

January 17, 2020

City of Aurora
Juliana Berry
15151 E. Alameda Pkwy
Aurora, CO 80012

Re: **Second Submission Review** – Porteos – Preliminary Plat/Site Plan and FDP (PIP) Amendment
Application Number: **DA-1903-14**
Case Numbers: **2019-6052-00**

Dear Ms. Berry:

Thank you for taking the time to review the second submission for Porteos, Preliminary Plat/Site Plan and FDP (PIP) Amendment. Valuable feedback was received from City Staff on December 26, 2019 and changes made are reflected on the following pages. The following items have been included in the resubmittal:

- ISP
- Traffic Memo
- Response to Comments Letter (including response to comments, response to ISP redlines and response to Traffic Memo redlines)

Should you have any questions or need anything else, please feel free to reach me at 303-892-1166 or lvielehr@norris-design.com

Sincerely,
Norris Design



Leanne Vielehr
Senior Associate

Second Submission Review

SUMMARY OF KEY COMMENTS FROM ALL DEPARTMENTS

Previous Comments:

- Revise Site Plan Notes throughout (see Items 2 and 4)
Response: Site Plan Notes have been revised per comments.
- Public Works/Civil Engineering cannot approve the Site Plan until the Preliminary Drainage Report is approved (see Item 4)
Response: Acknowledged, Preliminary Drainage Report is currently under review.
- Adjust Sheets 8 and 15 of the Site Plan to accurately illustrate the proposed or existing Porteos FDP trail(s) (see Item 6)
Response: Ramp for trail crossing has been added and the following label has been added to Sheet 15: "Future FDP Trail Connection (exact trail alignment will be determined at time of CSP)".
- Dedicate any additional Right of Way or easements by separate document (see Item 8)
Response: Acknowledged. Working with Andy Niquette to submit easement/ROW package.
- Respond to all additional redline comments on the Site Plan
Response: Response to redlines have been attached to the end of this letter.

New Comments:

- Respond to comments received from outside agencies- direct communication with Denver International Airport is recommended (see Item 1)
Response: Comment noted, thank you.
- Adjust the plant material shown and counted (see Item 3)
Response: Plant counts within the required tables now match the plant counts within the plant schedule.
- Conform with required slopes, and allow for proper detention pond maintenance access (see Item 4)
Response: Slope labels and maintenance access have been added and labeled on both the site plan and landscape plans.
- Revise the plan set to provide required turn lanes and match street geometries in all relevant submitted documents (see Item 5)
Response: Plan set has been revised, please see Item 5 below.
- Ensure that the 15" sanitary sewer alignment shown reflects the PIP (see Item 7)
Response: Sanitary sewer has been extended per comment on plans.

PLANNING DEPARTMENT COMMENTS

1. Community Questions, Comments, and Concerns

1A. Received from outside agencies:

- Name: Chuck Weiss (cweiss@E-470.com)
Organization: E-470 Public Highway Authority, 1123 West 3rd Avenue, Denver CO 80223
Comment: At this time E-470 Public Highway Authority has No Comments as this is just outside of the ½ mile E-470 Corridor.

Response: Comment noted, thank you.

- Name: Tim Hester (tim.hester@flydenver.com)
Organization: Denver International Airport, Planning & Design, 8500 Pena Boulevard, Denver CO 80249
Comment: Please communicate directly with DIA for the below comments
-The site is found within/under the navigable airspace associated with DEN, as promulgated and regulated by the Federal Aviation Administration (FAA) under 14 CFR Part 77, Objects Affecting the Navigable Airspace. Based on Part 77 and the development site location, the proponent is required to file notice with the FAA, via the FAA Form 7460-1 process (Notice of Proposed Construction or Alteration), of any structure or temporary construction equipment (e.g., cranes) that penetrate Part 77 surfaces. The FAA website from which the need for the 7460 process can be determined ("Notice Criteria Tool") and/or the filing can be initiated is: <https://oeaaa.faa.gov/oeaaa/external/portal.jsp>.

Response: Acknowledged.

-The proposed improvements fall completely within the DEN 10,000' Critical Space separation criteria for the final build-out of proposed Runway 7R/25L (the northern most border of the planned development will be within 1/2 mile of the runway centerline). Currently, the landscape plan calls for nearly 400 trees and 3,500 shrubs within a landscape area of 135,600 sq.ft. The USDA wildlife biologists assigned to DEN manage DEN's Wildlife Hazard Management Plan and request coordination as this project progresses and will provide assistance with the requirements outlined in the current version of FAA Advisory Circular 150/5200-33 (see attached). DEN also requests that the landscape plan include maintenance of trees and grasses to reduce attractants for wildlife such as raptor species, blackbirds/starlings, and geese. Additionally, fruit-producing trees and shrubs should be avoided. Please see attached Hazardous Wildlife Attractants memo

Response: The plant schedule has been reviewed and the Thornless Cockspur Hawthorn tree has been replaced with Frans Fontaine Hornbeam.

- Porteos ISP Traffic Analysis (Jackson Gap) Study
 - Clarification request: How was the 15% heavy vehicle percentage determined? Should this be higher, considering the heavy amount of freight usage in the corridor?
Response: The 15% heavy vehicle percentage is consistent with numerous other traffic studies in the area and has been approved by City of Aurora. Industrial type sites usually experience heavy vehicle percentages in the 25-30 range, however there are many non-industrial uses planned along this corridor that will dilute this percentage down. We believe that 15% is a reasonable expectation for the corridor.

- Was there a signal warrant analysis performed for 2025 and 2040? If so, what are the results?"

Response: Signal warrant analysis was not explicitly performed for the ISP however it has been performed for many of these intersections through Traffic Impact Studies for nearby developments that indicate signalization will be warranted at all but Jackson Gap St/60th Ave.

- Name: Donna George (donna.l.george@xcelenergy.com)
Organization: Public Service Company of Colorado dba Xcel Energy, 1123 West 3rd Avenue, Denver CO 80223
Comment: Please see attached letter.
Response: Please see comment number 9 for response.

2. Completeness and Clarity of the Application

2A. Remove Notes on Sheet Number 1 that are unrelated to this application.

Response: Unrelated notes have been removed.

2B. As a reminder, the City has developed CAD Data Submittal Standards for internal and external use to streamline the process of importing AutoCAD information into the city's Enterprise GIS. Please note that a digital submission meeting the CAD Data Submittal Standards is required before your final Site Plan mylars can be routed for signatures or recorded. Please review the CAD Data Submittal Standards, including templates and required layer file labeling, at <http://tinyurl.com/AuroraCAD>. Email your Case Manager the appropriate Site Plan file before submitting your final Site Plan mylars. Once received, the City's AutoCAD Operator will run an audit report and your Case Manager will let you know whether the file meets or does not meet the City's CAD Data Submittal Standards. Please email CADGIS@auroragov.org for questions or more detailed instructions.

Response: Acknowledged. CAD files will be submitted.

3. **Landscaping Issues** (Kelly Bish / 303-739-7189 / kbish@auroragov.org / Comments in bright teal)

Sheet 10

3A. Provide the required street trees along E. 56th Avenue- the tree count is off by 20 trees. Adjust the street tree layout accordingly.

Response: Per an email conversation with Kelly Bish, ornamental trees can be counted towards required tree counts, required tree counts have been met along E. 56th Avenue.

3B. The total number of shrubs provided exceeds the total number of shrubs/grasses provided in the actual plant schedule- correct this disparity.

Response: The total number of shrubs provided in the table now matches the total number of shrubs/grasses provided in plant schedule.

Sheet 11

3C. The total number of grasses highlighted represents 62% of the plant material, and grasses can only make up 40% of the total.

Response: Grass counts have been reduced to achieve the 40% maximum.

REFERRAL COMMENTS FROM OTHER DEPARTMENTS AND AGENCIES

4. **Civil Engineering** (Kristin Tanabe / 303-739-7306 / ktanabe@auroragov.org / Comments in green)

4A. Public Works cannot approve this Site Plan until the Preliminary Drainage Report is approved.

Response: Acknowledged, Preliminary Drainage Report is currently under review.

4B. Please remove AutoCAD SHX text items in the Comment section, and flatten to reduce the select-ability of these items.

Response: SHX text items have been removed from plan sheets.

Sheet 1

4C. Add the following Site Plan Note: "The streetlight or pedestrian light installation within the public right-of-way shall be designed, funded, and constructed by the developer/owner. Ownership and maintenance of the street/pedestrian lights shall be the responsibility of the City of Aurora once they have been accepted. Street light and/or pedestrian photometrics plans shall be prepared and submitted to the City for review and approval and shall become a part of the approved civil construction plans for the project. An electrical plan showing site location of lights, electrical one line and grounding details shall be submitting to the Permit Center for review by the Building Department. The owner is responsible for obtaining an address for the meter(s) from the Planning Department. A Building Permit for the meter and a Public Inspections Permit for the street lights are required. Certificate of occupancies will not be issued until the street and/or pedestrian lighting plans are approved, constructed, and initially accepted."

Response: The above note has been added to the Cover Sheet per the comment.

Sheet 5

4D. Conform with the minimum required 2% slope for the proposed meandering swale at the north side of E. 56th Avenue, or provide an underdrain and show/label it.

Response: Swale meets minimum 2% slope requirements. Slope labels have been added to plans.

Sheets 5, 22, and 23

4E. Show maintenance access to the top of the outlet structure for the detention ponds; access from any street ROW requires mountable curbs and an all-weather drivable surface. Label appropriately, as well as the 100-year water surface elevation and direction of emergency overflow, including on all pertinent landscape sheets.

Response: Maintenance access has been added and labeled on plans. 100-year water surface elevation has also been shown and labeled on landscape plans.

5. Traffic Engineering (Brianna Medema / 303-739-7336 / bmedema@auroragov.org / Comments in orange)

Site Plan

Sheet 5

5A. An auxiliary right turn lane is needed at the intersection of E. 56th Avenue and Harvest Road; see the redline comment for more information.

Response: A right turn lane has been added per comment.

Sheet 6

5B. A south-bound right turn lane is required at Jackson Gap Way by E. 56th Avenue.

Response: Right turn lane has been labeled and que length confirmed.

Sheet 8

5C. Ensure that the highlighted geometry matches the Traffic Memo or vice versa, per the redline comment.

Response: Traffic memo has been updated to match plans.

Sheet 9

5D. Illustrate all of the completed street sections on Jackson Gap Street by E. 68th Avenue, and add turning templates for the intersection to prove that there are no conflicts associated with the left turns (or provide mitigation for conflicts).

Response: Intersection has been designed to meet traffic requirements. Striping for interim and ultimate condition will be submitted with the Civil Plan Set.

5E. Provide turn lanes by the intersection of E. 64th Avenue and Jackson Gap Street per the redline comments.

Sheet 23

Response: Right turn lane has been labeled and que length confirmed to match comment.

5F. Adjust the landscape along E. 56th Avenue to account for the required right turn lane.

Response: Landscape has been adjusted along E. 56th Avenue to account for required turn lane.

Traffic Memo

Pages 1 and 3

5G. Ensure that the geometry of Jackson Gap Street and Jackson Gap Way match the site plan at the next submission, including identification of Jackson Gap Street as a 4-lane collector between E. 56th and 60th Avenues.

Response: Acknowledged.

Pages 1, 5, and 9

5H. Update the recommended storage length column in Table 1 to match the listed recommendations.

Response: Acknowledged

6. **Parks** (Chris Ricciardiello / 303-739-7154 / cricciar@auroragov.org / Comments in purple)
Sheets 8 and 15

6A. The Porteos FDP shows an open space network trail (10'-wide concrete trail, with a 3'-wide soft surface trail immediately abutting) associated with the drainage channel and crossing in the highlighted area. Adjust the proposed grading and streetscape accordingly to accommodate the trail connection points to the Jackson Gap Street sidewalk. Refer to the redline comment for more questions on this issue.

Response: Ramp for trail crossing has been added and the following label has been added to Sheet 15: "Future FDP Trail Connection (exact trail alignment will be determined at time of CSP)".

7. **Aurora Water** (Daniel Pershing / 303-739-7646 / ddpershi@auroragov.org / Comments in red)
Sheet 5

7A. Realign the maintenance path to provide access to the outfall structure.

Response: Maintenance path has been added to the plans per comment.

Sheet 7

7B. Show the 15" sanitary alignment extending to the west per the redline comment and in accordance with the PIP.

Response: Sanitary sewer has been extended per comment.

8. **Easements** (Andy Niquette / 303-739-7325 / aniquett@auroragov.org / Comments in magenta)

8A. Dedicate any additional Right of Way or easements by separate document. Contact Andy Niquette at 303-739-7325 to start the process, if necessary.

Response: Acknowledged. Working with Andy Niquette to submit easement/ROW package.

9. **Xcel Energy** (Donna George / 303-571-3306 / donna.l.george@xcelenergy.com)

Public Service Company of Colorado's (PSCo) Right of Way & Permits Referral Desk has reviewed the plans for the above captioned project. Please be aware PSCo owns and operates existing natural gas and electric distribution facilities along the easterly side of Jackson Gap Street and Jackson Gap Way including a switch cabinet north of East 64th Avenue, and, natural gas and electric distribution facilities along East 68th Avenue. Should the project require any modification to existing facilities, the property owner/developer/contractor must complete the application process via xcelenergy.com/InstallAndConnect.

Response: Acknowledged.

BEGINNING AT A POINT WHERE NORTHING IS 725042.8922 AND WHOSE EASTING
 IS 227744.2962;
 1. HENCE SOUTH 89° 40'00" EAST, A DISTANCE OF 26.00 FEET, TO A POINT ON A
 CURVE;
 2. HENCE ALONG THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF 20.00
 FEET, A CENTRAL ANGLE OF 90° 00'00", AN ARC LENGTH OF 31.42 FEET, THE
 CHORD OF WHICH BEARS SOUTH 44° 40'00" EAST, 28.28 FEET;
 3. HENCE SOUTH 00° 19'51" WEST, A DISTANCE OF 68.07 FEET, TO A POINT ON A
 CURVE;
 4. HENCE ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 792.00
 FEET, A CENTRAL ANGLE OF 59° 20'35", AN ARC LENGTH OF 820.30 FEET, THE
 CHORD OF WHICH BEARS SOUTH 29° 22'27" EAST, 784.12 FEET;
 5. HENCE NORTH 59° 00'45" EAST, A DISTANCE OF 294.80 FEET, TO A POINT ON A
 CURVE;
 6. HENCE ALONG THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF
 108.00 FEET, A CENTRAL ANGLE OF 59° 13'35", AN ARC LENGTH OF 731.86 FEET,
 THE CHORD OF WHICH BEARS SOUTH 29° 22'27" EAST, 784.12 FEET;
 7. HENCE NORTH 00° 12'50" WEST, A DISTANCE OF 46.46 FEET;
 8. HENCE NORTH 89° 47'10" WEST, A DISTANCE OF 61.00 FEET;
 9. HENCE NORTH 05° 50'21" WEST, A DISTANCE OF 72.34 FEET, TO A POINT ON A
 CURVE;
 10. HENCE ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 25.00
 FEET, A CENTRAL ANGLE OF 90° 00'00", AN ARC LENGTH OF 39.27 FEET, THE
 CHORD OF WHICH BEARS NORTH 45° 12'50" EAST, 35.35 FEET;
 11. HENCE NORTH 00° 12'50" EAST, A DISTANCE OF 102.51 FEET;
 12. HENCE NORTH 05° 24'07" EAST, A DISTANCE OF 21.14 FEET;
 13. HENCE NORTH 02° 01'57" EAST, A DISTANCE OF 78.91 FEET, TO A POINT ON A
 CURVE.

CONTAINING A CALCULATED AREA OF 72275 SQUARE FEET OR 1.659 ACRES,
MORE OR LESS.

CONTAINING A CALCULATED AREA OF 25466 SQUARE FEET OR 0.585 ACRES,
MORE OR LESS.

BEGINNING AT A POINT WHOSE NORTHING IS 752001.12801 AND WHOSE EASTING
 IS 222889.8618. TO A POINT ON A CURVE.
 HENCE ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 682.85
 FEET, A CENTRAL ANGLE OF 06°37'17", AN ARC LENGTH OF 78.91 FEET, THE
 CHORD OF WHICH BEARS NORTH 25°12'51" WEST, 78.87 FEET, TO A POINT ON A
 CURVE.
 HENCE ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 696.00
 FEET, A CENTRAL ANGLE OF 17°56'09", AN ARC LENGTH OF 217.87 FEET, THE
 CHORD OF WHICH BEARS NORTH 35°54'30" WEST, 116.69 FEET ;
 HENCE NORTH 44°52'35" EAST, A DISTANCE OF 214.63 FEET, TO A POINT ON A
 CURVE.
 HENCE ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 20.00
 FEET, A CENTRAL ANGLE OF 90°00'00", AN ARC LENGTH OF 31.42 FEET, THE
 CHORD OF WHICH BEARS NORTH 18°52'35" WEST, 28.28 FEET ;
 HENCE NORTH 45°07'25" EAST, A DISTANCE OF 7.00 FEET, TO A POINT ON A
 CURVE.
 HENCE ALONG THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF 20.00
 FEET, A CENTRAL ANGLE OF 90°00'00", AN ARC LENGTH OF 31.42 FEET, THE
 CHORD OF WHICH BEARS NORTH 45°07'25" EAST, 28.28 FEET ;
 HENCE NORTH 44°52'35" EAST, A DISTANCE OF 14.62 FEET, TO A POINT ON A
 CURVE.
 HENCE ALONG THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF
 695.40 FEET, A CENTRAL ANGLE OF 06°07'06"99", AN ARC LENGTH OF 87.62 FEET, THE
 CHORD OF WHICH BEARS SOUTH 47°18'46" EAST, 87.56 FEET, TO A POINT ON A
 CURVE.
 HENCE ALONG THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF
 695.40 FEET, A CENTRAL ANGLE OF 17°17'48", AN ARC LENGTH OF 211.33 FEET,
 THE CHORD OF WHICH BEARS SOUTH 27°36'15" EAST, 211.33 FEET, TO THE POINT
 OF BEGINNING.

CONTAINING A CALCULATED AREA OF 2647 SQUARE FEET OR 0.061 ACRES, MORE OR LESS.

BEGINNING AT A POINT WHOSE NORTHING IS 717246.0111 AND WHOSE EASTING
 IS 229045.5923 ;
 THENCE NORTH 00° 37'51" WEST, A DISTANCE OF 141.53 FEET ;
 THENCE NORTH 03° 11'00" EAST, A DISTANCE OF 210.47 FEET ;
 THENCE NORTH 00° 37'51" WEST, A DISTANCE OF 853.92 FEET ;
 THENCE NORTH 01° 16'42" EAST, A DISTANCE OF 45.05 FEET ;
 THENCE SOUTH 00° 37'51" EAST, A DISTANCE OF 223.07 FEET ;
 THENCE SOUTH 05° 54'02" EAST, A DISTANCE OF 963.87 FEET ;
 THENCE SOUTH 07° 37'51" EAST, A DISTANCE OF 931.07 FEET, TO A POINT ON A
 CURVE,
 THENCE ALONG THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF 25.00
 FEET, A CENTRAL ANGLE OF 92° 32'02", AN ARC LENGTH OF 40.38 FEET, THE
 CHORD OF WHICH BEARS SOUTH 44° 47'30" WEST, 36.13 FEET ;
 THENCE NORTH 89° 47'10" WEST, A DISTANCE OF 20.64 FEET, TO A POINT ON A
 CURVE,
 THENCE ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 25.00
 FEET, A CENTRAL ANGLE OF 90° 50'41", AN ARC LENGTH OF 39.64 FEET, THE
 CHORD OF WHICH BEARS NORTH 44° 47'30" EAST, 35.61 FEET, TO THE POINT OF
 BEGINNING,
 CONTAINING A CALCULATED AREA OF 11217 SQUARE FEET OR 0.258 ACRES,
 MORE OR LESS.

CONTAINING A CALCULATED AREA OF 1773 SQUARE FEET OR 0.041 ACRES, MORE OR LESS.

S272825.2994, TO A POINT ON A CURVE;
 THENCE ALONG THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF 25.00 FEET, A CENTRAL ANGLE OF 78°29'44", AN ARC LENGTH OF 34.25 FEET, THE CHORD OF WHICH BEARS SOUTH 38°55'01" EAST, 31.63 FEET;
 THENCE SOUTH 00°19'51" WEST, A DISTANCE OF 682.04 FEET, TO A POINT ON A CURVE;
 THENCE ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 813.00 FEET, A CENTRAL ANGLE OF 59°20'35", AN ARC LENGTH OF 842.05 FEET, THE CHORD OF WHICH BEARS SOUTH 19°20'27" EAST, 804.91 FEET;
 THENCE SOUTH 59°00'45" EAST, A DISTANCE OF 294.80 FEET, TO A POINT ON A CURVE;
 THENCE ALONG THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF 57'887.00 FEET, A CENTRAL ANGLE OF 57°17'01", AN ARC LENGTH OF 686.85 FEET, THE CHORD OF WHICH BEARS SOUTH 57°17'01" EAST, 686.85 FEET;
 THENCE SOUTH 02°01'57" WEST, A DISTANCE OF 78.91 FEET;
 THENCE SOUTH 05°24'07" WEST, A DISTANCE OF 211.24 FEET;
 THENCE SOUTH 00°12'50" WEST, A DISTANCE OF 102.51 FEET, TO A POINT ON A CURVE;
 THENCE ALONG THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF 25.00 FEET, A CENTRAL ANGLE OF 53°57'45", AN ARC LENGTH OF 23.55 FEET, THE CHORD OF WHICH BEARS SOUTH 27°14'42" WEST, 22.68 FEET;
 THENCE NORTH 00°40'41" WEST, A DISTANCE OF 122.65 FEET;
 THENCE NORTH 04°18'18" EAST, A DISTANCE OF 288.59 FEET, TO A POINT ON A CURVE;
 THENCE ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 602.81 FEET, A CENTRAL ANGLE OF 21°37'51", AN ARC LENGTH OF 227.58 FEET, THE CHORD OF WHICH BEARS NORTH 10°21'50" WEST, 226.25 FEET, TO A POINT ON A CURVE;

FEET, A CENTRAL ANGLE OF 26°13'34", AN ARC LENGTH OF 448.93 FEET, THE
 CHORD OF WHICH BEARS NORTH 38°55'22" WEST, 445.02 FEET.
 THENCE NORTH 63°17'30" WEST, A DISTANCE OF 10.00 FEET.
 THENCE NORTH 56°21'18" WEST, A DISTANCE OF 40.79 FEET.
 THENCE NORTH 63°45'27" WEST, A DISTANCE OF 75.48 FEET.
 THENCE NORTH 54°31'55" WEST, A DISTANCE OF 75.26 FEET, TO A POINT ON A
 CURVE.
 THENCE ALONG THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF
 807.66 FEET, A CENTRAL ANGLE OF 19°51'56", AN ARC LENGTH OF 314.70 FEET,
 THE CHORD OF WHICH BEARS NORTH 56°36'39" WEST, 313.13 FEET, TO A POINT
 ON A CURVE.
 THENCE ALONG THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF
 270.33 FEET, A CENTRAL ANGLE OF 15°13'44", AN ARC LENGTH OF 337.65 FEET,
 THE CHORD OF WHICH BEARS NORTH 32°33'15" WEST, 336.66 FEET.
 THENCE NORTH 39°12'36" EAST, A DISTANCE OF 18.60 FEET, TO A POINT ON A
 CURVE.

BEGINNING AT A POINT WHOSE NORTHING IS 722340.3971 HAVING AND WHOSE EASTING
 IS 228353.005, TO A POINT ON A CURVE;
 HENCE ALONG THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF 25.00
 FEET, A CENTRAL ANGLE OF 79°31'20", AN ARC LENGTH OF 12.57 FEET, THE
 THOR OF WHICH BEARS SOUTH 14°11'18" EAST, 12.44 FEET;
 HENCE SOUTH 00°12'50" WEST, A DISTANCE OF 91.55 FEET;
 HENCE SOUTH 01°59'10" WEST, A DISTANCE OF 600.40 FEET;
 HENCE SOUTHWEST 00°01'29" WEST, A DISTANCE OF 896.45 FEET;
 HENCE SOUTH 01°41'44" EAST, A DISTANCE OF 210.09 FEET;
 HENCE SOUTH 00°12'50" WEST, A DISTANCE OF 702.10 FEET, TO A POINT ON A
 CURVE;
 HENCE ALONG THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF 20.00
 FEET, A CENTRAL ANGLE OF 79°32'19", AN ARC LENGTH OF 27.76 FEET, THE
 THOR OF WHICH BEARS SOUTH 39°58'59" WEST, 25.59 FEET;
 HENCE NORTH 00°55'16" WEST, A DISTANCE OF 116.97 FEET;
 HENCE NORTH 02°21'31" EAST, A DISTANCE OF 263.06 FEET;
 HENCE NORTH 00°31'11" WEST, A DISTANCE OF 906.51 FEET;
 HENCE NORTH 02°59'57" WEST, A DISTANCE OF 475.76 FEET;
 HENCE NORTH 00°48'28" WEST, A DISTANCE OF 26.87 FEET;
 HENCE NORTH 00°52'07" EAST, A DISTANCE OF 831.66 FEET;
 HENCE NORTH 03°08'58" WEST, A DISTANCE OF 49.85 FEET;
 HENCE NORTH 07°04'40" WEST, A DISTANCE OF 30.40 FEET;
 HENCE NORTH 25°18'06" WEST, A DISTANCE OF 22.86 FEET;
 HENCE NORTH 37°01'20" EAST, A DISTANCE OF 42.50 FEET;
 HENCE NORTH 43°57'17" WEST, A DISTANCE OF 23.67 FEET;
 HENCE NORTH 34°40'08" EAST, A DISTANCE OF 14.25 FEET;
 HENCE NORTH 37°50'48" WEST, A DISTANCE OF 31.41 FEET;
 HENCE NORTH 22°38'13" EAST, A DISTANCE OF 27.31 FEET;
 HENCE NORTH 05°54'30" WEST, A DISTANCE OF 50.17 FEET;
 HENCE NORTH 00°21'09" EAST, A DISTANCE OF 276.05 FEET;
 HENCE NORTH 01°59'57" WEST, A DISTANCE OF 902.52 FEET, TO A POINT OF
 BEGINNING,

CONTAINING A CALCULATED AREA OF 47802 SQUARE FEET OR 1.097 ACRES,
MORE OR LESS.

BEGINNING AT A POINT WHOSE NORTHING IS 7201.47 AND WHOSE EASTING
 228016.3891 ;
 HENCE NORTH $34^{\circ}03'02''$ WEST, A DISTANCE OF 20.17 FEET ;
 HENCE SOUTH $89^{\circ}02'05''$ WEST, A DISTANCE OF 18.17 FEET, TO A POINT ON A
 CURVE ;
 HENCE ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 856.85
 FEET, A CENTRAL ANGLE OF $08^{\circ}25'17''$, AN ARC LENGTH OF 126.07 FEET, THE
 THORN OF WHICH BEARS NORTH $40^{\circ}45'56''$ WEST, 125.94 FEET ;
 HENCE NORTH $44^{\circ}58'30''$ WEST, A DISTANCE OF 102.20 FEET ;
 HENCE NORTH $24^{\circ}23'55''$ WEST, A DISTANCE OF 38.81 FEET, TO A POINT ON A
 CURVE ;
 HENCE ALONG THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF 200.00
 FEET, A CENTRAL ANGLE OF $32^{\circ}43'54''$, AN ARC LENGTH OF 11.43 FEET, THE
 THORN OF WHICH BEARS SOUTH $61^{\circ}14'32''$ EAST, 11.27 FEET ;
 HENCE SOUTH $44^{\circ}52'35''$ EAST, A DISTANCE OF 145.63 FEET, TO A POINT ON A
 CURVE ;
 HENCE ALONG THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF
 106.00 FEET, A CENTRAL ANGLE OF $17^{\circ}56'09''$, AN ARC LENGTH OF 21.87 FEET, THE
 THORN OF WHICH BEARS SOUTH $53^{\circ}45'34''$ EAST, 216.99 FEET, TO A POINT ON
 A CURVE ;
 HENCE ALONG THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF
 82.825 FEET, A CENTRAL ANGLE OF $06^{\circ}37'17''$, AN ARC LENGTH OF 78.91 FEET, THE
 THORN OF WHICH BEARS SOUTH $25^{\circ}12'51''$ EAST, 78.87 FEET, TO A POINT ON A
 CURVE ;
 HENCE ALONG THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF
 100.07 FEET, A CENTRAL ANGLE OF $02^{\circ}04'08''$, AN ARC LENGTH OF 25.28 FEET, THE
 THORN OF WHICH BEARS SOUTH $18^{\circ}09'18''$ EAST, 25.28 FEET, TO A POINT ON A
 CURVE ;
 HENCE ALONG THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF
 397.50 FEET, A CENTRAL ANGLE OF $10^{\circ}09'58''$, AN ARC LENGTH OF 123.76 FEET,
 THE THORN OF WHICH BEARS SOUTH $13^{\circ}17'52''$ EAST, 123.60 FEET, TO A POINT ON
 A CURVE ;
 HENCE ALONG THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF 20.00
 FEET, A CENTRAL ANGLE OF $58^{\circ}06'07''$, AN ARC LENGTH OF 20.28 FEET, THE
 THORN OF WHICH BEARS SOUTH $20^{\circ}51'07''$ WEST, 19.42 FEET, TO A POINT ON A
 CURVE ;
 HENCE ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 515.92
 FEET, A CENTRAL ANGLE OF $18^{\circ}22'16''$, AN ARC LENGTH OF 165.42 FEET, THE
 THORN OF WHICH BEARS NORTH $16^{\circ}23'08''$ WEST, 164.72 FEET, TO A POINT ON A
 CURVE ;
 HENCE ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 531.69
 FEET, A CENTRAL ANGLE OF $08^{\circ}04'23''$, AN ARC LENGTH OF 74.92 FEET, THE
 THORN OF WHICH BEARS NORTH $24^{\circ}55'40''$ WEST, 74.85 FEET, TO A POINT ON A
 CURVE ;
 HENCE ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 679.00
 FEET, A CENTRAL ANGLE OF $04^{\circ}43'19''$, AN ARC LENGTH OF 55.96 FEET, THE
 BEGINNING AT A POINT WHOSE NORTHING IS 719761.3554 AND WHOSE EASTING
 229024.0637, TO A POINT ON A CURVE ;
 HENCE ALONG THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF 200.00
 FEET, A CENTRAL ANGLE OF $37^{\circ}47'17''$, AN ARC LENGTH OF 20.17 FEET, THE
 THORN OF WHICH BEARS NORTH $40^{\circ}45'56''$ WEST, 125.94 FEET ;
 HENCE NORTH $40^{\circ}45'56''$ WEST, A DISTANCE OF 102.20 FEET ;
 HENCE NORTH $00^{\circ}57'51''$ EAST, A DISTANCE OF 660.46 FEET ;
 HENCE NORTH $00^{\circ}34'46''$ WEST, A DISTANCE OF 150.72 FEET ;
 HENCE NORTH $01^{\circ}34'46''$ WEST, A DISTANCE OF 100.60 FEET ;
 HENCE NORTH $01^{\circ}33'12''$ WEST, A DISTANCE OF 100.60 FEET ;
 HENCE NORTH $01^{\circ}38'24''$ WEST, A DISTANCE OF 250.61 FEET, TO THE POINT OF
 BEGINNING.

CONTAINING A CALCULATED AREA OF 2517 SQUARE FEET OR 0.058 ACRES, MORE OR LESS.

BEGINNING AT A POINT WHOSE NORTHING IS 8171223.3748 AND WHOSE EASTING IS 2828310.9031;
 THENCE NORTH 04°25'22" WEST, A DISTANCE OF 15.27 FEET;
 THENCE NORTH 45°37'36" EAST, A DISTANCE OF 35.40 FEET;
 THENCE NORTH 00°12'50" EAST, A DISTANCE OF 140.69 FEET;
 THENCE NORTH 01°08'53" EAST, A DISTANCE OF 636.28 FEET;
 THENCE NORTH 00°12'50" EAST, A DISTANCE OF 140.69 FEET;
 THENCE NORTH 00°50'15" EAST, A DISTANCE OF 179.48 FEET;
 THENCE NORTH 00°12'50" EAST, A DISTANCE OF 326.79 FEET;
 THENCE NORTH 01°49'13" WEST, A DISTANCE OF 273.35 FEET;
 THENCE NORTH 08°48'32" WEST, A DISTANCE OF 209.27 FEET;
 THENCE NORTH 08°41'28" WEST, A DISTANCE OF 209.27 FEET;
 THENCE NORTH 18°44'41" WEST, A DISTANCE OF 22.24 FEET;
 THENCE NORTH 00°58'12" EAST, A DISTANCE OF 28.96 FEET;
 THENCE NORTH 07°05'12" EAST, A DISTANCE OF 35.38 FEET, TO A POINT ON A CURVE,
 THENCE ALONG THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF 20.00 FEET, A CENTRAL ANGLE OF 51°07'37", AN ARC LENGTH OF 17.85 FEET, THE CHORD OF WHICH BEARS SOUTH 15°29'58" EAST, 17.26 FEET;
 THENCE NORTH 00°12'50" WEST, A DISTANCE OF 2459.64 FEET, TO A POINT ON A CURVE,
 THENCE ALONG THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF 25.00 FEET, A CENTRAL ANGLE OF 90°00'00", AN ARC LENGTH OF 39.27 FEET, THE CHORD OF WHICH BEARS SOUTH 45°19'50" WEST, 35.56 FEET;
 THENCE NORTH 89°49'57" WEST, A DISTANCE OF 12.59 FEET, TO THE POINT OF BEGINNING.

CONTAINING A CALCULATED AREA OF 16641 SQUARE FEET OR 0.382 ACRES,
MORE OR LESS.

BEGINNING AT A POINT WHERE NORTH IS 7183.347988 AND WHOSE EASTING IS
 IS 229043.7015 ;
 THENCE NORTH 00°10'38" EAST, A DISTANCE OF 116.853 FEET ;
 THENCE NORTH 01°45'58" EAST, A DISTANCE OF 89.87 FEET ;
 THENCE SOUTH 00°37'51" EAST, A DISTANCE OF 44.88 FEET ;
 THENCE NORTH 01°16'42" WEST, A DISTANCE OF 45.05 FEET ;
 THENCE SOUTH 00°37'51" EAST, A DISTANCE OF 116.853 FEET ;
 THENCE SOUTH 03°11'00" WEST, A DISTANCE OF 210.47 FEET ;
 THENCE SOUTH 00°37'51" EAST, A DISTANCE OF 141.53 FEET, TO A POINT ON A
 CURVE
 THENCE ALONG THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF 25.00
 FEET, A CENTRAL ANGLE OF 38°29'00", AN ARC LENGTH OF 16.79 FEET, THE
 CHORD OF WHICH BEARS SOUTH 18°36'40" WEST, 16.48 FEET ;
 THENCE NORTH 03°53'17" WEST, A DISTANCE OF 119.24 FEET ;
 THENCE NORTH 00°31'57" WEST, A DISTANCE OF 119.24 FEET ;
 THENCE NORTH 02°28'30" EAST, A DISTANCE OF 465.53 FEET ;
 THENCE NORTH 00°18'23" WEST, A DISTANCE OF 207.88 FEET
 THENCE NORTH 01°24'06" WEST, A DISTANCE OF 154.68 FEET, TO THE POINT OF
 BEGINNING.

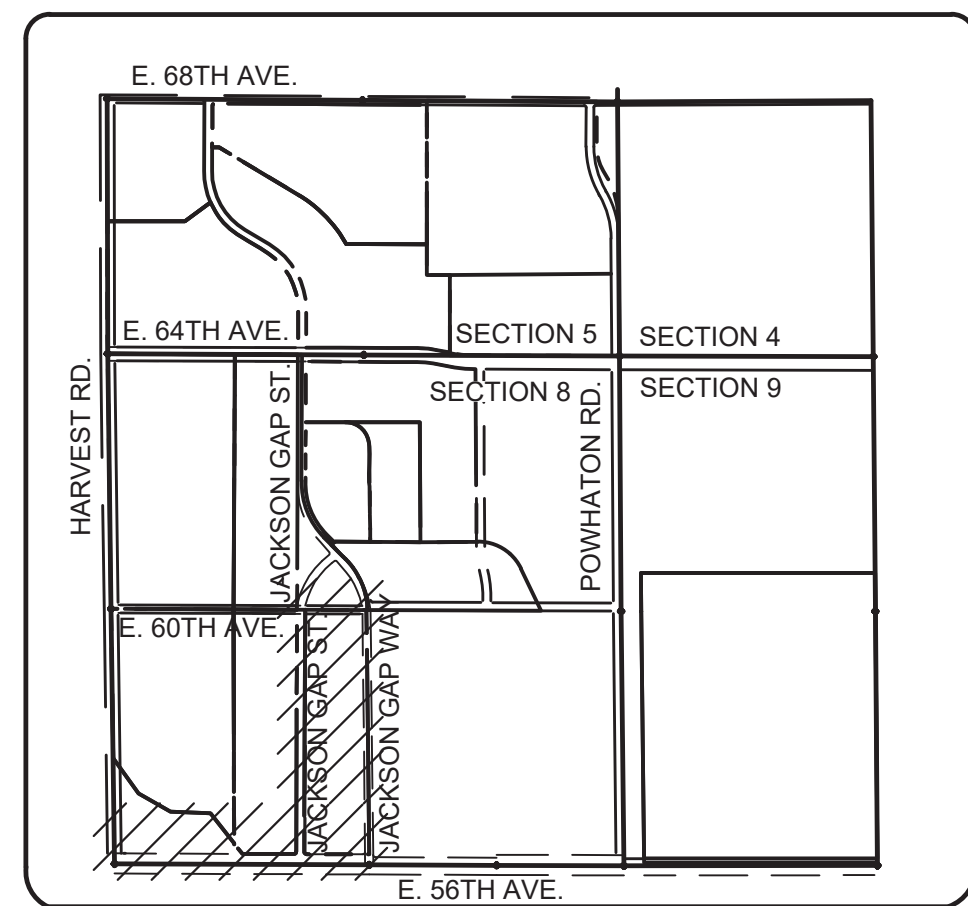
CONTAINING A CALCULATED AREA OF 12150 SQUARE FEET OR 0.279 ACRES,
MORE OR LESS.

BEGINNING AT A POINT WHOSE NORTING IS 717226.6149 AND WHOSE EASTING IS
 227245.6709 ;
 THENCE NORTH 85°42'16" EAST, A DISTANCE OF 7.21 FEET ;
 THENCE NORTH 100°12'47" EAST, A DISTANCE OF 58.29 FEET ;
 THENCE SOUTH 89°47'13" EAST, A DISTANCE OF 62.85 FEET ;
 THENCE SOUTH 00°12'47" WEST, A DISTANCE OF 47.75 FEET ;
 THENCE SOUTH 70°59'03" EAST, A DISTANCE OF 34.48 FEET ;
 THENCE NORTH 89°47'10" WEST, A DISTANCE OF 102.68 FEET , TO THE POINT OF
 BEGINNING.

CONTAINING A CALCULATED AREA OF 3883 SQUARE FEET OR 0.089 ACRES, MORE OR LESS.

BEGINNING AT A POINT WHOSE NORTHING IS 717234.4644 AND WHOSE EASTING IS 226778.9511 ;
THENCE SOUTH 29°51'04" EAST, A DISTANCE OF 6.19 FEET ;
THENCE NORTH 89°47'10" WEST, A DISTANCE OF 6.46 FEET ;
THENCE NORTH 32°18'25" EAST, A DISTANCE OF 6.33 FEET , TO THE POINT OF BEGINNING.

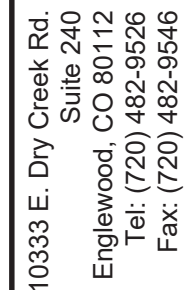
CONTAINING A CALCULATED AREA OF 17 SQUARE FEET OR 0.000 ACRES, MORE OR LESS.



	PROPOSED CURB & GUTTER
	PROPOSED STREET LIGHT 180' TYP.
	PROPOSED FIRE HYDRANT
	EXISTING FIRE HYDRANT
	PROPOSED SIDEWALK
	PROPOSED CURB RETURN SIDEWALK RAMP
	PROPOSED TEMPORARY ROAD BARRIER
	PROPOSED MANHOLE
	PROPOSED PAVEMENT
	STREET CENTERLINE
	PUBLIC STREET CROWN LINE
	PUBLIC STREET RIGHT-OF-WAY
	PROPERTY LOT LINE
	EDGE OF PAVEMENT
	SECTION LINE
	PROPOSED EASEMENT
	EXISTING EASEMENT
	PROPERTY BOUNDARY
	SIGHT TRIANGLE LINE
	FUTURE CURB AND GUTTER



SCALE: 1" = 100

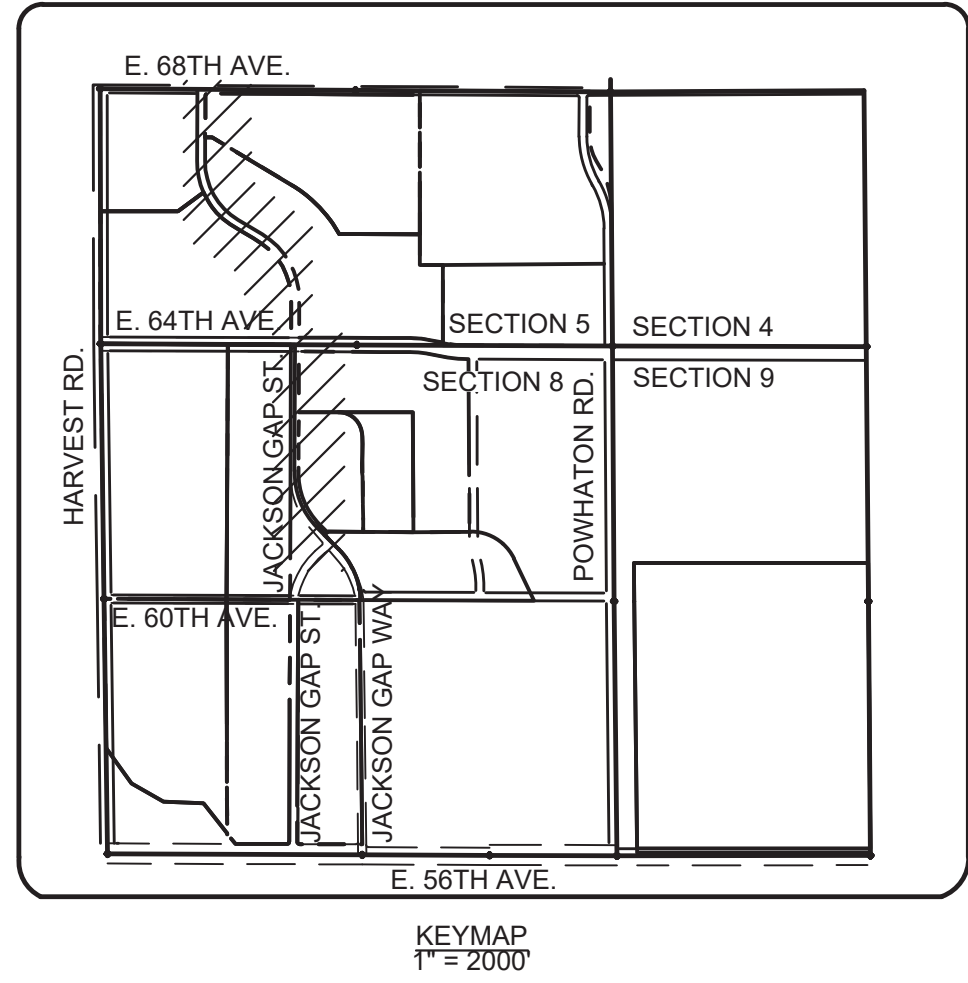
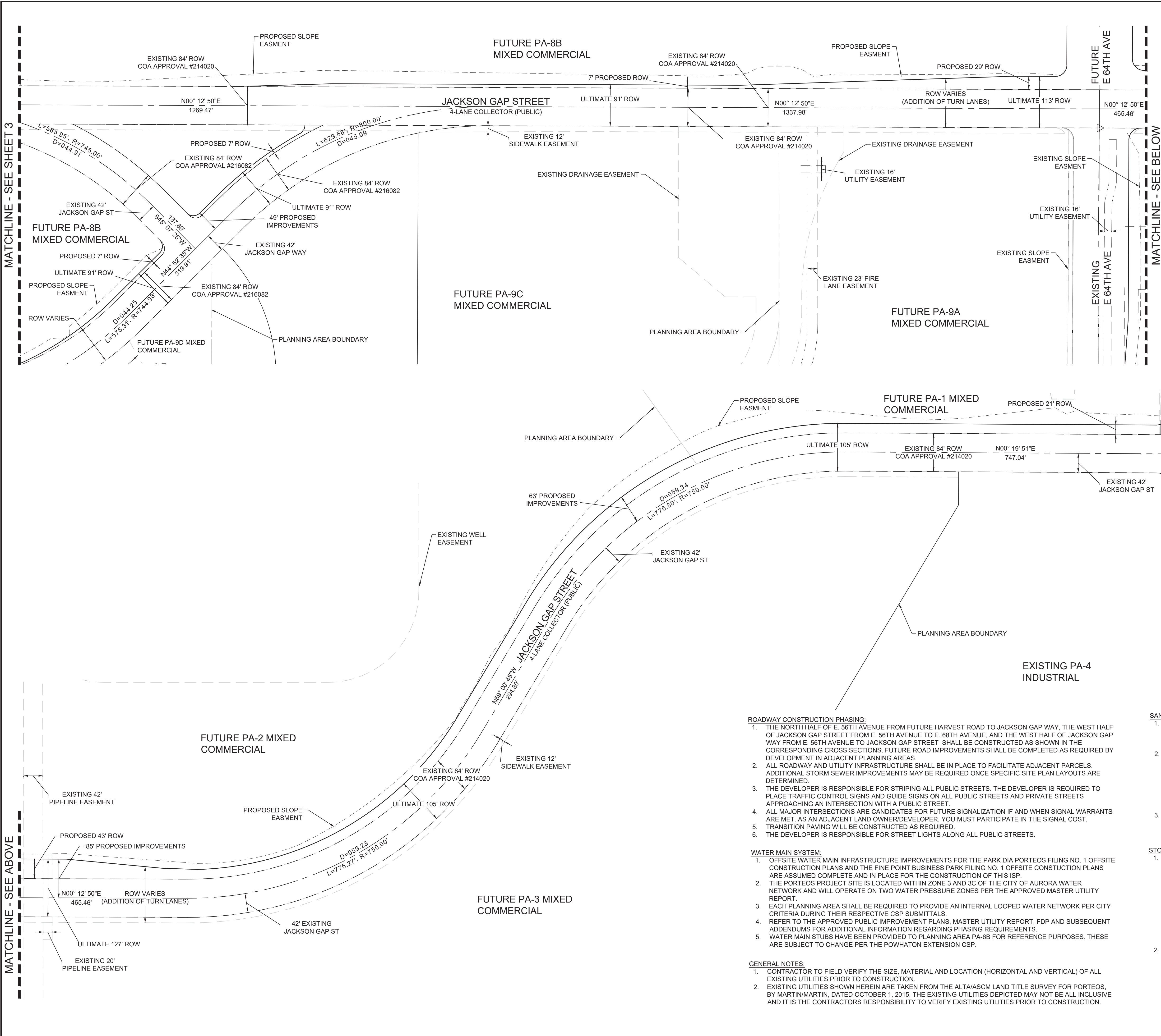


**AMENDMENT TO INFRASTRUCTURE
SITE PLAN NO. 1 AT PORTEOS
EASEMENT EXHIBIT**

DRAWN BY:	NJ	SCALE:	
CHECKED BY:		AS SHOWN	
SJK		FILE NO:	8130249709
DATE:		DECEMBER 2010	

3
SHEET NUMBER

N:\PROJECTS\PORTEOS\JACKSON GAP AND 98TH\CAD\ENGINEERING\SHSHEET SETS\ISP\EASEMENT EXHIBIT.DWG, JOEF, 12/27/19



LEGEND

- PROPOSED CURB & GUTTER
- PROPOSED STREET LIGHT 180' TYP.
- PROPOSED FIRE HYDRANT
- EXISTING FIRE HYDRANT
- PROPOSED SIDEWALK
- PROPOSED CURB RETURN SIDEWALK RAMP
- PROPOSED TEMPORARY ROAD BARRIER
- PROPOSED MANHOLE
- PROPOSED PAVEMENT
- STREET CENTERLINE
- PUBLIC STREET CROWN LINE
- PUBLIC STREET RIGHT-OF-WAY
- PROPERTY LOT LINE
- EDGE OF PAVEMENT
- SECTION LINE
- PROPOSED EASEMENT
- EXISTING EASEMENT
- PROPERTY BOUNDARY
- SIGHT TRIANGLE LINE
- FUTURE CURB AND GUTTER

100 50 0 100 200
SCALE: 1" = 100'

- ROADWAY CONSTRUCTION PHASING:**
1. THE NORTH HALF OF E. 56TH AVENUE FROM FUTURE HARVEST ROAD TO JACKSON GAP WAY, THE WEST HALF OF JACKSON GAP STREET FROM E. 56TH AVENUE TO E. 68TH AVENUE, AND THE WEST HALF OF JACKSON GAP WAY FROM E. 56TH AVENUE TO JACKSON GAP STREET SHALL BE CONSTRUCTED AS SHOWN IN THE CORRESPONDING CROSS SECTIONS. FUTURE ROAD IMPROVEMENTS SHALL BE COMPLETED AS REQUIRED BY DEVELOPMENT IN ADJACENT PLANNING AREAS.
 2. ALL ROADWAY AND UTILITY INFRASTRUCTURE SHALL BE IN PLACE TO FACILITATE ADJACENT PARCELS. ADDITIONAL STORM SEWER IMPROVEMENTS MAY BE REQUIRED ONCE SPECIFIC SITE PLAN LAYOUTS ARE DETERMINED.
 3. THE DEVELOPER IS RESPONSIBLE FOR STRIPING ALL PUBLIC STREETS. THE DEVELOPER IS REQUIRED TO PLACE TRAFFIC CONTROL SIGNS AND GUIDE SIGNS ON ALL PUBLIC STREETS AND PRIVATE STREETS APPROACHING AN INTERSECTION WITH A PUBLIC STREET.
 4. ALL MAJOR INTERSECTIONS ARE CANDIDATES FOR FUTURE SIGNALIZATION IF AND WHEN SIGNAL WARRANTS ARE MET. AS AN ADJACENT LAND OWNER/DEVELOPER, YOU MUST PARTICIPATE IN THE SIGNAL COST.
 5. TRANSITION PAVING WILL BE CONSTRUCTED AS REQUIRED.
 6. THE DEVELOPER IS RESPONSIBLE FOR STREET LIGHTS ALONG ALL PUBLIC STREETS.

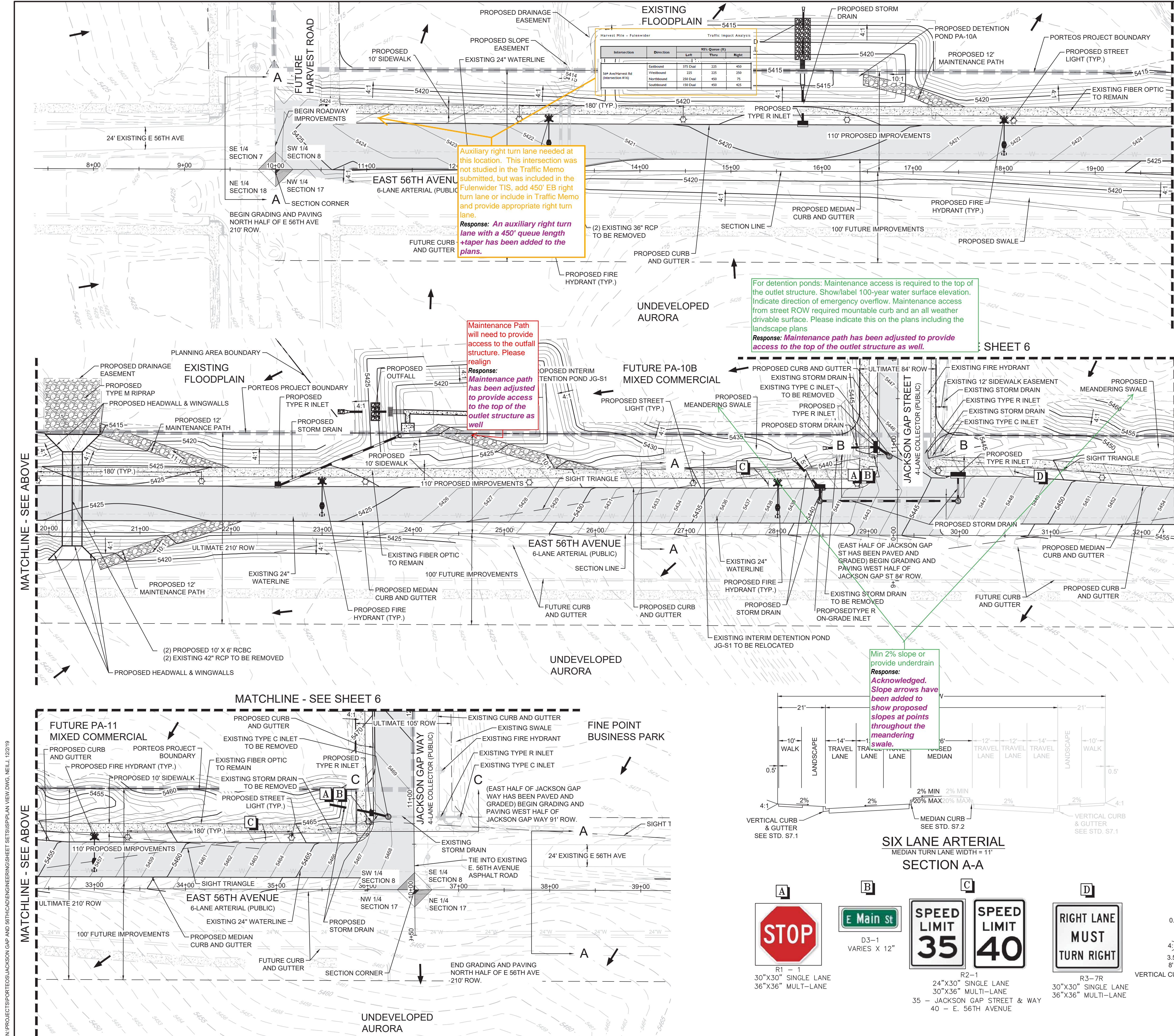
- WATER MAIN SYSTEM:**
1. OFFSITE WATER MAIN INFRASTRUCTURE IMPROVEMENTS FOR THE PARK DIA PORTEOS FILING NO. 1 OFFSITE CONSTRUCTION PLANS AND THE FINE POINT BUSINESS PARK FILING NO. 1 OFFSITE CONSTRUCTION PLANS ARE ASSUMED COMPLETE AND IN PLACE FOR THE CONSTRUCTION OF THIS ISP.
 2. THE PORTEOS PROJECT SITE IS LOCATED WITHIN ZONE 3 AND 3C OF THE CITY OF AURORA WATER NETWORK AND WILL OPERATE ON TWO WATER PRESSURE ZONES PER THE APPROVED MASTER UTILITY REPORT.
 3. EACH PLANNING AREA SHALL BE REQUIRED TO PROVIDE AN INTERNAL LOOPED WATER NETWORK PER CITY CRITERIA DURING THEIR RESPECTIVE CSP SUBMITTALS.
 4. REFER TO THE APPROVED PUBLIC IMPROVEMENT PLANS, MASTER UTILITY REPORT, FDP AND SUBSEQUENT ADDENDUMS FOR ADDITIONAL INFORMATION REGARDING PHASING REQUIREMENTS.
 5. WATER MAIN STUBS HAVE BEEN PROVIDED TO PLANNING AREA PA-6B FOR REFERENCE PURPOSES. THESE ARE SUBJECT TO CHANGE PER THE POWHATON EXTENSION CSP.

- GENERAL NOTES:**
1. CONTRACTOR TO FIELD VERIFY THE SIZE, MATERIAL AND LOCATION (HORIZONTAL AND VERTICAL) OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
 2. EXISTING UTILITIES SHOWN HEREIN ARE TAKEN FROM THE ALTA/ASCM LAND TITLE SURVEY FOR PORTEOS, BY MARTIN/MARTIN, DATED OCTOBER 1, 2015. THE EXISTING UTILITIES DEPICTED MAY NOT BE ALL INCLUSIVE AND IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY EXISTING UTILITIES PRIOR TO CONSTRUCTION.

- SANITARY SEWER SYSTEM:**
1. OFFSITE SEWER MAIN INFRASTRUCTURE IMPROVEMENTS FOR THE PARK DIA PORTEOS FILING NO. 1 OFFSITE CONSTRUCTION PLANS AND THE FINE POINT BUSINESS PARK FILING NO. 1 OFFSITE CONSTRUCTION PLANS ARE ASSUMED COMPLETE AND IN PLACE FOR THE CONSTRUCTION OF THIS ISP.
 2. PER THE AURORA "MASTER SEWER PLANS" A FUTURE PERMANENT GRAVITY SYSTEM SHALL BE PROVIDED TO CONNECT TO THE DENVER METRO INFRASTRUCTURE AND NORTHERN TREATMENT PLANT. A TIME TABLE FOR THESE IMPROVEMENTS HAS YET TO BE DETERMINED; HOWEVER, AURORA AND PORTEOS OWNERSHIP HAVE IDENTIFIED PARAMETERS AND OTHER DEVELOPMENT TRIGGERS FOR BOTH INTERIM AND FINAL ALTERNATIVE SEWER CONVEYANCE SYSTEMS. REFER TO THE APPROVED MASTER UTILITY STUDY AND AMENDMENTS FOR SPECIFIC INFORMATION REGARDING PHASING REQUIREMENTS.
 3. ADDITIONAL SANITARY SEWER MAINS WILL BE REQUIRED AS OTHER PLANNING AREAS DEVELOP; AS OUTLINED IN THE APPROVED PUBLIC IMPROVEMENT PLANS, MASTER UTILITY REPORT, FDP AND SUBSEQUENT AMENDMENTS TO THESE DOCUMENTS.

- STORM SEWER SYSTEM:**
1. STORM INLETS SHALL BE INSTALLED AT SPECIFIED ON-GRADE AND SUMP LOCATIONS ALONG E. 56TH AVENUE, AT THE INTERSECTION OF JACKSON GAP STREET AND E. 56TH AVENUE, AT THE INTERSECTION OF JACKSON GAP WAY AND E. 56TH AVENUE, AT SPECIFIED SUMP LOCATIONS ALONG JACKSON GAP STREET, AND AT SPECIFIED ON-GRADE AND SUMP LOCATIONS ALONG JACKSON GAP WAY. THESE INLETS WILL CAPTURE RUNOFF FROM ASSOCIATED IMPROVEMENTS TO E. 56TH AVENUE, JACKSON GAP STREET, AND JACKSON GAP WAY. TWO TEN-FOOT-WIDE BY 6-FOOT-HIGH BOX CULVERTS WILL BE INSTALLED UNDER THE ASSOCIATED IMPROVEMENTS TO THE NORTH HALF OF E. 56TH AVENUE TO CONVEY RUNOFF WITHIN THE SECOND CREEK FLOODPLAIN NORTH UNDER THE ROAD. BMPs AND EROSION CONTROL MEASURES SHALL BE INSTALLED TO MINIMIZE EROSION AND REDUCE EROSION CHARACTERISTICS AT CULVERT CROSSINGS AND WITHIN EXISTING CHANNEL CONVEYANCE PATHS.
 2. ADDITIONAL PUBLIC STORM SEWER SYSTEMS MAY BE REQUIRED AS PLANNING AREAS DEVELOP.

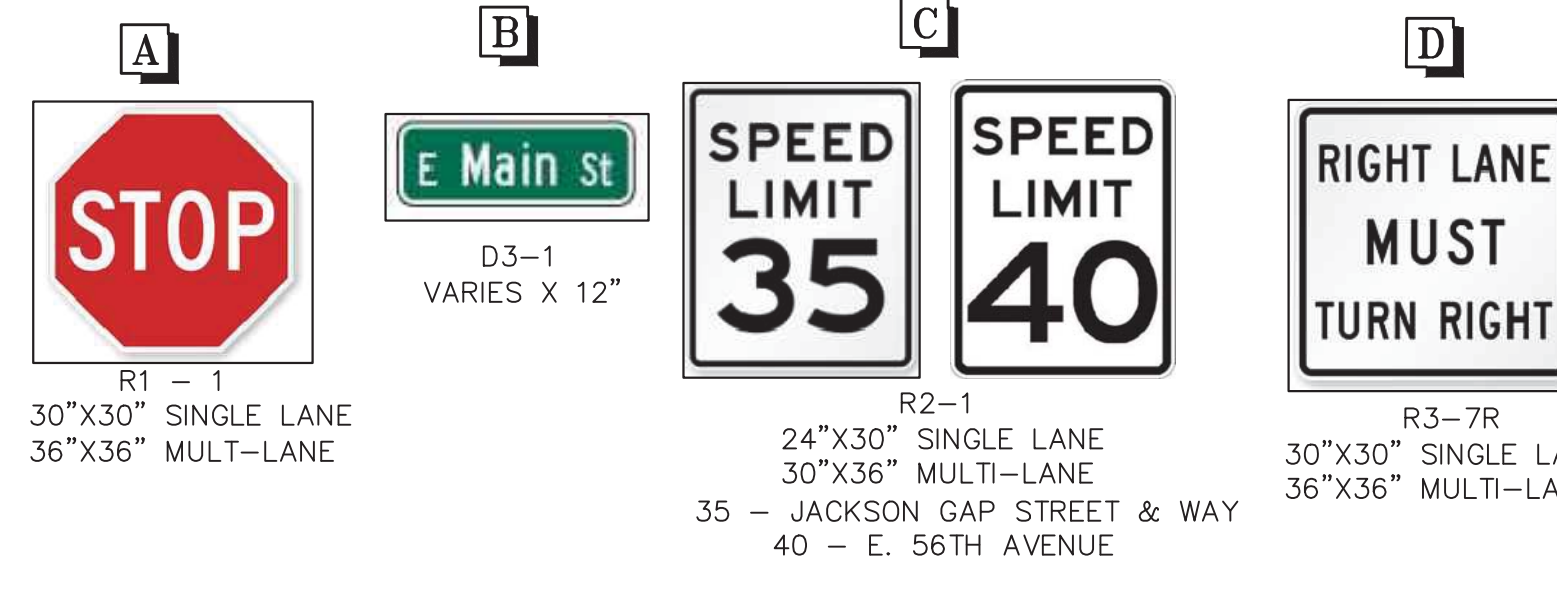
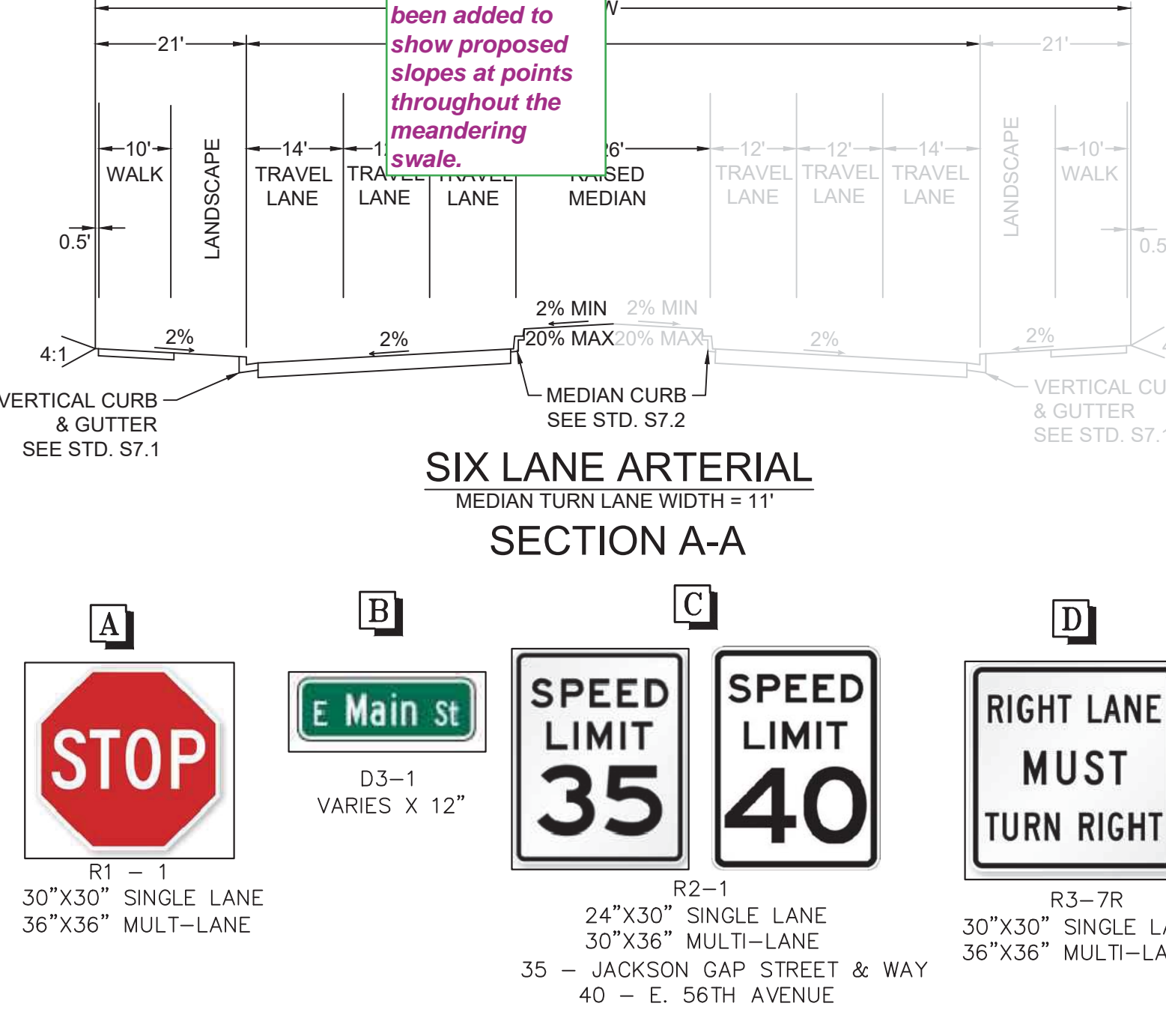
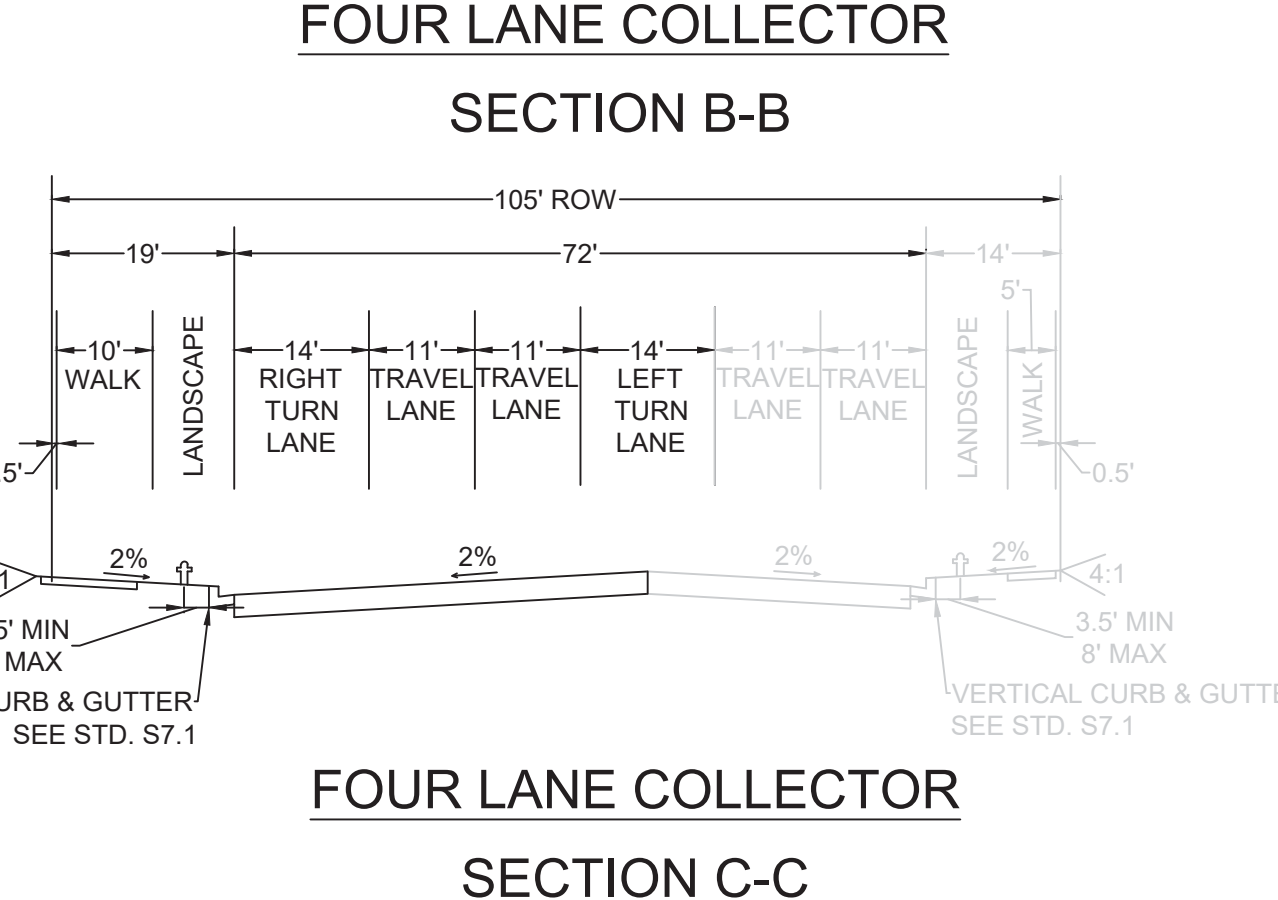
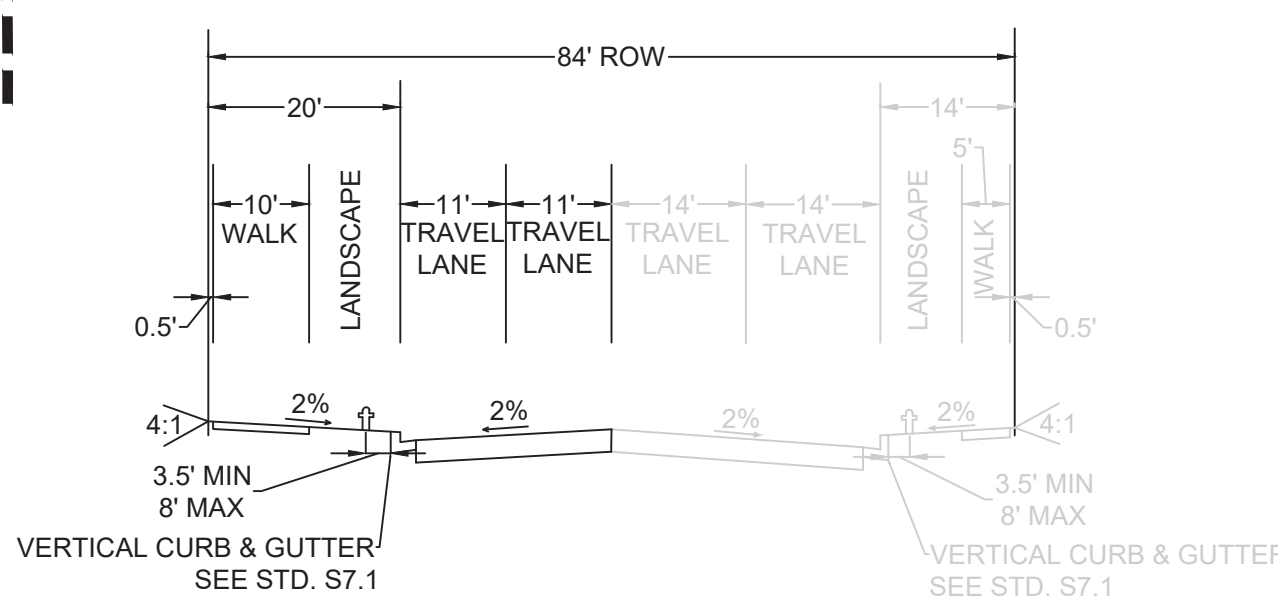
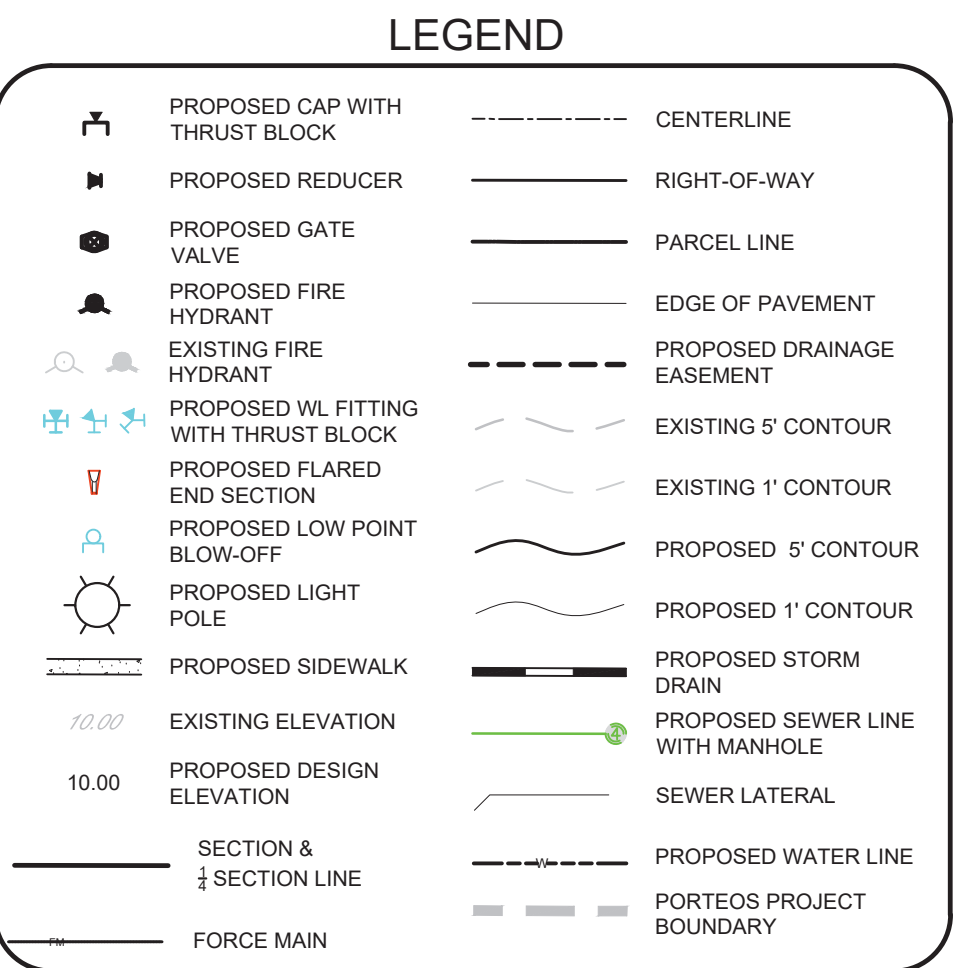
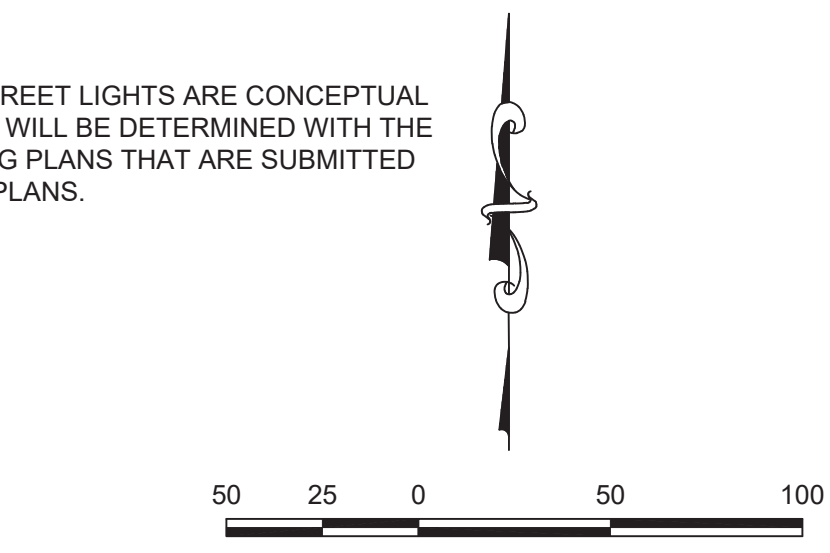
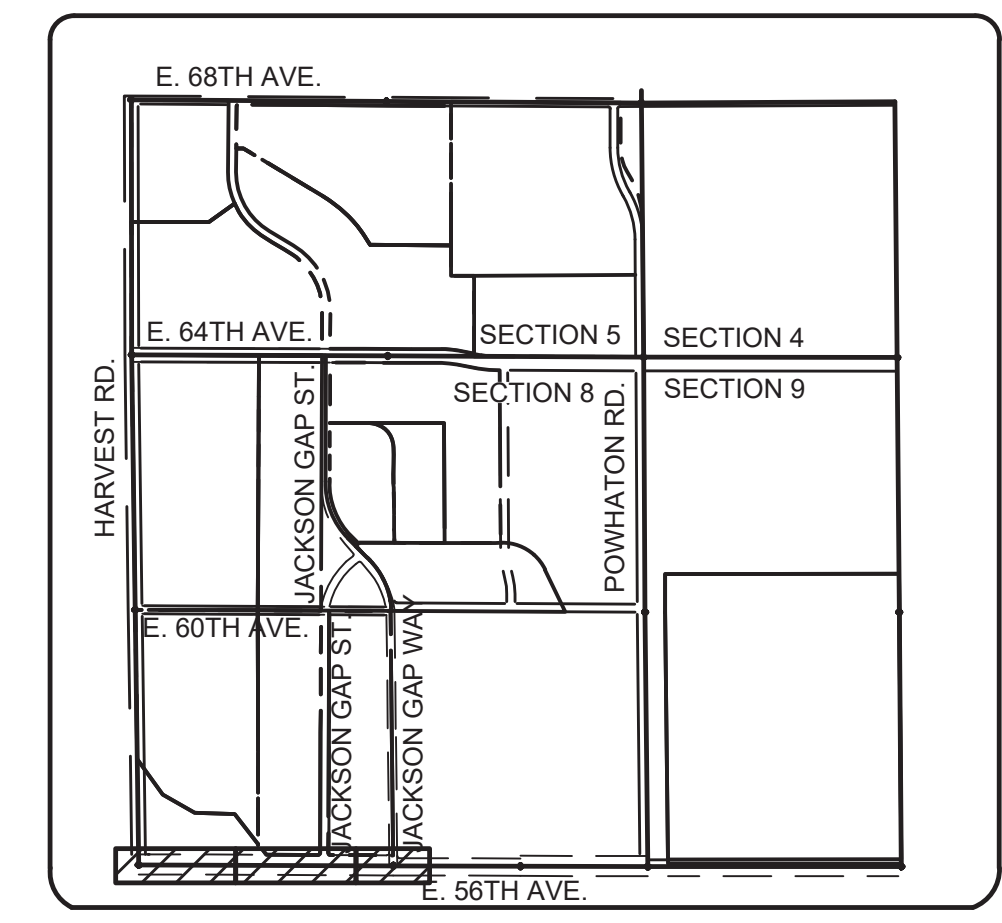
SHEET NUMBER	4	DRAWN BY: NJ	CHECKED BY: SK	DATE: DECEMBER 2019	SCALE: AS SHOWN	FILE NO: 8130249709	AMENDMENT TO INFRASTRUCTURE SITE PLAN NO. 1 AT PORTEOS EASEMENT EXHIBIT	10333 E. Dry Creek Rd., Suite 240 Englewood, CO 80112 Tel: (720) 482-5566 Fax: (720) 482-5546	CML CONSULTANTS	Revisions	No.	Date	Init.	Appr.	Date		



MATCHLINE - SEE BELOW

MATCHLINE - SEE BELOW

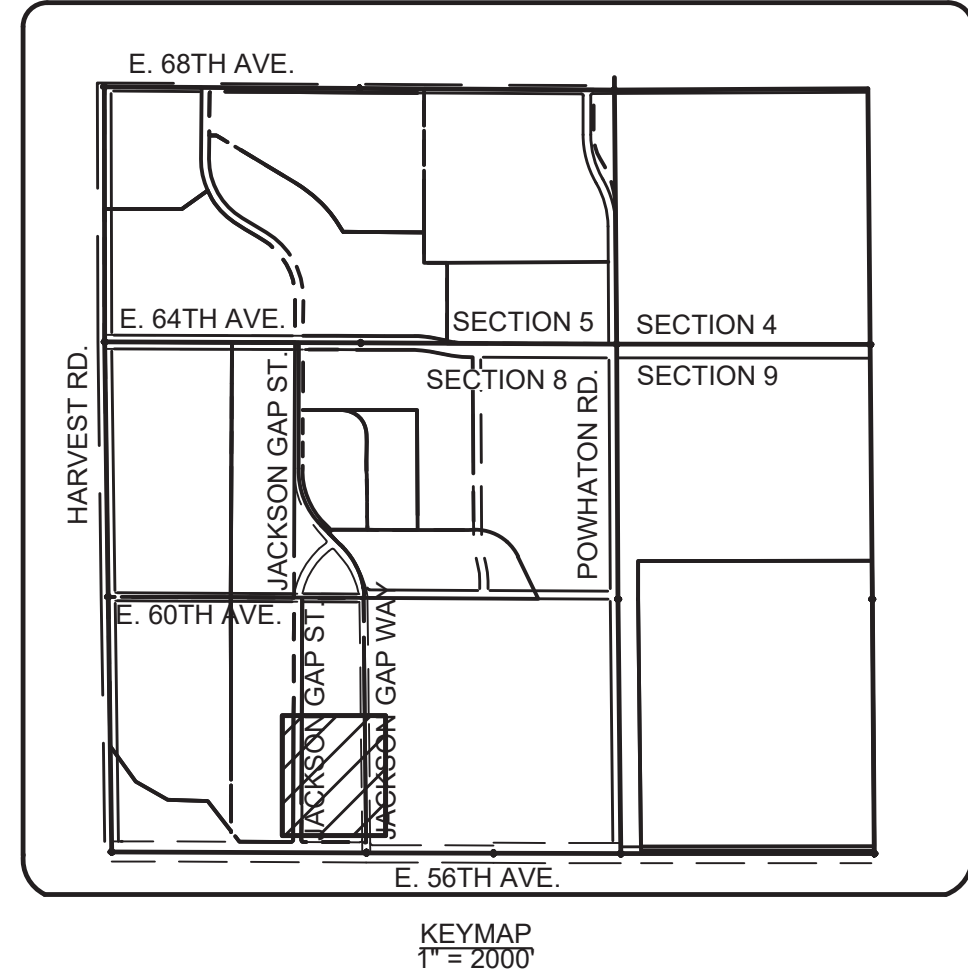
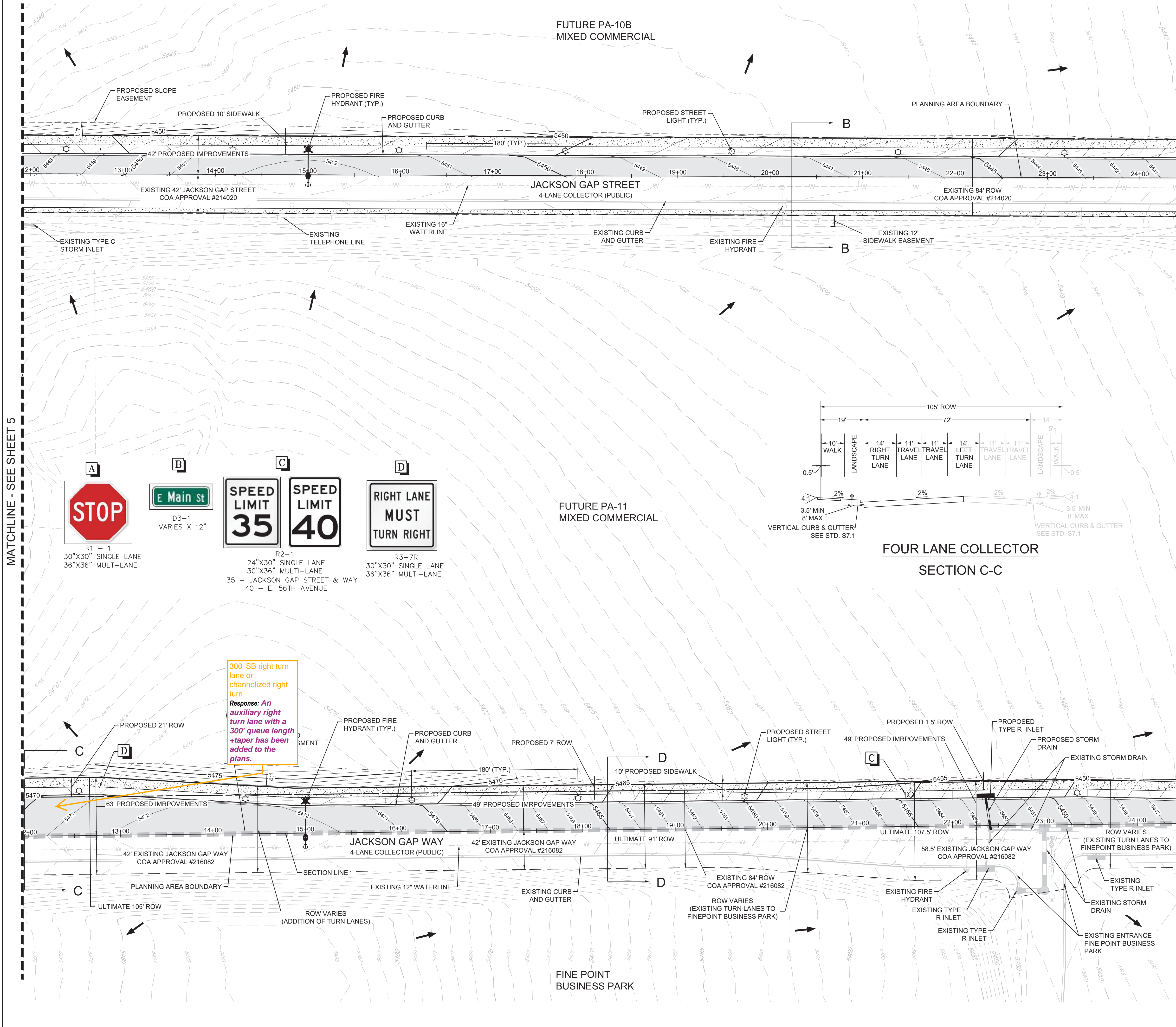
NOTES:
1. PROPOSED STREET LIGHTS ARE CONCEPTUAL AND LOCATIONS WILL BE DETERMINED WITH THE STREET LIGHTING PLANS THAT ARE SUBMITTED WITH THE CIVIL PLANS.



N:\PROJECTS\PORTER\JACKSON GAP AND 8TH\CD\ENGINEERING\SHSHEET SET\SUPPLAN VIEW.DWG, NELL, 12/2/19

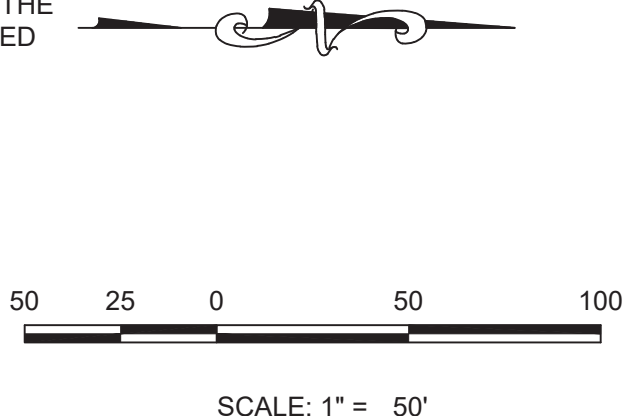
MATCHLINE - SEE SHEET 5

MATCHLINE - SEE SHEET 7



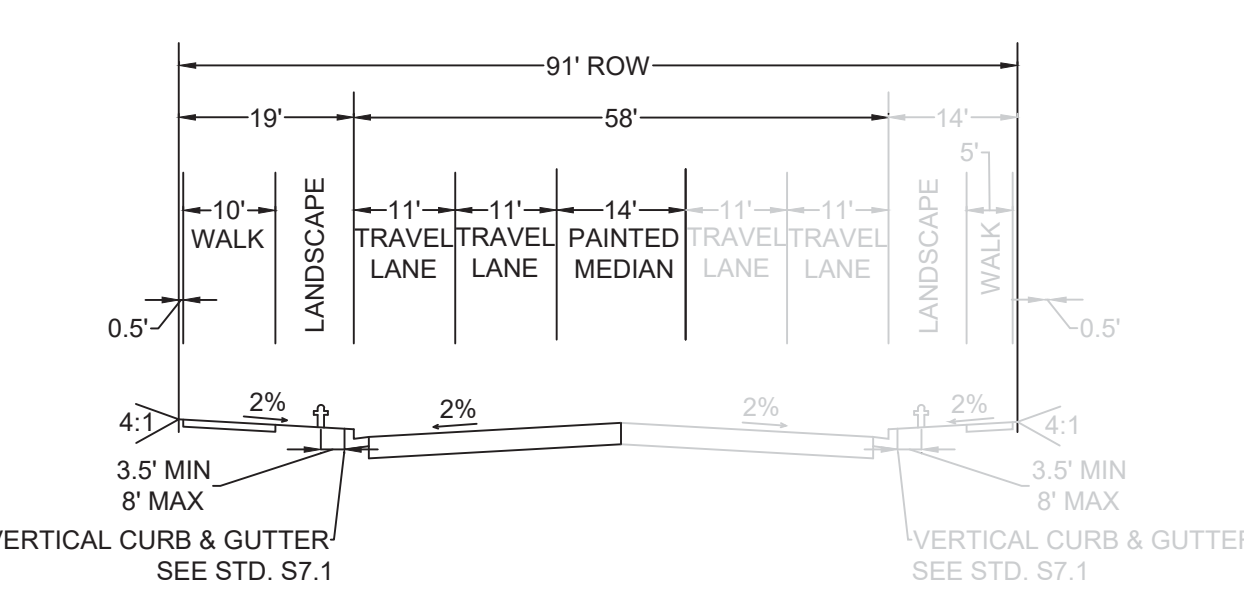
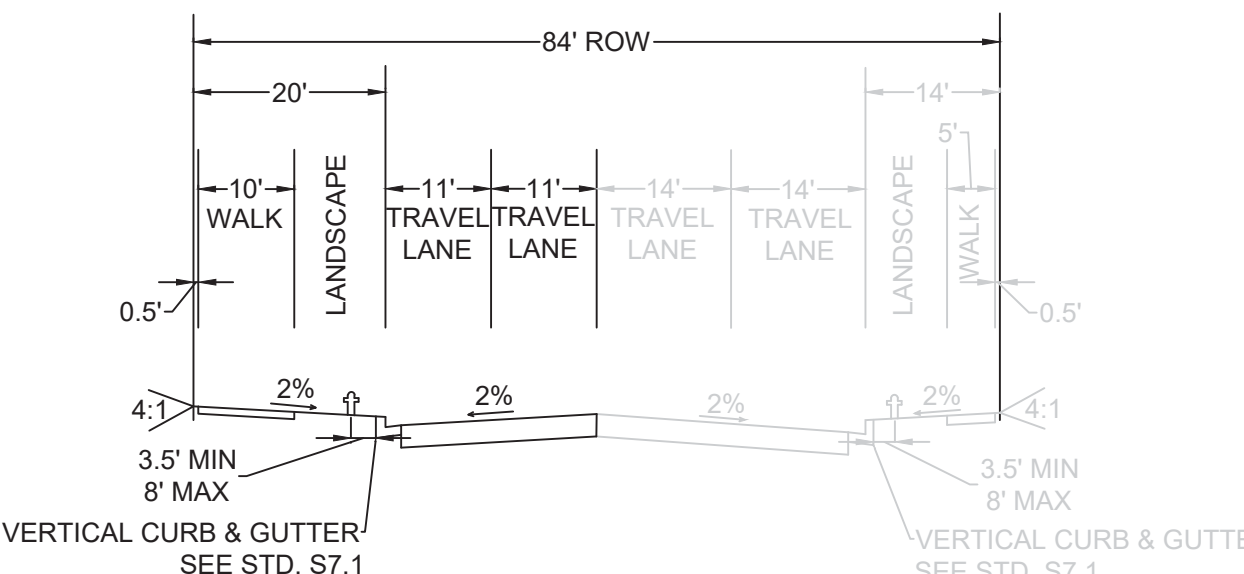
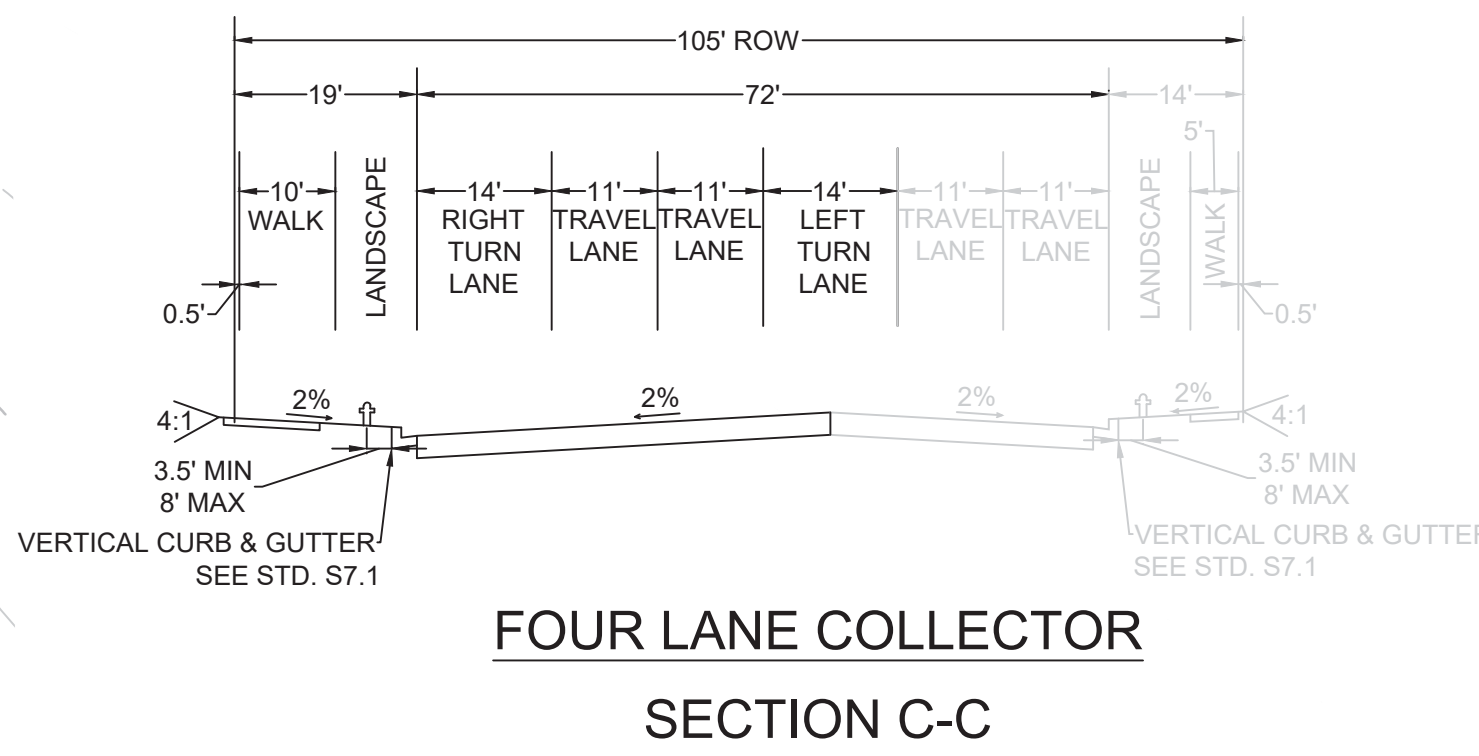
NOTES:

1. PROPOSED STREET LIGHTS ARE CONCEPTUAL AND LOCATIONS WILL BE DETERMINED WITH THE STREET LIGHTING PLANS THAT ARE SUBMITTED WITH THE CIVIL PLANS.



LEGEND

	PROPOSED CAP WITH THRUST BLOCK		CENTERLINE
	PROPOSED REDUCER		RIGHT-OF-WAY
	PROPOSED GATE VALVE		PARCEL LINE
	PROPOSED FIRE HYDRANT		EDGE OF PAVEMENT
	EXISTING FIRE HYDRANT		PROPOSED DRAINAGE EASEMENT
	PROPOSED WL FITTING WITH THRUST BLOCK		EXISTING 5' CONTOUR
	PROPOSED FLARED END SECTION		EXISTING 1' CONTOUR
	PROPOSED LOW POINT BLOW-OFF		PROPOSED 5' CONTOUR
	PROPOSED LIGHT POLE		PROPOSED 1' CONTOUR
	PROPOSED SIDEWALK		PROPOSED STORM DRAIN
	EXISTING ELEVATION		PROPOSED SEWER LINE WITH MANHOLE
	PROPOSED DESIGN ELEVATION		SEWER LATERAL
	SECTION & 1/2 SECTION LINE		PROPOSED WATER LINE
	FORCE MAIN		PORTEO'S PROJECT BOUNDARY



No.	Revisions	Date	Init.	Appr.	Date

10333 E. Dry Creek Rd.
Suite 240
Englewood, CO 80112
Tel: (720) 482-5556
Fax: (720) 482-5556



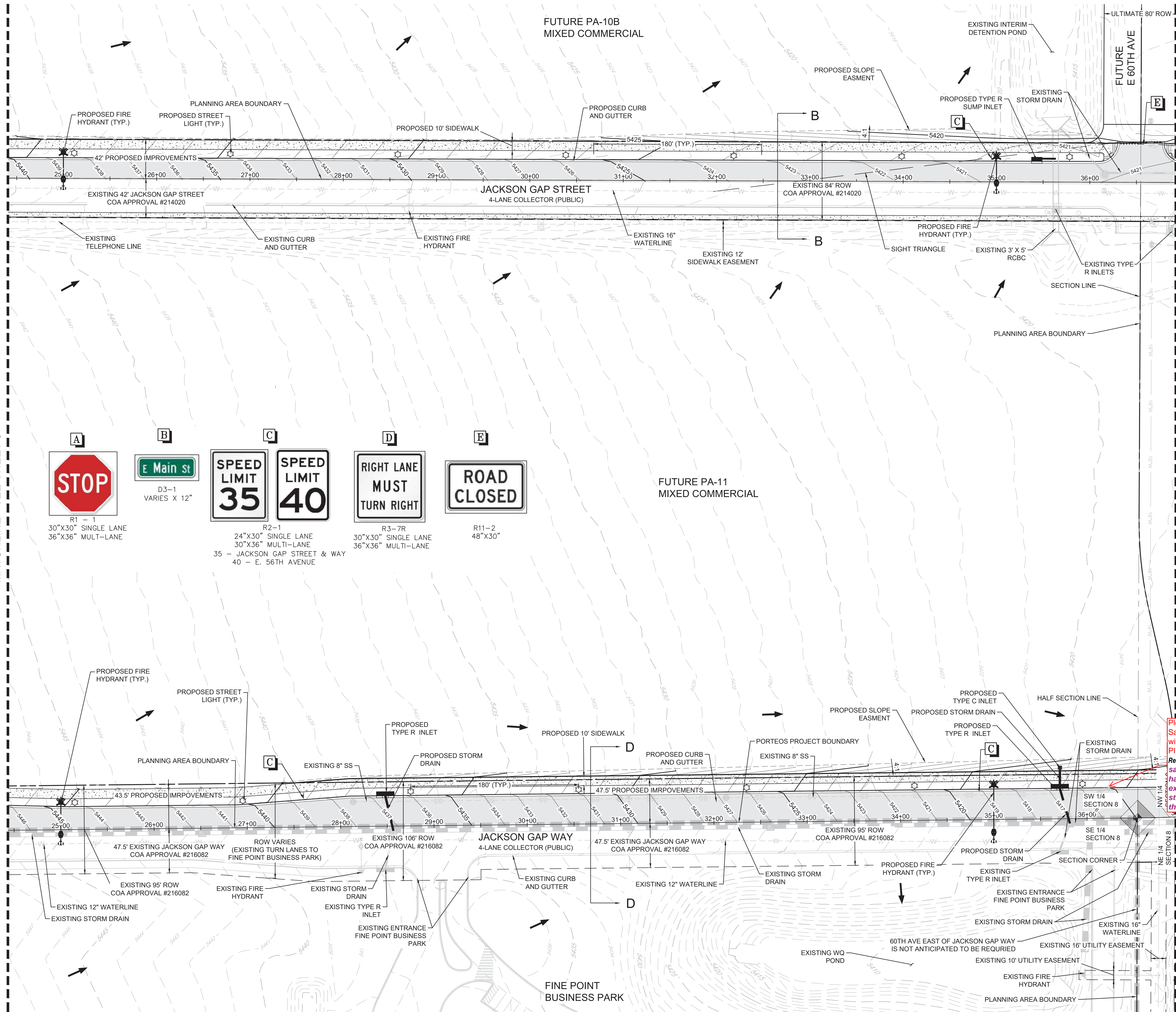
AMENDMENT TO INFRASTRUCTURE
SITE PLAN NO. 1 AT PORTEO'S
PLAN VIEW

SCALE: AS SHOWN
DRAWN BY: NJ
CHECKED BY: SK
FILE NO: 8130249709
DATE: DECEMBER 2019

SHEET NUMBER
6

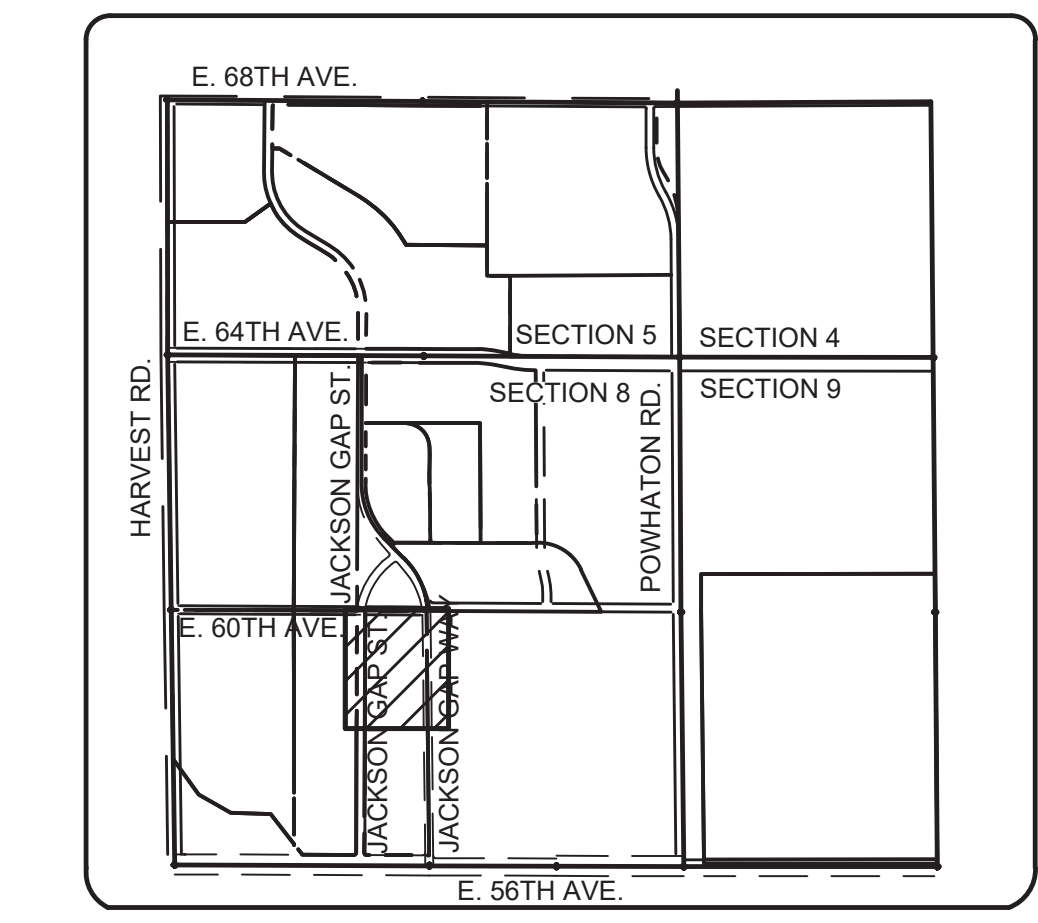
N:\PROJECTS\PORTOES\JACKSON GAP AND 60TH AVENUE\ENGINEERING\SHSHEET SET\SIPLAN VIEW.DWG, NELL, 12/21/19

MATCHLINE - SEE SHEET 6



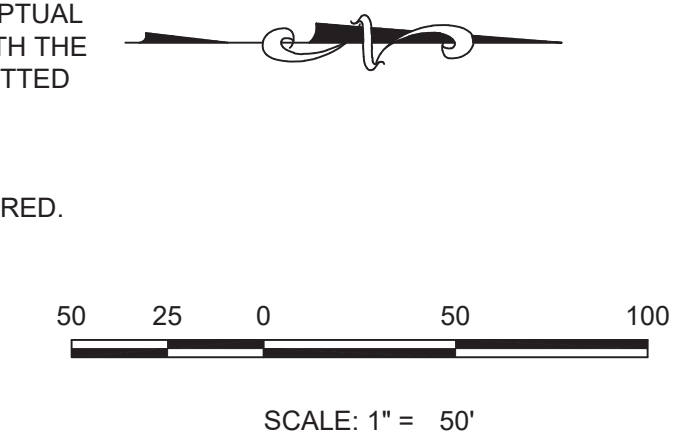
MATCHLINE - SEE SHEET 8

Please show 15' Sanitary alignment within 60th per the PIP.
Response: The sanitary sewer has been extended and 15' stub added per the PIP.



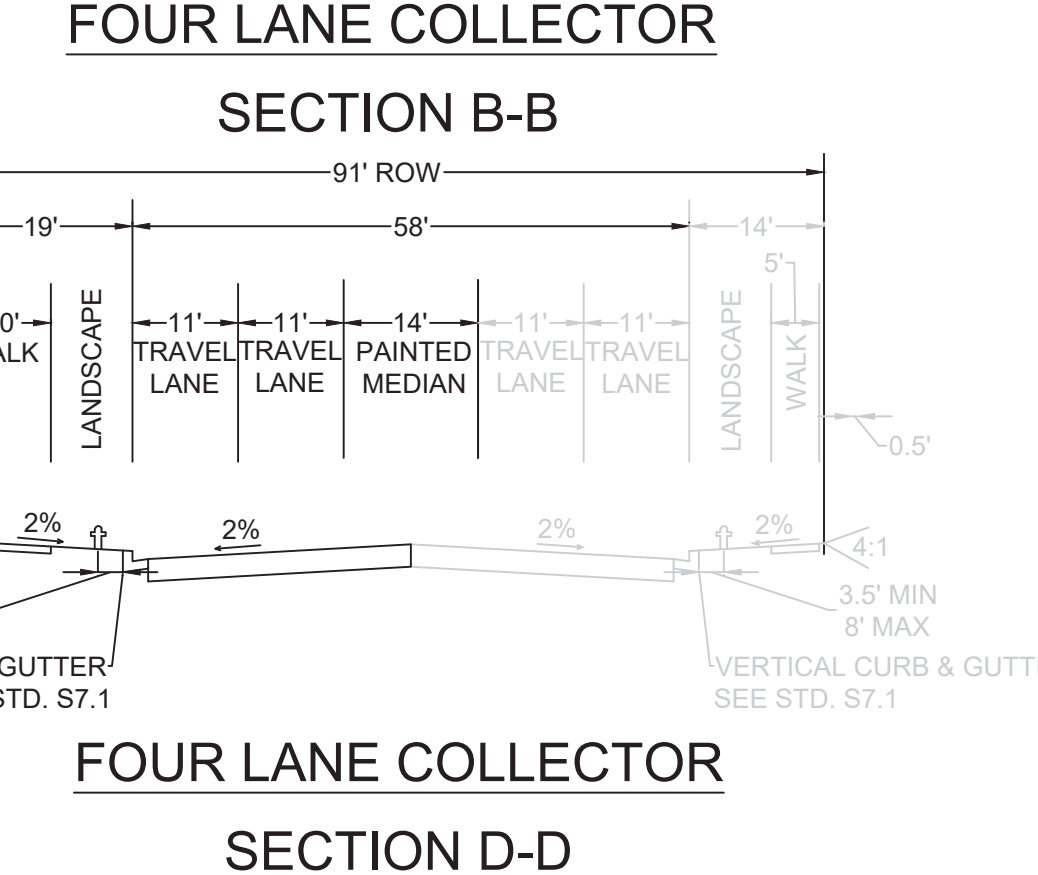
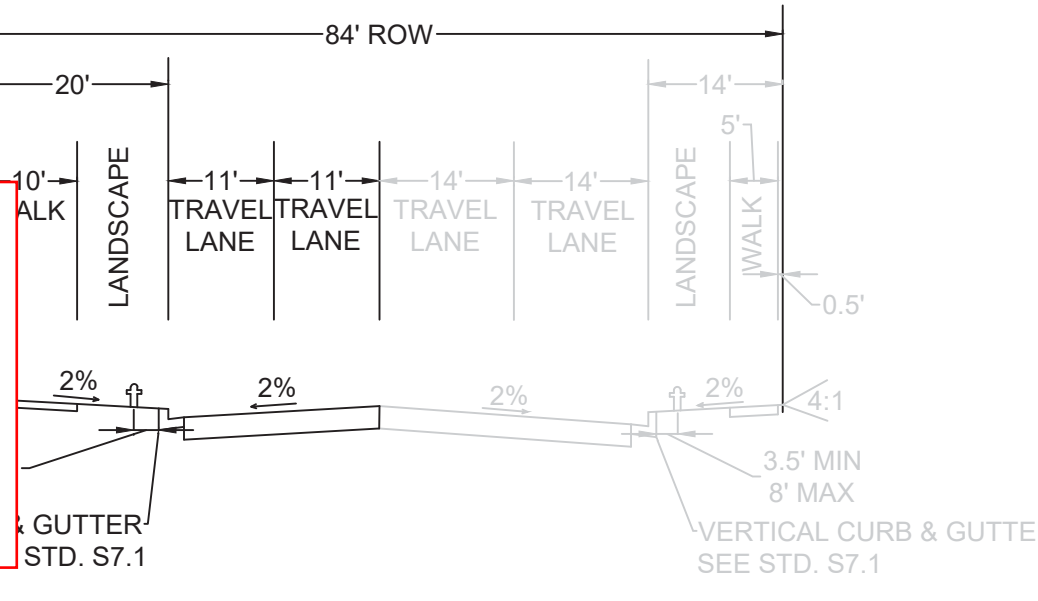
NOTES:

1. PROPOSED STREET LIGHTS ARE CONCEPTUAL AND LOCATIONS WILL BE DETERMINED WITH THE STREET LIGHTING PLANS THAT ARE SUBMITTED WITH THE CIVIL PLANS.
2. E. 60TH AVENUE EAST OF JACKSON GAP STREET IS NOT ANTICIPATED TO BE REQUIRED.



LEGEND

	PROPOSED CAP WITH THRUST BLOCK		CENTERLINE
	PROPOSED REDUCER		RIGHT-OF-WAY
	PROPOSED GATE VALVE		PARCEL LINE
	PROPOSED FIRE HYDRANT		EDGE OF PAVEMENT
	EXISTING FIRE HYDRANT		PROPOSED DRAINAGE EASEMENT
	PROPOSED WL FITTING WITH THRUST BLOCK		EXISTING 5' CONTOUR
	PROPOSED FLARED END SECTION		EXISTING 1' CONTOUR
	PROPOSED LOW POINT BLOW-OFF		PROPOSED 5' CONTOUR
	PROPOSED LIGHT POLE		PROPOSED 1' CONTOUR
	PROPOSED SIDEWALK		PROPOSED STORM DRAIN
	EXISTING ELEVATION		PROPOSED SEWER LINE WITH MANHOLE
	PROPOSED DESIGN ELEVATION		SEWER LATERAL
	SECTION & 1/2 SECTION LINE		PROPOSED WATER LINE
	FORCE MAIN		PORTEOS PROJECT BOUNDARY



10333 E. Dry Creek Rd.
Suite 240
Englewood, CO 80112
Tel: (720) 482-5566
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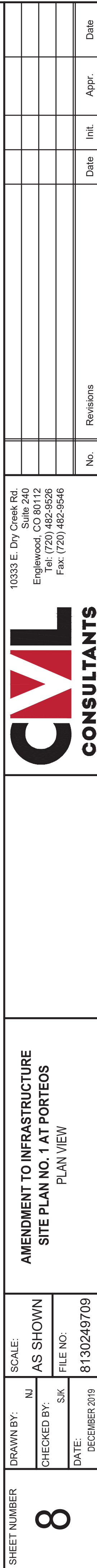


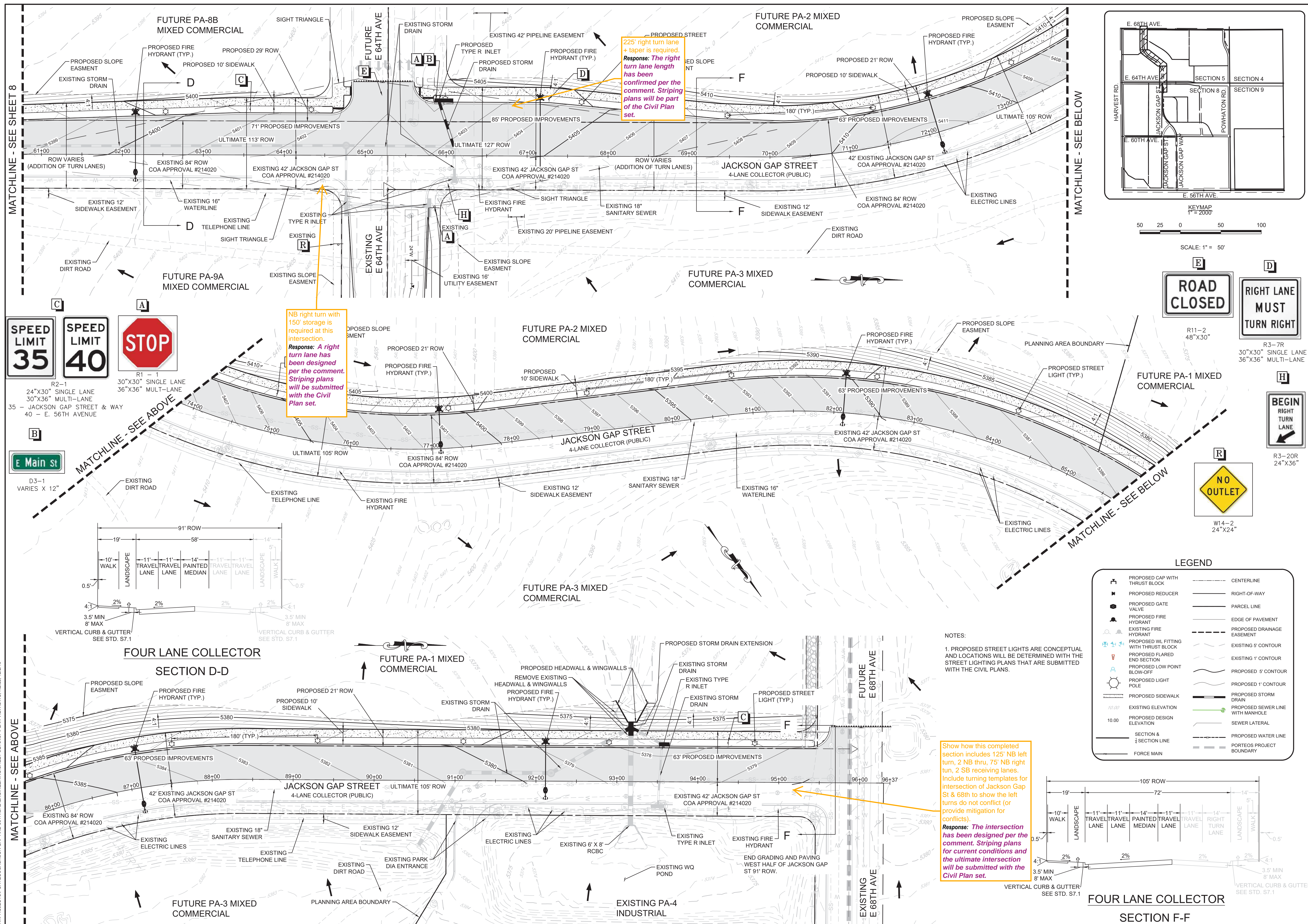
AMENDMENT TO INFRASTRUCTURE
SITE PLAN NO. 1 AT PORTEOS
PLAN VIEW

SCALE: AS SHOWN
DRAWN BY: NJ
CHECKED BY: SK
DATE: DECEMBER 2019





























SHEET NUMBER
7

FILE NO: 8130249709





LEGEND

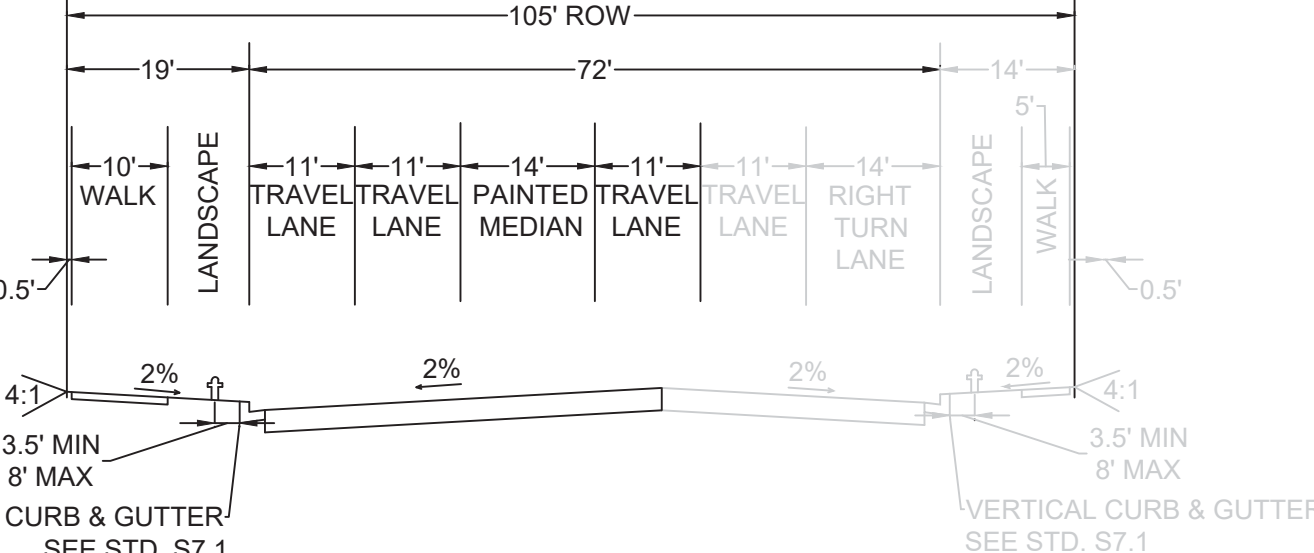
	PROPOSED CAP WITH THRUST BLOCK		CENTERLINE
	PROPOSED REDUCER		RIGHT-OF-WAY
	PROPOSED GATE VALVE		PARCEL LINE
	PROPOSED FIRE HYDRANT		EDGE OF PAVEMENT
	EXISTING FIRE HYDRANT		PROPOSED DRAINAGE EASEMENT
	PROPOSED WL FITTING WITH THRUST BLOCK		EXISTING 5' CONTOUR
	PROPOSED FLARED END SECTION		EXISTING 1' CONTOUR
	PROPOSED LOW POINT BLOW-OFF		PROPOSED 5' CONTOUR
	PROPOSED LIGHT POLE		PROPOSED 1' CONTOUR
	PROPOSED SIDEWALK		PROPOSED STORM DRAIN
	EXISTING ELEVATION		PROPOSED SEWER LINE WITH MANHOLE
	PROPOSED DESIGN ELEVATION		SEWER LATERAL
	SECTION & 1/2 SECTION LINE		PROPOSED WATER LINE
	FORCE MAIN		PORTEOS PROJECT BOUNDARY

NOTES:

1. PROPOSED STREET LIGHTS ARE CONCEPTUAL AND LOCATIONS WILL BE DETERMINED WITH THE STREET LIGHTING PLANS THAT ARE SUBMITTED WITH THE CIVIL PLANS.

how how this completed
 section includes 125' NB left
 turn, 2 NB thru, 75' NB right
 turn, 0 SB receiving lanes.
 include turning templates for
 intersection of Jackson Gap
 St & 68th to show the left
 turns do not conflict (or
 provide mitigation for
 conflicts).

Response: *The intersection
 has been designed per the
 comment. Stripping plans
 or current conditions and
 the ultimate intersection
 will be submitted with the
 Civil Plan set.*

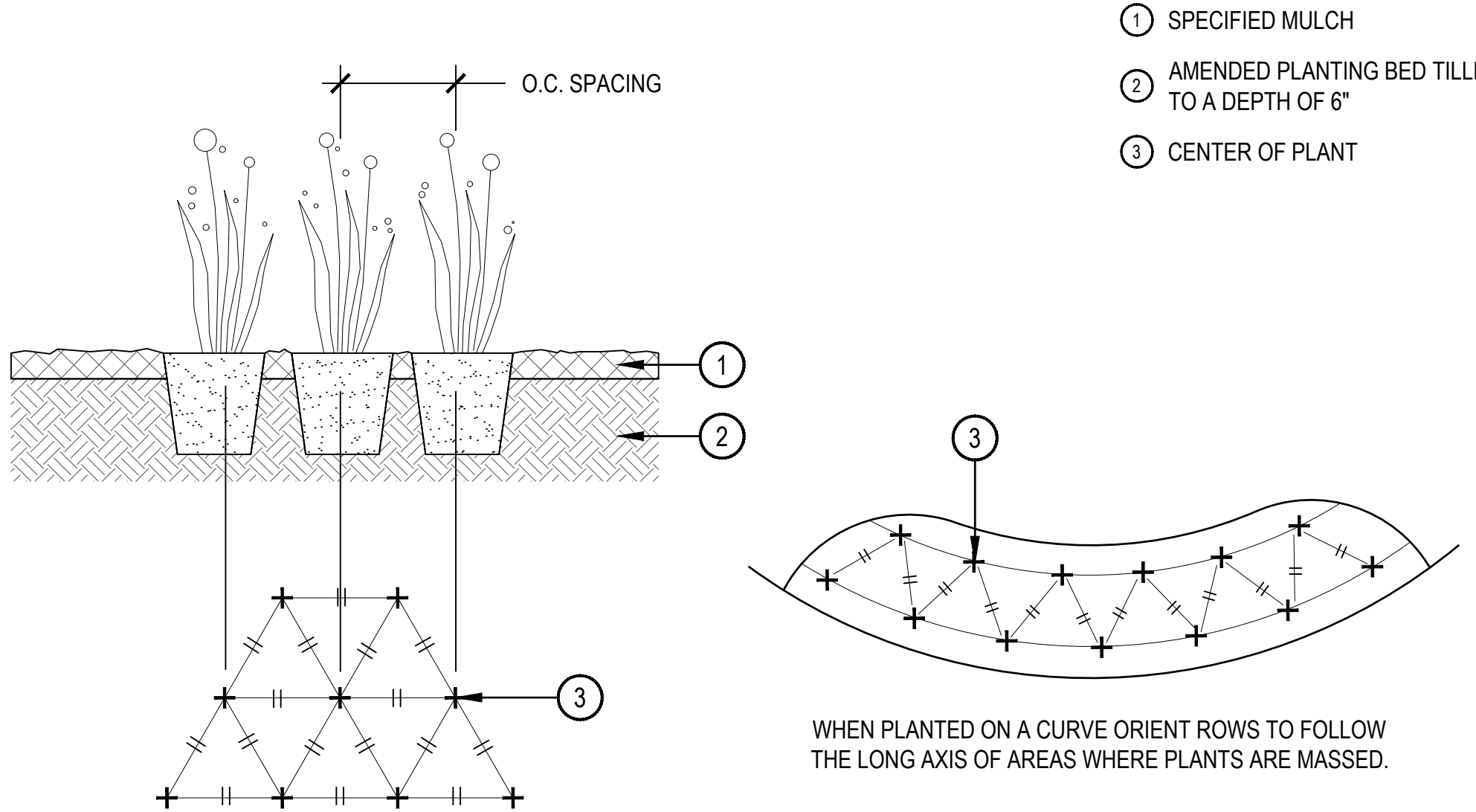


LANDSCAPE NOTES

1. THE DEVELOPER, HIS SUCCESSORS AND ASSIGNS, SHALL BE RESPONSIBLE FOR INSTALLATION, MAINTENANCE AND REPLACEMENT OF ALL LANDSCAPING MATERIALS SHOWN OR INDICATED ON THE APPROVED SITE PLAN ON FILE IN THE PLANNING DEPARTMENT.
2. ALL CROSSINGS OR ENCROACHMENTS BY PRIVATE LANDSCAPE IRRIGATION LINES OR SYSTEMS INTO EASEMENTS AND STREET RIGHTS-OF-WAY OWNED BY THE CITY OF AURORA ARE ACKNOWLEDGED BY THE OWNER AS BEING SUBJECT TO CITY OF AURORA'S USE AND OCCUPANCY OF THE SAID EASEMENTS OR RIGHTS-OF-WAY. THE OWNER, THEIR SUCCESSORS AND ASSIGNS, HEREBY AGREE TO INDEMNIFY THE CITY OF AURORA FOR ANY LOSS, DAMAGE OR REPAIR TO CITY FACILITIES THAT MAY RESULT FROM THE INSTALLATION, OPERATION, OR MAINTENANCE OF SAID PRIVATE IRRIGATION LINES OR SYSTEMS.
3. ANY MAJOR CHANGES FROM THE APPROVED PLANS, REQUIRED BECAUSE OF VARIATIONS IN THE FIELD CONDITIONS SHALL REQUIRE AN APPROVED AMENDMENT TO THE CSP, PRIOR TO COMMENCING ANY CONSTRUCTION ACTIVITIES THAT WOULD SUPPORT THIS CHANGE.
4. IRRIGATION CONTROLLERS SHALL BE EQUIPPED WITH AUTOMATIC RAIN SHUT OFF SENSORS.
5. SHRUB BEDS ARE TO BE CONTAINED BY GREEN 1/8" X 4" INTERLOCKING TYPE STEEL EDGER. IT IS NOT REQUIRED WHEN BED IS ADJACENT TO CURBS, WALLS, FENCES, OR WALKS.
6. ALL SHRUB BEDS ARE TO BE MULCHED WITH 3" DEPTH, 1 1/2" LOCAL RIVER ROCK MULCH. WEED CONTROL FABRIC IS REQUIRED IN ALL SHRUB BEDS.
7. ALL GROUNDCOVER AND PERENNIAL BEDS ARE TO BE MULCHED WITH 3" DEPTH SHREDDED WOOD BARK MULCH. NO WEED CONTROL FABRIC IS REQUIRED IN GROUNDCOVER BEDS. ALL SOD AND TURF TYPE SEEDING AREAS ARE TO HAVE SOIL PREPARATION PER CITY OF AURORA, UTILITIES DEPARTMENT, OFFICE OF WATER CONSERVATION, REGULATIONS FOR OBTAINING NEW SOD/SEED PERMITS. (MINIMUM RATE OF 4.0 CU. YDS. OF COMPOST PER 1000 S.F.).
8. ALL AREAS TO BE SEEDED WITH DRYLAND GRASSES, NATIVE TYPE GRASSES, NATURALIZED GRASSES, OR RESTORATIVE GRASSES SHALL COMPLY WITH ARTICLE 14 OF THE CITY OF AURORA ZONING CODE, "LANDSCAPE ORDINANCE", SEC. 146-1429. THESE AREAS WILL COMPLY WITH REGULATIONS OUTLINED IN THIS CODE FOR SOIL AMENDMENTS AND IRRIGATION.
9. THE COVER CROP SHOWN IN THE SEED MIXTURE MAY BE CHANGED OR RATES ADJUSTED BASED ON THE TIME OF YEAR IN WHICH THE SEEDING IS TO OCCUR.
10. CONTRACTOR TO RE-ESTABLISH VEGETATION IN AREAS OF DISTURBANCE. RE-SEED AREAS DISTURBED BY TREE PLANTING.

11. A SOILS ANALYSIS SHALL BE PERFORMED, BY AN INDEPENDENT TESTING LABORATORY, FOR ALL AREAS TO BE LANDSCAPED PRIOR TO ISSUING CONSTRUCTION DRAWINGS. THE SOILS ANALYSIS WILL BE USED TO JUSTIFY THE SEEDING RATE, QUANTITY OF COMPOST, NEED FOR IRRIGATION, AND RECOMMENDED AMOUNT OF WATER TO BE APPLIED TO SEEDED AREAS. THE SEED MIXTURE, IRRIGATION SYSTEM, AND COMPOST RATES SHOWN ON PLANS MAY BE MODIFIED TO OPTIMIZE THE PERFORMANCE AND EXPEDITE THE RESTORATION OF THESE AREAS.
12. THE DEVELOPER, HIS SUCCESSORS AND ASSIGNS SHALL BE RESPONSIBLE FOR THE ESTABLISHMENT OF DRYLAND GRASSES, NATIVE TYPE GRASSES, NATURALIZED GRASSES, OR RESTORATIVE GRASSES, FOR A PERIOD NOT TO EXCEED THREE FULL GROWING SEASONS. TEMPORARY IRRIGATION SYSTEMS MAY BE NECESSARY TO FACILITATE GERMINATION AND ESTABLISHMENT. THE AREA SHALL BE MAINTAINED AS WEED FREE AS POSSIBLE, DURING THE ENTIRE ESTABLISHMENT PERIOD. MOWING, PULLING, AND CHEMICAL METHODS MAY BE USED TO CONTROL WEEDS AND PREVENT REDEVELOPMENT OF SEED HEADS ON THE WEED PLANT.
13. PERFORMANCE OF SEEDED AREAS SHALL BE EVALUATED FOR INITIAL ACCEPTANCE, AT THE END OF THE FIRST FULL GROWING SEASON, BY BOTH THE CITY OF AURORA AND THE DEVELOPER'S REPRESENTATIVE. THE INSPECTION WILL BE DETERMINE COMPLIANCE WITH SUBSECTION C (1 AND 2), OF ARTICLE 14, SECTION 146-1429
14. AFTER EACH FULL GROWING SEASON, FOR A PERIOD NOT TO EXCEED THREE YEARS, THE GRASS STAND SHALL BE EVALUATED FOR UNIFORMITY IN APPEARANCE, COVERAGE, AND PRESENCE OF WEEDS. UPON AGREEMENT FROM THE DEVELOPER'S REPRESENTATIVE AND THE CITY AURORA, THE TEMPORARY IRRIGATION SYSTEM WILL BE PERMANENTLY DEACTIVATED OR REMOVED.
15. SIX INCHES OF THE ORIGINAL TOP SOIL, SHALL BE SALVAGED FROM THE SITE, PRIOR TO OVERLOT GRADING AND REDISTRIBUTED OVER AREAS TO RECEIVED DRYLAND GRASSES, NATIVE TYPE GRASSES, NATURALIZED GRASSES, OR RESTORATIVE GRASSES, IN ACCORDANCE WITH PART 3 OF SUBSECTION I, OF ARTICLE 14, SECTION 146-1429.
16. TREES SHALL NOT BE LOCATED IN DRAINAGE SWALES, OR DRAINAGE AREAS.
17. THE DEVELOPER, HIS SUCCESSORS AND ASSIGNS ARE RESPONSIBLE FOR IMPLEMENTING EROSION CONTROL MEASURES ON SEEDED SLOPES EXCEEDING 3:1.
18. SIGHT TRIANGLES SHALL REMAIN UNOBSTRUCTED BY PLANT MATERIAL, OR ANY OTHER VISUAL OBSTACLE, OVER 24" IN HEIGHT. VISIBILITY MUST REMAIN 75% OPEN FOR THE VERTICAL AREA FROM 2 TO 3 FEET HEIGHT AS IDENTIFIED IN THE ROADWAY DESIGN & SPECIFICATIONS MANUAL.
19. ANY TREE LOCATED WITHIN A SIGHT TRIANGLE MUST BE PRUNED TO PROVIDE NO OBSTRUCTION BELOW 7' IN ACCORDANCE WITH THE SIGHT TRIANGLE DETAIL IN COA ROADWAY DESIGN MANUAL.

20. ALL AREAS SHALL BE GRADED TO ACHIEVE POSITIVE DRAINAGE, UNLESS IDENTIFIED AS A DETENTION OR RETENTION POND.
21. DO NOT DISTURB THE EXISTING PAVING, LIGHTING, LANDSCAPING, OR IRRIGATION THAT EXISTS ADJACENT TO THE SITE UNLESS OTHERWISE NOTED ON PLAN.
22. LANDSCAPE MATERIAL PLACEMENT SHALL NOT BE PLACED OR KEPT NEAR FIRE HYDRANTS, FIRE DEPARTMENT INLET CONNECTIONS OR FIRE PROTECTION CONTROL VALVES IN A MANNER THAT WOULD PREVENT SUCH EQUIPMENT OR FIRE HYDRANTS FROM BEING IMMEDIATELY DISCERNIBLE. THE FIRE DEPARTMENT SHALL NOT BE DETERRED OR HINDERED FROM GAINING IMMEDIATE ACCESS TO FIRE PROTECTION EQUIPMENT OR HYDRANTS.
23. A 5-FOOT CLEAR SPACE SHALL BE MAINTAINED AROUND THE CIRCUMFERENCE OF FIRE HYDRANTS.
24. LANDSCAPING MATERIAL SHOWN WITHIN THE SITE PLAN CANNOT ENCROACH INTO ROADWAYS THAT ARE DEDICATED (OR DESIGNATED) AS FIRE LANE EASEMENTS (OR CORRIDORS).
25. ALL LANDSCAPED AREAS AND PLANT MATERIAL, EXCEPT FOR NON-IRRIGATED NATIVE, RESTORATIVE, AND DRYLAND GRASS AREAS THAT COMPLY WITH REQUIREMENTS FOUND IN SEC. 146-1429, MUST BE WATERED BY AN AUTOMATIC UNDERGROUND IRRIGATION SYSTEM. IRRIGATION SYSTEM DESIGN, INSTALLATION, OPERATION, AND MAINTENANCE SHALL CONFORM TO REQUIREMENTS FOUND IN THE CITY OF AURORA IRRIGATION ORDINANCE.
26. ALL FIRE HYDRANTS SHALL BE LOCATED NOT LESS THAN 36" AND NOT MORE THAN 8' MAXIMUM FROM THE BACK OF THE CURB TO THE CENTER OF THE HYDRANT AND SHALL BE UNOBSTRUCTED ON THE STREET SIDE.
27. PRIOR TO ISSUANCE OF THE FINAL CERTIFICATE OF OCCUPANCY (CO) FOR PLANNING AREA 12, DEVELOPER WILL COMPLETE INSTALLATION OF THE LANDSCAPING. IF ROADWAY AND HARDSCAPE CONSTRUCTION IS COMPLETED AFTER OCTOBER 15TH, A TEMPORARY CERTIFICATE OF OCCUPANCY (TCO) MAY BE ISSUED, AND THE LANDSCAPING WILL BE REQUIRED TO BE COMPLETED WITHIN 90 DAYS FROM THE FOLLOWING APRIL 15TH. .
24. ADJUSTMENTS IN THE PLANT MATERIAL LOCATIONS WILL BE NECESSARY TO ACCOMMODATE FUTURE DRIVEWAY/CURB CUTS ASSOCIATED WITH ALL ADJACENT PLANNING AREAS.
25. FIRE HYDRANTS MUST BE PLACED AT LEAST ONE (1) FOOT IN FRONT OR BEHIND A SIDEWALK WHILE STILL MEETING THE MINIMUM BACK OF CURB CLEARANCE REQUIREMENTS.



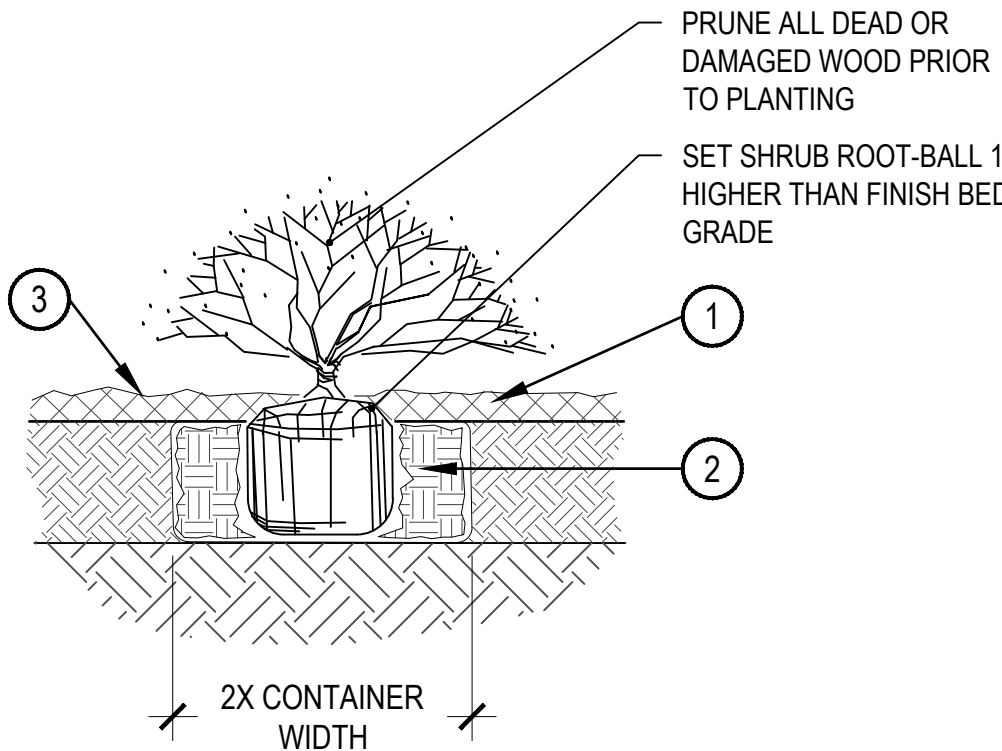
1 PERENNIAL PLANT LAYOUT

SCALE: 1" = 1'-0"

- 1 SPECIFIED MULCH
- 2 AMENDED SOIL IN PLANTING BED PER SPECIFICATIONS. TILL SOIL TO A DEPTH OF EIGHT INCHES.
- 3 FINISH GRADE (TOP OF MULCH)

NOTE:

1. BROKEN OR CRUMBLING ROOT-BALLS WILL BE REJECTED
2. CARE SHOULD BE TAKEN NOT TO DAMAGE THE SHRUB OR ROOT-BALL WHEN REMOVING IT FROM ITS CONTAINER
3. ALL JUNIPERS SHOULD BE PLANTED SO THE TOP OF THE ROOT-BALL OCCURS ABOVE THE FINISH GRADE OF THE MULCH LAYER
4. DIG PLANT PIT TWICE AS WIDE AND HIGH AS THE CONTAINER



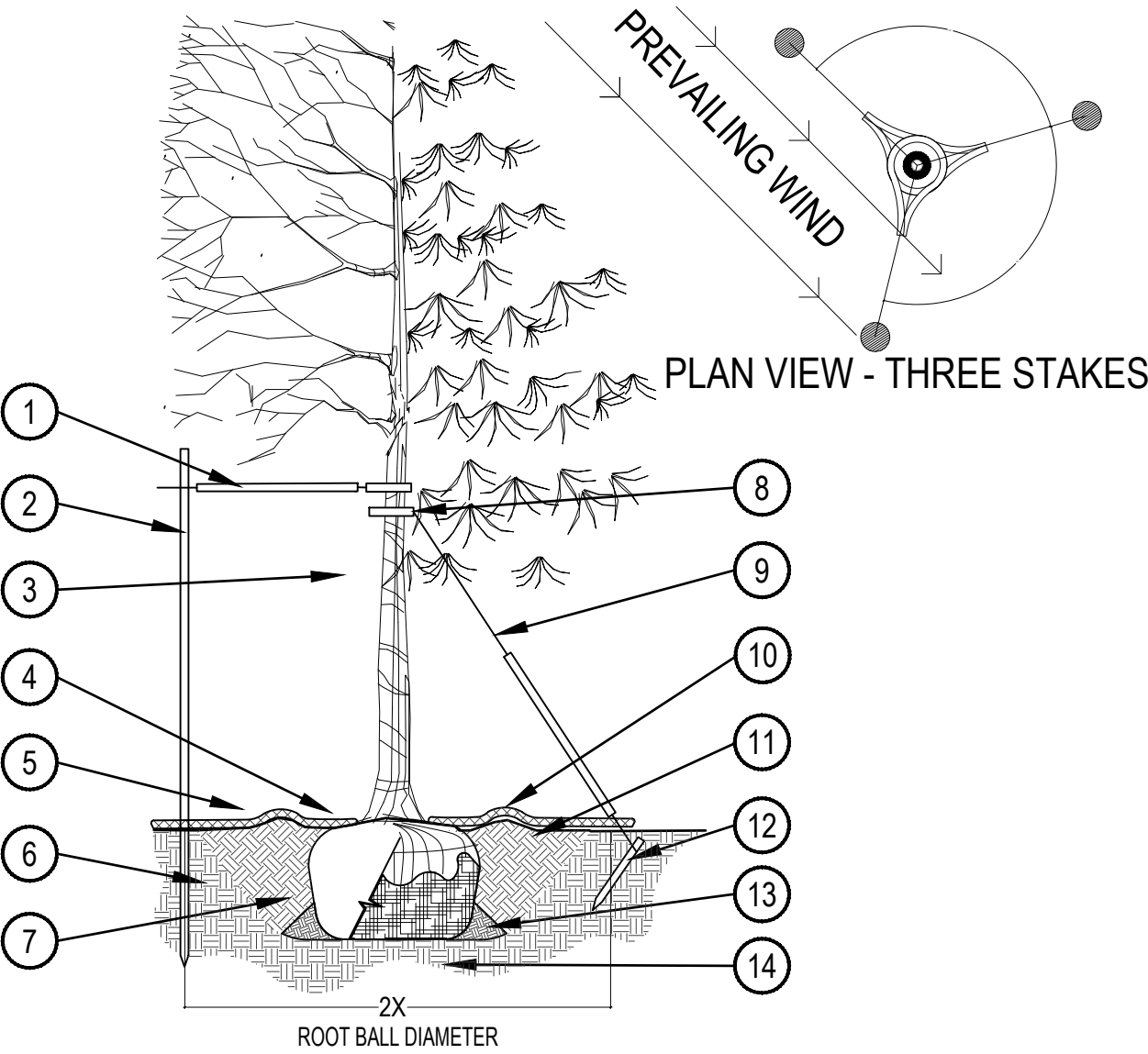
2 SHRUB PLANTING

SCALE: 1-1/2" = 1'-0"

STANDARD RIGHT OF WAY LANDSCAPE REQUIRE						
56TH AVENUE						
ROW DESCRIPTION	ROW LENGTH	LANDSCAPE AREA	# OF TREES REQUIRED	# OF TREES PROVIDED	# OF SHRUBS REQUIRED	# OF SHRUBS PROVIDED
STREET FRONTAGE (1 TREE / 40 FT.)	2,408 L.F.	24,316	61	42	608	652 SHRUBS
JACKSON GAP STREET						
STREET FRONTAGE (1 TREE / 40 FT.)	9,866 L.F.	81,461	247	**242	2,037	2,057 SHRUBS
JACKSON GAP WAY						
STREET FRONTAGE (1 TREE / 40 FT.)	3,729 L.F.	29,814	94	95	746	*736 SHRUBS

**DUE TO UTILITY CONFLICTS, TREE REQUIREMENTS ON JACKSON GAP STREET HAVE NOT BEEN MET.

*ONE TREE OVER REQUIRED COUNTS ON JACKSON GAP WAY REPLACED TEN REQUIRED SHRUBS.



3 TREE PLANTING DETAIL

SCALE: 3/16" = 1'-0"

PRUNING NOTES:

1. ALL PRUNING SHALL COMPLY WITH ANSI
2. DO NOT HEAVILY PRUNE THE TREE AT PLANTING. LEADERS AND BROKEN BRANCHES. SOME INTERIOR TWIGS AND LATERAL BRANCHES MAY BE PRUNED. HOWEVER, DO NOT REMOVE THE TERMINAL BUDS OF BRANCHES THAT EXTEND TO THE EDGE OF THE CROWN.

STAKING NOTES:

1. STAKE TREES PER FOLLOWING SCHEDULE, THEN REMOVE AT END OF FIRST GROWING SEASON.
- 1.1 1-3/4" CALIPER SIZE - MIN. 1 STAKE ON SIDE OF PREVAILING WIND (GENERALLY N.W. SIDE)
- 1.2 1-3/4" - 3" CALIPER SIZE - MIN. 2 STAKES - ONE ON N.W. SIDE, ONE ON S.W. SIDE (OR PREVAILING WIND SIDE AND 180° FROM THAT SIDE)
- 1.3 3" CALIPER SIZE AND LARGER - 3 STAKES PER DIAGRAM
2. WIRE OR CABLE SHALL BE MIN. 12 GAUGE, TIGHTEN WIRE OR CABLE ONLY ENOUGH TO KEEP FROM SLIPPING. ALLOW FOR SOME TRUNK MOVEMENT. NYLON STRAPS SHALL BE LONG ENOUGH TO ACCOMMODATE 1-1/2" OF GROWTH AND BUFFER ALL BRANCHES FROM WIRE.

- 1 PLACE MIN. 1/2" PVC PIPE AROUND EACH WIRE. EXPOSED WIRE SHALL BE MAX. 2" EACH SIDE
- 2 6 FT. UNTREATED WOOD POST (MIN. 1.5" DIAMETER). ALL SHALL BE DRIVEN OUTSIDE ROOTBALL AND IN UNDISTURBED SOIL.
- 3 TREE WRAP TO BE INSTALLED ONLY FROM OCTOBER 1 THROUGH APRIL 30. (DECIDUOUS ONLY)
- 4 PLANT TREE SO THAT FIRST ORDER MAJOR ROOT IS 1"-2" ABOVE FINAL GRADE.
- 5 3" DEEP MULCH RING PLACED A MINIMUM OF 4 FT. IN DIAMETER. DO NOT PLACE MULCH IN CONTACT WITH TREE TRUNK (FINISHED GRADE REFERENCES TOP OF MULCH).
- 6 1:1 SLOPE ON SIDES OF PLANTING HOLE.
- 7 REMOVE ALL TWINE, ROPE, BURLAP AND WIRE FROM ENTIRE ROOT BALL AND TRUNK
- 8 GROMMETED NYLON STRAPS
- 9 GALVANIZED WIRE, MIN. 12 GAUGE CABLE - TWIST WIRE ONLY TO KEEP FROM SLIPPING.
- 10 4-6" HIGH WATER SAUCER IN NON-TURF AREAS.
- 11 BACKFILL WITH BLEND OF EXISTING SOIL AND A MAXIMUM 20% (BY VOLUME) ORGANIC MATERIAL. WATER THOROUGHLY WHEN BACKFILLING
- 12 2 FT. STEEL T-POST. ALL SHALL BE DRIVEN BELOW GRADE AND OUTSIDE ROOTBALL IN UNDISTURBED SOIL.
- 13 PLACE SOIL AROUND ROOT BALL FIRMLY, DO NOT COMPACT OR TAMP. SETTLE SOIL WITH WATER TO FILL ALL AIR POCKETS.
- 14 PLACE ROOT BALL ON UNDISTURBED SOIL TO PREVENT SETTLEMENT.

SHEET NUMBER	DRAWN BY:	EN: KK	CHECKED BY:	JB: PKL	DATE:	SCALE:	AS SHOWN	FILE NO:	AMENDMENT TO INFRASTRUCTURE SITE PLAN NO. 1 AT PORTEOS	LANDSCAPE NOTES	ACP DIA 1287 INVESTORS, LLC 4530 E SHEA BLVD., SUITE 100 PHOENIX, AZ 85028 ATTN: JEFFREY PERKINS P: 602.484.7880	NORRIS DESIGN Planning Landscape Architecture Project Facilitation 1101 Bannock Street Denver, CO 80204 P: 303.882.1166 www.norris-design.com	4	3	2	1	RESPONSE TO COMMENTS	12/04/2019	Date	Init	Appr.	Date

PLANTING SCHEDULE

SHEET NUMBER

11

DRAWN BY:

EN KK

CHECKED BY:

JB PK/LV

DATE:

12/03/2019

SCALE:

AS SHOWN

FILE NO:

AMENDMENT TO INFRASTRUCTURE

SITE PLAN NO. 1 AT PORTEOS

PLANT SCHEDULE

ACP DIA 1287 INVESTORS, LLC

4530 E SHEA BLVD., SUITE 100

PHOENIX, AZ 85028

ATTN: JAMES C. PERKINS

P: 602.494.7380

NORRIS DESIGN

Planning | Landscape Architecture | Project Presentation

Norris Design

1101 Bannock Street

Denver, CO 80204

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No.

RESPONSE TO COMMENTS

Revisions

12/04/2019

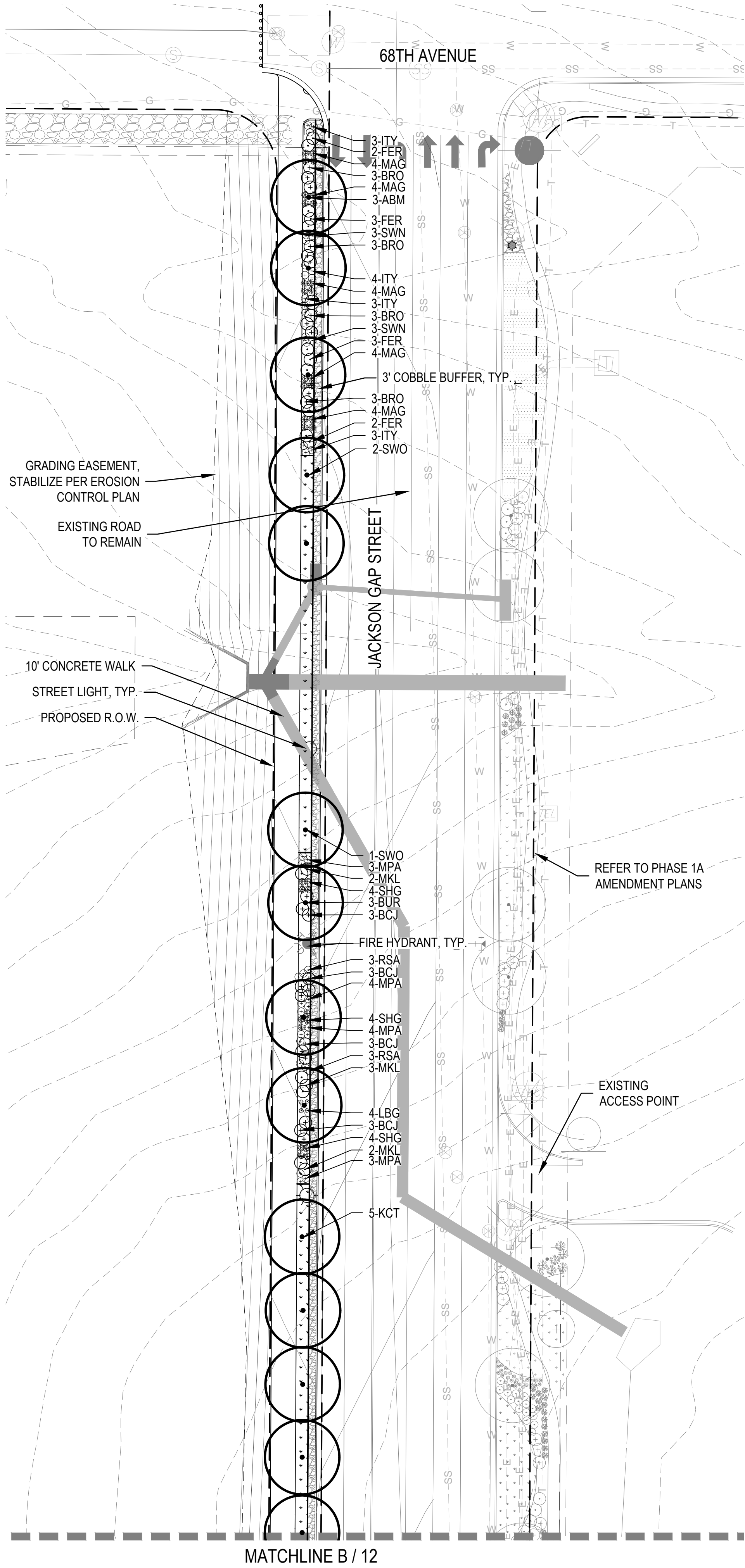
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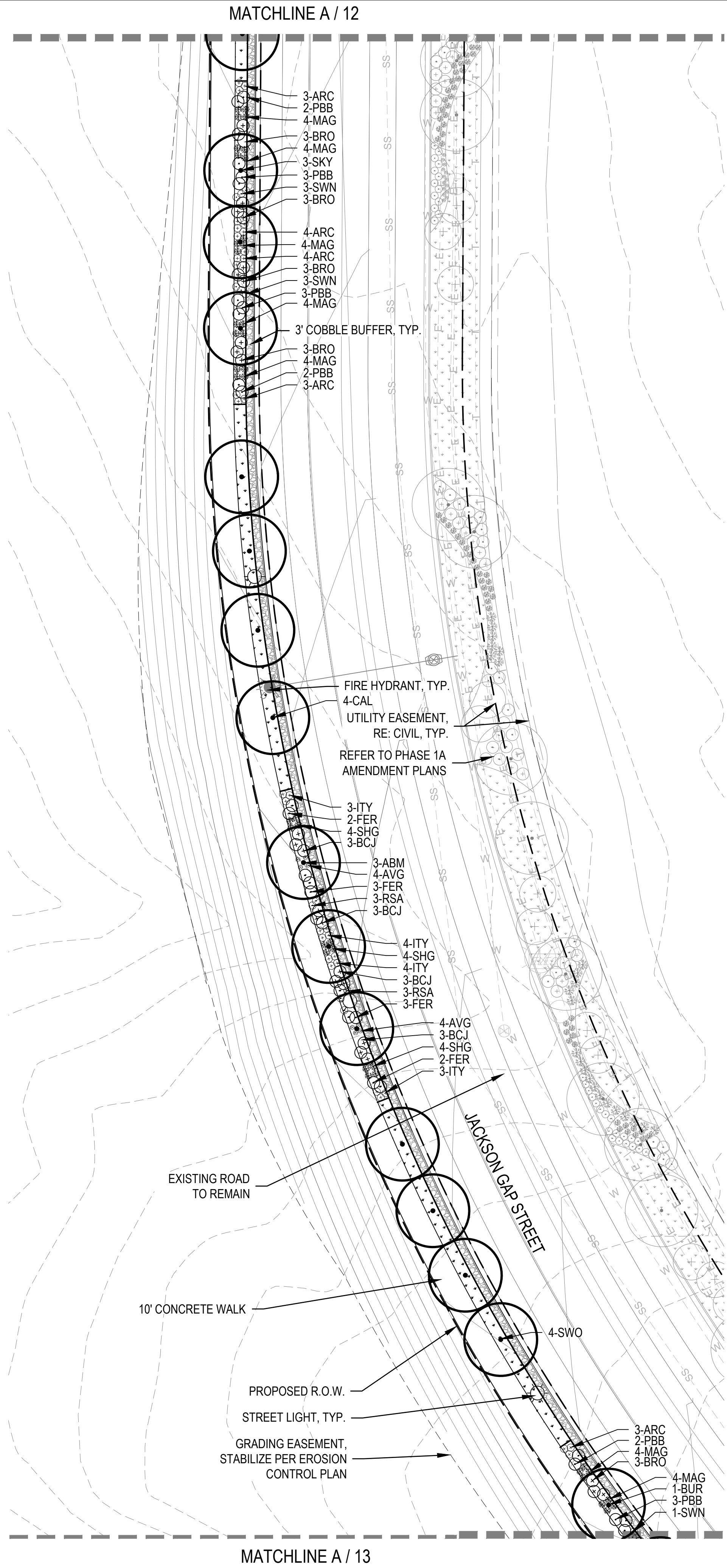
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A LANDSCAPE PLAN

SCALE: 1" = 30'



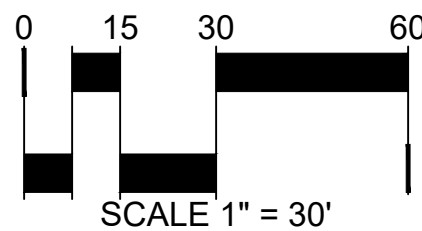
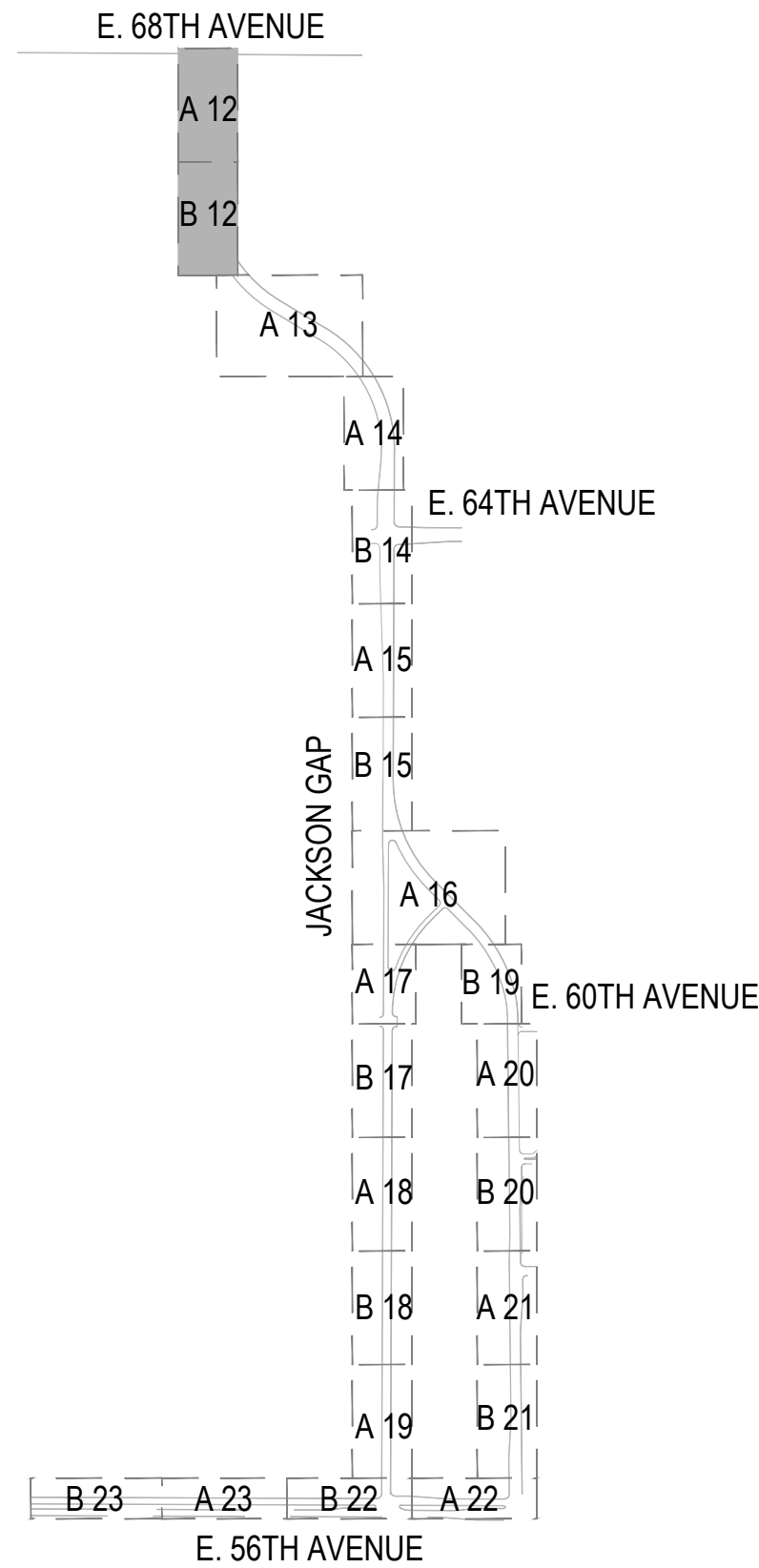
B LANDSCAPE PLAN

SCALE: 1" = 30'

LEGEND

- CANOPY TREE
- ORNAMENTAL TREE
- DECIDUOUS SHRUBS
- EVERGREEN SHRUBS
- ORNAMENTAL GRASSES
- ENHANCED NATIVE SEED MIX
- 4"-6" ROCK COBBLE
- STEEL EDGER
- LIMIT OF LANDSCAPE IMPROVEMENTS
- STREET LIGHT
- FIRE HYDRANT
- PROPOSED CONTOURS -MAJOR
- PROPOSED CONTOURS -MINOR
- EXISTING CONTOURS

KEY MAP

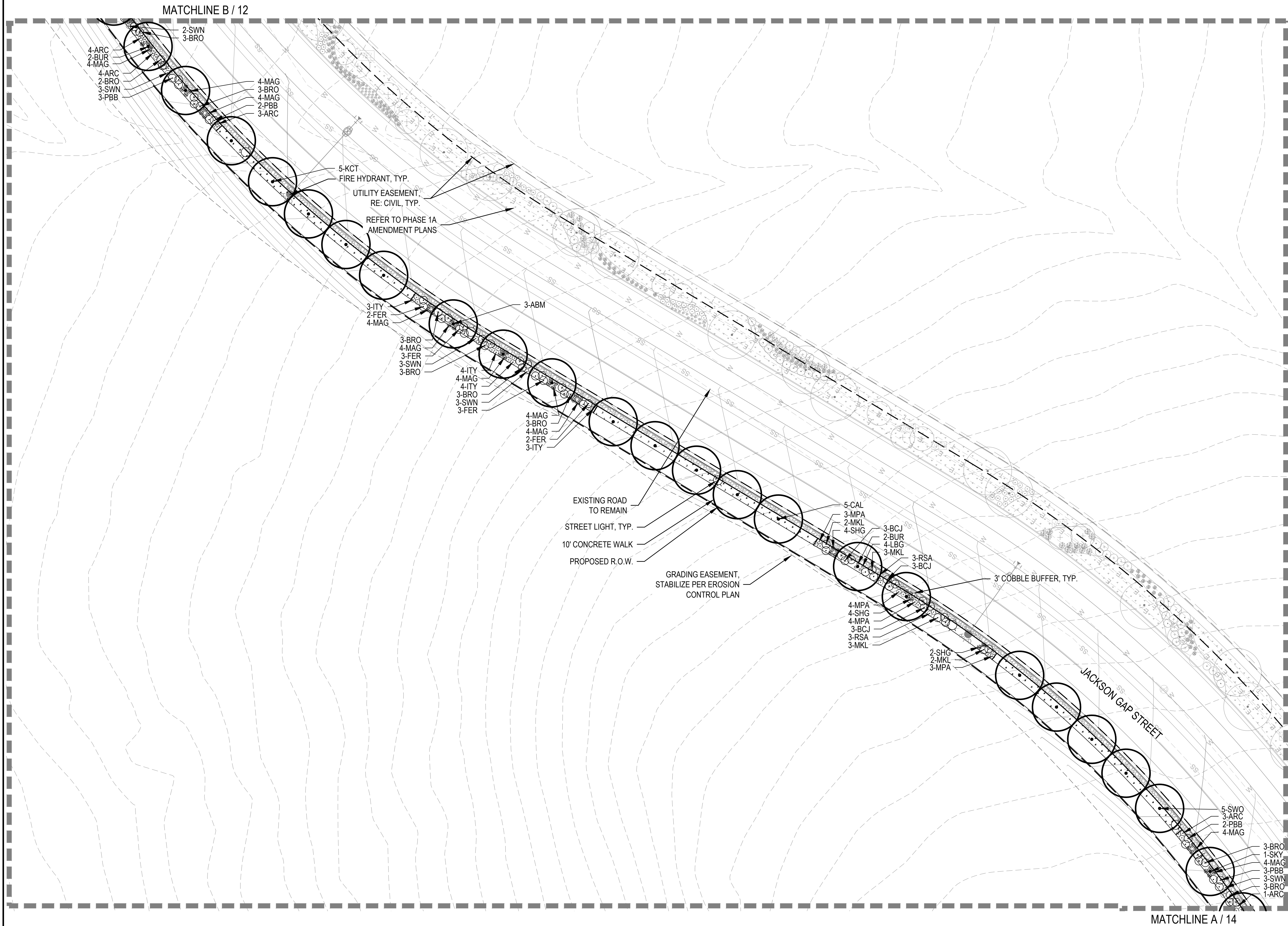


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ACP DIA 1287 INVESTORS, LLC 4530 E. SHEA BLVD., SUITE 100 PHOENIX, AZ 85028 ATTN: JEFFREY PERKINS P: 602.434.7380					
Norris Design 1101 Bannock Street Denver, CO 80204 P: 303.892.1166 www.norris-design.com					
4	3	2	1	RESPONSE TO COMMENTS	12/04/2019
No.	Revisions	Date	Init.	Appr.	Date

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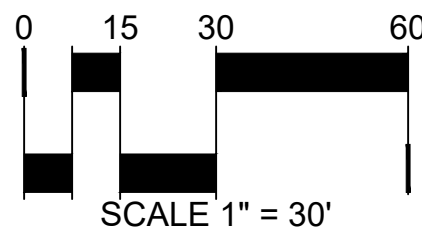
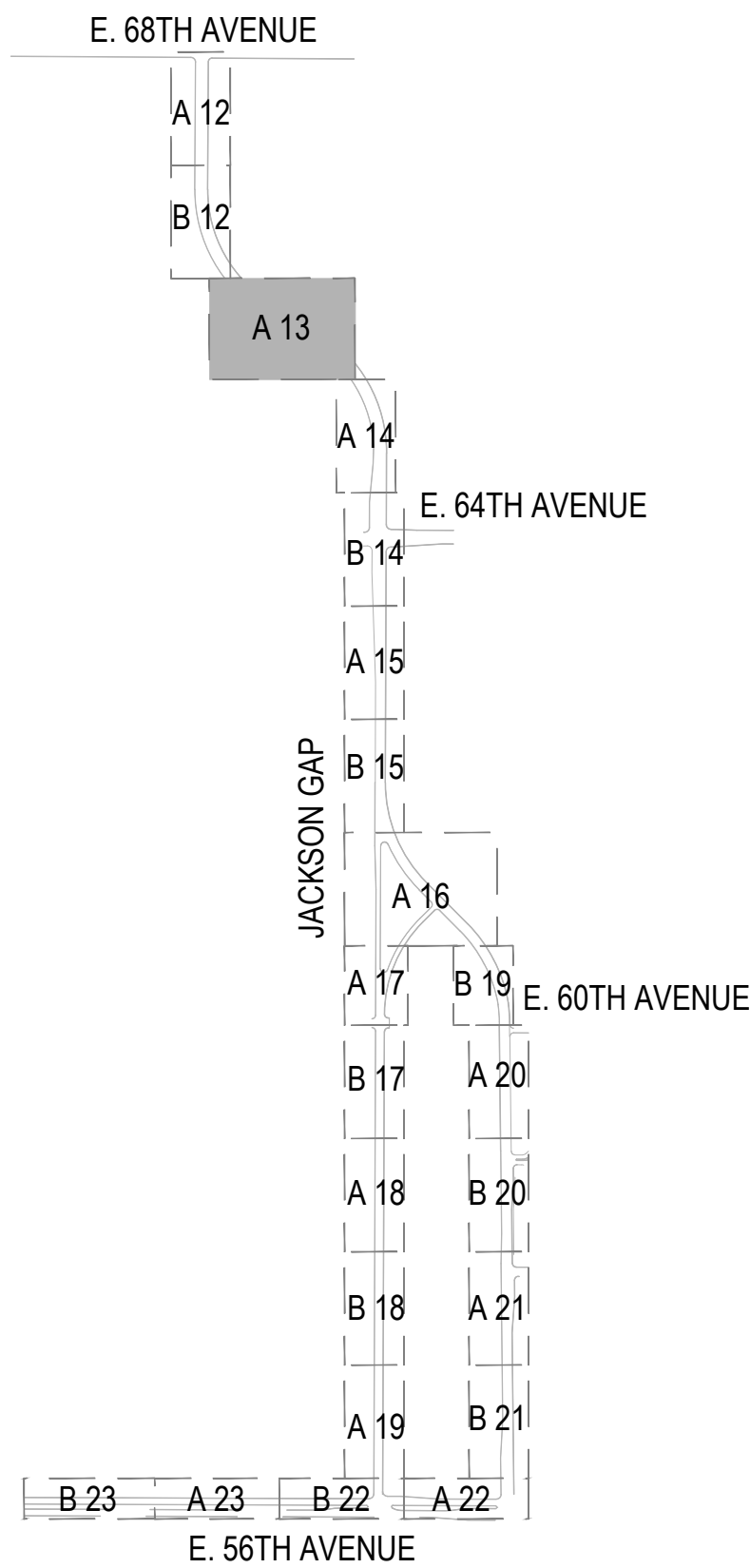
A
13 LANDSCAPE PLAN



LEGEND

- CANOPY TREE
- ORNAMENTAL TREE
- DECIDUOUS SHRUBS
- EVERGREEN SHRUBS
- ORNAMENTAL GRASSES
- ENHANCED NATIVE SEED MIX
- 4"-6" ROCK COBBLE
- STEEL EDGER
- LIMIT OF LANDSCAPE IMPROVEMENTS
- STREET LIGHT
- FIRE HYDRANT
- PROPOSED CONTOURS -MAJOR
- PROPOSED CONTOURS -MINOR
- EXISTING CONTOURS

KEY MAP



SHEET NUMBER
13

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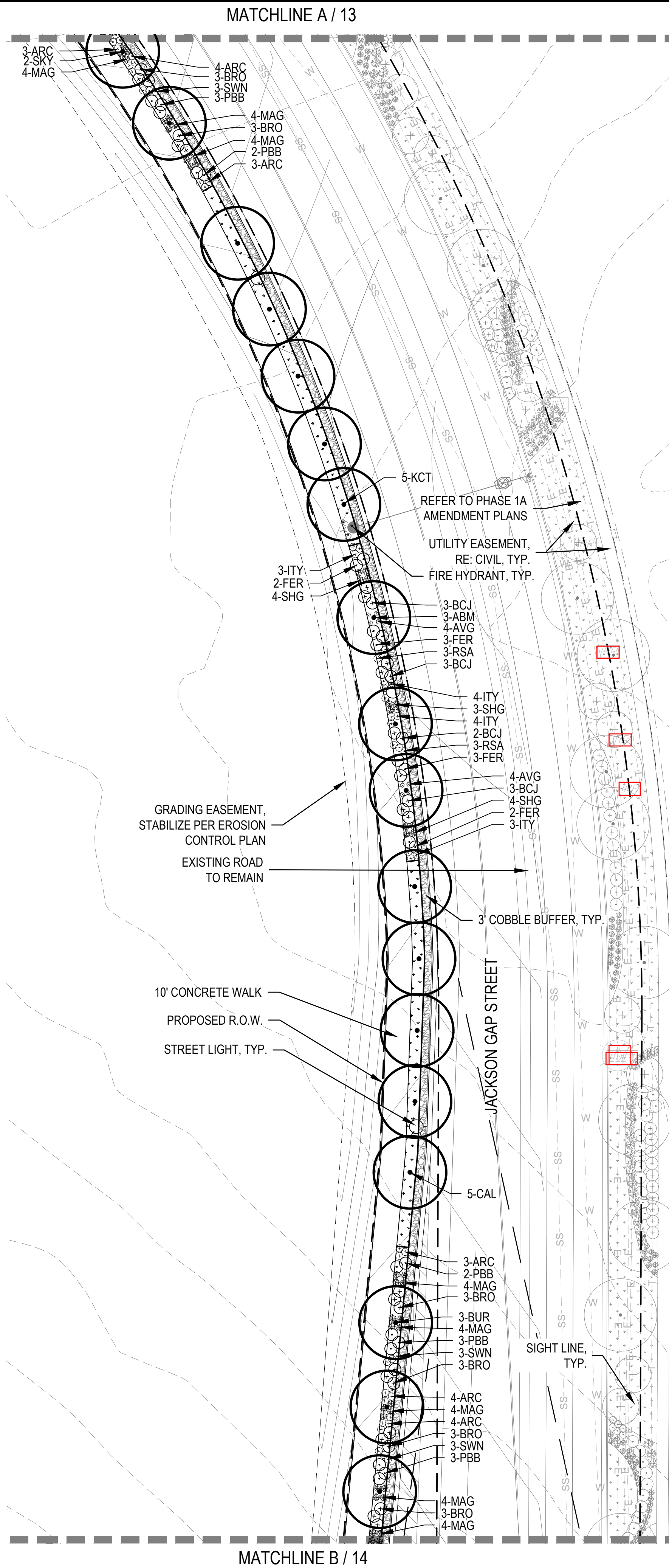
AMENDMENT TO INFRASTRUCTURE
SITE PLAN NO. 1 AT PORTEOS
LANDSCAPE PLAN

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No.	Date	Init.	Appr.	Date
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3				
2				
1	12/04/2019			
RESPONSE TO COMMENTS				
Revisions				

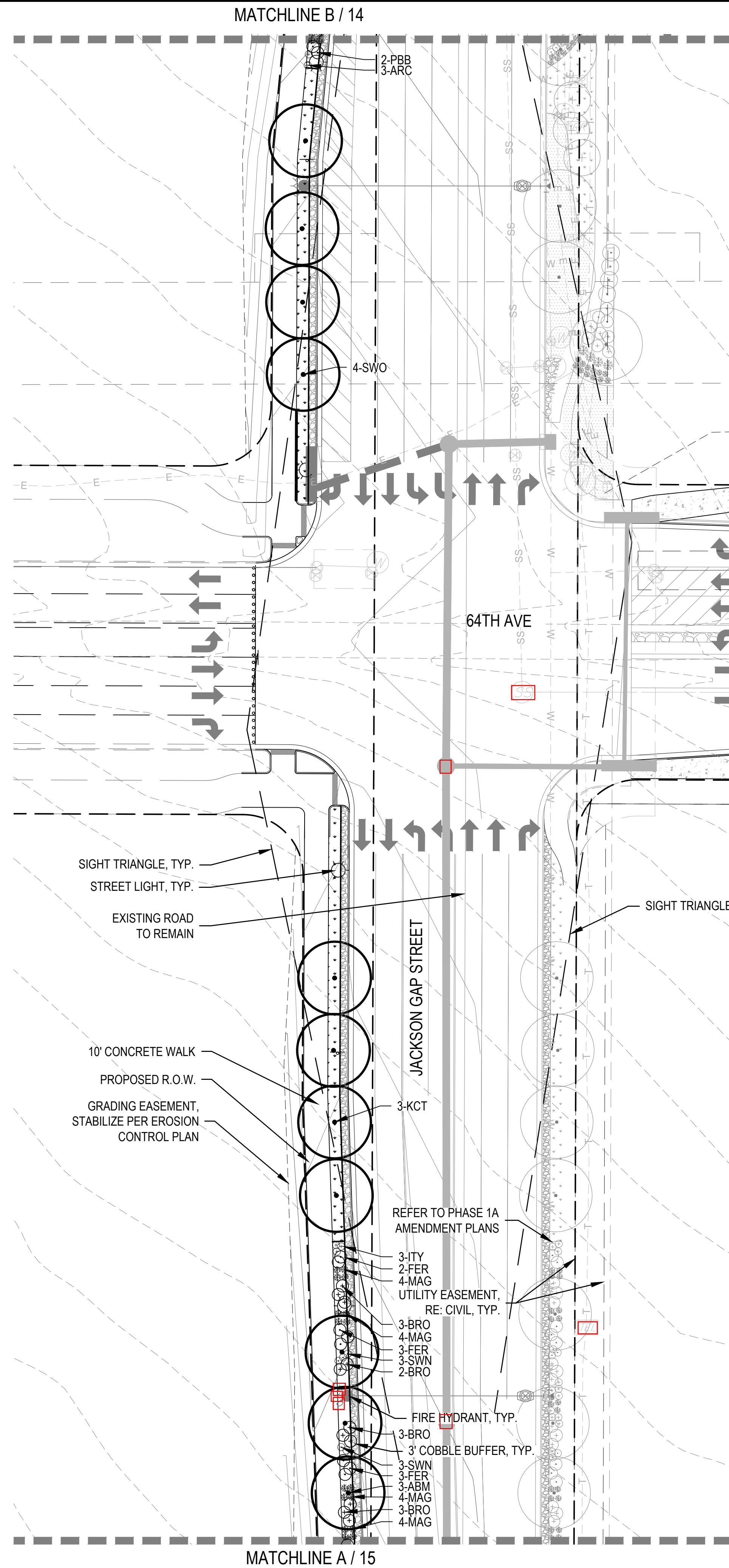
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A
14

LANDSCAPE PLAN

SCALE: 1" = 30'



B
14

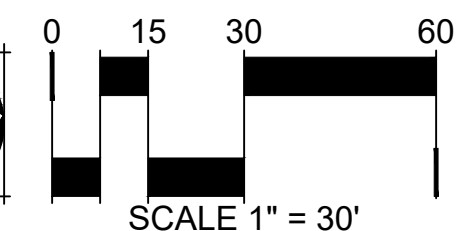
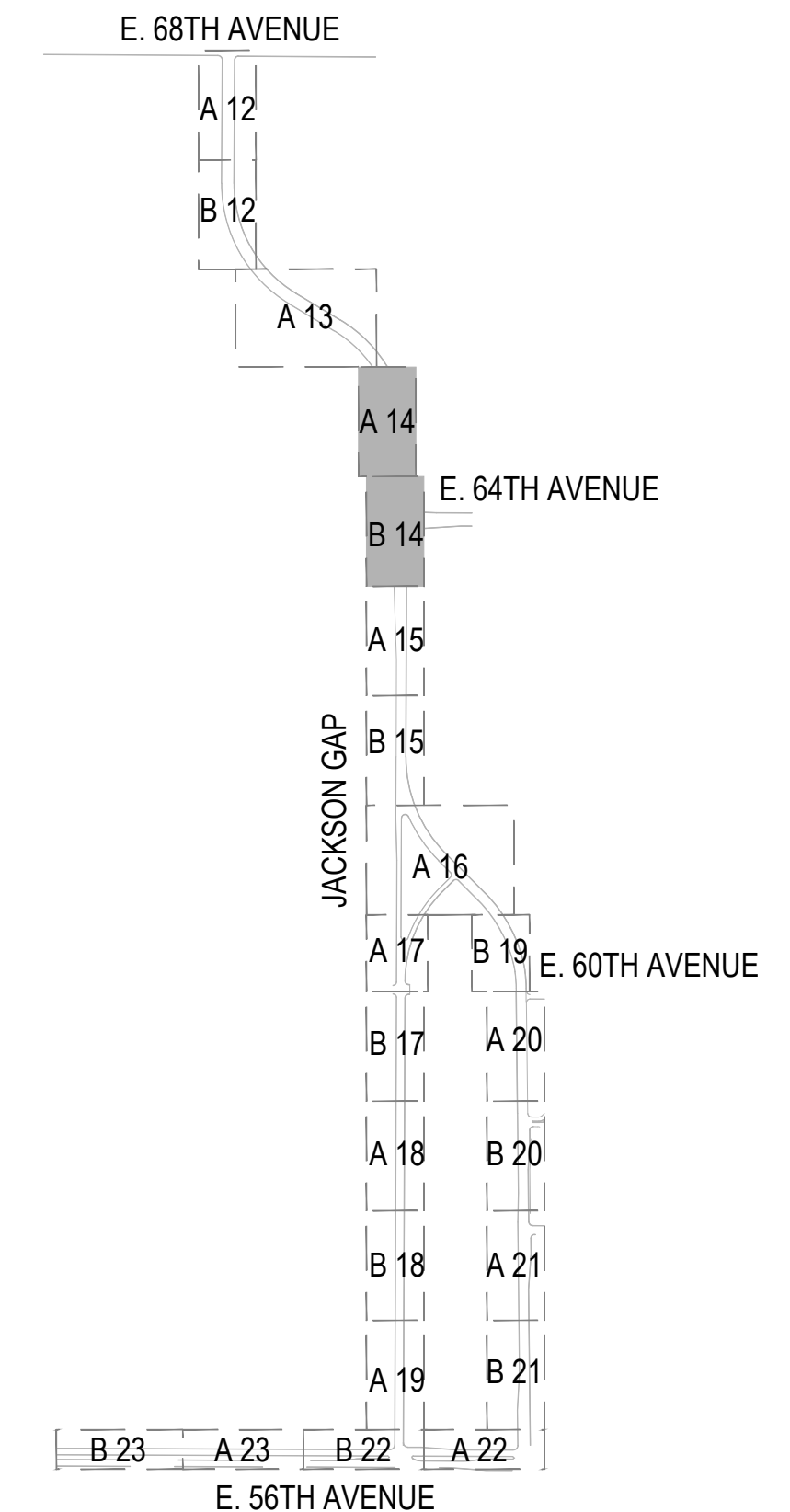
LANDSCAPE PLAN

SCALE: 1" = 30'

LEGEND

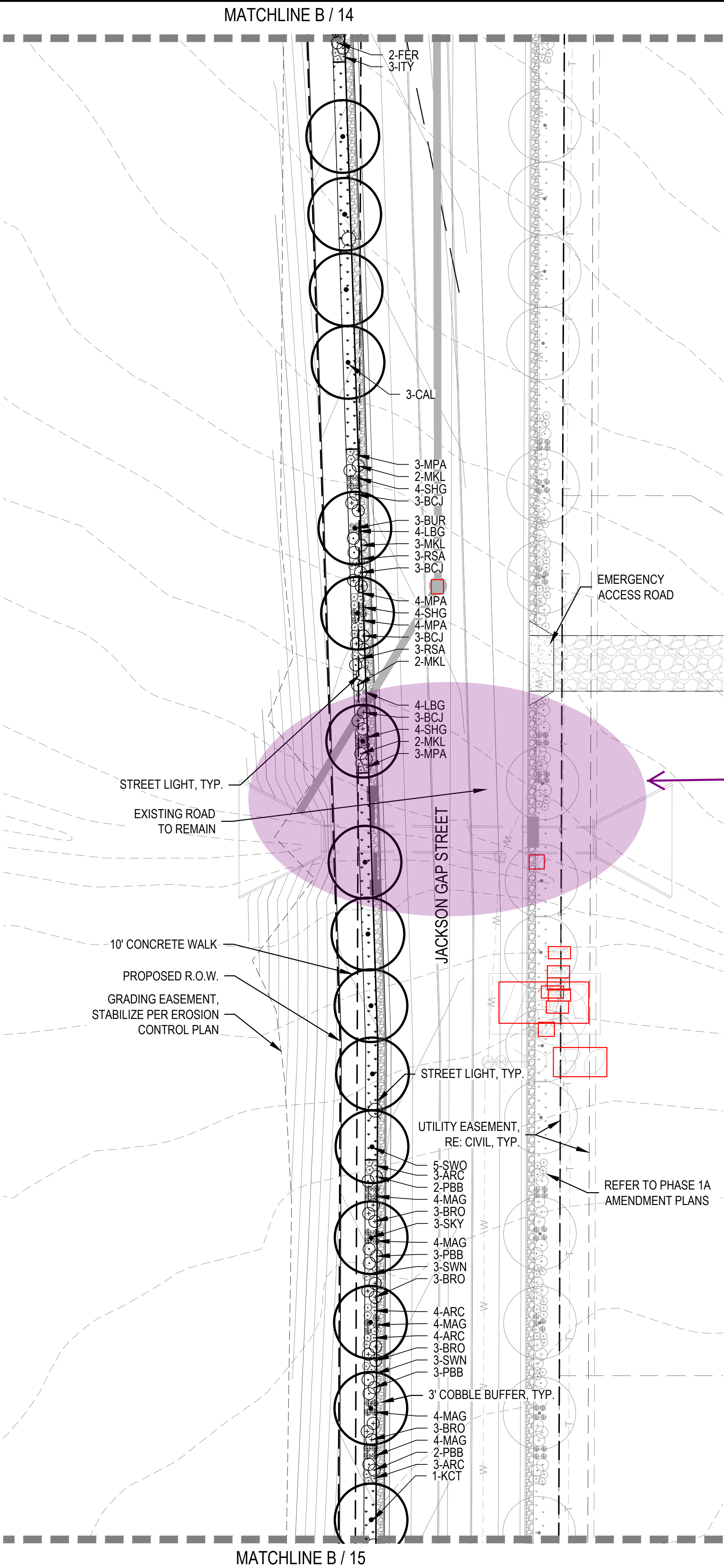
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KEY MAP



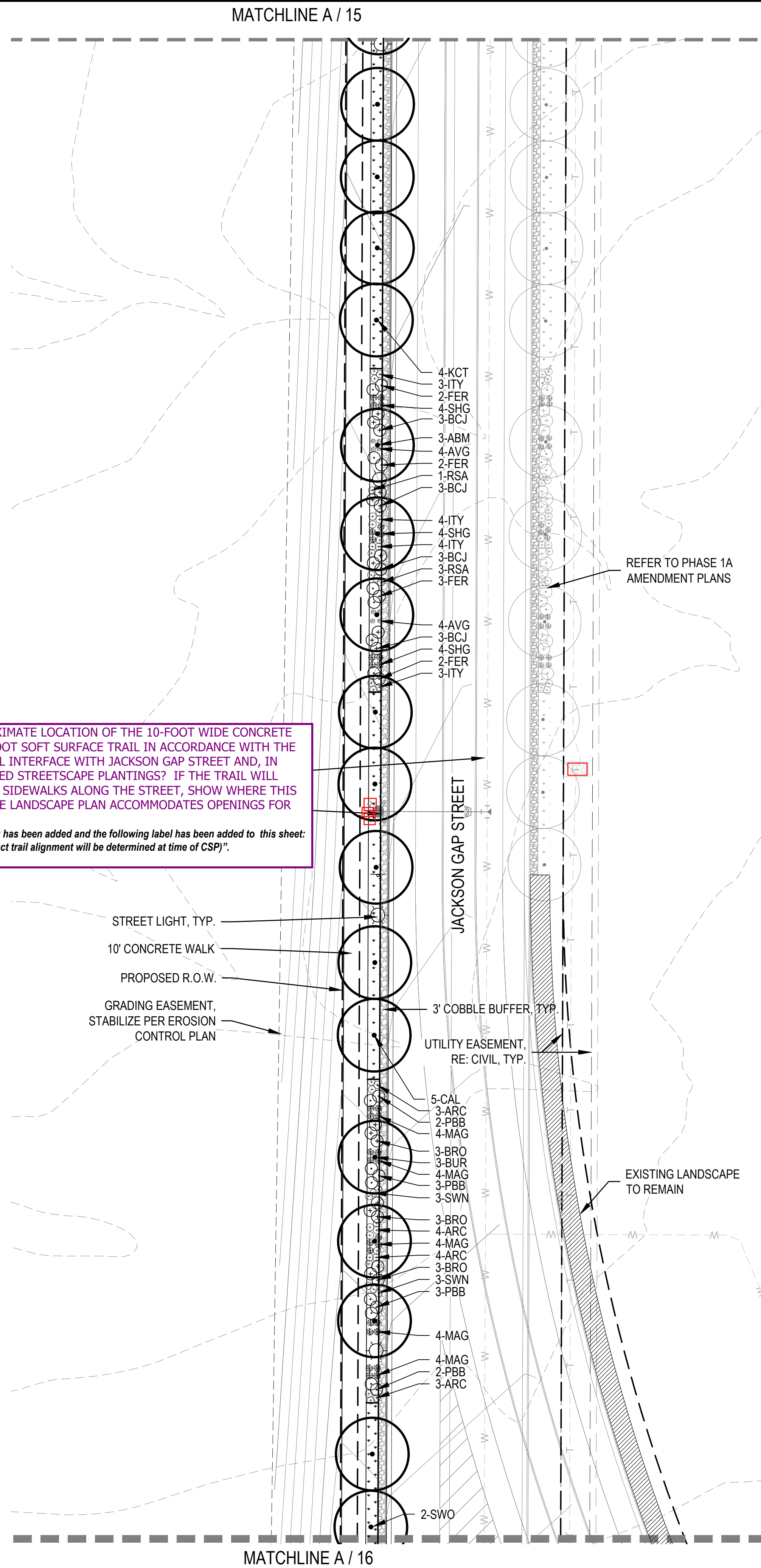
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Scale:	AS SHOWN	File No:			
AMENDMENT TO INFRASTRUCTURE SITE PLAN NO. 1 AT PORTEOS LANDSCAPE PLAN					
ACP DIA 1287 INVESTORS, LLC 4530 E. SHEA BLVD., SUITE 100 PHOENIX, AZ 85028 ATTN: JEFFREY PERKINS P. 602.434.7380					
Norris Design 1101 Bannock Street Denver, CO 80204 P. 303.882.1166 www.norris-design.com					
4	3	2	1	RESPONSE TO COMMENTS	12/04/2019
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A LANDSCAPE PLAN

SCALE: 1" = 30'



B LANDSCAPE PLAN

SCALE: 1" = 30'

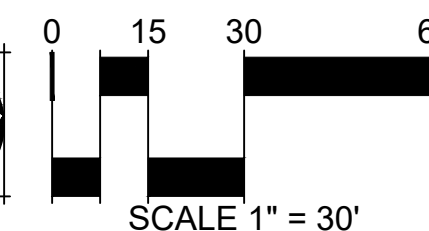
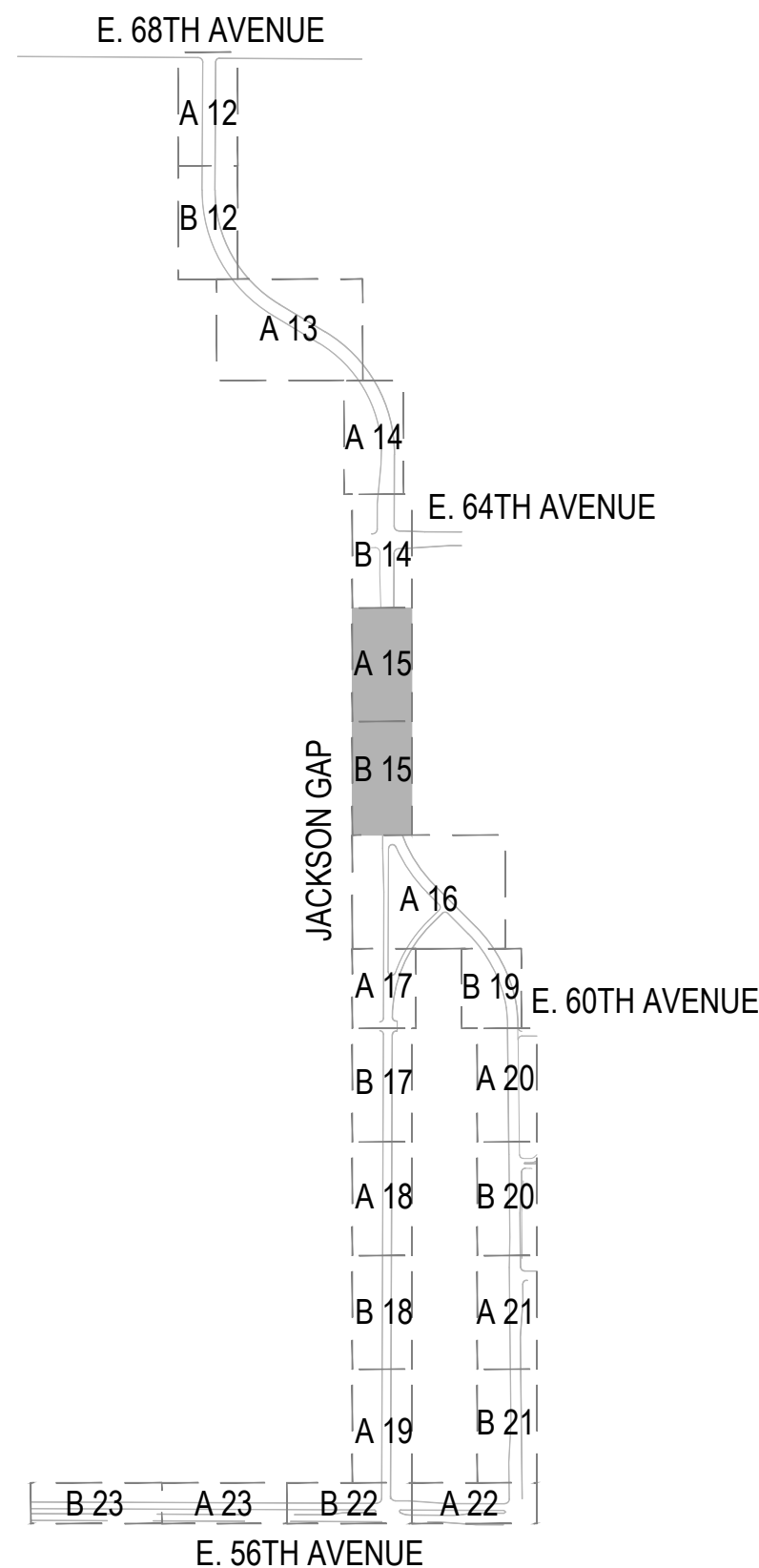
AGAIN, SHOW THE APPROXIMATE LOCATION OF THE 10-FOOT WIDE CONCRETE TRAIL AND ADJACENT 3-FOOT SOFT SURFACE TRAIL IN ACCORDANCE WITH THE FDP. HOW WILL THE TRAIL INTERFACE WITH JACKSON GAP STREET AND, IN PARTICULAR, THE PROPOSED STREETScape PLANTINGS? IF THE TRAIL WILL INTERCONNECT WITH THE SIDEWALKS ALONG THE STREET, SHOW WHERE THIS WILL OCCUR AND HOW THE LANDSCAPE PLAN ACCOMMODATES OPENINGS FOR THE CONNECTION POINTS.

Response: Ramp for trail crossing has been added and the following label has been added to this sheet: "Future FDP Trail Connection (exact trail alignment will be determined at time of CSP)".

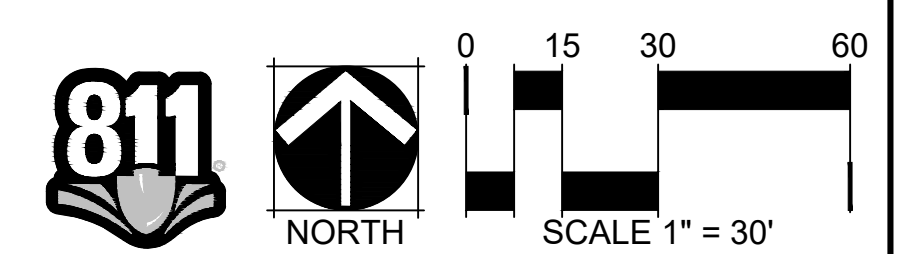
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- PROPOSED CONTOURS - MINOR
- EXISTING CONTOURS

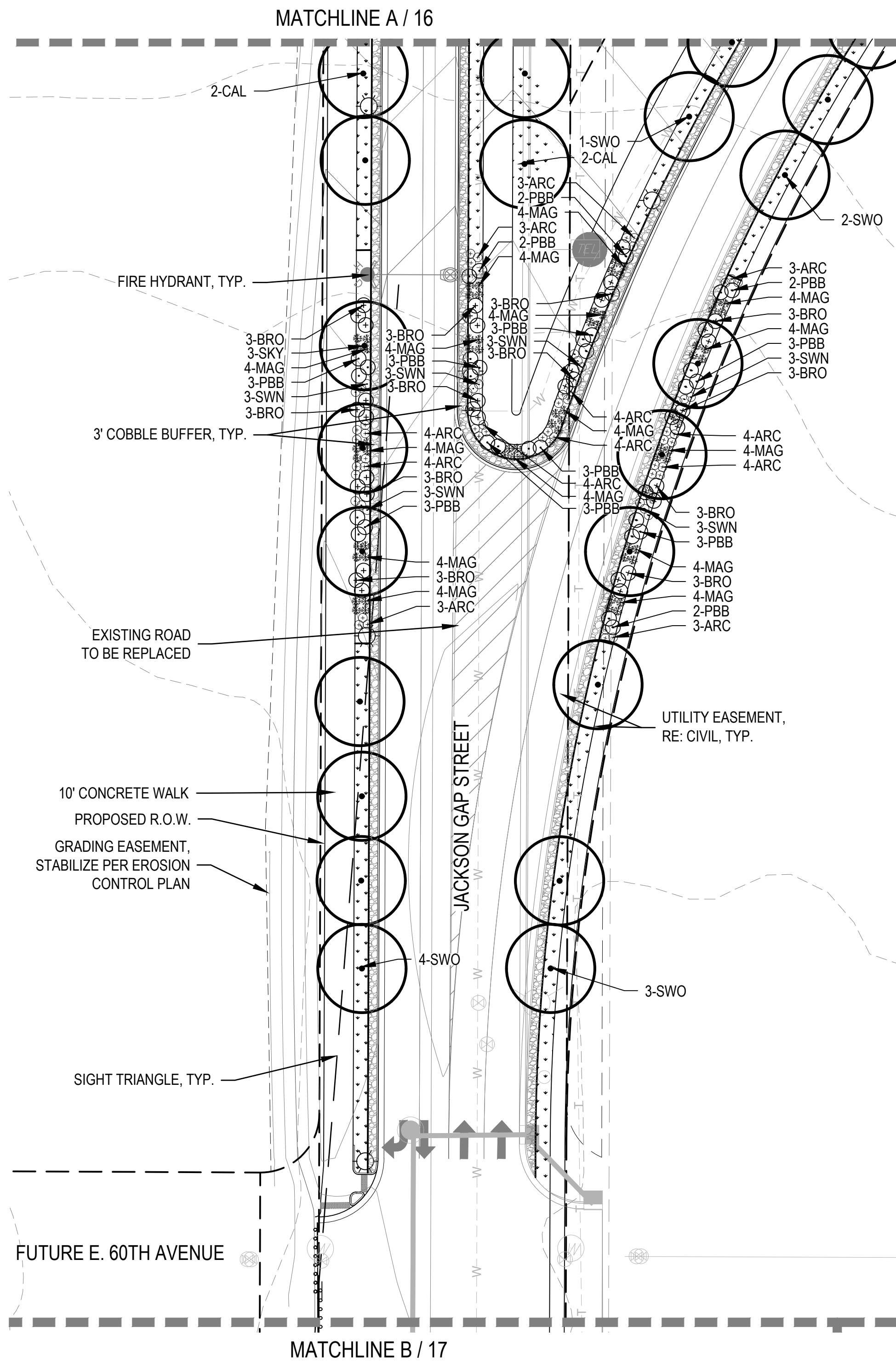
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ACP DIA 1287 INVESTORS, LLC 4530 E. SHEA BLVD., SUITE 100 PHOENIX, AZ 85028 ATTN: JEFFREY M. HARRIS P: 602.494.7880					
Norris Design 1101 Bannock Street Denver, CO 80204 P: 303.892.1166 www.norris-design.com					
4	3	2	1	RESPONSE TO COMMENTS	12/04/2019
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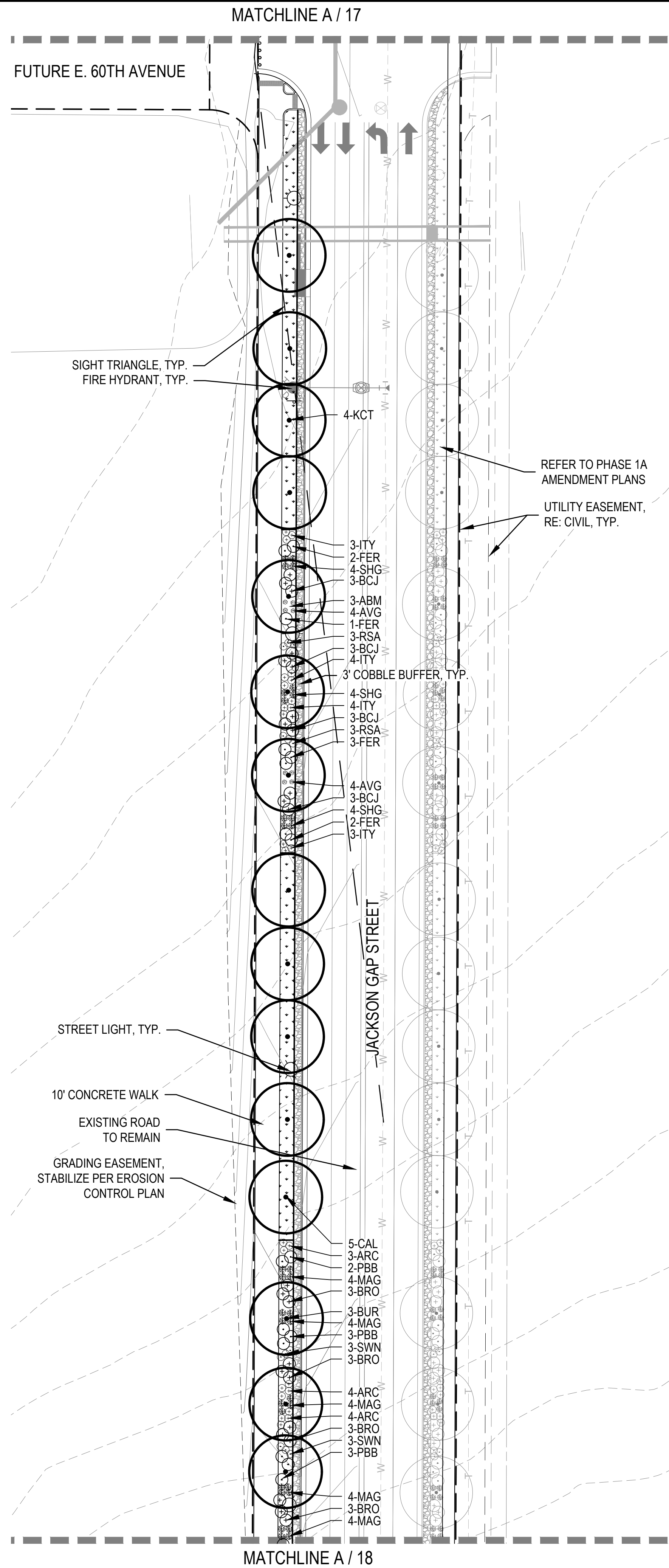


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A LANDSCAPE PLAN

SCALE: 1" = 30'



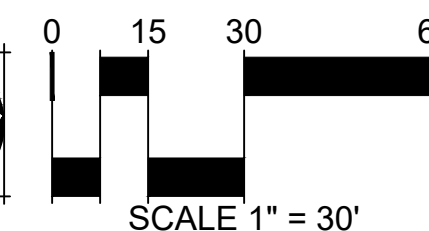
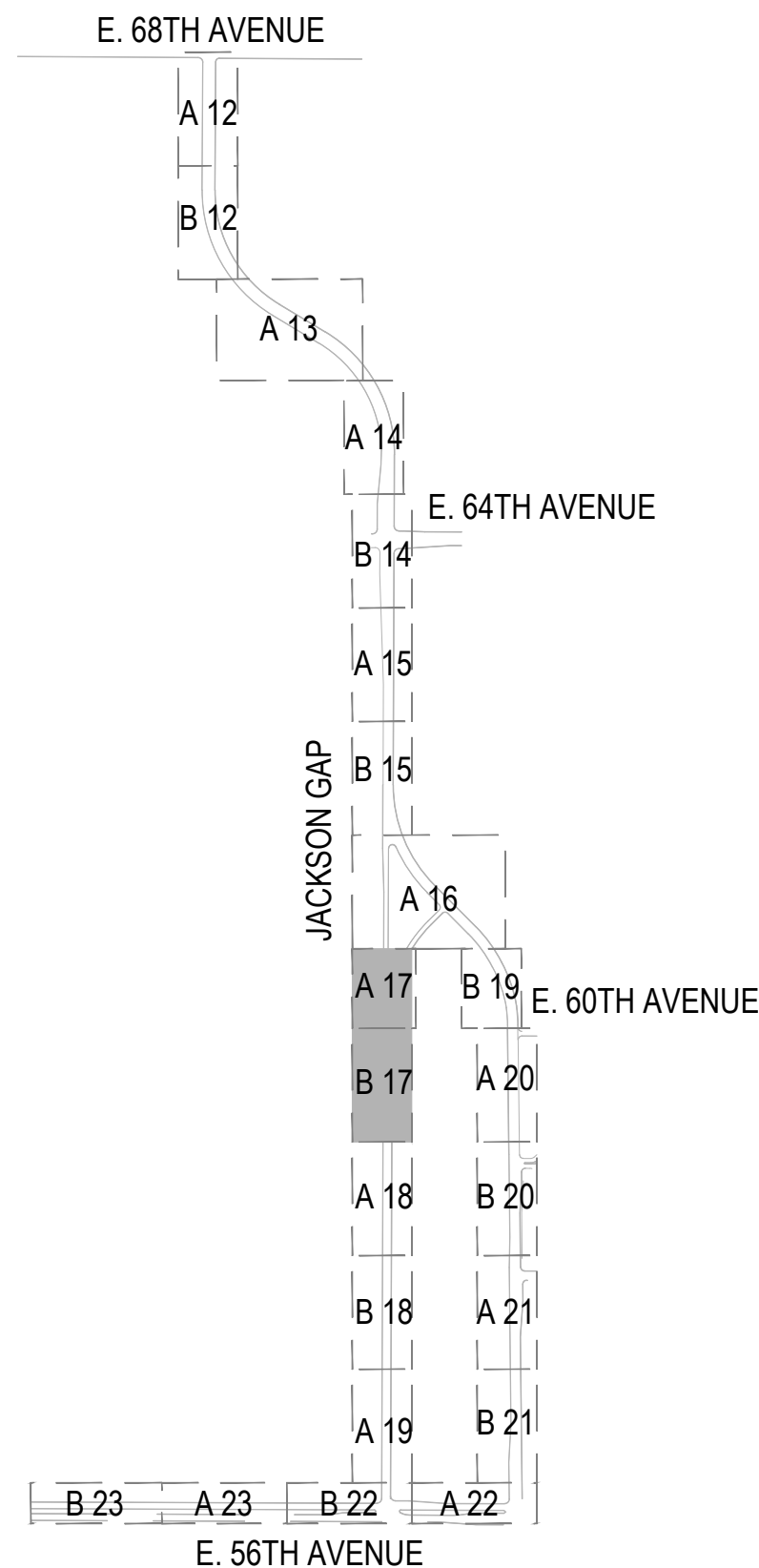
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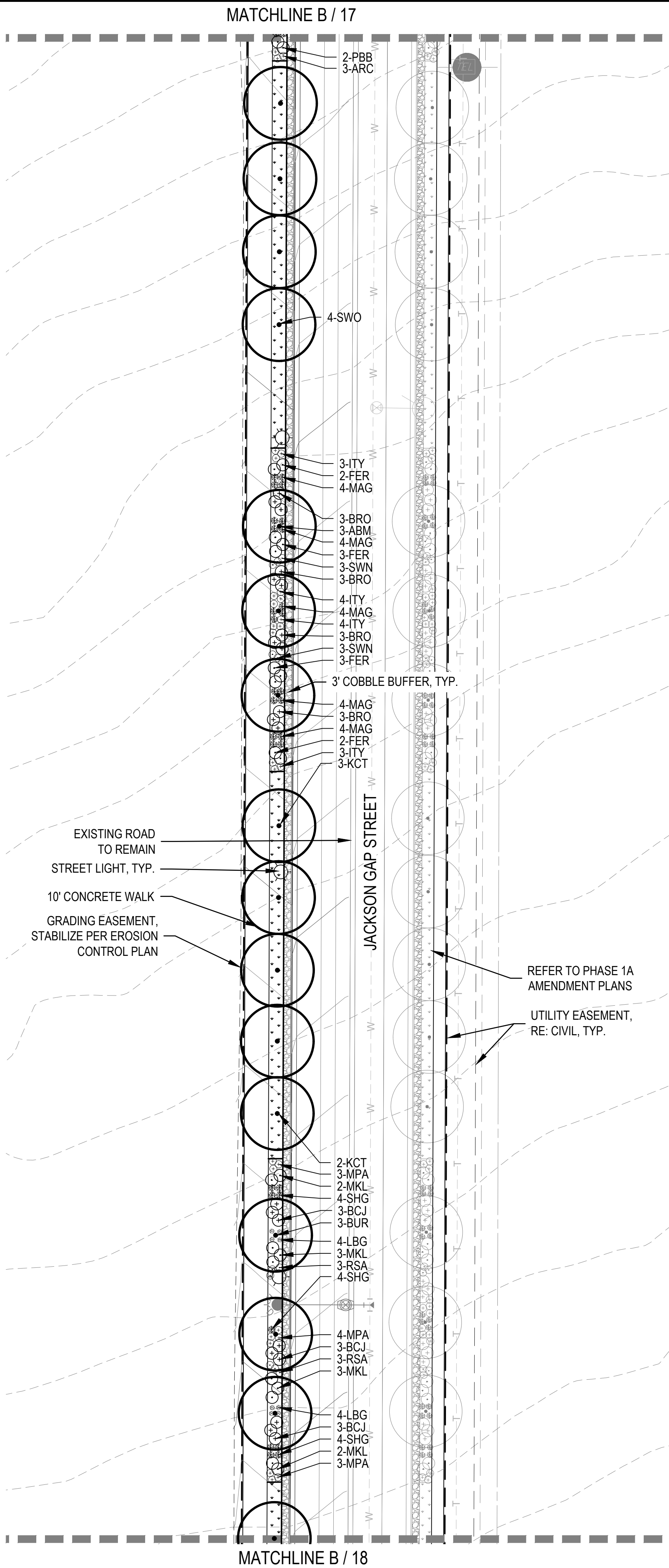
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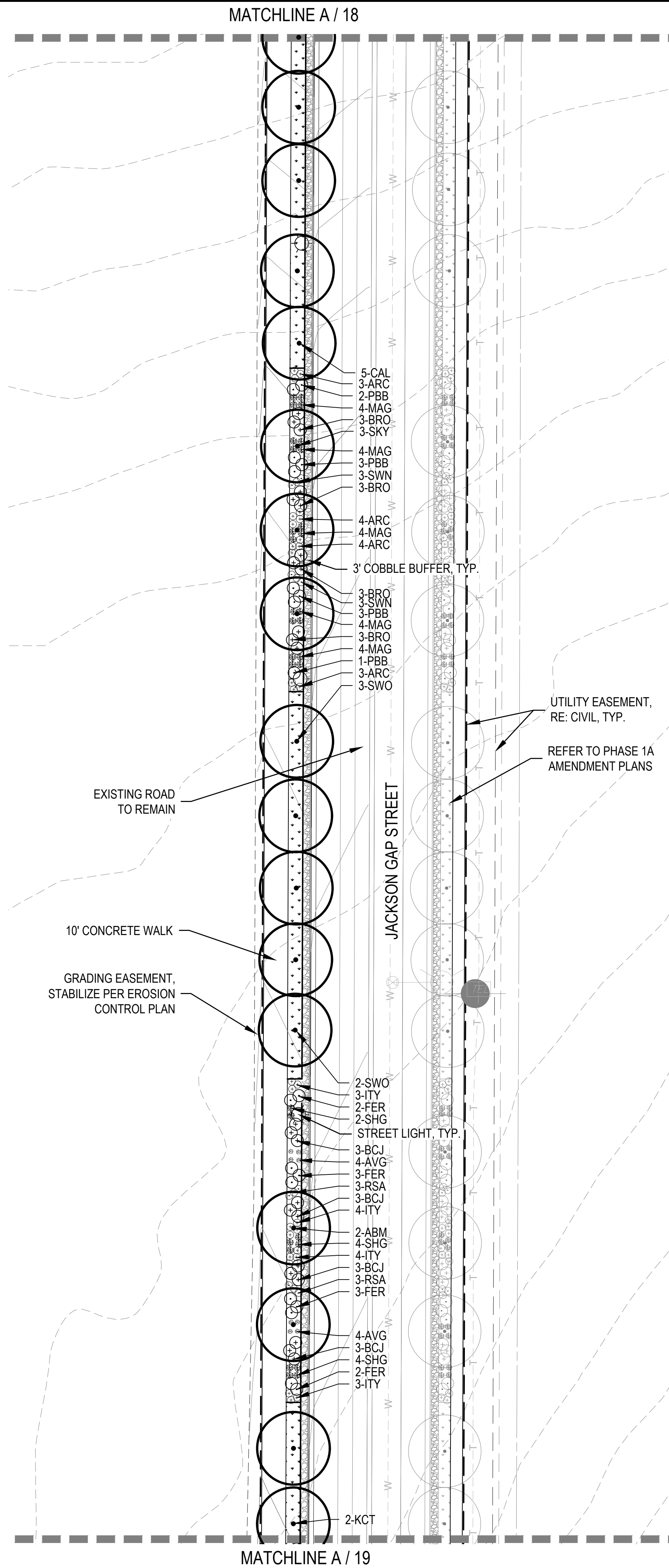
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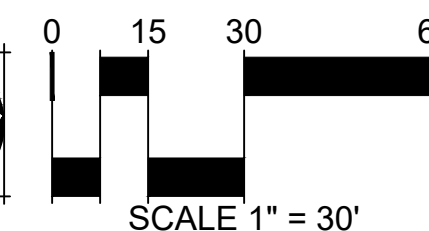
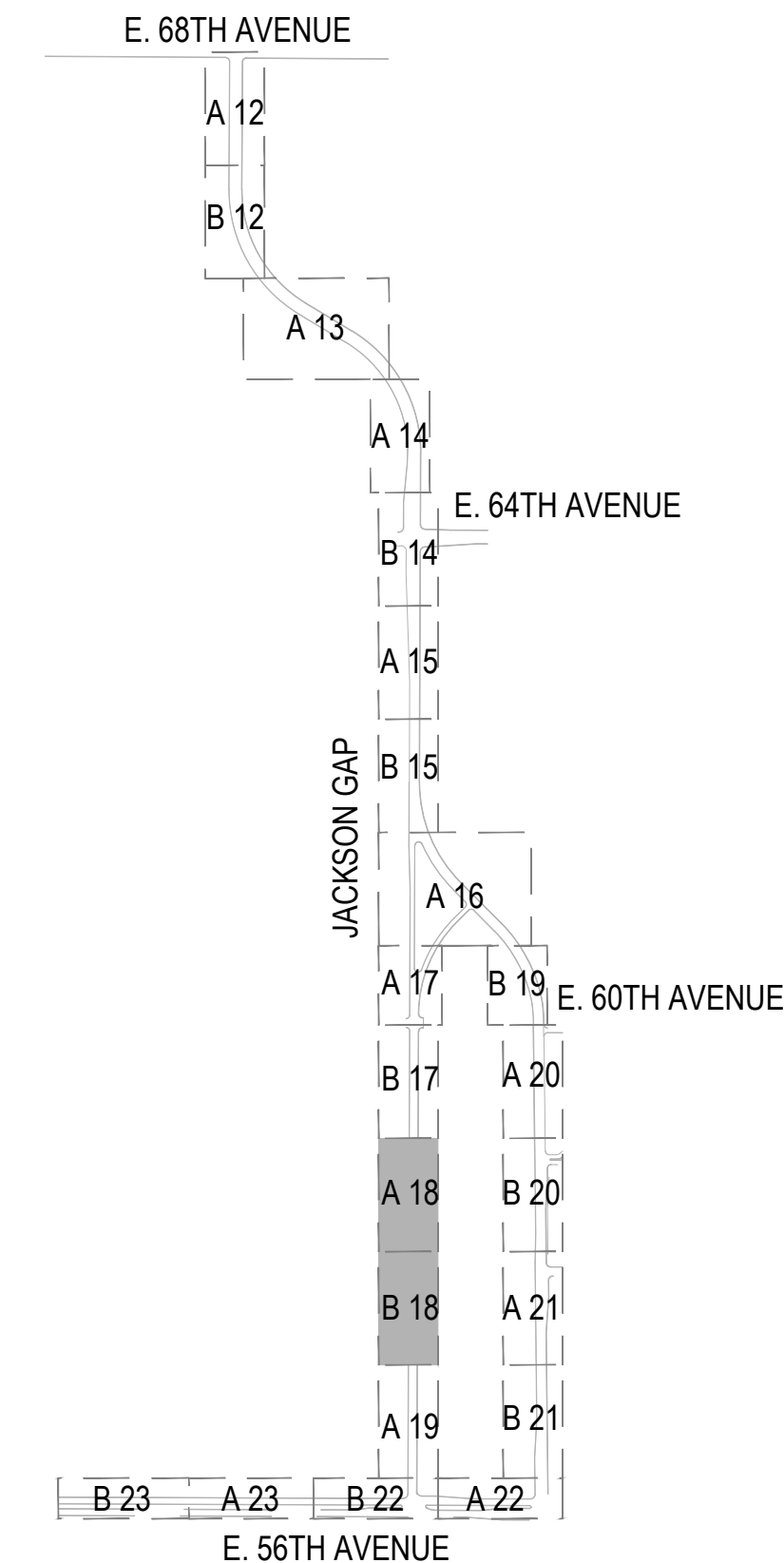
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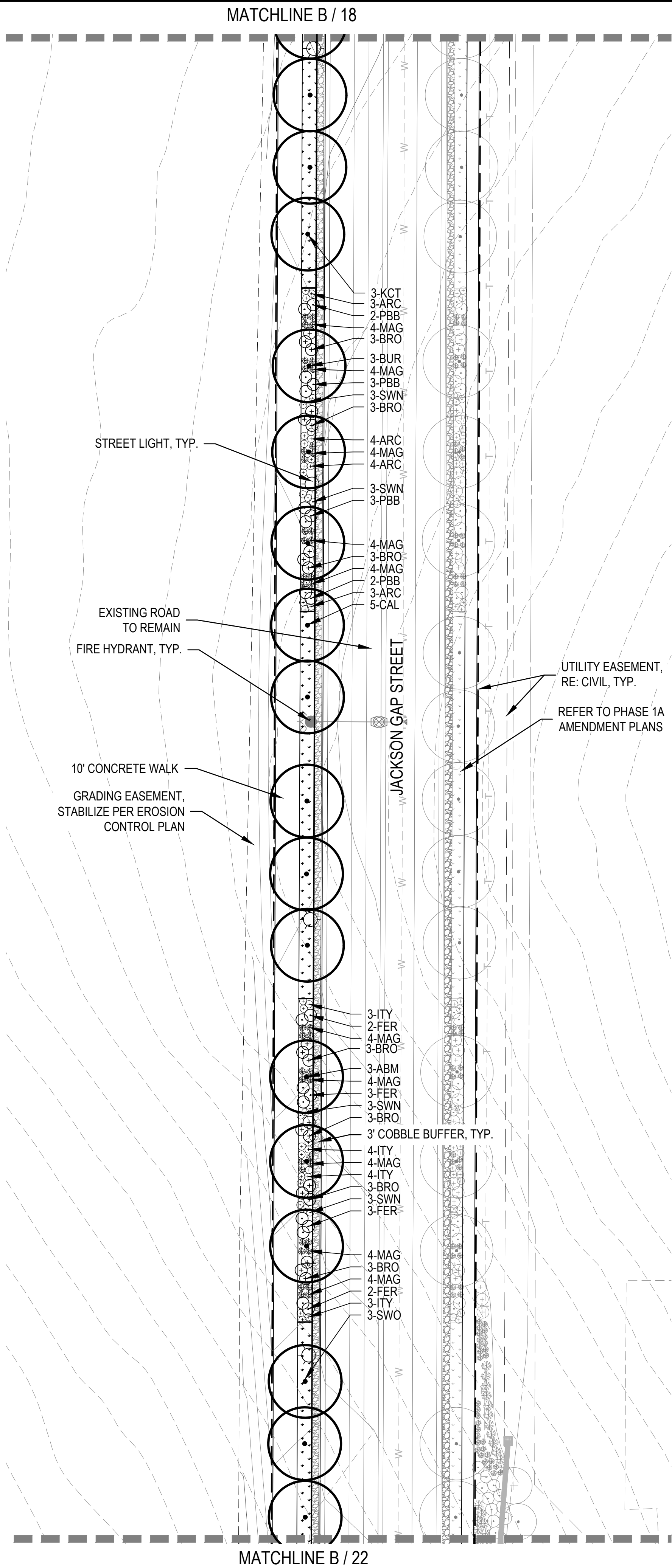
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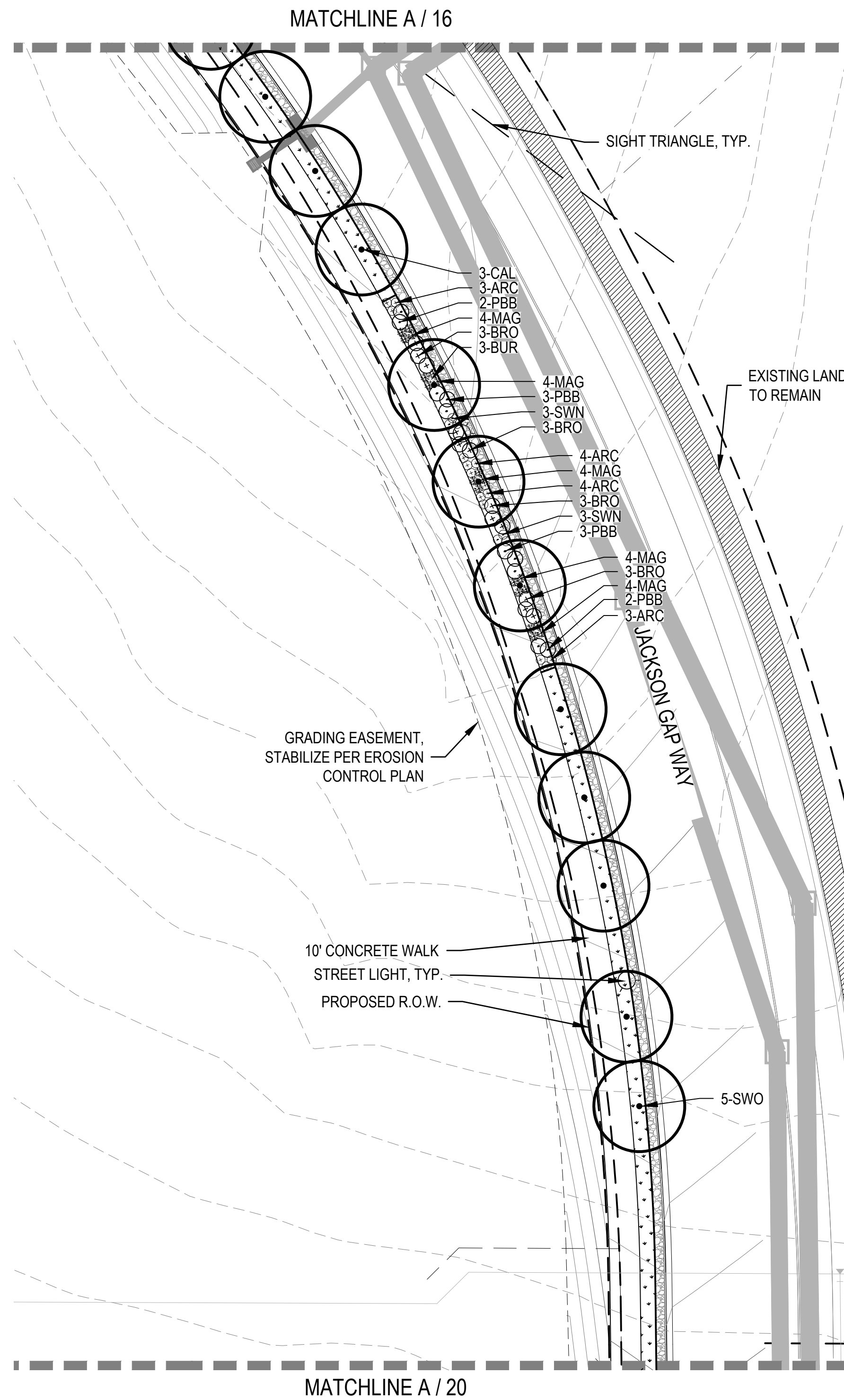
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Norris Design 1101 Bannock Street Denver, CO 80204 P. 303.892.1166 www.norris-design.com					
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A LANDSCAPE PLAN

SCALE: 1" = 30'



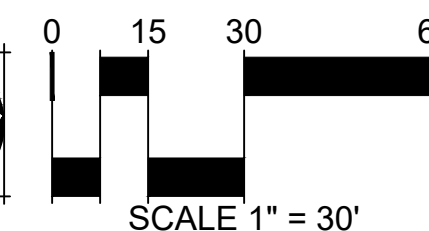
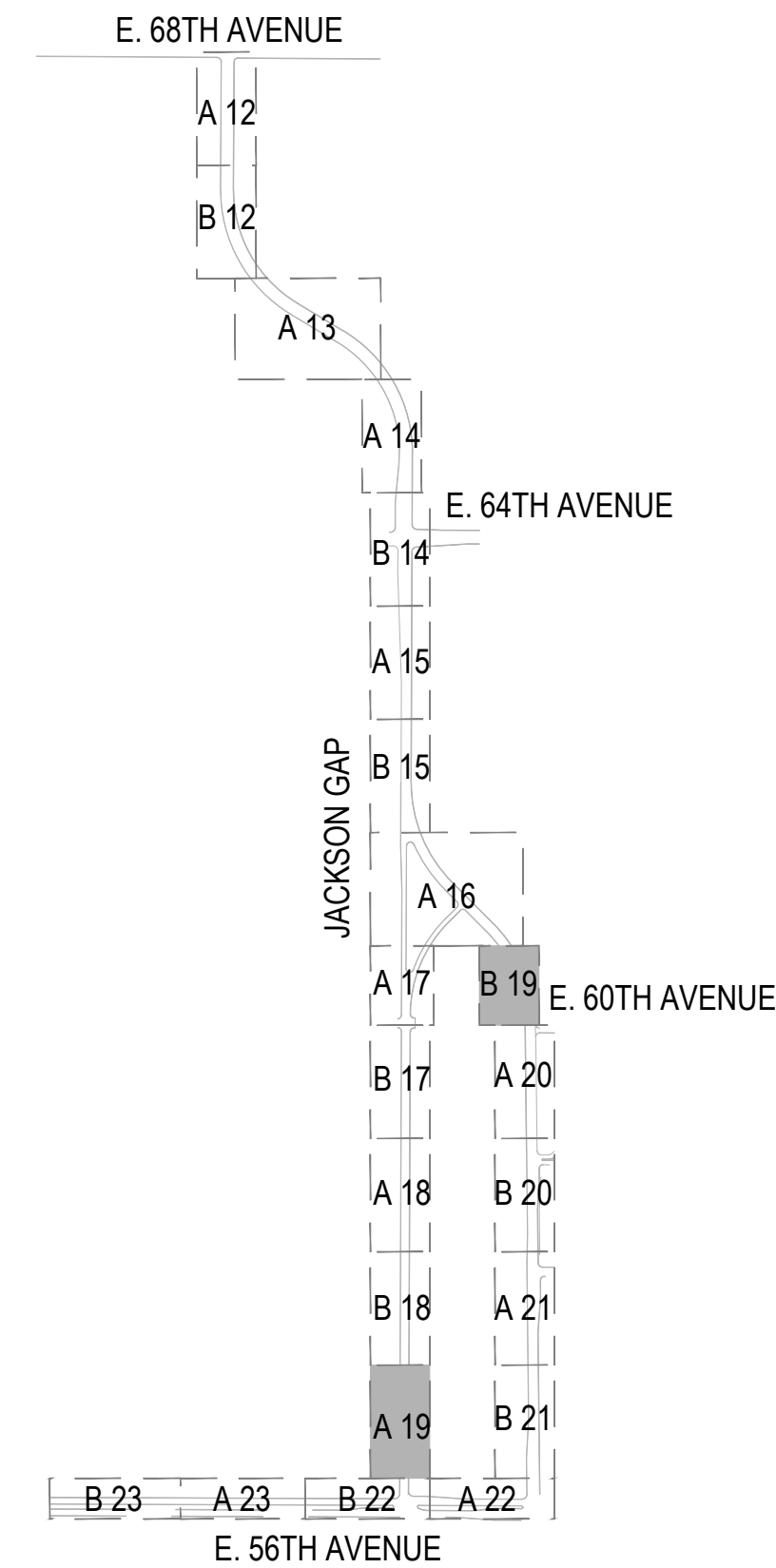
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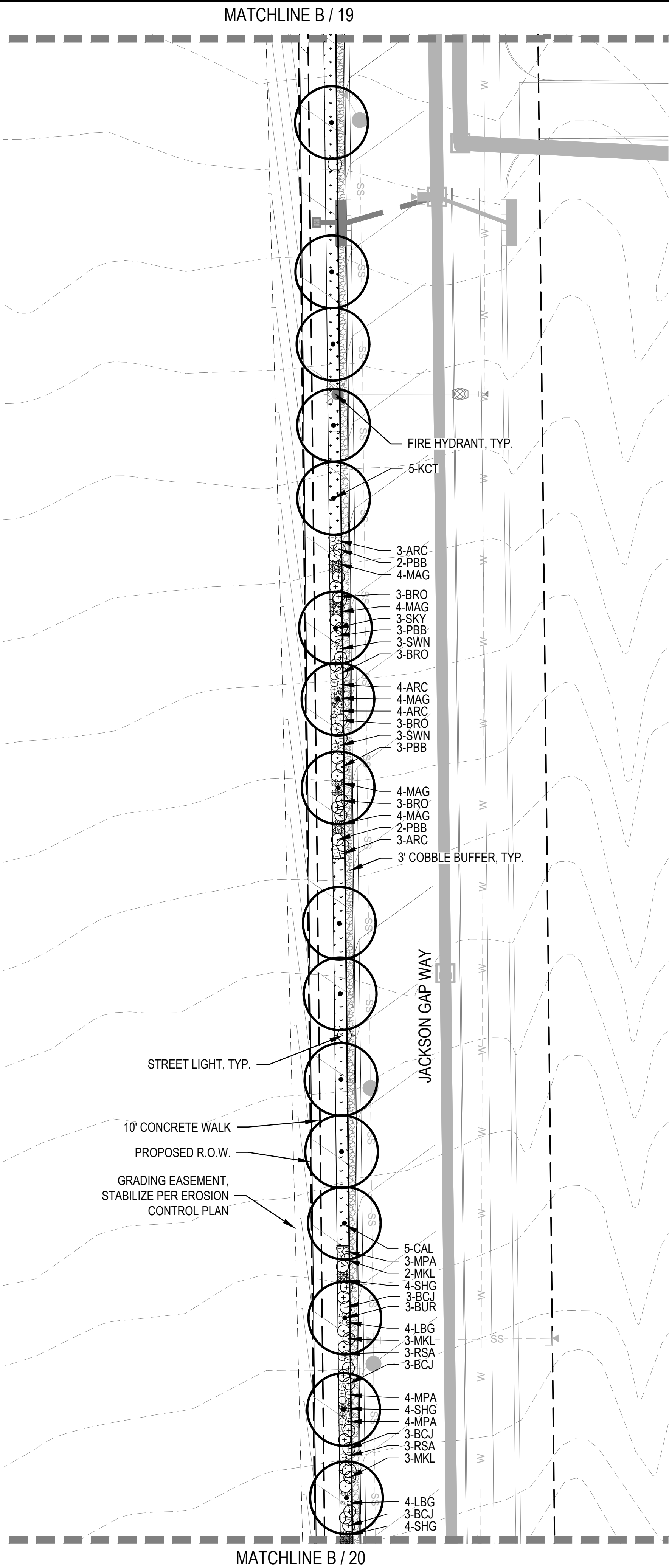
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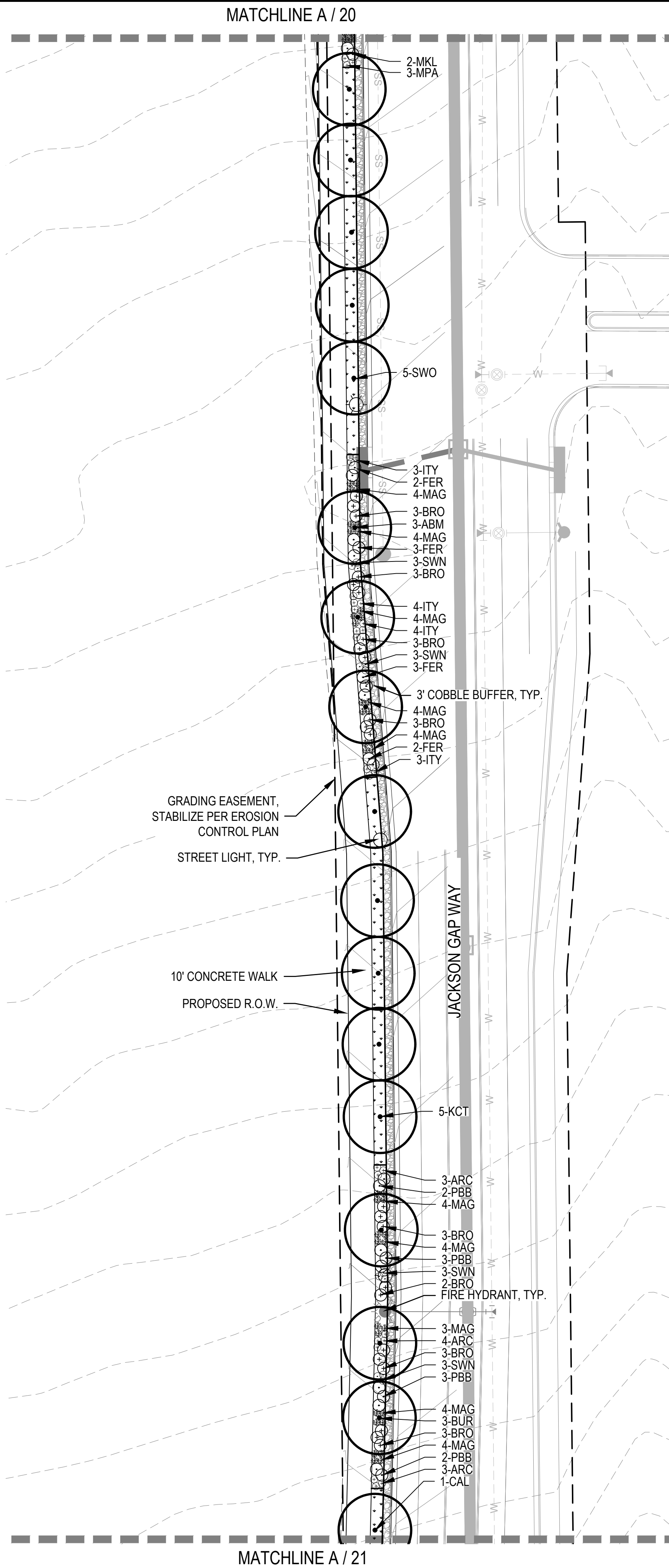
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4	3	2	1	RESPONSE TO COMMENTS	12/04/2019
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A LANDSCAPE PLAN

SCALE: 1" = 30'



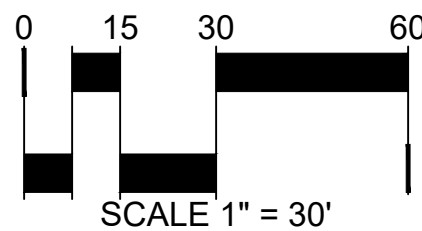
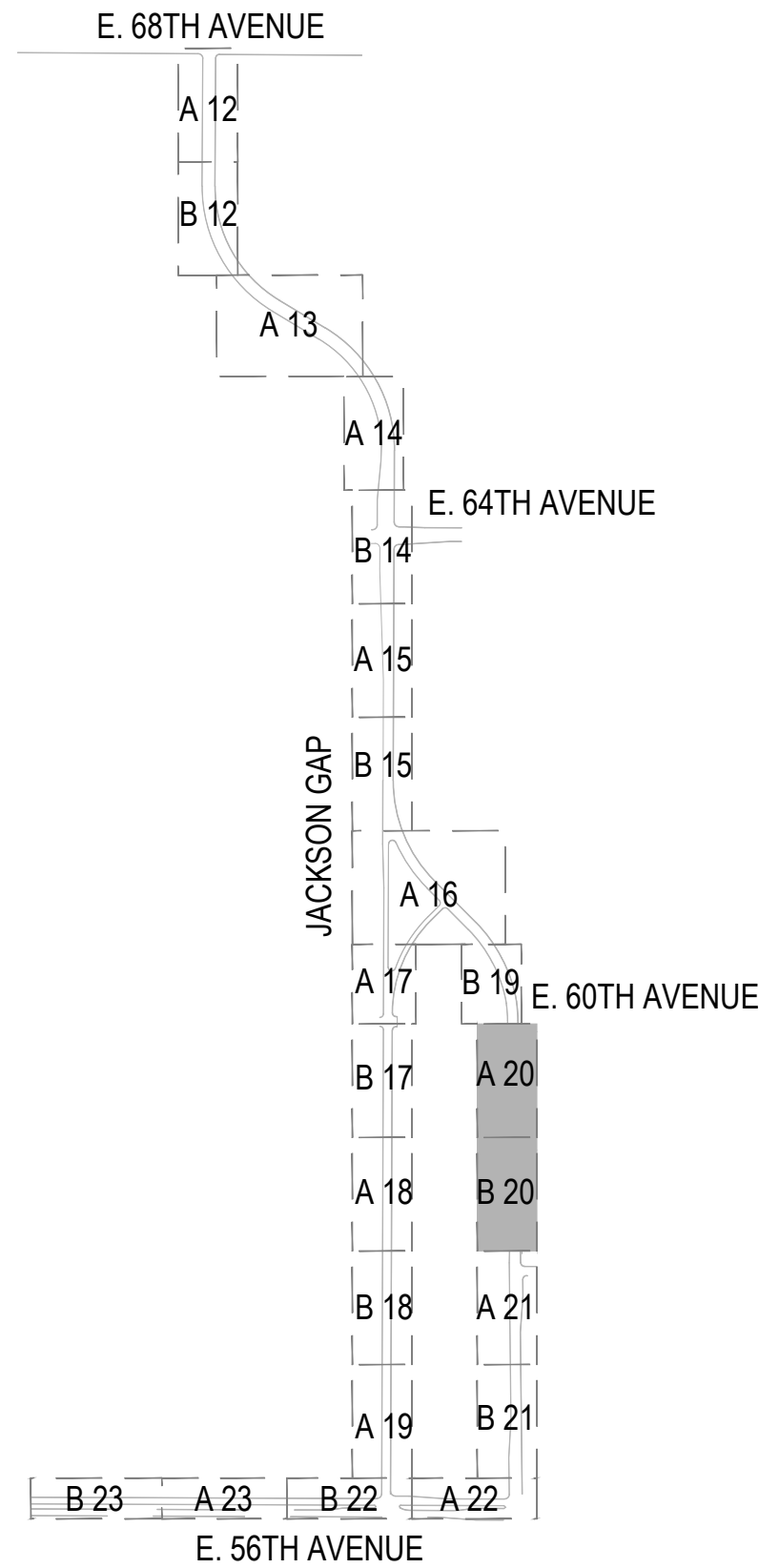
B LANDSCAPE PLAN

SCALE: 1" = 30'


LEGEND

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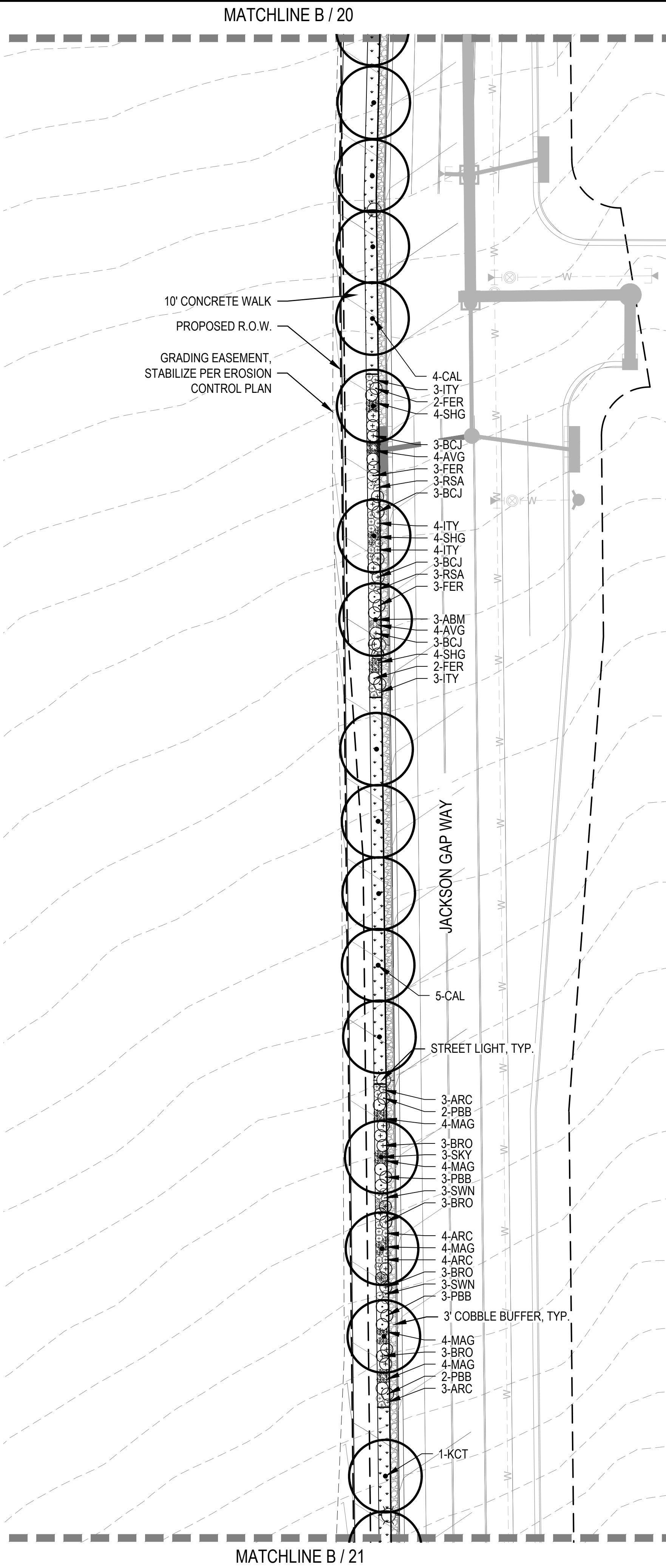
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20

SHEET NUMBER	20	DRAWN BY:		SCALE:		AMENDMENT TO INFRASTRUCTURE		ACP DIA 1287 INVESTORS, LLC		<div> NORRIS DESIGN <small>Planning Landscape Architecture Project Presentation</small></div> <div>Norris Design 1101 Bannock Street Denver, CO 80204 P 303.892.1166 www.norris-design.com</div>		4				
		EN, KK		AS SHOWN		SITE PLAN NO. 1 AT PORTECOS		4530 E SHEA BLVD., SUITE 100				3				
		CHECKED BY:		FILE NO:		LANDSCAPE PLAN		PHOENIX, AZ 85028				2				
		JB, PM, LV						ATTN: BILL WICHTERMAN				1	RESPONSE TO COMMENTS	12/04/219		
		DATE:						P: 602.494.7800				No.	Revisions	Date	Init.	Appr.

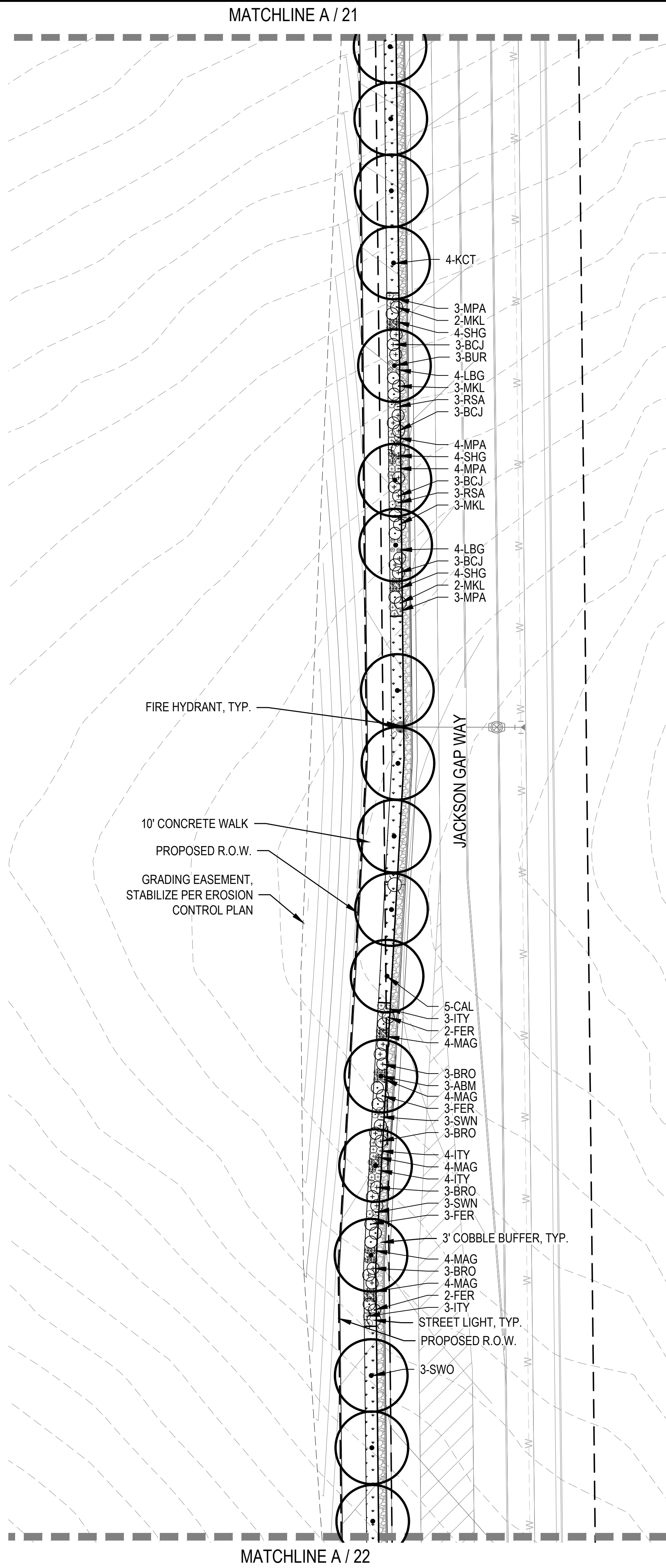
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A
21

LANDSCAPE PLAN

SCALE: 1" = 30'



B
21

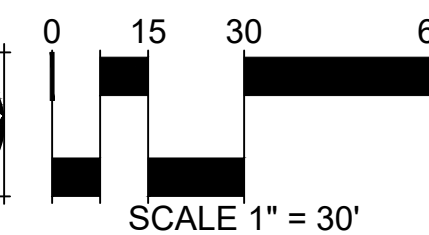
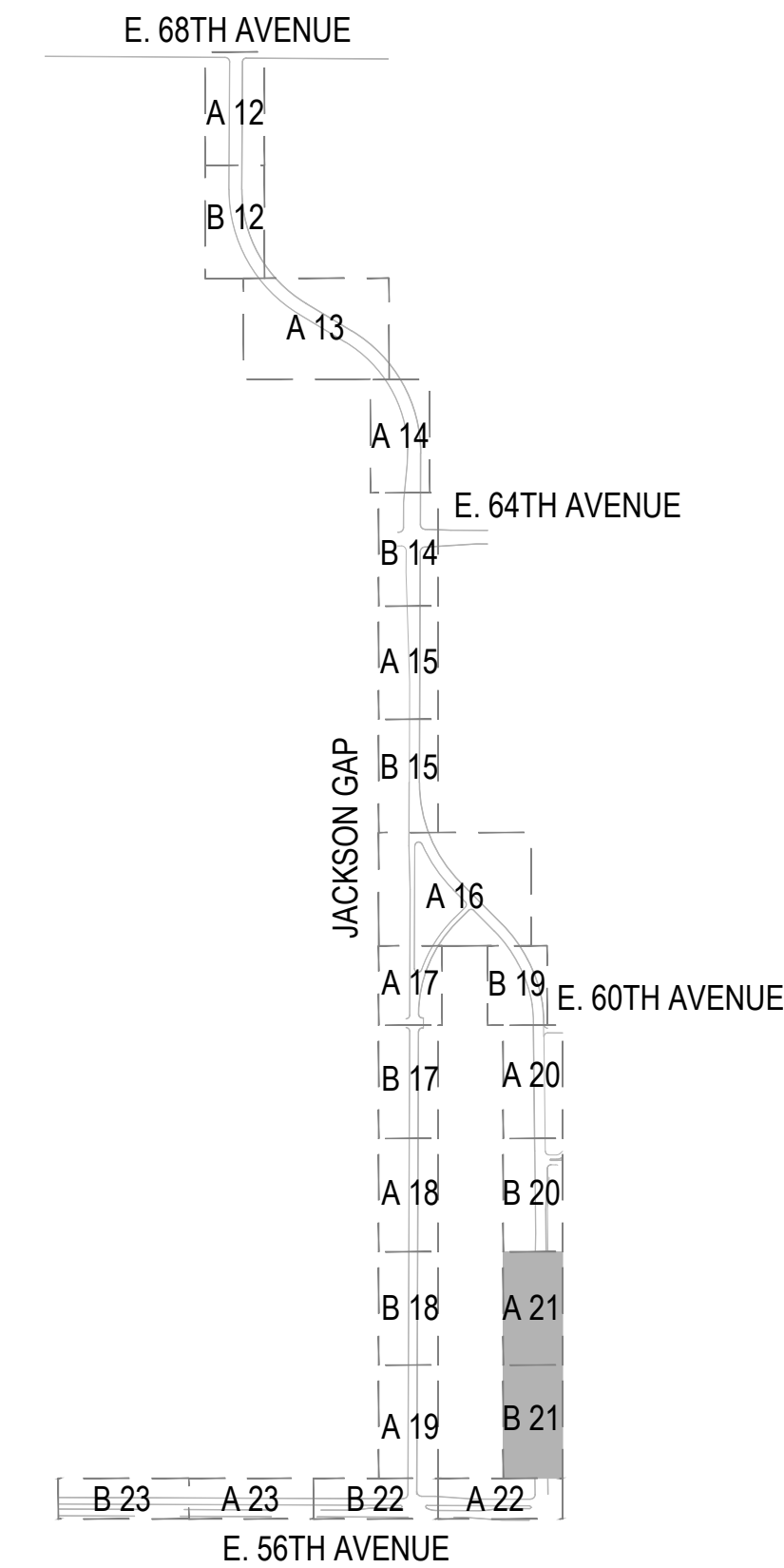
LANDSCAPE PLAN


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LEGEND

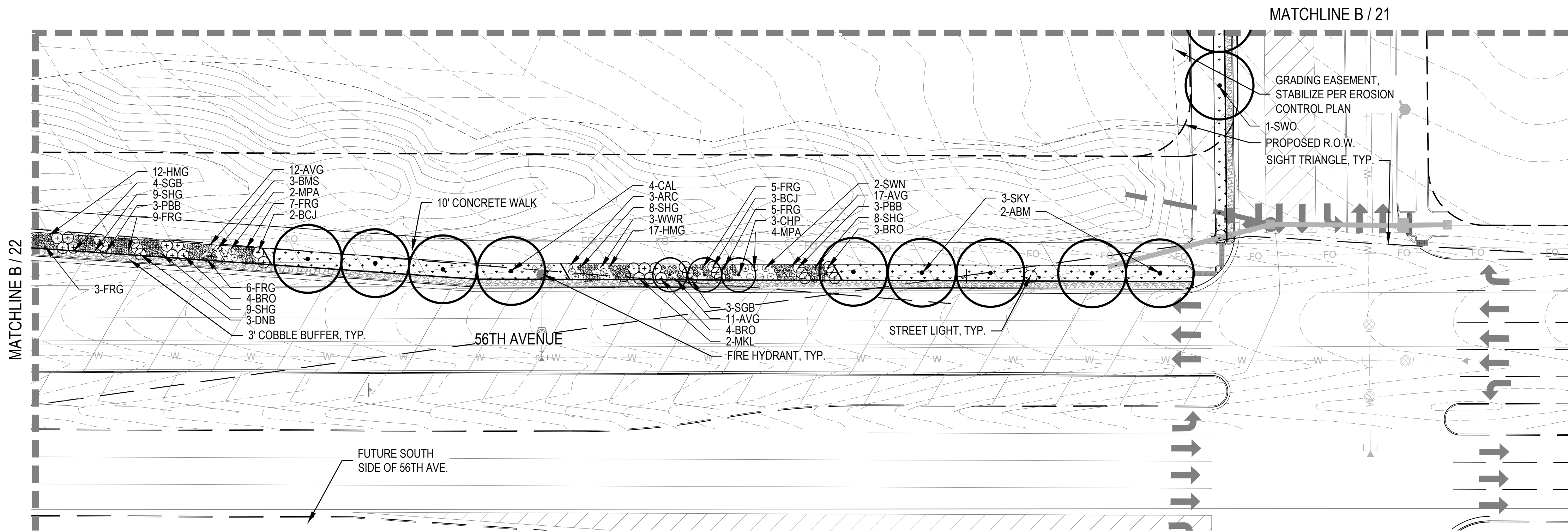
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KEY MAP



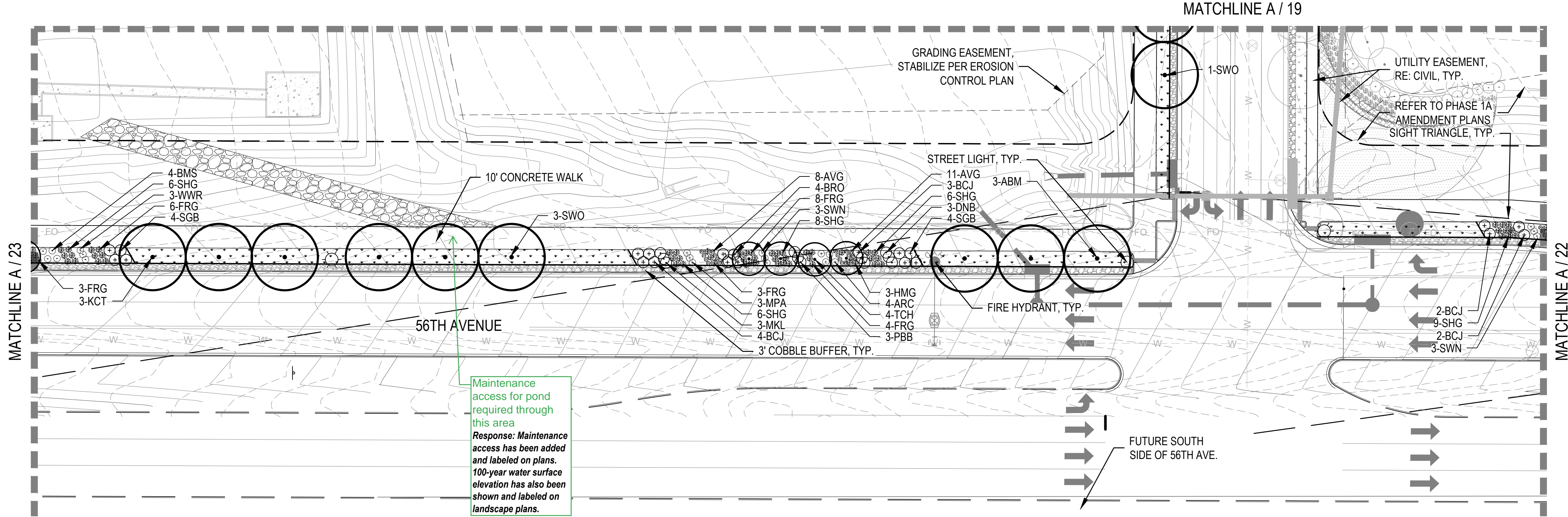
SHEET NUMBER	DRAWN BY:		SCALE:	ACP DIA 1287 INVESTORS, LLC 4530 E SHEA BLVD, SUITE 100 PHOENIX, AZ 85028 ATTN: BILL WICHTERMAN P: 602.494.7800	 NORRIS DESIGN <small>Planning Landscape Architecture Project Formation</small>	Norris Design 1101 Bannock Street Denver, CO 80204 P 303.892.1166 www.norris-design.com	4					Date				
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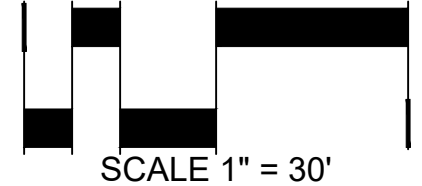
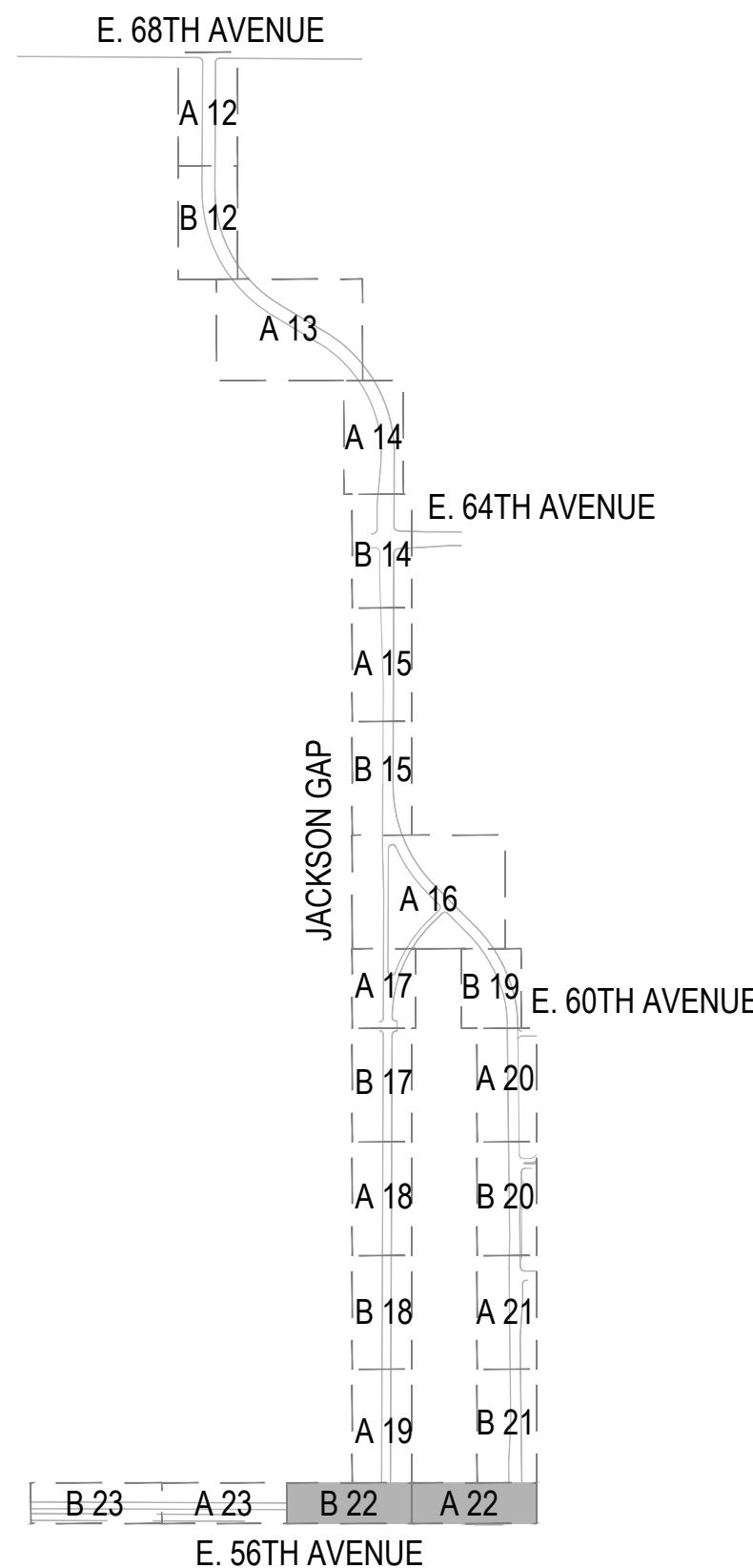
LEGEND

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Maintenance access for pond required through this area.
Response: Maintenance access has been added and labeled on plans. 100-year water surface elevation has also been shown and labeled on landscape plans.

KEY MAP



22

Drawn By:	EN KK	Checked By:	JB PKL LV	Date:	12/03/2019
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ACP DIA 1287 INVESTORS, LLC 4530 E SHEA BLVD, SUITE 100 PHOENIX, AZ 85028 ATTN: JEFFREY PERKINIAN P: 602.434.7380					
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4	3	2	1	RESPONSE TO COMMENTS	12/04/2019
No.	Revisions	Date	Init.	Appr.	Date



MEMORANDUM

TO: Chris Fellows, Velocity Metropolitan District No. 1

FROM: Philip J. Dunham, PE

DATE: November 27, 2019

SUBJECT: **Porteos ISP Traffic Analysis (Jackson Gap)**
(FHU No. 119297-01)

The purpose of this memorandum is to summarize future traffic projections for the intersections along Jackson Gap Street and Jackson Gap Way in the Porteos development of Aurora, Colorado, and to update lane geometry recommendations compared to the previous Porteos traffic studies. Information from new development plans and recent transportation studies were used to develop a “blended” forecast of traffic volumes and operations at these intersections. Intersection operational analyses were conducted using the methodologies outlined in the 6th Edition of the *Highway Capacity Manual* (HCM, 2017). Levels of Service (LOS) and 95th percentile queue lengths were referenced to provide lane geometry recommendations.

The 2040 planning horizon year was analyzed to determine the ultimate turn lane needs at buildout. However, City of Aurora staff has expressed concern about possible deficiency in turn lane length in an interim condition prior to the construction of Harvest Road when Jackson Gap Street is the sole connection to DEN in the area. A 2025 analysis was performed to analyze the impacts to turn lane needs along Jackson Gap Street in absence of Harvest Road in an effort to identify locations where 2040 recommendations may not be sufficient.

2040 Traffic Projections

Several studies were researched to develop the forecasts in this memorandum. One of the foundational studies used in this analysis was the *Aurora Northeast Area Transportation Study (NEATS) Refresh* that presented results of travel demand modeling for the area. Traffic impact studies prepared to consider specific impacts of a maximum build-out scenario were also used to develop the “blended” traffic forecasts. These “blended” forecasts begin with the master study information and then refines the numbers by adjusting to trip generation for known land uses as they compare to those presented in the master studies. These traffic studies include:

- Porteos Master Traffic Impact Study Update
- Porteos PA-7 Groot Distribution Center
- Porteos PA-5 JAG Logistics Center
- Fulenwider FDP

NEATS results were not available at the time the master study was completed, so this approach produces very different projections than shown in the master Porteos Traffic Study. All subsequent Porteos traffic studies utilized the *NEATS Refresh* study to aid in determining background traffic volumes. The Groot and JAG studies refined traffic forecasts for specific planning areas within the larger Porteos development area and the Fulenwider study refined forecasts for property immediately west of the Porteos development.

Comments 12.19.19:

1) Geometry of Jackson Gap St & Jackson Gap Way and Jackson Gap St between 60th Ave & 56th Ave, is identified as a 4-lane collector. Ensure Traffic Memo & ISP match on next submission.

Response: Memo updated to reflect 4-lane cross section

2) Agree with longer storage length recommendations. Update table accordingly.

Response: Table updated with longer lengths to meet short-term needs

3) See comments throughout.

Response: Acknowledged

These three studies were used primarily as the basis for determining traffic volumes on Jackson Gap Street and Jackson Gap Way.

Figure I presents the final set of 2040 traffic volume projections for the six intersections along Jackson Gap Street and Jackson Gap Way within the Porteos development. Daily and peak hour traffic volumes on each approach leg are lower than the previous Porteos studies, but they are generally higher than, or similar, to 2040 volumes presented in the *NEATS Refresh* study.

2040 Traffic Analysis

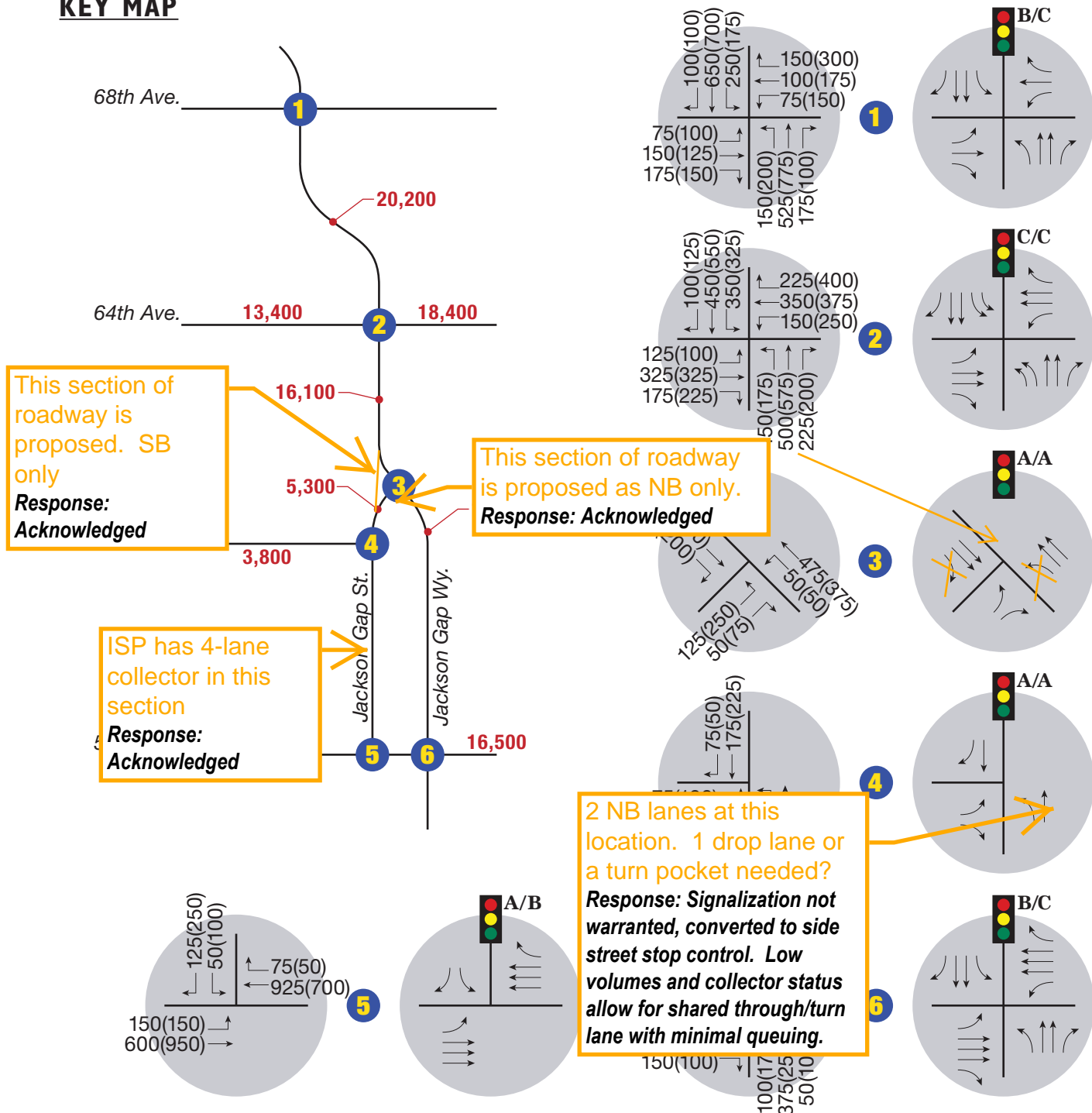
Using the peak hour projections from **Figure I**, intersection LOS were calculated to help identify appropriate lane geometry and the analyses are attached for reference. Additionally, the *Colorado State Highway Access Code (CDOT SHAC)* was referenced to determine the need for left-turn and right-turn auxiliary lanes. The 95th percentile queue lengths associated with peak hour operations were used to inform vehicle storage lane length recommendations.

Figure I also displays peak hour traffic operations and geometry recommendations for the following six intersections along Jackson Gap Street and Jackson Gap Way:


- Jackson Gap St/68th Avenue
- Jackson Gap St/64th Avenue
- Jackson Gap St/ Jackson Gap Way
- Jackson Gap St/60th Avenue
- Jackson Gap St/56th Avenue
- Jackson Gap Way/56th Avenue

Table I displays 2040 peak hour 95th percentile queue lengths and recommended storage lengths based on both the estimated vehicle queues and guidance contained in the *CDOT SHAC* using an NR-B classification. Heavy vehicle percentage is assumed at 15 percent for the purposes of determining queue length. The recommended storage lengths were developed to contain the maximum anticipated peak hour vehicle queues.

KEY MAP



LEGEND

- XXX(XXX) = AM(PM) Peak Hour Traffic Volumes
- XXXX = Daily Traffic Volumes
- X/X = AM/PM Peak Hour Signalized Intersection Level of Service
- x/x = AM/PM Peak Hour Unsignalized Intersection Level of Service
-  = Traffic Signal

NOTE: Drawing Not to Scale



NORTH
FIGURE I

2040 Traffic Conditions

2025 Traffic Analysis

Using the 2040 volumes presented in **Figure 1** for Jackson Gap Street in conjunction with 2040 daily volume projections presented in the Fulenwider Master TIS for Harvest Road, an estimate of 2025 traffic conditions has been made. From an evaluation of various *NEATS Refresh* volume projections it was estimated that a 2025 condition could represent approximately 30 percent of Harvest Road 2040 projections and 40 percent of 2040 Jackson Gap Street projections, all accommodated by Jackson Gap Street given the assumption that Harvest Road will not yet be established as a connection to DEN.

The 2040 Jackson Gap Street volumes presented on **Figure 1** were reduced to 40 percent, and then 30 percent of the 2040 through volumes and turning movement volumes associated with Harvest Road (per the Fulenwider traffic study) were added to develop 2025 volume projections on Jackson Gap Street, reflecting a condition without Harvest Road. The traffic volume projections for this interim 2025 scenario in which Jackson Gap Street remains as the sole connection to DEN are presented in presented on **Figure 2**.

The projected daily volumes along Jackson Gap Street fall in the LOS C or better for a four-lane minor arterial according to the *NEATS Refresh* study. More detailed analysis was performed on this 2025 condition with respect to each intersection, and it was determined that all intersections still operate at an acceptable level of service. The 95th percentile queuing was also evaluated for this 2025 condition and it was determined that there are five locations in which the 2025 queue length exceeds that of 2040, due to the lack of Harvest Road. These movement locations include:

- Jackson Gap Way/64th Avenue eastbound left-turn
- Jackson Gap Way/64th Avenue southbound right-turn
- Jackson Gap Way/56th Avenue eastbound left-turn
- Jackson Gap Way/56th Avenue eastbound right-turn
- Jackson Gap Way/56th Avenue southbound right-turn

These shortfalls are due to the increased traffic using both 64th Avenue and 56th Avenue to access Jackson Gap Street in the absence of Harvest Road.

Table 1. Queuing Analysis and Recommendations

Intersection	Approach	Movement	2025 95 th Percentile Queue Length (ft) ¹		2040 95 th Percentile Queue Length (ft) ¹		Recommended Storage Length	2040 SCHAC Recommended Storage Length ²
			AM	PM	AM	PM		
Jackson Gap Street/68 th Avenue	Eastbound	Left-Turn	20	55	33	58	75	150
		Through	30	28	80	90	Continuous	Continuous
		Right-Turn	25	23	85	90	100	250
	Westbound	Left-Turn	13	33	33	93	100	200
		Through	20	43	50	123	Continuous	Continuous
		Right-Turn	23	70	73	243	250	400
	Northbound	Left-Turn	15	23	53	103	125	275
		Through	150	188	120	260	Continuous	Continuous
		Right-Turn	13	8	70	48	75	250
	Southbound	Left-Turn	23	20	80	93	100	325
		Through	123	215	140	238	Continuous	Continuous
		Right-Turn	18	20	33	53	50	150
Jackson Gap Street/64 th Avenue	Eastbound	Left-Turn	175	185	63	68	75 ³	175
		Through	30	38	98	128	Continuous	Continuous
		Right-Turn	45	70	80	153	175	300
	Westbound	Left-Turn	35	68	75	158	175	325
		Through	45	55	103	130	Continuous	Continuous
		Right-Turn	35	100	13	313	325	525
	Northbound	Left-Turn*	45	60	53	85	100	125
		Through	175	183	145	235	Continuous	Continuous
		Right-Turn	25	23	108	130	150	300
	Southbound	Left-Turn*	48	55	115	155	175	275
		Through	133	223	108	205	Continuous	Continuous
		Right-Turn	153	218	35	70	75 ³	175
Jackson Gap Street/ Jackson Gap Way	Eastbound	Left-Turn	15	78	25	80	Continuous	Continuous
		Right-Turn	3	0	3	68	75	100
	Northbound	Left-Turn	5	3	3	5	50	75
		Through	0	20	3	18	Continuous	Continuous
	Southbound	Through	10	78	18	65	Continuous	Continuous
		Right-Turn	23	25	23	43	50	275

Intersection	Approach	Movement	2025 95 th Percentile Queue Length (ft) ¹		2040 95 th Percentile Queue Length (ft) ¹		Recommended Storage Length	2040 SCHAC Recommended Storage Length ²
			AM	PM	AM	PM		
Jackson Gap Street/ 60 th Avenue	Eastbound	Left-Turn	15	25	15	20	25	150
		Right-Turn	3	5	53	90	Continuous	Continuous
	Northbound	Left-Turn	5	3	8	5	25	175
		Through	0	3	3	5	Continuous	Continuous
	Southbound	Through	10	13	28	35	Continuous	Continuous
		Right-Turn	23	8	10	8	25	100
Jackson Gap Street/ 56 th Avenue	Eastbound	Left-Turn	40	35	68	73	100	200
		Through	0	13	8	40	Continuous	Continuous
	Westbound	Through	30	43	68	68	Continuous	Continuous
		Right-Turn	3	3	15	13	50	100
	Southbound	Left-Turn	5	10	18	30	50	150
		Right-Turn	8	150	13	18	Continuous	Continuous
Jackson Gap Way/ 56 th Avenue	Eastbound	Left-Turn	235	208	103	68	125 ³	200
		Through	20	73	43	160	Continuous	Continuous
		Right-Turn	58	110	58	48	75 ³	200
	Westbound	Left-Turn	28	30	63	68	75	100
		Through	73	43	128	63	Continuous	Continuous
		Right-Turn	45	43	43	35	50	150
	Northbound	Left-Turn	73	78	45	85	100	250
		Through	65	105	103	68	Continuous	Continuous
		Right-Turn	10	18	25	55	75	150
	Southbound	Left-Turn	23	40	35	73	75	200
		Through	40	78	53	120	Continuous	Continuous
		Right-Turn	168	285	55	130	150 ³	275

*Dual Left-Turn queues and storage are per lane.

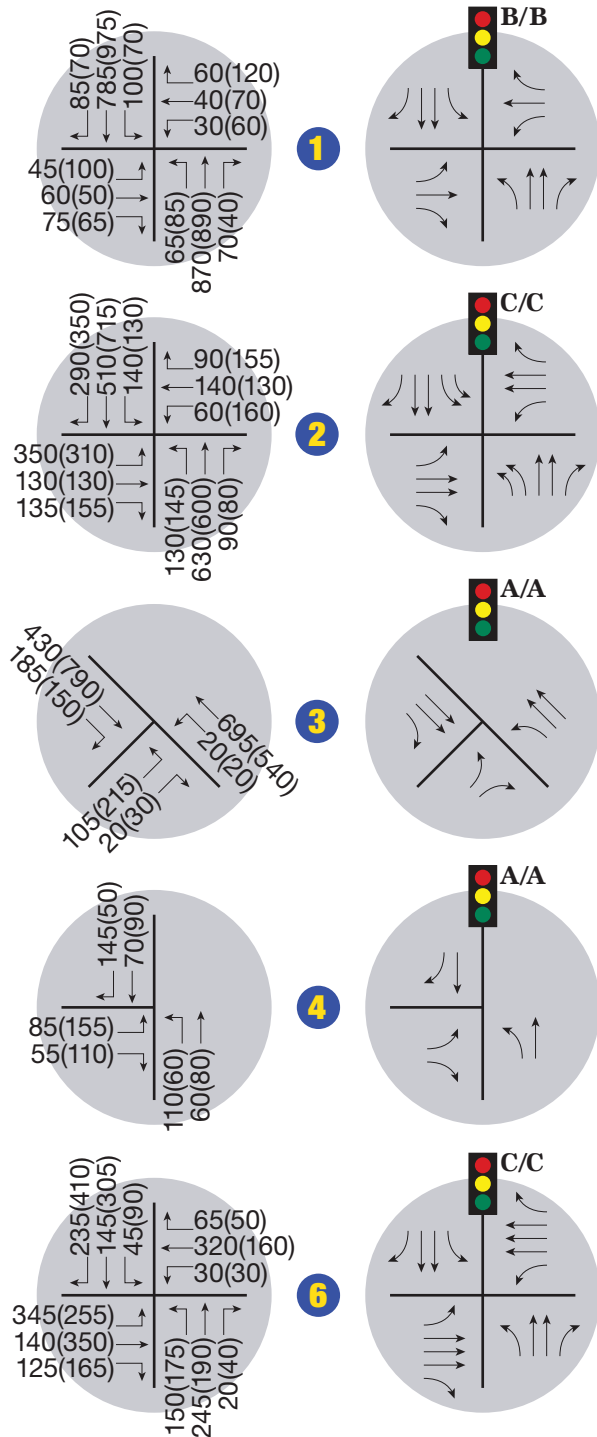
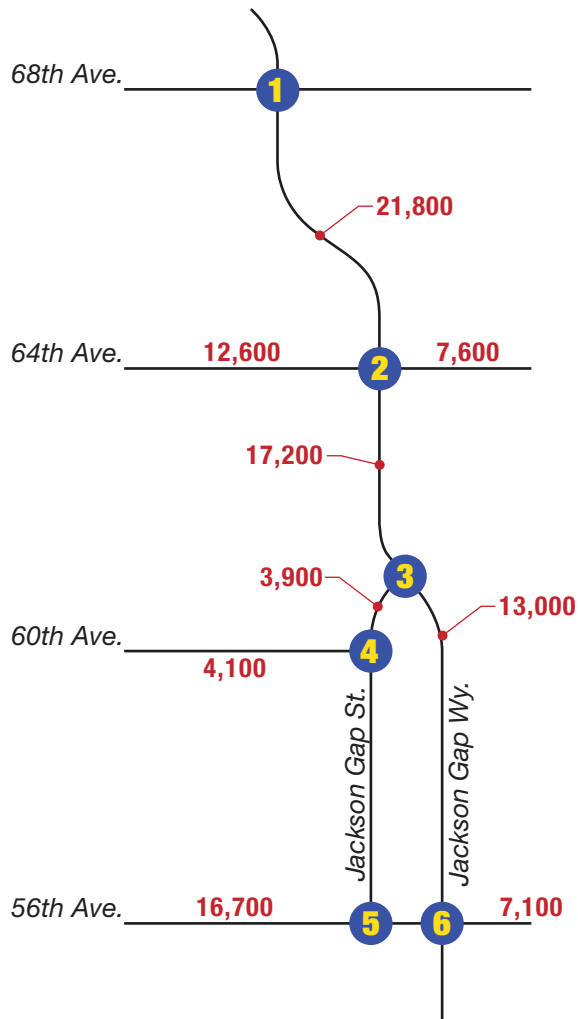
¹ Calculations based on HCM methodology using a heavy vehicle percentage of 15 percent.

² Number shown is based on volume adjustments of 3 PCE per heavy vehicle

³ 2025 queuing indicates potential storage length shortfall

Figure 2. Year 2025 Traffic Conditions

KEY MAP



LEGEND

XXX(XXX) = AM(PM) Peak Hour Traffic Volumes

XXXX = Daily Traffic Volumes

X/X = AM/PM Peak Hour Signalized Intersection Level of Service

x/x = AM/PM Peak Hour Unsignalized Intersection Level of Service

 = Traffic Signal

NOTE: Drawing Not to Scale



NORTH

FIGURE 2

2025 Traffic Conditions


Recommendation

City of Aurora *Traffic Impact Study Guidelines* indicate that the *CDOT SHAC* be used to determine storage and taper lengths. These values yield overly conservative results and provide storage well in excess 95th percentile queues (which already incorporate a heavy vehicle percentage), often by a factor of two to three. The *SHAC* procedures do not account for other conditions in the intersection such as low opposing through movements if a left-turn movement is in question. Rather, our recommendation is that the values in **Table I** corresponding to the 95th percentile lengths be used for storage lengths, plus tapers along Jackson Gap Street, Jackson Gap Way, 68th Avenue, 64th Avenue, and 60th Avenue should be 144 feet (to provide the required 12:1 taper ratio for 12-foot lanes on streets with a posted speed 40 MPH and an NR-B classification as identified in the *CDOT SHAC*). Northbound and southbound left-turns along Jackson Gap Street should be doubled to 288 feet to account for dual left-turn lanes. Tapers along 56th Avenue should be 162 feet (to provide the required 13.5:1 taper for 12-foot lanes on a 45 MPH roadway with an NR-B classification identified in the *CDOT SHAC*).

Analysis of an interim 2025 condition, in which Harvest Road was not in place, determined that the queue for five turning movements will exceed that estimated for 2040. The following recommendations could help alleviate these queuing issues for this short-term scenario:

- Jackson Gap Way/64th Avenue eastbound left-turn: Increase storage length to 200 feet
- Jackson Gap Way/64th Avenue southbound right-turn: Explore possibility of providing channelized right turn or increase storage length to 225 feet
- Jackson Gap Way/56th Avenue eastbound left-turn: Increase storage length to 225 feet
- Jackson Gap Way/56th Avenue eastbound right-turn: Increase storage length to 125 feet
- Jackson Gap Way/56th Avenue southbound right-turn: Explore possibility of providing channelized right turn or increase storage length to 300 feet

























Attachments



Update "Recommended Storage length" column in table with these recommendations.
Response: Table updated with longer lengths to meet short-term needs

Timings
1: Jackson Gap St & 68th Ave

Porteos ISP Jackson Gap
08/27/2019

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	150	175	75	100	150	150	525	175	250	650	100
Future Volume (vph)	75	150	175	75	100	150	150	525	175	250	650	100
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	15.0	30.0	30.0	15.0	30.0	30.0	21.0	45.0	45.0	30.0	54.0	54.0
Total Split (%)	12.5%	25.0%	25.0%	12.5%	25.0%	25.0%	17.5%	37.5%	37.5%	25.0%	45.0%	45.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	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	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	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	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effect Green (s)	20.4	13.7	13.7	19.8	13.4	13.4	32.7	21.7	21.7	38.0	24.5	24.5
Actuated g/C Ratio	0.28	0.19	0.19	0.27	0.18	0.18	0.44	0.29	0.29	0.51	0.33	0.33
v/c Ratio	0.23	0.53	0.46	0.25	0.36	0.42	0.44	0.62	0.35	0.61	0.68	0.20
Control Delay	21.5	38.3	9.3	21.8	34.7	9.6	14.8	27.8	6.1	17.0	26.3	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.5	38.3	9.3	21.8	34.7	9.6	14.8	27.8	6.1	17.0	26.3	5.6
LOS	C	D	A	C	C	A	B	C	A	B	C	A
Approach Delay		22.5			20.1			21.0			21.9	
Approach LOS		C			C			C			C	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 73.8

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.68

Intersection Signal Delay: 21.5

Intersection LOS: C

Intersection Capacity Utilization 55.4%

ICU Level of Service B

Analysis Period (min) 15

























Splits and Phases: 1: Jackson Gap St & 68th Ave



HCM 6th Signalized Intersection Summary

























1: Jackson Gap St & 68th Ave

Porteos ISP Jackson Gap
08/27/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	150	175	75	100	150	150	525	175	250	650	100
Future Volume (veh/h)	75	150	175	75	100	150	150	525	175	250	650	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678
Adj Flow Rate, veh/h	82	163	162	82	109	146	163	571	172	272	707	98
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
Percent Heavy Veh, %	15	15	15	15	15	15	15	15	15	15	15	15
Cap, veh/h	350	276	234	313	276	234	382	854	381	462	1036	462
Arrive On Green	0.07	0.16	0.16	0.07	0.16	0.16	0.10	0.27	0.27	0.16	0.32	0.32
Sat Flow, veh/h	1598	1678	1422	1598	1678	1422	1598	3188	1422	1598	3188	1422
Grp Volume(v), veh/h	82	163	162	82	109	146	163	571	172	272	707	98
Grp Sat Flow(s),veh/h/ln	1598	1678	1422	1598	1678	1422	1598	1594	1422	1598	1594	1422
Q Serve(g_s), s	2.2	4.7	5.7	2.2	3.1	5.0	3.8	8.4	5.3	6.1	10.2	2.6
Cycle Q Clear(g_c), s	2.2	4.7	5.7	2.2	3.1	5.0	3.8	8.4	5.3	6.1	10.2	2.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	350	276	234	313	276	234	382	854	381	462	1036	462
V/C Ratio(X)	0.23	0.59	0.69	0.26	0.40	0.62	0.43	0.67	0.45	0.59	0.68	0.21
Avail Cap(c_a), veh/h	562	811	687	525	811	687	717	2447	1091	978	2991	1334
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.6	20.4	20.8	16.7	19.7	20.5	12.3	17.2	16.1	11.4	15.4	12.9
Incr Delay (d2), s/veh	0.3	2.0	3.7	0.4	0.9	2.7	0.8	0.9	0.8	1.2	0.8	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.3	3.2	3.4	1.3	2.0	2.9	2.1	4.8	2.8	3.2	5.6	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.9	22.4	24.4	17.1	20.6	23.2	13.0	18.1	16.9	12.5	16.3	13.1
LnGrp LOS	B	C	C	B	C	C	B	B	B	B	B	B
Approach Vol, veh/h	407			337			906			1077		
Approach Delay, s/veh	22.1			20.9			17.0			15.0		
Approach LOS	C			C			B			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.0	18.6	8.0	13.2	9.9	21.6	8.0	13.2				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	25.5	40.5	10.5	25.5	16.5	49.5	10.5	25.5				
Max Q Clear Time (g_c+I1), s	8.1	10.4	4.2	7.7	5.8	12.2	4.2	7.0				
Green Ext Time (p_c), s	0.5	3.7	0.1	1.0	0.2	4.5	0.1	0.7				
Intersection Summary												
HCM 6th Ctrl Delay	17.5											
HCM 6th LOS	B											

Timings
2: Jackson Gap St & 64th Ave

Porteos ISP Jackson Gap
08/27/2019

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	325	175	150	350	225	150	500	225	350	450	100
Future Volume (vph)	125	325	175	150	350	225	150	500	225	350	450	100
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	18.0	30.0	30.0	18.0	30.0	30.0	18.0	42.0	42.0	30.0	54.0	54.0
Total Split (%)	15.0%	25.0%	25.0%	15.0%	25.0%	25.0%	15.0%	35.0%	35.0%	25.0%	45.0%	45.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	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	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	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	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effect Green (s)	28.0	17.0	17.0	28.2	17.1	17.1	10.3	22.4	22.4	16.7	28.8	28.8
Actuated g/C Ratio	0.32	0.20	0.20	0.33	0.20	0.20	0.12	0.26	0.26	0.19	0.33	0.33
v/c Ratio	0.41	0.57	0.44	0.48	0.61	0.52	0.45	0.67	0.45	0.64	0.47	0.20
Control Delay	24.7	37.2	9.0	25.9	38.0	9.1	43.8	34.2	6.9	39.7	24.7	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.7	37.2	9.0	25.9	38.0	9.1	43.8	34.2	6.9	39.7	24.7	5.6
LOS	C	D	A	C	D	A	D	C	A	D	C	A
Approach Delay		26.8			26.5			28.8			28.4	
Approach LOS		C			C			C			C	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 86.2

Natural Cycle: 70

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.67

Intersection Signal Delay: 27.7

Intersection LOS: C

Intersection Capacity Utilization 56.1%

ICU Level of Service B

Analysis Period (min) 15
























Splits and Phases: 2: Jackson Gap St & 64th Ave



HCM 6th Signalized Intersection Summary













2: Jackson Gap St & 64th Ave

Porteos ISP Jackson Gap
08/27/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	125	325	175	150	350	225	150	500	225	350	450	100
Future Volume (veh/h)	125	325	175	150	350	225	150	500	225	350	450	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678
Adj Flow Rate, veh/h	136	353	143	163	380	203	163	543	205	380	489	87
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
Percent Heavy Veh, %	15	15	15	15	15	15	15	15	15	15	15	15
Cap, veh/h	335	592	264	360	645	287	254	783	349	510	1047	467
Arrive On Green	0.09	0.19	0.19	0.11	0.20	0.20	0.08	0.25	0.25	0.16	0.33	0.33
Sat Flow, veh/h	1598	3188	1422	1598	3188	1422	3100	3188	1422	3100	3188	1422
Grp Volume(v), veh/h	136	353	143	163	380	203	163	543	205	380	489	87
Grp Sat Flow(s),veh/h/ln	1598	1594	1422	1598	1594	1422	1550	1594	1422	1550	1594	1422
Q Serve(g_s), s	4.1	6.2	5.5	4.9	6.6	8.1	3.1	9.4	7.7	7.1	7.4	2.7
Cycle Q Clear(g_c), s	4.1	6.2	5.5	4.9	6.6	8.1	3.1	9.4	7.7	7.1	7.4	2.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	335	592	264	360	645	287	254	783	349	510	1047	467
V/C Ratio(X)	0.41	0.60	0.54	0.45	0.59	0.71	0.64	0.69	0.59	0.74	0.47	0.19
Avail Cap(c_a), veh/h	542	1334	595	540	1334	595	687	1961	875	1297	2589	1155
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.7	22.7	22.5	17.3	22.0	22.6	27.1	20.9	20.3	24.2	16.2	14.6
Incr Delay (d2), s/veh	0.8	1.0	1.7	0.9	0.9	3.2	2.7	1.1	1.6	2.2	0.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.5	3.9	3.2	3.0	4.1	0.5	2.1	5.8	4.3	4.5	4.3	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.5	23.7	24.2	18.2	22.9	25.8	29.8	22.0	21.8	26.4	16.6	14.8
LnGrp LOS	B	C	C	B	C	C	C	C	C	C	B	B
Approach Vol, veh/h	632			746			911			956		
Approach Delay, s/veh	22.7			22.7			23.4			20.3		
Approach LOS	C			C			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.5	19.5	11.1	15.8	9.5	24.5	10.1	16.8				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	25.5	37.5	13.5	25.5	13.5	49.5	13.5	25.5				
Max Q Clear Time (g_c+I1), s	9.1	11.4	6.9	8.2	5.1	9.4	6.1	10.1				
Green Ext Time (p_c), s	0.9	3.5	0.2	2.0	0.2	3.0	0.1	2.2				
Intersection Summary												
HCM 6th Ctrl Delay	22.2											
HCM 6th LOS	C											

Timings 3: Jackson Gap Way & Jackson Gap St

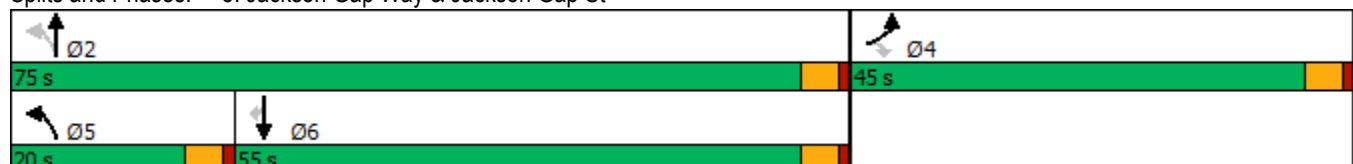
Porteos ISP Jackson Gap
08/27/2019

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	125	50	50	475	300	175
Future Volume (vph)	125	50	50	475	300	175
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	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	9.5	22.5	22.5	22.5
Total Split (s)	45.0	45.0	20.0	75.0	55.0	55.0
Total Split (%)	37.5%	37.5%	16.7%	62.5%	45.8%	45.8%
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			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	Min	Min	Min
Act Effect Green (s)	9.4	9.4	20.5	21.7	17.7	17.7
Actuated g/C Ratio	0.26	0.26	0.56	0.60	0.49	0.49
v/c Ratio	0.34	0.13	0.09	0.28	0.21	0.24
Control Delay	15.5	6.2	5.3	5.7	10.4	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.5	6.2	5.3	5.7	10.4	3.8
LOS	B	A	A	A	B	A
Approach Delay	12.9			5.6	8.0	
Approach LOS	B			A	A	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 36.4
Natural Cycle: 55
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.34
Intersection Signal Delay: 7.7
Intersection LOS: A
Intersection Capacity Utilization 30.6%
ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 3: Jackson Gap Way & Jackson Gap St









HCM 6th Signalized Intersection Summary

3: Jackson Gap Way & Jackson Gap St













Porteos ISP Jackson Gap
08/27/2019



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	125	50	50	475	300	175
Future Volume (veh/h)	125	50	50	475	300	175
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1678	1678	1678	1678	1678	1678
Adj Flow Rate, veh/h	136	54	54	516	326	190
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	15	15	15	15	15	15
Cap, veh/h	229	204	529	1627	878	391
Arrive On Green	0.14	0.14	0.06	0.51	0.28	0.28
Sat Flow, veh/h	1598	1422	1598	3272	3272	1422
Grp Volume(v), veh/h	136	54	54	516	326	190
Grp Sat Flow(s),veh/h/ln	1598	1422	1598	1594	1594	1422
Q Serve(g_s), s	2.1	0.9	0.5	2.5	2.1	2.9
Cycle Q Clear(g_c), s	2.1	0.9	0.5	2.5	2.1	2.9
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	229	204	529	1627	878	391
V/C Ratio(X)	0.59	0.26	0.10	0.32	0.37	0.49
Avail Cap(c_a), veh/h	2488	2214	1382	8640	6189	2760
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.4	9.9	5.0	3.7	7.6	7.9
Incr Delay (d2), s/veh	2.4	0.7	0.1	0.1	0.3	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.0	0.1	0.1	0.1	0.7	0.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	12.9	10.6	5.1	3.8	7.9	8.8
LnGrp LOS	B	B	A	A	A	A
Approach Vol, veh/h	190			570	516	
Approach Delay, s/veh	12.2			3.9	8.2	
Approach LOS	B			A	A	
Timer - Assigned Phs	2			4	5	6
Phs Duration (G+Y+Rc), s	17.8			8.2	6.1	11.7
Change Period (Y+Rc), s	4.5			4.5	4.5	4.5
Max Green Setting (Gmax), s	70.5			40.5	15.5	50.5
Max Q Clear Time (g_c+l1), s	4.5			4.1	2.5	4.9
Green Ext Time (p_c), s	3.0			0.4	0.1	2.3
Intersection Summary						
HCM 6th Ctrl Delay			6.9			
HCM 6th LOS			A			

Timings
4: Jackson Gap St & 60th Ave

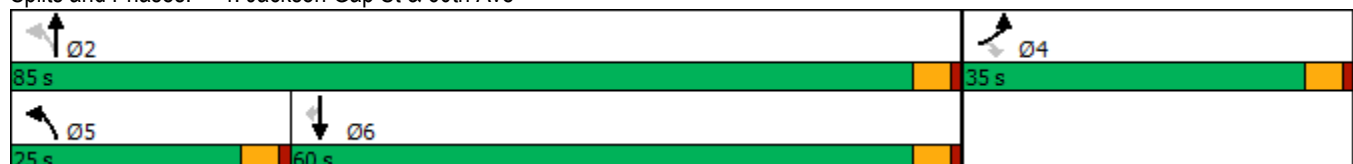
Porteos ISP Jackson Gap
08/27/2019

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	75	75	125	150	175	75
Future Volume (vph)	75	75	125	150	175	75
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	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	9.5	22.5	22.5	22.5
Total Split (s)	35.0	35.0	25.0	85.0	60.0	60.0
Total Split (%)	29.2%	29.2%	20.8%	70.8%	50.0%	50.0%
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			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	Min	Min	Min
Act Effect Green (s)	7.9	7.9	25.8	27.1	16.2	16.2
Actuated g/C Ratio	0.20	0.20	0.64	0.68	0.40	0.40
v/c Ratio	0.26	0.24	0.19	0.15	0.28	0.13
Control Delay	18.4	7.2	4.6	4.3	15.3	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.4	7.2	4.6	4.3	15.3	5.0
LOS	B	A	A	A	B	A
Approach Delay	12.8			4.4	12.2	
Approach LOS	B			A	B	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 40
 Natural Cycle: 55
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.28
 Intersection Signal Delay: 9.2
 Intersection LOS: A
 Intersection Capacity Utilization 31.6%
 ICU Level of Service A
 Analysis Period (min) 15













Splits and Phases: 4: Jackson Gap St & 60th Ave



HCM 6th Signalized Intersection Summary

4: Jackson Gap St & 60th Ave

Porteos ISP Jackson Gap
08/27/2019

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	75	75	125	150	175	75
Future Volume (veh/h)	75	75	125	150	175	75
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1678	1678	1678	1678	1678	1678
Adj Flow Rate, veh/h	82	82	136	163	190	82
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	15	15	15	15	15	15
Cap, veh/h	214	191	592	865	368	312
Arrive On Green	0.13	0.13	0.12	0.52	0.22	0.22
Sat Flow, veh/h	1598	1422	1598	1678	1678	1422
Grp Volume(v), veh/h	82	82	136	163	190	82
Grp Sat Flow(s),veh/h/ln	1598	1422	1598	1678	1678	1422
Q Serve(g_s), s	1.2	1.4	1.4	1.3	2.6	1.2
Cycle Q Clear(g_c), s	1.2	1.4	1.4	1.3	2.6	1.2
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	214	191	592	865	368	312
V/C Ratio(X)	0.38	0.43	0.23	0.19	0.52	0.26
Avail Cap(c_a), veh/h	1897	1688	1674	5257	3625	3072
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.1	10.2	5.2	3.3	8.8	8.3
Incr Delay (d2), s/veh	1.1	1.5	0.2	0.1	1.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.6	2.1	0.3	0.1	1.1	0.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	11.3	11.7	5.4	3.4	9.9	8.8
LnGrp LOS	B	B	A	A	A	A
Approach Vol, veh/h	164			299	272	
Approach Delay, s/veh	11.5			4.3	9.6	
Approach LOS	B			A	A	
Timer - Assigned Phs	2			4	5	6
Phs Duration (G+Y+Rc), s	17.7			7.9	7.6	10.1
Change Period (Y+Rc), s	4.5			4.5	4.5	4.5
Max Green Setting (Gmax), s	80.5			30.5	20.5	55.5
Max Q Clear Time (g_c+I1), s	3.3			3.4	3.4	4.6
Green Ext Time (p_c), s	0.8			0.3	0.2	1.1
Intersection Summary						
HCM 6th Ctrl Delay			7.9			
HCM 6th LOS			A			

Timings
5: 56th Avenue & Jackson Gap St

Porteos ISP Jackson Gap
08/27/2019

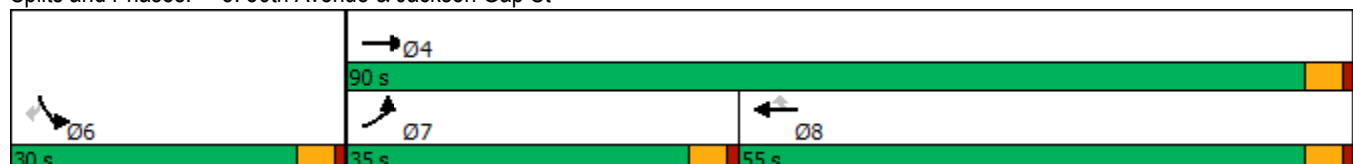


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	150	600	925	75	50	125
Future Volume (vph)	150	600	925	75	50	125
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Detector Phase	7	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	35.0	90.0	55.0	55.0	30.0	30.0
Total Split (%)	29.2%	75.0%	45.8%	45.8%	25.0%	25.0%
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	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	Min	Min	Min	None	None
Act Effect Green (s)	12.2	39.5	22.7	22.7	7.9	7.9
Actuated g/C Ratio	0.22	0.70	0.40	0.40	0.14	0.14
v/c Ratio	0.49	0.21	0.56	0.13	0.25	0.44
Control Delay	26.3	3.2	15.0	4.1	27.8	10.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.3	3.2	15.0	4.1	27.8	10.9
LOS	C	A	B	A	C	B
Approach Delay		7.8	14.2		15.7	
Approach LOS		A	B		B	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 56.7
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.56
 Intersection Signal Delay: 11.8
 Intersection LOS: B
 Intersection Capacity Utilization 41.6%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 5: 56th Avenue & Jackson Gap St









HCM 6th Signalized Intersection Summary

5: 56th Avenue & Jackson Gap St

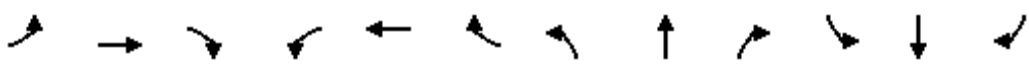
Porteos ISP Jackson Gap
08/27/2019



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations							
Traffic Volume (veh/h)	150	600	925	75	50	125	
Future Volume (veh/h)	150	600	925	75	50	125	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1678	1678	1678	1678	1678	1678	
Adj Flow Rate, veh/h	163	652	1005	82	54	136	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Percent Heavy Veh, %	15	15	15	15	15	15	
Cap, veh/h	209	2934	1816	564	213	190	
Arrive On Green	0.13	0.64	0.40	0.40	0.13	0.13	
Sat Flow, veh/h	1598	4731	4731	1422	1598	1422	
Grp Volume(v), veh/h	163	652	1005	82	54	136	
Grp Sat Flow(s),veh/h/ln	1598	1527	1527	1422	1598	1422	
Q Serve(g_s), s	3.9	2.4	6.8	1.5	1.2	3.6	
Cycle Q Clear(g_c), s	3.9	2.4	6.8	1.5	1.2	3.6	
Prop In Lane	1.00			1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	209	2934	1816	564	213	190	
V/C Ratio(X)	0.78	0.22	0.55	0.15	0.25	0.72	
Avail Cap(c_a), veh/h	1224	9837	5810	1804	1024	911	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	
Uniform Delay (d), s/veh	16.7	3.0	9.3	7.7	15.5	16.5	
Incr Delay (d2), s/veh	6.2	0.0	0.3	0.1	0.6	5.0	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(95%),veh/ln	2.7	0.3	2.7	0.6	0.7	0.5	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	22.9	3.0	9.6	7.8	16.1	21.6	
LnGrp LOS	C	A	A	A	B	C	
Approach Vol, veh/h		815	1087	190			
Approach Delay, s/veh		7.0	9.4	20.0			
Approach LOS		A	A	B			
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				30.0	9.8	9.7	20.3
Change Period (Y+Rc), s				4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s				85.5	25.5	30.5	50.5
Max Q Clear Time (g_c+l1), s				4.4	5.6	5.9	8.8
Green Ext Time (p_c), s				4.0	0.4	0.3	7.0
Intersection Summary							
HCM 6th Ctrl Delay			9.4				
HCM 6th LOS			A				

Timings 6: Jackson Gap Rd/Jackson Gap Way & 56th Avenue

Porteos ISP Jackson Gap
08/27/2019

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	150	350	150	75	800	100	100	375	50	75	200	100
Future Volume (vph)	150	350	150	75	800	100	100	375	50	75	200	100
Turn Type	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	24.0	52.0	52.0	18.0	46.0	46.0	15.0	35.0	35.0	15.0	35.0	35.0
Total Split (%)	20.0%	43.3%	43.3%	15.0%	38.3%	38.3%	12.5%	29.2%	29.2%	12.5%	29.2%	29.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	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	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	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	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	Min	None	Min	Min	None	None	None	None	None	None
Act Effect Green (s)	14.2	32.6	32.6	10.1	24.6	24.6	24.3	17.1	17.1	23.2	16.5	16.5
Actuated g/C Ratio	0.18	0.40	0.40	0.13	0.30	0.30	0.30	0.21	0.21	0.29	0.20	0.20
v/c Ratio	0.59	0.21	0.25	0.42	0.63	0.21	0.30	0.61	0.13	0.29	0.34	0.28
Control Delay	44.7	19.5	4.8	45.8	28.0	3.7	22.9	35.8	0.7	23.1	32.2	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.7	19.5	4.8	45.8	28.0	3.7	22.9	35.8	0.7	23.1	32.2	5.4
LOS	D	B	A	D	C	A	C	D	A	C	C	A
Approach Delay		21.9			26.9			30.0			23.2	
Approach LOS		C			C			C			C	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 80.7

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.63

Intersection Signal Delay: 25.7

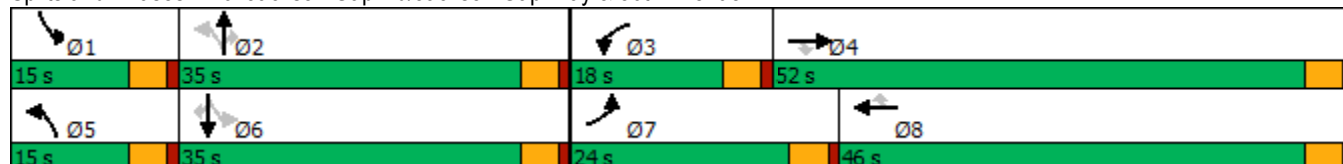
Intersection LOS: C

Intersection Capacity Utilization 53.3%

ICU Level of Service A

























Analysis Period (min) 15

Splits and Phases: 6: Jackson Gap Rd/Jackson Gap Way & 56th Avenue



























HCM 6th Signalized Intersection Summary
6: Jackson Gap Rd/Jackson Gap Way & 56th Avenue

Porteos ISP Jackson Gap
08/27/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	150	350	150	75	800	100	100	375	50	75	200	100
Future Volume (veh/h)	150	350	150	75	800	100	100	375	50	75	200	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678
Adj Flow Rate, veh/h	163	380	163	82	870	109	109	408	54	82	217	109
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
Percent Heavy Veh, %	15	15	15	15	15	15	15	15	15	15	15	15
Cap, veh/h	204	1667	517	102	1373	426	361	613	273	290	578	258
Arrive On Green	0.13	0.36	0.36	0.06	0.30	0.30	0.07	0.19	0.19	0.06	0.18	0.18
Sat Flow, veh/h	1598	4580	1422	1598	4580	1422	1598	3188	1422	1598	3188	1422
Grp Volume(v), veh/h	163	380	163	82	870	109	109	408	54	82	217	109
Grp Sat Flow(s),veh/h/ln	1598	1527	1422	1598	1527	1422	1598	1594	1422	1598	1594	1422
Q Serve(g_s), s	5.6	3.3	4.7	2.9	9.3	3.3	3.1	6.8	1.8	2.3	3.4	3.9
Cycle Q Clear(g_c), s	5.6	3.3	4.7	2.9	9.3	3.3	3.1	6.8	1.8	2.3	3.4	3.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	204	1667	517	102	1373	426	361	613	273	290	578	258
V/C Ratio(X)	0.80	0.23	0.32	0.80	0.63	0.26	0.30	0.67	0.20	0.28	0.38	0.42
Avail Cap(c_a), veh/h	547	3821	1186	379	3338	1036	536	1707	762	483	1707	762
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.1	12.6	13.0	26.3	17.2	15.1	17.0	21.3	19.3	17.5	20.5	20.7
Incr Delay (d2), s/veh	7.0	0.1	0.3	13.6	0.5	0.3	0.5	1.3	0.3	0.5	0.4	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.1	1.7	2.3	2.5	5.1	1.7	1.8	4.1	1.0	1.4	2.1	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.1	12.6	13.4	39.9	17.7	15.4	17.5	22.5	19.7	18.0	20.9	21.8
LnGrp LOS	C	B	B	D	B	B	B	C	B	B	C	C
Approach Vol, veh/h	706			1061			571			408		
Approach Delay, s/veh	17.1			19.2			21.3			20.5		
Approach LOS	B			B			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.1	15.5	8.1	25.2	8.8	14.8	11.8	21.6				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	10.5	30.5	13.5	47.5	10.5	30.5	19.5	41.5				
Max Q Clear Time (g_c+I1), s	4.3	8.8	4.9	6.7	5.1	5.9	7.6	11.3				
Green Ext Time (p_c), s	0.1	2.2	0.1	2.6	0.1	1.3	0.2	5.7				
Intersection Summary												
HCM 6th Ctrl Delay	19.3											
HCM 6th LOS	B											

Timings
1: Jackson Gap St & 68th Ave

Porteos ISP Jackson Gap
08/27/2019

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	125	150	150	175	300	200	775	100	175	700	100
Future Volume (vph)	100	125	150	150	175	300	200	775	100	175	700	100
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	15.0	34.0	34.0	15.0	34.0	34.0	24.0	50.0	50.0	21.0	47.0	47.0
Total Split (%)	12.5%	28.3%	28.3%	12.5%	28.3%	28.3%	20.0%	41.7%	41.7%	17.5%	39.2%	39.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	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	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	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	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effect Green (s)	25.3	15.8	15.8	27.4	19.6	19.6	44.4	30.9	30.9	40.3	28.8	28.8
Actuated g/C Ratio	0.29	0.18	0.18	0.31	0.22	0.22	0.51	0.35	0.35	0.46	0.33	0.33
v/c Ratio	0.31	0.45	0.42	0.45	0.51	0.57	0.61	0.76	0.19	0.61	0.73	0.20
Control Delay	25.1	39.5	9.4	27.8	39.8	8.6	19.7	30.6	5.5	21.2	31.3	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.1	39.5	9.4	27.8	39.8	8.6	19.7	30.6	5.5	21.2	31.3	5.9
LOS	C	D	A	C	D	A	B	C	A	C	C	A
Approach Delay		23.6			21.9			26.2			26.9	
Approach LOS		C			C			C			C	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 87.2

Natural Cycle: 70

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 25.2









Intersection LOS: C

Intersection Capacity Utilization 61.0%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 1: Jackson Gap St & 68th Ave

























			
21 s	50 s	15 s	34 s
			
24 s	47 s	15 s	34 s

HCM 6th Signalized Intersection Summary

Porteos ISP Jackson Gap

























08/27/2019

1: Jackson Gap St & 68th Ave

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	125	150	150	175	300	200	775	100	175	700	100
Future Volume (veh/h)	100	125	150	150	175	300	200	775	100	175	700	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678
Adj Flow Rate, veh/h	109	136	135	163	190	309	217	842	91	190	761	98
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
Percent Heavy Veh, %	15	15	15	15	15	15	15	15	15	15	15	15
Cap, veh/h	335	372	316	409	423	358	346	1067	476	314	1027	458
Arrive On Green	0.07	0.22	0.22	0.10	0.25	0.25	0.12	0.33	0.33	0.10	0.32	0.32
Sat Flow, veh/h	1598	1678	1422	1598	1678	1422	1598	3188	1422	1598	3188	1422
Grp Volume(v), veh/h	109	136	135	163	190	309	217	842	91	190	761	98
Grp Sat Flow(s),veh/h/ln	1598	1678	1422	1598	1678	1422	1598	1594	1422	1598	1594	1422
Q Serve(g_s), s	3.9	5.2	6.2	5.8	7.2	15.8	6.7	18.1	3.5	5.9	16.1	3.8
Cycle Q Clear(g_c), s	3.9	5.2	6.2	5.8	7.2	15.8	6.7	18.1	3.5	5.9	16.1	3.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	335	372	316	409	423	358	346	1067	476	314	1027	458
V/C Ratio(X)	0.33	0.37	0.43	0.40	0.45	0.86	0.63	0.79	0.19	0.60	0.74	0.21
Avail Cap(c_a), veh/h	442	652	553	469	652	553	569	1912	853	494	1786	797
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.5	25.0	25.4	19.6	23.9	27.1	16.5	22.8	17.9	17.1	22.9	18.7
Incr Delay (d2), s/veh	0.6	0.6	0.9	0.6	0.7	8.6	1.9	1.3	0.2	1.9	1.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.5	3.6	3.6	3.7	4.9	9.7	4.1	10.4	1.9	3.7	9.5	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.1	25.6	26.3	20.2	24.7	35.7	18.4	24.2	18.1	18.9	24.0	18.9
LnGrp LOS	C	C	C	C	C	D	B	C	B	B	C	B
Approach Vol, veh/h	380			662			1150			1049		
Approach Delay, s/veh	24.5			28.7			22.6			22.6		
Approach LOS	C			C			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.5	29.9	12.2	21.3	13.4	28.9	9.9	23.6				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	16.5	45.5	10.5	29.5	19.5	42.5	10.5	29.5				
Max Q Clear Time (g_c+I1), s	7.9	20.1	7.8	8.2	8.7	18.1	5.9	17.8				
Green Ext Time (p_c), s	0.2	5.3	0.1	0.9	0.3	4.7	0.1	1.4				
Intersection Summary												
HCM 6th Ctrl Delay	24.1											
HCM 6th LOS	C											

Timings
2: Jackson Gap St & 64th Ave

Porteos ISP Jackson Gap
08/27/2019

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	325	225	250	375	400	175	575	200	325	550	125
Future Volume (vph)	100	325	225	250	375	400	175	575	200	325	550	125
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	15.0	34.0	34.0	21.0	40.0	40.0	18.0	40.0	40.0	25.0	47.0	47.0
Total Split (%)	12.5%	28.3%	28.3%	17.5%	33.3%	33.3%	15.0%	33.3%	33.3%	20.8%	39.2%	39.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	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	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	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	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effect Green (s)	26.2	16.8	16.8	35.9	22.2	22.2	11.1	25.6	25.6	16.0	30.5	30.5
Actuated g/C Ratio	0.29	0.18	0.18	0.39	0.24	0.24	0.12	0.28	0.28	0.17	0.33	0.33
v/c Ratio	0.35	0.61	0.54	0.73	0.54	0.67	0.52	0.72	0.40	0.67	0.57	0.24
Control Delay	24.1	41.2	9.6	35.2	34.6	9.8	46.5	36.0	6.4	44.3	28.4	5.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.1	41.2	9.6	35.2	34.6	9.8	46.5	36.0	6.4	44.3	28.4	5.5
LOS	C	D	A	D	C	A	D	D	A	D	C	A
Approach Delay		27.6			25.1			31.7			30.7	
Approach LOS		C			C			C			C	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 91.9

Natural Cycle: 75

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.73

Intersection Signal Delay: 28.8

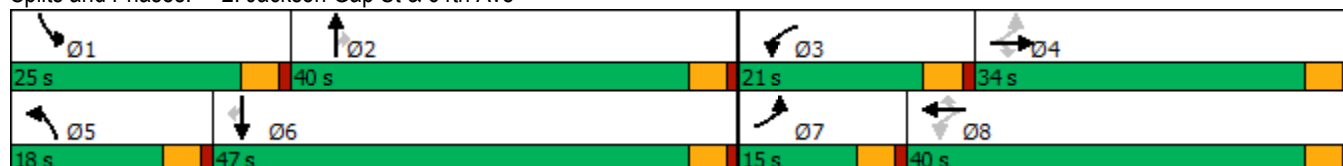
Intersection LOS: C

Intersection Capacity Utilization 63.0%

ICU Level of Service B

Analysis Period (min) 15

























Splits and Phases: 2: Jackson Gap St & 64th Ave



HCM 6th Signalized Intersection Summary













2: Jackson Gap St & 64th Ave

Porteos ISP Jackson Gap
08/27/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	325	225	250	375	400	175	575	200	325	550	125
Future Volume (veh/h)	100	325	225	250	375	400	175	575	200	325	550	125
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678
Adj Flow Rate, veh/h	109	353	198	272	408	393	190	625	177	353	598	114
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
Percent Heavy Veh, %	15	15	15	15	15	15	15	15	15	15	15	15
Cap, veh/h	331	762	340	435	1012	451	266	802	358	443	984	439
Arrive On Green	0.07	0.24	0.24	0.15	0.32	0.32	0.09	0.25	0.25	0.14	0.31	0.31
Sat Flow, veh/h	1598	3188	1422	1598	3188	1422	3100	3188	1422	3100	3188	1422
Grp Volume(v), veh/h	109	353	198	272	408	393	190	625	177	353	598	114
Grp Sat Flow(s),veh/h/ln	1598	1594	1422	1598	1594	1422	1550	1594	1422	1550	1594	1422
Q Serve(g_s), s	4.2	7.8	10.1	9.9	8.2	21.5	4.9	15.0	8.8	9.1	13.1	5.0
Cycle Q Clear(g_c), s	4.2	7.8	10.1	9.9	8.2	21.5	4.9	15.0	8.8	9.1	13.1	5.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	331	762	340	435	1012	451	266	802	358	443	984	439
V/C Ratio(X)	0.33	0.46	0.58	0.63	0.40	0.87	0.71	0.78	0.49	0.80	0.61	0.26
Avail Cap(c_a), veh/h	424	1142	510	519	1375	613	508	1375	613	772	1646	734
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.2	26.8	27.7	18.1	22.0	26.5	36.6	28.7	26.3	34.1	24.2	21.4
Incr Delay (d2), s/veh	0.6	0.4	1.6	1.7	0.3	10.0	3.6	1.7	1.1	3.3	0.6	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.7	5.1	6.1	6.3	5.2	12.5	3.4	9.4	5.2	6.2	8.2	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.7	27.3	29.3	19.8	22.3	36.5	40.2	30.4	27.4	37.5	24.8	21.7
LnGrp LOS	C	C	C	B	C	D	D	C	C	D	C	C
Approach Vol, veh/h		660			1073			992			1065	
Approach Delay, s/veh		26.9			26.9			31.7			28.7	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.3	25.2	16.7	24.2	11.6	29.9	10.2	30.6				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	20.5	35.5	16.5	29.5	13.5	42.5	10.5	35.5				
Max Q Clear Time (g_c+I1), s	11.1	17.0	11.9	12.1	6.9	15.1	6.2	23.5				
Green Ext Time (p_c), s	0.7	3.7	0.3	2.2	0.2	3.7	0.1	2.7				
Intersection Summary												
HCM 6th Ctrl Delay			28.7									
HCM 6th LOS			C									

Timings 3: Jackson Gap Way & Jackson Gap St

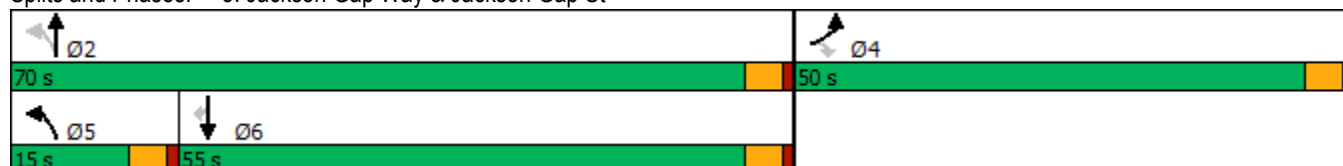
Porteos ISP Jackson Gap
08/27/2019

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	250	75	50	375	600	200
Future Volume (vph)	250	75	50	375	600	200
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	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	9.5	22.5	22.5	22.5
Total Split (s)	50.0	50.0	15.0	70.0	55.0	55.0
Total Split (%)	41.7%	41.7%	12.5%	58.3%	45.8%	45.8%
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			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	Min	Min	Min
Act Effect Green (s)	16.6	16.6	28.1	28.1	21.5	21.5
Actuated g/C Ratio	0.30	0.30	0.51	0.51	0.39	0.39
v/c Ratio	0.57	0.17	0.14	0.25	0.53	0.32
Control Delay	24.0	6.1	7.7	7.8	16.7	4.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.0	6.1	7.7	7.8	16.7	4.2
LOS	C	A	A	A	B	A
Approach Delay	19.9			7.8	13.6	
Approach LOS	B			A	B	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 54.7
Natural Cycle: 55
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.57
Intersection Signal Delay: 13.3
Intersection LOS: B
Intersection Capacity Utilization 45.9%
ICU Level of Service A
Analysis Period (min) 15















Splits and Phases: 3: Jackson Gap Way & Jackson Gap St



HCM 6th Signalized Intersection Summary













3: Jackson Gap Way & Jackson Gap St

Porteos ISP Jackson Gap
08/27/2019

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				 	 	
Traffic Volume (veh/h)	250	75	50	375	600	200
Future Volume (veh/h)	250	75	50	375	600	200
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1678	1678	1678	1678	1678	1678
Adj Flow Rate, veh/h	272	82	54	408	652	217
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	15	15	15	15	15	15
Cap, veh/h	365	325	390	1678	1103	492
Arrive On Green	0.23	0.23	0.06	0.53	0.35	0.35
Sat Flow, veh/h	1598	1422	1598	3272	3272	1422
Grp Volume(v), veh/h	272	82	54	408	652	217
Grp Sat Flow(s),veh/h/ln	1598	1422	1598	1594	1594	1422
Q Serve(g_s), s	5.8	1.7	0.7	2.6	6.2	4.3
Cycle Q Clear(g_c), s	5.8	1.7	0.7	2.6	6.2	4.3
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	365	325	390	1678	1103	492
V/C Ratio(X)	0.75	0.25	0.14	0.24	0.59	0.44
Avail Cap(c_a), veh/h	1981	1763	755	5690	4387	1957
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.2	11.6	6.6	4.7	9.9	9.3
Incr Delay (d2), s/veh	3.0	0.4	0.2	0.1	0.5	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.2	2.7	0.2	0.7	2.6	1.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	16.2	12.0	6.7	4.8	10.4	9.9
LnGrp LOS	B	B	A	A	B	A
Approach Vol, veh/h	354			462	869	
Approach Delay, s/veh	15.2			5.0	10.2	
Approach LOS	B			A	B	
Timer - Assigned Phs	2			4	5	6
Phs Duration (G+Y+Rc), s	23.8			12.9	6.6	17.2
Change Period (Y+Rc), s	4.5			4.5	4.5	4.5
Max Green Setting (Gmax), s	65.5			45.5	10.5	50.5
Max Q Clear Time (g_c+I1), s	4.6			7.8	2.7	8.2
Green Ext Time (p_c), s	2.3			0.8	0.0	4.5
Intersection Summary						
HCM 6th Ctrl Delay			9.9			
HCM 6th LOS			A			

Timings
4: Jackson Gap St & 60th Ave

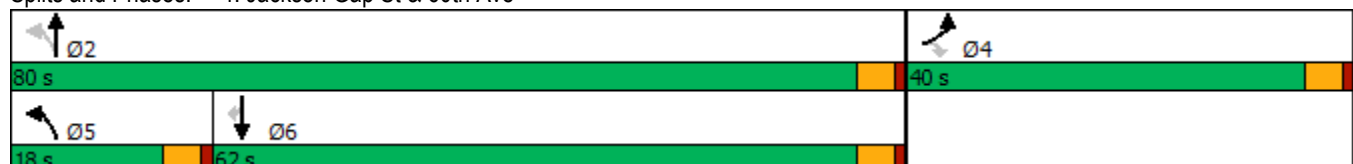
Porteos ISP Jackson Gap
08/27/2019

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	100	125	75	200	225	50
Future Volume (vph)	100	125	75	200	225	50
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	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	9.5	22.5	22.5	22.5
Total Split (s)	40.0	40.0	18.0	80.0	62.0	62.0
Total Split (%)	33.3%	33.3%	15.0%	66.7%	51.7%	51.7%
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			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	Min	Min	Min
Act Effect Green (s)	8.8	8.8	22.7	22.7	15.6	15.6
Actuated g/C Ratio	0.21	0.21	0.55	0.55	0.38	0.38
v/c Ratio	0.32	0.33	0.14	0.24	0.39	0.10
Control Delay	18.3	6.7	4.9	5.4	14.5	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.3	6.7	4.9	5.4	14.5	5.1
LOS	B	A	A	A	B	A
Approach Delay	11.8			5.3	12.8	
Approach LOS	B			A	B	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 41
 Natural Cycle: 55
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.39
 Intersection Signal Delay: 9.9
 Intersection LOS: A
 Intersection Capacity Utilization 32.8%
 ICU Level of Service A
 Analysis Period (min) 15













Splits and Phases: 4: Jackson Gap St & 60th Ave



HCM 6th Signalized Intersection Summary

4: Jackson Gap St & 60th Ave

Porteos ISP Jackson Gap
08/27/2019

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	100	125	75	200	225	50
Future Volume (veh/h)	100	125	75	200	225	50
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1678	1678	1678	1678	1678	1678
Adj Flow Rate, veh/h	109	136	82	217	245	54
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	15	15	15	15	15	15
Cap, veh/h	251	223	526	848	422	357
Arrive On Green	0.16	0.16	0.09	0.51	0.25	0.25
Sat Flow, veh/h	1598	1422	1598	1678	1678	1422
Grp Volume(v), veh/h	109	136	82	217	245	54
Grp Sat Flow(s),veh/h/ln	1598	1422	1598	1678	1678	1422
Q Serve(g_s), s	1.6	2.4	0.8	2.0	3.4	0.8
Cycle Q Clear(g_c), s	1.6	2.4	0.8	2.0	3.4	0.8
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	251	223	526	848	422	357
V/C Ratio(X)	0.43	0.61	0.16	0.26	0.58	0.15
Avail Cap(c_a), veh/h	2127	1893	1199	4751	3618	3066
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.2	10.5	5.5	3.7	8.7	7.8
Incr Delay (d2), s/veh	1.2	2.7	0.1	0.2	1.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.8	3.6	0.2	0.2	1.4	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	11.4	13.2	5.6	3.9	10.0	8.0
LnGrp LOS	B	B	A	A	B	A
Approach Vol, veh/h	245			299	299	
Approach Delay, s/veh	12.4			4.4	9.6	
Approach LOS	B			A	A	
Timer - Assigned Phs	2			4	5	6
Phs Duration (G+Y+Rc), s	18.0			8.7	6.8	11.2
Change Period (Y+Rc), s	4.5			4.5	4.5	4.5
Max Green Setting (Gmax), s	75.5			35.5	13.5	57.5
Max Q Clear Time (g_c+I1), s	4.0			4.4	2.8	5.4
Green Ext Time (p_c), s	1.0			0.6	0.1	1.3
Intersection Summary						
HCM 6th Ctrl Delay			8.6			
HCM 6th LOS			A			

Timings
5: 56th Avenue & Jackson Gap St

Porteos ISP Jackson Gap
08/27/2019

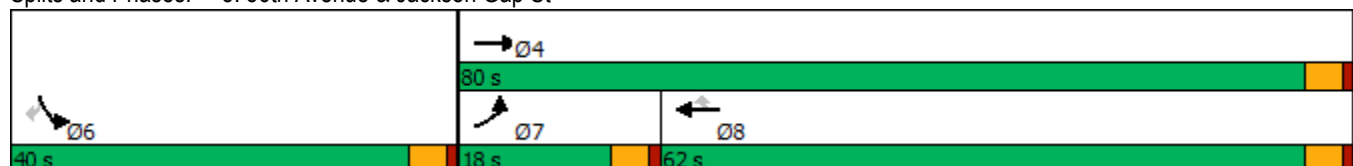


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↰	↑↑↑	↑↑↑	↰	↰	↰
Traffic Volume (vph)	150	950	700	50	100	250
Future Volume (vph)	150	950	700	50	100	250
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Detector Phase	7	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	18.0	80.0	62.0	62.0	40.0	40.0
Total Split (%)	15.0%	66.7%	51.7%	51.7%	33.3%	33.3%
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	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	Min	Min	Min	None	None
Act Effect Green (s)	13.0	33.7	16.1	16.1	9.3	9.3
Actuated g/C Ratio	0.25	0.65	0.31	0.31	0.18	0.18
v/c Ratio	0.42	0.35	0.55	0.11	0.39	0.58
Control Delay	22.2	4.8	16.8	5.3	24.6	8.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.2	4.8	16.8	5.3	24.6	8.8
LOS	C	A	B	A	C	A
Approach Delay		7.1	16.0		13.3	
Approach LOS		A	B		B	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 52.1
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.58
 Intersection Signal Delay: 11.1
 Intersection LOS: B
 Intersection Capacity Utilization 38.6%
 ICU Level of Service A
 Analysis Period (min) 15







Splits and Phases: 5: 56th Avenue & Jackson Gap St



HCM 6th Signalized Intersection Summary 5: 56th Avenue & Jackson Gap St































Porteos ISP Jackson Gap
08/27/2019



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations							
Traffic Volume (veh/h)	150	950	700	50	100	250	
Future Volume (veh/h)	150	950	700	50	100	250	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1678	1678	1678	1678	1678	1678	
Adj Flow Rate, veh/h	163	1033	761	54	109	272	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Percent Heavy Veh, %	15	15	15	15	15	15	
Cap, veh/h	205	2473	1394	433	392	349	
Arrive On Green	0.13	0.54	0.30	0.30	0.25	0.25	
Sat Flow, veh/h	1598	4731	4731	1422	1598	1422	
Grp Volume(v), veh/h	163	1033	761	54	109	272	
Grp Sat Flow(s),veh/h/ln	1598	1527	1527	1422	1598	1422	
Q Serve(g_s), s	4.2	5.6	5.8	1.2	2.3	7.5	
Cycle Q Clear(g_c), s	4.2	5.6	5.8	1.2	2.3	7.5	
Prop In Lane	1.00			1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	205	2473	1394	433	392	349	
V/C Ratio(X)	0.79	0.42	0.55	0.12	0.28	0.78	
Avail Cap(c_a), veh/h	514	8247	6281	1950	1353	1204	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	
Uniform Delay (d), s/veh	17.7	5.7	12.2	10.5	12.8	14.8	
Incr Delay (d2), s/veh	6.8	0.1	0.3	0.1	0.4	3.8	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(95%),veh/ln	2.9	1.6	2.7	0.5	1.2	0.7	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	24.6	5.8	12.5	10.7	13.2	18.6	
LnGrp LOS	C	A	B	B	B	B	
Approach Vol, veh/h		1196	815		381		
Approach Delay, s/veh		8.4	12.4		17.0		
Approach LOS		A	B		B		
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				27.1	14.8	9.9	17.3
Change Period (Y+Rc), s				4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s				75.5	35.5	13.5	57.5
Max Q Clear Time (g_c+I1), s				7.6	9.5	6.2	7.8
Green Ext Time (p_c), s				7.2	0.9	0.2	5.0
Intersection Summary							
HCM 6th Ctrl Delay			11.1				
HCM 6th LOS			B				

Timings
6: Jackson Gap Rd/Jackson Gap Way & 56th Avenue

Porteos ISP Jackson Gap
08/27/2019

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 			 	
Traffic Volume (vph)	75	875	100	75	400	75	175	250	100	150	400	200
Future Volume (vph)	75	875	100	75	400	75	175	250	100	150	400	200
Turn Type	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	18.0	44.0	44.0	18.0	44.0	44.0	21.0	40.0	40.0	18.0	37.0	37.0
Total Split (%)	15.0%	36.7%	36.7%	15.0%	36.7%	36.7%	17.5%	33.3%	33.3%	15.0%	30.8%	30.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	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	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	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	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	Min	None	Min	Min	None	None	None	None	None	None
Act Effect Green (s)	10.2	27.5	27.5	10.2	27.5	27.5	35.4	21.7	21.7	30.7	19.3	19.3
Actuated g/C Ratio	0.12	0.32	0.32	0.12	0.32	0.32	0.41	0.25	0.25	0.35	0.22	0.22
v/c Ratio	0.44	0.67	0.21	0.44	0.30	0.16	0.50	0.35	0.25	0.39	0.62	0.45
Control Delay	50.5	29.8	6.4	50.5	24.9	5.1	23.4	30.8	8.0	21.7	37.3	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.5	29.8	6.4	50.5	24.9	5.1	23.4	30.8	8.0	21.7	37.3	8.2
LOS	D	C	A	D	C	A	C	C	A	C	D	A
Approach Delay		29.1			25.7			24.0			26.4	
Approach LOS		C			C			C			C	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 86.8

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.67

Intersection Signal Delay: 26.8









Intersection LOS: C

Intersection Capacity Utilization 56.8%

ICU Level of Service B































Analysis Period (min) 15

Splits and Phases: 6: Jackson Gap Rd/Jackson Gap Way & 56th Avenue

 Ø1	 Ø2	 Ø3	 Ø4
18 s	40 s	18 s	44 s
 Ø5	 Ø6	 Ø7	 Ø8
21 s	37 s	18 s	44 s

























HCM 6th Signalized Intersection Summary
6: Jackson Gap Rd/Jackson Gap Way & 56th Avenue

Porteos ISP Jackson Gap
08/27/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 			 	
Traffic Volume (veh/h)	75	875	100	75	400	75	175	250	100	150	400	200
Future Volume (veh/h)	75	875	100	75	400	75	175	250	100	150	400	200
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678
Adj Flow Rate, veh/h	82	951	109	82	435	82	190	272	109	163	435	217
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
Percent Heavy Veh, %	15	15	15	15	15	15	15	15	15	15	15	15
Cap, veh/h	102	1424	442	102	1424	442	373	743	332	428	693	309
Arrive On Green	0.06	0.31	0.31	0.06	0.31	0.31	0.12	0.23	0.23	0.10	0.22	0.22
Sat Flow, veh/h	1598	4580	1422	1598	4580	1422	1598	3188	1422	1598	3188	1422
Grp Volume(v), veh/h	82	951	109	82	435	82	190	272	109	163	435	217
Grp Sat Flow(s),veh/h/ln	1598	1527	1422	1598	1527	1422	1598	1594	1422	1598	1594	1422
Q Serve(g_s), s	3.2	11.3	3.6	3.2	4.5	2.6	5.6	4.5	4.0	4.8	7.7	8.8
Cycle Q Clear(g_c), s	3.2	11.3	3.6	3.2	4.5	2.6	5.6	4.5	4.0	4.8	7.7	8.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	102	1424	442	102	1424	442	373	743	332	428	693	309
V/C Ratio(X)	0.81	0.67	0.25	0.81	0.31	0.19	0.51	0.37	0.33	0.38	0.63	0.70
Avail Cap(c_a), veh/h	344	2887	896	344	2887	896	601	1806	805	604	1653	737
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.0	18.8	16.1	29.0	16.4	15.8	16.2	20.1	20.0	16.1	22.2	22.6
Incr Delay (d2), s/veh	13.8	0.5	0.3	13.8	0.1	0.2	1.1	0.3	0.6	0.6	0.9	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.7	6.4	1.9	2.7	2.5	1.4	3.4	2.7	2.2	2.9	4.8	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.7	19.3	16.4	42.7	16.6	16.0	17.3	20.4	20.5	16.7	23.2	25.5
LnGrp LOS	D	B	B	D	B	B	B	C	C	B	C	C
Approach Vol, veh/h		1142			599			571			815	
Approach Delay, s/veh		20.7			20.1			19.4			22.5	
Approach LOS		C			C			B			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.1	19.1	8.5	24.0	12.1	18.1	8.5	24.0				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	13.5	35.5	13.5	39.5	16.5	32.5	13.5	39.5				
Max Q Clear Time (g_c+I1), s	6.8	6.5	5.2	13.3	7.6	10.8	5.2	6.5				
Green Ext Time (p_c), s	0.2	1.7	0.1	6.2	0.2	2.8	0.1	2.7				
Intersection Summary												
HCM 6th Ctrl Delay			20.8									
HCM 6th LOS			C									

Timings
1: Jackson Gap St & 68th Ave

Porteos ISP Jackson Gap
11/25/2019

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	60	75	30	40	60	65	870	70	100	785	85
Future Volume (vph)	45	60	75	30	40	60	65	870	70	100	785	85
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	15.0	30.0	30.0	15.0	30.0	30.0	21.0	45.0	45.0	30.0	54.0	54.0
Total Split (%)	12.5%	25.0%	25.0%	12.5%	25.0%	25.0%	17.5%	37.5%	37.5%	25.0%	45.0%	45.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	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	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	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	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effect Green (s)	13.1	8.9	8.9	11.9	8.2	8.2	41.3	37.1	37.1	42.3	37.6	37.6
Actuated g/C Ratio	0.20	0.13	0.13	0.18	0.12	0.12	0.62	0.56	0.56	0.64	0.57	0.57
v/c Ratio	0.18	0.29	0.27	0.13	0.21	0.22	0.17	0.54	0.09	0.28	0.48	0.11
Control Delay	24.1	35.5	3.8	23.7	35.6	1.8	7.4	16.4	0.6	8.3	14.9	3.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.1	35.5	3.8	23.7	35.6	1.8	7.4	16.4	0.6	8.3	14.9	3.4
LOS	C	D	A	C	D	A	A	B	A	A	B	A
Approach Delay		19.4			17.2			14.7			13.2	
Approach LOS		B			B			B			B	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 66.3

Natural Cycle: 70

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.54

Intersection Signal Delay: 14.6

Intersection LOS: B

Intersection Capacity Utilization 50.0%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 1: Jackson Gap St & 68th Ave

























			
Ø1	Ø2	Ø3	Ø4
30 s	45 s	15 s	30 s
			
Ø5	Ø6	Ø7	Ø8
21 s	54 s	15 s	30 s

HCM 6th Signalized Intersection Summary

Porteos ISP Jackson Gap

























11/25/2019

1: Jackson Gap St & 68th Ave

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	60	75	30	40	60	65	870	70	100	785	85
Future Volume (veh/h)	45	60	75	30	40	60	65	870	70	100	785	85
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678
Adj Flow Rate, veh/h	49	65	54	33	43	48	71	946	58	109	853	81
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
Percent Heavy Veh, %	15	15	15	15	15	15	15	15	15	15	15	15
Cap, veh/h	311	185	157	289	163	139	363	1310	584	353	1359	606
Arrive On Green	0.05	0.11	0.11	0.04	0.10	0.10	0.06	0.41	0.41	0.08	0.43	0.43
Sat Flow, veh/h	1598	1678	1422	1598	1678	1422	1598	3188	1422	1598	3188	1422
Grp Volume(v), veh/h	49	65	54	33	43	48	71	946	58	109	853	81
Grp Sat Flow(s),veh/h/ln	1598	1678	1422	1598	1678	1422	1598	1594	1422	1598	1594	1422
Q Serve(g_s), s	1.3	1.8	1.7	0.9	1.2	1.6	1.2	12.3	1.2	1.9	10.4	1.7
Cycle Q Clear(g_c), s	1.3	1.8	1.7	0.9	1.2	1.6	1.2	12.3	1.2	1.9	10.4	1.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	311	185	157	289	163	139	363	1310	584	353	1359	606
V/C Ratio(X)	0.16	0.35	0.34	0.11	0.26	0.35	0.20	0.72	0.10	0.31	0.63	0.13
Avail Cap(c_a), veh/h	571	864	733	569	864	733	795	2609	1163	1050	3188	1422
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.6	20.4	20.4	19.0	20.7	20.9	8.2	12.2	9.0	8.9	11.1	8.6
Incr Delay (d2), s/veh	0.2	1.1	1.3	0.2	0.8	1.5	0.3	0.8	0.1	0.5	0.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.8	1.2	1.0	0.5	0.8	0.9	0.6	6.0	0.5	0.9	4.9	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.8	21.5	21.7	19.1	21.5	22.3	8.5	13.0	9.0	9.4	11.6	8.7
LnGrp LOS	B	C	C	B	C	C	A	B	A	A	B	A
Approach Vol, veh/h	168			124			1075			1043		
Approach Delay, s/veh	20.8			21.2			12.5			11.1		
Approach LOS	C			C			B			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.4	24.8	6.3	10.0	7.6	25.6	7.0	9.3				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	25.5	40.5	10.5	25.5	16.5	49.5	10.5	25.5				
Max Q Clear Time (g_c+I1), s	3.9	14.3	2.9	3.8	3.2	12.4	3.3	3.6				
Green Ext Time (p_c), s	0.2	6.0	0.0	0.3	0.1	5.7	0.0	0.2				
Intersection Summary												
HCM 6th Ctrl Delay	12.9											
HCM 6th LOS	B											

Timings 2: Jackson Gap St & 64th Ave

Porteos ISP Jackson Gap
11/25/2019

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	350	130	135	60	140	90	130	630	90	140	510	290
Future Volume (vph)	350	130	135	60	140	90	130	630	90	140	510	290
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	30.0	30.0	30.0	30.0	30.0	30.0	15.0	45.0	45.0	15.0	45.0	45.0
Total Split (%)	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	12.5%	37.5%	37.5%	12.5%	37.5%	37.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	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	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	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	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effect Green (s)	37.3	27.7	27.7	17.5	9.8	9.8	9.1	25.1	25.1	9.2	25.3	25.3
Actuated g/C Ratio	0.44	0.32	0.32	0.20	0.11	0.11	0.11	0.29	0.29	0.11	0.30	0.30
v/c Ratio	0.69	0.14	0.27	0.24	0.42	0.40	0.44	0.74	0.20	0.46	0.60	0.50
Control Delay	27.1	24.8	6.4	21.1	41.9	14.1	43.7	33.2	6.3	44.0	29.1	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.1	24.8	6.4	21.1	41.9	14.1	43.7	33.2	6.3	44.0	29.1	5.8
LOS	C	C	A	C	D	B	D	C	A	D	C	A
Approach Delay		22.1			28.9			32.0			24.1	
Approach LOS		C			C			C			C	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 85.6

Natural Cycle: 70

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 26.7









Intersection LOS: C

Intersection Capacity Utilization 60.1%

ICU Level of Service B

Analysis Period (min) 15

























Splits and Phases: 2: Jackson Gap St & 64th Ave

			
Ø1	Ø2	Ø3	Ø4
15 s	45 s	30 s	30 s
			
Ø5	Ø6	Ø7	Ø8
15 s	45 s	30 s	30 s

HCM 6th Signalized Intersection Summary















2: Jackson Gap St & 64th Ave

Porteos ISP Jackson Gap
11/25/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	350	130	135	60	140	90	130	630	90	140	510	290
Future Volume (veh/h)	350	130	135	60	140	90	130	630	90	140	510	290
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678
Adj Flow Rate, veh/h	380	141	100	65	152	56	141	685	58	152	554	293
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
Percent Heavy Veh, %	15	15	15	15	15	15	15	15	15	15	15	15
Cap, veh/h	553	888	396	300	291	130	232	936	418	238	943	420
Arrive On Green	0.24	0.28	0.28	0.05	0.09	0.09	0.07	0.29	0.29	0.08	0.30	0.30
Sat Flow, veh/h	1598	3188	1422	1598	3188	1422	3100	3188	1422	3100	3188	1422
Grp Volume(v), veh/h	380	141	100	65	152	56	141	685	58	152	554	293
Grp Sat Flow(s),veh/h/ln	1598	1594	1422	1598	1594	1422	1550	1594	1422	1550	1594	1422
Q Serve(g_s), s	12.0	2.0	3.3	2.2	2.8	2.3	2.7	11.7	1.8	2.9	9.0	11.1
Cycle Q Clear(g_c), s	12.0	2.0	3.3	2.2	2.8	2.3	2.7	11.7	1.8	2.9	9.0	11.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	553	888	396	300	291	130	232	936	418	238	943	420
V/C Ratio(X)	0.69	0.16	0.25	0.22	0.52	0.43	0.61	0.73	0.14	0.64	0.59	0.70
Avail Cap(c_a), veh/h	838	1338	597	883	1338	597	536	2125	948	536	2125	948
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.3	16.5	17.0	23.1	26.3	26.1	27.2	19.3	15.8	27.2	18.2	19.0
Incr Delay (d2), s/veh	1.5	0.1	0.3	0.4	1.4	2.2	2.6	1.1	0.2	2.8	0.6	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	7.0	1.2	1.8	1.4	1.8	1.4	1.8	7.0	1.0	1.9	5.3	6.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.8	16.6	17.3	23.4	27.8	28.3	29.8	20.4	15.9	30.1	18.8	21.1
LnGrp LOS	B	B	B	C	C	C	C	C	B	C	B	C
Approach Vol, veh/h	621			273			884			999		
Approach Delay, s/veh	17.5			26.9			21.6			21.2		
Approach LOS	B			C			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.2	22.3	7.8	21.4	9.0	22.5	19.2	10.1				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	10.5	40.5	25.5	25.5	10.5	40.5	25.5	25.5				
Max Q Clear Time (g_c+I1), s	4.9	13.7	4.2	5.3	4.7	13.1	14.0	4.8				
Green Ext Time (p_c), s	0.2	4.1	0.1	0.8	0.1	3.9	0.7	0.8				
Intersection Summary												
HCM 6th Ctrl Delay	21.1											
HCM 6th LOS	C											

Timings 3: Jackson Gap Way & Jackson Gap St

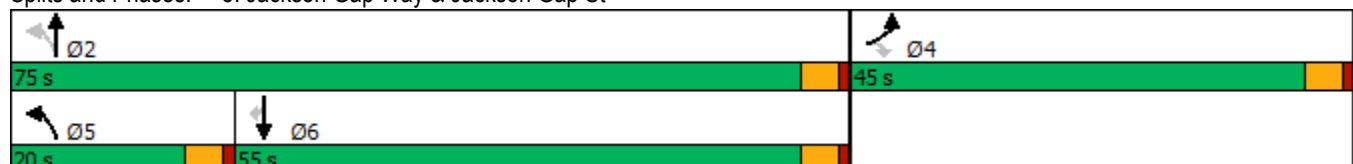
Porteos ISP Jackson Gap
11/25/2019

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				 	 	
Traffic Volume (vph)	105	20	20	695	430	185
Future Volume (vph)	105	20	20	695	430	185
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	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	9.5	22.5	22.5	22.5
Total Split (s)	45.0	45.0	20.0	75.0	55.0	55.0
Total Split (%)	37.5%	37.5%	16.7%	62.5%	45.8%	45.8%
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			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	Min	Min	Min
Act Effect Green (s)	9.1	9.1	25.1	26.3	24.5	24.5
Actuated g/C Ratio	0.22	0.22	0.62	0.65	0.60	0.60
v/c Ratio	0.32	0.07	0.04	0.37	0.25	0.22
Control Delay	16.9	7.7	4.8	5.7	7.4	2.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.9	7.7	4.8	5.7	7.4	2.8
LOS	B	A	A	A	A	A
Approach Delay	15.4			5.7	6.0	
Approach LOS	B			A	A	

Intersection Summary













Cycle Length: 120
 Actuated Cycle Length: 40.5
 Natural Cycle: 55
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.37
 Intersection Signal Delay: 6.6
 Intersection LOS: A
 Intersection Capacity Utilization 32.5%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 3: Jackson Gap Way & Jackson Gap St















HCM 6th Signalized Intersection Summary 3: Jackson Gap Way & Jackson Gap St

Porteos ISP Jackson Gap
11/25/2019

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	105	20	20	695	430	185
Future Volume (veh/h)	105	20	20	695	430	185
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1678	1678	1678	1678	1678	1678
Adj Flow Rate, veh/h	114	22	22	755	467	201
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	15	15	15	15	15	15
Cap, veh/h	194	173	468	1674	1020	455
Arrive On Green	0.12	0.12	0.03	0.53	0.32	0.32
Sat Flow, veh/h	1598	1422	1598	3272	3272	1422
Grp Volume(v), veh/h	114	22	22	755	467	201
Grp Sat Flow(s),veh/h/ln	1598	1422	1598	1594	1594	1422
Q Serve(g_s), s	1.7	0.4	0.2	3.8	3.0	2.8
Cycle Q Clear(g_c), s	1.7	0.4	0.2	3.8	3.0	2.8
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	194	173	468	1674	1020	455
V/C Ratio(X)	0.59	0.13	0.05	0.45	0.46	0.44
Avail Cap(c_a), veh/h	2542	2262	1396	8828	6324	2821
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.6	10.0	4.7	3.8	6.9	6.9
Incr Delay (d2), s/veh	2.8	0.3	0.0	0.2	0.3	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.9	0.6	0.0	0.1	0.8	0.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	13.4	10.3	4.8	4.0	7.2	7.5
LnGrp LOS	B	B	A	A	A	A
Approach Vol, veh/h	136			777	668	
Approach Delay, s/veh	12.9			4.0	7.3	
Approach LOS	B			A	A	
Timer - Assigned Phs	2			4	5	6
Phs Duration (G+Y+Rc), s	17.9			7.6	5.2	12.6
Change Period (Y+Rc), s	4.5			4.5	4.5	4.5
Max Green Setting (Gmax), s	70.5			40.5	15.5	50.5
Max Q Clear Time (g_c+I1), s	5.8			3.7	2.2	5.0
Green Ext Time (p_c), s	4.8			0.3	0.0	3.2
Intersection Summary						
HCM 6th Ctrl Delay			6.2			
HCM 6th LOS			A			

Timings
4: Jackson Gap St & 60th Ave

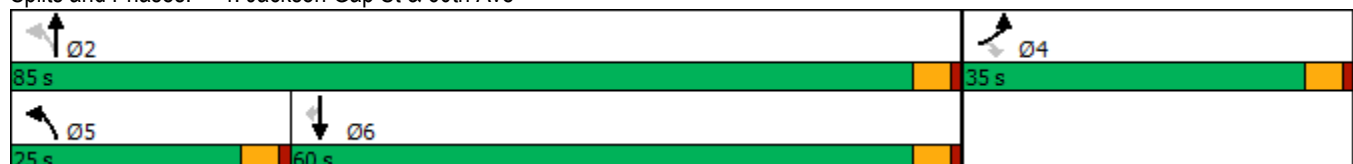
Porteos ISP Jackson Gap
11/25/2019

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	85	55	110	60	70	145
Future Volume (vph)	85	55	110	60	70	145
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	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	9.5	22.5	22.5	22.5
Total Split (s)	35.0	35.0	25.0	85.0	60.0	60.0
Total Split (%)	29.2%	29.2%	20.8%	70.8%	50.0%	50.0%
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			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	Min	Min	Min
Act Effect Green (s)	7.8	7.8	21.9	23.2	13.0	13.0
Actuated g/C Ratio	0.22	0.22	0.61	0.64	0.36	0.36
v/c Ratio	0.27	0.17	0.17	0.06	0.13	0.26
Control Delay	15.8	6.5	4.9	4.3	14.4	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.8	6.5	4.9	4.3	14.4	5.0
LOS	B	A	A	A	B	A
Approach Delay	12.1			4.7	8.1	
Approach LOS	B			A	A	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 36
 Natural Cycle: 55
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.27
 Intersection Signal Delay: 8.0
 Intersection LOS: A
 Intersection Capacity Utilization 25.0%
 ICU Level of Service A
 Analysis Period (min) 15













Splits and Phases: 4: Jackson Gap St & 60th Ave



HCM 6th Signalized Intersection Summary

4: Jackson Gap St & 60th Ave

Porteos ISP Jackson Gap
11/25/2019

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	85	55	110	60	70	145
Future Volume (veh/h)	85	55	110	60	70	145
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1678	1678	1678	1678	1678	1678
Adj Flow Rate, veh/h	92	60	120	65	76	158
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	15	15	15	15	15	15
Cap, veh/h	209	186	649	847	351	298
Arrive On Green	0.13	0.13	0.11	0.50	0.21	0.21
Sat Flow, veh/h	1598	1422	1598	1678	1678	1422
Grp Volume(v), veh/h	92	60	120	65	76	158
Grp Sat Flow(s),veh/h/ln	1598	1422	1598	1678	1678	1422
Q Serve(g_s), s	1.3	0.9	1.2	0.5	0.9	2.4
Cycle Q Clear(g_c), s	1.3	0.9	1.2	0.5	0.9	2.4
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	209	186	649	847	351	298
V/C Ratio(X)	0.44	0.32	0.18	0.08	0.22	0.53
Avail Cap(c_a), veh/h	1971	1754	1793	5464	3767	3192
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	9.9	9.7	4.9	3.2	8.1	8.7
Incr Delay (d2), s/veh	1.4	1.0	0.1	0.0	0.3	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.6	0.1	0.2	0.0	0.4	0.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	11.4	10.7	5.1	3.2	8.4	10.2
LnGrp LOS	B	B	A	A	A	B
Approach Vol, veh/h	152			185	234	
Approach Delay, s/veh	11.1			4.4	9.6	
Approach LOS	B			A	A	
Timer - Assigned Phs	2		4		5	6
Phs Duration (G+Y+Rc), s	17.0		7.7		7.3	9.7
Change Period (Y+Rc), s	4.5		4.5		4.5	4.5
Max Green Setting (Gmax), s	80.5		30.5		20.5	55.5
Max Q Clear Time (g_c+I1), s	2.5		3.3		3.2	4.4
Green Ext Time (p_c), s	0.3		0.3		0.2	0.7
Intersection Summary						
HCM 6th Ctrl Delay			8.3			
HCM 6th LOS			A			

Timings
5: 56th Avenue & Jackson Gap St

Porteos ISP Jackson Gap
11/25/2019

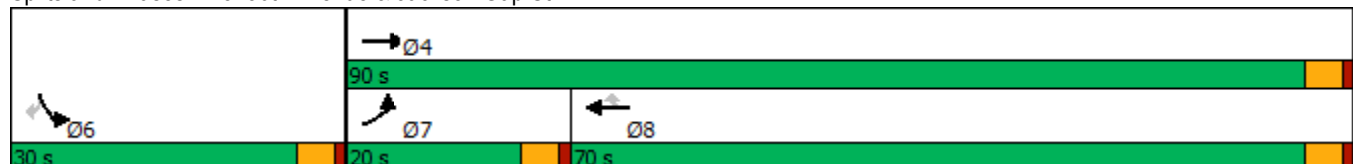


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↰	↑↑↑	↑↑↑	↰	↰	↰
Traffic Volume (vph)	120	590	675	30	20	75
Future Volume (vph)	120	590	675	30	20	75
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Detector Phase	7	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	20.0	90.0	70.0	70.0	30.0	30.0
Total Split (%)	16.7%	75.0%	58.3%	58.3%	25.0%	25.0%
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	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	Min	Min	Min	None	None
Act Effect Green (s)	9.6	31.1	20.1	20.1	6.5	6.5
Actuated g/C Ratio	0.22	0.73	0.47	0.47	0.15	0.15
v/c Ratio	0.37	0.20	0.35	0.05	0.09	0.29
Control Delay	19.3	3.0	11.6	5.3	19.6	9.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.3	3.0	11.6	5.3	19.6	9.1
LOS	B	A	B	A	B	A
Approach Delay		5.7	11.3		11.3	
Approach LOS		A	B		B	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 42.7
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.37
 Intersection Signal Delay: 8.7
 Intersection LOS: A
 Intersection Capacity Utilization 35.1%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 5: 56th Avenue & Jackson Gap St



HCM 6th Signalized Intersection Summary

5: 56th Avenue & Jackson Gap St

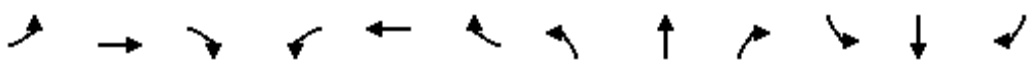
Porteos ISP Jackson Gap
11/25/2019



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	↰	↑↑↑	↑↑↑	↰	↰	↰	
Traffic Volume (veh/h)	120	590	675	30	20	75	
Future Volume (veh/h)	120	590	675	30	20	75	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1678	1678	1678	1678	1678	1678	
Adj Flow Rate, veh/h	130	641	734	33	22	82	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Percent Heavy Veh, %	15	15	15	15	15	15	
Cap, veh/h	176	2774	1588	493	154	137	
Arrive On Green	0.11	0.61	0.35	0.35	0.10	0.10	
Sat Flow, veh/h	1598	4731	4731	1422	1598	1422	
Grp Volume(v), veh/h	130	641	734	33	22	82	
Grp Sat Flow(s),veh/h/ln	1598	1527	1527	1422	1598	1422	
Q Serve(g_s), s	2.4	1.9	3.8	0.5	0.4	1.7	
Cycle Q Clear(g_c), s	2.4	1.9	3.8	0.5	0.4	1.7	
Prop In Lane	1.00			1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	176	2774	1588	493	154	137	
V/C Ratio(X)	0.74	0.23	0.46	0.07	0.14	0.60	
Avail Cap(c_a), veh/h	820	12966	9933	3084	1349	1200	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	
Uniform Delay (d), s/veh	13.0	2.7	7.7	6.6	12.5	13.1	
Incr Delay (d2), s/veh	6.0	0.0	0.2	0.1	0.4	4.1	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(95%),veh/ln	1.6	0.0	1.2	0.1	0.2	0.3	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	19.0	2.8	7.9	6.7	12.9	17.2	
LnGrp LOS	B	A	A	A	B	B	
Approach Vol, veh/h		771	767		104		
Approach Delay, s/veh		5.5	7.8		16.3		
Approach LOS		A	A		B		
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				22.8	7.4	7.8	15.0
Change Period (Y+Rc), s				4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s				85.5	25.5	15.5	65.5
Max Q Clear Time (g_c+I1), s				3.9	3.7	4.4	5.8
Green Ext Time (p_c), s				3.9	0.2	0.2	4.7
Intersection Summary							
HCM 6th Ctrl Delay			7.3				
HCM 6th LOS			A				

Timings 6: Jackson Gap Rd/Jackson Gap Way & 56th Avenue

Porteos ISP Jackson Gap
11/25/2019

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	345	140	125	30	320	65	150	245	20	45	145	235
Future Volume (vph)	345	140	125	30	320	65	150	245	20	45	145	235
Turn Type	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	35.0	50.0	50.0	15.0	30.0	30.0	18.0	40.0	40.0	15.0	37.0	37.0
Total Split (%)	29.2%	41.7%	41.7%	12.5%	25.0%	25.0%	15.0%	33.3%	33.3%	12.5%	30.8%	30.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	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	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	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	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	Min	None	Min	Min	None	None	None	None	None	None
Act Effect Green (s)	26.6	36.0	36.0	7.3	11.8	11.8	26.5	19.6	19.6	17.4	10.1	10.1
Actuated g/C Ratio	0.34	0.46	0.46	0.09	0.15	0.15	0.34	0.25	0.25	0.22	0.13	0.13
v/c Ratio	0.71	0.07	0.19	0.23	0.51	0.22	0.43	0.34	0.05	0.18	0.39	0.64
Control Delay	32.5	14.8	4.2	40.5	35.0	1.7	24.3	29.2	0.2	21.6	36.3	12.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.5	14.8	4.2	40.5	35.0	1.7	24.3	29.2	0.2	21.6	36.3	12.7
LOS	C	B	A	D	D	A	C	C	A	C	D	B
Approach Delay		22.6			30.2			26.0			21.7	
Approach LOS		C			C			C			C	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 78.8

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 24.9

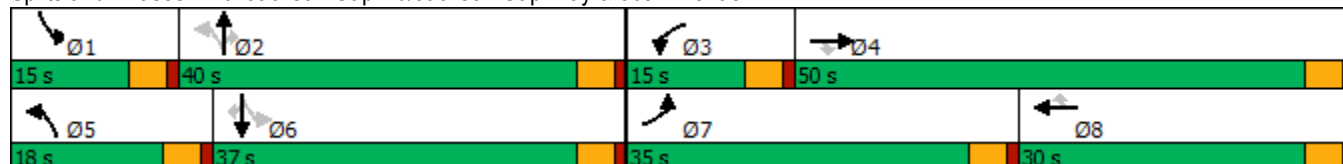
Intersection LOS: C

Intersection Capacity Utilization 52.8%

ICU Level of Service A

Analysis Period (min) 15































Splits and Phases: 6: Jackson Gap Rd/Jackson Gap Way & 56th Avenue



HCM 6th Signalized Intersection Summary

























6: Jackson Gap Rd/Jackson Gap Way & 56th Avenue

Porteos ISP Jackson Gap
11/25/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 			 	
Traffic Volume (veh/h)	345	140	125	30	320	65	150	245	20	45	145	235
Future Volume (veh/h)	345	140	125	30	320	65	150	245	20	45	145	235
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678
Adj Flow Rate, veh/h	375	152	136	33	348	71	163	266	22	49	158	255
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
Percent Heavy Veh, %	15	15	15	15	15	15	15	15	15	15	15	15
Cap, veh/h	426	1666	517	55	602	187	433	889	397	392	707	315
Arrive On Green	0.27	0.36	0.36	0.03	0.13	0.13	0.10	0.28	0.28	0.05	0.22	0.22
Sat Flow, veh/h	1598	4580	1422	1598	4580	1422	1598	3188	1422	1598	3188	1422
Grp Volume(v), veh/h	375	152	136	33	348	71	163	266	22	49	158	255
Grp Sat Flow(s),veh/h/ln	1598	1527	1422	1598	1527	1422	1598	1594	1422	1598	1594	1422
Q Serve(g_s), s	14.6	1.4	4.4	1.3	4.6	3.0	4.8	4.3	0.7	1.5	2.6	11.0
Cycle Q Clear(g_c), s	14.6	1.4	4.4	1.3	4.6	3.0	4.8	4.3	0.7	1.5	2.6	11.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	426	1666	517	55	602	187	433	889	397	392	707	315
V/C Ratio(X)	0.88	0.09	0.26	0.60	0.58	0.38	0.38	0.30	0.06	0.12	0.22	0.81
Avail Cap(c_a), veh/h	752	3214	998	259	1801	559	602	1745	778	579	1598	713
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.8	13.6	14.5	30.9	26.5	25.7	15.7	18.4	17.1	18.0	20.7	23.9
Incr Delay (d2), s/veh	6.0	0.0	0.3	9.9	0.9	1.3	0.5	0.2	0.1	0.1	0.2	4.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	9.4	0.8	2.3	1.1	2.9	1.8	2.9	2.6	0.4	0.9	1.6	6.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.8	13.6	14.8	40.8	27.3	27.0	16.3	18.6	17.2	18.1	20.8	28.9
LnGrp LOS	C	B	B	D	C	C	B	B	B	B	C	C
Approach Vol, veh/h		663			452			451			462	
Approach Delay, s/veh		22.4			28.3			17.7			25.0	
Approach LOS		C			C			B			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.4	22.6	6.7	28.1	11.1	18.9	21.8	13.0				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	10.5	35.5	10.5	45.5	13.5	32.5	30.5	25.5				
Max Q Clear Time (g_c+I1), s	3.5	6.3	3.3	6.4	6.8	13.0	16.6	6.6				
Green Ext Time (p_c), s	0.0	1.4	0.0	1.1	0.2	1.4	0.7	1.9				
Intersection Summary												
HCM 6th Ctrl Delay			23.3									
HCM 6th LOS			C									

Timings
1: Jackson Gap St & 68th Ave

Porteos ISP Jackson Gap
11/25/2019

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	50	65	60	70	120	85	890	40	70	975	70
Future Volume (vph)	100	50	65	60	70	120	85	890	40	70	975	70
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	15.0	34.0	34.0	15.0	34.0	34.0	24.0	50.0	50.0	21.0	47.0	47.0
Total Split (%)	12.5%	28.3%	28.3%	12.5%	28.3%	28.3%	20.0%	41.7%	41.7%	17.5%	39.2%	39.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	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	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	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	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effect Green (s)	21.5	13.9	13.9	17.5	9.4	9.4	45.4	38.8	38.8	43.5	37.8	37.8
Actuated g/C Ratio	0.27	0.17	0.17	0.22	0.12	0.12	0.56	0.48	0.48	0.54	0.47	0.47
v/c Ratio	0.34	0.19	0.22	0.22	0.40	0.47	0.33	0.64	0.06	0.26	0.72	0.11
Control Delay	27.9	37.0	6.4	26.2	42.9	13.3	10.6	19.3	0.1	9.8	22.1	2.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.9	37.0	6.4	26.2	42.9	13.3	10.6	19.3	0.1	9.8	22.1	2.6
LOS	C	D	A	C	D	B	B	B	A	A	C	A
Approach Delay		23.5			24.7			17.9			20.1	
Approach LOS		C			C			B			C	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 80.9

Natural Cycle: 75

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.72

Intersection Signal Delay: 20.0





Intersection LOS: B

Intersection Capacity Utilization 55.1%

ICU Level of Service B

Analysis Period (min) 15

























Splits and Phases: 1: Jackson Gap St & 68th Ave

			
Ø1	Ø2	Ø3	Ø4
21 s	50 s	15 s	34 s
			
Ø5	Ø6	Ø7	Ø8
24 s	47 s	15 s	34 s

HCM 6th Signalized Intersection Summary

























1: Jackson Gap St & 68th Ave

Porteos ISP Jackson Gap
11/25/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	50	65	60	70	120	85	890	40	70	975	70
Future Volume (veh/h)	100	50	65	60	70	120	85	890	40	70	975	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678
Adj Flow Rate, veh/h	109	54	43	65	76	113	92	967	25	76	1060	65
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
Percent Heavy Veh, %	15	15	15	15	15	15	15	15	15	15	15	15
Cap, veh/h	329	237	201	342	199	169	294	1395	622	317	1377	614
Arrive On Green	0.08	0.14	0.14	0.06	0.12	0.12	0.07	0.44	0.44	0.06	0.43	0.43
Sat Flow, veh/h	1598	1678	1422	1598	1678	1422	1598	3188	1422	1598	3188	1422
Grp Volume(v), veh/h	109	54	43	65	76	113	92	967	25	76	1060	65
Grp Sat Flow(s),veh/h/ln	1598	1678	1422	1598	1678	1422	1598	1594	1422	1598	1594	1422
Q Serve(g_s), s	3.5	1.7	1.6	2.1	2.5	4.5	1.8	14.5	0.6	1.5	16.7	1.6
Cycle Q Clear(g_c), s	3.5	1.7	1.6	2.1	2.5	4.5	1.8	14.5	0.6	1.5	16.7	1.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	329	237	201	342	199	169	294	1395	622	317	1377	614
V/C Ratio(X)	0.33	0.23	0.21	0.19	0.38	0.67	0.31	0.69	0.04	0.24	0.77	0.11
Avail Cap(c_a), veh/h	489	838	710	538	838	710	717	2457	1096	667	2295	1024
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.5	22.5	22.4	21.0	24.0	24.9	10.9	13.4	9.5	10.0	14.3	10.0
Incr Delay (d2), s/veh	0.6	0.5	0.5	0.3	1.2	4.5	0.6	0.6	0.0	0.4	0.9	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.2	1.1	0.9	1.3	1.7	2.8	0.9	7.5	0.3	0.8	8.6	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.1	23.0	23.0	21.2	25.2	29.4	11.5	14.0	9.5	10.4	15.2	10.1
LnGrp LOS	C	C	C	C	C	C	B	B	A	B	B	B
Approach Vol, veh/h	206			254			1084			1201		
Approach Delay, s/veh	22.0			26.1			13.7			14.6		
Approach LOS	C			C			B			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.1	30.3	7.8	12.9	8.4	30.0	9.1	11.5				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	16.5	45.5	10.5	29.5	19.5	42.5	10.5	29.5				
Max Q Clear Time (g_c+I1), s	3.5	16.5	4.1	3.7	3.8	18.7	5.5	6.5				
Green Ext Time (p_c), s	0.1	6.2	0.0	0.3	0.1	6.8	0.1	0.5				
Intersection Summary												
HCM 6th Ctrl Delay	15.9											
HCM 6th LOS	B											

Timings
2: Jackson Gap St & 64th Ave

Porteos ISP Jackson Gap
11/25/2019

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	310	130	155	100	150	160	145	600	80	130	715	350
Future Volume (vph)	310	130	155	100	150	160	145	600	80	130	715	350
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	25.0	40.0	40.0	15.0	30.0	30.0	18.0	47.0	47.0	18.0	47.0	47.0
Total Split (%)	20.8%	33.3%	33.3%	12.5%	25.0%	25.0%	15.0%	39.2%	39.2%	15.0%	39.2%	39.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	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	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	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	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effect Green (s)	34.5	23.8	23.8	19.3	10.3	10.3	10.2	30.7	30.7	9.8	30.3	30.3
Actuated g/C Ratio	0.39	0.27	0.27	0.22	0.12	0.12	0.11	0.35	0.35	0.11	0.34	0.34
v/c Ratio	0.71	0.17	0.34	0.38	0.45	0.55	0.45	0.60	0.15	0.42	0.73	0.52
Control Delay	33.4	30.5	7.6	26.1	43.5	13.9	44.0	26.7	1.5	44.0	30.2	5.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.4	30.5	7.6	26.1	43.5	13.9	44.0	26.7	1.5	44.0	30.2	5.2
LOS	C	C	A	C	D	B	D	C	A	D	C	A
Approach Delay		26.0			27.7			27.3			24.4	
Approach LOS		C			C			C			C	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 88.9

Natural Cycle: 75

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.73

Intersection Signal Delay: 26.0









Intersection LOS: C

Intersection Capacity Utilization 60.3%

ICU Level of Service B

Analysis Period (min) 15

























Splits and Phases: 2: Jackson Gap St & 64th Ave

 Ø1	 Ø2	 Ø3	 Ø4
18 s	47 s	15 s	40 s
 Ø5	 Ø6	 Ø7	 Ø8
18 s	47 s	25 s	30 s

HCM 6th Signalized Intersection Summary













2: Jackson Gap St & 64th Ave

Porteos ISP Jackson Gap
11/25/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	310	130	155	100	150	160	145	600	80	130	715	350
Future Volume (veh/h)	310	130	155	100	150	160	145	600	80	130	715	350
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678
Adj Flow Rate, veh/h	337	141	121	109	163	132	158	652	47	141	777	358
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
Percent Heavy Veh, %	15	15	15	15	15	15	15	15	15	15	15	15
Cap, veh/h	510	824	368	356	418	187	240	1082	483	219	1061	473
Arrive On Green	0.20	0.26	0.26	0.08	0.13	0.13	0.08	0.34	0.34	0.07	0.33	0.33
Sat Flow, veh/h	1598	3188	1422	1598	3188	1422	3100	3188	1422	3100	3188	1422
Grp Volume(v), veh/h	337	141	121	109	163	132	158	652	47	141	777	358
Grp Sat Flow(s),veh/h/ln	1598	1594	1422	1598	1594	1422	1550	1594	1422	1550	1594	1422
Q Serve(g_s), s	12.0	2.4	4.9	4.1	3.3	6.3	3.5	12.0	1.6	3.1	15.2	15.9
Cycle Q Clear(g_c), s	12.0	2.4	4.9	4.1	3.3	6.3	3.5	12.0	1.6	3.1	15.2	15.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	510	824	368	356	418	187	240	1082	483	219	1061	473
V/C Ratio(X)	0.66	0.17	0.33	0.31	0.39	0.71	0.66	0.60	0.10	0.64	0.73	0.76
Avail Cap(c_a), veh/h	647	1600	713	470	1149	512	591	1915	854	591	1915	854
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.4	20.3	21.3	23.8	28.1	29.4	31.7	19.4	16.0	32.0	20.8	21.1
Incr Delay (d2), s/veh	1.7	0.1	0.5	0.5	0.6	4.9	3.1	0.5	0.1	3.2	1.0	2.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	7.4	1.5	2.8	2.7	2.2	4.0	2.4	7.3	0.9	2.2	8.9	8.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.1	20.4	21.8	24.3	28.7	34.3	34.8	19.9	16.0	35.2	21.8	23.6
LnGrp LOS	C	C	C	C	C	C	C	B	B	D	C	C
Approach Vol, veh/h		599			404			857			1276	
Approach Delay, s/veh		20.5			29.3			22.5			23.8	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.5	28.5	9.9	22.8	10.0	28.0	19.0	13.8				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	13.5	42.5	10.5	35.5	13.5	42.5	20.5	25.5				
Max Q Clear Time (g_c+I1), s	5.1	14.0	6.1	6.9	5.5	17.9	14.0	8.3				
Green Ext Time (p_c), s	0.2	3.9	0.1	1.0	0.2	5.7	0.4	1.0				
Intersection Summary												
HCM 6th Ctrl Delay			23.5									
HCM 6th LOS			C									

Timings 3: Jackson Gap Way & Jackson Gap St

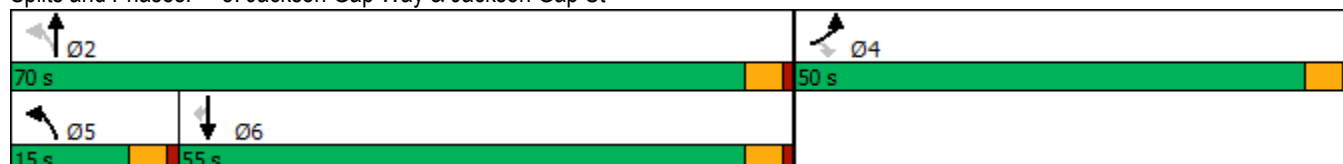
Porteos ISP Jackson Gap
11/25/2019

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	215	30	20	540	790	150
Future Volume (vph)	215	30	20	540	790	150
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	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	9.5	22.5	22.5	22.5
Total Split (s)	50.0	50.0	15.0	70.0	55.0	55.0
Total Split (%)	41.7%	41.7%	12.5%	58.3%	45.8%	45.8%
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			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	Min	Min	Min
Act Effect Green (s)	15.8	15.8	30.2	30.2	26.7	26.7
Actuated g/C Ratio	0.28	0.28	0.54	0.54	0.48	0.48
v/c Ratio	0.53	0.08	0.06	0.35	0.57	0.22
Control Delay	23.9	8.6	7.0	8.0	14.3	3.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.9	8.6	7.0	8.0	14.3	3.4
LOS	C	A	A	A	B	A
Approach Delay	22.0			7.9	12.6	
Approach LOS	C			A	B	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 55.9
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.57
Intersection Signal Delay: 12.4
Intersection LOS: B
Intersection Capacity Utilization 41.2%
ICU Level of Service A
Analysis Period (min) 15













Splits and Phases: 3: Jackson Gap Way & Jackson Gap St



HCM 6th Signalized Intersection Summary













3: Jackson Gap Way & Jackson Gap St

Porteos ISP Jackson Gap
11/25/2019

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	215	30	20	540	790	150
Future Volume (veh/h)	215	30	20	540	790	150
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1678	1678	1678	1678	1678	1678
Adj Flow Rate, veh/h	234	33	22	587	859	163
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	15	15	15	15	15	15
Cap, veh/h	310	276	337	1815	1351	602
Arrive On Green	0.19	0.19	0.03	0.57	0.42	0.42
Sat Flow, veh/h	1598	1422	1598	3272	3272	1422
Grp Volume(v), veh/h	234	33	22	587	859	163
Grp Sat Flow(s),veh/h/ln	1598	1422	1598	1594	1594	1422
Q Serve(g_s), s	5.3	0.7	0.3	3.7	8.1	2.8
Cycle Q Clear(g_c), s	5.3	0.7	0.3	3.7	8.1	2.8
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	310	276	337	1815	1351	602
V/C Ratio(X)	0.75	0.12	0.07	0.32	0.64	0.27
Avail Cap(c_a), veh/h	1912	1701	735	5490	4233	1888
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.5	12.6	6.2	4.3	8.6	7.1
Incr Delay (d2), s/veh	3.7	0.2	0.1	0.1	0.5	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.1	0.0	0.1	0.8	3.1	1.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	18.2	12.8	6.2	4.4	9.1	7.4
LnGrp LOS	B	B	A	A	A	A
Approach Vol, veh/h	267			609	1022	
Approach Delay, s/veh	17.5			4.5	8.9	
Approach LOS	B			A	A	
Timer - Assigned Phs	2		4		5	6
Phs Duration (G+Y+Rc), s	26.2		11.9		5.5	20.6
Change Period (Y+Rc), s	4.5		4.5		4.5	4.5
Max Green Setting (Gmax), s	65.5		45.5		10.5	50.5
Max Q Clear Time (g_c+l1), s	5.7		7.3		2.3	10.1
Green Ext Time (p_c), s	3.5		0.6		0.0	6.0
Intersection Summary						
HCM 6th Ctrl Delay			8.7			
HCM 6th LOS			A			

Timings
4: Jackson Gap St & 60th Ave

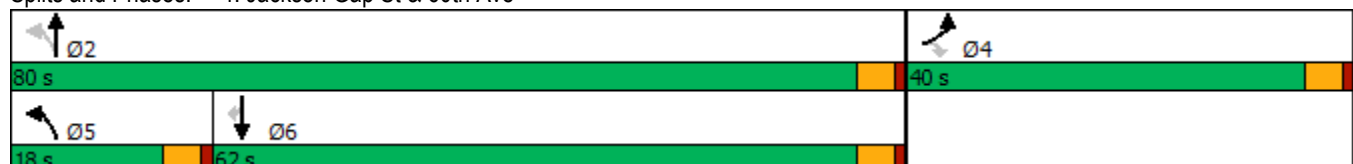
Porteos ISP Jackson Gap
11/25/2019

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	155	110	60	80	90	50
Future Volume (vph)	155	110	60	80	90	50
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	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	9.5	22.5	22.5	22.5
Total Split (s)	40.0	40.0	18.0	80.0	62.0	62.0
Total Split (%)	33.3%	33.3%	15.0%	66.7%	51.7%	51.7%
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			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	Min	Min	Min
Act Effect Green (s)	9.8	9.8	17.3	17.3	10.6	10.6
Actuated g/C Ratio	0.27	0.27	0.47	0.47	0.29	0.29
v/c Ratio	0.40	0.26	0.12	0.11	0.20	0.12
Control Delay	15.6	5.2	5.8	5.7	14.6	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.6	5.2	5.8	5.7	14.6	6.2
LOS	B	A	A	A	B	A
Approach Delay	11.3			5.7	11.6	
Approach LOS	B			A	B	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 36.5
 Natural Cycle: 55
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.40
 Intersection Signal Delay: 10.0
 Intersection LOS: A
 Intersection Capacity Utilization 26.1%
 ICU Level of Service A
 Analysis Period (min) 15













Splits and Phases: 4: Jackson Gap St & 60th Ave



HCM 6th Signalized Intersection Summary

4: Jackson Gap St & 60th Ave

Porteos ISP Jackson Gap
11/25/2019

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	155	110	60	80	90	50
Future Volume (veh/h)	155	110	60	80	90	50
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1678	1678	1678	1678	1678	1678
Adj Flow Rate, veh/h	168	120	65	87	98	54
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	15	15	15	15	15	15
Cap, veh/h	281	250	579	769	341	289
Arrive On Green	0.18	0.18	0.07	0.46	0.20	0.20
Sat Flow, veh/h	1598	1422	1598	1678	1678	1422
Grp Volume(v), veh/h	168	120	65	87	98	54
Grp Sat Flow(s),veh/h/ln	1598	1422	1598	1678	1678	1422
Q Serve(g_s), s	2.4	1.9	0.7	0.7	1.2	0.8
Cycle Q Clear(g_c), s	2.4	1.9	0.7	0.7	1.2	0.8
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	281	250	579	769	341	289
V/C Ratio(X)	0.60	0.48	0.11	0.11	0.29	0.19
Avail Cap(c_a), veh/h	2303	2049	1338	5143	3917	3320
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	9.3	9.1	5.5	3.8	8.3	8.1
Incr Delay (d2), s/veh	2.0	1.4	0.1	0.1	0.5	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.0	0.2	0.1	0.1	0.5	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	11.4	10.6	5.6	3.9	8.8	8.4
LnGrp LOS	B	B	A	A	A	A
Approach Vol, veh/h	288			152	152	
Approach Delay, s/veh	11.0			4.6	8.7	
Approach LOS	B			A	A	
Timer - Assigned Phs	2		4		5	6
Phs Duration (G+Y+Rc), s	15.8		8.8		6.3	9.5
Change Period (Y+Rc), s	4.5		4.5		4.5	4.5
Max Green Setting (Gmax), s	75.5		35.5		13.5	57.5
Max Q Clear Time (g_c+I1), s	2.7		4.4		2.7	3.2
Green Ext Time (p_c), s	0.4		0.7		0.1	0.6
Intersection Summary						
HCM 6th Ctrl Delay			8.8			
HCM 6th LOS			A			

Timings 5: 56th Avenue & Jackson Gap St

Porteos ISP Jackson Gap
11/25/2019



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↰	↑↑↑	↑↑↑	↱	↰	↱
Traffic Volume (vph)	90	730	740	20	40	160
Future Volume (vph)	90	730	740	20	40	160
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Detector Phase	7	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	18.0	80.0	62.0	62.0	40.0	40.0
Total Split (%)	15.0%	66.7%	51.7%	51.7%	33.3%	33.3%
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	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	Min	Min	Min	None	None
Act Effect Green (s)	8.7	29.8	19.0	19.0	7.2	7.2
Actuated g/C Ratio	0.19	0.65	0.41	0.41	0.16	0.16
v/c Ratio	0.33	0.27	0.43	0.04	0.18	0.48
Control Delay	20.8	3.8	12.2	5.8	20.5	9.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.8	3.8	12.2	5.8	20.5	9.1
LOS	C	A	B	A	C	A
Approach Delay		5.7	12.0		11.4	
Approach LOS		A	B		B	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 46.2

Natural Cycle: 55

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.48

Intersection Signal Delay: 9.0

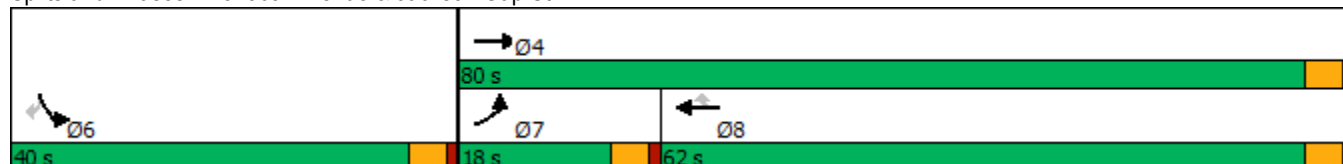
Intersection LOS: A

Intersection Capacity Utilization 34.7%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 5: 56th Avenue & Jackson Gap St









HCM 6th Signalized Intersection Summary

5: 56th Avenue & Jackson Gap St































Porteos ISP Jackson Gap
11/25/2019



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations							
Traffic Volume (veh/h)	90	730	740	20	40	160	
Future Volume (veh/h)	90	730	740	20	40	160	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1678	1678	1678	1678	1678	1678	
Adj Flow Rate, veh/h	98	793	804	22	43	174	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Percent Heavy Veh, %	15	15	15	15	15	15	
Cap, veh/h	142	2612	1602	497	265	236	
Arrive On Green	0.09	0.57	0.35	0.35	0.17	0.17	
Sat Flow, veh/h	1598	4731	4731	1422	1598	1422	
Grp Volume(v), veh/h	98	793	804	22	43	174	
Grp Sat Flow(s),veh/h/ln	1598	1527	1527	1422	1598	1422	
Q Serve(g_s), s	2.0	3.1	4.7	0.3	0.8	4.0	
Cycle Q Clear(g_c), s	2.0	3.1	4.7	0.3	0.8	4.0	
Prop In Lane	1.00			1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	142	2612	1602	497	265	236	
V/C Ratio(X)	0.69	0.30	0.50	0.04	0.16	0.74	
Avail Cap(c_a), veh/h	633	10141	7723	2397	1663	1480	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	
Uniform Delay (d), s/veh	15.1	3.8	8.7	7.3	12.2	13.5	
Incr Delay (d2), s/veh	5.9	0.1	0.2	0.0	0.3	4.5	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(95%),veh/ln	1.4	0.5	1.7	0.1	0.4	6.0	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	21.0	3.9	9.0	7.4	12.5	18.0	
LnGrp LOS	C	A	A	A	B	B	
Approach Vol, veh/h		891	826	217			
Approach Delay, s/veh		5.8	8.9	16.9			
Approach LOS		A	A	B			
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				23.9	10.2	7.5	16.4
Change Period (Y+Rc), s				4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s				75.5	35.5	13.5	57.5
Max Q Clear Time (g_c+I1), s				5.1	6.0	4.0	6.7
Green Ext Time (p_c), s				5.1	0.5	0.1	5.2
Intersection Summary							
HCM 6th Ctrl Delay			8.4				
HCM 6th LOS			A				

Timings
6: Jackson Gap Rd/Jackson Gap Way & 56th Avenue

Porteos ISP Jackson Gap
11/25/2019

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 			 	
Traffic Volume (vph)	255	350	165	30	160	50	190	435	40	90	305	410
Future Volume (vph)	255	350	165	30	160	50	190	435	40	90	305	410
Turn Type	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	32.0	47.0	47.0	15.0	30.0	30.0	15.0	46.0	46.0	12.0	43.0	43.0
Total Split (%)	26.7%	39.2%	39.2%	12.5%	25.0%	25.0%	12.5%	38.3%	38.3%	10.0%	35.8%	35.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	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	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	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	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	Min	None	Min	Min	None	None	None	None	None	None
Act Effect Green (s)	18.8	27.3	27.3	7.3	8.5	8.5	29.1	21.1	21.1	22.5	15.2	15.2
Actuated g/C Ratio	0.26	0.38	0.38	0.10	0.12	0.12	0.41	0.30	0.30	0.32	0.21	0.21
v/c Ratio	0.67	0.22	0.28	0.21	0.32	0.19	0.52	0.51	0.08	0.30	0.50	0.69
Control Delay	33.3	17.4	5.0	36.6	33.0	1.5	20.4	25.4	0.3	17.2	28.4	9.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.3	17.4	5.0	36.6	33.0	1.5	20.4	25.4	0.3	17.2	28.4	9.1
LOS	C	B	A	D	C	A	C	C	A	B	C	A
Approach Delay		20.0			27.0			22.5			17.3	
Approach LOS		C			C			C			B	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 71.4

Natural Cycle: 75

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.69

Intersection Signal Delay: 20.5









Intersection LOS: C

Intersection Capacity Utilization 52.3%

ICU Level of Service A

























Analysis Period (min) 15

Splits and Phases: 6: Jackson Gap Rd/Jackson Gap Way & 56th Avenue

			
12 s	46 s	15 s	47 s
			
15 s	43 s	32 s	30 s

HCM 6th Signalized Intersection Summary
6: Jackson Gap Rd/Jackson Gap Way & 56th Avenue

Porteos ISP Jackson Gap
11/25/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	255	350	165	30	160	50	190	435	40	90	305	410
Future Volume (veh/h)	255	350	165	30	160	50	190	435	40	90	305	410
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678
Adj Flow Rate, veh/h	277	380	179	33	174	54	207	473	43	98	332	446
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
Percent Heavy Veh, %	15	15	15	15	15	15	15	15	15	15	15	15
Cap, veh/h	323	1127	350	54	357	111	449	1292	576	438	1146	511
Arrive On Green	0.20	0.25	0.25	0.03	0.08	0.08	0.11	0.41	0.41	0.06	0.36	0.36
Sat Flow, veh/h	1598	4580	1422	1598	4580	1422	1598	3188	1422	1598	3188	1422
Grp Volume(v), veh/h	277	380	179	33	174	54	207	473	43	98	332	446
Grp Sat Flow(s),veh/h/ln	1598	1527	1422	1598	1527	1422	1598	1594	1422	1598	1594	1422
Q Serve(g_s), s	11.8	4.8	7.7	1.4	2.6	2.6	5.5	7.3	1.3	2.7	5.3	20.7
Cycle Q Clear(g_c), s	11.8	4.8	7.7	1.4	2.6	2.6	5.5	7.3	1.3	2.7	5.3	20.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	323	1127	350	54	357	111	449	1292	576	438	1146	511
V/C Ratio(X)	0.86	0.34	0.51	0.61	0.49	0.49	0.46	0.37	0.07	0.22	0.29	0.87
Avail Cap(c_a), veh/h	621	2751	854	237	1651	512	516	1870	834	511	1735	774
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.3	21.9	23.0	33.7	31.3	31.3	11.5	14.7	12.9	12.8	16.2	21.1
Incr Delay (d2), s/veh	6.6	0.2	1.2	10.7	1.0	3.3	0.7	0.2	0.1	0.3	0.1	7.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	8.3	2.9	4.4	1.2	1.7	1.7	3.1	4.2	0.7	1.6	3.1	11.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.9	22.1	24.2	44.5	32.3	34.5	12.3	14.9	13.0	13.1	16.3	28.3
LnGrp LOS	C	C	C	D	C	C	B	B	B	B	B	C
Approach Vol, veh/h	836			261			723			876		
Approach Delay, s/veh	26.4			34.3			14.0			22.1		
Approach LOS	C			C			B			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.8	33.2	6.9	21.9	12.0	29.9	18.8	10.0				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	7.5	41.5	10.5	42.5	10.5	38.5	27.5	25.5				
Max Q Clear Time (g_c+I1), s	4.7	9.3	3.4	9.7	7.5	22.7	13.8	4.6				
Green Ext Time (p_c), s	0.0	2.7	0.0	2.6	0.1	2.7	0.5	0.9				
Intersection Summary												
HCM 6th Ctrl Delay	22.5											
HCM 6th LOS	C											