City of San Antonio
TRANSPORTATION AND CAPITAL IMPROVEMENTS

ADDENDUM NO. 4

PROJECT NAME: **Ray Ellison (Loop 410 to Old Pearsall Road)**

PROJECT NO.: **40-00312**

DATE: 3/24/2015

This addendum should be included in and be considered part of the plans and specifications for the name of the project. The contractor shall be required to sign an acknowledgement of the receipt of this addendum and submit with their bid.

ENGINEER'S ESTIMATE

City Construction	**$16,308,600**
Additive Alternative	$700,900.00
SAWS Water	$792,382.78
SAWS Sewer	$214,946.21
CPS Energy Gas	$4,116,407.66
Total Construction	***$22,133,236.65***

PROJECT MANUAL

- Replace "020 Bid Form" with Addendum No. 4 "020 Bid Form." Revised estimated construction budget.
- Replace "025 Unit Pricing Form" with Addendum No. 4 "025 Unit Pricing Form." Revised base bid items.
- Replace "Governing Specifications" with Addendum No. 4 "Governing Specifications." Added Item 2174 Wood Fence.
- Add Addendum No. 4 "Special Specification 2174 Wood fence."

PLANS

Ray Ellison Plans

- Replace Sheet 4 "Project Layout" with Addendum No. 4 Sheet 4 "Project Layout" Revised alignments.

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- Replace Sheet 6 “Horizontal Alignment Data” with Addendum No. 4 Sheet 6 “Horizontal Alignment Data” Revised retaining wall alignment data.
- Replace Sheet 7 “Horizontal Alignment Data” with Addendum No. 4 Sheet 6 “Horizontal Alignment Data” Revised sidewalk alignment data.
- Replace Sheet 15 “Supplemental General Notes” with Addendum No. 4 Sheet 15 “Supplemental General Notes” Added notes.
- Replace Sheet 18 “Summary of Quantities Roadway” with Addendum No. 4 Sheet 18 “Summary of Quantities Roadway” Updated quantities.
- Replace Sheet 19 “Summary of Quantities Roadway” with Addendum No. 4 Sheet 19 “Summary of Quantities Roadway” Updated quantities.
- Replace Sheet 20 “Summary of Quantities Drainage” with Addendum No. 4 Sheet 20 “Summary of Quantities Drainage” Updated quantities.
- Replace Sheet 23 “Summary of Quantities Planting Plans & SW3P” with Addendum No. 4 Sheet 23 “Summary of Quantities Planting Plans & SW3P” Updated quantities.
- Replace Sheet 24 “Summary of Quantities Traffic Signal” with Addendum No. 4 Sheet 24 “Summary of Quantities Traffic Signal” Updated quantities.
- Replace Sheet 39 “Traffic Control Plan Layout Phase 2” with Addendum No. 4 Sheet 39 “Traffic Control Plan Layout Phase 2” Revised typical section.
- Replace Sheet 40 “Traffic Control Plan Layout Phase 2” with Addendum No. 4 Sheet 40 “Traffic Control Plan Layout Phase 2” Revised typical section.
- Replace Sheet 41 “Traffic Control Plan Layout Phase 2” with Addendum No. 4 Sheet 41 “Traffic Control Plan Layout Phase 2” Revised typical section.
- Replace Sheet 42 “Traffic Control Plan Layout Phase 2” with Addendum No. 4 Sheet 42 “Traffic Control Plan Layout Phase 2” Revised typical section.
- Replace Sheet 43 “Traffic Control Plan Layout Phase 2” with Addendum No. 4 Sheet 43 “Traffic Control Plan Layout Phase 2” Revised typical section.
- Replace Sheet 56 “Traffic Control Plan Layout Phase 3” with Addendum No. 4 Sheet 56 “Traffic Control Plan Layout Phase 3” Revised roadway.
- Replace Sheet 105 “Roadway Plan & Profile Sheet STA 168+00 To STA 173+00” with Addendum No. 4 Sheet 105 “Roadway Plan & Profile Sheet STA 168+00 To STA 173+00” Revised retaining wall and sidewalk.
- Replace Sheet 106 “Roadway Plan & Profile Sheet STA 173+00 To STA 178+00” with Addendum No. 4 Sheet 106 “Roadway Plan & Profile Sheet STA 173+00 To STA 178+00” Revised retaining wall and sidewalk.
- Replace Sheet 121 “Sidewalk Plan & Profile Sheet STA 168+00 To STA 173+00” with Addendum No. 4 Sheet 121 “Sidewalk Plan & Profile Sheet STA 168+00 To STA 173+00” Revised retaining wall and sidewalk.

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- Replace Sheet 122 “Sidewalk Plan & Profile Sheet STA 173+00 To STA 178+00” with Addendum No. 4 Sheet 122 “Sidewalk Plan & Profile Sheet STA 173+00 To STA 178+00” Revised retaining wall and sidewalk.
- Replace Sheet 139 “Retaining Wall 2 Layout” with Addendum No. 4 Sheet 139 “Retaining Wall 2 Layout” Revised retaining wall and sidewalk.
- Replace Sheet 169 “Drainage Computations System C” with Addendum No. 4 Sheet 169 “Drainage Computations System C” Revised hydraulics.
- Replace Sheet 171 “Ditch Hydraulic Data Sheet” with Addendum No. 4 Sheet 171 “Ditch Hydraulic Data Sheet” Revised ditch.
- Replace Sheet 187 “Storm Drain Plan & Profile System C” with Addendum No. 4 Sheet 187 “Storm Drain Plan & Profile System C” Revised ditch.
- Replace Sheet 188 “Storm Drain Plan & Profile System C” with Addendum No. 4 Sheet 188 “Storm Drain Plan & Profile System C” Revised ditch.
- Replace Sheet 198 “Storm Drain Laterals” with Addendum No. 4 Sheet 198 “Storm Drain Laterals” Revised line C-1.
- Replace Sheet L1.15 “Planting Plan” with Addendum No. 4 Sheet L1.15 “Planting Plan” Revised plants.
- Replace Sheet L1.15A “Planting Plan” with Addendum No. 4 Sheet L1.15A “Planting Plan” Revised plants.
- Replace Sheet L1.16 “Planting Plan” with Addendum No. 4 Sheet L1.16 “Planting Plan” Revised plants.
- Replace Sheet L1.16A “Planting Plan” with Addendum No. 4 Sheet L1.16A “Planting Plan” Revised plants.
- Replace Sheet L2.2 “Planting Details and Plant Lists” with Addendum No. 4 Sheet L2.2 “Planting Details and Plant Lists.” Revised plants.
- Replace Sheet 394 “Proposed Cross Sections” with Addendum No. 4 Sheet 394 “Proposed Cross Sections” Revised retaining wall and sidewalk.
- Replace Sheet 395 “Proposed Cross Sections” with Addendum No. 4 Sheet 395 “Proposed Cross Sections” Revised retaining wall and sidewalk.
- Replace Sheet 396 “Proposed Cross Sections” with Addendum No. 4 Sheet 396 “Proposed Cross Sections” Revised retaining wall and sidewalk.
- Replace Sheet 397 “Proposed Cross Sections” with Addendum No. 4 Sheet 397 “Proposed Cross Sections” Revised retaining wall and sidewalk.

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TRANSPORTATION AND CAPITAL IMPROVEMENTS

CONTRACTOR'S QUESTIONS

1. Will a schedule be provided?

   Response: No. As stated at the Pre-bid meeting, the project is anticipated to have 22 months (660 days) of construction.

2. Will a Geotech Report be provided?

   Response: Provided in Addendum 02.

3. Is this a LAM project or Federally Funded?

   Response: This is not LAM or a federally funded project.

4. Sheet 30 Phase 1 Note 1: No Design Sheets included, So will the quantities of CTBs and Detours that are needed in Phase on be paid for (Especially around the box culvert work on the downstream side)?
   a. There may be more Temporary Pavement needed over the constructed box culverts, will this be paid for?

   Response: Barrier for utility work in Phase 1 was added in Addendum 02. See TCP Narrative for Culvert A construction phasing. No additional temporary pavement needed for box culvert construction.

5. Stone Wall: We could not locate this in the plans. Can a plan view & detail be provided of both the wall and footing?

   Response: Stone Wall detail is provided in Miscellaneous Roadway Details.

6. Boulders: There isn't a plan sheet regarding the boulders or a size shown. Could this please be provided?

   Response: Boulder detail is provided in Drainage Details.

7. Police Officers: Who will determine when this pay item will be used?

   Response: This will be determined in the field by the inspection crew.

8. Sheet 4 of Add Alt: Sewer and Water crossings at 303+80 and 304+60 may require a concrete saddle or encasement the storm crossing. Can a pay item be added for this work?
   Response: No. Build per plans

9. Sheet 19 & 24 Showing the MBC at Indian Creek. Will flowable fill be required between:
   a. 6x6 Box Culvert and the adjacent 6-8x6
   b. 36"RCP and the adjacent 6-8x6
   c. 4x4 & 8x8 Junction Boxes and the adjacent 6-8x6

   Response: Yes. Per TXDOT Standard, cement stabilized backfill between boxes, subsidiary to Box Culvert Item.

10. Will the contractor have to take delivery of all 24" steel pipe and fittings at one time and store on the jobsite?
    Response: No. All of the pipe will be ordered at one time but delivered to the site or storage facility as needed and as directed by CPS Energy. In other words, CPS Energy will provide the supplier with dates and quantities for each shipment of pipe. It is preferred that the pipe be stored at the site or at the gas contractor's facilities.

11. Can the contractor order the 24" pipe to be delivered in phases to reduce double-handling of the material??

    Response: See response to question #11. CPS Energy will work with the contractor to determine pipe shipment sizes, dates, and destination.

12. The Spread Footing Retaining Wall No 2 has an average height of 6.7 feet. The face of the wall is at 47.75 ft Left of Center line. The back edge of the footing is at 51.25 ft. We will have to lay the slopes back a little beyond that plus 2 feet for forms on the footing giving the top of slope at 61.25 ft from Centerline. The ROW width from Centerline is 50 feet. Will additional Construction Easements be provided to the Contractor by the City to construct the Retaining Wall? If so, will they be available before the anticipated May 20th Start Date??

    Response: No additional easements will be provided. Retaining wall and sidewalk are revised per Addendum 4.

13. Are there any special formliners or finishes required on the Spread Footing Retaining Walls?

    Response: No.

14. When are the abandoned gas lines required to be flushed out??

Response: They must be "flushed out" once they're abandoned. See general note #3 of the gas plans for more info.

15. What is the availability of CPS related materials?

    Response: All items listed as non-stock on the Material Summary Tables for each gas plan sheet will be ordered by CPS Energy prior to gas construction. Contractor should coordinate location of these materials and all stock materials with the CPS Energy inspector.

16. Are there only 155.00 tons of lime on this project as shown on the "025 Unit Pricing Form"?

    Response: Lime quantities are revised for Addendum 04.

17. TCP Phase II sheets show a 4" temporary sidewalk in the cross section, yet calls out a 2" depth in the legend. Which depth is correct?

    Response: All temporary sidewalks will have 2" depth. TCP sheets are revised for Addendum 04.

18. Who is responsible for cathodic protection?

    Response: The gas contractor will be responsible for installing all cathodic protection devices such as CPTLBs, anodes, etc. at the locations shown on the gas plans.

STATE OF TEXAS
JAMES A. LUTZ
84722
LICENSED
PROFESSIONAL ENGINEER

3/24/2015

CITY OF SAN ANTONIO

Project Name: Ray Ellison Boulevard (410 to Old Pearsall Road) **Date Issued: March 24, 2015**
ID NO.: 40-00312
The estimated construction budget for this contract is $22,133,236.65

020

BID FORM

I. BASE BID

Amount of Street/Roadway Construction Base Bid (Insert Amount in Words and Numbers):

_____ $_____

Amount of SAWS Water (12-5091 & 12-5104) Base Bid (Insert Amount in Words and Numbers):

_____ $_____

Amount of SAWS Sewer (12-5591) Base Bid (Insert Amount in Words and Numbers):

_____ $_____

Amount of CPS Base Bid (Insert Amount in Words and Numbers):

_____ $_____

Total Amount of Base Bid (Insert Amount in Words and Numbers):

_____ **$**_____

II. ALTERNATES

Amount of each Alternates (if applicable) insert in Numbers:

Additive Alternate #1 - Walnut Valley Storm Drain

Total Amount of Bid for Additive Alternate #1 (Insert Amount in Words and Numbers):

_____ $_____

III. UNIT PRICES

Bidders shall submit unit pricing on the 025 Unit Pricing form, and it shall be attached immediately following this sheet.

_____ _____
Official Name of Company (legal) Telephone No.

_____ _____
Address Fax No.

_____ _____
City, State and Zip Code E-mail Address

Name of the proposed **Project Manager:** _____

Name of the proposed **Site Superintendent:** _____

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025 UNIT PRICING FORM

PROJECT NAME:Ray Ellison Boulevard (410 to Old Pearsall Road)

PROJECT NO. 40-00312

BASE BID

ALT. NO.	ITEM NO.	DESC. CODE	S.P. NO	BID ITEM DESCRIPTION	UNIT OF MEASURE	APPROX. QUANTITIES	UNIT BID PRICE	AMOUNT	ITEM SEQUENCE NO.
				The City only will accept bid pricing to the hundredths. Any pricing extended out to three decimal points will be truncated to two decimal points in the City's favor.					
	100.1			MOBILIZATION	LS	1			
	100.2			INSURANCE AND BOND	LS	1			
	101.1			PREPARING RIGHT-OF-WAY	LS	1			
	103.1			REMOVE CONCRETE CURB	LF	6777			
	103.3			REMOVE SIDEWALKS AND DRIVEWAYS	SF	79366			
	103.4			REMOVE MISCELLANEOUS CONCRETE	SF	1653			
	104.1			STREET EXCAVATION	CY	36690			
	105.1			CHANNEL EXCAVATION	CY	4310			
	106.1			BOX CULVERT EXCAVATION AND BACKFILL	CY	17804			
	107.1			EMBANKMENT (FINAL)(ORD COMP)(TY B)	CY	4420			
	108.1			LIME TREATED SUBGRADE (8" COMPACTED DEPTH)	SY	66203			
	108.2			LIME	TON	1868			
	203.1			TACK COAT	GAL	12502			
	205.2			HOT MIX ASPHALTIC PAVEMENT, TYPE B (8" COMP. DEPTH)	SY	64200			
	205.3			HOT MIX ASPHALTIC PAVEMENT, TYPE C (2" COMP. DEPTH)	SY	62525			
	205.4			HOT MIX ASPAHLTIC PAVEMENT, TYPE D (1.5" COMP. DEPTH)	SY	62525			
	209.1			BUS STOP CONCRETE PAD	SY	1782			
	302.1			METAL FOR STRUCTURES	LBS	4665			
	306.1			SRUCTURAL EXCAVATION	CY	284			
	307.1			CONCRETE STRUCTURE (WINGWALL)(PW-1)	CY	127			
	307.2			CONCRETE STRUCTURE (WINGWALL)(SW-0)	CY	7			
	307.3			CONCRETE STRUCTURE (WINGWALL)(FW-0)	CY	3			
	307.4			CONCRETE STRUCTURE (FLUME)	SY	16			
	307.5			CONCRETE STRUCTURE (HEADWALLS OR OUTFALL STRUCTURES)	SY	21			
	308.1			DRILLED SHAFTS (36")	LF	72			
	308.3			DRILLED SHAFTS (30")	LF	12			
	401.101			REINFORCED CONCRETE PIPE (CLASS III)(24" DIA)	LF	2402			
	401.102			REINFORCED CONCRETE PIPE (CLASS III)(30" DIA)	LF	448			
	401.103			REINFORCED CONCRETE PIPE (CLASS III)(36" DIA)	LF	592			

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PROJECT NO. 40-00312

ALT. NO.	ITEM NO.	DESC. CODE	S.P. NO	BID ITEM DESCRIPTION	UNIT OF MEASURE	APPROX. QUANTITIES	UNIT BID PRICE	AMOUNT	ITEM SEQUENCE NO.
	401.104			REINFORCED CONCRETE PIPE (CLASS III)(42" DIA)	LF	176			
	401.105			REINFORCED CONCRETE PIPE (CLASS IV)(24" DIA)	LF	698			
	401.106			REINFORCED CONCRETE PIPE (CLASS IV)(30" DIA)	LF	108			
	410.2			GRAVEL SUBGRADE FILTER	CY	96			
	500.1			CONCRETE CURB	LF	8187			
	500.6			CONCRETE CURB (FLUSH CURB)	LF	13523			
	502.1			CONCRETE SIDEWALKS	SY	12566			
	502.3			SIDEWALK DRAIN	EA	1			
	502.4			CONCRETE SIDEWALK FOR BUS SHELTER	SY	54			
	503.2			PORTLAND CEMENT CONCRETE DRIVEWAY - COMMERCIAL	SY	2928			
	504.1			CONCRETE MEDIAN	SY	374			
	504.2			CONCRETE DIRECTIONAL ISLAND	SY	164			
	505.1			CONCRETE RIPRAP (5")	SY	1235			
	506.1			CONCRETE RETAINING WALLS - COMBINATION TYPE	CY	118			
	508.1			RELOCATING WIRE FENCE	LF	63			
	512.3			VALVE BOX ADJUSTMENTS	EA	2			
	515.1			TOPSOIL	CY	2428			
	517.1			BRIDGE RAIL (TXDOT C-223)	LS	208			
	520.1			HYDROMULCH	SY	883			
	522.1			SIDEWALK PIPE RAILING	LF	491			
	530.1			BARRICADES, SIGNS, AND TRAFFIC HANDLING	LS	1			
	531			COSA SIGNS	EA	123			
	535.1			4 INCH WIDE YELLOW LINE	LF	18988			
	535.101			COMBINATION THRU/RIGHT WHITE ARROW	EA	2			
	535.11			COMBINATION THRU/LEFT WHITE ARROW	EA	3			
	535.16			STRAIGHT WHITE ARROW BICYCLE FACILITY	EA	28			
	535.17			BICYCLE RIDER SYMBOL	EA	28			
	535.2			4 INCH WIDE WHITE LINE	LF	45973			
	535.4			8 INCH WIDE WHITE LINE	LF	460			
	535.51			WHITE YIELD TRIANGLE (18")	EA	15			
	535.52			MEDIAN NOSE WHITE	EA	5			
	535.53			24 INCH WIDE YELLOW LINE	LF	34			
	535.7			24 INCH WIDE WHITE LINE	LF	1604			
	535.9			LEFT WHITE ARROW	EA	2			

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ALT. NO.	ITEM NO.	DESC. CODE	S.P. NO	BID ITEM DESCRIPTION	UNIT OF MEASURE	APPROX. QUANTITIES	UNIT BID PRICE	AMOUNT	ITEM SEQUENCE NO.
	537.6			TRAFFIC BUTTON (TYPE I-C)	EA	464			
	537.8			TRAFFIC BUTTON (TYPE II A-A)	EA	479			
	540.1			ROCK FILTER DAMS (INSTALL) (TYPE 2)	LF	245			
	540.10			CURB INLET GRAVEL FILTER	LF	270			
	540.11			BAGGED INLET GRAVEL FILTERS	LF	70			
	540.2			ROCK FILTER DAMS (REMOVE) (TYPE 2)	LF	245			
	540.3			ROCK FILTER DAMS (INSTALL) (TYPE 3)	LF	142			
	540.4			ROCK FILTER DAMS (REMOVE) (TYPE 3)	LF	142			
	540.6			CONSTRUCTION EXITS (INSTALL)	SY	900			
	540.7			CONSTRUCTION EXITS (REMOVE)	SY	900			
	540.8			SANDBAGS FOR TEMPORARY SEDIMENT CONTROL FENCE	LF	414			
	540.9			TEMPORARY SEDIMENT CONTROL FENCE	LF	12119			
	550.1			TRENCH EXCAVATION SAFETY PROTECTION	LF	9330			
	551.1			TEMPORARY SPECIAL SHORING	SF	1171			
	554.1			EROSION CONTROL MATTING	SY	493			
	618.1			TRENCH CONDUIT (PVC SHCEDULE 40) (2")	LF	325			
	618.2			TRENCH CONDUIT (PVC SHCEDULE 40) (3")	LF	130			
	618.5			BORE CONDUIT (PVC SHCEDULE 40) (3")	LF	1675			
	620.1			ELECTRICAL CONDUCTORS (NO. 6) (BARE)	LF	15			
	620.2			ELECTRICAL CONDUCTORS (NO. 8) (BARE)	LF	1840			
	620.3			ELECTRICAL CONDUCTORS (NO. 6) (INSULATED)	LF	25			
	624.4			GROUND BOXES TY D (162922)	EA	12			
	628.1			ELECTRICAL SERVICES (TYPE D) (120/240V)	EA	1			
	633.1			BATTERY BACKUP SYSTEM	EA	1			
	680.1			INSTALLATION OF HIGHWAY TRAFFIC SIGNALS [ISOLATED]	EA	3			
	681.1			TEMPORARY TRAFFIC SIGNALS (PER INTERSECTION)	EA	2			
	682.1			VEHICLE SIGNAL SECTION WITH BACK PLATE (3 SEC)	EA	15			
	682.2			VEHICLE SIGNAL SECTION WITH BACK PLATE (4 SEC)	EA	2			
	683.1			LED COUNTDOWN PEDESTRIAN SIGNAL MODULE	EA	16			
	684.1			TRAFFIC SIGNAL CABLES (TYPE A) (14 AWG) (9 CONDUCTOR)	LF	3545			
	684.11			TRAFFIC SIGNAL CABLES (TYPE A) (14 AWG) (7 CONDUCTOR)	LF	840			
	684.12			TRAFFIC SIGNAL CABLES (TYPE A) (14 AWG) (4 CONDUCTOR)	LF	680			
	685.4			SOLAR-POWERED (PHOTOVOLTAIC) SCHOOL ZONE FLASHER ASSEMBLIES	EA	6			
	686.1			INSTALL TRAFFIC SIGNAL POLE ASSEMBLIES (STEEL)(STR TY D)(LUM)	EA	2			

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ALT. NO.	ITEM NO.	DESC. CODE	S.P. NO	BID ITEM DESCRIPTION	UNIT OF MEASURE	APPROX. QUANTITIES	UNIT BID PRICE	AMOUNT	ITEM SEQUENCE NO.
	686.5			INSTALL TRAFFIC SIGNAL POLE ASSEMBLY SMA-80 (32 FT) ILSN	EA	1			
	686.51			INSTALL TRAFFIC SIGNAL POLE ASSEMBLY SMA-80 (36 FT) ILSN	EA	1			
	686.52			INSTALL TRAFFIC SIGNAL POLE ASSEMBLY SMA-80 (40FT) ILSN	EA	2			
	687.1			PED POLE ASSEMBLY (10 FT TALL, GALVANIZED STEEL)	EA	9			
	688.2			PED DETECTORS (2 INCH PUSH BUTTON)	EA	16			
	688.3			AUDIBLE PEDESTRIAN SIGNAL UNITS [2" PUSHBUTTON AND SIGN]	EA	16			
	693.11			INSTALL INTERNALLY LIGHTED STREET NAME SIGN (LED)	EA	4			
	696.12			INSTALL RADAR ADVANCE DETECTION ASSEMBLY (RADD)	EA	4			
	696.13			INSTALL RADAR PRESENCE DETECTION ASSEMBLY (RPDD)	EA	8			
	696.14			INSTALL RADAR COMMUNICATION CABLE	LF	1890			
	801.1			LEVEL I PROTECTIVE FENCING	LF	7500			
	802.2			LEVEL II PRUNING	LS	1			
	1003.1			LANDSCAPE BOULDERS	EA	3			
	5300.2			OFF-DUTY POLICE OFFICERS	HRS	160			
	5999.1			STONE WALL	SF	1916			
	8000.1			CPS POWER POLE BRACING	LS	1			
	9000.101			ENGINEERED SOIL MEDIA	CY	2352			
	9000.102			GRAVEL DRAINAGE LAYER	CY	779			
	9000.103			4" PERFORATED PVC PIPE	LF	10236			
	9000.104			4" SOIL MEDIA BARRIER	CY	264			
	9000.105			LATERAL HYDRAULIC RESTRICTION BARRIER	SY	4188			
	9000.106			BERM	CY	8			
	9000.107			4" PVC PIPE	LF	1315			
	329200.1			ROCK MULCH (W/ WEED BARRIER)	SF	151763			
	329200.2			DRAINFIELD SEED MIX	SF	1114			
	329200.3			BARK MULCH WITH SHORT GRASS MIX	SF	7578			
	329200.4			SOLID SOD BERMUDA	SY	1986			
	329200.5			HYDROSEED	SY	18840			
	329300.1			NATIVE PLANTS 1 GALLON	EA	10498			
	329300.2			NATIVE PLANTS 3 GALLON	EA	1271			
	329300.3			NATIVE PLANTS 5 GALLON	EA	607			
	329300.4			DESERT WILLOW TREES (4" CALIPER)	EA	2			
	329300.5			MONTERREY OAKS (4" CALIPER)	EA	16			
	0168	2001		VEGETATIVE WATERING	MG	326			

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PROJECT NO. 40-00312

ALT. NO.	ITEM NO.	DESC. CODE	S.P. NO	BID ITEM DESCRIPTION	UNIT OF MEASURE	APPROX. QUANTITIES	UNIT BID PRICE	AMOUNT	ITEM SEQUENCE NO.
	0423	2007		RETAINING WALL (SPREAD FOOTING)	SF	2522			
	0432	2016		RIPRAP (STONE COMMON)(DRY)(8 IN)	CY	13			
	0432	2069		RIPRAP (STONE COMMON)(DRY)(18 IN)	CY	51			
	0432	9999		RIPRAP (STONE COMMON)(DRY)	SY	125			
	0452	2010		REMOV RAIL (PEDESTRIAN)	LF	110			
	0462	2001		CONC BOX CULV (3 FT X 2 FT)	LF	666			
	0462	2003		CONC BOX CULV (4 FT X 2 FT)	LF	416			
	0462	2006		CONC BOX CULV (5 FT X 2 FT)	LF	240			
	0462	2008		CONC BOX CULV (5 FT X 4 FT)	LF	698			
	0462	2010		CONC BOX CULV (6 FT X 3 FT)	LF	195			
	0462	2011		CONC BOX CULV (6 FT X 4 FT)	LF	1968			
	0462	2013		CONC BOX CULV (6 FT X 6 FT)	LF	333			
	0462	2021		CONC BOX CULV (8 FT X 6 FT)	LF	555			
	0462	2068		CONC BOX CULV (10 FT X 3 FT)	LF	390			
	0462	9999		CONC BOX CULV (2 FT X 1 FT)	LF	257			
	0465	2080		INLET (COMPL)(DROP)(TY 3)	EA	1			
	0465	2143		INLET (COMPL)(TRAFFIC)(TY X-1)	EA	35			
	0465	2145		INLET (COMPL)(TRAFFIC)(TY X-3)	EA	1			
	0465	2148		INLET (COMPL)(TRAFFIC)(TY X-6)	EA	1			
	0465	2190		INLET (COMPL)(DROP)(TY W-1)	EA	3			
	0465	2195		INLET (COMPL)(CURB)(TY 1)	EA	16			
	0465	4034		INLET (COMPL)(PSL)(RC)(3FTX3FT)	EA	6			
	0465	4036		INLET (COMPL)(PSL)(RC)(4FTX4FT)	EA	12			
	0465	4037		INLET (COMPL)(PSL)(RC)(4FTX5FT)	EA	2			
	0465	4039		INLET (COMPL)(PSL)(RC)(5FTX6FT)	EA	6			
	0465	4040		INLET (COMPL)(PSL)(RC)(6FTX6FT)	EA	1			
	0465	4041		INLET (COMPL)(PSL)(RC)(8FTX8FT)	EA	8			
	0467	2213		SET (TY II)(30 IN)(RCP)(3:1)(C)	EA	2			
	0467	2224		SET (TY II)(24 IN)(RCP)(4:1)(C)	EA	2			
	0467	9999		SET (TY I) (S=2 FT) (HW=1 FT) (4:1) P	EA	5			
	0496	2005		REMOV STR (WINGWALL)	EA	2			
	0496	2006		REMOV STR (HEADWALL)	EA	4			
	0496	2007		REMOV STR (PIPE)	LF	292			
	0496	2008		REMOV STR (BOX CULVERT)	LF	425			

CITY OF SAN ANTONIO

025 UNIT PRICING FORM

PROJECT NAME:Ray Ellison Boulevard (410 to Old Pearsall Road)
PROJECT NO. 40-00312

ALT. NO.	ITEM NO.	DESC. CODE	S.P. NO	BID ITEM DESCRIPTION	UNIT OF MEASURE	APPROX. QUANTITIES	UNIT BID PRICE	AMOUNT	ITEM SEQUENCE NO.
	0496	2030		REMOVE STR (BOLLARD)	EA	5			
	0496	2289		REMOVE STR (DRAINAGE FLUME)	EA	1			
	0508	2001		CONSTRUCTING DETOURS	STA	106			
	0512	2008		PORT CTB (FUR & INST)(LOW PROF)(TY 1)	LF	9100			
	0512	2009		PORT CTB (FUR & INST)(LOW PROF)(TY 2)	LF	720			
	0512	2026		PORT CTB (MOVE)(LOW PROF)(TY 1)	LF	8480			
	0512	2027		PORT CTB (MOVE)(LOW PROF)(TY 2)	LF	360			
	0512	2044		PORT CTB (REMOVE)(LOW PROF)(TY 1)	LF	9100			
	0512	2045		PORT CTB (REMOVE)(LOW PROF)(TY 2)	LF	720			
	0529	2094		CONC CURB (TY F3)	LF	193			
	0531	2005		CURB RAMPS (TY 1)	EA	7			
	0531	2006		CURB RAMPS (TY 2)	EA	2			
	0531	2007		CURB RAMPS (TY 3)	EA	4			
	0531	2009		CURB RAMPS (TY 6)	EA	6			
	0531	2010		CURB RAMPS (TY 7)	EA	17			
	0531	2014		CURB RAMPS (TY 22)	EA	1			
	0531	2040		CURB RAMPS (TY 5)	EA	2			
	0542	2001		REMOVING METAL BEAM GUARD FENCE	LF	400			
	0542	2002		REMOVING TERMINAL ANCHOR SECTION	EA	6			
	0644	2080		RELOCATE SM RD SN SP & AM(GALV SQ) COSA	EA	1			
	0662	2001		WK ZN PAV MRK NON-REMOV (W) 4" (BRK)	LF	100			
	0662	2004		WK ZN PAV MRK NON-REMOV (W) 4" (SLD)	LF	1103			
	0662	2016		WK ZN PAV MRK NON-REMOV (W) 24" (SLD)	LF	11			
	0662	2032		WK ZN PAV MRK NON-REMOV (Y) 4" (SLD)	LF	1718			
	0662	2061		WK ZN PAV MRK REMOV (TRAF BTN) TY W	LF	940			
	0662	2067		WK ZN PAV MRK REMOV (W) 4" (SLD)	LF	27272			
	0662	2079		WK ZN PAV MRK REMOV (W) 24" (SLD)	LF	420			
	0662	2084		WK ZN PAV MRK REMOV (W) (ARROW)	EA	3			
	0662	2099		WK ZN PAV MRK REMOV (Y) 4" (SLD)	LF	45122			
	0662	2113		WK ZN PAV MRK SHT TERM (TAB) TY W	EA	2290			
	0662	2114		WK ZN PAV MRK SHT TERM (TAB) TY Y	EA	940			
	2174	9999		WOOD FENCE	LF	365			
	6007	2001		REMOVING TRAFFIC SIGNALS	EA	2			
	6834	2001		PORTABLE CHANGEABLE MESSAGE SIGN	DAY	154			
							Total Bid Amount:		

CITY OF SAN ANTONIO

025 UNIT PRICING FORM

PROJECT NAME:Ray Ellison Boulevard (410 to Old Pearsall Road)

PROJECT NO. 40-00312

ADDITIVE ALTERNATIVE #1

ALT. NO.	ITEM NO.	DESC. CODE	S.P. NO	BID ITEM DESCRIPTION	UNIT OF MEASURE	APPROX. QUANTITIES	UNIT BID PRICE	AMOUNT	ITEM SEQUENCE NO.
				The City only will accept bid pricing to the hundredths. Any pricing extended out to three decimal points will be truncated to two decimal points in the City's favor.					
	100.1			MOBILIZATION	LS	1			
	100.2			INSURANCE AND BOND	LS	1			
	101.1			PREPARING RIGHT-OF-WAY	LS	1			
	103.1			REMOVE CONCRETE CURB	LF	10			
	103.4			REMOVE MISCELLANEOUS CONCRETE	SF	623			
	106.1			BOX CULVERT EXCAVATION AND BACKFILL	CY	3553			
	205.3			HOT MIX ASPHALTIC PAVEMENT, TYPE C (2" COMP. DEPTH)	SY	2682			
	208.1			SALVAGING, HAULING, AND STOCKPILING RECLAIMABLE ASPHALTIC PAVEMI	SY	2682			
	500.1			CONCRETE CURB	LF	37			
	502.1			CONCRETE SIDEWALKS	SY	21			
	505.1			COMPLETE RIPRAP (6 INCHES THICK)	SY	28			
	506.1			CONCRETE RETAINING WALLS-COMB TYPE	CY	3			
	511.3			REPLACING WITH HOT MIX ASPHALTIC CONCRETE PAVEMENT - 8 INCH COMP.	SY	957			
	512.3			VALVE BOX ADJUSTMENTS	EA	1			
	516.1			BERMUDA SODDING	SY	40			
	522.1			SIDEWALK PIPE RAILING	LF	32			
	530.1			BARRICADES, SIGNS AND TRAFFIC HANDLING	LS	1			
	540.1			ROCK FILTER DAMS (INSTALL TYPE 2)	LF	100			
	540.11			BAGGED INLET GRAVEL FILTERS	LF	50			
	540.2			ROCK FILTER DAMS (REMOVE TYPE 2)	LF	100			
	550.1			TRENCH EXCAVATION SAFETY PROTECTION	LF	846			
	168	2001		VEGETATIVE WATERING	MG	1			
	0452	2010		REMOV RAIL (PEDESTRIAN)	LF	28			
	0462	2007		CONC BOX CULV (5 FT X 3 FT)	LF	692			
	0462	2010		CONC BOX CULV (6 FT X 3 FT)	LF	154			
	0465	2477		INLET (COMP)(DROP)(TY W-2)	EA	1			
	0465	4039		INLET (COMPL)(PSL)(RC)(5FTX6FT)	EA	1			
	0465	4041		INLET (COMPL)(PSL)(RC)(8FTX8FT)	EA	2			
							Total Bid Amount:		

CITY OF SAN ANTONIO

025 UNIT PRICING FORM

PROJECT NAME:Ray Ellison Boulevard (410 to Old Pearsall Road)

PROJECT NO. 40-00312

SAWS WATER JOB NO. 12-5091 AND 12-5104

ALT. NO.	ITEM NO.	DESC. CODE	S.P. NO	BID ITEM DESCRIPTION	UNIT OF MEASURE	APPROX. QUANTITIES	UNIT BID PRICE	AMOUNT	ITEM SEQUENCE NO.
				The City only will accept bid pricing to the hundredths. Any pricing extended out to three decimal points will be truncated to two decimal points in the City's favor.					
	100			MOBILIZATION	LS	1			
	101			PREPARING RIGHT OF WAY	LS	1			
	205			HOT MIX ASPHALTIC PAVEMENT - TYPE D (2" COMPACTED DEPTH)	SY	602			
	206			ASPHALT TREATED BASE (10" COMPACTED DEPTH)	SY	457			
	550			TRENCH EXCAVATION SAFETY PROTECTION	LF	4413			
	818			8" PVC WATERLINE (RESTRAINED)	LF	80			
	818			12" PVC WATERLINE (RESTRAINED)	LF	4067			
	818			16" PVC WATERLINE (RESTRAINED)	LF	146			
	824			RELAY 1" LONG SERVICE	EA	1			
	824			RELAY 1-1/2" SHORT SERVICE	EA	4			
	824			RELAY 2" LONG SERVICE	EA	1			
	826			VALVE BOX ADJUSTMENT	EA	7			
	828			8" GATE VALVES	EA	2			
	828			12" GATE VALVES	EA	13			
	832			16" x 12" TAPPING SLEEVE AND VALVES	EA	2			
	834.1			FIRE HYDRANT	EA	10			
	834.2			TAPPED FIRE HYDRANT	EA	2			
	836			PIPE FITTINGS, ALL SIZES AND TYPES	TON	11.447			
	840			8" WATER TIE-INS	EA	2			
	840			12" WATER TIE-INS	EA	12			
	840			16" WATER TIE-INS	EA	2			
	841			HYDROSTATIC TESTING	EA	8			
	844			2" BLOWOFF, TEMPORARY	EA	16			
	844			2" BLOWOFF, PERMANENT	EA	3			
	846			1" AIR RELEASE ASSEMBLY	EA	1			
	856.2			12" CARRIER PIPE	LF	105			
	856.2			16" CARRIER PIPE	LF	44			
	856.3			CASING OR LINER 24"	LF	105			
	856.3			CASING OR LINER 30"	LF	44			
	3000			REMOVAL, TRANSPORTATION AND DISPOSAL OF AC PIPE	LF	910			
							Total Bid Amount:		

CITY OF SAN ANTONIO

025 UNIT PRICING FORM

PROJECT NAME:Ray Ellison Boulevard (410 to Old Pearsall Road)

PROJECT NO. 40-00312

SAWS SEWER JOB NO. 12-5591

ALT. NO.	ITEM NO.	DESC. CODE	S.P. NO	BID ITEM DESCRIPTION	UNIT OF MEASURE	APPROX. QUANTITIES	UNIT BID PRICE	AMOUNT	ITEM SEQUENCE NO.
				The City only will accept bid pricing to the hundredths. Any pricing extended out to three decimal points will be truncated to two decimal points in the City's favor.					
	100			MOBILIZATION	LS	1			
	101			PREPARING RIGHT OF WAY	LS	1			
	550			TRENCH EXCAVATION SAFETY PROTECTION	LF	668.58			
	848			10" PVC SANITARY SEWER LINE (0'-6')	LF	256.09			
	848			10" PVC SANITARY SEWER LINE (6'-10')	LF	215.9			
	848			18" PVC SANITARY SEWER LINE (6'-10')	LF	25.61			
	848			18" PVC SANITARY SEWER LINE (10'-14')	LF	170.98			
	851			LOCATE AND ADJUST EXSTING MANHOLE	EA	1			
	852.1			SANITARY SEWER MANHOLE (0'-6')	EA	10			
	852.3			EXTRA DEPTH MANHOLE (>6')	VF	22.89			
	854			SANITARY SEWER LATERALS	LF	53			
	854.1			SANITARY SEWER CLEAN-OUT	EA	2			
	855			RECONSTRUCTION OF EXISTING MANHOLE	EA	4			
	858			CONCRETE ENCASEMENT, CRADLES, SADDLES AND COLLARS	CY	21			
	860			VERTICAL STACKS	VF	4			
	862.1			ABANDONMENT OF 15" SANITARY SEWER MAIN	LF	187			
	862.2			ABANDONMENT OF 18" SANITARY SEWER MAIN	LF	15.5			
	864			BYPASS PUMPING	LS	1			
	866			SEWER MAIN TELEVISION INSPECTION (8"-15")	LF	471.99			
	866			SEWER MAIN TELEVISION INSPECTION (18"-24")	LF	196.59			

Total Bid Amount:

CITY OF SAN ANTONIO

025 UNIT PRICING FORM

PROJECT NAME:Ray Ellison Boulevard (410 to Old Pearsall Road)
PROJECT NO. 40-00312

CPS ENERGY Job #1798754

ALT. NO.	ITEM NO.	DESC. CODE	S.P. NO	BID ITEM DESCRIPTION	UNIT OF MEASURE	APPROX. QUANTITIES	UNIT BID PRICE	AMOUNT	ITEM SEQUENCE NO.
				The City only will accept bid pricing to the hundredths. Any pricing extended out to three decimal points will be truncated to two decimal points in the City's favor.					

NOTE A: For each of the items below, the Contractor's work is to include: trenching, joining, testing, coating steel, building and painting risers and meter set-ups, connecting new pipe to existing pipe and installing all necessary fittings for tie-ins such as, stopper fittings and 3-way stopper tees, valves, insulating joints, installing all necessary cathodic protection devices such as CPTLB's and anodes, sand padding, backfilling and compacting to consistency of original soil, replacing paving, curbs, and sidewalks removed or damaged during construction, and cleanup as may be necessary in each instance.

NOTE B: Trenching is considered to be the normal method of service installation and is required on all service adjustments. A gas service can be rerun by INSERTION, when the old service is PULLED from the riser to one foot inside the property line, ONLY at the discretion of the CPS Energy inspector.

NOTE C: Bid quantities shown are estimates by CPS Energy. Per foot prices shall be applied to the actual distance measured along the top of the trench or the actual length of the bore, as applicable.

NOTE D: Unit prices shall include insurance costs. CPS Energy's insurance requirements are specified in Exhibit GAS-1.

ALT. NO.	ITEM NO.	DESC. CODE	S.P. NO	BID ITEM DESCRIPTION	UNIT OF MEASURE	APPROX. QUANTITIES	UNIT BID PRICE	AMOUNT	ITEM SEQUENCE NO.
	1			Install Gas Main or Casing (Distance as Measured Along the Top of Trench).					
				2" Plastic Pipe and Tracer Wire	LF	2538			
				4" Plastic Pipe and Tracer Wire	LF	908			
				6" Plastic Pipe and Tracer Wire	LF	1981			
				8" Plastic Pipe and Tracer Wire	LF	392			
				6" Steel Pipe	LF	68			

PROJECT NAME:Ray Ellison Boulevard (410 to Old Pearsall Road)
PROJECT NO. 40-00312

				8" Steel Pipe	LF	81			
				24" Steel Pipe	LF	9593			
	The COST to abandon the existing main(s) is not an ADDITIONAL item and is to be included in the Unit Price(s) for this item.								
	2			Install Gas Main or Casing by directional drilling. (Includes all costs for installation and restoration cost of bore pits.)					
				4" Plastic Pipe with Tracer Wire	LF	147			
	The COST to abandon the existing main(s) is not an ADDITIONAL item and is to be included in the Unit Price(s) for this item.								
	3			Rerun and Lower Gas Service off New Main (Main to 1 ft. inside Prop. Line) Sizes 1" through 4."					
				Short Side	EA	2			
				Long Side	EA	5			
	4			Rerun and Lower Gas Service off New Main (Main to Meter) Sizes 1" through 4." (Includes installation of new anodeless riser.)					
				Short Side	EA	1			
	5			Replace existing steel service riser on customer premises with new anodeless riser, rebuilding to standard, and tie into existing plastic service line.					
				1" through 4" risers	EA	4			
	6			Concrete/Flatwork	SY	3			
	7			Flowable Fill	CY	257			
	8			Cut and Restore Pavement. To be used as directed by CPS representative.	SY	771			
	9			Install Gas Regulator Station	LS	1			

PROJECT NAME:Ray Ellison Boulevard (410 to Old Pearsall Road)
PROJECT NO. 40-00312

	10			Contractor to hire T.D. Williamson (TDW) to provide all labor and necessary fittings for Double-Stopple Bypass Plugging and Hot tapping operation on Existing 24" steel gas main. Contractor to provide any additional labor necessary to complete the bypass or hot tapping and plugging.					
				Bypass (24" Stopple fittings & 12" Steel Bypass)	EA	2			
	11			Contractor to hire T.D. Williamson (TDW) to provide all labor and necessary fittings for Plugging and Hot tapping operation on Existing 24" steel gas main. Contractor to provide any additional labor necessary to complete hot tapping and plugging.					
				Plug (24" Stopple fitting)	EA	1			

Total Bid Amount:

_____certifies that the unit prices shown on this complete computer print-out for all of the bid items and the alternates contained in this proposal are the unit prices intended and that its bid will be tabulated using these unit prices and no other information from this print-out.

_____Acknowledged and agrees that the total bid amount shown will be read as its total bid and further agrees that the official total bid amount will be determined by multiplying the unit bid prices shown in this print-out by the respective estimated quantities shown in the proposal and then totaling all of the extended amounts. _____ agrees to the terms, conditions, and requirements of the bidder's bid proposal.

Signed: _____ Date: _____

Title: _____

CITY OF SAN ANTONIO, TEXAS
GOVERNING SPECIFICATIONS

All standard specifications and special specifications applicable to this project are identified as follows:

CITY OF SAN ANTONIO
STANDARD SPECIFICATIONS FOR CONSTRUCTION (JUNE 2008)

ITEM NO.	DESCRIPTION
100	MOBILIZATION
101	PREPARING RIGHT-OF-WAY
103	REMOVE CONCRETE
104	STREET EXCAVATION
105	CHANNEL EXCAVATION
106	BOX CULVERT EXCAVATION AND BACKFILL
107	EMBANKMENT
108	LIME TREATED SUBGRADE
203	TACK COAT
205	HOT MIX ASPHALTIC CONCRETE PAVEMENT
206	ASPHALTIC TREATED BASE
208	SALVAGING, HAULING, & STOCKPILING RECLAIMABLE ASPHALTIC PAVEMENT
209	CONCRETE PAVEMENT
302	METAL FOR STRUCTURES
307	CONCRETE STRUCTURES
308	DRILLED SHAFTS AND UNDER-REAMED FOUNDATIONS
401	REINFORCED CONCRETE PIPE
410	GRAVEL SUBGRADE FILLER
412	CEMENT STABILIZED SAND
500	CONCRETE CURB, GUTTER, AND CONCRETE CURB AND GUTTER
502	CONCRETE SIDEWALKS
503	ASPHALTIC CONCRETE, PORTLAND CEMENT CONCRETE, AND GRAVEL DRIVEWAYS
504	CONCRETE MEDIAN
505	CONCRETE RIPRAP
506	CONCRETE RETAINING WALL – COMBINATION TYPE
508	RELOCATING WIRE FENCE
511	CUTTING AND REPLACING PAVEMENTS (TRENCH REPAIR)
512	VALVE BOX ADJUSTMENTS
515	TOPSOIL
516	SODDING
522	SIDEWALK PIPE RAILING
526	FIELD OFFICE
530	BARRICADES, SIGNS, AND TRAFFIC HANDLING
531	SIGNS
533	CLEANING AND REMOVAL OF PAVEMENT MARKINGS AND MARKERS
535	HOT APPLIED THERMOPLASTIC PAVEMENT MARKINGS
537	RAISED PAVEMENT MARKERS
540	TEMPORARY EROSION, SEDIMENTATION AND WATER POLLUTION PREVENTION AND CONTROL
550	TRENCH EXCAVATION SAFETY PROTECTION
551	TEMPORARY SPECIAL SHORING
600	TRAFFIC SIGNAL GENERAL CONDITIONS

618	CONDUIT
620	ELECTRICAL CONDUCTORS
624	GROUND BOXES
625	ZINC-COATED STEEL WIRE STRAND
628	ELECTRICAL SERVICES
633	BATTERY BACKUP SYSTEM FOR TRAFFIC SIGNAL
636	ALUMINUM SIGNS
680	INSTALLATION OF HIGHWAY TRAFFIC SIGNALS
681	TEMPORARY TRAFFIC SIGNALS
682	VEHICLE AND PEDESTRIAN SIGNAL HEADS
683	LED COUNTDOWN PEDESTRIAN SIGNAL MODULE
684	TRAFFIC SIGNAL CABLES
685	FLASHING BEACON ASSEMBLIES
686	TRAFFIC SIGNAL POLE ASSEMBLIES (STEEL)
687	PEDESTAL POLE ASSEMBLIES
688	PEDESTRIAN DETECTORS AND VEHICLE LOOP DETECTORS
693	INTERNALLY LIGHTED STREET NAME SIGN ASSEMBLIES
696	RADAR
700	COST LOADED PROJECT SCHEDULES
801	TREE AND LANDSCAPE PROTECTION
802	TREE PRUNING, SOIL AMENDING AND FERTILIZATION
1000	WEB PORTAL

SPECIAL PROVISIONS

SPECIAL PROVISIONS UPDATE MAY 2009
SPECIAL PROVISIONS UPDATE FEBRUARY 2010
SPECIAL PROVISIONS UPDATE JUNE 2010
SPECIAL PROVISIONS UPDATE NOVEMBER 2013
SPECIAL PROVISION TO THE GENERAL CONDITIONS

SPECIAL SPECIFICATIONS

800	PROJECT SIGN
1003	LANDSCAPE BOULDER
2174	WOOD FENCE
5300	OFF-DUTY POLICE OFFICER
5999	STONE MASONRY (STONE WALL)
8000	CPS POWER POLE BRACING
9000	LOW IMPACT DEVELOPMENT
328400	LANDSCAPE IRRIGATION
329113	SOIL PREPARATION
329200	TURF AND GRASSES
329300	PLANTS

TEXAS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MAINTENANCE OF HIGHWAYS, STREETS, AND BRIDGES 2004

168	VEGETATIVE WATERING
423	RETAINING WALLS

432	RIP RAP
452	PEDESTRIAN RAIL
462	CONCRETE BOX CULVERT
465	INLET
467	SAFETY END TREATMENTS
496	REMOVING STRUCTURES
508	CONSTRUCTION DETOURS
512	PORTABLE CONCRETE TRAFFIC BARRIER
529	CONCRETE CURB, GUTTER, AND COMBINED CURB AND GUTTER
531	CURB RAMPS
542	REMOVING METAL BEAM GUARD FENCE
556	PIPE UNDERDRAINS
644	SMALL ROADSIDE SIGN SUPPORTS AND ASSEMBLIES
662	WORK ZONE PAVEMENT MARKINGS
3268	DENSE GRADED HOT MIX ASPHALT
6007	REMOVING TRAFFIC SIGNALS
6834	PORTABLE CHANGEABLE MESSAGE SIGN

SAN ANTONIO WATER SYSTEM
2014 SPECIFICATIONS FOR WATER AND SANITARY SEWER CONSTRUCTION
(REVISED APRIL 2014)

818	PVC PIPE INSTALLATION
824	SERVICE SUPPLY LINES (WATER)
826	VALVE BOX ADJUSTMENTS
828	GATE VALVES
833	METER AND METER BOX INSTALLATION
834	FIRE HYDRANTS
836	GREY IRON AND DUCTILE-IRON FITTINGS
840	WATER TIE-INS
841	HYDROSTATIC TESTING OPERATIONS
844	BLOW OFF ASSEMBLIES
846	AIR RELEASE ASSEMBLIES
848	SANITARY SEWER LINE
852	EXTRA DEPTH MANHOLE
855	RECONSTRUCTION OF EXISTING MANHOLES
856	JACKING, BORING OR TUNNELING PIPE
864	BYPASS PUMPING
866	SEWER MAIN TELEVISION INSPECTION
3000	REMOVAL, TRANSPORTATION AND DISPOSAL OF PIPE

CPS ENERGY REQUIREMENTS AND SPECIFICATIONS
FOR CONSTRUCTION OF
NATURAL GAS DISTRIBUTION FACILITIES
ON THE RAY ELLISON BOULEVARD
PROJECT

SPECIAL SPECIFICATION
2174
Wood Fence

1. **Description.** This Item shall govern for the relocation of wood fence supported by posts at locations shown on the plans or as designated by the Engineer.

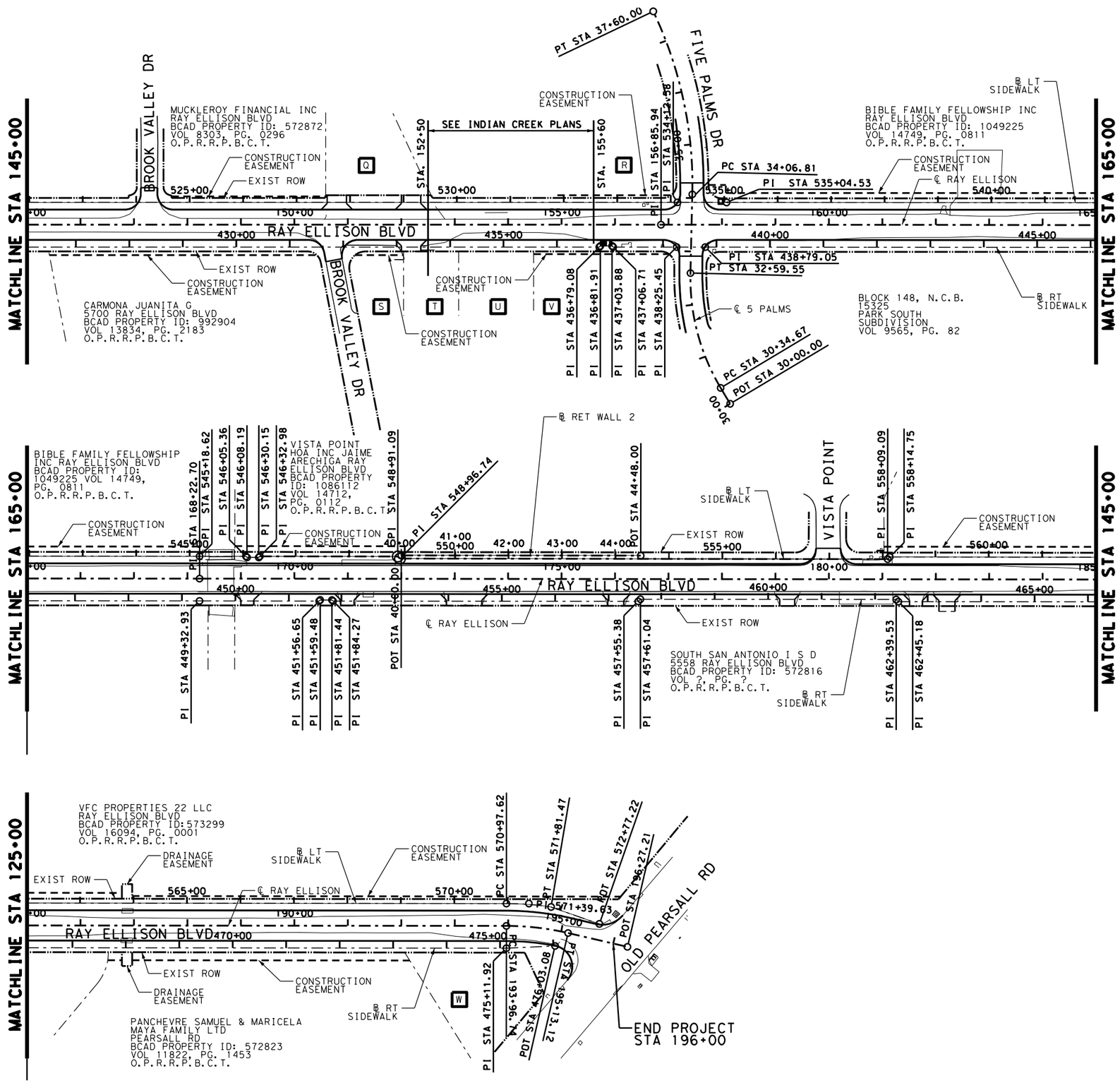
2. **Materials.** All replacement posts, rails, and pickets shall be of the same type of material and configuration as the existing fence.

3. **Construction.** Fence posts shall be spaced at intervals equal or closer than the existing fence. Posts shall be set in a vertical position. All posts shall be placed to the minimum depth below ground as shown on the plans or as directed by the Engineer. Posts shall be set plumb and firm to the line and grade shown on the plans. Make connection to adjacent side fences, as needed, to provide full containment of residential back yards.

4. **Measurements.** This Item will be measured by the linear foot of relocated wood fence, measured along the face of the bottom rail of the fence from center to center of the end posts.

5. **Payment.** The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Relocate Wood Fence." This price shall be full compensation for relocation of the existing fence, furnishing and installing all fence materials as needed, connecting to existing fences for containment, digging post holes, including excavation, backfilling, disposal of surplus material, placing concrete for posts, removal and disposal of existing fence; for all preparation, hauling and installing of same, and for all labor, tools, equipment and incidentals.

Plotted on: 3/24/2015 12:17:18 PM



NOTES:

1. REFER TO HORIZONTAL ALIGNMENT DATA SHEET FOR MORE DETAILS.
2. ALL EXISTING FEATURES ARE SHOWN SCREENED BACK i.e. FADED.

PROPERTY KEY:

- **Q** 5727 RAY ELLISON BLVD
  BCAD PROPERTY ID: 572947
  VOL 9662, PG. 1697
  O.P.R.R.P.B.C.T.SNES CAR WASH CORRAL INC
- **R** FGMS FUND V LP
  FIVE PALMS DR
  BCAD PROPERTY ID: 572948
  VOL 15353, PG. 455
  O.P.R.R.P.B.C.T.
- **S** J E T PROPERTIES INC
  7222 BROOK VALLEY DR
  BCAD PROPERTY ID: 572668
  VOL 10487, PG. 1435
  O.P.R.R.P.B.C.T.
- **T** J E T PROPERTIES INC
  7208 BROOK VALLEY DR
  BCAD PROPERTY ID: 572670
  VOL ?, PG. ?
  O.P.R.R.P.B.C.T.
- **U** BEXAR COUNTY
  ALPINE SHORE
  BCAD PROPERTY ID: 572667
  VOL ?, PG. ?
  O.P.R.R.P.B.C.T.
- **V** QUINLAN GILBERT L
  RAY ELLISON BLVD
  BCAD PROPERTY ID: 572666
  VOL 5787, PG. 2004
  O.P.R.R.P.B.C.T.
- **W** BRIMEX LIMITED PARTNERSHIP
  OLD PEARSALL RD
  BCAD PROPERTY ID: 572822
  VOL 15687, PG. 1601
  O.P.R.R.P.B.C.T.

ADDENDUM NO. 04

STATE OF TEXAS
JAMES A. LUTZ
84722
LICENSED
PROFESSIONAL ENGINEER

JAMES A. LUTZ, P.E. 3/24/2015
DATE

0 100 200 300
SCALE: 1"= 200'

PAPE-DAWSON ENGINEERS

2000 NW LOOP 410 | SAN ANTONIO, TEXAS 78213 | PHONE: 210.375.9000 FAX: 210.375.9010

TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION # 470

CITY OF SAN ANTONIO
TRANSPORTATION & CAPITAL IMPROVEMENTS

RAY ELLISON BLVD
LOOP 410 TO OLD PEARSALL RD

PROJECT LAYOUT

SHEET 2 OF 2

100 % SUBMITTAL	PROJECT NO.: 8185-00		DATE: 3/24/2015
DRWN. BY: HM	DSGN. BY: HM	CHKD. BY: DT	SHEET NO.: 4

Design Filename: P:\81\85\00\Design\Civil\Roadway\818500PRJ02_ADD_04.dgn

℄ RETAINING WALL 1 ALIGNMENT

Beginning chain RW1 description

```
                                        Curve Data
                                      *----------*
Curve RW1
P.I.  Station            10+32.01  N       13,680,984.18  E        2,086,763.78
Delta        =          3° 43′ 39" (RT)
Degree       =          5° 49′ 27"
Tangent      =                32.01
Length       =                64.00
Radius       =               983.75
External     =                 0.52
Long Chord   =                63.99
Mid. Ord.    =                 0.52
P.C.  Station            10+00.00  N       13,681,006.26  E        2,086,740.60
P.T.  Station            10+64.00  N       13,680,960.65  E        2,086,785.48
C.C.                               N       13,680,293.80  E        2,086,062.24
Back         = S  46° 24′ 14" E
Ahead        = S  42° 40′ 35" E
Chord Bear   = S  44° 32′ 25" E
```

Ending chain RW1 description

℄ RETAINING WALL 2 ALIGNMENT

Beginning chain RW2 description

```
Point RW201            N    13,679,406.27 E     2,092,728.25 Sta      40+00.00

Course from RW201 to RW202 S 80° 33′ 44" E Dist 448.00

Point RW202            N    13,679,332.81 E     2,093,170.19 Sta      44+48.00
```

Ending chain RW2 description

℄ WALNUT VALLEY

Beginning chain WV_ALIGN description

```
Point WV01             N    13,680,165.55 E     2,087,871.28 Sta     300+00.00

Course from WV01 to WV02 N 9° 22′ 51" E Dist 82.38

Point WV02             N    13,680,246.83 E     2,087,884.71 Sta     300+82.38

                                        Curve Data
                                      *----------*
Curve WV01
P.I.  Station           301+70.98  N       13,680,334.24  E        2,087,899.15
Delta        =         20° 05′ 43" (LT)
Degree       =         11° 27′ 33"
Tangent      =                88.59
Length       =               175.37
Radius       =               500.00
External     =                 7.79
Long Chord   =               174.47
Mid. Ord.    =                 7.67
P.C.  Station           300+82.38  N       13,680,246.83  E        2,087,884.71
P.T.  Station           302+57.75  N       13,680,421.28  E        2,087,882.68
C.C.                               N       13,680,328.32  E        2,087,391.39
Back         = N   9° 22′ 51" E
Ahead        = N  10° 42′ 53" W
Chord Bear   = N   0° 40′ 01" W

Point WV04             N    13,680,421.28 E     2,087,882.68 Sta     302+57.75

Course from WV04 to PC WV02 N 10° 42′ 53" W Dist 267.82

                                        Curve Data
                                      *----------*
Curve WV02
P.I.  Station           305+79.12  N       13,680,737.06  E        2,087,822.93
Delta        =         20° 14′ 36" (RT)
Degree       =         19° 05′ 55"
Tangent      =                53.56
Length       =               105.99
Radius       =               300.00
External     =                 4.74
Long Chord   =               105.44
Mid. Ord.    =                 4.67
P.C.  Station           305+25.57  N       13,680,684.44  E        2,087,832.88
P.T.  Station           306+31.56  N       13,680,789.87  E        2,087,831.79
C.C.                               N       13,680,740.21  E        2,088,127.65
Back         = N  10° 42′ 53" W
Ahead        = N   9° 31′ 43" E
Chord Bear   = N   0° 35′ 35" W

Course from PT WV02 to WV10 N 9° 31′ 43" E Dist 268.44

Point WV10             N    13,681,054.61 E     2,087,876.23 Sta     309+00.00
```

Ending chain WV_ALIGN description

ADDENDUM NO. 04

STATE OF TEXAS
JAMES A. LUTZ
84722
LICENSED
PROFESSIONAL ENGINEER

JAMES A. LUTZ, P.E. — 3/24/2015 DATE

0 100 200 300
SCALE: 1"= 200′

PAPE-DAWSON ENGINEERS
2000 NW LOOP 410 | SAN ANTONIO, TEXAS 78213 | PHONE: 210.375.9000 FAX: 210.375.9010
TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION # 470

CITY OF SAN ANTONIO
TRANSPORTATION & CAPITAL IMPROVEMENTS

RAY ELLISON BLVD
LOOP 410 TO OLD PEARSALL RD

HORIZONTAL ALIGNMENT DATA

SHEET 2 OF 3

100 % SUBMITTAL	PROJECT NO.: 8185-00		DATE: 3/24/2015
DRWN. BY: HM	DSGN. BY: HM	CHKD. BY: DT	SHEET NO.: 6

Design Filename: P:\81\85\00\Design\Civil\General\818500HALN_DATA02_ADD_04.dgn
Plotted on: 3/24/2015 12:17:19 PM

Plotted on: 3/24/2015 12:17:19 PM

℄ LEFT SIDEWALK ALIGNMENT

Beginning chain SWN description

Point SW026	N	13,680,203.50	E	2,087,897.68	Sta	500+00.00
Course from SW026 to SW027 S 80° 37′ 09" E Dist 1,256.10						
Point SW027	N	13,679,998.77	E	2,089,136.98	Sta	512+56.10
Course from SW027 to SW028 S 80° 37′ 09" E Dist 43.12						
Point SW028	N	13,679,991.74	E	2,089,179.53	Sta	512+99.22
Course from SW028 to SW030 S 80° 37′ 09" E Dist 51.36						
Point SW030	N	13,679,983.37	E	2,089,230.20	Sta	513+50.58
Course from SW030 to SW031 S 80° 37′ 09" E Dist 2,062.00						
Point SW031	N	13,679,647.27	E	2,091,264.63	Sta	534+12.58
Course from SW031 to SW032 S 80° 33′ 45" E Dist 91.95						
Point SW032	N	13,679,632.20	E	2,091,355.33	Sta	535+04.53
Course from SW032 to SW033 S 80° 34′ 37" E Dist 1,014.09						
Point SW033	N	13,679,466.16	E	2,092,355.73	Sta	545+18.62
Course from SW033 to SW034 S 80° 33′ 44" E Dist 86.75						
Point SW034	N	13,679,451.94	E	2,092,441.30	Sta	546+05.36
Course from SW034 to SW035 S 35° 36′ 35" E Dist 2.83						
Point SW035	N	13,679,449.64	E	2,092,442.95	Sta	546+08.19
Course from SW035 to SW036 S 80° 33′ 44" E Dist 21.96						
Point SW036	N	13,679,446.04	E	2,092,464.62	Sta	546+30.15
Course from SW036 to SW037 N 54° 23′ 25" E Dist 2.83						
Point SW037	N	13,679,447.68	E	2,092,466.91	Sta	546+32.98
Course from SW037 to SW038 S 80° 33′ 44" E Dist 258.11						
Point SW038	N	13,679,405.36	E	2,092,721.53	Sta	548+91.09
Course from SW038 to SW039 S 35° 33′ 44" E Dist 5.66						
Point SW039	N	13,679,400.76	E	2,092,724.82	Sta	548+96.74
Course from SW039 to SW040 S 80° 33′ 44" E Dist 912.35						
Point SW040	N	13,679,251.15	E	2,093,624.82	Sta	558+09.09
Course from SW040 to SW042 N 54° 26′ 16" E Dist 5.66						
Point SW042	N	13,679,254.44	E	2,093,629.42	Sta	558+14.75
Course from SW042 to PC SW02 S 80° 33′ 44" E Dist 1,282.87						

Curve Data

Curve SW02					
P.I. Station	571+39.63	N	13,679,037.19	E	2,094,936.36
Delta =	8° 42′ 27" (RT)				
Degree =	10° 23′ 04"				
Tangent =	42.01				
Length =	83.85				
Radius =	551.75				
External =	1.60				
Long Chord =	83.77				
Mid. Ord. =	1.59				
P.C. Station	570+97.62	N	13,679,044.08	E	2,094,894.93
P.T. Station	571+81.47	N	13,679,024.11	E	2,094,976.28
C.C.		N	13,678,499.80	E	2,094,804.45
Back = S 80° 33′ 44" E					
Ahead = S 71° 51′ 17" E					
Chord Bear = S 76° 12′ 30" E					

Point SW044	N	13,679,024.11	E	2,094,976.28	Sta	571+81.47
Course from SW044 to SW045 S 61° 19′ 01" E Dist 95.74						
Point SW045	N	13,678,978.16	E	2,095,060.27	Sta	572+77.22

Ending chain SWN description

℄ RIGHT SIDEWALK ALIGNMENT

Beginning chain SWS description

Point SW001	N	13,680,166.95	E	2,087,688.89	Sta	402+09.84
Course from SW001 to SW002 S 57° 07′ 28" E Dist 33.62						
Point SW002	N	13,680,148.70	E	2,087,717.13	Sta	402+43.46
Course from SW002 to SW004 S 80° 37′ 09" E Dist 87.18						
Point SW004	N	13,680,134.49	E	2,087,803.14	Sta	403+30.64
Course from SW004 to SW005 S 75° 51′ 20" E Dist 12.04						
Point SW005	N	13,680,131.54	E	2,087,814.82	Sta	403+42.68
Course from SW005 to SW006 S 80° 37′ 09" E Dist 94.23						
Point SW006	N	13,680,116.19	E	2,087,907.79	Sta	404+36.91
Course from SW006 to SW007 S 83° 28′ 54" E Dist 20.02						
Point SW007	N	13,680,113.91	E	2,087,927.69	Sta	404+56.94
Course from SW007 to SW008 S 80° 37′ 09" E Dist 3,222.15						
Point SW008	N	13,679,588.72	E	2,091,106.75	Sta	436+79.09
Course from SW008 to SW009 N 54° 23′ 08" E Dist 2.83						
Point SW009	N	13,679,590.37	E	2,091,109.05	Sta	436+81.92
Course from SW009 to SW010 S 80° 37′ 09" E Dist 21.97						
Point SW010	N	13,679,586.79	E	2,091,130.72	Sta	437+03.89
Course from SW010 to SW011 S 35° 36′ 52" E Dist 2.83						
Point SW011	N	13,679,584.49	E	2,091,132.37	Sta	437+06.72
Course from SW011 to SW012 S 80° 37′ 09" E Dist 118.74						
Point SW012	N	13,679,565.13	E	2,091,249.53	Sta	438+25.46
Course from SW012 to SW013 S 80° 33′ 13" E Dist 53.60						
Point SW013	N	13,679,556.34	E	2,091,302.40	Sta	438+79.06
Course from SW013 to SW014 S 80° 34′ 37" E Dist 1,053.87						
Point SW014	N	13,679,383.79	E	2,092,342.05	Sta	449+32.93
Course from SW014 to SW016 S 80° 33′ 44" E Dist 223.72						
Point SW016	N	13,679,347.11	E	2,092,562.75	Sta	451+56.66
Course from SW016 to SW017 N 54° 23′ 25" E Dist 2.83						
Point SW017	N	13,679,348.75	E	2,092,565.04	Sta	451+59.48
Course from SW017 to SW018 S 80° 33′ 44" E Dist 21.96						
Point SW018	N	13,679,345.15	E	2,092,586.71	Sta	451+81.44
Course from SW018 to SW019 S 35° 36′ 35" E Dist 2.83						
Point SW019	N	13,679,342.85	E	2,092,588.35	Sta	451+84.27
Course from SW019 to SW020 S 80° 33′ 44" E Dist 571.12						
Point SW020	N	13,679,249.20	E	2,093,151.74	Sta	457+55.39
Course from SW020 to SW021 N 54° 26′ 16" E Dist 5.66						
Point SW021	N	13,679,252.49	E	2,093,156.34	Sta	457+61.05
Course from SW021 to SW022 S 80° 33′ 44" E Dist 478.49						
Point SW022	N	13,679,174.03	E	2,093,628.35	Sta	462+39.53
Course from SW022 to SW023 S 35° 33′ 44" E Dist 5.66						
Point SW023	N	13,679,169.43	E	2,093,631.64	Sta	462+45.19
Course from SW023 to SW024 S 80° 33′ 44" E Dist 1,266.74						
Point SW024	N	13,678,961.71	E	2,094,881.23	Sta	475+11.93
Course from SW024 to SW025 S 83° 16′ 12" E Dist 91.16						
Point SW025	N	13,678,951.03	E	2,094,971.77	Sta	476+03.09

Ending chain SWS description

ADDENDUM NO. 04

STATE OF TEXAS
JAMES A. LUTZ
84722
LICENSED
PROFESSIONAL ENGINEER

JAMES A. LUTZ, P.E. 3/24/2015
DATE

0 100 200 300
SCALE: 1"= 200'

PAPE-DAWSON ENGINEERS
2000 NW LOOP 410 | SAN ANTONIO, TEXAS 78213 | PHONE: 210.375.9000 FAX: 210.375.9010
TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION # 470

CITY OF SAN ANTONIO
TRANSPORTATION & CAPITAL IMPROVEMENTS

RAY ELLISON BLVD
LOOP 410 TO OLD PEARSALL RD

HORIZONTAL ALIGNMENT DATA

SHEET 3 OF 3

100 % SUBMITTAL	PROJECT NO.: 8185-00		DATE: 3/24/2015
DRWN. BY: HM	DSGN. BY: HM	CHKD. BY: DT	SHEET NO.: 7

Design Filename: P:\81\85\00\Design\Civil\General\818500HALN_DATA03_ADD_04.dgn

THE FOLLOWING CHANGES ARE MADE TO THE CITY OF SAN ANTONIO'S GENERAL NOTES:

DRAINAGE NOTES

1. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL OBTAIN ALL REQUIRED STORM WATER PERMITS, FEES, AND APPROVALS. NO CONSTRUCTION OR FABRICATION SHALL BEGIN UNTIL THE CONTRACTOR HAS RECEIVED AND THOROUGHLY REVIEWED ALL PERMITS REQUIRED FOR CONSTRUCTION IN DRAINAGE EASEMENTS, RIGHT-OF-WAYS, AND FLOODPLAINS.

2. THE CONTRACTOR SHALL NOTIFY STORM WATER ENGINEERING AT LEAST 24 HOURS PRIOR TO THE INSTALLATION OF ANY DRAINAGE FACILITY WITHIN A DRAINAGE EASEMENT OR STREET RIGHT-OF-WAY NOT INDICATED ON THE CONSTRUCTION PLANS.

3. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING EXISTING DRAINAGE FACILITIES FROM DAMAGE. ANY DAMAGE TO EXISTING DRAINAGE SYSTEMS, WHETHER OR NOT SHOWN ON THE PLANS, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR AT HIS EXPENSE. THE CONTRACTOR SHALL NOTIFY STORM WATER ENGINEERING AT 210-207-8052 AS SOON AS CONFLICTS WITH UTILITIES ARE ENCOUNTERED OR ANY DRAINAGE SYSTEM IS DAMAGED DURING CONTRUCTION.

4. CONSTRUCTION SPOILS WILL NOT BE ALLOWED TO BE DEPOSITED ANYWHERE WITHIN A DRAINAGE EASEMENT, RIGHT-OF-WAY OR FLOODPLAIN WITHIN THE LIMITS OF THE PROJECT AND SHALL BE DISPOSED OFFSITE IN COMPLIANCE WITH CURRENT APPLICABLE REGULATIONS.

5. NO STRUCTURE, FENCES, WALLS, LANSCAPING, OR OTHER STRUCTURES THAT IMPEDE DRAINAGE SHALL BE PLACED WITHIN THE LIMITS OF THE DRAINAGE EASEMENTS SHOWN ON THE CONSTRUCTION DOCUMENTS.

6. UPON COMPLETION OF TRENCHING, THE AREA WILL BE BACKFILLED AND COMPACTED TO ITS ORIGINAL CONDITION. TRENCHES/BORE PITS TO BE OPEN AND UNATTENDED LONGER THAN 24 HOURS SHALL BE PROTECTED TO WITHSTAND ALL HYDRODYNAMIC AND HYDROSTATIC FORCES AND PREVENT DOWNSTREAM IMPACTS. TRENCHES/BORE PITS TO BE OPEN LONGER THAN 30 DAYS AFTER STARTING EXCAVATION SHALL BE BACKFILLED WITH A SEMI-PERMANENT REPAIR BACKFILL.

7. IMPROVED SECTIONS OF EARTHEN CHANNELS AND/OR WATERWAYS WILL BE VEGETATED BY SEEDING OR SODDING. EIGHTY-FIVE PERCENT OF THE CHANNEL SURFACE AREA MUST HAVE ESTABLISHED VEGETATION BEFORE THE CITY OF SAN ANTONIO WILL ACCEPT CHANNEL FOR MAINTENANCE.

ADDITIONAL NOTES

EXCESS SOIL DISPOSAL: CONTRACTOR SHALL PROVIDE A SUBMITTAL REGARDING DISPOSAL SITES TO THE CITY ONCE THE CONTRACTOR RECEIVES THE INTENT OF AWARD LETTER. THE CONDITIONS SET FORTH HEREIN ARE SOLELY DUE TO A DESIRE BY THE CITY TO MANAGE AND DOCUMENT THE DISPOSAL OF EXCESS SOILS FROM THIS SITE IN ACCORDANCE WITH THE CITY'S POLICY. ACCORDINGLY, IN THE SOIL DISPOSAL SUBMITTAL, THE CONTRACTOR SHALL:

1. CONTRACTOR SHALL CERTIFY AND ASSURE THAT THE NUMBER OF SOIL DISPOSAL SITES DOES NOT EXCEED THREE (3) SITES.

2. CONTRACTOR SHALL CERTIFY THAT NO DISPOSAL AREAS ARE WITHIN THE FLOOD PLAIN AND PROVIDE OWNER EVIDENCE TO THAT EFFECT.

3. CONTRACTOR SHALL PROVIDE TO THE CITY OF SAN ANTONIO THE WRITTEN AUTHORIZATION FROM ALL AFFECTED LANDOWNERS TO DISPOSE OF SOIL FROM THIS PROJECT SITE ON THEIR PROPERTY FOR FUTURE DEVELOPMENT.

4. CONTRACTOR SHALL INCLUDE PROVISIONS IN LANDOWNER AGREEMENTS THAT THE CITY RESERVES THE RIGHT TO CONDUCT INDEPENDENT VISUAL INSPECTIONS AND SOIL TESTING ON LISTED PROPERTIES, IF NECESSARY, PRIOR TO DISPOSAL OF PROJECT EXCESS SOILS TO DETERMINE BACKGROUND LEVELS OF VARIOUS ELEMENTS AS IDENTIFIED BY THE CITY. SAID LANDOWNER AGREEMENTS WILL PROVIDE AN EFFECTIVE RIGHT OF ENTRY THAT WILL EXPIRE UPON SUBSTANTIAL COMPLETION OF THE PROJECT.

5. CONTRACTOR AGREES TO ABIDE BY THE LANDOWNERS WRITTEN CONDITIONS IN LANDOWNER AGREEMENTS INCLUDING THOSE RELATED TO PLACING, COMPACTING, RESTORATION, AND EROSION CONTROL OF THE SITE(S), AND THAT THE LANDOWNERS WILL BE REQUESTED TO PROVIDE FINAL WRITTEN APPROVAL PRIOR TO SUBSTANTIAL COMPLETION, AND THAT ANY COSTS THE CITY INCURS TO ADDRESS LEGITIMATE LANDOWNER CONCERNS WILL BE CONSIDERED AND MAY BE DEDUCTED FROM THE CONTRACTOR'S FINAL PAYMENT, AS DETERMINED BY THE CITY.

6. CONTRACTOR AGREES TO COMPLY WITH OTHER REGULATORY AUTHORIZATIONS FOR PROPER AND LEGAL IMPLEMENTATION OF THE REUSE PLAN PRIOR TO SOILS TRANSPORT, AS APPLICABLE. CONTRACTOR NEEDS TO ENSURE AN APPROPRIATE STORM WATER POLLUTION PREVENTION PLAN IS DEVELOPED AND IMPLEMENTED IN ACCORDANCE WITH TEXAS POLLUTANT DISCHARGE ELIMINATION SYSTEM REQUIREMENTS, AS APPLICABLE.

7. CONTRACTOR SHALL BE RESPONSIBLE FOR TRACKING EXCESS SOIL DISPOSED OF AT APPROVED DESIGNATED AREAS. CONTRACTOR SHALL TRACK LOADS AND PROVIDE DOCUMENTATION, SUCH AS TRIP TICKETS OR "BILL OF LADING" FOR ALL TRANSPORTED SOIL TO EACH APPROVED SITE.

TREE PRESERVATION NOTES

1. PRIOR TO START OF WORK, CALL 207-1111 TO SCHEDULE A PRE-CONSTRUCTION & FENCING INSPECTION (PER SECTION 35-477 OF THE UDC, SUBSECTION TREE PERMITS (5)C)

2. FAILURE TO SCHEDULE A FENCING INSPECTION PRIOR TO START OF WORK MAY RESULT IN A STOP WORK ORDER OR A PENALTY OF $2000.00 OR BOTH.

3. CONTRACTOR IS RESPONSIBLE FOR PROVIDING A LICENSED TREE MAINTENANCE PROFESSIONAL THROUGHOUT THE PROJECT PER CITY OF SAN ANTONIO ORDINANCE ARTICLE VIII SEC. 21-171.

4. 35-523 (P) MUNICIPAL AND UTILITY ENTITIES SHALL OBTAIN A TREE PERMIT BEFORE ANY VEGETATION IS REMOVED OR NEW CONSTRUCTION ACTIVITY TAKES PLACE. SPECIAL ATTENTION WILL BE GIVEN TO THE PRESERVATION OF TREES IN PUBLIC RIGHTS-OF-WAY THAT ARE TO HELP SATISFY THE OBJECTIVES OF THE STREETSCAPE PLANTING STANDARDS OF THIS ARTICLE (SECTION 35-512). THE CITY ARBORIST SHALL APPROVE AN APPLICATION FOR THE REASONABLE REMOVAL OF A PROTECTED TREE IN CONNECTION WITH CONSTRUCTION, MAINTENANCE OR REPAIR OF PUBLIC FACILITIES IN OR ABOVE A PUBLIC STREET, ALLEY, RIGHTS-OF-WAY, EASEMENT OR OTHER PUBLIC LAND.

5. 35-523 (P)(4) THE LOCATION OF ALL IMPROVEMENTS SHALL BE ORIENTATED BY THE APPLICANT, TO THE EXTENT THE APPLICANT DETERMINES POSSIBLE, IN A MANNER WHICH ALLOWS FOR THE PRESERVING OF THE GREATEST NUMBER OF TREES AND IN DOING SO IS ENCOURAGED TO ACQUIRE RIGHTS-OF-WAY IN SUCH A MANNER. APPLICANTS ARE ALSO ENCOURAGED TO PRESERVE TREES TO MEET THE LANDSCAPE AND STREETSCAPE STANDARDS. ALSO, AS THE PARTICULAR SITE CONDITIONS WARRANT, THE APPLICANT SHALL PRESERVE A DIVERSITY OF SPECIES.

6. 35-477 (J) IT SHALL BE THE RESPONSIBILITY OF THE PERMIT HOLDER TO MAINTAIN A COPY OF THE TREE PERMIT, THE DATA AND DRAWINGS REQUIRED BY THIS SECTION AND THE CONDITIONS OF APPROVAL IMPOSED BY THE CITY ARBORIST READILY AVAILABLE AT THE SITE AT ALL TIMES DURING WHICH AUTHORIZED WORK IS IN PROGRESS.

7. 35-523 (K)(5) ALL OFFSITE STAGING, STORAGE, PROJECT TRAILERS, EMPLOYEE PARKING, ETC. ARE REQUIRED TO COMPLY WITH THE TERMS AND CONDITIONS OF THE APPROVED TREE PERMIT.

8. 35-523 (K)(4) BRANCH/ROOT PRUNING & WOUNDED TREES: ALL BROKEN BRANCHES & EXPOSED ROOTS 2" IN DIAMETER OR GREATER OF SIGNIFICANT, HERITAGE OR MITIGATION TREES SHALL BE CUT CLEANLY. FOR OAK SPECIES, IN ORDER TO PREVENT OAK WILT INFECTION, WOUNDS MUST BE PAINTED WITHIN 30 MIN.

9. 21-170 (B) GENERAL REQUIREMENTS: ALL WOUNDS TO THE TRUNK, LIMBS, AND ROOT SYSTEM OF OAK TREES IN THE CITY THAT EXPOSE SAPWOOD SHALL BE PAINTED WITHIN 30 MIN. OF THE WOUND WITH ASPHALTIC, EXTERIOR OIL OR LATEX BASED PAINT.

10. 35-511 (E) A PROTECTIVE BARRIER, BEGINNING AT THE OUTSIDE OF THE DRIPLINE OF THE TREE, TO PROTECT THE ROOT PROTECTION ZONE SHALL BE ERECTED AND MAINTAINED UNTIL CONSTRUCTION IS COMPLETED.

11. 35-523 (K)(2) THE BARRIER SHALL BE IN PLACE BEFORE ANY SITE WORK IS INITIATED AND MAINTAINED THROUGHOUT THE CONSTRUCTION PROCESS.

12. 35-477 (5)(C) A PRE-CONSTRUCTION MEETING IS REQUIRED TO REVIEW PROCEDURES FOR PROTECTION AND MANAGEMENT OF ALL SIGNIFICANT, HERITAGE OR MITIGATION TREES. THIS CAN BE SCHEDULED WITH THE FENCING INSPECTION, 207-1111.

13. PLEASE FORWARD A COPY TO THE CONTRACTOR ON SITE WITH A COPY OF THE PLAT OR PLAN (IF APPLICABLE) FOR POSTING ON SITE. A COPY OF THE APPROVED PERMIT AND PLAN MUST BE ON SITE DURING SITE WORK.

ADDENDUM NO. 04

PAPE-DAWSON ENGINEERS
2000 NW LOOP 410 | SAN ANTONIO, TEXAS 78213 | PHONE: 210.375.9000 FAX: 210.375.9010
TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION # 470

CITY OF SAN ANTONIO
TRANSPORTATION & CAPITAL IMPROVEMENTS

RAY ELLISON BLVD
LOOP 410 TO OLD PEARSALL RD
SUPPLEMENTAL GENERAL NOTES

SHEET 2 OF 2

100 % SUBMITTAL	PROJECT NO.: 8185-00		DATE: 3/24/2015
DRWN. BY:	DSGN. BY: HM	CHKD. BY: DT	SHEET NO.: 15

	ITEM	103.1	103.3	103.4	104.1	107.1	108.1	108.2	203.1	205.2	205.3
	DESCRIPTION	REMOVE CONCRETE CURB	REMOVE SIDEWALKS AND DRIVEWAYS	REMOVE MISCELLANEOUS CONCRETE	STREET EXCAVATION	EMBANKMENT (FINAL) (ORD COMP) (TY B)	LIME TREATED SUBGRADE (8" COMPACTED DEPTH)	LIME	TACK COAT	HOT MIX ASPHALTIC PAVEMENT, TYPE B (8" COMP. DEPTH)	HOT MIX ASPHALTIC PAVEMENT, TYPE C (2" COMP. DEPTH)
SHT NO		LF	SF	SF	CY	CY	SY	TON	GAL	SY	SY
91	ROADWAY PLAN AND PROFILE - SHEET 1 OF 20	1446	1665	200	340	129	2980	86	569	2904	2845
92	ROADWAY PLAN AND PROFILE - SHEET 2 OF 20	150	3719	250	1185	966	3705	107	702	3596	3511
93	ROADWAY PLAN AND PROFILE - SHEET 3 OF 20				1422	1000	3578	103	677	3469	3384
94	ROADWAY PLAN AND PROFILE - SHEET 4 OF 20				4739	181	3400	98	641	3291	3206
95	ROADWAY PLAN AND PROFILE - SHEET 5 OF 20	75	417		2561	253	3491	101	659	3382	3297
96	ROADWAY PLAN AND PROFILE - SHEET 6 OF 20	75	2696		1730	226	3332	96	626	3220	3132
97	ROADWAY PLAN AND PROFILE - SHEET 7 OF 20		7459		2428	3	3306	95	622	3196	3112
98	ROADWAY PLAN AND PROFILE - SHEET 8 OF 20	895	9190	141	1994	66	4452	128	841	4313	4204
99	ROADWAY PLAN AND PROFILE - SHEET 9 OF 20		7500	40	1522	228	3306	95	622	3196	3112
100	ROADWAY PLAN AND PROFILE - SHEET 10 OF 20		2100		2943	12	3492	101	659	3380	3293
101	ROADWAY PLAN AND PROFILE - SHEET 11 OF 20	209	10662		1935	39	3155	91	595	3055	2976
102	ROADWAY PLAN AND PROFILE - SHEET 12 OF 20	714	3548	307	118	91	1977	57	378	1927	1888
103	ROADWAY PLAN AND PROFILE - SHEET 13 OF 20		2053		1199	286	3306	95	622	3196	3112
104	ROADWAY PLAN AND PROFILE - SHEET 14 OF 20		2032	10	1688	27	3306	95	622	3196	3112
105	ROADWAY PLAN AND PROFILE - SHEET 15 OF 20	964	6799	180	1804	147	2639	76	501	2565	2507
106	ROADWAY PLAN AND PROFILE - SHEET 16 OF 20	1000	6800		2010		3306	95	622	3196	3112
107	ROADWAY PLAN AND PROFILE - SHEET 17 OF 20	967	8873	50	1101	46	2828	81	540	2756	2699
108	ROADWAY PLAN AND PROFILE - SHEET 18 OF 20	19	1445		3194	469	3306	95	622	3196	3112
109	ROADWAY PLAN AND PROFILE - SHEET 19 OF 20				1239	144	3306	95	622	3196	3112
110	ROADWAY PLAN AND PROFILE - SHEET 20 OF 20	218	1028	120	165	107	1985	57	374	1920	1870
	TOTALS	6732	77986	1298	35317	4420	64153	1847	12116	62150	60596

	ITEM	205.4	209.1	302.1	307.4	500.1	500.6	502.1	502.3	502.4	503.2
	DESCRIPTION	HOT MIX ASPAHLTIC PAVEMENT, TYPE D (1.5" COMP. DEPTH)	BUS STOP CONCRETE PAD	METAL FOR STRUCTURES	CONCRETE STRUCTURE (FLUME)	CONCRETE CURB	CONCRETE CURB (FLUSH CURB)	CONCRETE SIDEWALKS	SIDEWALK DRAIN	CONCRETE SIDEWALK FOR BUS SHELTER	PORTLAND CEMENT CONCRETE DRIVEWAY - COMMERCIAL
SHT NO		SY	SY	LBS	SY	LF	LF	SY	EA	SY	SY
91	ROADWAY PLAN AND PROFILE - SHEET 1 OF 20	2845				659		394			
92	ROADWAY PLAN AND PROFILE - SHEET 2 OF 20	3511				997		544			397
93	ROADWAY PLAN AND PROFILE - SHEET 3 OF 20	3384				1000		639			72
94	ROADWAY PLAN AND PROFILE - SHEET 4 OF 20	3206				1000		616			156
95	ROADWAY PLAN AND PROFILE - SHEET 5 OF 20	3297		1995		835	165	606			74
96	ROADWAY PLAN AND PROFILE - SHEET 6 OF 20	3132				54	978	633			171
97	ROADWAY PLAN AND PROFILE - SHEET 7 OF 20	3112					1000	593			289
98	ROADWAY PLAN AND PROFILE - SHEET 8 OF 20	4204	269			846	849	920	1	12	317
99	ROADWAY PLAN AND PROFILE - SHEET 9 OF 20	3112					1000	594			452
100	ROADWAY PLAN AND PROFILE - SHEET 10 OF 20	3293				44	981	621			
101	ROADWAY PLAN AND PROFILE - SHEET 11 OF 20	2976				77	841	477			337
102	ROADWAY PLAN AND PROFILE - SHEET 12 OF 20	1888	303	1995		285	741	533		18	
103	ROADWAY PLAN AND PROFILE - SHEET 13 OF 20	3112				14	987	674			
104	ROADWAY PLAN AND PROFILE - SHEET 14 OF 20	3112					1000	667			
105	ROADWAY PLAN AND PROFILE - SHEET 15 OF 20	2507	605	675	16	237	763	639		12	187
106	ROADWAY PLAN AND PROFILE - SHEET 16 OF 20	3112					1000	615			212
107	ROADWAY PLAN AND PROFILE - SHEET 17 OF 20	2699	605			120	867	587		12	264
108	ROADWAY PLAN AND PROFILE - SHEET 18 OF 20	3112				90	910	667			
109	ROADWAY PLAN AND PROFILE - SHEET 19 OF 20	3112					1000	667			
110	ROADWAY PLAN AND PROFILE - SHEET 20 OF 20	1870				151	441	365			
	TOTALS	60596	1782	4665	16	6409	13523	12051	1	54	2928

ADDENDUM NO. 04

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CITY OF SAN ANTONIO
TRANSPORTATION & CAPITAL IMPROVEMENTS

RAY ELLISON BLVD
LOOP 410 TO OLD PEARSALL RD
SUMMARY OF QUANTITIES
ROADWAY

SHEET 1 OF 2

100 % SUBMITTAL	PROJECT NO.: 8185-00		DATE: 3/24/2015
DRWN. BY: BD	DSGN. BY: HM	CHKD. BY: DT	SHEET NO.: 18

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SHT NO	ITEM / DESCRIPTION	504.1 CONCRETE MEDIAN	504.2 CONCRETE DIRECTIONAL ISLAND	505.1 CONCRETE RIPRAP (5")	506.1 CONCRETE RETAINING WALLS - COMBINATION TYPE	508.1 RELOCATING WIRE FENCE	512.3 VALVE BOX ADJUSTMENTS	522.1 SIDEWALK PIPE RAILING	5999.1 STONE WALL	8000.1 CPS POWER POLE BRACING	0423-2007 RETAINING WALL (SPREAD FOOTING)
		SY	SY	SY	CY	LF	EA	LF	SF	LS	SF
91	ROADWAY PLAN AND PROFILE - SHEET 1 OF 20	341	164							1	
92	ROADWAY PLAN AND PROFILE - SHEET 2 OF 20	33						62			
93	ROADWAY PLAN AND PROFILE - SHEET 3 OF 20							95			437
94	ROADWAY PLAN AND PROFILE - SHEET 4 OF 20										
95	ROADWAY PLAN AND PROFILE - SHEET 5 OF 20			24				24	200		
96	ROADWAY PLAN AND PROFILE - SHEET 6 OF 20				12				180		
97	ROADWAY PLAN AND PROFILE - SHEET 7 OF 20				15				456		
98	ROADWAY PLAN AND PROFILE - SHEET 8 OF 20				15	63			116		
99	ROADWAY PLAN AND PROFILE - SHEET 9 OF 20				5				396		
100	ROADWAY PLAN AND PROFILE - SHEET 10 OF 20				12						
101	ROADWAY PLAN AND PROFILE - SHEET 11 OF 20								140		
102	ROADWAY PLAN AND PROFILE - SHEET 12 OF 20			36			2	46			
103	ROADWAY PLAN AND PROFILE - SHEET 13 OF 20				3						
104	ROADWAY PLAN AND PROFILE - SHEET 14 OF 20				12						
105	ROADWAY PLAN AND PROFILE - SHEET 15 OF 20				13			96	140		405
106	ROADWAY PLAN AND PROFILE - SHEET 16 OF 20				17				72		1680
107	ROADWAY PLAN AND PROFILE - SHEET 17 OF 20				10				216		
108	ROADWAY PLAN AND PROFILE - SHEET 18 OF 20							168			
109	ROADWAY PLAN AND PROFILE - SHEET 19 OF 20										
110	ROADWAY PLAN AND PROFILE - SHEET 20 OF 20			3							
	TOTALS	374	164	63	114	63	2	491	1916	1	2522

SHT NO	ITEM / DESCRIPTION	0452-2010 REMOV RAIL (PEDESTRIAN)	0496-2030 REMOVE STR (BOLLARD)	0496-2289 REMOV STR (DRAINAGE FLUME)	0529-2094 CONC CURB (TY F3)	0531-2005 CURB RAMPS (TY 1)	0531-2006 CURB RAMPS (TY 2)	0531-2007 CURB RAMPS (TY 3)	0531-2009 CURB RAMPS (TY 6)	0531-2010 CURB RAMPS (TY 7)	0531-2014 CURB RAMPS (TY 22)
		LF	EA	EA	LF	EA	EA	EA	EA	EA	EA
91	ROADWAY PLAN AND PROFILE - SHEET 1 OF 20					2					1
92	ROADWAY PLAN AND PROFILE - SHEET 2 OF 20										
93	ROADWAY PLAN AND PROFILE - SHEET 3 OF 20										
94	ROADWAY PLAN AND PROFILE - SHEET 4 OF 20										
95	ROADWAY PLAN AND PROFILE - SHEET 5 OF 20					1		2			
96	ROADWAY PLAN AND PROFILE - SHEET 6 OF 20					1				2	
97	ROADWAY PLAN AND PROFILE - SHEET 7 OF 20										
98	ROADWAY PLAN AND PROFILE - SHEET 8 OF 20			1		1			2	5	
99	ROADWAY PLAN AND PROFILE - SHEET 9 OF 20		5								
100	ROADWAY PLAN AND PROFILE - SHEET 10 OF 20									2	
101	ROADWAY PLAN AND PROFILE - SHEET 11 OF 20					1	2			1	
102	ROADWAY PLAN AND PROFILE - SHEET 12 OF 20								2	4	
103	ROADWAY PLAN AND PROFILE - SHEET 13 OF 20										
104	ROADWAY PLAN AND PROFILE - SHEET 14 OF 20										
105	ROADWAY PLAN AND PROFILE - SHEET 15 OF 20	110									
106	ROADWAY PLAN AND PROFILE - SHEET 16 OF 20										
107	ROADWAY PLAN AND PROFILE - SHEET 17 OF 20					1				3	
108	ROADWAY PLAN AND PROFILE - SHEET 18 OF 20				193						
109	ROADWAY PLAN AND PROFILE - SHEET 19 OF 20										
110	ROADWAY PLAN AND PROFILE - SHEET 20 OF 20							1	2		
	TOTALS	110	5	1	193	7	2	3	6	17	1

SHT NO	ITEM / DESCRIPTION	0531-2040 CURB RAMPS (TY 5)	0542-2001 REMOVING METAL BEAM GUARD FENCE	0542-2002 REMOVING TERMINAL ANCHOR SECTION	2174-9999 WOOD FENCE
		EA	LF	EA	LF
91	ROADWAY PLAN AND PROFILE - SHEET 1 OF 20				
92	ROADWAY PLAN AND PROFILE - SHEET 2 OF 20				
93	ROADWAY PLAN AND PROFILE - SHEET 3 OF 20				
94	ROADWAY PLAN AND PROFILE - SHEET 4 OF 20				
95	ROADWAY PLAN AND PROFILE - SHEET 5 OF 20				
96	ROADWAY PLAN AND PROFILE - SHEET 6 OF 20				
97	ROADWAY PLAN AND PROFILE - SHEET 7 OF 20				
98	ROADWAY PLAN AND PROFILE - SHEET 8 OF 20				
99	ROADWAY PLAN AND PROFILE - SHEET 9 OF 20				
100	ROADWAY PLAN AND PROFILE - SHEET 10 OF 20				
101	ROADWAY PLAN AND PROFILE - SHEET 11 OF 20				
102	ROADWAY PLAN AND PROFILE - SHEET 12 OF 20	2			
103	ROADWAY PLAN AND PROFILE - SHEET 13 OF 20				
104	ROADWAY PLAN AND PROFILE - SHEET 14 OF 20				
105	ROADWAY PLAN AND PROFILE - SHEET 15 OF 20		50	2	95
106	ROADWAY PLAN AND PROFILE - SHEET 16 OF 20				270
107	ROADWAY PLAN AND PROFILE - SHEET 17 OF 20				
108	ROADWAY PLAN AND PROFILE - SHEET 18 OF 20		325	3	
109	ROADWAY PLAN AND PROFILE - SHEET 19 OF 20		25	1	
110	ROADWAY PLAN AND PROFILE - SHEET 20 OF 20				
	TOTALS	2	400	6	365

ADDENDUM NO. 04

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CITY OF SAN ANTONIO
TRANSPORTATION & CAPITAL IMPROVEMENTS

RAY ELLISON BLVD
LOOP 410 TO OLD PEARSALL RD
SUMMARY OF QUANTITIES
ROADWAY

SHEET 2 OF 2

100 % SUBMITTAL	PROJECT NO.: 8185-00		DATE: 3/24/2015
DRWN. BY: BD	DSGN. BY: HM	CHKD. BY: DT	SHEET NO.: 19

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SHT NO	ITEM / DESCRIPTION	103.4 REMOVE MISCELLANEOUS CONCRETE (SF)	105.1 CHANNEL EXCAVATION (CY)	106.1 BOX CULVERT EXCAVATION AND BACKFILL (CY)	401.101 REINFORCED CONCRETE PIPE (CLASS III)(24" DIA) (LF)	401.102 REINFORCED CONCRETE PIPE (CLASS III)(30" DIA) (LF)	401.103 REINFORCED CONCRETE PIPE (CLASS III)(36" DIA) (LF)	401.104 REINFORCED CONCRETE PIPE (CLASS III)(42" DIA) (LF)	401.105 REINFORCED CONCRETE PIPE (CLASS IV)(24" DIA) (LF)	401.106 REINFORCED CONCRETE PIPE (CLASS IV)(30" DIA) (LF)	505.1 CONCRETE RIPRAP (5" THICK) (SY)
173	STORM DRAIN PLAN AND PROFILE - SHEET 1 OF 20				357						
174	STORM DRAIN PLAN AND PROFILE - SHEET 2 OF 20			213		264				108	130
175	STORM DRAIN PLAN AND PROFILE - SHEET 3 OF 20	355			60						
176	STORM DRAIN PLAN AND PROFILE - SHEET 4 OF 20		32		285						8
177	STORM DRAIN PLAN AND PROFILE - SHEET 5 OF 20		233	100		133	128	176			
178	STORM DRAIN PLAN AND PROFILE - SHEET 6 OF 20		250	1850							
179	STORM DRAIN PLAN AND PROFILE - SHEET 7 OF 20		257	1909							
180	STORM DRAIN PLAN AND PROFILE - SHEET 8 OF 20		196	1738							8
181	STORM DRAIN PLAN AND PROFILE - SHEET 9 OF 20		222	2127							
182	STORM DRAIN PLAN AND PROFILE - SHEET 10 OF 20		291	1870							
183	STORM DRAIN PLAN AND PROFILE - SHEET 11 OF 20		182	1628							
184	STORM DRAIN PLAN AND PROFILE - SHEET 12 OF 20			268			409				5
185	STORM DRAIN PLAN AND PROFILE - SHEET 13 OF 20		307		14						3
186	STORM DRAIN PLAN AND PROFILE - SHEET 14 OF 20		312								
187	STORM DRAIN PLAN AND PROFILE - SHEET 15 OF 20		148	528							
188	STORM DRAIN PLAN AND PROFILE - SHEET 16 OF 20		129	1198							
189	STORM DRAIN PLAN AND PROFILE - SHEET 17 OF 20		186	373	23						
190	STORM DRAIN PLAN AND PROFILE - SHEET 18 OF 20		248						353		
191	STORM DRAIN PLAN AND PROFILE - SHEET 19 OF 20		321		256				296		
192	STORM DRAIN PLAN AND PROFILE - SHEET 20 OF 20		63								
193	STORM DRAIN LATERALS				178						
194	STORM DRAIN LATERALS				89	51			49		
195	STORM DRAIN LATERALS				160						
196	STORM DRAIN LATERALS				313						
197	STORM DRAIN LATERALS				328		55				
198	STORM DRAIN LATERALS				207						
199	STORM DRAIN LATERALS				132						
	TOTALS	355	3377	13802	2402	448	592	176	698	108	154

SHT NO	ITEM / DESCRIPTION	506.1 CONCRETE RETAINING WALLS COMBINATION TYPE (CY)	550.1 TRENCH EXCAVATION SAFETY PROTECTION (LF)	1003.1 LANDSCAPE BOULDER (EA)	9000.101 ENGINEERED SOIL MEDIA (CY)	9000.102 GRAVEL DRAINAGE LAYER (CY)	9000.103 4" PERFORATED PVC PIPE (LF)	9000.104 4" SOIL MEDIA BARRIER (CY)	9000.105 LATERAL HYDRAULIC RESTRICTION BARRIER (SY)	9000.106 BERM (CY)	9000.107 4" PVC PIPE (LF)
173	STORM DRAIN PLAN AND PROFILE - SHEET 1 OF 20		357								
174	STORM DRAIN PLAN AND PROFILE - SHEET 2 OF 20	4	456								
175	STORM DRAIN PLAN AND PROFILE - SHEET 3 OF 20		60								
176	STORM DRAIN PLAN AND PROFILE - SHEET 4 OF 20		285		22	8	20	3			10
177	STORM DRAIN PLAN AND PROFILE - SHEET 5 OF 20		458		161	54	314	18	74		21
178	STORM DRAIN PLAN AND PROFILE - SHEET 6 OF 20		416		173	58	777	20	346	2	44
179	STORM DRAIN PLAN AND PROFILE - SHEET 7 OF 20		634		178	60	799	20	356		26
180	STORM DRAIN PLAN AND PROFILE - SHEET 8 OF 20		384		136	46	610	16	272	1	32
181	STORM DRAIN PLAN AND PROFILE - SHEET 9 OF 20		408		154	52	689	18	307		42
182	STORM DRAIN PLAN AND PROFILE - SHEET 10 OF 20		461		202	68	906	23	403		18
183	STORM DRAIN PLAN AND PROFILE - SHEET 11 OF 20		608		126	42	566	14	252		27
184	STORM DRAIN PLAN AND PROFILE - SHEET 12 OF 20		476								
185	STORM DRAIN PLAN AND PROFILE - SHEET 13 OF 20		14		213	71	956	24	425		26
186	STORM DRAIN PLAN AND PROFILE - SHEET 14 OF 20			1	216	72	970	24	432		78
187	STORM DRAIN PLAN AND PROFILE - SHEET 15 OF 20		416	2	103	35	461	12	205	1	318
188	STORM DRAIN PLAN AND PROFILE - SHEET 16 OF 20		324		93	27	526	9	109		11
189	STORM DRAIN PLAN AND PROFILE - SHEET 17 OF 20		365		136	38	678	13	132		111
190	STORM DRAIN PLAN AND PROFILE - SHEET 18 OF 20		353		172	58	770	20	343	2	465
191	STORM DRAIN PLAN AND PROFILE - SHEET 19 OF 20		552		223	75	1000	25	445	2	76
192	STORM DRAIN PLAN AND PROFILE - SHEET 20 OF 20				44	15	194	5	87		10
193	STORM DRAIN LATERALS		178								
194	STORM DRAIN LATERALS		189								
195	STORM DRAIN LATERALS		160								
196	STORM DRAIN LATERALS		313								
197	STORM DRAIN LATERALS		383								
198	STORM DRAIN LATERALS		207								
199	STORM DRAIN LATERALS		132								
	TOTALS	4	8589	3	2352	779	10236	264	4188	8	1315

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RAY ELLISON BLVD
LOOP 410 TO OLD PEARSALL RD
SUMMARY OF QUANTITIES
DRAINAGE

SHEET 1 OF 3

100 % SUBMITTAL	PROJECT NO.: 8185-00		DATE: 3/24/2015
DRWN. BY: BD	DSGN. BY: HM	CHKD. BY: DT	SHEET NO.: 20

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PLANTING PLANS SUMMARY

ITEM	515.1	801.1	802.2	329200.1	329200.2	329200.3	329200.4	329200.5	329300.1	329300.2
DESCRIPTION	TOPSOIL	LEVEL I PROTECTIVE FENCING	LEVEL II PRUNING	ROCK MULCH	DRAINFIELD SEED MIX	BARK MULCH WITH SHORT GRASS MIX	SOLID SOD BERMUDA	HYDROSEED	NATIVE PLANTS 1 GALLON	NATIVE PLANTS 3 GALLON
	CY	LF	LS	SF	SF	SF	SY	SY	EA	EA
PLANTING PLANS	2305	7500	1	151763	1114	7578	1909	18840	10498	1271
TOTALS	2305	7500	1	151763	1114	7578	1909	18840	10498	1271

ITEM	329300.3	329300.4	329300.5	0168-2001
DESCRIPTION	NATIVE PLANTS 5 GALLON	DESERT WILLOW TREES	MONTERREY OAKS	VEGETATIVE WATERING
	EA	EA	EA	MG
PLANTING PLANS	607	2	16	324
TOTALS	607	2	16	324

SW3P SUMMARY

	ITEM	540.1	540.11	540.2	540.6	540.7	540.9	540.10
	DESCRIPTION	ROCK FILTER DAMS (INSTALL) (TYPE 2)	BAGGED INLET GRAVEL FILTERS	ROCK FILTER DAMS (REMOVE) (TYPE 2)	CONSTRUCTION EXITS (INSTALL)	CONSTRUCTION EXITS (REMOVE)	TEMPORARY SEDIMENT CONTROL FENCE	CURB INLET GRAVEL FILTER
SHT NO		LF	LF	LF	SY	SY	LF	LF
245	SW3P LAYOUT PH I AND II	40		40	60	60	715	120
246	SW3P LAYOUT PH I AND II		35				1000	60
247	SW3P LAYOUT PH I AND II		25		60	60	955	
248	SW3P LAYOUT PH I AND II				60	60	415	
249	SW3P LAYOUT PH I AND II						1515	
250	SW3P LAYOUT PH I AND II	125		125	60	60	1720	
251	SW3P LAYOUT PH I AND II	50		50			1765	
252	SW3P LAYOUT PH I AND II				60	60	1165	
253	SW3P LAYOUT PH I AND II	30		30	60	60	1380	
254	SW3P LAYOUT PH I AND II		10		60	60	1075	
255	SW3P LAYOUT PH III AND IV				60	60		45
256	SW3P LAYOUT PH III AND IV							45
258	SW3P LAYOUT PH III AND IV				60	60		
259	SW3P LAYOUT PH III AND IV				60	60		
260	SW3P LAYOUT PH III AND IV				60	60		
263	SW3P LAYOUT PH III AND IV				60	60		
264	SW3P LAYOUT PH III AND IV				60	60		
	TOTALS	245	70	245	780	780	11705	270

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RAY ELLISON BLVD
LOOP 410 TO OLD PEARSALL RD
SUMMARY OF QUANTITIES
PLANTING PLANS & SW3P
SHEET 1 OF 1

100 % SUBMITTAL	PROJECT NO.: 8185-00		DATE: 3/24/2015
DRWN. BY: BD	DSGN. BY: HM	CHKD. BY: DT	SHEET NO.: 23

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IH 410 SIGNAL QUANTITIES

	ITEM	DESCRIPTION	UNI	QTY
**	308.2	DRILLED SHAFT (24")	LF	6
*	531.91	PEDESTRIAN SIGN R10-3BL (9" X 12")	EA	2
	600.1	TRAFFIC SIGNAL GENERAL CONDITIONS N/A	EA	1
	618.2	TRENCH CONDUIT (PVC SCHEDULE 40) (3")	LF	105
	620.2	ELECTRICAL CONDUCTORS (NO. 8) (BARE)	LF	355
	624.4	GROUND BOXES TY D (162922)	EA	1
	680.1	INSTALLATION OF HIGHWAY TRAFFIC SIGNALS [ISOLATED]	EA	1
	683.1	LED COUNTDOWN PEDESTRIAN SIGNAL MODULE	EA	2
	684.1	TRAFFIC SIGNAL CABLES (TYPE A) (14 AWG) (9 CONDUCTOR)	LF	570
	687.1	PED POLE ASSEMBLY (PUSH BUTTON POST, INCL. FND)	EA	1
	688.2	PED DETECTORS (2 INCH PUSH BUTTON)	EA	2
	688.3	AUDIBLE PEDESTRIAN SIGNAL UNITS [2" PUSHBUTTON AND SIGN]	EA	2

APPLE VALLEY DRIVE SIGNAL QUANTITIES

ITEM	DESCRIPTION	UNIT	QTY
618.5	BORE CONDUIT (PVC SCHEDULE 40) (3")	LF	880
624.4	GROUND BOXES TY D (162922)	EA	4

FIVE PALMS RD SIGNAL QUANTITIES

	ITEM	DESCRIPTION	UNIT	QTY
	308.1	DRILLED SHAFTS (36")	LF	42
**	308.2	DRILLED SHAFTS (24")	LF	30
	308.3	DRILLED SHAFTS (30")	LF	12
*	531.91	PEDESTRIAN SIGN R10-3BL (9" X 12")	EA	4
*	531.92	PEDESTRIAN SIGN R10-3BR (9" X 12")	EA	4
*	531.95	R10-17T LEFT TURN YIELD ON FLASHING YELLOW ARROW* (30" X 30")	EA	2
	600.1	TRAFFIC SIGNAL GENERAL CONDITIONS N/A	EA	1
	618.1	TRENCH CONDUIT (PVC SCHEDULE 40) (2")	LF	235
	618.2	TRENCH CONDUIT (PVC SCHEDULE 40) (3")	LF	25
	618.5	BORE CONDUIT (PVC SCHEDULE 40) (3")	LF	795
	620.1	ELECTRICAL CONDUCTORS (NO. 6) (BARE)	LF	15
	620.2	ELECTRICAL CONDUCTORS (NO. 8) (BARE)	LF	1195
	620.3	ELECTRICAL CONDUCTORS (NO. 6) (INSULATED)	LF	25
	624.4	GROUND BOXES TY D (162922)	EA	5
	628.1	ELECTRICAL SERVICES (TYPE D) (120/240V)	EA	1
	633.1	BATTERY BACKUP SYSTEM	EA	1
	680.1	INSTALLATION OF HIGHWAY TRAFFIC SIGNALS [ISOLATED]	EA	1
	682.1	VEHICLE SIGNAL SECTION WITH BACK PLATE (3 SEC)	EA	8
	682.2	VEHICLE SIGNAL SECTION WITH BACK PLATE (4 SEC)	EA	2
	683.1	LED COUNTDOWN PEDESTRIAN SIGNAL MODULE	EA	8
	684.1	TRAFFIC SIGNAL CABLES (TYPE A) (14 AWG) (9 CONDUCTOR)	LF	2300
	684.12	TRAFFIC SIGNAL CABLES (TYPE A) (14 AWG) (4 CONDUCTOR)	LF	680
	686.5	INSTALL TRAFFIC SIGNAL POLE ASSEMBLY SMA-80 (32 FT) ILSN	EA	1
	686.51	INSTALL TRAFFIC SIGNAL POLE ASSEMBLY SMA-80 (36 FT) ILSN	EA	1
	686.52	INSTALL TRAFFIC SIGNAL POLE ASSEMBLY SMA-80 (40FT) ILSN	EA	2
	687.1	PED POLE ASSEMBLY (PUSH BUTTON POST, INCL. FND)	EA	5
	688.2	PED DETECTORS (2 INCH PUSH BUTTON)	EA	8
	688.3	AUDIBLE PEDESTRIAN SIGNAL UNITS [2" PUSHBUTTON AND SIGN]	EA	8
	693.11	INSTALL INTERNALLY LIGHTED STREET NAME SIGN (LED)	EA	4
	696.12	INSTALL RADAR ADVANCE DETECTION ASSEMBLY (RADD)	EA	2
	696.13	INSTALL RADAR PRESENCE DETECTION ASSEMBLY (RPDD)	EA	4
	696.14	INSTALL RADAR COMMUNICATION CABLE	LF	1030
	6007	REMOVE TRAFFIC SIGNAL	EA	1
*	680.ITS01	802.11n, b/g/n Outdoor Mesh AP, FCC Cfg (Part#: AIR-CAP1552E-A-K9)	EA	1
*	680.ITS02	2400-2483.5 MHz, 4.0 dBi Omni Ant, with N Connect (Part #: AIR-ANT2547V-N)	EA	3
*	680.ITS03	Aironet 1550 Series AC Power Cord, 40 ft, N. Amer Plug (Part #: AIR-CORD-R3P-40NA)	EA	1
*	680.ITS04	1550 Series Pole Mount Kit (Part #: AIR-ACCPMK1550)	EA	1
*	680.ITS05	Airnet 1550 Series AP SMARTnet 8x5xNBD Service (Part #: CON-SNT-CAP-1552Ex)	EA	1
*	680.ITS06	27331A 01010000 BELDEN (Power Cable) (Part #: VNTC 16-3-R10K-BED)	LF	90
*	680.ITS07	IND ETH 5E4P24 HLD (Ethernet Cable) (Part #: 7919A 01001000)	LF	90
*	680.ITS08	2955 12 TX W/SM UPLINKS (Part #:WS-C2955S-12)	EA	1
*	680.ITS09	19 IN RACK MOUNT KIT (Part #: CISCO STK-RACKMNT-2955)	EA	1
*	680.ITS10	CISCO, AC TO 24 V DC DIN RAIL PW (Part #: PWR-2955-AC)	EA	1
*	680.ITS11	SMARTNET 8X5XNBD 2955 12 TX w/Single Mode Uplinks (Part #:CON-SNTWSC2955S)	EA	1
*	680.ITS12	Su-a-5.3-6-bd-vl (Part #: ALV-853197)	EA	1
*	680.ITS13	Astro Bracket (Part #: AB-3004-29)	EA	1
*	680.ITS14	Aluminum Tube (Part #: AB-2003-23)	EA	1
*	680.ITS15	IND ETH 5E4P24 HLD (Ethernet Cable) (Part #: 7919A 01001000)	LF	90
***	683.SUB01	BRACKET ASSY (SYMBOLIC PEDESTRIAN HEAD)	EA	8

PEARSALL RD SIGNAL QUANTITIES

	ITEM	DESCRIPTION	UNIT	QTY
	308.1	DRILLED SHAFTS (36")	LF	30
**	308.2	DRILLED SHAFTS (24")	LF	18
*	531.1	METRO STREET NAME, BLOCK NUMBERS*	EA	3
*	531.11	R3-5 LEFT OR RIGHT ONLY* (30" X 36")	EA	2
*	531.24	R9-3A PEDESTRIAN CROSSING PROHIBITED*(18" X 18")	EA	1
*	531.91	PEDESTRIAN SIGN R10-3BL (9" X 12")	EA	3
*	531.92	PEDESTRIAN SIGN R10-3BR (9" X 12")	EA	3
*	531.93	R10-10L LEFT TURN SIGNAL* (24" X 30")	EA	1
	600.1	TRAFFIC SIGNAL GENERAL CONDITIONS N/A	EA	1
	618.1	TRENCH CONDUIT (PVC SCHEDULE 40) (2")	LF	90
	620.2	ELECTRICAL CONDUCTORS (NO. 8) (BARE)	LF	290
	624.4	GROUND BOXES TY D (162922)	EA	2
*	625.1	ZINC COATED STEEL WIRE STRAND (5/16 IN)	LF	1000
*	625.2	ZINC COATED STEEL WIRE STRAND (3/16 IN)	LF	450
	680.1	INSTALLATION OF HIGHWAY TRAFFIC SIGNALS [ISOLATED]	EA	1
	682.1	VEHICLE SIGNAL SECTION WITH BACK PLATE (3 SEC)	EA	7
	683.1	LED COUNTDOWN PEDESTRIAN SIGNAL MODULE	EA	6
	684.1	TRAFFIC SIGNAL CABLES (TYPE A) (14 AWG) (9 CONDUCTOR)	LF	675
	684.11	TRAFFIC SIGNAL CABLES (TYPE A) (14 AWG) (7 CONDUCTOR)	LF	840
	686.1	INSTALL TRAFFIC SIGNAL POLE ASSEMBLIES (STEEL)(STR TY D)(LUM)	EA	2
	687.1	PED POLE ASSEMBLY (PUSH BUTTON POST, INCL. FND)	EA	3
	688.2	PED DETECTORS (2 INCH PUSH BUTTON)	EA	6
	688.3	AUDIBLE PEDESTRIAN SIGNAL UNITS [2" PUSHBUTTON AND SIGN]	EA	6
	696.12	INSTALL RADAR ADVANCE DETECTION ASSEMBLY (RADD)	EA	2
	696.13	INSTALL RADAR PRESENCE DETECTION ASSEMBLY (RPDD)	EA	4
	696.14	INSTALL RADAR COMMUNICATION CABLE	LF	860
	6007	REMOVE TRAFFIC SIGNAL	EA	1
*	680.ITS01	802.11n, b/g/n Outdoor Mesh AP, FCC Cfg (Part#: AIR-CAP1552E-A-K9)	EA	1
*	680.ITS02	2400-2483.5 MHz, 4.0 dBi Omni Ant, with N Connect (Part #: AIR-ANT2547V-N)	EA	3
*	680.ITS03	Aironet 1550 Series AC Power Cord, 40 ft, N. Amer Plug (Part #: AIR-CORD-R3P-40NA)	EA	1
*	680.ITS04	1550 Series Pole Mount Kit (Part #: AIR-ACCPMK1550)	EA	1
*	680.ITS05	Airnet 1550 Series AP SMARTnet 8x5xNBD Service (Part #: CON-SNT-CAP-1552Ex)	EA	1
*	680.ITS06	27331A 01010000 BELDEN (Power Cable) (Part #: VNTC 16-3-R10K-BED)	LF	215
*	680.ITS07	IND ETH 5E4P24 HLD (Ethernet Cable) (Part #: 7919A 01001000)	LF	215
*	680.ITS08	2955 12 TX W/SM UPLINKS (Part #:WS-C2955S-12)	EA	1
*	680.ITS09	19 IN RACK MOUNT KIT (Part #: CISCO STK-RACKMNT-2955)	EA	1
*	680.ITS10	CISCO, AC TO 24 V DC DIN RAIL PW (Part #: PWR-2955-AC)	EA	1
*	680.ITS11	SMARTNET 8X5XNBD 2955 12 TX w/Single Mode Uplinks (Part #:CON-SNTWSC2955S)	EA	1
*	680.ITS12	Su-a-5.3-6-bd-vl (Part #: ALV-853197)	EA	1
*	680.ITS13	Astro Bracket (Part #: AB-3004-29)	EA	1
*	680.ITS14	Aluminum Tube (Part #: AB-2003-23)	EA	1
*	680.ITS15	IND ETH 5E4P24 HLD (Ethernet Cable) (Part #: 7919A 01001000)	LF	215
***	683.SUB01	BRACKET ASSY (SYMBOLIC PEDESTRIAN HEAD)	EA	6

*ITEMS ARE SUBSIDIARY TO ITEM 680.1 INSTALLATION OF HIGHWAY TRAFFIC SIGNALS (NSPI).
**ITEMS ARE SUBSIDIARY TO ITEM 687.1 PED POLE ASSEMBLY (NSPI).
***ITEMS ARE SUBSIDIARY TO ITEM 683.1 LED COUNTDOWN SIGNAL MODULE (NSPI).

ADDENDUM NO. 04

PAPE-DAWSON ENGINEERS
2000 NW LOOP 410 | SAN ANTONIO, TEXAS 78213 | PHONE: 210.375.9000 FAX: 210.375.9010
TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION # 470

CITY OF SAN ANTONIO
TRANSPORTATION & CAPITAL IMPROVEMENTS

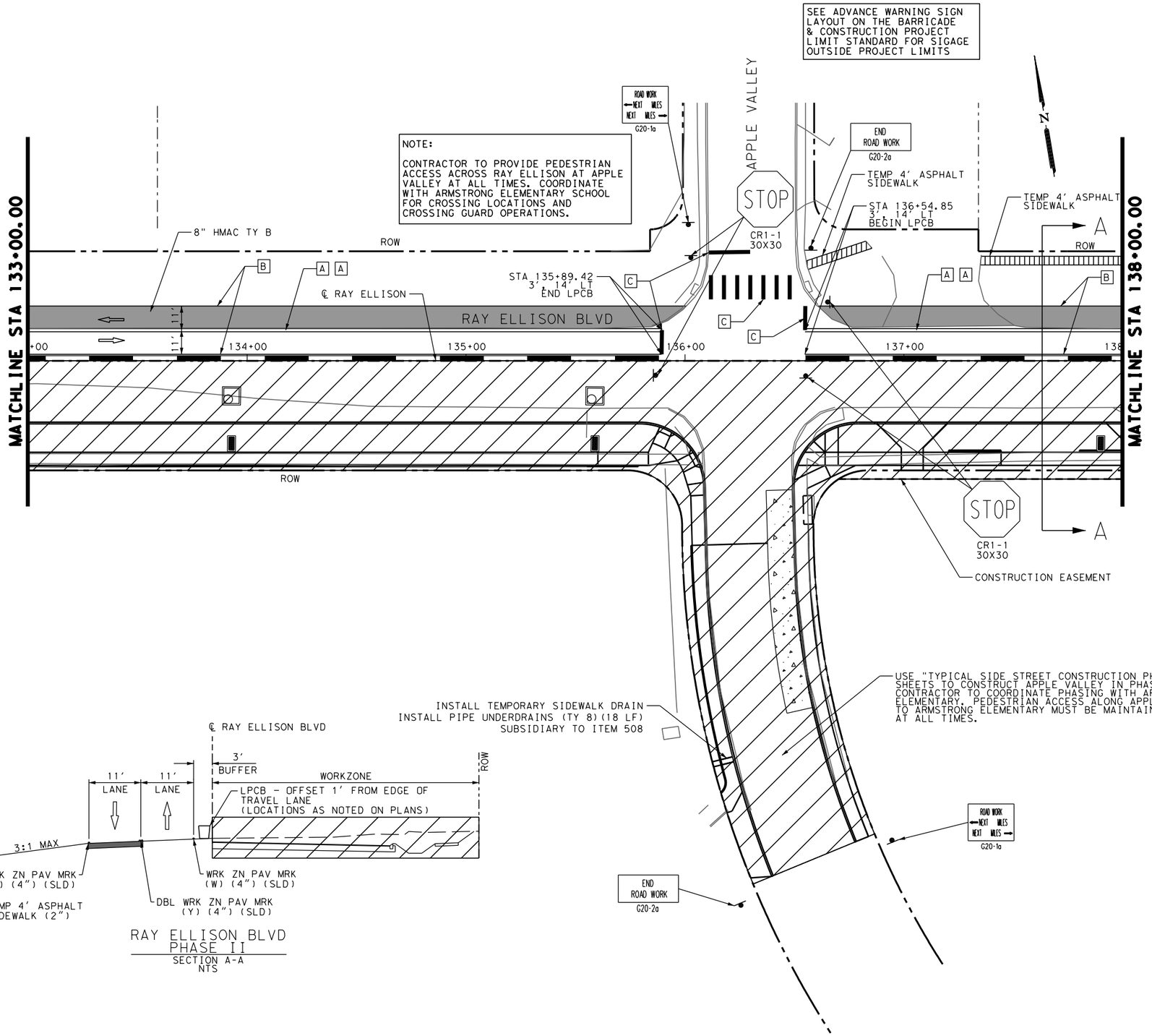
RAY ELLISON BLVD
LOOP 410 TO OLD PEARSALL RD
SUMMARY OF QUANTITIES
TRAFFIC SIGNAL

SHEET 1 OF 1

100 % SUBMITTAL	PROJECT NO.: 8185-00		DATE: 3242015
DRWN. BY: BD	DSGN. BY: HM	CHKD. BY: DT	SHEET NO.: 24

Plotted on: 3/24/2015 12:17:28 PM
Design Filename: P:\81\85\00\Design\Civil\TCP\818500TCP_PH1_04A_ADD_04.dgn

I.D.	DESCRIPTION
A	WK ZN PAV MRK REMOV (Y) 4" (SLD)
B	WK ZN PAV MRK REMOV (W) 4" (SLD)
C	WK ZN PAV MRK REMOV (W) 24" (SLD)
D	WK ZN PAV MRK REMOV (W) 4" (BRK)
E	WK ZN PAV MRK REMOV (REFL) TY I-A
F	WK ZN PAV MRK REMOV (REFL) TY II-A-A
G	WK ZN RAISED PAV MRK TYPE W



RAY ELLISON BLVD
PHASE II
SECTION A-A
NTS

NOTES:

1. FOR ADDITIONAL DETAILS SEE TxDOT TRAFFIC CONTROL PLAN AND BARRICADE & CONSTRUCTION STANDARD SHEETS.
2. EXISTING PAVEMENT MARKINGS CONFLICTING WITH WORK ZONE PAVEMENT MARKINGS SHALL BE REMOVED. THIS WORK IS CONSIDERED SUBSIDIARY TO THE WORK ZONE PAVEMENT MARKING ITEMS.
3. A TAPERED LOW PROFILE CONCRETE BARRIER SHALL BE USED AT THE END OF EACH SEGMENT OF BARRIERS, UNLESS OTHERWISE NOTED.
4. EXISTING FEATURES ARE SHOWN SCREENED BACK, i.e. FADED.

LEGEND:

- TEMPORARY PAVEMENT (8" HMAC TY B)
- TEMPORARY ASPHALT SIDEWALK (2" HMA TY C)
- CONSTRUCTION PHASE II
- LOW PROFILE CONCRETE BARRIER (LPCB)
- TYPE III BARRICADE
- PLASTIC DRUMS
- SIGN
- TRAFFIC FLOW ARROWS

ADDENDUM NO. 04

STATE OF TEXAS
JAMES A. LUTZ
84722
LICENSED PROFESSIONAL ENGINEER

JAMES A. LUTZ, P.E. 3/24/2015 DATE

0 25 50 75
SCALE: 1" = 50'

PAPE-DAWSON ENGINEERS
2000 NW LOOP 410 | SAN ANTONIO, TEXAS 78213 | PHONE: 210.375.9000 FAX: 210.375.9010
TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION # 470

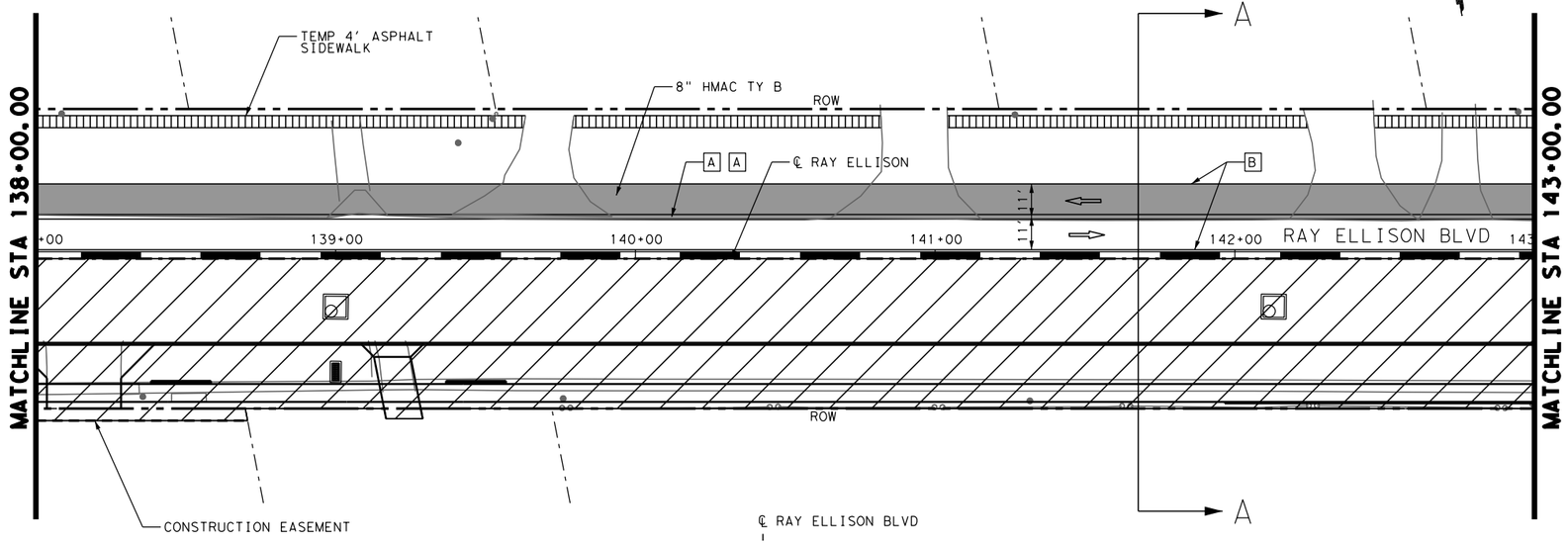
CITY OF SAN ANTONIO
TRANSPORTATION & CAPITAL IMPROVEMENTS

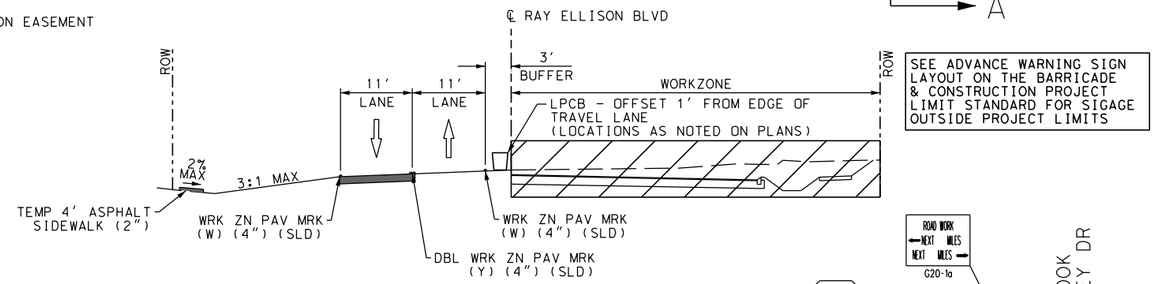
RAY ELLISON BLVD
LOOP 410 TO OLD PEARSALL RD
TRAFFIC CONTROL PLAN LAYOUT
PHASE II

SHEET 6 OF 13

100 % SUBMITTAL	PROJECT NO.: 8185-00		DATE: 3/24/2015
DRWN. BY: HM	DSGN. BY: HM	CHKD. BY: DT	SHEET NO.: 39

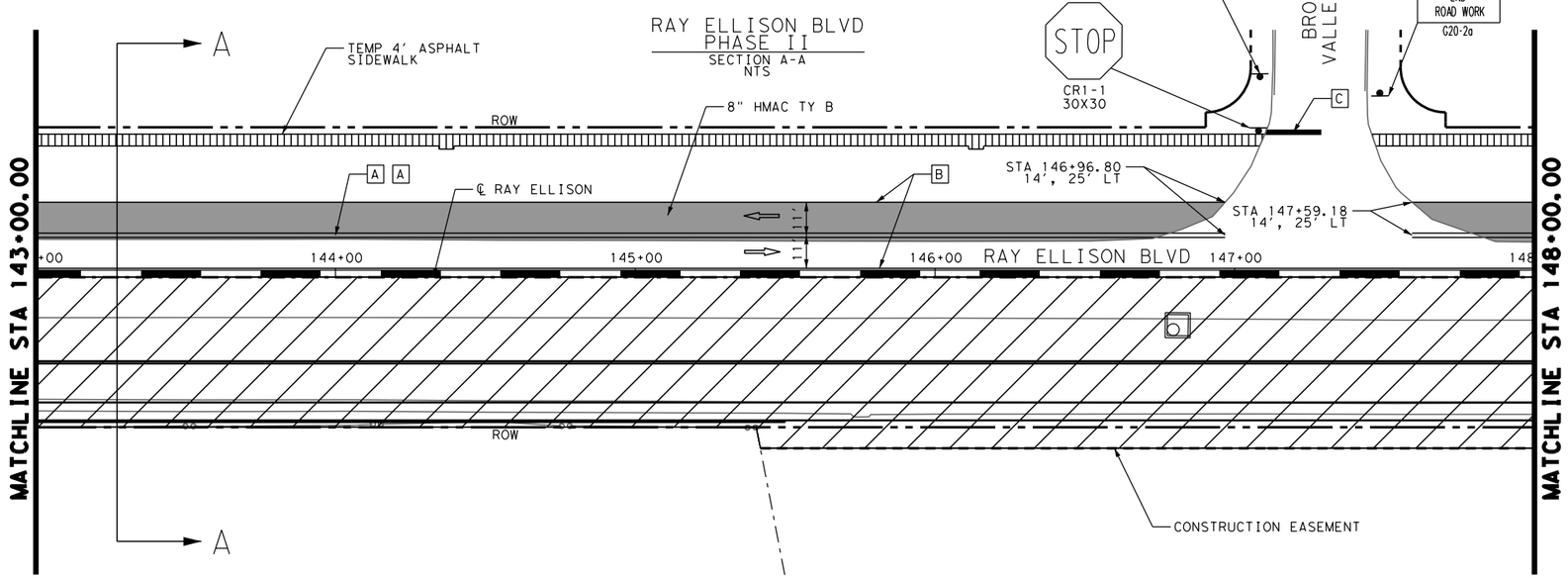
I.D.	DESCRIPTION
A	WK ZN PAV MRK REMOV (Y) 4" (SLD)
B	WK ZN PAV MRK REMOV (W) 4" (SLD)
C	WK ZN PAV MRK REMOV (W) 24" (SLD)
D	WK ZN PAV MRK REMOV (W) 4" (BRK)
E	WK ZN PAV MRK REMOV (REFL) TY I-A
F	WK ZN PAV MRK REMOV (REFL) TY II-A-A
G	WK ZN RAISED PAV MRK TYPE W





SEE ADVANCE WARNING SIGN LAYOUT ON THE BARRICADE & CONSTRUCTION PROJECT LIMIT STANDARD FOR SIGAGE OUTSIDE PROJECT LIMITS

RAY ELLISON BLVD
PHASE II
SECTION A-A
NTS



NOTES:

1. FOR ADDITIONAL DETAILS SEE TxDOT TRAFFIC CONTROL PLAN AND BARRICADE & CONSTRUCTION STANDARD SHEETS.
2. EXISTING PAVEMENT MARKINGS CONFLICTING WITH WORK ZONE PAVEMENT MARKINGS SHALL BE REMOVED. THIS WORK IS CONSIDERED SUBSIDIARY TO THE WORK ZONE PAVEMENT MARKING ITEMS.
3. A TAPERED LOW PROFILE CONCRETE BARRIER SHALL BE USED AT THE END OF EACH SEGMENT OF BARRIERS, UNLESS OTHERWISE NOTED.
4. EXISTING FEATURES ARE SHOWN SCREENED BACK, i.e. FADED.

LEGEND:

- TEMPORARY PAVEMENT (8" HMAC TY B)
- TEMPORARY ASPHALT SIDEWALK (2" HMA TY C)
- CONSTRUCTION PHASE II
- LOW PROFILE CONCRETE BARRIER (LPCB)
- TYPE III BARRICADE
- PLASTIC DRUMS
- SIGN
- TRAFFIC FLOW ARROWS

ADDENDUM NO. 04

STATE OF TEXAS
JAMES A. LUTZ
84722
LICENSED PROFESSIONAL ENGINEER

JAMES A. LUTZ, P.E. 3/24/2015
DATE

0 25 50 75
SCALE: 1"= 50'

PAPE-DAWSON ENGINEERS
2000 NW LOOP 410 | SAN ANTONIO, TEXAS 78213 | PHONE: 210.375.9000 FAX: 210.375.9010
TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION # 470

CITY OF SAN ANTONIO
TRANSPORTATION & CAPITAL IMPROVEMENTS

RAY ELLISON BLVD
LOOP 410 TO OLD PEARSALL RD
TRAFFIC CONTROL PLAN LAYOUT PHASE II

SHEET 7 OF 13

100 % SUBMITTAL	PROJECT NO.: 8185-00		DATE: 3/24/2015
DRWN. BY: HM	DSGN. BY: HM	CHKD. BY: DT	SHEET NO.: 40

Plotted on: 3/24/2015 12:17:29 PM
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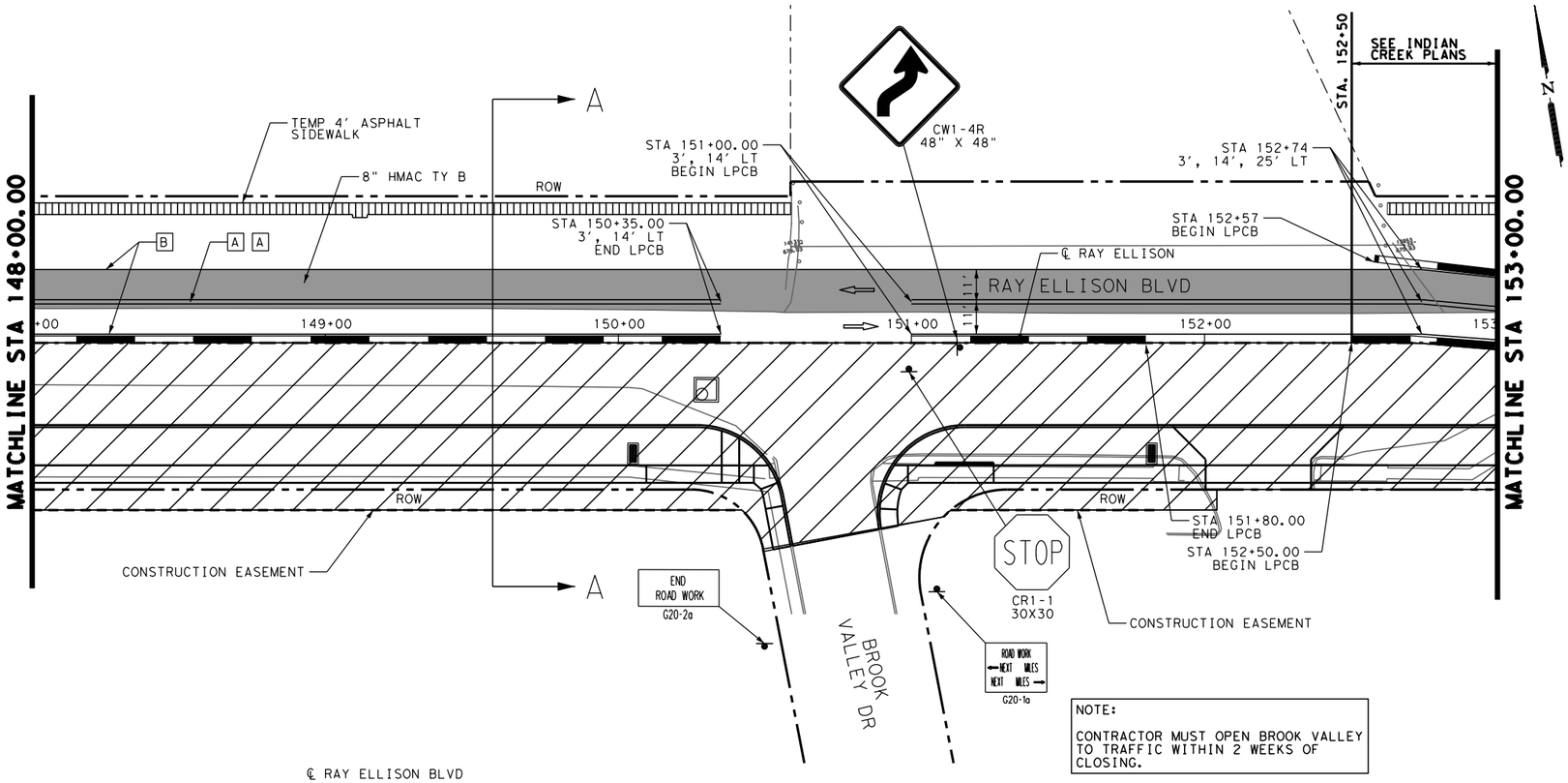
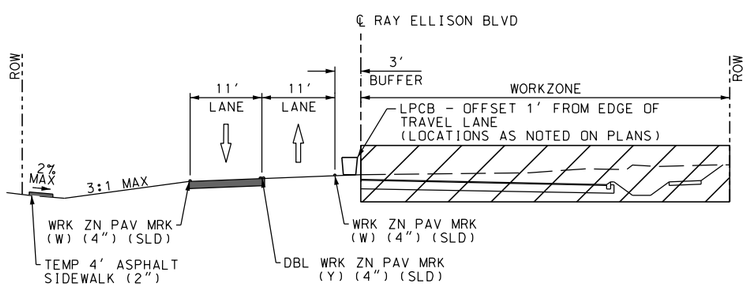
I.D.	DESCRIPTION
A	WK ZN PAV MRK REMOV (Y) 4" (SLD)
B	WK ZN PAV MRK REMOV (W) 4" (SLD)
C	WK ZN PAV MRK REMOV (W) 24" (SLD)
D	WK ZN PAV MRK REMOV (W) 4" (BRK)
E	WK ZN PAV MRK REMOV (REFL) TY I-A
F	WK ZN PAV MRK REMOV (REFL) TY II-A-A
G	WK ZN RAISED PAV MRK TYPE W



NOTE:

CONTRACTOR MUST OPEN BROOK VALLEY TO TRAFFIC WITHIN 2 WEEKS OF CLOSING.



RAY ELLISON BLVD
PHASE II
SECTION A-A
NTS

NOTES:

1. FOR ADDITIONAL DETAILS SEE TxDOT TRAFFIC CONTROL PLAN AND BARRICADE & CONSTRUCTION STANDARD SHEETS.
2. EXISTING PAVEMENT MARKINGS CONFLICTING WITH WORK ZONE PAVEMENT MARKINGS SHALL BE REMOVED. THIS WORK IS CONSIDERED SUBSIDIARY TO THE WORK ZONE PAVEMENT MARKING ITEMS.
3. A TAPERED LOW PROFILE CONCRETE BARRIER SHALL BE USED AT THE END OF EACH SEGMENT OF BARRIERS, UNLESS OTHERWISE NOTED.
4. EXISTING FEATURES ARE SHOWN SCREENED BACK, i.e. FADED.

LEGEND:

- TEMPORARY PAVEMENT (8" HMAC TY B)
- TEMPORARY ASPHALT SIDEWALK (2" HMA TY C)
- CONSTRUCTION PHASE II
- LOW PROFILE CONCRETE BARRIER (LPCB)
- TYPE III BARRICADE
- PLASTIC DRUMS
- SIGN
- TRAFFIC FLOW ARROWS
- EXIST. SIGNAL HEAD ON SPAN

ADDENDUM NO. 04

STATE OF TEXAS
JAMES A. LUTZ
84722
LICENSED
PROFESSIONAL ENGINEER

JAMES A. LUTZ, P.E. — 3/24/2015 DATE

0 25 50 75
SCALE: 1"= 50'

PAPE-DAWSON ENGINEERS
2000 NW LOOP 410 | SAN ANTONIO, TEXAS 78213 | PHONE: 210.375.9000 FAX: 210.375.9010
TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION # 470

CITY OF SAN ANTONIO
TRANSPORTATION & CAPITAL IMPROVEMENTS

RAY ELLISON BLVD
LOOP 410 TO OLD PEARSALL RD
TRAFFIC CONTROL PLAN LAYOUT
PHASE II

SHEET 8 OF 13

100 % SUBMITTAL	PROJECT NO.: 8185-00		DATE: 3242015
DRWN. BY: HM	DSGN. BY: HM	CHKD. BY: DT	SHEET NO.: 41

Plotted on: 3/24/2015 12:17:30 PM
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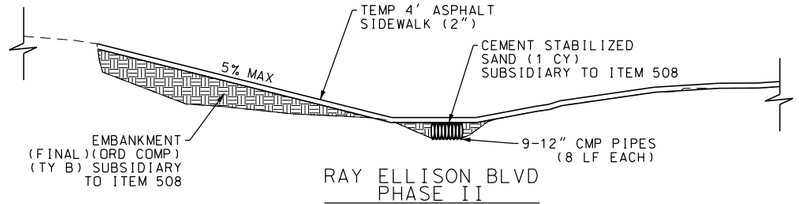
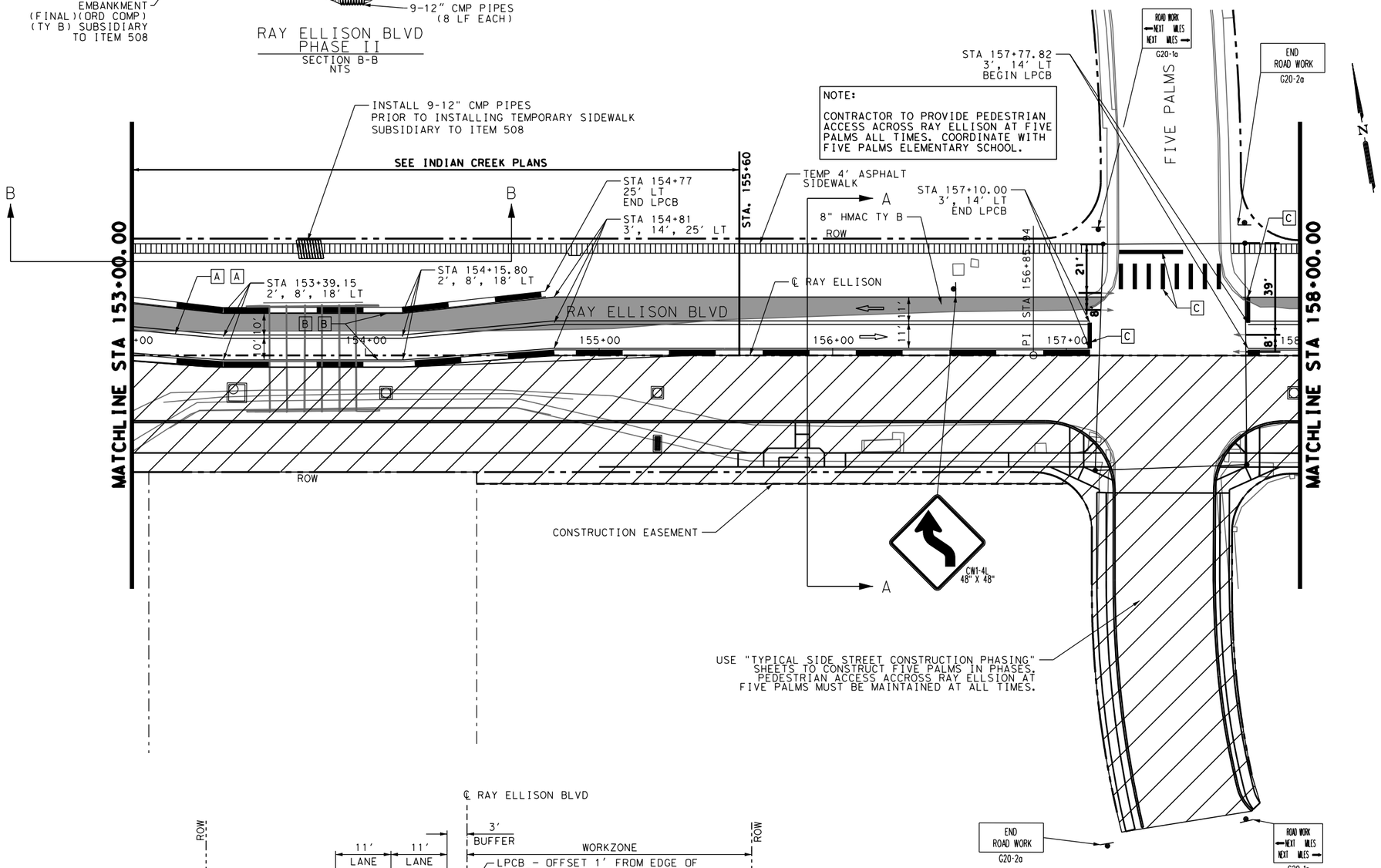
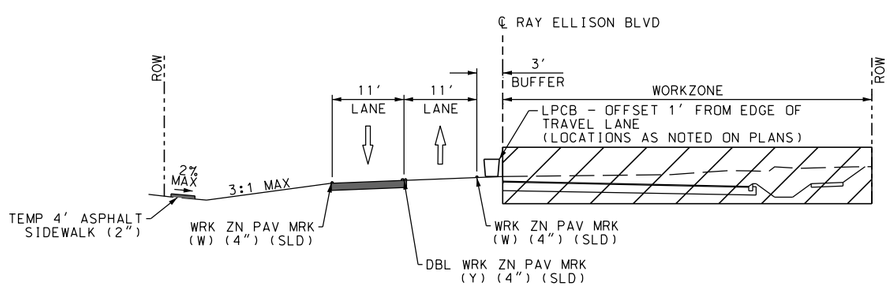


RAY ELLISON BLVD
PHASE II
SECTION B-B
NTS





RAY ELLISON BLVD
PHASE II
SECTION A-A
NTS

I.D.	DESCRIPTION
A	WK ZN PAV MRK REMOV (Y) 4" (SLD)
B	WK ZN PAV MRK REMOV (W) 4" (SLD)
C	WK ZN PAV MRK REMOV (W) 24" (SLD)
D	WK ZN PAV MRK REMOV (W) 4" (BRK)
E	WK ZN PAV MRK REMOV (REFL) TY I-A
F	WK ZN PAV MRK REMOV (REFL) TY II-A-A
G	WK ZN RAISED PAV MRK TYPE W

NOTES:

1. FOR ADDITIONAL DETAILS SEE TxDOT TRAFFIC CONTROL PLAN AND BARRICADE & CONSTRUCTION STANDARD SHEETS.
2. EXISTING PAVEMENT MARKINGS CONFLICTING WITH WORK ZONE PAVEMENT MARKINGS SHALL BE REMOVED. THIS WORK IS CONSIDERED SUBSIDIARY TO THE WORK ZONE PAVEMENT MARKING ITEMS.
3. A TAPERED LOW PROFILE CONCRETE BARRIER SHALL BE USED AT THE END OF EACH SEGMENT OF BARRIERS, UNLESS OTHERWISE NOTED.
4. EXISTING FEATURES ARE SHOWN SCREENED BACK, i.e. FADED.

LEGEND:

- TEMPORARY PAVEMENT (8" HMAC TY B)
- TEMPORARY ASPHALT SIDEWALK (2" HMA TY C)
- CONSTRUCTION PHASE II
- LOW PROFILE CONCRETE BARRIER (LPCB)
- TYPE III BARRICADE
- PLASTIC DRUMS
- SIGN
- TRAFFIC FLOW ARROWS
- EXIST. SIGNAL HEAD ON SPAN

ADDENDUM NO. 04

STATE OF TEXAS
JAMES A. LUTZ
84722
LICENSED
PROFESSIONAL ENGINEER

JAMES A. LUTZ, P.E. — 3/24/2015 DATE

0 25 50 75
SCALE: 1"= 50'

PAPE-DAWSON ENGINEERS
2000 NW LOOP 410 | SAN ANTONIO, TEXAS 78213 | PHONE: 210.375.9000 FAX: 210.375.9010
TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION # 470

CITY OF SAN ANTONIO
TRANSPORTATION & CAPITAL IMPROVEMENTS

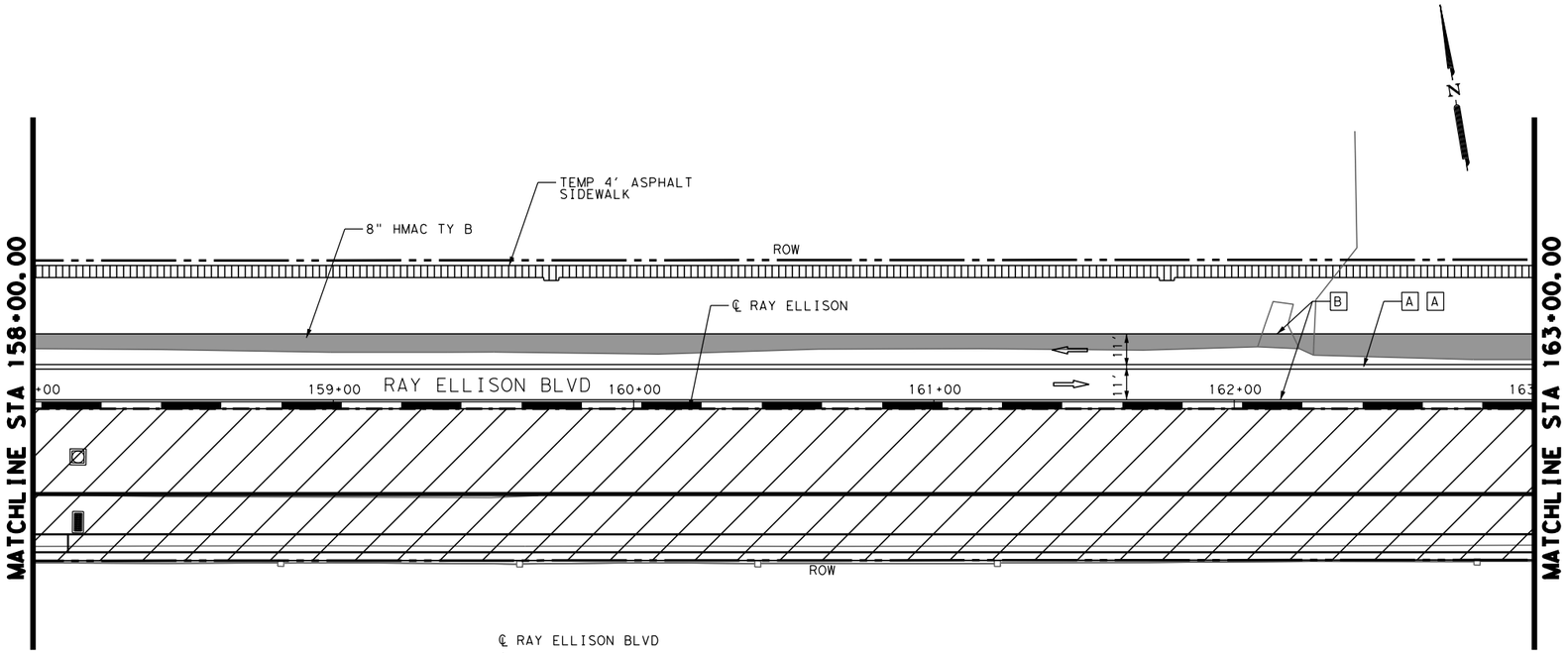
RAY ELLISON BLVD
LOOP 410 TO OLD PEARSALL RD
TRAFFIC CONTROL PLAN LAYOUT
PHASE II

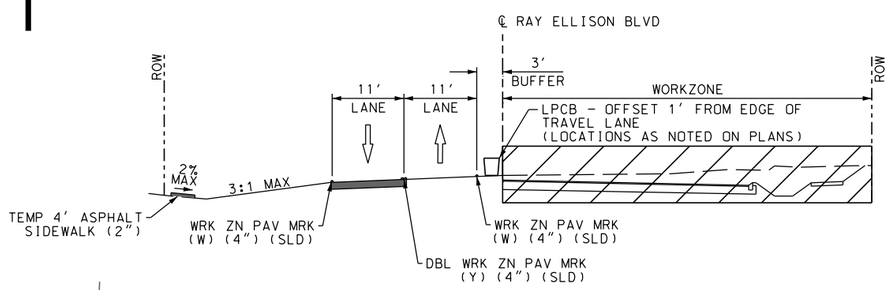
SHEET 9 OF 13

100 % SUBMITTAL	PROJECT NO.: 8185-00		DATE: 3/24/2015
DRWN. BY: HM	DSGN. BY: HM	CHKD. BY: DT	SHEET NO.: 42

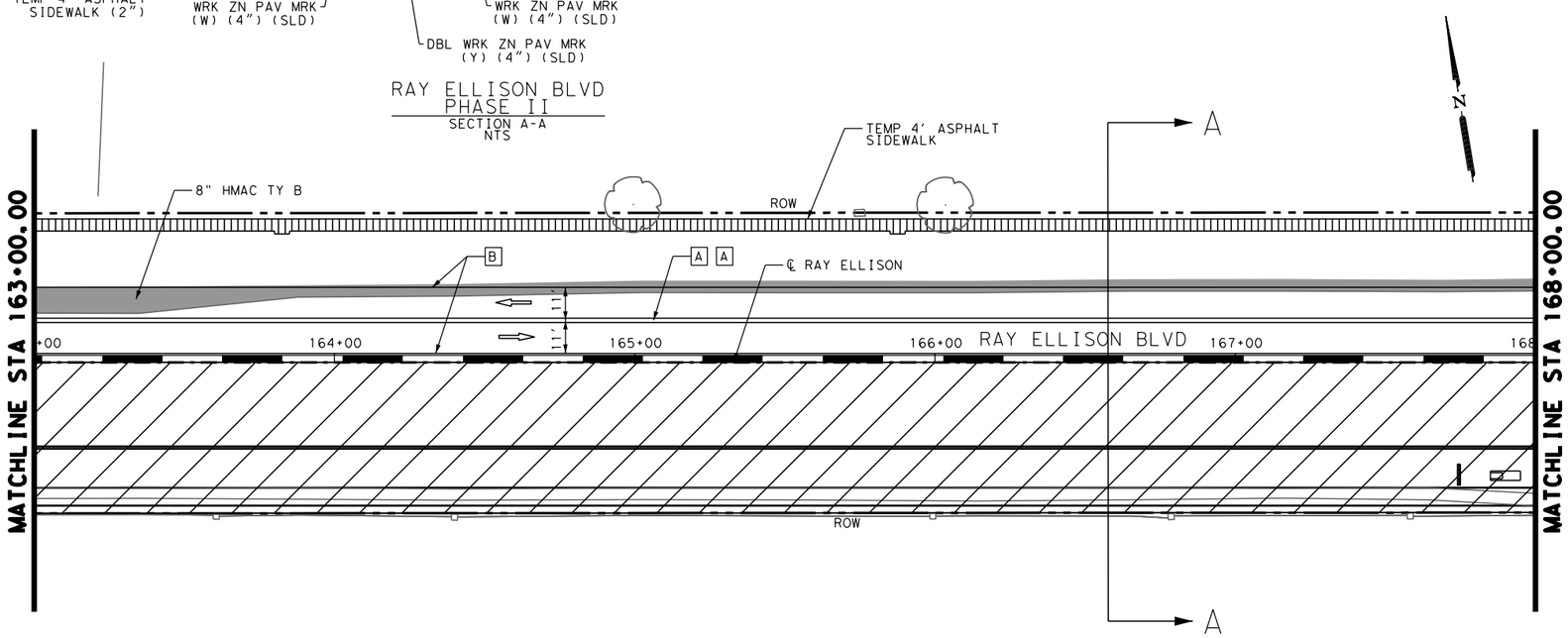
Design Filename: P:\81\85\00\Design\Civil\TCP\818500TCP_PH1_06A_ADD_04.dgn

I.D.	DESCRIPTION
A	WK ZN PAV MRK REMOV (Y) 4" (SLD)
B	WK ZN PAV MRK REMOV (W) 4" (SLD)
C	WK ZN PAV MRK REMOV (W) 24" (SLD)
D	WK ZN PAV MRK REMOV (W) 4" (BRK)
E	WK ZN PAV MRK REMOV (REFL) TY I-A
F	WK ZN PAV MRK REMOV (REFL) TY II-A-A
G	WK ZN RAISED PAV MRK TYPE W





RAY ELLISON BLVD
PHASE II
SECTION A-A
NTS



NOTES:

1. FOR ADDITIONAL DETAILS SEE TxDOT TRAFFIC CONTROL PLAN AND BARRICADE & CONSTRUCTION STANDARD SHEETS.
2. EXISTING PAVEMENT MARKINGS CONFLICTING WITH WORK ZONE PAVEMENT MARKINGS SHALL BE REMOVED. THIS WORK IS CONSIDERED SUBSIDIARY TO THE WORK ZONE PAVEMENT MARKING ITEMS.
3. A TAPERED LOW PROFILE CONCRETE BARRIER SHALL BE USED AT THE END OF EACH SEGMENT OF BARRIERS, UNLESS OTHERWISE NOTED.
4. EXISTING FEATURES ARE SHOWN SCREENED BACK, i.e. FADED.

LEGEND:

- TEMPORARY PAVEMENT (8" HMAC TY B)
- TEMPORARY ASPHALT SIDEWALK (2" HMA TY C)
- CONSTRUCTION PHASE II
- LOW PROFILE CONCRETE BARRIER (LPCB)
- TYPE III BARRICADE
- PLASTIC DRUMS
- SIGN
- TRAFFIC FLOW ARROWS

ADDENDUM NO. 04

STATE OF TEXAS
JAMES A. LUTZ
84722
LICENSED
PROFESSIONAL ENGINEER

JAMES A. LUTZ, P.E. 3/24/2015
DATE

0 25 50 75
SCALE: 1"= 50'

PAPE-DAWSON ENGINEERS
2000 NW LOOP 410 | SAN ANTONIO, TEXAS 78213 | PHONE: 210.375.9000 FAX: 210.375.9010
TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION # 470

CITY OF SAN ANTONIO
TRANSPORTATION & CAPITAL IMPROVEMENTS

RAY ELLISON BLVD
LOOP 410 TO OLD PEARSALL RD
TRAFFIC CONTROL PLAN LAYOUT
PHASE II

SHEET 10 OF 13

100 % SUBMITTAL	PROJECT NO.: 8185-00		DATE: 3/24/2015
DRWN. BY: HM	DSGN. BY: HM	CHKD. BY: DT	SHEET NO.: 43

Plotted on: 3/24/2015 12:17:32 PM
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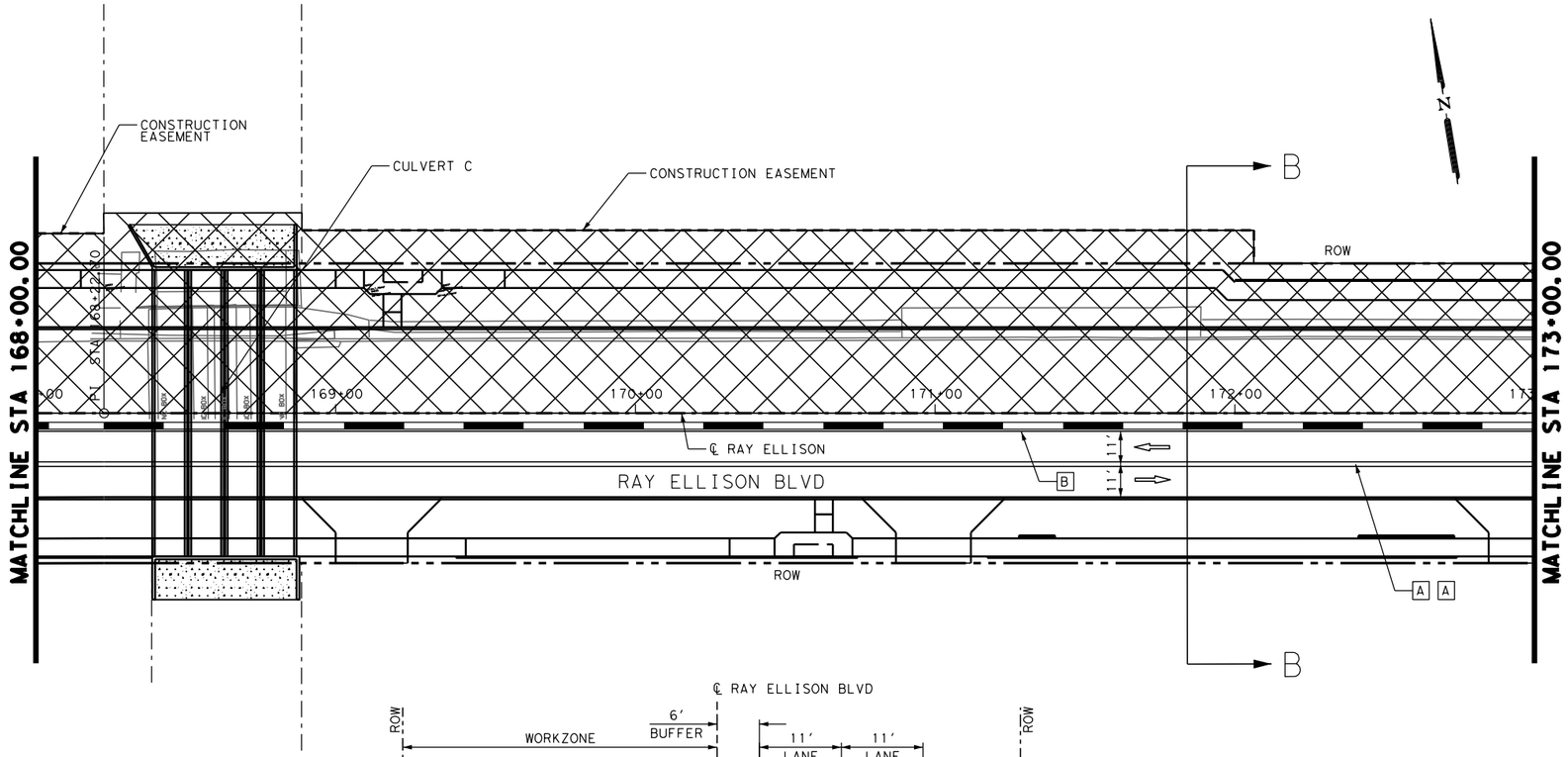
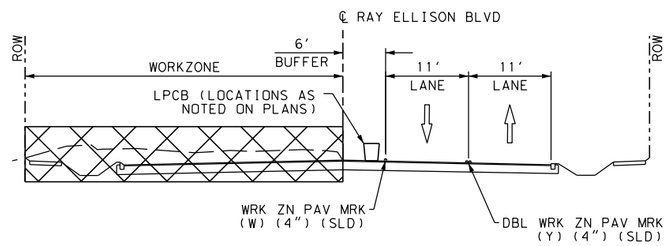
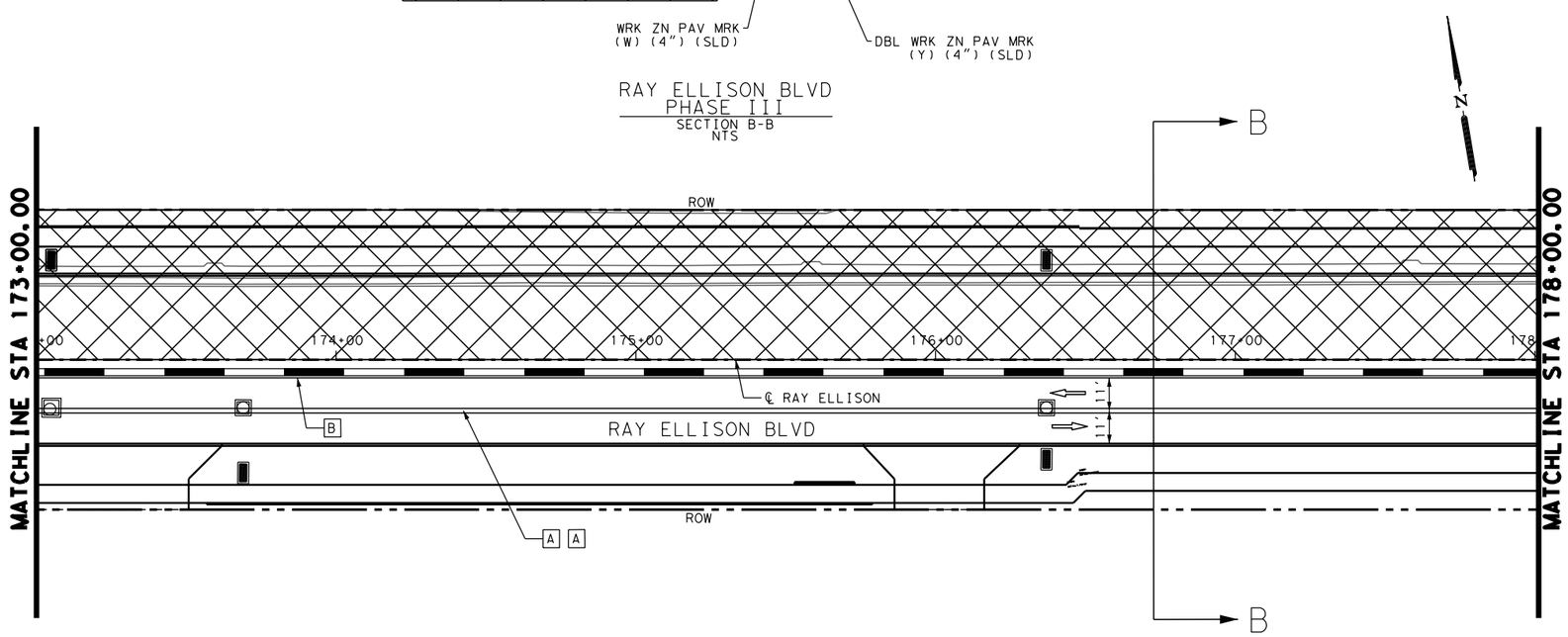
I.D.	DESCRIPTION
A	WK ZN PAV MRK REMOV (Y) 4" (SLD)
B	WK ZN PAV MRK REMOV (W) 4" (SLD)
C	WK ZN PAV MRK REMOV (W) 24" (SLD)
D	WK ZN PAV MRK REMOV (W) 4" (BRK)
E	WK ZN PAV MRK REMOV (REFL) TY I-A
F	WK ZN PAV MRK REMOV (REFL) TY II-A-A
G	WK ZN RAISED PAV MRK TYPE W





RAY ELLISON BLVD
PHASE III
SECTION B-B
NTS



NOTES:

1. FOR ADDITIONAL DETAILS SEE TxDOT TRAFFIC CONTROL PLAN AND BARRICADE & CONSTRUCTION STANDARD SHEETS.
2. EXISTING PAVEMENT MARKINGS CONFLICTING WITH WORK ZONE PAVEMENT MARKINGS SHALL BE REMOVED. THIS WORK IS CONSIDERED SUBSIDIARY TO THE WORK ZONE PAVEMENT MARKING ITEMS.
3. A TAPERED LOW PROFILE CONCRETE BARRIER SHALL BE USED AT THE END OF EACH SEGMENT OF BARRIERS, UNLESS OTHERWISE NOTED.
4. EXISTING FEATURES ARE SHOWN SCREENED BACK, i.e. FADED.

LEGEND:

- TEMPORARY PAVEMENT (8" HMAC TY B)
- CONSTRUCTION PHASE III
- LOW PROFILE CONCRETE BARRIER (LPCB)
- TYPE III BARRICADE
- PLASTIC DRUMS
- SIGN
- TRAFFIC FLOW ARROWS

ADDENDUM NO. 04

STATE OF TEXAS
JAMES A. LUTZ
84722
LICENSED PROFESSIONAL ENGINEER

JAMES A. LUTZ, P.E. — 3/24/2015 DATE

0 25 50 75
SCALE: 1"= 50'

PAPE-DAWSON ENGINEERS
2000 NW LOOP 410 | SAN ANTONIO, TEXAS 78213 | PHONE: 210.375.9000 FAX: 210.375.9010
TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION # 470

CITY OF SAN ANTONIO
TRANSPORTATION & CAPITAL IMPROVEMENTS

RAY ELLISON BLVD
LOOP 410 TO OLD PEARSALL RD
TRAFFIC CONTROL PLAN LAYOUT
PHASE III

SHEET 9 OF 11

100 % SUBMITTAL	PROJECT NO.: 8185-00		DATE: 3242015
DRWN. BY: HM	DSGN. BY: HM	CHKD. BY: DT	SHEET NO.: 56

Plotted on: 3/24/2015 12:17:34 PM
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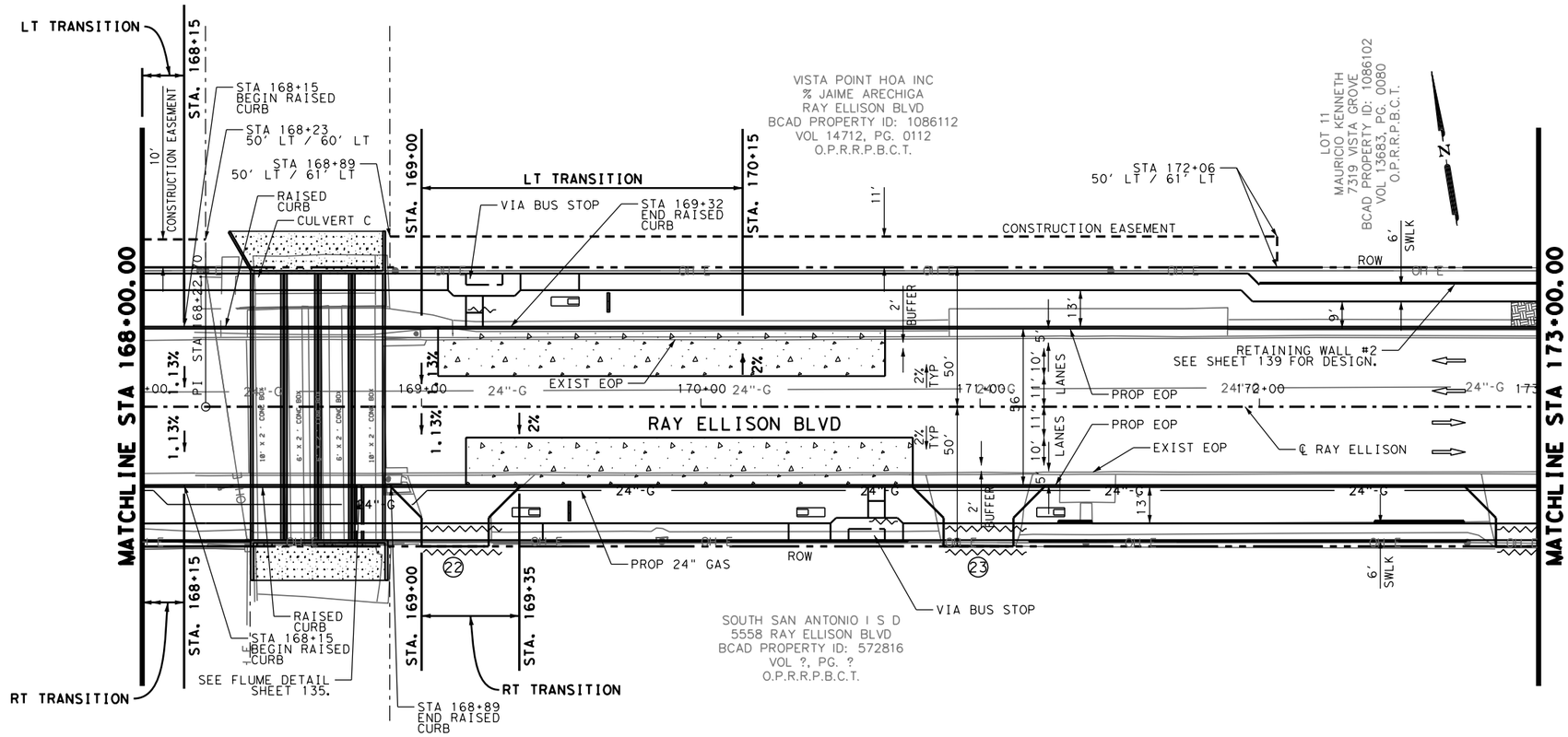
Plotted on: 3/24/2015 12:17:36 PM



SEE SIDEWALK PLAN & PROFILE SHEET 121 FOR SIDEWALK DETAILS

NOTES:

1. CALL THE TEXAS STATE WIDE ONE CALL LOCATOR NUMBER 1-800-344-8377, 48 HOURS BEFORE BEGINNING ANY EXCAVATION.
2. DUE TO FEDERAL REGULATION TITLE 49, PART 192.181, CPS MUST MAINTAIN ACCESS TO GAS VALVES AT ALL TIMES. THE CONTRACTOR MUST PROTECT AND WORK AROUND ANY GAS VALVES THAT ARE IN THE PROJECT AREA.
3. THE CONTRACTOR WILL BE RESPONSIBLE FOR PROTECTING CPS OVERHEAD AND UNDERGROUND ELECTRIC FACILITIES IF ADJACENT TO WORK AREA.
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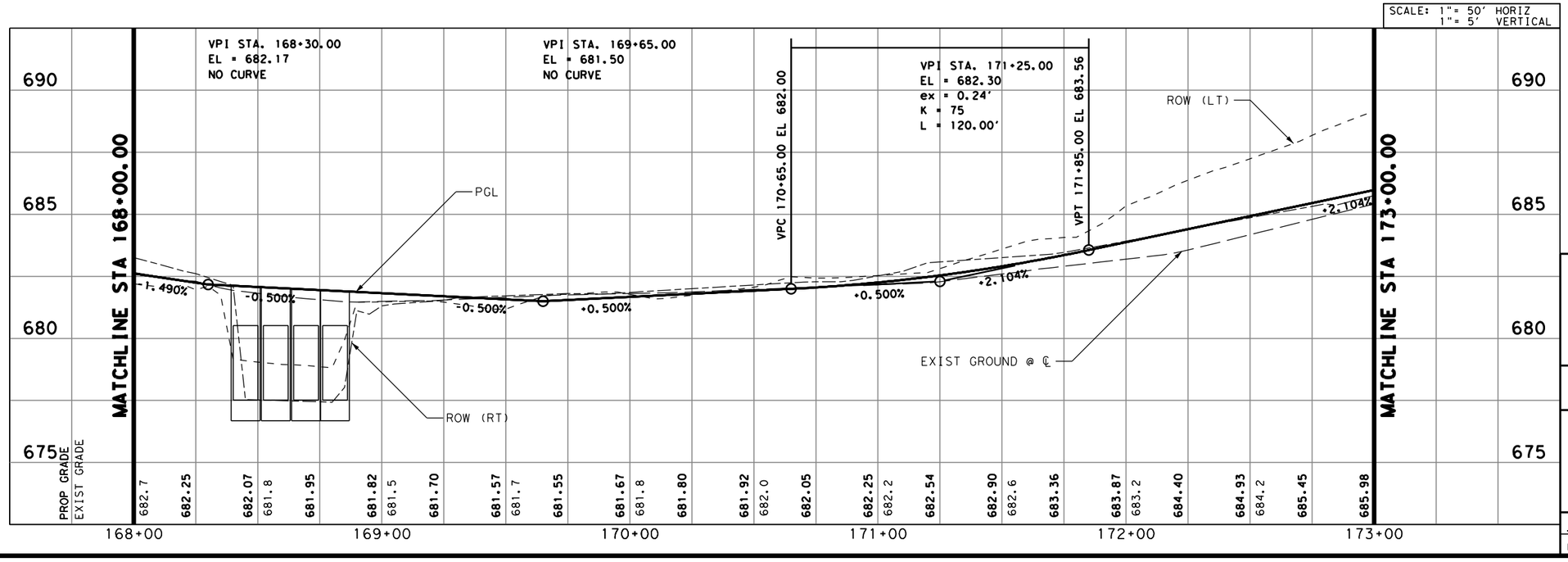
6. ALL DIMENSIONS ARE TO EDGE OF PVMT, CENTER OF MARKING OR FACE OF CURB UNLESS OTHERWISE NOTED.
7. ALL EXISTING FEATURES ARE SHOWN SCREENED BACK i.e. FADED.
8. FOR INTERSECTION DETAILS, REFER TO "INTERSECTION DETAIL" SHEETS.
9. FOR DRIVEWAY DETAILS, REFER TO COSA STANDARD "TYPICAL CONCRETE DRIVEWAY DETAILS" AND "DRIVEWAY SUMMARY" SHEET.
10. SEE PLANTING PLANS FOR LANDSCAPING DETAILS.

LEGEND

- OH E — OVERHEAD ELECTRIC LINE
- 8" SS — SANITARY SEWER LINE
- G — CPS GAS LINE
- UGT — UNDERGROUND TELECOM LINE
- 12" W — WATER LINE
- IRRIGATION SLEEVE (SEE LANDSCAPING)
- DRAINAGE INLET
- MANHOLE
- (X) DRIVEWAY #
- DRIVEWAY
- TRAFFIC FLOW ARROW
- CONCRETE VIA BUS PAD SEE MISC DETAIL SHEET 140

SCALE: 1"= 50' HORIZ
1"= 5' VERTICAL



ADDENDUM NO. 04

STATE OF TEXAS
JAMES A. LUTZ
84722
LICENSED PROFESSIONAL ENGINEER

JAMES A. LUTZ, P.E. 3/24/2015 DATE

0 25 50 75
SCALE: 1"= 50'

PAPE-DAWSON ENGINEERS
2000 NW LOOP 410 | SAN ANTONIO, TEXAS 78213 | PHONE: 210.375.9000 FAX: 210.375.9010
TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION # 470

CITY OF SAN ANTONIO
TRANSPORTATION & CAPITAL IMPROVEMENTS

RAY ELLISON BLVD
LOOP 410 TO OLD PEARSALL RD
ROADWAY PLAN & PROFILE SHEET
STA 168+00.00 TO STA 173+00.00

SHEET 15 OF 20

100 % SUBMITTAL	PROJECT NO.: 8185-00		DATE: 3/24/2015
DRWN. BY: HM	DSGN. BY: HM	CHKD. BY: DT	SHEET NO.: 105

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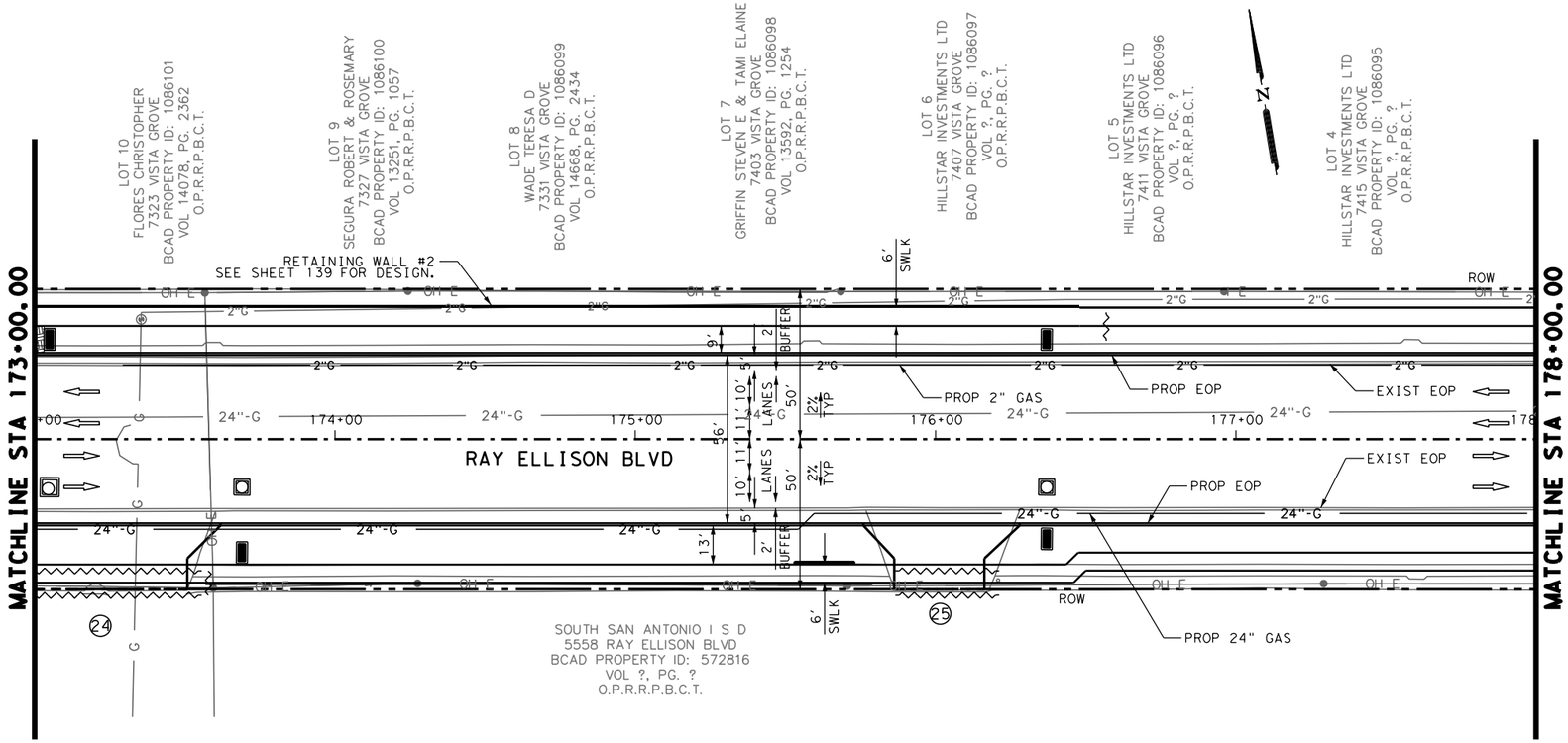
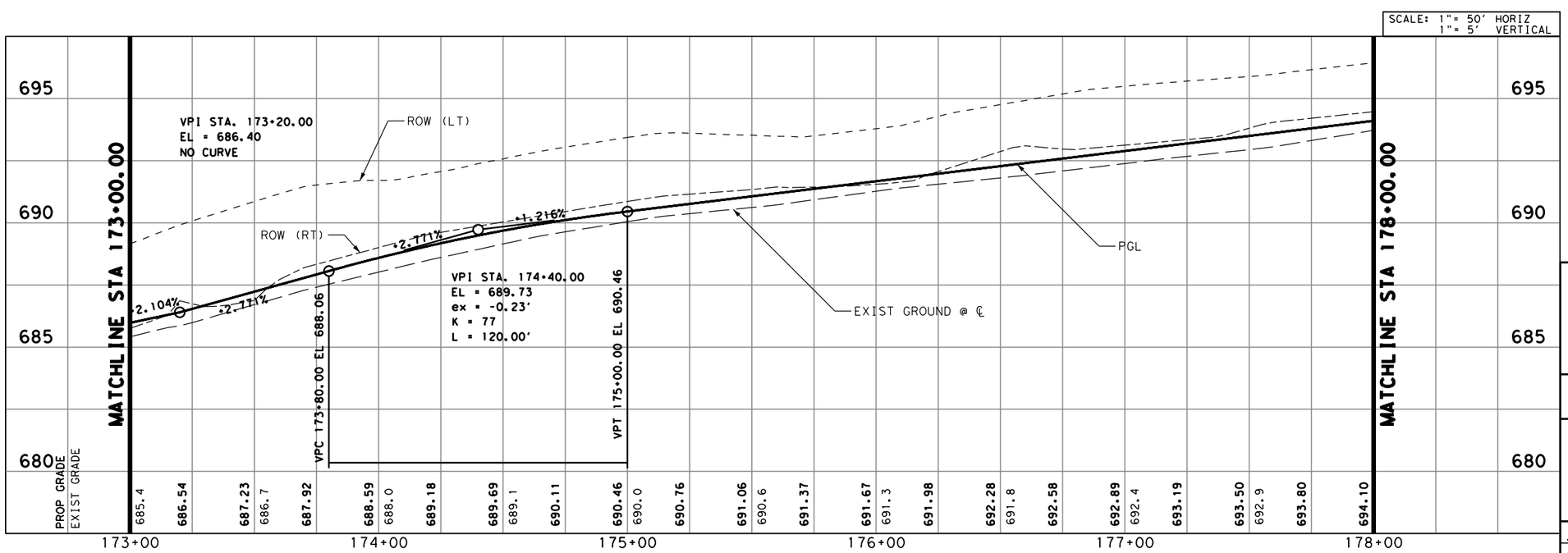
Plotted on: 3/24/2015 12:17:37 PM



SEE SIDEWALK PLAN & PROFILE
SHEET 122 FOR SIDEWALK DETAILS



NOTES:

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10. SEE PLANTING PLANS FOR LANDSCAPING DETAILS.

LEGEND

- OH E — OVERHEAD ELECTRIC LINE
- 8" SS — SANITARY SEWER LINE
- G — CPS GAS LINE
- UGT — UNDERGROUND TELECOM LINE
- 12" W — WATER LINE
- IRRIGATION SLEEVE (SEE LANDSCAPING)
- DRAINAGE INLET
- MANHOLE
- DRIVEWAY #
- DRIVEWAY
- TRAFFIC FLOW ARROW
- CONCRETE VIA BUS PAD SEE MISC DETAIL SHEET 140

ADDENDUM NO. 04

STATE OF TEXAS
JAMES A. LUTZ
84722
LICENSED
PROFESSIONAL ENGINEER

JAMES A. LUTZ, P.E. 3/24/2015
DATE

0 25 50 75
SCALE: 1"= 50'

PAPE-DAWSON ENGINEERS
2000 NW LOOP 410 | SAN ANTONIO, TEXAS 78213 | PHONE: 210.375.9000 FAX: 210.375.9010
TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION # 470

CITY OF SAN ANTONIO
TRANSPORTATION & CAPITAL IMPROVEMENTS

RAY ELLISON BLVD
LOOP 410 TO OLD PEARSALL RD

ROADWAY PLAN & PROFILE SHEET
STA 173+00.00 TO STA 178+00.00
SHEET 16 OF 20

100 % SUBMITTAL	PROJECT NO.: 8185-00		DATE: 3/24/2015
DRWN. BY: HM	DSGN. BY: HM	CHKD. BY: DT	SHEET NO.: 106

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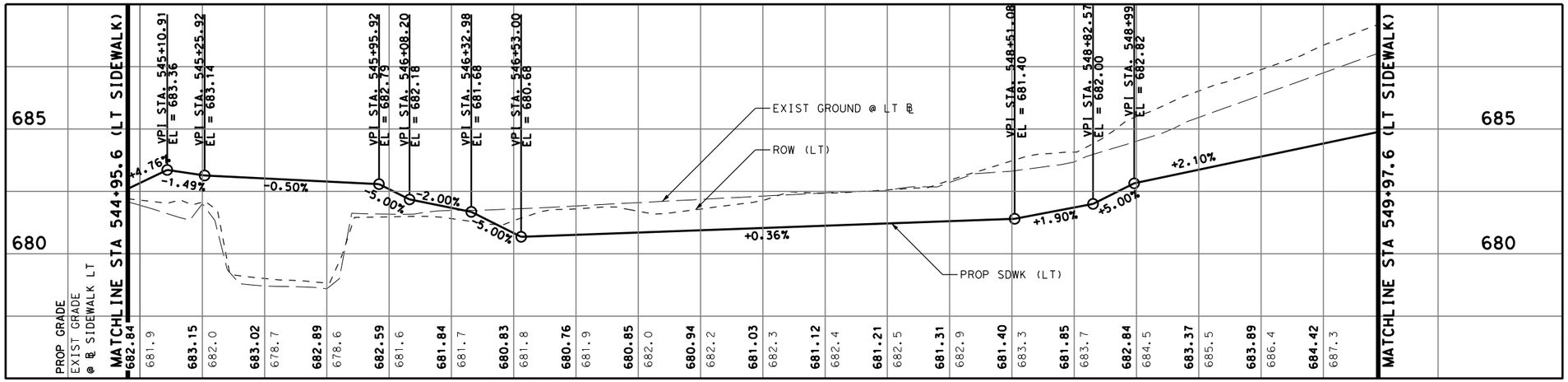
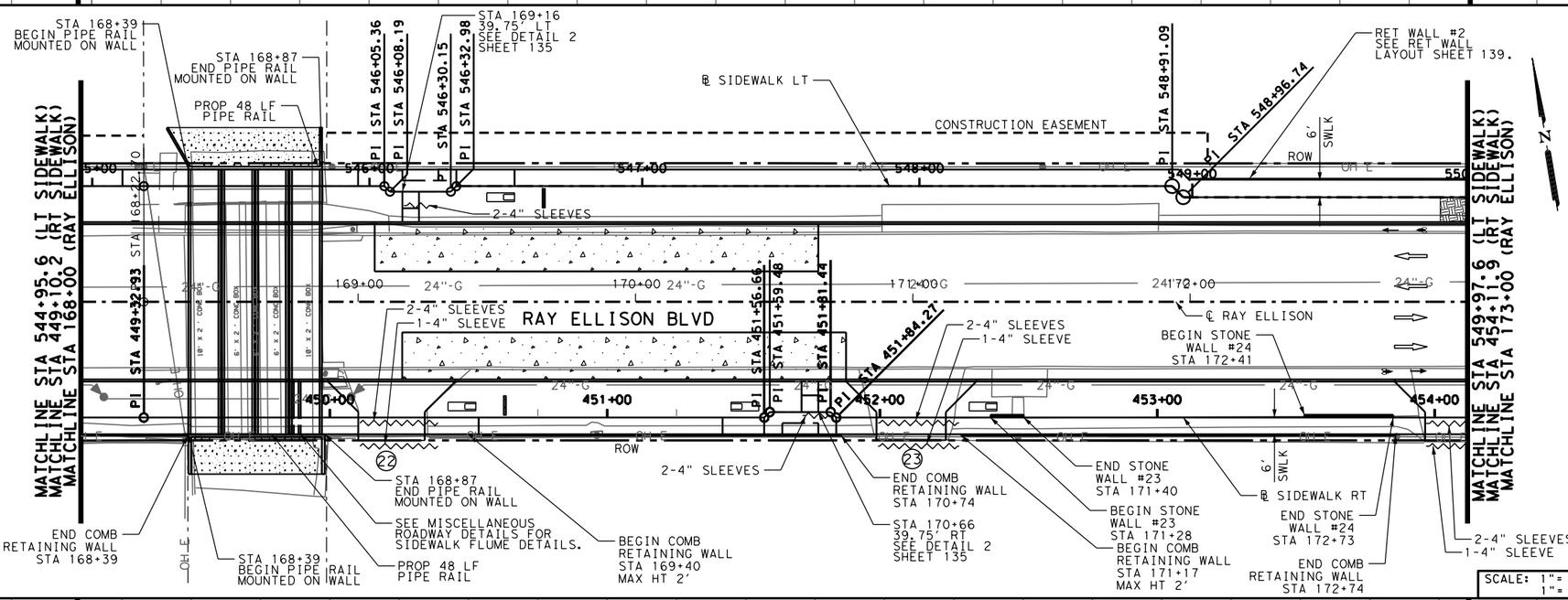
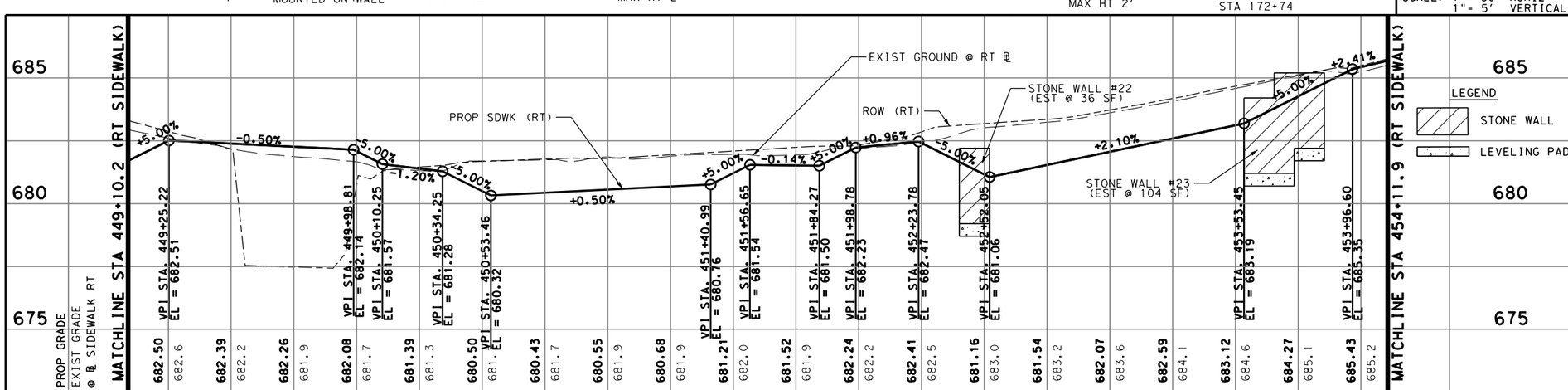




SCALE: 1"= 50' HORIZ
1"= 5' VERTICAL



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11. SEE STORM DRAIN P&P FOR DRAINAGE FEATURES, INCLUDING LID FEATURES.
12. SIDEWALK P&P SHEETS ARE PROVIDED FOR SIDEWALK DIVORCED FROM CURB ONLY. FOR SIDEWALK ADJACENT TO CURB FOLLOW TOP OF CURB PROFILE PER COSA STANDARDS.
13. SEE INTERSECTION LAYOUT SHEETS FOR SIDEWALK RAMP DETAILS.

LEGEND

- OH E — OVERHEAD ELECTRIC LINE
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- G — CPS GAS LINE
- UGT — UNDERGROUND TELECOM LINE
- 12" W — WATER LINE
- IRRIGATION SLEEVE (SEE LANDSCAPING)
- TRAFFIC FLOW ARROW

ADDENDUM NO. 04

STATE OF TEXAS
JAMES A. LUTZ
84722
LICENSED PROFESSIONAL ENGINEER

JAMES A. LUTZ, P.E. — 3/24/2015 DATE

0 25 50 75
SCALE: 1"= 50'

PAPE-DAWSON ENGINEERS
2000 NW LOOP 410 | SAN ANTONIO, TEXAS 78213 | PHONE: 210.375.9000 FAX: 210.375.9010
TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION # 470

CITY OF SAN ANTONIO
TRANSPORTATION & CAPITAL IMPROVEMENTS

RAY ELLISON BLVD
LOOP 410 TO OLD PEARSALL RD
SIDEWALK PLAN & PROFILE SHEET
STA 168+00 TO STA 173+00

SHEET 11 OF 16

100 % SUBMITTAL	PROJECT NO.: 8185-00		DATE: 3/24/2015
DRWN. BY: JS	DSGN. BY: HM	CHKD. BY: DT	SHEET NO.: 121

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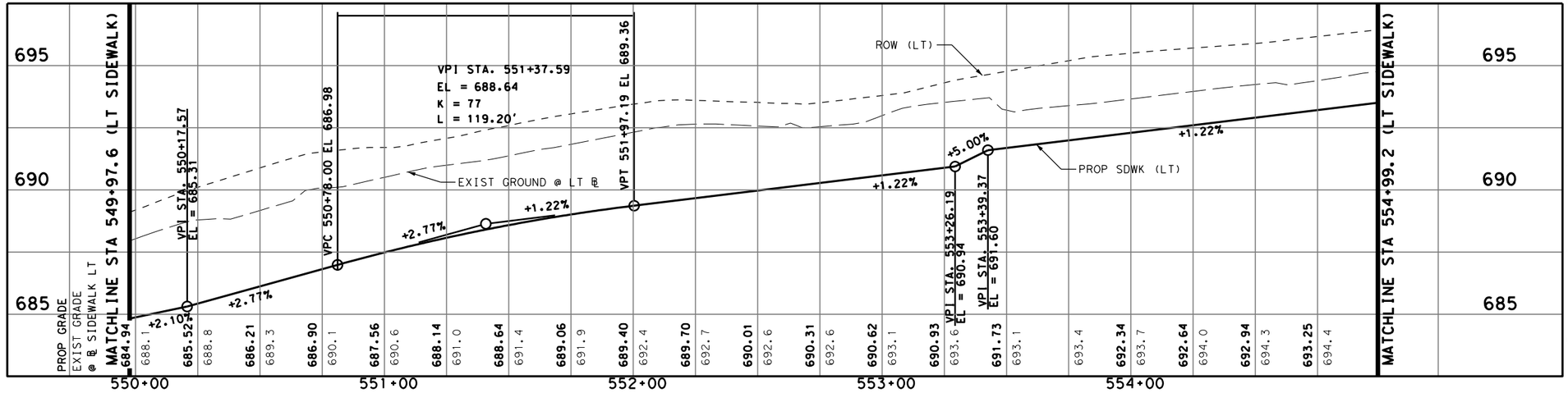

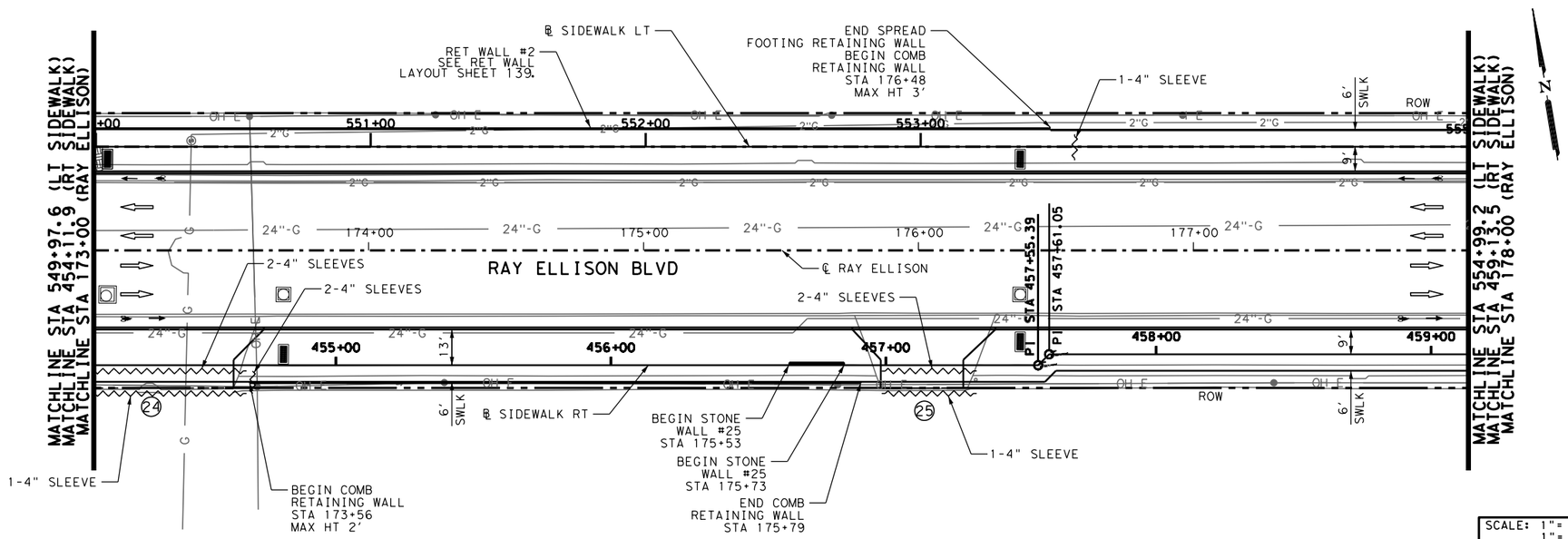

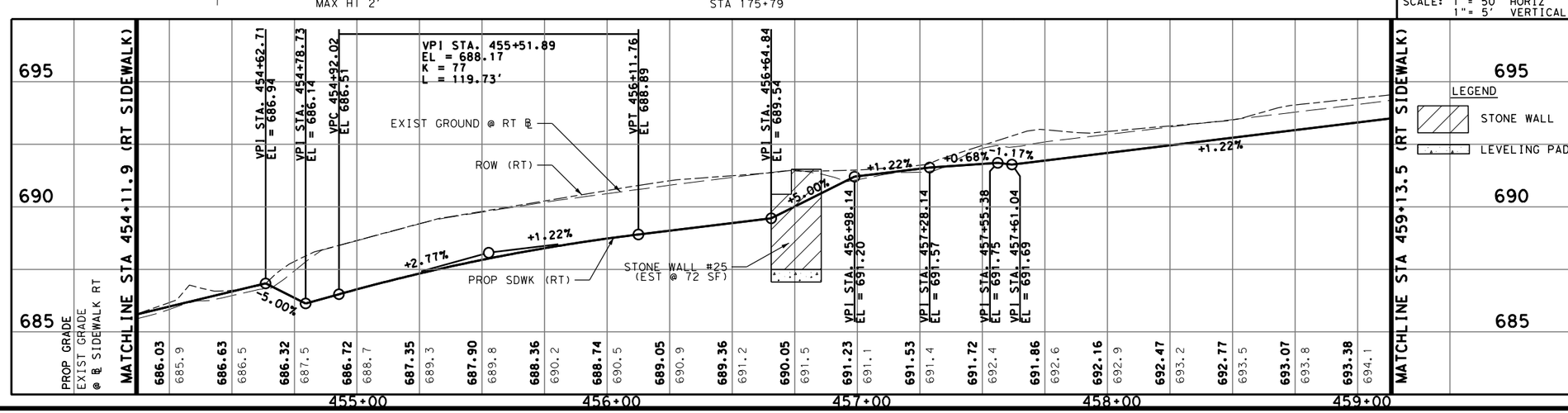

SCALE: 1"= 50' HORIZ
1"= 5' VERTICAL

LEGEND
STONE WALL
LEVELING PAD

NOTES:

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LEGEND

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— 8" SS —	SANITARY SEWER LINE
— G —	CPS GAS LINE
— UGT —	UNDERGROUND TELECOM LINE
— 12" W —	WATER LINE
∿∿∿	IRRIGATION SLEEVE (SEE LANDSCAPING)
⇦	TRAFFIC FLOW ARROW

ADDENDUM NO. 04

STATE OF TEXAS
JAMES A. LUTZ
84722
LICENSED PROFESSIONAL ENGINEER

JAMES A. LUTZ, P.E. — 3/24/2015 DATE

0 25 50 75
SCALE: 1"= 50'

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CITY OF SAN ANTONIO
TRANSPORTATION & CAPITAL IMPROVEMENTS

RAY ELLISON BLVD
LOOP 410 TO OLD PEARSALL RD
SIDEWALK PLAN & PROFILE SHEET
STA 173+00 TO STA 178+00

SHEET 12 OF 16

100 % SUBMITTAL	PROJECT NO.: 8185-00		DATE: 3242015
DRWN. BY: JS	DSGN. BY: HM	CHKD. BY: DT	SHEET NO.: 122

Plotted on: 3/24/2015 12:17:41 PM
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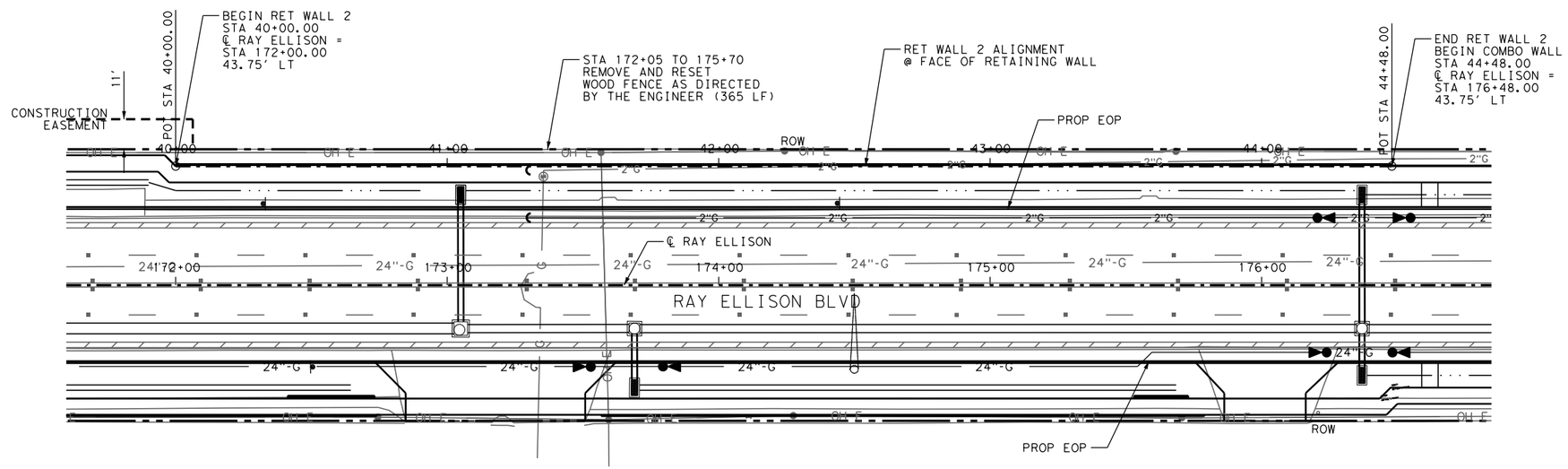
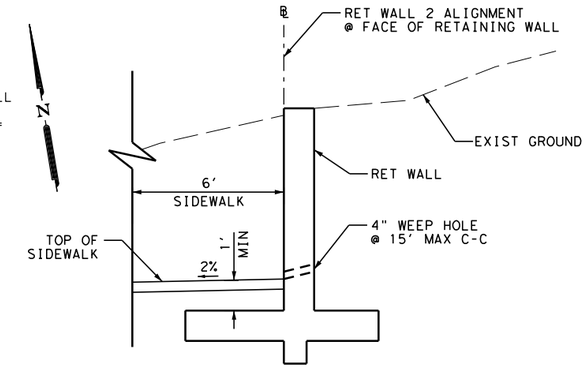




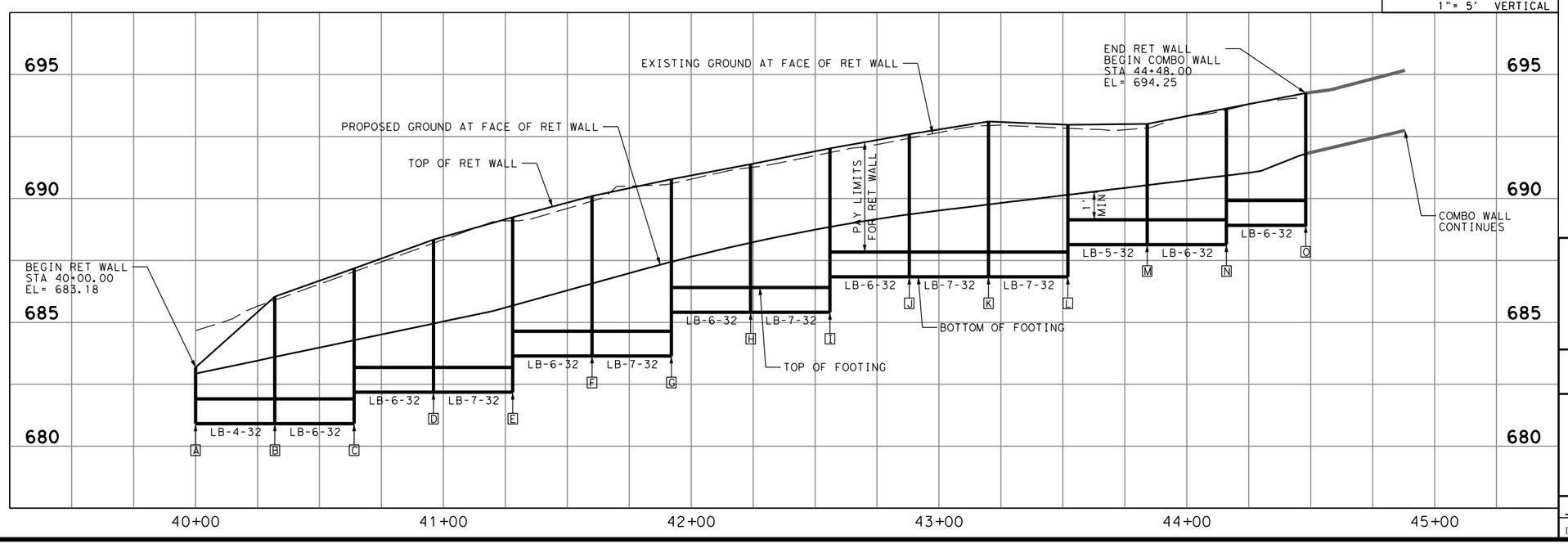
TYPICAL RETAINING WALL SECTION

NOT TO SCALE

RETAINING WALL 2 ELEVATION CHART

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
STATION	40+00.00	40+32.00	40+64	40+96	41+28	41+60	41+92	42+24	42+56	42+88	43+20	43+52	43+84	44+16	44+48
TOP OF WALL ELEV	683.18	686.04	687.18	688.34	689.24	690.09	690.77	691.38	692.02	692.59	693.10	692.97	693.01	693.63	694.25
EXIST GROUND ELEV AT	684.67	685.90	687.04	688.19	689.10	689.89	690.60	691.25	691.85	692.43	692.94	692.83	692.84	693.57	694.09
PROP GROUND ELEV AT	682.93	683.61	684.28	684.95	685.68	686.57	687.44	688.21	688.85	689.36	689.76	690.14	690.53	690.92	691.81
TOP OF FOOTING ELEV (LT)	N/A	681.91	681.91	683.18	683.18	684.64	684.64	686.41	686.41	687.84	687.84	687.84	689.14	689.14	689.92
TOP OF FOOTING ELEV (RT)	681.91	681.91	683.18	683.18	684.64	684.64	686.41	686.41	687.84	687.84	687.84	689.14	689.14	689.92	N/A

SCALE: 1"= 50' HORIZ
1"= 5' VERTICAL



ADDENDUM NO. 04

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JAMES A. LUTZ
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LICENSED
PROFESSIONAL ENGINEER

JAMES A. LUTZ, P.E. — 3/24/2015 DATE

0 25 50 75
SCALE: 1"= 50'

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CITY OF SAN ANTONIO
TRANSPORTATION & CAPITAL IMPROVEMENTS

RAY ELLISON BLVD
LOOP 410 TO OLD PEARSALL RD
RETAINING WALL 2 LAYOUT

100 % SUBMITTAL	PROJECT NO.: 8185-00		DATE: 3/24/2015
DRWN. BY: HM	DSGN. BY: HM	CHKD. BY: DT	SHEET NO.: 139

Plotted on: 3/24/2015 12:17:43 PM

SYSTEM C DISCHARGE

SYSTEM C RUNOFF COMPUTATIONS - RATIONAL METHOD														SYSTEM C TIME OF CONCENTRATION CALCULATION									
														OVERLAND FLOW			SHALLOW FLOW			CHANNEL FLOW			TOTAL Tc (MIN)
AREA - ID	SUBAREA 1	SUBAREA 1 C VALUE	SUBAREA 2	SUBAREA 2 C VALUE	SUBAREA 3	SUBAREA 3 C VALUE	TOTAL AREA (ac)	TOTAL C	CA	Tc (MIN)	I_{25} (IN/HR)	Q_{25} (CFS)	TO INLET/JUNCTION	L (FT)	SLOPE %	Tc (MIN)	L (FT)	SLOPE %	Tc (MIN)	L (FT)	* VEL (FPS)	Tc (MIN)	
C-1	0.34	0.96	0.14	0.39	0.00	0.00	0.48	0.79	0.38	10	8.45	3.2	CULVERT C	50	4.0%	0.8	-	-	-	378	6.0	1.1	1.8
C-2	0.34	0.96	2.70	0.67	0.13	0.39	3.17	0.69	2.19	23	5.76	12.6	CULVERT C	300	1.3%	20.0	165	0.5%	1.8	395	6.0	1.1	22.9
C-4	0.46	0.96	0.12	0.39	0.00	0.00	0.58	0.84	0.49	10	8.45	4.1	CULVERT C	51	5.9%	0.7	-	-	-	477	6.0	1.3	2.0
C-5	0.23	0.96	0.08	0.39	0.00	0.00	0.31	0.81	0.25	10	8.45	2.1	TI-C5	49	2.4%	0.9	-	-	-	254	6.0	0.7	1.6
C-6	0.35	0.96	0.14	0.39	0.00	0.00	0.49	0.80	0.39	10	8.45	3.3	TI-C6	144	1.0%	3.1	-	-	-	261	6.0	0.7	3.9
C-7	0.14	0.96	1.39	0.72	0.15	0.39	1.67	0.71	1.19	17	6.83	8.1	OUTLET C	300	4.1%	15.9	107	2.8%	0.5	82	6.0	0.2	16.6
C-8	0.28	0.96	0.85	0.67	0.11	0.39	1.24	0.71	0.88	16	7.08	6.3	TI-C8	261	3.8%	14.7	-	-	-	304	6.0	0.8	15.5
C-9	0.25	0.96	0.59	0.67	0.14	0.39	0.98	0.71	0.69	10	8.45	5.9	TI-C9	108	3.6%	7.4	-	-	-	320	6.0	0.9	8.3
C-11	4.88	0.72	0.59	0.67	0.14	0.39	4.88	0.72	3.51	24	5.64	19.8	TI-C11	300	2.2%	20.0	721	5.4%	2.6	495	6.0	1.4	23.9
C-12	2.18	0.72	0.59	0.67	0.14	0.39	2.18	0.72	1.57	20	6.24	9.8	TI-C12	300	4.1%	15.9	667	5.0%	2.5	503	6.0	1.4	19.7

NOTES: 1. DRAINAGE AREAS C-3 AND C-10 NOT USED.
2. C VALUES CALCULATED PER 2006 COSA UDC AND 2014 COSA ZONING MAP

*VELOCITIES MEET OR EXCEED ACTUAL VELOCITIES SHOWN ON SHEET 171.

SYSTEM C INLET HYDRAULICS

SYSTEM C DROP/TRAFFIC INLET COMPUTATIONS															
INLET				DRAINAGE AREA	Q_{25}	INLET HEAD	REQ'D AREA	INLET AREA	INLET TYPE	CARRY OVER			BY PASS FLOW		
NO	TYPE	CONTROL	STATION	NO	CFS	FT	FT^2	FT^2							
TI-C8	(TY X-1)	37.75'LT CL	173+05.00	C-8	6.3	0.38	3.59	15.00	TI X1						
TI-C5	(TY X-1)	37.75'RT CL	173+69.00	C-5	2.1	0.19	1.74	15.00	TI X1						
TI-C6	(TY X-1)	33.21'RT CL	176+37.00	C-6	3.3	0.25	2.36	15.00	TI X1						
TI-C9	(TY X-1)	33.20'LT CL	176+37.00	C-9	5.9	0.37	3.43	15.00	TI X1						
TI-C11	(TY X-6)	30.60'LT CL	179+83.62	C-11	19.8	0.30	12.77	89.23	TI X6						
TI-C12	(TY X-3)	30.60'LT CL	180+11.65	C-12	9.8	0.29	6.47	44.69	TI X3						

NOTE:
25-YR DESIGN STORM WAS ANALYZED USING GEOPAK DRAINAGE FOR STORM DRAIN CALCULATIONS.

ADDENDUM NO. 04

SYSTEM C CONVEYANCE

SYSTEM C STORM DRAIN COMPUTATIONS											
LINE NO	FROM	TO	LENGTH (FT)	TC (MIN)	I_{25} (in/hr)	Q_{25} (CFS)	DESIGN				
							STR SIZE	SLOPE %	CAP (CFS)	VEL (FT/SEC)	FREQ (YR)
LINE C	MH-C12	MH-C11	23.00	24	5.63	9.8	24" RCP	1.00	26.4	3.1	25
LINE C	MH-C11	MH-C7	342.00	24	5.56	28.6	3'x2' SBC	1.75	87.6	11.0	25
LINE C	MH-C7	MH-C6	264.00	25	5.51	34.3	3'x2' SBC	1.19	72.3	10.1	25
LINE C	MH-C6	MH-C8	59.50	25	5.49	35.4	3'x2' SBC	0.31	37.0	7.2	25
LINE C	MH-C8	OUTLET C	415.91	26	---	40.1	4'x2' SBC	0.22	45.3	6.9	25
LINE C-1	TI-C8	MH-C8	48.25	25	5.49	6.2	24" RCP	0.30	14.4	2.1	25
LINE C-2	TI-C6	MH-C7	12.21	24	5.56	3.3	24" RCP	1.00	26.4	1.9	25
LINE C-2	TI-C9	MH-C7	44.20	24	5.56	5.9	24" RCP	0.50	18.6	1.9	25
LINE C-3	TI-C11	MH-C11	43.35	24	5.63	19.8	24" RCP	2.96	45.4	11.4	25
LINE C-4	TI-C12	MH-C12	43.38	20	6.24	9.8	24" RCP	1.00	26.4	7.1	25
LINE C-5	TI-C5	MH-C6	16.75	25	5.51	2.1	24" RCP	1.00	26.4	0.9	25

STATE OF TEXAS
JAMES A. LUTZ
84722
LICENSED PROFESSIONAL ENGINEER

JAMES A. LUTZ, P.E. 3/24/2015 DATE

PAPE-DAWSON ENGINEERS
2000 NW LOOP 410 | SAN ANTONIO, TEXAS 78213 | PHONE: 210.375.9000 FAX: 210.375.9010
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CITY OF SAN ANTONIO
TRANSPORTATION & CAPITAL IMPROVEMENTS

RAY ELLISON BLVD
LOOP 410 TO OLD PEARSALL RD

DRAINAGE COMPUTATIONS
SYSTEM C

SHEET 4 OF 5

100 % SUBMITTAL	PROJECT NO.: 8185-00		DATE: 3/24/2015
DRWN. BY: HM	DSGN. BY: HM	CHKD. BY: DT	SHEET NO.: 169

Design Filename: P:\81\85\00\Design\Civil\Drainage\818500DA_HYD04_ADD04.dgn

Design Filename: P:\81\85\00\Design\Civil\Drainage\818500DA_DITCH01_ADD_04.dgn
Plotted on: 3/24/2015 12:17:44 PM

DITCH COMPUTATIONS

B-6		
D=	0.73	DEPTH OF FLOW IN FEET
BW=	2	BOTTOM WIDTH IN FEET
L S.S=	4	LEFT SIDE SLOPE
R S.S.=	3	RIGHT SIDE SLOPE
SFL=	0.024	FL SLOPE IN FT/FT
N=	0.05	MANNING'S N-VALUE
Qcal=	9	DISCHARGE, CFS
A=	3.33	SQ. FT.
V=	2.71	FPS
Dmin=	2.00	MINIMUM DEPTH IN DITCH

B-9		
D=	0.88	DEPTH OF FLOW IN FEET
BW=	2	BOTTOM WIDTH IN FEET
L S.S=	4	LEFT SIDE SLOPE
R S.S.=	3	RIGHT SIDE SLOPE
SFL=	0.017	FL SLOPE IN FT/FT
N=	0.05	MANNING'S N-VALUE
Qcal=	11.4	DISCHARGE, CFS
A=	4.49	SQ. FT.
V=	2.54	FPS
Dmin=	2.00	MINIMUM DEPTH IN DITCH

B-30		
D=	0.51	DEPTH OF FLOW IN FEET
BW=	2	BOTTOM WIDTH IN FEET
L S.S=	3	LEFT SIDE SLOPE
R S.S.=	4	RIGHT SIDE SLOPE
SFL=	0.015	FL SLOPE IN FT/FT
N=	0.05	MANNING'S N-VALUE
Qcal=	3.4	DISCHARGE, CFS
A=	1.93	SQ. FT.
V=	1.76	FPS
Dmin=	1.12	MINIMUM DEPTH IN DITCH

B-23		
D=	0.85	DEPTH OF FLOW IN FEET
BW=	2	BOTTOM WIDTH IN FEET
L S.S=	3	LEFT SIDE SLOPE
R S.S.=	4	RIGHT SIDE SLOPE
SFL=	0.012	FL SLOPE IN FT/FT
N=	0.05	MANNING'S N-VALUE
Qcal=	8.8	DISCHARGE, CFS
A=	4.21	SQ. FT.
V=	2.09	FPS
Dmin=	1.12	MINIMUM DEPTH IN DITCH

C-4		
D=	0.73	DEPTH OF FLOW IN FEET
BW=	2	BOTTOM WIDTH IN FEET
L S.S	4	LEFT SIDE SLOPE
R S.S	3	RIGHT SIDE SLOPE
SFL=	0.005	FL SLOPE IN FT/FT
N=	0.05	MANNING'S N-VALUE
Qcal	4.1	DISCHARGE, CFS
A=	3.3	SQ. FT.
V=	1.23	FPS
Dmin	2.00	MINIMUM DEPTH IN DITCH

D-7		
D=	0.66	DEPTH OF FLOW IN FEET
BW=	2	BOTTOM WIDTH IN FEET
L S.S	4	LEFT SIDE SLOPE
R S.S	3	RIGHT SIDE SLOPE
SFL=	0.009	FL SLOPE IN FT/FT
N=	0.05	MANNING'S N-VALUE
Qcal	4.4	DISCHARGE, CFS
A=	2.82	SQ. FT.
V=	1.56	FPS
Dmin	1.12	MINIMUM DEPTH IN DITCH

B-26		
D=	0.74	DEPTH OF FLOW IN FEET
BW=	2	BOTTOM WIDTH IN FEET
L S.S=	4	LEFT SIDE SLOPE
R S.S.=	3	RIGHT SIDE SLOPE
SFL=	0.026	FL SLOPE IN FT/FT
N=	0.05	MANNING'S N-VALUE
Qcal=	9.8	DISCHARGE, CFS
A=	3.43	SQ. FT.
V=	2.86	FPS
Dmin=	2.00	MINIMUM DEPTH IN DITCH

B-10		
D=	0.72	DEPTH OF FLOW IN FEET
BW=	2	BOTTOM WIDTH IN FEET
L S.S=	3	LEFT SIDE SLOPE
R S.S.=	4	RIGHT SIDE SLOPE
SFL=	0.016	FL SLOPE IN FT/FT
N=	0.05	MANNING'S N-VALUE
Qcal=	7.1	DISCHARGE, CFS
A=	3.26	SQ. FT.
V=	2.18	FPS
Dmin=	1.70	MINIMUM DEPTH IN DITCH

B-31		
D=	0.33	DEPTH OF FLOW IN FEET
BW=	2	BOTTOM WIDTH IN FEET
L S.S=	3	LEFT SIDE SLOPE
R S.S.=	4	RIGHT SIDE SLOPE
SFL=	0.015	FL SLOPE IN FT/FT
N=	0.05	MANNING'S N-VALUE
Qcal=	1.4	DISCHARGE, CFS
A=	1.03	SQ. FT.
V=	1.35	FPS
Dmin=	1.12	MINIMUM DEPTH IN DITCH

B-24		
D=	0.65	DEPTH OF FLOW IN FEET
BW=	2	BOTTOM WIDTH IN FEET
L S.S=	4	LEFT SIDE SLOPE
R S.S.=	3	RIGHT SIDE SLOPE
SFL=	0.012	FL SLOPE IN FT/FT
N=	0.05	MANNING'S N-VALUE
Qcal=	5	DISCHARGE, CFS
A=	2.79	SQ. FT.
V=	1.79	FPS
Dmin=	2.00	MINIMUM DEPTH IN DITCH

C-5		
D=	0.38	DEPTH OF FLOW IN FEET
BW=	2	BOTTOM WIDTH IN FEET
L S.S	4	LEFT SIDE SLOPE
R S.S	3	RIGHT SIDE SLOPE
SFL=	0.018	FL SLOPE IN FT/FT
N=	0.05	MANNING'S N-VALUE
Qcal	2.1	DISCHARGE, CFS
A=	1.28	SQ. FT.
V=	1.65	FPS
Dmin	2.00	MINIMUM DEPTH IN DITCH

D-1		
D=	0.48	DEPTH OF FLOW IN FEET
BW=	2	BOTTOM WIDTH IN FEET
L S.S	4	LEFT SIDE SLOPE
R S.S	3	RIGHT SIDE SLOPE
SFL=	0.01	FL SLOPE IN FT/FT
N=	0.05	MANNING'S N-VALUE
Qcal	2.4	DISCHARGE, CFS
A=	1.74	SQ. FT.
V=	1.38	FPS
Dmin	1.12	MINIMUM DEPTH IN DITCH

B-7		
D=	0.65	DEPTH OF FLOW IN FEET
BW=	2	BOTTOM WIDTH IN FEET
L S.S=	4	LEFT SIDE SLOPE
R S.S.=	3	RIGHT SIDE SLOPE
SFL=	0.026	FL SLOPE IN FT/FT
N=	0.05	MANNING'S N-VALUE
Qcal=	7.3	DISCHARGE, CFS
A=	2.76	SQ. FT.
V=	2.65	FPS
Dmin=	2.00	MINIMUM DEPTH IN DITCH

B-11		
D=	0.66	DEPTH OF FLOW IN FEET
BW=	2	BOTTOM WIDTH IN FEET
L S.S=	3	LEFT SIDE SLOPE
R S.S.=	4	RIGHT SIDE SLOPE
SFL=	0.022	FL SLOPE IN FT/FT
N=	0.05	MANNING'S N-VALUE
Qcal=	6.9	DISCHARGE, CFS
A=	2.82	SQ. FT.
V=	2.4	FPS
Dmin=	1.12	MINIMUM DEPTH IN DITCH

B-32		
D=	0.25	DEPTH OF FLOW IN FEET
BW=	2	BOTTOM WIDTH IN FEET
L S.S=	3	LEFT SIDE SLOPE
R S.S.=	4	RIGHT SIDE SLOPE
SFL=	0.026	FL SLOPE IN FT/FT
N=	0.05	MANNING'S N-VALUE
Qcal=	1.1	DISCHARGE, CFS
A=	0.72	SQ. FT.
V=	1.53	FPS
Dmin=	1.12	MINIMUM DEPTH IN DITCH

B-19		
D=	1.26	DEPTH OF FLOW IN FEET
BW=	0	BOTTOM WIDTH IN FEET
L S.S=	3.3	LEFT SIDE SLOPE
R S.S.=	4	RIGHT SIDE SLOPE
SFL=	0.005	FL SLOPE IN FT/FT
N=	0.03	MANNING'S N-VALUE
Qcal=	14.6	DISCHARGE, CFS
A=	5.83	SQ. FT.
V=	2.5	FPS
Dmin=	1.50	MINIMUM DEPTH IN DITCH

C-8		
D=	0.74	DEPTH OF FLOW IN FEET
BW=	0	BOTTOM WIDTH IN FEET
L S.S	3	LEFT SIDE SLOPE
R S.S	4	RIGHT SIDE SLOPE
SFL=	0.018	FL SLOPE IN FT/FT
N=	0.03	MANNING'S N-VALUE
Qcal	6.3	DISCHARGE, CFS
A=	1.92	SQ. FT.
V=	3.3	FPS
Dmin	2.00	MINIMUM DEPTH IN DITCH

D-8		
D=	0.73	DEPTH OF FLOW IN FEET
BW=	2	BOTTOM WIDTH IN FEET
L S.S	3	LEFT SIDE SLOPE
R S.S	4	RIGHT SIDE SLOPE
SFL=	0.009	FL SLOPE IN FT/FT
N=	0.05	MANNING'S N-VALUE
Qcal	5.5	DISCHARGE, CFS
A=	3.33	SQ. FT.
V=	1.65	FPS
Dmin	1.12	MINIMUM DEPTH IN DITCH

B-27		
D=	0.42	DEPTH OF FLOW IN FEET
BW=	2	BOTTOM WIDTH IN FEET
L S.S=	4	LEFT SIDE SLOPE
R S.S.=	3	RIGHT SIDE SLOPE
SFL=	0.017	FL SLOPE IN FT/FT
N=	0.05	MANNING'S N-VALUE
Qcal=	2.4	DISCHARGE, CFS
A=	1.44	SQ. FT.
V=	1.67	FPS
Dmin=	2.00	MINIMUM DEPTH IN DITCH

B-12		
D=	0.84	DEPTH OF FLOW IN FEET
BW=	2	BOTTOM WIDTH IN FEET
L S.S=	4	LEFT SIDE SLOPE
R S.S.=	3	RIGHT SIDE SLOPE
SFL=	0.013	FL SLOPE IN FT/FT
N=	0.05	MANNING'S N-VALUE
Qcal=	8.9	DISCHARGE, CFS
A=	4.13	SQ. FT.
V=	2.15	FPS
Dmin=	2.00	MINIMUM DEPTH IN DITCH

B-14		
D=	0.48	DEPTH OF FLOW IN FEET
BW=	2	BOTTOM WIDTH IN FEET
L S.S=	3	LEFT SIDE SLOPE
R S.S.=	4	RIGHT SIDE SLOPE
SFL=	0.024	FL SLOPE IN FT/FT
N=	0.05	MANNING'S N-VALUE
Qcal=	3.7	DISCHARGE, CFS
A=	1.74	SQ. FT.
V=	2.12	FPS
Dmin=	1.80	MINIMUM DEPTH IN DITCH

B-20		
D=	0.95	DEPTH OF FLOW IN FEET
BW=	0	BOTTOM WIDTH IN FEET
L S.S=	4	LEFT SIDE SLOPE
R S.S.=	3.3	RIGHT SIDE SLOPE
SFL=	0.005	FL SLOPE IN FT/FT
N=	0.03	MANNING'S N-VALUE
Qcal=	6.7	DISCHARGE, CFS
A=	3.26	SQ. FT.
V=	2.05	FPS
Dmin=	1.50	MINIMUM DEPTH IN DITCH

D-4		
D=	0.44	DEPTH OF FLOW IN FEET
BW=	2	BOTTOM WIDTH IN FEET
L S.S	3	LEFT SIDE SLOPE
R S.S	4	RIGHT SIDE SLOPE
SFL=	0.028	FL SLOPE IN FT/FT
N=	0.05	MANNING'S N-VALUE
Qcal	3.4	DISCHARGE, CFS
A=	1.54	SQ. FT.
V=	2.21	FPS
Dmin	1.70	MINIMUM DEPTH IN DITCH

D-2		
D=	0.63	DEPTH OF FLOW IN FEET
BW=	2	BOTTOM WIDTH IN FEET
L S.S	4	LEFT SIDE SLOPE
R S.S	3	RIGHT SIDE SLOPE
SFL=	0.01	FL SLOPE IN FT/FT
N=	0.05	MANNING'S N-VALUE
Qcal	4.3	DISCHARGE, CFS
A=	2.66	SQ. FT.
V=	1.62	FPS
Dmin	1.70	MINIMUM DEPTH IN DITCH

B-28		
D=	0.45	DEPTH OF FLOW IN FEET
BW=	2	BOTTOM WIDTH IN FEET
L S.S=	4	LEFT SIDE SLOPE
R S.S.=	3	RIGHT SIDE SLOPE
SFL=	0.017	FL SLOPE IN FT/FT
N=	0.05	MANNING'S N-VALUE
Qcal=	2.8	DISCHARGE, CFS
A=	1.61	SQ. FT.
V=	1.74	FPS
Dmin=	2.00	MINIMUM DEPTH IN DITCH

B-36		
D=	0.36	DEPTH OF FLOW IN FEET
BW=	2	BOTTOM WIDTH IN FEET
L S.S=	4	LEFT SIDE SLOPE
R S.S.=	3	RIGHT SIDE SLOPE
SFL=	0.015	FL SLOPE IN FT/FT
N=	0.05	MANNING'S N-VALUE
Qcal=	1.7	DISCHARGE, CFS
A=	1.19	SQ. FT.
V=	1.43	FPS
Dmin=	1.65	MINIMUM DEPTH IN DITCH

B-16		
D=	0.53	DEPTH OF FLOW IN FEET
BW=	2	BOTTOM WIDTH IN FEET
L S.S=	3	LEFT SIDE SLOPE
R S.S.=	4	RIGHT SIDE SLOPE
SFL=	0.01	FL SLOPE IN FT/FT
N=	0.05	MANNING'S N-VALUE
Qcal=	3	DISCHARGE, CFS
A=	2.07	SQ. FT.
V=	1.45	FPS
Dmin=	1.12	MINIMUM DEPTH IN DITCH

C-1		
D=	0.51	DEPTH OF FLOW IN FEET
BW=	2	BOTTOM WIDTH IN FEET
L S.S=	4	LEFT SIDE SLOPE
R S.S.=	3	RIGHT SIDE SLOPE
SFL=	0.013	FL SLOPE IN FT/FT
N=	0.05	MANNING'S N-VALUE
Qcal=	3.2	DISCHARGE, CFS
A=	1.96	SQ. FT.
V=	1.64	FPS
Dmin=	2.00	MINIMUM DEPTH IN DITCH

D-3		
D=	0.61	DEPTH OF FLOW IN FEET
BW=	2	BOTTOM WIDTH IN FEET
L S.S	3	LEFT SIDE SLOPE
R S.S	4	RIGHT SIDE SLOPE
SFL=	0.005	FL SLOPE IN FT/FT
N=	0.05	MANNING'S N-VALUE
Qcal	2.8	DISCHARGE, CFS
A=	2.51	SQ. FT.
V=	1.12	FPS
Dmin	1.12	MINIMUM DEPTH IN DITCH

ADDENDUM NO. 04

B-8		
D=	0.49	DEPTH OF FLOW IN FEET
BW=	2	BOTTOM WIDTH IN FEET
L S.S=	4	LEFT SIDE SLOPE
R S.S.=	3	RIGHT SIDE SLOPE
SFL=	0.017	FL SLOPE IN FT/FT
N=	0.05	MANNING'S N-VALUE
Qcal=	3.4	DISCHARGE, CFS
A=	1.85	SQ. FT.
V=	1.84	FPS
Dmin=	2.00	MINIMUM DEPTH IN DITCH

B-37		
D=	0.26	DEPTH OF FLOW IN FEET
BW=	2	BOTTOM WIDTH IN FEET
L S.S=	4	LEFT SIDE SLOPE
R S.S.=	3	RIGHT SIDE SLOPE
SFL=	0.015	FL SLOPE IN FT/FT
N=	0.05	MANNING'S N-VALUE
Qcal=	0.9	DISCHARGE, CFS
A=	0.76	SQ. FT.
V=	1.19	FPS
Dmin=	1.70	MINIMUM DEPTH IN DITCH

B-33		
D=	0.42	DEPTH OF FLOW IN FEET
BW=	2	BOTTOM WIDTH IN FEET
L S.S=	4	LEFT SIDE SLOPE
R S.S.=	3	RIGHT SIDE SLOPE
SFL=	0.008	FL SLOPE IN FT/FT
N=	0.05	MANNING'S N-VALUE
Qcal=	1.7	DISCHARGE, CFS
A=	1.46	SQ. FT.
V=	1.16	FPS
Dmin=	2.00	MINIMUM DEPTH IN DITCH

C-2		
D=	0.98	DEPTH OF FLOW IN FEET
BW=	2	BOTTOM WIDTH IN FEET
L S.S=	3	LEFT SIDE SLOPE
R S.S.=	4	RIGHT SIDE SLOPE
SFL=	0.013	FL SLOPE IN FT/FT
N=	0.05	MANNING'S N-VALUE
Qcal=	12.6	DISCHARGE, CFS
A=	5.36	SQ. FT.
V=	2.35	FPS
Dmin=	1.70	MINIMUM DEPTH IN DITCH

D-6		
D=	0.34	DEPTH OF FLOW IN FEET
BW=	2	BOTTOM WIDTH IN FEET
L S.S	4	LEFT SIDE SLOPE
R S.S	3	RIGHT SIDE SLOPE
SFL=	0.03	FL SLOPE IN FT/FT
N=	0.05	MANNING'S N-VALUE
Qcal	2.1	DISCHARGE, CFS
A=	1.08	SQ. FT.
V=	1.95	FPS
Dmin	1.12	MINIMUM DEPTH IN DITCH

B-2		
D=	0.83	DEPTH OF FLOW IN FEET
BW=	0	BOTTOM WIDTH IN FEET
L S.S=	4	LEFT SIDE SLOPE
R S.S.=	4	RIGHT SIDE SLOPE
SFL=	0.028	FL SLOPE IN FT/FT
N=	0.03	MANNING'S N-VALUE
Qcal=	12.4	DISCHARGE, CFS
A=	2.78	SQ. FT.
V=	4.47	FPS
Dmin=	1.50	MINIMUM DEPTH IN DITCH

B-15		
D=	0.75	DEPTH OF FLOW IN FEET
BW=	2	BOTTOM WIDTH IN FEET
L S.S=	4	LEFT SIDE SLOPE
R S.S.=	3	RIGHT SIDE SLOPE
SFL=	0.019	FL SLOPE IN FT/FT
N=	0.05	MANNING'S N-VALUE
Qcal=	8.5	DISCHARGE, CFS
A=	3.47	SQ. FT.
V=	2.45	FPS
Dmin=	2.00	MINIMUM DEPTH IN DITCH

B-18		
D=	0.41	DEPTH OF FLOW IN FEET
BW=	2	BOTTOM WIDTH IN FEET
L S.S=	4	LEFT SIDE SLOPE
R S.S.=	3	RIGHT SIDE SLOPE
SFL=	0.008	FL SLOPE IN FT/FT
N=	0.05	MANNING'S N-VALUE
Qcal=	1.6	DISCHARGE, CFS
A=	1.42	SQ. FT.
V=	1.13	FPS
Dmin=	1.90	MINIMUM DEPTH IN DITCH

C-7		
D=	0.90	DEPTH OF FLOW IN FEET
BW=	2	BOTTOM WIDTH IN FEET
L S.S=	3	LEFT SIDE SLOPE
R S.S.=	4	RIGHT SIDE SLOPE
SFL=	0.008	FL SLOPE IN FT/FT
N=	0.05	MANNING'S N-VALUE
Qcal=	8.1	DISCHARGE, CFS
A=	4.61	SQ. FT.
V=	1.76	FPS
Dmin=	1.60	MINIMUM DEPTH IN DITCH

D-5		
D=	0.61	DEPTH OF FLOW IN FEET
BW=	2	BOTTOM WIDTH IN FEET
L S.S	4	LEFT SIDE SLOPE
R S.S	3	RIGHT SIDE SLOPE
SFL=	0.005	FL SLOPE IN FT/FT
N=	0.05	MANNING'S N-VALUE
Qcal	2.8	DISCHARGE, CFS
A=	2.51	SQ. FT.
V=	1.12	FPS
Dmin	1.12	MINIMUM DEPTH IN DITCH

NOTES
1. 25-YR DESIGN STORM WAS ANALYZED USING GEOPAK DRAINAGE FOR STORM DRAIN CALCULATIONS.

2. SIDE SLOPES SHOWN ARE MAXIMUM VALUES FOR DITCHES AND CAN VARY. SEE STORM DRAIN PLAN AND PROFILES FOR DETAILED DITCH DESIGNS.

STATE OF TEXAS
JAMES A. LUTZ
84722
LICENSED
PROFESSIONAL ENGINEER

JAMES A. LUTZ, P.E. 3/24/2015
DATE

PAPE-DAWSON ENGINEERS
2000 NW LOOP 410 | SAN ANTONIO, TEXAS 78213 | PHONE: 210.375.9000 FAX: 210.375.9010
TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION # 470

CITY OF SAN ANTONIO
TRANSPORTATION & CAPITAL IMPROVEMENTS

RAY ELLISON BLVD
LOOP 410 TO OLD PEARSALL RD
DITCH HYDRAULIC DATA SHEET

100 % SUBMITTAL	PROJECT NO.: 8185-00		DATE: 3/24/2015
DRWN. BY: HM	DSGN. BY: HM	CHKD. BY: DT	SHEET NO.: 171

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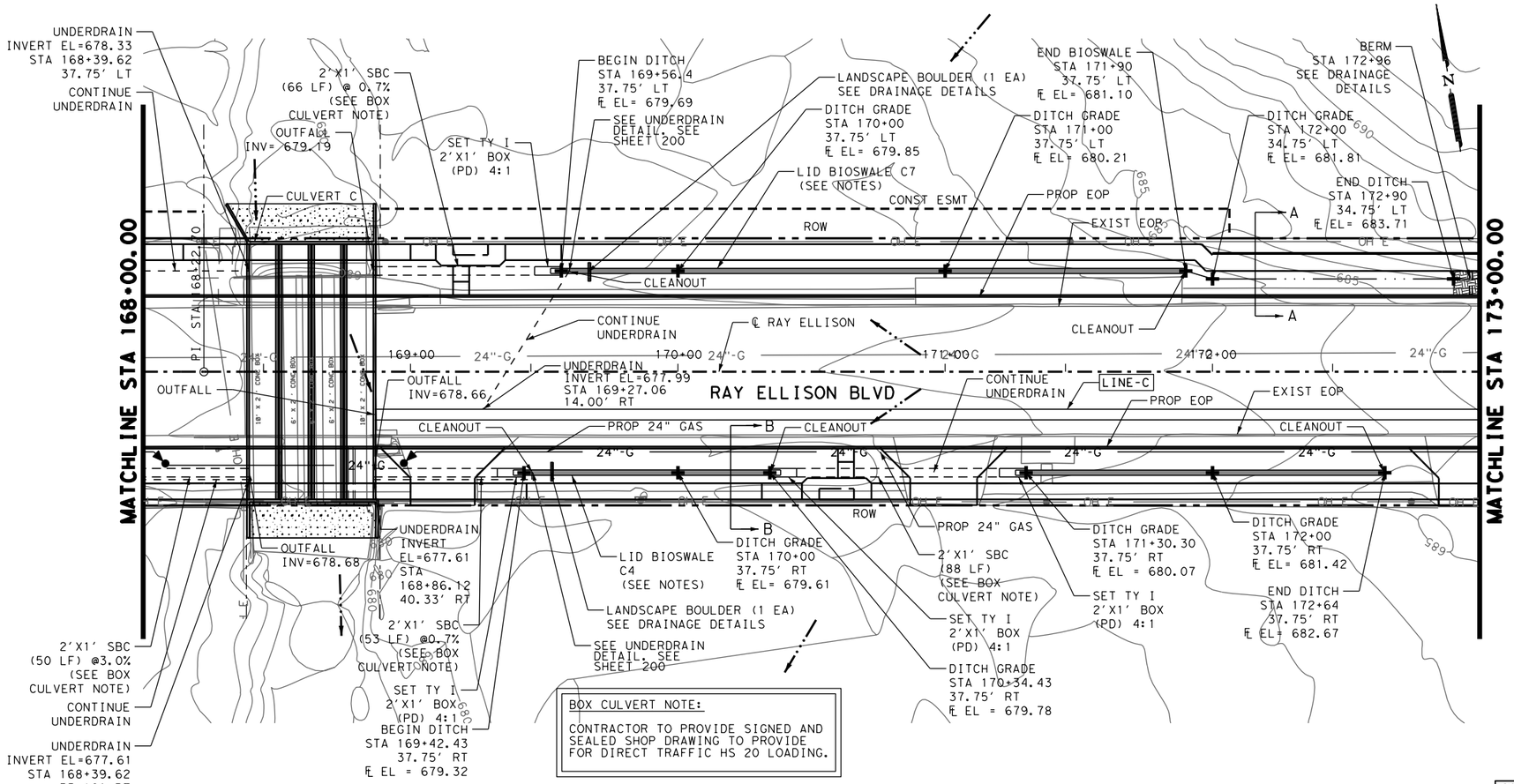


BOX CULVERT NOTE:

CONTRACTOR TO PROVIDE SIGNED AND SEALED SHOP DRAWING TO PROVIDE FOR DIRECT TRAFFIC HS 20 LOADING.

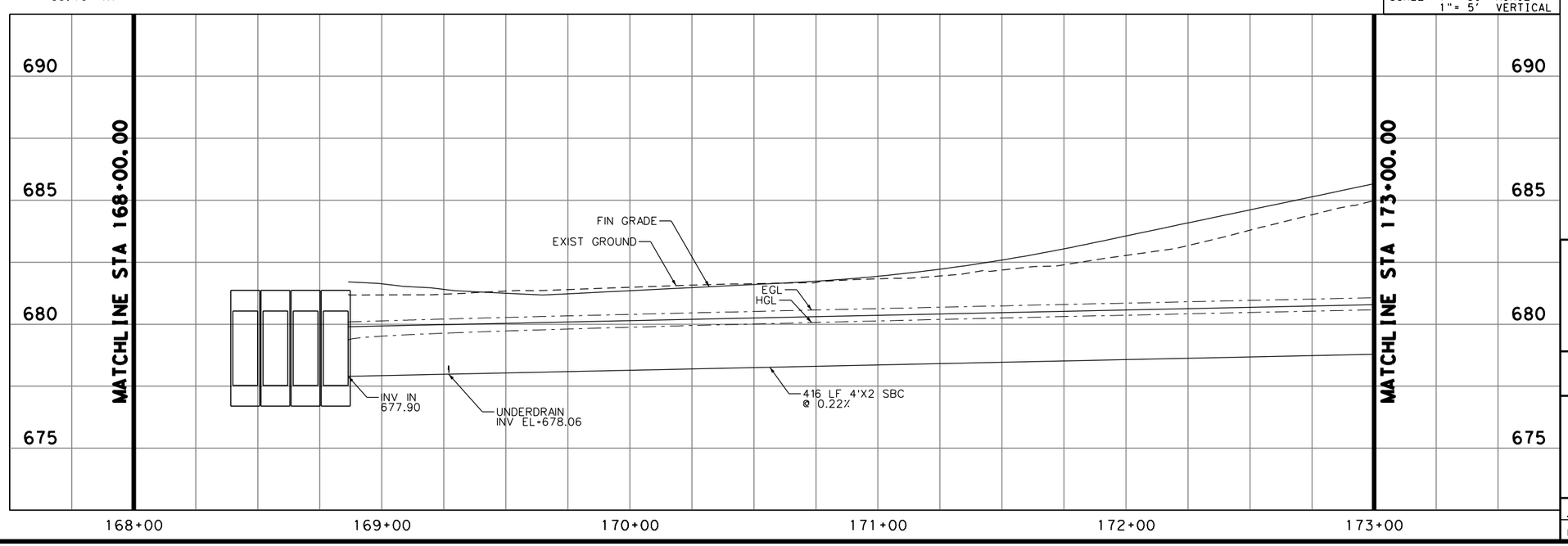
NOTES:

1. ALL UTILITIES AND EXISTING DRAINAGE STRUCTURES SHOWN ARE APPROXIMATE LOCATIONS. CONTRACTOR SHALL VERIFY DEPTHS AND LOCATIONS PRIOR TO THE START OF CONSTRUCTION.
2. SEE PERTINENT STRUCTURE LAYOUT OR PROFILE FOR ADDITIONAL DETAILS OF EACH DRAINAGE STRUCTURE.
3. ALL PIPES ARE NORMAL TO AND STRAIGHT FROM STRUCTURE TO STRUCTURE UNLESS OTHERWISE SHOWN.
4. SEE LID TYPICAL SECTIONS FOR MORE INFORMATION REGARDING LID FEATURES INCLUDING LID INLET AND UNDERDRAIN DETAILS.
5. ALL EXISTING FEATURES ARE SHOWN SCREENED BACK, i.e. FADED.
6. SEE DITCH HYDRAULIC DATA SHEET FOR BIOSWALE DITCH COMPUTATIONS.
7. SEE PLANTINGS PLANS SHEETS FOR LANDSCAPING DETAILS.
8. BIOSWALE UNDERDRAIN CLEANOUT MAX SPACING OF 300'

LEGEND

	LID FEATURE
LINE-A1	STORM DRAIN LINE W/ DESIGNATION
DI-A1	DROP INLET W/ DESIGNATION
MH-A1	JUNCTION BOX W/ DESIGNATION
	DRAINAGE FLOW ARROW
	DITCH GRADE
	DITCH FLOW LINE
OH E	OVERHEAD ELECTRIC LINE
8" SS	SANITARY SEWER LINE
G	CPS GAS LINE
UGT	UNDERGROUND TELECOM LINE
12" W	WATER LINE

SCALE: 1"= 50' HORIZ
1"= 5' VERTICAL



ADDENDUM NO. 04

STATE OF TEXAS
JAMES A. LUTZ
84722
LICENSED PROFESSIONAL ENGINEER

JAMES A. LUTZ, P.E. 3/24/2015 DATE

0 25 50 75
SCALE: 1"= 50'

PAPE-DAWSON ENGINEERS
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CITY OF SAN ANTONIO
TRANSPORTATION & CAPITAL IMPROVEMENTS

RAY ELLISON BLVD
LOOP 410 TO OLD PEARSALL RD
STORM DRAIN PLAN & PROFILE
SYSTEM C

SHEET 15 OF 20

100 % SUBMITTAL	PROJECT NO.: 8185-00		DATE: 3/24/2015
DRWN. BY: BD	DSGN. BY: HM	CHKD. BY: DT	SHEET NO.: 187

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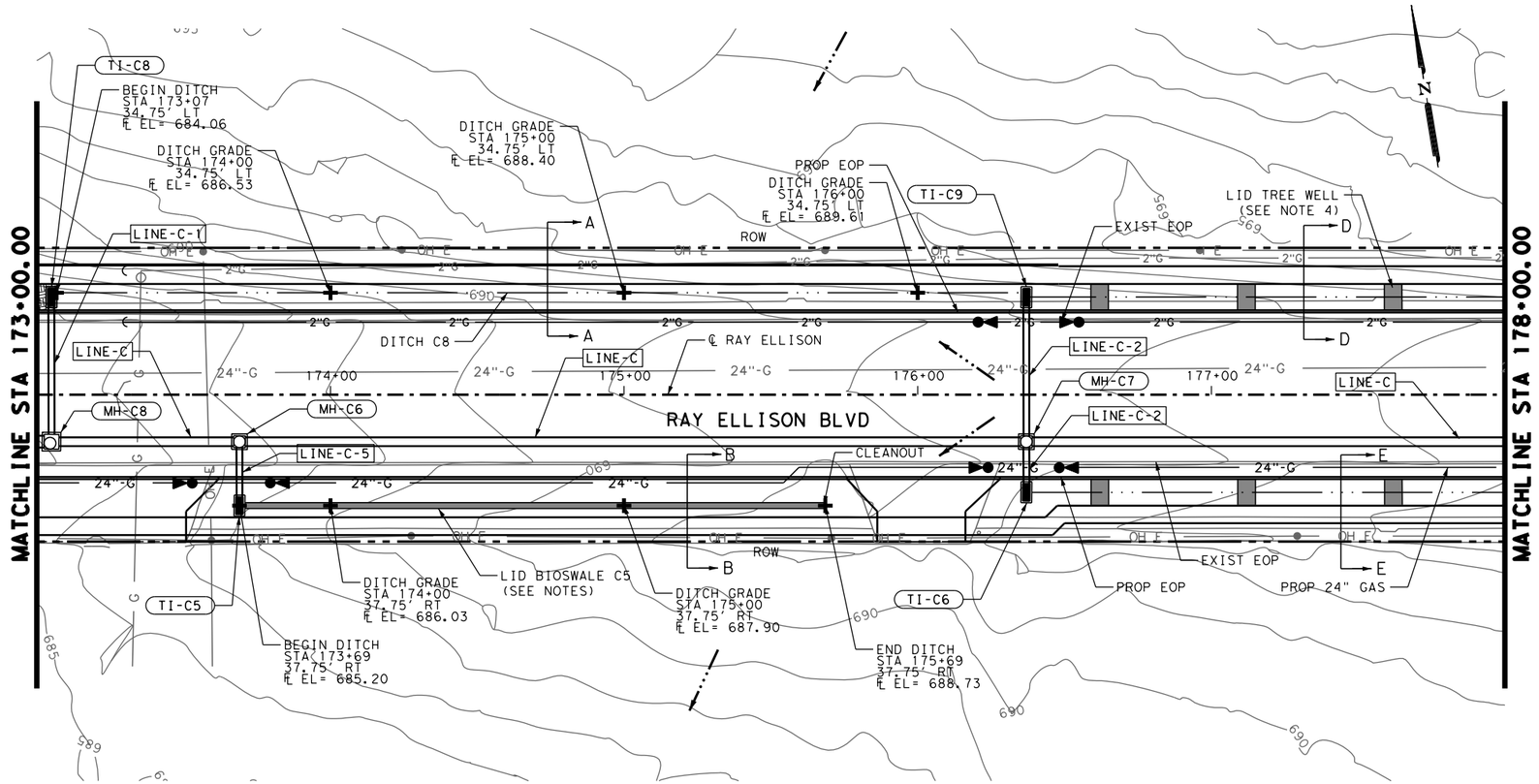

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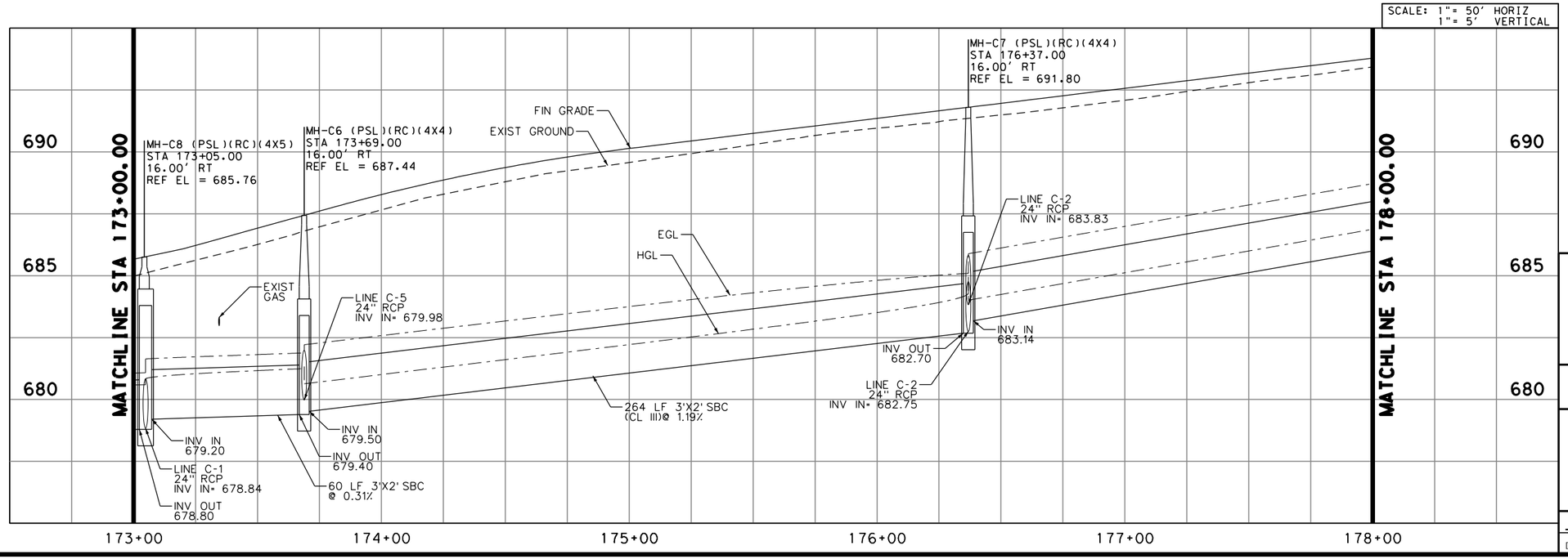
7. SEE PLANTINGS PLANS SHEETS FOR LANDSCAPING DETAILS.
8. BIOSWALE UNDERDRAIN CLEANOUT MAX SPACING OF 300'

LEGEND

	LID FEATURE
LINE-A1	STORM DRAIN LINE W/ DESIGNATION
DI-A1	DROP INLET W/ DESIGNATION
MH-A1	JUNCTION BOX W/ DESIGNATION
	DRAINAGE FLOW ARROW
	DITCH GRADE
	DITCH FLOW LINE
OH E	OVERHEAD ELECTRIC LINE
8" SS	SANITARY SEWER LINE
G	CPS GAS LINE
UGT	UNDERGROUND TELECOM LINE
12" W	WATER LINE

SCALE: 1"= 50' HORIZ
1"= 5' VERTICAL



ADDENDUM NO. 04

STATE OF TEXAS
JAMES A. LUTZ
84722
LICENSED
PROFESSIONAL ENGINEER

JAMES A. LUTZ, P.E. — 3/24/2015 DATE

0 25 50 75
SCALE: 1"= 50'

PAPE-DAWSON ENGINEERS

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TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION # 470

CITY OF SAN ANTONIO
TRANSPORTATION & CAPITAL IMPROVEMENTS

RAY ELLISON BLVD
LOOP 410 TO OLD PEARSALL RD
STORM DRAIN PLAN & PROFILE
SYSTEM C

SHEET 16 OF 20

100 % SUBMITTAL	PROJECT NO.: 8185-00		DATE: 3/24/2015
DRWN. BY: BD	DSGN. BY: HM	CHKD. BY: DT	SHEET NO.: 188

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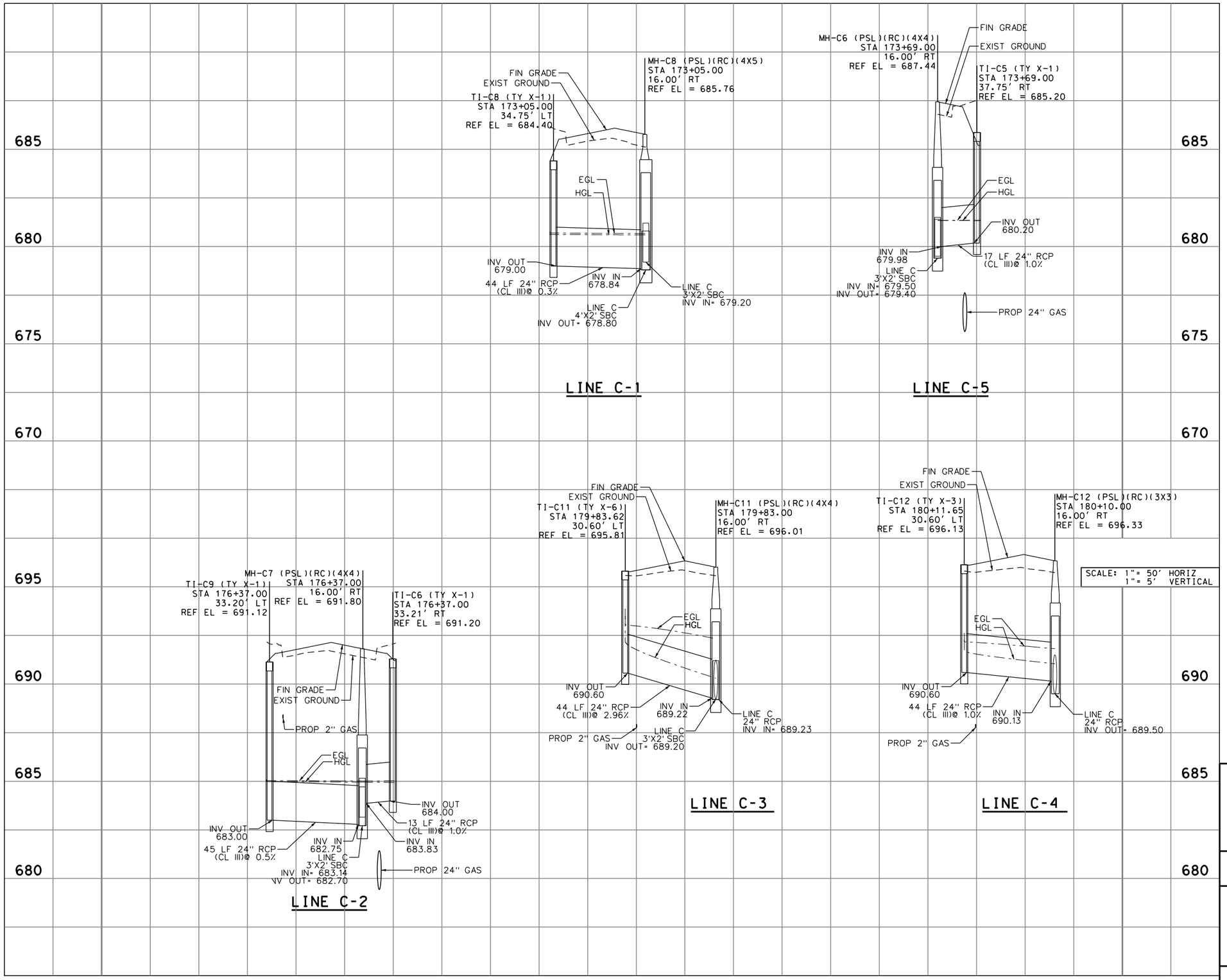

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LEGEND

	LID FEATURE
LINE-A1	STORM DRAIN LINE W/ DESIGNATION
DI-A1	DROP INLET W/ DESIGNATION
MH-A1	JUNCTION BOX W/ DESIGNATION
	DRAINAGE FLOW ARROW
	DITCH GRADE
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OH E	OVERHEAD ELECTRIC LINE
8" SS	SANITARY SEWER LINE
G	CPS GAS LINE
UGT	UNDERGROUND TELECOM LINE
12" W	WATER LINE

ADDENDUM NO. 04

STATE OF TEXAS
JAMES A. LUTZ
84722
LICENSED
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JAMES A. LUTZ, P.E. 3/24/2015
DATE

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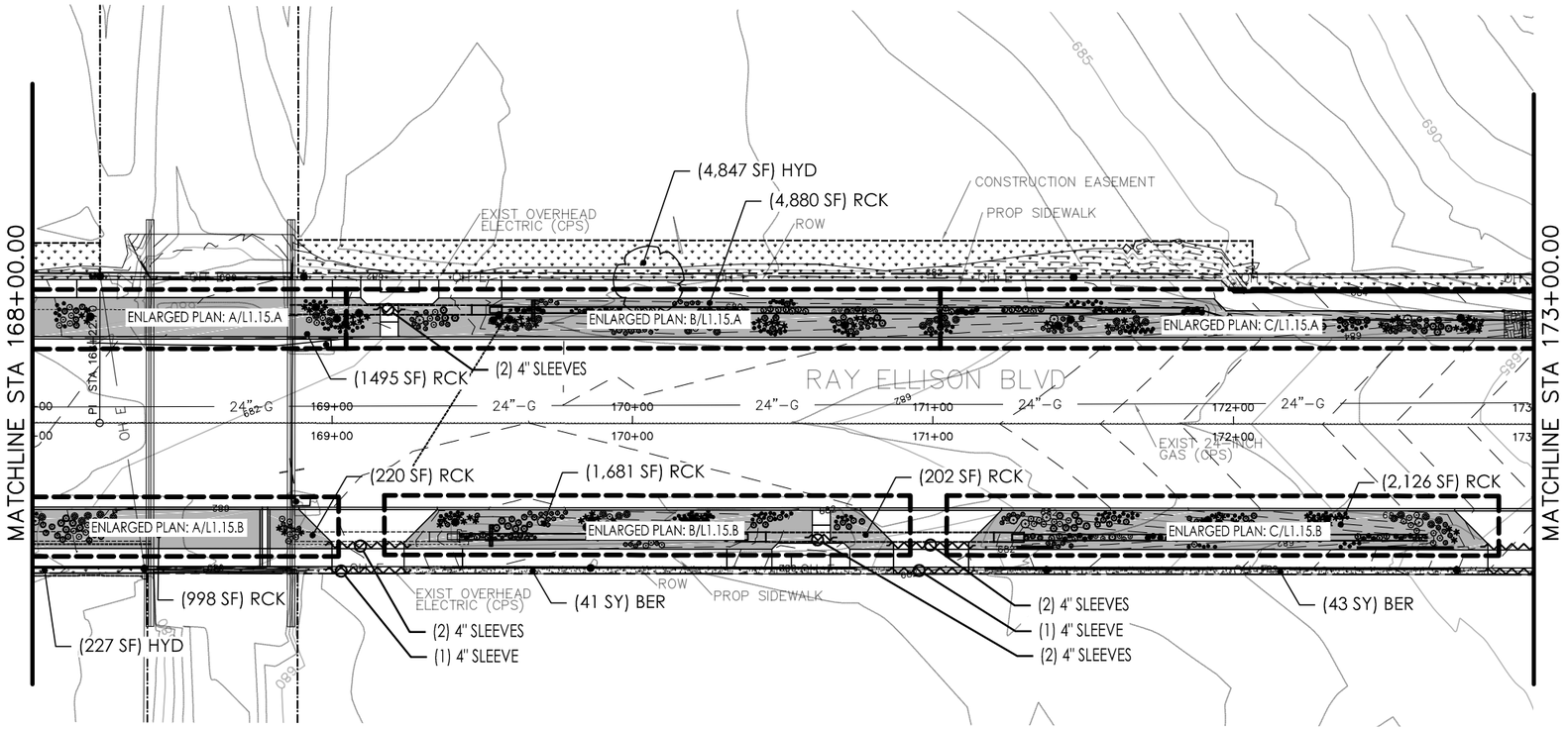
CITY OF SAN ANTONIO
TRANSPORTATION & CAPITAL IMPROVEMENTS

RAY ELLISON BLVD
LOOP 410 TO OLD PEARSALL RD
STORM DRAIN LATERALS
LINE C-1, LINE C-5
LINE C-2, LINE C-3, LINE C-4

100 % SUBMITTAL	PROJECT NO.: 8185-00		DATE: 3/24/2015
DRWN. BY: HM	DSGN. BY: HM	CHKD. BY: DT	SHEET NO.: 198



MASK LANDSCAPE ARCHITECTURE
118 Broadway Suite 201
San Antonio, TX 78205
210.267.5246
www.mlandarch.com

- ROCK MULCH (RCK)
- TURF-SOLID SOD (BER)
- TURF-HYDROSEED (HYD)
- COMPOST MULCH WITH SHORT GRASS MIX (SSM)
- DRAINFIELD SEED MIX (DSM)
- SHRUBS AND GRASSES
- TREES
- IRRIGATION SLEEVES REFERENCE DETAIL SHEETS

NOTES:

SEE TREE PRESERVATION PLANS FOR TREE DETAILS

REFERENCE: PLANTING NOTES AND DETAILS SHEETS FOR PLANT MATERIAL INSTALLATION

REFERENCE: IRRIGATION DETAILS AND NOTES FOR IRRIGATION SYSTEM INSTALLATION

REGISTERED LANDSCAPE ARCHITECT
BRYAN KYE MASK
2369
STATE OF TEXAS

3/24/15

ADDENDUM NO. 04

0 25 50 75
SCALE: 1"= 50'

PAPE-DAWSON ENGINEERS
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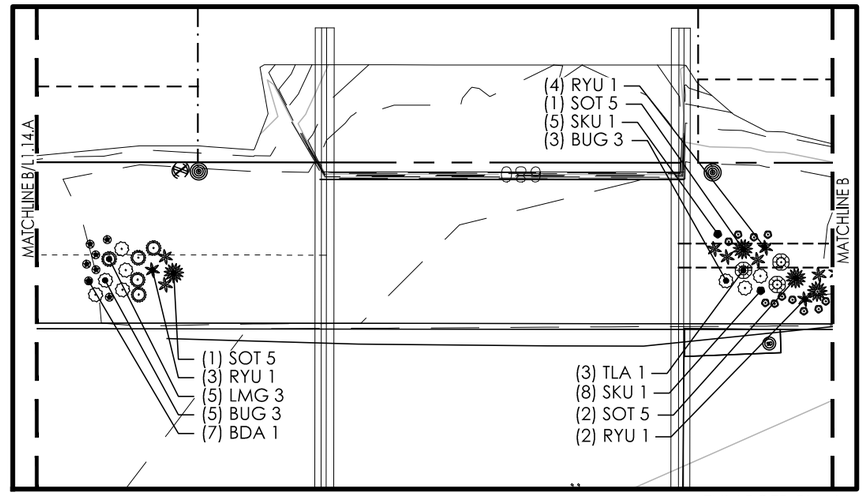
TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION # 470

CITY OF SAN ANTONIO
TRANSPORTATION & CAPITAL IMPROVEMENTS

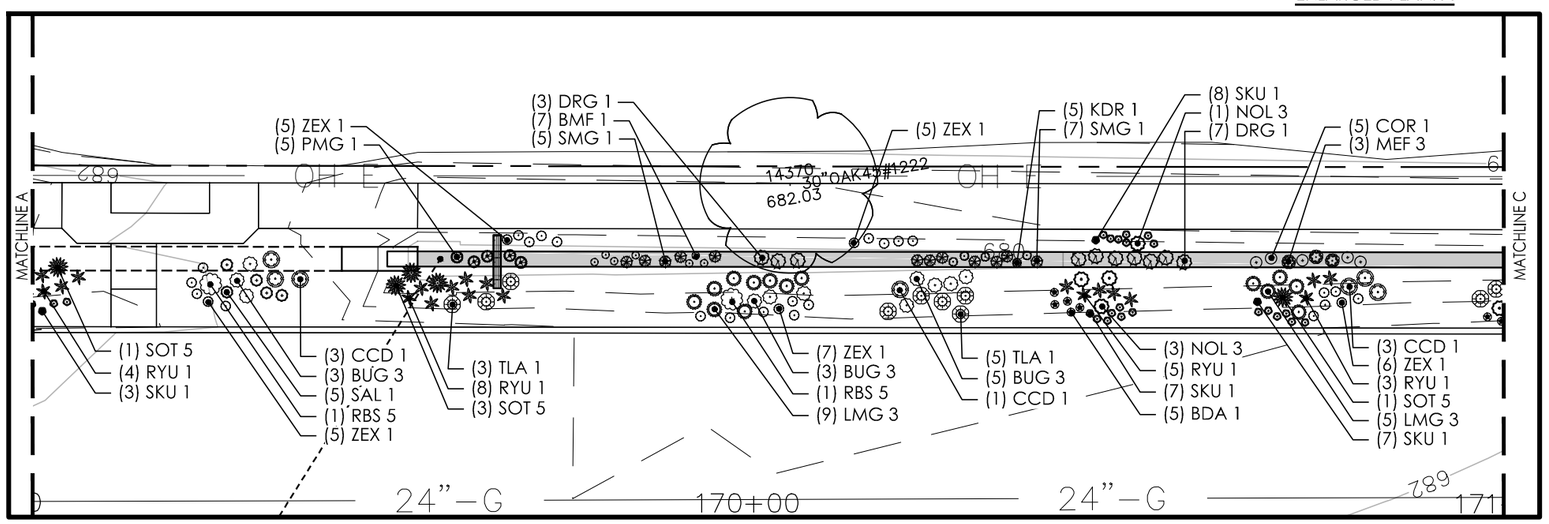
RAY ELLISON BLVD
LOOP 410 TO OLD PEARSALL RD
PLANTING PLAN

SHEET 34 OF 51

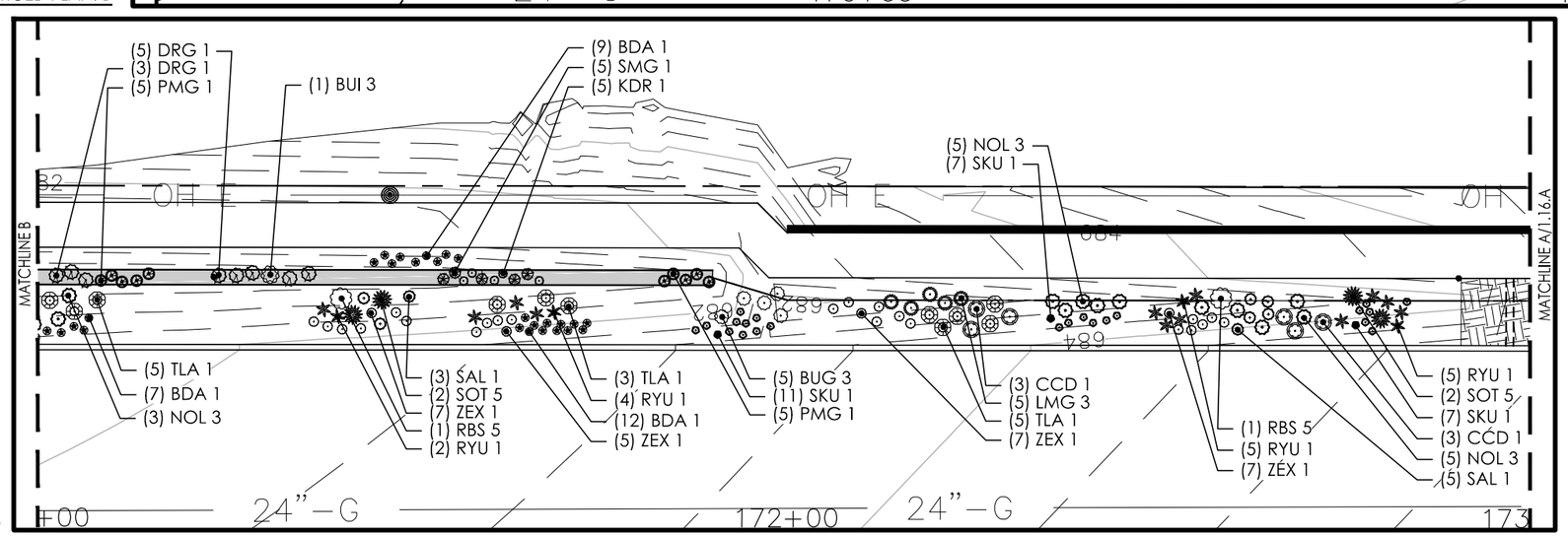
100 % SUBMITTAL	PROJECT NO.: 8185-00		DATE: 03-24-15
DRWN. BY: BKM	DSGN. BY: BKM	CHKD. BY: BKM	SHEET NO.: L1.15



ENLARGED PLAN: A



ENLARGED PLAN: B



ENLARGED PLAN: C

MLA
MASK LANDSCAPE ARCHITECTURE
118 Broadway Suite 201
San Antonio, TX 78205
210.267.5246
www.mlandarch.com

SY	KEY	COMMON NAME	SY	KEY	COMMON NAME
	BGG	BLONDE AMBITION GRASS		LMG	LINDHEIMER MUHLY GRASS
	NOL	BEAR GRASS NOLINA		PMG	PINE MUHLY GRASS
	BUG	BULL GRASS		MEF	MEXICAN FIRE
	BUI	BUTTERFLY IRIS		RBS	RIO BRAVO SAGE
	COR	COREOPSIS		RYU	RED YUCCA
	BDA	BLACKFOOT DAISY		SKU	SKULLCAP
	DRG	DEER GRASS		SMG	SEEP MUHLY
	SOT	SOTOL		ZEX	ZEXMENIA
	BMF	BLUE MIST FLOWER		TLA	TEXAS LANTANA
	SAL	SALVIA		KDR	KATY DWARF RUELLIA
	CCD	COPPER CANYON DAISY		MOK	MONTERREY OAK
				DWI	DESERT WILLOW

NOTES:

SEE TREE PRESERVATION PLANS FOR TREE DETAILS

REFERENCE: PLANTING NOTES AND DETAILS SHEETS FOR PLANT MATERIAL INSTALLATION

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REGISTERED LANDSCAPE ARCHITECT
BRYAN KYE MASK
2369
STATE OF TEXAS

3/24/15

ADDENDUM NO. 04

0 10 20 30
SCALE: 1"= 20'

PAPE-DAWSON ENGINEERS
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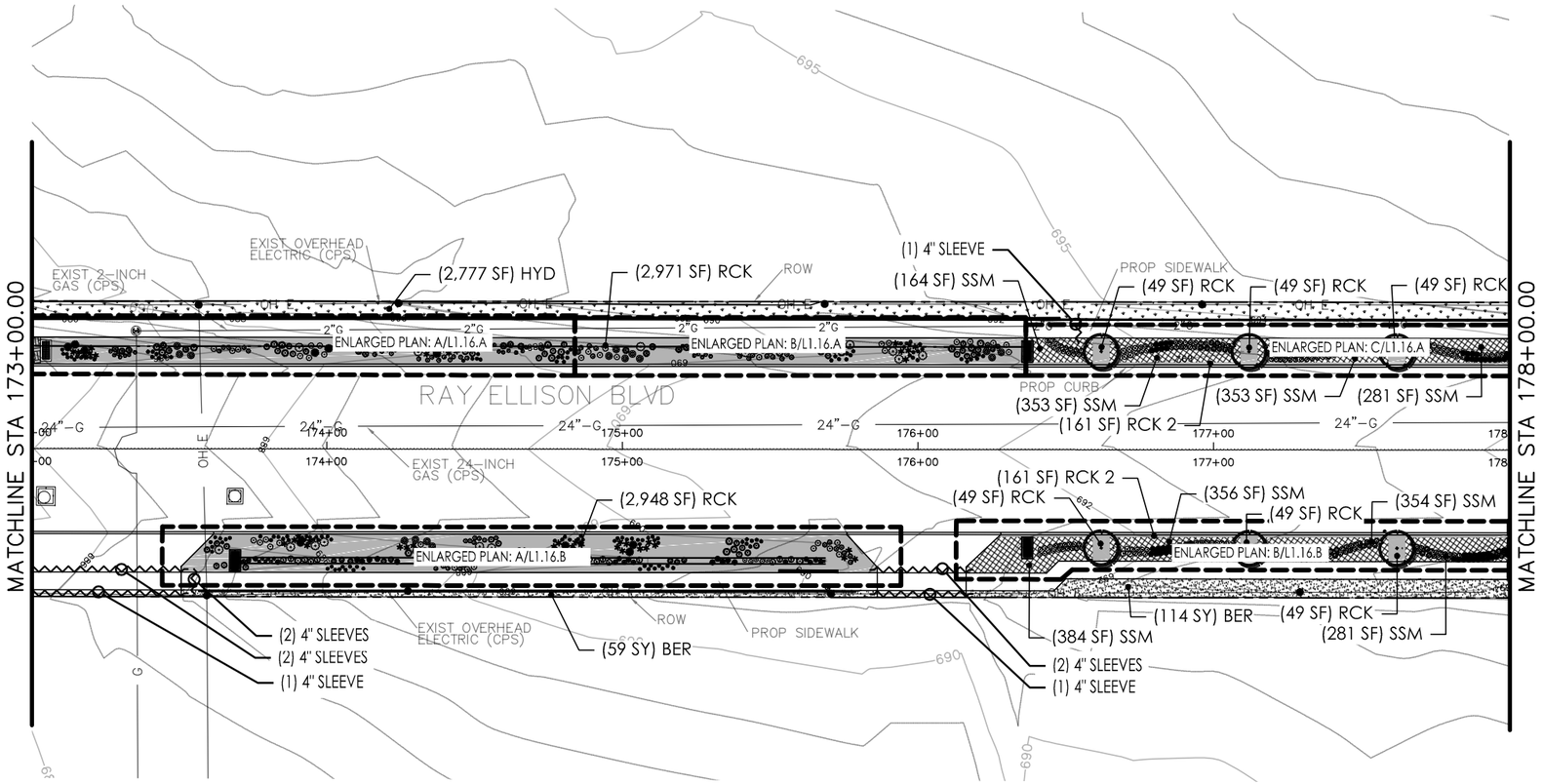
TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION # 470

CITY OF SAN ANTONIO
TRANSPORTATION & CAPITAL IMPROVEMENTS

RAY ELLISON BLVD
LOOP 410 TO OLD PEARSALL RD
ENLARGED PLANTING PLANS

SHEET 35 OF 51

100 % SUBMITTAL	PROJECT NO.: 8185-00	DATE: 03-24-15
DRWN. BY: BKM	DSGN. BY: BKM / CHKD. BY: BKM	SHEET NO.: L1.15.A



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- ROCK MULCH (RCK)
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- COMPOST MULCH WITH SHORT GRASS MIX (SSM)
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- SHRUBS AND GRASSES
- TREES
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REGISTERED LANDSCAPE ARCHITECT
BRYAN KYE MASK
2369
STATE OF TEXAS

3/24/15

ADDENDUM NO. 04

0 25 50 75
SCALE: 1"= 50'

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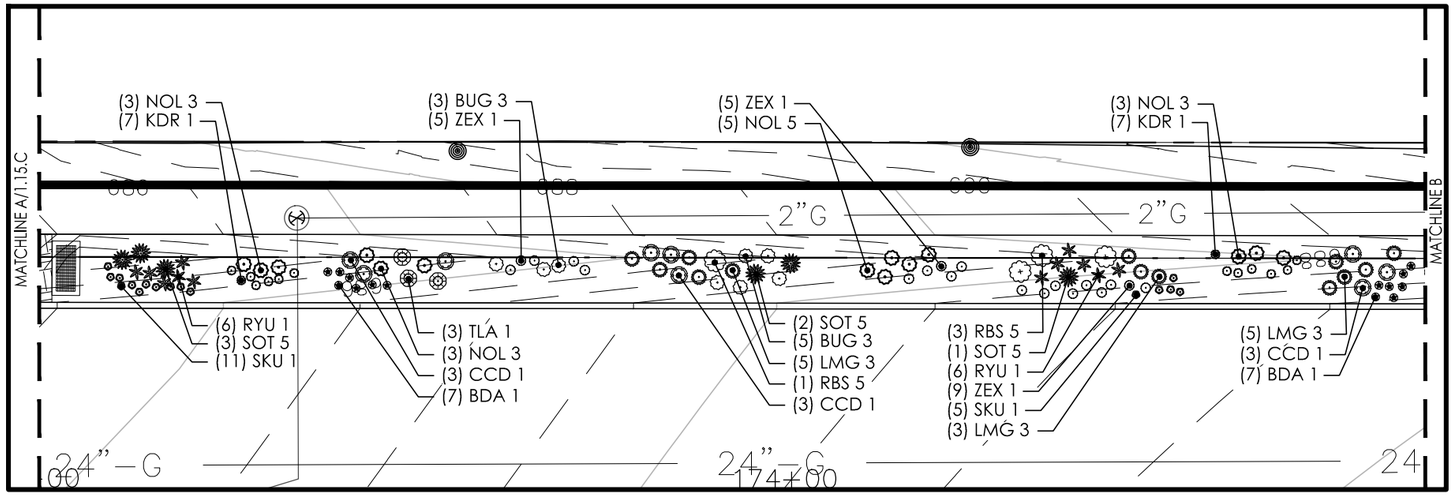
CITY OF SAN ANTONIO
TRANSPORTATION & CAPITAL IMPROVEMENTS

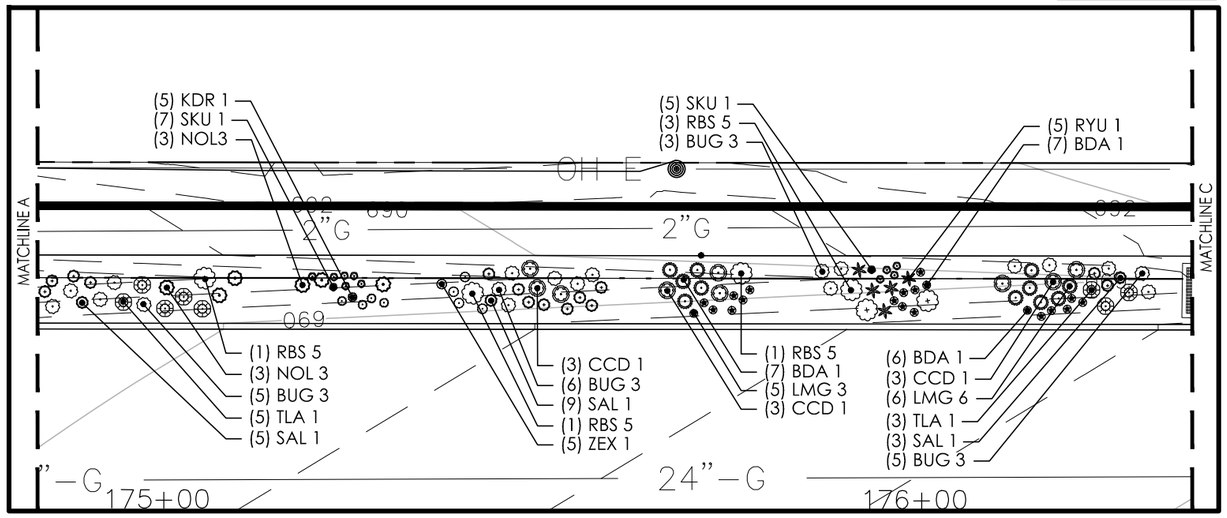
RAY ELLISON BLVD
LOOP 410 TO OLD PEARSALL RD
PLANTING PLAN

SHEET 37 OF 51

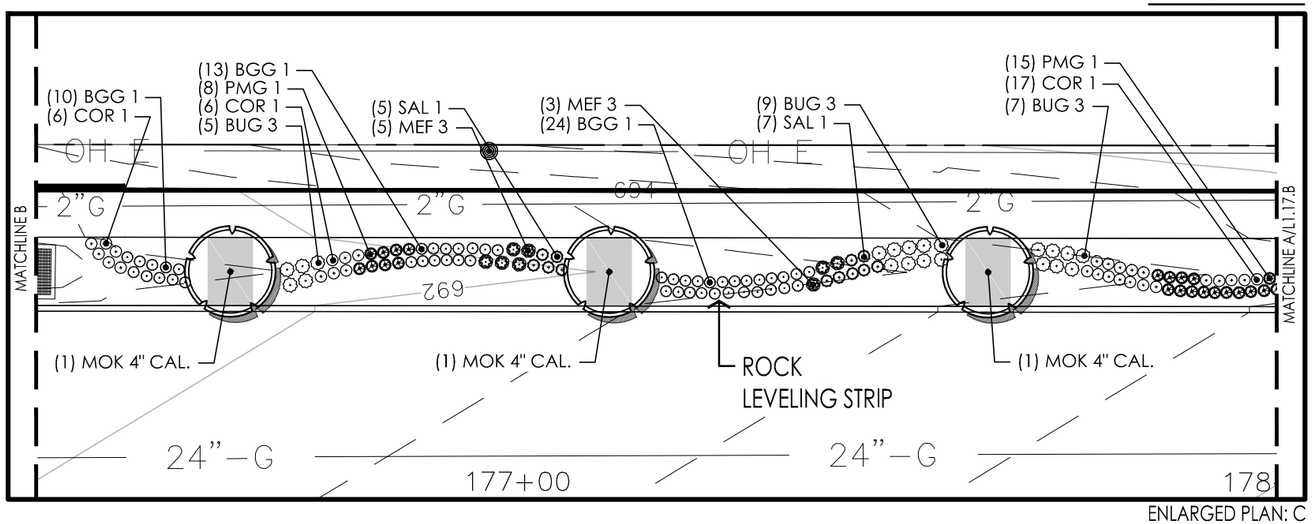
100 % SUBMITTAL	PROJECT NO.: 8185-00		DATE: 03-24-15
DRWN. BY: BKM	DSGN. BY: BKM	CHKD. BY: BKM	SHEET NO.: L1.16



ENLARGED PLAN: A



ENLARGED PLAN: B



ENLARGED PLAN: C

MLA
MASK LANDSCAPE ARCHITECTURE
118 Broadway Suite 201
San Antonio, TX 78205
210.267.5246
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SY	KEY	COMMON NAME	SY	KEY	COMMON NAME
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	BMF	BLUE MIST FLOWER		TLA	TEXAS LANTANA
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	CCD	COPPER CANYON DAISY		MOK	MONTERREY OAK
				DWI	DESERT WILLOW

NOTES:

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REGISTERED LANDSCAPE ARCHITECT
BRYAN KYE MASK
2369
STATE OF TEXAS

3/24/15

ADDENDUM NO. 04

0 10 20 30
SCALE: 1"= 20'

PAPE-DAWSON ENGINEERS
2000 NW LOOP 410 | SAN ANTONIO, TEXAS 78213 | PHONE: 210.375.9000 FAX: 210.375.9010
TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION # 470

CITY OF SAN ANTONIO
TRANSPORTATION & CAPITAL IMPROVEMENTS

RAY ELLISON BLVD
LOOP 410 TO OLD PEARSALL RD
ENLARGED PLANTING PLANS

SHEET 38 OF 51

100 % SUBMITTAL	PROJECT NO.: 8185-00	DATE: 03-24-15
DRWN. BY: BKM	DSGN. BY: BKM / CHKD. BY: BKM	SHEET NO.: L1.16.A

Trees

QTY	KEY	UNIT	SIZE	COMMON NAME	SCIENTIFIC NAME	HEIGHT	SPREAD	SPACING	REMARKS
17	MOK	EA	4" Caliper	Monterrey Oak	Quercus polymorpha	12'-14'	5'-6'		Standard, Full Round Canopy
2	DWI	EA	4" Caliper	Desert Willow 'Arts Seedless'	Chilopsis linearis Arts Seedless	10'-12'	5'-6'		Standard, Full Round Canopy

Shrubs/Perennials

QTY	KEY	UNIT	SIZE	COMMON NAME	SCIENTIFIC NAME	HEIGHT	SPREAD	SPACING	REMARKS
141	BUI	EA	#3 cont.	Butterfly Iris	Moraea iridoides	12"	10"	30"	
317	BMF	EA	#1 cont.	Blue Mist Flower	Conoclinium greggii	6"-8"	Full	15"	
318	CCD	EA	#1 cont.	Copper Canyon Daisy	Tagetes lemmonii	12"-14"	Full	30"	
381	COR	EA	#1 cont.	Coreopsis	Coreopsis lanceolata	6"-8"	Full	12"	
303	KDR	EA	#1 cont.	Katy Dwarf Ruellia	Ruellia brittoniana 'Katie Blue'	4"	Full	15"	
947	BDA	EA	#1 cont.	Blackfoot Daisy	Melampodium leucanthum	6"-8"	Full	12"	
194	MEF	EA	#3 cont.	Mexican Fire	Anisacanthus quadrifidus v. wrightii Mexican Fire	16"-18"	18"-20"	30"	Available at Mountain States Nursery
294	RBS	EA	#5 cont.	Rio Bravo Sage	Leucophyllum langmaniae 'Rio Bravo'	20"-24"	Full	30"	Available at Mountain States Nursery
446	SAL	EA	#1 cont.	Autumn Sage	Salvia greggii	12"-14"	Full	24"	Mix of red, white and pink
1462	SKU	EA	#1 cont.	Skull Cap	Scutellaria frutescens	6"	Full	18"	
313	SOT	EA	#5 cont.	Sotol	Dasylirion texana	16"-18"	18"-20"	30"	
893	RYU	EA	#1 cont.	Red Yucca	Hesperaloe parviflora	8"-10"	Full	24"	
372	TLA	EA	#1 cont.	Texas Lantana	Lantana horrida	10"	12"	30"	
1101	ZEX	EA	#1 cont.	Zexmenia	Wedelia texana Devil's River	8"	8"-10"	18"	Available at Mountain States Nursery

Grasses

QTY	KEY	UNIT	SIZE	COMMON NAME	SCIENTIFIC NAME	HEIGHT	SPREAD	SPACING	REMARKS
597	BGG	EA	#1 cont.	Blue Grama Grass "Blonde Ambition"	Bouteloua gracilis "Blonde Ambition"	8"-10"	Full	18"	Available at Mountain States Nursery
563	PMG	EA	#1 cont.	Pine Muhly Grass	Muhlengergia dubia	12"-15"	Full	18"	
938	LMG	EA	#3 cont.	Lindheimer Muhly	Muhlenbergia lindheimeri	16"-18"	Full	24"	
527	NOL	EA	#1 cont.	Bear Grass Nolina	Nolina microcarpa	12"-15"	Full	18"	
1014	BUG	EA	#1 cont.	Bull Grass	Muhlengergia emersleyi 'El Toro'	12"-15"	Full	18"	
669	SMG	EA	#1 cont.	Seep Muhly	Muhlenbergia reverchonii	12"-15"	Full	18"	
586	DRG	EA	#1 cont.	Deer Grass	Muhlenbergia rigens	12"-15"	Full	24"	

Turf Grasses

QTY	KEY	UNIT		COMMON NAME	SCIENTIFIC NAME				REMARKS
1,909	BER	SY		Common Bermuda	Cynodon dactylon				Solid Sod
169,553	HYD	SF		Sahara Bermuda	Cynodon dactylon v. Numex Sahara				Hydroseed

Miscellaneous

QTY	KEY	UNIT		NAME	TYPE				REMARKS
7,578	SSM	SF		Short Grass/Wildflower Seed Mix	Combination of Native Mixes				Available at Douglas King Seeds
1,114	DSM	SF		Drain Field Seed Mix	Seed Mix for Detention Features				Available at Douglas King Seeds
151,763	RCK	SF		Rock Mulch	Texas Blend 1"-3"				Available at Keller Materials
940	RCK 2	SF		Rock Leveling Edge	Texas Blend 1"-3/8"				Available at Keller Materials

MLA
MASK LANDSCAPE ARCHITECTURE
118 Broadway Suite 201
San Antonio, TX 78205
210.267.5246
www.mlandarch.com

REGISTERED LANDSCAPE ARCHITECT
BRYAN KYE MASK
2369
STATE OF TEXAS

3/24/15

ADDENDUM NO. 04

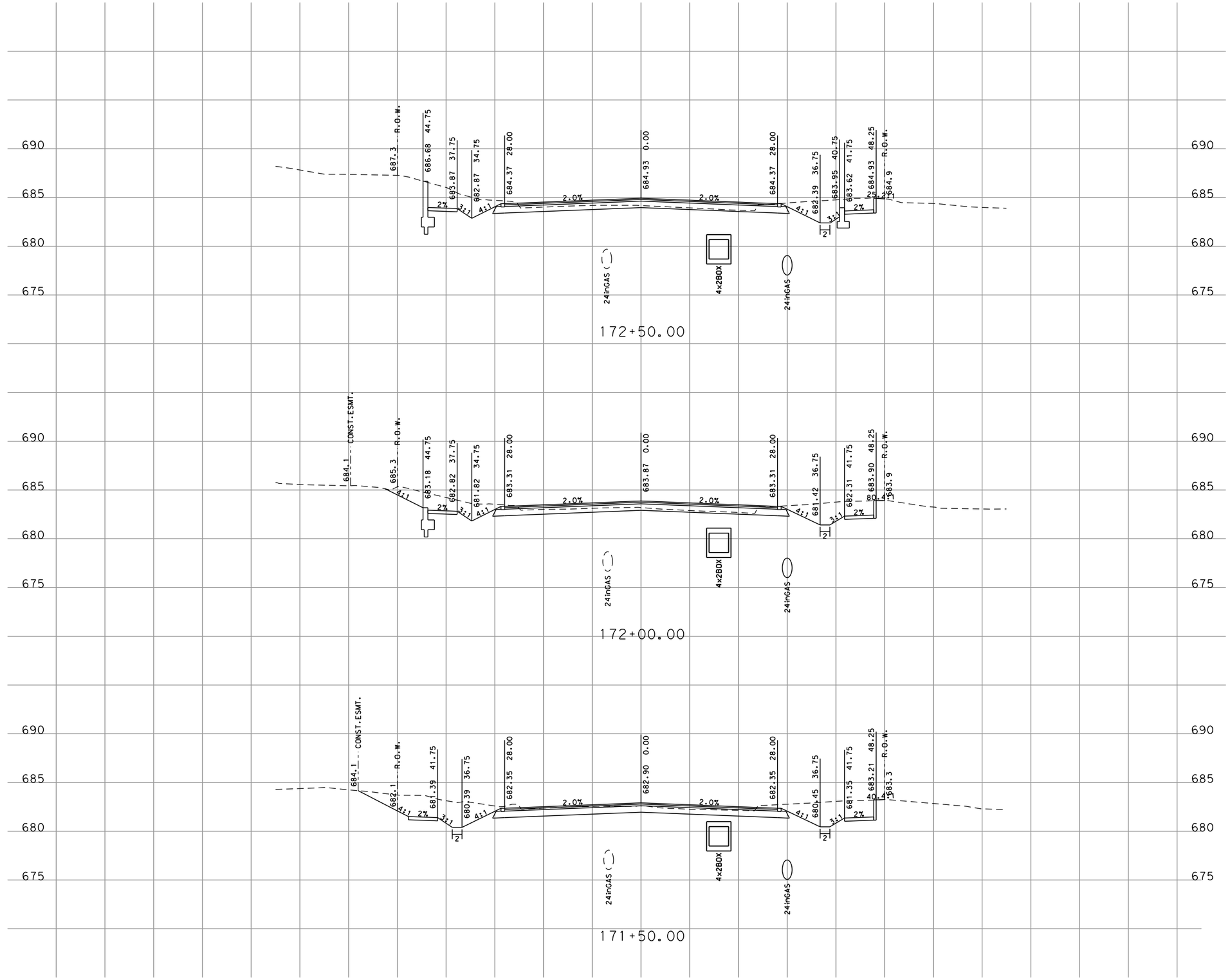
PAPE-DAWSON ENGINEERS
2000 NW LOOP 410 | SAN ANTONIO, TEXAS 78213 | PHONE: 210.375.9000 FAX: 210.375.9010
TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION # 470

CITY OF SAN ANTONIO
TRANSPORTATION & CAPITAL IMPROVEMENTS

RAY ELLISON BLVD
LOOP 410 TO OLD PEARSALL RD
PLANTING DETAILS AND PLANT LISTS

ADDENDUM 04 — SHEET 3 OF 3

100 % SUBMITTAL	PROJECT NO.: 8185-00		DATE: 03-24-15
DRWN. BY: BKM	DSGN. BY: BKM	CHKD. BY: BKM	SHEET NO.: L2.2



UTILITY NOTE:
THE LOCATIONS OF THE EXISTING UTILITIES HSOWN ARE TAKEN FROM THE BEST INFORMATION AVAILABLE. THEY ARE NOT GURANTEED TO BE ACCURATE AND MUST BE VERIFIED BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION.

ADDENDUM NO. 04

SCALE: H: 1" = 20'
V: 1" = 10'

PAPE-DAWSON ENGINEERS
555 EAST RAMSEY | SAN ANTONIO, TEXAS 78216 | PHONE: 210.375.9000 FAX: 210.375.9010
TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION # 470

CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

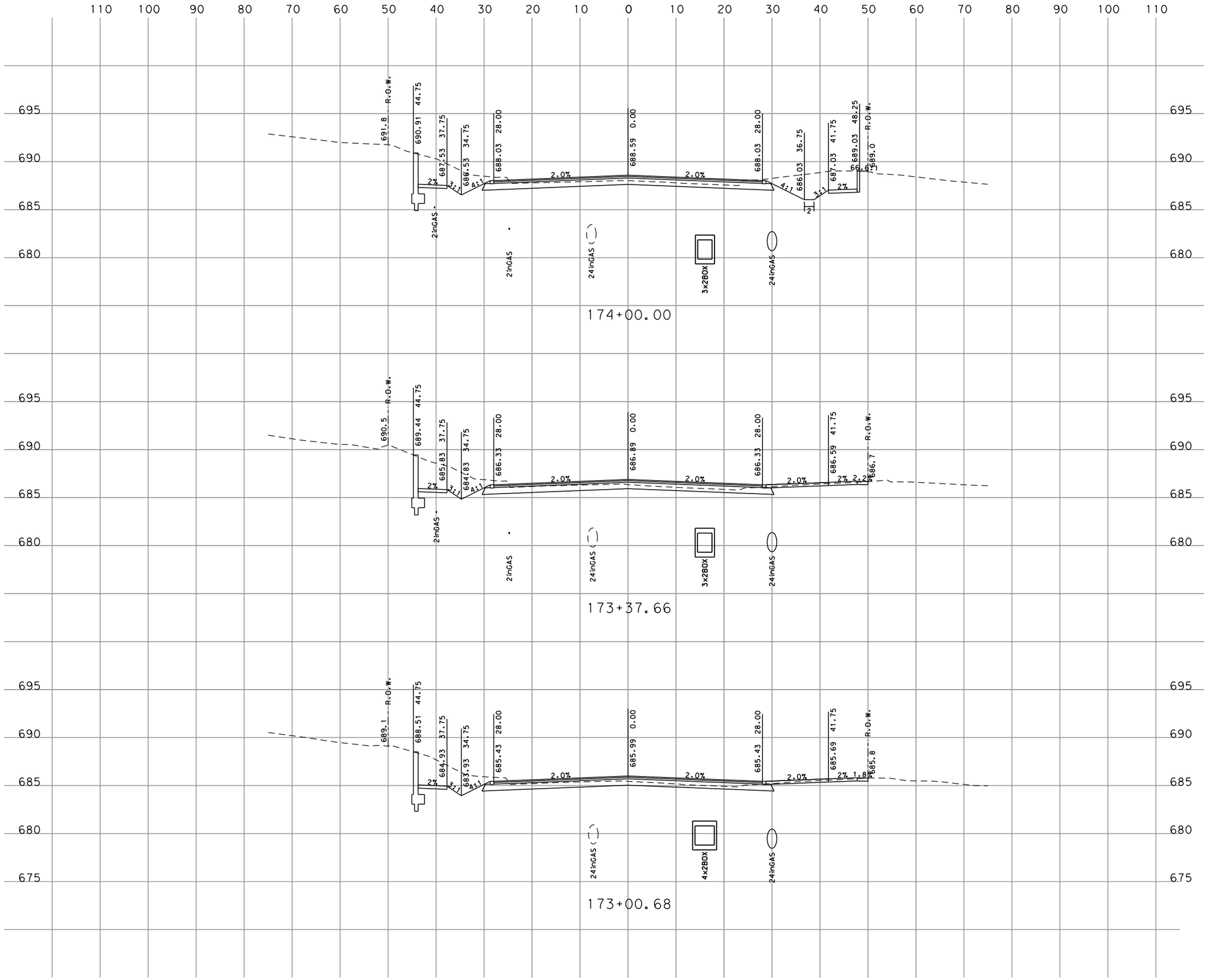
RAY ELLISON BLVD PROPOSED CROSS SECTIONS

SHEET45 OF 60

SURVY. BY:	APPR. BY: TRAFFIC ENGINEER	SCALE:
DRWN. BY: BD	APPR. BY: ASSISTANT CITY ENGINEER	REF. NO.:
DSGN. BY: BD		PROJ NO.: 8185-00
CHKD. BY: DT		SHEET NO.: 394

Plotted on: $DATE$

Design Filename: $FILE$



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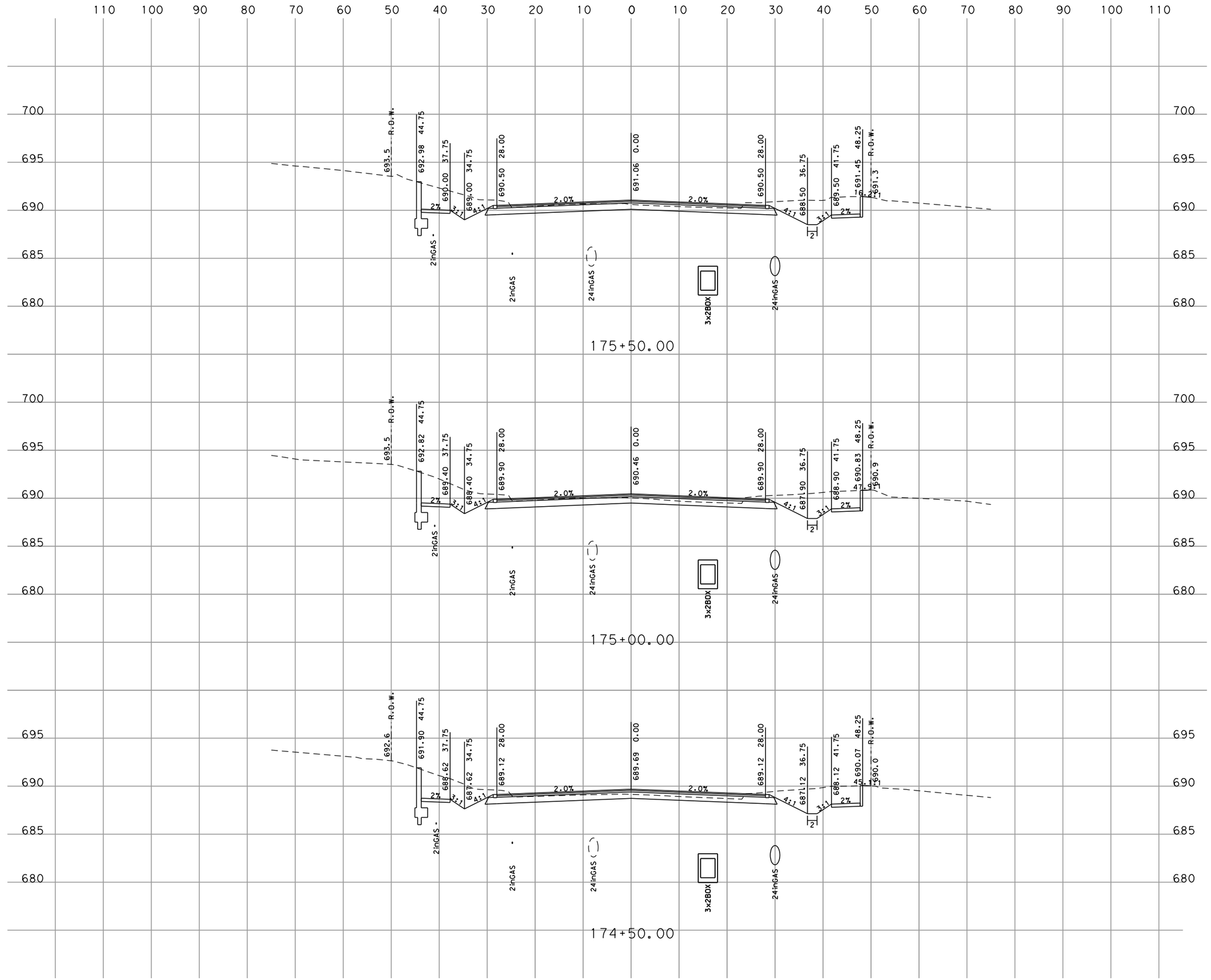
CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

RAY ELLISON BLVD PROPOSED CROSS SECTIONS

SURVY. BY:	APPR. BY: TRAFFIC ENGINEER	SCALE:
DRWN. BY: BD		REF. NO.:
DSGN. BY: BD	APPR. BY: ASSISTANT CITY ENGINEER	PROJ NO.: 8185-00
CHKD. BY: DT		SHEET NO.: 395

Plotted on: $DATE$

Design Filename: $FILE$



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CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

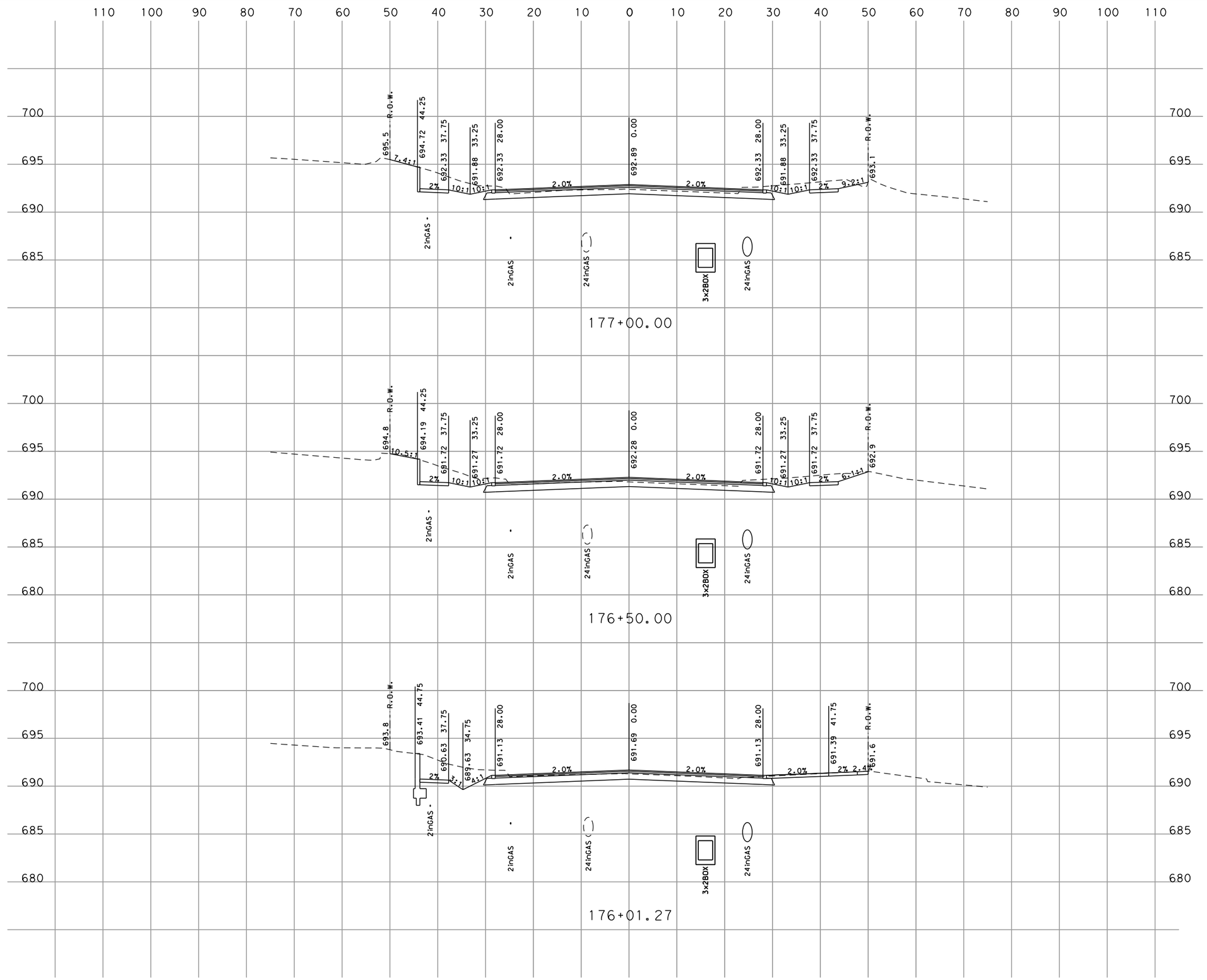
RAY ELLISON BLVD
PROPOSED CROSS SECTIONS

SHEET47 OF 60

SURVY. BY:	APPR. BY: TRAFFIC ENGINEER	SCALE:
DRWN. BY: BD		REF. NO.:
DSGN. BY: BD	APPR. BY: ASSISTANT CITY ENGINEER	PROJ NO.: 8185-00
CHKD. BY: DT		SHEET NO.: 396

Plotted on: $DATE$

Design Filename: $FILE$



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CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

RAY ELLISON BLVD PROPOSED CROSS SECTIONS

SHEET48 OF 60

SURVY. BY:	APPR. BY: TRAFFIC ENGINEER	SCALE:
DRWN. BY: BD	APPR. BY: ASSISTANT CITY ENGINEER	REF. NO.:
DSGN. BY: BD		PROJ NO.: 8185-00
CHKD. BY: DT		SHEET NO.: 397

Plotted on: $DATE$

Design Filename: $FILE$

City of San Antonio

TRANSPORTATION AND CAPITAL IMPROVEMENTS

Note: Addenda Acknowledgement Form for Addendum 4 is attached herein. This form must be signed and submitted with the bid package.

RECEIPT OF ADDENDUM NUMBER(S) **4** IS HEREBY ACKNOWLEDGED FOR PLANS AND

SPECIFICATIONS FOR CONSTRUCTION OF **Ray Ellison (Loop 410 to Old Pearsall Road) Project No. 40-00312**

FOR WHICH BIDS WILL BE OPENED ON **Tuesday, March 31, 2015 @ 2 PM CST**

THIS ACKNOWLEDGEMENT MUST BE SIGNED AND RETURNED WITH THE BID PACKAGE.

Company Name: _____

Address: _____

City/State/Zip Code: _____

Date: _____

_____

Signature

_____

Print Name/Title