Ordered by Engineer under the terms of Section 1-04.4 of the Standard Specifications or the RFP

Change proposed by Contractor / Design-Builders

Evolution & Description Of Change

This change order provides compensation for all costs to perform significant street improvements on East 25th Street in front of the new Tacoma Amtrak Cascades Station. Street improvements include roadway and sidewalk construction between East D Street and East 25th Street, conversion of the roadway segment from a two-way street into a one-way eastbound travel lane, utility relocations and adjustments, and streetscape improvements. Due to the net cost of this change order, it will be executed by the State Construction Office. Following is a brief explanation of why this change order is needed.

Prior to advertisement of the Contract, the City of Tacoma identified and evaluated the likely development impacts resulting from the Amtrak station relocation to East 25th Street. These include an increase in pedestrian activity and a change in traffic patterns, which the City determined must be mitigated by the Contracting Agency and its Contractor. Mitigation work was discussed during original design of the project but was not added at that time due to discussions with the City not being complete over what specific improvements were needed, and a lack of time to prepare additional plans and provisions needed prior to advertisement of the Contract once the improvements were determined. The City and the Contracting Agency have since agreed on the full extent of the street improvements at East 25th Street that are needed for this mitigation. The work under this change order has also been reviewed and approved by the Federal Rail Administration (FRA), the agency authorizing funding for this project.

The work on East 25th Street will not only provide better access to the Amtrak station for the increasing volume of travelers it is handling, but will also minimize parking and access conflicts, improve ADA and bus accessibility, and create a more aesthetically-pleasing streetscape in front of the station - a request of the local community.

The original Contract plans included some minor modifications along East 25th Street. Existing bid items that would have been used to pay for these modifications are reduced or deleted under this change order resulting in a reduction of $70,961.50 to the Contract, and one new lump sum item in the amount of $1,090,972.00 is setup to provide compensation for the full extent of the work. This change order increases the contract by a net total of $1,020,010.50. Contract time is not affected by this change.
# Change Record

<table>
<thead>
<tr>
<th>Contract Number</th>
<th>Contract Title</th>
<th>Change Order Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>8895</td>
<td>Tacoma Amtrak Cascades Station</td>
<td>63</td>
</tr>
</tbody>
</table>

## Basis of Cost & Justification:

Negotiations with the Contractor resulted in agreement to pay for all work on East 25th Street under one new lump sum item, and existing Contract bid items related to original East 25th Street work are either reduced or deleted as stated on the first page of this Change Record. This allows all East 25th Street work to be covered under this change order.

The attached “WSDOT ESTIMATE - East 25th Street Modifications - All Items of Work” spreadsheet lists the items of work covered under this change order, and includes estimated quantities and unit prices for each. These unit prices are based on estimated amounts for equipment, labor, materials, subcontractors, and other costs, along with mark-ups, as negotiated and agreed to by Frank Green, WSDOT Cascades HSR, KMB/PDB Project Lead and Project Engineer for Contract 8895.

## Contract Time:

Contract time is not affected by this change order. The work is happening concurrently with final work on the station building and will not affect critical path activities.

## Prior Approvals:

This change order was initially approved by Frank Green on January 25, 2017, and later by Craig McDaniel on March 2, 2017 and Chris Tams on March 3, 2017. David Williams, Engineer of Record from PB (WSDOT design consultant) approved the preliminary plans and provisions on January 25, 2017. David Smelser, Rail Capital Program Manager for WSDOT, gave approval to proceed with this change order on February 10, 2017. On behalf of the Federal Railroad Administration (FRA), Leonard Evans approved of the work on November 7, 2017. Steve Standley signed and approved the final plan set on behalf of the City of Tacoma on March 28, 2017. Notice to Proceed with the East 25th Street work was provided to the Contractor on April 25, 2017 via Serial Letter No. 181 signed by Frank Green.

## List Attachments:

1. Travelers Power of Attorney form; 2. Change Order Checklist (DOT Form 422-003); 3. WSDOT ESTIMATE spreadsheet; 4. Notice to Proceed (WSDOT SL No. 181, dated 4/25/17, signed by Frank Green); 5. Change Approval E-mails (Top to Bottom: Region Approval e-mail, dated 3/3/17, Chris Tams; HQ Approval e-mail, dated 3/2/17, Craig McDaniel; EOR Approval e-mail, dated 1/25/17, David Williams; PE Approval e-mail, dated 1/25/17, Frank Green; Rail Capital Program Manager (WSDOT) Approval e-mail, dated 2/10/17. David Smelser; Federal Railroad Administration (FRA) Approval Letter, signed and dated 11/7/16, Leonard Evans)

Distribution: Copy of Change Record & Change Order w/Backup - Project Engineer
Copy of ONLY Change Order - Prime Contractor / Design-Build
Copy of Change Record & Change Order w/Backup - Region Construction Office
Electronic Copy & Original of Change Record & Change Order w/Backup - State Construction Office

DOT Form 422-002
Revised 08/2015
WASHINGTON STATE
DEPARTMENT OF TRANSPORTATION
CHANGE ORDER

DATE: 06/15/17
Page 1 of 49

CONTRACT NO: 008895  
FEDERAL AID NO: HSR-0017-11-01-06

CONTRACT TITLE: TACOMA AMTRAK CASCADES STATION / FREIGHT HOUSE'S

CHANGE ORDER NO: 63  
EAST 25TH STREET MODIFICATION

PRIME CONTRACTOR: SW0165408  
GARCO CONSTRUCTION, INC.
P O BOX 2946

SPOKANE  
WA  99220-2946

Ordered by Engineer under the terms of Section 1-04.4 of the Standard Specifications

( ) Change proposed by Contractor

ENDORSED BY: Garco Construction, Inc.

[Signature]

CONTRACTOR

June 16, 2017

DATE

SURETY CONSENT:
Travelers Casualty and Surety Company of America

ATTORNEY IN FACT
Shawn M. Wilson

June 16, 2017

DATE

ORIGINAL CONTRACT AMOUNT:  
10,317,000.00

CURRENT CONTRACT AMOUNT:  
14,225,585.33

ESTIMATED NET CHANGE THIS ORDER:  
1,020,010.50

ESTIMATED CONTRACT TOTAL AFTER CHANGE:  
15,245,595.83

Approval Required:
( ) Region  
( ) Olympia Service Center  
( ) Local Agency

APPROVAL RECOMMENDED

[Signature]

PROJECT ENGINEER

6/20/17

DATE

EXECUTED

[Signature]

STATE CONSTRUCTION ENGINEER

6/30/17

DATE

APPROVAL RECOMMENDED

[Signature]

REGIONAL ADMIN:

28JUN17

DATE

EXECUTED

[Signature]

OTHER APPROVAL WHEN REQUIRED

SIGNATURE

DATE

REPRESENTING

CO02v04 (revised Feb 2005)
All work, materials, and measurements to be in accordance with the provisions of the Standard Specifications and Special Provisions for the type of construction involved.

This contract is revised as follows:

DESCRIPTION OF WORK

This change order provides compensation for all costs to perform the following street improvements on East 25th Street:

Roadway and sidewalk construction between East D Street and approximate station 27+63 on East 25th Street including asphalt and concrete paving, sidewalk pavement treatment, ADA curb ramp improvements along East 25th Street and at the intersection of East D Street and East 25th Street, passenger loading and unloading zones, and dedicated ADA parking; conversion of the roadway segment into a one-way eastbound travel lane with updated signing, traffic signal modifications, and pavement markings between East D and East G streets; utility relocations and adjustments; and streetscape improvements including landscaping and pedestrian amenities as defined and shown on pages 5 through 99 of this change order.

CONSTRUCTION REQUIREMENTS

The following Contract plan sheets are replaced, as shown on pages 30, 31, 32, 33, 34, 36, 37, 39, 40, 41, 42, 47, 51, 52, 56, 57, 58, 59, 60, 61, 62, 64, 65, 66, 67, 68, 69, and 70 of this change order: IN1, IN4, IN5, SP4, SP5, EC4, EC5, EC6, RS1, PV4, PV5, DR4, PM1, PM2, TC1, TC2, TC3, TC4, TC5, A050, A053, A100, A200, A1203, A1209, IN1, IN4, and IN5.

The following Contract plan sheets are added, as shown on pages 35, 38, 43, 44, 45, 46, 48, 49, 50, 53, 54, 55, 63, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, and 99 of this change order: SP5A, EC5A, PV5A, PV7A, PV7B, PV7C, DR4A, DR4B, DD2A, PM2A, PM2B, PM2C, A053A, SS73A, SS73B, SS73C, SS73D, ED112A, ED112B, ED112C, E109A, E109B, E109C, TN1, TS1, TS2, TS3, LSN1, LS1, LS2, LS3, LSD1, LPNL1, LP1, LP2, LP3, LPD1, LRNL1, LR1, LR2, LR3, and LRD1.

Plan sheet DR3 is deleted from the Contract.

Special Provisions, as shown on pages 5 through 29, supplementing and revising the Contract Provisions, are added to the Contract.

MEASUREMENT

No specific unit of measure shall apply to the new lump sum item "East 25th Street Modifications".
PAYMENT

The following bid item quantities shall be reduced under this change order:

Bid Item No. 4 "Removing Cement Conc. Pavement",
Bid Item No. 5 "Removing Cement Conc. Sidewalk",
Bid Item No. 8 "Removing Asphalt Conc. Pavement",
Bid Item No. 14 "Drain Pipe 6 In. Diam.",
Bid Item No. 24 "Crushed Surfacing Base Course",
Bid Item No. 31 "ESC Lead", and
Bid Item No. 33 "Wattle".

The following bid items shall be deleted from the Contract under this change order:

Bid Item No. 7 "Removing Cement Conc. Curb",
Bid Item No. 25 "Cement Conc. Pavement",
Bid Item No. 30 "Commercial HMA",
Bid Item No. 36 "Integral Cement Conc. Traffic Curb",
Bid Item No. 37 "Type D Mountable Integral Cement Conc. Traffic Curb",
Bid Item No. 46 "Manhole 48 In. Diam. Type 1", and
Bid Item No. 52 "Cement Conc. Sidewalk".

The following bid item shall be added to the Contract under this change order:

"East 25th Street Modifications", lump sum.

This lump sum item shall be full compensation for completing all work included in this charge order.

CONTRACT TIME

Contract time is not affected by this change.
<table>
<thead>
<tr>
<th>ITEM NO</th>
<th>GROUP NO</th>
<th>STD ITEM</th>
<th>ITEM DESCRIPTION</th>
<th>UNIT MEASURE</th>
<th>UNIT PRICE</th>
<th>EST QTY CHANGE</th>
<th>EST AMT CHANGE</th>
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<td>0090</td>
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1,020,010.50
Department of Transportation
Olympia, Washington 98504

May 15, 2017

TACOMA
AMTRAK CASCADES STATION
Federal Project

East 25th Street Modifications Change Order (Change Order No. 63)

Special Provisions

1. On Page 66, insert the following after Line 19:

   4. Prior to performing work adjacent to the Tacoma Link trackway, coordinate with
      Tacoma Link to ensure work will be performed following Tacoma Link guidelines
      and approved work windows.

2. On Page 66, insert the following after Line 35:

   Tacoma Link
   Robert Blackburn
   robert.blackburn@soundtransit.org
   (206) 370-5674 Work, (206) 730-0062 Mobile

3. In Addendum No. 2, Item 12, Page 3, the following items under Removal of Structure
   and Obstructions are deleted:

<table>
<thead>
<tr>
<th>Item</th>
<th>Location</th>
<th>Approximate Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remove Tree</td>
<td>E 25TH LINE STA 26+80 RT</td>
<td>4 EA</td>
</tr>
<tr>
<td></td>
<td>E 25TH LINE STA 27+17 RT</td>
<td></td>
</tr>
<tr>
<td></td>
<td>E 25TH LINE STA 27+41 RT</td>
<td></td>
</tr>
<tr>
<td></td>
<td>E 25TH LINE STA 27+66 RT</td>
<td></td>
</tr>
<tr>
<td>Remove Tree Grate</td>
<td>E 25TH LINE STA 26+80 RT</td>
<td>4 EA</td>
</tr>
<tr>
<td></td>
<td>E 25TH LINE STA 27+17 RT</td>
<td></td>
</tr>
<tr>
<td></td>
<td>E 25TH LINE STA 27+41 RT</td>
<td></td>
</tr>
<tr>
<td></td>
<td>E 25TH LINE STA 27+66 RT</td>
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<tr>
<td>Remove Bench</td>
<td>E 25TH LINE STA 26+98 RT</td>
<td>4 EA</td>
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<tr>
<td></td>
<td>E 25TH LINE STA 30+12 RT</td>
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<tr>
<td></td>
<td>E 25TH LINE STA 30+20 RT</td>
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<tr>
<td></td>
<td>E 25TH LINE STA 30+29 RT</td>
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4. In Addendum No. 2, Item 12, Page 3, insert the following items under Removal of Structure and Obstructions:

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<tr>
<th>Item</th>
<th>Location</th>
<th>Approximate Quantity</th>
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<tbody>
<tr>
<td>Remove and Salvage Grate</td>
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<td></td>
<td>E 25\textsuperscript{th} LINE STA 22+96 RT</td>
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<td></td>
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<td>Remove Bench</td>
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<td>Remove Trash Bin</td>
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<td>Remove Bollard</td>
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<td>Remove Illuminated Bollard</td>
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<td>Remove Pole and Light</td>
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<tr>
<td></td>
<td>STA 25+78 RT</td>
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<td></td>
<td>STA 26+46 RT</td>
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<tr>
<td>Remove Planter Walls and Foundation 1.0' Below</td>
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<td>Final Grade</td>
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</tr>
<tr>
<td></td>
<td>STA 25+40 RT</td>
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<td>to STA 26+75 RT</td>
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</tr>
<tr>
<td></td>
<td>STA 26+51 RT</td>
<td></td>
</tr>
<tr>
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<td>to STA 26+83 RT</td>
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<td>STA 27+22 RT</td>
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<tr>
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<td>to STA 27+45 RT</td>
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<td>STA 24+44 RT</td>
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<td>to STA 24+53 RT</td>
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<tr>
<td>Remove Railing</td>
<td>STA 25+04 RT</td>
<td>52 LF</td>
</tr>
<tr>
<td></td>
<td>to STA 25+35 RT</td>
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</tr>
<tr>
<td>Remove Boulder</td>
<td>STA 26+75 RT</td>
<td>9 EA</td>
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<td></td>
<td>to STA 27+15 RT</td>
<td></td>
</tr>
<tr>
<td>Remove Irrigation Boxes</td>
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<td>5 EA</td>
</tr>
</tbody>
</table>

Items designated as Remove and Salvage shall be removed in such a manner as to prevent damage, cleaned for reuse, and stored in a secure area until delivery to Owner. Contractor to protect items from damage during transport and storage.

The Contractor shall verify the owner of each salvaged item. In the event that the Owner does not want the item returned, the item shall become the property of the Contractor, and the Contractor is responsible for the cost of disposal of the item.
5. On Page 91, insert the following after Line 26:

(......)  
**Remove and Reinstall Miscellaneous Items**

This work shall consist of providing all labor and equipment necessary to remove, clean, store, and complete the reinstallation of miscellaneous items as shown on the Plans and shall include, but are not be limited to, the following:

- Remove and Reinstall Mailbox  
  E 25TH LINE STA 24+96 RT  
  1 EA

- Remove and Reinstall Art Work And Foundation  
  E 25TH LINE STA 27+03 RT  
  1 EA

- Remove and Reinstall Shelter And Foundation  
  E 25TH LINE STA 25+92 RT  
  3 EA  
  E 25TH LINE STA 26+13 RT  
  E 25TH LINE STA 26+33 RT

Removed items designated for reinstallation shall be stored in a secure area and protected from damage. Contractor shall clean and repair removed items to functional condition for intended reuse, and reinstall where indicated on the Plans. Reinstallation shall comply with all requirements for new materials and equipment. Provide connections, supports, foundations, and any other materials necessary for reinstallation.

6. On Page 91, insert the following after Line 43:

The approximate thickness of the sidewalk on E 25th is 4 inches and the approximate thickness of the asphalt on E 25th is 6 inches per City of Tacoma standards.

7. On Page 93, insert the following after Line 47:

Division 5 is supplemented with the following:

**5-06 Stamped Tinted Concrete Crosswalk**

5-06.1 **Description**

This work shall consist of constructing a stamped and tinted pavement composed of portland cement concrete on a prepared subgrade or base in accordance with these Specifications and in conformity with the lines, grades, thickness, and typical cross-sections shown in the Plans. It shall include dowel bars, tie bars, joint filler and sealants, coloring, and all other activities associated with the construction as described in Section 5-06.3.

5-06.2 **Materials**

<table>
<thead>
<tr>
<th>Material</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Portland Cement</td>
<td>9-01</td>
</tr>
<tr>
<td>Fine Aggregate</td>
<td>9-03</td>
</tr>
<tr>
<td>Coarse Aggregate</td>
<td>9-03</td>
</tr>
</tbody>
</table>
Combined Aggregate  9-03
Joint Filler  9-04.1
Joint Sealants  9-04.2
Dowel Bars  9-07.5
Tie Bars  9-07.6
Curing Materials and Admixtures  9-23
Water  9-25
Epoxy Resins  9-26
Color Hardener
Non-pigmented Release Agent

5-06.3 Construction Requirements

The stamped tinted concrete crosswalk shall be constructed as required in Section 5-05.3 Construction Requirements. Section 5-05.3(11) Finishing shall be replaced with the following:

Any edge slump of the pavement, exclusive of specified edging, in excess of 1/4 inch shall be corrected before the concrete has hardened. If edge slump on any 1-foot or greater length of hardened concrete exceeds 1-inch, the concrete shall be repaired as provided in Section 5-05.3(22).

The Color Hardener shall be applied evenly to the plastic surface by the dry-shake method using a minimum of 60 pounds per 100 square feet. It shall be applied in two or more shakes, floated after each, and troweled only after the final floating.

A Non-pigmented Release Agent shall be applied evenly to the surface. A highlighting/antiquing color shall be rolled or brushed on the top surface to the stamped concrete. Two coats of surface sealer shall be applied.

One 2 foot by 2 foot sample crosswalk shall be produced and submitted to the Engineer for approval of the color, texture and pattern. The sample crosswalk shall be produced to allow materials, tools and construction techniques to be evaluated and adjusted if needed. Sample crosswalk shall be of representative of the pattern layout and installation techniques for approval.

Where shown on the plans, the crosswalk shall be stamped with an approved pattern to match the existing adjacent crosswalk. Where no stamping is required, the crosswalk pavement shall be given a final finish surface by texturing with a broom perpendicular to the direction of the crosswalk.

8. On Page 94, insert the following after Line 3:

Storm Sewers
This section is deleted. The requirements of Section 7-17 shall apply to storm sewers.

9. On Page 95, replace lines 24-25 with the following:
A flexible pipe-to-manhole connector shall be used in all connections of rigid and thermoplastic pipes to new precast concrete manholes to provide a watertight joint between the pipe and the manhole, unless otherwise directed by the Engineer. The connector shall be "Kor-N-Seal" with "Wedge Korband" (Type I or II as required for pipe diameter), manufactured by NPC, Inc., Milford, New Hampshire, or Engineer approved equal. The connectors shall be installed in accordance with the manufacturer's recommendations.

10. On Page 96, insert the following after Line 3:

7-05.3(5) Adjust Cleanout

The Contractor shall furnish all labor, material, and equipment necessary to adjust the cleanout rings and covers, as shown on the plans. The work shall include the raising or lowering of cleanout rings and covers to meet finished grade.

Section 7-08.3(2)F is supplemented with the following:

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

Section 7-08.3(2)G is revised to read as follows:

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

11. On Page 96, Line 20, replace the sentence with the following:

Section 7-05.5 is supplemented with the following:

12. On Page 99, insert the following after Line 32:

**Roadside Restoration**

Description

Section 8-02.1 is supplemented with the following:

PSIPE shall include all Work necessary for weed control within the planting area, planting area preparation, fine grading, planting, cultivating, plant storage and protection, fertilizer and root dip, staking, cleanup, and water necessary to complete planting operations and meet the conditions specified in Section 8-02.3(13).

**Materials**
**Topsoil Type A**

Section 9-14.1(1) is supplemented with the following:

(----)

Topsoil Type A shall meet the following:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Sand</td>
<td>greater than 0.05 mm to less than 2mm - 60-70% by volume</td>
</tr>
<tr>
<td>Compost</td>
<td>30-40% by volume</td>
</tr>
<tr>
<td>Silt</td>
<td>greater than 0.002 mm to less than 0.05 mm - maximum of 35%¹</td>
</tr>
<tr>
<td>Clay</td>
<td>less than 0.002 mm - maximum of 15%¹</td>
</tr>
<tr>
<td>Organic Content</td>
<td>Percent of dry weight – 10% Minimum</td>
</tr>
<tr>
<td>Acidity (pH)</td>
<td>5.5 to 7.5</td>
</tr>
</tbody>
</table>

¹ Clay and Silt combined - no greater than 40%

The Contractor shall send a minimum of one representative sample of Topsoil Type A to an approved testing laboratory for fertility testing analysis 30 days prior to use on the project site. All testing shall be done in accordance with the current version of the Methods of Soil Analysis published by the Soil Science Society of America. The soil fertility test analysis and report shall include the following:

**Extractable analysis:** nitrate nitrogen, ammonium nitrogen, phosphorus, potassium, calcium, magnesium, copper, zinc, manganese and iron.

**Saturation extract values:** calcium, magnesium, potassium, sodium, boron, sulfate, pH, lime content, salinity and sodium adsorption ratio (SAR).

The Contractor shall be responsible for adding fertilizers and additives as recommended by the testing laboratory reports. All cost associated with fertility testing and adding fertilizers and additives to the top soil shall be the responsibility of the Contractor.

**Construction Requirements**

**Responsibility During Construction**

Section 8-02.3(1) is supplemented with the following:

(----)

Landscape construction shall begin after all adjacent curbs, sidewalks, walls, and associated roadside work is completed.

**Topsoil**

The second and third sentences of the first paragraph of Section 8-02.3(4) are revised to read as follows:

(----)

The soil depth at planting areas shall be as detailed in the Plans.
Plant Establishment Plan
Section 8-02.3(2)C is deleted in its entirety.

Planting Area Preparation
The third paragraph of Section 8-02.3(5) is revised to read as follows:

(-----)
The areas shall be brought to a uniform finished grade with the root zone flush with the top of curbs and sidewalks and top of the soil shall be rounded at a rate of 1" per foot of width of planter.

Section 8-02.3(5) is supplemented with the following:

(-----)
The planting area shall be prepared as detailed in the Plans.

Planting
Section 8-02.3(8) is supplemented with the following:

(-----)
When planting pit is three-quarters backfilled, fill with water and allow water to soak away before filling pit to finish grade.

Water trees immediately after planting.

Completion of Initial Planting
Section 8-02.3(12) is revised to read as follows:

(-----)
Upon completion of initial planting within a designated area, the Contractor shall notify the Engineer and request an inspection. The Engineer will make an inspection of all plant material and notify the Contractor in writing, of any required replacement or corrective action. The Contractor shall replace all materials rejected or missing and correct unsatisfactory conditions within 15 working days and request another inspection. Completion of initial planting within a designated area includes the following:

1. One hundred percent of all required planting materials (trees, whips, shrubs, ground covers, seedlings, lawn sod, and seeded areas) shall be in a healthy and vigorous growing condition and shall be installed as shown in the Plans.

2. Planting area cleanup.

3. Full operation of the irrigation system, complete bark coverage, and all planting areas in a weed free condition.

Plant Establishment
The second through fourth paragraphs of Section 8-02.3(13) are deleted.

The fifth paragraph of Section 8-02.3(13) is revised to read as follows:
At the end of one year warranty period, plants that do not show normal growth shall be replaced. All automatic irrigation systems shall be inspected at final completion. The contractor shall conduct an irrigation coverage test with Landscape Architect, provide as-built drawings, a small colored zone map for inclusion into the controller enclosure, set the controller, and submit an irrigation controller plan for a one year period, including dates and instructions for winterization and startup.

Irrigation Systems

Construction Requirements

System Operation
The last sentence of the first paragraph of Section 8-03.3(11) is revised to read as follows:

(-----)
The final inspection of the irrigation system will coincide with the end of the Contract. The second and fourth paragraphs of Section 8-03.3(11) are deleted.

The third paragraph of Section 8-03.3(11) is revised to read as follows:

(-----)
For the life of the Contract, the Contractor shall be responsible for having any inspections and tests performed on all cross connection control devices as required and specified by the Washington State Department of Health. Inspections and tests shall be conducted at the time of initial activation Potable water shall not flow through the cross connection control device to any downstream component until tested and approved for use by the local health authority in accordance with Section 8-03.3(12).

13. On Page 99, insert the following after Line 48:

(-----)
Cement Conc. Wheel Stop
The wheel stops shall be precast reinforced cement concrete curb manufactured explicitly for use as wheel stops and shall be installed in accordance with the manufacturer’s recommendations. The wheel stops shall be constructed in accordance with the Plans.


15. On Page 100, Line 12 is deleted.

16. On Page 100, insert the following after Line 26:

7. Traffic Signal Modifications
8. Rectangular Rapid Flashing Beacon
Traffic Signal Modifications
Traffic Signal Modifications include all work associated with installation of pedestrian pushbuttons at East D Street / East 25th Street, including excavation, backfill and concrete foundations, furnishing and installing pushbutton posts, accessible pedestrian signal (APS) pedestrian pushbutton, conduits and fittings, junction boxes and wiring, removal of existing signal equipment, and all necessary work to provide fully functioning pedestrian detection systems; adjusting junction boxes at East D Street / East 25th Street intersection to grade; and all electrical work associated with disconnecting power to existing blank-out signs mounted to signal mast arm at East G Street / East 25th Street as shown in the Plans. This work shall include procuring and furnishing a video image vehicle detection system with mounting hardware to the City of Tacoma for installation by others at East G Street / East 25th Street, and supplying onsite support for installation and testing of the system from the manufacturer.

Rectangular Rapid Flashing Beacon
Rectangular Rapid Flashing Beacon (RRFB) includes all work to provide a fully functioning RRFB system, including but not limited to excavation, backfilling, concrete pole foundations, signal pole, junction boxes, conduits, wiring, beacon unit, solar panel, pedestrian push buttons, permanent traffic signs to be installed with the system, all associated mounting hardware, restoring facilities destroyed or damaged during construction, and for making all required tests.

17. On Page 100, insert the following after Line 35:

This section is supplemented with the following:

APS Pedestrian Pushbutton
The complete pushbutton assembly shall include the following components:

a. The frame assembly shall consist of an integral pushbutton mount and the sign platform. It shall be cast aluminum and powder coat finished with the manufacturer’s specified black color. The frame assembly shall consist of a backplate to accept a 5-inch by 7-inch sign secured with metal screws, and a round housing with pre-drilled holes to mount the pushbutton assembly.

b. The pushbutton housing shall be die-cast aluminum, round body of approximately 3 inches diameter, and powder coat finished with the manufacturer’s specified black color.

c. The pushbutton shall be stainless steel, with a raised tactile directional arrow on the pushbutton. The manufacturer shall provide arrow options of: Left, Right, Up, and bi-directional Left and Right.

d. The pushbutton assembly shall include a Latching Mode with an LED indicator light that will stay “ON” and a percussive beeper for audible feedback. The LED and beeper shall be actuated each time the pushbutton is pressed and shall terminate at the beginning of the pedestrian walk phase.

e. The central control unit shall be available in both rack mounted and shelf mounted systems. The central control unit shall be rack mounted for TS2 traffic control units and shelf mounted for all other traffic control unit types.

f. The sign shall be an MUTCD R10-3 and size shall be 5 inch by 7 inch.

The complete pushbutton assembly shall have the following characteristics:

a. Vandal resistant construction.
b. NEMA250-6P or IP-68 enclosure protection rating.
c. NEMATS-2 compliance for temperature and humidity, transient voltage protection, and mechanical shock and vibration rating.
d. IEC 61000-4-4 and IEC 61000-4-5 compliance for transient suppression.
e. A minimum call pulse length shall be 240 milliseconds.
f. Constant call fail safe.
g. 3-year minimum warranty.

The APS pushbutton shall have following features:
a. Confirmation of button push via a latching sunlight visible red LED indication, audible tone, and vibrating indication.
b. The audible sound shall be emitted from a weather proof and vandal resistant speaker within the pushbutton assembly. All sounds should automatically adjust for ambient noise.
c. The pushbutton assembly shall come programmed to emit a rapid tick. It shall also have the capability to record custom voice messages and custom sounds during the walk or clearance interval or if the button is held for three seconds or more.
d. Standard and customized locating tone and message features.
e. In addition to the standard locate sounds, ability for custom locate sounds and location messages.
g. All sounds are synchronized.
h. Volume Over Ambient Noise: adjustable up to a minimum of 10dB.
i. Locate Tone Volume: -24dB to +6dB Ambient.
j. Maximum Volume: 10dB at 1m.

Video Image Vehicle Detection System
The video image vehicle detection system (VIVDS) for East 25th Street and East G Street shall meet the following requirements:

System Hardware
The required hardware shall include the following:
- One VIVDS processor capable of connecting with 1 to 8 sensors.
- One or more VIVDS sensors, with at least one sensor having a fisheye lens for omnidirectional viewing of the roadway or intersection.
- One 1.5" straight-thread, swivel bracket, and surge protector junction unit, per each fisheye sensor.
- One surge protector junction unit, per each advanced/stopline sensor.
- One mounting pole and bracket (90° pole per each fisheye sensor; or straight, vertical pole per each advanced/stopline sensor).
- One Ethernet Protection Module (surge protector located in the traffic cabinet), per each VIVDS sensor.
- VIVDS interface cables to the traffic signal controller based on model/type.

Sensor Hardware
The VIVDS should have at least one downward-facing fisheye sensor capable of seeing the center of the intersection and have an omnidirectional line of site to track vehicles entering and exiting the intersection. Other required features shall include the following:
- Color images outputted into digital format as MJPEG images.
- Horizontal resolution of at least 2560 lines and vertical resolution of at least 1920 lines.
- A five (5) megapixel CMOS camera with an active-pixel sensor (APS).
- Camera lens shall not require adjustment and is always in focus.
- A thermostatically controlled heater residing inside the enclosure to reduce the effects of ice and condensation.
- Any plastics used in the enclosure shall have ultraviolet inhibitors.
- A waterproof and dust tight aluminum enclosure.

The sensor dimensions excluding connectors shall not exceed 9.9" x 7.9" (height x diameter). The weight of the sensor including the enclosure shall not exceed eight 8 lbs. The VIVDS sensor manufacturer shall provide a lifetime "always in focus" guarantee on the iconic bell shaped fisheye camera.

**Optional VIVDS Sensors**

Certain projects will have special requirements or needs, such as advanced or stopline detection. In these instances, an additional VIVDS sensor with a field of view of either 30° - 50° for stopline detection or a field of view of 9° - 18° for advanced detection should be used. The sensor dimensions excluding connectors and mounting bracket shall not exceed 8" x 15" x 3.5" and the weight should not exceed eight (8) lbs. Other required features are the following:

- Color images outputted into digital format as MJPEG images.
- Horizontal resolution of at least 2560 lines and vertical resolution of at least 1920 lines.
- A 5 – 50 mm varifocal lens set for the specific application.
- A five (5) megapixel CMOS camera with an active-pixel sensor (APS).
- A thermostatically controlled heater residing inside the enclosure to reduce the effects of ice and condensation.
- A sun shield to minimize lens exposure to the sun.
- A waterproof and dust tight powdered coated aluminum housing.

The sensor's mounting bracket should be easily mounted to a standard 1.5" vertical pole and allow for the installer to adjust the sensor's horizontal position with one hand and tighten the bracket without having to support the sensor simultaneously.

**Processor Hardware**

The VIVDS processor shall support 1 or 2 fisheye sensors, or if equipped with 1 fisheye sensor the VIVDS processor should, at a minimum, be capable of simultaneously supporting up to four (4) additional VIVDS sensors for special requirements such as advance detection or underpass detection. The VIVDS processor shall comply with NEMA standards, TS-1 Type 1, and 2; TS-2; 170/2070; and ITS. The VIVDS processor shall provide the following inputs and outputs:

<table>
<thead>
<tr>
<th>Type</th>
<th>Inputs</th>
<th>Outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>TS-1</td>
<td>24</td>
<td>24</td>
</tr>
<tr>
<td>TS-2</td>
<td>16</td>
<td>64</td>
</tr>
<tr>
<td>170/2070</td>
<td>8</td>
<td>24</td>
</tr>
<tr>
<td>ITS</td>
<td>16</td>
<td>64</td>
</tr>
</tbody>
</table>
The VIVDS processor will have at a minimum four (4) USB 3.0 ports for expansion flexibility and have a built-in modem.

The VIVDS processor shall be no more than 1U high with dimensions, excluding connectors, not to exceed 8.5" x 11.5" x 1.75" and weigh no more than 5.2 lbs. The unit shall have flexible mounting options including the ability to lie flat on a cabinet shelf, be mounted in a standard traffic cabinet rack with optional mounting ears, or be installed vertically with optional base. The outer enclosure shall be a powdered coated aluminum.

**Electrical**

The VIVDS sensor(s) will use five (5) watts nominally and a maximum of fifty (50) watts with active heaters. The sensor(s) will be Power Over Ethernet (POE) and will only require a single burial grade, gel-filled RJ-45 CAT5e cable for both power and data.

Each VIVDS sensor shall have its own surge protector junction unit and EPM surge protection unit in the traffic cabinet. The VIVDS processor shall operate within a range of 89 to 240 VAC, 60Hz single phase. Power to the VIVDS processor is from the transient protected side of the AC power distribution system in the traffic control cabinet where the VIVDS processor is installed.

**Cabling and Surge Protection Units**

RJ-45 CAT5e cabling shall be a high performance direct burial data cable capable of 350MHz bandwidth for data applications. The cabling shall consist of a 24 AWG solid bare copper wire with 8 conductors in a gel filled core. The jacket shall consist of linear low-density polyethylene (LLDPE) that is UV resistant and have a cable diameter of no more than 6.5 mm. The cable shall have easily identifiable striped pairs as follows:

- Orange-White, Orange
- Green-White, Blue
- Blue-White, Green
- Brown-White, Brown

The cable shall be rated at a minimum for 50 V.

The surge protector junction unit for the VIVDS sensor shall be no more than three (3) ft. from the VIVDS sensor and shall provide protection against a transient pulse with a pulse shape of 8/20μs and a max current of 75A. The unit shall weigh no more than two (2) lbs.

The EPM, surge protection unit for the VIVDS sensor, shall have at most a max impulse discharge current of 40 KA and an impedance of at least 100 ohms. The unit should have at least Line-Line and Line-Ground protection options, and the POE current should not exceed 1.8A.

**Environmental**
The VIVDS sensors and processor will need to meet or exceed the NEMA standard of -29°F up to 149°F and meet or exceed a 5-30Hz vibration test as well as a 10G shock test.

The VIVDS processor shall have at least 0% to 95%, non-condensing. The VIVDS sensor(s) shall have at least 0% to 100% relative humidity.

**System Software**
Each VIVDS system will include client software for up to 8 sensors for detecting and counting the vehicle’s entrance and exit of the intersection. The VIVDS system will also include software for communicating with the traffic controllers and other electronic devices.

The client software shall be included with each VIVDS system and should be downloaded and run on any personal computer with a Windows 7 or newer operating system. The client software at minimum should include management tools to perform the following:

- View, diagnose, configure, and reset individual sensor outputs
- View the status of inputs to enable setup and troubleshooting in the field
- Configure and view calls and phases
- The ability to create and define, as well as edit, vehicle zones, road masks, object masks, and pedestrian zones by drawing arbitrary shaped polygons using a computer
- View the site’s configuration history
- Publish and revert back to previous configuration
- View video and images from the sensor within the software’s interface
- Optionally access and use an API that is documented online and that uses HTTP
- Provide System Alerts for diagnostic and administrative events

The alerts/notifications package for purchase should include at a minimum the following types of alerts:

- Wrong way vehicle detection
- Loss of visibility event

**Vehicle Detection**
VIVDS system shall provide real time vehicle detection (within 500 milliseconds (ms) of vehicle arrival). The system should detect the presence of vehicles for up to 64 detection zones per VIVDS sensor. The detection zones shall be sensitive to the direction a vehicle travels and the direction to be detected by each detection zone shall be programmable by a client software user.

**Detection Zone Placement**
The VIVDS system should provide a flexible detection zone placement anywhere within one hundred (100) meters of the VIVDS sensors. Preferred presence detector configurations shall be arbitrarily shaped polygons, including simple boxes, drawn across lanes of traffic or placed in line with lanes of traffic. A single VIVDS sensor should replace one or more conventional detector loops.

**Detection Zone Programming**
Placement of detection zones will be done by means of a graphical interface using MJPEG image of the roadway. The client software displays images of the detection zones overlaid on the video image of traffic while the VIVDS processor is running. The detection zones, when operating, shall display outlined or filled, with a visible change indicating activation.

A laptop should be used to draw detection zones. Alternatively, a mouse, keyboard, and monitor may be connected directly to the processor to configure a site. The detection zones should be capable of being sized and shaped to provide optimal road coverage and detection. It should be possible to upload detector configurations to the VIVDS processor and to retrieve the sensor configuration that is currently running in the VIVDS processor through the client software. The configuration should also be retrievable from the VIVDS system's cloud if properly backed up. The user will be able to edit previously defined detector configurations in order to fine tune the detection zone placement size and shape. Once a detection configuration has been created, the system will provide a graphic display of the new configuration on its monitor. While this fine-tuning is being done, the sensor will be required to continue to operate from the sensor configuration, currently in place. A user should be able to use a system command to revert to previous configurations stored in the client software or on the VIVDS system's cloud if properly backed up. When a vehicle occupies a detection zone, the detection zone on the live video will indicate the presence of a vehicle, thereby verifying proper operation of the system. The presence of the vehicle as well as the signal states will be indicated via colored LED lights on the front panel of VIVDS processor. With the absence of images, the VIVDS processor's display shall indicate proper operation of the detection zones.

Detection zones shall be sensitive to the direction of vehicle travel. The direction will be capable of being detected by each detection zone and will be programmable by the user. The vehicle detection zones will not activate if a vehicle is traveling in any direction other than the one specified for detection in the zone. Cross-street and wrong way traffic shall not cause a false detection. Detection zones will be capable of an optional user defined call to detect a side entrance (90° or less angled entrance).

Design Field of View
The VIVDS system will be able to reliably detect vehicle presence in the design field of view. The design field of view shall be defined as the sensor view when the image sensor is mounted thirty (30) feet (9 meters) or higher above the roadway, when the sensor is in front of all stop lines, no more than seventy-five (75) feet from the intersection center, and the beginning of the detection area is not greater than one hundred and fifty (150) feet from the image sensor. Within this design field of view, the VIVDS processor should be capable of setting up a single detection zone for point detection (equivalent to the operation of a 6' x 6' inductive loop). A VIVDS sensor, placed at the proper mounting height, is able to monitor up to and including five (5) traffic lanes per approach simultaneously. A single fisheye lens VIVDS sensor, placed at the proper mounting height, should be able to monitor detection zones in an intersection of at a minimum of five (5) approaches.

Detection Performance
Detection accuracy of the VIVDS system shall be comparable to properly operating inductive loops. Detection accuracy should include the presence of any vehicle in the defined detection zone regardless of the lane the vehicle is occupying. Occlusion produced by vehicles in the same or adjacent lanes shall not be considered a failure of the VIVDS processor, but a limitation of the VIVDS sensor placement.

Detection shall be 98% accurate in good weather conditions with slight degradation possible under adverse weather or road conditions (i.e. rain, snow, fog). Detection will be expected for the entire design field of view on a lane by lane or by approach basis.

Equipment failure, either sensor or VIVDS processor, shall result in constant vehicle detection on affected detection zones. The VIVDS system will be required to have the ability to place a constant call to a specific zone, if said zone loses visibility, while simultaneously making calls in the traditional manner in the remaining zones.

**System Software Operation**
The VIVDS must transmit and receive all information needed for sensor setup, to monitor vehicle detection, to view vehicle traffic flow, and to interpret stored data. The remote communications link between the VIVDS processor shall not interfere with the on-street detection of the VIVDS processor.

The user should be able to view the detection area in a horizon to horizon fisheye view or in a configurable four (4) pane flattened view on the same screen. Each view should be able to be customized by the user, with the ability to digitally pan-tilt-zoom.

**Installation**
The supplier of the VIVDS system shall be present on-site to supervise the installation and testing of the sensors, processor, and other sensor components.

System installers will be required to be certified by the system manufacturer. A manufacturer's instructional guide will not be considered an adequate substitute for practical, classroom training and formal certification by an approved agency.

The manufacturer shall provide an online user guide and an electronic copy of the user guide within the client software and on board the VIVDS processor for reference.

Formal levels of factory authorized training are required for installers, contractors and system operators. All training must be certified by the VIVDS system manufacturer.

**Warranty, Maintenance and Support**
The video detection system must be warranted to be free of defects in material and workmanship for a period of 3 years from date of shipment from the manufacturer’s facility. During the warranty period, the system manufacturer will be required to repair with new or refurbished materials, or replace at no charge,
any product containing a warranty defect provided the product is returned FOB to the supplier's factory or authorized repair site. Return product, product for repair, or product to be replaced under warranty by the supplier shall have prepaid transportation. This warranty does not apply to any products damaged by accident, improperly operated, abused, serviced by unauthorized personnel or unauthorized modification. Ongoing software support by the manufacturer includes updates of the VIVDS processor's engine and updates to the client software shall be provided free of charge for the life of the system.

Rectangular Rapid Flashing Beacon
Rectangular rapid flashing beacon (RRFB) shall be solar-powered, with technical and operational requirements set forth in FHWA's Conditions of Interim Approval memorandum. The RRFB units installed on each side of the street shall be capable of synchronous activation via wireless communications.

The rectangular rapid flashing beacon system on East 25th Street shall meet the following additional requirements:

Rapid Flashing Bar

Beacons

Beacons shall have LED bulbs and be highly visible from a minimum of 1,000 feet in advance of the crosswalk during the day. LED's shall be rated for a minimum of 15 years with a minimum run time of 100,000 hours. They shall be recessed in the flash bar with an additional polycarbonate shield for vandal resistance. Light configuration shall provide lights on both ends of the bar for notification to pedestrians entering the crosswalk from either side.

Flash Bar Housing

The Flash bar housing shall be constructed from a single piece of a minimum of 1/8th inch thick structural aluminum, providing durability and corrosion resistance. The flash bar shall allow directional rotation – enabling lights to be aimed toward oncoming traffic. There shall be no exposed screws.

Beacon Control

The flash pattern, activation duration and/or activation schedule shall be determined by the system controller. The system controller shall automatically adjust beacon brightness as outside light levels change between day and night, being brighter during the day and dimming at night. The level of brightness during different conditions shall be programmable through the controller.

MUTCD Flash Pattern Compliance now and for any Future Changes
System shall support online configuration changes such that if MUTCD guidelines call for a new flash pattern, system can be upgraded within days.

Controller

Enclosure

The controller unit shall be housed in a NEMA 3R or greater rated, pole mounted, aluminum cabinet with stainless steel hinge. The controller cabinet shall be 19"H x 10"W x 6"D plus or minus 1 inch for all dimensions.

Power Options

The controller unit shall be capable of both solar-powered and AC-powered options. The operating electrical power for AC-powered controller systems shall be 120V. Solar-powered controller systems shall be designed with a solar panel and backup battery source capable of running the system for at least 15 days without sunlight.

System Notification Capable, Remote Data Available

Usage data regarding activation times and dates shall be accessible via direct connection to the controller. Activation and activity logs shall be downloadable and printable.

Configuration

All system configuration changes shall be able to be done through a direct connection to the controller. The system controller shall offer optional manual system configuration via dials within the controller cabinet. Configuration options shall allow for variation of system flash durations from 1 to 60 seconds.

Controller to Controller Communication

The controller shall support wireless communication across the roadway or for advanced warning flashers using spread spectrum radio frequency, thus eliminating the need for cable trenching. Range shall be at least 500 feet. Up to 10 optional RF channels shall be available to allow multiple systems to operate within close proximity of each other.

Activation Log

The system shall be capable of logging all activations for a given period with a time stamp. The system shall record notifications of low battery voltage levels.

Guarantees and Warranties

The contractor shall provide a RRFB System from a manufacturer that offers, as a customary trade practice in the connection with the purchase of any equipment,
materials, or items incorporated into the project, a minimum 2 year guarantee or warranty on the controller cabinet and associated appurtenances, batteries and solar panel. The Contractor shall furnish to the Contracting Agency a written guarantee or warranty from the manufacturer.

18. On Page 100, insert the following after Line 45:

**Section 8-20.3(6) Junction Boxes**

*The third paragraph is revised to read:*
Adjustments involving raising or lowering the junction boxes shall require conduit modification if the resultant clearance between the top of the conduit and the junction box lid become less than 6-inches in accordance with City of Tacoma Standard Plan TS-08.

*This section is supplemented with the following:*
Junction boxes installed in sidewalks shall not be located within curb ramps. Adjacent junction boxes shall be separated by a minimum of three-inches. Junction boxes shall be located a minimum of 12-inches from the edge of the sidewalk unless located adjacent to the back of curb.

**8-20.3(8) Wiring**

*The tenth paragraph is revised to read:*
Ten feet of slack cable shall be provided at the controller end of all cables terminating in the controller cabinet. A minimum of three (3) feet of slack cable shall be left at all strain poles and junction boxes.

*The thirteenth paragraph is revised to read:*
All loop lead-in wiring shall be tagged at the splice point and at the controller. All signal conductors shall be tagged at the controller cabinet, as directed by the Engineer, with a small permanent band bearing the circuit designation. A legend shall be furnished to the Engineer.

**8-20.3(14)C Induction Loop Vehicle Detectors**

Subsections 2, 4, 9, and 10 are deleted.

19. On Page 103, insert the following after Line 45:

**Rectangular Rapid Flashing Beacon**

The Contractor shall warranty all electrical and mechanical equipment and strain poles and streetlight standards for satisfactory in service operation for one year following project acceptance. Warranty shall include troubleshooting, labor, materials and all other costs to bring the equipment to a satisfactory level of service. Normal maintenance is not included in the warranty.

20. On Page 104, insert the following after Line 16:
Description
Section 8-21.1 is supplemented with the following:

The following items are removed from the original contract:
  Traffic Signs           10 SF
  Steel Square Tube Post  6 EA; and

the following items are added as part of the East 25th Street Modifications:
  Removing and Salvaging Signs, Remove Posts  25 EA
  Traffic Signs            137 SF
  Steel Square Tube Post   12 EA

21. On Page 105, insert the following after Line 10:

(******)

PAVEMENT MARKING

Description
Section 8-22.1 is supplemented with the following:

Curb marking is a solid line of color specified in the Plans, and is used for designating
on-street parking restriction zones. It is installed on both the top width and vertical face
of the curb.

22. On Page 107, insert the following after Line 43:

(******)

ADJUST AND REPLACE EXISTING ACCESS COVER WITH NON-SLIP LID

Description
This Work shall include all Work to furnish and install the non-slip lid for the existing
utility cover to grade. It shall consist of replacing the existing utility access cover with a
non-slip lid that is in the sidewalk or crosswalk within the project limits and if necessary,
adjusting to grade according to the Plans. The lid shall have a coefficient of friction of
0.6 or greater. The Contractor shall work with the City and utility companies to procure
the correct size lid to match the existing vault, junction box, handhole, catch basin, meter
box, or manhole. Furthermore, if the cover is accessible by vehicular traffic, a traffic
rated lid shall be used.

Construction Requirements
The replacement of the covers shall be adjusted to the grade specified in the plans.

23. On Page 111, insert the following after Line 33:

Item #5 East: 25th Street Modifications
a. **Item Description:** This item consists of the construction on East 25th Street as described in these Contract Documents. This includes conversion of the roadway segment into a one-way eastbound travel lane with updated signing, traffic signal modifications and pavement markings between East D and East G Streets; roadway and sidewalk construction between East D Street and East 25th Street Sta 27+63 including: asphalt & concrete paving, sidewalk pavement treatment, ADA curb ramp improvements along East 25th Street and East D Street & East 25th Street intersection, passenger loading and unloading zones, dedicated ADA parking; utility relocations and adjustments; and other proposed streetscape improvements including landscaping and pedestrian amenities.

The following work is included but not limited to:

- Removing Cement Conc. Pavement
- Removing Cement Conc. Sidewalk
- Removing Cement Conc. Curb and Gutter
- Removing Cement Conc. Curb
- Removing Asphalt Conc. Pavement
- Drain Pipe 6 in. Diam.
- Testing Storm Sewer Pipe
- Sewer Cleanout
- Testing Sewer Pipe
- PVC Sanitary Sewer Pipe 6 in. Diam.
- Crushed Surfacing Base Course
- Cement Conc. Pavement
- Cement Conc. Pavement with Rebars
- ESC Lead
- Inlet Protection
- Wattle
- Integral Cement Conc. Traffic Curb
- Adjust Valve Box
- Manhole 48 in. Diam. Type 1
- Adjust Manhole
- Cement Conc. Sidewalk
- Clearing and Grubbing
- Removing Paint Line
- Removing Plastic Line
- Removing Plastic Crosswalk Line
- Roadway Excavation Incl. Haul
- Service Connection 2.0 In. Diam.
- Service Connection 1.5 In. Diam.
- Service Connection 4.0 In. Diam.
- Service Connection 6.0 In. Diam.
- Commercial HMA
- Cement Conc. Traffic Curb
- Plastic Line
- Plastic Crosshatch Marking
- Plastic Wide Lane Line
- Plastic Traffic Arrow
- Plastic Crosswalk Line
- Plastic Stop Line
Painted Access Parking Space Symbol
Plastic Traffic Letter
Raised Pavement Marker Type 2
Conduit Pipe 2 In. Diam.
Structure Excavation Class B Incl. Haul
Gravel Backfill for Drain
Gravel Backfill for Pipe Zone Bedding
Detectable Warning Surface
Cement Conc. Curb Ramp Type Perpendicular A
PSIPE - 2.5" Cal. Tree
PSIPE - 5 Gal Shrub
PSIPE - 1 Gal Groundcover
PSIPE - 4" Groundcover
Irrigation System
Project Surveying
Project Temporary Traffic Control
Removal of Structure and Obstructions
Remove and Reinstall Miscellaneous Items
Stamped Tinted Concrete Crosswalk
Adjust Cleanout
Topsoil Type A
Soil Amendment
Bark or Wood Chip Mulch
Cement Conc. Wheel Stop
Rectangular Rapid Flashing Beacon
Traffic Signal Modifications
Permanent Signing
Painted Curb Marking
Adjust and Replace Existing Access Cover with Non-Slip Lid
Stone Bench

b. Measurement: This item will be measured as a lump sum unit.

c. Payment: This item will be paid at the contract lump sum price, as agreed to in the change order. No separate payment under existing contract bid items shall be made for any work described in this section for the subject location.

24. On Page 685, Division 12 Furnishings is supplemented with the following:

SECTION 12 93 40 SITE SEATING, BENCHES AND TABLES

PART 1 - GENERAL

1.01 SCOPE OF WORK:

Furnish all labor, materials, equipment and related items necessary to complete the work shown on the Drawings and/or Specifications. The items of work to be performed include but are not limited to:
1. Stone Bench.

1.02 RELATED SECTIONS:
A. Not Used.

1.03 SUBMITTALS
A. Product data for each type of stone, samples for verification purposes of stone in form for each color, grade, finish, type, and variety of stone required and consisting of stones not less than 12 inches square. Include 2 or more stones in each set of samples showing the full range of variations in appearance characteristics to be expected in the completed work. Deliver samples to site for review.

1.04 QUALITY ASSURANCE
A. Sources: Each separate material type of the landscape stonework shall be obtained from a single source and be of the same type material to assure uniformity of quality and appearance. Deliver all project stone materials to an approved holding area prior to commencement of work for review by the Landscape Architect.

B. Information on the Drawings and in the Specifications establishes the requirements for both aesthetic effects and performance of the stone. Aesthetic effects relative to the formal characteristics are indicated by dimensions, arrangement, alignment, and profiles of components and assemblies as they relate to sight lines and relationships to one another and to adjoining construction; performance is indicated by criteria subject to verification either by preconstruction or field test, if applicable, or by in-service experience.

C. Do not modify intended aesthetic effects, except with the Owner's approval, and only to the extent exclusively needed to comply with the performance requirements. Where modifications are proposed, submit comprehensive explanatory data for review.

1.05 DELIVERY, STORAGE, AND HANDLING
A. Deliver materials to the project site in undamaged condition.

B. Store and handle the stone and related materials to prevent their deterioration or damage due to moisture, temperature changes, contaminants, corrosion, breakage, chipping, or other causes.

C. Do not use pinch or wrecking bars.
D. Lift with wide-belt-type slings where possible; do not use wire rope or ropes containing tar or other substances that might cause staining.

1.06 SUBSTITUTIONS

A. Make no materials substitutions without the written approval of the Landscape Architect.

1.07 LAYOUT

A. Verify the location of all elements of the stonework prior to installation. The Landscape Architect reserves the right to adjust the locations of stonework during the installation period as appropriate to the job.

PART 2 - PRODUCTS

2.01 STONE

A. Stone Bench

1. Basis-of Design Product: Subject to compliance with requirements, provide stone seat from: Marenakos Rock Center, Ph. (425) 392-3313, or approved equal.

2. Stone Type: Granite.


5. Size: See drawings.

6. Installation Method: Refer to details, see plans for location.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify the following:

1. Support work and site conditions are ready to receive Work of this Section.

2. Items in other Sections are properly located and sized.
3.02 PREPARATION

A. Lines, levels and reference points shall be established prior to beginning work and shall be protected and maintained throughout the course of work.

B. Stone shall be cleaned prior to placement. Implements and methods that can stain, mar, mark or damage exposed surfaces shall not be used.

C. All improvements and utilities within the work area shall be located prior to beginning work and shall be protected during the course of work.

D. Coordinate with irrigation work as required to provide sleeving and/or pipe access into all planting pockets.

3.03 INSTALLATION OF STONWORK

A. Stones shall be set to comply with requirements indicated on the plans.

B. Stones shall be thoroughly cleaned and moistened immediately before setting, and the bed cleaned.

C. Stones shall be handled in a manner to prevent jarring or displacing the stones already set. The rolling or turning of stones will not be permitted. If a stone is loosened after being set, it shall be removed, cleaned off, and the stone reinstalled.

3.04 CLEANING

A. Replace any damaged stone deemed unacceptable by the Landscape Architect.

B. Immediately after being laid, stone shall be thoroughly cleaned and kept clean until the work is accepted.

C. Excess stone and other materials shall be removed upon completion of work. Soil contaminated by stonework shall be removed and replaced with acceptable topsoil.

D. Soiled surfaces shall be cleaned with a cleaning solution. Non-metallic tools shall be used in cleaning operations.

3.05 FINAL ACCEPTANCE

A. Final acceptance of the stonework in this section shall be made by the Landscape Architect or Owner after an inspection to determine 100 percent completion of the Contract work and all punch list items.

END OF SECTION
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Note: All sheet references first 957 of structure code designations and match line sheet references etc. throughout the plans, refer to the entry in the plan reference number box.

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**Contract 8895**  
**Change Order No. 63**  
**Page 30 of 99**
CONSTRUCTION NOTES:
1. REMOVE TREE (INCLUDED IN CLEARING AND GRUBBING)
2. PROTECT SIGNAL POLE
3. REMOVE TRASH BIN
4. REMOVE CURB OR CURB AND GUTTER
5. PROTECT CURB & GUTTER
6. PROTECT CURB RAMP
7. PROTECT POLE MOUNTED ART TO REMAIN

GENERAL NOTES:
1. FOR SAWCUT AND REMOVAL LIMITS SEE PAYING PLANS.
2. FOR ILLUMINATED BOLLARDS, ELECTRICAL AND COMMUNICATION ITEMS TO BE REMOVED, RELOCATED, ABANDONED, ADJUSTED OR TO REMAIN SEE ELECTRICAL AND SITE LIGHTING PLANS.
3. RELOCATE ABANDONED OR REMOVED ITEMS TO REMAIN OR LID REPLACEMENT SEE DRAINAGE AND UTILITY PLANS.
4. FOR SIGNS AND PAVEMENT MARKINGS SEE SIGNING AND PAVEMENT MARKING PLANS.
5. REPLACE EXISTING UTILITY ACCESS COVERS WITH NON-SKID LIDS WITHIN THE SIDEWALK IN THE PROJECT LIMITS AND ADJUST TO GRADE AS NOTED IN THE ELECTRICAL, SITE PLANS.
6. REPLACE EXISTING UTILITY SERVICE BOXES WITH NON-SKID LIDS WITHIN THE SIDEWALK IN THE PROJECT LIMITS.
7. SEE DRAINAGE AND UTILITY PLANS FOR LOCATION OF VALVES AND WATER METER ADJUSTMENT AND LID REPLACEMENT.

LEGEND
- REMOVING CEMENT CONCRETE SIDEWALK
- REMOVING ASPHALT CONCRETE PAVEMENT
- REMOVING CEMENT CONCRETE PAVEMENT
- CLEARING AND GRAVING
- SAWCUT LINE
TEMPORARY EROSION AND SEDIMENT CONTROL NOTES:
1. The implementation of these TESC plans and the construction maintenance, replacement and upgrading of TESC facilities is the responsibility of the Contractor until all construction is completed and approved vegetation/landscaping is established and the entire site is stabilized.

2. The boundaries of the clearing limits shown on this plan shall be clearly flagged in the field prior to construction during the construction period and the clearing beyond the flagged clearing limits shall be permitted. The clearing shall be maintained by the Contractor until the duration of the construction.

3. The TESC facilities shown on this plan shall be constructed prior to and/or in conjunction with all clearing and grading activities and in such a manner as to ensure that sediment and sediment-laden water do not enter the drainage system or roadways or violate applicable water standards.

4. The TESC facilities shown on this plan shall be upgraded as needed for unexpected storm events and to ensure that sediment and sediment-laden water do not enter the site.

5. The TESC facilities shall be inspected weekly and maintained as necessary to ensure their continued function.

6. The TESC facilities on active site shall be installed and maintained a minimum of once a month or within 48 hours following a major storm event or as necessary to ensure their continued function.

7. At no time shall more than one foot of sediment be allowed to accumulate within a catch basin sediment trap.

8. All catch basins and conveyance lines shall be cleared prior to paving. The clearing operation shall not flush sediment-laden water into the downstream system.

9. Stabilized construction entrances shall be installed at the beginning of construction and maintained for the duration of the project. Additional measures may be required to ensure that all paved areas are kept clean for the duration of the project.

10. Storm drain inlet protection shall be installed per WSDOT STD Plan 402.300.4.

11. Wattles shall be installed per WSDOT STD Plan 303.30-01.

12. Wattles shall be in accordance with standard specification 5-14 for installing wattles along contours. Installation shall be in accordance with standard specification 5-11.7.

13. Ensure knot on each end of wattles overlap adjacent wattles 12" behind one another and securely tie together.

14. Compact excavated soil and debris to prevent undercutting. Additional standing may be necessary to prevent undercutting.

15. Install wattles perpendicular to flow along contours.

16. Wattles shall be inspected regularly and immediately after a rainfall produces runoff. To ensure they remain thoroughly entrenched and in contact with the soil.

17. Perform maintenance in accordance with standard specification 5-11.18.3.

18. Refer to standard specification 5-11.18 for removal.

19. To install on hard surfaces use sand bags supports at 5' minimum spacing.

20. Erosion and sediment control bars installed in all work areas must not impede active pedestrian pathways. Side walls remove wattles and supporting sandbags immediately once the exposed bare soil is covered and sediment laden activities are complete in work areas.

PUBLIC WORKS DEPARTMENT
CONSTRUCTION DIVISION

UTILITY CONTACTS

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NOTES:
1. SEE SHEET 001 FOR WATER METER BOX DETAIL.
2. SEE SHEET 002 FOR IN-SUME CATCH BASH DETAIL.
3. SEE PAVING PLANS FOR PAVEMENT RESTORATION LIMITS.
4. FIELD VERIFY EXISTING CROSSING AND NOTIFY THE ENGINEER OF UTILITY ELEVATION.
5. CONNECT WATER SERVICE CONNECTION TO EXISTING WATER SERVICE CONNECTION, ENSURE THAT WATER SERVICE TO BUILDINGS DOES NOT HAVE NORMAL DRAINAGE OPERATIONS ARE MAINTAINED.
6. COORDINATE WITH TACOMA WATER TO SCHEDULE THE RETIREMENT AND INSTALLATION OF WATER SERVICE CONNECTION AT WATER MAIN.
7. ALL JOINTS SHALL BE REINFORCED OR FLANGED.
8. MECHANICAL JOINT PIPE SHALL BE REINFORCED WITH MECHANICAL JOINT INSIDE ACTION, THE CONTRACTOR SHALL INSTALL PROVING CLAMPS BOLT AND Gasket. JOINTS SHALL BE REINFORCED WITH STAINLESS STEEL LOCKING SEGMENTS.

CONSTRUCTION NOTES:
4. TACOMA WATER TO REMOVE EXISTING WATER SERVICE AND PLUG EXISTING CONNECTION AT WATER MAIN.
5. ADJUST AND REPLACE EXISTING ACCESS COVER WITH NON-SLIP LID.
6. TACOMA WATER TO REMOVE WATER VAULT.
7. PROTECT FIRE HYDRANT.
NOTES:
1. SEE SHEET DD1 FOR WATER METER BOX DETAIL.
2. SEE SHEET DD2 FOR IN-LINE CATCH BASIN DETAIL.
3. SEE PAVING PLANS FOR PAVEMENT RESTORATION LIMITS.
4. FIELD VERIFY EXISTING CROSSING AND NOTIFY THE ENGINEER OF UTILITY ELEVATION.
5. CONNECT WATER SERVICE CONNECTION TO EXISTING WATER SERVICE CONNECTION.
6. CONNECT WATER TO SCHEDULE THE RETIREMENT AND THE INSTALLATION OF WATER SERVICE CONNECTIONS CONTACT FRANK SIMONETTI AT PHONE NUMBER (553) 386-7073.
7. ALL JOINTS SHALL BE RESTRAIN OR FLANGED TO MECHANICAL JOINT FIEDE ACTION.

CONSTRUCTION NOTES:
3. TACOMA WATER TO REMOVE FIRE HYDRANT ASSEMBLY.
4. TACOMA WATER TO REMOVE EXISTING WATER SERVICE AND SLUG EXISTING CONNECTION AT WATER MAIN.
5. ADJUST AND REPLACE EXISTING ACCESS COVER WITH NON-SLIP LID.
6. ADJUST MANHOLE.
7. ADJUST CLEANOUT.
8. ADJUST VALVE BOX TO GRADE.
9. TACOMA WATER TO REMOVE WATER VAULT.
10. TACOMA WATER TO RETIRE SERVICE WHERE COLLECTOR SERVICE LINES ARE TAPED.
1.5" DOUBLE CHECK VALVE ASSEMBLY

NOTES:
1. ALL INSTALLATIONS MUST MEET MINIMUM STANDARDS OF THE UNIFORM PLUMBING CODE AND WASHINGTON APPROVED INSTALLATIONS LIST.
2. TESTING IS REQUIRED BY A WASHINGTON STATE DEPARTMENT OF HEALTH CERTIFIED SANITATION ASSEMBLY TESTER UPON INSTALLATION AND ANNUALLY THEREAFTER. ASSEMBLY TO BE MAINTAINED BY OWNER.
GENERAL NOTES:
1. ALL PAVEMENT MARKINGS SHALL BE THERMOPLASTIC UNLESS OTHERWISE NOTED.
2. REMOVAL OF EXISTING PAVEMENT MARKINGS SHALL INCLUDE REMOVAL OF RAISED PAVEMENT MARKERS ON THE PAVEMENT MARKING.
3. LONGITUDINAL PAVEMENT MARKINGS SHALL INCLUDE RAISED PAVEMENT MARKERS PERMANENTLY INSTALLED FOR CITY OF TACOMA STD PLAN NO CHECK COLOR OF RAISED PAVEMENT MARKERS PERMANENTLY INSTALLED FOR CITY OF TACOMA STD PLAN 34-
4. PERFORATED SQUARE STEEL TUBE (PST) POSTS SHALL BE SURFACE MOUNTED IN ACCORDANCE WITH CITY OF TACOMA STD PLAN SU-34.
5. DELIVER ALL SALVAGED SIGNS TO THE CITY OF TACOMA UNLESS SIGNS ARE TO BE REINSTALLED.

PAVEMENT MARKING CONSTRUCTION NOTES:
1. REMOVE EXISTING DOUBLE CENTERLINE
2. REMOVE EXISTING MEDIAN LANE LINES (YELLOW)
3. INSTALL 3½" SQUARE ACCESS PARKING SPACE STANDARDS WITH BLUE BACKGROUND PER WIDEBODY STANDARDS. K-SPAN WIDEBODY CENTERS OVER GUIDANCE LINES.
4. INSTALL 4½" WIDE WHITE THERMOPLASTIC LINE

PUBLIC WORKS DEPARTMENT
CONSTRUCTION DIVISION

Approved:
MU319-87

Work Order No.

SIGN SCHEDULE

<table>
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<tr>
<th>SIGN #</th>
<th>SIGN CODE</th>
<th>SIGN DESCRIPTION</th>
<th>STA LOCATION</th>
<th>SIGN SIZE</th>
<th>SHEETING TYPE</th>
<th>POST MATERIAL</th>
<th>POST MARK</th>
<th>CLEARANCE</th>
<th>REMARKS</th>
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<td>25</td>
<td>RT-801</td>
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<td>STA 25+00</td>
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<td>25-80</td>
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<td>STA 26+00</td>
<td>12' x 36'</td>
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<td>-</td>
<td>7&quot;</td>
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<td>-</td>
<td>2' SQ</td>
<td>SEE DETAIL THIS SHEET</td>
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<td>RT-801A</td>
<td>VAN ACCESSIBLE</td>
<td>STA 28+00</td>
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<td>-</td>
<td>-</td>
<td>7&quot;</td>
<td>SEE DETAIL THIS SHEET</td>
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<tr>
<td>29</td>
<td>RT-801</td>
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<td>STA 29+00</td>
<td>12' x 36'</td>
<td>N</td>
<td>-</td>
<td>-</td>
<td>7&quot;</td>
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<tr>
<td>30</td>
<td>RT-4D</td>
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<td>STA 30+00</td>
<td>12' x 36'</td>
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<td>-</td>
<td>7&quot;</td>
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<td>31</td>
<td>RT-4D</td>
<td>NO PARKING</td>
<td>STA 31+00</td>
<td>12' x 36'</td>
<td>N</td>
<td>-</td>
<td>-</td>
<td>7&quot;</td>
<td>SEE DETAIL ON PM2</td>
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<tr>
<td>32</td>
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<td>STA 32+00</td>
<td>12' x 36'</td>
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<tr>
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<td>SEE DETAIL ON PM2</td>
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SIGN INSTALLATION / REMOVAL NOTES:
1. REMOVE AND SALVAGE EXISTING SIGNS TO CITY OF TACOMA. REMOVE SIGN POST AND CUT ANCHOR BOLTS FROM D.O.
2. REMOVE AND SALVAGE EXISTING SIGNS TO CITY OF TACOMA.
3. REMOVE AND SALVAGE EXISTING SIGNS TO CITY OF TACOMA.
4. REMOVE AND SALVAGE EXISTING SIGNS TO CITY OF TACOMA.

CONTRACT 8895
Change Order No. 63
Page 53 of 99
PUBLIC WORKS DEPARTMENT
CONSTRUCTION DIVISION

Work Order No.: 123456

FILE NAME: 123456.WDO20
DATE: 03/09/07
OWNER: City of Tacoma

GENERAL NOTES:
1. ALL PAVEMENT MARKINGS SHALL BE THERMOPLASTIC UNLESS OTHERWISE NOTED.
2. REMOVAL OF EXISTING PAVEMENT MARKINGS SHALL INCLUDE REMOVAL OF RAISED PAVEMENT MARKERS ON THE PAVEMENT MARKING.
3. LONITUDINAL PAVEMENT MARKINGS SHALL INCLUDE RAISED PAVEMENT MARKERS (RPM) INSTALLED PER CITY OF TACOMA STD PLAN 60-30-3. COLOR OF RPM SHALL MATCH COLOR OF PAVEMENT MARKING.
4. PERFORATED SQUARE STEEL TUBE (PST) POSTS SHALL BE SURFACE MOUNTED IN ACCORDANCE WITH CITY OF TACOMA STD PLAN 85-3A.

NOTES:
1. DO NOT INSTALL MIDDLE RPM WHEN W < 20.
2. INSTALL ONE RPM AT 12 WHEN B & 12.

RPM LAYOUT DETAIL
NOT TO SCALE

0 10 20
SCALE IN FEET
GENERAL NOTES:

1. ALL PAVEMENT MARKINGS SHALL BE THERMOPLASTIC UNLESS OTHERWISE NOTED.
2. REMOVAL OF EXISTING PAVEMENT MARKINGS SHALL INCLUDE REMOVAL OF RAISED PAVEMENT MARKERS ON THE PAVEMENT MARKINGS.
3. PERFORATED SQUARE STEEL TUBE (PSST) POSTS SHALL BE SURFACE MOUNTED IN ACCORDANCE WITH CITY OF TACOMA STANDARD PLAN 51-34.

SIGN SCHEDULE

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<th>SIGN DESCRIPTION</th>
<th>STA LOCATION (OR MP)</th>
<th>SIGN SIZE</th>
<th>SHEETING TYPE</th>
<th>POST MATERIAL</th>
<th>POST SIZE</th>
<th>CLEARANCE</th>
<th>REMARKS</th>
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<tr>
<td>1</td>
<td>R5-1</td>
<td>DO NOT ENTER</td>
<td>EX POLE 3 (SEE TSB)</td>
<td>30' x 30'</td>
<td>IV</td>
<td>SIGNAL POLE</td>
<td>-</td>
<td>9</td>
<td>-</td>
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<tr>
<td>2</td>
<td>R5-1</td>
<td>NO STRAIGHT THROUGH SYMBOL</td>
<td>EX POLE 3 (SEE TSB)</td>
<td>30' x 30'</td>
<td>IV</td>
<td>MAST ARM</td>
<td>-</td>
<td>9</td>
<td>-</td>
</tr>
<tr>
<td>3</td>
<td>R5-1</td>
<td>NO RIGHT TURN</td>
<td>EX POLE 2 (SEE TSB)</td>
<td>30' x 30'</td>
<td>IV</td>
<td>MAST ARM</td>
<td>-</td>
<td>9</td>
<td>-</td>
</tr>
<tr>
<td>4</td>
<td>R5-1</td>
<td>NO LEFT TURN</td>
<td>STA 30+80</td>
<td>30' x 30'</td>
<td>IV</td>
<td>PST</td>
<td>2' SQ</td>
<td>7</td>
<td>MOUNT AT 130 TO CURB FACE</td>
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<tr>
<td>5</td>
<td>L2-400</td>
<td>LEFT TURN ARROW</td>
<td>STA 31+25, BELT</td>
<td>30' x 30'</td>
<td>IV</td>
<td>PST</td>
<td>2' SQ</td>
<td>7</td>
<td>SEE SIGN DETAIL THIS SHEET</td>
</tr>
</tbody>
</table>

* SIGN CODES ARE FROM THE 2006 MUTCD EXCEPT AS NOTED.

City of Tacoma Sign Code.

PUBLIC WORKS DEPARTMENT
CONSTRUCTION DIVISION

CONTRACT #695
Change Order No. 53
Page 55 of 99
NOTES:
1. DIVIDERS SHALL NOT ENCROACH ONTO ADJACENT TRAVEL LANE.
2. SEE TCS FOR TRAFFIC CONTROL, SET UP FOR ONE WAY STREET OPERATION ON EAST 25TH STREET.
3. PROVIDE TEMPORARY LOADING ZONE AND ACCESS TO BUSINESSES DURING OPERATING HOURS

SEQUENCE CONSTRUCTION TO MAINTAIN AN ADA-COMPLIANT WALKWAY AT ALL TIMES

PUBLIC WORKS DEPARTMENT
CONSTRUCTION DIVISION

LEGOEND:
- S/M LOCATION
- CHANNELIZATION DEVICE
- TYPE 2 BARRIERS
- SITE DETAIL ON TC2
- WORK ZONE

FILE NAME: J2049101_MSDOT_OvHbere_HGA_CAD_CG/3D_5/6/23/57/Tas 1 & Station/PCF 202 East 25th/1986_P9_TD_Tact 202_00000
TIME: 10:43:21 PM
DATE: 5/12/2017
PLACED BY:
DESIGNED BY: L. NAKAMOTO
ENTERED BY: L. SUZUKI
CHECKED BY: L. GUAN
PUBL. DATE: 1/5/2023
REVISION: 1.0

TACOMA AMTRAK CASCADAS STATION
TRAFFIC CONTROL PLAN

Washington State Department of Transportation
NOTE:
1. BUSINESSES, SCHOOL TRANIT AND PIERCE TRANSIT WILL BE COORDINATED WITH
   THE CITY OF TACOMA TRAFFIC CONTROL MANAGER.
2. NOTIFY THE APPROPRIATE CITY DEPARTMENTS FOR INFORMATION AND WORK
   SCHEDULES.
3. TRAFFIC CONTROL DEVICES SHALL INCLUDE: DAYTIME WORK ZONE
   LIGHTS AND STEADY FLARES.
4. EAST 25TH STREET WILL BE FULLY CLOSED TO TRAFFIC DURING THE PIERCE
   TRANSIT LANE PROJECT.
5. COORDINATE WITH THE CITY OF TACOMA TRAFFIC CONTROL MANAGER FOR SIGN
   INSTALLATION.

PUBLIC WORKS
DEPARTMENT

CONSTRUCTION DIVISION

Work Order No.:

FILE NAME:

PUBLIC WORKS
DEPARTMENT

CONSTRUCTION DIVISION

Work Order No.:

FILE NAME:

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**NOTE:** ALL SHEET REFERENCES, FIRST NOIL OF STRUCTURE CODE DESIGNATIONS AND MATCH LINE SHEET REFERENCES, ETC. THROUGHOUT THE PLANS, REFER TO THE ENTRY IN THE PLAN REFERENCE NUMBER BOX.
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<td>255</td>
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<td>260</td>
<td>E012 NORTH PLATFORM CENTER - ELECTRICAL &amp; SYSTEMS PLAN</td>
</tr>
<tr>
<td>261</td>
<td>E013 NORTH PLATFORM CENTER WEST - ELECTRICAL &amp; SYSTEMS PLAN</td>
</tr>
<tr>
<td>262</td>
<td>E014 NORTH PLATFORM WEST - POWER &amp; SYSTEMS PLAN</td>
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<tr>
<td>263</td>
<td>E015 NORTH PLATFORM EAST - LIGHTING PLAN</td>
</tr>
<tr>
<td>264</td>
<td>E016 NORTH PLATFORM CENTER - LIGHTING PLAN</td>
</tr>
<tr>
<td>265</td>
<td>E017 NORTH PLATFORM WEST - LIGHTING PLAN</td>
</tr>
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</table>

**NOTE:** ALL SHEET REFERENCES, FIRST HOI OF STRUCTURE CODE DESIGNATIONS AND WATER LINE SHEET REFERENCES, ETC., THROUGHOUT THE PLANS, REFERR TO THE ENTRY IN THE PLAN REFERENCE NUMBER BOX.
RELOCATED SHELTER COLUMN PLACED OVER HSB 3½x1916

NOTE:
1. CONTRACTOR SHALL FIELD VERIFY DIMENSIONS OF ALL EXISTING STRUCTURAL IN THE CASE OF FIELD CONDITIONS DIFFERENT THAN SHOWN ON PLANS THE CONTRACTOR SHALL IMMEDIATELY NOTIFY ENGINEER.
2. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING DIMENSIONS BEFORE FABRICATION OF ANY STRUCTURAL STEEL MEMBERS.
1. Contractor shall field verify dimensions of all existing structures in the case of field conditions different than shown on plans. The contractor shall immediately notify engineer.

2. Contractor shall field verify all existing dimensions before fabrication of any structural steel members.

FOUNDATION - RELOCATED ART WORK COLUMN

SECTION A-A

SECTION B-B
PLAN - AMTRAK MONUMENT SIGN FOUNDATION

SCALE: 1/4" = 1'-0"

SECTION A-A

SCALE: 1/2" = 1'-0"

PUBLIC WORKS DEPARTMENT

CONSTRUCTION DIVISION

FILE NAME: JH156623 MROOT Huntley Ca/CAD/DRAWINGS/Revit/1/13 Pillar/PC0 133 Ent 230VPH 03 SU 101

DATE: 3/2/2017

PLOTTED By: 

APPROVED By: 

CHECKED By: 

TACOMA AMTRAK CASCADAS STATION

Washington State Department of Transportation

PARSONS BRUCKEHOFF

FILE: 133-AM001511-A00151-A0155

DRAWN: 

AMTRAK MONUMENT SIGN FOUNDATION
GENERAL NOTES:
1. LOCATION OF EXISTING UTILITIES SHALL BE VERIFIED, COORDINATE ALL WORK WITH UTILITY COMPANIES TO ELIMINATE CONFLICT.
2. CONDUITS SHALL BE PLACED IN COMMON TRENCHES WHEN POSSIBLE.
3. ALL CIRCUIT RUNS AND JUNCTION BOX LOCATIONS ARE APPROXIMATE. FINAL LOCATIONS MAY BE ADJUSTED TO AVOID CONFLICTS AND FOR EASE OF CONSTRUCTION BUT MUST BE APPROVED BY RESIDENT ENGINEER PRIOR TO EXCAVATION.
4. ALL WIRING TERMINATIONS IN THE CONTROLLER CABINET SHALL BE PERFORMED BY THE CITY OF TACOMA.
5. ALL PEDESTRIAN PUSH BUTTONS SHALL BE ACCESSIBLE PEDESTRIAN SIGNAL (PSS) DETECTORS CONTRACTOR SHALL FURNISH CONTROL UNIT FOR THE DETECTORS.
6. ALL EXISTING JUNCTION BOXES TO REMAIN SHALL BE ADJUSTED TO FINAL FINISHED GRADE.

LEGEND

EXISTING

PROPOSED

---

CONDUIT

MAST-ARM

SIGNAL POLE

PEDESTRIAN

PUSH BUTTON POST

PEDESTRIAN

PUSH BUTTON

WIDESCREEN TYPE

JUNCTION BOX

POLE NUMBER

WIRE NOTE

CONSTRUCTION NOTE

---
CONSTRUCTION NOTES:

1. INSTALL PEDESTRIAN PUSH BUTTON POST AND FOUNDATION PER POLE SCHEDULE THIS SHIF
2. REMOVE EXISTING PEDESTRIAN PUSH BUTTON FOR EAST LEG CROSSWALK.
3. REMOVE EXISTING PEDESTRIAN PUSH BUTTON FOR EAST LEG CROSSWALK AND REPLACE WITH NEW APS PUSH BUTTON ASSEMBLY.
4. INSTALL CONDUIT IN EXISTING JUNCTION BOX.

---

POLE SCHEDULE

<table>
<thead>
<tr>
<th>POLE NO.</th>
<th>LOCATION</th>
<th>POLE TYPE</th>
<th>POLE HEIGHT (Ft)</th>
<th>FOUNDATION TYPE</th>
<th>VELOCITY STD PLAN</th>
<th>SIZE</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>STA 21-M</td>
<td>PBS POST</td>
<td>3</td>
<td>J2SL0A03</td>
<td>1.5 SQUARE</td>
<td></td>
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</tbody>
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WIRE SCHEDULE

<table>
<thead>
<tr>
<th>RUN #</th>
<th>RACEMAY</th>
<th>DB</th>
<th>GB</th>
<th>REMARKS</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>1&quot;</td>
<td>1</td>
<td>1</td>
<td>INSTALL IN CONDUIT WITH EXISTING PBS CONDUCTORS</td>
</tr>
<tr>
<td>2</td>
<td>2.5&quot;</td>
<td>1</td>
<td>1</td>
<td>INSTALL IN CONDUIT WITH EXISTING PBS CONDUCTORS</td>
</tr>
<tr>
<td>3</td>
<td>3.5&quot;</td>
<td>2</td>
<td>2</td>
<td>INSTALL IN CONDUIT WITH EXISTING PBS CONDUCTORS</td>
</tr>
</tbody>
</table>
CONSTRUCTION NOTES:

1. CONSTRUCT POLE FOUNDATION AND INSTALL POLE PER POLE SCHEDULE THIS SHEET. INSTALL SOLAR POWERED RRFB SYSTEM ON POLE, INCLUDING PEDESTRIAN PUSH BUTTON ASSEMBLY, AND WIRING IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS AND DETAIL THIS SHEET.

2. CONSTRUCT POLE FOUNDATION AND INSTALL POLE PER POLE SCHEDULE THIS SHEET. INSTALL SOLAR POWERED RRFB SYSTEM ON POLE COMPLETE WITH WIRING IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS AND DETAIL THIS SHEET.

3. CONSTRUCT POLE FOUNDATION AND INSTALL POST PER POLE SCHEDULE THIS SHEET. INSTALL APS PUSH BUTTON ASSEMBLY ON POST.

<table>
<thead>
<tr>
<th>POLE NO.</th>
<th>LOCATION</th>
<th>POLE TYPE</th>
<th>POLE HEIGHT (FT)</th>
<th>FOUNDATION TYPE</th>
<th>POLE STD PLAN</th>
<th>SIZE</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>STA 24-00.1</td>
<td>13 FT</td>
<td>TYPE 1 FIXED BASE</td>
<td>14</td>
<td>2-21.10</td>
<td>2 ROUND</td>
</tr>
<tr>
<td>B</td>
<td>STA 25-06.1</td>
<td>11.5 FT</td>
<td>TYPE 1 FIXED BASE</td>
<td>14</td>
<td>2-21.10</td>
<td>2 ROUND</td>
</tr>
<tr>
<td>C</td>
<td>STA 24-06.1</td>
<td>13 FT</td>
<td>MB POST</td>
<td>5</td>
<td>2-20.10</td>
<td>1.5 SQUARE</td>
</tr>
</tbody>
</table>
GENERAL NOTES

1. REMOVE CONSTRUCTION MATERIALS AND OTHER DEBRIS.
2. LAYOUT OF PLANTS SHALL BE APPROVED BY RESIDENT ENGINEER PRIOR TO PLANTING.
3. PLANT MATERIAL LAYOUT MAY REQUIRE ADJUSTMENT TO ACCOMMODATE STRUCTURES, OBSTACLES, UTILITIES, IRRIGATION, ETC. NOTIFY RESIDENT ENGINEER OF PROPOSED CHANGES.
4. VERIFY LOCATION OF ALL BELOW GRADE UTILITY LINES AND STRUCTURES AND PROTECT DURING CONSTRUCTION.
5. PROVIDE AND INSTALL ALL PLANTING SOILS TO ALL PLANTING AREAS AS DEFINED IN PLANTING SCHEDULE, DETAILS AND SPECIFICATIONS. RESIDENT ENGINEER SHALL REVIEW AND APPROVE SUBGRADE AS WELL AS FINISH GRADES PRIOR TO PLANTING.
6. CENTER OF TREES SHALL BE PLANTED A MINIMUM OF 5' CLEAR FROM EDGE OF UNDERGROUND UTILITY LINES.
7. ALL LANDSCAPE AREAS SHALL RECEIVE MINIMUM 3' BARK MULCH.
8. PLACE THE AMENDED TOPSOIL TO THE FOLLOWING DIMENSIONS:
   TREE PLANTING DEPTH OF FOOTBALL (12'-6") AND ENTIRE EXTENT OF PLANTING AREA.
   SHRUB PLANTING AREA ADJACENT TO BLOCK CROSSING MIN 1' DEPTH
   PLANTER @ BUILDING - DEPTH OF PLANTER.

NOTES:
1. SEE LP1 FOR GENERAL PLANTING NOTES
2. SEE LP1 FOR PLANTING SCHEDULE
3. SEE LP1 FOR PLANTING DETAILS
FIELD VERIFY LOCATION AND ELEVATION OF COMMUNICATIONS DUCT BANK.
- PROVIDE GEOREFERENCING OVER UTILITIES WHERE
  UTILITY IS UNDER PLANTING AREA. PER DETAIL 3. LPS TO
  PREVENT ROOT INTRUSION TYP.
- IF UTILITIES LOCATED/ELAVATION OF COMMUNICATIONS
  DUCT BANK IS IN CONFLICT WITH TREE, NOTIFY
  LANDSCAPE ARCHITECT FOR POSSIBLE TREE LOCATION
  ADJUSTMENT WITHIN PLANTING AREA. TYP. ALL PLANTING
  AREAS.

DIMENTIONS FOR REVIEW ONLY. ALL
TREES TO BE CENTERED IN PLANTING
AREAS AS SHOWN PER DTL 1, LPS1. TYP.
### Landscape Schedule

<table>
<thead>
<tr>
<th>QTV</th>
<th>Symbol</th>
<th>Botanical Name</th>
<th>Common Name</th>
<th>Size</th>
<th>Comments</th>
<th>Spacing</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>×</td>
<td>Quercus coccaea</td>
<td>SCARLET OAK</td>
<td>2.5′ CAL.</td>
<td>563 PER PLAN</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>×</td>
<td>Ilex verticillata</td>
<td>PRIVET HONEYSUCEL</td>
<td>5 GAL.</td>
<td>CONT 36 O.C.</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>×</td>
<td>Ilex opaca</td>
<td>VIRGINIA SWEETBAY</td>
<td>5 GAL.</td>
<td>CONT 36 O.C.</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>×</td>
<td>Ilex glabra 'HINNIE'</td>
<td>EUROPEAN HINNIE</td>
<td>5 GAL.</td>
<td>CONT 36 O.C.</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>×</td>
<td>Viburnum opulus 'Superstar'</td>
<td>SUPERSTAR SPIREA</td>
<td>5 GAL.</td>
<td>CONT 36 O.C.</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>×</td>
<td>Epimedium × perralchicum 'Prolificum'</td>
<td>BARRENWORT</td>
<td>1 GAL.</td>
<td>CONT 24 O.C.</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>×</td>
<td>Prunus incisa 'Chukusens'</td>
<td>BEACH STRAWBERRY</td>
<td>4′ POT</td>
<td>18 O.C.</td>
<td></td>
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</tbody>
</table>

### Notes:

1. **Root barrier:** Shall be a root control mold or extruded modular component made of high density polypropylene or polyethylene plastic. A depth of 12 inches root barrier is required along outside of roadway, curbs, boundaries or other structures where root ball is within 5 feet.

2. **Edging:** Combined with turf, hardscape, or topsoil. Total width 36 inches to 5 feet.

3. **Fertilizer:** Pre-planting 5-10-5 per 10 cubic feet of planting area. Non-water soluble.

4. **Soil:** Native soil used. Non-water soluble.

5. **Plant center:** See note above.

6. **Root ball:** See note above.

7. **Planting:** Topsoil, see spec.

8. **Fertilizer:** See spec.

9. **Soil moisture:** 5-10-5 per 10 cubic feet of planting area. Non-water soluble.

10. **Planting:** Topsoil, see spec.

11. **Planting:** Topsoil, see spec.

12. **Planting:** Topsoil, see spec.

13. **Soil moisture:** 5-10-5 per 10 cubic feet of planting area. Non-water soluble.

14. **Planting:** Topsoil, see spec.

15. **Planting:** Topsoil, see spec.

16. **Planting:** Topsoil, see spec.

17. **Planting:** Topsoil, see spec.

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97. **Planting:** Topsoil, see spec.

98. **Planting:** Topsoil, see spec.

99. **Planting:** Topsoil, see spec.

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**Contract:** 8895  
**Change Order No:** 63  
**Page:** 94 of 99
GENERAL IRRIGATION NOTES

1. SEE DR WASHER PRODUCTION PERMIT
   2. THE IRRIGATION SYSTEM DESIGN IS BASED ON THE MINIMUM SPRINKLER OPERATING
   3. PRESSURE AND THE MAXIMUM FLOW DEMAND AT EACH STATION SHOWN ON THIS IRRIGATION
   4. DRAWINGS. THE REPORTED STATION PRESSURE WILL NEVER BE LESS THAN THE SPRINKLER
   5. TIP OPERATING PRESSURE. THE EXISTING PIPES AND OR CONNECTION POINTS MAY
   6. REQUIRE ADDITIONAL PRESSURE TO MEET THE REQUIREMENTS OF THE SPRINKLER
   7. SYSTEM. REPORT INEFFICIENT MEASURED WATER PRESSURE TO THE RESIDENT
   8. ENGINEER.
   9. THIS DESIGN IS DIAGRAMATIC. ALL PIPING, VALVES, ETC. SHOWN WITHIN INFILL AREAS
   10. ARE FOR DESIGN CLARIFICATION ONLY AND SHALL BE INSTALLED IN PLANTING AREAS WHERE
   11. POSSIBLE. AVOID ANY CONFLICTS AMONG THE SPRINKLER SYSTEM PLANTING, UTILITIES AND
   12. ARCHITECTURAL FEATURES.

13. DO NOT WILLFULLY INSTALL THE SPRINKLER SYSTEM AS SHOWN ON THE DRAWINGS WHEN IT IS
14. OBVIOUS IN THE FIELD THAT CONSTRUCTION, GRADE DIFFERENCES, OR DIFFERENCES IN
15. AREA DIMENSIONS EXIST THAT MIGHT NOT HAVE BEEN CONSIDERED IN THE DESIGN. SUCH
16. OBSTRUCTIONS OR DIFFERENCES SHOULD BE BROUGHT TO THE ATTENTION OF THE RESIDENT
17. ENGINEER. IN THE EVENT THE INSTALLATION IS NOT PERFORMED THE CONTRACTOR SHALL
18. ASSUME FULL RESPONSIBILITY FOR ANY REWORKS NEEDED.
19. CONTRACTOR SHALL BE RESPONSIBLE FOR SLEEVES, CHASES AND PENETRATIONS UNDER
20. PAVEMENTS, WALLS, ETC. PRIOR TO PAVING AND FORMING.
21. PROVIDE ONE PEDESTAL PUMP, AIR COMPRESSOR, AND PRESSURE RELIEF VALVES.
22. PROVIDE ONE SPARE PAIR OF WIRE CONNECTORS FOR THE FIELD INSTALLATION.
23. PROVIDE MANUAL DRAIN VALVES, AS NEEDED, TO ALLOW COMPLETE DRAINAGE OF
24. THE ENTIRE IRRIGATION SYSTEM FOR SYSTEM MAINTENANCE AND WINTERIZATION. SLOPE
25. RIPS 15% MIN TO DRAINS.
26. PROVIDE THE FIELD CONDITIONS REQUIRE ADJUSTMENTS. HEADS SHALL BE ADJUSTED OR DELETED
27. ACCORDING TO THE IRRIGATION LEGEND OR MANUFACTURER'S SPECIFICATIONS. PIPE
28. SIZES SHALL BE ADJUSTED ACCORDINGLY. WATER VELOCITY SHALL NOT EXCEED 6 FEET
29. PER SECOND.
30. THE IRRIGATION CONTRACTOR SHALL SHUFF AND ADJUST ALL SPRINKLER-PEAS TO
31. DETERMINE THE OPERATING PRESSURE AND TO PREVENT OVERSPRAY UNTIL WATER, ROADSIDE AND
32. GARDENS. THIS SHALL INCLUDE SELECTING THE BEST DEGREES OR ARC TO FIT THE EXISTING
33. PIPING AND OR CONNECTING THE AIR TO THE SYSTEM. MAKE THE NECESSARY ADJUSTMENTS AT
34. EACH VALVE TO ENSURE THE OPTIMUM OPERATING REQUIREMENTS FOR EACH SYSTEM.
35. PIPE SIZES ARE NOTED FROM END OF LATERAL RUNS. STARTING WITH SIZED INCREASING
36. IN SIZE, AS SHOWN, UPSTREAM TOWARDS THE REMOTE CONTROL VALVES. ALL UNLABELED
37. PIPING WITHIN THE CONTROL ZONE IS 3/4".

NOTES:

1. SEE INSET FOR GENERAL IRRIGATION
2. SEE IRDP FOR IRRIGATION SCHEDULE
3. SEE IRDO FOR IRRIGATION DETAILS