

## CITY OF TACOMA Public Works Engineering Division

ADDENDUM NO.1

DATE 3/22/2023

### REVISIONS TO: Request for Bids Specification No. PW23-0021F Links to Opportunity Streetscape – Bid Package 3

### NOTICE TO ALL BIDDERS:

This addendum is issued to clarify, revise, add to or delete from, the original specification documents for the above project. This addendum, as integrated with the original specification documents, shall form the specification documents. The noted revisions shall take precedence over previously issued specification documents and shall become part of this contract.

### **REVISIONS TO THE SUBMITTAL DEADLINE:**

The submittal deadline has been changed to 11:00 a.m., Pacific Time, Tuesday, April 11, 2023.

### **REVISIONS TO THE PROPOSAL PAGES:**

Remove the Bid Proposal in its entirety and replace with Bid Proposal labeled Addendum #1. Updated quantities to match Special Provisions.

### **REVISIONS TO THE SPECIAL PROVISIONS:**

Remove Special Provisions Divisions 2 through 9 in their entirety and replace with Special Provisions Divisions 2 through 9 labeled Addendum #1. Original Special Provisions Divisions 2 through 9 were not correct documents.

### **REVISIONS TO THE PLANS:**

Replace Plan sheet MC-01. Numbering has been updated to match bid proposal. Replace Plan sheets UT-01, UT-02 & UT-03. Pipe type has been updated.

NOTE: Acknowledge receipt of this addendum by initialing the corresponding space as indicated on the signature page. Vendors who have already submitted their bid/proposal may contact the Purchasing Division at 253-502-8468 and request return of their bid/proposal for acknowledgment and re-submittal. Or, a letter acknowledging receipt of this addendum may be submitted in an envelope marked Request for Bids Specification No. PW23-0021F Addendum No. 1. The City reserves the right to reject any and all bids, including, in certain circumstances, for failure to appropriately acknowledge this addendum.

cc: Jon Kulju, Public Works Engineering

## <u>BID PROPOSAL</u>

### SPECIFICATION NO. PW23-0021F Links to Opportunity Streetscape Bid Package #3

The undersigned hereby certifies that he/she has examined the location and construction details of work as outlined on the Plans and Specifications for Project No. PWK-G0041 and has read and thoroughly understands the Plans and Specifications and contract governing the work embraced in this improvement and the method by which payment will be made for said work, and hereby proposes to undertake and complete the work embraced in this improvement in accordance with said Plans, Specifications and contract and at the following schedule of rates and prices:

- NOTE: 1. Unit prices of all items, all extensions and total amount of bid should be shown. Show unit prices in figures only.
  - 2. The notations below the item numbers refer to the specification section where information may be found regarding each contract item. These notations are intended only as a guide and are not warranted to refer to all specification sections where information may be found.

ltem No.	Sect.	Item Description	Unit	Estimated Quantity	Unit Price	Total Amount
R-1	1-04	Minor Changes	Force Account	Estimate	Estimated	\$25,000.00
R-2	1-05	Roadway Surveying	Lump Sum	1	Lump Sum	\$
R-3	1-05	Record Drawings	Lump Sum	1	Minimum Bid \$1000	\$
R-4	1-07	SPCC Plan	Lump Sum	1	Lump Sum	\$
R-5	1-07	Archeological and Historical Objects Salvage	Force Account	Estimated	Estimated	\$10,000.00
R-6	1-09	Mobilization	Lump Sum	1	Lump Sum	\$
R-7	1-10	Pedestrian Traffic Control	Lump Sum	1	Lump Sum	\$
R-8	1-10	Uniformed Police Officer for Traffic Control	HR	500	\$	\$
R-9	1-10	Project Temporary Traffic Control	Lump Sum	1	Lump Sum	\$

ltem No.	Sect.	Item Description	Unit	Estimated Quantity	Unit Price	Total Amount
R-10	2-01	Certified Arborist	Lump Sum	1	Lump Sum	\$
R-11	2-01	Certified Arborist Assessment Report Compliance	Force Account	Estimated	Estimated	\$5,000
R-12	2-01	Roadside Cleanup	Force Account	Estimated	Estimated	\$70,625.00
R-13	2-01	Clearing and Grubbing	Lump Sum	1	Lump Sum	\$
R-14	2-02	Removal of Structure and Obstruction	Lump Sum	1	Lump Sum	\$
R-15	2-02	Test Holes	Lin. Ft.	100	\$	\$
R-16	2-06	Subgrade Maintenance and Protection	Lump Sum	1	Lump Sum	\$
R-17	2-14	Remove Existing Pavement, Type I, Class A2	Sq. Yd.	200	\$	\$
R-18	2-14	Remove Existing Pavement, Type I, Class A4	Sq. Yd.	300	\$	\$
R-19	2-14	Remove Existing Pavement, Type I, Class C6	Sq. Yd.	3,800	\$	\$
R-20	2-14	Remove Existing Pavement, Type I, Class C12	Sq. Yd.	500	\$	\$
R-21	2-14	Remove Existing Pavement, Type III, Class C6	Sq. Yd.	100	\$	\$
R-22	2-15	Remove Curb	Lin. Ft.	200	\$	\$
R-23	2-18	Remove and Relocate Existing Planter Pot	Each	17	\$	\$
R-24	2-18	Remove and Relocate Existing Sign	Each	9	\$	\$
R-25	2-18	Remove and Relocate Existing Trash Can	Each	10	\$	\$
Contractor's Name						

Specification Number: PW23-0021F Links to Opportunity Bid Package 3

ltem No.	Sect.	Item Description	Unit	Estimated Quantity	Unit Price	Total Amount
R-26	2-18	Coordinate Bus Shelter Work with Pierce Transit	Each	4	\$	\$
R-27	2-18	Remove and Relocate Existing Kiosk	Each	1	\$	\$
R-28	2-18	Remove and Relocate Existing Mail Drop Box	Each	1	\$	\$
R-29	2-18	Remove and Relocate Existing Security Pole	Each	1	\$	\$
R-30	2-18	Remove and Relocate Existing Historic Maker's Mark Imprint	Each	4	\$	\$
R-31	2-19	Remove and Replace Existing Lid with ADA Compliant Non-slip Lid	Each	112	\$	\$
R-32	2-20	Remove Wall 0-4 Ft	Lin. Ft.	105	\$	\$
R-33	2-20	Remove Fence and Gate	Lin. Ft.	238	\$	\$
R-34	2-20	Remove Stairs	Sq. Ft.	40	\$	\$
R-35	2-20	Remove Business District Banner	Lump Sum	1	Lump Sum	\$
R-36	2-21	Site Health & Safety Plan	Lump Sum	1	Lump Sum	\$
R-37	2-21	Site Health and Safety Officer	Lump Sum	1	Lump Sum	\$
R-38	2-21	Soil Management Plan	Lump Sum	1	Lump Sum	\$
R-39	2-21	Excavation and Haul of Contaminated Materials	Force Account	Estimated	Estimated	\$5,000
R-40	4-04	Crushed Surfacing Base Course	Cu. Yd.	275	\$	\$
R-41	4-04	Crushed Surfacing Top Course	Cu. Yd.	225	\$	\$
R-42	5-04	HMA CL ½ In. PG 58H-22	Ton	140	\$	\$

ltem No.	Sect.	Item Description	Unit	Estimated Quantity	Unit Price	Total Amount
R-43	5-04	Cold Plant Mix for Temporary Pavement Patch	Ton	100	\$	\$
R-44	5-05	Cement Conc. Pavement	Sq. Yd.	30	\$	\$
R-45	7-05	Adjust Existing Catch Basin, Furnish New Frame and Grate	Each	2	\$	\$
R-46	7-05	Adjust Existing Utility Lid to Grade	Each	109	\$	\$
R-47	7-09	Ductile Iron Sleeve 6 in. Diam.	Lin. Ft.	15	\$	\$
R-48	7-17	Ductile Iron Sewer Pipe 3 in. diam.	Lin. Ft.	290	\$	\$
R-49	7-20	Trench Drain	Lin. Ft.	88	\$	\$
R-50	8-01	NPDES Construction Stormwater General Permit	Lump Sum	1	Lump Sum	\$
R-51	8-01	Erosion Control and Water Pollution Prevention	Lump Sum	1	Lump Sum	\$
R-52	8-01	Stormwater Pollution Prevention Plan (SWPPP)	Lump Sum	1	Lump Sum	\$
R-53	8-02	Soil Mix 1	Cu. Yd.	256	\$	\$
R-54	8-02	Plant Selection – Tree	Each	57	\$	\$
R-55	8-02	Soil Amendment	Sq. Yd.	860	\$	\$
R-56	8-02	Tree Root Barrier	Lin. Ft.	1,573	\$	\$
R-57	8-02	Decorative Gravel	Cu. Yd.	20	\$	\$
R-58	8-02	Tree Protection	Each	14	\$	\$
R-59	8-02	Tree Watering Bag System	Each	15	\$	\$
R-60	8-03	Irrigation System Complete	Lump Sum	1	Lump Sum	\$

ltem No.	Sect.	Item Description	Unit	Estimated Quantity	Unit Price	Total Amount
R-61	8-04	Traffic Curb and Gutter	Lin. Ft.	108	\$	\$
R-62	8-04	Pedestrian Curb	Lin. Ft.	60	\$	\$
R-63	8-04	Extruded Curb	Lin. Ft.	5	\$	\$
R-64	8-06	Cement Conc. Driveway Entrance Type 1	Sq. Yd.	100	\$	\$
R-65	8-06	Cement Conc. Driveway Entrance Type 2	Sq. Yd.	300	\$	\$
R-66	8-14	Cement Conc. Sidewalk	Sq. Yd.	5,105	\$	\$
R-67	8-14	Welcoming Mat	Sq. Ft.	360	\$	\$
R-68	8-20	Illumination System, Complete	Lump Sum	1	Lump Sum	\$
R-69	8-20	Service Connection to Tacoma Power	Each	7	\$	\$
R-70	8-21	Permanent Signing	Each	19	\$	\$
R-71	8-22	Parking Stall Striping	Lin. Ft.	40	\$	\$
R-72	8-22	Access Parking Space Symbol	Each	1	\$	\$
R-73	8-22	Painting Curb	Lin. Ft.	123	\$	\$
R-74	8-22	Remove Paint Line	Lin. Ft.	44	\$	\$
R-75	8-30	Cement Conc. Stairway	Sq. Ft.	6	\$	\$
R-76	8-31	4" Conc. Sandblasting Strip	Lin. Ft.	2,000	\$	\$
R-77	8-32	Unit Pavers	Sq. Ft.	360	\$	\$
R-78	8-33	Granite Stone Panels with Quote	Each	9	\$	\$
R-79	8-34	Vertical Marker Columns	Each	2	\$	\$

ltem No.	Sect.	Item Description	Unit	Estimated Quantity	Unit Price	Total Amount
R-80	8-35	Bench	Each	4	\$	\$
R-81	8-35	Lighted Seat Block	Each	17	\$	\$
R-82	8-35	Lean Rail	Each	2	\$	\$
R-83	8-35	Game Table	Each	1	\$	\$
R-84	8-35	Street Chair	Each	4	\$	\$
R-85	8-35	Replace Existing Fence in Kind	Lin. Ft.	220	\$	\$
R-86	8-35	Replace Existing Gate in Kind	Each	8	\$	\$
R-87	8-36	Bike Corral	Each	3	\$	\$
R-88	8-38	Bike Rack	Each	34	\$	\$
R-89	8-40	Commercial ADA Ramp	Each	1	\$	\$
R-90	8-41	Cement Colored Concrete	Sq. Yd.	900	\$	\$
R-91	8-45	Informational Plaque	Each	11	\$	\$
R-92	8-46	Temporary Outdoor Mat for Pedestrians	Sq. Ft.	3,500	\$	\$
R-93	8-46	Temporary Bypass Ramps	Each	15	\$	\$
R-94	8-47	Accessibility Work Plan	Lump Sum	1	Lump Sum	\$
R-95	8-48	Maintain Required Access	Lump Sum	1	Lump Sum	\$
R-96	8-49	Protection or Private Property	Lump Sum	1	Lump Sum	\$

## TOTAL BASE BID FOR ITEMS R-1 THRU R-96

Contractor's Name: \_\_\_\_\_ Specification Number: PW23-0021F Links to Opportunity Bid Package 3

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## 1 DIVISION 2: EARTHWORK

### 2 3 2-01 CLEARING, GRUBBING, AND ROADSIDE CLEANUP

4 (March 17, 2016 Tacoma GSP)

### 5 6 **2-01.1 Description**

7 The first sentence of the first paragraph is revised to read:

8 The Contractor shall clear, grub, and cleanup those areas within the area of ground disturbance
9 in accordance with the Plans and Specifications and as needed to complete the Contract Work.

10

12

18

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11 This section is supplemented with the following:

Trees, stumps, shrubs, and brush located outside the Clearing & Grubbing area shall be
considered as part of "Clearing and Grubbing" when identified for removal on the Plans.

## 16 2-01.2 Disposal of Usable Material and Debris

17 The second paragraph is revised to read:

19 The Contractor shall dispose of all debris in accordance with Section 2-01.2(2). 20

## 21 2-01.3(1) Clearing

22 This section is revised to read:

- 23 24 1. Fell trees within the area to be cleared and individual trees as shown on the Plans. 25 2. Close-cut parallel to the slope of the ground all stumps to be left in the cleared area 26 outside the slope stakes. 27 3. Close cut all stumps that will be buried by fills 5-feet or less in depth. 28 4. Follow these requirements for all stumps that will be buried by fills deeper than 5-feet 29 from the top, side, or end surface of the embankment or any structure and are in a 30 location that will not be terraced as described in Section 2-03.3(14): 31 a. Close-cut stumps under 18-inches in diameter. 32 b. Trim stumps that exceed 18-inches in diameter to no more than 12-inches 33 above original ground level. 5. Leave standing any trees or native growth indicated by the Engineer. 34 35 6. Trim all trees to be left standing to the height specified by the Engineer and certified Arborist, with a minimum height of eight (8) feet above sidewalk and fourteen (14) 36 37 feet above the roadway surface. Neatly cut all limbs close to the tree trunk. All tree trimming must be done by or under the direction of a certified Arborist. 38 7. Thin clumps of native growth as the Engineer may direct. 39 40 8. Protect, by fencing if necessary, all trees or native growth from any damage caused 41 by construction operations in accordance with Standard Plans LS-08 through LS-11. 42 9. Trim all shrubs and brush which covers sidewalks, curb, curb and gutter, and curb 43 ramps to a minimum of four inches from the edge of sidewalk or as directed by the 44 Engineer or Certified Arborist. 45 10. Remove and dispose of, or relocate the following existing features where necessary 46 within the project limits or as indicated on the Plans:
  - a. Cement concrete gutter boxes.

1 2 3 4 5	<ul> <li>b. Large rocks, garden stone, or other stones used for the purpose of landscaping or as a barrier when inside the paving limits.</li> <li>c. Wood curbs, logs, railroad ties, and other timber used for landscaping when inside the paving limits.</li> <li>d. Bollards inside the paving area and not designated to remain</li> </ul>
ñ	<ul> <li>Belocate Eco Blocks to a location outside of the paving limits</li> </ul>
7	11 Pomovo troop as indicated on the plane or as directed by the Engineer or certified
0	Arbariat. The tree removel shall include atump grinding to sight include blow find
0	Albonst. The free removal shall include stump ginding to eight inches below linal
9	grade and removal of roots according to the Plans and Specifications, and as
10	directed by the Engineer and certilled Arbonst, such that a new tree can be planted
11	In the same area.
12	12. Perform all work as required by the certified Arborist Reports to protect, remove, trim,
13	prune roots or limbs, and any other works detailed in the Arborist Reports. This work
14	shall be performed on Force Account per Section 1-09.6.
15	13. All stumps identified for stump grinding or as directed by the Engineer or certified
16	Arborist shall be ground to eight inches below final grade.
17	
18	
19	2-01.3(2) Grubbing
20	item e is revised to read:
21	
22	Upon which embankments will be placed, except stumps may be close-cut or trimmed as
23	allowed in Section 2-01.3(1) Item 4.
24	
25	Add the following sections:
26	
27	2-01.3(5) Certified Arborist
28	
29	The Contractor shall provide a certified Arborist on site to assess and provide Arborist Reports
30	for all work within the Tree Protection Zone of a tree in accordance with the Urban Forestry
31	Manual and the Tacoma Municipal Code 13.06.502. All work done in the critical root zone shall
32	be in compliance with the Arborist Report provided by the certified Arborist or under the direction
33	of the certified Arborist.
34	
35	The certified Arborist shall be on site to assess and provide direction for all tree trimming, limb
36	or root pruning of greater than 4 inches, and tree removals as specified in the Plans or other
37	tree work as directed by the Engineer. The certified Arborist shall submit an Arborist Report to
38	the Engineer per section 1-05.3
39	
40	The Arborist shall be certified by the International Society of Arboriculture (ISA).
41	
42	2-01.3(6) Definition of Vegetation
43	
44	A "tree" is defined as any self-supporting, woody perennial plant having a main stem (trunk) and

- which normally attains a height of at least ten (10) feet at maturity.
- A "shrub" is defined as any woody perennial plant which normally attains a height of less than
  ten (10) feet at maturity and which can be construed to have some landscape value.

"Brush" is defined as any perennial vegetation which normally attains a height of ten (10) feet or
less at maturity, which is not maintained as part of a landscape feature, which is "volunteer"
growth or which exists in a naturalized state. Examples include but are not limited to stands of
blackberries and scotch broom.

## 7 2-01.3(7) Tree and Stump Classifications

8

9 Trees shall be classified by the measured diameter at a point four and one-half (4-½) feet above 10 average ground level. Trees that have several stems at the four and one-half (4-½) foot height 11 will be considered a tree clump. The largest diameter single stem will be measured and will 12 dictate the class rating. Only the largest, single stem in the clump will be utilized for 13 measurement and payment.

14

15 Stumps shall be classified by the measured diameter at the highest point of the stump above

the average ground level or a point four and one-half (4-1/2) feet above the average groundlevel, whichever is less.

18

19 Trees and stumps will be classified as follows:20

Less than 4 inches	Class 0
4 inches up to but not including 12 inches	Class I
12 inches up to but not including 24 inches	Class II
24 inches up to and including 42 inches	Class III
Greater than 42 inches (Tree height greater than 30 feet)	Class IV
Greater than 42 inches (Tree height of 30 feet or less)	Class V
	Less than 4 inches 4 inches up to but not including 12 inches 12 inches up to but not including 24 inches 24 inches up to and including 42 inches Greater than 42 inches (Tree height greater than 30 feet) Greater than 42 inches (Tree height of 30 feet or less)

### 28 29 **2-01.4 Measurement**

30 This section is supplemented with the following:

31 32

33 No specific unit of measurement shall apply to the lump sum item "Certified Arborist".

34
35 No specific unit of measurement shall apply to "Certified Arborist Assessment Report
36 Compliance", by force account

37

## 38 2-01.5 Payment

39 The third paragraph of this section is revised to read:

40
41 The unit Contract price per lump sum for "Clearing and Grubbing" shall be full pay for all Work
42 described in this section and section 2-13 except "Roadside Cleanup", "Certified Arborist", and
43 "Certified Arborist Assessment Report Compliance".

- 4445 This section is supplemented with the following:
- 46

47 "Certified Arborist", lump sum

48

The lump sum contract price for "Certified Arborist" shall be full pay for all labor, materials, and equipment to provide a certified Arborist on site prior to and during construction to perform all tree assessments, provide tree assessment reports, direct and assess all tree trimming, root and limb pruning, tree removals or other tree work (not included in other bid items) as directed by the Engineer and in accordance with the Contract.. No extra payment shall be made for any delays in construction schedule to provide a certified Arborist and comply with the certified Arborists assessments and reports.

- 10
- 9 "Certified Arborist Assessment Report Compliance", by force account
- An estimated amount is entered into the bid proposal for "Certified Arborist Assessment Report
- 12 Compliance", by force account. The Contractor will be compensated by force account per 13 Section 1-09.6 for all Work related to the Arborist Assessment Report as directed by the
- 14 Certified Arborist or as directed by the Engineer.
- 14
- 16
- 17

## 1 2-02 REMOVAL OF STRUCTURES AND OBSTRUCTIONS

2 (December 9, 2005 Tacoma GSP) 3

## 4 2-02.1 Description

5 The first sentence of the first paragraph is revised to read:

The Work described in this section includes relocating, removing and disposing of, or salvaging,
materials named in the Special Provisions, as shown on the plans, or identified by the Engineer,
including street lights and foundations foundations, pole foundations, signs, drain pipes, all
items needed to complete the work, and all such items that are omitted in bid items outside of

- 11 Section 2-02.
- 12

17

22

13 This section is supplemented with the following:

The Work described in this section also includes test holes according to this special provision,
for determining the location and depth of existing utilities or structures.

### 18 2-02.3(3) Removal of Pavement, Sidewalks, and Curbs

- 19 *This section is deleted.*20
- 21 Section 2-02.3 is supplemented with the following:

# 23 **2-02.3(19) Test Holes**

The engineer may at certain locations on the project site need to discover or locate an existing utility or structure that does not have proper as-built information. The contractor shall excavate a small test hole, where directed by the engineer, in determining the location and depth of the existing utility or structure.

29

The test hole may be excavated by conventional excavation methods or by the use of a vacuum truck. The test hole for the conventional method shall be a minimum of 48" by 48" in width. The test hole shall be no deeper than 17 feet in depth. Gravel borrow shall be used to backfill the excavated hole. The gravel borrow shall be compacted in accordance to section 2-09 of the standard specifications. Three inches of cold mix asphalt shall be placed on top of the gravel borrow to provide a driving surface in a travel lane.

## 37 2-02.4 Measurement

38 This section is supplemented with the following:

39

40 Measurement of the test hole shall be measured per linear foot from the surface of the

- 41 existing ground to the bottom of the excavated test hole.
- 42

## 43 **2-02.5 Payment**

44 This section is supplemented with the following:

- 45 46 Any demolition, relocation, and removal work not specifically 1 included in other bid items shall
- 47 be paid for under "Removal of Structure and Obstruction", per lump sum.
- 48

### "Test Hole", per linear foot

123456789 The unit contract price per linear foot for "Test Hole" shall be full pay for all labor, equipment, and materials required to perform potholing, complete and close the test hole, and construct temporary pavement repair in accordance with these specifications.

#### 1 2-03 **ROADWAY EXCAVATION AND EMBANKMENT**

(March 17, 2016 Tacoma GSP)

#### Description 2-03.1

The last sentence of the first paragraph is deleted.

# 2 3 4 5 6 7 2-03.3(5) Slope Treatment

- 8 This section is deleted.
- 9

#### 10 2-03.3(19) Removal of Pavement, Sidewalks, Curbs, and Gutters

- This section is deleted. 11
- 12
- 13 14

#### 2-06 SUBGRADE PREPARATION 1

2 (September 20, 2018 Tacoma GSP) 3

#### 4 2-06.3 **Construction Requirements** 5

This section is supplemented with the following:

## 2-06.3(3) Subgrade Repair for Subgrade Not Constructed Under Same Contract

7 8

6

9 Upon removal of pavement, the Contractor and City Inspector shall walk the subgrade surface 10 to determine and delineate any subgrade areas that need to be repaired. Any Subgrade areas 11 that require repair, from the initial walkthrough, shall be determined solely by the City Inspector. 12 Any initial subgrade repairs shall be paid for according to Section 2-06.5(2). Subgrade repair 13 shall be performed in accordance with Section 2-06 and immediately after it has been 14 determined and delineated. In order to minimize damage to the subgrade, the Contractor is 15 encouraged to minimize pavement removal during the work.

16

#### 17 2-06.3(4) Subgrade Maintenance and Protection

18

19 Immediately after the contractor constructs the subgrade or completes initial subgrade repair to

20 the City's satisfaction, the contractor shall maintain and protect the subgrade. Any defects or

21 damage of the subgrade thereafter shall be repaired or replaced according to Section 2-06, at

22 the Contractor's expense before placement of any succeeding courses or pavement.

23 Maintenance and protection of the subgrade shall be the responsibility of the Contractor. The

24 Contractor shall be required to take precautionary measures to prevent damage by heavy loads 25 or equipment, as well as from inclement weather.

26

27 The Contractor and City Inspector should walk the exposed subgrade on a daily basis to 28 determine if there is damage to the subgrade. Any Subgrade areas that require repair 29 according to this section shall be determined solely by the City Inspector.

- 30
- 31 2-06.5 **Measurement and Payment**
- 32 This section is supplemented with the following: 33
- 34 Subgrade Maintenance and Protection shall be paid by lump sum and shall apply to all 35 subgrade.
- 36
- 37 "Subgrade Maintenance and Protection", per lump sum 38
- 39 The lump sum price for "Subgrade Maintenance and Protection" shall be full pay for all material,
- 40 labor, and equipment for implementation of subgrade maintenance and protection, as
- 41 determined by the City Inspector.
- 42 43 If the contractor fails to protect the subgrade so that additional subgrade repairs are required as
  - 44 determined by the City Inspector, then the city shall not owe payment for these additional 45 subgrade repairs in accordance with Section 2-06.3.
  - 46

#### 47 2-06.5(2) Subgrade Not Constructed Under Same Contract

Item 5 under this section is deleted. 48

- 2-07 1 WATERING
- 2 (August 3, 2009 Tacoma GSP) 3

#### 4 2-07.3 **Construction Requirements** 5

The last sentence of the first paragraph is revised to read:

6 7 The Engineer may direct that the Contractor apply water <u>during non-working hours such as</u> 8 evenings, weekends, or recognized holidays. 9

10 Section 2-07.3 is supplemented with the following:

#### 11 12 2-07.3(1) Water Supplied from Hydrants

13 14 There is no guarantee that all fire hydrants will be available for use for cleaning, lining, or any 15 other construction activities associated with this project. Prior to construction activities, it shall 16 be the Contractor's responsibility to verify which hydrants will be available by contacting Tacoma

17 Water. The Contractor shall use only those hydrants designated by Tacoma Water.

18

19 Water supplied from hydrants governed by Tacoma Water shall be used in strict compliance with

- 20 the "Operating Procedures for the use of Water Division Hydrants" available at the Tacoma
- 21 Water Permit Counter.
- 22

23 The Contractor shall obtain a Hydrant Permit prior to start of work by contacting the Water 24 Permit Counter at (253) 502-8247, 2nd floor, Tacoma Public Utilities, Administrative Building, 25 3628 South 35th Street, Tacoma, WA 98409. A copy of the approved Hydrant Permit shall be 26 submitted to the Engineer.

27

28 Contractor personnel shall be in possession of a valid Tacoma Public Utilities Hydrant

29 Certification Card prior to obtaining a permit. If necessary, contractor personnel shall undergo

30 training to receive the required certification. Contact the Water Permit Counter to set up training 31 as necessary.

32

#### 33 2-07.4 Measurement

34 This section has been revised to read: 35

36 No specific unit of measurement shall apply to "Watering", to be included in the lump sum 37 "Erosion Control and Water Pollution Prevention" lump sum item in Section 8-01.

38

#### 39 2-07.5 Payment

- 40 This section has been revised to read:
- 41

42 The lump sum unit contract price for "Erosion Control and Water Pollution Prevention" in Section 43 8-01 shall include the full pay for all labor, materials, tools, and equipment necessary to furnish, haul, and apply the water.

- 44
- 45
- 46 47

## 1 2-09 STRUCTURE EXCAVATION

(March 17, 2016 Tacoma GSP)

This section is deleted.

## 1 2-13 VEGETATION REMOVAL

2 (March 17, 2003 Tacoma GSP) 3

## 2-13.1 Description

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This Work shall consist of the removal and disposal of vegetation identified on the Plans.

This Section was supplemented with the following:

910 Clearing of all vegetation shall be done in accordance with Section 2-01.3(1).

# 11122-13.2Definition of Vegetation

A "tree" is defined as any self-supporting, woody perennial plant having a main stem (trunk) and
which normally attains a height of at least ten (10) feet at maturity, usually with one (1) main
stem or trunk and many branches.

A "shrub" is defined as any woody perennial plant which normally attains a height of less than
ten (10) feet at maturity and which can be construed to have some landscape value.

"Brush" is defined as any perennial vegetation which normally attains a height of ten (10) feet or
less at maturity, which is not maintained as part of a landscape feature, which is "volunteer"
growth or which exists in a naturalized state. Examples include but are not limited to stands of
blackberries and scotch broom.

26 This Section was supplemented with the following:

27
28 Clearing of all vegetation shall be done in accordance with Section 2-01.3(1).
29

# 30 2-13.3 Construction Requirements31

32 All stumps not identified for removal shall be close-cut parallel to the slope of the ground.

All stumps identified for stump grinding shall be ground to eight inches below final grade.

36 Disposal of all debris shall be in accordance with Section 2-01.2(2).37

38 This Section was supplemented with the following:

40 Clearing of all vegetation shall be done in accordance with Section 2-01.3(1). 41

## 42 2-13.4 Measurement

44 This section is revised to read:

45
46 Vegetation removal is included within the lump sum Clearing and Grubbing item, refer to section
47 2.01.4.
48

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## 2-13.5 Payment

This section is revised to read:

Payment for vegetation removal will be made in accordance with the lump sum Clearing and Grubbing item, refer to section 2.01.5.

# 1 2 3 4 5 6 7 2-14 **PAVEMENT REMOVAL**

(March 17, 2003 Tacoma GSP)

#### 2-14.1 Description

8 9 The Work described in this section includes the removal and disposal of pavement surfaces identified on the Plans or as marked in the field.

#### 2-14.2 **Pavement Classification**

10 Removal of pavement is defined below by type and class based on composition and thickness: 11

12	•	
13 14 15	Туре І	Pavement removal where all or portions of the existing pavement is being removed in conjunction with street construction or any other removal not described below for Type II or Type III.
16 17 18	Type II	Pavement removal required for the placing of utilities at greater and varying depths, such as sewers.
20 21 22	Type III	Pavement removal required for narrow and shallow utility cuts in order to install light cables, conduits and similar shallow utilities.
23 24 25 26 27	Class A2	Class A2 pavement removal shall apply to the removal of asphalt concrete, bituminous road surfacing, multiple lift bituminous surface treatments or any combination of these components having an average thickness of two inches or less.
28 29 30 31	Class A4	Class A4 pavement removal shall apply to the removal of asphalt concrete, bituminous road surfacing, multiple lift bituminous surface treatments or any combination of these components having an average thickness between two inches and four inches.
33 34 35 36 37	Class A8	Class A8 pavement removal shall apply to the removal of asphalt concrete, bituminous road surfacing, multiple lift bituminous surface treatments or any combination of these components having an average thickness between four inches and eight inches.
37 38 39 40 41 42 43	Class C6	Class C6 pavement removal shall apply to all non-reinforced cement concrete pavements or slabs having an average thickness of six inches or less, typical for existing sidewalk and residential driveway entrances. After the curbs and pavement have been constructed, the Contractor may be required to remove additional sidewalk necessary to provide proper connections and grades, as determined by the Engineer.
44 45 46 47 48	Class C12	Class C12 pavement removal shall apply to all cement concrete pavements or slabs having an average thickness of between six inches and twelve inches, typical for concrete road pavement and some commercial driveways.

- 1Class CAClass CA pavement removal shall apply to all pavements that have a wearing2surface of asphalt concrete upon a cement concrete pavement or, cement3concrete base, and for which the total combined thickness of the pavement4averages between six inches and twelve inches.5
  - **Class H** Class H pavement removal shall apply to early type pavement of a cement concrete base with a brick or cobblestone surface and potentially an additional layer of asphalt concrete pavement for which the total combined thickness of the pavement averages between six inches and twelve inches.

### 10 11 2-14.3 Construction Requirements

All final meetlines shall be sawcut. All pavement removal shall be Type I removal unless notedotherwise below.

All pavement removal associated with proposed irrigation connections, existing main to
proposed irrigation meter, shall be paid by City of Tacoma, see section 8-03.

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All pavement removal associated with removal and replacement of existing pavement for the

installation of proposed irrigation service lines outside of the proposed streetscape
 improvements, refer to the TESC and Demolition Plans, shall be Type III.

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Where monolithic cement concrete pavement and curb are being removed, the curb removal
shall be considered as pavement removal, and the measurement for payment will be to the back
of the curb.

The removal of existing street improvements shall be conducted in such a manner as not to
damage utilities and any portion of the improvement that is to remain in place. Any deviation in
this matter will obligate the Contractor, at no expense to the Contracting Agency, to repair,

30 replace, or otherwise make proper restoration to the satisfaction of the Engineer.31

## 32 2-14.4 Measurement

34 Pavement removal will be measured per square yard.35

Type I pavement removal will be measured in its original position through the use of survey
techniques.

## 39 2-14.5 Payment

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41 Payment will be made in accordance with Section 1-04.1.42

43 Remove Existing Pavement, Type \_\_\_\_, Class \_\_\_\_, per square yard

44 45 The unit price per square yard for "Remove Existing Pavement, Type \_\_\_\_\_, Class \_\_\_\_\_" shall

46 be full compensation for all classes of pavement removal in accordance with the Plans and

47 these Specifications. All costs associated with saw cutting meet lines shall be included in the

48 unit Contract price for pavement removal. Pavement class shall be assumed based on the

1 location of existing pavement. Class A2 pavement is assumed to be located in areas where

2 existing landscape strips are paved with asphalt and are not existing driving surfaces. Class A4

3 pavement is assumed to be located on all asphalt surfaces outside of the existing paved

4 roadways not included in Class A2. Class A8 pavement is assumed to be all existing asphalt

5 roadway surfaces. Class C6 pavement is assumed to be all existing cement concrete sidewalk.

6 Class C12 pavement is assumed to be all existing cement concrete driving surfaces. Classes

7 CA and H are not anticipated to be found. If existing surface thicknesses are encountered which

8 do not match the assumptions listed above, a proportional adjustment per square yard will be

9 paid to the Contractor.

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#### 2-15 CURB AND CURB AND GUTTER REMOVAL 1 2

(March 17, 2003 Tacoma GSP)

#### 2-15.1 Description

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The Work described in this section includes the complete removal and disposal of curbs and curb and gutter identified on the Plans or as marked in the field.

#### 2-15.2 **Curb Classification**

11 Removal of curb and/or curb and gutter will include all types as defined below:

12 13 Integral Curb - Integral curb shall consist of curb that is constructed monolithic with the 14 adjacent cement concrete pavement.

- 15 16 **Curb** - Curb may consist of cement concrete curb, granite curb, or any other combination of 17 rigid material that extends below the pavement surface elevation.
- 18 19 Extruded/Precast Curb - Extruded or precast curb may consist of asphalt or concrete extruded 20 or precast curb that is installed on a pavement surface.
- 21 22 Curb and Gutter - Curb and gutter may be cement concrete, or a cement concrete curb with a 23 brick gutter on a cement concrete base, or other combination of rigid material. 24

#### 25 2-15.3 **Construction Requirements**

26 27 Integral curb removal shall consist of the removal of the curb and the integral base section 28 under the curb. The removal shall be accomplished by saw cutting along the face of the curb. 29

30 The removal of the curb and/or curb and gutter shall be conducted in such a manner as not to 31 damage utilities and any portion of the improvement that is to remain in place. Any deviation in 32 this matter will obligate the Contractor, at no expense to the Contracting Agency, to repair, 33 replace, or otherwise make proper restoration to the satisfaction of the Engineer. 34

#### 35 2-15.4 Measurement

37 Curb and curb and gutter removal will be measured per linear foot.

#### 38 39 2-15.5 **Payment** 40

- 41 Payment will be made in accordance with Section 1-04.1 42
- 43 "Remove Curb", per linear foot
- 44 45 All costs associated with saw cutting necessary for the removal of curb and/or curb and gutter
- 46 shall be included in the unit Contract price for removal.

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The Standard Specifications are supplemented with the following:

## 2-18 REMOVE AND RELOCATE EXISTING SITE FEATURE

## 2-18.1 Description

The work described in this section includes the removal, storage, and relocation of site features, which include planter pots, signs, trash cans, bus shelters, mail boxes, kiosks, mail drop box, newspaper racks, security poles, and historic maker's mark sidewalk imprints.

### 10 11 **2-18.2 Classification**

13 Remove and relocate existing site feature will be based on composition, as defined below:

Planter Pot – Planter pots shall consist of cement or ceramic pots located on sidewalks within
 the project ROW and called out on the plans.

Sign – Signs shall consist of a base, post and sign located within the project ROW and called
 out on the plans. Existing signs on posts to be removed must be replaced as noted on the
 plans.

Trash Can – Trash cans shall consist of circular trash receptacles within the project ROW and
 called out on the plans.

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Bus Shelter – Bus shelters shall consist of the concrete pad, structure, roof, siding and bench
 located at bus stops within the ROW and called out on the plans. Work associated with bus
 shelters and bus pads is to be performed by Pierce Transit crews. Contractor must coordinate
 with work with Pierce Transit. All costs associated with coordination with Pierce Transit is
 incidental to this work

30

Mail Box – Mail boxes shall consist of the mail box, post, and concrete base located within the
 project ROW and called out in the plans.

33

Kiosk – Kiosk shall consist of the board, structure, and base located within the project ROW
 and called out in the plans

Security Pole – Security pole shall consist of a pole, base and any attached electronics located
 within the project ROW and called out in the plans.

39

40 **Mail Drop Box** – USPS Mail Drop Box shall consist of the mail receptacle located within the

- 41 project ROW and called out in the plans. All costs associated with the removal, temporary
- storage, and reinstallation of the existing USPS Mail Drop Box including any requiredcoordination with USPS is incidental to this work.

44

45 **Newspaper Rack** – Newspaper Rack shall consist of the newspaper holder and base located

46 within the project ROW and called out in the plans.

47

Historic Maker's Mark Imprint - Existing historic maker's mark imprints found in the existing
 sidewalk within the project ROW and called out in the plans. This work must be done per City of
 Tacoma standards as shown on the plans.

## 2-18.3 Construction Requirements

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7 The removal of site features shall be conducted in such a manner as not to damage utilities, the
8 sidewalk, or roadway. Any deviation in this matter will obligate the Contractor, at no expense to
9 the Contracting Agency, to repair, replace, or otherwise make proper restoration to the
10 satisfaction of the Engineer.

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Site features shall be kept off-site in a secured City of Tacoma storage yard at the entrance of
 the Tacoma Landfill and Recycling Center until relocation. Driving directions are provided below.

- 14 15 From I-5:
  - 1. Take exit 132 and merge onto SR-16
  - 2. Take exit 1C (Fircrest/Čenter Street)
  - 3. At the traffic light, go straight onto South Mullen Street and follow the road until you reach the landfill
    - 4. Take the first right just inside the main entrance gate. Storage area is on the South side of the Storm Pond.
- 22 From Orchard Street:23 1. Turn onto South
  - 1. Turn onto South Center Street heading east
  - 2. Turn right onto South Mullen Street and follow the road until you reach the Tacoma Transfer & Recovery Center
    - 3. Take the first right just inside the main entrance gate. Storage area is on the South side of the Storm Pond.
- Contractor shall coordinate access with the City of Tacoma during construction. Any damage
  occurred to the site feature during the process of removal to relocation shall be repaired or
  replaced at the expense of the contractor.
- 31 replaced a 32
- If the site feature to be removed and/or relocated is owned by Pierce Transit; the transit
  authority must first be contacted and their site feature shall be handled per Pierce Transit's
  direction.
- The site feature shall be relocated and installed as described on the plans or as directed by the
  Engineer. The feature installation shall meet project specifications.

## 40 2-18.4 Measurement

- 41
  42 The removal of planter pots, signs, trash cans, bus shelters, mail boxes, kiosks, security poles,
  43 mail drop boxes, newspapers racks, and historic maker's mark imprints will be measured per
  44 each.
- 45
  46 The removal of fence and gate will be measured per linear foot. See section 2-20 for fence and
  47 gate removal.
- 48

1	2-18.5	Payment							
2 3 4	Payment	will be made in accordance with Section 1-04.1.							
5	"Remove and Relocate Existing Planter Pot", per each								
7 8	"Remove	and Relocate Existing Sign", per each							
9 10	"Remove	and Relocate Existing Trash Can", per each							
11 12 13	"Coordina required	te Bus Shelter Work with Pierce Transit", per each including all costs associated with coordination with work with Pierce Transit.							
14 15 16 17	"Remove removal, required	and Relocate Existing Mail Drop Box", per each including all costs associated with the temporary storage, and reinstallation of the existing USPS Mail Drop Box including any coordination with USPS is incidental to this work.							
18 19	"Remove	and Relocate Existing Kiosk", per each							
20 21	"Remove	and Relocate Existing Newspaper Rack", per each							
22 23	"Remove	and Relocate Existing Security Pole", per each							
24 25	"Remove	and Relocate Existing Historic Maker's Mark Imprint", per each							
26 27 28 20	All costs included	associated with the removal storage and installation of the site feature shall be in the unit contract price of the remove and relocate bid item.							
30		END OF SECTION							

The Standard Specifications are supplemented with the following:

## 2-19 REMOVE AND REPLACE EXISTING LID WITH ADA COMPLIANT NON-SLIP LID

### 2-19.1 Description

The work described in this section includes the removal and replacement of utility lids to provide a non-slip and ADA compliant surface.

### 9 10 **2-19.2 Classification**

Removal and replacement of existing lid with ADA compliant non-slip lid shall include all nonADA compliant utility lids within the ADA walkway as shown on the plans.

## 15 2-19.3 Construction Requirements

All utility lids directed for replacement shall be replaced by a similar size locking lid meeting nonslip ADA standards with a coefficient of friction of at least 0.6. Any patching or sealing of the
sidewalk shall be done in a manner to provide a smooth surface and shall be included in the unit
contract price.

### 2-19.4 Measurement

The replacement of lids will be measured per each.

## 26 2-19.5 Payment

2728 Payment will be made in accordance with Section 1-04.1.

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30 "Remove and Replace Existing Lid with ADA Compliant Non-Slip Lid", per each

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All costs associated with the removal and disposal of the existing lid shall be included in the unit contract price of the bid item. All costs associated with replacing existing utility boxes as

34 required to install ADA compliant non-slip lids and all costs associated with sidewalk removal

and replacement required to replace damaged utility boxes shall be included in the unit contract
 price for the bid item.

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The Standard Specifications are supplemented with the following:

## 2-20 REMOVE EXISTING SITE FEATURE

## 2-20.1 Description

The work described in this section includes the removal and disposal of chain link fences, bollards, walls 0 - 4 feet and stairs as identified on the Plans or as marked in the field. The work also includes the removal and return to the City of Tacoma of Business District Banners.

## 11 2-20.2 Classification

13 Remove existing site feature shall be based in composition, as defined below:

Existing Fence and Gate – Fencing and gates shall consist of chain link, wooden, and other
types of both residential and commercial fences and associated gates within the project ROW
and called out in the plans or marked in the field.

Bollards – Bollards shall consist of concrete traffic bollards located within the project ROW and
 called out in the plans or marked in the field.

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Wall 0 – 4 Feet – Walls shall consist of retaining walls made from either concrete or earthen
 rocks that lie within the project ROW and called out in the plans or marked in the field.

Stairs – Stairs shall consist of stairs made from concrete or wood that lie within the project
 ROW and called out in the plans or marked in the field.

Business District Banner – Business district banners shall consist of cloth banners hung on
luminaries that are either called out on the plans or marked in the field. Contractor is responsible
for returning all business district banners to applicable business district upon removal.

## 32 2-20.3 Construction Requirements

The removal of site features shall be conducted in such a manner as not to damage utilities, the
sidewalk, or roadway. Any deviation in this matter will obligate the Contractor, at no expense to
the Contracting Agency, to repair, replace, or otherwise make proper restoration to the
satisfaction of the Engineer.

38

Removal of the business district banners shall be conducted in a manner to not damage the
banner or the luminaire it is mounted on. Once removed the banners shall be returned to the
City of Tacoma.

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# 43 **2-20.4 Measurement** 44

45 The removal of Bollards will be measure per each.46

47 The removal of fences, gates, and walls 0-4 feet will be measured per liner foot.

48

The removal of stairs will be measure per square foot. The removal of business district banners will included in a lump sum that includes the removal of all business district banners and coordination required to return these banners to applicable business district. 7 Payment 2-20.5 Payment will be made in accordance with Section 1-04.1. "Remove Bollards", per each "Remove Wall 0-4 feet", per linear foot "Remove Stairs", per square foot "Remove Fence and Gate", per linear foot All costs associated with the removal and disposal of the Chain Link Fences, bollards, walls and stairs shall be included in the unit contract price of the bid item. "Remove Business District Standard, per lump sum. The "Remove Business District Standard" lump sum Bid item includes the removal of all business district banners and coordination required to return these banners to applicable business district. **END OF SECTION** 

The Standard Specifications are supplemented with the following:

## 2-21 CONTROL AND MANAGEMENT OF CONTAMINATED MATERIALS

### 2-21.1(1) General

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5 6 7 Contaminated soils exceeding the levels listed in the Washington State Models Toxics Control 8 Act (MTCA) cleanup regulations (Chapter 173-340 WAC) are not expected to be encountered 9 on the project site. If contaminated soils are discovered onsite the Contractor shall operate 10 within and meet all applicable laws and regulations associated with working with regulated 11 materials encountered during excavation activities. 12

13 The Contractor is advised to review the applicable Washington Administrative Codes (WAC), 14 Washington Department of Ecology (DOE), Washington State Department of Health (DOH), 15 MTCA and Asarco Reports. 16

17 Websites for further information: 18

- 19 WAC: http://apps.leg.wa.gov/wac/ (Title 173-303 & 173-340) 20 21 DOH: http://www.doh.wa.gov/ 22 23 DOE: http://www.ecy.wa.gov/ 24 25 MTCA: http://www.ecy.wa.gov/pubs/9406.pdf
- 26 27 Public Health Seattle and King County: 28 http://www.kingcounty.gov/healthservices/health/ehs/toxic/ArsenicLead.aspx
- 29 30 Pierce County Health Department: 31 http://www.tpchd.org/index.php 32
- 33 Environmental Protection Agency, Asarco Smelter Cleanup: 34 http://www.epa.gov/region10
- 35 36 Agency for Toxics Substances and Disease Registry, Facts on Arsenic: 37 http://www.atsdr.cdc.gov/tfacts2.html
- 38 39 Centers for Disease Control. Facts on Lead: 40 http://www.cdc.gov/nceh/lead/publications/1997/factlead.htm 41
- 42 Department of Health, Drinking Water: 43
  - http://www.doh.wa.gov/ehp/dw

#### 44 45 2-21.1(3) Soil Management 46

47 Contaminated soils are not expected to be found however, if contaminated soils are discovered 48 during the construction process, the Contractor shall load any contaminated material directly

49 into trucks and dispose of it as contaminated material at LRI Landfill, located at 30919 Meridian

- 50 Street East, Graham, WA, or other licensed and acceptable facility. A Waste Disposal
- 51 Authorization (WDA) for the disposal facility will be supplied to the Contractor at the beginning of

1 the Construction Activities. The Contractor shall follow all provisions of the WDA. The City of 2 Tacoma will pay for all LRI disposal fees. 3

## 2-21.1(4) Submittals

5 6 This paragraph lists submittals required for this project area. Other submittals will be as 7 required. 8

- 1. Health and Safety Plan Section 2-21.2(2).
- 2. Resume of Site Health and Safety Officer Section 2-21.2(3).
- 3. Manifest Package and Supporting Analytical Data Section 2-21.3(2)D
- 4. Soil Management Plan Section 2-21.2(5)

## 5. Contractor and/or Subcontractor Environmental Qualifications

#### 14 2-21.2 Health and Safety 15

16 The Contractor shall be responsible for the health and safety conditions at the job site related to 17 the regulated substances. This includes the health and safety of workers and public during 18 work and non-working hours. The Contractor shall inform all workers and visitors of the 19 potential for exposure to regulated materials. The Contractor shall follow regulatory procedures 20 to prevent the release of contamination.

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22 Contaminated material excavated during the project is considered solid waste. The Contractor's 23 Health and Safety Plan shall specify training requirements for the site, including 24, 48, or 80 24 hour training OSHA training as referenced in WAC 296 843 20010, if applicable. The 25 Contractor shall be responsible for all training costs as part of the Site Health and Safety Plan

26 lump sum Bid item.

#### 27 28 2-21.2(1) Health and Safety Laws and Regulations

29

30 For all work conducted within the limits of this project site, the Contractor shall ensure 31 compliance with all applicable health and safety provisions for hazardous waste operations, 32 including requirements of the Federal Occupation Safety and Health Act of 1970 (OSHA) and all 33 amendments, including 29 CFR Part 1910, WAC 296-843, as well as any other applicable 34 regulations. Failure to be thoroughly familiar with applicable health and safety provisions shall 35 not relieve the Contractor of the responsibility to fully comply with all laws and regulations.

36 37 2-21.2(2) Site Health and Safety Plan

38

39 The Site Health and Safety Plan shall be prepared in accordance with WAC 173-340-810. The 40 Contractor shall develop a written Site Health and Safety Plan to be used for the duration of the 41 project. The plan shall incorporate all required city, county, state, and federal health and safety 42 provisions. The plan shall be submitted to the City within ten (10) working days after execution 43 of the contract. The Contractor is advised that the City will review the Site Health and Safety 44 Plan, but the Contractor is solely responsible for ensuring that the Site Health and Safety Plan is 45 implemented in accordance with the regulatory requirements. At least one copy of the plan shall be maintained at the work site. A properly gualified individual shall be assigned to serve 46 47 as the Site Health and Safety Officer, authorized to supervise and enforce compliance with the

1 plan. The Health and Safety Officer shall be responsible for monitoring the work area for health 2 hazards including sampling of the air, soil, and water as required to ensure worker safety. 3 All provisions of the Site Health and Safety Plan shall apply to the Contractor, Subcontractors, 4 and all other visitors to the site. Approved Subcontractors may elect to develop a site-specific 5 plan, but this shall not relieve the Contractor of the requirements and responsibilities described 6 herein. The terms and provisions of a Subcontractor's site-specific plan shall meet or exceed 7 the Contractor's plan and shall be submitted to the City or its agents prior to the Subcontractor 8 commencing work. 9

The Site Health and Safety Plan shall comply with all applicable regulations and shall include,
but not be limited to:

- A list of chemical hazards and physical hazards, allowable OSHA exposure levels, threshold limit values, and all other regulatory exposure levels.
   If 24, 48, or 80 hour training is required by the Site Health and Safety Plan, then
  - 2. If 24, 48, or 80 nour training is required by the Site Health and Safety Plan, then the Contractor shall provide a list of all persons, by work category/type, who will be trained. Photocopies of the employee's training certificates shall be submitted to the Contracting Agency.
    - Engineering controls, work practices, personnel and equipment decontamination procedures, and types of personal protective equipment to be used. A list of safety and monitoring equipment to be kept at the job site and its storage location. A record of monitoring equipment calibration shall be maintained.
      - 4. A list of required health and safety information to be documented.
      - 5. An emergency evacuation plan for immediate removal to the nearest hospital or doctor's care for any person who may be injured on the job site. It shall include evacuation routes to medical treatment and emergency telephone numbers for hospitals, ambulances, police and fire departments, poison control, and the City of Tacoma.

In the event the Health and Safety Plan is determined by a regulatory agency to be inadequate
to protect the employees and the public, then the Plan shall be modified by the Contractor at the
Contractor's sole expense.

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## 34 **2-21.2(3)** Site Health and Safety Officer

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36 The Contractor shall appoint a Site Health and Safety Officer for the project. The Health and 37 Safety Officer must meet the requirements contained in 29 CFR Part 1910 and Chapter 296-62 38 WAC and who is gualified by experience and training in hazardous waste operations in 39 accordance with other applicable laws, regulations, and requirements of this Section. The Site 40 Health and Safety Officer shall be qualified and authorized to monitor, supervise, and enforce 41 safety compliance with the Site Health and Safety Plan. A resume of the Site Health and Safety 42 Officer's qualifications shall be submitted to the City for review within five (5) working days of 43 receiving the Notice to Proceed. The Site Health and Safety Officer shall be on site at all times 44 when work operations involve excavation and trenching or at other times when the potential for 45 encountering hazardous substances exists as identified as contaminated soil in the Plans and 46 Section 2-17.

47

1 The Contractor shall be solely responsible for identification and monitoring of air (gases), soil, 2 dust, and groundwater with chemical constituents that could pose health and safety concerns to

3 site personnel. The Contractor shall provide for the protection of safety and health of all

4 workers and other authorized persons, including the City and its agents at the jobsite from

5 exposure to potentially hazardous substances.

6

The Contractor shall be solely responsible for ensuring that all necessary monitoring equipment,
 protective clothing, and other supplies and equipment up to the appropriate level of protection

9 as defined by WISHA, OSHA, and other applicable guidelines are available to implement the 10 plan. No work shall take place in areas where hazardous substances may potentially be

plan. No work shall take place in areas where hazardous substances may potentially be
 present unless the Site Health and Safety Officer is present and monitoring site conditions.

12

The Contractor, through the Site Health and Safety Officer, shall not permit any employee, in the performance of the Contract, to work under conditions which are hazardous to the

15 employee. Should violations of the safety and health requirements be called to the Site Health

16 and Safety Officer's attention by the City, its agent, or any authorized representative of a

17 regulator agency, then the Contractor shall immediately correct the identified conditions.

# 1819 2-21.2(4) Contractor Safety Equipment

The Contractor shall maintain, at the job site, first-aid and safety equipment applicable to the
work as prescribed by the governing safety authorities. All required safety equipment shall be
kept in fully operational condition for the duration of the contract.

24

All personnel shall be trained in the use of the appropriate safety equipment that would be
 utilized during the course of their work. The Site Health and Safety Officer shall ascertain that
 the safety equipment is being used when appropriate and/or required.

## 29 2-21.2(5) Soil Management Plan

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### The Contractor shall submit a detailed plan for management of all excavated soils. The plan shall include excavation, loading, and transporting procedures, dust control procedures, and disposal of contaminated soils.

34

## 35 2-21.3 Construction Requirements

3637 Construction activities at the site will generate excess soils and possible groundwater

associated with the installation of underground utilities. The Contractor shall fully develop and
 implement a program in accordance with the Health and Safety Plan to ensure worker health
 and safety and to minimize disruption to construction due to site contamination.

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## 42 **2-21.3(1)** Notification

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The Contractor shall notify the Contracting Agency, in writing, at least ten (10) working days

prior to the date that excavation operations are to begin and identify the limits of that excavation.
 Excavation and sampling shall not take place without a designated representative from the

- 47 Contracting Agency on site.
- 48

## 2-21.3(2) Transportation

## 2-21.3(2)A General

The Contractor shall provide all equipment, personnel, and materials necessary to load and
transport waste materials, including contaminated soils and debris, for off-site treatment and/or
disposal in accordance with federal, state, and local regulations. The City of Tacoma will pay for
all LRI disposal fees. All other costs associated with the equipment, personnel, and materials
necessary to load and transport waste material, including contaminated soils and debris shall be
included in the force account Bid item for Excavation and Haul of Contaminated Materials

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## 2-21.3(2)BControl of Waste Material

Vehicles used by the Contractor to transport waste materials shall be properly designed,
equipped, and maintained to prevent the loss of materials during transport. The following
requirements shall be met for all vehicles transporting waste materials from the site:

- 1. No soil from the site shall adhere to the outside of the surface of the vehicle (including tires and undercarriage).
  - 2. No liquids shall be leaking or dripping from the vehicles.
  - 3. Any and all waste materials shall be covered with tarpaulin or otherwise completely enclosed to prevent loss of materials from the vehicle during transport.
- 25 26

If leaking or dripping from transport vehicles occurs, the Contracting Agency may direct the
Contractor to use liners or other means to prevent dripping and leaking. The Contractor shall
implement such measures, as directed by the Contracting Agency, at the Contractor's sole
expense.

## 32 2-21.3(2)C Street Sweeping

The Contractor shall sweep those streets within the project when truck traffic carries soil from
the site into the street. Street sweeping shall be conducted in such a way as to not generate
visible dust. Material collected from street sweeping shall be disposed of in a legal manner at
an off-site location.

# 3839 2-21.3(2)DTransportation and Shipping Requirements

40

The Contractor shall be responsible for obtaining permits and authorizations necessary to use
the selected haul routes. The Contractor shall use United States DOT regulations, 49 CFR
172.101 to identify proper shipping names for each hazardous material (including Dangerous
Waste) to be shipped off site. Proper shipping names shall be submitted to the Contracting
Agency in the form of draft shipping documents for review and comment.

The Contractor shall ensure that each shipment of material sent off site is accompanied by theappropriate shipping documents. The Contractor shall prepare a bill of lading for each shipment
of regulated material which does not require a hazardous waste manifest. The bill of lading
shall satisfy the requirements of United States DOT regulations, 49 CFR 172 Subpart C and any
applicable state or local law or regulation, and shall be submitted to the Contracting Agency for
review. The Contractor shall be responsible for completing the shipping documents and
obtaining the signatures of the Contracting Agency as needed.

### 2-21.3(3) Off-site Treatment and Disposal

8
9 The Contractor shall provide documentation of legal disposition including trip tickets and
10 Certificates of Disposal.

### 12 2-21.4 Measurement

No specific measurement shall apply to the lump sum item of Site Health and Safety Plan, Site
Health and Safety Officer, and Soil Management Plan.

16
17 No specific measurement shall apply to the force account item for Excavation and Haul of
18 Contaminated Materials.

### 19 20 **2-21.5 Payment**

Payment will be made in accordance with Section 1-04.1 for each of the following Bid Items that
are included in the Proposal:

- 25 "Site Health and Safety Plan", per lump sum.
- 2627 "Site Health and Safety Officer", per lump sum.
- 2829 "Soil Management Plan", per lump sum.
- 30

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Health and safety training, safety equipment and practices, dust control, efficiency losses to
other Contract items caused by handling contaminated materials, and other Work required to
comply with this specification not specifically identified in a Bid item shall be considered
incidental to the work to comply with this Section and all costs therefore shall be included in the
Contract prices for the payment items involved and included in the Proposal.

- 3637 "Excavation and Haul of Contaminated Materials", per force account.
- 38
- 39
- 40

## 1 DIVISION 3: AGGREGATE PRODUCTION AND ACCEPTANCE

- 2 3 **3-04** ACCEPTANCE OF AGGREGATE
- 4 (April 1, 2012 Tacoma GSP)

### 5 6 **3-04.1 Description**

- 7 The first and third paragraphs are deleted.
- 89 The fourth paragraph is revised to read:10
- Nonstatistical evaluation will be used for the acceptance of aggregate materials. <u>(remainder deleted)</u>
- 13 14 **3-04.3 Construction Requirements**

### 15 16 **3-04.3(1) General**

- 17 The first sentence is revised to read:
- 18
- For the purpose of <u>acceptance sampling and testing</u>, all test results obtained for a material type
- 20 will be evaluated collectively.

# 2122 3-04.3(4) Testing Results

23 This section is replaced with the following:

The results of all acceptance testing will be provided by the City's Project Engineer within 3
working days of testing.

# 2728 **3-04.3(6) Statistical Evaluation**

- 29 This section is deleted
- 30
- 31
- 32

#### **DIVISION 4: BASES** 1

### 2 3 4 4-04 BALLAST AND CRUSHED SURFACING

(March 17, 2003 Tacoma GSP)

#### 5 4-04.5 Payment

6 7 This section is supplemented with the following:

### 8

9 All costs for labor, equipment, and materials required to furnish, place, and compact the crushed 10 surfacing top course for all asphalt concrete approaches and non-paved approaches shall be

included in the unit Contract price for "Crushed Surfacing Top Course", per cubic yard and shall 11

- 12 only apply to areas shown on the plans.
- 13

## 14

### 15

### **DIVISION 5: SURFACE TREATMENTS AND PAVEMENTS** 1 2 3

#### 5-04 HOT MIX ASPHALT

5-04.3 **Construction Requirements** 

#### 7 5-04.3(3) Hot Mix Asphalt Pavers

#### 8 (June 16, 2016 Tacoma GSP)

- 9 The second paragraph is deleted.
- 10

4 5

6

#### 11 5-04.3(3) A Material Transfer Device/Vehicle

- 12 (June 16, 2016 Tacoma GSP)
- 13 The first paragraph is revised to read:
- 14
- 15 A Material Transfer Device/Vehicle (MTD/V) shall not be used unless specific paving areas are
- 16 specified below. A MTD/V shall only be used according to this special provision for the following 17 paving areas:
- 18
- 19 None: 20

#### 21 5-04.3(5)E **Pavement Repair**

#### 22 (June 16, 2016 Tacoma GSP)

23 This section is revised to read:

24

25 Pavement repair shall be in accordance with the City of Tacoma Right-of-Way Restoration 26 Policy found at https://www.cityoftacoma.org/government/city\_departments/public\_works/right-27 of-wav/

28

29 Pavement repair consists of asphalt concrete sawcut, removing asphalt concrete pavement,

30 crushed surfacing and subgrade, and installing Construction Geotextile for Separation, placing

31 crushed surfacing top course over the Construction Geotextile, and HMA in accordance with the 32 Contract or as directed by the Engineer.

33

34 Pavement repair excavation may also be performed by the use of a milling machine of a type 35 that has operated successfully on work comparable with that to be done under the Contract and 36 shall be approved by the Engineer prior to use. If a milling machine is used for excavation, the 37 excavation shall be as directed by the Engineer.

38

39 In all types of excavation, after the removal of the asphalt, the base material will be evaluated by

- 40 the Engineer to determine if it is suitable. If the base is determined not to be suitable, the
- 41 Contractor shall remove the base material and restore the sub-grade in accordance with Section 42 2-06 and the Plans, regardless of the method used for excavation.
- 43

44 Estimated plan quantities for pavement repair are approximate and are provided for bidding

- 45 purposes only. The actual dimensions to be used will be verified by the Engineer at the time of
- 46 construction. Contrary to Section 1-04.6, no changes to the unit prices for id for various items
- 47 will be permitted due to any increase or decrease in the amount of pavement repair.
- 48

Payment for pavement repair shall be by the unit Bid prices according to the Contract for all
 materials, labor, and equipment required to complete the pavement repair. Items not included in
 the Proposal shall be paid for according to Section 1-04.1(2).

the Proposal shall be paid for according to Section 1-04.1(2

- 5 5-04.3(7)A Mix Design
- 6 7 **5-04.3(7)A1 General**
- 8 (June 16, 2016 Tacoma GSP)
- 9 This section is supplemented with the following: 10

The Contractor shall determine anti-strip requirements for HMA and provide laboratory 25 testdata for anti-stripping.

14 The Contractor shall provide a mix design based upon 3 million ESALs.

### 16 5-04.3(7)A2 Statistical or Nonstatistical Evaluation

17 Delete this section and replace it with the following:

### 18 19 **5-04.3(7)A2 Nonstatistical Evaluation**

- 20 (January 16, 2014 APWA GSP)
- 21 22

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Mix designs for HMA accepted by Nonstatistical Evaluation shall:

- Be submitted to the Project Engineer on WSDOT Form 350-042
- Have the aggregate structure and asphalt binder content determined in accordance with WSDOT Standard Operating Procedure 732 and meet the requirements of Sections 9-03.8(2) and 9-03.8(6).
- Have anti-strip requirements, if any, for the proposed mix design determined in accordance with WSDOT Test Method T 718 or based on historic anti-strip and aggregate source compatibility from WSDOT lab testing. Anti-strip evaluation of HMA mix designs utilized that include RAP will be completed without the inclusion of the RAP.
- At or prior to the preconstruction meeting, the Contractor shall provide one of the following mix
   design verification certifications for Contracting Agency review;
  - The proposed mix design indicated on a WSDOT mix design/anti-strip report that is within one year of the approval date
    - The proposed HMA mix design submittal (Form 350-042) with the seal and certification (stamp & signature) of a valid licensed Washington State Professional Engineer.
- The proposed mix design by a qualified City or County laboratory mix design report that
   is within one year of the approval date.

The mix design will be performed by a lab accredited by a national authority such as Laboratory
Accreditation Bureau, L-A-B for Construction Materials Testing, The Construction Materials
Engineering Council (CMEC's) ISO 17025 or AASHTO Accreditation Program (AAP) and shall
supply evidence of participation in the AASHTO Material Reference Laboratory (AMRL)

- 47 program.
- 48

1 At the discretion of the Engineer, agencies may accept mix designs verified beyond the one-2 year verification period with a certification from the Contractor that the materials and sources 3 are the same as those shown on the original mix design.

4 5

### 5-04.3(8)A Acceptance Sampling and Testing – HMA Mixture

- 6 7 **5-04.3(8)A1 General**
- 8 (January 16, 2014 APWA GSP)
- 9 Delete this section and replace it with the following: 10
- 11 Acceptance of HMA shall be as defined under nonstatistical or commercial evaluation.
- Nonstatistical evaluation will be used for all HMA not designated as Commercial HMA in the
  Contract documents.
- 15

16 The mix design will be the initial JMF for the class of HMA. The Contractor may request a 17 change in the JMF. Any adjustments to the JMF will require the approval of the Project Engineer

- and must be made in accordance with Section 9-03.8(7).
- 19

20 Commercial evaluation may be used for Commercial HMA and for other classes of HMA in the 21 following applications: sidewalks, road approaches, ditches, slopes, paths, trails, gores, pre-

- 22 level, and pavement repair. Other nonstructural applications of HMA accepted by commercial
- 23 evaluation shall be as approved by the Project Engineer. Sampling and testing of HMA accepted
- by commercial evaluation will be at the option of the Project Engineer. Commercial HMA can be
- accepted by a Contractor certificate of compliance letter stating the material meets the HMA
- 26 requirements defined in the Contract.27

### 28 5-04.3(8)A4 Definition of Sampling Lot and Sublot

### 29 (January 16, 2014 APWA GSP)

- 30 Section 5-04.3(8)A4 is supplemented with the following:
- 31

For HMA in a structural application, sampling and testing for total project quantities less than 400 tons is at the discretion of the engineer. For HMA used in a structural application and with a total project quantity less than 800 tons but more than 400 tons, a minimum of one acceptance test shall be performed:

- 36 lest shall
- i. If test results are found to be within specification requirements, additional testing will
  be at the engineer's discretion.
- ii. If test results are found not to be within specification requirements, additional testing
  as needed to determine a CPF shall be performed.
- 41
- 42 5-04.3(8)A5 Test Results
- 43 (January 16, 2014 APWA GSP)
- 44 The first paragraph of this section is deleted.
- 45

1 **5-04.3(8)A6** Test Methods

### 2 **(June 16, 2016 Tacoma GSP)** 3

This section is revised to read:

5
6 Testing of HMA for compliance of Va will be at the option of the Contracting Agency, and will be
by WSDOT Standard Operating Procedure (SOP) 731. Testing for compliance of asphalt binder
content will be by FOP for AASHTO T 308. Testing for compliance of gradation will be by FOP
9 for WAQTC T 27/T 11, WSDOT Materials Manual.

- 10 11 **5-04.3(10) Compaction**
- 12

4

### 13 **5-04.3(10)B1 General**

### 14 (June 16, 2016 Tacoma GSP)

15 The fourth sentence of the first paragraph is revised to read: 16

The specified level of density attained will be determined by the non-statistical evaluation of nuclear density tests taken on the day the mix is placed (after completion of the finish rolling).

19 20

0 The sixth paragraph and subsequent table are deleted.

2122 This section is supplemented with the following:

23 24 Compaction tests will be performed at a minimum of 5 various locations, as determined by the 25 Engineer, for each 400 tons placed. The locations will be determined by the stratified random 26 sampling procedure conforming to WSDOT Test Method T 716. For an area in progress with a 27 CPF less than 0.75, a new compaction sequence will begin at the Contractor's request after the 28 Project Engineer is satisfied that material conforming to the Specifications can be produced. 29 The Compaction Test Procedures will be provided to the Contractor by the Contracting Agency 30 at the Pre-Construction Conference or a Pre-Paving Meeting, prior to the placement of HMA 31 material on site. 32 33 Cores may be used as an alternate to the nuclear density gauge tests. When cores are taken by

- the Engineer at the request of the Contractor, the request shall be made by noon of the first
   working day following placement of the mix. The Engineer shall be reimbursed for the coring
   expenses.
- 37

38 At the start of paving, if requested by the Contractor, a compaction test section shall be

- 39 constructed as directed by the Engineer to determine the compactibility of the mix design.
- 40 Compactibility shall be based on the ability of the mix to attain the specified minimum density
- 41 (91 percent of the maximum density determined by WSDOT FOP for AASHTO T 729). Following
- 42 determination of compactibility, the Contractor is responsible for the control of the compaction
- effort. If the Contractor does not request a test section, the mix will be considered compactible.
- 45 HMA for pre-leveling shall be compacted to the satisfaction of the Engineer.
- 46

47 **5-04.3(10)B2** Cyclic Density

48 (June 16, 2016 Tacoma GSP)

1 2

### 3 5-04.3(10)B4 Test Results

This section is deleted.

### 4 (June 16, 2016 Tacoma GSP)

5 The first paragraph is revised to read:

6
7 The Engineer will inform the Contractor of field compaction test results as work is being
8 performed. Formal Test Report(s) will be provided to the Contractor within 3 Working Days.
9

### 10 5-04.3(17) Paving Under Traffic

### 11 (June 16, 2016 Tacoma GSP)

- 12 The second paragraph is supplemented with the following:
- No traffic shall be allowed on any newly placed pavement without the approval of the Engineer.
- 14

### 16 5-04.3(20) Anti Stripping Additive

### 17 (June 16, 2016 Tacoma GSP)

- 18 This section is revised to read as follows:
- 19

The asphalt supplier shall add anti-stripping additive to the liquid asphalt prior to shipment to the asphalt mixing plant. The Contractor shall submit the anti-stripping additive type and amount as designated in the WSDOT mix design/anti-strip evaluation report. The Contractor shall submit the anti-stripping additive amount and the manufacturer's certification, together with the HMA mix design submittal in accordance with Section 5-04.3(7)A. Paving shall not begin before the anti-stripping additive submittal is approved by the Engineer.

### 26 27 **5-04.4 Measurement**

### 28 (June 16, 2016 Tacoma GSP)

- 29 The first paragraph is revised to read:
- 30

HMA Cl. ½ in. PG64-22 will be measured by the ton in accordance with Section 1-09.2, with no
deduction being made for the weight of asphalt binder, blending sand, mineral filler, antistripping additive, or any other component of the mixture; and the measurement shall include
asphalt wedge curbs and thickened edges in accordance with the Plans or as directed by the
Engineer. If the Contractor elects to remove and replace mix as allowed in Section 5-04.3(11),
the material removed will not be measured.

- 37
- 38 The second paragraph is revised to read:
- 39

No specific unit of measure will apply to roadway cores, which shall be included in the
 measurements for the HMA items that are included in the Proposal.

42

### 43 5-04.5 Payment

### 44 (June 16, 2016 Tacoma GSP)

45
46 Pay items for "Job Mix Compliance Price Adjustment" and "Compaction Price Adjustment" are
47 deleted.

1 The following pay items for HMA are revised to read: 2 3 "HMA CI. 1/2 IN PG58H-22", per ton. 4 5 The unit Contract price per ton for "HMA CI. <sup>1</sup>/<sub>2</sub> IN PG58H-22" shall be full payment for all costs 6 incurred to carry out the requirements of Section 5-04, including coring and testing, and shall 7 include anti-stripping additive, asphalt wedge curbs, thickened edges, curb drains, and 8 connection to existing drains in accordance with the Contract. Any costs that are already 9 included in other Bid items in the Proposal shall not be included in the unit Contract prices per 10 ton for these HMA Bid items. 11 12 "Cold Plant Mix for Temporary Pavement Patch", per square yard. 13 14 The unit Contract price for "Cold Plant Mix for Temporary Pavement Patch" shall be full pay for 15 all labor, equipment, and materials required to furnish and install; maintain; and remove and 16 dispose of the temporary patch. 17 18 Temporary pavement patches placed between October 1st and March 31st shall be HMA Cl. 1/2" 19 PG 58H-22. 20 5-04.5(1) Quality Assurance Price Adjustments 21 22 This section is deleted. 23 24 25 **END OF SECTION** 

#### 5-05 **CEMENT CONCRETE PAVEMENT** 1 2

(June 16, 2016 Tacoma GSP)

#### 5-05.1 Description

This section is supplemented with the following:

All concrete pavement restoration shall be performed in accordance with the City of Tacoma's Right -of-Way Restoration Policy.

#### 10 5-05.3 **Construction Requirements**

#### 11 12 5-05.3(1) Concrete Mix Design for Paving

13 The sixth paragraph is supplemented with the following:

- 15 The submittal for the concrete mix design shall provide the following date: the date, the amount
- 16 of materials (i.e., cement, sand, aggregates, water), the type and amount of each admixture,
- 17 and the designated 28-day compressive strength specific to the mix design being submitted.
- 18 The design compressive strength shall be a minimum of 4,000 psi. 19

#### 20 5-05.3(4) Measuring and Batching Materials

#### 22 5-05.3(4)A Acceptance of Portland Cement Concrete Pavement

23 This section is supplemented with the following: 24

- 25 Acceptance of concrete will be on a non-statistical acceptance only.
- 27 The first, second, third and fourth paragraphs are deleted. 28

#### 29 5-05.3(8) Joints

- 30 The second paragraph is revised to read:
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- 32 The Contractor shall submit a concrete panel jointing plans in accordance with the Plans and
- 33 these Specifications. When a concrete panel jointing plan is included in the Plans, the
- 34 Contractor may adopt or submit a revised jointing plan in accordance with Standard Plans and
- 35 the Specifications at the Contractor's own expense. The Contractor's jointing plan shall be
- 36 approved in writing by the Engineer before the start of concrete paying.
- 37

38 When new pavement abuts existing pavement, the location of the joints in the new pavement 39 shall match with the joints in the existing pavement unless otherwise approved by the Engineer.

#### 41 5-05.3(10) **Tie Bars and Corrosion Resistant Dowel Bars**

- 42 The first sentence of the last paragraph is revised to read:
- 43

- 44 The tie bar holes shall be clean before grouting.
- 45 46 5-05.3(11) Finishing
- 47 The third paragraph is revised to read:
- 48

1 In advance of curing operations, the pavement shall receive an initial texturing followed by final 2 finishing. Initial texturing shall be performed with a burlap drag or broom device, creating 3 striations in the same orientation as the final finish. The concrete roadway surface shall be 4 finished with a transverse tining. Where integral concrete curbs are constructed, the roadway 5 surface finish shall end 12 inches from the flowline.

6 7

The fourth paragraph is revised to read:

8

9 Burlap drags, brooms, and tine devices may be installed on self-propelled equipment having 10 external alignment control. When texturing the pavement with burlap, the area of burlap in

11 contact with the pavement shall be maintained constant at all times. Broom and tine devices

12 shall be provided with positive elevation control. Downward pressure on pavement surface shall

13 be maintained at all times during texturing so as to achieve uniform texturing without

14 measurable variations in pavement profile. If self-propelled texturing machines are used, these 15 shall be operated so that travel speed during texturing is maintained constant. Failure of the

16 texturing equipment to perform according to this section shall constitute cause for stopping

17 placement of concrete until the equipment deficiency or malfunction is corrected.

18

19 The seventh paragraph is revised to read:

#### 20 21 **Test Panel:**

22 At the start of concrete pavement construction, the Contractor shall first finish a textured

23 concrete test panel and the Engineer shall give approval of the achieved finish according to this

24 section prior to further concrete pavement construction. If the test panel is rejected by the

25 Engineer, the Contractor shall remove and replace the test panel at no additional cost to the

26 Contracting Agency. The Contractor can designate one of the project panels as a test panel or 27 create a sacrificial test panel on site of at least four feet by eight feet.

28

29 Project panels not meeting the characteristics of the test panel shall be removed and replaced 30 at no additional cost to the Contracting Agency.

31

32 The eighth through tenth paragraphs are deleted 33

#### 34 5-05.3(14) **Cold Weather Work**

35 This section is supplemented with the following: 36

37 The following additional requirements for placing concrete shall be in effect from November 1 to April 1:

38 39

40

- Engineer shall be notified at least 24 hours prior to placement of concrete.
- 41 • The contractor must submit a "Cold Weather Work Plan" for approval of concrete 42 pavement in cold temperatures. The "Cold Weather Work Plan" must address safety 43 precautions taken and education given relating to the project.
- 44 All concrete placement shall be completed no later than 2:00 p.m. each day. •
- 45 Where forms have been placed and the subgrade has been subjected to frost, no concrete shall be placed until the ground is completely thawed. At that time, the forms 46 47 shall be adjusted and subgrade repaired as determined by the Engineer.

### 1 5-05.3(22) Repair of Defective Pavement Slabs

- 2 This section is supplemented with the following:
- All repairs of defective pavement slabs shall be performed in accordance with the City of
  Tacoma's Right-of-Way Restoration Policy.

### 7 5-05.4 Measurement

- 8 This section is revised to read: 9
- 10 Measurement for cement concrete pavement and concrete base pavement shall be by the
- square yard for the pavement completed and accepted according to Section 5-05 and the Plans,
   including the area underneath curbs. No deduction will be made for castings in pavement.
- 1314 Cement Concrete Pavement for Pavement Patches will be measured by the square yard.
- 15
- Epoxy-Coated Tie Bars with Drill Hole that are drilled into existing cement concrete pavementwill be measured per each tie bar installed according to the Plans and Section 5-05.
- 18
  19 Dowel Bar Retrofit shall be measured per each retrofitted dowel bar installed into an existing
  20 concrete pavement edge according to the Plans and Section 5-05.
- 21 22 5-05.5 Payment

23 This section is revised to read:

- 25 Payment will be made in accordance with Section 1-04.1.
- 27 "Cement Conc. Pavement", per square yard.
- The unit Contract price per square yard for "Cement Conc. Pavement" shall be full payment for
  all costs incurred to carry out the requirements of Section 5-05 and the Plans, and shall include
  furnishing and installing epoxy coated dowel bars and tie bars except as specified for "Dowell
  Bar Retrofit" and "Epoxy-Coated Tie Bar with Drill Hole" in this section.
- 33

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26

- Tie bars that are drilled into existing cement concrete pavement that is not constructed under
   the Contract will be paid for under the item "Epoxy-Coated Tie Bar with Drill Hole" when
   included in the Proposal.
- 37
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- 30 39

### 1 **DIVISION 6: STRUCTURES**

- 2 3 6-02 CONCRETE STRUCTURES
- 4 (February 16, 2011 Tacoma GSP) 5
- 6 **6-02.3 Construction Requirements** 7
- 8 6-02.3(2) Proportioning Materials9

### 10 6-02.3(2)B Commercial Concrete

11 This section is supplemented with the following:

Where concrete Class 3000 is specified for driveways, the Contractor may use Standard
Concrete as specified in City of Tacoma Standard Plan No. SU-07.

# 156-02.3(4) Ready Mix Concrete

17 This first paragraph is revised to read.

18

- 19 All concrete shall be batched in a prequalified manual, semi-automatic, or automatic plant as
- 20 described in Section 6-02.3(4)A.

21

22 23

#### **DIVISION 7: DRAINAGE STRUCTURES, STORM SEWERS, SANITARY** 1 SEWERS, WATER MAINS, AND CONDUITS 2

7-02 CULVERTS

(April 1, 2012 Tacoma GSP)

## 3 4 5 6 7 7-02.2 Materials

8 This section is supplemented with the following: 9

10 All culvert pipe shall have a smooth interior wall. 11

### 12 13

7-04 **STORM SEWERS** 

(March 17, 2003 Tacoma GSP) This section is deleted. The requirements of Section 7-17 shall apply to storm sewers.

#### 7-05 1 MANHOLES, INLETS, CATCH BASINS, AND DRYWELLS 2

(March 23, 2010 Tacoma GSP)

#### 7-05.1 Description

This section is supplemented with the following:

All references to sanitary sewers shall be construed to also mean storm sewers.

#### 8 9 7-05.3 **Construction Requirements**

10 The first sentence of the eleventh paragraph is revised to read:

11

3 4

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6 7

12 A flexible pipe-to-manhole connector shall be used in all connections of rigid and thermoplastic 13 pipes to **new** precast concrete manholes to provide a watertight joint between the pipe and the

- 14 manhole, unless otherwise directed by the Engineer. The connector shall be "Kor-N-Seal" with
- 15 "Wedge Korband" (Type I or II as required for pipe diameter), manufactured by NPC, Inc.
- 16 Milford, New Hampshire, or Engineer approved equal. The connectors shall be installed in
- 17 accordance with the manufacturer's recommendations. 18

#### 19 7-05.3(1) Adjusting Manholes and Catch Basins to Grade

20 This section is revised to read:

21

#### 22 7-05.3(1) Adjusting Utility Structures to Grade 23

24 Where shown in the Plans or where directed by the Engineer, utility structures shall be adjusted 25 to grade as staked or as otherwise designated by the Engineer.

26

27 The materials and methods of construction shall conform to the requirements specified in 28 Section 7-05.3 and Standard Plan No. SU-25. The finished structure shall conform to the 29 requirements of the standard plan for the specific structure.

30

#### 31 7-05.3(3) Connections to Existing Manholes

32 The first sentence is revised to read: 33

34 The Contractor shall inspect the existing manholes in the field to verify invert elevations and the 35 scope of work necessary to make the connection(s) prior to construction. 36

#### 37 7-05.4 Measurement

- 38 The sixth paragraph is revised to read:
- 39

## Connections to existing structures will be measured per each.

40 41

- 42 This section is supplemented with the following:
- 44 Reconnecting existing sewer pipes to new manhole structures will be measured per each. 45
- 46 Manholes with Cast-in-Place Base will be measured per each.
- 47 48 This section is supplemented with the following:

### **7-05.5 Payment**

3 ⊿	The first paragraph is supplemented with the following:
4 5 6 7	The unit Contract price for "Manhole Type 1 48"" shall be full pay for all work required to furnish and install the new manhole to finished grade, including, but not limited to, excavating for,
7 8 9	ladders, steps, and handholds, as applicable per Standard Plans.
10 11	The pay item for "Connection to Drainage Structure" is revised to read:
12 13	"Connect New Sewer PipeIn. Diam. to Existing Structure", per each.
14 15	This section is supplemented with the following:
16 17	"Reconnect Existing Sewer Pipe,In. Diam. To New Structure", per each.
18 19 20 21	The unit Contract price per each shall be full pay for all labor, equipment and materials necessary to reconnect the existing sewer pipe to the new structure as specified in Section 7-05.3.
22 23	"Adjust Existing Catch Basin, Furnish New Frame and Grate", per each
24 25 26 27 28	The unit Contract price per each for "Adjust Existing Catch Basin, Furnish New Frame and Grate" shall be full pay for all costs associated with adjusting the frame and grate to finished grade, including but not limited to, excavating, furnish and place backfill, furnishing and installing the new frame and grate, compacting, surfacing, and restoration.
29 30	"Adjust Existing Manhole, Furnish New Frame and Cover", per each
31 32 33 34 35	The unit Contract price per each for "Adjust Existing Manhole, Furnish New Frame and Cover" shall be full pay for all costs associated with adjusting the frame and cover to finished grade, including but not limited to, excavating, furnish and place backfill, furnishing and installing the new frame and cover, compacting, surfacing, and restoration.
36 37	"Adjust Existing Utility Lid to Grade", per each
38 39 40 41 42	The unit Contract price per each for "Adjust Existing Utility Lid to Grade" shall be full pay for all costs associated with the adjusting the valve chamber to finished grade, including but not limited to, excavating, furnish and place backfill, compacting, surfacing, and restoration. If existing utility must be replaced to match grade, cost for replacing utility is incidental to this bid item.
43 44 45	END OF SECTION

#### 1 7-07 **CLEANING EXISTING DRAINAGE STRUCTURES**

2 (March 23, 2010 Tacoma GSP)

## 3 4 5 6 7 7-07.3 Construction Requirements

Item three of paragraph two is revised to read:

- 3. If sediment and water from structures does not meet the conditions described in 1 or 2 above, the Contractor shall collect and dispose of all water used and all debris generated in clearing operations. No Cleaning water or debris shall be flushed downstream beyond the limits of the work.
- 10 11

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- 13 14

- 1 7-08 GENERAL PIPE INSTALLATION REQUIREMENTS
- 2 (November 16, 2016 Tacoma GSP) 3
- 4 **7-08.3(1)** Excavation and Preparation of Trench
- 5 **7-08.3(1)A Trenches**

7 The tenth paragraph of this section is deleted. All dewatering requirements are found in section 8 8-01.3(1)C.

- 9 10 **7-08.3(1)C Bedding the Pipe**
- 11 This section is supplemented with the following:
- 12

Pipe bedding for sanitary and storm sewers shall be in accordance with City of TacomaStandard Plan No. SU-16.

15

16 Pipe bedding for water service sleeve shall be in accordance with Tacoma Water standards. 17

18 7-08.3(2) Laying Pipe

### 20 7-08.3(2)F Plugs and Connections

21 This section is supplemented with the following:

22

19

Rigid couplings, manufactured by Romac Industries, Inc., or Engineer approved equal, shall be
 used at any pipe joint in which bell and spigot or fused joints are not used. Flexible couplings
 are not permitted, except for side sewer installation.

### 27 7-08.3(2)G Jointing of Dissimilar Pipe

28 This section is revised to read:

29

26

Dissimilar pipe shall be joined by use of rigid couplings manufactured by Romac Industries, Inc.,
 or Engineer approved equal, except for side sewer installation.

### 33 7-08.3(3) Backfilling

34 The second paragraph is revised to read:

35

Pipe zone backfill, backfill above pipe zone, and extra excavation area backfill material shall
meet the requirements of Section 9-03.12(2). Recycled concrete shall not be used for pipe zone
bedding, pipe zone backfill, backfill above pipe zone, and extra excavation area backfill

- 39
- 40 The fourth paragraph is revised to read:
- 41

42 Backfill above the pipe zone shall be accomplished in such a manner that the pipe will not be

43 shifted out of position nor damaged by impact or overloading. If pipe is being placed in a new

44 embankment, backfill above the pipe zone shall be placed in accordance with Section 2-

45 03.3(14)C. If pipe is being placed under existing paved areas, or roadways, backfill above the

46 pipe zone shall be placed in horizontal layers no more than 12-inches thick and compacted to

- 47 95-percent maximum density. If pipe is being placed in non-traffic areas, backfill above the pipe
- 2014 zone shall be placed in horizontal layers no more than 12-inches thick and compacted to 85-

1 percent maximum density. All compaction shall be in accordance with the Compaction Control

2 Test of Section 2-03.3(14)D. Material excavated from the trench shall be used for backfill above

3 the pipe zone, except that organic material, frozen lumps, wood, rocks, or pavement chunks

4 larger than 6-inches in maximum dimension shall not be used. Material determined by the

- 5 Engineer to be unsuitable for backfill at the time of excavation shall be removed and replaced
- with imported backfill material meeting the requirements of Section 9-03.12(2). Material
   determined to be suitable for backfill at the time of excavation shall be stockpiled and used f
- determined to be suitable for backfill at the time of excavation shall be stockpiled and used for
   backfill material. If the stockpiled material becomes unsuitable, the Contractor shall furnish
- 9 suitable material in an amount equal to that, which became unsuitable, at no expense to the
- 10 Contracting Agency.
- 11

### 12 7-08.3(4) Plugging Existing Pipe

13 This section is revised to read:

14

15 If construction of the new sewer pipe does not result in the removal of the existing pipe due to differing alignments, then the existing pipe shall be abandoned in place as shown in the Plans. The Contractor shall plug all pipe branches, stubs, or other open ends of the pipe to be abandoned and fill with CDF. The Contractor shall submit a Pipe Abandonment Plan in

- accordance with Section 1-05.3 describing the proposed methods for filling the pipes with CDF,
   specifically addressing how the pipes will be filled in a manner that will prevent air pockets from
- being left in the abandoned pipe. The CDF mix design shall meet the requirements of Section 2 09.3(1)E.
- 23

### 24 7-08.4 Measurement

25 This section is supplemented with the following: 26

Abandonment of existing sewer pipes will be measured by the cubic yard of CDF necessary tofill the existing pipes.

### 29 30 **7-08.5 Payment**

- 31 The pay item for "Structure Excavation Class B" is revised to read: 32
- 33 "CDF for Pipe Abandonment", per cubic yard.

The unit Contract price for "CDF for Pipe Abandonment" shall be full payment for all labor,
materials, and equipment necessary to abandon the sewer pipes.

30 37

- 38 "Schedule A Storm Sewer Pipe 3 In. Diam", per linear foot.
- 39
- 40 The unit Contract price for "Schedule A Storm Sewer Pipe 3 In. Diam." shall be full payment for 41 all labor, materials, and equipment necessary to install Storm Pipe Through Concrete Curb per
- 42 City of Tacoma Standard Plan No. SU-29.
- 43
- 44

### 45

### **END OF SECTION**

#### 1 7-09 Water Mains

#### 7-09.1 Description

This section is revised to read:

- 2 3 4 5 6 7 The Work consists of constructing a water service sleeve in accordance with Tacoma Water
- standards at the location shown on the plans. The Contractor must coordinate this Work with the 8 property owner.
- 9

#### 10 7-09.1(1)D Pipe Zone Backfill

- 11 This section is revised to read:
- 12

13 Pipe zone backfill includes material placed above the gravel backfill for pipe zone bedding per

- 14 Tacoma Water standards.
- 15

16

1

2 3

4 5

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16

25

The Standard Specifications are supplemented with the following:

### 7-20 TRENCH DRAIN

### 7-20.1 Description

This work consists of construction trench drain in accordance with the Plans and these specifications. Construction involves the following components:

- A. System requirements: Provide a trench drain system of prefabricated modular components.
   The system can incorporate a frame when required to carry the specified load.
- B. Gratings shall comply with the load requirements of AASHTO or DIN/EN loading
   specifications as required by the Engineer. Gratings shall comply with City of Tacoma
   accessibility requirements and national ADA standards.
- 17 C. Integral frames which extend onto the concrete slab shall include consolidation vent ports
   18 which help minimize air entrapment under the frame when proper vibration techniques are
   19 used.
   20
- D. Frames which extend onto the concrete slab shall include anchoring studs which secure the
   frame into the surrounding concrete. Anchoring studs shall be a minimum of 0.5 in (6 mm) in
   diameter, and shall extend at least 3 in (75 mm) from the frame. The anchor studs shall be
   spaced 24 in (610 mm) or less along the length of the grate.
- E. Installation chairs which support the channels and help resist system floating during
   concrete placement shall be utilized as supplied by the manufacturer. Chairs also allow for
   system adjustment and alignment prior to concrete placement.
- F. Polymer concrete systems shall include a continuous anchoring rib at the base of each side
   of the channels to help resist floating during concrete placement.
- 33 G. All piping interface connections shall be compatible with PVC or ABS adhesive.
- H. Fiberglass systems shall either include surface veil or gel coat on the media bearing surface
   with a UV inhibitor package.

# 38 7-20.2 Classification 39

- 40 Trench drains shall be provided by the contractor and the following information shall be41 submitted to the Engineer:
- 42

34

- A. Product Data: Submit product data and installation instructions including manufacturer's
  data sheets for specified products.
- B. Product Drawings: Submit shop drawings showing layout, profiles and product components,
   including anchorage, accessories, finish colors, patterns and textures.
- 48

C. Quality Assurance Submittals: Upon request, submit the following: 1 2 1. Test Reports: Certified test reports showing compliance with specified performance 3 characteristics and physical properties. Reports shall be stamped by a licensed 4 Professional Engineer. 5 6 2. Certificates: Product certificates signed by manufacturer certifying materials comply 7 with specified performance characteristics and criteria and physical requirements. 8 9 D. Manufacturer and Contractor Warranty Documents: Upon request. 10 11 7-20.3 **Construction Requirements** 12 13 Construction of the trench drain shall meet the following specifications: 14 15 Site Preparation: 16 17 A. Surface Preparation: Ensure ground conditions are suitable. Poor site conditions require 18 engineering advice. 19 20 B. Reinforcement: All reinforcement shall be in compliance with Concrete Reinforcing Steel 21 Institute, as shown on the site drawings, and shall be firmly held in place during concrete 22 placement. 23 24 C. The slab shall be designed to hold any applicable holds and shall be built with an 25 appropriate factor of safety. 26 27 Installation: 28 29 A. Install precast trench drain per manufacturer installation instructions at locations indicated 30 on the site drawings. 31 32 B. Expansion, Construction, and Control Joints: Site plans shall include the location of all 33 concrete joints. The system shall not be used as an expansion, construction, or control joint 34 in the direction of flow. Expansion, construction, and control joints oriented transverse to the 35 direction of flow shall cross the system at a channel joint. 36 37 C. Precast Trench Drain System Installation: Ensure channels are surrounded on all sides by 38 concrete of minimum 3000 psi (20,684 kPa) compressive strength. Check relevant 39 installation section drawings for minimum suggested dimensions required. 40 41 D. Concrete Edge: Concrete shall be screeded and finished flush to the top surface of the 42 trench drain system. No secondary edge-finishing tools shall be used. 43 44 E. Site Tolerances: <sup>1</sup>/<sub>2</sub>-inch lateral, <sup>1</sup>/<sub>4</sub>-inch vertical, maintaining all required ADA slope and 45 distance thresholds. 46

1 F. Related Products Installation: Refer to other sections in Related Sections paragraph herein 2 for related products installation.

#### 7-20.4 Measurement

3 4 5 6 7 The measurement of trench drains shall be measured per linear foot.

#### 8 7-20.5 **Payment**

9 10 Payment will be made for each of the following Bid items that are included in the proposal, and shall be full compensation for all Work associated with these items: 11

- 12
- 13 "Trench Drain", per Linear Foot
- 14 15 The unit Contract price for "Trench Drain" shall be full payment for all labor, materials, and
- 16 equipment necessary to install the proposed trench drain, grate, frame, and associated curb 17 cut(s).
- 18
- 19
- 20

## 1 DIVISION 8: MISCELLANEOUS CONSTRUCTION

### 2 3 8-01 EROSION CONTROL AND WATER POLLUTION CONTROL

4 (March 17, 2016 Tacoma GSP)

### 5 6 **8-01.1 Description**

7 This section is supplemented with the following:

8 9

9 The City of Tacoma Stormwater Management Manual is available on the City's website. 10

11 The City of Tacoma has been issued a Washington State Department of Ecology NPDES

12 Construction Stormwater General Permit for this project. This Work also consists of

administration and compliance with the requirements of this permit for this project. A copy of this
 permit is included in Appendix A of these Special Provisions.

# 16 8-01.3 Construction Requirements17

### 18 8-01.3(1) General

19 This section is supplemented with the following: 20

The Contractor shall perform all work in compliance with the NPDES Construction StormwaterGeneral Permit issued for this project.

The permit shall be transferred to the Contractor prior to issuance of a Notice to Proceed and
terminated upon completion of the project per the following:

26 27

28

29

30

31

- 1. The City will provide the Contractor with a Transfer of Coverage form prior to issuing a Notice to Proceed.
- 2. The Contractor shall sign and return the Transfer of Coverage form to the City.
- 3. The City will process the transfer and pay any associated transfer fees to the Washington State Department of Ecology.
- 32
  32
  33
  33
  34
  4. Once the transfer is complete and a Notice to Proceed has been issued, the Contractor is responsible for performing all work in compliance with the permit and the plans and specifications.
- 355. The Contractor shall pay any renewal fees if the need for permit renewal is caused36by contractor, otherwise the City will pay all renewal fees.
- Upon Physical Completion of the Work, the Contractor shall submit a Notice of
   Termination to the Washington State Department of Ecology and provide the City
   documentation that the termination is effective.
- 40

43

### 41 8-01.3(1)A Submittals

42 This section is revised to read:

44 The Contractor shall adopt or modify a Temporary Erosion and Sediment Control (TESC) Plan

and Stormwater Pollution Prevention Plan (SWPPP) Report. The Contractor shall include an
 implementation schedule for the TESC Plan and SWPPP and incorporate this implementation

schedule into the Contractor's progress report. The SWPPP and implementation schedule shall
 be submitted in accordance with 1-05.3 and 1-08.3.

3

TESC Plans and SWPPP Reports that are modified by the Contractor shall be reviewed and
approved by the Project Engineer before implementation. The Contractor shall allow 5 working
days for the Project Engineer to review any original or revised TESC Plans or SWPPP reports.
Failure to approve all or part of any such Plan shall not make the Contracting Agency liable to
the Contractor for any Work delays.

9

10 The SWPPP is considered a "living" document that shall be revised to account for additional 11 erosion control/pollution prevention BMPs as they become necessary and are implemented in 12 the field during project construction. A copy of the most current SWPPP and TESC plans shall 13 remain on-site at all times and an additional copy shall be forwarded to the Engineer. At the 14 Contractor's preference, revisions to the SWPPP and TESC Plan may be forwarded to the 15 Engineer rather than submitting a complete document. Revision to the SWPPP and TESC Plan 16 may be kept on-site in a file along with the original SWPPP document.

17

The contractor shall provide Stormwater Pollution Prevention Plan inspection reports or forms
per 8-01.3(1)B to the Project Engineer no later than the end of the next working day following
the inspection.

21

### 22 8-01.3(1)B Erosion and Sediment Control (ESC) Lead

23 This section is revised to read:

24

25 The Contractor shall identify the ESC Lead at the Preconstruction Meeting and the contact 26 information for the ESC Lead shall be added to the Stormwater Pollution Prevention Plan 27 (SWPPP) Report and the Temporary Erosion and Sediment Control (TESC) Plan Sheet. The 28 ESC Lead shall maintain, for the life of the contract, a current Certified Erosion and Sediment 29 Control Lead (CESCL) certificate or maintain a current Certified Professional in Erosion and 30 Sediment Control (CPESC) certificate from a course approved by the Washington State 31 Department of Ecology. The CESCL or CPESC shall be listed on the Emergency Contact List 32 required under Section 1-05.13(1).

33

42

43

The CESCL or CPESC shall direct implementation of the measures identified in the SWPPP
 and as shown on the TESC plan. Implementation shall include, but is not limited to the following:

- Installing and maintaining all temporary erosion and sediment control Best
   Management Practices (BMPs) included in the SWPPP and as shown on the TESC
   plan. Damaged or inadequate BMPs shall be corrected as needed to assure
   continued performance of their intended function in accordance with BMP
   specifications and Permit requirements.
  - 2. Performing monitoring as required by the NPDES Construction Stormwater General Permit.
- 44 3. Inspecting all on-site erosion and sediment control BMPs at least once every
  45 calendar week and within 24 hours of any discharge from the site. A SWPPP
  46 Inspection report or form shall be prepared for each inspection and shall be included

Т	in the SWPPP file. A copy of each SWPPP Inspection report or form shall be		
2	submitted to the Engineer no later than the end of the next working day following the		
3	inspection. The report or form shall include, but not be limited to the following:		
4	a. When, where, and how BMPs were installed, maintained, modified, and		
5	removed.		
6	b Observations of BMP effectiveness and proper placement		
7	c Recommendations for improving future BMP performance with upgraded or		
י 8	replacement BMPs when inspections reveal SWPPP inadequacies		
0	d Approximate amount of precipitation since last inspection and when last		
9 10	u. Approximate amount of precipitation since last inspection and when last		
10	Inspection was periorned.		
11	4. Opdating and maintaining a SWPPP file on site that includes, but is not limited to the		
12	following:		
13	a. SWPPP Inspection Reports or Forms.		
14	b. SWPPP narrative.		
15	c. National Pollutant Discharge Elimination System Construction Stormwater		
16	General Permit (Notice of Intent).		
17	d. All documentation and correspondence related to the NPDES Construction		
18	Stormwater General Permit.		
19	e. Other applicable permits.		
20			
21	Upon request, the file shall be provided to the Engineer for review.		
22			
23	8-01.3(2) Seeding, Fertilizing, and Mulching		
24	The following sections are deleted in their entirety:		
25			
26	8-01.3(2)A1 Seeding		
27	8-01.3(2)B Seeding and Fertilizing		
28	8-01.3(2)D Mulching		
29 30	0-01.3(2)E Hackiners		
31	8-01 3(8) Street Cleaning		
32	The third paragraph is revised to read:		
33			
34	Street washing with water shall not be permitted.		
35			
36	8-01.3 Construction Requirements		
37			
38	8-01.3(9)D Inlet Protection		
39	Replace the third paragraph of this section with the following:		
40	When the depth of accumulated addiment and debuic reaches environtely 1/2 the beight of		
41 10	when the depth of accumulated sediment and depris reaches approximately 1/3 the height of an internal device or 1/3 the height of the external device (or less when as aposified by the		
4∠ ⁄/२	an internal device or 1/3 the height of the external device (or less when so specified by the manufacturer) or as designated by the Engineer, the sediment and debris shall be removed and		
-+	manufacturer, or as designated by the Engineer, the sediment and debits shall be removed and		
44	disposed of per SWMM BMP C220 or as specified on the Plans or within the SWPPP		
33 34 35 36 37 38 39 40 41 42 43	<ul> <li>Street washing with water shall not be permitted.</li> <li>8-01.3 Construction Requirements</li> <li>8-01.3(9)D Inlet Protection Replace the third paragraph of this section with the following:</li> <li>When the depth of accumulated sediment and debris reaches approximately 1/3 the height of an internal device or 1/3 the height of the external device (or less when so specified by the manufacturer), or as designated by the Engineer, the sediment and debris shall be removed a</li> </ul>		

1 The section is supplemented with the following: 2 3 Only bag-type filters are allowed for use in the public right of way. 4 5 8-01.3(10) Wattles 6 The fifth and sixth sentences are revised to read: 7 8 On gradually sloped or clay-type soils trenches shall be 3 to 5 inches deep. On loose soils, in 9 high rainfall areas, or on steep slopes, trenches shall be 3 to 5 inches deep, or  $\frac{1}{2}$  to 2/3 the 10 thickness of the wattle. 11 12 8-01.3(17) Tree Protection 13 14 Submit and receive approval from the City of Tacoma for a Tree Protection Plan for the site. 15 Comply with Tacoma Urban Forest Manual tree protection instructions. 16 17 8-01.4 Measurement 18 This section is supplemented with the following: 19 20 No specific unit of measurement shall apply to the lump sum item "Stormwater Pollution 21 Prevention Plan (SWPPP)". 22 23 No specific unit of measurement shall apply to the lump sum item "NPDES Construction 24 General Permit". 25 26 Add the following new sections: 27 8-01.4(1) Lump Sum Bid for Project (No Unit Items) 28 29 When the bid Proposal contains the item "Erosion/Water Pollution Control", there will be no 30 measurement of unit items for Work defined by Section 8-01.4 except as described in Section 8-31 01.4(2). Also, except as described in Section 8-01.4(2), all of Sections 8-01.4 35 and 8-01.5 are 32 deleted. 33 34 8-01.5 Payment 35 This section is supplemented with the following: 36 37 Where removal of erosion control BMPs is directed by the Engineer according to 8-01.3(16) or 38 according to these specification and the plans, removal shall be included in the lump sum or unit 39 cost for these respective BMPs. 40 41 "NPDES Construction Stormwater General Permit", per lump sum. The lump sum contract price for "NPDES Construction Stormwater General Permit" shall be full pay for all costs, including but 42 43 not limited to, transfer of coverage, sampling, monitoring, reporting, coordinating, inspecting, 44 materials and labor, and all fees and any other expenses necessary to fully comply with the 45 requirements of the Permit up to and including termination of the Permit and completion of the 46 Work. The lump sum price shall also include all costs necessary to supply the City of Tacoma 47 with all information as necessary to ensure compliance with the permit. 48

- "Erosion Control and Water Pollution Prevention", per lump sum.
- "Stormwater Pollution Prevention Plan (SWPPP)", per lump sum.

The lump sum contract price for "SWPPP" shall be full pay for all costs associated with

1 2 3 4 5 6 7 maintaining the proposed temporary erosion control BMPs as noted on the plans. The lump sum

price shall also include all costs necessary to supply the City of Tacoma with all information

8 necessary to ensure compliance with City standards.

- 9 10
- 11

1 2	8-02 ROADSIDE RESTORATION (March 31, 2014 Tacoma GSP)		
3			
4	8-02.1 Description		
5 6	The first paragraph of Section 8-02.1 is revised to read:		
7	This work shall consist of installing tree protection and soil amendment per details on drawings.		
8 9	furnishing and placing topsoil, mulch, seeding, and planting, decorative gravel, container plants balled and burlapped plants, controlling weeds and pests, fertilizing, and performing plant		
10	establishment activities, in accordance with these Specifications and as shown in the Plans or		
11	as directed by the Project Engineer.		
12			
13	Soil quality BMP L613 applies to the project. If a conflict occurs between these Special		
14	Provisions and BMP L613, BMP L613 shall govern.		
15	-		
16	The fourth list item is deleted.		
17			
18	8-02.2 Materials		
19	The following list is revised to read:		
20			
21	Materials shall meet the requirements of the following sections:		
22	Soil Mix 1 9-14.1(1)		
23	Fertilizer 9-14.3		
24	Mulch and Amendments 9-14.4 and as shown on the plans		
25	Erosion Control Blanket 9-14.5		
26	Plant Materials 9-14.6 and as shown on the plans		
27	Stakes, Guys, and Wrapping 9-14.7		
28	Irrigation Water 9-24.2		
29	Root Barrier 9-14.8 and as shown on the plans		
30	Decorative Gravel – Size shall be 3/8-inch clean washed, naturally occurring angular		
31	aggregates. Color: "Chinook Brown"; colors shall be an even		
32	distribution of sienna, light tan, amper with tints of rust to match		
33	control sample.		
34 25	Geotextile will be placed between decorative gravel and underlying soil.		
20 20	Tree Watering Day System 9-14.10 Tree Distantion		
27	Social 8 02 3(16)		
20	Seeding 6-02.5(10)		
30	8.02.3 Construction Paguiroments		
40	This section is supplemented with the following:		
<u>4</u> 1	The sector is supplemented with the following.		
42	All grades shall be maintained in the areas to be planted in a true and even condition. The		
43	contractor shall be careful not to disturb any of the existing or cut slopes. Where final grades		

45 compacted condition. The finished grade shall be such that after planting, the grade shall be46 flush with adjoining surfaces; positive drainage shall also be maintained.

47

44

have not been established, the areas shall be finish graded and all surfaces left in an even and

### 1 8-02.3(4) Topsoil

2 The first paragraph is deleted and replaced with the following:

3

4 Imported topsoil shall be spread evenly over all plant bed areas to a depth of 36 inches.

5 Subgrade shall be scarified to a depth of 1 foot and all rocks in excess of 1 inch removed prior 6 to topsoil placement. The Contractor shall not proceed with topsoil operations until the scarified

to topsoil placement. The Contractor shall not proceed with topsoil operations until the scarifie
 subgrades have been accepted/approved by the Project Engineer. After the topsoil has been

8 spread, all large clods, hard lumps, rocks 1/2 inch in diameter and larger, and litter shall be

9 raked up, removed, and disposed of by the Contractor. Refer to Soil Mix a per 9-14.1(1).

10

11 Imported topsoil for planting and lawn areas shall be installed as described in City of Tacoma 12 Standard Plan No. GSI-01d and as shown on the plans. GSI-01d is for BMP L613, Post

Standard Plan No. GSI-01d and as shown on the plans. GSI-01d is for BMP L613, Post
 Construction Soil Quality and Depth, and this best management practice is required for all

- 14 disturbed areas that will be pervious under proposed conditions. Required seeding is included
- 15 as incidental to all topsoil. Refer to section 8-02.3(10) for fertilization requirements. Refer to Soil
- 16 Amendments per 8-02.3(6).
- 17

18 The second paragraph is deleted.

### 19 20 8-02.3(4)A Topsoil Type A

- This section is replaced in its entirety with the following:
- Topsoil Type A shall meet the requirements of Section 9.14.1(1).

### 25 8-02.3(4)B Topsoil Type B

26 This section is deleted. 27

### 28 8-02.3(4)C Topsoil Type C

- 29 This section is deleted.
- 30

### 31 8-02.3(5) Planting Area Preparation

32 The third paragraph is revised to read:

33

The areas shall be brought to a uniform finished grade, 3 inches below walks, curbs, junction, valve boxes, and catch basins, or the specified depth of mulch, unless otherwise specified. All excess material and debris, stumps, and rocks larger than 1 inch shall be removed and disposed of off the project site or as approved by the Project Engineer.

- 37 38
- 39 This section is supplemented with the following:
- 40

All grades shall be maintained in the areas to be planted in a true and even condition. The contractor shall be careful not to disturb any of the existing or cut slopes. Where final grades have not been established, the areas shall be finish graded and all surfaces left in an even and compacted condition. The finished grade shall be such that, after planting, the grade shall be flush with adjoining surfaces; positive drainage shall also be maintained.

46

### 47 8-02.3(6) Soil Amendments

48 This section is supplemented with the following:

1 2 Recycled/compost material in accordance with Section 9-14.4(8) shall be blended with the 3 specified topsoil at a 1/1 ratio by volume. 4 5 BMP L613, Post Construction Soil Quality and Depth is required for all disturbed areas that will 6 be pervious under proposed conditions. All improvements associated with BMP L613, as shown 7 on the plans and City of Tacoma Standard Plan No. GSI-01d, are incidental to Soil 8 Amendments. This includes all planting and lawn area mulch, seeding and fertilization, topsoil, 9 and scarified subsoil. 10 11 8-02.3(7) Layout of Planting 12 The third, fourth, and fifth paragraphs are deleted. 13 14 8-02.3(8) Planting 15 Item 1 is deleted, and Item 2 of the second paragraph is revised to read: 16 17 Planting Operations: 18 19 Spring Planting: April 1 – July 15 ٠ 20 Fall Planting: October 1 – November 15 21 22 8-02.3(9) Pruning, Staking, Guying and Wrapping 23 This section is supplemented with the following: 24 25 Crossed or rubbing branches shall be removed, provided the natural shape of the tree is 26 preserved. Under no circumstances shall pruning be done prior to inspection and approval of 27 plants by the Engineer. All cuts shall be made flush with the parent stem, leaving no stubs. 28 Pruning cuts shall be made in a manner to favor the earliest possible covering of the wound by 29 callus growth. Cuts that produce large wounds and weaken the tree will not be acceptable. 30 31 Top growth removal to compensate for root loss shall not exceed one-third (1/3) of the top 32 growth unless otherwise specified or directed by the Engineer. Cuts created 3/4 inch in 33 diameter shall be treated with an approved tree wound dressing. All pruning shall produce a 34 clean cut without bruising or tearing the bark and shall be in living wood where the wood can 35 properly heal over. 36 37 Evergreens shall not be pruned, except to remove injured branches. The use of pole shears 38 and/or hedge shears for pruning deciduous and evergreen trees will not be permitted. All 39 trimmings and other debris left over from the planting operations shall be collected and disposed 40 of off the site. 41 42 All evergreen trees and deciduous trees over 15 feet in height shall be guyed with three wires or 43 cables. 44 45 All deciduous and evergreen trees shall be staked the same day of planting. 46 47 All street trees shall be provided with a trunk free of branching 6 to 7 feet from root flare. 48

7

All Pruning, Staking, Guying and Wrapping is incidental to Roadside Cleanup in 2-01.

### 8-02.3(10) Fertilizers

This section is supplemented with the following:

Fertilizer shall be supplied and applied in the form and rates indicated below:

Type of Fertilizer	Application Rate
Commercial-grade complete fertilizer of neutral character, consisting of fast- and slow-release nitrogen, 50 percent derived from natural organic sources of urea formaldehyde, phosphorous, and potassium.	1 lb./1,000 square feet of actual nitrogen, 4 percent phosphorous, and 2 percent potassium by weight at the rate recommended by the topsoil analysis.
Granular or pelleted slow-release fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium.	Slow-release fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium at the rate recommended by the topsoil analysis.

8 9

10

Fertilizer shall be incidental to Soil Amendments per 8-02.3(6).

### 11 8-02.3(11) Bark or Wood Chip Mulch

12 The third sentence of the first paragraph is revised to read: 13

Mulch shall be feathered to plant material trunks, stems, canes, or root collars, and level with
 the top of junction and valve boxes, curbs, and pavement edges.

- 17 This section is supplemented with the following:
- 17 18

Bark or wood chip mulch in accordance with Section 9-14.4(3) shall be applied to a depth of

3 inches at the location indicated on the Plans or as directed by the Engineer.

Bark or wood chip mulch shall be incidental to Soil Amendments per 8-02.3(6).

### 24 8-02.3(13) Plant Establishment

- 25 This section is revised to read:
- The Contractor shall maintain the planting areas and all plants planted within the project limits to
  ensure the resumption and continued growth of the planted material until physical completion of
  the contract.
- 30
- 31 Maintenance shall include, but not be limited to, labor and materials necessary for removal of
- 32 foreign, dead, or rejected plant material, maintaining a weed-free condition, and the
- replacement of all unsatisfactory plant material planted under the contract.
- 35 Planting dates for replacement plant material will be approved by the Engineer.
- 36

1 The Contractor shall meet with the Engineer for the purpose of joint inspection of the project 2 once installation has been completed and thereafter on a periodic "as needed" basis as 3 determined by the Engineer, until the physical completion date of the contract. 4 5 All conditions unsatisfactory to the Engineer shall be corrected by the Contractor within a ten-6 day period immediately following the inspection. Failure to comply with corrective steps as 7 outlined by the Engineer shall constitute justification of the Contracting Agency to take 8 corrective steps and to deduct all costs thereof from any monies due the Contractor. 9 10 The Contractor shall replace all plants stolen or damaged by the acts of others until the physical 11 completion date of the contract. 12 13 Plant Establishment shall be incidental to Plant Selection per 8-02.3(8). 14 15 8-02.3(14) Plant Replacement 16 This section is revised to read: 17 18 The Contractor shall provide the Contracting Agency a one (1) year non pro-rated, full labor and 19 materials warranty for all planted material. The warranty shall cause the Contractor to remove 20 and replace all rejected plant material during the warranty period. The warranty period shall 21 begin at the date of physical completion of the contract and end one calendar year from that 22 date. 23 24 The Contractor shall be responsible for growing or providing enough plants for replacement of 25 all plant material rejected during the warranty period. All rejected plant material shall be 26 replaced at dates approved by the Engineer. 27 28 All replacement plants shall be of the same species and quality as the plants they replace. 29 Plants may vary in size reflecting one season of growth should the Contractor elect to hold plant 30 material under nursery conditions for an additional year to serve as replacement plants. 31 32 Replacement plants will be subject to the original warranty provision as stated above. 33 34 Plant Replacement shall be incidental to Plant Selection per 8-02.3(8). 35 36 8-02.3(15) Live Fascines 37 This section is deleted. 38 39 8-02.3(16) Lawn Installation 40 41 All Lawn Installation shall be incidental to Soil Amendments per 8-02.3(6). 42 43 8-02.3(16)A Lawn Installation 44 The second paragraph is revised to read: 45 46 All seeding areas shall be seeded with the following mix: 47 48

Type of Seed	% by Weight
Dwarf Tall Fescue (several varieties)	45
Dwarf Perennial Rye (Barclay)	30
Red Fescue	20
Colonial Bentgrass	5

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Low-Growing Turf Seed Mix per the City of Tacoma Surface Water Design Manual, Volume 2,
Chapter 3, Section 3.1.8, BMP C 120, Table 2-3. The rate of application shall be per seed
supplier recommendation of BMP C 120. All seeding shall be applied via hydroseed.

The third paragraph is supplemented with the following:

Where no irrigation system is to be installed, the lawn shall be placed during the following period only:

March 1 – June 30 September 1 – October 25

14 The fifth paragraph is supplemented with the following:15

Topsoil shall be placed to a depth of 8 inches. Subsoils shall be scarified to a minimum depth of4 inches. See City of Tacoma BMP L613.

19 The sixth paragraph is supplemented with the following:

21 On sloped areas, the sod strips shall be laid perpendicular to the flow of water.

### 23 8-02.3(16)B Lawn Establishment

This section is supplemented with the following:

Lawn that is replaced shall be of the same mixture and grade as the surviving lawn.

2728 Section 8-02.3 is supplemented with the following:

### 30 8-02.3(17) Root Barrier

Provide and install "Root Barrier" as detailed and as shown in Plans. "Root Barrier" shall be as
 specified in Section 9-14.9 Root Barrier of these Special Provisions.

### 33

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### 34 8-02.3(18) Tree Watering Bag System

35 Provide and install "Tree Watering Bag System" where indicated on the plans, per

manufacturer's recommendations. "Tree Watering Bag System" shall be as specified in Section
 9-14.10 Tree Watering Bag System of these Special Provisions.

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### 39 **8-02.3(19) Decorative Gravel**

40 41 The Contractor shall place 3-inch depth of decorative gravel in the individual tree wells, as

- 42 described in the Plans.
- 43

#### 1 2 8-02.3(20) Submittals 3 4 Contractor to submit samples of the following for Engineer's approval: 5 6 Decorative gravel sample. 7 • Provide topsoil soil analysis. 8 9 8-02.4 Measurement 10 The first paragraph is revised to read: 11 12 Soil Mix 1 and Decorative Gravel will be measured by the cubic yard in the haul conveyance at 13 the point of delivery. Soil Amendment will be measured by the square yard and shall include all 14 soil amendment required to satisfy City of Tacoma Standard Plan No. GSI-01d and BMP L613, 15 Post Construction Soil Quality and Depth. 16 17 This section is supplemented with the following: 18 19 Irrigation water used to establish vegetation will be considered included in the cost of plants. 20 21 "Tree Root Barrier" shall be measured per linear foot installed. 22 23 "Tree Watering Bag System" shall be measured per each installed tree watering bag. 24 25 8-02.5 Payment The pay item for "Topsoil Type " is revised to read 26 27 28 "Soil Mix 1", per cubic yard as described in 9-14.1. 29 The unit Contract price per cubic yard for "Soil Mix 1" shall be full payment for all costs 30 for the specified Work. 31 32 The pay item for "Plant Selection" is revised to read 33 34 All Plant Selection items shall include Plant Establishment and Plant Replacement. 35 "Plant Selection Tree", per each. Payment for "Plant Selection Small Tree" shall be full pay for all materials, labor, tools, 36 37 equipment, and supplies necessary for weed control within planting areas, planting area 38 preparation, fine grading, planting, cultivating, watering, and cleanup for the particular items 39 called for in the Plans until the physical completion date of the contract. A one (1) year plant 40 warranty shall be included in the unit contract price. 41 42 The seventh, eighth, and ninth paragraph pertaining to partial payment are deleted. 43 The pay item for "\_\_\_\_ Compost" is revised to read 44 45 46 All required Compost shall be integral to "Soil Amendment". 47 48 The pay item for "Fertilizer" is revised to read
1	
2 3 4	applicable.
5	The pay item for "Weed and Pest Control" is revised to read
7 8 9	All required Weed and Pest Control shall be integral to "Plant Selection" and "Soil Amendment" as applicable.
10 11	The pay app for "Soil Amendment" is revised to read
12 13 14 15 16 17 18	"Soil Amendment", per square yard. The unit Contract price per square yard for "Soil Amendment" shall be full pay for furnishing and incorporating the soil amendments into the existing soil as required per City of Tacoma Standard Plan No. GSI-01d as shown on the plans. This includes all required mulch, seeding and fertilizer, planting and turf topsoil, and scarified existing subsoil in planting and lawn areas.
19 20	The pay app for "Bark or Wood Chip Mulch" is revised to read
20 21 22	All required Bark or Wood Chip Mulch shall be integral to "Soil Amendment".
22 23 24	The pay app for "Water" is revised to read
25 26	All required Water shall be integral to "Plant Selection" and "Soil Amendment".
27 28 20	The pay app for "Seeded Lawn Installation", "Sod Installation", and "Lawn Mowing" is revised to read
30 31 32	All required Seeded Lawn Installation, Sod Installation, and Lawn Mowing shall be integral to "Soil Amendment" in proposed lawn areas as shown on the plans.
33 34	This section is supplemented with the following:
35 36	"Tree Root Barrier", per linear foot.
37 38 39	The unit Contract price per linear foot for "Root Barrier" shall be full compensation necessary or incidental to procuring and installing Root Barrier as called for on the Plans.
40 41	"Tree Watering Bag System", per each.
42 43 44 45	The unit Contract price per each for "Tree Watering Bag System" shall be full compensation necessary or incidental to procuring and installing Tree Watering Bag System as called for on the Plans.
46 47	"Decorative Gravel", per cubic yard.

1 The unit Contract price per cubic yard for "Decorative Gravel" shall include separation fabric as 2 3 4 5 6 7 8 required by the plans and shall be full compensation necessary or incidental for procuring and installing Decorative Gravel as called for on the Plans.

"Tree Protection", per each.

The unit Contract price per each for "Tree Protection" shall be full compensation necessary or incidental for procuring and installing Tree Protection as called for on the Plans.

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**IRRIGATION SYSTEM** 

8-03

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### 2 (March 1, 2004 Tacoma GSP) 3 4 8-03.3 **Construction Requirements** 5 The fourth paragraph is supplemented with the following: 6 7 All electrical work from the electrical source to the controller junction box must be completed by 8 a licensed electrical contractor. 9 10 8-03.3(5) Installation 11 The first sentence of the second paragraph is revised to read: 12 13 Final position of turf heads shall be level or $\frac{1}{2}$ inch below finished grade measured from the top 14 of the sprinkler. 15 16 The fourth paragraph is revised to read: 17 18 Final position of valve boxes, capped sleeves, and quick coupler valves shall be level with the 19 finished grade or mulch. 20 21 This section is supplemented with the following: 22 23 The Contractor shall advise the Engineer at least 24 hours before pressure tests are to be 24 conducted. 25 26 A zone diagram shall be posted in the controller to facilitate the selection of the valves to be 27 operated. 28 29 8-03.5 Payment 30 31 "Irrigation System", lump sum. 32 This first sentence of this section is revised to read: 33 34 All costs for furnishing, trenching, backfill, installing, and operating the irrigation system as 35 detailed in the Plans shall be included in the lump sum price for the complete irrigation system, not including Work to be performed by Tacoma Water as shown on the plans. The 36 Contractor shall provide necessary staking for Tacoma Water as part of this lump sum. 37 38 Contractor shall furnish and install meter box. This Bid item includes all coordination 39 with Tacoma Water required to complete the Work. 40 41 This section is supplemented with the following: 42 43 All costs associated with work performed by Tacoma Water including connections to the City of 44 Tacoma water main, furnishing, installing, trenching, backfill, and required resurfacing 45 associated with the proposed irrigation service connections to the existing main will be paid by 46 City of Tacoma. 47 48

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#### 8-04 CURBS, GUTTERS, AND SPILLWAYS 1 2

(March 1, 2004 Tacoma GSP)

### 3 4 8-04.3 Construction Requirements 5

### 8-04.3(1) Cement Concrete Curbs, Gutters, and Spillways

7 The first paragraph is revised to read:

9 Cement concrete curb, curb and gutters, gutters, and spillways shall be constructed with air 10 entrained concrete Class 3000 conforming to the requirements of Section 6-02.

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### 8-04.3(6) Cold Weather Work

13 14 The following additional requirements for placing concrete shall be in effect from 15 25 November 1 to April 1:

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• The Engineer shall be notified at least 24 hours prior to placement of concrete.

- The contractor must submit a "Cold Weather Work Plan" for approval of concrete pavement in cold temperatures.
- All concrete placement shall be completed no later than 2:00 p.m. each day. •
- Where forms have been placed and the subgrade has been subjected to frost, no concrete shall be placed until the ground is completely thawed. At that time, the forms shall be adjusted and subgrade repaired as determined by the Engineer.

#### 24 25 8-04.5 Payment

26 This section is supplemented with the following:

- 27 28 "TRAFFIC CURB AND GUTTER", per linear foot.
- 29

30 Payment for "Traffic Curb and Gutter" shall be full pay for all materials, labor, tools, equipment, 31 and supplies necessary for the installation of Cement Concrete Traffic Curb & Gutter per City of 32 Tacoma Standard Plan No. SU-03.

- 33
- 34 "PEDESTRIAN CURB", per linear foot.

35 Payment for "Pedestrian Curb" shall be full pay for all materials, labor, tools, equipment, and 36 37 supplies necessary for the installation of Cement Concrete Pedestrian Curb per City of Tacoma 38 Standard Plan No. SU-03A.

### 39

40 "EXTRUDED CURB", per linear foot. 41

42 Payment for "Extruded Curb" shall be full pay for all materials, labor, tools, equipment, and 43 supplies necessary for the installation of Extruded Curb per WSDOT Standard Plan F-10.42-00.

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#### 8-06 **CEMENT CONCRETE DRIVEWAY ENTRANCES** 1 2

(March 3, 2008 Tacoma GSP)

#### 8-06.3 **Construction Requirements**

5 The first paragraph is revised to read:

6 7 Cement concrete driveway approaches shall be constructed with air entrained concrete Class 8 3000 conforming to the requirements of Section 6-02 or Portland Cement Concrete Pavement 9 conforming to the requirements of Section 5-05 and per City of Tacoma Standard Plans Nos. 10 SU-07 and SU-08.

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12 This section is supplemented with the following sub-section:

### 14 8-06.3(1) Cold Weather Work 15

16 The following additional requirements for placing concrete shall be in effect from November 1 to 17 April 1: 18

- The Engineer shall be notified at least 24 hours prior to placement of concrete. ٠
- All concrete placement shall be completed no later than 2:00 p.m. each day.
- Where forms have been placed and the subgrade has been subjected to frost, no concrete shall be placed until the ground is completely thawed. At that time, the forms shall be adjusted and subgrade repaired as determined by the Engineer.

#### 24 25 8-06.5 Payment

26 The third paragraph is revised to read:

27 28 Excavation required for the construction of the driveway entrance shall be paid for under the unit

29 contract price for "Roadway Excavation, Incl. Haul" when included in the proposal. Otherwise,

30 the Contractor shall include all costs associated with excavating, including haul and disposal,

31 regardless of the depth in the unit contract price for "Cement Conc. Driveway Entrance Type 1" 32 And "Cement Conc. Driveway Entrance Type 2".

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- 34 35

## 1 8-14 CEMENT CONCRETE SIDEWALKS

2 (March 23, 2010 Tacoma GSP)

# 3 4 8-14.3 Construction Requirements 5

### 6 8-14.3(3) Placing and Finishing Concrete

7 The fourth paragraph is revised to read:

9 Curb ramps shall be of the type specified in the Plans. The detectable warning pattern shall 10 have the truncated dome shape shown in the Standard Plans.

### 11 12 8-14.3(4) Curing

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13 The second sentence is revised to read:14

15 Curing shall be in accordance with Section 5-05.3(13).

17 Section 8-14.3 is supplemented with the following:

# 18 19 8-14.3(20) Cold Weather Work 20

The following additional requirements for placing concrete shall be in effect from November 1 to April 1:

- The Engineer shall be notified at least 24 hours prior to placement of concrete.
- The contractor must submit a "Cold Weather Work Plan" for approval of concrete pavement in cold temperatures.
- All concrete placement shall be completed no later than 2:00 p.m. each day.
- Where forms have been placed and the subgrade has been subjected to frost, no concrete shall be placed until the ground is completely thawed. At that time, the forms shall be adjusted and subgrade repaired as determined by the Engineer.
- 3132 8-14.3(21) Thickened Edge for Sidewalk
- 34 Thickened edge shall be constructed in accordance with the standard plan.

### 35 36 **8-14.4 Measurement**

37 This section is supplemented with the following:

39 Measurement of the Tree Root Barriers shall be by linear foot.

### 41 8-14.5 Payment

- 42 The pay item "Cement Conc. Sidewalk" is supplemented with the following:
- 43
- All additional costs related to the construction of thickened edges shall be included in the unitcontract cost for "Cement Conc. Sidewalk".
- 46
- 47 The sixth paragraph is revised to read:
- 48

1 Excavation required for the construction of the sidewalk shall be paid for under the unit contract

2 price for "Roadway Excavation, Incl. Haul" when included in the proposal. Otherwise, the

3 Contractor shall include all costs associated with excavating, including haul and disposal,

4 5 6 7 regardless of the depth in the unit contract price for "Cement Conc. Sidewalk" and/or "Cement

Conc. Curb Ramp"

"Welcome Mat", per square feet.

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9 The unit Contract price per square yard for "Welcome Mat" shall be full payment for all costs 10 incurred to install the proposed concrete slab, mortar bed, and associated steel dowel as shown

11 on the Welcome Mat detail provided on the design plans.

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### 1 8-20 ILLUMINATION, TRAFFIC SIGNAL SYSTEMS, AND ELECTRICAL 2 (March 31, 2014 Tacoma GSP)

2 (March 31, 2014 Tacoma GSP) 3

### 4 **8-20.2 Materials** 5 This section is supple

This section is supplemented with the following:

6
7 The Contractor shall warranty all electrical and mechanical equipment described in this Section
8 for satisfactory in-service operation for one year following project acceptance. Warranty shall
9 include troubleshooting, labor, materials, and all other costs to bring the equipment to a
10 satisfactory level of service. Normal maintenance is not included in the warranty.

### 11

### 12 8-20.2(1) Equipment List and Drawings

13 This section is revised to read:

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Within 20 days following execution of the Contract, the Contractor shall submit to the Engineer a
completed "Request for Approval of Material" that describes the material proposed for use to
fulfill the Plans and Specifications.

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The Contractor shall submit Type 2 Working Drawings consisting of supplemental data, sample
articles, or both, of the material proposed for use. Supplemental data includes such items as
catalog cuts, product Specifications, shop drawings, wiring diagrams, etc.

The Contractor shall submit Type 2 Working Drawings consisting of the following information for
 each different type of luminaire required on the Contract:

- 1. Isocandela diagrams showing vertical light distribution, vertical control limits, and lateral light distribution classification.
- 2. Details showing the lamp socket positions with respect to lamp and refractor for each light distribution type. This requires that the Contracting Agency know what the light pattern available are and the light distribution.
- Additional submittals for proposed alternate LED Roadway Luminaires shall be in conformance
   with Section 9-29.10.

The Contractor shall submit for approval Type 3E Working Drawings in accordance with Section
1-05.3 for each type of light standard and each type of signal standard called for on this project.

- 38 39 The Engineer's acceptance of any submitted documentation shall in no way relieve the
- 40 Contractor from compliance with the safety and performance requirements as specified herein.
- 41
- 42 Submittals required shall include but not be limited to the following:
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2 proposed installation location by Roadway station, offset and the scheduled sequence 3 for each cable vault installation. 4 5 3. A Type 2E Working Drawing consisting of a pit plan, for each boring pit, depicting the 6 protection of traffic and pedestrians, pit dimensions, shoring, bracing, struts, walers, 7 sheet piles, conduit skids, and means of attachment, casing type, and casing size. 8 9 4. A Type 2E Working Drawing consisting of a boring plan depicting the boring system and 10 entire support system. 11 12 **Rapid Flashing Beacons** Rapid Flashing Beacon (RFB) indications shall comply with the dimensional, operational, and 13 14 flash pattern requirements of Federal Highway Administration (FHWA) Interim Approval 21 (IA-15 21, Conditions 4, 5, and 6, excluding Condition 5f. RFB systems shall be capable of providing, 16 at a minimum, the following two-channel flashing patterns: 17 18 NEMA Standard 50-50: 19 20 Channel one is ON and channel two is OFF for 0.5 seconds. • 21 Channel one is OFF and channel two is ON for 0.5 seconds. 22 (Cycle repeats; the total flashing pattern cycle length is 1.00 second.) 23 24 RFB "WW+S" Pattern (IA-21 Condition 5b): 25 26 Channel one is ON and channel two is OFF for 0.05 seconds. 27 • Both channels are OFF for 0.05 seconds. 28 Channel one is OFF and channel two is ON for 0.05 seconds. • 29 Both channels are OFF for 0.05 seconds. • 30 Channel one is ON and channel two is OFF for 0.05 seconds. • 31 • Both channels are OFF for 0.05 seconds.

2. A Type 2 Working Drawing consisting of a cable vault installation plan showing the exact

- Channel one is OFF and channel two is ON for 0.05 seconds. 32 • 33
  - Both channels are OFF for 0.05 seconds.
    - Both channels are ON for 0.05 seconds.
- 35 • Both channels are OFF for 0.05 seconds. 36
  - Both channels are ON for 0.05 seconds.
  - Both channels are OFF for 0.25 seconds. •
  - (Cycle repeats; the total flashing pattern cycle length is 0.80 seconds.)
- 38 39

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40 The flashing pattern shall be user-selectable in the field. 41

42 RFB system pushbuttons shall not include tactile arrows, speech messages, or vibrotactile 43 indications. RFB system pushbuttons shall use a 9" x 12" R10-25 sign. The R10-25 sign may 44 include integral yellow warning lights.

- 45
- 46 8-20.3 **Construction Requirements**
- 47

### 1 8-20.3(1) General

2 This section is supplemented with the following:

The Contractor shall call 24 hours prior for inspection before covering any underground conduit,
prior to installing any detection loops, or placing concrete for foundations. For inspections,
notify Traffic Signal/Streetlighting at (253) 591-5287.

8 Work shall be sequenced such that after the new signal is placed in operation, the Contractor

9 shall remove any equipment not required for the operation of the new signal. The Contractor
10 shall remove the old vehicle and pedestrian signal heads immediately after the new system is
11 operational.

12

For new signals, the contractor shall provide a Portable Message Change Sign (PMCS) in each direction, and operate the PMCS for one week before and one week after activating the new signal. This work shall be paid for in accordance with Section 1.10

- signal. This work shall be paid for in accordance with Section 1-10.
- 16

17 Off duty police officers shall be provided by the Contractor to direct traffic at any time the signal 18 is not in normal operation. This work shall be paid for in accordance with Section 1-10.

19 The following existing and temporary equipment shall be deconstructed/removed by the

20 Contractor and delivered to the City of Tacoma Signal/Streetlight Shop located at 3401A South

21 Orchard Street. Care shall be exercised in removing and salvaging the equipment. Any

equipment damaged during removal, hauling, and stockpiling shall be repaired or replaced by the Contractor at no expense to the City.

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- All signal heads and mounting hardware.
- Flashing beacons and flasher control pane.
- Steel poles, mast arms, and hardware.
- Aluminum poles, mast arms, and hardware.
- Controller cabinets and all internal hardware and wiring.
  - Vehicle detection systems, including video, microwave, and infrared systems, and associated hardware.
  - All Opticom equipment or other preemption and priority equipment.
  - LED luminaries, LED retrofit kits, and LED lamps
  - Ornamental/decorative fixtures and poles/posts.
  - Pedestrian signals, poles, and pushbuttons.
- Signs, brackets, and hardware.
- Locking junction box security lids, security bolts, and all other wire theft deterrent
   security hardware.
- 39
- All other equipment shall be removed and disposed of by the Contractor, including, but notlimited to, the following:
- 42

- Wood poles.
  - All wiring outside of the controller cabinet.
- 45 Loops.
- Non-LED cobra-head fixtures and GE shells (minus power door).
- 47

## 1 8-20.3(1)A Temporary Lighting

The Contractor shall schedule the work to minimize the outage between any existing lights and
new lights. The temporary lighting shall be installed and operational before the existing lighting
is removed from service. Temporary lighting shall be provided by the Contractor. City
Signal/Streetlight Maintenance Crews will hot splice the final connection or connections. The
Contractor shall provide 72 hours notice to schedule the City crews for the hot splicing.

9 All cost for temporary lighting are included as incidental to the Illumination System, Complete10 lump sum bid item.

11

### 12 8-20.3(4) Foundations

13 This section is supplemented with the following:

14

Anchor bolts for streetlight standards and for strain poles shall extend a minimum of two threads
 and a maximum of six threads above the top heavy-hex-nut. A minimum of three threads shall

17 remain between the bottom of the leveling hex-nut and the top of the foundation.

18

19 Foundations shall be excavated using an auger and poured against undisturbed material,

20 unless otherwise approved by the Engineer. Vacuum excavation should be used where there is

- 21 a possibility of conflict with utilities or other facilities.
- 22

Forming the foundation with galvanized culvert pipe or similar forming methods will only be allowed when soil conditions or other factors make this method of construction necessary and

25 when approved by the Engineer. Biodegradable forming tubes shall be fully removed from the

26 cured concrete prior to backfilling. When using culvert or tubes, the following backfill

27 requirements will apply. The area between the form and undisturbed material shall be filled with

28 CDF. For lightly loaded installations and only with the approval of the Engineer, Crushed

29 Surfacing Top Course meeting the requirements of Section 9-03.9(3) may be used. Placement

30 shall be in accordance with Section 2-09.3(1)E and shall be backfilled and compacted in the 31 presence of the Engineer.

32

Vacuum excavation shall be used where there is a possibility of conflict with utilities or otherfacilities

# 3536 8-20.3(5) Conduit

37

### 38 8-20.3(5)A General

39 This section is supplemented with the following:

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41 As soon as the mandrel has been pulled through, both ends of the conduit shall be sealed in an

- 42 approved manner. A minimum size #14 AWG insulated solid copper wire pull line shall be
- 43 installed in all empty conduits. At least 3 feet of the copper wire pull line shall be neatly coiled
- and secured to the conduit in the same manner as is shown in Washington State Department of
   Transportation Standard Plan J-28.70-01, 14 Details A and B.

### 1 8-20.3(5)B Conduit Type

2 This section is supplemented with the following:

Conduit under driveways and other vehicular access ways shall be Schedule 80 high-density
polyethylene (HDPE), Schedule 80 PVC, or rigid metal conduit (RMC).

6 7

3

Conduit installed in a joint trench, with power, and that is installed a minimum of 36 inches from
finished grade may utilize Schedule 40 PVC in lieu of Schedule 80 PVC. This allowance shall
not be construed to permit the use of dissimilar materials in a single run.

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Pole riser conduit material types shall be in accordance with applicable City of Tacoma standardplans.

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### 14 8-20.3(5)D Conduit Placement

15 *This section is supplemented with the following:* 16

17 Conduit terminating in pole foundations shall extend to 3 inches below the handhole.

19 Conduit terminating in controller foundations shall terminate 1 inch above the foundation. 20

### 21 8-20.3(5)E Method of Conduit Installation

### 23 8-20.3(5)E1 Open Trenching

24 Subsection 5 is revised to read:

 Trenches located within the paved roadway shall be backfilled with 3 inches of sand over the conduit, followed by material meeting the requirements of Section 9-03.12(3). Compaction shall be in conformance with Section 2-09.3(1)E. All street cuts shall be repaired in accordance with the standard plans and City of Tacoma Standard Plan No. SU-15.

32 This section is supplemented with the following new Subsections:

- 7. Where multiple conduit are installed in the same trench, the trench shall be of sufficient width to accommodate all conduit with a minimum 3-inch separation between each conduit, and a minimum clearance of 1 inch on the sides of the trench. When conduit is laid horizontal to one another, the conduit shall be laid at the same elevation, parallel with one another. When conduit is laid vertically in the same trench, conduit spacers shall be used to maintain the 3-inch separation. Spacers shall be installed in accordance with the manufacturer's recommendations for conduit of that size and type. Additional spacers shall be required where the supported conduit is sagging more than 20 percent of the nominal diameter of the conduit.
- 8. In all conduit trenches, metallic, detectible, utility warning tape shall be placed at 12-inches below final grade.
- 45 46

### 47 8-20.3(6) Junction Boxes, Cable Vaults, and Pull boxes

48 This section is supplemented with the following:

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Unless otherwise specified in the Plans, or as otherwise directed by the Engineer, all junction boxes exposed to vehicular traffic shall be Heavy-Duty. Field adjustments of junction boxes causing junction boxes to be installed within an intersection radius and within four feet of the curb may require Heavy-Duty junction boxes. Final placement and type of all junction boxes within an intersection shall be as directed by the engineer.

8 Adjacent junction boxes shall be separated by a minimum of 3 inches. 9

Concrete meeting the requirements of 6-02.3(2)B shall be placed surrounding all junction boxes, except as otherwise provided for below. Concrete shall be flush with the top of the junction box and the adjacent improvements. Concrete shall be cast-in-place. Junction boxes shall be secured with the concrete border as follows:

- When the junction box is located within a concrete or asphalt section and is located a minimum of 12 inches from the edge of the section, a concrete border will not be required.
  - 2. Where junction boxes are located within 12 inches from the edge of the concrete or asphalt section, the junction box shall be secured on all sides with a minimum 12-inch wide, 6-inch deep concrete section. Concrete shall be finished in the same manner as the adjacent concrete, where applicable.
    - 3. Where junction boxes are located within a planter strip, a landscaped area, or other nonhardened surface, the junction box shall be bordered on all sides with a minimum 6-inch wide, 12-inch deep concrete section flush with the top of the junction box.

## 26 8-20.3(7) Messenger Cable, Fittings

The second paragraph of this section is deleted.

- 29 This section is supplemented with the following:
- Cable ties shall be used to neatly secure the signal cable to the span wire at 10-inch centers
  and shall be tightened at top. Excess tie material shall be completely cut off. The signal control
  cable shall be below the span wire and shall be straight with no twisting or spiraling. A minimum
  5% sag shall be provided in the span wire when fully loaded with all vehicular signal heads,
  unless otherwise directed by the Engineer.

## 37 8-20.3(8) Wiring

- 38 The third paragraph is revised to read:
- 39
- 40 All splices in underground illumination circuits, induction loop circuits, and magnetometer
- 41 circuits shall be installed at junction boxes. The only splice allowed in an induction loop circuit
- 42 shall be the shielded cable to loop wire splice. The only splice allowed in a magnetometer
- 43 circuit shall be the probe lead-in cable to the magnetometer cable splice.
- 44
- 45 Induction loop splices and magnetometer splices shall be heat-shrink type with moisture
- 46 blocking material, sized for the conductors. Magnetometer and induction loop splices shall be
- soldered. The end of the sheathing shall be sealed with a heat-shrink insulator.
- 48

1	The fo	urth paragraph is revised to read:		
2 3	Signal wiring shall be in conformance with the following:			
4 5 6	1.	All termination for traffic signal control systems shall be in accordance with City of		
0 7 8	2.	All signal wiring shall be five-conductor or two-conductor 14-gauge stranded copper wire unless otherwise shown in the plans		
9 10	3. 4.	For five-section and bimodal heads, 2-5c-14-gauge conductors shall be utilized. 5c wire shall not be split between high voltage and low voltage. Where a pedestrian		
11 12		head and a pedestrian push button share a common pole, a separate 2c shall be pulled in for the push button.		
13 14	5.	A single 5c may be split between two pedestrian heads on a common pole with a jumper across the neutral.		
15 16	6.	Opticom and detection wiring shall be per manufacturer's recommendations.		
17 18 19 20	All wiri cabine below:	ng entering the cabinet shall be gathered across the conduits to the right front of the t and neatly tied and circle the base of the cabinet counterclockwise as further described		
21 22 23 24 25 26 27	1.	Copper communication cables shall circle the base of the cabinet, counterclockwise from front right, one full circle, and around to the back of the right panel. Cables shall follow up the back of the right panel and terminate on TS14. Cable outer jacket sheathing shall be removed from a point two (2) inches below TS14. Cables shall be uniform in length, with sufficient slack to reach any terminal on the TS14. Individual wire slack shall be neatly looped back and tied. A bolt/flanged nut alligator jaw shield bond connector shall be utilized.		
28 29	2.	Power service conductors shall circle the base of the cabinet, counterclockwise from front right one full circle, and back around to the front right of the base		
30 31 32	3.	Detection cables shall circle the base of the cabinet, counterclockwise from front right, to the back of the left panel. Cables shall follow up the back of the left panel and terminate as directed in the field.		
33 34 35 36 37 38	4.	Signal vehicle and pedestrian head shall circle the base of the cabinet, counterclockwise from front right, to back left. Cable outer jacket sheathing shall be removed from the point that the conductor reaches the back left of the cabinet to the ends of the conductors. All vehicle and pedestrian conductors in the cabinets shall be uniform in length, with sufficient slack to reach any terminal on the load bay. Individual wire slack shall be neatly looped back and tied		
39 40 41 42 43 44	5.	Push button conductors shall circle the base of the cabinet, counterclockwise from front right, to front left. Cable outer jacket sheathing shall be removed from the point that the conductor reaches the front left of the cabinet to the ends of the conductors. All push button conductors in the cabinets shall be uniform in length, with sufficient slack to reach any terminal on the TS3 terminal strip. Individual wire slack shall be neatly looped back and tied.		
43 46 47	Field v has be	viring of the cabinet shall be done by City of Tacoma Signal Electricians after all wiring een pulled into the cabinet and properly labeled with a temporary label consisting of white		

48 electricians tape with permanent marker. The Contractor shall provide a detailed description/

1 key of all temporary labeling. The cabinet and labeling shall be inspected by the 2 Signal/Streetlight inspector prior to cabinet wiring. The Contractor shall allow five working days 3 for City Electricians to field wire the cabinet after the inspection is complete. Improper or 4 incorrect labeling requiring additional effort by the City may result in additional time required by 5 City forces to wire the cabinet. 6 7 The fifth paragraph is revised to read: 8 9 Splices and taps on underground and overhead circuits shall be made with solderless crimp 10 connectors, installed with an approved tool designed for the purpose, to securely join the wires 11 both mechanically and electrically. Splices and taps will be sealed in accordance with this 12 section. 13 14 The seventh paragraph is revised to read: 15 16 Aerial illumination splices shall be taped with thermoplastic electrical insulating tape equivalent 17 to the original wire insulation rating and thickness. It shall be well lapped over the original 18 insulation. 19 20 The eighth paragraph is revised to read: 21 22 All splices in junction boxes and handholes shall be taped and sealed with an electrical coating. 23 Tape splice insulation shall consist of thermoplastic electrical insulating tape equivalent to the 24 original wire insulation rating and thickness. It shall be well lapped over the original insulation 25 and moisture resistant electrical coating shall be applied and allowed to dry. Two layers of 26 thermoplastic tape will then be applied, followed by a second layer of moisture resistant 27 electrical coating. 28 29 The ninth paragraph is revised to read: 30 31 Illumination cable in light standards shall be #10 AWG USE or "Pole and Bracket" cable, as 32 specified in Section 9-29.3(2)D of the Standard Specifications. 33 34 The tenth paragraph is revised to read: 35 36 Fifteen (15) feet of slack cable shall be provided at the controller end of all cables terminating in 37 the controller cabinet. A minimum of 3 feet of slack cable shall be left at all strain poles and 38 junction boxes. 39 40 8-20.3(10) Service, Transformer, and Intelligent Transportation System (ITS) Cabinets 41 The second, third, and fifth paragraphs are deleted. 42 43 8-20.3(13) Illumination Systems 44 45 8-20.3(13)A Light Standards 46 The sixth, seventh, and eighth paragraphs are deleted 47 48 This section is supplemented with the following:

1 2 Conventional Base installation shall conform to the following:

3 4 The light standards shall be assembled and mounted complete on foundations perfectly straight 5 and in good alignment. Proper leveling of the standards shall be accomplished by means of 6 four leveling nuts that are to be employed with the anchor bolts. Standards shall be plumb 7 within 1/50 inch per foot.

8

9 Luminaires shall be securely attached to the mast arm in a straight and level position. The 10 luminaires shall be installed at a specified number of degrees from level, if directed by the 11 Engineer. After the poles are plumbed, grout shall be neatly placed between the pole base and 12 the concrete. The Contractor shall form a 1/2-inch diameter weep hole in the grout. The nuts 13 and bolts required for this foundation shall be furnished by the Contractor.

- 14
- 15 All above grade signal and streetlight infrastructure, including streetlight standards, traffic signal 16 poles, push-button poles, cabinets, and enclosures, shall not be installed closer than 3 feet from
- 17 the face of curb to the nearest part of the pole or structure, and no closer than 5 feet from fire
- 18 hydrants and utility poles. 19

### 20 8-20.3(14) Signal Systems

21 This section is deleted.

### 22 23 8-20.3(14) A Signal Controllers

24 This section is revised to read:

- 25 26 The fully wired control cabinet, the controller, the MMU, and detection hardware for the cabinet 27 shall be delivered to the City of Tacoma Traffic Signal Shop for configuration, programming, 28 testing, and certification prior to installation. At the Contractor's request, the City will off load the 29 equipment. The Contractor shall notify the City 24 hours in advance of the equipment delivery.
- 30

31 A minimum of two weeks shall be required for the City to configure and test the cabinet and 32 controller for each intersection. If multiple cabinets and controllers are delivered, the Contractor 33 shall identify the sequence for configuration and allow one additional week for each additional 34 cabinet and controller delivered.

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36 The Contractor shall be responsible for transporting the controller cabinet from the

37 Signal/Streetlight Shop site to the jobsite, and for installation of the cabinet and all field wiring.

- 38 Field wiring shall be performed in accordance with 8-20.3(8) and as directed by City of Tacoma 39 Signal and Streetlight personnel in the field.
- 40

### 41 8-20.3(14)B Signal Heads

- 42 This section is supplemented with the following:
- 43

44 For span wire installation, the red indications shall be leveled to within 1 inch for each direction

- 45 as approved by the City. The height to the bottom of the lowest head shall be 17 feet, plus or minus 3 inches. Height to the bottom of the lowest four-section or five-section head shall be a
- 46
- 47 minimum of 16 feet-3 inches, plus or minus 3 inches.
- 48

1 For span wire installation, the signal stem (drop pipe) shall be 1 to 3 feet long unless otherwise 2 approved by the Engineer.

### 3 4 8-20.3(17) "As Built" Plans 5

This section is supplemented with the following:

These drawings shall show the routing of all underground conduits. The locations of the conduit shall be dimensioned with a precision and accuracy of 1 foot.

#### 9 10 8-20.4 Measurement

11 12 All work to complete electrical and illumination systems as shown on the plans, including all 13 required trenching, backfill, pavement restoration, and all work associated with disconnecting, 14 removing, and salvaging existing City of Tacoma street lights as noted on the plans, is included 15 as incidental to the Illumination System, Complete lump sum Bid item unless stated otherwise 16 below.

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18 Service Connection to Tacoma Power shall be measured per each. The unit cost for this bid 19 item shall include all trenching and/or directional boring, demolition including haul, roadway restoration, and permitting associated with the proposed electrical service connections.

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22 Directional boring will be measured by the linear foot for the length of the boring tunnel: this 23 work is incidental to the Illumination System, Complete lump sum Bid item.

#### 24 25 8-20.5 Payment

26 Payment will be made for each of the following Bid items that are included in the Proposal:

- 27 28 "Illumination System, Complete", lump sum.
  - "Service Connection to Tacoma Power", per each.

## 1 8-22 PAVEMENT MARKING

2 (January 19, 2017 Tacoma GSP) 3

### 8-22.1 Description

The last sentence of the second paragraph is revised to read:

Traffic letters used in word messages shall be 6-feet high with the exception of the "R" in the
railroad crossing symbol which shall be as shown on the standard plans.

### 9 10 8-22.2 Materials

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- 11 The Section is supplemented with the following:
  - All "Plastic Chevron", "Plastic Arrow", "Plastic Sharrow Symbol", "Plastic Letter" markings and all "Plastic Crosswalk Line" and "Plastic Stop Line" lines, shall be a Preformed retro-reflective thermoplastic pavement marking material incorporating a pre-applied bead coating that can be adhered to asphalt, concrete and Portland Cement Concrete pavements by means of heat fusion. The applied markings shall be very durable, oil and grease impervious, and provide immediate and continuing retro-reflectivity meeting the requirements of Section 9-34.3(2).
- "Green Durable Product" materials shall meet the requirements of section 9-34.3(4) for MMA.
- Materials used for curb paint shall be the same as for pavement marking paint per Section 9-34.2.

## 25 8-22.3 Construction Requirements

# 2627 8-22.3(3)E Installation

28 The Section is supplemented with the following for applying Type B material:

Effective Performance Life: When properly applied, in accordance with manufacturer's
 instructions, the preformed marking materials shall be neat and durable. The markings shall
 remain skid resistant and show no lifting, shrinkage, tearing, roll back, or other signs of poor
 adhesion.

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Packaging: The flexible preformed marking material, for use as transverse or bike symbols as
well as legends, shall be available in flat form material up to a maximum of 2-foot width by 4-foot
length. The material shall be packed in suitable cartons clearly labeled for ease of identifying
the contents. Packaging shall not use plastic liners within to separate material from itself.
Product packaging shall identify part number and mil thickness.

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41 Material Replacement Provisions: Any properly applied preformed marking materials that
 42 shall smear or soften independent of pavement movement or condition within a period of one
 43 year from date of application shall be replaced by the supplier.

- 44
- 45 **Installation:** The preformed marking materials shall be applied in accordance with the
- 46 manufacturer's recommendations on clean and dry surfaces. New Portland concrete cement
- 47 surfaces must be sandblasted to entirely remove curing compound. Marking configuration shall
- 48 be in accordance with the "Manual on Uniform Traffic Control Devices," where applicable.

New Surfaces: Preformed marking materials specified for newly paved asphalt road surfaces
shall be capable of being applied as the original permanent marking on the day the surface is
paved.

Fusion: The preformed marking materials shall be fusible to the pavement by means of a
propane torch recommended by the manufacturer.

**Technical Services:** The supplier shall provide technical services as may be required.

# 108-22.3(3)F Application Thickness

- 12 The Section is supplemented with the following:
- Green Durable Product: Approximately 4.2-gallon mixture of Green colored MMA, hardwearing
   aggregate, and catalyst should cover 70-75 SF at 90 mils thickness.

### 16 17 8-22.3(4) Tolerances for Lines

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- 18 The allowable tolerance for "Length of Line" is revised to read:
- Length of Line: The longitudinal accumulative error within a 32-foot length of skip stripe shall
   not exceed plus or minus 1 inch.

### 23 8-22.4 Measurement

- The last sentence of the sixth paragraph is revised to read:
- 26 Crosswalk lines will be measured by the linear foot of marking installed.
- 2728 The section is supplemented with the following:
- Green Bike Markings will be measured by each typical Green Bike Markings installed.
  Painted curb will be measured by the linear foot of curb line as "Painted Curb."
- 33 Plastic Sharrow Symbols will be measured by each typical sharrow symbol installed.

### 34 35 8-22.5 Payment

- 36 This section is supplemented with the following:
- 38 "Parking Stall Striping", per linear foot of thermoplastic pavement markings.39
- 40 "Access Parking Space Symbol", per each thermoplastic pavement marking.
- 4142 "Painted Curb" per linear foot.
- 4344 "Remove Paint Line" per linear foot.
- 45 46
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1 The Standard Specifications are supplemented with the following: 2

### 8-30 CEMENT CONCRETE STAIRWAY

4 (March 17, 2003 Tacoma GSP) 5

### 8-30.1 Description

8 This work shall consist of constructing cement concrete stairways in accordance with details
9 shown in the Standard Plans and these Specifications and in conformity to lines and grades
10 shown in the Plans or as established by the Engineer.

### 8-30.2 Materials

14 Materials shall meet the requirements of the following sections:

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16	Portland Cement	9-01
17	Aggregates	9-03
18	Premolded Joint Filler	9-04.1
19	Concrete Curing Materials and Admixtures	9-23
20	Reinforcing Bars	9-07
21	Paint	9-08
22		

The concrete shall be air-entrained concrete Class 3000 in accordance with the requirements of
 Section 6-02.

### 26 8-30.3 Construction Requirements

### 28 8-30.3(1) Excavation

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Excavation shall be made to the required depth and to a width that will permit the installation
and bracing of the forms. The foundation shall be shaped and compacted to a firm even
surface conforming to the section shown in the Standard Plan. All soft and yielding material
shall be removed and replaced with acceptable material.

### 35 8-30.3(2) Forms

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## • •••••(=)

Forms shall be of wood or metal and shall extend for the full depth of the concrete. All forms
shall be straight, free from warp, and of sufficient strength to resist the pressure of the concrete
without warping. Bracing and staking of forms shall be such that the forms remain in both
horizontal and vertical alignment until their removal. After the forms have been set to line and
grade, the foundation shall be brought to the required grade and thoroughly wetted

42 approximately 12 hours before placing the concrete.

43

# 44 8-30.3(3) Placing and Finishing of Concrete45

46 Front and side edging of stair treads shall be to a radius of 1/2 inch.

Landings for stairways shall be marked as specified for concrete sidewalks except that
transverse and longitudinal markings shall be modified as necessary to result in uniform size of
squares in each landing. Where gutters are along the side of stairways, the gutter portion of
stairway landings shall be smooth finished without markings to conform with the stairway gutter.

### 8-30.3(4) Cold Weather Work

The following additional requirements for placing concrete shall be in effect from November 1 to April 1:

- The Engineer shall be notified at least 24 hours prior to placement of concrete.
- All concrete placement shall be completed no later than 2:00 p.m. each day.
- Where forms have been placed and the subgrade has been subjected to frost, no concrete shall be placed until the ground is completely thawed. At that time, the forms shall be adjusted and subgrade repaired as determined by the Engineer.

### 17 8-30.3(5) Curing

19 Cement concrete stairways shall be cured for a minimum of 72 hours in accordance with 20 Section 5-05.3(13).

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### 8-30.4 Measurement

Measurement of cement concrete stairway will be in accordance with City of Tacoma StandardPlan SU-10.

# 27 **8-30.5 Payment** 28

- 29 "Cement Conc. Stairway", per linear foot.
- 30

The unit Contract price per linear foot for "Cement Conc. Stairway" shall be full pay for all labor, equipment, and materials required for clearing and grubbing; excavation; subgrade preparation; construction of forms; furnishing and placing reinforcing steel; furnishing and placing of concrete in accordance with the plans and specifications.

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The Standard Specifications are supplemented with the following:

## 8-31 SIDEWALK SANDBLASTING

### 8-31.1 Description

This work shall consist of sandblasting concrete sidewalks in accordance with these specifications at the locations indicated in the plans or where designated by the engineer.

# 108-31.2Construction Requirements11

- 1. Locating sandblast band.
  - a. Locate band with chalk or tape in orientation as shown on drawings for approval by the Engineer. Provide Engineer 48 hours' notice of completion of layout.
- 152. Blasting Operations and Requirements:
  - a. Apply sandblasted finish to exposed concrete surfaces where indicated and approved by Engineer, including exposed concrete surfaces constructed as part of the Tacoma Link Expansion project.
    - b. Perform sand blasting at least 72 hours after placement of concrete. Coordinate with Tacoma Link Expansion project, formwork construction, concrete placement schedule, and formwork removal to ensure that surfaces to be blast finished are blasted at the same age for uniform results.
      - c. Determine type of nozzle, nozzle pressure, and blasting techniques required to match the Engineer's control samples.
      - d. Abrasive blast corners and edge of patterns carefully, using backup boards, to maintain uniform corner or edge line.
- Depths of Cut: Use an abrasive grit of proper type and gradation to expose aggregate and surrounding matrix surface to match the Engineer's control samples as follows:
   Light Sand Blast Finish: Expose fine aggregate with no exposure of coarse aggregate
  - a. Light Sand Blast Finish: Expose fine aggregate with no exposure of coarse aggregate; maximum 1/16-inch reveal.
  - b. Medium Sand Blast Finish: Generally expose fine aggregate with occasional coarse aggregate; 1/8-inch to 3/16-inch reveal.
- Surface Continuity: Perform sand blast finishing in as continuous an operation as possible,
   utilizing the same work crew to maintain continuity of finish on each surface or area of work.
   Maintain patterns of variances in depths of cuts as indicated.
- 40 4. Construction Joints: Use technique acceptable to the Engineer to achieve uniform treatment41 of construction joints.
- 42 43 5
  - 5. Protection and Repair:
    - a. Protect adjacent materials and finishes from dust, dirt, and other surface or physical damage during abrasive blast finishing operations. Provide protection as required and remove from site at completion of the work.
- b. Repair or replace other work damaged by finishing operations.

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- 6. Lettering Finish: Perform spray painting of letters utilizing technique acceptable to the 2 Engineer to achieve uniform treatment of lettering.
  - a. Provide (3) coats of clear coat paint at letters located at colored concrete sidewalk.
  - b. Provide (3) coats of dark grey paint at letters located at concrete sidewalk
- 5 6 7. Cleanup: Maintain control of concrete chips, dust, and debris in each area of the work. 7 Clean up and remove such material at the completion of each day of operation. Prevent 8 migration of airborne materials by use of tarpaulins, wind breaks, and similar containing 9 devices.

### 8-31.3 **Submittals**

- 12 13 1. Sample Panels: Before work is allowed to commence the contractor shall furnish a minimum 14 of two (3) initial sample panels and (2) final sample panels approximately 4ft. x 4ft. for 15 review by the contracting agency. Initial sample panels shall consist of (1) concrete sidewalk 16 panel and (2) colored concrete sidewalk panels. Final sample panels shall consist of (1) 17 concrete sidewalk panel and (1) colored concrete sidewalk panel. 18
  - a. Locate panels where indicated or, if not indicated, as directed by Contracting Agency.
  - b. Sandblast part of an exposed-face surface for each sandblast finish indicated. Include a 4-inch wide band traversing the length of sample, across joints and along edge of sample with a minimum of (2) 90 degree turns. Sandblast 6" letters to form the word HILLTOPIA, include jointing as shown in drawings. Paint words as indicated. Sample shall demonstrate adequacy of repair techniques proposed for repair of surface blemishes.
  - c. After review of initial panels, the contractor shall furnish a minimum of (2) final panels approximately 4ft. x 4ft. with revised blasting as indicated during review of initial panel, for review by the contracting agency.
  - d. After acceptance of blasting technique, maintain one sample panel at the Project site in an undisturbed condition as a standard for judging the completed Work.
    - e. Demolish and remove sample panels when directed.
- 31 32 2. Sample paint colors: Prior to commencement of sample panels the contractor shall furnish 33 contact color sheet samples in the range of colors indicated for lettering finishes.

### 8-31.4 Measurement

37 Sidewalk Sandblasting shall be measured by the linear foot with the width to match that which is 38 shown on the plans. 39

#### 40 8-31.5 Payment 41

- 42 Payment will be made for the following Bid item that is included in the proposal:
- 43

"4 inch Concrete Sandblasting Strip", per linear foot. 44 45

46 The unit Contract price per each for "4 inch Concrete Sandblasting Strip" shall be full payment

47 for all costs for the specified Work.

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1 The Standard Specifications are supplemented with the following: 2

### 8-32 UNIT PAVERS

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### 8-32.1 Description

This work shall consist of constructing a unit paver surface in accordance with these Special Provisions and as detailed on the Plans. This section includes the following:

10 1. Precast Concrete Pavers.

### 12 8-32.2 Materials

- 14 1. Requirements: Precast paving units for pedestrian use made of solid concrete.
  - a. Portland Cement: ASTM C 150, Type III, high early strength.
  - b. Aggregate: ASTM C 33.
  - c. Color Admixture: ASTM C979 or equal, as required to achieve color selected.
  - d. Aggregate for exposed aggregate surface: As selected.
  - e. Compressive strength: Minimum 5,000 psi.
    - f. Water absorption: Less than 5%
  - g. Pavers shall contain on average 5% entrained air, with no individual piece under 4%.
- 23 2. Acceptable Paver Products:
  - a. Manufacturer: Stepstone, Inc. 17025 South Main Street, Gardena, CA 90248. 800-572-9029
- 27 i. Paver A:28 1. Style
  - 1. Style: Diamond 8 or Narrow Modular Paver- see details
  - 2. Sizes:
    - a. Diamond 8: 23-7/8" x 3-7/8" x 7-7/8"
    - b. Narrow Modular Paver: 6" x 18" x 4"
    - 3. Color: 1821 French Grey
    - 4. Finish: Sandblast
  - ii. Paver B:
    - 1. Style: Diamond 8 or Narrow Modular Paver- see details
    - 2. Sizes:
      - a. Diamond 8: 23-7/8" x 3-7/8" x 7-7/8"
      - b. Narrow Modular Paver: 6" x 18" x 4"
    - 3. Color: 1806 Almond
    - 4. Finish: Sandblast
  - iii. Paver C:
    - 1. Style: Diamond 8 or Narrow Modular Paver- see details
    - 2. Sizes:
      - a. Diamond 8: 23-7/8" x 3-7/8" x 7-7/8"
      - b. Narrow Modular Paver: 6" x 18" x 4"
- 48 3. Color: 1805 Iceberg Green

1		4. Finish: Sandblast
2	iv.	Paver D:
4		1. Style: Diamond 8 or Narrow Modular Paver- see details
5		2. Sizes:
6		a. Diamond 8: 23-7/8" x 3-7/8" x 7-7/8"
7		b. Narrow Modular Paver: 6" x 18" x 4"
8		3. Color: 1816 Brick Red
9		4. Finish: Sandblast
10 11	h Manu	facturer: OCP 731 W Parkridge Ave Norco CA 92860
12	b. Mana	
13	i.	Paver E:
14		1. Style: Flat Worx: Mesa or QS-12PV- see details
15		2. Sizes:
16		a. Mesa: 15-1/2" x 24" x 2-1/4"
17		b. QS-12PV: 12" x 12" x 2-1/4"
18		3. Color: WT1 (Light Grey)
19		
20	ii.	Paver F:
21		1. Style: Flat Worx; Mesa or QS-12PV- see details
22		2. Sizes:
23		a. Mesa: 15-1/2" x 24" x 2-1/4"
24		b. QS-12PV: 12" x 12" x 2-1/4"
25		c. 3" x 12" x 2-1/4", cut from QX-12PV paver
26		3. Color: GR3 (Black)
27		
28	iii.	Paver G:
29		1. Style: Flat Worx; Mesa or QS-12PV- see details
30		2. Sizes:
31		a. Mesa: 15-1/2" x 24" x 2-1/4"
32		b. QS-12PV: 12" x 12" x 2-1/4"
33		c. 3" x 12" x 2-1/4", cut from QX-12PV paver
34		3. Color: Quail Hill Red
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36	iv.	Paver H:
37		<ol> <li>Style: Flat Worx; Mesa or QS-12PV- see details</li> </ol>
38		2. Sizes:
39		a. Mesa: 15-1/2" x 24" x 2-1/4"
40		b. QS-12PV: 12" x 12" x 2-1/4"
41		c. 3" x 12" x 2-1/4", cut from QX-12PV paver
42		3. Color: GN1 (Green)
43		
44	۷.	Paver I:
45		1. Style: Flat Worx; Mesa or QS-12PV- see details
46		2. Sizes:
47		a. Mesa: 15-1/2" x 24" x 2-1/4"
48		b. QS-12PV: 12" x 12" x 2-1/4"

1 2			<ul><li>c. 3" x 12" x 2-1/4", cut from QX-12PV paver</li><li>3. Color: BG1 (Beige)</li></ul>
3 4 5 6 7 8 9 10 11			<ul> <li>vi. Paver J: <ol> <li>Style: Flat Worx; Mesa or QS-12PV- see details</li> <li>Sizes: <ul> <li>Mesa: 15-1/2" x 24" x 2-1/4"</li> <li>QS-12PV: 12" x 12" x 2-1/4"</li> <li>C 3" x 12" x 2-1/4", cut from QX-12PV paver</li> </ul> </li> <li>Color: GR2 (Grey)</li> </ol></li></ul>
12 13 14 15 16 17 18 19 20 21	3.	Mo a. b. c. d.	ortar Setting-Bed Materials Portland Cement: ASTM C 150, Type I or II. Sand: ASTM C 144. Latex Additive: Acrylic-resin or styrene-butadiene-rubber water emulsion serving as replacement for part or all of gauging water, of type specifically recommended by latex additive manufacturer for use with field-mixed portland mortar bed, and not containing a retarder. Weather, frost, shock resistant complying with ANSI A118.4 test and equal to Laticrete 3701 Mortar Admixture. Water: Potable.
22 23 24 25 26 27 28 29 30 31 32	4.	Gro a. b. c.	<ul> <li>but Materials:</li> <li>Sand-Portland Cement Grout: ANSI A108.10, composed of white or gray cement as required to produce required color. <ol> <li>Latex Additive: Manufacturer's standard acrylic-resin or styrene-butadiene-rubber water emulsion, serving as replacement for part or all of gaging water, of type specifically recommended by latex-additive manufacturer for use with field-mixed sand-portland cement grout.</li> </ol> </li> <li>Grout Colors: As selected by Engineer from manufacturer's full range.</li> <li>Galvanized welded wire mesh associated with Unit Paver installation is integral to Grout Materials.</li> </ul>
33 34 35 36 37 38 39 40 41 42 43	5.	The will the a. b.	e Contractor is hereby advised that some concrete pavers manufactured and delivered not be acceptable for use in the Work for any exposed face, edge, or corner, and refore may require that some of the pavers be rejected for use on this project. Permissible Extent of Chippage from Edges and Corners: 1/16 inch. The cumulative length of chips on the exposed face of a single unit shall not exceed 1 percent of the perimeter of the exposed face of the paver, and no single chip shall exceed 1/8 inch in length. Other than chips, the paver shall be free of cracks, color, and other imperfections detracting from the appearance of a designated sample when viewed from a distance of 5 feet.
44 45	8-3	2.3	Construction Requirements
46 47	8-3	2.3	(1) Submittals
48	1.	Pr	roduct Data: For the following:

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- a. Precast Concrete Pavers, include mix design meeting the criteria identified in this specification.
- 2. Samples for Verification:
  - a. Submit two product samples of full-size units of each type of unit paver indicated in sets for each color, texture, and pattern specified, showing the full range of variations expected in these characteristics.
  - b. Grout Samples for Initial Selection: Submit manufacturer's color charts showing the full range of colors for selection by Engineer.
  - c. Joint Sealant Samples for Initial Selection: Submit Manufacturer's full range of colors for selection by Engineer.
  - d. Grout Samples for Verification: Submit three 4-inch long product samples of the colored grout selected by Engineer, installed between unit pavers or as required to show the full range of colors to be expected in the finish work.
  - e. Joint Sealant Sample for Verification: Submit three 4-inch long product samples of the colored grout selected by Engineer, installed between unit pavers or as required to show the full range of colors to be expected in the finish work.
    - f. Example Joint Filler Material: Submit one 12-inch length.
- Qualification Data: For firms and persons specified in "Quality Assurance" Article to
   demonstrate their capabilities and experience. Include lists of completed projects with
   project names and addresses, names and addresses of Engineers and owners, and other
   information specified.
- 25 4. Compatibility and Adhesion Test Reports: From latex-additive manufacturer indicating the26 following:
  - a. Mortar and grout containing latex additives have been tested with pavers for compatibility and adhesion.
  - b. Interpretation of test results relative to mortar and grout performance and written recommendations for installation practices needed for adhesion.
- 32 5. Product Warranty: Provide certified copies of manufacturer's product warranties.

# 34 8-32.3(2) Quality Assurance35

- Installer Qualifications: An experienced installer who has completed unit paver installations
   similar in material, design, and extent to that indicated for this Project and whose work has
   resulted in construction with a record of successful in-service performance.
- Source Limitations: Obtain each type of unit paver, joint material, and setting material from
  one source with resources to provide materials and products of consistent quality in
  appearance and physical properties.
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Pre-construction Coordination: Review installation procedures and coordinate paving work
with other work affected by the unit paving work. Prior to beginning construction, unit paver
contractor shall coordinate critical dimensions of pavers with flatwork contractor, to minimize
cutting of pavers. Field verify layout shown on Drawings coincides with paver critical

1 dimensions by constructing mockup as described below. Submit evidence to Engineer that 2 this coordination work has been completed. 3 4 4. Mockups: 5 6 a. Before installing unit pavers, build an 8ft. X 4ft. mockup of the pattern selected by the 7 Engineer. The mockup shall verify selections made under sample submittals and 8 demonstrate aesthetic effects, quality of materials and execution of the work. Build 9 mockup using materials indicated for the completed work including base construction. 10 mortar bed and joints, edge conditions, expansion joints, and contiguous work. Build 11 mockups to comply with the following requirements: 12 13 i. Build mockup in the location as directed by Engineer. 14 ii. Build mockup in advance of concrete forms being laid out or constructed, so that 15 critical dimensions of the unit paving work may be coordinated with the 16 surrounding flatwork. 17 Notify Engineer seven days in advance of dates and times when mockup will be iii. 18 constructed. 19 Demonstrate the proposed range of aesthetic effects, workmanship and the iv. 20 method of cleaning mortar from paver surfaces without causing damage. 21 Obtain Engineer's approval of mockup before starting unit paver installation. ٧. 22 Maintain mockup during construction in an undisturbed condition as a standard vi. 23 for judging the completed Work. 24 vii. Demolish and remove mockup when directed. 25 Approved mockup may become part of the completed Work if undisturbed at time viii. 26 of Substantial Completion. 27 ix. For material failing tests, obtain mortar and grout manufacturer's written instructions for corrective measures, including the use of alternative materials to 28 29 obtain optimum bond and prevent staining. 30 31 b. For all remaining paver patterns construct full size mockups for Engineer review and 32 approval by dry-laying pavers on a flat surface in the patterns and colors indicated on 33 drawings. Dry laid paver mockups shall be used to verify selections made under 34 sample submittals and to demonstrate aesthetic effects and qualities of materials. Build 35 mockups in the location as directed by Engineer. 36 37 i. Build mockups in advance of concrete forms being laid out or constructed, so 38 that critical dimensions of the unit paving work may be coordinated with the 39 surrounding flatwork. 40 ii. Notify Engineer seven days in advance of dates and times when mockups will be 41 constructed. 42 iii. Demonstrate the proposed range of aesthetic effects and workmanship. 43 iv. Obtain Engineer's approval of mockups before starting unit paver installation. 44 45 8-32.3(3) Delivery, Storage, and Handling 46

 Deliver all materials to the installation site in the manufacturer's original packaging.
 Packaging shall contain manufacturer's name, customer name, order, identification number, and other related information.

a. Cover pavers with plastic or use other packaging materials that will prevent rust marks

3. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do

2. Protect unit pavers and aggregate during storage and construction against soiling or

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not use cementitious materials that have become damp. a. Store liquids in tightly closed containers protected from freezing.

contamination from earth and other materials.

# 14 8-32.3(4) Project Conditions15

from steel strapping.

- Cold-Weather Protection: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen subgrade or setting beds. Remove and replace unit paver work damaged by frost or freezing.
- 20 2. Weather Limitations for Mortar and Grout: Comply with the following requirements:
  - a. Cold Weather Requirements: Protect unit paver work against freezing when atmospheric temperature is 40 degrees F and falling. Heat materials to provide mortar and grout temperatures between 40 and 120 degrees F. Provide the following protection for completed portions of work for 24 hours after installation when the mean daily air temperature is as indicated: below 40 degrees F, cover with weather-resistant membrane; below 25 degrees F, cover with insulating blankets; below 20 degrees F, provide enclosure and temporary heat to maintain temperature above 32 degrees F.
  - b. Hot Weather Requirements: Protect unit paver work when temperature and humidity conditions produce excessive evaporation of setting beds and grout. Provide artificial shade and windbreaks and use cooled materials as required. Do not apply mortar to substrates with temperatures of 100 degrees F and higher.
    - i. When ambient temperature exceeds 100 degrees F with a wind velocity of greater than 8 mph, set pavers within 1 minute of spreading setting-bed mortar.

# 36 8-32.3(5) Examination37

- Examine areas indicated to receive paving with Installer present, for compliance with
   requirements for installation tolerances and other conditions affecting performance.
   Proceed with installation only after unsatisfactory conditions have been corrected.
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3. Verify that grout materials can be cleaned from pavers, or provide coating to pavers to facilitate removal of grout materials.

### 8-32.3(6) Preparation

- 1. Remove substances, from concrete substrates, that could impair mortar bond, including curing and sealing compounds, form oil, and laitance.
- 2. Clean concrete substrates to remove dirt, dust, debris, and loose particles. This may require mechanical grinding and scarifying of the surface.
- 3. Neutralize any trace of strong acid or alkali from the substrate prior to mortar application.
- 4. Remove substances, protrusions, and fins from concrete acting as edge restraints that could impair tight joints.

#### 8-32.3(7) Installation, General

- 1. Do not use unit pavers with chips, cracks, and voids that exceed the tolerances listed under Section 8.26.2(1). Do not use unit pavers outside the approved color range or unit pavers with discolorations and other defects that might be visible or cause staining in finished work.
- 2. Pavers shall be clean and free of foreign materials prior to installation.
- 3. Mix pavers from several pallets or cubes, as they are placed, to produce uniform blend of colors and textures.
- 4. Cut unit pavers with motor-driven masonry saw equipment. Cut units to provide pattern indicated and to fit adjoining work neatly. Use full units without cutting where possible. Where cutting is required, use the largest size unit possible.
  - a. Block splitter may be not used. Hammer cutting is not acceptable.
- 5. Joint Pattern: Per Plans.
- 6. Tolerances: Do not exceed 1/16 inch unit-to-unit offset from flush (lippage) or 1/8 inch in 10 feet from level, or indicated slope, for finished surface of paving.
- 7. Expansion and Control Joints: Provide for sealant-filled joints at locations and of widths indicated. Provide joint filler and backer rod for sealant-filled joints where indicated. Install joint filler before setting pavers.

#### 8-32.3(8) Mortar Setting-Bed Applications

1. Saturate concrete subbase with clean water several hours before placing setting bed. Remove surface water about one hour before placing setting bed.

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- 2. Apply cement-paste bond coat over surface of concrete subbase about 15 minutes before 2 placing setting bed. Limit area of bond coat to avoid its drying out before placing setting 3 bed. Do not exceed 1/16-inch thickness for bond coat. 4
  - 3. Apply mortar bed over bond coat immediately after applying bond coat. Spread and screed setting bed to uniform thickness at subgrade elevations required for accurate setting of pavers to finished grades indicated.
  - 4. Place payers before initial set of cement occurs. Immediately before placing payers on setting bed, apply uniform 1/16-inch-thick, slurry bond coat to bed and to back of each paver with a flat trowel.
- 13 5. Tamp or beat payers with a wooden block or rubber mallet to obtain full contact with setting 14 bed and to bring finished surfaces within indicated tolerances. Set each paver in a single 15 operation before initial set of mortar; do not return to areas already set and disturb pavers 16 for purposes of realigning finished surfaces or adjusting joints.
- 18 6. Spaced Joint Widths: Provide jointing as indicated on drawings, with variations not 19 exceeding plus or minus 1/16 inch or as approved during mock-up process.
- 21 7. Grout joints as soon as possible after initial set of setting bed.
  - a. Store grout at 70 degrees F for a minimum of 24 hours prior to installation.
  - b. For concrete pavers with grouted joints, apply paver sealer to the top surface of pavers, avoiding any application of sealer into joints to be grouted. Allow sealer to dry completely before grouting joints.
  - c. Force grout into joints, taking care not to smear grout on adjoining surfaces.
  - d. Clean pavers as grouting progresses by dry brushing or rubbing with dry burlap to remove smears before tooling joints.
  - e. Tool exposed joints slightly concave, or as directed by Owner's Representative, when thumbprint hard, using a jointer larger than joint thickness, unless otherwise indicated.
    - f. If tooling squeezes grout from joints, remove excess grout and smears by dry brushing or rubbing with dry burlap and tool joints again to produce a uniform appearance.
- 34 8. Cure grout by maintaining in a damp condition for seven days, unless otherwise 35 recommended by grout or liquid-latex manufacturer.

#### 37 8-32.3(9) Repairing, Pointing, and Cleaning

- 38 39 1. Remove and replace unit pavers that are loose, chipped, broken, stained, or otherwise 40 damaged or that do not match adjoining units (color, spacing and elevation) as intended, at 41 no additional cost to the Owner. Provide new units to match adjoining units and install in 42 same manner as original units, with same joint treatment and with no evidence of 43 replacement at no additional cost to the Owner. Unit pavers must not be loose, chipped, 44 broken, stained, or otherwise damaged at the completion of the project.
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- 46 2. Pointing: During tooling of joints, enlarge voids or holes and completely fill with grout. Point 47 up joints at sealant joints to provide a neat, uniform appearance, properly prepared for 48 sealant application.

- 1 2 3. Cleaning: Remove excess grout from exposed paver surfaces; wash and scrub clean as 3 indicated below. 4
  - a. Lightly pre-wet or flash-cool the paver surface (do not soak). If plant material is nearby, protect and/or keep wet during chemical application.
- 5 6 b. Apply masonry cleaner through an EC Jet (or a pump sprayer diluted to 4:1 ratio) to the 7 entire surface to be cleaned. Overlap each stroke to achieve even coverage. 8
  - c. Allow product to sit for 5 to 7 minutes, being careful to not allow the product to dry on the pavement surface.
  - d. If required, repeat application to melt remaining soils/stains/residue/efflorescence.
- 10 11 e. Do not allow the product to dry on the pavement surface.
- f. Begin rinsing from highest elevation to lowest. Use long even strokes, overlap each 12 13 stroke. Low-pressure rinse with a pressure washer is recommended, but not necessary. 14
  - g. Repeat Steps "a" through "f" above, if necessary, to achieve desired result.

#### 16 8-32.4 Measurement

18 Unit Pavers", per square foot.

#### 20 8-32.5 Payment 21

- 22 Payment will be made for the following Bid items when included in the Proposal:
- 23 24 "Unit Pavers", per square foot. 25

26 The unit Contract prices above shall be full pay for all Work to complete the installation of unit 27 pavers on top of the welcome mat base. See section 8-14.

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1	Th	e Stan	dard Specifications are supplemented with the following:		
2	8-3	33	GRANITE STONE TEXT PANELS		
4 5	8-3	33.1	Description		
6 7 8	Th cor	is work mpone	s shall consist of constructing Granite Stone Panels, including the following nts:		
9 10 11	1.	Grani	te Stone Panels with Text.		
11 12 13	Wo	ork sha	Il be in accordance with these Special Provisions and as detailed on the Plans.		
13 14 15	8-3	33.2	Materials		
15 16 17	8-3	83.2(1)	Granite Stone		
18 19 20	Gra felo cor	Granite: Igneous rock, formed from liquid magma, cooled slowly. Includes the minerals feldspar, quartz, and mica in various proportions. ASTM C 615. Cut stone from one block or contiguous, matched blocks in which natural markings occur.			
21 22 23 24 25 26 27 28 29	1.	Granit a. S M b. L c. F d. N ('	te Stone Panel: Stone variety: Carnelian by Coldspring Granite. 17482 Granite West Rd., Cold Spring, /N. 56320. Phone: 320-685-3621. .ocation: Exterior paving areas indicated on drawings. Finish: Thermal. Jominal Thickness: Not less than the following nominal thickness: 1-15/16 inches +1/8" -1/16"), 50 mm.		
30 31	8-3	33.2(2)	Mortar Materials		
32 33	1.	Portla weath	nd Cement: ASTM C 150, Type I or Type II, except Type III may be used for cold- ner construction.		
34 35 36	2.	Hydra	ted Lime: ASTM C 207.		
37 20	3.	Portla	nd Cement-Lime Mix: ASTM C 150, Type I or Type III, and ASTM C 207.		
39 40 41	4.	Colore morta	ed Portland Cement-Lime Mix: ASTM C 150, Type I or Type III; ASTM C 207; and r pigments.		
42 42	5.	Aggre	egate: ASTM C 144.		
43 44 45	6.	Morta satisfa	r Pigments: Natural and synthetic iron oxides. Use only pigments with a record of actory performance in mortar and containing no carbon black.		

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- 7. Latex Additive: Acrylic-resin water emulsion recommended by additive manufacturer for use with field-mixed portland cement mortar bed.
- 8. Thin-Set Mortar: Latex-Portland Cement Mortar: ANSI A118.4.

## 8-33.2(3) Grout Materials

- 7 8 1. Sand-Cement Grout: Portland cement, ASTM C 150/C 150M, Type I, and clean, natural 9 sand, ASTM C 144 or ASTM C 404. Mix at ratio of 1 part cement to 2-1/2 to 3 parts sand, by 10 volume, with minimum water required for placement and hydration. Water-soluble chloride 11 ion content less than 0.06 percent by weight of cement when tested according to 12 ASTM C 1218/C 1218M.
- 14 2. Provide color as selected by Engineer from manufacturer's full range.

### 15 16 8-33.2(4) Paint Materials

- 18 1. Letter paint: UV resistant, paint formulated from compound of pigments and resins, 19 specifically formulated for painting stone. 20
- 21 2. Provide color as selected by Engineer from manufacturer's full range.
- 23 3. Cleveland Lithichrome Stone Paint or equal.

#### 25 8-33.2(5) Accessories

- 27 1. Reinforcing Wire: ASTM A 185 and ASTM A 82 except for minimum wire size. 28
- 29 2. Cleaner: As recommended by stone producer.
- 31 8-33.3 **Construction Requirements**
- 33 8-33.3(1) Submittals
- 35 1. Material Test Reports: For each granite stone variety used on Project, include physical 36 property data and material test reports
- 38 2. Shop Drawings for Granite stone text panels: 39
  - a. Detail fabrication and installation of granite stone panels.
  - b. Indicate locations, plans, dimensions, text, shapes, finishes, and cross sections of each panel. Include the following for text: font type, size, location spacing, depth of letters, depth and color of letter paint, etc.
- 43 c. Indicate extent/location of each surface finish.
- 44 d. Indicate finish of wearing surface and edge finishes.
- 45 e. Indicate relationship of granite stone panels to adjacent materials.
- If design modifications are proposed to meet performance requirements and field 46 f. conditions, submit design calculations and Shop Drawings. Do not adversely affect the 47
1 appearance, durability, or strength of panels when modifying details or materials and 2 maintain the general design concept. 3 4 3. Granite Stone Samples: Three 11-1/4 inch wide by 23-1/4 inch long by 2 inch thick samples 5 for initial verification of design intent, for each type of finish indicated on exposed surfaces of 6 granite stone panels, exhibiting the full range of color and finish texture characteristics 7 expected. 8 a. Provide each sample with a different font type and color of letter paint as indicated by 9 Engineer. 10 11 4. Provide color contact sheet indicating manufacturers full range of color options for Grout 12 joints for initial selection (see Submittals). Provide physical product samples for (3) colors 13 selected by Engineer. 14 15 8-33.3(2) Quality Assurance 16 17 1. Obtain each stone variety from a single quarry. 18 19 2. Granite Stone Installer Qualifications: Engage experienced installer that has completed 20 stone installation similar in material, design, and extent to that indicated for the project. 21 22 3. Granite Stone Fabricator Qualifications: Engage experienced fabricator that has completed 23 stone sandblasting and stone fabrication similar in material, design, and extent to that 24 indicated for the project. A firm that assumes responsibility for engineering granite stone 25 panels which complies with performance requirements. This responsibility includes 26 preparation of Shop Drawings 27 28 4. Preconstruction Stone Testing: Engage an independent testing agency to perform the 29 following testing for each stone variety: 30 31 a. Furnish test specimens that are representative of materials. 32 b. Physical Property Tests: ASTM standards specified for stone type. 33 c. Flexural Strength Tests: ASTM C 880. 34 35 8-33.3(3) Granite Stone Fabrication 36 37 1. Comply with requirements in this Section for measuring, transporting, and placing granite 38 stone panels. 39 40 2. Fabricate stone to comply with requirements indicated and with the following references: 41 a. Granite: NBGQA's "Specifications for Architectural Granite." 42 43 3. Cut stone to produce pieces of thickness, size, and shape, indicated, including details on 44 Drawings and Shop Drawings. 45 46 4. Carefully inspect finished stone at fabrication plant for compliance with requirements. 47 Replace defective units. Clean backs of stones to remove rust stains and iron particles. 48

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Blasting of the granite stone panels and paint application shall be performed by the stone
 fabricator in a controlled environment prior to delivery to the project site.

## 8-33.3(4) Granite Stone Finishes

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  1. Faces shall be free of cracks, fractures, spalls, and other obvious defects. Stone shall be split in a straight line with a hydraulic guillotine and broken along the natural grain of the stone.
- Finish exposed-face surfaces of granite stone panels to match approved design reference
   sample and as follows:
   a. Top surface shall have a thermal finish meeting or exceeding .6 static coefficient of
  - a. Top surface shall have a thermal finish meeting or exceeding .6 static coefficient of friction measured by ASTM-C1028. Provide three samples for initial selection, per Submittals.
  - b. Unexposed surfaces may have sawn finish and shall be uniform, straight, and sharp.

## 17 8-33.3(5) Mortar and Grout Mixes

- 19 1. Mortar: Comply with referenced standards and with manufacturers' written instructions.
  - a. Do not use admixtures. Do not use calcium chloride.
    - b. Combine mortar materials and mix thoroughly. Discard mortar when it has reached initial set.
- Latex-Modified Portland Cement Setting Mortar: Proportion and mix Portland cement,
   aggregate, and latex additive to comply with manufacturer's written instructions.
- 3. Mortar-Bed Bond Coat: Mix neat cement and latex additive to a creamy consistency.
- Latex-Modified Portland Cement Bond Coat: Proportion and mix Portland cement,
   aggregate, and latex additive to comply with manufacturer's written instructions.
- 32 5. Cement-Paste Bond Coat: Mix either neat cement or cement and sand with water to a33 consistency similar to that of thick cream.
- 35 6. Joint Grout: Comply with mixing requirements in referenced ANSI standards and with36 manufacturer's written instructions.

## 38 8-33.3(6) Blasting

- Blasting letters: Carving shall be abrasive granular grit blasted at high-pressure to produce
  incised letters with standard accenting in fonts, depths and sizes shown in drawings.
- 41 42
- 43 Ensure each panel is blasted in a single operation by the same operator. Ensure all text is44 incised to same depth and shape.
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- Provide a unique rubber stencil with lettering as approved by Engineer during submittal process
  that firmly adheres to stone during blasting allowing only the stone surface not covered by the

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stencil to be incised. Stencil shall be removable with residue that is cleanable using
 manufacturer's suggested stone cleaning materials.

## 8-33.3(7) Paint Application

- 1. After completion of blasting has occurred are area has been cleared of all dirt, dust, debris or other loose particles install paint at each letter.
- 2. Apply a prime coat, second coat and clear finish coat in accordance with manufacturer's recommendations.

## 12 8-33.4 Execution

## 8-33.4(1) Examination

- Examine supporting concrete foundation slab for compliance with requirements for installation tolerances, bearing surface tolerances, and other conditions affecting performance of the Work.
- Do not install granite stone panels until supporting cast-in-place concrete has attained
   minimum allowable design compressive strength and is structurally ready to receive loads
   from granite stone units.
- 24 3. Proceed with installation only after unsatisfactory conditions have been corrected.

## 8-33.4(2) Installation

- Sweep concrete substrate to remove dirt, dust, debris, and loose particles and substances
   from concrete substrate that could impair mortar bond.
- Clean dirty or stained stone surfaces before setting. Scrub with fiber brushes; drench with
   clear water. Use mild cleaning compounds
- 34 3. Saturate concrete with clean water several hours before placing setting bed. Remove
   35 surface water about one hour before placing setting bed.
- 4. Apply mortar-bed bond coat to damp concrete and broom to provide an even coating that
  completely covers the concrete. Do not exceed 1/16-inch (1.5-mm) thickness. Limit area of
  mortar-bed bond coat to avoid its drying out before placing setting bed.
  a. Place reinforcing wire mesh over concrete, lapped at joints by at least one full mesh
  - a. Place reinforcing wire mesh over concrete, lapped at joints by at least one full mesh and supported so mesh becomes embedded in middle of setting bed. Hold edges back from vertical surfaces about 1/2 inch (13 mm).
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44 5. Apply mortar bed to finished elevations indicated immediately after applying mortar-bed45 bond coat.

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Mix and place only that amount of mortar bed that can be covered with stone before initial
 set. Cut back, bevel edge, and discard material that has reached initial set before stone can
 be placed.

- 7. Place stone before initial set of mortar occurs. Immediately before placing stone on setting bed, apply uniform 1/16-inch- (1.5-mm-) thick bond coat to bed or to back of each stone unit.
- 8. Tamp and beat stone with a wooden block or rubber mallet.
  - a. Set each unit in a single operation before initial set of mortar.
- 109. Rake out joints to depth required to receive grout or pointing mortar as units are set.
- 12
   13 10. Grouting Joints: Use Polymer-Modified Cement Grout for Stone Joints meeting
   14 ANSI A108.10, comply with manufacturer's written instructions.
  - a. Remove mortar, sealant, and stains before tooling joints.
  - b. Grout joints as soon as possible after initial set of mortar setting bed. Finish joints by tooling to produce a slightly concave polished joint, free of drying cracks.
  - c. Maintain grout in damp condition for seven days.

## 20 8-33.4(3) Repairs

1. Remove and replace damaged granite stone when repairs do not comply with requirements.

# 24 **8-33.4(4) Cleaning** 25

- 1. Prohibit traffic from installed stone for a minimum of 72 hours.
- 28 2. Clean surfaces of granite stone as work progresses.29
- Clean mortar, grout, sealant, and other deleterious material from granite stone surfaces and adjacent materials immediately.
- 4. Clean exposed surfaces of granite stone after erection to remove markings, dirt, and stains.
   Perform cleaning procedures according to granite stone fabricator's recommendations.
- Frotect other work from staining or damage due to cleaning operations. Do not use cleaning
   materials or processes that could change the appearance of exposed granite stone finishes
   or damage adjacent materials.

## 40 8-33.5 Measurement

42 Granite Stone Panels with Quote shall be measured per each.

### 43 44 **8-33.6**

- 4546 Payment will be made for each of the following Bid items that are included in the proposal, and
- 47 shall be full compensation for all Work including excavation, concrete slab, mortar set grout, and
- 48 all other work needed to complete per plans:

Payment

<sup>1</sup> "Granite Stone Panels with Quote", per each.

1 The Standard Specifications are supplemented with the following: 2

#### 8-34 **VERTICAL MARKER COLUMNS**

#### 8-34.1 Description

6 7 This item consists of the furnishing of all materials for the fabrication of and the installation of 8 Vertical Marker Columns. Columns shall be round, tapered steel with a round base cover. The 9 column, footing, banner support members, surface applied art, anchoring, and hardware shall 10 be included, as shown and detailed in the Plans and Specifications. Banners are not a part of 11 this work.

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4 5

13 Columns shall be fabricated from weldable grade, hot rolled commercial guality, ASTM A595

- 14 Grade A, 11 gauge, carbon steel. Columns shall be one piece construction with full length
- 15 longitudinal weld. Guaranteed minimum yield strength of 55,000 PSI (380 MPa) after fabrication.
- 16 Base plate and cover shall be structural quality, hot rolled, carbon steel ASTM A36. Following
- 17 fabrication and prior to application of powdercoat, all components shall receive a hot dipped 18 galvanized finish.
- 19

20 Verify actual locations of other construction contiguous and adjacent to column placement by 21 field measurements before fabrication. Provide shop drawings: show details and instructions for 22 fabrication, assembly, and installation of custom fabricated items as indicated on the Drawings. 23 Provide one full-scale complete column for review and approval prior to commencing 24 fabrication.

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### 8-34.2 **Submittals**

- 28 1. Provide powder coat color contact sheet showing full manufacturer's range of the following 29 colors to be selected by Engineer. 30
  - a. Black
  - b. Yellow
  - c. Green
  - d. Red

### 8-34.3 Payment

37 Payment will be made for each of the following Bid items that are included in the proposal, and 38 shall be full compensation for all work including:

- 39
- 40 "Vertical Marker Columns", per each.
- 41 42 The unit Contract prices above shall be full pay for all Work to complete, including furnishing
- 43 material, fabrication, installation in place, footings, anchor bolts, excavation, and finish
- 44 application, as detailed in the Plans and outlined in the Specifications.
- 45
- 46 47

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The Standard Specifications are supplemented with the following:

## 8-35 SITE AND STREET FURNISHINGS

## 8-35.1 Description

This work consists of furnishing and installing benches, trash receptacles, and bicycle racks, as detailed in the Plans.

## 8-35.2 Materials

## 2 Bench:

_	Bollolli	
3	Backed benc	h with arm rests at ends and center per Landscape Forms: 'NeoCombo' or
4	approved equ	ual.
5	Material:	Anodized Aluminum
6	Color:	Powdercoated Black
7	Length:	59 inches

- 8 Depth: 26.5 inches
- 19 Overall Height: 31 inches
- 20 Mounting: Surface mount with corrosion resistant anchor bolts
- 21
- 22 Chair:
- 23 Backed chair with arm rests per Landscape Forms: 'NeoCombo' or approved equal.
- 24 Material: Anodized Aluminum
- 25 Color: Powdercoated Black
- 26 Length: 24 inches
- 27 Depth: 26.5 inches
- 28 Overall Height: 31 inches
- 29 Mounting: Surface mount with corrosion resistant anchor bolts

# 3031 Game Table:

- 32 Square table with perforated chess pattern. Landscape Forms: 'Park Centre' or approved
- 33 equal.
- 34 Material: Powdercoated Steel
- 35 Color: Silver
- 36 Width: 28 inches
- 37 Depth: 28 inches
- 38 Overall Height: 29-1/2 inches
- 39 Mounting: Surface mount with steel base plate with corrosion resistant anchor bolts

### 40 41 **Lean Rail**:

- 42 Leaning rail. Landscape Forms: 'Jessie' or approved equal.
- 43 Material: Aluminum
- 44 Color: Powdercoated black
- 45 Length: 96 inches
- 46 Depth: 3 inches
- 47 Overall Height: 42 inches48 Mounting: Surface mount with corrosion resistant anchor bolts

### 1 2 Lighted Seat Bl

Lighted Seat Block	
Backless cast sto	one bench. Landscape Forms: 'Socrates lit' or approved equal.
Material:	Escofet cast stone concrete
Length:	24 inches
Depth:	24 inches
Overall Height:	18 inches
Color:	White. Color shall be integral colored concrete with UV and fade resistant
	color pigments.
Mounting:	Embedded
Lighting:	Heavy Duty waterproof RGBW LED strip lighting with built in driver, UL
	listed, IP67 rated.
	Lighted Seat Block Backless cast sto Material: Length: Depth: Overall Height: Color: Mounting: Lighting:

## 13

## 14 **Replace Existing Fence and Gate In-Kind:**

15 Replace existing fence and associated gate(s) in-kind as noted on plans including 16 concrete foundations, posts as required depending on fence type shown on plans, 17 latching gate hardware, connections to existing fencing and returns, and any other 18 feature found on the existing fencing and gates to be replaced. Fences and gates and 19 associated foundations shall be located entirely on private property. Gates must swing 20 away from the roadway.

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## 8-35.3 Construction Requirements

## 24 8-35.3(1) Quality Assurance

Manufacturing standards: Provide each item of equipment as a complete unit produced by a
 single manufacturer, including fittings, accessories, frames, bases, and anchorage devices.

- 29 Construction: Construct each item and ship to the site in minimum number of sections.
- 30

Conflicts: Compare manufacturer's shop drawings of all products with the products shown on the Drawings. If conflicts arise between shop drawings and the Drawings, notify Owner's

- Representative before proceeding with the Work.
- Warranty: Warranty furnishings against any defects in material and/or workmanship for a period of three years from the date of install.
- 37

## 38 8-35.3(2) Submittals

- 39
- 40 Product Data: For each type of product indicated. Include construction details, material
   41 descriptions, dimensions of individual components and profiles, finishes, field-assembly
- 42 requirements, and installation details.
- 43
- 44 Product Schedule: For site furnishings. Use same designations indicated on Drawings.
- 4546 Samples: For each exposed product and for each color and texture specified.
- 47

Shop Drawings: Submit manufacturer's shop drawings of all products for approval by Owner's
 Representative prior to fabrication or supplying. Shop drawing shall include installation and
 leveling methods for each type of site furnishing, including hardware intended to be utilized.

## 8-35.3(3) Examination

Examine areas and conditions, with Installer present, for compliance with requirements for
correct and level finished grade, mounting surfaces, installation tolerances, and other conditions
affecting performance.

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Notify the Owner's Representative of any conditions detrimental to the proper and timely
completion of the work. Do not proceed with installation until unsatisfactory conditions have
been corrected and are acceptable to the installer. Notify Owner's Representative for
observation of layout prior to installation.

### 15 16 **8-35.3(4) Installation, General**

Comply with manufacturer's written installation instructions, unless more stringent requirements
 are indicated. Complete field assembly of site and street furnishings, where required.

Unless otherwise indicated, install site furnishings after landscaping and paving have been
 completed. Obtain approval of layout location from Owner's Representative prior to installing.

When installation requires a thickened concrete base beneath furnishings or concrete pavers,
install concrete base prior to mounting. Allow concrete pavers to be placed over top of concrete
base where indicated.

27
28 Core drill hole through concrete pavers into concrete base, epoxy support threaded post in
29 place ensuring posts are set plumb and are aligned at correct angle, height and spacing.

30

Install site furnishings level, plumb, true, and securely anchored at locations indicated onDrawings.

33

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Where threaded posts are exposed after setting of site furnishing cut tops to 1/8 inch above nutand grind smooth. Deform threads.

## 37 8-35.3(5) Cleaning

38
39 After completing site furnishing installation, inspect components. Remove spots, dirt, and
40 debris. Repair damaged finishes to match original finish or replace component.

- 41 42 **8-35.4 Me**a
- 43

8-35.4 Measurement

44 Benches shall be measured per each.

4546 Street Chairs shall be measured per each.

- 47
- 48 Game Tables shall be measured per each.

1		
2 3	Lean Rail	s shall be measured per each.
4	Lighted S	eat Blocks shall be measured per each.
5 6	8-35.5	Payment
7	0 0010	- aymone
8	Payment	will be made for each of the following Bid items that are included in the proposal, and
9	shall be f	all compensation for all Work associated with these items:
10		
11	"Bench",	per each.
12		
13	"Street Cl	nair", per each.
14	"o –	
15	"Game Ia	able", per each.
16	"Leen De	il" nar aaab
1/ 10	Lean Ra	n, per each.
10	"Lighted	Seat Block" ner each
20	Lighted	
21		
22		END OF SECTION

The Standard Specifications are supplemented with the following:

## 8-36 BIKE CORRAL

## 8-36.1 Description

This work shall consist of installing bike corrals at on-street locations for bicycle parking. Bike corrals shall be installed in accordance with details shown in the Plans and these Specifications. Traffic related delineators and wheel stops are incidental to the Bike Corral bid item.

11 8-36.2 Materials

## 13 Bicycle Corral Racks:

- 14 Sportworks Tofino No Scratch Bike Racks (5) on mounting rail or approved equal. 15 Finish: Hot-Dip Galvanized. 16 Finish: Hot-Dip Galvanized. Mounting: Rail mount. (2) Parallel rails of galvanized 3" x 1.4" x 3/16" thick steel. Fasten 17 18 rack to rails with 3/8" x 1" bolts and nuts. Each rack shall have a minimum of (2) tamper-19 resistant security nuts, one per each rack foot. 20 Fasteners: 21 Asphalt Surface: (2) 4" Titen asphalt anchors or approved equal per mounting rail 22 with tamper-resistant security nuts. Fasteners shall be galvanized.
  - Concrete Surface: (2) concrete 3.75" wedge anchors per corral with tamperresistant security nuts. Fasteners shall be galvanized.

## 26 Wheel Stops:

- 27 Dimensions: 6" high and 6' long.
- 28 Material: Precast concrete per WSDOT Standard Specification 9-18 Precast Traffic Curb. 29 Color: Yellow.
- 30

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- 31 **Flexible Delineators:** per Impact Recovery Systems 3" Tuff Post or approved equal.
- 32 Dimensions: 3" OD, 48" tall.
- Material: Flexible polypropylene plastic tube with two 3" bands of white retro-reflectivesheeting.
- 35 Color: White.
- 36 Mounting: Surface mount or spring mount per detail on plans and manufacturer. 37

## 38 **Thermoplastic Bicyclist Marking:**

Material: Type B Thermoplastic per WSDOT Standard Specification 9-34.3(2) and City of
 Tacoma General Special Provisions 8-22.2.

## 42 8-36.3 Construction Requirements

- 43
- Install bike racks and mounting rails in accordance with APBP (Association of Pedestrian and
   Bicycle Professionals) recommendations for location and spacing.
- 46
- Install thermoplastic bicyclist marking per WSDOT Standard Specification 8-22.3(3)E and City of
  Tacoma General Special Provisions 8-22.3(3).

### 8-36.4 Measurement

1 2 3 4 5 6 7 Bike Corrals shall be measured per each. Traffic related delineators and wheel stops are incidental to the Bike Corral bid item.

#### Payment 8-36.5

8 9 Payment will be made for each of the following Bid items that are included in the proposal, and 10 shall be full compensation for all Work associated with these items:

11

12 "Bike Corral", per each.

13

## **END OF SECTION**

14 15

The Standard Specifications are supplemented with the following:

### 8-37 **BIKE REPAIR STATION**

#### 8-37.1 Description

This work shall consist of installing a bike repair station. Bike repair stations shall be installed in accordance with details shown in the Plans and these Specifications.

#### 9 10 8-37.2 **Materials**

**Bicycle repair station:** Sportworks Bike Fixation Public Work Stand or approved equal. Finish: Orange Thermoplastic.

- 14 Mounting: Surface mount.
- Fasteners: (4) concrete wedge 3.75" anchors per repair station. A minimum of (2) anchors 15
- 16 to have tamper-resistant security nuts.
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18 Air pump: Dero "Air Kit 3" or approved equal.

- 19 Dimensions: 20
  - Main body: 6" tube.
  - Foot: 10" dia. 0.25" steel plate.
- 22 Finish: Thermoplastic. 23
  - Mounting: Surface mount.
  - Fasteners: (4) concrete wedge 3.75" anchors per air pump. A minimum of (2) anchors to have tamper-resistant security nuts.

#### 26 27 8-37.3 **Construction Requirements**

28 29 This section has been deleted.

#### 30 31 8-37.4 Measurement

33 Bike Repair Station shall be measured per each.

#### 35 8-37.5 Payment

37 Payment will be made for each of the following Bid items that are included in the proposal, and 38 shall be full compensation for all Work associated with these items:

- 39 40 "Bike Repair Station", per each.
- 41
- 42 43

1 The Standard Specifications are supplemented with the following: 2

## 8-38 BIKE RACK

## 8-38.1 Description

This work shall consist of installing bike racks as on-street locations for bicycle parking. Bike corrals shall be installed in accordance with details shown in the Plans and these Specifications.

## 10 8-38.2 Materials

# 1112 Bicycle Rack:

Sportworks Toifino No Scratch Bike Rack or approved equal.

- 14 Finish:
  - Mild steel: Hot-Dip Galvanized
  - Stainless steel: Satin finish
- 17 Mounting: Surface mount.
- Fasteners: (4) concrete 3.75" wedge anchors per rack. Each rack shall have a minimum of
  (2) tamper resistant security nuts, one per each rack foot. Fasteners shall be galvanized for
  galvanized rack finish or stainless for stainless rack finish.

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## 8-38.3 Construction Requirements

Install bike racks in accordance with APBP (Association of Pedestrian and Bicycle
 Professionals) recommendations for optimal positioning and spacing.

# 27 **8-38.4 Measurement** 28

29 "Bike Rack", per each.

### 30 31

32

## 8-38.5 Payment

Payment will be made for each of the following Bid items that are included in the proposal, and
shall be full compensation for all Work associated with these items:

36 "Bike Rack", per each.

- 37
- 38 39

The Standard Specifications are supplemented with the following:
 3

## 8-40 COMMERCIAL ADA RAMP

## 8-40.1 Description

8 This work shall consist of construction ADA ramps to commercial business according to the 9 contract documents. The ADA ramp with includes the concrete and joint filler needed to meet 10 ADA standards.

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8-40.2 Materials

- 14 Materials shall meet the requirements of the following sections:
- 15 Portland Cement 9-01
- 16 Aggregates 9-03
- 17 Premolded Joint Filler 9-04.1
- 18 Concrete Curing Materials and Admixtures 9-2319
- 20 Guard rails shall meet the following specifications:
- A. Guardrails and Handrails shall be the product of a company normally engaged in the
   manufacture of pipe railing. Railing shall be shop assembled in lengths not to exceed 24 feet
   for field erection.
- B. The handrail shall be made of pipes joined together with component fittings. Samples of all
  components, bases, toeboard, and pipe must be submitted for approval at the request of the
  engineer. Components that are pop-riveted or glued at the joints will not be acceptable. All
  components must be mechanically fastened with stainless steel hardware.
- 29
  30 C. Railings shall be 1 1/2" Schedule 40 aluminum pipe alloy 6105-T5, ASTM-B-429 or ASTM31 B-221. Post shall be 1 1/2" Schedule 40 aluminum pipe of the same alloy. Post spacing shall
  32 be a maximum of 6'-0".
- 34 D. Guardrails and Handrails shall be designed to withstand a 200lb concentrated load applied
   35 in any direction and at any point on the top rail.
   36
- E. Intermediate railings shall be provided such that a 21-inch diameter sphere cannot pass
   through any opening.
- F. The manufacturer shall submit calculations for approval at the request of the Engineer.
  Testing of base castings or base extrusions by an independent lab or manufacturer's lab (if
  manufacturer's lab meets the requirements of the Aluminum Association) will be an
  acceptable substitute for calculations. Calculations will be required for approval of all other
  design aspects.
- 45
  46 G. Posts shall not interrupt the continuation of the top rail at any point along the railing,
  47 including corners and end terminations (OSHA 1910.23). The top surface of the top railing

1 2		shall b	e smooth and shall not be interrupted by projected fittings.
2 3 4 5	H.	The m manuf a labo	id-rail at a corner return shall be able to withstand a 200lb load without loosening. The acturer is to determine this dimension for their system and provide physical tests from ratory to confirm compliance.
7 8 9 10 11	I.	Concre furnish reduct publisl	ete anchors shall be stainless steel type 303 or 304 wedge anchors and shall be ned by the handrail manufacturer. The anchor design shall include the appropriate ion factors for spacing and edge distances in accordance with the manufacturers ned data.
12 13 14 15 16 17	J.	Toe bo shall b and co board Toe bo	bard shall conform to OSHA standards. Toe board shall be a minimum of 4" high and be an extrusion that attaches to the posts with clamps which will allow for expansion ontraction between posts. Toeboard shall be set 1/4" above the walking surface. Toe shall be provided on handrails as required by OSHA and/or as shown on drawings. bard shall be shipped in stock lengths for field installation.
18 19 20	K.	A self- not be	closing gate shall guard openings in the railing (OSHA 1910.23). Safety chains shall used unless specifically shown on the drawings.
20 21 22 23	L.	Finish wrapp	shall be Aluminum Association M10-C22-A41 (215-R1). The pipe shall be plastic- ed. The plastic wrap is to be removed after erection.
23 24 25	M.	Alumir a coat	num surfaces in contact with concrete, grout or dissimilar metals will be protected with of bituminous paint, Mylar isolators or other approved material.
26	8-4	0.3	Construction Requirements
28 29 30	AD sha	A ramp all be flu	os will be built as specified in the plans and shall also meet ADA standards. The ramp ush to existing surfaces on both ends.
31 32	8-4	0.4	Measurement
33 34	"Co	ommero	cial ADA ramp", shall be measured per each.
35 36	8-4	0.5	Payment
37 38 39	Pay sha	yment v all be fu	will be made for each of the following Bid items that are included in the proposal, and Ill compensation for all Work associated with these items:
40 41	"Co	ommero	cial ADA Ramp", per each.
42 43	Pa	yment	will be made for Handrails per Section 8-30.
43 44 45	Pa	yment v	will be made for Curb Walls as integral to Commercial ADA Ramp.
40 47			END OF SECTION
			117

1	The Standard Specifications are supplemented with the following:			
2 3 4	8-41	CEMENT CONCRETE COLORED SIDEWALK		
4 5 6	8-41.1	Description		
7	This Sect	ion includes requirements for integrally colored concrete.		
0 9 10	8-41.2	Materials		
10 11 12		1. Colored Admixture for Integrally Colored Concrete:		
12 13 14 15 16 17		<ul> <li>Contractor shall submit proposed colors for approval prior to purchasing product. Color by LM Scofield or Davis Colors. Samples shall include the following colors, additional colors may be requested.</li> </ul> <u>LM Scofield:</u>		
18 19 20 21		i. Dark Gray ii. Charcoal iii. French Gray		
22 23 24 25		<u>Davis Colors:</u> i. Graphite ii. Dark Grey		
26 27 28 29 30 31 32 33 34 35 36 37		<ul> <li>b. Admixture shall be a colored, water-reducing, admixture containing no calcium chloride with coloring agents that are lime proof and UV resistant.</li> <li>c. Colored admixture shall conform to the requirements of ACI 303.1, ASTM C979, ASTMC494, and AASHTO M194.</li> <li>d. Admixture shall be non-fading finely ground synthetic mineral-oxide coloring pigment and water reducing wetting agent.</li> <li>e. Curing and Sealing Compound for Integrally Colored Concrete: Comply with ASTM C309 and ASTM 3315 for use with integrally colored concrete. Use to cure exterior flatwork that will be allowed to weather naturally with no or only occasional maintenance.</li> <li>i. Clear, solvent-borne, non-yellowing and VOC-compliant.</li> </ul>		
38 39 40 41 42 43 44 45 46 47 48		<ol> <li>Concrete Sandblasting: Use an abrasive grit of proper type and gradation to expose aggregate and surrounding matrix surface to match the Engineer's control samples as follows:         <ul> <li>Light Sand Blast Finish at Colored Concrete Sidewalk: Expose fine aggregate with no exposure of coarse aggregate; maximum 1/16-inch reveal.</li> <li>Medium Sand Blast Finish at Sandblasted Band and Sandblasted Text: Generally expose fine aggregate with occasional coarse aggregate; 1/8-inch to 3/16-inch reveal.</li> </ul> </li> </ol>		

1 2 3 4 5 6 3. 7 8 9 10 11 12 13 14	<ul> <li>e. Provide the specified sandblast finishes in Mock-up for final selection of finish. Refer to section 8-31 for sandblasting mock-up requirements.</li> <li>f. Additional Sandblast mock-ups may be required to determine final finishes.</li> <li>Substitutions: The use of products other than those specified will be considered providing that the Contractor requests its use in writing within 14 days prior to bid date. This request shall be accompanied by the following: <ol> <li>Certificate of compliance from material manufacturer stating that proposed products meet or exceed requirements of this Section.</li> <li>Documented proof that proposed materials have a 10 year proven record of performance confirmed by at least 5 local projects that design professional can examine.</li> </ol> </li> </ul>
15 4. 16 17 18 19 20 21 22 23 24	<ul> <li>Submittals</li> <li>a. Product Data: For each type of manufactured material and product indicated.</li> <li>i. Joint Filler Material: Submit one 12-inch length.</li> <li>ii. Elastomeric Joint Sealant: Submit actual sample in 12-inch length.</li> <li>iii. Manufacturer's 12 inch by 12 inch samples of integral colors indicated at full strength, half strength, and quarter strength.</li> </ul>
26         27         28         29         30         31         32         33         34         35         36         37         38         39         40         41         42         43         44         45         46         47	<ul> <li>concrete sidewalk to demonstrate standard of workmanship, typical pattern, texture, surface finishes, specified color, joints, curing and sealing applications.</li> <li>a. Build mockups in the location and of the size indicated on the Drawings or, if not indicated, as directed by the Engineer.</li> <li>b. Notify Engineer 7 days in advance of dates and times when mockups will be constructed.</li> <li>c. Provide examples of each type of jointing identified on the drawings. Jointing layout and intersections should be identical to the angles indicated on the plans.</li> <li>d. Obtain approval of mockups from Engineer before starting construction. The construction of multiple mockups shall be performed as directed by the Engineer, until approval is granted. All costs associated with the construction of mockups shall be the sole responsibility of the Contractor.</li> <li>e. Upon approval of Colored Concrete Sidewalk mock-up begin sample panel work for Sidewalk Sandblasting. Contractor may elect to combine Colored Concrete Sidewalk and Sidewalk Sandblasting mock-ups.</li> <li>f. Maintain approved mockups during construction in an undisturbed condition as a standard for judging the completed pavement.</li> <li>g. In presence of the Engineer, damage part of the exposed surface of colored concrete sidewalk for each finish, color, and texture required, and domonstrate materials and tochnic concrete for exparise to materials.</li> </ul>

$\begin{array}{c}1\\2\\3\\4\\5\\6\\7\\8\\9\\1\\1\\1\\2\\1\\4\\1\\5\\16\\1\\7\\1\\8\end{array}$	8-41.3	<ul> <li>adjacent undamaged surfaces. Demolish and remove repaired portion of the mockup as directed by the Engineer.</li> <li>h. Demolish and remove approved mockups from the site when directed by Engineer.</li> <li>i. Upon approval of Colored Concrete Sidewalk mock-up begin sample panel work for Sidewalk Sandblasting. Contractor may elect to combine Colored Concrete Sidewalk and Sidewalk Sandblasting mock-ups.</li> <li><b>Construction Requirements</b></li> <li>1. The Contractor shall provide a concrete mix design for each design of concrete specified in the Contract. The Contractor shall utilize ACI 211.1 as a guide to determine proportions. Concrete strength, placement, and workability shall be the responsibility of the Contractor. Following approval of the Contractor's proposal, all other requirements of Section 5-05 and 5-06 shall apply.</li> <li>a. Minimum Cement Content: Six sacks per cubic yard of concrete.</li> <li>b. Slump of concrete shall be consistent throughout project at 4 inches or less. At no time shall slump exceed 5 inches. If super plasticizers or mid-range water reducers are allowed, elumn aball net exceed 8 inches.</li> </ul>
19 20 21 22 23 24 25 26		<ol> <li>Air content: For integral colored concrete: 6% ±1%.</li> <li>Do not add calcium chloride to mix as it causes mottling and surface discoloration.</li> <li>Supplemental admixtures shall not be used unless approved by manufacturer.</li> <li>Do not add water to the mix in the field.</li> <li>Add colored admixture to the mix according to manufacturer's written instructions in premeasured bags or liquid dosages, not by weight or cement content.</li> </ol>
27 28 29 30 31 32 33 34 35 36 37	8-41.4	<ol> <li>Quality Assurance</li> <li>Manufacturer Qualifications: Manufacturer with 10 years' experience in manufacture of specified products.</li> <li>Installer Qualifications: An installer with 5 years' experience with work of similar scope and quality.</li> <li>Comply with the requirements of ACI 301.</li> <li>Obtain each specified material from same source and maintain high degree of consistency in workmanship throughout Project.</li> <li>Notification of manufacturer's authorized representative shall be given at least 1 week before start of Work.</li> </ol>
38 39 40 41 42 43 44	8-41.5	<ol> <li>Delivery, Storage and Handling</li> <li>Deliver products in original factory unopened, undamaged packaging bearing identification of product, manufacturer, batch number, and expiration data, as applicable.</li> <li>Store the product in a location protected from damage, construction activity, and precipitation in strict accordance with the manufacturer's recommendations.</li> </ol>

1	8-41.6	Field Conditions	
2		1. Schedule placements to minimize exposure to wind and hot sun before curing	
3		materials are applied.	
4 5		2. Do not place concrete if rain, snow, or if frost is forecast within 24 hours. Protect fresh concrete from moisture and freezing.	
6		3. Comply with professional practices described in ACI 305R and ACI 306R.	
7		4. Schedule delivery of integral colored concrete to provide consistent mix times for	
8		batching until discharge. Mix times shall meet manufacturer's written	
9		recommendations.	
10			
11	8-41.7	Pre-Job Conference	
12		1. One week prior to placement of concrete, a meeting between Contractor,	
13		Engineer and Manufacturer's Representative shall be held to discuss the Project	
14		and application methods.	
15			
16	8-41.8	Acceptable Manufacturer for Integral Concrete Color	
17 10		1. L.M. Scolleid Company, (800)800-9900 2. Dovia Calara (814)241 4790	
10		2. Davis Colors, $(044)341-4780$	
20	8-41 9	Installation General	
20 21	0-41.5	1 Examine subgrade and sub-base for compliance. Notify Engineer if conditions	
22		are noncompliant in middle (top to bottom) of concrete paying	
23		2. Move concrete into place with square-tipped shovels or concrete rakes.	
24		3. Vibrators, when used, shall be inserted and withdrawn vertically.	
25		4. Concrete shall be struck to specified level with wood or magnesium straight edge	
26		or mechanical vibrating screed.	
27		5. Concrete surface shall be further leveled and consolidated with highway	
28		magnesium straight edge and/or magnesium bull float.	
29		6. Mechanically float concrete surfaces as soon as concrete surface has taken its	
30		initial set and will support weight of a power float machine equipped with float	
31		shoes or combination blades and operator.	
32			
33	8-41.10	Integral Colored Concrete Paving Applications	
34		1. Apply color release agent in accordance with manufacturer's recommendations.	
30 26		2. Willion variations in appearance of colored concrete, which are similar to hatural	
30 27			
32 32	8-11 11	Curing and Sealing	
30	0-41.11	1 Protect concrete from prematurely drying and from excessive cold or hot	
40		temperatures that would alter normal curing process	
41		2. Integral Colored Concrete Paving:	
42			
43		a. Apply clear curing and sealing compound for integrally colored concrete	
44		according to manufacturer's instructions using manufacturer's	
45		recommended application techniques.	
46		b. Apply curing and sealing compound at consistent time for each pour to	
41		maintain close color consistency.	

1	8-41.12	Protection of Finished Work
2		1. Prohibit foot or vehicular traffic on paving surface for the time specified by
3		manufacturer, or until paving is properly protected from damage.
4		<ol> <li>Barricade area to protect paving.</li> <li>Brotect paving surface from demage until final inspection and eccenteres by</li> </ol>
о 6		5. Protect paying surface from damage until final inspection and acceptance by Engineer
7		A Repair damaged colored concrete in accordance with manufacturer's
8		instructions
9		5. Sawcutting of joints as shown on plans.
10		6. Thoroughly cleaning of all joints including removal of slurry as directed by the
11		Inspector.
12		<ol><li>Provide required doweling and thickened edges as shown on plans.</li></ol>
13		
14		
15	8-41.13	Measurement
16 17	C	ement colored concrete shall be measured by the square yard of finished surface.
18	8-41.14	Payment
19	Pa	ayment will be made for the following Bid items when included in the Proposal:
20		
21		"Cement Colored Concrete", per square yard.
22		
23	I he unit (	Contract prices above shall be full pay for all Work to complete the installation,
24 25	including	naul and disposal of all waste material, sawcutting, and doweling as shown on plans.
20 26		END OF SECTION

The Standard Specifications are supplemented with the following:

## 8-43 PEDESTRIAN PUSH BUTTON ASSEMBLY

## 8-43.1 Description

This work shall consist of installing pedestrian push button and its assembly. This work includes
the installation of the foundation, breakaway base, pushbutton and wiring connection. The
pedestrian push button assembly shall be installed in accordance with details shown in the
Plans and these Specifications.

## 12 8-43.2 Construction Requirements

The Pedestrian Push Button Assembly shall meet WSDOT specifications 9-29.15, WSDOT
Standard Plan J-20.15-03 and City of Tacoma Standard Plan TS-03.

### 16 17 8-43.3 Measurement

1819 "Pedestrian Push Button Assembly", per each.

### 20 21 8-43.4 Payment

Payment will be made for each of the following Bid items that are included in the proposal, and
shall be full compensation for all Work associated with these items:

26 "Pedestrian Push Button Assembly", per each.

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The Standard Specifications are supplemented with the following:

### 8-44 **RECTANGULAR RAPID FLASHING BEACON**

#### 8-44.1 Description

This work shall consist of installing a rectangular rapid flashing beacon (RRFB) and its assembly. This work includes the installation of the foundation, pole, signs and rectangular rapid flashing beacon

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11 The RRFB and assembly shall be installed in accordance with details shown in the Plans and 12 these Specifications.

#### 14 8-44.2 Materials

15 The rapid flashing beacons shall be use LED lights and be placed side by side. A predetermined

- 16 light pattern shall be immediately initiated each and every time a pedestrian pushes an 17 associated pushbutton detector. This pattern shall be:
- 18 ٠ The left beacon shall be illuminated for 0.05 seconds.
- 19 Both beacons shall be dark for 0.05 seconds. •
- 20 • The right beacon shall be illuminated for 0.05 seconds.
- 21 Both beacons shall be dark for 0.05 seconds. •
  - The left beacon shall be illuminated for 0.05 seconds. •
  - Both beacons shall be dark for 0.05 seconds. •
- 24 The right beacon shall be illuminated for 0.05 seconds. • 25
  - Both beacons shall be dark for 0.05 seconds. •
  - Both beacons shall be illuminated for 0.05 seconds. •
    - Both beacons shall be dark for 0.05 seconds.
    - Both beacons shall be illuminated for 0.05 seconds. •
    - Both beacons shall be dark for 0.25 seconds. •
- The flash rate of each individual RRFB indication, as applied over the full flashing sequence, 30 31 shall be between 5 and 30 flashes per second. The light intensity of the yellow indications 32 during daytime conditions shall meet the minimum specifications for Class 1 yellow peak 33 luminous intensity in the Society of Automotive Engineers Standard J595.
- 35 The pole that the RRFB is mounted on a tapered steel shaft and meet the specifications of 36 WSDOT standard plan J-21.16-01

#### 38 8-44.3 **Construction Requirements**

39 The Rectangular Rapid Flashing beacon shall meet WSDOT specifications and WSDOT 40 standard Plans G-30.10, J-21.10, J-21.16, J-21.17, Detail C and the contract plans and details. 41

#### 42 8-44.4 Measurement

44 "Rectangular Rapid Flashing Beacon", per each.

#### 45 46 8-44.5 Payment

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43

- Payment will be made for each of the following Bid items that are included in the proposal, and shall be full compensation for all Work associated with these items: 1 2 3 4 5 6 7 8
  - "Rectangular Rapid Flashing Beacon", per each.

1 8-45 INFORMATIONAL PLAQUE

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## 8-45.1 Description

This work shall consist of installing (11) eleven informational plaques, in locations as field verified by Engineer. The informational plaques shall be provided by others.

## 8-45.2 Materials

A thick bed Latex Portland Cement Mortar, and shall conform to ASTM C 150 and ANSI 118.4,
for exterior application. Mortar shall be combined with a latex admix, specifically for use with
thin-set mortars, cement grouts, and cement mortar beds.

Performance properties of the Latex Portland Cement Mortar and latex admix shall comply with
the following:

- 1718 Water Absorption: ANSI A118.6–4.4< 5%</li>
- 19 Compressive Strength: ANSI A118.4–6.14000–5000 psi (33.8–34.5 MPa)
- 20 TCA Service Rating: ASTM C-627 Extra Heavy
- 22 Grout shall be a tri-poly fortified sanded grout, combined with a latex or acrylic admixture.

2324 Grout shall conform to ANSI A118.7-1999. Color shall be gray color.

## 8-45.3 Construction Requirements

Informational plaques shall be installed in locations as approved by the Engineer.

30 Contractor shall submit epoxy grout color sample for approval by Engineer prior to fabrication.

Contractor shall ensure all information plaques and surrounding work surface area to be wiped
clean of any epoxy grout work.

## 35 **8-45.4 Measurement**

37 Unit of measurement for "Informational Plaque" is per each.38

## 39 8-45.5 Payment

- 41 Payment shall be made for the following bid items:42
- 43 "Informational Plaque", per each.

44 45 The unit price for the above, including all incidental work shall be full compensation for all labor,

46 material, tools, and equipment necessary to satisfactorily complete the work as defined in the

47 Standard Specifications and these Special Provisions. This includes all labor, materials, tools,

48 and equipment necessary or incidental to "Informational Plaque" as shown on the Plans.

1 2

#### **TEMPORARY OUTDOOR MATS AND BYPASS RAMPS FOR PEDESTRIANS** 1 8-46 2 (\*\*\*\*\*)

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#### 8-46.1 Description

6 Mats shall be provided as a means to prevent tracking dirt into buildings and will provide some 7 comfort for local visitors, workers, and residents. The contractor shall lay down mats to cover 8 unfinished surfaces near pedestrian access points to properties with structures. Requests for 9 additional mays may be made any time.

10 11 At times Contractor may need to provide temporary bypass ramps equipped with handrailing 12 to allow for ADA access to residential and/or business access points or around work zones.

#### 13 14 8-46.2 **Materials**

- 15 16 Any type of bristled foot mats will be considered. The ideal matting shall resemble artificial turf 17 rugs. A physical test sample shall be provided. The Contractor shall submit the proposed 18 material type for "Temporary Outdoor Mats for Pedestrians" to the Engineer for approval prior to 19 installation. Upon approval, the Contractor shall provide the "Temporary Outdoor Mats for 20 Pedestrians" as specified.
- 21

22 Any type of temporary pedestrian bypass ramp will be considered. Temporary pedestrian 23 bypass ramps shall have a 600 pound load capacity (minimum). These temporary pedestrian 24 bypass ramps shall have a minimum 5-foot by 5-foot level landing, a 6-foot long minimum ramp 25 portion with a maximum cross slope of 2%, a maximum running slope of 12:1, and handrails per 26 City of Tacoma and national ADA standards. 27

#### 28 8-46.3 Construction

29

30 The Contractor shall provide Outdoor Mats at all existing entry ways for pedestrians, and as 31 directed by the Engineer. All pedestrian access paths shall be maintained per Specification 32 Sections 1-07.23, and 1-10. The mats shall not hide undulations, rocks, or debris that may pose 33 a tripping hazard; the underlying surface shall be relatively firm and smooth. Where applicable 34 the matted access shall be ADA compliant per these specifications and the PROWAG 35 regulations, and as directed by the Engineer.

36

37 The Contractor shall provide Bypass Ramps at all locations where proposed Outdoor Mats 38 cross the existing curb to allow for ADA access from the top to the bottom of the existing curb. 39 The Bypass Ramp shall be ADA compliant per these specifications and the PROWAG

- 40 regulations, and as directed by the Engineer. Bypass ramps must allow for storm drainage in 41 existing gutter.
- 42

43 The Contractor shall maintain the mats and ramps and remove/replace as directed for the

44 duration of the construction, until the sidewalk and entry ways are finished at each respective

- 45 location. Relocation of these mats and ramps is incidental to Maintain Required Access in
- 46 section 8-48.
- 47

# 1 **8-46.4 Measurement** 2

A neat line square foot measurement shall apply to the bid item "Temporary Outdoor Mats forPedestrians", per square foot.

56 "Temporary Bypass Ramps", per each.7

## 8 8-46.5 Payment

- 910 The bid item "Temporary Outdoor Mats for Pedestrians" will be paid per square foot.
- 1112 The bid item "Temporary Bypass Ramps", per each will be paid per each.
- 1314 Payment for "Temporary Bypass Ramps" shall be full pay for all materials, labor, tools,
- 15 equipment, and supplies necessary for the installation of Temporary Bypass Ramps per ADA
- 16 and PROWAG requirements.

17

## 18

19

# 1 8-47 ACCESSIBILITY WORK PLAN

## 8-47.1 Description

This work consists of preparing a site specific accessibility work plan to describe how property owner/tenant access shall be maintained at all time during construction and off hours if necessary.

## 8-47.2 Vacant

### 10 11 8-47.3 Construction Requirements

12 13 The Contractor shall prepare an Accessibility Work Plan to detail for each site the means 14 and methods to be used in keeping the access open to each individual property. The 15 Accessibility Work Plan shall also describe the signing and safety precautions taken to guide 16 residents, employees, and customers through the work zone both into and out of the 17 business and/or residence and around the project site. The plan shall comply with the 18 requirements for ADA access in the American Disability Act Accessibility Guidelines (ADAG) 19 and the City of Tacoma's Traffic Control Handbook. Signing shall comply with the Manual on 20 Uniform Traffic Control Devices.

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The Accessibility Work Plan shall include the Contractor's emergency contact person and phone number. The Accessibility Work Plan shall be submitted for review by the Engineer two weeks prior to beginning work on an individual property. Work shall not commence at the individual property work site until the Accessibility Work Plan for that location has been approved by the Project Engineer.

## 28 **8-47.4 Measurement**

There is no measurement for this lump sum item.

# 3132 8-47.5 Payment33

Payment will be made in accordance with section 1-04.1, for each of the following bid items that are included in the Proposal.

- 36
  37 "Accessibility Work Plan \_\_\_\_\_", lump sum.
  38 The unit contract price for "Accessibility Work Plan \_\_\_\_\_", per lump sum, shall be full
  39 pay to prepare and submit the plan as specified.
  40
  41 END OF SECTION
- 42

# 1 8-48 MAINTAIN REQUIRED ACCESS

## 8-48.1 Description

This work consists of furnishing, constructing, maintaining, and removing the temporary access as detailed in the Accessibility Work Plans.

# 8 **8-48.2 Vacant** 9

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# 108-48.3Construction Requirements11

The Contractor shall construct the access as detailed in the Accessibility Work Plan for the individual property work site.

The Contractor shall maintain property owner/tenant access at all times during the work as described in the Accessibility Work Plan for the individual property work site.

Upon completion of the work at the individual property work site, the Contractor shall remove
 the temporary work access completely, allowing for permanent access to the individual
 property site.

### 22 8-48.4 Measurement

There is no measurement for this lump sum item.

## 26 8-48.5 Payment

Payment will be made in accordance with section 1-04.1, for each of the following bid items
that are included in the Proposal.

3031 "Maintain Required Access", lump sum.

The unit contract price for "Maintain Required Access \_\_\_\_\_", per lump sum, shall be full pay to furnish, install, maintain, relocate, and remove the temporary access to each property as specified.

## END OF SECTION

36 37 38

## 1 8-49 PROTECTION OF PRIVATE PROPERTY

2 Add this new Section:3

## 8-49.1 Description

The contractor shall protect private property during demolition and construction. Private property
includes and is not limited to building facades, windows, pavements, fences, trees, planting
pots, light fixtures, and any other special features with private ownership. Section 1-07.16 shall
also apply. Means and methods may vary depending on the specific private property to be
protected, and these and the duration will also depend on the nature of the construction work.
Therefore, this Work will be paid for by Lump Sum.

## 13 8-49.2 Materials

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Materials used may vary and are dependent on the approval of the Engineer. Some materialsthat are anticipated are as follows:

- 17 Plywood boards
- 18 Plastic sheets
- 19 Plexiglas
- Canvass fabric drop cloth

## 22 8-49.3 Construction

A specific protection activity anticipated is shielding the lower building face with plywood during
sidewalk demolition and during the pouring of new concrete. Other protection activities relate to
controlling construction dust and may involve utilizing additional water trucks.

27

21

28 When dust and small flying particles can coat or damage windows, the contractor shall

coordinate with the Engineer and property owner(s) to protect the windows with a protectivecovering.

31

In any case the Contractor shall conduct the protection of private property as directed and approved by the Engineer, including the above examples. The contractor shall attend meetings with property owner groups or individual property owners as directed by the Engineer. Adequate communication with property owners regarding this Work is essential to obtain property owner concurrence and minimize impacts for business owners.

38 Otherwise, Section 1-07.16, "Protection and Restoration of Property", shall apply.

### 39 40 **8-49.4 Measurement**

42 All items associated with "Protection of Private Property" shall be included in a lump sum Bid43 item.

# 44 **8-49.5 Payment** 45

- 46 All Costs for "Protection of Private Property", per lump sum.
- 47

41

All costs associated with any specific "Protection of Private Property" activity shall be included in this lump sum Bid item. 1 2 3

## 1 DIVISION 9: MATERIALS

2 3 **9-03 AGGREGATES** 4

## 9-03.1 Aggregates for Portland Cement Concrete

## 7 9-03.1(1) General Requirements

### 8 (June 16, 2016 Tacoma GSP)

9 The seventh paragraph is deleted.

- 10 11 **9-03.6 Vacant**
- 12 (Jun 16, 2016 Tacoma GSP)

13 This section, including the title, is revised to read:

# 15 9-03.6 Aggregates for Asphalt Treated Base (ATB) 16

## 17 9-03.6(1) General Requirements

Aggregates for asphalt treated base shall be manufactured from ledge rock, talus, or gravel, in accordance with the provisions of Section 3-01 that meet the following test requirements:

21		
22	Los Angeles Wear, 500 Rev.	30% max.
23	Degradation Factor	15 min.

### 24 25 9-03.6(2) Grading

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27 Aggregates for asphalt treated base shall meet the following requirements for grading:

28

Sieve Size	Percent Passing
2"	100
1/2"	56-100
No. 4	32-72
No. 10	22-57
No. 40	8-32
No. 200	2.0-9.0

29

30 All percentages are by weight.

# 3132 9-03.6(3) Test Requirements

33

When the aggregates are combined within the limits set forth in Section 9-03.6(2) and mixed in the laboratory with the designated grade of asphalt, the mixture shall be capable of meeting the following test values:

37 38

39 % of Theoretical Maximum Specific Gravity (GMM) (approximate)40

93@ 100 gyrations

1					
2	AASHTO T324, WSDOT TM T718	, or ASTM D3625	Pass		
3	(Acceptable anti-strip evaluation te	ests)			
4					
5	The sand equivalent value of the mineral aggregate for asphalt treated base (ATB) shall not b				
6	less than 35.				
7					
8	9-03.8 Aggregates for Hot M	ix Asphalt			
9	(March 9, 2016 APWA GSP)				
10	Supplement section 9-03.8 with the following:				
11					
12	9-03.8(8) Aggregates for Porous Hot Mix Asphalt/Porous Warm Mix Asphalt				
13	(PHMA/PWMA)				
14					
15	9-03.8(8)A General Requirements				
16					
17	Aggregates for Porous Hot Mix Asphalt (PHMA) or Porous Warm Mix Asphalt (PWMA) shall be				
18	manufactured from ledge rock, talus, or gravel, in accordance with the provisions of Section 3-				
19	01 that meet the following test requirements:				
20					
21	Los Angeles Wear, 500 Rev.	30% max.			
22	Degradation Factor	15 min.			

# 2324 9-03.8(8)B Grading

25

26 Aggregates for PHMA/PWMA shall meet the following requirements for grading:

27

Sieve Size	Percent Passing
<sup>3</sup> ⁄₄" square	100
<sup>1</sup> ∕₂" square	90 - 100
3⁄8" square	55 - 90
U.S. No. 4	10 - 40
U.S. No. 8	0 - 20
U.S No. 40	0 - 13
U.S. No. 200	0 - 5

28 29 \* All percentages are by weight.

The aggregate for PHMA/PWMA shall consist of crushed stone with a percent fracture greater than 90% on two faces on the No. 4 sieve and above, and shall be tested in accordance with

32 the field operating procedures for AASHTO T 335.

33

# 34 **9-03.12 Gravel Backfill** 35

## 36 9-03.12(3) Gravel Backfill for Pipe Zone Bedding

- 37 The grading requirements included in this section are revised to read:
- 38
- 39 Sieve Size Percent Passing

1	3/4"	Square 100
2	3/8"	Square 95-100
3	U.S. No. 8	0-10
4	U.S. No. 200	0-3
5	Sand Equivalent	35 Minimum

# Sand Equivalent 35 Minin 9-03.21 Recycled Material

# 89 9-03.21(1) General Requirements

### 10 (June 16, 2016 Tacoma GSP)

11 This section is supplemented with the following:

12

13 Recycled materials will only be permitted upon approval of the Engineer. Recycled concrete

- shall not be permitted for use as pipe zone backfill, backfill above pipe zone, and extra
- 15 excavation area backfill material.

16

17 18
#### 1 9-08 PAINTS AND RELATED MATERIALS 2

(March 23, 2010 Tacoma GSP)

Section 9-08 is supplemented with the following:

#### **Painting Surfaces Systems** 9-08.20

The surfaces shall be painted in accordance with the type materials and exposures as identified in this section. The contractor shall provide the Engineer with a paint mil.

#### 10 11 9-08.20(1) Steel

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12 13 A. Exposed/outside exposure (non-galvanized)

		I I V	· · · · · · · · · · · · · · · · · · ·	
14		1. Primer Coat	Section 9-08.1(2)C	(2.5-mils)
15		2. Intermediate Coat	Section 9-08.1(2)G	(3.5-mils)
16		3. Top Coat:	Section 9-08.1(2)H	(1.0-mils)
17		·		· · · · · ·
18	В.	Exposed/Interior exposure (no	on-galvanized)	
19		1. Primer Coat:	Section 9-08.1(2)C	(2.5-mils)
20		2. Intermediate Coat:	Section 9-08.1(2)G	(3.5-mils)
21		3. Top Coat:	Section 9-08.1(2)H	(1.0-mils)
22		·		· · · · · ·
23	C.	Unexposed/interior & exterior	(non-galvanized)	
24		1. Primer Coat:	Section 9-08.1(2)C	(2.5-mils)
25				· · · · ·
26	D.	Exposed/interior & outside ex	posure (galvanized)	
27		1. Primer Coat:	Section 9-08.1(2)E	(2.5-mils)
28		2. Top Coat:	Section 9-08.1(2)H	(1.0-mils)
		•	( )	· · /

- 30 E. Powder Coating and Galvanize Coating shall be applied where indicated in the contract documents and as approved through the submittal process. All other surfaces to be coated 31 32 per Section 6-07.3. 33
- 34 F. Painting shall be applied in accordance with Section 6-07.3.

#### 36 9-08.20(2) Concrete

37				
38	Α.	Exposed/outside exposure		
39		1. 1 <sub>st</sub> Cost:	Section 9-08.3	(3.0-mils)
40				· · ·
41	В.	Exposed/Interior exposure		
42		1. 1st Cost: Section	9-08.1(3)	(2.0-mils)
43		2. 2nd Cost: Section	9-08.1(3)	(1.0-mils)
44			. ,	· /

- C. Surface to be painted where indicated on contract plans
- 47 D. Colors to be selected by the Project Engineer
- 48

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46

29

### 9-08.20(3) Wood

All surfaces to be coated where and in accordance with contract documents as indicated.

### **END OF SECTION**

# 1 9-14 EROSION CONTROL AND ROADSIDE PLANTING

### 9-14.1 Topsoil

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Section 9-14.1(1) is deleted in its entirety and replaced with the following:

### 9-14.1(1) Soil Mix 1

Soil Mix 1 shall meet the following requirements:

- Provide "4-way mix" Topsoil from Tagro, or approved alternate.
- ASTM D 5268, pH range of 5.5 to 7, a minimum of 4 percent organic material content; free of stones 1 inch or larger in any dimension and other extraneous materials harmful to plant growth.
  - The Contractor shall import manufactured topsoil from offsite sources. The Contractor shall obtain topsoil displaced from naturally well-drained construction or mining sites where topsoil occurs at least 4 inches deep. Topsoil obtained from agricultural land, bogs, or marshes will not be accepted.
  - The Contractor shall furnish the soil analysis by a qualified soil-testing laboratory stating percentages of organic matter; gradation of sand, silt, and clay content; cation exchange capacity; sodium absorption ratio; deleterious material; pH; and mineral and plant-nutrient content of topsoil to the Project Engineer for approval.
    - The Contractor shall submit a certified report by the soil testing agency that the topsoil is suitable for plant growth and that perennial weed seeds and/or weed rhizomes are not present. Provide recommended quantities of nitrogen, phosphorus, and potash nutrients and soil amendments to be added to produce satisfactory topsoil to the Project Engineer for approval.

# 28 9-14.4 Mulch and Amendments 29

30 Section 9-14.4(3) is deleted in its entirety and replaced with the following:

### 31

# 32 9-14.4(3) Bark or Wood Chips (Mulch, as specified in the Plans) 33

Arborist wood chips shall be used as mulch. Mulch shall be derived from hardwood species and shall include woodchips, bark, wood, and leave detritus. It shall be ground so that a minimum of 95 percent of the material will pass through a 2-inch sieve and no more than 25 percent, by loose volume, will pass through a No. 4 sieve. The mulch shall not contain resin, tannin, or other compounds in quantities that would be detrimental to plant life. Sawdust or wood shavings shall not be used as mulch.

4041 Add the following new section:

42 (\*\*\*\*\*)

43

### 44 9-14.9 Root Barrier

45 46 Root barrier shall be 18-inch NDS Root Barrier Panel, RP 1850, flexible panel with integrated

- interlocking joints, or approved equal. Available from Frank J Martin Co. 1-29 800-654-1786.
- 48

 Add the following new section: (\*\*\*\*\*\*)
 9-14.10 Tree Watering Bag System
 Tree Watering Bag System shall be the 20-gallon Treegator Original slow release watering system for trees, or approved equal. Install per manufacturer's recommendations.
 END OF SECTION

# 1 9-15 IRRIGATION SYSTEM 2

### 3 9-15.3 Automatic Controllers

4 This Section shall be replaced in its entirety with the following:

5

6 Contractor shall provide Rain Bird Corporation TBOS-II Waterproof Battery Controller inside 7 individual remote control valve boxes at the locations shown on the drawings. The automatic 8 controller clock shall be a battery operated timed device for automatically opening and closing 9 control valves for predetermined periods of time and mounted so that all normal adjustments will 10 be conveniently located for use by the operator per the manufacturer's written 11 instruction. Where valves are clustered, a multi-station controller can be used to provide 12 operation of adjacent valves. Rain Bird Corporation TBOS-II Potted Latching Solenoids shall be 13 installed on all control valves. A Rain Bird Corporation TBOS-II Field Transmitter shall be 14 provided with each controller. 15 16 **Operating Specifications:** 17 18 1. Operating temperature: 0° to 60° C, using one 9V alkaline battery. 19 20 2. Operate one latching solenoid per station. 21 22 3. Controller shall be compatible with competitive valve models/latching solenoids. 23 24 4. Controller shall provide three independent programs and eight start times per program. 25 Programming will include: 26 27 Basic programming includes three independent programs with flexible days cycles, • 28 including custom even, odd, odd-31, and 1-6 day program cycles for maximum 29 flexibility. • Eight (8) start times per program per day. 30 31 Independent station operation allows simultaneous start times or sequential start • times based on system hydraulic capacity. 32 33 34 5. Station run times shall be operable from 1 minute to 12 hours in 1-minute increments. 35 36 6. Controller shall have seasonal adjustments by month. 37 38 39 **END OF SECTION** 

- 1 9-28 SIGNING MATERIALS AND FABRICATION
- 2 (April 1, 2012 Tacoma GSP) 3

### 4 9-28.1 General

5 The second sentence of the first paragraph is hereby revised to read:

6
7 Permanent signs which measure 36 inches or less on a side and are mounted to be on a single
8 post shall be constructed of single 0.080-inch aluminum panels.
9

10 The third sentence of the first paragraph is hereby revised to read:

1112 Sign overlay panels shall be .050-inch aluminum.

# 1314 9-28.9 Fiberglass Reinforced Plastic Signs

- 15 This section is deleted in its entirety.
- 16
- 17
- 18 END OF SECTION

### 1 9-29 ILLUMINATION, SIGNALS, ELECTRICAL

2 (March 31, 2016 Tacoma GSP)

# 3 4 9-29.1 Conduit, Innerduct, and Outerduct 5

### 6 9-29.1(6) Detectable Underground Warning Tape

7 This section is supplemented with the following:

8

9 For electrical circuits detectable underground warning tape shall be high visibility red, with

10 continuous legend of "Caution Electric Line Buried Below" or equal. The warning tape shall be

polyethylene with a metallic backing. The polyethylene shall be a minimum 3 inches wide, 4 mils
thick.

### 14 9-29.2 Junction Boxes, Cable Vaults and Pull Boxes

15 This section is supplemented with the following:

- Unless otherwise specified, all junction boxes containing illumination and signal control cable
  shall be Type 1, Standard Duty, with alternate 2 locking lid per WSDOT Standard Plan J-40.1002.
- 20

Unless otherwise specified, all junction boxes containing interconnect cabling shall be Type 2,
 Standard Duty, with alternate 2 locking lid per WSDOT Standard Plan J-40.10-02.

23 24 9-29.2(4) Cover Markings

25 The second paragraph of this section is revised to read: 26

27 Covers shall be marked or embossed with "LT" for boxes containing illumination circuits.28

29 Covers shall be marked or embossed with "TS" for boxes containing traffic signal circuits. 30

### 31 9-29.3 Fiber Optic Cable, Electrical Conductors, and Cable

32 This section is supplemented with the following:33

Where not otherwise specified, all wiring shall meet standard of the industry for the application employed. Wiring shall be consistent with manufacturers' recommendations and meet all applicable codes.

- 38 9-29.3(2) Electrical Conductors and Cable
- 3940 9-29.3(2)A Single Conductor
- 41 42 9-29.3(2)A1 Single Conductor Current Carrying

43 This section is supplementing with the following:44

45 Service connections shall be stranded copper size AWG #6 USE unless otherwise shown in the 46 plans. Black conductor insulation shall be used for the service and the neutral conductor shall

47 be white. Color tape marking shall not be acceptable for the neutral conductor.

### 1 9-29.3(2)A2 Grounding Electrode Conductor

2 This section is supplemented with the following:

Grounding electrode conductor shall be minimum #8 AWG, unless otherwise shown in the
plans. When the ground is pulled through a conduit, the wire shall be insulated. Color tape
marking shall not be acceptable for marking the ground.

### 8 9-29.3(2)A3 Equipment Grounding and Bonding Conductors

9 This section is supplemented with the following:

10

Equipment grounding shall be minimum #8 AWG unless otherwise shown in the plans. When
the ground is pulled through a conduit, the wire shall be insulated. Color tape marking shall not
be acceptable for marking the ground.

### 15 9-29.3(2) B Multi-Conductor Cable

16 This section is supplemented with the following:

17

14

18 Two-conductor through 10-conductor unshielded signal control cable, shall have stranded 19 copper conductors, size AWG 14, and shall conform to International Municipal Signal

- 20 Association (IMSA) signal cable 20-1.
- 21 22

### 2 9-29.4 Messenger Cable, Fittings

This section is supplemented with the following:

Messenger cable shall be 5/16-inch, seven-wire strand messenger cables conforming to ASTM
 A 475, extra-high strength grade, 11,200 lbs. min. breaking strength, Class B galvanized.

- All guy eye anchor rods shall be double-hub type.
- 29

30 Weatherheads shall be clamp-on type PVC. Where used for signal or flashing beacon

31 conductors, the center of the wire entrance shall be cut or machined out to a large diameter to
 32 accommodate entry of multi-conductors. All edges shall be smoothed to avoid chaffing.

- 33
- All miscellaneous nuts, bolts, washers, and fittings shall be stainless steel or brass unlessotherwise noted.
- 36

All metal line hardware shall be hot-dipped galvanized in conformance with the requirements of
 ASTM Designation A-153. All eyebolts shall be thimble eye design cast or welded to form a
 solid eye.

40

41 5-strand, class B galvanized steel, pretwisted guy strand dead ends, high strength cable

42 conforming to ASTM Designation A-475, shall be utilized at all span wire terminations. 1/2" rope

43 wire thimbles shall be required where span wire connects to all poles or bull rings, except where

- thimble eye bolts are used. Span wire shall normally be installed directly pole to pole, unlessotherwise directed or specified.
- 46

47 Strain insulators shall be installed where connecting to wood poles. Where span wire is

48 connected to a steel or concrete pole, insulators shall not be installed. Strain insulators shall be

- 1 wet process, porcelain, conforming to EEI-NEMA Class 54-2 standards for 12,000-pound
- 2 ultimate strength and shall be installed 9 feet from the pole. 3

#### 4 9-29.6 Light and Signal Standards 5

This section is supplemented with the following:

All light and signal standards shall be fixed base.

8 9 The head of the handhold security bolt shall be flush with the face of plate. The face plate of the 10 handhole shall be flush with pole.

#### 11 12 9-29.6(3) Timber Light Standards, Timber Strain Poles, Timber Service Supports

13 This section is supplemented with the following: 14

15 All timber poles shall be Class II unless otherwise specified.

16

6 7

Mast arms for wood poles shall be "tapered elliptical" or "tapered truss" style, of a size sufficient 17 to be used with a luminaire weight of 48 pounds with an EPA of 1.1 square feet. Arms shall 18 19 have 2-3/8 inches O.D. x 8-inch long slip fitter for mounting luminaire. 20

#### 21 9-29.6 Light and Signal Standards

22 Section 9-29.6 is supplemented with the following:

23 24 9-29.6(6) City of Tacoma Universal Pole 25

26 Unless otherwise specified, light standards and strain poles shall be in conformance with the 27 following City of Tacoma standard design. 28

#### 29 Strength

30

31 Each pole and mast arm shall have adequate strength for the designated luminaire with a 1.8 32 safety factor for maximum combined stresses using 90 mph isotach (117 mph gusts) per 33 AASHTO specifications for structure supports for highway luminaires. Design shall be based on 34 total loading of 50 pounds and EPA of 2.0 square feet.

#### 35 36 Standard Bolt Spacing

37 38 30-Foot Poles -- Baseplate shall accommodate 1-inch anchor bolts. The bolt circle shall be 39 between 11 and 13 inches.

40

41 40-Foot Poles -- Baseplate shall accommodate 1-inch anchor bolts. The bolt circle shall be 42 between 12.5 and 14.5 inches.

43

#### 44 9-29.6(6) A Steel Strain Poles 45

46 Each pole shall be of tapered round or octagonal construction.

- 47
- 48 CLASS 1 POLE: Design for dead load tensions up to 1500 pounds

1 CLASS 2 POLE: Design for dead load tensions up to 2600 pounds 2 3 Class 1 poles shall have a minimum base diameter of 12-inches for octagonal poles and 12-1/4-4 inches for round poles. Poles shall have a minimum wall thickness of 0.3125-inches. Anchor 5 bolts shall be 1-1/2-inch by 60-inches and shall have a spacing of 11-5/16-inches on center, on 6 the square. It is the responsibility of the pole manufacturer to maintain proper clearance 7 between the pole shaft and nuts for the anchor bolts. 8 9 Class 2 poles shall have a minimum base diameter of 13-1/2-inches for octagonal poles and 14-10 inches for round poles. Poles shall have a minimum wall thickness of 0.375-inches. Anchor 11 bolts shall be 2-inch by 66-inches and shall have a spacing of 12-3/4-inches on center, on the 12 square. It is the responsibility of the pole manufacturer to maintain proper clearance between 13 the pole shaft and nuts for the anchor bolts 14 15 Poles shall be of single-ply construction. Multiple-ply poles shall not be allowed. 16 17 Each pole shall be of tapered round or octagonal construction. Pole taper shall be in the range 18 of 0.13 to 0.14 in/ft. 19 20 A base plate and top casting shall be securely attached to each pole. The attachment of the 21 base plate to the pole shall be a welded connection sufficient to develop the full strength of the 22 pole. The base plate shall have four (4) holes which will sufficiently accommodate the specified 23 anchor bolts for the pole class. 24 25 Pole shall be of sufficient strength to allow for the span wire to be installed to sag an amount 26 equal to 5% of the span length. 27 28 The maximum acceptable deflection, at 30 feet above the base, is 5 inches. The specified 29 deflection shall be at a loading condition of 1,500 pounds horizontal pull at 30 feet above the 30 base for Class 1 Poles. For Class 2 Poles, the loading condition shall be 2,600 pounds 31 horizontal pull at 30 feet above the base. 32 33 Structural material shall be zinc-coated by a "hot-dip" process in accordance with ASTM A123 34 and the final coating shall measure 0.0039 inch or more in thickness as determined by a 35 magnetic thickness gauge. All tapped holes shall be chased after galvanizing. Hardware shall 36 be coated in accordance with ASTM A307. 37 38 The finished pole shall be reasonably straight and free from injurious defects. If galvanizing is 39 damaged, the maximum area to be repaired is defined in accordance with ASTM A123 Section 40 4.6. The maximum area to be repaired in the field shall be determined in advance by the 41 Engineer. Repair areas damaged during construction, handling, transport, or installation by one 42 of the approved methods in accordance with ASTM A780 whenever damage exceeds 3/16 43 inches in width. Minimum thickness for repair shall measure 0.0039 inches. 44 45 The company shall furnish the purchaser with template prints showing spacing and size of holes 46 in base for the anchor rods. 47

1 The material shall carry the manufacturer's standard guarantee against any defect in material or 2 workmanship for a minimum period of one year following the date of installation. The Contractor 3 shall submit mil test reports for all steel used in the manufacturing of strain poles and pedestals. 4 5 The Contractor shall submit a Certificate of Compliance with ASTM Standards and 6 Specifications for galvanizing. The certificate, signed by the galvanizer, shall detail galvanizing 7 process and testing procedure to determine that galvanizing meets minimum thickness 8 specified. 9 The contractor shall submit welder certification. Welders must be certified to AWS standards. 10 11 12 Each pole shall include the following: 13 14 1. One (1) rain-tight pole cap. 15 16 2. One (1) 4-inch by 6-1/2-inch handhole at base end with cover plate opposite to mast 17 arm. 18 19 3. Anchor bolts shall be hot dipped galvanized steel with two (2) galvanized nuts and 20 two (2) washers for each bolt. Only 12-inches of threaded end of the bolts must be 21 galvanized. 1-1/2-inch diameter bolts shall have 8-inches of top thread and 2-inch 22 diameter bolts shall have 10-inches of top thread. 23 24 4. Anchor bolts shall have threaded bottom ends to receive an anchor plate and nut. 25 The nut shall be tack-welded to the anchor plate. Anchor plates for 1-1/2-inch 26 diameter anchor bolts shall be 4-inch square by 1-inch thick. Anchor plates for 2-27 inch diameter anchor bolts shall be 6-inch square by 1-inch thick. 28 29 5. One (1) adjustable strain clamp to be mountable between 26 to 28 feet above the 30 base. Clamp shall provide facility to attach span wire at four-guarter points. 31 32 6. Provisions for mounting a mast arm of specified length. All poles shall be supplied 33 with one mast arm mounting flange. The centerline of the flange shall be approximately 6 inches below the top of 38-foot poles and 24 inches below the top of 34 35 30-foot poles. The flanges shall conform with the detail drawing included in the 36 Special Provisions. Poles ordered without mast arms but with provisions for a later 37 addition of a mast arm shall be provided with a metal cover and gasket to protect the 38 opening being provided. The cover shall be bolted to the pole using the holes 39 provided for fastening the mast arm. 40 41 7. One (1) two-inch coupling to receive clamp-on type aluminum weatherhead 42 positioned at 27 feet, and no more than 45° from the location of the mast arm, unless

1	otherwise specified.
2	
3	8. One (1) 1-1/4-inch coupling for wire inlet located directly opposite the mast arm.
4 5	9. One (1) grounding lug-hole in lip of handhole for 1/2-NC brass bolt.
6 7	9 29 6/6/BL uminairo Mast Arms
8	3-23.0(0)D Lummane Mast Anns
9	Each mast arm shall have sufficient strength with a 1.8 safety factor to support a 70-pound
10	luminaire on an 18-foot mast arm per the latest AASHTO Specifications for Structural Supports
11	for Highway Signs, Luminaires, and Traffic Signals.
12	Material and workmanship shall conform to the best commercial standards of the industry
14	
15	The mast arm and its fastening shall be constructed of steel conforming to Section 9-29.6
16	
17 18 10	Each mast arm shall support a ballast-in-head luminaire and shall provide a luminaire mounting height of approximately two (2) feet above the strain pole mounting flange.
20	The mast arm shall provide a horizontal extension from the center of the pole to the center of
21	the luminaire as shown in the Plans.
22	
23 24 25	The mast arm shall be of tapered construction. The luminaire end of the mast arm shall not exceed 2.375 inches O.D. for a minimum distance of 8 inches. The outside arm diameter at the pole flange shall not exceed 5.88 inches.
20 27 28	The mast arm shall be capable of being fastened to the mast arm mounting flange dimensioned in the detail drawing. All mounting bolt heads shall clear the weld.
29	
31	This section is supplemented with the following:
32	
33 34 25	Unless otherwise shown in the Plans, all new luminaires shall be Light Emitting Diode (LED) fixtures conforming to these Specifications.
35 36	Luminaires shall be provided with utility labels. Litility labels shall show actual total system
37	wattage for LED luminaires.
38	5
39	All LED Luminaires shall conform to the following minimum criteria:
40	
41	<ul> <li>A Qualified Product on one of the following fixture lists:</li> </ul>
43	<ul> <li>Energy Star</li> </ul>
44	<ul> <li>Design Lights Consortium</li> </ul>
45	<ul> <li>Lighting Design Lab</li> </ul>
46 47	<ul> <li>vvarranty: 10-year minimum, including power driver and LED chips.</li> <li>Input Voltage: 120-277V</li> </ul>
τı	mpar voltago. 120 211 V.

- Color Rendering Index (CRI): 70 minimum.
  - Correlated Color Temperature (CCT): 4000-5300K.
  - Calculated Lumen Maintenance Factor (LMF): 100,000 hours or more (L70 at 25°C/77°F) in accordance with IESNA TM-21-11 and IESNA LM-80-08.
  - Surge suppression protection: 10kV (IEEE/ANSI C62.41.2).

### 9-29.10(1) Conventional Roadway Luminaires

This section is supplemented with the following:

### 10 Photometrics

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Unless otherwise specified, the light distribution shall be IES Type III, medium, cutoff.

Photometric Performance:

- Flat lens luminaires shall have a total downward utilization greater than 65 percent.
- Drop lens luminaires shall have a total downward utilization greater than 70 percent.

Photometric performance shall be verified with photometric report from an independent testing
laboratory. Report should be submitted with the bid when requested. Failure to supply report
within ten working days of bid opening may be cause, at the City of Tacoma's discretion, the bid
to be considered non-responsive.

### 24 Ballasts

26 Ballasts shall be suitable for operation on 240-volt circuits unless otherwise stated.

28 150-watt luminaires shall be 55-volt design.

Each luminaire shall have fuses and fuseholders for each power conductor above ground
potential. Fuses shall be 1.0 cm X1.8 cm (13/32" X 1.5"). Fuses shall be slow blow type (carry
110 percent, open at 135 percent within 1 hour, carry 200 percent for minimum of 10 seconds).
Luminaires 250 watts and below shall have 5 amp fuses. Luminaires above 250 watts shall
have 10 amp fuses, BUSS FNM series or equal.

Luminaires shall have receptacle for ANSI standard twistlock photoelectric controls. For 240volt luminaires, the photocell shall be wired for 240 volts.

3839 This section is supplemented with the following

### 40

41 42

9-29.10(1)A LED Roadway Luminaires

43 Each luminaire shall have LED compatible fuses (in conformance with the manufacturer's

44 recommendations) and fuseholders for each power conductor above ground potential. Fuses

45 shall be located in the fixture head. Fuses shall be 10.3mm x 38.1 mm (13/32" x 1.5"). Fuses

46 shall be slow blow type (carry 110 percent, open at 135 percent within 1 hour, carry 200 percent

47 for minimum of 10 seconds). Luminaires 250 watts and below shall have 5 amp fuses.

48 Luminaires above 250 watts shall have 10 amp fuses.

 LED Roadway Luminaire housings shall be grey/silver and fabricated of aluminum. The powerdoor shall be fabricated from either aluminum or a UV resistant polymer. Power16 door access shall be tool-less.

6 LED Roadway Luminaires shall be equipped with a 7-pin NEMA Photocell Receptacle.

Where specific luminaires are called out in the project documents, as the basis of the lighting
design, the specified luminaires may be provided in accordance with the requirements of
Sections 8-20 and 9-29. An alternate product may be provided for the LED Roadway Luminaire,
provided that the luminaire meets all conditions of this section and meets the following
conditions:

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- LED Roadway Luminaires shall be one of the following products:
  - Beta/Cree XSP Series or LEDway Series
    - Leotek Green Cobra Series
- GE Evolve Series
  - American Electric Lighting/Holophane Autobahn Series
- The total system wattage shall not exceed the total system wattage specified.
- A full electrical and photometric design shall be provided for review by the City.
   Submittals shall be Type 3E and stamped and signed by a licensed Professional
   Engineer. The alternate product selected shall meet or exceed the designed product.
   Contact the City of Tacoma Traffic Engineering Section for a list of design assumptions
   and criteria utilized in the lighting design.
  - BUG Ratings for LED Roadway Luminaires shall be in conformance with Chapter 5 Section 3.1 (Table 5-1) of the City of Tacoma Right-of-Way Design Manual.

# 28 **9-29.11 Control Equipment** 29

### 30 9-29.11(2) Photoelectric Controls

31 This section is revised to read:32

The photoelectric control shall be the twistlock type and the light sensitive element shall be
a solid state photo diode. The control shall be designed to turn on at 2.6 foot-candles
(± 20 percent) and turn off at 2.6 foot-candles (± 20 percent). The lighting control shall not drift
by more than 1 percent over a 10-year period.

- 37
- The output control relay shall be electro-mechanical. The time delay for both turn on and turn off shall be a minimum of 1 second and a maximum of 5 seconds. The output relay shall be rated 1000 watts incandescent or 15 amps inductive load. The contacts shall be normally closed.
- 41 42
- 43 The lighting control shall have a built in metal oxide varistor (MOV) rated a minimum of
- 44 160 joules for lightning and transient protection. The control shall also have secondary zener
- 45 diode and transient filter. The relay shall be suitable for operation on 240 volt, 60-hertz
- 46 electrical circuits.
- 47
- 48 Dimensions shall conform to ANSI specifications for twistlock photocells.

### 9-29.12 Electrical Splice Materials

### 9-29.12(1) Illumination Circuit Splices

This section is revised to read:

Splices and taps shall be made with solderless crimp connectors on underground and overhead circuits to securely join the wires both mechanically and electrically. Splices shall be sealed in accordance with 8-20.3(8).

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### 11 Thermoplastic Electrical Insulating Tape

1213 Electrical tape shall be made by the same manufacturer and compatible with the electrical

coating utilized to form a complete system that both insulates and protects the splice. Electrical

- 15 tape shall be based on polyvinyl chloride (PVC) and/or its copolymers and have a rubber–
- based, pressure-sensitive adhesive. The tape shall have a voltage rating of 600V (UL510).
- 17 The tape shall be 7 mils thick, and be UL Listed and marked per UL Standard 510 as "Flame
- Retardant, Cold, and Weather Resistant." The tape shall be resistant to abrasion, moisture,
   alkalies, acids, corrosion, and varying weather conditions, including ultraviolet exposure. The
- tape must be applicable at temperatures ranging from 0°F through 100°F (–18°C through 38°C)
- 21 without loss of physical properties. The tape shall have an operating temperature up to 220°F
- 22 (105°C). The tape shall be classified for use in outdoor environments. The tape shall be
- compatible with synthetic cable insulations, jackets, and splicing compounds. The tape will
- remain stable and will not telescope more than 0.1 inches when maintained at temperatures below 120°F (50°C).
- 26

# 27 Moisture Resistant Electrical Coating28

- Electrical Coating shall be made by the same manufacturer and compatible with the vinyl
- electrical tape utilized to form a complete system that both insulates and protects the splice.
   Electrical Coating shall seal and bond the tape and be suitable for direct burial, direct water
   immersion, and above ground applications. Electrical coating shall be flexible when dry.
- Electrical coating shall consist of the solvents Acetone, Methyl Ethyl Ketone, and Toluene and
   shall contain synthetic rubber and resin solids.

### 36 9-29.15 Flashing Beacon Control

37 This section is revised to read:

# 3839 9-29.15 Pedestrian Activated Crosswalk Beacons

- 40
- 41 Crosswalk beacons shall be with two flashing beacons, unless otherwise specified,
- 42 independently aimable, with wireless control of the other beacons at the pedestrian crossing.
- 43 Unit shall be one integral assembly which includes the two beacons, control circuitry and inter-
- 44 beacon radio communications hardware and software. Indicator heads shall be green unless
- 45 otherwise specified. All circuitry and batteries shall be contained within the indicator heads. A
- separate post mounted controller box shall not be acceptable.

1 Beacons shall have 8-inch amber faces and meet MUTCD and ITE specifications for the

2 intended application. Flashing modes shall include MUTCD specification  $\frac{1}{2}$  second on,  $\frac{1}{2}$ 

3 second off and high visibility strobe pattern. Variations shall include synchronized or wig-wag

4 (alternating). Flashing duration shall be variable from 5 seconds to 60 seconds. Beacons shall 5 have inputs for activation by pedestrian pushbuttons and wirelessly transmitting the activation to

6 the other beacons at the pedestrian crossing.

7

8 Beacon shall incorporate inter-beacon radio communication via spread spectrum radio using 9 ISM 902-928 Mhz. Unit shall include minimum of 8 unique addresses for multiple units in close 10 proximity. Communication shall have a minimum range of 300 feet.

11

12 Units shall have separate solar panels and batteries for each individual beacon. Solar panels 13 shall be minimum 4 watt per beacon. Batteries shall be commercially available minimum 25 AH. 14 Fully charged units shall have capacity for one month of continuous operation based on 300 20-15 second LED flash cycles per day.

- 16

17 Mounting shall be compatible with the specified pole. Contractor shall be responsible for

18 coordinating the mounting interface between the pole and crosswalk beacon assembly. 19

#### 20 **Rapid Flashing Beacons**

21 Rapid Flashing Beacon (RFB) indications shall comply with the dimensional, operational, and 22 flash pattern requirements of Federal Highway Administration (FHWA) Interim Approval 21 (IA-23 21, Conditions 4, 5, and 6, excluding Condition 5f. RFB systems shall be capable of providing, 24 at a minimum, the following two-channel flashing patterns:

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31 32 1. NEMA Standard 50-50:

- Channel one is ON and channel two is OFF for 0.5 seconds.
- Channel one is OFF and channel two is ON for 0.5 seconds.

(Cycle repeats; the total flashing pattern cycle length is 1.00 second.)

### 2. RFB "WW+S" Pattern (IA-21 Condition 5b):

- 33 Channel one is ON and channel two is OFF for 0.05 seconds. ٠ 34 Both channels are OFF for 0.05 seconds. 35 Channel one is OFF and channel two is ON for 0.05 seconds. ٠ Both channels are OFF for 0.05 seconds. 36
- 37 Channel one is ON and channel two is OFF for 0.05 seconds. • 38 Both channels are OFF for 0.05 seconds.
- Channel one is OFF and channel two is ON for 0.05 seconds. 39 ٠ 40 Both channels are OFF for 0.05 seconds.
- Both channels are ON for 0.05 seconds. 41 •
- Both channels are OFF for 0.05 seconds. 42 43
  - Both channels are ON for 0.05 seconds.
  - Both channels are OFF for 0.25 seconds.
  - (Cycle repeats; the total flashing pattern cycle length is 0.80 seconds.)

47 The flashing pattern shall be user-selectable in the field.

48

44

45

1 RFB system pushbuttons shall not include tactile arrows, speech messages, or vibrotactile
2 indications. RFB system pushbuttons shall use a 9" x 12" R10-25 sign. The R10-25 sign may
3 include integral yellow warning lights.

### 4 5 9-29.19 Pedestrian Push Buttons

6 This section is supplemented with the following: 7

8 Pushbuttons shall be steel with a directional vibro-tactile arrow. Push buttons shall be fully 9 voice messaging APS compliant and fully programmable/customizable by the end user.

Pushbuttons shall be provided to the City for programming/messaging 2 weeks prior to
 installation.

12

13 The sign shall be in conformance with MUTCD R10-3b.

14

15 The unit shall be black. The assembly shall include the cabinet control unit if applicable to the

brand selected. A 4" pole adapter shall be included for locations where two pushbuttons are
mounted to the same 4" pole.

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19 If additional conduit pathways are required between the pushbutton and the pedestrian head, 20 due to the contractor's selection of pedestrian push button manufacturers, the Contractor shall 21 submit a revised design with the submittal of the push button material. The design shall be 22 stamped and signed by a licensed professional engineer. Required additional pathways shall

23 be provided at no additional cost to the City.

### 25 9-29.20 Pedestrian Signal

26 This section is supplemented with the following:

All pedestrian signals housings shall be die-cast aluminum.

30 The Vacant Section 9-29.22 is replaced with the following:

### 32 9-29.22 Preemption Hardware

34 Preemption Hardware shall be Opticom TM Model 721 unless otherwise specified.35

### 36 9-29.24 Service Cabinets

37 This section is supplemented with the following:38

- Service cabinets shall be pole mounted, exterior NEMA 3R Rated with a bolt on HUB for topentry. Cabinet shall be a maximum 10 inches wide, 14 inches high, and 5 inches deep.
- Load Center shall have between 100 and 150 Amps, with capacity for 6 spaces and 12 circuits,
  or 8 spaces and 16 circuits as required by Code.
- 4445 Service panels shall be one of the following brands/series:
- 46

- 47 1. Square D QO Series
- 48 2. Siemens Type BL

1 2	3. Eaton/Cutler Hammer – Quick Lag Type BA 4. Engineer Approved Equal
3 4 5	<b>9-29.24(2) Electrical Circuit Breakers and Contactors</b> The first paragraph is supplemented with the following:
6 7 8	Mercury relays shall not be accepted. Contactors shall be one of the following brands:
9	1. Square D
10	2. Siemens
11	3. Eaton/Cutler Hammer
12	4. Engineer Approved Equal
13	The second paragraph is deleted
15	no cocona paragraphio dolotod.
16	The third sentence of the third paragraph is deleted.
17	
18	The third paragraph is supplemented with the following:
19 20 21	All service panel breakers shall be one of the following brands/series:
22	1 Square D – QO Series
23	2. Siemens – Type BL
24	3. Eaton/Cutler Hammer – Quick Lag Type BA
25	4. Engineer approved Equal
26	
27	All surface mount breakers shall be one of the following Brands/Series:
28	
29	1. Square D (Type QOU)
30	2. Siemens
31	3. Eaton/Cutler Hammer
32	4. General Electric
33	5. Engineer approved Equal
34 35	
36	END OF SECTION
37	
38	
39	END OF SPECIAL PROVISIONS

Item Number	Tacoma Standard Item #	Item Description	Unit	
DIVISION 1 - C	GENERAL REQUIREMENTS		1	
R-1	1-04	MINOR CHANGES	F.A.	1
R-2	1-05	ROADWAY SURVEYING	L.S.	1
R-3	1-05	RECORD DRAWINGS (\$1000 MIN)	L.S.	
R-4	1-07	SPCC PLAN	L.S.	
R-5	1-07	ARCHAEOLOGICAL AND HISTORICAL OBJECT SALVAGE	F.A.	
R-6	1-09	MOBILIZATION	L.S.	
R-7	1-10	PEDESTRIAN TRAFFIC CONTROL	L.S.	
R-8	1-10	UNIFORMED POLICE OFFICER FOR TRAFFIC CONTROL	H.R.	15
R-9	1-10	PROJECT TEMPORARY TRAFFIC CONTROL	L.S.	
DIVISION 2 - E			1	
R-10	2-01	CERTIFIED ARBORIST	L.S.	$\overline{1}$
R-11	2-01	CERTIFIED ARBORIST ASSESSMENT REPORT COMPLIANCE	F.A.	
R-12	2-01	ROADSIDE CLEANUP	F.A.	$\frac{1}{1}$
R-13	2-01		1.5.	$\frac{1}{1}$
R-14	2-02			$+\frac{1}{1}$
R-15	2-02	TEST HOLES	L.F.	$\frac{1}{1}$
R-16	2-06	SUBGRADE MAINTENANCE AND PROTECTION		$\frac{1}{1}$
R-17	2.00	REMOVE EXISTING PAVEMENT. TYPE I. CLASS A2	S Y	$\frac{1}{2}$
R-18	2-14	REMOVE EXISTING PAVEMENT. TYPE I. CLASS A4	S Y	12
R-19	2-14	REMOVE EXISTING PAVEMENT, TYPE I, CLASS C6	<u>S Y</u>	3
R-20	2.14	REMOVE EXISTING PAVEMENT, TYPE I, CLASS C12	<u>  5.1.</u>   5.V	$\frac{1}{5}$
R_21	2-14	REMOVE EXISTING PAVEMENT TYPE III CLASS C6	<u>  5.1.</u>   c v	$\frac{1}{1}$
R_22	2.14			$\frac{1}{2}$
R-22	2-13	REMOVE AND RELOCATE EXISTING PLANTER POT		
D 24	2-10			
D 25	2-10			$\frac{1}{1}$
R-23	2-10			$\frac{1}{1}$
N-20	2-10			
R-27	2-18			$\frac{1}{1}$
R-20	2-10			$\frac{1}{1}$
R-29	2-18			$\frac{1}{1}$
R-30	2-18			
R-31	2-19	REMOVE AND REPLACE EXISTING LID WITH ADA COMPLIANT NON-SLIP LID		$\frac{1}{1}$
K-32	2-20			╞
R-33	2-20			12
R-34	2-20		5.F.	
R-35	2-20		L.S.	
K-36	2-21		L.S.	$\frac{1}{1}$
R-37	2-21		L.S.	
R-38	2-21		L.S.	$\frac{1}{1}$
R-39	2-21	EXCAVATION AND HAUL OF CONTAMINATED MATERIALS	F.A.	1
DIVISION 4 - E	BASES			
R-40	4-04		<u>C.Y.</u>	2
R-41	4-04		C.Y.	2
DIVISION 5 - S				Τ.
R-42	5-04			+1
R-43	5-04	COLD PLANT MIX FOR TEMPORARY PAVEMENT PATCH		+1
R-44	5-05		S.Y.	3
DIVISION 7 - D	KAINAGE STRUCTURES, ST	URMI SEWERS, SANITARY SEWERS, WATER MAINS, AND CONDUITS		
R-45	7-05	ADJUST EXISTING CATCH BASIN, FURNISH NEW FRAME AND GRATE	EACH	2
R-46	7-05	ADJUST EXISTING UTILITY LID TO GRADE	EACH	1
R-47	7-09	DUCTILE IRON SLEVE 6 IN. DIAM.	L.F.	1
R-48	7-17	DUCTILE IRON SEWER PIPE 3 IN. DIAM	L.F.	2
		I	1	1

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Civil Engineers Structural Engineers Landscape Architects Community Planners Land Surveyors Neighbors TACOMA·SEATTLE SPOKANE·TRI-CITIES 2215 North 30th Street, Suite 300 Tacoma, WA 98403 253.383.2422 TEL 253.383.2572 FAX WWW.ahbl.com WEB

IVISION 8 - MISC	ELLANEIOUS CONS	STRUCTION		
R-50	8-01	NPDES CONSTRUCTION STORMWATER GENERAL PERMIT	L.S.	1
R-51	8-01	EROSION CONTROL AND WATER POLLUTION PREVENTION	L.S.	1
R-52	8-01	STORMWATER POLLUTION PREVENTION PLAN (SWPPP)	L.S.	1
R-53	8-02	SOIL MIX 1	C.Y.	256
R-54	8-02	PLANT SELECTION - TREE	EACH	57
R-55	8-02	SOIL AMENDMENT	S.Y.	860
R-56	8-02	TREE ROOT BARRIER	L.F.	1,57
R-57	8-02	DECORATIVE GRAVEL	C.Y.	20
R-58	8-02	TREE PROTECTION	EACH	14
R-59	8-02	TREE WATERING BAG SYSTEM	EACH	15
R-60	8-03	IRRIGATION SYSTEM COMPLETE	L.S.	1
R-61	8-04	TRAFFIC CURB AND GUTTER	L.F.	108
R-62	8-04	PEDESTRIAN CURB	L.F.	60
R-63	8-04	EXTRUDED CURB	L.F.	5
R-64	8-06	CEMENT CONCRETE ACCESS TYPE 1	S.Y.	100
B-65	8-06	CEMENT CONCRETE ACCESS TYPE 2	S Y	300
B-66	8-14		S Y	5.10
B-67	8-14		5.11. S F	360
B-68	8-20		1 \$	1
R-69	8-20			7
B-70	8-21	PERMANENT SIGNING	EACH	19
P_71	8-22			40
P_72	8-22			1
P 72	0-22 0 22			50
R-73	8-22			30
R-74	8-22		с.	6
R-75	0-50		Э.г.	2 00
R-70	0-31		с.	2,00
R-77	0-52	GRANITE STONE DANELS WITH OLIOTE	5.F.	300
R-70	0-55			9
R-79	8-34		EACH	2
R-80	8-35		EACH	4
R-81	8-35		EACH	1/
	<u>٥-</u> ٥٦			4
κ-δ3	8-35		EACH	1 /
<u>κ-84</u>	8-35			4
	8-35			220
	8-35		EACH	ð n
κ-δ/	8-30		EACH	3
<u>к-88</u>	8-38		EACH	34
к-89	8-40		LACH	1
K-90	8-41		S.F.	0,00
K-91	8-45		LACH	
R-92	8-46		S.F.	3,50
R-93	8-46		EACH	15
R-94	8-47		L.S.	1
R-95	8-48		L.S.	1

- CAL				FINAL CONSTRUCTION CHECKED	date 2/10/2023 designed	SCALE AS SHOWN CHECKED	CHRISTOPHER CHRISTOPHER Serve OF WASHING OF	DEPARTMEN	city of tacoma NT OF PUBLIC WORKS	work order no. PWK-G0041-04-03
				BY	CHS DRAWN CHS. RJS	TCS FILE NAME 2160917	Table Addition	DocuSigned by:	LINKS TO OPPORTUNITY STREETSCAPE PROJECT	AHBL JOB NO. 2160917.10
	ADDENDUM 1 REVISIONS REVISION	3/20/23 DATE	APPD	FIELD BOOKS			03/20/2023	STE AND BUILDING DIVISION	SUMMARY OF QUANTITIES	<sup>sheet no.</sup> MC—01 sheet 2 ог 58

BID PACKAGE 3



1	NO	REVISION	DATE	APPD	BUUKS			03/20/2023	SITE AND BUILDING DIVISION
	17	AUUENDUM 1 REVISIONS	3/20/23		FIELD			STONAL ENC	
	$\Delta$		- /00 /07		DATE	drawn CHS, RJS	FILE NAME 2160917	THOM SECISTER WITH	(Livis Lavson.
3-5					BY	CHS	TCS	Sales Z-	
TENKY						DESIGNED	CHECKED	South and a state of the state	DEPARIM
					CHECKED	2/10/2023	AS SHOWN	CHRISTOPHER OF WASHING	
						DATE	SCALE		

		GRAPHIC S	SCALE
	z		40
		1" = 20 FI	EET
	CONNECT EXISTING RUIL DING D		
	1 STORM PIPE THROUGH CONCRE STANDARD PLAN NO. SU-29. MAII	TE CURB PER CITY (	OF TACOMA 3 UT-04
	2 STORM PIPE THROUGH CONCRE STANDARD PLAN NO. SU-29.	TE CURB PER CITY	
	3 12" WIDE TRENCH DRAIN WITH A		DEPTH OF 3". $\begin{pmatrix} 6 \\ UT-04 \end{pmatrix}$
	4 PROTECT EXISTING STRUCTURE GRADE ENSURE STRUCTURE IS EQUIDO	- AUJUST RIM TO MA	
	5 RESISTANT LID. 0.6 MINIMUM CON REPLACE STRUCTURE IF NECES	EFFICIENT OF FRICT SARY.	TON.
	6 BULBOUT (IN-LINE) CURB CUT	$\overline{4}$	
		OUTLET TO CURB AN	ID GUTTER $5$ UT-04
	<ul> <li>PROPOSED LIGHT POLE. REFER</li> <li>ADDITIONAL INFORMATION.</li> </ul>	TO ILLUMINATION PI	LANS FOR
	PROPOSED HANDHOLE LOCATED REFER TO ILLUMINATION PLANS	OUTSIDE 7' SIDEW. FOR ADDITIONAL IN	ALK SECTION. FORMATION.
	REFER TO IRRIGATION PLANS FO	OR CONNECTION TO ACOMA WATER. CON	IRRIGATION TRACTOR
	SHALL FURNISH AND INSTALL ME PLANS FOR CONTINUATION.		
	METER SUPPLIED AND SET BY TA	ACOMA WATER, CON TER BOX WITH TRA	ITRACTOR FFIC RATED
	LID. REFER TO IRRIGATION PLAN IRRIGATION LINE UPSTREAM OF	S FOR CONTINUATION	ON. DR
	12 REFERENCE ONLY. CONNECTION BY TACOMA WATER. CONTRACTO	NAND REQUIRED RE OR TO PROVIDE STA	SURFACING KING FOR
	TACOMA WATER.		
	<b>ATABLE BEAU</b>		
l'	1 ALL EXISITING DIDED OF CHANNEL IS		S GH CURB
	FOUND WITHIN THE LIMITS OF THE I SIDEWALK IMPROVEMENTS MUST B	PROPOSED CURB A	ND/OR 3 EPLACED IT-04
ເຈ 🛛	PER CITY OF TACOMA STD PLAN NO	) SU-29.	
	2. BARE GALVANIZED METAL SHALL NO THAT CONVEY STORMWATER, SUCI	OT BE USED FOR MA H AS ROOFS, CANOF	ATERIALS PIES, SIDING,
	GALVANIZED MATERIALS SHALL HA FINISH, SUCH AS BAKED FNAMFI P	VE AN INERT, NON-L LUOROCARBON PAI	EACHABLE NT (SUCH AS
S IS	KYNAR OR HYLAR), FACTORY-APPLI ASPHALT COATING. ACRYLIC PAINT	ED EPOXY, PURE AI	LUMINUM, OR
	FIELD-APPLIED, AND PART ZINC (SU ARE NOT ACCEPTABLE.	CH AS GALVALUME)	) COATINGS
	3. BURIED UTILITIES ARE SHOWN IN TI PRIOR TO INSTALLATION OF ANY P		LOCATION.
	CONTRACTOR SHALL VERIFY LOCA EXISTING UTILITIES. IN THE FVFNT	TION AND ELEVATIO	N OF CY FROM
Ţ	THE INFORMATION PRESENTED ON SHALL NOTIFY THE DESIGN ENGINE	THESE PLANS, CON	ITRACTOR
	4. ALL STORM PIPES CONNECTING TO	CONCRETE STRUC	TURES
	SHALL BE GROUTED TO ASSURE CO WATERTIGHT.	JNNECTION AT STRU	JUTURE IS
	5. ALL TYPE 2 CATCH BASINS SHALL H UNLESS NOTED OTHERWISF	IAVE AN INSIDE DIAM	METER OF 48"
	6. ALL STRUCTURE GRATES SHALL BE	E LOCKING UNLESS I	NOTED
	OTHERWISE. GRATES SHALL CONFO UNLESS NOTED OTHERWISE.		WING
	VANED - WSDOT STANDA HERRINGBONE - WSDOT STANDA SOUD - WSDOT STANDA	КЛ PLAN B-30.30-03 RD PLAN B-30.50-03 RD PLANS B 30.20 0	4
AT	BEEHIVE - OLYMPIC FOUND APPROVED FOUND	ND PLANS D-30.20-04 RY PART NO. SM60E IVALENT	+ BH OR
	7. ALL STORMWATER INLETS (CATCH	BASINS, AREA DRAII	NS, ETC.)
	SHALL BE MARKED AS FOLLOWS: "E STREAM." CITY OF TACOMA TO PRO	OUMP NO WASTE. DF VIDE STICKERS TO	RAINS TO THE
			CH BASINS.
	0. I REINCH DRAINS SHALL BE ADA CO LOCKING GRATES.	IVIPLIANT AND SHALI	
			BID PACKAGE 3
	ТАСОМА		WORK ORDER NO.
ENT O	F PUBLIC WORK		ТWK-GUU41-U4-U3 аны јов no.
LINKS T	U UPPORIUNITY STREETSCAL	PE PROJECT	2160917.10
	214+50 TO OB STA 222+	10	стал. 10. UI-U1 Sheet <u>33</u> ог <u>5</u> 8

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T T WAY					FINAL CONSTRUCTION CHECKED	DATE 2/10/2023 DESIGNED	SCALE AS SHOWN CHECKED	STATE OF WASHINGTON	DEPARTMEN	CITY OF TACOMA NT OF PUBLIC WORKS	work order no. PWK-G0041-04-03
					BY DATE	CHS DRAWN CHS_RIS	TCS FILE NAME 2160917	Han Addition	DocuSigned by:	LINKS TO OPPORTUNITY STREETSCAPE PROJECT	ahbl job no. 2160917.10
<u>Tacoma</u> ₄	1 NO	ADDENDUM 1 REVISIONS R E V I S I O N	3/20/23 DATE	APPD	FIELD BOOKS		2100917	03/20/2023	SITE AND BUILDING CHIESING F7DCBBCFF4F8	222+10 TO OB STA 229+70	<sup>Sheet no.</sup> UT-02 sheet 34 of 58

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A CAL				FINAL CONSTRUCTION CHECKED	DATE 2/10/2023 DESIGNED	SCALE AS SHOWN CHECKED	CHRISTOPHER CHRISTOPHER STATE OF WASHING	DE
				BY	CHS drawn CHS, RJS	TCS FILE NAME 2160917	Hand And And And And And And And And And A	
	ADDENDUM 1 REVISIONS	3/20/23	APPD	FIELD BOOKS			OS/ONAL ENO	23687
10	REVISION	DATE	AFFU				03/20/2023	SITE AND BUILDING DIVISION

1. EXISTING JUNCTION BOX LOCATIONS SHALL BE FIELD VERIFIED. RELOCATION OF ANY JUNCTION BOX WILL NEED TO BE EVALUATED PRIOR TO WORK BEING SCHEDULED. EXISTING JUNCTION BOXES DAMAGED DURING CONSTRUCTION MUST BE REPLACED.



(	CITY OF TACOMA	WORK ORDER NO.
PARTMEN	IT OF PUBLIC WORKS	PWK-G0041-04-03
		AHBL JOB NO.
ied by:	LINKS TO UPPORTUNITY STREETSCAPE PROJECT	2160917 10
	LITILITY PLAN OR STA	
arson	UTLITT LAN UD JIA	U = 03
BBCFF4F8	229+70 TO OB STA 237+25	SHEET 35 OF 58