COBB COUNTY
DEPARTMENT OF TRANSPORTATION
ENGINEERING DIVISION

Resurfacing 2012-3
Local Roads (North)
Project No. E9030
January 19, 2012

ADDENDUM NO. 1

Proposals Received Until JANUARY 26, 2012 – 12:00 Noon Local Time

The following addendum hereby amends and/or modifies the Bid Documents and Contract Specifications as issued for this project. All bidders are subject to the provisions of this Addendum. **Bidders shall acknowledge receipt of this addendum and must use the attached revised bid schedule of items stamped Addendum No. 1.**

I. PREBID CONFERENCE

Minutes of the Prebid Conference held on Tuesday January 17, 2012, are attached.

NOTE: Addenda, including plan holder lists, will be posted online at the following websites for Cobb Purchasing and Cobb DOT: http://purchasing.cobbcountyga.gov/bid-list.htm and http://dot.cobbcountyga.gov/bid-rfp.htm. Receipt of addenda must be acknowledged in the bid document. It is the bidder's ultimate responsibility to ensure that they have all applicable addenda prior to bid submittal and to utilize the latest bid schedule.

Contractor to pay special attention to the Cobb County Water System Details, provided with addendum.

New striping to replace the existing striping on each street shall match existing striping, unless directed otherwise by Engineer.

The following streets have been deleted from the contract:

#3 – Autumn Chase Court
#17 – Collegiate Drive
#18 – Collegiate Way
#23 – Booth Court
#25 – Jill Lane
#29 – Dogwood Lane

II. BID SCHEDULE OF ITEMS

REVISED:

Pay Item #402-1802, Recycled ASPH CONC Patching INCL BIT MATL & H Lime, **10,730 TON**
Pay Item #402-3100, RECY ASP CONC 9.5MM SUPRPAVE TY1, GP 1 or BLD 1, INCL BM & HM, **14,563 TON**
Pay Item #413-1000, BITUM Tack Coat, **11,651 GAL**
Pay Item #432-5010, Mill Asphalt Conc. Pvmt, Variable Depth, **178,593 SY**
Pay Item #653-1704, Thermoplastic Solid Traffic Stripe, 24 IN, White, **300 LF**
Pay Item #653-1804, Thermoplastic Solid Traffic Stripe, 8 IN, White, **950 LF**

II. BID SCHEDULE OF ITEMS

ADDED:

Pay Item #660-C494, Adjust Existing MH to Grade In Pavement 0-1FT, **200 EA**
Pay Item #660-C494, Adjust Existing MH to Grade In Pavement 0-1FT,
Desc: Includes Lowering Prior to Milling, **18 EA**
Pay Item #672-C155, Adjust Existing Valve Box To Grade in Pavement, **35 EA**
Pay Item #674-C031 Utility Allowance, **1 LS**

III. QUESTIONS/ANSWERS

Q. What type mix will be used for patching?

A. The estimate is based on two inches of binder. The patching pay item also includes milling.

Q. Is there any full width milling?

A. Yes.

Q. Do you have a list of approved Unit Price Contractors/Subcontractors allowed to perform water and sewer relocation work associated with this project?

A. The Dickerson Group, K.M. Davis Contracting Company, Inc., Mechanical Jobbers, Inc., Site engineering, Inc., Steele & Associates, Inc. & Tippins Contracting Company, Inc.

Q. Where can I get a copy of the plan holders list?

A. At the following website: http://dot.cobbcountyga.gov/bid-rfp.htm. This will be available on all future projects.

Q. Will the speed hump on Brookcliff Place need to be put back?

A. No.

Q. Is temporary striping required on milled roads?

A. No, unless directed otherwise by the field engineer.

Questions should be sent via email, no later than 2:00 p.m. on Monday, January 23, 2012, **to purchasing@cobbcounty.org**

Michael S. Cates, P.E.
Pre-Construction Engineer

MSC/RJG/jan
cc: *Electronic copies:*
John Flood, Cobb County Purchasing (w/hard copy)
Bob Galante, CCDOT Construction
Ted Harris, CCDOT Operations
Russell Cooke, CCWS
Larry Terry, CCDOT Construction
Joe Alexander, CCDOT Construction
Jeff Neiswender, CCDOT Construction
Andy Rikard, CCDOT Utility Coordinator, Engineering
Denise Hatabian, CCDOT Construction
Mike Lehner, CCDOT Construction
Lynn Lambert, CCDOT Engineering
David Muller, CCDOT Utility Coordinator, Construction
Attachment: Prebid Minutes, Revised Bid Schedule & Water Specifications

2012-3 Local Roads (North)
RESURFACING CONTRACT
PROJECT NO. E9030
PREBID CONFERENCE
Bid Date: January 26, 2012 – 12:00 Noon Local Time

DATE: January 17, 2012 – 9:30 a.m.

ATTENDEES: See Attached Sign-in Sheet

MEETING MINUTES:

(1) This is the Prebid Conference for Cobb DOT **PROJECT NO. E9030, Resurfacing Contract, LOCAL ROADS (North). Bids will be received until 12:00 noon on January 26, 2012, at Cobb County Purchasing Department, 1772 County Services Parkway, Marietta, Georgia. Bids will be opened and read aloud at 2:00 p.m. at the Cobb County Purchasing Department, 1772 County Services Parkway.**

NO BIDS WILL BE ACCEPTED AFTER THE 12:00 NOON DEADLINE. Those received late will be unopened. All bidders must be on record with Cobb County as having purchased plans and specifications. All bids shall be submitted on the Bid Proposal Form. Any revisions made on the outside of the envelope will not be accepted.

Addenda, including plan holder lists, will be posted online at the following websites for Cobb Purchasing and Cobb DOT: http://purchasing.cobbcountyga.gov/bid-list.htm and http://dot.cobbcountyga.gov/bid-rfp.htm . Receipt of addenda must be acknowledged in the bid document. It is the bidder's ultimate responsibility to ensure that they have all ***applicable addenda prior to bid submittal*** *and to utilize the latest bid schedule.*

DO NOT DELIVER BIDS TO COBB DEPARTMENT OF TRANSPORTATION.

The time allowed for completion of the project will be December 31, 2012.

Minutes of this meeting and any revisions will be issued as Addendum No. 1.

(2) Introduction of Special Representatives in attendance.

(3) **Project Description:**

Project No.:	**E9030**
Project Name:	**Resurfacing 2012-3 Local Roads (North)**

Project consists of asphaltic resurfacing on various county streets. Work includes variable depth milling, patching, leveling, resurfacing and pavement markings.

Payment will be made monthly based on approved invoices.

Cobb County Water System work is involved on this project. Only contractors who have been awarded the Unit Price Contracts for the FY2012-FY2013 Manhole and Valve Box Adjustments and their sub-contractors are allowed to perform water and sewer relocation work associated with this project. The Owner reserves the right to deduct the manhole and valve adjustment work from the contract work if the Owner determines the bid unit prices for the manhole and valve adjustment items are not in the best interest of the Owner.

ADDENDUM NO. 1

(4) Special Items to Note

The **Contractor** and their subcontractors are required to be in compliance with the "Georgia Security and Immigration Compliance Act." The Contractor must execute **and submit at the time of the bid** the "Contractor Affidavit and Agreement," (Page 1.12) **or bid will be determined non-responsive and will be disqualified.**

The **Contractor** must submit a DBE participation report to the **County** prior to beginning work on the project. **A monthly DBE utilization report must be submitted with each monthly invoice.** A final DBE report must be submitted at the end of the project. If DBE participation changes during the course of the project, an updated participation report must be submitted to the **County** at the time of such change. The County strongly supports DBE participation in all contracts.

For all bids for contracts involving utility work as defined in O.C.G.A. 43-14-1 et.seq., the **Contractor and/or subcontractor(s)** that will perform utility work must have a valid state of Georgia Utility Contractor License and comply with all applicable provisions of Chapter 14 of title 43 of O.C.G.A.

The **Contractor** must meet the current bid requirements of the Georgia Department of Transportation.

All work performed for this project will be in accordance with the Georgia Department of Transportation Standard Specifications, Construction of Transportation Systems, **Current Edition**, and any modifications identified in the bid documents.

- There are no speed humps in this contract
- Contractor is responsible for coordinating and controlling the utilities. If issues arise and efforts to resolve are exhausted, the County may intervene.
- Contractor shall obtain signed "Utility Adjustment Schedules" from all utilities involved. This form is located on Page 3.23 of the Contract Documents.
- Contractor must be sensitive to the public needs. All communication with the public must be through the contractor's project superintendent. Laborers should not communicate with property owners and other such citizens.
- Mailboxes and driveway accesses must be maintained.
- Lawns must be restored to existing or better conditions. Sod and grass must be restored with sod and grass of the same type.
- Heavy equipment operating in the right-of-way must yield to all traffic and define their work area with approved channeling devices.
- County maps of streets shown in contract will be available upon request!

(4) Special Items to Note (continued):

- Work cannot be performed that slows traffic during the peak hours of 6:00 a.m. – 9:00 a.m. or 4:00 p.m. – 7:00 p.m. (note time change) unless approved by Engineer. **Night work is not permitted.**
- All signs that are temporarily removed must be put back in place before the end of the day.
- If change orders or supplemental agreements are required, all changes require approval **before** the work is started.
- Contractor Pay Requests – quantities to be agreed on with inspector by the 25th of each month. Contractor is to submit formal invoice by the 5th of each month.
- Contractor to submit emergency telephone numbers for contractor, and all sub-contractors (particularly the traffic control sub-contractor). Phone list shall include home number(s), office, and pager(s), (where applicable).
- Non-collusion affidavits and copies of Georgia business licenses (Cobb County business licenses for those companies whose headquarters are located in Cobb County) must be submitted for all sub-contractors prior to work.
- Traffic control involving the use of Uniformed County Police Vehicles will be coordinated by Cobb DOT and paid under the Construction Allowance Item.
- Contractor is responsible for scheduling his own work; however, from time to time, the County reserves the right to add, delete, delay, or expedite the resurfacing of any street at no additional compensation to the Contractor.
- Milling items to include unforeseen concrete areas. No additional compensation will be paid. Milling is variable depth.
- Milling machines are to be used for all patching.
- Milled areas are to be paved within 15 days, or $1,000 per day in liquidated damages may be assessed if left unpaved.
- Sweeper Truck shall have a minimum capacity of 3 cubic yds., with adequate dust control.
- Thermoplastic striping is to be complete within 14 days of paving, and no sooner than 3 days. If incomplete, liquidated damages in the amount of $1,000 per day will apply.
- Cobb County Water System will inspect man-hole covers and valve box adjustments.
- Cobb County will implement GDOT's Asphalt Concrete Price Index for the month of January 2012 and follow guidelines set forth by the State.

(4) Special Items to Note (continued):

The contractor will not be able to start receiving payments until March 2012.

(5) Contract Documents:

Contractor should make every effort to completely review Section 3, General Conditions. Please review Section 107.23; Section 108.03; Section 108.08, and Section 150.

(6) Review:

Section 150 Traffic Control –.

Section 150.08 Enforcement

(7) Questions should be sent via email, **no later than 2:00 p.m. on Monday, January 23, 2012,** to purchasing@cobbcounty.org

Michael S. Cates, P.E.
Pre-Construction Engineer

MSC/RJG/jan

COBB COUNTY DEPARTMENT OF TRANSPORTATION
RESURFACING CONTRACT 2012-3
PROJECT NO. E9030
Pre-Bid Conference
January 17, 2011 9:30 a.m.

NAME	FIRM	OFFICE PHONE/FAX	EMAIL ADDRESS
Jim Peek	C.W. Matthews Contracting	O 770-422-7520 F 770-422-9361	jpeek@cwmatthews.com
Lawrence Tutterow	Stewart Bros., Inc	O 770-447-5810 F	ltutterow@stewartbrosinc.
Darryl Dardar	Parker Fry, LLC	O 678-249-8401 F	ddardar@comcast.net
Mike Lehner	Cobb DOT	O 7-528-3681 F 7-245-7794	
Denise Hatabian	Cobb DOT	O 7-528-1653 F	denise.hatabian@cobbcounty.org
Stephanie Brice	Cobb Purchasing	O 770-528-8400 F 770-528-8429	Stephanie.brice@Cobbcounty.org

ADDENDUM NO. 1

Contract No: C 000526 Vendor: _____

Project No: E903 2012-3 RESURFACING LOCAL ROADS (NORTH) RESURFACING Signature: _____

Group:T01 ROADWAY

Line No.	Approx Quant.	Item	Unit Price	Amount
5	1.00 LS	205-0100 CONSTRUCTION ALLOWANCE	FIXED	$50,000.00
10	1.00 LS	400-0001 ASPHALT CEMENT INDEX (+/-)	FIXED	$100,000.00
15	10,730.00 TON	402-1802 RECYCLED ASPH CONC PATCHING INCL BIT MATL & H LIME		
20	14,563.00 TON	402-3100 RECYASPCON 9.5MM SUPRPAVE TY1,GP1ORBLD1,INCLBM&HL		
25	11,651.00 GAL	413-1000 BITUM TACK COAT		
30	178,593.00 SY	432-5010 MILL ASPHALT CONC PVMT, VARIABLE DEPTH Desc: (BOLD = FULL WIDTH)		
35	300.00 LF	653-1704 THERMOPLASTIC SOLID TRAFFIC STRIPE, 24 IN, WHITE		
40	950.00 LF	653-1804 THERMOPLASTIC SOLID TRAFFIC STRIPE, 8 IN, WHITE		
			TOTAL ROADWAY	

Contract No: C 000526 Vendor: _____

Project No: E903 2012-3 RESURFACING LOCAL ROADS (NORTH) RESURFACING Signature: _____

Group:W01 WATER

Line No.	Approx Quant.	Item	Unit Price	Amount
45	18.00 EA	660-C494 ADJUST EXISTING MH TO GRADE IN PAVEMENT 0-1 FT. Desc: INCLUDES LOWERING PRIOR TO MILLLING		
50	200.00 EA	660-C494 ADJUST EXISTING MH TO GRADE IN PAVEMENT 0-1 FT.		
55	35.00 EA	672-C155 ADJUST EXISTING VALVE BOX TO GRADE IN PAVEMENT		
60	1.00 LS	674-C031 UTILITY ALLOWANCE	FIXED	$20,000.00

TOTAL WATER

TOTAL ROADWAY

GRAND TOTAL 2012-3 RESURFACING E9030

FINAL PAGE

MEASUREMENT AND PAYMENT

GENERAL

Only those pay items identified in the Bid Schedule, or added by addendum or supplemental agreement, will be measured for payment by the units listed in the bid schedule and/or supplemental agreement and paid for at the Contract prices.

The cost of all Work not directly covered by the pay items shall be considered incidental to the construction and is to be included and distributed among the bid unit prices of the pay items listed in the Contract. No separate payment shall be made for repair of damage to roadways, sidewalks, driveways, curb & gutters, etc. due to the contractors' equipment, miscalculation of manhole or valve box location, or other preventable situations

Contract unit prices represent the installed, complete-in-place, tested and accepted cost, including, but not limited to:

* All required labor, tools, and equipment, unless otherwise noted.
* All materials, unless specifically identified for payment under another pay item.
* All required erosion and sediment control, excavation, dewatering, sheeting/shoring/bracing, backfill, compaction, restoration to grade, landscape replacement including grassing and sod replacement and repair.
* All required traffic control consistent with MUTCD, including lane closure permits from the proper authorities.
* Daily, proper, legal disposal of all surplus, waste, and unsuitable materials and debris.
* Protection of existing utilities, including but not limited to, coordination with the Utilities Protection Center, compliance with all regulatory guidelines for utility location, and diligent care in handling and working around utilities.
* Coordination of additional project access as may be desired
* Protection of all work from traffic, vandalism, weather/seasonal conditions.
* Miscellaneous associated work necessary to complete the work in place.

All excavation is considered unclassified. No separate payment shall be made for any type of soil or rock encountered. Backfill materials shall be select and compacted to a minimum of 98% Standard Proctor and to 100% Standard Proctor for the top 12-inches below roadways

ADJUSTMENT TO GRADE OF EXISTING VALVE BOX

Unit price each is for all coordination, traffic control, labor, material, and equipment necessary for the adjustment to grade of an existing water distribution system valve box (with lid, valve box pad, valve box extension, valve nut extension, etc., as applicable). Payment items are specific to depth of adjustment and to in pavement or out of pavement conditions.

ADJUSTMENT TO GRADE OF EXISTING MANHOLE

Unit price each is for the coordination, traffic control, labor, material, and equipment necessary for the adjustment of an existing sanitary sewer collection system manhole (with ring & cover, surrounding pad, etc., as applicable). Payment items are specific to in pavement or out of pavement conditions..

ADJUSTMENT OF EXISTING MANHOLE USING A 1-FOOT PRECAST CONCRETE RISER

Unit price each is for the coordination, traffic control, labor, material, and equipment necessary for the adjustment of an existing sanitary sewer collection manhole using 1-foot precast concrete riser section(s) and including the necessary removal and reinstallation of the existing cone or flat-top section. Adjustment to finished grade shall be measured and paid for under the corresponding bid items. Payment items are specific to in pavement or out of pavement conditions..

TEMPORARY "LOWERING" AN EXISTING MANHOLE TO ACCOMMODATE ROADWAY MILLING OPERATIONS

Unit price each is for all coordination, traffic control, labor, material, and equipment necessary for the temporary "lowering" of an existing manhole to accommodate Department of Transportation contracts' roadway milling operations. Includes, but is not limited to, accurate horizontal survey to locate manhole following resurfacing for subsequent adjustment to finished grade, securing the manhole to prevent entry of construction and other debris, etc. Adjustment to finished grade shall be measured and paid for under the corresponding bid items. Payment items are specific to in pavement conditions.

SPECIAL CONDITIONS

The following specific Special Conditions take precedent over plans and specifications. Section numbers shown refer to the appropriate section of the *Cobb County Water System Contract Documents*. All other requirements remain in full effect.

1. The work performed under this contract shall have a guarantee period of two (2) years from the date of Acceptance (reference Section 00700,General Conditions, Paragraph 4.10).

2. Builder's Risk insurance is not required for this contract. (Section 00750, Insurance Requirements For Contractors, Paragraph 1.D.)

3. No subcontractors will be permitted to perform any portion of work under this contract unless authorized by the Owner for select specialty work.

4. Contractor shall provide all other job site safety training and equipment to ensure a safe working environment for employees, Owner representatives, and the adjacent public. All project foremen shall have Competent Person certification. Work in sanitary sewer manholes and other confined areas shall be directly supervised by personnel having current "Confined Space Entry" certification. For excavations exceeding 48-inches in depth, direct supervision shall be by personnel with both Competent Person and "Trench Safety" or "Confined Space Entry" certifications.

5. Contractor shall notify the Owner immediately of any created or observed situation involving the discharge/spill of raw sewage which is or has the potential of reaching a water way.

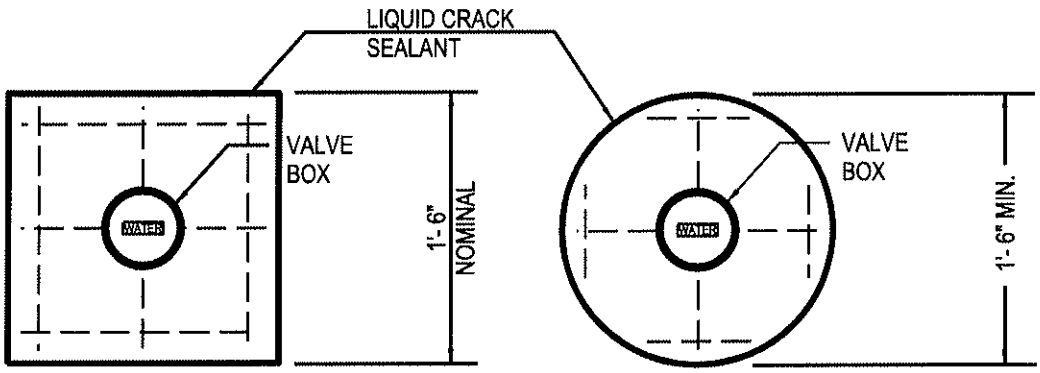
6. Contractor shall notify the Owner of any observed situation of water distribution system leakage, sewer collection system inflow/infiltration or other unusual problems at a location, prior to beginning work.

END OF SPECIAL CONDITIONS

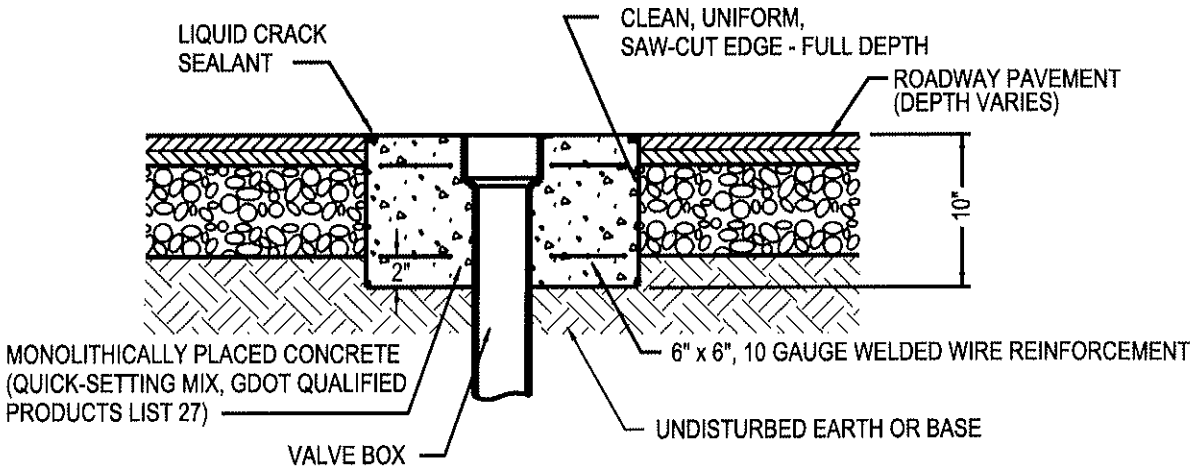
DETAIL 02713-33
COBB COUNTY WATER SYSTEM
VALVE BOX ADJUSTMENT IN PAVEMENT

JULY 7, 2009

AGENCY DIRECTOR



PLAN



SECTION

GENERAL NOTES

1. IF REPLACEMENT IS NECESSARY, VALVE BOX SHALL BE APPROVED STANDARD CAST IRON ADJUSTABLE WITH A MIN. DIA. OF 5 1/4" THE CASTING SHALL BE COATED WITH COAL-TAR PITCH VARNISH. THE LID SHALL BEAR THE WORD "WATER" OR THE LETTER "W". BOXES SHALL BE EQUAL TO EAST JORDAN IRON WORKS MODEL 8550. NO EXISTING VALVE BOX SHALL BE REUSED IF CRACKED, OR OTHERWISE DAMAGED, OR IF FOUND INAPPROPRIATE FOR SERVICE IN THE LOCATION.

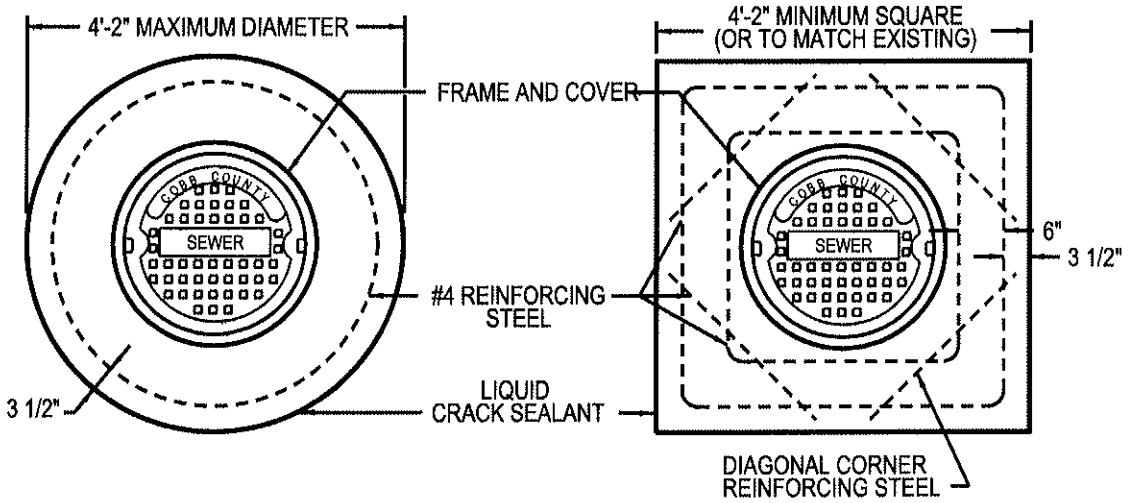
2. VALVE BOX SHALL BE CLEANED OF ANY EXISTING DEBRIS, DIRT, SILT, GRAVEL, ETC. AND/OR STRAIGHTENED TO ENSURE POSITIVE ACCESSIBILITY OF THE VALVE OPERATING NUT OR HANDWHEEL.

3. VALVE BOXES FOR OTHER UTILITIES (SANITARY SEWER, REUSE WATER, ETC.) SHALL BE SIMILARLY HANDLED. LID SHALL BE PROVIDED WITH THE APPROPRIATE DESIGNATION FOR THE UTILITY.

DETAIL 03410-09
COBB COUNTY WATER SYSTEM
MANHOLE ADJUSTMENT IN PAVEMENT

JULY 7, 2009

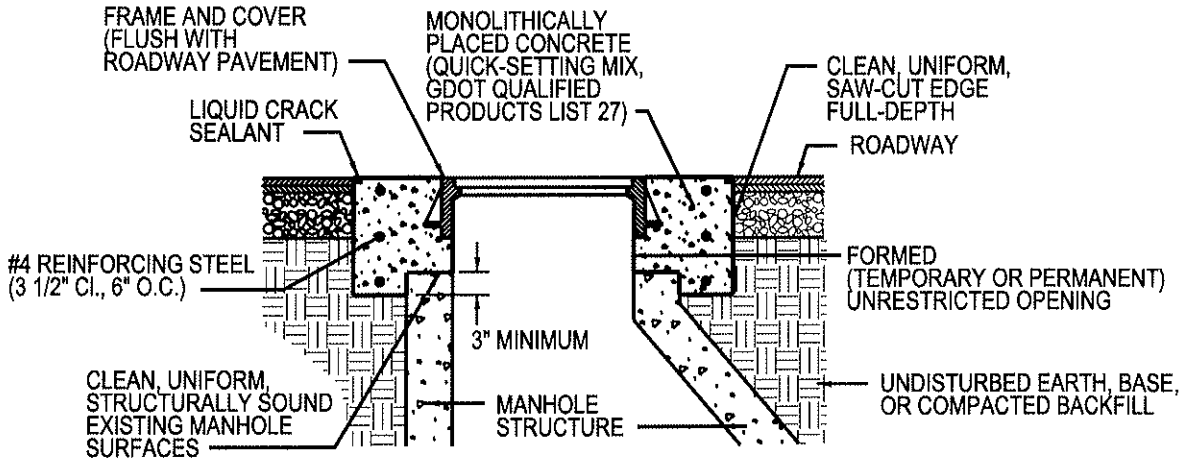
AGENCY DIRECTOR



STANDARD CIRCULAR SHAPE

SQUARE SHAPE USED ONLY AS DIRECTED BY OWNER

PLAN



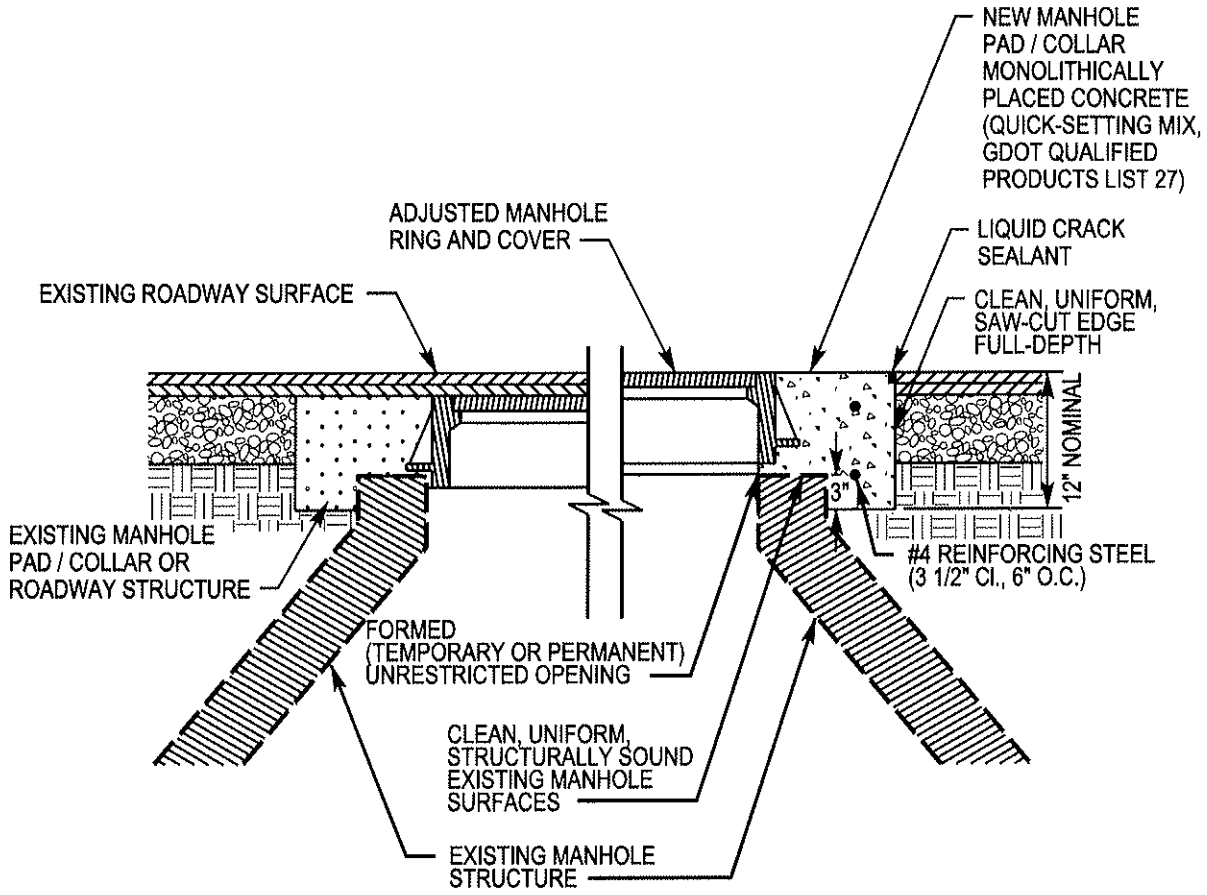
SECTION

IF REPLACEMENT OF THE FRAME & COVER IS NECESSARY, ACCEPTABLE PRODUCTS ARE EAST JORDAN IRON WORKS V-1480-1,V-2480, V-2480-1, OR U.S. FOUNDRY 360E OR 360E/WT AS REQUIRED BY FIELD CONDITIONS OR DIRECTED BY OWNER.

DETAIL 03410-09(B)
COBB COUNTY WATER SYSTEM
MANHOLE ADJUSTMENT IN PAVEMENT
TYPE "A" - < 12" ADJUSTMENT

DECEMBER 3, 2009

AGENCY DIRECTOR

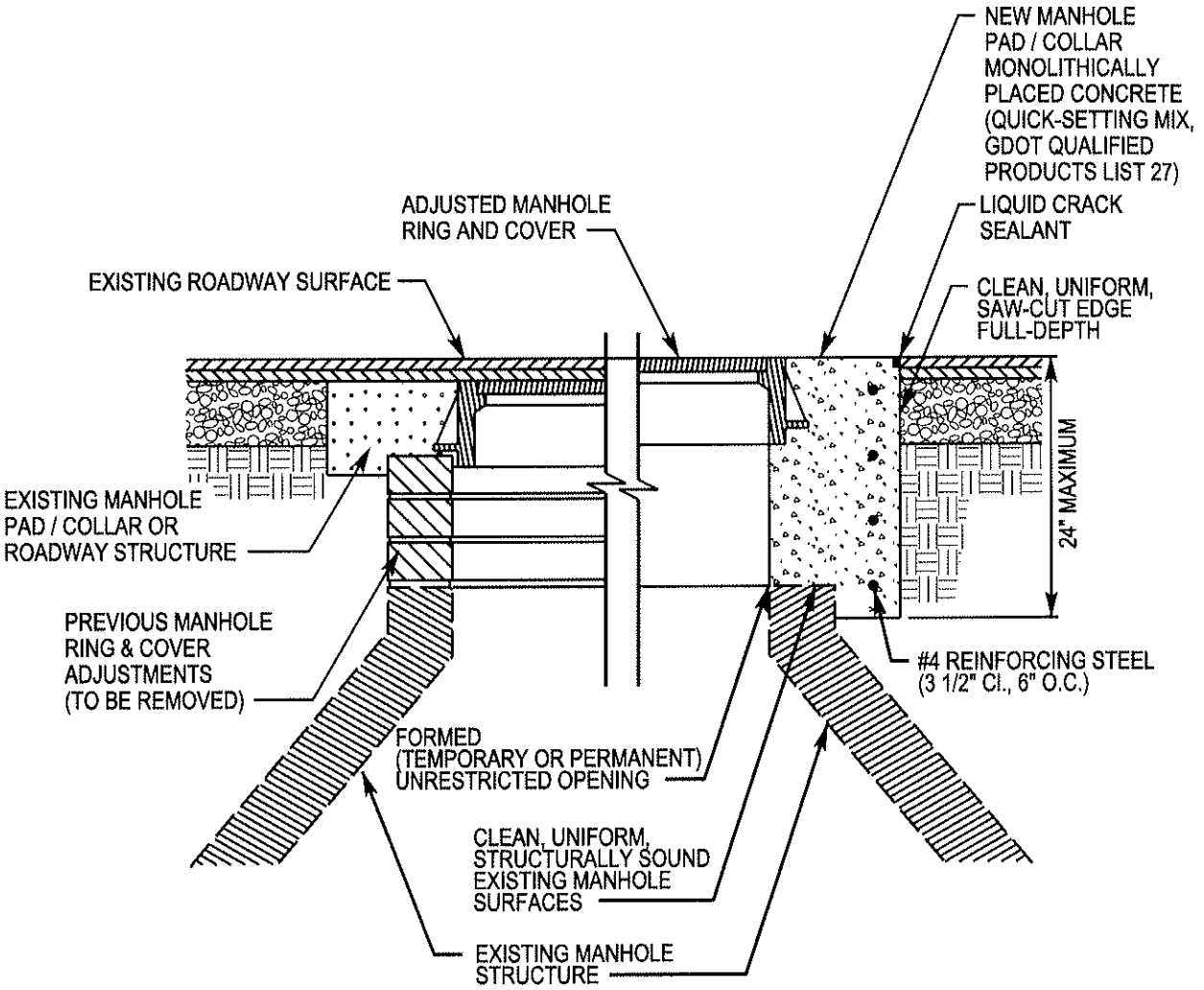


IF REPLACEMENT OF THE FRAME & COVER IS NECESSARY, ACCEPTABLE PRODUCTS ARE EAST JORDAN IRON WORKS V-1480-1,V-2480, V-2480-1, OR U.S. FOUNDRY 360E OR 360E/WT AS REQUIRED BY FIELD CONDITIONS OR DIRECTED BY OWNER.

DETAIL 03410-09(C)
COBB COUNTY WATER SYSTEM
MANHOLE ADJUSTMENT IN PAVEMENT
TYPE "B" - 12" TO 24" ADJUSTMENT

DECEMBER 3, 2009

AGENCY DIRECTOR

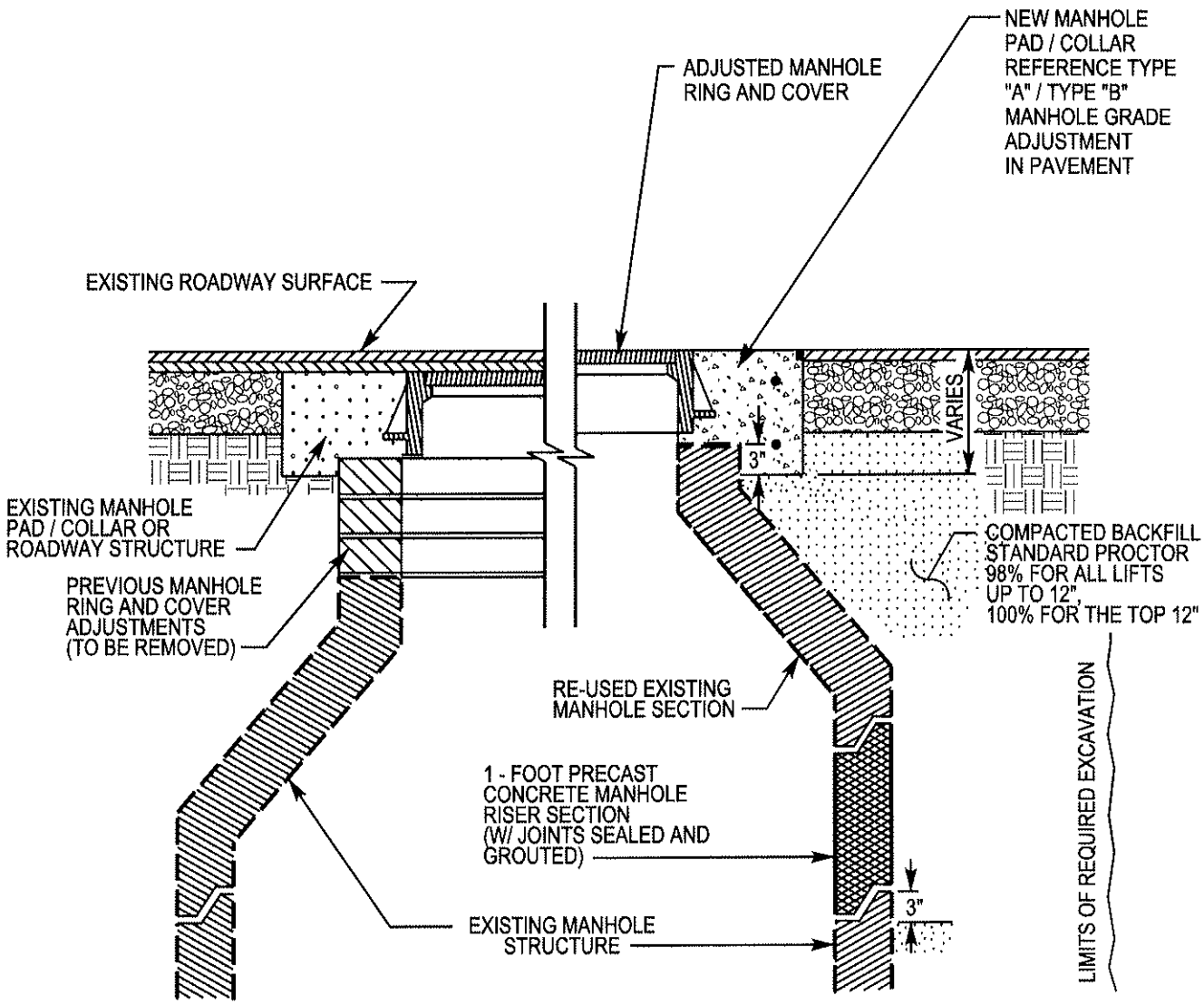


IF REPLACEMENT OF THE FRAME & COVER IS NECESSARY, ACCEPTABLE PRODUCTS ARE EAST JORDAN IRON WORKS V-1480-1,V-2480, V-2480-1, OR U.S. FOUNDRY 360E OR 360E/WT AS REQUIRED BY FIELD CONDITIONS OR DIRECTED BY OWNER.

DETAIL 03410-09(D)
COBB COUNTY WATER SYSTEM
MANHOLE ADJUSTMENT IN PAVEMENT
USING 1 - FOOT PRECAST RISER SECTION

DECEMBER 3, 2009

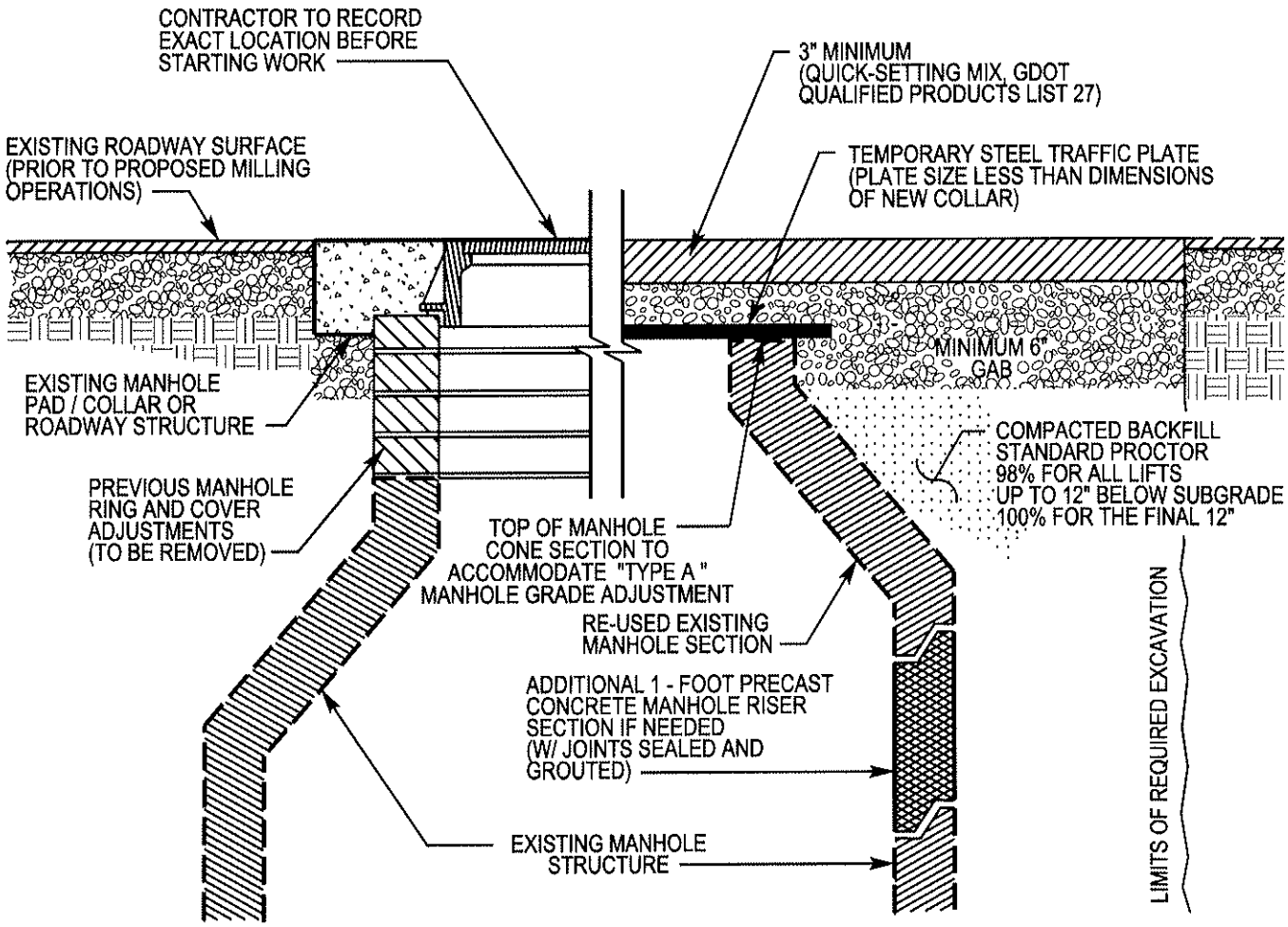
AGENCY DIRECTOR



DETAIL 03410 - 15 (A)
COBB COUNTY WATER SYSTEM
MANHOLE GRADE ADJUSTMENT
TEMPORARY LOWERING OF EXISTING MANHOLE TO ACCOMODATE ROADWAY MILLING OPERATION STEP 1

DECEMBER 3, 2009

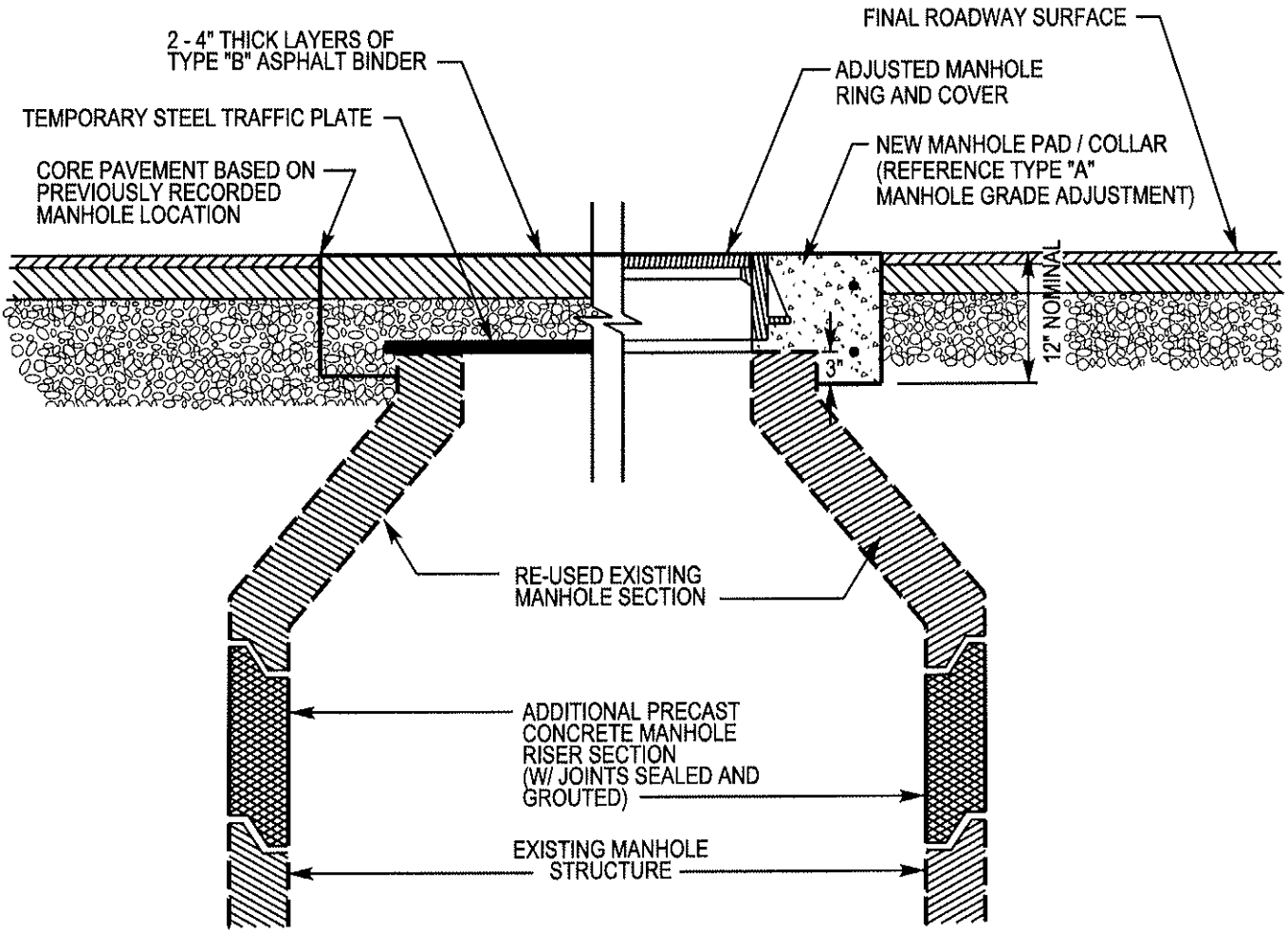
AGENCY DIRECTOR



DETAIL 03410 - 15 (B)
COBB COUNTY WATER SYSTEM
MANHOLE GRADE ADJUSTMENT
TEMPORARY LOWERING OF EXISTING MANHOLE TO ACCOMODATE ROADWAY MILLING OPERATION STEP 2

DECEMBER 3, 2009

AGENCY DIRECTOR



SECTION 02650 - MANHOLE FRAME AND COVER ADJUSTMENTS

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. This Section addresses the adjustment to grade and/or replacement of manhole frames and covers for both in-pavement and out-of-pavement structures

B. The Contractor shall be responsible for the following:

1. Furnishing all labor, equipment, and materials necessary to complete the work.
2. Compliance with Cobb County Department of Transportation and/or Georgia Department of Transportation guidelines for work zone establishment, traffic control, authorization to perform work within roadways and right-of-ways, material specifications, etc.
3. Compliance with Cobb County Community Development regulations in regards to erosion and sedimentation control.
4. Negotiations and obtaining (in writing) any necessary permission to enter private property to access work areas.
5. Protect or re-establish existing drainage ways or easements which may be impacted during work activities.
6. Repair of any manholes damaged as a result of work activities

C. The Owner will provide maps of the sewer collection systems' (via electronic PDF format) and other location details based on the best information currently and readily available for the Contractor's use in establishing the general location of a manhole. The Contractor is responsible for further location efforts (electromagnetic devices, survey measurement/alignment, etc.) to properly identify the work order location.

D. Water supply for concrete mix preparation shall be from an authorized, metered source. Fire hydrant meter(s) are available for rental from the Cobb County Water System

1.02 WARRANTY

A. A written two year warranty covering all workmanship and materials shall be provided by the Contractor for each adjustment from the date of the completion of the work order.

1.03 SUBMITTALS

A. Submit shop drawings for materials furnished under this section to the Owner in conformance with the requirements of Section 01300 (Submittals) of these Specifications.

B. Submit to owner the detailed mix design information (compressive strength, curing time, availability to introduce traffic loads, etc.) for the concrete

C. Submit a letter from the rapid-set cement manufacturer certifying that all products proposed for use in conjunction with the cement have been reviewed (including the dye/ staining agent, curing and sealing compound, and crack sealant) and have been determined to be compatible with the cement material when used as intended in this project.

PART 2 - PRODUCTS

2.01 GENERAL

A. All materials and products utilized in the execution of the work shall be in accordance with these Specifications and the subject to the inspection, testing, and approval of the Owner.

2.02 MATERIALS

A. Manhole Frames and Covers

1. Standard manhole frames and covers shall be furnished and installed on manholes in roadways and in maintained right-of-ways (unless located in direct drainage ways). Standard manhole frames and covers shall be East Jordan Iron Works Model V-1480, U.S. Foundry Model USF 360-E, or approved equal.

2. Bolt-down, watertight frames and covers shall be furnished and installed on manholes along easements for outfall collector and interceptor sewers, in drainage ways, and elsewhere as directed. Bolt-down, watertight fames and covers shall be East Jordan Iron Works Model V2480, U.S. Foundry USF 360-E / ORS, or approved equal with rubber gasket. Two (2), 5/8-inch diameter, stainless steel, machine bolts shall be furnished and installed along with two (2) Owner-furnished, 5/8-inch stainless steel, "tamper-proof" bolts.

B. Concrete and Grout

1. Concrete for manhole frame and cover adjustments in roadways shall be a rapid-setting, early strength mix meeting the requirements of Section 934-Rapid Setting Patching Materials for Portland Cement Concrete of the Georgia Department of Transportation's Standard Specifications and utilizing a product from the Georgia Department of Transportation's Qualified Products List 27, "Rapid Setting Patching Materials" (latest edition) such as CTS Manufacturing Company's Rapid Set D.O.T. Cement or approved equal. Sand, coarse

aggregate, water, and other special additives shall be furnished and accurately proportioned in accordance with the patching material manufacturer's specifications.

2. Sand-cement grout for setting precast concrete adjustment rings shall consist of 1 part Type III Portland cement, 2 parts sand, with a maximum of 4.5 gallons of water per sack (cubic foot) of cement.

3. Hydraulic cement for use in sealing manhole joints, lift holes, around pipe connections, inverts, complete interior grouting of brick manholes, etc. shall be Thoro Waterplug (Masterseal 590), Quikrete Hydraulic Water-Stop Cement (No. 1126) or approved equal.

C. An acrylic curing and sealing compound shall be applied to the concrete surface in accordance with the manufacturer's instruction. The compound shall be Rez-Seal by Euclid Chemical Company or approved equal.

D. The perimeter joint shall have a cold-pour, liquid, crack sealant applied to inhibit the effects of water penetration between the newly placed concrete and the surrounding pavement. This application shall be in accordance with the manufacturer's instruction. The sealant shall be Brewer Cote of the Brewer Company, or approved equal.

E. Reinforcing steel shall be deformed, billet-steel bars conforming to ASTM A615, Grade 60. Bars shall be shop fabricated and bent cold.

F. Precast Concrete manhole sections shall conform to Specification for Precast Concrete Manhole Sections, ASTM designation C478, except as otherwise specified below. The method of construction shall conform to the drawings and details and the following additional requirements:

1. Barrel sections shall have tongue and groove joints. Joints shall have a round rubber gasket set in specially provided indentations. The round rubber "O"-ring gasket shall conform to ASTM C443 standard specifications SS-S-210A "Sealing Compound, Preformed Plastic fro Pipe Joints", Type I, Rope Form and AASHTO Designation M-198 75 1, Type B, Flexible Plastic Gasket (Bitumen) are also acceptable.

2. Type I cement shall be used except as otherwise approved.

3. The date of manufacture and the name or trademark of the manufacturer shall be clearly marked on the inside of each precast section. Each section of the manhole must be inspected and stamped by an accredited testing laboratory.

4. Sections shall be cured by an approved method for at least 28 days.

5. Top sections shall be eccentric except that precast concrete slabs shall be used where cover over the top of the pipe is less than 4 feet for all manholes.

6. Precast concrete slabs over top sections, where required, shall be capable of supporting the overburden plus live load equivalent to AASHTO H-20 loading.

7. Manhole steps shall be cast into precast sections and shall conform to ASTM Specification C478. Steps shall be Plastic Step by M.A. Industries, Inc. or equal.

8. Lift holes for handling the precast sections shall not penetrate completely through the wall.

G. Precast concrete adjustment rings shall conform to ASTM C478, except as otherwise specified below. The method of construction shall conform to the drawings and detail and the following additional requirements:

1. The precast concrete adjustment ring shall only be used for minor vertical adjustments (12-inches or less) to a manhole frame and cover out of pavement and where directed by the Owner.

2. The precast concrete adjustment ring shall be free from cracks, voids, and other defects.

3. The inside diameter of the precast concrete adjustment ring shall have a diameter to match the manhole frame and cover.

PART 3 - EXECUTION

3.01 GENERAL

A. Care shall be taken in all aspects of the work, including, but not limited to the following:

1. Protection of existing sanitary sewer mains and manholes.

2. Protection of existing adjacent utilities.

3. Protection of existing adjacent trees, shrubs, landscape, etc.

4. Protection of existing adjacent roadway surfaces.

5. Protection of existing adjacent drainage ways, creeks, streams, ponds, and lakes.

6. Handling of materials.

7. Providing traffic control.

B. The Contractor shall be effectively equipped with machinery, tools, materials, traffic control devices, etc. to perform the necessary tasks for completing work in accordance with these specifications and detail drawings.

C. The Contractor shall be effectively staffed with knowledgeable, capable personnel. Experienced, trained supervisory personnel shall be present at all times to ensure the best quality work in accordance with these specifications and detail drawings.

D. The Contractor shall legally dispose of all waste, surplus, or unsuitable materials or debris on a daily basis. Debris allowed to drop into sewer manholes shall immediately be removed to avoid the potential of sewer blockages. Contractor will be held responsible for any fine levied by Federal, State, or Local authorities having jurisdiction, which may be the direct or indirect result of work performed under this Contract.

E. In the event the Contractor encounters a manhole which has not previously been adjusted in accordance with the Specifications of this Contract, the Contractor shall inform the Owner. At the Owner's direction, the Contractor will correct the existing condition to bring the manhole to the current standards set forth by this Contract.

3.02 ADJUSTMENT AND/ OR REPLACEMENT IN ROADWAYS AND PAVEMENT

A. The adjustment to grade and/ or replacement of manhole frames and covers in roadways shall be performed with the following guidelines:

1. Accurately locate the Manhole (if not currently visible) and its center.

2. Mechanically core or saw-cut the full depth of existing roadway pavement around the manhole. A circular core/cut with a diameter sufficient for adjustment needs is required.

   a. Exceptions to this include situations in which existing, square concrete pad/patch, exposed at roadway surface is being replaced. In these instances the replacement pad/patch is to match the existing square dimensions.

3. All existing adjustment rings, bricks, shims, etc. shall be removed and the surrounding sub-base and base shall be excavated to the clean lines and dimension of the pavement core/cut.

   a. For Manhole adjustments less than 24-inches- Excavation shall be to a depth of 3-inches (minimum) below the resulting top of the intact manhole structure. The existing structure shall be exposed and be cleaned of residual dirt, mud, cement, gravel, etc. Care shall be employed to prevent the entry of dirt, debris, and foreign materials into the manhole, and if such occurs, shall immediately be removed by the Contractor at no additional cost to the Owner.

b. For manhole adjustments greater than 24-inches- Excavation shall be to a depth of 3-inches (minimum) below existing cone section, the existing cone section removed, 1-foot concrete riser section(s) installed, the existing cone section reinstalled (if suitable for reuse), and all joints sealed & grouted. Care shall be employed to prevent the entry of dirt, debris, and foreign materials into the manhole, and if such occurs, shall immediately be removed by the Contractor at no additional cost to the Owner.

4. The cast iron manhole frame shall be supported in place, centered accurately over the manhole throat/chimney, and set to the elevation and slope of the adjacent roadway surface. This support and the formwork for subsequent concrete placement around the installation shall be by a proven method deemed acceptable by the owner. The manhole throat/chimney diameter shall not be permanently compromised or constricted in any way. The use of manhole adjusting rings (of any type of material) or brick is not acceptable. Any supporting interior form/liner to remain in place shall be of a corrosion-resistant material, such as Vylon, PVC, HDPE, etc. and shall be secured and sealed in place with a proven, compatible adhesive/ sealant.

5. Accurately proportion the rapid-setting, high-early strength concrete mix in accordance to manufacturer's specifications. Place the concrete along with the required reinforcing steel to the detailed clearances. Mechanically vibrate the concrete to achieve proper consolidation and the elimination of voids. The concrete collar shall be a monolithic placement, completely filling the core/cut opening and encapsulating the top of the manhole structure and manhole cast iron frame. Screed concrete surface flush with the adjacent roadway surface. Float and/or trowel to a consistent finish. Tool a perimeter joint to a depth of 1-1/2-inch and apply a light broom finish. Following the finishing, apply a curing and sealing compound to the concrete and a crack sealant to the perimeter joint in accordance with manufacturer's instructions.

6. Maintain full traffic control around the freshly placed concrete until the concrete has achieved a minimum compressive strength of 1200 psi based upon manufacturer's mix design guidelines. Curing duration will be validated by the Owner by random sampling and testing during the course of the contract.

7. Place concrete only if ambient and adjoining surface temperatures are 45 degrees and rising or if sufficient thermal protection is provided to maintain proper curing conditions. Appropriate curing precautions shall be taken to protect the concrete during hot weather conditions.

B. As specifically directed for coordination with select Department of Transportation roadway resurfacing projects, the Contractor shall lower existing manholes prior to major road surface milling operations. The following general guidelines shall apply:

1. Accurately locate the manhole (if not currently visible) and its center. Reference and record location for subsequent adjustment.

2. Mechanically core or saw cut the full depth of existing roadway around the manhole, or completely remove the concrete pad/patch if such exists.

3. Dependent upon the anticipated depth of proposed road surface milling

   a. Remove the manhole frame and cover.

   b. Remove any existing manhole adjustments, i.e. adjustment rings, bricks, shims, etc.

   c. For manhole adjustments greater than 24-inches- The existing cone section is to be removed, 1-foot precast concrete riser section(s) shall be installed, the existing cone section (if suitable) shall be reinstalled, and all joints sealed and grouted. Care shall be employed to prevent the entry of dirt, debris, and foreign materials into the manhole, and if such occurs, it shall be immediately removed by the Contractor at no additional cost to the Owner.

   d. If the proposed milling depth allows, the manhole frame and cover may be reset. If not, the manhole frame and cover shall be removed and an adequate sized steel traffic plate placed over the manhole structure. Either method is temporary until roadway milling and resurfacing has been completed, and shall be sufficient to support traffic loads as well as to protect the sanitary sewer facility.

   e. All debris, including the manhole frame and cover (if removed) shall be removed from the site.

4. Backfill with select granular material and compact to a level of 3-inches below the anticipated road surface milling depth.

5. Accurately proportion the rapid-setting, high-early strength concrete mix in accordance to manufacturer's specifications. Place concrete and screed to a level flush with the existing roadway surface. Neither concrete curing compound nor joint sealant will be required for this temporary pad/patch.

6. Maintain full traffic control around the freshly placed concrete until the concrete has achieved a minimum compressive strength of 1200 psi based upon manufacturer's mix design guidelines, curing duration will be validated by the Owner by random sampling and testing during the course of the contract.

7. Place concrete only if ambient and adjoining surface temperatures are 45 degrees and rising or if sufficient thermal protection is provided to maintain proper curing conditions. Appropriate curing precautions shall be taken to protect the concrete during hot weather conditions.

8. Following completion of the Department of Transportation's resurfacing of the roadway, permanent adjustment to grade of the manhole frame and cover shall be performed in accordance with these specifications.

3.03 ADJUSTMENT AND/OR REPLACEMENT OUT OF PAVEMENT

A. The adjustment to grade and/or replacement of manhole frames and covers out of pavement within right-of ways and/or easements shall be performed in accordance with the following guidelines:

1. Accurately locate the Manhole (if not currently visible) and its center.

2. Excavate to fully expose the top of the manhole structure at a depth to effectively and safely perform the manhole adjustment work.

3. All existing adjustment rings, bricks, shims, etc. shall be removed. Care shall be employed to prevent the entry of dirt, debris, and foreign materials into the manhole, and if such occurs, shall immediately be removed by the Contractor at no additional cost to the Owner.

4. Perform manhole adjustments using all new materials and components in accordance with manufacturer instructions, industry guidelines, and these specifications and detail drawings.

    a. Manhole adjustments involving only frame and cover replacement will be accomplished by attaching the new frame to the manhole structure with 4 each, ½-inch diameter, stainless steel anchor bolts (or threaded rods), installed in drilled holes with epoxy adhesive. Install a butyl rubber flexible sealant (Ram-Nek, Kent Seal, or equal) to provide a mastic seal between frame and structure.

    b. Manhole height adjustments involving the removal of the existing precast cone or flat-top section, installation of a new precast concrete riser section of the proper diameter and height, and resetting the existing cone or flat-top section (if acceptable for reuse). Anchor Straps shall be installed per the standard details

    c. If the existing manhole is of brick and mortar construction, the brick cone and walls shall be demolished/ removed to an adequate and structurally sound level (as determined by the Owner). A new precast concrete riser and cone or flat-top sections of the proper diameter and height shall be installed on the brick structure. An external concrete collar shall be placed to secure the precast concrete to the brick structure as indicated by contract standard details.

    d. For locations specifically authorized by the Owner for minor vertical adjustments (12-inches or less), precast concrete adjustment rings may be used to elevate the frame and cover. Adjustment rings, along with the frame, shall be secured to the manhole structure with 4 each, ½-inch

stainless steel anchor bolts (or threaded rods) installed in drilled holes with epoxy adhesive. Grout shall be used to bond adjustment rings as well as to provide an exterior seal.

5. Place concrete only if ambient and adjoining surface temperatures are 45 degrees and rising or if sufficient thermal protection is provided to maintain proper curing conditions. Appropriate curing precautions shall be taken to protect the concrete during hot weather conditions.

3.04 FIELD QUALITY ASSURANCES

A. Owner shall field inspect all work performed before final acceptance and payment.

B. A written two-year warranty shall be provided for the replacement work.

C. Failures considered to be warranty repairs include concrete surface spalling, cracking of the concrete, separation of the manhole frame from the concrete, or other obvious defects. The Owner may require the concrete mix manufacturer's involvement in examination of failures and determination of modifications necessary to avoid future defective work.

D. Warranty repair consists of complete removal and replacement of the manhole frame in accordance with these adjustment specifications at no cost to the Owner. Critical failures that create a potential traffic hazard shall be rectified within 24 hours of notice, while less serious failures shall be addressed within 30 days of notice. The failure type shall be determined by the Owner.

END OF SECTION 02650

SECTION 02660 - VALVE BOX ADJUSTMENTS

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. This Section addresses the adjustment to grade and/or replacement of valve box for both in-pavement and out-of-pavement situations

B. The Contractor shall be responsible for the following:

1. Furnishing all labor, equipment, and materials necessary to complete the work.
2. Compliance with Cobb County Department of Transportation and/or Georgia Department of Transportation guidelines for work zone establishment, traffic control, authorization to perform work within roadways and right-of-ways, material specifications, etc.
3. Compliance with Cobb County Community Development regulations in regards to erosion and sedimentation control.
4. Negotiations and obtaining (in writing) any necessary permission to enter private property to access work areas.
5. Protect or re-establish existing drainage ways or easements which may be impacted during work activities.
6. Repair of any valve boxes damaged as a result of work activities.

C. The Owner will provide maps of the water distribution systems (via electronic PDF format) and other location details based on the best information currently and readily available for the Contractor's use in establishing the general location of a valve box. The Contractor is responsible for further location efforts (electromagnetic devices, survey measurement/alignment, etc.) to properly identify the work order location.

D. Water supply for concrete mix preparation shall be from an authorized, metered source. Fire hydrant meter(s) are available for rental from the Cobb County Water System

1.02 WARRANTY

A. A written two-year warranty covering all workmanship and materials shall be provided by the Contractor for each adjustment from the date of the completion of the work order.

1.03 SUBMITTALS

A. Submit shop drawings for materials furnished under this section to the Owner in conformance with the requirements of Section 01300 (Submittals) of these Specifications.

B. Submit to owner the detailed mix design information (compressive strength, curing time, availability to introduce traffic loads, etc.) for the concrete

C. Submit a letter from the rapid-set cement manufacturer certifying that all products proposed for use in conjunction with the cement have been reviewed (including the dye/ staining agent, curing and sealing compound, and crack sealant) and have been determined to be compatible with the cement material when used as intended in this project.

PART 2 - PRODUCTS

2.01 GENERAL

A. All materials and products utilized in the execution of the work shall be in accordance with these Specifications and the subject to the inspection, testing, and approval of the Owner.

2.02 MATERIALS

A. Valve Box

1. Valve Box shall be approved standard cast iron adjustable with a minimum diameter of 5-1/4-inches. The casting shall be coated with coal-tar pitch varnish. The lid shall bear the word "WATER", the letter "W", or other applicable designation for sewer, reuse water, etc. The valve box shall be East Jordan Iron Works model 8550 or approved equal.

B. Concrete and Grout

1. Concrete for valve box adjustments in roadways shall be a rapid-setting, early strength mix meeting the requirements of section 934 - Rapid Setting Patching Materials for Portland Cement Concrete of the Georgia Department of Transportation Standard Specification and utilizing a product from the Georgia Department of Transportation's Qualified Products List 27, "Rapid Setting Patching Materials" (latest edition) such as CTS Manufacturing Company's Rapid Set D.O.T. Cement or approved equal. Sand, coarse aggregate, water, and other special additives shall be furnished and accurately proportioned in accordance with the patching material manufacturer's specifications.

2. Sand-cement grout for filling of annular space between valve box and precast collar shall consist of 1 part Type III Portland cement, 2 parts sand, with a maximum of 4.5 gallons of water per sack (cubic foot) of cement.

C. An acrylic curing and sealing compound shall be applied to the concrete surface in accordance with the manufacturer's instruction. The compound shall be Rez-Seal by Euclid Chemical Company or approved equal.

D. The perimeter joint shall have a cold-pour liquid, crack sealant applied to inhibit the effects of water penetration between the newly placed concrete and the surrounding pavement. This application shall be in accordance with the manufacturer's instruction. The sealant shall be Brewer Cote of the Brewer Company, or approved equal.

E. Mesh reinforcement shall be electrically welded, cold-drawn, mild-steel, plain wire fabric conforming to ASTM A185. Wires shall be cold-drawn steel conforming to ASTM A82. Mesh reinforcement shall be supplied as flat sheets or mats.

F. Precast concrete valve collars may be used in unpaved areas instead of casting valve collar in place upon approval of the precast valve collar shop drawings. The precast collar can be square or circular in shape. The concrete shall be a minimum of 3000 psi design and a have minimum thickness of 4". The precast collar shall be a minimum 18-inch square or have a minimum diameter of 18".

PART 3 - EXECUTION

3.01 GENERAL

A. Care shall be taken in all aspects of the work, including, but not limited to the following:

1. Protection of existing water main and valves.
2. Protection of existing adjacent utilities.
3. Protection of existing adjacent trees, shrubs, landscape, etc.
4. Protection of existing adjacent roadway surfaces.
5. Protection of existing adjacent drainage ways, creeks, streams, ponds, and lakes.
6. Handling of materials.
7. Providing traffic control.

B. The Contractor shall be effectively equipped with machinery, tools, materials, traffic control devices, etc. to perform the necessary tasks for completing work in accordance with these specifications and detail drawings.

C. The Contractor shall be effectively staffed with knowledgeable, capable personnel. Experienced, trained supervisory personnel shall be present at all times to ensure the best quality work in accordance with these specifications and detail drawings.

D. In the event the Contractor encounters a valve box which has not previously been adjusted in accordance with the Specifications of this Contract, the Contractor shall inform the Owner. At the Owner's direction, the Contractor will correct the existing condition to bring the valve box to the current standards set forth by this Contract.

E. All water distribution system valves shall be exercised through their full range upon completion of valve box adjustment work. An accurate "count" of full turns to fully open and close the valve shall be recorded along with the original position (open, closed, partial) and provided to the Owner. The valve shall be returned to its original position.

F. The Contractor shall avoid allowing any debris from the work activities to enter the valve box. If such occurs, the Contractor shall immediately take action to remove debris.

3.02 ADJUSTMENT AND/ OR REPLACEMENT IN ROADWAYS AND PAVEMENT

A. The adjustment to grade and/ or replacement of valve boxes in roadways shall be performed with the following guidelines:

1. Accurately locate the valve box (if not currently visible) and its center.

2. Mechanically core or saw-cut the full depth of existing roadway pavement around the valve box. A circular core/cut with a diameter sufficient for adjustment (but not to exceed 20-inches) is required.

    a. Exceptions to this include situations in which existing, square concrete pad/patch, exposed at roadway surface is being replaced. In these instances the replacement pad/patch is to match the existing square dimensions.

3. Excavate as necessary around the existing valve box including removing it to clean debris from the box and valve nut and to center the box on the valve nut. No existing valve box shall be reused if cracked, otherwise damaged, or if found inappropriate for the location. The area of excavation shall be to the clean lines and dimensions of the pavement core/cut. Excavation below the nominal depth of the concrete collar shall be backfilled in lifts and compacted to 98% standard proctor using select materials.

4. The valve box shall be supported in place, centered accurately over the valve, and set to the elevation and slope of the adjacent roadway surface. This support and the formwork for subsequent concrete placement around the installation shall be by a proven method and deemed acceptable by the owner. The valve box shall be installed to ensure positive accessibility of the operating nut or extension stem (if required) of the valve.

5. Accurately proportion the rapid-setting, high-early strength concrete mix in accordance to manufacturer's specifications. Place the concrete along with the required reinforcing steel to the detailed clearances. Mechanically vibrate the concrete to achieve proper consolidation and the elimination of voids. The concrete collar shall be a monolithic placement, completely filling the core/cut opening and encapsulating the top 10-inches of the valve box. Screed concrete surface flush with the adjacent roadway surface. Float and/or trowel to a consistent finish. Tool a perimeter joint to a depth of 1-1/2-inch and apply a light broom finish. Following the finishing, apply a curing and sealing compound to the concrete and a crack sealant to the perimeter joint in accordance with manufacturer's.

6. Maintain full traffic control around the freshly placed concrete until the concrete has achieved a minimum compressive strength of 1200 psi based upon manufacturer's mix design guidelines. Curing duration will be validated by the Owner by random sampling and testing during the course of the contract.

7. Place concrete only if ambient and adjoining surface temperatures are 45 degrees and rising or if sufficient thermal protection is provided to maintain proper curing conditions. Appropriate curing precautions shall be taken to protect the concrete during hot weather conditions.

B. As specifically directed for coordination with select Department of Transportation roadway resurfacing projects, the Contractor shall prepare existing valve boxes prior to major road surface milling operations. The following general guideline shall apply:

1. Accurately locate the valve box (if not currently visible) and its center. Reference and record location for subsequent adjustment.

2. Expose the valve box as necessary and/or otherwise remove the valve box cover.

3. Pack the valve box with heavy paper or other suitable filler material to prevent milling residue from filling the valve box.

4. Following completion of the Department of Transportation resurfacing of the roadway, permanent adjustment to grade of the valve box shall be performed in accordance with these specifications. This work will typically include valve box clean-out and valve box replacement.

3.03 ADJUSTMENT AND/ OR REPLACEMENT OUT OF PAVEMENT

A. The adjustment to grade and/or replacement of valve boxes out of pavement shall be performed in accordance with the following guidelines:

1. Accurately locate the valve box (if not currently visible) and its center.

2. Excavate as necessary around the existing valve box including removing it to clean debris from the box and valve nut and to center the box on the valve nut.

No existing valve box shall be reused if cracked, otherwise damaged, or if found inappropriate for the location. The area of excavation shall be limited as much as practical. Excavation below the required depth of the concrete collar shall be backfilled in lifts and compacted to 98% standard proctor using select materials.

3. The valve box intended for installation shall be supported in place, centered accurately over the valve, and set to the elevation and slope of the adjacent ground. The valve box shall be installed to ensure positive accessibility of the operating nut or extension stem (if required) of the valve.

4. The final 4" shall be reserved for the valve collar:

   a. Installing the cast in place concrete valve collar. Accurately proportion the rapid-setting, high-early strength concrete mix in accordance to manufacturer's specifications. Place the concrete along with the required reinforcing mesh to the detailed clearances. The concrete shall be a monolithic placement encompassing the top 4-inches of the valve box. Screed concrete surface to be flush with the adjacent ground level. Float and/or trowel to a consistent finish and apply a light broom finish.

      i. Maintain full traffic control around the freshly placed concrete until the concrete has achieved a minimum compressive strength of 1200 psi based upon manufacturer's mix design guidelines. Curing duration will be validated by the Owner by random sampling and testing during the course of the contract.

      ii. Place concrete only if ambient and adjoining surface temperatures are 45 degrees and rising or if sufficient thermal protection is provided to maintain proper curing conditions. Appropriate curing precautions shall be taken to protect the concrete during hot weather conditions.

   b. Install approved precast concrete valve collar.

3.04 FIELD QUALITY ASSURANCE

A. Owner shall field inspect all work performed before final acceptance and payment.

B. A written two-year warranty shall be provided for the replacement work.

C. Failures considered to be warranty repairs include concrete surface spalling, cracking of the concrete, separation of the valve box from the concrete, or other obvious defects. The Owner may require the concrete mix manufacturer's involvement in examination of failures and determination of modifications necessary to avoid future defective work

D. Warranty repair consists of complete removal and replacement of the valve box in accordance with these adjustment specifications at no cost to the Owner. Critical failures that create a potential traffic hazard shall be rectified within 24 hours of notice, while less serious failures shall be addressed within 30 days of notice. The failure type shall be determined by the Owner.

END OF SECTION 02660