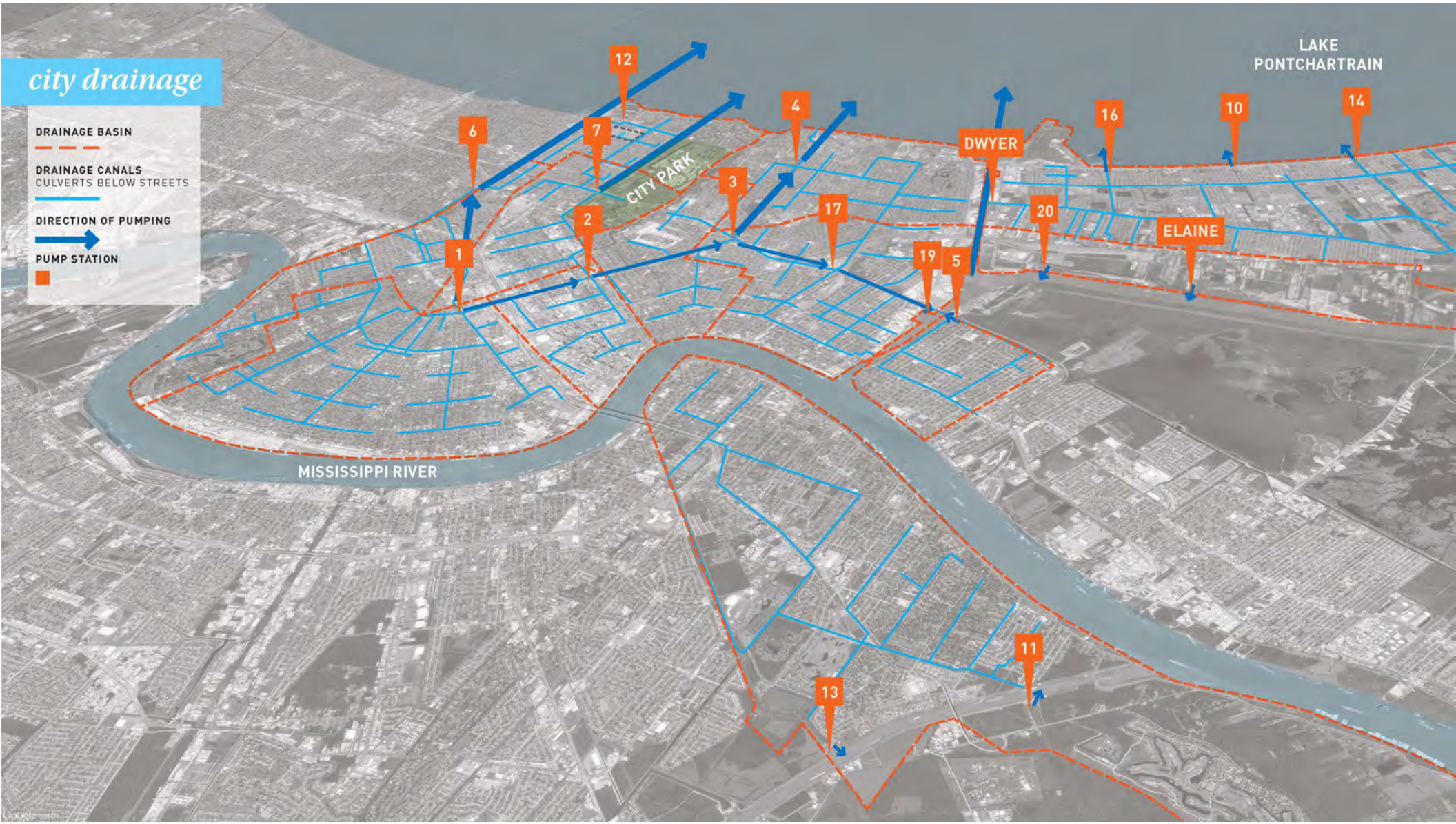
Lakeview Drainage Updates & Green Infrastructure

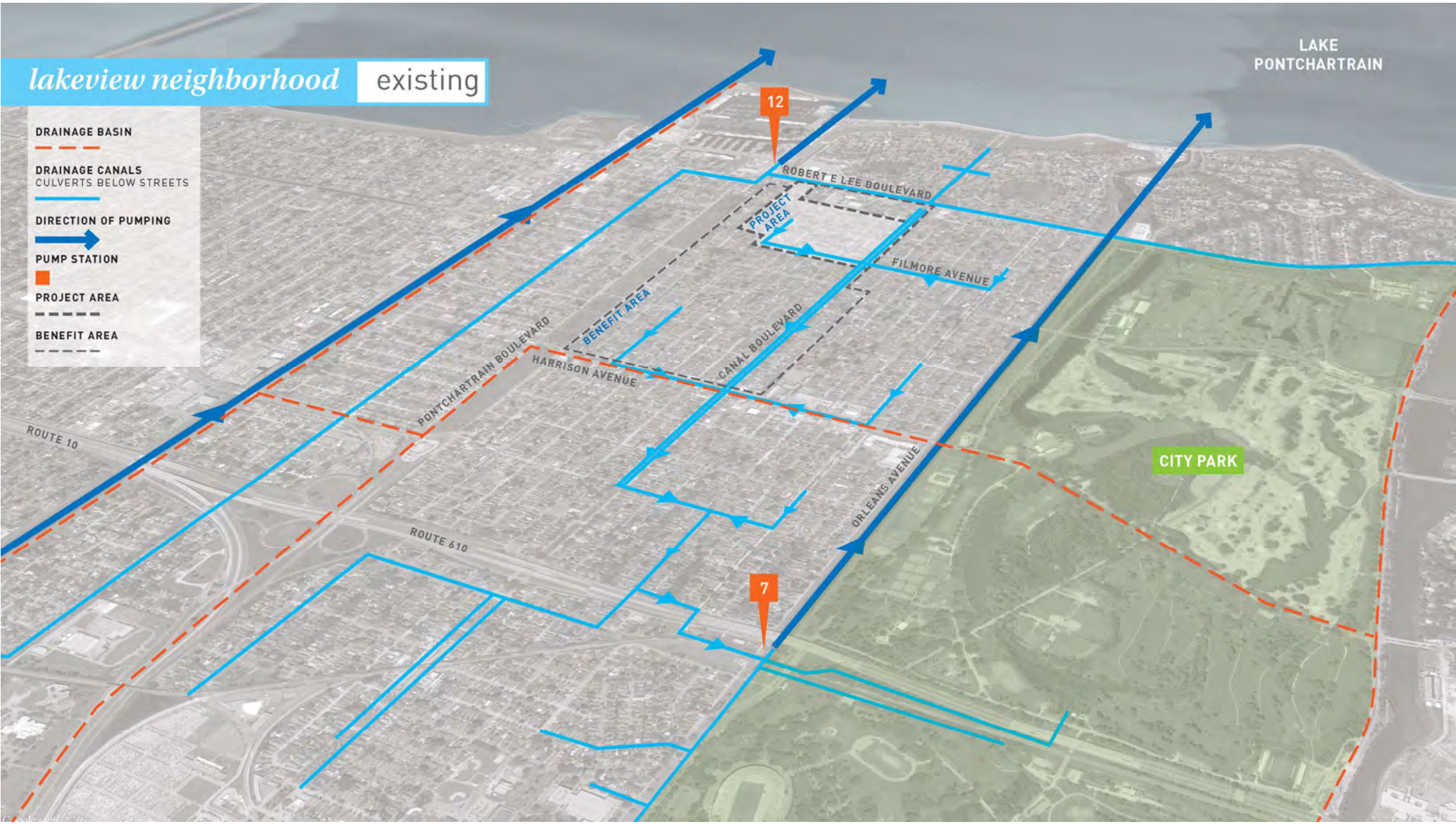
NEW ORLEANS, LA

SPACKMAN MOSSOP AND MICHAELS

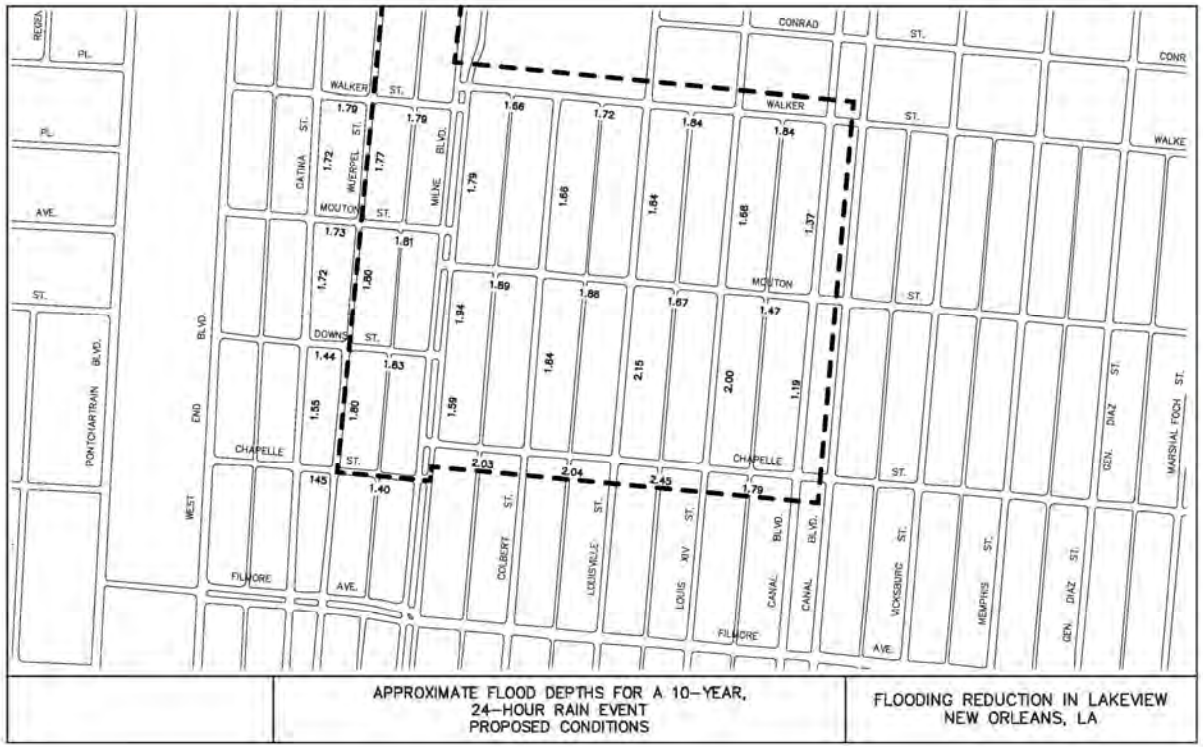
Gaea

RDRC PRESENTATION
MARCH 29, 2018


city drainage
DRAINAGE BASIN
DRAINAGE CANALS
CULVERTS BELOW STREETS
DIRECTION OF PUMPING
PUMP STATION
LAKE
PONTCHARTRAIN
MISSISSIPPI RIVER
CITY PARK
DWYER
ELAINE
1
2
3
4
5
6
7
10
11
12
13
14
16
17
19
20


lakeview neighborhood
existing
DRAINAGE BASIN
DRAINAGE CANALS
CULVERTS BELOW STREETS
DIRECTION OF PUMPING
PUMP STATION
PROJECT AREA
BENEFIT AREA
LAKE PONTCHARTRAIN
12
7
ROBERT E LEE BOULEVARD
PROJECT AREA
FILMORE AVENUE
BENEFIT AREA
CANAL BOULEVARD
PONTCHARTRAIN BOULEVARD
HARRISON AVENUE
ROUTE 10
ROUTE 610
ORLEANS AVENUE
CITY PARK

analysis



Reference Example of H&H Model Development During Site Analysis.

GOALS

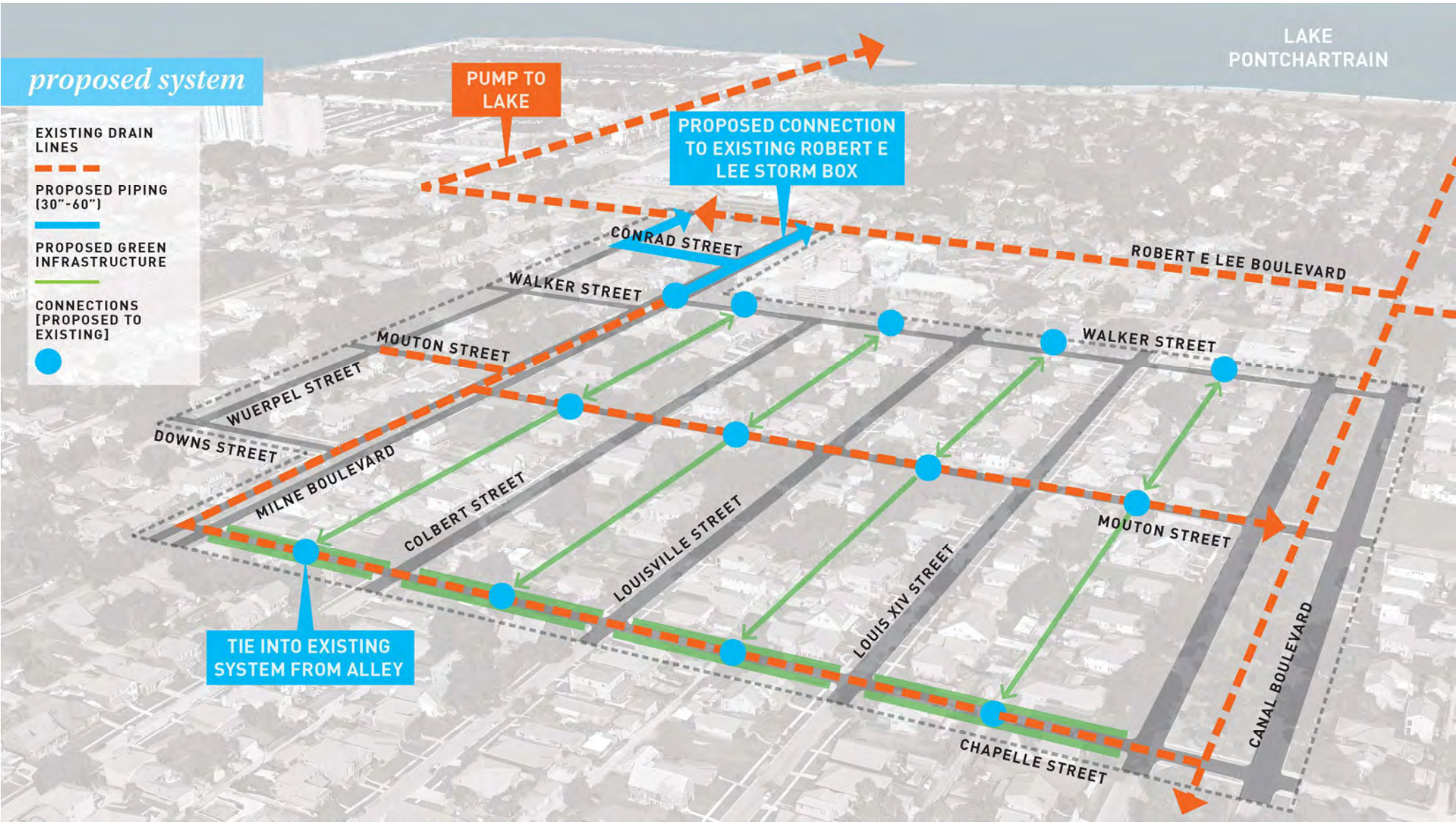
- *Mitigate and Reduce Flooding*
- *Upgrade Infrastructure and Reroute Storm Drain*
- *Slow and Store Water with Green Infrastructure*

RESULTS

- *Average Flood Reduction of 1" Across the Site*
- *Up to 2.5" of Average Flood Reduction in Areas Adjacent to the Site*

project area
LAKE
PONTCHARTRAIN
ROBERT E LEE BOULEVARD
CONRAD STREET
WALKER STREET
MOUTON STREET
WUERPEL STREET
DOWNS STREET
MILNE BOULEVARD
COLBERT STREET
LOUISVILLE STREET
LOUIS XIV STREET
CHAPELLE STREET
WALKER STREET
MOUTON STREET
CANAL BOULEVARD

limits of work
LIMITS OF PHASED CONSTRUCTION
INSTALLATION OF PROPOSED PIPING WITHIN ROADWAY TO BE PHASED
GREEN ALLEY TO BE PHASED
INSTALLATION OF RAIN GARDENS; ROADWAY TO REMAIN OPEN
LAKE PONTCHARTRAIN
ROBERT E LEE BOULEVARD
CONRAD STREET
WALKER STREET
MOUTON STREET
WUERPEL STREET
DOWNS STREET
MILNE BOULEVARD
COLBERT STREET
LOUISVILLE STREET
LOUIS XIV STREET
CHAPELLE STREET
CANAL BOULEVARD
WALKER STREET
MOUTON STREET


proposed system
EXISTING DRAIN LINES
PROPOSED PIPING (30"-60")
PROPOSED GREEN INFRASTRUCTURE
CONNECTIONS [PROPOSED TO EXISTING]
PUMP TO LAKE
PROPOSED CONNECTION TO EXISTING ROBERT E LEE STORM BOX
LAKE PONTCHARTRAIN
CONRAD STREET
ROBERT E LEE BOULEVARD
WALKER STREET
WALKER STREET
MOUTON STREET
WUERPEL STREET
DOWNS STREET
MILNE BOULEVARD
COLBERT STREET
LOUISVILLE STREET
LOUIS XIV STREET
MOUTON STREET
CANAL BOULEVARD
CHAPELLE STREET
TIE INTO EXISTING SYSTEM FROM ALLEY

analysis

10 year storm existing

NO FLOODING

0.0 - 0.5

0.5 - 1.0

1.0 - 1.5

1.5 - 2.0

2.0 - 2.5

2.5 - 3.0

3.0 - 3.5+

0' 250 500 1000 Ft

analysis 10 year storm proposed

flood reduction

1" - 2"

2" - 3"

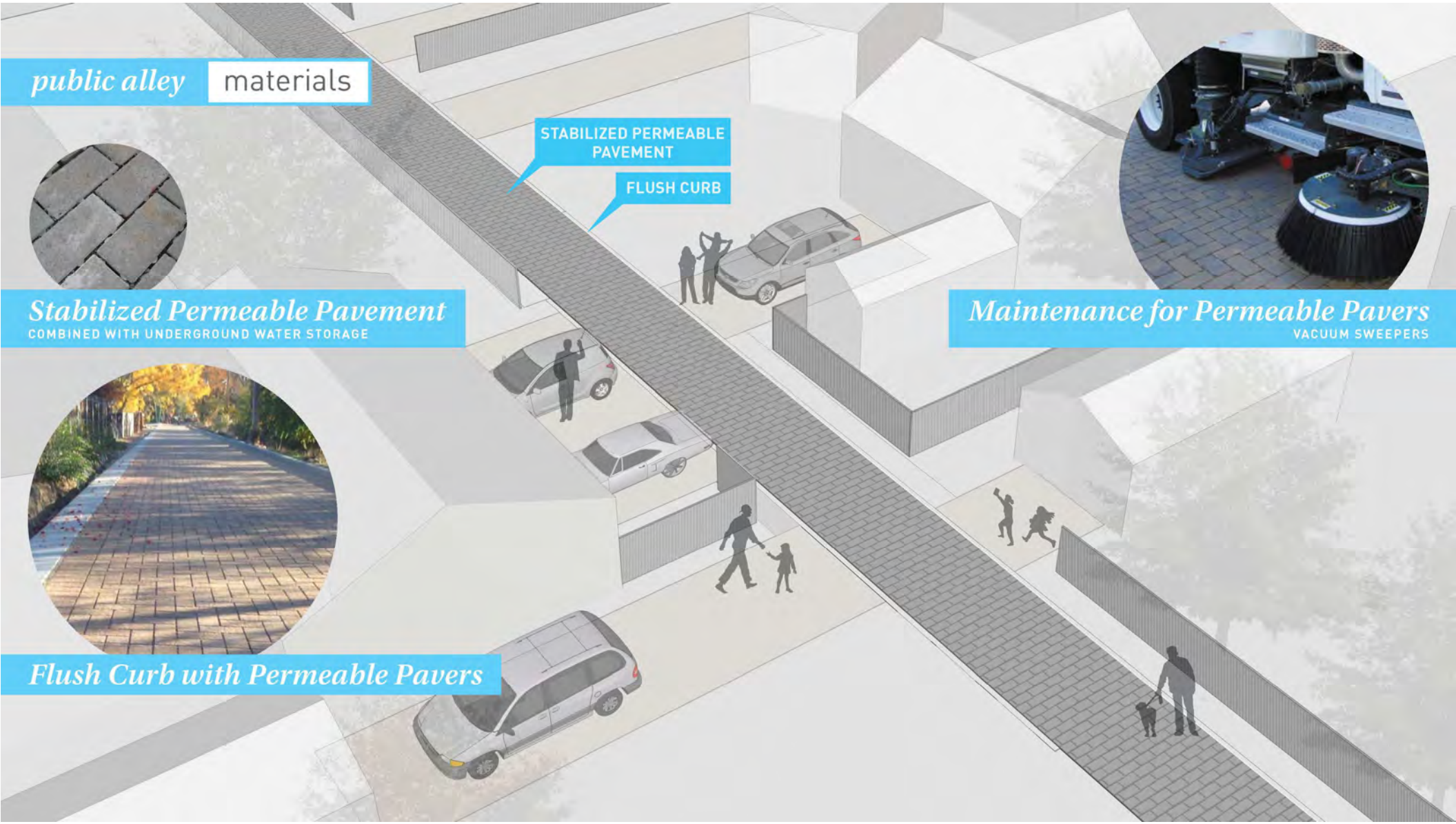
3" - 4"

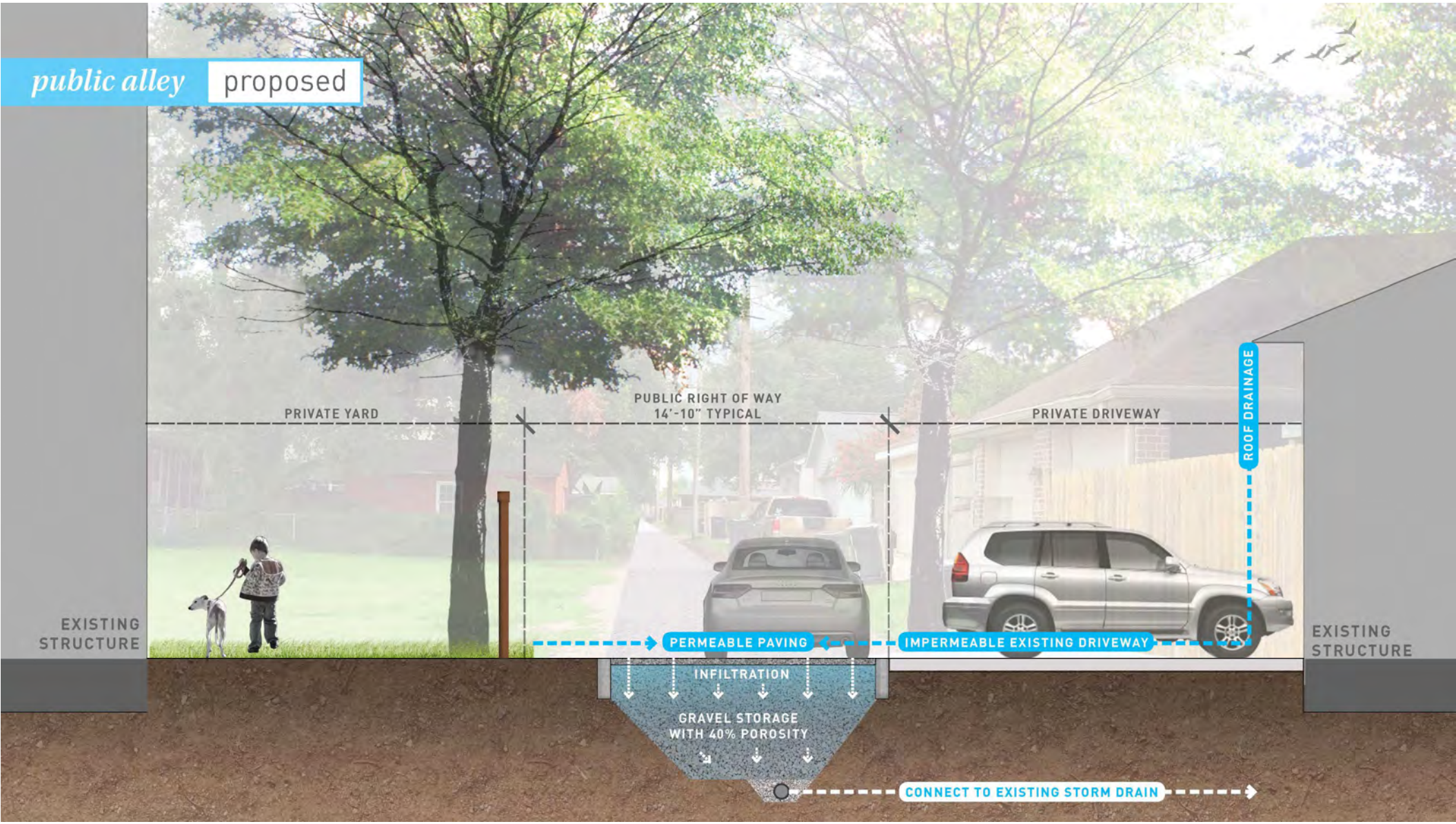
4" - 5"

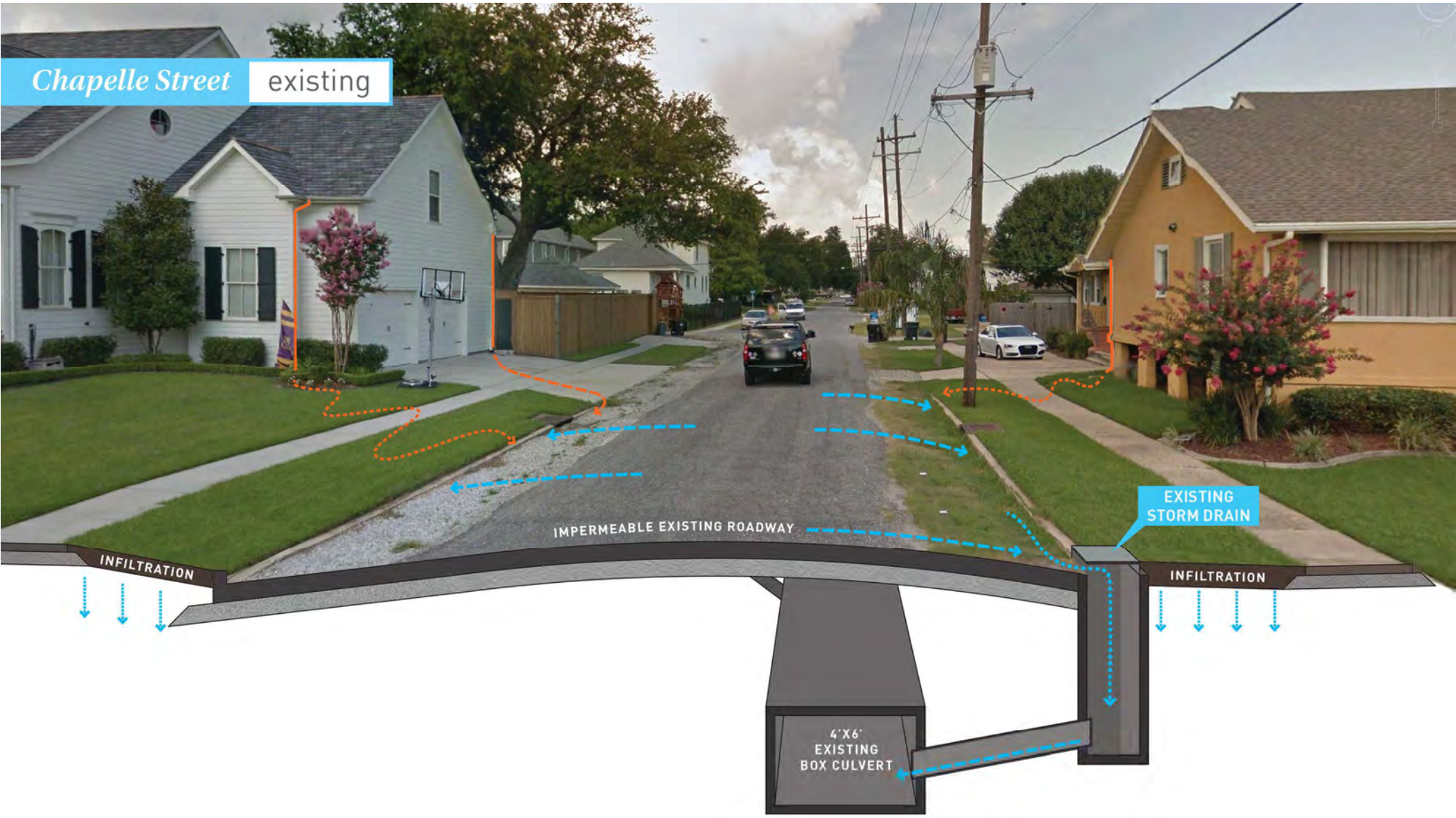
5" - 6"

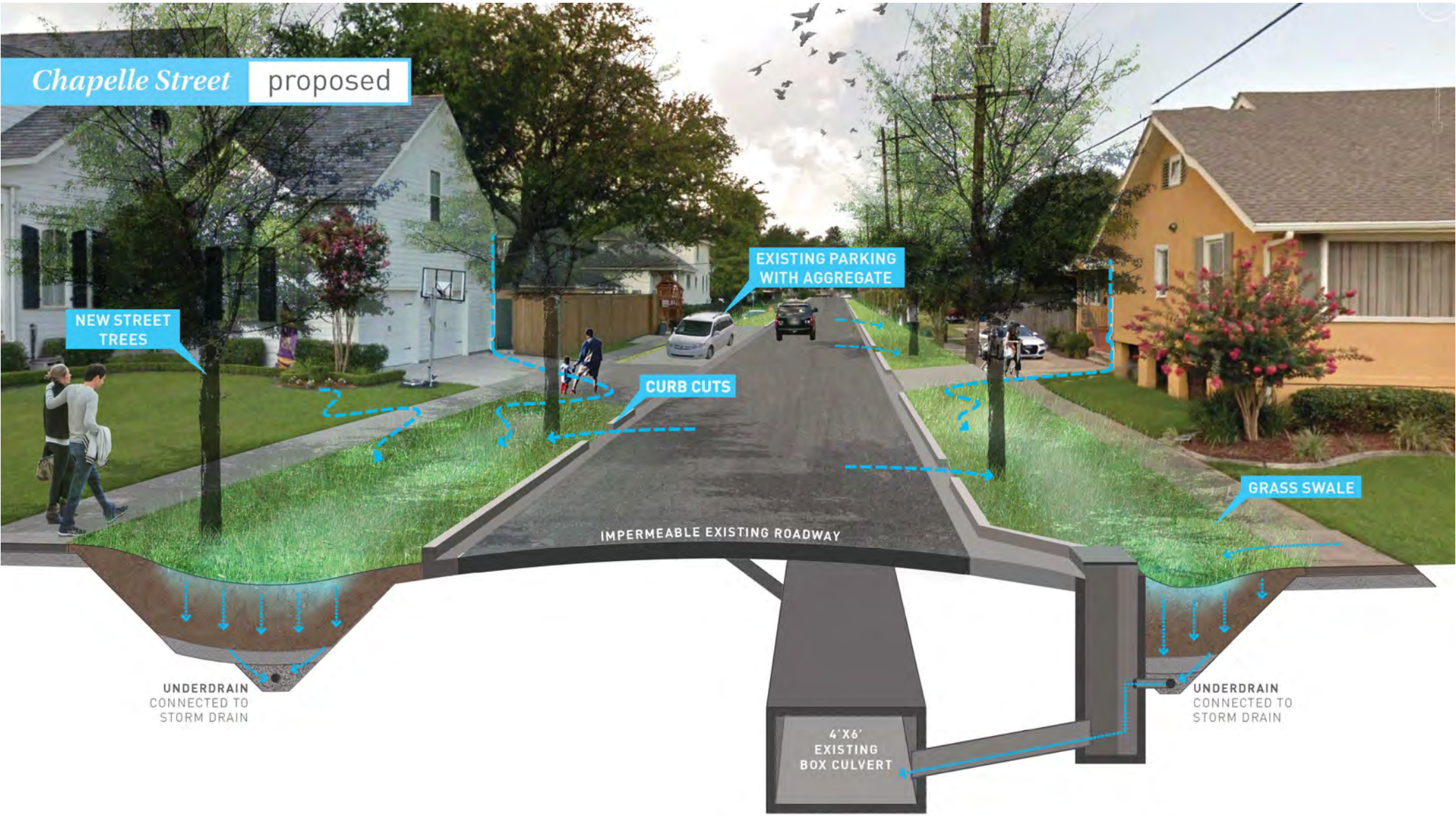
6"+

0' 250 500 1000 Ft

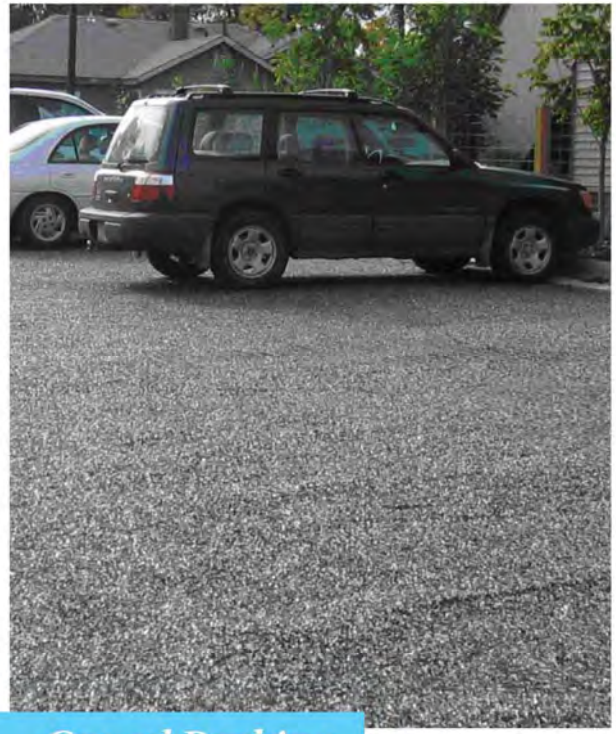

public alley materials
STABILIZED PERMEABLE PAVEMENT
FLUSH CURB
Stabilized Permeable Pavement
COMBINED WITH UNDERGROUND WATER STORAGE
Maintenance for Permeable Pavers
VACUUM SWEEPERS
Flush Curb with Permeable Pavers


public alley
proposed
PRIVATE YARD
PUBLIC RIGHT OF WAY
14'-10" TYPICAL
PRIVATE DRIVEWAY
ROOF DRAINAGE
EXISTING STRUCTURE
PERMEABLE PAVING
IMPERMEABLE EXISTING DRIVEWAY
EXISTING STRUCTURE
INFILTRATION
GRAVEL STORAGE
WITH 40% POROSITY
CONNECT TO EXISTING STORM DRAIN


Chapelle Street
existing
IMPERMEABLE EXISTING ROADWAY
INFILTRATION
INFILTRATION
EXISTING
STORM DRAIN
4'X6'
EXISTING
BOX CULVERT


Chapelle Street
proposed
NEW STREET TREES
EXISTING PARKING WITH AGGREGATE
CURB CUTS
GRASS SWALE
IMPERMEABLE EXISTING ROADWAY
UNDERDRAIN CONNECTED TO STORM DRAIN
4'X6' EXISTING BOX CULVERT
UNDERDRAIN CONNECTED TO STORM DRAIN

Chapelle Street materials



Gravel Parking

Curb Cuts

Grass Swale

Chapelle Street Types of Trees

Swamp Red Maple

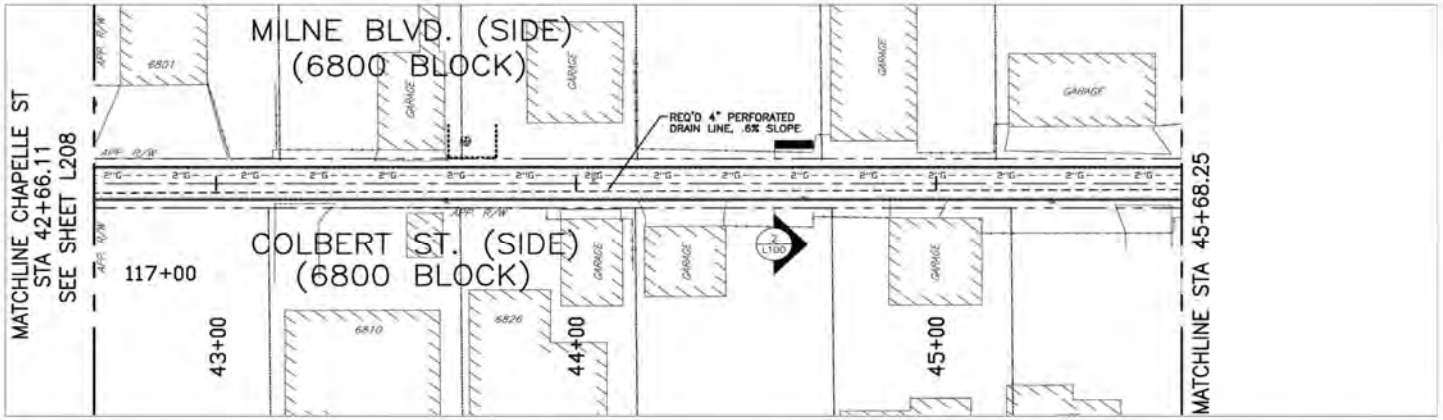
Acer rubrum var. drummondii

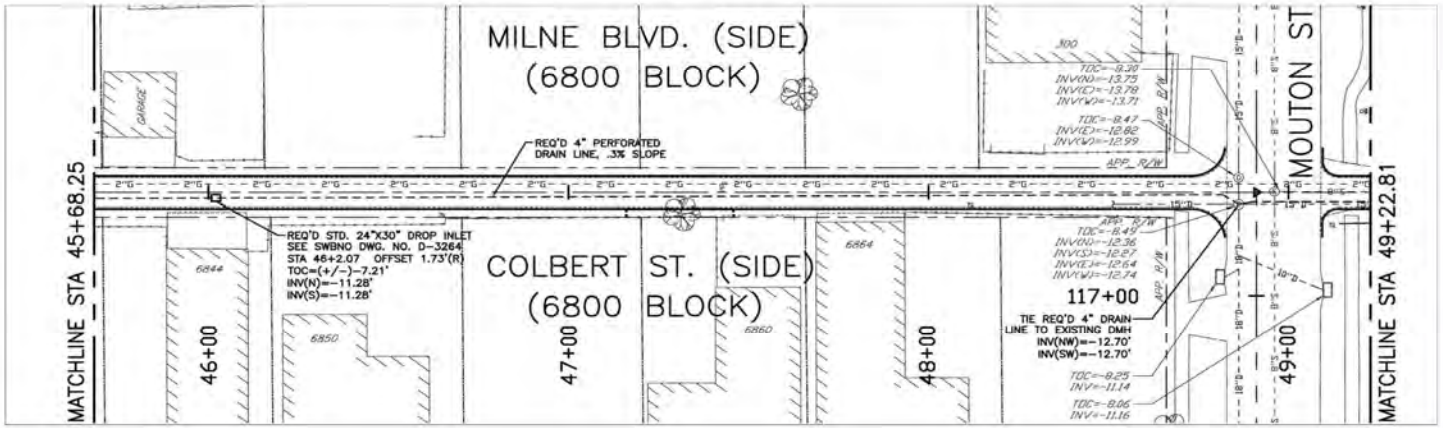
Sweetbay Magnolia

Magnolia virginiana

Pond Cypress

Taxodium ascendens





LEGEND

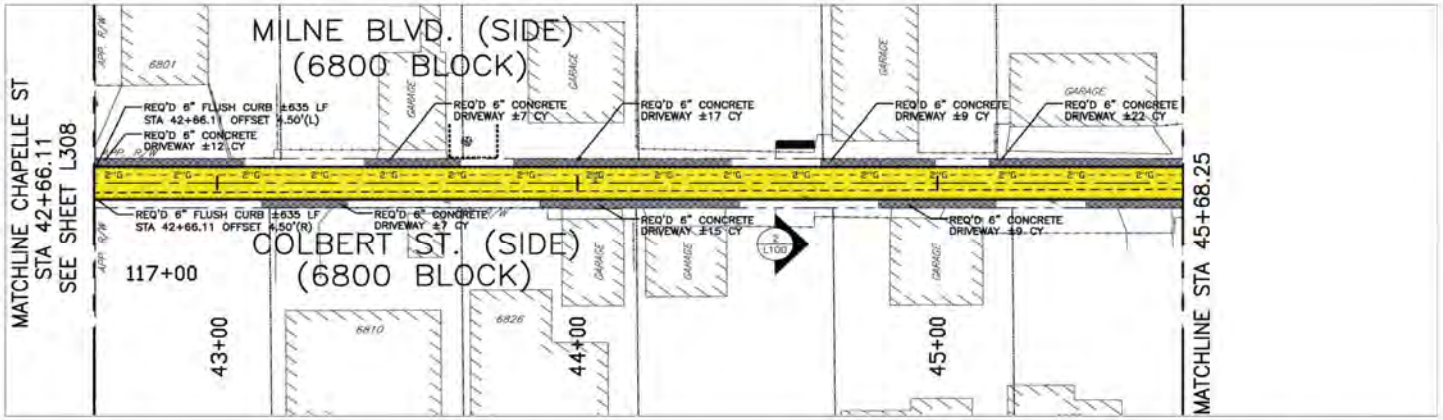
Drain Line
Gas Line
Water Line
Sewer Line
Center Line
Apparent Right-of-Way
Parcel Line
Fence Line
Mountable Catch Basin
Drop Inlet
Vertical Catch Basin
Drain Manhole
Electric Manhole
Sewer Manhole
Water Manhole
Water Meter
Water Valve
Existing Trees
Gas Valve
Power Pole
Light Pole
Fire Hydrant
Sign
Req'd Removal and/or Replacement of Existing Trees
Tree Protection Fence
Req'd Placement of Underdrain

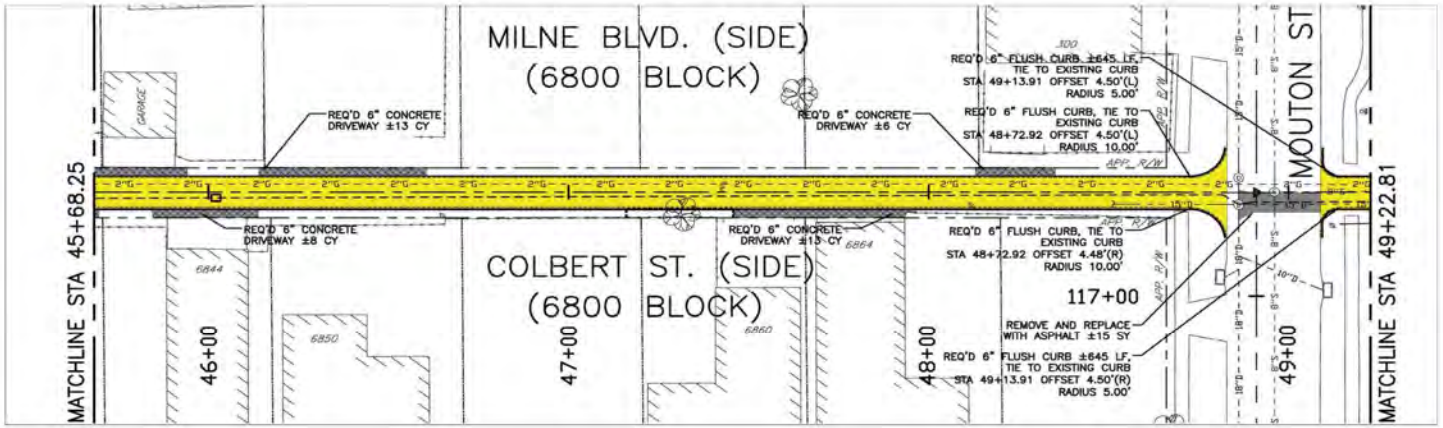
1A MILNE BLVD AND COLBERT ST ALLEY

LAKEVIEW DRAINAGE UPDATES & GREEN INFRASTRUCTURE

SPACKMAN MOSSOP AND MICHAELS

Gaea





LEGEND

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- Drop Inlet
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- Water Valve
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- Sign
- Req'd Removal and/or Replacement of Existing Trees
- Tree Protection Fence
- Req'd Placement of Underdrain
- Req'd Removal and/or Replacement of Concrete Driveway
- Req'd Removal and/or Replacement of Asphalt Roadway
- Req'd Removal and/or Replacement of Permeable Pavement

1A MILNE BLVD AND COLBERT ST ALLEY - MATERIAL

LAKEVIEW DRAINAGE UPDATES & GREEN INFRASTRUCTURE

SPACKMAN MOSSOP AND MICHAELS

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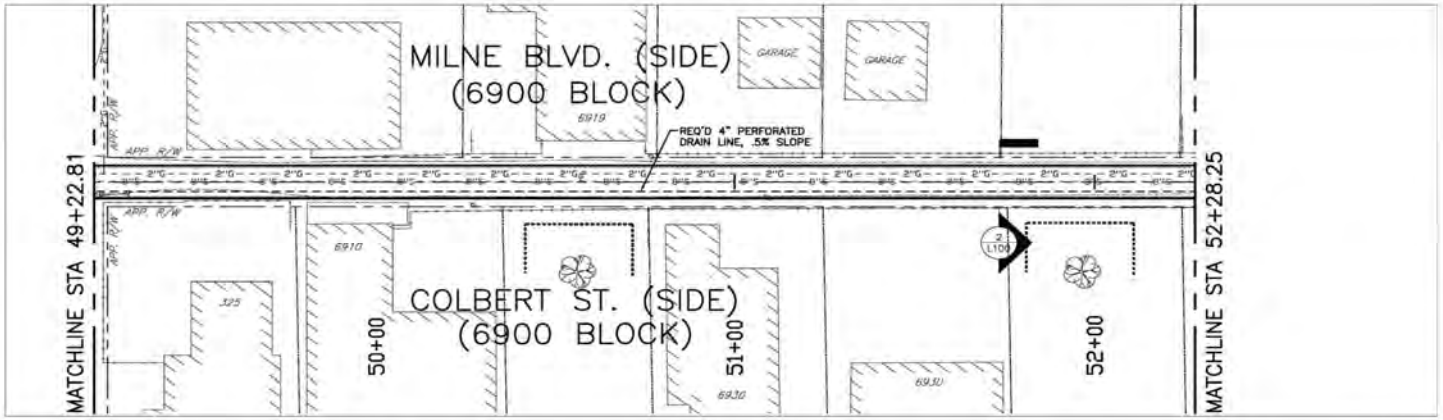

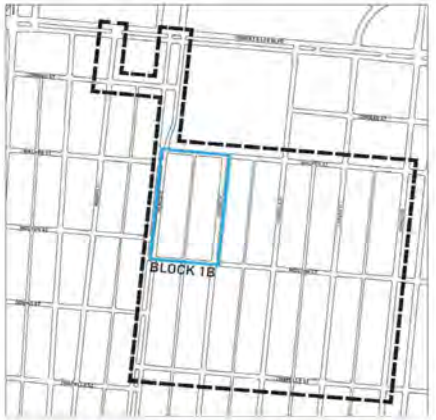

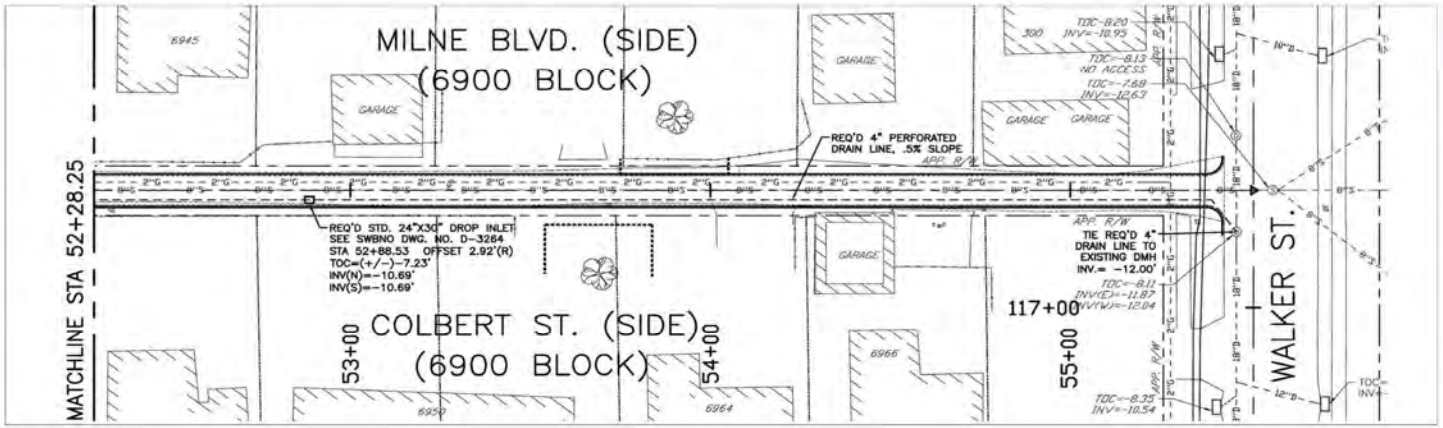

LEGEND

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- Req'd Placement of Underdrain

1B MILNE BLVD AND COLBERT ST ALLEY

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SPACKMAN MOSSOP AND MICHAELS

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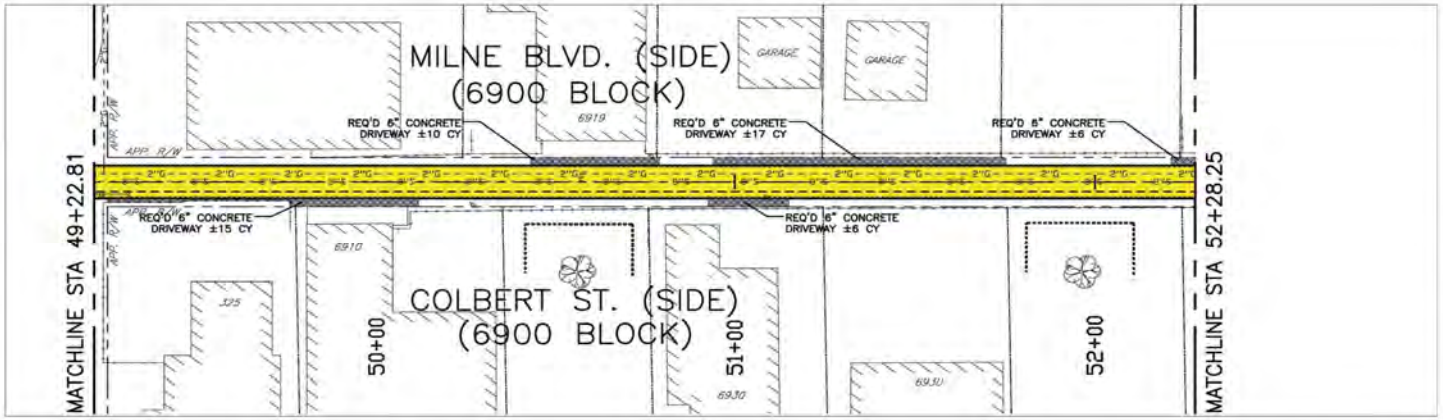

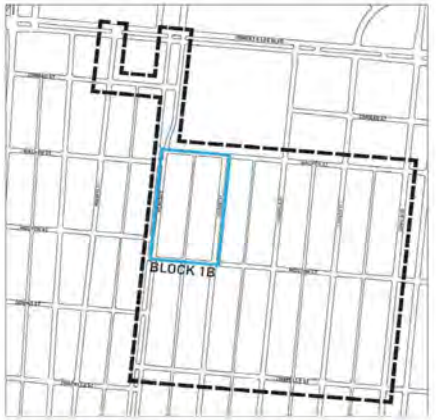

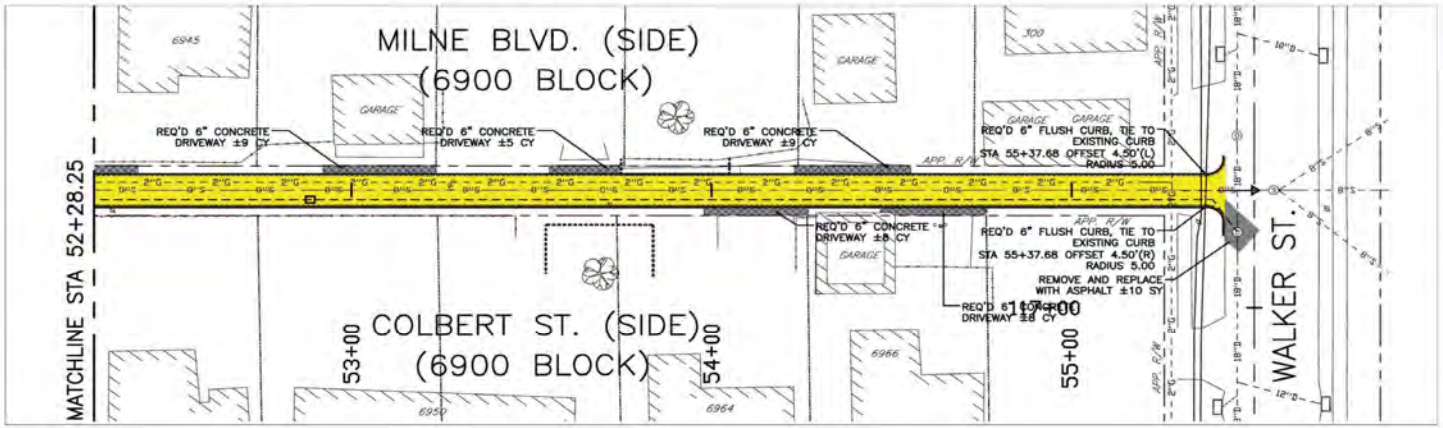

LEGEND

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- Electric Manhole
- Sewer Manhole
- Water Manhole
- Water Meter
- Water Valve
- Existing Trees
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- Req'd Removal and/or Replacement of Asphalt Roadway
- Req'd Removal and/or Replacement of Permeable Pavement

1B MILNE BLVD AND COLBERT ST ALLEY - MATERIAL

LAKEVIEW DRAINAGE UPDATES & GREEN INFRASTRUCTURE

SPACKMAN MOSSOP AND MICHAELS

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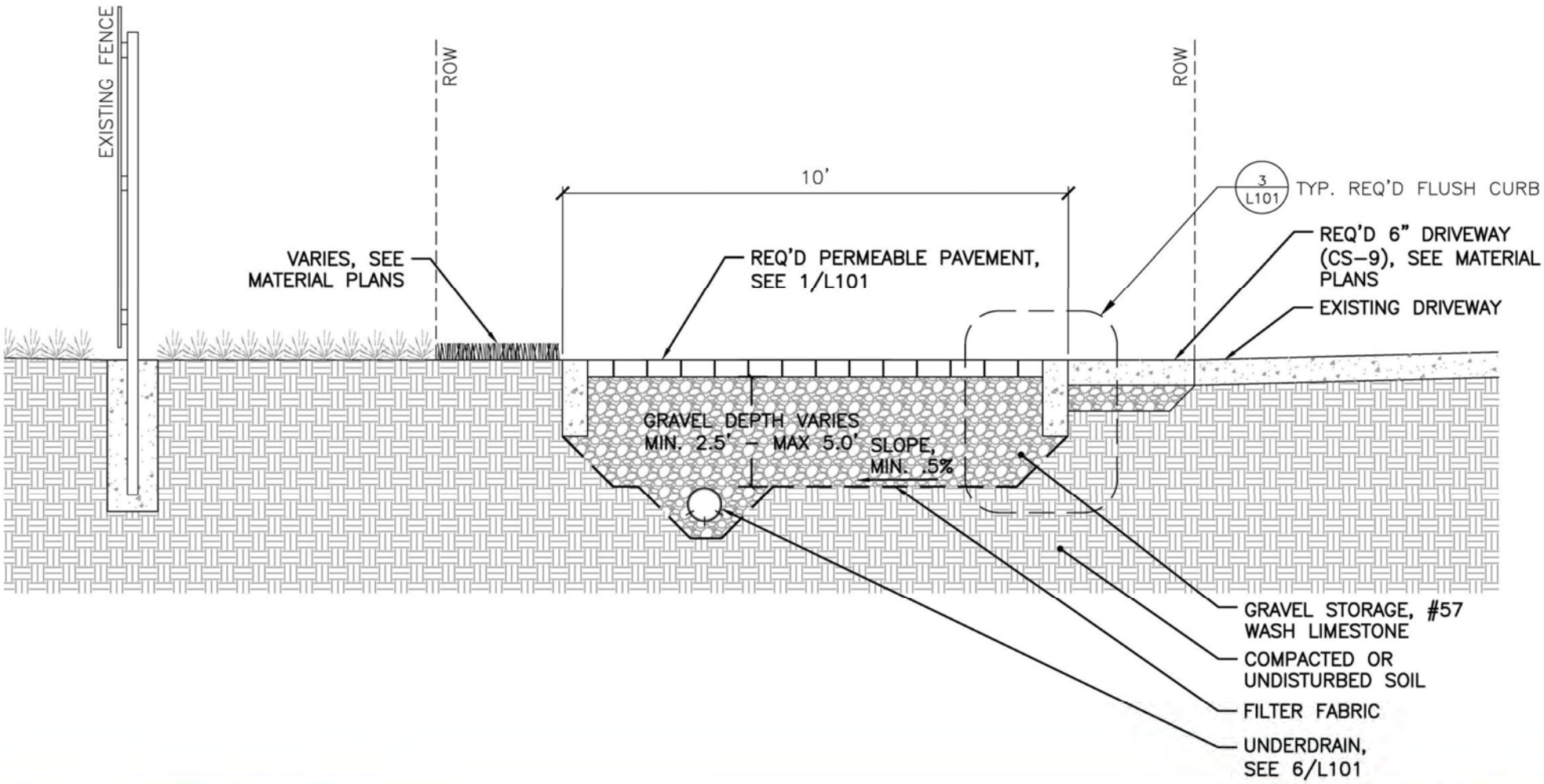
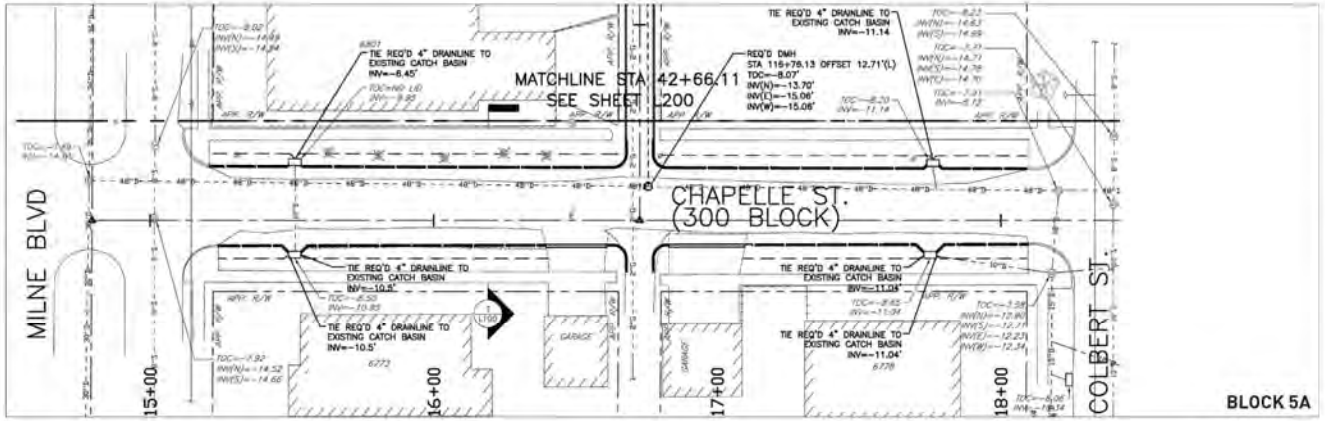
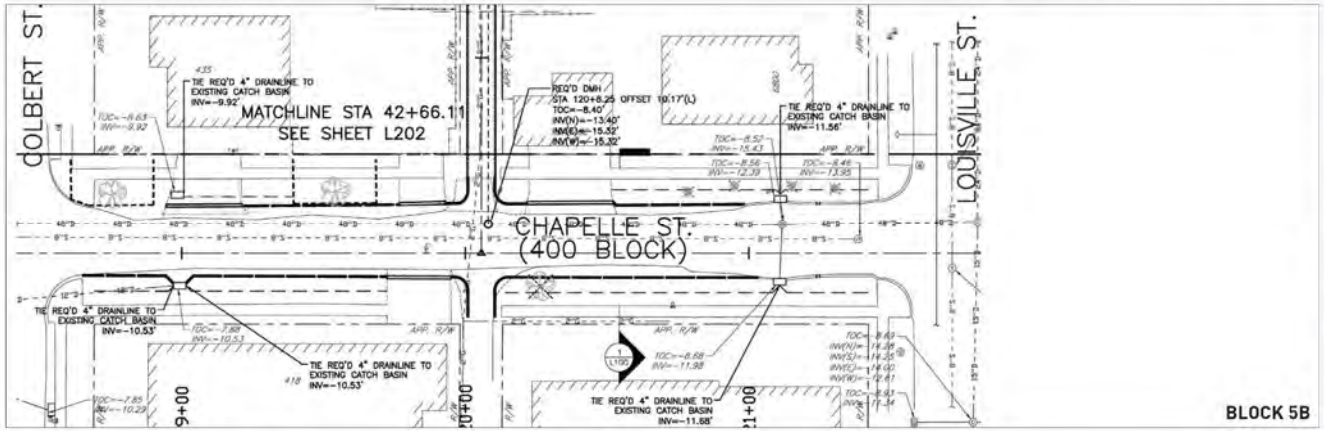


TYPICAL ALLEY SECTION

LAKEVIEW DRAINAGE UPDATES & GREEN INFRASTRUCTURE

SPACKMAN MOSSOP AND MICHAELS





LEGEND

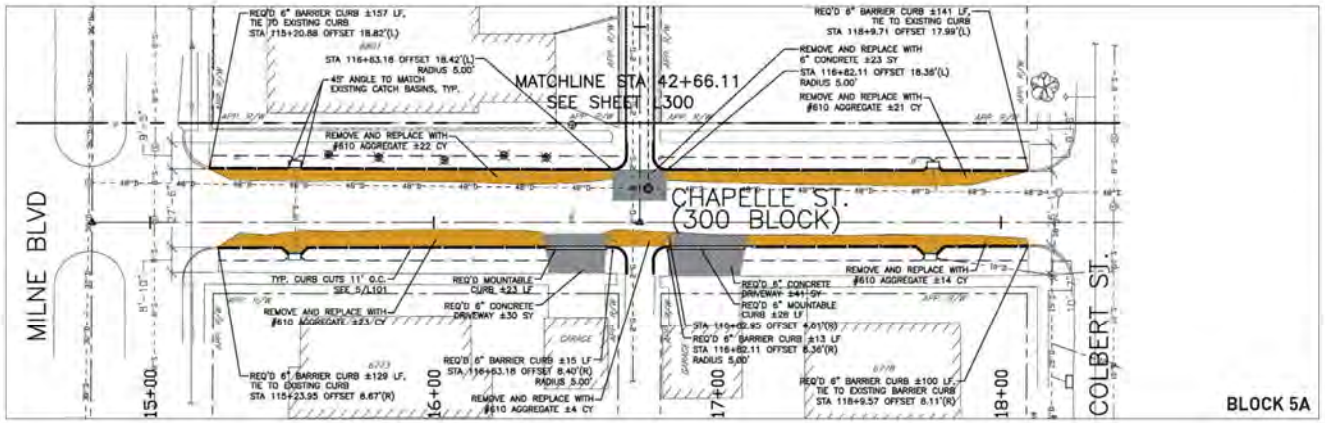
Drain Line, Gas Line, Water Line, Sewer Line, Center Line, Apparent Right-of-Way, Parcel Line, Fence Line, Mountable Catch Basin, Grass Inlet, Vertical Catch Basin, Drain Manhole, Electric Manhole, Sewer Manhole, Water Manhole, Water Meter, Water Valve, Existing Trees, Gas Valve, Power Pole, Light Pole, Fire Hydrant, Sign, Reqd Removal and/or Replacement of Existing Trees, Tree Protection Fence, Reqd Placement of Underdrain

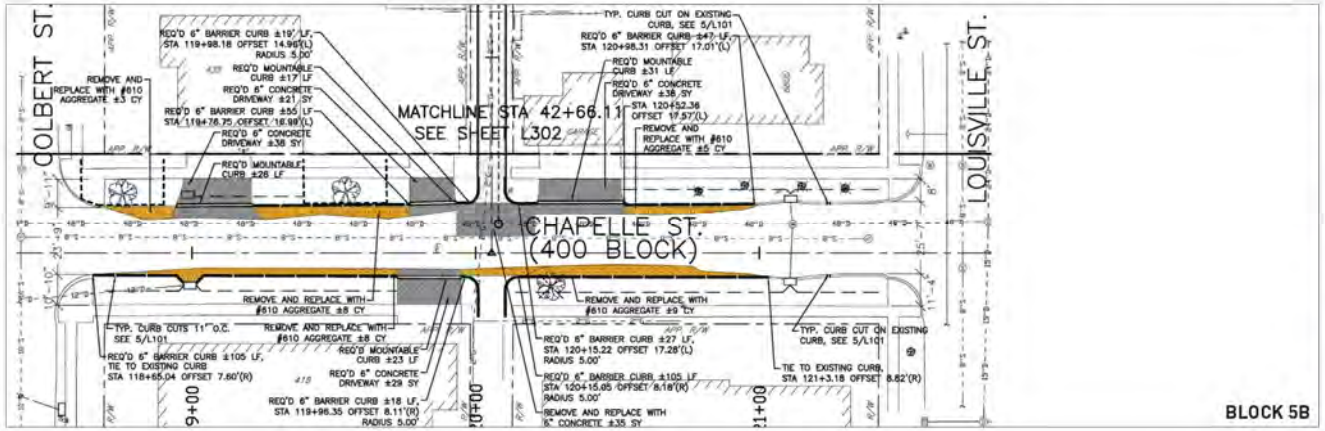
5 CHAPELLE ST - BLOCK 5 A & B

LAKEVIEW DRAINAGE UPDATES & GREEN INFRASTRUCTURE

SPACKMAN MOSSOP AND MICHAELS

Gaea





LEGEND

Drain Line
Gas Line
Water Line
Sewer Line
Center Line
Apparent Right-of-Way
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Drop Inlet
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Tree Protection Fence
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Req'd Removal and/or Replacement of Asphalt Roadway
Req'd Removal and/or Replacement of Permeable Pavement
Req'd Removal and/or Replacement of Aggregate Pavement

5 CHAPELLE ST - BLOCK 5 A & B - MATERIAL

LAKEVIEW DRAINAGE UPDATES & GREEN INFRASTRUCTURE

SPACKMAN MOSSOP AND MICHAELS

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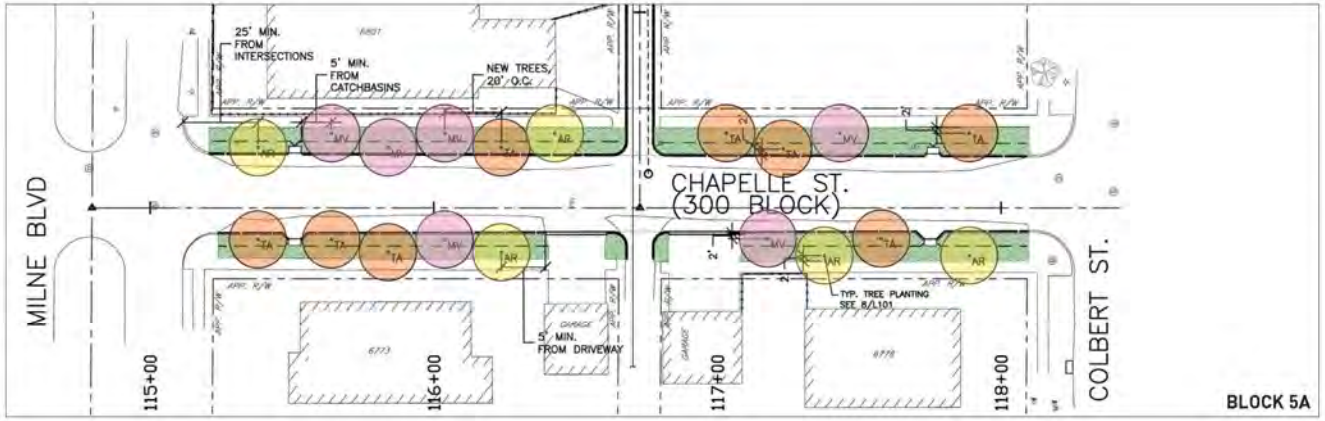

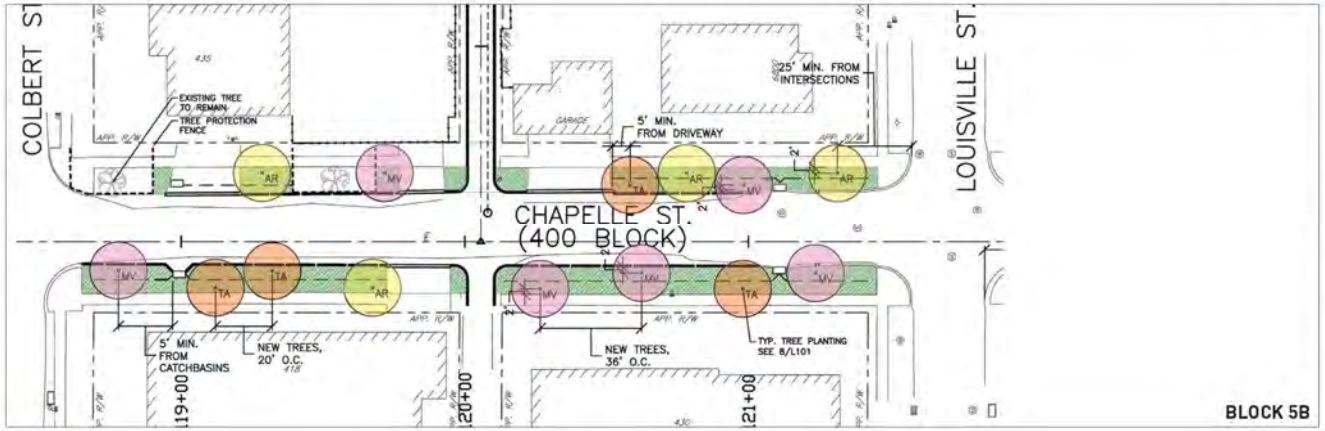

LEGEND

- Swamp Red Maple
- Sweetbay Magnolia
- Pond Cypress
- Req'd Removals and/or Replacement of Aggregate Pavement
- Req'd Removal and/or Grass and Grass Swale
- Tree Protection Fence
- Req'd Removals and/or Replacement of Existing Trees
- Existing Trees

5 CHAPELLE ST - BLOCK 5 A & B - PLANTING

LAKEVIEW DRAINAGE UPDATES & GREEN INFRASTRUCTURE

SPACKMAN MOSSOP AND MICHAELS

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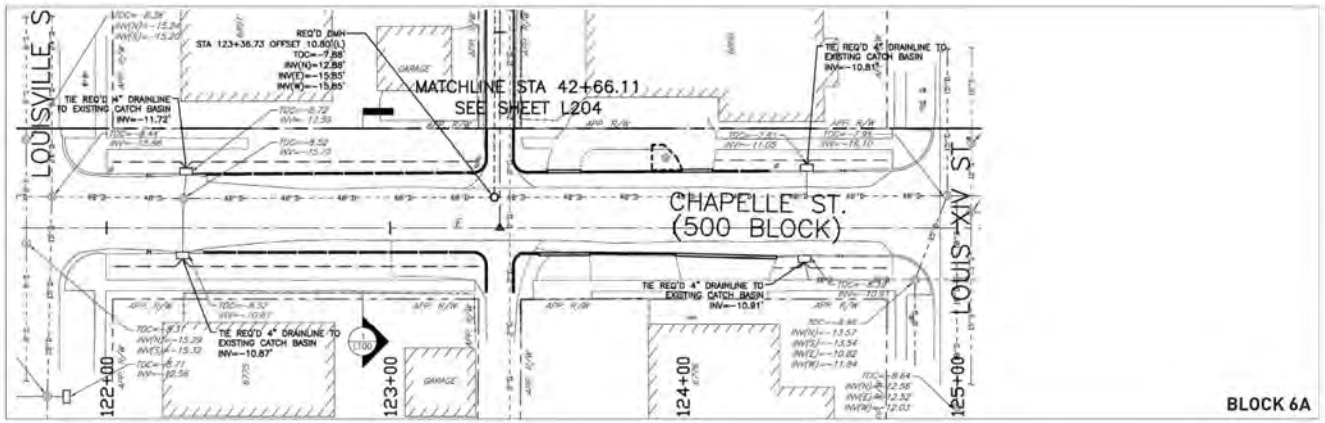

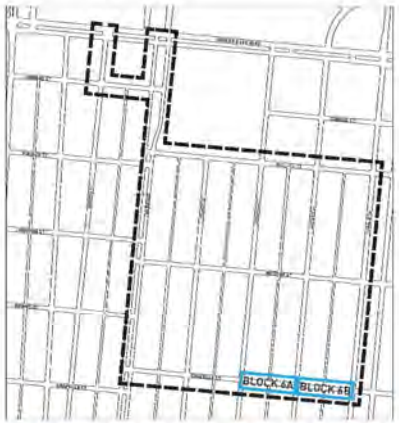

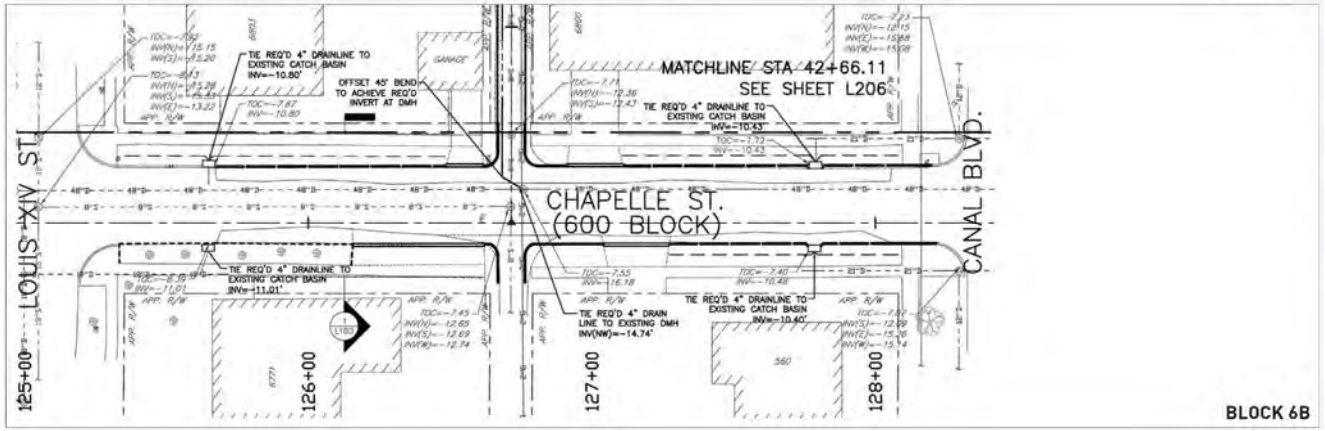

LEGEND

Drain Line
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Water Line
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Center Line
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Parcel Line
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Grate Inlet
Vertical Catch Basin
Drain Manhole
Electric Manhole
Sewer Manhole
Water Manhole
Water Meter
Water Valve
Existing Trees
Gas Valve
Power Pole
Light Pole
Fire Hydrant
Sign
Req'd Removal and/or Replacement of Existing Trees
Tree Protection Fence
Regrade Placement of Underdrain

6 CHAPELLE ST - BLOCK 6 A & B

LAKEVIEW DRAINAGE UPDATES & GREEN INFRASTRUCTURE

SPACKMAN MOSSOP AND MICHAELS

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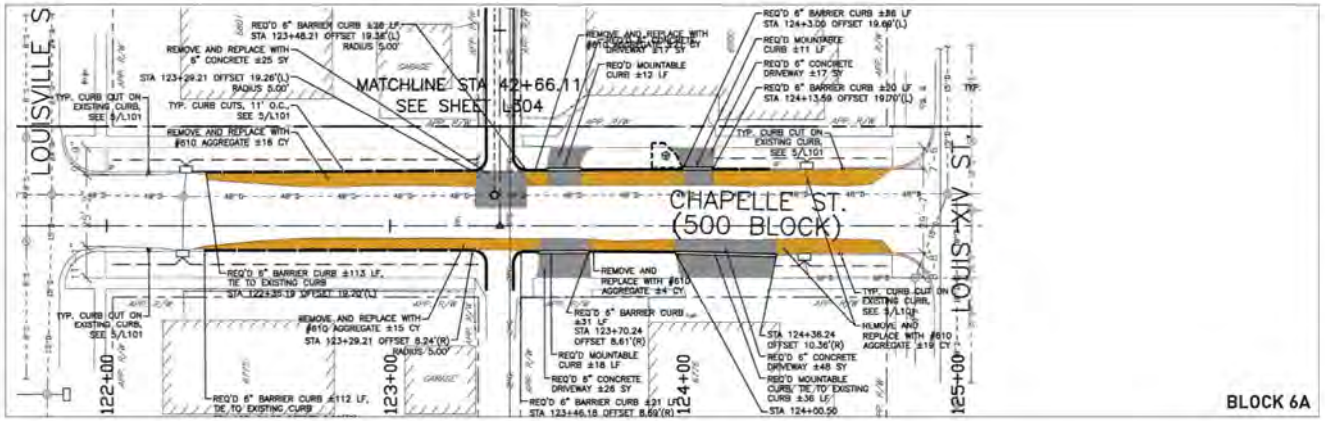
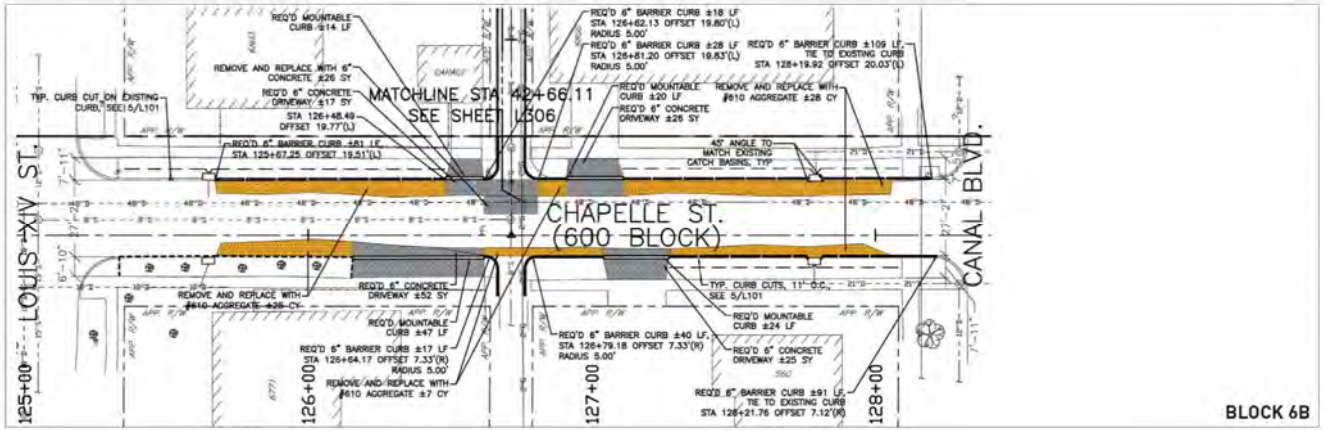




LEGEND

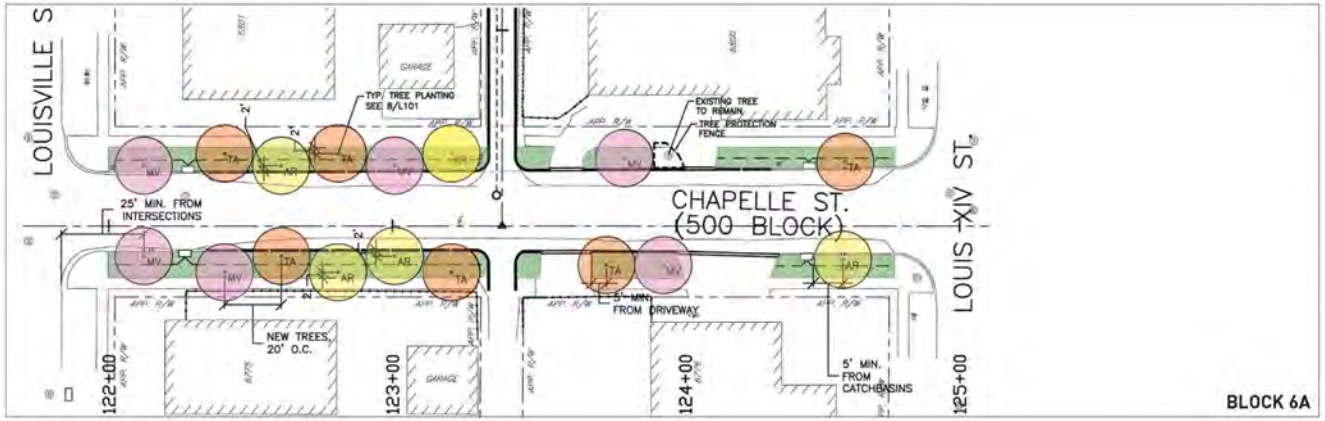
Drain Line, Gas Line, Water Line, Sewer Line, Center Line, Apparent Right-of-Way, Parcel Line, Fence Line, Mountable Catch Basin, Drop Inlet, Vertical Catch Basin, Drain Manhole, Electric Manhole, Sewer Manhole, Water Manhole, Water Meter, Water Valve, Existing Trees, Gas Valve, Power Pole, Light Pole, Fire Hydrant, Sign, Req'd Removal and/or Replacement of Existing Trees, Tree Protection Fence, Req'd Placement of Underdrain, Req'd Removal and/or Replacement of Concrete Driveway, Req'd Removal and/or Replacement of Asphalt Roadway, Req'd Removal and/or Replacement of Permeable Pavement, Req'd Removal and/or Replacement of Aggregate Pavement

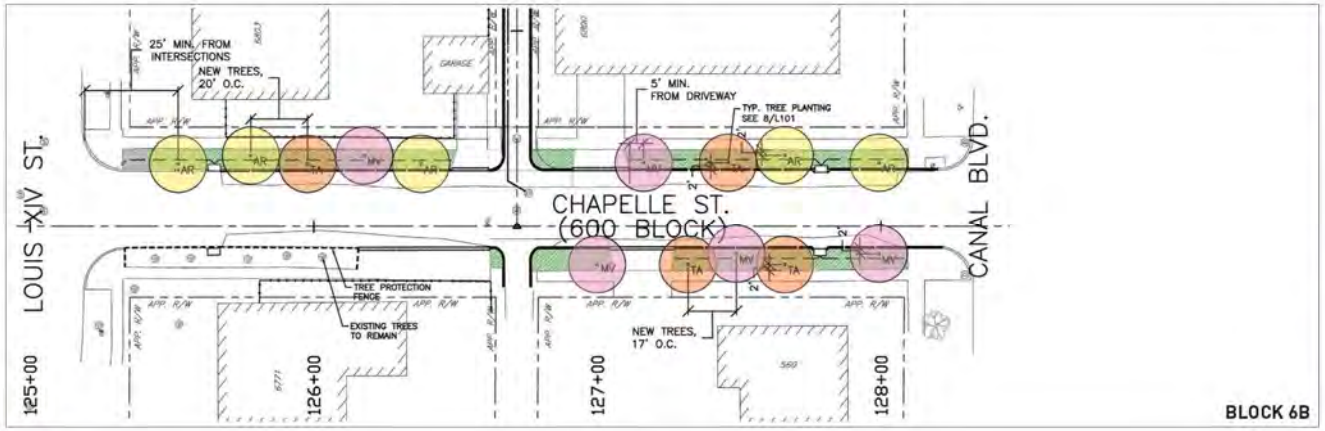
6 CHAPELLE ST - BLOCK 6 A & B - MATERIAL

LAKEVIEW DRAINAGE UPDATES & GREEN INFRASTRUCTURE

SPACKMAN MOSSOP AND MICHAELS

Gaea





LEGEND

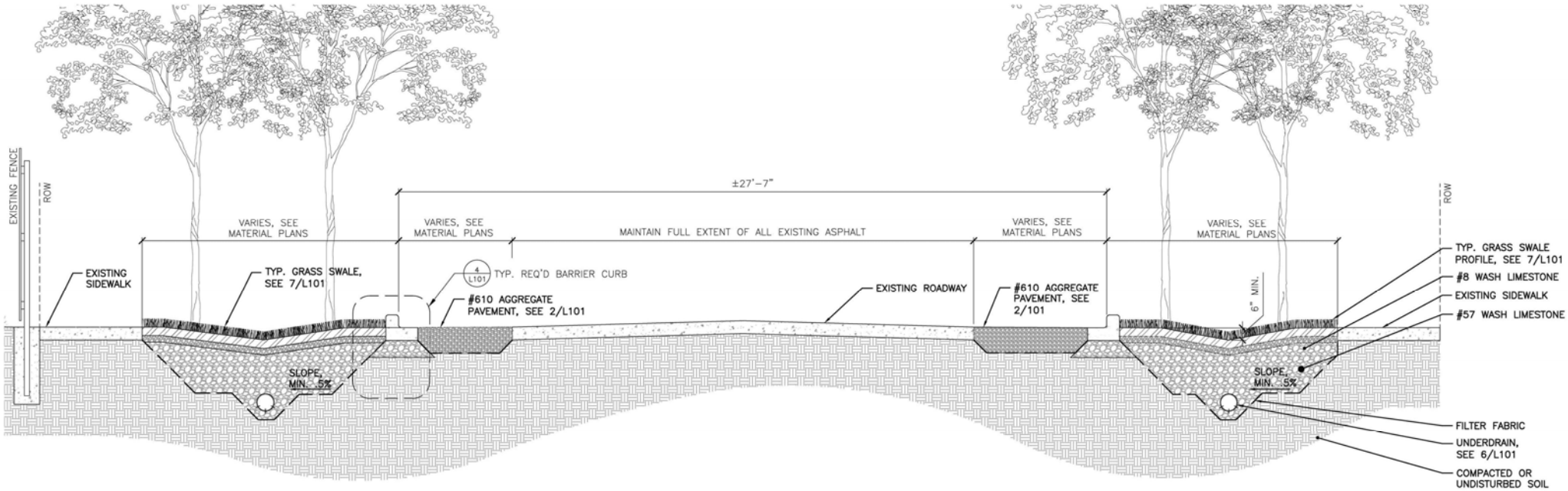
- Swamp Red Maple
- Sweetbay Magnolia
- Pond Cypress
- Req'd Removals and/or Replacement of Aggregate Pavement
- Req'd Removal and/or Grass and Grass Swale
- Tree Protection Fence
- Req'd Removals and/or Replacement of Existing Trees
- Existing Trees

6 CHAPELLE ST - BLOCK 6 A & B - PLANTING

LAKEVIEW DRAINAGE UPDATES & GREEN INFRASTRUCTURE

SPACKMAN MOSSOP AND MICHAELS

Gaea

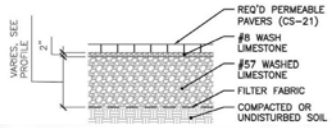


TYPICAL CHAPELLE STREET SECTION

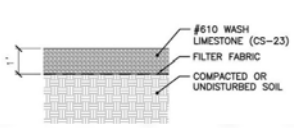
LAKEVIEW DRAINAGE UPDATES & GREEN INFRASTRUCTURE

SPACKMAN MOSSOP AND MICHAELS

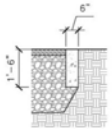
Gaea



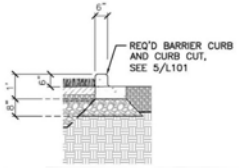
1 REQ'D PERMEABLE PAVEMENT DETAIL



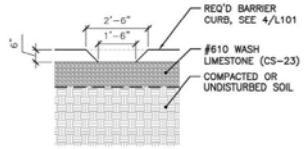
2 REQ'D AGGREGATE PAVEMENT DETAIL



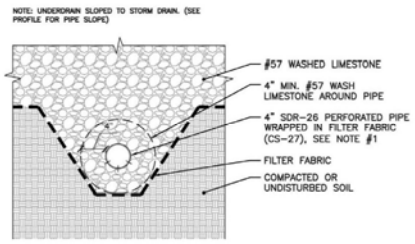
3 REQ'D FLUSH CURB DETAIL



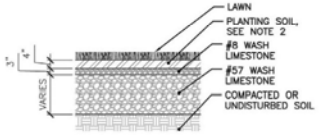
4 REQ'D BARRIER CURB DETAIL



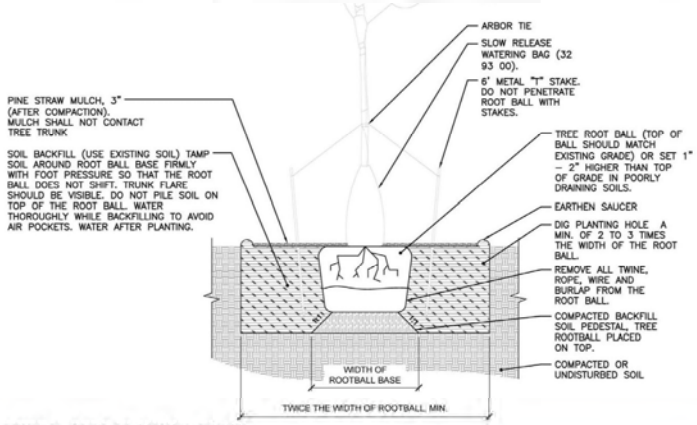
5 TYP. CURB CUT PROFILE



6 TYPICAL 4" UNDERDRAIN DET



7 TYPICAL GRASS SWALE PROFILE



8 TYPICAL TREE PLANTING DETAIL

TYPICAL DETAILS
LAKEVIEW DRAINAGE UPDATES & GREEN INFRASTRUCTURE

SPACKMAN MOSSOP MICHAELS

Gaea