

Jacobs is providing engineering design of the Gilbert Road Light Rail Extension Project. The Project is approximately 1.9 miles in length, extending from the Central Mesa Extension (CME) project's eastern extent at Edgemont and Main Street east on Main Street to Gilbert Road. The Project includes center-running light rail track, two passenger stations on Main Street including stations at Stapley Drive and Gilbert Road, a Park and Ride (PNR) facility at Gilbert Road, an Operator's Facility, traction power substations, a signal building, and all ancillary equipment to operate the trains.

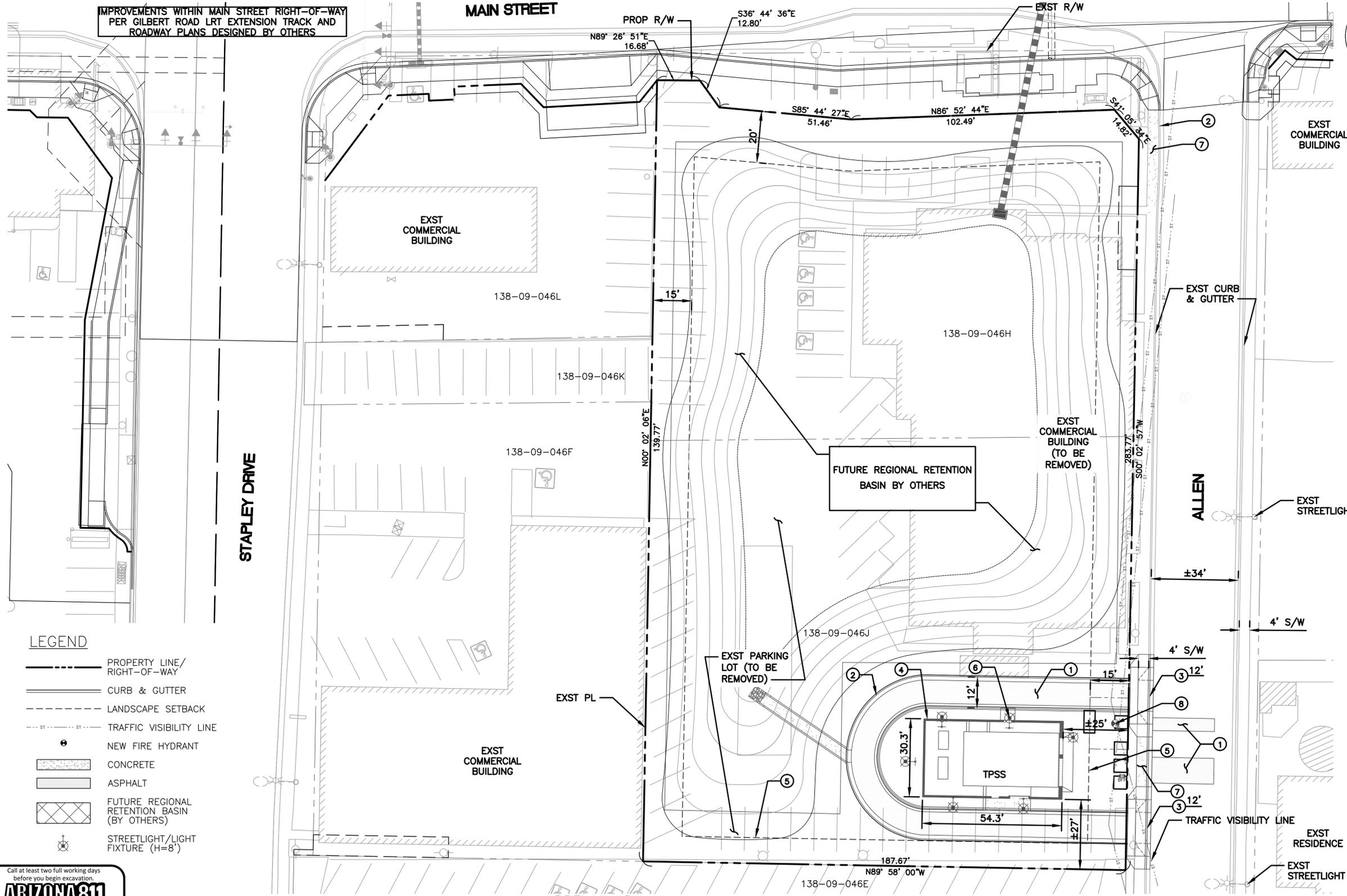
At 1235 E. Main Street (SW corner of Main Street and Allen), a Traction Power Substation (TPSS) is proposed that will provide power supply to the trains. The proposed building is a masonry structure that houses the power equipment and has access doors for Valley Metro maintenance personnel. The proposed building is similar in appearance to an existing TPSS at Sycamore and Main Street that was constructed as part of the original start-up system.

IMPROVEMENTS WITHIN MAIN STREET RIGHT-OF-WAY PER GILBERT ROAD LRT EXTENSION TRACK AND ROADWAY PLANS DESIGNED BY OTHERS



KEY NOTES

ITEM	
1	PROPOSED ASPHALT PAVEMENT
2	PROPOSED CURB AND GUTTER
3	PROPOSED CONCRETE DRIVEWAY
4	PROPOSED TPSS BUILDING
5	LANDSCAPING SETBACK
6	PROPOSED STREET LIGHT
7	PROPOSED SIDEWALK
8	PROPOSED FIRE HYDRANT



**SITE ADDRESS**  
SWC MAIN ST & ALLEN  
MESA, ARIZONA

**SITE ACREAGE**  
NET AREA = 55,000 ± SF  
= 1.26 AC

**ZONING**  
EXISTING: GC  
**MARICOPA COUNTY ASSESSOR PARCEL NUMBER**  
APN #138-09-046J

**MARICOPA COUNTY ASSESSOR ADJACENT PARCEL NUMBERS**  
APN #138-09-046H  
APN #138-09-046E  
APN #138-09-046F

**OWNER**  
CITY OF MESA  
55 N CENTER STREET  
MESA, AZ 85201

**APPLICANT**  
VALLEY METRO RAIL  
101 N 1st AVE, STE 1300  
PHOENIX, AZ 85003  
MAIN PH: 602-271-9324  
PROJECT MANAGER:  
PATRICK FULLER  
PH: 602-322-4487  
FAX: 602-252-7453

**ENGINEER**  
PREMIER ENGINEERING CORP  
6437 W CHANDLER BLVD, STE 1  
CHANDLER, AZ 85226  
PHONE: (480) 829-6000  
FAX: (480) 829-6016

LEGEND

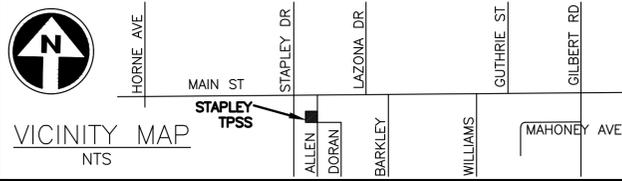
- PROPERTY LINE/ RIGHT-OF-WAY
- CURB & GUTTER
- LANDSCAPE SETBACK
- TRAFFIC VISIBILITY LINE
- NEW FIRE HYDRANT
- CONCRETE
- ASPHALT
- FUTURE REGIONAL RETENTION BASIN (BY OTHERS)
- STREETLIGHT/LIGHT FIXTURE (H=8')

Call at least two full working days before you begin excavation.

Arizona Blue Stake, Inc.  
Dial 8-1-1 or 1-800-STAKE-IT (782-5348) in Maricopa County: (602) 263-1100

NOTE: THIS PROJECT SHALL CONFORM TO FTA'S BUY AMERICA REQUIREMENTS.

PRELIMINARY  
NOT FOR  
CONSTRUCTION



**PREMIER**  
ENGINEERING CORPORATION  
6437 W. CHANDLER BLVD SUITE 1  
CHANDLER, AZ 85226 (480) 829-6000

SUBMITTED \_\_\_\_\_ DATE \_\_\_\_\_

**JACOBS**  
101 N. 1st AVENUE, #2600, PHOENIX, AZ 85003  
T 602.253.1200, F 602.253.1202  
WWW.JACOBS.COM

APPROVED \_\_\_\_\_ DATE \_\_\_\_\_

DESIGNED BY:  
**KMR**

DRAWN BY:  
**KMR**

CHECKED BY:  
**KJB**

APPROVED BY:  
**KJB**

SCALE:  
**1:20**

SUBMITTAL DATE:  
**18 OCT 16**

GILBERT ROAD LRT EXTENSION  
VALLEY METRO CONTRACT NO. 14011-GRDS CITY OF MESA PROJECT NO. CP0296

**STAPLEY TPSS FACILITY  
MAIN STREET / ALLEN  
SITE PLAN**

DRAWING NO:  
**GRE-CP-DRB-02**

REVISION: \_\_\_\_\_

CITY OF MESA PLAN NO: \_\_\_\_\_

SHEET NO:  
**1 OF 1**

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Oct 18, 2016 10:16am  
By: gzcacal



KEY NOTES

ITEM	DESCRIPTION
1	PROPOSED 4' SCUPPER
2	PROPOSED 4' SCUPPER SPILLWAY
3	PROPOSED PAVEMENT RIDGE
4	PROPOSED TPSS BUILDING

**STORMWATER CALCS**  
 100YR, 2HR DEPTH = 2.159 IN  
 RAINFALL:RUNOFF COEFF. = 0.85  
 NET DRAINAGE AREA = 1.26 AC  
 REQUIRED VOLUME = 0.193 AC-FT  
 = 8,411 CF  
 PROPOSED VOLUME = BASIN BY OTHERS

**SITE ADDRESS**  
 SWC MAIN ST & ALLEN  
 MESA, ARIZONA

**SITE ACREAGE**  
 NET AREA = 55,000 ± SF  
 = 1.26 AC

**ZONING**  
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**MARICOPA COUNTY ASSESSOR PARCEL NUMBER**  
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 PREMIER ENGINEERING CORP  
 6437 W CHANDLER BLVD, STE 1  
 CHANDLER, AZ 85226  
 PHONE: (480) 829-6000  
 FAX: (480) 829-6016

DRAWING NO:  
**GRE-GD-DRB-02**

REVISION:

CITY OF MESA PLAN NO:

SHEET NO:  
**1 OF 1**

IMPROVEMENTS WITHIN MAIN STREET RIGHT-OF-WAY PER GILBERT ROAD LRT EXTENSION TRACK AND ROADWAY PLANS DESIGNED BY OTHERS

MAIN STREET

STAPLEY DRIVE

EXST COMMERCIAL BUILDING

EXST COMMERCIAL BUILDING

G=38.16

EXST COMMERCIAL BUILDING

FUTURE REGIONAL RETENTION BASIN BY OTHERS

ALLEN

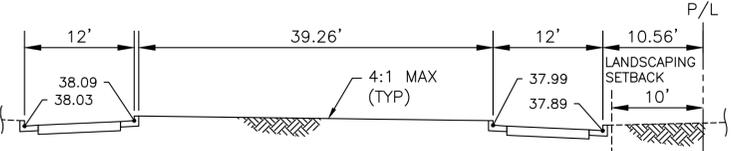
±34'

EXST PARKING LOT (TO BE REMOVED)

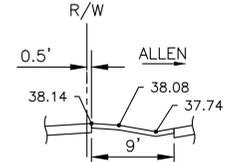
STORMWATER RUNOFF TO COLLECT IN PROPOSED REGIONAL RETENTION BASIN (BY OTHERS)

EXST COMMERCIAL BUILDING

EXST RESIDENCE



SECTION A



SECTION B

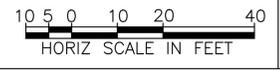
- LEGEND**
- PROPOSED PAVEMENT RIDGE
  - PROPOSED GRADE BREAK
  - DIRECTION OF STORMWATER RUNOFF

**DRAINAGE STATEMENT**

THE EXISTING SITE IS GENERALLY SLOPING TOWARDS MAIN STREET AND ALLEN. THERE ARE NO EXISTING DRYWELLS OR RETENTION FACILITIES PRESENT WITHIN THE SITE.

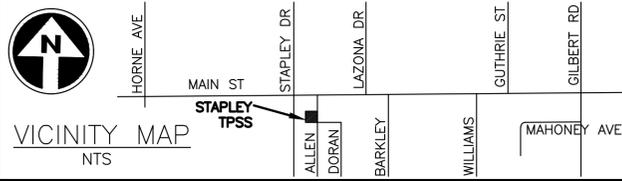
NOTE: ALL ELEVATIONS ARE BASED AT 1200 FEET.  
 NOTE: THIS PROJECT SHALL CONFORM TO FTA'S BUY AMERICA REQUIREMENTS.

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**PREMIER**  
 ENGINEERING CORPORATION  
 6437 W. CHANDLER BLVD SUITE 1  
 CHANDLER, AZ 85226 (480) 829-6000

SUBMITTED: \_\_\_\_\_ DATE: \_\_\_\_\_

**JACOBS**

101 N. 1st AVENUE, #2600, PHOENIX, AZ 85003  
 T 602.253.1200, F 602.253.1202  
 WWW.JACOBS.COM

APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_

**VALLEY METRO**

DESIGNED BY:  
**KMR**

DRAWN BY:  
**KMR**

CHECKED BY:  
**KJB**

APPROVED BY:  
**KJB**

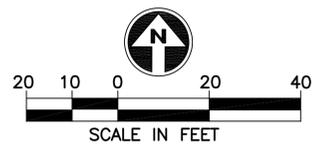
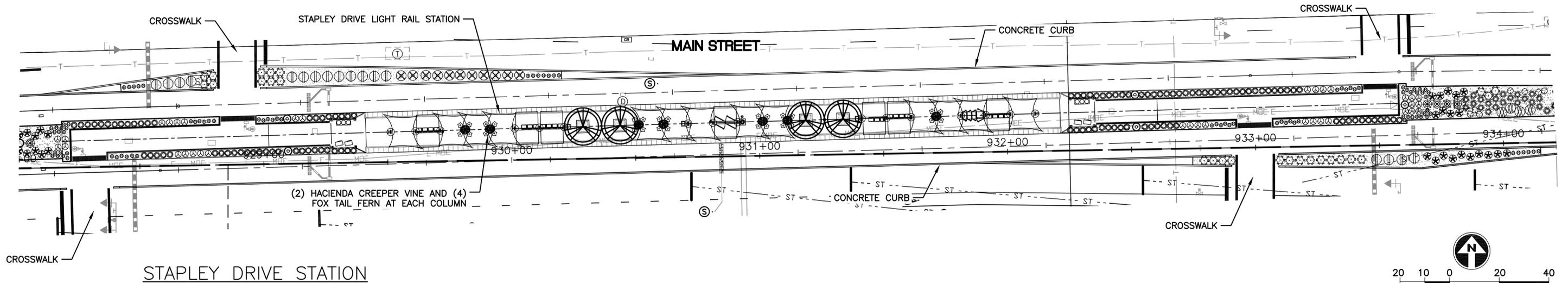
SCALE:  
**1:20**

SUBMITTAL DATE:  
**18 OCT 16**

GILBERT ROAD LRT EXTENSION  
 VALLEY METRO CONTRACT NO. 14011-GRDS CITY OF MESA PROJECT NO. CP0296

**STAPLEY TPSS FACILITY  
 MAIN STREET / ALLEN  
 GRADING & DRAINAGE PLAN**

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 Oct 18, 2016 10:15am By: gzcopal



**CITY OF MESA LANDSCAPE DATA**

DESCRIPTION	REQ'D	PROV'D
LOCAL STREET FRONTAGE (66 LF)		
1 TREE & 4 SHRUBS PER 25 LF		
TREES	3	3
SHRUBS	12	16
COMMERCIAL BUFFER (130 LF)		
3 TREES & 20 SHRUBS PER 100 LF		
TREES	4	4
SHRUBS	26	26

**PLANT SIZE NOTES:**

- 25% OF THE TREES REQUIRED ALONG THE STREET FRONTAGE SHALL BE 36" BOX OR LARGER, WITH A MINIMUM OF 50% OF THE TREES REQUIRED ALONG THE STREET FRONTAGE SHALL BE 24" BOX. NO TREE SHALL BE SMALLER THAN 15 GALLON.
- 50% OF THE TREES IN THE COMMERCIAL LANDSCAPE BUFFER SHALL BE 24" BOX, THE REMAINING SHALL BE A MINIMUM SIZE OF 15 GALLON.
- 50% OF ALL REQUIRED SHRUBS SHALL BE 5 GALLON OR LARGER. NO SHRUBS MAY BE SMALLER THAN 1 GALLON.

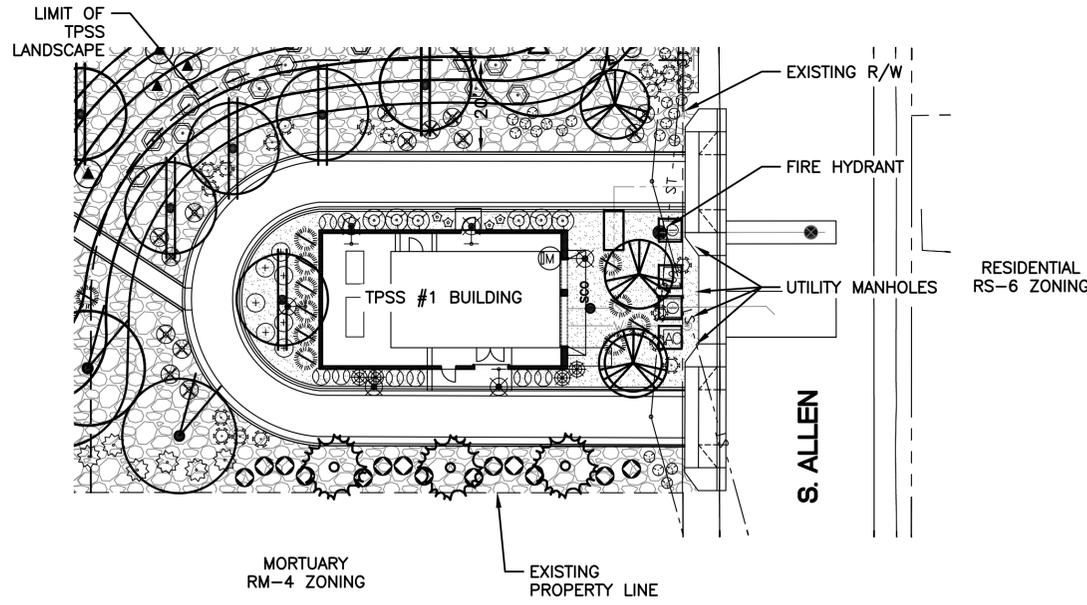
**GENERAL NOTES:**

- ALL LANDSCAPE AREAS TO RECEIVE AN AUTOMATIC DRIP IRRIGATION SYSTEM.
- ALL PLANT MATERIAL SHALL BE INSTALLED PER CITY REQUIREMENTS.
- TREES SHALL BE INSTALLED A MINIMUM OF 18' FROM LIGHT POLES. SHRUBS SHALL BE INSTALLED A MINIMUM OF 7' FROM LIGHT POLES.

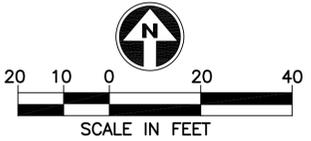
---ST--- = SIGHT DISTANCE TRIANGLE LINES. THERE SHALL BE NO OBSTRUCTIONS TO VISION BETWEEN A HEIGHT OF 3' & 8' WITHIN THE SIGHT DISTANCE TRIANGLE PER CITY OF MESA ENGINEERING & DESIGN MANUAL.

PLANT LEGEND	
SYM.	SPECIES:
<b>TREES: SIZE AS NOTED</b>	
	ACACIA ANEURA: 24" BOX MULGA
	ACACIA ANEURA: 36" BOX MULGA
	DALBERGIA SISSOU: 24" BOX SISSOU TREE
	CHILOPSIS LINEARIS 'BUBBA': 24" BOX 'BUBBA' DESERT WILLOW
	PISTACIA LENTISCUS: 24" BOX MASTIC
	ULMUS PARVIFOLIA 'ALLEE': 24" BOX ALLEE CHINESE ELM
<b>SHRUBS: 5 GALLON</b>	
	BOUGAINVILLEA SPECIES 'LA JOLLA' LA JOLLA BOUGAINVILLEA
	RUELLIA PENINSULARIS BAJA RUELLIA
	TECOMA STANS 'SIERRA APRICOT' SIERRA APRICOT TECOMA
<b>GROUNDCOVERS: 1 GALLON</b>	
	ASPARAGUS DENSIFLORUS 'MYERS' FOXTAIL FERN
	CALLIANDRA HYBRID 'SARITA' SARITA FAIRY DUSTER
	CALLISTEMON VIMALIS 'LITTLE JOHN' LITTLEJOHN BOTTLEBRUSH
	LANTANA X. 'NEW GOLD'* NEW GOLD LANTANA
	ROSMARINUS OFFICINALIS 'HUNTINGTON CARPET' PROSTRATE ROSEMARY
	RUELLIA BRITTONIANA 'KATIE' KATIE RUELLIA

PLANT LEGEND	
SYM.	SPECIES:
<b>ACCENTS: 5 GALLON</b>	
	ASCLEPIAS SUBULATA DESERT MILKWEED
	DASYLIRION WHEELERI DESERT SPOON
	EUPHORBIA ANTISYPHILITICA CANDELILLA
	HESPERALOE FUNIFERA GIANT HESPERALOE
	HESPERALOE PARVIFLORA 'BRAKELIGHTS' BRAKELIGHTS RED YUCCA
	HESPERALOE PARVIFLORA 'YELLOW YUCCA' YELLOW HESPERALOE
	MUHLENBERGIA CAPILLARIS REGAL MIST MUHLENBERGIA
	MUHLENBERGIA EMERSLEYI 'EL TORO' EL TORO DEER GRASS
	YUCCA PALLIDA PALE LEAF YUCCA
<b>VINES:</b>	
	PARTHENOCISSUS SP. 'HACIENDA' HACIENDA CREEPER
<b>MULCH:</b>	
	DECOMPOSED GRANITE: 2" DEPTH, SIZE & GRADATION TO MATCH LIGHT RAIL
	FRACTURED ROCK RIP RAP: 3"-6" IN SIZE. 4" DEPTH. COLOR TO BE DARK BROWN
* 5 GALLON GROUNDCOVERS	



TPSS#1

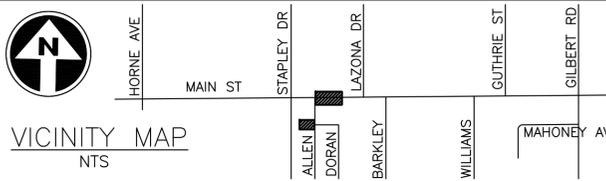


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Dial 8-1-1 or 1-800-STAKE-IT (782-5348) in Maricopa County; (602) 263-1100

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PRELIMINARY- NOT FOR CONSTRUCTION



**J2** Engineering and Environmental Design  
4649 East Cotton Gin Loop, Suite B2  
Phoenix, Arizona 85040  
Phone: 602-438-2221  
Web: www.j2design.us

Professional Landscaper Seal  
No. 23430  
JEFFREY M. ENGELMANN  
Expires: 09/30/2017

**JACOBS**  
101 N. 1st AVENUE, #2600, PHOENIX, AZ 85003  
T 602.253.1200, F 602.253.1202  
WWW.JACOBS.COM

**VALLEY METRO**

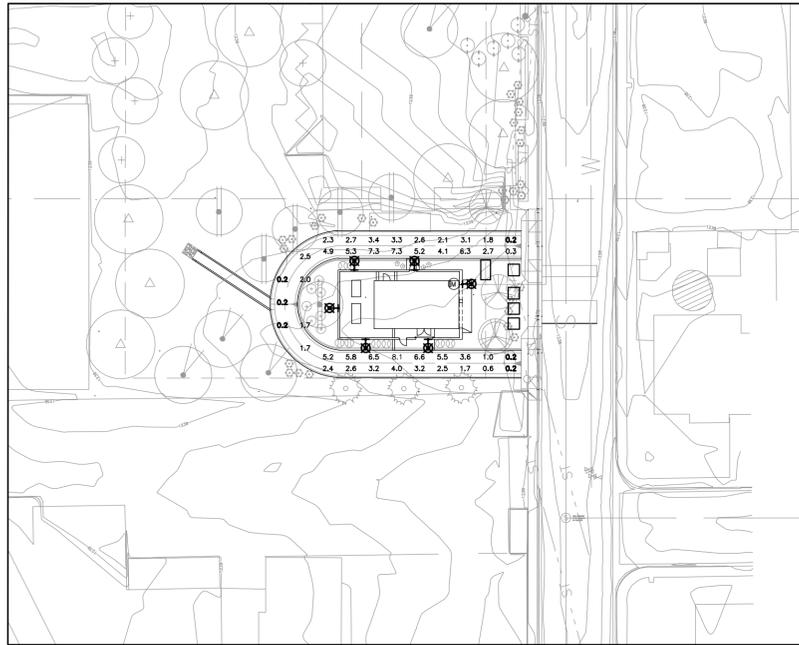
DESIGNED BY: S. PLACKO  
DRAWN BY: S. PLACKO  
CHECKED BY: K. WALLIN  
APPROVED BY: J. ENGELMANN  
SCALE: 1"=20'  
SUBMITTAL DATE: 18 OCT 16

GILBERT ROAD LRT EXTENSION  
VALLEY METRO CONTRACT NO. 14011-GRDS CITY OF MESA PROJECT NO. CP0296

**STAPLEY DRIVE STATION & TPSS #1**  
CONCEPTUAL LANDSCAPE PLAN

DRAWING NO: GRE-LP-DRB-02  
REVISION:  
CITY OF MESA PLAN NO:  
SHEET NO:

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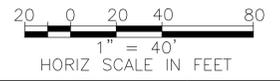


**LEGEND:**

■ EATON — MCGRAW-EDISON (FORMER COOPER LIGHTING)  
 INNOVATIONS CENTER-P3 test report no. P139675  
 lamp(s): (14) 4000K CCT, 70 CRI LEDs  
 candela file 'IST-F02-LED-E1-BL3.ies'  
 14 lamp(s) per luminaire, photometry is absolute  
 Light Loss Factor = 0.900, watts per luminaire = 49  
 mounting height= 8 ft

**PHOTOMETRIC RESULTS:**

TPSS-West  
 43 points  
 HORIZONTAL FOOTCANDLES  
 Average 3.2  
 Maximum 8.1  
 Minimum 0.2  
 Avg:Min 15.85  
 Max:Min 40.50  
 Coef Var 0.69



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PRELIMINARY  
NOT FOR  
CONSTRUCTION

**WRIGHT**  
engineering corporation

ELECTRICAL ENGINEERING AND DESIGN  
165 EAST CHILTON DRIVE • CHANDLER, ARIZONA 85225  
PHONE 480.497.5829 • FAX 480.497.5807  
www.wrightengr.com Project # 15217

SUBMITTED *Clifford Tolman* DATE 9 SEPT 16

Professional Engineer Seal  
57159  
CLIFFORD M. TOLMAN  
One-Signed 10-16-16

**JACOBS**

101 N. 1st AVENUE, #2600, PHOENIX, AZ 85003  
T 602.253.1200, F 602.253.1202  
WWW.JACOBS.COM

APPROVED *Robert H. Hoines* DATE 9 SEPT 16

**VALLEY METRO**

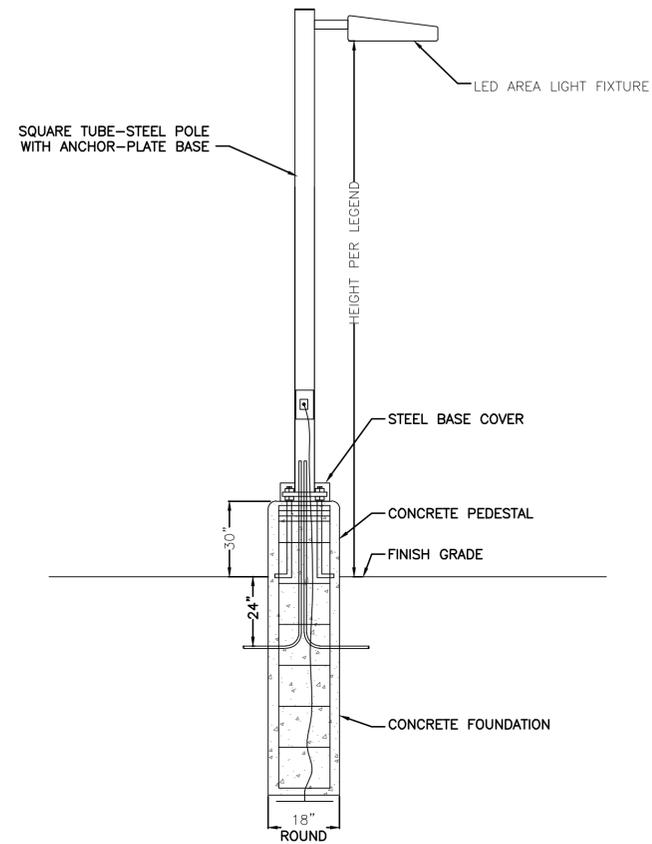
DESIGNED BY: Z. USEVITCH
DRAWN BY: Z. USEVITCH
CHECKED BY: C. TOLMAN
APPROVED BY: C. TOLMAN
SCALE: AS NOTED
SUBMITTAL DATE: 9 SEPT 16

GILBERT ROAD LRT EXTENSION  
VALLEY METRO CONTRACT NO. 14011-GRDS CITY OF MESA PROJECT NO. CP0296

**STAPLEY TPSS FACILITY  
ALLEN / MAHONEY AVENUE  
PHOTOMETRIC ANALYSIS**

DRAWING NO: <b>GRE-PH-DRB-02</b>
REVISION:
CITY OF MESA PLAN NO:
SHEET NO: 1 OF 1

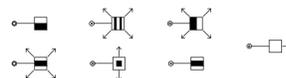
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 zach Oct 20, 2016 10:14am ByColor



**AREA LIGHT DETAIL**

NO SCALE

THIS DETAIL APPLIES TO THE FOLLOWING SYMBOLS ON THE SITE PLAN:



**DESCRIPTION**

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

**SPECIFICATION FEATURES**

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

**Optics**  
Patented, high-efficiency injection-molded AccuLED Optics technology. Optics are precisely designed to shape the distribution maximizing efficiency and application spacing. AccuLED Optics create consistent distributions with the scalability to meet customized application requirements. Offered standard in 4000K (+/- 275K) CCT 70 CRI. Optional 3000K, 5000K and 6000K CCT.

**Electrical**  
LED drivers are mounted to removable tray assembly for ease of maintenance. 120-277V 50/60Hz, 347V 60Hz or 480V 60Hz operation. 480V is compatible for use with 480V Wye systems only. Standard with 0-10V dimming. Shipped standard with Eaton proprietary circuit module designed to withstand 10kV of transient line surge. The Galleon LED luminaire is suitable for operation in -40°C to 40°C ambient environments. For applications with ambient temperatures exceeding 40°C, specify the HA (High Ambient) option. Light Squares are IP66 rated. Greater than 90% lumen maintenance expected at 60,000 hours. Available in standard 1A drive current and optional 600mA, 800mA and 1200mA drive currents (nominal).

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

arm mounting requirement table. Round pole adapter included. For wall mounting, specify wall mount bracket option. **QUICK MOUNT ARM:** Adapter is bolted directly to the pole. Quick mount arm slide into place on the adapter and is secured via two screws, facilitating quick and easy installation. The versatile, patent pending, quick mount arm accommodates multiple drill patterns ranging from 1-1/2" to 4-7/8". Removal of the door on the quick mount arm enables wiring of the fixture without having to access the driver compartment. A knock-out enables round pole mounting.

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

**Warranty**  
Five-year warranty.

**McGraw-Edison**

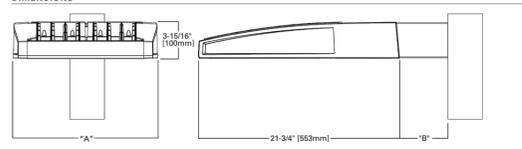
Catalog #	Type
Project	
Comments	Date
Prepared by	



**GLEON GALLEON LED**

1-10 Light Squares  
Solid State LED  
AREA/SITE LUMINAIRE

**DIMENSIONS**

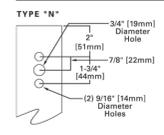


**DIMENSION DATA**

Number of Light Squares	"A" Width (mm)	"B" Standard Arm Length (mm)	"B'" Optional Arm Length (mm)	Weight with Arm (lbs.)	EPA with Arm (Sq. Ft.)
1-4	15-1/2" (394mm)	7" (178mm)	10" (254mm)	32 (15.0 kgs.)	0.86
5-6	21-5/8" (549mm)	7" (178mm)	10" (254mm)	44 (20.0 kgs.)	1.00
7-8	27-5/8" (702mm)	7" (178mm)	10" (254mm)	56 (25.5 kgs.)	1.07
9-10	33-3/4" (857mm)	7" (178mm)	10" (254mm)	63 (28.6 kgs.)	1.12

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

**DRILLING PATTERN**



**CERTIFICATION DATA**

ULcUL Wet Location Listed  
ESD 8001  
LM79 / LM80 Compliant  
3G Vibration Rated  
IP66 Rated

**ENERGY DATA**

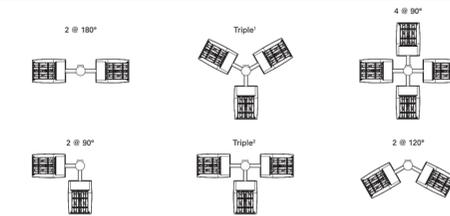
Electronic LED Driver  
50.9 Power Factor  
<20% Total Harmonic Distortion  
120V/277V 50/60Hz  
347V & 480V 60Hz  
40°C Min. Temperature  
40°C Max. Temperature  
50°C Max. Temperature (HA Option)



TD600020EN  
2016-08-23 08:01:04

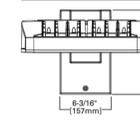
**ARM MOUNTING REQUIREMENTS**

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

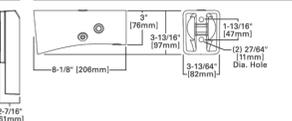


NOTES: 1 Round poles are 3 @ 120°. Square poles are 3 @ 90°. 2 Round poles are 3 @ 90°.

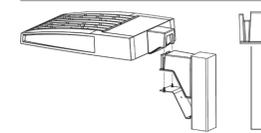
**STANDARD WALL MOUNT**



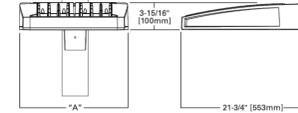
**MAST ARM MOUNT**



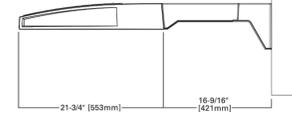
**QUICK MOUNT ARM (INCLUDES FIXTURE ADAPTER)**



**QM Quick Mount Arm (Standard)**



**QMEA Quick Mount Arm (Extended)**



**QUICK MOUNT ARM DATA**

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

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



Eaton  
122 Highway 70 South  
Peachtree City, GA 30089  
P: 770-486-4600  
www.eaton.com/lighting

Specifications and dimensions subject to change without notice.

TD600020EN  
2016-08-23 08:01:04

NOTE: THIS PROJECT SHALL CONFORM TO FTA'S BUY AMERICA REQUIREMENTS.

PRELIMINARY  
NOT FOR  
CONSTRUCTION

**WRIGHT**  
engineering corporation  
ELECTRICAL ENGINEERING AND DESIGN  
165 EAST CHILTON DRIVE • CHANDLER, ARIZONA 85225  
PHONE 480.497.5829 • FAX 480.497.5807  
www.wrightengr.com Project # 15217

SUBMITTED *Clifford Tolman* DATE 9 SEPT 16

Professional Engineer  
57159  
CLIFFORD M. TOLMAN  
One State Street  
Phoenix, AZ 85004

APPROVED *Clifford Tolman* DATE 9 SEPT 16

**JACOBS**  
101 N. 1st AVENUE, #2600, PHOENIX, AZ 85003  
T 602.253.1200, F 602.253.1202  
WWW.JACOBS.COM

APPROVED *John H. Hoines* DATE 9 SEPT 16

**VALLEY METRO**

DESIGNED BY:  
Z. USEVITCH  
DRAWN BY:  
Z. USEVITCH  
CHECKED BY:  
C. TOLMAN  
APPROVED BY:  
C. TOLMAN  
SCALE:  
AS NOTED  
SUBMITTAL DATE:  
9 SEPT 16

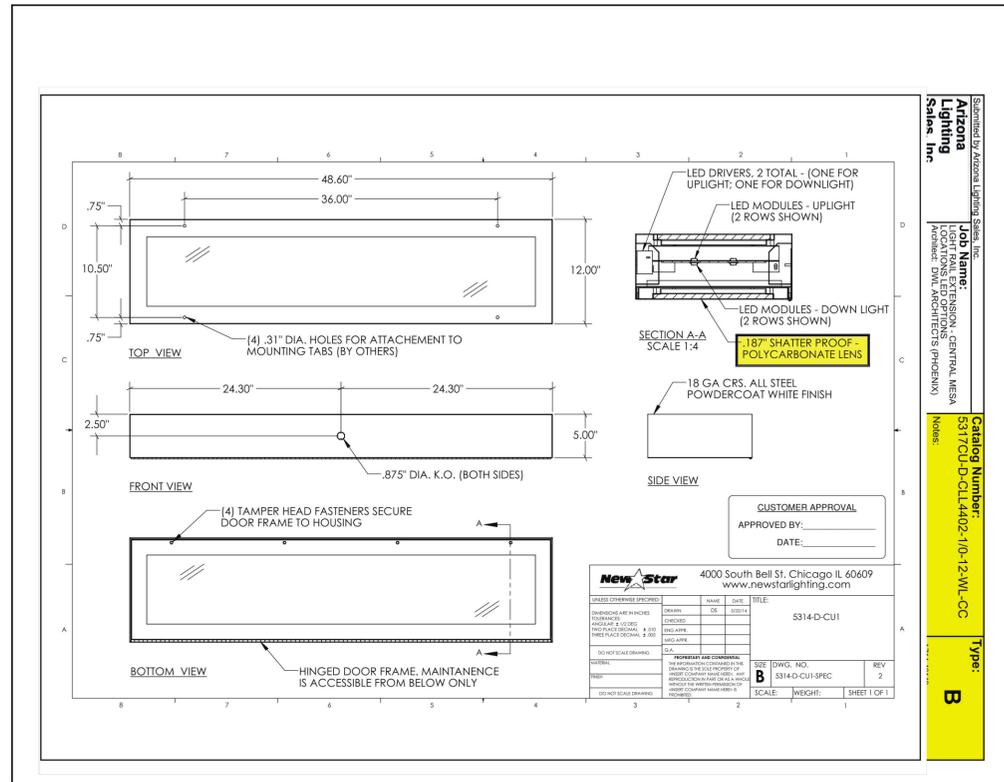
GILBERT ROAD LRT EXTENSION  
VALLEY METRO CONTRACT NO. 14011-GRDS CITY OF MESA PROJECT NO. CP0296

**LIGHTING DETAILS  
AND  
SPECIFICATION SHEETS**

DRAWING NO:  
**GRE-PH-DRB-03**  
REVISION:  
CITY OF MESA PLAN NO:  
SHEET NO:  
1 OF 1

C:\Users\zach\AppData\local\temp\AcPublish\_6544\GRE\_ELO4-ALUX.dwg  
zsch Oct 20, 2016 10:14am ByColor

Call at least two full working days before you begin excavation.  
**ARIZONA 811**  
Arizona Blue Stake, Inc.  
Dial 8-1-1 or 1-800-STAKE-IT (782-5348) in Maricopa County; (602) 263-1100



**BUS SHELTER LIGHT DETAIL**

NO SCALE

THIS DETAIL APPLIES TO THE FOLLOWING SYMBOL ON THE SITE PLAN:



**McGraw-Edison**

**DESCRIPTION**  
 The Impact Elite family of wall luminaires is the ideal complement to site design. Incorporating modular LightBAR™ technology, the Impact Elite luminaire provides outstanding uniformity and energy-conscious illumination. Combined with a rugged construction, the Impact Elite luminaire is the ideal facade and security luminaire for zones surrounding schools, office complexes, apartments and recreational facilities. UL/cUL listed for wet locations.

**SPECIFICATION FEATURES**

**Construction**  
 Heavy-wall, die-cast aluminum housing and removable hinged door frame for precise tolerance control and repeatability. Hinged door inset for clean mating with housing surface and secured via two captive fasteners. Optional tamper-resistant Torx™ head fasteners offer vandal resistant access to the electrical chamber.

**Optics**  
 Choice of six patented, high-efficiency AccuLED Optics™ distributions. Optics are precisely designed to shape the light output, maximizing efficiency and application spacing. AccuLED Optics technology creates consistent distributions with the scalability to meet customized application requirements. Offered Standard in 4000K (+/- 275K) CCT and minimum 70 CRI. Optional 3000K CCT, 5000K CCT and 5700K CCT.

**Electrical**  
 LED drivers mount to die-cast aluminum back housing for optimal heat sinking, operation efficacy, and prolonged life. Standard drivers feature electronic universal voltage (120-277V 50/60Hz), 347V 60Hz or 480V 60Hz operation, greater than 0.9 power factor, less than 20% harmonic distortion, and are suitable for operation in -40°C to 40°C ambient environments. All fixtures are shipped standard with 10KV/10KA common - and differential - mode surge protection. LightBARs feature an IP68 enclosure rating and maintain greater than 95% lumen maintenance at 60,000 hours per IESNA TM-21. Emergency egress options for -20°C ambient environments and occupancy sensor available.

**Mounting**  
 Gasketed and zinc plated rigid steel mounting attachment fits directly to 4" j-box or wall with the Impact Elite "Hook-N-Lock" mechanism for quick installation. Secured with two captive corrosion resistant black oxide coated allen head set screws concealed but accessible from bottom of fixture.

**Finish**  
 Cast components finished in a five-stage super TGIC polyester powder coat paint, 2.5 mil nominal thickness for superior protection against fade and wear. Standard colors include black, bronze, grey, white, dark platinum and graphite metallic. RAL and custom color matches available. Consult the McGraw-Edison Architectural Colors brochure for the complete selection.

**Warranty**  
 Five-year warranty.

**Dimensions**

**Cylinder**  
 18" (457mm) x 9" (229mm) x 7" (178mm)

**Quarter Sphere**  
 18" (457mm) x 9" (229mm) x 9" (229mm)

**Trapezoid**  
 16-1/2" (419mm) x 9" (229mm) x 7" (178mm)

**Wedge**  
 16-1/2" (419mm) x 8-1/4" (210mm) x 9" (229mm)

**HOOK-N-LOCK MOUNTING**

**ISC/ISS/IST/ISW**  
**IMPACT ELITE LED**

**1 - 2 LightBARs**  
**Solid State LED**

**WALL MOUNT LUMINAIRE**

**CERTIFICATION DATA**  
 UL/cUL Listed  
 LM79 / LM80 Compliant  
 IP68 LightBARs  
 ISO 9001  
 DesignLights Consortium® Qualified\*

**ENERGY DATA**  
 Electronic LED Driver  
 >0.9 Power Factor  
 <20% Total Harmonic Distortion  
 120-277V/50 & 60Hz, 347V/60Hz, 480V/60Hz  
 -40°C Minimum Temperature  
 40°C Ambient Temperature Rating

**SHIPPING DATA**  
 Approximate Net Weight:  
 18 lbs. (8 kgs.)

**FT&N**  
 Powering Business Worldwide

**www.designlights.org**

**TDS14002EN**  
 2015-06-03 10:20:35

**TPSS BUILDING LIGHT DETAIL**

NO SCALE

THIS DETAIL APPLIES TO THE FOLLOWING SYMBOL ON THE SITE PLAN:



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 zach Oct 20, 2016 10:14am ByColor

Call at least two full working days before you begin excavation.

**ARIZONA 811**  
 Arizona Blue Stake, Inc.

Dial 8-1-1 or 1-800-STAKE-IT (782-5348) in Maricopa County; (602) 263-1100

NOTE: THIS PROJECT SHALL CONFORM TO FTA'S BUY AMERICA REQUIREMENTS.

PRELIMINARY  
 NOT FOR  
 CONSTRUCTION

**WRIGHT**  
 engineering corporation  
 ELECTRICAL ENGINEERING AND DESIGN  
 165 EAST CHILTON DRIVE • CHANDLER, ARIZONA 85225  
 PHONE 480.497.5829 • FAX 480.497.5807  
 www.wrightenr.com Project # 15217

SUBMITTED: *Clifford Tolman* DATE: 9 SEPT 16

Professional Engineer  
 57159  
 CLIFFORD M. TOLMAN  
 One State St. Phoenix, AZ 85004  
 (602) 253-1200

APPROVED: *Clifford M. Tolman* DATE: 9 SEPT 16

**JACOBS**

101 N. 1st AVENUE, #2600, PHOENIX, AZ 85003  
 T 602.253.1200, F 602.253.1202  
 www.jacobs.com

APPROVED: *Robert H. Hoines* DATE: 9 SEPT 16

**VALLEY METRO**

DESIGNED BY: Z. USEVITCH  
 DRAWN BY: Z. USEVITCH  
 CHECKED BY: C. TOLMAN  
 APPROVED BY: C. TOLMAN  
 SCALE: AS NOTED  
 SUBMITTAL DATE: 9 SEPT 16

GILBERT ROAD LRT EXTENSION  
 VALLEY METRO CONTRACT NO. 14011-GRDS CITY OF MESA PROJECT NO. CP0296

**LIGHTING DETAILS AND SPECIFICATION SHEETS**

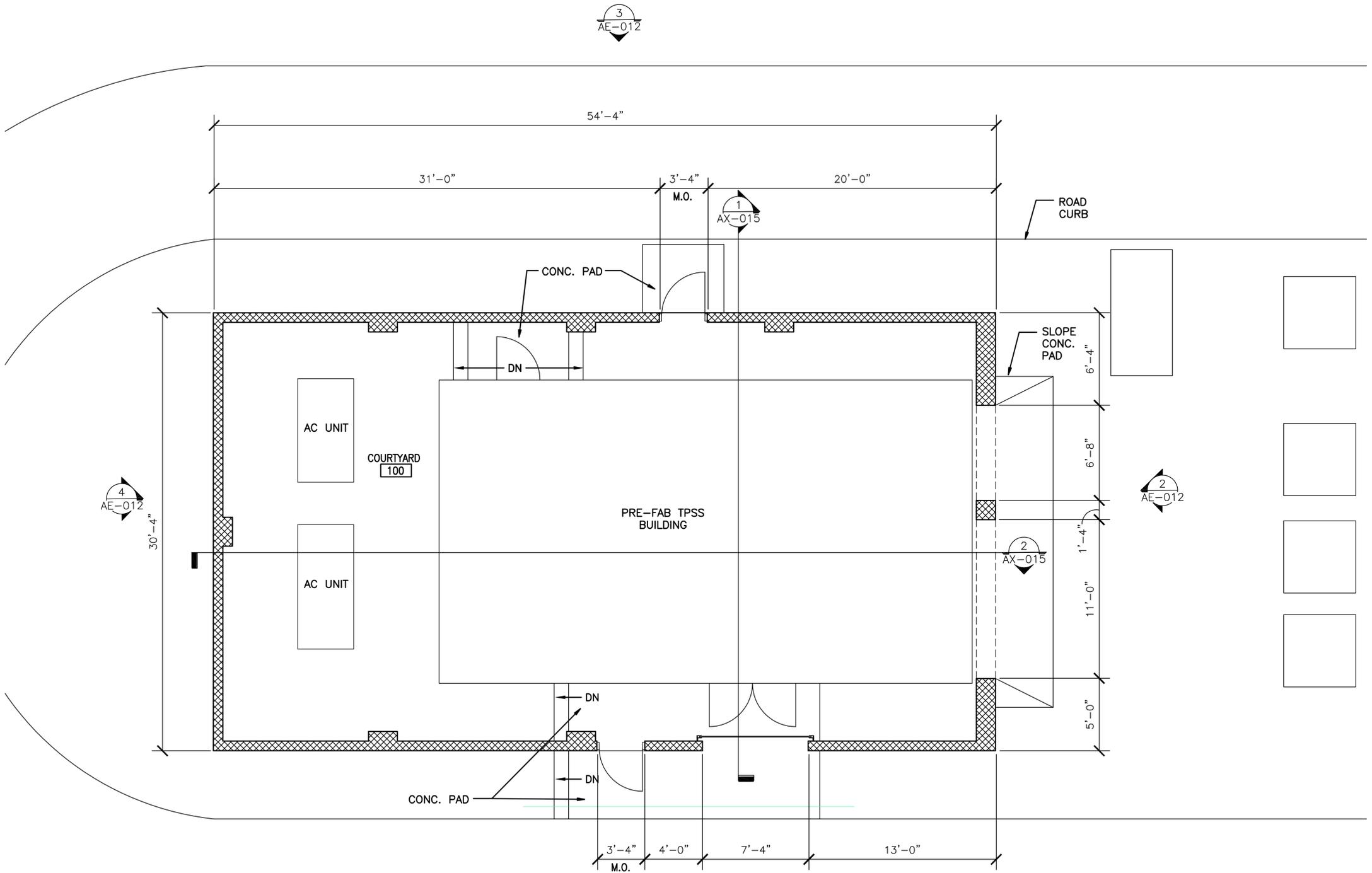
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 REVISION: -  
 CITY OF MESA PLAN NO: -  
 SHEET NO: 1 OF 1



**BUILDING FINISHES KEYNOTES**

KEYED NOTES
1 CONCRETE PAD
2 GARBAGE TOTES
3 GROUND FAVE CMU - 1
4 SPLIT FACE CMU - 1
5 SPLIT FACE CMU - 2
6 FREE-AIR LOUVERS
7 STOREFRONT SYSTEM
8 STOREFRONT INTEGRAL SUNSHADE
9 STEEL BEAMS
10 8" CMU WALL

ALLEN ROAD



**1 TPSS FLOOR PLAN**  
1/4" = 1'-0"

PRELIMINARY  
NOT FOR  
CONSTRUCTION

NOTE: THIS PROJECT MUST CONFORM TO FTA'S BUY AMERICA REQUIREMENTS.

P:\469002 Jacobs\_VM Gilbert Rd Lt Rail Ext\16 CAD\Dwg\Arch\DRB (9-13-2016)\Buildings\GRE-AG-DRB-51.dwg  
By:Color  
Sep 08, 2016 6:20pm

Call at least two full working days before you begin excavation.

Arizona Blue Stake, Inc.  
Dial 8-1-1 or 1-800-STAKE-IT (782-5348) in Maricopa County: (602) 263-1100

REV	DATE	BY	DESCRIPTION
A	10/30/15	-	30% SUBMITTAL
B	04/18/16	-	60% SUBMITTAL
C	06/27/16	-	DRB APPLICATION
D	09/13/16	-	DRB APPLICATION

464 South Farmer Avenue, Suite 101, Tempe, AZ 85281  
www.wendelcompanies.com p.877.293.6335  
Wendel WD Architecture, Engineering, Surveying and Landscape Architecture P.C.

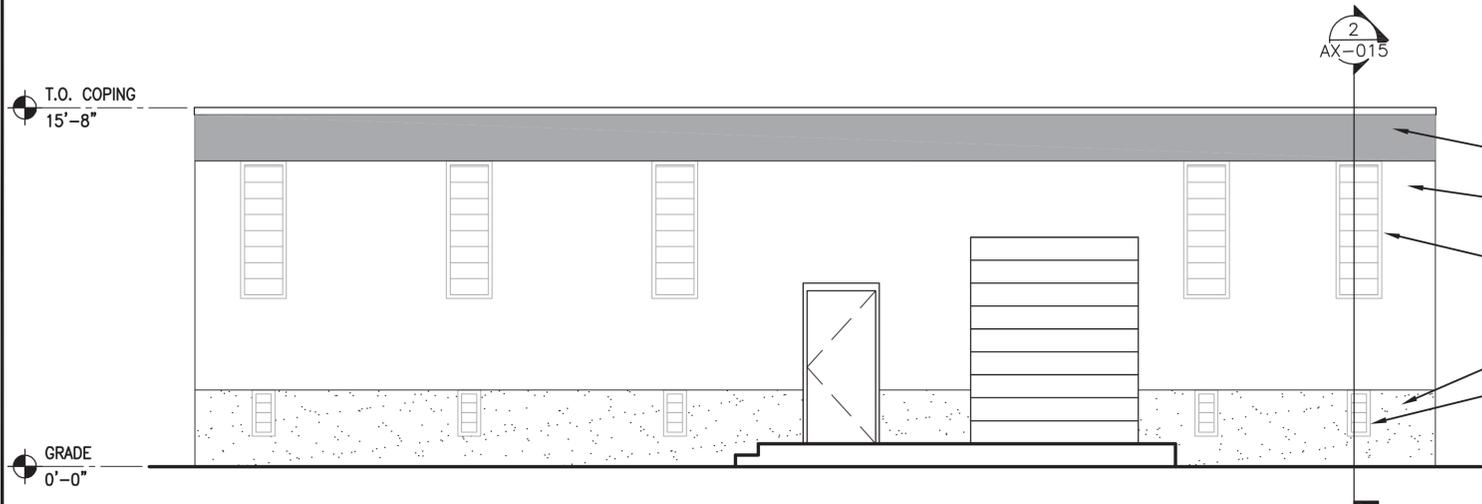
101 N. 1st AVENUE, #2600, PHOENIX, AZ 85003  
T 602.253.1200, F 602.253.1202  
WWW.JACOBS.COM

DESIGNED BY: J. HILL	GILBERT ROAD LRT EXTENSION VALLEY METRO CONTRACT NO. 14011-GRDS CITY OF MESA PROJECT NO. CP0296
DRAWN BY: D. HOPKINS	
CHECKED BY: -	
APPROVED BY: -	
SCALE: AS NOTED	STAPLEY DRIVE TRACTION POWER SUBSTATION FLOOR PLAN
SUBMITTAL DATE: 13 SEP 16	

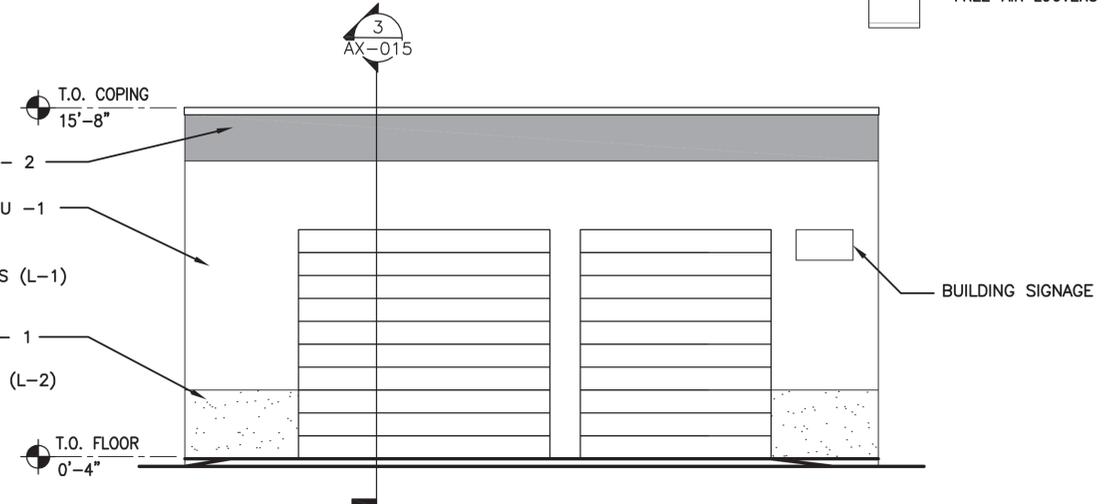
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REVISION: D
CITY OF MESA PLAN NO: -
SHEET NO: -

**LEGEND**

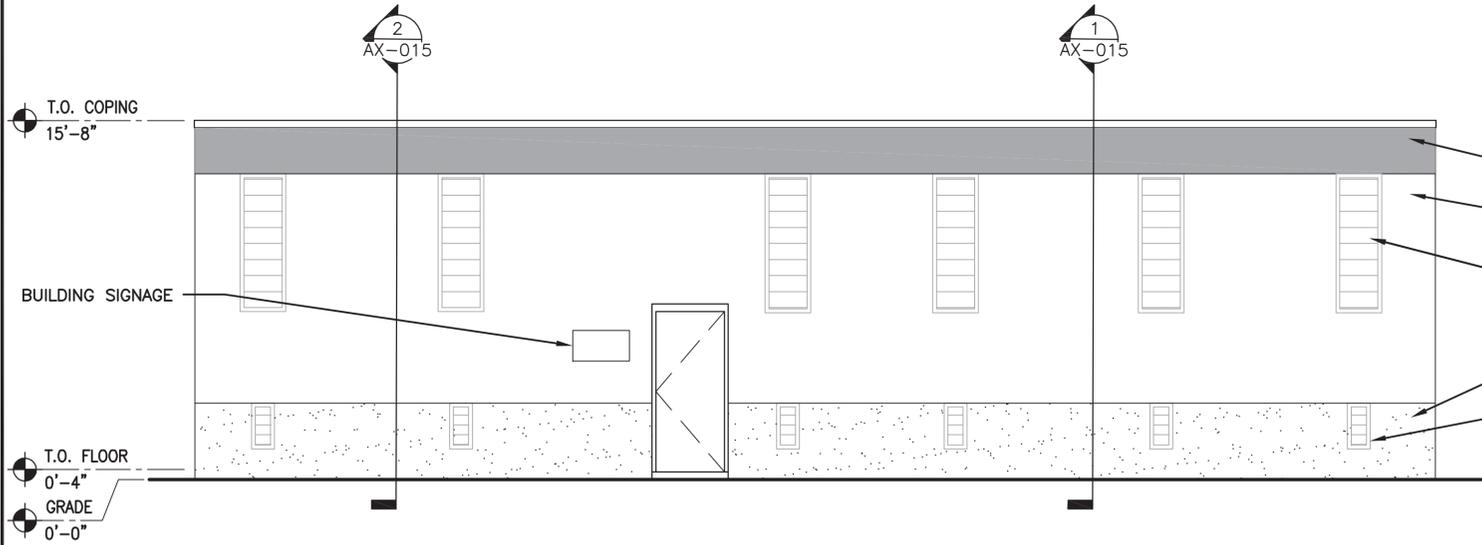
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-  - SPLIT FACE CMU - 1
-  - SPLIT FACE CMU - 2
-  - FREE-AIR LOUVERS



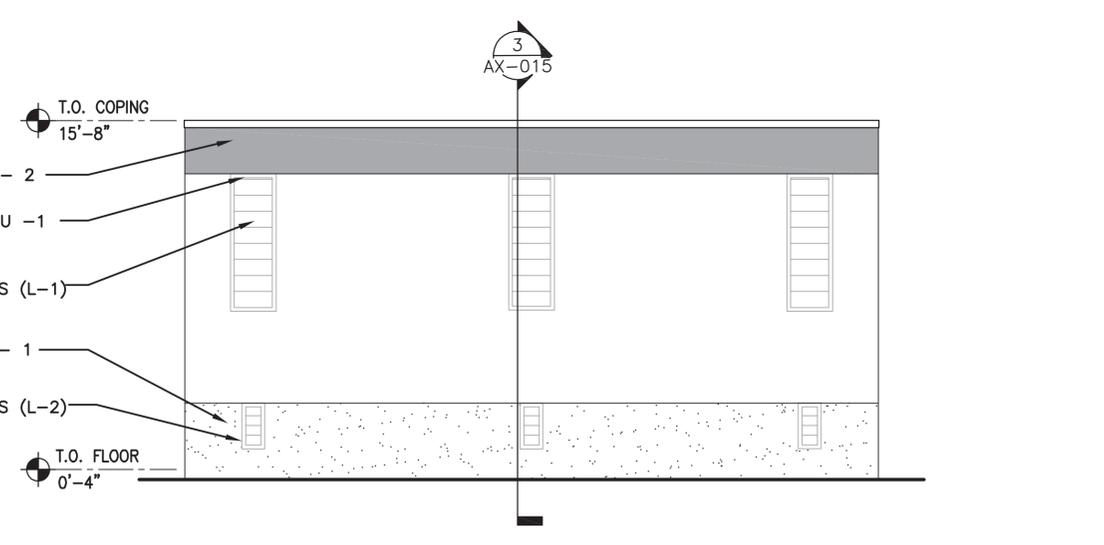
**1 TPSS SOUTH ELEVATION**  
1/4" = 1'-0"



**2 TPSS EAST ELEVATION**  
1/4" = 1'-0"



**3 TPSS NORTH ELEVATION**  
1/4" = 1'-0"



**4 TPSS WEST ELEVATION**  
1/4" = 1'-0"

Call at least two full working days before you begin excavation.

**ARIZONA 811**  
Arizona Blue Stake, Inc.  
Dial 8-1-1 or 1-800-STAKE-IT (782-5348) in Maricopa County; (602) 263-1100

NOTE: THIS PROJECT SHALL CONFORM TO FTA'S BUY AMERICA REQUIREMENTS PER 49 CFR PART 661.

REV	DATE	BY	DESCRIPTION
A	04/18/16	-	60% SUBMITTAL
B	09/29/16	-	90% SUBMITTAL

**wendel**  
464 South Farmer Avenue, Suite 101, Tempe, AZ 85281  
www.wendelcompanies.com p:877.293.6335  
Wendel W.D. Architecture, Engineering, Surveying and Landscape Architecture P.C.

PRELIMINARY  
NOT FOR  
CONSTRUCTION

**JACOBS**  
101 N. 1st AVENUE, #2600, PHOENIX, AZ 85003  
T 602.253.1200, F 602.253.1202  
WWW.JACOBS.COM

**VALLEY METRO**

DESIGNED BY:  
J. HILL  
DRAWN BY:  
D. HOPKINS  
CHECKED BY:  
J. HILL  
APPROVED BY:

GILBERT ROAD LRT EXTENSION  
VALLEY METRO CONTRACT NO. 14011-GRDS CITY OF MESA PROJECT NO. CP0296

**STAPLEY DRIVE TRACTION POWER  
SUBSTATION ELEVATIONS**

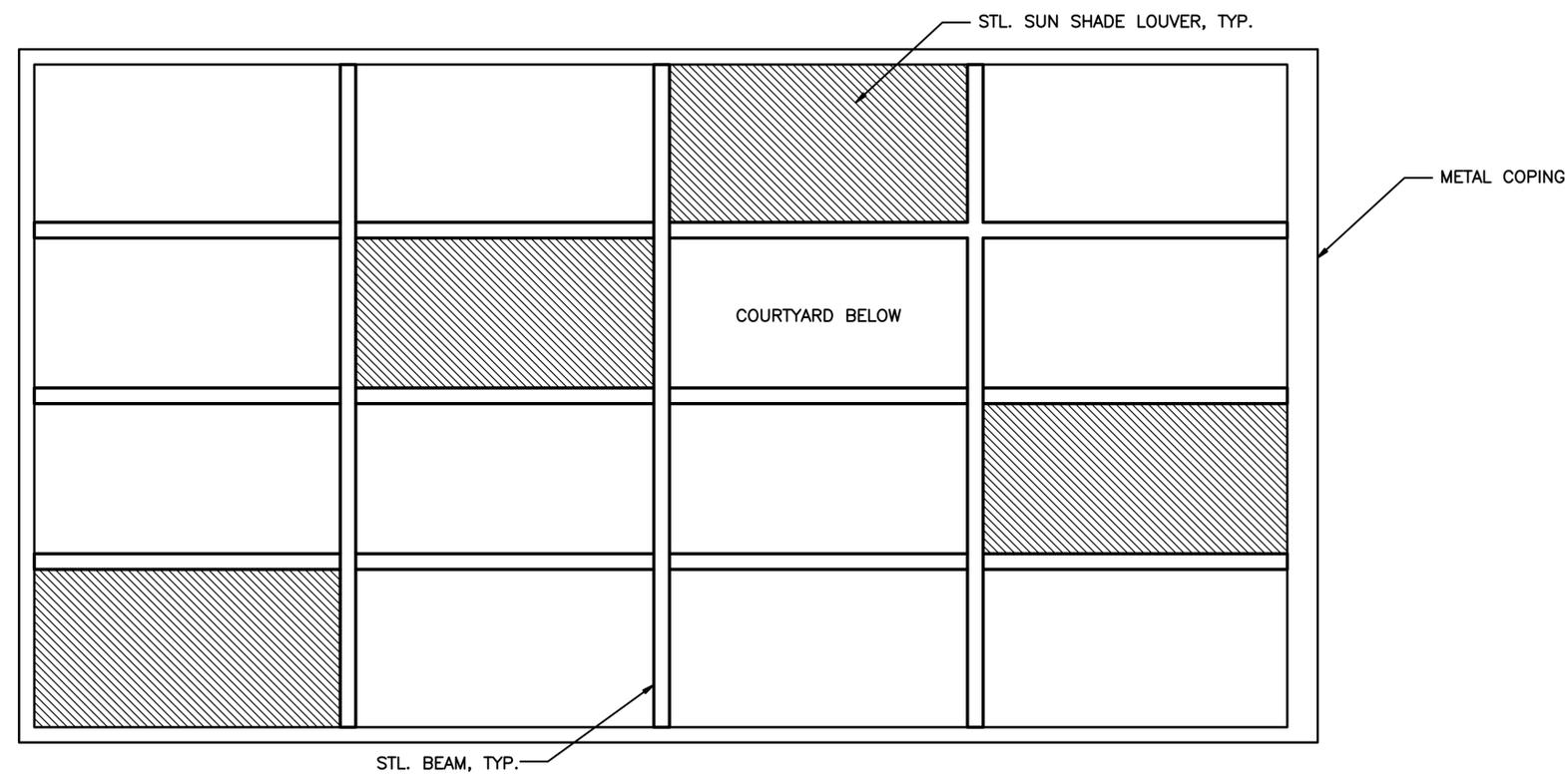
DRAWING NO:  
**GRE-AE-312**  
REVISION:  
B  
CITY OF MESA PLAN NO:  
-  
SHEET NO:  
863

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DH2 Sep 20, 2016 6:56pm By:Color



**BUILDING FINISHES KEYNOTES**

KEYED NOTES	
1	CONCRETE PAD
2	GARBAGE TOTES
3	GROUND FAVE CMU - 1
4	SPLIT FACE CMU - 1
5	SPLIT FACE CMU - 2
6	FREE-AIR LOUVERS
7	STOREFRONT SYSTEM
8	STOREFRONT INTEGRAL SUNSHADE
9	STEEL BEAMS
10	8" CMU WALL



**1 TPSS ROOF PLAN**  
1/4" = 1'-0"



NOTE: THIS PROJECT MUST CONFORM TO FTA'S BUY AMERICA REQUIREMENTS.

PRELIMINARY  
NOT FOR  
CONSTRUCTION

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REV	DATE	BY	DESCRIPTION
A	10/30/15	-	30% SUBMITTAL
B	04/18/16	-	60% SUBMITTAL
C	06/27/16	-	DRB APPLICATION
D	09/13/16	-	DRB APPLICATION

DESIGNED BY: J. HILL
DRAWN BY: D. HOPKINS
CHECKED BY: -
APPROVED BY: -
SCALE: AS NOTED
SUBMITTAL DATE: 13 SEP 16

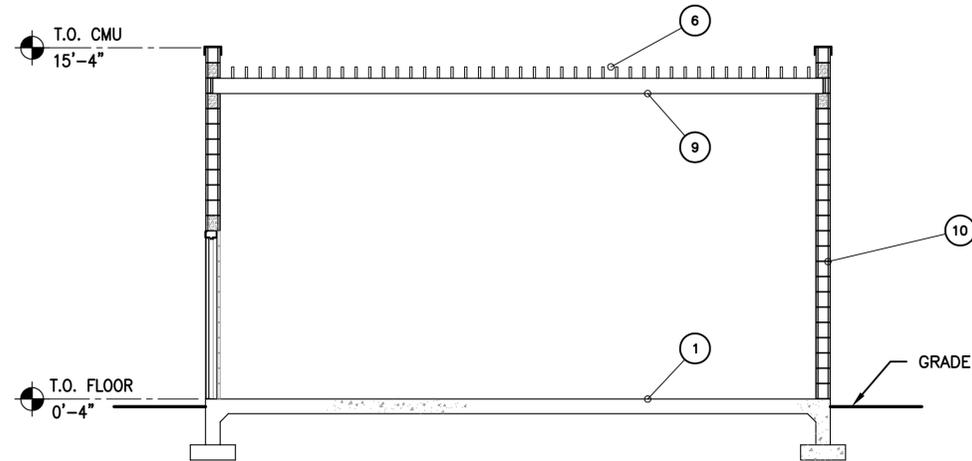
GILBERT ROAD LRT EXTENSION  
VALLEY METRO CONTRACT NO. 14011-GRDS CITY OF MESA PROJECT NO. CP0296

**STAPLEY DRIVE TRACTION POWER  
SUBSTATION ROOF PLAN**

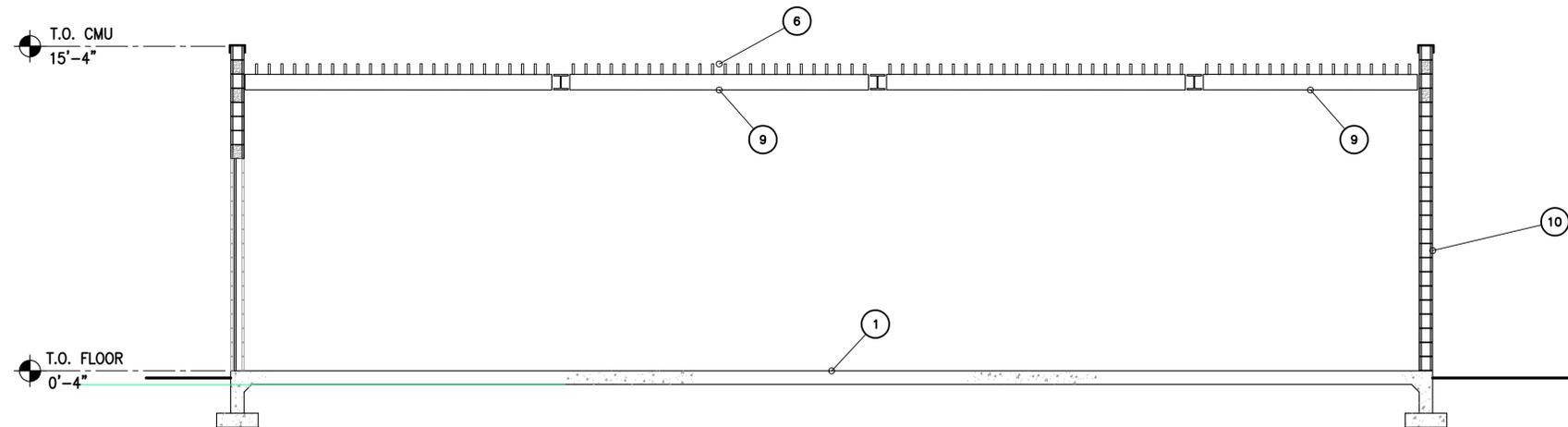
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REVISION: D
CITY OF MESA PLAN NO: -
SHEET NO: -

**BUILDING FINISHES KEYNOTES**

KEYED NOTES	
1	CONCRETE PAD
2	GARBAGE TOTES
3	GROUND FAVE CMU - 1
4	SPLIT FACE CMU - 1
5	SPLIT FACE CMU - 2
6	FREE-AIR LOUVERS
7	STOREFRONT SYSTEM
8	STOREFRONT INTEGRAL SUNSHADE
9	STEEL BEAMS
10	8" CMU WALL



**1 SECTION**  
1/4" = 1'-0"



**2 SECTION**  
1/4" = 1'-0"

PRELIMINARY  
NOT FOR  
CONSTRUCTION

NOTE: THIS PROJECT MUST CONFORM TO FTA'S BUY AMERICA REQUIREMENTS.

Call at least two full working days before you begin excavation.



REVISIONS		
REV	DATE	DESCRIPTION
A	10/30/15	30% SUBMITTAL
B	04/18/16	60% SUBMITTAL
C	06/27/16	DRB APPLICATION
D	09/13/16	DRB APPLICATION

464 South Farmer Avenue, Suite 101, Tempe, AZ 85281  
www.wendelcompanies.com p.877.293.6335  
Wendel WD Architecture, Engineering, Surveying and Landscape Architecture P.C.

101 N. 1st AVENUE, #2600, PHOENIX, AZ 85003  
T. 602.253.1200, F. 602.253.1202  
WWW.JACOBS.COM

DESIGNED BY: J. HILL
DRAWN BY: D. HOPKINS
CHECKED BY: -
APPROVED BY: -
SCALE: AS NOTED
SUBMITTAL DATE: 13 SEP 16

GILBERT ROAD LRT EXTENSION  
VALLEY METRO CONTRACT NO. 14011-GRDS CITY OF MESA PROJECT NO. CP0296

**STAPLEY DRIVE TRACTION POWER  
SUBSTATION SECTIONS**

DRAWING NO: <b>GRE-AX-DRB-53</b>
REVISION: D
CITY OF MESA PLAN NO: -
SHEET NO: -

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**Recommended color enhancement palette for Gilbert Road LRT corridor (FRP panels, artwork)**

Note: These colors are representative of the plant bloom colors on following page.

SW 6724 Mesquin Green (Recommended accent color)	SW 6716 Dancing Green Gilbert Station Upper FRP Panels	SW 6908 Fun Yellow Gilbert Station Upper FRP Panels	SW 6771 Bathe Blue Gilbert Station Upper FRP Panels	Pantone 660 COM Standard Color Gilbert Station Lower FRP Shade	Pantone 392 COM Standard Color Stapley Station Lower FRP Shade

Option B:

SW 7041 Van Dyke Brown	SW 6108 Latte

Color Option E  
10.5.16

Stapley Station-Perspective Elevation





## Design Review- Gilbert Road LRT Extension Color Recommendations

### Recommended Station Paint Color

LRV (Light Reflectance Value): 46

STRUCTURE  
HIGHLIGHT  
COLOR



SW 6108  
Latte

PRIMARY  
STRUCTURE  
COLOR



SW 7041  
Van Dyke Brown

### Existing CME Station Color

LRV: 8

### Recommended PNR Bus Shelter Color/Site Amenity Colors



SW 7035  
Aesthetic White



SW 6724  
Mesclun Green  
(Recommended accent color)

### TPSS Building

CMU Colors



Ground Face (Accent)  
Mojave Brown

Ground Face (Field)  
Glacial White

Split Face (Base)  
Dark Cocoa

### Storefront/Louvers



Brushed Aluminum

### Recommended color enhancement palette for Gilbert Road LRT corridor (FRP panels, artwork)

Note: These colors are representative of the plant bloom colors on following page.



SW 6716  
**Dancing Green**  
Gilbert Station  
Upper FRP Panels



SW 6908  
**Fun Yellow**  
Gilbert Station  
Upper FRP Panels



SW 6771  
**Bathe Blue**  
Gilbert Station  
Upper FRP Panels



**Pantone 660**  
COM Standard Color  
Gilbert Station  
Lower FRP Shade



**Pantone 392**  
COM Standard Color  
Stapley Station  
Lower FRP Shade

**Plant Bloom Colors:**



SW 6724  
Mesclun Green



SW 6908  
Fun Yellow



SW 6902  
Decisive Yellow



SW 6869  
Stop



SW 6771  
Bathe Blue



Simmondsia chinensis



Yellow hesperaloe



Lantana x 'new gold'



Trailing fairy duster



SW 6866  
Heartthrob



SW 6600  
Enticing Red



SW 6908  
Fun Yellow



SW 6716  
Dancing Green



SW 6452  
Inland



Hesperaloe parviflora brakelights



Yellow hesperaloe



Candelilla



Pistacia lentiscus tree