Wisconsin Department of Transportation

Division of Transportation Systems Development
Bureau of Project Development
4822 Madison Yards Way, 4th Floor South
Madison, WI 53705

Telephone: (608) 266-1631
Facsimile (FAX): (608) 266-8459

January 9, 2020

NOTICE TO ALL CONTRACTORS:

Proposal #13:	**4327-08-71**	**4327-09-71**
	V Denmark, CTH R	**V Denmark, CTH R**
	Devils River Trail Bridge B-05-0438	**Wall Street Bridge B-05-0439**
	CTH R	**CTH R**
	Brown County	**Brown County**

Letting of January 14, 2020

This is Addendum No. 02, which provides for the following:

Special Provisions:

Added Special Provisions	
Article No.	Description
17	Wall Modular Block Gravity Landscape West Abutment, Item SPV.0165.01; Wall Modular Block Gravity Landscape East Abutment, Item SPV.0165.02.

Schedule of Items:

Revised Bid Item Quantities					
Bid Item	Item Description	Unit	Old Quantity	Revised Quantity	Proposal Total
612.0406	Pipe Underdrain Wrapped 6-Inch	LF	860	215	1,075

Added Bid Item Quantities					
Bid Item	Item Description	Unit	Old Quantity	Revised Quantity	Proposal Total
SPV.0165.01	Wall Modular Block Gravity West Abutment	SF	0	235	235
SPV.0165.02	Wall Modular Block Gravity East Abutment	SF	0	305	305

Plan Sheets:

Added Plan Sheets – 4327-09-71	
Plan Sheet	Plan Sheet Title (brief description of why sheet was added)
4A	Retaining Wall Layout – West Abutment (Added retaining walls for future urban typical section for Wall Street)
4B	Retaining Wall Layout – East Abutment (Added retaining walls for future urban typical section for Wall Street)
4C	Retaining Wall Details – Design Data (Added retaining walls for future urban typical section for Wall Street)
4D	Retaining Wall Details – Typical Sections (Added retaining walls for future urban typical section for Wall Street)

The responsibility for notifying potential subcontractors and suppliers of these changes remains with the prime contractor.

Sincerely,

Mike Coleman

Proposal Development Specialist
Proposal Management Section

ADDENDUM NO. 02

4327-08-71 & 4327-09-71

January 9, 2020

Special Provisions

17. Wall Modular Block Gravity Landscape West Abutment, Item SPV.0165.01; Wall Modular Block Gravity Landscape East Abutment, Item SPV.0165.02.

A Description

This special provision describes designing, furnishing materials and erecting a permanent earth retention system in accordance to the lines, dimension, elevations and details as shown on the plans and provided in the contract. The design life of the wall and all wall components shall be 75 years minimum.

B Materials

B.1 Proprietary Wall Systems

The supplied wall system must be from the department's approved list of Modular Block Gravity Landscape Wall systems. Proprietary wall systems must conform to the requirements of this specification and be pre-approved for use by the department's Bureau of Structures. The department maintains a list of pre-approved proprietary wall systems. The name of the pre-approved proprietary wall system selected shall be furnished to the engineer within 25 days after the award of contract. The location of the plant manufacturing the facing units shall be furnished to the engineer at least 14 days prior to the project delivery.

To be eligible for use on this project, a system must have been pre-approved by the Bureau of Structures and added to that list prior to the bid closing date. To receive pre-approval, the retaining wall system must comply with all pertinent requirements of this provision and be prepared in accordance to the requirements of Chapter 14 of the department's LRFD Bridge Manual. Information and assistance with the pre-approval process can be obtained by contacting the Bureau of Structures, Structures Maintenance Section at the following email address: DOTDLStructuresFabrication@dot.wi.gov.

B.2 Design Requirements

It is the responsibility of the Contractor to submit a design and supporting documentation as required by this special provision, for review and acceptance by the department, to show the proposed wall design is in compliance with the design specifications. The submittal shall include the following items for review: detailed plans and shop drawings, complete design calculations, explanatory notes, supporting materials, and specifications. The detailed plans and shop drawings shall include all details, dimensions, quantities and cross-sections necessary to construct the walls. Submit shop drawings to the engineer conforming to 105.2 with electronic submittal to the fabrication library under 105.2.2. Certify that shop drawings conform to quality control standards by submitting department form DT2329 with each set of shop drawings. Department review does not relieve the contractor from responsibility for errors or omissions on shop drawings. Submit no later than 60 days from the date of notification to proceed with the project and a minimum of 30 days prior to the date proposed to begin wall construction.

The plans and shop drawings shall be prepared on reproducible sheets 11 inch x 17 inch, including borders. Each sheet shall have a title block in the lower right corner. The title block shall include the WisDOT project identification number and structure number. Design calculations and notes shall be on 8 ½ inch x 11 inch sheets, and shall contain the project identification number, name or designation of the wall, date of preparation, initials of designer and checker, and page number at the top of the page. All plans, shop drawings, and calculations shall be signed, sealed and dated by a professional engineer licensed in the State of Wisconsin.

The design of the wall shall be in compliance with the current American Association of State Highway and Transportation Officials LRFD (AASHTO LRFD) Bridge Design Specifications with latest interim specifications for Mechanically Stabilized Earth Walls, WisDOT's current Standard Specifications for Highway and Structure Construction (standard spec), Chapter 14 of the WisDOT LRFD Bridge Manual and standard engineering design procedures as determined by the Department. Loads, load combinations, load and resistance factors shall be as specified in AASHTO LRFD Section 11. The associated resistance factors shall be defined in accordance with Table 11.5.7-1 in AASHTO LRFD.

Design and construct the walls in accordance to the lines, grades, heights and dimensions shown on the plans, as herein specified, and as directed by the engineer.

Walls shall be designed for a minimum live load surcharge of 100 psf in accordance with Chapter 14 of the WisDOT LRFD Bridge Manual or as shown on the plans.

A maximum value of the angle of internal friction of the wall backfill material used for design shall be assumed to be 30 degrees without a certified report of tests. If a certified report of tests yields an angle of internal friction greater than 30 degrees, the larger test value may be used for design, up to a maximum value of 36 degrees.

An external stability check at critical wall stations showing Capacity Demand Ratio (CDR) for sliding, eccentricity, and bearing checks is provided by the department and are provided on the wall plans.

The design of the wall by the Contractor shall consider the internal and compound stability of the wall mass in accordance with AASHTO LRFD 11.10.6. Internal stability shall also be considered at each block level. Calculations for factored stresses and resistances shall be based upon assumed conditions at the end of the design life. The width of the modular block (front face to back face) shall be included in the design computations and shown on the wall shop drawings. Blocks must have a minimum width of 8 inches. Block widths may vary among courses, but shall consist of only a single block. Compound stability shall be computed for the applicable strength limits. Sample analyses and hand calculations shall be submitted to verify the output of any software program used. The design calculations and notes shall clearly indicate the Capacity to Demand Ratios (CDR) for all internal and external stabilities as defined in AASHTO LRFD.

Wall facing units shall be designed in accordance with AASHTO LRFD 11.10.2.3.

The minimum embedment of the wall shall be 1 foot 6 inches below finished grade, or as given on the plans. All walls shall be provided with a concrete or base aggregate leveling pad. Minimum wall embedment does not include the leveling pad depth. Step the leveling pad to follow the general slope of the ground line. Frost depth shall not be considered in designing the wall for depth of leveling pad.

Wall facing units shall be installed on a leveling pad.

B.3 Wall System Components

Materials furnished for wall system components under this contract shall conform to the requirements of this specification. All documentation related to material and components of the wall systems specified in this subsection shall be submitted to the engineer.

B.3.1 Wall Facing

Wall facing units shall consist of precast modular concrete blocks. Furnish concrete produced by a dry-cast or wet-cast process. Concrete for all blocks shall not contain less than 565 pounds of cementitious materials per cubic yard. The contractor may use cement conforming to standard spec. 501.2.1 or may substitute for portland cement at the time of batching conforming to standard spec.

501.2.6 for fly, 501.2.7 for slag, or 501.2.8 for other pozzolans. In either case the maximum total supplementary cementitious content is limited to 30% of the total cementitious content by weight.

Dry-cast concrete blocks shall be manufactured in accordance with ASTM C1372 and this specification.

All units shall incorporate a mechanism or devices that develop a mechanical connection between vertical block layers. Units that are broken, have cracks wider than 0.02" and longer than 25% of the nominal height of the unit, chips larger than 1", have excessive efflorescence, or are otherwise deemed unacceptable by the engineer, shall not be used within the wall. A single block front face style shall be used throughout each wall. The color and surface texture of the block shall be as given on the plan.

The top course of facing units shall be as noted on the plans, either;

- Solid precast concrete unit designed to be compatible with the remainder of the wall. The finishing course shall be bonded to the underlying facing units with a durable, high strength, flexible adhesive compound compatible with the block material.
- A formed cast-in-place concrete cap. A cap of this type shall have texture, color, and appearance, as noted on the plans. The vertical dimension of the cap shall not be less than 3 1/2 inches. Expansion joints shall be placed in the cap at a maximum spacing of 20 feet unless noted otherwise on the plan. Use Grade A, A-FA, A-S, A-T, A-IS, A-IP or A-IT concrete conforming to standard spec 501 as modified in standard spec 716. Provide QMP for cast in place cap and coping concrete as specified in standard spec 716, Class II Concrete.

Block dimensions may vary no more than ±1/8 inch from the standard values published by the manufacturer. Blocks must have a minimum width (front face to back face) of 8 inches. The minimum front face thickness of blocks shall be 4 inches measured perpendicular from the front face to inside voids greater than 4 square inches. The minimum allowed thickness of any other portions of the block is 1¾ inches. The front face of the blocks shall conform to plan requirements for color, texture, or patterns.

If pins are used to align modular block facing units, they shall consist of a non-degrading polymer, or hot dipping galvanized steel and be made for the express use with the modular block units supplied, to develop mechanical interlock between facing unit block layers. Connecting pins shall be capable of holding the wall in the proper position during backfilling. Furnish documentation that establishes and substantiates the design life of such devices.

B.3.1.1 Material Testing

Provide independent quality verification testing of project materials according to the following requirements:

Test	Method	Requirement	
		Dry-cast	Wet-cast
Compressive Strength (psi)	ASTM C140	5000 min.	4000 min.
Air Content (%)	AASHTO T152	N/A	6.0 +/-1.5
Water Absorption (%)	ASTM C140	6 max.[3]	N/A
Freeze-Thaw Loss (%) 40 cycles, 5 of 5 samples 50 cycles, 4 of 5 samples	ASTM C1262[1]	1.0 max.[2][3] 1.5 max.[2][3]	N/A

[1] Test shall be run using a 3% saline solution and blocks greater than 45 days old.

[2] Test results that meet either of the listed requirements for Freeze-Thaw Loss are acceptable.

[3] The independent testing laboratory shall control and conduct all sampling and testing. Prior to sampling, the manufacturer's representative shall identify materials by lot. Five blocks per lot shall be randomly selected for testing. Solid blocks used as a finishing or top course shall not be selected. The selected blocks shall remain under the control of the person who conducted the

sampling until shipped or delivered to the testing laboratory. All pallets of blocks within a lot shall be strapped or wrapped to secure the contents and tagged or marked for identification. The engineer will reject any pallet of blocks delivered to the project without intact security measures. At no expense to the department, the contractor shall remove all rejected blocks from the project. If a random sample of five blocks of any lot tested by the department fails to meet any of the above testing requirements, the entire lot will be considered non-conforming.

The contractor and fabricator shall coordinate with the independent testing agency to ensure that strength and air content samples can be taken appropriately during manufacturing. At the time of delivery of materials, furnish the engineer a certified report of test from an AASHTO-registered or ASTM-accredited independent testing laboratory for each lot.

The certified test report shall include the following:

- Project ID
- Production process used (dry-cast or wet-cast)
- Name and location of testing facility
- Name of sampling technician
- Lot number and lot size

Testing of project materials shall be completed not more than 18 months prior to delivery. Independent testing frequency shall not exceed 5000 blocks for dry-cast blocks and the lesser of 150 CY or 1 day's production for wet-cast blocks. The certified test results will represent all blocks within the lot. Each pallet of blocks delivered shall bear lot identification information. Block lots that do not meet the requirements of this specification or blocks without supporting certified test reports will be rejected and shall be removed from the project at no expense to the department.

Nonconforming materials will be subject to evaluation according to standard spec 106.5.

B.3.2 Leveling Pad

Provide an unreinforced cast-in-place concrete or base aggregate leveling pad. Use Grade A, A-FA, A-S, A-T, A-IS, A-IP, or A-IT concrete conforming to standard spec 501 as modified in standard spec 716. Provide QMP for leveling pad concrete as specified in standard spec 716, Class III Concrete. Use Base Aggregate Dense 1 1/4-Inch conforming to standard spec 305.

The minimum width of the concrete leveling pad shall be as wide as the proposed blocks plus 6-inches, with 6-inches of the leveling pad extending beyond the front face of the blocks. The minimum thickness of the leveling pad shall be 6-inches.

The minimum width of the base aggregate leveling pad shall be as wide as the proposed blocks plus 12-inches, and the modular blocks centered on the leveling pad. The minimum thickness of the leveling pad shall be 12-inches after compaction.

B.3.3 Backfill

Furnish and place backfill for the wall as shown on the plans and as hereinafter provided.

Wall Backfill, Type A, shall comply with the requirements for Coarse Aggregate Size No. 1 as given in standard spec 501.2.5.4. All backfill placed within a zone from the top of the leveling pad to the top of the final layer of wall facing units and within 1 foot behind the back face of the wall shall be Wall Backfill, Type A. This includes all material used to fill openings in the wall facing units.

A layer of Geotextile Type "DF" (Schedule B) shall be placed vertically between the backfill and the Type A backfill. The geotextile shall extend from the top of the leveling pad to 6 inches below the surface of the retained soil. The geotextile shall then wrap across the top of the Type A backfill to the back of block wall facing.

Backfill placed between retained soil and Type A backfill shall comply with the requirements for Granular Backfill Grade 1 as contained in 209.2.2 of the standard spec. The Contractor may substitute Type A Backfill for Granular Backfill Grade 1.

C Construction

C.1 Excavation and Backfill

Excavation and preparation of the foundation for the wall and the leveling pad shall be in accordance to standard spec 206. At the end of each working day, provide good temporary drainage such that the backfill shall not become contaminated with run-off soil or water if it should rain. Do not stockpile or store materials or large equipment within 10 feet of the back of the wall.

Place backfill materials in the areas as indicated on the plans and as detailed in this specification. Backfill lifts shall be no more than 8-inches in depth, after compaction. Backfilling shall closely follow erection of each course of wall facing units.

Conduct backfilling operations in such a manner as to prevent damage or misalignment of the wall facing units or other wall components. At no expense to the department, correct any such damage or misalignment as directed by the engineer. A field representative of the wall supplier shall be available during wall construction to provide technical assistance to the contractor and the engineer.

Do not operate tracked or wheeled equipment on the backfill within 3 feet from the back face of modular blocks. The engineer may order the removal of any large or heavy equipment that may cause damage or misalignment of the wall facing units.

C.2 Compaction

Compact wall backfill Type A with at least three passes of lightweight manually operated compaction equipment acceptable to the engineer.

Ensure adequate moisture is present in the backfill during placement and compaction to prevent segregation and to help achieve compaction.

Compaction of backfill within 3 feet of the back face of the wall should be accomplished using lightweight compaction devices. Use of heavy compaction equipment or vehicles should be avoided within 3 feet of the modular blocks.

C.3 Wall Components

C.3.1 General

Erect wall facing units and other associated elements according to the wall manufacturer's construction guide and to the lines, elevations, batter, and tolerances as shown on the plans. Center the initial layer of facing units on the leveling pad; then level them and properly align them. Fill formed voids or openings in the facing units with wall backfill, Type A. Remove all debris on the top of each layer of facing units, before placing the next layer of facing units.

Install all pins, rods, clips, or other devices used to develop mechanical interlock between facing unit layers in accordance with the manufacturer's directions.

C.3.2 Leveling Pad

Provide an unreinforced cast-in-place concrete or base aggregate leveling pad as shown on the plans. Vertical tolerances shall not exceed 3/4-inch when measured along a 10-foot straight edge. Allow the concrete to set at least 12 hours prior to placing wall facing units.

The bottom row of wall facing units shall be horizontal and 100% of the unit surface shall bear on the leveling pad.

C.4 Geotechnical Information

Geotechnical data to be used in the design of the wall is given on the wall plan.

D Measurement
The department will measure Wall Modular Block Gravity Landscape by the square foot acceptably completed. The department will compute the measured quantity from the theoretical pay limits the contract plans show. The department will make no allowance for wall area constructed above or below the theoretical pay limits. All work beyond the theoretical pay limits is incidental to the cost of work. The department will make no allowance for as-built quantities.

E Payment
The department will pay for accepted measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0165.01	Wall Modular Block Gravity Landscape West Abutment	SF
SPV.0165.02	Wall Modular Block Gravity Landscape East Abutment	SF

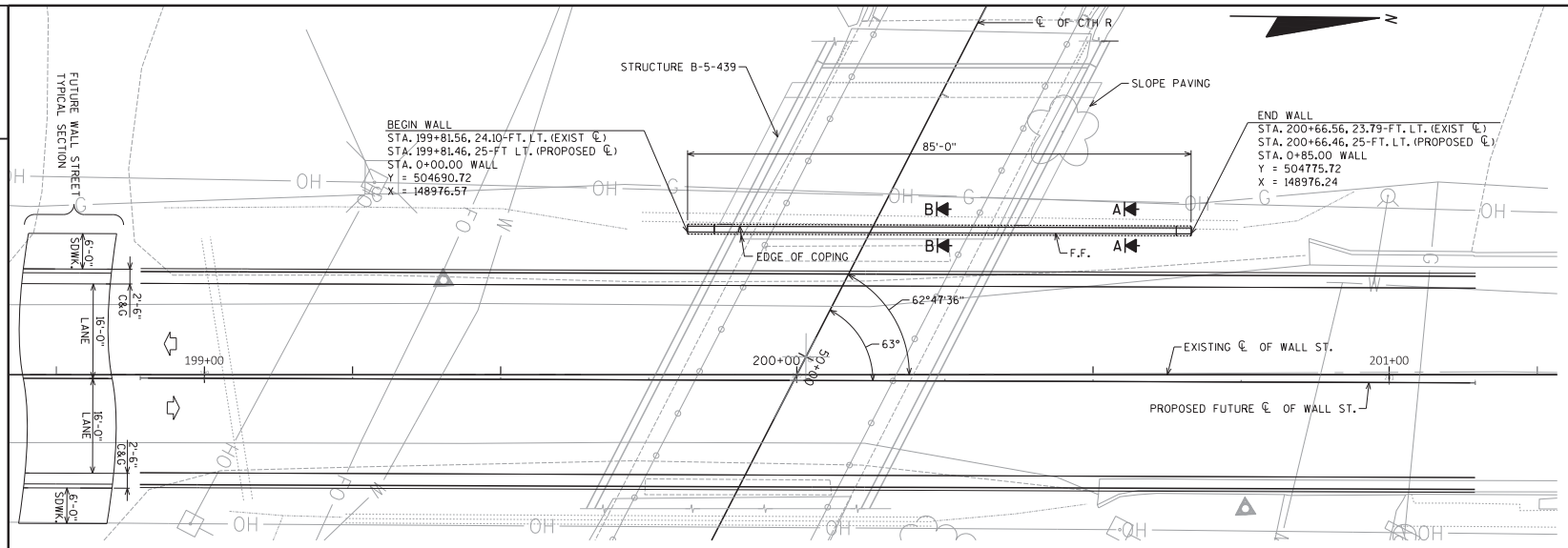
Payment is full compensation for supplying a design and shop drawings; preparing the site, including all necessary excavation and disposal of materials; supplying all necessary wall components to produce a functional wall system including cap, copings, leveling pad, and leveling pad steps; constructing the retaining system and providing temporary drainage; providing backfill, backfilling, compacting, developing/completing/documenting the quality management program, and performing compaction testing.

The department will pay separately for railings, and other items above the wall cap or coping.

Schedule of Items
Attached, dated January 9, 2020, are the revised Schedule of Items Pages 3 and 6.

Plan Sheets
The following 8½ x 11-inch sheets are attached and made part of the plans for this proposal:
Project 4327-09-71: Added: 4A, 4B, 4C and 4D

END OF ADDENDUM



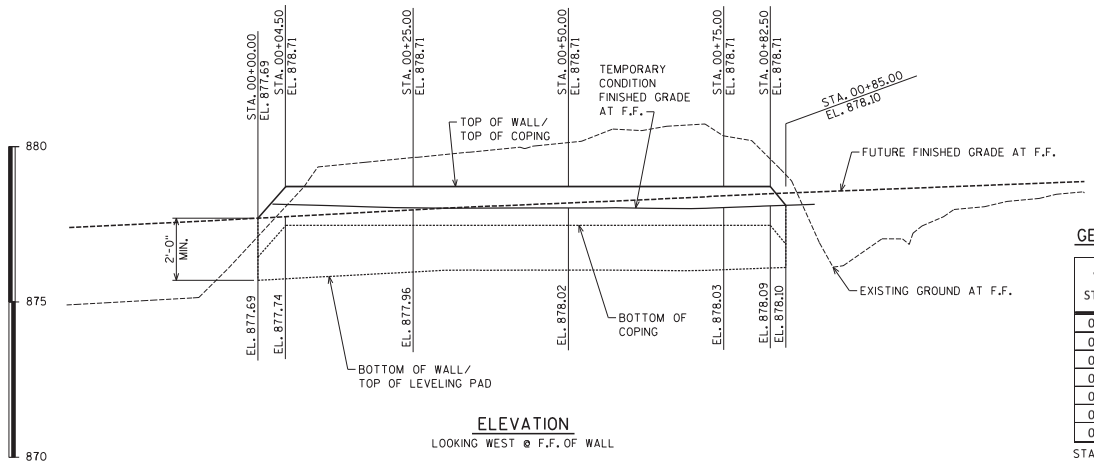
PLAN

ALL STATIONS & DIMENSIONS ARE MEASURED ALONG FRONT FACE

FOR SECTIONS A & B, SEE SHEET "RETAINING WALL DETAILS - TYPICAL SECTIONS".

TOTAL ESTIMATED QUANTITIES

ITEM NUMBER	BID ITEMS	UNIT
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	105 LF
SPV.0165.01	WALL MODULAR BLOCK GRAVITY LANDSCAPE WEST ABUTMENT	235 SF



ELEVATION

LOOKING WEST @ F.F. OF WALL

GEOMETRY TABLE

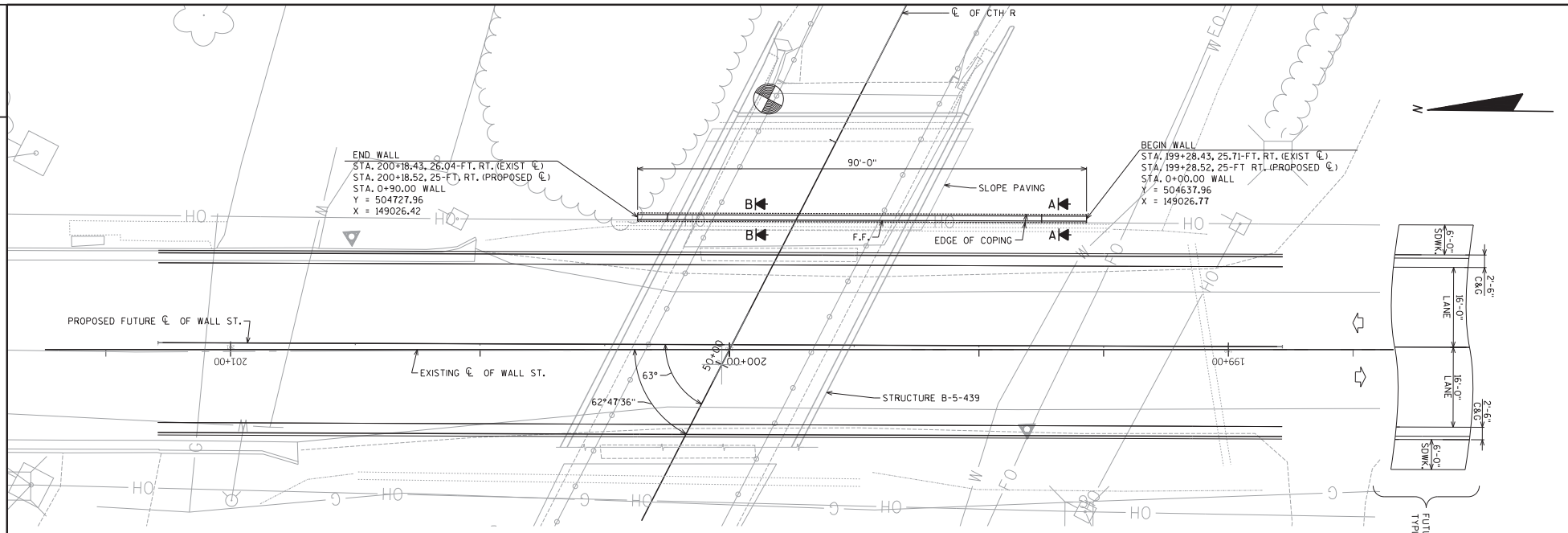
WALL STATION	ROAD STATION	OFFSET TO FF OF WALL	TOP OF WALL EL.	FINISHED GRADE EL.
0+00.00	199+81.46	25'	877.69	877.69
0+04.50	199+85.96	25'	878.71	877.74
0+25.00	199+98.96	25'	878.71	877.96
0+50.00	200+23.96	25'	878.71	878.02
0+75.00	200+48.96	25'	878.71	878.03
0+82.50	200+63.96	25'	878.71	878.09
0+85.00	200+66.46	25'	878.10	878.10

STATIONING BASED ON PROPOSED ℄

F.F. DENOTES FRONT FACE.

Addendum No. 02
ID 4327-09-71
Added Sheet 4A
January 9, 2020

PROJECT NO: 4327-09-71	HWY: CTH R	COUNTY: BROWN	RETAINING WALL LAYOUT - WEST ABUTMENT	SHEET 4A	E



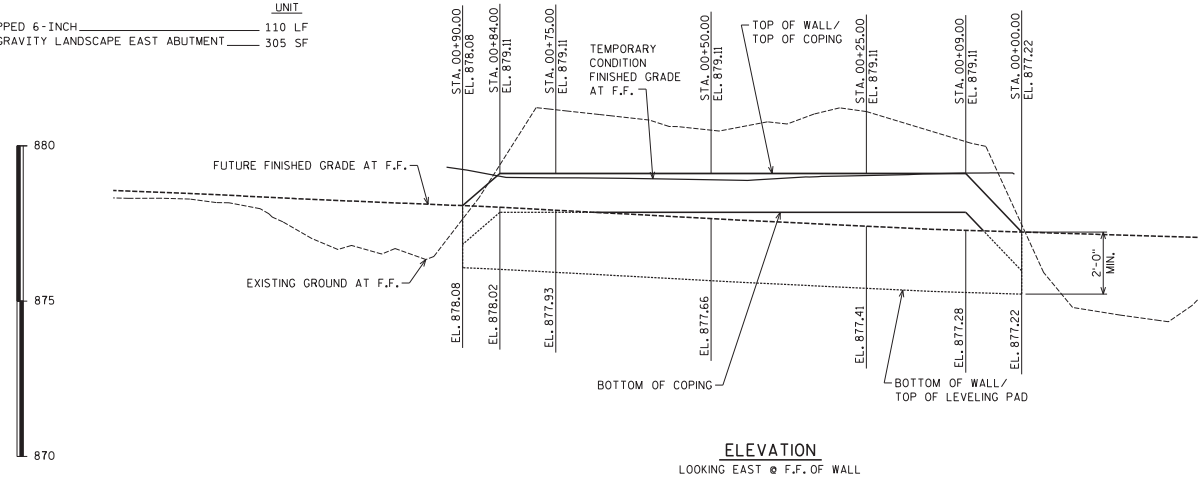
PLAN

ALL STATIONS & DIMENSIONS ARE MEASURED ALONG FRONT FACE

FOR SECTIONS A & B, SEE SHEET "RETAINING WALL DETAILS - TYPICAL SECTIONS".

TOTAL ESTIMATED QUANTITIES

ITEM NUMBER	BID ITEMS	UNIT
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	110 LF
SPV.0165.02	WALL MODULAR BLOCK GRAVITY LANDSCAPE EAST ABUTMENT	305 SF



ELEVATION

LOOKING EAST @ F.F. OF WALL

GEOMETRY TABLE

WALL STATION	ROAD STATION	OFFSET TO FF OF WALL	TOP OF WALL EL.	FINISHED GRADE EL.
0+00.00	199+28.52	25'	877.22	877.22
0+09.00	199+37.52	25'	879.11	877.28
0+25.00	199+48.52	25'	879.11	877.41
0+50.00	199+73.52	25'	879.11	877.66
0+75.00	199+98.52	25'	879.11	877.93
0+84.00	200+12.52	25'	879.11	878.02
0+90.00	200+18.52	25'	878.08	878.08

STATIONING BASED ON PROPOSED ℄

F.F. DENOTES FRONT FACE.

Addendum No. 02
ID 4327-09-71
Added Sheet 4B
January 9, 2020

PROJECT NO: 4327-09-71	HWY: CTH R	COUNTY: BROWN	RETAINING WALL LAYOUT - EAST ABUTMENT	SHEET 4B	E

GENERAL NOTES

THE PLAN QUANTITY FOR THE BID ITEM "WALL MODULAR BLOCK GRAVITY" IS BASED ON A WALL HEIGHT MEASURED FROM THE TOP OF WALL TO A CONSTANT DEPTH OF 2'-0" BELOW FINISHED GRADE.

DRAWINGS SHALL NOT BE SCALED.

THE QUANTITY OF CONCRETE MASONRY, COATED REINFORCING STEEL, AND RUBBERIZED MEMBRANE WATERPROOFING FOR THE CAST-IN-PLACE COPING IS INCIDENTAL TO BID ITEM "WALL MODULAR BLOCK GRAVITY".

DESIGN DATA

THE CONTRACTOR SHALL PROVIDE COMPLETE DESIGN PLANS, DETAILS, SPECIFICATIONS AND SHOP DRAWINGS FOR THE RETAINING WALLS IN ACCORDANCE WITH THE SPECIAL PROVISIONS. THE RETAINING WALL MANUFACTURER SHALL PROVIDE TECHNICAL ASSISTANCE TO THE CONTRACTOR DURING CONSTRUCTION. THE COST OF FURNISHING THESE ITEMS SHALL BE INCLUDED IN THE BID ITEM "WALL MODULAR BLOCK GRAVITY".

PLANS, ELEVATIONS AND DETAILS SHOWN ON THESE DRAWINGS ARE INTENDED TO INDICATE WALL LOCATIONS, LENGTHS, HEIGHTS AND DETAILS COMMON TO ANY WALL SYSTEM SELECTED. THE CONTRACTOR SHALL VERIFY THAT THE WALL SYSTEM SELECTED WILL CONFORM TO THE REQUIRED ALIGNMENTS AND DETAILS.

MODULAR BLOCKS SHALL HAVE A 'CUT STONE' APPREARNCE WITH SANDSTONE COLORATION.

BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS SHOWN OR NOTED OTHERWISE.

THE RETAINING WALL IS TO BE DESIGNED USING THE ELEVATIONS GIVEN ON THE LAYOUT SHEETS.

DESIGN FOR RETAINING WALL TO PROVIDE FOR FINISHED GRADE SLOPED BEHIND WALL AND RAILING AS SHOWN.

DESIGN RETAINING WALL FOR A LIVE LOAD SURCHARGE OF 240 psf.

ULTIMATE DESIGN STRESSES:

CONCRETE MASONRY (COPING) _____ f'_c = 3,500 p.s.i.
HIGH STRENGTH BAR STEEL REINFORCEMENT (GRADE 60) _____ f_y = 60,000 p.s.i.

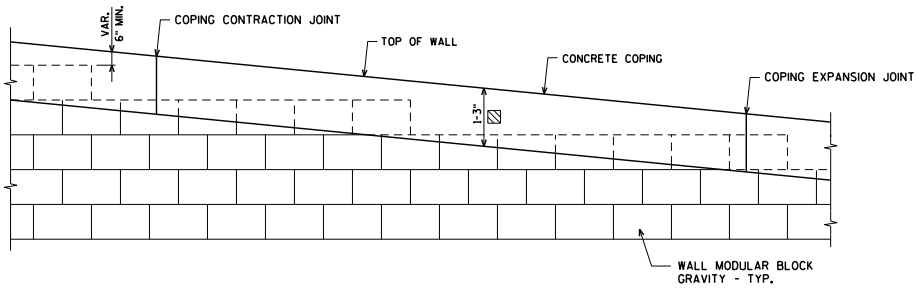
WALL EXTERNAL & OVERALL STABILITY EVALUATION

DIMENSIONS	EVALUATED LOCATIONS	
LOCATION	W. ABUT.	E. ABUT.
WALL HEIGHT (FEET)	2.97	3.83
EXPOSED WALL HEIGHT (FEET)	0.97	1.83
MINIMUM LENGTH OF REINFORCEMENT (FEET) ■	---	---
WALL STATION	0+04.50	0+09.00
BORING USED	1-18	2-18
CAPACITY TO DEMAND RATIO (CDR)		
SLIDING (CDR>1.0)	1.03	1.00
ECCENTRICITY (CDR>1.0)	1.28	1.00
OVERALL STABILITY (CDR>1.0) ☆	2.30	2.15
BEARING RESISTANCE (CDR>1.0)	6.30	2.86
FACTORED BEARING RESISTANCE (psf)	4,105	3,485

NOTES

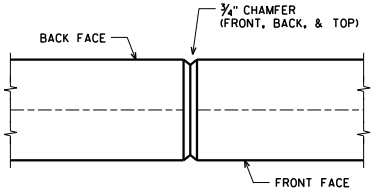
■ THE LENGTHS PROVIDED IN THE TABLE ARE THE MINIMUM REQUIRED REINFORCEMENT LENGTHS BASED UPON THE MINIMUM DESCRIBED IN THE WALL SYSTEM SPECIAL PROVISIONS OR EXTERNAL AND OVERALL STABILITY AT THE DESIGNATED LOCATIONS. THESE DESIGNATED LOCATIONS REPRESENT TYPICAL AND CRITICAL WALL LOCATIONS, BUT SHALL NOT BE CONSIDERED ALL INCLUSIVE. THE CONTRACTOR DESIGN LENGTHS SHALL MEET OR EXCEED THE MINIMUM VALUES REPRESENTED IN THE TABLE AT THESE DESIGNATED LOCATIONS.

☆ THE LENGTHS PROVIDED IN THE TABLE ARE THE MINIMUM REQUIRED REINFORCMENT LENGTHS BASED ON OVERALL STABILITY PERFORMED BY THE WALL DESIGNER. COMPOUND STABILITY IS THE CONTRACTORS RESPONSIBILITY.



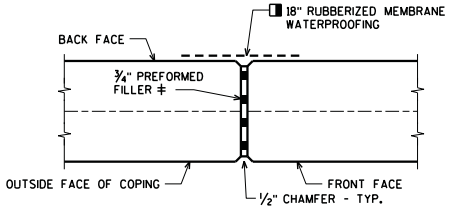
RETAINING WALL FACE & CONCRETE COPING DETAIL

▨ THIS DIMENSION MAY CHANGE DEPENDING ON HEIGHT OF BLOCKS. THIS DIMENSION TO BE CONSTANT FOR ENTIRE LENGTH OF WALL. MAXIMUM ALLOWABLE HEIGHT OF BLOCKS TO BE 9 INCHES.



COPING CONTRACTION JOINT

DO NOT RUN BAR STEEL THRU JOINT
MAXIMUM SPACING OF JOINT = 12'



COPING EXPANSION JOINT

DO NOT RUN BAR STEEL THRU JOINT
MAXIMUM SPACING OF JOINT = 50'

◨ MEMBRANE WATERPROOFING TO EXTEND FROM TOP OF COPING TO 6" BELOW TOP OF PANELS.

‡ SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONC.)

PLACE EXPANSION JOINTS AT EVERY THIRD JOINT AND AT ALL WALL RADIUS PC/PT POINTS AND BEND POINTS.

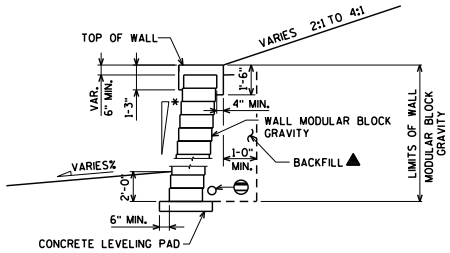
SOIL PARAMETERS

STRATUM LOCATIONS AND SOIL DESCRIPTIONS	TOTAL UNIT WEIGHT (PCF)	FRICTION ANGLE (DEGREES)	COHESION (PCF)
GRANULAR BACKFILL (REINFORCING ZONE OR BACKFILL)	120	34°	0
RETAINED SOIL ⊛	120	30°	0

⊛ DESIGN WALL FOR THESE VALUES

Addendum No. 02
ID 4327-09-71
Added Sheet 4C
January 9, 2020

PROJECT NO 4327-09-71	HWY: CTH R	COUNTY: BROWN	RETAINING WALL DETAILS - DESIGN DATA	SHEET 4C	E



SECTION A-A

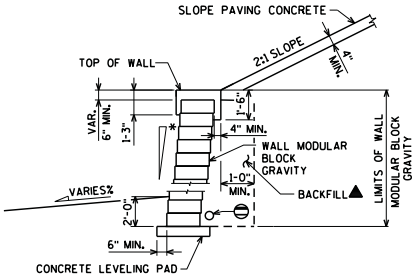
STA. 199+81.46 TO STA. 199+86.82 (PROPOSED ℄) - WEST ABUTMENT
STA. 200+39.01 TO STA. 200+66.46 (PROPOSED ℄) - WEST ABUTMENT
STA. 199+28.52 TO STA. 199+59.99 (PROPOSED ℄) - EAST ABUTMENT
STA. 200+12.17 TO STA. 200+18.52 (PROPOSED ℄) - EAST ABUTMENT

* SET BLOCK VARIES BY MANUFACTURER, MAX. FRONT FACE FROM VERTICAL BLOCK IS 1 HORIZ. TO 12 VERT.

▲ INCIDENTAL TO BID ITEM "WALL MODULAR BLOCK GRAVITY".

⊖ PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON THIS SHEET.

FOR LOCATION OF SECTION A, SEE SHEETS :
"RETAINING WALL LAYOUT - WEST ABUTMENT"
& "RETAINING WALL LAYOUT - EAST ABUTMENT"



SECTION B-B

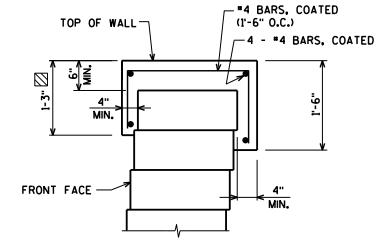
STA. 199+86.82 TO STA. 200+39.01 (PROPOSED ℄) - WEST ABUTMENT
STA. 199+59.99 TO STA. 200+12.17 (PROPOSED ℄) - EAST ABUTMENT

* SET BLOCK VARIES BY MANUFACTURER, MAX. FRONT FACE FROM VERTICAL BLOCK IS 1 HORIZ. TO 12 VERT.

▲ INCIDENTAL TO BID ITEM "WALL MODULAR BLOCK GRAVITY".

⊖ PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON THIS SHEET.

FOR LOCATION OF SECTION A, SEE SHEETS :
"RETAINING WALL LAYOUT - WEST ABUTMENT"
& "RETAINING WALL LAYOUT - EAST ABUTMENT"

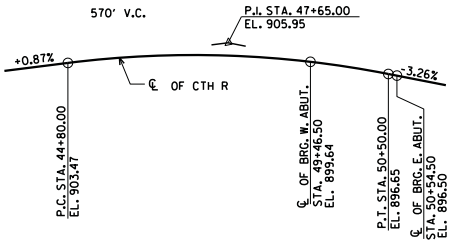


COPING DETAIL

▨ THIS DIMENSION MAY CHANGE DEPENDING ON HEIGHT OF BLOCKS. THIS DIMENSION TO BE CONSTANT FOR ENTIRE LENGTH OF WALL. MAXIMUM ALLOWABLE HEIGHT OF BLOCKS TO BE 9 INCHES AT COPING.

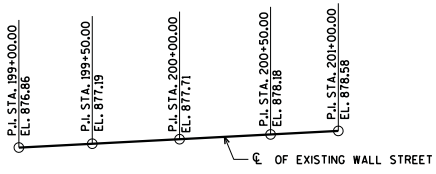
MAINTAIN 2" MINIMUM COVER ON ALL REBAR.

Addendum No. 02
ID 4327-09-71
Added Sheet 4D
January 9, 2020

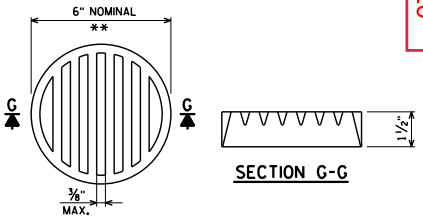


PROFILE GRADE LINE
(CTH R)

BENCH MARK:
ALUM. CAP ON NE WW
STA. 50+52, 16.0 FT. LT.
EL. 896.78



PROFILE GRADE LINE
(EXISTING WALL STREET)



SECTION G-G

** DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SO SLOTS ARE VERTICAL.

THE RODENT SHIELD, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALLY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SHIELD TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 x 1-INCH STAINLESS STEEL SHEET METAL SCREWS.

RODENT SHIELD DETAIL

PROJECT NO: 4327-09-71	HWY: CTH R	COUNTY: BROWN	RETAINING WALL DETAILS - TYPICAL SECTIONS	SHEET 4D	E

Proposal ID: 20200114013 **Project(s):** 4327-08-71, 4327-09-71

Federal ID(s): N/A, N/A

SECTION: 0001 Contract Items

Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0064	612.0406 Pipe Underdrain Wrapped 6-Inch	1,075.000 LF	_____.____	_____.____
0066	614.0150 Anchor Assemblies for Steel Plate Beam Guard	8.000 EACH	_____.____	_____.____
0068	614.2300 MGS Guardrail 3	196.500 LF	_____.____	_____.____
0070	614.2330 MGS Guardrail 3 K	356.000 LF	_____.____	_____.____
0072	614.2500 MGS Thrie Beam Transition	316.000 LF	_____.____	_____.____
0074	614.2610 MGS Guardrail Terminal EAT	1.000 EACH	_____.____	_____.____
0076	618.0100 Maintenance And Repair of Haul Roads (project) 01. 4327-08-71	1.000 EACH	_____.____	_____.____
0078	618.0100 Maintenance And Repair of Haul Roads (project) 02. 4327-09-71	1.000 EACH	_____.____	_____.____
0080	619.1000 Mobilization	1.000 EACH	_____.____	_____.____
0082	624.0100 Water	14.000 MGAL	_____.____	_____.____
0084	625.0100 Topsoil	5,180.000 SY	_____.____	_____.____
0086	628.1504 Silt Fence	2,020.000 LF	_____.____	_____.____
0088	628.1520 Silt Fence Maintenance	4,040.000 LF	_____.____	_____.____
0090	628.1905 Mobilizations Erosion Control	5.000 EACH	_____.____	_____.____
0092	628.1910 Mobilizations Emergency Erosion Control	3.000 EACH	_____.____	_____.____
0094	628.2004 Erosion Mat Class I Type B	5,180.000 SY	_____.____	_____.____

Proposal ID: 20200114013 **Project(s):** 4327-08-71, 4327-09-71

Federal ID(s): N/A, N/A

SECTION: 0001 Contract Items

Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0160	SPV.0105 Special 02. Superstructure 3/4" V-Drip Edge Structure B-5-439	LS	LUMP SUM	_____.____
0162	SPV.0195 Special 01. Traffic Bond Limestone 3/8-Inch	50.000 TON	_____.____	_____.____
0164	203.0100 Removing Small Pipe Culverts	2.000 EACH	_____.____	_____.____
0166	204.0175 Removing Concrete Slope Paving	302.000 SY	_____.____	_____.____
0168	SPV.0165 Special 01. Wall Modular Block Gravity Landscape West Abutment	235.000 SF	_____.____	_____.____
0170	SPV.0165 Special 02. Wall Modular Block Gravity Landscape East Abutment	305.000 SF	_____.____	_____.____
	Section: 0001		**Total:**	_____.____
			Total Bid:	_____.____