



**SOLID WASTE & RECYCLING
TRANSFER STATION**
FEASIBILITY STUDY 18-11171-C



March 2019



Workshop Agenda

- Open House
- Concept Features
- Primary Concept Plans
- Q&A
- Feedback & Next Steps

Project Goals

- State-of-the-art Zero Waste Transfer Station
- Maximize recovery of reusable and recyclable materials
- Highest and best use of recovered materials
- User-friendly for customers, city staff, city contractors
- Sensitive to potential neighborhood and environmental impacts
- Environmental health & safety of the workers, visitors
- Facility will be a vital component to meet the City Zero Waste Goal

Planning to Date

November-December 2018

- Listening Sessions
- Program and Site Review

January 2019

- Preliminary Concepts
- Design Charrette

March 2019

- Primary Concept Plans

Future Presentations

Mid-April 2019

- Defined Concept Plans to Community Members

May 28, 2019

- Conceptual Plan presentation to Zero Waste Commission

June 18, 2019

- City Council Work Session on Conceptual Plans

Overview of the Transfer Station Facilities

- Opened in 1983
- Location: 2nd and Gilman Street
- Approximately 138,000 tons of materials processed annually from Berkeley and the surrounding region
- Transfer Station Capacity:
 - Currently handles more than 420 tons per day
- Approximately 75,000 tons of garbage transferred to landfill annually
- Approximately 63,000 reused, recycled or composted annually



Overview of the Transfer Station

- City collection fleet & administration
- Self-haul transfer
- Refuse, organics, & construction debris transfer
- Motor oil, mattresses, tires, white/brown goods drop off
- City contracted vendor reuse salvage
- City contracted vendor residential recycling fleet & administration
- City contracted vendor recyclables processing, recycling & universal waste drop-off, buyback & administration



Input from the Listening Sessions

- Form follows policy:
 - Maximize diversion
 - Highest and best use
- “Casual user friendly”
- Build on what works
- LEED Platinum, Net-Zero Energy
- Be a good neighbor



- Residual trash transfer

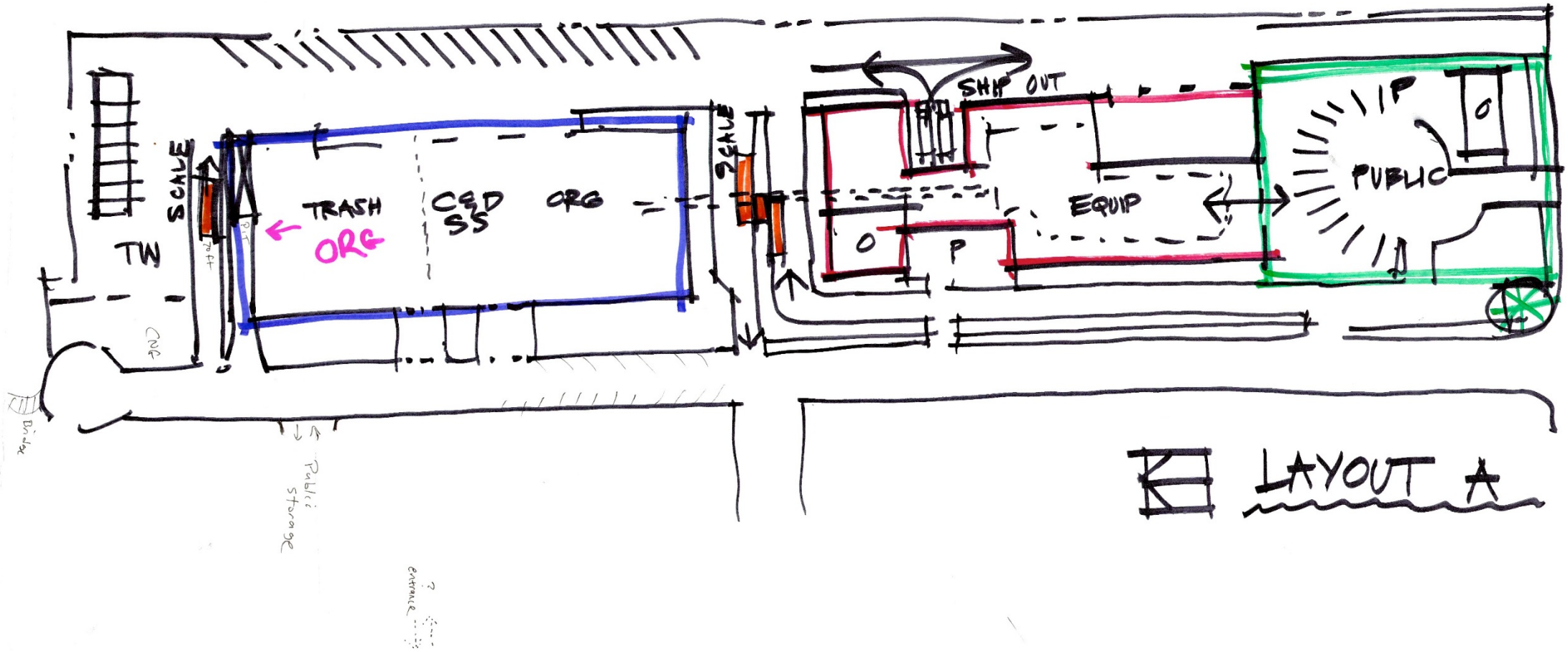


Desired Program Features

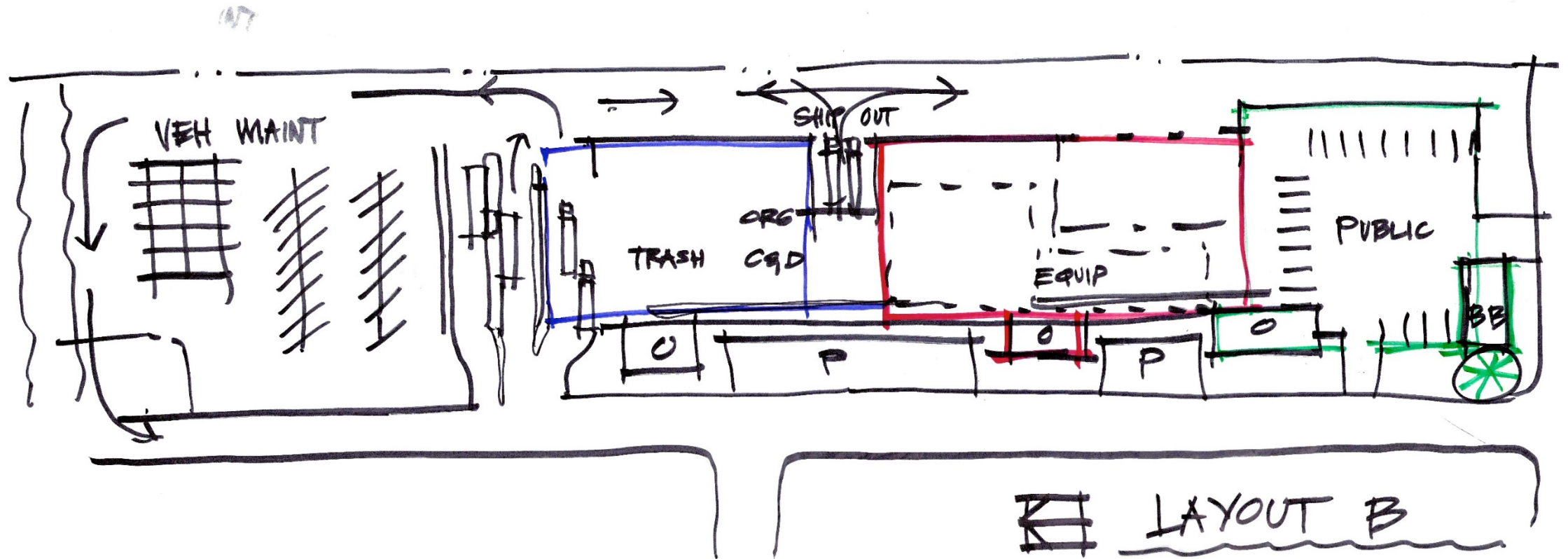
- Expand materials for drop-off
- Increase separation, salvage and recycling of:
 - All self-haul loads
 - Including construction & demolition debris loads
- Reuse Exchange
- Education Center



Concepts from Design Charrette



Concepts from Design Charrette



Site Concept Features – Public Recycling Center

Public Buy Back and Drop-off Area (“Public Recycling Center”)	Concept 1	Concept 2	Concept 3
Recycling Center is significantly larger than the existing area	X	X	X
Recycling Center includes bulky goods drop-off, reusables drop-off, and expanded universal drop-off for customers	X	X	X
Recycling Center is at the south end of the site and faces Gilman St for maximum visibility and community presence	X	X	X
Weather protection canopy structure provided over Recycling Center. (this canopy will have solar photovoltaic panels for on-site power generation)	X	X	X
Recycling Center has entry and exit to Second St	X	X	X
Recycling Center has exit to Gilman St. (note: this a right only exit with an acceleration lane)	X	X	X
Return loop capability is provided for customers that have missed a station	X	X	X
Recycling Center provides customer discretion on when to use Main Scales for tipping of solid waste, organics, and C&D	X	X	X
Recycling Center uses pull-over parking (airport style) in lieu of parking stalls that would require more maneuvering	X	X	X
Recycling Center is adjacent to the MRF for the ease of transfer of collected materials	X		X
Recycling Center is adjacent to the Transfer Station (public) for better integration of salvage and recovery of materials, particularly reusables		X	
Recycling Center provides some employee parking and office space	X		
Traffic circulation for all public and self-hauler customers passes through the Recycling Center		X	X

Site Concept Features – Self-haul, Transfer Station, MRF

Self-haul, Transfer Station, MRF	Concept 1	Concept 2	Concept 3
Self-haul exiting (from Main Scales) to Gilman, right turn only		X	X
Self-haul exiting (from Main Scales) to Second St & Gilman	X		X
All City/Route trucks exit site to Harrison St.	X	X	X
Consolidation of interior space (MRF & Transfer Station) in one structure.		X	X
Transfer Station continues to be used for unloading of solid waste, source separated organics, and mixed C&D	X	X	X
Transfer Station continues to accommodate Urban Ore salvage/recovery operations	X	X	X
Transfer Station is a separate structure (from MRF) providing additional circulation and access.	X		
Transfer station public area is enclosed with entry and exit fast roll doors.	X	X	X
Reuse of northern loadout tunnel	X		
Truck parking spaces in one area	X		
A separate remote RFID scale is required for separation of commercial and public traffic.	X	X	X
A second separate remote RFID scale for MRF tipping	X		X
Transfer Station floor area between public and commercial has no obstacles e.g. walls or loadout stall and is flexible for reassignment between public and commercial use depending on demand.	X		

Site Concept Features – Self-haul, Transfer Station, MRF

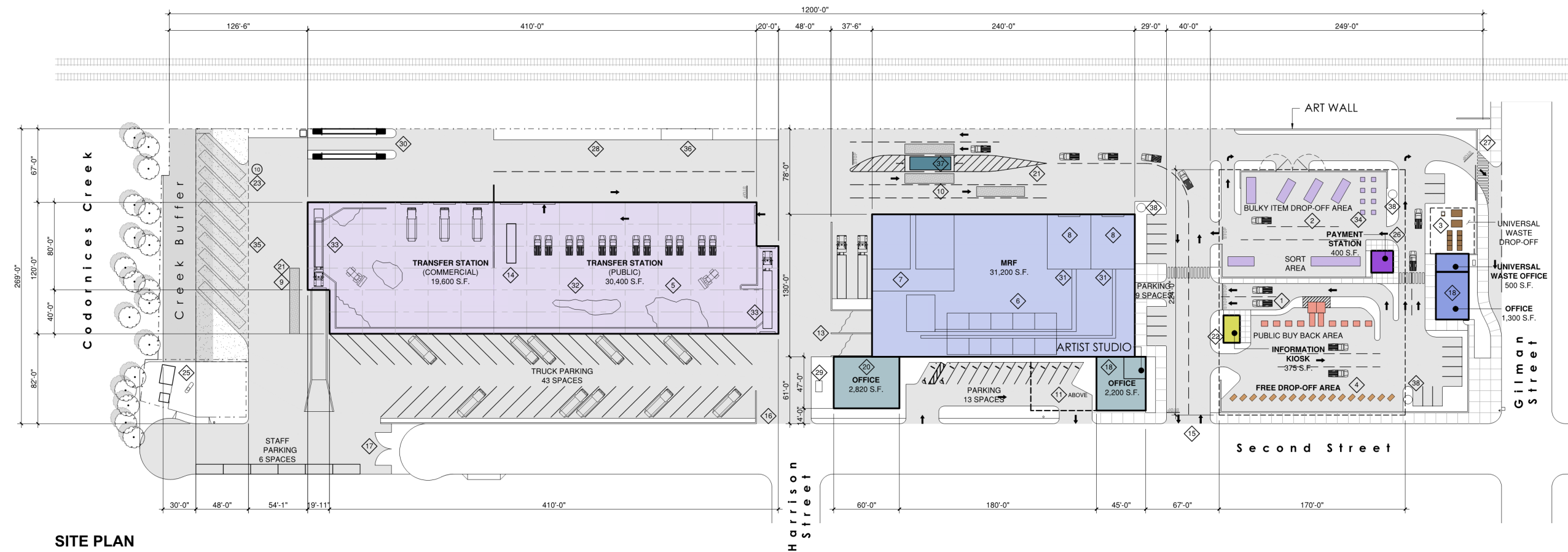
Self-haul, Transfer Station, MRF	Concept 1	Concept 2	Concept 3
Transfer Station truck doors predominantly face east (tracks)	X	X	X
MRF truck doors predominantly face east (tracks)	X	X	
Commercial Transfer Station has one loadout; Public Transfer Station has one loadout.	X	X	X
Commercial Transfer Station has an additional loadout option.		X	
The MRF truck (route and commodity) access is separate of on-site public user traffic		X	X
Commercial truck access is separate from on-site public user traffic	X	X	X
The Commercial area of the Transfer Station is separate from public user activity.	X	X	X
The outbound public self-haul user has good queuing capability	X		
Contractor and City offices are consolidated in the same area of the site.		X	X
Employee parking is separate from public traffic	X		
Assumed acquisition of north end of Second St. cul-de-sac for employee parking, bin storage, etc. (from Public Storage driveway north)	X		
The Second St cul-de-sac remains as is		X	X
Continued use of angled car parking spaces on east side of Second St. for employee parking		X	X

Site Concept Features - Community

Community	Concept 1	Concept 2	Concept 3
Information kiosk provided for on-site way-finding and facility use, City recycling programs & events, etc.	X	X	X
Pedestrian access provided at Gilman/Second St corner	X	X	X
Education Center with multi-purpose room	X	X	X
Education Center with viewing of the recycling equipment	X		X
Artist Studio in residence and/or Makers Shop	X	X	X
Art Wall at south end of east property line	X	X	X

Site Concept Features - Environmental

Environmental	Concept 1	Concept 2	Concept 3
Codornices Creek buffer zone and restoration area provided	X	X	X
Permeable paving for additional stormwater mitigation near the Creek.	X	X	X
Rainwater capture systems & low water fixtures	X	X	X
Optimal use of rooftop photovoltaics	X	X	X
Fast roll doors to control noise, dust and odor	X	X	X
Negative air flow and filtration systems	X	X	X
Daylighting and LED lighting	X	X	X
Vegetated walls and titanium dioxide coatings (to absorb NOx)	X	X	X
Recycled content construction materials	X	X	X
Reuse of demolition concrete	X	X	X
Reflective roof and paving to mitigate heat island effect	X	X	X



SITE PLAN

KEYNOTES

- | | | | | |
|----------------------------|--|-------------------------------|---------------------|------------------------------------|
| 1 PUBLIC BUY BACK AREA | 9 70' SCALE | 17 CITY VEHICLES | 25 CNG STATION | 33 LOADOUT |
| 2 BULKY ITEM DROP-OFF AREA | 10 40' SCALE | 18 CONTRACTOR'S OFFICE | 26 PAYMENT STATION | 34 APPLIANCE AREA |
| 3 UNIVERSAL WASTE DROP-OFF | 11 EDUCATION CENTER | 19 MRF OPERATION OFFICE | 27 ALTERNATE ACCESS | 35 PERMEABLE PAVING FOR STORMWATER |
| 4 FREE DROP-OFF AREA | 12 VEHICLE MAINTENANCE | 20 CITY OFFICE | 28 BIN STORAGE | 36 FUEL ISLAND |
| 5 ORGANICS | 13 GLASS BUNKERS | 21 RFID STATION | 29 TRANSFORMER | 37 SCALEHOUSE |
| 6 MRF PROCESSING AREA | 14 CONTAINER SALVAGE TRAILER | 22 INFORMATION KIOSK | 30 TRUCK WASH | 38 RAIN WATER TANK |
| 7 BALE STORAGE/SHIPPING | 15 MAIN SCALES FOR PUBLIC | 23 SEMI TRAILER/TRUCK PARKING | 31 INFEEED CONVEYOR | |
| 8 MRF TIPPING | 16 TRANSFER TRAILERS, RECYCLING ROUTE AND COMMODITY TRUCKS | 24 FUEL ISLAND | 32 C&D | |

Charrette-based Proposal Concept

Solid Waste & Recycling Transfer Station



EDUCATION
CENTER

INFORMATION

BERKELEY
FACILITY
NAME TBD

COMMUNITY
RECYCLING
CENTER →

PAPER

PAPER

PLASTIC

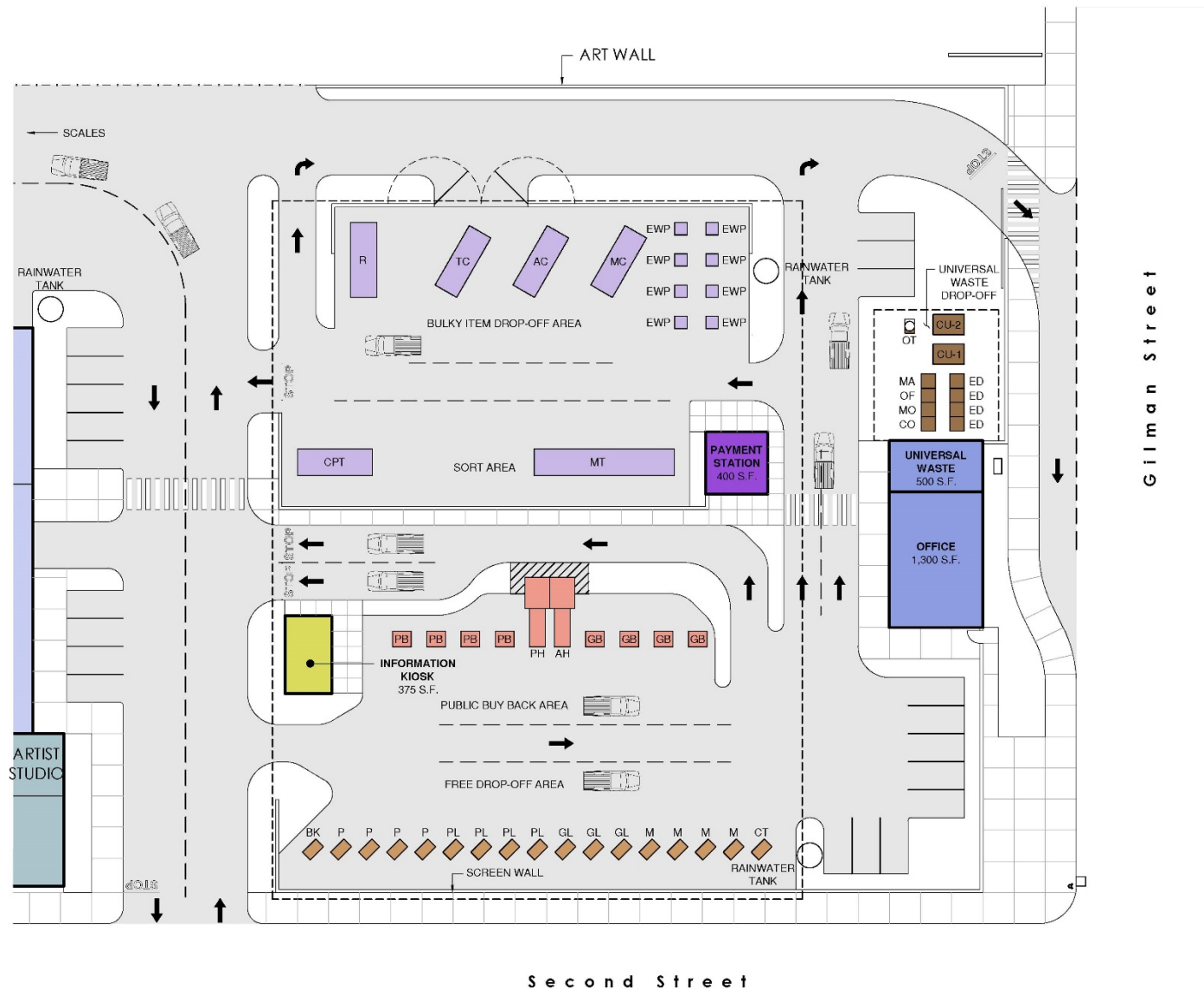
ALUMINUM

GLASS

CASH

LAS





LEGEND

FREE DROP-OFF AREA

- P = PAPER
- PL = PLASTIC
- GL = GLASS
- M = METALS
- BK = BOOKS
- CT = CLOTHING/TEXTILES

PUBLIC BUY-BACK AREA

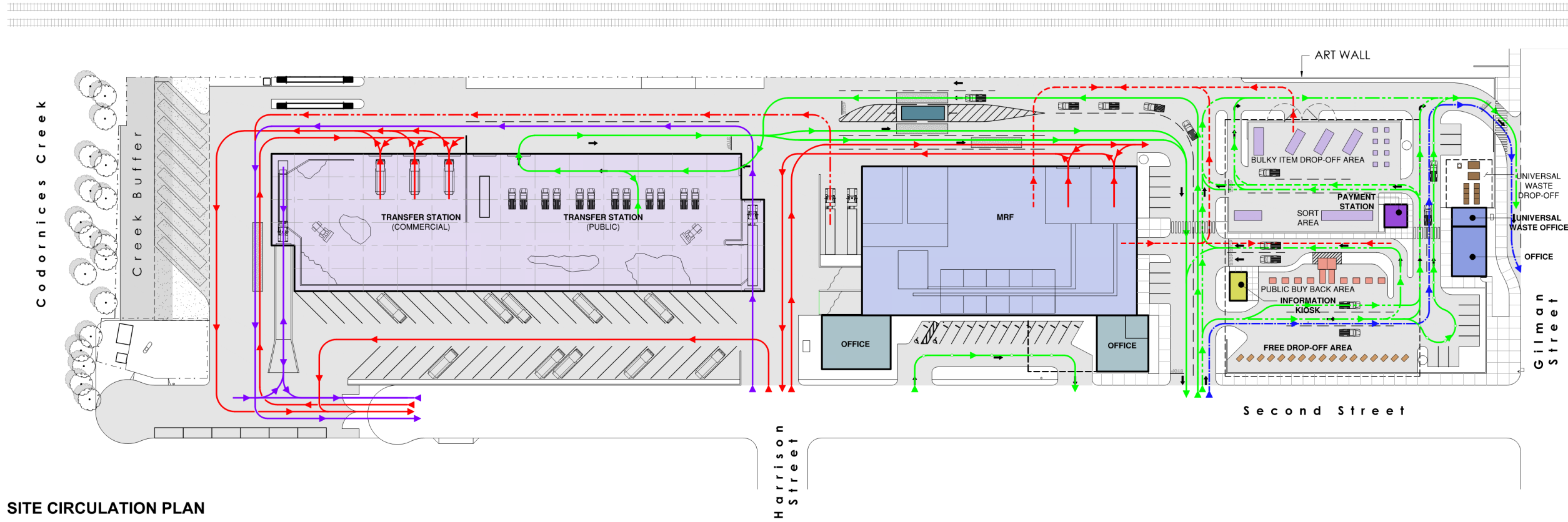
- PB = 6' X 5' BINS - PAPER (TYP OF 4)
- GB = 6' X 5' BINS - GLASS (TYP OF 4)
- AH = HOPPER - ALUMINUM
- PH = HOPPER - PLASTIC

UNIVERSAL WASTE DROP-OFF

- OT = 37" X 54" OIL TANK (250-GALLON)
- CO = 55" X 55" PLATFORM - COOKING OIL DRUM
- MO = 55" X 55" PLATFORM - MOTOR OIL DRUM
- OF = 55" X 55" PLATFORM - OIL FILTER DRUM
- MA = 55" X 55" PLATFORM - MOTOR ANTIFREEZE DRUMS
- ED = 55" X 55" PLATFORMS - EMPTY DRUMS, (TYP OF 4)
- CU-1 = 10' X 6.5' CHEMSTOR UNIT FOR STORAGE OF PAINT, CAR BATTERIES, AND HOUSEHOLD BATTERIES
- CU-2 = 10' X 6.5' CHEMSTOR UNIT FOR STORAGE OF FLUORESCENT LIGHTING TUBES AND BALLASTS

BULKY ITEM DROP-OFF AREA

- EWP = E-WASTE PALLETS
- MC = 22' X 8' ROLLOFF CONTAINER - LARGE METAL
- AC = 22' X 8' ROLLOFF CONTAINER - APPLIANCES
- TC = 22' X 8' ROLLOFF CONTAINER - TIRES
- R = 24' BOX FOR REUSABLES
- CPT = 24' TRAILER - CARPET AND CARPET PAD
- MT = 45' TRAILER - MATTRESSES



SITE CIRCULATION PLAN

LEGEND

PUBLIC - SELF-HAUL



PUBLIC - BULKY ITEM, SALVAGE/REUSE



PUBLIC - BUYBACK



PUBLIC - UNIVERSAL WASTE



PUBLIC - EMPLOYEES



COMMERCIAL - TRANSFER TRUCKS



COMMERCIAL - ROUTE TRUCKS



COMMERCIAL - COMMODITY SHIPPING



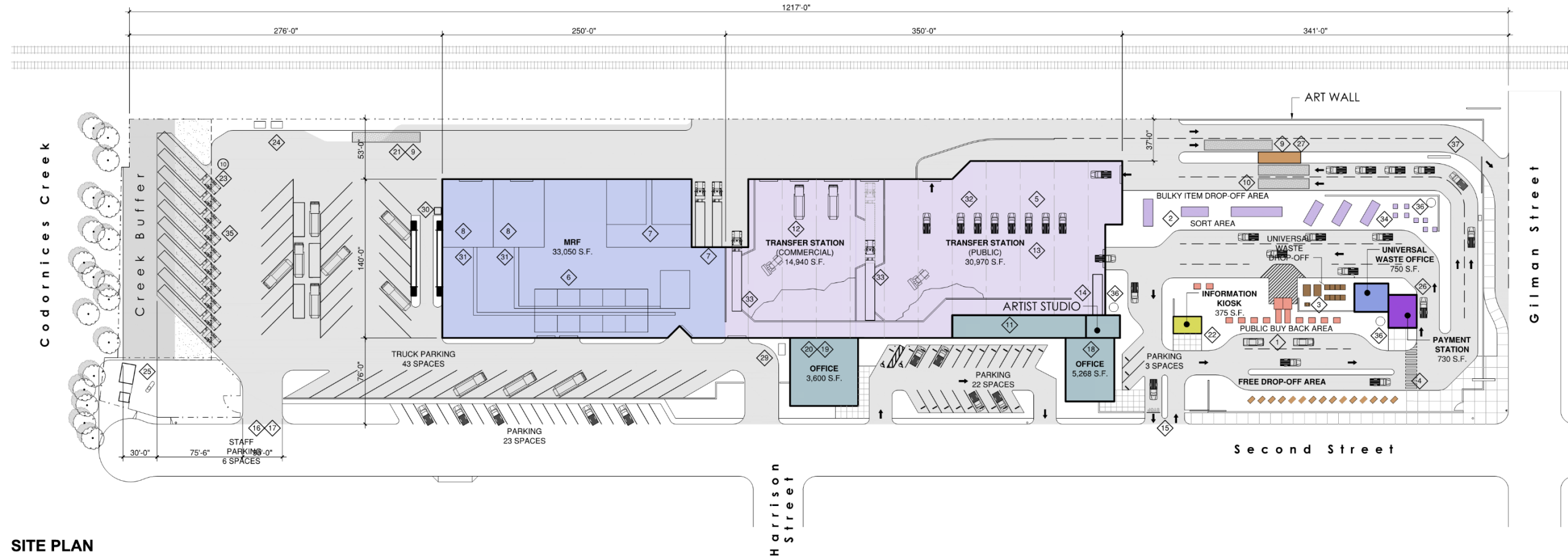
COMMERCIAL - FORKLIFT, YARD GOAT



NOTE: THE VEHICLE MAINTENANCE STRUCTURE IS NOT SHOWN

Charrette-based Proposal Concept 1

Solid Waste & Recycling Transfer Station



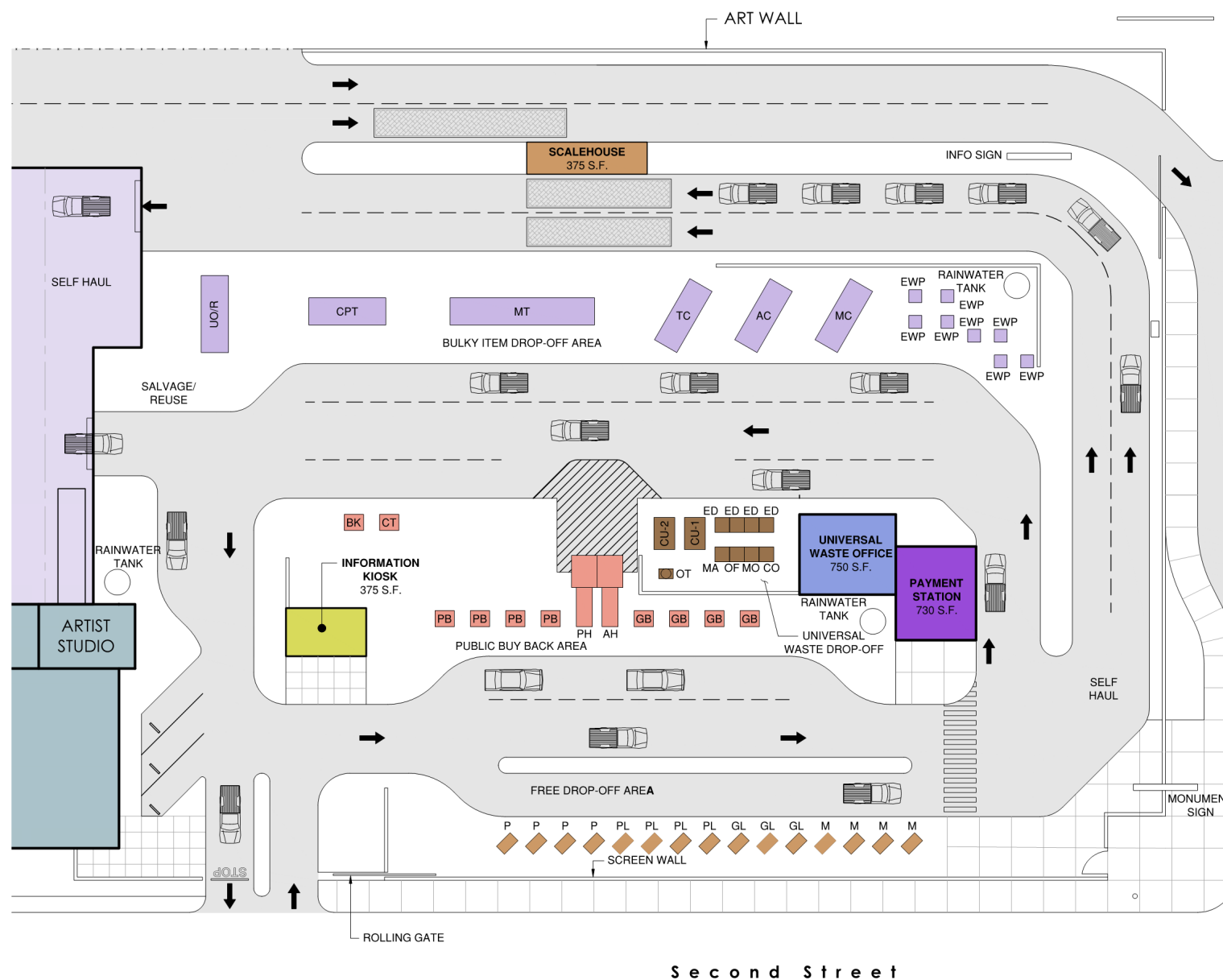
SITE PLAN

KEYNOTES

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Charrette-based Proposal Concept 2

Solid Waste & Recycling Transfer Station



LEGEND

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- GL = GLASS
- M = METALS

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- CPT = 24' TRAILER - CARPET AND CARPET PAD
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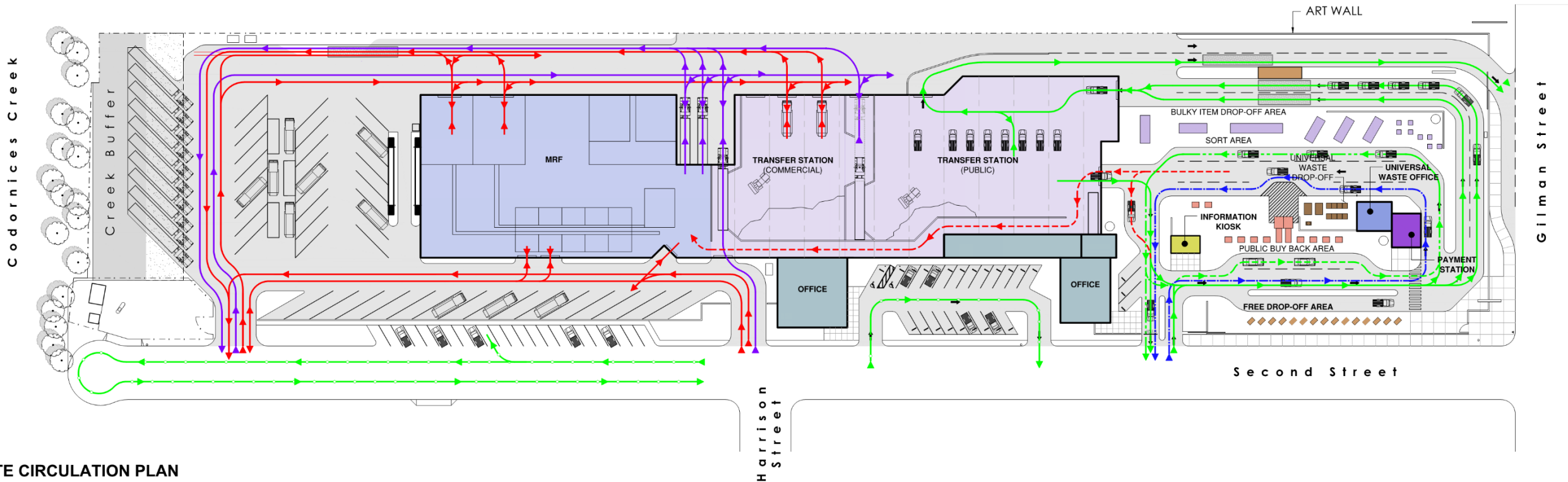
Gilman Street

Second Street

PUBLIC RECYCLE DROP-OFF AREA

Charrette-based Proposal Concept 2

Solid Waste & Recycling Transfer Station



SITE CIRCULATION PLAN

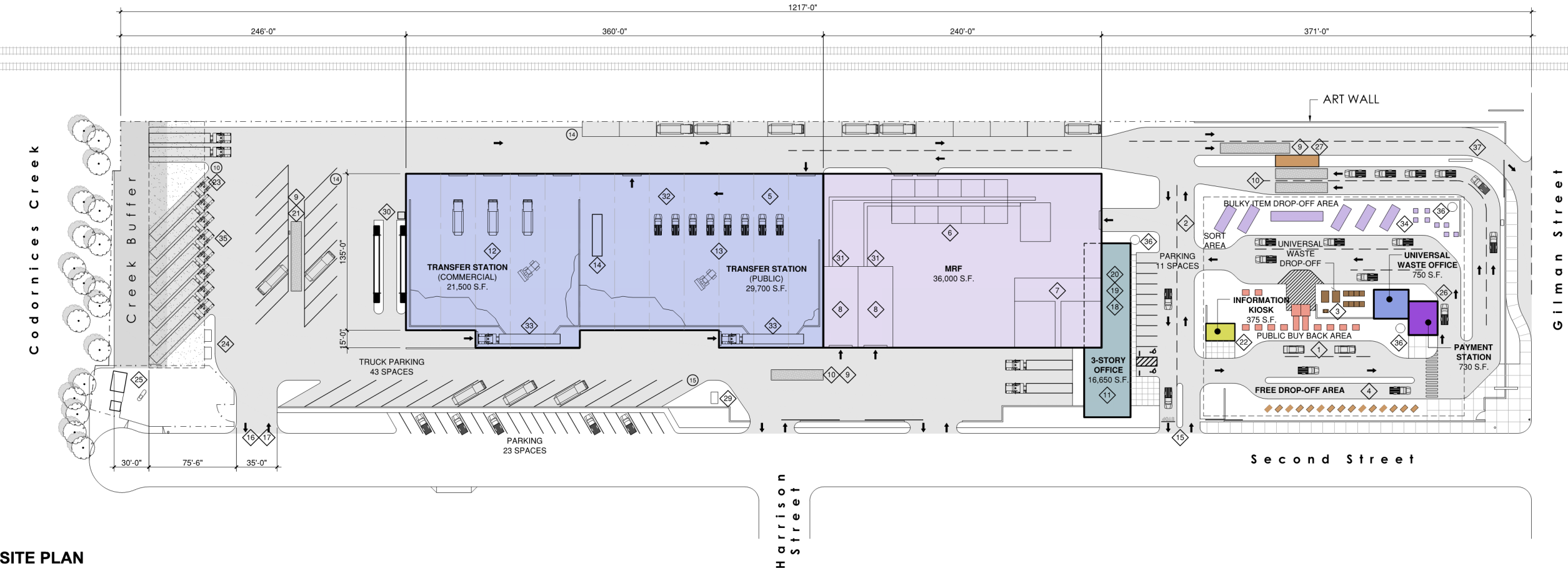
LEGEND

PUBLIC - SELF-HAUL		COMMERCIAL - TRANSFER TRUCKS	
PUBLIC - BULKY ITEM, SALVAGE/REUSE		COMMERCIAL - ROUTE TRUCKS	
PUBLIC - BUYBACK		COMMERCIAL - COMMODITY SHIPPING	
PUBLIC - UNIVERSAL WASTE		COMMERCIAL - FORKLIFT, YARD GOAT	
PUBLIC - EMPLOYEES			

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Charrette-based Proposal Concept 2

Solid Waste & Recycling Transfer Station



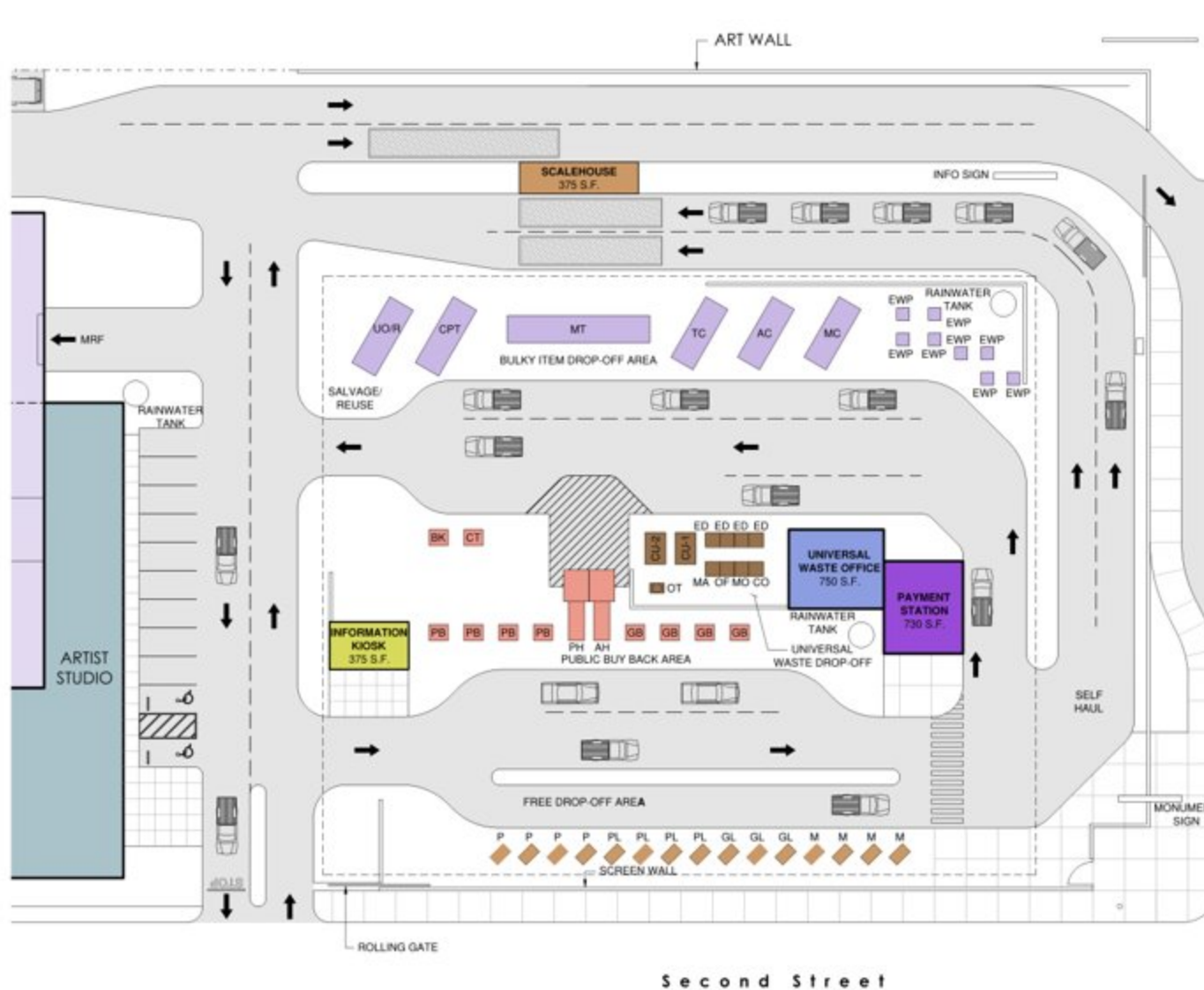
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Charrette-based Proposal Concept 3

Solid Waste & Recycling Transfer Station



LEGEND

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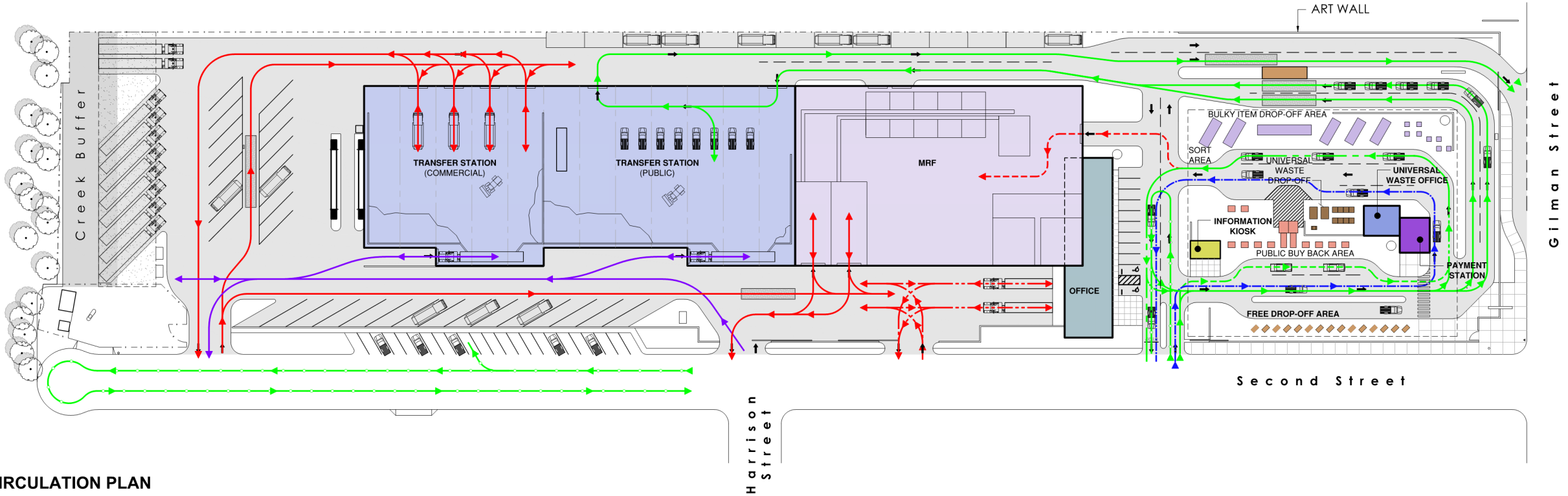
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- CPT = 24' TRAILER - CARPET AND CARPET PAD
- MT = 45' TRAILER - MATTRESSES

ENLARGED SITE PLAN

PUBLIC RECYCLE DROP-OFF AREA
Charrette-based Proposal Concept **3**
Solid Waste & Recycling Transfer Station

Codornices Creek



SITE CIRCULATION PLAN

LEGEND

PUBLIC - SELF-HAUL		COMMERCIAL - TRANSFER TRUCKS	
PUBLIC - BULKY ITEM, SALVAGE/REUSE		COMMERCIAL - ROUTE TRUCKS	
PUBLIC - BUYBACK		COMMERCIAL - COMMODITY SHIPPING	
PUBLIC - UNIVERSAL WASTE		COMMERCIAL - FORKLIFT, YARD GOAT	
PUBLIC - EMPLOYEES			

NOTE: THE VEHICLE MAINTENANCE STRUCTURE IS NOT SHOWN

Charrette-based Proposal Concept 3
Solid Waste & Recycling Transfer Station



March 2019

