

# Transbay Transit Center San Francisco, CA CM/GC Contract No. 08-04-CMGC-000 Project No. 30100

# BID PACKAGE TG13.1 ADDENDUM # 4

**DATE**: 06/18/2015

TO: All Qualified Bidders

FROM: Webcor/Obayashi Joint Venture

BID DUE DATE: June 30, 2015 at 2:00 p.m.

#### COMMUNICATION WITH WEBCOR/OBAYASHI JOINT VENTURE

At no time during the bid process (defined as the time between issuance of the IFB until award of Subcontract to Trade Subcontractor) shall Bidders contact any person(s) or staff of the TJPA, TJPA Program Management/Program Controls (PMPC) team, Webcor/Obayashi Joint Venture, CM Oversight (CMO), or other TJPA Consultants regarding the IFB. The only contact is for submission of questions using the contact directions as described in Exhibit A, Section III. "Communication with Webcor Obayashi Joint Venture".

The QBD and Pre-bid Request for Substitutions submission time frame expired on **Tuesday**, **June 9**, **2015** at **2:00 p.m.** 

Bids are due on Tuesday, June 30, 2015 at 2:00 p.m.

Reference the Project Bidding Manual, Section III.B.1 regarding document availability and how to obtain the documents.

#### MODIFIED DOCUMENTS PER ADDENDUM #4

The items listed below make up the TG13.1 – Roof Park Landscaping and Irrigation Construction Bid Package Addendum #4. This Addendum shall supersede all previously issued Bidding Documents. All other conditions and requirements remain unchanged.

- a. Exhibit A Trade Subcontractor Bid Package Manual and Forms Subcontracts #301001301, Addendum #4, dated 06/18/2015.
  - 1) Revised Section II. "Key Dates For Bidding Process"
  - 2) Revised Section IV. "Scope of the Package and Bid Item Information"
  - 3) Revised Section VII. "Contract Document List"
- b. Exhibit I Schedule, date 6/18/2015
- c. Exhibit M Q&A Log, dated 06/17/2015
- d. Questions on Bid Documents (QBD) Responses
  - 1) The attached IFB Questions and Answers are incorporated into the Bid Documents by this Addendum.

#### END OF ADDENDUM #4

## TG13.1 – Roof Park Landscaping and Irrigation

Questions are numbered in the order received. Numbers missing in the sequence will be answered in a future set.

Question No.	Submission Date	Drawing No.	Document/ Spec. No.	Question	Response
TG13.1- 001	3/20/2015		Exhibit A for TG13.1, VII Contract Document List	We are requesting information as to where the Contract Documents, highlighted on the list below, can be obtained.	The SFPUC IFB ES Drawings, TG12.2 - OCS, and SFPUC IFB ES Drawings Revision 1 may be found in the plan rooms.
TG13.1- 002	3/20/2015		Exhibit A for TG13.1, Reference RFIs	We are requesting information as to where the Reference RFIs listed below, can be obtained.	Answers to the P1-RFIs are located in the log at the link shown in the Exhibit A, VII Contract Document List. The T-RFI answers are located at the link shown in the Exhibit A, VII Contract Document List and are updated on a weekly basis.
TG13.1- 003	3/20/2015	L1-7634 details 1,3, and 4	08 05 13, 1.5.A. 08 05 13	As mentioned at the Pre-Bid meeting held on Wednesday, March 18, 2015, we are requesting information on any firms who have previous knowledge with Structural Analysis and Design using a recognized 3-dimensional finite element program using geometric and material non-linear analysis.	Melissa Gradecki Larson Engineering, Inc. 118 S. Clinton Street, Suite 470 Chicago, IL 60661 Phone: 312 345 0540

## TG13.1 – Roof Park Landscaping and Irrigation

Questions are numbered in the order received. Numbers missing in the sequence either have been answered in a previous response set or will be answered in a future set.

Question No.	Submission Date	Drawing No.	Document/ Spec. No.	Question	Response	
TG13.1- 006	3.25.2015	L1-8633		Clarify the dimensions of L1-8633. The dimensions do not appear to be correct. For example, the 1 1/2" TYP dimension for the total height of 4" stone slab and grout bed does not appear to be correct. Also, the 2 1/2" TYP dimension for the concrete stair stringer supporting the 1'-6" stone tread does not appear to be correct either. Please provide an updated detail with revised dimensions.	Please refer to SKLA 380 for clarification on the stone stair dimensions.	
TG13.1- 027	3.25.2015	L1-3607		Confirm that the high point at the center of the north and south circular planters is 87.78 and not 86.78.	Confirmed. The high point at the center of the north and south circular planters is 87.78. Please refer to SKLA 383.1 for the updated spot elevations.	
TG13.1- 030	3.25.2015		32 14 41, 2.3	Specification 32 14 41, section 2.3.A and 2.3.B refer to two different stone colors for Cobblestone Pavers. Clarify which stone color is meant to be priced and installed.	The stone colors to be priced are Brittainia Black and Gray Salt Granite, in accordance with Specification Section 32 14 41 paragraphs 2.3.A.2 and 2.3.B.2, respectively.	
TG13.1- 031	3.25.2015		32 14 40, 2.3	Specification 32 14 40, section 2.3.A and 2.3.B refer to two different stone colors for Cobblestone Pavers. Clarify which stone color is meant to be priced and installed.	The stone colors to be priced are Brittainia Black and Gray Salt Granite, in accordance with Specification Section 32 14 40 paragraph 2.3.A.4 and 2.3.B.4, respectively.	
TG13.1- 035	3.30.2015		Project Manual	Per Project Bidding Manual – sheet 25 of 50 - 25. Cranes/Hoisting – it states that the Landscape contractor is to utilize the existing Webcor/Obayashi Joint Venture supplied crane. Per Exhibit A 'Revised & Reissued for Addendum #1 – 2. 'General Work – IV. A - 25. Cranes and hoisting, it states the Landscape Contractor is responsible for all craning and hoisting. Please clarify which is correct.	The TG13.1 Trade Subcontractor "shall provide a crane for all their hoisting activities" as stated in the TG13.1 Roof Park Landscaping and Irrigation Exhibit A, Section IV. Trade Subcontractor Requirements, A. General Information - Supplemental Instructions, 25. Cranes/Hoisting.	

Question No.	Submission Date	Drawing No.	Document/ Spec. No.	Question	Response
TG13.1- 041	4.2.2015	05 60 00 2.3 N, L1-4603 and L1-4606		In Exhibit A-Trade Package #TG13.1 Roof Park Landscaping and Irrigation Package, 3. Base Bid Item Scope; Roof Park Miscellaneous Metals Item 4 states "Furnish and install all trench drains and stainless steel liners for trench drains on the Roof Park Level with all associated components/embed." We are requesting clarification if this is to include the Trench Drains at the Elliptical Skylights? If so can you please provide location as to where the Details for this trench drain can be found?	The trench drains around the elliptical skylights are not part of the TG13.1 scope. The trade subcontractors for TG13.1 and TG08.11R Glass Curtain Walls and Skylights are to coordinate on the connection to the subsurface drainage system provided by TG13.1.
TG13.1- 043	4.2.2015			Due to the complexity of the project, is it possible to have a 3 week bid extension?	An extension is being considered.
TG13.1- 044	4.2.2015	L-0006		Per Plan sheet L-0006- the irrigation legend states that the backflow is shown on plumbing drawings but it does not state who is responsible for providing and installing this item. Please clarify if this is in the plumber's contract.	The backflow preventers are supplied and installed by the TG10.2 Plumbing Trade Subcontractor. The TG13.1 Trade Subcontractor needs to coordinate with the TG10.2 Plumbing Trade Subcontractor. See TG10.2 Exhibit A Section VI, Number 3. Base Bid Item Scope, Landscape & Irrigation at Ground and Roof Park Levels - Trade Scope Delineations, pages 15 and 16. Refer to the attachment.





This Trade Subcontractor is also responsible to seal all pipe sleeves and to repair or replace any existing waterproofing damaged by this Trade Subcontractor. To maintain contract waterproofing warranty for damaged material all repairs and/or replacement shall be as directed by Webcor/Obayashi Joint Venture and conducted by the Waterproofing Trade Subcontractor that installed the original work (Best Contracting Services @ 510-886-7240 or bestcontracting.com).

D

## **Future Retail and Tenant Spaces**

Provide the system rough-ins for future installation as shown and/or specified.

#### <u>D</u> <u>Pumps, Pans & Piping</u>

Furnish and install any condensate pans, piping, and/or pumps required for specified systems as required. Coordinate with Electrical Trade Subcontractor for coordinated points of connection and the Mechanical Trade Subcontractor for condensate piping and line drip pan connections to drains provided by this Trade Subcontractor.

D

#### **Expansion Joints**

Furnish and install all drainage requirements. Interface with joint assemblies shall be fully coordinated with Joint Trade Subcontractor to ensure fully sealed and watertight connections.

#### **Trench Drains**

Furnish and install all trench drain assemblies. If trench drain assembly is not clearly specified as to type or model, include all cost to accommodate assembly for the condition shown (see Exclusions for the only exception).

# D

**Landscape & Irrigation at Ground and Roof Park Levels - Trade Scope Delineations** (Refer to ASI 117 – 119 for scope modifications. Scope of work that will be included for the Roof Park Deck is as described below.)

This Trade Subcontractor to coordinate and furnish complete shop drawings up to and through the Roof Park structural deck and cap systems at and above structural deck for future installations as follows:

- 1. Water connections and backflow preventers for all landscape irrigation systems. Coordinate with Landscape Trade Subcontractor and Landscape contract documents for final locations, orientation of and connection to preventers.
- 2. All area drainage as coordinated between plumbing, architectural and landscape drawings. All concrete vaults, boxes and extension rings shall be provided by the Landscape Trade Subcontractor. Any PVC sub drain systems within planted and lawn areas shall be furnished and installed in the future by the Landscape Trade Subcontractor.
- 3. All area drain grates and pipe extensions required for various planted areas. Coordinate all drain ring and clamp assemblies with Waterproofing Trade Subcontractor (see Flashing below). Any secondary grating required for vaults, boxes or extension rings shall be furnished and installed in the future by Landscape Trade Subcontractor.

- 4. All drainage including, but not limited to, slot and trench drains within topping slabs or other hardscape areas as coordinated with landscaping (excluding Roof Top Park trench drains within built up decks piping with cap only at structural deck), plumbing, and architectural drawings (see Exclusions for the only exception of trench drain responsibility).
- 5. Any sub drain system required for precast and CIP planters shall be installed by Landscape Trade Subcontractor. Trade Subcontractor to provide a coordinated POC for storm drain connection.
- 6. DELETED
- 7. DELETED

<u>D</u>

#### **Supports and Miscellaneous Iron**

Furnish, coordinate, and install all bracing, vibration isolation, embeds, inserts, saddles, struts, rods, angle iron, and any other supporting elements required for this work scope.

#### <u>B</u> Access Doors

Locate, coordinate and all rated and non-rated access doors as specified or code required, and located per Trade Subcontractor's design coordination documents. Include all specialty architectural access door assemblies as specified. Installation of Access Doors is by others with one exception: installation of access door frames or unitized door assemblies that are not poured monolithically with concrete walls, decks or vaults are by this Trade Subcontractor.

<u>B</u>

#### **Flashing**

Wherever installations penetrate the roof, exterior walls, perimeter walls, or waterproofing of any kind, all approved base flashing and necessary counter flashings will be provided and installed by Trade Subcontractor. If waterproofing systems are compromised Trade Subcontractor shall enlist and pay for the services of the Waterproofing Trade Subcontractor to patch and repair waterproofing as necessary for properly flashed penetrations.

#### Sealants and Caulking

Provide all acoustical, fire, pressurization, or other penetration sealants/caulking and other associated components of the assemblies as specified, including any third party testing and inspections, and obtain Architect's approval of all exposed caulking or sealants prior to use. Sealant and caulking applications shall be professionally applied. An unacceptable application, due to unprofessional applications or incorrect material, is to be removed and reinstalled at Trade Subcontractor's expense.

#### <u>B</u> Equipment & Tank Pads

Trade Subcontractor is responsible for coordinating and sizing all required equipment and tank pads for installation by others. Provide all required pad data in sufficient time to accommodate pad installations prior to any interior finish installations and/or required expediting on an "as needed" basis for scheduled Trade Subcontractor equipment and tank installations.

#### **Meter and Submeters**

## TG13.1 – Roof Park Landscaping and Irrigation

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Question No.	Submission Date	Drawing No.	Document/ Spec. No.	Question	Response
TG13.1- 004	3/25/2015	A1-2912	N/A	Confirm that the Board Formed Concrete planters at GL 1.2 are meant to be poured around the structural fin walls.	Confirmed.
TG13.1- 005	3/25/2015	L1-9622, L1-8687, 2/L1- 8634		L1-8633 shows 1'6" of exposed stone at each tread, with an overlap between each level. L1-9622 shows that each Amphitheater Stair Stone Module has 1'6" total width which does not appear to allow for any overlap. 2/L1-8634 shows the overlap but does not indicate how much overlap is required. What is the stone overlap dimension? And how wide is each stone module meant to be?	The stone stair overlap dimension is +/- 2" and the exposed tread surface is 1'6". Please refer to the attached SKLA 381.1 for stone stair dimension clarifications.
TG13.1- 007	3/25/2015	L1-9622		Confirm that the length of each Amphitheater Stair Stone Module is 8 feet in length.	The amphitheater stair stone module varies. Refer to SKLA 381.1 attached to the Q&A TG13.1-005 response for stone module clarifications.
TG13.1- 008	3/25/2015	L1-9622		L1-9622 provides one typical Amphitheater Stair Stone Module to be applied to all tread levels and that the stone be typically aligned to each level above it. Since each level will have a different radius as it progresses further away from the radius reference point, the typical dimensions of each tread level should be different, similar to how the Stone Circular Planters are shown on L1- 9626. Please provide updated details for the Amphitheater Stone Stairs.	The amphitheater stair stone module varies. Please refer to SKLA 381.1 attached to the Q&A TG13.1-005 response for stone module clarifications.
TG13.1- 009	3/25/2015	1/L1- 2642, 1/L1- 9601		Resin paving is required above the subslab in 1/L1-2642, but there is no depressed subslab as is typical for resin paving areas. Retention angle is shown to hold in the resin paving in 1/L1-9601. Confirm that depressions in the subslab are required for all angle shown in 1/L1-9601 and provide an updated detail for 1/L1-2642.	Confirmed. Depressions in the subslab at the restaurant deck resin paving area are required. Please refer to the attached SKLA 378-1 and 378-2 for the depressed slab location.

TG13.1- 010	3/25/2015	1/L1- 2642, 1/L1- 9601, 3/A1- 8911	Clarify if the resin paving at the restaurant deck is able to push directly up to the restaurant or if retention angle is required. There is no retention angle shown in 1/L1-2642, 1/L1-9601, or 3/A1-8911. If retention angle is required, please provide updated details.	Retention angles are required at the restaurant deck resin paving area. Please refer to the attached SKLA 378-3 and 378-4 for details.
TG13.1- 011	3/25/2015	L1-7670, L1-7671, L1-7672	Do utility vaults need to be mechanically fastened to the topping slab? If so, provide details for this connection.	No. Utility vaults do not need to be mechanically fastened to the topping slab.
TG13.1- 012	3/25/2015	L1-4602	The invert Dimension at GL 1 / G shows a value of 843.42. This appears to be a typo. Please provide the correct invert dimension.	Please refer to the attached SKLA 382.1 to see the updated invert elevation at GL 1/G.
TG13.1- 013	3/25/2015	L1-6632	Vine plantings are indicated on GL 4, but there are no vine bubblers. Confirm that there should be vine bubblers on GL 4 and provide updated details.	Vine bubblers on GL 4 have been shown on sheet L1-6632. Please refer to the attached SKLA 388.1 and 388.2 to see vine bubbler locations.
TG13.1- 014	3/25/2015	L1-6632	Confirm that the Subsurface Drip Irrigation indicated as a broken line on L1-6632 is meant to be solid and is the same as the Subsurface Drip Irrigation indicated with a solid line on L1-6633 thru L1-6637.	Confirmed. The subsurface drip irrigation on L1-6632 is solid-line type. Please refer to SKLA 388.1 attached to Q&A TG13.1-013.
TG13.1- 016	3/25/2015	E1-2602, L1-1602	There is a conflict between the Utility Corridor Routing on E1-2602 and L1-1602. Which routing is correct and should be priced?	Please refer to the attached SKLA 379-1 REV, 379-2 REV, 379-3 REV, 379-4 REV, 379-5 REV, and 379-6 REV for utility corridor routing.
TG13.1- 017	3/25/2015	E1-2602, L1-1602	Confirm that the intent of the Utility Corridor Routing is meant to run through the CMU foundation of the Amphitheater Stairs.	Confirmed. Refer to sketches attached to Q&A TG13.1-016.
TG13.1- 018	3/25/2015	A1-2903, L1-5603, P1-2603, A1-2913, L1-2623, L1-4603	At GL 6.3 / D there are roof drains indicated on A1-2903, L1-5603, P1-2603, but not on A1-2913, L1-2623, L1-4603. Clarify if there are roof drains at GL 6.3 / D and if a Precast Concrete Roof Drain Enclosure is required for this location. Confirm that the Precast Concrete Roof Drain Enclosure will not conflict with the Restaurant.	A precast concrete roof drain enclosure is not required at the location indicated in the QBD. Roof drains at grid lines 6.3 / D have been removed. Please refer to the attached sketches: SKLA-386, SKP1-2503, SKP1-2603 and SKP1-5010.

TG13.1- 019	3/25/2015	A1-2913, P1-2603, L1-3603, L1-4603	At GL 7.8 A1-2913 shows four openings in the protection slab with the slab sloping towards these openings which appear to be drains. P1-2603 shows four ghosted squares, but no roof drains in that location. L1-3603 and L1-4603 show two surface drains, with finish grade sloping toward the two drains and the effluent routing to the roof drains on GL 8.5. Confirm that there are two drains as shown on L1-3603 and L1-4603 and not four as indicated on A1-2913. Provide updated coordinated sheets showing either two or four drains.	Please refer to updated drain penetrations per attached sketches SKP1-2503, SKP1- 2603, SKA-4575 and SKA-4579. Landscape drawings are correct as shown, indicating only the two surface drains. For slab penetrations, refer to Architectural and Plumbing drawings. Four drains at the main slab are correct as shown on the protection slab drawings. Surface area drains will not be shown on plumbing drawings.
TG13.1- 020	3/25/2015	L1-1603, E1-2603	The Electrical Drawings say to provide vaults per the Landscape Drawings. The Utility Vaults on E1-2603 at GL 6.5 / F.7 are not shown on L1-1603. The Utility Vaults on L1- 1607 at GL 8.7 / E are not shown on E1- 2603. Clarify which sheet is correct and please provide updated details.	Please refer to SKLA 379 series attached to Q&A TG13.1-016 for utility vaults locations.
TG13.1- 021	3/25/2015	E1-2606, L1-1606	There is a conflict between the Utility Corridor Routing on E1-2606 and L1-1606. Which routing is correct and should be priced?	Please refer to SKLA 379 series attached to Q&A TG13.1-016 for utility corridor routing.
TG13.1- 022	3/25/2015	E1-2607, L1-1607	There is a conflict between the Utility Corridor Routing on E1-2607 and L1-1607. Which routing is correct and should be priced?	Please refer to SKLA 379 series attached to Q&A TG13.1-016 for utility corridor routing.
TG13.1- 023	3/25/2015	L1-6623, L1-6626, L1-9680, L1-9681	Define the type of plant required on the East and West Mounds. L1-9680 shows ta on the detail, but there is no ta in the Shrubs and Perennials Schedule. L1-9681 only shows black dots.	The planting required on the east and west mounds is Trachelospermum Asiaticum, identified as "GC-TA" on sheets L1-6623 and L1-6626, and identified on the planting legend sheet L-0009. Please refer to SKLA 385.1, 385.2, 385.3 and 385.4.
TG13.1- 024	3/25/2015	L1-1605, L1-1606	Provide details for Utility Vaults within the Bamboo Grove Basins.	Please refer to attached SKLA 387 for the utility vault within the bamboo basins.
TG13.1- 025	3/25/2015	L1-4606	The Stair 601 area drain in paving at GL 30.3 / F shows an invert elevation of 84.09 which is higher than the drain lines flowing to it. Confirm if this is in fact the correct elevation. If this is incorrect, provide the correct elevation and update the detail.	The invert elevation at the stair 601 area drain was omitted as shown on attached SKLA 384-1. Please refer to architectural and plumbing details for the drainage.
TG13.1- 026	3/25/2015	L1-4606	Clarify where the Stair 601 area drain at GL 30.3 / F drains go to. It does not appear to drain to a roof drain. Where is the plumbing connection?	Provide an area drain at the main roof slab level below Stair 601 landing. Provide drain piping for the area drain at landing and other drain lines connected to the area drain piping shown on drawing L1-4606. Please refer to attached sketches SKP1-SKP1-2506, SKP1- 2606 and SKA-4578.

TG13.1- 028	3/25/2015	L1-8621, 32 14 41	Specification 32 14 41, section 2.3.C and 2.3.D refer to two stone types and sizes for the Flush Stone Header Units and the Stone Curb and Garden Headers. 32 14 41, 2.3.C.1 and 2.3.D.1 refer to the table in paragraph 3.7 for a schedule of sizes and finishes. The sizes of sandstone in 32 14 41, 3.7 are larger in size than the other specified materials in 32 14 41, 2.3.C.2 and 2.3.D.2. It also appears that the material specified in 32 14 41, 2.3.C.2 and 2.3.D.2 corresponds to the details in the drawings, as shown on L1-8621. The stone size specified in 32 14 41, 2.3.C.1 and 2.3.D.1 are not shown in the drawings. Clarify which type of stone and size is meant to be installed.	Provide Stone Header units per 2.3.C.2. Provide Stone Curb and Garden Header per 2.3.D.2.
TG13.1- 029	3/25/2015	32 14 41, 3.7	Specification 32 14 41, 3.7 states to refer to the drawings for shape and dimensions of Stone Header W1, W2, W3, W4 and W5. Stone Header W1, W2, W3, W4 and W5 are not shown in the drawings. Please provide details for W1, W2, W3, W4, and W5.	Refer to the response to Q&A TG13.1-028-0 for clarification. 32 14 41, 3.7 does not apply.
TG13.1- 032	3/27/2015	L1-6603 thru L1- 6607	Sheet L1-6603 thru L1-6607 show vine planting at the Green Screen locations but they do not provide a species and/or plant size. Please clarify.	Refer to sheet L0006 for species and size.
TG13.1- 033	3/27/2015	L-0006 - L-0007	<ul> <li>On sheet L-0006 and L0007 - Tree Planting Schedule – Please clarify if the following tree sizes are to be per the 'container' size call out or the Abbreviated callout.</li> <li>AC60 – Aesculus Californica and/or container size 48" box tree.</li> <li>QT60 – Quercus Tomentella and/or container size 36" box tree.</li> <li>LA36 – Leucadendron Argenteum and/or container size 24" box tree.</li> </ul>	As indicated in the construction documents: AC60=48" box OT60=36" box LA36=24" box
TG13.1- 034	3/27/2015	L1-6605	Per sheet L1-6605, there is a tree called out 'HF48', but there is no HF48 tree called out on the tree planting legend on sheets L-0006 and L-0007. Please clarify this tree type and size.	'HF 48' should be 'HM48'. Please refer to the attached SKLA 390.1 for the tree type clarification.

TG13.1- 036	4/2/2015	32 15 00 2.1 Materials A and B, L1-2603 and L1- 2606		We are requesting clarification as to the depth of Aggregate Mulch Type 1 to be installed at the Elliptical Planter areas shown on Plan Sheets L1-2603 and L1-2606.	See response to Q&A TG13.1-037.
TG13.1- 037	4/2/2015	32 15 00 2.1 Materials A and B, L1-2605		We are requesting clarification as to the depth of Aggregate Mulch Type 1 to be installed in Circular Planter Area at Grid Line 15 and between Grid Lines D and F.	Provide 3" depth for Aggregate Mulch Type 1 at these locations.
TG13.1- 038	4/2/2015	03 33 12 and 04 22 00, L1- 2638 Detail 1		On Sheet L1-2638 there is a callout for "CMU Footing Below" and "CMU Wall Below" at the 4 Great Lawn Planters. In reviewing the referenced Details 2, 3 and 4 on Sheet L1- 7681, and Detail 2 on Sheet L1-7682, there are no CMU Footings or CMU Wall shown to be installed at the Great Lawn Planters on Concrete. Please clarify.	Omit reference to "CMU WALL BELOW" and "CMU FOOTING BELOW" as shown on the attached SKLA 391.1. Please refer to 2/L1- 7683 for typical detail.
TG13.1- 039	4/2/2015	33 41 19, L1-4605		At Grid Line 21 and between Grid lines C & D and Grid Lines F & G there is 4" perforated pipe shown that terminates without any type of Area Drain or Cleanout. Please clarify if any Area Drain or Cleanout is required.	Provide cleanouts as indicated on the attached SKLA 392.1.
TG13.1- 040	4/2/2015	33 41 19 2.2. G. Dual Cleanout, L-0005 Legend		In the General Park Level Grading and Drainage Plans Legend there is a Duel Cleanout - Buried Lid and Duel Cleanout – Drain Grate Lid listed. In reviewing the Park Level Details Drainage on Sheets L1-9650 through L1-9652 there is no Detail for any type of Cleanout. Please provide.	Please refer to the attached SKLA 393.1 and 393.2 for the dual cleanout details.
TG13.1- 042	4/2/2015	L-0006		Per Plan sheet L-0006, the irrigation legend calls for a controller A and a booster pump Assembly, but these items cannot be located on the plans, please clarify where they are located and/or if they are required.	The irrigation items are shown in the ground level plan. Please refer to sheet L1-6322 and L1-6323. TG13.1 Roof Park Landscaping and Irrigation does not include ground level landscaping.
TG13.1- 045	4/2/2015		Long Form Subcontract	We are requesting clarification as to whether there are or are not Liquidated Damages associated with Trade Package #TG13.1 Roof Park Landscaping and Irrigation Package. If Liquidated Damages are required for Trade Package #TG13.1, then please identify the Amount of Liquidated Damages and whether it is assessed per Calendar Days or Working Days.	Liquidated Damages are part of the TG13.1 <b>Trade Subcontractor's</b> Contract. See Specification Section 00 05 20 section 4.02 Liquidated Damages, Specification Section 00 07 00 section 7.02 Liquidated Damages, and Specification Section 00 08 20 section 1.8 Liquidated Damages.

TG13.1- 046	4/2/2015	22.14.40	Exhibit A- TG13.1, Section II. Key Dates	We are requesting clarification if should there be an extension of the Bid Date, as previously requested, will there be a new date established for submitting Questions on Bid Documents (QBD)?	See TG13.1 Exhibit A Addendum #2 issued on 4/8/2015; the bid due date is now June 30 and QBDs are due June 9.
049	4/2/2015	2.3 Materials Items A and B 1 on Both Sheets, L1-2632 and L1- 2633		type of Cobblestone Pavers are to be used per the Specification Section 32 14 40 Sand- Set Stone Paving; Part 2-Products 2.3 Materials A. Black Cobblestone Pavers: 2. Academy Black or 4. Brittania Black B. White Cobblestone Pavers: 2. Sierra White or 4. Gray Salt	
TG13.1- 051	4/2/2015	32 14 41 2.3 Materials Items C 1-Flush Stone Header Layout, L1-8620		We are requesting clarification as to which type of Stone is to be used for the Flush Stone Header Units per the Specification Section 32 14 41 Mortar-Set Stone Paving; Part 2-Products 2.3 Materials Item C. 1. Base Bid: Canyon Gold Sandstone or 2. Siv Yellow Granite	Refer to response to Q&A TG13.1-028.
TG13.1- 052	4/2/2015	32 14 41 2.3 Materials Items D 3-Stone Curb at Bus Fountain 1-Stone Curb at Planting, L1-8623 and L1- 8625		We are requesting clarification as to which type of Stone is to be used for the Stone Curb and Garden per the Specification Section 32 14 41 Mortar-Set Stone Paving; Part 2-Products 2.3 Materials Item D. 1. Canyon Gold Sandstone or 2. Siv Yellow Granite	Refer to response to Q&A TG13.1-028.
TG13.1- 053	4/2/2015			With the complexity of the Roof Park and Landscaping scope can the bid date be extended?	See Q&A TG13.1 Exhibit A Addendum #2 issued on 4/8/2015; the bid due date is now June 30 and QBDs are due June 9.

TG13.1- 058	4/2/2015 33 41 19 3.3; Item E 2- Subdrain and Perforated Pipe, L1- 9666	Per Specification Section 33 41 19; Part 3- Part 3 Execution; 3.3 Solid and Perforated Pipe installation; Item E. Backfill in Planting Areas over Perforated Subdrain Pipe; #1 states "Backfill with drain rock to elevations indicated on Drawings"; however, per Detail 2-Subdrain and Perforated Pipe on Sheet L1- 9666, the perforated pipe is to be backfilled with Sand. Please clarify which material is to be used for backfill, Drain Rock or Sand.	Use sand for backfill as shown in the detail and refer to attached SKLA 397 for clarification.
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	<ul> <li>CONTROL JOINT TYP</li> <li>REFER TO 5/L1-7641</li> <li>DEPRESSED SLAB FOR RETENTION ANGLE</li> <li>PRECAST CONCRETE SUBSLAB AT BUS FOUNTAIN TYF</li> <li>REFER BUS FOUNTAIN PRECAST ENLARGEMENTS</li> <li>REFER BUS FOUNTAIN TYP</li> <li>REFER TO 2/L1-7641</li> </ul>	
	<ul> <li>CONTROL JOINT TYP</li> <li>REFER TO 5/L1-7641</li> <li>DEPRESSED SLAB FOR RETENTION ANGLE</li> <li>PRECAST CONCRETE SUBSLAB AT BUS FOUNTAIN TYF</li> <li>REFER BUS FOUNTAIN PRECAST ENLARGEMENTS</li> <li>EXPANSION JOINT TYP</li> <li>REFER TO 2/L1-7641</li> </ul>	



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# **RETENTION ANGLE** ADDED ALONG THE RESTAURANT **BUILDING WITH** UPDATED DETAILS

- CUSTOM FABRICATE DRAIN GRATE TO MEET STONE CURB







# RESIN PAVING AT RESTAURANT DECK BUILDING FACE







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# VINE BUBBLERS AT SOUTH VINE PLANTING AREA **2 - 2** SKLA 388

















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DOWEL AND WATERSTOP AT EXPANSION JOINT SCALE: 3" = 1' 2

![](_page_42_Figure_6.jpeg)

![](_page_42_Figure_17.jpeg)

![](_page_43_Figure_0.jpeg)

![](_page_44_Figure_0.jpeg)

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![](_page_48_Figure_0.jpeg)

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LEGEND	LEGEND	LEGEND	LEGEND
GENERAL PARK LEVEL SUBSLAB PLANS	GENERAL PARK LEVEL GRADING AND DRAINAGE PLANS	GENERAL PARK LEVEL GEOSYNTHETIC FILL PLANS	GENERAL PARK LEVEL SOILS PLANS
	PROPOSED SPOT ELEVATION	PROPOSED SPOT ELEVATION	HIGH USE TURF SOIL - 1'-6" AVG. DEPTH
op dowings/	PROPOSED CONTOUR 87.00	PROPOSED 1 FOOT CONTOUR 87.00	2'-0" AVG. DEPTH SOIL PROFILE - REINFORCED SOIL FOR MOUNDS REINFORCED SOIL FOR MOUNDS 
BUS FOUNTAIN PRECAST CONCRETE SUBSLAB AND BASIN	1.5%	PROPOSED 0.5 FOOT CONTOUR	1'-6" AVG. DEPTH SOIL PROFILE - PLANTING BED MIX SOIL AND HORTICULTURAL
concrete walk	FLUSH	SLOPE DIRECTION AND PERCENTAGE	1'-6" AVG. DEPTH SOIL PROFILE - PLANTING BED MIX SOIL AND HORTICULTURAL
CMU SUPPORT WALLS	GRADE BREAK	GRADE BREAK	2'-0" AVG. DEPTH SOIL PROFILE - PLANTING BED MIX SOIL AND HORTICULTURAL
g     seq       seq     LIGHT PYLON FOOTING       +1     - SSD       **     MAST LIGHT FOOTING	DRAIN CENTERLINE	HIGH POINT + ROOF DRAIN ENCLOSURE	WETLAND PLANTING MEDIUM - 2'-0" AVG. DEPTH SOIL PROFILE
The second secon	DRAIN HIGH POINT		2'-4" AVG. DEPTH SOIL PROFILE - PLANTING BED MIX SOIL AND HORTICULTURAL
Image: State of the state			2'-4" AVG. DEPTH SOIL PROFILE - PLANTING BED DESERT GARDEN MIX SOIL
EXPANSION JOINT - NON-DOWELED	$\square$	GEOSTINTHETIC FILL SLOPE TRANSITION ZONE	2'-10" AVG. DEPTH SOIL PROFILE - PLANTING BED MIX SOIL AND HORTICULTURAL
CONCRETE BASIN CONSTRUCTION JOINT - WATERSTOP ROOF DRAIN ENCLOSURE - PRECAST CONCRETE	AREA DRAIN IN PLANTING - 4" DIA - 4/L1-9650 AREA DRAIN IN SUBSLAB		2'-10" AVG. DEPTH SOIL PROFILE - PLANTING BED DESERT GARDEN MIX SOIL
SIGNAGE FOOTING – SSD	$\bullet$ $= 6 \text{ DIA}$ $= 4/L1-9651$ $DRAIN BOX WITH AREA DRAIN GRATE$ $= 22" \times 22"$ $= 1/L1-9652$		2'-10" AVG. DEPTH STRUCTURAL SOIL PROFILE
ELLIPTICAL RAIL FOOTING	CATCHBASIN WITH AREA DRAIN GRATE - 9" DIA - 1/L1-9650 CATCHBASIN WITH SOLID LID - BURIED LID		4'-0" AVG. DEPTH SOIL PROFILE - PLANTING BED MIX SOIL AND HORTICULTURAL
BOULDER FOOTING - SSD DRINKING FOUNTAIN FOOTING	- 2/L1-9650 DRAIN BY ARCHITECT - SAD		4'-0" AVG. DEPTH STRUCTURAL SOIL PROFILE
PLAY STRUCTURE FOOTING - SSD BUS FOUNTAIN PRECAST CONCRETE MODULE	DUEL CLEANOUT DUEL CLEANOUT	LEANOUT DETAILS SEEN ADDED.	
- SEE SHEETS L1-7655 TO L1-7658 FOR ENLARGEMENTS			
BASIN CONFIGURATION MODULE NUMBER DEPRESSED SLAB FOR RETENTION ANGLE	PERFORATED PIPE         - 4" DIAMETER         SOLID PIPE         - 4" DIAMETER		
CCP\801\Field\Field Sket			
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#### SECTION 33 41 19 - LANDSCAPE DRAINAGE

#### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section Includes:
  - 1. Solid Storm Drain Pipe, indicated on Landscape Drawings.
  - 2. Perforated Subdrain Pipe System indicated on Landscape Drawings.
  - 3. Planting Area Catch Basins, Area Drains, and Clean-outs Indicated on the Landscape Drawings.
  - 4. Bi-level Drains, Paving Area Drains and Subslab Drains Indicated on the Landscape Drawings.
  - 5. Planter Drains Indicated on the Landscape Drawings.
  - 6. Cleanout/Inspection Cover in Paving.
  - 7. Rigid Drain Mat.
  - 8. Flexible Drain Mat.
  - 9. Geotextile Fabric.

#### 1.2 REFERENCES

- A. ASTM American Society for Testing and Materials:
  - 1. A 48 Specification for Gray Iron Castings.
  - 2. D 1248 Specification for Polyethylene Plastics Molding and Extrusion Materials.
  - D 1557 Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort.
  - 4. D 2321 Practice for Underground Installation of Flexible Thermoplastic Pipe for Sewers and Other Gravity Flow Applications.
  - 5. D 2729 Specification for PVC Sewer Pipe and Fittings.
  - 6. D 3034 Specification for Type PSM PVC Sewer Pipe and Fittings.
  - 7. D 3350 Specification for Polyethylene Plastics Pipe and Fitting Materials.
  - 8. F 405 Specification for Corrugated Polyethylene Tubing and Fittings.
  - 9. F 679 Specification for PVC Large-Diameter Plastic Gravity Sewer Pipe and Fittings.
  - F 949 Specification for PVC Corrugated Sewer Pipe with Smooth Interior and Fittings.

#### 1.3 DEFINITIONS

- A. PVC: Polyvinyl Chloride.
- B. SDR: Standard Dimensional Ratio.
- C. HDPE: High Density Polyethylene.
- D. RCP: Reinforced Concrete Pipe.
- E. Finished Subgrade Surface: Final soil subgrade surface on which topsoil, aggregate base, or paving is installed.
- F. Acceptance, Acceptable, or Accepted: Acceptance by the TJPA Representative in writing.

- G. Excessive Compaction: Planting Medium compaction greater than specified in Section 32 91 00, part 3.2.C-2
- 1.4 ACTION SUBMITTALS
  - A. Product Data:
    - 1. Pipe and Pipe Fittings.
    - 2. Geotextile Fabric and Sock.
    - 3. Clean-out Adaptor Coupling and Plug.
    - 4. Flexible Coupling.
    - 5. Drain Grates.
    - 6. Drain Fixtures.
  - B. Test Reports: Sand backfill sieve analysis with test date less than 2 weeks old.
  - C. Samples: Submit sample of fabricated sock and proposed Field connections.

# 1.5 INFORMATIONAL SUBMITTALS

- A. Manufacturer's Instructions: Trench Drain Installation Instructions.
- B. Record Documents:
  - 1. Maintain on the construction site a record of materials and equipment installed each day.
  - 2. Daily record information neatly to scale, on full-size prints of the Construction Documents.
  - 3. Include changes, substitutions, and manufacturer's names and catalog numbers for materials and equipment.
  - 4. Show actual locations of drains, grates, clean-outs and piping.
  - 5. Show dimensions from easily-identifiable permanent structures such as walls, curbs, buildings or walks.
  - 6. Procure reproducibles of the current Construction Documents from the TJPA.
  - 7. After Work completion, deliver information noted on reproducibles to the TJPA.

# 1.6 QUALITY ASSURANCE

- A. Contractor Qualifications: Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the Work of this Section.
- B. Regulatory Requirements: Meet requirements of applicable laws, codes, and regulations required by authorities having jurisdiction over Work.

# 1.7 DELIVERY, STORAGE AND HANDLING

- A. Storage:
  - 1. Store products with protection from weather or other conditions which would damage or impair the effectiveness of the product.
  - 2. Protect PVC pipes and fittings from direct sunlight.
  - 3. Store pipe on firm, well-draining, continuous surface equal to or longer than pipe.

### 1.8 SITE CONDITIONS

- A. Environmental Requirements: Lay and join pipe in dry trenches.
- B. Existing Conditions:
  - 1. Prior to Work commencement, review and clearly mark in field horizontal and vertical locations of existing public underground utilities and structures with appropriate utility companies.
  - 2. Prior to Work commencement, review and clearly mark in field horizontal and vertical locations of existing private underground utilities and structures with the TJPA's Representative.

# PART 2 - PRODUCTS

# 2.1 ACCEPTABLE MANUFACTURERS AND SUPPLIERS

- A. Plastic Catch Basins, Atrium and Flat Drain Grates:
  - 1. National Diversified Sales (NDS), Camarillo, CA.
  - 2. Advanced Drainage Systems, Inc., OH.
  - 3. Or equal.
- B. Perforated Pipe:
  - 1. Advanced Drainage Systems, Inc., Columbus, OH.
  - 2. Hancor Inc., Findlay, OH.
  - 3. Or equal.
- C. Flexible Couplings:
  - 1. Fernco, Inc., West Sparks, NV.
  - 2. Mission Rubber Company, Corona, CA.
  - 3. Or equal.
- D. Planter Drain Fixtures for Raised Planters:
  - 1. Zurn Industries, Erie, PA; www.zurn.com.
  - 2. <u>1...</u>JR Smith, Montgomery, AL; www.jrsmith.com.
  - 3.  $\underline{\ldots 1}$  Or equal.
- E. Slot Drain Pipe: See Section 05 60 00.
- F. Rigid Drain Mat:
  - 1. Vespro, Inc., San Rafael, CA; (415) 459-7311; www.vesproinc.com.
  - 2. <u>1...</u>Atlantis Flo-Cell; www.atlantiscorp.com.
  - 3. <u>...1</u>Or equal.
- G. Flexible Drain Mat for Back of Walls:
  - 1. Tenax Corporation, Baltimore, MD; (800) 356-8495; www.tenax.net.
  - 2. <u>1...</u>Tencate Geosynthetics, Pendergrass, GA; (706) 693-2226.
  - 3.  $\underline{\dots 1}$  Or equal.

- H. Floor Drain in Paving:
  - 1. Zurn, Erie, PA; www.zurn.com.
  - 2. <u>1...</u>JR Smith, Montgomery, AL; www.jrsmith.com.
  - 3.  $\underline{\dots 1}$  Or equal.
- I. Geotextile Fabric:
  - 1. Carthage Mills, Cincinnati, OH.
  - 2. Propex, Chattanooga, TN.
  - 3. Or equal.

# 2.2 MATERIALS

- A. Solid Pipe: PVC with rubber ring joints, SDR 35; ASTM D 3034 for 4 or 6-inch diameter pipe, as indicated in Drawings.
- B. Solid Pipe Fittings: PVC, ASTM D 3034.
- C. Perforated Pipe: AASHTO Class II perforations, Category 4, Grade P33; double-wall, corrugated, HDPE, smooth-interior wall, 4-inch diameter pipe.
- D. Perforated Pipe Fittings: HDPE manufactured by solid pipe manufacturer.
- E. Sock for Perforated Pipe and Geotextile at Drains in Aggregate Mulch: Carthage 30 Percent; SI Geosolutions Geotex 117F.
- F. Clean-out for Planting Areas PVC; Schedule 80 female adaptor with brass male pipe thread plug.
- G. Dual Clean-Out in Planting Areas: PVC; Schedule 80 female adaptor with brass male pipe thread plug.
- H. Sand Backfill for Perforated Pipe Trenches: Refer to Section 32 91 00, Planting Soil Preparation.
- I. Flexible Coupling: Heavy-duty 3/8-inch thick, minimum 5 inches long, flexible PVC with stainless-steel clamps designed and manufactured specifically to connect corrugated polyethylene pipe to PVC pipe.
- J. Catch Basins: Eight-inch round Nyoplast drain basin with manufacturer's lateral connections to fit lateral pipe sizes indicated on Drawings.
  - 1. Area Drain Grate for Catch Basins in Planting: with 8-inch diameter ductile iron grate painted black.
  - 2. Solid Lid with vandal-proof secured top for Catch Basins: Solid end cap.
  - 3. Or equal.
- K. Area Drains for Concrete Paving and Subslabs:
  - 1. JR Smith 2250 for 6-inch pipe With vandal-proof secured top.
  - 2. Or equal.

- L. Area Drains at Amphitheater Steps in Lawn:
  - 1. 4-inch round black NDS #11 with vandal-proof secured top.
  - 2. Or equal.
- M. Planter Drains for Radial Planters:
  - 1. Zurn Z-350, 24-inch long standpipe, 4-inch pipe size, with vandal-proof secured top.
  - 2. Or equal.
- N. Rigid Drain Mat:
  - 1. Versicell, 30mm thick.
  - 2. Or equal.
- O. Flexible Drain Mat for Back of Walls:
  - 1. Tenax Tenflow.
  - 2. Or equal.
- P. Area Drain in Planting:
  - 1. NDS Spee-D Basin with outlets as needed. Use manufacturer's recommended fittings and 6-inch round black <u>plastic-ductile iron</u> grates, with vandal-proof secured top.
  - 2. Or equal.
- Q. Bi level Area Drains in Resin Paving and Cobblestone Paving:
  - 1. Zurn Z415BZ, polished nickel bronze finish, grate 5-3/16-inch diameter. High extension adapter and vandal-proof secured top.
  - 2. Or equal.
- R. Bamboo Planting Area Drain:
  - <u>1...</u>Precast concrete (Christy drain box No. V64, or equal) Box with cast iron grate Co. V64-71C. Cut 1-inch by 1-inch weep holes in bottom unit at 7 inches on center. Set drain at finsh grade (under aggregate mulch) cover grate with geotextile fabric. Center drain box over subslab drain. With vandal-proof secured top....1
  - 2. Or equal.
- S. Cleanout in Paving:
  - 1. Jay R. Smith 4233-04-NB-U with vandal-proof secured top
  - 2. Or equal.
- T. <u>*I*...</u>Ground Level Area Drain in Paving: Zurn 2400 Z5B400B; Type B1, round adjustable light duty strainer with square heel proof openings and vandal proof secured top. Polished bronze finish, or equal....1

#### PART 3 - EXECUTION

# 3.1 PREPARATION

# A. Protection:

- 1. Use every possible precaution to prevent damage to existing conditions to remain.
- 2. Provide barricades, fences or other barriers as necessary to protect existing conditions to remain from damage during construction.
- 3. Use every possible precaution to prevent excessive compaction of planting area soil within or adjacent to the areas of Work.
- 4. Do not store materials or equipment, permit burning, or operate or park equipment under the branches of existing plants to remain.
- 5. Submit written notification of conditions damaged during construction to the TJPA's Representative within one working day of observed damage and before damage is covered.

# 3.2 SURVEY REQUIREMENTS

- A. Lines and Levels: Establish lines and levels, locate and lay out by instrumentation and similar appropriate means for piping and catch basins.
- B. Staking: Provide a sufficient quantity of grade stakes as required to install piping, catch basin rims, and clean outs to elevations, slopes, and horizontal locations indicated on the Drawings.

# 3.3 SOLID AND PERFORATED PIPE INSTALLATION

- A. Manufacturer's Requirements: Conform to the installation requirements of the pipe manufacturer's current printed instructions.
- B. Pipe Laying:
  - 1. Furnish and place in position necessary batter boards, string lines, plummets, graduated poles, etc., required in establishing and maintaining the lines and grades.
  - 2. Protect batter boards and location stakes from possible damage or change of location.
  - 3. Begin laying of the pipe on the prepared foundation at the outlet or downstream end with the spigot or tongue end of the pipe joint pointing downstream and proceed toward the inlet or upstream end with each abutting section of pipe properly matched, true to the established lines and grades.
  - 4. Provide acceptable equipment for hoisting and lowering the sections of pipe into the trench without disturbing the prepared bedding foundation or the sides of the trench.
  - 5. Clean ends of the pipe carefully before the pipe is placed in the trench.
  - 6. As each length of pipe is laid, protect openings to prevent the entrance of earth or bedding material.
  - 7. Fit and match pipe so that when laid in the prepared bedding it will form a smooth, uniform conduit.
- C. Backfill Under Paving Over Solid Pipe:
  - 1. Backfill as specified above for general backfill, except backfill remainder of trench above the granular soil backfill material with field sand in 6-inch maximum loose depth lifts, and moisten each lift and compact to 95 percent relative compaction as determined by ASTM D 1557.

- 2. Backfill to permit the rolling and compaction of the filled trench with the adjoining material to provide the required bearing value so that paving of the area can proceed immediately after backfilling is complete.
- D. Backfill in Planting Areas Over Solid Pipe:
  - 1. Backfill as specified above for general backfill except bring granular soil backfill up to finished subgrade surface level.
  - 2. Compact granular soil backfill to a maximum 75-80 percent relative compaction as determined by ASTM D 1557.
  - 3. Backfill top 12 inches of trenches with topsoil backfill.
  - 4. Settle topsoil by sprinkling with minimum 2 inches of water.
- E. Backfill in Planting Areas Over Perforated Subdrain Pipe:
  - 1. Backfill with drain rock-drainage material to elevations indicated on Drawings.
  - 2. Apply water to settle backfill to 75-80 percent relative compaction.
  - 3. Do not compact more than 75-80 percent relative compaction.
- F. Settlement: If settlement occurs, fill depressions with topsoil, raise plants and mulch or reseed as required to repair settled planting areas to the original accepted condition.

#### 3.4 TOLERANCES

- A. Catch Basin and Area Drain Rim Elevations: Plus or minus 1/4-inch.
- B. Trench Drain Rim Elevations: Flush with adjacent paving.

#### 3.5 **PROTECTION**

- A. Pipe Lines: Protect from excessive loads until date of Final Completion.
- B. Drain Grates: Protect from excessive loads until date of Final Completion.

#### END OF SECTION 33 41 19

SPECIFICATION ISSUE LOG

Revision	Date
0	03/31/14
1	12/16/14

# TG13.1 – Roof Park Landscaping and Irrigation

Questions are numbered in the order received. Numbers missing in the sequence either have been answered in a previous response set or will be answered in a future set.

Question No.	Submission Date	Drawing No.	Document/ Spec. No.	Question	Response
TG13.1- 015	3/25/2015	E1-2602 thru E1-2607, L1- 1602 thru L1-1607		Confirm that a utility vault is not needed for the conduit penetrations through the structural slab, for example, as shown on E1-2602 note 1. Confirm that note 6 on E1- 2602 states that there will be no other utility vaults required than those indicated on the Landscape Drawings.	Confirmed. Contractor will provide pull box above Bus Deck ceiling, if required. Confirmed. There will be no additional utility vaults required than those indicated on the landscape drawings.
TG13.1- 050	4/2/2015	32 14 41 2.3 Materials Items A and B 1-Bus Fountain Paving Plan, L1-8628		We are requesting clarification as to which type of cobblestone pavers are to be used for the Bus Fountain Paving per the Specification Section 32 14 41 Mortar-Set Stone Paving; Part 2-Products 2.3 Materials. For Black Cobblestone Pavers: 1. Academy Black or 2. Brittania Black? For White Cobblestone Pavers: 1. Sierra White or 2. Gray Salt Granite?	Please refer to the Q&A TG13.1-030 response.
TG13.1- 054	4/2/2015	05 60 00 2.3 Manufactured Units A & B 1- Bus Fountain Grate Type A 1-Bus Fountain Grate Type B, L1-8670 and L1-8670		We are requesting clarification as to which Type of Grate is to be installed for the Bus Fountain – Transition Pieces shown on Sheets L1-2603 through L1-2606.	Each transition piece is custom made and will match the adjacent units with regards to material and configuration. Custom units shall be documented in shop drawings.
TG13.1- 055	4/2/2015	33 41 19 2.2 Materials A. Solid Pipe 1- Precast Concrete Roof Drain Enclosure at Planting, L1- 7665		We are requesting clarification of the Inspection Tube – Solid Pipe with Solid Cap is to be PVC SDR 35 for the Pipe and PVC ASTM D 3034 for the Cap per Specification Section 33 41 19 Landscape Drainage; 2.2 Materials; A and B.	Confirmed.

TG13.1- 056	4/2/2015	33 41 19 2.2 Materials; Item J. 1- Catch Basin with Area Grate, L1- 9650	Per Specification Section 33 41 19; Part 2- Products; 2.2 Materials; Item J Catch Basin, the Catch Basin is to be an <b>8" Round</b> Nyoplast Drain Basin with an <b>8" diameter</b> ductile iron Grate painted Black. However, on in the General Park Level Grading and Drainage Plans Legend on Sheet L-0005, the Catch Basin with Area Drain Grate is <b>specified to be 9"</b> in diameter. Please clarify if the grate is to be 8" or 9" in diameter.	Use the catch basin per specification and refer to attached SKLA 396.1 for clarification.
TG13.1- 057	4/2/2015	33 41 19 2.2 Materials; Item P 3- Area Drain in Planting, L1- 9650	Per Specification Section 33 41 19; Part 2- Products; 2.2 Materials; Item P. Area Drain in Planting, the Area Drain is to be an NDS Spee-D Basin with outlets as needed and a <b>6</b> " round black plastic grate with vandal- proof secured top. However, in the General Park Level Grading and Drainage Plans on Sheet L-0005, the Area Drain in Planting is <b>specified to be 8</b> " in diameter. Please clarify <b>if the Area Drain is to be 6</b> " or 8" in diameter.	Use the area drain per specification and refer to attached SKLA 396.1 and SKLA 397 for clarification.
TG13.1- 059	4/2/2015	L1-9664 - 1- Soil Profile at Beams-2'- 10"-2-Soil Profile at Beams-4'-0"	We are requesting information from the manufacturer and material type details for the 1/2" protection board and the grade type for the 3/4" plywood shown to be installed over the 3" Waterproofing Assembly.	The Shop Grade Type 1, 3/4" plywood is temporary protection and is not required to be treated or finished (refer to previous responses to RFI P1-0091 and P1-0091.1). The references to protection board and waterproofing have been revised; please see attached SKLA-398.1 and SKLA-398.2. Note: the protection layer and waterproofing assembly for the Rooftop Park concrete structural elements are part of the WPM-3 waterproofing system, as shown in the architectural detail 2/A1-8851, and described in Specification Section 07 13 54.
TG13.1- 063	4/17/2015	S-1013	Can the structural engineer provide a concentrated load that we can assume they will approve for equipment on the roof park level that corresponds to the 100 psf live load?	<ul> <li>Below are two examples of a concentrated load equivalent to a 100 psf live load:</li> <li>1. A 14,400 lb. piece of equipment resting on a 12' X 12' platform that spreads the load uniformly into a 12' X 12' area.</li> <li>2. A point load of 0.694lb within a 1" X 1" area.</li> </ul>

G	ENERAL PARK LI	EVEL SUBSLAB PLANS	GENERAL PA
		CONCRETE SUBSLAB	
			<u>FS 86.50</u>
		CONCRETE BASIN	87.00
		BUS FOUNTAIN PRECAST CONCRETE SUBSLAB AND BASIN	1.5%
		CONCRETE WALK	
		CMU SUPPORT WALLS	
		LIGHT PYLON FOOTING — SSD	
		MAST LIGHT FOOTING — SSD	
		CRACK CONTROL JOINT	
$\left\{ \right\}$		EXPANSION JOINT - DOWELED	
		EXPANSION JOINT - PLATE DOWELED	
		EXPANSION JOINT - NON-DOWELED	
		CONCRETE BASIN CONSTRUCTION JOINT - WATERSTOP	
		ROOF DRAIN ENCLOSURE – PRECAST CONCRETE	
		SIGNAGE FOOTING – SSD	
		ELLIPTICAL RAIL FOOTING	•
		BOULDER FOOTING – SSD	$\oplus$
		DRINKING FOUNTAIN FOOTING	
		PLAY STRUCTURE FOOTING – SSD	
	a y 1 03	BUS FOUNTAIN PRECAST CONCRETE MODULE – SEE SHEETS L1–7655 TO L1–7658 FOR ENLARGEMENTS	
		BASIN CONFIGURATION MODULE NUMBER	
		DEPRESSED SLAB FOR RETENTION ANGLE	
>			<b>—</b>

	LEGEND	LEG	E
RK	LEVEL GRADING AND DRAINAGE PLANS	GENERAL PARK LEVEL GEOSYN	ГНЕ
/	PROPOSED SPOT ELEVATION	FS 86.50 PROPOSED SPOT	ELE
	PROPOSED CONTOUR	PROPOSED 1 FO	от с
		87.00	
	SLOPE DIRECTION AND PERCENTAGE	PROPOSED 0.5 F	-00T
	FLUSH	1.5%	I AN
	GRADE BREAK	GRADE BREAK	
	DRAIN CENTERLINE	HIGH POINT	
	DRAIN HIGH POINT	ROOF DRAIN ENG	LOS
	ROOF DRAIN ENCLOSURE	GEOSYNTHETIC FI	LL
	AREA DRAIN IN PAVING - 4/L1-9651	GEOSYNTHETIC FI	LL S
	AREA DRAIN IN PLANTING - 3/L1-9650		
	AREA DRAIN IN PLANTING - 4/L1-9650		
	AREA DRAIN IN SUBSLAB - 4/L1-9651		
	DRAIN BOX WITH AREA DRAIN GRATE - 1/L1-9652		
	CATCHBASIN WITH AREA DRAIN GRATE - 1/L1-9650		
	CATCHBASIN WITH SOLID LID – BURIED LID – 2/L1–9650		
	DUEL CLEANOUT		
	DUEL CLEANOUT – DRAIN GRATE LID		
	CLEANOUT - BURIED LID		
	PERFORATED PIPE – 4" DIAMETER DRAIN SIZES WE		
	SOLID PIPE - 4" DIAMETER CLARIFICATION.	REFER TO	
	Y FITTING	FOR DRAIN SIZES.	
	RIDGELINE		

IND		LEGEND
ETIC FILL PLANS	GENERAL PARK LE	EVEL SOILS PLANS
EVATION		HIGH USE TURF SOIL — 1'—6" AVG. DEPTH
CONTOUR		2'-0" AVG. DEPTH SOIL PROFILE - REINFORCED SOIL FOR MOUNDS
CONTOUR		1'—6" AVG. DEPTH SOIL PROFILE — PLANTING BED MIX SOIL AND HORTICULTURAL S
ND PERCENTAGE		1'—6" AVG. DEPTH SOIL PROFILE — PLANTING BED MIX SOIL AND HORTICULTURAL S
		2'—0" AVG. DEPTH SOIL PROFILE — PLANTING BED MIX SOIL AND HORTICULTURAL S
SURE		WETLAND PLANTING MEDIUM — 2'—0" AVG. DEPTH SOIL PROFILE
		2'—4" AVG. DEPTH SOIL PROFILE — PLANTING BED MIX SOIL AND HORTICULTURAL S
SLOPE TRANSITION ZONE		2'—4" AVG. DEPTH SOIL PROFILE — PLANTING BED DESERT GARDEN MIX SOIL
		2'—10" AVG. DEPTH SOIL PROFILE — PLANTING BED MIX SOIL AND HORTICULTURAL S
		2'–10" AVG. DEPTH SOIL PROFILE – PLANTING BED DESERT GARDEN MIX SOIL
		2'-10" AVG. DEPTH STRUCTURAL SOIL PROFILE
		4'—0" AVG. DEPTH SOIL PROFILE — PLANTING BED MIX SOIL AND HORTICULTURAL S
		4'-0" AVG. DEPTH STRUCTURAL SOIL PROFILE

![](_page_61_Figure_7.jpeg)

G	ENERAL PARK LI	EVEL SUBSLAB PLANS	GENERAL PA
		CONCRETE SUBSLAB	
			<u>FS 86.50</u>
		CONCRETE BASIN	87.00
		BUS FOUNTAIN PRECAST CONCRETE SUBSLAB AND BASIN	1.5%
		CONCRETE WALK	
		CMU SUPPORT WALLS	
		LIGHT PYLON FOOTING — SSD	
		MAST LIGHT FOOTING — SSD	
		CRACK CONTROL JOINT	
$\left\{ \right\}$		EXPANSION JOINT - DOWELED	
		EXPANSION JOINT - PLATE DOWELED	
		EXPANSION JOINT - NON-DOWELED	
		CONCRETE BASIN CONSTRUCTION JOINT - WATERSTOP	
		ROOF DRAIN ENCLOSURE – PRECAST CONCRETE	
		SIGNAGE FOOTING – SSD	
		ELLIPTICAL RAIL FOOTING	•
		BOULDER FOOTING – SSD	$\oplus$
		DRINKING FOUNTAIN FOOTING	
		PLAY STRUCTURE FOOTING – SSD	
	a y 1 03	BUS FOUNTAIN PRECAST CONCRETE MODULE – SEE SHEETS L1–7655 TO L1–7658 FOR ENLARGEMENTS	
		BASIN CONFIGURATION MODULE NUMBER	
		DEPRESSED SLAB FOR RETENTION ANGLE	
>			<b>—</b>

	LEGEND	LEG	E
RK	LEVEL GRADING AND DRAINAGE PLANS	GENERAL PARK LEVEL GEOSYN	ГНЕ
/	PROPOSED SPOT ELEVATION	FS 86.50 PROPOSED SPOT	ELE
	PROPOSED CONTOUR	PROPOSED 1 FO	от с
		87.00	
	SLOPE DIRECTION AND PERCENTAGE	PROPOSED 0.5 F	-00T
	FLUSH	1.5%	I AN
	GRADE BREAK	GRADE BREAK	
	DRAIN CENTERLINE	HIGH POINT	
	DRAIN HIGH POINT	ROOF DRAIN ENG	LOS
	ROOF DRAIN ENCLOSURE	GEOSYNTHETIC FI	LL
	AREA DRAIN IN PAVING - 4/L1-9651	GEOSYNTHETIC FI	LL S
	AREA DRAIN IN PLANTING - 3/L1-9650		
	AREA DRAIN IN PLANTING - 4/L1-9650		
	AREA DRAIN IN SUBSLAB - 4/L1-9651		
	DRAIN BOX WITH AREA DRAIN GRATE - 1/L1-9652		
	CATCHBASIN WITH AREA DRAIN GRATE - 1/L1-9650		
	CATCHBASIN WITH SOLID LID – BURIED LID – 2/L1–9650		
	DUEL CLEANOUT		
	DUEL CLEANOUT – DRAIN GRATE LID		
	CLEANOUT - BURIED LID		
	PERFORATED PIPE – 4" DIAMETER DRAIN SIZES WE		
	SOLID PIPE - 4" DIAMETER CLARIFICATION.	REFER TO	
	Y FITTING	FOR DRAIN SIZES.	
	RIDGELINE		

IND		LEGEND
ETIC FILL PLANS	GENERAL PARK LE	EVEL SOILS PLANS
EVATION		HIGH USE TURF SOIL — 1'—6" AVG. DEPTH
CONTOUR		2'-0" AVG. DEPTH SOIL PROFILE - REINFORCED SOIL FOR MOUNDS
CONTOUR		1'—6" AVG. DEPTH SOIL PROFILE — PLANTING BED MIX SOIL AND HORTICULTURAL S
ND PERCENTAGE		1'—6" AVG. DEPTH SOIL PROFILE — PLANTING BED MIX SOIL AND HORTICULTURAL S
		2'—0" AVG. DEPTH SOIL PROFILE — PLANTING BED MIX SOIL AND HORTICULTURAL S
SURE		WETLAND PLANTING MEDIUM — 2'—0" AVG. DEPTH SOIL PROFILE
		2'—4" AVG. DEPTH SOIL PROFILE — PLANTING BED MIX SOIL AND HORTICULTURAL S
SLOPE TRANSITION ZONE		2'—4" AVG. DEPTH SOIL PROFILE — PLANTING BED DESERT GARDEN MIX SOIL
		2'—10" AVG. DEPTH SOIL PROFILE — PLANTING BED MIX SOIL AND HORTICULTURAL S
		2'–10" AVG. DEPTH SOIL PROFILE – PLANTING BED DESERT GARDEN MIX SOIL
		2'-10" AVG. DEPTH STRUCTURAL SOIL PROFILE
		4'—0" AVG. DEPTH SOIL PROFILE — PLANTING BED MIX SOIL AND HORTICULTURAL S
		4'-0" AVG. DEPTH STRUCTURAL SOIL PROFILE

![](_page_62_Figure_7.jpeg)

#### SECTION 33 41 19 - LANDSCAPE DRAINAGE

#### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section Includes:
  - 1. Solid Storm Drain Pipe, indicated on Landscape Drawings.
  - 2. Perforated Subdrain Pipe System indicated on Landscape Drawings.
  - 3. Planting Area Catch Basins, Area Drains, and Clean-outs Indicated on the Landscape Drawings.
  - 4. Bi-level Drains, Paving Area Drains and Subslab Drains Indicated on the Landscape Drawings.
  - 5. Planter Drains Indicated on the Landscape Drawings.
  - 6. Cleanout/Inspection Cover in Paving.
  - 7. Rigid Drain Mat.
  - 8. Flexible Drain Mat.
  - 9. Geotextile Fabric.

#### 1.2 REFERENCES

- A. ASTM American Society for Testing and Materials:
  - 1. A 48 Specification for Gray Iron Castings.
  - 2. D 1248 Specification for Polyethylene Plastics Molding and Extrusion Materials.
  - D 1557 Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort.
  - 4. D 2321 Practice for Underground Installation of Flexible Thermoplastic Pipe for Sewers and Other Gravity Flow Applications.
  - 5. D 2729 Specification for PVC Sewer Pipe and Fittings.
  - 6. D 3034 Specification for Type PSM PVC Sewer Pipe and Fittings.
  - 7. D 3350 Specification for Polyethylene Plastics Pipe and Fitting Materials.
  - 8. F 405 Specification for Corrugated Polyethylene Tubing and Fittings.
  - 9. F 679 Specification for PVC Large-Diameter Plastic Gravity Sewer Pipe and Fittings.
  - F 949 Specification for PVC Corrugated Sewer Pipe with Smooth Interior and Fittings.

#### 1.3 DEFINITIONS

- A. PVC: Polyvinyl Chloride.
- B. SDR: Standard Dimensional Ratio.
- C. HDPE: High Density Polyethylene.
- D. RCP: Reinforced Concrete Pipe.
- E. Finished Subgrade Surface: Final soil subgrade surface on which topsoil, aggregate base, or paving is installed.
- F. Acceptance, Acceptable, or Accepted: Acceptance by the TJPA Representative in writing.

- G. Excessive Compaction: Planting Medium compaction greater than specified in Section 32 91 00, part 3.2.C-2
- 1.4 ACTION SUBMITTALS
  - A. Product Data:
    - 1. Pipe and Pipe Fittings.
    - 2. Geotextile Fabric and Sock.
    - 3. Clean-out Adaptor Coupling and Plug.
    - 4. Flexible Coupling.
    - 5. Drain Grates.
    - 6. Drain Fixtures.
  - B. Test Reports: Sand backfill sieve analysis with test date less than 2 weeks old.
  - C. Samples: Submit sample of fabricated sock and proposed Field connections.

# 1.5 INFORMATIONAL SUBMITTALS

- A. Manufacturer's Instructions: Trench Drain Installation Instructions.
- B. Record Documents:
  - 1. Maintain on the construction site a record of materials and equipment installed each day.
  - 2. Daily record information neatly to scale, on full-size prints of the Construction Documents.
  - 3. Include changes, substitutions, and manufacturer's names and catalog numbers for materials and equipment.
  - 4. Show actual locations of drains, grates, clean-outs and piping.
  - 5. Show dimensions from easily-identifiable permanent structures such as walls, curbs, buildings or walks.
  - 6. Procure reproducibles of the current Construction Documents from the TJPA.
  - 7. After Work completion, deliver information noted on reproducibles to the TJPA.

# 1.6 QUALITY ASSURANCE

- A. Contractor Qualifications: Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the Work of this Section.
- B. Regulatory Requirements: Meet requirements of applicable laws, codes, and regulations required by authorities having jurisdiction over Work.

# 1.7 DELIVERY, STORAGE AND HANDLING

- A. Storage:
  - 1. Store products with protection from weather or other conditions which would damage or impair the effectiveness of the product.
  - 2. Protect PVC pipes and fittings from direct sunlight.
  - 3. Store pipe on firm, well-draining, continuous surface equal to or longer than pipe.

### 1.8 SITE CONDITIONS

- A. Environmental Requirements: Lay and join pipe in dry trenches.
- B. Existing Conditions:
  - 1. Prior to Work commencement, review and clearly mark in field horizontal and vertical locations of existing public underground utilities and structures with appropriate utility companies.
  - 2. Prior to Work commencement, review and clearly mark in field horizontal and vertical locations of existing private underground utilities and structures with the TJPA's Representative.

# PART 2 - PRODUCTS

# 2.1 ACCEPTABLE MANUFACTURERS AND SUPPLIERS

- A. Plastic Catch Basins, Atrium and Flat Drain Grates:
  - 1. National Diversified Sales (NDS), Camarillo, CA.
  - 2. Advanced Drainage Systems, Inc., OH.
  - 3. Or equal.
- B. Perforated Pipe:
  - 1. Advanced Drainage Systems, Inc., Columbus, OH.
  - 2. Hancor Inc., Findlay, OH.
  - 3. Or equal.
- C. Flexible Couplings:
  - 1. Fernco, Inc., West Sparks, NV.
  - 2. Mission Rubber Company, Corona, CA.
  - 3. Or equal.
- D. Planter Drain Fixtures for Raised Planters:
  - 1. Zurn Industries, Erie, PA; www.zurn.com.
  - 2. <u>1...</u>JR Smith, Montgomery, AL; www.jrsmith.com.
  - 3.  $\underline{\ldots 1}$  Or equal.
- E. Slot Drain Pipe: See Section 05 60 00.
- F. Rigid Drain Mat:
  - 1. Vespro, Inc., San Rafael, CA; (415) 459-7311; www.vesproinc.com.
  - 2. <u>1...</u>Atlantis Flo-Cell; www.atlantiscorp.com.
  - 3. <u>...1</u>Or equal.
- G. Flexible Drain Mat for Back of Walls:
  - 1. Tenax Corporation, Baltimore, MD; (800) 356-8495; www.tenax.net.
  - 2. <u>1...</u>Tencate Geosynthetics, Pendergrass, GA; (706) 693-2226.
  - 3.  $\underline{\dots 1}$  Or equal.

- H. Floor Drain in Paving:
  - 1. Zurn, Erie, PA; www.zurn.com.
  - 2. <u>1...</u>JR Smith, Montgomery, AL; www.jrsmith.com.
  - 3.  $\underline{\dots 1}$  Or equal.
- I. Geotextile Fabric:
  - 1. Carthage Mills, Cincinnati, OH.
  - 2. Propex, Chattanooga, TN.
  - 3. Or equal.

# 2.2 MATERIALS

- A. Solid Pipe: PVC with rubber ring joints, SDR 35; ASTM D 3034 for 4 or 6-inch diameter pipe, as indicated in Drawings.
- B. Solid Pipe Fittings: PVC, ASTM D 3034.
- C. Perforated Pipe: AASHTO Class II perforations, Category 4, Grade P33; double-wall, corrugated, HDPE, smooth-interior wall, 4-inch diameter pipe.
- D. Perforated Pipe Fittings: HDPE manufactured by solid pipe manufacturer.
- E. Sock for Perforated Pipe and Geotextile at Drains in Aggregate Mulch: Carthage 30 Percent; SI Geosolutions Geotex 117F.
- F. Clean-out for Planting Areas PVC; Schedule 80 female adaptor with brass male pipe thread plug.
- G. Dual Clean-Out in Planting Areas: PVC; Schedule 80 female adaptor with brass male pipe thread plug.
- H. Sand Backfill for Perforated Pipe Trenches: Refer to Section 32 91 00, Planting Soil Preparation.
- I. Flexible Coupling: Heavy-duty 3/8-inch thick, minimum 5 inches long, flexible PVC with stainless-steel clamps designed and manufactured specifically to connect corrugated polyethylene pipe to PVC pipe.
- J. Catch Basins: Eight-inch round Nyoplast drain basin with manufacturer's lateral connections to fit lateral pipe sizes indicated on Drawings.
  - 1. Area Drain Grate for Catch Basins in Planting: with 8-inch diameter ductile iron grate painted black.
  - 2. Solid Lid with vandal-proof secured top for Catch Basins: Solid end cap.
  - 3. Or equal.
- K. Area Drains for Concrete Paving and Subslabs:
  - 1. JR Smith 2250 for 6-inch pipe With vandal-proof secured top.
  - 2. Or equal.

- L. Area Drains at Amphitheater Steps in Lawn:
  - 1. 4-inch round black NDS #11 with vandal-proof secured top.
  - 2. Or equal.
- M. Planter Drains for Radial Planters:
  - 1. Zurn Z-350, 24-inch long standpipe, 4-inch pipe size, with vandal-proof secured top.
  - 2. Or equal.
- N. Rigid Drain Mat:
  - 1. Versicell, 30mm thick.
  - 2. Or equal.
- O. Flexible Drain Mat for Back of Walls:
  - 1. Tenax Tenflow.
  - 2. Or equal.
- P. Area Drain in Planting:
  - 1. NDS Spee-D Basin with outlets as needed. Use manufacturer's recommended fittings and 6-inch round black <u>plastic-ductile iron</u> grates, with vandal-proof secured top.
  - 2. Or equal.
- Q. Bi level Area Drains in Resin Paving and Cobblestone Paving:
  - 1. Zurn Z415BZ, polished nickel bronze finish, grate 5-3/16-inch diameter. High extension adapter and vandal-proof secured top.
  - 2. Or equal.
- R. Bamboo Planting Area Drain:
  - <u>1...</u>Precast concrete (Christy drain box No. V64, or equal) Box with cast iron grate Co. V64-71C. Cut 1-inch by 1-inch weep holes in bottom unit at 7 inches on center. Set drain at finsh grade (under aggregate mulch) cover grate with geotextile fabric. Center drain box over subslab drain. With vandal-proof secured top....1
  - 2. Or equal.
- S. Cleanout in Paving:
  - 1. Jay R. Smith 4233-04-NB-U with vandal-proof secured top
  - 2. Or equal.
- T. <u>*I*...</u>Ground Level Area Drain in Paving: Zurn 2400 Z5B400B; Type B1, round adjustable light duty strainer with square heel proof openings and vandal proof secured top. Polished bronze finish, or equal....1

#### PART 3 - EXECUTION

# 3.1 PREPARATION

# A. Protection:

- 1. Use every possible precaution to prevent damage to existing conditions to remain.
- 2. Provide barricades, fences or other barriers as necessary to protect existing conditions to remain from damage during construction.
- 3. Use every possible precaution to prevent excessive compaction of planting area soil within or adjacent to the areas of Work.
- 4. Do not store materials or equipment, permit burning, or operate or park equipment under the branches of existing plants to remain.
- 5. Submit written notification of conditions damaged during construction to the TJPA's Representative within one working day of observed damage and before damage is covered.

# 3.2 SURVEY REQUIREMENTS

- A. Lines and Levels: Establish lines and levels, locate and lay out by instrumentation and similar appropriate means for piping and catch basins.
- B. Staking: Provide a sufficient quantity of grade stakes as required to install piping, catch basin rims, and clean outs to elevations, slopes, and horizontal locations indicated on the Drawings.

# 3.3 SOLID AND PERFORATED PIPE INSTALLATION

- A. Manufacturer's Requirements: Conform to the installation requirements of the pipe manufacturer's current printed instructions.
- B. Pipe Laying:
  - 1. Furnish and place in position necessary batter boards, string lines, plummets, graduated poles, etc., required in establishing and maintaining the lines and grades.
  - 2. Protect batter boards and location stakes from possible damage or change of location.
  - 3. Begin laying of the pipe on the prepared foundation at the outlet or downstream end with the spigot or tongue end of the pipe joint pointing downstream and proceed toward the inlet or upstream end with each abutting section of pipe properly matched, true to the established lines and grades.
  - 4. Provide acceptable equipment for hoisting and lowering the sections of pipe into the trench without disturbing the prepared bedding foundation or the sides of the trench.
  - 5. Clean ends of the pipe carefully before the pipe is placed in the trench.
  - 6. As each length of pipe is laid, protect openings to prevent the entrance of earth or bedding material.
  - 7. Fit and match pipe so that when laid in the prepared bedding it will form a smooth, uniform conduit.
- C. Backfill Under Paving Over Solid Pipe:
  - 1. Backfill as specified above for general backfill, except backfill remainder of trench above the granular soil backfill material with field sand in 6-inch maximum loose depth lifts, and moisten each lift and compact to 95 percent relative compaction as determined by ASTM D 1557.

- 2. Backfill to permit the rolling and compaction of the filled trench with the adjoining material to provide the required bearing value so that paving of the area can proceed immediately after backfilling is complete.
- D. Backfill in Planting Areas Over Solid Pipe:
  - 1. Backfill as specified above for general backfill except bring granular soil backfill up to finished subgrade surface level.
  - 2. Compact granular soil backfill to a maximum 75-80 percent relative compaction as determined by ASTM D 1557.
  - 3. Backfill top 12 inches of trenches with topsoil backfill.
  - 4. Settle topsoil by sprinkling with minimum 2 inches of water.
- E. Backfill in Planting Areas Over Perforated Subdrain Pipe:
  - 1. Backfill with drain rock-drainage material to elevations indicated on Drawings.
  - 2. Apply water to settle backfill to 75-80 percent relative compaction.
  - 3. Do not compact more than 75-80 percent relative compaction.
- F. Settlement: If settlement occurs, fill depressions with topsoil, raise plants and mulch or reseed as required to repair settled planting areas to the original accepted condition.

#### 3.4 TOLERANCES

- A. Catch Basin and Area Drain Rim Elevations: Plus or minus 1/4-inch.
- B. Trench Drain Rim Elevations: Flush with adjacent paving.

#### 3.5 **PROTECTION**

- A. Pipe Lines: Protect from excessive loads until date of Final Completion.
- B. Drain Grates: Protect from excessive loads until date of Final Completion.

#### END OF SECTION 33 41 19

SPECIFICATION ISSUE LOG

Revision	Date
0	03/31/14
1	12/16/14

![](_page_70_Figure_0.jpeg)

![](_page_70_Figure_4.jpeg)

![](_page_71_Figure_0.jpeg)

![](_page_71_Figure_5.jpeg)
## TG13.1 – Roof Park Landscaping and Irrigation

Questions are numbered in the order received. Numbers missing in the sequence either have been answered in a previous response set or will be answered in a future set.

Question No.	Submission Date	Drawing No.	Document/ Spec. No.	Question	Response
TG13.1- 060	4/16/2015	00 08 06 PLA, L1- 4602- 4607 and L1-6632- 6637		Please confirm which unions are claiming the drainage (as shown on the piping sheets L1- 4602 to L1-4607) and the irrigation (as shown on irrigation sheets L1-6632 to L1- 6637).	Local 38 Plumbing Union claims landscape irrigation within building limits, including drainage piping; however, perforated drainage piping may be an exception. Contact Bill Blackwell of Local 38 at 415-626-2000 for further clarification on Union jurisdiction.
TG13.1- 064	4/22/2015	SKLA 376, RFI 2173	TG13.1 Pre- Bid Presentation Slide 14	We are requesting clarification if there will be a formal Detail issued for the attached Roof Park Utility Trench Diagram that was shown on Page 14 of the Pre-Bid Meeting Presentation.	The sketch provided suggests an option for the general arrangement of conduit along this corridor, as a guideline for installation. A coordinated shop drawing detailing Rooftop Park Utility Trench specifications shall be provided by the TG13.1 Trade Subcontractor. No formal drawing will be issued.
TG13.1- 065	4/22/2015	32 34 10, Part 2 Products; 2.2.A., L1-5602 through L1-5607, Details 1 & 2/L1- 7690		We understand that we are responsible for determining the amount of Geo-Synthetic Fill <b>required. We are requesting the Architect's</b> estimated quantity of the Geo-Synthetic Fill for comparison use only.	The Architect's estimated quantity will not be provided. Bidder should refer to the contract drawings to determine estimated quantities.
TG13.1- 066	4/22/2015	32 91 00, Part 2 - Products, 2.4, L- 0005, L1-5622 through L1-5627, Details 1 through 9 on L1- 9660		We understand that we are responsible for determining the amount of Soil Mixes required. We are requesting the Architect's estimated quantities of the various Soil Mixes as listed in the "General Park Level Soils Plans" Legend on Sheet L-0005, and as shown on the Park Level Soils Plans Phase 1 Sheets L1-5622 through L1-5627 for comparison use only.	The Architect's estimated quantities will not be provided Bidder should refer to the contract drawings to determine estimated quantities.

TG13.1- 067	4/22/2015	03 45 00, Part 2 - Products; 2.3.B., L1-7664, L1-3602 through L1-3607, L1-4602 through L1-4607	We are requesting the Top of Lid Elevations for all the Precast Concrete Roof Drain Enclosures at Planting Areas that are shown on Sheets L1-4602 through L1-4607, in order to determine the overall heights required. Currently the only Top of Lid Elevations provided are those shown in Detail 1-Bamboo Grove Subslab Enlargement Plan on Sheet L1- 2646.	The top of lid elevation of the precast concrete roof drain is 1'-6" below finish grade. Please refer to attached SKLA 401.0 for clarification.
TG13.1- 068	4/22/2015	2/L1- 9665, L1-5622 through L1-5627	We are requesting clarification as to the limits of where the ¾" Plywood and ½" Protection Board is to be installed around the 3" Waterproofing Assembly at the Beams. Are they to be installed only at the Beams within the Soil Mix Areas as shown on the Park Level Soils Plans Sheets L1-5622 through L1-5627?	Yes. The 3/4" plywood and 1/2" protection board shall be installed only at the beams within the soil mix area, as shown on the park level soils plan. Refer to L1-5622 to L1-5627.
TG13.1- 069	4/22/2015	33 41 19, Part 2 - Products; 2.2.J, 1/L1- 9650, L1-4604	On this Sheet there are 3 each Catch Basin with Area Drain Grate – 9" diameter shown to be installed in the Bus Fountain Precast Concrete Modules. 1 is between Grid Lines 13 & 14 and B & C; 1 is between Grid Lines 14 & 15 and B & C; 1 is between Grid Lines 18 & 19 and B & C. However, per the Park Level Details Precast Concrete shown on Sheets L1- 7655 through L1-7658, there is only a Knock for a Drain Body – 4" Diameter. Please clarify if the Catch Basin in the Precast Concrete Modules are to be 9" diameter or 4" Diameter.	Please refer to attached SKLA 402.0 through 402.3 for clarification. All drains in basin are 4".
TG13.1- 070	4/22/2015	33 41 19, Part 2 - Products; 2.2.P., 3/L1- 9650, L1-3603, L1-4603	On Sheet L1-3603 there are 3 each Area Drain in Planting – <b>8</b> " diameter shown to be installed at the following Grid Lines: 1 between Grid Lines 7 & 8 and Grid Lines C.3 & D with a Rim Elevation 86.40; 1 between Grid Lines 6 & 7 and Grid Lines D.4 & D.8 with a Rim Elevation 86.30; and 1 between Grid Lines 6 & 7 and Grid Lines E.6 & F with a Rim Elevation 86.30. They are along the base of the Mound. However, these Area Drains are not shown on Plan Sheet L1-4603 Park Level Zone 03 Piping Plan Phase 1. Please clarify if these Area Drains are to be installed.	The area drains were added to the piping plan. Refer to SKLA 402.0 enclosed in the response to QBD TG13.1-069.

TG13.1- 071	4/22/2015	33 41 19, Part 2 - Products; 2.2.P., 3/L1- 9650, L1-3605, L1-4605		On Sheet L1-3605 there is an Area Drain in Planting – 8" diameter shown to be installed between Grid Lines 23 & 24 and Grid Lines F & F.7 with a Rim Elevation 86.16. In addition this Area Drain is shown to be installed on Top of the Roof Drain Enclosure in the Bamboo Basin at the same Grid Lines as above on Sheet L1-4605. Please clarify if this Area Drain is to be installed at the location as shown.	The area drain was deleted. Refer to SKLA 404 attached for clarification.
TG13.1- 072	4/22/2015	33 41 19, Part 2 - Products; 2.2.K., 4/L1- 9651, L1-3606, L1-4606		On Sheet L1-3606 there is an Area Drain in Paving shown to be installed in the lower Stair landing area between Grid Lines 30 & 31 and Grid Lines E.6 & F with a Rim Elevation 83.50. However on Sheet L1-4606 the invert Elevation for this same Area Drain between Grid Lines 30 & 31 and E6. & F is shown to be 84.09. Please clarify the Rim and Invert Elevations.	The area drain rim elevation in the lower stair landing area is 83.50 as shown on sheet L1- 3606. The invert elevation for the area drain was omitted. Refer to the responses to QBD TG13.1-025 and -026 for clarification.
TG13.1- 074	4/22/2015	12 93 00, Part 2 Products, 2.3.A & B, Details 1 through 6 on L1- 9630, Details 1 through 6 on L1- 9631		Please find attached, for the owner's review and comments, a letter from Studio 431/ landscapeforms regarding the usage of Black Locust Lumber with Site Furnishings, as is specified on this Project. They are expressing their concerns regarding the Weatherablility and Long-Term Aesthetics and have included images of typical results of weathered Black Locust when used in such instances. Currently they have provided a quote using FCS IPE Lumber for the Wood Slat Bench and Wood Slat Chairs. Please advise if this will be an acceptable alternative to the Black Locust Lumber.	<ul> <li>Please provide bid based on material indicated in Contract Documents.</li> <li>Proposed alternate is not acceptable as it is in conflict with TJPA's recommended guideline:</li> <li>TROPICAL HARDWOOD AND VIRGIN REDWOOD BAN</li> <li>Pursuant to Section 804(b) of the San Francisco Code, the TJPA urges contractors not to import, purchase, obtain, or use for any purpose, any tropical hardwood product, virgin redwood or virgin redwood wood product.</li> </ul>
TG13.1- 075	4/22/2015	L1-9632 Details 1 through 4	L1-9632 Details 1 through 4	In Item iii. Site Furniture it states "not limited to the following, i.e., Benches, Bollards, Fountains and Pylons; this Trade Subcontractor shall install these items near the completion of roof park and coordinate with WOJV." We are requesting clarification if we are to install the Bollards, Fountains and Pylons since according to Exhibit A Item 3. Base Bid Scope; Roof Park Site Furnishings; Items 1 and 2, these items are not included in Trade Package TG13.1, only the Wood Slat Benches and Chairs, and the Café Chairs and Tables.	The TG13.1 Trade Subcontractor shall furnish and install footings for the utility bollard and drinking fountains as stated in the Exhibit A, IV. Scope of the Package and Bid Item Information, 3. Base Bid Item Scope. Utility bollard and drinking fountain embeds shall be provided by others for the TG13.1 Trade Subcontractor to place in their respective footings. Pylons are not in the TG13.1 Trade <b>Subcontractor's</b> scope of work.

TG13.1- 076	4/22/2015	04 22 00, L1- 7610 Detail 1 - 4, L1- 7612 Detail 1 - 2, L1- 2622 through L1-2627	We are requesting a Plan which shows the Top and Bottom Elevations for all the CMU Support Walls, as shown on the Park Level Subslab Plan Phase 1 Sheets L1-2622 through L1-2627.	The top of CMU wall footings can be found on the Architectural Protection Slab Plans (A1- 2912 thru A1-2917). The bottom of the footings can be derived from the slopes provided on these plans.
TG13.1- 077	4/22/2015	L1-7630	We are requesting clarification as to which Trade Subcontractor is responsible for installing the Glass Paving at Seismic Joint B.	The Glass Paving at Seismic Joint B is integral to the glass floor system and shall be installed by the TG08.11R Trade Subcontractor.



\_ INSPECTION TUBE - SOLID PIPE - SOLID CAP - FINISHED GRADE \_ REMOVABLE LID – PRECAST CONCRETE

- PLANTING BED SOIL MIX

REBAR TYP -- (3) #4 EQUALLY SPACED ON EACH SIDE OF LID AS SHOWN REBAR TYP <sup>-</sup>- (3) #4 AT 12" OC

LONGITUDINAL REBAR — — #6 AT 16" OC

REBAR TYP - #6 CENTERED BETWEEN WEEP HOLES - REFER TO 1/L1-7667PRECAST CONCRETE ROOFDRAIN ENCLOSURE — AT PLANTING AREA \_ ADHESIVE

- SAND DRAINAGE COURSE - GEOTEXTILE FABRIC



- NON-SHRINK GROUT - KNOCK OUT TO RECEIVE DRAIN PIPE - SOLID DRAIN PIPE

- GEOSYNTHETIC FILL

– SHEAR PIN FOOTING BEYOND – SAD

- RIGID DRAIN MAT PROTECTION SLAB - SAD \_ WATER PROOFING — SAD

– DRAIN BODY CAST INTO SLAB - SPD STRUCTURAL SLAB - SSD

NOTE: 1. REFER TO PLUMBING DRAWINGS FOR ROOF DRAIN TYPE/LOCATION. 2. REFER TO PIPING DRAWINGS FOR SOLID PIPE INVERTS.



ISSUED FOR CONSTRUCTION



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