



**Oregon State
University**

**Construction Contracts
Administration, Procurement
Contracts & Materials
Management (PCMM)**
Oregon State University
644 SW 13th Ave.
Corvallis, Oregon 97333

**P 541-737-4261
F 541-737-5546
oregonstate.edu**

4/10/2019

Oregon State University
Construction Contract Administration
2019 Path of Travel Improvements

ADDENDUM NO. 2

THIS ADDENDUM IS BEING ISSUED for clarification and/or revisions of the drawings and specifications as noted. This document is hereby made a part of the Contract Documents to the extent as though it was originally included herein.

The following changes shall be made to the **TECHNICAL SPECIFICATIONS**:

- Item 1 **Attachment A** – Pre-bid sign-in sheet from Pre-bid meeting on 04-08-2019

- Item 2 **REPLACE** General Note #16, Sheet C1.0 with: “This project calls out 2’ wide yellow replaceable detectable warning panels manufactured by “ADA Solutions” and available at Masons Supply Company. Two locations also call out for yellow “Access Tile” and yellow surface applied “Armor Tile Tactile System” detectable warning panels, respectively. All installations shall be performed per manufacturer’s instructions and recommendations.”

- Item 3 **REPLACE Construction Item Note #11** on C1.1, C1.2, and C1.3 with: “Install yellow replaceable ADA Solutions T. Domes.”

- Item 4 In Division 1 Section 01 22 00, paragraph 3.01K: **DELETE** “concrete” in the first sentence. See attached for updated copy.

- Item 5 In Section 03 30 53, paragraph 4.10 & 4.10A: **DELETE** “concrete”. See attached for updated copy.

- Item 6 **REPLACE** Bid Form with Bid form date 04-09-2019. Item #11 **DELETE** “concrete”. See attached for updated copy.

END OF ADDENDUM NO. 2

Mandatory Pre-Bid Meeting Attendee List

Project: 2019 Path of Travel Improvements

Project Manager: Lindsey Austin

Job Walk: Monday April 8, 2019 10:00AM Oak Creek Bldg.

Oregon State
University

Company	Oregon State University	Email	Kelly.oar@oregonstate.edu	Prime <input type="checkbox"/>	Sub <input type="checkbox"/>
Name	Kelly Oar	Phone	541-737-4672	Supplier <input type="checkbox"/>	Other <input type="checkbox"/>
Company	Oregon State University	Email	541-926-5667	Prime <input type="checkbox"/>	Sub <input type="checkbox"/>
Name	Lindsey Austin	Phone	lindsey.austin@oregonstate.edu	Supplier <input type="checkbox"/>	Other <input type="checkbox"/>
Company	Pacific excavation	Email	nswen@pacificexc.com	Prime <input checked="" type="checkbox"/>	Sub <input type="checkbox"/>
Name	Nathan Swan	Phone	541-510-5422	Supplier <input type="checkbox"/>	Other <input type="checkbox"/>
Company	Turney Excavating	Email	martin@turneyexcavating.com	Prime <input checked="" type="checkbox"/>	Sub <input type="checkbox"/>
Name	Bob Turney	Phone	971 772 4376	Supplier <input type="checkbox"/>	Other <input type="checkbox"/>
Company	Roe Concrete Const.	Email	Willie@roconcrete.com	Prime <input checked="" type="checkbox"/>	Sub <input type="checkbox"/>
Name	William Roe	Phone	541-405-6527	Supplier <input type="checkbox"/>	Other <input type="checkbox"/>
Company	Brown Contracting	Email	sean@browncontracting.net	Prime <input checked="" type="checkbox"/>	Sub <input type="checkbox"/>
Name	Brad Doerr	Phone	541-338-9345	Supplier <input type="checkbox"/>	Other <input type="checkbox"/>
Company	KNIFE RIVER	Email	brodie.harvey@kniferiver.com	Prime <input checked="" type="checkbox"/>	Sub <input type="checkbox"/>
Name	BRODIE HARVEY	Phone	541-918-5120	Supplier <input type="checkbox"/>	Other <input type="checkbox"/>

Mandatory Pre-Bid Meeting Attendee List
Project: 2019 Path of Travel Improvements

Project Manager: Lindsey Austin

Job Walk: Monday April 8, 2019 10:00AM Oak Creek Bldg.



Company	ISE Oregon	Email	wire.blair@iseoregon.com	Engineer	Prime <input type="checkbox"/>	Sub <input type="checkbox"/>
Name	Mike Blair	Phone	541.510-3322		Supplier <input type="checkbox"/>	Other <input type="checkbox"/>
Company	OSU Facilities - Landscape	Email	todd.cross@oregonstate.edu		Prime <input type="checkbox"/>	Sub <input type="checkbox"/>
Name	Todd Cross	Phone	541-737-6741		Supplier <input type="checkbox"/>	Other <input checked="" type="checkbox"/>
Company		Email			Prime <input type="checkbox"/>	Sub <input type="checkbox"/>
Name		Phone			Supplier <input type="checkbox"/>	Other <input type="checkbox"/>
Company		Email			Prime <input type="checkbox"/>	Sub <input type="checkbox"/>
Name		Phone			Supplier <input type="checkbox"/>	Other <input type="checkbox"/>
Company		Email			Prime <input type="checkbox"/>	Sub <input type="checkbox"/>
Name		Phone			Supplier <input type="checkbox"/>	Other <input type="checkbox"/>
Company		Email			Prime <input type="checkbox"/>	Sub <input type="checkbox"/>
Name		Phone			Supplier <input type="checkbox"/>	Other <input type="checkbox"/>

OREGON STATE UNIVERSITY

BID FORM

PROJECT: 2019 PATH OF TRAVEL IMPROVEMENTS

BID CLOSING: THURSDAY MAY 2, 2019 10:00 AM LOCAL TIME

BID OPENING: THURSDAY MAY 2, 2019 10:00 AM LOCAL TIME

FROM: _____
Name of Contractor

TO: Oregon State University (“Owner”)
 Construction Contract Administration
 644 SW 13th Ave.
 Corvallis, Oregon 97333

1. The Undersigned (*check one of the following and insert information requested*):

___ a. An individual doing business under an assumed name registered under the laws of the State of _____; or

___ b. A partnership registered under the laws of the State of _____; or

___ c. A corporation organized under the laws of the State of _____; or

___ d. A limited liability corporation/company organized under the laws of the State of _____;

2. The Undersigned proposes to add to or deduct from the Base Bid indicated below the items or work relating to the following Unit Price(s) as designated in the Specifications, for which any adjustments in the Contract amount will be made in accordance with Section D of the OSU General conditions.

Item No.	Exhibit or Spec.	Schedule of Items	MM*	Quantity	Unit	Unit Price	Total Price
OSU Path of Travel Improvements							
1	Section 03 30 53; SHTS C1.1-C1.3	Remove ext’g sidewalk & improvements; replace with 4-inch concrete sidewalk per Construction Item #1	DQ	2,338	SF		
2	Section 03 30 53; SHTS C1.1-C1.3	Remove ext’g sidewalk & improvements; replace with 6-inch concrete sidewalk per Construction Item #2	DQ	5,646	SF		
3	Section 03 30 53; SHTS C1.1-C1.3	Remove ext’g curb or improvement; replace with 16-inch curb per Construction Item #3	DQ	414	LF		
4	Section 03 30 53; SHT C1.1	Remove ext’g tooled concrete; replace per Construction Item #4	DQ	1	Each		

5	Section 03 30 53; SHT C1.1	Remove ext'g curb ramp & associated curb; replace per Construction Item #5	DQ	3	Each		
6	Section 03 30 53; SHT C1.1	Payment for Construction Item #6 will be paid through Construction Items # 2 and #11	DQ	N/A	N/A		
7	Section 03 30 53; SHT C1.1	Remove ext'g curb, sidewalk, and ramp; replace per Construction Item #7	DQ	1	Each		
8	Section 03 30 53; SHT C1.1	Remove ext'g curb, ramp, and sidewalk; replace per Construction Item #8	DQ	4	Each		
9	Section 03 30 53; SHTS C1.1- C1.3	Remove ext'g improvement; replace per Construction Item #9	DQ	729	SF		
10	Section 03 30 53; SHT C1.1	Remove ext'g curb ramp & transition curb; replace per Construction Item #10	DQ	2	Each		
11	Section 03 30 53; SHTS C1.1- C1.3	Remove ext'g improvement per plans; Install truncated domes per Construction Item #11	DQ	132	SF		
12	Section 03 30 53; SHTS C1.2	Remove asphalt and improvements over tunnel; replace per Construction Item #12	DQ	242	SF		
13	Section 32 12 16; SHT C1.3	Grind/Inlay asphalt & install detectable warning system; per Construction Item #13	DQ	1	Each		
14	Section 03 30 53; SHT C1.3	Payment for Construction Item #14 will be paid through Construction Items # 2 and #11	DQ	N/A	N/A		
15	Section 03 30 53; SHT C1.3	Remove ext'g curb, ramp, and sidewalk; replace per Construction Item #15	DQ	1	Each		
16	Section 03 30 53; SHTS C1.1- C1.3	Salvage ext'g Meter Box, Adjust to New Finish Grade	DQ	5	Each		
17	Section 32 12 16; SHTS C1.1- C1.3	Remove ext'g asphalt and rock; replace with 2-2.5-inch lifts asphalt and 15 inches baserock per Construction Items #17	DQ	433	SF		
18	Section 32 12 16; SHTS C1.1- C1.3	Remove ext'g asphalt and rock; replace with 2-3-inch lifts asphalt and 15 inches baserock per Construction	DQ	936	SF		

		Items #18					
19	Section 31 05 00	Remove damaged or ext'g irrigation lateral; replace with new rerouted 5-foot section of irrigation lateral per Section 31 05 00	DQ	10	Each (per 5' section of new pipe)		
20	Section 31 05 00	Remove damaged or lost Rainbird 1800 sprinkler head; replace with new Rainbird 1800 per Section 31 05 00	DQ	10	Each		
21	Section 31 05 00	Remove damaged or lost Hunter I-20 rotor head; replace with new Hunter I-20 per Section 31 05 00	DQ	5	Each		
22	Section 02 22 00	Mobilization; Traffic, Pedestrian, Fencing Control, Clean-up	AQ	1	LS		

MM* DQ-Design Quantity, AQ-Actual Quantity; LS-Lump Sum

Units: LS-Lump Sum; SF-Square Foot; LF-Lineal Feet; CY-Cubic Yard

BASE BID (the sum of Total Price column (Dollars)) (\$ _____)

and the Undersigned agrees to be bound by the following documents:

- Notice of Opportunity
 - Supplemental Instructions to Bidders
 - Performance Bond and Payment Bond
 - Supplemental OSU General Conditions
 - Prevailing Wage Rates
 - Plans and Specifications
 - Instructions to Bidders
 - Sample Contract
 - OSU General Conditions
 - Payroll and Certified Statement Form
 - Drawings and Details
- ADDENDA numbered ____ through____, inclusive (*fill in blanks*)

3. The work shall be completed within the time stipulated and specified in Division 1, Section 01 11 00, of the Specifications.

4. The Undersigned certifies that: (1) This Bid has been arrived at independently and is being submitted without collusion with and without any agreement, understanding, or planned common course of action with any other vendor of materials, supplies, equipment or services described in the invitation to bid designed to limit independent bidding or competition; and (2) The contents of the Bid have not been communicated by the Undersigned or its employees or agents to any person not an employee or agent of the Undersigned or its surety on any Bond furnished with the Bid and will not be communicated to such person prior to the official opening of the Bid.

5. The undersigned **HAS, HAS NOT** (*circle applicable status*) paid unemployment or income taxes in Oregon within the past 12 months and **HAS, HAS NOT** (*circle applicable status*) a business address in Oregon..

6. The Undersigned agrees, if awarded a contract, to comply with the provisions of ORS 279C.800 through 279C.870 pertaining to the payment of the prevailing rates of wage.

7. Contractor's CCB registration number is _____. As a condition to submitting a bid, a Contractor must be registered with the Oregon Construction Contractors Board in accordance with ORS 701.035 to 701.055, and disclose the registration number. Failure to register and disclose the number will render the bid unresponsive and it will be rejected, unless contrary to federal law.

8. The successful Bidder hereby certifies that all subcontractors who will perform construction work as described in ORS 701.005(2) were registered with the Construction Contractors Board in accordance with ORS 701.035 to 701.055 at the time the subcontractor(s) made a bid to work under the Contract.

9. The successful Bidder hereby certifies that, in compliance with the Worker's Compensation Law of the State of Oregon, its Worker's Compensation Insurance provider is _____, Policy No. _____, and that Contractor shall submit Certificates of Insurance as required.

10. Contractor's Project Manager for this project is: _____, Office Phone: _____ Cell Phone: _____.

11. The Undersigned certifies that it has not discriminated against minority, women, or emerging small businesses in obtaining any subcontracts for this project.

12. The Undersigned agrees, if awarded the Contract, to execute and deliver to Owner, within twenty (20) calendar days after receiving the Contract Documents, an Agreement Form and a satisfactory Performance Bond and Payment Bond, each in an amount equal to one hundred (100) percent of the Contract sum, using forms provided by the Owner. The surety requested to issue the Performance Bond and Payment Bond will be: _____.

(name of surety company - not insurance agency) The Undersigned hereby authorizes said surety company to disclose any information to the Owner concerning the Undersigned's ability to supply a Performance Bond and Payment Bond each in the amount of the Contract.

By signature below, Contractor agrees to be bound by this Bid.

NAME OF FIRM _____

ADDRESS _____

FEDERAL TAX ID _____

TELEPHONE NO _____

FAX NO _____

SIGNATURE 1) _____

Sole Individual - Signature

Sole Individual - Printed Name

or 2) _____

Partner

or 3) _____

Authorized Officer of Corporation - Signature

(SEAL)

Authorized Officer of Corporation Printed Name

Attested: Secretary of Corporation

*Payment information will be reported to the IRS under the name and taxpayer ID # provided above.
Information not matching IRS records could subject Contractor to 31 percent backup withholding.*

******* END OF BID *******

UNIT PRICES
Section 01 22 00

PART 1 GENERAL

1.01 DESCRIPTION

- A. Provide unit prices for the Work described herein.

1.02 QUALITY ASSURANCE

- A. For each unit price item which is performed, coordinate the work of the various trades involved, and modify surrounding work as required to complete the project, as intended.
- B. In the figure for each unit price, include incidental costs which, as attributable to adjustments in the work of other trades, may be required to achieve the contemplated final conditions.
- C. If there is a question regarding the extent, scope, nature, or intent of the unit price work, contact the Owner for clarification. Failure on the part of the Contractor to clarify any unclear items shall not relieve the Contractor of the responsibility for performing the Work in accordance with the intent and requirements of the Project Manual or Drawings.
- D. The description of unit price items listed hereinafter is qualitative. The quantities listed are estimated quantities and are included for the purpose of award of the Contract. Actual quantities of labor and materials required to execute the unit price items of Work will be determined by project conditions and with concurrence of the Owner's Authorized Representative.

PART 2 PRODUCTS

2.01 GENERAL

- A. The notes on the Plan Sheets apply to the Work under each unit price item.

PART 3 EXECUTION

3.01 LIST OF UNIT PRICE ITEMS OF WORK

- A. Remove existing sidewalk/Replace with 4-inch concrete sidewalk per Construction Item #1:

Unit price per Square Foot (SF) to remove existing sidewalk and improvements, and replace per Construction Item #1. The unit contract price for this bid item shall be considered full payment for all related work, including work zone control, labor, materials, and equipment. The construction for this unit price item shall meet the requirements of the Contract Documents.

- B. Remove existing improvement/Replace with 6-inch concrete sidewalk per Construction Item **#2**:

Unit price per Square Foot (SF) to remove existing sidewalk and improvements, and replace per Construction Item #2. The unit contract price for this bid item shall be considered full payment for all related work, including work zone control, labor, materials, and equipment. The construction for this unit price item shall meet the requirements of the Contract Documents.

- C. Remove existing curb or improvement/Replace with curb per Construction Item **#3**:

Unit price per Linear Foot (LF) to remove existing curb and/or improvement, and replace per Construction Item #3. The unit contract price for this bid item shall be considered full payment for all related work, including work zone control, labor, materials, and equipment. The construction for this unit price item shall meet the requirements of the Contract Documents.

- D. Remove existing improvement/Replace per Construction Item **#4**:

Unit price per each to remove existing tooled concrete detectable warning pad, and replace per Construction Item #4. The unit contract price for this bid item shall be considered full payment for all related work, including work zone control, labor, materials, and equipment. The construction for this unit price item shall meet the requirements of the Contract Documents.

- E. Remove existing curb ramp and transition curbs/Replace per Construction Item **#5**:

Unit price per each to remove existing curb ramp and associated curbs, and replace per Construction Item #5. The unit contract price for this bid item shall be considered full payment for all related work, including work zone control, labor, materials, and equipment. The construction for this unit price item shall meet the requirements of the Contract Documents.

- F. Remove existing asphalt and baserock/Replace per Construction Item **#6**:

Unit prices for Construction Item #6 will be paid through Construction Items #2 and #11. The unit contract price for these bid items shall be considered full payment for all related work, including work zone control, labor, materials, and equipment. The construction for this unit price item shall meet the requirements of the Contract Documents.

- G. Remove existing curb, ramp, and sidewalk/Replace per Construction Item **#7**:

Unit price per each to remove existing curb, ramp, and sidewalk, and replace per Construction Item #7. The unit contract price for this bid item shall be considered full payment for all related work, including work zone control, labor, materials, and equipment. The construction for this unit price item shall meet the requirements of the Contract Documents.

H. Remove existing curb, ramp, and sidewalk/Replace per Construction Item #8:

Unit price per each to remove existing curb, ramp, and sidewalk, and replace per Construction Item #8. The unit contract price for this bid item shall be considered full payment for all related work, including work zone control, labor, materials, and equipment. The construction for this unit price item shall meet the requirements of the Contract Documents.

I. Remove existing improvement/Replace per Construction Item #9:

Unit price per Square Foot (SF) to remove existing improvement, and replace per Construction Item #9. The unit contract price for this bid item shall be considered full payment for all related work, including work zone control, labor, materials, and equipment. The construction for this unit price item shall meet the requirements of the Contract Documents.

J. Remove existing curb ramp and improvements/Replace per Construction Item #10:

Unit price per each to remove existing curb ramp and associated curbs, and replace per Construction Item #10. The unit contract price for this bid item shall be considered full payment for all related work, including work zone control, labor, materials, and equipment. The construction for this unit price item shall meet the requirements of the Contract Documents

K. Install new detectable warning truncated domes per Construction Item #11:

Unit price per Square Foot (SF) to install new detectable warning pavers per Construction Item #11. The unit contract price for this bid item shall be considered full payment for all related work, including work zone control, labor, materials, and equipment. The construction for this unit price item shall meet the requirements of the Contract Documents.

L. Remove existing asphalt and improvements over tunnel/replace per Construction Item #12:

Unit price per Square Foot (SF) to remove existing asphalt and rat slab over tunnel, and replace per Construction Item #12. The unit contract price for this bid item shall be considered full payment for all related work, including work

zone control, labor, materials, and equipment. The construction for this unit price item shall meet the requirements of the Contract Documents.

M. Remove existing improvements/Replace per Construction Item **#13**:

Unit price per each to grind/inlay asphalt and place surface applied detectable warning pads per Construction Item #13. The unit contract price for this bid item shall be considered full payment for all related work, including work zone control, labor, materials, and equipment. The construction for this unit price item shall meet the requirements of the Contract Documents.

N. Remove existing curb ramp panel/Replace per Construction Item **#14**:

Unit prices for Construction Item #14 will be paid through Construction Items #2 and #11. The unit contract price for these bid items shall be considered full payment for all related work, including work zone control, labor, materials, and equipment. The construction for this unit price item shall meet the requirements of the Contract Documents.

O. Remove existing curb ramp and improvements/Replace per Construction Item **#15**:

Unit price per each to remove existing curb, curb ramp, and sidewalk, and replace per Construction Item #15. The unit contract price for this bid item shall be considered full payment for all related work, including work zone control, labor, materials, and equipment. The construction for this unit price item shall meet the requirements of the Contract Documents.

P. Salvage existing meter box/Adjust to new finish grade per Construction Item **#16**:

Unit price per each to salvage existing meter and/or valve box, and adjust to new finish grade per Construction Item #16. The unit contract price for this bid item shall be considered full payment for all related work, including work zone control, labor, materials, and equipment. The construction for this unit price item shall meet the requirements of the Contract Documents.

Q. Remove existing asphalt and rock/Replace per Construction Items **#17**:

Unit price per Square Foot (SF) to remove existing asphalt and rock, and replace with per Construction Items #17. The unit contract price for this bid item shall be considered full payment for all related work, including work zone control, labor, materials, and equipment. The construction for this unit price item shall meet the requirements of the Contract Documents.

R. Remove existing asphalt and rock/Replace per Construction Items **#18**:

Unit price per Square Foot (SF) to remove existing asphalt and rock, and replace with per Construction Items #18. The unit contract price for this bid item shall be considered full payment for all related work, including work zone control, labor, materials, and equipment. The construction for this unit price item shall meet the requirements of the Contract Documents.

S. Irrigation lateral line replacement:

Unit price per each five foot or less increment to remove existing irrigation lateral lines and appurtenances, and reroute per Earthwork specification 31 05 00. The project improvements may make rerouting of some irrigation lines necessary. The unit price for this bid item shall be considered full payment for all related work, including work zone control, labor, materials, and equipment. The construction for this unit price shall meet the requirements of the Contract Documents.

T. Rainbird 1800 spray head replacement:

Unit price per each to install new Rainbird 1800 spray heads and appurtenances, per Earthwork specification 31 05 00. The unit price for this bid item shall be considered full payment for all related work, including work zone control, labor, materials, and equipment. The construction for this unit price shall meet the requirements of the Contract Documents.

U. Hunter I-20 rotor head replacement:

Unit price per each to install new Hunter I-20 spray heads and appurtenances, per Earthwork specification 31 05 00. The unit price for this bid item shall be considered full payment for all related work, including work zone control, labor, materials, and equipment. The construction for this unit price shall meet the requirements of the Contract Documents.

V. Mobilization; Traffic, Pedestrian, & Fencing Control; Clean-up:

Unit price per Lump Sum (LS) for all mobilization. The unit contract price for this bid item shall be considered full payment for all project related work, including work zone control, tree protection, erosion control (if required), labor, materials, and equipment. The construction for this unit price item shall meet the requirements of the Contract Documents.

END OF SECTION

SECTION 03 30 53

CAST-IN-PLACE CONCRETE, CURBS, AND GUTTERS

Part 1 - General

1.01 SECTION INCLUDES

- A. Cast in place concrete slabs, paving, footings, sidewalks, curbs, and gutters.

1.02 RELATED SECTIONS

- A. Summary of Work, Section 01 11 00
- B. Unit Prices, Section 01 22 00
- C. Tree and Plant Protection, Section 01 56 39
- D. Mobilization; Traffic, Ped., & Fencing Control; Cleanup, Section 02 22 00
- E. Earthwork, Section 31 05 00
- F. Asphalt Concrete Paving, Section 32 12 16

1.03 REFERENCES

- A. Refer to City of Corvallis Standard Specifications II.6.

1.04 SUBMITTALS

- A. Product Data: Provide data on admixtures.
- B. Mix Design: Submit mix design listing materials, products, and quantities for each concrete strength specified.

1.05 PROJECT RECORD DOCUMENTS

- A. Accurately record actual locations of embedded utilities and components which are concealed from view.

1.06 QUALITY ASSURANCE

- A. Perform Work in accordance with ACI 301.
- B. Acquire cement and aggregate from same source for all work.
- C. Conform to ACI 305R when concreting during hot weather.
- D. Conform to ACI 306R when concreting during cold weather.
- E. Conform to ACI 318 when constructing with reinforcing steel.

1.07 COORDINATION

- A. Coordinate work.

Part 2 - Products

2.01 CONCRETE MATERIALS

- A. Cement: ASTM C150, Type I Normal, Portland type.
- B. Fine and Coarse Aggregates: ASTM C33, washed clean, free of deleterious substances; maximum size of 3/4 inch (18 mm) at exposed aggregate flatwork and 1-1/2 inch (38 mm) elsewhere, and not larger than 1/5 of narrowest space between forms, 1/3 of slab depth, nor 3/4 (18 mm) of minimum clear space between reinforcing bars.
- C. Water: Clean and not detrimental to concrete.

2.02 ADMIXTURES

- A. Air Entrainment: ASTM C260.
- B. Chemical: ASTM C494 Type A Water Reducing admixture; containing no set accelerating, set retarding compounds, chloride or nitrates.

2.03 ACCESSORIES

- A. Bonding Agent: Neat cement paste, mixed to thick, brushable consistency.
- B. Non Shrink Grout:
 - 1. Premixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing agents.
 - 2. Capable of developing minimum compressive strength of 2,400 psi in 4 hours and 7,000 psi (48 MPa) in 28 days.
 - 3. Brands:
 - a. Horn Non-corrosive Non-shrink Grout manufactured by A.C. Horn Inc.
 - b. Masterflow 928 Grout manufactured by Master Builders Technologies
 - c. Non-Ferrous, Non-Shrink Grout manufactured by Burke
 - d. 588 Non-Shrink Non-Ferrous Grout manufactured by W.R. Meadows, Inc.
 - e. SonogROUT 14K manufactured by Sonneborn-Rexnord
- C. Snap Tie Plugs: Preformed, non-shrink grout plugs to fill holes left by form ties; size to flush with wall surface; matching adhesive.

- D. Tie-Through Bolt Plugs: Vinyl plug, size for installation at center of wall.
- E. Hardener/Sealer: ASTM C309, Type 1 clear; non-yellowing; acrylic copolymer; TIAH manufactured by W.R. Meadows, or approved.
- F. Curing/Sealing Compound: ASTM C309, Type 1 clear; non-yellowing; acrylic polymer; CS-309 manufactured by W.R. Meadows, or approved.
- G. Expansion Joint Filler
 - 1. Manufacturer & Brand: Sonneborn Sonoflex F, or approved
 - 2. Thickness: 3/8 inch
 - 3. Depth: As required to position Filler top 3/4 inch below Slab top.
- H. Expansion Joint Sealing Compound
 - 1. Manufacturer & Brand: Sonneborn Sonolastic Paving Joint Sealant, PRC Rubbercalc 220, or approved.
 - 2. Color: Gray

2.04 CONCRETE MIX

- A. Mix and deliver concrete in accordance with ASTM C94.
- B. Types of Concrete:
 - 1. Type A Concrete: Provide concrete to the following characteristics for footings, sidewalks, curbs, and gutters:

<u>UNIT</u>	<u>MEASUREMENT</u>
Compressive Strength (28 day)	4000 psi
Minimum Cement Content	6 sacks per cubic yard
Maximum water/cement ratio	0.45
Air	5% ± 1%
Maximum Slump	4 inch
Commercial Mix	

- 2. Type B Concrete: Provide concrete to the following characteristics for paving:

<u>UNIT</u>	<u>MEASUREMENT</u>
Compressive Strength (7 day)	3000 psi
Compressive Strength (28 day)	4000 psi
Minimum Cement Content	7 sacks per cubic yard
Maximum water/cement ratio	0.40
Air	5% ± 1%
Maximum Slump	4 inch
Commercial Mix	

- C. Use accelerating admixtures in cold weather only when approved by Engineer or Owner's authorized representative. Use of admixtures will not relax cold weather placement requirements.
- D. Use set retarding admixtures during hot weather only when approved by Engineer.
- E. Fly Ash may be used to replace up to 20% of the cement content (by weight) in non-architecturally exposed concrete.

2.05 REINFORCING STEEL

- A. Use ASTM Grade 60.
- B. Use reinforcing steel size as called out on Drawings.

Part 3 - Execution

3.01 EXAMINATION

- A. Ensure reinforced steel is placed as called out on the Drawings in accordance with ACI 318.
- B. Verify requirements for concrete cover over reinforcement.
- C. Verify that anchors, seats, plates, reinforcement and other items to be cast into concrete are accurately placed, positioned securely, and will not cause hardship in placing concrete.

3.02 PREPARATION

- A. Prepare previously placed concrete by cleaning with steel brush and applying bonding agent. Place successive concrete within 2 hours.

3.03 PLACING CONCRETE

- A. Place concrete in accordance with ACI 301.
- B. Notify Engineer and Owner's authorized representative minimum 48 hours prior to commencement of operations.
- C. Ensure reinforcement, inserts, embedded parts, formed expansion and contraction joints, and other items are not disturbed during concrete placement.
- D. Maintain records of concrete placement. Record date, location, quantity, air temperature, and test samples taken.
- E. Place concrete continuously between predetermined expansion, control, and construction joints.

- F. Screed slabs level, maintaining surface flatness of maximum 1/4 inch in 10 ft.
- G. Do not convey concrete through aluminum pipe.

3.04 CONCRETE FINISHING

- A. Provide formed concrete surfaces to be left exposed with sack rubbed finish as scheduled in this Section.

3.05 CONCRETE WALK FINISHING

- A. Draw fine hairline broom across concrete perpendicular to walkway direction.

3.06 WALKWAY EDGING

- A. Before final finishing is completed and before final concrete set has occurred, finish concrete edges with edging tool shaped with ¼ inch radius.
- B. Take particular care to maintain surface on both sides of joint in same plane.
- C. Do not use kneeling planks on concrete surface.

3.07 WALKWAY JOINTS

A. General

1. Make perpendicular to line of walkway.
2. Layout joints in accordance with approved drawings
3. Form to true straight lines with slabs flush at joints.

B. Construction Joints

1. Provide when placing fresh concrete against hardened concrete or other structures.
2. Space joints no greater than 25 ft apart.
3. Provide expansion joint fillers in joints and up to level of walkway surface with expansion joint sealing compound.

C. Weakened-plane Shrinkage-control Joints:

1. Locate as shown on the drawings, equally spaced between spans where not dimensioned or aligned with other elements.
2. Joint Depth: 1/3 of Slab thickness
3. Joint Width: 1/8 inch

3.08 CURING AND PROTECTION

- A. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.

- B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.
- C. Apply curing/sealing compound to freshly finished concrete slabs, in accordance with manufacturer's recommendations.

3.09 FIELD QUALITY CONTROL

- A. Field inspection and testing shall be performed in accordance with ACI 301.
- B. Provide free access to Work and cooperate with the appointed firm.
- C. Submit proposed mix design of each type of concrete to inspection and testing firm for review prior to commencement of Work.
- D. Tests of cement and aggregates may be performed to ensure conformance with specified requirements.
- E. Four concrete test cylinders will be taken for every 100 or less cu yds of each type of concrete placed per day. Cylinders will be prepared in accordance with ASTM C31.
- F. One additional test cylinder will be taken during cold weather concreting, cured on job site under same conditions as concrete it represents.
- G. Concrete test cylinders will be laboratory tested in accordance with ASTM C39.
- H. One slump test will be taken for each set of test cylinders taken in accordance with ASTM C143.

3.10 PATCHING

- A. Allow Engineer or Owner's authorized representative to inspect concrete surfaces immediately upon removal of forms.
- B. Excessive honeycomb or embedded debris in concrete is not acceptable. Notify Engineer upon discovery.
- C. Patch imperfections in accordance with ACI 301.
- D. Patch form tie holes to be watertight and to match appearance of formed surfaces.

3.11 DEFECTIVE CONCRETE

- A. Defective Concrete: Concrete not conforming to required lines, details, dimensions, tolerances or specified requirements.

- B. The Engineer or Owner's authorized representative will determine repair or replacement of defective concrete.
- C. Do not patch, fill, touch up, repair, or replace exposed concrete except upon express direction of Engineer for each individual area.

Part 4 - Measurement and Payment

4.01 UNIT PRICE: 4-INCH THICK CONCRETE SIDEWALK

- A. The purpose of this unit price item is to remove existing sidewalk and/or improvements and replace with new sidewalk compliant with ADA requirements.
- B. The payment for this bid item shall be made at the contract unit price, and shall be paid on a square foot (SF) basis. The unit price includes all labor, materials, and equipment associated with the construction of the sidewalk, including street cuts, excavation, haul off, backfill, baserock, and landscape repair (soil replacement, grass seeding as needed). The construction for this unit price item shall meet requirements of this Section, and the Contract Documents.

4.02 UNIT PRICE: 6-INCH THICK CONCRETE SIDEWALK

- A. The purpose of this unit price item is to remove existing sidewalk and/or improvements and replace with new sidewalk compliant with ADA requirements.
- B. The payment for this bid item shall be made at the contract unit price, and shall be paid on a square foot (SF) basis. The unit price includes all labor, materials, and equipment associated with the construction of the sidewalk, including street cuts, excavation, haul off, backfill, baserock, and landscape repair (soil replacement, grass seeding as needed). The construction for this unit price item shall meet requirements of this Section, and the Contract Documents.

4.03 UNIT PRICE: 16-INCH STRAIGHT CONCRETE CURB

- A. The purpose of this unit price item is to remove existing curb and/or improvements and replace with new 16" straight concrete curb compliant with ADA requirements.
- B. The payment for this bid item shall be made at the contract unit price, and shall be paid on a linear foot (LF) basis. The unit price for this item shall be considered full payment for all labor, materials, and equipment associated with the placement of this item, including street cuts, excavation, haul off, placement of crushed aggregate baserock, and landscape repair. The construction for this unit price item shall meet the requirements of this Section, and the Contract Documents.

4.04 UNIT PRICE: REPLACE CONCRETE AND DETECTABLE WARNING TILE

- A. The purpose of this unit price item is to remove approximately 3' X 48' of existing tooled detectable warning concrete, while protecting existing ballards, and replace with new concrete and "Access Tile" detectable warning panels to match the existing panels across the street, and to be compliant with ADA requirements.
- B. The payment for this bid item shall be made at the contract unit price, and shall be paid on a per item basis. The unit price for this item shall be considered full payment for all labor, materials, and equipment associated with the placement of this item, including street cuts, excavation, haul off, placement of crushed aggregate baserock, concrete, and new detectable warning tile. The construction for this unit price item shall meet the requirements of this Section, and the Contract Documents.

4.5 UNIT PRICE: CONSTRUCT 3 NEW CURB RAMPS

- A. The purpose of this unit price item is to remove existing transition curbs, curb ramps, and improvements to construct 3 curb ramps compliant with ADA requirements.
- B. The payment for this bid item shall be made at the contract unit price, and shall be paid on a per item basis. The unit price for this item shall be considered full payment for all labor, materials, and equipment associated with the placement of this item, including street cuts, excavation, haul off, placement of crushed aggregate baserock, and landscape repair. The construction for this unit price item shall meet the requirements of this Section, and the Contract Documents.

4.6 UNIT PRICE: CONSTRUCT NEW CURB RAMP SIMILAR TO ADJACENT RAMP

- A. The purpose of this unit price item is to remove the existing ramp and improvements to construct an ADA compliant ramp similar to the ramp 90 feet to the east, including the placement of approximately 26 LF of 16" curb and 10 LF of concrete detectable warning panels (20 SF). The associated asphalt replacement will be paid by its respective unit price.
- B. The payment for this bid item shall be made at the contract unit price, and shall be paid on a per item basis. The unit price for this item shall be considered full payment for all labor, materials, and equipment associated with the placement of this item, including street cuts, excavation, haul off, and placement of crushed aggregate baserock. The construction for this unit price item shall meet the requirements of this Section, and the Contract Documents.

4.7 UNIT PRICE: CONSTRUCT 4 NEW CURB RAMPS

- A. The purpose of this unit price item is to remove the existing ramp and improvements to construct an ADA compliant ramp that aligns with the ramp

across the roadway. This unit price item includes the 6" thick ramp, concrete detectable warnings, and the new curb for the ramp. Replacement of the concrete roadway at the new ramp and existing ramp, and the curb and sidewalk replacement at the existing ramp will be paid using different unit prices.

- B. The payment for this bid item shall be made at the contract unit price, and shall be paid on a per item basis. The unit price for this item shall be considered full payment for all labor, materials, and equipment associated with the placement of this item, including street cuts, excavation, haul off, and placement of crushed aggregate baserock. The construction for this unit price item shall meet the requirements of this Section, and the Contract Documents.

4.8 UNIT PRICE: 8-INCH REINFORCED CONCRETE

- A. The purpose of this unit price item is to remove existing improvement and replace with new reinforced concrete compliant with ADA requirements.
- B. The payment for this bid item shall be made at the contract unit price, and shall be paid on a square foot (SF) basis. The unit price includes all labor, materials, and equipment associated with the construction of the pavement, including street cuts, excavation, haul off, backfill, baserock, and landscape repair. The construction for this unit price item shall meet requirements of this Section, and the Contract Documents.

4.9 UNIT PRICE: CONSTRUCT 2 NEW CURB RAMPS

- A. The purpose of this unit price item is to remove existing transition curbs, curb ramps, and improvements to construct 2 curb ramps compliant with ADA requirements.
- B. The payment for this bid item shall be made at the contract unit price, and shall be paid on a per item basis. The unit price for this item shall be considered full payment for all labor, materials, and equipment associated with the placement of this item, including street cuts, excavation, haul off, placement of crushed aggregate baserock, and landscape repair. The construction for this unit price item shall meet the requirements of this Section, and the Contract Documents.

4.10 UNIT PRICE: INSTALL NEW [REDACTED] DETECTABLE WARNING PAVERS

- A. The purpose of this unit price item is install new [REDACTED] detectable warning truncated dome panels, compliant with ADA requirements. The associated concrete will be paid using a different unit price.
- B. The payment for this bid item shall be made at the contract unit price, and shall be paid on a square foot (SF) basis. The unit price for this item shall be considered full payment for all labor, materials, and equipment associated with the placement of this item. The construction for this unit price item shall meet the requirements of this Section, and the Contract Documents.

4.11 UNIT PRICE: 11"+/- REINFORCED CONCRETE OVER TUNNEL TOP WITH DETECTABLE WARNING PANELS

- C. The purpose of this unit price item is to remove existing asphalt and/or improvements over tunnel, under a road, and replace with 11-inch thick reinforced concrete over new tunnel waterproofing, compliant with ADA requirements. This unit price includes placing tunnel waterproofing and detectable warning panels per the plans. The adjacent curb and asphalt replacement will be paid using different unit prices.
- D. The payment for this bid item shall be made at the contract unit price, and shall be paid on a square foot (SF) basis. The unit price for this item shall be considered full payment for all labor, materials, and equipment associated with the placement of this item, including tunnel waterproofing, detectable warning panels, street cuts, excavation, haul off, placement of crushed aggregate baserock, and landscape repair. The construction for this unit price item shall meet the requirements of this Section, and the Contract Documents.

4.12 UNIT PRICE: CONSTRUCT NEW CURB RAMP

- A. The purpose of this unit price item is to remove the existing ramp and improvements to construct an ADA compliant ramp. This unit price item includes the 6" thick ramp, associated ramp flares, concrete detectable warnings, and the approximately 24 LF of new 16" curb for the ramp.
- B. The payment for this bid item shall be made at the contract unit price, and shall be paid on a per item basis. The unit price for this item shall be considered full payment for all labor, materials, and equipment associated with the placement of this item, including street cuts, excavation, haul off, and placement of crushed aggregate baserock. The construction for this unit price item shall meet the requirements of this Section, and the Contract Documents.

4.13 UNIT PRICE: ADJUST METER BOX & VALVE CONTROL BOX

- A. The purpose of this unit price item is to adjust existing meter and valve control boxes to the new finish grade in the sidewalk, compliant with ADA requirements.
- B. The payment for this bid item shall be made at the contract unit price, and shall be paid on a per item basis. The unit price includes all labor, materials, and equipment associated with the adjustments. The construction for this unit price item shall meet requirements of this Section, and the Contract Documents.

END OF SECTION 03 30 53