	0.020	0.000	0.25	26.52	0.25	26.52	0.0	Off
15	A13	3.08	0.00	3.08	0.00	DrGrt	0.0	0.00	6.00	3.00	2.00	Sag	1.50	0.020	0.020	0.000	0.22	23.89	0.22	23.89	0.0	Off
16	A14	3.08	0.00	3.08	0.00	DrGrt	0.0	0.00	6.00	3.00	2.00	Sag	1.50	0.020	0.020	0.000	0.22	23.89	0.22	23.89	0.0	Off
17	A15	3.19	0.00	3.19	0.00	DrGrt	0.0	0.00	6.00	3.00	2.00	Sag	1.50	0.020	0.020	0.000	0.22	24.43	0.22	24.43	0.0	Off
18	A16	3.30	0.00	3.30	0.00	DrGrt	0.0	0.00	6.00	3.00	2.00	Sag	1.50	0.020	0.020	0.000	0.23	24.96	0.23	24.96	0.0	Off
19	A17	2.39	0.00	2.39	0.00	DrGrt	0.0	0.00	6.00	3.00	2.00	Sag	1.50	0.020	0.020	0.000	0.19	20.51	0.19	20.51	0.0	Off
20	A3.2	2.96	0.00	2.96	0.00	Curb	4.0	13.00	0.00	0.00	0.00	Sag	1.50	0.060	0.020	0.000	0.18	5.96	0.18	5.96	0.0	Off
21	A3.3	1.25	0.00	1.25	0.00	Curb	4.0	13.00	0.00	0.00	0.00	Sag	1.50	0.060	0.020	0.000	0.10	2.05	0.10	2.05	0.0	Off

Project File: 14-3686 Storm Line A-4.stm

Number of lines: 21

Run Date: 6/1/2016

NOTES: Inlet N-Values = 0.016; Intensity = 102.31 / (Inlet time + 9.60) ^ 0.80; Return period = 50 Yrs. ; * Indicates Known Q added. All curb inlets are throat.

Hydraulic Grade Line Computations

Line	Size (in)	Q (cfs)	Downstream								Len (ft)	Upstream								Check		JL coeff (K)	Minor loss (ft)
			Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)		Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)	Ave Sf (%)	Enrgy loss (ft)		
1	30	27.43	321.00	323.00	2.00	3.75	6.52	0.83	323.83	0.000	17.460	321.20	322.98 j	1.78**	3.75	7.32	0.83	323.82	0.000	0.000	n/a	0.15	0.12
2	30	27.52	321.20	322.98	1.78	3.75	7.34	0.84	323.82	0.000	23.400	321.40	323.19	1.79**	3.75	7.33	0.84	324.02	0.000	0.000	n/a	1.00	n/a
3	30	27.64	321.40	323.19	1.79	3.75	7.36	0.84	324.03	0.000	32.120	321.70	323.49	1.79**	3.76	7.34	0.84	324.33	0.000	0.000	n/a	1.50	n/a
4	15	8.00	328.80	329.84	1.04*	1.09	7.34	0.75	330.58	0.000	78.350	329.80	330.91	1.11**	1.16	6.92	0.75	331.66	0.000	0.000	n/a	1.02	n/a
5	15	2.39	332.30	332.79	0.49*	0.45	5.37	0.24	333.03	0.000	62.670	333.00	333.62	0.62**	0.61	3.95	0.24	333.86	0.000	0.000	n/a	1.00	n/a
6	24	20.63	322.20	323.78	1.58*	2.67	7.74	0.88	324.66	0.000	105.340	323.00	324.63	1.63**	2.74	7.54	0.88	325.51	0.000	0.000	n/a	0.50	n/a
7	24	20.33	323.00	324.63	1.63	2.72	7.42	0.87	325.50	0.000	68.330	323.60	325.22 j	1.62**	2.72	7.47	0.87	326.08	0.000	0.000	n/a	0.50	n/a
8	24	19.89	323.60	325.22	1.62	2.70	7.31	0.85	326.06	0.000	92.670	324.30	325.90 j	1.60**	2.70	7.38	0.85	326.75	0.000	0.000	n/a	0.50	n/a
9	24	19.34	324.30	325.90	1.60	2.66	7.18	0.82	326.72	0.000	93.000	325.00	326.58 j	1.58**	2.66	7.26	0.82	327.40	0.000	0.000	n/a	0.50	n/a
10	24	18.82	325.00	326.58	1.58	2.63	7.07	0.80	327.38	0.000	102.920	325.80	327.36 j	1.56**	2.63	7.16	0.80	328.16	0.000	0.000	n/a	0.50	n/a
11	24	18.32	325.80	327.36	1.56	2.60	6.97	0.77	328.13	0.000	80.190	326.40	327.94 j	1.54**	2.60	7.06	0.77	328.71	0.000	0.000	n/a	0.50	n/a
12	24	18.06	326.40	327.94	1.54	2.58	6.96	0.76	328.70	0.000	135.930	327.50	329.03 j	1.53**	2.58	7.01	0.76	329.79	0.000	0.000	n/a	1.50	n/a
13	24	17.27	327.50	329.03	1.53	2.52	6.70	0.73	329.76	0.000	50.500	327.90	329.40 j	1.50**	2.52	6.85	0.73	330.13	0.000	0.000	n/a	1.11	0.81
14	24	16.88	327.90	329.40	1.50	2.49	6.69	0.71	330.11	0.000	48.370	328.30	329.78 j	1.48**	2.49	6.77	0.71	330.49	0.000	0.000	n/a	0.58	n/a
15	24	13.75	328.30	329.78	1.48	2.23	5.52	0.59	330.37	0.000	66.000	328.80	330.13 j	1.33**	2.23	6.18	0.59	330.73	0.000	0.000	n/a	0.50	0.30
16	24	11.11	328.80	330.13	1.33	1.96	4.99	0.50	330.63	0.000	66.000	329.30	330.49 j	1.19**	1.96	5.68	0.50	331.00	0.000	0.000	n/a	0.50	0.25
17	24	8.42	329.30	330.49	1.19	1.64	4.30	0.41	330.91	0.000	66.000	329.80	330.83 j	1.03**	1.64	5.14	0.41	331.24	0.000	0.000	n/a	0.50	0.21
18	18	5.50	330.30	331.07	0.77*	0.92	5.99	0.38	331.45	0.000	71.000	330.90	331.80	0.90**	1.11	4.95	0.38	332.18	0.000	0.000	n/a	0.81	0.31
19	15	2.39	331.40	331.94	0.54*	0.50	4.77	0.24	332.18	0.000	74.590	332.00	332.62	0.62**	0.61	3.95	0.24	332.86	0.000	0.000	n/a	1.00	n/a
20	15	4.09	329.80	330.91	1.11	0.85	3.54	0.36	331.27	0.000	38.320	330.20	331.02 j	0.82**	0.85	4.81	0.36	331.38	0.000	0.000	n/a	1.36	n/a
21	15	1.25	330.20	331.02	0.82	0.39	1.47	0.16	331.18	0.000	33.190	330.60	331.04 j	0.44**	0.39	3.24	0.16	331.20	0.000	0.000	n/a	1.00	n/a

Project File: 14-3686 Storm Line A-4.stm

Number of lines: 21

Run Date: 6/1/2016

Notes: * depth assumed.; ** Critical depth.; j-Line contains hyd. jump. ; c = cir e = ellip b = box

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID	
Line	To Line		Incr	Total		Incr	Total	Inlet	Syst					Size	Slope	Dn	Up	Dn	Up	Dn	Up		
		(ft)	(ac)	(ac)	(C)			(min)	(min)	(in/hr)	(cfs)	(cfs)	(ft/s)	(in)	(%)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)		
1	End	32.080	0.00	7.55	0.00	0.00	7.17	0.0	7.6	9.5	70.36	86.06	9.53	42	0.62	322.80	323.00	325.21	325.63	335.86	336.13	B0-B1	
2	1	14.100	0.00	7.55	0.00	0.00	7.17	0.0	7.6	9.6	70.48	129.8	9.10	42	1.42	323.00	323.20	325.63	325.83	336.13	336.09	B1-B2	
3	2	20.570	0.26	7.55	0.95	0.25	7.17	5.0	7.6	9.6	70.66	107.5	9.11	42	0.97	323.20	323.40	325.83	326.03	336.09	335.60	B2-B3	
4	3	50.990	0.17	7.15	0.95	0.16	6.79	5.0	7.4	9.6	67.45	96.53	8.80	42	0.78	323.40	323.80	326.03	326.37	335.60	335.50	B3-B4	
5	4	91.110	0.42	6.83	0.95	0.40	6.49	5.0	7.2	9.8	63.36	95.54	8.50	42	0.77	323.80	324.50	326.37	326.99	335.50	335.20	B4-B5	
6	5	66.000	0.40	6.41	0.95	0.38	6.09	5.0	7.0	9.9	60.05	94.87	8.32	42	0.76	324.50	325.00	326.99	327.43	335.20	335.20	B5-B6	
7	6	66.000	0.46	6.01	0.95	0.44	5.71	5.0	6.8	10.0	56.89	94.87	8.12	42	0.76	325.00	325.50	327.43	327.86	335.20	336.50	B6-B7	
8	7	87.440	0.46	5.55	0.95	0.44	5.27	5.0	6.5	10.1	53.32	97.52	7.87	42	0.80	325.50	326.20	327.86	328.48	336.50	336.00	B7-B8	
9	8	66.000	0.87	5.09	0.95	0.83	4.84	5.0	6.3	10.2	49.34	62.89	8.55	36	0.76	326.20	326.70	328.48	328.98	336.00	336.00	B8-B9	
10	9	66.000	0.82	4.22	0.95	0.78	4.01	5.0	6.2	10.3	41.21	38.67	8.63	30	0.76	327.20	327.70	329.55	330.03	336.00	336.00	B9-B10	
11	10	66.000	0.76	3.40	0.95	0.72	3.23	5.0	6.0	10.4	33.51	38.67	6.83	30	0.76	327.70	328.20	330.61	330.99	336.00	336.00	B10-B11	
12	11	66.000	0.75	2.64	0.95	0.71	2.51	5.0	5.8	10.5	26.33	38.67	5.36	30	0.76	328.20	328.70	331.35	331.58	336.00	336.00	B11-B12	
13	12	66.000	0.73	1.89	0.95	0.69	1.80	5.0	5.7	10.6	19.05	21.33	6.06	24	0.76	329.20	329.70	331.81	332.20	336.00	336.00	B12-B13	
14	13	66.000	0.64	1.16	0.95	0.61	1.10	5.0	5.4	10.8	11.89	21.33	3.79	24	0.76	329.70	330.20	332.49	332.65	336.00	336.00	B13-B14	
15	14	68.000	0.52	0.52	0.95	0.49	0.49	5.0	5.0	11.0	5.45	18.51	4.01	18	2.65	330.70	332.50	332.76	333.40	336.00	336.00	B14-B15	
16	3	57.430	0.14	0.14	0.95	0.13	0.13	5.0	5.0	11.0	1.47	7.15	3.99	15	1.04	330.00	330.60	330.38	331.08	335.60	335.60	B3-B3.1	
17	4	29.050	0.00	0.15	0.00	0.00	0.14	0.0	5.4	10.8	3.50	7.11	5.14	15	1.03	328.70	329.00	329.32	329.75	335.50	336.00	B4-B4.1	
18	17	68.292	0.00	0.15	0.00	0.00	0.14	0.0	5.1	10.9	3.52	3.91	5.42	12	1.03	329.50	330.20	330.24	331.00	336.00	336.00	B4.1A-B4.1B	
19	18	21.992	0.15	0.15	0.95	0.14	0.14	5.0	5.0	11.0	1.57	2.77	3.47	10	1.36	330.20	330.50	331.00	331.06	336.00	336.00	B4.1B-B4.1C	
20	18	53.092	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	1.96	4.12	4.05	10	3.01	330.20	331.80	331.00	332.43	336.00	336.00	B4.1B-B4.1BB	
Project File: 14-3686 Storm Line B-4.stm																Number of lines: 20				Run Date: 6/1/2016			
NOTES:Intensity = 54.79 / (Inlet time + 5.90) ^ 0.67; Return period =Yrs. 25 ; c = cir e = ellip b = box																							

Inlet Report

Line No	Inlet ID	Q = CIA	Q carry	Q capt	Q Byp	Junc Type	Curb Inlet		Grate Inlet			Gutter							Inlet			Byp Line No
		(cfs)	(cfs)	(cfs)	(cfs)		Ht (in)	L (ft)	Area (sqft)	L (ft)	W (ft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)	Depr (in)	
1	B1	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
2	B2	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
3	B3	2.73	0.00	2.73	0.00	Curb	4.0	13.00	0.00	0.00	0.00	Sag	1.50	0.060	0.020	0.000	0.17	5.48	0.17	5.48	0.0	Off
4	B4	1.78	0.00	1.78	0.00	DrGrt	0.0	0.00	6.00	3.00	2.00	Sag	1.50	0.020	0.020	0.000	0.15	17.21	0.15	17.21	0.0	Off
5	B5	4.40	0.00	4.40	0.00	DrGrt	0.0	0.00	6.00	3.00	2.00	Sag	1.50	0.020	0.020	0.000	0.28	29.81	0.28	29.81	0.0	Off
6	B6	4.19	0.00	4.19	0.00	DrGrt	0.0	0.00	6.00	3.00	2.00	Sag	1.50	0.020	0.020	0.000	0.27	28.92	0.27	28.92	0.0	Off
7	B7	4.82	0.00	4.82	0.00	DrGrt	0.0	0.00	6.00	3.00	2.00	Sag	1.50	0.020	0.020	0.000	0.30	31.55	0.30	31.55	0.0	Off
8	B8	4.82	0.00	4.82	0.00	DrGrt	0.0	0.00	12.00	6.00	4.00	Sag	1.50	0.020	0.020	0.000	0.19	22.61	0.19	22.61	0.0	Off
9	B9	9.12	0.00	9.12	0.00	DrGrt	0.0	0.00	12.00	6.00	4.00	Sag	1.50	0.020	0.020	0.000	0.28	32.46	0.28	32.46	0.0	Off
10	B10	8.60	0.00	8.60	0.00	DrGrt	0.0	0.00	12.00	6.00	4.00	Sag	1.50	0.020	0.020	0.000	0.27	31.36	0.27	31.36	0.0	Off
11	B11	7.97	0.00	7.97	0.00	DrGrt	0.0	0.00	12.00	6.00	4.00	Sag	1.50	0.020	0.020	0.000	0.26	30.01	0.26	30.01	0.0	Off
12	B12	7.86	0.00	7.86	0.00	DrGrt	0.0	0.00	12.00	6.00	4.00	Sag	1.50	0.020	0.020	0.000	0.26	29.78	0.26	29.78	0.0	Off
13	B13	7.65	0.00	7.65	0.00	DrGrt	0.0	0.00	12.00	6.00	4.00	Sag	1.50	0.020	0.020	0.000	0.25	29.32	0.25	29.32	0.0	Off
14	B14	6.71	0.00	6.71	0.00	DrGrt	0.0	0.00	12.00	6.00	4.00	Sag	1.50	0.020	0.020	0.000	0.23	27.19	0.23	27.19	0.0	Off
15	B15	5.45	0.00	5.45	0.00	DrGrt	0.0	0.00	12.00	6.00	4.00	Sag	1.50	0.020	0.020	0.000	0.20	24.19	0.20	24.19	0.0	Off
16	B3.1	1.47	0.00	1.47	0.00	Curb	4.0	13.00	0.00	0.00	0.00	Sag	1.50	0.060	0.020	0.000	0.11	2.61	0.11	2.61	0.0	Off
17	B4.1	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
18	B4.1B	0.00	0.00	0.00	0.00	None	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
19	B4.1C	1.57	0.00	1.57	0.00	DrGrt	0.0	0.00	2.00	1.00	2.00	Sag	1.50	0.020	0.020	0.000	0.20	21.67	0.20	21.67	0.0	Off
20	B2.1BB	1.96*	0.00	0.00	1.96	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off

Project File: 14-3686 Storm Line B-4.stm

Number of lines: 20

Run Date: 6/1/2016

NOTES: Inlet N-Values = 0.016; Intensity = 54.79 / (Inlet time + 5.90) ^ 0.67; Return period = 25 Yrs. ; * Indicates Known Q added. All curb inlets are throat.

Hydraulic Grade Line Computations

Line	Size (in)	Q (cfs)	Downstream								Len (ft)	Upstream								Check		JL coeff (K)	Minor loss (ft)
			Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)		Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)	Ave Sf (%)	Enrgy loss (ft)		
1	42	70.36	322.80	325.21	2.41	7.05	9.98	1.28	326.49	0.000	32.080	323.00	325.63	2.63**	7.74	9.09	1.28	326.91	0.000	0.000	n/a	0.15	0.19
2	42	70.48	323.00	325.63	2.63	7.74	9.10	1.29	326.91	0.000	14.100	323.20	325.83	2.63**	7.75	9.10	1.29	327.11	0.000	0.000	n/a	0.43	n/a
3	42	70.66	323.20	325.83	2.63	7.75	9.12	1.29	327.12	0.000	20.570	323.40	326.03	2.63**	7.76	9.10	1.29	327.32	0.000	0.000	n/a	1.50	n/a
4	42	67.45	323.40	326.03	2.63	7.58	8.69	1.23	327.26	0.000	50.990	323.80	326.37	2.57**	7.58	8.90	1.23	327.60	0.000	0.000	n/a	1.50	n/a
5	42	63.36	323.80	326.37	2.57	7.33	8.36	1.16	327.53	0.000	91.110	324.50	326.99	2.49**	7.33	8.64	1.16	328.15	0.000	0.000	n/a	1.50	n/a
6	42	60.05	324.50	326.99	2.49	7.12	8.19	1.11	328.10	0.000	66.000	325.00	327.43	2.43**	7.12	8.44	1.11	328.53	0.000	0.000	n/a	0.50	0.55
7	42	56.89	325.00	327.43	2.43	6.90	7.99	1.06	328.48	0.000	66.000	325.50	327.86	2.36**	6.90	8.24	1.06	328.92	0.000	0.000	n/a	1.07	n/a
8	42	53.32	325.50	327.86	2.36	6.64	7.73	1.00	328.86	0.000	87.440	326.20	328.48 j	2.28**	6.64	8.02	1.00	329.48	0.000	0.000	n/a	1.07	n/a
9	36	49.34	326.20	328.48	2.28	5.77	8.55	1.13	329.62	0.000	66.000	326.70	328.98	2.28**	5.78	8.54	1.13	330.12	0.000	0.000	n/a	0.50	0.57
10	30	41.21	327.20	329.55	2.35	4.79	8.60	1.15	330.70	0.744	66.000	327.70	330.03	2.33	4.76	8.65	1.16	331.19	0.744	0.744	0.491	0.50	0.58
11	30	33.51	327.70	330.61	2.50	4.91	6.83	0.72	331.34	0.569	66.000	328.20	330.99	2.50	4.91	6.83	0.72	331.71	0.569	0.569	0.376	0.50	0.36
12	30	26.33	328.20	331.35	2.50	4.91	5.36	0.45	331.80	0.351	66.000	328.70	331.58	2.50	4.91	5.36	0.45	332.03	0.351	0.351	0.232	0.50	0.22
13	24	19.05	329.20	331.81	2.00	3.14	6.06	0.57	332.38	0.605	66.000	329.70	332.20	2.00	3.14	6.06	0.57	332.78	0.604	0.605	0.399	0.50	0.29
14	24	11.89	329.70	332.49	2.00	3.14	3.79	0.22	332.71	0.236	66.000	330.20	332.65	2.00	3.14	3.79	0.22	332.87	0.236	0.236	0.156	0.50	0.11
15	18	5.45	330.70	332.76	1.50	1.11	3.09	0.15	332.91	0.230	68.000	332.50	333.40 j	0.90**	1.11	4.93	0.38	333.78	0.510	0.370	n/a	1.00	0.38
16	15	1.47	330.00	330.38	0.38*	0.32	4.58	0.18	330.56	0.000	57.430	330.60	331.08	0.48**	0.43	3.39	0.18	331.26	0.000	0.000	n/a	1.00	n/a
17	15	3.50	328.70	329.32	0.62*	0.61	5.77	0.32	329.64	0.000	29.050	329.00	329.75	0.75**	0.77	4.52	0.32	330.07	0.000	0.000	n/a	1.00	n/a
18	12	3.52	329.50	330.24	0.74*	0.63	5.63	0.42	330.67	0.000	68.292	330.20	331.00	0.80**	0.67	5.22	0.42	331.42	0.000	0.000	n/a	1.00	n/a
19	10	1.57	330.20	331.00	0.80	0.39	2.92	0.25	331.25	0.000	21.992	330.50	331.06 j	0.56**	0.39	4.02	0.25	331.31	0.000	0.000	n/a	1.00	n/a
20	10	1.96	330.20	331.00	0.80	0.44	3.64	0.31	331.31	0.000	53.092	331.80	332.43 j	0.63**	0.44	4.45	0.31	332.74	0.000	0.000	n/a	1.00	n/a

Project File: 14-3686 Storm Line B-4.stm

Number of lines: 20

Run Date: 6/1/2016

Notes: * depth assumed.; ** Critical depth.; j-Line contains hyd. jump. ; c = cir e = ellip b = box

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID	
Line	To Line		Incr	Total		Incr	Total	Inlet	Syst					Size	Slope	Dn	Up	Dn	Up	Dn	Up		
		(ft)	(ac)	(ac)	(C)			(min)	(min)	(in/hr)	(cfs)	(cfs)	(ft/s)	(in)	(%)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)		
1	End	32.080	0.00	7.55	0.00	0.00	7.17	0.0	7.4	10.6	78.07	86.06	9.86	42	0.62	322.80	323.00	325.41	325.76	335.86	336.13	B0-B1	
2	1	14.100	0.00	7.55	0.00	0.00	7.17	0.0	7.4	10.6	78.18	129.8	9.60	42	1.42	323.00	323.20	325.76	325.96	336.13	336.09	B1-B2	
3	2	20.570	0.26	7.55	0.95	0.25	7.17	5.0	7.3	10.6	78.35	107.5	9.62	42	0.97	323.20	323.40	325.96	326.16	336.09	335.60	B2-B3	
4	3	50.990	0.17	7.15	0.95	0.16	6.79	5.0	7.2	10.7	74.71	96.53	9.27	42	0.78	323.40	323.80	326.16	326.50	335.60	335.50	B3-B4	
5	4	91.110	0.42	6.83	0.95	0.40	6.49	5.0	7.0	10.8	70.25	95.54	8.94	42	0.77	323.80	324.50	326.50	327.12	335.50	335.20	B4-B5	
6	5	66.000	0.40	6.41	0.95	0.38	6.09	5.0	6.8	10.9	66.48	94.87	8.72	42	0.76	324.50	325.00	327.12	327.55	335.20	335.20	B5-B6	
7	6	66.000	0.46	6.01	0.95	0.44	5.71	5.0	6.6	11.0	62.89	94.87	8.49	42	0.76	325.00	325.50	327.55	327.98	335.20	336.50	B6-B7	
8	7	87.440	0.46	5.55	0.95	0.44	5.27	5.0	6.4	11.2	58.80	97.52	8.21	42	0.80	325.50	326.20	327.98	328.60	336.50	336.00	B7-B8	
9	8	66.000	0.87	5.09	0.95	0.83	4.84	5.0	6.2	11.2	54.34	62.89	8.98	36	0.76	326.20	326.70	328.60	329.09	336.00	336.00	B8-B9	
10	9	66.000	0.82	4.22	0.95	0.78	4.01	5.0	6.1	11.3	45.33	38.67	9.24	30	0.76	327.20	327.70	329.72	330.41	336.00	336.00	B9-B10	
11	10	66.000	0.76	3.40	0.95	0.72	3.23	5.0	6.0	11.4	36.81	38.67	7.50	30	0.76	327.70	328.20	331.07	331.52	336.00	336.00	B10-B11	
12	11	66.000	0.75	2.64	0.95	0.71	2.51	5.0	5.8	11.5	28.86	38.67	5.88	30	0.76	328.20	328.70	331.96	332.24	336.00	336.00	B11-B12	
13	12	66.000	0.73	1.89	0.95	0.69	1.80	5.0	5.6	11.6	20.84	21.33	6.64	24	0.76	329.20	329.70	332.51	332.99	336.00	336.00	B12-B13	
14	13	66.000	0.64	1.16	0.95	0.61	1.10	5.0	5.3	11.8	12.98	21.33	4.13	24	0.76	329.70	330.20	333.33	333.51	336.00	336.00	B13-B14	
15	14	68.000	0.52	0.52	0.95	0.49	0.49	5.0	5.0	12.0	5.92	18.51	3.51	18	2.65	330.70	332.50	333.65	333.79	336.00	336.00	B14-B15	
16	3	57.430	0.14	0.14	0.95	0.13	0.13	5.0	5.0	12.0	1.59	7.15	4.08	15	1.04	330.00	330.60	330.40	331.10	335.60	335.60	B3-B3.1	
17	4	29.050	0.00	0.15	0.00	0.00	0.14	0.0	5.4	11.8	3.64	7.11	5.21	15	1.03	328.70	329.00	329.33	329.77	335.50	336.00	B4-B4.1	
18	17	68.292	0.00	0.15	0.00	0.00	0.14	0.0	5.1	11.9	3.66	3.91	5.49	12	1.03	329.50	330.20	330.27	331.01	336.00	336.00	B4.1A-B4.1B	
19	18	21.992	0.15	0.15	0.95	0.14	0.14	5.0	5.0	12.0	1.71	2.77	3.66	10	1.36	330.20	330.50	331.01	331.09	336.00	336.00	B4.1B-B4.1C	
20	18	53.092	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	1.96	4.12	4.03	10	3.01	330.20	331.80	331.01	332.43	336.00	336.00	B4.1B-B4.1BB	
Project File: 14-3686 Storm Line B-4.stm																Number of lines: 20				Run Date: 6/1/2016			
NOTES:Intensity = 102.31 / (Inlet time + 9.60) ^ 0.80; Return period =Yrs. 50 ; c = cir e = ellip b = box																							

Inlet Report

Line No	Inlet ID	Q = CIA (cfs)	Q carry (cfs)	Q capt (cfs)	Q Byp (cfs)	Junc Type	Curb Inlet		Grate Inlet			Gutter							Inlet			Byp Line No
							Ht (in)	L (ft)	Area (sqft)	L (ft)	W (ft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)	Depr (in)	
1	B1	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
2	B2	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
3	B3	2.96	0.00	2.96	0.00	Curb	4.0	13.00	0.00	0.00	0.00	Sag	1.50	0.060	0.020	0.000	0.18	5.96	0.18	5.96	0.0	Off
4	B4	1.94	0.00	1.94	0.00	DrGrt	0.0	0.00	6.00	3.00	2.00	Sag	1.50	0.020	0.020	0.000	0.16	18.08	0.16	18.08	0.0	Off
5	B5	4.78	0.00	4.78	0.00	DrGrt	0.0	0.00	6.00	3.00	2.00	Sag	1.50	0.020	0.020	0.000	0.29	31.39	0.29	31.39	0.0	Off
6	B6	4.56	0.00	4.56	0.00	DrGrt	0.0	0.00	6.00	3.00	2.00	Sag	1.50	0.020	0.020	0.000	0.28	30.45	0.28	30.45	0.0	Off
7	B7	5.24	0.00	5.24	0.00	DrGrt	0.0	0.00	6.00	3.00	2.00	Sag	1.50	0.020	0.020	0.000	0.31	33.23	0.31	33.23	0.0	Off
8	B8	5.24	0.00	5.24	0.00	DrGrt	0.0	0.00	12.00	6.00	4.00	Sag	1.50	0.020	0.020	0.000	0.20	23.67	0.20	23.67	0.0	Off
9	B9	9.91	0.00	9.91	0.00	DrGrt	0.0	0.00	12.00	6.00	4.00	Sag	1.50	0.020	0.020	0.000	0.30	34.09	0.30	34.09	0.0	Off
10	B10	9.34	0.00	9.34	0.00	DrGrt	0.0	0.00	12.00	6.00	4.00	Sag	1.50	0.020	0.020	0.000	0.29	32.92	0.29	32.92	0.0	Off
11	B11	8.66	0.00	8.66	0.00	DrGrt	0.0	0.00	12.00	6.00	4.00	Sag	1.50	0.020	0.020	0.000	0.27	31.49	0.27	31.49	0.0	Off
12	B12	8.54	0.00	8.54	0.00	DrGrt	0.0	0.00	12.00	6.00	4.00	Sag	1.50	0.020	0.020	0.000	0.27	31.25	0.27	31.25	0.0	Off
13	B13	8.32	0.00	8.32	0.00	DrGrt	0.0	0.00	12.00	6.00	4.00	Sag	1.50	0.020	0.020	0.000	0.27	30.77	0.27	30.77	0.0	Off
14	B14	7.29	0.00	7.29	0.00	DrGrt	0.0	0.00	12.00	6.00	4.00	Sag	1.50	0.020	0.020	0.000	0.25	28.52	0.25	28.52	0.0	Off
15	B15	5.92	0.00	5.92	0.00	DrGrt	0.0	0.00	12.00	6.00	4.00	Sag	1.50	0.020	0.020	0.000	0.21	25.35	0.21	25.35	0.0	Off
16	B3.1	1.59	0.00	1.59	0.00	Curb	4.0	13.00	0.00	0.00	0.00	Sag	1.50	0.060	0.020	0.000	0.12	2.93	0.12	2.93	0.0	Off
17	B4.1	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
18	B4.1B	0.00	0.00	0.00	0.00	None	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
19	B4.1C	1.71	0.00	1.71	0.00	DrGrt	0.0	0.00	2.00	1.00	2.00	Sag	1.50	0.020	0.020	0.000	0.21	22.79	0.21	22.79	0.0	Off
20	B2.1BB	1.96*	0.00	0.00	1.96	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off

Project File: 14-3686 Storm Line B-4.stm

Number of lines: 20

Run Date: 6/1/2016

NOTES: Inlet N-Values = 0.016; Intensity = 102.31 / (Inlet time + 9.60) ^ 0.80; Return period = 50 Yrs. ; * Indicates Known Q added. All curb inlets are throat.

Hydraulic Grade Line Computations

Line	Size	Q	Downstream								Len	Upstream								Check		JL coeff	Minor loss
			Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)		Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)	Ave Sf (%)	Enrgy loss (ft)		
	(in)	(cfs)									(ft)											(K)	(ft)
1	42	78.07	322.80	325.41	2.61	7.71	10.13	1.43	326.84	0.000	32.080	323.00	325.76	2.76**	8.14	9.59	1.43	327.19	0.000	0.000	n/a	0.15	0.21
2	42	78.18	323.00	325.76	2.76	8.14	9.60	1.43	327.19	0.000	14.100	323.20	325.96	2.76**	8.14	9.60	1.43	327.39	0.000	0.000	n/a	0.43	0.62
3	42	78.35	323.20	325.96	2.76	8.14	9.62	1.44	327.40	0.000	20.570	323.40	326.16	2.76**	8.15	9.61	1.44	327.60	0.000	0.000	n/a	1.50	n/a
4	42	74.71	323.40	326.16	2.76	7.97	9.16	1.36	327.53	0.000	50.990	323.80	326.50	2.70**	7.97	9.37	1.36	327.87	0.000	0.000	n/a	1.50	n/a
5	42	70.25	323.80	326.50	2.70	7.74	8.81	1.28	327.78	0.000	91.110	324.50	327.12	2.62**	7.74	9.08	1.28	328.41	0.000	0.000	n/a	1.50	n/a
6	42	66.48	324.50	327.12	2.62	7.52	8.59	1.21	328.34	0.000	66.000	325.00	327.55	2.55**	7.52	8.84	1.21	328.77	0.000	0.000	n/a	0.50	n/a
7	42	62.89	325.00	327.55	2.55	7.30	8.36	1.15	328.71	0.000	66.000	325.50	327.98	2.48**	7.30	8.61	1.15	329.14	0.000	0.000	n/a	1.07	n/a
8	42	58.80	325.50	327.98	2.48	7.03	8.05	1.09	329.07	0.000	87.440	326.20	328.60	2.40**	7.03	8.36	1.09	329.69	0.000	0.000	n/a	1.07	1.16
9	36	54.34	326.20	328.60	2.40	6.04	8.96	1.26	329.86	0.000	66.000	326.70	329.09	2.39**	6.04	8.99	1.26	330.35	0.000	0.000	n/a	0.50	0.63
10	30	45.33	327.20	329.72	2.50	4.91	9.24	1.33	331.05	1.042	66.000	327.70	330.41	2.50	4.91	9.24	1.33	331.73	1.041	1.041	0.687	0.50	0.66
11	30	36.81	327.70	331.07	2.50	4.91	7.50	0.87	331.95	0.687	66.000	328.20	331.52	2.50	4.91	7.50	0.87	332.40	0.686	0.686	0.453	0.50	0.44
12	30	28.86	328.20	331.96	2.50	4.91	5.88	0.54	332.50	0.422	66.000	328.70	332.24	2.50	4.91	5.88	0.54	332.78	0.422	0.422	0.279	0.50	0.27
13	24	20.84	329.20	332.51	2.00	3.14	6.64	0.68	333.19	0.724	66.000	329.70	332.99	2.00	3.14	6.63	0.68	333.67	0.724	0.724	0.478	0.50	0.34
14	24	12.98	329.70	333.33	2.00	3.14	4.13	0.27	333.59	0.281	66.000	330.20	333.51	2.00	3.14	4.13	0.27	333.78	0.280	0.281	0.185	0.50	0.13
15	18	5.92	330.70	333.65	1.50	1.77	3.35	0.17	333.82	0.271	68.000	332.50	333.79	1.29	1.62	3.66	0.21	334.00	0.251	0.261	0.178	1.00	0.21
16	15	1.59	330.00	330.40	0.40*	0.34	4.69	0.19	330.59	0.000	57.430	330.60	331.10	0.50**	0.46	3.48	0.19	331.29	0.000	0.000	n/a	1.00	n/a
17	15	3.64	328.70	329.33	0.63*	0.62	5.82	0.33	329.66	0.000	29.050	329.00	329.77	0.77**	0.79	4.59	0.33	330.10	0.000	0.000	n/a	1.00	n/a
18	12	3.66	329.50	330.27	0.77*	0.65	5.65	0.44	330.71	0.000	68.292	330.20	331.01	0.81**	0.69	5.34	0.44	331.46	0.000	0.000	n/a	1.00	0.44
19	10	1.71	330.20	331.01	0.81	0.41	3.15	0.27	331.29	0.000	21.992	330.50	331.09 j	0.59**	0.41	4.17	0.27	331.36	0.000	0.000	n/a	1.00	0.27
20	10	1.96	330.20	331.01	0.81	0.44	3.61	0.31	331.32	0.000	53.092	331.80	332.43 j	0.63**	0.44	4.45	0.31	332.74	0.000	0.000	n/a	1.00	n/a
Project File: 14-3686 Storm Line B-4.stm														Number of lines: 20					Run Date: 6/1/2016				
Notes: * depth assumed.; ** Critical depth.; j-Line contains hyd. jump. ; c = cir e = ellip b = box																							

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (l)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID	
Line	To Line		Incr	Total		Incr	Total	Inlet	Syst					Size	Slope	Dn	Up	Dn	Up	Dn	Up		
		(ft)	(ac)	(ac)	(C)			(min)	(min)	(in/hr)	(cfs)	(cfs)	(ft/s)	(in)	(%)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)		
1	End	31.790	0.00	2.47	0.00	0.00	2.35	0.0	13.3	7.5	17.68	27.48	7.23	24	1.26	321.60	322.00	323.00	323.51	337.05	337.12	C0-C1	
2	1	22.070	0.00	2.47	0.00	0.00	2.35	0.0	13.3	7.6	17.72	28.57	6.94	24	1.36	322.00	322.30	323.51	323.82	337.12	337.10	C1-C2	
3	2	55.350	0.30	1.88	0.95	0.29	1.79	5.0	13.1	7.6	13.57	25.51	5.73	24	1.08	322.30	322.90	323.82	324.23	337.10	337.00	C2-C3	
4	3	178.640	0.08	0.82	0.95	0.08	0.78	5.0	12.6	7.7	6.03	7.02	6.10	15	1.01	323.40	325.20	324.29	326.19	337.00	338.60	C3-C4	
5	4	92.840	0.00	0.32	0.00	0.00	0.30	0.0	11.9	7.9	2.41	7.26	4.64	15	1.08	326.50	327.50	327.00	328.12	338.60	338.43	C4-C5	
6	5	381.480	0.00	0.32	0.00	0.00	0.30	0.0	9.4	8.8	2.68	7.07	4.25	15	1.02	327.50	331.40	328.12	332.06	338.43	341.38	C5-C6	
7	6	77.610	0.03	0.22	0.95	0.03	0.21	5.0	8.6	9.1	1.90	7.10	3.29	15	1.03	331.40	332.20	332.06	332.75	341.38	341.00	C6-C7	
8	7	39.000	0.06	0.06	0.95	0.06	0.06	5.0	5.0	11.0	0.63	7.92	3.26	15	1.28	335.50	336.00	335.74	336.31	341.00	341.00	C7-C7.1	
9	4	37.090	0.00	0.15	0.00	0.00	0.14	0.0	5.0	11.0	1.57	0.21	18.00	4	1.08	334.70	335.10	335.03	356.60	338.60	339.22	C4.1-C4.1A	
10	9	19.710	0.15	0.15	0.95	0.14	0.14	5.0	5.0	11.0	1.57	0.21	18.02	4	1.01	335.30	335.50	357.36	368.85	339.22	339.50	C4.1A-C4.1B	
11	3	76.830	0.37	0.76	0.95	0.35	0.72	5.0	6.8	10.0	7.19	9.44	7.45	15	1.82	332.40	333.80	333.22	334.87	337.00	338.80	C3-C3.1	
12	11	27.450	0.28	0.39	0.95	0.27	0.37	5.0	6.7	10.0	3.72	11.17	3.97	15	2.55	333.80	334.50	334.87	335.28	338.80	339.50	C3.1-C3.2	
13	12	93.560	0.11	0.11	0.95	0.10	0.10	5.0	5.0	11.0	1.15	7.23	2.30	15	1.07	334.50	335.50	335.28	335.92	339.50	340.50	C3.2-C3.3	
14	6	39.760	0.10	0.10	0.95	0.10	0.10	5.0	5.0	11.0	1.05	7.84	3.76	15	1.26	334.50	335.00	334.81	335.40	341.38	339.00	C6-C6.1	
15	7	139.110	0.08	0.13	0.95	0.08	0.12	5.0	6.5	10.1	1.25	7.02	2.82	15	1.01	332.20	333.60	332.75	334.04	341.00	339.00	C7-C8	
16	15	39.000	0.05	0.05	0.95	0.05	0.05	5.0	5.0	11.0	0.52	7.08	1.94	15	1.03	333.60	334.00	334.04	334.28	339.00	339.00	C8-C9	
17	4	67.710	0.27	0.27	0.95	0.26	0.26	5.0	5.0	11.0	2.83	7.11	4.82	15	1.03	333.30	334.00	333.85	334.68	338.60	339.05	C4-C4.1	
18	2	57.880	0.30	0.59	0.95	0.29	0.56	5.0	5.4	10.8	6.04	7.12	6.14	15	1.04	329.80	330.40	330.68	331.39	337.10	336.00	C2-C2.1	
19	18	59.080	0.29	0.29	0.95	0.28	0.28	5.0	5.0	11.0	3.04	7.05	3.60	15	1.02	330.40	331.00	331.39	331.70	336.00	336.00	C2.1-C2.2	
Project File: 14-3686 Storm Line C-4.stm																Number of lines: 19				Run Date: 6/1/2016			
NOTES:Intensity = 54.79 / (Inlet time + 5.90) ^ 0.67; Return period =Yrs. 25 ; c = cir e = ellip b = box																							

Inlet Report

Line No	Inlet ID	Q = CIA	Q carry	Q capt	Q Byp	Junc Type	Curb Inlet		Grate Inlet			Gutter							Inlet			Byp Line No
		(cfs)	(cfs)	(cfs)	(cfs)		Ht (in)	L (ft)	Area (sqft)	L (ft)	W (ft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)	Depr (in)	
1	C1	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
2	C2	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
3	C3	3.14	0.00	1.88	1.26	Comb	4.0	4.00	0.00	2.00	2.00	0.020	1.50	0.060	0.020	0.013	0.23	8.61	0.23	8.61	0.0	Off
4	C4	0.84	0.00	0.74	0.09	Comb	4.0	4.00	0.00	2.00	2.00	0.020	1.50	0.060	0.020	0.013	0.16	4.76	0.16	4.76	0.0	Off
5	C5	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
6	C6	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
7	C7	0.31	0.00	0.31	0.00	Comb	4.0	4.00	0.00	2.00	2.00	0.020	1.50	0.060	0.020	0.013	0.11	2.71	0.11	2.71	0.0	Off
8	C7.1	0.63	0.00	0.60	0.03	Comb	4.0	4.00	0.00	2.00	2.00	0.020	1.50	0.060	0.020	0.013	0.14	4.11	0.14	4.11	0.0	Off
9	C4.1A	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
10	C4.1B	1.57	0.00	1.57	0.00	DrGrt	0.0	0.00	6.00	3.00	2.00	Sag	1.50	0.020	0.020	0.000	0.14	15.99	0.14	15.99	0.0	Off
11	C3.1	3.88	0.00	3.88	0.00	Curb	4.0	12.00	0.00	0.00	0.00	Sag	1.50	0.060	0.020	0.000	0.23	8.31	0.23	8.31	0.0	Off
12	C3.2	2.94	0.00	2.94	0.00	Curb	4.0	12.00	0.00	0.00	0.00	Sag	1.50	0.060	0.020	0.000	0.19	6.39	0.19	6.39	0.0	Off
13	C3.3	1.15	0.00	1.15	0.00	Curb	4.0	12.00	0.00	0.00	0.00	Sag	1.50	0.060	0.020	0.000	0.10	2.04	0.10	2.04	0.0	Off
14	C6.1	1.05	0.00	1.05	0.00	DrGrt	0.0	0.00	6.00	3.00	2.00	Sag	1.50	0.020	0.020	0.000	0.11	12.68	0.11	12.68	0.0	Off
15	C8	0.84	0.00	0.74	0.09	Comb	4.0	4.00	0.00	2.00	2.00	0.020	1.50	0.060	0.020	0.013	0.16	4.76	0.16	4.76	0.0	Off
16	C9	0.52	0.00	0.51	0.01	Comb	4.0	4.00	0.00	2.00	2.00	0.020	1.50	0.060	0.020	0.013	0.14	3.76	0.14	3.76	0.0	Off
17	C4.1	2.83	0.00	1.75	1.08	Comb	4.0	4.00	0.00	2.00	2.00	0.020	1.50	0.060	0.020	0.013	0.23	8.26	0.23	8.26	0.0	Off
18	C2.1	3.14	0.00	3.14	0.00	Curb	4.0	13.00	0.00	0.00	0.00	Sag	1.50	0.060	0.020	0.000	0.19	6.32	0.19	6.32	0.0	Off
19	C2.2	3.04	0.00	3.04	0.00	Curb	4.0	13.00	0.00	0.00	0.00	Sag	1.50	0.060	0.020	0.000	0.18	6.12	0.18	6.12	0.0	Off
Project File: 14-3686 Storm Line C-4.stm														Number of lines: 19					Run Date: 6/1/2016			
NOTES: Inlet N-Values = 0.016; Intensity = 54.79 / (Inlet time + 5.90) ^ 0.67; Return period = 25 Yrs. ; * Indicates Known Q added. All curb inlets are throat.																						

Hydraulic Grade Line Computations

Line	Size (in)	Q (cfs)	Downstream								Len (ft)	Upstream								Check		JL coeff (K)	Minor loss (ft)
			Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)		Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)	Ave Sf (%)	Enrgy loss (ft)		
1	24	17.68	321.60	323.00	1.40	2.35	7.53	0.75	323.75	0.000	31.790	322.00	323.51	1.51**	2.55	6.93	0.75	324.26	0.000	0.000	n/a	0.15	n/a
2	24	17.72	322.00	323.51	1.51	2.55	6.94	0.75	324.26	0.000	22.070	322.30	323.82	1.52**	2.55	6.94	0.75	324.56	0.000	0.000	n/a	0.98	n/a
3	24	13.57	322.30	323.82	1.52	2.21	5.32	0.59	324.40	0.000	55.350	322.90	324.23 j	1.33**	2.21	6.14	0.59	324.81	0.000	0.000	n/a	1.50	n/a
4	15	6.03	323.40	324.29	0.89*	0.94	6.43	0.52	324.81	0.000	178.640	325.20	326.19	0.99**	1.04	5.78	0.52	326.71	0.000	0.000	n/a	1.87	0.97
5	15	2.41	326.50	327.00	0.50*	0.45	5.32	0.24	327.24	0.000	92.840	327.50	328.12	0.62**	0.61	3.96	0.24	328.37	0.000	0.000	n/a	0.58	0.14
6	15	2.68	327.50	328.12	0.62	0.61	4.39	0.26	328.38	0.000	381.480	331.40	332.06	0.66**	0.65	4.11	0.26	332.32	0.000	0.000	n/a	1.00	0.26
7	15	1.90	331.40	332.06	0.66	0.52	2.92	0.21	332.27	0.000	77.610	332.20	332.75 j	0.55**	0.52	3.67	0.21	332.96	0.000	0.000	n/a	1.50	n/a
8	15	0.63	335.50	335.74	0.24*	0.16	3.85	0.11	335.85	0.000	39.000	336.00	336.31	0.31**	0.24	2.66	0.11	336.42	0.000	0.000	n/a	1.00	n/a
9	4	1.57	334.70	335.03	0.33*	0.09	18.00	5.04	340.07	58.158	37.090	335.10	356.60	0.33**	0.09	18.00	5.04	361.64	58.136	58.147	21.57	0.15	0.76
10	4	1.57	335.30	357.36	0.33	0.09	18.02	5.05	362.41	58.289	19.710	335.50	368.85	0.33**	0.09	18.02	5.05	373.89	58.267	58.278	11.49	1.00	5.05
11	15	7.19	332.40	333.22	0.82*	0.85	8.47	0.64	333.86	0.000	76.830	333.80	334.87	1.07**	1.12	6.42	0.64	335.51	0.000	0.000	n/a	0.50	0.32
12	15	3.72	333.80	334.87	1.07	0.80	3.32	0.33	335.20	0.000	27.450	334.50	335.28 j	0.78**	0.80	4.63	0.33	335.61	0.000	0.000	n/a	1.27	n/a
13	15	1.15	334.50	335.28	0.78	0.37	1.44	0.16	335.43	0.000	93.560	335.50	335.92 j	0.42**	0.37	3.16	0.16	336.08	0.000	0.000	n/a	1.00	0.16
14	15	1.05	334.50	334.81	0.31*	0.24	4.44	0.15	334.96	0.000	39.760	335.00	335.40	0.40**	0.34	3.07	0.15	335.55	0.000	0.000	n/a	1.00	n/a
15	15	1.25	332.20	332.75	0.55	0.39	2.41	0.16	332.91	0.000	139.110	333.60	334.04 j	0.44**	0.39	3.23	0.16	334.20	0.000	0.000	n/a	1.50	0.24
16	15	0.52	333.60	334.04	0.44	0.21	1.36	0.10	334.14	0.000	39.000	334.00	334.28 j	0.28**	0.21	2.53	0.10	334.38	0.000	0.000	n/a	1.00	0.10
17	15	2.83	333.30	333.85	0.55*	0.52	5.46	0.27	334.12	0.000	67.710	334.00	334.68	0.68**	0.68	4.19	0.27	334.95	0.000	0.000	n/a	1.00	n/a
18	15	6.04	329.80	330.68	0.88*	0.93	6.51	0.52	331.20	0.000	57.880	330.40	331.39	0.99**	1.04	5.78	0.52	331.91	0.000	0.000	n/a	1.50	n/a
19	15	3.04	330.40	331.39	0.99	0.71	2.91	0.29	331.68	0.000	59.080	331.00	331.70 j	0.70**	0.71	4.29	0.29	331.99	0.000	0.000	n/a	1.00	0.29

Project File: 14-3686 Storm Line C-4.stm

Number of lines: 19

Run Date: 6/1/2016

Notes: * depth assumed.; ** Critical depth.; j-Line contains hyd. jump. ; c = cir e = ellip b = box

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID	
Line	To Line		Incr	Total		Incr	Total	Inlet	Syst					Size	Slope	Dn	Up	Dn	Up	Dn	Up		
		(ft)	(ac)	(ac)	(C)			(min)	(min)	(in/hr)	(cfs)	(cfs)	(ft/s)	(in)	(%)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)		
1	End	31.790	0.00	2.47	0.00	0.00	2.35	0.0	12.6	8.6	20.10	27.48	7.99	24	1.26	321.60	322.00	323.00	323.61	337.05	337.12	C0-C1	
2	1	22.070	0.00	2.47	0.00	0.00	2.35	0.0	12.6	8.6	20.14	28.57	7.43	24	1.36	322.00	322.30	323.61	323.91	337.12	337.10	C1-C2	
3	2	55.350	0.30	1.88	0.95	0.29	1.79	5.0	12.4	8.6	15.42	25.51	6.09	24	1.08	322.30	322.90	323.91	324.31	337.10	337.00	C2-C3	
4	3	178.640	0.08	0.82	0.95	0.08	0.78	5.0	11.9	8.8	6.85	7.02	6.37	15	1.01	323.40	325.20	324.40	326.25	337.00	338.60	C3-C4	
5	4	92.840	0.00	0.32	0.00	0.00	0.30	0.0	11.3	9.0	2.73	7.26	4.82	15	1.08	326.50	327.50	327.03	328.16	338.60	338.43	C4-C5	
6	5	381.480	0.00	0.32	0.00	0.00	0.30	0.0	9.0	9.9	3.00	7.07	4.41	15	1.02	327.50	331.40	328.16	332.10	338.43	341.38	C5-C6	
7	6	77.610	0.03	0.22	0.95	0.03	0.21	5.0	8.3	10.2	2.13	7.10	3.41	15	1.03	331.40	332.20	332.10	332.78	341.38	341.00	C6-C7	
8	7	39.000	0.06	0.06	0.95	0.06	0.06	5.0	5.0	12.0	0.68	7.92	3.34	15	1.28	335.50	336.00	335.75	336.32	341.00	341.00	C7-C7.1	
9	4	37.090	0.00	0.15	0.00	0.00	0.14	0.0	5.0	12.0	1.71	0.21	19.57	4	1.08	334.70	335.10	335.03	360.52	338.60	339.22	C4.1-C4.1A	
10	9	19.710	0.15	0.15	0.95	0.14	0.14	5.0	5.0	12.0	1.71	0.21	19.58	4	1.01	335.30	335.50	361.41	374.98	339.22	339.50	C4.1A-C4.1B	
11	3	76.830	0.37	0.76	0.95	0.35	0.72	5.0	6.7	11.0	7.95	9.44	7.76	15	1.82	332.40	333.80	333.28	334.91	337.00	338.80	C3-C3.1	
12	11	27.450	0.28	0.39	0.95	0.27	0.37	5.0	6.5	11.1	4.10	11.17	4.19	15	2.55	333.80	334.50	334.91	335.32	338.80	339.50	C3.1-C3.2	
13	12	93.560	0.11	0.11	0.95	0.10	0.10	5.0	5.0	12.0	1.25	7.23	2.35	15	1.07	334.50	335.50	335.32	335.94	339.50	340.50	C3.2-C3.3	
14	6	39.760	0.10	0.10	0.95	0.10	0.10	5.0	5.0	12.0	1.14	7.84	3.85	15	1.26	334.50	335.00	334.82	335.42	341.38	339.00	C6-C6.1	
15	7	139.110	0.08	0.13	0.95	0.08	0.12	5.0	6.4	11.1	1.38	7.02	2.90	15	1.01	332.20	333.60	332.78	334.06	341.00	339.00	C7-C8	
16	15	39.000	0.05	0.05	0.95	0.05	0.05	5.0	5.0	12.0	0.57	7.08	1.98	15	1.03	333.60	334.00	334.06	334.29	339.00	339.00	C8-C9	
17	4	67.710	0.27	0.27	0.95	0.26	0.26	5.0	5.0	12.0	3.08	7.11	4.95	15	1.03	333.30	334.00	333.87	334.71	338.60	339.05	C4-C4.1	
18	2	57.880	0.30	0.59	0.95	0.29	0.56	5.0	5.4	11.8	6.59	7.12	6.33	15	1.04	329.80	330.40	330.75	331.43	337.10	336.00	C2-C2.1	
19	18	59.080	0.29	0.29	0.95	0.28	0.28	5.0	5.0	12.0	3.30	7.05	3.74	15	1.02	330.40	331.00	331.43	331.73	336.00	336.00	C2.1-C2.2	
Project File: 14-3686 Storm Line C-4.stm																Number of lines: 19				Run Date: 6/1/2016			
NOTES:Intensity = 102.31 / (Inlet time + 9.60) ^ 0.80; Return period =Yrs. 50 ; c = cir e = ellip b = box																							

Inlet Report

Line No	Inlet ID	Q = CIA	Q carry	Q capt	Q Byp	Junc Type	Curb Inlet		Grate Inlet			Gutter							Inlet			Byp Line No
		(cfs)	(cfs)	(cfs)	(cfs)		Ht (in)	L (ft)	Area (sqft)	L (ft)	W (ft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)	Depr (in)	
1	C1	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
2	C2	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
3	C3	3.42	0.00	1.98	1.44	Comb	4.0	4.00	0.00	2.00	2.00	0.020	1.50	0.060	0.020	0.013	0.24	8.91	0.24	8.91	0.0	Off
4	C4	0.91	0.00	0.79	0.12	Comb	4.0	4.00	0.00	2.00	2.00	0.020	1.50	0.060	0.020	0.013	0.16	4.96	0.16	4.96	0.0	Off
5	C5	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
6	C6	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
7	C7	0.34	0.00	0.34	0.00	Comb	4.0	4.00	0.00	2.00	2.00	0.020	1.50	0.060	0.020	0.013	0.12	2.86	0.12	2.86	0.0	Off
8	C7.1	0.68	0.00	0.64	0.05	Comb	4.0	4.00	0.00	2.00	2.00	0.020	1.50	0.060	0.020	0.013	0.15	4.31	0.15	4.31	0.0	Off
9	C4.1A	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
10	C4.1B	1.71	0.00	1.71	0.00	DrGrt	0.0	0.00	6.00	3.00	2.00	Sag	1.50	0.020	0.020	0.000	0.15	16.79	0.15	16.79	0.0	Off
11	C3.1	4.22	0.00	4.22	0.00	Curb	4.0	12.00	0.00	0.00	0.00	Sag	1.50	0.060	0.020	0.000	0.24	8.96	0.24	8.96	0.0	Off
12	C3.2	3.19	0.00	3.19	0.00	Curb	4.0	12.00	0.00	0.00	0.00	Sag	1.50	0.060	0.020	0.000	0.20	6.93	0.20	6.93	0.0	Off
13	C3.3	1.25	0.00	1.25	0.00	Curb	4.0	12.00	0.00	0.00	0.00	Sag	1.50	0.060	0.020	0.000	0.11	2.32	0.11	2.32	0.0	Off
14	C6.1	1.14	0.00	1.14	0.00	DrGrt	0.0	0.00	6.00	3.00	2.00	Sag	1.50	0.020	0.020	0.000	0.11	13.29	0.11	13.29	0.0	Off
15	C8	0.91	0.00	0.79	0.12	Comb	4.0	4.00	0.00	2.00	2.00	0.020	1.50	0.060	0.020	0.013	0.16	4.96	0.16	4.96	0.0	Off
16	C9	0.57	0.00	0.55	0.02	Comb	4.0	4.00	0.00	2.00	2.00	0.020	1.50	0.060	0.020	0.013	0.14	3.91	0.14	3.91	0.0	Off
17	C4.1	3.08	0.00	1.85	1.23	Comb	4.0	4.00	0.00	2.00	2.00	0.020	1.50	0.060	0.020	0.013	0.23	8.51	0.23	8.51	0.0	Off
18	C2.1	3.42	0.00	3.42	0.00	Curb	4.0	13.00	0.00	0.00	0.00	Sag	1.50	0.060	0.020	0.000	0.20	6.86	0.20	6.86	0.0	Off
19	C2.2	3.30	0.00	3.30	0.00	Curb	4.0	13.00	0.00	0.00	0.00	Sag	1.50	0.060	0.020	0.000	0.19	6.64	0.19	6.64	0.0	Off

Project File: 14-3686 Storm Line C-4.stm

Number of lines: 19

Run Date: 6/1/2016

NOTES: Inlet N-Values = 0.016; Intensity = 102.31 / (Inlet time + 9.60) ^ 0.80; Return period = 50 Yrs. ; * Indicates Known Q added. All curb inlets are throat.

Hydraulic Grade Line Computations

Line	Size (in)	Q (cfs)	Downstream								Len (ft)	Upstream								Check		JL coeff (K)	Minor loss (ft)
			Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)		Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)	Ave Sf (%)	Enrgy loss (ft)		
1	24	20.10	321.60	323.00	1.40	2.35	8.56	0.86	323.86	0.000	31.790	322.00	323.61	1.61**	2.71	7.42	0.86	324.47	0.000	0.000	n/a	0.15	n/a
2	24	20.14	322.00	323.61	1.61	2.71	7.44	0.86	324.47	0.000	22.070	322.30	323.91	1.61**	2.71	7.43	0.86	324.77	0.000	0.000	n/a	0.98	n/a
3	24	15.42	322.30	323.91	1.61	2.38	5.69	0.66	324.56	0.000	55.350	322.90	324.31 j	1.41**	2.38	6.49	0.66	324.97	0.000	0.000	n/a	1.50	0.98
4	15	6.85	323.40	324.40	1.00*	1.05	6.52	0.60	325.00	0.000	178.640	325.20	326.25	1.05**	1.10	6.22	0.60	326.85	0.000	0.000	n/a	1.87	n/a
5	15	2.73	326.50	327.03	0.53*	0.50	5.50	0.27	327.30	0.000	92.840	327.50	328.16	0.66**	0.66	4.14	0.27	328.43	0.000	0.000	n/a	0.58	0.15
6	15	3.00	327.50	328.16	0.66	0.66	4.54	0.28	328.45	0.000	381.480	331.40	332.10	0.70**	0.70	4.27	0.28	332.38	0.000	0.000	n/a	1.00	n/a
7	15	2.13	331.40	332.10	0.70	0.56	3.03	0.22	332.32	0.000	77.610	332.20	332.78 j	0.58**	0.56	3.80	0.22	333.01	0.000	0.000	n/a	1.50	n/a
8	15	0.68	335.50	335.75	0.25*	0.17	3.95	0.12	335.86	0.000	39.000	336.00	336.32	0.32**	0.25	2.72	0.12	336.44	0.000	0.000	n/a	1.00	0.12
9	4	1.71	334.70	335.03	0.33*	0.09	19.57	5.95	340.99	68.715	37.090	335.10	360.52	0.33**	0.09	19.56	5.95	366.47	68.689	68.702	25.48	0.15	0.89
10	4	1.71	335.30	361.41	0.33	0.09	19.59	5.96	367.37	68.841	19.710	335.50	374.98	0.33**	0.09	19.58	5.96	380.94	68.815	68.828	13.57	1.00	5.96
11	15	7.95	332.40	333.28	0.88*	0.92	8.62	0.74	334.02	0.000	76.830	333.80	334.91	1.11**	1.15	6.89	0.74	335.65	0.000	0.000	n/a	0.50	0.37
12	15	4.10	333.80	334.91	1.11	0.85	3.56	0.36	335.27	0.000	27.450	334.50	335.32 j	0.82**	0.85	4.81	0.36	335.68	0.000	0.000	n/a	1.27	0.46
13	15	1.25	334.50	335.32	0.82	0.39	1.47	0.16	335.48	0.000	93.560	335.50	335.94 j	0.44**	0.39	3.24	0.16	336.10	0.000	0.000	n/a	1.00	n/a
14	15	1.14	334.50	334.82	0.32*	0.25	4.55	0.15	334.98	0.000	39.760	335.00	335.42	0.42**	0.36	3.14	0.15	335.57	0.000	0.000	n/a	1.00	n/a
15	15	1.38	332.20	332.78	0.58	0.41	2.46	0.17	332.95	0.000	139.110	333.60	334.06 j	0.46**	0.41	3.33	0.17	334.24	0.000	0.000	n/a	1.50	n/a
16	15	0.57	333.60	334.06	0.46	0.22	1.38	0.10	334.17	0.000	39.000	334.00	334.29 j	0.29**	0.22	2.59	0.10	334.40	0.000	0.000	n/a	1.00	n/a
17	15	3.08	333.30	333.87	0.57*	0.55	5.58	0.29	334.16	0.000	67.710	334.00	334.71	0.71**	0.71	4.31	0.29	334.99	0.000	0.000	n/a	1.00	0.29
18	15	6.59	329.80	330.75	0.95*	1.00	6.59	0.57	331.32	0.000	57.880	330.40	331.43	1.03**	1.08	6.08	0.57	332.01	0.000	0.000	n/a	1.50	0.86
19	15	3.30	330.40	331.43	1.03	0.75	3.05	0.30	331.74	0.000	59.080	331.00	331.73 j	0.73**	0.75	4.42	0.30	332.04	0.000	0.000	n/a	1.00	0.30

Project File: 14-3686 Storm Line C-4.stm

Number of lines: 19

Run Date: 6/1/2016

Notes: * depth assumed.; ** Critical depth.; j-Line contains hyd. jump. ; c = cir e = ellip b = box

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID	
Line	To Line		Incr	Total		Incr	Total	Inlet	Syst					Size	Slope	Dn	Up	Dn	Up	Dn	Up		
		(ft)	(ac)	(ac)	(C)			(min)	(min)	(in/hr)	(cfs)	(cfs)	(ft/s)	(in)	(%)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)		
1	End	103.180	0.00	0.00	0.00	0.00	0.00	0.0	1.2	0.0	26.47	41.49	8.08	30	0.87	322.50	323.40	323.95	325.15	334.87	338.38	D3-D4	
2	1	44.353	0.00	0.00	0.00	0.00	0.00	0.0	1.1	0.0	23.98	40.30	9.94	24	2.71	323.90	325.10	325.15	326.83	338.38	338.39	D4-D5	
3	2	29.481	0.00	0.00	0.00	0.00	0.00	0.0	1.0	0.0	21.18	40.36	7.49	24	2.71	325.10	325.90	326.83	327.55	338.39	338.40	D5-D6	
4	3	30.000	0.00	0.00	0.00	0.00	0.00	0.0	0.9	0.0	18.92	40.01	7.01	24	2.67	325.90	326.70	327.55	328.26	338.40	338.35	D6-D7	
5	4	69.035	0.00	0.00	0.00	0.00	0.00	0.0	0.7	0.0	15.16	39.57	6.10	24	2.61	326.70	328.50	328.26	329.90	338.35	338.18	D7-D8	
6	5	39.965	0.00	0.00	0.00	0.00	0.00	0.0	0.6	0.0	11.02	18.00	8.41	18	2.50	329.00	330.00	329.90	331.27	338.18	338.40	D8-D9	
7	6	74.249	0.00	0.00	0.00	0.00	0.00	0.0	0.3	0.0	6.68	11.19	7.28	15	2.56	330.50	332.40	331.27	333.44	338.40	338.25	D9-D10	
8	7	16.603	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	5.04	7.68	5.97	15	1.20	334.00	334.20	334.74	335.11	338.25	338.25	D10-D10.1	
9	6	16.239	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	4.34	7.76	5.71	15	1.23	334.00	334.20	334.67	335.04	338.40	338.25	D9-D9.1	
10	5	16.250	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	4.14	4.28	5.99	12	1.23	334.00	334.20	334.79	335.06	338.18	338.25	D8-D8.1	
11	4	16.610	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	3.76	4.23	5.76	12	1.20	334.00	334.20	334.73	335.02	338.35	338.25	D7-D7.1	
12	3	16.276	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	2.26	2.63	5.11	10	1.23	334.00	334.20	334.60	334.87	338.40	338.25	D6-D6.1	
13	2	16.283	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	2.80	4.28	5.22	12	1.23	334.00	334.20	334.59	334.92	338.39	335.41	D5-D5.1	
14	1	16.295	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	2.49	2.63	5.29	10	1.23	334.00	334.20	334.65	334.90	338.38	335.41	D4-D4.1	
15	7	46.242	0.00	0.00	0.00	0.00	0.00	0.0	0.1	0.0	1.64	2.47	4.25	10	1.08	332.90	333.40	333.44	333.97	338.25	338.25	D10-D11	
16	15	16.871	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	1.64	2.58	4.09	10	1.19	333.40	333.60	333.97	334.17	338.25	338.25	D11-D12	
17	End	91.520	0.00	0.00	0.00	0.00	0.00	0.0	1.0	0.0	9.72	26.32	10.09	18	5.35	324.50	329.40	325.13	330.60	331.85	338.08	D2-D2.1	
18	17	48.334	0.00	0.00	0.00	0.00	0.00	0.0	0.8	0.0	8.37	11.57	5.72	18	1.03	329.40	329.90	330.60	331.02	338.08	338.16	D2.1-D2.2	
19	18	55.500	0.00	0.00	0.00	0.00	0.00	0.0	0.6	0.0	6.36	7.27	5.72	15	1.08	329.90	330.50	331.02	331.52	338.16	338.25	D2.2-D2.3	
20	19	51.500	0.00	0.00	0.00	0.00	0.00	0.0	0.4	0.0	4.29	7.55	4.46	15	1.17	330.50	331.10	331.52	331.94	338.25	338.01	D2.3-D2.4	
21	20	51.000	0.00	0.00	0.00	0.00	0.00	0.0	0.2	0.0	1.89	2.57	4.76	10	1.18	332.60	333.20	333.13	333.82	338.01	338.01	D2.4-D2.5	
22	21	31.759	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	1.89	2.66	4.37	10	1.26	333.20	333.60	333.82	334.22	338.01	338.01	D2.5-D2.6	
Project File: 14-3686 Storm Line D-1.stm																Number of lines: 26				Run Date: 5/18/2016			
NOTES:Intensity = 54.79 / (Inlet time + 5.90) ^ 0.67; Return period =Yrs. 25 ; c = cir e = ellip b = box																							

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line		Incr	Total		Incr	Total	Inlet	Syst					Size	Slope	Dn	Up	Dn	Up	Dn	Up	
		(ft)	(ac)	(ac)	(C)			(min)	(min)	(in/hr)	(cfs)	(cfs)	(ft/s)	(in)	(%)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	
23	17	32.426	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	1.35	2.63	4.32	10	1.23	333.20	333.60	333.62	334.12	338.08	334.81	D2.1-D2.1A
24	20	32.426	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	2.40	2.63	5.22	10	1.23	332.10	332.50	332.72	333.19	338.01	338.01	D2.4-D2.4A
25	19	32.426	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	2.07	2.63	4.96	10	1.23	331.90	332.30	332.46	332.94	338.25	338.01	D2.3-D2.3A
26	18	32.426	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	2.01	2.63	4.91	10	1.23	331.90	332.30	332.45	332.94	338.16	338.01	D2.2-D2.2A
Project File: 14-3686 Storm Line D-1.stm																Number of lines: 26				Run Date: 5/18/2016		
NOTES:Intensity = 54.79 / (Inlet time + 5.90) ^ 0.67; Return period =Yrs. 25 ; c = cir e = ellip b = box																						

Hydraulic Grade Line Computations

Line	Size (in)	Q (cfs)	Downstream								Len (ft)	Upstream								Check		JL coeff (K)	Minor loss (ft)
			Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)		Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)	Ave Sf (%)	Enrgy loss (ft)		
1	30	26.47	322.50	323.95	1.45	2.96	8.96	0.81	324.76	0.000	103.180	323.40	325.15	1.75**	3.68	7.20	0.81	325.96	0.000	0.000	n/a	1.00	n/a
2	24	23.98	323.90	325.15	1.25	2.07	11.58	1.07	326.22	0.000	44.353	325.10	326.83	1.73**	2.89	8.29	1.07	327.90	0.000	0.000	n/a	1.00	1.07
3	24	21.18	325.10	326.83	1.73	2.77	7.32	0.91	327.74	0.000	29.481	325.90	327.55 j	1.65**	2.77	7.65	0.91	328.46	0.000	0.000	n/a	1.00	n/a
4	24	18.92	325.90	327.55	1.65	2.64	6.84	0.80	328.35	0.000	30.000	326.70	328.26 j	1.56**	2.64	7.18	0.80	329.07	0.000	0.000	n/a	1.00	0.80
5	24	15.16	326.70	328.26	1.56	2.35	5.75	0.65	328.91	0.000	69.035	328.50	329.90 j	1.40**	2.35	6.44	0.65	330.55	0.000	0.000	n/a	1.00	n/a
6	18	11.02	329.00	329.90	0.90	1.11	9.92	0.74	330.64	0.000	39.965	330.00	331.27	1.27**	1.60	6.91	0.74	332.01	0.000	0.000	n/a	1.00	0.74
7	15	6.68	330.50	331.27	0.77	0.79	8.42	0.58	331.85	0.000	74.249	332.40	333.44	1.04**	1.09	6.13	0.58	334.02	0.000	0.000	n/a	1.00	n/a
8	15	5.04	334.00	334.74	0.74*	0.76	6.67	0.43	335.17	0.000	16.603	334.20	335.11	0.91**	0.96	5.27	0.43	335.54	0.000	0.000	n/a	1.00	n/a
9	15	4.34	334.00	334.67	0.67*	0.67	6.50	0.38	335.05	0.000	16.239	334.20	335.04	0.84**	0.88	4.93	0.38	335.42	0.000	0.000	n/a	1.00	n/a
10	12	4.14	334.00	334.79	0.79*	0.67	6.21	0.52	335.31	0.000	16.250	334.20	335.06	0.86**	0.72	5.77	0.52	335.58	0.000	0.000	n/a	1.00	0.52
11	12	3.76	334.00	334.73	0.73*	0.62	6.09	0.46	335.19	0.000	16.610	334.20	335.02	0.82**	0.69	5.43	0.46	335.48	0.000	0.000	n/a	1.00	0.46
12	10	2.26	334.00	334.60	0.60*	0.42	5.42	0.36	334.95	0.000	16.276	334.20	334.87	0.67**	0.47	4.80	0.36	335.23	0.000	0.000	n/a	1.00	n/a
13	12	2.80	334.00	334.59	0.59*	0.48	5.80	0.34	334.93	0.000	16.283	334.20	334.92	0.72**	0.60	4.65	0.34	335.25	0.000	0.000	n/a	1.00	0.34
14	10	2.49	334.00	334.65	0.65*	0.45	5.48	0.40	335.05	0.000	16.295	334.20	334.90	0.70**	0.49	5.09	0.40	335.30	0.000	0.000	n/a	1.00	n/a
15	10	1.64	332.90	333.44	0.54	0.37	4.40	0.26	333.70	0.000	46.242	333.40	333.97	0.57**	0.40	4.09	0.26	334.23	0.000	0.000	n/a	1.00	n/a
16	10	1.64	333.40	333.97	0.57*	0.40	4.09	0.26	334.23	0.000	16.871	333.60	334.17	0.57**	0.40	4.09	0.26	334.43	0.000	0.000	n/a	1.00	n/a
17	18	9.72	324.50	325.13	0.63*	0.71	13.77	0.64	325.77	0.000	91.520	329.40	330.60	1.20**	1.52	6.40	0.64	331.24	0.000	0.000	n/a	1.00	0.64
18	18	8.37	329.40	330.60	1.20	1.41	5.51	0.54	331.15	0.000	48.334	329.90	331.02 j	1.12**	1.41	5.92	0.54	331.56	0.000	0.000	n/a	1.00	0.54
19	15	6.36	329.90	331.02	1.12	1.07	5.49	0.55	331.57	0.000	55.500	330.50	331.52 j	1.02**	1.07	5.95	0.55	332.07	0.000	0.000	n/a	1.00	0.55
20	15	4.29	330.50	331.52	1.02	0.87	4.01	0.37	331.89	0.000	51.500	331.10	331.94 j	0.84**	0.87	4.90	0.37	332.31	0.000	0.000	n/a	1.00	n/a
21	10	1.89	332.60	333.13	0.53*	0.37	5.15	0.30	333.43	0.000	51.000	333.20	333.82	0.62**	0.43	4.37	0.30	334.11	0.000	0.000	n/a	1.00	0.30
22	10	1.89	333.20	333.82	0.62*	0.43	4.37	0.30	334.11	0.000	31.759	333.60	334.22	0.62**	0.43	4.37	0.30	334.51	0.000	0.000	n/a	1.00	0.30

Project File: 14-3686 Storm Line D-1.stm

Number of lines: 26

Run Date: 5/18/2016

Notes: * depth assumed.; ** Critical depth.; j-Line contains hyd. jump. ; c = cir e = ellip b = box

Hydraulic Grade Line Computations

Line	Size (in)	Q (cfs)	Downstream								Len (ft)	Upstream								Check		JL coeff (K)	Minor loss (ft)
			Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)		Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)	Ave Sf (%)	Enrgy loss (ft)		
23	10	1.35	333.20	333.62	0.42*	0.28	4.86	0.22	333.84	0.000	32.426	333.60	334.12	0.52**	0.36	3.78	0.22	334.34	0.000	0.000	n/a	1.00	0.22
24	10	2.40	332.10	332.72	0.62*	0.44	5.47	0.38	333.11	0.000	32.426	332.50	333.19	0.69**	0.48	4.97	0.38	333.57	0.000	0.000	n/a	1.00	0.38
25	10	2.07	331.90	332.46	0.56*	0.39	5.35	0.33	332.78	0.000	32.426	332.30	332.94	0.64**	0.45	4.58	0.33	333.27	0.000	0.000	n/a	1.00	0.33
26	10	2.01	331.90	332.45	0.55*	0.38	5.32	0.32	332.76	0.000	32.426	332.30	332.94	0.64**	0.45	4.51	0.32	333.25	0.000	0.000	n/a	1.00	0.32
Project File: 14-3686 Storm Line D-1.stm														Number of lines: 26					Run Date: 5/18/2016				
Notes: * depth assumed.; ** Critical depth.; j-Line contains hyd. jump. ; c = cir e = ellip b = box																							

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID	
Line	To Line		Incr	Total		Incr	Total	Inlet	Syst					Size	Slope	Dn	Up	Dn	Up	Dn	Up		
		(ft)	(ac)	(ac)	(C)			(min)	(min)	(in/hr)	(cfs)	(cfs)	(ft/s)	(in)	(%)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)		
1	End	103.180	0.00	0.00	0.00	0.00	0.00	0.0	1.2	0.0	26.47	41.49	8.08	30	0.87	322.50	323.40	323.95	325.15	334.87	338.38	D3-D4	
2	1	44.353	0.00	0.00	0.00	0.00	0.00	0.0	1.1	0.0	23.98	40.30	9.94	24	2.71	323.90	325.10	325.15	326.83	338.38	338.39	D4-D5	
3	2	29.481	0.00	0.00	0.00	0.00	0.00	0.0	1.0	0.0	21.18	40.36	7.49	24	2.71	325.10	325.90	326.83	327.55	338.39	338.40	D5-D6	
4	3	30.000	0.00	0.00	0.00	0.00	0.00	0.0	0.9	0.0	18.92	40.01	7.01	24	2.67	325.90	326.70	327.55	328.26	338.40	338.35	D6-D7	
5	4	69.035	0.00	0.00	0.00	0.00	0.00	0.0	0.7	0.0	15.16	39.57	6.10	24	2.61	326.70	328.50	328.26	329.90	338.35	338.18	D7-D8	
6	5	39.965	0.00	0.00	0.00	0.00	0.00	0.0	0.6	0.0	11.02	18.00	8.41	18	2.50	329.00	330.00	329.90	331.27	338.18	338.40	D8-D9	
7	6	74.249	0.00	0.00	0.00	0.00	0.00	0.0	0.3	0.0	6.68	11.19	7.28	15	2.56	330.50	332.40	331.27	333.44	338.40	338.25	D9-D10	
8	7	16.603	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	5.04	7.68	5.97	15	1.20	334.00	334.20	334.74	335.11	338.25	338.25	D10-D10.1	
9	6	16.239	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	4.34	7.76	5.71	15	1.23	334.00	334.20	334.67	335.04	338.40	338.25	D9-D9.1	
10	5	16.250	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	4.14	4.28	5.99	12	1.23	334.00	334.20	334.79	335.06	338.18	338.25	D8-D8.1	
11	4	16.610	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	3.76	4.23	5.76	12	1.20	334.00	334.20	334.73	335.02	338.35	338.25	D7-D7.1	
12	3	16.276	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	2.26	2.63	5.11	10	1.23	334.00	334.20	334.60	334.87	338.40	338.25	D6-D6.1	
13	2	16.283	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	2.80	4.28	5.22	12	1.23	334.00	334.20	334.59	334.92	338.39	335.41	D5-D5.1	
14	1	16.295	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	2.49	2.63	5.29	10	1.23	334.00	334.20	334.65	334.90	338.38	335.41	D4-D4.1	
15	7	46.242	0.00	0.00	0.00	0.00	0.00	0.0	0.1	0.0	1.64	2.47	4.25	10	1.08	332.90	333.40	333.44	333.97	338.25	338.25	D10-D11	
16	15	16.871	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	1.64	2.58	4.09	10	1.19	333.40	333.60	333.97	334.17	338.25	338.25	D11-D12	
17	End	91.520	0.00	0.00	0.00	0.00	0.00	0.0	1.0	0.0	9.72	26.32	10.09	18	5.35	324.50	329.40	325.13	330.60	331.85	338.08	D2-D2.1	
18	17	48.334	0.00	0.00	0.00	0.00	0.00	0.0	0.8	0.0	8.37	11.57	5.72	18	1.03	329.40	329.90	330.60	331.02	338.08	338.16	D2.1-D2.2	
19	18	55.500	0.00	0.00	0.00	0.00	0.00	0.0	0.6	0.0	6.36	7.27	5.72	15	1.08	329.90	330.50	331.02	331.52	338.16	338.25	D2.2-D2.3	
20	19	51.500	0.00	0.00	0.00	0.00	0.00	0.0	0.4	0.0	4.29	7.55	4.46	15	1.17	330.50	331.10	331.52	331.94	338.25	338.01	D2.3-D2.4	
21	20	51.000	0.00	0.00	0.00	0.00	0.00	0.0	0.2	0.0	1.89	2.57	4.76	10	1.18	332.60	333.20	333.13	333.82	338.01	338.01	D2.4-D2.5	
22	21	31.759	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	1.89	2.66	4.37	10	1.26	333.20	333.60	333.82	334.22	338.01	338.01	D2.5-D2.6	
Project File: 14-3686 Storm Line D-1.stm																Number of lines: 26				Run Date: 5/18/2016			
NOTES:Intensity = 102.31 / (Inlet time + 9.60) ^ 0.80; Return period =Yrs. 50 ; c = cir e = ellip b = box																							

Storm Sewer Tabulation

Station		Len (ft)	Drng Area		Rnoff coeff (C)	Area x C		Tc		Rain (I) (in/hr)	Total flow (cfs)	Cap full (cfs)	Vel (ft/s)	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID								
Line	To Line		Incr (ac)	Total (ac)		Incr (min)	Total (min)	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)									
23	17	32.426	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	1.35	2.63	4.32	10	1.23	333.20	333.60	333.62	334.12	338.08	334.81	D2.1-D2.1A								
24	20	32.426	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	2.40	2.63	5.22	10	1.23	332.10	332.50	332.72	333.19	338.01	338.01	D2.4-D2.4A								
25	19	32.426	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	2.07	2.63	4.96	10	1.23	331.90	332.30	332.46	332.94	338.25	338.01	D2.3-D2.3A								
26	18	32.426	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	2.01	2.63	4.91	10	1.23	331.90	332.30	332.45	332.94	338.16	338.01	D2.2-D2.2A								

Hydraulic Grade Line Computations

Line	Size (in)	Q (cfs)	Downstream								Len (ft)	Upstream								Check		JL coeff (K)	Minor loss (ft)
			Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)		Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)	Ave Sf (%)	Enrgy loss (ft)		
1	30	26.47	322.50	323.95	1.45	2.96	8.96	0.81	324.76	0.000	103.180	323.40	325.15	1.75**	3.68	7.20	0.81	325.96	0.000	0.000	n/a	1.00	n/a
2	24	23.98	323.90	325.15	1.25	2.07	11.58	1.07	326.22	0.000	44.353	325.10	326.83	1.73**	2.89	8.29	1.07	327.90	0.000	0.000	n/a	1.00	1.07
3	24	21.18	325.10	326.83	1.73	2.77	7.32	0.91	327.74	0.000	29.481	325.90	327.55 j	1.65**	2.77	7.65	0.91	328.46	0.000	0.000	n/a	1.00	n/a
4	24	18.92	325.90	327.55	1.65	2.64	6.84	0.80	328.35	0.000	30.000	326.70	328.26 j	1.56**	2.64	7.18	0.80	329.07	0.000	0.000	n/a	1.00	0.80
5	24	15.16	326.70	328.26	1.56	2.35	5.75	0.65	328.91	0.000	69.035	328.50	329.90 j	1.40**	2.35	6.44	0.65	330.55	0.000	0.000	n/a	1.00	n/a
6	18	11.02	329.00	329.90	0.90	1.11	9.92	0.74	330.64	0.000	39.965	330.00	331.27	1.27**	1.60	6.91	0.74	332.01	0.000	0.000	n/a	1.00	0.74
7	15	6.68	330.50	331.27	0.77	0.79	8.42	0.58	331.85	0.000	74.249	332.40	333.44	1.04**	1.09	6.13	0.58	334.02	0.000	0.000	n/a	1.00	n/a
8	15	5.04	334.00	334.74	0.74*	0.76	6.67	0.43	335.17	0.000	16.603	334.20	335.11	0.91**	0.96	5.27	0.43	335.54	0.000	0.000	n/a	1.00	n/a
9	15	4.34	334.00	334.67	0.67*	0.67	6.50	0.38	335.05	0.000	16.239	334.20	335.04	0.84**	0.88	4.93	0.38	335.42	0.000	0.000	n/a	1.00	n/a
10	12	4.14	334.00	334.79	0.79*	0.67	6.21	0.52	335.31	0.000	16.250	334.20	335.06	0.86**	0.72	5.77	0.52	335.58	0.000	0.000	n/a	1.00	0.52
11	12	3.76	334.00	334.73	0.73*	0.62	6.09	0.46	335.19	0.000	16.610	334.20	335.02	0.82**	0.69	5.43	0.46	335.48	0.000	0.000	n/a	1.00	0.46
12	10	2.26	334.00	334.60	0.60*	0.42	5.42	0.36	334.95	0.000	16.276	334.20	334.87	0.67**	0.47	4.80	0.36	335.23	0.000	0.000	n/a	1.00	n/a
13	12	2.80	334.00	334.59	0.59*	0.48	5.80	0.34	334.93	0.000	16.283	334.20	334.92	0.72**	0.60	4.65	0.34	335.25	0.000	0.000	n/a	1.00	0.34
14	10	2.49	334.00	334.65	0.65*	0.45	5.48	0.40	335.05	0.000	16.295	334.20	334.90	0.70**	0.49	5.09	0.40	335.30	0.000	0.000	n/a	1.00	n/a
15	10	1.64	332.90	333.44	0.54	0.37	4.40	0.26	333.70	0.000	46.242	333.40	333.97	0.57**	0.40	4.09	0.26	334.23	0.000	0.000	n/a	1.00	n/a
16	10	1.64	333.40	333.97	0.57*	0.40	4.09	0.26	334.23	0.000	16.871	333.60	334.17	0.57**	0.40	4.09	0.26	334.43	0.000	0.000	n/a	1.00	n/a
17	18	9.72	324.50	325.13	0.63*	0.71	13.77	0.64	325.77	0.000	91.520	329.40	330.60	1.20**	1.52	6.40	0.64	331.24	0.000	0.000	n/a	1.00	0.64
18	18	8.37	329.40	330.60	1.20	1.41	5.51	0.54	331.15	0.000	48.334	329.90	331.02 j	1.12**	1.41	5.92	0.54	331.56	0.000	0.000	n/a	1.00	0.54
19	15	6.36	329.90	331.02	1.12	1.07	5.49	0.55	331.57	0.000	55.500	330.50	331.52 j	1.02**	1.07	5.95	0.55	332.07	0.000	0.000	n/a	1.00	0.55
20	15	4.29	330.50	331.52	1.02	0.87	4.01	0.37	331.89	0.000	51.500	331.10	331.94 j	0.84**	0.87	4.90	0.37	332.31	0.000	0.000	n/a	1.00	n/a
21	10	1.89	332.60	333.13	0.53*	0.37	5.15	0.30	333.43	0.000	51.000	333.20	333.82	0.62**	0.43	4.37	0.30	334.11	0.000	0.000	n/a	1.00	0.30
22	10	1.89	333.20	333.82	0.62*	0.43	4.37	0.30	334.11	0.000	31.759	333.60	334.22	0.62**	0.43	4.37	0.30	334.51	0.000	0.000	n/a	1.00	0.30

Project File: 14-3686 Storm Line D-1.stm

Number of lines: 26

Run Date: 5/18/2016

Notes: * depth assumed.; ** Critical depth.; j-Line contains hyd. jump. ; c = cir e = ellip b = box

Hydraulic Grade Line Computations

Line	Size (in)	Q (cfs)	Downstream								Len (ft)	Upstream								Check		JL coeff (K)	Minor loss (ft)
			Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)		Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)	Ave Sf (%)	Enrgy loss (ft)		
23	10	1.35	333.20	333.62	0.42*	0.28	4.86	0.22	333.84	0.000	32.426	333.60	334.12	0.52**	0.36	3.78	0.22	334.34	0.000	0.000	n/a	1.00	0.22
24	10	2.40	332.10	332.72	0.62*	0.44	5.47	0.38	333.11	0.000	32.426	332.50	333.19	0.69**	0.48	4.97	0.38	333.57	0.000	0.000	n/a	1.00	0.38
25	10	2.07	331.90	332.46	0.56*	0.39	5.35	0.33	332.78	0.000	32.426	332.30	332.94	0.64**	0.45	4.58	0.33	333.27	0.000	0.000	n/a	1.00	0.33
26	10	2.01	331.90	332.45	0.55*	0.38	5.32	0.32	332.76	0.000	32.426	332.30	332.94	0.64**	0.45	4.51	0.32	333.25	0.000	0.000	n/a	1.00	0.32
Project File: 14-3686 Storm Line D-1.stm														Number of lines: 26					Run Date: 5/18/2016				
Notes: * depth assumed.; ** Critical depth.; j-Line contains hyd. jump. ; c = cir e = ellip b = box																							

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (l)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line		Incr	Total		Incr	Total	Inlet	Syst					Size	Slope	Dn	Up	Dn	Up	Dn	Up	
		(ft)	(ac)	(ac)	(C)			(min)	(min)	(in/hr)	(cfs)	(cfs)	(ft/s)	(in)	(%)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	
1	End	996.414	0.36	1.47	0.95	0.34	1.40	5.0	8.2	11.3	188.1	208.0	12.72	54	0.95	320.50	330.00	324.45	333.95	326.00	341.21	F1-F2
2	1	80.612	0.48	0.48	0.95	0.46	0.46	5.0	5.0	13.2	178.4	108.6	18.55	42	0.99	334.71	335.51	339.51	341.67	341.21	341.33	F2-F2.1
3	1	220.645	0.00	0.17	0.00	0.00	0.16	0.0	5.2	13.1	2.11	16.87	5.06	18	2.20	334.26	339.11	334.62	339.66	341.21	344.15	F2-E1
4	3	12.250	0.17	0.17	0.95	0.16	0.16	5.0	5.0	13.2	2.13	20.30	3.63	18	3.18	339.11	339.50	339.66	340.05	344.15	343.50	E1-E2
5	1	364.038	0.09	0.46	0.95	0.09	0.44	5.0	6.3	12.3	5.38	10.72	5.49	18	0.89	334.36	337.59	335.11	338.48	341.21	342.60	F2-G1.1
6	5	34.483	0.00	0.37	0.00	0.00	0.35	0.0	6.1	12.5	4.38	10.79	4.27	18	0.90	337.59	337.90	338.48	338.70	342.60	342.80	G1.1-G1
7	6	39.808	0.22	0.22	0.95	0.21	0.21	5.0	5.0	13.2	2.75	13.97	3.66	18	1.51	338.00	338.60	338.70	339.23	342.80	342.60	G1-G2
8	6	99.902	0.15	0.15	0.95	0.14	0.14	5.0	5.0	13.2	1.88	6.57	4.14	15	0.88	338.40	339.28	338.86	339.82	342.80	343.41	G1-G1.2
Project File: 14-3686 Storm Line E-1.stm																Number of lines: 8				Run Date: 5/18/2016		
NOTES:Intensity = 126.88 / (Inlet time + 10.50) ^ 0.83; Return period =Yrs. 100 ; c = cir e = ellip b = box																						

Hydraulic Grade Line Computations

Line	Size (in)	Q (cfs)	Downstream								Len (ft)	Upstream								Check		JL coeff (K)	Minor loss (ft)
			Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)		Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)	Ave Sf (%)	Enrgy loss (ft)		
1	54	188.1	320.50	324.45	3.95	14.79	12.72	2.52	326.96	0.000	996.414	330.00	333.95	3.95**	14.79	12.72	2.52	336.46	0.000	0.000	n/a	2.21	5.56
2	42	178.4	334.71	339.51	3.50	9.62	18.55	5.35	344.86	2.681	80.612	335.51	341.67	3.50	9.62	18.54	5.35	347.02	2.680	2.680	2.160	1.00	5.35
3	18	2.11	334.26	334.62	0.36*	0.32	6.51	0.20	334.82	0.000	220.645	339.11	339.66	0.55**	0.58	3.61	0.20	339.86	0.000	0.000	n/a	1.00	0.20
4	18	2.13	339.11	339.66	0.55	0.58	3.64	0.20	339.86	0.000	12.250	339.50	340.05	0.55**	0.59	3.62	0.20	340.25	0.000	0.000	n/a	1.00	n/a
5	18	5.38	334.36	335.11	0.75*	0.89	6.07	0.37	335.49	0.000	364.038	337.59	338.48	0.89**	1.10	4.91	0.37	338.86	0.000	0.000	n/a	0.50	0.19
6	18	4.38	337.59	338.48	0.89	0.96	3.99	0.32	338.81	0.000	34.483	337.90	338.70 j	0.80**	0.96	4.56	0.32	339.02	0.000	0.000	n/a	0.74	0.24
7	18	2.75	338.00	338.70	0.70	0.70	3.39	0.24	338.94	0.000	39.808	338.60	339.23 j	0.63**	0.70	3.92	0.24	339.47	0.000	0.000	n/a	1.00	0.24
8	15	1.88	338.40	338.86	0.46*	0.41	4.61	0.21	339.07	0.000	99.902	339.28	339.82	0.54**	0.51	3.66	0.21	340.03	0.000	0.000	n/a	1.00	n/a
Project File: 14-3686 Storm Line E-1.stm														Number of lines: 8					Run Date: 5/18/2016				
Notes: * depth assumed.; ** Critical depth.; j-Line contains hyd. jump. ; c = cir e = ellip b = box																							

Inlet Report

Line No	Inlet ID	Q = CIA (cfs)	Q carry (cfs)	Q capt (cfs)	Q Byp (cfs)	Junc Type	Curb Inlet		Grate Inlet			Gutter							Inlet			Byp Line No
							Ht (in)	L (ft)	Area (sqft)	L (ft)	W (ft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)	Depr (in)	
1	F2	4.51	2.57	3.80	3.27	Comb	4.0	4.00	0.00	2.00	2.00	0.020	1.50	0.060	0.020	0.013	0.30	11.90	0.80	11.90	6.0	Off
2	F2.1	6.01	0.00	3.44	2.57	Comb	4.0	4.00	0.00	2.00	2.00	0.020	1.50	0.060	0.020	0.013	0.28	11.20	0.78	11.20	6.0	1
3	E1	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
4	E2	2.13	0.00	2.13	0.00	Curb	4.0	12.00	0.00	0.00	0.00	0.020	1.50	0.060	0.020	0.013	0.21	7.31	0.71	7.31	6.0	3
5	G1.1	1.13	0.00	1.13	0.00	Curb	4.0	12.00	0.00	0.00	0.00	0.020	1.50	0.060	0.020	0.013	0.17	5.51	0.67	5.51	6.0	1
6	G1	0.00	0.27	0.00	0.27	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
7	G2	2.75	0.00	2.75	0.00	Curb	4.0	12.00	0.00	0.00	0.00	0.020	1.50	0.060	0.020	0.013	0.22	8.16	0.72	8.16	6.0	6
8	G1.2	1.88	0.00	1.61	0.27	Comb	4.0	4.00	0.00	2.00	2.00	0.020	1.50	0.060	0.020	0.013	0.20	6.91	0.70	6.91	6.0	6
Project File: 14-3686 Storm Line E-1 NO Q.stm														Number of lines: 8					Run Date: 5/17/2016			
NOTES: Inlet N-Values = 0.016; Intensity = 126.88 / (Inlet time + 10.50) ^ 0.83; Return period = 100 Yrs. ; * Indicates Known Q added. All curb inlets are throat.																						

AQUA ENGINEERING SERVICES, LTD.

103 Plantation Cove, Suite C
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Fax (601) 790-9412

June 1, 2016

Renaissance at Colony Park, LLC
c/o The Mattiace Company
P.O. Box 13809
Jackson, MS 39236

Re: Renaissance at Colony Park III Flood Detention Calculations

Dear Sir:

Enclosed are the flood detention calculations for the above referenced project. The total site consists of about 44.7 acres. The Renaissance Phase III Project is about 38.6 acres plus about 6.1 acres along Purple Creek that will be developed to provide detention storage. The proposed storage will be provided by developing a detention basin along Purple Creek on the land purchased by the City of Ridgeland for this express purpose as part of the overall flood control plan for Purple Creek. The attached calculations show that the proposed development would require about 10.9 acre-feet of flood detention storage for the 50-year event and about 11.3 acre-feet for the 100-year event.

The proposal is to provide about 54.5 acre-feet of storage by developing a detention basin on the 9.4 acres along Purple Creek. The City requires that existing channel storage below the 100-year event be deducted from the total detention. The existing channel storage is estimated to be about 6.6 acre-feet. This leaves a net increase of about 47.9 acre-feet of storage. This area is connected to the existing City detention basin on Purple Creek in Freedom Ridge Park and will increase the total storage available. The attached report by the US Geological Survey, dated October 2012) determined the 100-year flood for existing conditions to be 2,090 cubic feet per second, which is less than the FEMA Flood Insurance Study discharge of 2,590 cubic feet per second. Therefore, the proposed project would not increase the Base Flood Elevation.

Therefore, the proposed detention will meet all of the City of Ridgeland requirements for flood detention storage. If you need additional information please call us.

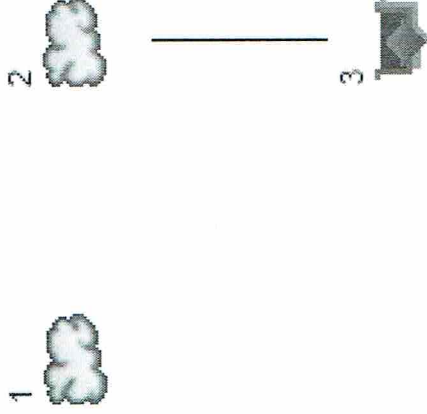
Sincerely yours,



Billy E. Colson, P.E.

Enclosure: Calculations (21 p.)
 USGS Report (9p.)

AQ1504D.DOC



<u>Legend</u>		
<u>Hyd.</u>	<u>Origin</u>	<u>Description</u>
1	SCS Runoff	Total Pre
2	SCS Runoff	Total Post
3	Reservoir	Detention Outflow

Hydrograph Return Period Recap

Hyd. No.	Hydrograph type (origin)	Inflow Hyd(s)	Peak Outflow (cfs)								Hydrograph description
			1-Yr	2-Yr	3-Yr	5-Yr	10-Yr	25-Yr	50-Yr	100-Yr	
1	SCS Runoff	-----	21.15	27.90	-----	42.44	53.47	66.07	77.46	85.54	Total Pre
2	SCS Runoff	-----	55.92	66.84	-----	88.92	104.94	122.78	138.64	149.82	Total Post
3	Reservoir	2	15.08	19.25	-----	28.36	35.03	48.81	71.82	87.79	Detention Outflow
Proj. file: CostcoAQ1504.gpw Wednesday, Jun 1 2016, 12:21 PM											

Hydrograph Summary Report

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Maximum storage (cuft)	Hydrograph description
1	SCS Runoff	27.90	1	786	290,129	----	-----	-----	Total Pre
2	SCS Runoff	66.84	1	756	493,823	----	-----	-----	Total Post
3	Reservoir	19.25	1	808	485,196	2	324.55	254,320	Detention Outflow
CostcoAQ1504.gpw					Return Period: 2 Year			Wednesday, Jun 1 2016, 12:21 PM	

Hydrograph Plot

Hydraflow Hydrographs by Intelisolve

Wednesday, Jun 1 2016, 12:21 PM

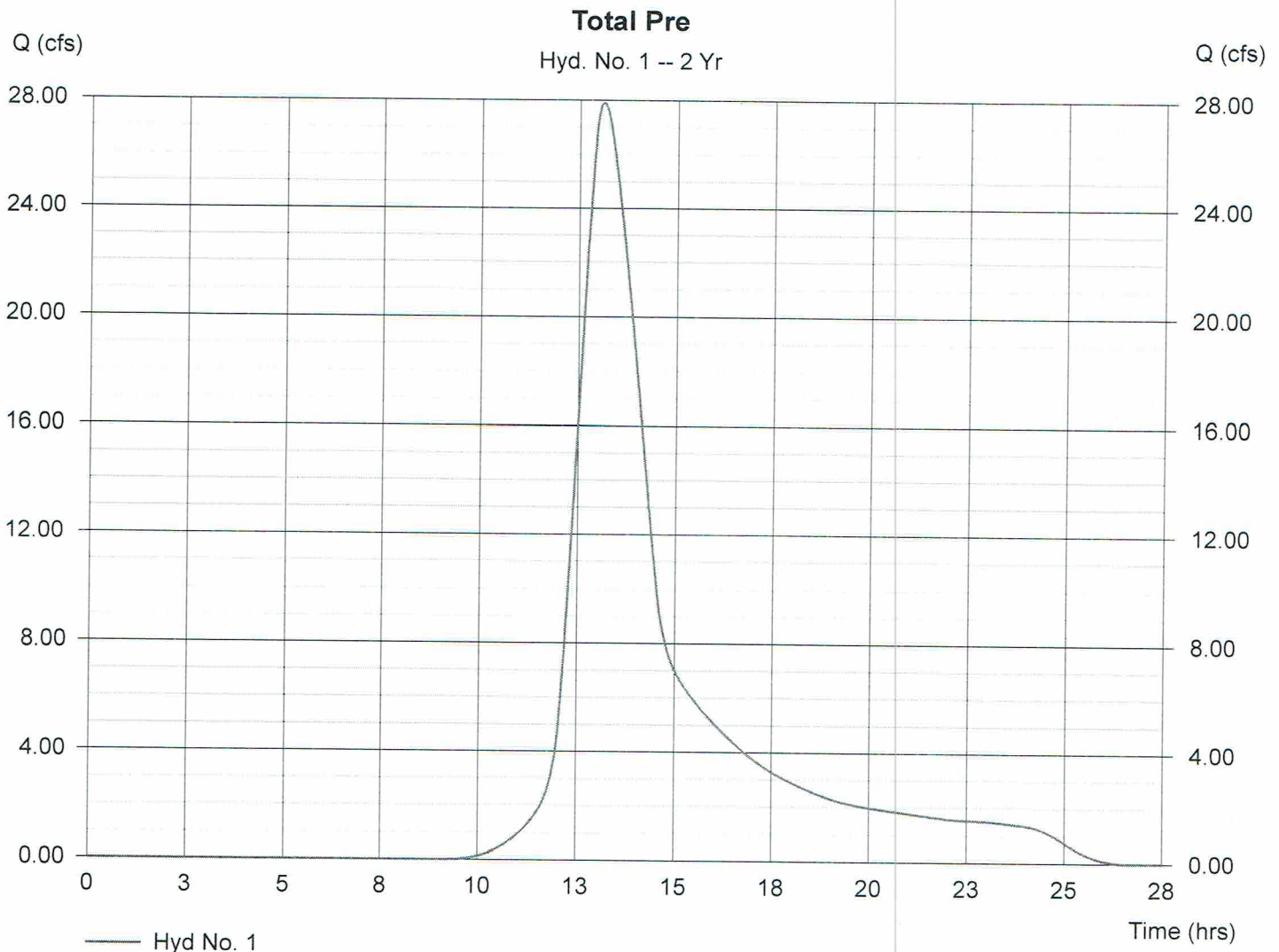
Hyd. No. 1

Total Pre

Hydrograph type = SCS Runoff
 Storm frequency = 2 yrs
 Drainage area = 38.600 ac
 Basin Slope = 0.5 %
 Tc method = LAG
 Total precip. = 4.42 in
 Storm duration = 24 hrs

Peak discharge = 27.90 cfs
 Time interval = 1 min
 Curve number = 76
 Hydraulic length = 2240 ft
 Time of conc. (Tc) = 96.84 min
 Distribution = Type III
 Shape factor = 484

Hydrograph Volume = 290,129 cuft



Hydrograph Plot

Hydraflow Hydrographs by Intelisolve

Wednesday, Jun 1 2016, 12:21 PM

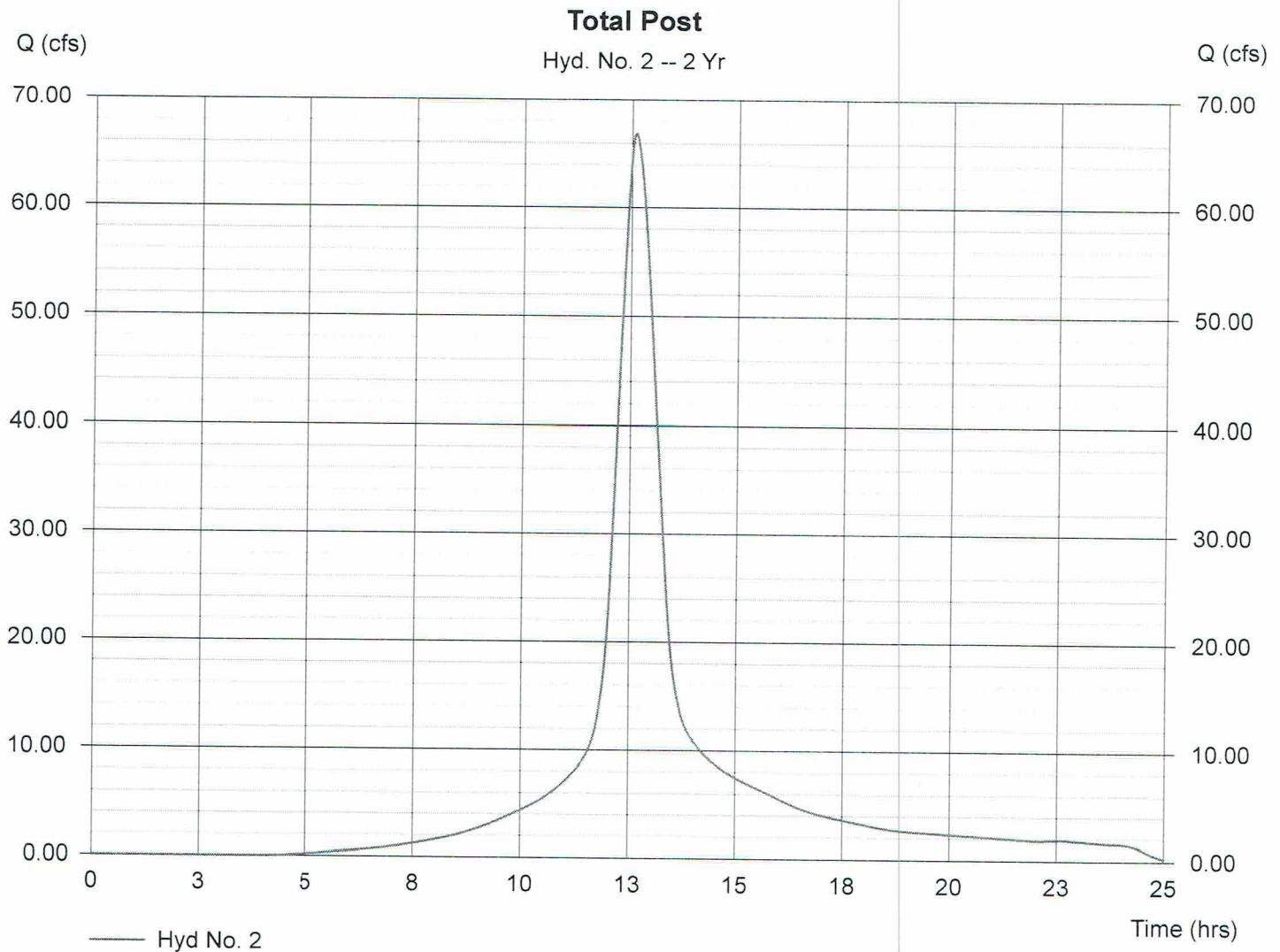
Hyd. No. 2

Total Post

Hydrograph type = SCS Runoff
 Storm frequency = 2 yrs
 Drainage area = 38.600 ac
 Basin Slope = 0.5 %
 Tc method = LAG
 Total precip. = 4.42 in
 Storm duration = 24 hrs

Peak discharge = 66.84 cfs
 Time interval = 1 min
 Curve number = 92
 Hydraulic length = 2240 ft
 Time of conc. (Tc) = 55.34 min
 Distribution = Type III
 Shape factor = 484

Hydrograph Volume = 493,823 cuft



Hydrograph Plot

Hydraflow Hydrographs by Intelisolve

Wednesday, Jun 1 2016, 12:21 PM

Hyd. No. 3

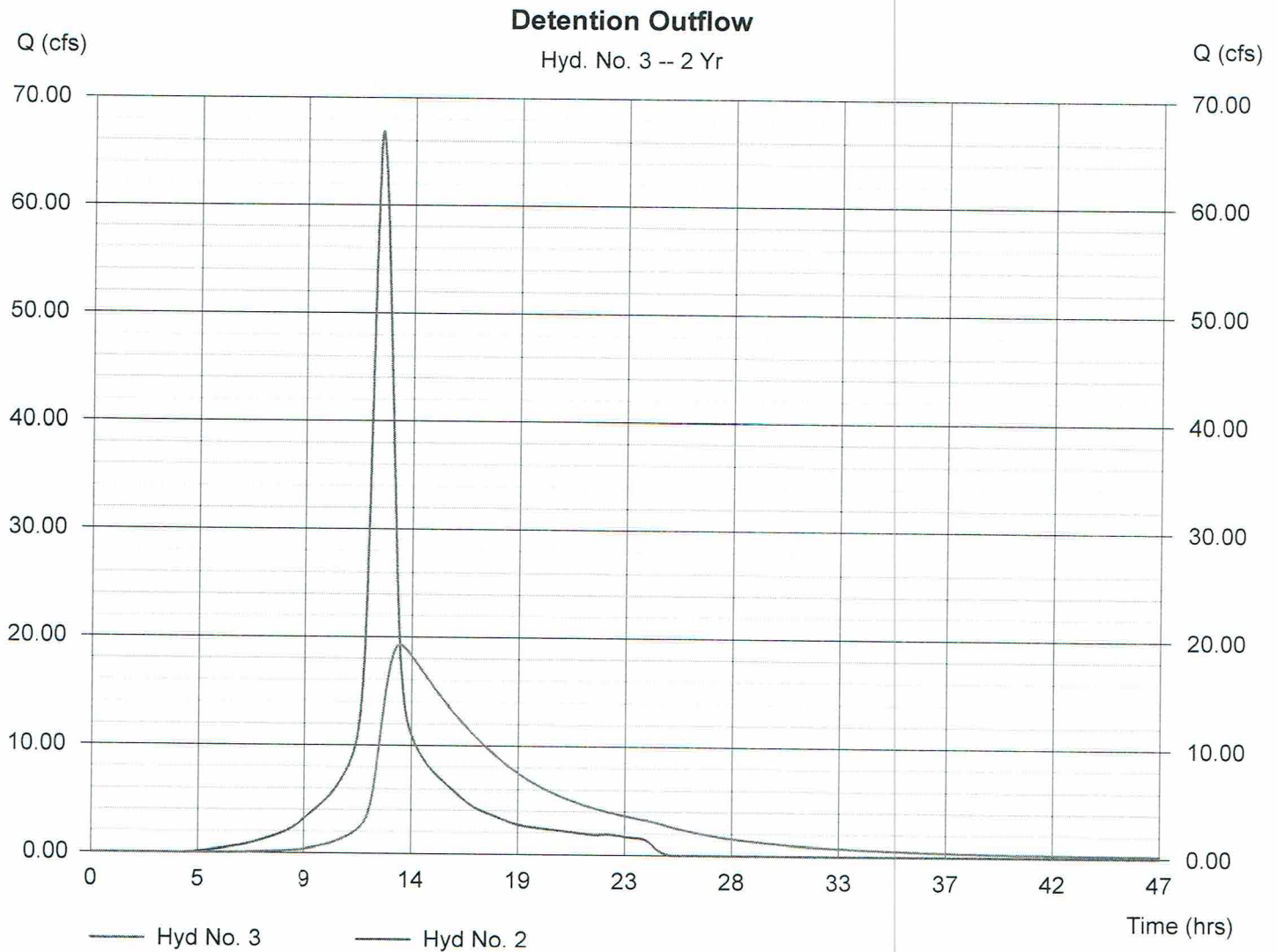
Detention Outflow

Hydrograph type = Reservoir
Storm frequency = 2 yrs
Inflow hyd. No. = 2
Reservoir name = Purple Basin

Peak discharge = 19.25 cfs
Time interval = 1 min
Max. Elevation = 324.55 ft
Max. Storage = 254,320 cuft

Storage Indication method used.

Hydrograph Volume = 485,196 cuft



Pond Report

6

Hydraflow Hydrographs by Intelsolve

Wednesday, Jun 1 2016, 12:21 PM

Pond No. 1 - Purple Basin

Pond Data

Pond storage is based on known contour areas. Average end area method used.

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	323.00	154,264	0	0
1.00	324.00	165,935	160,100	160,100
2.00	325.00	177,743	171,839	331,939
3.00	326.00	189,661	183,702	515,641
4.00	327.00	202,404	196,033	711,673
5.00	328.00	215,310	208,857	920,530
6.00	329.00	228,140	221,725	1,142,255
7.00	330.00	240,925	234,533	1,376,788

Culvert / Orifice Structures

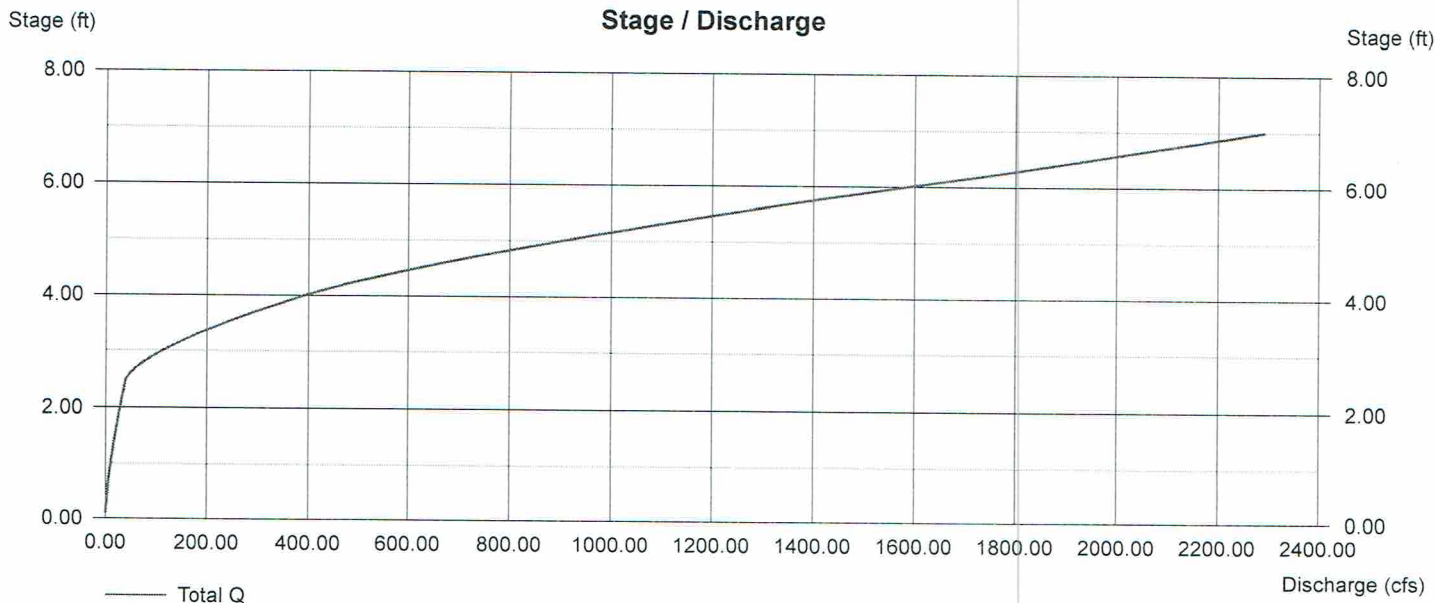
	[A]	[B]	[C]	[D]
Rise (in)	= 120.00	0.00	0.00	0.00
Span (in)	= 192.00	0.00	0.00	0.00
No. Barrels	= 2	0	0	0
Invert El. (ft)	= 319.20	0.00	0.00	0.00
Length (ft)	= 300.00	0.00	0.00	0.00
Slope (%)	= 1.00	0.00	0.00	0.00
N-Value	= .013	.000	.000	.000
Orif. Coeff.	= 0.60	0.00	0.00	0.00
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 3.00	0.00	51.00	36.00
Crest El. (ft)	= 323.00	0.00	325.50	327.00
Weir Coeff.	= 3.33	0.00	3.33	3.33
Weir Type	= Rect	---	Rect	Rect
Multi-Stage	= Yes	No	Yes	Yes

Exfiltration = 0.000 in/hr (Contour) Tailwater Elev. = 0.00 ft

Note: Culvert/Orifice outflows have been analyzed under inlet and outlet control.



Hydrograph Summary Report

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Maximum storage (cuft)	Hydrograph description
1	SCS Runoff	53.47	1	784	548,091	----	-----	-----	Total Pre
2	SCS Runoff	104.94	1	755	793,092	----	-----	-----	Total Post
3	Reservoir	35.03	1	804	783,555	2	325.31	388,530	Detention Outflow
CostcoAQ1504.gpw					Return Period: 10 Year			Wednesday, Jun 1 2016, 12:21 PM	

Hydrograph Plot

Hydraflow Hydrographs by Intelisolve

Wednesday, Jun 1 2016, 12:21 PM

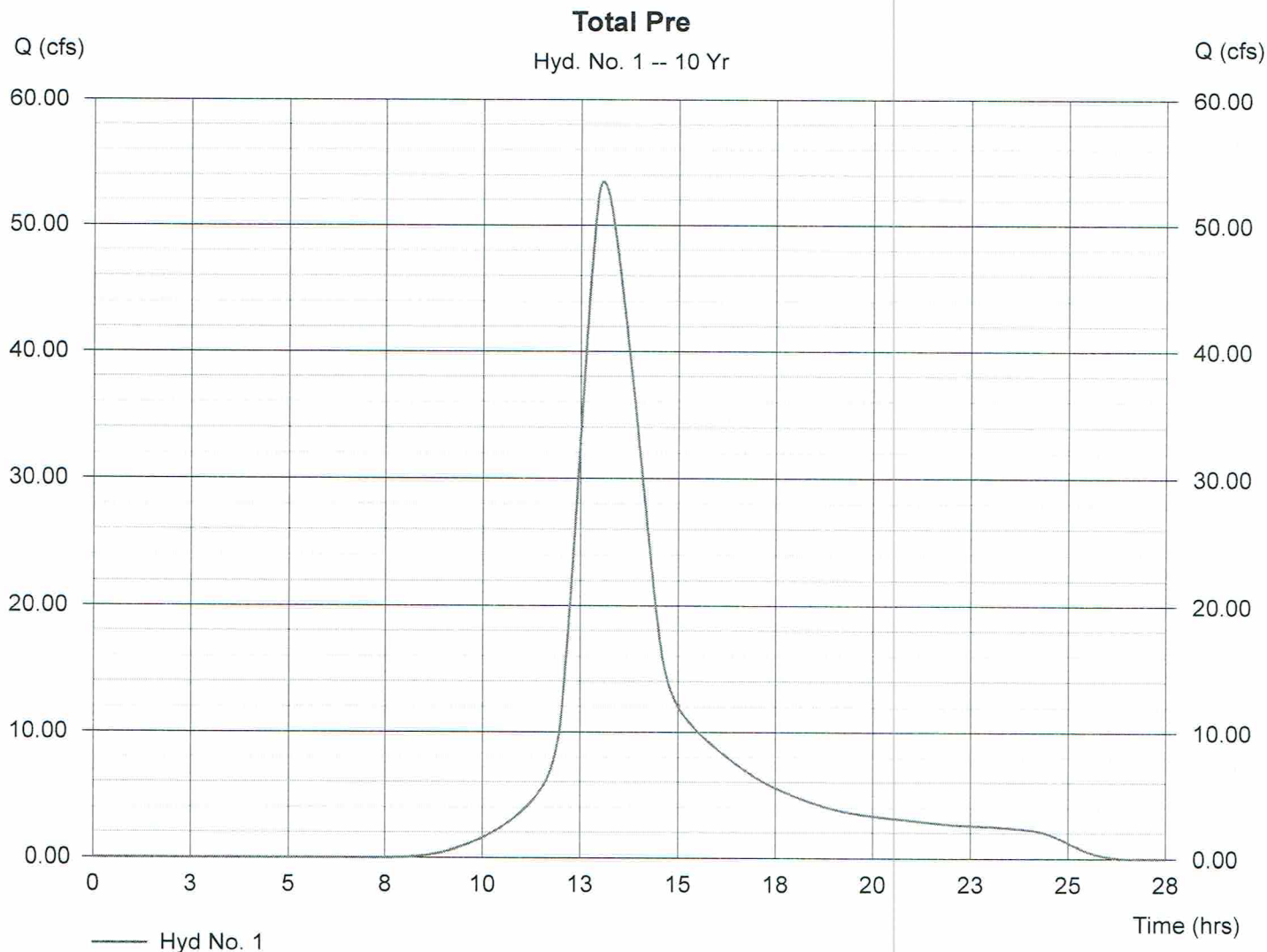
Hyd. No. 1

Total Pre

Hydrograph type = SCS Runoff
 Storm frequency = 10 yrs
 Drainage area = 38.600 ac
 Basin Slope = 0.5 %
 Tc method = LAG
 Total precip. = 6.60 in
 Storm duration = 24 hrs

Peak discharge = 53.47 cfs
 Time interval = 1 min
 Curve number = 76
 Hydraulic length = 2240 ft
 Time of conc. (Tc) = 96.84 min
 Distribution = Type III
 Shape factor = 484

Hydrograph Volume = 548,091 cuft



Hydrograph Plot

Hydraflow Hydrographs by Intelisolve

Wednesday, Jun 1 2016, 12:21 PM

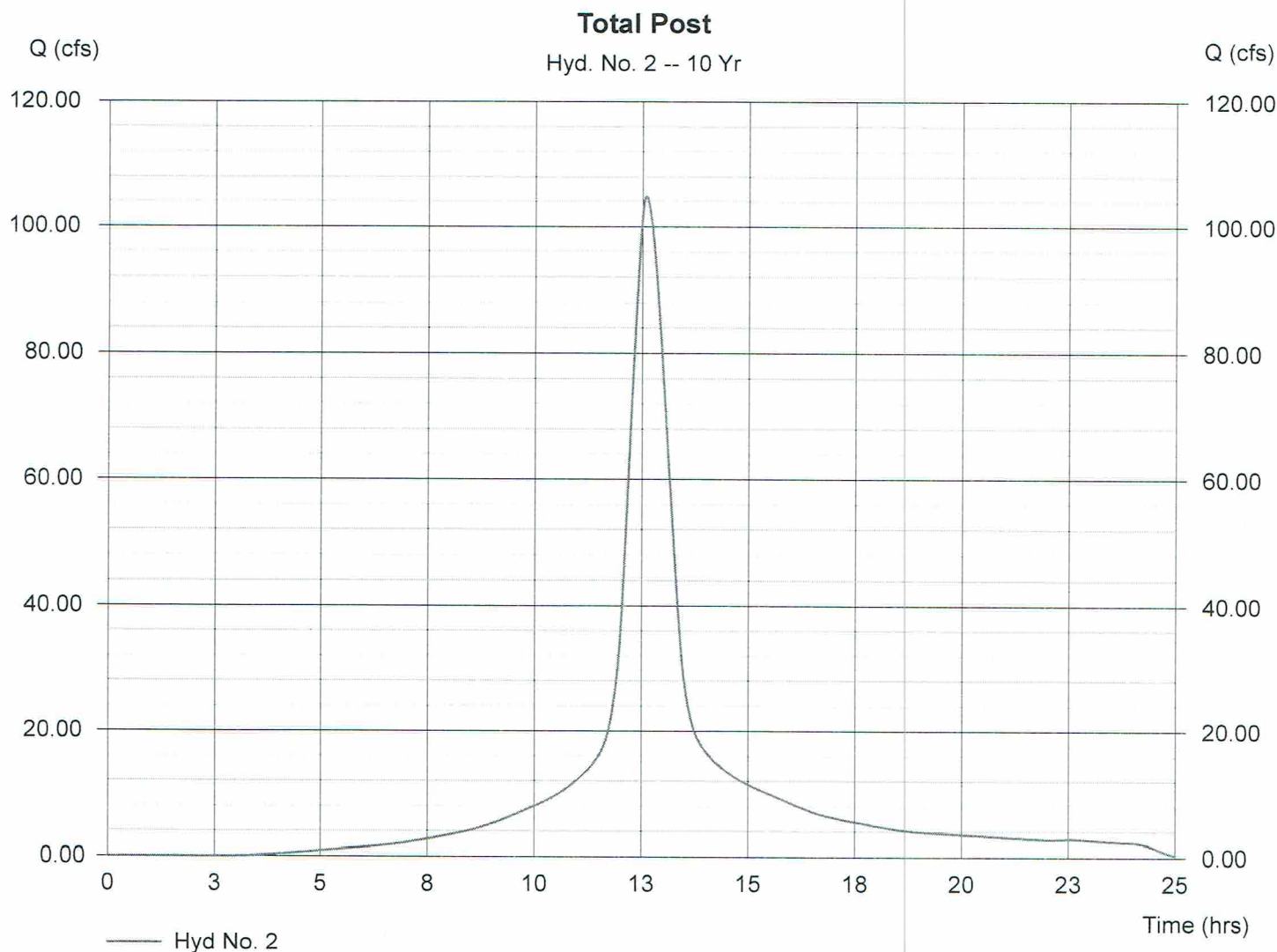
Hyd. No. 2

Total Post

Hydrograph type = SCS Runoff
 Storm frequency = 10 yrs
 Drainage area = 38.600 ac
 Basin Slope = 0.5 %
 Tc method = LAG
 Total precip. = 6.60 in
 Storm duration = 24 hrs

Peak discharge = 104.94 cfs
 Time interval = 1 min
 Curve number = 92
 Hydraulic length = 2240 ft
 Time of conc. (Tc) = 55.34 min
 Distribution = Type III
 Shape factor = 484

Hydrograph Volume = 793,092 cuft



Hydrograph Plot

Hydraflow Hydrographs by Intelisolve

Wednesday, Jun 1 2016, 12:21 PM

Hyd. No. 3

Detention Outflow

Hydrograph type = Reservoir
 Storm frequency = 10 yrs
 Inflow hyd. No. = 2
 Reservoir name = Purple Basin

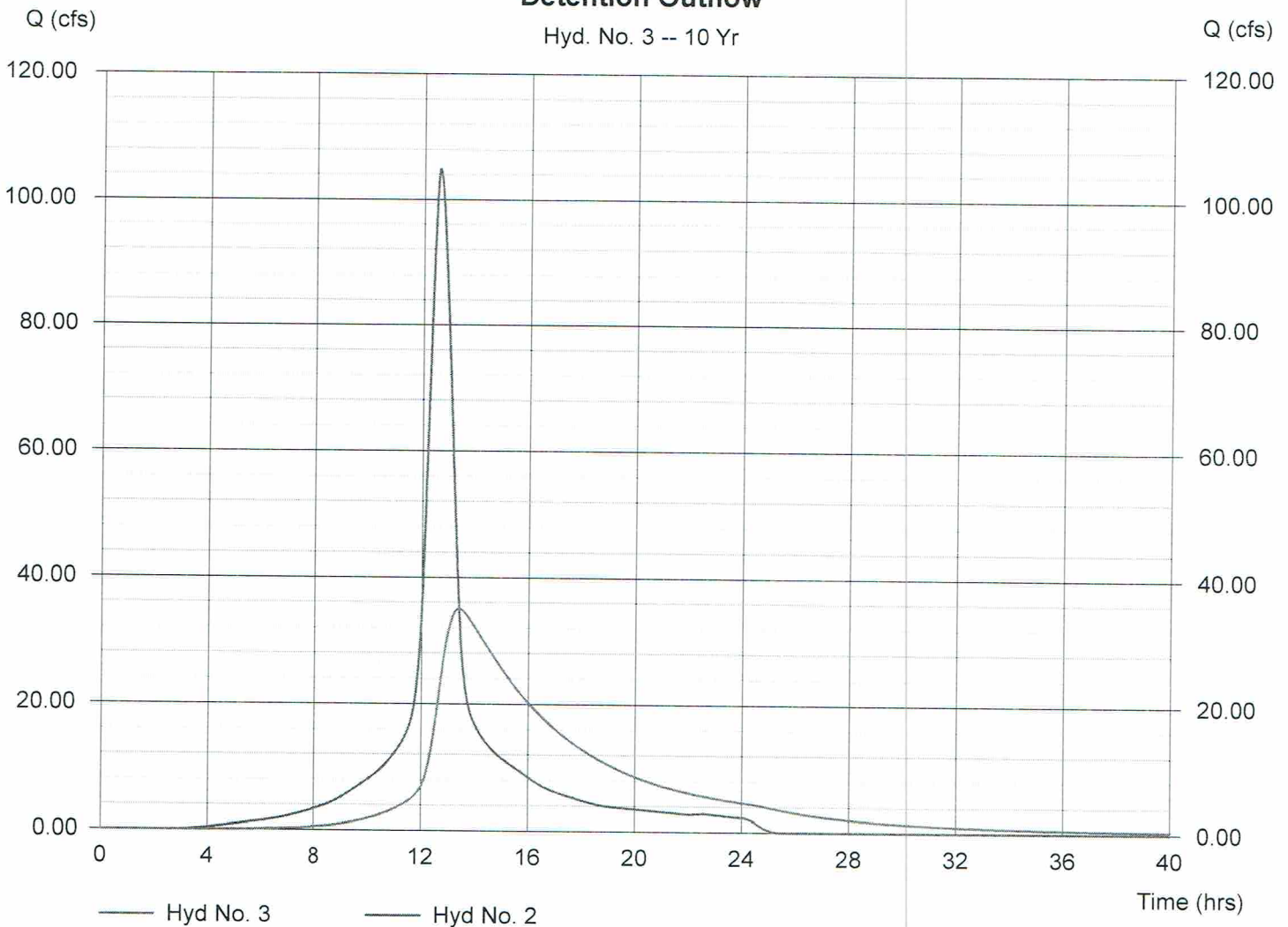
Peak discharge = 35.03 cfs
 Time interval = 1 min
 Max. Elevation = 325.31 ft
 Max. Storage = 388,530 cuft

Storage Indication method used.

Hydrograph Volume = 783,555 cuft

Detention Outflow

Hyd. No. 3 -- 10 Yr



Pond Report

11

Hydraflow Hydrographs by Intelisolve

Wednesday, Jun 1 2016, 12:21 PM

Pond No. 1 - Purple Basin

Pond Data

Pond storage is based on known contour areas. Average end area method used.

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	323.00	154,264	0	0
1.00	324.00	165,935	160,100	160,100
2.00	325.00	177,743	171,839	331,939
3.00	326.00	189,661	183,702	515,641
4.00	327.00	202,404	196,033	711,673
5.00	328.00	215,310	208,857	920,530
6.00	329.00	228,140	221,725	1,142,255
7.00	330.00	240,925	234,533	1,376,788

Culvert / Orifice Structures

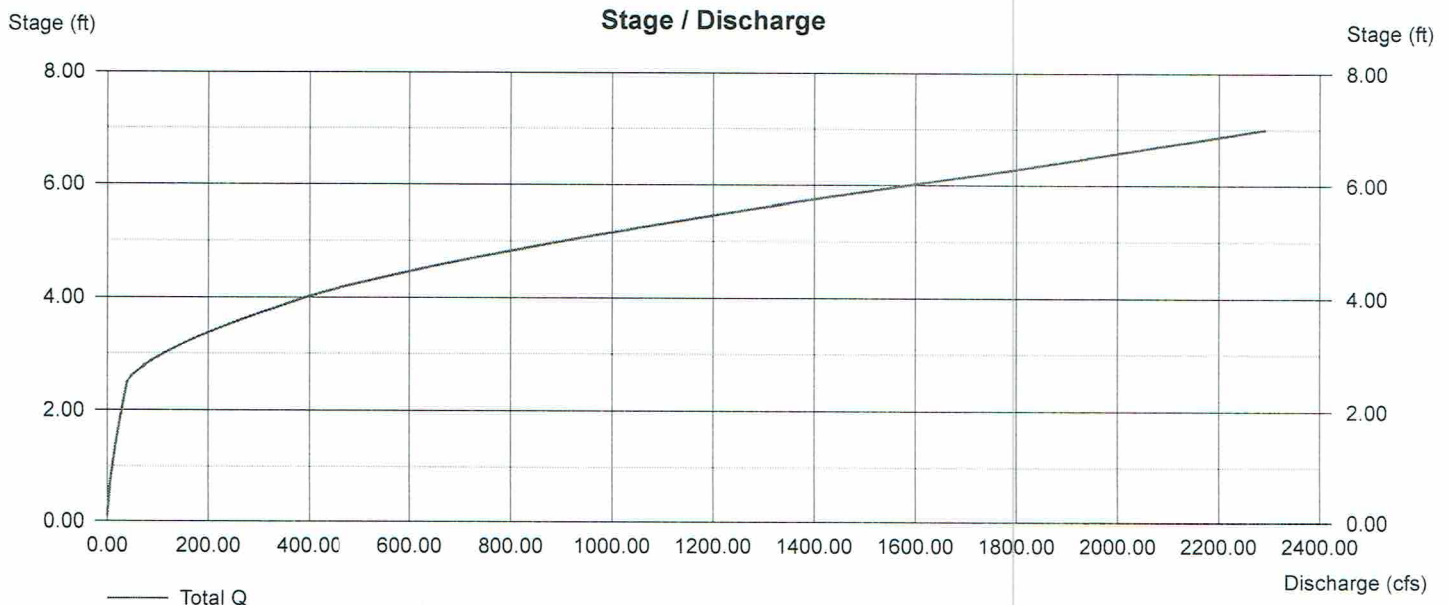
	[A]	[B]	[C]	[D]
Rise (in)	= 120.00	0.00	0.00	0.00
Span (in)	= 192.00	0.00	0.00	0.00
No. Barrels	= 2	0	0	0
Invert El. (ft)	= 319.20	0.00	0.00	0.00
Length (ft)	= 300.00	0.00	0.00	0.00
Slope (%)	= 1.00	0.00	0.00	0.00
N-Value	= .013	.000	.000	.000
Orif. Coeff.	= 0.60	0.00	0.00	0.00
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 3.00	0.00	51.00	36.00
Crest El. (ft)	= 323.00	0.00	325.50	327.00
Weir Coeff.	= 3.33	0.00	3.33	3.33
Weir Type	= Rect	---	Rect	Rect
Multi-Stage	= Yes	No	Yes	Yes

Exfiltration = 0.000 in/hr (Contour) Tailwater Elev. = 0.00 ft

Note: Culvert/Orifice outflows have been analyzed under inlet and outlet control.



Hydrograph Summary Report

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Maximum storage (cuft)	Hydrograph description
1	SCS Runoff	77.46	1	783	794,897	----	-----	-----	Total Pre
2	SCS Runoff	138.64	1	755	1,063,258	----	-----	-----	Total Post
3	Reservoir	71.82	1	792	1,053,191	2	325.78	475,395	Detention Outflow
CostcoAQ1504.gpw					Return Period: 50 Year			Wednesday, Jun 1 2016, 12:21 PM	

Hydrograph Plot

Hydraflow Hydrographs by Intelisolve

Wednesday, Jun 1 2016, 12:21 PM

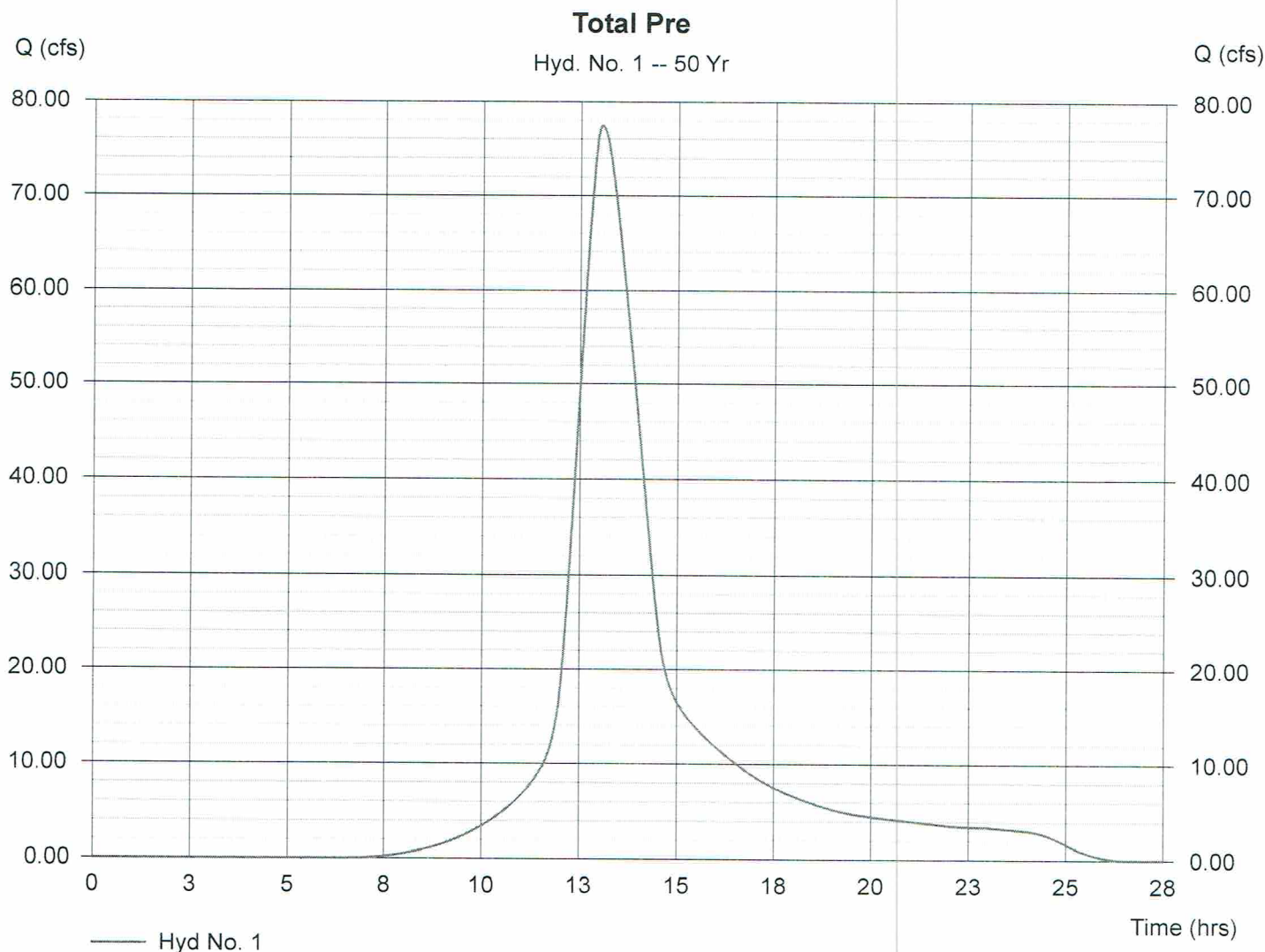
Hyd. No. 1

Total Pre

Hydrograph type = SCS Runoff
 Storm frequency = 50 yrs
 Drainage area = 38.600 ac
 Basin Slope = 0.5 %
 Tc method = LAG
 Total precip. = 8.55 in
 Storm duration = 24 hrs

Peak discharge = 77.46 cfs
 Time interval = 1 min
 Curve number = 76
 Hydraulic length = 2240 ft
 Time of conc. (Tc) = 96.84 min
 Distribution = Type III
 Shape factor = 484

Hydrograph Volume = 794,897 cuft



Hydrograph Plot

Hydraflow Hydrographs by Intelisolve

Wednesday, Jun 1 2016, 12:21 PM

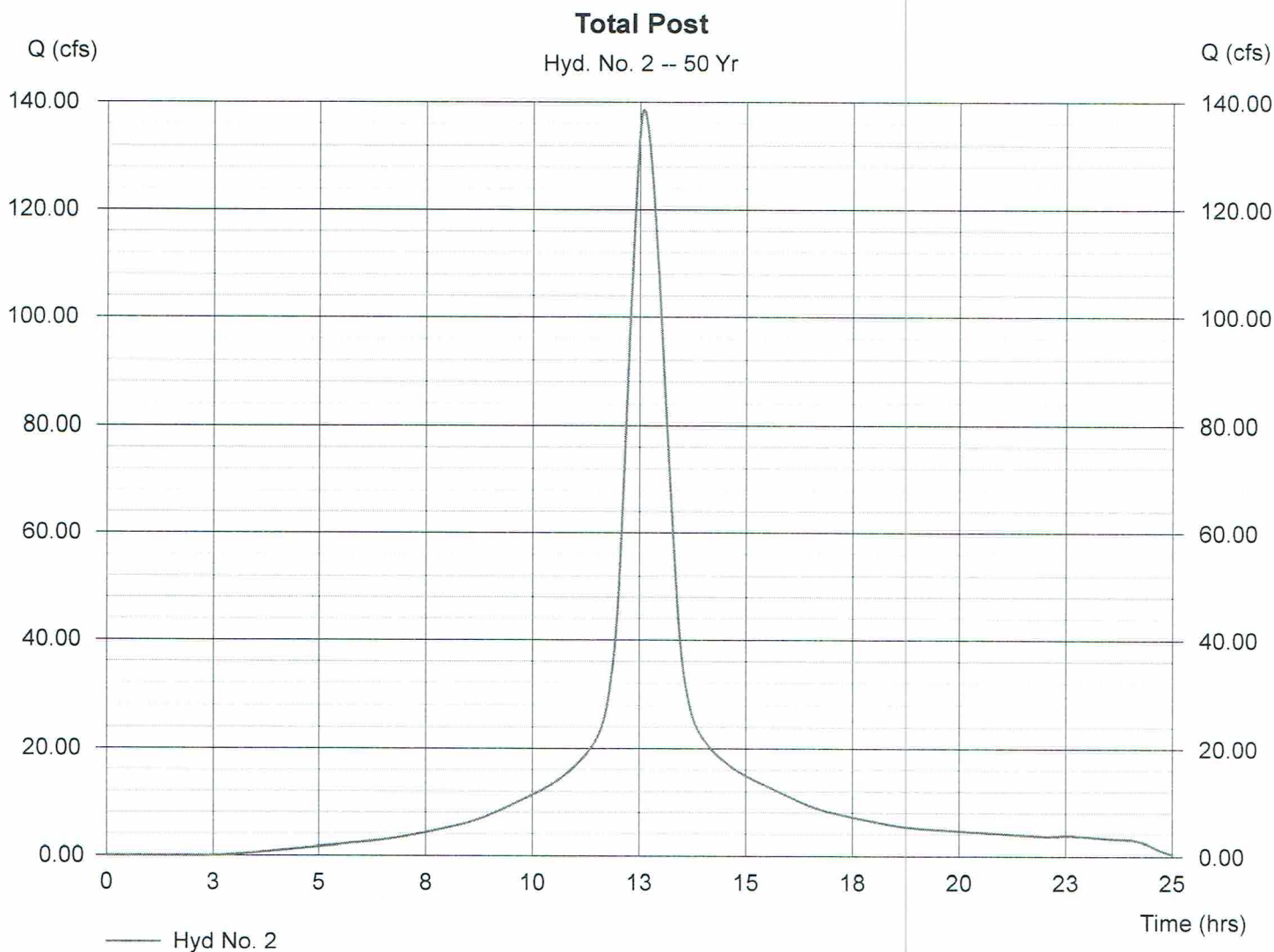
Hyd. No. 2

Total Post

Hydrograph type = SCS Runoff
 Storm frequency = 50 yrs
 Drainage area = 38.600 ac
 Basin Slope = 0.5 %
 Tc method = LAG
 Total precip. = 8.55 in
 Storm duration = 24 hrs

Peak discharge = 138.64 cfs
 Time interval = 1 min
 Curve number = 92
 Hydraulic length = 2240 ft
 Time of conc. (Tc) = 55.34 min
 Distribution = Type III
 Shape factor = 484

Hydrograph Volume = 1,063,258 cuft



Hydrograph Plot

Hydraflow Hydrographs by Intelisolve

Wednesday, Jun 1 2016, 12:21 PM

Hyd. No. 3

Detention Outflow

Hydrograph type = Reservoir
 Storm frequency = 50 yrs
 Inflow hyd. No. = 2
 Reservoir name = Purple Basin

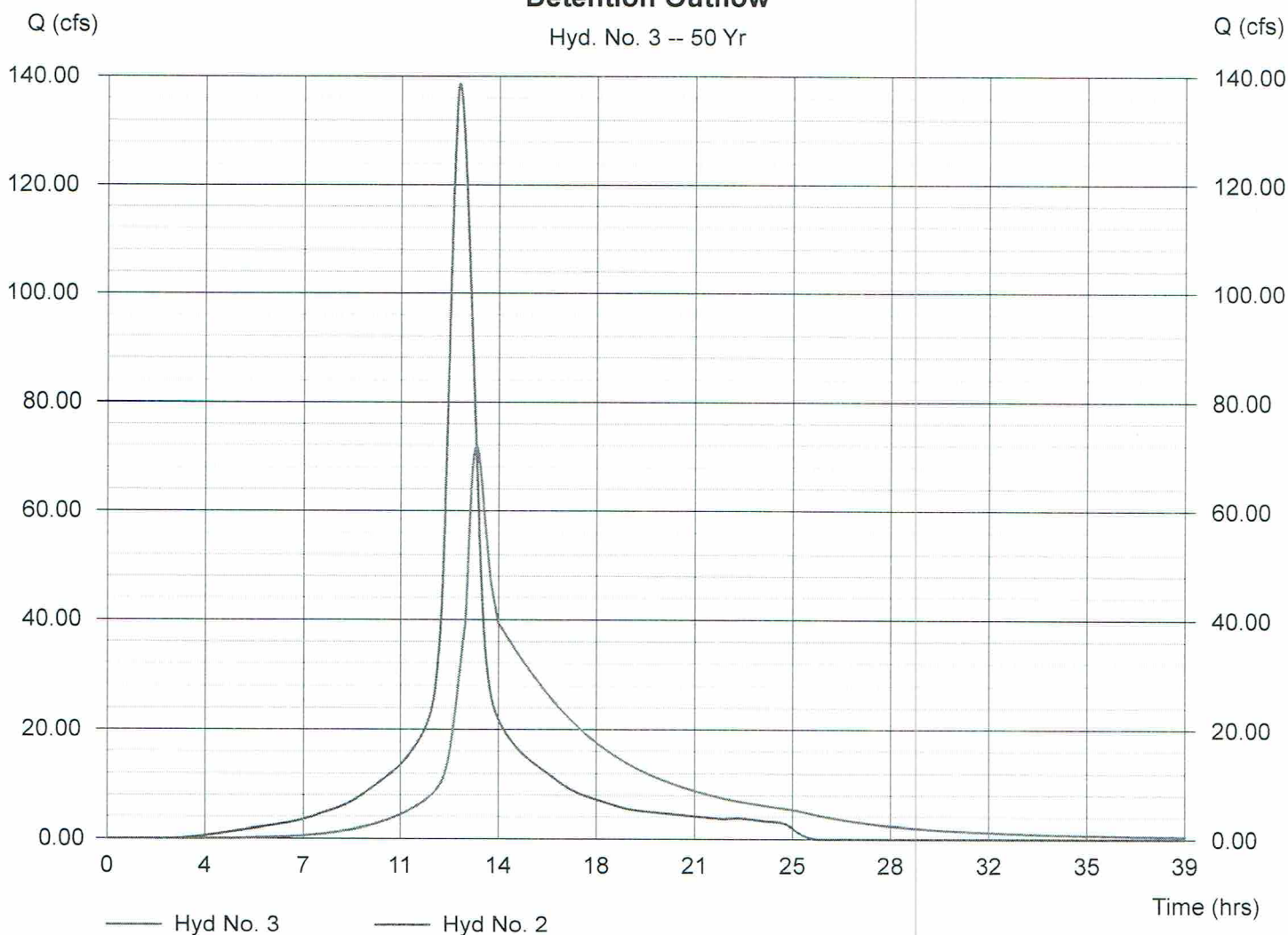
Peak discharge = 71.82 cfs
 Time interval = 1 min
 Max. Elevation = 325.78 ft
 Max. Storage = 475,395 cuft

Storage Indication method used.

Hydrograph Volume = 1,053,191 cuft

Detention Outflow

Hyd. No. 3 -- 50 Yr



Pond Report

Hydraflow Hydrographs by Intelisolve

Wednesday, Jun 1 2016, 12:21 PM

Pond No. 1 - Purple Basin

Pond Data

Pond storage is based on known contour areas. Average end area method used.

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	323.00	154,264	0	0
1.00	324.00	165,935	160,100	160,100
2.00	325.00	177,743	171,839	331,939
3.00	326.00	189,661	183,702	515,641
4.00	327.00	202,404	196,033	711,673
5.00	328.00	215,310	208,857	920,530
6.00	329.00	228,140	221,725	1,142,255
7.00	330.00	240,925	234,533	1,376,788

Culvert / Orifice Structures

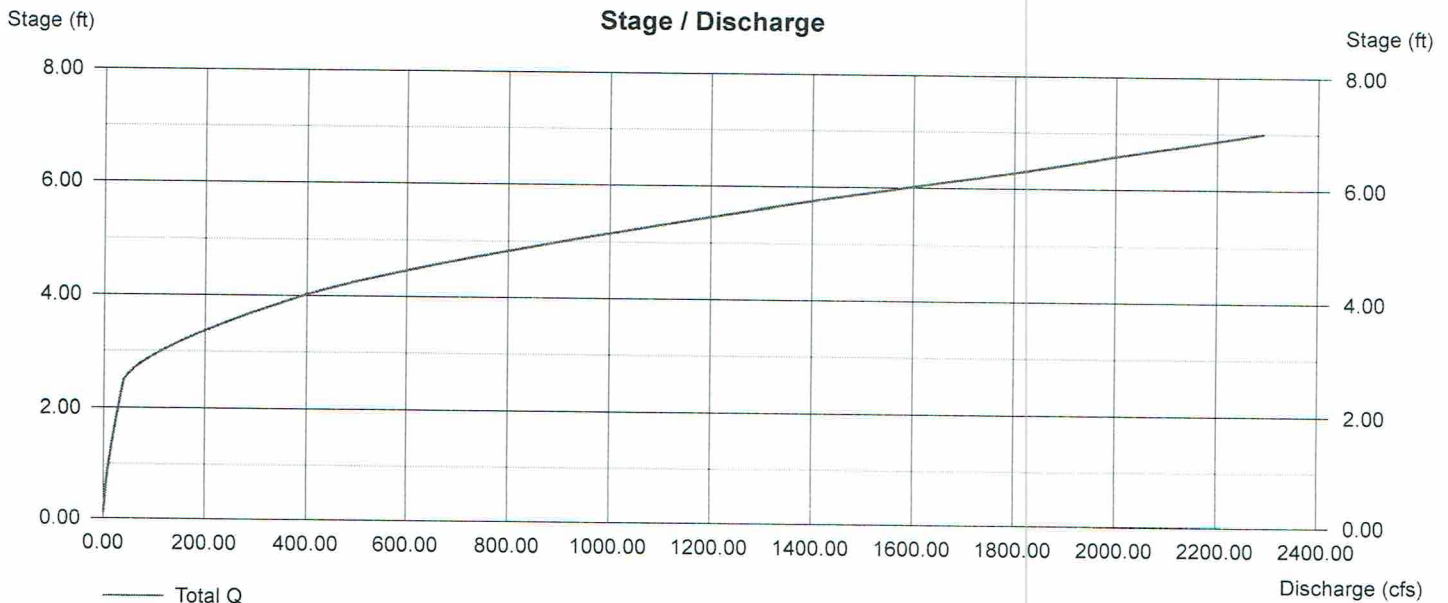
	[A]	[B]	[C]	[D]
Rise (in)	= 120.00	0.00	0.00	0.00
Span (in)	= 192.00	0.00	0.00	0.00
No. Barrels	= 2	0	0	0
Invert El. (ft)	= 319.20	0.00	0.00	0.00
Length (ft)	= 300.00	0.00	0.00	0.00
Slope (%)	= 1.00	0.00	0.00	0.00
N-Value	= .013	.000	.000	.000
Orif. Coeff.	= 0.60	0.00	0.00	0.00
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 3.00	0.00	51.00	36.00
Crest El. (ft)	= 323.00	0.00	325.50	327.00
Weir Coeff.	= 3.33	0.00	3.33	3.33
Weir Type	= Rect	---	Rect	Rect
Multi-Stage	= Yes	No	Yes	Yes

Exfiltration = 0.000 in/hr (Contour) Tailwater Elev. = 0.00 ft

Note: Culvert/Orifice outflows have been analyzed under inlet and outlet control.



Hydrograph Summary Report

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Maximum storage (cuft)	Hydrograph description
1	SCS Runoff	85.54	1	782	879,163	----	-----	-----	Total Pre
2	SCS Runoff	149.82	1	755	1,153,582	----	-----	-----	Total Post
3	Reservoir	87.79	1	788	1,143,374	2	325.87	492,549	Detention Outflow

Hydrograph Plot

Hydraflow Hydrographs by Intelisolve

Wednesday, Jun 1 2016, 12:21 PM

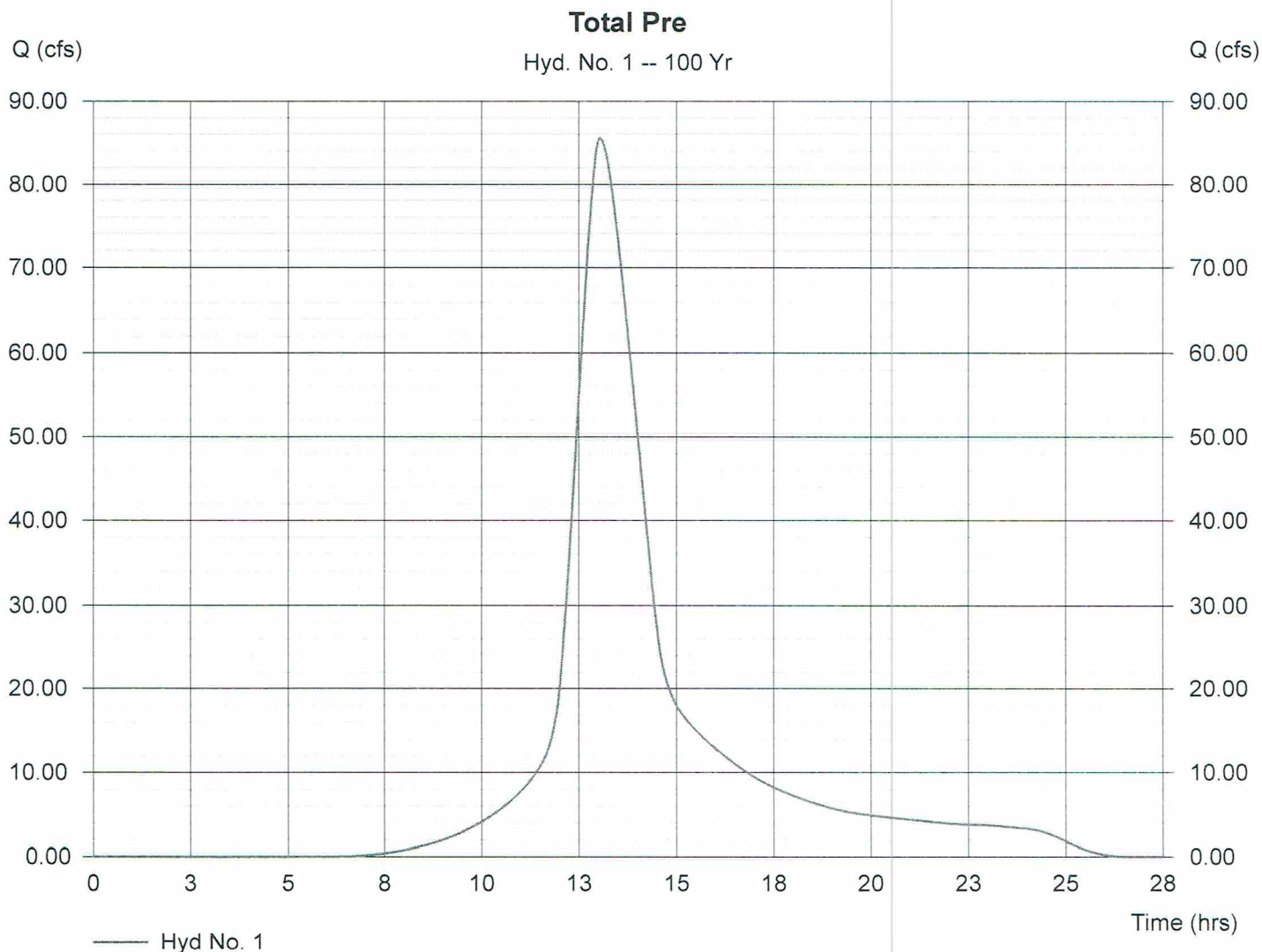
Hyd. No. 1

Total Pre

Hydrograph type = SCS Runoff
 Storm frequency = 100 yrs
 Drainage area = 38.600 ac
 Basin Slope = 0.5 %
 Tc method = LAG
 Total precip. = 9.20 in
 Storm duration = 24 hrs

Peak discharge = 85.54 cfs
 Time interval = 1 min
 Curve number = 76
 Hydraulic length = 2240 ft
 Time of conc. (Tc) = 96.84 min
 Distribution = Type III
 Shape factor = 484

Hydrograph Volume = 879,163 cuft



Hydrograph Plot

Hydraflow Hydrographs by Intelisolve

Wednesday, Jun 1 2016, 12:21 PM

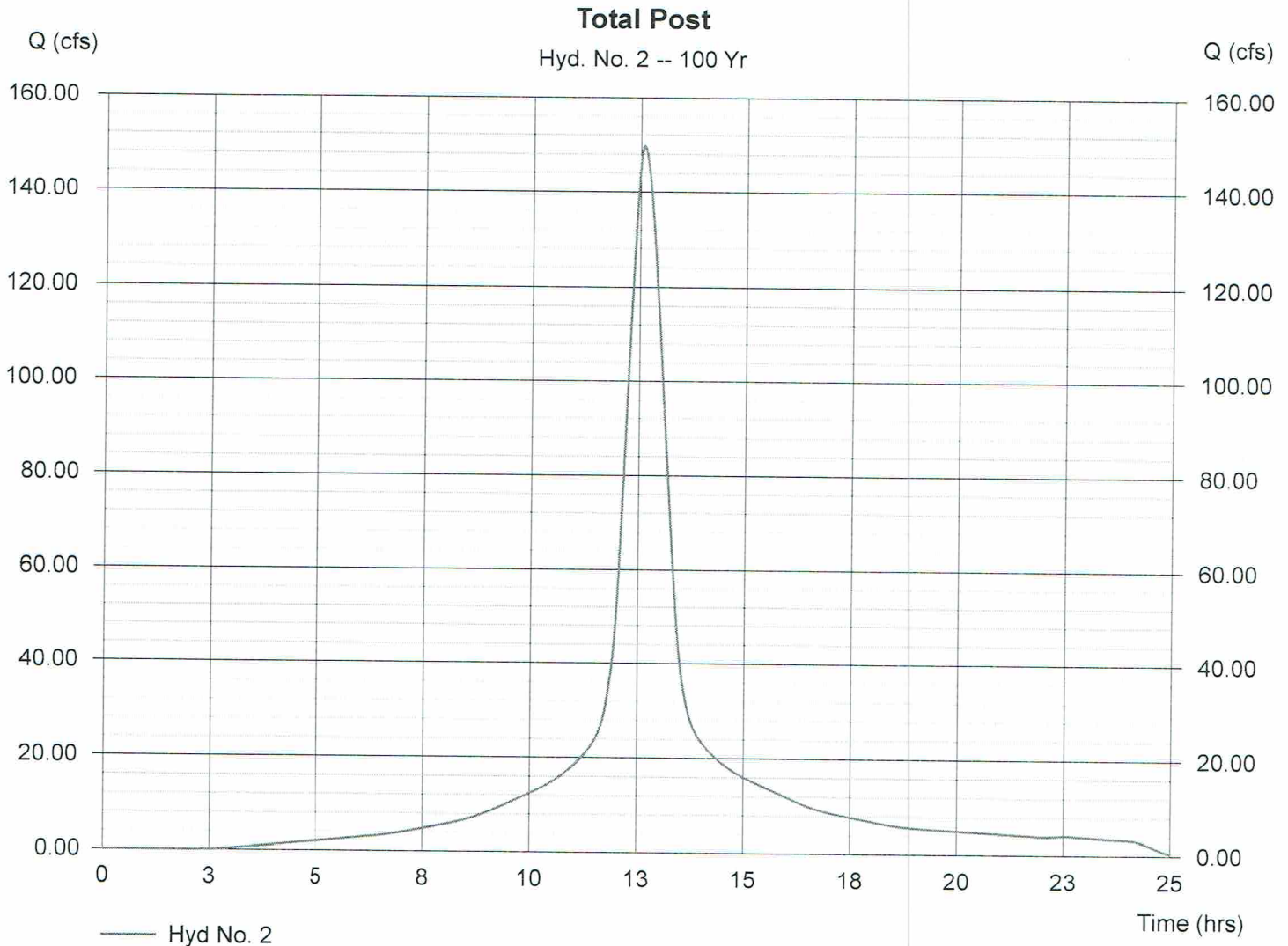
Hyd. No. 2

Total Post

Hydrograph type = SCS Runoff
 Storm frequency = 100 yrs
 Drainage area = 38,600 ac
 Basin Slope = 0.5 %
 Tc method = LAG
 Total precip. = 9.20 in
 Storm duration = 24 hrs

Peak discharge = 149.82 cfs
 Time interval = 1 min
 Curve number = 92
 Hydraulic length = 2240 ft
 Time of conc. (Tc) = 55.34 min
 Distribution = Type III
 Shape factor = 484

Hydrograph Volume = 1,153,582 cuft



Hydrograph Plot

Hydraflow Hydrographs by Intelisolve

Wednesday, Jun 1 2016, 12:21 PM

Hyd. No. 3

Detention Outflow

Hydrograph type = Reservoir
 Storm frequency = 100 yrs
 Inflow hyd. No. = 2
 Reservoir name = Purple Basin

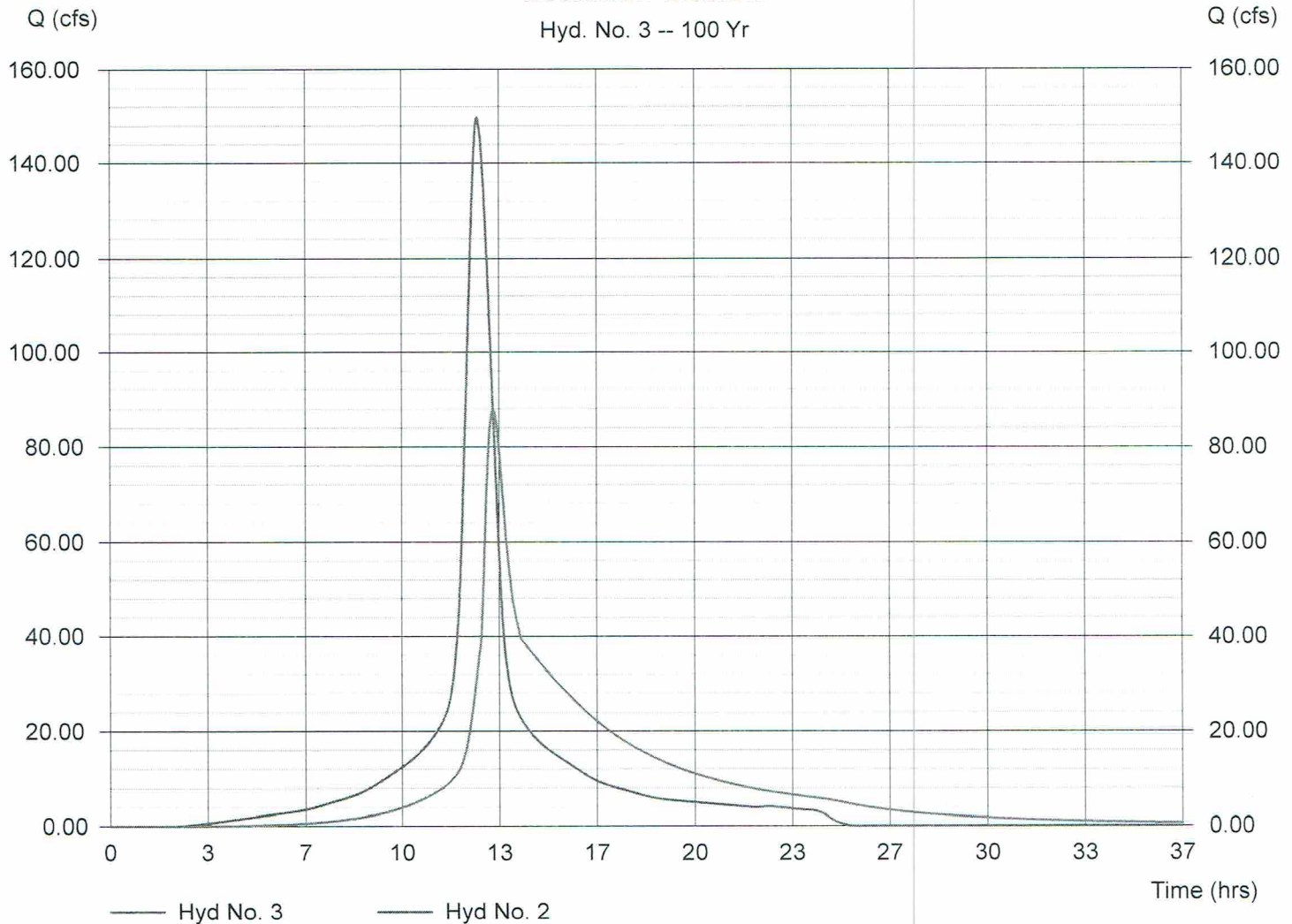
Peak discharge = 87.79 cfs
 Time interval = 1 min
 Max. Elevation = 325.87 ft
 Max. Storage = 492,549 cuft

Storage Indication method used.

Hydrograph Volume = 1,143,374 cuft

Detention Outflow

Hyd. No. 3 -- 100 Yr



Pond Report

21

Hydraflow Hydrographs by Intelisolve

Wednesday, Jun 1 2016, 12:21 PM

Pond No. 1 - Purple Basin

Pond Data

Pond storage is based on known contour areas. Average end area method used.

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	323.00	154,264	0	0
1.00	324.00	165,935	160,100	160,100
2.00	325.00	177,743	171,839	331,939
3.00	326.00	189,661	183,702	515,641
4.00	327.00	202,404	196,033	711,673
5.00	328.00	215,310	208,857	920,530
6.00	329.00	228,140	221,725	1,142,255
7.00	330.00	240,925	234,533	1,376,788

Culvert / Orifice Structures

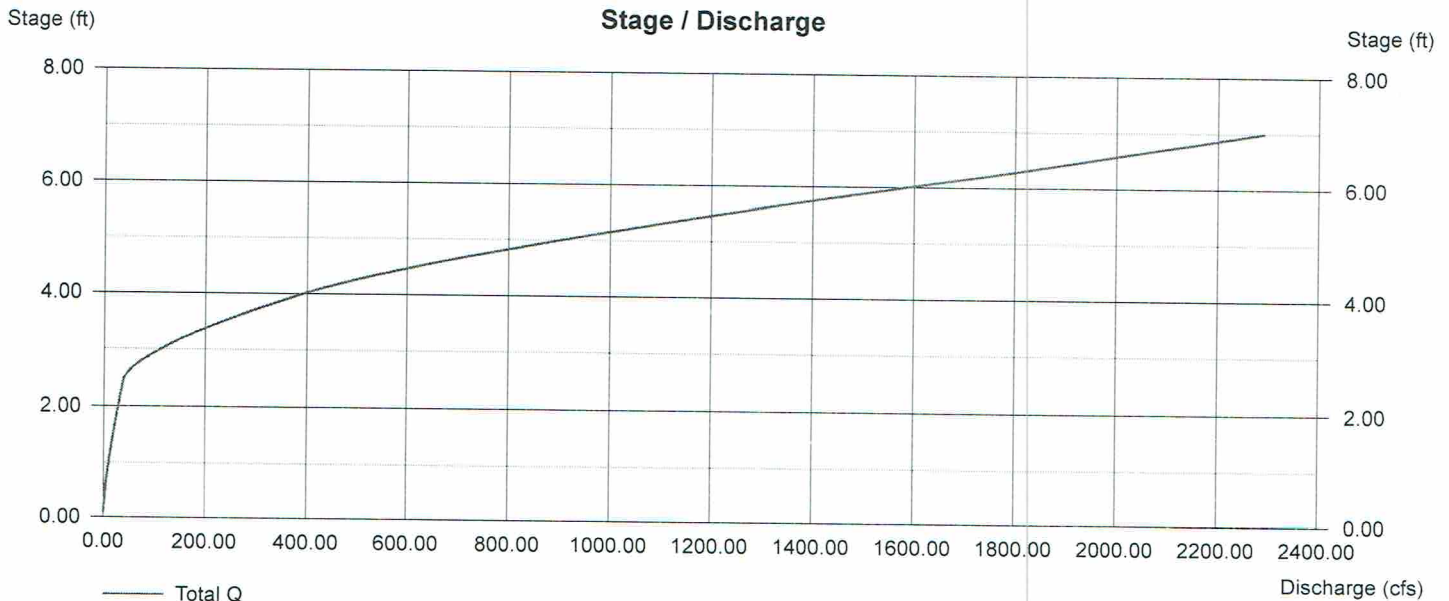
	[A]	[B]	[C]	[D]
Rise (in)	= 120.00	0.00	0.00	0.00
Span (in)	= 192.00	0.00	0.00	0.00
No. Barrels	= 2	0	0	0
Invert El. (ft)	= 319.20	0.00	0.00	0.00
Length (ft)	= 300.00	0.00	0.00	0.00
Slope (%)	= 1.00	0.00	0.00	0.00
N-Value	= .013	.000	.000	.000
Orif. Coeff.	= 0.60	0.00	0.00	0.00
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 3.00	0.00	51.00	36.00
Crest El. (ft)	= 323.00	0.00	325.50	327.00
Weir Coeff.	= 3.33	0.00	3.33	3.33
Weir Type	= Rect	---	Rect	Rect
Multi-Stage	= Yes	No	Yes	Yes

Exfiltration = 0.000 in/hr (Contour) Tailwater Elev. = 0.00 ft

Note: Culvert/Orifice outflows have been analyzed under inlet and outlet control.



**PURPLE CREEK
AT U.S. INTERSTATE HIGHWAY 55
AT RIDGELAND, MISSISSIPPI
LAT. 32°25'16'', LONG. 90°08'42''
PROJECT NO. NH-0055-02(163)
MADISON COUNTY**

GENERAL DESCRIPTION

The Mississippi Department of Transportation (MDOT) proposes to reconstruct the U.S. Interstate Highway 55 crossing of Purple Creek at Ridgeland, Mississippi (fig. 1). This project will replace the double 16 ft x 10 ft box culvert near station 106+18.

The site is located in the city of Ridgeland and the basin extends into the city of Madison, which is one of the fastest growing cities in the State. Much development has taken place in the Purple Creek basin in recent years, and with the mushrooming growth of the area, it is likely that development in the basin will continue well into the future. As a result of the vast development, storm-water detention ponds have been constructed in the basin and are present upstream and downstream of the site.

The drainage area at the site is 2.58 mi². The length of the channel from the site to the basin divide is about 3.1 mi and the average slope of the channel between points located at 10 and 85 percent of the length upstream of the site is about 25 ft/mi. Average channel and valley slopes in the vicinity of the crossing are about 12 ft/mi. The proposed highway alignment is skewed about 30 degrees from normal to the channel and the floodplain in the vicinity of the crossing.

PREVIOUS STUDIES AND FLOOD HISTORY

The USGS visited the site (fig. 2) on July 21, 2012, to recover floodmarks from the flood of July 20, 2012 and returned to the site on August 23, 2012 to survey floodmark elevations and select roughness coefficients (Manning's "n") along the approach section. The flood of July 20, 2012 crested at an elevation of 328.7 ft upstream of the culvert and at an elevation of 328.4 ft downstream of the culvert.

In 2010, the Federal Emergency Management Agency (FEMA) published flood maps for Madison County. According to the FEMA maps the 50-, 100-, and 500-year flood elevations at the downstream side of the existing culvert are about 332.4, 332.8, and 333.5 ft, respectively.

Plan-profile sheets furnished by the MDOT contain an upstream high-water elevation of 328.4 ft.

FLOOD FREQUENCY

A flood-frequency curve (fig. 3) for Purple Creek at the U.S. Interstate Highway 55 crossing was developed using procedures outlined in the 1991 USGS report, "Flood Characteristics at Mississippi Streams" and without considering the effects of any of the storm-water detention ponds. The rural flood-frequency discharges were adjusted for urbanization using methods also described in the 1991 report. A 2-year, 2-hour rainfall of 2.4 inches, basin storage of 2 percent, 23 percent of the basin considered impervious area, and a Basin Development Factor of 3 were used to represent existing urbanization. The 50- and 100-year floods are 1,830 and 2,090 ft³/s, respectively. The 500-year flood is estimated to be 2,580 ft³/s.

STAGE-DISCHARGE RELATION

An estimated stage-discharge relation (fig. 4) for Purple Creek at the downstream side of the existing U.S. Interstate Highway 55 crossing was based on the July 2012 flood-peak discharge of $620 \text{ ft}^3/\text{s}$ at elevation 328.4 ft (about a 3-year flood, fig. 2) and discharge conveyance ratios. The peak discharge for this flood was estimated from an areal study of peak discharges at nearby gaged sites. Conveyance computations were based on a floodplain cross section taken from the FEMA model and located about 500 ft downstream of the site, the valley cross section furnished by the MDOT and roughness coefficients selected by the USGS. The MDOT valley cross section was modified where considered not representative. The elevations corresponding to the 50- and 100-year floods are 331.4 and 331.7 ft, respectively. The elevation of the 500-year flood is estimated to be 332.2 feet. Because of the skew of the crossing, water-surface elevations at the left (north) edge of the floodplain crossing during large floods are estimated to be about 0.2 ft higher than those at the right (south) edge.

PROBABLE DISTRIBUTIONS OF APPROACH FLOW

Probable distributions of approach flow for the 50- and 100-year floods (fig. 5) were made by relative-conveyance computations using the modified valley cross section and roughness coefficients selected by the USGS.

During the 50-year flood ($1,830 \text{ ft}^3/\text{s}$), there will be about $100 \text{ ft}^3/\text{s}$ (6%) approaching the crossing left (north) of the main channel, about $1,610 \text{ ft}^3/\text{s}$ (88%) in the main channel, and about $120 \text{ ft}^3/\text{s}$ (6%) right (south) of the main channel.

Purple Creek at U.S. Interstate Highway 55 at Ridgeland, Mississippi
Project No. NH-0055-02(163)

During the 100-year flood (2,090 ft³/s), there will be about 130 ft³/s (6%) approaching the crossing left (north) of the main channel, about 1,820 ft³/s (87%) in the main channel, and about 140 ft³/s (7%) right (south) of the main channel.

DATUM

Elevations presented are to MDOT Datum, which appears to be North American Vertical Datum of 1988 at this site.

These data are preliminary and subject to change with additional review by the USGS.

Prepared by _____
W. Trent Baldwin, Hydrologist, P.E.

Checked by _____
Brandon Anderson, Hydrologist

Reviewed by _____
John B. Storm, Hydrologist, P.E.

Enclosures
WTB/wtb
October 2012

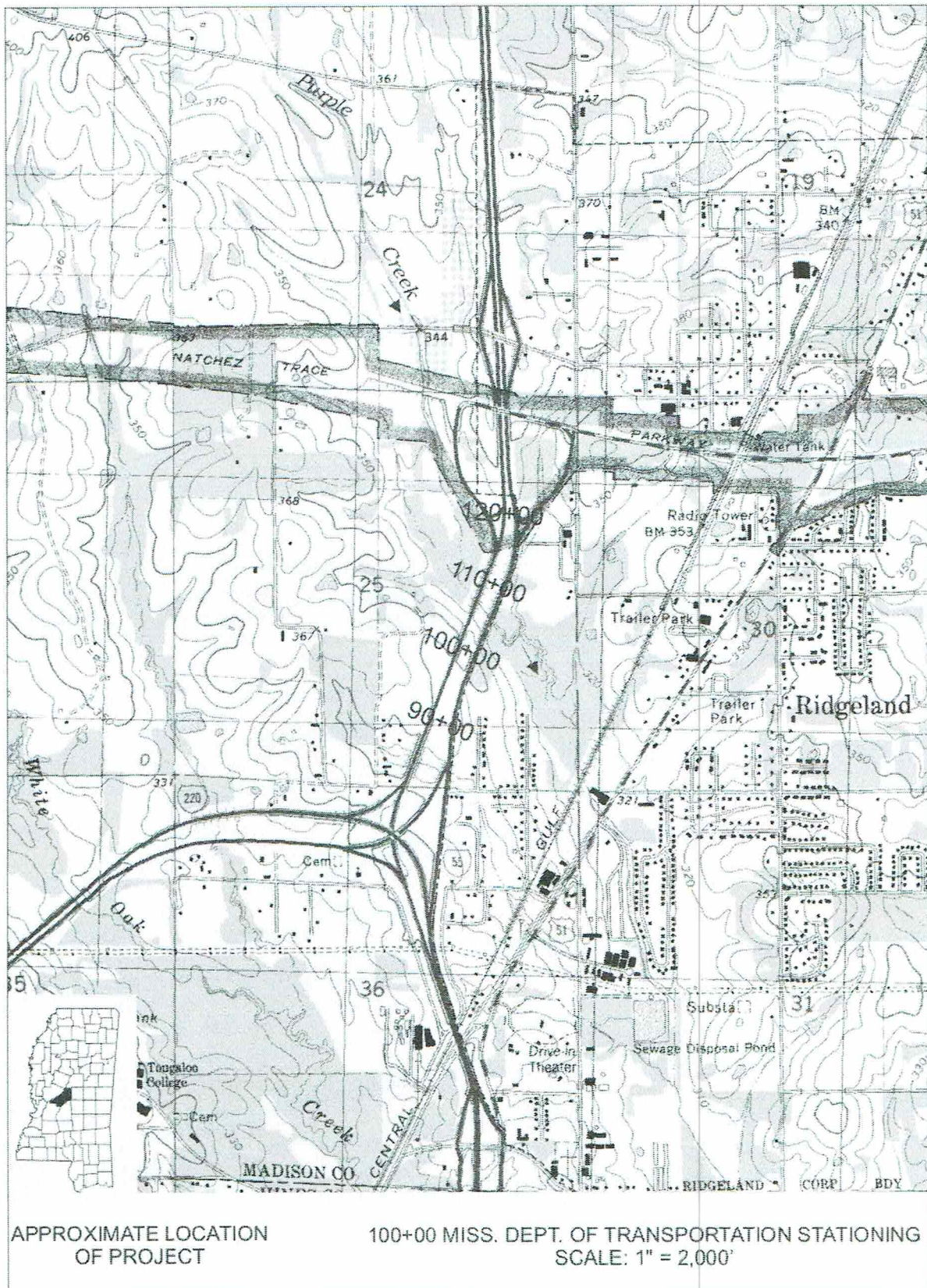


Figure 1.--Location map, Purple Creek at U.S. Interstate Highway 55 at Ridgeland, Mississippi.



Looking upstream from culvert (August 23, 2012)



Looking downstream from culvert (August 23, 2012)

Figure 2.--Photographs at Purple Creek at
U.S. Interstate Highway 55 at Ridgeland, Mississippi.

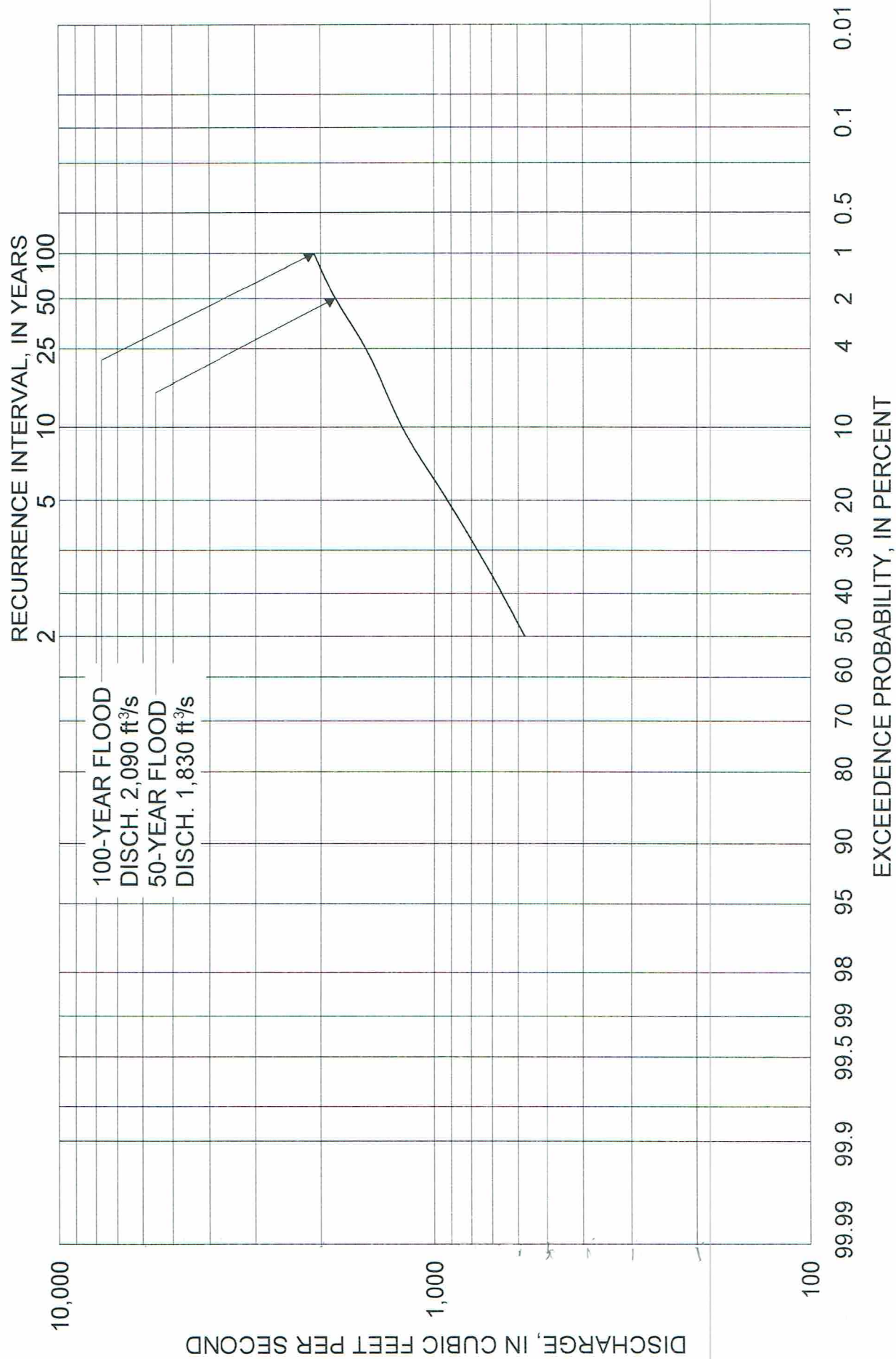


Figure 3.--Magnitude and frequency of annual floods, Purple Creek at U.S. Interstate Highway 55 at Ridgeland, Mississippi.

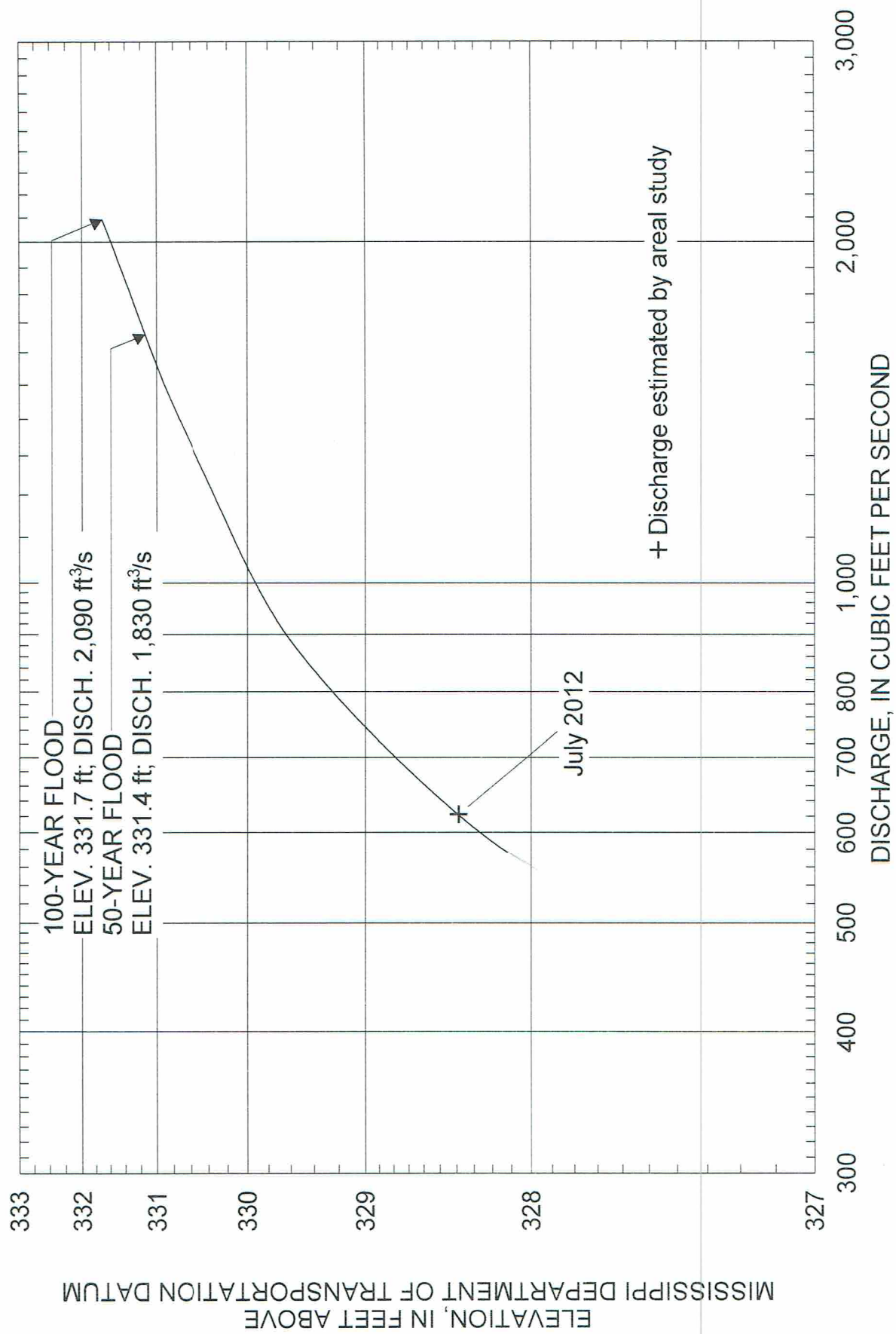


Figure 4.--Stage-discharge relation, Purple Creek at U.S. Interstate Highway 55 at Ridgeland, Mississippi (downstream side of existing culvert).

0.18	0.055	0.18
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EXISTING CULVERT OPENING

100

1,610

120

PROBABLE DISTRIBUTION OF APPROACH FLOW FOR THE 50-YEAR FLOOD (1,830 ft³/s)

130

1,820

140

PROBABLE DISTRIBUTION OF APPROACH FLOW FOR THE 100-YEAR FLOOD (2,090 ft³/s)

Figure 5.-- Cross section and probable distribution of approach flow, Purple Creek at U.S. Interstate Highway 55 at Ridgeland, Mississippi.

Figure 5.-- Cross section and probable distribution of approach flow, Purple Creek at U.S. Interstate Highway 55 at Ridgeland, Mississippi.

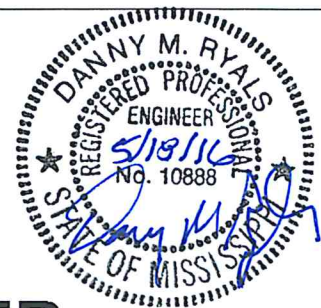
STORM DRAINAGE DESIGN AND ANALYSIS

ROUGH GRADING AND DRAINAGE PACKAGE

RENAISSANCE AT COLONY PARK PHASE 3

RIDGELAND, MISSISSIPPI

PREPARED BY



STORM DRAINAGE AREAS

ANALYSIS OF EXISTING
36" RCP (DOUBLE) UNDER
HIGHLAND COLONY PARKWAY



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COMPUTED BY Ryals DATE 5/11/16

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Existing Twin 36" RCP UNDER HIGHLAND COLONY PARKWAY

$$A = 38.1 \text{ Ac.} \quad C = 0.68 \quad \text{Slope} = \frac{340 - 335.8}{2,000} = 1.71\%$$

$$t_c = 10 \frac{L^{.37}}{17^{.5.21}} = (10) \frac{(2000)^{.37}}{(17)^{.68} (1.71)^{.21}} = 21.65 \text{ min}$$

$$T_{100} = 7.43 \text{ in/hr}$$

$$Q_{100} = CIA = (.68)(7.43 \text{ in/hr})(38.1 \text{ Ac.}) = 192.5 \text{ cfs use } 193 \text{ cfs}$$

Existing Pipe Size 36" (2 pipes)

$$36" \text{ Pipe Slope}_{\text{North}} = \frac{335.79 - 335.19}{139.70} (100) = 0.43\%$$

$$\text{Adj. slope} = 0.43\%$$

$$36" \text{ Pipe Slope}_{\text{South}} = \frac{336.01 - 335.26}{138.93} (100) = 0.54\%$$

Top of CURB Elev. = 341.09

$$Head = 341.09 - 336.01 = 5.08' \text{ use } 5' \text{ max need.}$$

Existing Pipe will only carry 132 cfs < 193 cfs (Existing 100 year Flow)

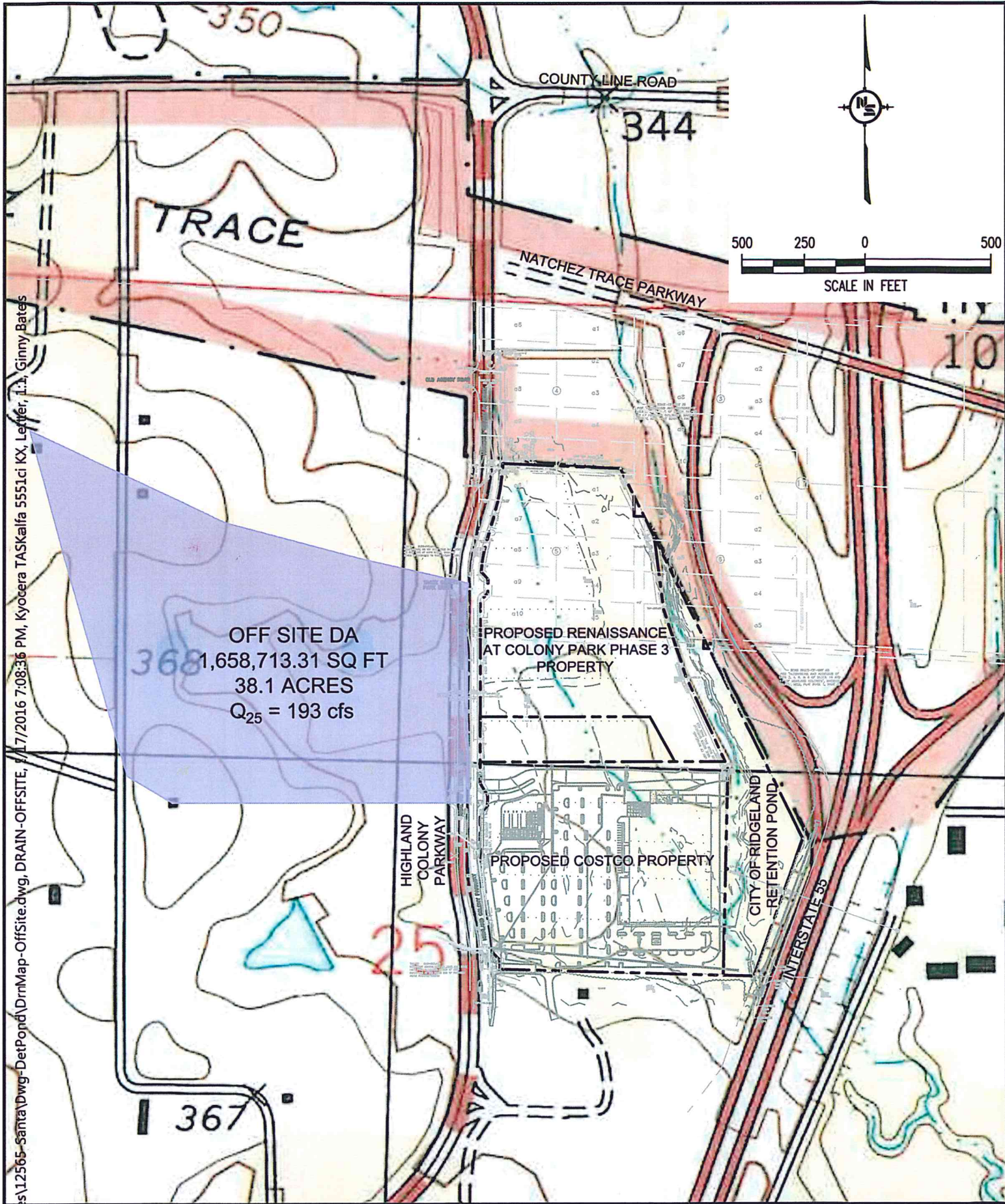
No Good

City of Ridge land to upgrade existing pipe to carry existing flows.

Culvert Designer/Analyzer Report

Twin 36

Analysis Component				
Storm Event	Design	Discharge	0.00 cfs	
Peak Discharge Method: Rational				
Design Return Period	100 year	Check Return Period	100 year	
Design Peak Discharge	0.00 cfs	Check Peak Discharge	0.00 cfs	
Total Area	0.00 acres	Time of Concentration	21.65 min	
Rational Coefficient	0.00	Intensity	7.43 in/hr	
Tailwater Conditions: Constant Tailwater				
Tailwater Elevation	N/A ft			
Name	Description	Discharge	HW Elev.	Velocity
Weir	Not Considered	N/A	N/A	N/A



I:\Projects\CadFiles\12565-Santa\Draw-DetPond\DrnMap-OffSite.dwg, DRAIN-OFFSITE, 1/17/2016 7:08:36 PM, Kyocera TASKalfa 5551ci KX, Letter, 11, Ginny Bates

**RENAISSANCE at COLONY PARK
PHASE 3
RIDGELAND, MISSISSIPPI**



OFF SITE DRAINAGE MAP

DATE: 05/2016	SCALE: 1" = 500'	JOB NUMBER: NS.12565.000
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Rainfall Table

Return Periods							
Durations	1 year	2 year	5 year	10 year	25 year	50 year	100 year
5 min	6.12	6.96	8.64	9.60	11.04	12.00	13.20
10 min	4.68	5.34	6.66	7.38	8.46	9.24	10.20
15 min	3.96	4.52	5.60	6.24	7.16	7.76	8.60
30 min	2.74	3.14	3.88	4.32	4.96	5.40	5.96
60 min	1.74	2.00	2.48	2.75	3.30	3.44	3.77
120 min	1.05	1.22	1.52	1.71	1.94	2.17	2.40
180 min	0.77	0.91	1.13	1.29	1.46	1.62	1.79
360 min	0.47	0.55	0.68	0.78	0.91	0.99	1.11
720 min	0.28	0.33	0.41	0.47	0.55	0.59	0.67
1440 min	0.16	0.18	0.24	0.28	0.32	0.36	0.39

Rainfall Intensities are in (in/hr)

Culvert Calculator Report

Twin 36 Pipe Analysis

Solve For: Discharge

Culvert Summary			
Allowable HW Elevation	341.00 ft	Headwater Depth/Height	1.70
Computed Headwater Elev.	341.00 ft	Discharge	131.74 cfs
Inlet Control HW Elev.	340.72 ft	Tailwater Elevation	335.22 ft
Outlet Control HW Elev.	341.00 ft	Control Type	Outlet Control

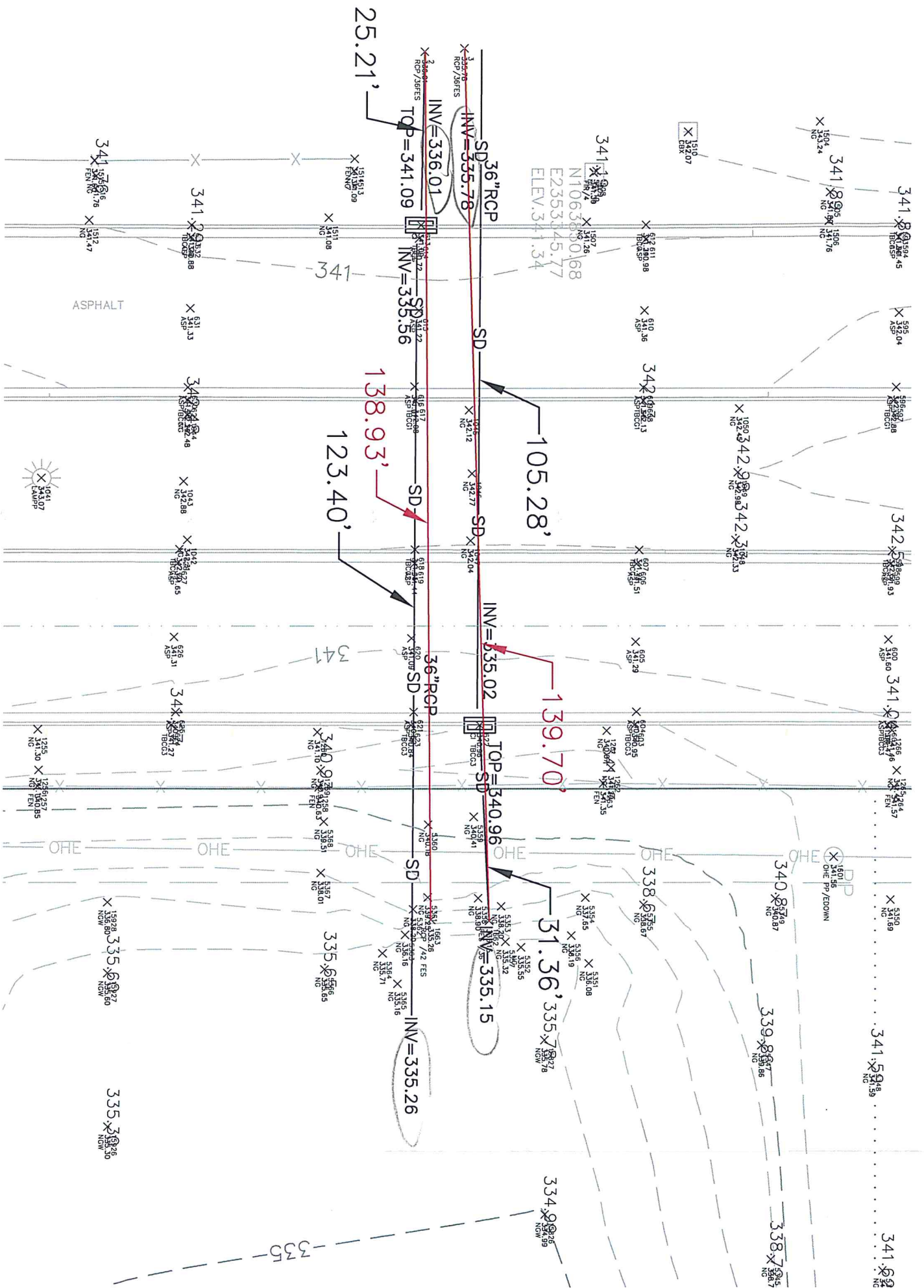
Grades			
Upstream Invert	335.90 ft	Downstream Invert	335.22 ft
Length	139.32 ft	Constructed Slope	0.004881 ft/ft

Hydraulic Profile			
Profile	CompositeM2PressureProfile	Depth, Downstream	2.60 ft
Slope Type	Mild	Normal Depth	N/A ft
Flow Regime	Subcritical	Critical Depth	2.60 ft
Velocity Downstream	10.12 ft/s	Critical Slope	0.008946 ft/ft

Section			
Section Shape	Circular	Mannings Coefficient	0.013
Section Material	Concrete	Span	3.00 ft
Section Size	36 inch	Rise	3.00 ft
Number Sections	2		

Outlet Control Properties			
Outlet Control HW Elev.	341.00 ft	Upstream Velocity Head	1.35 ft
Ke	0.20	Entrance Loss	0.27 ft

Inlet Control Properties			
Inlet Control HW Elev.	340.72 ft	Flow Control	Submerged
Inlet Type	Groove end projecting	Area Full	14.1 ft²
K	0.00450	HDS 5 Chart	1
M	2.00000	HDS 5 Scale	3
C	0.03170	Equation Form	1
Y	0.69000		



Culvert Calculator Report

Box Culvert Upstream of Junction Box 1

Solve For: Headwater Elevation

Culvert Summary			
Allowable HW Elevation	336.00 ft	Headwater Depth/Height	1.04
Computed Headwater Elev.	327.21 ft	Discharge	193.00 cfs
Inlet Control HW Elev.	327.21 ft	Tailwater Elevation	323.00 ft
Outlet Control HW Elev.	327.11 ft	Control Type	Inlet Control
Grades			
Upstream Invert	322.00 ft	Downstream Invert	321.60 ft
Length	150.00 ft	Constructed Slope	0.002667 ft/ft
Hydraulic Profile			
Profile	M2	Depth, Downstream	3.18 ft
Slope Type	Mild	Normal Depth	3.85 ft
Flow Regime	Subcritical	Critical Depth	3.18 ft
Velocity Downstream	10.12 ft/s	Critical Slope	0.004390 ft/ft
Section			
Section Shape	Box	Mannings Coefficient	0.013
Section Material	Concrete	Span	6.00 ft
Section Size	6 x 5 ft	Rise	5.00 ft
Number Sections	1		
Outlet Control Properties			
Outlet Control HW Elev.	327.11 ft	Upstream Velocity Head	1.19 ft
Ke	0.20	Entrance Loss	0.24 ft
Inlet Control Properties			
Inlet Control HW Elev.	327.21 ft	Flow Control	N/A
Inlet Type	headwall w 3/4 inch chamfers	Area Full	30.0 ft ²
K	0.51500	HDS 5 Chart	10
M	0.66700	HDS 5 Scale	1
C	0.03750	Equation Form	2
Y	0.79000		

DESIGN FOR BOX CULVERT DOWN
STREAM OF JUNCTION BOX NO. 1



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PROJECT Renaissance Ph 3	ACCOUNT NO. 12565
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COMPUTED BY Ryak DATE 5/11/16
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Junction Box 1 (Box Culvert Size)

$$A = 383 \text{ Ac} + 3.38 \text{ Ac} + 2.46 \text{ Ac} = 44.1 \text{ AREA}$$

$$C = \frac{39.8 (1.68) + (3.38 + 2.46) (1.91)}{44.1 \text{ Ac}} = 0.71$$

$$\text{Slope} = \frac{370 - 337}{(2,000 + 400)} (100) = 1.39\%$$

$$t_c = 10 \frac{L^{1.37}}{17C^{5.21}} = (10) \frac{(2400)^{1.37}}{(17)^{5.21} (1.39)^{5.21}} = 22.26 \text{ min}$$

$$I_{100} = 7.32 \text{ in/hr}$$

$$Q_{100} = CIA = (1.71) (7.32 \text{ in/hr}) (44.1 \text{ Ac}) = 229.2 \text{ cfs}$$

$$\text{Box Culvert Slope} = \frac{335.22 - 320.00}{1304} (100) = 1.17\% \text{ maximum}$$

Culvert Designer/Analyzer Report

Box Culvert Down Stream of Junction Box 1

Analysis Component			
Storm Event	Design	Discharge	0.00 cfs

Peak Discharge Method: Rational			
Design Return Period	100 year	Check Return Period	100 year
Design Peak Discharge	0.00 cfs	Check Peak Discharge	0.00 cfs
Total Area	0.00 acres	Time of Concentration	22.26 min
Rational Coefficient	0.00	Intensity	7.32 in/hr

Tailwater Conditions: Constant Tailwater	
Tailwater Elevation	N/A ft

Name	Description	Discharge	HW Elev.	Velocity
Weir	Not Considered	N/A	N/A	N/A

Rainfall Table

Return Periods							
Durations	1 year	2 year	5 year	10 year	25 year	50 year	100 year
5 min	6.12	6.96	8.64	9.60	11.04	12.00	13.20
10 min	4.68	5.34	6.66	7.38	8.46	9.24	10.20
15 min	3.96	4.52	5.60	6.24	7.16	7.76	8.60
30 min	2.74	3.14	3.88	4.32	4.96	5.40	5.96
60 min	1.74	2.00	2.48	2.75	3.30	3.44	3.77
120 min	1.05	1.22	1.52	1.71	1.94	2.17	2.40
180 min	0.77	0.91	1.13	1.29	1.46	1.62	1.79
360 min	0.47	0.55	0.68	0.78	0.91	0.99	1.11
720 min	0.28	0.33	0.41	0.47	0.55	0.59	0.67
1440 min	0.16	0.18	0.24	0.28	0.32	0.36	0.39

Rainfall Intensities are in (in/hr)

Culvert Calculator Report

Box Culvert Down Stream of Junction Box No. 1

Solve For: Headwater Elevation

Culvert Summary			
Allowable HW Elevation	336.00 ft	Headwater Depth/Height	1.30
Computed Headwater Elev.	326.59 ft	Discharge	229.20 cfs
Inlet Control HW Elev.	326.08 ft	Tailwater Elevation	323.00 ft
Outlet Control HW Elev.	326.59 ft	Control Type	Outlet Control

Grades			
Upstream Invert	321.40 ft	Downstream Invert	321.30 ft
Length	300.00 ft	Constructed Slope	0.000333 ft/ft

Hydraulic Profile			
Profile	CompositeM2PressureProfile	Depth, Downstream	2.94 ft
Slope Type	Mild	Normal Depth	N/A ft
Flow Regime	Subcritical	Critical Depth	2.94 ft
Velocity Downstream	9.73 ft/s	Critical Slope	0.003585 ft/ft

Section			
Section Shape	Box	Mannings Coefficient	0.013
Section Material	Concrete	Span	8.00 ft
Section Size	8 x 4 ft	Rise	4.00 ft
Number Sections	1		

Outlet Control Properties			
Outlet Control HW Elev.	326.59 ft	Upstream Velocity Head	0.80 ft
Ke	0.20	Entrance Loss	0.16 ft

Inlet Control Properties			
Inlet Control HW Elev.	326.08 ft	Flow Control	N/A
Inlet Type	90° headwall w 45° bevels	Area Full	32.0 ft²
K	0.49500	HDS 5 Chart	10
M	0.66700	HDS 5 Scale	2
C	0.03140	Equation Form	2
Y	0.82000		

DESIGN FOR BOX
CULVERT DOWNSTREAM OF JUNCTION
BOX NO. 2



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COMPUTED BY *Ryals* DATE *5/12/16*

CHECKED BY _____ DATE _____

Junction Box 2

$$A = 38.3 \text{ Ac} + 3.39 \text{ Ac} + 2.46 \text{ Ac} + 7.56 \text{ Ac} + 6.66 \text{ Ac} = 58.36 \text{ Ac}$$

$$C = \frac{38.3^{.69} + (3.39^{.69} + 2.46^{.69} + 7.56^{.69} + 6.66^{.69}) \cdot .91}{58.36 \text{ Ac}} = 0.76$$

$$\text{Slope} = \frac{370 - 336}{(2000 + 400 + 300)} (100) = 1.26\%$$

$$t_c = 10 \frac{L^{.37}}{17C^{.21}} = (10) \frac{(2700)^{.37}}{(17)^{.21} (1.26)^{.21}} = 20.58 \text{ min}$$

$$I_{100} = 7.62 \text{ in/hr}$$

$$Q_{100} = CIA = (.76)(7.62 \text{ in/hr})(58.36 \text{ Ac}) = 337.97 \text{ cfs}$$

Culvert Designer/Analyzer Report

Box Culvert Down Stream of Junction Box 2

Analysis Component			
Storm Event	Design	Discharge	0.00 cfs

Peak Discharge Method: Rational			
Design Return Period	100 year	Check Return Period	100 year
Design Peak Discharge	0.00 cfs	Check Peak Discharge	0.00 cfs
Total Area	0.00 acres	Time of Concentration	20.58 min
Rational Coefficient	0.00	Intensity	7.62 in/hr

Tailwater Conditions: Constant Tailwater	
Tailwater Elevation	N/A ft

Name	Description	Discharge	HW Elev.	Velocity
Weir	Not Considered	N/A	N/A	N/A

Rainfall Table

Return Periods							
Durations	1 year	2 year	5 year	10 year	25 year	50 year	100 year
5 min	6.12	6.96	8.64	9.60	11.04	12.00	13.20
10 min	4.68	5.34	6.66	7.38	8.46	9.24	10.20
15 min	3.96	4.52	5.60	6.24	7.16	7.76	8.60
30 min	2.74	3.14	3.88	4.32	4.96	5.40	5.96
60 min	1.74	2.00	2.48	2.75	3.30	3.44	3.77
120 min	1.05	1.22	1.52	1.71	1.94	2.17	2.40
180 min	0.77	0.91	1.13	1.29	1.46	1.62	1.79
360 min	0.47	0.55	0.68	0.78	0.91	0.99	1.11
720 min	0.28	0.33	0.41	0.47	0.55	0.59	0.67
1440 min	0.16	0.18	0.24	0.28	0.32	0.36	0.39

Rainfall Intensities are in (in/hr)

Culvert Calculator Report

Box Culvert Down Stream of Junction Box No. 2

Solve For: Headwater Elevation

Culvert Summary			
Allowable HW Elevation	335.00 ft	Headwater Depth/Height	1.24
Computed Headwater Elev.	327.31 ft	Discharge	337.97 cfs
Inlet Control HW Elev.	327.31 ft	Tailwater Elevation	323.00 ft
Outlet Control HW Elev.	327.20 ft	Control Type	Inlet Control
Grades			
Upstream Invert	321.10 ft	Downstream Invert	320.35 ft
Length	403.61 ft	Constructed Slope	0.001858 ft/ft
Hydraulic Profile			
Profile	M2	Depth, Downstream	4.76 ft
Slope Type	Mild	Normal Depth	N/A ft
Flow Regime	Subcritical	Critical Depth	3.81 ft
Velocity Downstream	8.88 ft/s	Critical Slope	0.003849 ft/ft
Section			
Section Shape	Box	Mannings Coefficient	0.013
Section Material	Concrete	Span	8.00 ft
Section Size	8 x 5 ft	Rise	5.00 ft
Number Sections	1		
Outlet Control Properties			
Outlet Control HW Elev.	327.20 ft	Upstream Velocity Head	1.91 ft
Ke	0.20	Entrance Loss	0.38 ft
Inlet Control Properties			
Inlet Control HW Elev.	327.31 ft	Flow Control	N/A
Inlet Type	90° headwall w 45° bevels	Area Full	40.0 ft²
K	0.49500	HDS 5 Chart	10
M	0.66700	HDS 5 Scale	2
C	0.03140	Equation Form	2
Y	0.82000		

DESIGN FOR BOX CULVERT
DOWNSTREAM OF JUNCTION BOX 3



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PROJECT	Renaissance Ph 3		
SUBJECT	Hydraulic Analysis		
	ACCOUNT NO.	12565	

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Junction Box 3

$$A = 39.3 \text{ Ac} + 3.39 \text{ Ac} + 2.46 \text{ Ac} + 7.56 \text{ Ac} + 6.66 \text{ Ac} + 2.93 \text{ Ac} + 3.10 \text{ Ac} = 64.39 \text{ Ac}$$

$$C = \frac{[39.3 \text{ Ac} (.69) + (3.39 \text{ Ac} + 2.46 \text{ Ac} + 7.56 \text{ Ac} + 6.66 \text{ Ac} + 2.93 \text{ Ac} + 3.10 \text{ Ac}) (.91)]}{64.39}$$

$$C = 0.77$$

$$\text{Slope} = \frac{370 - 333}{(2000 + 400 + 300 + 404)} (10) = 1.19\%$$

$$t_c = 10 \frac{L^{.37}}{17 C^{.21}} = \frac{(3104)^{.37}}{(17)^{.77} (1.19)^{.21}} = 21.27 \text{ min}$$

$$I_{100} = 7.50 \text{ in/hr}$$

$$Q_{100} = CIA = (.77) (7.50 \text{ in/hr}) (64.39 \text{ Ac}) = 371.95 \text{ cfs}$$

9'x5' Box will carry 371.95 cfs @ a velocity of 9.19 ft/sec with a maximum head of 326.21' at JB No. 3.

A Roadway Height of 324.5 was used on the downstream End.

Culvert Designer/Analyzer Report

Box Culvert Down Stream of Junction Box 3

Analysis Component			
Storm Event	Design	Discharge	0.00 cfs

Peak Discharge Method: Rational			
Design Return Period	100 year	Check Return Period	100 year
Design Peak Discharge	0.00 cfs	Check Peak Discharge	0.00 cfs
Total Area	0.00 acres	Time of Concentration	21.27 min
Rational Coefficient	0.00	Intensity	7.50 in/hr

Tailwater Conditions: Constant Tailwater	
Tailwater Elevation	N/A ft

Name	Description	Discharge	HW Elev.	Velocity
Weir	Not Considered	N/A	N/A	N/A

Rainfall Table

Return Periods							
Durations	1 year	2 year	5 year	10 year	25 year	50 year	100 year
5 min	6.12	6.96	8.64	9.60	11.04	12.00	13.20
10 min	4.68	5.34	6.66	7.38	8.46	9.24	10.20
15 min	3.96	4.52	5.60	6.24	7.16	7.76	8.60
30 min	2.74	3.14	3.88	4.32	4.96	5.40	5.96
60 min	1.74	2.00	2.48	2.75	3.30	3.44	3.77
120 min	1.05	1.22	1.52	1.71	1.94	2.17	2.40
180 min	0.77	0.91	1.13	1.29	1.46	1.62	1.79
360 min	0.47	0.55	0.68	0.78	0.91	0.99	1.11
720 min	0.28	0.33	0.41	0.47	0.55	0.59	0.67
1440 min	0.16	0.18	0.24	0.28	0.32	0.36	0.39

Rainfall Intensities are in (in/hr)

Culvert Calculator Report

Box Culvert Downstream of Junction Box No. 3

Solve For: Headwater Elevation

Culvert Summary			
Allowable HW Elevation	334.00 ft	Headwater Depth/Height	1.21
Computed Headwater Elev.	326.21 ft	Discharge	371.85 cfs
Inlet Control HW Elev.	326.21 ft	Tailwater Elevation	323.00 ft
Outlet Control HW Elev.	326.15 ft	Control Type	Inlet Control
Grades			
Upstream Invert	320.15 ft	Downstream Invert	320.00 ft
Length	45.00 ft	Constructed Slope	0.003333 ft/ft
Hydraulic Profile			
Profile	M2	Depth, Downstream	3.76 ft
Slope Type	Mild	Normal Depth	3.85 ft
Flow Regime	Subcritical	Critical Depth	3.76 ft
Velocity Downstream	11.00 ft/s	Critical Slope	0.003559 ft/ft
Section			
Section Shape	Box	Mannings Coefficient	0.013
Section Material	Concrete	Span	9.00 ft
Section Size	9 x 5 ft	Rise	5.00 ft
Number Sections	1		
Outlet Control Properties			
Outlet Control HW Elev.	326.15 ft	Upstream Velocity Head	1.80 ft
Ke	0.20	Entrance Loss	0.36 ft
Inlet Control Properties			
Inlet Control HW Elev.	326.21 ft	Flow Control	N/A
Inlet Type	90° headwall w 45° bevels	Area Full	45.0 ft²
K	0.49500	HDS 5 Chart	10
M	0.66700	HDS 5 Scale	2
C	0.03140	Equation Form	2
Y	0.82000		

DESIGN OF OUTLET STRUCTURE FOR
RENAISSANCE AT COLONY PARK
PHASE 3 NORTHERN PARCEL



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SUBJECT <i>Hydraulic Analysis</i>	

COMPUTED BY *Ryals* DATE *5/12/16*

CHECKED BY _____ DATE _____

Northern Parcel Drainage

$$A = 14.23$$

$$+ 38.30$$

$$52.53 \text{ Ac}$$

$$C = 0.65$$

$$\text{slope} = \frac{370 - 331}{(2000 + 650)} (100) = 1.97 \%$$

$$t_c = 10 \frac{L^{.37}}{17^{.65} S^{.21}} = 10 \frac{(2650)^{.37}}{17^{.65} (1.97)^{.21}} = 27.13 \text{ min}$$

$$I_{100} = 6.97 \text{ in/hr}$$

$$Q_{100} = CIA = (.65)(6.97 \text{ in/hr})(52.53 \text{ Ac}) = 220.91 \text{ cfs}$$

TRAPEZOIDAL CHANNEL OVERFLOW OPENING

190' Flat Bottom with 3 to 1 side slope

would carry 220.91 cfs @ depth 1.66'

USE A OUTFLOW PIPE SIZE OF 36", A 36" RCD

will carry 50 cfs @

Culvert Designer/Analyzer Report Northern Parcel

Analysis Component				
Storm Event	Design	Discharge	0.00 cfs	
Peak Discharge Method: Rational				
Design Return Period	100 year	Check Return Period	100 year	
Design Peak Discharge	0.00 cfs	Check Peak Discharge	0.00 cfs	
Total Area	0.00 acres	Time of Concentration	27.13 min	
Rational Coefficient	0.00	Intensity	6.47 in/hr	
Tailwater Conditions: Constant Tailwater				
Tailwater Elevation	N/A ft			
Name	Description	Discharge	HW Elev.	Velocity
Weir	Not Considered	N/A	N/A	N/A

Rainfall Table

Return Periods							
Durations	1 year	2 year	5 year	10 year	25 year	50 year	100 year
5 min	6.12	6.96	8.64	9.60	11.04	12.00	13.20
10 min	4.68	5.34	6.66	7.38	8.46	9.24	10.20
15 min	3.96	4.52	5.60	6.24	7.16	7.76	8.60
30 min	2.74	3.14	3.88	4.32	4.96	5.40	5.96
60 min	1.74	2.00	2.48	2.75	3.30	3.44	3.77
120 min	1.05	1.22	1.52	1.71	1.94	2.17	2.40
180 min	0.77	0.91	1.13	1.29	1.46	1.62	1.79
360 min	0.47	0.55	0.68	0.78	0.91	0.99	1.11
720 min	0.28	0.33	0.41	0.47	0.55	0.59	0.67
1440 min	0.16	0.18	0.24	0.28	0.32	0.36	0.39

Rainfall Intensities are in (in/hr)



CLIENT	PAGE	OF	PAGES
PROJECT	ACCOUNT NO.		
SUBJECT			

COMPUTED BY _____ DATE _____

CHECKED BY _____ DATE _____

LT SIDE 120 TO 1

RT SIDE 130 TO 1

$$Q = 220.91 \text{ cfs} \quad \text{slope} \quad \frac{1}{230} (100) = 0.43\%$$

$$\text{Depth} = 1.23' \quad V = 1.14 \text{ ft/sec}$$

Outfall STRUCTURE =

$$Q = CA \sqrt{2gh} \left(\frac{2}{3} \right)$$

$$C = .80 \quad A = \text{area} \quad g = 32.2 \text{ ft/sec}^2$$

$$h = \text{head} = 1.23'$$

$$220.91 \text{ cfs} = \left[(.80)(A) \sqrt{2(32.2)(1.23)} \right] \frac{2}{3}$$

$$220.91 \text{ cfs} = .80(A) (8.90) (0.67)$$

$$220.91 = 4.77A$$

$$A = 46.31 \text{ ft}^2$$

USE A 8' X 6' VERTICAL BOX STRUCTURE

$$\text{Invert TIE-IN } 321.33 + 10' (.002) = 321.35 \text{ Invert of Drop Structure}$$

$$\text{Allowable Headwater} = [331.00 + 1.23] - 321.35 = 10.88'$$

$$\text{Allowable Headwater Elev.} = 332.23$$

8' X 4' Box @ 0.02% slope will carry 220.91 cfs @

Velocity of 9.61 ft/sec.

Worksheet for Existing Triangular Channel - 1

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.060
Channel Slope	0.00430 ft/ft
Left Side Slope	120.00 ft/ft (H:V)
Right Side Slope	130.00 ft/ft (H:V)
Discharge	220.91 ft ³ /s

Results

Normal Depth	1.23 ft
Flow Area	188.35 ft ²
Wetted Perimeter	306.89 ft
Hydraulic Radius	0.61 ft
Top Width	306.88 ft
Critical Depth	0.72 ft
Critical Slope	0.07374 ft/ft
Velocity	1.17 ft/s
Velocity Head	0.02 ft
Specific Energy	1.25 ft
Froude Number	0.26
Flow Type	Subcritical

GVF Input Data

Downstream Depth	0.00 ft
Length	0.00 ft
Number Of Steps	0

GVF Output Data

Upstream Depth	0.00 ft
Profile Description	
Profile Headloss	0.00 ft
Downstream Velocity	Infinity ft/s
Upstream Velocity	Infinity ft/s
Normal Depth	1.23 ft
Critical Depth	0.72 ft
Channel Slope	0.00430 ft/ft
Critical Slope	0.07374 ft/ft

Culvert Calculator Report

Out Parcel Box

Solve For: Headwater Elevation

Culvert Summary			
Allowable HW Elevation	332.23 ft	Headwater Depth/Height	1.14
Computed Headwater Elev.	325.93 ft	Discharge	220.91 cfs
Inlet Control HW Elev.	325.87 ft	Tailwater Elevation	0.00 ft
Outlet Control HW Elev.	325.93 ft	Control Type	Outlet Control

Grades			
Upstream Invert	321.35 ft	Downstream Invert	321.33 ft
Length	10.00 ft	Constructed Slope	0.002000 ft/ft

Hydraulic Profile			
Profile	M2	Depth, Downstream	2.87 ft
Slope Type	Mild	Normal Depth	N/A ft
Flow Regime	Subcritical	Critical Depth	2.87 ft
Velocity Downstream	9.61 ft/s	Critical Slope	0.003565 ft/ft

Section			
Section Shape	Box	Mannings Coefficient	0.013
Section Material	Concrete	Span	8.00 ft
Section Size	8 x 4 ft	Rise	4.00 ft
Number Sections	1		

Outlet Control Properties			
Outlet Control HW Elev.	325.93 ft	Upstream Velocity Head	1.29 ft
Ke	0.20	Entrance Loss	0.26 ft

Inlet Control Properties			
Inlet Control HW Elev.	325.87 ft	Flow Control	Unsubmerged
Inlet Type	90° headwall w 45° bevels	Area Full	32.0 ft²
K	0.49500	HDS 5 Chart	10
M	0.66700	HDS 5 Scale	2
C	0.03140	Equation Form	2
Y	0.82000		

Worksheet for Overflow Outlet Trapezoidal Channel - 2

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.041	
Channel Slope	0.06000	ft/ft
Left Side Slope	4.00	ft/ft (H:V)
Right Side Slope	4.00	ft/ft (H:V)
Bottom Width	10.00	ft
Discharge	220.91	ft ³ /s

Results

Normal Depth	1.49	ft
Flow Area	23.82	ft ²
Wetted Perimeter	22.30	ft
Hydraulic Radius	1.07	ft
Top Width	21.94	ft
Critical Depth	1.91	ft
Critical Slope	0.02281	ft/ft
Velocity	9.27	ft/s
Velocity Head	1.34	ft
Specific Energy	2.83	ft
Froude Number	1.57	
Flow Type	Supercritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	1.49	ft
Critical Depth	1.91	ft
Channel Slope	0.06000	ft/ft

Worksheet for Overflow Outlet Trapezoidal Channel - 2

GVF Output Data

Critical Slope

0.02281 ft/ft

TRAFFIC IMPACT ANALYSIS
for
Renaissance Phase 3
Ridgeland, MS



October 2015

Prepared for

Renaissance at Colony Park, LLC
125 S. Congress Street, Suite 1800
Jackson, MS 39201

Prepared by:



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- Traffic Counts: 1) Highland Colony Pkwy/Old Agency Rd (A15-19), Highland Colony Pkwy/Old Agency Pkwy (A20-23), Highland Colony Pkwy/Trace Colony Park Dr (A24-27), Highland Colony Pkwy/New Pointe Dr (A28-31)
- Traffic Model of Lake Harbour Drive Extension (A32-33)
- Ridgeland delay study for Old Agency Parkway at Highland Colony Parkway (A34)
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- Parkway typical sections, November 1989 (A143)

1.0 Introduction and Summary

This report summarizes the findings of a traffic analysis performed by Neel-Schaffer, Inc. as requested by the Renaissance at Colony Park for the proposed Renaissance Phase 3 located in Ridgeland, Mississippi. The project site is located on the east side of Highland Colony Parkway, south of the Natchez Trace Parkway and west of Interstate 55. Development of the 45 acre parcel is planned to include a 145,000 SF Costco Wholesale club, 127,500 SF of retail development, a 4,000 SF bank and three restaurants.

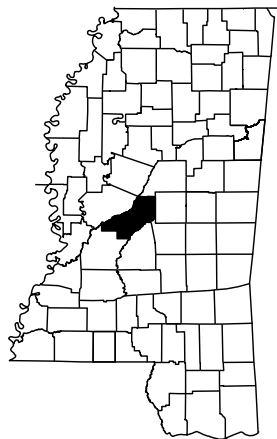
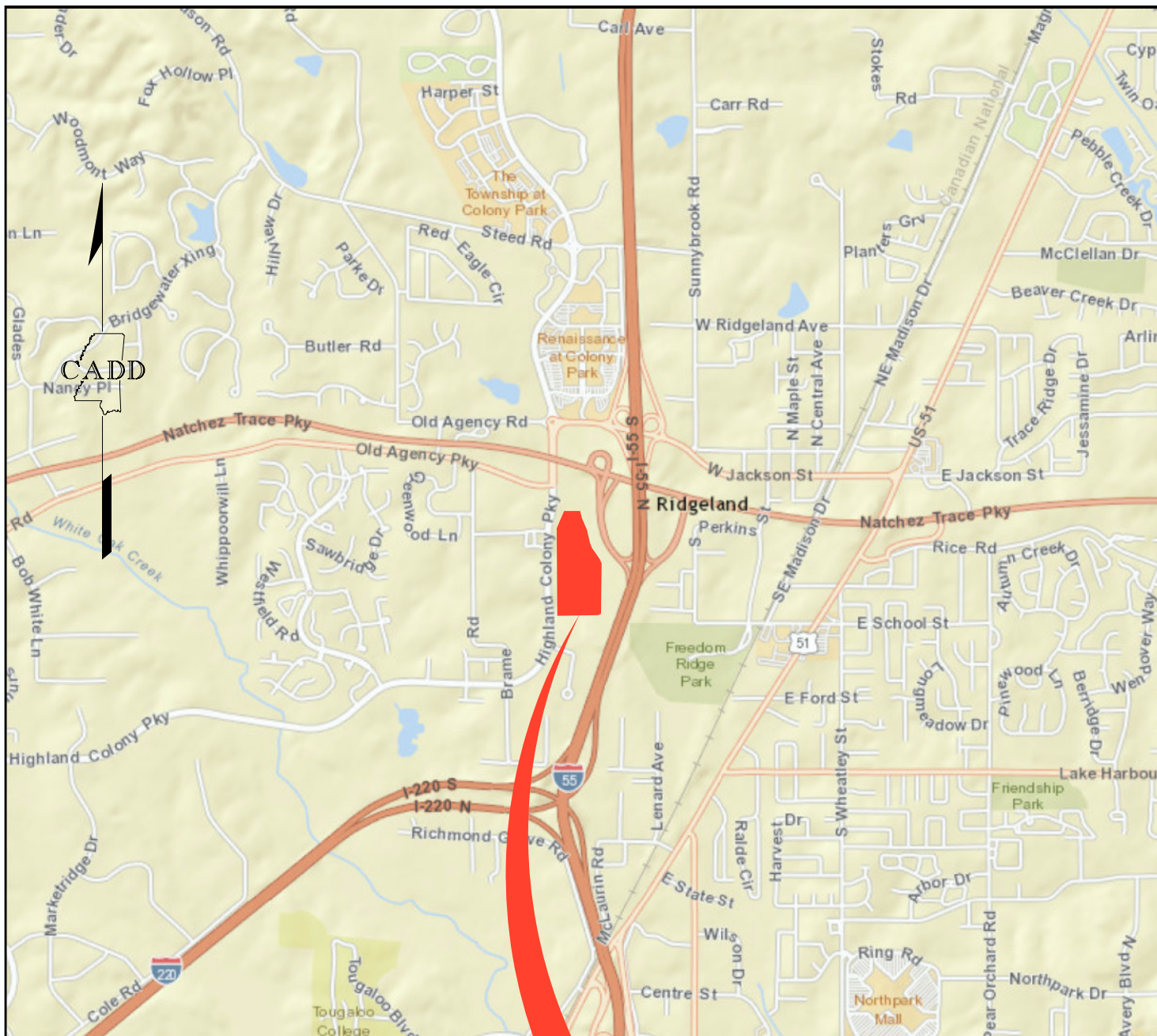
1.1 Purpose

The purpose of this analysis is to estimate the trip generation potential for the project site and evaluate the impact of the site traffic on the adjacent roadways and intersections within the project study area. To analyze the related impact to the surrounding area, existing roadway capacity and non-site traffic levels-of-service were evaluated. In addition, a field review was conducted to observe existing land usage within the study area of the project site and the existing geometrics of the surrounding roadways.

2.0 Proposed Development

2.1 Site Location

The project site is located on the east side of Highland Colony Parkway, south of the Natchez Trace Parkway property, west of I-55 and north of Christ Life Church of the Highlands. Currently, regional and direct access to the site is provided by Highland Colony Parkway and Old Agency Road. Old Agency Road extends east of Highland Colony Parkway to an interchange with I-55 at Exit 105, and west to residential areas and St. Andrews Episcopal School. The recent completion of the new I-55 interchange and widening project between Old Agency Road and MS 463 included adding two new mainline north/south travel lanes on I-55, a new east/west connector road (Colony Park Boulevard) between Highland Colony Parkway and Sunnybrook Road, a new split diamond interchange on I-55 between the new Colony Park Boulevard and Madison Avenue, and north/south one-way frontage roads between Madison Avenue and Old Agency Road. The new interstate access and east/west roadway connection (Colony Park Boulevard) is approximately 0.75 miles north of Old Agency Road. The location of the project site is shown in **Figure 1**.



**PROJECT
LOCATION**

MADISON COUNTY

2.2 Land Use and Intensity

The project site is currently undeveloped. The proposed development is planned to include a 145,000 SF Costco Wholesale Warehouse Club with a 16 fueling position gas station, 127,500 SF of additional retail space, a 4,000 SF bank/financial branch, a 6,000 SF family sit-down restaurant, a 6,000 SF quality restaurant, and a 3,500 SF fast casual restaurant with a drive-thru window. The project site is planned to be completed by 2018. The proposed project site plan is provided in **Figure 2**.

3.0 Existing Conditions

3.1 Study Area

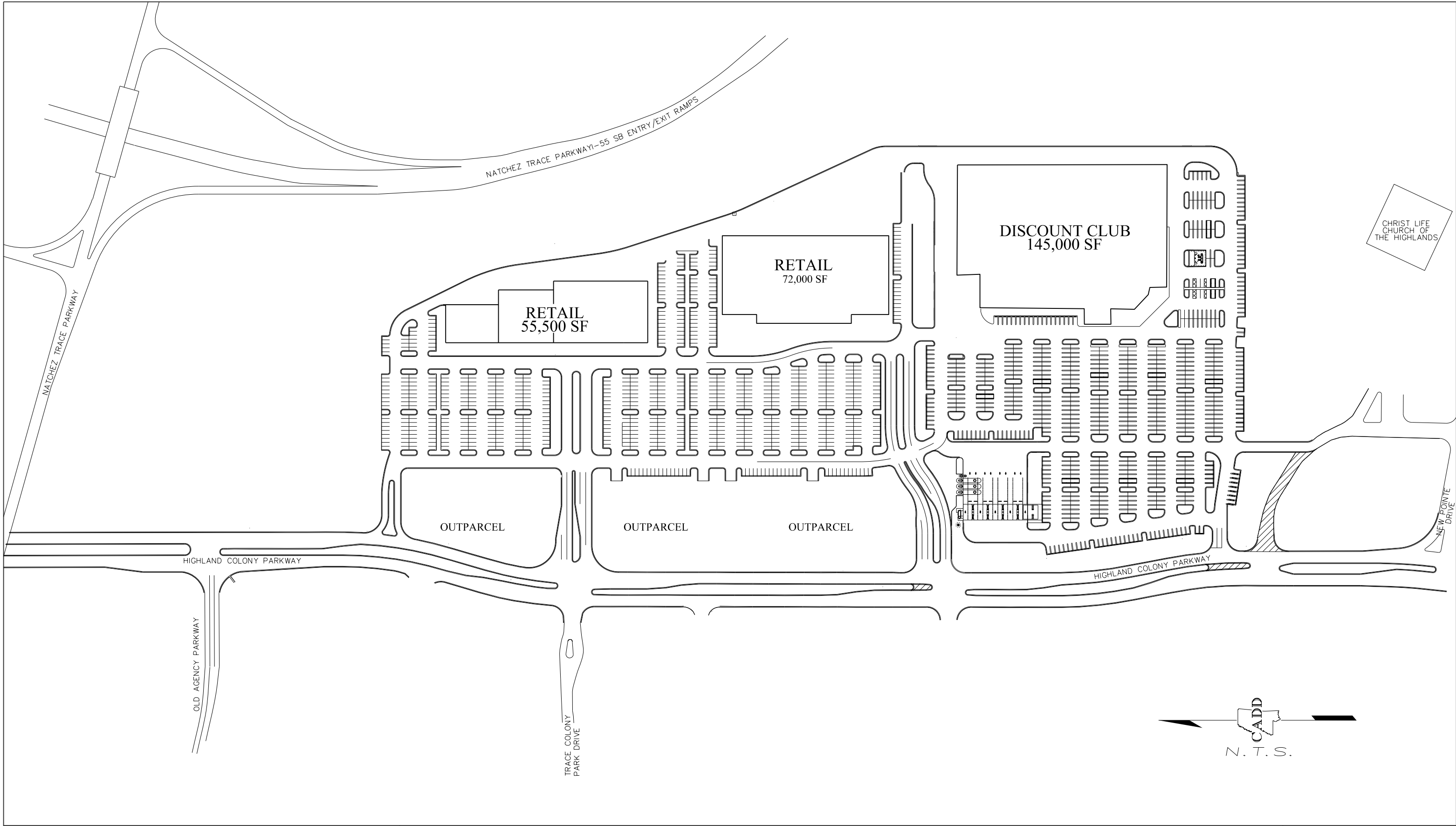
The study area was identified based on the development intensity and the corresponding traffic generation of the proposed development. The study area was determined to include the four proposed site access driveways, the adjacent intersection of Old Agency Parkway/Highland Colony Parkway, the roundabout at Old Agency Road/Highland Colony Parkway, and the intersection of New Pointe Drive/Highland Colony Parkway (future Lake Harbour Drive extension location). The Renaissance Phase 3 site includes the construction of four site driveways for access to Highland Colony Parkway.

3.2 Land Use

The site is approximately 45 acres. Property adjacent to the site to the north is Natchez Trace Parkway right-of-way. North of the Natchez Trace is the Renaissance retail development and office space that includes over 800,000 SF of retail/office development. The City's Land Use Plan (dated 2/4/14) identifies the project site as General Commercial, along with much of the property south and west of the site as either General Commercial or Low-Intensity Commercial.

There are multiple churches along Highland Colony Parkway, including:

- 1) Christ Life Church of the Highlands, adjacent to the site to the south,
- 2) Highlands Presbyterian Church, north of Colony Park Boulevard,
- 3) Parkway Hills UMC adjacent to Park Place Boulevard in Madison, and
- 4) Broadmoor Baptist Church in Madison.

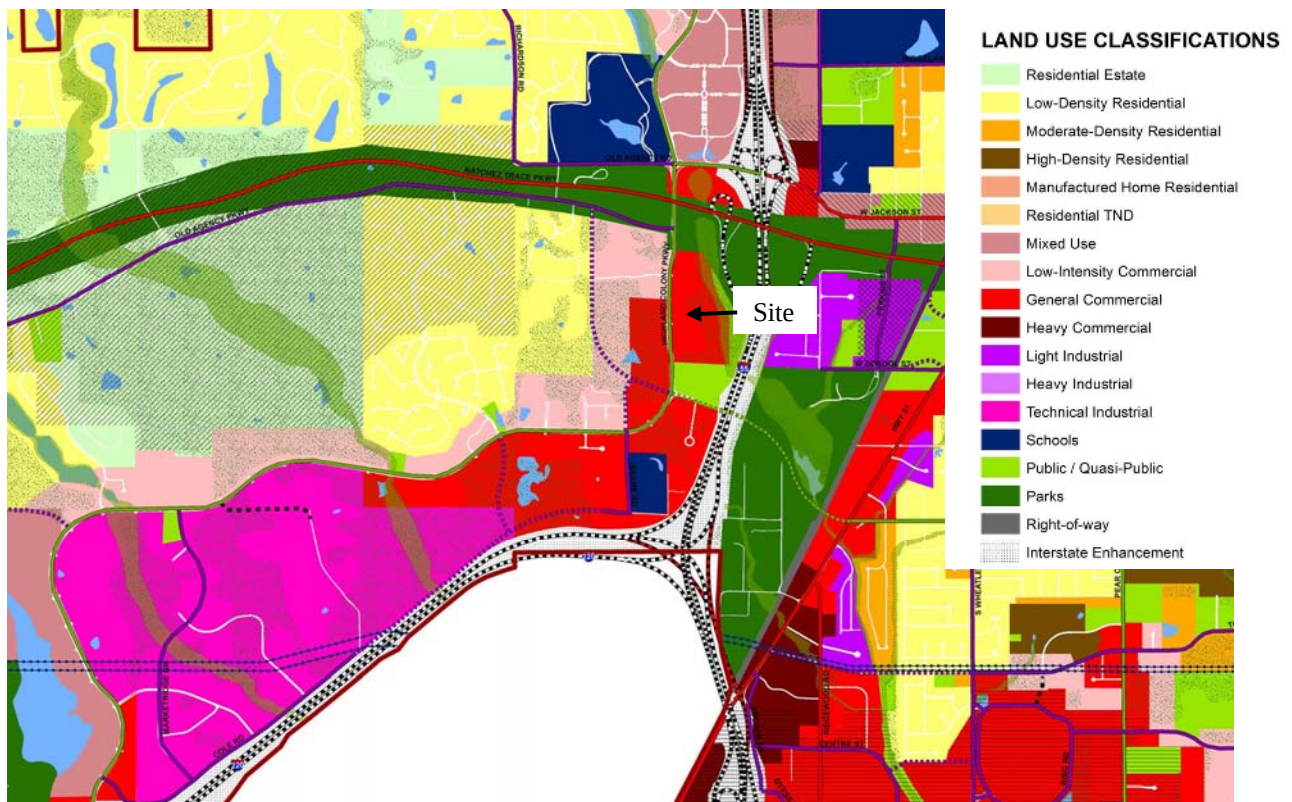


The Natchez Trace Parkway and a parallel recreational trail are identified as “Parks” on the land use map. Two schools exist along Highland Colony Parkway:

- 1) Highland Elementary School located approximately 0.4 miles south of the site and has 715 students in grades 3-5.
- 2) St. Andrews Episcopal School located approximately 0.6 miles north of the site across from Renaissance (Phase 1) and has 353 students in grades 9-12 and 351 students in grades 5-8.
- 3) Madison Central High School is located on Highland Colony Parkway (in Madison), approximately 3 miles north of the project site.

Veritas School was located 1.6 miles north of the site on Highland Colony Parkway, but closed at the end of the 2014-2015 school year.

Greenwood Plantation, Dinsmor and Highland Park are residential subdivisions located between Highland Colony Parkway and the Natchez Trace Parkway.



City of Ridgeland Generalized Future Land Use and Transportation Plan (2/4/14).

3.3 Roadways and Intersections

The primary roadway serving the project site is Highland Colony Parkway. Based on the Functional Classification System of the Jackson Urbanized Area, Highland Colony Parkway is classified as a Minor Arterial roadway adjacent to the site. Highland Colony Parkway is primarily a north/south roadway connecting County Line Road to the south with MS Highway 463 to the north, a distance of 7.6 miles. North of MS Highway 463, the roadway narrows to a two-lane roadway and becomes Bozeman Road, extending north to Gluckstadt Road, then changes to Catlett Road, extending north to MS Highway 22.

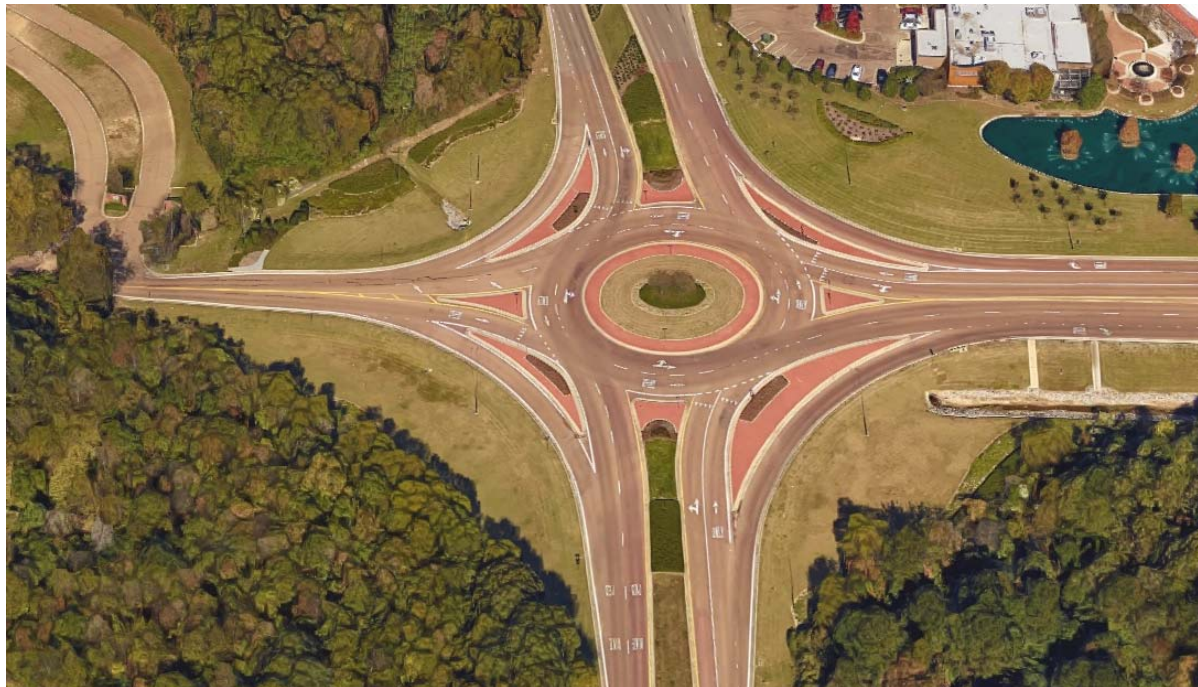
Highland Colony Parkway was originally named Summertree Parkway on the roadway design plans, and was constructed in 1990. The typical section adjacent to the site includes two 12 ft travel lanes in each direction, with 2 ft curb and gutter on the inside and outside edges of pavement, along with a 24 ft wide raised curb, grassed median with street lighting in the median island. The right-of-way width is 100 ft. The posted speed limit is 40 mph on Highland Colony Parkway.



Looking north on Highland Colony Parkway at Old Agency Parkway.

Highland Colony Parkway has significant subgrade failure areas, particularly along the southern 2,000 LF of the parkway. The city of Ridgeland has final plans ready to reconstruct the southern 2,000 LF of Highland Colony Parkway from County Line Road to Business Park Drive, including full depth reclamation of the subgrade. Construction is anticipated to start in Spring 2016. Madison County is leading a project that will resurface Reunion Parkway, Highland Colony Parkway from County Line Road to Old Agency Road and Hoy Road with isolated repairs to the subgrade and curb/gutter. The county's project has been through field and office reviews and is planned to be advertised for construction in Spring 2016.

The intersection of Highland Colony Parkway with Old Agency Road is controlled with a two lane roundabout. The roundabout is one of the few two lane roundabouts in Mississippi. Old Agency Road east of Highland Colony Parkway is classified as a minor arterial roadway to I-55, as a principal arterial east of I-55 and as a major collector west of Highland Colony Parkway. The west approach is primarily 20 ft in width, with no shoulders. When the Natchez Trace was extended through this area, due to the alignment, Old Agency Parkway was constructed to maintain access, along with an overpass over the Natchez Trace, named Greenwood Crossing, to connect the old and new roadways. The posted speed limit is 35 mph on Old Agency Road.



Old Agency Road/Highland Colony Parkway intersection, Google Maps 2015.

The city of Ridgeland completed widening Lake Harbour Drive to a five-lane roadway between Northpark Drive and US Highway 51 in September, 2014. Lake Harbour Drive is classified as a minor arterial roadway west of Old Canton Road. East of Old Canton Road, Lake Harbour Drive becomes Spillway Road and is classified as a Principal Arterial. The city is finalizing construction plans for the extension of Lake Harbour Drive from US Highway 51 to Highland Colony Parkway. The extension will bridge over I-55 and intersect the parkway at New Pointe Drive, just south of the project site, and includes installation of a new traffic signal at this intersection. The project will extend the 5-lane roadway east to Highland Colony Parkway with a separated multi-use trail, connecting the trail to the adjacent Freedom Ridge Park. The Lake Harbour Drive Extension construction project is scheduled to begin in 2016 and be completed in 2018. The City of Ridgeland Generalized Future Land Use and Transportation Plan (2/4/14) shows the extension of Lake Harbour Drive across Highland Colony Parkway and extending north along Brame Road.



New Pointe Drive intersection with Highland Colony Parkway, looking west.

The Natchez Trace Parkway is classified as a Minor Arterial roadway and extends east/west across the city of Ridgeland, without direct access to Highland Colony Parkway. A multi-use trail system exists parallel to the Natchez Trace throughout the city of Ridgeland.



Natchez Trace Multi-Use Path/Trail Crossing of Highland Colony Parkway, looking south.

With the extension of the Natchez Trace Parkway west of I-55, the Natchez Trace bisected Old Agency Road. As a result, a $\pm$ 1 mile long, 2-lane parallel roadway was constructed within the Natchez Trace right-of-way that connected the cut-off section of Old Agency Road to Highland Colony Parkway. This new roadway was named Old Agency Parkway and is classified as a Major Collector in the functional classification of streets. The cross section includes 22 ft of asphalt with one lane in each direction and a posted speed limit is 40 mph. Greenwood Crossing connects Old Agency Parkway with Old Agency Road, with a bridge over the Natchez Trace. Old Agency Parkway serves as a major access for the Dinsmor and Greenwood Plantation subdivisions. The intersection of Old Agency Parkway with Highland Colony Parkway is not a signalized intersection, making eastbound left turns wait for acceptable gaps in north/south traffic to turn left and go north. Some residents use Greenwood Crossing to access Old Agency Road to enter Highland Colony Parkway at the roundabout.



Old Agency Parkway, looking west toward Greenwood Crossing from Brame Road.

Trace Colony Park Drive extends west of Highland Colony Parkway connecting with Brame Road. Trace Colony Park Drive is primarily 25 ft in width with 2 ft curb and gutter on the north and south sides of the roadway. Trace Colony Park Drive widens at Highland Colony Parkway to 37 ft in width to accommodate a center raised island and allows for eastbound left turn and right turn lanes.



Trace Colony Park Drive, looking west from Highland Colony Parkway.

Brame Road extends north/south, connecting Highland Colony Parkway with Old Agency Parkway. The roadway has a narrow (± 20 ft) cross section and appears to have had some asphalt placed over a gravel road. The roadway is a low volume road that connects to a gated entrance to Greenwood Plantation and provides access to Trace Colony Park Drive. The majority of the traffic observed on the roadway entered Greenwood Plantation.



Brame Road, looking south from Old Agency Parkway.

3.4 Traffic Volumes

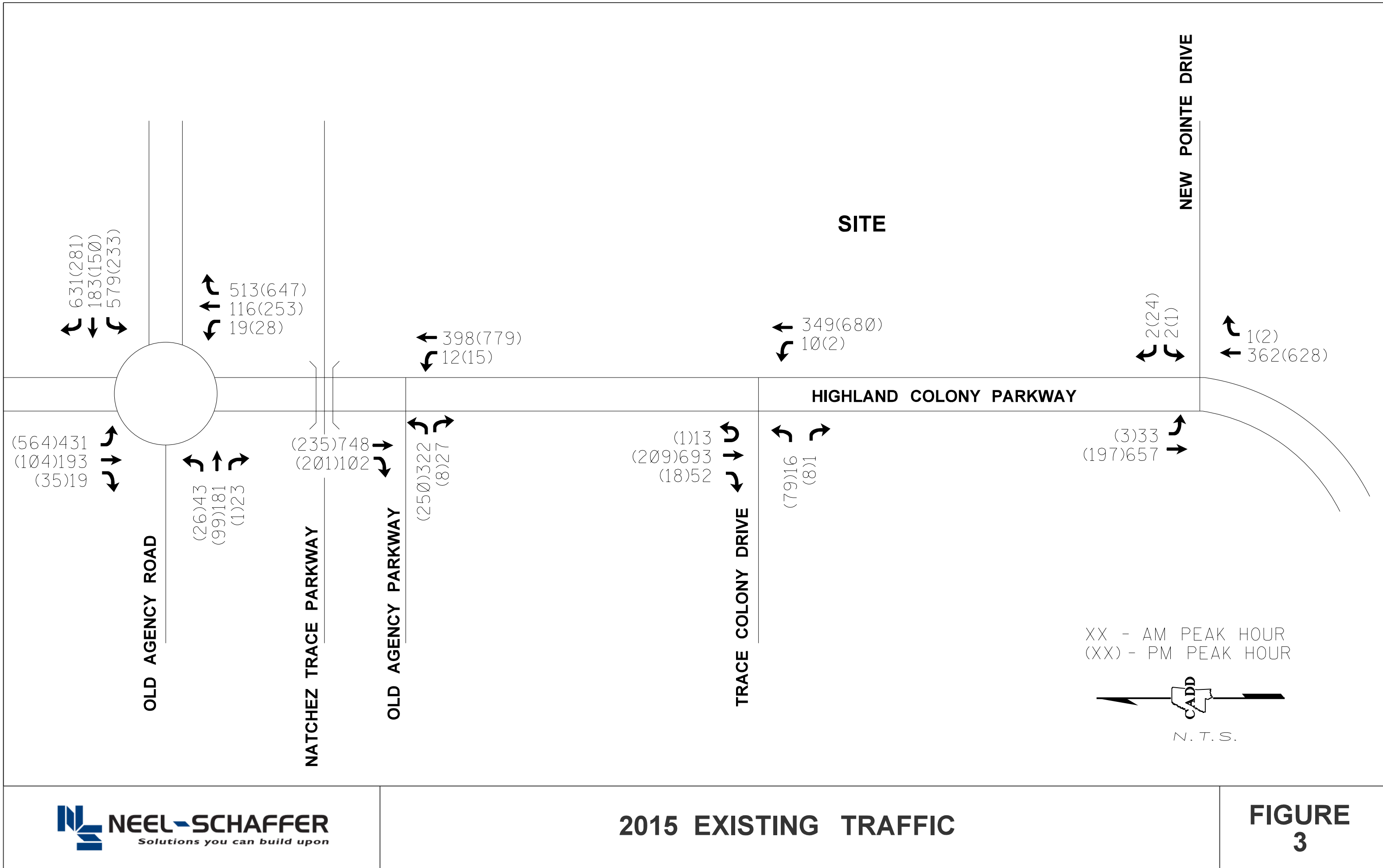
Turning movement counts were conducted on Highland Colony Parkway at the intersections with Old Agency Road, Old Agency Parkway, Trace Colony Park Drive, and New Pointe Drive. Tube counts were placed by the city of Ridgeland on Highland Colony Parkway to obtain 24 hour volumes and identify day-of-week variations in traffic volumes. The turning movement counts were conducted in August and September, on weekdays, when all schools were back in session. Madison County public schools started back on August 7, while St. Andrews Upper School started August 14.

The turning movement counts were used to identify the peak hour traffic volumes at the study intersections. The daily traffic volumes published by MDOT from 2012 identify 7,600 vehicles per day (vpd) at the count station south of Old Agency Parkway adjacent to the project site. A seven day count was also obtained on Highland Colony Parkway north of Old Agency Parkway south of Old Agency Road. The peak hour periods were used in this analysis to determine capacity and level-of-service at the study intersections. The existing peak hour volumes are shown in **Figure 3**.

3.5 Existing Traffic Level-of-Service

The capacity and level-of-service (LOS) of an intersection is evaluated based on the average vehicular delay during the peak hour periods. The vehicular delays are directly related to the turning movement volumes, traffic composition and roadway geometrics at the study intersections. The methodology utilized in this analysis is based on the *Highway Capacity Manual* (HCM) for signalized and stop controlled intersections. Roundabout analysis is performed with Sidra software, by Akcelik and Associates. Sidra is the most advanced empirical analysis tool for evaluating delays/levels of service for roundabouts.

S:\Projects\12923-Costco\CADD\2015existingtraffic2.dgn



The level-of-service, as outlined in the HCM, is reported as a letter designation of LOS A through LOS F (A is least delay and F is most delay). The traffic volumes recorded at the study intersections on Highland Colony Parkway were evaluated for the AM and PM peak hours using the information provided in the HCM. The results of this analysis are shown in **Table 1**.

Table 1
Year 2015 Existing Traffic Level-of-Service

Unsignalized Intersection	Time Period	Level of Service											
		Northbound			Southbound			Eastbound			Westbound		
		Lt	Th	Rt	Lt	Th	Rt	Lt	Th	Rt	Lt	Th	Rt
Old Agency Rd / Highland Colony P	AM Peak	A	A	A	A	A	A	A	A	A	A	A	A
	PM Peak	A	A	A	A	A	A	A	A	A	A	A	A
Old Agency Pkwy/ Highland Colony P	AM Peak	B	-	-	-	-	-	F	-	B	-	-	-
	PM Peak	A	-	-	-	-	-	D	-	A	-	-	-
Trace Colony Park/ Highland Colony P	AM Peak	A	-	-	A	-	A	C	-	B	-	-	-
	PM Peak	A	-	-	A	-	A	B	-	A	-	-	-
New Pointe Drive/ Highland Colony P	AM Peak	-	-	A	A	-	-	-	-	-	B	-	A
	PM Peak	-	-	A	A	-	-	-	-	-	C	-	B

Source: Neel-Schaffer, 2015.

The level-of-service analysis shows that the eastbound left turn from Old Agency Parkway is operating with the most delay. The city of Ridgeland conducted a peak hour delay study for the AM Peak hour and recorded eastbound 363 left turns with an average stopped time of 32.5 seconds per vehicle for the left turning traffic. With the exception of the eastbound left turn from Old Agency Parkway onto Highland Colony Parkway, the study intersections are shown to operate at acceptable levels (from a capacity standpoint).

4.0 Projected Traffic

4.1 Site Traffic

The 45 acre site is proposed to be developed with a 145,000 SF Costco Wholesale Warehouse Club that has a gas station in the parking lot with 16 fueling positions, 127,500 SF of retail development, a 4,000 SF bank/financial branch, a 6,000 SF family sit-down restaurant, a 6,000 SF quality restaurant, and 3,500 SF fast casual restaurant with a drive-thru window. The project site is planned to be completed in 2017. The trip generation potential for the proposed development was calculated using the ITE Trip Generation, 9th Edition. The trip generation calculations for the project site traffic are shown in **Table 2**.

4.2 Trip Distribution and Assignment

Lake Harbour Drive Extension is planned to begin construction in 2016 and open in 2018. The opening of Renaissance Phase 3 is potentially in 2017. Two horizon years were evaluated, to identify the impacts without Lake Harbour Drive Extension (2017) and with Lake Harbour Drive Extension (2018). An analysis of the travel patterns associated with existing land uses in the immediate area of the site was used as the basis for trip distribution and assignment. The project site traffic distribution characteristics were estimated based upon current and expected land uses, demographic distribution in the surrounding areas, and the existing and future roadway network. The distributed site generated traffic was assigned to the roadway network within the study area and is shown in **Figures 4a-4b** (w/o and with Lake Harbour Drive Extension).

4.3 Non-Site Traffic Forecast

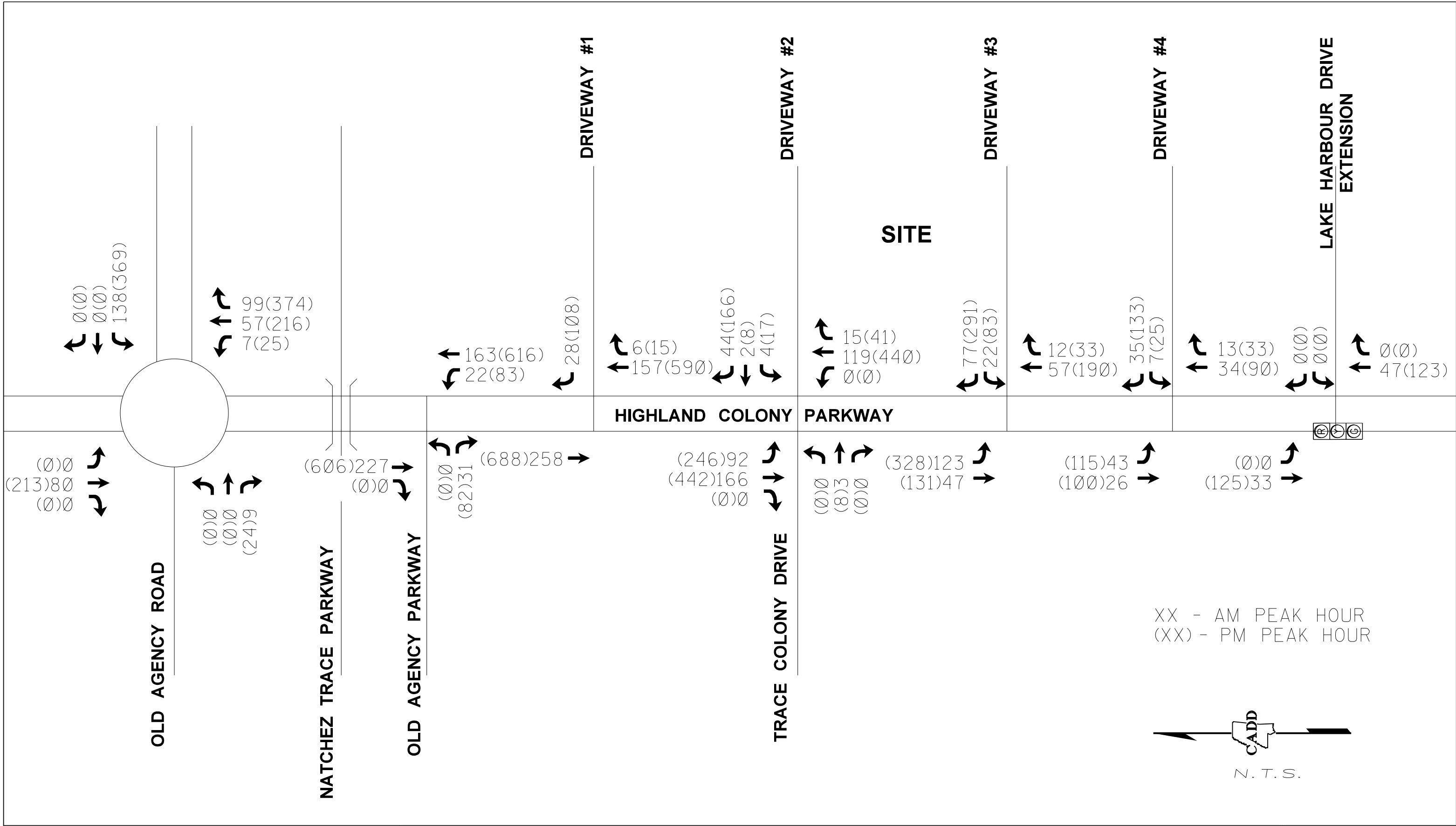
The buildout of Renaissance Phase 3 is planned to be 2017. Existing non-site traffic volumes were forecast to Year 2017 based on the historical growth identified in the surrounding area. Non-site volumes were also forecast to year 2018, to account for the opening of the Lake Harbour Drive Extension. The urban transportation model was used to identify the anticipated traffic impacts associated with the construction of the Lake Harbour Drive Extension to connect US Highway 51 with Highland Colony Parkway. Based on the traffic model, the hourly 2015 traffic volumes collected were redistributed on the roadway network to include the new roadway (Lake Harbour Drive Extension). The traffic model information is provided in the report Appendix. In addition to the changes in circulation patterns, the historical population growth was researched through the US Census Bureau. Census data for Madison County and city of Ridgeland are listed in **Table 3**.

Table 2
Trip Generation

Land Use	Intensity	Daily Trips	AM Peak Hour			PM Peak Hour		
			Total	In	Out	Total	In	Out
Discount Club	145,000 S.F.	6,061	71	50	21	606	303	303
Gasoline/Service Station	16 Pumps	2,697	178	91	87	222	111	111
Retail	127,500 S.F.	7,953	181	112	69	705	338	367
Drive-In Bank	4,000 S.F.	593	48	27	21	97	49	48
High Turn Over Sit Down Restaurant	6,000 S.F.	763	65	36	29	59	35	24
Quality Restaurant	6,000 S.F.	540	5	4	1	45	30	15
Fast Food Restaurant w/Drive Thru	3,500 S.F.	1,736	159	81	78	114	59	55
		20,343	707	401	306	1,848	925	923
Internal Capture								
Restaurant to Retail	20%	1,216	92	48	44	87	50	37
Gas to Costco	50%	1,349	89	46	43	111	56	55
Subtotal Internal Trips		2,565	181	94	87	198	106	92
Subtotal External Trips		17,778	526	307	219	1,650	819	831
Pass by traffic								
Discount Club	37%	2,243	0	0	0	224	112	112
Gas Station	58%/42% AM/PM	1,133	75	38	37	129	64	65
Retail/Commercial	34%	2,704	0	0	0	240	115	125
High Turn Over Sit Down Restaurant	43%	328	0	0	0	25	15	10
Quality Restaurant	44%	238	0	0	0	20	13	7
FF Restaurant	50%	868	80	41	39	57	30	27
		7,514	155	79	76	695	349	346
Total New External Trips		10,264	371	228	143	955	470	485

Daily Traffic Generation			
Discount Club	[ITE 857]	=	$T = 41.8 * X$
Gasoline/Service Station	[ITE 944]	=	$T = 168.56 * X$
Retail	[ITE 820]	=	$Ln(T) = 0.65*Ln(X)+5.83$
Drive-In Bank	[ITE 912]	=	$T = 148.15 * (X)$
High Turnover Sit Down Rest	[ITE 932]	=	$T = 127.15 * X$
Quality Restaurant	[ITE 931]	=	$T = 89.95 * X$
Fast Food Rest. w/Drive Thru	[ITE 934]	=	$T = 496.12 * X$
AM Peak Hour Traffic Generation			
Discount Club	[ITE 857]	=	$T = 0.49 * X \text{ (70\%in/30\%out)}$
Gasoline/Service Station	[ITE 944]	=	$T = 10.27 * X +13.89 \text{ ; (51\%in/49\%out)}$
Retail	[ITE 820]	=	$Ln(T) = 0.61*Ln(X)+2.24 \text{ ; (62\%in/38\%out)}$
Drive-In Bank	[ITE 912]	=	$T = 12.08 * X \text{ (57\%in/43\%out)}$
High Turnover Sit Down Rest	[ITE 932]	=	$T = 10.81 * X \text{ ; (55\%in/45\%out)}$
Quality Restaurant	[ITE 931]	=	$T = 0.81 * X \text{ ; (82\%in/18\%out)}$
Fast Food Rest. w/Drive Thru	[ITE 934]	=	$T = 45.42 * X \text{ ; (51\%in/49\%out)}$
PM Peak Hour Traffic Generation			
Discount Club	[ITE 857]	=	$T = 4.18 * X \text{ (50\%in/50\%out)}$
Gasoline/Service Station	[ITE 844]	=	$T = 13.87 * X \text{ ; (50\%in/50\%out)}$
Retail	[ITE 820]	=	$Ln(T) = 0.67*Ln(X)+3.31 \text{ ; (48\%in/52\%out)}$
Drive-In Bank	[ITE 912]	=	$T = 24.3 * X \text{ (50\%in/50\%out)}$
High Turnover Sit Down Rest	[ITE 932]	=	$T = 9.85 * X \text{ ; (60\%in/40\%out)}$
Quality Restaurant	[ITE 931]	=	$T = 7.49 * X \text{ ; (67\%in/33\%out)}$
Fast Food Rest. w/Drive Thru	[ITE 934]	=	$T = 32.65 * X \text{ ; (52\%in/48\%out)}$

Source: ITE Trip Generation, 9th Edition, Trip Generation Handbook, 3rd Edition Neel-Schaffer, 2015.



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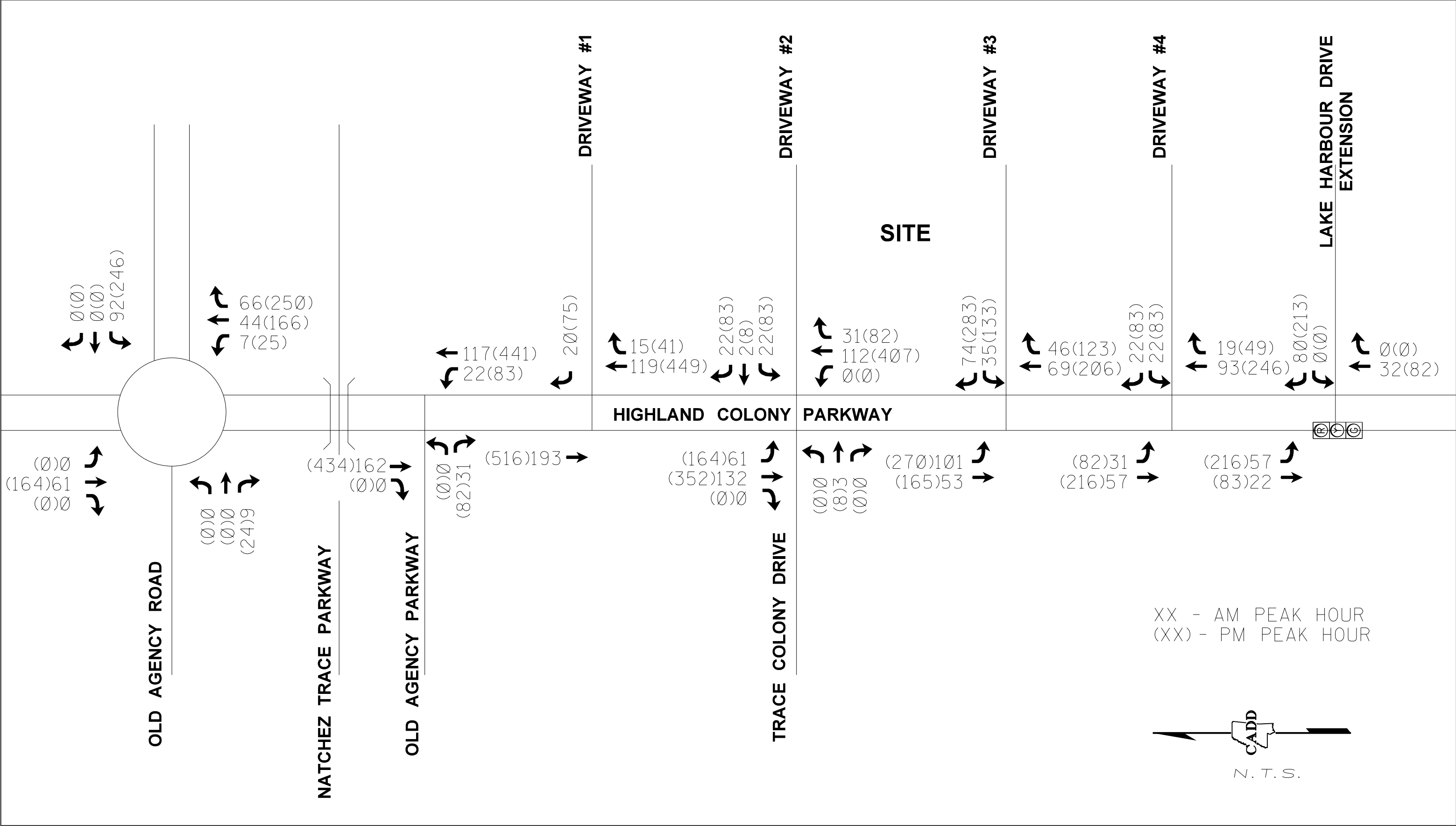


Table 3
Historical Population Growth Rate

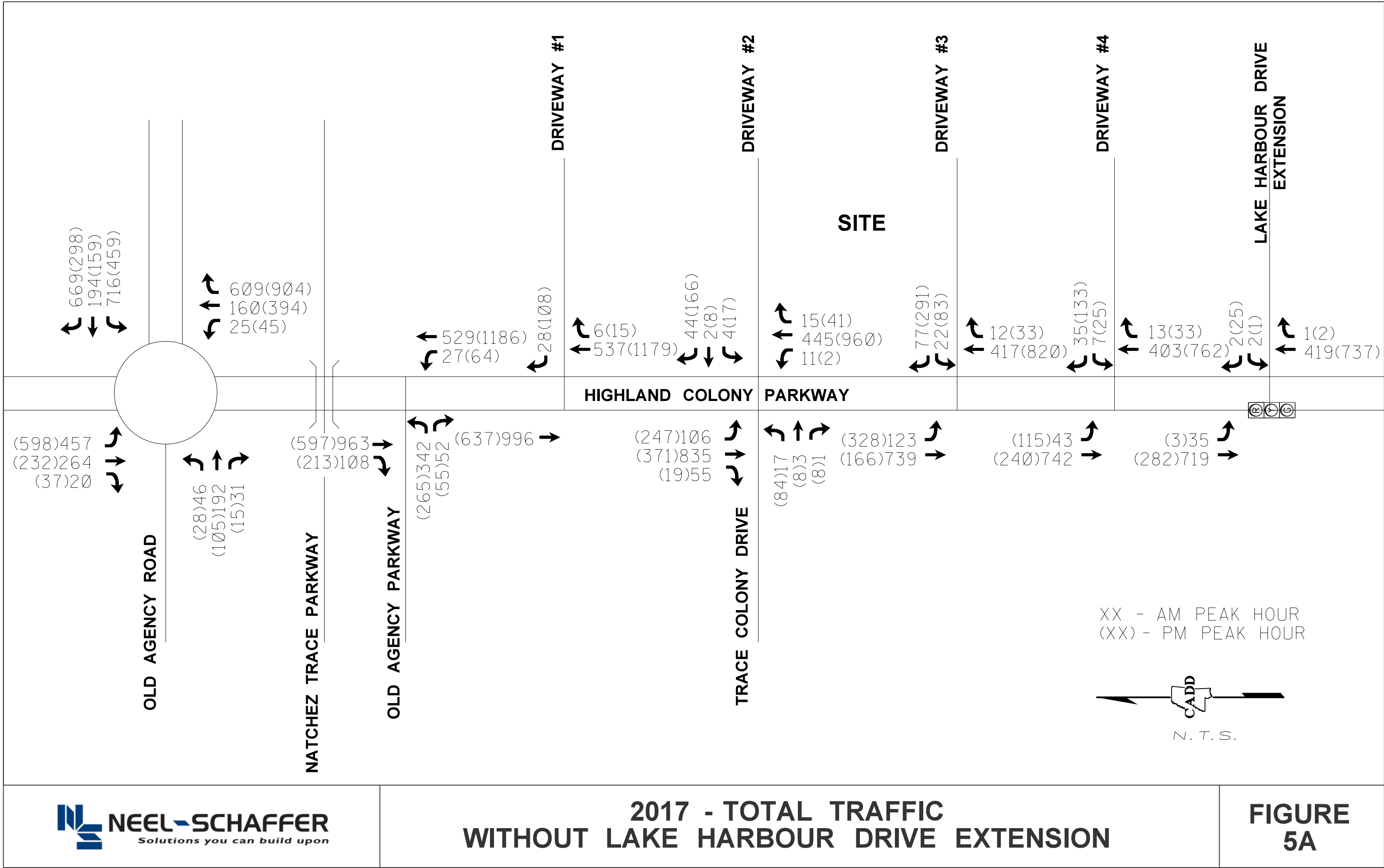
Description	Total Population			1990-2010 Percent Change	1990-2010 Compound Annual Growth
	Year 2010	Year 2000	Year 1990		
Ridgeland	24,094	20,333	12,952	86.0%	3.15%
Madison County, MS	95,595	75,063	54,271	76.1%	2.87%

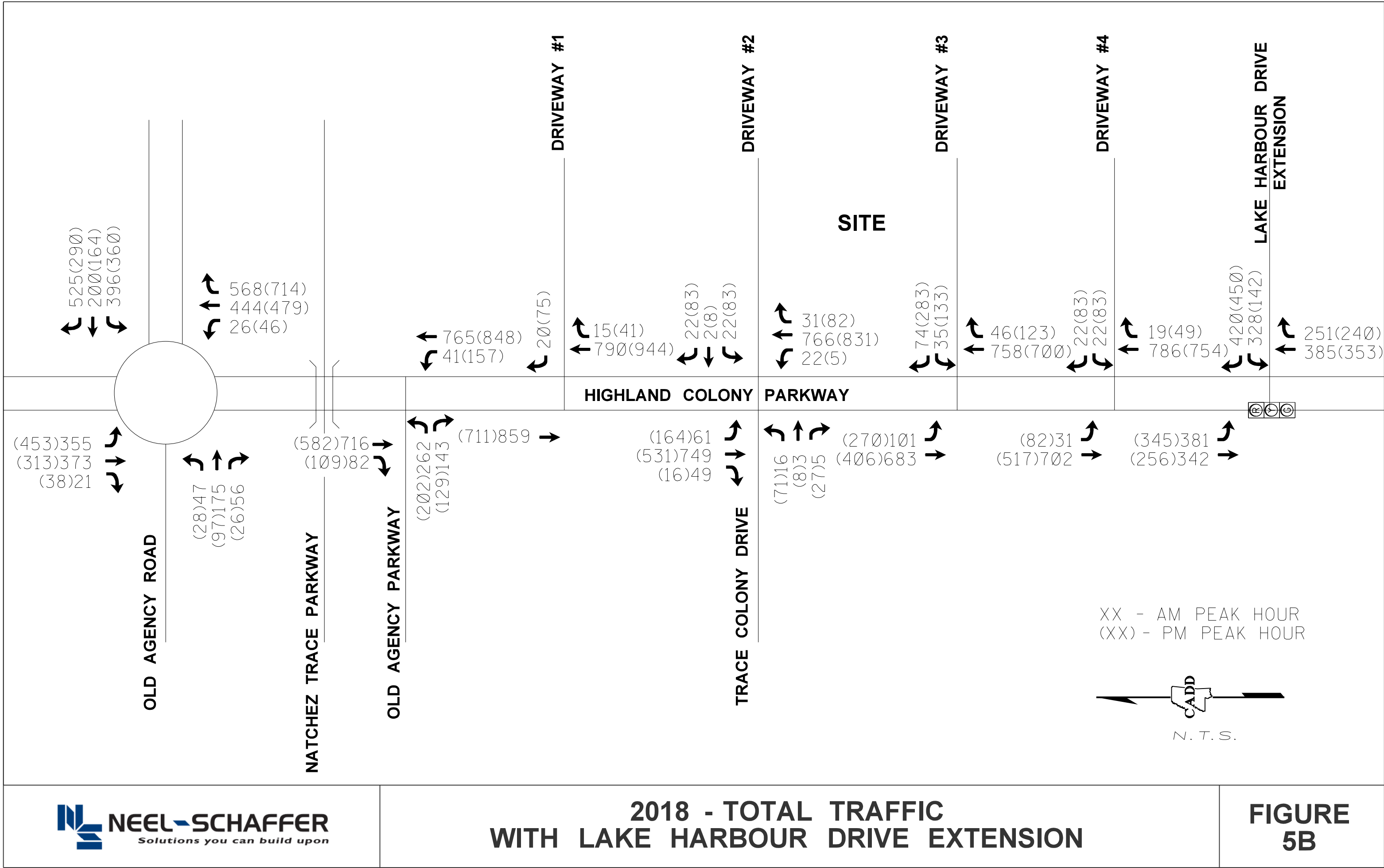
Source: US Census, 2010, 2000, 1990.

The MDOT count stations were also researched to identify traffic trends adjacent to the project site. MDOT traffic counts on Highland Colony Parkway (#455250) south of Old Agency Parkway show a slight decrease of 0.6% compounded annually from 7,900 vpd in 2006 to 7,600 vpd in 2012. To remain conservative, a 3% compound annual growth rate was utilized to forecast the year 2015 traffic to Year 2017/2018.

4.4 Total Traffic

Site generated traffic volumes were added to non-site traffic volumes to arrive at total (Year 2017/2018) traffic volumes. **Figure 5a** illustrates the Year 2017 peak hour total traffic volumes and **Figure 5b** the 2018 peak hour total traffic. The volume calculation sheets are provided in the Appendix.





5.0 Traffic and Improvement Analysis

5.1 Site Access

The access to the project site is shown to include four site driveways on Highland Colony Parkway. The locations of three of the southern site driveways aligns with the existing median openings on Highland Colony Parkway. The northern median opening is proposed as a right-turn-in/right-turn-out only driveway.

The southern site driveway is planned to be a shared drive with the Christ Life Church of the Highlands. This driveway is planned to be relocated north of its current location. Shifting the driveway to the north will require modifying the median nose and shifting the median opening to the north to align with the new shared driveway. The construction of the shared access is shown to create a direct link from the proposed Lake Harbour Drive Extension to Renaissance Phase 3, through the church driveway. Traffic calming measures are recommended to reduce the cut-through traffic that will divert through the church campus rather than use Highland Colony Parkway. Providing an off-set to the connection, along with speed humps could help to reduce the cut-through potential. Additionally, reconstructing the church driveway on Lake Harbour Drive further east would reduce the impact that turning traffic would have on the intersection, as well as reduce the volume of cut-through traffic as the driveway would not be a direct link to the adjacent retail center. The church may decide that a gate may be the most appropriate method to control cut-through traffic across the property.

5.2 Auxiliary Lane Evaluation

The proposed site driveways were evaluated using the MDOT Roadway Design Manual to identify if right-turn auxiliary lanes are anticipated to be needed. The warrants outlined in the MDOT Roadway Design Manual are volume based warrants that are graphed to identify if minimum threshold volumes satisfy the warrant. The volume warrants were based on the Lake Harbour Drive Extension being in place, allowing for more traffic to access the site to/from the south. The volume warrants revealed that northbound right-turn ingress lanes are recommended at each of the four site driveways. The warrant analysis sheets are provided in the report Appendix.

5.3 Level-of-Service Analysis

The traffic volumes forecast to 2017/2018 and the anticipated site generated traffic volumes were added to develop 2017/2018 total traffic volumes. The study intersections were evaluated for the buildout year (2017) AM and PM peak hours and the opening year of Lake Harbour Drive Extension (2018) using the information provided in the HCM. The results of this analysis are shown in **Table 4** – 2017 non-site, **Table 5** - 2017 total traffic, **Table 6** - 2018 non-site traffic and **Table 7** - 2018 total traffic. New Pointe Drive is anticipated to be renamed to Lake Harbour Drive Extension by 2018 and be a signalized intersection. The level of service analysis sheets are provided in the report Appendix.

Table 4
Year 2017 Non-Site Traffic Level-of-Service

Unsignalized Intersection	Time Period	Level-of-Service											
		Northbound			Southbound			Eastbound			Westbound		
		L	T	R	L	T	R	L	T	R	L	T	R
Old Agency Rd / Highland Colony P	AM Peak	A	A	A	A	A	A	B	B	A	A	A	A
	PM Peak	A	A	A	A	A	A	A	A	A	A	A	A
Old Agency Pkwy/ Highland Colony P	AM Peak	A	-	-	-	-	-	F	-	B	-	-	-
	PM Peak	A	-	-	-	-	-	C	-	A	-	-	-
Trace Colony Park/ Highland Colony P	AM Peak	A	-	-	A	-	A	C	-	B	-	-	-
	PM Peak	A	-	-	B	-	A	B	-	A	-	-	-
New Pointe Drive/ Highland Colony P	AM Peak	-	-	-	A	-	-	-	-	-	C	-	A
	PM Peak	-	-	-	A	-	-	-	-	-	C	-	B

Source: Neel-Schaffer, 2015.

Table 5
Year 2017 Total Traffic Level-of-Service

Unsignalized Intersection	Time Period	Level-of-Service											
		Northbound			Southbound			Eastbound			Westbound		
		L	T	R	L	T	R	L	T	R	L	T	R
Old Agency Rd / Highland Colony P	AM Peak	A	A	A	A	A	A	C	C	A	A	A	A
	PM Peak	A	A	A	A	A	A	A	A	A	A	A	A
Old Agency Pkwy/ Highland Colony P	AM Peak	B	-	-	-	-	A	F	-	B	-	-	-
	PM Peak	B	-	-	-	-	A	F	-	B	-	-	-
Site Drive #1/ Highland Colony P	AM Peak	-	-	A	-	-	-	-	-	-	-	-	B
	PM Peak	-	-	A	-	-	-	-	-	-	-	-	C
Trace Colony Park/ #2 Highland Colony	AM Peak	B	-	-	A	-	A	D	-	B	C	-	A
	PM Peak	A	-	-	C	-	A	F	-	A	E	-	B
Site Drive #3/ Highland Colony P	AM Peak	-	-	-	A	-	-	-	-	-	D	-	A
	PM Peak	-	-	-	B	-	-	-	-	-	F	-	C
Site Drive #4/ Highland Colony P	AM Peak	-	-	-	A	-	-	-	-	-	C	-	A
	PM Peak	-	-	-	B	-	-	-	-	-	C	-	B
New Pointe Drive/ Highland Colony P	AM Peak	-	-	-	A	-	-	-	-	-	B	-	A
	PM Peak	-	-	-	A	-	-	-	-	-	C	-	B
Signalized Intersection	Time Period	Intersection Level-of-Service											
Old Agency Pky/ Highland Colony P	AM Peak	B											
	PM Peak	A											
Site Drive #3/ Highland Colony P	AM Peak	A											
	PM Peak	B											

Source: Neel-Schaffer, 2015.

Table 6
Year 2018 Non-Site Traffic Level-of-Service

Signalized Intersection	Time Period	Intersection Level-of-Service											
Lake Harbour Dr Ext /Highland Colony P	AM Peak	B											
	PM Peak	A											
Unsignalized Intersection	Time Period	Level-of-Service											
		Northbound			Southbound			Eastbound			Westbound		
		L	T	R	L	T	R	L	T	R	L	T	R
Old Agency Rd / Highland Colony P	AM Peak	A	A	A	A	A	A	A	A	A	A	A	A
	PM Peak	A	A	A	A	A	A	A	A	A	A	A	A
Old Agency Pkwy/ Highland Colony P	AM Peak	A	-	-	-	-	-	F	-	B	-	-	-
	PM Peak	A	-	-	-	-	-	D	-	A	-	-	-
Trace Colony Park/ Highland Colony P	AM Peak	A	-	-	A	-	A	C	-	B	-	-	-
	PM Peak	A	-	-	A	-	A	B	-	A	-	-	-

Source: Neel-Schaffer, 2015.

Table 7-Year 2018 Total Traffic Level-of-Service

Signalized Intersection	Time Period	Intersection Level-of-Service											
Old Agency Pky/ Highland Colony P	AM Peak	B											
	PM Peak	A											
Site Drive #3/ Highland Colony P	AM Peak	A											
	PM Peak	A											
Lake Harbour Dr Ext /Highland Colony P	AM Peak	B											
	PM Peak	A											
Unsignalized Intersection	Time Period	Level-of-Service											
		Northbound			Southbound			Eastbound			Westbound		
		L	T	R	L	T	R	L	T	R	L	T	R
Old Agency Rd / Highland Colony P	AM Peak	A	A	A	A	A	A	A	A	A	A	A	A
	PM Peak	A	A	A	A	A	A	A	A	A	A	A	A
Old Agency Pkwy/ Highland Colony P	AM Peak	A	-	-	-	-	A	F	-	B	-	-	-
	PM Peak	B	-	-	-	-	A	F	-	B	-	-	-
Site Drive #1/ Highland Colony P	AM Peak	-	-	A	-	-	-	-	-	-	-	-	B
	PM Peak	-	-	A	-	-	-	-	-	-	-	-	B
Trace Colony Park/ #2 Highland Colony	AM Peak	A	-	-	B	-	A	D	-	B	D	-	B
	PM Peak	A	-	-	B	-	A	F	-	B	F	-	B
Site Drive #3/ Highland Colony P	AM Peak	-	-	-	B	-	-	-	-	-	F	-	B
	PM Peak	-	-	-	B	-	-	-	-	-	F	-	C
Site Drive #4/ Highland Colony P	AM Peak	-	-	-	A	-	-	-	-	-	C	-	B
	PM Peak	-	-	-	B	-	-	-	-	-	D	-	B

Source: Neel-Schaffer, 2015.

The failing LOS for the eastbound left turn at Old Agency Parkway/Highland Colony Parkway in the existing, build and no-build scenarios can be addressed with signalization. Installation of a traffic signal is shown to improve the intersection delays (for the eastbound left turn movement) significantly. Similarly, the LOS F for Site Drive #3 is shown to be mitigated with signalization of this primary site driveway.

Site Drive #2 is proposed to align with Trace Colony Park Drive and is shown to have LOS F for the east/west left turns. The adjacent traffic signals are anticipated to create artificial gaps in north/south traffic to allow this relatively low volume (approximately 1 vehicle per minute during the peak hour) to find sufficient gaps. In the event that gaps are not available, both access drives have alternate routes to the adjacent proposed signalized intersections. Unsignalized minor left turns on arterial roadways typically operate at LOS F. Signalization of Site Drive #2/Trace Colony Park Drive at Highland Colony Parkway is not recommended, as the volume is not anticipated to justify signalization.

5.4 Signal Warrants

The Manual on Uniform Traffic Control Devices (MUTCD) outlines the factors for justifying installation of a traffic control signal. Three of the 9 warrants are vehicular volume based warrants: 1) eight-hour vehicular volume, 2) four-hour vehicular volume and 3) peak hour. The MUTCD states that a traffic control signal should not be installed unless one or more of the warrants are met. Warrant #1, the eight-hour warrant, is intended for application at locations where a large volume of intersecting traffic is the principal reason to consider installing a traffic control signal. Warrant #2, the four-hour warrant is intended where the volume of intersecting traffic is the principal reason to consider installing a traffic control signal. Warrant #3, the peak-hour signal warrant is intended for use at a location where traffic conditions are such that for a minimum of 1 hour of an average day, the minor-street traffic suffers undue delay when entering or crossing the major street. These three volume based warrants were evaluated at the study intersections on Highland Colony Parkway between Old Agency Road and Lake Harbour Drive.

Old Agency Parkway/Highland Colony Parkway

An analysis of the existing traffic volumes on Old Agency Parkway at Highland Colony Parkway was conducted to determine if the traffic signal warrants outlined in the MUTCD are met. The volumes were compared to the threshold volumes for Condition A – Minimum Vehicular Volume and for Condition B-Interruption of Continuous Traffic in warrant 1, as well as the volume warrants in #2 and #3. The results revealed that the existing (2015) traffic volumes satisfy all three of the volume based warrants. Installation of a traffic control signal is recommended, with or without the development of this project, as the exiting volumes meet the MUTCD warrants #1-#3. The signal warrant volume analysis is provided in the Appendix.

Site Driveway #3/Highland Colony Parkway

The trips anticipated from the proposed development were assigned to each of the site driveways. Site Driveway #3 is proposed to be the primary access for the retail center. This driveway is anticipated to have nearly 50% of the ingress/egress traffic use this driveway. The trip generation equations from ITE provide equations to estimate the AM and PM peak hour volumes. Additionally, there is a table in this land use that identifies the hourly variation of retail trips by hour-of-day for ingress and egress movements. Based on the Trip Generation Land Use 820-retail traffic tables, the driveway volumes were developed for each hour of the day between the AM and

PM peak hours. This hourly traffic volume was evaluated based on the MUTCD volume based warrants. The volume analysis identifies that the peak hour, four hour and eight-hour warrants are each anticipated to be met for Site Drive #3 in 2018. The warrant analysis also demonstrates that if half of the right turning vehicles leaving the site were discounted, the intersection is still anticipated to meet the eight-hour warrant. The volume calculations are shown in **Table 8**.

Table 8
Signal Warrant Volume Evaluation – Year 2018

Hour of Day	% entering	% exiting	Site Drive #3 WB		Minor St Total	Minor St Left+1/2 rt	Minor St Rank	Major St Total	Major St Rank
			Lt Turn	Rt Turn					
8:00	3.1%	1.2%	35	74	109	72	14	760	4
9:00	5.5%	2.0%	29	61	90	60	15	395	11
10:00	7.0%	4.3%	62	132	194	128	12	400	10
11:00	8.4%	6.2%	90	190	280	185	11	784	2
12:00	9.4%	8.3%	120	255	375	248	6	771	3
13:00	8.2%	8.6%	124	265	389	257	5	698	7
14:00	7.7%	8.9%	129	273	402	266	2	695	8
15:00	7.8%	8.8%	127	271	398	263	4	556	9
16:00	8.0%	8.9%	129	273	402	266	2	716	5
17:00	8.4%	9.2%	133	283	416	275	1	991	1
18:00	8.0%	7.5%	108	231	339	224	8	716	5
19:00	7.9%	7.2%	104	222	326	215	9	0	
20:00	4.3%	7.7%	111	237	348	230	7	0	
21:00	1.8%	7.2%	104	222	326	215	9	0	
22:00	1.7%	2.8%	41	86	127	84	13	0	

Source: ITE Trip Generation, Table 1-Land Use 820, Neel-Schaffer, 2015, count data from 8/18/15.

The signal warrant analyses identified that both the major street threshold volumes and minor street volumes are satisfied on Highland Colony Parkway at Old Agency Parkway and are anticipated to be satisfied at the intersection of Site Drive #3 with Highland Colony Parkway. Installation of a traffic control signal is recommended for Old Agency Parkway and Site Drive #3. The spacing between these intersections would be 1,000 ft from Old Agency Road roundabout to Old Agency Parkway, 1,700 ft from Old Agency Parkway to Site Drive #3, and 1,200 ft from Site Drive #3 to Lake Harbour Drive Extension. These three signals are recommended to be interconnected to allow for coordinated timing plans and to maximize efficiency since the proposed signals are to be located within 3,000 ft along Highland Colony Parkway.

An alternative to providing traffic signals on Highland Colony Parkway would be to include a roundabout at any of the potential signal locations, in lieu of a traffic signal. The roundabouts would require two lanes for north/south movements, but Site Drive #3 and Old Agency Parkway could include single lane approaches for east/west connections. Roundabouts would provide a continuation of the aesthetic element that exists at the existing landscaped roundabout at Old Agency Road while providing the increased efficiency and improved safety components associated with roundabouts over typical signalized intersections.

5.5 Natchez Trace Parkway – Multi-Use Trail

The city of Ridgeland is committed to multi-use trails and has a significant network of trails in the city. The primary trail is located within the Natchez Trace Parkway right-of-way and extends east/west across the city. An at grade trail crossing exists just south of the Old Agency Road/Highland Colony Parkway roundabout. The trail is an uncontrolled crossing with signs and striping notifying drivers of potential pedestrian/bicycle crossings.



Natchez Trace Trail crossing at Highland Colony Parkway, looking west.

The Natchez Trace multi-use trail crossing at Highland Colony Parkway has a weekday average of 13,400 vehicles per day. The development of Renaissance Phase 3 will increase this volume of vehicular traffic. A current construction project is extending a north/south connection to the multi-use trail on the west side of Highland Colony Parkway north to Steed Road. The Lake Harbour Drive project recently extended the multi-use trail from Northpark Drive westward to Highway 51. The extension of Lake Harbour Drive to Highland Colony Parkway will include an extension of the multi-use trail to Highland Colony Parkway on the north side of Lake Harbour Drive, which will ultimately connect trails along the Natchez Trace and Highland Colony Parkway to those along Lake Harbour Drive.

Discussions with the developer of Renaissance Phase 3 have included the concept of extending the multi-use trail from Lake Harbour Drive Extension north to the Natchez Trace Parkway trail, along the east side of Highland Colony Parkway. If signalization of the intersection of Old Agency Parkway at Highland Colony Parkway is approved by the National Park Service (Natchez Trace Parkway staff), then a controlled pedestrian crossing is recommended at the new traffic signal, concurrent with a connection to the existing trail crossing on the west side of Highland Colony Parkway. Some people may choose to cross in the current crossing location, which is directly in line with the east/west trail, while others may choose to travel south and cross at a signal. Signal phasing is recommended to take into account the potential conflicts from turning vehicles across designated crosswalks.

Existing traffic counts reveal that weekend vehicular volumes are approximately half of the weekday vehicular volumes on Highland Colony Parkway. There are times that bike/ped crossings would have few conflicting vehicles, but for times that do not, a signal controlled crosswalk would provide pedestrians and cyclists with an option to cross at a traffic signal.

5.6 Lake Harbour Drive Extension/Highland Colony Parkway Intersection

The future intersection of Lake Harbour Drive Extension/Highland Colony Parkway is anticipated to be a major intersection controlled with a traffic signal. The alignment of Highland Colony Parkway is within a horizontal curve at this intersection (currently New Pointe Drive). The projected traffic volumes for southbound left turning traffic identify over 300 southbound left turning vehicles during both the AM and PM peak hours. Typically, when left turning volumes exceed 300 vph, consideration is given to providing dual left turn lanes. The planned width of Lake Harbour Drive Extension can accommodate dual southbound left turn lanes.

The city of Ridgeland *Generalized Future Land Use and Transportation Plan* (2/4/14) shows the extension of Lake Harbour Drive across Highland Colony Parkway, extending west to intersect Brame Road and follow Brame Road north to terminate at Old Agency Parkway. A driveway opening exists on this west approach of New Pointe Drive currently. Visibility from the interior of this horizontal curve is restricted and would potentially create visibility issues for traffic entering the intersection. Due to the degree of horizontal curvature, north/south left turning vehicles would interfere with the line of sight of the opposing approach. If vehicles were queued in both the northbound left turn lane and southbound left turn lane, the queued vehicles are within the line of sight of north/south through traffic. The turning vehicles would not have a direct line of sight to identify the approaching through traffic without pulling into the through travel lanes, which would potentially increase the crash risk.

The line of sight issue could be resolved by either restricting left turning traffic to “protected only” phasing, by prohibiting northbound left turns and eliminating the turn bay, or by installing a roundabout, instead of a signalized intersection. If a west approach is constructed, the eastbound movements also have limited sight distance due to an earthen berm and trees located within the sight triangle. Due to the sight distance limitations associated with the berm and horizontal curve, if a west approach were constructed, the eastbound right turns on red would likely need to be prohibited, as there does not appear to be sufficient intersection sight distance.

6.0 Recommendations and Conclusions

The development of the project site's retail, financial, gas station and restaurant land uses is not anticipated to create significant capacity related deficiencies based on the projected trip generation, traffic counts, recommended improvements and future road construction in the area.

Existing traffic volumes were analyzed to identify the existing levels-of-service at the study area intersections. The Old Agency Road roundabout is shown to operate at LOS A on all approaches during the AM and PM peak hours, except the eastbound approach in the AM peak, which is operating at LOS C. The only deficient LOS identified was the eastbound left turn from Old Agency Parkway to Highland Colony Parkway, which is operating at LOS F during the AM peak hour. Analysis of the existing traffic volumes at the intersection (Old Agency Parkway/Highland Colony Parkway) identified that all three of the vehicular volume based traffic signal warrants are met. The traffic control at the intersection is recommended to be upgraded to either a signal controlled intersection or a roundabout. Changes to the traffic control must be coordinated (and approved by) the Natchez Trace Parkway as this intersection is within the Natchez Trace right-of-way. The intersection is approximately 500 ft south of the Natchez Trace Parkway overpass.

The city of Ridgeland has a project to extend Lake Harbour Drive from US Highway 51 to Highland Colony Parkway. The extension is proposed to intersect Highland Colony Parkway at the existing intersection of New Pointe Drive. The roadway project is scheduled to begin in 2016 and be completed in 2018. This roadway project will be a major access for the proposed Renaissance Phase 3 site and is forecast to change area traffic patterns by providing some diversion of traffic from Old Agency Road. The diversion of traffic to this new roadway was accounted for in this analysis and is based on the urban transportation model.

Access to the project site is proposed through four site driveways, located at three existing median openings along Highland Colony Parkway between New Pointe Drive and Old Agency Parkway. The driveways were numbered (1-4) from north to south. Auxiliary (northbound) right-turn ingress lanes are shown to be warranted (and recommended) at each site driveway.

Drive #1 is a right-turn-in/right-turn-out only driveway, while drives 2-4 are full access. Driveway #2 aligns with Trace Colony Park Drive. Driveway 3 is proposed as the major site entrance/exit and is shown to meet signal warrants. Either a traffic signal or roundabout is recommended at the intersection of Highland Colony Parkway/Site Drive #3. A driveway exists on the west side of Highland Colony Parkway at Site Drive #3, accessing vacant land.

Driveway #4 is proposed at the south property line and replaces the existing church driveway with a shared driveway and internal connection to the site from the adjacent church. The shifting of the driveway to the north will require a slight modification of the median island to shift the median opening north to align with the new (shared) site driveway. The shared aspect of this new driveway concurrent with a direct connection across the church property between the retail site and Lake Harbour Drive Extension presents a very likely scenario for cut-through traffic. Shifting the church driveway to the east on Lake Harbour Drive Extension and the construction of speed humps or traffic tables is recommended to discourage cut-through traffic across the church property, or use of a gate to close the church driveway at the retail driveway to all traffic when church is not in session.

The Natchez Trace Parkway multi-use trail is recommended to be extended south of the existing crossing approximately 700 ft to Old Agency Parkway to allow a controlled crossing at the proposed new signal location. Additionally, the trail is recommended to extend approximately 3,000 ft south, along the east side of Highland Colony Parkway, to the Lake Harbour Drive Extension to connect to the planned multi-use trail on the north side of Lake Harbour Drive. Trail connections are also recommended to extend into the project site and access on-site sidewalks to facilitate the movement of bike/pedestrian traffic to the Renaissance Phase 3 site from the adjacent multi-use trail and residential areas. All work within Natchez Trace Parkway right-of-way must be approved by the National Park Service/Natchez Trace Parkway staff.

The intersection of Lake Harbour Drive Extension with Highland Colony Parkway is shown to be a signalized intersection in the Waggoner Engineering, Inc., roadway design plans, providing a single southbound left turn lane. Traffic volume forecasts for 2018 identify more than 300 vph during both the AM and PM peak hours with the development of the retail site. Consideration for dual southbound left turn lanes as part of the Lake Harbour Extension project is recommended.

Additionally, if a west approach is constructed at this intersection, “protected only” north/south left turn phasing is recommended to be implemented, as the north/south left turn queues will likely obstruct the visibility of permissive left turning traffic within this horizontal curve along Highland Colony Parkway. An alternative to the dual left turn lane construction and “protected only” left turn phasing would be construction of a roundabout rather than a traffic signal.

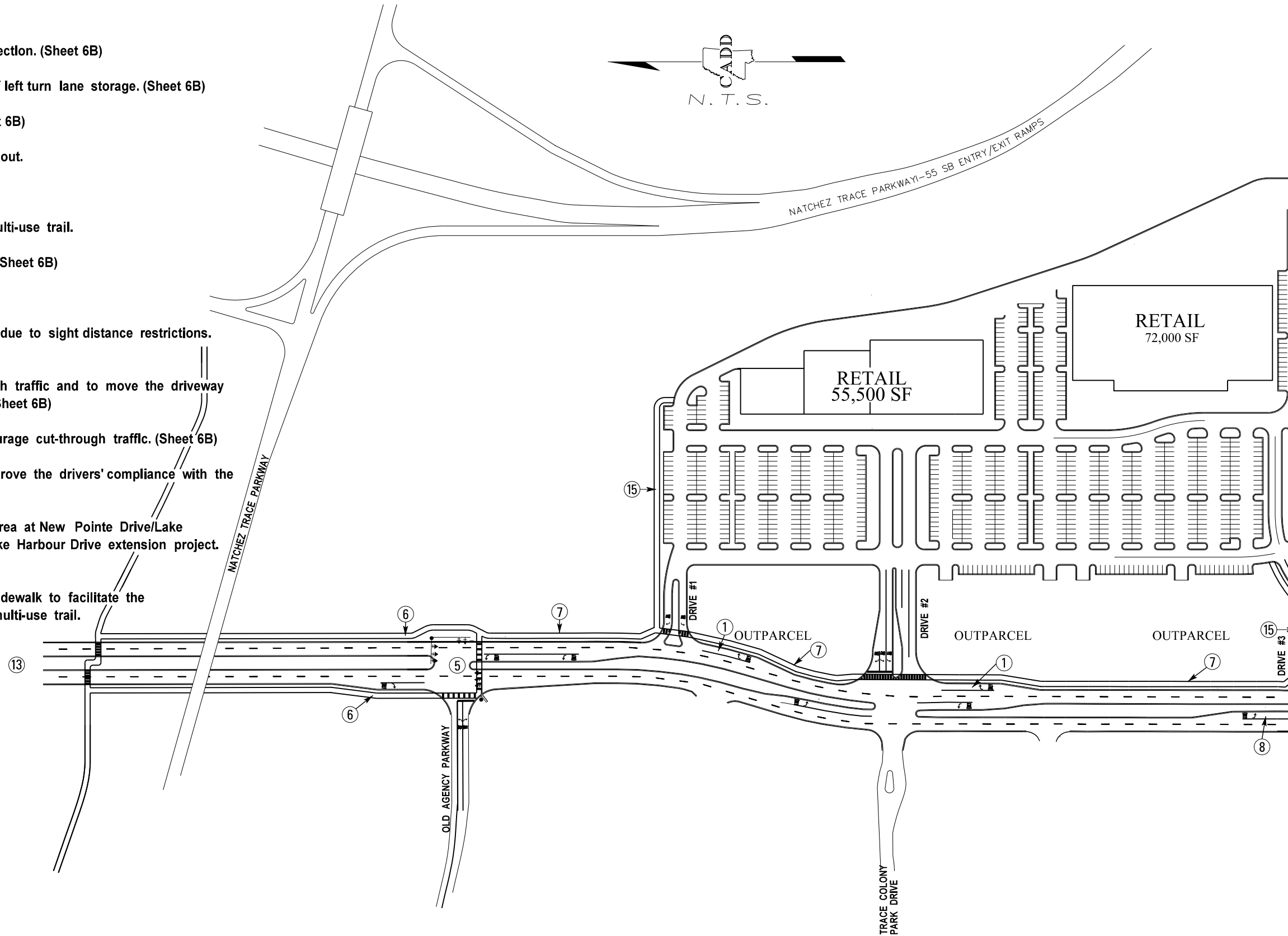
With the potential for three consecutive traffic signals on Highland Colony Parkway at Old Agency Parkway, Site Drive #3 and Lake Harbour Drive Extension, interconnection of these signals is recommended to improve the signal efficiency and allow for coordinated timing plans. An alternative to the “Protected Only” left turns would be to install Flashing Yellow Arrows (FYA’s) for left turn traffic control. The FYA’s could be set to “Protected Only” operation during peak periods and peak retail months (November/December) and allow protected/ permitted operation at off-peak times.

The developer is recommended to coordinate with the city of Ridgeland to identify an acceptable route for tractor-trailers (and dump trucks) to access the site, prior to the construction of Lake Harbour Drive extension. Similar arrangements will also be required with the City and Contractor for the construction of Lake Harbour Drive and the new bridge over I-55. The project to mill/overlay Highland Colony Parkway is likely to be adversely affected by the commercial traffic associated with the site development and adjacent road construction based on the anticipation of a fiscal year 2016 mill/overlay project. The Lake Harbour Drive extension project would be an appropriate project to include reconstructing the Highland Colony Parkway intersection area at New Pointe Drive/Lake Harbour Drive to provide a more structural asphalt depth. The slow turning action of Highland Elementary school buses (and other traffic) will likely require a thicker pavement depth to prevent excessive rutting.

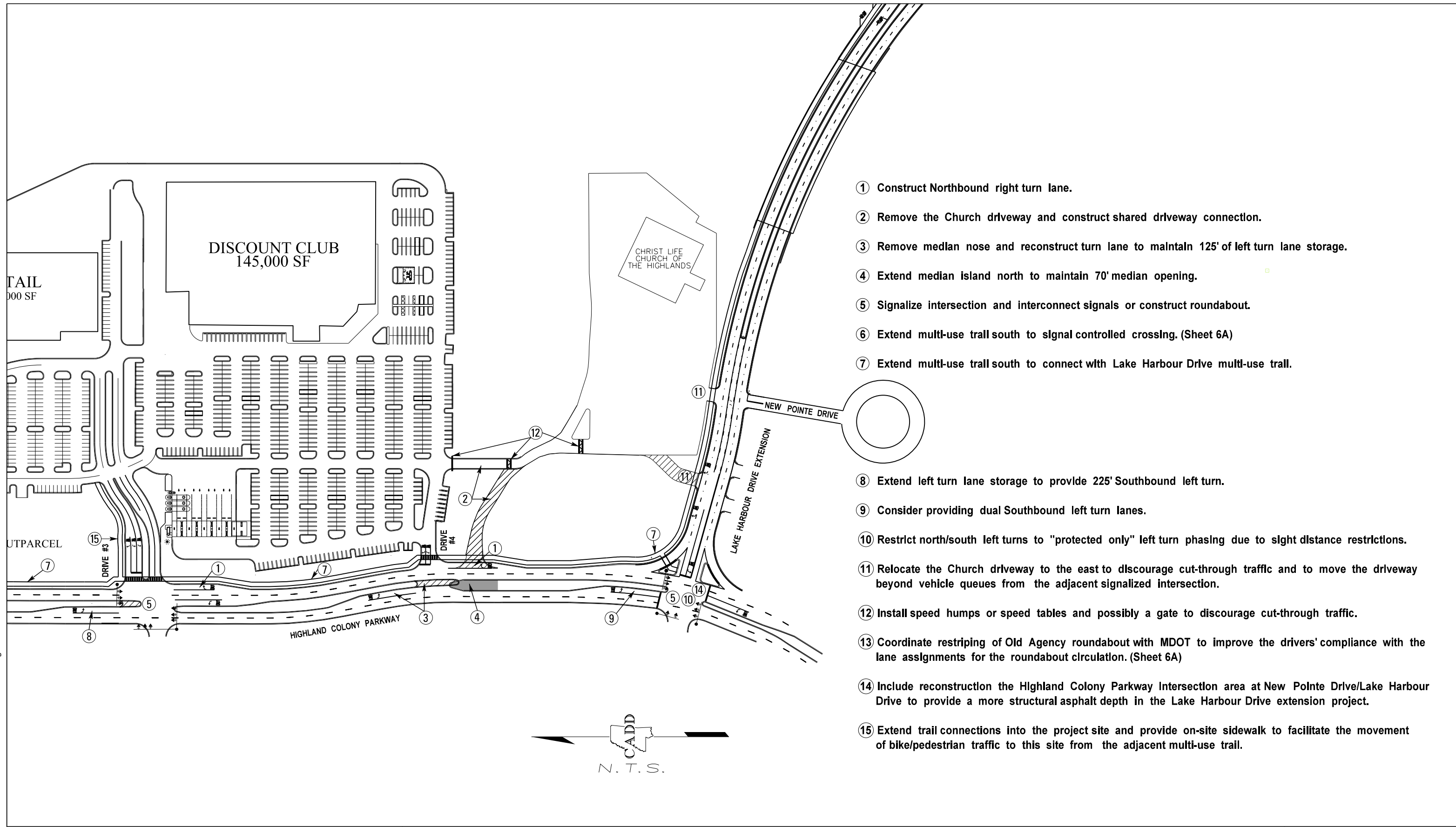
The existing roundabout at Old Agency Road has older striping legends and layout. A restriping of the roundabout is recommended to be coordinated with MDOT to improve the drivers’ compliance with the lane assignments for the roundabout circulation.

The recommended improvements are shown graphically in **Figures 6A and 6B**.

- ① Construct Northbound right turn lane.
- ② Remove the Church driveway and construct shared driveway connection. (Sheet 6B)
- ③ Remove median nose and reconstruct turn lane to maintain 125' of left turn lane storage. (Sheet 6B)
- ④ Extend median island north to maintain 70' median opening. (Sheet 6B)
- ⑤ Signalize Intersection and Interconnect signals or construct roundabout.
- ⑥ Extend multi-use trail south to signal controlled crossing.
- ⑦ Extend multi-use trail south to connect with Lake Harbour Drive multi-use trail.
- ⑧ Extend left turn lane storage to provide 225' Southbound left turn. (Sheet 6B)
- ⑨ Consider providing dual Southbound left turn lanes. (Sheet 6B)
- ⑩ Restrict north/south left turns to "protected only" left turn phasing due to sight distance restrictions. (Sheet 6B)
- ⑪ Relocate the Church driveway to the east to discourage cut-through traffic and to move the driveway beyond vehicle queues from the adjacent signalized intersection. (Sheet 6B)
- ⑫ Install speed humps or speed tables and possibly a gate to discourage cut-through traffic. (Sheet 6B)
- ⑬ Coordinate restriping of Old Agency roundabout with MDOT to improve the drivers' compliance with the lane assignments for the roundabout circulation.
- ⑭ Include reconstruction the Highland Colony Parkway intersection area at New Pointe Drive/Lake Harbour Drive to provide a more structural asphalt depth in the Lake Harbour Drive extension project. (Sheet 6B)
- ⑮ Extend trail connections into the project site and provide on-site sidewalk to facilitate the movement of bike/pedestrian traffic to this site from the adjacent multi-use trail.



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Appendix

- Volume Calculation Tables (Year 2017 A1-7/Year 2018 A8-A14)
- Traffic Counts:
 - Highland Colony Pkwy/Old Agency Rd (A15-19),
 - Highland Colony Pkwy/Old Agency Pkwy (A20-23),
 - Highland Colony Pkwy/Trace Colony Park Dr (A24-27),
 - Highland Colony Pkwy/New Pointe Dr (A28-31)
- Traffic Model of Lake Harbour Drive Extension (A32-33)
- Ridgeland delay study for Old Agency Parkway at Highland Colony Parkway (A34)
- Right turn lane warrant graphs (A35-36)
- Level of Service Summary Sheets:
 - Existing (A37-50),
 - 2017 Non-Site (51-64),
 - 2017 Total (65-92),
 - 2018 Non-Site (A93-108),
 - 2018 Total (A109-138)
- Signal warrant analysis sheets (A139-142)
- Parkway typical sections, November 1989 (A143)

May 23, 2016

Matthew Dodd, PLA, ASLA
City of Ridgeland
P.O. Box 217
Ridgeland, MS 39158

Dear Matthew,

Pursuant to your letter to Danny Ryals of our office, dated May 20, 2016, this is a response to Items No. 27 and 28 in that letter.

Item No. 27: Traffic Impact Analysis – please justify the 50% internal capture rate for the gas to Costco (Trip Generation Table, page 16).

Response:

The internal capture was based on the fact that the majority of the people going to Costco are going to be the primary users of the gas pumps. The ITE trip generation for a gasoline/service station is for a stand-alone facility. The people using the fueling islands at the Costco are primarily going to be patrons of the discount store, required to use their discount card to get access to the gas pumps. We would not anticipate that more than half of the gas station patrons would be making a separate trip to the store for the sole purpose of purchasing fuel. The net reduction in trips is AM – Total Internal Capture Reduction: 46 vph in/43 vph out in the AM, equating to:

Ingress trips: 23 vph trips reduction from the Costco Store and 23 vph reduction from the Costco gas station in the AM in

Egress trips: 22 vph reduction from the Costco store exiting-21 vph reduction from the Costco gas station exiting in the AM, PM –
Total Internal Capture Reduction: 56 vph in/55 vph out in the PM,

Ingress trips: 28 vph trips reduction from the Costco Store and 28 vph reduction from the Costco gas station in the PM in

Egress trips: 28 vph reduction from the Costco store exiting-27 vph reduction from the Costco gas station exiting in the PM, Ultimately, the reduction is not a significant volume (less than 30 vph per each of the two land uses in the AM and PM Peak hours), and that the gas station would most certainly be a secondary trip to the majority of the customers that are card holding members at the gas pumps.

Even if the gas station were open to non-card holding members, the usage would still (likely) be predominantly Costco store patrons based on the Sam's club model and other member stores nationally.

Item No. 28: Traffic Impact Analysis – the analysis was done using a 145,000 sf wholesale club; however, the proposed wholesale club is 155,000 sf. Please explain how the additional 10,000 sf will affect the traffic impact analysis.

Response:

Based on trip generation tables, the increase in building square footage results in the following additional trips:

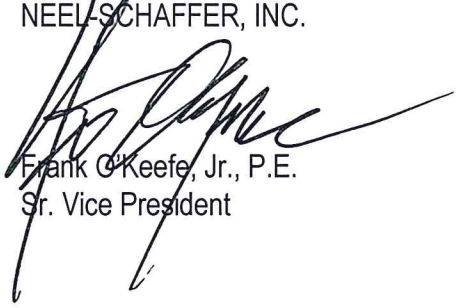
Total AM trips increase by 5 (3 In / 2 Out).

Total PM trips increase by 26 (13 in / 13 Out).

These additional trips are not significant in the big picture and should not change the overall recommended improvement plans.

Matthew, we hope these responses answer your questions regarding the traffic study. Should you need additional clarification or have additional questions, please do not hesitate to contact me.

Sincerely,
NEEL-SCHAFFER, INC.



Frank O'Keefe, Jr., P.E.
Sr. Vice President

Old Agency Road/Highland Colony Parkway

Annual Growth Factor 3.0%
 Base Year 2015
 Horizon Year 1 2017

Start Time	Northbound			Southbound			Eastbound			Westbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
AM Peak Hour													
2015 Existing Traffic	19	116	513	431	193	19	43	181	23	579	183	631	2,931
2017 Non-Site Traffic	20	123	544	457	205	20	46	192	24	614	194	669	3,108
Site Traffic	7	57	99	0	80	0	0	0	9	138	0	0	390
Pass By Trips	-2	-20	-34		-21				-2	-36			-115
2017 Total Traffic	25	160	609	457	264	20	46	192	31	716	194	669	3,383
PM Peak Hour													
2015 Existing Traffic	28	253	647	564	104	35	26	99	1	233	150	281	2,421
2017 Non-Site Traffic	30	268	686	598	110	37	28	105	1	247	159	298	2,567
Site Traffic	25	216	374	0	213	0	0	0	24	369	0	0	1,221
Pass By Trips	-10	-90	-156		-91				-10	-157			-514
2017 Total Traffic	45	394	904	598	232	37	28	105	15	459	159	298	3,274

Source: Neel-Schaffer, 2015.

Old Agency Parkway/Highland Colony Parkway

Annual Growth Factor 3.0%
 Base Year 2015
 Horizon Year 1 2017

Start Time	Northbound			Southbound			Eastbound			Westbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
AM Peak Hour													
2015 Existing Traffic	12	398	0	0	748	102	322	0	27	0	0	0	1,609
2017 Non-Site Traffic	13	422	0	0	794	108	342	0	29	0	0	0	1,708
Site Traffic	22	163	0	0	227	0	0	0	31	0	0	0	443
Pass By Trips	-8	-56			-58				-8				-130
2017 Total Traffic	27	529	0	0	963	108	342	0	52	0	0	0	2,021
PM Peak Hour													
2015 Existing Traffic	15	779	0	0	235	201	250	0	8	0	0	0	1,488
2017 Non-Site Traffic	16	826	0	0	249	213	265	0	8	0	0	0	1,577
Site Traffic	83	616	0	0	606	0	0	0	82	0	0	0	1,387
Pass By Trips	-35	-256			-258				-35				-584
2017 Total Traffic	64	1,186	0	0	597	213	265	0	55	0	0	0	2,380

Source: Neel-Schaffer, 2015.

North Site Drive (#1)/Highland Colony Parkway

Annual Growth Factor 3.0%
 Base Year 2015
 Horizon Year 1 2017

Start Time	Northbound			Southbound			Eastbound			Westbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
AM Peak Hour													
2015 Existing Traffic	0	410	0	0	758	0	0	0	0	0	0	0	1,168
2017 Non-Site Traffic	0	435	0	0	804	0	0	0	0	0	0	0	1,239
Site Traffic	0	157	6	0	258	0	0	0	0	0	0	28	449
Pass By Trips		-55			-66								
2017 Total Traffic	0	537	6	0	996	0	0	0	0	0	0	28	1,567
PM Peak Hour													
2015 Existing Traffic	0	794	0	0	228	0	0	0	0	0	0	0	1,022
2017 Non-Site Traffic	0	842	0	0	242	0	0	0	0	0	0	0	1,084
Site Traffic	0	590	15	0	688	0	0	0	0	0	0	108	1,401
Pass By Trips		-253			-293								
2017 Total Traffic	0	1,179	15	0	637	0	0	0	0	0	0	108	1,939

Source: Neel-Schaffer, 2015.

Trace Colony Park Drive-Site Drive #2/Highland Colony Parkway

Annual Growth Factor 3.0%
 Base Year 2015
 Horizon Year 1 2017

Start Time	Northbound			Southbound			Eastbound			Westbound			Total
	Left	Thru	Right	U-Turn/Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
AM Peak Hour													
2015 Existing Traffic	10	349	0	13	693	52	16	0	1	0	0	0	1,134
2017 Non-Site Traffic	11	370	0	14	735	55	17	0	1	0	0	0	1,203
Site Traffic	0	119	15	92	166	0	0	3	0	4	2	44	445
Pass By Trips		-44			-66								-110
2017 Total Traffic	11	445	15	106	835	55	17	3	1	4	2	44	1,538
PM Peak Hour													
2015 Existing Traffic	2	680	0	1	209	18	79	0	8	0	0	0	997
2017 Non-Site Traffic	2	721	0	1	222	19	84	0	8	0	0	0	1,057
Site Traffic	0	440	41	246	442	0	0	8	0	17	8	166	1,368
Pass By Trips		-201			-293								-494
2017 Total Traffic	2	960	41	247	371	19	84	8	8	17	8	166	1,931

Source: Neel-Schaffer, 2015.

Site Drive #3/Highland Colony Parkway

Annual Growth Factor 3.0%
 Base Year 2015
 Horizon Year 1 2017

Start Time	Northbound			Southbound			Eastbound			Westbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
AM Peak Hour													
2015 Existing Traffic	0	359	0	0	694	0	0	0	0	0	0	0	1,053
2017 Non-Site Traffic	0	381	0	0	736	0	0	0	0	0	0	0	1,117
Site Traffic	0	57	12	123	47	0	0	0	0	22	0	77	338
Pass By Trips		-21			-44								-65
2017 Total Traffic	0	417	12	123	739	0	0	0	0	22	0	77	1,390
PM Peak Hour													
2015 Existing Traffic	0	682	0	0	217	0	0	0	0	0	0	0	899
2017 Non-Site Traffic	0	724	0	0	230	0	0	0	0	0	0	0	954
Site Traffic	0	190	33	328	131	0	0	0	0	83	0	291	1,056
Pass By Trips		-94			-195								-289
2017 Total Traffic	0	820	33	328	166	0	0	0	0	83	0	291	1,721

Source: Neel-Schaffer, 2015.

South Site Drive (#4)/Highland Colony Parkway

Annual Growth Factor 3.0%
 Base Year 2015
 Horizon Year 1 2017

Start Time	Northbound			Southbound			Eastbound			Westbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
AM Peak Hour													
2015 Existing Traffic	0	359	0	0	694	0	0	0	0	0	0	0	1,053
2017 Non-Site Traffic	0	381	0	0	736	0	0	0	0	0	0	0	1,117
Site Traffic	0	34	13	43	26	0	0	0	0	7	0	35	158
Pass By Trips		-12			-20								-32
2017 Total Traffic	0	403	13	43	742	0	0	0	0	7	0	35	1,243
PM Peak Hour													
2015 Existing Traffic	0	682	0	0	217	0	0	0	0	0	0	0	899
2017 Non-Site Traffic	0	724	0	0	230	0	0	0	0	0	0	0	954
Site Traffic	0	90	33	115	100	0	0	0	0	25	0	133	496
Pass By Trips		-52			-90								-142
2017 Total Traffic	0	762	33	115	240	0	0	0	0	25	0	133	1,308

Source: Neel-Schaffer, 2015.

New Pointe Drive (Lake Harbour Ext)/Highland Colony Parkway

Annual Growth Factor 3.0%
 Base Year 2015
 Horizon Year 1 2017

Start Time	Northbound			Southbound			Eastbound			Westbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
AM Peak Hour													
2015 Existing Traffic	0	362	1	33	657	0	0	0	0	2	0	2	1,057
2017 Non-Site Traffic	0	384	1	35	697	0	0	0	0	2	0	2	1,121
Site Traffic	0	47	0	0	33	0	0	0	0	0	0	0	80
Pass By Trips		-12		0	-11								-23
2017 Total Traffic	0	419	1	35	719	0	0	0	0	2	0	2	1,178
PM Peak Hour													
2015 Existing Traffic	0	628	2	3	197	0	0	0	0	1	0	24	855
2017 Non-Site Traffic	0	666	2	3	209	0	0	0	0	1	0	25	906
Site Traffic	0	123	0	0	125	0	0	0	0	0	0	0	248
Pass By Trips		-52		0	-52								-104
2017 Total Traffic	0	737	2	3	282	0	0	0	0	1	0	25	1,050

Source: Neel-Schaffer, 2015.

Old Agency Road/Highland Colony Parkway

Annual Growth Factor 3.0%
 Base Year 2015
 Horizon Year 1 2018

Start Time	Northbound			Southbound			Eastbound			Westbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
AM Peak Hour													
2015 Existing Traffic	19	116	513	431	193	19	43	181	23	579	183	631	2,931
2015 Existing Traffic w/ Lake Harb. Ext Adj	19	380	480	325	300	19	43	160	45	300	183	480	2,734
2018 Non-Site Traffic	21	415	525	355	328	21	47	175	49	328	200	525	2,989
Site Traffic	7	44	66	0	61	0	0	0	9	92	0	0	279
Pass By Trips	-2	-15	-23		-16				-2	-24			-82
2018 Total Traffic	26	444	568	355	373	21	47	175	56	396	200	525	3,186
PM Peak Hour													
2015 Existing Traffic	28	253	647	564	104	35	26	99	1	233	150	281	2,421
2015 Existing Traffic w/ Lake Harb. Ext Adj	28	350	520	415	200	35	26	89	11	200	150	265	2,289
2018 Non-Site Traffic	31	382	568	453	219	38	28	97	12	219	164	290	2,501
Site Traffic	25	166	250	0	164	0	0	0	24	246	0	0	875
Pass By Trips	-10	-69	-104		-70				-10	-105			-368
2018 Total Traffic	46	479	714	453	313	38	28	97	26	360	164	290	3,008

Source: Neel-Schaffer, 2015.

Old Agency Parkway/Highland Colony Parkway

Annual Growth Factor 3.0%
 Base Year 2015
 Horizon Year 1 2018

Start Time	Northbound			Southbound			Eastbound			Westbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
AM Peak Hour													
2015 Existing Traffic	12	398	0	0	748	102	322	0	27	0	0	0	1,609
2015 Existing Traffic w/ Lake Harb. Ext Adj	25	630	0	0	545	75	240	0	110	0	0	0	1,625
2018 Non-Site Traffic	27	688	0	0	596	82	262	0	120	0	0	0	1,775
Site Traffic	22	117	0	0	162	0	0	0	31	0	0	0	332
Pass By Trips	-8	-40			-42				-8				-98
2018 Total Traffic	41	765	0	0	716	82	262	0	143	0	0	0	2,009
PM Peak Hour													
2015 Existing Traffic	15	779	0	0	235	201	250	0	8	0	0	0	1,488
2015 Existing Traffic w/ Lake Harb. Ext Adj	100	540	0	0	305	100	185	0	75	0	0	0	1,305
2018 Non-Site Traffic	109	590	0	0	333	109	202	0	82	0	0	0	1,425
Site Traffic	83	441	0	0	434	0	0	0	82	0	0	0	1,040
Pass By Trips	-35	-183			-185				-35				-438
2018 Total Traffic	157	848	0	0	582	109	202	0	129	0	0	0	2,027

Source: Neel-Schaffer, 2015.

North Site Drive (#1)/Highland Colony Parkway

Annual Growth Factor 3.0%
 Base Year 2015
 Horizon Year 1 2018

Start Time	Northbound			Southbound			Eastbound			Westbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
AM Peak Hour													
2015 Existing Traffic	0	410	0	0	758	0	0	0	0	0	0	0	1,168
2015 Existing Traffic w/ Lake Harb. Ext Adj	0	655	0	0	655	0	0	0	0	0	0	0	1,310
2018 Non-Site Traffic	0	716	0	0	716	0	0	0	0	0	0	0	1,432
Site Traffic	0	119	15	0	193	0	0	0	0	0	0	20	347
Pass By Trips		-45			-50								
2018 Total Traffic	0	790	15	0	859	0	0	0	0	0	0	20	1,684
PM Peak Hour													
2015 Existing Traffic	0	794	0	0	228	0	0	0	0	0	0	0	1,022
2015 Existing Traffic w/ Lake Harb. Ext Adj	0	640	0	0	380	0	0	0	0	0	0	0	1,020
2018 Non-Site Traffic	0	699	0	0	415	0	0	0	0	0	0	0	1,114
Site Traffic	0	449	41	0	516	0	0	0	0	0	0	75	1,081
Pass By Trips		-204			-220								
2018 Total Traffic	0	944	41	0	711	0	0	0	0	0	0	75	1,771

Source: Neel-Schaffer, 2015.

Trace Colony Park Drive-Site Drive #2/Highland Colony Parkway

Annual Growth Factor 3.0%
 Base Year 2015
 Horizon Year 1 2018

Start Time	Northbound			Southbound			Eastbound			Westbound			Total
	Left	Thru	Right	U-Turn/Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
AM Peak Hour													
2015 Existing Traffic	10	349	0	13	693	52	16	0	1	0	0	0	1,134
2015 Existing Traffic w/ Lake Harb. Ext Adj	20	640	0	0	610	45	15	0	5	0	0	0	1,335
2018 Non-Site Traffic	22	699	0	0	667	49	16	0	5	0	0	0	1,458
Site Traffic	0	112	31	61	132	0	0	3	0	22	2	22	385
Pass By Trips		-45			-50								-95
2018 Total Traffic	22	766	31	61	749	49	16	3	5	22	2	22	1,748
PM Peak Hour													
2015 Existing Traffic	2	680	0	1	209	18	79	0	8	0	0	0	997
2015 Existing Traffic w/ Lake Harb. Ext Adj	5	575	0	0	365	15	65	0	25	0	0	0	1,050
2018 Non-Site Traffic	5	628	0	0	399	16	71	0	27	0	0	0	1,146
Site Traffic	0	407	82	164	352	0	0	8	0	83	8	83	1,187
Pass By Trips		-204			-220								-424
2018 Total Traffic	5	831	82	164	531	16	71	8	27	83	8	83	1,909

Source: Neel-Schaffer, 2015.

Site Drive #3/Highland Colony Parkway

Annual Growth Factor 3.0%
 Base Year 2015
 Horizon Year 1 2018

Start Time	Northbound			Southbound			Eastbound			Westbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
AM Peak Hour													
2015 Existing Traffic	0	359	0	0	694	0	0	0	0	0	0	0	1,053
2015 Existing Traffic w/ Lake Harb. Ext Adj	0	660	0	0	615	0	0	0	0	0	0	0	1,275
2018 Non-Site Traffic	0	721	0	0	672	0	0	0	0	0	0	0	1,393
Site Traffic	0	69	46	101	53	0	0	0	0	35	0	74	378
Pass By Trips		-32			-42								-74
2018 Total Traffic	0	758	46	101	683	0	0	0	0	35	0	74	1,697
PM Peak Hour													
2015 Existing Traffic	0	682	0	0	217	0	0	0	0	0	0	0	899
2015 Existing Traffic w/ Lake Harb. Ext Adj	0	580	0	0	390	0	0	0	0	0	0	0	970
2018 Non-Site Traffic	0	634	0	0	426	0	0	0	0	0	0	0	1,060
Site Traffic	0	206	123	270	165	0	0	0	0	133	0	283	1,180
Pass By Trips		-140			-185								-325
2018 Total Traffic	0	700	123	270	406	0	0	0	0	133	0	283	1,915

Source: Neel-Schaffer, 2015.

South Site Drive (#4)/Highland Colony Parkway

Annual Growth Factor 3.0%
 Base Year 2015
 Horizon Year 1 2018

Start Time	Northbound			Southbound			Eastbound			Westbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
AM Peak Hour													
2015 Existing Traffic	0	359	0	0	694	0	0	0	0	0	0	0	1,053
2015 Existing Traffic w/ Lake Harb. Ext Adj	0	660	0	0	615	0	0	0	0	0	0	0	1,275
2018 Non-Site Traffic	0	721	0	0	672	0	0	0	0	0	0	0	1,393
Site Traffic	0	93	19	31	57	0	0	0	0	22	0	22	244
Pass By Trips		-28			-27								-55
2018 Total Traffic	0	786	19	31	702	0	0	0	0	22	0	22	1,582
PM Peak Hour													
2015 Existing Traffic	0	682	0	0	217	0	0	0	0	0	0	0	899
2015 Existing Traffic w/ Lake Harb. Ext Adj	0	580	0	0	390	0	0	0	0	0	0	0	970
2018 Non-Site Traffic	0	634	0	0	426	0	0	0	0	0	0	0	1,060
Site Traffic	0	246	49	82	216	0	0	0	0	83	0	83	759
Pass By Trips		-126			-125								-251
2018 Total Traffic	0	754	49	82	517	0	0	0	0	83	0	83	1,568

Source: Neel-Schaffer, 2015.

New Pointe Drive (Lake Harbour Ext)/Highland Colony Parkway

Annual Growth Factor 3.0%
 Base Year 2015
 Horizon Year 1 2018

Start Time	Northbound			Southbound			Eastbound			Westbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
AM Peak Hour													
2015 Existing Traffic	0	362	1	33	657	0	0	0	0	2	0	2	1,057
2015 Existing Traffic w/ Lake Harb. Ext Adj	0	330	230	315	300	0	0	0	0	300	0	330	1,805
2018 Non-Site Traffic	0	361	251	344	328	0	0	0	0	328	0	361	1,973
Site Traffic	0	32	0	57	22	0	0	0	0	0	0	80	191
Pass By Trips		-8		-20	-8							-21	-57
2018 Total Traffic	0	385	251	381	342	0	0	0	0	328	0	420	2,107
PM Peak Hour													
2015 Existing Traffic	0	628	2	3	197	0	0	0	0	1	0	24	855
2015 Existing Traffic w/ Lake Harb. Ext Adj	0	280	220	200	190	0	0	0	0	130	0	300	1,320
2018 Non-Site Traffic	0	306	240	219	208	0	0	0	0	142	0	328	1,443
Site Traffic	0	82	0	216	83	0	0	0	0	0	0	213	594
Pass By Trips		-35		-90	-35							-91	-251
2018 Total Traffic	0	353	240	345	256	0	0	0	0	142	0	450	1,786

Source: Neel-Schaffer, 2015.

Michael Baker Jr., Inc.
310 New Pointe Drive
Ridgeland, Mississippi, United States 39157
601.607.8700

Roundabout
Old Agency Rd @ Highland Colony Pkwy
County: Madison
City: Ridgeland

File Name : 1510140 Old Agency @ Highland Colony
Site Code : 1510140
Start Date : 9/3/2015
Page No : 1

Groups Printed- Lights - Other Vehicles

	Highland Colony From North				Old Agency From East				Highland Colony From South				Old Agency From West				
Start Time	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Int. Total
07:00 AM	50	16	0	0	150	20	92	1	0	20	140	0	0	32	3	0	524
07:15 AM	112	33	4	0	168	55	158	0	0	24	215	0	8	68	3	0	848
07:30 AM	137	52	2	0	90	71	160	0	2	29	144	0	10	51	8	0	756
07:45 AM	100	61	5	0	156	38	151	0	7	34	85	0	10	31	8	0	686
Total	399	162	11	0	564	184	561	1	9	107	584	0	28	182	22	0	2814
08:00 AM	82	47	8	0	165	19	162	0	10	29	69	0	15	31	4	0	641
08:15 AM	59	35	0	0	105	14	121	0	0	20	68	0	6	42	0	0	470
08:30 AM	52	24	2	0	84	14	112	0	6	20	68	0	11	38	0	0	431
08:45 AM	57	22	3	0	78	23	110	0	1	34	61	0	5	19	2	0	415
Total	250	128	13	0	432	70	505	0	17	103	266	0	37	130	6	0	1957
09:00 AM	72	24	1	0	75	25	103	0	0	22	72	0	10	17	0	0	421
09:15 AM	52	22	3	0	54	9	78	0	6	24	56	0	5	13	0	0	322
09:30 AM	86	13	0	0	50	12	78	0	3	22	62	0	7	20	2	0	355
09:45 AM	58	17	3	0	60	20	82	0	2	27	45	0	4	21	1	0	340
Total	268	76	7	0	239	66	341	0	11	95	235	0	26	71	3	0	1438
10:00 AM	56	11	8	0	59	13	61	0	1	33	64	0	2	18	0	0	326
10:15 AM	71	13	3	0	61	17	56	0	7	28	60	0	9	12	2	0	339
10:30 AM	75	24	8	0	48	22	64	0	1	26	68	0	6	10	0	0	352
10:45 AM	93	22	3	0	60	11	60	0	7	30	79	0	9	19	3	0	396
Total	295	70	22	0	228	63	241	0	16	117	271	0	26	59	5	0	1413
11:00 AM	88	22	2	0	49	22	62	0	2	47	95	0	4	21	0	0	414
11:15 AM	99	23	7	0	51	17	86	0	8	59	113	0	6	13	0	0	482
11:30 AM	134	40	5	0	50	21	75	0	2	68	117	0	4	18	2	0	536
11:45 AM	111	31	6	0	84	20	96	0	3	58	89	0	5	5	2	0	510
Total	432	116	20	0	234	80	319	0	15	232	414	0	19	57	4	0	1942
12:00 PM	86	49	4	0	66	26	66	0	3	65	95	0	5	17	1	0	483
12:15 PM	119	37	5	0	100	21	84	0	3	44	82	0	4	4	0	0	503
12:30 PM	111	49	7	0	75	23	74	0	3	36	82	0	8	33	0	0	501
12:45 PM	112	46	9	0	103	10	85	0	0	41	81	0	9	20	2	0	518
Total	428	181	25	0	344	80	309	0	9	186	340	0	26	74	3	0	2005
01:00 PM	110	50	9	0	97	23	94	0	4	41	79	0	5	19	1	0	532
01:15 PM	104	47	5	0	97	29	81	0	0	34	69	0	8	14	0	0	488
01:30 PM	110	30	5	0	93	29	79	0	2	32	95	0	8	18	1	0	502
01:45 PM	103	34	6	0	84	22	63	0	3	32	73	0	5	15	1	0	441
Total	427	161	25	0	371	103	317	0	9	139	316	0	26	66	3	0	1963
02:00 PM	107	29	6	0	88	27	60	0	2	34	93	0	6	9	3	0	464
02:15 PM	101	25	7	0	85	21	62	0	1	37	150	0	5	21	1	0	516
02:30 PM	111	28	1	0	56	23	70	0	8	22	85	0	13	15	2	0	434
02:45 PM	99	22	9	0	72	22	71	0	3	15	68	0	11	10	2	0	404
Total	418	104	23	0	301	93	263	0	14	108	396	0	35	55	8	0	1818
03:00 PM	112	20	8	0	61	38	112	0	1	50	78	0	3	20	1	0	504
03:15 PM	140	3	5	0	79	41	103	0	7	26	70	0	12	10	1	0	497
03:30 PM	160	30	6	0	80	15	101	0	7	34	97	0	2	34	1	0	567
03:45 PM	127	31	5	0	68	43	78	0	4	44	105	0	12	17	2	0	536
Total	539	84	24	0	288	137	394	0	19	154	350	0	29	81	5	0	2104
04:00 PM	159	28	12	0	53	41	60	1	10	29	132	0	10	29	1	0	565
04:15 PM	111	18	6	0	59	43	69	0	5	44	92	0	11	37	1	0	496
04:30 PM	139	33	8	0	60	40	55	0	4	58	162	0	4	30	0	0	593
04:45 PM	117	15	8	0	71	38	76	0	6	66	133	0	6	26	0	0	562
Total	526	94	34	0	243	162	260	1	25	197	519	0	31	122	2	0	2216
05:00 PM	187	32	10	0	39	30	78	0	15	78	208	0	11	21	0	0	709
05:15 PM	121	24	9	0	63	42	72	0	3	51	144	0	5	22	1	0	557

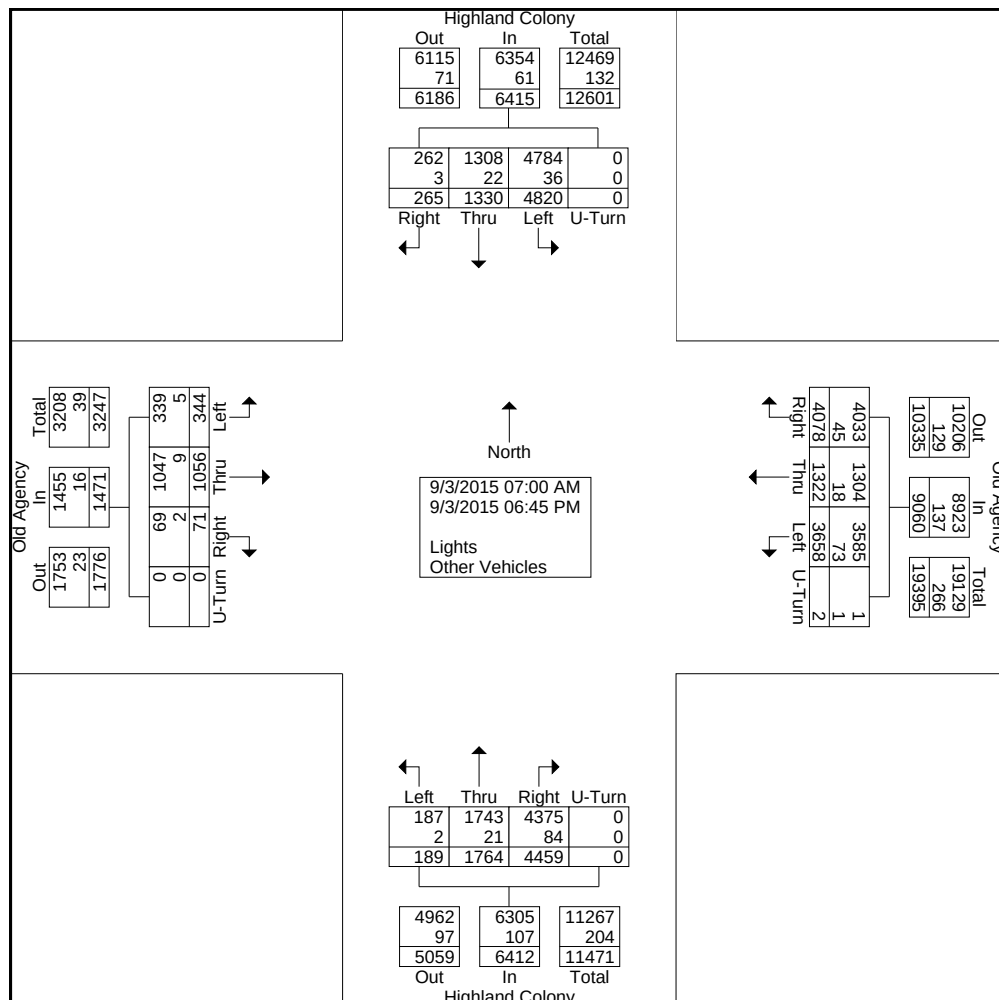
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 Ridgeland, Mississippi, United States 39157
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Roundabout
 Old Agency Rd @ Highland Colony Pkwy
 County: Madison
 City: Ridgeland

File Name : 1510140 Old Agency @ Highland Colony
 Site Code : 1510140
 Start Date : 9/3/2015
 Page No : 2

Groups Printed- Lights - Other Vehicles

	Highland Colony From North				Old Agency From East				Highland Colony From South				Old Agency From West				Int. Total
Start Time	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	
05:30 PM	88	20	9	0	60	36	90	0	7	61	86	0	9	36	0	0	502
05:45 PM	100	14	6	0	68	35	93	0	6	38	90	0	7	21	2	0	480
Total	496	90	34	0	230	143	333	0	31	228	528	0	32	100	3	0	2248
06:00 PM	114	20	6	0	55	33	67	0	5	23	79	0	9	27	1	0	439
06:15 PM	85	17	4	0	42	44	68	0	1	34	72	0	8	6	1	0	382
06:30 PM	70	15	10	0	42	35	62	0	3	22	42	0	9	14	1	0	325
06:45 PM	73	12	7	0	45	29	38	0	5	19	47	0	3	12	4	0	294
Total	342	64	27	0	184	141	235	0	14	98	240	0	29	59	7	0	1440
Grand Total	4820	1330	265	0	3658	1322	4078	2	189	1764	4459	0	344	1056	71	0	23358
Apprch %	75.1	20.7	4.1	0	40.4	14.6	45	0	2.9	27.5	69.5	0	23.4	71.8	4.8	0	
Total %	20.6	5.7	1.1	0	15.7	5.7	17.5	0	0.8	7.6	19.1	0	1.5	4.5	0.3	0	
Lights	4784	1308	262	0	3585	1304	4033	1	187	1743	4375	0	339	1047	69	0	23037
% Lights	99.3	98.3	98.9	0	98	98.6	98.9	50	98.9	98.8	98.1	0	98.5	99.1	97.2	0	98.6
Other Vehicles	36	22	3	0	73	18	45	1	2	21	84	0	5	9	2	0	321
% Other Vehicles	0.7	1.7	1.1	0	2	1.4	1.1	50	1.1	1.2	1.9	0	1.5	0.9	2.8	0	1.4

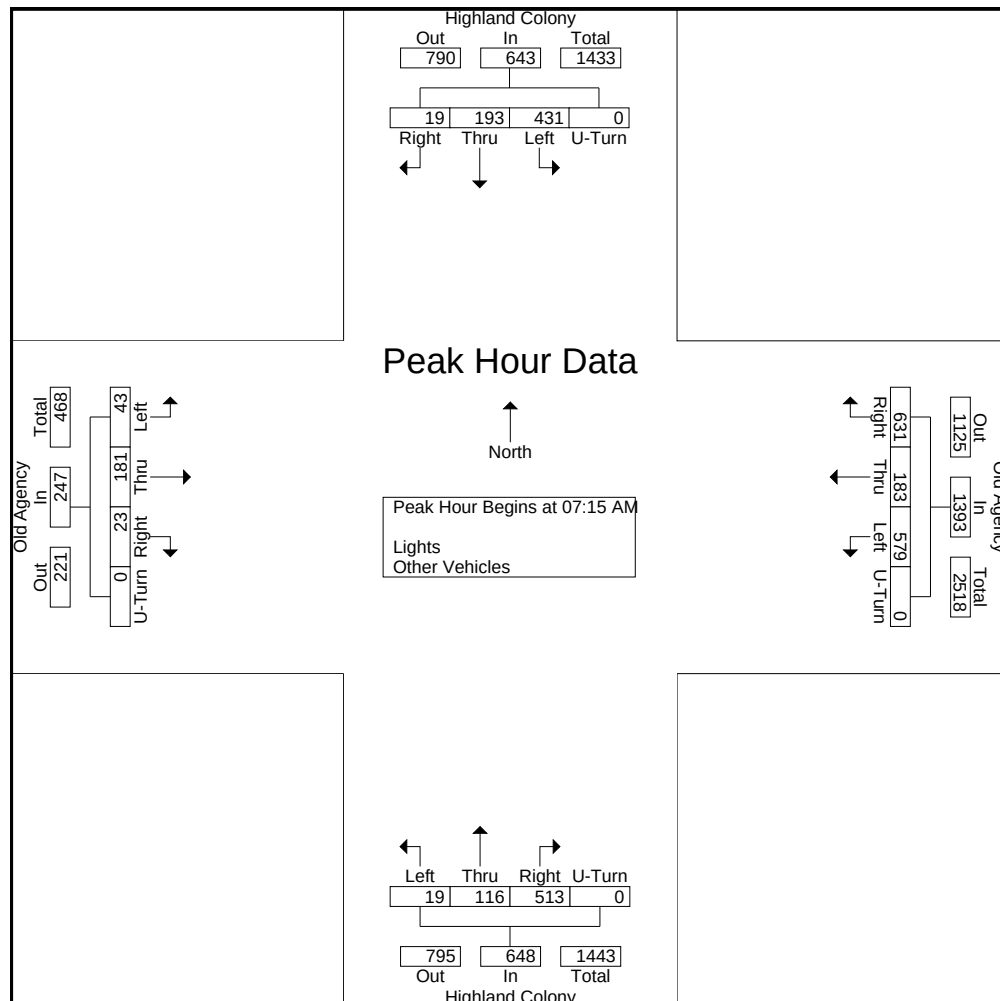


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Roundabout
Old Agency Rd @ Highland Colony Pkwy
County: Madison
City: Ridgeland

File Name : 1510140 Old Agency @ Highland Colony
Site Code : 1510140
Start Date : 9/3/2015
Page No : 3

	Highland Colony From North					Old Agency From East					Highland Colony From South					Old Agency From West					
Start Time	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	112	33	4	0	149	168	55	158	0	381	0	24	215	0	239	8	68	3	0	79	848
07:30 AM	137	52	2	0	191	90	71	160	0	321	2	29	144	0	175	10	51	8	0	69	756
07:45 AM	100	61	5	0	166	156	38	151	0	345	7	34	85	0	126	10	31	8	0	49	686
08:00 AM	82	47	8					162	0	346	10					15	31	4	0	50	641
Total Volume	431	193	19	0	643	579	183	631	0	1393	19	116	513	0	648	43	181	23	0	247	2931
% App. Total	67	30	3	0		41.6	13.1	45.3	0		2.9	17.9	79.2	0		17.4	73.3	9.3	0		
PHF	.786	.791	.594	.000	.842	.862	.644	.974	.000	.914	.475	.853	.597	.000	.678	.717	.665	.719	.000	.782	.864

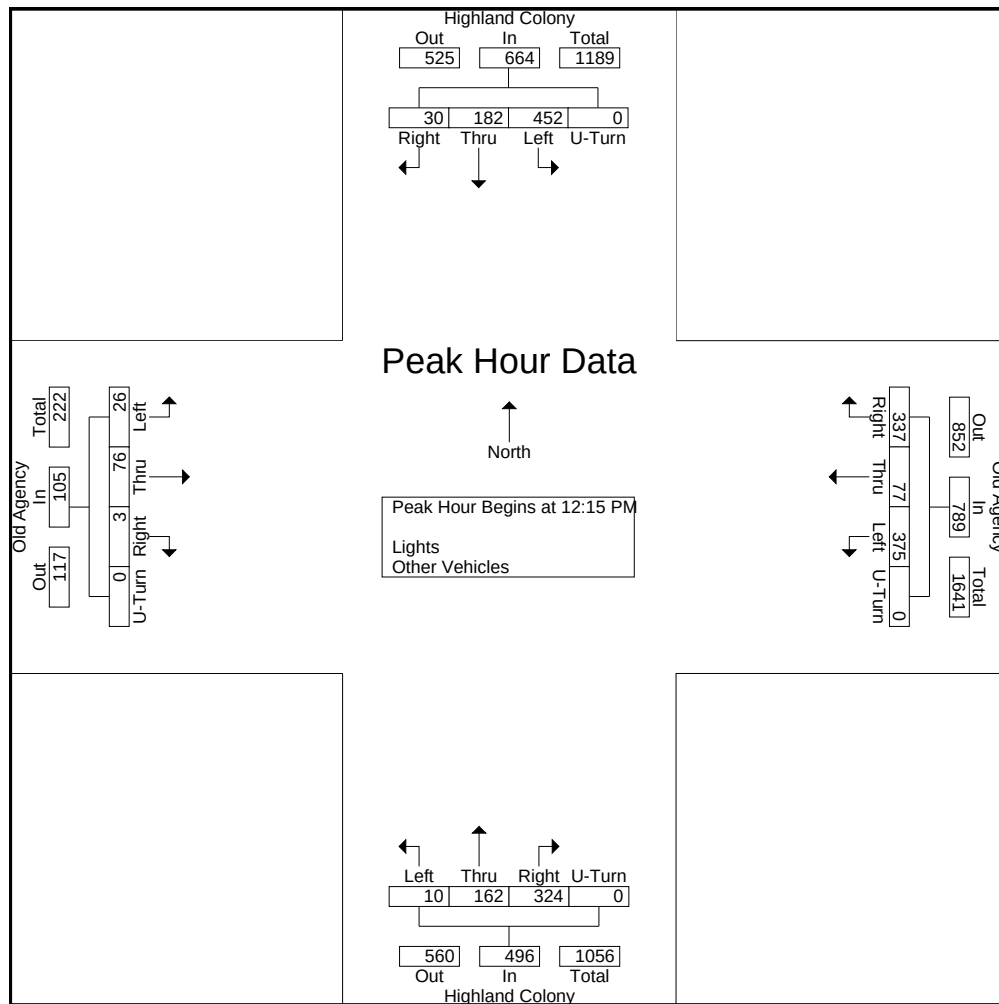


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Roundabout
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File Name : 1510140 Old Agency @ Highland Colony
 Site Code : 1510140
 Start Date : 9/3/2015
 Page No : 4

	Highland Colony From North					Old Agency From East					Highland Colony From South					Old Agency From West					
Start Time	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:15 PM																					
12:15 PM	119	37	5	0	161	100	21	84	0	205	3	44	82	0	129	4	4	0	0	8	503
12:30 PM	111	49	7	0	167	75	23	74	0	172	3	36	82	0	121	8	33	0	0	41	518
12:45 PM	112	46	9	0	167	103	10	85	0	198	0	41	81	0	122	9	20	2	0	31	518
01:00 PM	110	50	9	0	169	97	23	94	0	214	4										532
Total Volume	452	182	30	0	664	375	77	337	0	789	10	162	324	0	496	26	76	3	0	105	2054
% App. Total	68.1	27.4	4.5	0		47.5	9.8	42.7	0		2	32.7	65.3	0		24.8	72.4	2.9	0		
PHF	.950	.910	.833	.000	.982	.910	.837	.896	.000	.922	.625	.920	.988	.000	.961	.722	.576	.375	.000	.640	.965

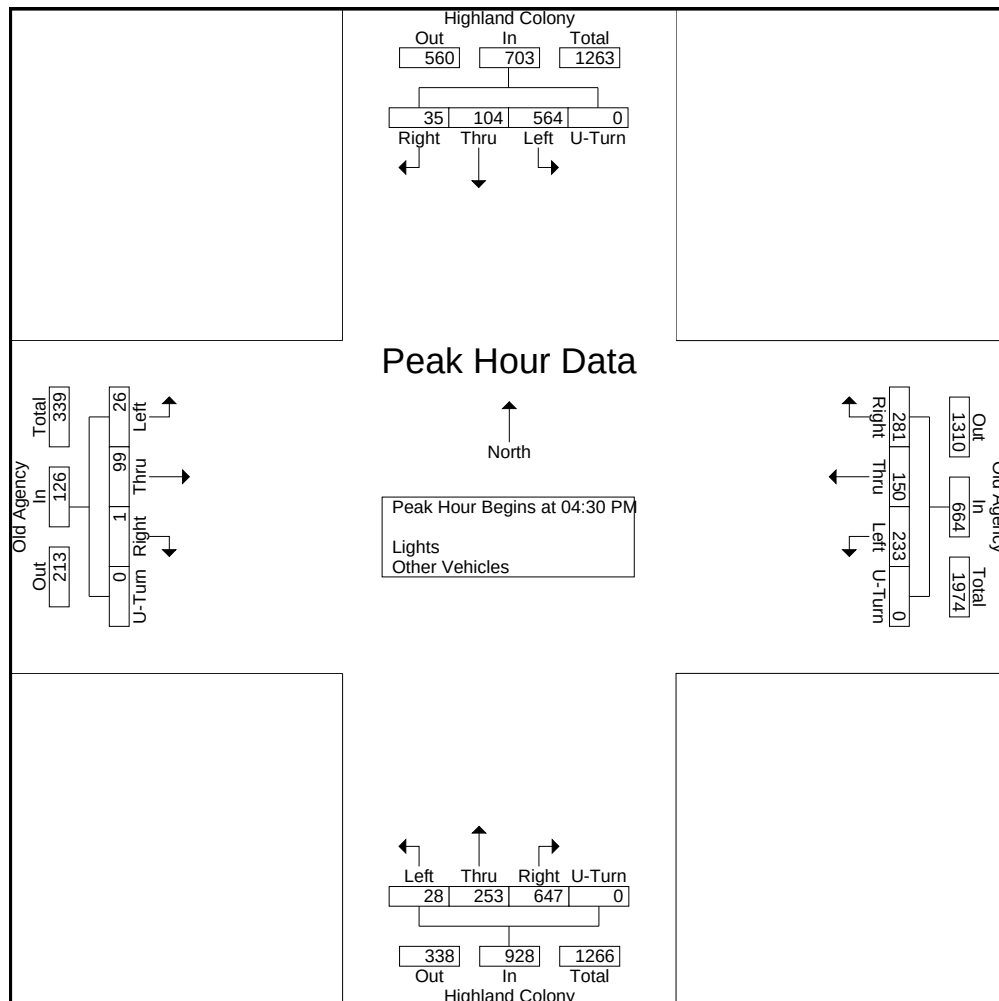


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Roundabout
Old Agency Rd @ Highland Colony Pkwy
County: Madison
City: Ridgeland

File Name : 1510140 Old Agency @ Highland Colony
Site Code : 1510140
Start Date : 9/3/2015
Page No : 5

	Highland Colony From North					Old Agency From East					Highland Colony From South					Old Agency From West					
Start Time	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	139	33	8	0	180	60	40	55	0	155	4	58	162	0	224	4	30	0	0	34	593
04:45 PM	117	15	8	0	140	71	39	78	0	185	15	78	208	0	301	11	21	0	0	32	709
05:00 PM	187		10		229	39	30	78	0	147	15	78	208	0	301	11	21	0	0	32	709
05:15 PM	121	24	9	0	154	63	42	72	0	177	3	51	144	0	198	5	22	1	0	28	557
Total Volume	564	104	35	0	703	233	150	281	0	664	28	253	647	0	928	26	99	1	0	126	2421
% App. Total	80.2	14.8	5	0		35.1	22.6	42.3	0		3	27.3	69.7	0		20.6	78.6	0.8	0		
PHF	.754	.788	.875	.000	.767	.820	.893	.901	.000	.897	.467	.811	.778	.000	.771	.591	.825	.250	.000	.926	.854



Neel-Schaffer

P.O. Box 22625
Jackson, MS 39225

Intersection: Old Agency Pkwy/HCP
Counter: C. McDonald
City/State: Ridgeland/MS
Weather: Clear/Dry

File Name : hcp-old-agency
Site Code : 00000000
Start Date : 8/18/2015
Page No : 1

Groups Printed- Unshifted

	Highland Colony Pkwy Northbound					Highland Colony Pkwy Southbound					Old Agency Pkwy Eastbound					n/a Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	U-turn	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:30 AM	1	15	0	0	16	0	60	20	0	80	29	0	2	0	31	0	0	0	0	0	127
06:45 AM	0	27	0	0	27	0	103	20	0	123	43	0	3	0	46	0	0	0	0	0	196
Total	1	42	0	0	43	0	163	40	0	203	72	0	5	0	77	0	0	0	0	0	323
07:00 AM	1	93	0	0	94	0	127	27	0	154	86	0	5	0	91	0	0	0	0	0	339
07:15 AM	2	146	0	0	148	0	202	16	0	218	84	0	8	0	92	0	0	0	0	0	458
07:30 AM	3	129	0	0	132	0	143	21	0	164	113	0	4	0	117	0	0	0	0	0	413
07:45 AM	6	78	0	0	84	0	212	28	0	240	66	0	8	0	74	0	0	0	0	0	398
Total	12	446	0	0	458	0	684	92	0	776	349	0	25	0	374	0	0	0	0	0	1608
08:00 AM	1	45	0	0	46	0	191	37	0	228	59	0	7	0	66	0	0	0	0	0	340
08:15 AM	3	65	0	0	68	0	147	34	0	181	62	0	2	0	64	0	0	0	0	0	313
08:30 AM	1	53	0	0	54	0	115	32	0	147	70	0	4	0	74	0	0	0	0	0	275
08:45 AM	1	44	0	0	45	0	80	18	0	98	44	0	1	0	45	0	0	0	0	0	188
Total	6	207	0	0	213	0	533	121	0	654	235	0	14	0	249	0	0	0	0	0	1116
09:00 AM	1	43	0	0	44	0	43	24	0	67	28	0	1	0	29	0	0	0	0	0	140
09:15 AM	0	50	0	0	50	0	48	27	0	75	45	0	2	0	47	0	0	0	0	0	172
09:30 AM	4	42	0	0	46	0	52	21	0	73	47	0	3	0	50	0	0	0	0	0	169
09:45 AM	1	49	0	0	50	0	54	24	0	78	46	0	2	0	48	0	0	0	0	0	176
Total	6	184	0	0	190	0	197	96	0	293	166	0	8	0	174	0	0	0	0	0	657
10:00 AM	1	57	0	0	58	0	47	16	0	63	50	0	1	0	51	0	0	0	0	0	172
10:15 AM	1	38	0	0	39	0	36	25	0	61	26	0	1	0	27	0	0	0	0	0	127
10:30 AM	1	48	0	0	49	0	41	26	0	67	36	0	1	0	37	0	0	0	0	0	153
10:45 AM	4	68	0	0	72	0	55	15	0	70	45	0	0	0	45	0	0	0	0	0	187
Total	7	211	0	0	218	0	179	82	0	261	157	0	3	0	160	0	0	0	0	0	639
11:00 AM	0	85	0	0	85	0	66	23	0	89	58	0	1	0	59	0	0	0	0	0	233
11:15 AM	4	134	0	0	138	0	55	19	0	74	67	0	1	0	68	0	0	0	0	0	280
11:30 AM	0	125	0	0	125	0	67	46	0	113	41	0	1	0	42	0	0	0	0	0	280
11:45 AM	2	134	0	0	136	0	105	47	0	152	38	0	4	0	42	0	0	0	0	0	330
Total	6	478	0	0	484	0	293	135	0	428	204	0	7	0	211	0	0	0	0	0	1123
12:00 PM	2	128	0	0	130	0	77	37	0	114	39	0	2	0	41	0	0	0	0	0	285
12:15 PM	2	83	0	0	85	0	83	36	0	119	58	0	2	0	60	0	0	0	0	0	264
12:30 PM	2	80	0	0	82	0	99	40	0	139	44	0	2	0	46	0	0	0	0	0	267
12:45 PM	6	74	0	0	80	0	123	43	0	166	31	0	6	0	37	0	0	0	0	0	283
Total	12	365	0	0	377	0	382	156	0	538	172	0	12	0	184	0	0	0	0	0	1099
01:00 PM	0	68	0	0	68	0	124	43	0	167	28	0	3	0	31	0	0	0	0	0	266
01:15 PM	1	66	0	0	67	1	117	36	0	154	31	0	1	0	32	0	0	0	0	0	253
01:30 PM	2	56	0	0	58	2	85	29	0	116	37	0	2	0	39	0	0	0	0	0	213
01:45 PM	1	70	0	0	71	0	97	19	0	116	47	0	5	0	52	0	0	0	0	0	239
Total	4	260	0	0	264	3	423	127	0	553	143	0	11	0	154	0	0	0	0	0	971
02:00 PM	1	74	0	0	75	2	91	29	0	122	33	0	5	0	38	0	0	0	0	0	235
02:15 PM	2	120	0	0	122	0	65	22	0	87	46	0	2	0	48	0	0	0	0	0	257
02:30 PM	3	108	0	0	111	0	68	35	0	103	41	0	1	0	42	0	0	0	0	0	256
02:45 PM	2	72	0	0	74	1	78	19	0	98	53	0	3	0	56	0	0	0	0	0	228
Total	8	374	0	0	382	3	302	105	0	410	173	0	11	0	184	0	0	0	0	0	976
03:00 PM	2	91	0	0	93	2	52	32	0	86	38	0	1	0	39	0	0	0	0	0	218
03:15 PM	2	61	0	0	63	0	50	49	0	99	32	0	2	0	34	0	0	0	0	0	196
03:30 PM	2	86	0	0	88	0	55	48	0	103	39	0	3	0	42	0	0	0	0	0	233
03:45 PM	2	73	0	0	75	0	71	31	0	102	57	0	3	0	60	0	0	0	0	0	237
Total	8	311	0	0	319	2	228	160	0	390	166	0	9	0	175	0	0	0	0	0	884

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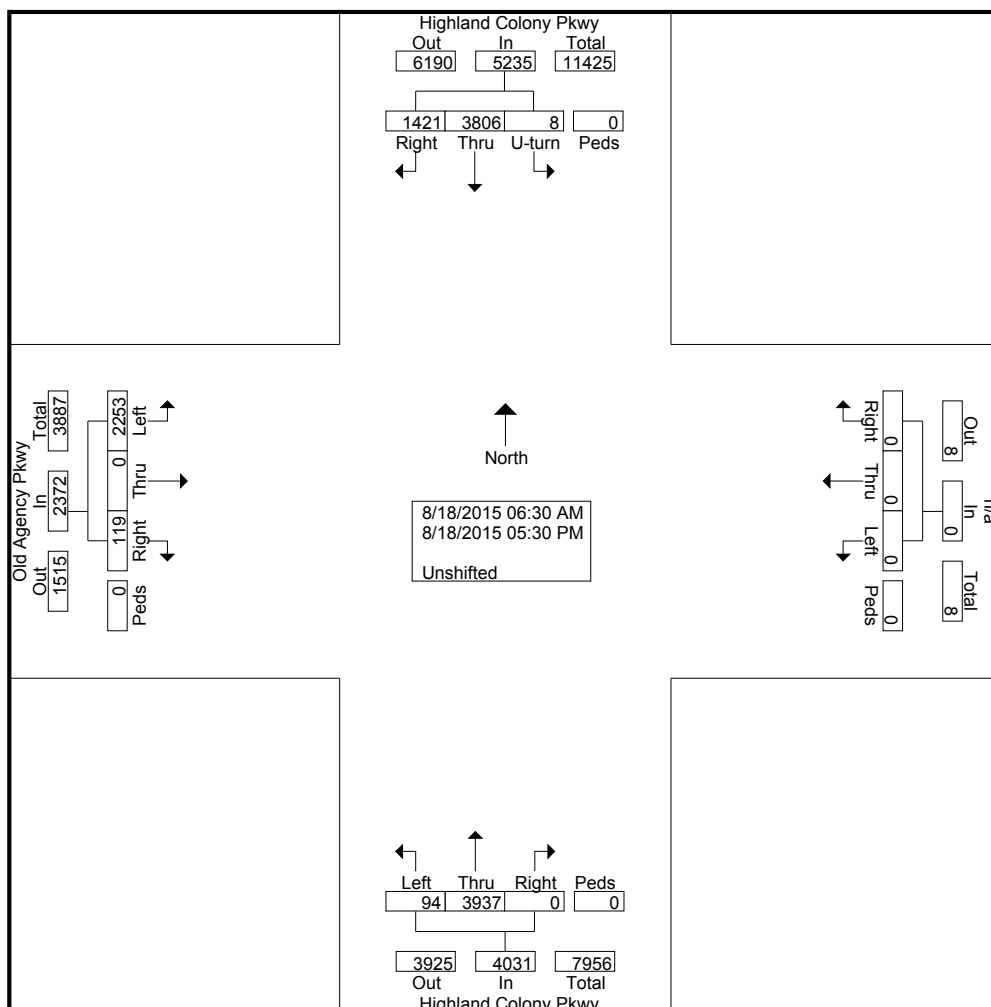
P.O. Box 22625
Jackson, MS 39225

Intersection: Old Agency Pkwy/HCP
Counter: C. McDonald
City/State: Ridgeland/MS
Weather: Clear/Dry

File Name : hcp-old-agency
Site Code : 00000000
Start Date : 8/18/2015
Page No : 2

Groups Printed- Unshifted

	Highland Colony Pkwy Northbound					Highland Colony Pkwy Southbound					Old Agency Pkwy Eastbound					n/a Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	U-turn	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
04:00 PM	3	77	0	0	80	0	50	34	0	84	68	0	3	0	71	0	0	0	0	0	235
04:15 PM	3	68	0	0	71	0	51	39	0	90	32	0	2	0	34	0	0	0	0	0	195
04:30 PM	3	177	0	0	180	0	62	51	0	113	77	0	2	0	79	0	0	0	0	0	372
04:45 PM	4	160	0	0	164	0	49	42	0	91	54	0	2	0	56	0	0	0	0	0	311
Total	13	482	0	0	495	0	212	166	0	378	231	0	9	0	240	0	0	0	0	0	1113
05:00 PM	3	276	0	0	279	0	57	50	0	107	63	0	1	0	64	0	0	0	0	0	450
05:15 PM	5	166	0	0	171	0	67	58	0	125	56	0	3	0	59	0	0	0	0	0	355
05:30 PM	3	135	0	0	138	0	86	33	0	119	66	0	1	0	67	0	0	0	0	0	324
Grand Total	94	3937	0	0	4031	8	3806	1421	0	5235	2253	0	119	0	2372	0	0	0	0	0	11638
Apprch %	2.3	97.7	0	0		0.2	72.7	27.1	0		95	0	5	0		0	0	0	0		
Total %	0.8	33.8	0	0	34.6	0.1	32.7	12.2	0	45	19.4	0	1	0	20.4	0	0	0	0	0	



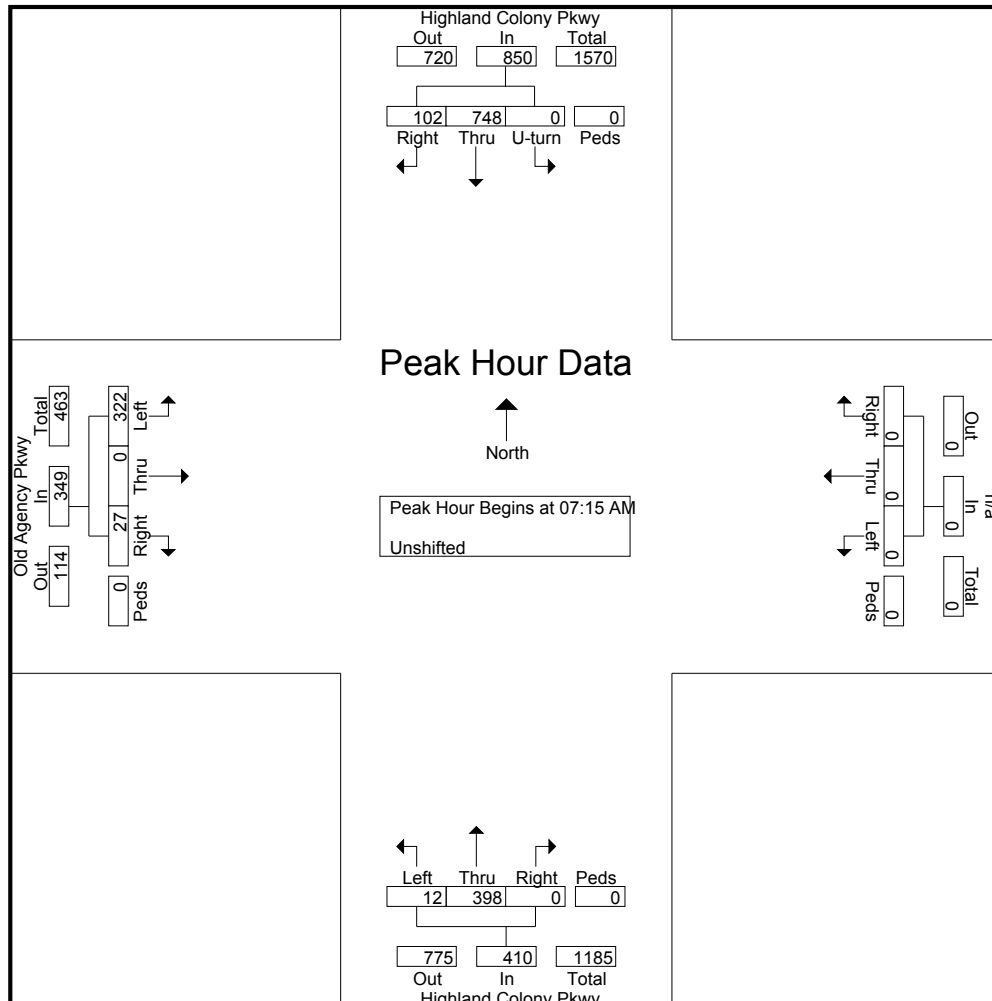
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P.O. Box 22625
Jackson, MS 39225

Intersection: Old Agency Pkwy/HCP
Counter: C. McDonald
City/State: Ridgeland/MS
Weather: Clear/Dry

File Name : hcp-old-agency
Site Code : 00000000
Start Date : 8/18/2015
Page No : 3

	Highland Colony Pkwy Northbound					Highland Colony Pkwy Southbound					Old Agency Pkwy Eastbound					n/a Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	U-turn	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:30 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	2	146	0	0	148	0	202	16	0	218	84	0	8	0	92	0	0	0	0	0	458
07:30 AM	3	129	0	0	132	0	143	21	0	164	113	0	4	0	117	0	0	0	0	0	413
07:45 AM	6	78	0	0	84	0	212	28	0	240	66	0	8	0	74	0	0	0	0	0	398
08:00 AM	1	45	0	0	46	0	191	37	0	228	59	0	7	0	66	0	0	0	0	0	340
Total Volume	12	398	0	0	410	0	748	102	0	850	322	0	27	0	349	0	0	0	0	0	1609
% App. Total	2.9	97.1	0	0		0	88	12	0		92.3	0	7.7	0		0	0	0	0		
PHF	.500	.682	.000	.000	.693	.000	.882	.689	.000	.885	.712	.000	.844	.000	.746	.000	.000	.000	.000	.000	.878



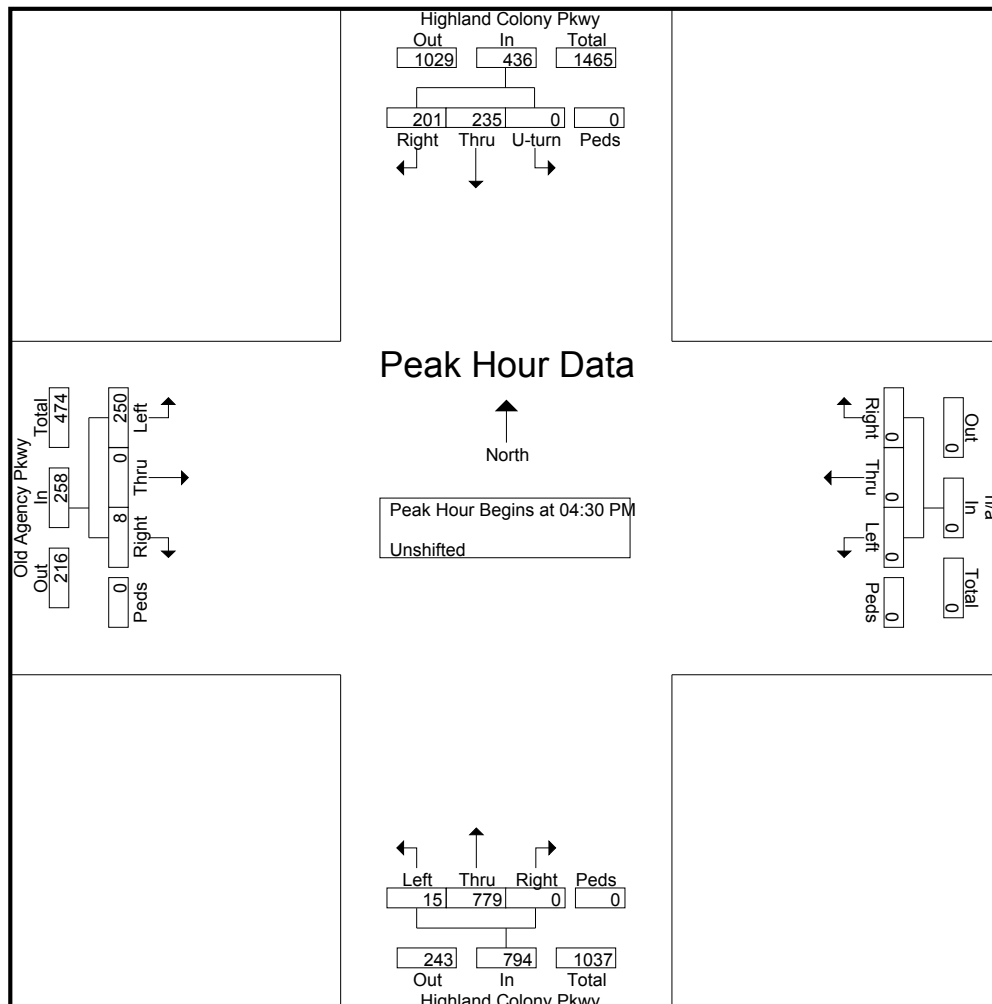
Neel-Schaffer

P.O. Box 22625
Jackson, MS 39225

Intersection: Old Agency Pkwy/HCP
Counter: C. McDonald
City/State: Ridgeland/MS
Weather: Clear/Dry

File Name : hcp-old-agency
Site Code : 00000000
Start Date : 8/18/2015
Page No : 4

	Highland Colony Pkwy Northbound					Highland Colony Pkwy Southbound					Old Agency Pkwy Eastbound					n/a Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	U-turn	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:30 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	3	177	0	0	180	0	62	51	0	113	77	0	2	0	79	0	0	0	0	0	372
04:45 PM	4	160	0	0	164	0	49	42	0	91	54	0	2	0	56	0	0	0	0	0	311
05:00 PM	3	276	0	0	279	0	57	50	0	107	63	0	1	0	64	0	0	0	0	0	450
05:15 PM	5	166	0	0	171	0	67	58	0	125	56	0	3	0	59	0	0	0	0	0	355
Total Volume	15	779	0	0	794	0	235	201	0	436	250	0	8	0	258	0	0	0	0	0	1488
% App. Total	1.9	98.1	0	0		0	53.9	46.1	0		96.9	0	3.1	0		0	0	0	0	0	
PHF	.750	.706	.000	.000	.711	.000	.877	.866	.000	.872	.812	.000	.667	.000	.816	.000	.000	.000	.000	.000	.827



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P.O. Box 22625
Jackson, MS 39225

Intersection: Trace Colony Pk Dr/HCP
Counter: A. Kane
City/State: Ridgeland/MS
Weather: Clear/Dry

File Name : HCP-TCP
Site Code : 00000000
Start Date : 8/18/2015
Page No : 1

Groups Printed- Unshifted - Bank 1 - Bank 2

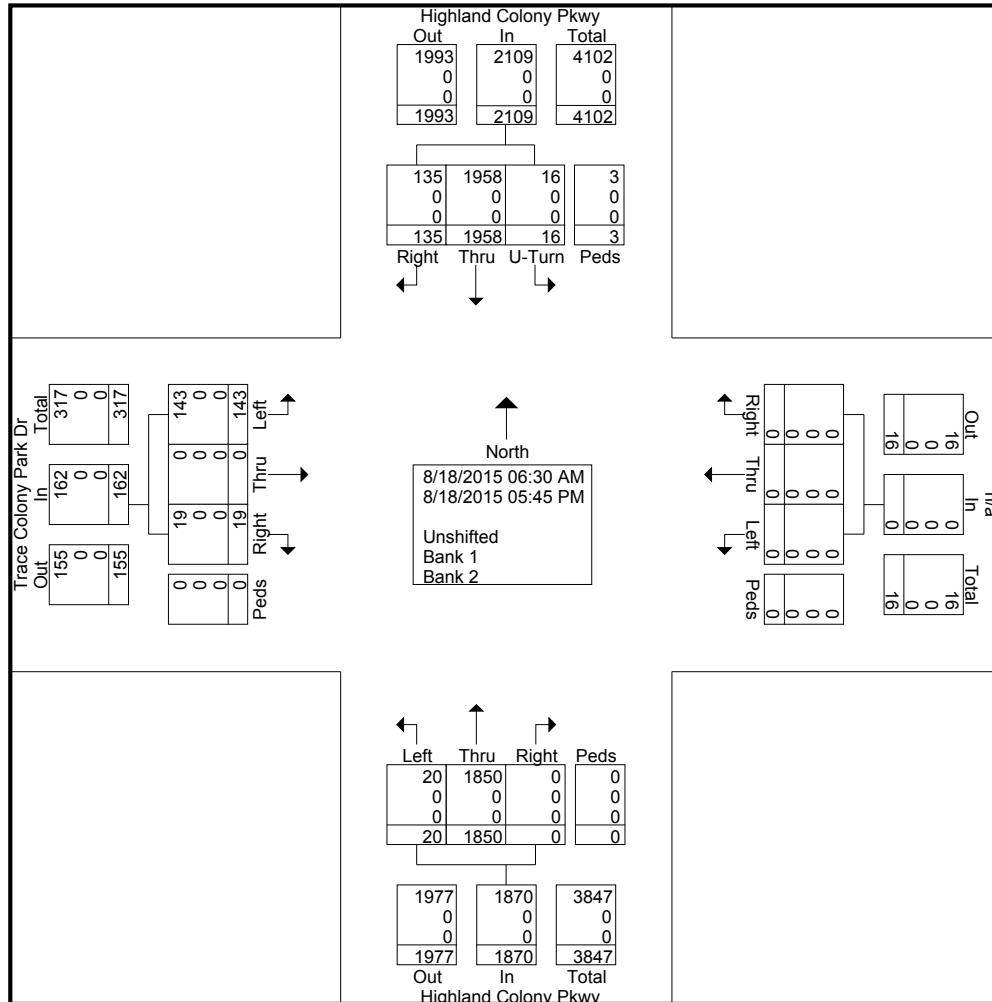
	Highland Colony Pkwy Northbound					Highland Colony Pkwy Southbound					Trace Colony Park Dr Eastbound					n/a Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	U-Turn	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:30 AM	0	16	0	0	16	0	54	1	0	55	0	0	0	0	0	0	0	0	0	0	71
06:45 AM	1	24	0	0	25	0	102	5	2	109	0	0	0	0	0	0	0	0	0	0	134
Total	1	40	0	0	41	0	156	6	2	164	0	0	0	0	0	0	0	0	0	0	205
07:00 AM	0	93	0	0	93	0	126	5	0	131	1	0	0	0	1	0	0	0	0	0	225
07:15 AM	2	135	0	0	137	1	194	9	0	204	6	0	0	0	6	0	0	0	0	0	347
07:30 AM	2	101	0	0	103	7	132	8	0	147	5	0	1	0	6	0	0	0	0	0	256
07:45 AM	2	69	0	0	71	4	189	17	0	210	3	0	0	0	3	0	0	0	0	0	284
Total	6	398	0	0	404	12	641	39	0	692	15	0	1	0	16	0	0	0	0	0	1112
08:00 AM	4	44	0	0	48	1	178	18	0	197	2	0	0	0	2	0	0	0	0	0	247
08:15 AM	1	65	0	0	66	0	139	14	0	153	1	0	2	0	3	0	0	0	0	0	222
08:30 AM	0	50	0	0	50	0	108	5	0	113	1	0	0	0	1	0	0	0	0	0	164
08:45 AM	1	41	0	0	42	0	85	17	0	102	4	0	0	0	4	0	0	0	0	0	148
Total	6	200	0	0	206	1	510	54	0	565	8	0	2	0	10	0	0	0	0	0	781
*** BREAK ***																					
03:30 PM	1	82	0	0	83	0	53	5	0	58	4	0	0	0	4	0	0	0	0	0	145
03:45 PM	0	78	0	0	78	1	69	8	0	78	12	0	6	0	18	0	0	0	0	0	174
Total	1	160	0	0	161	1	122	13	0	136	16	0	6	0	22	0	0	0	0	0	319
04:00 PM	2	88	0	0	90	0	47	2	0	49	2	0	1	0	3	0	0	0	0	0	142
04:15 PM	0	77	0	0	77	0	51	2	0	53	10	0	0	0	10	0	0	0	0	0	140
04:30 PM	1	162	0	0	163	1	55	4	0	60	17	0	4	0	21	0	0	0	0	0	244
04:45 PM	0	139	0	0	139	0	45	4	0	49	20	0	0	0	20	0	0	0	0	0	208
Total	3	466	0	0	469	1	198	12	0	211	49	0	5	0	54	0	0	0	0	0	734
05:00 PM	1	224	0	0	225	0	46	6	0	52	33	0	3	0	36	0	0	0	0	0	313
05:15 PM	0	155	0	0	155	0	63	4	1	68	9	0	1	0	10	0	0	0	0	0	233
05:30 PM	2	119	0	0	121	0	90	1	0	91	12	0	0	0	12	0	0	0	0	0	224
05:45 PM	0	88	0	0	88	1	132	0	0	133	1	0	1	0	2	0	0	0	0	0	223
Total	3	586	0	0	589	1	331	11	1	344	55	0	5	0	60	0	0	0	0	0	993
Grand Total	20	1850	0	0	1870	16	1958	135	3	2112	143	0	19	0	162	0	0	0	0	0	4144
Apprch %	1.1	98.9	0	0		0.8	92.7	6.4	0.1		88.3	0	11.7	0		0	0	0	0		
Total %	0.5	44.6	0	0	45.1	0.4	47.2	3.3	0.1	51	3.5	0	0.5	0	3.9	0	0	0	0	0	
Unshifted	20	1850	0	0	1870	16	1958	135	3	2112	143	0	19	0	162	0	0	0	0	0	4144
% Unshifted	100	100	0	0	100	100	100	100	100	100	100	0	100	0	100	0	0	0	0	0	100
Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bank 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bank 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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P.O. Box 22625
Jackson, MS 39225

Intersection: Trace Colony Pk Dr/HCP
Counter: A. Kane
City/State: Ridgeland/MS
Weather: Clear/Dry

File Name : HCP-TCP
Site Code : 00000000
Start Date : 8/18/2015
Page No : 2



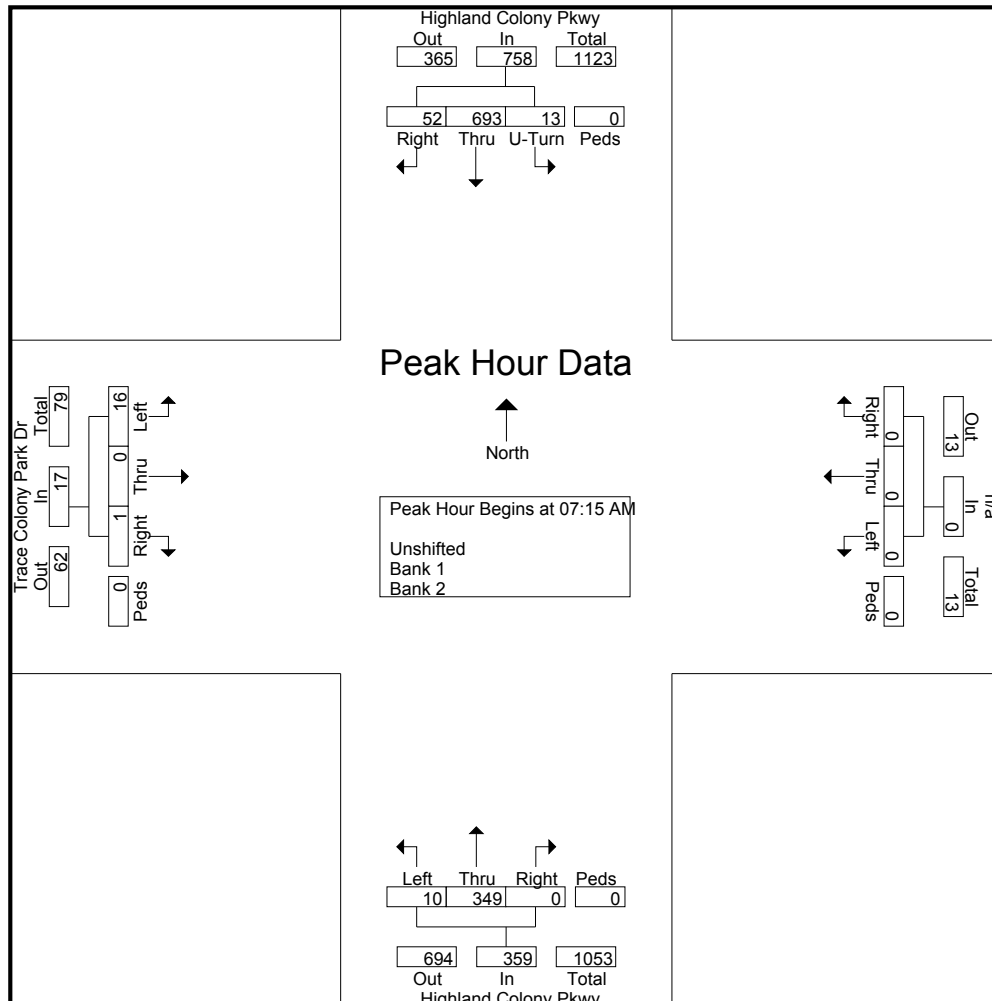
Neel-Schaffer

P.O. Box 22625
Jackson, MS 39225

Intersection: Trace Colony Pk Dr/HCP
Counter: A. Kane
City/State: Ridgeland/MS
Weather: Clear/Dry

File Name : HCP-TCP
Site Code : 00000000
Start Date : 8/18/2015
Page No : 3

	Highland Colony Pkwy Northbound					Highland Colony Pkwy Southbound					Trace Colony Park Dr Eastbound					n/a Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	U-Turn	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:30 AM to 12:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	2	135	0	0	137	1	194	9	0	204	6	0	0	0	6	0	0	0	0	0	347
07:30 AM	2	101	0	0	103	7	132	8	0	147	5	0	1	0	6	0	0	0	0	0	256
07:45 AM	2	69	0	0	71	4	189	17	0	210	3	0	0	0	3	0	0	0	0	0	284
08:00 AM	4	44	0	0	48	1	178	18	0	197	2	0	0	0	2	0	0	0	0	0	247
Total Volume	10	349	0	0	359	13	693	52	0	758	16	0	1	0	17	0	0	0	0	0	1134
% App. Total	2.8	97.2	0	0		1.7	91.4	6.9	0		94.1	0	5.9	0		0	0	0	0		
PHF	.625	.646	.000	.000	.655	.464	.893	.722	.000	.902	.667	.000	.250	.000	.708	.000	.000	.000	.000	.000	.817



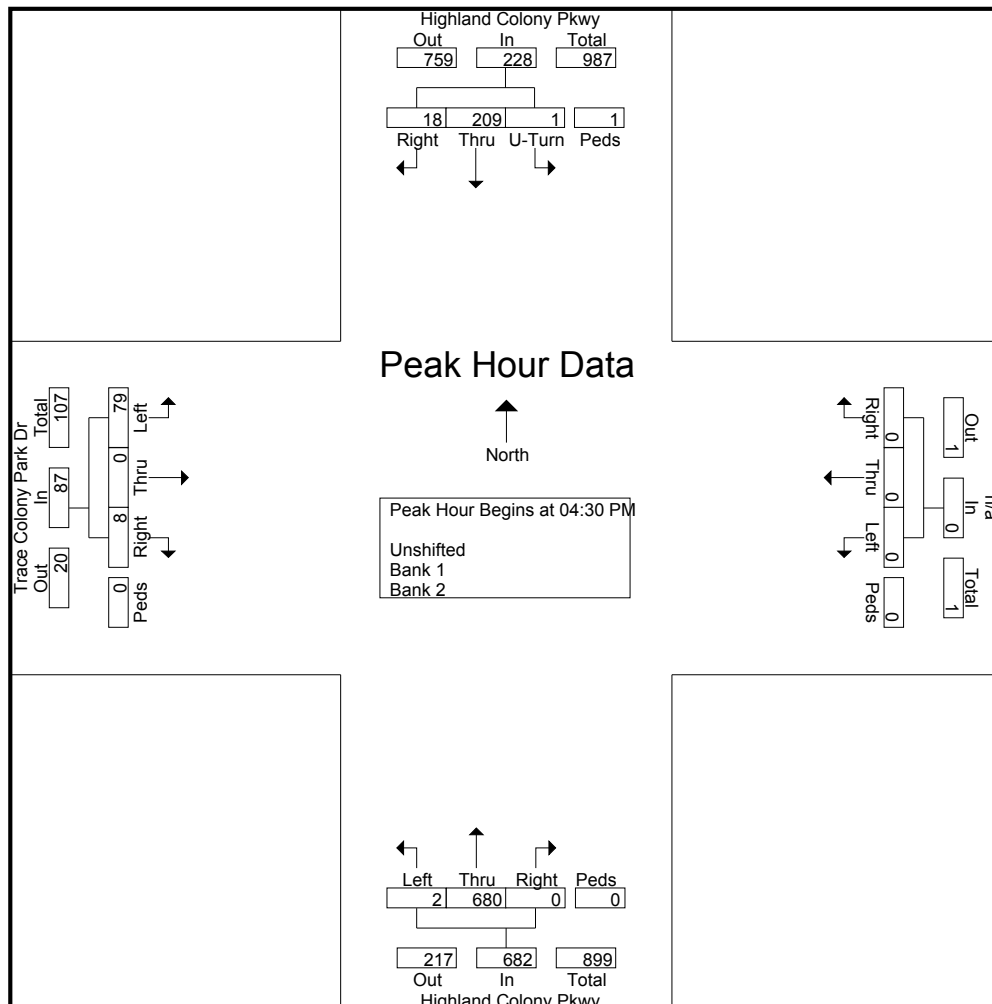
Neel-Schaffer

P.O. Box 22625
Jackson, MS 39225

Intersection: Trace Colony Pk Dr/HCP
Counter: A. Kane
City/State: Ridgeland/MS
Weather: Clear/Dry

File Name : HCP-TCP
Site Code : 00000000
Start Date : 8/18/2015
Page No : 4

	Highland Colony Pkwy Northbound					Highland Colony Pkwy Southbound					Trace Colony Park Dr Eastbound					n/a Westbound					
Start Time	Left	Thr u	Rig ht	Ped s	App. Total	U-Turn	Thr u	Right	Peds	App. Total	Left	Thr u	Right	Peds	App. Total	Left	Thr u	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:30 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	1	162	0	0	163	1	55	4	0	60	17	0	4	0	21	0	0	0	0	0	244
04:45 PM	0	139	0	0	139	0	45	4	0	49	20	0	0	0	20	0	0	0	0	0	208
05:00 PM	1	224	0	0	225	0	46	6	0	52	33	0	3	0	36	0	0	0	0	0	313
05:15 PM	0	155	0	0	155	0	63	4	1	68	9	0	1	0	10	0	0	0	0	0	233
Total Volume	2	680	0	0	682	1	209	18	1	229	79	0	8	0	87	0	0	0	0	0	998
% App. Total	0.3	99.7	0	0		0.4	91.3	7.9	0.4		90.8	0	9.2	0		0	0	0	0		
PHF	.500	.759	.000	.000	.758	.250	.829	.750	.250	.842	.598	.000	.500	.000	.604	.000	.000	.000	.000	.000	.797



Neel - Schaffer, Inc.

P.O. Box 22625

Jackson, MS 39225

Intersection: New Pointe Dr/HCP

Counted by: C. McDonald

City / County: Ridgeland/MS

Weather : Clear/Dry

File Name : Highland Colony - New Pointe Dr AM-PM

Site Code : 00000000

Start Date : 8/25/2015

Page No : 1

Groups Printed- Unshifted

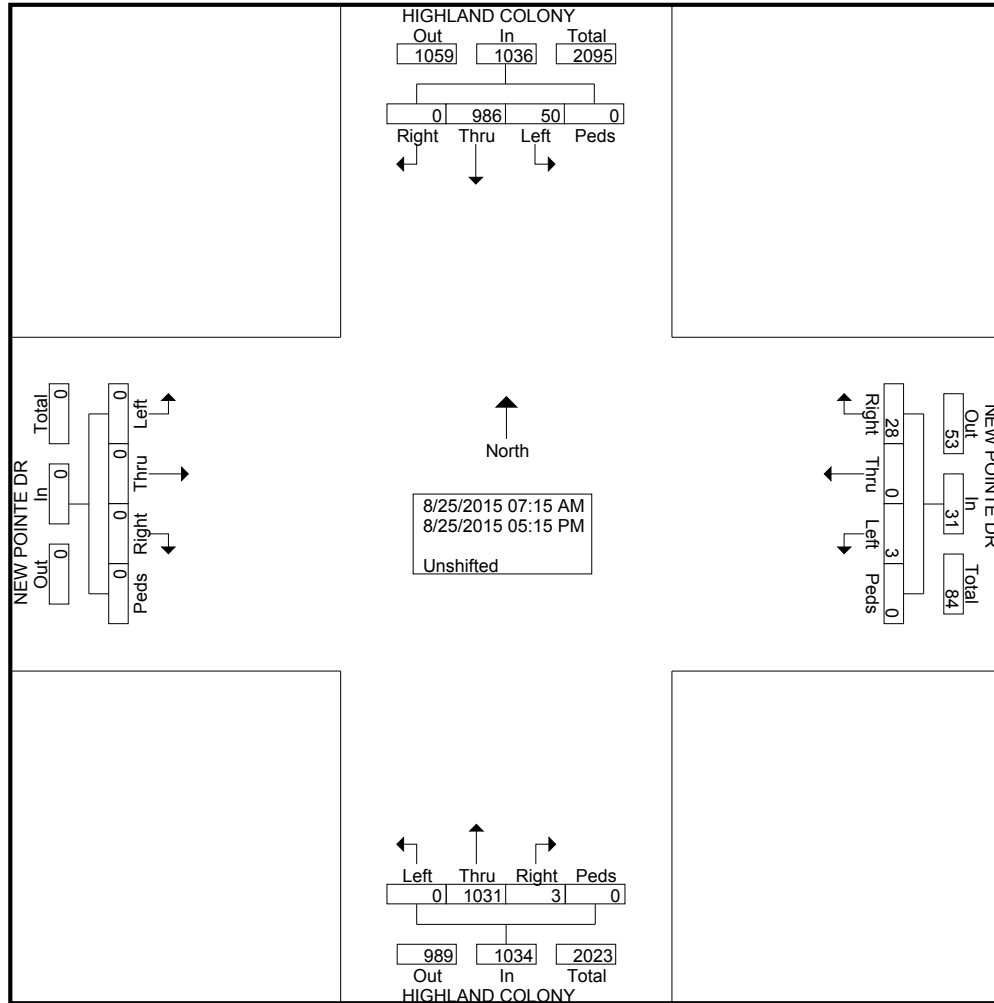
	HIGHLAND COLONY Northbound					HIGHLAND COLONY Southbound					NEW POINTE DR Eastbound					NEW POINTE DR Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:15 AM	0	153	0	0	153	12	170	0	0	182	0	0	0	0	0	2	0	0	0	2	337
07:30 AM	0	88	0	0	88	3	142	0	0	145	0	0	0	0	0	0	0	1	0	1	234
07:45 AM	0	67	0	0	67	7	180	0	0	187	0	0	0	0	0	0	0	0	0	0	254
Total	0	308	0	0	308	22	492	0	0	514	0	0	0	0	0	2	0	1	0	3	825
08:00 AM	0	54	1	0	55	11	165	0	0	176	0	0	0	0	0	0	0	1	0	1	232
08:15 AM	0	41	0	0	41	14	132	0	0	146	0	0	0	0	0	0	0	2	0	2	189
*** BREAK ***																					
Total	0	95	1	0	96	25	297	0	0	322	0	0	0	0	0	0	0	3	0	3	421
*** BREAK ***																					
04:30 PM	0	155	1	0	156	0	40	0	0	40	0	0	0	0	0	1	0	3	0	4	200
04:45 PM	0	124	0	0	124	2	53	0	0	55	0	0	0	0	0	0	0	10	0	10	189
Total	0	279	1	0	280	2	93	0	0	95	0	0	0	0	0	1	0	13	0	14	389
05:00 PM	0	225	0	0	225	0	52	0	0	52	0	0	0	0	0	0	0	8	0	8	285
05:15 PM	0	124	1	0	125	1	52	0	0	53	0	0	0	0	0	0	0	3	0	3	181
Grand Total	0	1031	3	0	1034	50	986	0	0	1036	0	0	0	0	0	3	0	28	0	31	2101
Apprch %	0	99.7	0.3	0		4.8	95.2	0	0		0	0	0	0		9.7	0	90.3	0		
Total %	0	49.1	0.1	0	49.2	2.4	46.9	0	0	49.3	0	0	0	0		0.1	0	1.3	0	1.5	

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P.O. Box 22625
Jackson, MS 39225

Intersection: New Pointe Dr/HCP
Counted by: C. McDonald
City / County: Ridgeland/MS
Weather : Clear/Dry

File Name : Highland Colony - New Pointe Dr AM-PM
Site Code : 00000000
Start Date : 8/25/2015
Page No : 2



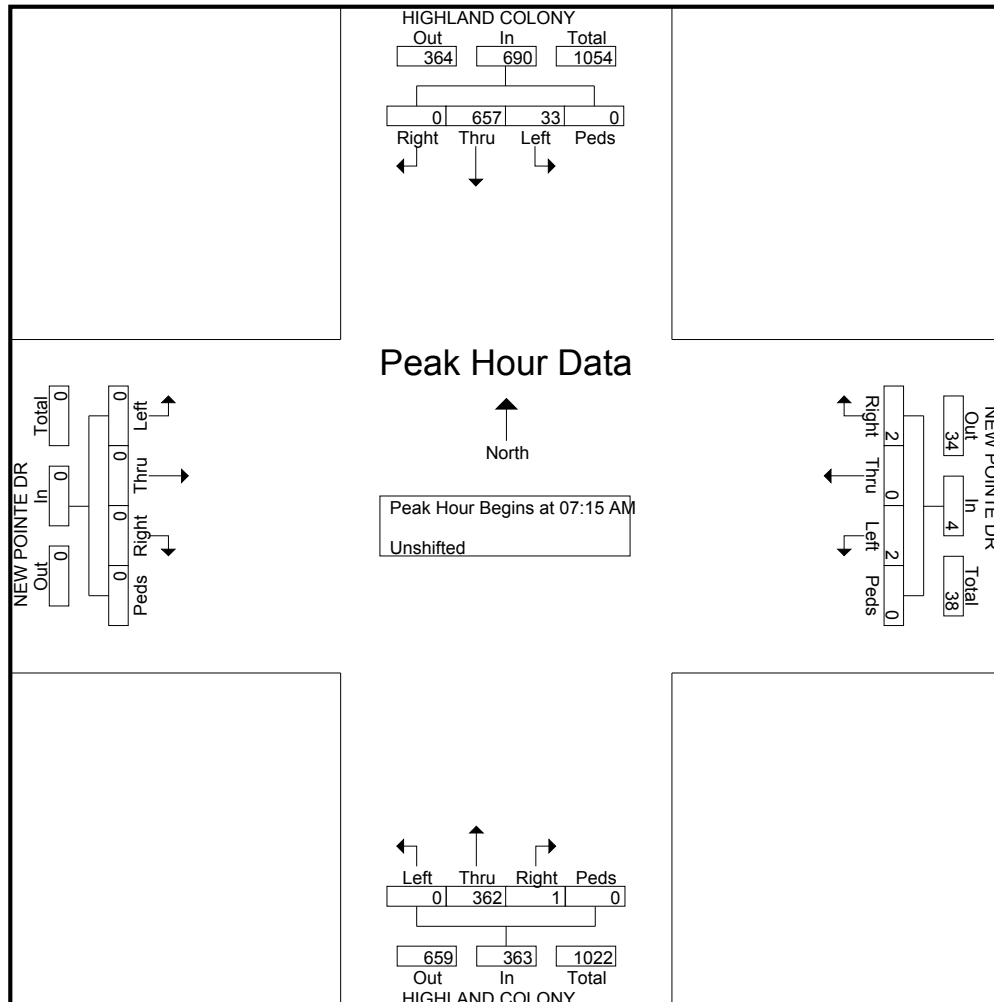
Neel - Schaffer, Inc.

P.O. Box 22625
Jackson, MS 39225

Intersection: New Pointe Dr/HCP
Counted by: C. McDonald
City / County: Ridgeland/MS
Weather : Clear/Dry

File Name : Highland Colony - New Pointe Dr AM-PM
Site Code : 00000000
Start Date : 8/25/2015
Page No : 3

	HIGHLAND COLONY Northbound					HIGHLAND COLONY Southbound					NEW POINTE DR Eastbound					NEW POINTE DR Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	0	153	0	0	153	12	170	0	0	182	0	0	0	0	0	2	0	0	0	2	337
07:30 AM	0	88	0	0	88	3	142	0	0	145	0	0	0	0	0	0	0	1	0	1	234
07:45 AM	0	67	0	0	67	7	180	0	0	187	0	0	0	0	0	0	0	0	0	0	254
08:00 AM	0	54	1	0	55	11	165	0	0	176	0	0	0	0	0	0	0	1	0	1	232
Total Volume	0	362	1	0	363	33	657	0	0	690	0	0	0	0	0	2	0	2	0	4	1057
% App. Total	0	99.7	0.3	0		4.8	95.2	0	0		0	0	0	0		50	0	50	0		
PHF	.000	.592	.250	.000	.593	.688	.913	.000	.000	.922	.000	.000	.000	.000	.000	.250	.000	.500	.000	.500	.784



Neel - Schaffer, Inc.

P.O. Box 22625

Jackson, MS 39225

Intersection: New Pointe Dr/HCP

Counted by: C. McDonald

City / County: Ridgeland/MS

Weather : Clear/Dry

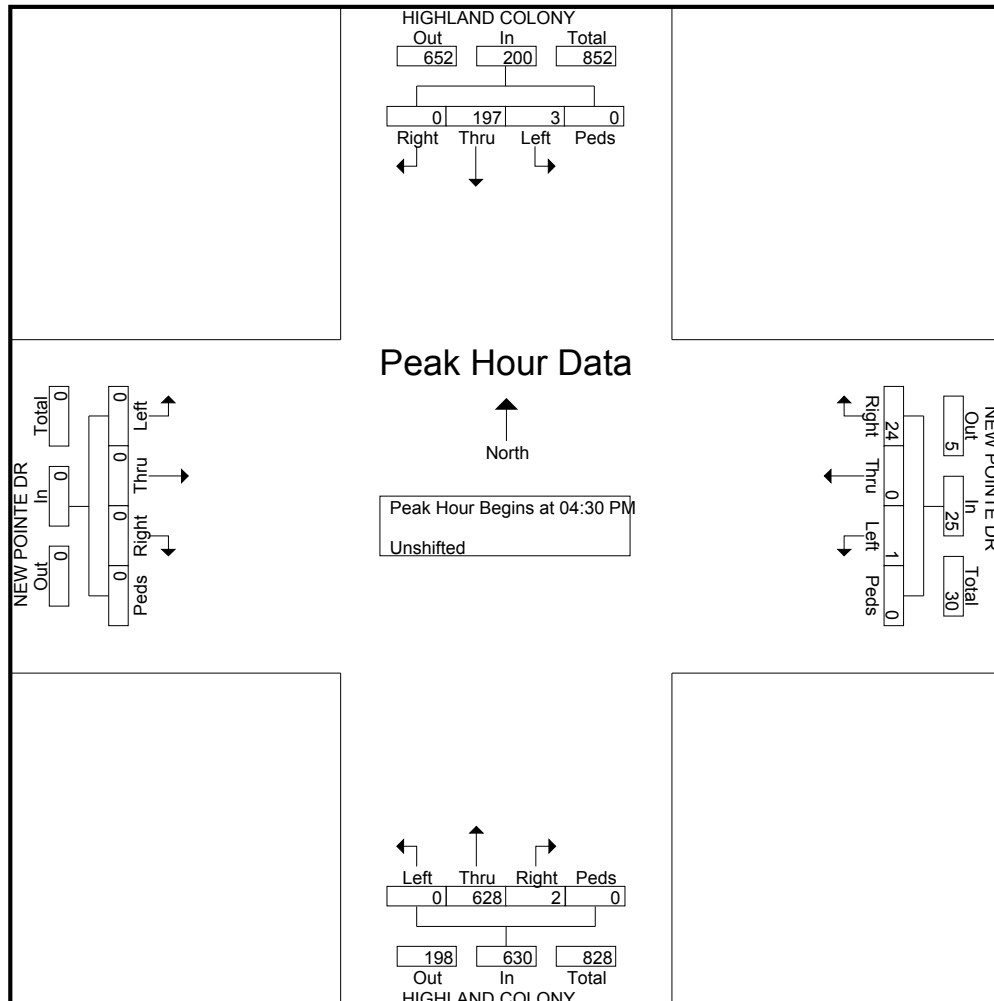
File Name : Highland Colony - New Pointe Dr AM-PM

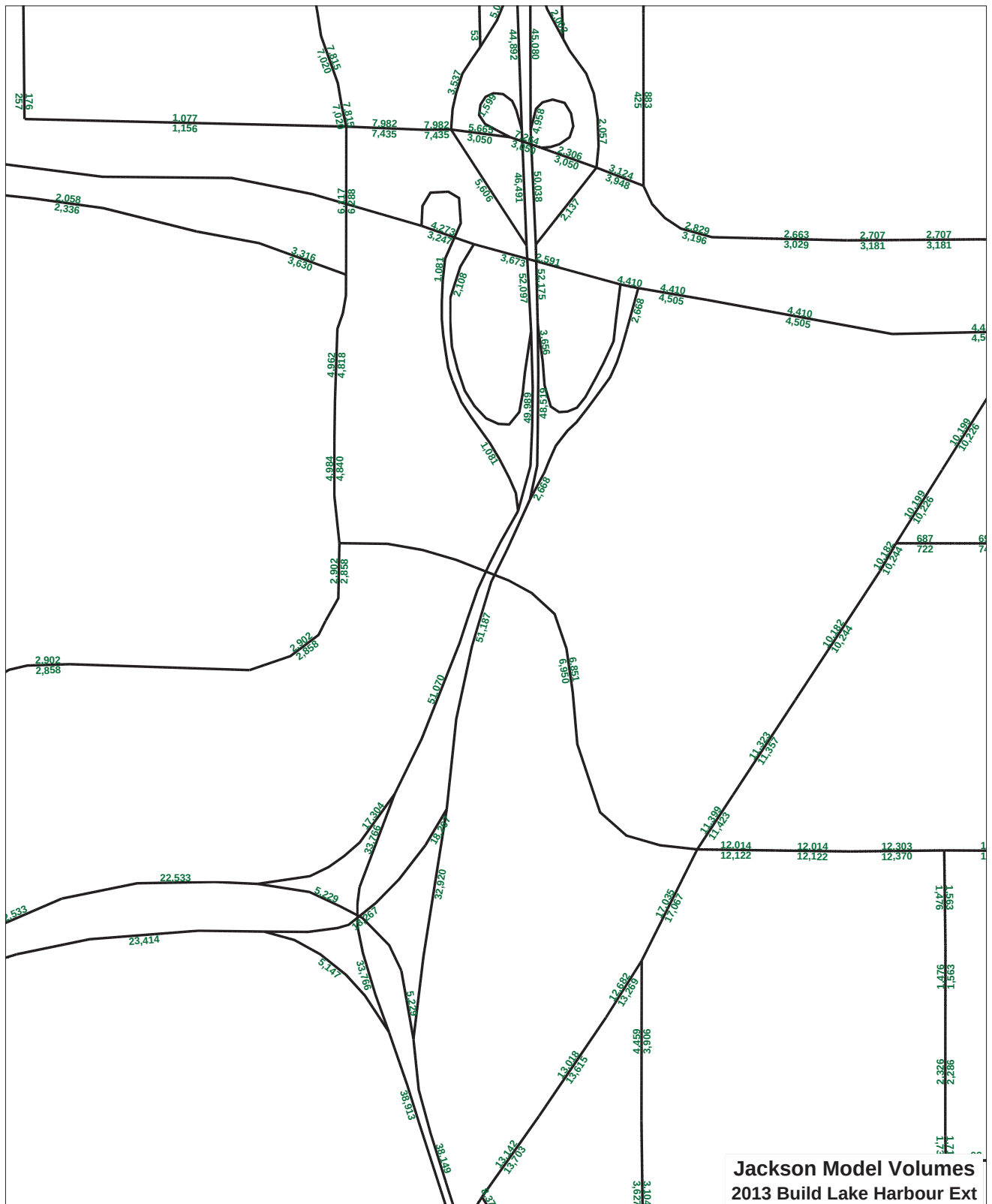
Site Code : 00000000

Start Date : 8/25/2015

Page No : 4

	HIGHLAND COLONY Northbound					HIGHLAND COLONY Southbound					NEW POINTE DR Eastbound					NEW POINTE DR Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	155	1	0	156	0	40	0	0	40	0	0	0	0	0	1	0	3	0	4	200
04:45 PM	0	124	0	0	124	2	53	0	0	55	0	0	0	0	0	0	0	10	0	10	189
05:00 PM	0	225	0	0	225	0	52	0	0	52	0	0	0	0	0	0	0	8	0	8	285
05:15 PM	0	124	1	0	125	1	52	0	0	53	0	0	0	0	0	0	0	3	0	3	181
Total Volume	0	628	2	0	630	3	197	0	0	200	0	0	0	0	0	1	0	24	0	25	855
% App. Total	0	99.7	0.3	0		1.5	98.5	0	0		0	0	0	0		4	0	96	0		
PHF	.000	.698	.500	.000	.700	.375	.929	.000	.000	.909	.000	.000	.000	.000	.000	.250	.000	.600	.000	.625	.750





This is your address
Your City, State, Zip Code
Your Tagline Here

File Name : Not Na
Site Code : 000000
Start Date : 8/11/20
Page No : 1

Let's R

Primary Information:	Lane 1	Lane 2
0:00 AM - 8:12:00 AM		
Total Vehicle Count:	363	22
Lay Vehicle Count:	363	22
rough Vehicle Count:	0	0
erage Stopped Time:	32.50	3.455
imum Stopped Time:	106	22
1. Secs. for Delay:	0	0
erage Queue:	2.74	0.020
ue Density:	3.93	1.000
imum Queue:	17	1
lay in Vehicle Hour:	2.74	0.02
al Delay:	11797	76

A = 0-10 S/VEH

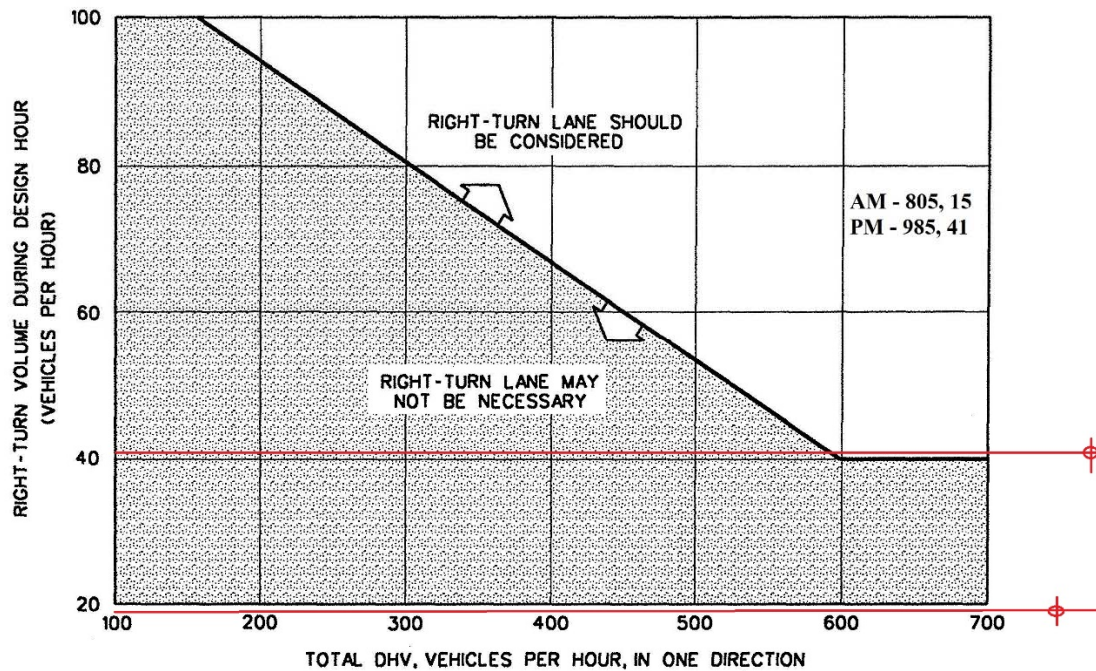
OLD AGENCY PARKWAY
STOP SIGN DELAY STUDY
8.11.2015

Right Turn Lane Warrant Analysis

Site Driveway #1

AM Peak Hour Volume (805 vph northbound thru+right, 15 vph right turn)

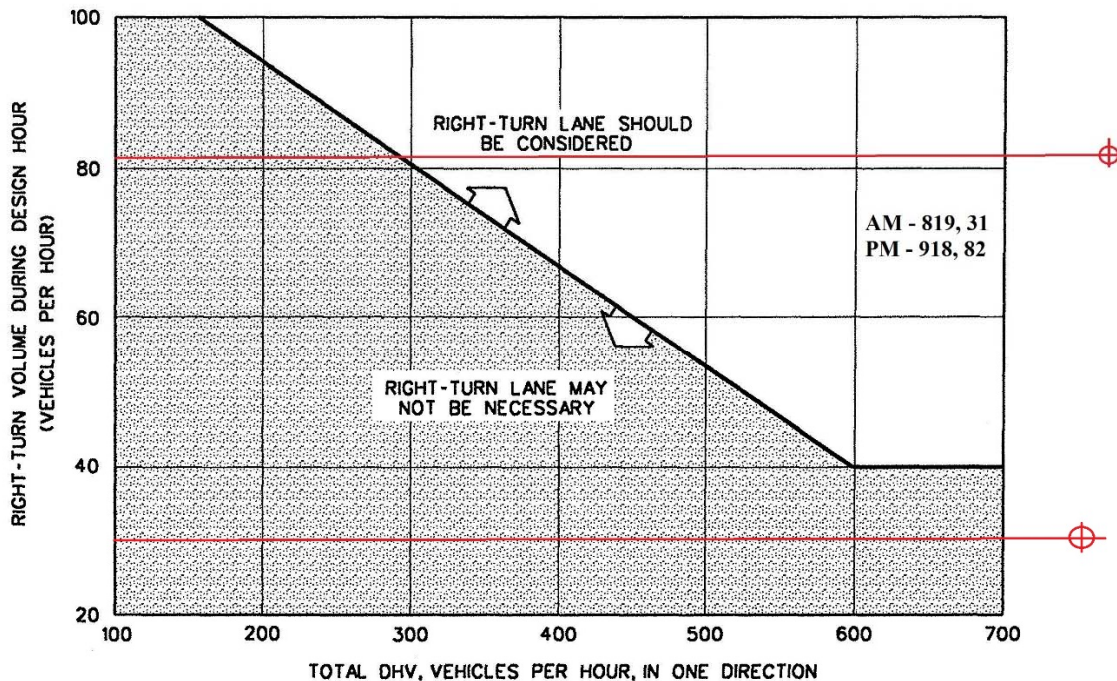
PM Peak Hour Volume (985 vph northbound thru+right, 41 vph right turn)



Site Driveway #2

AM Peak Hour Volume (819 vph northbound thru+right, 31 vph right turn)

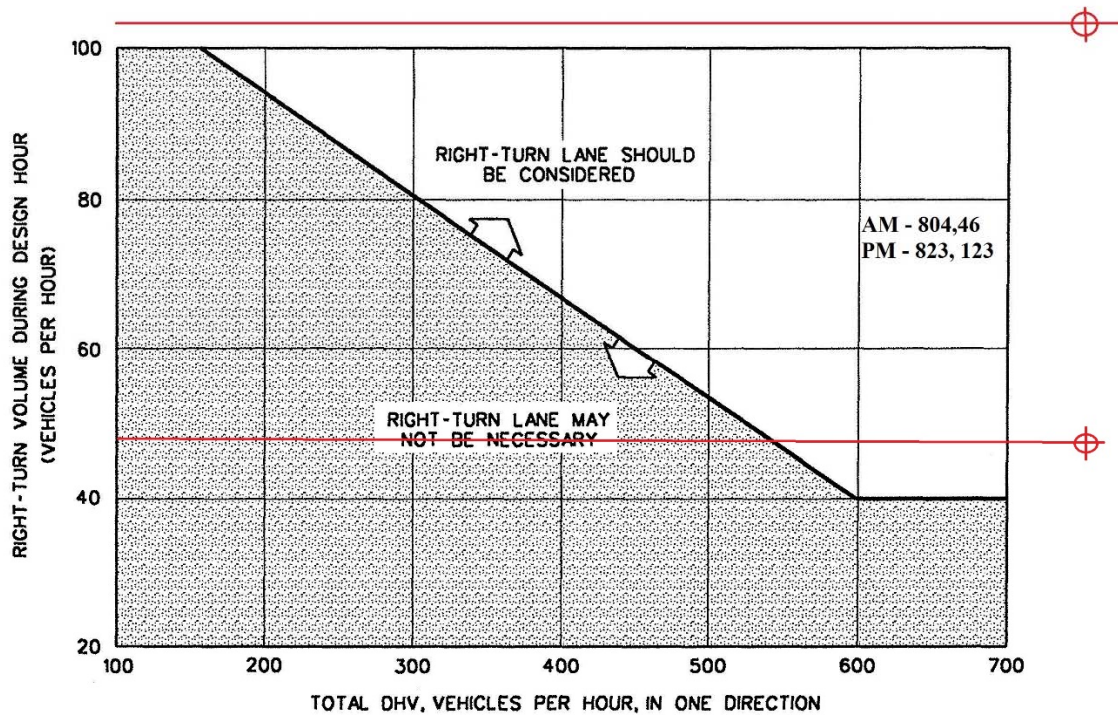
PM Peak Hour Volume (918 vph northbound thru+right, 82 vph right turn)



Site Driveway #3

AM Peak Hour Volume (804 vph northbound thru+right, 46 vph right turn)

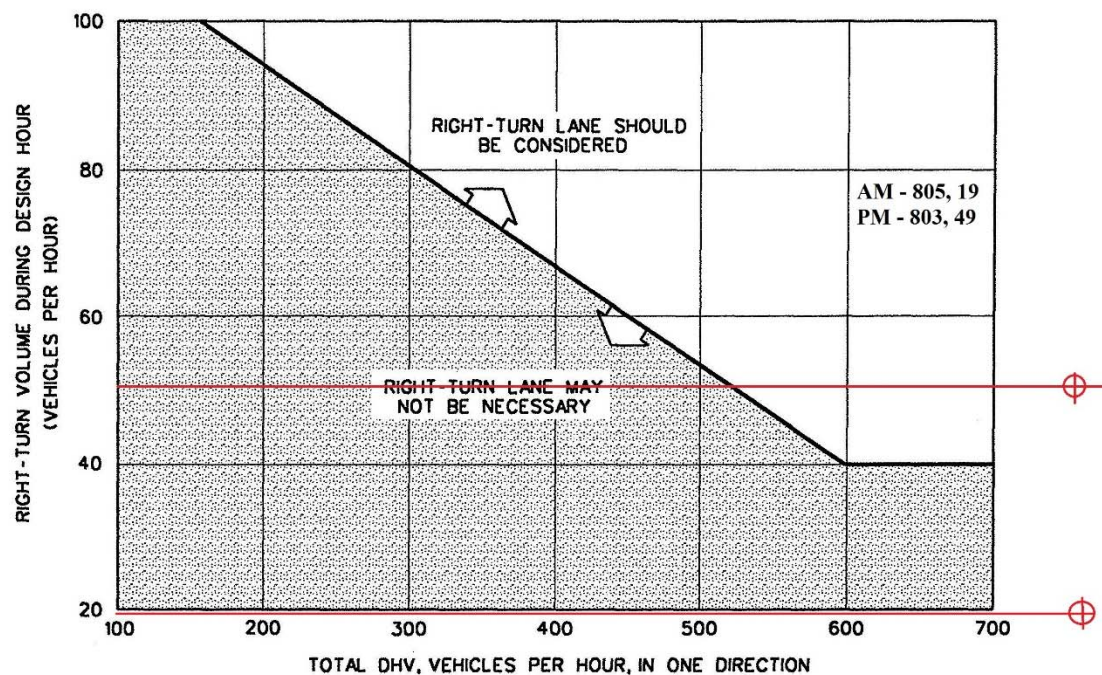
PM Peak Hour Volume (823 vph northbound thru+right, 123 vph right turn)



Site Driveway #4

AM Peak Hour Volume (805 vph northbound thru+right, 19 vph right turn)

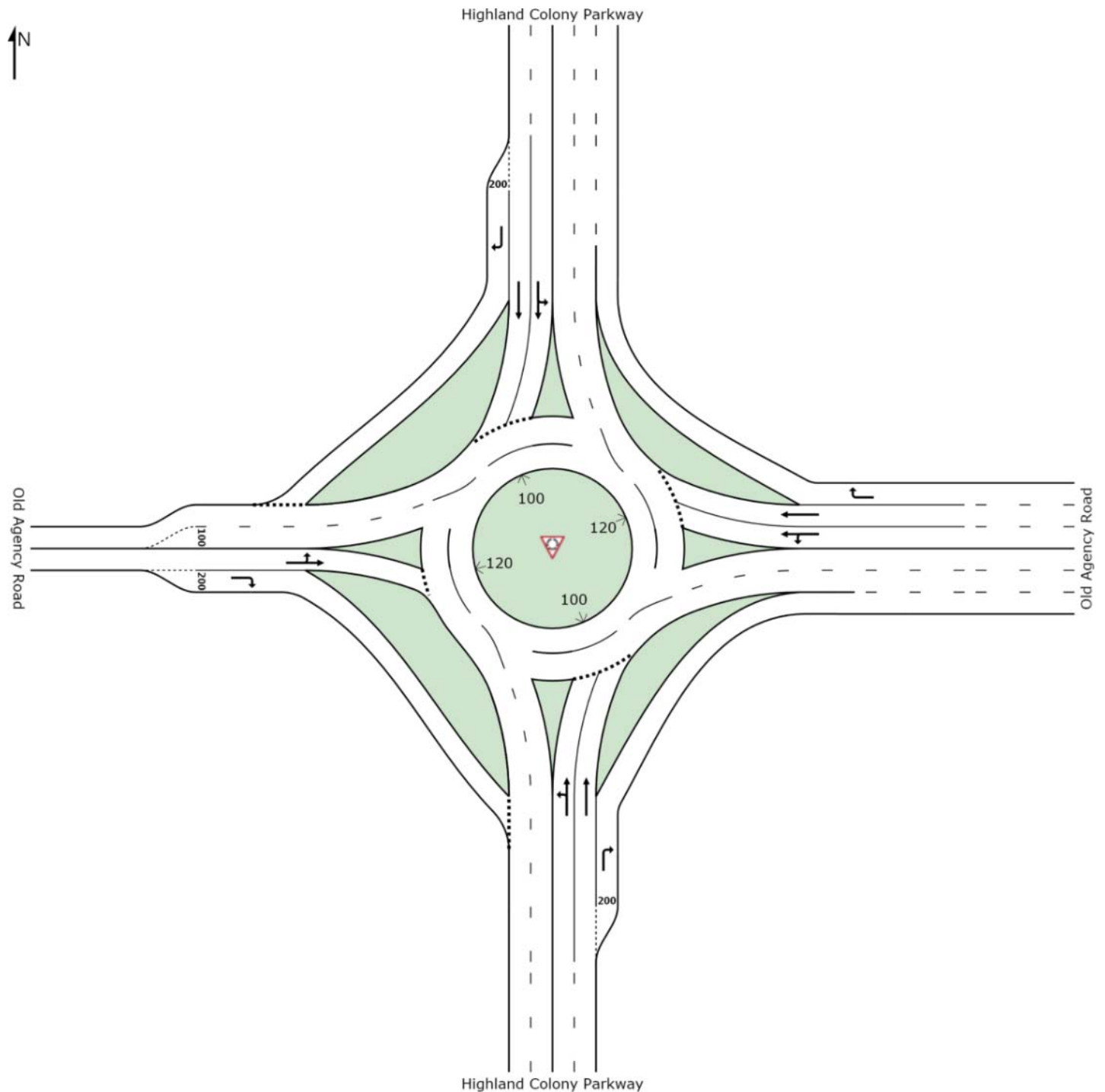
PM Peak Hour Volume (803 vph northbound thru+right, 49 vph right turn)



SITE LAYOUT

Site: 2015 Existing AM

Highland Colony Parkway at Old Agency Road
Roundabout



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INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

 **Site: 2015 Existing AM**

Highland Colony Parkway at Old Agency Road
Roundabout

Volume Display Method: Total and %

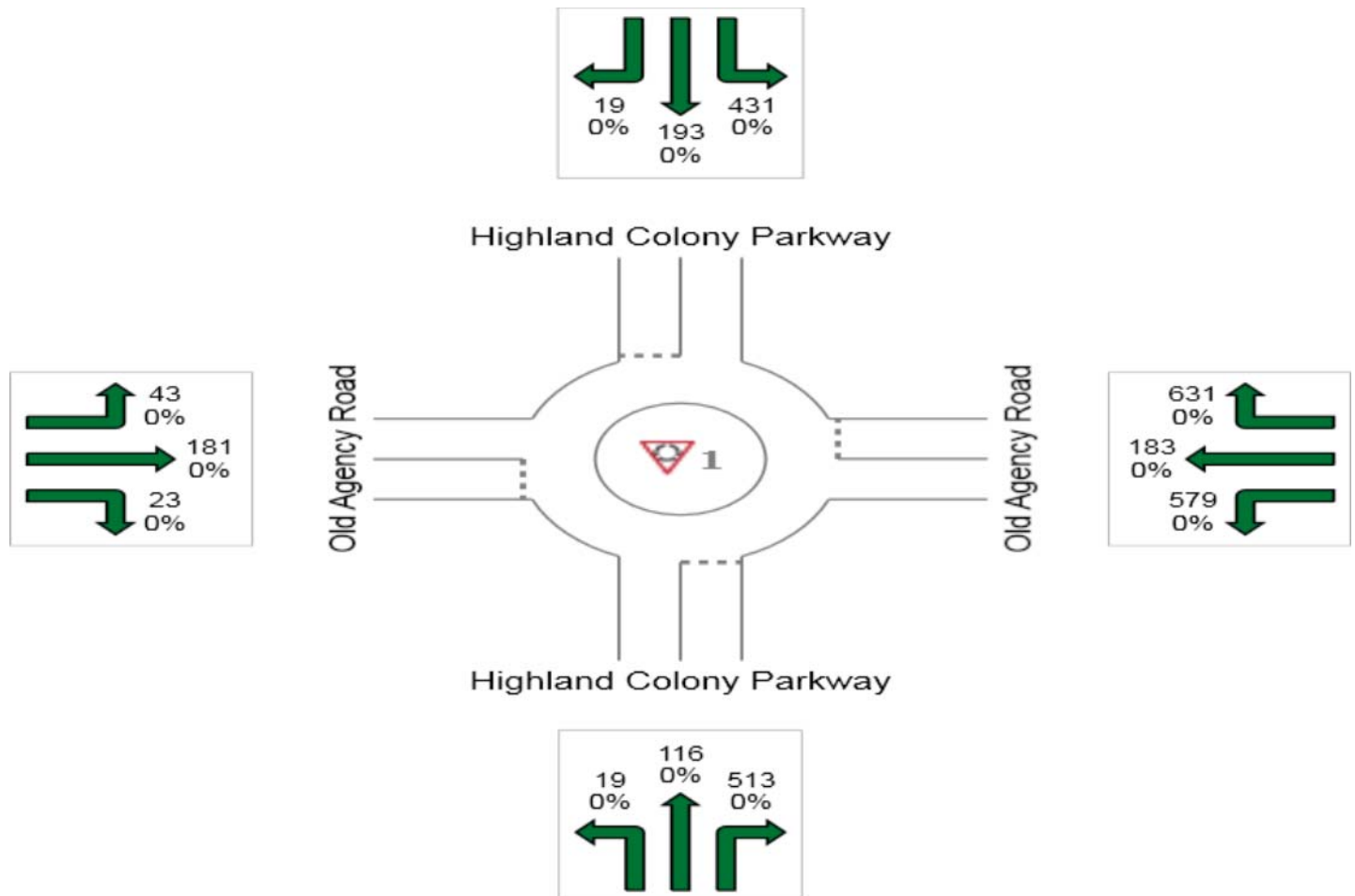
Volumes are shown for Movement Class(es): All Classes and Heavy Vehicles

Total Intersection Volumes (veh)

All Movement Classes: 2931

Light Vehicles (LV): 2931

Heavy Vehicles (HV): 0



LEVEL OF SERVICE

 **Site: 2015 Existing AM**

Highland Colony Parkway at Old Agency Road
Roundabout

All Movement Classes

	South	East	North	West	Intersection
LOS	A	A	A	A	A

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option is selected.

MOVEMENT SUMMARY

Site: 2015 Existing AM

Highland Colony Parkway at Old Agency Road
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Highland Colony Parkway											
3	L2	21	0.0	0.089	3.4	LOS A	0.5	12.2	0.67	0.54	35.2
8	T1	126	0.0	0.089	3.1	LOS A	0.5	13.0	0.67	0.53	35.6
18	R2	558	0.0	0.333	0.0	LOS A	0.0	0.0	0.00	0.00	37.2
Approach		704	0.0	0.333	0.7	LOS A	0.5	13.0	0.14	0.11	36.8
East: Old Agency Road											
1	L2	629	0.0	0.457	0.8	LOS A	2.9	72.4	0.42	0.27	34.4
6	T1	199	0.0	0.204	1.0	LOS A	0.9	23.6	0.37	0.23	37.1
16	R2	686	0.0	0.410	0.0	LOS A	0.0	0.0	0.00	0.00	37.5
Approach		1514	0.0	0.457	0.5	LOS A	2.9	72.4	0.22	0.14	36.0
North: Highland Colony Parkway											
7	L2	468	0.0	0.486	3.7	LOS A	3.2	79.0	0.73	0.76	33.5
4	T1	210	0.0	0.295	3.7	LOS A	1.4	35.0	0.67	0.59	35.9
14	R2	21	0.0	0.016	0.6	LOS A	0.1	1.6	0.30	0.14	36.1
Approach		699	0.0	0.486	3.6	LOS A	3.2	79.0	0.70	0.69	34.2
West: Old Agency Road											
5	L2	47	0.0	0.447	8.8	LOS A	2.8	71.1	0.85	0.91	33.4
2	T1	197	0.0	0.447	8.8	LOS A	2.8	71.1	0.85	0.91	33.1
12	R2	25	0.0	0.033	2.6	LOS A	0.1	3.5	0.59	0.47	35.8
Approach		268	0.0	0.447	8.2	LOS A	2.8	71.1	0.83	0.87	33.4
All Vehicles		3186	0.0	0.486	1.8	LOS A	3.2	79.0	0.36	0.32	35.5

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option is selected.

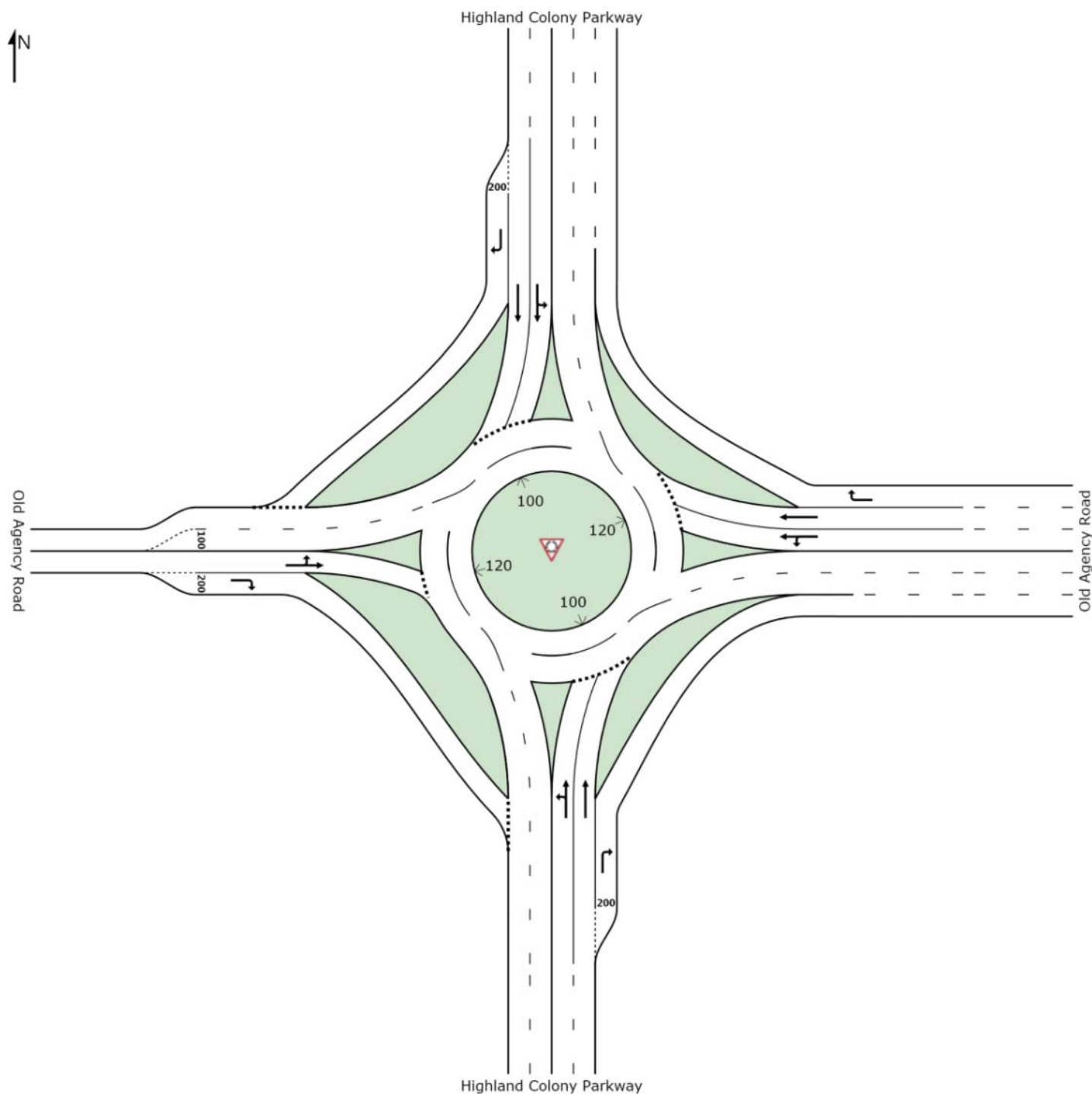
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Organisation: NEEL-SCHAFFER | Created: Wednesday, October 07, 2015 4:51:21 PM
Project: S:\projects\12923-Costco\SIDRA October 2015\HCP - OAR Revised 2015-10-07.sip6

INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

 **Site: 2015 Existing PM**

Highland Colony Parkway at Old Agency Road
Roundabout

Volume Display Method: Total and %

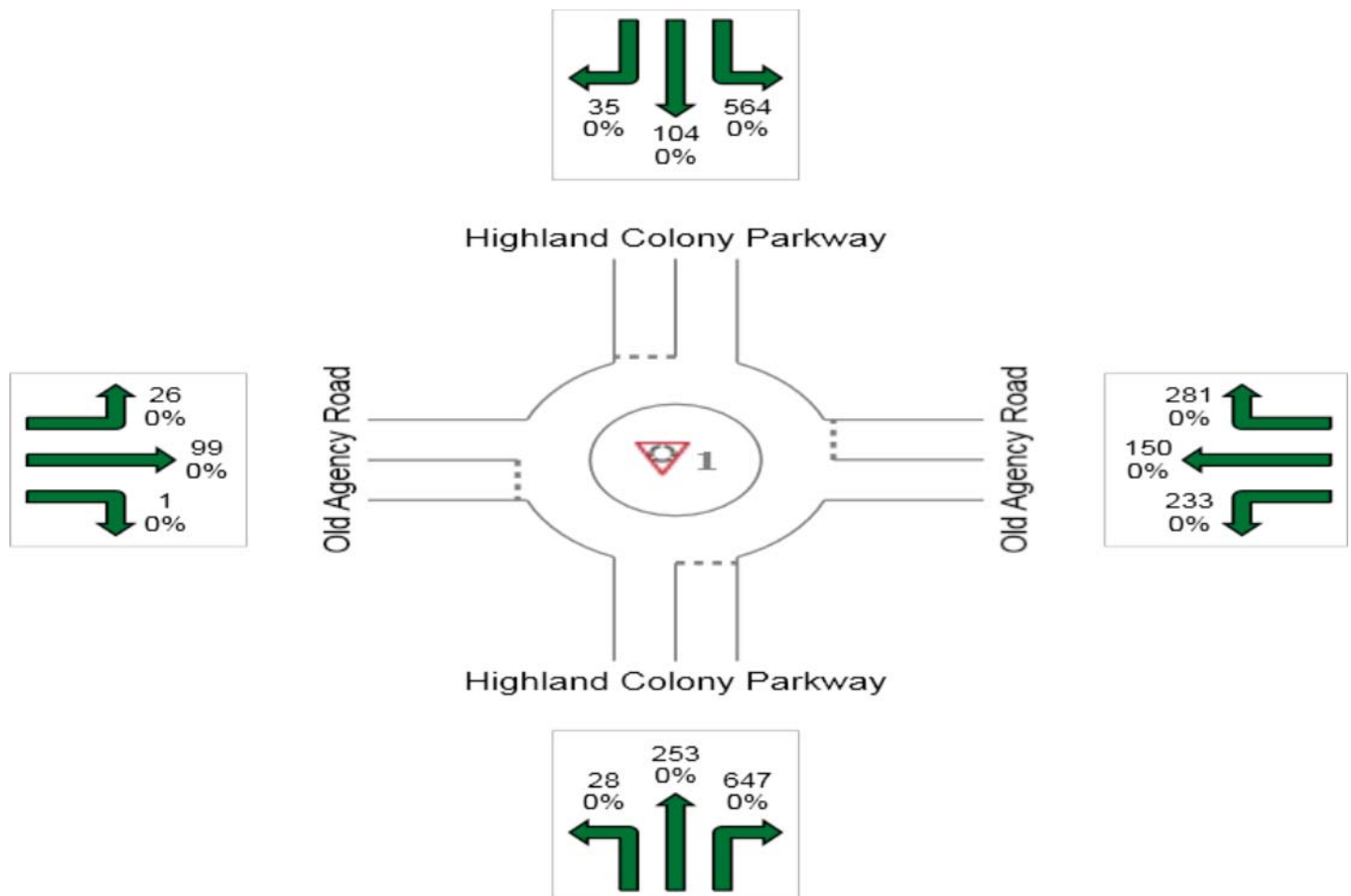
Volumes are shown for Movement Class(es): All Classes and Heavy Vehicles

Total Intersection Volumes (veh)

All Movement Classes: 2421

Light Vehicles (LV): 2421

Heavy Vehicles (HV): 0



LEVEL OF SERVICE



Site: 2015 Existing PM

Highland Colony Parkway at Old Agency Road
Roundabout

All Movement Classes

	South	East	North	West	Intersection
LOS	A	A	A	A	A

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

SIDRA Standard Delay Model is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option is selected.

MOVEMENT SUMMARY

 **Site: 2015 Existing PM**

Highland Colony Parkway at Old Agency Road
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Highland Colony Parkway											
3	L2	30	0.0	0.192	4.0	LOS A	1.1	28.2	0.72	0.64	35.2
8	T1	275	0.0	0.192	3.7	LOS A	1.2	30.3	0.72	0.61	35.4
18	R2	703	0.0	0.420	0.0	LOS A	0.0	0.0	0.00	0.00	37.2
Approach		1009	0.0	0.420	1.2	LOS A	1.2	30.3	0.22	0.19	36.6
East: Old Agency Road											
1	L2	253	0.0	0.200	0.9	LOS A	1.0	24.2	0.43	0.31	34.3
6	T1	163	0.0	0.155	1.1	LOS A	0.7	17.4	0.43	0.26	36.8
16	R2	305	0.0	0.182	0.0	LOS A	0.0	0.0	0.00	0.00	37.6
Approach		722	0.0	0.200	0.6	LOS A	1.0	24.2	0.25	0.17	36.2
North: Highland Colony Parkway											
7	L2	613	0.0	0.523	2.0	LOS A	3.3	83.2	0.60	0.53	33.8
4	T1	113	0.0	0.157	2.4	LOS A	0.6	15.9	0.50	0.41	36.5
14	R2	38	0.0	0.029	0.5	LOS A	0.1	3.0	0.28	0.14	36.2
Approach		764	0.0	0.523	2.0	LOS A	3.3	83.2	0.57	0.49	34.3
West: Old Agency Road											
5	L2	28	0.0	0.203	4.3	LOS A	1.0	25.9	0.71	0.67	35.4
2	T1	108	0.0	0.203	4.3	LOS A	1.0	25.9	0.71	0.67	35.1
12	R2	1	0.0	0.001	1.1	LOS A	0.0	0.1	0.39	0.18	36.4
Approach		137	0.0	0.203	4.3	LOS A	1.0	25.9	0.71	0.66	35.2
All Vehicles		2632	0.0	0.523	1.4	LOS A	3.3	83.2	0.35	0.29	35.7

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option is selected.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Project: S:\projects\12923-Costco\SIDRA October 2015\HCP - OAR Revised 2015-10-07.sip6

TWO-WAY STOP CONTROL SUMMARY								
General Information				Site Information				
Analyst	B. Blackledge			Intersection	HCP - Old Agency Parkway			
Agency/Co.	Neel - Schaffer, Inc			Jurisdiction				
Date Performed	8/26/2015			Analysis Year	2015			
Analysis Time Period	Existing AM							
Project Description 12923 - Costco								
East/West Street: Old Agency Parkway				North/South Street: Highland Colony Parkway				
Intersection Orientation: North-South				Study Period (hrs): 0.25				
Vehicle Volumes and Adjustments								
Major Street	Northbound			Southbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume (veh/h)	12	398			748	102		
Peak-Hour Factor, PHF	0.88	0.88	1.00	1.00	0.88	0.88		
Hourly Flow Rate, HFR (veh/h)	13	452	0	0	850	115		
Percent Heavy Vehicles	1	--	--	0	--	--		
Median Type	Raised curb							
RT Channelized			0			0		
Lanes	1	2	0	0	2	1		
Configuration	L	T			T	R		
Upstream Signal		0			0			
Minor Street	Eastbound			Westbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)	322		27					
Peak-Hour Factor, PHF	0.88	0.88	0.88	1.00	1.00	1.00		
Hourly Flow Rate, HFR (veh/h)	365	0	30	0	0	0		
Percent Heavy Vehicles	1	0	1	0	0	0		
Percent Grade (%)	0			0				
Flared Approach		N			N			
Storage		0			0			
RT Channelized			0			0		
Lanes	1	0	1	0	0	0		
Configuration	L		R					
Delay, Queue Length, and Level of Service								
Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L					L		R
v (veh/h)	13					365		30
C (m) (veh/h)	715					309		630
v/c	0.02					1.18		0.05
95% queue length	0.06					15.71		0.15
Control Delay (s/veh)	10.1					146.1		11.0
LOS	B					F		B
Approach Delay (s/veh)	--	--				135.8		
Approach LOS	--	--				F		

TWO-WAY STOP CONTROL SUMMARY								
General Information				Site Information				
Analyst	B. Blackledge			Intersection	HCP - Old Agency Parkway			
Agency/Co.	Neel - Schaffer, Inc			Jurisdiction				
Date Performed	8/26/2015			Analysis Year	2015			
Analysis Time Period	Existing PM							
Project Description 12923 - Costco								
East/West Street: Old Agency Parkway				North/South Street: Highland Colony Parkway				
Intersection Orientation: North-South				Study Period (hrs): 0.25				
Vehicle Volumes and Adjustments								
Major Street	Northbound			Southbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume (veh/h)	15	779			235	201		
Peak-Hour Factor, PHF	0.88	0.88	1.00	1.00	0.88	0.88		
Hourly Flow Rate, HFR (veh/h)	17	885	0	0	267	228		
Percent Heavy Vehicles	1	--	--	0	--	--		
Median Type	Raised curb							
RT Channelized			0			0		
Lanes	1	2	0	0	2	1		
Configuration	L	T			T	R		
Upstream Signal		0			0			
Minor Street	Eastbound			Westbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)	250		8					
Peak-Hour Factor, PHF	0.88	0.88	0.88	1.00	1.00	1.00		
Hourly Flow Rate, HFR (veh/h)	284	0	9	0	0	0		
Percent Heavy Vehicles	1	0	1	0	0	0		
Percent Grade (%)	0			0				
Flared Approach		N			N			
Storage		0			0			
RT Channelized			0			0		
Lanes	1	0	1	0	0	0		
Configuration	L		R					
Delay, Queue Length, and Level of Service								
Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L					L		R
v (veh/h)	17					284		9
C (m) (veh/h)	1072					454		917
v/c	0.02					0.63		0.01
95% queue length	0.05					4.19		0.03
Control Delay (s/veh)	8.4					25.3		9.0
LOS	A					D		A
Approach Delay (s/veh)	--	--				24.8		
Approach LOS	--	--				C		

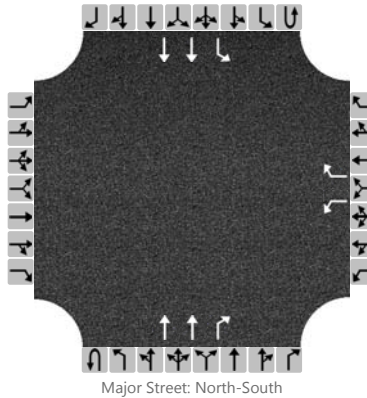
TWO-WAY STOP CONTROL SUMMARY								
General Information				Site Information				
Analyst	B. Blackledge			Intersection	HCP - Trace Colony Park Drive			
Agency/Co.	Neel - Schaffer, Inc			Jurisdiction				
Date Performed	8/26/2015			Analysis Year	2015			
Analysis Time Period	Existing AM							
Project Description 12923 - Costco								
East/West Street: Trace Colony Park Drive				North/South Street: Highland Colony Parkway				
Intersection Orientation: North-South				Study Period (hrs): 0.25				
Vehicle Volumes and Adjustments								
Major Street	Northbound			Southbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume (veh/h)	10	349		13	693	52		
Peak-Hour Factor, PHF	0.82	0.82	1.00	0.82	0.82	0.82		
Hourly Flow Rate, HFR (veh/h)	12	425	0	15	845	63		
Percent Heavy Vehicles	1	--	--	1	--	--		
Median Type	Raised curb							
RT Channelized			0			0		
Lanes	1	2	0	1	2	0		
Configuration	L	T		L	T	TR		
Upstream Signal		0			0			
Minor Street	Eastbound			Westbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)	16		1					
Peak-Hour Factor, PHF	0.82	0.88	0.82	1.00	1.00	1.00		
Hourly Flow Rate, HFR (veh/h)	19	0	1	0	0	0		
Percent Heavy Vehicles	1	0	1	0	0	0		
Percent Grade (%)	0			0				
Flared Approach		N			N			
Storage		0			0			
RT Channelized			0			0		
Lanes	1	0	1	0	0	0		
Configuration	L		R					
Delay, Queue Length, and Level of Service								
Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L				L		R
v (veh/h)	12	15				19		1
C (m) (veh/h)	752	1138				288		607
v/c	0.02	0.01				0.07		0.00
95% queue length	0.05	0.04				0.21		0.00
Control Delay (s/veh)	9.9	8.2				18.4		10.9
LOS	A	A				C		B
Approach Delay (s/veh)	--	--				18.0		
Approach LOS	--	--				C		

TWO-WAY STOP CONTROL SUMMARY								
General Information				Site Information				
Analyst	B. Blackledge			Intersection	HCP - Trace Colony Park Drive			
Agency/Co.	Neel - Schaffer, Inc			Jurisdiction				
Date Performed	8/26/2015			Analysis Year	2015			
Analysis Time Period	Existing PM							
Project Description 12923 - Costco								
East/West Street: Trace Colony Park Drive				North/South Street: Highland Colony Parkway				
Intersection Orientation: North-South				Study Period (hrs): 0.25				
Vehicle Volumes and Adjustments								
Major Street	Northbound			Southbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume (veh/h)	2	680		1	209	18		
Peak-Hour Factor, PHF	0.82	0.82	1.00	0.82	0.82	0.82		
Hourly Flow Rate, HFR (veh/h)	2	829	0	1	254	21		
Percent Heavy Vehicles	1	--	--	1	--	--		
Median Type	Raised curb							
RT Channelized			0			0		
Lanes	1	2	0	1	2	0		
Configuration	L	T		L	T	TR		
Upstream Signal		0			0			
Minor Street	Eastbound			Westbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)	79		8					
Peak-Hour Factor, PHF	0.82	0.88	0.82	1.00	1.00	1.00		
Hourly Flow Rate, HFR (veh/h)	96	0	9	0	0	0		
Percent Heavy Vehicles	1	0	1	0	0	0		
Percent Grade (%)	0			0				
Flared Approach		N			N			
Storage		0			0			
RT Channelized			0			0		
Lanes	1	0	1	0	0	0		
Configuration	L		R					
Delay, Queue Length, and Level of Service								
Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L				L		R
v (veh/h)	2	1				96		9
C (m) (veh/h)	1292	805				487		912
v/c	0.00	0.00				0.20		0.01
95% queue length	0.00	0.00				0.73		0.03
Control Delay (s/veh)	7.8	9.5				14.2		9.0
LOS	A	A				B		A
Approach Delay (s/veh)	--	--				13.8		
Approach LOS	--	--				B		

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	Kiser	Intersection	New Pointe Dr/HCP
Agency/Co.	Neel-Schaffer	Jurisdiction	Ridgeland
Date Performed	8/26/2015	East/West Street	New Pointe Drive
Analysis Year	2015	North/South Street	Highland Colony Parkway
Time Analyzed	AM Peak	Peak Hour Factor	0.79
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Renaissance Phase 3		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		1	0	1	0	0	2	1	0	1	2	0
Configuration						L		R			T	R		L	T	
Volume (veh/h)						2		2			361	1		33	657	
Percent Heavy Vehicles						1		1						1		
Proportion Time Blocked																
Right Turn Channelized	No				Yes				Yes				No			
Median Type	Left + Thru															
Median Storage	1															

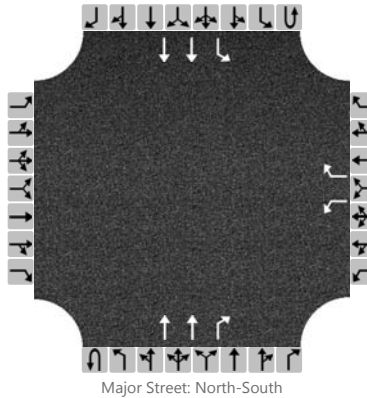
Delay, Queue Length, and Level of Service

Flow Rate (veh/h)						3		3						42		
Capacity						368		778						1107		
v/c Ratio						0.01		0.00						0.04		
95% Queue Length						0.0		0.0						0.1		
Control Delay (s/veh)						14.9		9.6						8.4		
Level of Service (LOS)						B		A						A		
Approach Delay (s/veh)					12.3								0.4			
Approach LOS					B								A			

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	Kiser	Intersection	New Pointe Dr/HCP
Agency/Co.	Neel-Schaffer	Jurisdiction	Ridgeland
Date Performed	8/26/2015	East/West Street	New Pointe Drive
Analysis Year	2015	North/South Street	Highland Colony Parkway
Time Analyzed	PM Peak	Peak Hour Factor	0.80
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Renaissance Phase 3		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		1	0	1	0	0	2	1	0	1	2	0
Configuration						L		R			T	R		L	T	
Volume (veh/h)						1		24			628	2		3	197	
Percent Heavy Vehicles						1		1						1		
Proportion Time Blocked																
Right Turn Channelized	No				Yes				Yes				No			
Median Type	Left + Thru															
Median Storage	1															

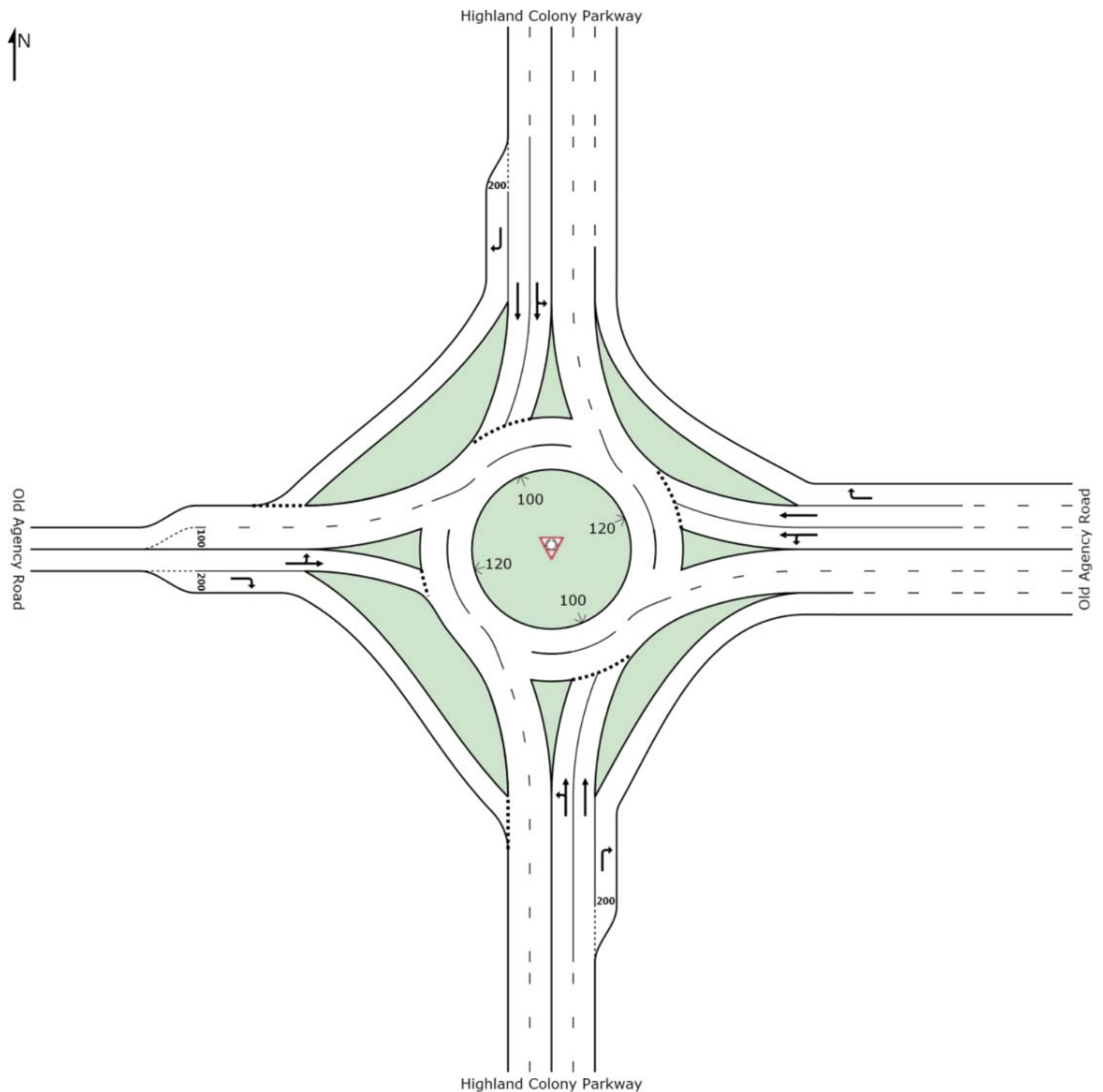
Delay, Queue Length, and Level of Service

Flow Rate (veh/h)						1		30							4		
Capacity						351		610							836		
v/c Ratio						0.00		0.05							0.00		
95% Queue Length						0.0		0.2							0.0		
Control Delay (s/veh)						15.3		11.2							9.3		
Level of Service (LOS)						C		B							A		
Approach Delay (s/veh)					11.3								0.1				
Approach LOS					B								A				

SITE LAYOUT

 **Site: 2017 Non-Site AM**

Highland Colony Parkway at Old Agency Road
Roundabout



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Organisation: NEEL-SCHAFFER | Created: Wednesday, October 07, 2015 4:51:21 PM

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INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

 **Site: 2017 Non-Site AM**

Highland Colony Parkway at Old Agency Road
Roundabout

Volume Display Method: Total and %

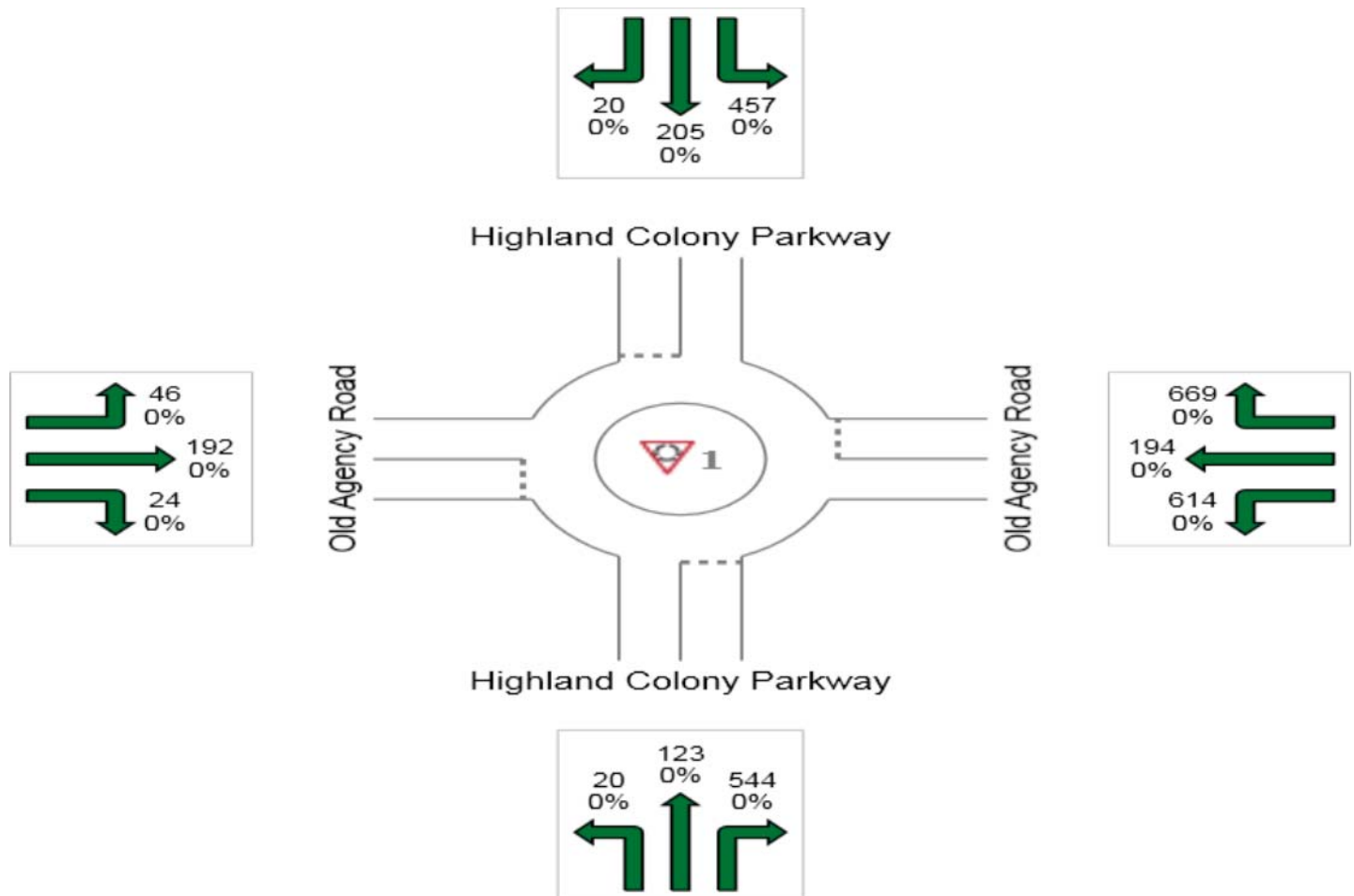
Volumes are shown for Movement Class(es): All Classes and Heavy Vehicles

Total Intersection Volumes (veh)

All Movement Classes: 3108

Light Vehicles (LV): 3108

Heavy Vehicles (HV): 0



LEVEL OF SERVICE

 **Site: 2017 Non-Site AM**

Highland Colony Parkway at Old Agency Road
Roundabout

All Movement Classes

	South	East	North	West	Intersection
LOS	A	A	A	B	A

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

SIDRA Standard Delay Model is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option is selected.

MOVEMENT SUMMARY

 **Site: 2017 Non-Site AM**

Highland Colony Parkway at Old Agency Road
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Highland Colony Parkway											
3	L2	22	0.0	0.099	3.8	LOS A	0.6	14.0	0.70	0.58	35.1
8	T1	134	0.0	0.099	3.5	LOS A	0.6	15.0	0.70	0.56	35.5
18	R2	591	0.0	0.353	0.0	LOS A	0.0	0.0	0.00	0.00	37.2
Approach		747	0.0	0.353	0.8	LOS A	0.6	15.0	0.15	0.12	36.8
East: Old Agency Road											
1	L2	667	0.0	0.489	0.9	LOS A	3.2	80.3	0.45	0.30	34.3
6	T1	211	0.0	0.219	1.1	LOS A	1.0	25.6	0.39	0.24	37.0
16	R2	727	0.0	0.434	0.0	LOS A	0.0	0.0	0.00	0.00	37.5
Approach		1605	0.0	0.489	0.5	LOS A	3.2	80.3	0.24	0.16	36.0
North: Highland Colony Parkway											
7	L2	497	0.0	0.532	4.4	LOS A	3.7	93.6	0.77	0.82	33.2
4	T1	223	0.0	0.325	4.0	LOS A	1.6	39.4	0.69	0.63	35.8
14	R2	22	0.0	0.017	0.6	LOS A	0.1	1.7	0.31	0.15	36.1
Approach		741	0.0	0.532	4.1	LOS A	3.7	93.6	0.73	0.74	34.0
West: Old Agency Road											
5	L2	50	0.0	0.510	11.2	LOS B	3.5	88.3	0.89	0.98	32.3
2	T1	209	0.0	0.510	11.2	LOS B	3.5	88.3	0.89	0.98	32.0
12	R2	26	0.0	0.035	2.8	LOS A	0.2	3.8	0.61	0.49	35.8
Approach		285	0.0	0.510	10.4	LOS B	3.5	88.3	0.86	0.94	32.4
All Vehicles		3378	0.0	0.532	2.2	LOS A	3.7	93.6	0.38	0.34	35.4

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option is selected.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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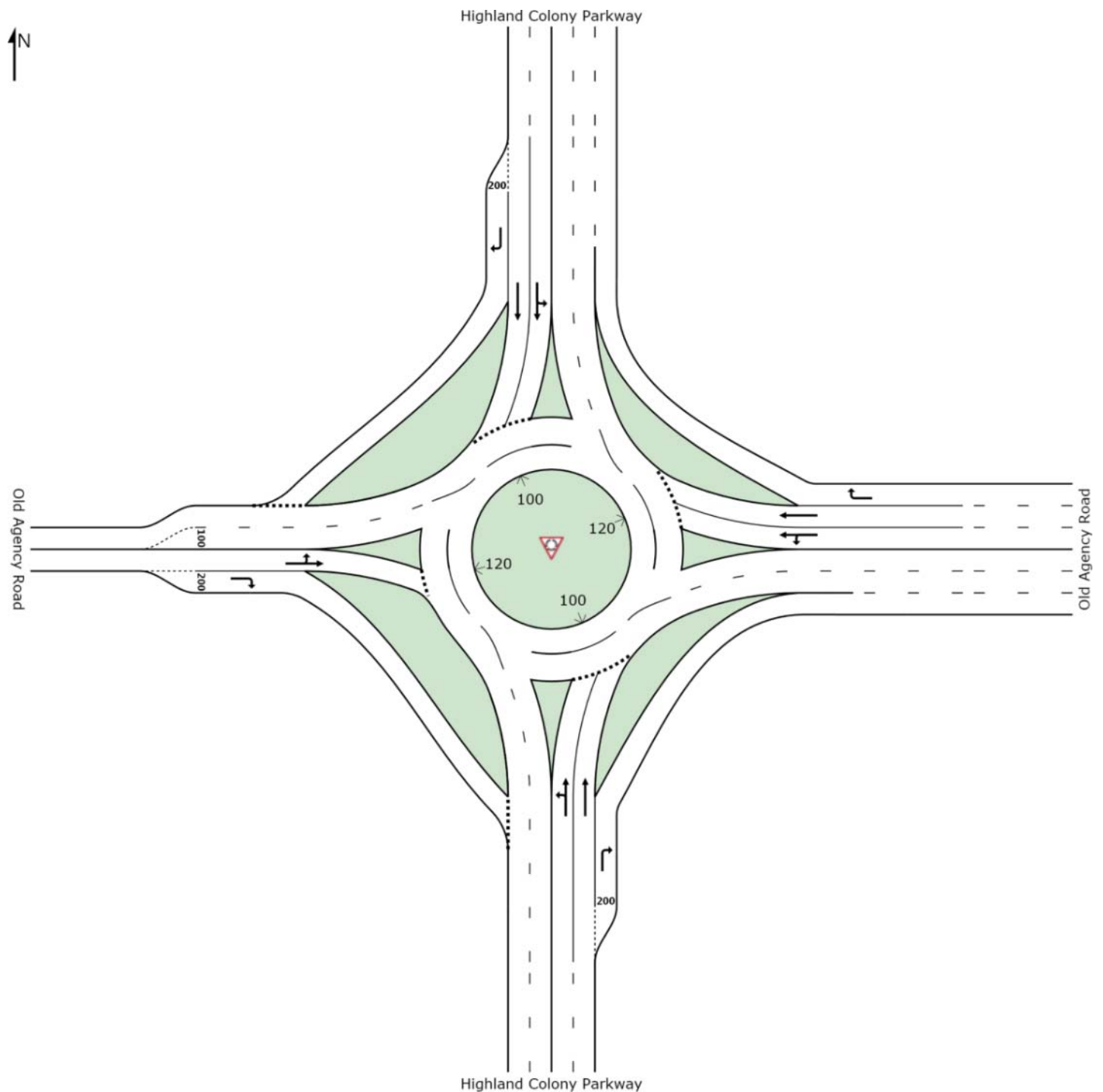
Project: S:\projects\12923-Costco\SIDRA October 2015\HCP - OAR Revised 2015-10-07.sip6

SITE LAYOUT



Site: 2017 Non-Site PM

Highland Colony Parkway at Old Agency Road
Roundabout



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Organisation: NEEL-SCHAFFER | Created: Wednesday, October 07, 2015 4:51:21 PM

Project: S:\projects\12923-Costco\SIDRA October 2015\HCP - OAR Revised 2015-10-07.sip6

INPUT VOLUMES

Vehicles and pedestrians per 60 minutes



Site: 2017 Non-Site PM

Highland Colony Parkway at Old Agency Road
Roundabout

Volume Display Method: Total and %

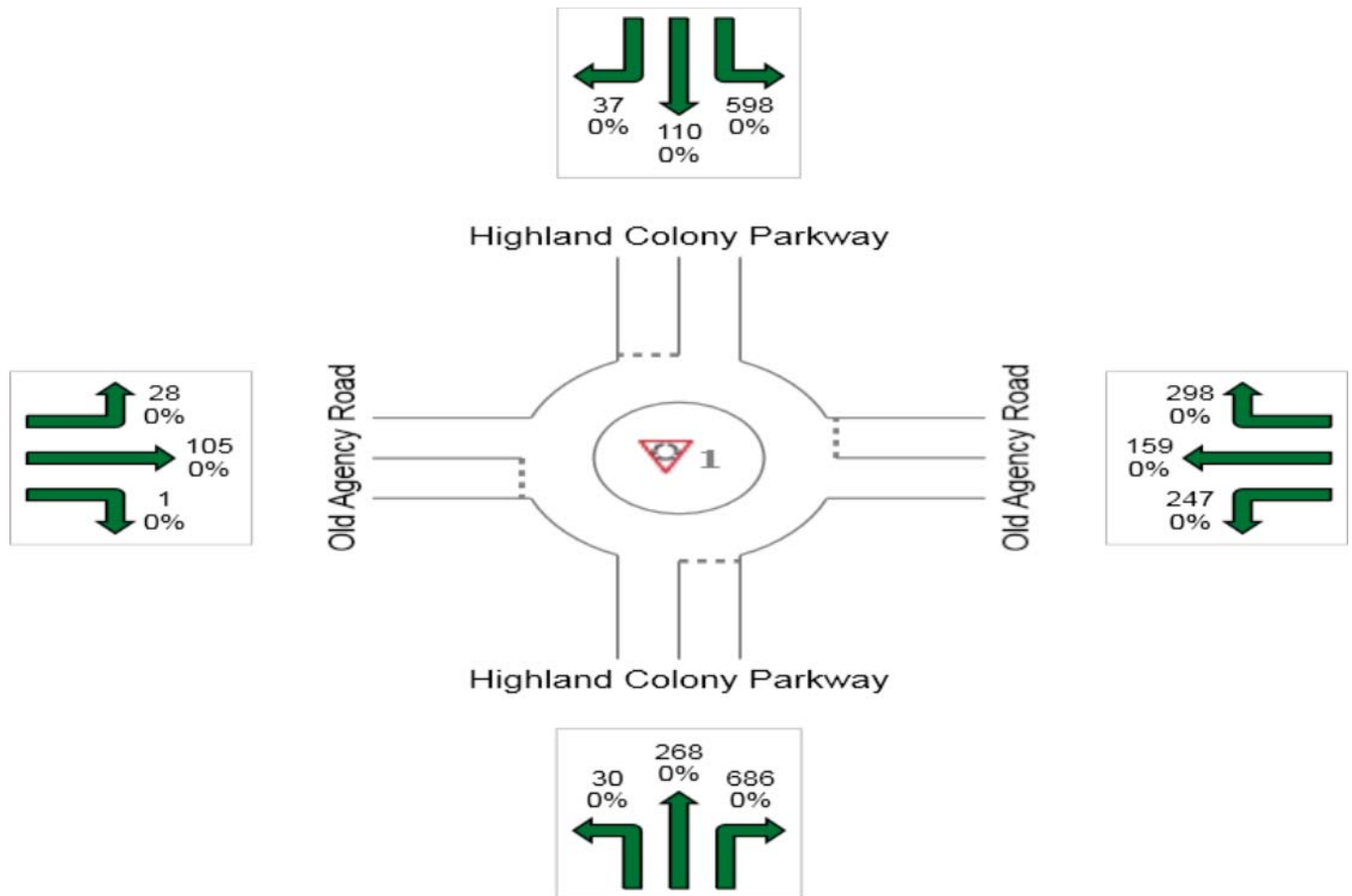
Volumes are shown for Movement Class(es): All Classes and Heavy Vehicles

Total Intersection Volumes (veh)

All Movement Classes: 2567

Light Vehicles (LV): 2567

Heavy Vehicles (HV): 0



LEVEL OF SERVICE

 **Site: 2017 Non-Site PM**

Highland Colony Parkway at Old Agency Road
Roundabout

All Movement Classes

	South	East	North	West	Intersection
LOS	A	A	A	A	A

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

SIDRA Standard Delay Model is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option is selected.

MOVEMENT SUMMARY



Site: 2017 Non-Site PM

Highland Colony Parkway at Old Agency Road
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Highland Colony Parkway											
3	L2	33	0.0	0.215	4.5	LOS A	1.3	32.7	0.76	0.69	35.1
8	T1	291	0.0	0.215	4.1	LOS A	1.4	35.4	0.76	0.66	35.3
18	R2	746	0.0	0.445	0.0	LOS A	0.0	0.0	0.00	0.00	37.2
Approach		1070	0.0	0.445	1.3	LOS A	1.4	35.4	0.23	0.20	36.5
East: Old Agency Road											
1	L2	268	0.0	0.215	0.9	LOS A	1.1	26.4	0.45	0.33	34.3
6	T1	173	0.0	0.167	1.2	LOS A	0.8	19.0	0.45	0.28	36.7
16	R2	324	0.0	0.193	0.0	LOS A	0.0	0.0	0.00	0.00	37.6
Approach		765	0.0	0.215	0.6	LOS A	1.1	26.4	0.26	0.18	36.1
North: Highland Colony Parkway											
7	L2	650	0.0	0.563	2.4	LOS A	3.9	97.0	0.63	0.59	33.7
4	T1	120	0.0	0.169	2.5	LOS A	0.7	17.2	0.52	0.43	36.5
14	R2	40	0.0	0.030	0.5	LOS A	0.1	3.2	0.29	0.15	36.2
Approach		810	0.0	0.563	2.3	LOS A	3.9	97.0	0.60	0.54	34.2
West: Old Agency Road											
5	L2	30	0.0	0.227	4.8	LOS A	1.2	29.8	0.74	0.72	35.3
2	T1	114	0.0	0.227	4.8	LOS A	1.2	29.8	0.74	0.72	35.0
12	R2	1	0.0	0.001	1.1	LOS A	0.0	0.1	0.40	0.19	36.4
Approach		146	0.0	0.227	4.7	LOS A	1.2	29.8	0.74	0.72	35.0
All Vehicles		2790	0.0	0.563	1.6	LOS A	3.9	97.0	0.37	0.32	35.6

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option is selected.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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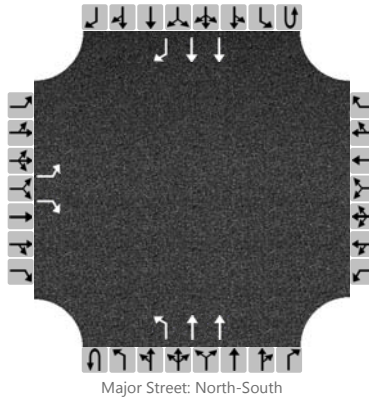
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HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	J Kiser	Intersection	HCP - Old Agency Parkway
Agency/Co.	Neel - Schaffer, Inc	Jurisdiction	Ridgeland
Date Performed	8/26/2015	East/West Street	Old Agency Parkway
Analysis Year	2017	North/South Street	Highland Colony Parkway
Time Analyzed	Non Site AM	Peak Hour Factor	1.00
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Renaissance Phase 3		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		1	0	1		0	0	0	0	1	2	0	0	0	2	1
Configuration		L		R						L	T				T	R
Volume (veh/h)		342		29						13	422				794	108
Percent Heavy Vehicles		1		1						1						
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Left + Thru															
Median Storage	1															

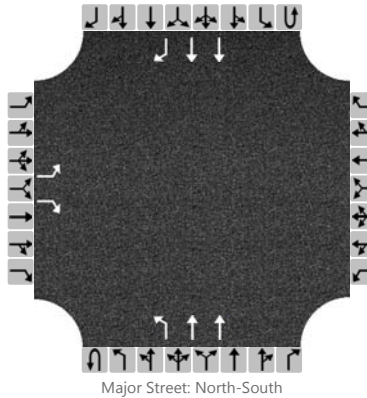
Delay, Queue Length, and Level of Service

Flow Rate (veh/h)		342		29						13						
Capacity		328		654						756						
v/c Ratio		1.04		0.04						0.02						
95% Queue Length		12.3		0.1						0.1						
Control Delay (s/veh)		98.5		10.8						9.8						
Level of Service (LOS)		F		B						A						
Approach Delay (s/veh)	91.6								0.3							
Approach LOS	F								A							

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	J. Kiser	Intersection	HCP - Old Agency Parkway
Agency/Co.	Neel - Schaffer, Inc	Jurisdiction	Ridgeland
Date Performed	8/26/2015	East/West Street	Old Agency Parkway
Analysis Year	2017	North/South Street	Highland Colony Parkway
Time Analyzed	Non Site PM	Peak Hour Factor	1.00
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Renaissance Phase 3		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		1	0	1		0	0	0	0	1	2	0	0	0	2	1
Configuration		L		R						L	T				T	R
Volume (veh/h)		265		8						16	826				249	213
Percent Heavy Vehicles		1		1						1						
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Left + Thru															
Median Storage	1															

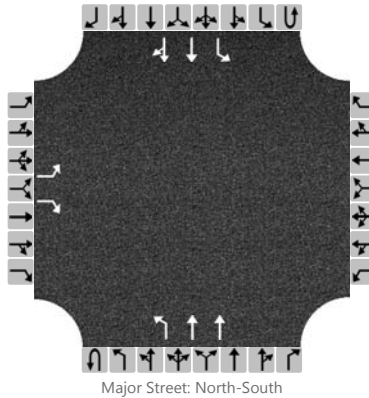
Delay, Queue Length, and Level of Service

Flow Rate (veh/h)		265		8						16						
Capacity		471		929						1103						
v/c Ratio		0.56		0.01						0.01						
95% Queue Length		3.4		0.0						0.0						
Control Delay (s/veh)		22.0		8.9						8.3						
Level of Service (LOS)		C		A						A						
Approach Delay (s/veh)	21.6								0.2							
Approach LOS	C								A							

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	J Kiser	Intersection	HCP - Trace Colony Park Drive
Agency/Co.	Neel - Schaffer, Inc	Jurisdiction	Ridgeland
Date Performed	8/26/2015	East/West Street	Trace Colony Park Drive
Analysis Year	2017	North/South Street	Highland Colony Parkway
Time Analyzed	Non Site AM	Peak Hour Factor	1.00
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Renaissance Phase 3		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		1	0	1		0	0	0	0	1	2	0	0	1	2	0
Configuration		L		R						L	T			L	T	TR
Volume (veh/h)		17		1						11	370		14	0	735	55
Percent Heavy Vehicles		1		1						1			0	1		
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Left + Thru															
Median Storage	1															

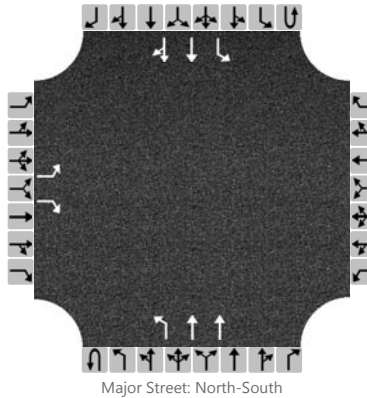
Delay, Queue Length, and Level of Service

Flow Rate (veh/h)		17		1						11				14		
Capacity		330		656						833				846		
v/c Ratio		0.05		0.00						0.01				0.02		
95% Queue Length		0.2		0.0						0.0				0.1		
Control Delay (s/veh)		16.5		10.5						9.4				9.3		
Level of Service (LOS)		C		B						A				A		
Approach Delay (s/veh)	16.2								0.3				0.2			
Approach LOS	C								A				A			

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	J Kiser	Intersection	HCP - Trace Colony Park Drive
Agency/Co.	Neel - Schaffer, Inc	Jurisdiction	Ridgeland
Date Performed	8/26/2015	East/West Street	Trace Colony Park Drive
Analysis Year	2017	North/South Street	Highland Colony Parkway
Time Analyzed	Non Site PM	Peak Hour Factor	1.00
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Renaissance Phase 3		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		1	0	1		0	0	0	0	1	2	0	0	1	2	0
Configuration		L		R						L	T			L	T	TR
Volume (veh/h)		84		8						2	721		1	0	222	19
Percent Heavy Vehicles		1		1						1			0	1		
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Left + Thru															
Median Storage	1															

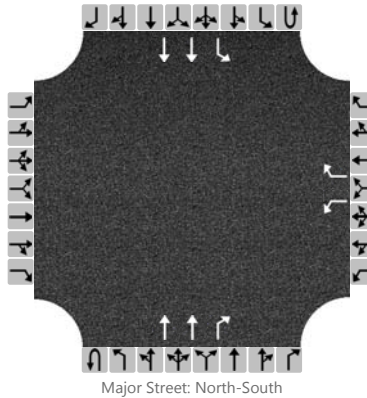
Delay, Queue Length, and Level of Service

Flow Rate (veh/h)		84		8						2				1		
Capacity		526		934						1330				508		
v/c Ratio		0.16		0.01						0.00				0.00		
95% Queue Length		0.6		0.0						0.0				0.0		
Control Delay (s/veh)		13.1		8.9						7.7				12.1		
Level of Service (LOS)		B		A						A				B		
Approach Delay (s/veh)	12.8								0.0				0.0			
Approach LOS	B								A				A			

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	Kiser	Intersection	New Pointe Dr/HCP
Agency/Co.	Neel-Schaffer	Jurisdiction	Ridgeland
Date Performed	8/26/2015	East/West Street	New Pointe Drive
Analysis Year	2017	North/South Street	Highland Colony Parkway
Time Analyzed	Non-Site AM Peak	Peak Hour Factor	0.79
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Renaissance Phase 3		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		1	0	1	0	0	2	1	0	1	2	0
Configuration						L		R			T	R		L	T	
Volume (veh/h)						2		2			384	1		35	697	
Percent Heavy Vehicles						1		1						1		
Proportion Time Blocked																
Right Turn Channelized	No				Yes				Yes				No			
Median Type	Left + Thru															
Median Storage	1															

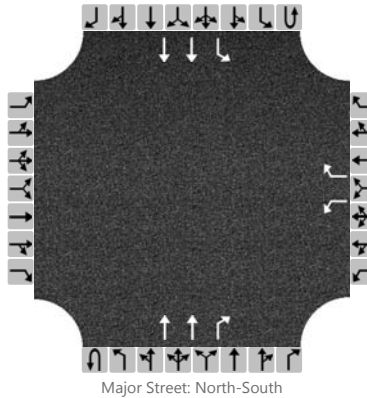
Delay, Queue Length, and Level of Service

Flow Rate (veh/h)						3		3						44		
Capacity						348		761						1080		
v/c Ratio						0.01		0.00						0.04		
95% Queue Length						0.0		0.0						0.1		
Control Delay (s/veh)						15.4		9.8						8.5		
Level of Service (LOS)						C		A						A		
Approach Delay (s/veh)					12.6								0.4			
Approach LOS					B								A			

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	Kiser	Intersection	New Pointe Dr/HCP
Agency/Co.	Neel-Schaffer	Jurisdiction	Ridgeland
Date Performed	8/26/2015	East/West Street	New Pointe Drive
Analysis Year	2017	North/South Street	Highland Colony Parkway
Time Analyzed	Non-Site PM Peak	Peak Hour Factor	0.80
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Renaissance Phase 3		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		1	0	1	0	0	2	1	0	1	2	0
Configuration						L		R			T	R		L	T	
Volume (veh/h)						1		25			666	2		3	209	
Percent Heavy Vehicles						1		1						1		
Proportion Time Blocked																
Right Turn Channelized	No				Yes				Yes				No			
Median Type	Left + Thru															
Median Storage	1															

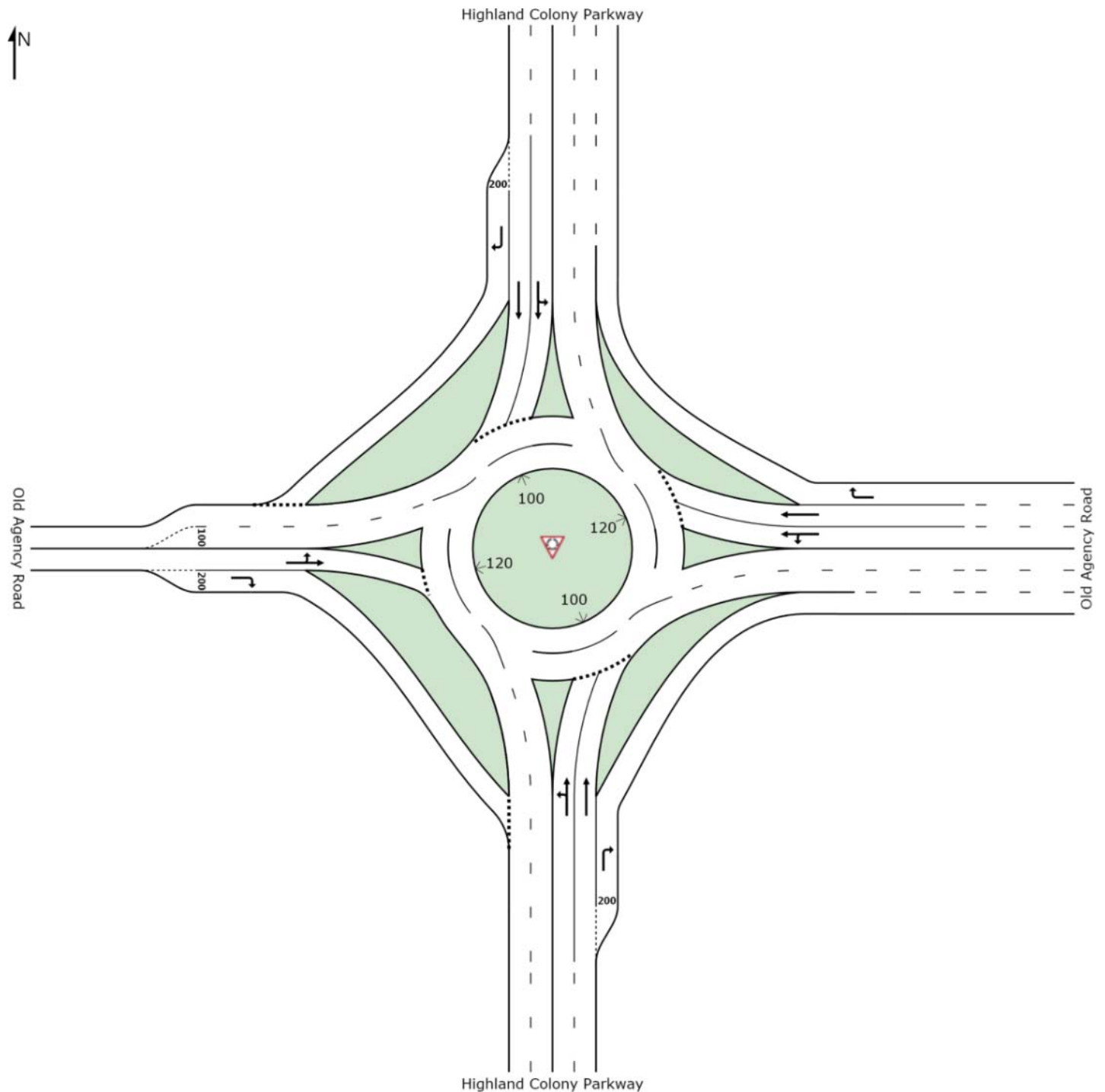
Delay, Queue Length, and Level of Service

Flow Rate (veh/h)						1		31							4		
Capacity						332		588							803		
v/c Ratio						0.00		0.05							0.00		
95% Queue Length						0.0		0.2							0.0		
Control Delay (s/veh)						15.9		11.5							9.5		
Level of Service (LOS)						C		B							A		
Approach Delay (s/veh)					11.6								0.1				
Approach LOS					B								A				

SITE LAYOUT

 **Site: 2017 Total AM**

Highland Colony Parkway at Old Agency Road
Roundabout



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Organisation: NEEL-SCHAFFER | Created: Wednesday, October 07, 2015 4:51:21 PM

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INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

 **Site: 2017 Total AM**

Highland Colony Parkway at Old Agency Road
Roundabout

Volume Display Method: Total and %

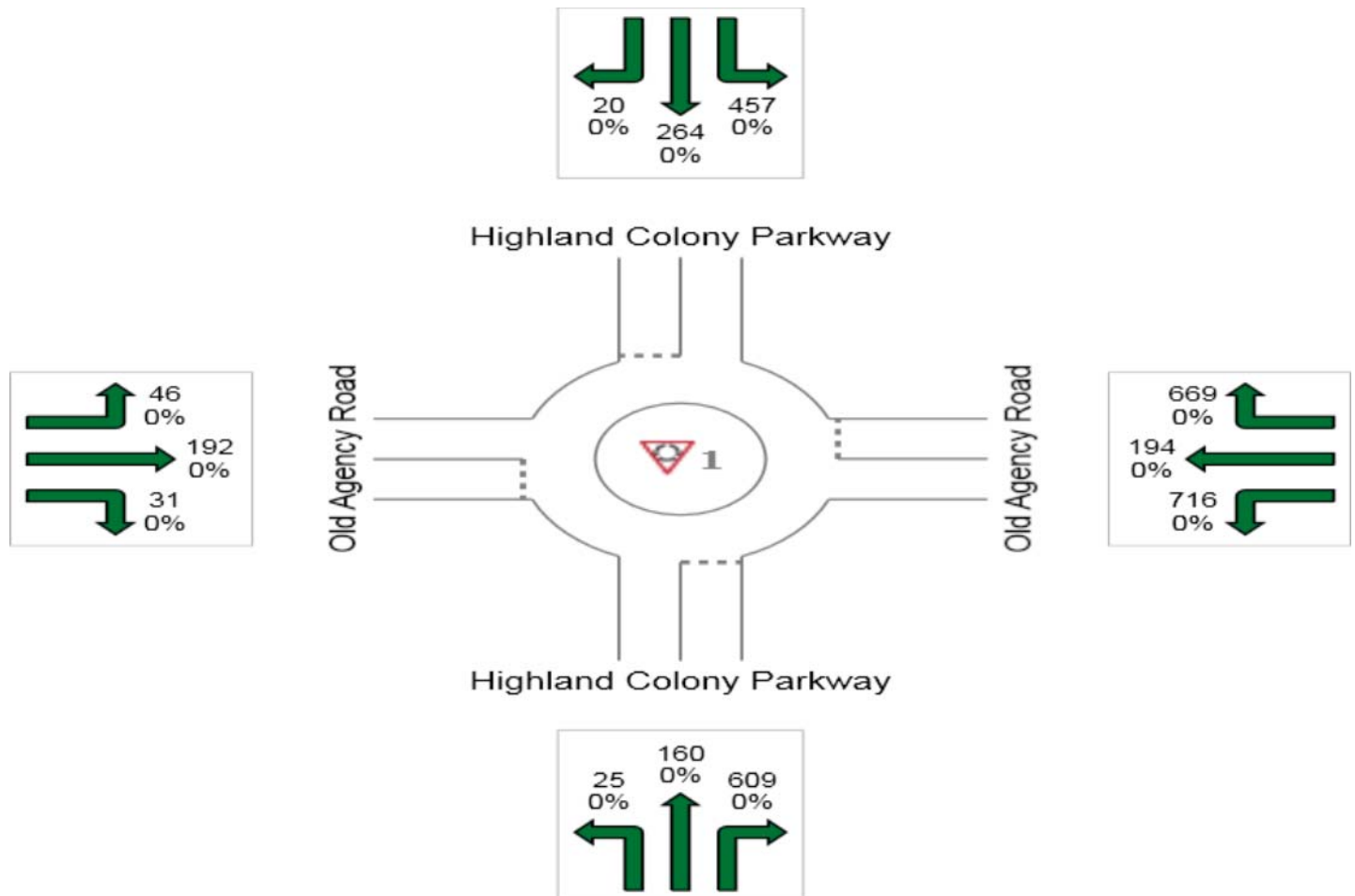
Volumes are shown for Movement Class(es): All Classes and Heavy Vehicles

Total Intersection Volumes (veh)

All Movement Classes: 3383

Light Vehicles (LV): 3383

Heavy Vehicles (HV): 0



LEVEL OF SERVICE

 **Site: 2017 Total AM**

Highland Colony Parkway at Old Agency Road
Roundabout

All Movement Classes

	South	East	North	West	Intersection
LOS	A	A	A	B	A

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option is selected.

MOVEMENT SUMMARY

 **Site: 2017 Total AM**

Highland Colony Parkway at Old Agency Road
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Highland Colony Parkway											
3	L2	27	0.0	0.130	3.9	LOS A	0.8	18.8	0.72	0.61	35.1
8	T1	174	0.0	0.130	3.6	LOS A	0.8	20.3	0.72	0.59	35.4
18	R2	662	0.0	0.395	0.0	LOS A	0.0	0.0	0.00	0.00	37.2
Approach		863	0.0	0.395	0.9	LOS A	0.8	20.3	0.17	0.14	36.7
East: Old Agency Road											
1	L2	778	0.0	0.586	1.2	LOS A	4.3	106.4	0.55	0.40	34.0
6	T1	211	0.0	0.239	1.4	LOS A	1.1	28.0	0.44	0.29	36.8
16	R2	727	0.0	0.434	0.0	LOS A	0.0	0.0	0.00	0.00	37.5
Approach		1716	0.0	0.586	0.7	LOS A	4.3	106.4	0.30	0.22	35.7
North: Highland Colony Parkway											
7	L2	497	0.0	0.587	5.9	LOS A	4.6	116.0	0.84	0.93	32.5
4	T1	287	0.0	0.442	5.7	LOS A	2.6	65.9	0.78	0.82	35.3
14	R2	22	0.0	0.017	0.6	LOS A	0.1	1.8	0.32	0.16	36.1
Approach		805	0.0	0.587	5.7	LOS A	4.6	116.0	0.81	0.87	33.5
West: Old Agency Road											
5	L2	50	0.0	0.589	16.2	LOS C	4.5	111.5	0.93	1.08	30.2
2	T1	209	0.0	0.589	16.2	LOS C	4.5	111.5	0.93	1.08	29.9
12	R2	34	0.0	0.052	3.5	LOS A	0.2	6.0	0.67	0.59	35.4
Approach		292	0.0	0.589	14.7	LOS B	4.5	111.5	0.90	1.02	30.5
All Vehicles		3677	0.0	0.589	2.9	LOS A	4.6	116.0	0.43	0.41	34.9

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option is selected.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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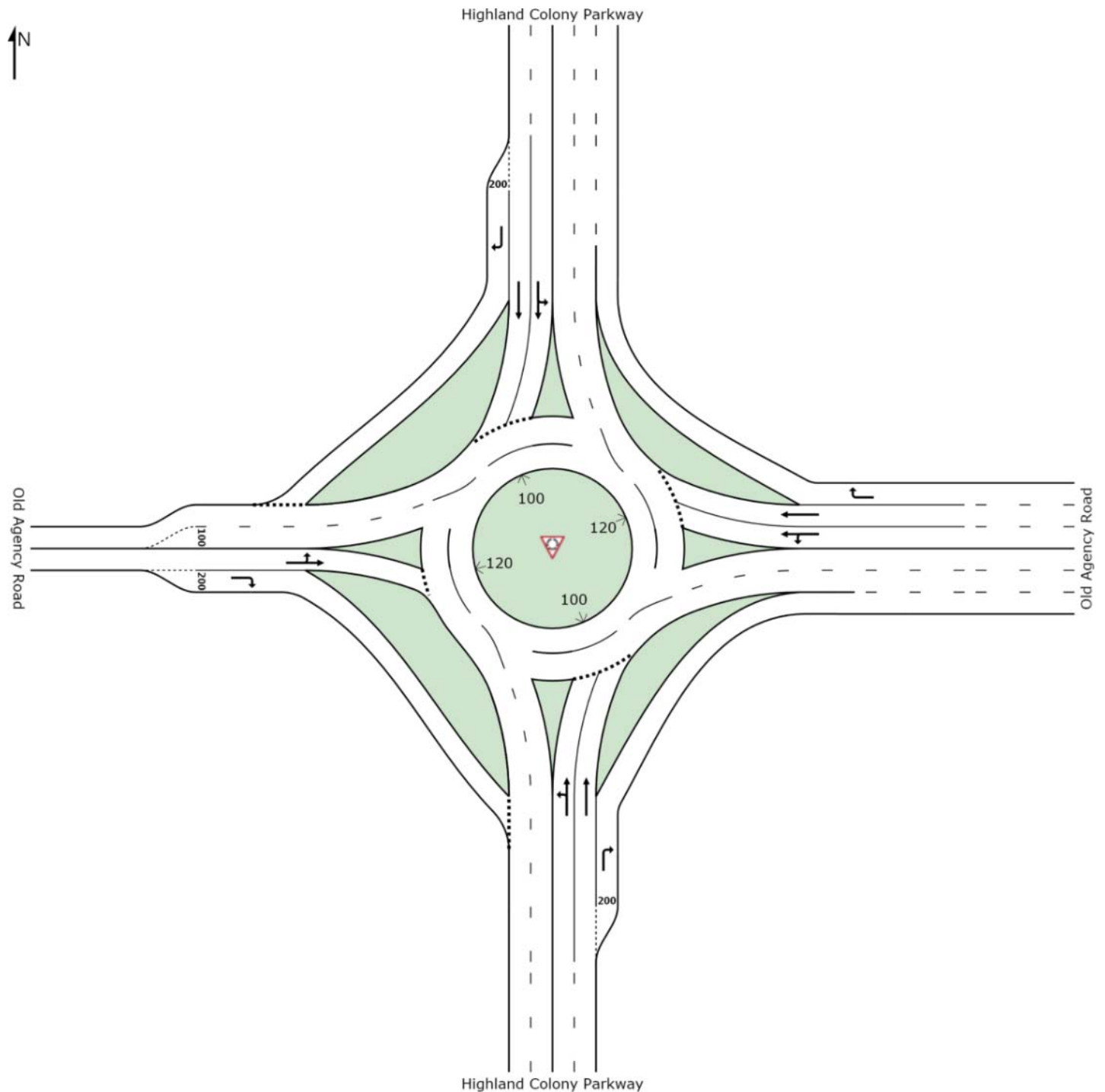
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SITE LAYOUT

 **Site: 2017 Total PM**

Highland Colony Parkway at Old Agency Road
Roundabout



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Project: S:\projects\12923-Costco\SIDRA October 2015\HCP - OAR Revised 2015-10-07.sip6

INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

 **Site: 2017 Total PM**

Highland Colony Parkway at Old Agency Road
Roundabout

Volume Display Method: Total and %

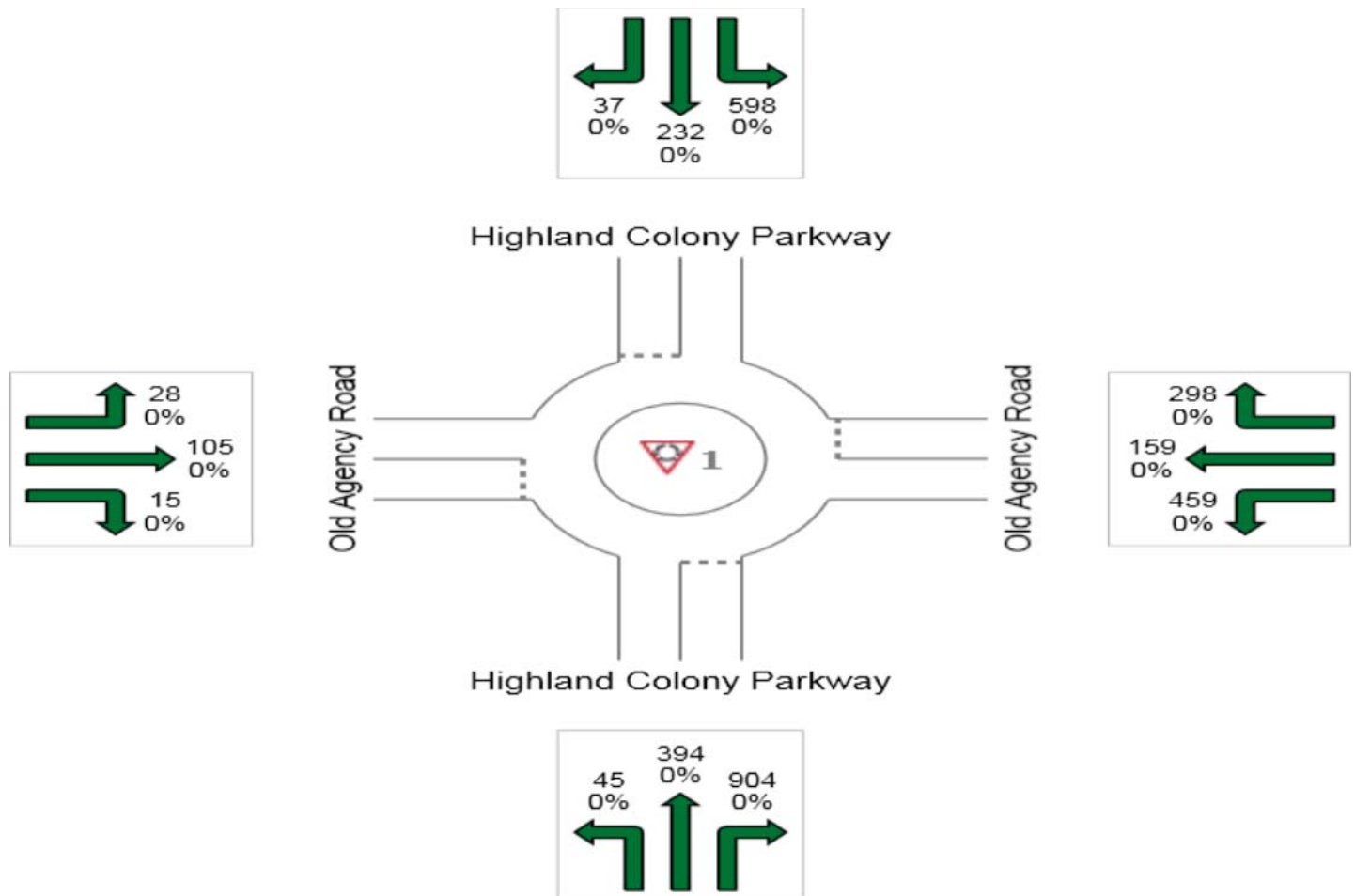
Volumes are shown for Movement Class(es): All Classes and Heavy Vehicles

Total Intersection Volumes (veh)

All Movement Classes: 3274

Light Vehicles (LV): 3274

Heavy Vehicles (HV): 0



LEVEL OF SERVICE

 **Site: 2017 Total PM**

Highland Colony Parkway at Old Agency Road
Roundabout

All Movement Classes

	South	East	North	West	Intersection
LOS	A	A	A	A	A

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

SIDRA Standard Delay Model is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option is selected.

MOVEMENT SUMMARY

 **Site: 2017 Total PM**

Highland Colony Parkway at Old Agency Road
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Highland Colony Parkway											
3	L2	49	0.0	0.332	4.8	LOS A	2.2	54.7	0.82	0.76	34.9
8	T1	428	0.0	0.332	4.4	LOS A	2.4	59.4	0.83	0.72	35.0
18	R2	983	0.0	0.587	0.0	LOS A	0.0	0.0	0.00	0.00	37.1
Approach		1460	0.0	0.587	1.6	LOS A	2.4	59.4	0.27	0.24	36.4
East: Old Agency Road											
1	L2	499	0.0	0.435	1.5	LOS A	2.5	62.9	0.61	0.51	33.9
6	T1	173	0.0	0.214	2.1	LOS A	1.0	24.2	0.56	0.39	36.3
16	R2	324	0.0	0.193	0.0	LOS A	0.0	0.0	0.00	0.00	37.6
Approach		996	0.0	0.435	1.1	LOS A	2.5	62.9	0.40	0.32	35.4
North: Highland Colony Parkway											
7	L2	650	0.0	0.653	4.6	LOS A	5.6	139.9	0.80	0.87	33.0
4	T1	252	0.0	0.354	3.5	LOS A	1.8	44.4	0.67	0.57	35.9
14	R2	40	0.0	0.031	0.6	LOS A	0.1	3.2	0.31	0.16	36.1
Approach		942	0.0	0.653	4.2	LOS A	5.6	139.9	0.75	0.76	33.9
West: Old Agency Road											
5	L2	30	0.0	0.298	7.2	LOS A	1.6	41.2	0.84	0.84	34.1
2	T1	114	0.0	0.298	7.2	LOS A	1.6	41.2	0.84	0.84	33.8
12	R2	16	0.0	0.020	2.2	LOS A	0.1	2.1	0.56	0.42	35.9
Approach		161	0.0	0.298	6.7	LOS A	1.6	41.2	0.82	0.80	34.1
All Vehicles		3559	0.0	0.653	2.3	LOS A	5.6	139.9	0.46	0.42	35.3

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option is selected.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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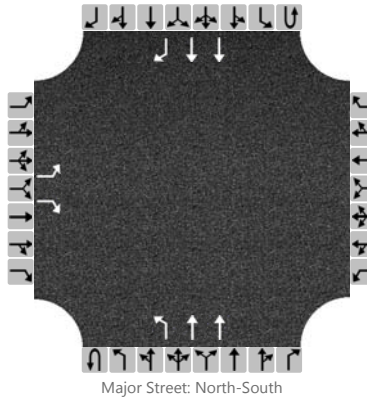
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HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	J Kiser	Intersection	HCP - Old Agency Parkway
Agency/Co.	Neel - Schaffer, Inc	Jurisdiction	Ridgeland
Date Performed	8/26/2015	East/West Street	Old Agency Parkway
Analysis Year	2017	North/South Street	Highland Colony Parkway
Time Analyzed	Total Traffic AM	Peak Hour Factor	0.90
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Renaissance Phase 3		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		1	0	1		0	0	0	0	1	2	0	0	0	2	1
Configuration		L		R						L	T				T	R
Volume (veh/h)		342		52						27	529				963	108
Percent Heavy Vehicles		1		1						1						
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Left + Thru															
Median Storage	1															

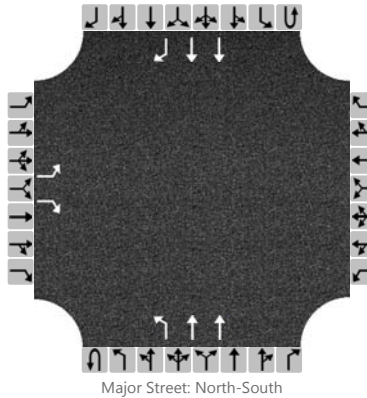
Delay, Queue Length, and Level of Service

Flow Rate (veh/h)		380		58						30						
Capacity		221		546						588						
v/c Ratio		1.72		0.11						0.05						
95% Queue Length		25.4		0.4						0.2						
Control Delay (s/veh)		379.1		12.4						11.4						
Level of Service (LOS)		F		B						B						
Approach Delay (s/veh)	330.5								0.6							
Approach LOS	F								A							

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	J Kiser	Intersection	HCP - Old Agency Parkway
Agency/Co.	Neel - Schaffer, Inc	Jurisdiction	Ridgeland
Date Performed	8/26/2015	East/West Street	Old Agency Parkway
Analysis Year	2017	North/South Street	Highland Colony Parkway
Time Analyzed	Total Traffic PM	Peak Hour Factor	0.90
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Renaissance Phase 3		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		1	0	1		0	0	0	0	1	2	0	0	0	2	1
Configuration		L		R						L	T				T	R
Volume (veh/h)		265		55						64	1186				597	213
Percent Heavy Vehicles		1		1						1						
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Left + Thru															
Median Storage	1															

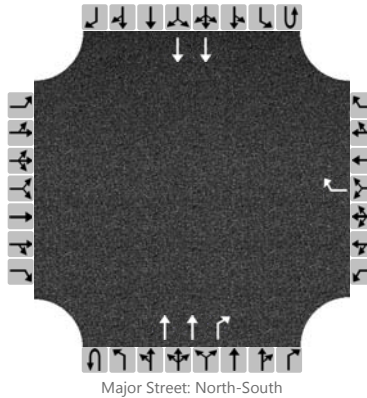
Delay, Queue Length, and Level of Service

Flow Rate (veh/h)		294		61						71						
Capacity		221		711						757						
v/c Ratio		1.33		0.09						0.09						
95% Queue Length		16.1		0.3						0.3						
Control Delay (s/veh)		220.4		10.5						10.2						
Level of Service (LOS)		F		B						B						
Approach Delay (s/veh)	184.3								0.5							
Approach LOS	F								A							

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	J Kiser	Intersection	HCP - Driveway 1
Agency/Co.	Neel - Schaffer, Inc	Jurisdiction	Ridgeland
Date Performed	8/26/2015	East/West Street	Driveway 1
Analysis Year	2017	North/South Street	Highland Colony Parkway
Time Analyzed	Total Traffic AM	Peak Hour Factor	0.90
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Renaissance Phase 3		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	1	0	0	2	1	0	0	2	0
Configuration								R			T	R			T	
Volume (veh/h)								28			537	6			996	
Percent Heavy Vehicles								0								
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

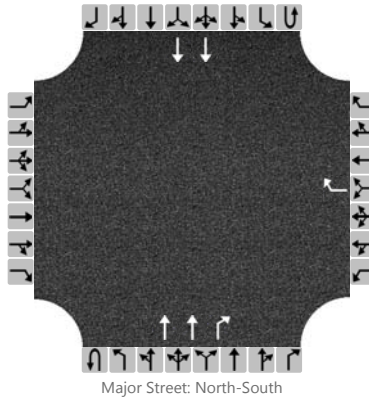
Delay, Queue Length, and Level of Service

Flow Rate (veh/h)								31								
Capacity								746								
v/c Ratio								0.04								
95% Queue Length								0.1								
Control Delay (s/veh)								10.0								
Level of Service (LOS)								B								
Approach Delay (s/veh)					10.0											
Approach LOS					B											

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	J Kiser	Intersection	HCP - Driveway 1
Agency/Co.	Neel - Schaffer, Inc	Jurisdiction	Ridgeland
Date Performed	8/26/2015	East/West Street	Driveway 1
Analysis Year	2017	North/South Street	Highland Colony Parkway
Time Analyzed	Total Traffic PM	Peak Hour Factor	0.90
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Renaissance Phase 3		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	1	0	0	2	1	0	0	2	0
Configuration								R			T	R			T	
Volume (veh/h)								108			1179	15			637	
Percent Heavy Vehicles								0								
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

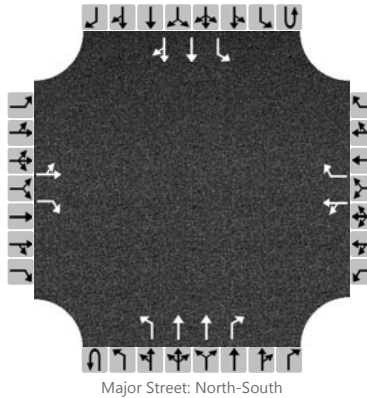
Delay, Queue Length, and Level of Service

Flow Rate (veh/h)								120								
Capacity								470								
v/c Ratio								0.26								
95% Queue Length								1.0								
Control Delay (s/veh)								15.3								
Level of Service (LOS)								C								
Approach Delay (s/veh)					15.3											
Approach LOS					C											

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	J Kiser	Intersection	HCP - Trace Colony Park Drive
Agency/Co.	Neel - Schaffer, Inc	Jurisdiction	Ridgeland
Date Performed	8/26/2015	East/West Street	Trace Colony Park Drive
Analysis Year	2017	North/South Street	Highland Colony Parkway
Time Analyzed	Total Traffic AM	Peak Hour Factor	0.90
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Renaissance Phase 3		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	1		0	1	1	0	1	2	1	0	1	2	0
Configuration		LT		R		LT		R		L	T	R		L	T	TR
Volume (veh/h)		17	3	1		4	2	44		11	445	15		106	835	55
Percent Heavy Vehicles		1	1	1		1	1	1		1				1		
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Left + Thru															
Median Storage	1															

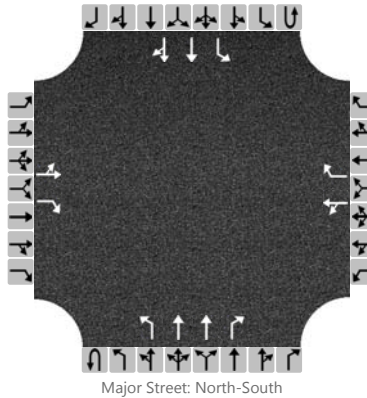
Delay, Queue Length, and Level of Service

Flow Rate (veh/h)		22		1		6		49		12				118		
Capacity		148		576		207		794		701				1058		
v/c Ratio		0.15		0.00		0.03		0.06		0.02				0.11		
95% Queue Length		0.5		0.0		0.1		0.2		0.1				0.4		
Control Delay (s/veh)		33.5		11.3		22.9		9.8		10.2				8.8		
Level of Service (LOS)		D		B		C		A		B				A		
Approach Delay (s/veh)	32.4				11.1				0.2				0.9			
Approach LOS	D				B				A				A			

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	J Kiser	Intersection	HCP - Trace Colony Park Drive
Agency/Co.	Neel - Schaffer, Inc	Jurisdiction	Ridgeland
Date Performed	8/26/2015	East/West Street	Trace Colony Park Drive
Analysis Year	2017	North/South Street	Highland Colony Parkway
Time Analyzed	Total Traffic PM	Peak Hour Factor	0.90
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Renaissance Phase 3		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	1		0	1	1	0	1	2	1	0	1	2	0
Configuration		LT		R		LT		R		L	T	R		L	T	TR
Volume (veh/h)		84	8	8		17	8	166		2	960	41		247	371	19
Percent Heavy Vehicles		1	1	1		1	1	1		1				1		
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Left + Thru															
Median Storage	1															

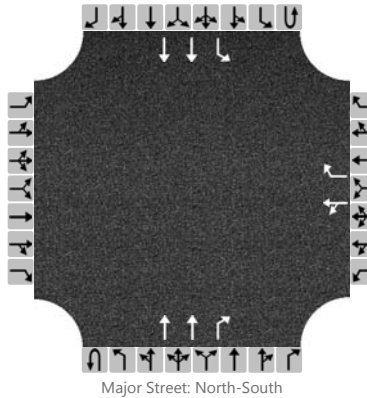
Delay, Queue Length, and Level of Service

Flow Rate (veh/h)		102		9		28		184		2				274		
Capacity		37		826		110		547		1130				629		
v/c Ratio		2.76		0.01		0.25		0.34		0.00				0.44		
95% Queue Length		11.5		0.0		0.9		1.5		0.0				2.2		
Control Delay (s/veh)		1025.0		9.4		48.5		14.9		8.2				15.1		
Level of Service (LOS)		F		A		E		B		A				C		
Approach Delay (s/veh)	770.5				19.1				0.0				5.8			
Approach LOS	F				C				A				A			

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	J Kiser	Intersection	HCP - Driveway 3
Agency/Co.	Neel - Schaffer, Inc	Jurisdiction	Ridgeland
Date Performed	8/26/2015	East/West Street	Driveway 3
Analysis Year	2017	North/South Street	Highland Colony Parkway
Time Analyzed	Total Traffic AM	Peak Hour Factor	0.90
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	12923 - Renaissance Phase 3		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	1	0	0	2	1	0	1	2	0
Configuration						LT		R			T	R		L	T	
Volume (veh/h)						22	0	77			417	12		123	739	
Percent Heavy Vehicles						0	0	0						0		
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

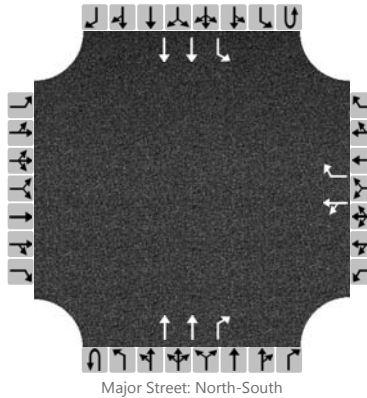
Delay, Queue Length, and Level of Service

Flow Rate (veh/h)						24		86							137		
Capacity						171		812							1097		
v/c Ratio						0.14		0.11							0.12		
95% Queue Length						0.5		0.4							0.4		
Control Delay (s/veh)						29.5		10.0							8.8		
Level of Service (LOS)						D		A							A		
Approach Delay (s/veh)					14.2								1.3				
Approach LOS					B								A				

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	J Kiser	Intersection	HCP - Driveway 3
Agency/Co.	Neel - Schaffer, Inc	Jurisdiction	Ridgeland
Date Performed	8/26/2015	East/West Street	Driveway 3
Analysis Year	2017	North/South Street	Highland Colony Parkway
Time Analyzed	Total Traffic PM	Peak Hour Factor	0.90
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	12923 - Renaissance Phase 3		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	1	0	0	2	1	0	1	2	0
Configuration						LT		R			T	R		L	T	
Volume (veh/h)						83	0	291			820	33		328	166	
Percent Heavy Vehicles						0	0	0						0		
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

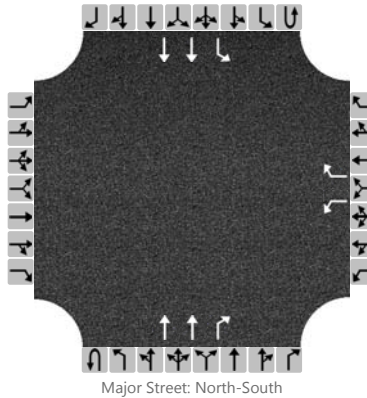
Delay, Queue Length, and Level of Service

Flow Rate (veh/h)						92		323						364		
Capacity						41		609						733		
v/c Ratio						2.26		0.53						0.50		
95% Queue Length						9.9		3.1						2.8		
Control Delay (s/veh)						790.4		17.4						14.7		
Level of Service (LOS)						F		C						B		
Approach Delay (s/veh)					188.8								9.7			
Approach LOS					F								A			

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	J Kiser	Intersection	HCP - Driveway 4
Agency/Co.	Neel - Schaffer, Inc	Jurisdiction	Ridgeland
Date Performed	8/26/2015	East/West Street	Driveway 4
Analysis Year	2017	North/South Street	Highland Colony Parkway
Time Analyzed	Total Traffic AM	Peak Hour Factor	0.90
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Renaissance Phase 3		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		1	0	1	0	0	2	1	0	1	2	0
Configuration						L		R			T	R		L	T	
Volume (veh/h)						7		35			403	13		43	742	
Percent Heavy Vehicles						0		0						0		
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Left + Thru															
Median Storage	1															

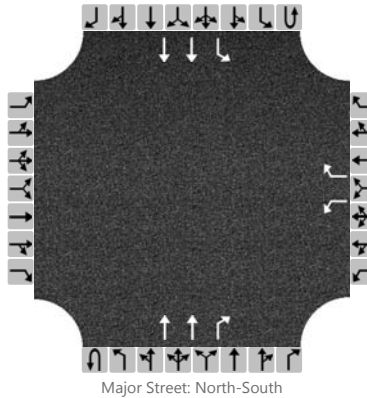
Delay, Queue Length, and Level of Service

Flow Rate (veh/h)						8		39						48		
Capacity						367		821						1110		
v/c Ratio						0.02		0.05						0.04		
95% Queue Length						0.1		0.1						0.1		
Control Delay (s/veh)						15.0		9.6						8.4		
Level of Service (LOS)						C		A						A		
Approach Delay (s/veh)					10.5								0.5			
Approach LOS					B								A			

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	J Kiser	Intersection	HCP - Driveway 4
Agency/Co.	Neel - Schaffer, Inc	Jurisdiction	Ridgeland
Date Performed	8/26/2015	East/West Street	Driveway 4
Analysis Year	2017	North/South Street	Highland Colony Parkway
Time Analyzed	Total Traffic PM	Peak Hour Factor	0.90
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Renaissance Phase 3		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		1	0	1	0	0	2	1	0	1	2	0
Configuration						L		R			T	R		L	T	
Volume (veh/h)						25		133			762	33		115	240	
Percent Heavy Vehicles						0		0						0		
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Left + Thru															
Median Storage	1															

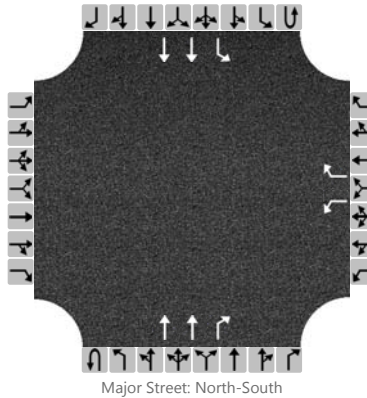
Delay, Queue Length, and Level of Service

Flow Rate (veh/h)						28		148							128		
Capacity						242		634							774		
v/c Ratio						0.12		0.23							0.17		
95% Queue Length						0.4		0.9							0.6		
Control Delay (s/veh)						21.8		12.4							10.6		
Level of Service (LOS)						C		B							B		
Approach Delay (s/veh)					13.9								3.4				
Approach LOS					B								A				

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	Kiser	Intersection	New Pointe Dr/HCP
Agency/Co.	Neel-Schaffer	Jurisdiction	Ridgeland
Date Performed	8/26/2015	East/West Street	New Pointe Drive
Analysis Year	2017	North/South Street	Highland Colony Parkway
Time Analyzed	Total Traffic AM Peak	Peak Hour Factor	0.90
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Renaissance Phase 3		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		1	0	1	0	0	2	1	0	1	2	0
Configuration						L		R			T	R		L	T	
Volume (veh/h)						2		2			419	1		35	719	
Percent Heavy Vehicles						1		1						1		
Proportion Time Blocked																
Right Turn Channelized	No				Yes				Yes				No			
Median Type	Left + Thru															
Median Storage	1															

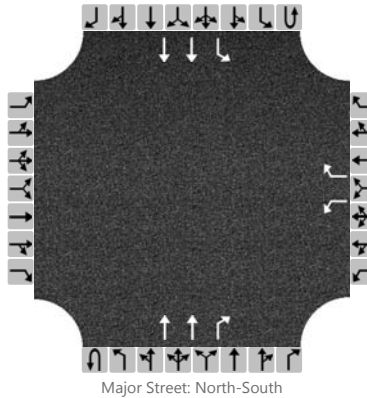
Delay, Queue Length, and Level of Service

Flow Rate (veh/h)						2		2						39		
Capacity						374		772						1099		
v/c Ratio						0.01		0.00						0.04		
95% Queue Length						0.0		0.0						0.1		
Control Delay (s/veh)						14.7		9.7						8.4		
Level of Service (LOS)						B		A						A		
Approach Delay (s/veh)					12.2								0.4			
Approach LOS					B								A			

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	Kiser	Intersection	New Pointe Dr/HCP
Agency/Co.	Neel-Schaffer	Jurisdiction	Ridgeland
Date Performed	8/26/2015	East/West Street	New Pointe Drive
Analysis Year	2017	North/South Street	Highland Colony Parkway
Time Analyzed	Total Traffic PM Peak	Peak Hour Factor	0.90
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Renaissance Phase 3		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		1	0	1	0	0	2	1	0	1	2	0
Configuration						L		R			T	R		L	T	
Volume (veh/h)						1		25			737	2		3	282	
Percent Heavy Vehicles						1		1						1		
Proportion Time Blocked																
Right Turn Channelized	No				Yes				Yes				No			
Median Type	Left + Thru															
Median Storage	1															

Delay, Queue Length, and Level of Service

Flow Rate (veh/h)						1		28							3		
Capacity						334		594							812		
v/c Ratio						0.00		0.05							0.00		
95% Queue Length						0.0		0.1							0.0		
Control Delay (s/veh)						15.8		11.4							9.5		
Level of Service (LOS)						C		B							A		
Approach Delay (s/veh)					11.5								0.1				
Approach LOS					B								A				

Lanes, Volumes, Timings
100: Highland Colony & Old Agency Pkwy

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	 			 	 	
Traffic Volume (vph)	342	52	27	529	963	108
Future Volume (vph)	342	52	27	529	963	108
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200	0	200			120
Storage Lanes	1	0	1			1
Taper Length (ft)	25		25			
Lane Util. Factor	0.97	0.95	1.00	0.95	0.95	1.00
Frt	0.980					0.850
Flt Protected	0.958		0.950			
Satd. Flow (prot)	3393	0	1770	3539	3539	1583
Flt Permitted	0.958		0.195			
Satd. Flow (perm)	3393	0	363	3539	3539	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	21					86
Link Speed (mph)	40			40	40	
Link Distance (ft)	647			489	480	
Travel Time (s)	11.0			8.3	8.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	380	58	30	588	1070	120
Shared Lane Traffic (%)						
Lane Group Flow (vph)	438	0	30	588	1070	120
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	24			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	2	2	1
Detector Template	Left		Left	Thru	Thru	Right
Leading Detector (ft)	20		20	100	100	20
Trailing Detector (ft)	0		0	0	0	0
Detector 1 Position(ft)	0		0	0	0	0
Detector 1 Size(ft)	20		20	6	6	20
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot		pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases			2			6

Baseline

Synchro 9 Report
Page 1

Lanes, Volumes, Timings
100: Highland Colony & Old Agency Pkwy

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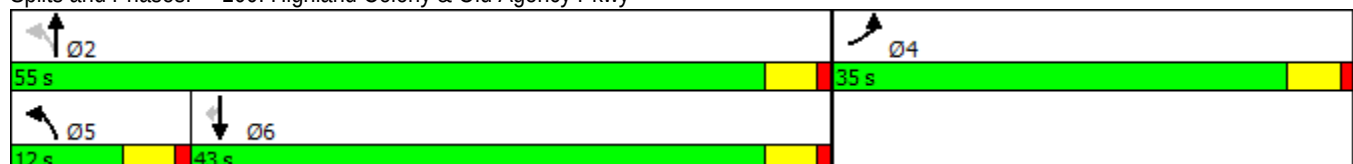


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector Phase	4		5	2	6	6
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0
Minimum Split (s)	22.5		9.5	22.5	22.5	22.5
Total Split (s)	35.0		12.0	55.0	43.0	43.0
Total Split (%)	38.9%		13.3%	61.1%	47.8%	47.8%
Maximum Green (s)	30.5		7.5	50.5	38.5	38.5
Yellow Time (s)	3.5		3.5	3.5	3.5	3.5
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5		4.5	4.5	4.5	4.5
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		None	Max	Max	Max
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Dont Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effect Green (s)	14.2		50.6	50.6	46.4	46.4
Actuated g/C Ratio	0.19		0.69	0.69	0.63	0.63
v/c Ratio	0.65		0.08	0.24	0.48	0.12
Control Delay	31.0		4.9	5.0	9.8	3.8
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	31.0		4.9	5.0	9.8	3.8
LOS	C		A	A	A	A
Approach Delay	31.0			5.0	9.2	
Approach LOS	C			A	A	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 73.8
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.65
Intersection Signal Delay: 12.3
Intersection LOS: B
Intersection Capacity Utilization 45.5%
ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 100: Highland Colony & Old Agency Pkwy



Lanes, Volumes, Timings
101: Highland Colony & Site Drive #3

2017-total-AM.syn
10/5/2015

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	22	0	77	0	417	12	123	739	0
Future Volume (vph)	0	0	0	22	0	77	0	417	12	123	739	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		150	0		100	200		0
Storage Lanes	0		0	2		1	0		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt						0.850			0.850			
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	0	0	3433	0	1583	0	3539	1583	1770	3539	0
Flt Permitted				0.950						0.447		
Satd. Flow (perm)	0	0	0	3433	0	1583	0	3539	1583	833	3539	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						86			73			
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		364			406			404			489	
Travel Time (s)		8.3			9.2			6.9			8.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	24	0	86	0	463	13	137	821	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	24	0	86	0	463	13	137	821	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors				1		1		2	1	1		2
Detector Template				Left		Right		Thru	Right	Left		Thru
Leading Detector (ft)				20		20		100	20	20		100
Trailing Detector (ft)				0		0		0	0	0		0
Detector 1 Position(ft)				0		0		0	0	0		0
Detector 1 Size(ft)				20		20		6	20	20		6
Detector 1 Type				Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)				0.0		0.0		0.0	0.0	0.0		0.0
Detector 1 Queue (s)				0.0		0.0		0.0	0.0	0.0		0.0
Detector 1 Delay (s)				0.0		0.0		0.0	0.0	0.0		0.0
Detector 2 Position(ft)								94				94
Detector 2 Size(ft)								6				6
Detector 2 Type								Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)								0.0				0.0
Turn Type				Prot		Prot		NA	Perm	pm+pt		NA
Protected Phases				3		3		2		1		6
Permitted Phases									2	6		

Baseline

Synchro 9 Report
Page 3

Lanes, Volumes, Timings
101: Highland Colony & Site Drive #3

2017-total-AM.syn
10/5/2015

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase				3		3		2	2	1	6	
Switch Phase												
Minimum Initial (s)				5.0		5.0		5.0	5.0	5.0	5.0	
Minimum Split (s)				9.5		9.5		22.5	22.5	9.5	22.5	
Total Split (s)				25.0		25.0		48.0	48.0	17.0	65.0	
Total Split (%)				27.8%		27.8%		53.3%	53.3%	18.9%	72.2%	
Maximum Green (s)				20.5		20.5		43.5	43.5	12.5	60.5	
Yellow Time (s)				3.5		3.5		3.5	3.5	3.5	3.5	
All-Red Time (s)				1.0		1.0		1.0	1.0	1.0	1.0	
Lost Time Adjust (s)				0.0		0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)				4.5		4.5		4.5	4.5	4.5	4.5	
Lead/Lag								Lag	Lag	Lead		
Lead-Lag Optimize?								Yes	Yes	Yes		
Vehicle Extension (s)				3.0		3.0		3.0	3.0	3.0	3.0	
Recall Mode				None		None		Max	Max	None	Max	
Walk Time (s)								7.0	7.0		7.0	
Flash Dont Walk (s)								11.0	11.0		11.0	
Pedestrian Calls (#/hr)								0	0		0	
Act Effect Green (s)				6.7		6.7		52.2	52.2	63.5	64.3	
Actuated g/C Ratio				0.09		0.09		0.68	0.68	0.82	0.83	
v/c Ratio				0.08		0.40		0.19	0.01	0.18	0.28	
Control Delay				32.2		14.1		5.7	0.0	2.4	2.2	
Queue Delay				0.0		0.0		0.0	0.0	0.0	0.0	
Total Delay				32.2		14.1		5.7	0.0	2.4	2.2	
LOS				C		B		A	A	A	A	
Approach Delay								5.5			2.2	
Approach LOS								A			A	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 77.2
Natural Cycle: 45
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.40
Intersection Signal Delay: 4.4
Intersection Capacity Utilization 32.5%
Analysis Period (min) 15

Intersection LOS: A

ICU Level of Service A

Splits and Phases: 101: Highland Colony & Site Drive #3



Lanes, Volumes, Timings
100: Highland Colony & Old Agency Pkwy

2017-total-PM.syn

10/5/2015

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	🔴🔴		🔴	🔴🔴	🔴🔴	🔴
Traffic Volume (vph)	265	55	64	1186	597	213
Future Volume (vph)	265	55	64	1186	597	213
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200	0	200			120
Storage Lanes	1	0	1			1
Taper Length (ft)	25		25			
Lane Util. Factor	0.97	0.95	1.00	0.95	0.95	1.00
Frt	0.974					0.850
Flt Protected	0.960		0.950			
Satd. Flow (prot)	3379	0	1770	3539	3539	1583
Flt Permitted	0.960		0.336			
Satd. Flow (perm)	3379	0	626	3539	3539	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	30					237
Link Speed (mph)	40			40	40	
Link Distance (ft)	647			489	480	
Travel Time (s)	11.0			8.3	8.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	294	61	71	1318	663	237
Shared Lane Traffic (%)						
Lane Group Flow (vph)	355	0	71	1318	663	237
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	24			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	2	2	1
Detector Template	Left		Left	Thru	Thru	Right
Leading Detector (ft)	20		20	100	100	20
Trailing Detector (ft)	0		0	0	0	0
Detector 1 Position(ft)	0		0	0	0	0
Detector 1 Size(ft)	20		20	6	6	20
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot		pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases			2			6

Baseline

Synchro 9 Report
Page 1

Lanes, Volumes, Timings
100: Highland Colony & Old Agency Pkwy

2017-total-PM.syn
10/5/2015

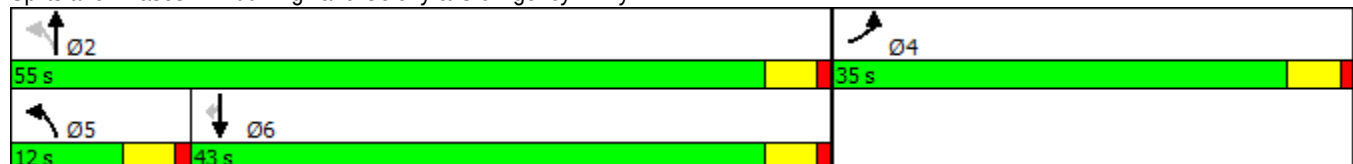


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector Phase	4		5	2	6	6
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0
Minimum Split (s)	22.5		9.5	22.5	22.5	22.5
Total Split (s)	35.0		12.0	55.0	43.0	43.0
Total Split (%)	38.9%		13.3%	61.1%	47.8%	47.8%
Maximum Green (s)	30.5		7.5	50.5	38.5	38.5
Yellow Time (s)	3.5		3.5	3.5	3.5	3.5
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5		4.5	4.5	4.5	4.5
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		None	Max	Max	Max
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Dont Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effect Green (s)	12.1		50.6	50.6	41.8	41.8
Actuated g/C Ratio	0.17		0.70	0.70	0.58	0.58
v/c Ratio	0.60		0.13	0.53	0.32	0.23
Control Delay	29.4		4.3	6.2	9.4	2.1
Queue Delay	0.0		0.0	0.3	0.0	0.0
Total Delay	29.4		4.3	6.5	9.4	2.1
LOS	C		A	A	A	A
Approach Delay	29.4			6.4	7.4	
Approach LOS	C			A	A	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 71.8
Natural Cycle: 55
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.60
Intersection Signal Delay: 9.9
Intersection LOS: A
Intersection Capacity Utilization 49.6%
ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 100: Highland Colony & Old Agency Pkwy



Lanes, Volumes, Timings
101: Highland Colony & Site Drive #3

2017-total-PM.syn

10/5/2015

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	83	0	291	0	820	33	328	166	0
Future Volume (vph)	0	0	0	83	0	291	0	820	33	328	166	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		150	0		100	200		0
Storage Lanes	0		0	2		1	0		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt						0.850			0.850			
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	0	0	3433	0	1583	0	3539	1583	1770	3539	0
Flt Permitted				0.950						0.237		
Satd. Flow (perm)	0	0	0	3433	0	1583	0	3539	1583	441	3539	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						313			73			
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		364			406			404			489	
Travel Time (s)		8.3			9.2			6.9			8.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	92	0	323	0	911	37	364	184	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	92	0	323	0	911	37	364	184	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors				1		1		2	1	1		2
Detector Template				Left		Right		Thru	Right	Left		Thru
Leading Detector (ft)				20		20		100	20	20		100
Trailing Detector (ft)				0		0		0	0	0		0
Detector 1 Position(ft)				0		0		0	0	0		0
Detector 1 Size(ft)				20		20		6	20	20		6
Detector 1 Type				Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)				0.0		0.0		0.0	0.0	0.0		0.0
Detector 1 Queue (s)				0.0		0.0		0.0	0.0	0.0		0.0
Detector 1 Delay (s)				0.0		0.0		0.0	0.0	0.0		0.0
Detector 2 Position(ft)								94				94
Detector 2 Size(ft)								6				6
Detector 2 Type								Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)								0.0				0.0
Turn Type				Prot		Prot		NA	Perm	pm+pt		NA
Protected Phases				3		3		2		1		6
Permitted Phases									2	6		

Baseline

Synchro 9 Report
Page 3

Lanes, Volumes, Timings
101: Highland Colony & Site Drive #3

2017-total-PM.syn
10/5/2015

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase				3		3		2	2	1	6	
Switch Phase												
Minimum Initial (s)				5.0		5.0		5.0	5.0	5.0	5.0	
Minimum Split (s)				9.5		9.5		22.5	22.5	9.5	22.5	
Total Split (s)				25.0		25.0		48.0	48.0	17.0	65.0	
Total Split (%)				27.8%		27.8%		53.3%	53.3%	18.9%	72.2%	
Maximum Green (s)				20.5		20.5		43.5	43.5	12.5	60.5	
Yellow Time (s)				3.5		3.5		3.5	3.5	3.5	3.5	
All-Red Time (s)				1.0		1.0		1.0	1.0	1.0	1.0	
Lost Time Adjust (s)				0.0		0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)				4.5		4.5		4.5	4.5	4.5	4.5	
Lead/Lag								Lag	Lag	Lead		
Lead-Lag Optimize?								Yes	Yes	Yes		
Vehicle Extension (s)				3.0		3.0		3.0	3.0	3.0	3.0	
Recall Mode				None		None		Max	Max	None	Max	
Walk Time (s)								7.0	7.0		7.0	
Flash Dont Walk (s)								11.0	11.0		11.0	
Pedestrian Calls (#/hr)								0	0		0	
Act Effect Green (s)				8.9		8.9		45.3	45.3	60.6	60.6	
Actuated g/C Ratio				0.11		0.11		0.58	0.58	0.77	0.77	
v/c Ratio				0.24		0.71		0.45	0.04	0.70	0.07	
Control Delay				32.6		13.9		11.1	0.8	12.2	2.6	
Queue Delay				0.0		0.0		0.0	0.0	0.0	0.0	
Total Delay				32.6		13.9		11.1	0.8	12.2	2.6	
LOS				C		B		B	A	B	A	
Approach Delay								10.7			9.0	
Approach LOS								B			A	

Intersection Summary

Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 78.5	
Natural Cycle: 45	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.71	
Intersection Signal Delay: 11.8	Intersection LOS: B
Intersection Capacity Utilization 55.0%	ICU Level of Service B
Analysis Period (min) 15	

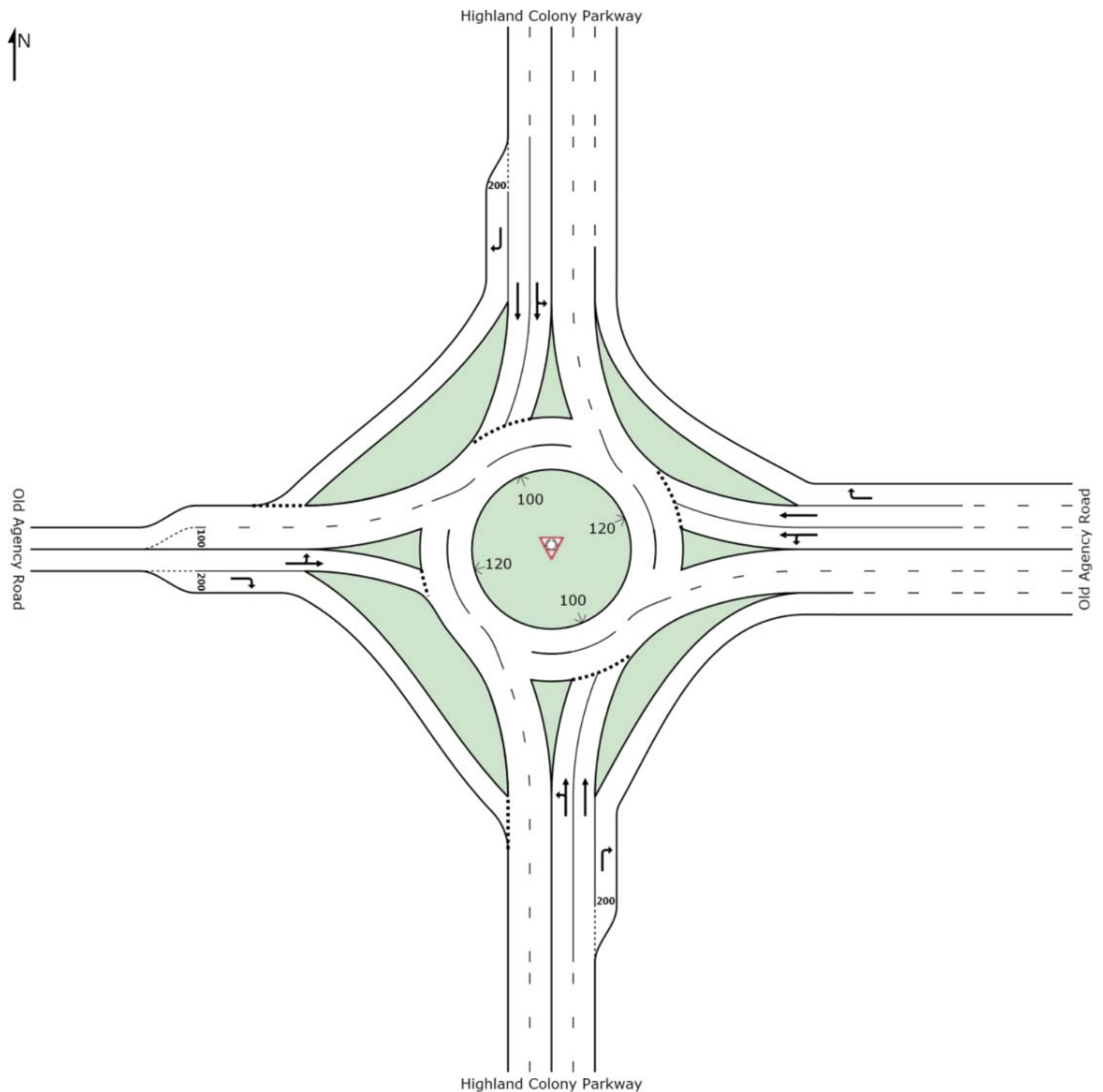
Splits and Phases: 101: Highland Colony & Site Drive #3



SITE LAYOUT

 **Site: 2018 Non-Site AM**

Highland Colony Parkway at Old Agency Road
Roundabout



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INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

 **Site: 2018 Non-Site AM**

Highland Colony Parkway at Old Agency Road
Roundabout

Volume Display Method: Total and %

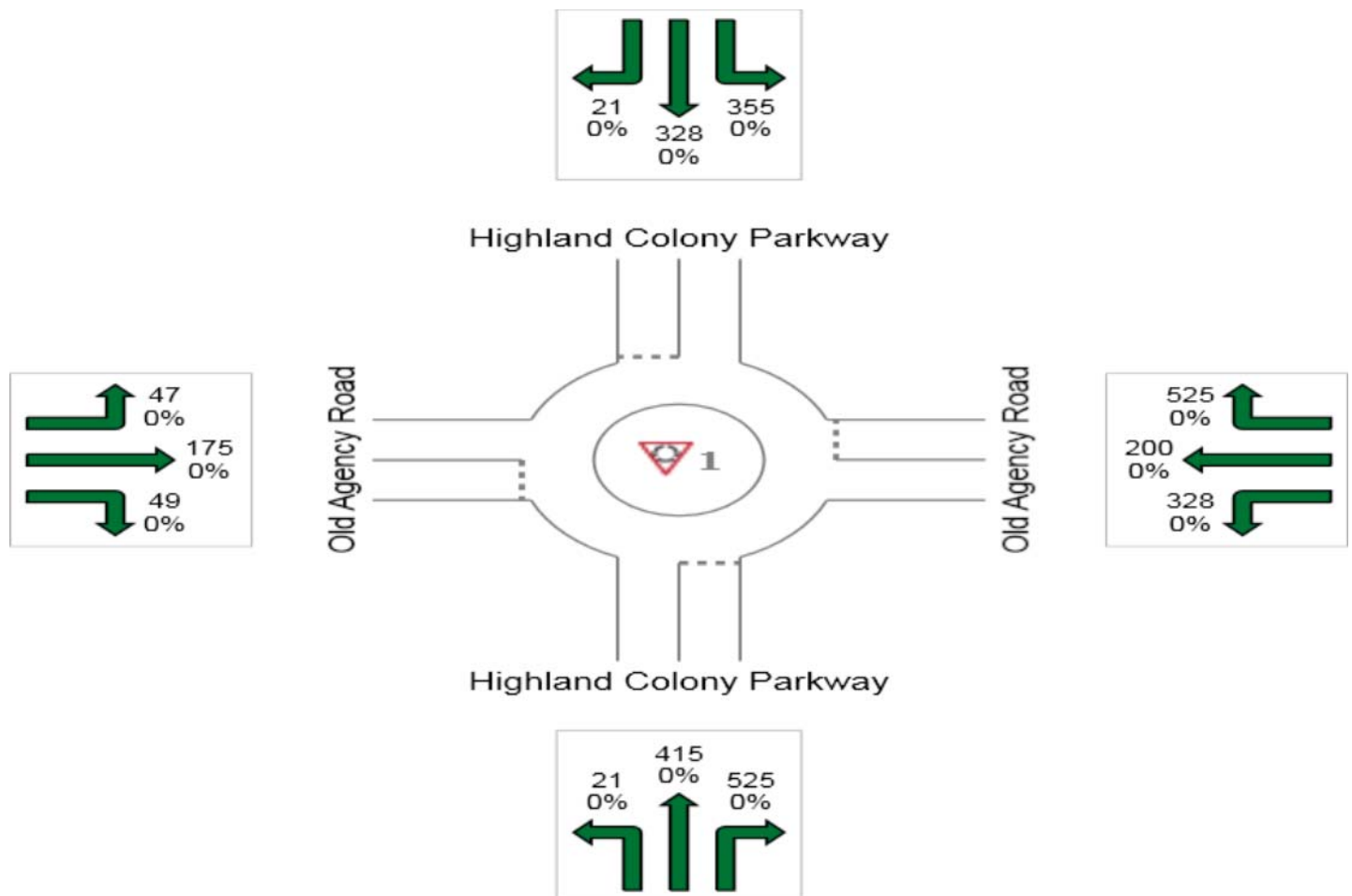
Volumes are shown for Movement Class(es): All Classes and Heavy Vehicles

Total Intersection Volumes (veh)

All Movement Classes: 2989

Light Vehicles (LV): 2989

Heavy Vehicles (HV): 0



LEVEL OF SERVICE

 **Site: 2018 Non-Site AM**

Highland Colony Parkway at Old Agency Road
Roundabout

All Movement Classes

	South	East	North	West	Intersection
LOS	A	A	A	A	A

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option is selected.

MOVEMENT SUMMARY



Site: 2018 Non-Site AM

Highland Colony Parkway at Old Agency Road
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Highland Colony Parkway											
3	L2	23	0.0	0.258	3.2	LOS A	1.5	36.6	0.66	0.55	35.8
8	T1	451	0.0	0.258	3.0	LOS A	1.6	38.8	0.66	0.52	35.8
18	R2	571	0.0	0.341	0.0	LOS A	0.0	0.0	0.00	0.00	37.2
Approach		1045	0.0	0.341	1.4	LOS A	1.6	38.8	0.30	0.24	36.5
East: Old Agency Road											
1	L2	357	0.0	0.306	1.4	LOS A	1.5	38.5	0.54	0.45	34.1
6	T1	217	0.0	0.232	1.8	LOS A	1.1	26.4	0.54	0.36	36.4
16	R2	571	0.0	0.341	0.0	LOS A	0.0	0.0	0.00	0.00	37.5
Approach		1145	0.0	0.341	0.8	LOS A	1.5	38.5	0.27	0.21	36.1
North: Highland Colony Parkway											
7	L2	386	0.0	0.370	1.8	LOS A	1.9	48.6	0.60	0.52	33.9
4	T1	357	0.0	0.370	2.2	LOS A	1.9	48.6	0.61	0.44	36.0
14	R2	23	0.0	0.018	0.6	LOS A	0.1	1.9	0.33	0.17	36.1
Approach		765	0.0	0.370	2.0	LOS A	1.9	48.6	0.59	0.47	34.9
West: Old Agency Road											
5	L2	51	0.0	0.360	4.5	LOS A	1.9	46.7	0.74	0.72	35.3
2	T1	190	0.0	0.360	4.5	LOS A	1.9	46.7	0.74	0.72	35.0
12	R2	53	0.0	0.062	2.0	LOS A	0.2	6.0	0.52	0.43	36.0
Approach		295	0.0	0.360	4.1	LOS A	1.9	46.7	0.70	0.67	35.2
All Vehicles		3249	0.0	0.370	1.5	LOS A	1.9	48.6	0.39	0.32	35.9

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option is selected.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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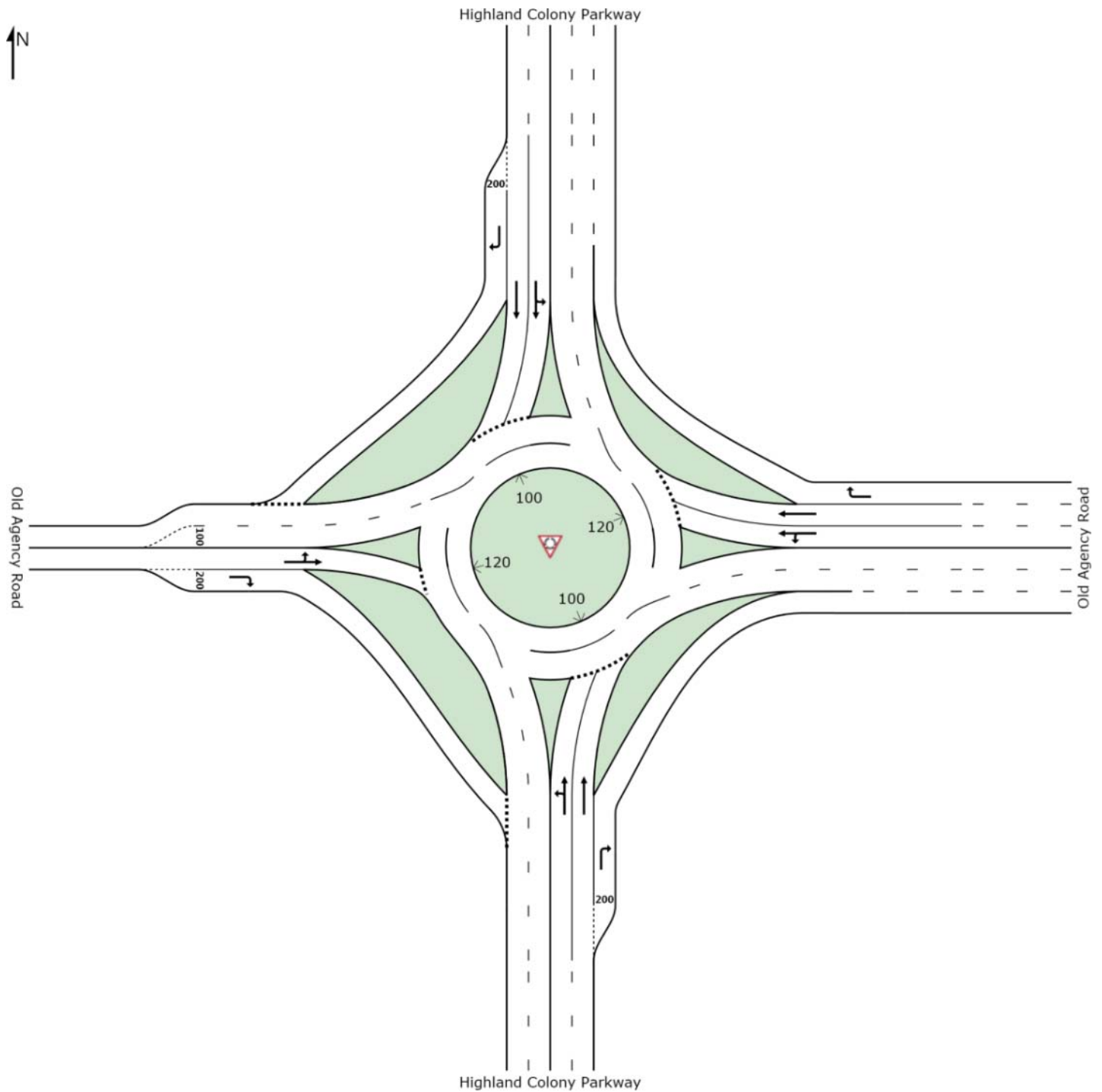
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SITE LAYOUT



Site: 2018 Non-Site PM

Highland Colony Parkway at Old Agency Road
Roundabout



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INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

 **Site: 2018 Non-Site PM**

Highland Colony Parkway at Old Agency Road
Roundabout

Volume Display Method: Total and %

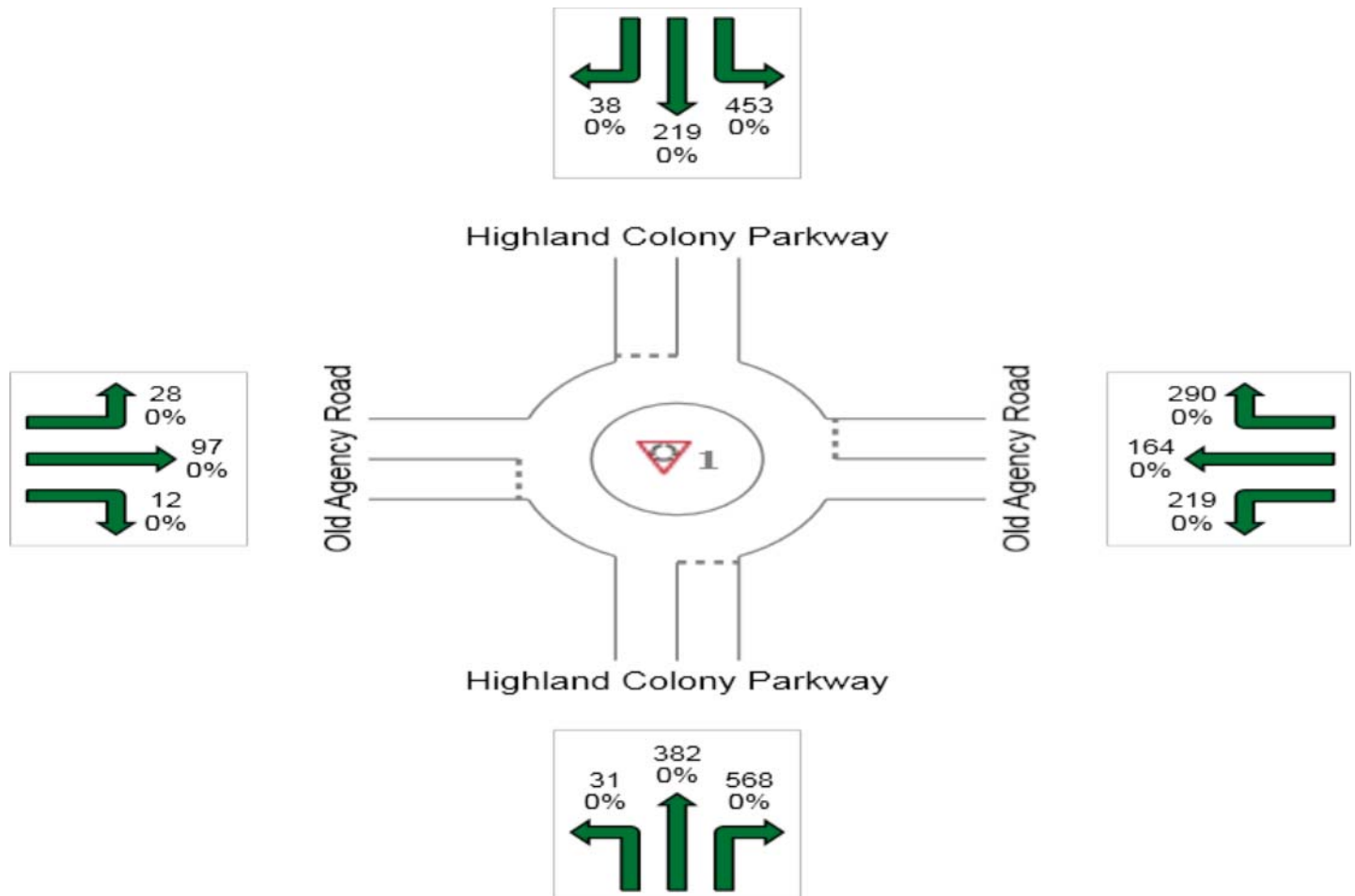
Volumes are shown for Movement Class(es): All Classes and Heavy Vehicles

Total Intersection Volumes (veh)

All Movement Classes: 2501

Light Vehicles (LV): 2501

Heavy Vehicles (HV): 0



LEVEL OF SERVICE

 **Site: 2018 Non-Site PM**

Highland Colony Parkway at Old Agency Road
Roundabout

All Movement Classes

	South	East	North	West	Intersection
LOS	A	A	A	A	A

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option is selected.

MOVEMENT SUMMARY

 **Site: 2018 Non-Site PM**

Highland Colony Parkway at Old Agency Road
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Highland Colony Parkway											
3	L2	34	0.0	0.248	3.2	LOS A	1.4	35.6	0.67	0.55	35.6
8	T1	415	0.0	0.248	3.0	LOS A	1.5	37.7	0.66	0.52	35.7
18	R2	617	0.0	0.369	0.0	LOS A	0.0	0.0	0.00	0.00	37.2
Approach		1066	0.0	0.369	1.3	LOS A	1.5	37.7	0.28	0.22	36.5
East: Old Agency Road											
1	L2	238	0.0	0.201	1.2	LOS A	0.9	23.6	0.49	0.39	34.2
6	T1	178	0.0	0.180	1.5	LOS A	0.8	20.0	0.50	0.32	36.5
16	R2	315	0.0	0.188	0.0	LOS A	0.0	0.0	0.00	0.00	37.6
Approach		732	0.0	0.201	0.7	LOS A	0.9	23.6	0.28	0.20	36.1
North: Highland Colony Parkway											
7	L2	492	0.0	0.423	1.5	LOS A	2.3	57.7	0.55	0.47	33.9
4	T1	238	0.0	0.263	1.9	LOS A	1.2	30.0	0.52	0.37	36.5
14	R2	41	0.0	0.032	0.5	LOS A	0.1	3.3	0.30	0.16	36.1
Approach		772	0.0	0.423	1.6	LOS A	2.3	57.7	0.53	0.42	34.8
West: Old Agency Road											
5	L2	30	0.0	0.191	3.6	LOS A	0.9	22.5	0.67	0.59	35.6
2	T1	105	0.0	0.191	3.6	LOS A	0.9	22.5	0.67	0.59	35.3
12	R2	13	0.0	0.014	1.3	LOS A	0.0	1.2	0.42	0.27	36.3
Approach		149	0.0	0.191	3.4	LOS A	0.9	22.5	0.65	0.57	35.4
All Vehicles		2718	0.0	0.423	1.3	LOS A	2.3	57.7	0.37	0.29	35.8

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option is selected.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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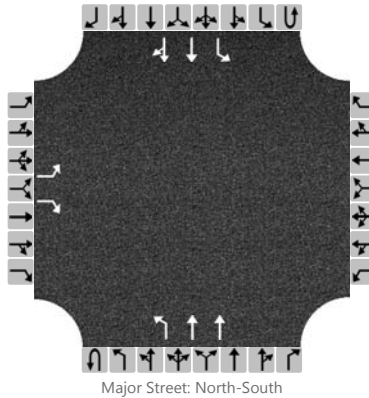
TWO-WAY STOP CONTROL SUMMARY								
General Information					Site Information			
Analyst	B. Blackledge				Intersection	HCP - Old Agency Parkway		
Agency/Co.	Neel - Schaffer, Inc				Jurisdiction			
Date Performed	8/26/2015				Analysis Year	2018		
Analysis Time Period	Non Site AM							
Project Description 12923 - Costco								
East/West Street: Old Agency Parkway					North/South Street: Highland Colony Parkway			
Intersection Orientation: North-South					Study Period (hrs): 0.25			
Vehicle Volumes and Adjustments								
Major Street	Northbound			Southbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume (veh/h)	27	688			596	82		
Peak-Hour Factor, PHF	0.90	0.90	1.00	1.00	0.90	0.90		
Hourly Flow Rate, HFR (veh/h)	30	764	0	0	662	91		
Percent Heavy Vehicles	1	--	--	0	--	--		
Median Type	Raised curb							
RT Channelized			0			0		
Lanes	1	2	0	0	2	1		
Configuration	L	T			T	R		
Upstream Signal		0			0			
Minor Street	Eastbound			Westbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)	262		120					
Peak-Hour Factor, PHF	0.90	0.88	0.90	1.00	1.00	1.00		
Hourly Flow Rate, HFR (veh/h)	291	0	133	0	0	0		
Percent Heavy Vehicles	1	0	1	0	0	0		
Percent Grade (%)	0			0				
Flared Approach		N			N			
Storage		0			0			
RT Channelized			0			0		
Lanes	1	0	1	0	0	0		
Configuration	L		R					
Delay, Queue Length, and Level of Service								
Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L					L		R
v (veh/h)	30					291		133
C (m) (veh/h)	859					331		712
v/c	0.03					0.88		0.19
95% queue length	0.11					8.24		0.68
Control Delay (s/veh)	9.3					59.7		11.2
LOS	A					F		B
Approach Delay (s/veh)	--	--				44.5		
Approach LOS	--	--				E		

TWO-WAY STOP CONTROL SUMMARY								
General Information					Site Information			
Analyst	B. Blackledge				Intersection	HCP - Old Agency Parkway		
Agency/Co.	Neel - Schaffer, Inc				Jurisdiction			
Date Performed	8/26/2015				Analysis Year	2018		
Analysis Time Period	Non Site PM							
Project Description 12923 - Costco								
East/West Street: Old Agency Parkway					North/South Street: Highland Colony Parkway			
Intersection Orientation: North-South					Study Period (hrs): 0.25			
Vehicle Volumes and Adjustments								
Major Street	Northbound			Southbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume (veh/h)	109	590			333	109		
Peak-Hour Factor, PHF	0.90	0.90	1.00	1.00	0.90	0.90		
Hourly Flow Rate, HFR (veh/h)	121	655	0	0	370	121		
Percent Heavy Vehicles	1	--	--	0	--	--		
Median Type	Raised curb							
RT Channelized			0			0		
Lanes	1	2	0	0	2	1		
Configuration	L	T			T	R		
Upstream Signal		0			0			
Minor Street	Eastbound			Westbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)	202		82					
Peak-Hour Factor, PHF	0.90	0.88	0.90	1.00	1.00	1.00		
Hourly Flow Rate, HFR (veh/h)	224	0	91	0	0	0		
Percent Heavy Vehicles	1	0	1	0	0	0		
Percent Grade (%)	0			0				
Flared Approach		N			N			
Storage		0			0			
RT Channelized			0			0		
Lanes	1	0	1	0	0	0		
Configuration	L		R					
Delay, Queue Length, and Level of Service								
Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L					L		R
v (veh/h)	121					224		91
C (m) (veh/h)	1076					355		859
v/c	0.11					0.63		0.11
95% queue length	0.38					4.10		0.35
Control Delay (s/veh)	8.8					31.0		9.7
LOS	A					D		A
Approach Delay (s/veh)	--	--				24.8		
Approach LOS	--	--				C		

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	B. Blackledge	Intersection	HCP - Trace Colony Park Drive
Agency/Co.	Neel - Schaffer, Inc	Jurisdiction	
Date Performed	8/26/2015	East/West Street	Trace Colony Park Drive
Analysis Year	2018	North/South Street	Highland Colony Parkway
Time Analyzed	Non Site AM	Peak Hour Factor	1.00
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	12923 - Costco		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		1	0	1		0	0	0	0	1	2	0	0	1	2	0
Configuration		L		R						L	T			L	T	TR
Volume (veh/h)		16		5						22	699			0	667	49
Percent Heavy Vehicles		1		1						1				1		
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Left + Thru															
Median Storage	1															

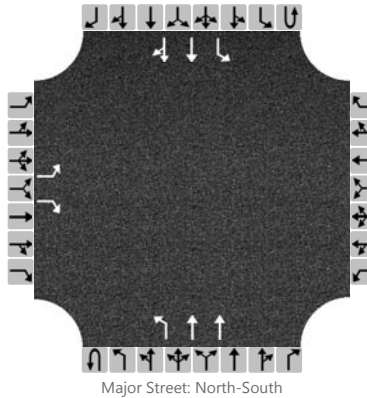
Delay, Queue Length, and Level of Service

Flow Rate (veh/h)		16		5						22						
Capacity		330		688						887				900		
v/c Ratio		0.05		0.01						0.02						
95% Queue Length		0.2		0.0						0.1						
Control Delay (s/veh)		16.5		10.3						9.2				9.0		
Level of Service (LOS)		C		B						A				A		
Approach Delay (s/veh)	15.0								0.3							
Approach LOS	B								A							

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	B. Blackledge	Intersection	HCP - Trace Colony Park Drive
Agency/Co.	Neel - Schaffer, Inc	Jurisdiction	
Date Performed	8/26/2015	East/West Street	Trace Colony Park Drive
Analysis Year	2018	North/South Street	Highland Colony Parkway
Time Analyzed	Non Site PM	Peak Hour Factor	1.00
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	12923 - Costco		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		1	0	1		0	0	0	0	1	2	0	0	1	2	0
Configuration		L		R						L	T			L	T	TR
Volume (veh/h)		71		27						5	628			0	399	16
Percent Heavy Vehicles		1		1						1				1		
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Left + Thru															
Median Storage	1															

Delay, Queue Length, and Level of Service

Flow Rate (veh/h)		71		27						5						
Capacity		469		834						1148				957		
v/c Ratio		0.15		0.03						0.00						
95% Queue Length		0.5		0.1						0.0						
Control Delay (s/veh)		14.1		9.5						8.2				8.8		
Level of Service (LOS)		B		A						A				A		
Approach Delay (s/veh)	12.8								0.1							
Approach LOS	B								A							

Lanes, Volumes, Timings
102: Highland Colony & Lake Harbour Ext

2018-non-site-AM.syn

8/26/2015

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	328	361	361	251	344	328
Future Volume (vph)	328	361	361	251	344	328
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250	0		100	120	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25				25	
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	3433	1583	3539	1583	1770	3539
Flt Permitted	0.950				0.456	
Satd. Flow (perm)	3433	1583	3539	1583	849	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		392		273		
Link Speed (mph)	30		40			40
Link Distance (ft)	437		814			404
Travel Time (s)	9.9		13.9			6.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	357	392	392	273	374	357
Shared Lane Traffic (%)						
Lane Group Flow (vph)	357	392	392	273	374	357
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	24		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2	1	1	2
Detector Template	Left	Right	Thru	Right	Left	Thru
Leading Detector (ft)	20	20	100	20	20	100
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	6	20	20	6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)			94			94
Detector 2 Size(ft)			6			6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA	Perm	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2	6	

8/26/2015 Baseline

Synchro 9 Report
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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Detector Phase	8	8	2	2	1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	9.5	22.5
Total Split (s)	33.0	33.0	28.0	28.0	29.0	57.0
Total Split (%)	36.7%	36.7%	31.1%	31.1%	32.2%	63.3%
Maximum Green (s)	28.5	28.5	23.5	23.5	24.5	52.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Max	Max	None	Max
Walk Time (s)	7.0	7.0	7.0	7.0		7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0		11.0
Pedestrian Calls (#/hr)	0	0	0	0		0
Act Effect Green (s)	13.7	13.7	36.2	36.2	52.6	52.6
Actuated g/C Ratio	0.18	0.18	0.48	0.48	0.70	0.70
v/c Ratio	0.57	0.64	0.23	0.30	0.51	0.14
Control Delay	31.8	8.6	13.3	3.2	7.4	4.4
Queue Delay	0.0	0.0	0.0	0.0	0.3	0.0
Total Delay	31.8	8.6	13.3	3.2	7.7	4.4
LOS	C	A	B	A	A	A
Approach Delay	19.7		9.1			6.1
Approach LOS	B		A			A

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 75.3
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.64
Intersection Signal Delay: 11.8
Intersection Capacity Utilization 49.6%
Analysis Period (min) 15

Intersection LOS: B
ICU Level of Service A

Splits and Phases: 102: Highland Colony & Lake Harbour Ext



Lanes, Volumes, Timings
102: Highland Colony & Lake Harbour Ext

2018-non-site-PM.syn

8/26/2015

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	142	328	306	240	219	208
Future Volume (vph)	142	328	306	240	219	208
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250	0		100	120	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25				25	
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	3433	1583	3539	1583	1770	3539
Flt Permitted	0.950				0.495	
Satd. Flow (perm)	3433	1583	3539	1583	922	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		357		261		
Link Speed (mph)	30		40			40
Link Distance (ft)	437		814			404
Travel Time (s)	9.9		13.9			6.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	154	357	333	261	238	226
Shared Lane Traffic (%)						
Lane Group Flow (vph)	154	357	333	261	238	226
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	24		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2	1	1	2
Detector Template	Left	Right	Thru	Right	Left	Thru
Leading Detector (ft)	20	20	100	20	20	100
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	6	20	20	6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)			94			94
Detector 2 Size(ft)			6			6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA	Perm	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2	6	

8/26/2015 Baseline

Synchro 9 Report
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Lanes, Volumes, Timings
102: Highland Colony & Lake Harbour Ext

2018-non-site-PM.syn
8/26/2015



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Detector Phase	8	8	2	2	1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	9.5	22.5
Total Split (s)	33.0	33.0	28.0	28.0	29.0	57.0
Total Split (%)	36.7%	36.7%	31.1%	31.1%	32.2%	63.3%
Maximum Green (s)	28.5	28.5	23.5	23.5	24.5	52.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Max	Max	None	Max
Walk Time (s)	7.0	7.0	7.0	7.0		7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0		11.0
Pedestrian Calls (#/hr)	0	0	0	0		0
Act Effect Green (s)	9.4	9.4	39.6	39.6	52.6	52.6
Actuated g/C Ratio	0.13	0.13	0.56	0.56	0.74	0.74
v/c Ratio	0.34	0.69	0.17	0.26	0.30	0.09
Control Delay	29.7	11.1	8.9	2.3	4.3	3.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.7	11.1	8.9	2.3	4.3	3.0
LOS	C	B	A	A	A	A
Approach Delay	16.7		6.0			3.7
Approach LOS	B		A			A

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 71
Natural Cycle: 55
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.69
Intersection Signal Delay: 8.8
Intersection Capacity Utilization 36.3%
Analysis Period (min) 15

Intersection LOS: A
ICU Level of Service A

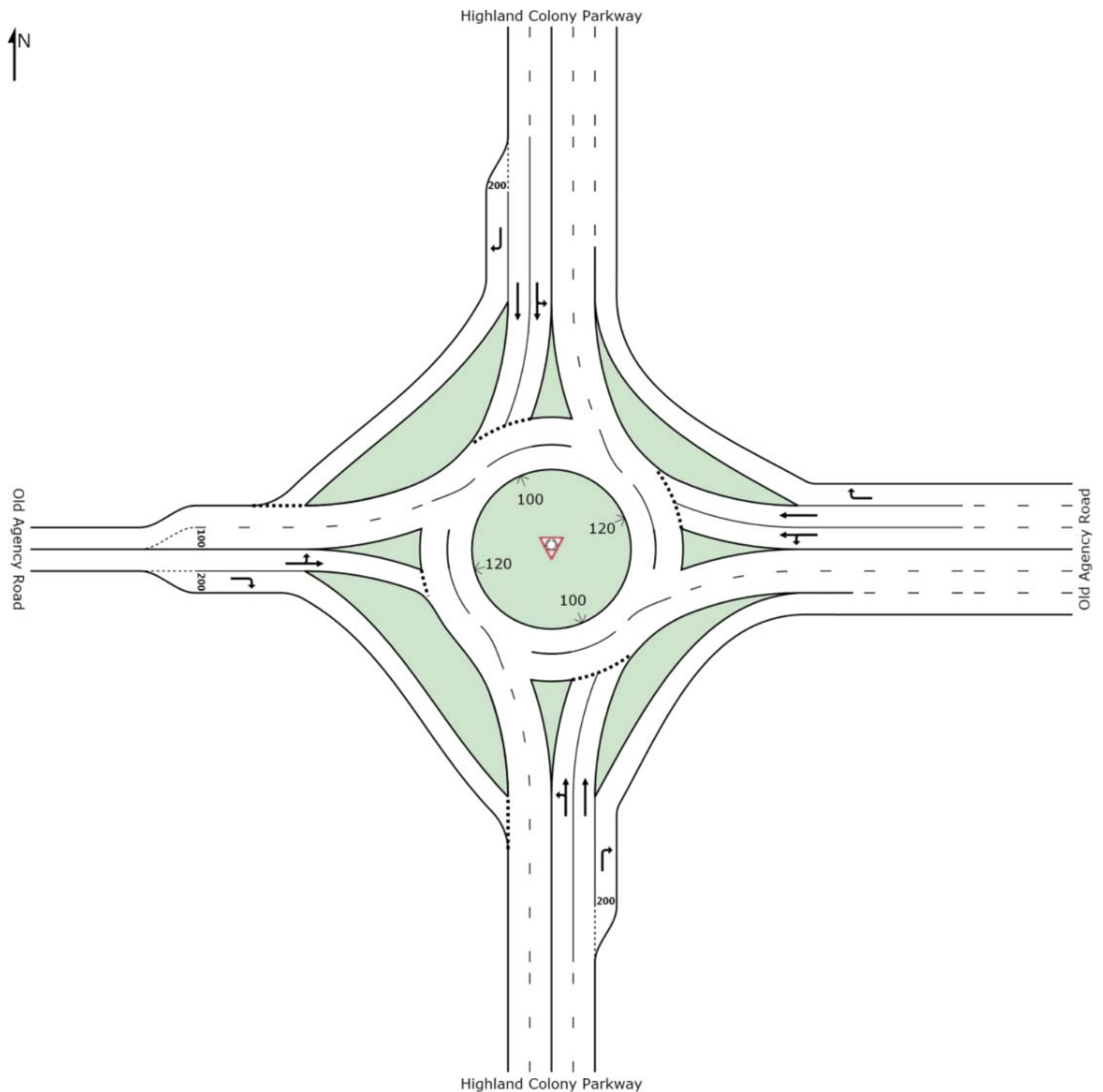
Splits and Phases: 102: Highland Colony & Lake Harbour Ext



SITE LAYOUT

 **Site: 2018 Total AM**

Highland Colony Parkway at Old Agency Road
Roundabout



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Organisation: NEEL-SCHAFFER | Created: Wednesday, October 07, 2015 4:51:22 PM

Project: S:\projects\12923-Costco\SIDRA October 2015\HCP - OAR Revised 2015-10-07.sip6

INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

 **Site: 2018 Total AM**

Highland Colony Parkway at Old Agency Road
Roundabout

Volume Display Method: Total and %

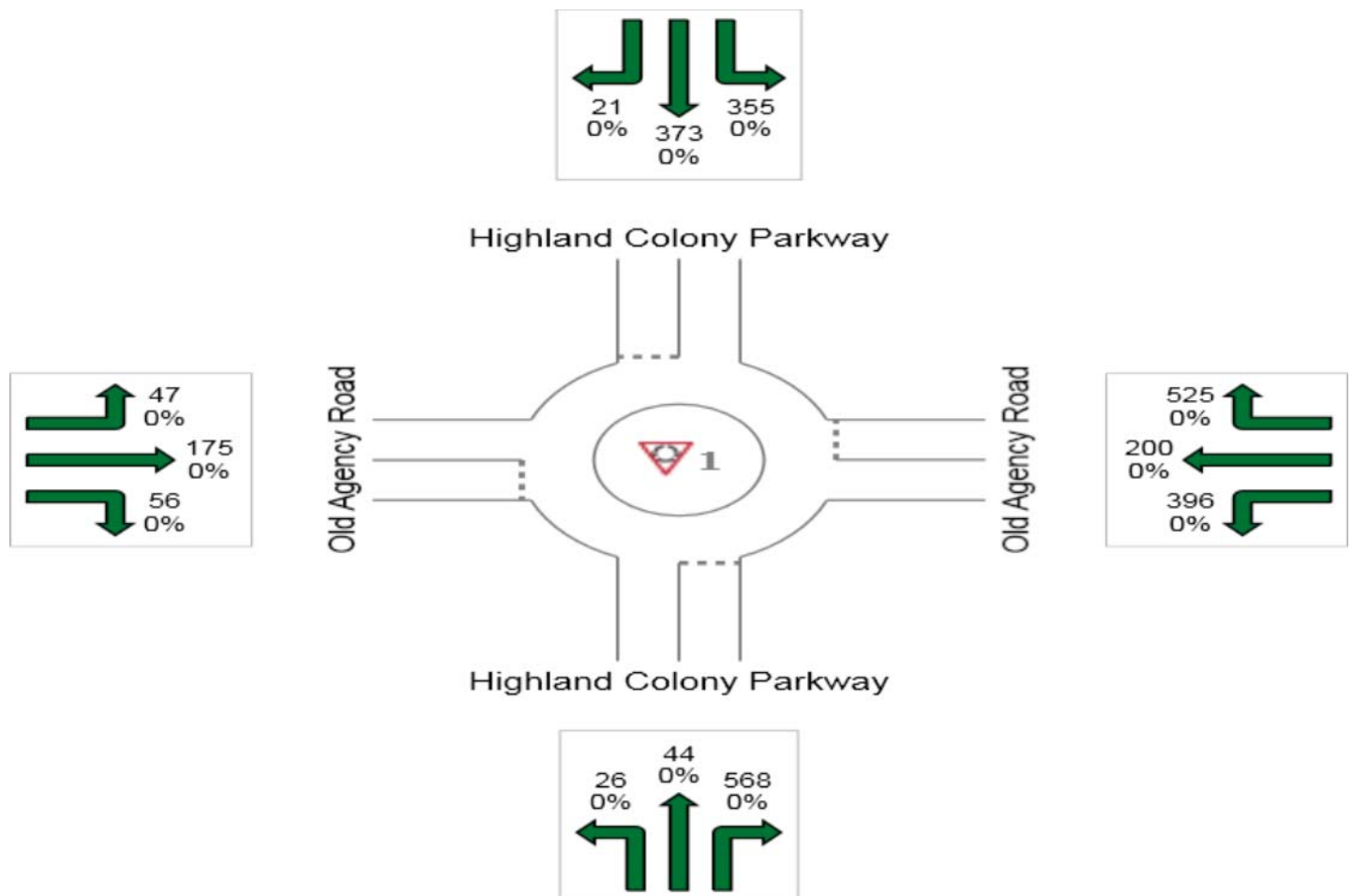
Volumes are shown for Movement Class(es): All Classes and Heavy Vehicles

Total Intersection Volumes (veh)

All Movement Classes: 2786

Light Vehicles (LV): 2786

Heavy Vehicles (HV): 0



LEVEL OF SERVICE



Site: 2018 Total AM

Highland Colony Parkway at Old Agency Road
Roundabout

All Movement Classes

	South	East	North	West	Intersection
LOS	A	A	A	A	A

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

SIDRA Standard Delay Model is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option is selected.

MOVEMENT SUMMARY



Site: 2018 Total AM

Highland Colony Parkway at Old Agency Road
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Highland Colony Parkway											
3	L2	28	0.0	0.041	2.7	LOS A	0.2	5.3	0.59	0.43	34.4
8	T1	48	0.0	0.041	2.4	LOS A	0.2	5.6	0.59	0.41	35.9
18	R2	617	0.0	0.369	0.0	LOS A	0.0	0.0	0.00	0.00	37.2
Approach		693	0.0	0.369	0.3	LOS A	0.2	5.6	0.06	0.05	37.0
East: Old Agency Road											
1	L2	430	0.0	0.299	0.4	LOS A	1.6	39.5	0.28	0.15	34.7
6	T1	217	0.0	0.185	0.5	LOS A	0.9	21.3	0.28	0.15	37.4
16	R2	571	0.0	0.341	0.0	LOS A	0.0	0.0	0.00	0.00	37.5
Approach		1218	0.0	0.341	0.3	LOS A	1.6	39.5	0.15	0.08	36.4
North: Highland Colony Parkway											
7	L2	386	0.0	0.415	2.8	LOS A	2.2	54.0	0.62	0.62	33.8
4	T1	405	0.0	0.375	2.1	LOS A	1.9	47.2	0.59	0.42	36.2
14	R2	23	0.0	0.018	0.6	LOS A	0.1	1.8	0.31	0.16	36.1
Approach		814	0.0	0.415	2.4	LOS A	2.2	54.0	0.60	0.50	35.0
West: Old Agency Road											
5	L2	51	0.0	0.382	5.3	LOS A	2.0	50.8	0.77	0.79	35.1
2	T1	190	0.0	0.382	5.3	LOS A	2.0	50.8	0.77	0.79	34.8
12	R2	61	0.0	0.076	2.3	LOS A	0.3	7.5	0.56	0.49	35.9
Approach		302	0.0	0.382	4.7	LOS A	2.0	50.8	0.72	0.73	35.1
All Vehicles		3028	0.0	0.415	1.3	LOS A	2.2	54.0	0.31	0.25	36.0

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option is selected.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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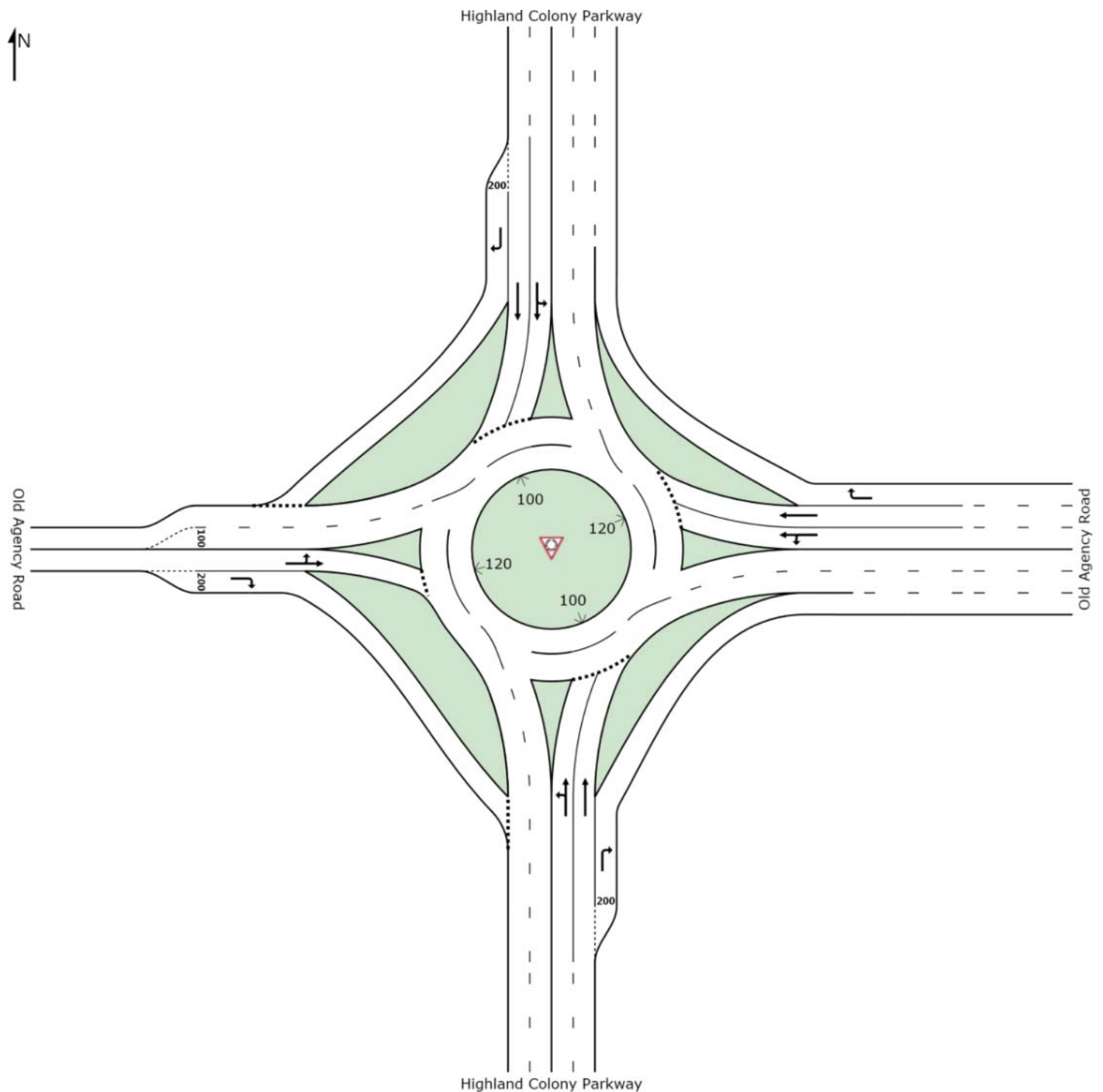
Organisation: NEEL-SCHAFFER | Processed: Wednesday, October 07, 2015 3:45:17 PM

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SITE LAYOUT

 **Site: 2018 Total PM**

Highland Colony Parkway at Old Agency Road
Roundabout



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INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

 **Site: 2018 Total PM**

Highland Colony Parkway at Old Agency Road
Roundabout

Volume Display Method: Total and %

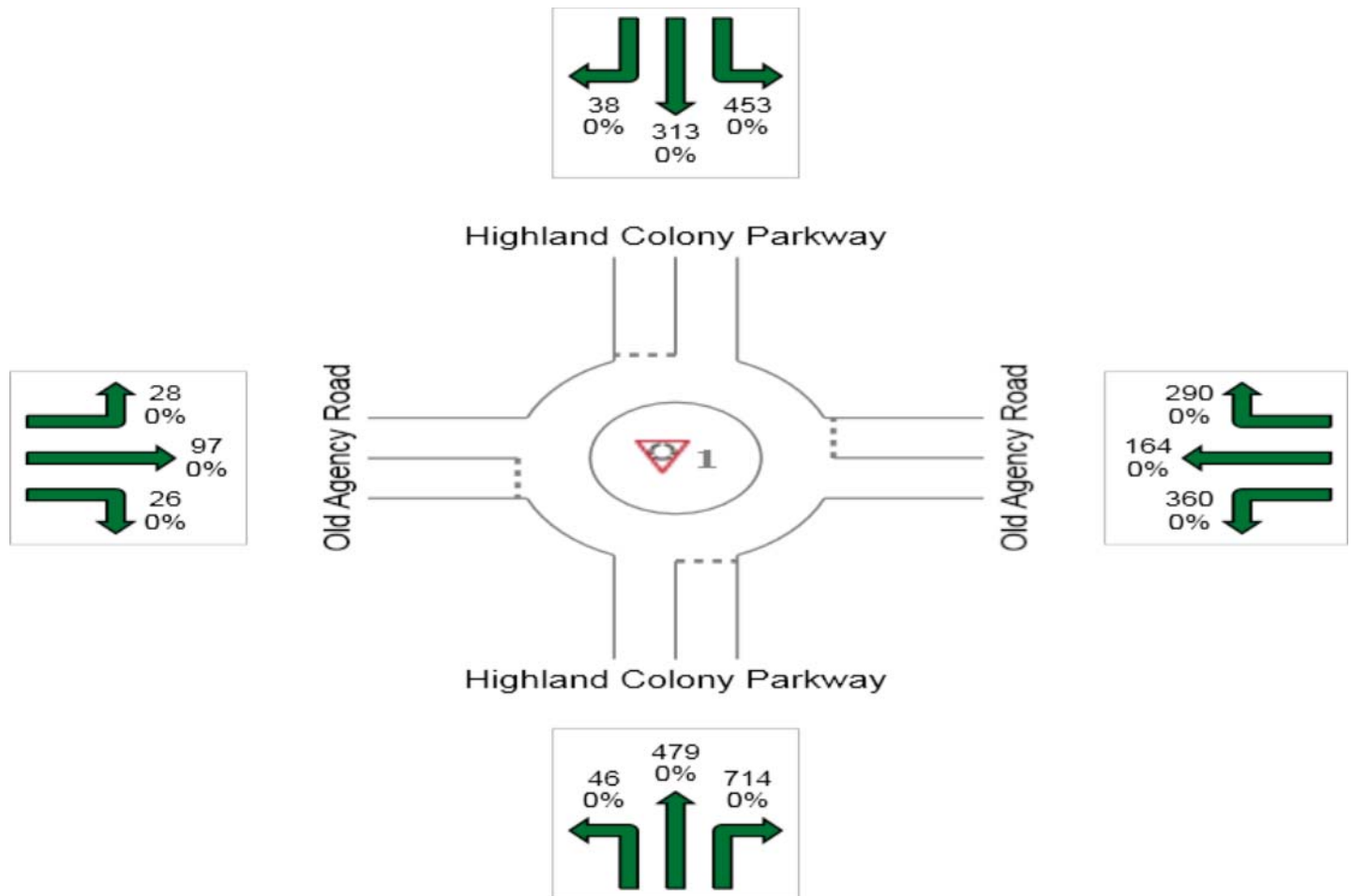
Volumes are shown for Movement Class(es): All Classes and Heavy Vehicles

Total Intersection Volumes (veh)

All Movement Classes: 3008

Light Vehicles (LV): 3008

Heavy Vehicles (HV): 0



LEVEL OF SERVICE

 **Site: 2018 Total PM**

Highland Colony Parkway at Old Agency Road
Roundabout

All Movement Classes

	South	East	North	West	Intersection
LOS	A	A	A	A	A

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option is selected.

MOVEMENT SUMMARY



Site: 2018 Total PM

Highland Colony Parkway at Old Agency Road
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Highland Colony Parkway											
3	L2	50	0.0	0.320	3.4	LOS A	2.0	48.9	0.71	0.58	35.4
8	T1	521	0.0	0.320	3.1	LOS A	2.1	52.0	0.71	0.55	35.5
18	R2	776	0.0	0.463	0.0	LOS A	0.0	0.0	0.00	0.00	37.2
Approach		1347	0.0	0.463	1.4	LOS A	2.1	52.0	0.30	0.24	36.4
East: Old Agency Road											
1	L2	391	0.0	0.351	1.6	LOS A	1.8	46.0	0.59	0.50	33.9
6	T1	178	0.0	0.213	2.1	LOS A	1.0	23.8	0.57	0.40	36.3
16	R2	315	0.0	0.188	0.0	LOS A	0.0	0.0	0.00	0.00	37.6
Approach		885	0.0	0.351	1.1	LOS A	1.8	46.0	0.38	0.30	35.6
North: Highland Colony Parkway											
7	L2	492	0.0	0.466	2.4	LOS A	2.9	71.4	0.66	0.62	33.7
4	T1	340	0.0	0.390	2.6	LOS A	2.0	51.2	0.64	0.48	36.0
14	R2	41	0.0	0.032	0.6	LOS A	0.1	3.4	0.31	0.17	36.1
Approach		874	0.0	0.466	2.4	LOS A	2.9	71.4	0.64	0.54	34.6
West: Old Agency Road											
5	L2	30	0.0	0.225	4.7	LOS A	1.1	27.7	0.74	0.72	35.2
2	T1	105	0.0	0.225	4.7	LOS A	1.1	27.7	0.74	0.72	34.9
12	R2	28	0.0	0.034	2.0	LOS A	0.1	3.3	0.52	0.41	36.0
Approach		164	0.0	0.225	4.2	LOS A	1.1	27.7	0.71	0.66	35.2
All Vehicles		3270	0.0	0.466	1.7	LOS A	2.9	71.4	0.43	0.36	35.6

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option is selected.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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TWO-WAY STOP CONTROL SUMMARY								
General Information					Site Information			
Analyst	B. Blackledge				Intersection	HCP - Old Agency Parkway		
Agency/Co.	Neel - Schaffer, Inc				Jurisdiction			
Date Performed	8/26/2015				Analysis Year	2018		
Analysis Time Period	Total Traffic AM							
Project Description 12923 - Costco								
East/West Street: Old Agency Parkway					North/South Street: Highland Colony Parkway			
Intersection Orientation: North-South					Study Period (hrs): 0.25			
Vehicle Volumes and Adjustments								
Major Street	Northbound			Southbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume (veh/h)	41	765			716	82		
Peak-Hour Factor, PHF	0.90	0.90	1.00	1.00	0.90	0.90		
Hourly Flow Rate, HFR (veh/h)	45	850	0	0	795	91		
Percent Heavy Vehicles	1	--	--	0	--	--		
Median Type	Raised curb							
RT Channelized			0			0		
Lanes	1	2	0	0	2	1		
Configuration	L	T			T	R		
Upstream Signal		0			0			
Minor Street	Eastbound			Westbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)	262		143					
Peak-Hour Factor, PHF	0.90	0.88	0.90	1.00	1.00	1.00		
Hourly Flow Rate, HFR (veh/h)	291	0	158	0	0	0		
Percent Heavy Vehicles	1	0	1	0	0	0		
Percent Grade (%)	0			0				
Flared Approach		N			N			
Storage		0			0			
RT Channelized			0			0		
Lanes	1	0	1	0	0	0		
Configuration	L		R					
Delay, Queue Length, and Level of Service								
Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L					L		R
v (veh/h)	45					291		158
C (m) (veh/h)	766					275		653
v/c	0.06					1.06		0.24
95% queue length	0.19					11.49		0.94
Control Delay (s/veh)	10.0					111.2		12.3
LOS	A					F		B
Approach Delay (s/veh)	--	--				76.4		
Approach LOS	--	--				F		

TWO-WAY STOP CONTROL SUMMARY								
General Information				Site Information				
Analyst	B. Blackledge			Intersection	HCP - Old Agency Parkway			
Agency/Co.	Neel - Schaffer, Inc			Jurisdiction				
Date Performed	8/26/2015			Analysis Year	2018			
Analysis Time Period	Total Traffic PM							
Project Description 12923 - Costco								
East/West Street: Old Agency Parkway				North/South Street: Highland Colony Parkway				
Intersection Orientation: North-South				Study Period (hrs): 0.25				
Vehicle Volumes and Adjustments								
Major Street	Northbound			Southbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume (veh/h)	157	848			582	109		
Peak-Hour Factor, PHF	0.90	0.90	1.00	1.00	0.90	0.90		
Hourly Flow Rate, HFR (veh/h)	174	942	0	0	646	121		
Percent Heavy Vehicles	1	--	--	0	--	--		
Median Type	Raised curb							
RT Channelized			0			0		
Lanes	1	2	0	0	2	1		
Configuration	L	T			T	R		
Upstream Signal		0			0			
Minor Street	Eastbound			Westbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)	202		129					
Peak-Hour Factor, PHF	0.90	0.88	0.90	1.00	1.00	1.00		
Hourly Flow Rate, HFR (veh/h)	224	0	143	0	0	0		
Percent Heavy Vehicles	1	0	1	0	0	0		
Percent Grade (%)	0			0				
Flared Approach		N			N			
Storage		0			0			
RT Channelized			0			0		
Lanes	1	0	1	0	0	0		
Configuration	L		R					
Delay, Queue Length, and Level of Service								
Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L					L		R
v (veh/h)	174					224		143
C (m) (veh/h)	849					215		719
v/c	0.20					1.04		0.20
95% queue length	0.77					9.74		0.74
Control Delay (s/veh)	10.3					120.3		11.2
LOS	B					F		B
Approach Delay (s/veh)	--	--				77.8		
Approach LOS	--	--				F		

TWO-WAY STOP CONTROL SUMMARY								
General Information					Site Information			
Analyst	B. Blackledge				Intersection	HCP - Driveway 1		
Agency/Co.	Neel - Schaffer, Inc				Jurisdiction			
Date Performed	8/26/2015				Analysis Year	2018		
Analysis Time Period	Total Traffic AM							
Project Description 12923 - Costco								
East/West Street: Driveway 1					North/South Street: Highland Colony Parkway			
Intersection Orientation: North-South					Study Period (hrs): 0.25			
Vehicle Volumes and Adjustments								
Major Street	Northbound			Southbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume (veh/h)		790	15		859			
Peak-Hour Factor, PHF	1.00	0.90	0.90	1.00	0.90	1.00		
Hourly Flow Rate, HFR (veh/h)	0	877	16	0	954	0		
Percent Heavy Vehicles	0	--	--	0	--	--		
Median Type	Undivided							
RT Channelized			0			0		
Lanes	0	2	1	0	1	0		
Configuration		T	R		T			
Upstream Signal		0			0			
Minor Street	Eastbound			Westbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)						20		
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	0.90		
Hourly Flow Rate, HFR (veh/h)	0	0	0	0	0	22		
Percent Heavy Vehicles	0	0	0	0	0	0		
Percent Grade (%)	0			0				
Flared Approach		N			N			
Storage		0			0			
RT Channelized			0			0		
Lanes	0	0	0	0	0	1		
Configuration						R		
Delay, Queue Length, and Level of Service								
Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration					R			
v (veh/h)					22			
C (m) (veh/h)					623			
v/c					0.04			
95% queue length					0.11			
Control Delay (s/veh)					11.0			
LOS					B			
Approach Delay (s/veh)	--	--	11.0					
Approach LOS	--	--	B					

TWO-WAY STOP CONTROL SUMMARY								
General Information					Site Information			
Analyst	B. Blackledge				Intersection	HCP - Driveway 1		
Agency/Co.	Neel - Schaffer, Inc				Jurisdiction			
Date Performed	8/26/2015				Analysis Year	2018		
Analysis Time Period	Total Traffic PM							
Project Description 12923 - Costco								
East/West Street: Driveway 1					North/South Street: Highland Colony Parkway			
Intersection Orientation: North-South					Study Period (hrs): 0.25			
Vehicle Volumes and Adjustments								
Major Street	Northbound			Southbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume (veh/h)		944	41		711			
Peak-Hour Factor, PHF	1.00	0.90	0.90	1.00	0.90	1.00		
Hourly Flow Rate, HFR (veh/h)	0	1048	45	0	790	0		
Percent Heavy Vehicles	0	--	--	0	--	--		
Median Type	Undivided							
RT Channelized			0			0		
Lanes	0	2	1	0	1	0		
Configuration		T	R		T			
Upstream Signal		0			0			
Minor Street	Eastbound			Westbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)						75		
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	0.90		
Hourly Flow Rate, HFR (veh/h)	0	0	0	0	0	83		
Percent Heavy Vehicles	0	0	0	0	0	0		
Percent Grade (%)	0			0				
Flared Approach		N			N			
Storage		0			0			
RT Channelized			0			0		
Lanes	0	0	0	0	0	1		
Configuration						R		
Delay, Queue Length, and Level of Service								
Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration					R			
v (veh/h)					83			
C (m) (veh/h)					557			
v/c					0.15			
95% queue length					0.52			
Control Delay (s/veh)					12.6			
LOS					B			
Approach Delay (s/veh)	--	--	12.6					
Approach LOS	--	--	B					

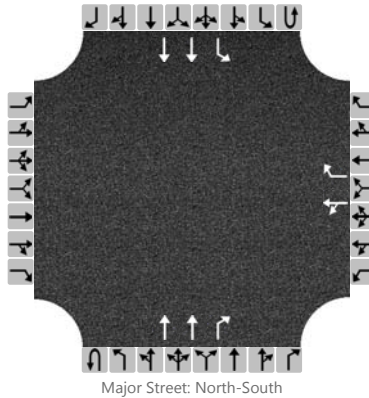
TWO-WAY STOP CONTROL SUMMARY								
General Information				Site Information				
Analyst	B. Blackledge			Intersection	HCP - Trace Colony Park Drive			
Agency/Co.	Neel - Schaffer, Inc			Jurisdiction				
Date Performed	8/26/2015			Analysis Year	2018			
Analysis Time Period	Total Traffic AM							
Project Description 12923 - Costco								
East/West Street: Trace Colony Park Drive				North/South Street: Highland Colony Parkway				
Intersection Orientation: North-South				Study Period (hrs): 0.25				
Vehicle Volumes and Adjustments								
Major Street	Northbound			Southbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume (veh/h)	22	766	31	61	749	49		
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90		
Hourly Flow Rate, HFR (veh/h)	24	851	34	67	832	54		
Percent Heavy Vehicles	1	--	--	1	--	--		
Median Type	Raised curb							
RT Channelized			0			0		
Lanes	1	2	1	1	2	0		
Configuration	L	T	R	L	T	TR		
Upstream Signal		0			0			
Minor Street	Eastbound			Westbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)	16	3	5	22	2	22		
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90		
Hourly Flow Rate, HFR (veh/h)	17	3	5	24	2	24		
Percent Heavy Vehicles	1	1	1	1	1	1		
Percent Grade (%)	0			0				
Flared Approach		N			N			
Storage		0			0			
RT Channelized			0			0		
Lanes	0	1	1	0	1	1		
Configuration	LT		R	LT		R		
Delay, Queue Length, and Level of Service								
Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L	LT		R	LT		R
v (veh/h)	24	67	26		24	20		5
C (m) (veh/h)	766	767	190		630	171		616
v/c	0.03	0.09	0.14		0.04	0.12		0.01
95% queue length	0.10	0.29	0.47		0.12	0.39		0.02
Control Delay (s/veh)	9.9	10.1	26.9		10.9	28.8		10.9
LOS	A	B	D		B	D		B
Approach Delay (s/veh)	--	--	19.3			25.2		
Approach LOS	--	--	C			D		

TWO-WAY STOP CONTROL SUMMARY								
General Information				Site Information				
Analyst	B. Blackledge			Intersection	HCP - Trace Colony Park Drive			
Agency/Co.	Neel - Schaffer, Inc			Jurisdiction				
Date Performed	8/26/2015			Analysis Year	2018			
Analysis Time Period	Total Traffic PM							
Project Description 12923 - Costco								
East/West Street: Trace Colony Park Drive				North/South Street: Highland Colony Parkway				
Intersection Orientation: North-South				Study Period (hrs): 0.25				
Vehicle Volumes and Adjustments								
Major Street	Northbound			Southbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume (veh/h)	5	831	82	164	531	16		
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90		
Hourly Flow Rate, HFR (veh/h)	5	923	91	182	590	17		
Percent Heavy Vehicles	1	--	--	1	--	--		
Median Type	Raised curb							
RT Channelized			0			0		
Lanes	1	2	1	1	2	0		
Configuration	L	T	R	L	T	TR		
Upstream Signal		0			0			
Minor Street	Eastbound			Westbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)	71	8	27	83	8	83		
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90		
Hourly Flow Rate, HFR (veh/h)	78	8	30	92	8	92		
Percent Heavy Vehicles	1	1	1	1	1	1		
Percent Grade (%)	0			0				
Flared Approach		N			N			
Storage		0			0			
RT Channelized			0			0		
Lanes	0	1	1	0	1	1		
Configuration	LT		R	LT		R		
Delay, Queue Length, and Level of Service								
Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L	LT		R	LT		R
v (veh/h)	5	182	100		92	86		30
C (m) (veh/h)	974	686	153		601	127		737
v/c	0.01	0.27	0.65		0.15	0.68		0.04
95% queue length	0.02	1.07	3.65		0.54	3.67		0.13
Control Delay (s/veh)	8.7	12.1	64.6		12.1	78.7		10.1
LOS	A	B	F		B	F		B
Approach Delay (s/veh)	--	--	39.4			60.9		
Approach LOS	--	--	E			F		

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	B. Blackledge	Intersection	HCP - Driveway 3
Agency/Co.	Neel - Schaffer, Inc	Jurisdiction	
Date Performed	8/26/2015	East/West Street	Driveway 3
Analysis Year	2018	North/South Street	Highland Colony Parkway
Time Analyzed	Total Traffic AM	Peak Hour Factor	0.90
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	12923 - Renaissance Phase 3		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	1	0	0	2	1	0	1	2	0
Configuration						LT		R			T	R		L	T	
Volume (veh/h)						35	0	74			758	46		101	683	
Percent Heavy Vehicles						0	0	0						0		
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

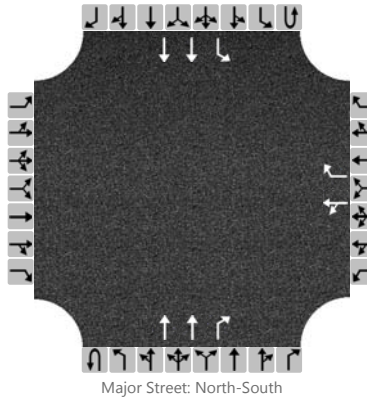
Delay, Queue Length, and Level of Service

Flow Rate (veh/h)						39		82						112		
Capacity						107		637						768		
v/c Ratio						0.37		0.13						0.15		
95% Queue Length						1.5		0.4						0.5		
Control Delay (s/veh)						57.1		11.5						10.5		
Level of Service (LOS)						F		B						B		
Approach Delay (s/veh)						26.2								1.3		
Approach LOS						D								A		

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	B. Blackledge	Intersection	HCP - Driveway 3
Agency/Co.	Neel - Schaffer, Inc	Jurisdiction	
Date Performed	8/26/2015	East/West Street	Driveway 3
Analysis Year	2018	North/South Street	Highland Colony Parkway
Time Analyzed	Total Traffic PM	Peak Hour Factor	0.90
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	12923 - Renaissance Phase 3		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	1	0	0	2	1	0	1	2	0
Configuration						LT		R			T	R		L	T	
Volume (veh/h)						133	0	283			700	123		270	406	
Percent Heavy Vehicles						0	0	0						0		
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

Delay, Queue Length, and Level of Service

Flow Rate (veh/h)						148		314						300		
Capacity						59		664						754		
v/c Ratio						2.50		0.47						0.40		
95% Queue Length						14.8		2.5						1.9		
Control Delay (s/veh)						832.3		15.2						12.9		
Level of Service (LOS)						F		C						B		
Approach Delay (s/veh)					277.0								5.2			
Approach LOS					F								A			

TWO-WAY STOP CONTROL SUMMARY								
General Information					Site Information			
Analyst	B. Blackledge				Intersection	HCP - Driveway 4		
Agency/Co.	Neel - Schaffer, Inc				Jurisdiction			
Date Performed	8/26/2015				Analysis Year	2018		
Analysis Time Period	Total Traffic AM							
Project Description 12923 - Costco								
East/West Street: Driveway 4					North/South Street: Highland Colony Parkway			
Intersection Orientation: North-South					Study Period (hrs): 0.25			
Vehicle Volumes and Adjustments								
Major Street	Northbound			Southbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume (veh/h)		786	19	31	702			
Peak-Hour Factor, PHF	1.00	0.90	0.90	0.90	0.90	1.00		
Hourly Flow Rate, HFR (veh/h)	0	873	21	34	780	0		
Percent Heavy Vehicles	0	--	--	0	--	--		
Median Type	Raised curb							
RT Channelized			0			0		
Lanes	0	2	1	1	2	0		
Configuration		T	R	L	T			
Upstream Signal		0			0			
Minor Street	Eastbound			Westbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)				22		22		
Peak-Hour Factor, PHF	1.00	1.00	1.00	0.90	0.90	0.90		
Hourly Flow Rate, HFR (veh/h)	0	0	0	24	0	24		
Percent Heavy Vehicles	0	0	0	0	0	0		
Percent Grade (%)	0			0				
Flared Approach		N			N			
Storage		0			0			
RT Channelized			0			0		
Lanes	0	0	0	1	0	1		
Configuration				L		R		
Delay, Queue Length, and Level of Service								
Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		L	L		R			
v (veh/h)		34	24		24			
C (m) (veh/h)		767	268		625			
v/c		0.04	0.09		0.04			
95% queue length		0.14	0.29		0.12			
Control Delay (s/veh)		9.9	19.7		11.0			
LOS		A	C		B			
Approach Delay (s/veh)	--	--	15.4					
Approach LOS	--	--	C					

TWO-WAY STOP CONTROL SUMMARY								
General Information					Site Information			
Analyst	B. Blackledge				Intersection	HCP - Driveway 4		
Agency/Co.	Neel - Schaffer, Inc				Jurisdiction			
Date Performed	8/26/2015				Analysis Year	2018		
Analysis Time Period	Total Traffic PM							
Project Description 12923 - Costco								
East/West Street: Driveway 4					North/South Street: Highland Colony Parkway			
Intersection Orientation: North-South					Study Period (hrs): 0.25			
Vehicle Volumes and Adjustments								
Major Street	Northbound			Southbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume (veh/h)		754	49	82	517			
Peak-Hour Factor, PHF	1.00	0.90	0.90	0.90	0.90	1.00		
Hourly Flow Rate, HFR (veh/h)	0	837	54	91	574	0		
Percent Heavy Vehicles	0	--	--	0	--	--		
Median Type	Raised curb							
RT Channelized			0			0		
Lanes	0	2	1	1	2	0		
Configuration		T	R	L	T			
Upstream Signal		0			0			
Minor Street	Eastbound			Westbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)				83		83		
Peak-Hour Factor, PHF	1.00	1.00	1.00	0.90	0.90	0.90		
Hourly Flow Rate, HFR (veh/h)	0	0	0	92	0	92		
Percent Heavy Vehicles	0	0	0	0	0	0		
Percent Grade (%)	0			0				
Flared Approach		N			N			
Storage		0			0			
RT Channelized			0			0		
Lanes	0	0	0	1	0	1		
Configuration				L		R		
Delay, Queue Length, and Level of Service								
Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		L	L		R			
v (veh/h)		91	92		92			
C (m) (veh/h)		769	265		639			
v/c		0.12	0.35		0.14			
95% queue length		0.40	1.49		0.50			
Control Delay (s/veh)		10.3	25.6		11.6			
LOS		B	D		B			
Approach Delay (s/veh)	--	--	18.6					
Approach LOS	--	--	C					

Lanes, Volumes, Timings
100: Highland Colony & Old Agency Pkwy

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	WT		LT	TT	TT	LT
Traffic Volume (vph)	262	143	41	765	716	82
Future Volume (vph)	262	143	41	765	716	82
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200	0	200			120
Storage Lanes	1	0	1			1
Taper Length (ft)	25		25			
Lane Util. Factor	0.97	0.95	1.00	0.95	0.95	1.00
Frt	0.947					0.850
Flt Protected	0.969		0.950			
Satd. Flow (prot)	3316	0	1770	3539	3539	1583
Flt Permitted	0.969		0.294			
Satd. Flow (perm)	3316	0	548	3539	3539	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	130					88
Link Speed (mph)	40			40	40	
Link Distance (ft)	647			489	480	
Travel Time (s)	11.0			8.3	8.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	285	155	45	832	778	89
Shared Lane Traffic (%)						
Lane Group Flow (vph)	440	0	45	832	778	89
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	24			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	2	2	1
Detector Template	Left		Left	Thru	Thru	Right
Leading Detector (ft)	20		20	100	100	20
Trailing Detector (ft)	0		0	0	0	0
Detector 1 Position(ft)	0		0	0	0	0
Detector 1 Size(ft)	20		20	6	6	20
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot		pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases			2			6

Baseline

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Lanes, Volumes, Timings
100: Highland Colony & Old Agency Pkwy

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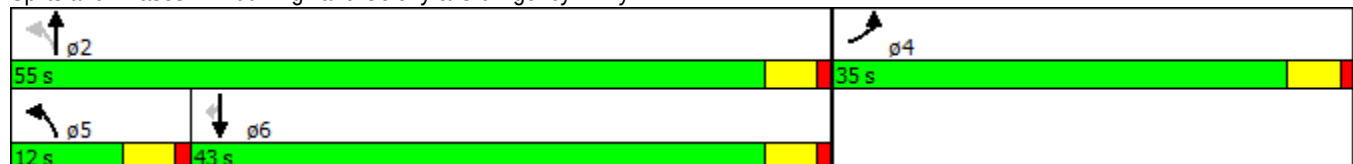
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector Phase	4		5	2	6	6
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0
Minimum Split (s)	22.5		9.5	22.5	22.5	22.5
Total Split (s)	35.0		12.0	55.0	43.0	43.0
Total Split (%)	38.9%		13.3%	61.1%	47.8%	47.8%
Maximum Green (s)	30.5		7.5	50.5	38.5	38.5
Yellow Time (s)	3.5		3.5	3.5	3.5	3.5
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5		4.5	4.5	4.5	4.5
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		None	Max	Max	Max
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Dont Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effect Green (s)	12.1		50.6	50.6	44.2	44.2
Actuated g/C Ratio	0.17		0.71	0.71	0.62	0.62
v/c Ratio	0.66		0.09	0.33	0.36	0.09
Control Delay	24.3		4.2	4.8	8.8	2.6
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	24.3		4.2	4.8	8.8	2.6
LOS	C		A	A	A	A
Approach Delay	24.3			4.8	8.2	
Approach LOS	C			A	A	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 71.7
Natural Cycle: 55
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.66
Intersection Signal Delay: 10.1
Intersection Capacity Utilization 47.2%
Analysis Period (min) 15

Intersection LOS: B
ICU Level of Service A

Splits and Phases: 100: Highland Colony & Old Agency Pkwy



Lanes, Volumes, Timings
100: Highland Colony & Old Agency Pkwy

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	🔴🔴		🔴	🔴🔴	🔴🔴	🔴
Traffic Volume (vph)	202	129	157	848	582	109
Future Volume (vph)	202	129	157	848	582	109
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200	0	200			120
Storage Lanes	1	0	1			1
Taper Length (ft)	25		25			
Lane Util. Factor	0.97	0.95	1.00	0.95	0.95	1.00
Frt	0.942					0.850
Flt Protected	0.970		0.950			
Satd. Flow (prot)	3302	0	1770	3539	3539	1583
Flt Permitted	0.970		0.346			
Satd. Flow (perm)	3302	0	645	3539	3539	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	140					118
Link Speed (mph)	40			40	40	
Link Distance (ft)	647			489	480	
Travel Time (s)	11.0			8.3	8.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	220	140	171	922	633	118
Shared Lane Traffic (%)						
Lane Group Flow (vph)	360	0	171	922	633	118
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	24			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	2	2	1
Detector Template	Left		Left	Thru	Thru	Right
Leading Detector (ft)	20		20	100	100	20
Trailing Detector (ft)	0		0	0	0	0
Detector 1 Position(ft)	0		0	0	0	0
Detector 1 Size(ft)	20		20	6	6	20
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot		pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases			2			6

Baseline

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Lanes, Volumes, Timings
100: Highland Colony & Old Agency Pkwy

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector Phase	4		5	2	6	6
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0
Minimum Split (s)	22.5		9.5	22.5	22.5	22.5
Total Split (s)	35.0		12.0	55.0	43.0	43.0
Total Split (%)	38.9%		13.3%	61.1%	47.8%	47.8%
Maximum Green (s)	30.5		7.5	50.5	38.5	38.5
Yellow Time (s)	3.5		3.5	3.5	3.5	3.5
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5		4.5	4.5	4.5	4.5
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		None	Max	Max	Max
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Dont Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effect Green (s)	10.1		50.6	50.6	39.0	39.0
Actuated g/C Ratio	0.14		0.73	0.73	0.56	0.56
v/c Ratio	0.60		0.29	0.36	0.32	0.13
Control Delay	21.1		4.6	4.3	9.2	2.3
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	21.1		4.6	4.3	9.2	2.3
LOS	C		A	A	A	A
Approach Delay	21.1			4.3	8.1	
Approach LOS	C			A	A	

Intersection Summary

Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 69.7	
Natural Cycle: 55	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.60	
Intersection Signal Delay: 8.4	Intersection LOS: A
Intersection Capacity Utilization 45.9%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 100: Highland Colony & Old Agency Pkwy

2 55 s	4 35 s
5 12 s	6 43 s

Lanes, Volumes, Timings
101: Highland Colony & Site Drive #3

2018-total-AM.syn

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	35	0	74	0	758	46	101	683	0
Future Volume (vph)	0	0	0	35	0	74	0	758	46	101	683	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		150	0		100	200		0
Storage Lanes	0		0	2		1	0		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt						0.850			0.850			
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	0	0	3433	0	1583	0	3539	1583	1770	3539	0
Flt Permitted				0.950						0.296		
Satd. Flow (perm)	0	0	0	3433	0	1583	0	3539	1583	551	3539	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						80			73			
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		364			406			404			489	
Travel Time (s)		8.3			9.2			6.9			8.3	
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
Adj. Flow (vph)	0	0	0	38	0	80	0	824	50	110	742	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	38	0	80	0	824	50	110	742	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors				1		1		2	1	1		2
Detector Template				Left		Right		Thru	Right	Left		Thru
Leading Detector (ft)				20		20		100	20	20		100
Trailing Detector (ft)				0		0		0	0	0		0
Detector 1 Position(ft)				0		0		0	0	0		0
Detector 1 Size(ft)				20		20		6	20	20		6
Detector 1 Type				Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)				0.0		0.0		0.0	0.0	0.0		0.0
Detector 1 Queue (s)				0.0		0.0		0.0	0.0	0.0		0.0
Detector 1 Delay (s)				0.0		0.0		0.0	0.0	0.0		0.0
Detector 2 Position(ft)								94				94
Detector 2 Size(ft)								6				6
Detector 2 Type								Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)								0.0				0.0
Turn Type				Prot		Prot		NA	Perm	pm+pt		NA
Protected Phases				3		3		2		1		6
Permitted Phases									2	6		

Baseline

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Lanes, Volumes, Timings
101: Highland Colony & Site Drive #3

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase				3		3		2	2	1	6	
Switch Phase												
Minimum Initial (s)				5.0		5.0		5.0	5.0	5.0	5.0	
Minimum Split (s)				9.5		9.5		22.5	22.5	9.5	22.5	
Total Split (s)				25.0		25.0		48.0	48.0	17.0	65.0	
Total Split (%)				27.8%		27.8%		53.3%	53.3%	18.9%	72.2%	
Maximum Green (s)				20.5		20.5		43.5	43.5	12.5	60.5	
Yellow Time (s)				3.5		3.5		3.5	3.5	3.5	3.5	
All-Red Time (s)				1.0		1.0		1.0	1.0	1.0	1.0	
Lost Time Adjust (s)				0.0		0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)				4.5		4.5		4.5	4.5	4.5	4.5	
Lead/Lag								Lag	Lag	Lead		
Lead-Lag Optimize?								Yes	Yes	Yes		
Vehicle Extension (s)				3.0		3.0		3.0	3.0	3.0	3.0	
Recall Mode				None		None		Max	Max	None	Max	
Walk Time (s)								7.0	7.0		7.0	
Flash Dont Walk (s)								11.0	11.0		11.0	
Pedestrian Calls (#/hr)								0	0		0	
Act Effect Green (s)				6.7		6.7		55.3	55.3	63.5	64.4	
Actuated g/C Ratio				0.09		0.09		0.72	0.72	0.82	0.83	
v/c Ratio				0.13		0.38		0.33	0.04	0.20	0.25	
Control Delay				32.8		14.0		6.1	1.0	2.7	2.1	
Queue Delay				0.0		0.0		0.2	0.0	0.0	0.0	
Total Delay				32.8		14.0		6.3	1.0	2.7	2.1	
LOS				C		B		A	A	A	A	
Approach Delay								6.0			2.2	
Approach LOS								A			A	

Intersection Summary

Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 77.3	
Natural Cycle: 45	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.38	
Intersection Signal Delay: 5.2	Intersection LOS: A
Intersection Capacity Utilization 40.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 101: Highland Colony & Site Drive #3



Lanes, Volumes, Timings
101: Highland Colony & Site Drive #3

2018-total-PM.syn
8/27/2015

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	133	0	283	0	700	123	270	406	0
Future Volume (vph)	0	0	0	133	0	283	0	700	123	270	406	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		150	0		100	200		0
Storage Lanes	0		0	2		1	0		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt						0.850			0.850			
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	0	0	3433	0	1583	0	3539	1583	1770	3539	0
Flt Permitted				0.950						0.298		
Satd. Flow (perm)	0	0	0	3433	0	1583	0	3539	1583	555	3539	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						308			129			
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		364			406			404			489	
Travel Time (s)		8.3			9.2			6.9			8.3	
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
Adj. Flow (vph)	0	0	0	145	0	308	0	761	134	293	441	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	145	0	308	0	761	134	293	441	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors				1		1		2	1	1		2
Detector Template				Left		Right		Thru	Right	Left		Thru
Leading Detector (ft)				20		20		100	20	20		100
Trailing Detector (ft)				0		0		0	0	0		0
Detector 1 Position(ft)				0		0		0	0	0		0
Detector 1 Size(ft)				20		20		6	20	20		6
Detector 1 Type				Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)				0.0		0.0		0.0	0.0	0.0		0.0
Detector 1 Queue (s)				0.0		0.0		0.0	0.0	0.0		0.0
Detector 1 Delay (s)				0.0		0.0		0.0	0.0	0.0		0.0
Detector 2 Position(ft)								94				94
Detector 2 Size(ft)								6				6
Detector 2 Type								Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)								0.0				0.0
Turn Type				Prot		Prot		NA	Perm	pm+pt		NA
Protected Phases				3		3		2		1		6
Permitted Phases									2	6		

Baseline

Synchro 9 Report
Page 1

Lanes, Volumes, Timings
101: Highland Colony & Site Drive #3

2018-total-PM.syn
8/27/2015

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase				3		3		2	2	1	6	
Switch Phase												
Minimum Initial (s)				5.0		5.0		5.0	5.0	5.0	5.0	
Minimum Split (s)				9.5		9.5		22.5	22.5	9.5	22.5	
Total Split (s)				25.0		25.0		48.0	48.0	17.0	65.0	
Total Split (%)				27.8%		27.8%		53.3%	53.3%	18.9%	72.2%	
Maximum Green (s)				20.5		20.5		43.5	43.5	12.5	60.5	
Yellow Time (s)				3.5		3.5		3.5	3.5	3.5	3.5	
All-Red Time (s)				1.0		1.0		1.0	1.0	1.0	1.0	
Lost Time Adjust (s)				0.0		0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)				4.5		4.5		4.5	4.5	4.5	4.5	
Lead/Lag								Lag	Lag	Lead		
Lead-Lag Optimize?								Yes	Yes	Yes		
Vehicle Extension (s)				3.0		3.0		3.0	3.0	3.0	3.0	
Recall Mode				None		None		Max	Max	None	Max	
Walk Time (s)								7.0	7.0		7.0	
Flash Dont Walk (s)								11.0	11.0		11.0	
Pedestrian Calls (#/hr)								0	0		0	
Act Effect Green (s)				9.3		9.3		46.9	46.9	60.6	60.6	
Actuated g/C Ratio				0.12		0.12		0.59	0.59	0.77	0.77	
v/c Ratio				0.36		0.67		0.36	0.14	0.52	0.16	
Control Delay				34.3		12.1		9.6	2.4	6.3	2.8	
Queue Delay				0.0		0.0		0.3	0.0	0.0	0.0	
Total Delay				34.3		12.1		10.0	2.4	6.3	2.8	
LOS				C		B		A	A	A	A	
Approach Delay								8.8			4.2	
Approach LOS								A			A	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 78.9

Natural Cycle: 45

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.67

Intersection Signal Delay: 9.5

Intersection LOS: A

Intersection Capacity Utilization 48.9%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 101: Highland Colony & Site Drive #3



Lanes, Volumes, Timings
102: Highland Colony & Lake Harbour Ext

2018-total-AM.syn

8/27/2015

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	 		 			 
Traffic Volume (vph)	328	420	385	251	381	342
Future Volume (vph)	328	420	385	251	381	342
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250	0		100	120	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25				25	
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	3433	1583	3539	1583	1770	3539
Flt Permitted	0.950				0.436	
Satd. Flow (perm)	3433	1583	3539	1583	812	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		457		273		
Link Speed (mph)	30		40			40
Link Distance (ft)	437		814			404
Travel Time (s)	9.9		13.9			6.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	357	457	418	273	414	372
Shared Lane Traffic (%)						
Lane Group Flow (vph)	357	457	418	273	414	372
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	24		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2	1	1	2
Detector Template	Left	Right	Thru	Right	Left	Thru
Leading Detector (ft)	20	20	100	20	20	100
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	6	20	20	6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)			94			94
Detector 2 Size(ft)			6			6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA	Perm	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2	6	

Baseline

Synchro 9 Report
Page 1

Lanes, Volumes, Timings
102: Highland Colony & Lake Harbour Ext

2018-total-AM.syn
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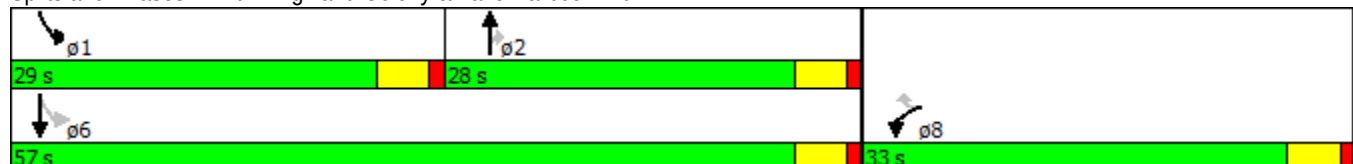
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Detector Phase	8	8	2	2	1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	9.5	22.5
Total Split (s)	33.0	33.0	28.0	28.0	29.0	57.0
Total Split (%)	36.7%	36.7%	31.1%	31.1%	32.2%	63.3%
Maximum Green (s)	28.5	28.5	23.5	23.5	24.5	52.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Max	Max	None	Max
Walk Time (s)	7.0	7.0	7.0	7.0		7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0		11.0
Pedestrian Calls (#/hr)	0	0	0	0		0
Act Effect Green (s)	13.7	13.7	35.2	35.2	52.6	52.6
Actuated g/C Ratio	0.18	0.18	0.47	0.47	0.70	0.70
v/c Ratio	0.57	0.69	0.25	0.31	0.57	0.15
Control Delay	31.7	9.0	14.2	3.4	8.3	4.4
Queue Delay	0.0	0.0	0.0	0.0	0.3	0.0
Total Delay	31.7	9.0	14.2	3.4	8.7	4.4
LOS	C	A	B	A	A	A
Approach Delay	18.9		10.0			6.7
Approach LOS	B		A			A

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 75.4
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.69
Intersection Signal Delay: 12.0
Intersection Capacity Utilization 52.4%
Analysis Period (min) 15

Intersection LOS: B
ICU Level of Service A

Splits and Phases: 102: Highland Colony & Lake Harbour Ext



Lanes, Volumes, Timings
102: Highland Colony & Lake Harbour Ext

2018-total-PM.syn
8/27/2015

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	 		 		 	 
Traffic Volume (vph)	142	450	353	240	345	256
Future Volume (vph)	142	450	353	240	345	256
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250	0		100	120	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25				25	
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	3433	1583	3539	1583	1770	3539
Flt Permitted	0.950				0.468	
Satd. Flow (perm)	3433	1583	3539	1583	872	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		489		261		
Link Speed (mph)	30		40			40
Link Distance (ft)	437		814			404
Travel Time (s)	9.9		13.9			6.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	154	489	384	261	375	278
Shared Lane Traffic (%)						
Lane Group Flow (vph)	154	489	384	261	375	278
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	24		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2	1	1	2
Detector Template	Left	Right	Thru	Right	Left	Thru
Leading Detector (ft)	20	20	100	20	20	100
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	6	20	20	6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)			94			94
Detector 2 Size(ft)			6			6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA	Perm	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2	6	

Baseline

Synchro 9 Report
Page 1

Lanes, Volumes, Timings
102: Highland Colony & Lake Harbour Ext

2018-total-PM.syn
8/27/2015



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Detector Phase	8	8	2	2	1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	9.5	22.5
Total Split (s)	33.0	33.0	28.0	28.0	29.0	57.0
Total Split (%)	36.7%	36.7%	31.1%	31.1%	32.2%	63.3%
Maximum Green (s)	28.5	28.5	23.5	23.5	24.5	52.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Max	Max	None	Max
Walk Time (s)	7.0	7.0	7.0	7.0		7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0		11.0
Pedestrian Calls (#/hr)	0	0	0	0		0
Act Effect Green (s)	10.3	10.3	37.1	37.1	52.7	52.7
Actuated g/C Ratio	0.14	0.14	0.52	0.52	0.73	0.73
v/c Ratio	0.31	0.76	0.21	0.28	0.48	0.11
Control Delay	28.8	11.3	11.6	3.0	6.2	3.5
Queue Delay	0.0	0.0	0.0	0.0	0.3	0.0
Total Delay	28.8	11.3	11.6	3.0	6.5	3.5
LOS	C	B	B	A	A	A
Approach Delay	15.5		8.1			5.2
Approach LOS	B		A			A

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 72
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.76
Intersection Signal Delay: 9.6
Intersection Capacity Utilization 45.1%
Analysis Period (min) 15

Intersection LOS: A
ICU Level of Service A

Splits and Phases: 102: Highland Colony & Lake Harbour Ext



Neel-Schaffer

P.O. Box 22625
Jackson, MS 39225

Study Name :

Signal Warrants - Summary

Major Street Approaches

Northbound: Highland Colony Pkwy

Number of Lanes: 2

Approach Speed: 45

Total Approach Volume: 4,031

Southbound: Highland Colony Pkwy

Number of Lanes: 2

Approach Speed: 45

Total Approach Volume: 5,227

Minor Street Approaches

Eastbound: Old Agency Pkwy

Number of Lanes: 1

Total Approach Volume: 2,372

Warrant Summary (Rural values apply.)

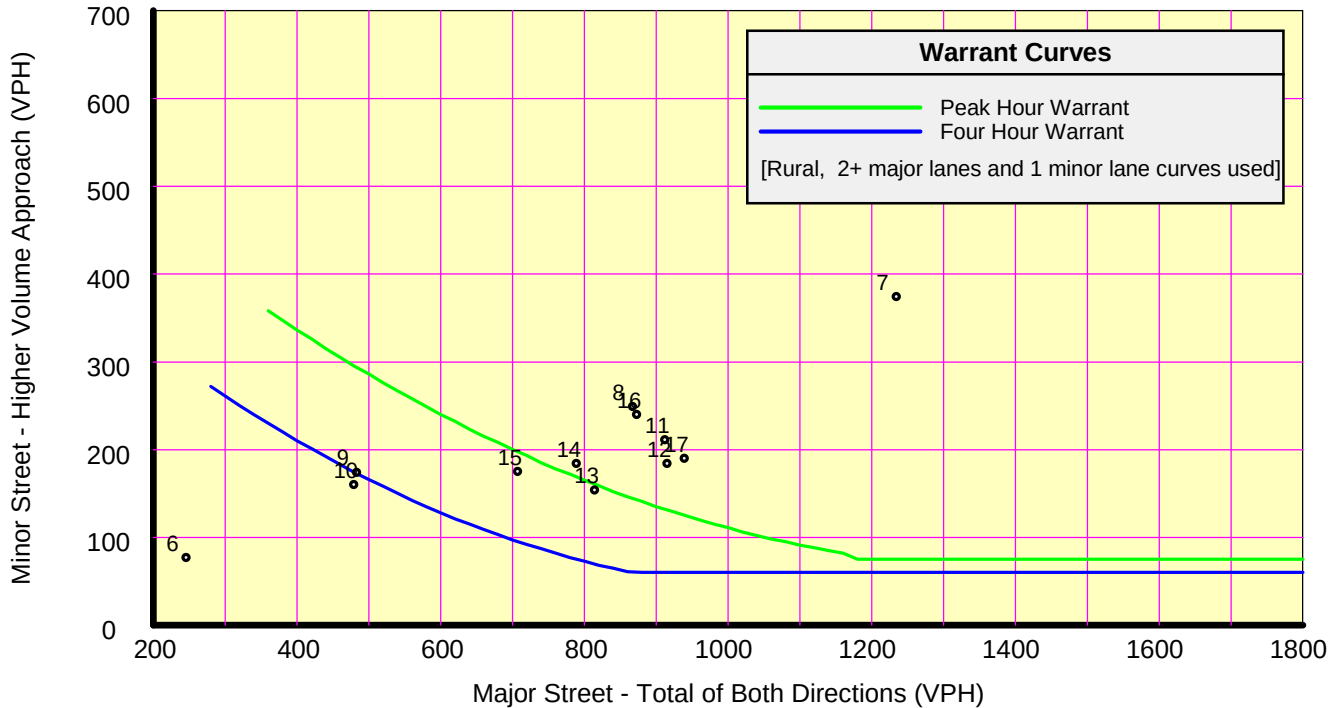
Warrant 1 - Eight Hour Vehicular Volumes	Satisfied
Warrant 1A - Minimum Vehicular Volume Satisfied	
Required volumes reached for 11 hours, 8 are needed	
Warrant 1B - Interruption of Continuous Traffic Satisfied	
Required volumes reached for 9 hours, 8 are needed	
Warrant 1 A&B - Combination of Warrants Satisfied	
Required volumes reached for 9 hours, 8 are needed	
Warrant 2 - Four Hour Volumes	Satisfied
Number of hours (10) volumes exceed minimum >= minimum required (4).	
Warrant 3 - Peak Hour	Satisfied
Warrant 3A - Peak Hour Delay Satisfied	
Number of hours (4) volumes and delays exceed minimum >= minimum required (1).	
Warrant 3B - Peak Hour Volumes Satisfied	
Volumes exceed minimums for at least one hour.	
Warrant 4 - Pedestrian Volumes	Not Evaluated
Warrant 5 - School Crossing	Not Evaluated
Warrant 6 - Coordinated Signal System	Not Evaluated
Warrant 7 - Crash Experience	Not Evaluated
Warrant 8 - Roadway Network	Not Evaluated

Neel-Schaffer

P.O. Box 22625
Jackson, MS 39225

Study Name :

Signal Warrants - Summary



Analysis of 8-Hour Volume Warrants:

Hour Begin	Major Total	Higher Minor Vol	Dir	War-1A			War-1B			War-1A&B		
				Major Crit	Minor Crit	Meets?	Major Crit	Minor Crit	Meets?	Major Crit	Minor Crit	Meets?
00:00	0	0	EB	420-No	105-No	---	630-No	53-No	---	504-No	84-No	---
01:00	0	0	EB	420-No	105-No	---	630-No	53-No	---	504-No	84-No	---
02:00	0	0	EB	420-No	105-No	---	630-No	53-No	---	504-No	84-No	---
03:00	0	0	EB	420-No	105-No	---	630-No	53-No	---	504-No	84-No	---
04:00	0	0	EB	420-No	105-No	---	630-No	53-No	---	504-No	84-No	---
05:00	0	0	EB	420-No	105-No	---	630-No	53-No	---	504-No	84-No	---
06:00	246	77	EB	420-No	105-No	---	630-No	53-Yes	Minor	504-No	84-No	---
07:00	1,234	374	EB	420-Yes	105-Yes	Both	630-Yes	53-Yes	Both	504-Yes	84-Yes	Both
08:00	867	249	EB	420-Yes	105-Yes	Both	630-Yes	53-Yes	Both	504-Yes	84-Yes	Both
09:00	483	174	EB	420-Yes	105-Yes	Both	630-No	53-Yes	Minor	504-No	84-Yes	Minor
10:00	479	160	EB	420-Yes	105-Yes	Both	630-No	53-Yes	Minor	504-No	84-Yes	Minor
11:00	912	211	EB	420-Yes	105-Yes	Both	630-Yes	53-Yes	Both	504-Yes	84-Yes	Both
12:00	915	184	EB	420-Yes	105-Yes	Both	630-Yes	53-Yes	Both	504-Yes	84-Yes	Both
13:00	814	154	EB	420-Yes	105-Yes	Both	630-Yes	53-Yes	Both	504-Yes	84-Yes	Both
14:00	789	184	EB	420-Yes	105-Yes	Both	630-Yes	53-Yes	Both	504-Yes	84-Yes	Both
15:00	707	175	EB	420-Yes	105-Yes	Both	630-Yes	53-Yes	Both	504-Yes	84-Yes	Both
16:00	873	240	EB	420-Yes	105-Yes	Both	630-Yes	53-Yes	Both	504-Yes	84-Yes	Both
17:00	939	190	EB	420-Yes	105-Yes	Both	630-Yes	53-Yes	Both	504-Yes	84-Yes	Both
18:00	0	0	EB	420-No	105-No	---	630-No	53-No	---	504-No	84-No	---
19:00	0	0	EB	420-No	105-No	---	630-No	53-No	---	504-No	84-No	---
20:00	0	0	EB	420-No	105-No	---	630-No	53-No	---	504-No	84-No	---
21:00	0	0	EB	420-No	105-No	---	630-No	53-No	---	504-No	84-No	---
22:00	0	0	EB	420-No	105-No	---	630-No	53-No	---	504-No	84-No	---
23:00	0	0	EB	420-No	105-No	---	630-No	53-No	---	504-No	84-No	---

Neel-Schaffer

P.O. Box 22625
Jackson, MS 39225

Study Name :

Signal Warrants - Summary

Major Street Approaches

Northbound: Highland Colony Pkwy

Number of Lanes: 2

Approach Speed: 45

Total Approach Volume: 4,051

Southbound: Highland Colony Pkwy

Number of Lanes: 2

Approach Speed: 45

Total Approach Volume: 3,925

Minor Street Approaches

Westbound: Site Drive #3

Number of Lanes: 2

Total Approach Volume: 3,145

Warrant Summary (Rural values apply.)

Warrant 1 - Eight Hour Vehicular Volumes	Satisfied
Warrant 1A - Minimum Vehicular VolumeSatisfied	
Required volumes reached for 8 hours, 8 are needed	
Warrant 1B - Interruption of Continuous TrafficSatisfied	
Required volumes reached for 8 hours, 8 are needed	
Warrant 1 A&B - Combination of WarrantsNot Satisfied	
Required volumes reached for 7 hours, 8 are needed	
Warrant 2 - Four Hour Volumes	Satisfied
Number of hours (8) volumes exceed minimum >= minimum required (4).	
Warrant 3 - Peak Hour	Satisfied
Warrant 3A - Peak Hour DelayNot Satisfied	
Total approach volumes and delays on minor street do not exceed minimums for any hour.	
Warrant 3B - Peak Hour VolumesSatisfied	
Volumes exceed minimums for at least one hour.	
Warrant 4 - Pedestrian Volumes	Not Evaluated
Warrant 5 - School Crossing	Not Evaluated
Warrant 6 - Coordinated Signal System	Not Evaluated
Warrant 7 - Crash Experience	Not Evaluated
Warrant 8 - Roadway Network	Not Evaluated

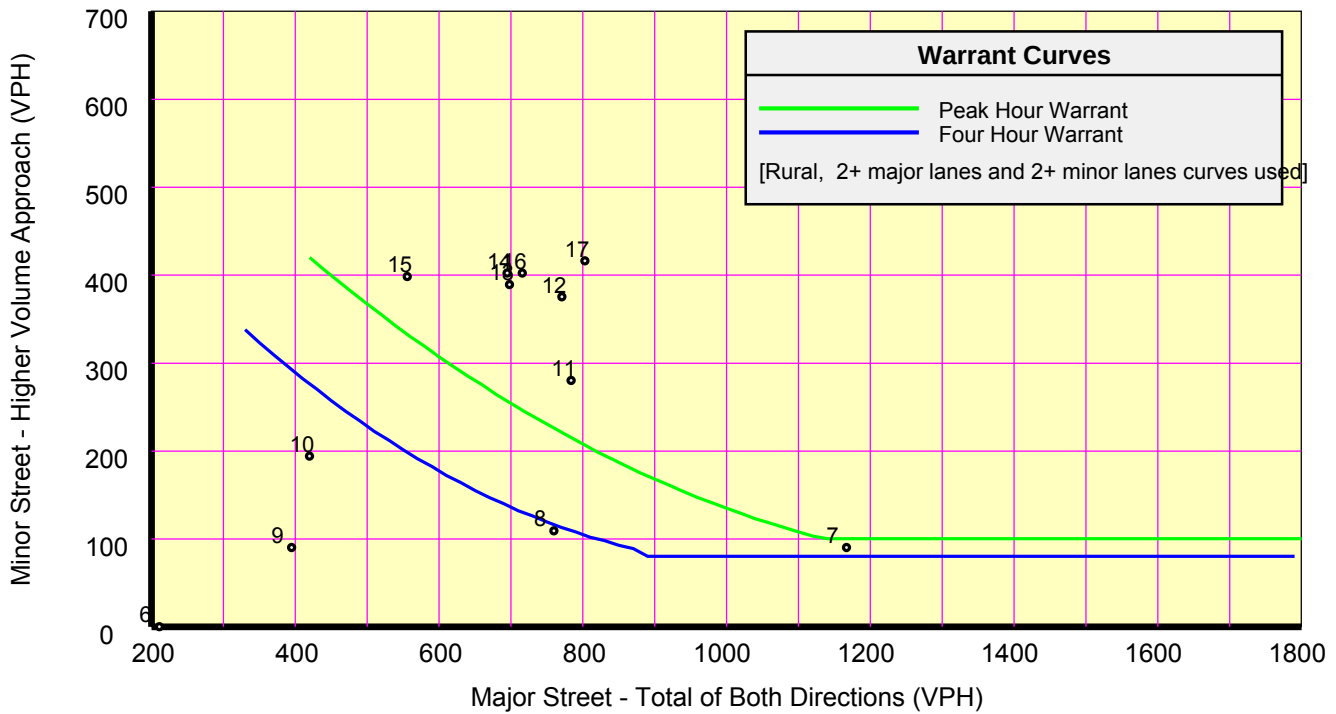
Neel-Schaffer

P.O. Box 22625

Jackson, MS 39225

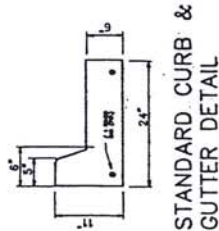
Study Name :

Signal Warrants - Summary

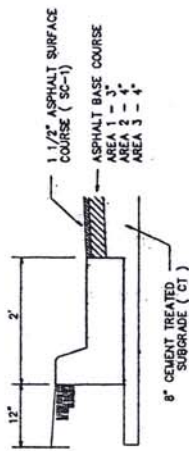


Analysis of 8-Hour Volume Warrants:

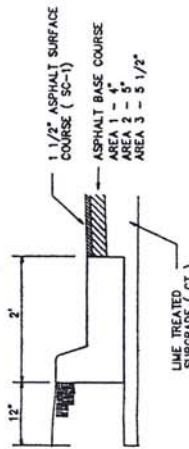
Hour	Major	Higher Minor	War-1A			War-1B			War-1A&B		
Begin	Total	Vol Dir	Major Crit	Minor Crit	Meets?	Major Crit	Minor Crit	Meets?	Major Crit	Minor Crit	Meets?
00:00	0	0 EB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
01:00	0	0 EB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
02:00	0	0 EB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
03:00	0	0 EB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
04:00	0	0 EB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
05:00	0	0 EB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
06:00	211	0 EB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
07:00	1,167	90 WB	420-Yes	140-No	Major	630-Yes	70-Yes	Both	504-Yes	112-No	Major
08:00	760	109 WB	420-Yes	140-No	Major	630-Yes	70-Yes	Both	504-Yes	112-No	Major
09:00	395	90 WB	420-No	140-No	---	630-No	70-Yes	Minor	504-No	112-No	---
10:00	420	194 WB	420-Yes	140-Yes	Both	630-No	70-Yes	Minor	504-No	112-Yes	Minor
11:00	784	280 WB	420-Yes	140-Yes	Both	630-Yes	70-Yes	Both	504-Yes	112-Yes	Both
12:00	771	375 WB	420-Yes	140-Yes	Both	630-Yes	70-Yes	Both	504-Yes	112-Yes	Both
13:00	698	389 WB	420-Yes	140-Yes	Both	630-Yes	70-Yes	Both	504-Yes	112-Yes	Both
14:00	695	402 WB	420-Yes	140-Yes	Both	630-Yes	70-Yes	Both	504-Yes	112-Yes	Both
15:00	556	398 WB	420-Yes	140-Yes	Both	630-No	70-Yes	Minor	504-Yes	112-Yes	Both
16:00	716	402 WB	420-Yes	140-Yes	Both	630-Yes	70-Yes	Both	504-Yes	112-Yes	Both
17:00	803	416 WB	420-Yes	140-Yes	Both	630-Yes	70-Yes	Both	504-Yes	112-Yes	Both
18:00	0	0 EB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
19:00	0	0 EB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
20:00	0	0 EB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
21:00	0	0 EB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
22:00	0	0 EB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
23:00	0	0 EB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---



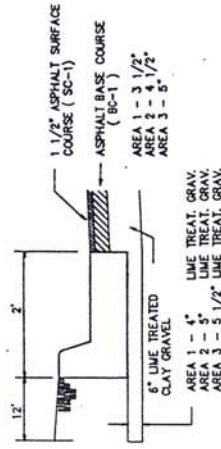
STANDARD CURB & GUTTER DETAIL



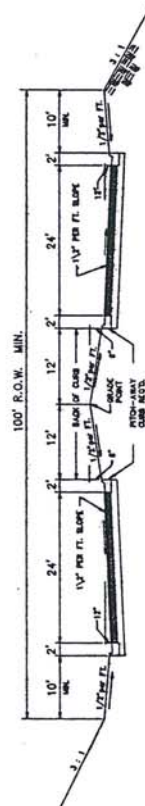
BASE BID
CEMENT TREATED SUBGRADE



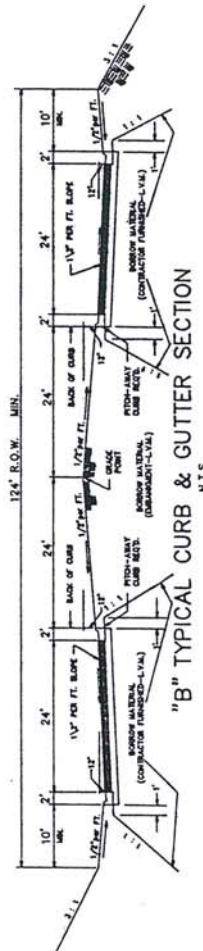
ALTERNATE 1
LIME MODIFIED SUBGRADE



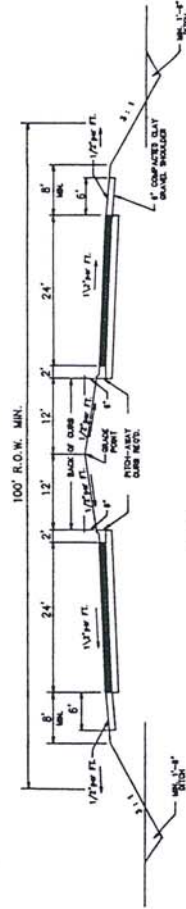
ALTERNATE 2
LIME TREATED CLAY GRAVEL SUBGRADE



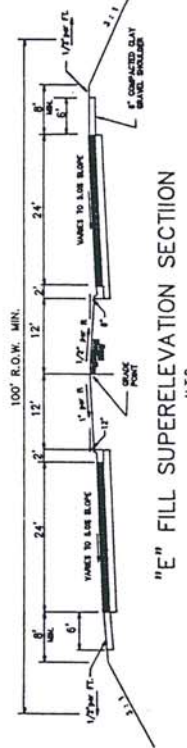
"A" TYPICAL CURB & GUTTER SECTION
N.T.S.



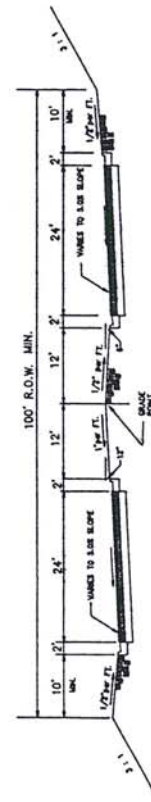
"B" TYPICAL CURB & GUTTER SECTION
N.T.S.



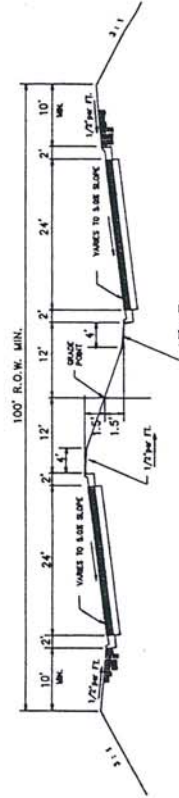
"D" FILL SECTION
N.T.S.



"E" FILL SUPERELEVATION SECTION
N.T.S.



"C" CURB & GUTTER SUPERELEVATION SECTION
N.T.S.



"G" SUPERELEVATION STEPPED SECTION
N.T.S.

- NOTE:
1. IF CURB POURED BY MACHINE, 3,000 PSI CONCRETE WILL BE REQUIRED.
2. EROSION CONTROL LIMITS WILL BE AS INDICATED IN THE TECHNICAL SPECIFICATIONS.
3. TWO # 6 SLIP DOWELS 24" LONG

TYPICAL SECTIONS
SUMMERTREE PARKWAY



~~July 2, 2015~~

Revised June 1, 2016

Brian Kendell, Architect
MulvannyG2 Architects
8444 Westpark Drive, Suite 120
McLean, VA 22102
Phone: 703-564-8387
Brian.Kendell@MulvannyG2.com

**RE: Costco
Water Supply Test and Site Flow Analysis
Ridgeland, MS**

Dear Mr. Kendell:

The requested water supply test and site flow analysis for the subject project are detailed in this report and submitted for review and posting.

Note: This water report has been revised based on a new proposed civil utility layout as indicated on AEC Drawing C5.0 dated 5/24/2016 and received on 5/27/2016.

SUMMARY OF RESULTS (CONCLUSION C1 - AS DESIGNED)

Fireline Base of Riser (BOR) static pressure at Finish Floor Elevation (FFE):	64.0 psi
Fireline BOR high static pressure at FFE:	71.0 psi
Fireline BOR residual pressure at FFE:	51.0 psi @ 2020 gpm
Fireline BOR residual pressure at FFE:	49.0 psi @ 2220 gpm
Assumed Fireline BOR FFE:	338.7-ft. AMSL
Low Hydraulic Gradient Reduction:	-7.0 psi

Fireline Backflow Preventer Required: Double Check Type Backflow Preventer Located Inside the Building (10-inch AMES 2000 SS is assumed for calculations).

A fire pump WILL NOT be required for the 2020 gpm demand.

A fire pump WILL BE required for the 2220 gpm demand.

**WATER SUPPLY SITE SURVEY REPORT
COSTCO
STORE #TBA
SWC NATCHEZ TRACE PARKWAY AND HIGHLAND COLONY PARKWAY
RIDGELAND, MS**

TEST DATE: 06/17/15

Information Gathered:

1. Telgian conducted a hydrant flow test with the assistance of Fire Marshal Nelson Peden on June 17, 2015. This analysis is based on results from that test.
2. The existing water main sizes were provided by the City of Ridgeland Public Works Department. All new piping has been assumed based on the proposed location of the site.
3. Telgian obtained revised information on backflow prevention requirements from John "Mike" McCollum, Director of Public Works. For fire services, a double check assembly (AMES 2000 SS or similar) is required. This device could be located inside the building.

The Site:

This site is located in the central portion of Ridgeland, MS and is located along the east side of Highland Colony Parkway approximately 500 ft north of New Pointe Drive. There are currently no water mains in Highland Colony Parkway near the proposed site. The nearest main to the proposed site is a 16 inch PVC water main which crosses beneath Interstate 55 and is located in New Pointe Drive and is proposed that it is to supply a future 16 inch PVC main in Highland Colony Parkway which is proposed to supply a 12 inch PVC public service loop around the outer perimeter of the property which is proposed to supply a 12 inch combination service for a 12 inch fire service and 8 inch private service loop around the property. The arrangement of these lines in the immediate vicinity of the property is shown on Attachment #1 – Location Sketch/ Area Water Map. It is proposed that sprinkler protection for this facility is to be provided by a 12 inch lead in from the section of 12 inch private main on the private service loop north of the property, as shown on Attachment #1.

The Public System:

The City of Ridgeland utilizes an indirect pumping arrangement to supply water to its looped distribution system. There are seven clear wells throughout the city which provide a combined 10 MGD. The tanks controlling pressures within the vicinity of this site are the Natchez Trace Parkway Tank, and the North Park Tank. The Natchez Trace Parkway Tank, located approximately 1 mile northeast of the site, is an elevated tank having a capacity of 300,000 gallons. This tank has an overflow elevation of 507.5 ft., AMSL and a low water (pump start) level of 488 ft., AMSL. At the time of the test, the water level in the tank was found to be 504 ft., AMSL. The North Park Tank, located approximately 1.5 miles southeast of the site, is an elevated tank having a capacity of 500,000 gallons. This tank has an overflow elevation of 507.5 ft., AMSL and a low water (pump start) level of 488 ft., AMSL. At the time of the test, the water level in the tank was found to be 504 ft., AMSL.

There are seven clear wells throughout the city which are rated for a total output capacity of 10 MGD and are each equipped with constant speed motors.

Further information was requested regarding the distribution system, however no further information has been received.

**WATER SUPPLY SITE SURVEY REPORT
COSTCO
STORE #TBA
SWC NATCHEZ TRACE PARKWAY AND HIGHLAND COLONY PARKWAY
RIDGELAND, MS**

TEST DATE: 06/17/15

Water Flow Test Data:

The following summarizes the hydrant flow test results:

Flow for the test was made utilizing the hydrant located on the 16 inch main at the address of 310 New Pointe Drive. Static and residual pressures were taken at the hydrant located on the 16 inch main at the address of 315 New Pointe Drive. Two 2-1/2 inch hydrant butts were used, each equipped with a 2-1/2 inch Pollard diffuser. Pitot readings of 46/46 psi were obtained on the nozzles, having discharge coefficients of 0.90/0.90. This resulted in a total flow of 2277 gpm at a residual pressure of 60 psi. Static pressure before and after testing was 62 psi. Static and residual pressure readings were taken at an elevation of 364 ft., AMSL, which is even with the assumed finish floor elevation of the building (338.7 ft., AMSL). This test is effective at the base of the pressure hydrant for friction loss purposes. Please see enclosed Attachment #2 for a graphical representation of this test and necessary calculations. The test was made at 9:45 a.m., CST.

* Adjustments were made for assumed pipe friction loss to the site entry point, (-6.0 psi), elevation change (+11.0 psi), low hydraulic gradient (-7.0 psi), and a backflow prevention device (-5.0 psi). No deduction for any safety buffer (which may be required by the AHJ) has been taken. See following comments for additional information.

Additional Comments:

Information was requested regarding testing procedures for MIC within the water system. Currently the system is not tested for MIC at this time, and no evidence has been recorded to date.

The public system can be considered a reliable supply with respect to the City of Ridgeland duration requirements. This acceptability is based upon the system capability to maintain the required fire flow for the design 120 minute duration.

Per Nelson Peden, Fire Marshal (Phone: 607-624-7526), a 75% reduction for fully sprinklered buildings is acceptable in the determination of fire flows in accordance with the International Fire Code, Appendix B. Based upon the proposed size of the building and its classification as a Type II-B per the International Building Code, the required flow rate reduces to 2000 gpm at 20 psi. As the calculation for available supply for a 2020 gpm sprinkler system demand exceeds this demand, additional calculations were not presented. If it is desired to provide additional calculations reflecting the on site fire flows, additional calculations will be provided upon request.

Conclusions:

C1. FIRE WATER SUPPLY: The available public supplies combined with the assumed fire protection lead-in sizing and arrangement, as shown on Attachment #1, should yield a base of riser supply of 64.0 psi static and 2020 gpm flowing at a 51.0 psi residual and 2200 gpm flowing at a 49.0 psi residual. This supply is downstream of a 10 inch, Ames 2000 SS, double check type backflow preventer. This exceeds the minimum target demand of 2020 gpm at 45 psi for the supply of sprinkler protection without a pump when utilizing 10'-0" spacing and a pump **WILL NOT BE** required with this installation. However, this does

**WATER SUPPLY SITE SURVEY REPORT
COSTCO
STORE #TBA
SWC NATCHEZ TRACE PARKWAY AND HIGHLAND COLONY PARKWAY
RIDGELAND, MS**

TEST DATE: 06/17/15

not meet the minimum target demand of 2220 gpm at 65 psi for the supply of sprinkler protection without a pump when utilizing 12'-6" spacing and a pump **WILL BE** required with this installation. A tank **WILL NOT** be required for either installation. See Attachment #2 for a graphical representation and necessary calculations.

This analysis assumes that the installation meets the design parameters and information stated herein. If changes are made, they should be analyzed to determine resultant effects on the water supply.

If you need additional information, please feel free to contact us.

Sincerely,
Brian S. Garland, CET
Senior Fire Protection Consultant

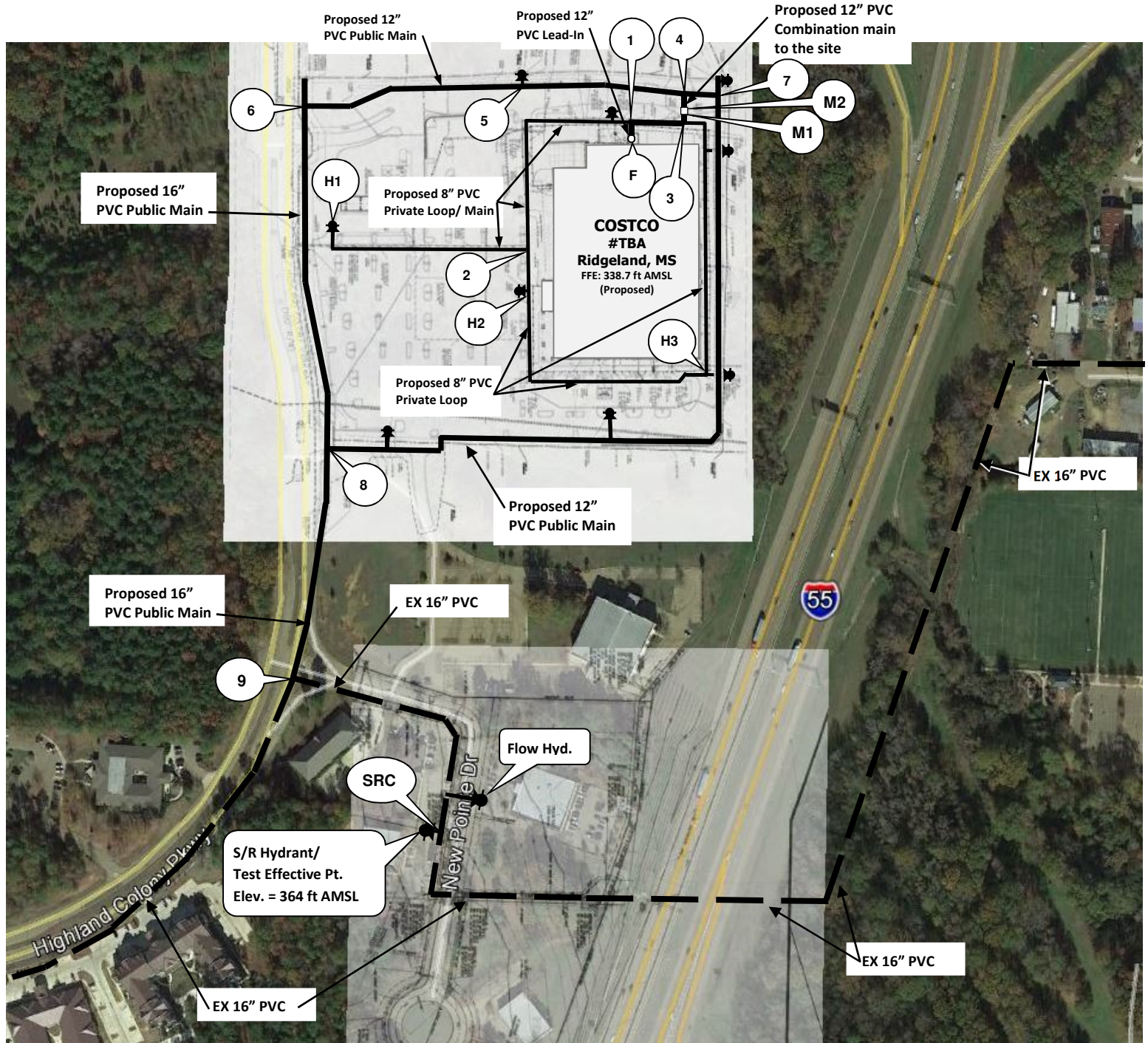
ATTACHMENTS:

Attachment #1 - Location Sketch/Area Water Map
Attachment #2 - Water Supply Plot – Fire Calculations

Attachment #1

Costco Wholesale
Location Sketch/ Area Water Map
Water flow test: 6/17/15
Water flow test information: 62s / 60r / 2277 gpm

Store #TBA – Highland Colony Parkway, Ridgeland, MS
Notes by: Brian Garland, Telgian Corporation
Water flow test conducted by: Brian Garland
Water flow test witnessed by: Fire Marshal Nelson Peden



Natchez Trace Parkway Tank
1.0 Miles +/-

North Park Tank
1.5 Miles +/-

Existing pipe types, sizes and locations are per the City of Ridgeland Public Works Department. All other piping, locations and sizes are assumed.

N



Scale: 1" = 300'-0"

X

Hydraulic Reference Point

Note: This drawing is for reference only and should not be used for exact locations or construction.

**WATER SUPPLY SITE SURVEY
FIRE SPRINKLER DEMAND**

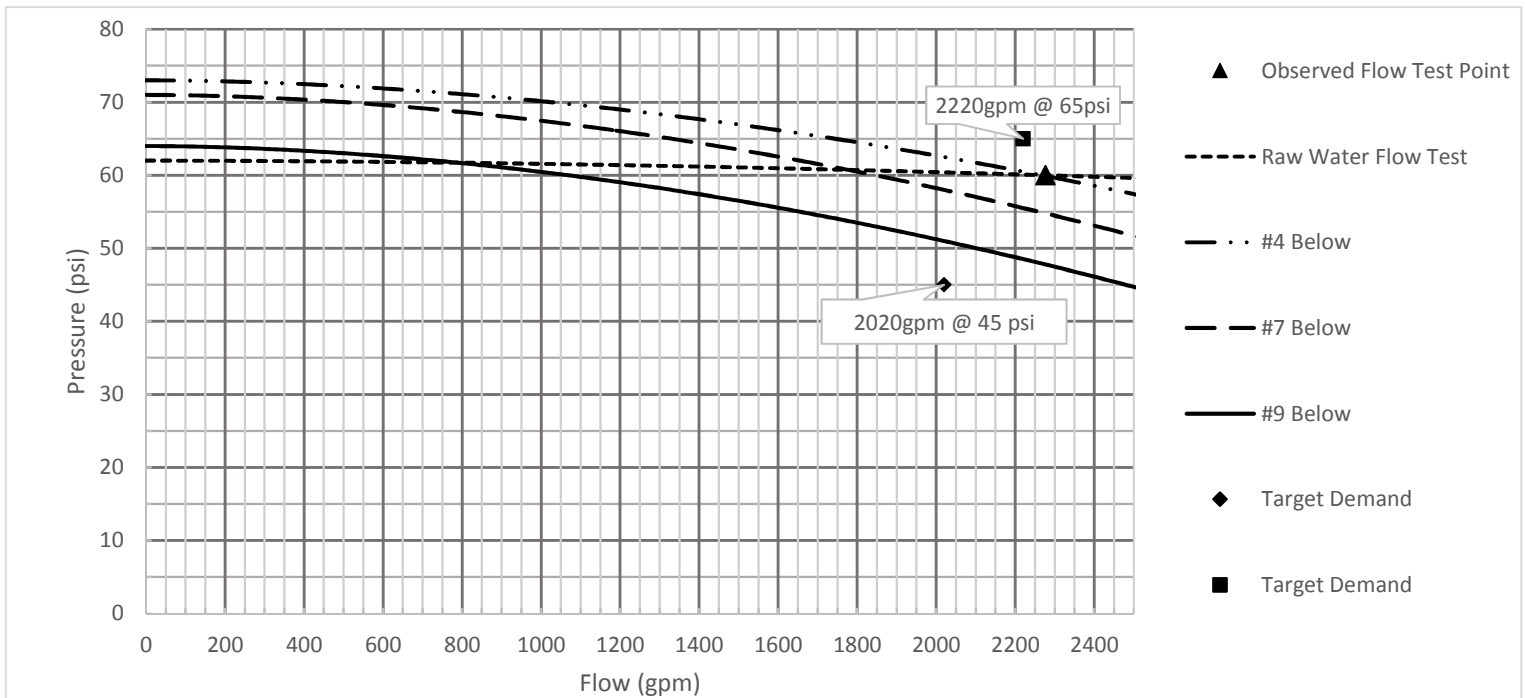
PROJECT: COSTCO
LOCATION: Highland Colony Parkway
CITY/STATE: Ridgeland, MS

Static (psi)	Residual (psi)	Flow (gpm)
62	60	2277

Gauge Hydrant Elevation (ft)	Building FFE (ft)
364	338.7

Outlet Diameter #1 (in)	Hydrant Coefficient #1	Pitot #1 (psi)	Outlet Diameter #2 (in)	Hydrant Coefficient #2	Pitot #2 (psi)	Outlet Diameter #3 (in)	Hydrant Coefficient #3	Pitot #3 (psi)	Outlet Diameter #4 (in)	Hydrant Coefficient #4	Pitot #4 (psi)
2.5	0.9	46	2.5	0.9	46						

Gauge Hydrant Location:	On the 16 inch main at the address of 315 New Pointe Drive.											
Flow Hydrant Location:	On the 16 inch main at the address of 310 New Pointe Drive 80 ft North of the S/R hydrant											
Test By:	Telgian Corporation					Date:	6/17/2015			Time:	9:45 AM	
Backflow Prevention:	Size:	<u>10-inch</u>	Type:	<u>Double Check</u>		Mfg:	<u>Ames</u>		Model:	<u>2000SS</u>		
Water Meter:	Size:	<u>None</u>	Mfg:	<u>N/A</u>		Model:						



Flow Rate (gpm)		0	2020	2220	
		Static (psi)	Residual (psi)		
1.	Pressure available at test	62	60.5	60.0	
2.	Elevation Adjustment	11	Included in Calcs	Included in Calcs	
3.	Pressure loss due to friction	0	Included in Calcs	Included in Calcs	
4.	Pressure at base of riser upstream of BFP & meter	73	62.5	61	
5.	BFP loss/preload	-2	-4.5	-5	
6.	Water meter loss	0	0	0	
7.	Pressure at base of riser downstream of BFP & meter	71	58	56	
8.	Adjustment for low public pressure	-7	-7	-7	
9.	Total base of riser pressure	64	51	49	

Calculated Demands	
gpm	psi
2020	45
2220	65

Additional Demands	
gpm	psi

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JOB TITLE: Costco Ridgeland, MS Sprinkler 2020 - Attachment # 2 Pages 2 thru 4

WATER SUPPLY DATA

SOURCE NODE TAG	STATIC PRESS. (PSI)	RESID. PRESS. (PSI)	FLOW @ (GPM)	AVAIL. PRESS. (PSI)	TOTAL @ DEMAND (GPM)	REQ'D PRESS. (PSI)
SRC	62.0	60.0	2277.0	60.4	2020.0	

AGGREGATE FLOW ANALYSIS:

TOTAL FLOW AT SOURCE	2020.0 GPM
TOTAL HOSE STREAM ALLOWANCE AT SOURCE	0.0 GPM
OTHER HOSE STREAM ALLOWANCES	2020.0 GPM
TOTAL DISCHARGE FROM ACTIVE SPRINKLERS	0.0 GPM

NODE ANALYSIS DATA

NODE TAG	ELEVATION (FT)	NODE TYPE	PRESSURE (PSI)	DISCHARGE (GPM)
F	338.7	HOSE STREAM	62.4	2020.0
1	338.7	- - - -	63.1	- - -
2	338.7	- - - -	63.2	- - -
3	338.7	- - - -	63.4	- - -
4	338.7	- - - -	68.3	- - -
5	338.7	- - - -	69.2	- - -
6	350.0	- - - -	65.2	- - -
7	338.7	- - - -	68.5	- - -
8	355.0	- - - -	63.3	- - -
9	358.0	- - - -	62.5	- - -
H1	351.0	- - - -	57.8	- - -
H2	338.7	- - - -	63.2	- - -
H3	338.7	- - - -	63.3	- - -
M1	338.7	- - - -	63.9	- - -
M2	338.7	- - - -	67.9	- - -
SRC	364.0	SOURCE	60.4	2020.0

DATE: 5/31/2016HASS\COSTCO RIDGELAND, MS - SPRINKLER - 2020 - REVISED.SDF

JOB TITLE: Costco Ridgeland, MS Sprinkler 2020 - Attachment # 2 Pages 2 thru 4

PIPE DATA

PIPE TAG	END	ELEV.	NOZ.	PT	DISC.	Q (GPM)	DIA (IN)	LENGTH	PRESS.		
	NODES	(FT)	(K)	(PSI)	(GPM)	VEL (FPS)	HW (C)	(FT)	SUM.		
							FL/FT		(PSI)		
F1	Pipe: 1					-2020.0	11.650	PL	45.00	PF	0.6
		338.7	H.S.	62.4	2020.0	6.1	150	FTG	ETG	PE	0.0
		338.7	0.0	63.1	0.0		0.004	TL	170.00	PV	
12	Pipe: 2					-147.9	7.980	PL	530.00	PF	0.1
		338.7	0.0	63.1	0.0	0.9	150	FTG	E2G	PE	0.0
		338.7	0.0	63.2	0.0		0.000	TL	569.00	PV	
H12	Pipe: 3					0.0	7.980	PL	515.00	PF	0.0
		351.0	0.0	57.8	0.0	0.0	150	FTG	ET2G	PE	5.3
		338.7	0.0	63.2	0.0		0.000	TL	607.00	PV	
2H2	Pipe: 4					-147.9	7.980	PL	90.00	PF	0.0
		338.7	0.0	63.2	0.0	0.9	150	FTG	G	PE	0.0
		338.7	0.0	63.2	0.0		0.000	TL	96.00	PV	
H2H3	Pipe: 5					-147.9	7.980	PL	685.00	PF	0.1
		338.7	0.0	63.2	0.0	0.9	150	FTG	2E4G	PE	0.0
		338.7	0.0	63.3	0.0		0.000	TL	763.00	PV	
H33	Pipe: 6					-147.9	7.980	PL	620.00	PF	0.1
		338.7	0.0	63.3	0.0	0.9	150	FTG	ETG	PE	0.0
		338.7	0.0	63.4	0.0		0.000	TL	706.00	PV	
13	Pipe: 7					-1872.1	11.650	PL	115.00	PF	0.4
		338.7	0.0	63.1	0.0	5.6	150	FTG	G	PE	0.0
		338.7	0.0	63.4	0.0		0.003	TL	123.00	PV	
3M1	Pipe: 8					-2020.0	11.650	PL	30.00	PF	0.4
		338.7	0.0	63.4	0.0	6.1	150	FTG	TG	PE	0.0
		338.7	0.0	63.9	0.0		0.004	TL	119.00	PV	
M2M1	Pipe: 8A						FIXED PRESSURE LOSS DEVICE				
		338.7	0.0	67.9	0.0		4.0 psi, 2020.1 gpm				
M24	Pipe: 8B					-2020.0	11.650	PL	45.00	PF	0.5
		338.7	0.0	67.9	0.0	6.1	150	FTG	TG	PE	0.0
		338.7	0.0	68.3	0.0		0.004	TL	134.00	PV	
47	Pipe: 8C					-940.5	11.650	PL	75.00	PF	0.1
		338.7	0.0	68.3	0.0	2.8	150	FTG	T2G	PE	0.0
		338.7	0.0	68.5	0.0		0.001	TL	172.00	PV	
78	Pipe: 8D					-940.5	11.650	PL	1730.00	PF	1.9
		338.7	0.0	68.5	0.0	2.8	150	FTG	9ET3G	PE	-7.1
		355.0	0.0	63.3	0.0		0.001	TL	2159.00	PV	
45	Pipe: 8E					-1079.5	11.650	PL	415.00	PF	0.8
		338.7	0.0	68.3	0.0	3.2	150	FTG	9EG	PE	0.0
		338.7	0.0	69.2	0.0		0.001	TL	747.00	PV	

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JOB TITLE: Costco Ridgeland, MS Sprinkler 2020 - Attachment # 2 Pages 2 thru 4

PIPE TAG	END	ELEV.	NOZ.	PT	DISC.	Q(GPM)	DIA(IN)	LENGTH	PRESS.
	NODES	(FT)	(K)	(PSI)	(GPM)	VEL(FPS)	HW(C)	(FT)	SUM.
							FL/FT		(PSI)
Pipe: 8F						-1079.5	11.650	PL 530.00	PF 0.9
5		338.7	0.0	69.2	0.0	3.2	150	FTG 5ETG	PE -4.9
6		350.0	0.0	65.2	0.0		0.001	TL 799.00	PV
Pipe: 8G						-1079.5	16.000	PL 800.00	PF 0.3
6		350.0	0.0	65.2	0.0	1.7	150	FTG 5E4G	PE -2.2
8		355.0	0.0	63.3	0.0		0.000	TL 1220.03	PV
Pipe: 8H						-2020.0	16.000	PL 550.00	PF 0.5
8		355.0	0.0	63.3	0.0	3.2	150	FTG E2G	PE -1.3
9		358.0	0.0	62.5	0.0		0.001	TL 651.39	PV
Pipe: 9						-2020.0	16.000	PL 600.00	PF 0.5
9		358.0	0.0	62.5	0.0	3.2	150	FTG EG	PE -2.6
SRC		364.0	SRCE	60.4	(N/A)		0.001	TL 686.90	PV

NOTES (HASS):

- (1) Calculations were performed by the HASS 8.5 computer program under license no. 2704110710 granted by
HRS Systems, Inc.
208 Southside Square
Petersburg, TN 37144
(931) 659-9760
- (2) The system has been calculated to provide an average imbalance at each node of 0.008 gpm and a maximum imbalance at any node of 0.060 gpm.
- (3) Total pressure at each node is used in balancing the system. Maximum water velocity is 6.1 ft/sec at pipe 8.
- (4) Items listed in bold print on the cover sheet

are automatically transferred from the calculation report.
- (5) Available pressure at source node SRC under full flow conditions is 60.40 psi compared to the minimum required pressure of 20.00 psi.
- (6) PIPE FITTINGS TABLE

Pipe Table Name: STANDARD.PIP

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JOB TITLE: Costco Ridgeland, MS Sprinkler 2020 - Attachment # 2 Pages 2 thru 4

PAGE: * MATERIAL: S40 HWC: 120

Diameter (in)	Equivalent Fitting Lengths in Feet								
	E	T	L	C	B	G	A	D	N
	Ell	Tee	LngEll	ChkVlv	BfyVlv	GatVlv	AlmChk	DPVlv	NP Tee
15.000	35.00	70.00	28.00	87.00	24.00	7.00	60.00	60.00	70.00

PAGE: E MATERIAL: PVC150 HWC: 150

Diameter (in)	Equivalent Fitting Lengths in Feet						
	E	T	L	C	B	G	N
	Ell	Tee	LngEll	ChkVlv	BfyVlv	GatVlv	NP Tee
7.980	27.00	53.00	20.00	68.00	18.00	6.00	53.00
11.650	36.00	81.00	24.00	87.00	28.00	8.00	81.00

DATE: 5/31/2016HASS\COSTCO RIDGELAND, MS - SPRINKLER - 2220 - REVISED.SDF

JOB TITLE: Costco Ridgeland, MS Sprinkler 2220 - Attachment # 2 Pages 2 thru 4

WATER SUPPLY DATA

SOURCE NODE TAG	STATIC PRESS. (PSI)	RESID. PRESS. (PSI)	FLOW @ (GPM)	AVAIL. PRESS. (PSI)	TOTAL @ DEMAND (GPM)	REQ'D PRESS. (PSI)
SRC	62.0	60.0	2277.0	60.1	2220.0	

AGGREGATE FLOW ANALYSIS:

TOTAL FLOW AT SOURCE	2220.0 GPM
TOTAL HOSE STREAM ALLOWANCE AT SOURCE	0.0 GPM
OTHER HOSE STREAM ALLOWANCES	2220.0 GPM
TOTAL DISCHARGE FROM ACTIVE SPRINKLERS	0.0 GPM

NODE ANALYSIS DATA

NODE TAG	ELEVATION (FT)	NODE TYPE	PRESSURE (PSI)	DISCHARGE (GPM)
F	338.7	HOSE STREAM	61.2	2220.0
1	338.7	- - - -	61.9	- - -
2	338.7	- - - -	62.0	- - -
3	338.7	- - - -	62.4	- - -
4	338.7	- - - -	67.4	- - -
5	338.7	- - - -	68.4	- - -
6	350.0	- - - -	64.6	- - -
7	338.7	- - - -	67.6	- - -
8	355.0	- - - -	62.8	- - -
9	358.0	- - - -	62.1	- - -
H1	351.0	- - - -	56.7	- - -
H2	338.7	- - - -	62.1	- - -
H3	338.7	- - - -	62.2	- - -
M1	338.7	- - - -	62.9	- - -
M2	338.7	- - - -	66.9	- - -
SRC	364.0	SOURCE	60.1	2220.0

DATE: 5/31/2016HASS\COSTCO RIDGELAND, MS - SPRINKLER - 2220 - REVISED.SDF

JOB TITLE: Costco Ridgeland, MS Sprinkler 2220 - Attachment # 2 Pages 2 thru 4

PIPE DATA

PIPE TAG	END	ELEV.	NOZ.	PT	DISC.	Q (GPM)	DIA (IN)	LENGTH	PRESS.		
	NODES	(FT)	(K)	(PSI)	(GPM)	VEL (FPS)	HW (C)	(FT)	SUM.		
							FL/FT		(PSI)		
F1	Pipe: 1					-2220.0	11.650	PL	45.00	PF	0.7
		338.7	H.S.	61.2	2220.0	6.7	150	FTG	ETG	PE	0.0
		338.7	0.0	61.9	0.0		0.004	TL	170.00	PV	
12	Pipe: 2					-162.5	7.980	PL	530.00	PF	0.1
		338.7	0.0	61.9	0.0	1.0	150	FTG	E2G	PE	0.0
		338.7	0.0	62.0	0.0		0.000	TL	569.00	PV	
H12	Pipe: 3					0.0	7.980	PL	515.00	PF	0.0
		351.0	0.0	56.7	0.0	0.0	150	FTG	ET2G	PE	5.3
		338.7	0.0	62.0	0.0		0.000	TL	607.00	PV	
2H2	Pipe: 4					-162.5	7.980	PL	90.00	PF	0.0
		338.7	0.0	62.0	0.0	1.0	150	FTG	G	PE	0.0
		338.7	0.0	62.1	0.0		0.000	TL	96.00	PV	
H2H3	Pipe: 5					-162.5	7.980	PL	685.00	PF	0.2
		338.7	0.0	62.1	0.0	1.0	150	FTG	2E4G	PE	0.0
		338.7	0.0	62.2	0.0		0.000	TL	763.00	PV	
H33	Pipe: 6					-162.5	7.980	PL	620.00	PF	0.1
		338.7	0.0	62.2	0.0	1.0	150	FTG	ETG	PE	0.0
		338.7	0.0	62.4	0.0		0.000	TL	706.00	PV	
13	Pipe: 7					-2057.5	11.650	PL	115.00	PF	0.5
		338.7	0.0	61.9	0.0	6.2	150	FTG	G	PE	0.0
		338.7	0.0	62.4	0.0		0.004	TL	123.00	PV	
3M1	Pipe: 8					-2220.0	11.650	PL	30.00	PF	0.5
		338.7	0.0	62.4	0.0	6.7	150	FTG	TG	PE	0.0
		338.7	0.0	62.9	0.0		0.004	TL	119.00	PV	
M2M1	Pipe: 8A						FIXED PRESSURE LOSS DEVICE				
		338.7	0.0	66.9	0.0		4.0 psi, 2220.1 gpm				
M24	Pipe: 8B					-2220.0	11.650	PL	45.00	PF	0.6
		338.7	0.0	66.9	0.0	6.7	150	FTG	TG	PE	0.0
		338.7	0.0	67.4	0.0		0.004	TL	134.00	PV	
47	Pipe: 8C					-1033.6	11.650	PL	75.00	PF	0.2
		338.7	0.0	67.4	0.0	3.1	150	FTG	T2G	PE	0.0
		338.7	0.0	67.6	0.0		0.001	TL	172.00	PV	
78	Pipe: 8D					-1033.6	11.650	PL	1730.00	PF	2.2
		338.7	0.0	67.6	0.0	3.1	150	FTG	9ET3G	PE	-7.1
		355.0	0.0	62.8	0.0		0.001	TL	2159.00	PV	
45	Pipe: 8E					-1186.4	11.650	PL	415.00	PF	1.0
		338.7	0.0	67.4	0.0	3.6	150	FTG	9EG	PE	0.0
		338.7	0.0	68.4	0.0		0.001	TL	747.00	PV	

DATE: 5/31/2016HASS\COSTCO RIDGELAND, MS - SPRINKLER - 2220 - REVISED.SDF

JOB TITLE: Costco Ridgeland, MS Sprinkler 2220 - Attachment # 2 Pages 2 thru 4

PIPE TAG	END	ELEV.	NOZ.	PT	DISC.	Q(GPM)	DIA(IN)	LENGTH	PRESS.
	NODES	(FT)	(K)	(PSI)	(GPM)	VEL(FPS)	HW(C)	(FT)	SUM.
							FL/FT		(PSI)
Pipe: 8F						-1186.4	11.650	PL 530.00	PF 1.1
5		338.7	0.0	68.4	0.0	3.6	150	FTG 5ETG	PE -4.9
6		350.0	0.0	64.6	0.0		0.001	TL 799.00	PV
Pipe: 8G						-1186.4	16.000	PL 800.00	PF 0.3
6		350.0	0.0	64.6	0.0	1.9	150	FTG 5E4G	PE -2.2
8		355.0	0.0	62.8	0.0		0.000	TL 1220.03	PV
Pipe: 8H						-2220.0	16.000	PL 550.00	PF 0.6
8		355.0	0.0	62.8	0.0	3.5	150	FTG E2G	PE -1.3
9		358.0	0.0	62.1	0.0		0.001	TL 651.39	PV
Pipe: 9						-2220.0	16.000	PL 600.00	PF 0.6
9		358.0	0.0	62.1	0.0	3.5	150	FTG EG	PE -2.6
SRC		364.0	SRCE	60.1	(N/A)		0.001	TL 686.90	PV

NOTES (HASS):

- (1) Calculations were performed by the HASS 8.5 computer program under license no. 2704110710 granted by
HRS Systems, Inc.
208 Southside Square
Petersburg, TN 37144
(931) 659-9760
- (2) The system has been calculated to provide an average imbalance at each node of 0.008 gpm and a maximum imbalance at any node of 0.060 gpm.
- (3) Total pressure at each node is used in balancing the system. Maximum water velocity is 6.7 ft/sec at pipe 8.
- (4) Items listed in bold print on the cover sheet
are automatically transferred from the calculation report.
- (5) Available pressure at source node SRC under full flow conditions is 60.09 psi compared to the minimum required pressure of 20.00 psi.
- (6) PIPE FITTINGS TABLE

Pipe Table Name: STANDARD.PIP

DATE: 5/31/2016HASS\COSTCO RIDGELAND, MS - SPRINKLER - 2220 - REVISED.SDF

JOB TITLE: Costco Ridgeland, MS Sprinkler 2220 - Attachment # 2 Pages 2 thru 4

PAGE: * MATERIAL: S40 HWC: 120

Diameter (in)	Equivalent Fitting Lengths in Feet								
	E	T	L	C	B	G	A	D	N
	Ell	Tee	LngEll	ChkVlv	BfyVlv	GatVlv	AlmChk	DPVlv	NP Tee
15.000	35.00	70.00	28.00	87.00	24.00	7.00	60.00	60.00	70.00

PAGE: E MATERIAL: PVC150 HWC: 150

Diameter (in)	Equivalent Fitting Lengths in Feet						
	E	T	L	C	B	G	N
	Ell	Tee	LngEll	ChkVlv	BfyVlv	GatVlv	NP Tee
7.980	27.00	53.00	20.00	68.00	18.00	6.00	53.00
11.650	36.00	81.00	24.00	87.00	28.00	8.00	81.00

Dewey Knight and Associates, Inc.
Registered Professional Land Surveyors
2425 Florence -- Byram Road
Florence, Mississippi 39073
Phone 601-373-3989

May 20, 2016

Mayor Gene F. McGee
The City of Ridgeland, Mississippi
P. O. Box 217
Ridgeland, Mississippi 39158

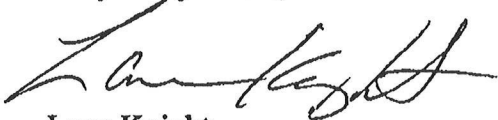
Dear Mr. McGee

We are pleased to offer you the following proposal for a Class "B" or better survey the existing Ridgeland City Hall property located at 304 Highway 51 in Ridgeland, Mississippi.

An approximate cost of Three Thousand Two Hundred Dollars (\$3,200.00) to be billed at One Hundred Dollars (\$125.00) per hour Field Services and (\$75.00) per hour for computer Services.

We can begin work on this project as quickly as we are given a notice to proceed.

Very Truly Yours,



Lane Knight,
Registered Professional Surveyor

Accepted By: _____

For: _____



public works

Memorandum

To: Mayor and Board of Alderman

From: Mike McCollum

Date: June 1, 2016

Re: Solid Waste Grant Agreement

We request that the Mayor and Board of Alderman approve and authorize the Mayor to sign the enclosed grant agreement between the City and The Mississippi Department of Environmental Quality (MDEQ). The amount of the grant is \$15,400.00 of which MDEQ will pay one hundred percent. The purpose for the grant is for the purchase of two solar powered compactors and one water bottle filler station in order to provide additional containers for recyclables and encourage the reduction of disposable water bottles.

Thank you for your consideration of our recommendation. Please contact me if you have any questions.

mailing address: p.o. box 217 • ridgeland, ms 39158
street address: 304 highway 51 • ridgeland, ms 39157
ph: 601.856.7113 • www.ridgelandms.org

Gene F. McGee, cmo - mayor • Paula W. Tierce, phr - city clerk / human resources director

board of aldermen: D.I. Smith, cmo - at-large • Ken Heard, cmo - ward 1 • Chuck Gautier, cmo, , mayor pro tempore - ward 2
Kevin Holder, cmo - ward 3 • Brian P. Ramsey, cmo - ward 4 • Scott Jones, cmo - ward 5 • Wesley Hamlin, cmo - ward 6



STATE OF MISSISSIPPI
PHIL BRYANT
GOVERNOR
MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY
GARY C. RIKARD, EXECUTIVE DIRECTOR

May 18, 2016

MAYOR'S OFFICE
RECEIVED

MAY 24 2016

The Honorable Gene McGee, Mayor
City of Ridgeland
P.O. Box 217
Ridgeland, MS 39158

CITY OF RIDGELAND

Dear Mayor McGee:

Our Department has completed a review of the solid waste assistance grant application submitted on behalf of the City of Ridgeland (City). Based on this review, the City's grant request in the amount of \$15,400. has been preliminarily approved, subject to the full execution of a formal grant agreement. The terms of the grant agreement will include the project proposed by the City.

The formal grant agreement has been enclosed for your review and signature. **Please sign the three copies of the agreement and return these three copies within 15 days from the above date to Mrs. Lenora Townsend at our Department.** Please contact our office at (601) 961-5171 if you have any questions concerning your grant award.

Sincerely,

A handwritten signature in cursive script that reads "Denise Rodgers".

Denise Rodgers
Solid Waste Policy, Planning & Grants Branch

enclosures

MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY ASSISTANCE AGREEMENT		Assistance ID No. SWC442	
		Date of Staff Approval 23-May-16	
AGREEMENT TYPE		Recipient Type	
Cooperative Agreement		CITY	
Grant Agreement	X	Tax ID No.	
Assistance Amendment			
RECIPIENT CITY OF RIDGELAND 304 HIGHWAY 51 NORTH RIDGELAND, MS 39157		PROJECT MANAGER MIKE MCCOLLUM PUBLIC WORKS DIRECTOR	
ISSUING OFFICE MS DEPT. OF ENVIRONMENTAL QUALITY OFFICE OF POLLUTION CONTROL P. O. BOX 2261 JACKSON, MS 39225		PROJECT MANAGER DENISE RODGERS SOLID WASTE POLICY, PLANNING AND GRANTS BRANCH	
ASSISTANCE PROGRAM LOCAL GOVERNMENT SOLID WASTE ASSISTANCE PROGRAM		STATUTORY AUTHORITY SECTION 17-17-65, MS CODE ANN.	
PROJECT TITLE AND DESCRIPTION SOLAR RECYCLING COMPACTORS AND WATER BOTTLE REFILL STATIONS			
PROJECT LOCATION CITY RIDGELAND COUNTY STATE MS		PROJECT PERIOD The project period shall begin upon execution of the grant agreement by the Executive Director of MDEQ and end no later than DECEMBER 31, 2017.	
		TOTAL PROJECTED PERIOD COST \$ 15,400.00	
FUNDS	Former Award	This Action	Amended Total
MDEQ Amount This Action --Competitive (4050)		\$ 15,400.00	
Recipient Contribution			
Other Contribution			
Total Project Cost	\$ -	\$ 15,400.00	
APPROVED BUDGET			
Personnel-(Enforcement Officer)			
Indirect			
Travel			
Equipment		\$ 15,400.00	
Supplies			
Educational Material			
Construction			
Other --			
Total Charges	\$ -	\$ 15,400.00	
METHOD OF PAYMENT			
Advance			
Reimbursement	X		

SPECIAL TERMS AND CONDITIONS FOR ASSISTANCE AGREEMENT
(Local Governments Solid Waste Assistance Program)

Method of Payment

Reimbursement shall be the method of payment. The recipient shall submit Attachment A, Request for Payment, and additional documentation for verification of service/work performed prior to payment being issued. Request for Payment forms and supporting documentation shall be submitted to Mississippi Department of Environmental Quality (MDEQ) on a quarterly basis and include a report of activities to date, (i.e., unauthorized dump sites cleaned, etc.) The recipient shall submit a payment request for eligible program activities performed through June 30 of each year no later than July 31 of that year. All requests for payment related to this grant agreement shall be submitted to MDEQ no later than forty-five (45) days after the expiration date of the grant agreement after which time, the grant agreement will be considered closed and funds will no longer be available to the recipient. Funds utilized and/or disbursed under this grant award shall be consistent with the recipient's approved grant application, incorporated herein by reference. This clause shall supercede Clause 5, Method of Payment of the Standard Terms and Conditions.

Disposal of Wastes

Disposal of solid wastes from the clean-up of unauthorized dumps or from other collection activities funded by this grant shall be conducted in accordance with existing solid waste disposal laws and regulations. The preferred method of disposal shall be the removal of the wastes to a permitted/authorized solid waste landfill, or where appropriate, rubbish landfill. However, if conditions warrant, the recipient, upon concurrence from MDEQ, may elect to abate an unauthorized dump by on-site burial of such wastes as allowed by state law. On-site burial of wastes shall be considered by MDEQ on a case-by-case and shall be limited to nonhazardous wastes.

Grant Administration Costs

The recipient shall use not more than three percent (3%) of funds provided through this grant to defray the costs of administration of the grant.

Responsible Party

If a person is found to be responsible for creating an unauthorized dump, the recipient shall make a reasonable effort to require that person to clean up the property before expending any monies from this funding to clean up the property. If the recipient is unable to locate the person responsible for creating the dump, or if the recipient determines that person is financially or otherwise incapable of cleaning up the property, the recipient may use the monies from the fund to clean up the property and shall make a reasonable effort to recover from the responsible person any funds expended.

Enforcement Officer

Upon selection or designation of the enforcement officer the Recipient agrees to provide MDEQ with the following information:

1. Name, address, telephone number, fax number, and, where applicable, e-mail address for the enforcement officer;
2. Detailed description of the duties and responsibilities for the enforcement officer.

Should the enforcement officer be replaced due to resignation, or attrition, the recipient shall provide the information above upon selection of the replacement.

Recipient further agrees that the enforcement officer shall be required to investigate local complaint related matters, which may be directed to the enforcement officer by MDEQ.

Recipient further agrees to adhere to the Local Solid Waste Enforcement Officers Duties and Procedures guidance document prescribed by MDEQ.

Household Hazardous Waste Collection Project (HHW)

The Recipient shall conduct a HHW project in accordance with Sections 17-17-439 through 17-17-445 and the Mississippi "Right-Way to Throw Away Program."

The Recipient shall provide to MDEQ a comprehensive report following the HHW collection day event which would include, at a minimum, the following:

1. Description of the public notification efforts;
2. Amounts of waste collected, by type;
3. Cost summary;
4. Number of residents participating in the HHW collection day event.

The Recipient shall ensure that all hazardous materials collected shall be disposed by a contractor who is properly licensed and approved by all applicable regulatory agencies.

STANDARD TERMS AND CONDITIONS FOR ASSISTANCE AGREEMENTS

1. Workplan

The workplan (grant application) constitutes the Recipient's and MDEQ's commitment to accomplish the program goals and objectives. MDEQ's review and evaluation of performance under this agreement and MDEQ's response to the findings of oversight will be carried out in accordance with the stated policies.

2. Expenditure Commitment

The Recipient commits to expend the funds awarded in this agreement and to complete the funded project in accordance with the workplan included in this grant application (workplan) and incorporated into this agreement by reference.

3. Financial Management

MDEQ requires that Recipients have in place, prior to the receipt of funds, a financial management system that will be able to isolate and trace every grant dollar from receipt to expenditure and have on file appropriate support documentation for each transaction. Examples of documentation are vendor invoices, bills of lading, payment vouchers, payrolls, bank statements and reconciliations.

4. Audit: Access to Records

Recipient assures that it will give MDEQ, the Comptroller General of the United States, and the State of Mississippi, through any authorized representative, access to and the right to examine all records, books, papers, or documents related to the award; will establish a proper accounting system in accordance with generally accepted accounting standards or agency directives; and will retain all required records relating to this agreement for three years after project completion and all other pending matters are closed.

5. Method of Payment

Reimbursement shall be the preferred method of funding. Recipients shall be paid a predetermined sum for services/work performed. Recipient shall submit a Request for Payment, as provided in Attachment A, and additional documentation for verification of service/work performed prior to payment being issued. In special cases, funding advances may be allowed, subject to approval by MDEQ. Requests for Payment and applicable supporting documentation shall be submitted to MDEQ upon project completion. All requests for payments related to this grant shall be submitted to MDEQ no later than forty-five (45) days after the expiration date of the grant.

6. Final Payment

Pursuant to satisfactory completion of the work performed under this agreement as may be determined by final inspection, and as a condition before final payment under this agreement or as termination settlement under this agreement, the Recipient shall execute and deliver to MDEQ a release of all claims against MDEQ arising under, or by virtue of, this agreement, except claims which are specifically exempted by the Recipient to be set forth therein. Such release is provided in Attachment B of this agreement. Unless otherwise provided in this agreement, by state law, or expressly agreed to by the parties in this agreement, final payment under this agreement or settlement upon termination of this agreement shall not constitute waiver of MDEQ's claims against the Recipient or his sureties under this agreement or applicable performance and payment of bonds.

7. Procurement

Recipient shall comply with purchasing guidelines established in 31-7-13 of the Mississippi Code in the procurement of commodities and services.

8. Disadvantaged Businesses

Recipient will ensure that its best efforts will be used in making available to minority businesses a minimum of 5% of the grant funds that may be expended as necessary in obtaining any supplies, construction, equipment, or services in completing the project detailed in the Workplan.

9. Title to Real Property, Equipment and Supplies

Unless otherwise agreed to, title to any real property, equipment and supplies that may be acquired under this agreement shall vest upon acquisition in the Recipient. Real property, equipment and supplies shall be used by the Recipient in the program or project for which it was acquired as long as needed, whether or not the project or program continues to be supported by grant funds.

10. Changes and Amendments

Changes may be made to the agreement in relation to the effective period of the agreement, the total amount of the agreement, budgetary categories associated with the funding of the agreement, and the work to be performed as defined in the work plan. Such changes shall be constructively made by way of a formal agreement amendment, which shall require written approval of the Executive Director of MDEQ prior to any such changes being made. Changes which affect the total amount of the agreement may also require prior approval by the Commission on Environmental Quality.

11. Recycled Paper

Recipient agrees to use recycled paper for all reports which are prepared as a part of this agreement and delivered to MDEQ.

12. Gratuities

A. If MDEQ finds, after a notice and hearing, that the Recipient or any of the Recipient's agents or representatives offered or gave gratuities (in the form of entertainment, gifts or otherwise) to any employee, official or agent of MDEQ, the state agency providing funds used in this agreement in an attempt to secure a agreement or favorable treatment in awarding, amending or making any determination related to the performance of this agreement, MDEQ may, by written notice to the Recipient, terminate this agreement. MDEQ may also pursue other rights and remedies that the law or this agreement provides. However, the existence of the facts on which MDEQ bases such findings shall be in issue and may be reviewed in proceedings under the Remedies clause of this agreement.

B. In the event this agreement is terminated as provided in paragraph A., MDEQ may pursue the same remedies against the Recipient as it could pursue in the event of a breach of the agreement by the Recipient, and as a penalty, in addition to any other damages to which it may be entitled by law, be entitled to exemplary damages in an amount (as determined by MDEQ) which shall be not less than three nor more than ten times the costs the Recipient incurs in providing any such gratuities to such officer or employee.

13. Publication and Publicity

A. Recipient may publish results of its participation pursuant to this agreement after prior review by and consent by MDEQ's Project Manager provided that (1) such publications acknowledge that the program is supported by funds granted by MDEQ, and (2) that one (1) copy of the publication is furnished to MDEQ.

B. Recipient shall use its best efforts to ensure that any publicity received by the Recipient as a result of the work funded by this agreement shall acknowledge that the program is supported by funds granted by MDEQ.

14. Hold Harmless for Personnel Claims

To the extent permitted by Mississippi law, recipient agrees to indemnify, save and hold harmless the Mississippi Commission on Environmental Quality, MDEQ and the state of Mississippi, as well as their employees, from and against any and all losses, claims, debts, demands, damages, suits or actions at law, judgments, and costs, including attorney's fees, or expenses on the part of MDEQ or MDEQ's agents or employees arising out of or attributable

to work performed under this agreement or the use of facilities or equipment provided to Recipient under the terms of this agreement.

15. Assurances

The Recipient certifies that:

- A. It maintains the legal authority to apply for state assistance, and the institutional, managerial and financial capability (including funds sufficient to pay the non-state share of project costs) to ensure proper planning, management and completion of the project described in the grant application.
- B. It is not presently debarred, suspended, proposed for debarment, declared ineligible from participating in government projects; has not within a three year period preceding this application been convicted of or had a civil judgment rendered against it for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing public transactions; has not within a three year period preceding this proposal been convicted of violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements or receiving stolen property; is not presently indicted or otherwise criminally or civilly charged by a government entity with commission of any of the offenses enumerated herein; and has not within a three year period preceding this application had one or more public transactions terminated for default.
- C. It will establish safeguards to prohibit employees from using their positions for a purpose that constitutes or presents the appearance of personal or organizational conflict of interest, or personal gain.
- D. It will comply with all applicable requirements or State and Federal laws, executive orders, regulations and policies governing this program.
- E. The Recipient shall maintain current permits and approvals necessary from applicable regulatory agencies to carry out the project/program activities.

16. Enforcement

- A. If a Recipient materially fails to comply with any term of an award, whether stated in Federal and State statute or regulation, an assurance, in a State plan or application, a notice of an award, or elsewhere, MDEQ may take one or more of the following actions, as appropriate in the circumstances:
 - 1. Temporarily withholding payments pending correction of the deficiency by the Recipient or more severe enforcement by MDEQ;

2. Disallow (that is deny both use of funds and matching credit for) all or part of the cost of the activity of action not in compliance;
 3. Wholly or partly suspend or terminate the current award for the Recipient's program.
 4. Withhold further awards for the program, or
 5. Take other remedies that may be legally available.
- B. In taking an enforcement action, MDEQ will provide the Recipient an opportunity for such hearing, appeal, or other administrative proceeding to which the Recipient is entitled under any statute or regulation applicable to the action involved.
- C. Costs of Recipient resulting from obligations incurred by the Recipient during a suspension or after termination of an award are not allowable unless MDEQ expressly authorizes them in the notice of suspension or termination or subsequently. Other Recipient costs during suspension or after termination which are necessary and not reasonably avoidable are allowable if:
1. The costs result from obligations which were properly incurred by the Recipient before the effective date of suspension or termination, are not in anticipation of it, and in the case of a termination, are non-cancelable, and
 2. The costs would be allowable if the award were not suspended or expired normally at the end of the funding period in which the termination takes effect.

17. Termination for Convenience

This agreement may be terminated in whole or in part as follows:

- A. By MDEQ with the consent of the Recipient in which case the two parties shall agree upon the termination conditions, including the effective date and in the case of a partial termination, the portion to be terminated; or
- B. By the Recipient upon written notification to MDEQ, setting forth the reasons for such termination, the effective date, and in the case of a partial termination, the portion to be terminated. However, if, in the case of a partial termination, MDEQ determines that the remaining portion of the award will not accomplish the purposes for which the award was made, MDEQ may terminate the award in its entirety under paragraph A. of this section.

18. Remedies

Unless otherwise provided in this agreement, all claims, counter-claims, disputes and other matters in question between MDEQ and the Recipient arising out of, or relating to, this agreement or the breach of it will be decided in a court of competent jurisdiction within the State of Mississippi. Before pleading to the Mississippi judicial system at any level, the Recipient must exhaust all administrative remedies in effect on the date the agreement giving rise to the dispute was executed.

The State of Mississippi, acting by and through the Mississippi Department of Environmental Quality, hereby offers assistance/amendment **CITY OF RIDGELAND** for all approved costs incurred up to and not exceeding **\$15,400.00** for the support of approved budget period effort described in application (including all application modifications) cited in this agreement **SOLAR RECYCLING COMPACTORS AND WATER BOTTLE REFILL STATIONS.**

MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY

Gary C. Rikard
Executive Director

Date

CITY OF RIDGELAND

Authorized Signature

Date

ATTACHMENT B

MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY

RELEASE OF CLAIMS

Agreement Number SWC442

WHEREAS, by the terms of the above-identified agreement entered into by the Mississippi Department of Environmental Quality and the Recipient, **CITY OF RIDGELAND** it is provided that after completion of all work, and prior to final payment, the Recipient will furnish the Mississippi Department of Environmental Quality with a release of all claims;

NOW, THEREFORE, in consideration of the above premises and the payments by the Mississippi Department of Environmental Quality to the Recipient pursuant to the above referenced agreement, the sum of \$ _____, the Recipient hereby remises, releases, and forever discharges the Mississippi Department of Environmental Quality, its officers, agents, and employees, of and from all manner of debts, dues, liabilities, obligations, accounts, claims, and demands whatsoever, in law and equity, under or by virtue of the said agreement except:

CITY OF RIDGELAND

Authorized Signature

ATTACHMENT A
MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY
ATTN: INVOICES
P. O. BOX 2369
JACKSON, MS 39225

REQUEST FOR PAYMENT

Name of Recipient _____ Grant Agreement No. _____
Address _____ Person preparing report: _____
_____ Telephone number: _____
_____ Request period: From _____ To _____

1. Amount of this payment request: \$ _____
2. Total amount of grant: \$ _____
3. Total prior payments approved: \$ _____
4. Total funds requested to date (*line 1 plus line 3*): \$ _____
5. Balance of grant funds remaining after this request (*line 2 minus line 4*) \$ _____

TO BE COMPLETED ONLY IF RECIPIENT IS PROVIDING FUNDS TO THE GRANT PROJECT.

6. Total funds to be contributed by recipient: \$ _____
7. Amount contributed by recipient to date: \$ _____
8. Balance to be contributed by recipient (*line 6 minus line 7*): \$ _____

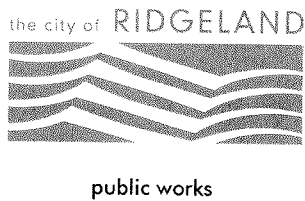
I hereby certify that the amount requested is for reimbursement of allowable costs consistent with the terms of this agreement, that request for reimbursement of these costs has not previously been made, and that the amounts requested herein do not exceed budgeted amounts stipulated in the award.

NOTE: Please attach appropriate documentation that supports this payment request (for example, payroll records for Enforcement officer, billing records, volume of tires disposed, volume of solid wastes disposed, location of solid waste sites cleaned up.

Signature of Authorized Official

Typed Name and Title of Authorized Official

Date



Memorandum

To: Mayor and Board of Alderman

From: Mike McCollum

Date: June 1, 2016

Re: Recycling Contract Renewal Waste Management

I request that the Mayor and Board of Alderman approve the second of three renewal options in the Waste Management Recycling Contract with the City.

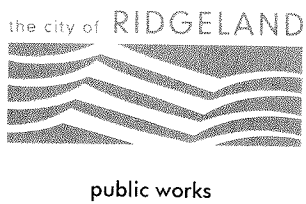
We are pleased with the service provided by them over the past four years and look forward to the same superior performance.

Thank you for your consideration of our recommendation. Please contact me if you have any questions.

mailing address: p.o. box 217 • ridgeland, ms 39158
street address: 304 highway 51 • ridgeland, ms 39157
ph: 601.856.7113 • www.ridgelandms.org

Gene F. McGee, cmo - mayor • Paula W. Tierce, phr - city clerk / human resources director

board of aldermen: D.I. Smith, cmo - at-large • Ken Heard, cmo - ward 1 • Chuck Gautier, cmo, , mayor pro tempore - ward 2
Kevin Holder, cmo - ward 3 • Brian P. Ramsey, cmo - ward 4 • Scott Jones, cmo - ward 5 • Wesley Hamlin, cmo - ward 6



Memorandum

To: Mayor and Board of Alderman

From: Mike McCollum

Date: June 1st 2016

Re: County Line Road Landscaping Contract US Lawns

I request that the Mayor and Board of Alderman approve the attached contract between the City and U.S. Lawns for landscaping services on East County Line Road. The current contract with U.S. Lawns will expire on September 31st 2016 and we want to make sure that there is no lapse in service for this extremely important economic corridor. We have determined that their work is satisfactory and wish to continue our current relationship with U.S. Lawns.

Thank you for your consideration of our recommendation. Please contact me if you have any questions.

mailing address: p.o. box 217 • ridgeland, ms 39158
street address: 304 highway 51 • ridgeland, ms 39157
ph: 601.856.7113 • www.ridgelandms.org

Gene F. McGee, cmo - mayor • Paula W. Tierce, phr - city clerk / human resources director

board of aldermen: D.I. Smith, cmo - at-large • Ken Heard, cmo - ward 1 • Chuck Gautier, cmo, , mayor pro tempore - ward 2
Kevin Holder, cmo - ward 3 • Brian P. Ramsey, cmo - ward 4 • Scott Jones, cmo - ward 5 • Wesley Hamlin, cmo - ward 6

LANDSCAPE MAINTENANCE
COUNTYLINE ROAD FROM OLD CANTON ROAD TO
RIDGEWOOD ROAD AND THE ISLAND ON THE
SOUTH END OF OLD CANTON ROAD TO INCLUDE
THE CITY ENTRANCE SIGN AT THE INTERSECTION
OF OLD CANTON AND COUNTY LINE ROAD
CITY OF RIDGELAND, MISSISSIPPI
DEPARTMENT OF PUBLIC WORKS

GENE F. MCGEE, MAYOR

BOARD OF ALDERMEN:

Ken Heard

Chuck Gautier

Kevin Holder

Brian P. Ramsey

Scott Jones

Wes Hamlin

D.I. Smith, Alderman-at-Large

Paula Tierce, City Clerk

John M. McCollum

Public Works Director

October 2016

INDEX TO CONTRACT DOCUMENTS

LANDSCAPE MAINTENANCE COUNTYLINE ROAD
FROM OLD CANTON ROAD TO RIDGEWOOD ROAD
AND THE ISLAND ON THE SOUTH END OF OLD
CANTON ROAD TO INCLUDE THE CITY ENTRANCE
SIGN AT THE INTERSECTION OF OLD CANTON
AND COUNTY LINE ROAD

<u>TITLE</u>	<u>SECTION #</u>
<u>PAGE#</u>	
Index	2
Proposal Form 00300	3
Landscape Maintenance General Instructions 02970	19

END OF INDEX

DATE: _____

PROJECT: LANDSCAPE MAINTENANCE COUNTYLINE ROAD FROM OLD CANTON ROAD TO RIDGEWOOD ROAD AND THE ISLAND ON THE SOUTH END OF OLD CANTON ROAD TO INCLUDE THE CITY ENTRANCE SIGN AT THE INTERSECTION OF OLD CANTON AND COUNTY LINE ROAD- CITY OF RIDGELAND

PROPOSAL OF:

Name of

Company: _____

Address: _____

Telephone Number _____ Fax Number _____

In compliance with the proposal instructions relating to the above mentioned project, and having carefully examined the Proposal Documents, Specifications, Addenda thereto, and being familiar with all conditions affecting the work, including the site conditions, the undersigned proposes to furnish all labor, materials, equipment and general construction necessary to do the work called for by said documents for the amounts set forth below:

PROPOSAL:

LANDSCAPE MAINTENANCE COUNTYLINE ROAD FROM OLD CANTON ROAD TO RIDGEWOOD ROAD AND THE ISLAND ON THE SOUTH END OF OLD CANTON ROAD TO INCLUDE THE CITY ENTRANCE SIGN AT THE INTERSECTION OF OLD CANTON AND COUNTY LINE ROAD– CITY OF RIDGELAND

<u>Item No.</u>	<u>Item Description</u>	<u>Amount</u>
1	Turf Care	\$
2	Tree Care	\$
3	Shrub and ground cover care	\$
4	Maintenance and replacement of annuals	\$
5	Irrigation system maintenance, watering	\$
6	Fire Ant Control	\$
7	Edging and Trimming	\$
8	Debris Removal	\$
9	Walkways and Other paved areas	\$
10	Policing and cleaning	\$
TOTAL BASE BID		\$

Note: Please refer to the general specifications and the map labeled exhibit “A” for frequency, Areas and quantities

The undersigned agrees to hold this proposal for acceptance for 60 calendar days from the date of opening proposals.

The undersigned further proposes and agrees to commence work on October 1, 2016 and continue through September 30, 2017.

Respectfully submitted,

AUTHORIZED SIGNATURE:

NAME AND TITLE:

END OF SECTION

SECTION 00750

GENERAL INSTRUCTIONS

PART 1 - GENERAL

1.01 DEFINITIONS AND RESPONSIBILITIES

A. City of Ridgeland: City of Ridgeland
 P. O. Box 217
 Ridgeland, Mississippi 39158

B. The Department of Public Works shall be the administrator of the Contract for the City.

1.02 PROPOSAL/ CONTRACT DOCUMENTS

A. The proposal/ contract documents shall consist of these contract documents, drawings, and addenda issued prior to receipt of proposals. Enumeration of the documents (other than addenda) is as follows:

1. Contract Documents Dated October 2016:

SECTION #	TITLE
---	Index
00300	Proposal Form
02970	General Instructions

B. Following receipt of proposals, changes or additions to the Contract Documents may be made, provided mutual agreement is achieved between the City of Ridgeland and the Contractor in both Scope of Work and Contract Amount. This will be verified by the City of Ridgeland in writing to the Contractor.

1.03 PROPOSAL PROCESS

A. Refer questions regarding the documents to the Public Works Director (PWD). Addenda will be issued by the Public Works Director, if necessary.

B. Site Conditions:

1. By submitting a proposal, Contractor acknowledges that he has reviewed the site, including systems which will be under his care, and understands the requirements of this Contract.
2. If any unusual conditions are found to exist at the site, or discrepancies found in the drawings, they shall be called to the attention of the Public Works Director prior to submitting a proposal, and an interpretation requested. If Contractor fails to make such request, no excuse shall be entertained thereafter for failure to carry out the work in a satisfactory manner, and no additional compensation shall be allowed for such discrepancies or unusual conditions. The interpretation shall be given to all entities who have received this RFP and advised the Public Works Department of its intent to submit a proposal.

C. Proposals:

1. Submit IN DUPLICATE on the forms provided.
2. Complete information required on the proposal form. The proposal shall include the costs for elements of the work as well as the costs for fees, permits, and taxes. Proposals must be regular in every respect and NO interlineations, exclusions, or special conditions shall be made or included in the Proposal Form by the Bidder.

1.04 POST PROPOSAL

A. In determining the acceptance of the proposal(s), the following will be considered by the City of Ridgeland:

1. Whether contractor
 - a. maintains a permanent place of business,
 - b. has adequate equipment to do the work properly and expeditiously,
 - c. has a suitable financial status,
 - d. has appropriate practical and technical experience, and
 - e. is not currently involved in litigation with the City of Ridgeland or any other governmental entity.

B. The City of Ridgeland may request financial and/or job reference information from any proposer considered for award.

1. The City of Ridgeland reserves the right to reject any proposal for failure to provide such information, when requested in writing by the City of Ridgeland, or when an investigation of the available information does not satisfy the City of Ridgeland.

C. Proposals are to be guaranteed for a period of 60 calendar days. No alterations or modifications may be made to the proposals during that time, unless negotiated with and approved by the City.

D. The City of Ridgeland reserves the right to reject any and all proposals.

1.05 AWARD

A. Award will be made as soon as possible as determined by the City of Ridgeland.

B. The City of Ridgeland will issue a "Notice-to-Proceed" to the Contractor as soon as possible after award.

C. Two (2) copies of the insurance certificates required in paragraph 1.06 shall be delivered with the executed contract and required bonds.

1.06 INSURANCE AND BONDS

A. Insurance Required:

1. Workmen's Compensation: The Contractor shall be protected against claims for injury, disease, or death of employees which, for any reason, may not fall within the provisions of a Workmen's Compensation Law. The liability limits shall not be less than the required statutory limits for Workmen's Compensation and Employer's liability in the amount of \$100,000.00 for each person. This policy shall include an "all states" endorsement.

2. Contractor's Comprehensive Public Liability and Property Damage Insurance, covering operations in connection with the performance of this Contract in amounts not less than the following:

- a. Bodily injury liability in the amount of \$500,000.00 for each person and \$500,000.00 for each accident.
- b. Personal injury in the amount of \$500,000.00 for each person and \$500,000.00 for each accident.
- c. Property damage liability in the amount of \$100,000.00 for all damages arising out of the injury or destruction of property each occurrence and \$100,000.00 annual aggregate.

3. Contractor's Contingent or Protective Liability and Property Damage: The Contractor shall secure contingent or protective liability and property damage insurance to protect him from any and all claims arising from the operation of his subcontractors in the execution of Work included in the Contract. In no case shall the amount of such protection be less than the limits of paragraph 1.06 A.2. as described herein for both Public Liability Insurance and Property Damage Insurance.

4. Automotive Public Liability and Property Damage: The Contractor shall maintain automobile public liability insurance in the amount of not less than \$250,000.00 for injury to one person and \$500,000.00 for one accident, and automobile property damage in the amount of \$100,000.00 for each occurrence and \$500,000.00 combined single unit from any and all claims arising from the use of the following, all of which may be used on and off the site of the project:

- a. Contractor's own automobiles and trucks.
- b. Hired automobiles and trucks.
- c. Automobiles and trucks owned by subcontractors.

B. Security for Faithful Performance: Simultaneously with his delivery of the executed Contract, the Contractor shall furnish Contract Performance and Payment Bonds in the full amount of the Contract for the payment of persons performing labor on this Contract and for furnishing materials in connection with this Contract. The surety on such Bond or Bonds shall be a duly authorized Surety Company doing business in the State of Mississippi.

1. Copies of acceptable bond forms follow this section.

1.07 CONTRACT TIME

A. This contract will be effective from October 1, 2016 thru September 30, 2017. However, the City of Ridgeland may, at their option, renew the contract for three (3) additional years (October 1, 2017 to September 30, 2020).

1.08 SUBMITTALS - None required, except as noted.

1.09 PAYMENT

A. Payment shall be made by the City of Ridgeland to the Contractor in equal monthly payments upon receipt of the monthly statement from the Contractor and approval by the City of Ridgeland of the Work performed during the month, or portion of a month.

B. Submittal process:

1. No later than the 25th of each month, submit 1 copy of the following to the City of Ridgeland:

- a. Invoice for the month's services.
- b. Invoice for emergency or additional work performed during the month, per the City of Ridgeland's written request.
- c. Complete list of tasks performed during the month.

C. City of Ridgeland will review the application and the site. Invoice will be processed for payment provided that the invoice is correct and work performed is acceptable.

1.10 EMERGENCY OR ADDITIONAL WORK/ CHANGES

A. The Scope of Work and respective Contract Sum can be changed by mutual agreement during the Contract Period.

1. Deletions to the Scope of Work and respective Contract Sum may be elected by the City of Ridgeland if:

- a. Contractor fails to perform required work, or
- b. City of Ridgeland and Contractor agree that a particular item/ area of work is not required.

B. Additional work is work not included within the Proposal Scope of Work, but of a landscape nature that the City of Ridgeland deems necessary.

C. Compensation shall be determined as follows:

1. City of Ridgeland will advise the Contractor of the work it wishes performed that is in addition to the Proposal Scope of Work.
2. Contractor shall prepare a quotation as delineating labor costs, quantities of material(s), profit, and overhead, and submit 2 copies to the City of Ridgeland. City will elect whether to request Contractor to perform the work.
3. The City of Ridgeland reserves the right to:
 - a. Further negotiate with the Contractor to achieve a proposal mutually acceptable to both parties.
 - b. Reject the proposal.
 - c. Accept the proposal in total.

1.11 GENERAL

A. Contractor is responsible for repair of damages to existing elements on the site, including plant material, created by the Contractor's operations or employees.

1. Windows, windshields, and other glass damage by the Contractor shall be paid for by the Contractor.

B. This project is located along, COUNTYLINE ROAD FROM OLD CANTON ROAD TO RIDGEWOOD ROAD AND THE ISLAND ON THE SOUTH END OF OLD CANTON ROAD TO INCLUDE THE CITY ENTRANCE SIGN AT THE INTERSECTION OF OLD CANTON AND COUNTY LINE ROAD, located in the City of Ridgeland, Mississippi which is always open to the public. In addition to his employees, the Contractor is responsible for the safety of site users with regards to his work and operations, specifically the use of equipment and other areas/ items of work which may be accessible to the general public.

1.12 TERMINATION OF CONTRACT

A. By City of Ridgeland:

1. Should the Contractor fail to adequately perform or is negligent in his responsibilities for a period of fourteen days, the City of Ridgeland will notify the Contractor in writing of such negligence.
2. The City of Ridgeland may terminate the Contract seven days after the date of the Notice of Negligence letter has been issued, if it is obvious to the City of Ridgeland that the Contractor has made no attempt to correct the performance or negligence.
3. Termination date shall be effective on the end of business on the seventh day following the date of a written termination notice issued by the City of Ridgeland.

B. By Contractor: Should the Contractor elect to terminate his Contract with the City of Ridgeland, this may be done so only by prior written notification, the minimum notice time must be 45 calendar days from the date of a Notice to Terminate.

C. Should termination be elected by either party, settlement of final fees shall be determined by the City of Ridgeland and Contractor. Previous payments provided by the City of Ridgeland shall be pro-rated based upon the time the Contractor has been employed and the proportional amount of fees for the time remaining in the Contract shall be credited to the City of Ridgeland.

1.13 PROTECTION OF PERSONS AND PROPERTY

A. The Contractor shall be responsible for initiating, maintaining, and supervising safety precautions and programs in connection with the performance of the Contract. The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury, or loss to:

1. Employees on the work site and other persons who may be affected thereby;
2. The public users of each site;
3. The work site and materials and equipment to be incorporated therein, and;
4. Other property at the site or adjacent thereto.

B. the Contractor shall give notices and comply with applicable laws, ordinances, rules, regulations and lawful orders of public authorities bearing on safety of persons and property and their protection from damage, injury, or loss. The Contractor shall promptly remedy

damage and loss to property at the site caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible, except for damage or loss attributable to acts or omissions of the City of Ridgeland or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor.

PART 2 - PRODUCTS (See General Instructions)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

CONTRACT

This Contract made and entered into by and between _____, hereinafter called Contractor, and the CITY OF RIDGELAND, MISSISSIPPI, a municipal corporation, hereinafter called City.

WITNESSETH:

That for and in consideration of the mutual benefits and advantages each to the other, as hereinafter set forth, the parties hereto agree as follows:

That for LANDSCAPE MAINTENANCE FOR COUNTY LINE ROAD FROM OLD CANTON TO RIDGEWOOD ROAD AND THE ISLAND ON THE SOUTH END OF OLD CANTON ROAD TO INCLUDE THE CITY ENTRANCE SIGN AT THE INTERSECTION OF OLD CANTON AND COUNTY LINE ROADS

Contract Documents, for the proposal including any and all subsequent Change Orders or Supplemental Agreements for the work to be done are hereby made a part of this contract by reference as if fully and completely set forth herein.

1. That the work to be done, more specifically disclosed by said specifications and other contract documents, is for LANDSCAPE MAINTENANCE FOR COUNTY LINE ROAD FROM OLD CANTON TO RIDGEWOOD ROAD AND THE ISLAND ON THE SOUTH END OF OLD CANTON ROAD TO INCLUDE THE CITY ENTRANCE SIGN AT THE INTERSECTION OF OLD CANTON AND COUNTY LINE ROADS

2. The Contractor agrees to faithfully complete all of said work contemplated by this contract in good and workmanlike manner, strictly in accordance with said plans and specifications, and other contract documents and requirements of the City, and in accordance with the Laws of the State of Mississippi and the ordinances of the City of Ridgeland, for which the City hereby agrees to pay and the Contractor agrees to accept a sum of money in current funds and in equal monthly amounts to the total value of the work complete in place, computed by dividing the final quantities of each item of work by the number of months therefore as stated in the proposal, attached hereto and made a part hereof, which sum shall not exceed the sum of _____ (\$ _____), plus the amount of any supplemental agreements extra work authorized and performed. Landscaping Maintenance Services includes furnishing all materials, the doing of all work contemplated under the contract, as well as all loss or damage, if any, arising out of the nature of the work, or the action of the weather, and any and all other

unforeseen obstructions or difficulties that may be encountered in the prosecution of the same. The Contractor will assume all risks of every kind and description in the performance of the contract.

3. The Contractor agrees and binds himself to indemnify and save harmless the City of Ridgeland, of and from any and all claims for damages growing out of the performance of this contract as a result of negligence of the Contractor.

4. Attached hereto and made a part of this contract are an Insurance Certificate, a Payment Bond and a Performance Bond, executed by a surety company doing business in the State of Mississippi in the sum of

5. The Contractor agrees to allow the City, or any of its duly authorized representatives, access to any books, documents, papers and records of the Contractor which are directly pertinent to the project which is the subject of this contract, for the purpose of making audits, examinations, excerpts and transcriptions, and Contractor agrees to insert an identical clause in any and all subcontracts.

6. The Contractor will commence work required by the Contract Documents within ten (10) days after the date of the Notice to Proceed and will complete the work within the time specified unless the City has agreed to extend that portion of the work not completed. The Contract Period will be October 1, 2016 to September 30, 2017

7. That the Contract may be annulled by the City for just cause.

8. Subcontractors will comply with all applicable laws and regulations pertinent to this contract, the same as the contractor.

IN WITNESS WHEREOF the parties hereto have filed their signatures this the ____ day of _____, 2016.

CONTRACTOR

BY: _____

TITLE: _____

CITY OF RIDGELAND, MISSISSIPPI

BY: _____

TITLE: Gene F. McGee, Mayor.

ATTEST:

BY: _____

Paula Tierce, CITY CLERK

PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS:

That

(Name of Contractor)

(Address of Contractor)

A _____ hereinafter called "Principal", and
(Corporation, Partnership or Individual)

_____ hereinafter called "Surety", are held and firmly
(Name of Surety)
bound unto the CITY OF RIDGELAND, MISSISSIPPI, hereinafter called "City of Ridgeland" in
the penal sum of _____
Dollars \$ _____

In lawful money of the United States, for the payment of which sum well and truly to be made,
we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a
certain Contract with the CITY OF RIDGELAND, dated the _____ day of
_____, 20____, a copy of which is hereto attached and made a part hereof for the
:

PROJECT

NOW, THEREFORE, if the Principal shall promptly make payment to all persons, firms,
SUBCONTRACTORS, and corporations furnishing materials for or performing labor in the
prosecution of the WORK provided for in such Contract, and any authorized extension or
modification thereof, including all amounts due for materials lubricants, oil gasoline, coal and
coke, repairs on machinery, equipment and tools, consumed or used in connection with the
construction of such WORK, and all insurance premiums on said WORK, and for all labor,
performed in such WORK whether by SUBCONTRACTOR or otherwise, then this obligation
shall be void; otherwise to remain in full force and effect. PROVIDED, FURTHER, that the said
Surety for value received hereby stipulates and sees that no change, extension of time, alteration

or addition to the terms of the Contract or to the WORK to be performed hereunder or the SPECIFICATIONS accompanying the same shall in any wise affect its obligation on this BOND, and it does hereby waive notice of any such change, extension of time, alteration or addition to the loans of this Contract or to the WORK or to the SPECIFICATIONS. PROVIDED, FURTHER, that no final settlement between the CITY OF RIDGELAND and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may not yet be satisfied.

WITNESS WHEREOF, this instrument is executed in three (3) counterparts, each of which shall be deemed an original, this the _____ day of _____, 20__.

ATTEST:

(Principal) Secretary

(SEAL)

Witness as to Principal

(Address)

ATTEST
(SEAL)

Witness as to Surety

(Address)

(Principal)

By _____

(Address)

(Surety)

By _____
Attorney-in-Fact

(Address)

NOTE: Date of BOND must not be prior to date of CONTRACT. If CONTRACTOR is Partnership, all partners should execute BOND.

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS:

That _____

(Name of Contractor)

(Address of Contractor)

Hereinafter called "Principal", and _____

Hereinafter called "Surety", are held and firmly bound unto the City of Ridgeland,

Mississippi, hereinafter called "Owner" in the penal sum of _____
Dollars (\$ _____)

in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain Contract with the Owner, dated the _____ day of _____,

2016, a copy of which is hereto attached and made a part hereof for the: for
LANDSCAPE MAINTENANCE FOR COUNTY LINE ROAD FROM OLD CANTON
TO RIDGEWOOD ROAD AND THE ISLAND ON THE SOUTH END OF OLD
CANTON ROAD TO INCLUDE THE CITY ENTRANCE SIGN AT THE
INTERSECTION OF OLD CANTON AND COUNTY LINE ROADS

NOW, THEREFORE, if the Principal shall well, truly and faithfully perform its duties, all the undertakings, covenants, terms, conditions, and agreements of said Contract during the Original term thereof, and any extensions thereof which may be granted by the City of Ridgeland, with or without notice to the Surety and if he shall satisfy all claims and demands incurred under such Contract, and shall fully indemnify and save harmless the CITY OF RIDGELAND from all costs

and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the CITY OF RIDGELAND of all or outlay and expense which the CITY OF RIDGELAND may incur in making good and default, then this obligation shall be void; otherwise to remain in full force and effect. PROVIDED, FURTHER, that the said Surety for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or to the WORK to be performed hereunder or the SPECIFICATIONS accompanying the same shall in any wise affect its obligation on this BOND, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of this Contract or to the WORK or to the SPECIFICATIONS.

PROVIDED, FURTHER, that no final settlement between the CITY OF RIDGELAND and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may not yet be satisfied.

WITNESS WHEREOF, this instrument is executed in three (3) counterparts, each of which shall be deemed an original, this the _____ day of _____, 2016.

ATTEST:

(Principal) Secretary
(SEAL)

(Principal)
By _____

Witness as to Principal

(Address)

ATTEST:
(SEAL)

(Surety)
By _____
Attorney-in-Fact

Witness as to Surety

(Address)

(Address)

NOTE: Date of BOND must not be prior to date of CONTRACT. If CONTRACTOR is Partnership, all partners should execute BOND.

LANDSCAPE MAINTENANCE

SECTION 02970

PART 1 – GENERAL

1.01 WORK INCLUDED

- A. Furnishing materials, labor, equipment and services necessary to provide Landscape Maintenance services as described herein and as delineated on the Drawings. Work shall include the following:
 - 1. Turf Care
 - 2. Tree Care
 - 3. Shrub and Groundcover Care
 - 4. Replacement and maintenance of annual plants
 - 5. Irrigation Systems and Maintenance, Watering
 - 6. Fire Ant Control
 - 7. Edging and Trimming
 - 8. Debris Removal
 - 9. Walkways and Other paved Areas
 - 10. Policing and Cleaning
- B. Refer to the Drawings for the specific Scope of Work required at each location for items 1 through 5 of paragraph 'A', above.
- C. Items 6 through 10 of paragraph 'A', above, shall be performed on each site as applicable.

1.02 WORK NOT INCLUDED

- A. Contractor shall not be responsible for replacement/repair of plant material (exclusive of annuals) or site amenities including irrigation system components, caused by unforeseen acts such as drought, freezes, or storm damage.
- B. The Contractor shall be responsible for replacement/repair of plant material/site amenity damage that is resultant from the Contractor's operations, including personnel and equipment.

1.03 REQUIREMENTS

- A. Meet applicable Federal, State, and local codes, regulations and ordinances governing at the site of the project at the time(s) of execution.
- B. Perform chemical operations with personnel who are Certified Commercial Pesticide Applicators under the laws and regulations of the State of Mississippi Department of Agriculture and Commerce, Division of Plant Industry.
- C. Contractor's representative (supervisor) shall be experienced in landscape maintenance, and preferably shall have an education in ornamental horticulture.
- D. Gardeners/laborers shall be personally presentable when on the site.

1.04 ENVIRONMENTAL CONDITIONS

- A. Conduct maintenance operations, particularly chemical-related operations, in weather conditions which provide favorable horticultural conditions and favorable temperature, moisture and soil conditions as may be required by chemical manufacturer's recommendations.

1.05 STORAGE

- A. No equipment or materials may be stored on the site or within any buildings, unless approved by the owner.

PART 2 – PRODUCTS

2.01 GENERAL

- A. Products are subject to approval by the Owner and shall be rejected if in their opinion the materials do not meet the requirements of the Specifications.

2.02 DELIVERY AND HANDLING

- A. Should materials be delivered to the site prior to actual usage and require storage, obtain permission of the Owner for said storage and its location. If the Owner allows storage, materials shall receive suitable protection from the elements. Handle materials so as not to accidentally open containers or contaminate before time of actual mixing or usage.

2.03 PRODUCT SUBMITTALS

- A. Submit in accordance with Section 00750 – General Instructions

2.04 FERTILIZERS

- A. General: Commercial fertilizers shall be complete formula manufactured standard products complying with regulations and laws at the time of bidding, uniform in composition, dry and free flowing. Fertilizers shall contain not less than the percentage by weight of ingredients set out in the following table: these requirements apply to all fertilizers (except for trees) used throughout the project.

GRADE	NITROGEN	PHOSPHORUS P-2-0-5	POTASH K ₂
-------	----------	--------------------	-----------------------

Notes:

1. An allowance of four percent (4%) variation or tolerance of the above proportions will be permitted based on relative commercial value.
2. Fertilizers noted with an asterisk (*) shall be a slow release polymer-encapsulated sulfur coated urea product as manufactured by the O.M. Scott & Sons Co., Marysville, OH., or approved equal.

Trees:

1. Commercial fertilizer shall be a complete formula, slow release, spike-type as Jobe's Fertilizer Spikes, manufactured by International Spike, Inc., Lexington, KY., or approved equal (Submittal Required).

- B. Turf – Application rates: GRADE RATE PER ACRE
(There is no turf Care in this proposal)

- C. Shrubs and Groundcover – Application rates: Apply 5-5-5 fertilizer at the rate of 5 pounds per 1,000 square feet.
- D. Trees- Application rate(s) for each species of tree shall be as per manufacturer's recommendations.

2.05 LIME

- A. Agricultural limestone containing not less than 80 percent of calcium and magnesium carbonate, meeting the following minimum gradations:
 - 1. 80 percent passing a #10 sieve or at least 90 percent passing a #8 mesh sieve.
 - 2. Pelletized material may be utilized provided that manufacturer's data and product label are submitted to and approved by the Owner.
- B. Apply at the rate of one ton per acre on turf areas only.

2.06 HERBICIDES

- A. Utilized for spot weeding in beds, edging and trimming shall be a systemic, weed killer such as Roundup Herbicide, by Monsanto or an approved equal. Herbicide shall be applied as per manufacturer's instructions. When used for edging or trimming, swath of spray shall not exceed 6 inches.
- B. Utilized for weed control in turf, shall include pre-emerge and/or post emerge herbicide suitable for use on the specific type of turf(s) on this project. Materials and application rates shall be approved by the Owner prior to application. SUBMITTAL REQUIRED.

2.07 INSECTICIDES AND FUNGICIDES

- A. Insecticides and Fungicides for turf or plant material shall not be required within the Scope of Work of the base bid, but may be required as additional work on an "as needed" basis. Upon award of Contract, Contractor shall prepare SUBMITTALS for two types of insecticides and fungicides, each which may be required on turf or plant material.

2.08 MULCH

- A. Mulch for each bed shall match the existing material in the bed as of the initial date of this Contract.
 - 1. Cypress mulch Durolast or equal. Lightly compact in areas of applications to the depths required.

2.09 EQUIPMENT

- A. Provide and maintain necessary maintenance equipment at no cost to the Owner.

2.10 ANNUALS

- A. Replace as needed (at least 3 times per year) and fertilize monthly

2.11 FIRE ANT CONTROL

- A. A liquid or granular chemical, U.S. Environmental Protection Agency approved, shall be utilized to treat and control fire ants. Submit product data to the Owner for review and approval.

PART 3 – EXECUTION

3.01 GENERAL

- A. Maintain turf, shrubs, ground covers, (including bed areas), vines, annuals and trees in a healthy growing condition, by performing the necessary operations as listed herein. Scheduling of operations shall be as per the LANDSCAPE MAINTENANCE SCHEDULE following this Section.
- B. The Contractor shall not be responsible for regularly scheduled major trash and litter pickup or major debris removal (ie: trees blown down by storm damage) however, the Contractor shall be responsible for removal of minor trash and litter or minor debris (ie: limbs with a diameter of 3” or smaller) which would interfere with maintenance operations (ie: mowing, weeding, etc.) and would cause an unsightly appearance in the opinion on the Owner. Litter and debris removal operations, as defined herein, shall only be performed at times prior to the actual performance of each specific operation.
- A. Insect and Fungus Control:
 - 1. Fire ant control shall be included in the Base Bid scope of work. Refer to paragraph 3.06.
 - 2. Other insect and fungus control required only on the basis of “as needed” and shall be regarded as additional work.
 - 3. Contractor is responsible for detection of problems related to insect and fungus control and immediate notification of the Owner.
 - 4. Materials utilized shall be those pre-approved by the Owner during the submittal process.

3.03 SHRUB AND GROUND COVER CARE

- A. Shrub Pruning and Shearing:
 - 1. General:
 - a. Prune and shear shrubs 3 to 5 times per year depending on the type of plant material. Do not prune later than August 15, depending on the plants ability to “harden over” the cuts prior to winter.
 - b. Shall include major renovation or merely shaping of the plant material, as determined by the Owner.
 - i. Review pruning of shrubs with the Owner, and receive approval, prior to execution.
 - ii. Major renovation or heading back of plants shall be performed ONLY on as “as needed” basis.
 - c. Purpose will be to remove dead and diseased parts of the plant, remove “leggy” branches or shoots, promote vigorous compact growth, yet maintain growth within space limitations, and maintain a natural appearance.
 - d. DO NOT prune shrubs into balled or boxed forms unless such is required by the design.
 - e. Pruning and shearing shall be subject to the approval of the Owner.
 - 2. Evergreen shrubs (both slow and fast growing types)-Prune and shear during the month of June.
 - a. Major renovation or heading back of plants shall be performed during the dormant season or in early spring.
 - 3. Spring blooming deciduous shrubs-Prune and shear following the bloom of the particular plant.

- a. Major renovation or heading back of plants shall be performed during late spring.
 - 4. Deciduous summer blooming shrubs-Prune and shear during the month of February.
 - a. Major renovation or heading back of plants shall be performed during the dormant season or in early spring.
 - 5. Additional pruning and shearing may be elected by the Owner and deemed as additional work.
- B. Groundcover Pruning and Shearing
 - 1. Required only on the basis of "as needed" and regarded as additional work to the Base Bid work.
 - 2. When required:
 - a. Location and time as determined by the Owner
 - b. Prune or shear required ground covers (ie: Asiatic jasmine, Liriope, Mondo Grass) with a string type trimmer to a height of 3 inches.
 - c. Perform between March 1 and March 15.
- C. Fertilization: Apply 5-5-5 fertilizer to groundcover and shrubs 2 times per year during the periods of March 15 to March 31 and from November 1 to November 15.
- D. Weeding:
 - 1. Perform weeding of plant beds with herbicides where practical, otherwise by hand, as often as necessary to maintain order.
 - a. Maintain planting beds in a weed free condition.
 - b. Weed density shall not exceed 3 weeds per square foot.
 - 2. Remove dead or terminally diseased plants promptly from beds notify the Owner.
 - 3. Spent blooms of the display type shall be removed regularly when they become unsightly.
- E. Mulching
 - 1. Provide and apply mulch to planting beds (except those containing mature groundcovers), pit planted shrubs less than 36 inches in height (unless the plants have achieved matured full spread). And trees less than 4 inches in caliper.
 - a. Bark mulch shall be replenished once per year.
 - b. Pine straw mulch shall be replenished throughout the Contract at no additional cost to the Owner.
 - 2. Before November 15
 - a. Remove existing mulch from beds and/or replace with the existing type to depths of 2 inches for bark and 4 inches for pine straw, if mold or mildew is present.
 - 3. In areas next to buildings, finished elevations of mulch shall not be less than 6 inches below the finished floor grade.
 - a. In circumstances where the existing mulch elevation is less than 6 inches below finish floor grade, remove and dispose of old and deteriorated mulch prior to the installation of new mulch.
- F. Insect and Fungus Control:
 - 1. Fire and control shall be included in the Base Bid scope of work. Refer to paragraph 3.06

2. Other insect and fungus control required only on the basis of "as needed" and shall be regarded as additional work.
3. Contractor is responsible for detection of problems related to insect and fungus control and immediate notification of the Owner.
4. Materials utilized shall be those pre-approved by the Owner during the submittal process.

3.04 TREE CARE

A. General

1. Provide care and maintenance of trees 4 inches in caliper and less regards to pruning, fertilization and removal of dead wood.
2. Regular maintenance of these larger than 4 inches in caliper, work normally performed by an arborist or tree surgeon (ie: cavity work, cabling, chemical injections, major pruning) shall not be included in the Contract.

B. Pruning

1. Required one time per year
 - a. Prune deciduous trees only during the dormant season.
 - b. Prune evergreen trees during the dormant (winter) months
2. Prune trees to:
 - a. Select and develop permanent scaffold branches that are smaller in diameter than the trunk of branch to which they are attached, which have vertical spacing of from 12 to 24 inches and radial orientation so as not overlay one another;
 - b. Eliminate diseased or damaged growth;
 - c. Eliminate narrow V-shaped branch forks that lack strength;
 - d. Reduce toppling and wind damage by thinning out crowns;
 - e. Maintain growth within space limitations;
 - f. Maintain a natural appearance;
 - g. And remove suckers.
 - h. Remove suckers and lower growth from shrub-type plants which have been tree-formed
 - i. Thin out and shape to prevent wind and storm damage to evergreens.
3. Make pruning cuts to lateral branches or buds in front of the branch collar approximately ¼ inch. Stubbing is not permitted.
4. Review pruning of trees with the Owner, and receive approval, prior to execution.

C. Fertilization:

1. Required on an "as needed" basis which shall be deemed as additional work.
2. When required-tree spikes
 - a. Provide the number of tree spikes as recommended per tree by the manufacturer.
 - b. Perform fertilization between May 15 and June 1.
3. When required-liquid fertilizer
 - a. Apply under pressure below grade through a perforated rod or probe.
 - b. Determine rates of fertilizer mix (water and concentrate based upon manufacturer's recommendations. Quantities of mix per tree shall be as follows:

Less than 3 inches in caliper	50 gallons
3 inches to 8 inches in caliper	100 gallons
Greater than 8" in caliper	150 gallons
 - c. Begin at the drip line of each tree, working to the trunk, making 3 concentric circles inserting the rod locations approximately 4 feet on center.

D. Staking or Guying:

1. Inspect periodically the staking and guying of trees which have been installed less than 1 growing season.
2. Upon inspection, tighten and readjust guy wires where necessary to avoid girdling of trunks or branches, and avoid rubbing of branches that may cause bark wounds.
3. Remove and dispose of staking and guying for plants which have been installed longer than 1 growing season.

E. Insect and Fungus Control:

1. Required only on the basis of "as needed" and shall be regarded as additional work.
2. Contractor is responsible for detection of problems related to insect and fungus control and immediate notification of the Owner.
3. Materials utilized shall be those pre-approved by the Owner during the submittal process.

3.05 3.06 FIRE ANT CONTROL

- A. Eradicate fire ants I primary turf areas, shrub beds and groundcover beds.
- B. Frequency-during the period of April 15-November 1:
 1. Shrub and groundcover Beds-Apply spot treatment to mounds as needed.

3.07 IRRIGATION SYSTEMS AND MAINTENANCE, WATERING

A. Work required at Spillway Road clock tower

1. Conduct operations and reviews of the irrigation system:
 - a. Provide the annual start up and review of the system between March 1 and March 15.
 - b. Conduct monthly reviews of the system to determine if all is in working order
 - c. Provide the annual winterization of the system in a manner to best maintain and promote the growth of plant material.
2. Program and operate the irrigation system in a manner to the best maintain and promote the growth of plant material
 - a. Review with and have approved the times of operation by the Owner
 - b. Coordinate with and inform the Owner as to the time(s) and frequency of operation of the irrigation systems, and particular times that watering may be necessary.
 - c. Repair damage to irrigation system caused by Contractor's operations.
3. The Contractor shall not be responsible for damage and repair to the irrigation system caused by others.
 - a. Defective items or deficiencies in the irrigation system shall be brought to the attention of the Owner immediately by the Contractor.
 - b. Repairs to the irrigation system (other than those caused by the Contractor's Operations) are not included n the Base Bid Scope of Work and shall be considered on an "as needed" or emergency basis, which is additional work.

- B. Areas or plants located outside of irrigation systems shall be water on an "as- needed" basis when determined by the Owner and shall be considered as additional work to the Base Bid.

3.08 EDGING AND TRIMMING

- A. Where required;
 - 1. Turf-around signs, light poles, walks, paved areas including curbs, and site features.
 - 2. Ground Covers or vines-adjacent to the entrance sign.
- B. Methods:
 - 3. Herbicides may be utilized around trees, signs, and light poles, in-between planting beds and turf, provided adequate protection is used where trees with sensitive bark (ie: Crape Myrtle) are being sprayed around.
- C. Frequency:
 - 4. Turf Areas, Groundcovers and Vine beds: Required every other mowing time from April 15 to November 1 and with each mowing scheduled before and after the mowing period of April 15 to November 1. (Refer to paragraph 3.02 E.)
 - a. Perform on the same day as mowing operations
 - b. Chemical treatments required as necessary to present a clean, crisp appearance of the items being edged or trimmed around.

3.09 DEBRIS REMOVAL

- A. Remove landscape maintenance-related debris to dumpsters on site or to an authorized dumping facility. This included:
 - 1. Turf Clippings
 - 2. Earth displaced by mowing equipment
 - 3. Pruning/shearing clippings
 - 4. Edging debris, and
 - 5. Debris encumbering the mowing areas
- B. Clean or vacuum walks, parking areas, and other paved areas of litter from the lawn maintenance process after each mowing.
- C. Debris will not be permitted to dominate a particular dumpster, nor will debris encumber the dumpster's use by the Owner.

3.10 WALKWAYS AND OTHER PAVED AREAS

- A. Upon initiation of the Contract, remove and dispose of weeds, etc., growing within asphalt or concrete pavements (except designated islands with plant material or turf within parking areas) which included walks, drives, parking areas, and curb and gutter.
- B. Throughout the duration of the Contract, chemically control and prevent future weed or grass growth within these areas.

3.11 POLICING AND CLEANING

- A. Thoroughly clean walks immediately after each mowing or pruning operation by sweeping, use of blowers, or spraying with water.
- B. Inspect grounds immediately following each mowing and clean trash and debris resultant from landscape maintenance operations.
- C. Should the Owner determine that grass clippings in turf areas which have been mowed are excessive and necessitate raking, the removal and disposal of these clippings shall be considered as additional work.



public works

TO: Mayor and Board of Aldermen

FROM: Mike McCollum, Public Works Director 

DATE: June 1, 2016

SUBJECT: Request Authority to Advertise for Term Bids

The Public Works Department would like to request authority to advertise for term bids for the period of October 1, 2016 to September 30, 2017.

JMM/rb

mailing address: p.o. box 217 • ridgeland, ms 39158
street address: 304 highway 51 • ridgeland, ms 39157
ph: 601.856.7113 • www.ridgelandms.org

Gene F. McGee, cmo - mayor • Paula W. Tierce, phr - city clerk / human resources director

board of aldermen: D.I. Smith, cmo - at-large • Ken Heard, cmo - ward 1 • Chuck Gautier, cmo, , mayor pro tempore - ward 2
Kevin Holder, cmo - ward 3 • Brian P. Ramsey, cmo - ward 4 • Scott Jones, cmo - ward 5 • Wesley Hamlin, cmo - ward 6

NOTICE TO BIDDERS

Notice is hereby given that the Mayor and Board of Aldermen of the City of Ridgeland, Mississippi, will receive written, sealed bids for the purchase, by the City of Ridgeland, Mississippi, of services, commodities, equipment or supplies for public works and public buildings and contracts for public construction until the hour of **10:00 am., Tuesday, August 9, 2016**, at the City Clerk's office at City Hall, 304 Highway 51, P.O. Box 217, Ridgeland, Mississippi 39158.

A list of all such services, commodities, equipment, and supplies has been prepared and is on file at the office of the Director of Public Works at the Public Works Department located in the City Hall at Ridgeland, Mississippi, and copies thereof may be obtained without charge, upon request. Bids should be submitted on the form provided, and the prices quoted should be binding for the period from **OCTOBER 1, 2016 THRU SEPTEMBER 30, 2017**. Contracts for purchase will be made from the lowest and/or best bids submitted, but the Mayor and Board of Aldermen reserve the right to reject any and all bids, and accept or reject any part of a bid.

When necessary to insure ready availability of services, supplies, or for public works and the timely completion of public projects, the Mayor and Board of Aldermen reserve the right to accept no more than two alternate bids. However, no purchases will be made through alternate bidders unless the lowest and best bidder, for reasons beyond his control, cannot deliver the commodities or services contained in his bid. In that event, purchase of such commodities or services may be made from one of the bidders whose bid was accepted as an alternate.

All bids properly submitted in accordance with this notice will be opened at **10:00 am, August 9, 2016** at the City Hall of Ridgeland, Mississippi.

CITY OF RIDGELAND, MISSISSIPPI

BY: /s/Paula Tierce
Paula Tierce, City Clerk

(S E A L)

Publish: July 7, 2015 and July 14, 2015
Furnish 2 proofs of publication/City of Ridgeland



May 18, 2016

TO: Mayor & Board of Aldermen

FROM: John R. Neal, Chief of Police 

SUBJECT: Donation – City of Ridgeland Chamber of Commerce

I am requesting acceptance of check #7743 made payable to the City of Ridgeland Police Department in the amount of \$5,000.00. This is a donation from The City of Ridgeland Chamber of Commerce for Law Enforcement Appreciation Week and will be utilized to purchase additional Tasers.

I am requesting these funds be deposited into account 001-100-730 (Capital Equipment).

Your consideration and acceptance will be greatly appreciated.

Attachment (1)

CC: Anna Robbins

115 west school street • ridgeland, ms 39157
ph: 601.856.2121 • www.ridgelandms.org

Gene F. McGee, cmo - mayor • John R. Neal - chief of police
board of aldermen: D.I. Smith, cmo - at-large • Ken Heard, cmo - ward 1 • Chuck Gautier, cmo, mayor pro tempore - ward 2
Kevin Holder, cmo - ward 3 • Brian P. Ramsey, cmo - ward 4 • Scott Jones, cmo - ward 5 • Wesley Hamlin, cmo - ward 6

**CITY OF RIDGELAND
CHAMBER OF COMMERCE**

01-00

P.O. BOX 194 991-9996
RIDGELAND, MS 39158

7743

85-127/842
827

CHECK ARMOR

PAY TO THE ORDER OF City of Ridgeland Police Department \$ 5,000.00
five thousand dollars + 07/100 DOLLARS



Right Where You Are

INFOLINE 1-888-797-7711

FOR Police Appreciation Week

Linda T. Bynum MP

⑈007743⑈ ⑆084201278⑆ 60381159⑈



May 13, 2016

TO: Mayor & Board of Aldermen

FROM: John R. Neal, Chief of Police 

SUBJECT: Special Event – 100 Miles of Mayhem

I have attached a request for a Special Events Permit from Linda Bartley with the Bike Crossing. This event is the 100 Miles of Mayhem scheduled Saturday, June 11, 2016 from 7:00 a.m. to 3:00 p.m. and bike riders have the option of a 25, 50, 64 or 100 mile bike ride.

All riders will begin at the Bike Crossing and travel west on Jackson Street to Highland Colony Parkway where they will travel south to Old Agency Parkway. They will continue west on Old Agency Parkway to Livingston Road traveling north leaving our city limits. Riders then continue to Lake Cavalier Road where routes will split and go different directions returning back to the Bike Crossing.

Ms. Bartley is expecting a crowd of approximately 300 and will utilize the Bike Crossing facilities as well as two portable restrooms on-site to accommodate participants. Ms. Bartley will have staff and volunteers that will man water stations and clean-up the event upon conclusion.

This event will not generate overtime for the police department and the on-duty traffic unit will coordinate with the shift to cover the intersections at Jackson Street and Highland Colony Parkway.

Checks in the amounts of \$100.00 and \$1,000.00 representing requisite filing fee and bond money are attached. Also included is a request for Permit to Play on Premises.

Your consideration and approval will be greatly appreciated.

CC: Lt. Brian Myers

Attachments (1)

115 west school street • ridgeland, ms 39157
ph: 601.856.2121 • www.ridgelandms.org

Gene F. McGee, cmo - mayor • John R. Neal - chief of police
board of aldermen: D.L. Smith, cmo - at-large • Ken Heard, cmo - ward 1 • Chuck Gautier, cmo, mayor pro tempore - ward 2
Kevin Holder, cmo - ward 3 • Brian P. Ramsey, cmo - ward 4 • Scott Jones, cmo - ward 5 • Wesley Hamlin, cmo - ward 6

**City of Ridgeland Application for
SPECIAL EVENTS PERMIT
(Please Allow 3 Weeks for Approval)**

Name & Address _____
Of _____
Individual/Business: THE BIKE CROSSING
115 W. JACKSON ST
Type of Event: (Details) CHARITY BIKE RIDE
100 miles of Mayhem
Location of Event: 115 W. JACKSON ST.
RIDGELAND, MS 39867
Date(s) of Event: JUNE 11, 2016 to _____
Hours of Event: 6:00 A.M. to 10 P.M.
Estimated Crowd Size: 300
What arrangements will be made for adequate restroom facilities: 2 BATH ROOM
INSIDE 2 OUTSIDE
What arrangements will be made for clean-up at completion of event: VOLUNTEERS
Contact Person: LINDA BARTLEY Phone: 601-856-0049
Signature of Contact Person: Linda Bartley Date: 3-15-2016

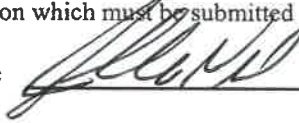
You must do the following before your application will be considered:

- 1). You must present to the Chief of Police or his designee your plan for parking and traffic control. You must state in this plan whether or not police or private security personnel will be needed to direct and handle traffic and parking.
- 2). If the event is to have outdoor music, a written statement will be required from the applicant stating that the applicant will comply with the noise ordinance of the City of Ridgeland, MS.
- 3). If there is a need for Police Department and/or Public Works Department personnel to work in controlling the special event, the applicant will agree in writing to pay this cost.
- 4). The applicant must post a bond in the minimum amount of One Thousand Dollars (\$1,000.00). Please submit a separate check in that amount made payable to the City of Ridgeland with your special event application. This is to insure that the event area is immediately cleaned up after its conclusion and any City employee who works overtime as a result of the special event will be compensated from the bond proceeds.
- 5). Submit the above application and information to the Patrol Division Commander with a non-refundable filing fee of One Hundred Dollars (\$100.00), together with the above referenced bond. Upon receipt, the Patrol Division Commander and/or his designee will review and make a

recommendation to the Chief who will review the application and present same to the Board of Aldermen for subsequent approval. Please allow a minimum of three weeks to complete this process.

- 6). If the event will involve a race and/or walk, please submit a map reflecting the proposed route, together with a description of the route. If any portion of the route will include portions of the Natchez Trace, you must first obtain approval from the Natchez Trace Chief (Phone No. 662-680-4014; Ridgeland Office: 601-856-7321) and documentation reflecting this approval must be submitted with the application.
- 7). If the event is to be held at Old Trace Park, you must first seek approval from PRVWSD Parks & Recreation (601-856-6319) and obtain a facility use application which must be submitted with your application.

☒ Approved Chief of Police or Designee



☐ Denied Date: 13 MAY 2016

*A copy of the Special Events Ordinance should be attached to this permit when applicant receives it.

Ridgeland Police Department
Application for
PERMIT to PLAY ON PREMISES MUSIC

Date of Application: 3-15-2016

Permit Applicant: THE BIKE CROSSING

Applicant Address: 115 W JACKSON ST Phone #: 601-856-0049

Name of Individual Responsible for On-Premises Activity: LINDA BARTLEY
(This person must be present at all times)

Name of Business: THE BIKE CROSSING

Business Address: 115 W. JACKSON ST

Business Telephone: 601-856-0049

Date(s) of Activity: JUNE 11, 2016

Hours of Operation: 6:00 A.M. (music 11:00 A.M. to 3:00 P.M.) to 6:00 P.M.

Maximum Noise Level, in decibels, to be emitted at the nearest boundary of the premises: AVERAGE

Description of premises where activity is scheduled: _____
115 W. JACKSON ST.

Provide any facts that would show the activity for which the permit is requested would not disturb the peace of any family or person within the area into which sound shall carry: _____

In the event a permit is denied, the applicant may appeal the decision to the Mayor and Board of Aldermen. Any such appeal shall be taken not more than ten (10) days from the denial of a permit by giving written notice of the appeal to the Ridgeland City Clerk.

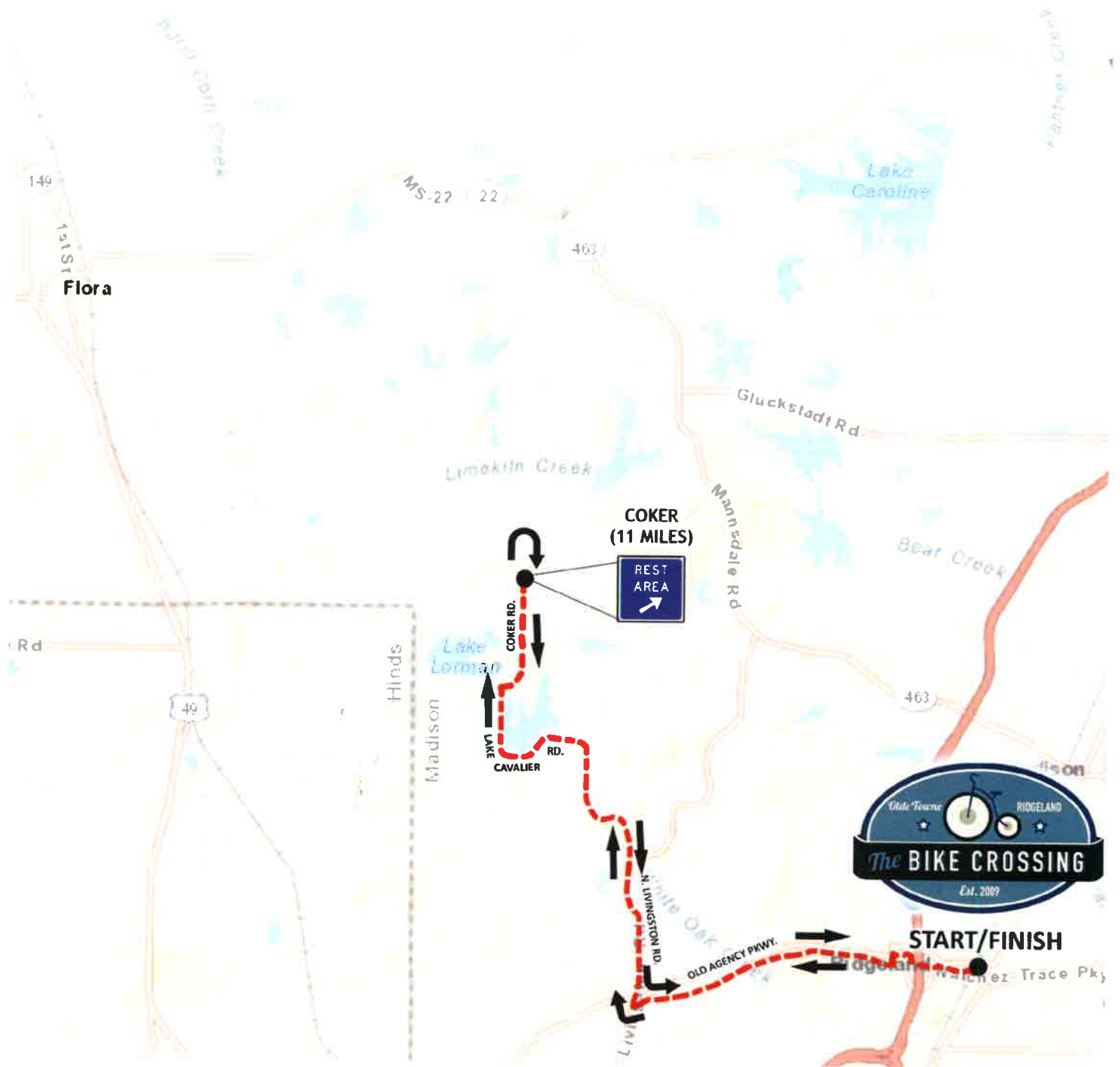
The Chief of Police shall have the authority to revoke any permit issued.

Linda Bartley
Applicants Signature

3-15-2016
Date

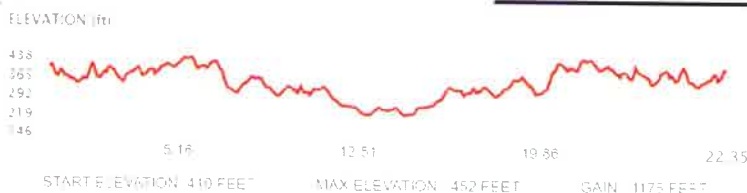
☒ APPROVED
☐ DENIED

Chief of Police or Designee [Signature]
Date 13 MAY 2016



25 MILE ROUTE

Sag: 601-856-0049

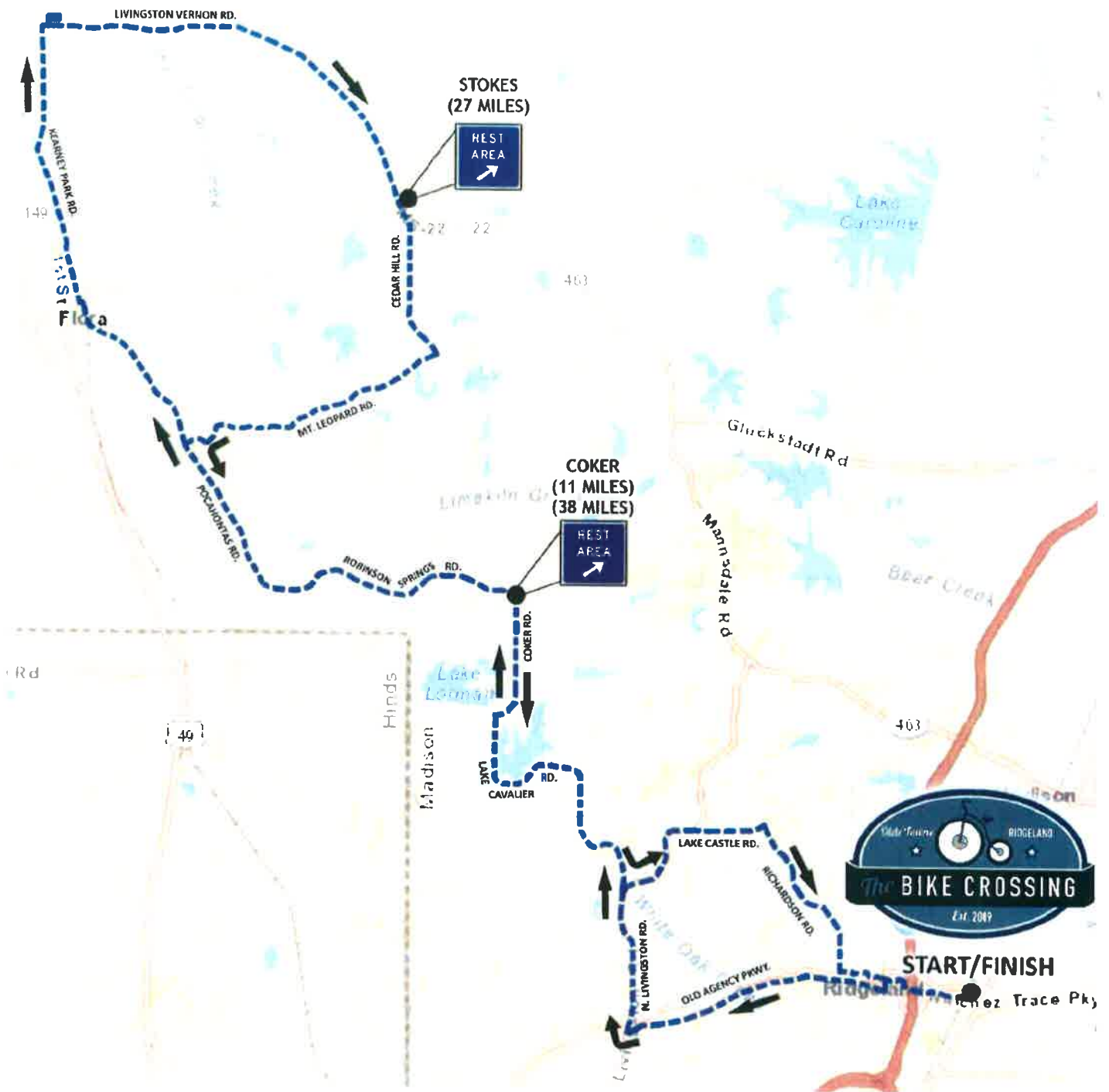


tbc's annual

100



miles
of **MAYhem**



50 MILE ROUTE

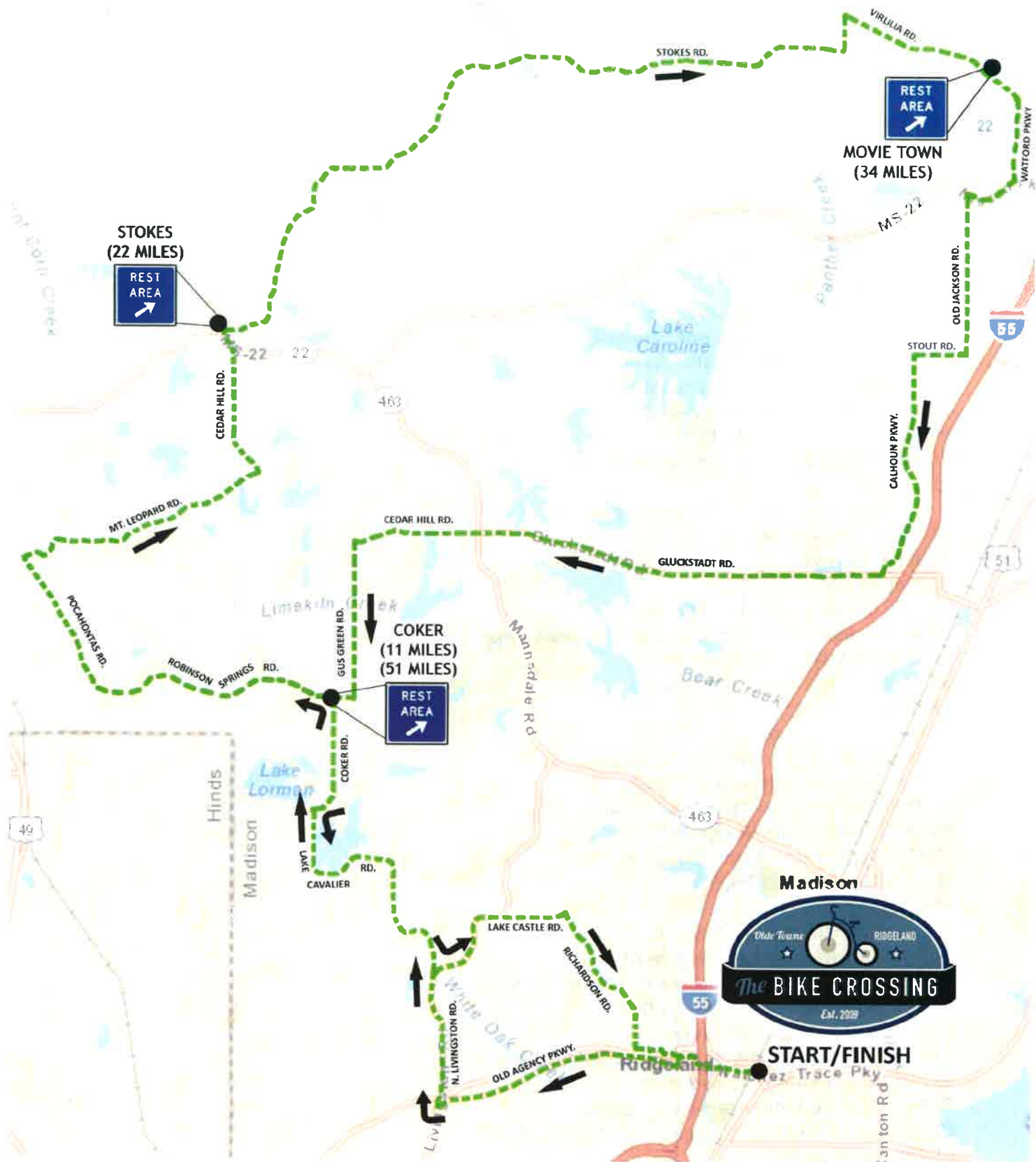


tbc's annual

100

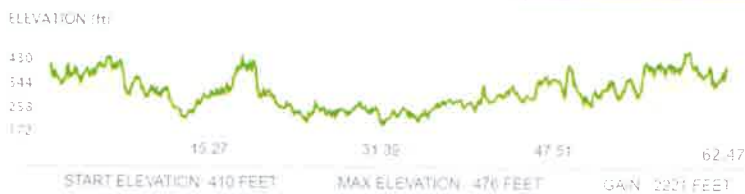


miles
MAYhem



64 MILE ROUTE

Sag: 601-856-0049



tbc's annual **100** miles of **MAYhem**



CASH ONLY IF ALL CheckLock™ SECURITY FEATURES LISTED ON BACK INDICATE NO TAMPERING OR COPYING

THE BIKE CROSSING, LLC
115 W JACKSON ST
BLDG 1A SUITE 1D
RIDGELAND, MS 39157
601-856-0049

BANCORPSOUTH BANK
85-127/842

2475

4-18-2016

PAY TO THE
ORDER OF

City of Ridgeland
One thousand & no/100
\$ 1,000.00
DOLLARS

100 Miles of Mayhem

Linda Bartley

⑈002475⑈ ⑆084201278⑆ 47903703⑈

Created by ICWS Inc (C) FROY Group 2005 (3/27/2015)

100 MILES OF MAYHEM
THE BIKE CROSSING LLC
LINDA B BARTLEY
115 W JACKSON ST STE 1D
RIDGELAND MS 39157

65-618
653

923

DATE

4-18-2016

PAY TO THE
ORDER OF

City of Ridgeland
One hundred & no/100
\$ 100.00
DOLLARS

First Commercial Bank
1300 Meadowbrook Road
Jackson, MS 39211

MEMO

Permit

Linda Bartley

⑈065306189⑈

5018189⑈



May 31, 2016

TO: Mayor & Board of Aldermen

FROM: John R. Neal, Chief of Police

SUBJECT: Surplus Property

I am requesting the following City property be declared as surplus and be sold:

Description:	2009 Dodge Ram
VIN:	1D3HB16K49J527646
Asset #:	100-1-593

Your consideration and approval will be greatly appreciated.

CC: Anna Robbins

115 west school street • ridgeland, ms 39157
ph: 601.856.2121 • www.ridgelandms.org

Gene F. McGee, cmo - mayor • John R. Neal - chief of police
board of aldermen: D.L. Smith, cmo - at-large • Ken Heard, cmo - ward 1 • Chuck Gautier, cmo, mayor pro tempore - ward 2
Kevin Holder, cmo - ward 3 • Brian P. Ramsey, cmo - ward 4 • Scott Jones, cmo - ward 5 • Wesley Hamlin, cmo - ward 6



police department

May 31, 2016

TO: Mayor & Board of Aldermen

FROM: John R. Neal, Chief of Police

SUBJECT: Surplus Property – Detective Frank Dillard's duty weapon

I respectfully request the following duty weapon be declared surplus property and Detective Frank Dillard be allowed to purchase upon his retirement:

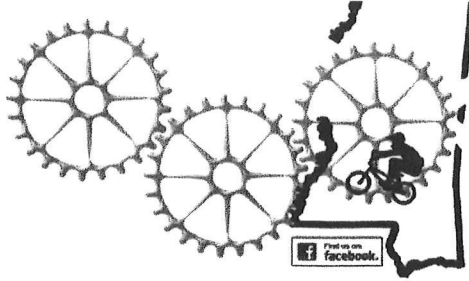
Description:	Glock 23
Serial Number:	XXX776
Asset#:	100-6-1346

Your consideration and approval will be greatly appreciated.

CC: Anna Robbins

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ph: 601.856.2121 • www.ridgelandms.org

Gene F. McGee, cmo - mayor • John R. Neal - chief of police
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Mag-Ridge Bicycle Motocross

Parent-Riders Association

338 NE Madison Drive

Ridgeland, MS 39157

USABMX.com/tracks/1782

TO: Gene F. McGee, Mayor
City of Ridgeland

FROM: Bart Bartran

SUBJECT: Lease Renewal

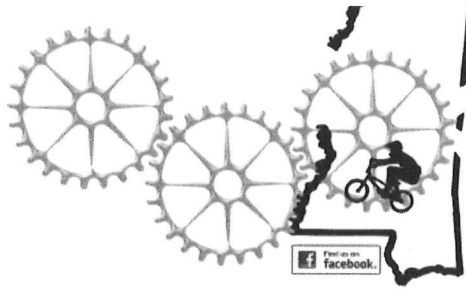
Dear Sir,

As the newly elected President of the Mag-Ridge Bicycle Motocross (BMX) Parent-Riders Association (PRA) I am humbly appealing to you, on their behalf, requesting an extension to our current lease with your fine city. We are currently under an agreement with your office to lease the property located at 340 NE Madison Drive for the purpose of promoting the sport of BMX and continuing to offer the ONLY facility of this nature in the entire State of Mississippi that allows riders a place to train, race and compete in the sport that we love.

Your unwavering support over the past several years is greatly appreciated and the lease has allowed us to make this dream come true. This has proven to be a growing sport and we have seen a significant increase in participation and interest in what we are doing here in the City of Ridgeland. To the extent that we have become very financially stable and have generated enough funding to not only sustain the current operations that our association supports, but also to invest more and improve our facilities by putting that money back into the facilities and ultimately investing in the City of Ridgeland as well. To this point, we ask for your consideration and continued support.

The initial lease offered a two year period, with the option of five (5) one-year renewals. So at this point in the life of the track, we are operating on a lease from year-to-year. We would like to respectfully request that you consider a renewal of this contractual agreement and extend it to a full 10 years to allow us more predictability, security and comfort in investing these funds knowing that our commitment is long-term and will be allowed to endure. Based on the past two years of performance and growth, we see this track and the sport being around for years to come with it getting bigger and bigger every year.

I would like to take this opportunity to thank you in advance for your consideration, understanding and continued support of our facilities, organization and our sport. If you have any further questions, cares or concerns in this matter, please do not hesitate to contact me at (601)517-2622. Should you or your office require anything additional from me or our association, please let me know and feel free to call or e-mail me at robert.r.bartran.mi@mail.mil.



Mag-Ridge Bicycle Motocross

Parent-Riders Association

338 NE Madison Drive

Ridgeland, MS 39157

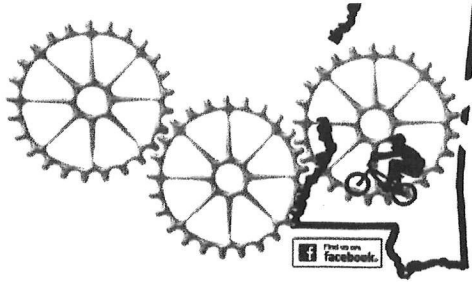
USABMX.com/tracks/1782

Bart Bartran

President

Magnolia-Ridge Bicycle Motocross (BMX)

Parent-Riders Association



Mag-Ridge Bicycle Motocross

Parent-Riders Association

338 NE Madison Drive

Ridgeland, MS 39157

USABMX.com/tracks/1782

TO: Gene F. McGee, Mayor
City of Ridgeland

FROM: Bart Bartran

SUBJECT: Mag-Ridge BMX Race Track Statistics

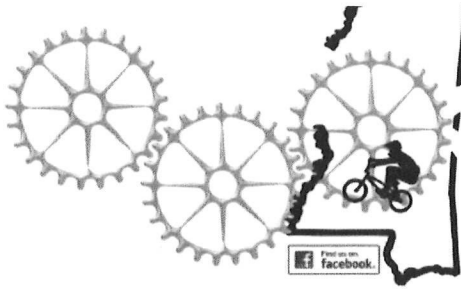
Dear Sir,

Since the opening of our track and recreational facility in February of 2010, our organization and the popularity of BMX Racing in the state of Mississippi has grown. As the only BMX facility in the entire state, right here in Ridgeland, a steady increase in participation and the demands that come with growth have been evident. We have gone from a small 'interest group' of local supports; to a state, regional and national attraction that has brought in many other enthusiasts from neighboring states and across the United States. We hosted our first regional qualifying event last year, and have been selected to do so again this year. It is our goal to be selected next year as a host for the regional event itself or maybe even a national venue for professional racers and riders from the U.S., Canada and other countries to come and be guest here in our great city. Here are some statistics and data that show our progress since our initial formation.

When the first lease was approved and construction began, the organization consisted of only 6 members. During that first year, only three (3) organized races were held. During the course of that year, only about 10 practices were able to be conducted as there was a lot of work to be done on the track and the facilities. Over the next two years, the organization and facilities attracted a few other volunteers and was able to solicit minimal amounts of contribution to support a slow build with minimum progress. To say the least, no banking account was necessary.

In 2013, that had been some changes in management and membership, which recorded 39 active members and several new sponsors that contributed to the facilities growth and much needed support. During 2013, there were 20 organized races held and practice was being conducted weekly. Over the next two years, the membership grew to just over 50 participants with the number of races increasing during that race season and a more steady reliable organized practice session being held weekly. The 2013 season ended with a little over \$2000.00 in our associations banking account.

2015 proved to be the most successful year with membership exceeding over 100 active members from across the state with many out of state guest, attending regularly. With an organized race being held once a week, and organized practice and training sessions being conducted at least once a week (and sometimes twice weekly), the organization experienced its most significant maturity sense



Mag-Ridge Bicycle Motocross

Parent-Riders Association
338 NE Madison Drive
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establishment. On an average practice day, there are normally 30 to 50 riders; with a total of about 80 to 100 attendees, which includes the riders, family members and spectators. On an average race day, we can expect between 50 to 80 racers; with a total of about 100-120 attendees, which includes the riders, family members and spectators.

Also in May of 2015, Mag-Ridge BMX was selected to host a Regional Gold Cup Championship qualifier. This one race attracted in excess of 500 attendees; consisting of riders, family members and spectators. This is a three day event that last all day long. Consequently, These folks not only took in the enjoyment of our facilities, but most being from out of town reserved overnight provisions in the City of Ridgeland and also dined and indulged in the other local entertainment that your city has to offer. Mag-Ridge has been selected once again to host another event of this magnitude here in Ridgeland on 24-26 Jun 2016 when we expect to attract at least the same size crowd, and most likely more as the word has spread about the success and improvements that we have made to our track.

As we begin the 2016 race season and 6th year of the track's existence, we are holding strong with reliable active membership presently at 120 paid members. The association started the year off with a little over \$10,000.00 in the bank and a list of very reliable supporters and sponsors that will help elevate our facilities and operations to greater heights. We bring a family oriented sport to the City of Ridgeland that is not available at any other location in our great state. We offer an active and annual event that attracts people from neighboring states and across the nation. We are recognized and sanctioned by a national organization (USA BMX) that list Ridgeland, MS on their international website as one of their supported tracks and venues for enjoying BMX Racing, practice and training.

I would like to again thank you for your consideration and continued support of our facilities, organization and our sport. If you have any further questions, cares or concerns in this matter, please do not hesitate to contact me at (601)517-2622. Should you or your office require anything additional from me or our association, please let me know and feel free to call or e-mail me at robert.r.bartran.mi.@mail.mil.

Bart Bartran
President
Magnolia-Ridge Bicycle Motocross (BMX)
Parent-Riders Association

AGREEMENT

WHEREAS, on or about the 2nd day of July, 2016, the City of Canton, Mississippi, will sponsor the Mississippi Championship Hot Air Balloon Festival, hereinafter referred to as the "Festival"; and,

WHEREAS, as a component of said Festival, the City of Canton will cause a number of the balloons to participate in a "Balloon Glow" sponsored by the City of Ridgeland, adjacent to Northpark Mall; and,

WHEREAS, in that there are considerable costs and expenses to the City of Canton associated with said Balloon Glow, the City of Ridgeland has agreed to make a non-refundable contribution to the City of Canton to offset said expenses; and,

WHEREAS, prior to the Festival, certain advertisements and promotions are conducted by both the City of Ridgeland and the City of Canton in connection therewith, and each agrees to include the other's activities in their respective promotional efforts.

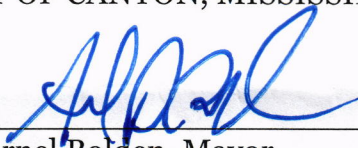
NOW, THEREFORE, BE IT AGREED BY AND BETWEEN THE CITY OF RIDGELAND, MISSISSIPPI, AND THE CITY OF CANTON, MISSISSIPPI, as follows, to wit:

1. That within (10) business days following its approval, the City of Ridgeland shall pay unto the City of Canton a non-refundable contribution in the sum of Fifteen Thousand Dollars (\$15,000.00) to offset the City of Canton's costs and expenses associated with the Balloon Glow sponsored and promoted by the City of Ridgeland, adjacent to Northpark Mall.
2. That the City of Canton shall cause at least twenty (20) balloons, excluding special shaped balloons, to participate in said Balloon Glow at a time and acceptable location, subject to permissible weather conditions.
3. The parties acknowledge and agree that the inflation of hot air balloons for said Balloon Glow is contingent upon the existence of favorable weather conditions at the appointed time, which shall be solely determined by the individual balloonists participating in said Balloon Glow.
4. The parties acknowledge and agree that the aforesaid Fifteen Thousand Dollars (\$15,000.00) contribution shall not be refunded in the event weather conditions do not permit the Balloon Glow at the appointed time and place.
5. The parties acknowledge and agree that each shall prominently include the respective events and activities of the other in their respective printed, radio, television and internet, promotional advertisements and materials for the Festival.

6. The City of Ridgeland shall provide liability insurance coverage for the Ridgeland Balloon Glow in the amount of not less than One Million Dollars (\$1,000,000.00) per occurrence naming the City of Canton as well as its officers, agents, employees and elected officials, as additional loss payees, for the activities conducted in conjunction with said Balloon Glow.

SO AGREED, this the 17th day of May, 2016.

CITY OF CANTON, MISSISSIPPI

By: 
Arnel Bolden, Mayor

ATTEST:


City Clerk

CITY OF RIDGELAND, MISSISSIPPI

By: _____
Gene McGee, Mayor

ATTEST:

City Clerk

===== PAYMENT DISTRIBUTION =====									
LICENSE	PERIOD	CODE	ISSUED TO	FEE	PENALTY	TAX	INTEREST	TOTAL PAID	
0010717	4/01/16- 3/31/17	27-17-365	LBI DBAJACKSON FISH AND	25.00CR	3.00CR	.00	.00	28.00CR	
8136	6/01/16- 5/31/17	27-17-365	1-800-HEALTHY.COM	40.00CR	.00	.00	.00	40.00CR	
9162	6/01/16- 5/31/17	27-17-009	220 MINI STORAGE	20.00CR	.00	.00	.00	20.00CR	
9897	6/01/16- 5/31/17	27-17-009	A X A ADVISORS LLC	39.00CR	.00	.00	.00	39.00CR	
0011276	4/01/16- 3/31/17	27-17-009	ACTION FIREARMS TRAINING	20.00CR	2.40CR	.00	.00	22.40CR	
0010545	6/01/16- 5/31/17	27-17-009	ADCOCK & MORRISON PLLC	30.00CR	.00	.00	.00	30.00CR	
5747	5/01/16- 4/30/17	27-17-009	ADD A PHONE INC	20.00CR	2.20CR	.00	.00	22.20CR	
10297	5/01/16- 4/30/17	27-17-009	ANJOU RESTAURANT	54.00CR	.00	.00	.00	54.00CR	
0011299	4/10/16- 4/09/17	27-17-009	ARMSTROMG MCCALL	62.50CR	.00	.00	.00	62.50CR	
0011049	5/01/16- 4/30/17	27-17-009	AVA	20.00CR	.00	.00	.00	20.00CR	
9607	5/01/16- 4/30/17	27-17-009	BARNETTES SALON	42.00CR	.00	.00	.00	42.00CR	
0011028	5/01/16- 4/30/17	27-17-009	BEAUTIFUL GORGEOUS WORLD	20.00CR	.00	.00	.00	20.00CR	
0011310	5/01/16- 4/30/17	27-17-365	BLUETOOTH WORLD	20.00CR	2.20CR	.00	.00	22.20CR	
7982	6/01/16- 5/31/17	27-17-009	BUFFALO WILD WINGS GRILL	48.00CR	.00	.00	.00	48.00CR	
0011607	5/02/16- 2/01/17	27-17-365	BUMPS AD BEYOND LLC	20.00CR	.00	.00	.00	20.00CR	
9851	5/01/16- 4/30/17	27-17-009	BURGERS & BLUES LLC	75.00CR	.00	.00	.00	75.00CR	
5767	6/01/16- 5/31/17	27-17-365	CALLAWAYS YARD & GARDEN C	40.00CR	.00	.00	.00	40.00CR	
0010828	2/01/16- 1/31/17	27-17-009	CANON SOLUTIONS AMERICA I	30.00CR	4.20CR	.00	.00	34.20CR	
6206	6/01/16- 5/31/17	27-17-009	CHARLES N WHITE CONSTRUCT	57.00CR	.00	.00	.00	57.00CR	
0010766	5/01/16- 4/30/17	27-17-009	CHRIS ROSSON DBA CHICK FI	20.00CR	.00	.00	.00	20.00CR	
8012	4/01/16- 3/31/17	27-17-009	COLORSTONE LLC	20.00CR	2.20CR	.00	.00	22.20CR	
7253	6/01/16- 5/31/17	27-17-009	COMPENSATION INSURANCE	20.00CR	.00	.00	.00	20.00CR	
8321	6/01/16- 5/31/17	27-17-009	CREATIVE EXPRESSIONS INC	20.00CR	.00	.00	.00	20.00CR	
0011589	4/15/17- 4/15/17	27-17-009	D'S CAJUN SPOT	30.00CR	.00	.00	.00	30.00CR	
0011606	5/17/16- 5/16/17	27-17-009	DAVID R MANN	20.00CR	.00	.00	.00	20.00CR	
0010606	6/01/16- 5/31/17	27-17-009	DURANGO OPERATING, LLC	20.00CR	.00	.00	.00	20.00CR	
0011322	5/01/16- 4/30/17	27-17-009	EL SABOR MEXI AN CUISINE	20.00CR	.00	.00	.00	20.00CR	
8642	4/01/16- 3/31/17	27-17-009	ELITE PRINTING DESIGN	20.00CR	2.40CR	.00	.00	22.40CR	
10326	6/01/16- 5/31/17	27-17-009	EMMANUEL MEDICAL CLINIC	20.00CR	.00	.00	.00	20.00CR	
9289	2/01/16- 1/31/17	27-17-009	FAS TAX OF RIDGELAND LLC	.00	2.20CR	.00	.00	2.20CR	
0010777	5/01/16- 4/30/17	27-17-365	FAST FILL #4 LLC	20.00CR	.00	.00	.00	20.00CR	
0011132	6/01/16- 5/31/17	27-17-009	FILING AND STORAGE OF MS	20.00CR	.00	.00	.00	20.00CR	
8547	5/01/16- 4/30/17	27-17-365	GENERAL NUTRITION CENTER	32.50CR	.00	.00	.00	32.50CR	
0011586	4/01/16- 3/31/17	27-17-009	GUARANTEED AC	20.00CR	.00	.00	.00	20.00CR	
7764	6/01/16- 5/31/17	27-17-009	HAYLES TOWING AND RECOVER	20.00CR	.00	.00	.00	20.00CR	
10313	6/01/16- 5/31/17	27-17-365	HEMLINE MS INC	300.00CR	.00	.00	.00	300.00CR	
0011605	5/18/16- 5/17/17	27-17-365	I CUSTOMIZE	20.00CR	.00	.00	.00	20.00CR	
0011390	6/01/16- 5/31/17	27-17-365	IEH AUTO PARTS LLC	200.00CR	.00	.00	.00	200.00CR	
8327	6/01/16- 5/31/17	27-17-009	INSPECT IT LIKE A GIRL	20.00CR	.00	.00	.00	20.00CR	
10331	6/01/16- 5/31/17	27-17-009	INTERIOR CONSTRUCTORS LLC	20.00CR	.00	.00	.00	20.00CR	
5647	7/01/16- 6/30/17	27-17-365	JACKSON DATA PRODUCTS INC	40.00CR	.00	.00	.00	40.00CR	
8908	6/01/16- 5/31/17	27-17-365	JADE	75.00CR	.00	.00	.00	75.00CR	
9340	2/29/16- 2/28/17	27-17-009	JEAN HAWKS PH D OFFICE	20.00CR	2.40CR	.00	.00	22.40CR	
0011600	5/05/16- 5/05/17	27-17-009	JHS & ASSOCIATES LLC	20.00CR	.00	.00	.00	20.00CR	
10325	6/01/16- 5/31/17	27-17-009	KIRKLAND DEVELOPMENT INC	20.00CR	.00	.00	.00	20.00CR	
10324	6/01/16- 5/31/17	27-17-009	KIRKLAND MANAGEMENT LLC	30.00CR	.00	.00	.00	30.00CR	

				===== PAYMENT DISTRIBUTION =====					
LICENSE	PERIOD	CODE	ISSUED TO	FEE	PENALTY	TAX	INTEREST	TOTAL PAID	
10323	6/01/16- 5/31/17	27-17-009	KIRKLAND PROPERTIES LLC	20.00CR	.00	.00	.00	20.00CR	
9879	6/01/16- 5/31/17	27-17-009	KNOBIAS, INC	20.00CR	.00	.00	.00	20.00CR	
0010787	6/01/16- 5/31/17	27-17-365	KRIS JEWELERS III LLC	920.00CR	.00	.00	.00	920.00CR	
5417	6/01/16- 5/31/17	27-17-009	KRISPY KREME DOUGHNUTS #2	66.00CR	.00	.00	.00	66.00CR	
9169	6/01/16- 5/31/17	27-17-009	L W PROPERTIES LLC	20.00CR	.00	.00	.00	20.00CR	
0011601	5/03/16- 5/03/17	27-17-365	MACHELLE'S GRAPHIC CREATI	20.00CR	.00	.00	.00	20.00CR	
6210	6/01/16- 5/31/17	27-17-009	MADISON RIDGELAND HEATING	20.00CR	.00	.00	.00	20.00CR	
6873	6/01/16- 5/31/17	27-17-009	MARKOW WALKER REEVES ANDE	96.00CR	.00	.00	.00	96.00CR	
9394	4/01/16- 3/31/17	27-17-365	MATERIAL GIRLS LLC	25.00CR	.00	.00	.00	25.00CR	
10328	6/01/16- 5/31/17	27-17-365	MAZDA OF RIDGELAND	1,840.00CR	.00	.00	.00	1,840.00CR	
6679	5/01/16- 4/30/17	27-17-365	MCGRAW RENTAL & SUPPLY CO	150.00CR	16.50CR	.00	.00	166.50CR	
0010589	6/01/16- 5/31/17	27-17-009	MEMBERS EXCHANGE CRIDIT U	75.00CR	.00	.00	.00	75.00CR	
0010784	6/01/16- 5/31/17	27-17-009	MERRILL LYNCH	105.00CR	.00	.00	.00	105.00CR	
6901	6/01/16- 5/31/17	27-17-009	MISSISSIPPI RAINBOW PRINT	30.00CR	.00	.00	.00	30.00CR	
7584	6/01/16- 5/31/17	27-17-009	MISSISSIPPI STATE MEDICAL	51.00CR	.00	.00	.00	51.00CR	
8441	2/29/16- 2/28/17	27-17-009	NAVISTAR TRANSPORT LLC	20.00CR	2.40CR	.00	.00	22.40CR	
10327	6/01/16- 5/31/17	27-17-009	NELL WYATT REAL ESTATE	30.00CR	.00	.00	.00	30.00CR	
10113	6/01/16- 5/31/17	27-17-009	NOBLE & NOBLE PLLC	20.00CR	.00	.00	.00	20.00CR	
9415	6/01/16- 5/31/17	27-17-009	NOLAN PALMER & COMPANY LL	20.00CR	.00	.00	.00	20.00CR	
0011332	6/01/16- 5/31/17	27-17-009	NORTHEAST DENTAL	30.00CR	.00	.00	.00	30.00CR	
10298	5/01/16- 4/30/17	27-17-009	NORTH PARK LEARNING CENTER	51.00CR	.00	.00	.00	51.00CR	
0011428	6/01/16- 5/31/17	27-17-365	NUYOU, LLC	62.50CR	.00	.00	.00	62.50CR	
9835	5/01/16- 4/30/17	27-17-009	OBERT LAW GROUP P A	20.00CR	.00	.00	.00	20.00CR	
6902	7/01/16- 6/30/17	27-17-365	OVERHEAD DOOR COMPANY	20.00CR	.00	.00	.00	20.00CR	
0011587	5/10/16- 5/10/17	27-17-009	PAFFORD EMS	30.00CR	.00	.00	.00	30.00CR	
6357	6/01/16- 5/31/17	27-17-009	PEAR ORCHARD APARTMENTS	30.00CR	.00	.00	.00	30.00CR	
9448	6/01/16- 5/31/17	27-17-009	PREMIER PUBLISHING INC	30.00CR	.00	.00	.00	30.00CR	
6523	6/01/16- 5/31/17	27-17-365	QUALITY CHEMICAL & SUPPLY	75.00CR	.00	.00	.00	75.00CR	
7048	6/01/16- 5/31/17	27-17-365	RACK ROOM SHOES	92.50CR	.00	.00	.00	92.50CR	
9060	2/01/16- 1/31/17	27-17-009	REGIONS BANK - HCP BRANCH	30.00CR	4.20CR	.00	.00	34.20CR	
6846	6/01/16- 5/31/17	27-17-365	RIDGELAND DISCOUNT DRUGS	75.00CR	.00	.00	.00	75.00CR	
0011081	6/01/16- 5/31/17	27-17-009	RIDGELAND FITNESS LLC	20.00CR	.00	.00	.00	20.00CR	
6895	6/01/16- 5/31/17	27-17-009	RIDGELAND TAEKWONDO	20.00CR	.00	.00	.00	20.00CR	
7113	2/01/16- 1/31/17	27-17-009	RIDGELAND UPHOLSTERY	20.00CR	2.80CR	.00	.00	22.80CR	
5644	6/01/16- 5/31/17	27-17-365	RITE AID #7210	300.00CR	.00	.00	.00	300.00CR	
0010615	6/01/16- 5/31/17	27-17-009	ROLLINS LAW FIRM	30.00CR	.00	.00	.00	30.00CR	
8336	6/01/16- 5/31/17	27-17-009	SARAS NAILS INC	20.00CR	.00	.00	.00	20.00CR	
0011303	5/01/16- 4/30/17	27-17-009	SEW FIT ALTERATIONS	20.00CR	.00	.00	.00	20.00CR	
9157	5/01/16- 4/30/17	27-17-009	SIMMONS LAW GROUP P A	30.00CR	3.30CR	.00	.00	33.30CR	
0010604	2/01/16- 1/31/17	27-17-009	SOLAR CONTROL OF JACKSON	30.00CR	.00	.00	.00	30.00CR	
8796	6/01/16- 5/31/17	27-17-009	SOUTHGROUP INSURANCE	54.00CR	.00	.00	.00	54.00CR	
10084	5/01/16- 4/30/17	27-17-009	STAFFMARK INVESTMENT LLC	30.00CR	.00	.00	.00	30.00CR	
6402	6/01/16- 5/31/17	27-17-009	STANLEY STEEMER	30.00CR	.00	.00	.00	30.00CR	
0011588	7/01/16- 6/30/17	27-17-009	STINE'S CHOICE HOME CARE	20.00CR	.00	.00	.00	20.00CR	
8347	5/01/16- 4/30/17	27-17-365	T MOBILE	440.00CR	.00	.00	.00	440.00CR	
0011612	5/25/16- 5/25/17	27-17-009	TACO BELL #32313	60.00CR	.00	.00	.00	60.00CR	

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L I C E N S E P A Y M E N T R E P O R T
SORTED BY: NAME

PAGE: 3
PAYMENT DATES: 5/01/2016 TO 5/31/2016

				===== PAYMENT DISTRIBUTION =====				
LICENSE	PERIOD	CODE	ISSUED TO	FEE	PENALTY	TAX	INTEREST	TOTAL PAID
8308	5/01/16- 4/30/17	27-17-009	TIENDA LA GUADALUPE	20.00CR	.00	.00	.00	20.00CR
0011308	6/01/16- 5/31/17	27-17-009	TOTAL I CARE OF MS LLC	20.00CR	.00	.00	.00	20.00CR
6317	6/01/16- 5/31/17	27-17-009	TRACE CLEANERS	33.00CR	.00	.00	.00	33.00CR
9171	6/01/16- 5/31/17	27-17-009	TROTTI CONSTRUCTION INC	20.00CR	.00	.00	.00	20.00CR
8369	4/01/16- 3/31/17	27-17-009	UNEMPLOYMENT COST SOLUTIO	20.00CR	2.40CR	.00	.00	22.40CR
0011307	4/22/16- 4/21/17	27-17-009	UNIQUELY INSPIRED	20.00CR	.00	.00	.00	20.00CR
8791	6/01/16- 5/31/17	27-17-009	UNUM GROUP	30.00CR	.00	.00	.00	30.00CR
0011180	6/01/16- 5/31/17	27-17-009	UPCHURCH SERVICES LLC	93.00CR	.00	.00	.00	93.00CR
8639	4/01/16- 3/31/17	27-17-009	V I P NAILS	30.00CR	.00	.00	.00	30.00CR
0011352	6/01/16- 5/31/17	27-17-009	WAFFLE HOUSE	60.00CR	.00	.00	.00	60.00CR
9775	2/29/16- 2/28/17	27-17-009	WATERCOLOR SALON	66.00CR	8.58CR	.00	.00	74.58CR
9610	6/01/16- 5/31/17	27-17-009	WHITTEN GROUP, THE	20.00CR	.00	.00	.00	20.00CR
0010799	6/01/16- 5/31/17	27-17-009	ZEN DAY SPA	20.00CR	.00	.00	.00	20.00CR

RECORD TOTAL		INPUT TOTAL		FEE TOTAL	PENALTY TOTAL	TAX TOTAL	INTEREST TOTAL	GRAND TOTAL
105				7,440.00CR	63.38CR			7,503.38CR

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PAGE: 4
PAYMENT DATES: 5/01/2016 TO 5/31/2016

** LICENSE CODE TOTALS **

LICENSE CODE	DESCRIPTION	FEE	PENALTY	PAYMENT TAX	DISTRIBUTION INTEREST	TOTAL PAID
27-17-009	SERVICE BUSINESSES	82	2,587.50CR	41.68CR		2,629.18CR
27-17-365	RETAIL/WHOLESALE BUSINESSES	24	4,852.50CR	21.70CR		4,874.20CR
TOTAL			7,440.00CR	63.38CR		7,503.38CR

** REPORT CODE TOTALS **

		===== PAYMENT DISTRIBUTION =====			
REPORT CODE	DESCRIPTION	FEE	PENALTY	TAX	INTEREST
*****	INVALID	54	2,672.00CR	46.08CR	2,718.08CR
238220	Plumbing Heating and Air-Condi	2	113.00CR		113.00CR
238340	Tile and Terrazzo Contractors	1	20.00CR	2.20CR	22.20CR
238990	All Other Specialty Trade Cont	23	785.00CR	6.60CR	791.60CR
441310	Automotive Parts and Accessori	1	200.00CR		200.00CR
446120	Cosmetics Beauty Supplies and	1	62.50CR		62.50CR
446191	Food (Health) Supplement Store	1	62.50CR		62.50CR
448120	Women's Clothing Stores	1	20.00CR		20.00CR
453220	Gift Novelty and Souvenir Stor	1	20.00CR		20.00CR
454390	Other Direct Selling Establish	7	3,145.00CR	5.20CR	3,150.20CR
531210	Offices of Real Estate Agents	1	20.00CR		20.00CR
541110	Offices of Lawyers	2	30.00CR	3.30CR	33.30CR
541310	Architectural Services	1	20.00CR		20.00CR
561730	Landscaping Services	1	20.00CR		20.00CR
621210	Offices of Dentists	1	30.00CR		30.00CR
621320	Offices of Optometrists	1	20.00CR		20.00CR
621610	Home Health Care Services	1	20.00CR		20.00CR
621910	Ambulance Services	1	30.00CR		30.00CR
713940	Fitness and Recreational Sport	1	20.00CR		20.00CR
722511	FULL-SERVICE RESTAURANTS	3	110.00CR		110.00CR
812112	Beauty Salons	1	20.00CR		20.00CR
TOTAL		7,440.00CR	63.38CR		7,503.38CR

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PAGE: 6
PAYMENT DATES: 5/01/2016 TO 5/31/2016

** FEE CODE TOTALS **

FEE CODE	DESCRIPTION	FEE	===== PAYMENT DISTRIBUTION =====			TOTAL PAID
			PENALTY	TAX	INTEREST	
27-17-009	SERVICE BUSINESS	62	1,370.00CR	33.10CR		1,403.10CR
27-17-009C	SERVICE BUSINESSES OVER 10	19	1,155.00CR	8.58CR		1,163.58CR
27-17-365	RETAIL/WHOLESALE BUSINESSES	25	4,915.00CR	21.70CR		4,936.70CR
TOTAL			7,440.00CR	63.38CR		7,503.38CR

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PAYMENT DATES: 5/01/2016 TO 5/31/2016

** GENERAL LEDGER DISTRIBUTION **

FUND G/L ACCOUNT	ACCOUNT NAME	AMOUNT
001-000-220	PRIVILEGE LICENSES	7,503.38CR
099-000-008	POOLED CASH	7,503.38

REPORT SELECTION CRITERIA

REPORT SELECTION

LICENSES: THRU ZZZZZZZZZZ
EFFECTIVE DATES: 0/00/0000 TO 99/99/9999
EXPIRATION DATES: 0/00/0000 TO 99/99/9999
PAYMENT DATES: 5/01/2016 TO 5/31/2016
LICENSE CODES: Include: 27-17-009 , 27-17-035 , 27-17-299 , 27-17-365 , 27-17-415 , 27-17-425 , 27-27-005 27-27-301 , 75-85-0
REPORT CODES: All
FEE CODES: All

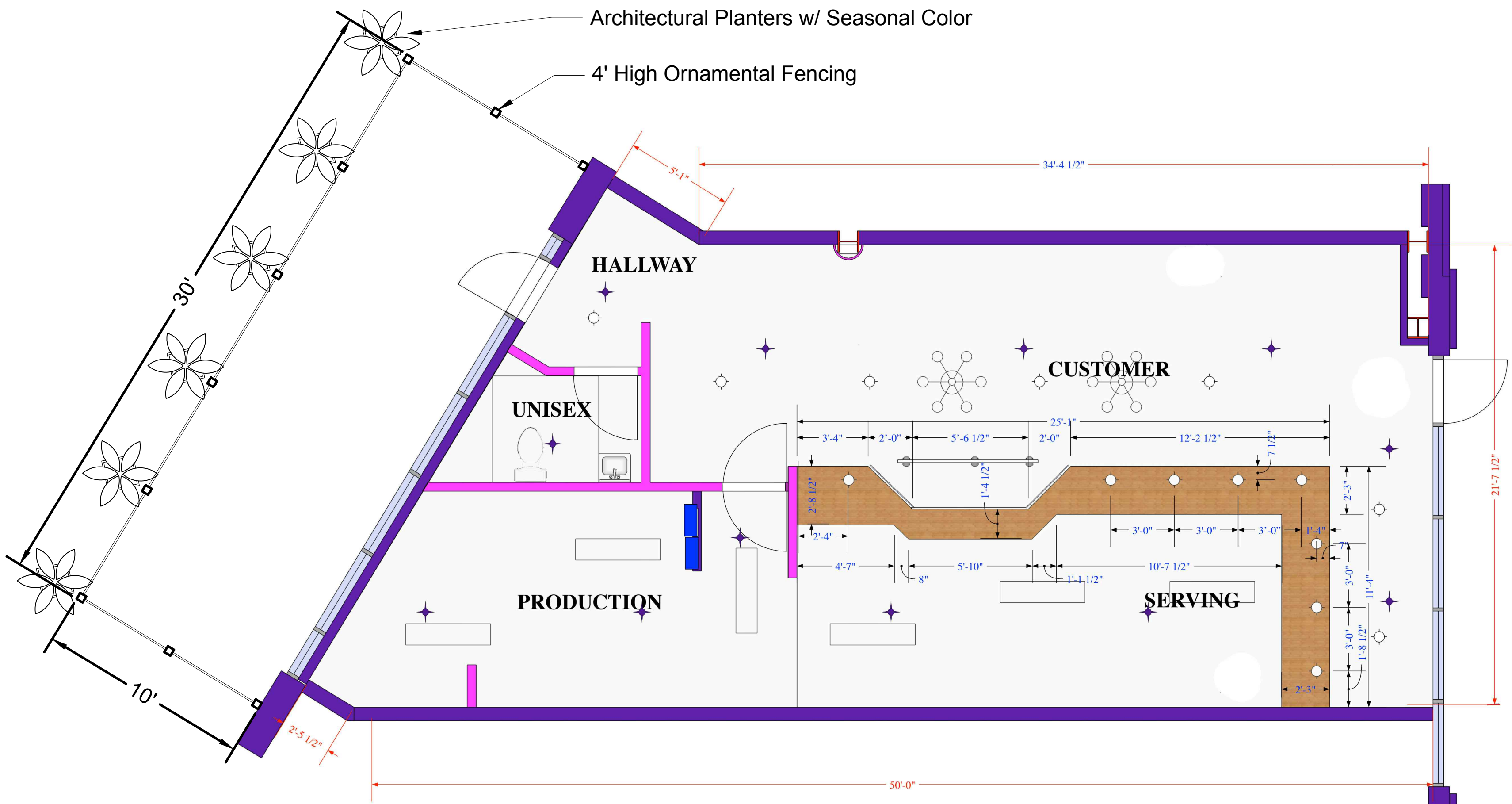
PRINT OPTIONS

SEQUENCE: NAME
REPORT TYPE: SUMMARY
REVERSE PAYMENTS: NO

END OF REPORT



PATIO VIEW



SITE PLAN

SCALE: 1/4" = 1'-0"

Charlie Graingers

la terra studio Project # 16250

Ridgeland, MS

submittals / revisions

no.	date	detail

la terra studio, inc.

16250
its project number
May 23, 2016
date
bms
drawn by
bms
checked by

registration



sheet title

sheet number

**MINUTES OF A MEETING OF THE ARCHITECTURAL REVIEW BOARD
OF THE CITY OF RIDGELAND, MISSISSIPPI**

A meeting of the Architectural Review Board of the City of Ridgeland, Mississippi, (the "Board"), was duly called, held, and conducted on Tuesday May 24, 2016 at 6:00 o'clock P.M. in the Ridgeland City Hall in the City of Ridgeland, Madison County, Mississippi.

.....

The following members were present, to-wit:

Bill Dicken, Chairman
Alex Ross
Randy Knouse
Glenn Ray
Connie Suber
Ron Blaylock

Members Absent:

Donald Pendergrast
Tom Bobbitt

Also attending:

Matt Dodd, City Planner
Alan Hart, Director of Community Development
Jerry Mills, City Attorney

The meeting was called to order by Chairman Dicken. Chairman Dicken led the invocation. It was determined by the members present that there was a quorum.

The first item on the agenda was **MED GRILLE**. The project was presented by **Mr. Clay Emerich of Northpark Mall**. The project is located in **Northpark Mall**. The applicant is requesting approval to install a new storefront and awning.

Chairman Dicken opened the floor for a motion. Randy Knouse made a motion to approve the project as a "minor" agenda item. Ron Blaylock seconded the motion and a vote was taken thereon as follows:

Alex Ross	Aye
Tom Bobbitt	Absent
Ron Blaylock	Aye
Donald Pendergrast	Absent
Randy Knouse	Aye
Glenn Ray	Aye
Connie Suber	Aye

Chairman Dicken then declared the motion to approve the project carried.

The second item on the agenda was **MT. CHARITY CHURCH**. The project was presented by **Mr. Brooks** with **Siding with Strength**. The project is located at **954 Lake Harbour Drive**. The applicant is requesting approval to install a new roof and soffit.

Chairman Dicken opened the floor for a motion. Glenn Ray made a motion to approve the project as a “minor” agenda item contingent upon the roof being the ‘burnished slate’ bronze color. Randy Knouse seconded the motion and a vote was taken thereon as follows:

Alex Ross	Aye
Tom Bobbitt	Absent
Ron Blaylock	Aye
Donald Pendergrast	Absent
Randy Knouse	Aye
Glenn Ray	Aye
Connie Suber	Aye

Chairman Dicken then declared the motion to approve the project carried.

The next item on the agenda was **CHARLIE GRAINGERS**. The project was presented by **Mr. Kirk Carraway**. The project is located in the **Renaissance at Colony Park Development**. The applicant is requesting approval to construct an outdoor patio area.

Chairman Dicken opened the floor for a motion. Alex Ross made a motion to approve the project as a “major” agenda item. Ron Blaylock seconded the motion and a vote was taken thereon as follows:

Alex Ross	Aye
Tom Bobbitt	Absent
Ron Blaylock	Aye
Donald Pendergrast	Absent
Randy Knouse	Aye
Glenn Ray	Aye
Connie Suber	Aye

Chairman Dicken then declared the motion to approve the project carried.

The last item on the agenda was **RENAISSANCE PHASE III / COSTCO**. The project was presented by **Mr. Keith O’Keefe, Mrs. Julie Miller, and Mr. Brian Kendell**. The project is located off of **Highland Colony Parkway**. The applicant is requesting approval to construct a new large master planned commercial development.

Following the applicants presentation, Ken Heard, Alderman Ward 1, requested that the Board allow for public comment. Chairman Dicken then opened the meeting for public comment. Gerald Beard, resident of Montrachet voiced concerns regarding the new development. Karen Bush, resident of Greenwood Plantation voiced concerns regarding the new development.

With there being no further public comment, Chairman Dicken opened the floor for a motion. Randy Knouse made a motion to approve the project as a "major" agenda item contingent upon: a) the applicant revising the fuel center canopy to match the architecture of the Costco building by bricking the columns and adding a decorative cap to the canopy; b) the applicant will adjust the berm and landscape along Highland Colony Parkway to ensure better screening of the fuel center and parking lot, the revised plan will be reviewed by Community Development to determine if it is adequately screened; c) Trees located on the church property will be protected and if any are removed during construction will be mitigated and replanted to ensure that a buffer and screen are maintained between the Costco and church property. Ron Blaylock seconded the motion and a vote was taken thereon as follows:

Alex Ross	Aye
Tom Bobbitt	Absent
Ron Blaylock	Aye
Donald Pendergrast	Absent
Randy Knouse	Aye
Glenn Ray	Aye
Connie Suber	Aye

Chairman Dicken then declared the motion to approve the project carried.

The minutes from the May 10, 2016 meeting were then read and approved by the board. There being no further business to come before the board, the meeting was adjourned.

Bill Dicken, Chairman

ATTEST:

Connie Suber, Secretary

**BEFORE THE BOARD OF ALDERMEN AND MAYOR
OF THE CITY OF RIDGELAND**

JAMES E. POOLE, JR., EMPRESS PROPERTIES, LLC
TURNER A. LUTTRELL, AND
GALLAGHER'S PASS HOMEOWNERS ASSOCIATION, INC.

PETITIONERS

**PETITION TO AMEND THE SUBDIVISION PLAT
OF GALLAGHER'S PASS SUBDIVISION**

The Gallagher's Pass Homeowner's Association, Inc., a Mississippi non-profit corporation, James E. Poole, Jr., Empress Properties, LLC, a single-member Mississippi limited liability company (owned by James E. Poole, Jr.), and Turner A. Luttrell ("Petitioners"), by counsel, hereby respectfully petition the City of Ridgeland, pursuant to Mississippi Code Section 17-1-23(4), to amend the existing plat of the Gallagher's Pass Subdivision (the "Subdivision") in order to change the building setbacks for lots 1, 13, 14, and 15 as described below.

1.

Rice Road Development, LLC (the "Developer") developed the Subdivision. The Developer filed the existing plat which is on record in Plat Cabinet E at Page 88A (the "Plat"). A copy of the Plat is attached as **Exhibit A**.

2.

As shown on the Plat, the Subdivision is comprised of 15 individual lots. The building setbacks for each lot are shown on Exhibit A to the left side of the drawing. This Petition only seeks to make reasonable changes to the setbacks for Lots 1, 13, 14 and 15 (the "Subject Lots"). James E. Poole, Jr. owns Lots 1 and 13¹, and Turner A. Luttrell owns Lots 14 and 15. The current building setbacks for the Subject Lots are as follows:

Lot 1: Front = 35'; Rear = 20'; Side = 5' (30' on left side)

Lot 13: Front = 15'; Rear = 95'; Side = 5'

Lot 14: Front = 30'; Rear = 95'; Side = 5'

Lot 15: Front = 15'; Rear = 75'; Side = 5'

3.

The owners of the Subject Lots have plans and funding to construct upscale, high quality single-family residential dwellings on the lots consistent with the existing dwellings in the Subdivision. However, given the overall dimensions of the Subject Lots, the existing building setbacks make it impossible to construct proper dwellings on those lots. This is the primary reason the Plat should be amended as requested below.

¹ Mr. Poole owns Lot 13 through Empress Properties, LLC, of which he is the single member/owner of the limited liability company.

4.

Additionally, the current setbacks for the Subject Lots are inconsistent with the setbacks for the other lots in the Subdivision. Comparing the setbacks for each of the Subject Lots against the setbacks for the other lots and with each other, there are unexplained inconsistencies which suggest that certain setbacks stated on the original Plat may have been the result of typographical errors or lack of attention to detail or planning. For example: even though Lots 13, 14, and 15 are similarly situated having Rice Road to the rear of the property and are similar in dimensions, for some inexplicable reason, the Rear Setback (on the Rice Road side) for lot 15 is only 75 feet while it is 95 feet for the other two lots. As another example, the Front Setback for most of the lots in the Subdivision (including lots 13 and 15) is only 15 feet, but it is twice as long – 30 feet – for lot 14, even though the front of lots 13, 14 and 15 are similarly situated in that they each front the private neighborhood street. Furthermore, if the existing setbacks are not altered, they likely will negatively affect the future values and marketability of the Subject Lots. In sum, the current building setbacks for the Subject Lots do not make sense and are preventing the owners of those lots from improving them with high quality residential dwellings. The Subdivision and the City of Ridgeland would benefit from the construction of such residences.

5.

For these reasons, the Petitioners respectfully ask that the City approve altering the Plat to make several reasonable changes to the setbacks for the Subject Lots as follows (proposed changes shown in bold underlined italics):

EXISTING SETBACKS ON PLAT	REQUESTED CHANGES
Lot 1: Front = 35'; Rear = 20'; Side = 5' (30' on left side)	Lot 1: Front = 35'; Rear = 20'; Side = 5' (<u>25'</u> on left side)
Lot 13: Front = 15'; Rear = 95'; Side = 5'	Lot 13: Front = 15'; Rear = <u>75'</u> ; Side = 5'
Lot 14: Front = 30'; Rear = 95'; Side = 5'	Lot 14: Front = <u>15'</u> ; Rear = <u>50'</u> ; Side = 5'
Lot 15: Front = 15'; Rear = 75'; Side = 5'	Lot 15: Front = 15'; Rear = <u>50'</u> ; Side = 5'

6.

Should the City approve the requested changes to the setbacks, the Petitioners will record in the land records the *Amendment to Covenants and Ratification of Plat Regarding Setbacks* which is attached as **Exhibit B** (the “Proposed Amendment”).

7.

As required by Mississippi Code Section 17-1-23(4), all parties directly interested in the Plat - specifically all of the owners of all of the lots in the Subdivision - have been made aware of this action and, after a thorough discussion of the matter at a formal meeting of the homeowners association, have unanimously agreed in writing that the setbacks should be changed as requested herein. The unanimous agreement of the interested parties/lot owners is indicated by their signatures on the Proposed Amendment. *See* Exhibit B. The names of those interested parties/lot owners are listed on Exhibit B.

8.

For the reasons set forth above, the Petitioners request that the City approve altering the Plat of the Subdivision in accordance with the Proposed Amendment attached as Exhibit B. The Petitioners respectfully request that the City consider this Petition as soon as possible, preferably during the Board of Aldermen meeting to be held on June 6 and 7, 2016. Time is of the essence with respect to the owner's buildings plans for the Subject Lots.

Respectfully submitted: May 25, 2016.



Petitioners, by Counsel

Presented by counsel for the Petitioners:
Matthew T. Vitart, Esq.
MS Bar# 103552
RANDALL, SEGREST, WEEKS, REEVES &
SONES, PLLC
992 Northpark Drive, Suite A
Ridgeland, MS 39157
(601) 362-1015 (office)
mvitart@randallsecrest.com

**EXHIBIT A
PLAT**

[SEE ATTACHED]

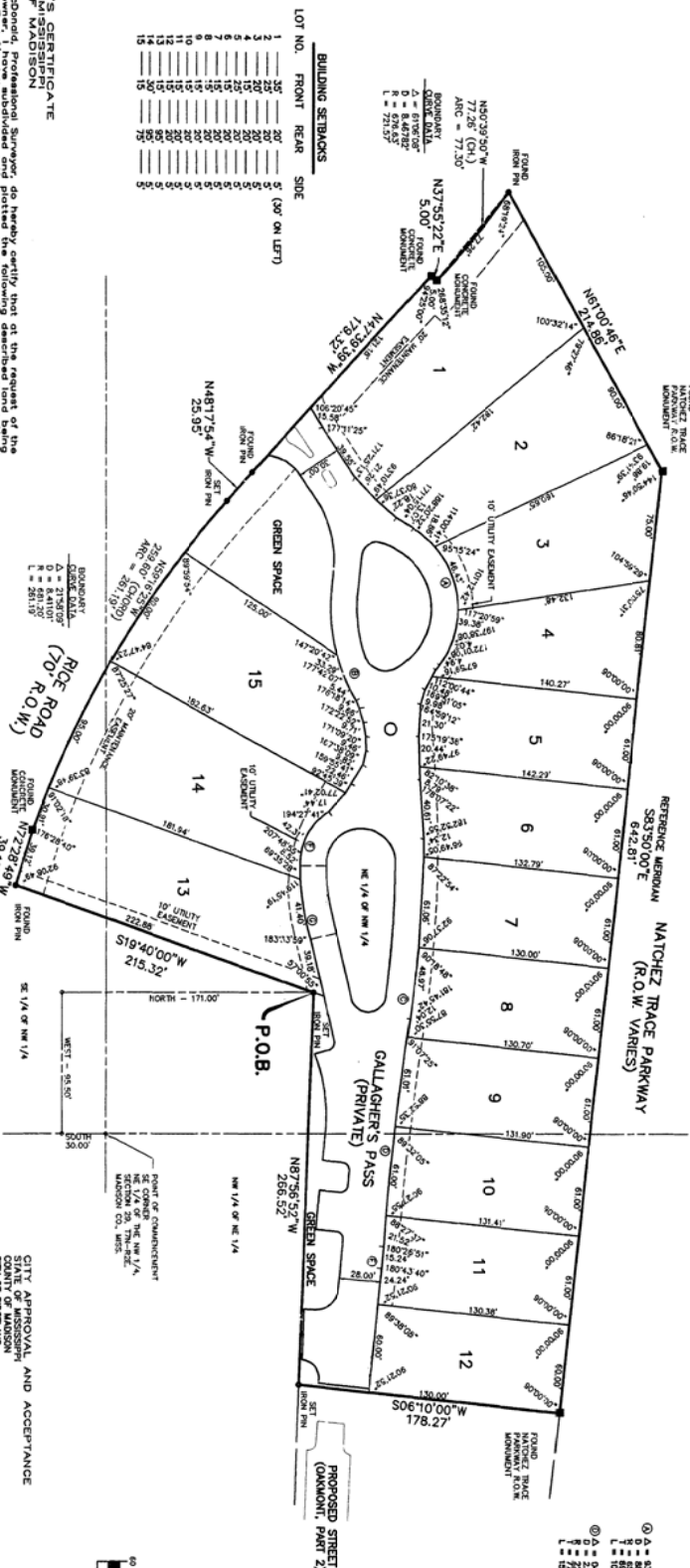
NOTES:

1. THIS PROPERTY LIES WITHIN THE LIMITS ESTABLISHED FOR ZONE "X" (NO SHADING) ACCORDING TO FIRM MAP NUMBER 289900320 D EFFECTIVE APRIL 15, 1994.
2. DIMENSIONS ALONG CURVES ARE CHORD DISTANCES.
3. SURVEY CLASSIFICATION "B".
4. REFERENCE MERIDIAN, NORTH REFERENCED TO THE SOUTH R.O.W. LINE OF THE MATCHED TRACE PARKWAY.
5. AREA = 4.603 ACRES, MORE OR LESS.

GALLAGHER'S PASS

SITUATED IN THE
EAST 1/2 OF THE NW 1/4 AND THE NW 1/4 OF THE NE 1/4 OF
SECTION 29, T 7 N - R 2 E,
CITY OF RIDGELAND, MADISON COUNTY, MISSISSIPPI

PLATTED & SURVEYED BY
H D LANG AND ASSOCIATES, INC.
ENGINEERS / LAND SURVEYORS
4099 NORTH STATE STREET
JACKSON, MISSISSIPPI
(601) 362-4886



STATE OF MISSISSIPPI COUNTY OF MADISON

I, Donald L. McDonda, Professional Surveyor, do hereby certify that at the request of the City of Ridgeland, Mississippi, I have surveyed and platted the above described property, and that the same is a true and correct copy of the original survey and plat on file in my office.

LOT NO.	FRONT	REAR	SIDE
1	20'	20'	(ON LEFT)
2	20'	20'	(ON LEFT)
3	20'	20'	(ON LEFT)
4	20'	20'	(ON LEFT)
5	20'	20'	(ON LEFT)
6	20'	20'	(ON LEFT)
7	20'	20'	(ON LEFT)
8	20'	20'	(ON LEFT)
9	20'	20'	(ON LEFT)
10	20'	20'	(ON LEFT)
11	20'	20'	(ON LEFT)
12	20'	20'	(ON LEFT)
13	20'	20'	(ON LEFT)
14	20'	20'	(ON LEFT)
15	20'	20'	(ON LEFT)

I, Fred Davis, Manager of Rice Road Development, LLC, do hereby certify that the above described property is a true and correct copy of the original survey and plat on file in my office.

By *Donald L. McDonda* day of *January* 2002
Professional Surveyor

By *Kathleen M. Pollock* day of *January* 2002
Notary Public

By *Arthur Johnston* day of *January* 2002
City Engineer

CITY APPROVAL AND ACCEPTANCE
I, Arthur Johnston, City Engineer, do hereby certify that this is a true and correct copy of the original survey and plat on file in my office.

By *Arthur Johnston* day of *January* 2002
City Engineer

By *Donald L. McDonda* day of *January* 2002
Professional Surveyor

By *Arthur Johnston* day of *January* 2002
City Engineer

**EXHIBIT B
PROPOSED AMENDMENT**

[SEE ATTACHED]

INDEXING INSTRUCTIONS:

Gallagher's Pass
Cabinet E, Slide 88A, Lots 1-15, inclusive
Madison County, MS
File Number: 2016030997

PREPARED BY AND RETURN TO:

FIRST GUARANTY TITLE, INC.
509 Cobblestone Court, Suite B
Madison, MS 39110
Telephone: (601) 605.6626

AMENDMENT TO COVENANTS
AND RATIFICATION OF PLAT REGARDING SETBACKS

WHEREAS, a plat of Gallagher's Pass, a subdivision of Madison County, Mississippi, was on the 6th day of June, 2008, filed in the land records office of the Chancery Clerk of Madison County, Mississippi, in Plat Cabinet E at Slide 88A (herein "plat" or "Plat") of the records of maps and plats of lands in said Madison County, Mississippi; and

WHEREAS, the setbacks on said lots are such that the building envelope is of such size and configuration that it is impossible to construct a residence thereon; and

WHEREAS, the undersigned desire to amend the setbacks set forth on said plat; and

WHEREAS, this document is executed for amending the plat regarding the setbacks on lots 1, 13, 14 & 15 as shown above and is executed for the purpose of perfecting and ratifying said plat and the changes set forth on this amendment.

NOW, THEREFORE, the setbacks are adjusted and amended as follows:

Left side set back along Rice Road on Lot 1 is 25' feet; and

Rear set back on Lot 13 is 75' feet; and

Rear set back on Lot 14 is 50' feet and front set back is 15' feet, and

Rear set back on Lot 15 is 50' feet,

The undersigned does hereby authorize, appoint and direct the Chancery Clerk of Madison County as their attorney to note on the plat this ratification.

THIS INSTRUMENT may be executed in counterparts, each of which constitutes an original and all of which taken together constitute one and the same document.

WITNESS THE SIGNATURE OF THE UNDERSIGNED this the 10th day of May, 2016.

Approved as to form and content:

James E. Poole, Jr.

By: James E. Poole, Jr.
Owner of Lot 1

Approved as to form and content:

Joe D. Havens & Cathy C. Havens

By: Joe D. Havens
Cathy C. Havens
Owner of Part of Lots 2 and 3

Approved as to form and content:

James W. Creekmore, Jr.

By: James W. Creekmore, Jr.
Owner of Lot 7

Approved as to form and content:

William Eric Byrd

By: William Eric Byrd
Owner of Lot 9

Approved as to form and content:

Empress Properties, LLC, A MS LLC

By: James E. Poole, Jr.
Manager
Owner of Lot 13

Approved as to form and content:

Kim J. Gonzales

By: Kim J. Gonzales
Owner of Lot 2

Approved as to form and content:

Gil Lewis Turchin and Sally Mary Herbert

By: Gil Lewis Turchin
Sally Mary Herbert
Owner of Lot 4

Approved as to form and content:

James H. Creekmore, Jr. a/k/a

James W. Creekmore, Jr.

By: James H. Creekmore, Jr.
Owner of Lot(s) 5 and 6

Approved as to form and content:

Jennifer Rae Low

By: Jennifer Rae Low
Owner of Lot 8

Approved as to form and content:

Revel Rawlings and Elizabeth S. Rawlings

By: Revel Rawlings
Elizabeth S. Rawlings
Owner of Lot(s) 10, 11 and 12

Approved as to form and content:

Turner A. Luttrell and Susan Clark Luttrell

By: Turner A. Luttrell
Susan Clark Luttrell

Owner of Lot(s) 14 and 15

INDIVIDUAL ACKNOWLEDGEMENT FOR James E. Poole, Jr.

STATE OF MISSISSIPPI

COUNTY OF MADISON

Personally appeared before me, the undersigned authority in and for the said county and state,
on this the 10th day of May, 2016, within my jurisdiction, the within named James R.
Poole, Jr, who acknowledged he executed the above and foregoing instrument.

Mary V. Henry
NOTARY PUBLIC

My commission expires: December 18, 2019



INDIVIDUAL ACKNOWLEDGEMENT FOR Kim J. Gonzales

STATE OF MISSISSIPPI

COUNTY OF MADISON

Personally appeared before me, the undersigned authority in and for the said county and state,
on this the 10th day of May, 2016, within my jurisdiction, the within named Kim J.
Gonzales, who acknowledged she executed the above and foregoing instrument.

Mary V. Henry
NOTARY PUBLIC

My commission expires: December 18, 2019



INDIVIDUAL ACKNOWLEDGEMENT FOR Joe D. Havens and Cathy C. Havens

STATE OF MISSISSIPPI

COUNTY OF MADISON

Personally appeared before me, the undersigned authority in and for the said county and state, on this the 10 day of May, 2016, within my jurisdiction, the within named Joe D. Havens and Cathy C. Havens, who acknowledged he/she/they executed the above and foregoing instrument.

Sherry Emerson
NOTARY PUBLIC

My commission expires: Jan 9 2017



INDIVIDUAL ACKNOWLEDGEMENT FOR James W. Creekmore, Jr.

STATE OF MISSISSIPPI

COUNTY OF MADISON

Personally appeared before me, the undersigned authority in and for the said county and state, on this the 15th day of May, 2016, within my jurisdiction, the within named James H. Creekmore, Jr., a/k/a James W. Creekmore, Jr., who acknowledged he executed the above and foregoing instrument.

Mary V. Henry
NOTARY PUBLIC

My commission expires: December 18, 2019



INDIVIDUAL ACKNOWLEDGEMENT FOR Jennifer Rae Low

STATE OF MISSISSIPPI

COUNTY OF MADISON

Personally appeared before me, the undersigned authority in and for the said county and state,
on this the 10th day of May, 2016, within my jurisdiction, the within named Jennifer Rae
Low, who acknowledged she executed the above and foregoing instrument.

Mary V. Henry
NOTARY PUBLIC

My commission expires: December 18, 2019



INDIVIDUAL ACKNOWLEDGEMENT FOR William Eric Byrd

STATE OF MISSISSIPPI

COUNTY OF MADISON

Personally appeared before me, the undersigned authority in and for the said county and state,
on this the 22nd day of May, 2016, within my jurisdiction, the within named William Eric
Byrd, who acknowledged he executed the above and foregoing instrument.

Matthew T. Vitart
NOTARY PUBLIC

My commission expires: April 10, 2020



INDIVIDUAL ACKNOWLEDGEMENT FOR Revel Rawlings and Elizabeth S. Rawlings

STATE OF MISSISSIPPI

COUNTY OF MADISON

Personally appeared before me, the undersigned authority in and for the said county and state, on this the 10th day of May, 2016, within my jurisdiction, the within named Revel Rawlings and Elizabeth S. Rawlings, who acknowledged they executed the above and foregoing instrument.

Mary V. Henry
NOTARY PUBLIC

My commission expires: December 18, 2019



INDIVIDUAL ACKNOWLEDGEMENT FOR Turner A. Luttrell and Susan Clark Luttrell

STATE OF MISSISSIPPI

COUNTY OF MADISON

Personally appeared before me, the undersigned authority in and for the said county and state, on this the 10th day of May, 2016, within my jurisdiction, the within named Turner A. Luttrell and Susan Clark Luttrell, who acknowledged they executed the above and foregoing instrument.

Mary V. Henry
NOTARY PUBLIC

My commission expires: December 18, 2019



INDIVIDUAL ACKNOWLEDGEMENT FOR Gil Lew Turchin and Sally Mary Herbert
STATE OF MISSISSIPPI
COUNTY OF MADISON

Personally appeared before me, the undersigned authority in and for the said county and state,
on this the 10th day of May 2016, within my jurisdiction, the within named Gil Lewis
Turchin and Sally Mary Herbert, who acknowledged they executed the above and foregoing
instrument.

Mary V. Henry
NOTARY PUBLIC

My commission expires: December 18, 2019



LIMITED LIABILITY COMPANY ACKNOWLEDGEMENT FOR
EMPRESS PROPERTIES, LLC, A Mississippi Limited Liability Company

STATE OF MISSISSIPPI
COUNTY OF MADISON

PERSONALLY appeared before me, the undersigned authority in and for the said County and
State, this the 10th day of May, 2016, within my jurisdiction, the within named
James E. Poole, Jr., personally known to me to be and who acknowledged that he is
manager of Empress Properties, LLC, a Mississippi limited liability company, and that
for and on behalf of said limited liability company, and as the act and deed of said limited liability
company, he executed and delivered the above and foregoing instrument for the purposes therein
mentioned, after first having been duly authorized by said limited liability company so to do.

GIVEN under my hand and official seal on this the 10th day of May, 2016.

Mary V. Henry
NOTARY PUBLIC

My commission expires: December 18, 2019



VENDOR		DOCKET		*-----INVOICE-----*		
NUMBER	NAME	NUMBER	COMMENT	NUMBER	DATE	AMOUNT
01-61100	RIDGELAND TOURISM COMMISS	130977	TOURISM TAX	I 201605209382	5/12/2016	139,669.21
			TOURISM TAX	001-000-101	139,669.21	
TOTAL =						139,669.21

FUND TOTALS		
FUND	NAME	TOTAL
001	GENERAL FUND	139,669.21
TOTALS FOR ALL FUNDS =		139,669.21

VENDOR		DOCKET	*-----INVOICE-----*				
NUMBER	NAME	NUMBER	COMMENT	NUMBER	DATE	AMOUNT	
01-03495	MISS DEPARTMENT OF REVENUE	130978	APRIL 2016 SALES TAX	I 201605209383	5/16/2016	4,473.86	
			APRIL 2016 SALES TAX	001-000-104	14.70		
			APRIL 2016 SALES TAX	400-000-111	4,459.16		
						TOTAL =	4,473.86

FUND TOTALS		
FUND	NAME	TOTAL
001	GENERAL FUND	14.70
400	PUBLIC UTILITIES FUND	4,459.16
TOTALS FOR ALL FUNDS =		4,473.86

VENDOR		DOCKET	*-----INVOICE-----*			
NUMBER	NAME	NUMBER	COMMENT	NUMBER	DATE	AMOUNT
01-04952	ADVANTAGE CLOSING AND ESC	130979	PURCHASE OF 408 LEONARD AVE	I 201605209384	5/18/2016	44,921.85
			PURCHASE OF 408 LEONARD AVE	378-601-700	44,921.85	
					=====	
					TOTAL =	44,921.85
					=====	

FUND TOTALS		
FUND	NAME	TOTAL
378	LAKE HARBOUR DR EXT	44,921.85
TOTALS FOR ALL FUNDS =		44,921.85

VENDOR		DOCKET	*-----INVOICE-----*			
NUMBER	NAME	NUMBER	COMMENT	NUMBER	DATE	AMOUNT
01-03495	MISS DEPARTMENT OF REVENUE	130980	TAG FOR DAMAGED TAG-STREET DEP I 201606029390		6/01/2016	12.00
			TAG FOR DAMAGED TAG-STREET DEP 001-201-632		12.00	
					=====	
					TOTAL =	12.00
					=====	

FUND TOTALS		
FUND	NAME	TOTAL
001	GENERAL FUND	12.00
TOTALS FOR ALL FUNDS =		12.00

VENDOR		DOCKET	*-----INVOICE-----*			
NUMBER	NAME	NUMBER	COMMENT	NUMBER	DATE	AMOUNT
01-02402	ACCESS CONTROL GROUP	130981	MAGLOCK	I 2053294	5/13/2016	420.00
			MAGLOCK	001-100-637	420.00	
01-01350	ADCAMP INC	130982	YACHT CLUB RD ST OVERLAY	I 35631	5/19/2016	70,493.03
			1 1/2" ASPHALT SURFA	001-201-603	32,846.49	
			1 1/2" MILLING ASPHA	001-201-603	1,546.44	
			1 1/2" ASPHALT SURFA	001-201-603	36,100.11	
			ROUNDING ADJUSTMENT	001-201-603	0.01CR	
01-01655	ADVANTAGE BUSINESS SYSTEM	130983	CORRM0: 05-17-16 - 06-16-16	I 118587	5/11/2016	234.02
			CORRM0: 05-17-16 - 06-16-16	001-040-635	234.02	
01-01655	ADVANTAGE BUSINESS SYSTEM	130984	POSTAGE MACHINE CARTRIDGE	I 118623	5/12/2016	131.56
			POSTAGE MACHINE CARTRIDGE	001-040-540	121.56	
			SHIPPING	001-040-540	10.00	
01-02164	AETNA	130985	863057-10-00001: JUNE 2016	I 201606029391	5/16/2016	2,807.96
			863057-10-00001: JUNE 2016	001-010-480	106.00	
			863057-10-00001: JUNE 2016	001-020-480	95.40	
			863057-10-00001: JUNE 2016	001-040-480	74.20	
			863057-10-00001: JUNE 2016	001-040-480	10.60	
			863057-10-00001: JUNE 2016	001-092-480	10.60	
			863057-10-00001: JUNE 2016	001-040-480	10.60	
			863057-10-00001: JUNE 2016	001-100-480	858.60	
			863057-10-00001: JUNE 2016	001-160-480	625.40	
			863057-10-00001: JUNE 2016	001-180-480	116.60	
			863057-10-00001: JUNE 2016	001-201-480	318.00	
			863057-10-00001: JUNE 2016	001-340-480	137.80	
			863057-10-00001: JUNE 2016	005-101-480	31.80	
			863057-10-00001: JUNE 2016	400-650-480	265.00	
			863057-10-00001: JUNE 2016	404-650-480	21.20	
			863057-10-00001: JUNE 2016	001-000-170	111.22	
			863057-10-00001: JUNE 2016	005-000-170	1.66	
			863057-10-00001: JUNE 2016	400-000-170	13.28	
			863057-10-00001: JUNE 2016	404-000-170	0.00	
01-03644	AFLAC	130986	EBQ21: MAY 2016	I 355689	5/15/2016	6,075.74
			EBQ21: MAY 2016	001-000-171	4,685.12	
			EBQ21: MAY 2016	005-000-171	81.38	
			EBQ21: MAY 2016	400-000-171	1,284.54	
			EBQ21: MAY 2016	404-000-171	24.70	
01-03678	AFLAC GROUP INSURANCE	130987	9618: MAY 2016	I A067493600	5/31/2016	32.78
			9618: MAY 2016	001-000-171	32.78	
01-04767	AHLRICH, PAUL	130988	6GAMES@10.00: MAY 18-19, 2016	I 201606029393	5/19/2016	60.00
			6GAMES@10.00: MAY 18-19, 2016	001-340-690	60.00	
01-04767	AHLRICH, PAUL	130989	9GAMES@10.00:MAY23,24,26 2016	I 201606029394	5/26/2016	90.00
			9GAMES@10.00:MAY23,24,26 2016	001-340-690	90.00	

VENDOR		DOCKET		*-----INVOICE-----*		
NUMBER	NAME	NUMBER	COMMENT	NUMBER	DATE	AMOUNT
01-03780	AMERICAN MUNICIPAL SERVIC	130990	DECEMBER 2015: COURT DECEMBER 2015: COURT	I 28079 001-000-115	12/31/2015 3,334.18	3,334.18
01-03780	AMERICAN MUNICIPAL SERVIC	130991	JANUARY 2016: COURT JANUARY 2016: COURT	I 28477 001-000-115	1/31/2016 3,135.16	3,135.16
01-04660	ANDERSON, MERRELL	130992	9GAMES@20.00:MAY16,18,19 2016 9GAMES@20.00:MAY16,18,19 2016	I 201606029395 001-340-690	5/19/2016 180.00	180.00
01-04660	ANDERSON, MERRELL	130993	9GAMES@20.00:MAY23,24,26 2016 9GAMES@20.00:MAY23,24,26 2016	I 201606029396 001-340-690	5/26/2016 180.00	180.00
01-04582	CARPET TECH INC	130994	CARPET CARPET LABOOR	I CG611917 001-100-637 001-100-637	5/06/2016 168.97 86.65	255.62
01-01944	ATMOS ENERGY	130995	3013046088:04-23-16 - 05-23-16 3013046088:04-23-16 - 05-23-16	I 201606029397 001-160-630	5/23/2016 85.47	85.47
01-01944	ATMOS ENERGY	130996	3013187195:04-27-16 - 05-26-16 3013187195:04-27-16 - 05-26-16	I 201606029398 001-340-630	5/26/2016 27.21	27.21
01-01944	ATMOS ENERGY	130997	3015422613:04-27-16 - 05-26-16 3015422613:04-27-16 - 05-26-16	I 201606029399 001-160-630	5/26/2016 65.35	65.35
01-05550	B W I OF JACKSON INC	130998	ROUND UP TALSTAR ROUND UP PRO FUEL	I 13612464 001-340-575 001-340-575 001-340-575	5/20/2016 480.60 84.00 0.61	565.21
01-03925	BANCORPSOUTH EQUIPMENT FI	130999	LEASE FOR WHEEL LOADER LEASE FOR WHEEL LOADER	I 15 001-201-640	5/31/2016 1,744.00	1,744.00
01-03426	BASS, NOELL	131000	ADV TRAV: 06-12-16 - 06-17-16 ADV TRAV: 06-12-16 - 06-17-16	I 201606029400 001-100-610	5/13/2016 282.90	282.90
01-01602	BATON ROUGE INDUSTRIES IN	131001	CREDIT FOR WRONG VENDOR# CREDIT FOR WRONG VENDOR#	C 23289 200-450-840	4/25/2016 820.00CR	820.00CR
01-01602	BATON ROUGE INDUSTRIES IN	131002	11-02-15 - 05-01-16 FEES 11-02-15 - 05-01-16 FEES	I 23289 200-450-840	4/25/2016 820.00	820.00
01-01827	BELL, NATHAN	131003	ADV TRAV: 06-13-16 - 06-24-16 ADV TRAV: 06-13-16 - 06-24-16	I 201606029401 001-160-610	5/02/2016 300.48	300.48
01-04940	BLACKLEDGE, SHARON	131004	HEATWAVE POTTERY OVERALL AWARDS 1ST PLACE AWARD 2ND PLACE AWARDS 3RD PLACE AWARDS	I 61025205 001-340-650 001-340-650 001-340-650 001-340-650	5/25/2016 80.00 756.00 624.00 468.00	1,928.00

VENDOR		DOCKET	*-----INVOICE-----*			
NUMBER	NAME	NUMBER	COMMENT	NUMBER	DATE	AMOUNT
01-03264	BLAYLOCK, RONALD	131005	MAY 24, 2016 MEETING MAY 24, 2016 MEETING	I 052416 001-180-611	5/24/2016 50.00	50.00
01-07400	BLURTON, BANKS & ASSOCIAT	131006	S. MAPLE ST. CULVERT REPL INSTALL 29"x18" RCAP SELECT BACKFILL DUMP TRUCK TRACK HOE FOREMAN LABOR	I 054-659 001-201-603 001-201-603 001-201-603 001-201-603 001-201-603 001-201-603	5/12/2016 1,050.00 225.00 520.00 776.00 416.00 576.00	3,563.00
01-07400	BLURTON, BANKS & ASSOCIAT	131007	SEWER MANHOLE INSTALL 10 TN DUMP TRUCK/DRI TRACKHOE & OPERATOR FOREMAN LABOR 48" DIA. STND MANHLE CONNECT. EX. SEW/MH BACKHOE	I 054-660 400-650-603 400-650-603 400-650-603 400-650-603 400-650-603 400-650-603 400-650-603	5/19/2016 650.00 1,358.00 364.00 504.00 2,050.00 2,700.00 658.00	8,284.00
01-02264	BRODERICK ADVERTISING	131008	RESEARCHING RECORDS SERVICES RESEARCHING RECORDS SERVICES	I 21485 001-093-604	3/31/2016 111.25	111.25
01-01784	BROOKS, PERCY	131009	3GAMES@20.00: MAY 18, 2016 3GAMES@20.00: MAY 18, 2016	I 201606029402 001-340-690	5/18/2016 60.00	60.00
01-01784	BROOKS, PERCY	131010	6GAMES@20.00: MAY 24,26 2016 6GAMES@20.00: MAY 24,26 2016	I 201606029403 001-340-690	5/26/2016 120.00	120.00
01-08420	BROWN BOTTLING GROUP INC	131011	WATER WATER	I 484447 001-340-650	5/03/2016 442.00	442.00
01-03797	BROWN, EDDIE LEE	131012	9GAMES@20.00:MAY 16,18,19 2016 9GAMES@20.00:MAY 16,18,19 2016	I 201606029404 001-340-690	5/19/2016 180.00	180.00
01-03797	BROWN, EDDIE LEE	131013	11GAMES@20.00:MAY 23-26 2016 11GAMES@20.00:MAY 23-26 2016	I 201606029405 001-340-690	5/26/2016 220.00	220.00
01-08800	BUFORD PLUMBING CO	131014	FD-TOILET REPAIR TRIP CHARGE 4" CLOSET COLLAR WAX RING CLOSET BOLT LABOR	I 147204 001-160-637 001-160-637 001-160-637 001-160-637 001-160-637	5/09/2016 15.00 5.93 2.08 3.16 100.00	126.17
01-08860	BULLDOG CONSTRUCTION CO I	131015	MISC. CONCRETE REPAIR #2 CONC. CURB/GUT. LEVE CAST INPLACE CURB/GU MISC. INPLACE CONC. SAWCUTTING EX CONC.	I 4397 001-201-603 001-201-603 001-201-603 001-201-603	5/19/2016 8,925.00 4,950.00 3,392.00 875.00	18,142.00

VENDOR NUMBER	NAME	DOCKET		*-----INVOICE-----*		
		NUMBER	COMMENT	NUMBER	DATE	AMOUNT
01-08860	BULLDOG CONSTRUCTION CO I	131016	GREENBROOK & APPLERIDGE	I 4398	5/19/2016	20,364.00
			CONC. CURB/GUT. LVL	001-201-603	8,100.00	
			CAST INPLACE C&GUTTR	001-201-603	5,720.00	
			MISC. INPLACE CONC	001-201-603	4,864.00	
			SAWCUTTING C&GUTTER	001-201-603	1,680.00	
01-03826	C SPIRE WIRELESS	131017	0002596490:04-08-16 - 05-07-16 I	201606029415	5/07/2016	986.78
			0002596490:04-08-16 - 05-07-16	001-340-605	986.78	
01-03826	C SPIRE WIRELESS	131018	0031656019:04-23-16 - 05-22-16 I	201606029416	5/22/2016	160.97
			0031656019:04-23-16 - 05-22-16	001-020-605	160.97	
01-03826	C SPIRE WIRELESS	131019	0031656041:04-23-16 - 05-22-16 I	201606029417	5/22/2016	983.86
			0031656041:04-23-16 - 05-22-16	001-020-605	279.93	
			0031656041:04-23-16 - 05-22-16	001-042-605	532.92	
			0031656041:04-23-16 - 05-22-16	001-080-605	61.97	
			0031656041:04-23-16 - 05-22-16	001-092-605	47.07	
			0031656041:04-23-16 - 05-22-16	001-093-605	61.97	
01-03826	C SPIRE WIRELESS	131020	0031656076:04-23-16 - 05-22-16 I	201606029418	5/22/2016	329.61
			0031656076:04-23-16 - 05-22-16	001-160-605	329.61	
01-03826	C SPIRE WIRELESS	131021	0031656124:04-23-16 - 05-22-16 I	201606029419	5/22/2016	495.76
			0031656124:04-23-16 - 05-22-16	001-180-605	495.76	
01-03826	C SPIRE WIRELESS	131022	0031656148:04-23-16 - 05-22-16 I	201606029420	5/22/2016	1,225.41
			0031656148:04-23-16 - 05-22-16	001-201-605	562.81	
			0031656148:04-23-16 - 05-22-16	400-650-605	560.64	
			0031656148:04-23-16 - 05-22-16	404-650-605	101.96	
01-04912	CABLE-TECH	131023	CAMERA REPAIR	I 1627	4/04/2016	2,734.00
			CAMERA REPAIR	001-100-635	1,974.00	
			LABOR	001-100-635	760.00	
01-09700	CABOT LODGE	131024	ROOMS	I 1807	5/07/2016	94.00
			ROOMS	001-340-650	94.00	
01-09700	CABOT LODGE	131025	ROOMS	I 1808	5/07/2016	94.00
			ROOMS	001-340-650	94.00	
01-09700	CABOT LODGE	131026	ROOMS	I 1809	5/07/2016	94.00
			ROOMS	001-340-650	94.00	
01-09700	CABOT LODGE	131027	ROOMS	I 1810	5/07/2016	94.00
			ROOMS	001-340-650	94.00	
01-09700	CABOT LODGE	131028	ROOMS	I 1817	5/08/2016	94.00
			ROOMS	001-340-650	94.00	
01-09700	CABOT LODGE	131029	ROOMS	I 1818	5/08/2016	94.00
			ROOMS	001-340-650	94.00	

VENDOR		DOCKET		*-----INVOICE-----*		
NUMBER	NAME	NUMBER	COMMENT	NUMBER	DATE	AMOUNT
01-01441	CAPITOL TOWING INC	131030	TOW CHARGE TOW CHARGE P339	I 77972 001-100-632	5/13/2016 55.00	55.00
01-04307	CARD SERVICES CENTER	131031	04-09-16 - 05-10-16 SERVICES 04-09-16 - 05-10-16 SERVICES 04-09-16 - 05-10-16 SERVICES	I 201606029406 001-100-610 001-040-610	5/10/2016 90.40 72.00	162.40
01-04109	CARTER, ALVIN	131032	3GAMES@20.00: MAY 16, 2016 3GAMES@20.00: MAY 16, 2016	I 201606029408 001-340-690	5/16/2016 60.00	60.00
01-04109	CARTER, ALVIN	131033	6GAMES@20.00: MAY 23,24, 2016 6GAMES@20.00: MAY 23,24, 2016	I 201606029409 001-340-690	5/24/2016 120.00	120.00
01-12050	CENTRAL PIPE SUPPLY INC	131034	WATER PARTS 3/4 COMP 3/4 CURB 3/4 TO 3/4 COM,PRESS 3/4 IP TO3/4 COMP 3/4 PVC INSERT 8 X 3/4 TAPPING SAD 1 COMP 1 CURB	I S100054322.001 400-650-575 400-650-575 400-650-575 400-650-575 400-650-575 400-650-575	4/12/2016 624.00 253.00 208.00 90.00 266.10 1,148.00	2,589.10
01-12050	CENTRAL PIPE SUPPLY INC	131035	WATER PARTS 3/4 COMMP 1" CURB INDEX WRENCH	I S100054322.002 400-650-575 400-650-575	5/09/2016 797.40 84.00	881.40
01-12050	CENTRAL PIPE SUPPLY INC	131036	WATER PARTS 3/4 METER CONNECTOR 1" METER CONNECTOR 1 X 1 X 3/4 TEE 3/4 METER BASE 2 X 6 M REPAIR CLAMP 3/4 CI METER BOX 2" WHEEL VALVE PVC CLEANER 1" VALVE BOX RISER 2" VALVE BOX RISER 4" VALVE BOX RISER 6" VALVE BOX RISER 3" VALVE BOX RISER	I S100056673.001 400-650-575 400-650-575 400-650-575 400-650-575 400-650-575 400-650-575 400-650-575 400-650-575 400-650-575 400-650-575 400-650-575 400-650-575 400-650-575	5/03/2016 265.00 180.00 568.08 1,026.00 240.56 948.80 135.80 165.48 50.00 65.00 105.00 145.00 80.00	3,974.72
01-01335	CHAPMAN, BOB	131037	3GAMES@20.00: MAY 18, 2016 3GAMES@20.00: MAY 18, 2016	I 201606029410 001-340-690	5/18/2016 60.00	60.00
01-01335	CHAPMAN, BOB	131038	3GAMES@20.00: MAY 26, 2016 3GAMES@20.00: MAY 26, 2016	I 201606029411 001-340-690	5/26/2016 60.00	60.00
01-13025	CINTAS CORPORATION LOC #2	131039	02148 02148 02148	I 10180503 001-180-540 400-650-540	5/10/2016 22.59 22.58	45.17
01-13025	CINTAS CORPORATION LOC #2	131040	02148	I 10183456	5/17/2016	45.17

VENDOR			DOCKET		*-----INVOICE-----*			
NUMBER	NAME		NUMBER	COMMENT	NUMBER	DATE	AMOUNT	CONT
01-13025	CINTAS CORPORATION LOC #2		131040	02148	I 10183456	5/17/2016	45.17	
				02148	001-180-540	22.59		
				02148	400-650-540	22.58		
01-13025	CINTAS CORPORATION LOC #2		131041	04052	I 10183457	5/17/2016	38.00	
				04052	001-340-540	38.00		
01-13025	CINTAS CORPORATION LOC #2		131042	02147	I 10183458	5/17/2016	33.00	
				02147	001-340-540	33.00		
01-13025	CINTAS CORPORATION LOC #2		131043	04448	I 10183585	5/17/2016	256.05	
				04448	001-201-535	256.05		
01-13025	CINTAS CORPORATION LOC #2		131044	04450	I 10183586	5/17/2016	175.23	
				04450	400-650-535	175.23		
01-13025	CINTAS CORPORATION LOC #2		131045	04448	I 10183587	5/17/2016	2.55	
				04448	001-201-540	2.55		
01-13025	CINTAS CORPORATION LOC #2		131046	04450	I 10183588	5/17/2016	46.54	
				04450	400-650-540	46.54		
01-13025	CINTAS CORPORATION LOC #2		131047	02148	I 10186463	5/24/2016	45.17	
				02148	001-180-540	22.59		
				02148	400-650-540	22.58		
01-13025	CINTAS CORPORATION LOC #2		131048	04052	I 10186464	5/24/2016	38.00	
				04052	001-340-540	38.00		
01-13025	CINTAS CORPORATION LOC #2		131049	02147	I 10186465	5/24/2016	33.00	
				02147	001-340-540	33.00		
01-13025	CINTAS CORPORATION LOC #2		131050	04448	I 10186592	5/24/2016	256.05	
				04448	001-201-535	256.05		
01-13025	CINTAS CORPORATION LOC #2		131051	04450	I 10186593	5/24/2016	175.23	
				04450	400-650-535	175.23		
01-13025	CINTAS CORPORATION LOC #2		131052	04448	I 10186594	5/24/2016	2.55	
				04448	001-201-540	2.55		
01-13025	CINTAS CORPORATION LOC #2		131053	04450	I 10186595	5/24/2016	46.54	
				04450	400-650-540	46.54		
01-13025	CINTAS CORPORATION LOC #2		131054	04052	I 10189446	5/31/2016	38.00	
				04052	001-340-540	38.00		
01-13025	CINTAS CORPORATION LOC #2		131055	02147	I 10189447	5/31/2016	33.00	
				02147	001-340-540	33.00		
01-13025	CINTAS CORPORATION LOC #2		131056	04448	I 10189574	5/31/2016	386.59	
				04448	001-201-535	386.59		

VENDOR NUMBER	NAME	DOCKET		*-----INVOICE-----*		
		NUMBER	COMMENT	NUMBER	DATE	AMOUNT
01-13025	CINTAS CORPORATION LOC #2	131057	04450	I 10189575	5/31/2016	192.05
			04450	400-650-535	192.05	
01-13025	CINTAS CORPORATION LOC #2	131058	04448	I 10189576	5/31/2016	2.55
			04448	001-201-540	2.55	
01-13025	CINTAS CORPORATION LOC #2	131059	04450	I 10189577	5/31/2016	46.54
			04450	400-650-540	46.54	
01-01137	CINTAS FIRST AID & SAFETY	131060	SAFETY SUPPLIES	I 5005083341	5/11/2016	268.58
			REFILL SAFETY CABINE	001-201-540	95.29	
			SAFETY VEST LG.	400-650-540	54.36	
			LATEX GLOVES	400-650-540	49.20	
			TRIPLE ANTIBIOTIC OI	400-650-540	12.10	
			ASPIRIN	400-650-540	13.48	
			ANTACID	400-650-540	16.15	
			NAPROXEN	400-650-540	18.00	
			IODINE SWABS	400-650-540	10.00	
01-13200	CITY OF JACKSON	131061	JUNE 2016 MADISON SEWAGE DISPO	I 201606029407	5/31/2016	243,839.85
			JUNE 2016 MADISON SEWAGE DISPO	404-650-688	243,839.85	
01-14370	CLYDE C SCOTT INSURANCE A	131062	RENEW CRIME BOND	I 19873	5/13/2016	1,656.00
			RENEW CRIME BOND	001-092-625	1,656.00	
01-02440	COMCAST CABLE	131063	426510013: 05-19-16 - 06-18-18	I 201606029421	5/17/2016	89.90
			426510013: 05-19-16 - 06-18-18	001-201-604	89.90	
01-02440	COMCAST CABLE	131064	339213027: 05-28-16 - 06-27-16	I 201606029422	5/26/2016	239.90
			339213027: 05-28-16 - 06-27-16	001-020-604	14.70	
			339213027: 05-28-16 - 06-27-16	001-042-604	53.90	
			339213027: 05-28-16 - 06-27-16	001-080-604	4.89	
			339213027: 05-28-16 - 06-27-16	001-180-604	63.57	
			339213027: 05-28-16 - 06-27-16	001-201-604	19.60	
			339213027: 05-28-16 - 06-27-16	001-340-604	53.90	
			339213027: 05-28-16 - 06-27-16	400-650-604	29.34	
01-02440	COMCAST CABLE	131065	360909025: 05-28-16 - 06-27-16	I 201606029423	5/26/2016	89.90
			360909025: 05-28-16 - 06-27-16	001-340-604	89.90	
01-14550	COMFORT, STANLEY	131066	6GAMES@20.00: MAY 16&19, 2016	I 201606029412	5/19/2016	120.00
			6GAMES@20.00: MAY 16&19, 2016	001-340-690	120.00	
01-14550	COMFORT, STANLEY	131067	6GAMES@20.00: MAY 23&26, 2016	I 201606029413	5/26/2016	120.00
			6GAMES@20.00: MAY 23&26, 2016	001-340-690	120.00	
01-04023	COOL WATER CATERING & EVE	131068	REST STOP FOOD	I 8476	5/06/2016	2,215.46
			REST STOP FOOD	001-340-650	3,215.46	
			INKIND	001-340-650	1,000.00CR	
01-04766	CROWDER, JEANNA	131069	3GAMES@10.00: MAY 16, 2016	I 201606029414	5/16/2016	30.00

VENDOR		DOCKET	*-----INVOICE-----*				
NUMBER	NAME	NUMBER	COMMENT	NUMBER	DATE	AMOUNT	
01-04766	CROWDER, JEANNA	131069	3GAMES@10.00: MAY 16, 2016	I 201606029414	5/16/2016	30.00	CONT
			3GAMES@10.00: MAY 16, 2016	001-340-690	30.00		
01-04592	CRYSTAL CLEAN SWEEPING IN	131070	04-16-16 - 05-10-16 SWEEPING	I 25934	5/15/2016	7,218.35	
			04-16-16 - 05-10-16 SWEEPING	001-201-604	7,218.35		
01-16500	CUSTOM PRODUCTS CORP	131071	SIGNS	I 275526	5/26/2016	1,574.99	
			CHEVRON 24" X 30"	001-201-685	142.50		
			GREENWOOD/NANCY	001-201-685	168.90		
			30 MPH MINIMUM SPEED	001-201-685	51.07		
			BEAVER CREEK WATERWA	001-201-685	216.92		
			PURPLE CREEK SIGN	001-201-685	108.46		
			NO LITTERING	001-201-685	108.46		
			PED CROSSING LEFT	001-201-685	353.70		
			PED CROSSING RIGHT	001-201-685	353.70		
			YARD OF MONTH	001-201-685	71.28		
01-04251	DAVIS, CHRISTINE	131072	3GAMES@10.00: MAY 19, 2016	I 201606029424	5/19/2016	30.00	
			3GAMES@10.00: MAY 19, 2016	001-340-690	30.00		
01-04251	DAVIS, CHRISTINE	131073	3GAMES@10.00: MAY 23, 2016	I 201606029425	5/23/2016	30.00	
			3GAMES@10.00: MAY 23, 2016	001-340-690	30.00		
01-18050	DELL MARKETING L.P.	131074	MAINTENANCE RENEWAL	I XJX91TWP9	5/03/2016	33.00	
			MAINTENANCE RENEWAL	001-042-635	33.00		
01-03638	DELTA DENTAL INSURANCE CO	131075	25-1536700000: JUNE 2016	I BE001657639	6/01/2016	12,052.36	
			25-1536700000: JUNE 2016	001-010-480	281.50		
			25-1536700000: JUNE 2016	001-020-480	253.35		
			25-1536700000: JUNE 2016	001-020-480	28.15		
			25-1536700000: JUNE 2016	001-040-480	197.05		
			25-1536700000: JUNE 2016	001-040-480	28.15		
			25-1536700000: JUNE 2016	001-092-480	28.15		
			25-1536700000: JUNE 2016	001-040-480	28.15		
			25-1536700000: JUNE 2016	001-100-480	2,280.15		
			25-1536700000: JUNE 2016	001-100-480	207.66		
			25-1536700000: JUNE 2016	001-160-480	1,632.70		
			25-1536700000: JUNE 2016	001-160-480	28.15		
			25-1536700000: JUNE 2016	001-180-480	309.65		
			25-1536700000: JUNE 2016	001-201-480	872.65		
			25-1536700000: JUNE 2016	001-340-480	365.95		
			25-1536700000: JUNE 2016	005-101-480	84.45		
			25-1536700000: JUNE 2016	400-650-480	703.75		
			25-1536700000: JUNE 2016	404-650-480	56.30		
			25-1536700000: JUNE 2016	001-000-170	3,989.44		
			25-1536700000: JUNE 2016	005-000-170	111.22		
			25-1536700000: JUNE 2016	400-000-170	565.79		
			25-1536700000: JUNE 2016	404-000-170	0.00		
01-18475	DEPENDABLE PEST SERVICE I	131076	LIBRARY - TERMITE INSP	I 161859	4/13/2016	170.00	
			LIBRARY - TERMITE INSP	001-350-637	170.00		

VENDOR NUMBER	NAME	DOCKET NUMBER	COMMENT	*-----INVOICE-----*		
				NUMBER	DATE	AMOUNT
01-18475	DEPENDABLE PEST SERVICE I	131077	ANNUAL TERMITE INSPECTION ANNUAL TERMITE INSPECTION	I 162994 001-092-637	5/19/2016 270.00	270.00
01-01993	DEVINEY RENTAL AND SUPPLY	131078	KUBOTA - L4760-HST KUBOTA - L4760-HST VENDOR DISCOUNT KUBOTA LA1055 LOADER PALLET FORKS QK. ATT	I ES05444 001-340-730 001-340-730 001-340-730 001-340-730	4/12/2016 38,228.40 2,782.64CR 4,992.30 800.00	41,238.06
01-01993	DEVINEY RENTAL AND SUPPLY	131079	MOWER PARTS BLADE-7 BLADES-9 SPRING BOLT	I IV58287 001-201-635 001-201-635 001-201-635 001-201-635	5/11/2016 157.95 141.90 97.08 15.52	412.45
01-01993	DEVINEY RENTAL AND SUPPLY	131080	REPAIR EXCAVATOR BUCKET SHANK BUCKET TEETH	I IV58573 400-650-635 400-650-635	5/18/2016 63.73 113.16	176.89
01-18615	DICKEN, BILL	131081	MAY 24, 2016 MEETING MAY 24, 2016 MEETING	I 052416 001-180-611	5/24/2016 50.00	50.00
01-19050	DISCOUNT TROPHY INC	131082	PLAQUES 13X20 WALNUT PLAQUE BLACK/SILVER PLAQUE	I 110985 001-100-540 001-100-540	5/13/2016 198.00 157.50	355.50
01-04948	DRYDEN, THOMAS	131083	12GAMES@10.00:MAY16,18,19 2016 12GAMES@10.00:MAY16,18,19 2016	I 201606029426 001-340-690	5/19/2016 120.00	120.00
01-04948	DRYDEN, THOMAS	131084	12GAMES@10.00:MAY23,24,26 2016 12GAMES@10.00:MAY23,24,26 2016	I 201606029427 001-340-690	5/26/2016 120.00	120.00
01-03328	EDKO LLC	131085	HERBICIDE APPLICATION TO DITCH HERBICIDE APPLICATION TO DITCH	I 340541 001-201-604	5/09/2016 5,478.53	5,478.53
01-00384	EDWARDS, MARCUS	131086	ADV TRAV: 06-12-16 - 06-17-16 ADV TRAV: 06-12-16 - 06-17-16	I 201606029428 001-100-610	5/13/2016 282.90	282.90
01-21506	ENTERGY	131087	CREDIT-ACCT CLOSED CREDIT-ACCT CLOSED	C 201603308987 001-201-684	2/02/2016 19.14CR	19.14CR
01-21506	ENTERGY	131088	CREDIT-ACCOUNT CLOSED CREDIT-ACCOUNT CLOSED	C 201603308988 001-201-684	3/03/2016 19.14CR	19.14CR
01-21506	ENTERGY	131089	45142510: 12-29-16 - 01-27-16 45142510: 12-29-16 - 01-27-16	I 201603308987 001-201-684	2/02/2016 19.14	19.14
01-21506	ENTERGY	131090	45142510: 01-28-16 - 02-26-16 45142510: 01-28-16 - 02-26-16	I 201603308988 001-201-684	3/03/2016 19.14	19.14
01-21506	ENTERGY	131091	111753950: 04-06-16 - 05-04-16	I 201606029429	5/10/2016	306.39

VENDOR		DOCKET		*-----INVOICE-----*			
NUMBER	NAME	NUMBER	COMMENT	NUMBER	DATE	AMOUNT	CONT
01-21506	ENERGY	131091	111753950: 04-06-16 - 05-04-16 I	201606029429	5/10/2016	306.39	
			111753950: 04-06-16 - 05-04-16	001-201-684		306.39	
01-21506	ENERGY	131092	100962737: 04-25-16 - 05-24-16 I	201606029430	5/26/2016	8.89	
			100962737: 04-25-16 - 05-24-16	400-650-630		8.89	
01-21506	ENERGY	131093	105612568: 04-21-16 - 05-20-16 I	201606029431	5/26/2016	152.17	
			105612568: 04-21-16 - 05-20-16	001-201-684		152.17	
01-21506	ENERGY	131094	105612600: 04-21-16 - 05-20-16 I	201606029432	5/26/2016	246.41	
			105612600: 04-21-16 - 05-20-16	001-201-684		246.41	
01-21506	ENERGY	131095	123466740: 04-22-16 - 05-21-16 I	201606029433	5/26/2016	83.52	
			123466740: 04-22-16 - 05-21-16	001-201-684		83.52	
01-21506	ENERGY	131096	123466989: 04-22-16 - 05-21-16 I	201606029434	5/26/2016	27.45	
			123466989: 04-22-16 - 05-21-16	001-201-684		27.45	
01-21506	ENERGY	131097	123467862: 04-22-16 - 05-21-16 I	201606029435	5/26/2016	63.84	
			123467862: 04-22-16 - 05-21-16	001-201-684		63.84	
01-21506	ENERGY	131098	123469033: 04-22-16 - 05-21-16 I	201606029436	5/26/2016	27.57	
			123469033: 04-22-16 - 05-21-16	001-201-684		27.57	
01-21506	ENERGY	131099	44930162: 04-22-16 - 05-21-16 I	201606029437	5/26/2016	19.73	
			44930162: 04-22-16 - 05-21-16	001-201-684		19.73	
01-21506	ENERGY	131100	67890079: 04-21-16 - 05-21-16 I	201606029438	5/26/2016	27.44	
			67890079: 04-21-16 - 05-21-16	001-201-684		27.44	
01-21506	ENERGY	131101	82141797: 04-22-16 - 05-21-16 I	201606029439	5/26/2016	56.22	
			82141797: 04-22-16 - 05-21-16	001-201-684		56.22	
01-21506	ENERGY	131102	100962695: 04-21-16 - 05-24-16 I	201606029440	5/27/2016	8.98	
			100962695: 04-21-16 - 05-24-16	400-650-630		8.98	
01-21506	ENERGY	131103	100962703: 04-26-16 - 05-25-16 I	201606029441	5/27/2016	8.89	
			100962703: 04-26-16 - 05-25-16	400-650-630		8.89	
01-21506	ENERGY	131104	101379923: 04-25-16 - 05-24-16 I	201606029442	5/27/2016	27.44	
			101379923: 04-25-16 - 05-24-16	001-201-684		27.44	
01-21506	ENERGY	131105	123468100: 04-25-16 - 05-21-16 I	201606029443	5/27/2016	17.96	
			123468100: 04-25-16 - 05-21-16	001-201-684		17.96	
01-21506	ENERGY	131106	123468233: 04-23-16 - 05-24-16 I	201606029444	5/27/2016	23.54	
			123468233: 04-23-16 - 05-24-16	001-201-684		23.54	
01-21506	ENERGY	131107	123468522: 04-23-16 - 05-24-16 I	201606029445	5/27/2016	24.71	
			123468522: 04-23-16 - 05-24-16	001-201-684		24.71	
01-21506	ENERGY	131108	125345488: 04-25-16 - 05-21-16 I	201606029446	5/27/2016	42.38	

VENDOR		DOCKET		*-----INVOICE-----*			
NUMBER	NAME	NUMBER	COMMENT	NUMBER	DATE	AMOUNT	CONT
01-21506	ENERGY	131108	125345488: 04-25-16 - 05-21-16	I 201606029446	5/27/2016	42.38	
			125345488: 04-25-16 - 05-21-16	001-201-684		42.38	
01-21506	ENERGY	131109	17002775: 04-25-16 - 05-21-16	I 201606029447	5/27/2016	75.61	
			17002775: 04-25-16 - 05-21-16	400-650-630		75.61	
01-21506	ENERGY	131110	47143144: 04-22-16 - 05-20-16	I 201606029448	5/27/2016	25.10	
			47143144: 04-22-16 - 05-20-16	400-650-630		25.10	
01-21506	ENERGY	131111	47143193: 04-22-16 - 05-20-16	I 201606029449	5/27/2016	33.10	
			47143193: 04-22-16 - 05-20-16	400-650-630		33.10	
01-21506	ENERGY	131112	74592593: 04-25-16 - 05-23-16	I 201606029450	5/27/2016	64.93	
			74592593: 04-25-16 - 05-23-16	001-201-630		64.93	
01-21506	ENERGY	131113	74592635: 04-25-16 - 05-24-16	I 201606029451	5/27/2016	73.91	
			74592635: 04-25-16 - 05-24-16	400-650-630		73.91	
01-21506	ENERGY	131114	75485649: 04-23-16 - 05-23-16	I 201606029452	5/27/2016	13.23	
			75485649: 04-23-16 - 05-23-16	001-201-684		13.23	
01-21506	ENERGY	131115	78293693: 04-25-16 - 05-21-16	I 201606029453	5/27/2016	55.74	
			78293693: 04-25-16 - 05-21-16	001-201-684		55.74	
01-02231	EWING IRRIGATION PRODUCTS	131116	IRRIGATION PARTS	I 1346620	4/29/2016	426.00	
			RAINBIRD BODY 12IN	001-340-575		326.40	
			RAINBIRD 6IN	001-340-575		81.70	
			RAINBIRD VARIABLE	001-340-575		17.90	
01-02231	EWING IRRIGATION PRODUCTS	131117	IRRIGATION PARTS	I 1381822	5/05/2016	137.22	
			SLIP	001-340-575		31.35	
			BLK/WHT CONN	001-340-575		32.00	
			BLK/GRY CONN	001-340-575		15.84	
			BURIAL WIRE BLK	001-340-575		58.03	
01-01898	F B I N A A MS CHAPTER	131118	2016 SUMMER CONFERENCE	I 201605189380	5/13/2016	275.00	
			2016 SUMMER CONFERENCE	001-100-681		275.00	
01-23750	FORESTRY SUPPLIERS INC	131119	GATORADE	I 886083-00	5/05/2016	415.80	
			GATORADE	001-340-650		415.80	
01-23750	FORESTRY SUPPLIERS INC	131120	TOOLS	I 889140-00	5/12/2016	430.15	
			3GAL COOLER	400-650-540		116.85	
			5GAL COOLER	400-650-540		134.85	
			PROBE ROD	400-650-540		97.00	
			HAND SPRAYER	400-650-540		81.45	
01-24500	FUELMAN OF MS-#127779	131121	127779: 05-09-16 - 05-15-16	I NP47436867	5/16/2016	40.05	
			127779: 05-09-16 - 05-15-16	001-092-525		40.05	
01-24500	FUELMAN OF MS-#127779	131122	127779: 05-16-16 - 05-22-16	I NP47477113	5/23/2016	101.33	
			FUEL - VEHICLES - STREETS	001-201-525		39.65	

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NUMBER	NAME	NUMBER	COMMENT	NUMBER	DATE	AMOUNT	
01-24500	FUELMAN OF MS-#127779	131122	127779: 05-16-16 - 05-22-16	I NP47477113	5/23/2016	101.33	CONT
			FUEL - VEHICLES - WATER	400-650-525	23.45		
			FUEL - VEHICLES - EMCRSS	404-650-525	38.23		
01-24500	FUELMAN OF MS-#127779	131123	127779: 05-23-16 - 05-29-16	I NP47515246	5/30/2016	40.66	
			127779: 05-23-16 - 05-29-16	001-092-525	40.66		
01-01867	FUELMAN OF MS-#127780	131124	127780: 05-09-16 - 05-15-16	I NP47436868	5/16/2016	1,260.12	
			127780: 05-09-16 - 05-15-16	001-201-525	573.64		
			127780: 05-09-16 - 05-15-16	400-650-525	654.55		
			127780: 05-09-16 - 05-15-16	404-650-525	31.93		
01-01867	FUELMAN OF MS-#127780	131125	127780: 05-16-16 - 05-22-16	I NP47477114	5/23/2016	1,059.82	
			127780: 05-16-16 - 05-22-16	001-201-525	580.76		
			127780: 05-16-16 - 05-22-16	400-650-525	444.51		
			127780: 05-16-16 - 05-22-16	404-650-525	34.55		
01-01867	FUELMAN OF MS-#127780	131126	127780: 05-23-16 - 05-29-16	I NP47515247	5/30/2016	1,447.43	
			127780: 05-23-16 - 05-29-16	001-201-525	642.97		
			127780: 05-23-16 - 05-29-16	400-650-525	742.59		
			127780: 05-23-16 - 05-29-16	404-650-525	61.87		
01-01868	FUELMAN OF MS-#127781	131127	127781: 05-02-16 - 05-08-16	I NP47400665	5/09/2016	386.65	
			127781: 05-02-16 - 05-08-16	001-160-525	386.65		
01-01868	FUELMAN OF MS-#127781	131128	127781: 05-09-16 - 05-15-16	I NP47436869	5/16/2016	440.58	
			127781: 05-09-16 - 05-15-16	001-160-525	440.58		
01-01868	FUELMAN OF MS-#127781	131129	127781: 05-16-16 - 05-22-16	I NP47477115	5/23/2016	334.94	
			127781: 05-16-16 - 05-22-16	001-160-525	334.94		
01-01868	FUELMAN OF MS-#127781	131130	127781: 05-23-16 - 05-29-16	I NP47515248	5/30/2016	441.58	
			127781: 05-23-16 - 05-29-16	001-160-525	441.58		
01-01869	FUELMAN OF MS-#127782	131131	127782: 05-09-16 - 05-15-16	I NP47436870	5/16/2016	80.05	
			127782: 05-09-16 - 05-15-16	001-180-525	80.05		
01-01869	FUELMAN OF MS-#127782	131132	127782: 05-16-16 - 05-22-16	I NP47477116	5/23/2016	90.37	
			127782: 05-16-16 - 05-22-16	001-180-525	90.37		
01-01869	FUELMAN OF MS-#127782	131133	127782: 05-23-16 - 05-29-16	I NP47515249	5/30/2016	133.75	
			127782: 05-23-16 - 05-29-16	001-180-525	133.75		
01-01870	FUELMAN OF MS-#127783	131134	127783: 05-09-16 - 05-15-16	I NP47436871	5/16/2016	2,319.79	
			127783: 05-09-16 - 05-15-16	001-100-525	2,319.79		
01-01870	FUELMAN OF MS-#127783	131135	127783: 05-16-16 - 05-22-16	I NP47477117	5/23/2016	2,529.10	
			127783: 05-16-16 - 05-22-16	001-100-525	2,529.10		
01-01871	FUELMAN OF MS-#127785	131136	127785: 05-09-16 - 05-15-16	I NP47436872	5/16/2016	70.70	
			127785: 05-09-16 - 05-15-16	001-340-525	70.70		

VENDOR		DOCKET		*-----INVOICE-----*		
NUMBER	NAME	NUMBER	COMMENT	NUMBER	DATE	AMOUNT
01-01871	FUELMAN OF MS-#127785	131137	127785: 05-16-16 - 05-22-16	I NP47477118	5/23/2016	95.16
			127785: 05-16-16 - 05-22-16	001-340-525	95.16	
01-01871	FUELMAN OF MS-#127785	131138	127785: 05-23-16 - 05-29-16	I NP47515251	5/30/2016	87.02
			127785: 05-23-16 - 05-29-16	001-340-525	87.02	
01-00111	CHUCK GAUTIER	131139	ADV TRAV: 06-26-16 - 06-30-16	I 201606029454	6/02/2016	424.75
			ADV TRAV: 06-26-16 - 06-30-16	001-020-610	424.75	
01-02190	GILL, SHIRLEY	131140	MAY 23, 2016 MEETING	I 052316	5/23/2016	50.00
			MAY 23, 2016 MEETING	001-093-611	50.00	
01-25730	GOLDEN, KENDALL	131141	ADV TRAV: 06-13-16 - 06-16-16	I 201606029494	6/02/2016	164.00
			ADV TRAV: 06-13-16 - 06-16-16	001-160-610	164.00	
01-02127	GRAY-DANIELS CHEVROLET	131142	TRUCK PARTS	I 660548GC	5/10/2016	102.12
			SCREWS	400-650-632	5.32	
			SCREW ANCHOR	400-650-632	5.32	
			BEZEL	400-650-632	91.48	
01-00644	GREEN EARTH PRODUCTS	131143	HAD TOWELS AND DEGREASER	I 38210	5/16/2016	1,965.01
			DEGREASER	001-201-575	1,636.25	
			HAND TOWELS	001-201-575	328.76	
01-01348	GREGORY, JAMES EDWIN III	131144	3GAMES@20.00: MAY 16, 2016	I 201606029455	5/16/2016	60.00
			3GAMES@20.00: MAY 16, 2016	001-340-690	60.00	
01-01348	GREGORY, JAMES EDWIN III	131145	3GAMES@20.00: MAY 23, 2016	I 201606029456	5/23/2016	60.00
			3GAMES@20.00: MAY 23, 2016	001-340-690	60.00	
01-02909	HAMLIN, WESLEY N	131146	ADV TRAV: 06-26-16 - 06-30-16	I 201606029459	6/02/2016	424.75
			ADV TRAV: 06-26-16 - 06-30-16	001-020-610	424.75	
01-01062	HANCOCK BANK	131147	11-02-15 - 05-01-16 FEES	I 23289	4/25/2016	820.00
			11-02-15 - 05-01-16 FEES	200-450-840	820.00	
01-27765	HARCROS CHEMICALS INC	131148	CHLORINE & FLUORIDE	I 770099336	5/05/2016	540.00
			1 TON CHLORINE	400-650-575	540.00	
01-27765	HARCROS CHEMICALS INC	131149	CHLORINE & FLUORIDE	I 770099401	5/10/2016	2,862.00
			150LB CHLORINE	400-650-575	1,080.00	
			SODIUM FLUORIDE	400-650-575	1,782.00	
01-27765	HARCROS CHEMICALS INC	131150	1 TON CHLORINE	I 770099421	5/12/2016	540.00
			1 TON CHLORINE	400-650-575	540.00	
01-04944	HARRELL, LOGAN	131151	6GAMES@10.00: MAY 16&18, 2016	I 201606029460	5/18/2016	60.00
			6GAMES@10.00: MAY 16&18, 2016	001-340-690	60.00	
01-29190	HEARD, KEN	131152	ADV TRAV: 06-26-16 - 06-29-16	I 201606029458	6/02/2016	377.60
			ADV TRAV: 06-26-16 - 06-29-16	001-020-610	377.60	

VENDOR NUMBER	NAME	DOCKET NUMBER	COMMENT	*-----INVOICE-----*		
				NUMBER	DATE	AMOUNT
01-04406	HEATH, VICKI	131153	MAY 23, 2016 MEETING	I 052316	5/23/2016	50.00
			MAY 23, 2016 MEETING	001-093-611	50.00	
01-01657	HIGGINBOTHAM, RONALD SCOT	131154	MAY 23, 2016 MEETING	I 052316	5/23/2016	50.00
			MAY 23, 2016 MEETING	001-093-611	50.00	
01-04700	HODGES, JEFFREY	131155	11GAMES@10.00:MAY 23-26, 2016	I 201606029461	5/26/2016	110.00
			11GAMES@10.00:MAY 23-26, 2016	001-340-690	110.00	
01-00492	HOLDER, KEVIN	131156	ADV TRAV: 06-06-16 - 06-30-16	I 201606029457	6/02/2016	424.75
			ADV TRAV: 06-06-16 - 06-30-16	001-020-610	424.75	
01-04622	HOLLY, SALLY M.	131157	MAY 2016	I 201606029462	6/02/2016	1,000.00
			MAY 2016	001-340-690	1,000.00	
01-03681	HOLLYWOOD FEED, LLC	131158	FEED/SOAP	I 5321676	5/19/2016	163.75
			40# DOG FOOD	001-100-540	135.28	
			CONDITIONER	001-100-540	18.98	
			SHAMPOO	001-100-540	9.49	
01-03853	HUTCHINGS, CHRISTOPHER LE	131159	MAY 23, 2016 MEETING	I 052316	5/23/2016	50.00
			MAY 23, 2016 MEETING	001-093-611	50.00	
01-32050	ILLINOIS CENTRAL RAILROAD	131160	8" SEWER LINE EASEMENT	I 9500160245	5/02/2016	50.00
			8" SEWER LINE EASEMENT	400-650-660	50.00	
01-02386	INTERNATIONAL CODE COUNCI	131161	MEMBERSHIP	I 3093941	5/02/2016	135.00
			MEMBERSHIP	001-180-686	135.00	
01-32675	INTERSTATE BATTERY SYSTEM	131162	CAR BATTERY	I 678325	5/17/2016	187.90
			IMPALA BATTERY	001-100-632	187.90	
01-04057	ITSVAVY	131163	8GB DDR3 UPGRADE/PLOTTER	I 00875177	5/16/2016	27.84
			8GB DDR3 UPGRADE/PLOTTER	001-042-501	27.84	
01-33385	JACKSON DATA PRODUCTS IN	131164	GAS INSPECTION STICKERS	I 0079292	5/19/2016	99.60
			GAS INSPECTION STICKERS	001-180-540	99.60	
01-33385	JACKSON DATA PRODUCTS IN	131165	#9 WINDOW ENVELOPES	I 0079294	5/19/2016	131.48
			#9 WINDOW ENVELOPES	001-040-500	131.48	
01-02458	JACKSON ICE CO	131166	ICE	I 5385136	5/05/2016	350.00
			ICE	001-340-650	350.00	
01-33800	JACKSON PAPER COMPANY	131167	ENMOTION TOWELS	I 674495	5/04/2016	542.50
			ENMOTION TOWELS	001-100-510	542.50	
01-33800	JACKSON PAPER COMPANY	131168	JANIT. SUPPLIES/LIBRARY	I 677404	5/19/2016	110.62
			ENMOTION ROLL TOWEL	001-350-510	54.25	
			TOILET TISSUE	001-350-510	56.37	

VENDOR		DOCKET		*-----INVOICE-----*		
NUMBER	NAME	NUMBER	COMMENT	NUMBER	DATE	AMOUNT
01-04945	JACKSON, DIANE	131169	MAY 23, 2016 MEETING MAY 23, 2016 MEETING	I 052316 001-093-611	5/23/2016 50.00	50.00
01-04904	JACKSON, SHELIA	131170	MAY 23, 2016 MEETING MAY 23, 2016 MEETING	I 052316 001-093-611	5/23/2016 50.00	50.00
01-04956	JAIMES, VICTOR	131171	REMITTANCE OF BOND FEE REMITTANCE OF BOND FEE	I 201606029463 001-000-122	5/05/2016 642.00	642.00
01-34590	JERRY PATE TURF SUPPLY IN	131172	LAPPING COMPOUND LAPPING COMPOUND FREIGHT	I 11824636 001-340-575 001-340-575	5/10/2016 101.98 36.36	138.34
01-34785	JOHNSON LAWN & OUTDOOR EQ	131173	BOLTS HEX NUT HIGH PER. OIL	I 182680 001-340-635 001-340-635	2/04/2016 9.44 93.60	103.04
01-35100	JONES, SCOTT	131174	ADV TRAV: 06-26-16 - 06-30-16 ADV TRAV: 06-26-16 - 06-30-16	I 201606029464 001-020-610	6/02/2016 424.75	424.75
01-00973	KIMBALL MIDWEST	131175	SHOP SUPPLIES BLUE WIRE NUT YELLOW WIRE NUT 15 1/2" TIE RAP ELECTRICAL TAPE FLAT BLACK PAINT PINS	I 4886430 400-650-540 400-650-540 400-650-540 400-650-540 400-650-540 400-650-540	5/05/2016 11.05 17.59 12.32 10.76 92.04 13.00	156.76
01-04867	KING, KATHY	131176	MAY 2016 MAY 2016	I 201606029465 001-340-650	6/02/2016 200.00	200.00
01-04513	KNOUSE, RANDY	131177	MAY 24, 2016 MEETING MAY 24, 2016 MEETING	I 052416 001-180-611	5/24/2016 50.00	50.00
01-04901	LARD OIL COMPANY OF MISSI	131178	BULK OIL BULK OIL OIL TAX ENVIRONMENTAL FEE	I 0774898-IN 400-650-525 400-650-525 400-650-525	5/04/2016 2,108.00 16.00 9.95	2,133.95
01-02334	LATHAM, RITA	131179	MAY 2016 MAY 2016	I 201606029468 001-340-690	6/02/2016 280.00	280.00
01-38275	LEWIS ELECTRIC INC	131180	POWER SERVICE/METER BASE POWER SERVICE/METER BASE	I M2016.47 001-201-603	5/26/2016 14,549.00	14,549.00
01-02576	LINCOLN NATIONAL LIFE INS	131181	502251: JUNE 2016 502251: JUNE 2016 502251: JUNE 2016 502251: JUNE 2016 502251: JUNE 2016	I 201606029466 001-010-480 001-020-480 001-040-480 001-040-480 001-092-480	6/02/2016 161.22 50.78 160.56 25.50 13.38	4,324.39

VENDOR		DOCKET		*-----INVOICE-----*				
NUMBER	NAME	NUMBER	COMMENT	NUMBER	DATE	AMOUNT		
01-02576	LINCOLN NATIONAL LIFE INS	131181	502251: JUNE 2016	I 201606029466	6/02/2016	4,324.39	CONT	
			502251: JUNE 2016	001-040-480	25.50			
			502251: JUNE 2016	001-100-480	1,357.87			
			502251: JUNE 2016	001-160-480	1,088.08			
			502251: JUNE 2016	001-180-480	235.24			
			502251: JUNE 2016	001-201-480	478.49			
			502251: JUNE 2016	001-340-480	254.91			
			502251: JUNE 2016	005-101-480	63.19			
			502251: JUNE 2016	400-650-480	394.54			
			502251: JUNE 2016	404-650-480	15.13			
01-00090	LITTLE CREEK INC	131182	JANITORIAL SUPPLIES	I 1605005	5/05/2016	1,817.73		
			TRASH LINERS	001-340-510	812.00			
			TOWELS	001-340-510	184.00			
			HAND SOAP	001-340-510	214.40			
			HARD ROLL TOWELS	001-340-510	108.00			
			KITCHEN TOWELS	001-340-510	72.00			
			BLEACH	001-340-510	29.00			
			URINAL SCREENS	001-340-510	82.00			
			REG. ROLL TISSUE	001-340-510	269.00			
			TOILET TISSUE	001-340-510	47.33			
01-00090	LITTLE CREEK INC	131183	JANITORIAL SUPPLIES	I 1605005-01	5/09/2016	446.27		
			HARD ROLL TOWELS	001-340-510	54.00			
			HAND SOAP	001-340-510	321.60			
			TOILET TISSUE	001-340-510	23.67			
			CHARMIN	001-340-510	47.00			
01-02031	LOWE'S BUSINESS ACCOUNT	131184	FD-STATION 2	I 13079	5/16/2016	201.13		
			CEILING TILES	001-160-637	185.00			
			PAINT	001-160-637	16.13			
01-04955	LOWERY CARNIVAL COMPANY	131185	REFUND OF SPECIAL EVENT BOND	I 201606029467	5/18/2016	1,000.00		
			REFUND OF SPECIAL EVENT BOND	001-000-119	1,000.00			
01-40485	MADISON ACE HARDWARE	131186	SUPPLIES	I 125479	5/03/2016	616.81		
			NOZZLE SELECT	001-340-540	7.49			
			COUPLE PVC	001-340-540	0.34			
			COUPLE QWICK FIX	001-340-540	7.58			
			TRASH CAN	001-340-540	71.96			
			DEADBOLT	001-340-540	12.99			
			HDWE FSTBRS BLDG	001-340-540	119.88			
			CONCRETE MIX	001-340-540	10.98			
			PLIER LINEMAN	001-340-540	14.99			
			28" BLACK HVY DUTY	001-340-540	31.78			
			MARKING CHALK	001-340-540	112.50			
			BOLT CUTTER	001-340-540	51.99			
			KNIFE SNAPBLD	001-340-540	10.36			
			ACE ANGLE BROOM	001-340-540	11.99			
			BALL VALVE	001-340-540	39.99			
			PACK GLAND	001-340-540	17.99			
			CONCRETE MIX	001-340-540	54.90			

VENDOR		DOCKET		*-----INVOICE-----*			
NUMBER	NAME	NUMBER	COMMENT	NUMBER	DATE	AMOUNT	CONT
01-40485	MADISON ACE HARDWARE	131186	SUPPLIES	I 125479	5/03/2016	616.81	CONT
			KEY SINGLE	001-340-540	19.90		
			ENTRY KNOB BALL	001-340-540	12.99		
			MULT. BIT SCREWDRIVE	001-340-540	18.99		
			KEY SINGLE	001-340-540	11.94		
			ADAPTER	001-340-540	17.99		
			DISCOUNT	001-340-540	42.71CR		
01-40485	MADISON ACE HARDWARE	131187	JANITORIAL SUPPLIES	I 433755	5/18/2016	1,547.78	
			COUPLE PVC	001-340-510	0.87		
			COUPLE QUIK FIX	001-340-510	16.47		
			MARKING CHALK	001-340-510	240.00		
			GROUNDING PLUG	001-340-510	4.49		
			SOFTSOAP	001-340-510	47.76		
			409	001-340-510	35.88		
			CLOROX CLEANER	001-340-510	47.88		
			ULTRA DAWN	001-340-510	39.90		
			PINE SOL	001-340-510	49.95		
			OIL CHAIN BAR	001-340-510	11.99		
			LYSOL BOWL CLEANER	001-340-510	17.94		
			DUST AND POLLEN MASK	001-340-510	41.94		
			ZIPLOCK STORAGE BAG	001-340-510	15.96		
			CABLE TIES	001-340-510	143.97		
			CORD REEL	001-340-510	53.94		
			DUCK TAPE	001-340-510	19.77		
			GORILLA TAPE	001-340-510	29.97		
			STAPLEGUN	001-340-510	37.98		
			FLAGGING TAPE	001-340-510	8.94		
			NAIL SPIKE	001-340-510	64.99		
			SHOVEL	001-340-510	67.96		
			SHOVEL	001-340-510	33.98		
			TRASH CANS	001-340-510	179.90		
			LOPPERS	001-340-510	69.98		
			KNIFE	001-340-510	15.54		
			RSTP SPRAY	001-340-510	49.90		
			TRIAZICIDE	001-340-510	143.88		
			SERATED SPADE	001-340-510	151.96		
			DISCOUNT	001-340-510	95.91CR		
01-40485	MADISON ACE HARDWARE	131188	SUPPLIES	I 655421	5/03/2016	4.04	
			GROUNDING PLUG	001-340-540	4.49		
			DISCOUNT	001-340-540	0.45CR		
01-01078	MADISON COUNTY WASTEWATER	131189	ADM ASSESSMENT: JUNE 2016	I 2599	6/01/2016	3,408.50	
			ADM ASSESSMENT: JUNE 2016	400-650-604	3,408.50		
01-01078	MADISON COUNTY WASTEWATER	131190	SRF LOAN: JULY 2016	I 2603	6/01/2016	1,409.79	
			SRF LOAN: JULY 2016	400-650-842	1,409.79		
01-01078	MADISON COUNTY WASTEWATER	131191	PARKWAY EAST: JULY 2016	I 2608	6/01/2016	2,021.54	
			PARKWAY EAST: JULY 2016	400-650-845	2,021.54		

VENDOR		DOCKET	*-----INVOICE-----*			
NUMBER	NAME	NUMBER	COMMENT	NUMBER	DATE	AMOUNT
01-01078	MADISON COUNTY WASTEWATER	131192	BOZEMAN RD: JULY 2016 BOZEMAN RD: JULY 2016	I 2611 400-650-848	6/01/2016 1,832.14	1,832.14
01-01078	MADISON COUNTY WASTEWATER	131193	TRUSTMARK LOAN TRUSTMARK LOAN	I 2616 400-650-846	6/01/2016 5,809.84	5,809.84
01-03880	MALONE, DOUGLAS	131194	MAY 23, 2016 MEETING MAY 23, 2016 MEETING	I 052316 001-093-611	5/23/2016 50.00	50.00
01-42310	MARS MARKETING PROMOTIONA	131195	CENTURY RIDE MEDALS CENTURY RIDE MEDALS DIE DESIGN/SET UP SHIPPING	I 32725 001-340-650 001-340-650 001-340-650 001-340-650	5/06/2016 2,593.50 195.00 50.00 128.75	2,967.25
01-42310	MARS MARKETING PROMOTIONA	131196	CENTURY RIDE SHIRTS CENTURY RIDE S-XL CENTURY RIDE XXL CENTURY RIDE XXXL SHIPPING	I 32947 001-340-650 001-340-650 001-340-650 001-340-650	5/26/2016 714.00 141.00 20.80 53.16	928.96
01-42480	MARTINSON'S GARDEN WORKS	131197	PINESTRAW BALES OF PINESTRAW ROLLS PINESTRAW	I 19238 001-340-575 001-340-575	5/06/2016 79.90 152.91	232.81
01-04918	MATERIAL GIRLS LLC	131198	OVERPYMT OF PRIVILEGE LICENSE OVERPYMT OF PRIVILEGE LICENSE	I 201606029470 001-000-351	5/18/2016 155.00	155.00
01-03465	MATTHEWS, ANNA	131199	5GAMES@10.00:MAY 24&25, 2016 5GAMES@10.00:MAY 24&25, 2016	I 201606029471 001-340-690	5/25/2016 50.00	50.00
01-04083	MCCLAIN LODGE LLC	131200	CENTURY RIDE - 2016 REST STOP LUNCH DISCOUNT	I 2992 001-340-650 001-340-650 001-340-650	5/07/2016 592.50 9,067.50 633.98CR	9,026.02
01-04662	MCCRAW, NOAH	131201	6GAMES@10.00:MAY 16&18, 2016 6GAMES@10.00:MAY 16&18, 2016	I 201606029472 001-340-690	5/18/2016 60.00	60.00
01-01984	MCDONALD DIRT WORKS	131202	DIRT DIRT	I 507010 001-340-575	5/16/2016 450.00	450.00
01-42882	MCGRAW GOTTA-GO	131203	CENTURY RIDE PORT-A-JOHN HAND WASHING STATION PICK UP/DELIVERY	I 335036B 001-340-650 001-340-650 001-340-650	5/06/2016 1,425.00 95.00 400.00	1,920.00
01-42882	MCGRAW GOTTA-GO	131204	PORT-A-LET UNIT/DELIVERY PORT-A-LET UNIT	I 336004B 001-340-650	5/13/2016 75.00	75.00
01-42975	MEL LUNA SAW COMPANY	131205	WEEDEATERS & SAWS	I 83034	5/12/2016	3,317.28

VENDOR		DOCKET		*-----INVOICE-----*		
NUMBER	NAME	NUMBER	COMMENT	NUMBER	DATE	AMOUNT
01-42975	MEL LUNA SAW COMPANY	131205	WEEDEATERS & SAWS	I 83034	5/12/2016	3,317.28
			WEEDEATERS	001-201-730	1,161.44	CONT
			STIHL BLOWER	001-201-730	439.96	
			STIHL POLESAW	001-201-730	527.96	
			STIHL CUT OFF SAW	001-201-730	879.96	
			STIHL CHAINSAW	001-201-730	307.96	
01-44250	MID-SOUTH UNIFORM & SUPPL	131206	UNIFORMS	I 546770	5/13/2016	519.87
			CUFF CASE	001-100-535	29.74	
			RAINCOAT	001-100-535	40.38	
			CUFF CASE	001-100-535	31.25	
			VEST CARRIER	001-100-535	74.40	
			LIGHT HOLDER	001-100-535	14.66	
			BELT KEEPER	001-100-535	12.50	
			DUTY BELT	001-100-535	74.81	
			CUFF CASE	001-100-535	31.25	
			UNIFORM SHIRT	001-100-535	42.00	
			SEW ON PATCHES	001-100-535	4.00	
			UNIFORM PANTS	001-100-535	124.50	
			RAINCOAT	001-100-535	40.38	
01-04957	MIGUEL, HARBY	131207	REMITTANCE OF BOND FEE	I 201606029469	5/05/2016	642.00
			REMITTANCE OF BOND FEE	001-000-122	642.00	
01-00837	MISS CHEMICAL SUPPLY INC	131208	ASPHALT CRACK SEALANT	I 25117	5/10/2016	4,318.55
			ASPHALT CRACK SEALANT	001-201-578	4,318.56	
			CREDIT TO MATCH INVOICE	001-201-578	0.01CR	
01-00837	MISS CHEMICAL SUPPLY INC	131209	MOSQUITO SPRAY	I 25123	5/17/2016	4,400.00
			MOSQUITO SPRAY	001-250-544	4,400.00	
01-47890	MISS TENT AND PARTY RENTA	131210	CENTURY RIDE TENTS	I 101155	5/09/2016	1,186.50
			30X45 TENT	001-340-650	742.50	
			TABLES	001-340-650	144.00	
			CHAIRS	001-340-650	240.00	
			DELIVERY/PICK UP	001-340-650	60.00	
01-47950	MISS VALLEY ELECTRIC SUPP	131211	JANITORIAL - FLOOD LIGHT	I S1263304.001	5/25/2016	37.92
			JANITORIAL - FLOOD LIGHT	001-092-510	37.92	
01-04419	MISSISSIPPI AG COMPANY	131212	REPAIR PARTS	I P51493	5/03/2016	202.29
			FUEL SHUT OFF	001-340-635	189.42	
			PTO RELAY	001-340-635	12.87	
01-04419	MISSISSIPPI AG COMPANY	131213	REPAIR PARTS	I P53423	5/24/2016	335.20
			SOLENOID	001-340-635	189.42	
			PRINTED CIRCUIT	001-340-635	125.29	
			COVER	001-340-635	16.64	
			FREIGHT	001-340-635	3.85	
01-02077	MONOHAN, SANDRA	131214	REIMBURSE FOR MEALS & GAS	I 201606029492	5/24/2016	121.18
			REIMBURSE FOR MEALS & GAS	001-093-610	121.18	

VENDOR		DOCKET		*-----INVOICE-----*		
NUMBER	NAME	NUMBER	COMMENT	NUMBER	DATE	AMOUNT
01-49512	MR FORMS PRINTING CO	131215	CRASH REPORTS	I 160511	5/12/2016	399.88
			CRASH REPORTS	001-100-540	399.88	
01-50608	N A P A AUTO PARTS 007	131216	FD-WATER SHUT OFF VALVE	I 095007	5/16/2016	11.05
			WATER SHUT OFF VALVE	001-160-632	11.05	
01-51700	NATIONAL REGISTRY OF EMTS	131217	FD-PINS	I 40177	5/05/2016	107.00
			EMT PINS	001-160-535	72.00	
			PARAMEDIC PINS	001-160-535	35.00	
01-04482	NEAL, DON	131218	9GAMES@20.00:MAY 16,18,19 2016	I 201606029474	5/19/2016	180.00
			9GAMES@20.00:MAY 16,18,19 2016	001-340-690	180.00	
01-04482	NEAL, DON	131219	11GAMES@20.00:MAY 23-26, 2016	I 201606029475	5/26/2016	220.00
			11GAMES@20.00:MAY 23-26, 2016	001-340-690	220.00	
01-51950	NEAL, JOHN	131220	ADV TRAV: 06-20-16 - 06-24-16	I 201606029473	5/31/2016	235.75
			ADV TRAV: 06-20-16 - 06-24-16	001-100-610	235.75	
01-04679	NEXAIR, LLC	131221	TORCH BOTTLE RENTALS	I 04187301	4/30/2016	39.80
			BOTTLE MAINT	400-650-540	5.00	
			OXYGEN BOTTLE RENT	400-650-540	17.40	
			GAS BOTTLE RENT	400-650-540	17.40	
01-01133	O'REILLY AUTO PARTS	131222	HEADLIGHT	I 118166	5/12/2016	29.60
			HEADLIGHT	001-100-632	29.60	
01-01133	O'REILLY AUTO PARTS	131223	ADHESIVE	I 119676	5/24/2016	20.55
			ADHESIVE	001-100-540	15.56	
			WHEEL WAND	001-100-540	4.99	
01-53715	OFFICE PRODUCTS PLUS INC	131224	FLIP CHART	I 759572-0	5/10/2016	72.74
			FLIP CHART	001-100-540	72.74	
01-53715	OFFICE PRODUCTS PLUS INC	131225	OFFICE/JANITORIAL SUPPLY	I 760735-0	5/24/2016	71.26
			9 VOLT BATTERIES	001-040-500	8.86	
			MED. BLACK INK REFIL	001-040-500	5.34	
			MONEY RECEIPT BOOK	001-040-500	39.98	
			C BATTERIES, 8/PACK	001-092-510	17.08	
01-53715	OFFICE PRODUCTS PLUS INC	131226	OFFICE/JANITORIAL SUPPLY	I 760735-1	5/25/2016	5.34
			MED. BLUE INK REFILL	001-040-500	5.34	
01-04572	PALMER-ALLEN, CARLA	131227	MAY 23, 2016 MEETING	I 052316	5/23/2016	50.00
			MAY 23, 2016 MEETING	001-093-611	50.00	
01-04209	PENDER, TERRY	131228	6GAMES@20.00: MAY 16&19, 2016	I 201606029477	5/19/2016	120.00
			6GAMES@20.00: MAY 16&19, 2016	001-340-690	120.00	
01-04209	PENDER, TERRY	131229	9GAMES@20.00:MAY 23,24,26 2016	I 201606029478	5/26/2016	180.00
			9GAMES@20.00:MAY 23,24,26 2016	001-340-690	180.00	

VENDOR NUMBER	NAME	DOCKET NUMBER	COMMENT	*-----INVOICE-----*		
				NUMBER	DATE	AMOUNT
01-00593	PERFIT INC	131230	MAY 2016 MAY 2016	I 201606029479 001-340-690	6/02/2016 480.00	480.00
01-01932	PINNACLE TOWERS LLC	131231	JUNE 2016 RENTAL JUNE 2016 RENTAL	I 19363075 005-101-604	6/01/2016 1,693.40	1,693.40
01-03279	PNC EQUIPMENT FINANCE	131232	COMMERCIAL LEASE EQUIPMENT COMMERCIAL LEASE EQUIPMENT	I 5553553 001-340-604	5/07/2016 3,707.04	3,707.04
01-03279	PNC EQUIPMENT FINANCE	131233	ORIGINATION FEES ORIGINATION FEES	I 5584459 001-340-604	5/10/2016 250.00	250.00
01-03279	PNC EQUIPMENT FINANCE	131234	LEASE OF EQUIPMENT LEASE OF EQUIPMENT	I 5584460 001-340-604	5/10/2016 4,333.53	4,333.53
01-03279	PNC EQUIPMENT FINANCE	131235	PROPERTY TAX PROPERTY TAX	I 5584469 001-340-604	5/09/2016 2,618.14	2,618.14
01-57350	PRASSEL LUMBER COMPANY IN	131236	BRICKS AND BLOCKS BRICKS AND BLOCKS CONCRETE PAD CONCRETE BLOCKS	I 800393 001-201-575 001-201-575 001-201-575	5/17/2016 330.40 295.20 204.12	829.72
01-04397	PRIMAL WEAR INC	131237	JERSEY RE-ORDER JERSEY RE-ORDER	I 201605249387 001-340-650	5/23/2016 2,666.00	2,666.00
01-58450	PYLE, MILLS, & DYE, P.A.	131238	SERVICES THROUGH 05-27-16 SERVICES THROUGH 05-27-16 SERVICES THROUGH 05-27-16 SERVICES THROUGH 05-27-16 SERVICES THROUGH 05-27-16 SERVICES THROUGH 05-27-16 SERVICES THROUGH 05-27-16 SERVICES THROUGH 05-27-16 SERVICES THROUGH 05-27-16	I 201606029476 001-180-601 001-060-601 001-060-601 001-201-601 362-601-601 378-601-601 390-601-601 400-650-601	5/27/2016 1,745.25 5,399.54 1,501.25 1,035.00 390.00 2,321.68 105.00 420.00	12,917.72
01-04159	PYROFIRE DISPLAYS	131239	BALANCE FOR FIREWORKS BALANCE FOR FIREWORKS	I RDGE7-5.24 001-340-650	5/24/2016 5,750.00	5,750.00
01-58550	QUALITY CHEMICAL & SUPPLY	131240	SUPPLIES CENTER PULL TOWELS TOILET TISSUE LARGE GARBAGE BAGS 8OZ CUPS	I 173281 400-650-510 400-650-510 400-650-510 400-650-510	5/13/2016 344.00 149.40 288.00 92.00	873.40
01-58550	QUALITY CHEMICAL & SUPPLY	131241	SUPPLIES SPOONS	I 173323 001-340-650	5/18/2016 43.71	43.71
01-03095	RAMSEY, BRIAN	131242	ADV TRAV: 06-26-16 - 06-30-16 ADV TRAV: 06-26-16 - 06-30-16	I 201606029482 001-020-610	6/02/2016 424.75	424.75

VENDOR		DOCKET		*-----INVOICE-----*		
NUMBER	NAME	NUMBER	COMMENT	NUMBER	DATE	AMOUNT
01-00058	RANEY'S CARPET CARE INC	131243	CARPET CLEANING CARPET CLEANING	I 30212 001-350-637	5/10/2016 137.52	137.52
01-59418	RAY, GLENN	131244	MAY 24, 2016 MEETING MAY 24, 2016 MEETING	I 052416 001-180-611	5/24/2016 50.00	50.00
01-60825	RICK'S PRO TRUCK & AUTO A	131245	RECIVER HITCH RECIVER HITCH 2" DROP 2" BALL	I 300319 404-650-632 404-650-632 404-650-632	5/18/2016 169.95 29.95 8.00	207.90
01-00649	RIDGELAND SERVICE CENTER	131246	TIRES- P250 TIRES- P250 BALANCE WASTE TIRE FEE	I 207802 001-100-632 001-100-632 001-100-632	5/12/2016 397.20 43.80 12.00	453.00
01-00649	RIDGELAND SERVICE CENTER	131247	TIRES P280 TIRES P280 BALANCE TIRE DISPOSAL TPMS SENSOR	I 207852 001-100-632 001-100-632 001-100-632 001-100-632	5/13/2016 460.32 43.80 12.00 95.00	611.12
01-01424	ROBERSON, WILLIAM E	131248	6GAMES@20.00:MAY 18&19, 2016 6GAMES@20.00:MAY 18&19, 2016	I 201606029480 001-340-690	5/19/2016 120.00	120.00
01-01424	ROBERSON, WILLIAM E	131249	2GAMES@20.00: MAY 25, 2016 2GAMES@20.00: MAY 25, 2016	I 201606029481 001-340-690	5/25/2016 40.00	40.00
01-48825	ROSS, ALEX W	131250	MAY 24, 2016 MEETING MAY 24, 2016 MEETING	I 052416 001-180-611	5/24/2016 50.00	50.00
01-62168	S & S ENCLOSURES	131251	SCREENS RESCREEN/DOORS	I 276078 001-340-637	4/26/2016 1,800.00	1,800.00
01-04889	MIKE AND MARTY PARTY LLC	131252	FINAL PAYMENT/SHENANDOAH FINAL PAYMENT/SHENANDOAH	I 201605249385 001-340-650	5/23/2016 7,500.00	7,500.00
01-64600	SIGNS FIRST	131253	SIGNS SIGNS STEPSTAKE WIRE	I 152125 001-340-650 001-340-650	5/05/2016 238.20 24.05	262.25
01-64965	SKEEN PLUMBING & GAS INC	131254	QUARTERLY MAINT. MAY,2016 QUARTERLY MAINT. MAY,2016	I A55369 001-092-637	5/11/2016 430.00	430.00
01-64965	SKEEN PLUMBING & GAS INC	131255	UNCLOG TOILET UNCLOG TOILET	I A55406 001-092-637	5/20/2016 225.00	225.00
01-00692	SMITH'S LAWN AND LANDSCAP	131256	APRIL 29, MAY 11,18,24 SERVICE APRIL 29, MAY 11,18,24 SERVICE	I 9325 001-201-604	5/31/2016 21,326.25	21,326.25
01-03978	SMITH, DOUGLAS I.	131257	ADV TRAV: 06-26-16 - 06-30-16	I 201606029488	6/02/2016	424.75

VENDOR		DOCKET		*-----INVOICE-----*			
NUMBER	NAME	NUMBER	COMMENT	NUMBER	DATE	AMOUNT	
01-03978	SMITH, DOUGLAS I.	131257	ADV TRAV: 06-26-16 - 06-30-16	I 201606029488	6/02/2016	424.75	CONT
			ADV TRAV: 06-26-16 - 06-30-16	001-020-610	424.75		
01-03716	SMITH, JAMES E.	131258	6GAMES@20.00: MAY 18&19, 2016	I 201606029484	5/19/2016	120.00	
			6GAMES@20.00: MAY 18&19, 2016	001-340-690	120.00		
01-03716	SMITH, JAMES E.	131259	5GAMES@20.00: MAY 24&25, 2016	I 201606029485	5/25/2016	100.00	
			5GAMES@20.00: MAY 24&25, 2016	001-340-690	100.00		
01-02421	SMITH, MICHAEL J.	131260	MAY 23, 2016 MEETING	I 052316	5/23/2016	50.00	
			MAY 23, 2016 MEETING	001-093-611	50.00		
01-65950	SOUTHERN ADMINISTRATORS	131261	COMPANY#106: JUNE 2016	I 16052510600000	5/25/2016	552.50	
			COMPANY#106: JUNE 2016	001-010-481	10.50		
			COMPANY#106: JUNE 2016	001-020-481	15.75		
			COMPANY#106: JUNE 2016	001-040-481	10.50		
			COMPANY#106: JUNE 2016	001-092-481	1.75		
			COMPANY#106: JUNE 2016	001-040-481	3.50		
			COMPANY#106: JUNE 2016	001-100-481	85.75		
			COMPANY#106: JUNE 2016	001-160-481	61.25		
			COMPANY#106: JUNE 2016	001-180-481	17.50		
			COMPANY#106: JUNE 2016	001-201-481	29.75		
			COMPANY#106: JUNE 2016	001-340-481	19.25		
			COMPANY#106: JUNE 2016	005-101-481	5.25		
			COMPANY#106: JUNE 2016	400-650-481	35.00		
			COMPANY#106: JUNE 2016	404-650-481	1.75		
			COMPANY#106: JUNE 2016	001-000-170	219.00		
			COMPANY#106: JUNE 2016	005-000-170	4.50		
			COMPANY#106: JUNE 2016	400-000-170	30.00		
			COMPANY#106: JUNE 2016	404-000-170	1.50		
01-65975	SOUTHERN ATHLETIC FIELDS	131262	SAF COAT	I 44697	5/04/2016	4,567.80	
			SAF COAT	001-340-575	2,767.80		
			FREIGHT	001-340-575	1,800.00		
01-65975	SOUTHERN ATHLETIC FIELDS	131263	SAF TRAC	I 44809	5/19/2016	2,100.00	
			SAF TRAC	001-340-575	1,200.00		
			FREIGHT	001-340-575	900.00		
01-04466	SOUTHERN FINANCIAL SYSTEM	131264	04-01-16 - 05-03-16 SERVICES	I 201606029483	5/03/2016	30.80	
			04-01-16 - 05-03-16 SERVICES	400-000-115	30.80		
01-67940	STAR SERVICE INC OF JACKS	131265	CUST# 00753: JUNE 2016	I 057970	5/25/2016	5,785.00	
			CUST# 00753: JUNE 2016	001-092-637	784.00		
			CUST# 00753: JUNE 2016	001-100-637	2,032.00		
			CUST# 00753: JUNE 2016	001-160-637	1,223.00		
			CUST# 00753: JUNE 2016	001-201-637	234.00		
			CUST# 00753: JUNE 2016	001-340-637	792.00		
			CUST# 00753: JUNE 2016	400-650-637	234.00		
			CUST# 00753: JUNE 2016	001-350-637	486.00		
01-68050	STATE CHEMICAL MANUFACTUR	131266	FRAGRANCE PACKS	I 97777948	5/06/2016	566.30	

VENDOR		DOCKET		INVOICE			
NUMBER	NAME	NUMBER	COMMENT	NUMBER	DATE	AMOUNT	CONT
01-68050	STATE CHEMICAL MANUFACTUR	131266	FRAGRANCE PACKS	I 97777948	5/06/2016	566.30	CONT
			FRAGRANCE PACKS	001-340-510	164.70		
			FRAGRANCE PACKS	001-340-510	401.60		
01-68250	STATE TREASURER FUND: 337	131267	ANALYTICAL FEES	I 90047386	5/02/2016	1,400.00	
			ANALYTICAL FEES	001-100-604	1,400.00		
01-04665	STRODE, RAYMOND	131268	9GAMES@20.00:MAY 16,18,19 2016	I 201606029486	5/19/2016	180.00	
			9GAMES@20.00:MAY 16,18,19 2016	001-340-690	180.00		
01-04665	STRODE, RAYMOND	131269	9GAMES@20.00:MAY 23,24,26 2016	I 201606029487	5/26/2016	180.00	
			9GAMES@20.00:MAY 23,24,26 2016	001-340-690	180.00		
01-68950	SUBER, CONNIE	131270	MAY 24, 2016 MEETING	I 052416	5/24/2016	50.00	
			MAY 24, 2016 MEETING	001-180-611	50.00		
01-69095	SULLIVAN ELECTRIC	131271	SERVICE CALLS	I 583458	5/31/2016	2,925.00	
			FRP FLAG POLE	001-340-637	900.00		
			FRP WALKING TRAIL	001-340-637	720.00		
			TENNIS CENTER	001-340-637	675.00		
			REC. CENTER	001-340-637	270.00		
			TENNIS CENTER PARK	001-340-637	360.00		
01-69135	SUN BADGE CO	131272	BADGES	I 366072	5/11/2016	174.50	
			BADGES	001-100-535	163.50		
			SHIPPING	001-100-535	11.00		
01-04926	SYMBOL ARTS	131273	RPD PINS	I 0257279-IN	5/05/2016	780.00	
			RPD PINS	001-100-540	585.00		
			MOLD CHARGE	001-100-540	165.00		
			SHIPPING	001-100-540	30.00		
01-04392	TAW POWER SYSTEM	131274	FD-GENERATOR @ 4	I 26089668	5/10/2016	327.60	
			TROUBLESHOOT FEE	001-160-635	315.00		
			ENVIRONMENTAL FEE	001-160-635	12.60		
01-02274	TCS WARE INC	131275	L3 CAMERA SYSTEM	I 150622	5/11/2016	4,715.11	
			L3 CAMERA SYSTEM	005-101-730	4,690.11		
			SHIPPING	005-101-730	25.00		
01-03419	THINKWEBSTORE.COM	131276	EBLAST 6/18/16	I 4372	5/18/2016	60.00	
			EBLAST 6/18/16	001-093-604	60.00		
01-00449	TOMPKINS, RONNIE	131277	ACT TRAV: 05-30-16 - 05-31-16	I 201606029489	5/31/2016	263.27	
			ACT TRAV: 05-30-16 - 05-31-16	001-201-610	263.27		
01-71850	TRAFFIC CONTROL PRODUCTS	131278	SIGN RENTAL	I 20160224	5/09/2016	800.00	
			SIGN RENTAL	001-340-650	600.00		
			INSURANCE	001-340-650	200.00		
01-04682	TRAIL OF HONOR INC	131279	CHARITY GOLF TOURNAMENT	I 201605189381	5/17/2016	300.00	
			CHARITY GOLF TOURNAMENT	001-093-615	300.00		

VENDOR		DOCKET	*-----INVOICE-----*			
NUMBER	NAME	NUMBER	COMMENT	NUMBER	DATE	AMOUNT
01-02852	TRANSAMERICA LIFE INSURAN	131280	0B232: MAY 2016 0B232: MAY 2016	I TWM000038250198100 001-000-171	5/31/2016 97.47	97.47
01-04511	TRIAD MARTIAL ARTS INC	131281	TRAINING-M. PENN TRAINING-M. PENN	I 08042016CONF-06 001-100-681	5/10/2016 325.00	325.00
01-01739	TROPHY CASE, THE	131282	NAME PLATE REPLACEMENT NAME PLATE REPLACEMENT	I 2023 001-093-540	5/24/2016 10.00	10.00
01-02393	TYLER TECHNOLOGIES	131283	JUNE 2016 JUNE 2016	I 025-157443 400-650-604	6/01/2016 370.00	370.00
01-00920	U S A CYCLING INC	131284	RIDER SURCHARGE RIDER SURCHARGE	I 6 001-340-650	5/11/2016 1,437.75	1,437.75
01-03890	U.S. BANK EQUIPMENT FINAN	131285	797947: POLICE DEPT 797947: POLICE DEPT	I 304846561 001-100-635	5/17/2016 33.93	33.93
01-03890	U.S. BANK EQUIPMENT FINAN	131286	797947: PUBLIC WORKS 797947: PUBLIC WORKS	I 305233868 400-650-635	5/20/2016 504.68	504.68
01-00544	U.S. LAWNS OF JACKSON	131287	LAWN MAINTENANCE LAWN MAINTENANCE	I 32586 001-100-604	5/01/2016 499.00	499.00
01-00544	U.S. LAWNS OF JACKSON	131288	MONTHLY MAINTENANCE MONTHLY MAINTENANCE	I 32841 001-340-604	6/01/2016 8,165.84	8,165.84
01-00544	U.S. LAWNS OF JACKSON	131289	HARBOR DRIVE HARBOR DRIVE	I 32842 001-201-604	6/01/2016 1,017.18	1,017.18
01-00544	U.S. LAWNS OF JACKSON	131290	COUNTY LINE ROAD COUNTY LINE ROAD	I 32844 001-201-604	6/01/2016 3,778.50	3,778.50
01-00544	U.S. LAWNS OF JACKSON	131291	LAKE HARBOUR/NORTH PARK LAKE HARBOUR/NORTH PARK	I 32845 001-201-604	6/01/2016 964.41	964.41
01-00544	U.S. LAWNS OF JACKSON	131292	JACKSON STREET PARKING LOT JACKSON STREET PARKING LOT	I 32846 001-201-604	6/01/2016 825.33	825.33
01-00544	U.S. LAWNS OF JACKSON	131293	I-55 INTERCHANGE I-55 INTERCHANGE	I 32847 001-201-604	6/01/2016 7,897.91	7,897.91
01-03710	UNION AUTO PARTS	131294	P273 PARTS LOWER RADIATOR HOSE UPPER ENGINE MOUNT TORQUE BRACKET	I 657772-00 001-100-632 001-100-632 001-100-632	5/17/2016 26.50 89.28 40.10	155.88
01-75450	WALMART	131295	JANITORIAL SUPPLIES CAR WAS SOAP TIRE WET FEBREZE 2PK	I 03413 001-100-510 001-100-510 001-100-510	5/17/2016 8.00 8.00 24.70	115.82

VENDOR		DOCKET		*-----INVOICE-----*			
NUMBER	NAME	NUMBER	COMMENT	NUMBER	DATE	AMOUNT	
01-75450	WALMART	131295	JANITORIAL SUPPLIES	I 03413	5/17/2016	115.82	CONT
			FEBREZE	001-100-510	2.97		
			MR CLEAN	001-100-510	7.86		
			DISH SOAP	001-100-510	4.47		
			PINESOL	001-100-510	5.76		
			PINESOL	001-100-510	11.88		
			CLOROX WIPES	001-100-510	4.63		
			CLOROX WIPES 4PK	001-100-510	24.94		
			GLADE AIR FRESHENER	001-100-510	12.61		
01-75450	WALMART	131296	REST STOP ITEMS	I 04056	5/05/2016	226.10	
			BANANAS	001-340-650	86.40		
			DIXIE CUPS	001-340-650	21.72		
			ORANGES	001-340-650	59.64		
			GERM X WIPES	001-340-650	11.88		
			ORANGES	001-340-650	18.72		
			TIRE LEVER	001-340-650	14.80		
			CINNAMON BREAD	001-340-650	6.84		
			WHITE BREAD	001-340-650	1.48		
			WHEAT BREAD	001-340-650	1.64		
			CUPS	001-340-650	2.98		
01-75450	WALMART	131297	REPORT COVERS	I 04368	5/11/2016	20.26	
			2 PK WHITE OUT	001-201-500	4.44		
			COFFEE	001-201-540	6.97		
			REPORT COVERS	400-650-500	1.92		
			DVD -R 10 PK	404-650-500	6.93		
01-75450	WALMART	131298	REST STOP FOOD	I 05392	5/06/2016	105.04	
			PRETZELS	001-340-650	10.00		
			GUMMY BEARS	001-340-650	15.16		
			GOLD FISH	001-340-650	13.96		
			CHEESE IT	001-340-650	11.52		
			GOLD FISH	001-340-650	5.96		
			FILD FOLDERS	001-340-650	16.88		
			PICKLES	001-340-650	6.64		
			NUTTER BUTTER	001-340-650	10.68		
			OREO	001-340-650	14.24		
01-75450	WALMART	131299	SENIOR ADULT EXERCISE	I 06056	5/24/2016	114.06	
			CLOCK	001-340-540	9.88		
			AA BATTERIES	001-340-540	10.97		
			BOOM BOX	001-340-540	23.88		
			ICE CREAM	001-340-650	27.88		
			CREMES	001-340-650	15.04		
			COOKIES	001-340-650	1.48		
			COOKIES	001-340-650	3.56		
			CHEX MIX	001-340-650	3.96		
			TRAIL MIX	001-340-650	4.98		
			HERSHEY CHOCOLATE	001-340-650	2.28		
			STRAWBERRY SAUCE	001-340-650	2.28		
			PEANUTS	001-340-650	2.48		

VENDOR		DOCKET		*-----INVOICE-----*		
NUMBER	NAME	NUMBER	COMMENT	NUMBER	DATE	AMOUNT
01-75450	WALMART	131299	SENIOR ADULT EXERCISE	I 06056	5/24/2016	114.06
			BOWLS	001-340-650	2.97	CONT
			BOWLS	001-340-650	2.42	
01-75450	WALMART	131300	SNACKS FOR FBI CLASS	I 06480	5/09/2016	79.76
			MINI MUFFINS	001-100-650	22.44	
			GRANOLA BARS	001-100-650	6.98	
			GRANOLA BARS	001-100-650	4.98	
			COOKIES	001-100-650	7.48	
			COOKIES	001-100-650	5.00	
			COOKIETRAY	001-100-650	6.00	
			WATER	001-100-650	7.96	
			COKE	001-100-650	11.94	
			COKE	001-100-650	3.00	
			SPRITE	001-100-650	3.98	
01-75450	WALMART	131301	FD-TV	I 07603	5/13/2016	497.00
			TELEVISION	001-160-540	398.00	
			BLUE RAY PLAYER	001-160-540	99.00	
01-75450	WALMART	131302	USB CABLE, EXT HARD DRIVE	I 07963	5/17/2016	85.44
			8X5 X 11 FRAME	001-201-540	4.48	
			USB CABLE 10 FT	404-650-540	17.96	
			1 TB EXT HARD DRIVE	404-650-540	59.00	
			2 YR PLAN HARD DRIVE	404-650-540	4.00	
01-75450	WALMART	131303	WALMART	I 08642A	5/10/2016	269.70
			GAIN	001-160-540	9.86	
			PALMOLIVE	001-160-540	5.94	
			FEBREZE	001-160-540	14.82	
			CLOROX CLEANUP	001-160-540	8.64	
			CLOROX CLEANUP	001-160-540	4.76	
			CLOROX	001-160-540	9.94	
			LYSOL	001-160-540	21.08	
			PINE SOL	001-160-540	11.76	
			PINE SOL	001-160-540	19.76	
			BLEACH	001-160-540	11.91	
			COFFEE	001-160-540	47.64	
			BAR CHAIN OIL	001-160-540	7.94	
			MS OIL TAX	001-160-540	0.04	
			RADIAL BRUSH	001-160-540	4.74	
			BOWL BRUSH	001-160-540	3.98	
			TONG	001-160-540	8.97	
			SPONGE	001-160-540	2.96	
			CREAMER	001-160-540	3.98	
			PHONES	001-160-540	64.00	
			CANDY	001-160-540	6.98	
01-75450	WALMART	131304	HOUSEHOLD HAZARDOUS WASTE	I 09873A	5/13/2016	111.84
			BUBBLE MAILERS	001-340-540	39.52	
			FILE BOX	001-340-540	17.04	
			MUFFIN	001-340-650	27.86	

VENDOR		DOCKET		*-----INVOICE-----*		
NUMBER	NAME	NUMBER	COMMENT	NUMBER	DATE	AMOUNT
01-75450	WALMART	131304	HOUSEHOLD HAZARDOUS WASTE	I 09873A	5/13/2016	111.84
			DRINKS	001-340-650	6.98	CONT
			DRINKS	001-340-650	12.96	
			MUFFIN	001-340-650	7.48	
01-75750	WARING OIL CO	131305	FD-GENERATOR FUEL	I 001478371	5/03/2016	176.80
			DIESEL	001-160-525	93.60	
			DELIVERY	001-160-525	75.00	
			ENVIRONMENTAL TAX	001-160-525	0.18	
			FEDERAL LUS TAX	001-160-525	0.05	
			COMPLIANCE FEE	001-160-525	7.88	
			OIL SPILL TAX	001-160-525	0.09	
01-75750	WARING OIL CO	131306	FD-GENERATOR FUEL	I 001478372	5/03/2016	145.49
			DIESEL	001-160-525	62.40	
			DELIVERY	001-160-525	75.00	
			ENVIRONMENTAL TAX	001-160-525	0.12	
			FEDERAL LUS TAX	001-160-525	0.03	
			COMPLIANCE FEE	001-160-525	7.88	
			OIL SPILL TAX	001-160-525	0.06	
01-75750	WARING OIL CO	131307	FD-GENERATOR FUEL	I 001479039	5/03/2016	190.11
			DIESEL	001-160-525	104.00	
			DELIVERY	001-160-525	75.00	
			ENVIRONMENTAL TAX	001-160-525	0.20	
			FEDERAL LUS TAX	001-160-525	0.05	
			COMPLIANCE FEE	001-160-525	7.88	
			OIL SPILL TAX	001-160-525	0.10	
			MISS SPECIAL FUELS	001-160-525	2.88	
01-75900	WASTE MANAGEMENT OF MS	131308	ROLL OFF DUMPSTER	I 2764197-0078-2	5/01/2016	290.00
			ROLL OFF DUMPSTER	001-340-650	290.00	
01-75900	WASTE MANAGEMENT OF MS	131309	MAY 2016 SERVICES	I 2765735-0078-8	5/25/2016	1,447.66
			MAY 2016 SERVICES	001-340-682	1,073.58	
			MAY 2016 SERVICES	001-201-682	91.15	
			MAY 2016 SERVICES	400-650-682	91.15	
			MAY 2016 SERVICES	001-100-682	91.15	
			MAY 2016 SERVICES	001-350-682	100.63	
01-04927	WAYPOINT ANALYTICAL - MIS	131310	713 HAWTHORNE GREEN	I 1028187	5/18/2016	60.00
			CHLORINE	400-650-604	10.00	
			FECAL COLIFORM	400-650-604	25.00	
			FLUORIDE	400-650-604	25.00	
01-04946	WILLIAMS, HEZEKIAH	131311	3GAMES@10.00: MAY 16, 2016	I 201606029491	5/16/2016	30.00
			3GAMES@10.00: MAY 16, 2016	001-340-690	30.00	
01-04391	WILLOUGHBY PAINTING LLC	131312	2 BATHROOMS MEN/WOMEN	I 4413	5/18/2016	7,610.00
			2 BATHROOMS WOMEN/MEN	001-340-637	7,610.00	
01-77885	WORLD CLASS ATHLETIC SURF	131313	BULK PAINT/AEROSOL PAINT	I 44485	5/12/2016	4,680.00

VENDOR		DOCKET		*-----INVOICE-----*			
NUMBER	NAME	NUMBER	COMMENT	NUMBER	DATE	AMOUNT	
01-77885	WORLD CLASS ATHLETIC SURF	131313	BULK PAINT/AEROSOL PAINT	I 44485	5/12/2016	4,680.00	CONT
			GALLONS BULK PAINT	001-340-575	1,740.00		
			AEROSOL PAINT	001-340-575	2,800.00		
			FREIGHT	001-340-575	140.00		
01-02983	YELVERTON CONSULTING, LLC	131314	JUNE 2016 SERVICES	I 201606029493	5/31/2016	3,000.00	
			JUNE 2016 SERVICES	001-020-604	3,000.00		
						TOTAL =	723,393.43

FUND TOTALS		
FUND	NAME	TOTAL
001	GENERAL FUND	421,706.76
005	COURT SERVICES FEE FUND	6,791.96
200	G. O. BOND FUND	820.00
362	COLONY PARK BLVD	390.00
378	LAKE HARBOUR DR EXT	2,321.68
390	CITY CENTER PROJECTS	105.00
400	PUBLIC UTILITIES FUND	46,733.27
404	EMCRS OPERATION & MAINT	244,524.76
=====		
TOTALS FOR ALL FUNDS =		723,393.43

DEPT: ALL

PAYROLL NO#: 01

May 27, 2016 Payroll

*** GRAND TOTALS ***

-----EARNINGS-----			----BENF/REIMB----		-----DEDUCTIONS-----				-----TAXES-----			
DESC	HRS	AMOUNT	DESC	AMOUNT	CD	ABBV	EMPLOYEE	EMPLOYER	DESC	TAXABLE	EMPLOYEE	EMPLOYER
SAL	920.00	36,660.48	VEH	174.00	AFA	AFACC	1030.44		FED W/H	384,141.22	38,516.62	
SMON	0.00	25,586.14			AFC	AFCAN	970.58		ST WH MS	384,141.22	12,626.00	
REG	20,185.25	339,484.35			AFD	AFSHO	316.93		FICA	425,113.32	26,357.01	26357.01
R/O	30.00	486.60			AFH	AFHOS	587.50		MEDI	425,113.32	6,164.20	6164.20
O/T	288.75	5,785.29			AFS	AFSPE	276.96					
CE	37.51	0.00			ANN	ANUTY	1905.00					
COMP	56.50	956.51			B16	BKRUP	135.50					
SICK	433.50	7,838.40			C16	CHSUP	81.00					
VAC	849.50	18,088.09			C18	CHSUP	159.50					
HOL	464.50	7,463.24			C19	CHSUP	130.50					
FNRL	44.00	817.52			C27	CHSUP	92.00					
MLT	164.00	1,875.64			C32	CHSUP	225.00					
PARAM	0.00	692.31			C33	CHSUP	25.00					
SHIFT	0.00	600.00			C39	CHSUP	152.50					
YMCA	0.00	22.50			C41	CHSUP	77.50					
TRAFF	0.00	2,002.00			C42	CHSUP	147.50					
TASKF	16.00	607.52			C43	CHSUP	110.00					
TASKF	3.00	67.86			C44	CHSUP	277.50					
					C48	CHSUP	82.50					
					C49	CHSUP	62.50					
					C54	CHSUP	86.50					
					C55	CHSUP	146.00					
					C56	CHSUP	130.00					
					C57	CHSUP	75.00					
					CAF	ADMFE	122.25	144.32				
					CCF	CANCF	48.74					
					CFM	CFM	13.50	15.75				
					CHC	CHCAR	933.16					
					CO5	CHSUP	161.50					
					CRU	CRUN	6548.40					
					D08	GARNI	17.58					
					D10	GARNI	234.93					
					D15	GARNI	161.74					
					D34	GARNI	239.32					
					D35	GARNI	279.15					
					D36	GARNI	129.16					
					D37	GARNI	244.97					
					D38	GARNI	194.69					
					D39	GARNI	284.14					
					DCF	DENCF	2155.12	1239.04				
					DCM	DCM	312.06	197.05				
					DEN	DENTL		2263.40				
					DMO	DMO		28.15				
					HCF	HTHCF	12294.71	12565.15				

DEPT: ALL

PAYROLL NO#: 01

** (CONTINUED) **

DATE	ORG FN	ACCOUNT	CODE/RATE	HOURLY RATE	HOURS	AMOUNT	PROJECT
				HCM HCM	2297.64	2319.72	
				HLT HELTH		35182.42	
				HMO HMO	574.00	773.24	
				HRF HRF	192.48	300.39	
				LIF LIFE	71.38	1388.60	
				MDF YMCA	236.00		
				MDI YMCA	45.00		
				PBA POBEN	176.25		
				RET RET	39067.10	68936.26	
				UNR UNREM	3306.93		
TOTALS:		23,492.51 449,034.45		174.00	77625.31	125353.49	83,663.83 32521.21

-----DEPARTMENT RECAP-----

DEPT NO#	GROSS	REGULAR	OVERTIME	LEAVE	OTHER	BENEFITS	DEDUCTIONS	TAXES	NET
001-010	20,300.84	19,051.47	0.00	1,249.37	0.00	0.00	3,879.32	3,330.74	13,090.78
001-020	16,552.50	16,552.50	0.00	0.00	0.00	0.00	5,963.11	2,538.11	8,051.28
001-040	19,630.41	17,175.04	0.00	2,455.37	0.00	0.00	3,104.59	3,662.74	12,863.08
001-092	1,211.20	1,006.81	0.00	204.39	0.00	0.00	559.65	144.92	506.63
001-093	1,880.63	1,880.63	0.00	0.00	0.00	0.00	186.68	358.63	1,335.32
001-100	133,012.11	119,620.97	2,100.27	8,013.49	3,277.38	0.00	20,507.83	24,713.36	87,790.92
001-160	102,907.46	89,009.56	257.76	12,947.83	692.31	0.00	18,731.04	20,042.03	64,134.39
001-180	21,563.31	20,674.40	0.00	866.41	22.50	0.00	4,191.08	4,247.52	13,124.71
001-201	49,034.42	41,240.22	1,873.21	5,332.39	486.60	102.00	8,335.96	8,914.70	31,681.76
001-340	34,923.93	31,537.32	1,554.05	1,832.56	0.00	0.00	3,840.40	6,886.35	24,197.18
005-101	6,184.80	5,898.88	0.00	285.92	0.00	0.00	973.89	1,236.42	3,974.49
400-650	39,781.24	35,857.57	0.00	3,851.67	0.00	72.00	7,151.46	7,381.26	25,176.52
404-650	2,225.60	2,225.60	0.00	0.00	0.00	0.00	200.30	207.05	1,818.25

TOTALS	449,208.45	401,730.97	5,785.29	37,039.40	4,478.79	174.00	77,625.31	83,663.83	287,745.31

REGULAR INPUT: 288

MANUAL INPUT: 0

CHECK STUB COUNT: 2

DIRECT DEPOSIT STUB COUNT: 286

PACKET: 14441 Regular Payments

VENDOR SET: 01

BANK : PYBK PAYROLL RELATED DISB

May 2016 month End

VENDOR	NAME / I.D.	DESC	CHECK TYPE	CHECK DATE	DISCOUNT	AMOUNT	CHECK NO#	CHECK AMOUNT
00010	STATE TAX COMMISSION							
	I-T2 201605109238	STATE TAX WITHHOLDING	D	5/31/2016		12,410.00CR	000000	
	I-T2 201605249386	STATE TAX WITHHOLDING	D	5/31/2016		12,626.00CR	000000	25,036.00
00011	GOVT EMPL DEFERRED COMP P							
	I-ANN201605109238	ANNUITY	D	5/31/2016		805.00CR	000000	
	I-ANN201605249386	ANNUITY	D	5/31/2016		1,905.00CR	000000	2,710.00
00029	CITY OF RIDGELAND PAYROLL							
	I-RET201605109238	RETIREMENT	D	5/31/2016		105,157.39CR	000000	
	I-RET201605249386	RETIREMENT	D	5/31/2016		108,003.36CR	000000	213,160.75
00027	MISS DEPT OF HUMAN SERVICE							
	I-CO5201605109238	VARIOUS CHILD SUPP MONTHLY	R	5/31/2016		161.50CR	124837	
	I-CO5201605249386	VARIOUS CHILD SUPP MONTHLY	R	5/31/2016		161.50CR	124837	323.00

* * T O T A L S * *

	NO#	DISCOUNTS	CHECK AMT	TOTAL APPLIED
REGULAR CHECKS:	1	0.00	323.00	323.00
HANDWRITTEN CHECKS:	0	0.00	0.00	0.00
PRE-WRITE CHECKS:	0	0.00	0.00	0.00
DRAFTS:	3	0.00	240,906.75	240,906.75
VOID CHECKS:	0	0.00	0.00	0.00
NON CHECKS:	0	0.00	0.00	0.00
CORRECTIONS:	0	0.00	0.00	0.00
REGISTER TOTALS:	4	0.00	241,229.75	241,229.75

TOTAL ERRORS: 0

TOTAL WARNINGS: 0