

NOTIFICATION OF ADDENDUM

ADDENDUM NO. 1

DATED 10/29/2015

| | |
|----------------|----------------------------|
| Control | 2102-01-066, ETC. |
| Project | STP 1502(598), ETC. |
| Highway | RM 2244 |
| County | TRAVIS |

Ladies/Gentlemen:

Attached please find an addendum on the above captioned project. Included in the attachment is an addendum notification which details the changes and the respective proposal pages which were added and/or changed.

Except for new bid insert pages, it is unnecessary to return any of the pages attached.

Bid insert pages must be returned with the bid proposal submitted to the Department, unless your firm is submitting a bid using a computer print out. The computer print out must be changed to reflect the new bid item information.

Contractors and material suppliers, etc. who have previously been furnished informational proposals are not being furnished a copy of the addendum. If you have a subcontractor on the above project, please advise them of this addendum. Acknowledgment of this addendum is not requested if your company has been issued a proposal stamped "This Proposal Issued for Informational Purposes."

You are required to acknowledge receipt of this addendum on the Addendum Acknowledgement form contained in your bid proposal by placing a mark in the box next to the respective addendum.

Failure to Acknowledge receipt of this addendum in your bid proposal will result in your bid not being read.

SUBJECT: PLANS AND PROPOSAL ADDENDUMS

PROJECT: STP 1502(598)

CONTROL: 2102-01-066

COUNTY: TRAVIS

LETTING: 11/03/2015

REFERENCE NO: 1027

PROPOSAL ADDENDUMS

-
- PROPOSAL COVER
 - BID INSERTS (SH. NO.: 1-23 thru 23-23)
 - GENERAL NOTES (SH. NO.: R)

 - SPEC LIST (SH. NO.: 1-3 thru 3-3)
 - SPECIAL PROVISIONS:
 - ADDED:

 - DELETED:

 - SPECIAL SPECIFICATIONS:
 - ADDED:

 - DELETED:

 - OTHER: Plans

DESCRIPTION OF ABOVE CHANGES
(INCLUDING PLANS SHEET CHANGES)

****Bid Insert****

Deleted the following items, 432-6044 & 666-6282.

Added the following items, 420-6054, 420-6146 & 666-6302.

Revised quantities for the following items, 403-6001, 411-6001, 423-6001, 423-6004, 423-6015, 423-6017, 662-6048, 662-6050, 662-6056, 662-6058, & 740-6005.

****General Notes****

Sh R - Item 423 - Revised last note.

****Spec List****

Added Item 420.

****Plans****

DESCRIPTION OF ABOVE CHANGES
(INCLUDING PLANS SHEET CHANGES)

(CONTINUED)

Sh 2 - Index of Sheets - Added previously omitted sheet 293, added sheets 296A thru 296S, added previously omitted sheet 300, replaced sheet 302, added sheet 614.

Sh 28H - Item 423 - Revised last note.

Sh 29, 29A-29E - Made same changes as noted under Bid Insert.

Sh 30 - Revised quantities for items 662-6048 & 662-6050.

Sh 31 - Revised quantities for items 662-6056 & 662-6058.

Sh 38 - Revised quantities for items 403-6001, 423-6001, 423-6004, 423-6015, 423-6017 & 740-6005. Deleted column for item 410-6001. Added quantities for item 411-6001. Added items 420-6054 & 420-6146. Changed bid item 432-6044 to subsidiary item 432-*

Sh 43 - Replaced item 666-6282 with item 666-6302.

Sh 268-280, 280A, 281-285 - Updated summary tables, notes and some retaining wall heights.

Sh 288-290 - Removed rail from typical.

Sh 296A-296S - New sheets added.

Sh 300 - Added modified standard RW(MSE)DD(MOD) which was previously omitted.

Sh 302 - Updated to modified standard RW(CB) (MOD).

Sh 614 - New sheet added.

| ALT | ITEM-CODE | | | UNIT BID PRICE ONLY. WRITTEN IN WORDS | UNIT | APPROX QUANTITIES | DEPT USE ONLY |
|-----|------------|--------------|-------------|--|------|----------------------|---------------------|
| | ITEM NO | DESC CODE | S.P. NO. | | | | |
| | 100 | 6002 | | PREPARING ROW DOLLARS and CENTS | STA | 94.500 | 1 |
| | 104 | 6001 | | REMOVING CONC (PAV) DOLLARS and CENTS | SY | 104.000 | 2 |
| | 104 | 6009 | | REMOVING CONC (RIPRAP) DOLLARS and CENTS | SY | 847.000 | 3 |
| | 104 | 6015 | | REMOVING CONC (SIDEWALKS) DOLLARS and CENTS | SY | 836.000 | 4 |
| | 104 | 6022 | | REMOVING CONC (CURB AND GUTTER) DOLLARS and CENTS | LF | 200.000 | 5 |
| | 104 | 6029 | | REMOVING CONC (CURB OR CURB & GUT- TER) DOLLARS and CENTS | LF | 5,828.000 | 6 |
| | 105 | 6011 | | REMOVING STAB BASE AND ASPH PAV (2"- 6") DOLLARS and CENTS | SY | 606.000 | 7 |
| | 110 | 6001 | | EXCAVATION (ROADWAY) DOLLARS and CENTS | CY | 37,492.000 | 8 |
| | 132 | 6003 | | EMBANKMENT (FINAL)(ORD COMP)(TY B) DOLLARS and CENTS | CY | 16,909.000 | 9 |
| | 132 | 6005 | | EMBANKMENT (FINAL)(ORD COMP)(TY C) DOLLARS and CENTS | CY | 4,109.000 | 10 |
| | 160 | 6003 | | FURNISHING AND PLACING TOPSOIL (4") DOLLARS and CENTS | SY | 40,913.000 | 11 |

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| | ITEM NO | DESC CODE | S.P. NO. | | | | |
| | 162 | 6002 | | BLOCK SODDING DOLLARS and CENTS | SY | 3,092.000 | 12 |
| | 164 | 6007 | | BROADCAST SEED (PERM) (URBAN) (CLAY) DOLLARS and CENTS | SY | 37,821.000 | 13 |
| | 164 | 6011 | | BROADCAST SEED (TEMP) (COOL) DOLLARS and CENTS | SY | 37,821.000 | 14 |
| | 168 | 6001 | | VEGETATIVE WATERING DOLLARS and CENTS | MG | 1,134.700 | 15 |
| | 169 | 6001 | | SOIL RETENTION BLANKETS (CL 1) (TY A) DOLLARS and CENTS | SY | 37,821.000 | 16 |
| | 247 | 6056 | | FL BS (CMP IN PLC)(TY D GR 4)(FNAL POS) DOLLARS and CENTS | CY | 450.000 | 17 |
| | 340 | 6004 | | D-GR HMA(SQ) TY-A PG64-22 DOLLARS and CENTS | TON | 2,710.000 | 18 |
| | 340 | 6011 | | D-GR HMA(SQ) TY-B PG64-22 DOLLARS and CENTS | TON | 2,842.000 | 19 |
| | 341 | 6042 | | D-GR HMA TY-D SAC-B PG70-22 DOLLARS and CENTS | TON | 8,898.000 | 20 |
| | 341 | 6076 | | D-GR HMA TY B SAC-B PG (64-22) DOLLARS and CENTS | TON | 22,461.000 | 21 |
| | 347 | 6001 | | TOM (ASPHALT) PG 76-22 DOLLARS and CENTS | TON | 279.000 | 22 |
| | 347 | 6004 | | TOM-F (AGGREGATE) SAC-B DOLLARS and CENTS | TON | 3,602.000 | 23 |

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| | 400 | 6006 | | CUT & RESTORING PAV DOLLARS and CENTS | SY | 183.000 | 24 |
| | 401 | 6001 | | FLOWABLE BACKFILL DOLLARS and CENTS | CY | 189.000 | 25 |
| | 402 | 6001 | | TRENCH EXCAVATION PROTECTION DOLLARS and CENTS | LF | 21,720.000 | 26 |
| | 403 | 6001 | | TEMPORARY SPL SHORING DOLLARS and CENTS | SF | 12,758.000 | 27 |
| | 411 | 6001 | | ROCK NAIL ANCHORS DOLLARS and CENTS | LF | 3,480.000 | 28 |
| | 416 | 6031 | | DRILL SHAFT (TRF SIG POLE) (30 IN) DOLLARS and CENTS | LF | 56.500 | 29 |
| | 416 | 6032 | | DRILL SHAFT (TRF SIG POLE) (36 IN) DOLLARS and CENTS | LF | 92.400 | 30 |
| | 420 | 6054 | | CL C CONC (HEADWALL) DOLLARS and CENTS | CY | 3.400 | 31 |
| | 420 | 6146 | | CL F CONC (MISC) DOLLARS and CENTS | CY | 108.100 | 32 |
| | 423 | 6001 | | RETAINING WALL (MSE) DOLLARS and CENTS | SF | 15,594.000 | 33 |
| | 423 | 6004 | | RETAINING WALL (CONC BLOCK) DOLLARS and CENTS | SF | 5,486.000 | 34 |
| | 423 | 6008 | | RETAINING WALL (CAST - IN - PLACE) DOLLARS and CENTS | SF | 5,630.000 | 35 |

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| | 423 | 6015 | | RETAINING WALL (SPECIAL) DOLLARS and CENTS | SF | 6,320.000 | 36 |
| | 423 | 6017 | | RET WALL (SOIL NAILED)(FASCIA)(HOR SCH) DOLLARS and CENTS | SF | 4,727.000 | 37 |
| | 432 | 6001 | | RIPRAP (CONC)(4 IN) DOLLARS and CENTS | CY | 246.440 | 38 |
| | 432 | 6045 | | RIPRAP (MOW STRIP)(4 IN) DOLLARS and CENTS | CY | 56.300 | 39 |
| | 450 | 6006 | | RAIL (TY T223) DOLLARS and CENTS | LF | 314.000 | 40 |
| | 450 | 6032 | | RAIL (TY C223) DOLLARS and CENTS | LF | 2,499.000 | 41 |
| | 450 | 6051 | | RAIL (HANDRAIL)(TY E) DOLLARS and CENTS | LF | 110.500 | 42 |
| | 464 | 6003 | | RC PIPE (CL III)(18 IN) DOLLARS and CENTS | LF | 7,401.000 | 43 |
| | 464 | 6005 | | RC PIPE (CL III)(24 IN) DOLLARS and CENTS | LF | 4,460.000 | 44 |
| | 464 | 6007 | | RC PIPE (CL III)(30 IN) DOLLARS and CENTS | LF | 1,558.000 | 45 |
| | 464 | 6008 | | RC PIPE (CL III)(36 IN) DOLLARS and CENTS | LF | 1,749.000 | 46 |
| | 464 | 6010 | | RC PIPE (CL III)(48 IN) DOLLARS and CENTS | LF | 97.000 | 47 |

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| | 464 | 6011 | | RC PIPE (CL III)(54 IN) and DOLLARS CENTS | LF | 86.000 | 48 |
| | 465 | 6002 | | MANH (COMPL)(PRM)(48IN) and DOLLARS CENTS | EA | 25.000 | 49 |
| | 465 | 6003 | | MANH (COMPL)(PRM)(60IN) and DOLLARS CENTS | EA | 4.000 | 50 |
| | 465 | 6013 | | INLET (COMPL)(PCO)(3FT)(NONE) and DOLLARS CENTS | EA | 2.000 | 51 |
| | 465 | 6128 | | INLET (COMPL)(PSL)(FG)(4FTX4FT-4FTX-4FT) and DOLLARS CENTS | EA | 77.000 | 52 |
| | 465 | 6144 | | INLET (COMPL)(PSL)(FG)(8FTX8FT-4FTX-4FT) and DOLLARS CENTS | EA | 1.000 | 53 |
| | 466 | 6095 | | HEADWALL (CH - PW - 0) (DIA= 18 IN) and DOLLARS CENTS | EA | 1.000 | 54 |
| | 466 | 6101 | | HEADWALL (CH - PW - 0) (DIA= 36 IN) and DOLLARS CENTS | EA | 2.000 | 55 |
| | 466 | 6103 | | HEADWALL (CH - PW - 0) (DIA= 48 IN) and DOLLARS CENTS | EA | 2.000 | 56 |
| | 467 | 6356 | | SET (TY II) (18 IN) (RCP) (3: 1) (C) and DOLLARS CENTS | EA | 1.000 | 57 |
| | 496 | 6002 | | REMOV STR (INLET) and DOLLARS CENTS | EA | 5.000 | 58 |
| | 496 | 6003 | | REMOV STR (MANHOLE) and DOLLARS CENTS | EA | 4.000 | 59 |

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| | 496 | 6004 | | REMOV STR (SET) DOLLARS and CENTS | EA | 19.000 | 60 |
| | 496 | 6006 | | REMOV STR (HEADWALL) DOLLARS and CENTS | EA | 5.000 | 61 |
| | 496 | 6007 | | REMOV STR (PIPE) DOLLARS and CENTS | LF | 2,273.000 | 62 |
| | 496 | 6040 | | REMOV STR (RET WALL) DOLLARS and CENTS | LF | 1,872.000 | 63 |
| | 500 | 6001 | | MOBILIZATION DOLLARS and CENTS | LS | 1.000 | 64 |
| | 502 | 6001 | | BARRICADES, SIGNS AND TRAFFIC HAN- DLING DOLLARS and CENTS | MO | 28.000 | 65 |
| | 506 | 6002 | 001 | ROCK FILTER DAMS (INSTALL) (TY 2) DOLLARS and CENTS | LF | 270.000 | 66 |
| | 506 | 6011 | 001 | ROCK FILTER DAMS (REMOVE) DOLLARS and CENTS | LF | 270.000 | 67 |
| | 506 | 6020 | 001 | CONSTRUCTION EXITS (INSTALL) (TY 1) DOLLARS and CENTS | SY | 176.000 | 68 |
| | 506 | 6024 | 001 | CONSTRUCTION EXITS (REMOVE) DOLLARS and CENTS | SY | 176.000 | 69 |
| | 506 | 6038 | 001 | TEMP SEDMT CONT FENCE (INSTALL) DOLLARS and CENTS | LF | 8,651.000 | 70 |
| | 506 | 6039 | 001 | TEMP SEDMT CONT FENCE (REMOVE) DOLLARS and CENTS | LF | 8,651.000 | 71 |

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| | ITEM NO | DESC CODE | S.P. NO. | | | | |
| | 506 | 6041 | 001 | BIODEG EROSN CONT LOGS (INSTL) (12") DOLLARS and CENTS | LF | 2,190.000 | 72 |
| | 506 | 6043 | 001 | BIODEG EROSN CONT LOGS (REMOVE) DOLLARS and CENTS | LF | 2,190.000 | 73 |
| | 508 | 6001 | | CONSTRUCTING DETOURS DOLLARS and CENTS | SY | 220.000 | 74 |
| | 512 | 6009 | | PORT CTB (FUR & INST)(LOW PROF)(TY 1) DOLLARS and CENTS | LF | 40.000 | 75 |
| | 512 | 6010 | | PORT CTB (FUR & INST)(LOW PROF)(TY 2) DOLLARS and CENTS | LF | 40.000 | 76 |
| | 512 | 6017 | | PORT CTB (DES SOURCE)(F-SHAPE)(TY 1) DOLLARS and CENTS | LF | 240.000 | 77 |
| | 512 | 6021 | | PORT CTB (DES SOURCE)(LOW PROF)(TY 1) DOLLARS and CENTS | LF | 80.000 | 78 |
| | 512 | 6022 | | PORT CTB (DES SOURCE)(LOW PROF)(TY 2) DOLLARS and CENTS | LF | 80.000 | 79 |
| | 512 | 6057 | | PORT CTB (REMOVE)(LOW PROF)(TY 1) DOLLARS and CENTS | LF | 40.000 | 80 |
| | 512 | 6058 | | PORT CTB (REMOVE)(LOW PROF)(TY 2) DOLLARS and CENTS | LF | 40.000 | 81 |
| | 528 | 6004 | | LANDSCAPE PAVERS DOLLARS and CENTS | SY | 164.000 | 82 |
| | 529 | 6002 | | CONC CURB (TY II) DOLLARS and CENTS | LF | 841.000 | 83 |

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| | 529 | 6008 | | CONC CURB & GUTTER (TY II) DOLLARS and CENTS | LF | 6,337.000 | 84 |
| | 530 | 6004 | | DRIVEWAYS (CONC) DOLLARS and CENTS | SY | 1,942.000 | 85 |
| | 530 | 6005 | | DRIVEWAYS (ACP) DOLLARS and CENTS | SY | 8,511.000 | 86 |
| | 531 | 6002 | | CONC SIDEWALKS (5") DOLLARS and CENTS | SY | 8,955.000 | 87 |
| | 531 | 6008 | | CURB RAMPS (TY 5) DOLLARS and CENTS | EA | 2.000 | 88 |
| | 531 | 6010 | | CURB RAMPS (TY 7) DOLLARS and CENTS | EA | 62.000 | 89 |
| | 531 | 6013 | | CURB RAMPS (TY 10) DOLLARS and CENTS | EA | 29.000 | 90 |
| | 531 | 6016 | | CURB RAMPS (TY 21) DOLLARS and CENTS | EA | 24.000 | 91 |
| | 542 | 6001 | | REMOVE METAL BEAM GUARD FENCE DOLLARS and CENTS | LF | 419.000 | 92 |
| | 542 | 6002 | | REMOVE TERMINAL ANCHOR SECTION DOLLARS and CENTS | EA | 5.000 | 93 |
| | 556 | 6008 | | PIPE UNDERDRAINS (TY 8) (6") DOLLARS and CENTS | LF | 62.000 | 94 |
| | 560 | 6001 | | MAILBOX INSTALL-S (TWG-POST) TY 1 DOLLARS and CENTS | EA | 3.000 | 95 |

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| | 560 | 6002 | | MAILBOX INSTALL-D (TWG-POST) TY 1 DOLLARS and CENTS | EA | 1.000 | 96 |
| | 560 | 6003 | | MAILBOX INSTALL-M (TWG-POST) TY 1 DOLLARS and CENTS | EA | 2.000 | 97 |
| | 618 | 6023 | | CONDT (PVC) (SCH 40) (2") DOLLARS and CENTS | LF | 3,576.000 | 98 |
| | 618 | 6024 | | CONDT (PVC) (SCH 40) (2") (BORE) DOLLARS and CENTS | LF | 3,397.000 | 99 |
| | 618 | 6029 | | CONDT (PVC) (SCH 40) (3") DOLLARS and CENTS | LF | 2,062.000 | 100 |
| | 618 | 6030 | | CONDT (PVC) (SCH 40) (3") (BORE) DOLLARS and CENTS | LF | 2,454.000 | 101 |
| | 618 | 6053 | | CONDT (PVC) (SCH 80) (3") DOLLARS and CENTS | LF | 24,936.000 | 102 |
| | 618 | 6054 | | CONDT (PVC) (SCH 80) (3") (BORE) DOLLARS and CENTS | LF | 8,173.000 | 103 |
| | 620 | 6007 | | ELEC CONDR (NO.8) BARE DOLLARS and CENTS | LF | 10,979.000 | 104 |
| | 620 | 6008 | | ELEC CONDR (NO.8) INSULATED DOLLARS and CENTS | LF | 9,842.000 | 105 |
| | 620 | 6009 | | ELEC CONDR (NO.6) BARE DOLLARS and CENTS | LF | 455.000 | 106 |
| | 620 | 6010 | | ELEC CONDR (NO.6) INSULATED DOLLARS and CENTS | LF | 910.000 | 107 |

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| | ITEM NO | DESC CODE | S.P. NO. | | | | |
| | 624 | 6010 | | GROUND BOX TY D (162922)W/APRON DOLLARS and CENTS | EA | 39.000 | 108 |
| | 624 | 6021 | | GROUND BOX TY 2 (243636)W/APRON DOLLARS and CENTS | EA | 21.000 | 109 |
| | 628 | 6215 | | ELC SRV TY D 120/240 100(NS)AL(E)SP(O) DOLLARS and CENTS | EA | 8.000 | 110 |
| | 644 | 6001 | | IN SM RD SN SUP&AM TY10BWG(1)SA(P) DOLLARS and CENTS | EA | 70.000 | 111 |
| | 644 | 6027 | | IN SM RD SN SUP&AM TYS80(1)SA(P) DOLLARS and CENTS | EA | 7.000 | 112 |
| | 644 | 6030 | | IN SM RD SN SUP&AM TYS80(1)SA(T) DOLLARS and CENTS | EA | 3.000 | 113 |
| | 644 | 6038 | | IN SM RD SN SUP&AM TYS80(1)SA(U-EXAL) DOLLARS and CENTS | EA | 1.000 | 114 |
| | 644 | 6076 | | REMOVE SM RD SN SUP&AM DOLLARS and CENTS | EA | 88.000 | 115 |
| | 658 | 6046 | | INSTL OM ASSM (OM-2X)(WC)GND DOLLARS and CENTS | EA | 1.000 | 116 |
| | 662 | 6048 | | WK ZN PAV MRK REMOV (REFL) TY I-C DOLLARS and CENTS | EA | 6,273.000 | 117 |
| | 662 | 6050 | | WK ZN PAV MRK REMOV (REFL) TY II-A-A DOLLARS and CENTS | EA | 2,464.000 | 118 |
| | 662 | 6056 | | WK ZN PAV MRK REMOV (TRAF BTN) TY W DOLLARS and CENTS | EA | 7,651.000 | 119 |

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| | ITEM NO | DESC CODE | S.P. NO. | | | | |
| | 662 | 6058 | | WK ZN PAV MRK REMOV (TRAF BTN) TY Y DOLLARS and CENTS | EA | 7,550.000 | 120 |
| | 662 | 6071 | | WK ZN PAV MRK REMOV (W)8"(SLD) DOLLARS and CENTS | LF | 31.000 | 121 |
| | 662 | 6075 | | WK ZN PAV MRK REMOV (W)24"(SLD) DOLLARS and CENTS | LF | 944.000 | 122 |
| | 662 | 6080 | | WK ZN PAV MRK REMOV (W)(ARROW) DOLLARS and CENTS | EA | 8.000 | 123 |
| | 662 | 6090 | | WK ZN PAV MRK REMOV (W)(WORD) DOLLARS and CENTS | EA | 8.000 | 124 |
| | 666 | 6005 | | REFL PAV MRK TY I (W)4"(DOT)(090MIL) DOLLARS and CENTS | LF | 171.000 | 125 |
| | 666 | 6035 | | REFL PAV MRK TY I (W)8"(SLD)(090MIL) DOLLARS and CENTS | LF | 1,572.000 | 126 |
| | 666 | 6041 | | REFL PAV MRK TY I (W)12"(SLD)(090MIL) DOLLARS and CENTS | LF | 2,441.000 | 127 |
| | 666 | 6047 | | REFL PAV MRK TY I (W)24"(SLD)(090MIL) DOLLARS and CENTS | LF | 617.000 | 128 |
| | 666 | 6053 | | REFL PAV MRK TY I (W)(ARROW)(090MIL) DOLLARS and CENTS | EA | 26.000 | 129 |
| | 666 | 6056 | | REFL PAV MRK TY I(W)(DBL ARROW)(090MIL) DOLLARS and CENTS | EA | 2.000 | 130 |
| | 666 | 6077 | | REFL PAV MRK TY I (W)(WORD)(090MIL) DOLLARS and CENTS | EA | 24.000 | 131 |

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| | ITEM NO | DESC CODE | S.P. NO. | | | | |
| | 666 | 6098 | | REF PAV MRK TY I(W)18"(YLD TRI)(090MIL) DOLLARS and CENTS | EA | 36.000 | 132 |
| | 666 | 6104 | | REFL PAV MRK TY I (W)(BIKE ARW)(090MIL) DOLLARS and CENTS | EA | 6.000 | 133 |
| | 666 | 6110 | | REFL PAV MRK TY I(W)(BIKE SYML)(090MIL) DOLLARS and CENTS | EA | 6.000 | 134 |
| | 666 | 6140 | | REFL PAV MRK TY I (Y)12"(SLD)(090MIL) DOLLARS and CENTS | LF | 92.000 | 135 |
| | 666 | 6167 | | REFL PAV MRK TY II (W) 4" (BRK) DOLLARS and CENTS | LF | 4,117.000 | 136 |
| | 666 | 6168 | | REFL PAV MRK TY II (W) 4" (DOT) DOLLARS and CENTS | LF | 171.000 | 137 |
| | 666 | 6170 | | REFL PAV MRK TY II (W) 4" (SLD) DOLLARS and CENTS | LF | 17,435.000 | 138 |
| | 666 | 6178 | | REFL PAV MRK TY II (W) 8" (SLD) DOLLARS and CENTS | LF | 1,614.000 | 139 |
| | 666 | 6180 | | REFL PAV MRK TY II (W) 12" (SLD) DOLLARS and CENTS | LF | 3,203.000 | 140 |
| | 666 | 6182 | | REFL PAV MRK TY II (W) 24" (SLD) DOLLARS and CENTS | LF | 797.000 | 141 |
| | 666 | 6184 | | REFL PAV MRK TY II (W) (ARROW) DOLLARS and CENTS | EA | 27.000 | 142 |
| | 666 | 6185 | | REFL PAV MRK TY II (W) (DBL ARROW) DOLLARS and CENTS | EA | 2.000 | 143 |

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| | 666 | 6192 | | REFL PAV MRK TY II (W) (WORD) DOLLARS and CENTS | EA | 24.000 | 144 |
| | 666 | 6198 | | REFL PAV MRK TY II (W) 18" (YLD TRI) DOLLARS and CENTS | EA | 36.000 | 145 |
| | 666 | 6200 | | REFL PAV MRK TY II (W) (BIKE ARROW) DOLLARS and CENTS | EA | 6.000 | 146 |
| | 666 | 6202 | | REFL PAV MRK TY II (W) (BIKE SYMBOL) DOLLARS and CENTS | EA | 6.000 | 147 |
| | 666 | 6205 | | REFL PAV MRK TY II (Y) 4" (BRK) DOLLARS and CENTS | LF | 2,868.000 | 148 |
| | 666 | 6207 | | REFL PAV MRK TY II (Y) 4" (SLD) DOLLARS and CENTS | LF | 21,073.000 | 149 |
| | 666 | 6212 | | REFL PAV MRK TY II (Y) 12" (SLD) DOLLARS and CENTS | LF | 92.000 | 150 |
| | 666 | 6299 | | RE PM W/RET REQ TY I (W)4"(BRK)(090MIL) DOLLARS and CENTS | LF | 4,117.000 | 151 |
| | 666 | 6302 | | RE PM W/RET REQ TY I (W)4"(SLD)(090MIL) DOLLARS and CENTS | LF | 17,448.000 | 152 |
| | 666 | 6311 | | RE PM W/RET REQ TY I (Y)4"(BRK)(090MIL) DOLLARS and CENTS | LF | 2,868.000 | 153 |
| | 666 | 6314 | | RE PM W/RET REQ TY I (Y)4"(SLD)(090MIL) DOLLARS and CENTS | LF | 20,904.000 | 154 |
| | 672 | 6007 | | REFL PAV MRKR TY I-C DOLLARS and CENTS | EA | 273.000 | 155 |

| ALT | ITEM-CODE | | | UNIT BID PRICE ONLY. WRITTEN IN WORDS | UNIT | APPROX QUANTITIES | DEPT USE ONLY |
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| | ITEM NO | DESC CODE | S.P. NO. | | | | |
| | 672 | 6009 | | REFL PAV MRKR TY II-A-A DOLLARS and CENTS | EA | 582.000 | 156 |
| | 677 | 6001 | | ELIM EXT PAV MRK & MRKS (4") DOLLARS and CENTS | LF | 32,395.000 | 157 |
| | 677 | 6003 | | ELIM EXT PAV MRK & MRKS (8") DOLLARS and CENTS | LF | 100.000 | 158 |
| | 677 | 6005 | | ELIM EXT PAV MRK & MRKS (12") DOLLARS and CENTS | LF | 150.000 | 159 |
| | 677 | 6007 | | ELIM EXT PAV MRK & MRKS (24") DOLLARS and CENTS | LF | 220.000 | 160 |
| | 677 | 6008 | | ELIM EXT PAV MRK & MRKS (ARROW) DOLLARS and CENTS | EA | 2.000 | 161 |
| | 677 | 6012 | | ELIM EXT PAV MRK & MRKS (WORD) DOLLARS and CENTS | EA | 2.000 | 162 |
| | 680 | 6003 | | INSTALL HWY TRF SIG (SYSTEM) DOLLARS and CENTS | EA | 4.000 | 163 |
| | 680 | 6004 | | REMOVING TRAFFIC SIGNALS DOLLARS and CENTS | EA | 4.000 | 164 |
| | 681 | 6001 | | TEMP TRAF SIGNALS DOLLARS and CENTS | EA | 4.000 | 165 |
| | 682 | 6001 | | VEH SIG SEC (12")LED(GRN) DOLLARS and CENTS | EA | 40.000 | 166 |
| | 682 | 6002 | | VEH SIG SEC (12")LED(GRN ARW) DOLLARS and CENTS | EA | 9.000 | 167 |

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| | ITEM NO | DESC CODE | S.P. NO. | | | | |
| | 682 | 6003 | | VEH SIG SEC (12")LED(YEL) DOLLARS and CENTS | EA | 40.000 | 168 |
| | 682 | 6004 | | VEH SIG SEC (12")LED(YEL ARW) DOLLARS and CENTS | EA | 9.000 | 169 |
| | 682 | 6005 | | VEH SIG SEC (12")LED(RED) DOLLARS and CENTS | EA | 40.000 | 170 |
| | 682 | 6018 | | PED SIG SEC (LED)(COUNTDOWN) DOLLARS and CENTS | EA | 22.000 | 171 |
| | 682 | 6029 | | BACK PLATE (12")(3 SEC)ALUM DOLLARS and CENTS | EA | 31.000 | 172 |
| | 682 | 6031 | | BACK PLATE (12")(5 SEC)ALUM DOLLARS and CENTS | EA | 9.000 | 173 |
| | 684 | 6028 | | TRF SIG CBL (TY A)(14 AWG)(2 CONDR) DOLLARS and CENTS | LF | 6,879.000 | 174 |
| | 684 | 6031 | | TRF SIG CBL (TY A)(14 AWG)(5 CONDR) DOLLARS and CENTS | LF | 11,962.000 | 175 |
| | 684 | 6033 | | TRF SIG CBL (TY A)(14 AWG)(7 CONDR) DOLLARS and CENTS | LF | 3,049.000 | 176 |
| | 685 | 6001 | | INSTALL RDSB FLASH BEACON ASSEMBLY DOLLARS and CENTS | EA | 4.000 | 177 |
| | 686 | 6021 | | INS TRF SIG PL AM (S)1 ARM(20') DOLLARS and CENTS | EA | 1.000 | 178 |
| | 686 | 6025 | | INS TRF SIG PL AM (S)1 ARM(24') DOLLARS and CENTS | EA | 1.000 | 179 |

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| | ITEM NO | DESC CODE | S.P. NO. | | | | |
| | 686 | 6029 | | INS TRF SIG PL AM (S)1 ARM(28') DOLLARS and CENTS | EA | 2.000 | 180 |
| | 686 | 6035 | | INS TRF SIG PL AM(S)1 ARM(32')LUM DOLLARS and CENTS | EA | 1.000 | 181 |
| | 686 | 6043 | | INS TRF SIG PL AM(S)1 ARM(40')LUM DOLLARS and CENTS | EA | 2.000 | 182 |
| | 686 | 6047 | | INS TRF SIG PL AM(S)1 ARM(44')LUM DOLLARS and CENTS | EA | 2.000 | 183 |
| | 686 | 6135 | | INS TRF SIG PL AM(S)2 ARM(40-24')LUM DOLLARS and CENTS | EA | 2.000 | 184 |
| | 686 | 6147 | | INS TRF SIG PL AM(S)2 ARM(40-36')LUM DOLLARS and CENTS | EA | 1.000 | 185 |
| | 687 | 6001 | | PED POLE ASSEMBLY DOLLARS and CENTS | EA | 14.000 | 186 |
| | 688 | 6001 | | PED DETECT PUSH BUTTON (APS) DOLLARS and CENTS | EA | 22.000 | 187 |
| | 688 | 6003 | | PED DETECTOR CONTROLLER UNIT DOLLARS and CENTS | EA | 4.000 | 188 |
| | 740 | 6005 | | ANTI - GRAFFITI COATNG(PERMNENT-TY III) DOLLARS and CENTS | SF | 37,757.000 | 189 |
| | 1004 | 6001 | | TREE PROTECTION DOLLARS and CENTS | EA | 59.000 | 190 |
| | 6001 | 6002 | | PORTABLE CHANGEABLE MESSAGE SIGN DOLLARS and CENTS | EA | 3.000 | 191 |

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| | ITEM NO | DESC CODE | S.P. NO. | | | | |
| | 6002 | 6001 | | VIVDS PROCESSOR SYSTEM DOLLARS and CENTS | EA | 4.000 | 192 |
| | 6002 | 6002 | | VIVDS CAMERA ASSEMBLY DOLLARS and CENTS | EA | 23.000 | 193 |
| | 6002 | 6003 | | VIVDS SET-UP SYSTEM DOLLARS and CENTS | EA | 4.000 | 194 |
| | 6002 | 6005 | | VIVDS COMMUNICATION CABLE (COAX- IAL) DOLLARS and CENTS | LF | 8,243.000 | 195 |
| | 6007 | 6017 | | FIBER OPTIC CBL (SNGLE-MODE)(144 FIBER) DOLLARS and CENTS | LF | 12,866.000 | 196 |
| | 6007 | 6020 | | FIBER OPTIC PIGTAIL (12 FIBER) DOLLARS and CENTS | LF | 631.000 | 197 |
| | 6007 | 6021 | | FIBER OPTIC SPLICE ENCLOSURE DOLLARS and CENTS | EA | 7.000 | 198 |
| | 6007 | 6023 | | FIBER OPTIC PATCH PANEL (12 POSITION) DOLLARS and CENTS | EA | 5.000 | 199 |
| | 6007 | 6024 | | FIBER OPTIC PATCH PANEL (48 POSITION) DOLLARS and CENTS | EA | 2.000 | 200 |
| | 6165 | 6001 | | CONDUIT 1-4" PVC-C DUCT(TELE) DOLLARS and CENTS | LF | 50.000 | 201 |
| | 6165 | 6002 | | CONDUIT 2-4" PVC-C DUCT(TELE) DOLLARS and CENTS | LF | 109.000 | 202 |
| | 6165 | 6003 | | CONDUIT 3-4" PVC-C DUCT(TELE) DOLLARS and CENTS | LF | 66.000 | 203 |

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| | ITEM NO | DESC CODE | S.P. NO. | | | | |
| | 6165 | 6004 | | CONDUIT 4-4" PVC-C DUCT(TELE) DOLLARS and CENTS | LF | 288.000 | 204 |
| | 6165 | 6006 | | CONDUIT 21-4" PVC-C DUCT(TELE) DOLLARS and CENTS | LF | 4,729.000 | 205 |
| | 6165 | 6007 | | CONDUIT 22-4" PVC-C DUCT(TELE) DOLLARS and CENTS | LF | 39.000 | 206 |
| | 6165 | 6008 | | CONDUIT 23-4" PVC-C DUCT(TELE) DOLLARS and CENTS | LF | 140.000 | 207 |
| | 6165 | 6009 | | CONDUIT 24-4" PVC-C DUCT(TELE) DOLLARS and CENTS | LF | 128.000 | 208 |
| | 6165 | 6010 | | CONDUIT 25-4" PVC-C DUCT(TELE) DOLLARS and CENTS | LF | 300.000 | 209 |
| | 6165 | 6011 | | CONDUIT 26-4" PVC-C DUCT(TELE) DOLLARS and CENTS | LF | 176.000 | 210 |
| | 6165 | 6012 | | CONDUIT 27-4" PVC-C DUCT(TELE) DOLLARS and CENTS | LF | 56.000 | 211 |
| | 6165 | 6013 | | HANDHOLE 4'X8'X6' TYP A (TELE) DOLLARS and CENTS | EA | 1.000 | 212 |
| | 6165 | 6014 | | HANDHOLE 4'X8'X6' TYP B (TELE) DOLLARS and CENTS | EA | 2.000 | 213 |
| | 6165 | 6016 | | JACK AND BORE 14" STL CASING (TELE) DOLLARS and CENTS | LF | 172.000 | 214 |
| | 6165 | 6018 | | JACK AND BORE 30" STL CASING (TELE) DOLLARS and CENTS | LF | 261.000 | 215 |

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| | ITEM NO | DESC CODE | S.P. NO. | | | | |
| | 6165 | 6019 | | DIRECTIONAL BORE 14" STL CASING(TELE) DOLLARS and CENTS | LF | 328.000 | 216 |
| | 6165 | 6022 | | LOWERING EXIST DUCTS/CABLES (TELE) DOLLARS and CENTS | LF | 124.000 | 217 |
| | 6165 | 6023 | | REMOVE STRUCTURE MH (TELE) DOLLARS and CENTS | EA | 11.000 | 218 |
| | 6165 | 6043 | | CONDUIT 5-4" PVC-C DUCT (TELE) DOLLARS and CENTS | LF | 18.000 | 219 |
| | 6165 | 6044 | | HANDHOLE 12'X6'X7' (TELE) DOLLARS and CENTS | EA | 12.000 | 220 |
| | 7056 | 6001 | | PIPE (4") DI CLASS 350 (ALL DEPTHS) DOLLARS and CENTS | LF | 113.000 | 221 |
| | 7056 | 6002 | | PIPE (6") DI CLASS 350 (ALL DEPTHS) DOLLARS and CENTS | LF | 584.000 | 222 |
| | 7056 | 6003 | | PIPE (8") DI CLASS 350 (ALL DEPTHS) DOLLARS and CENTS | LF | 2,048.000 | 223 |
| | 7056 | 6004 | | PIPE (12") DI CLASS 350 (ALL DEPTHS) DOLLARS and CENTS | LF | 373.000 | 224 |
| | 7056 | 6005 | | PIPE (16") DI CLASS 250 (ALL DEPTHS) DOLLARS and CENTS | LF | 5,350.000 | 225 |
| | 7056 | 6006 | | CARRIER PIPE (16") DI CLASS 250 DOLLARS and CENTS | LF | 4,433.000 | 226 |
| | 7056 | 6007 | | BORE OR JACK PIPE (STEEL)(30") DOLLARS and CENTS | LF | 4,433.000 | 227 |

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| | ITEM NO | DESC CODE | S.P. NO. | | | | |
| | 7056 | 6008 | | PIPE ENCASEMENT (16")STEEL(SPLIT) DOLLARS and CENTS | LF | 144.000 | 228 |
| | 7056 | 6009 | | PIPE ENCASEMENT (18")STEEL(SPLIT) DOLLARS and CENTS | LF | 645.000 | 229 |
| | 7056 | 6011 | | PIPE ENCASEMENT (30")STEEL(SPLIT) DOLLARS and CENTS | LF | 265.000 | 230 |
| | 7056 | 6012 | | PRESSURE TAP AND VALVE 6"X6" DOLLARS and CENTS | EA | 13.000 | 231 |
| | 7056 | 6018 | | PRESSURE TAP AND VALVE 8"X8" DOLLARS and CENTS | EA | 2.000 | 232 |
| | 7056 | 6019 | | PRESSURE TAP AND VALVE 12"X12" DOLLARS and CENTS | EA | 1.000 | 233 |
| | 7056 | 6020 | | VALVE (GATE)(6") DOLLARS and CENTS | EA | 20.000 | 234 |
| | 7056 | 6021 | | VALVE (GATE)(8") DOLLARS and CENTS | EA | 37.000 | 235 |
| | 7056 | 6022 | | VALVE (GATE)(16") DOLLARS and CENTS | EA | 42.000 | 236 |
| | 7056 | 6023 | | VALVE (INSERTTM)(12") DOLLARS and CENTS | EA | 1.000 | 237 |
| | 7056 | 6024 | | WET CONNECTION 6 DIA X 6 DIA DOLLARS and CENTS | EA | 1.000 | 238 |
| | 7056 | 6025 | | WET CONNECTION 8 DIA X 8 DIA DOLLARS and CENTS | EA | 7.000 | 239 |

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| | ITEM NO | DESC CODE | S.P. NO. | | | | |
| | 7056 | 6026 | | AUTO COMBO AIR/VAC RELEASE VALVE AM 2" DOLLARS and CENTS | EA | 14.000 | 240 |
| | 7056 | 6027 | | DRAIN VALVE ASSEMBLY DOLLARS and CENTS | EA | 1.000 | 241 |
| | 7056 | 6028 | | HYDRA-STOPTM(6)W/COVER DOLLARS and CENTS | EA | 13.000 | 242 |
| | 7056 | 6029 | | HYDRA-STOPTM(8)W/COVER DOLLARS and CENTS | EA | 2.000 | 243 |
| | 7056 | 6030 | | TESTING & DISINFECTION DOLLARS and CENTS | EA | 20.000 | 244 |
| | 7056 | 6031 | | PRESSURE REDUCING VALVE (6"X2"), VAULT DOLLARS and CENTS | EA | 1.000 | 245 |
| | 7056 | 6032 | | PRESSURE REDUCING VALVE (16"X8"), VAULT DOLLARS and CENTS | EA | 1.000 | 246 |
| | 7056 | 6033 | | FIRE HYDRANTS DOLLARS and CENTS | EA | 17.000 | 247 |
| | 7056 | 6034 | | INST OR RECNNECT LATERAL SERVICE 1(LONG) DOLLARS and CENTS | EA | 3.000 | 248 |
| | 7056 | 6035 | | INST OR RECNNECT LATERAL SERVICE 1(SHRT) DOLLARS and CENTS | EA | 19.000 | 249 |

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| | ITEM NO | DESC CODE | S.P. NO. | | | | |
| | 7056 | 6036 | | INST OR RECNNCT LATERAL SERVICE 2(LONG) DOLLARS and CENTS | EA | 1.000 | 250 |
| | 7056 | 6037 | | INST OR RECNNCT LATERAL SERVICE 2(SHRT) DOLLARS and CENTS | EA | 3.000 | 251 |
| | 7056 | 6038 | | CUT AND PLUG EXIST WL (2.25") DOLLARS and CENTS | EA | 1.000 | 252 |
| | 7056 | 6039 | | CUT AND PLUG EXIST WL (6") DOLLARS and CENTS | EA | 11.000 | 253 |
| | 7056 | 6040 | | ABND/RMV/DISPOSE EXIST LINE (ALL TY/ SZ) DOLLARS and CENTS | LF | 12,500.000 | 254 |
| | 7056 | 6041 | | RMV AND DISPOSAL OF EXIST FIRE HYDRANT DOLLARS and CENTS | EA | 11.000 | 255 |
| | 7056 | 6042 | | RMV AND DISPOSAL OF EXIST PRV AND VAULT DOLLARS and CENTS | EA | 2.000 | 256 |
| | 7056 | 6043 | | PIPE ENCASEMENT (24") STEEL SPLIT DOLLARS and CENTS | LF | 156.000 | 257 |
| | 7056 | 6044 | | VALVE (GATE)(12") DOLLARS and CENTS | EA | 3.000 | 258 |
| | 7056 | 6045 | | CUT AND PLUG EXIST WL (8") DOLLARS and CENTS | EA | 4.000 | 259 |
| | 7057 | 6019 | | WET CONNECTION 2 DIA X 2 DIA DOLLARS and CENTS | EA | 2.000 | 260 |

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| | ITEM NO | DESC CODE | S.P. NO. | | | | |
| | 7057 | 6020 | | PIPE(2")DR 11 HPDE WW MAIN (ALL DEPTHS) DOLLARS and CENTS | LF | 167.000 | 261 |
| | 7057 | 6021 | | PIPE(1.25")DR 11 HPDE WW SERV(ALL DEPTH) DOLLARS and CENTS | LF | 108.000 | 262 |
| | 7057 | 6022 | | VALVE (2") WW ISOLATION DOLLARS and CENTS | EA | 2.000 | 263 |
| | 7057 | 6023 | | VALVE (2") WW FORCE MAIN FLUSH ASSEMBLY DOLLARS and CENTS | EA | 2.000 | 264 |
| | 7057 | 6024 | | WW SERVICE (1.25") BALL VALVE AND BOX DOLLARS and CENTS | EA | 5.000 | 265 |

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Sheet:

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GENERAL NOTES: Revised July 24, 2015

Basis of Estimate

| Item | Description | **Rate | Basis | Quantity |
|-------------|---|--------------------------------|----------------------|-----------------------|
| 160 | Topsoil | 1 CY/7 SY | 5844 CY | 40913 SY |
| 164 | Seed for Erosion Control (Item 164)(Temp) (Item 164)(Perm) | 4840 SY/AC 4840 SY/AC | 7.81 AC 7.81 AC | 37821 SY 37821 SY |
| **166 | Fertilizer (13-13-13) | 1/8 LB/SY | | |
| 168 | Vegetative Watering (Item 164)(Temp) (Item 164)(Perm) | 10 GAL/SY 20 GAL/SY | 37821 SY 37821 SY | 378.2 MG 756.4 MG |
| 341 | Dense-Graded Hot-Mix Asphalt TY D CL A PG 70-22 TY B CL A PG 64-22 | 110 LB/SY/IN 110 LB/SY/IN | 80272 SY 81047 SY | 8830 TON 22288 TON |
| 347 | Thin Surface Mixtures (TOM) (Asphalt) PG 76-22 (IIN) (Aggregate) SAC B | 7.9 LB/SY/IN 102.1 LB/SY/IN | 70558 SY 70558 SY | 279 TON 3602 TON |

** For Informational Purposes Only

GENERAL

References to manufacturer's trade name or catalog numbers are for the purpose of identification only. Similar materials from other manufacturers are permitted if they are of equal quality, comply with the specifications for this project, and are approved.

Do not place surface treatments or pavement when in the Engineer's professional judgment, the apparent general weather conditions are unsuitable for Overlay operations.

Remove and replace, at the Contractor's expense, and as directed, all defective work, which was caused by the Contractor's workforce, materials, or equipment.

Perform work during good weather unless otherwise directed. If work is performed at Contractor's option, when inclement weather is impending, and the work is damaged by subsequent precipitation, the Contractor is responsible for all costs associated with replacing the work, if required.

Accrue contract time charges through the Contractor's completion of the final punchlist.

Meet weekly with the Engineer to notify him/her of planned work for the upcoming week. Provide a three-week "look ahead," as well as all work performed over the past week.

Blade the side slopes to remove all grass from the area of construction before placing flexible base on that portion of the roadway to be widened, leveled-up, seal coated/surfaced treated, or Hot Mix Asphaltic Concrete Pavement (HMACP) overlaid. Blade the sod back onto the side slopes after the proposed items of work have been completed. Consider subsidiary to pertinent Items.

Equip all construction equipment used in roadway work with a permanently mounted 360° revolving or strobe warning light with amber lens. Light will have a minimum lens height and

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diameter of 5 inches and mounting height of not less than 6 feet above the roadway surface and be visible from all sides. Attach at each side of the rear end of the construction equipment an approved orange warning flag mounted not less than 6 feet above the roadway surface.

Overhead and underground utilities may exist in the vicinity of the project. The exact location of underground utilities is not known.

If working near power lines, comply with the appropriate sections of Local Legal Requirements, Texas State Law, and Federal Regulations relating to the type of work involved.

In the event of unforeseen utility adjustment, the Contractor will prosecute their work in such a manner and sequence as to facilitate the adjustments to be made.

Be aware that an Intelligent Transportation Systems (ITS) Infrastructure may exist within the limits of this project and that the system must remain operational throughout construction. The exact location of ITS Infrastructure is not known. Contact the TxDOT Area Engineer's or Inspection Team's Office for the location(s) at least 48 hours before commencing any work that might affect present ITS Infrastructure. Use caution if working in these areas to avoid damaging or interfering with existing facilities. Repair any damage to this system within 8 hours of occurrence at no cost to the Department. In the event of system damage, notify TxDOT/CTECC at (512) 974-0883 within one hour of occurrence. Failure of the Contractor to repair damage to any infrastructure that conveys any corridor information to TxDOT/CTECC will result in the Contractor being billed for the full cost of emergency repairs.

Match existing cross slopes, as directed. Consider subsidiary to the pertinent Items.

Provide a smooth, clean sawcut along the existing asphalt or concrete pavement structure, as directed. Consider subsidiary to the pertinent Items.

Remove all construction debris and surplus material generated by the construction work within the project limits. Perform this work as directed. Consider subsidiary to the pertinent Items.

Trim vegetation around signs and other obstructions. Consider subsidiary to pertinent Items.

Supply litter barrels in enough numbers at locations as directed to control litter within the project. Consider subsidiary to pertinent Items.

Use a self-contained vacuum broom to sweep the roadway and keep it free of sediment due to the Construction of the Roadway, as directed. Consider subsidiary to pertinent Items.

Protect all areas of the right of way, which are not included in the actual limits of the proposed construction areas, from destruction. Exercise care to prevent damage to trees, vegetation, and other natural surroundings. Areas not to be disturbed will be as directed. Restore any area disturbed because of the Contractor's operations to a condition as good as, or better than, before the beginning of work.

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Damage to existing pipes and SET's due to Contractor operations shall be repaired at Contractor's expense.

All locations used for storing construction equipment, materials, and stockpiles of any type, within the right of way, will be as directed. Use of right of way for these purposes will be restricted to those locations where driver sight distance to businesses and side street intersections is not obstructed and at other locations where an unsightly appearance will not exist. The Contractor will not have exclusive use of right of way but will cooperate in the use of the right of way with the city/county and various public utility companies as required.

The Project Superintendent will be capable of speaking English and will be available on the project at all times when work is being performed, including subcontractor work. The Superintendent will be available and on-call 24 hours a day.

Measure all minimum vertical clearances for all structures (including, but not limited to, signal mast arms, span wires, and overhead sign bridge structures) within the limits of the project for all roadway alignments in all directions of travel. Coordinate with the Engineer to take these measurements and obtain prior to opening roadways to traffic unless otherwise approved. The Engineer will report all minimum vertical clearance information to the District Permit Office.

Furnish, to the Engineer, a list of the final centerline elevations.

When directed, designate an official backer/spotter or "dump-man" who shall wear specially marked clothing and a specially marked hard hat which specifically identifies them as the backer/spotter and identifies that they are the person who is directing the backing operations. They shall be identified to all project personnel, Contractor and TxDOT, when dumping the various project materials, throughout the course of the project.

Storm Water Pollution Prevention Plan (SW3P)/Water Pollution Abatement Plan (WPAP) notes

For projects in the recharge zone or contributing zone of Williamson, Travis and Hays Counties, plans must include the sheet titled "TCEQ Requirements for Recharge Zone of the Edwards Aquifer" or "TCEQ Requirements for Contributing Zone of the Edwards Aquifer." Compliance with the notes on these sheets is required for TCEQ construction approval. The Engineer will be the sole judge as to the timing of all installations. Work will not progress until the Engineer has approved each installation.

Maintain erosion control features according to the TxDOT SW3P sheet.

In the event that significant contamination is encountered based on odors, visual evidence, or vapor monitoring, immediately contact the Engineer in accordance with Item 4.5 of the General Provisions of the STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MAINTENANCE OF HIGHWAYS, STREETS, AND BRIDGES. The Engineer may suspend work wholly or in part to determine the coordination/management for the testing, removal and

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disposal of hazardous materials that might be necessary according to all applicable rules, laws and regulations.

When any abandoned well is encountered, cease construction operations in this area and notify the Engineer who will coordinate the proper plugging procedures with Texas Commission on Environmental Quality (TCEQ).

Plug any drill holes, resulting from core sampling on-site or down-gradient of the site, with concrete from the bottom of the hole to the top of the hole so that water and contaminants are not allowed to enter the subsurface environment.

Restrict construction vehicles from traversing or utilizing existing roadways, unprotected construction areas, and areas with vegetative cover.

Maintain vehicles at designated maintenance sites, unless otherwise approved.

Transport any soils contaminated during construction of the proposed project from the site and properly dispose of off-site, off the recharge zone, and off any area draining to the recharge zone of the Edwards Aquifer.

Collect wastewater generated on-site by chemical toilets and transport off the recharge zone and dispose of properly.

Suspend all activities near any significant recharge features, such as sinkholes, caves, or any other subterranean openings that are discovered during construction or core sampling. Do not proceed until the designated Geologist or TCEQ representative is present to evaluate and approve remedial action.

Locate aboveground storage tanks kept on-site for construction purposes over bermed impervious liners as to not allow any leakage into underlying soils. Additionally, the containment will be sized to capture 150% of the total volume of fluids stored on-site within the storage area.

No blasting will be allowed within 300 feet of a geologic feature of significant recharge potential, unless otherwise approved. Known locations of these features are available from the Area Engineer.

For all work over or near Bodies of Water (Lakes, Rivers, Ponds, Creeks, etc.):

Keep on hand Synthetic Absorbent Booms (Petroleum Sorbent Booms, Petroleum Socks, Absorbant Socks, etc.) and Absorbent Pads (Eversoak Sorbents, Industrial Absorbent Pads, Calicorp Absorbent Pads, etc.), both types, for spilled petroleum products, in enough quantity to mitigate a petroleum-type spill due to Contract work.

ITEM 4 – SCOPE OF WORK

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Final cleanup will include the removal of excess material considered detrimental to vegetation growth along the front slope of the ditch. Materials such as surface aggregates and other materials, as specified by the Engineer, will be removed at the Contractor's expense.

ITEM 5 – CONTROL OF THE WORK

Before Contract letting, bidders may obtain from the Engineer's office, the earthwork information. If copies of the actual cross-sections (paper copies) are requested, they will be available at the Engineer's office for borrowing by copying companies for the purpose of making copies for the bidder, at the bidder's expense. In addition, cross-sections will be available in electronic format, upon request, at no cost to the bidder.

RDS or GEOPAK earthwork output listings for this project are available upon request, on diskettes or CD ROM's, at the Area Engineer's office.

Mark and maintain 100-foot station intervals for the duration of the project, as directed. Consider subsidiary to pertinent Items.

Electronic Shop Drawing Submittals:

Submit Electronic Shop Drawing Submittals according to the current **Guide to Electronic Shop Drawing Submittal (GESDS)**. For instructions on submitting shop drawings electronically go to TxDOT website (Business with TxDOT > Bridge Information > Shop Drawings. File is titled: **Guide to Electronic Shop Drawing Submittal.**)

For information on the electronic shop plan process, please visit the Bridge Division/Fabrication Branch web pages at: <http://www.txdot.gov/business/resources/specifications/shop-drawings.html>

The Guide to Electronic Shop Drawing Submittal at:

ftp://ftp.dot.state.tx.us/pub/txdot-info/library/pubs/bus/bridge/e_submit_guide.pdf

and the Submittal Requirements table at:

ftp://ftp.dot.state.tx.us/pub/txdot-info/library/pubs/bus/bridge/electronic_submission.pdf have been updated to include additional guidance on segmental bridge submittals.

And

Copies of the standard shop drawings are on file with Traffic Operations Division, Bridge Division, and the Materials Section of Construction Division. Additional shop drawings for roadway illumination assemblies built in conformance with these drawings are not required. Pre-approved shop drawing manufacturers and assembly model numbers can be found at TxDOT website (Business with TxDOT > Materials Information > Material Producer List. Category is Roadway Illumination and Electrical Supplies

1. In the E-mail "To:" box place the E-mail address to the following:

Alternatively/In addition, if the Shop Drawings (and Working Drawings, if/when required) are not required to be submitted to the **Bridge Division Fabrication Section:**

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Submit all Shop Drawings (and Working Drawings, if/when required), which do not require direct submittal to the **Bridge Division Fabrication Section**, electronically, to the following address:

| | | | |
|-------------------|---------------|--|--|
| South Austin Area | David Klipple | David.Klipple@txdot.gov | AUS_SA-ShopReview@txdot.gov |
|-------------------|---------------|--|--|

2. In the e-mail “CC:” or “Copy To:” box place the following E-mail addresses:

In every e-mail submittal, the “CC:” or “Copy To:” line of the header will include the following e-mail addresses:

a. Contractor’s Contact:

AND

b. Area Office Contact:

| | | | |
|-------------------|---------------|--|--|
| South Austin Area | David Klipple | David.Klipple@txdot.gov | AUS_SA-ShopReview@txdot.gov |
|-------------------|---------------|--|--|

ITEM 6 - CONTROL OF MATERIALS

Give a minimum of 24 hours of notice for materials, which require Inspection at the Plant.

ITEM 7 – LEGAL RELATIONS AND RESPONSIBILITIES

Article 7.2.3 Safety Contingency

The Contractor Force Account “Safety Contingency” that has been established for this project is intended to be utilized for work zone enhancements, to improve the effectiveness of the Traffic Control Plan, that could not be foreseen in the project planning and design stage. These enhancements will be mutually agreed upon by the Engineer and the Contractor’s Responsible Person based on weekly or more frequent traffic management reviews on the project. The Engineer may choose to use existing bid items if it does not slow the implementation of enhancement.

Article 7.7

Do not initiate activities in a Project Specific Location (PSL) associated with a U.S. Army Corps of Engineers (USACE) jurisdictional area that have not been previously evaluated by the USACE as part of the permit review of this project. Such activities include, but are not limited to, haul roads, equipment staging areas, borrow and disposal sites. Associated defined here means materials are delivered to or from the PSL. The jurisdictional area includes all waters of the U.S. including wetlands or associated wetlands affected by activities associated with this project. Special restrictions may be required for such work. Consult with the USACE regarding activities, including Project Specific Locations (PSLs) that have not been previously evaluated by the USACE. Provide the Department with a copy of all consultations or approvals from the USACE before initiating activities.

Proceed with activities in PSLs that do not affect a USACE jurisdictional area if self-determination has been made that the PSL is non-jurisdictional or proper USACE clearances have been obtained in jurisdictional areas or have been previously evaluated by the USACE as part of the permit review of this project. Document any determinations that their activities do not affect a USACE jurisdictional area. Maintain copies of their determinations for review by the Department or any regulatory agency.

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The Contractor must document and coordinate with the USACE, if required, before any excavation hauled from or embankment hauled into a USACE jurisdictional area by either (1) or (2) below.

(1) Restricted Use of Materials for the Previously Evaluated Permit Areas.

Document both the project specific location (PSL) and their authorization. Maintain copies for review by the Department or any regulatory agency. When an area within the project limits has been evaluated by the USACE as part of the permit process for this project:

- a. Suitable excavation of required material in the areas shown on the plans and cross sections as specified in Item 110, Excavation, is used for permanent or temporary fill (Item 132, Embankment) within a USACE jurisdictional area;
- b. Suitable embankment (Item 132) from within the USACE jurisdictional area is used as fill within a USACE evaluated area; and,
- c. Unsuitable excavation or excess excavation [“Waste”] (Item 110, Excavation) that is disposed of at an approved location within a USACE evaluated area.

(2) Contractor Materials from Areas Other than Previously Evaluated Areas.

Provide the Department with a copy of all USACE coordination or approvals before initiating any activities in a jurisdictional area within the project limits that has not been evaluated by the USACE or for any off right of way locations used for the following, but not limited to, haul roads, equipment staging areas, borrow and disposal sites:

- a. Item 132, Embankment, used for temporary or permanent fill within a USACE jurisdictional area; and,
- b. Unsuitable excavation or excess excavation [“Waste”] (Item 110, Excavation) that is disposed of outside a USACE evaluated area.

The total area estimated to be disturbed for this project is 29.55 acres. The disturbed area in this project, all project locations in the Contract, and the Contractor project specific locations (PSLs), within 1 mile of the project limits, for the Contract will further establish the authorization requirements for storm water discharges. The Department will obtain an authorization to discharge storm water from the Texas Commission on Environmental Quality (TCEQ) for the construction activities shown on the plans. The Contractor is to obtain required authorization from the TCEQ for Contractor PSLs for construction support activities on or off the ROW. When the total area disturbed in the Contract and PSLs within 1 mile of the project limits exceeds 5 acres, provide a copy of the Contractor NOI for PSLs on the ROW to the Engineer and to the local government that operates a separate storm sewer system.

This project required formal consultation, permits, or both with environmental resource agencies. Environmentally sensitive areas will most likely be encountered on Contractor designated PSLs for this project.

TxDOT has assumed a U.S. Army Corps of Engineers’ (USACE) Nationwide Permit #14 (NWP #14) for this project. This allows a maximum of $\frac{1}{10}$ of an acre of permanent fill to be

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placed within the creek channel. If more than $\frac{1}{10}$ of an acre will need to be filled, a pre-construction notice will need to be completed and mailed to the USACE or an additional permit will need to be obtained, by the Contractor, prior to construction. If temporary access roads will be needed, adhered to the requirement of NWP #14 and restore all disturbed areas be to their original contours, once construction is complete.

A project that requires a USACE permit must use at least one of the Best Management Practices (BMP) from each category listed on the Texas Commission on Environmental Quality (TCEQ) Section 401 checklist for NWP's. The erosion control BMP for this project would be blankets/matting. The post construction total suspended solid control BMP for this project would be vegetative filter strips. The sedimentation control BMP for this project would be silt fences and rock berms.

Do not park equipment or make stockpiles where driver sight distance to businesses and side street intersections is obstructed, especially after work hours. If it is necessary to park where drivers' views are blocked, make every effort to flag traffic accordingly. Give the travelling public first priority.

Maintain positive drainage for permanent, as well as, temporary drainage for the duration of the project. This work is the sole responsibility of the Contractor. Construct temporary and permanent drainage systems prior to the placement of temporary pavement, when possible, but absolutely prior to the placement of permanent pavement. Be responsible for any items associated with the temporary/interim drainage and all related maintenance. No direct payment will be made for this work. The Engineer will have the final authority in determining/approving the adequacy of any temporary/permanent drainage features installed.

Migratory Birds

The Contractor's attention is directed to the fact that there is the possibility that migratory birds may be nesting within the project limits. Migratory bird nesting activity can be concentrated on roadway structures such as bridges and culverts. Remove all old migratory bird nests from any structures between September 1 and January 31, and while the nests are not occupied or being used by migratory birds. In addition, be prepared to prevent migratory birds from re-nesting between February 1 and August 31.

All methods used for the removal of old bird nests and the prevention of re-nesting must be approved by the Engineer, well in advance of the planned use.

In the event that any active nest of a migratory bird species is encountered on-site during project construction, all construction activity, within the immediate vicinity of the nest, will cease immediately. Contact the Engineer to determine how to proceed.

No blasting on this project, unless otherwise allowed.

ITEM 8 – PROSECUTION AND PROGRESS

Working days will be computed and charged in accordance with Five-Day Workweek

In accordance with Item 8, disincentives for failure to substantially complete the milestone(s) will be applied.

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The road-user cost liquidated damages for Milestone 1 is \$ 3,600 per day.

The road-user cost liquidated damages for Milestone 2 is \$ 3,600 per day.

The road-user cost liquidated damages for Milestone 3 is \$ 3,600 per day.

The road-user cost liquidated damages for Milestone 4 is \$ 3,600 per day.

Substantially complete Milestone 1 in 124 working days.

Substantially complete Milestone 2 in 128 working days.

Substantially complete Milestone 3 in 72 working days.

Substantially complete Milestone 4 in 47 working days.

The time charges for Milestone 1 will begin upon Barricades are placed for Phase 1.

The time charges for Milestone 1 will end upon Barricades are modified for Phase 2.

The time charges for Milestone 2 will begin upon Barricades are placed for Phase 2.

The time charges for Milestone 2 will end upon Barricades are modified for Phase 3.

The time charges for Milestone 3 will begin upon Barricades are placed for Phase 3.

The time charges for Milestone 3 will end upon Barricades are modified for Phase 4.

The time charges for Milestone 4 will begin upon Barricades are modified for Phase 4.

The time charges for Milestone 4 will end upon Completion of Pavement surface minus final Overlay.

Work that interferes with traffic is required to be performed during the allowed work days and allowed work hours shown in the following table unless otherwise shown in the plans:

Table 1: Lane Closure Hours

| | All Remaining Phases | | | Phase 3 | Phase 3 |
|------|----------------------|--------------------|--------------------|--------------------|--------------------|
| | 9:00 AM – 4:00 PM | 8:00 PM – 12:00 AM | 12:00 AM – 5:00 AM | 8:00 PM – 12:00 AM | 12:00 AM – 5:00 AM |
| Sun | | X | X | | |
| Mon | X | | | X | X |
| Tues | X | | | X | X |
| Wed | X | | | X | X |
| Thur | X | | | X | X |
| Fri | | X | X | | |
| Sat | | X | X | | |

Any work requiring lane closures that is requested to be performed outside of the allowed work hours as shown above, will require written approval by the Engineer.

LANE RENTALS

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The contractor will be assessed a lane rental charge for each lane closed or obstructed on RM 2244 after hours shown in **Table 1: Lane Closure Hours** on allowed work days.

The schedule of rental charges will be as follows:

| Lane Rental Period | Rental Rate for Lane Closure | Rental Rate for Lane Closure |
|--|------------------------------------|------------------------------------|
| | Eastbound RM 2244 (per lane) | Westbound RM 2244 (per lane) |
| 0-15 minutes | \$3000 | \$3000 |
| 15-30 minutes | \$6200 | \$6200 |
| 30-45 minutes | \$9600 | \$9600 |
| 45-60 minutes | \$13200 | \$13200 |
| Every additional 0-15 minute interval after 1 hour, add: | \$3600 | \$3600 |
| Examples: Contractor fails to have 1 Westbound RM 2244 thru lane re-opened to traffic during Phase 1 on Monday until 5:20 AM; Assessed lane rental charge would be \$6,200. Contractor fails to have 1 Westbound RM 2244 thru lane re-opened to traffic during Phase 1 on Monday until 6:20 AM; Assessed lane rental charge would be \$20,400. | | |

Work is allowed to be performed during the nighttime, with prior approval.

Provide a virus-free computer disk or diskette containing the Construction Schedule.

ITEM 9 – MEASUREMENT AND PAYMENT

Provide full-time, off-duty, uniformed, certified peace officers in officially marked vehicles, as part of traffic control operations, as directed.

Show proof of certification by the Texas Commission on Law Enforcement Standards.

All law enforcement personnel used in Work Zone Traffic Control shall be trained for performing duties in work zones and are required to take “Safe and Effective Use of Law Enforcement Personnel in Work Zones” (Course # 133119) which can be found on line at the following site: www.nhi.fhwa.dot.gov

Certificates of completion should be available to all who finish the course and should be kept on hand by law enforcement personnel in order to substantiate completion when reporting to the work site.

No payment will be made for peace officers unless the Contractor completes the proper Department tracking form. Submit invoices that agree with the tracking form for payment at the end of each month, when approved services were provided. Request the tracking form from the Department.

No payment for officers used for moving equipment without prior written approval.

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Cancel "Off-Duty" Peace Officers and their Motor Vehicle Units when the Scheduled lane closures are canceled. Failure to cancel the Off Duty Officers and their respective Motor Vehicle Units will not be cause for payment, by TxDOT, for "Show Up" time.

ITEM 100 - PREPARING RIGHT OF WAY

Do not burn brush, unless otherwise approved.

Trim vegetation around signs and other obstructions. Consider subsidiary to pertinent Items.

Use hand methods or other means to remove objectionable material and obstructions, if doing work by mechanical methods is impractical. Consider subsidiary to the pertinent Items.

ITEM 110 – EXCAVATION

The Engineer will define unsuitable material.

ITEM 132 – ALL EMBANKMENT

At no time will the retaining wall backfill material exceed the adjacent embankment operation by more than one lift. At no time will the embankment adjacent to the retaining wall backfill exceed the wall backfill by any elevation.

The Engineer will define unsuitable material. Material which the Contractor might deem to be unsuitable due to moisture content will not be considered unsuitable material.

Prior to begin embankment of existing area, correct or replace unstable material to a depth of 6" below existing grade. Embankment areas shall be inspected prior to begin work.

Rock or broken concrete produced by the project is allowed in earth embankments. The size of the rock or broken concrete shall not exceed the layer thickness requirements in Section 132.3.4., "Compaction Methods." The material shall not be placed vertically within 5' of the finished subgrade elevation.

Embankment placed vertically within 5' of the finished subgrade elevation or within the edges of the subgrade and treated with lime, cement, or other calcium based additives must have a sulfate content less than 3000 ppm. Allow 5 business days for testing. Treatment of sulfate material 3000 ppm to 7000 ppm requires 7 days of mellowing and continuous water curing, in accordance TxDOT guidelines for Treatment of Sulfate-Rich Soils and Bases in Pavement Structures (9/2005). Material over 7000 ppm is not allowed.

ITEM 132 – EMBANKMENT TY C (Subgrade/Slopes/Abutments)

Do not furnish shale clays. The Engineer must approve the embankment material before use on the project. Existing material from within the project limits or approved by the engineer may be used vertically beyond 5' of the finished subgrade elevation or beyond the edge of the subgrade. Furnish embankment with sulfate content less than 3000 ppm if treated with calcium-based chemicals or within 5' of the finished subgrade elevation.

Embankment placed over the area of MSE backfill must meet the same backfill requirements for the type specified under Item 423.

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Embankment Material Requirements – Item 132 [TY C]

| Item | Description | (Percent Retained-Sieve) | | | | | LL Max | PI Max | PI Min |
|------|---|--------------------------|------|------|-------|-------|-----------|-----------|-----------|
| | | 1 3/4" | 7/8" | 3/8" | #4 | #40 | | | |
| 132 | Embankment (Ordinary Compaction)(TY C2) | 0-10 | - | - | 45-75 | 50-85 | 55 | 25 | 8 |

Embankment placed over the area of MSE backfill must meet the same backfill requirements for the type specified under Item 423 in the plans.

Stockpile imported TY C embankment at an approved location until it meets all testing requirements. The stockpile must be between 500 CY and 5000 CY and must not exceed a height of 15 FT. It is the Contractor's responsibility to identify and notify the Engineer of the location of the borrow source to allow time for testing and approval to avoid delay to the project. Allow a minimum of three working days for testing.

If TY C embankment will be treated with calcium-based chemicals and within 24" of the pavement base course, furnish TY C embankment with a sulfate content less than or equal to 3000 ppm, as determined by Tex-145-E.

For Type C Embankment material to be placed deeper than 24" and containing sulfates, follow Type B Sulfate table, however no material having sulfate content greater than 7000 ppm will be allowed.

ITEM 160 - TOPSOIL

Obtain approval of all topsoil sources before digging begins. Ensure off-site topsoil has a minimum PI of 25, or as directed. Ensure that the topsoil placed is similar to the topsoil that is within the project. To the extent possible, obtain as much of the topsoil from within the project site, or as directed. TxDOT reserves the right to take samples, as needed, to assure that the material meets the PI and other requirements as indicated in the Specifications (Fertility, Organics, Erodability, etc.).

No Sandy Loam allowed, unless the project dictates otherwise.

Obtain approval of the actual depth of the topsoil sources for both on-site and off-site sources.

Construct topsoil stockpiles of no more than five (5) feet in height.

It is permissible to use topsoil dikes for erosion control berms within the right of way, as directed.

Track ALL topsoiled slopes left idle for more than 14 days, within or at the end of the 14-day idle period, to prevent erosion. Tracking consists of operating a tracked vehicle or equipment up and down the slope, leaving track marks perpendicular to the direction of the slope. Retrack slopes after rain event, as directed. Consider the tracking of slopes to prevent erosion as subsidiary to the pertinent Items.

Upon final grading, immediately track all topsoiled slopes to prevent erosion, prior to seeding operations, as directed. Consider subsidiary to the pertinent Items.

Provide measurements for payment of topsoil quantities before seeding. Consider subsidiary to the pertinent Items.

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Place Topsoil in accordance with the SW3P, in phases, as partial completion of the roadway is obtained.

Perform topsoil measurements with the Engineer, as directed. Consider subsidiary to the pertinent Items.

ITEM 162 – SODDING FOR EROSION CONTROL

Furnish and place block sod.

ITEM 164 – SEEDING FOR EROSION CONTROL

Obtain vegetation establishment of all seeded areas, including adequate coverage, prior to “Final Acceptance.” If all other work is complete, time charges may be suspended, until adequate coverage is established.

Do not use ryegrass for temporary cover.

Reseed all areas with “little or no” grass growth after 1 month from the last seeding date, as directed. Consider subsidiary to the various bid Items.

Provide measurements for payment of seeding for erosion control quantities before seeding. Consider subsidiary to the pertinent Items.

ITEM 168 – VEGETATIVE WATERING

Water all areas of project to be seeded or sodded.

Maintain the seedbed in a condition favorable for the growth of grass. Watering can be postponed immediately after a rainfall on the site of ½ inch or greater, but will be resumed before the soil dries out. Continue watering until final acceptance.

Vegetative watering rates and quantities are based on ¼ inch of watering per week over a 3-month watering cycle. The actual rates used and paid for will be as directed and will be based on prevailing weather conditions to maintain the seedbed.

Obtain water at a source that is metered (furnish a current certification of the meter being used or furnish the manufacturer’s specifications showing the tank capacity for each truck used. Notify the Engineer, each day that watering takes place, before watering, so that meter readings or truck counts can be verified.

ITEM 169 – SOIL RETENTION BLANKETS

Provide machined mat of curled wood excelsior of 80%, six-inch or longer fibers. The top of each blanket is covered with a photodegradable extruded plastic mesh. For the weight requirements, (lbs/sq yd), of the matting see DMS 6370, typical roll width = 48 or 96 inches; typical roll length = 90 feet. This soil retention blanket should meet the previous stated requirements, equal, or better as approved.

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Use materials from prequalified material producers list as shown on the Texas Department of Transportation (TxDOT) ----- Construction Divisions (CST) materials producers list. See TxDOT website ([www.txdot.gov/Business with TxDOT > Materials Information > Material Producer List](http://www.txdot.gov/Business%20with%20TxDOT%20%26%20Materials%20Information%20%26%20Material%20Producer%20List)) for list of pre-qualified manufacturers. Direct all questions to the Maintenance Division, Vegetation Management Section, 125 E. 11th Street, Austin, TX 78701-2483.

ITEM 341, 347

Perform work during good weather, unless otherwise directed. If work is performed at Contractor's option, when inclement weather is impending, and the work is damaged by subsequent precipitation, the Contractor is responsible for all costs associated with replacing the work, if required.

ITEM 341, 347 (HMACP Testing)

The Contractor must sample asphalt binder, in accordance to the applicable item. Label the sample can with the corresponding CSJ, lot, and subplot numbers.

Samples must be stored in a common area where they are readily available to the TxDOT representative at the plant. The Contractor will be responsible for supplying storage for all samples. Retain all asphalt samples until hot mix production is complete or directed otherwise.

When directed, the Contractor is responsible for disposal of all asphalt binder samples, in accordance to Local, State, and Federal regulations.

[Hot Mix Asphaltic Concrete (HMAC) Core Holes]

Refill and compact all HMAC core holes to the same elevation as the adjacent roadway. Use hot mix of the type being used in the project to fill core holes. As an alternative a high performance cold patching mix such as Rapid Cure Patching Mix meeting the requirements of DMS-9203 or Medium Cure Patching mix made with SCM meeting requirements of DMS-9202. Consider this work subsidiary to the pertinent Items.

Mill a transverse butt joint to transition from the new ACP to the existing surface tie-in. Make the transition a minimum of 50 feet H: 1 inch V slope ratio of newly placed ACP. Make the temporary joint, at the tie-in, a minimum of a "3-paper-taper" longitudinally and covering the entire width. Sawcut existing pavement as directed. Prior to milling, core the existing pavement to determine its thickness. Do not proceed with milling until directed. Consider this work subsidiary to the pertinent Items.

ITEM 340, 341 - DENSE-GRADED HOT-MIX ASPHALT (Small Quantity)

Lime or an approved anti-stripping agent must be used when crushed gravel is utilized to meet a SAC "A" requirement.

Aggregates used on shoulders and ramps are required to meet SAC requirements.

Target laboratory molded density is 97% for all mixtures for TGC mixture designs.

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When using Superpave Gyrotory Compactor (SGC) to design mixtures, submit the SGC mix design to the Engineer for approval.

When using substitute binders, mold specimens for mix design and production at the temperature required for the substitute binder used to produce the HMA.

All mixtures must meet the Hamburg requirement as stated in the table below.

| High-Temperature Binder Grade | Test Method | Hamburg Wheel Test <u>Requirements</u>¹ | | |
|--------------------------------------|--------------------|---|---|---|
| | | Minimum # of Passes | Maximum Rut Depth (mm)² | Minimum Rut Depth (mm)^{2,3} |
| PG 64 or lower | Tex-242-F | 7,000 | 12.5 | 3 |
| PG 70 | Tex-242-F | 15,000 | 12.5 | 3 |
| PG 76 or higher | Tex-242-F | 20,000 | 12.5 | 3 |

1. The Engineer may accept Hamburg Wheel test results for production and placement if no more than 1 of the 5 most recent tests is below the specified number of passes and the failing test is no more than 2,000 passes below the specified number of passes.
2. Rut depth tested @ 122°F
3. Unless approved otherwise.

Department approved warm-mix additives is required for all surface mix application when recycled asphalt is used, unless approved otherwise. Dosage rates will be approved during JMF approval. Produce the WMA within the target temperature discharge range of 215°F and 275°F, unless approved otherwise.

Complete all roadways before final surface course placement, unless directed otherwise.

Ensure placement sequence to avoid excess distance of longitudinal joint lapback not to exceed one day's production rates.

Use a device to create a maximum 3H: 1V notched wedge joint on all hot mix joints of 2 in. or greater. Consider subsidiary to the pertinent Items.

Submit any proposed adjustments or changes to a job mix formula to the Engineer before production of the new job mix formula.

Tack every intermediate layer, unless otherwise directed. Do not dilute tack coat. Apply it through a distributor spray bar in accordance with Article 316.3.1 Distributor.

Submit thermal and segregation profiles as well as longitudinal joint densities on electronic forms provided by TXDOT to the Engineer.

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When surface irregularities, as defined in Article 341.4.9.3.3.5, “Irregularities”, are detected or measured, the Contractor must take immediate corrective action defined as the removal and replacement of a full lane width of the defective area using a paver to place new mix, unless otherwise directed. If there are multiple defective areas within a subplot, making up to 30% of the subplot by area, the Engineer will require the entire subplot be removed, unless directed otherwise.

Provide a minimum transition for all side streets of at least 12 feet and driveways of at least six (6) feet, unless otherwise shown on the plans or otherwise approved/directed.

ITEMS 347 THIN OVERLAY MIXTURES (TOM)

A Warm Mix Asphalt additive is required with a discharge temperature greater than 300° F when the haul distance from the plant to the project is greater than 40 miles or the ambient temperature is between 60-70° F, unless otherwise directed. WMA processes, such as water or foaming processes, are not allowed under these circumstances.

Use of pneumatic-tire rollers is prohibited.

Water flow rate should exceed 90 seconds tested in accordance to Tex-246-F. The Engineer will require the Contractor to perform water flow rate testing at least once per lot.

ITEM 416 - DRILLED SHAFT FOUNDATIONS

Stake all Foundations, for approval, before beginning drilling operations, as directed. Examples of types of foundations are Bridge Supports, Traffic Signal Pole Foundation, Roadway Illumination Assembly Foundations, Sign Support Locations, etc.

Calculate the vertical signal head clearance before placing any Traffic Signal Pole Foundation.

Obtain approval before placing additional exposed Traffic Pole Foundation.

Set anchor bolts for Mast-Arm Signal Poles and Strain Poles. Set two in tension and two in compression. Obtain approval of anchor bolt placement as directed before placing concrete.

Field cut holes for anchor bolts only as directed.

Class “C” concrete will be required for drilled shaft foundations involving overhead sign structures.

As shown on Table 1 in Item 416, use Class C concrete for reinforced drill shafts for traffic signal poles, unless it is discovered during construction that the slurry or underwater concrete placement methods will be needed.

Remove spoils, daily, out of flood plain, or as directed.

ITEM 420 – CONCRETE SUBSTRUCTURES

Perform work during good weather unless otherwise directed. If work is performed at Contractor’s option, when inclement weather is impending, and the work is damaged by

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subsequent precipitation, the Contractor is responsible for all costs associated with replacing the work, if required.

ITEM 423 - RETAINING WALLS

Inlet drains behind retaining walls in flumed areas will be Neenah R-3924 or equal. Other designs may be substituted only with the permission of the Engineer. Per plans, such inlets are subsidiary to the retaining wall bid item as well as all piping to tie into storm drains and connecting to the storm drains.

Drill, epoxy, and place #4 bars @ 12 inch centers, as directed, to tie the riprap & riprap flume to the MSE Wall Coping.

Measure surface area of retaining wall between finished grade at top of wall, including coping, and estimated/proposed ground line shown on the plans plus one (1) foot.

Immediately backfill the face of the retaining wall after the wall height gets above the final grade in front of the wall.

Set top of footing at a minimum of 1' feet below proposed ground.

Do not measure any footing adjustments made to accommodate the available optional designs. Supply the retaining wall fabricators with the drainage plans and large guide sign plans. Ensure the wall design accommodates the construction of inlets, conduit, and any other large drainage structure as shown on the plans.

Consider any Retaining Wall Light Brackets RW (BL) required for this project subsidiary to pertinent Items.

Use the approved Mechanically Stabilized Earth (MSE) Wall Systems listed at:
http://www.txdot.gov/business/contractors_consultants/bridge/retaining_wall.htm

Two feet either side of the width of the leveling pad must be compacted to meet ordinary compaction standards prior to placement of the leveling pad.

Verify each row of panel placement for specification tolerances after backfilling is accomplished and prior to placement of the next row of panels. Correct to within tolerance prior to placing subsequent rows of panels. Notify when a tolerance check is needed.

At no time will the retaining wall backfill material exceed the adjacent embankment operation by more than one embankment lift.

Build the wall backfill material a minimum of 24 inches horizontally beyond the end of the wall reinforcement. Compact it in accordance with 423.3.

Use a "modified" Ty "B" backfill material according to the following table:

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| <u>Type</u> | <u>Sieve Size</u> | <u>% Retained</u> |
|-------------|-------------------|-------------------|
| "BS" mod | 3 in. | 0 |
| | No. 4 | 85-100 |

Particles larger than ¼ inch will be angular or crushed. Rounded rock or gravel will not be allowed.

Retaining wall coping placement will be such that the outside face of the wall panels are not offset from the inside face of coping by more than 1½ inches.

Seal all form liner joints, in a manner acceptable to prevent leakage at the surface.

Consider surface finishes for concrete subsidiary.

Follow form liner manufacturer's recommended procedures for form liner construction.

The form liner will release clean and free of the concrete, without pulling or breaking concrete from the textured surface.

All MSE retaining wall panels will receive a textured concrete surface treatment using the custom form liner as shown in the plans. The custom form liner pattern provided by the contractor will be subject to approval.

Provide a 5' x 10' test panel representative of the texture for the custom form-liner surface finish prior to beginning precast operations. The surface texture will be subject to approval. If directed, construct additional test panels until a satisfactory surface treatment is obtained. Retain the approved test panels for use as standards of comparison for the production of the retaining wall panels. Consider subsidiary to the pertinent Items.

Upon approval of test panel, use the approved form liner throughout the project.

All Concrete Block Retaining Wall Systems shall be constructed from Pavestone's Diamond Pro Stone Cut using their anchorplex reinforcement or like material. Special Specification 4044 "Permeable Concrete Structural Backfill" is to be used with Concrete Block Retaining walls.

ITEM 432 - RIPRAP

Make 5-inches thick unless otherwise noted or directed.

Make all mow strip riprap four (4) inches, unless otherwise directed.

Where any proposed riprap joins existing riprap, saw cut the existing riprap and dowel/epoxy the joint as directed. Consider subsidiary to the pertinent Items.

Additional riprap may be required, as determined by the Engineer, near the end of project completion, due to unanticipated erosion locations. Any additional, approved riprap will be paid under this Item.

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Consider saw cutting of riprap as subsidiary.

Provide Class B Concrete for riprap.

Remove all loose Formwork and other Materials from the Floodplain or drainage areas, daily, which could float off in a Storm water Event, as directed.

ITEM 465 – JUNCTION BOXES, MANHOLES AND INLETS

Adjust inlet locations to the upstream side of driveways to accommodate driveway relocation.

Consider excavation and backfill, frames, grates, rings and covers subsidiary to pertinent Items.

Salvage existing grates, which are to remain the property of the Department, as directed. Stockpile neatly, as directed.

Provide temporary drainage at each curb inlet and maintain until the final course of asphaltic concrete pavement is placed.

Remove all loose Formwork and other Materials from the Floodplain or drainage areas, daily, which could float off in a Storm water Event, as directed.

ITEM 466 - HEADWALLS AND WINGWALLS

Use Class C concrete for headwalls or wingwalls.

Remove all loose Formwork and other Materials from the Floodplain or drainage areas, daily, which could float off in a Storm water Event, as directed.

ITEM 496 - REMOVING STRUCTURES

The Contractor's attention is directed to the fact that migratory birds tend to concentrate nesting on transportation structures. If migratory bird nests are present within the project limits, remove all old migratory bird nests only between September 1 and January 31 from any structure where work will be done. In addition, be prepared to prevent migratory birds from building nests between February 1 and August 31.

All methods used for the removal of old bird nests and the prevention of re-nesting must be approved by the Engineer, well in advance of the planned use.

In the event that any active nest of migratory birds is encountered on-site during project construction, all construction activity, within the immediate vicinity of the nest, will cease immediately. Contact the Engineer to determine how to proceed.

Provide a detailed plan for the removal of the existing structure(s) to include the schedule of removal and list of all equipment to be used.

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The structure or structures to be removed may have surface coatings, which may contain hazardous materials. Provide for the safety and health of employees and abide by all OSHA Standards and Regulations as well as those set by Texas Department of State Health Services (DSHS).

ITEM 502 - BARRICADES, SIGNS, AND TRAFFIC HANDLING

Nighttime lane closures will be allowed from 8:00 PM to 5:00 AM, unless otherwise shown on the plans.

No Daytime Lane Closures will be allowed, unless otherwise shown on the plans or as directed by the Area Engineer (AE).

The AE is the authority to approve additional lane closures, prior to any work.

Maintain a written record of documentation of “The Additional Approved Lane Closures.”

2 lanes will remain open, in each direction, at all times, unless otherwise shown on the plans or as approved by the AE.

Notify the Inspector so that they can notify Combined Transportation, Emergency, and Communications Center (CTECC) / Public Affairs Office, prior to implementing any “Approved Lane Closure” for a State Highway or Roadway. Provide notice no later than 11:00 AM (Central Time) and at least 24 hours prior to the closure. If the closure is scheduled on a Monday, then it will be called in by 11:00 AM on Friday. If the notification time falls on a State Holiday, which TxDOT observes, then make the notification to the Inspector by 11:00 AM on the day prior to the State Holiday. If you find you will need to report closure information after the 11:00 AM deadline, please contact Area Office for Construction Closures and/or Lowell Choate for Maintenance Closures. Once they have approved the late notice, TxDOT will then provide the information to the Public Information Office.

Also, provide “Advance Notice” of the Actual Lane Closure(s), on the Day (Night) of the Actual Lane Closure(s), to the TxDOT Inspector so that they can notify CTECC. Also, immediately upon removal of the Closure(s) provide notice to the TxDOT Inspector for them to notify CTECC.

Submit and secure concurrence, prior to the publication of any notices or placement of any traffic control devices for implementation of the traffic control plan, hereinafter called a Lane Closure Notice (LCN).

Present to TxDOT, an LCN for traffic control, which is proposed for implementation, a minimum of four (4) full working days preceding any proposed implementation date. Indicate the estimated date, time, duration, and location for the proposed work. As a part of the LCN submit a written description of the lane closure(s) depicting the proposed traffic control devices used, based on the appropriate plan sheet, TxDOT or TMUTCD standards, and an operational description of the work to be performed.

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Present to TxDOT, LCN's proposed to detour traffic, a minimum of *seven (7)* full calendar days preceding any proposed implementation date.

Present to TxDOT, LCN's proposed for night work, a minimum of *seven (7)* full calendar days preceding any proposed implementation date.

Receive concurrence prior to LCN implementation.

Meet with the Engineer prior to roadway and lane closures to ensure that sufficient equipment, materials, devices, and workers will be used. Discuss contingency plans at that time. Consider inclement weather prior to implementing the lane closures.

Submit a cancellation of any lane closures, no later than noon on the day preceding the proposed work.

Coordinate Main Lane closures with adjacent projects.

Obtain prior approval for any Lane Closures of the mainlanes, which occur during peak hours. Maintain a minimum of 2 lane(s) open, in each direction, at all times. This includes 'full' closures of the Roadway, unless otherwise directed.

Take immediate action to modify Closures / Traffic Control, if at any time backup (roadway queuing) becomes unreasonable (greater than 20 minutes). Have in place, a contingency plan of how this will occur.

Utilize Shadow Vehicle with Truck Mounted Attenuator for setup and removal of each lane closure.

Do not set up any Lane Closure / TCP when the pavement is wet prior to the "setup," unless otherwise directed. Revise Traffic Control, when inclement weather is imminent, as directed.

Incorporate and maintain a 3H: 1V safety wedge into the proposed construction for any roadway edge of 2 inches or greater adjacent to a roadway under traffic.

Within the limits of the project, provide standard barricades, warning signs, delineators, lights, 28-inch cones, and flaggers in enough numbers and combinations, as directed.

Use a minimum of 2 flaggers, 2 advance warning flashing arrow panels (TY C), 2 of each signs CW20-5TR or CW20-5TL with appropriate distance plaques and CW9-2TR or CW9-2TL and 28-in. cones at each location in which milling or paving operations are in progress. Maintain at least 1 lane of traffic in each direction during paving or milling operations. Maintain at least the minimum numbers of lanes as directed.

No Lane Closures on the Roadway that significantly reduce the level-of-service.

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For Mainlanes use night-work and same-night remove-and-replace operations.

No closures will be allowed on the weekends, which include the following holidays: January 1, the last Monday in May, July 4, the first Monday in September, the fourth Thursday in November, December 25, Easter weekend, and the working day prior to or immediately after any of the aforementioned holidays. Unless otherwise approved, no closures will be allowed on the weekends of special events that could be impacted by the construction. Ensure all equipment, vehicles, workers, etc., associated with these closures are off the roadways and all lanes re-opened, at least, by noon of the Friday before these holidays and special events.

Maintain a minimum of 2 through lane(s) in each direction, during the daylight hours, as directed.

Use advance warning flashing arrow panels for the closing of traffic lanes. Furnish one stand-by unit, in good working condition at the jobsite, ready for immediate use.

Maintain access to all streets and driveways at all times, unless otherwise approved. Consider subsidiary to the pertinent Items.

Furnish advisory speed signs in enough numbers as directed.

Maintain enough workers to revise traffic control as directed.

For each Lane Closure Set-up, provide a “Buffer Space” and Shadow Vehicle with Truck Mounted Attenuator (TMA), as directed

Provide a “Downstream” Buffer Space ($\approx 100'$ per lane with devices spaced at $\approx 20'$) for each lane closure setup, as directed.

Maintain construction-warning signs, which are needed for longer periods than what is shown on the traffic control plan or as directed. Consider subsidiary to the pertinent Items.

Cover or remove any existing sign(s), which conflict with temporary traffic control operations. Install all permanent signs, delineation, and object markers necessary for the operation of any roadway before opening that section of roadway to traffic, regardless of the phase during which the roadway construction occurs. Erect the signs on temporary mounts until the permanent mounts are installed. Consider any costs associated with the temporary mounts subsidiary. Repair or replace any signs, which are damaged by the Contractor’s operations during construction or which are deemed not sufficient. The Engineer will be the sole judge of the adequacy of the sign(s). Consider this work subsidiary to the pertinent Items.

Secure a 28-inch cone on top of any foundations that have protruding studs during construction. The cones will meet the specifications listed on BC (10)–14. In addition, they will be reflectorized, as described. All labor and materials will be considered subsidiary to the pertinent Items.

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Maintain Sandbags that are used for ballast, as directed. Consider subsidiary to the pertinent Items.

ITEM 504 - FIELD OFFICE AND LABORATORY

All labs and offices shall include cleaning at least once a week. The cleaning shall include sweeping and mopping of floors, cleaning the toilet and lavatory, and emptying wastebaskets. Space heaters are not considered adequate heating.

Projects with more than 500 CY of structural class concrete and/or 2000 CY of non-structural concrete shall include a concrete testing facility. Provide a structure with at least 200 sq. ft. of gross floor area in room 8 ft. high. The structure shall include the laboratory equipment and all other related items to perform the contract-controlling test procedures.

Projects with HMAC, furnish a Type D structure for the Engineer's exclusive use. The structure shall include high speed internet service with WIFI signal, one desk, two chairs, and one file cabinet. Provide a minimum of three 120-volt circuits with 20-amp breakers and at most two grounded convenience outlets per circuit.

ITEM 506 - TEMPORARY EROSION, SEDIMENTATION, AND ENVIRONMENTAL CONTROLS

Obtain the Engineer's approval for proposed methods used for erosion control before starting each phase of construction.

ITEM 512 - PORTABLE CONCRETE TRAFFIC BARRIER

If no hardware is available for designated source, the contractor shall furnish all necessary hardware to install the PTB and reimbursed in accordance with Item 9 Force Account. Bundle and return all PTB connection hardware to the nearest Area Office.

In lieu of a crash cushion and if approved by the Engineer, place 20:1 Class C concrete transition where PTB terminates adjacent to existing concrete barrier. Installation and removal will be paid using Item 512.

Upon completion of the project, designated source PTB deemed unsalvageable by the engineer will become the property of the contractor.

Any increase in temporary barrier quantities that occur due to Contractor changes in the sequence of work or the traffic control plan will not be paid by the State, unless agreed to, in writing, before the change occurs.

ITEM 528 - COLORED TEXTURED CONCRETE AND LANDSCAPE PAVERS

Use paving units such as "Holland-Stone" as manufactured by Pavestone Co., 1900 Clovis Barker Rd, San Marcos, TX 78666, or approved equal. Place in a 90° herringbone pattern. Paver color will be Pavestone Old Town Blend or equivalent.

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ITEM 530 – INTERSECTIONS, DRIVEWAYS, AND TURNOUTS

Notify property owners a minimum of 48 hours in advance of beginning work on their driveway. Provide a list of each notification and contact prior to each closure. Only close driveways for reconstruction if duration and alternate access are approved. Install and maintain material across a work zone as temporary access. Temporary access shall not have grade breaks that exceed 8%. This work is subsidiary.

Place the flex base for the Driveways using Ordinary Compaction. The pavement structure shall match the adjacent roadway unless shown elsewhere in the plans. HMA may use a maximum of 40% RAP and 5% RAS by volume for private driveways, public driveways for 2 lane roadways or smaller, and turnouts. Blending of 2 or more sources is allowed.

ITEM 540 - METAL BEAM GUARD FENCE

Adjust the limits of the Metal Beam Guard Fence (MBGF) to meet field conditions, as directed, before erection.

Before beginning the installation of the proposed MBGF, stake the locations for approval.

Furnish new, round, domed and unpainted timber posts. Furnish steel posts at locations where the minimum embedment shown on the plans for wooden posts cannot be achieved. Field verify the steel post lengths before fabrication. Consider the steel posts subsidiary to pertinent Items.

Install all permanent MBGF and delineators, when the roadway is constructed in one-half widths, on that section, before opening the road to traffic.

ITEM 556 – PIPE UNDERDRAINS

Place pipe underdrains as shown in the plans or as directed during construction.

Filter material will meet the gradation requirements of concrete coarse aggregate (Grade 2, 3, or 4).

ITEM 560 - MAILBOX ASSEMBLIES

Supplement each new mailbox installation with Type 2 object marker placed on the mailbox support in a vertical position 6 in. below the bottom of the mailbox.

Reflective tape may be used to simulate a Type 2 marker placed on tubular supports. Use tape that meets DMS-8600. The simulated marker will consist of three (3)--2¾-inch x 2¾-inch pieces of yellow high intensity tape spaced 1 inch apart.

The Type 2 marker will consist of OM-2SR or OM-2VP object markers if delineator post supports are used. Bi-directional brackets may be required on Size 2 mailbox installations. Consider subsidiary to the pertinent Items.

ITEM 585 - RIDE QUALITY FOR PAVEMENT SURFACES

Use Surface Test Type B Pay Adjustment Schedule 1 to evaluate ride quality of the travel lanes in accordance with Item 585, "Ride Quality for Pavement Surfaces."

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ITEMS 618, 620, 624, 628, 684 & 686

Use materials from prequalified material producers list as shown on the Texas Department of Transportation (TxDOT) ----- Construction Division's (CST) materials producers list. See TxDOT website (www.txdot.gov) – Business with TxDOT > Resources > Material Producer List - for list of pre-qualified manufacturers. “No substitutions” will be allowed for materials found on the list.

ITEM 618 & 620 - CONDUIT & ELECTRICAL CONDUCTORS

For electrical licensing and electrical certification requirements see Item 7 of the current Standard Specification book and any applicable Special Provisions to Item 7.

ITEM 618 - CONDUIT

Use materials from prequalified material producers list as shown on the Texas Department of Transportation (TxDOT) - Construction Division's (CST) materials producers list. Category is “Roadway Illumination and Electrical Supplies.”

Refer to plans and specifications for type of conduit. Waterproof and tighten all couplings and connections. Bring all proposed and existing conduit into a ground box and ‘elbow’ it unless otherwise shown on the plans. Provide a bushing to protect the wire from abrasion when a conduit run terminates.

Replace sections of conduit with the size and type shown on the plans in the event the existing conduit proves unusable due to location or damage.

Secure permission from the proper authority, as directed, before cutting into or removing any sidewalks or curbs for installation of this Item.

Saw cut and replace any riprap, which must be removed to install the conduit. Replace riprap with material and texture as directed.

The locations of conduit and ground boxes are diagrammatic and so shift, as directed, to accommodate field conditions.

Install conduit in an area not exceeding 2 feet in any direction from a straight line with the depth of the conduit at least 2 feet, unless otherwise shown on the plans. Installation of the conduit by jacking or boring method will be at a depth of at least 1 foot below the bottom of the base material of the roadway. Evidence of damage to the roadway during the jacking or boring operation will be enough grounds to stop the method being used.

Install conduit on a 2-inch sand cushion and backfill with at least 6 inches of sand. Backfill the remainder of the trench with flexible base, soil or two-sack concrete as required by the location of the conduit or as directed.

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Consider all conduit elbows and rigid metal extensions required to be installed on PVC conduit systems subsidiary.

Install a high tension, non-metallic pull rope in all conduit runs. The pull ropes are for future use. Cap all empty conduit runs using standard weather tight conduit caps as directed. Consider this work subsidiary to the pertinent Item.

Install a continuous bare or green insulated copper wire No. 8 AWG or larger in every conduit throughout the electrical system including installed loop detectors and traffic signal cables which are in conformance with the Electrical Detail Standard Sheets and the latest edition of the National Electrical Code (NEC).

Placement of conduit under the existing pavement using the open trench method will not be allowed without prior approval.

Seal all conduit ends with a permanently soft, non-toxic duct seal. The dust seal must not adversely affect plastic materials or corrode metals.

Use a coring device when drilling holes through concrete structures. Do not use masonry or concrete drills, unless otherwise approved.

Structurally mounted junction boxes shall be as shown on the plans. When used for traffic signal installations, these boxes shall be 12" x 12" x 8", and shall be approved. Consider these boxes subsidiary to this Item.

Place conduit a minimum depth of 42 inches below the bottom of ties.

Consider all fittings, brackets, and junction boxes necessary to complete the installations subsidiary to the pertinent Items.

ITEM 620 - ELECTRICAL CONDUCTORS

For both transformer and shoe-base type illumination poles, provide double-pole breakaway fuse holder from manufacturers pre-qualified by the Traffic Operations Division. Fuse holder is shown on the producer list under Items 610 & 620.

Provide and install slugs.

Provide breakaway disconnects in all breakaway poles. For Flashing Beacons (Item 685) and Pedestal Poles (Item 687) within the project provide single-pole breakaway disconnects. Use Bussman HEBW, Littelfuse LEB, Ferraz-Shawmut FEB, or equal on ungrounded conductors. For all grounded conductors use Bussman HET, Littelfuse LET, Ferraz-Shawmut FEBN, or equal. These breakaway connectors have a white colored marking and a permanently installed solid neutral.

Clearly and permanently, mark "Illumination" on the Illumination Conductors installed in a Signal Mast-Arm Pole or Strain Pole. Make the marks easily visible from the hand hole.

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Identify the conductors as shown on the Electrical Details Standard Sheets when two or more conductors are present in one conduit or enclosure. Use identification tag with two plastic straps. Each tag will indicate circuit number, letter, or other identification as shown on the plans.

Bond grounding conductors, which share the same conduit, junction box or structures, together at every accessible point, in accordance with the Electrical Detail Standard Sheets and the latest edition of the National Electrical Code (NEC).

All wiring will be in accordance with the National Electrical Code (NEC) and the appropriate Department standard sheets.

ITEM 624 - GROUND BOXES

All ground boxes for the traffic signal installation on this project will be precast polymer concrete of the size and type specified.

If an existing ground box with a metal cover is planned for use in a project, then that ground box will be replaced with a precast polymer concrete box and new cover (size to be determined by the Engineer). This work will be paid separately, as needed.

ITEM 628 – ELECTRICAL SERVICES

Notify Austin District Signal Shop of TxDOT, in a timely manner, at (512) 832-70617012, to make arrangements for a Service Account.

The service enclosure provided in this contract will have provisions for pad locking the enclosure shut.

The traffic signal system will require 120/240-Volt Power Service provided by the Local Electric Utility Company. Make all arrangements for power.

ITEM 644 - SMALL ROADSIDE SIGN ASSEMBLIES

Fabricate all small signs not detailed on the plans in conformance with the latest edition of the “Standard Highway Sign Designs for Texas.”

<http://www.txdot.gov/business/resources/signage.html>

ITEM 644, 647, 650

All signs removed within this project (both Large and Small) shall be salvaged and delivered in shipping crates for recycling to the TxDOT South Travis Area Engineer’s Office located at 9275 S. IH 35, Austin, TX, 78744. Provide a 48-hour notice to TxDOT at (512) 282-2113, prior to delivery of salvaged material. Consider this subsidiary to various bid Items.

ITEM 656 - FOUNDATIONS FOR TRAFFIC CONTROL DEVICES

Field cut holes for anchor bolts only as directed.

Provide all the materials needed for the installation of foundations under this Item.

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ITEM 662 - WORK ZONE PAVEMENT MARKINGS

Notify the Engineer at least 24 hours in advance of removing existing striping and placing pavement markings & markers.

Apply markings during good weather unless otherwise directed. If markings are placed at Contractor's option, when inclement weather is impending, and the markings are damaged by subsequent precipitation, the Contractor is responsible for all costs associated with replacing the markings if required.

Place temporary pavement markings each night, as directed. Temporary flexible-reflective tabs will not be allowed as temporary pavement marking on the various roadways, unless otherwise approved.

If Temporary Flexible Reflective Tabs are allowed replace any missing tabs daily. If tabs are used, replace tabs at the Contractor's expense.

Remove work zone pavement markings within 48 hours after permanent striping has been completed.

Foil backed pavement markings will not be allowed.

ITEM 666 - RETROREFLECTORIZED PAVEMENT MARKINGS

Notify the Engineer at least 24 hours in advance of work for this item.

If short term or removable markings are not included, place the Item 666 markings at the end of each work period. If short term or removable markings are included, place the Item 666 markings within 5 days of applying roadway surface.

TY II shall cure 48 hours prior to placing TY I markings. Roadway surface shall cure 72 hours prior to placing TY I.

Reference all existing stripes before commencing work. Obtain approval for placement of guide marks before installing permanent pavement markings. This work is subsidiary.

ITEM 672 - RAISED PAVEMENT MARKERS

Place the bituminous adhesive at a temperature range of 380°F to 390°F. Place the pavement marker on the bituminous adhesive approximately 20 seconds after the adhesive is placed on the pavement. Ensure the pavement marker rests solely on the adhesive and not the pavement surface. Ensure that a minimum of 1/8 in. layer of bituminous adhesive remains between the pavement marker and the pavement surface.

ITEM 677 - ELIMINATING EXISTING PAVEMENT MARKINGS AND MARKERS

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Remove and dispose of, off the right of way, any existing raised pavement markings before beginning surfacing operations. Remove the existing traffic buttons and pavement markers, daily, as work progresses and as directed. Consider subsidiary to the pertinent Items.

Grinding is not an acceptable method of stripe removal.

Blast cleaning is required for the removal of existing pavement markings.

Black paint will not be allowed, unless otherwise directed. Acceptable methods will be sand blasting (Blasting Method) or strip sealing (Surface Treatment Method).

ITEM 680 - HIGHWAY TRAFFIC SIGNALS

Install all of the materials necessary for a complete signal system as follows:

Obtain State-provided materials from the Austin District Signal Shop at 7901 N I-35 after giving a two-week advance notice to Signal Shop Supervisor at (512) 832-7012.

Furnish all other materials, tools, and labor required to provide a completed installation in accordance with the plans and specifications. Furnished materials provided by the Contractor will be new undepreciated stock.

Place the traffic signal into operation after the entire traffic signal has been completed, all required striping is complete, and all conflicting signing is removed. The TxDOT Austin District Signal Shop will be present to program the controller and assist with detection setup.

All illumination fixtures will be 250-watt, high-pressure sodium fixtures.

Furnish and install all permanent signs mounted on the traffic signal wires and traffic signal poles, which include pedestal pole assemblies. Furnish all hardware for installation. Consider all costs associated with the furnishing and installation of the permanent signs and the necessary hardware subsidiary to the pertinent Items.

Use a Vulcan swinger sign mounting bracket or equivalent for all signs mounted on span wires.

After the completion of the entire signal installation (including striping), a thirty-day (30-day) test period begins. After it has been determined, by the Department, that the field wiring and controller operation are satisfactory after this test period, and all other requirements of the project have been met, the Department will relieve the Contractor of any other responsibilities for the operation of the signal.

1. Use qualified personnel to respond to and diagnose all trouble calls during the thirty-day test period. Repair any malfunction to Contractor-supplied signal equipment. Provide to the Engineer a local telephone number, not subject to frequent changes and available on a 24-hour basis, for reporting trouble calls. Response time to reported calls must be less than 2 hours. Make appropriate repairs within 24 hours. Place a logbook in the controller cabinet and keep a record of each trouble call reported. Notify the Engineer of

each trouble call. Do not clear the error log in the conflict monitor during the thirty-day test period without the approval of the Engineer.

2. Remove the existing stop sign panels (or assemblies) after the traffic signals are in operation.
3. Install the Opticom equipment supplied by the City of Westlake.

City or District Supplied Equipment: Install the supplied traffic signal controller and cabinet.

4. Connect all field wiring to the controller assembly. The City (**or District**) will assist in determining how the detector loop lead-in cables are to be connected, and will also program the controller for operation, program the video detection, hook up the conflict monitor, detector units and other equipment, and turn on the controller. Pick up the signal cabinet from the District Signal Shop. Have a qualified technician and a representative from the controller supplier (if Contractor supplied controller) on the project site to place the traffic signals in operation.

At the end of construction, prior to turning the signals over to TxDOT, the contractor shall:

A. Cables - Inspect each signal cable for damage or deterioration, proper attachment, excess slack and tangled cables. Check all cable terminations in mast arm hand holes and tighten as needed.

B. Pole and Mast Arms - Inspect all pole bases, foundations, and mast arms. Check welds on pole for fatigue or cracking. Check and tighten all bolts as needed. Remove graffiti, non-standard stickers, and non-standard signs.

C. Ground Boxes - Inspect all ground boxes, clean out all debris, and replace or install missing lid bolts. Seal conduits.

D. Pedestrian Buttons - Check pedestrian push buttons for proper operation. Report broken buttons. Document all malfunctions found.

E. Illumination – Check lamps for proper operation. Document all malfunctions found.

F. Signal/Pedestrian Heads and Detection Units - Inspect all signal or pedestrian head lamps/LEDs lenses, reflectors, visors, and backplates for visible damage.

G. At locations with wireless detection units, tighten all mounting brackets, inspect connectors. Ensure a tight and waterproof fit on all connectors. Ensure correct alignment of all signal heads.

H. VIVDS – If video detection cameras are present at the intersection, clean camera lenses and tighten all mounting brackets. Inspect all camera/cable connectors and replace if necessary. Ensure a tight and waterproof fit on all connectors.

I. Electrical Service Enclosure - Inspect enclosure for damage. Check all cable terminations and tighten as needed. Seal conduits. Label all wiring with approved tags. Lock enclosure, if unable to lock report to Signal Shop Supervisor.

J. Controller Cabinet - Perform all of the following maintenance to the controller cabinet:

- Clean aluminum filters. Replace paper/fiberglass filters.

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- Replace fluorescent lamps as needed.
- Check ground rod clamp and wire.
- Seal conduits.
- Vacuum complete cabinet interior.
- Check fan and thermostat.
- Remove graffiti, non-standard stickers, and non-standard signs.
- Lubricate hinges and levers.
- Check all cable terminations and tighten as needed.
- Label all field wiring with approved tags.

Notify the District Signal Maintenance Office at (512) 832-7012 and Area Office / Office of Inspection one week before beginning any work involving traffic signals.

Provide for the removal and storage of the existing signal once the temporary signal is in operation. Remove abandoned foundations as described in 2014 Special Specification. Items to be returned to the Austin District Traffic Signal Shop include: (depends on intersection). Contact the Signal Shop Supervisor at (512) 832-7012 to make arrangements for delivery of salvaged items.

When the Engineer determines that the work required by this item is complete and communications has been established to the central control, a 60-day test period shall commence. When the entire communications system has operated continuously and satisfactorily for at least 60 days, the Contractor will be released from further maintenance of this item, in writing.

ITEM 681 - TEMPORARY TRAFFIC SIGNALS

Take control and be responsible for all Signals within the Project limits as shown on the plans, to commence when the signal system or roadway capacity is affected, or within 20 days after the start of work, whichever comes first. Contact the District Signal Shop Supervisor, at least two weeks in advance, at (512) 832-7012 to arrange to take over maintenance.

The scope of this contract will include modifications of existing signal systems as required to support the traffic control plan at the following locations:

Signal Location(s):

Camp Craft Road

Westlake Drive

Westbank Drive

Westwood Drive

Provide and maintain traffic signal operation of all signalized intersections within the project limits during all phases of construction whether existing, temporary, or final. Provide all items for temporary traffic signal including temporary controller and Video Imaging Vehicle Detection System (VIVDS) equipment. Controller will be an eight-phased NEMA controller. Controller cabinet will meet all the requirements of DMS-11170. Provide a pole-mounted controller cabinet that is 38 inches wide, 54 inches high, 26 inches deep, and that has three brackets for pole mounting. Install an 5'x 5'x 4" Class B concrete pad under the pole-mounted controller

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cabinet in accordance to Items 420 and 421. Connect all field wiring to the controller assembly. Have a qualified technician and a representative from the controller supplier on the project site to place the traffic signals in operation.

The controller cabinet assembly, including all accessories and components, and all video detection (VIVDS) cameras and processors will be salvaged and delivered to the TxDOT Signal Shop at 7901 N. IH 35, Austin, TX, 78753 at the end of this project. Provide a 48-hour notice to TxDOT at (512) 832-7012, prior to delivery of salvaged material.

Operation and maintenance of the temporary signal includes repair of Contractor-supplied equipment, provision of telephone number to the District for trouble calls, adjustment of timing, and the generation and implementation of traffic signal timing during all phases of the project. Prepare the timing plan under the supervision of a registered Traffic Engineer, and submit to the Engineer for approval. Load the approved timing plan into the controller and fine-tune the timing with field observations. Make timing adjustments for capacity and roadway alignment changes.

Video equipment will meet all the requirements of Item 6002. Provide signal phasing and timing plans for all construction signals throughout the entire duration of the project. These plans will match the construction sequencing or the Contractor's construction sequencing if different from what is shown in the plans. These plans will be submitted for approval and will provide operations equivalent to the existing signals.

Provide the Department the name and 24-hour telephone number of a person responsible for emergency maintenance operations. Use qualified personnel to respond to and diagnose all trouble calls during the length of the project. Repair any malfunction to signal equipment. Response time to reported trouble calls must be less than 2 hours. Make appropriate repairs within 24 hours. Place a logbook in the controller cabinet and keep a record of each trouble call reported. Notify the Engineer of each trouble call. Do not clear the error log in the conflict monitor without approval.

Relocate and modify signal heads as required by project phasing or other project work as directed by the Department. Relocation of signal heads for a phase change will be done during the same day. Consider subsidiary to the pertinent Items.

Be responsible for video detection changes as required by project phasing or other project work as directed by the Department. Consider subsidiary to the pertinent Items.

Maintain an 18-foot minimum vertical clearance for all construction signals at all times.

Make field measurements for treated timber poles in cooperation with the Engineer before construction to ensure the above clearance height from the highest point of the roadway surface. Timber poles provided will meet all the requirements of Item 627. In addition, place the signal heads a minimum of 40 feet and a maximum of 150 feet from the stopline. If the nearest signal head must be more than 150 feet from the stopline, place a supplemental nearside signal head.

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Determine the field measurements and elevations from the actual field location of the poles, considering all above and below ground utilities and existing roadway elevations.

All permanent signs mounted on the traffic signal wires, traffic signal poles, or traffic signal mast arms will be furnished and installed by the Contractor. The cost of the signs, hardware and erecting the signs will be subsidiary to the pertinent Items.

Be responsible for furnishing all other materials, tools, and labor required to maintain the signal in this project in accordance with the plans and specifications. All new materials provided by the Contractor will be new undepreciated stock.

ITEM 682 – VEHICLE AND PEDESTRIAN SIGNAL HEADS

Install signal head attachments so the wiring to each passes from the signal pole through the attachment hardware to the signal head. Refer to District Standard for more conductor attachment information. Attachment methods not shown on the district standard are to be approved by the Engineer before work begins. Use UV rated tie wraps.

Ensure the signal heads are made of aluminum and are hooded and covered until the signal system is put into operation.

Each signal head will be one way with the proper number of sections shown on the plans. Each head color will be bright yellow (Federal Yellow #13538 of Federal Standard 595). The inside of the visors will have a flat black finish.

Installed traffic signal heads within the project will have backplates unless otherwise shown on the plans. Backplates will be black aluminum.

Provide pedestrian signal head assemblies, which have a flush “egg-crated” or “Z” pattern visor for all lamps, and a one-piece reflector assembly for incandescent lamps only.

Provide louvers, which have five (5) vanes with a black finish on inside surfaces when required within the project. Fasten a hardware cloth screen, securely, with $\frac{5}{8}$ " or smaller mesh size to the front face of each louver to prevent entry by birds.

Mount signal heads level and plumb as directed.

Replace, at Contractor’s expense, all burned out or defective lamps for a period of 4 weeks from the date of the initial turn on. At the end of this 4-week period, the Engineer will relieve the Contractor of any maintenance of this portion of the signal system.

Use the four point mounting system (TY A) for signal heads, except in cases of skewed or vertical heads when (TY B) will be used.

Place LED’s at the proper angle with the ground. The wording “top” or the “up arrow” indicates the proper fixed alignment within the signal head. Hang the head parallel to the ground once attached and not angled down as with incandescent heads. Ensure the signal head to be level and

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within tolerances. LED's are designed to direct the indication towards the roadway surface. Variance in head leveling will cause the LED indication to appear dim during slight movement. Ensure each LED head to be properly leveled and sight tested before final acceptance.

ITEM 684 – TRAFFIC SIGNAL CABLES

Leave at least 2 feet for each cable run in each pull box and leave at least 2 feet in each steel pole in addition to the required length for each separate cable. Provide an extra 5 feet of each conductor terminating in the controller cabinet. Ensure conductors are continuous without splice from terminal point to terminal point or as directed. Do not use wire nuts.

Provide a separate multi-conductor signal cable (14 AWG) inside pedestal poles and mast-arm signal poles from the terminal strip to each signal head as shown on the plans.

ITEM 686 - TRAFFIC SIGNAL POLE ASSEMBLIES (STEEL)

Provide and install damping plates on all mast arms of 40 feet and over. For mast arms under 40 feet, refer to SMA and DMA Vibration Notes for guidance. Consider the cost for the provision and installation of damping plates as subsidiary to the various bid Items found within this project.

Provide double nuts on top and bottom of the base plate as shown on the standards.

Provide signal pole assemblies as shown on plans. Luminaire lamps and the installation of the arms and lamps are considered subsidiary to the pertinent items.

When luminaires are to be installed on mast arm poles, provide a separate terminal strip in the signal pole access compartment. The terminal strip shall be a 4-circuit Buchanan-Type 104SN, Kulka-Type 985-GP-4 CU, or equivalent.

Provide a 10-amp time-delay fuse for traffic signal poles onto which luminaires are to be installed. Place the fuse in the fuse block indicated within note #4 found on State standard MA-D-12.

ITEM 687 - PEDESTAL POLE ASSEMBLIES

Furnish and install pedestal pole assemblies as shown on plans. Furnish all other materials, tools, and labor required to provide a completed installation in accordance with the plans and specifications. Furnished materials provided by the Contractor will be new undepreciated stock.

ITEM 688 - PEDESTRIAN DETECTORS AND VEHICLE LOOP DETECTORS

Pedestrian push buttons will be mounted at a height of 3'-6" (42") above the sidewalk or landing and will be of the type that have permanent-type signs within the detector unit (9" x 12" sign & push button station on Signal Poles and 5" x 7" sign & push button station on Pedestrian Poles), which explains their purpose and indicates which crosswalk signal is actuated.

Repair or replace any push button detector, which proves to be inoperable for a period of 4 weeks from the initial flash turn on date. At the end of this 4-week period, the Engineer will relieve the Contractor of any maintenance of this portion of the signal system.

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Pedestrian Push buttons will be of substantial tamper proof construction. The push button will be ADA and TS 2 compliant. The push button will have a powder coated aluminum bezel with stainless steel actuator. The push button will utilize a momentary contact solid-state switching mechanism. The push button will provide visual and audible feedback to the pedestrian. The low movement push button will be functional in icing conditions. All fastening hardware will be stainless steel.

Provide the APS PED push button controller inside the traffic signal cabinet..

The audible feedback will be solely a confirmation chirp, be able to be turned on and off, and not conflict with any ADA issues.

ITEM 6001 – PORTABLE CHANGEABLE MESSAGE SIGN

Provide [3](#) “Electronic” Portable Changeable Message Sign(s) (EPCMS) as part of the traffic control operations and provide another one that is available to utilize when a backup is needed. Consider the one designated for backup as subsidiary to the various Items of the project. All EPCMS will be exclusive to this project, unless otherwise approved. Placement location and message as directed.

Place appropriate number of “Electronic” Portable Changeable Message Signs (EPCMS) at locations requiring lane closures for one-week prior to the closures, or as directed. Obtain approval for the actual message that will appear on the boards. If more than two phases of a message are required per board, provide additional EPCMS’s to meet the two-phases-per-board requirement.

ITEM 6002 - VIDEO IMAGING VEHICLE DETECTION SYSTEM (VIVDS)

Install the VIVDS cameras onto the mast arms with the attachment mechanisms provided with the camera system. Place the traffic signal cable (TY A) (3-conductor) (16 AWG) and the VIVDS communication cable coaxial in continuous and separate runs from each VIVDS camera to the controller. Consider the costs associated with the above work subsidiary to the pertinent Items.

Aim and adjust the cameras, install the cables and VIVDS cards into the controller cabinet and complete any other necessary work to bring the traffic signal into operation.

Provide the traffic signal cable and coaxial cable above and any incidentals necessary to install them.

Obtain the VIVDS system components to include the cameras, monitor and cards, from the Department. The VIVDS system also contains the attachment mechanisms needed to attach the cameras to the mast arms. Contact the signal shop supervisor a minimum of two weeks prior to pick up so that arrangements can be made for the equipment.

If State supplies the VIVDS then payment of the above work will be paid for based upon the foot of VIVDS communication cable installed.

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Contact Signal Shop to set-up system.

Provide and install all cables necessary to provide complete VIVDS operation. Provide a minimum of 10 cables to direct connect the notebook to the VIVDS port.

Phase red and green load switch outputs from up to sixteen (16) phases of a NEMA TS2 Type 2 controller shall be provided as inputs to the VPU for use with internal detector extend/delay timing functions. The C/VPU shall be able to condition the detector outputs and detection zones based on the state of the associated phase number and color.

The serial communication port on the front of the VPU shall be a DB-9 RS-232 connector. Supply a package that will operate with Windows XP and NT and provide the functionality defined in both sections 7.0 and 8.0 in both a direct connect and remote communications mode. The software resident in the VPU and the personal computer shall be capable of transmitting and receiving all information needed for zone set up, monitoring vehicle detection by viewing flashing detection zone overlays, and uploading/downloading and interrogating all stored data within the VPU. Remote communications with the VCU shall be possible with the addition of external communication devices (modem, Codec, etc.) using the RS-232 and video output ports on the front of the VPU.

The VPU operational software shall be stored internally in flash memory and be capable of being updated without the removal and replacement of memory devices.

Provide surge protection in the controller cabinet protecting the camera video and power inputs/outputs. All surge protection shall be dinrail mounted.

Install the VIVDS detection zones as directed. Have qualified personnel on site at the time of the signal turn-on to assist with the installation of detection zones.

If the camera locations shown in the plans do not allow for proper sight of the proposed detection zones, relocate the cameras as needed and as directed. This labor and material cost will not be paid separately, but is subsidiary to this Item.

The video output from the C/VPU shall be in color or black/white with active detection zones overlaid on full motion video.

Required Items for ITEM 6002 - VIDEO IMAGING VEHICLE DETECTION SYSTEM:

| <u>Spec.</u> | <u>Description</u> | <u>Not</u> | <u>State</u> | |
|--------------|----------------------------|-----------------|-----------------|-----------------|
| <u>Item</u> | | <u>Required</u> | <u>Required</u> | <u>Supplied</u> |
| 2.F | REMOTE COMMUNICATIONS LINK | | X | |
| 5.0 | VIVDS PROCESSOR UNIT | | 1 | |

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| | | | | |
|------|--|----------|----------|----------|
| 6.A | CAMERA ASSEMBLY | | | 6 |
| 7.0 | FIELD COMMUNICATIONS LINK | | | |
| | 6 Twisted-Pair Cable / 18 AWG | X | | |
| | Coaxial Cable w/Three (3) 16 AWG CNDRS | X | | |
| | Fiber Optic Cable | X | | |
| 8.0 | VIVDS SET-UP SYSTEM | | | |
| | Field PC | X | | |
| | Field Software for District Shop laptops | | X | |
| | Field Video Monitor /Ea. Inter. | | 1 | |
| 9.0 | TEMPORARY USE AND RETESTING | X | | |
| 10.0 | OPERATION FROM CENTRAL | | | |
| | Workstation Computer & Peripherals | X | | |
| | Central Control Software | | X | |
| 11.0 | INSTALLATION AND TRAINING | | | |
| | Eight (8) Hours | | X | |
| | Sixteen (16) Hours | X | | |

LIST OF MATERIAL
TEXAS DEPARTMENT OF TRANSPORTATION

| <u>DESCRIPTION</u> | <u>UNIT</u> | <u>QUANTITY</u> |
|-------------------------------------|-------------|-----------------|
| CABINET ASSEMBLY WITH ACCESSORIES | EA | 4 |
| VIVDS CAMERA ASSEMBLIES | EA | 23 |
| VIVDS PROCESSOR CARDS (2 CHANNEL) | EA | 4 |
| VIVDS PROCESSOR CARDS (4 CHANNEL) | EA | 4 |
| VIVDS EXTENSION MODULES (4 CHANNEL) | EA | 4 |
| VIVDS VIDEO MONITORS | EA | 4 |
| VIVDS SURGE SUPPRESSION PANELS | EA | 4 |
| MANAGED HARDENED ETHERNET SWITCH | EA | 6 |

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POWER SUPPLY (FOR ETHERNET SWITCH)

EA

6

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TEXAS DEPARTMENT OF TRANSPORTATION

GOVERNING SPECIFICATIONS AND SPECIAL PROVISIONS

ALL SPECIFICATIONS AND SPECIAL PROVISIONS APPLICABLE TO THIS PROJECT ARE IDENTIFIED AS FOLLOWS:

STANDARD SPECIFICATIONS: ADOPTED BY THE TEXAS DEPARTMENT OF
----- TRANSPORTATION NOVEMBER 1, 2014.
STANDARD SPECIFICATIONS ARE INCORPORATED
INTO THE CONTRACT BY REFERENCE.

ITEMS 1 TO 9 INCL., GENERAL REQUIREMENTS AND COVENANTS
ITEM 100 PREPARING RIGHT OF WAY (100)
ITEM 104 REMOVING CONCRETE
ITEM 105 REMOVING TREATED AND UNTREATED BASE AND ASPHALT PAVEMENT
ITEM 110 EXCAVATION (132)
ITEM 132 EMBANKMENT (100) (160) (204) (210) (216) (260) (400)
ITEM 160 TOPSOIL (168)
ITEM 162 SODDING FOR EROSION CONTROL (166) (168)
ITEM 164 SEEDING FOR EROSION CONTROL (162) (166) (168)
ITEM 168 VEGETATIVE WATERING
ITEM 169 SOIL RETENTION BLANKETS
ITEM 247 FLEXIBLE BASE (105) (204) (210) (216) (520)
ITEM 340 DENSE-GRADED HOT-MIX ASPHALT (SMALL QUANTITY) (300) (301)
(320) (520) (585)
ITEM 341 DENSE-GRADED HOT-MIX ASPHALT (300) (301) (320) (520) (585)
ITEM 347 THIN OVERLAY MIXTURES (TOM) (300) (301) (320) (520) (585)
ITEM 400 EXCAVATION AND BACKFILL FOR STRUCTURES (110) (132) (401)
(402) (403) (416) (420) (421) (423)
ITEM 401 FLOWABLE BACKFILL (421)
ITEM 402 TRENCH EXCAVATION PROTECTION
ITEM 403 TEMPORARY SPECIAL SHORING (410) (411) (423)
ITEM 411 ROCK NAIL ANCHORS (421) (431) (440)
ITEM 416 DRILLED SHAFT FOUNDATIONS (405) (420) (421) (423) (440) (448)
ITEM 420 CONCRETE SUBSTRUCTURES (400) (404) (421) (422) (426) (427)
(440) (441) (448)
ITEM 423 RETAINING WALLS (110) (132) (216) (400) (416) (420) (421) (424)
(440) (445) (4044)
ITEM 432 RIPRAP (247) (420) (421) (431) (440)
ITEM 450 RAILING (420) (421) (422) (424) (440) (441) (442) (445) (446)
(448)

ITEM 464 REINFORCED CONCRETE PIPE (400) (402) (403) (467) (476)
 ITEM 465 JUNCTION BOXES, MANHOLES, AND INLETS (400) (420) (421) (424)
 (440) (476)
 ITEM 466 HEADWALLS AND WINGWALLS (400) (420) (421) (432) (440) (464)
 ITEM 467 SAFETY END TREATMENT (400) (420) (421) (432) (440) (442) (445)
 (460) (464)
 ITEM 496 REMOVING STRUCTURES
 ITEM 500 MOBILIZATION
 ITEM 502 BARRICADES, SIGNS, AND TRAFFIC HANDLING (504)
 ITEM 504 FIELD OFFICE AND LABORATORY
 ITEM 506 TEMPORARY EROSION, SEDIMENTATION, AND ENVIRONMENTAL
 CONTROLS (161) (432) (556)
 ITEM 508 CONSTRUCTING DETOURS
 ITEM 512 PORTABLE CONCRETE TRAFFIC BARRIER (420) (421) (424) (440)
 (442)
 ITEM 528 COLORED TEXTURED CONCRETE AND LANDSCAPE PAVERS (132) (247)
 (275) (401) (420) (421) (440)
 ITEM 529 CONCRETE CURB, GUTTER, AND COMBINED CURB AND GUTTER (360)
 (420) (421) (440)
 ITEM 530 INTERSECTIONS, DRIVEWAYS, AND TURNOUTS (247) (260) (263)
 (275) (276) (292) (316) (330) (334) (340) (360) (421) (440)
 ITEM 531 SIDEWALKS (104) (360) (420) (421) (440) (530)
 ITEM 542 REMOVING METAL BEAM GUARD FENCE
 ITEM 556 PIPE UNDERDRAINS (402) (432)
 ITEM 560 MAILBOX ASSEMBLIES
 ITEM 618 CONDUIT (400) (476)
 ITEM 620 ELECTRICAL CONDUCTORS (610) (628)
 ITEM 624 GROUND BOXES (420) (421) (432) (440) (618) (620)
 ITEM 628 ELECTRICAL SERVICES (441) (445) (449) (618) (620) (627) (656)
 ITEM 644 SMALL ROADSIDE SIGN ASSEMBLIES (421) (440) (441) (442) (445)
 (636) (643) (656)
 ITEM 658 DELINEATOR AND OBJECT MARKER ASSEMBLIES (445)
 ITEM 662 WORK ZONE PAVEMENT MARKINGS (666) (668) (672) (677)
 ITEM 666 RETROREFLECTORIZED PAVEMENT MARKINGS (316) (318) (502) (662)
 (677) (678)
 ITEM 672 RAISED PAVEMENT MARKERS (677) (678)
 ITEM 677 ELIMINATING EXISTING PAVEMENT MARKINGS AND MARKERS (300)
 (302) (316)
 ITEM 680 HIGHWAY TRAFFIC SIGNALS (416) (610) (618) (624) (625) (627)
 (628) (636) (656) (682) (684) (686) (688)
 ITEM 681 TEMPORARY TRAFFIC SIGNALS (416) (610) (618) (620) (621) (622)
 (624) (625) (627) (628) (636) (644) (656) (680) (682) (684) (686)
 (687) (688) (690)
 ITEM 682 VEHICLE AND PEDESTRIAN SIGNAL HEADS
 ITEM 684 TRAFFIC SIGNAL CABLES
 ITEM 685 ROADSIDE FLASHING BEACON ASSEMBLIES (441) (442) (445) (449)
 (610) (620) (621) (624) (628) (656) (682) (684) (687)
 ITEM 686 TRAFFIC SIGNAL POLE ASSEMBLIES (STEEL) (416) (421) (441)
 (442) (445) (449)
 ITEM 687 PEDESTAL POLE ASSEMBLIES
 ITEM 688 PEDESTRIAN DETECTORS AND VEHICLE LOOP DETECTORS
 ITEM 740 GRAFFITI REMOVAL AND ANTI-GRAFFITI COATING

SPECIAL PROVISIONS: SPECIAL PROVISIONS WILL GOVERN AND TAKE
----- PRECEDENCE OVER THE SPECIFICATIONS ENUMERATED
HEREON WHEREVER IN CONFLICT THEREWITH.

REQUIRED CONTRACT PROVISIONS, FEDERAL-AID CONSTRUCTION CONTRACTS
(FORM FHWA 1273, MAY, 2012)

WAGE RATES

SPECIAL PROVISION "SCHEDULE OF LIQUIDATED DAMAGES" (000---001)
SPECIAL PROVISION "NONDISCRIMINATION" (000---002)
SPECIAL PROVISION "CERTIFICATION OF NONDISCRIMINATION IN EMPLOYMENT"
(000---003)
SPECIAL PROVISION "NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO
ENSURE EQUAL EMPLOYMENT OPPORTUNITY" (000---004)
SPECIAL PROVISION "STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY
CONSTRUCTION CONTRACT SPECIFICATIONS" (000---005)
SPECIAL PROVISION "ON-THE-JOB TRAINING PROGRAM" (000---006)
SPECIAL PROVISION "DISADVANTAGED BUSINESS ENTERPRISE IN FEDERAL AID
CONTRACTS" (000---007)
SPECIAL PROVISION "IMPORTANT NOTICE TO CONTRACTORS" (000---010)
SPECIAL PROVISION "IMPORTANT NOTICE TO CONTRACTORS" (000---151)
SPECIAL PROVISION TO ITEM 2 (002---004)
SPECIAL PROVISION TO ITEM 6 (006---001)
SPECIAL PROVISIONS TO ITEM 7 (007---001) (007---003)
SPECIAL PROVISIONS TO ITEM 8 (008---001) (008---003) (008---006)
SPECIAL PROVISION TO ITEM 300 (300---009)
SPECIAL PROVISION TO ITEM 506 (506---001)

SPECIAL SPECIFICATIONS:

ITEM 1004 TREE PROTECTION
ITEM 4044 PERMEABLE CONCRETE STRUCTURAL BACKFILL
ITEM 6001 PORTABLE CHANGEABLE MESSAGE SIGN
ITEM 6002 VIDEO IMAGING VEHICLE DETECTION SYSTEM
ITEM 6005 TESTING, TRAINING, DOCUMENTATION, FINAL ACCEPTANCE, AND
WARRANTY
ITEM 6006 ELECTRONIC COMPONENTS
ITEM 6007 FIBER OPTIC CABLE (6005) (6006)
ITEM 6165 AT&T TELECOMMUNICATION SYSTEM
ITEM 7056 WATER UTILITIES
ITEM 7057 WASTEWATER UTILITIES

GENERAL: THE ABOVE-LISTED SPECIFICATION ITEMS ARE THOSE UNDER WHICH
----- PAYMENT IS TO BE MADE. THESE, TOGETHER WITH SUCH OTHER
PERTINENT ITEMS, IF ANY, AS MAY BE REFERRED TO IN THE ABOVE-
LISTED SPECIFICATION ITEMS, AND INCLUDING THE SPECIAL
PROVISIONS LISTED ABOVE, CONSTITUTE THE COMPLETE SPECIFI-
CATIONS FOR THIS PROJECT.

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