MINUTES FOR DECEMBER 21, 2015

BOARD OF CHEROKEE COUNTY COMMISSIONERS

CHEROKEE COUNTY, KANSAS

CONVENE

Chairman Napier called the regular session of the Cherokee County Board of Commissioners (The Board), to order and led all in attendance in the Pledge of Allegiance at 9:00 AM on Monday, December 21, 2015 in the Commission Room, #109 of the Cherokee County Courthouse located at 110 W Maple St., Columbus, Kansas. Commissioners Charles Napier, Pat Collins, Robert Myers, and County Clerk Rodney Edmondson were present.

Members of the press present: Larry Hiatt, Jordan Zabel, and Machelle Smith

A motion was made by Commissioner Myers to approve the Minutes of the BOCC Meeting for December 14, 2015. The motion was seconded by Commissioner Collins. The motion carried 3-0.

Leigh McWilliams - Marry Occasion's by Friends

She appeared before the Board regarding her bills that were denied for payment by the County last week. Commissioner Myers stated that it was not a reflection of her business or any other business on the list. He stated that it was a question of departments and how they are spending tax payer dollars, and whether those expenses are necessary to perform the functions of their office when some of those departments are over budget. Commissioner Napier stated that they would get paid, they just wanted to bring awareness to the departments of their spending. McWilliams stated that they will be changing the way they do business with the County and would require prepayment for any services they provide.

Commissioner Collins asked the Board to discuss the bill for the County Lot annual dinner that wasn't paid. He stated that it is paid using money from salvaged scrap metal and the pop machine. He stated that no tax dollars are used. It was determined that $1,786 has been collected and turned into the Treasurer from those sales.

A motion was made by Commissioner Collins to pay item 89326 on page 21 of last week's Accounts Payables in the amount of $700, out of the money generated from the pop machine and scrap metal sales. The motion was seconded by Commissioner Napier. The motion carried 3-0.

The Board asked Clerk Edmondson to contact the County Sheriff, County Appraiser, and County Emergency Preparedness Director to come and see them regarding their unpaid bills.

Treasurer Hodgson informed the Board that she has received the KAMO Power payment for the PILOT in the amount of $111,197.68.

A motion was made by Commissioner Myers stating that after paying the $50,000 to USD 493, to put the balance of the KAMO check back into the Equipment Reserve Fund. The motion was seconded by Commissioner Collins. The motion carried 3-0.

Sheriff Groves, Appraiser Hixon, and Emergency Preparedness Director Allison appeared before the Board as requested, regarding their expenses that were submitted but not authorized last week. Each were given the opportunity to explain those expenses. It was determined that at the January Department Head meeting it would be discussed with all departments regarding future spending.

Sheriff Groves stated that the bill for $48 for hosting the Attorney General training for area Law Enforcement Agencies has been paid by him personally, so the County would not need to pay that bill.

A motion was made by Commissioner Napier to recess for 10 minutes to reconvene at 10:15 AM. The motion was seconded by Commissioner Collins. The motion carried 3-0 at 10:05 AM.

The meeting reconvened at 10:15 AM.

Leonard Vanatta - County Road Supervisor
Gene Langerot - County Lot Supervisor

They appeared before the Board on routine county road business.

Paul Rogers - Meals on Wheels

He appeared before the Board regarding the Columbus Meals on Wheels Program. He met with SEK-AAA and their attorney last week and they are considering paying the money owed to the Christian Church. He will keep the Board informed as to the future of the program.

Jacob Conard - Assistant County Attorney

He delivered a check from Gary and Donna Hall in the amount of $225,734.34 for the casino project litigation. Commissioner Myers stated that the check was for expenses incurred and an escrow amount of $50,000. The check was given to Treasurer Hodgson.

He presented a purchase order for a new computer server for the Board's approval. The estimate is for $8,307 from Advantage Computers.

A motion was made by Commissioner Myers to purchase the new server from the 2015 budget for the County Attorney. The motion was seconded by Commissioner Collins. The motion carried 3-0.

Mike White - Commerce Bank

He appeared before the Board representing The Commerce Bank regarding real estate taxes owed by C&N Corporation. They have mortgage security on three properties owned by C&N Corporation in Galena. He stated that they haven't decided to foreclose or not, but there is a hefty tax bill that is owed going back to 2011, and they are exploring their options. Treasurer Hodgson provided a report on the three properties showing $29,890.40 in taxes owed with an additional $3,132.25 in interest owed. Mr. White is asking the Board to consider waiving the interest owed if they choose to write a check for the taxes. The Board stated that they would need to consult with counsel before making any decision.

Alan Mauk - The Quapaw Tribe

He appeared before the Board regarding their recent proposal for the Tri-State Marker. Commissioner Myers stated that Mr. Mauk has provided him with documents where they have worked with the Newton County Commission on the Missouri side of the marker. Their deed states that the name of the road will remain State Line Road and it will open for use and be available free of charge. Commissioner Myers stated that he would like to participate and get the County involved on this project with the Quapaw Tribe.

A motion was made by Commissioner Myers to convey the property with a right of reversion that it would remain the State Line Road, it would be open and available for use by the public free of charge, and that it be developed in accordance with the plans that have been provided to the Commission. The motion was seconded by Commissioner Collins. The motion carried 3-0. The Board has a copy of the plans that are available for viewing.

Betha Elliott - County Health Director

She appeared before the Board for clarification on what purchases require Board approval. The Board stated that day to day office supplies are different for her department. She stated that she requires scrubs or lab coats for nurses. Currently they are reimbursed $75 for the nurses, and $50 for clerks to get embroidered shirts. The Board approved the scrubs, but not the embroidered shirts.

A motion was made by Commissioner Myers to terminate and not renew the contract with eCivis for 2016. The motion was seconded by Commissioner Collins. The motion carried 3-0.

A motion was made by Commissioner Napier to adopt the 2016 Payroll, Accounts Payables, and Holiday schedule as presented. The motion was seconded by Commissioner Myers. The motion carried 3-0.

A motion was made by Commissioner Napier to enter an Executive Session with the Board for a period of 10 minutes for the purpose of Non/Elected Personnel. The motion was seconded by Commissioner Myers. The motion carried 3-0 at 11:02 AM.

The meeting reconvened at 11:12 AM.

No action was taken during the Executive Session.

A motion was made by Commissioner Collins to recess for 10 minutes. The motion was seconded by Commissioner Myers. The motion carried 3-0 at 11:23 AM.

The meeting reconvened at 11:33 AM.

Jason Allison - Emergency Preparedness

He informed the Board that there is grant money coming open for outdoor storm sirens. There are four more rural areas that need a siren. The cost of those would be approximately $100,000 with the grant paying 75% of the cost. The Board gave their approval to seek the grant funding.

A motion was made by Commissioner Napier to pay the bills that were not paid last week in the Accounts Payables. The motion was seconded by Commissioner Collins. The motion carried 2-1 with Commissioner Myers voting no.

Commissioner Myers made a motion to adjourn until the next regular meeting set for Monday, December 28, 2015 at 9:00 AM. The motion was seconded by Commissioner Collins. The motion carried 3-0 at 11:41 AM.

ATTEST: Resolved and ordered this 28th day of December, 2015

Cherokee County Clerk

Commissioner

Commissioner

Commissioner

KAMO POWER

December 17, 2015

Commissioner Charles Napier
Commissioner Pat Collins
Commissioner Robert Myers
P.O. Box 14
Columbus, Kansas 66725

Re: KAMO Electric Cooperative, Inc., Payment in Lieu of Taxes, Cherokee County, Kansas

Dear Commissioners:

KAMO Electric Cooperative constructed a 345kV transmission line "through" Cherokee County, Kansas. The line was declared commercial and is operations. The State of Kansas allows such transmission facilities a tax exemption for ten years.

KAMO obligated to the Kansas Corporation Commission and to Cherokee County that a payment in lieu of taxes (PILOT) would be made to Cherokee County annually for the exempt period. This letter and attached check in the amount of $111,917.68 will confirm this year's obligation.

KAMO has worked diligently to apply a calculation to replicate the amount of PILOT obligation which would mirror payment to the Kansas Department of Revenue, Property Valuation Division, should such exemption not exist. (K.S.A. 79-259)

Should you have questions regarding this PILOT on the standing agreement between Cherokee County and KAMO, feel free to contact us.

Sincerely,

J. Chris Cariker

Executive Vice President and CEO
KAMO Electric Cooperative, Inc.

Enclosure
xc: Glenda Cafer
Doug Shepherd
Kansas Corporation Commission – Docket No. 08-KMOE-028-COC

KAMO POWER

OUR REF. NUMBER	YOUR INVOICE NUMBER	INVOICE DATE	INVOICE AMOUNT	AMOUNT PAID	DISCOUNT TAKEN	NET CHECK AMOUNT
165341	PROPERTY TAX	12/16/2015	111,917.68	111,917.68	0.00	111,917.68

RECEIVED
DEC 18 2015
Cherokee County
Treasurer

COPY

KAMO POWER
(918) 256-5551
P.O. BOX 577
VINITA, OK 74301

THE FIRST NATIONAL BANK AND TRUST COMPANY
VINITA, OK 74301
86-111/1031

246462

CHECK DATE	CONTROL NUMBER	AMOUNT
12/16/2015	246462	****111,917.68

VOID AFTER 90 DAYS

PAY One Hundred Eleven Thousand Nine Hundred Seventeen and 68/100----------

EXAMINE THIS FLUORESCENT SIGNATURE
UNDER BLACK LIGHT FOR AUTHENTICITY

CHEROKEE COUNTY TREASURER

TO THE ORDER OF

AUTHORIZED SIGNATURE

⑈246462⑈ ⑆103101110⑆ ⑈2⑉237⑉019⑈

KAMO Electric Cooperative, Inc.
Kansas PILOT Program
12/11/2015

Miles of Line	Taxing Unit	Millage Rate		Precent via tax	Distribute Assessed value	FIPSSTCO	COUNTY	Cert Date	State ID	Report2013
10.22787852	1089 130	0.097168	$ 33,876.83	30.33747%	$ 348,641.83	20021	Cherokee County	12/12/2012	011	No Changes
0.507265834	1519 020	0.100058	$ 1,730.14	1.50463%	$ 17,291.38	20021	Cherokee County	12/12/2012	011	No Changes
9.968983253	2477 011	0.095743	$ 32,535.08	29.56955%	$ 339,816.76	20021	Cherokee County	12/12/2012	011	No Changes
1.023043443	2478 010	0.102807	$ 3,585.18	3.03450%	$ 34,872.90	20021	Cherokee County	12/12/2012	011	No Changes
0.388353977	2479 070	0.096164	$ 1,273.02	1.15192%	$ 13,237.98	20021	Cherokee County	12/12/2012	011	No Changes
7.418920666	2902 080	0.098438	$ 24,894.16	22.00567%	$ 252,891.75	20021	Cherokee County	12/12/2012	011	No Changes
3.791593715	6025 030	0.098139	$ 12,684.03	11.24645%	$ 129,245.59	20021	Cherokee County	12/12/2012	011	No Changes
0.387645339	7211 012	0.101352	$ 1,339.25	1.14982%	$ 13,213.82	20021	Cherokee County	12/12/2012	011	No Changes
33.71368475			$ 111,917.68	100.0000%	$ 1,149,212.00					

Valuation Amoı $ 1,149,212.00

Note: The enclosed check covers the computation by taxing unit, for the miles of line KAMO Electric Cooperative, Inc. has in the state of Kansas, according to our GPS coordinates.
This is our initial "Payment in Lieu of Taxes" to Cherokee County, KS. Docket No. 2013-864-PVX in the State of Kansas, Court of Tax Appeals.
If you need further information, please contact Ann Crispin or Shari Fenstermacher at KAMO Electric Cooperative, Inc.

C & N Corporation

As of 12/21/2015	2011	2012	2013	2014	2015	Tax/Interest	
109 Clark St, Galena, KS	$ 2,748.90	$ 2,739.19	$ 2,648.91	$ 2,933.03	$ 2,681.62	$ 13,751.65	
	$ 612.65	$ 423.91	$ 251.13	$ 111.06		$ 1,398.75	Interest
						$ 15,150.40	
315 N Main St, Galena, KS	$ 1,094.04	$ 1,090.17	$ 422.26	$ 469.50	$ 500.64	$ 3,576.61	
	$ 253.45	$ 178.37	$ 53.48	$ 31.22		$ 516.52	Interest
						$ 4,093.13	
318 N Main St, Galena, KS	$ 2,374.46	$ 2,366.07	$ 2,288.09	$ 2,533.51	$ 3,000.01	$ 12,562.14	
	$ 531.40	$ 368.37	$ 219.10	$ 98.11		$ 1,216.98	Interest
						$ 13,779.12	

Total taxes owed	$ 29,890.40
Total interest owed	$ 3,132.25
Total taxes & Interst owed	$ 33,022.65

PURCHASE ORDER OR WORK ORDER

Authorization _____ Date 12/21/15

Authorization _____ Date

Authorization _____ Date 12-21-15

№ 6978

CHEROKEE COUNTY COURTHOUSE
COLUMBUS, KANSAS 66725
PHONE: 620-429-2042

DEPARTMENT

Vendor or Contractor

Advantage Computer

Address

P.O. Box 385

City State Zip Code

Iola, KS 66749

Requested By N. Coleman Department CA

SHIP TO:

Cherokee County Attorney's Office
110 W. Maple
Columbus, KS 66725

Part No.	Quantity	Description of Merchandise	Unit Price	Price
SYSA671	1	Pool 7 Server	2,805.00	2,805.00
BACKUPSVR	1	Backup Server Agreement	—	—
SFW4800	1	Windows Server 2012 R2	870.00	870.00
SFW4801	5	Windows Server 2012 CAL	45.00	225.00
DRV35140	1	Drive Hard 4TB Elements External Desktop USB 3.0 WD	132.00	132.00
PWR1500	1	UPS 1500va Smart-UPS Tower APC	655.00	655.00
Labor	1	Technical Labor (Estimated Server Installation)	2,500.00	2,500.00
DEV6105	1	Sonicwall TZ105 Network Security Appliance	405.00	405.00
DEV64616	1	Switch 16-port GBIC E'net TrendNet Managed	215.00	215.00
Labor	1	Firewall-Switch Installation & Setup Labor	500.00	500.00

TOTAL $8,307.00

CHEROKEE COUNTY ACCOUNTS PAYABLE/PAYROLL DATES
DEC 26TH 2015 - DEC 9TH 2016 PAY PERIODS
**ANYTHING TURNED IN AFTER 12:00 P.M ON TURN IN DATE WILL BE PAID THE NEXT PAY PERIOD*

MONTH	CUT-OFF	TURN IN	APPROVAL	PAYDAY	DAYS	7 HRS	8 HRS	HOLIDAYS
JANUARY	8-Jan	11-Jan	1/13/2016	15-Jan	10	70	80	1 1/2
	22-Jan	25-Jan	1/27/2016	29-Jan	10	70	80	1
FEBRUARY	5-Feb	8-Feb	2/10/2016	12-Feb	10	70	80	0
	19-Feb	22-Feb	2/24/2016	26-Feb	10	70	80	1
MARCH	4-Mar	8-Mar	3/14/2016	16-Mar	10	70	80	0
	18-Mar	22-Mar	3/28/2016	30-Mar	10	70	80	1
APRIL	1-Apr	5-Apr	4/11/2016	13-Apr	10	70	80	0
	15-Apr	19-Apr	4/25/2016	27-Apr	10	70	80	0
MAY	29-Apr	3-May	5/9/2016	11-May	10	70	80	0
	13-May	17-May	5/23/2016	25-May	10	70	80	
JUNE	27-May	31-May	6/6/2016	8-Jun	10	70	80	1
	10-Jun	14-Jun	6/20/2016	22-Jun	10	70	80	
JULY	24-Jun	28-Jun	7/1/2016	6-Jul	10	70	80	0
	8-Jul	12-Jul	7/18/2016	20-Jul	10	70	80	1
AUGUST	22-Jul	26-Jul	8/1/2016	3-Aug	10	70	80	0
	5-Aug	9-Aug	8/15/2016	17-Aug	10	70	80	0
	19-Aug	23-Aug	8/29/2016	31-Aug	10	70	80	
SEPTEMBER	2-Sep	6-Sep	9/12/2016	14-Sep	10	70	80	0
	16-Sep	20-Sep	9/26/2016	28-Sep	10	70	80	1
OCTOBER	30-Sep	4-Oct	10/7/2016	12-Oct	10	70	80	0
	14-Oct	18-Oct	10/24/2016	26-Oct	10	70	80	1
NOVEMBER	28-Oct	1-Nov	11/7/2016	9-Nov	10	70	80	0
	11-Nov	15-Nov	11/21/2016	23-Nov	10	70	80	1
DECEMBER	25-Nov	29-Nov	12/5/2016	7-Dec	10	70	80	2
	9-Dec	13-Dec	12/19/2016	21-Dec	10	70	80	0

HOLIDAYS	DATE'S	DAY'S OFF
NEW YEARS	FRI, JAN 1	FRI, JAN 1, 2016
MARTIN LUTHER I	MON, JAN 18	MON, JAN 18
PRESIDENTS DAY	MON, FEB 15	MON, FEB 15
GOOD FRIDAY	FRI, MARCH 25	FRI, MARCH 25
MEMORIAL DAY	MON, MAY 30	MON, MAY 30
INDEPENDENCE D	MON, JULY 4	MON, JULY 4
LABOR DAY	MON, SEPT 5	MON, SEPT 5
COLUMBUS DAY	MON, OCT 10	MON, OCT 10
VETERANS DAY	FRI, NOV 11	FRI, NOV 11
THANKSGIVING	THURS, NOV 24	THURS & FRI, NOV 24TH & 25TH
CHRISTMAS	SUN, DEC 25	FRI, DEC 23RD & MON DEC 26TH
NEW YEARS EVE	SAT, DEC 31ST	FRI, DEC 30TH @ NOON
NEW YEARS 2017	SUN, JAN 1	MON, JAN 2, 2017

Cherokee County Board of County Commissioners

Public Attendance Log: December 21, **2015**

Printed Name	*Phone Number*	*Address*	*Company or Organization*
Jerry Messer	674-1550		
Leigh McWilliams	762-6100		Marry occasions by friends
Paul + Monty Rogers	674-3097		
Mike Lefty/Seth Boyles	417.620.4035		
Jim Tunnell	620-848-9852		

QUAPAW TRIBE OF OKLAHOMA (O-GAH-PAH)

PLAN OF THE PROPOSED

BUFFALO TRAIL AND TRI-STATE GATHERING AREA

GRADING, DRAINAGE, SURFACING, AND SITE AMENITIES

LPCI PROJECT NO. 481.00

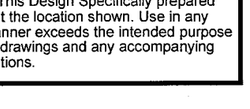
QUAPAW, OKLAHOMA
OTTAWA COUNTY

SURVEY DATUM

HORIZONTAL CONTROL:	BASED ON NAD 83 (93). BASIS OF BEARING: STATE PLANE GRID BEARINGS
VERTICAL CONTROL:	BENCH MARKS BASED ON NAVD 1988

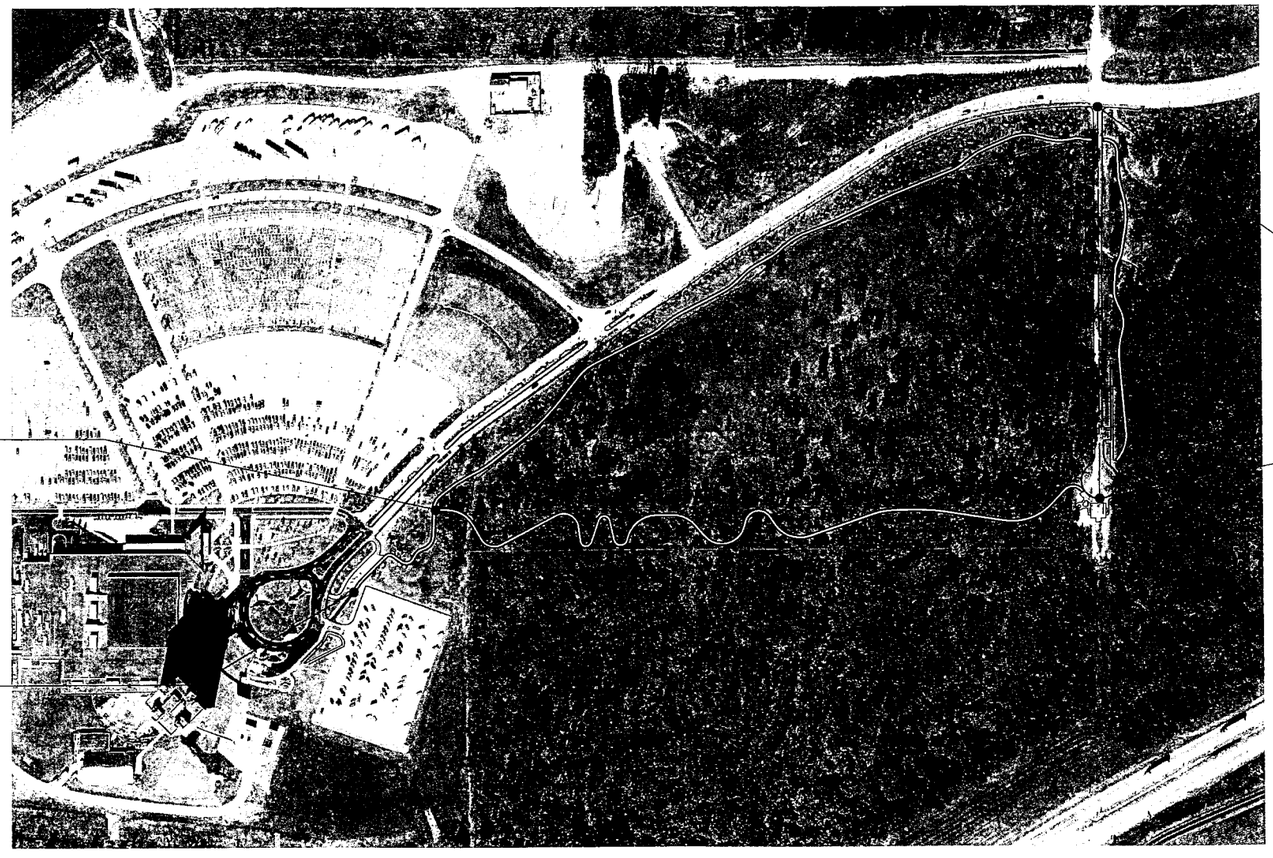
LOCATION MAP

OTTAWA COUNTY



SCALES

PLANS: 1"=30' (22"X34")
CROSS SECTIONS: 1"=5'
PROFILES: HORZ. 1"=30' (22"X34")
VERT. 1"=3'



BUFFALO TRAIL EOP STA. 56+73.69

BUFFALO TRAIL BOP STA. 0+00.00

118TH STREET EOP STA. 10+41.05

118TH STREET BOP STA. 0+0.00

SHEET INDEX

SHEET	TITLE
1	TITLE SHEET
2	KEY MAP
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6	SIGN SUMMARY
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16	SILT FENCE DETAIL
17-23	DEMO PLANS
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31-37	LIGHTING PLANS
38-44	BUFFALO TRAIL PROFILE SHEETS
45-50	BUFFALO TRAIL CROSS SECTION SHEETS
51	PARKING LAYOUT & GRADING PLAN
52	TURNABOUT LAYOUT & GRADING PLAN
53	PAVILION GRADING PLAN
54	PAVILION LAYOUT PLAN
55-57	118TH STREET PROFILE SHEETS
58-61	118TH STREET CROSS SECTION SHEETS
62	TRI-STATE PAVILION FURNITURE LAYOUT PLAN
63	PLANTING AND IRRIGATION PLANS
64-70	TRI-STATE PAVILION STRUCTURAL DETAILS
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ODOT STANDARD DETAIL SHEETS

ROADWAY	TRAFFIC
ASCD-5	SSAI-I
LECS-4	PM1-1
WCR-3	SBSI-I
PUD-3	PBDI-I
CI-1	SBS2-1
SSIF-4	SSPI-I
CIG-3	GMFI-I
MFC-4	WCHAIR-R
CSCD-5	
PED-3	COT STD
SPB-1	761

BEFORE YOU DIG CALL OKIE 811

NOTE: This Design Specifically prepared for use at the location shown. Use in any other manner exceeds the intended purpose of these drawings and any accompanying specifications.

2009 Oklahoma Standard Specifications for Highway Construction Govern, Approved by the U.S. Department of Transportation, Federal Highway Administration, January 4, 2010. Supplemental Specifications to the 2009 Standard Specifications Govern over the Standard Specifications.

BUFFALO TRAIL LENGTH.....5673.69 FT. ..... 1.07 MI.

118TH STREET LENGTH ..... 1041.05 FT. ..... .20 MI.

LandPlan Consultants, Inc. 1110 W. 23RD Street Tulsa, OK 74107 (918) 584-6464

STATE OF OKLAHOMA KEITH R. FRANKLIN REGISTERED LANDSCAPE ARCHITECT TULSA, OKLAHOMA

1·17·12

PREPARED BY:

LANDPLAN CONSULTANTS INCORPORATED
1110 W. 23rd St.
Tulsa, OK 74107
(918) 584-6464

Date 1.17.12

By Keith Franklin

Keith R. Franklin, ASLA
Registered L.A. No. 94

APPROVED BY:

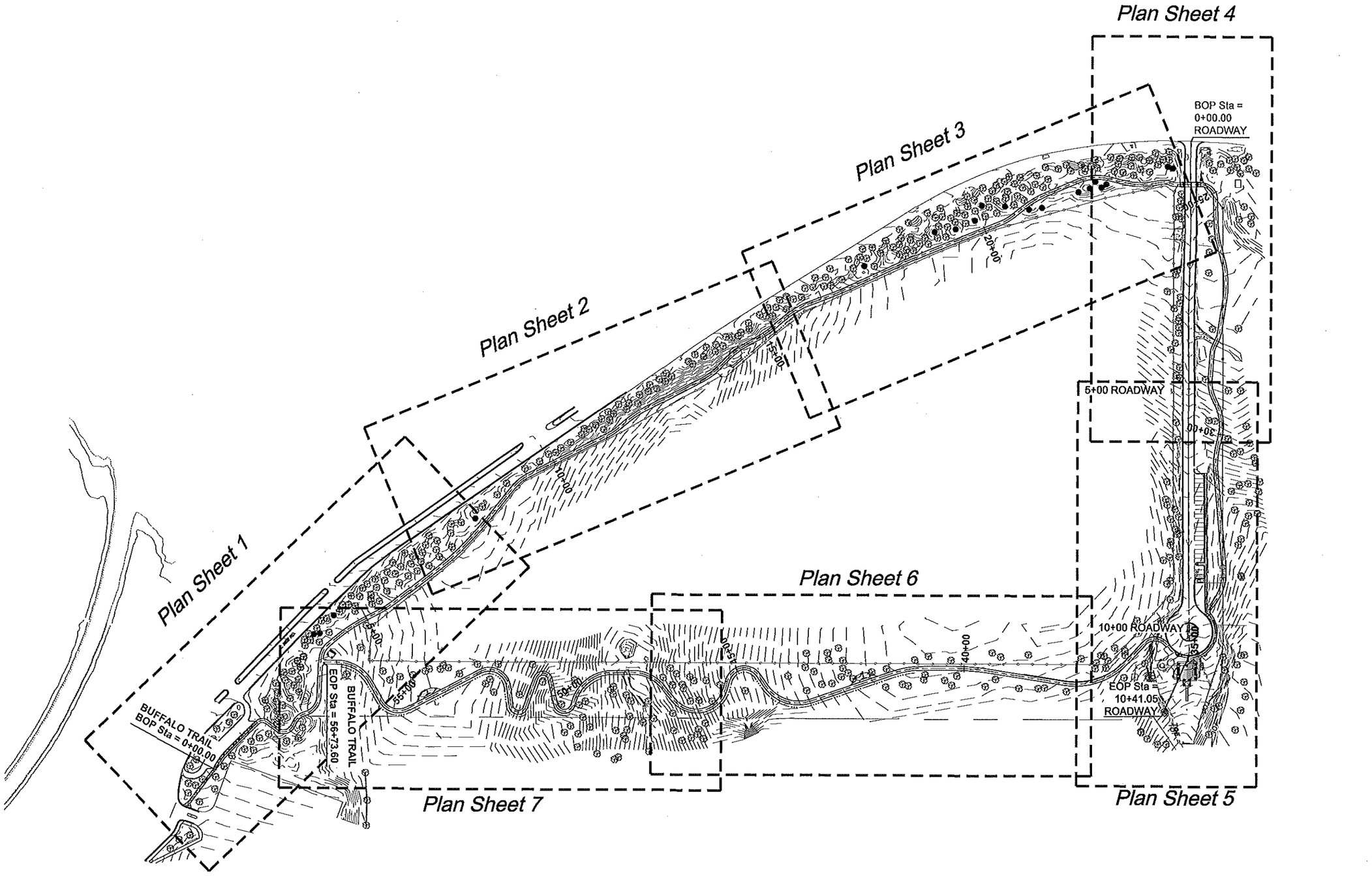
QUAPAW NATION

Date Approved

By

Chris Roper
Construction Manager

BUFFALO TRAIL AND TRI STATE GATHERING AREA



LANDPLAN
CONSULTANTS
INCORPORATED

1110 West 23rd
Tulsa, OK 74107
(918) 584-6464

Seal:

1-17-12

Buffalo Trail and Tri State Gathering Area

Quapaw Tribe of Oklahoma (O-Gah-Pah)

Keymap

Revisions:

North

Design	JM	1/1/12
Drawn	JM	1/1/12
Checked	KF	1/1/12
Approved		

PROJECT NUMBER: 481.00

BEFORE YOU DIG — 1-800-522-6543 CALL OKIE

Sheet: 2 of 72

F:\481-Buffalo Trail and Tri State Monument\Final\Roadcalc\481 BASE1.dwg, 1/17/2012 1:44:11 PM

GENERAL PAY QUANTITIES - BASE BID
BUFFALO TRAIL PROJECT (STA. 0+00.00 - STA. 56+73.60)
AND 118TH STREET PROJECT (STA. 0+00 - STA. 10+41.05)

ITEM NUM	SPEC NUM	DESCRIPTION	PAY NOTES	UNITS	QUAN.
1	*	(PL) SITE FURNITURE - 42" MIRAGE SQUARE TABLE	12	EA	1
2	*	(PL) SITE FURNITURE - 30" MIRAGE SQUARE TABLE	12	EA	2
3	*	(PL) SITE FURNITURE - 6' FUVISTA BENCH WITH BACK AND ARMRESTS	12	EA	6
4	*	(PL) SITE FURNITURE - 2' FUVISTA BENCH WITH BACK AND ARMRESTS	12	EA	9
5	*	(PL) SITE FURNITURE - 2' FUVISTA BENCH WITH BACK AND NO ARMRESTS	12	EA	7
6	*	(PL) SITE FURNITURE - 2' FUVISTA BENCH NO BACK AND NO ARMRESTS	12	EA	2
7	*	(PL) SITE FURNITURE - BANCO LITTER RECEPTACLE	12	EA	6
8	*	(PL) DECORATIVE CONCRETE PAVING WITH INTEGRAL COLOR	4, 5, 8, 9, 61, R-1	SY	950
9	*	(PL) 8'-0" WIDE TRAIL RAMP	5, 6, 9	EA	2
10	*	(PL) 1 TON DECORATIVE BOULDER - SURFACE LIMESTONE	63	EA	16
11	*	(PL) TRI-STATE PAVILION - COMPLETE	33, 43, 49	LS	1
12	*	(PL) KIOSK - COMPLETE	33, 43, 49	LS	1
13	*	(PL) ADJUST EXISTING GRANITE TRI-STATE MARKER TO GRADE	62	LS	1
14	*	(PL) ELECTRIC POWER DROP / SERVICE PANEL (WELLHOUSE LOCATION)	16, 42, 45, 46	LS	1
15	*	(PL) LIGHTING / ELECTRICAL FOR ROADWAY AND PARKING (CIRCUIT C)	16, 32, 34, 40, 45, 46	LS	1
16	*	(PL) LIGHTING / ELECTRICAL FOR TRAIL / KIOSK / PAVILION (CIRCUIT A, B AND D)	16, 32, 34, 41, 45, 46, 62	LS	1
17	02810	(PL) IRRIGATION SYSTEM - COMPLETE	18, 19, 44	LS	1
18	02960	(PL) PLANTING - TRI STATE MARKER PAVILION	22	LS	1
19	02960	(PL) PLANTING - REST AREAS	22	LS	1
20	201(B)	SELECTIVE CLEARING	43	LS	1
21	202(A)	UNCLASSIFIED EXCAVATION	1	CY	9631
22	202(E)	SELECT BORROW	17	CY	400
23	221(B)	TEMPORARY BALE BARRIERS	2, 14, 15	LF	160
24	221(C)	TEMPORARY SILT FENCE	2, 14, 15	LF	6,715
25	230(A)	SOLID SLAB SODDING	3, 25	SY	13,176
26	230(F)	WATERING	R-9	M-GAL	502
27	234(A)	FERTILIZING (13-13-13)	R-13	TON	0.627
28	303(A)	TYPE 'A' AGGREGATE BASE (BUFFALO TRAIL AND DECORATIVE PAVEMENT)	F-13	CY	641
29	303(A)	TYPE 'A' AGGREGATE BASE (118TH STREET PAVEMENT AND HES CONCRETE DRIVEWAYS)	F-13	CY	696
30	310(B)	SUBGRADE METHOD B (118 STREET CONSTRUCTION)	F-13, 11	SY	3,465
31	411(B)	SUPERPAVE TYPE S3	24, R-32	TON	776
32	411(C)	SUPERPAVE TYPE S4	24, R-32	TON	383
33	501(G)	CLSM - BACKFILL	29	CY	124
34	510(A)	CMU BLOCK RETAINING WALL WITH DOWNSTREAM VENEER	5, 28, 29	LS	1
35	601(B)	12" TYPE 1A PLAIN RIP RAP	55	TON	33
36	601(C)	12" TYPE 1A FILTER BLANKET	54	TON	33
37	609(B)	(PL) COMBINED CURB AND GUTTER (6" BARRIER)	5, 7	LF	2204
38	610(A)	4" CONCRETE TRAIL PAVING	4, R-1	SY	4324
39	610(B)	6" CONCRETE DRIVEWAY (HES)	4, 27, R-1	SY	109
40	611(E)	INLET (COT DESIGN 2A WITH LARGE JUNCTION BOX)	51, 56, 57, 58	EA	1
41	611(G)	INLET (ODOT CI DES. 2 STD.)	51, 56, 58	EA	2
42	612(E)	IRRIGATION VALVE BOX ADJUST TO GRADE	58	EA	3
43	613(A)	18" R.C. PIPE CLASS III	56, 58, 59, 60	LF	16
44	613(A)	24" R.C. PIPE CLASS III	56, 58, 59, 60	LF	150.8
45	613(A)	36" R.C. PIPE CLASS III	56, 58, 59, 60	LF	60
46	613(B)	36" CORR. GALV. STEEL PIPE	58, 59, 60	LF	16
47	613(E)	24" CORRUGATED POLYETHYLENE PIPE ROUND	58, 59, 60	LF	28
48	613(O)	SP. END SECTION OF 18" ROUND RCP	56, 58, 59, 60	EA	2
49	613(O)	SP. END SECTION OF 24" ROUND RCP	56, 58, 59, 60	EA	3
50	613(O)	SP. END SECTION OF 36" ROUND RCP	56, 58, 59, 60	EA	1
51	613(P)	24" GALV. STEEL CULVERT END SECTION ROUND	58, 59, 60	EA	1
52	613(P)	36" GALV. STEEL CULVERT END SECTION ROUND	58, 59, 60	EA	1
53	619(B)	(PL) REMOVAL OF EXISTING CONCRETE SIDEWALK	10, R-49	SY	37
54	619(B)	(PL) REMOVE AND RELOCATE EXISTING IRRIGATION HEADS	35	EA	21
55	619(B)	(PL) REMOVE EXISTING SIGN AND POST	30	EA	1
56	619(B)	(PL) REMOVAL OF EXISTING STEEL POST AND RAIL FENCE	47, R-49	LF	33
57	619(B)	(PL) REMOVAL OF EXISTING AGGREGATE ROADBED	38, R-49	SY	3160
58	619(B)	(PL) REMOVAL OF EXISTING DRAINAGE PIPE CULVERT	58, 59, R-49	LF	94
59	619(B)	(PL) REMOVE AND RESET EXISTING 12" RIP RAP	23, 58	SY	68
60	619(B)	(PL) REMOVAL OF EXISTING BARBED WIRE FENCE	R-49	LF	108
61	619(C)	(PL) SAWING PAVEMENT (FULL DEPTH)	10	LF	192
62	640(A)	FIELD OFFICE	31	EA	1
63	642(B)	CONSTRUCTION STAKING LEVEL II	13	LS	1
64	650(A)	SHEET ALUMINUM SIGNS	37, C-60	SF	19
65	651(C)	2 1/4" SQUARE TUBE POST	37, C-61	LF	38
66	654(A)	TRAFFIC STRIPE (PAINT) (4" WIDE) (YELLOW)	21, 39, 50, TS-12	LF	1,743
67	654(A)	TRAFFIC STRIPE (PAINT) (4" WIDE) (WHITE)	21, 39, 50, TS-12	LF	2,378
68	655(A)	TRAFFIC STRIPE (PLASTIC) (8" WIDE) (WHITE)	20, 38, 50, TS-11	LF	44
69	655(B)	TRAFFIC STRIPE (PLASTIC) (SYMBOLS) (HCAP)	20, 39, 50	EA	1
70	660(J)	CONSTRUCTION TRAFFIC CONTROL	TC-25	LS	1

GENERAL PAY QUANTITY NOTES

1. Estimated raw earthwork quantities for trail construction are based on cross-sections shown in the plans and are as follows: 2,994 cy of cut and 2,825 cy fill. Estimated raw earthwork quantities for roadway construction are based on cross-sections shown in the plans and are as follows: 1714 cy of cut and 307 cy fill. Estimated raw earthwork quantities for the tri-state marker pavilion construction and grading are as follows: 0 cy of cut and 1491 cy fill. Excess cut volumes of soil material generated by unclassified excavation can be utilized for select borrow as approved by Engineer to establish proposed grades for the trail. Slopes shall be graded smooth, sodded and left in a park-like, maintainable condition. Includes additional 300 cy as contingency for undercutting unsuitable material as directed by engineer.

GENERAL PAY QUANTITY NOTES

2. The Contractor shall submit an erosion control plan to the Owner for trail construction. Plan must be submitted at least 14 days prior to construction. Fencing quantity is estimated and will be placed as directed by the Engineer. Reinforce with hay bales as directed by the Engineer. All silt fence and hay bales shall be removed by the contractor at a time specified by the Engineer. No earthwork shall take place prior to the installation of all erosion control devices.
3. Solid slab sodding shall be 12,549 SY U-3 bermuda grass in graded areas within the cut and fill catchlines along the Buffalo trail, 118th Street and the Tri-State Marker Pavilion. Total quantity includes an additional 627 SY to be used at the discretion of the Engineer.
4. Reinforcing steel, expansion joint material, joint sealant, tooled contraction joints and all other related miscellaneous items as shown in the details will not be paid for seperately, but the cost thereof shall be included in the cost of (PL) Decorative Concrete Paving With Integral Color or 610(A) 4" Concrete Trail Paving. Refer to details and typical construction notes for supplemental information on concrete construction.
5. Includes cost for all necessary excavation, borrow, and compaction to achieve subgrade elevations as shown on the plans and construction details.
6. Shall include the cost of concrete, rebar, expansion material, joint sealant, subgrade compaction, and all other items shown in the details.
7. Refer to ODOT detail ASCD-4 and CSCD-4 for construction of combined curb and gutter (6" barrier).
8. The work shall consist of furnishing and placing Bomanite Sandscape Texture Integral Color concrete conforming to manufacturer's specifications as shown on the plans in close conformity with the lines, grades, and typical sections shown.

   Materials:
   Sealant shall be used per manufacturer's recommendations. Sealant shall be CP500 Penetrating Sealant or approved equal. Integral color as approved by the owner prior to construction as indicated on the plans.

   Construction:
   The installation must comply with all applicable regulations and codes including, but not limited to, the Americans with Disabilities Act. The integral color concrete shall have a uniform finish (surface, joints, and color) throughout the project. Methods of construction not providing a uniform surface shall be ceased immediately, and construction may resume only upon correction and the approval of the Engineer.
   Construction shall be in accordance with ACI 301. The technicians placing the decorative concrete shall be ACI certified and shall have previous experience on a project of similar scope within the last 180 days. Proof of certification and experience shall be submitted to the owner prior to commencement of integral color concrete construction.
   Concrete shall be placed and screeded to the proper line and grade and floated to a uniform surface.
   The surface shall then be cleaned and pressure washed to remove residual dust and other foreign matter. The surface shall be sealed with two coats of CP500 Penetrating Sealant or equal in accordance with the manufacturer's written instructions and approved by the engineer.
9. Price bid shall include furnishing and installing tactile warning markers at all street crossings and where shown in plans. Tactile warning panels shall be set in concrete as shown in the ramp details, cost includes all items shown in the detail for complete installation. Tactile warning panels shall be cast in place composite tactile as manufactured by ADA Solutions, Inc (800)-372-0519 (www.adatile.com) or approved equal. Detectable tactile warning panels shall be constructed with all ramp locations. Panels shall be installed per manufacturer's written instructions. Color shall be black.
10. Unit price includes the cost of full-depth saw-cutting.
11. Unit price shall be full compensation for furnishing all materials, equipment, labor and incidentals to complete the work as specified. Includes all provisions of ODOT Section 310 - Subgrade Method 'B'.
12. Refer to sheet 13 for site amenity information including manufacturer information, model number, quantity, furniture installation notes, etc. Refer to site plans for the placement of furniture at the rest areas. Refer to the Tri-State Pavilion Furniture Layout Plan for placement of furniture at the pavilion. Landscape Architect shall approve placement of furniture before permanently mounting to concrete. Price bid shall include all furniture, materials, labor and incidentals to fully install all furniture as shown in the plans.
13. The contractor will be responsible for all horizontal and vertical construction staking per the ODOT 2009 Standard Specifications for Highway Construction.

GENERAL PAY QUANTITY NOTES

14. Price bid shall be full compensation for furnishing all materials, equipment, labor & incidentals for installation, maintenance and removal of silt fence or bale barriers along with the dressing of disturbed areas.
15. Includes the cost of temporary sediment removal in accordance with ODOT Section 226 of the Standard Specifications.
16. Price bid for pull box shall include cover, extension, ground rod, concrete apron, crushed rock, excavation and backfilling necessary to construct and install pull boxes as shown in the plans. Includes all incidentals.
17. Quantity is estimated for contingency purposes and to be used for select borrow as approved and directed by Engineer only. Quantity may vary depending on existing conditions encountered during construction.
18. Unit price bid includes installation of one water meter. Cost also includes all trenching, boring, sleeving and drainage as may be required to install the meter as shown on the plans. Cost also includes furnishing and installing one 2" RPZ backflow preventor and all other items included in the details for insulated hot box with 120V receptacle.
19. Cost for the irrigation system shall include all piping, fitings, valves, quick couplers, boxes, future sleeves, trenching, backfill material, electrical connection and installation of receptacle for hotbox location and all other items shown in the plans and details.
20. Traffic stripe (plastic): refer to ODOT Standard Specifications for Highway Construction for 4" wide striping. Minimum thickness shall be 70 mil for lane, words, arrows, symbols and stop lines and 70 mil for edge, gore and diagonal lines.
21. Traffic stripe (paint): refer to ODOT Standard Specifications for Highway Construction for 4" wide striping. Minimum wet film thickness shall be 15 mil.
22. Refer to rest area and pavilion layout and planting plans for supplemental information including plant and materials lists. Price bid shall include furnishing all materials, equipment, labor and incidentals to fully complete planting and related items included in the plans and details for the rest area and pavilion.
23. Unit price shall be full compensation for furnishing all equipment, labor and incidentals to salvage, stockpile, reset and otherwise handle the existing rip rap materials as shown on the plans.
24. The aggregates shall meet the requirements for a wearing course mixture with 1000 ADT or more, as shown in Table 1 of section 708.02 (ODOT Standard Specs.). Replace section 708.04(C) with the following; Reclaimed Asphalt Concrete Pavement (RAP) shall not be used in the plant mix bituminous mixture. Asphalt cement shall be PG 64-22 OK.
25. Contractor shall refer to the sod specifications in section 02930 of the project manual for supplemental information on sod installation.
26. Quantity is estimated for contingency purposes and to be used for backfill as directed and approved by the Engineer only.
27. Refer to ODOT detail CDCD-5 for Type-1 driveway with 10' radius. Construct driveway to extents shown on the plans.
28. Contractor shall submit shop drawings for wall construction including bar charts for the cast in place footing prior to construction.
29. Unit price bid for cmu block retaining wall and cap shall include all materials, labor and incidentals to fully complete wall construction as shown in the plans and details; Unit price bid shall include, but is not limited to: excavation, backfill, cover aggregate, filter fabric, pipe underdrain, blocks, reinforced backfill material and all incidentals to complete the work. Unit Price bid includes cost of outlet lateral headwalls for pipe underdrain. Refer to ODOT details PUD-3, PED-3 (for outlet lateral headwall), wall detail sheets 10, 10A, trail profile sheets and cross sections. Total square footage of wall face for cmu block wall construction is estimated at 241 SF from sta. 1+40 - sta. 2+32; and estimated at 1,256 SF from sta. 35+68 - sta. 38+73. Cost for wall veneer (style: quick fit, color scheme: downstream) and wall cap (Harthstone, color scheme: Southfork Step 6) shall be included in the unit price bid for cmu block retaining wall. Cost for wall footing including class 'a' concrete, steel reinforcement, mortar/grout, and all incidentals shall be included in the unit price bid for cmu block retaining wall.
30. Unit price bid includes removal of existing sign post and footing - all resulting holes shall be filled and compacted with approved material for sod establishment. All removed signs shall be delivered to the Owner.
31. Payment will be full compensation for the respective work prescribed in Section 640 Field Office - ODOT 2009 Standard Specifications. The Engineer shall designate an acceptable site. The cost of utility connections and site preparation shall be considered incidental and included in other items.
32. Location of light pole footing shall be 3' from edge of curb to center of footing unless noted in the lighting summary. Engineer shall approve all light locations prior to drilling. Includes the cost of concrete, rebar, anchor bolts, nuts, washers, conduit and copper ground wire and any incidentals as shown on the plans and details.

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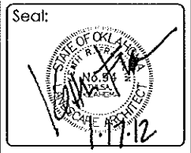

1-17-12

Buffalo Trail and Tri State Gathering Area
Quapaw Tribe of Oklahoma (O-Gah-Pah)
Pay Quantities and Notes

Revisions:

North

Design		
Drawn		
Checked		
Approved		

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Sheet: 3 of 72

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GENERAL PAY QUANTITY NOTES

33. Lump sum unit price bid for Tri-State Pavilion and Kiosk includes all items contained within the envelope of the structure including, but not limited to: Class 'A' concrete footings, grout/mortar, reinforcing steel, electrical conduit, wiring, light fixtures and electrical, cmu block for column and wall construction, stone veneer and caps for wall and column construction, all hardware, structural beams and truss, lumber, steel roofing material, sign material and all labor, equipment and materials necessary to complete all the work as shown in the plans and details.
34. Price bid shall include inline fuse and holder, one per phase conductor located in handhole and all other items as shown in the details, required by code, and as necessary for proper operation of the electrical systems. Install equipment per code and manufacturer's written instruction. Refer to Lighting Sheet (1) for electrical control panel layout and supplemental details.
35. Unit price bid shall be full compensation for furnishing all materials, equipment, labor and incidentals to remove and relocate irrigation heads in conflict with the trail alignment. Includes adjustment of irrigation main line or lateral lines as necessary and leveling heads to the proposed grade prior to completion of the project.
36. Removal of aggregate roadbed includes the top 6" of aggregate only. All other roadway earthwork shall be included in the unit price for unclassified excavation.
37. Unit price shall also include staking location of signs and symbols for approval of the Engineer prior to placement.
38. Refer to ODOT detail PM1-1 for crosswalk installation information.
39. Apply reflective glass beads per ODOT specification.
40. Unit price bid shall include all materials and labor to install lighting and electrical (Circuit C -- refer to lighting plans) to light roadway and parking area including but not limited to the following: (8) Lithonia post top LED light fixtures with Type II lamps and (3) Lithonia post top LED light fixtures with Type IV lamps on 25' poles (see light fixture schedule for model numbers), includes construction of all concrete bases, rebar and grounding; includes trenching and installation of 2" lighting conduit and #8 wire, #8 ground wire and #12 wire for 20 amp service from panel board to all lights on Circuit C; includes circuit board for this circuit located in panel board; and all other necessary materials, labor and incidentals needed to make a functioning circuit for the roadway and parking lighting.
41. Install bored conduit at a minimum depth of 36" below top of ground line. Where conduit passes under a surfaced area, cut an "x" in the surfaced area above the conduit crossing for future relocating purposes. Excessive use of water, such that the pavement might be undermined or the subgrade softened, will not be permitted. If pits are to be left overnight, cover them with substantial planking, and mark them in a manner approved by the Engineer. Includes cost of compacted backfill.
42. Unit price bid shall include all materials and labor to install power drop, meter location and service panel including but not limited to the following: Meter and meter can; photocell; finished perforation through wellhouse wall; panelboard; lighting contactor; grounding; conduit and wire down power pole and up and down wellhouse wall with 2" galvanized steel conduit and clamp attachments; trenched 2" schedule 40 PVC conduit and all wire to meter and panel board location; and all other necessary materials, labor and incidentals needed to make a functioning service panel.
43. Selective Clearing: Remove only trees within 3' of the trail edge and all trees marked for removal as shown in the plans. Areas beyond cut and fill catch points as shown on the plan sheets shall not be selectively cleared unless approved by the Engineer. All trees marked to be removed on plan sheets including trees within 3' of trail edge must be tagged and approved by the Engineer prior to removal. Remove all debris and trash piles, dead vegetation, undergrowth and resulting stumps from the disturbed area within the cut/fill catchlines. Resulting holes and low areas shall be filled with material approved by the engineer. Finished grades shall allow for positive drainage to existing and proposed drainage structures or flowlines.

    All work described herein shall be performed in a such a way that when complete, the designated areas shall be in a park-like condition that can be maintained economically. All remaining trees shall be protected from damage that may result from construction activities. Branches on all existing deciduous trees shall be pruned to provide a minimum of 12' clearance over proposed trail for the entire length of the trail. All requirements of Section 201 apply EXCEPT:
    a) "tree surgery paint" shall be deleted.
    b) trimming of selected trees shall be performed by an Arborist certified by ISA.
44. Irrigation shall be installed to provide quick coupler access at the rest area locations as shown on the plans. Refer to the Irrigation Specs. 02810 in the Project Manual for supplemental information.
45. Underground utility marking tape shall be used as specified on standard CCD-1(latest revision). The cost of the underground marking tape shall be paid for in this item of work.

GENERAL PAY QUANTITY NOTES

46. The contractor shall install a pull line in all conduit for future installation of electrical conductors. Material shall be polyester tape or rope, galvanized steel wire, or any other approved material that has a minimum breaking strength of 1,250 lbs. The contractor shall be responsible for securing the pull line at each end to prevent debris from plugging the conduit. Installation, capping and securing procedures shall be approved by the Engineer. The cost of all material, labor and incidentals necessary to complete this work shall be included in this item of work.
47. Unit price bid includes removal of footing and backfilling resulting hole with approved material in preparation for trail construction or for sod.
48. Stone veneer for Tri-State Pavilion, Kiosk and cmu block retaining walls shall be as follows: Impressions in Stone, Style: Quick Fit or Harthstone. Color Downstream or Southfork Step 6 - refer to details. Hardware shall be finished per details.
49. Truss manufacturer shall provide shop drawings for review and approval prior to fabrication.
50. Price bid shall include the cost of surface preparation and all other provisions for Section 854 Traffic Stripe (Paint) or Section 855 Traffic Stripe (Plastic) in the ODOT Standard Specifications.
51. Unit price bid includes inlet, inlet frame and grate, manhole frame and cover and cast iron curb inlets. Refer to COT standard 761 for construction of access manhole behinf curb inlet (drainage structure #P3 only). Refer to ODOT details: CI-1, SSIF-4, CIG-3 and MFC-4 for completion of inlet construction.
52. Unit price bid shall include all materials and labor required to install lighting and electrical for the trail, circle turnaround (118th Street), kiosk and pavilion including but not limited to the following: All (59) Lithonia post top LED light fixtures with Type II lamps and (3) Lithonia post top LED light fixtures with Type V lamps on 14' poles (see light fixture schedule for model numbers), including all concrete bases, rebar and grounding; (4) Lithonia post top LED light fixtures with Type II Lamps on 25' poles (see light fixture schedule for model numbers), including all concrete bases rebar and grounding; all Insight Medley X lights and Masque I lights and lamps for the pavilion and kiosk; all Holophane lights for pavilion monument; trenching and installation of 3/4", 2", and 2 1/2" lighting conduit and #1, #4 ground, #6, #6 ground, #8 and #8 ground wire for (3)-20 amp services (circuit A, B, and D) and (1)-80 amp service (circuit B) from main panel board to all locations on circuits included; circuit board and breakers for these circuits located in main panel board; pavilion panel as detailed including photocell, disconnect, transformer, Nema 3R enclosure, Appleton power receptacle, panelboard, circuit boards and breakers, grounding and concrete pad; conduit and 3/0 and #6 ground wire from transformer to panel; 3/4" schedule 40 trenched conduit and 3/4" galvanized steel conduit mounted with 1/0 and #6 ground going to 4 outlets and #12 AWG wire going to all lights in pavilion and kiosk; Type II and III pull boxes; and all other necessary materials, labor and incidentals needed to make functioning circuits for the trail lighting, pavilion power and lighting, and kiosk lighting.
53. Decorative boulders shall be Oklahoma surface limestone boulders weighing approximately 1 ton approximately 2'-6" x 3'-6" x 1'-6". No sub-surface boulders. Boulder shall be approved by engineer prior to placement.
54. Price bid is for placement of the 8" filter blanket associated with the placement of 12" laid-up rip rap at the designated drainage structure end sections and existing headwalls as shown on the plans. Price bid includes all necessary material, equipment, labor and incidentals to complete the work.
55. Unit price is for placement of 12" laid-up rip rap along select flowlines and drainage structure end sections as shown in plans. Price bid includes filter fabric, all necessary material, equipment, labor and incidentals to complete the work.
56. Unit price bid includes the cost of Omniflex gasket at all RCP pipe connections and at all precast end section locations.
57. Provide bolted and gasketed manhole frame and cover. Pay item includes the cost of support beams for installation in junction box and the cost of 'T' handles for locking manhole cover.
58. Unit price bid includes the cost of any necessary dewatering for the installation of all drainage structures, associated rip rap and junction/valve boxes.
59. Unit price bid includes all trench excavation required at each drainage structure location. All excavation and removed materials not used in the project embankment or as backfill around structures shall become the property of the Contractor for disposal. Disposal of excess materials shall be considered incidental.
60. Unit price bid includes placement of standard bedding material method 'B' at drainage structure locations. Refer to ODOT detail SPB-1 and SPI-4.
61. Refer to the Summary of Subgrades and Surfaces for station locations of the decorative Bomanite Sandscape Texture Integral Color concrete.

GENERAL PAY QUANTITY NOTES

62. Contractor shall obtain needed approval for adjustment of the Tri-State Marker prior to construction. Contractor shall locate each corner of the Tri-State Marker prior to adjusting the elevation of the marker. The marker shall be adjusted to match the elevation of the finished grade of the pavilion and shall be set in such a manner that water will not puddle on the marker. Contractor shall use care in the handling of the marker, any damage to the marker as a result of construction shall result in repair or replacement of the marker at the expense of the Contractor. All gaps and joints in relation to the marker shall be sealed with self-leveling silicone sealant. It is critical that the Tri-State Marker is moved vertically only and no lateral movement is allowed.

STANDARD PAY QUANTITY NOTES

C-60 Station locations shown on the plan sheets and summary sheets are approximate and exact locations shall be determined by the Engineer prior to construction.

C-61 Post lengths shown on the sign summary are approximate. Exact length shall be determined by field survey by the contractor.

F-13 Measurement will be based on the theoretical cross section shown on the typical section, multiplied by the actual length.

R-1 Payment for this item shall be based on plan quantity only. See section 109.01B of the standard specifications.

R-32 Est. At 112 pounds/square yard per 1" thickness. Includes asphalt and aggregate and other ingredients as specified in the job mix formula.

R-49 To become the property of and disposed of by the contractor in a manner approved by the Engineer.

TRAFFIC PLANNING AND SAFETY PAY QUANTITY NOTES

TS-11 Quantity shown includes 44 L.F. traffic stripe (plastic) (white) for road crosswalks. Traffic stripe (plastic) will be measured by the linear foot of eight inch (8") wide traffic stripe or the equivalent amount of eight inch (8") wide stripe when a narrower or wider stripe is specified in the plans or standard drawings. Stripe shall be thin-line plastic or approved equal. Thin stripe shall be applied at a thickness of 70 mils minimum, in accordance with the manufacturer's specifications and to the approval of the Engineer.

TS-12 Quantity shown includes 1,743 L.F. centerline traffic stripe (paint) (yellow) and 1,924 L.F. edge line traffic stripe (paint) (white). Includes 454 L.F. white striping in parking lot for parking spaces and gore pattern at handicap location. Traffic stripe (paint) will be measured by the linear foot of four inch (4") wide traffic stripe or the equivalent amount of four inch (4") wide stripe when a narrower or wider stripe is specified in the plans or standard drawings.

EROSION CONTROL PAY QUANTITY NOTES

R-9 Watering estimated at 40 gallons per square yard of sodding, seeding or sprigging.

R-13 Estimated at 200 pounds of 10-20-10 fertilizer per 100 sq. yds. of sodding and/or sprigging.

TRAFFIC CONTROL PAY QUANTITY NOTES

TC-25 Construction signing will be installed as directed by the Engineer and in accordance with chapter VI of the Manual on Uniform Traffic Control Devices, latest edition, and applicable O.D.O.T. standard drawings. Price bid for this item shall be payment in full for the installation and subsequent removal of all necessary construction traffic control required for completion of the project.

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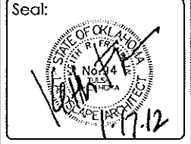
Seal:



Buffalo Trail and Tri State Gathering Area

Quapaw Tribe of Oklahoma (O-Gah-Pah)

Summary Schedules and Notes (1)

Revisions:

North

Design			
Drawn			
Checked			
Approved			

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Sheet: 4 of 72

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SUMMARY OF SURFACES

STATION	OFFSET	DESCRIPTION	* (PL) DECORATIVE CONCRETE PAVING WITH INTEGRAL COLOR (SY)	* (PL) 8'-0" WIDE TRAIL RAMP (EA)	230(A) SOLID SLAB SODDING (SY)	230(F) WATERING (M-GAL)	234(A) FERTILIZING (13-13-13) (TON)	303(A) TYPE 'A' AGGREGATE BASE (CY)	310(B) SUBGRADE METHOD B (SY)	411 (B) SUPERPAVE TYPE S3 (TON)	411 (C) SUPERPAVE TYPE S4 (TON)	609(A) (PL) COMBINED CURB AND GUTTER (6" BARRIER) (LF)	610 (A) 4" CONCRETE TRAIL PAVING (SY)	610 (B) 6" CONCRETE DRIVEWAY (HES) (SY)	854(A) TRAFFIC STRIPE (PAINT) (4" WIDE) (YELLOW) (LF)	854(A) TRAFFIC STRIPE (PAINT) (4" WIDE) (WHITE) (LF)	855(A) TRAFFIC STRIPE (PLASTIC) (8" WIDE) (WHITE) (LF)	855(B) TRAFFIC STRIPE (PLASTIC) (SYMBOLS) (HCAP) (LF)
BUFFALO TRAIL - STA. 0+00 - STA. 56+73.60																		
0+00.00 - 0+15.00	CL	TRANSITION TO 8'-0" WIDE CONCRETE TRAIL						1					12					
0+15.00 - 24+23.04	CL	8' WIDE CONCRETE TRAIL						238					2140					
24+23.04 - 24+31.04	CL	TRAIL RAMP		1														
24+31.04 - 24+56.37	CL	S. 118TH STREET CROSSING															44	
24+56.37 - 24+64.37	CL	TRAIL RAMP		1														
24+64.37 - 28+01.63	CL	8' WIDE CONCRETE TRAIL						33					300					
28+01.63 - 28+11.66	CL	HES CONCRETE DRIVEWAY																
28+11.66 - 33+53.72	CL	8' WIDE CONCRETE TRAIL						54					482					
33+53.72 - 35+47.65		DECORATIVE INTEGRAL COLORED CONCRETE - TRAIL AND PAVILION	554					62										
35+47.65 - 56+73.60	CL	8' WIDE CONCRETE TRAIL						210					1890					
41+75.54 - 42+34.52	RT	REST AREA #1	48					5										
53+75.43 - 54+37.96	RT	REST AREA #2	48					5										
56+60.36 - 56+71.65	RT	KIOSK AREA PAVING	40					4										
S.118TH STREET (STATE LINE ROAD)																		
0+00.00 - 10+41.05	CL	S. 118TH STREET CONSTRUCTION						578	3465	776	388	2204			1743	2378		1
1+70.98 - 2+02.88	RT	HES CONCRETE DRIVEWAY AT BUFFALO PEN						9						56				
3+60.88 - 4+02.88	LT	HES CONCRETE DRIVEWAY						9						53				
6+71.68 - 9+36.52	LT	DECORATIVE SIDEWALK ALONG PARKING TO TRAIL JUNCTION	155					17										
9+75.05 - 10+11.05	CL	DECORATIVE INTEGRAL COLORED CONCRETE - TURNABOUT	105					12										
		TOTAL SOD WITHIN THE CUT/FILL CATCHLINES			12549	502	0.627											
		TOTAL	950	2	12549	502	0.627	1237	3465	776	388	2204	4824	109	1743	2378	44	1

SUMMARY OF DRAINAGE STRUCTURES

STATION	DESCRIPTION	221(B) TEMPORARY BALE BARRIER (LF)	221(C) TEMPORARY SILT FENCE (LF)	601(B) TYPE 1A PLAIN RIP RAP (12") (TON)	601(C) TYPE IA FILTER BLANKET (TON)	611(G) INLET (ODOT C.I. DESIGN 2 STD.) (EA)	611(G) INLET (C.O.T. DESIGN 2A WITH LARGE JUNCTION BOX) (EA)	613(A) 18" R.C. PIPE CLASS III ROUND (LF)	613(A) 24" R.C. PIPE CLASS III (LF)	613(A) 36" R.C. PIPE CLASS III (LF)	613(B) 36" CORR. GALV. STEEL PIPE (LF)	613(E) 24" CORRUGATED POLYETHYLENE PIPE ROUND (LF)	613(O) SP. END SECTION OF 18" ROUND RCP (EA)	613(O) SP. END SECTION OF 24" ROUND RCP (EA)	613(O) SP. END SECTION OF 36" ROUND RCP (EA)	613(P) 24" GALV. STEEL CULVERT END SECTION ROUND (EA)	613(P) 36" GALV. STEEL CULVERT END SEC. RND. (EA)
0+00.00 - 56+73.60	TEMPORARY EROSION CONTROL - TRAIL	120	5,674														
0+00.00 - 10+41.05	TEMPORARY EROSION CONTROL - 118TH STREET	60	1,041														
2+67.90	DRAINAGE STRUCTURE P1 - 18" RCP (TRAIL)			3	1.5			16					2				
14+30.74	DRAINAGE STRUCTURE P2- 24" HDPE (TRAIL)			N/A	21							28				1	
6+59.59	DRAINAGE STRUCTURE P3A - 24" RCP (118TH STREET)			3	1.5				22.8					1			
	DRAINAGE STRUCTURE P3B - INLET (118TH STREET)			5.3	2.7		1			80					1		
8+93.33	DRAINAGE STRUCTURE P4 - INLET (118TH STREET)			5.3	2.7	1			64					1			
10+37.39	DRAINAGE STRUCTURE P5 - INLET (118TH STREET)			5.3	2.7	1			64					1			
47+94.00	DRAINAGE STRUCTURE P6 - 36" CGMP (TRAIL)			11	5.5						16						1
	TOTAL	180	6715	33	38	2	1	16	150.8	80	16	28	2	3	1	1	1

SUMMARY OF REMOVALS

STATION	612(E) (PL) IRRIGATION VALVE BOX ADJUST TO GRADE (EA)	619(B) (PL) REMOVAL OF EXISTING CONCRETE SIDEWALK (SY)	619(B) (PL) REMOVE AND RELOCATE EXISTING IRRIGATION HEADS (EA)	619(B) (PL) REMOVE EXISTING SIGN AND POST (EA)	619(B) (PL) REMOVAL OF EXISTING STEEL POST AND RAIL FENCE (LF)	619(B) (PL) REMOVAL OF EXISTING AGGREGATE ROADBED (SY)	619(B) (PL) REMOVAL OF EXISTING DRAINAGE PIPE CULVERT (LF)	619(B) (PL) REMOVAL AND RESET EXISTING 12" RIPRAP (SY)	619(B) (PL) REMOVAL OF EXISTING BARBED WIRE FENCE (LF)	619(C) (PL) SAWING PAVEMENT (FULL DEPTH) (LF)
BUFFALO TRAIL STA. 0+00 - STA. 56+73.60										
0+00.00 - 1+27.94		37								134
1+17.50 - 1+27.33	3									
2+74.27 - 20+54.34			21							
13+99.49 - 14+42.32								86		
34+00.91									58	
34+96.26 - 35+03.20					33					
34+96.59				1						
36+44.86 - 36+76.53									50	
S. 118TH STREET (STATE LINE ROAD) STA. 0+00 - STA. 10+41.05										
0+00.00 - 10+41.05						3,160				58
1+73.48 - 2+03.48							30			
6+59.65 - 6+89.27							64			
TOTAL	3	37	21	1	33	3160	94	86	108	192

GENERAL CONSTRUCTION NOTES

All construction shall be in accordance with the Standard Specifications for Highway Construction, Oklahoma Dept. of Transportation (edition of 2009) insofar as same may apply, and special provisions for this project.

All features of this project including, but not limited to, trail curb ramps, and crosswalk markings shall comply with The Americans with Disabilities Act, accessibility guidelines, and the interim final rules for public right-of-way, published in The Federal Register, July 23, 2004. Where spatial limitations or existing features within the limits of the project prevent full compliance with this act, the contractor shall immediately notify the Engineer upon discovery of such features. The contractor shall not proceed with any aspect of the work, which is not in full compliance with the ADA without prior written approval from the Engineer. Any work, which is not performed within the guidelines of the ADA, for which the contractor does not have written approval, shall be corrected at the contractor's expense.

Areas disturbed by construction outside the limits of construction shall be returned to their previous condition at contractor's expense, as directed by Engineer. Orange protective fencing shall be installed around the drip line of all existing trees to remain within the limits of construction. All areas disturbed between the cut & fill catchlines and the right of way line shall be revegetated by seeding as listed under erosion and sediment controls and stablilization practices in the SWP3. Cost shall be considered incidental and included in other items.

In order to alleviate dust conditions during grading operations and before pavement work is completed, the contractor shall sprinkle grading at intervals approved by the Engineer. Cost of sprinkling to be included in price bid for other items of work.

Placement of signs shall conform to standards set forth in the Manual on Uniform Traffic Control Devices.

Ramp slopes shall not exceed 12:1.

The contractor shall be responsible for locating all underground utilities prior to construction. Contractor shall be responsible for repair of all damaged utilities.

The contractor shall be responsible for meeting all Environmental Protection Agency (EPA) and Oklahoma Department of Environmental Quality (ODEQ) requirements for storm water management for this project. All cost to be included in other items of work. The Consultant shall submit a Storm Water Pollution Prevention Plan for this project 14 days prior to construction.

The cross slope for the trail shall not exceed 50:1.

The trail shall be set back a minimum of 2' from all items adjacent to the trail unless otherwise noted on the plans.

No fly ash allowed in concrete mix.

Stabilized construction entrances shall be constructed to help reduce vehicle tracking of soil from the site to existing streets. Cost shall be considered incidental and included in other items.

All unit price bids shall be full compensation for furnishing all materials, equipment, labor & incidentals required to complete the work as shown in the plans and details. Items listed on the drawings and not included as a separate pay quantity shall be considered incidental and the cost shall be included in the price bid for other items.

Layout information for all project elements shall be provided to the Contractor in digital format upon request.

LANDPLAN CONSULTANTS INCORPORATED
1110 West 23rd
Tulsa, OK 74107
(918) 584-6464

Seal: STATE OF OKLAHOMA KEITH R. FRANKLIN No. 9 TULSA, OKLAHOMA LANDSCAPE ARCHITECT 1.17.12

Buffalo Trail and Tri State Gathering Area

Quapaw Tribe of Oklahoma (O-Gah-Pah)

Summary Schedules and Notes (2)

Revisions:

North

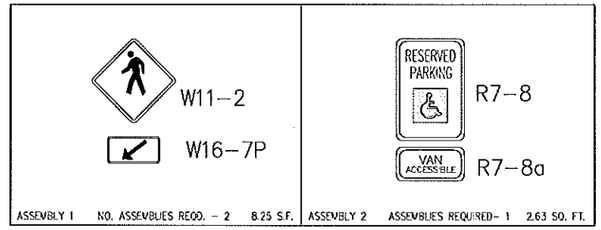
Design
Drawn
Checked
Approved

BEFORE YOU DIG 1-800-522-6543 CALL OKIE

SUMMARY OF TRAIL SIGNAGE

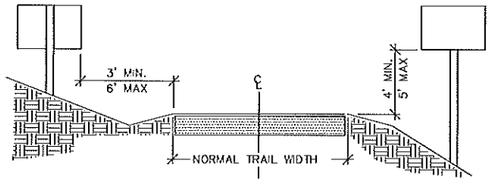
ITEM #				850(A)	851(C)	
SIGN #	STATION	OFFSET	TYPE OF SIGN	SHEET ALUMINUM SIGNS	2 1/4" SQUARE TUBE POST	COMMENTS
				SF	LF	
1	0+75	R	ASSEMBLY 1	8.25	14	PED CROSSING SIGNAGE - 118TH STREET
2	0+96	L	ASSEMBLY 1	8.25	14	PED CROSSING SIGNAGE - 118TH STREET
3	8+72	L	ASSEMBLY 2	2.63	10	VAN ACCESSIBLE PARKING SIGNAGE
			TOTAL	19	38	

SIGN ASSEMBLY DETAILS



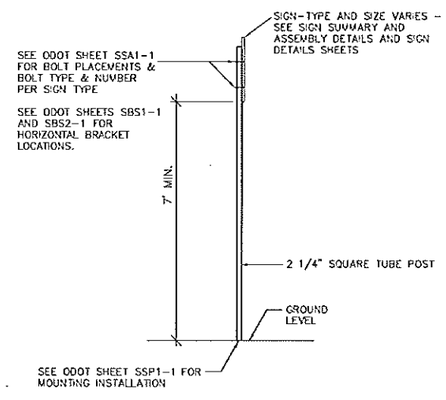
NOTE:
STATION LOCATIONS SHOWN ON THE PLAN SHEETS AND SUMMARY SHEETS ARE APPROXIMATE AND EXACT LOCATIONS SHALL BE DETERMINED BY THE ENGINEER PRIOR TO CONSTRUCTION TO AVOID TREES AND OTHER OBSTACLES.

NOTE:
HEIGHT OF SIGN ABOVE TRAIL AND MINIMUM CLEARANCES SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES , PART IX. HEIGHT FOR SIGNS ON ROAD SHALL BE 7' MIN. ABOVE GRADE.



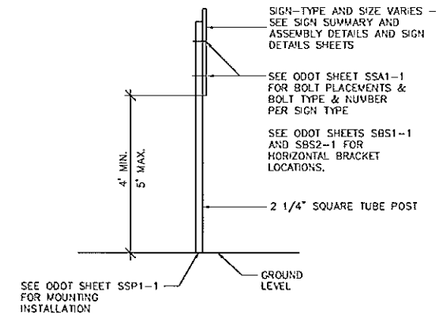
SECTION-TRAIL SIGN PLACEMENT

NOT TO SCALE



SIGN DETAIL FOR SHARE THE ROAD & SMALL ROAD SIGNS

NOT TO SCALE



DETAIL-TRAIL SIGN POST

NOT TO SCALE

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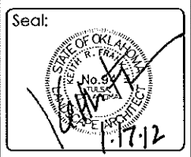
Seal:



1-17-12

Buffalo Trail and Tri State Gathering Area

Quapaw Tribe of Oklahoma (O-Gah-Pah)

Sign Summary

Revisions:

North

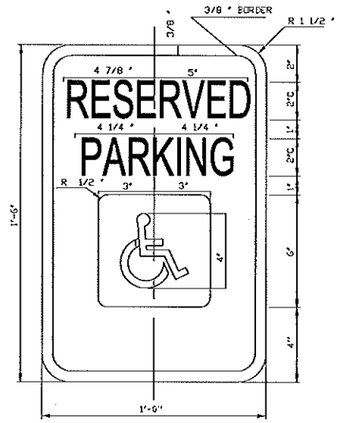
Design	JM	11/11
Drawn	JM	11/11
Checked	KF	11/11
Approved		

PROJECT NUMBER: 481

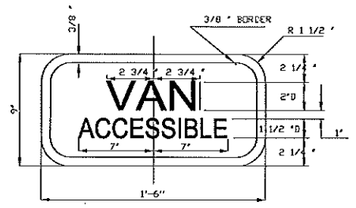
BEFORE YOU DIG ... 1-800-522-6543 CALL OKIE

Sheet: 6 of 72

F:\481-Buffalo Trail and Tri State Monument\Final\481-Sign Summary.dwg, 1/13/2012 10:14:46 AM



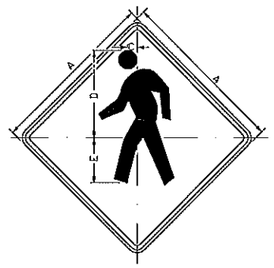
R7-8



R7-8a

COLOR: LEGEND AND BORDER.....GREEN (NON-REFLECTORIZED)
COLOR: SYMBOL.....WHITE ON BLUE BACKGROUND
BACKGROUND.....WHITE

12" X 18"	R7-8	1.5 SQ. FT.
9" X 18"	R7-8a	1.125 SQ. FT.

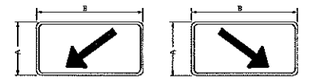


SIGN SIZE	DIMENSIONS						MAR-GIN	BOR-DER	BLANK STD
	A		C	D	E				
30 X 30	30		2 1/2	14	8		1/2	3/8	B-30(D)

COLOR: SYMBOL AND BORDER.....BLACK (NON-REFLECTORIZED)
BACKGROUND.....FLOURESCENT YELLOW-GREEN (REFLECTORIZED)

NOTE: REFER TO REVISED SIGN W11-2 IN THE AASHTO/MUTCD 2000 EDITION FOR EXACT DIMENSIONS

30" X 30"	W11-2	6.25 SQ. FT.



SIGN SIZE	DIMENSIONS			MAR-GIN	BOR-
	A	B			
12 X 24	12	24		1/2	

COLOR: SYMBOL AND BORDER.....BLACK (NON-REFLECTORIZED)
BACKGROUND.....FLOURESCENT YELLOW-GREEN (REFLECTORIZED)

NOTE: REFER TO REVISED SIGN W16-7P IN THE AASHTO/MUTCD 2000 EDITION FOR EXACT DIMENSIONS

12" X 24"	W16-7P	2.0 SQ. FT.

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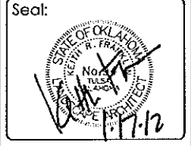
Seal:



Buffalo Trail and Tri State Gathering Area

Quapaw Tribe of Oklahoma (O-Gah-Pah)

Sign Details

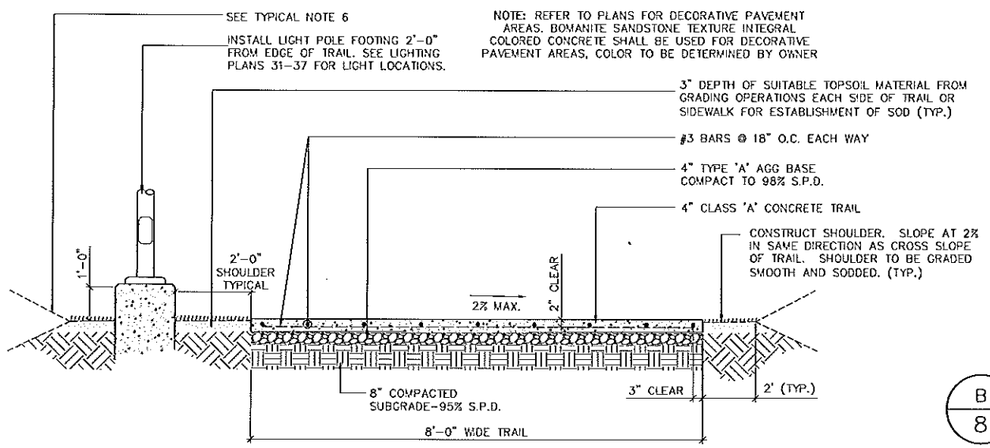
Revisions:

North

Design	JM	1/12
Drawn	JM	1/12
Checked	KF	1/12
Approved		

PROJECT NUMBER: 481

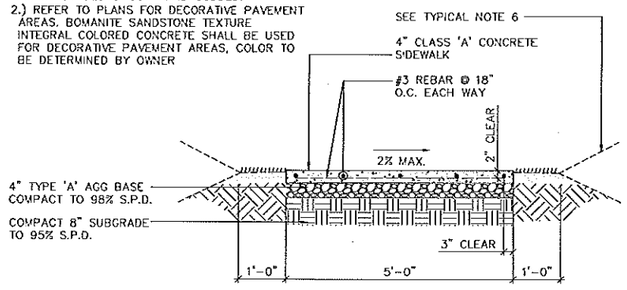
BEFORE YOU DIG — 1-800-522-6543 CALL OKIE



A/8 SECTION – 8'-0" WIDE CONCRETE TRAIL

NOT TO SCALE

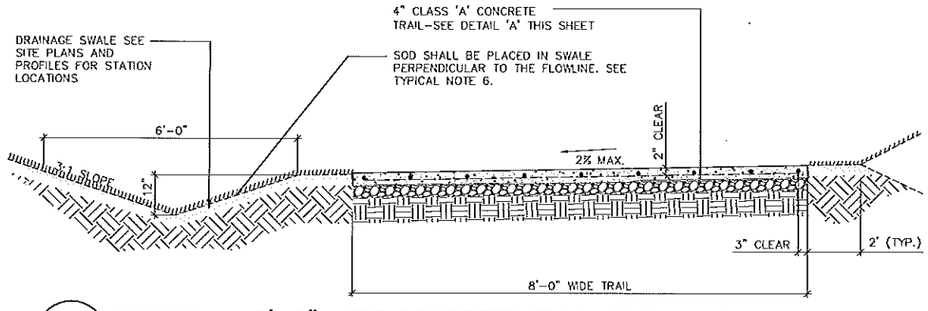
NOTES:
1.) CONSTRUCT A MIN 1'-0" SHOULDER ON EACH SIDE OF THE SIDEWALK UNLESS OTHERWISE SHOWN ON THE PLANS. SLOPE AT 2% MAX. IN SAME DIRECTION AS EXISTING GRADE UNLESS OTHERWISE SHOWN ON THE PLANS. SHOULDER TO BE GRADED SMOOTH AND SODDED.
2.) REFER TO PLANS FOR DECORATIVE PAVEMENT AREAS. BOMANITE SANDSTONE TEXTURE INTEGRAL COLORED CONCRETE SHALL BE USED FOR DECORATIVE PAVEMENT AREAS, COLOR TO BE DETERMINED BY OWNER



C/8 SECTION – 5'-0" CONCRETE SIDEWALK

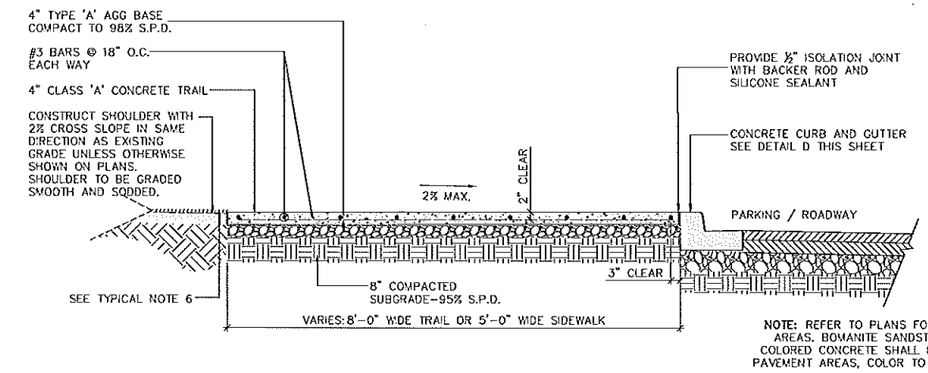
NOT TO SCALE

NOTE:
TRAIL MUST SLOPE TO THE DRAINAGE SWALE IN ALL PROPOSED SWALE LOCATIONS SEE SITE PLANS FOR SWALE LOCATIONS.



E/8 SECTION – 8'-0" WIDE CONCRETE TRAIL WITH DRAINAGE SWALE

NOT TO SCALE

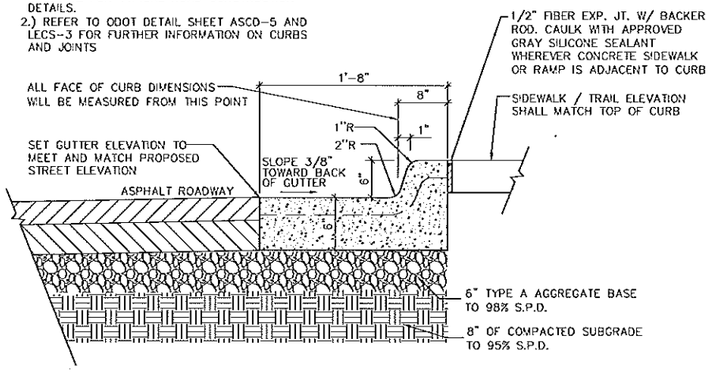


NOTE: REFER TO PLANS FOR DECORATIVE PAVEMENT AREAS. BOMANITE SANDSTONE TEXTURE INTEGRAL COLORED CONCRETE SHALL BE USED FOR DECORATIVE PAVEMENT AREAS, COLOR TO BE DETERMINED BY OWNER

B/8 SECTION – CONCRETE TRAIL/ SIDEWALK BEHIND CURB AND GUTTER

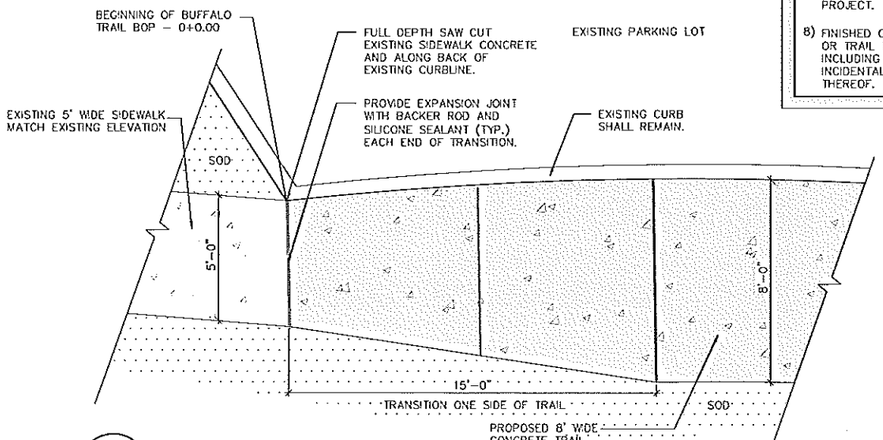
NOT TO SCALE

NOTES:
1.) PROVIDE SAWED CONTRACTION JOINTS IN CURB EVERY 20' ON CENTER. REFER TO DETAIL SHEET 12 FOR TYPICAL ROAD CONSTRUCTION DETAILS.
2.) REFER TO ODOT DETAIL SHEET ASCD-5 AND LECS-3 FOR FURTHER INFORMATION ON CURBS AND JOINTS



D/8 6" CONCRETE BARRIER CURB DETAIL

NOT TO SCALE



F/8 PLAN–TRAIL TRANSITION

NOT TO SCALE

TYPICAL TRAIL AND SIDEWALK CONSTRUCTION NOTES

1) CONSTRUCT 2% MAX. CROSS SLOPE IN SAME DIRECTION AS EXISTING GRADE UNLESS OTHERWISE DESIGNATED. MINIMUM CROSS SLOPE SHALL BE 1.5%

2) LONGITUDINAL GRADE SHALL NOT EXCEED 5% UNLESS OTHERWISE DESIGNATED.

3) WHEN SETTING GRADES FOR SIDEWALK AND TRAIL SURFACES, CONTRACTOR SHALL FIELD VERIFY THAT PAVING ELEV. WILL NOT TRAP WATER ON EITHER SIDE OF SIDEWALK OR TRAIL AND WILL ALLOW WATER TO FLOW FREELY TO DRAIN AWAY FROM AREA.

4) PROVIDE CONTROL JOINTS IN THE CONCRETE TRAIL EVERY 8' AND SEALED EXPANSION JOINTS EVERY 48' ALONG THE ENTIRE LENGTH OF ALL 8'-0" WIDE CONCRETE TRAIL SEGMENTS. – SEE ODOT STANDARD LECS-3 FOR SEALED EXPANSION JOINTS. SMOOTH EXPANSION JOINT DOWELS SHALL MATCH DIAMETER OF REINFORCING STEEL IN CONCRETE TRAIL (TYP.). LENGTH OF DOWELS SHALL BE 18" (TYP.). GREASE CAPPED END OF DOWEL AS SHOWN IN DETAILS.

5) PROVIDE CONTROL JOINTS IN THE 5' WIDE CONCRETE SIDEWALK EVERY 5' AND SEALED EXPANSION JOINTS EVERY 50' ALONG THE ENTIRE LENGTH OF THE 5' WIDE CONCRETE SIDEWALK. – SEE ODOT STANDARD LECS-3 FOR SEALED EXPANSION JOINTS. SMOOTH EXPANSION JOINT DOWELS SHALL MATCH DIAMETER OF REINFORCING STEEL IN CONCRETE SIDEWALK (TYP.). LENGTH OF DOWELS SHALL BE 12" (TYP.).

6) THE GROUND BEYOND TRAIL SHOULDERS SHALL MEET EXISTING GRADE WITH MAX. SLOPE OF 3:1 UNLESS OTHERWISE NOTED ON PLANS OR CROSS SECTIONS. ALL AREAS WITHIN THE CUT AND FILL CATCHLINES SHALL BE GRADED SMOOTH AND SODDED. CUT/FILL CATCHLINES AND SOD ARE DESIGNATED ON THE PLANS.

7) REFER TO ODOT DETAIL LECS-3 FOR DETAILS FOR SEALED EXPANSION / ISOLATION JOINTS AND CONTRACTION JOINTS. NOT ALL DETAILS IN LECS-3 WILL APPLY TO THIS TRAIL PROJECT.

8) FINISHED GRADE SHALL BE 1" BELOW THE EDGE OF SIDEWALK OR TRAIL TO ALLOW FOR SOD PLACEMENT. FINISH GRADING INCLUDING SALVAGED TOPSOIL FOR SOD SHALL BE CONSIDERED INCIDENTAL TO EARTHWORK AND INCLUDED IN THE COST THEREOF.

LANDPLAN CONSULTANTS INCORPORATED
1110 West 23rd
Tulsa, OK 74107
(918) 584-6464

Seal:

Buffalo Trail and Tri State Gathering Area

Quapaw Tribe of Oklahoma (O-Gah-Pah)

Details (1)

Revisions:

North

Design	JM	1/12
Drawn	JM	1/12
Checked	KF	1/12
Approved		

PROJECT NUMBER: 481

BEFORE YOU DIG – 1-800-522-6543 CALL OKIE

Sheet: 8 of 72

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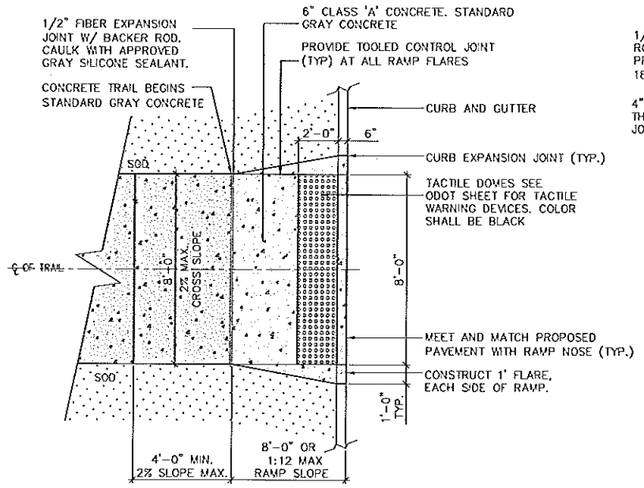
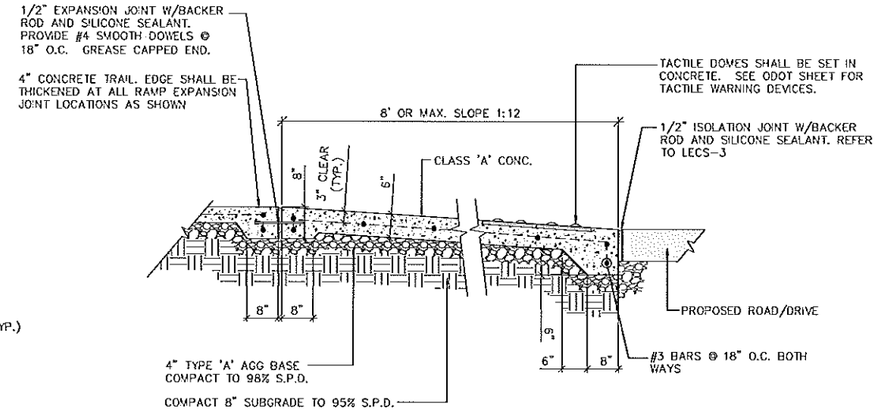


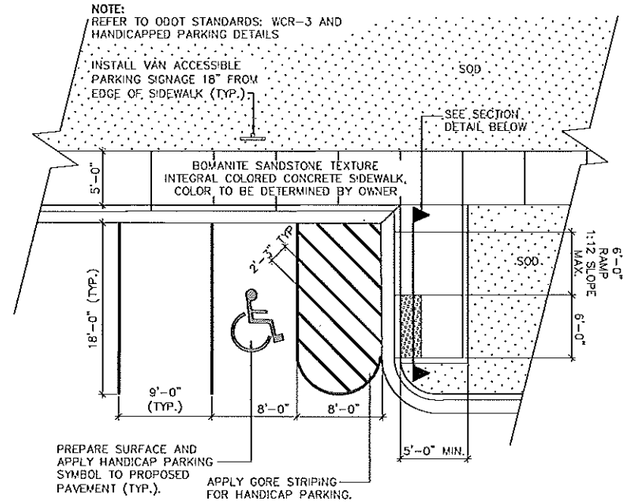
A/9 PLAN – 8'-0" WIDE TRAIL RAMP

NOT TO SCALE

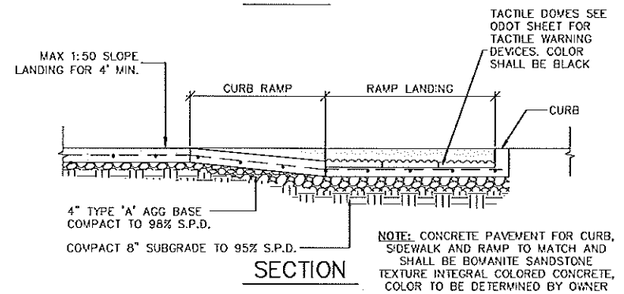


B/9 TYPICAL SECTION – 8' WIDE TRAIL RAMP

NOT TO SCALE



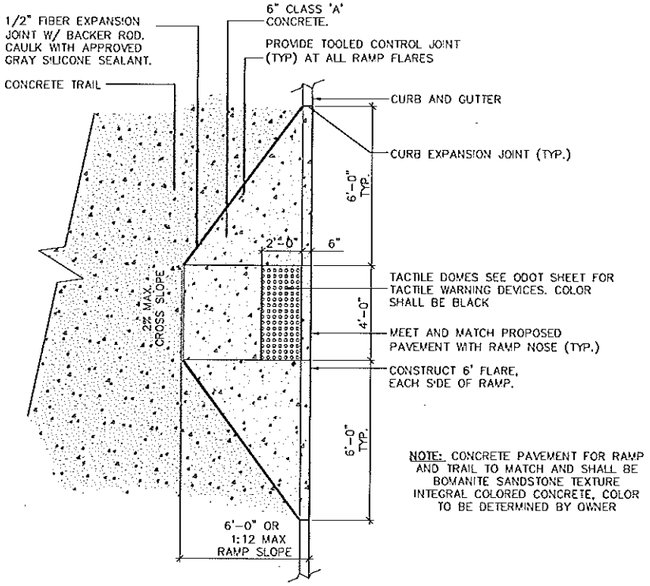
PLAN



SECTION

C/9 MODIFIED ODOT CURB RAMP TYPE "D"

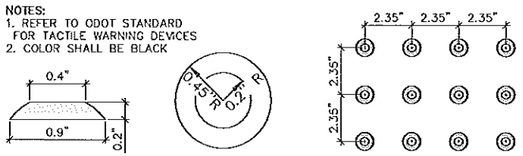
NOT TO SCALE



D/9 PLAN – 4'-0" WIDE CURB RAMP

NOT TO SCALE

NOTES:
1. REFER TO ODOT STANDARD FOR TACTILE WARNING DEVICES
2. COLOR SHALL BE BLACK



E/9 TACTILE MARKERS/TRUNCATED DOMES

NOT TO SCALE

TYPICAL RAMP CONSTRUCTION NOTES

1) MEDIUM BROOM FINISH PERPENDICULAR TO THE DIRECTION OF TRAVEL ON ALL RAMPS.

2) THE TACTILE FINISH FOR ALL CURB RAMPS AT ROADWAYS SHALL BE TRUNCATED DOVES. SEE ODOT SHEET FOR TACTILE WARNING DEVICES.

3) DAMAGE TO EXISTING PAVEMENT, OR ROADWAY ADJACENT TO RAMPS, RESULTING FROM CONSTRUCTION ACTIVITIES SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

4) LANDING AREA BEHIND ALL RAMPS SHALL BE A LEVEL AREA 4'-0" FROM THE BACK OF RAMP AT A MINIMUM UNLESS OTHERWISE SHOWN ON PLANS. THE LANDING AREA SHALL HAVE A MAX. 2% CROSS SLOPE AND LONGITUDINAL SLOPE.

5) ALL CURBS AND CURB RETURN CONSTRUCTION ASSOCIATED WITH TRAIL RAMP CONSTRUCTION SHALL BE CONSIDERED INCIDENTAL AND INCLUDED IN THE COST OF CONCRETE TRAIL RAMP (EA.).

6) THE MODIFIED CURB RAMP TYPE 'D' LOCATION SHALL BE INCLUDED IN THE COST AND QUANTITIES FOR 4" CLASS 'A' DECORATIVE CONCRETE PAVING. COST OF INTEGRAL CURB AND TRUNCATED DOMES SHALL BE CONSIDERED INCIDENTAL AND INCLUDED IN THE COST OF OTHER ITEMS.

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Seal:

1.17.12

Buffalo Trail and Tri State Gathering Area

Quapaw Tribe of Oklahoma (O-Gah-Pah)

Details (2)

Revisions:

North

Design	JM	1/12
Drawn	JM	1/12
Checked	KF	1/12
Approved		

PROJECT NUMBER: 481

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Sheet: 9 of 72

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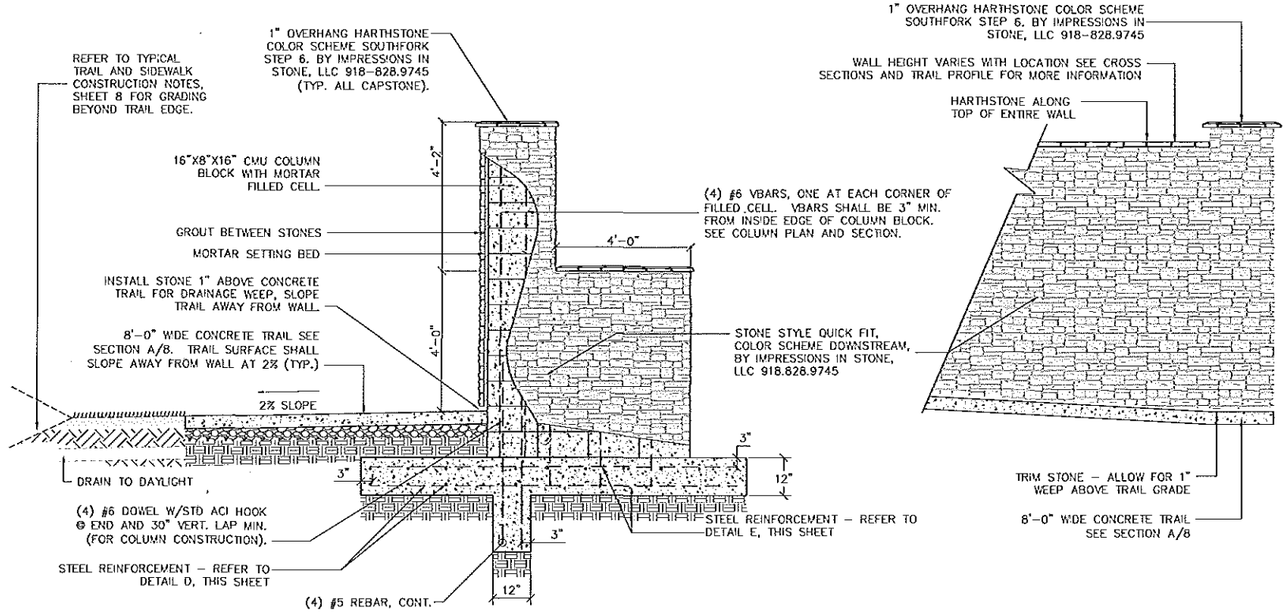
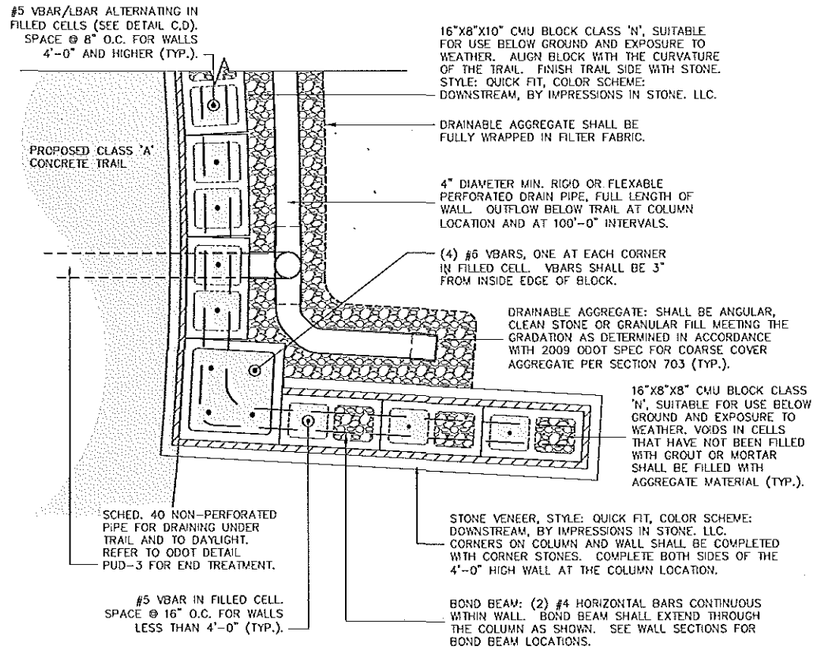


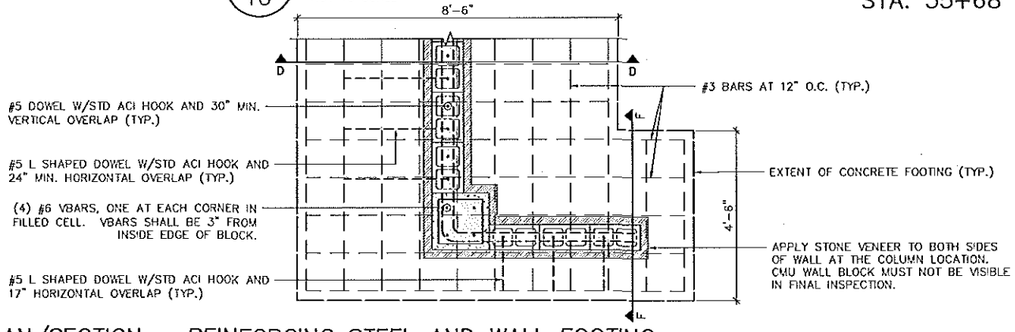
A/10 RETAINING WALL SECTION - CMU COLUMN ADJACENT TO TRAIL STA. 35+68

NOT TO SCALE



B/10 PLAN/SECTION - CMU COLUMN AND WALL AT BOND BEAM STA. 35+68

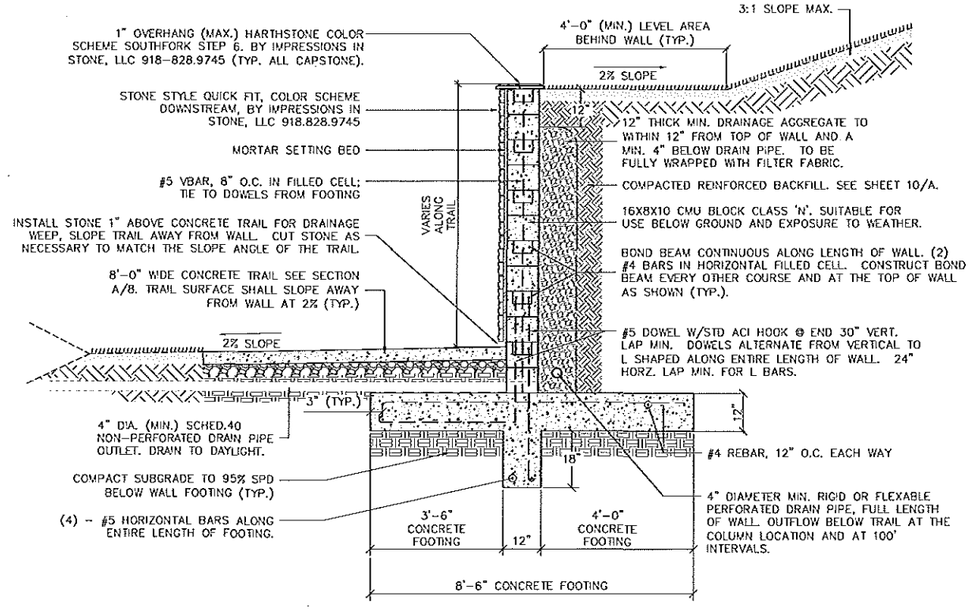
NOT TO SCALE



C/10 PLAN/SECTION - REINFORCING STEEL AND WALL FOOTING

NOT TO SCALE

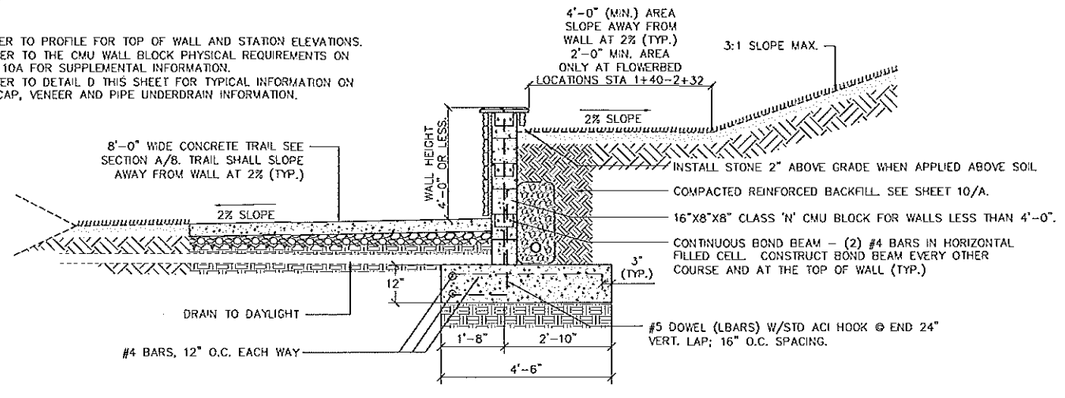
NOTE:
1) REFER TO PROFILE FOR TOP OF WALL AND STATION ELEVATIONS.
2) REFER TO THE CMU WALL BLOCK PHYSICAL REQUIREMENTS ON SHEET 10A FOR SUPPLEMENTAL INFORMATION.



D/10 RETAINING WALL SECTION-4'-0" & HIGHER STA. 35+68-STA. 36+76

NOT TO SCALE

NOTE:
1) REFER TO PROFILE FOR TOP OF WALL AND STATION ELEVATIONS.
2) REFER TO THE CMU WALL BLOCK PHYSICAL REQUIREMENTS ON SHEET 10A FOR SUPPLEMENTAL INFORMATION.
3) REFER TO DETAIL D THIS SHEET FOR TYPICAL INFORMATION ON WALL CAP, VENEER AND PIPE UNDERDRAIN INFORMATION.



E/10 RETAINING WALL SECTION- 4'-0" & LOWER STA. 36+76-STA. 38+75

NOT TO SCALE

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Seal: REGISTERED PROFESSIONAL ENGINEER DONALD E. LASLEY 14683 OKLAHOMA 16 Jan 2012

Buffalo Trail and Tri State Gathering Area

Quapaw Tribe of Oklahoma (O-Gah-Pah)

Details (3)

Revisions:

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PROJECT NUMBER: 481

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Sheet: 10 of 72

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CMU BLOCK RETAINING WALL PHYSICAL REQUIREMENTS

PHYSICAL SPECIFICATIONS

CMU RETAINING WALL UNITS SHALL BE 16" WIDE BY 8" HIGH BY 8" DEEP OR 16" WIDE BY 8" HIGH BY 10" DEEP ACCORDING TOP THE WALL HEIGHT. COLUMN WALL BLOCK SHALL BE 16" WIDE BY 8" HIGH BY 16" DEEP. THE MINIMUM CONCRETE COMPRESSIVE STRENGTH AT 28 DAYS SHALL BE 3,500 PSI AND SHALL COMPLY WITH ACI 318.

REINFORCING STEEL SHALL COMPLY WITH ASTM A615 AND SHALL HAVE A YEILD STRENGTH OF 60,000 PSI.

CONCRETE MASONRY BLOCKS SHALL COMPLY WITH ASTM C90.
ALL JOINT REINFORCEMENT, TIES AND OTHER ACCESSORIES SHALL BE RESISTANT TO CORROSION.
ALL HEAD AND BED JOINTS SHALL BE 3/8-INCH THICK. MORTAR SHALL CONFORM TO ASTM C270.

INSTALLATION

EXCAVATION: THE CONTRACTOR SHALL EXCAVATE TO THE LINES AND GRADES OR CUT AND FILL CATCHLINES AS SHOWN. OVER-EXCAVATION WILL NOT BE PAID FOR, AND REPLACEMENT WITH COMPACTED FILL AND/OR WALL SYSTEM COMPONENTS WILL BE REQUIRED AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR SHALL BE CAREFUL NOT TO DISTURB BASE BEYOND THE LINES SHOWN. EMBANKMENT EXCAVATION SHALL BE BENCH CUT.

BASE

NATIVE SOIL SHALL BE COMPACTED TO 95% OF STANDARD PROCTOR DENSITY AS SHOWN ON DRAWINGS WITH A MINIMUM THICKNESS OF EIGHT (8) INCHES. NATIVE SOIL SHALL BE COMPACTED SO AS TO PROVIDE A HARD, LEVEL SURFACE ON WHICH TO CONSTRUCT THE FOOTING.

THE CONCRETE FOOTING SHALL BE CONSTRUCTED TO INSURE COMPLETE AND LEVEL CONTACT OF RETAINING WALL UNITS WITH THE FOOTING. GAPS BETWEEN THE UNITS AND FOOTING SHALL NOT BE ALLOWED.
THE MINIMUM CONCRETE COMPRESSIVE STRENGTH AT 28 DAYS FOR THE FOOTING SHALL BE 3,500 PSI AND SHALL COMPLY WITH ACI 318. THE FOOTING SHALL BE CONSTRUCTED LEVEL AND SHALL STEP AS NECESSARY WITH THE ELEVATION OF THE TRAIL. THE FOOTING SHALL BE CONSTRUCTED SO THAT THERE IS A MINIMUM OF ONE CMU BLOCK BELOW THE TRAIL SURFACE AS SHOWN IN THE WALL CONSTRUCTION DETAILS.

UNIT INSTALLATION

THE FIRST COURSE OF CONCRETE WALL UNITS SHALL BE PLACED ON THE PREPARED FOOTING. THE UNITS SHALL BE CHECKED FOR LEVEL AND ALIGNMENT. THE FIRST COURSE IS THE MOST IMPORTANT TO INSURE ACCURATE AND ACCEPTABLE RESULTS. ROUGHEN TOP OF FOOTING OR PROVIDE 1" DEEP BY 4" WIDE CONTINUOUS KEYWAY PRIOR TO PLACEMENT OF MORTAR OR GROUT.

INSURE THAT THE UNITS ARE IN FULL CONTACT WITH THE BASE. DOWELS CAN BE LAPPED ABOVE THE PREPARED FOOTING AS SHOWN IN THE DETAILS. THE MINIMUM LAP LENGTH SHALL BE 20 INCHES FOR A #4 BAR, 25 INCHES FOR A #5 BAR AND 30 INCHES FOR A #6 BAR.

A BOND BEAM SHALL BE REQUIRED EVERY OTHER COURSE IN THE CONSTRUCTION OF THE WALL. THE BOND BEAM SHALL CONSIST OF (2) HORIZONTAL #4 BARS AND SHALL BE CONSTRUCTED WITH A PRECAST BOND BEAM CMU BLOCK OF THE CORRECT CORRESPONDING SIZE BASED ON THE WALL HEIGHT (SEE WALL CONSTRUCTION DETAILS); OR A SLOTTED UNIT MAY BE USED WITH SLOTS CAST INTO THE BLOCK OR CUT WITH A MASONRY SAW. THE BOND BEAM SHALL RUN THE COMPLETE LENGTH OF THE WALL OR WALL SEGMENT BASED ON THE STEPPING OF THE FOOTING. REFER TO PROFILE SHEETS.

ALL HEAD AND BED JOINTS SHALL BE ⅜" THICK. BED JOINTS OF THE STARTING COURSE OVER THE CONCRETE FOUNDATION MAY BE BETWEEN ¼ INCH AND ¾ INCH. MORTAR SHALL CONFORM TO ASTM C270.

PLACE 4" PERFORATED CLASS PS50 PVC DRAIN PIPE BEHIND WALL AS SPECIFIED IN THE DETAILS. PIPE SHALL CONFORM TO AASHTO M278 AS DESCRIBED IN THE 2009 ODOT SPECIFICATIONS 726.02. PERFORATIONS IN PIPE SHALL MEET ODOT SPECIFICATION AS SHOWN IN TABLE 726:3 FLEXIBLE CONDUIT MATERIAL SPECIFICATIONS. CONNECT PERFORATED PIPE TO SCHEDULE 40 NON-PERFORATED PIPE FOR DRAINING UNDER TRAIL AND TO DAYLIGHT AT 100' INTERVALS ALONG WALL.

PLACE COVER MATERIAL A MINIMUM OF TWELVE (12) INCHES THICK DIRECTLY BEHIND THE BACK OF THE UNITS. COVER MATERIAL SHALL BE ANGULAR, CLEAN STONE OR GRANULAR FILL MEETING THE GRADATION AS DETERMINED IN ACCORDANCE WITH THE 2009 ODOT SPECIFICATIONS FOR COARSE COVER AGGREGATE PER SECTION 703.06. THE COVER MATERIAL SHALL BE FULLY WRAPPED IN FILTER FABRIC.

PLACE REINFORCED BACKFILL AGAINST COVER MATERIAL (WRAPPED IN FILTER FABRIC) AND COMPACT. THE REINFORCED SOIL MATERIAL SHALL BE FREE OF DEBRIS. FILL SHOULD BE PLACED IN SIX (6) INCH LIFTS AND COMPACTED TO ACHIEVE 95% STANDARD PROCTOR DENSITY COMPACTION.

GEOTEXTILES

FULLY WRAP GEOTEXTILE FABRIC AROUND THE COVER MATERIAL TO KEEP THE COVER MATERIAL CLEAN OF FINES. FILTER FABRIC SHALL BE CONTECH NONWOVEN GEOTEXTILES #C-45NW OR EQUAL. THE FABRIC MUST MEET THE FOLLOWING SPECIFICATIONS:

GRAB TENSILE STRENGTH	ASTM D4632 120 LBS.
GRAB ELONGATION	ASTM D4632 50%
PUNCTURE STRENGTH	ASTM D4833 55 LBS
MULLEN BURST	ASTM D3786 230 PSI
TRAPEZOIDAL TEAR	ASTM D4533 50 LBS.
APPARENT OPENING SIZE	ASTM D4751 70/0.212 MM (US SIEVE)
PERMITTIVITY	ASTM D4491 1.50 SEC1
PERMEABILITY	ASTM D4491 .22 CM/SEC
WATER FLOW RATE	ASTM D4491 120 GPM/FT2
WEIGHT	ASTM D4533 4.0 OZ/YD2
THICKNESS	ASTM D5199 45 MILS
UV RESISTANCE	ASTM D4355 70% RETAINED @ 500 HR.

COMPLETION

WITHIN TWELVE (12) INCHES OF THE TOP OF THE WALL, PLACE TOPSOIL OVER THE COVER MATERIAL AND THROUGHOUT THE EXCAVATED AREA. TOPSOIL FILL CAP SHALL BE GRADED TO DRAIN RUNOFF LATERALLY ALONG THE WALL ALIGNMENT; THERE SHALL BE A 4'-0" WIDE AREA (MIN.) GRADED AT 2% AWAY FROM THE WALL TOP TO ALLOW RAINWATER RUNOFF TO MOVE LATERALLY BEHIND THE WALL (FOR WALL CONSTRUCTION STA. 1+40 - STA. 2+32 THE FLAT AREA SHALL BE 2'-0" BEHIND THE WALL). RAINWATER RUNOFF MUST NOT DRAIN OVER THE TOP OF THE WALL ONTO THE TRAIL. CONTRACTOR SHALL VERIFY THAT WATER RUNOFF DRAINS PARALLEL TO THE WALL TOP PRIOR TO PLACING SOD.

INSTALL CAP UNITS ON THE FINISHED WALL. CAP UNITS SHALL BE ADHERED TO THE TOP UNITS USING A FLEXIBLE, HIGH STRENGTH, CONCRETE ADHESIVE, BY PLACING TWO (2) 1/4 INCH BEADS OF ADHESIVE ALONG THE FULL LENGTH OF THE WALL. CARE SHALL BE TAKEN TO KEEP ADHESIVE FROM COMING INTO CONTACT WITH THE VENEER OF WALL UNITS. PRESS THE CAPS FIRMLY INTO ADHESIVE AND ALLOW TO CURE.

COMPLETE WALL CONSTRUCTION BY INSTALLING TURF, ETC. FOR EXTREME GRADES, OR IN AREAS WHERE EROSION CONTROL COULD BE A PROBLEM, INSTALL PROPER SURFACE TREATMENT MEASURES AS SOON AS POSSIBLE.

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Seal: REGISTERED PROFESSIONAL ENGINEER DONALD E. EASLEY 14683 OKLAHOMA 1-31-2012

Buffalo Trail and Tri State Gathering Area
Quapaw Tribe of Oklahoma (O-Gah-Pah)
Details (3A) - Wall Notes

Revisions:

North

Design	JM	1/12
Drawn	JM	1/12
Checked	KF	1/12
Approved		

PROJECT NUMBER: 481

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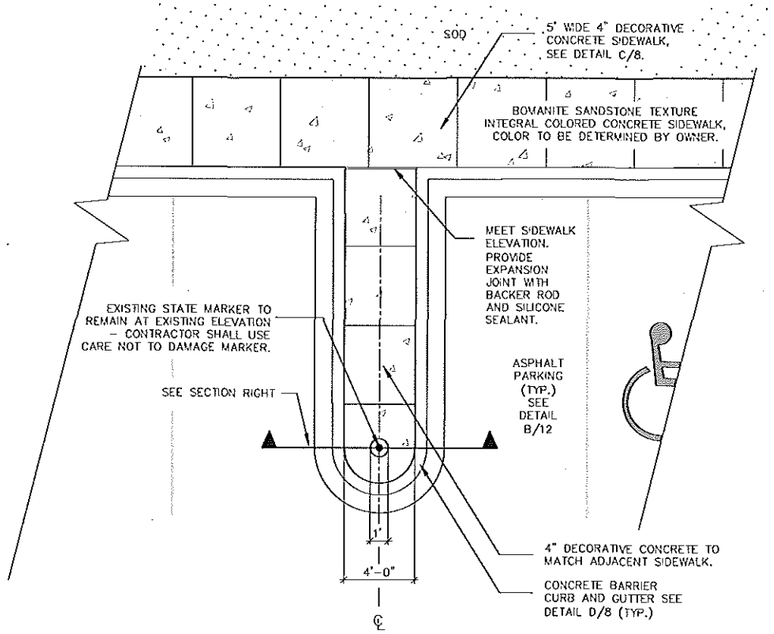
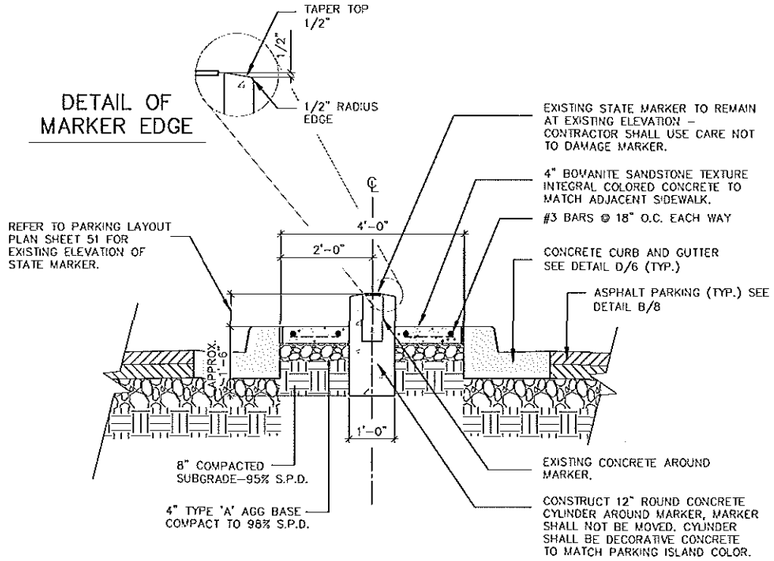
Sheet: 10A of 72



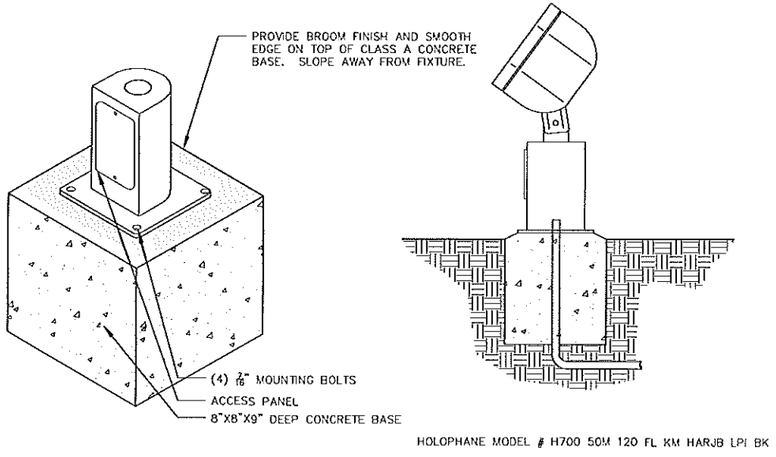
PLAN VIEW



SECTION

A 11 STATE MARKER AT PARKING ISLAND

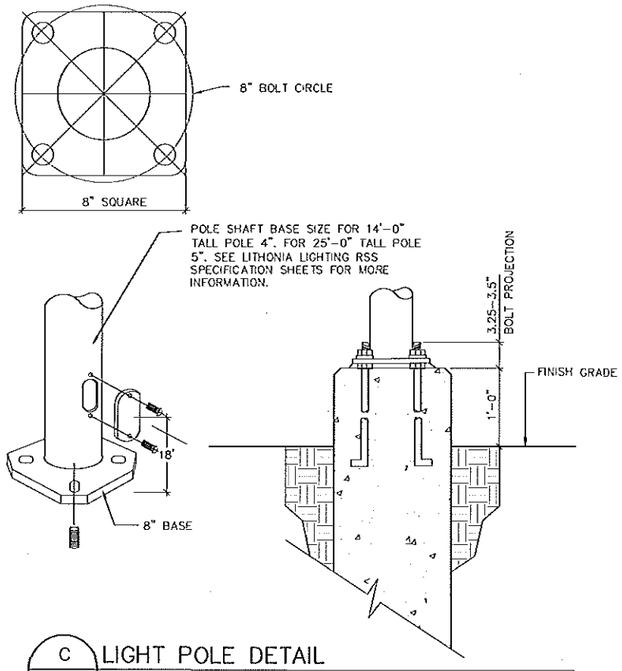
NOT TO SCALE



HOLOPHANE MODEL # H700 50M 120 FL KM HARJB LPI BK

B 11 HOLOPHANE ARCHITECTURAL FLOOD LIGHT

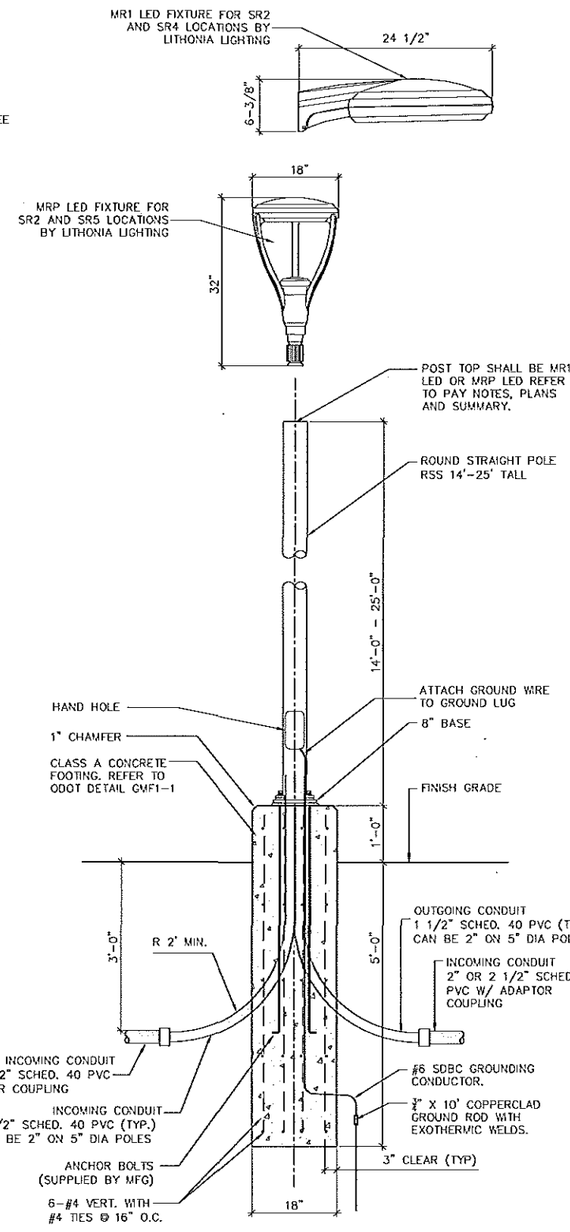
NOT TO SCALE



C 11 LIGHT POLE DETAIL

NOT TO SCALE

NOTE:
POLE LENGTH VARIES FOR ROADWAY AND TRAIL LIGHTING. REFER TO LIGHTING PLANS.



D 11 LIGHT POLE FOOTING

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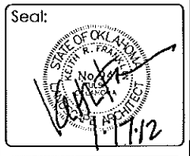

Buffalo Trail and Tri State Gathering Area

Quapaw Tribe of Oklahoma (O-Gah-Pah)

Details (4)

Revisions:

North

Design	JM	1/12
Drawn	JM	1/12
Checked	KF	1/12
Approved		

PROJECT NUMBER: 481

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Sheet: 11 of 72

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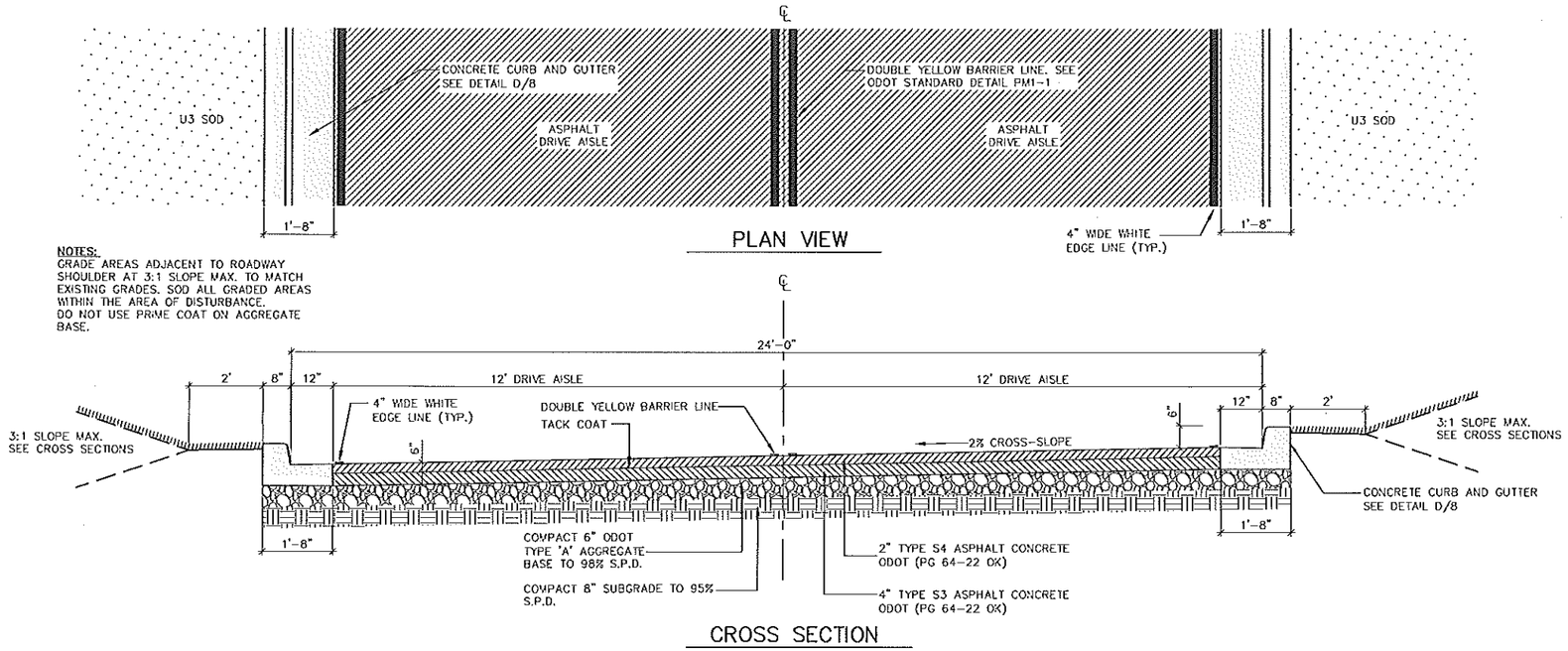
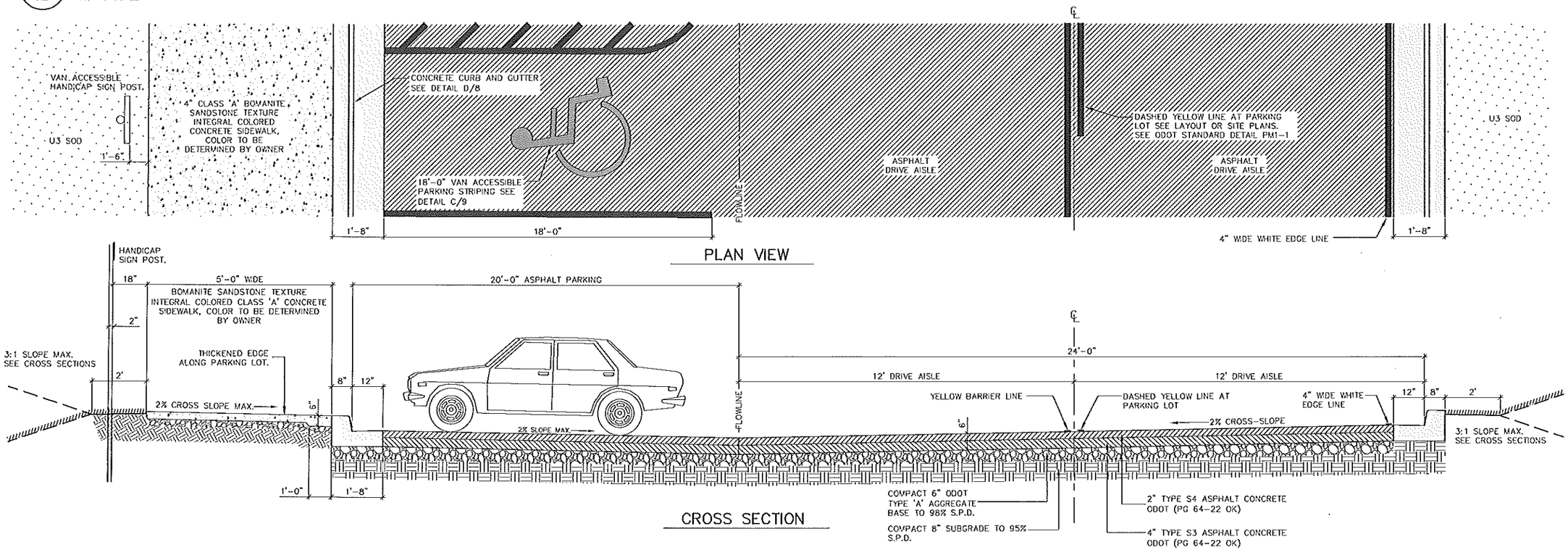


A/12 DETAIL – 118TH STREET ROADWAY CONSTRUCTION

NOT TO SCALE



B/12 DETAIL – 118TH STREET ROADWAY CONSTRUCTION

NOT TO SCALE

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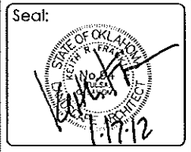

Buffalo Trail and Tri State Gathering Area

Quapaw Tribe of Oklahoma (O-Gah-Pah)

Details (5)

Revisions:

North

Design	JM	1/12
Drawn	JM	1/12
Checked	KF	1/12
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PROJECT NUMBER: 481

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Sheet: 12 of 72

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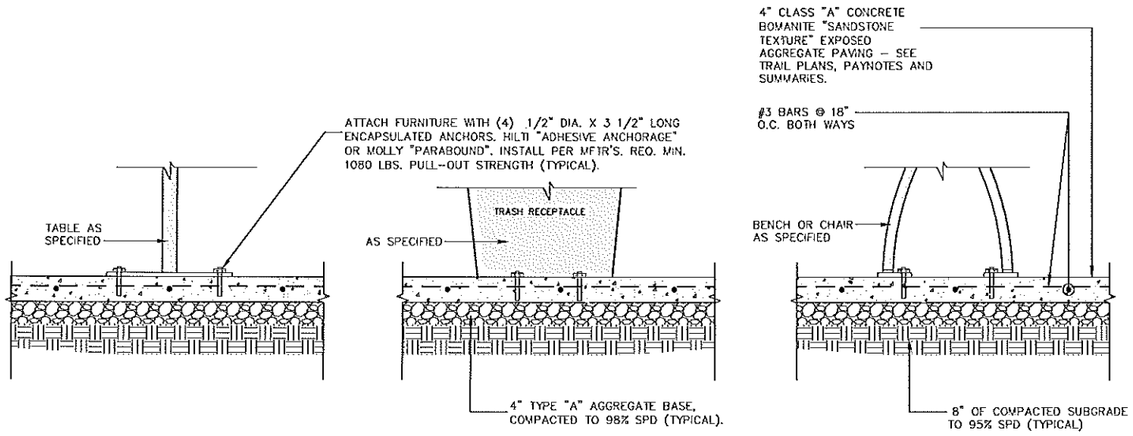
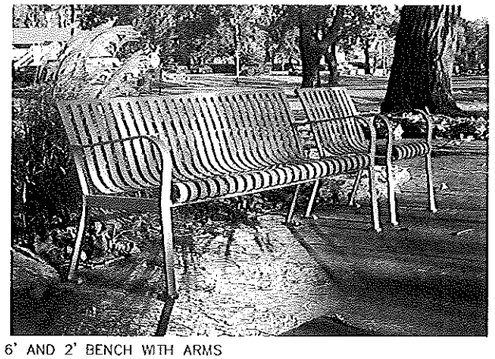
FURNITURE INSTALLATION NOTES:

1) CONTRACTOR SHALL PLACE EQUIPMENT ON CONCRETE FOR FINAL FIELD REVIEW AND APPROVAL BY LANDSCAPE ARCHITECT BEFORE PERMANENTLY MOUNTING TO CONCRETE.
2) CONTRACTOR SHALL TAKE CARE NOT TO DAMAGE THE FINISH OF THE SITE FURNITURE DURING INSTALLATION.
3) REFER TO PLAN SHEETS 29, 30, AND 62 FOR FURNITURE LAYOUT AT THE REST AREAS AND PAVILION.
4) PROVIDE PAINTED STEEL WASHERS TO MATCH FURNITURE COLOR FOR LEVELING OF FURNITURE AS NEEDED.

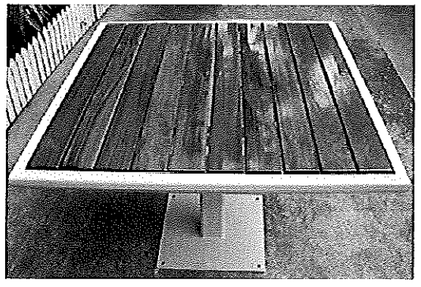


A/13 SECTION – FURNITURE INSTALLATION
NOT TO SCALE

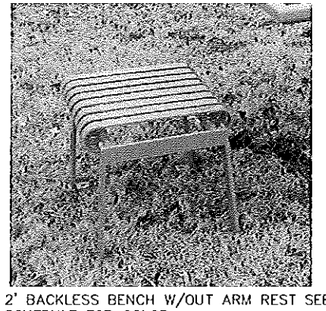


6' AND 2' BENCH WITH ARMS
SEE SCHEDULE FOR COLOR

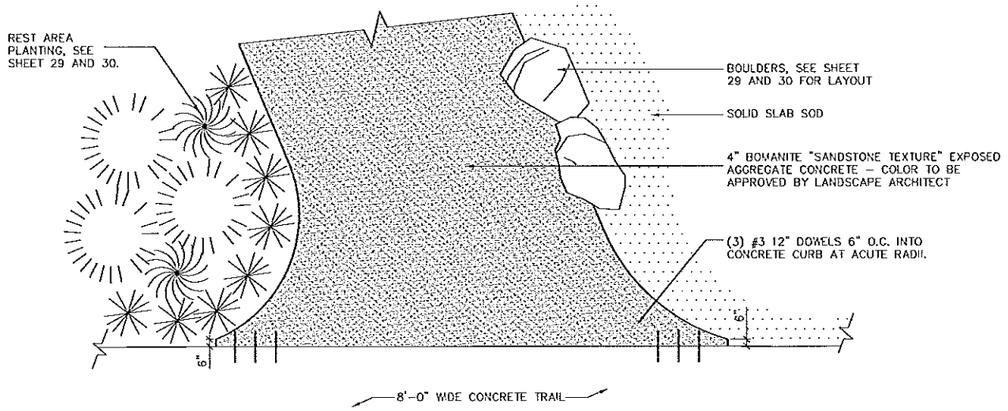
BANICO LITTER RECEPTACLE (TO BE SURFACE MOUNTED)
SEE SCHEDULE FOR COLOR



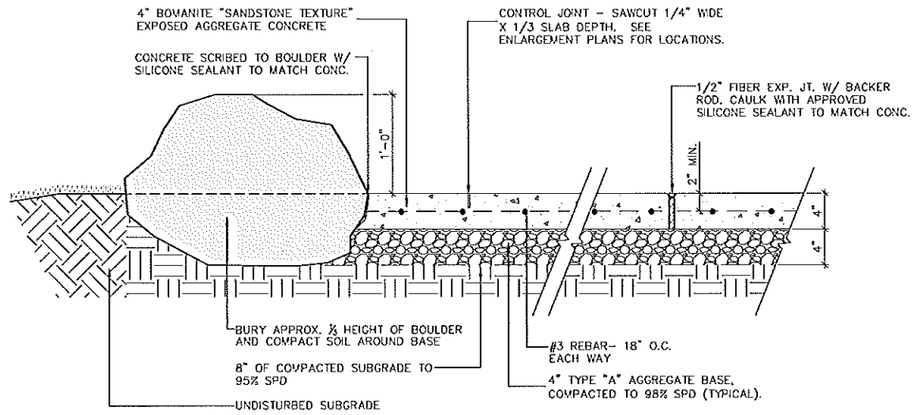
MIRAGE 42" SQUARE TABLE
SEE SCHEDULE FOR COLOR



2' BACKLESS BENCH W/OUT ARM REST SEE SCHEDULE FOR COLOR



B/13 DETAIL – DECORATIVE CONCRETE FOR TRAIL REST AREA
NOT TO SCALE



C/13 SECTION–DECORATIVE CONCRETE W/ BOULDER EDGE @ REST AREA
NOT TO SCALE

SITE AMENITIES – BASE BID QUANTITIES

ITEM	DESCRIPTION	MANUFACTURER	CONTACT	MODEL #	COLOR	NOTES	QTY.
1	6' BENCH	Creative Pipe, Inc.	1-800-644-8467	FVBB-FB-6-SM-P	T.B.D.	WITH ARMS	6
2	BANICO LITTER RECEPTACLE	Creative Pipe, Inc.	1-800-644-8467	BCT-FBS-32-F-P-LDD	T.B.D.	32 GALLON SURFACE FLANGE MOUNT LOW DOMED TOP	6
3	MIRAGE 42" TABLE	Creative Pipe, Inc.	1-800-644-8467	MRPT-HW-42SQ-F-P	T.B.D.	HARDWOOD TABLETOP (TEAK), 42" SQUARE, FLANGED SURFACE MOUNT, TGIC POLYESTER POWDER COAT.	1
4	MIRAGE 30" TABLE	Creative Pipe, Inc.	1-800-644-8467	MRPT-HW-30SQ-F-P	T.B.D.	HARDWOOD TABLETOP (TEAK), 30" SQUARE, FLANGED SURFACE MOUNT, TGIC POLYESTER POWDER COAT.	2
5	2' BENCH WITH BACK AND WITH ARM REST	Creative Pipe, Inc.	1-800-644-8467	FVBB-FB-2-SM-P	T.B.D.	FLAT BAR	9
6	2' BACKLESS BENCH WITHOUT ARM REST	Creative Pipe, Inc.	1-800-644-8467	FVBLB-FB-2-SM-P	T.B.D.	FLAT BAR, ARMLESS BACKLESS	2
7	2' BENCH WITH BACK AND NO ARM REST	Creative Pipe, Inc.	1-800-644-8467	FVBB-FB-2-SM-P-O	T.B.D.	FLAT BAR, ARMLESS	7

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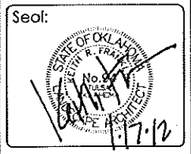

Buffalo Trail and Tri State Gathering Area

Quapaw Tribe of Oklahoma (O-Gah-Pah)

Details (6)

Revisions:

North

Design		
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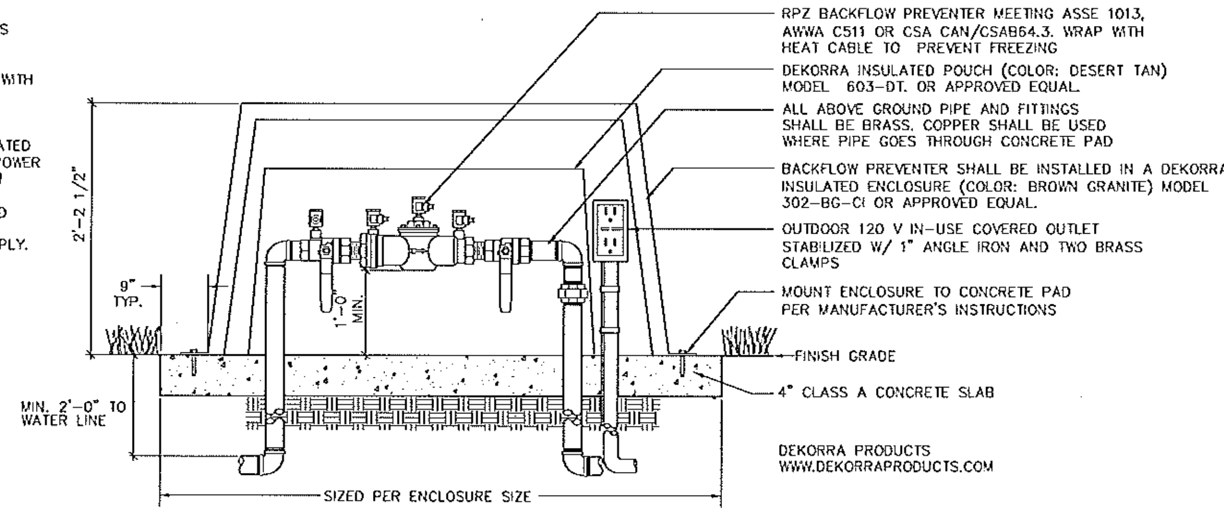
Sheet: 13 of 72

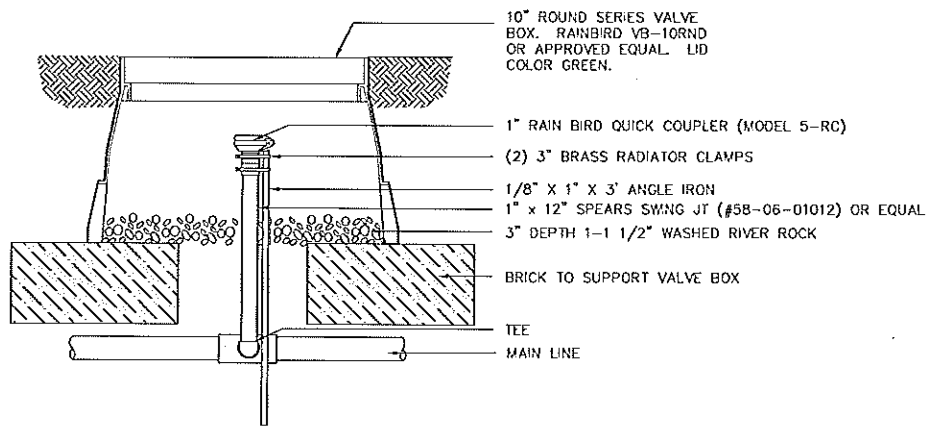
NOTE:
1.) ALL PIPE AND FITTINGS SHALL BE SAME SIZE AS SPECIFIED BACKFLOW PREVENTER

2.) CONTRACTOR SHALL PROVIDE 20 AMP SERVICE WITH IN-USE COVERED OUTDOOR OUTLET TO BACKFLOW LOCATION TO PROVIDE POWER FOR HEAT CABLE.

3.) COST OF BACKFLOW PREVENTER, COVER, INSULATED BAG, HEAT CABLE, CONCRETE SLAB, OUTLET AND POWER SUPPLY, METER, AND ALL COSTS FOR INSTALLATION SHALL BE INCLUDED IN LUMP SUM PRICE BID FOR IRRIGATION. INCLUDING TRENCHING, ¾" CONDUIT AND CONDUCTOR. CONTRACTOR SHALL COORDINATE WITH ELECTRIC PROVIDER FOR PROVISION OF POWER SUPPLY.

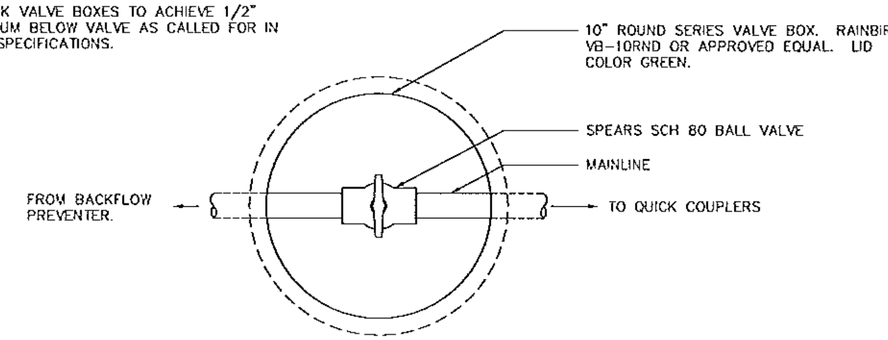


A/14 RPZ BACKFLOW PREVENTER
NOT TO SCALE



B/14 QUICK COUPLER
NOT TO SCALE

NOTES:
1. 1" OR 2" VALVES, SIZE ACCORDING TO PLANS.
2. STACK VALVE BOXES TO ACHIEVE 1/2" MINIMUM BELOW VALVE AS CALLED FOR IN THE SPECIFICATIONS.



C/14 SINGLE BALL VALVE
NOT TO SCALE

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Seal: STATE OF OKLAHOMA — KEITH R. FRANKLIN — LANDSCAPE ARCHITECT — 1.17.12

Buffalo Trail and Tri State Gathering Area
Quapaw Tribe of Oklahoma (O-Gah-Pah)
Detail Sheet (7)

Revisions:

North

Design	JM	1/12
Drawn	JM	1/12
Checked	KF	1/12
Approved		

PROJECT NUMBER: 481

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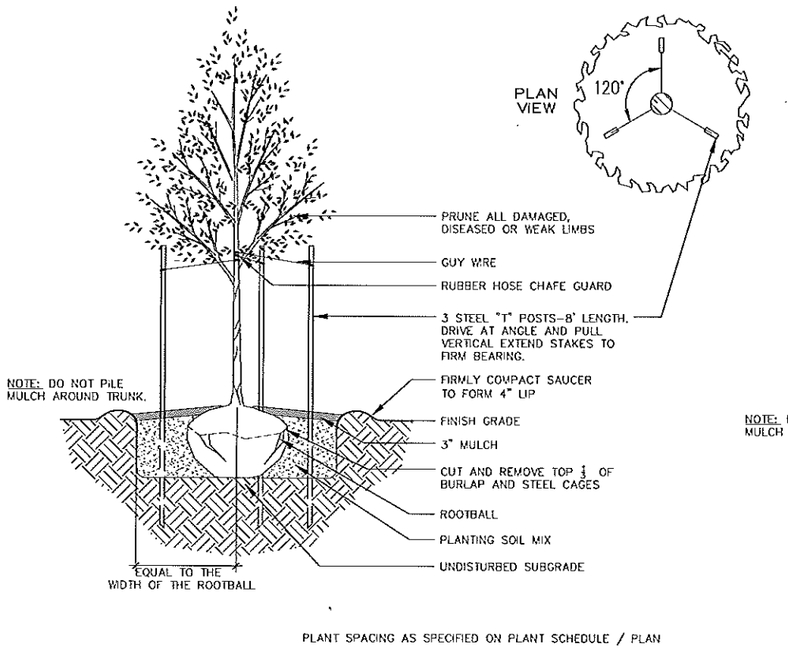
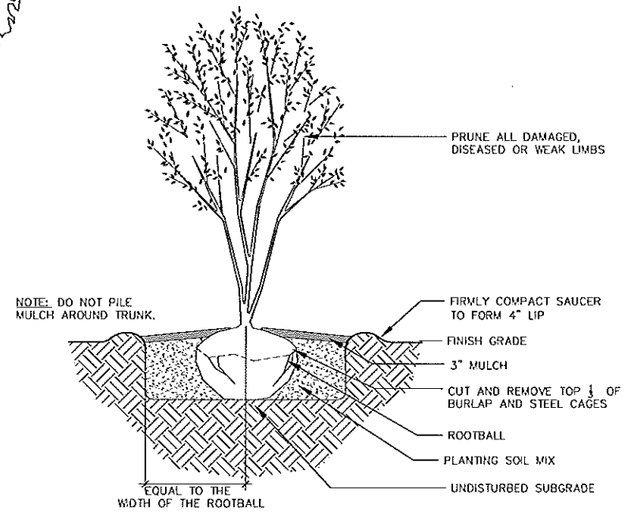


PLANT SPACING AS SPECIFIED ON PLANT SCHEDULE / PLAN

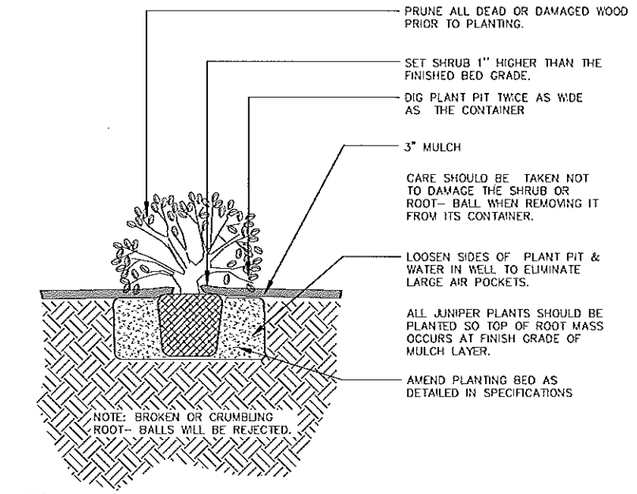
A/15 TREE PLANTING

NOT TO SCALE



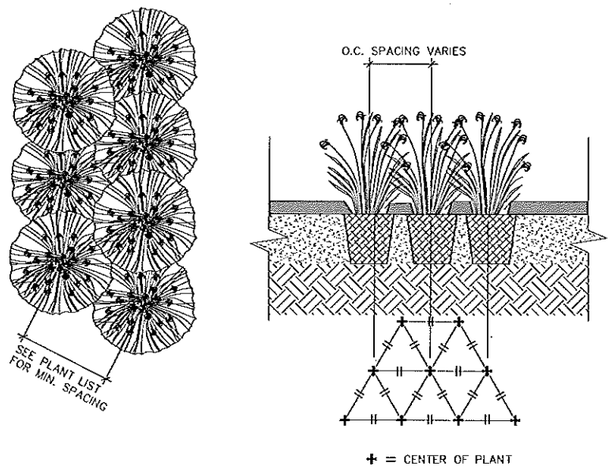
B/15 TREE PLANTING, MULTI–TRUNK

NOT TO SCALE



C/15 SHRUB PLANTING

NOT TO SCALE

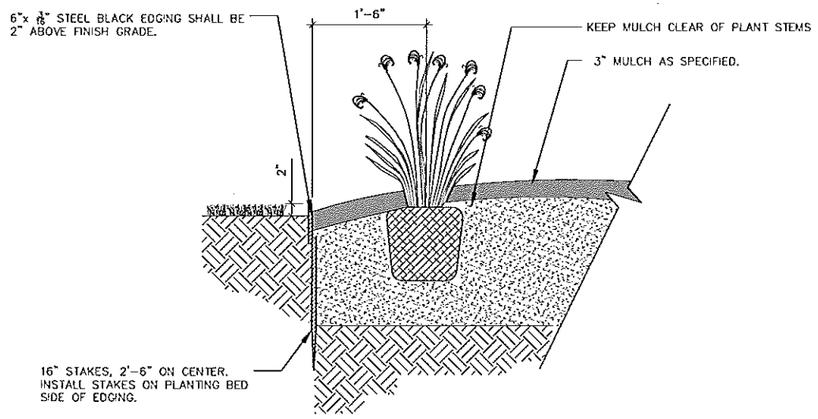


NOTE:

1.STANDARD TRIANGULATION TO FOLLOW SPACING REQUIREMENTS FOUND ON PLANT LIST.
2.PLAN TO TAKE PRECEDENT OVER GENERAL DETAIL.

D/15 PLANTING TYPICAL SPACING

NOT TO SCALE



E/15 SECTION–STEEL EDGING

NOT TO SCALE

PLANTING NOTES

1. WEEDS SHALL BE REMOVED AS APPROVED BY THE LANDSCAPE ARCHITECT IN ALL PLANTING BEDS AND 3" OF SHREDDED CYPRESS BARK MULCH APPLIED.

2. PLANTS SHALL BE IN A MOIST, VIGOROUS CONDITION, FREE FROM DEAD WOOD, BRUISES OR OTHER ROOT OR BRANCH INJURIES. THE LANDSCAPE ARCHITECT OWNERS REPRESENTATIVE HAS THE RIGHT TO REJECT ANY PLANTS THAT HE/SHE FEELS DOES NOT MEET THE STANDARDS AS SET FORTH BY THE AMERICAN STANDARDS INSTITUTE (ANSI) PUBLICATIONS: Z60.1–1996 NURSAERY STOCK.

3. CONTRACTOR SHALL APPLY BACK TO NATURE AT 3" DEPTH TO TOP OF PLANTING BEDS AND TILL IN TO A DEPTH OF 12".

4. CONTRACTOR SHALL VERIFY LOCATION OF UTILITIES PRIOR TO EXCAVATION FOR PLANTING BEDS AND TREE PLANTING.

5. LANDSCAPE ARCHITECT TO APPROVE STEEL BED EDGING LAYOUT PRIOR TO STAKING AND PLANTING.

6. ALL ITEMS SHOWN ON THE PLANTING PLANS, DETAILS AND TREE, SHRUBS AND GROUNDCOVER SPECIFICATIONS SECTION 02950 SHALL BE INCLUDED IN THE COST OF THE PLANTING. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO, TREE STAKING, GUYING, FERTILIZING, EXCAVATION, AND WATERING AS REQUIRED BY THE SPECIFICATIONS. ANY ITEM NOT LISTED ON THE BID SHEET SHALL BE CONSIDERED INCIDENTAL AND SHALL BE INCLUDED IN THE COST OF OTHER ITEMS.

7. THESE PLANS ARE ACCOMPANIED BY 8½"X11" SPECIFICATIONS SECTION 02950 – TREES, SHRUBS AND GROUNDCOVERS.

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1.11.12

Buffalo Trail and Tri State Gathering Area

Quapaw Tribe of Oklahoma (O-Gah-Pah)

Detail Sheet (8)

Revisions:

North

Design	JM	1/12
Drawn	JM	1/12
Checked	KF	1/12
Approved		

PROJECT NUMBER: 481

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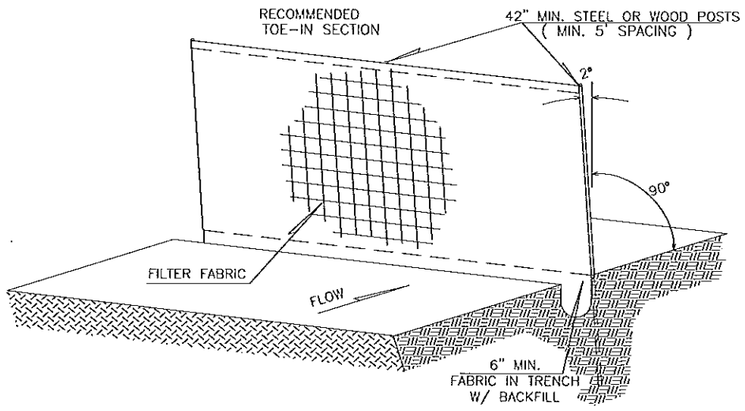
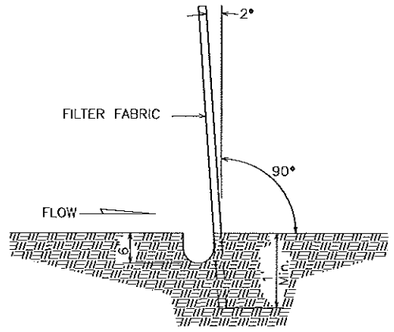
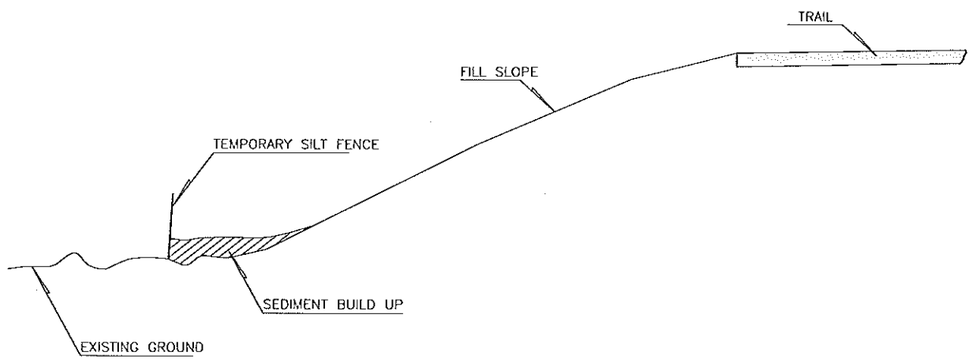
Sheet: 15 of 72



TEMPORARY SILT FENCE



NOTE: ALL DIMENSIONS AND LOCATIONS NOT INDICATED FOR ITEMS APPEARING ON THIS SHEET OR ON THE PLANS SHALL BE AS DIRECTED BY THE ENGINEER. STAKES AND ATTACHMENT OF FILTER FABRIC SHALL BE AS DIRECTED BY THE ENGINEER.



TYPICAL SILT FENCE PLACEMENT

TEMPORARY SILT FENCE

DESCRIPTION. THIS WORK SHALL CONSIST OF THE FURNISHING, INSTALLATION, MAINTENANCE, AND REMOVAL OF GEOTEXTILE BARRIER FENCE DESIGNED TO REMOVE SUSPENDED SOIL PARTICLES FROM WATER PASSING THROUGH THE FENCE. SILT FENCE SHALL BE INSTALLED AS SOON AS PRACTICAL TO PREVENT CONSTRUCTION FROM CONTAMINATING DRAINAGE WAYS. THE LOCATIONS FOR TEMPORARY SILT FENCE SHOWN ON THE PLANS ARE APPROXIMATE AND MAY BE CHANGED BY THE ENGINEER.

MATERIALS. THE SILT FENCE SHALL BE A WOVEN, POLYPROPYLENE, POLYESTER OR POLYAMIDE MATERIAL THAT SHALL BE RESISTANT TO ULTRAVIOLET DEGRADATION, MILDEW AND ROT. THE EDGES OF WOVEN FABRICS SHALL BE SEALED OR SELVAGED TO PREVENT RAVELING. FABRIC SHALL BE AT LEAST 36 INCHES WIDE WITH 6 INCHES OF THE WIDTH BURIED IN A TRENCH TO PREVENT UNDERCUTTING. THE FABRIC SHALL EXHIBIT THE FOLLOWING PHYSICAL PROPERTIES WHEN SAMPLED AND TESTED USING THE SPECIFIED METHODS.

PROPERTY	TEST METHOD	VALUES
GRAB TENSILE	ASTM D-4632	100 LBS. MIN.
ELONGATION @ YIELD	ASTM D-4632	10-40 LBS. (MAX.)
TRAPEZOID TEAR	ASTM D-4533	50 LBS. MIN.
UV RESISTANCE	ASTM D-4355	80% MIN.
APPARENT OPENING SIZE	ASTM D-4751	20-50 US SIEVE
	ASTM D-4491	0.01 MIN.

THE MANUFACTURER SHALL FURNISH A TYPE A CERTIFICATION WITH EACH SHIPMENT OF FENCE. THE MATERIAL SHALL BE WRAPPED IN A PROTECTIVE COVER TO GUARD AGAINST DAMAGE FROM ULTRAVIOLET RADIATION AND ABRASION DURING SHIPPING AND HANDLING. PREFABRICATED FENCE SYSTEMS MAY BE USED PROVIDED THEY MEET ALL OF THE MATERIAL REQUIREMENTS.

CONSTRUCTION METHODS. THE CONTRACTOR SHALL INSTALL A TEMPORARY SILT FENCE AS SHOWN ON THE PLANS AND/OR AS DIRECTED BY THE ENGINEER. FENCE CONSTRUCTION SHALL BE ADEQUATE TO HANDLE THE STRESS FROM HYDRAULIC AND SEDIMENT LOADING. GEOTEXTILE AT THE BOTTOM OF THE FENCE SHALL BE BURIED AS INDICATED ON THE STANDARD DRAWINGS. THE TRENCH SHALL BE BACKFILLED AND THE SOIL COMPACTED OVER THE GEOTEXTILE. FABRIC ENDS SHALL BE SPLICED TOGETHER AS INDICATED ON THE STANDARD DRAWING.

POSTS. POSTS MAY BE EITHER WOOD, STEEL OR SYNTHETIC MATERIAL WITH A MINIMUM LENGTH OF 42 INCHES AND BE OF SUFFICIENT STRENGTH TO RESIST DAMAGE DURING INSTALLATION AND STRONG ENOUGH TO SUPPORT APPLIED LOADS. SPACING BETWEEN POSTS SHALL NOT EXCEED 5 FEET AND POSTS WILL BE EMBEDDED INTO THE GROUND AT LEAST 1 FOOT. THE GEOTEXTILE WILL BE SECURELY FASTENED TO THE FENCE POSTS.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN THE INTEGRITY OF SILT FENCES AS LONG AS THEY ARE NECESSARY TO CONTAIN SEDIMENT RUNOFF. THE CONTRACTOR SHALL INSPECT ALL TEMPORARY SILT FENCES IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY DEFICIENCIES SHALL BE IMMEDIATELY CORRECTED BY THE CONTRACTOR. IN ADDITION, THE CONTRACTOR SHALL MAKE A DAILY REVIEW OF THE LOCATION OF SILT FENCES IN AREAS WHERE CONSTRUCTION ACTIVITIES HAVE CHANGED THE NATURAL CONTOUR AND DRAINAGE RUNOFF TO ENSURE THAT THE SILT FENCES ARE PROPERLY LOCATED FOR EFFECTIVENESS.

WHEN THE ACCUMULATED SILT REACHES A DEPTH OF 6 INCHES, THE CONTRACTOR SHALL REMOVE THE SEDIMENT AND DEPOSIT IT AT APPROVED SITES IN A MANNER THAT WILL NOT CONTRIBUTE TO ADDITIONAL SILTATION INTO THE RECEIVING WATERS. THE SILT FENCE SHALL REMAIN IN PLACE UNTIL THE ENGINEER APPROVES REMOVAL. THE EFFECTED AREA SHALL BE GRADED AND DRESSED TO THE SATISFACTION OF THE ENGINEER AFTER REMOVAL OF SILT FENCE.

METHOD OF MEASUREMENT. SILT FENCE WILL BE MEASURED BY THE LINEAR FOOT IN PLACE AS DIRECTED BY THE ENGINEER.

BASIS OF PAYMENT. ACCEPTED SILT FENCE, MEASURED AS PROVIDED ABOVE, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID FOR TEMPORARY SILT FENCE. PRICE BID WILL INCLUDE THE COST OF FURNISHING THE MATERIALS, INSTALLATION, MAINTENANCE, REMOVAL OF SEDIMENT AND SILT FENCE ALONG WITH THE DRESSING OF DISTURBED AREAS.

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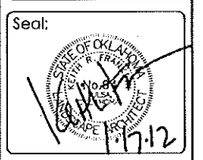

9.17.12

Buffalo Trail and Tri State Gathering Area
Quapaw Tribe of Oklahoma (O-Gah-Pah)
Silt Fence Details

Revisions:

North

Design		
Drawn		
Checked		
Approved		

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Sheet: 16 of 72

LEGEND

G — GAS LINE	TOE — TOE OF EX. SLOPE
W — WATER LINE	TOP — TOP OF EX. SLOPE
UG — UNDERGROUND GAS LINE	EXISTING WIRE FENCE
OVERHEAD ELECTRIC LINE	EXISTING BUFFALO ENCLOSURE
SD — STORM DRAIN LINE	RIGHT OF WAY LIMIT
SS — SAN SEWER LINE	EXISTING SIGN
TELEPHONE LINE/FIBER OPTIC	EXISTING LIGHT POLE
FLOWLINE	LIGHT POLE TO BE REMOVED
MATCHLINE	EX WATER VALVE / EX IRRIGATION VALVE
118TH STREET CENTERLINE	
BUFFALO TRAIL CENTERLINE	RELOCATED/REMOVED TREE
EXISTING TRAIL TO BE REMOVED	

REMOVE AND RELOCATE EXISTING IRRIGATION HEADS 2'-0" CLEAR FROM EDGE OF TRAIL (TYP) STA. 0+00 - STA. 20+54.34.

FULL DEPTH SAWCUT AND REMOVE 36 SY CONCRETE SIDEWALK BEHIND EXISTING CURB LINE STA. 0+00 - STA. 1+27.94

BUFFALO TRAIL EOP Sta = 56+73.60

REMOVE AND RELOCATE EXISTING IRRIGATION HEADS 2'-0" CLEAR FROM EDGE OF TRAIL (TYP) STA. 0+00 - STA. 20+54.34.

EXISTING WATER VALVE / EXISTING IRRIGATION VALVE (TYP.)

BUFFALO TRAIL CENTERLINE (TYP.)

BUFFALO TRAIL BOP Sta = 0+00.00

E. NEE RD.

54+00

ADJUST (3) IRRIGATION WATER VALVE BOXES TO GRADE.

EXISTING IRRIGATION HEAD (TYP.)

EXISTING TREE TO BE RELOCATED/REMOVED (TYP).

GRADE EXISTING MOUND AS SHOWN TO ALLOW WATER TO DRAIN FREELY TO PROPOSED PIPE. SEE SITE PLANS FOR DRAINAGE STRUCTURE #P1 LOCATION

RIGHT OF WAY LIMIT

EXISTING PARKING LOT

55+00

MATCHLINE SHEET 18

0 30 60 90

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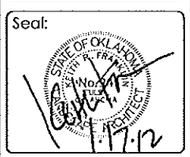

1.17.12

Buffalo Trail and Tri State Gathering Area

Quapaw Tribe of Oklahoma (O-Gah-Pah)

Demolition Plan 1

Revisions:

North

Design	JM	11/1/11
Drawn	JM	11/1/11
Checked	KF	11/1/11
Approved		

PROJECT NUMBER: 481.00

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Sheet: 17 of 72

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LEGEND

G	GAS LINE	TOE	TOE OF EX. SLOPE
W	WATER LINE	TOP	TOP OF EX. SLOPE
UG	UNDERGROUND GAS LINE		EXISTING WIRE FENCE
	OVERHEAD ELECTRIC LINE		EXISTING BUFFALO ENCLOSURE
SD	STORM DRAIN LINE		RIGHT OF WAY LIMIT
SS	SAN SEWER LINE		EXISTING SIGN
	TELEPHONE LINE/FIBER OPTIC		EXISTING LIGHT POLE
	FLOWLINE		LIGHT POLE TO BE REMOVED
	MATCHLINE	W	EX WATER VALVE / EX IRRIGATION VALVE
	118TH STREET CENTERLINE		
	BUFFALO TRAIL CENTERLINE		RELOCATED/REMOVED TREE
	EXISTING TRAIL TO BE REMOVED		

E. NEE RD.

10+00

15+00

EXISTING TREE TO BE RELOCATED / REMOVED (TYP.)

BUFFALO TRAIL CENTERLINE (TYP.)

REMOVE AND RELOCATE EXISTING IRRIGATION HEADS 2'-0" CLEAR FROM EDGE OF TRAIL (TYP) STA. 0+00 - STA. 20+54.34.

EXISTING WATER VALVE / EXISTING IRRIGATION VALVE (TYP.)

REMOVE 86 SY EXISTING 8"-12" RIPRAP AND STOCKPILE FOR REUSE AT END OF PROPOSED DRAINAGE STRUCTURE P2

EXPOSE EXISTING HDPE DRAINAGE PIPE. CLEAN END AND PREPARE FOR EXTENSION.

ADJUST EXISTING IRRIGATION HEADS TO GRADE WITHIN THE CUT-FILL CATCHLINES (STA. 0+00 - STA. 20+54.34)

MATCHLINE SHEET 17

MATCHLINE SHEET 19

0 30 60 90

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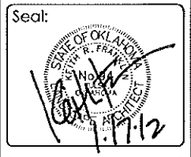

Buffalo Trail and Tri State Gathering Area

Quapaw Tribe of Oklahoma (O-Gah-Pah)

Demolition Plan 2

Revisions:

North

Design	JM	11/1/11
Drawn	JM	11/1/11
Checked	KF	11/1/11
Approved		

PROJECT NUMBER: 481.00

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Sheet: 18 of 72

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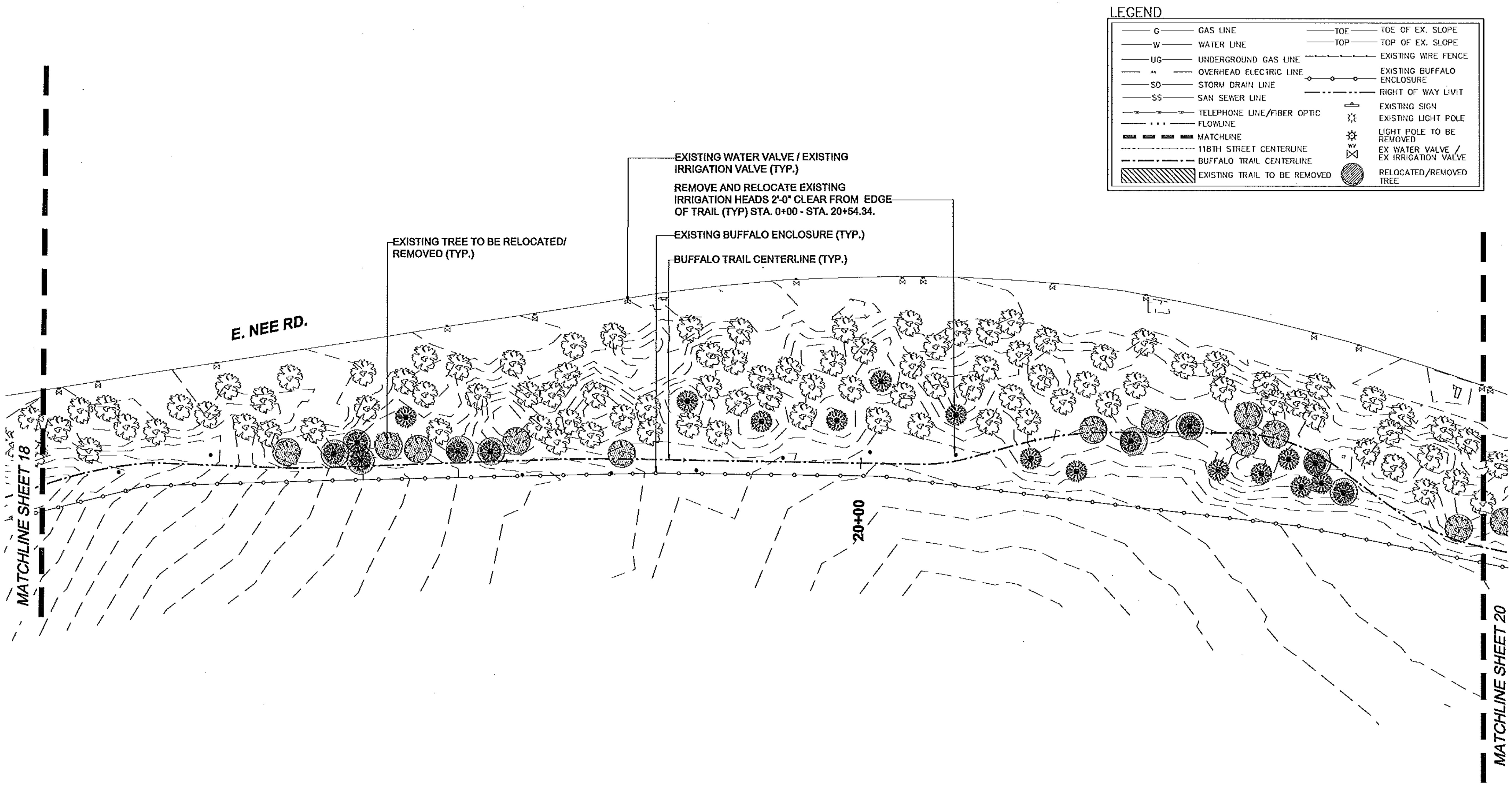
LEGEND
G — GAS LINE
W — WATER LINE
UG — UNDERGROUND GAS LINE
OVERHEAD ELECTRIC LINE
SD — STORM DRAIN LINE
SS — SAN SEWER LINE
TELEPHONE LINE/FIBER OPTIC
FLOWLINE
MATCHLINE
118TH STREET CENTERLINE
BUFFALO TRAIL CENTERLINE
EXISTING TRAIL TO BE REMOVED
TOE — TOE OF EX. SLOPE
TOP — TOP OF EX. SLOPE
EXISTING WIRE FENCE
EXISTING BUFFALO ENCLOSURE
RIGHT OF WAY LIMIT
EXISTING SIGN
EXISTING LIGHT POLE
LIGHT POLE TO BE REMOVED
EX WATER VALVE / EX IRRIGATION VALVE
RELOCATED/REMOVED TREE
EXISTING WATER VALVE / EXISTING IRRIGATION VALVE (TYP.)
REMOVE AND RELOCATE EXISTING IRRIGATION HEADS 2'-0" CLEAR FROM EDGE OF TRAIL (TYP) STA. 0+00 - STA. 20+54.34.
EXISTING BUFFALO ENCLOSURE (TYP.)
BUFFALO TRAIL CENTERLINE (TYP.)
EXISTING TREE TO BE RELOCATED/ REMOVED (TYP.)
E. NEE RD.
MATCHLINE SHEET 18
20+00
MATCHLINE SHEET 20

0 30 60 90

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Seal:
1.17.12

Buffalo Trail and Tri State Gathering Area
Quapaw Tribe of Oklahoma (O-Gah-Pah)
Demolition Plan 3

Revisions:

North

Design	JM	11/4/11
Drawn	JM	11/4/11
Checked	KF	11/4/11
Approved		

PROJECT NUMBER: 481.00

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Sheet: 19 of 72

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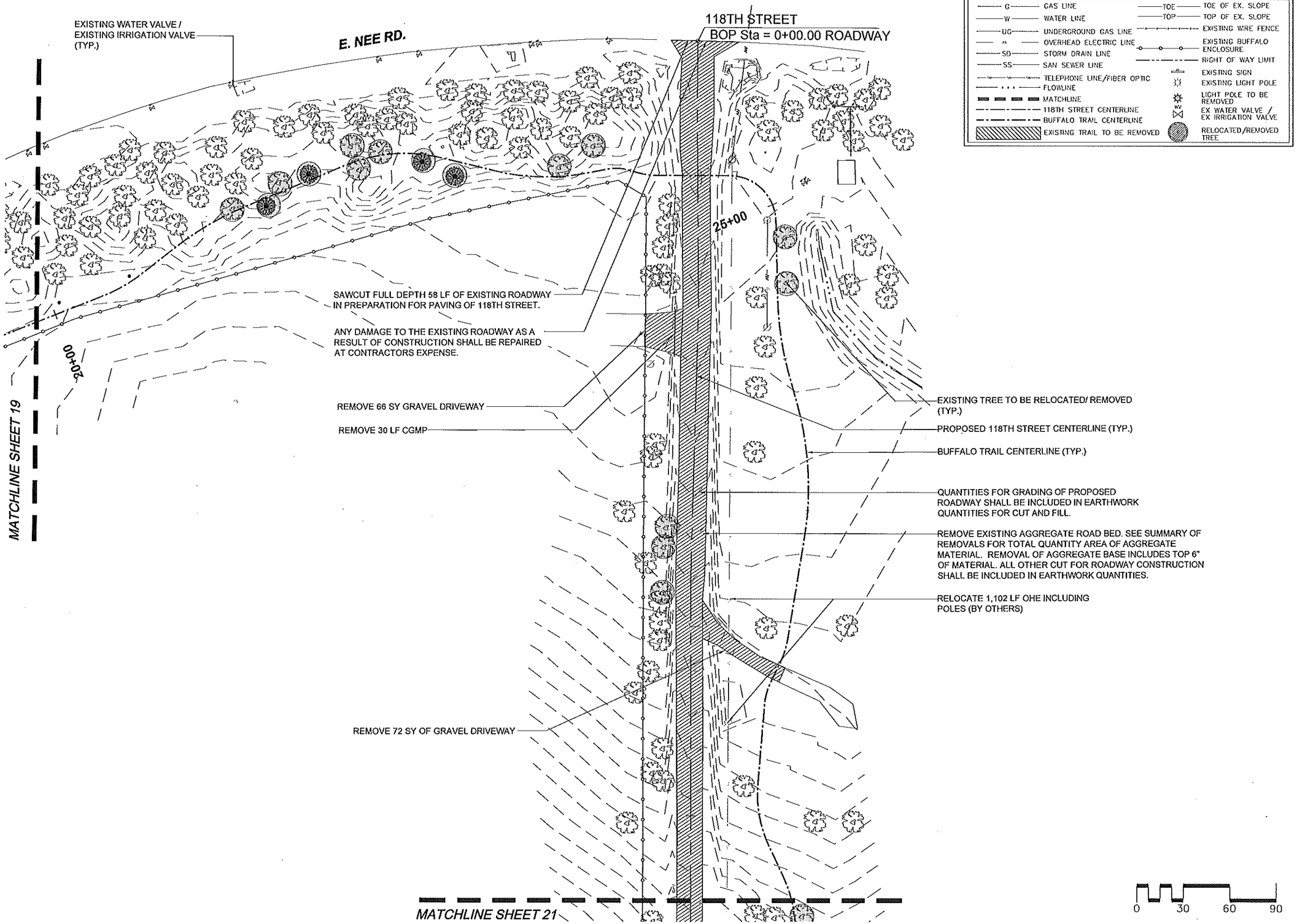

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Buffalo Trail and Tri State Gathering Area

Quapaw Tribe of Oklahoma (O-Gah-Pah)

Demolition Plan 4

Revisions:

North

Design	JM	11/1/11
Drawn	JM	11/1/11
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Sheet: 20 of 72

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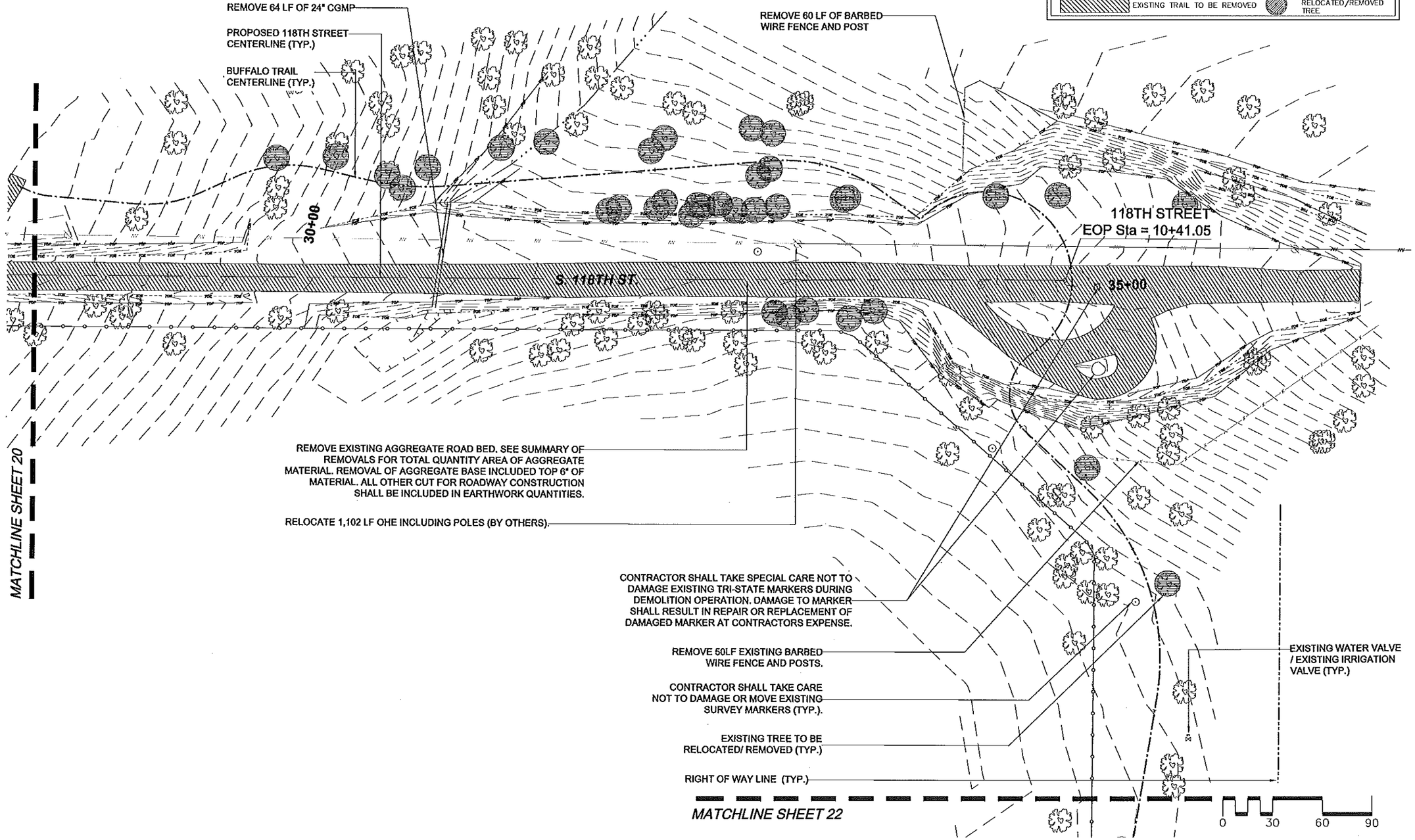

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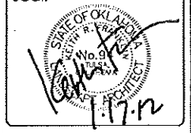

Buffalo Trail and Tri State Gathering Area

Quapaw Tribe of Oklahoma (O-Gah-Pah)

Demolition Plan 5

Revisions:

North

Design	JM	11/1/11
Drawn	JM	11/1/11
Checked	KF	11/1/11
Approved		

PROJECT NUMBER: 481.00

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Sheet: 21 of 72

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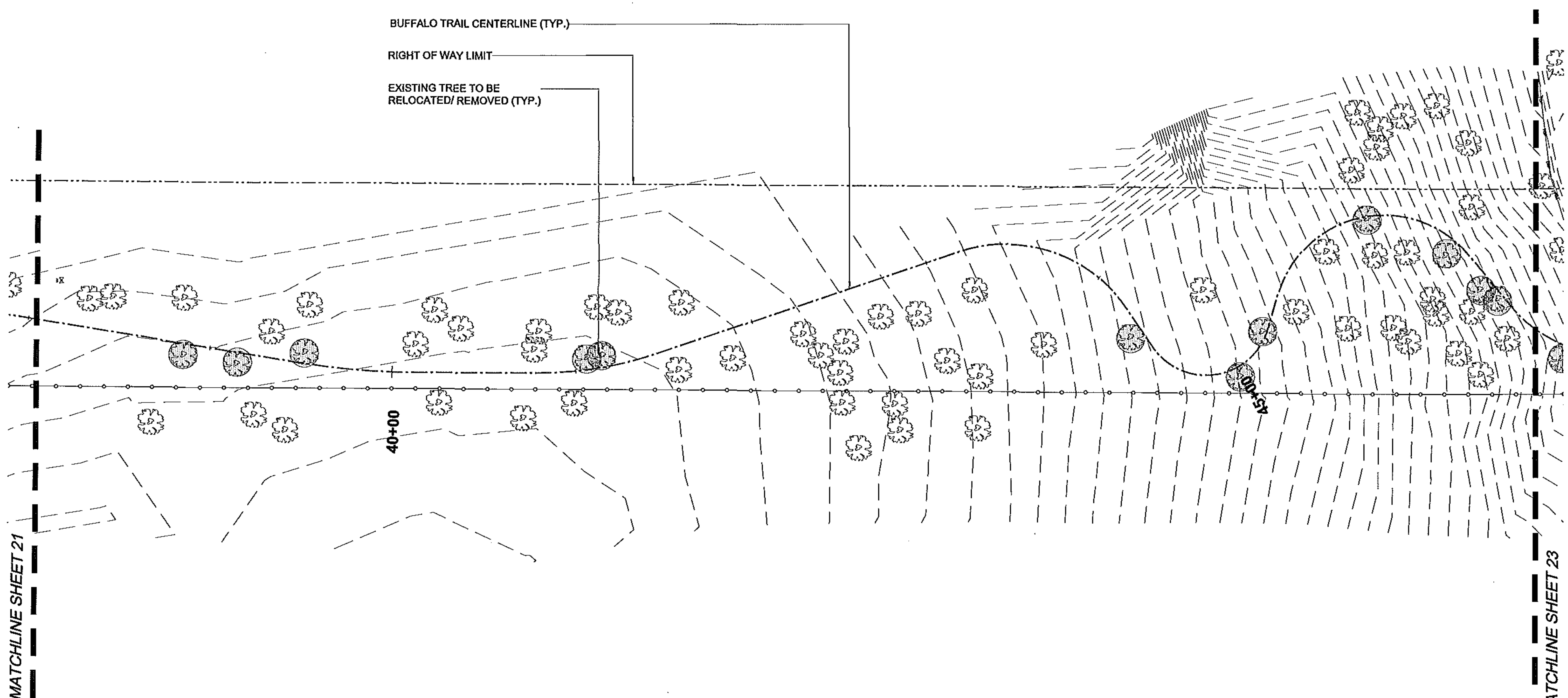
LEGEND

G	GAS LINE	TOE	TOE OF EX. SLOPE
W	WATER LINE	TOP	TOP OF EX. SLOPE
UG	UNDERGROUND GAS LINE		EXISTING WIRE FENCE
	OVERHEAD ELECTRIC LINE		EXISTING BUFFALO ENCLOSURE
SD	STORM DRAIN LINE		RIGHT OF WAY LIMIT
SS	SAN SEWER LINE		EXISTING SIGN
	TELEPHONE LINE/FIBER OPTIC		EXISTING LIGHT POLE
	FLOWLINE		LIGHT POLE TO BE REMOVED
	MATCHLINE		EX WATER VALVE / EX IRRIGATION VALVE
	118TH STREET CENTERLINE		RELOCATED/REMOVED TREE
	BUFFALO TRAIL CENTERLINE		
	EXISTING TRAIL TO BE REMOVED		



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Seal:

1.17.12

Buffalo Trail and Tri State Gathering Area

Quapaw Tribe of Oklahoma (O-Gah-Pah)

Demolition Plan 6

Revisions:

North

Design	JM	11/4/11
Drawn	JM	11/4/11
Checked	KF	11/4/11
Approved		

PROJECT NUMBER: 481.00

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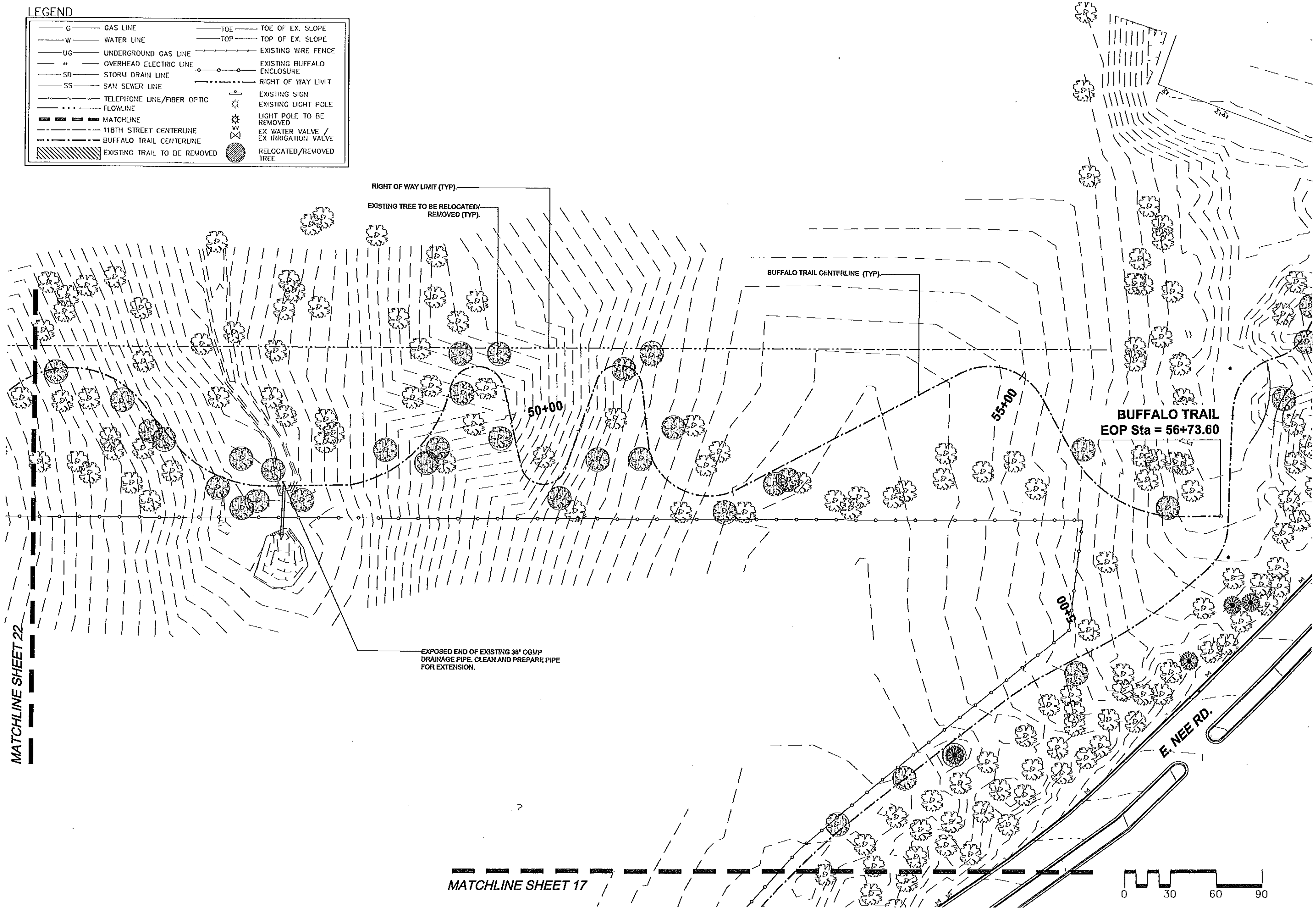
Sheet: 22 of 72


LEGEND
GAS LINE
WATER LINE
UNDERGROUND GAS LINE
OVERHEAD ELECTRIC LINE
STORM DRAIN LINE
SAN SEWER LINE
TELEPHONE LINE/FIBER OPTIC
FLOWLINE
MATCHLINE
118TH STREET CENTERLINE
BUFFALO TRAIL CENTERLINE
EXISTING TRAIL TO BE REMOVED
TOE OF EX. SLOPE
TOP OF EX. SLOPE
EXISTING WIRE FENCE
EXISTING BUFFALO ENCLOSURE
RIGHT OF WAY LIMIT
EXISTING SIGN
EXISTING LIGHT POLE
LIGHT POLE TO BE REMOVED
EX WATER VALVE / EX IRRIGATION VALVE
RELOCATED/REMOVED TREE
RIGHT OF WAY LIMIT (TYP).
EXISTING TREE TO BE RELOCATED/ REMOVED (TYP).
BUFFALO TRAIL CENTERLINE (TYP).
50+00
55+00
5+00
BUFFALO TRAIL
EOP Sta = 56+73.60
EXPOSED END OF EXISTING 36" CGMP DRAINAGE PIPE. CLEAN AND PREPARE PIPE FOR EXTENSION.
MATCHLINE SHEET 22
MATCHLINE SHEET 17
E. NEE RD.
0
30
60
90

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Seal:

Buffalo Trail and Tri State Gathering Area

Quapaw Tribe of Oklahoma (O-Gah-Pah)

Demolition Plan 7

Revisions:

North

Design	JM	11/1/11
Drawn	JM	11/1/11
Checked	KF	11/1/11
Approved		

PROJECT NUMBER: 481.00

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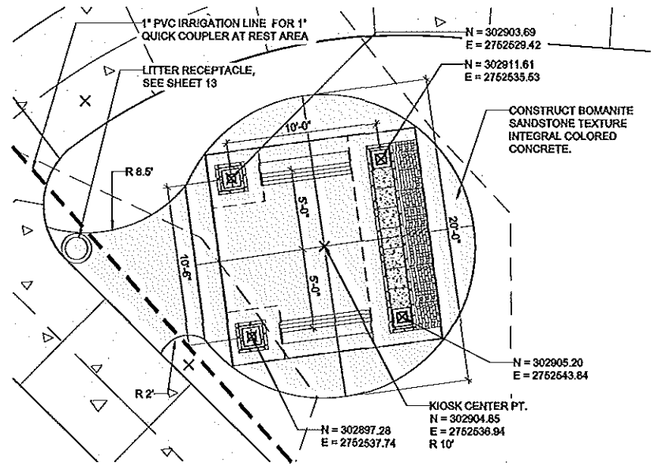
Sheet: 23 of 72

LEGEND

G — GAS LINE	TOE — TOE OF EX. SLOPE
W — WATER LINE	TOP — TOP OF EX. SLOPE
UG — UNDERGROUND GAS LINE	SOD / CUT FILL LIMIT
OVERHEAD ELECTRIC LINE	EX. CHAIN LINK FENCE
SD — STORM DRAIN LINE	TELEPHONE LINE/ FIBER OPTIC
SS — SAN SEWER LINE	HAY BALES
FLOWLINE	EXISTING SIGN
PROPOSED TRAIL CENTERLINE	ENHANCEMENT LIGHT
RIGHT OF WAY	ROADWAY LIGHT

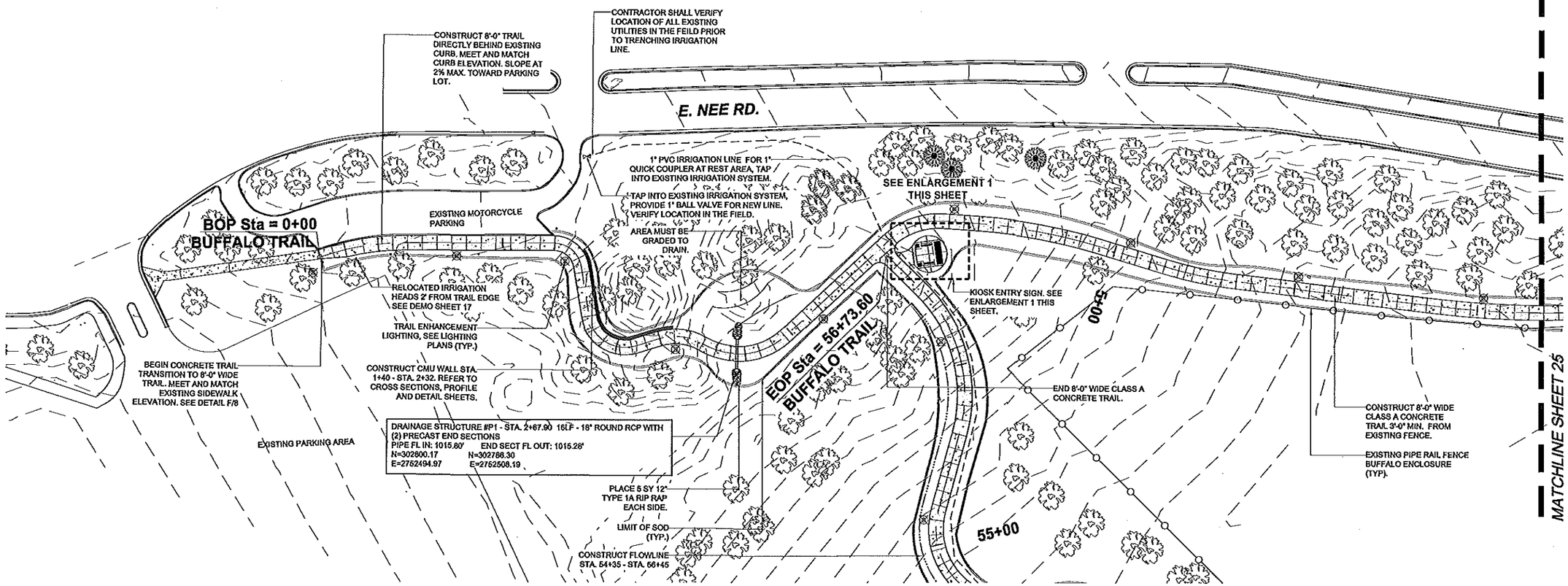
IRRIGATION LEGEND

1" IRRIGATION LINE	
1" QUICK COUPLER	
1" BALL VALVE	



A / 24 ENLARGEMENT 1 – KIOSK

SCALE 1:5 (FOR 22"X34" SHEET)



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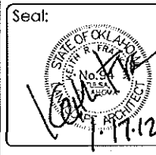

1.17.12

Buffalo Trail and Tri State Gathering Area

Quapaw Tribe of Oklahoma (O-Gah-Pah)

Site Plan (1)

Revisions:

North

Design	JM	1/1/12
Drawn	JM	1/1/12
Checked	KF	1/1/12
Approved		

PROJECT NUMBER: 481.00

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Sheet: 24 of 72

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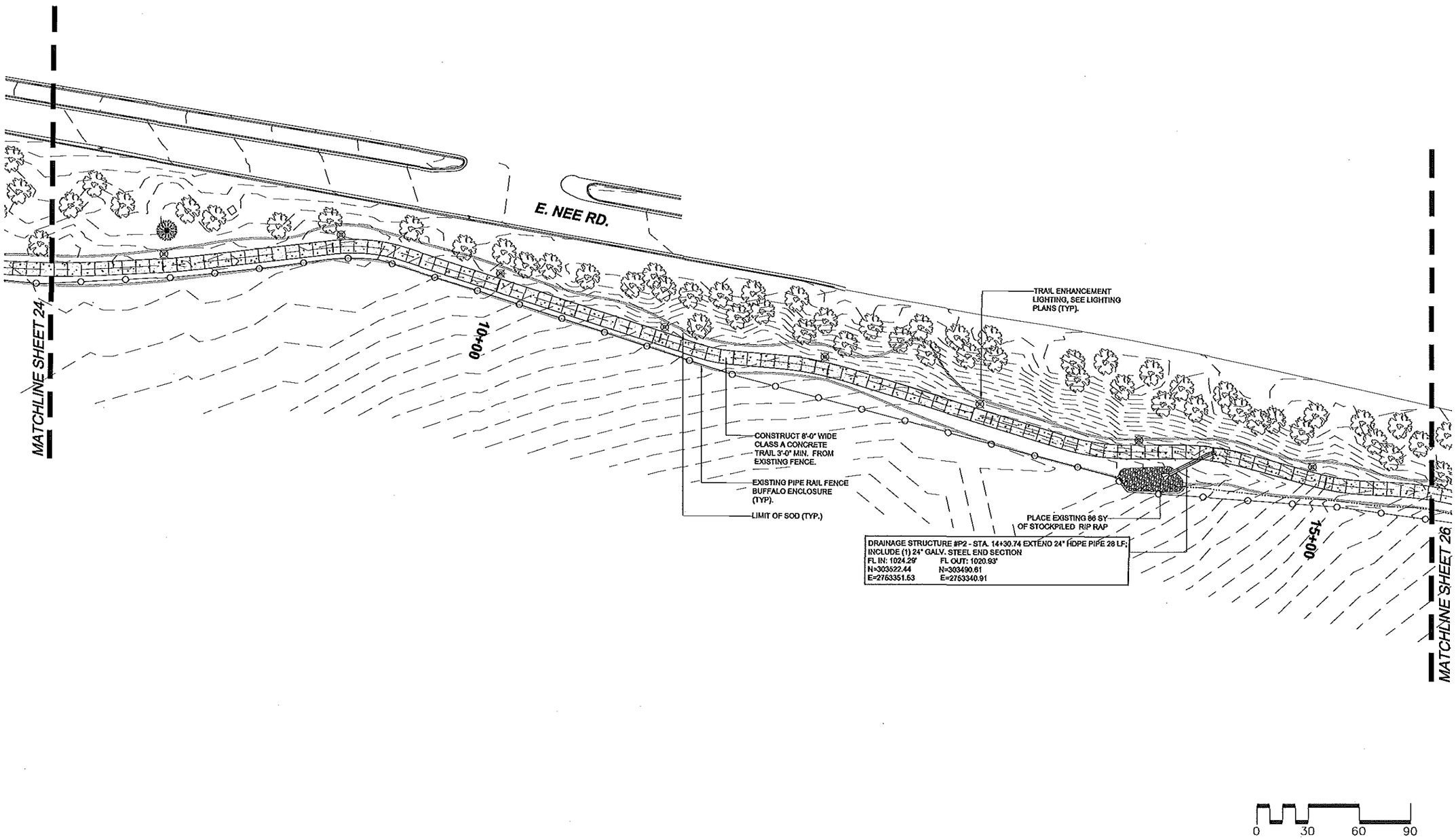
LEGEND

G — GAS LINE	TOE — TOE OF EX. SLOPE
W — WATER LINE	TOP — TOP OF EX. SLOPE
UG — UNDERGROUND GAS LINE	SOD / CUT FILL LIMIT
OVERHEAD ELECTRIC LINE	EX. CHAIN LINK FENCE
SD — STORM DRAIN LINE	TELEPHONE LINE/ FIBER OPTIC
SS — SAN SEWER LINE	HAY BALES
FLOWLINE	EXISTING SIGN
PROPOSED TRAIL CENTERLINE	ENHANCEMENT LIGHT
RIGHT OF WAY	ROADWAY LIGHT



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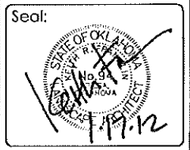

Buffalo Trail and Tri State Gathering Area

Quapaw Tribe of Oklahoma (O-Gah-Pah)

Site Plan (2)

Revisions:

North

Design	JM	1/1/12
Drawn	JM	1/1/12
Checked	KF	1/1/12
Approved		

PROJECT NUMBER: 481.00

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Sheet: 25 of 72

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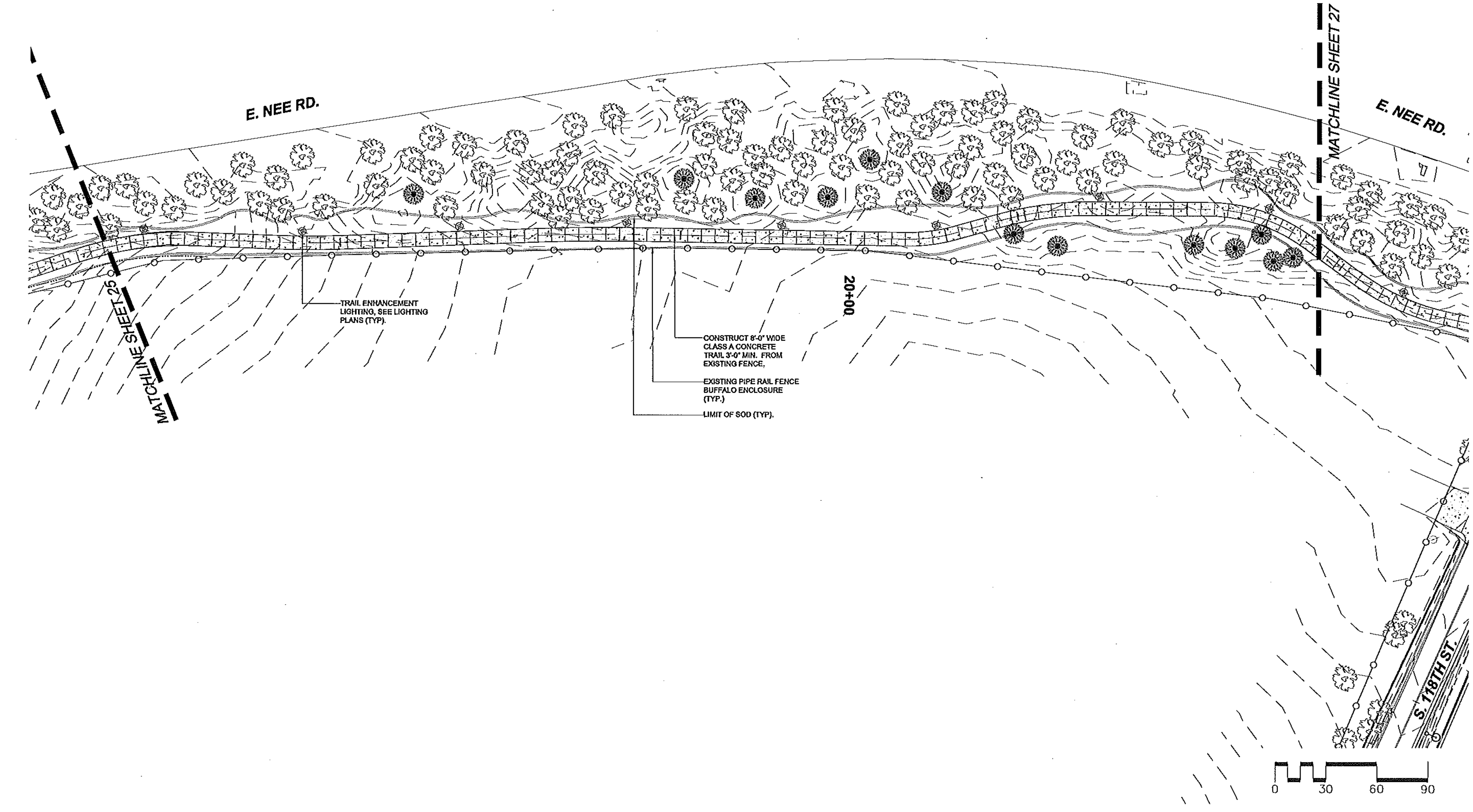
LEGEND

—— G ——	GAS LINE	—— TOE ——	TOE OF EX. SLOPE
—— W ——	WATER LINE	—— TOP ——	TOP OF EX. SLOPE
—— UG ——	UNDERGROUND GAS LINE		SOD / CUT FILL LIMIT
	OVERHEAD ELECTRIC LINE		EX. CHAIN LINK FENCE
—— SD ——	STORM DRAIN LINE		TELEPHONE LINE/ FIBER OPTIC
—— SS ——	SAN SEWER LINE		HAY BALES
	FLOWLINE		EXISTING SIGN
	PROPOSED TRAIL CENTERLINE		ENHANCEMENT LIGHT
	RIGHT OF WAY		ROADWAY LIGHT



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(918) 584-6464

Seal: 1.17.12

Buffalo Trail and Tri State Gathering Area

Quapaw Tribe of Oklahoma (O-Gah-Pah)

Site Plan (3)

Revisions:

North

Design	JM	1/1/12
Drawn	JM	1/1/12
Checked	KF	1/1/12
Approved		

PROJECT NUMBER: 481.00

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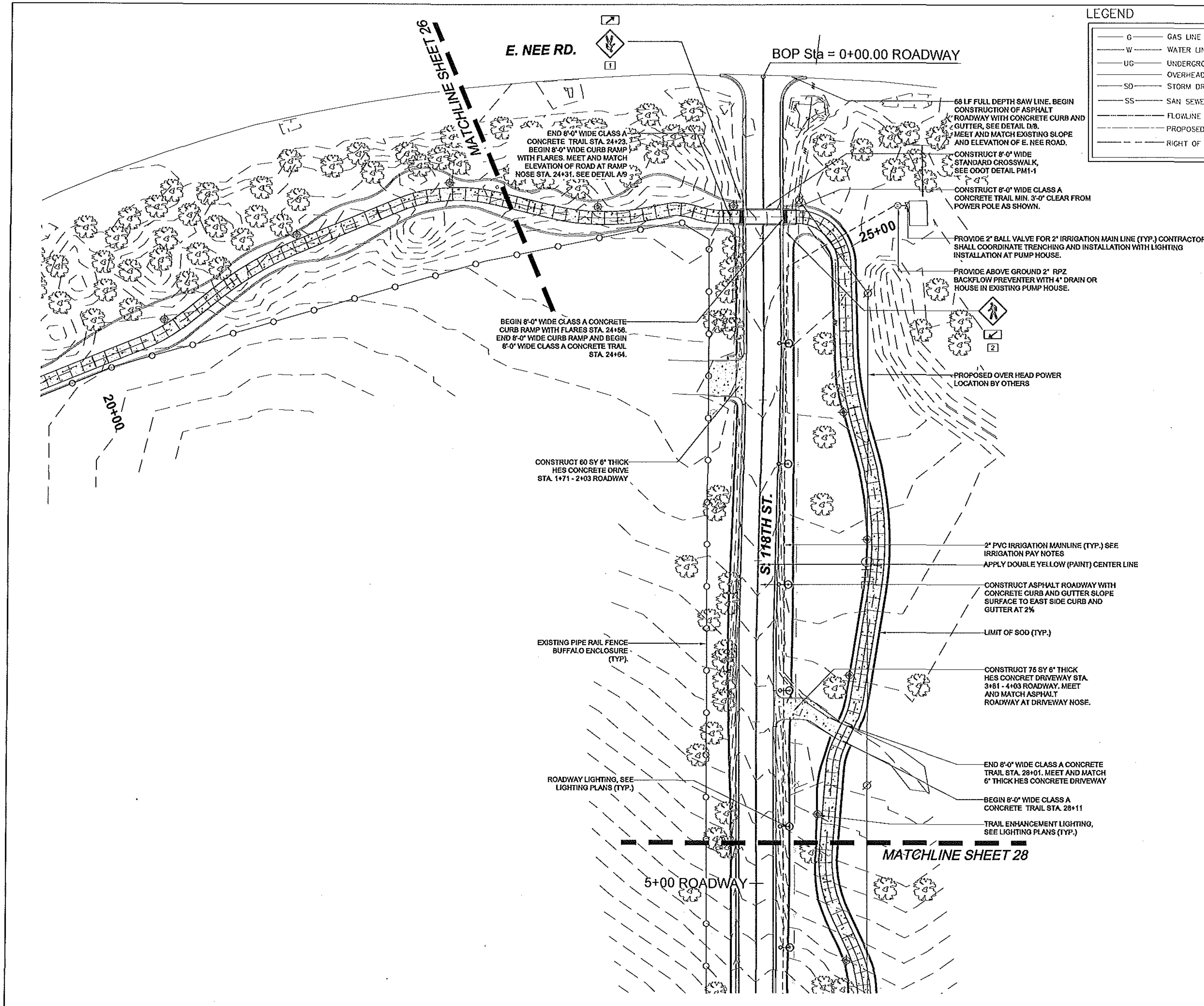

LEGEND

G	GAS LINE
W	WATER LINE
UG	UNDERGROUND GAS LINE
	OVERHEAD ELECTRIC LINE
SD	STORM DRAIN LINE
SS	SAN SEWER LINE
	FLOWLINE
	PROPOSED TRAIL CENTERLINE
	RIGHT OF WAY
TOE	TOE OF EX. SLOPE
TOP	TOP OF EX. SLOPE
	SOD / CUT FILL LIMIT
	EX. CHAIN LINK FENCE
	TELEPHONE LINE/ FIBER OPTIC
	HAY BALES
	EXISTING SIGN
	ENHANCEMENT LIGHT
	ROADWAY LIGHT

IRRIGATION LEGEND

	2" IRRIGATION MAINLINE
	1" QUICK COUPLER
B	2" BACKFLOW PREVENTER
	2" BALL VALVE

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Buffalo Trail and Tri State Gathering Area

Quapaw Tribe of Oklahoma (O-Gah-Pah)

Site Plan (4)

Revisions:

North

Design	JM	1/1/12
Drawn	JM	1/1/12
Checked	KF	1/1/12
Approved		

PROJECT NUMBER: 481.00

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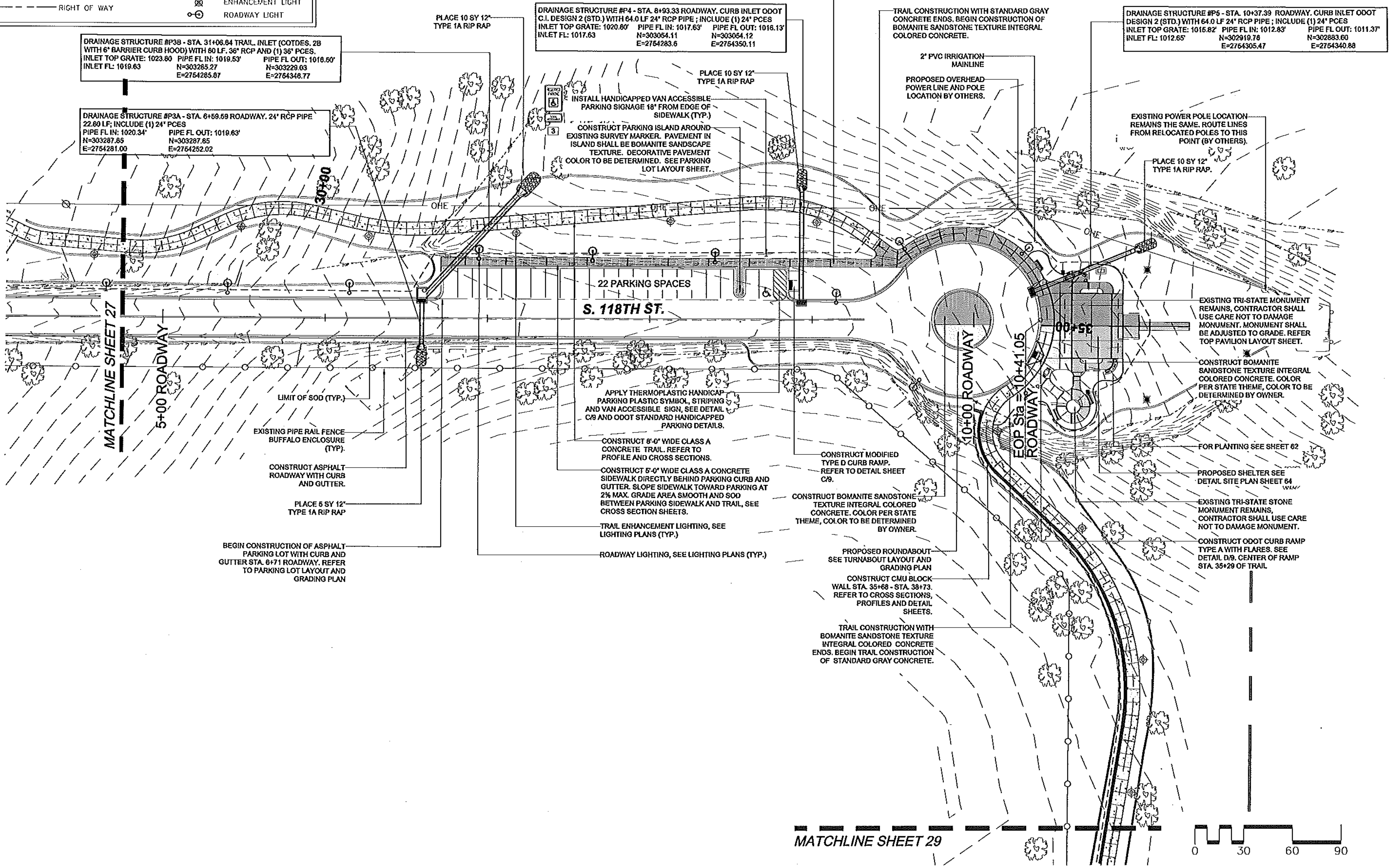
LEGEND

G	GAS LINE	TOE	TOE OF EX. SLOPE
W	WATER LINE	TOP	TOP OF EX. SLOPE
UG	UNDERGROUND GAS LINE		SOD / CUT FILL LIMIT
	OVERHEAD ELECTRIC LINE		EX. CHAIN LINK FENCE
SD	STORM DRAIN LINE		TELEPHONE LINE/ FIBER OPTIC
SS	SAN SEWER LINE		HAY BALES
	FLOWLINE		EXISTING SIGN
	PROPOSED TRAIL CENTERLINE		ENHANCEMENT LIGHT
	RIGHT OF WAY		ROADWAY LIGHT

IRRIGATION LEGEND

- 2" IRRIGATION MAINLINE
- 1" QUICK COUPLER
- (B) 2" BACKFLOW PREVENTER
- 2" BALL VALVE



DRAINAGE STRUCTURE #P3B - STA. 31+06.84 TRAIL. INLET (COTDES. 2B WITH 6" BARRIER CURB HOOD) WITH 60 LF. 36" RCP AND (1) 36" PCES. INLET TOP GRATE: 1023.80 PIPE FL IN: 1019.53' PIPE FL OUT: 1016.60' INLET FL: 1019.63 N=303265.27 N=303229.03 E=2754285.67 E=2754346.77
DRAINAGE STRUCTURE #P3A - STA. 6+59.59 ROADWAY. 24" RCP PIPE 22.60 LF; INCLUDE (1) 24" PCES PIPE FL IN: 1020.34' PIPE FL OUT: 1019.63' N=303287.65 N=303287.85 E=2754281.00 E=2754252.02
PLACE 10 SY 12" TYPE 1A RIP RAP
DRAINAGE STRUCTURE #P4 - STA. 8+93.33 ROADWAY. CURB INLET ODOT C.I. DESIGN 2 (STD.) WITH 64.0 LF 24" RCP PIPE ; INCLUDE (1) 24" PCES INLET TOP GRATE: 1020.60' PIPE FL IN: 1017.63' PIPE FL OUT: 1016.13' INLET FL: 1017.63 N=303054.11 N=303054.12 E=2754283.6 E=2754350.11
PLACE 10 SY 12" TYPE 1A RIP RAP
INSTALL HANDICAPPED VAN ACCESSIBLE PARKING SIGNAGE 18" FROM EDGE OF SIDEWALK (TYP.)
CONSTRUCT PARKING ISLAND AROUND EXISTING SURVEY MARKER. PAVEMENT IN ISLAND SHALL BE BOMANITE SANDSCAPE TEXTURE. DECORATIVE PAVEMENT COLOR TO BE DETERMINED. SEE PARKING LOT LAYOUT SHEET.
SIDEWALK PAVEMENT SHALL BE BOMANITE SANDSTONE TEXTURE INTEGRAL COLORED CONCRETE. COLOR TO BE DETERMINED.
TRAIL CONSTRUCTION WITH STANDARD GRAY CONCRETE ENDS. BEGIN CONSTRUCTION OF BOMANITE SANDSTONE TEXTURE INTEGRAL COLORED CONCRETE.
2" PVC IRRIGATION MAINLINE
PROPOSED OVERHEAD POWER LINE AND POLE LOCATION BY OTHERS.
DRAINAGE STRUCTURE #P5 - STA. 10+37.39 ROADWAY. CURB INLET ODOT DESIGN 2 (STD.) WITH 64.0 LF 24" RCP PIPE ; INCLUDE (1) 24" PCES INLET TOP GRATE: 1015.82' PIPE FL IN: 1012.83' PIPE FL OUT: 1011.37' INLET FL: 1012.65' N=302919.78 N=302883.60 E=2754305.47 E=2754340.88
EXISTING POWER POLE LOCATION REMAINS THE SAME. ROUTE LINES FROM RELOCATED POLES TO THIS POINT (BY OTHERS).
PLACE 10 SY 12" TYPE 1A RIP RAP.
30+00
OHE
22 PARKING SPACES
S. 118TH ST.
MATCHLINE SHEET 27
5+00 ROADWAY
10+00 ROADWAY
EOP Sta = 10+41.05 ROADWAY
35+00
EXISTING TRI-STATE MONUMENT REMAINS, CONTRACTOR SHALL USE CARE NOT TO DAMAGE MONUMENT. MONUMENT SHALL BE ADJUSTED TO GRADE. REFER TOP PAVILION LAYOUT SHEET.
CONSTRUCT BOMANITE SANDSTONE TEXTURE INTEGRAL COLORED CONCRETE. COLOR PER STATE THEME, COLOR TO BE DETERMINED BY OWNER.
FOR PLANTING SEE SHEET 62
PROPOSED SHELTER SEE DETAIL SITE PLAN SHEET 64
EXISTING TRI-STATE STONE MONUMENT REMAINS, CONTRACTOR SHALL USE CARE NOT TO DAMAGE MONUMENT.
CONSTRUCT ODOT CURB RAMP TYPE A WITH FLARES. SEE DETAIL D/9. CENTER OF RAMP STA. 35+29 OF TRAIL
LIMIT OF SOD (TYP.)
EXISTING PIPE RAIL FENCE BUFFALO ENCLOSURE (TYP).
CONSTRUCT ASPHALT ROADWAY WITH CURB AND GUTTER.
PLACE 5 SY 12" TYPE 1A RIP RAP
BEGIN CONSTRUCTION OF ASPHALT PARKING LOT WITH CURB AND GUTTER STA. 6+71 ROADWAY. REFER TO PARKING LOT LAYOUT AND GRADING PLAN
APPLY THERMOPLASTIC HANDICAP PARKING PLASTIC SYMBOL, STRIPING AND VAN ACCESSIBLE SIGN, SEE DETAIL C/9 AND ODOT STANDARD HANDICAPPED PARKING DETAILS.
CONSTRUCT 8'-0" WIDE CLASS A CONCRETE TRAIL. REFER TO PROFILE AND CROSS SECTIONS.
CONSTRUCT 5'-0" WIDE CLASS A CONCRETE SIDEWALK DIRECTLY BEHIND PARKING CURB AND GUTTER. SLOPE SIDEWALK TOWARD PARKING AT 2% MAX. GRADE AREA SMOOTH AND SOD BETWEEN PARKING SIDEWALK AND TRAIL, SEE CROSS SECTION SHEETS.
TRAIL ENHANCEMENT LIGHTING, SEE LIGHTING PLANS (TYP.)
ROADWAY LIGHTING, SEE LIGHTING PLANS (TYP.)
CONSTRUCT MODIFIED TYPE D CURB RAMP. REFER TO DETAIL SHEET C/9.
CONSTRUCT BOMANITE SANDSTONE TEXTURE INTEGRAL COLORED CONCRETE. COLOR PER STATE THEME, COLOR TO BE DETERMINED BY OWNER.
PROPOSED ROUNDABOUT SEE TURNABOUT LAYOUT AND GRADING PLAN
CONSTRUCT CMU BLOCK WALL STA. 35+68 - STA. 38+73. REFER TO CROSS SECTIONS, PROFILES AND DETAIL SHEETS.
TRAIL CONSTRUCTION WITH BOMANITE SANDSTONE TEXTURE INTEGRAL COLORED CONCRETE ENDS. BEGIN TRAIL CONSTRUCTION OF STANDARD GRAY CONCRETE.
MATCHLINE SHEET 29
0 30 60 90

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Seal: STATE OF OKLAHOMA ARCHITECT 1.17.12

Buffalo Trail and Tri State Gathering Area
Quapaw Tribe of Oklahoma (O-Gah-Pah)

Site Plan (5)

Revisions:

North

Design	JM	1/1/12
Drawn	JM	1/1/12
Checked	KF	1/1/12
Approved		

PROJECT NUMBER: 481.00

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Sheet: 28 of 72

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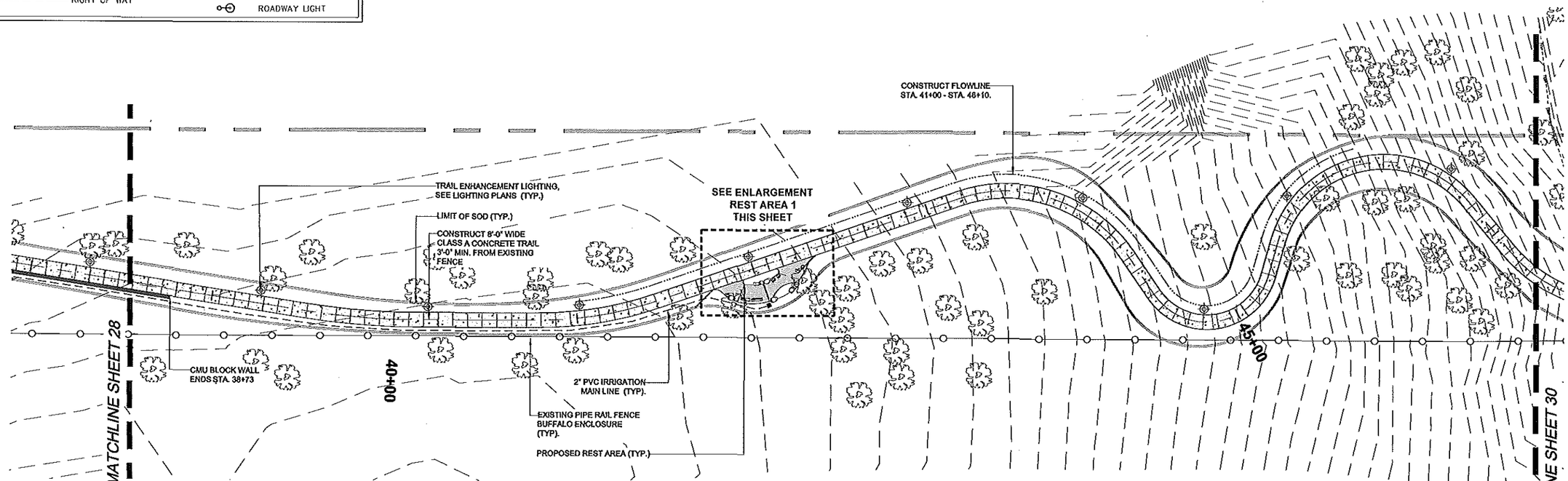
LEGEND

G — GAS LINE	TOE — TOE OF EX. SLOPE
W — WATER LINE	TOP — TOP OF EX. SLOPE
UG — UNDERGROUND GAS LINE	SOD / CUT FILL LIMIT
OVERHEAD ELECTRIC LINE	EX. CHAIN LINK FENCE
SD — STORM DRAIN LINE	TELEPHONE LINE/ FIBER OPTIC
SS — SAN SEWER LINE	HAY BALES
FLOWLINE	EXISTING SIGN
PROPOSED TRAIL CENTERLINE	ENHANCEMENT LIGHT
RIGHT OF WAY	ROADWAY LIGHT

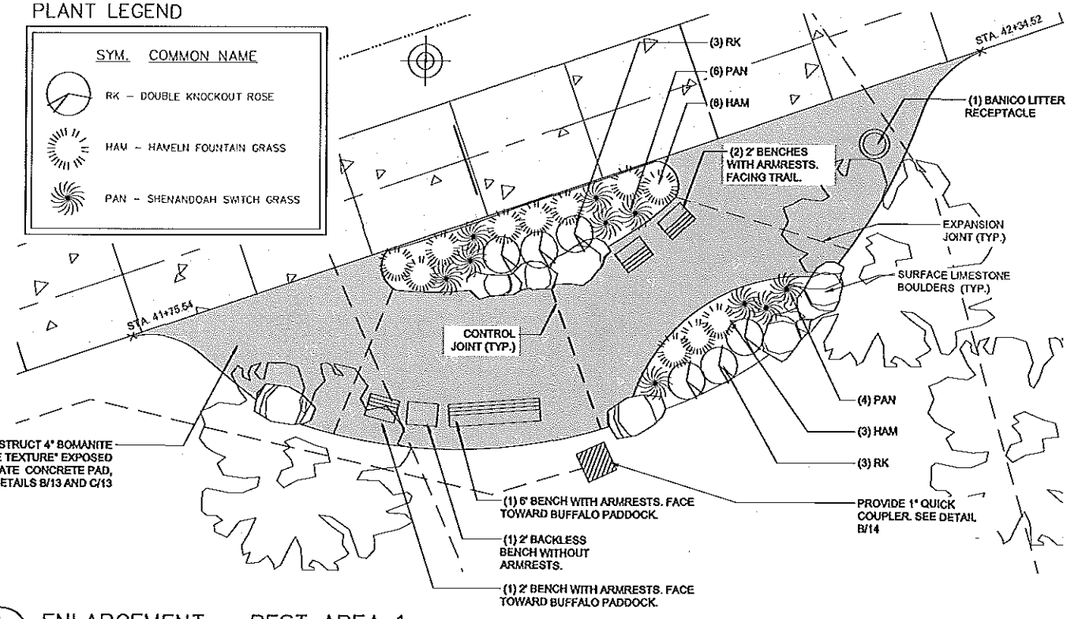
IRRIGATION LEGEND

2" IRRIGATION MAINLINE	
1" QUICK COUPLER	
(B) 2" BACKFLOW PREVENTER	
2" BALL VALVE	



PLANT LEGEND

SYM.	COMMON NAME
RK	DOUBLE KNOCKOUT ROSE
HAV	HAVELN FOUNTAIN GRASS
PAN	SHENANDOAH SWITCH GRASS



REST AREA PLANT LIST AND MATERIALS

QTY.	SYM.	SHRUB NAME	SIZE	Notes
9	RK	DOUBLE KNOCKOUT ROSE Rosa 'Radtko'	# 3	Full Pot
QTY.	SYM.	GRASSES NAME	SIZE	Notes
11	HAV	HAVELN FOUNTAIN GRASS Pennisetum alopecuroides 'Hameln'	# 1	Full Pot
17	PAN	SHENANDOAH SWITCH GRASS Panicum virgatum 'Shenandoah'	# 1	Full Pot

MATERIALS – BED PLANTING

1	CY	SHREDDED CYPRESS BARK MULCH (2" DEPTH OVER ENTIRE BED SURFACE)
2	CY	"BACK TO EARTH" COTTON SEED BURR COMPOST (3" DEPTH, WORKED INTO SOIL 8"-12")
9	LF	6" STEEL METAL EDGING, BLACK

NOTES:
1. FOR CONSTRUCTION OF REST AREAS DIGITAL LAYOUT POINTS WILL BE PROVIDED TO CONTRACTOR.
2. FOR FURNITURE ITEM INFORMATION REFER TO DETAIL SHEET 13.

A / 29 ENLARGEMENT – REST AREA 1
SCALE 1:5 (FOR 22"X34" SHEET)

0 30 60 90

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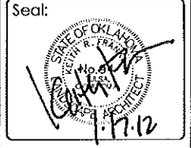

Buffalo Trail and Tri State Gathering Area

Quapaw Tribe of Oklahoma (O-Gah-Pah)

Site Plan (6)

Revisions:

North

Design	JM	1/1/12
Drawn	JM	1/1/12
Checked	KF	1/1/12
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Sheet: 29 of 72

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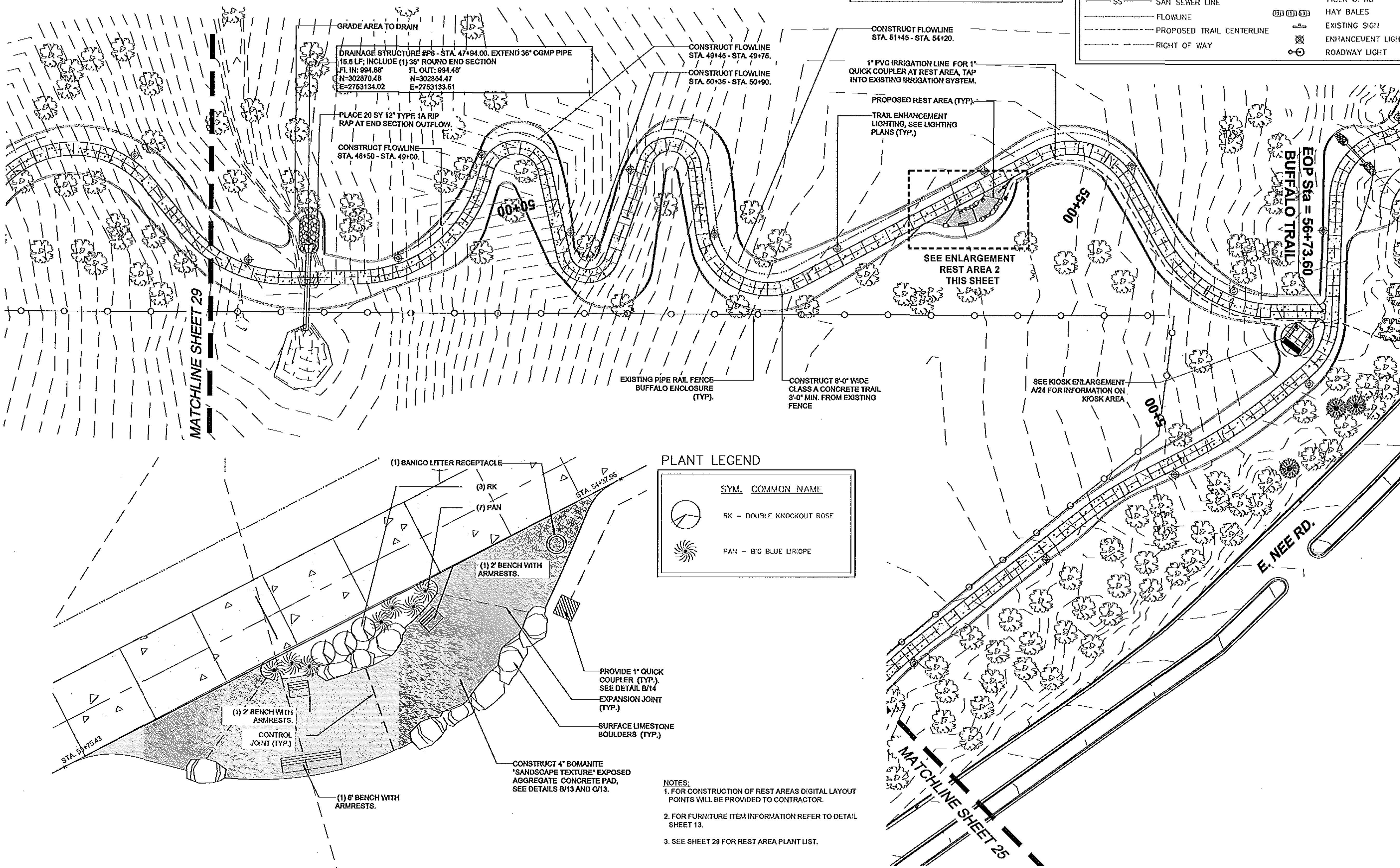
IRRIGATION LEGEND

Symbol	Description
- - - - -	1" IRRIGATION LINE
▪	1" QUICK COUPLER
⋈	1" BALL VALVE

LEGEND

Symbol	Description	Symbol	Description
—G—	GAS LINE	—TOE—	TOE OF EX. SLOPE
—W—	WATER LINE	—TOP—	TOP OF EX. SLOPE
—UG—	UNDERGROUND GAS LINE	....	SOD / CUT FILL LIMIT
———	OVERHEAD ELECTRIC LINE	—x—x—	EX. CHAIN LINK FENCE
—SD—	STORM DRAIN LINE		TELEPHONE LINE/ FIBER OPTIC
—SS—	SAN SEWER LINE		HAY BALES
....	FLOWLINE		EXISTING SIGN
—·—·—	PROPOSED TRAIL CENTERLINE		ENHANCEMENT LIGHT
— — —	RIGHT OF WAY		ROADWAY LIGHT



PLANT LEGEND

SYM.	COMMON NAME
◔	RK – DOUBLE KNOCKOUT ROSE
✲	PAN – BIG BLUE LIRIOPE

NOTES:
1. FOR CONSTRUCTION OF REST AREAS DIGITAL LAYOUT POINTS WILL BE PROVIDED TO CONTRACTOR.
2. FOR FURNITURE ITEM INFORMATION REFER TO DETAIL SHEET 13.
3. SEE SHEET 29 FOR REST AREA PLANT LIST.

A/30 ENLARGEMENT – REST AREA 2
SCALE 1:5 (FOR 22"X34" SHEET)

0 30 60 90

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Buffalo Trail and Tri State Gathering Area
Quapaw Tribe of Oklahoma (O-Gah-Pah)
Site Plan (7)

Revisions:

North

Design	JM	1/1/12
Drawn	JM	1/1/12
Checked	KF	1/1/12
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PROJECT NUMBER: 481.00

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LIGHT FIXTURE SCHEDULE

MARK	MANF. CAT. #	LAMP	VOLTAGE	LOCATION	MOUNTING	DESCRIPTION
A	INSIGHT LIGHTING MASQUE I SM 6" AND MEDLEY X24, 48,72 TBR	LED	120	PAVILION	SURFACE	MOUNT ON STANDOFFS TO BEAMS, AIM AS DIRECTED BY OWNER
B	INSIGHT LIGHTING MEDLEY X24 TBR	LED	120	SIGN KIOSK	SURFACE	MOUNT ON STANDOFFS TO BEAMS, AIM AS DIRECTED BY OWNER
C	HOLOPHANE LIGHTING H700-50M-120-FL-KM-HARJB-PL1-BK	50W MH	120	PAVILION MONUMENT	GROUND	BLACK GROUND MOUNTE FLOOD LIGHT AIM AS MONUMENT
D	LITHONIA LIGTHING MRP-LED1-49B350/40K-SR5-480	4000K 59.1W	480	TRAIL	POLE	POSTTOP LED FIXTURE ON 14FT POLE TYPE V DISTRIBUTION
E	LITHONIA LIGTHING MRP-LED1-49B350/40K-SR2-480	4000K 59.1W	480	ROAD	POLE	POSTTOP LED FIXTURE ON 20FT POLE TYPE II DISTRIBUTION
F	LITHONIA LIGTHING MRP-LED1-49B350/40K-SR4-480	4000K 59.1W	120	PARKING	POLE	POSTTOP LED FIXTURE ON 20FT POLE TYPE IV DISTRIBUTION

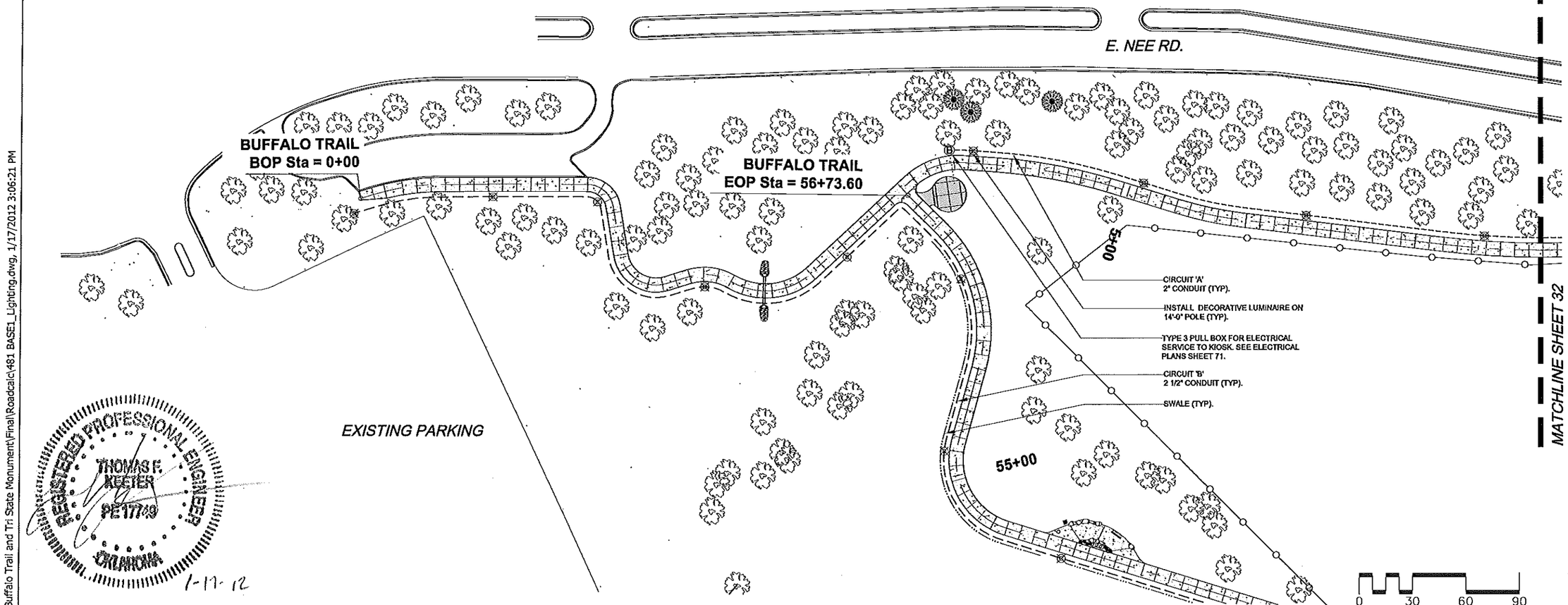
1. PROVIDE TRANSFORMER FOR FIXTURE AT SIGN KIOSK TO CONVERT 480V CIRCUIT TO REQUIRED VOLTAGE OF 120V.
2. PROVIDE 4" ROUND POLE AND BASE AS SPECIFIED FOR TYPES D, E, F.

LIGHTING LEGEND

- 2 1/2" LIGHTING CONDUIT
- 2" LIGHTING CONDUIT
- 3/4" LIGHTING CONDUIT
- PROPOSED LITHONIA MRP LED 1 SR2 LUMINAIRE ON 14' POLE
- PROPOSED LITHONIA MRP LED 1 SR5 LUMINAIRE ON 14' POLE
- PROPOSED LITHONIA MR1 LED 1 SR2 LUMINAIRE ON 25' POLE
- PROPOSED LITHONIA MR1 LED 1 SR4 LUMINAIRE ON 25' POLE
- CONCRETE PULL BOX SIZE III (SIZE II WHERE SHOWN ON PLANS)
- POWER DROP
- METER LOCATION

LEGEND

- G — GAS LINE
- W — WATER LINE
- UG — UNDERGROUND GAS LINE
- OHE — OVERHEAD ELECTRIC LINE
- SD — STORM DRAIN LINE
- SS — SAN SEWER LINE
- FLOWLINE
- PROPOSED TRAIL CENTERLINE
- RIGHT OF WAY
- TOE — TOE OF EX. SLOPE
- TOP — TOP OF EX. SLOPE
- SOD / CUT FILL LIMIT
- EX. CHAIN LINK FENCE
- TELEPHONE LINE/ FIBER OPTIC
- HAY BALES
- EXISTING SIGN



REGISTERED PROFESSIONAL ENGINEER
THOMAS F. KEETER
PE17749
OKLAHOMA
1-17-12

LANDPLAN CONSULTANTS INCORPORATED
1110 West 23rd
Tulsa, OK 74107
(918) 584-6464

Seal:

Buffalo Trail and Tri State Gathering Area

Quapaw Tribe of Oklahoma (O-Gah-Pah)

Lighting Plan 1

Revisions:

North

Design	JM	11/1/11
Drawn	JM	11/1/11
Checked	KF	11/1/11
Approved		

PROJECT NUMBER: 481.00

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Sheet: 31 of 72

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LIGHTING LEGEND

- 2 1/2" LIGHTING CONDUIT
- 2" LIGHTING CONDUIT
- 3/4" LIGHTING CONDUIT
- PROPOSED LITHONIA MRP LED 1 SR2 LUMINAIRE ON 14' POLE
- PROPOSED LITHONIA MRP LED 1 SR5 LUMINAIRE ON 14' POLE
- PROPOSED LITHONIA MR1 LED 1 SR2 LUMINAIRE ON 25' POLE
- PROPOSED LITHONIA MR1 LED 1 SR4 LUMINAIRE ON 25' POLE
- CONCRETE PULL BOX SIZE III (SIZE II WHERE SHOWN ON PLANS)
- POWER DROP
- METER LOCATION

LEGEND

- G — GAS LINE
- W — WATER LINE
- UG — UNDERGROUND GAS LINE
- OVERHEAD ELECTRIC LINE
- SD — STORM DRAIN LINE
- SS — SAN SEWER LINE
- FLOWLINE
- PROPOSED TRAIL CENTERLINE
- RIGHT OF WAY
- TOE — TOE OF EX. SLOPE
- TOP — TOP OF EX. SLOPE
- SOD / CUT FILL LIMIT
- EX. CHAIN LINK FENCE
- TELEPHONE LINE/ FIBER OPTIC
- HAY BALES
- EXISTING SIGN

CIRCUIT 'A' 2" CONDUIT (TYP)

INSTALL DECORATIVE LUMINAIRE ON 14'-0" POLE (TYP).

MATCHLINE SHEET 31

10+00

15+00

SWALE (TYP)

MATCHLINE SHEET 33

0 30 60. 90

LANDPLAN CONSULTANTS INCORPORATED

1110 West 23rd
Tulsa, OK 74107
(918) 584-6464

Seal:

Buffalo Trail and Tri State Gathering Area

Quapaw Tribe of Oklahoma (O-Gah-Pah)

Lighting Plan 2

Revisions:

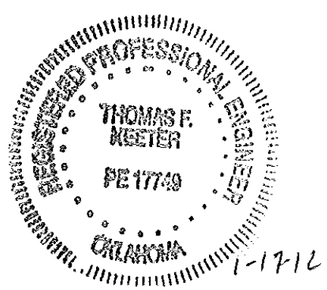
North

Design	JM	11/1/11
Drawn	JM	11/1/11
Checked	KF	11/1/11
Approved		

PROJECT NUMBER: 481.00

BEFORE YOU DIG 1-800-522-6543 CALL OKIE

Sheet: 32 of 72



1-17-12

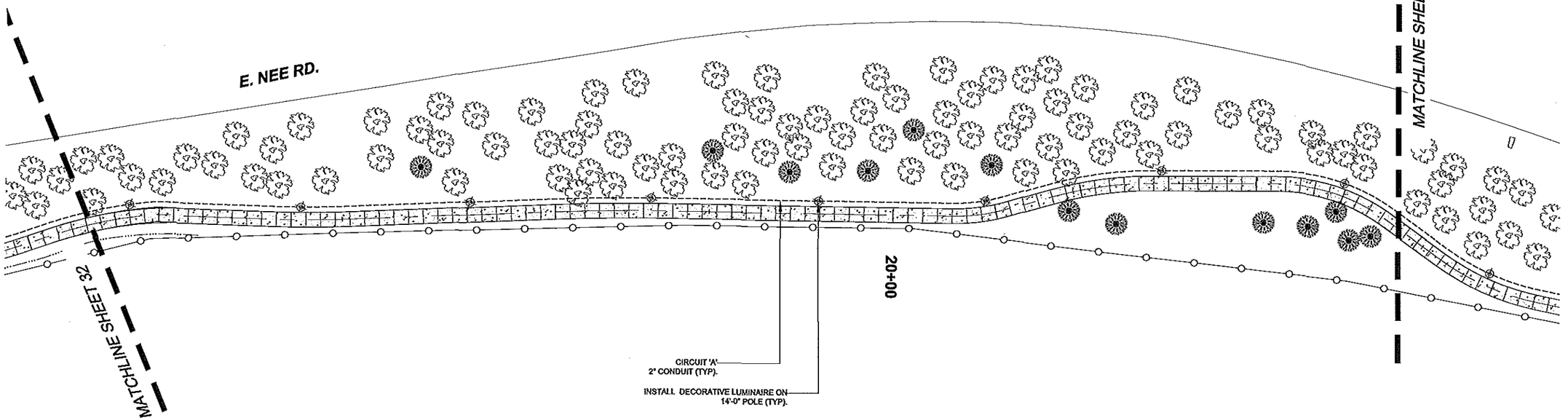
F:\481-Buffalo Trail and Tri State Monument\Final\Roadcalc\481 BASE1_Lighting.dwg, 1/17/2012 2:43:39 PM

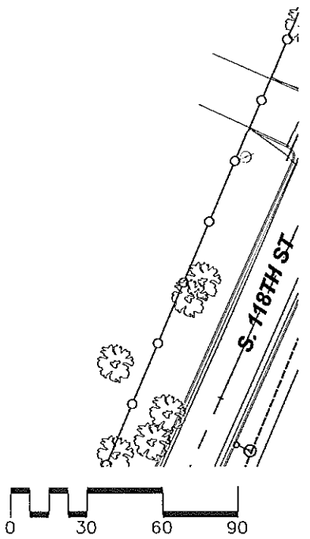
LIGHTING LEGEND

- 2 1/2" LIGHTING CONDUIT
- 2" LIGHTING CONDUIT
- 3/4" LIGHTING CONDUIT
- PROPOSED LITHONIA MRP LED 1 SR2 LUMINAIRE ON 14' POLE
- PROPOSED LITHONIA MRP LED 1 SR5 LUMINAIRE ON 14' POLE
- PROPOSED LITHONIA MRI LED 1 SR2 LUMINAIRE ON 25' POLE
- PROPOSED LITHONIA MRI LED 1 SR4 LUMINAIRE ON 25' POLE
- CONCRETE PULL BOX SIZE III (SIZE II WHERE SHOWN ON PLANS)
- POWER DROP
- METER LOCATION

LEGEND

- G — GAS LINE
- W — WATER LINE
- UG — UNDERGROUND GAS LINE
- OHE — OVERHEAD ELECTRIC LINE
- SD — STORM DRAIN LINE
- SS — SAN SEWER LINE
- FLOWLINE
- PROPOSED TRAIL CENTERLINE
- RIGHT OF WAY
- TOE — TOE OF EX. SLOPE
- TOP — TOP OF EX. SLOPE
- SOD / CUT FILL LIMIT
- EX. CHAIN LINK FENCE
- TELEPHONE LINE/ FIBER OPTIC
- HAY BALES
- EXISTING SIGN





REGISTERED PROFESSIONAL ENGINEER
THOMAS F. KEETER
PE 17769
OKLAHOMA
1-17-12

LANDPLAN CONSULTANTS INCORPORATED
1110 West 23rd
Tulsa, OK 74107
(918) 584-6464

Seal:

Buffalo Trail and Tri State Gathering Area

Quapaw Tribe of Oklahoma (O-Gah-Pah)

Lighting Plan 3

Revisions:

North

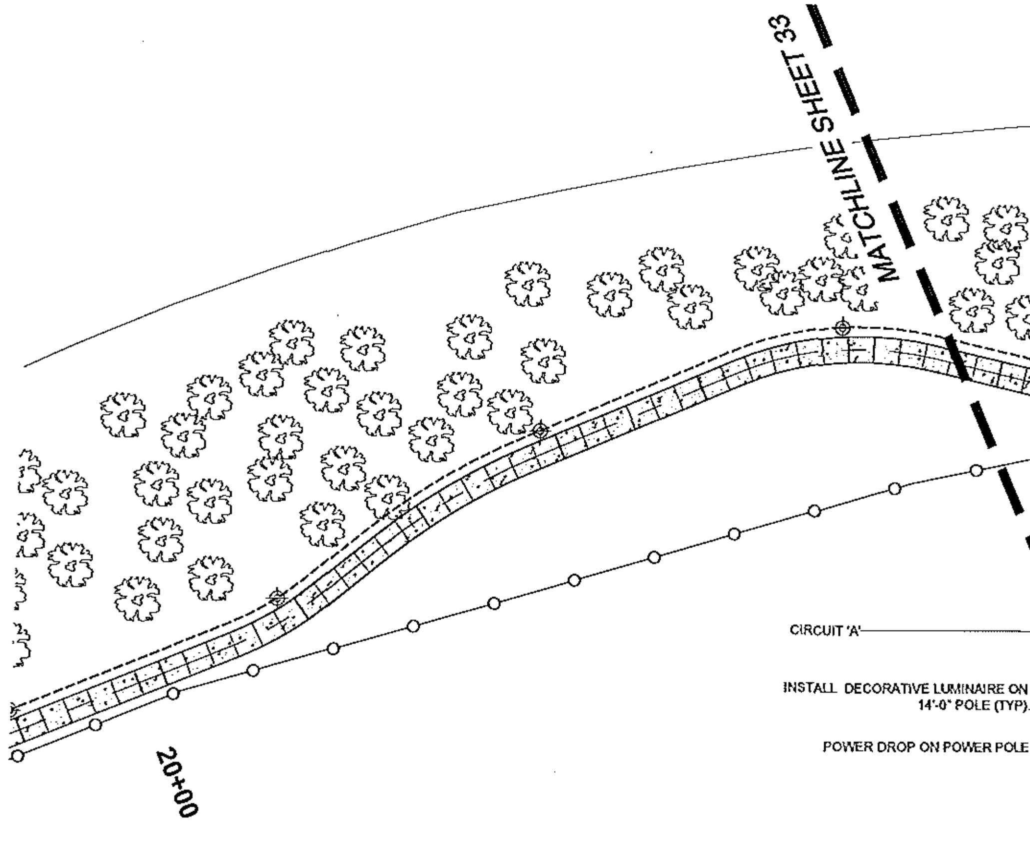
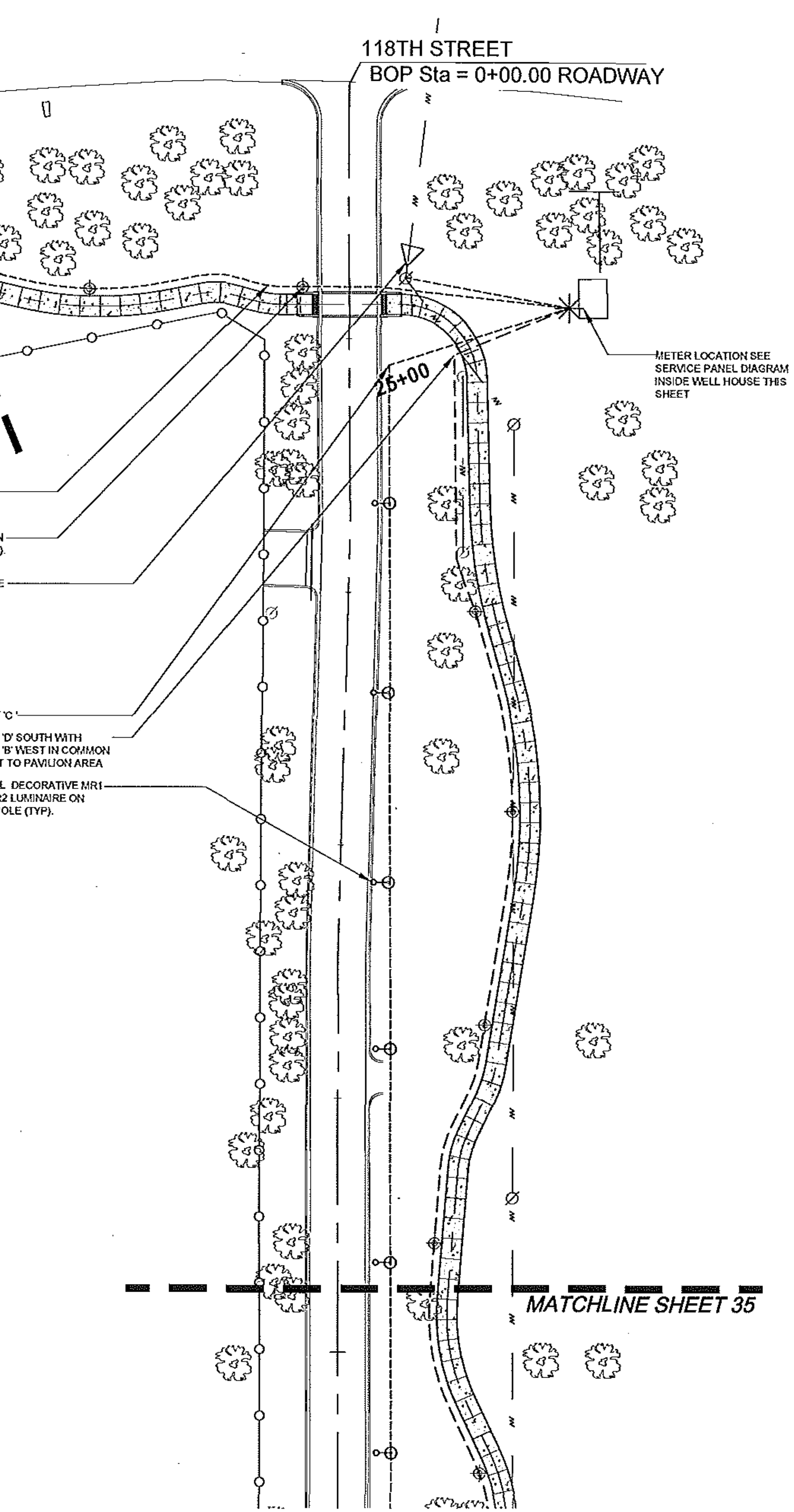
Design	JM	11/1/11
Drawn	JM	11/1/11
Checked	KF	11/1/11
Approved		

PROJECT NUMBER: 481.00

BEFORE YOU DIG 1-800-522-6543 CALL OKIE

Sheet: 33 of 72

F:\481-Buffalo Trail and Tri State Monument\Final\Roadcalc\481 BASE1_Lighting.dwg, 1/17/2012 2:44:04 PM

LEGEND

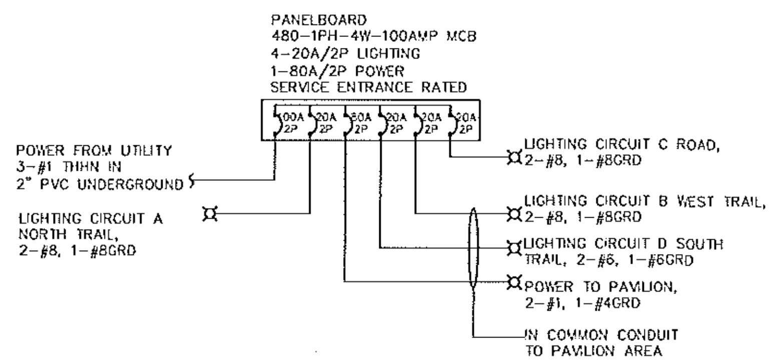
G — GAS LINE	TOE — TOE OF EX. SLOPE
W — WATER LINE	TOP — TOP OF EX. SLOPE
UG — UNDERGROUND GAS LINE	SOD / CUT FILL LIMIT
OVERHEAD ELECTRIC LINE	EX. CHAIN LINK FENCE
SD — STORM DRAIN LINE	TELEPHONE LINE/ FIBER OPTIC
SS — SAN SEWER LINE	HAY BALES
FLOWLINE	EXISTING SIGN
PROPOSED TRAIL CENTERLINE	
RIGHT OF WAY	

LIGHTING LEGEND

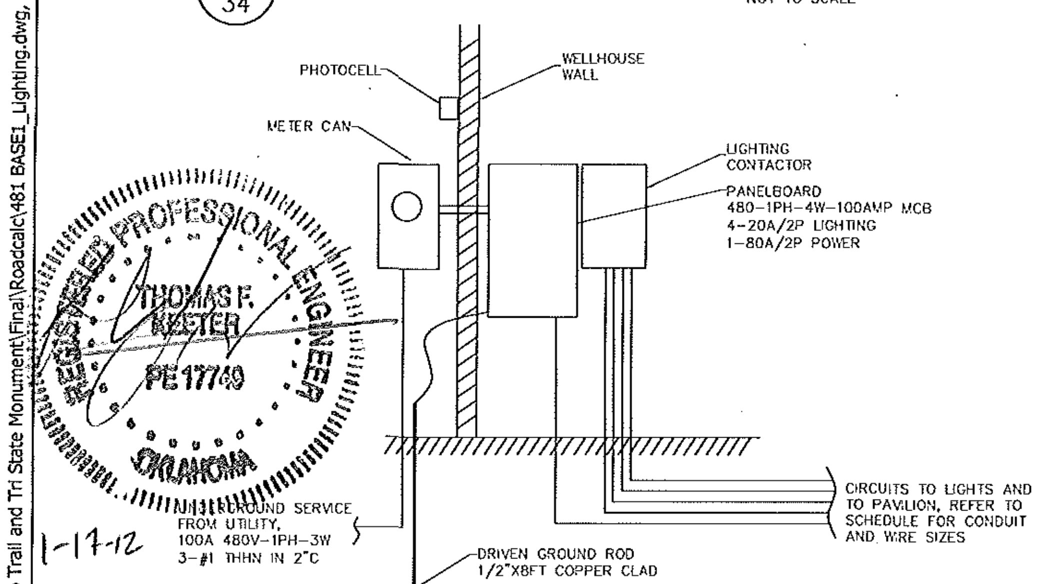
- 2 1/2" LIGHTING CONDUIT
- 2" LIGHTING CONDUIT
- 3/4" LIGHTING CONDUIT
- PROPOSED LITHONIA MRP LED 1 SR2 LUMINAIRE ON 14' POLE
- PROPOSED LITHONIA MRP LED 1 SR5 LUMINAIRE ON 14' POLE
- PROPOSED LITHONIA MR1 LED 1 SR2 LUMINAIRE ON 25' POLE
- PROPOSED LITHONIA MR1 LED 1 SR4 LUMINAIRE ON 25' POLE
- CONCRETE PULL BOX SIZE III (SIZE II WHERE SHOWN ON PLANS)
- POWER DROP
- METER LOCATION

ELECTRICAL GENERAL NOTES:

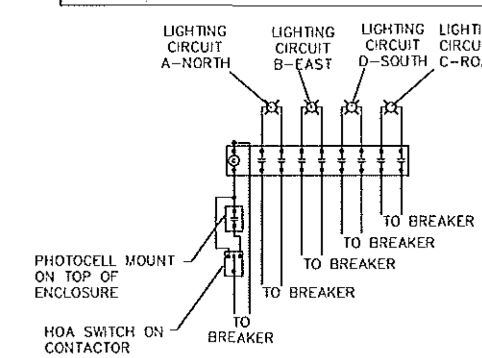
1. WIRING FROM PAVILION PANELBOARD TO LIGHTS, FLOODLIGHTS, AND RECEPTACLES SHALL BE #12AWG.
2. WIRING TO LIGHTS AND SERVICES SHALL BE AS INDICATED ON DETAILS.
3. MAKE WIRING JUNCTIONS TO BOTTOM OF POLES AT ACCESS POINTS. CONDUCTORS FROM JUNCTIONS UP TO LIGHTS SHALL BE #12 AWG.
4. MOUNT PHOTOCELLS TO FACE NORTH.
5. CONFIRM POWER RECEPTACLE CONFIGURATION WITH OWNER PRIOR TO PURCHASE.
6. ALL WORK SHALL COMPLY WITH NEC (NFPA 70, 2008).
7. ALL CONDUCTORS SHALL BE COPPER, THHN/THWN.
8. COORDINATE WITH UTILITY FOR SERVICE REQUIREMENTS AND PROVIDE AS REQUIRED..
9. TRAIL AND ROAD LIGHTS ARE 480V.
10. FLOODLIGHTS AND PAVILION LIGHTS ARE 120V. ONE PAVILION LIGHT IS USED AT SIGN KIOSK AND SHALL BE STEPPED DOWN FROM 480V TO 120 V WITH A TRANSFORMER.
11. ALL ELECTRICAL WORKS SHALL BE PERFORMED BY A LICENSED ELECTRICIAN.
12. ALL ABOVE GROUND ELECTRICAL CONDUIT SHALL BE GALVANIZED STEEL. ALL BELOW GROUND ELECTRICAL CONDUIT SHALL BE SCHEDULE 40 PVC.



A / 34 LIGHTING CIRCUITS DETAIL
NOT TO SCALE



B / 34 SERVICE PANEL DIAGRAM
NOT TO SCALE



C / 34 LIGHTING CONTROL DETAIL
NOT TO SCALE

0 30 60 90

LANDPLAN CONSULTANTS INCORPORATED
1110 West 23rd
Tulsa, OK 74107
(918) 584-6464

Seal:

Buffalo Trail and Tri State Gathering Area
Quapaw Tribe of Oklahoma (O-Gah-Pah)
Lighting Plan 4

Revisions:

North

Design	JM	11/1/11
Drawn	JM	11/1/11
Checked	KF	11/1/11
Approved		

PROJECT NUMBER: 481.00

BEFORE YOU DIG... CALL OKIE

Sheet: 34 of 72

F:\481-Buffalo Trail and Tri State Monument\Final\Roadcalc\481 BASE1_Lighting.dwg, 1/17/2012 2:44:32 PM

LIGHTING LEGEND

- 2 1/2" LIGHTING CONDUIT
- 2" LIGHTING CONDUIT
- 3/4" LIGHTING CONDUIT
- PROPOSED LITHONIA MRP LED 1 SR2 LUMINAIRE ON 14' POLE
- PROPOSED LITHONIA MRP LED 1 SR5 LUMINAIRE ON 14' POLE
- PROPOSED LITHONIA MR1 LED 1 SR2 LUMINAIRE ON 25' POLE
- PROPOSED LITHONIA MR1 LED 1 SR4 LUMINAIRE ON 25' POLE
- (B) CONCRETE PULL BOX SIZE III (SIZE II WHERE SHOWN ON PLANS)
- POWER DROP
- METER LOCATION

LEGEND

- G — GAS LINE
- W — WATER LINE
- UG — UNDERGROUND GAS LINE
- OVERHEAD ELECTRIC LINE
- SD — STORM DRAIN LINE
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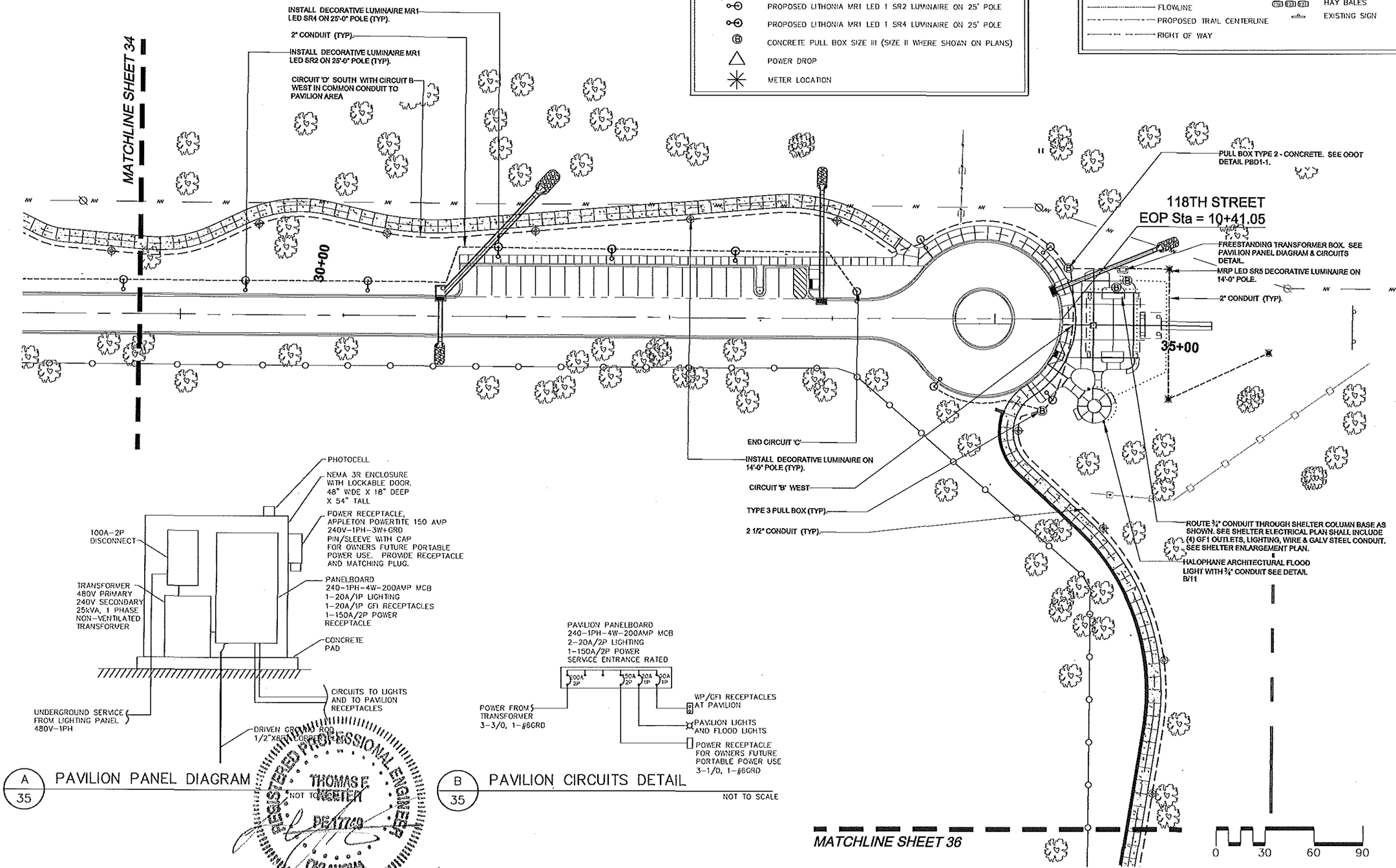
- EX. CHAIN LINK FENCE
- TELEPHONE LINE/ FIBER OPTIC
- HAY BALES
- EXISTING SIGN



A/35 PAVILION PANEL DIAGRAM — NOT TO SCALE

B/35 PAVILION CIRCUITS DETAIL — NOT TO SCALE

REGISTERED PROFESSIONAL ENGINEER — THOMAS E. KEITER — OKLAHOMA — 1-17-12

LANDPLAN CONSULTANTS INCORPORATED
1110 West 23rd
Tulsa, OK 74107
(918) 584-6464

Seal:

Buffalo Trail and Tri State Gathering Area

Quapaw Tribe of Oklahoma (O-Gah-Pah)

Lighting Plan 5

Revisions:

North

Design	JM	11/1/11
Drawn	JM	11/1/11
Checked	KF	11/1/11
Approved		

PROJECT NUMBER: 481.00

BEFORE YOU DIG 1-800-522-6543 CALL OKIE

Sheet: 35 of 72

LIGHTING LEGEND

- 2 1/2" LIGHTING CONDUIT
- 2" LIGHTING CONDUIT
- 3/4" LIGHTING CONDUIT
- PROPOSED LITHONIA MRP LED 1 SR2 LUMINAIRE ON 14' POLE
- PROPOSED LITHONIA MRP LED 1 SR5 LUMINAIRE ON 14' POLE
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- (B) CONCRETE PULL BOX SIZE III (SIZE II WHERE SHOWN ON PLANS)
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- SOD / CUT FILL LIMIT
- EX. CHAIN LINK FENCE
- TELEPHONE LINE/ FIBER OPTIC
- HAY BALES
- EXISTING SIGN

40+00

45+00

MATCHLINE SHEET 35

MATCHLINE SHEET37

SWALE (TYP.).

CIRCUIT 'B' 2 1/2" CONDUIT (TYP.).

INSTALL DECORATIVE LUMINAIRE ON 14' POLE (TYP.).

REGISTERED PROFESSIONAL ENGINEER
THOMAS F. KEETER
PE 17749
OKLAHOMA
1-17-12

0 30 60 90

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LANDPLAN CONSULTANTS INCORPORATED
1110 West 23rd
Tulsa, OK 74107
(918) 584-6464

Seal:

Buffalo Trail and Tri State Gathering Area

Quapaw Tribe of Oklahoma (O-Gah-Pah)

Lighting Plan 6

Revisions:

North

Design	JM	11/1/11
Drawn	JM	11/1/11
Checked	KF	11/1/11
Approved		

PROJECT NUMBER: 481.00

BEFORE YOU DIG ... 1-800-522-6543 CALL OKIE

Sheet: 36 of 72

LIGHTING LEGEND

- 2 1/2" LIGHTING CONDUIT
- 2" LIGHTING CONDUIT
- 3/4" LIGHTING CONDUIT
- PROPOSED LITHONIA MRP LED 1 SR2 LUMINAIRE ON 14' POLE
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- PROPOSED LITHONIA MR1 LED 1 SR4 LUMINAIRE ON 25' POLE
- CONCRETE PULL BOX SIZE III (SIZE II WHERE SHOWN ON PLANS)
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- METER LOCATION

LEGEND

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- TOE — TOE OF EX. SLOPE
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- SOD / CUT FILL LIMIT
- EX. CHAIN LINK FENCE
- TELEPHONE LINE/ FIBER OPTIC
- HAY BALES
- EXISTING SIGN

50+00

55+00

EOP Sta = 56+73.60

54+00

KIOSK WILL INCLUDE LIGHTING. SEE KIOSK ELECTRICAL PLANS

CIRCUIT 'B' 2 1/2" CONDUIT (TYP).

INSTALL DECORATIVE LUMINAIRE ON 14'-0" POLE (TYP).

MATCHLINE SHEET 36

MATCHLINE SHEET 31

0 30 60 90

REGISTERED PROFESSIONAL ENGINEER
THOMAS F. KEETER
PE 17749
OKLAHOMA
1-17-12

F:\481-Buffalo Trail and Tri State Monument\Final\Roadcalc\481 BASE1_Lighting.dwg, 1/17/2012 2:45:49 PM

LANDPLAN CONSULTANTS INCORPORATED
1110 West 23rd
Tulsa, OK 74107
(918) 584-6464

Seal:

Buffalo Trail and Tri State Gathering Area

Quapaw Tribe of Oklahoma (O-Gah-Pah)

Lighting Plan 7

Revisions:

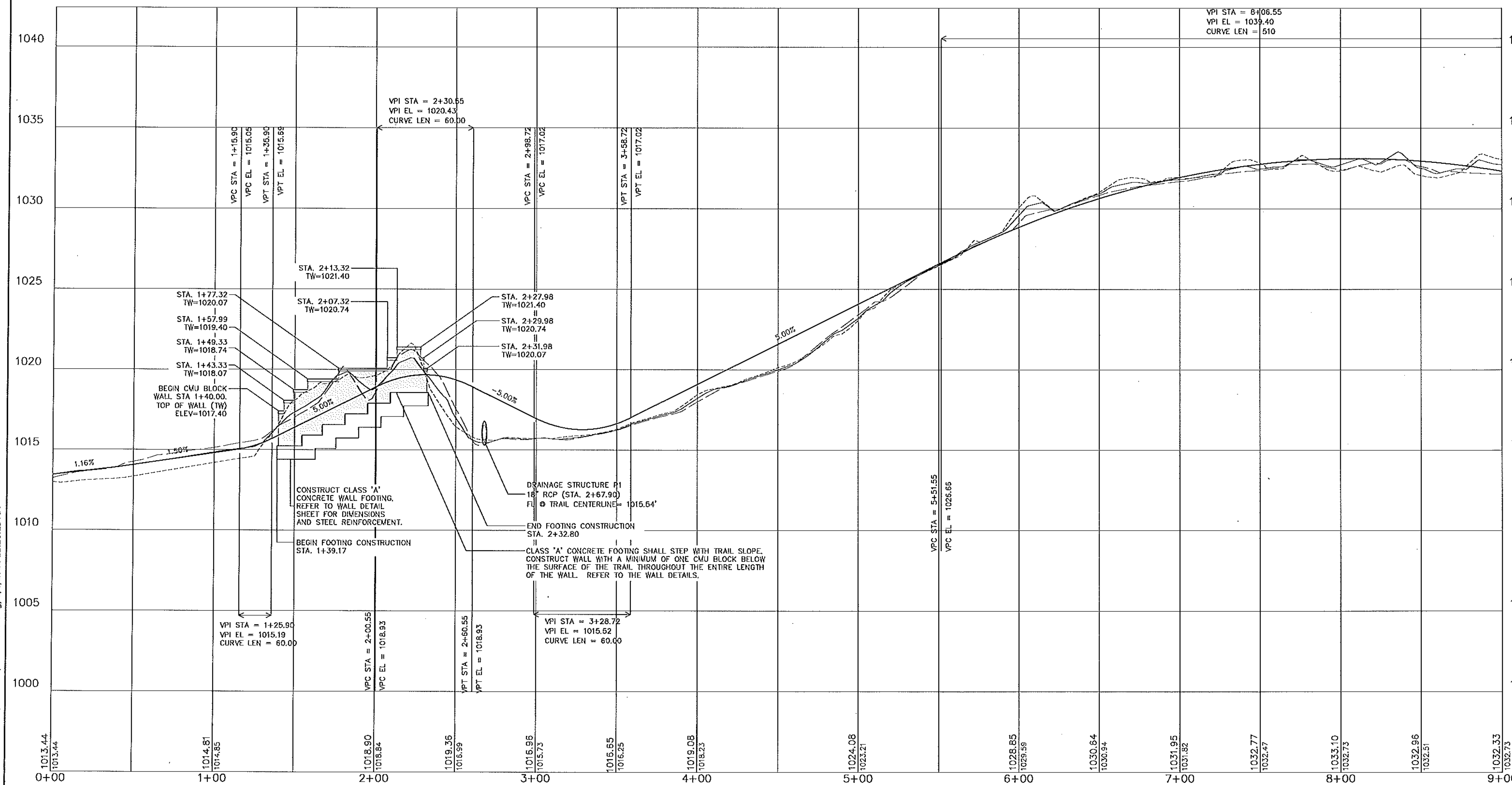
North

Design	JM	11/1/11
Drawn	JM	11/1/11
Checked	KF	11/1/11
Approved		

PROJECT NUMBER: 481.00

BEFORE YOU DIG — 1.800.522.4543 CALL OKIE

Sheet: 37 of 72



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PROFILE LEGEND

- - - - - - -	7' OFFSET LEFT
— — — — —	7' OFFSET RIGHT
————	EXISTING PROFILE
————	PROPOSED PROFILE

0 30 60 90

BEFORE YOU DIG CALL OKIE

1.17.12

BUFFALO TRAIL AND TRI-STATE GATHERING AREA

LANDPLAN CONSULTANTS INCORPORATED
1110 W. 23RD ST. Tulsa, OK 74107 (918) 584-6454

Design	JAM	1.12
Drawn	JAM	1.12
Checked	KRF	1.12
Approved		

PROJECT NUMBER 481.00

BUFFALO TRAIL
PROFILE SHEET (1)

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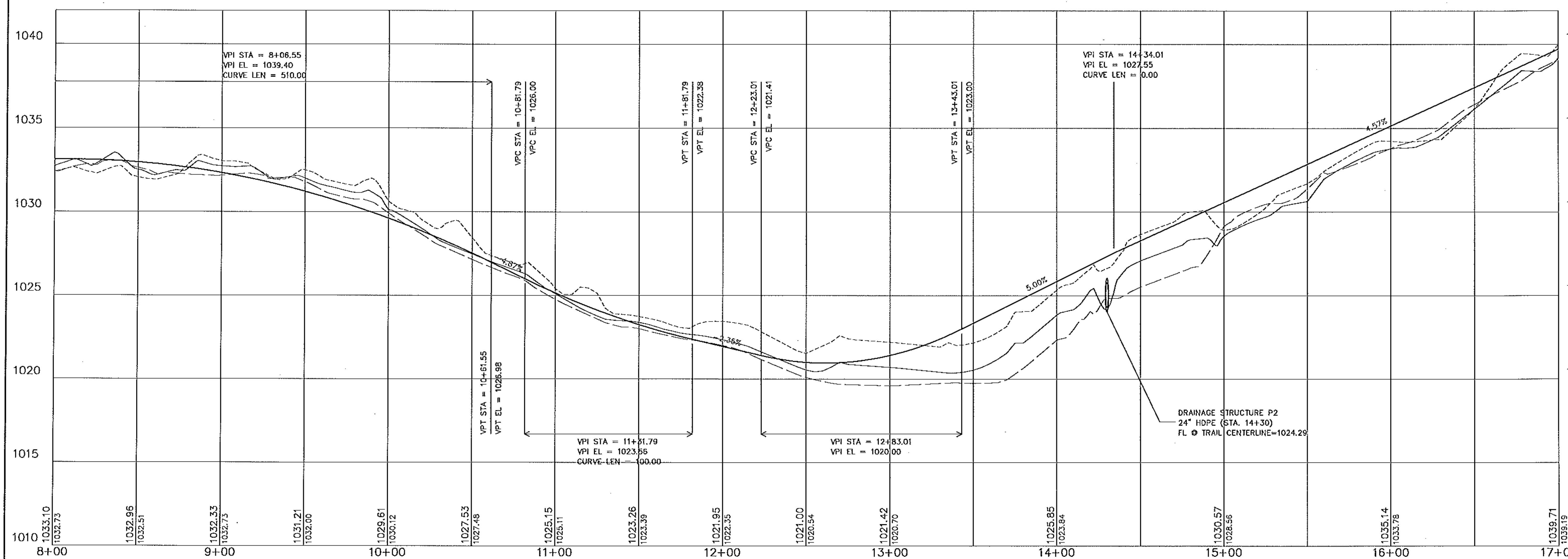


PROFILE LEGEND

- - - - - -	7' OFFSET LEFT
— — — —	7' OFFSET RIGHT
————	EXISTING PROFILE
————	PROPOSED PROFILE

0 30 60 90

BEFORE YOU DIG CALL OKIE

STATE OF OKLAHOMA — LANDSCAPE ARCHITECT

1.17.12

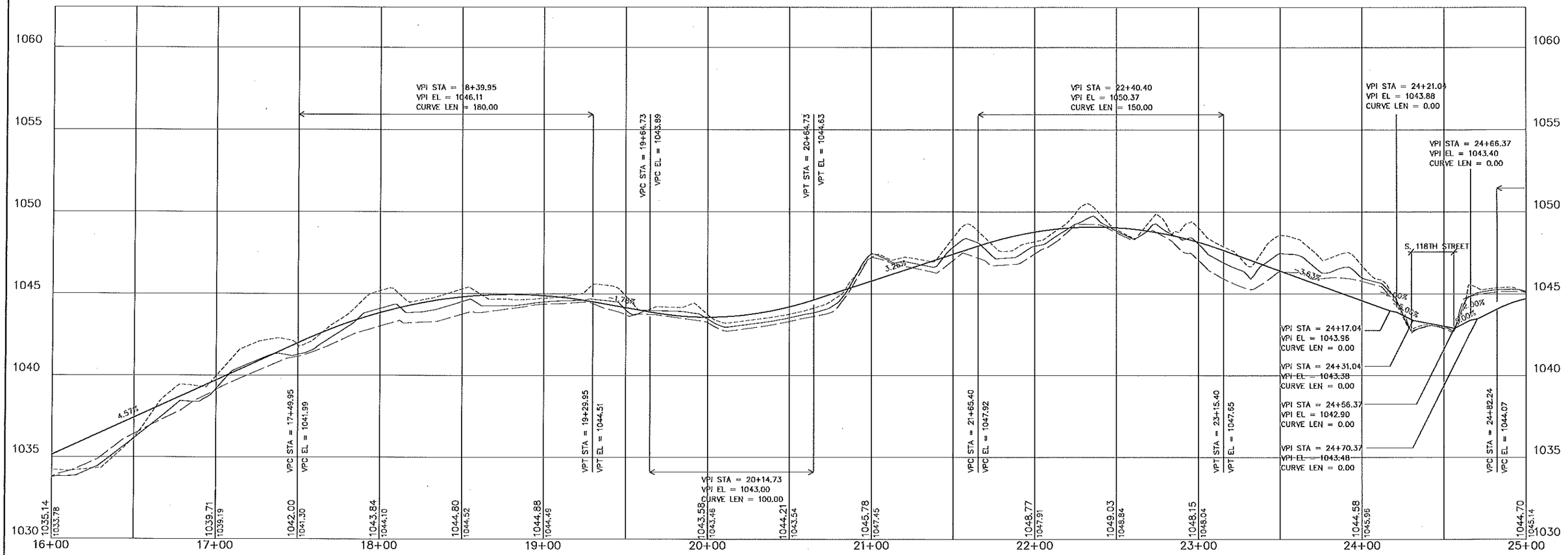
BUFFALO TRAIL AND TRI-STATE GATHERING AREA

LANDPLAN CONSULTANTS INCORPORATED
1810 W. 33RD ST. Tulsa, OK 74107 (918) 584-6161

Design	JAM	1.12
Drawn	JAM	1.12
Checked	KRF	1.12
Approved		

PROJECT NUMBER 481.00

BUFFALO TRAIL
PROFILE SHEET (2)



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PROFILE LEGEND

- 7' OFFSET LEFT
- 7' OFFSET RIGHT
- EXISTING PROFILE
- PROPOSED PROFILE

0 30 60 90

BEFORE YOU DIG CALL OKIE

STATE OF OKLAHOMA KERRY R. FRANKLIN LANDSCAPE ARCHITECT 1-17-12

BUFFALO TRAIL AND TRI-STATE GATHERING AREA

Design	JAM	1.12
Drawn	JAM	1.12
Checked	KRF	1.12
Approved		

PROJECT NUMBER 481.00

LANDPLAN CONSULTANTS INCORPORATED
1110 W. 23RD ST.
Tulsa, OK 74107
(918) 582-6454

BUFFALO TRAIL PROFILE SHEET (3)

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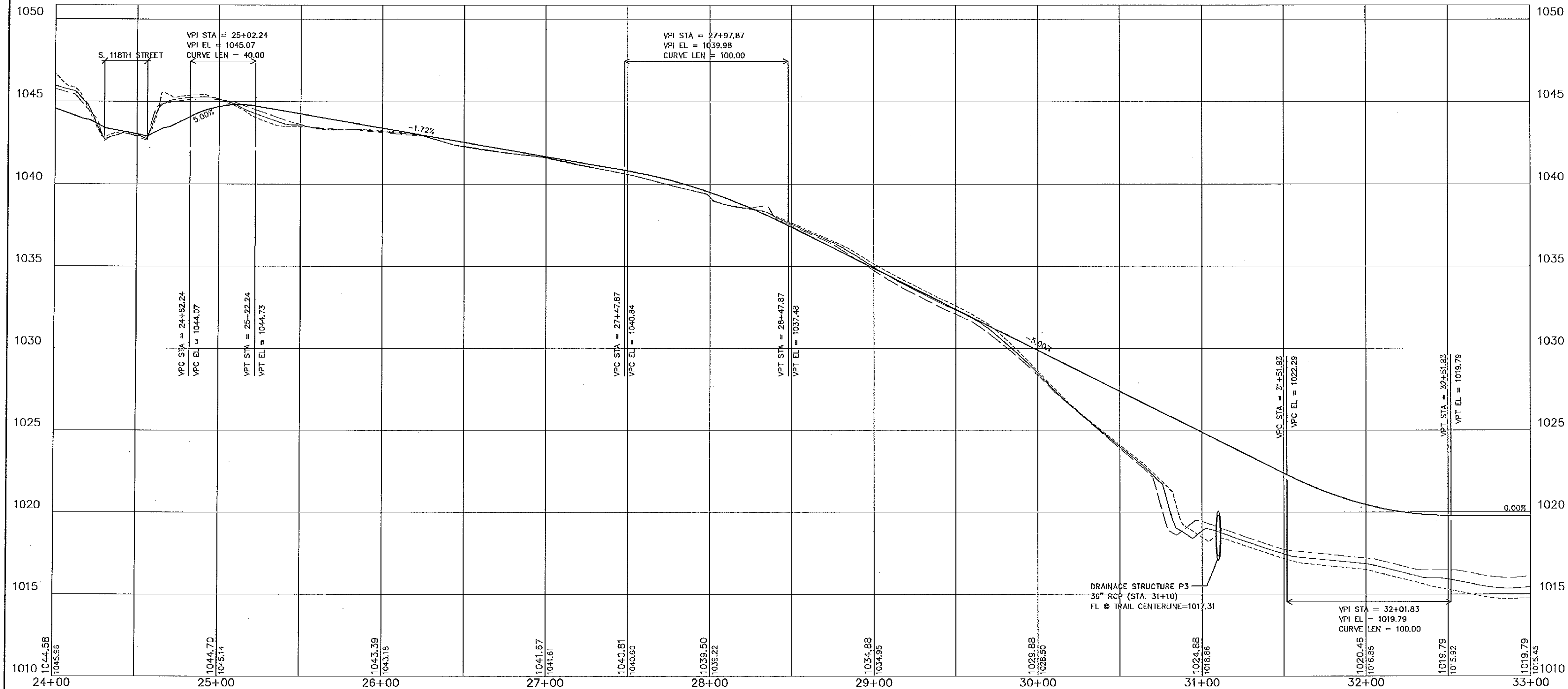


PROFILE LEGEND

- 7' OFFSET LEFT
- 7' OFFSET RIGHT
- EXISTING PROFILE
- PROPOSED PROFILE

0 30 60 90

BEFORE YOU DIG CALL OKIE

1.17.12

BUFFALO TRAIL AND TRI-STATE GATHERING AREA

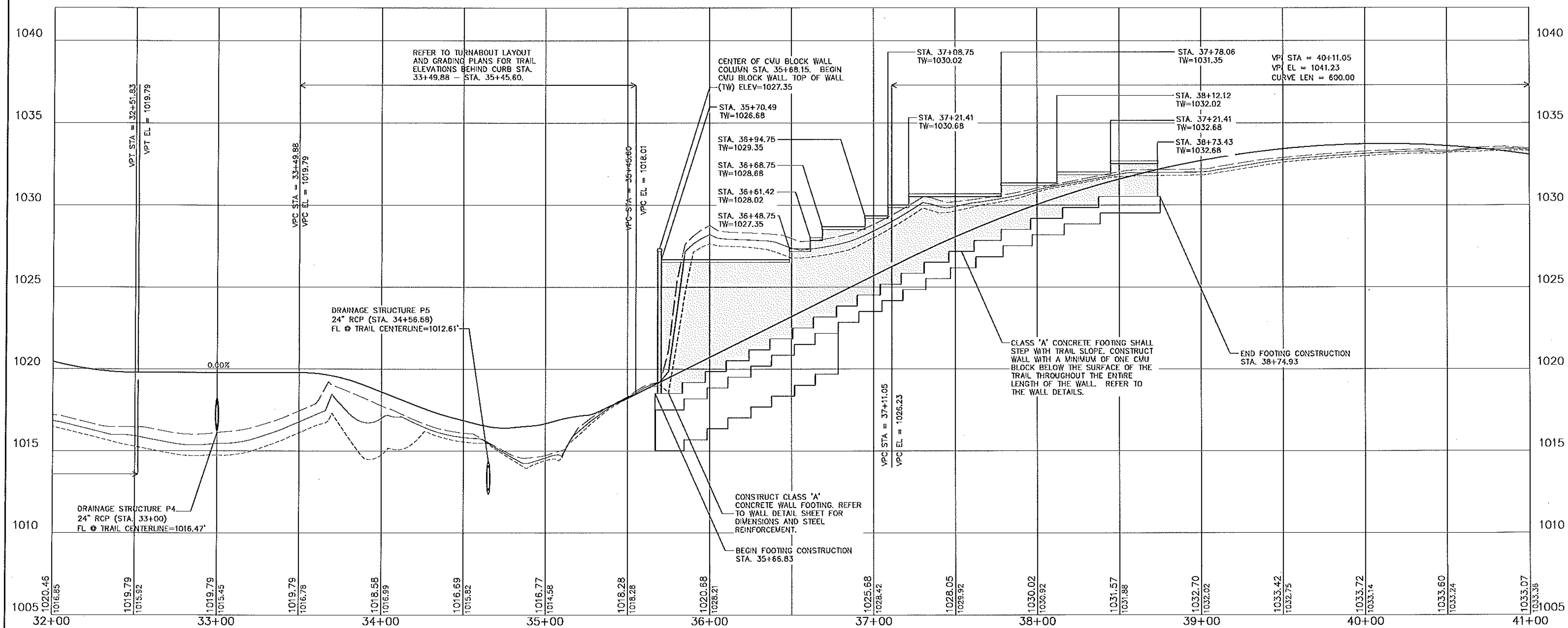
LANDPLAN CONSULTANTS INCORPORATED
1110 W. 23RD ST. Tulsa, OK 74107 (918) 604-6454

Design	JAM	1.12
Drawn	JAM	1.12
Checked	KRF	1.12
Approved		

PROJECT NUMBER 481.00

BUFFALO TRAIL
PROFILE SHEET (4)

Sheet 41 of 72



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PROFILE LEGEND

- - - - - -	7' OFFSET LEFT
— — — —	7' OFFSET RIGHT
————	EXISTING PROFILE
————	PROPOSED PROFILE

0 30 60 90

BEFORE YOU DIG CALL OKIE

1.17.12

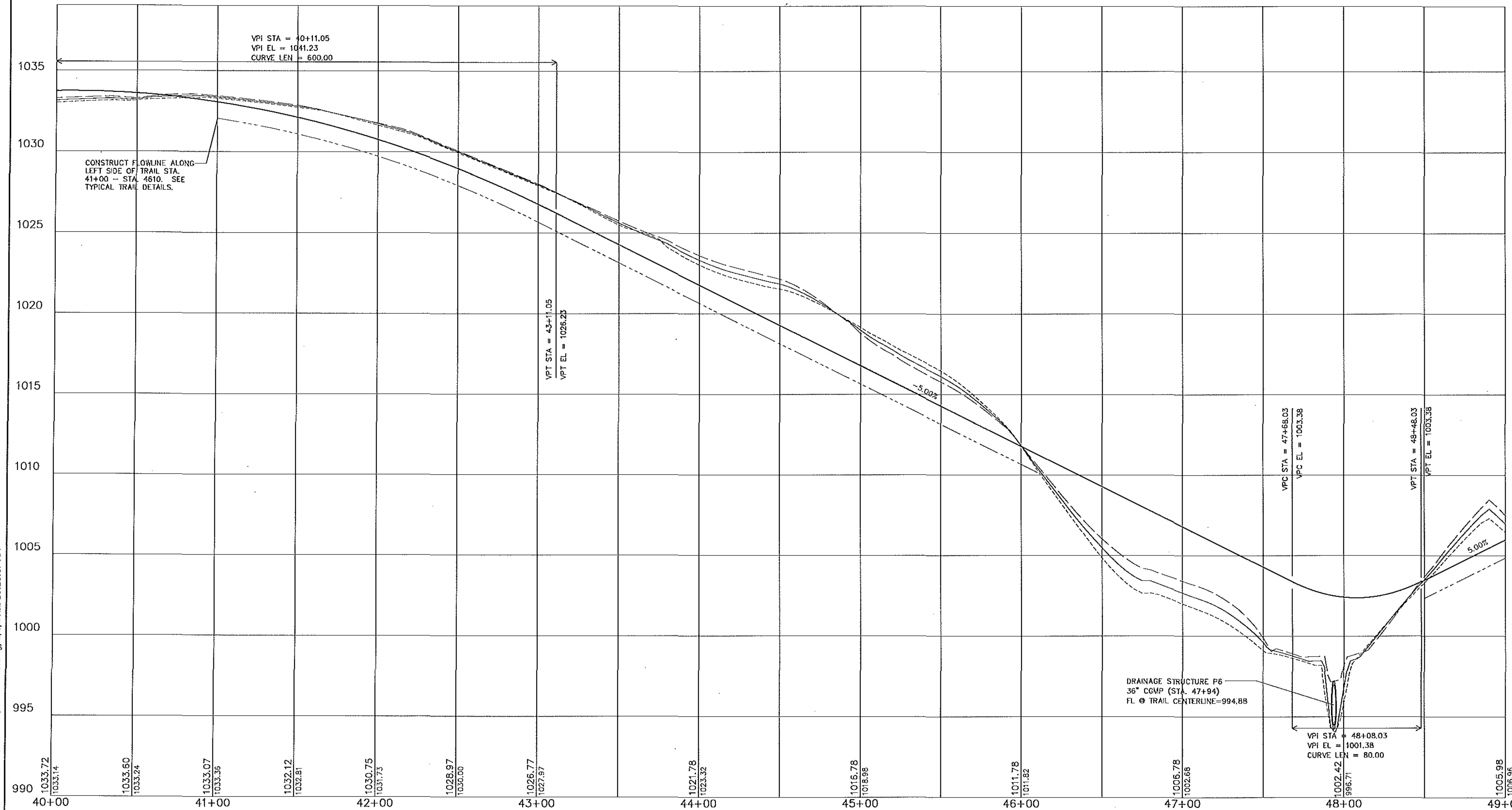
BUFFALO TRAIL AND TRI-STATE GATHERING AREA

LANDPLAN CONSULTANTS INCORPORATED

Design	JAM	1.12
Drawn	JAM	1.12
Checked	KRF	1.12
Approved		

PROJECT NUMBER 481.00

BUFFALO TRAIL PROFILE SHEET (5)



PROFILE LEGEND
7' OFFSET LEFT
7' OFFSET RIGHT
EXISTING PROFILE
PROPOSED PROFILE

0 30 60 90

BEFORE YOU DIG CALL OKIE

1.17.12

BUFFALO TRAIL AND TRI-STATE GATHERING AREA

LANDPLAN CONSULTANTS INCORPORATED

Design	JAM	1.12
Drawn	JAM	1.12
Checked	KRF	1.12
Approved		

PROJECT NUMBER 481.00

BUFFALO TRAIL PROFILE SHEET (6)

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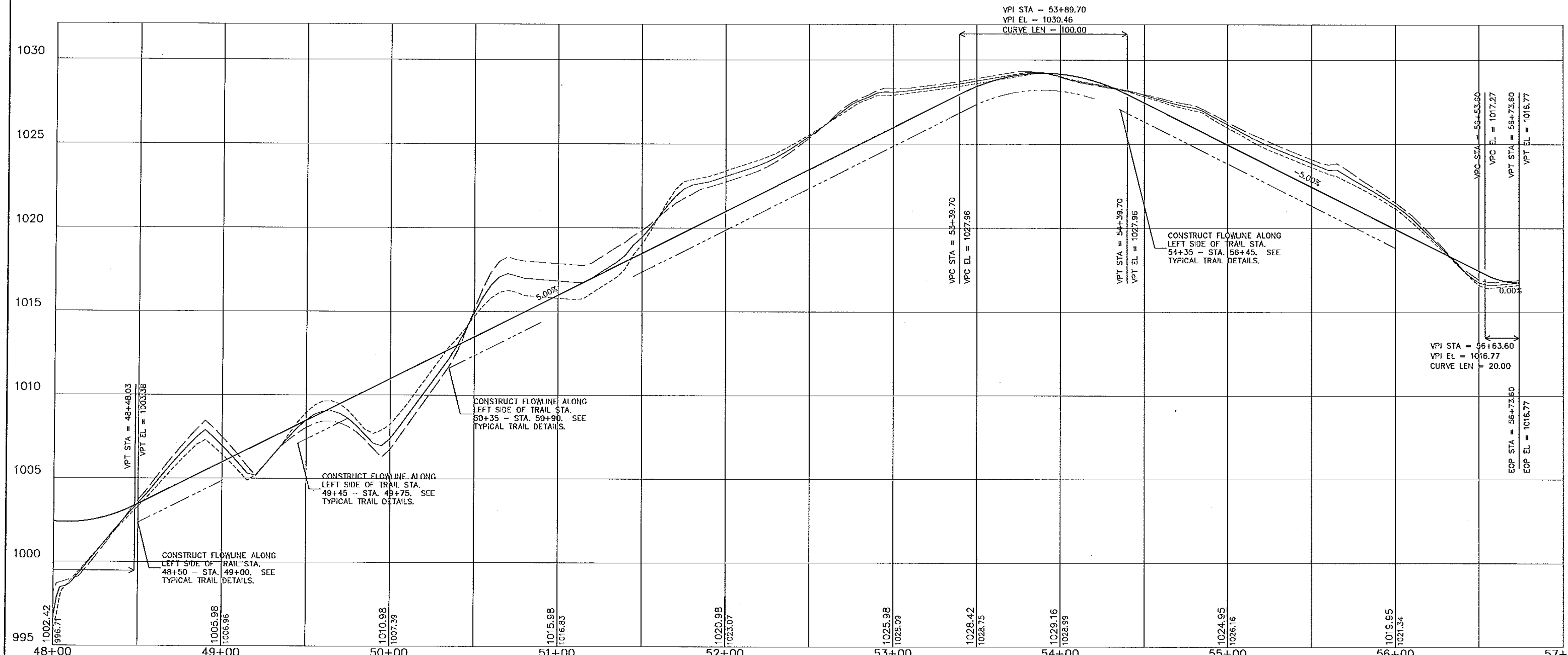

PROFILE LEGEND

- - - - -	7' OFFSET LEFT
— — —	7' OFFSET RIGHT
———	EXISTING PROFILE
———	PROPOSED PROFILE

0 30 60 90

BEFORE YOU DIG CALL OKIE

1.17.12

BUFFALO TRAIL AND TRI-STATE GATHERING AREA

LANDPLAN CONSULTANTS INCORPORATED
1110 W. 23RD ST. Tulsa, OK 74107 (918) 531-6484

Design	JAM	1.12
Drawn	JAM	1.12
Checked	KRF	1.12
Approved		

PROJECT NUMBER 481.00

BUFFALO TRAIL PROFILE SHEET (7)

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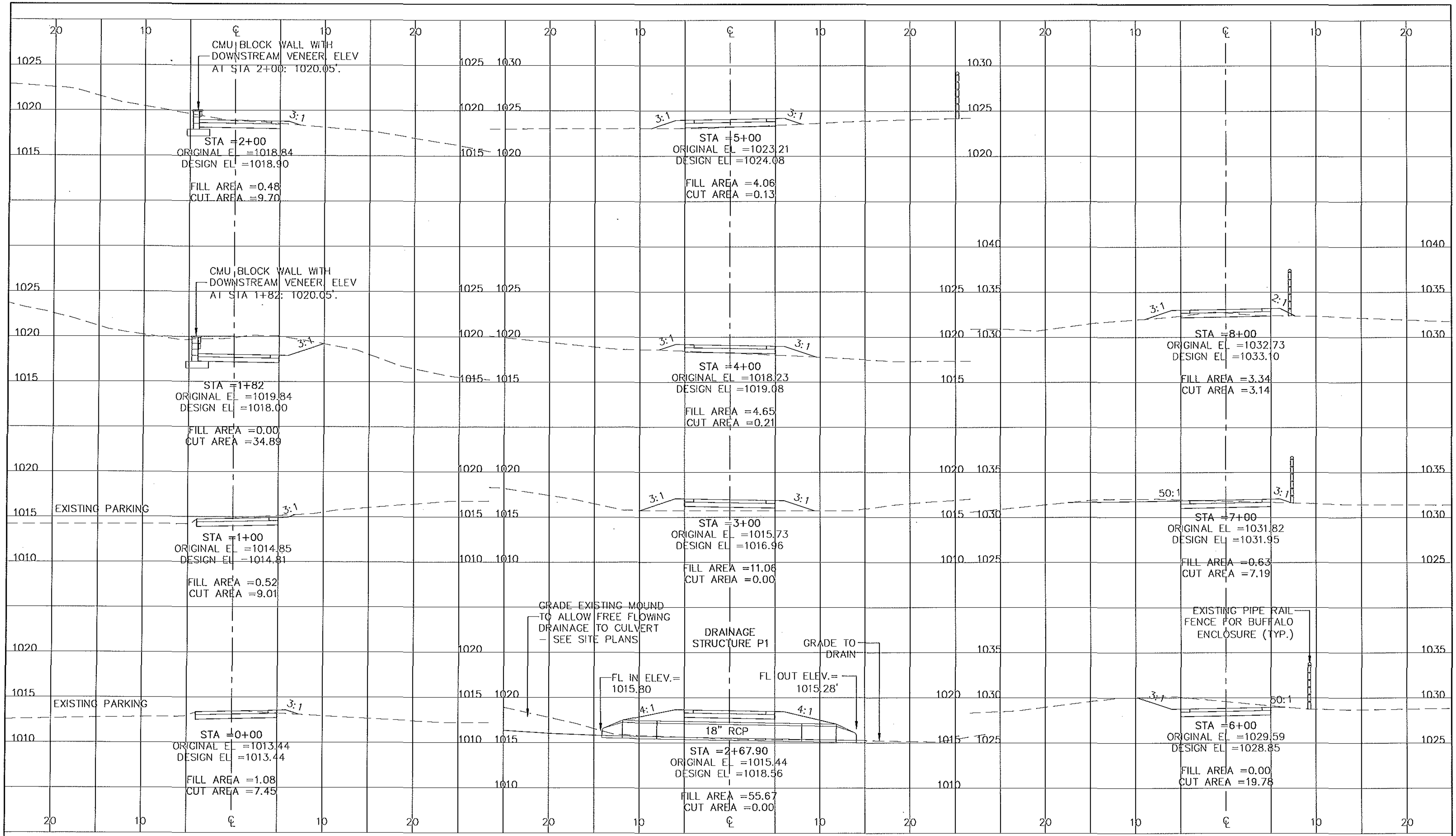

CMU BLOCK WALL WITH DOWNSTREAM VENEER. ELEV AT STA 2+00: 1020.05'.
STA =2+00
ORIGINAL EL =1018.84
DESIGN EL =1018.90
FILL AREA =0.48
CUT AREA =9.70
STA =5+00
ORIGINAL EL =1023.21
DESIGN EL =1024.08
FILL AREA =4.06
CUT AREA =0.13
CMU BLOCK WALL WITH DOWNSTREAM VENEER. ELEV AT STA 1+82: 1020.05'.
STA =1+82
ORIGINAL EL =1019.84
DESIGN EL =1018.00
FILL AREA =0.00
CUT AREA =34.89
STA =4+00
ORIGINAL EL =1018.23
DESIGN EL =1019.08
FILL AREA =4.65
CUT AREA =0.21
STA =8+00
ORIGINAL EL =1032.73
DESIGN EL =1033.10
FILL AREA =3.34
CUT AREA =3.14
EXISTING PARKING
STA =1+00
ORIGINAL EL =1014.85
DESIGN EL =1014.81
FILL AREA =0.52
CUT AREA =9.01
STA =3+00
ORIGINAL EL =1015.73
DESIGN EL =1016.96
FILL AREA =11.06
CUT AREA =0.00
STA =7+00
ORIGINAL EL =1031.82
DESIGN EL =1031.95
FILL AREA =0.63
CUT AREA =7.19
GRADE EXISTING MOUND TO ALLOW FREE FLOWING DRAINAGE TO CULVERT - SEE SITE PLANS
DRAINAGE STRUCTURE P1
GRADE TO DRAIN
EXISTING PIPE RAIL FENCE FOR BUFFALO ENCLOSURE (TYP.)
FL IN ELEV.= 1015.80
FL OUT ELEV.= 1015.28'
18" RCP
EXISTING PARKING
STA =0+00
ORIGINAL EL =1013.44
DESIGN EL =1013.44
FILL AREA =1.08
CUT AREA =7.45
STA =2+67.90
ORIGINAL EL =1015.44
DESIGN EL =1018.56
FILL AREA =55.67
CUT AREA =0.00
STA =6+00
ORIGINAL EL =1029.59
DESIGN EL =1028.85
FILL AREA =0.00
CUT AREA =19.78

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0 5 10 15

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1.17.12

BUFFALO TRAIL AND TRI-STATE GATHERING AREA

LANDPLAN CONSULTANTS INCORPORATED

Design	JAM	1.12
Drawn	JAM	1.12
Checked	KRF	1.12
Approved		

PROJECT NUMBER 481.00

BUFFALO TRAIL CROSS SECTION SHEET (1)

STA =12+00
ORIGINAL EL =1022.35
DESIGN EL =1021.95

FILL AREA =0.00
CUT AREA =22.00

STA =11+00
ORIGINAL EL =1025.11
DESIGN EL =1025.15

FILL AREA =0.52
CUT AREA =8.43

STA =10+00
ORIGINAL EL =1030.12
DESIGN EL =1029.61

FILL AREA =0.00
CUT AREA =17.33

EXISTING PIPE RAIL FENCE FOR BUFFALO ENCLOSURE (TYP.).

STA =9+00
ORIGINAL EL =1032.73
DESIGN EL =1032.33

FILL AREA =0.56
CUT AREA =15.94

DRAINAGE STRUCTURE P2

24" HDPE FLARED END SECTION - FL CUT ELEV. 1020.93'.

STA =14+02.80
ORIGINAL EL =1023.98
DESIGN EL =1025.95

FILL AREA =53.82
CUT AREA =0.15

STA =14+00
ORIGINAL EL =1023.84
DESIGN EL =1025.85

FILL AREA =37.30
CUT AREA =0.09

STA =13+00
ORIGINAL EL =1020.70
DESIGN EL =1021.42

FILL AREA =10.69
CUT AREA =7.32

STA =17+00
ORIGINAL EL =1039.19
DESIGN EL =1039.71

FILL AREA =0.77
CUT AREA =4.94

STA =16+00
ORIGINAL EL =1033.78
DESIGN EL =1035.14

FILL AREA =11.30
CUT AREA =0.00

STA =15+00
ORIGINAL EL =1028.56
DESIGN EL =1030.67

FILL AREA =19.80
CUT AREA =0.00

DRAINAGE STRUCTURE P2

24" HDPE - PIPE NOT PERPENDICULAR TO TRAIL. FL ELEV. 1024.29'

STA =14+30
ORIGINAL EL =1024.13
DESIGN EL =1027.35

FILL AREA =34.95
CUT AREA =0.00

0 5 10 15

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STATE OF OKLAHOMA No. 9 REGISTERED LANDSCAPE ARCHITECT 1-17-12

BUFFALO TRAIL AND TRI-STATE GATHERING AREA

LANDPLAN CONSULTANTS INCORPORATED	Design	JAM	1.12
	Drawn	JAM	1.12
	Checked	KRF	1.12
	Approved		

1110 W. 25th ST. Tulsa, OK 74107 (918) 584-6464

PROJECT NUMBER 481.00

BUFFALO TRAIL CROSS SECTION SHEET (2)

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STA =21+00
ORIGINAL EL =1047.45
DESIGN EL =1045.78

FILL AREA =0.00
CUT AREA =31.41

STA =20+00
ORIGINAL EL =1043.46
DESIGN EL =1043.58

FILL AREA =0.40
CUT AREA =7.34

STA =19+00
ORIGINAL EL =1044.49
DESIGN EL =1044.88

FILL AREA =1.04
CUT AREA =4.48

EXISTING PIPE RAIL FENCE FOR BUFFALO ENCLOSURE (TYP.).

STA =18+00
ORIGINAL EL =1044.10
DESIGN EL =1043.84

FILL AREA =2.49
CUT AREA =20.63

STA =25+00
ORIGINAL EL =1045.14
DESIGN EL =1044.70

FILL AREA =0.00
CUT AREA =13.87

PROPOSED ROAD CONSTRUCTION (118TH STREET) STA. 24+32.71 – STA. 24+54.71. SEE SITE PLANS.

STA =24+00
ORIGINAL EL =1045.96
DESIGN EL =1044.58

FILL AREA =0.00
CUT AREA =39.34

STA =23+00
ORIGINAL EL =1048.04
DESIGN EL =1048.15

FILL AREA =6.75
CUT AREA =11.34

STA =22+00
ORIGINAL EL =1047.91
DESIGN EL =1048.77

FILL AREA =8.26
CUT AREA =0.29

STA =29+00
ORIGINAL EL =1034.95
DESIGN EL =1034.88

FILL AREA =0.06
CUT AREA =9.24

STA =28+00
ORIGINAL EL =1039.22
DESIGN EL =1039.50

FILL AREA =0.84
CUT AREA =5.53

STA =27+00
ORIGINAL EL =1041.61
DESIGN EL =1041.67

FILL AREA =0.18
CUT AREA =7.68

STA =26+00
ORIGINAL EL =1043.18
DESIGN EL =1043.39

FILL AREA =0.59
CUT AREA =6.18

0 5 10 15

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STATE OF OKLAHOMA KEITH R. FRANK No. 9 REGISTERED LANDSCAPE ARCHITECT 1-17-12

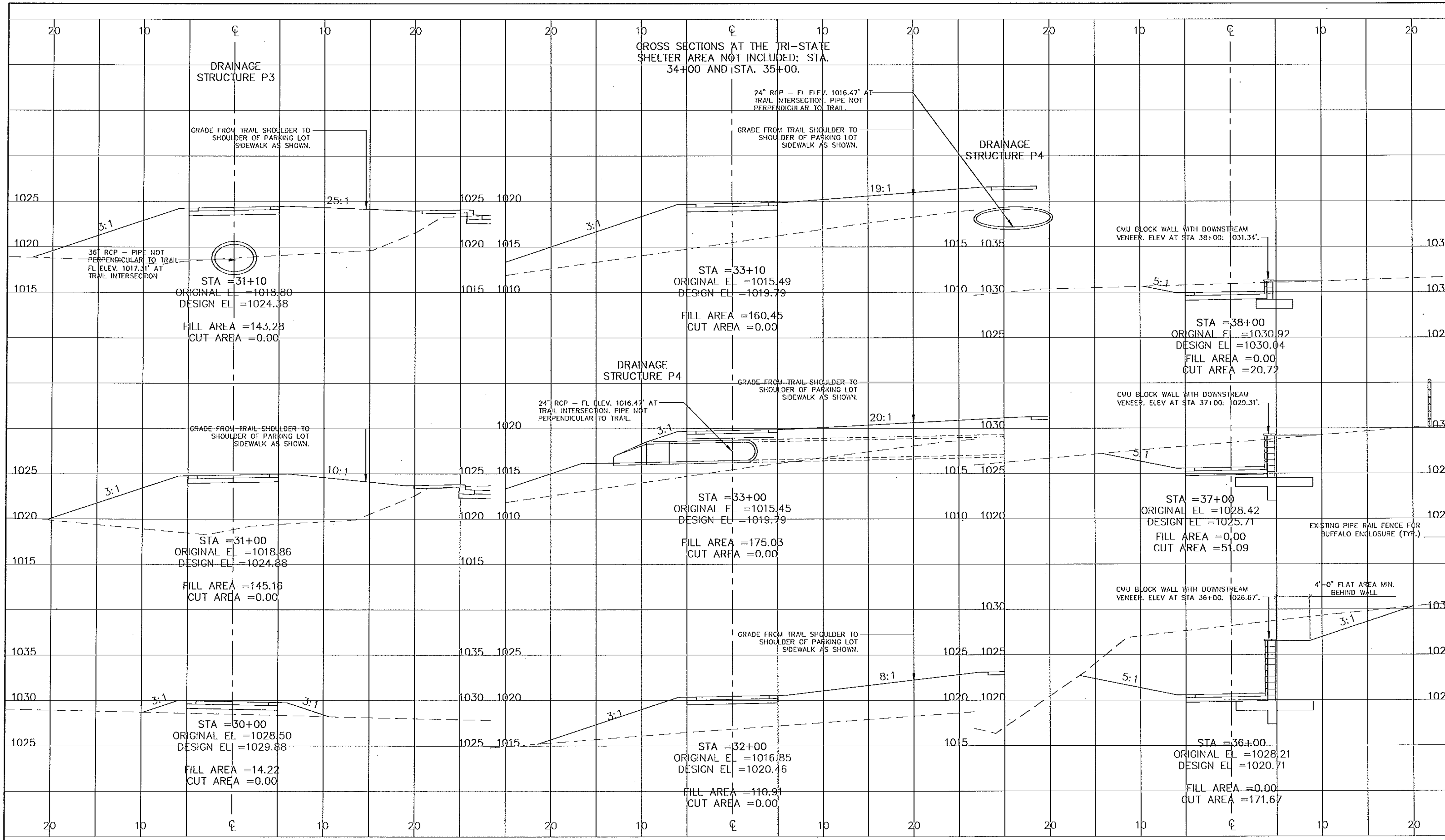
BUFFALO TRAIL AND TRI-STATE GATHERING AREA

Design	JAM	1.12
Drawn	JAM	1.12
Checked	KRF	1.12
Approved		

PROJECT NUMBER 481.00

LANDPLAN CONSULTANTS INCORPORATED
1110 W. 33RD ST.
Tulsa, OK 74107
(918) 584-6464

BUFFALO TRAIL CROSS SECTION SHEET (3)



CROSS SECTIONS AT THE TRI-STATE SHELTER AREA NOT INCLUDED: STA. 34+00 AND STA. 35+00.
DRAINAGE STRUCTURE P3
GRADE FROM TRAIL SHOULDER TO SHOULDER OF PARKING LOT SIDEWALK AS SHOWN.
36" RCP – PIPE NOT PERPENDICULAR TO TRAIL. FL ELEV. 1017.31' AT TRAIL INTERSECTION
STA =31+10
ORIGINAL EL =1018.80
DESIGN EL =1024.38
FILL AREA =143.28
CUT AREA =0.00
24" RCP – FL ELEV. 1016.47' AT TRAIL INTERSECTION. PIPE NOT PERPENDICULAR TO TRAIL.
DRAINAGE STRUCTURE P4
STA =33+10
ORIGINAL EL =1015.49
DESIGN EL =1019.79
FILL AREA =160.45
CUT AREA =0.00
CMU BLOCK WALL WITH DOWNSTREAM VENEER. ELEV AT STA 38+00: 1031.34'.
STA =38+00
ORIGINAL EL =1030.92
DESIGN EL =1030.04
FILL AREA =0.00
CUT AREA =20.72
STA =31+00
ORIGINAL EL =1018.86
DESIGN EL =1024.88
FILL AREA =145.16
CUT AREA =0.00
STA =33+00
ORIGINAL EL =1015.45
DESIGN EL =1019.79
FILL AREA =175.03
CUT AREA =0.00
CMU BLOCK WALL WITH DOWNSTREAM VENEER. ELEV AT STA 37+00: 1029.31'.
STA =37+00
ORIGINAL EL =1028.42
DESIGN EL =1025.71
FILL AREA =0.00
CUT AREA =51.09
EXISTING PIPE RAIL FENCE FOR BUFFALO ENCLOSURE (TYP.)
CMU BLOCK WALL WITH DOWNSTREAM VENEER. ELEV AT STA 36+00: 1026.67'.
4'-0" FLAT AREA MIN. BEHIND WALL
STA =30+00
ORIGINAL EL =1028.50
DESIGN EL =1029.88
FILL AREA =14.22
CUT AREA =0.00
STA =32+00
ORIGINAL EL =1016.85
DESIGN EL =1020.46
FILL AREA =110.91
CUT AREA =0.00
STA =36+00
ORIGINAL EL =1028.21
DESIGN EL =1020.71
FILL AREA =0.00
CUT AREA =171.67
3:1
25:1
19:1
5:1
10:1
20:1
8:1

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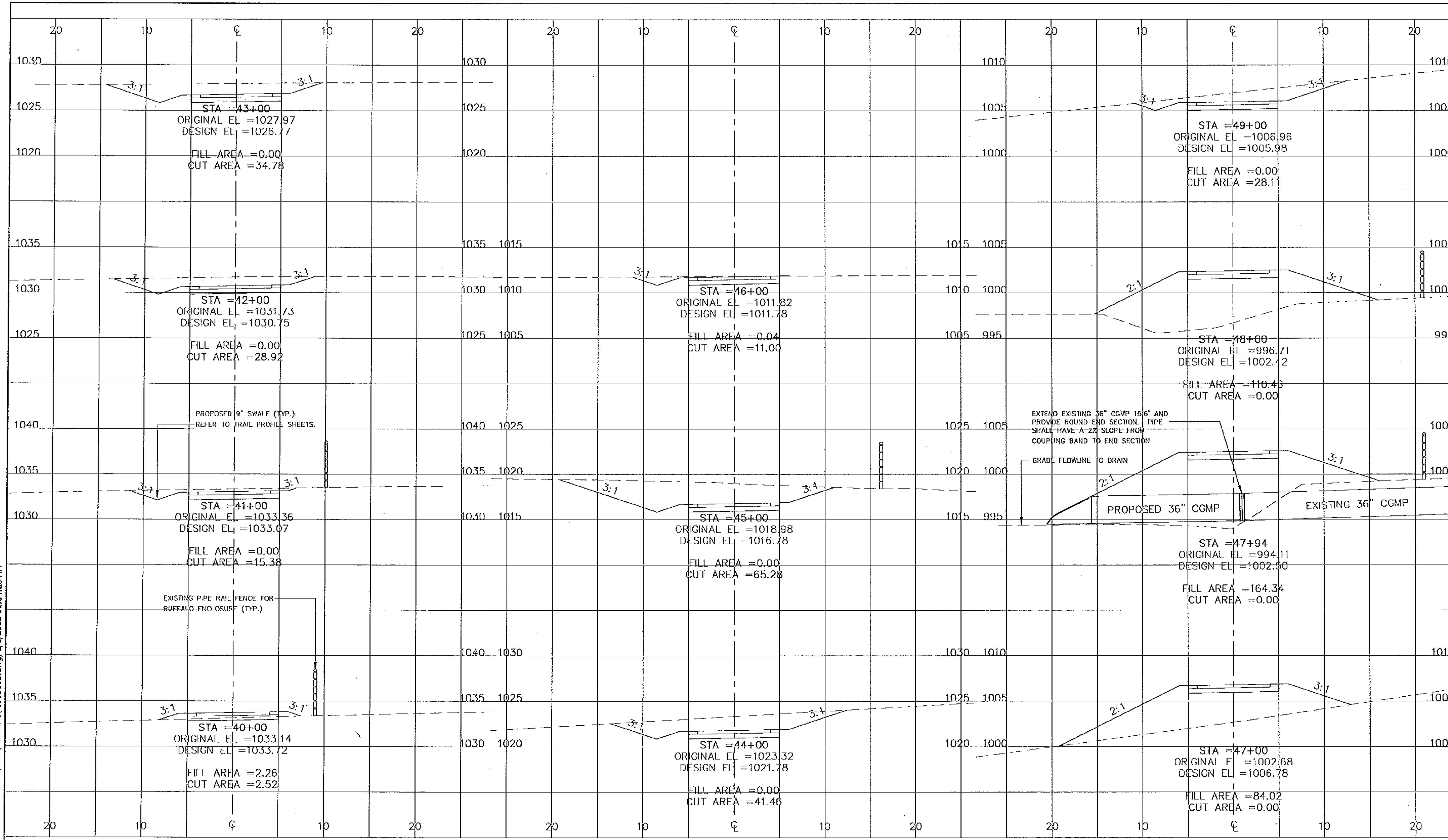
BUFFALO TRAIL AND TRI-STATE GATHERING AREA

LANDPLAN CONSULTANTS INCORPORATED

Design	JAM	1.12
Drawn	JAM	1.12
Checked	KRF	1.12
Approved		

PROJECT NUMBER 481.00

BUFFALO TRAIL CROSS SECTION SHEET (4)



STA =43+00
ORIGINAL EL =1027.97
DESIGN EL =1026.77
FILL AREA =0.00
CUT AREA =34.78
STA =42+00
ORIGINAL EL =1031.73
DESIGN EL =1030.75
FILL AREA =0.00
CUT AREA =28.92
PROPOSED 9" SWALE (TYP.).
REFER TO TRAIL PROFILE SHEETS.
STA =41+00
ORIGINAL EL =1033.36
DESIGN EL =1033.07
FILL AREA =0.00
CUT AREA =15.38
EXISTING PIPE RAIL FENCE FOR BUFFALO ENCLOSURE (TYP.)
STA =40+00
ORIGINAL EL =1033.14
DESIGN EL =1033.72
FILL AREA =2.26
CUT AREA =2.52
STA =46+00
ORIGINAL EL =1011.82
DESIGN EL =1011.78
FILL AREA =0.04
CUT AREA =11.00
STA =45+00
ORIGINAL EL =1018.98
DESIGN EL =1016.78
FILL AREA =0.00
CUT AREA =65.28
STA =44+00
ORIGINAL EL =1023.32
DESIGN EL =1021.78
FILL AREA =0.00
CUT AREA =41.46
STA =49+00
ORIGINAL EL =1006.96
DESIGN EL =1005.98
FILL AREA =0.00
CUT AREA =28.11
STA =48+00
ORIGINAL EL =996.71
DESIGN EL =1002.42
FILL AREA =110.46
CUT AREA =0.00
EXTEND EXISTING 36" CGMP 15.6' AND PROVIDE ROUND END SECTION. PIPE SHALL HAVE A 2% SLOPE FROM COUPLING BAND TO END SECTION
GRADE FLOWLINE TO DRAIN
PROPOSED 36" CGMP
EXISTING 36" CGMP
STA =47+94
ORIGINAL EL =994.11
DESIGN EL =1002.50
FILL AREA =164.34
CUT AREA =0.00
STA =47+00
ORIGINAL EL =1002.68
DESIGN EL =1006.78
FILL AREA =84.02
CUT AREA =0.00

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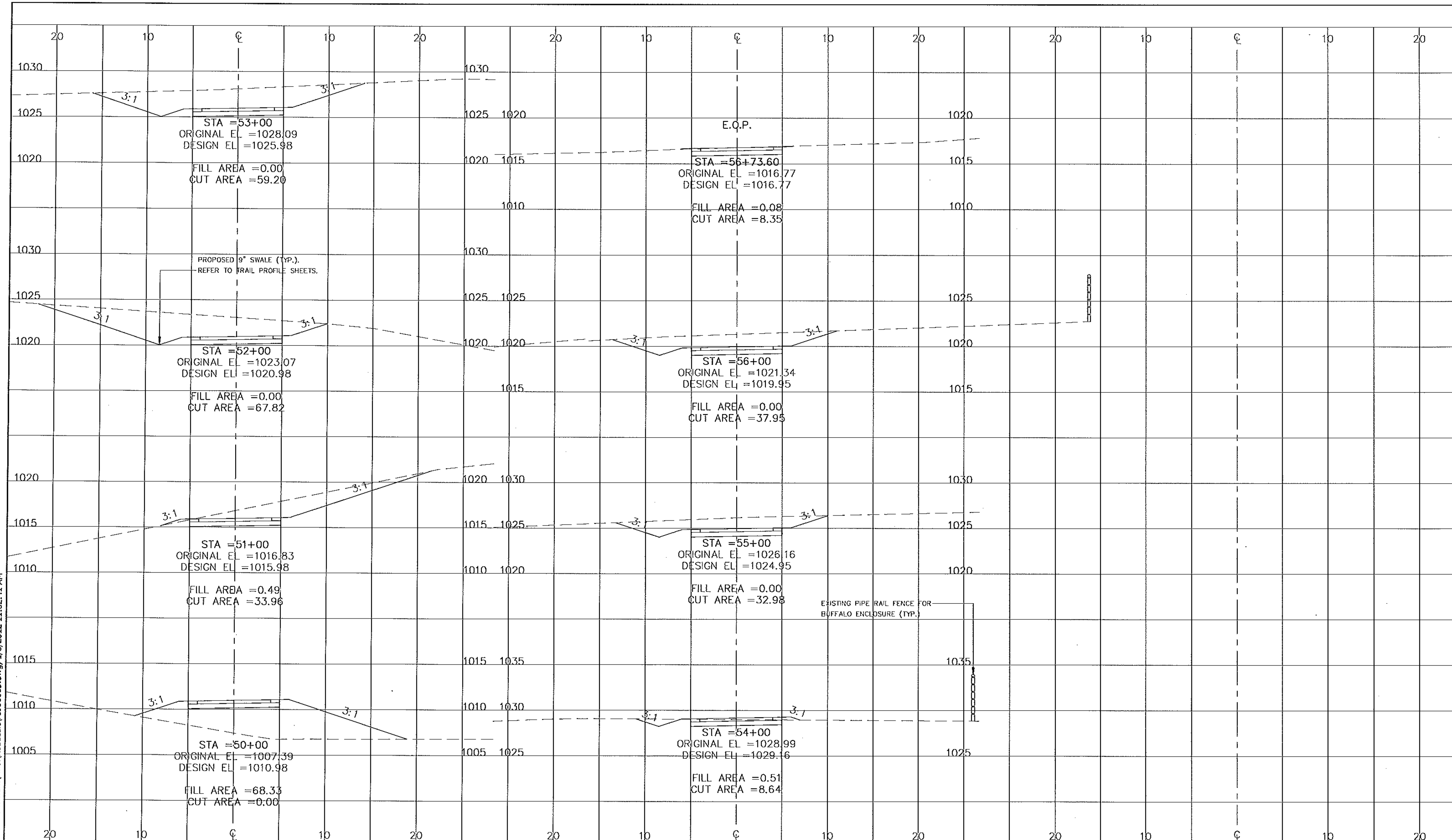
BUFFALO TRAIL AND TRI-STATE GATHERING AREA

LANDPLAN CONSULTANTS INCORPORATED
1110 W. 23RD ST.
Tulsa, OK 74107
(918) 584-6464

Design	JAM	1.12
Drawn	JAM	1.12
Checked	KRF	1.12
Approved		

PROJECT NUMBER 481.00

BUFFALO TRAIL
CROSS SECTION SHEET (5)



STA =53+00
ORIGINAL EL =1028.09
DESIGN EL =1025.98
FILL AREA =0.00
CUT AREA =59.20
PROPOSED 9" SWALE (TYP.). REFER TO TRAIL PROFILE SHEETS.
STA =52+00
ORIGINAL EL =1023.07
DESIGN EL =1020.98
FILL AREA =0.00
CUT AREA =67.82
STA =51+00
ORIGINAL EL =1016.83
DESIGN EL =1015.98
FILL AREA =0.49
CUT AREA =33.96
STA =50+00
ORIGINAL EL =1007.39
DESIGN EL =1010.98
FILL AREA =68.33
CUT AREA =0.00
E.O.P.
STA =56+73.60
ORIGINAL EL =1016.77
DESIGN EL =1016.77
FILL AREA =0.08
CUT AREA =8.35
STA =56+00
ORIGINAL EL =1021.34
DESIGN EL =1019.95
FILL AREA =0.00
CUT AREA =37.95
STA =55+00
ORIGINAL EL =1026.16
DESIGN EL =1024.95
FILL AREA =0.00
CUT AREA =32.98
EXISTING PIPE RAIL FENCE FOR BUFFALO ENCLOSURE (TYP.)
STA =54+00
ORIGINAL EL =1028.99
DESIGN EL =1029.16
FILL AREA =0.51
CUT AREA =8.64
3:1

0 5 10 15

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BUFFALO TRAIL AND TRI-STATE GATHERING AREA

LANDPLAN CONSULTANTS INCORPORATED

Design	JAM	1.12
Drawn	JAM	1.12
Checked	KRF	1.12
Approved		

PROJECT NUMBER 481.00

BUFFALO TRAIL CROSS SECTION SHEET (6)

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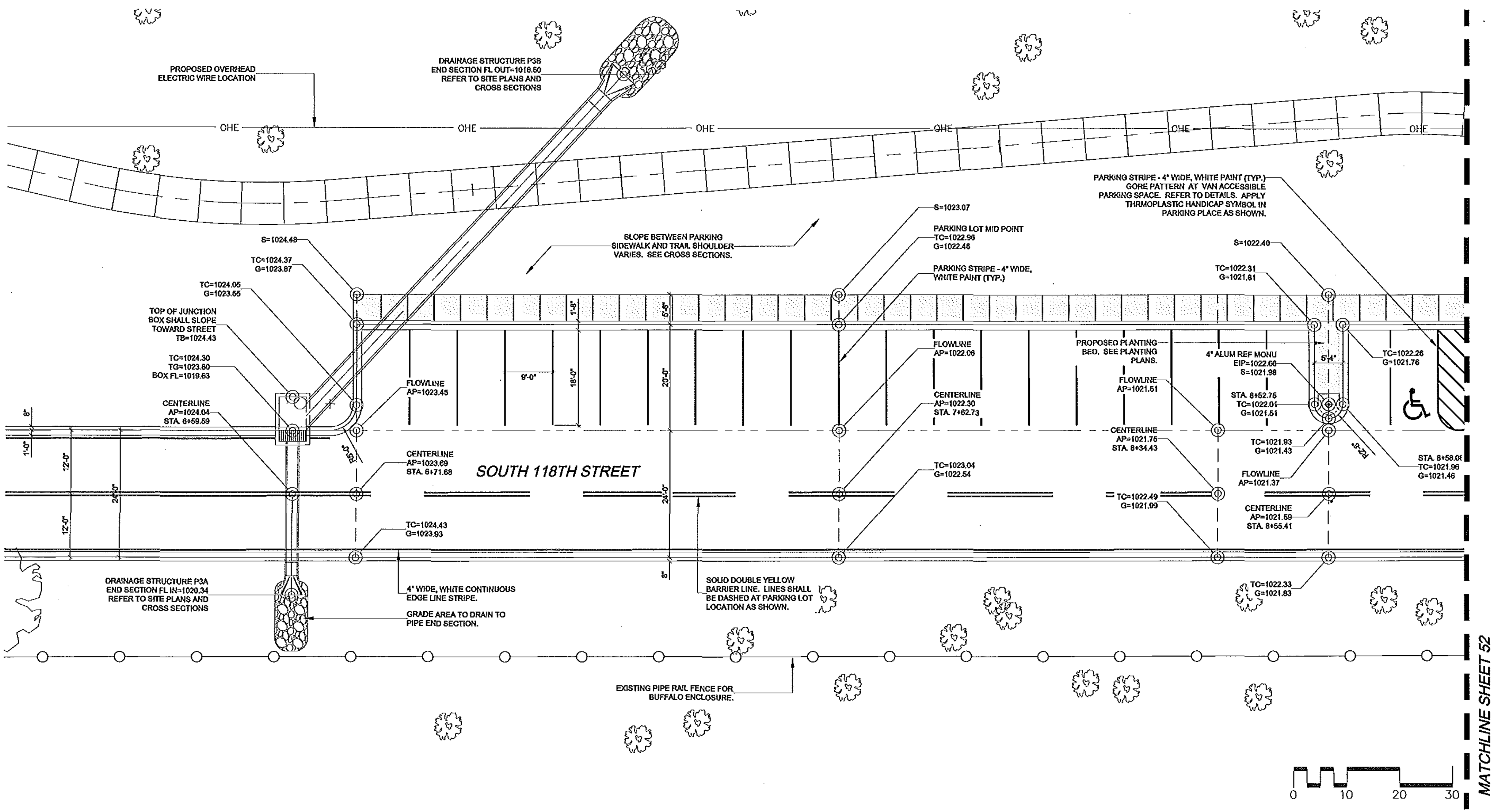
LEGEND

—G—	GAS LINE	—TOE—	TOE OF EX. SLOPE
—W—	WATER LINE	—TOP—	TOP OF EX. SLOPE
—UG—	UNDERGROUND GAS LINE		SOD / CUT FILL LIMIT
—OHE—	OVERHEAD ELECTRIC LINE		EX. CHAIN LINK FENCE
—SD—	STORM DRAIN LINE		TELEPHONE LINE/ FIBER OPTIC
—SS—	SAN SEWER LINE		HAY BALES
	FLOWLINE		EXISTING SIGN
	PROPOSED TRAIL CENTERLINE		ENHANCEMENT LIGHT
	RIGHT OF WAY		EXISTING MANHOLE

LAYOUT AND GRADING ABBREVIATIONS:

AP = ASPHALT PAVEMENT
CL = CENTERLINE
EC = EXISTING CONCRETE
EIP = EXIST. IRON PIN
FL = FLOW LINE
G = GUTTER
PC = PROPOSED CONCRETE
PG = PROPOSED GROUND
S = SIDEWALK
TB = TOP OF BOX
TC = TOP OF CURB
TG = TOP OF GRATE



PROPOSED OVERHEAD ELECTRIC WIRE LOCATION
DRAINAGE STRUCTURE P3B END SECTION FL OUT=1018.60 REFER TO SITE PLANS AND CROSS SECTIONS
OHE
SLOPE BETWEEN PARKING SIDEWALK AND TRAIL SHOULDER VARIES. SEE CROSS SECTIONS.
S=1024.48
TC=1024.37 G=1023.87
TC=1024.05 G=1023.65
TOP OF JUNCTION BOX SHALL SLOPE TOWARD STREET TB=1024.43
TC=1024.30 TG=1023.80 BOX FL=1019.63
CENTERLINE AP=1024.04 STA. 6+59.59
FLOWLINE AP=1023.45
CENTERLINE AP=1023.69 STA. 6+71.68
SOUTH 118TH STREET
TC=1024.43 G=1023.93
DRAINAGE STRUCTURE P3A END SECTION FL IN=1020.34 REFER TO SITE PLANS AND CROSS SECTIONS
4" WIDE, WHITE CONTINUOUS EDGE LINE STRIPE.
GRADE AREA TO DRAIN TO PIPE END SECTION.
SOLID DOUBLE YELLOW BARRIER LINE. LINES SHALL BE DASHED AT PARKING LOT LOCATION AS SHOWN.
EXISTING PIPE RAIL FENCE FOR BUFFALO ENCLOSURE.
S=1023.07
PARKING LOT MID POINT TC=1022.96 G=1022.46
PARKING STRIPE - 4" WIDE, WHITE PAINT (TYP.)
FLOWLINE AP=1022.08
CENTERLINE AP=1022.30 STA. 7+62.73
TC=1023.04 G=1022.54
PARKING STRIPE - 4" WIDE, WHITE PAINT (TYP.) GORE PATTERN AT VAN ACCESSIBLE PARKING SPACE. REFER TO DETAILS. APPLY THERMOPLASTIC HANDICAP SYMBOL IN PARKING PLACE AS SHOWN.
S=1022.40
TC=1022.31 G=1021.81
PROPOSED PLANTING BED. SEE PLANTING PLANS.
4" ALUM REF MONU EIP=1022.66 S=1021.98
FLOWLINE AP=1021.51
STA. 8+52.75 TC=1022.01 G=1021.51
CENTERLINE AP=1021.75 STA. 8+34.43
TC=1021.93 G=1021.43
FLOWLINE AP=1021.37
TC=1022.49 G=1021.99
CENTERLINE AP=1021.59 STA. 8+55.41
TC=1022.33 G=1021.83
TC=1022.26 G=1021.76
STA. 8+58.08 TC=1021.96 G=1021.46
9'-0"
18'-0"
20'-0"
24'-0"
12'-0"
1'-0"
5'-6"
1'-8"
8'
R5.0'
6'-4"
R2.5'
MATCHLINE SHEET 52
0 10 20 30

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LANDPLAN CONSULTANTS INCORPORATED
1110 West 23rd
Tulsa, OK 74107
(918) 584-6464

Seal:

STATE OF OKLAHOMA
LANDSCAPE ARCHITECT
1.17.12

Buffalo Trail and Tri State Gathering Area

Downstream Casino

Parking Layout and Grading Plan

Revisions:

North

Design	JM	1/1/12
Drawn	JM	1/1/12
Checked	KF	1/1/12
Approved		

PROJECT NUMBER: 481.00

BEFORE YOU DIG... CALL OKIE

Sheet: 51 of 72

LEGEND

G	GAS LINE	TOE	TOE OF EX. SLOPE
W	WATER LINE	TOP	TOP OF EX. SLOPE
UG	UNDERGROUND GAS LINE		SOD / CUT FILL LIMIT
OHE	OVERHEAD ELECTRIC LINE		EX. CHAIN LINK FENCE
SD	STORM DRAIN LINE		TELEPHONE LINE/ FIBER OPTIC
SS	SAN SEWER LINE		HAY BALES
	FLOWLINE		EXISTING SIGN
	PROPOSED TRAIL CENTERLINE		ENHANCEMENT LIGHT
	RIGHT OF WAY		EXISTING MANHOLE

LAYOUT AND GRADING ABBREVIATIONS:

AP = ASPHALT PAVEMENT	G = GUTTER	TC = TOP OF CURB
CL = CENTERLINE	PC = PROPOSED CONCRETE	TG = TOP OF GRATE
EC = EXISTING CONCRETE	PG = PROPOSED GROUND	
EIP = EXIST. IRON PIN	S = SIDEWALK	
FL = FLOW LINE	TB = TOP OF BOX	

DRAINAGE STRUCTURE P4
END SECTION
FL OUT=1016.13

THERMOPLASTIC HDC SYMBOL, SIGNAGE AND GORE STRIPING AT VAN ACCESSIBLE PARKING SPACE.

R CENTER POINT CURBLINE
N=303025.9013
E=2754323.5360

S=1021.98
TC=1021.87
G=1021.37
TC=1021.80
S=1021.80
TC=1021.80
G=1021.30
TC=1021.68
G=1021.18
TC=1021.38
G=1020.88
TC=1021.17
G=1021.17
TC=1021.55
G=1021.05

DRAINAGE STRUCTURE P4
STA. 8+93.33
TC=1021.30
TG=1020.80
FL=1017.63

FLOWLINE
AP=1020.91

CENTERLINE
AP=1021.21
STA. 8+85.10

TC=1021.95
G=1021.45

DOUBLE YELLOW CENTER LINE ENDS STA. 9+45

R CENTER POINT CURBLINE
N=303024.8677
E=2754219.5412

WHITE EDGE LINE CONTINUOUS AROUND TURNABOUT, BOTH SIDES OF ROAD.

MIDPOINT OF CURVE
STA. 9+40.14
TC=1020.19
G=1019.69

POINT OF CURVATURE
TC=1020.67
G=1020.07

CENTERLINE
AP=1020.31
STA. 9+22.05

POINT OF CURVATURE
TC=1021.05
G=1020.55

MIDPOINT OF CURVE
STA. 9+40.14
TC=1020.19
G=1019.69

POINT OF TANGENCY
STA. 9+54.32
TC=1020.00
G=1018.88

TC=1020.00
G=1018.88

S=1019.78
S=1019.78
S=1019.78

TC=1019.38
G=1018.88

TRAIL EDGE
STA. 33+76.61
S=1019.38

TRAIL EDGE
STA. 33+93.68
S=1018.90

TC=1018.74
G=1018.24

TRAIL EDGE
STA. 34+14.00
S=1018.13

S=1019.53
TC=1019.53
G=1019.03

POINT OF TANGENCY
STA. 9+54.32
TC=1019.53
G=1019.03

CENTERLINE
AP=1019.60
STA. 9+45.05

CENTER POINT
STA. 9+93.05
N=302954.3951
E=2754272.2456
S=1017.97

CENTERLINE
STA. 9+75.05
TC=1018.74
G=1018.24

ROADWAY ALIGNMENT AND TURNABOUT CENTERLINE
STA. 9+60.03
AP=1018.88

TURNABOUT CL
AP=1018.24

TC=1017.97
G=1017.47

TC=1017.97
G=1017.47

TC=1017.97
G=1017.47

TURNABOUT CL
AP=1017.77

TC=1018.74
G=1018.24

TC=1018.57
G=1018.07

CMU BLOCK RETAINING WALL WITH DECORATIVE DOWNSTREAM VENEER

TC=1017.20
G=1016.70

TRAIL EDGE
STA. 34+49
S=1017.36

TRAIL EDGE
STA. 34+54.15
S=1016.82

TC=1016.66
G=1016.16

ROADWAY ALIGNMENT AND TURNABOUT CENTERLINE
STA. 10+26.04
AP=1016.15

CENTERLINE
STA. 10+19.98
AP=1016.33

STA. 10+11.05
TC=1017.20
G=1016.70

TURNABOUT CL
AP=1017.25

TC=1017.64
G=1017.14

TC=1018.02
G=1017.62

TC=1018.08
G=1017.68

DRAINAGE STRUCTURE P5
ODOT DESIGN 2
DOUBLE GRATE INLET
TC=1016.32
TG INLET=1015.82
FL INLET=1012.65

DRAINAGE STRUCTURE P5
END SECTION
FL OUT=1011.37

DECORATIVE INTEGRAL COLORED CONCRETE BY BOMANITE. SANDSTONE TEXTURE (MISSOURI)

EOP ROADWAY
STA. 10+41.05
N=302908.3950
E=2754272.2442
TC=1016.51
G=1016.01

35'-00" TRAIL

TC=1016.60
G=1016.40

DECORATIVE INTEGRAL COLORED CONCRETE BY BOMANITE. SANDSTONE TEXTURE (OKLAHOMA)

RAMP TOP
S=1017.12

RAMP NOSE
G=1016.62

TC=1017.18
G=1016.68

DECORATIVE INTEGRAL COLORED CONCRETE BY BOMANITE. SANDSTONE TEXTURE (KANSAS)

EXISTING GRADE – TOP LINE
LIMITS OF GRADING

0 10 20 30

MATCHLINE SHEET 51

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LANDPLAN CONSULTANTS INCORPORATED
1110 West 23rd
Tulsa, OK 74107
(918) 584-6464

Seal:

Buffalo Trail and Tri State Gathering Area

Downstream Casino

Turnabout Layout and Grading Plan

Revisions:

North

Design	JM	1/1/12
Drawn	JM	1/1/12
Checked	KF	1/1/12
Approved		

PROJECT NUMBER: 481.00

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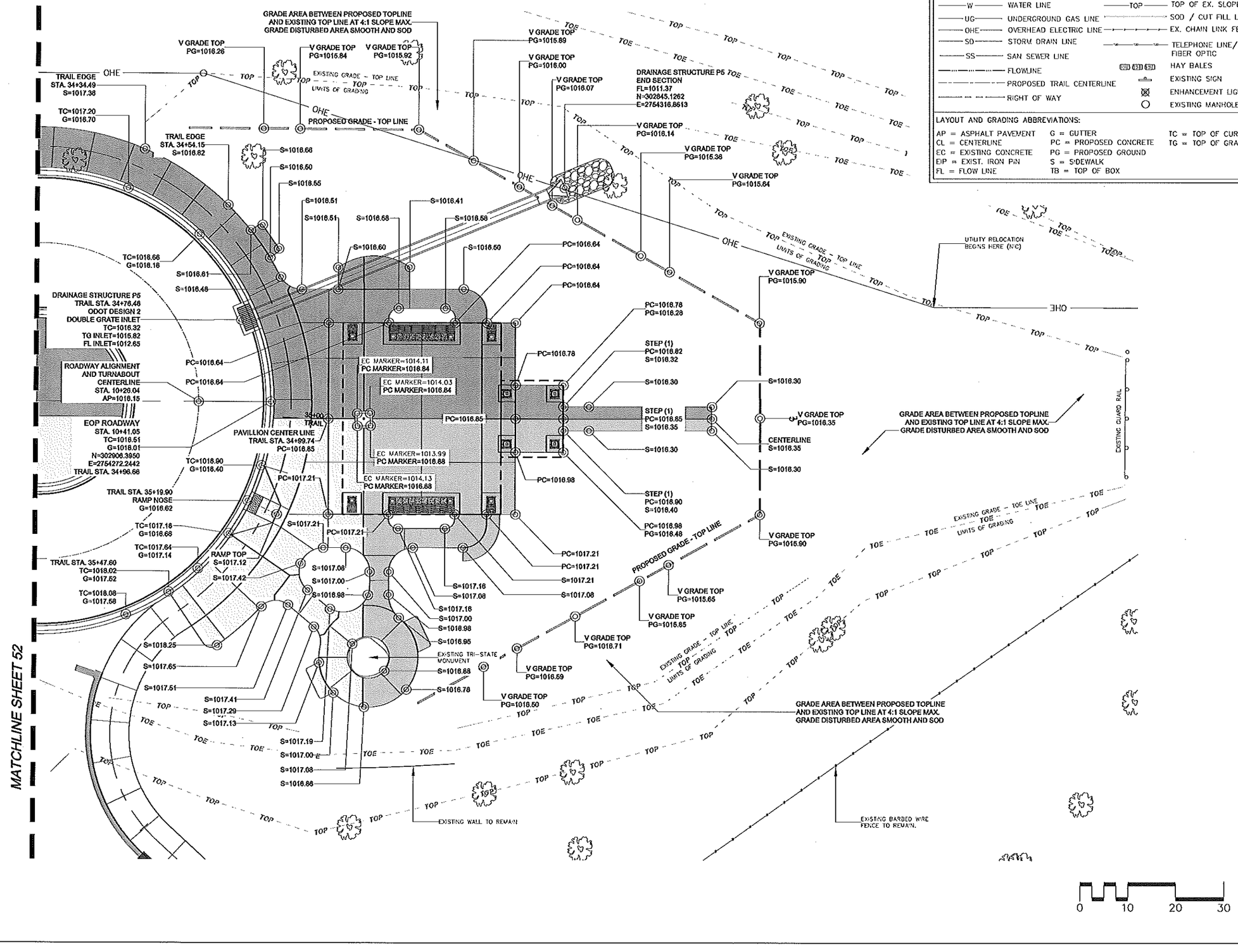
Sheet: 52 of 72



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Tulsa, OK 74107
(918) 584-6464

Seal:

Buffalo Trail and Tri State Gathering Area

Downstream Casino

Pavillion Grading Plan

Revisions:

North

Design	JM	1/1/12
Drawn	JM	1/1/12
Checked	KF	1/1/12
Approved		

PROJECT NUMBER: 481.00

BEFORE YOU DIG ... 1-800-522-6543 CALL OKIE

Sheet: 53 of 72

F:\481-Buffalo Trail and Tri State Monument\Final\Roadcalc\481 BASE.dwg, 1/17/2012 3:46:06 PM

LEGEND

G	GAS LINE	TOE	TOE OF EX. SLOPE
W	WATER LINE	TOP	TOP OF EX. SLOPE
UG	UNDERGROUND GAS LINE		SOD / CUT FILL LIMIT
OHE	OVERHEAD ELECTRIC LINE		EX. CHAIN LINK FENCE
SD	STORM DRAIN LINE		TELEPHONE LINE/ FIBER OPTIC
SS	SAN SEWER LINE		HAY BALES
	FLOWLINE		EXISTING SIGN
	PROPOSED TRAIL CENTERLINE		ENHANCEMENT LIGHT
	RIGHT OF WAY		EXISTING MANHOLE

LAYOUT AND GRADING ABBREVIATIONS:

AP = ASPHALT PAVEMENT	G = GUTTER	TC = TOP OF CURB
CL = CENTERLINE	PC = PROPOSED CONCRETE	TG = TOP OF GRATE
EC = EXISTING CONCRETE	PG = PROPOSED GROUND	
EIP = EXIST. IRON PIN	S = SIDEWALK	
FL = FLOW LINE	TB = TOP OF BOX	

V GRADE TOP LINE N=302923.7992 E=2754329.2462
V GRADE TOP LINE N=302875.6141 E=2754328.9190
CENTER OF POST N=302889.3559 E=2754285.8900
DRAINAGE STRUCTURE P5 END SECTION FL=1011.37 N=302845.1262 E=2754316.8813
R CENTER PT. N=302900.0538 E=2754300.6937
PC BUMPOUT TRAIL STA. 34+67.23
PC BUMPOUT TRAIL STA. 34+60.72
R CENTER PT. N=302879.7234 E=2754289.7525
CENTER OF POST N=302880.8559 E=2754285.8900
R CENTER PT. N=302869.9863 E=2754289.7525
CENTER OF POST N=302868.8559 E=2754285.8900
39.0 PAVILION SLAB
DRAINAGE STRUCTURE P5 TRAIL STA. 34+76.46 ODOT DESIGN 2 - DOUBLE GRATE INLET TC=1016.32 TG INLET=1015.82 FL INLET=1012.65
R CENTER PT. N=302868.3182 E=2754290.7444
CENTER OF POST N=302860.3586 E=2754285.8575
EC MARKER=1014.11 PC MARKER=1016.84 N=302888.3277 E=2754269.8129
10.0 PAVILION SLAB
31.0 SIDEWALK
V GRADE TOP LINE N=302804.4229 E=2754288.6940
EOP ROADWAY STA. 10+41.05 N=302888.3277 E=2754269.8129
EC MARKER=1014.03 PC MARKER=1016.84 N=302885.6664 E=2754269.8598
EC MARKER=1013.99 PC MARKER=1016.88 N=302885.6197 E=2754267.2379
CENTERLINE OF PAVILION N=302905.8553 E=2754268.7265
35+00 TRAIL
CENTER OF POST N=302860.3586 E=2754251.5630
EC MARKER=1014.13 PC MARKER=1016.88 N=302888.2776 E=2754267.1743
CENTER OF POST N=302868.8559 E=2754251.5630
CENTER OF POST N=302880.8559 E=2754251.5630
CENTER OF POST N=302889.3559 E=2754251.5630
R CENTER PT N=302879.7247 E=2754247.7242
R CENTER PT. N=302890.6148 E=2754236.7230
V GRADE TOP LINE N=302804.2971 E=2754268.8448
CENTER OF POST N=302847.1101 E=2754273.9765
CENTER OF POST N=302847.1100 E=2754263.4685
V GRADE TOP LINE N=302804.3293 E=2754248.6940
R CENTER PT. N=302868.3248 E=2754238.7302
R CENTER PT. N=302869.9863 E=2754238.7302
CENTER OF POST N=302857.1100 E=2754273.9765
CENTER OF POST N=302857.1100 E=2754263.4685
R CENTER PT. N=302876.6171 E=2754238.7302
R CENTER PT. N=302875.1159 E=2754231.9480
R CENTER PT. N=302918.6349 E=2754222.9168
R CENTER PT. N=302905.2235 E=2754226.7342
R CENTER PT. N=302895.3505 E=2754236.7230
R CENTER PT. N=302899.8038 E=2754222.1710
R CENTER PT. N=302891.1154 E=2754233.8107
V GRADE TOP LINE N=302876.6141 E=2754209.3606
EXISTING GUARD RAIL
MATCHLINE SHEET 52

0 10 20 30

LANDPLAN CONSULTANTS INCORPORATED
1110 West 23rd
Tulsa, OK 74107
(918) 584-6464

Seal:

Buffalo Trail and Tri State Gathering Area

Downstream Casino

Pavillion Layout Plan

Revisions:

North

Design	JM	1/1/12
Drawn	JM	1/1/12
Checked	KF	1/1/12
Approved		

PROJECT NUMBER: 481.00

BEFORE YOU DIG ... 1-800-522-6543 CALL OKIE

Sheet: 54 of 72

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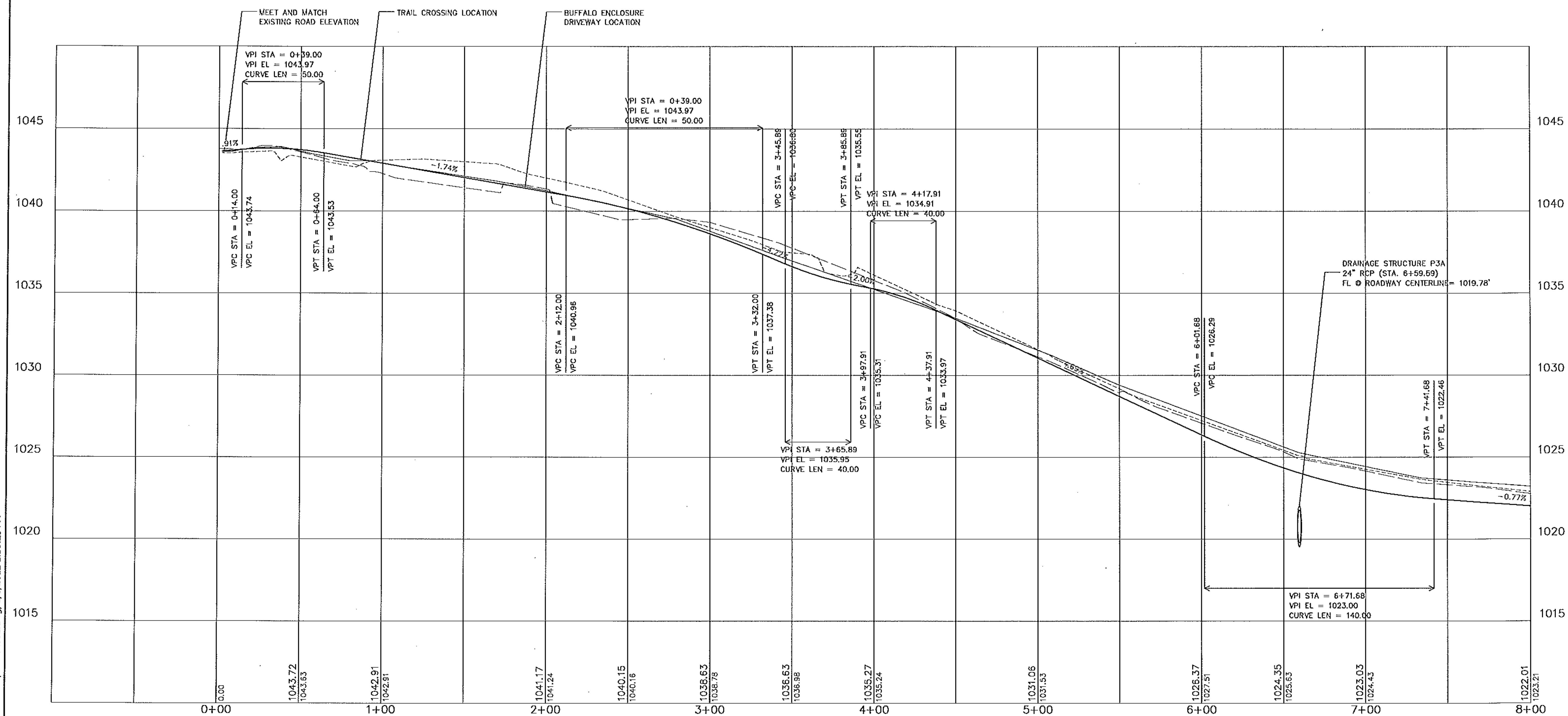


PROFILE LEGEND

- - - - - -	7' OFFSET LEFT
— - — - —	7' OFFSET RIGHT
········	EXISTING PROFILE
———	PROPOSED PROFILE

SCALES:
1" = 30' HOR
1" = 3' VER

0 30 60 90

BEFORE YOU DIG CALL OKIE

STATE OF OKLAHOMA KEITH R. FRANKLIN LANDSCAPE ARCHITECT

1.7.12

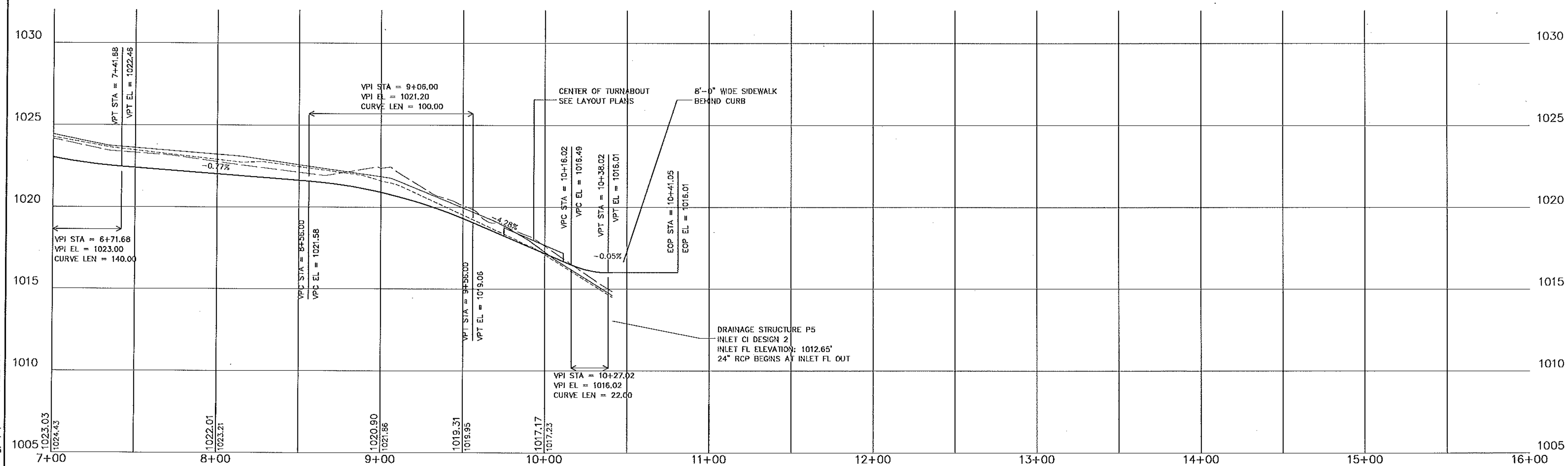
BUFFALO TRAIL AND TRI-STATE GATHERING AREA

LANDPLAN CONSULTANTS INCORPORATED
1110 E. 22ND ST. Tulsa, OK 74107 (918) 584-6464

Design	JAM	1.12
Drawn	JAM	1.12
Checked	KRF	1.12
Approved		

PROJECT NUMBER 481.00

S. 118TH STREET PROFILE SHEET (1)



PROFILE LEGEND

- 7' OFFSET LEFT
- 7' OFFSET RIGHT
- EXISTING PROFILE
- PROPOSED PROFILE

SCALES:
1" = 30' HOR
1" = 3' VER

0 30 60 90

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1.17.12

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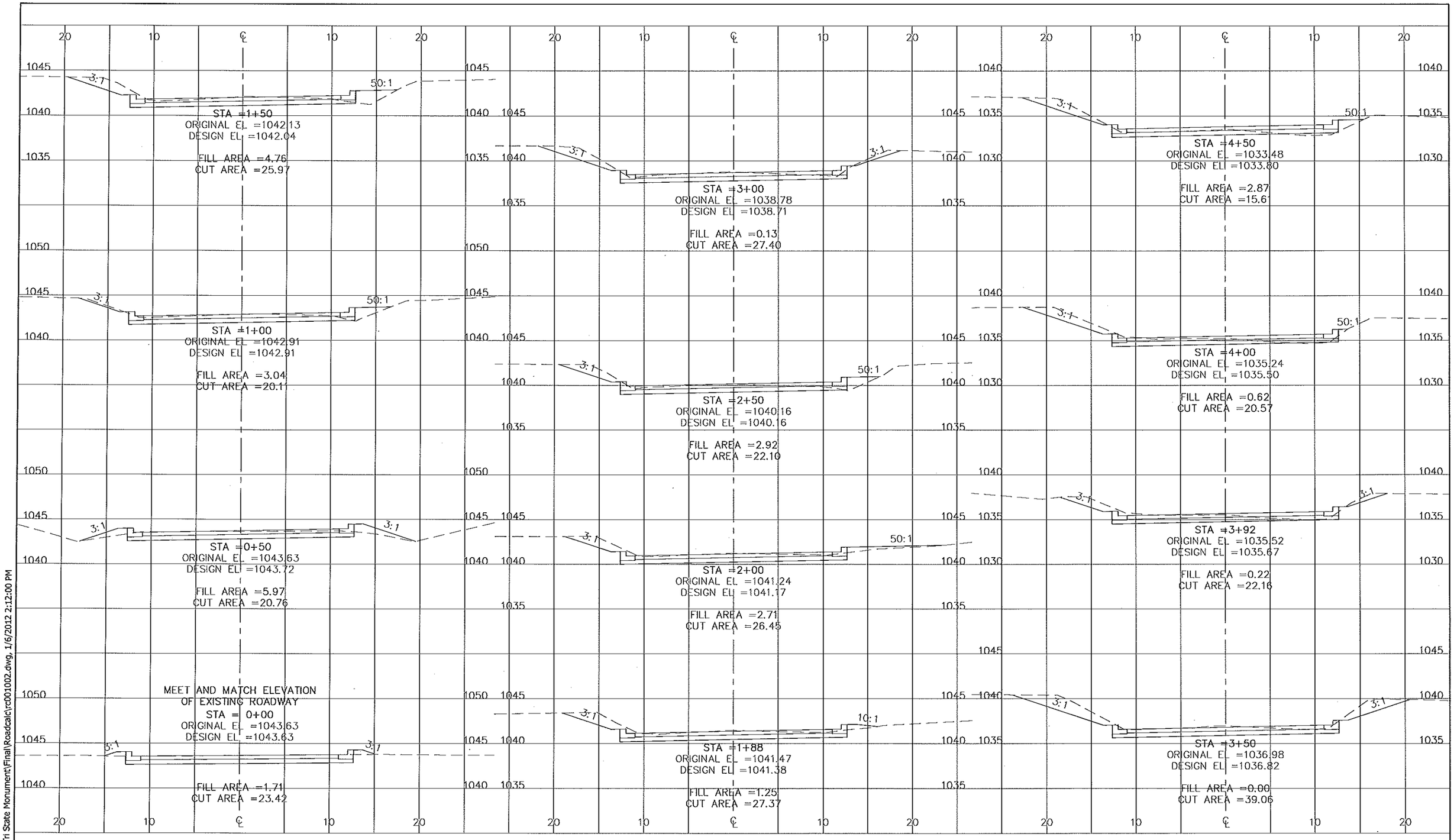
BUFFALO TRAIL AND TRI-STATE GATHERING AREA

LANDPLAN CONSULTANTS INCORPORATED

Design	JAM	1.12
Drawn	JAM	1.12
Checked	KRF	1.12
Approved		

PROJECT NUMBER 481.00

S. 118TH STREET PROFILE SHEET (2)



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STATE OF OKLAHOMA KEITH R. FERGUSON No. 9 REGISTERED PROFESSIONAL ENGINEER 1.17.12

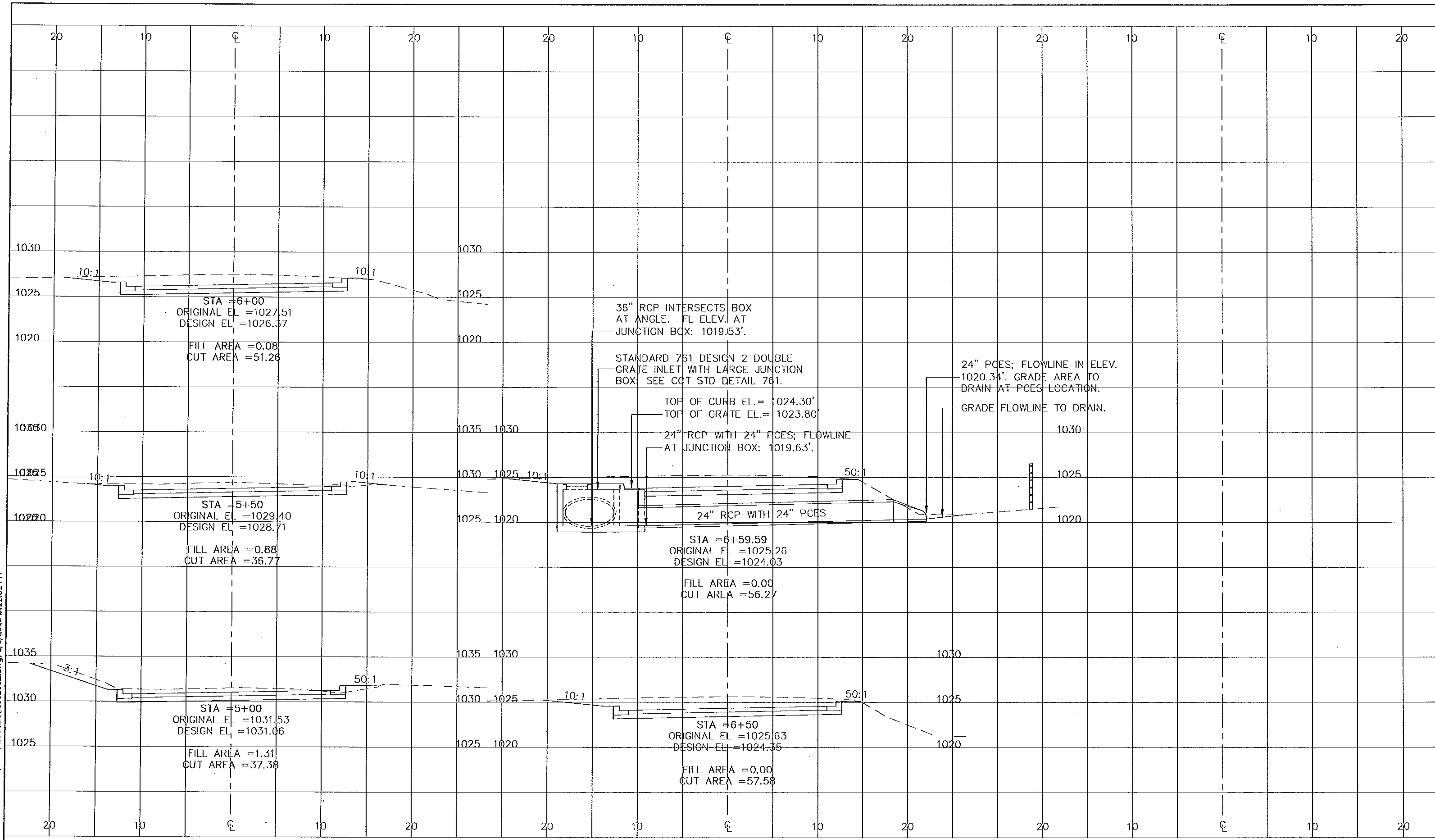
BUFFALO TRAIL AND TRI-STATE GATHERING AREA

Design	JAM	1.12
Drawn	JAM	1.12
Checked	KRF	1.12
Approved		

LANDPLAN CONSULTANTS INCORPORATED
1110 W. 23RD ST.
Tulsa, OK 74107
(918) 584-6464

PROJECT NUMBER 481.00

S. 118TH STREET
CROSS SECTION SHEET (1)



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1.17.12

BUFFALO TRAIL AND TRI-STATE GATHERING AREA

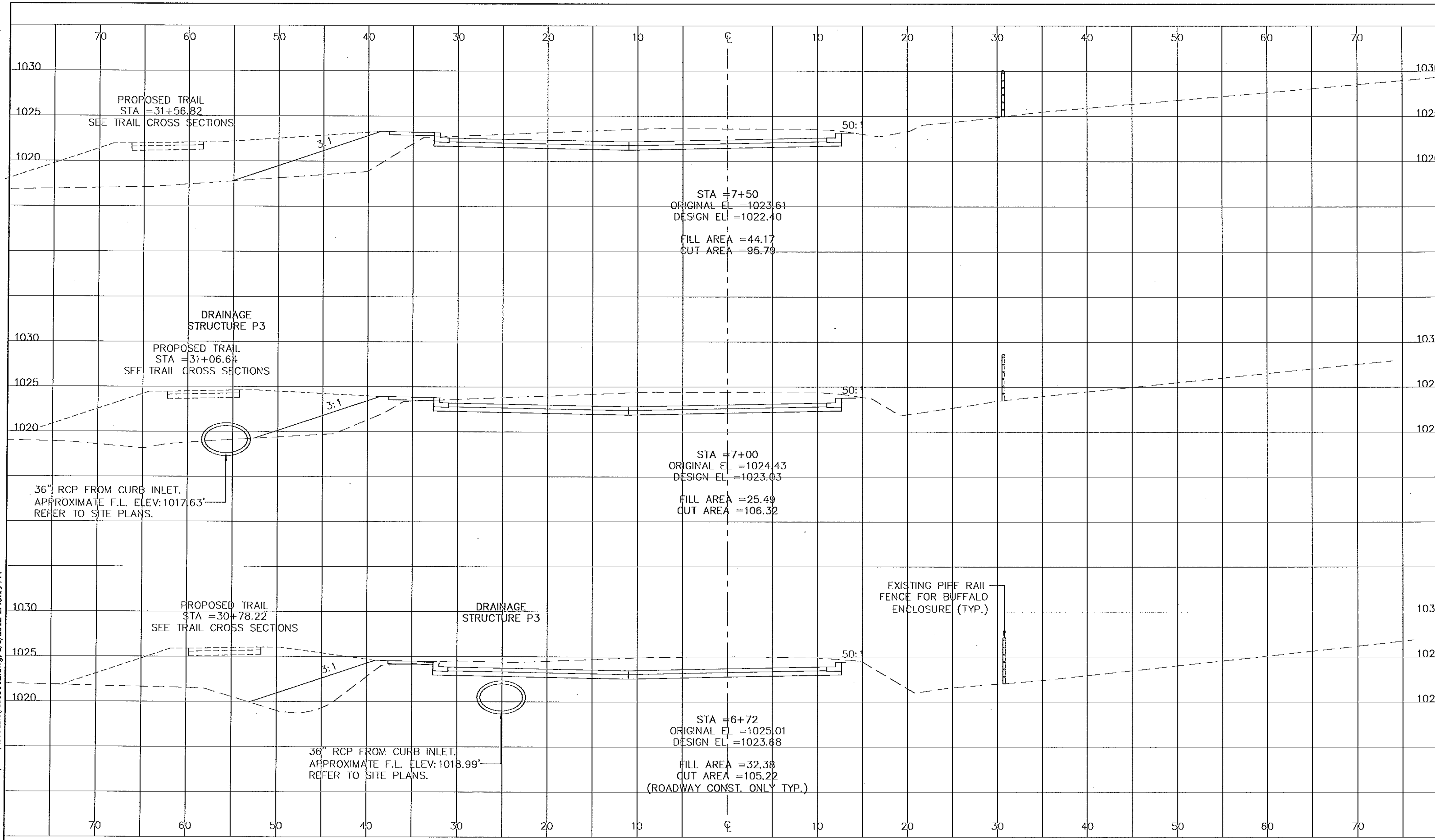
Design	JAM	1.12
Drawn	JAM	1.12
Checked	KRF	1.12
Approved		

LANDPLAN CONSULTANTS INCORPORATED

PROJECT NUMBER 481.00

S. 118TH STREET
CROSS SECTION SHEET (2)

Sheet 58 of 72



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1-17-12

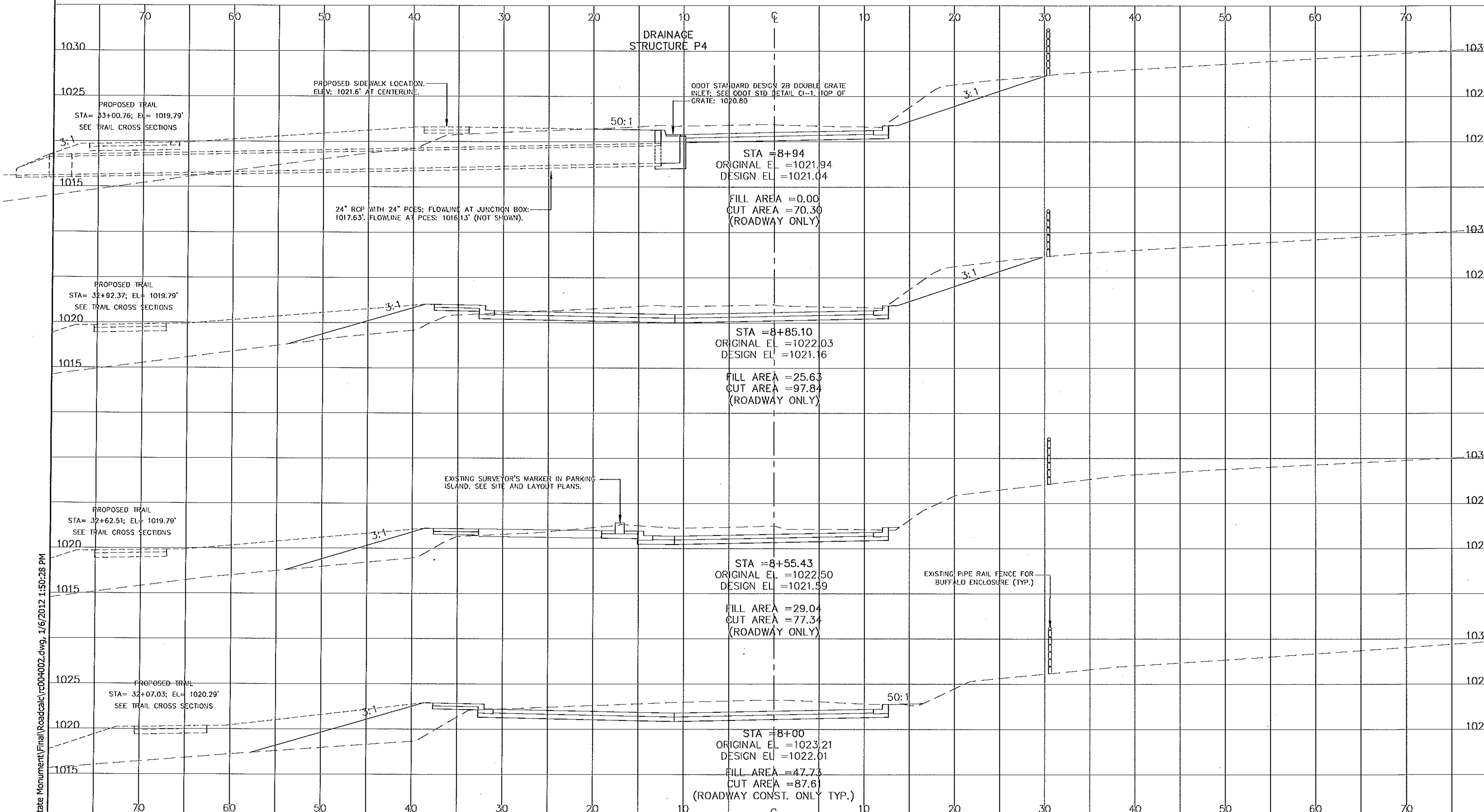
BUFFALO TRAIL AND TRI-STATE GATHERING AREA

LANDPLAN CONSULTANTS INCORPORATED
1110 W. 23RD ST. Tulsa, OK 74107 (918) 584-4464

Design	JAM	1.12
Drawn	JAM	1.12
Checked	KRF	1.12
Approved		

PROJECT NUMBER 481.00

S. 118TH STREET
CROSS SECTION SHEET (3)



DRAINAGE STRUCTURE P4
PROPOSED SIDEWALK LOCATION. ELEV: 1021.6' AT CENTERLINE.
ODOT STANDARD DESIGN 2B DOUBLE GRATE INLET; SEE ODOT STD DETAIL CI-1. TOP OF GRATE: 1020.80
PROPOSED TRAIL STA= 33+00.76; EL= 1019.79' SEE TRAIL CROSS SECTIONS
50:1
3:1
24" RCP WITH 24" PCES; FLOWLINE AT JUNCTION BOX: 1017.63'. FLOWLINE AT PCES: 1016.13' (NOT SHOWN).
STA =8+94
ORIGINAL EL =1021.94
DESIGN EL =1021.04
FILL AREA =0.00
CUT AREA =70.30
(ROADWAY ONLY)
PROPOSED TRAIL STA= 32+92.37; EL= 1019.79' SEE TRAIL CROSS SECTIONS
STA =8+85.10
ORIGINAL EL =1022.03
DESIGN EL =1021.16
FILL AREA =25.63
CUT AREA =97.84
(ROADWAY ONLY)
EXISTING SURVEYOR'S MARKER IN PARKING ISLAND. SEE SITE AND LAYOUT PLANS.
PROPOSED TRAIL STA= 32+62.51; EL= 1019.79' SEE TRAIL CROSS SECTIONS
STA =8+55.43
ORIGINAL EL =1022.50
DESIGN EL =1021.59
FILL AREA =29.04
CUT AREA =77.34
(ROADWAY ONLY)
EXISTING PIPE RAIL FENCE FOR BUFFALO ENCLOSURE (TYP.)
PROPOSED TRAIL STA= 32+07.03; EL= 1020.29' SEE TRAIL CROSS SECTIONS
STA =8+00
ORIGINAL EL =1023.21
DESIGN EL =1022.01
FILL AREA =47.73
CUT AREA =87.61
(ROADWAY CONST. ONLY TYP.)

0 5 10 15

BEFORE YOU DIG CALL OKIE 811

STATE OF OKLAHOMA LANDSCAPE ARCHITECT

1-17-12

BUFFALO TRAIL AND TRI-STATE GATHERING AREA

LANDPLAN CONSULTANTS INCORPORATED
1110 W. 23RD ST. Tulsa, OK 74107 (918) 584-6484

Design	JAM	1.12
Drawn	JAM	1.12
Checked	KRF	1.12
Approved		

PROJECT NUMBER 481.00

S. 118TH STREET CROSS SECTION SHEET (4)

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REFER TO TURNABOUT LAYOUT FOR PAVING ELEVATIONS
END OF ROADWAY ALIGNMENT AT CURBLINE

STA =10+41.05
ORIGINAL EL =1014.61
DESIGN EL =1016.01

3:1

10:1

STA =10+00
ORIGINAL EL =1017.23
DESIGN EL =1017.67 (SIDEWALK)

FILL AREA =108.88
CUT AREA =119.50

INTERSECTION OF PROPOSED TRAIL AND SIDEWALK LOCATION. ELEV: 1019.71' AT SIDEWALK CENTERLINE.

3:1

STA =9+50
ORIGINAL EL =1019.95
DESIGN EL =1019.31
FILL AREA =0.00
CUT AREA =135.96

EXISTING PIPE RAIL FENCE FOR BUFFALO ENCLOSURE (TYP.)

PROPOSED TRAIL
STA= 33+07.59; EL= 1019.79'
SEE TRAIL CROSS SECTIONS

PROPOSED SIDEWALK LOCATION. ELEV: 1021.38' AT CENTERLINE

50:1

3:1

STA =9+00
ORIGINAL EL =1021.86
DESIGN EL =1020.90
FILL AREA =0.00
CUT AREA =75.00

0 5 10 15

STATE OF OKLAHOMA
KEITH R. FRANKLIN
REGISTERED LANDSCAPE ARCHITECT
1.17.12

BUFFALO TRAIL AND TRI-STATE GATHERING AREA

Design	JAM	1.12
Drawn	JAM	1.12
Checked	KRF	1.12
Approved		

PROJECT NUMBER 481.00

S. 118TH STREET
CROSS SECTION SHEET (5)

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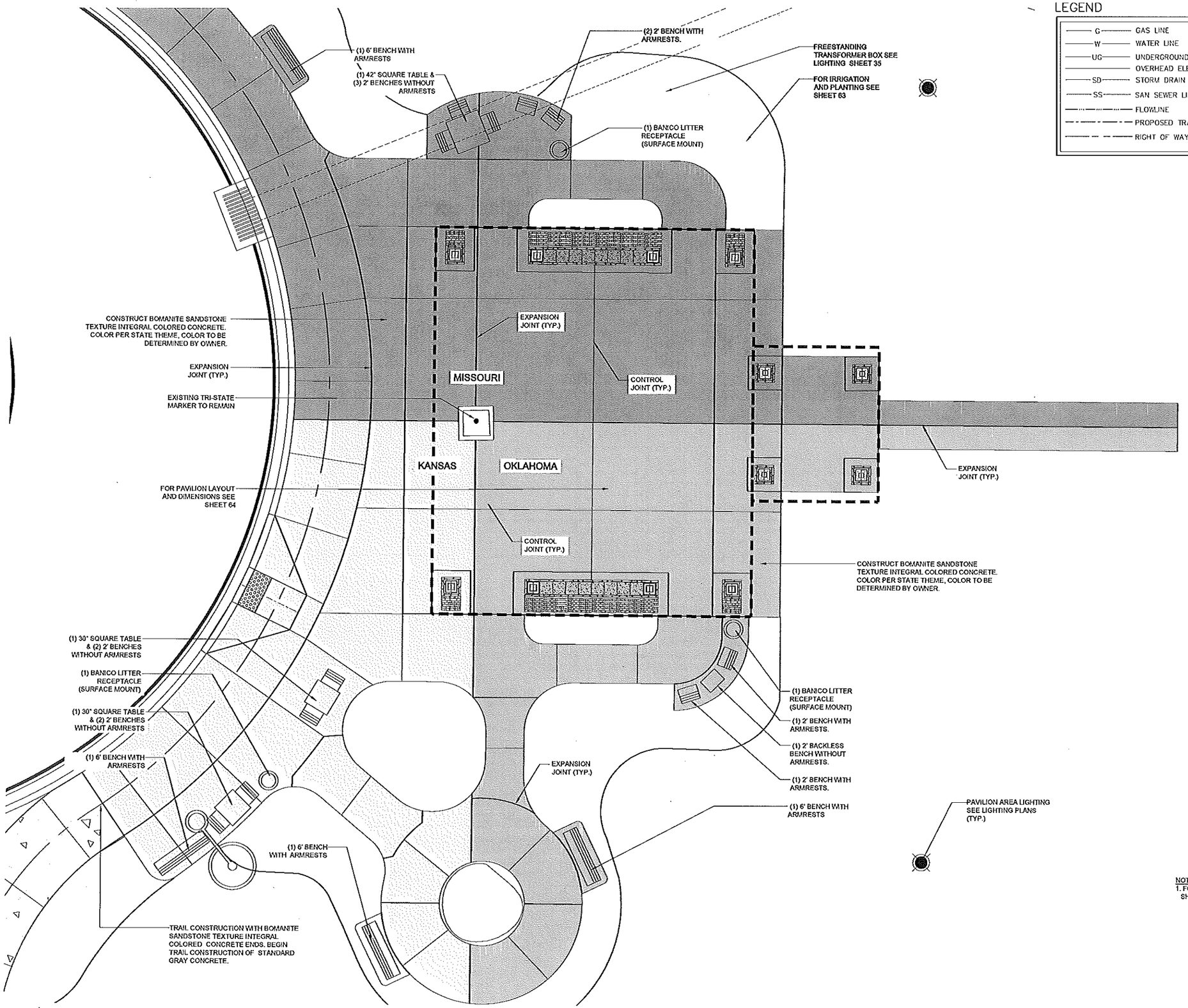


NOTE:
1. FOR FURNITURE ITEM INFORMATION REFER TO DETAIL SHEET 13.

LANDPLAN CONSULTANTS INCORPORATED
1110 West 23rd
Tulsa, OK 74107
(918) 584-6464

Seal:

Buffalo Trail and Tri State Monument

Downstream Casino Quapaw Nation

Pavilion Furniture & Pavement Joint Layout

Revisions:

North

Design	JM	1/1/12
Drawn	JM	1/1/12
Checked	KF	1/1/12
Approved		

PROJECT NUMBER: 481.00

BEFORE YOU DIG — 1-800-522-6543 CALL OKIE

Sheet: 62 of 72

F:\481-Buffalo Trail and Tri State Monument\Final\Roadcalc\481 BASE1.dwg, 1/17/2012 3:19:33 PM

PLANT LEGEND

COMMON NAME

- QR – NORTHERN RED OAK
- LI – NATCHEZ CRAPE MYRTLE
- AG – ROSE CREEK ABELIA
- IV – LITTLE HENRY SWEETSPIRE
- RK – DOUBLE KNOCKOUT ROSE
- HAM – HAMELN FOUNTAIN GRASS
- LIR – BIG BLUE LIRIOPE

IRRIGATION LEGEND

- 2" IRRIGATION MAINLINE
- 1" QUICK COUPLER
- 2" BACKFLOW PREVENTER
- 2" BALL VALVE

PLANT LIST AND MATERIALS

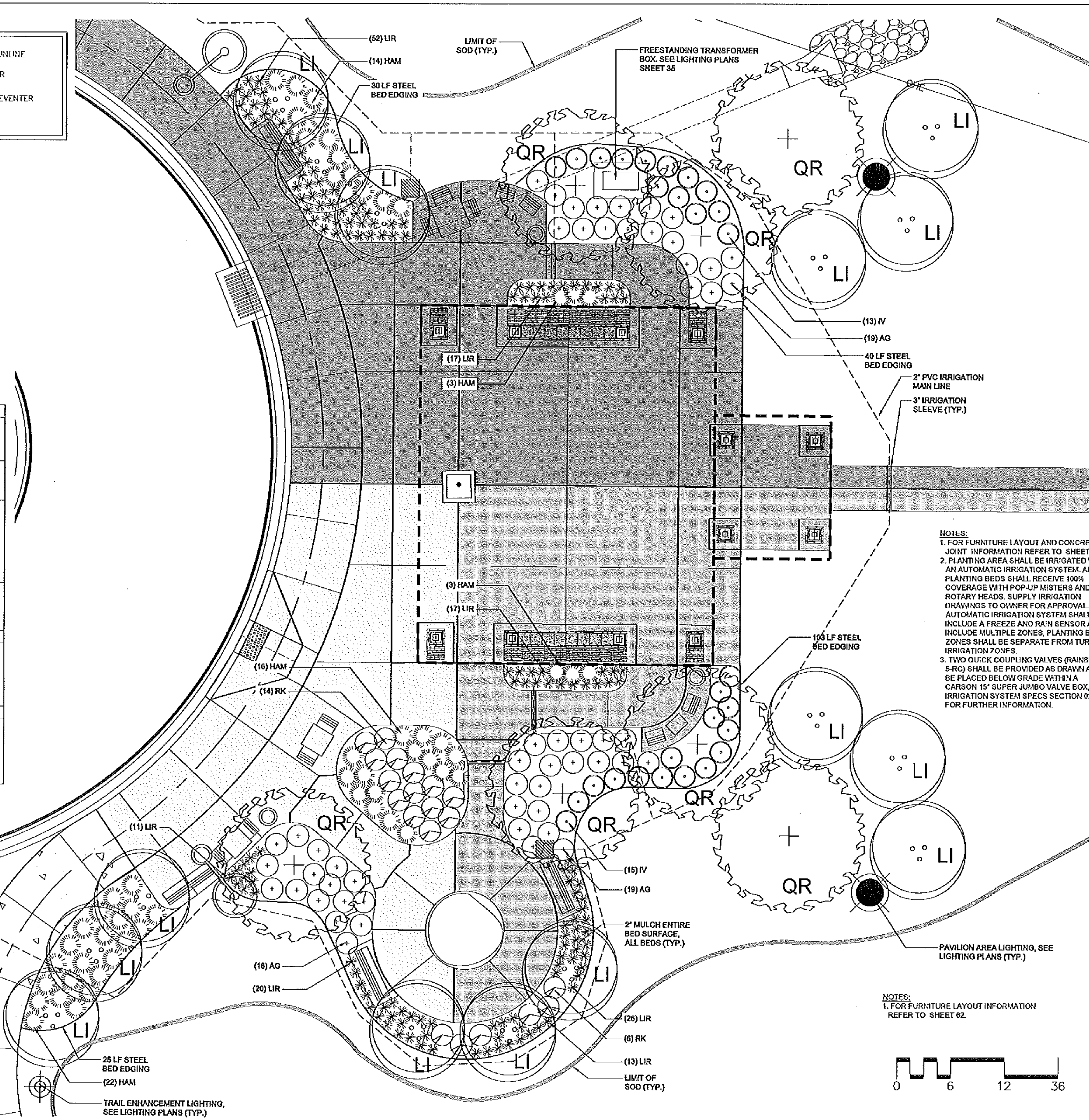
QTY.	SYM.	FLOWERING TREE NAME	SIZE	HT. x W
15	LI	NATCHEZ CRAPE MYRTLE (MATCHING) Lagerstroemia indica 'Natchez'	MT 3 to 5 Canes Min.	8'–10' x 4'–5'
QTY.	**SYM.**	**TREE NAME**	**SIZE**	**HT. x W**
7	QR	NORTHERN RED OAK (MATCHING) Quercus rubra	3" to 3 1/2" Cal.	10'–12' x 5'–6'
QTY.	**SYM.**	**SHRUB NAME**	**SIZE**	**Notes**
54	AG	ROSE CREEK ABELIA Abelia x grandiflora 'Rose Creek'	# 3	Full Pot
28	IV	LITTLE HENRY SWEETSPIRE Itea virginica 'Sprich'	# 3	Full Pot
20	RK	DOUBLE KNOCKOUT ROSE Rosa 'Radtko'	# 3	Full Pot
QTY.	**SYM.**	**GRASSES NAME**	**SIZE**	**Notes**
156	LIR	BIG BLUE LIRIOPE Liriope muscari 'Big Blue'	Qt. / 4" pot	Full Pot
58	HAM	HAMELN FOUNTAIN GRASS Pennisetum alopecuroides 'Hameln'	# 1	Full Pot

MATERIALS – TREE PLANTING

44 EA	SHREDDED CYPRESS BARK MULCH (3 CUBIC FT. BAGS) (2 BAGS PER TREE)
22 EA	"BACK TO EARTH" COTTON SEED BURR COMPOST (3 CUBIC FT. BAGS) (1 BAG PER TREE)

MATERIALS – BED PLANTING

9 CY	SHREDDED CYPRESS BARK MULCH (2" DEPTH OVER ENTIRE BED SURFACE)
12 CY	"BACK TO EARTH" COTTON SEED BURR COMPOST (3" DEPTH, WORKED INTO SOIL 8"–12")
198 LF	6" STEEL METAL EDGING, BLACK



NOTES:
1. FOR FURNITURE LAYOUT AND CONCRETE JOINT INFORMATION REFER TO SHEET 62.
2. PLANTING AREA SHALL BE IRRIGATED WITH AN AUTOMATIC IRRIGATION SYSTEM. ALL PLANTING BEDS SHALL RECEIVE 100% COVERAGE WITH POP-UP MISTERS AND / OR ROTARY HEADS. SUPPLY IRRIGATION DRAWINGS TO OWNER FOR APPROVAL. THE AUTOMATIC IRRIGATION SYSTEM SHALL INCLUDE A FREEZE AND RAIN SENSOR AND INCLUDE MULTIPLE ZONES, PLANTING BED ZONES SHALL BE SEPARATE FROM TURF IRRIGATION ZONES.
3. TWO QUICK COUPLING VALVES (RAINBIRD 5-RC) SHALL BE PROVIDED AS DRAWN AND BE PLACED BELOW GRADE WITHIN A CARSON 15" SUPER JUMBO VALVE BOX, SEE IRRIGATION SYSTEM SPECS SECTION 02810 FOR FURTHER INFORMATION.

NOTES:
1. FOR FURNITURE LAYOUT INFORMATION REFER TO SHEET 62.

LANDPLAN CONSULTANTS INCORPORATED
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Tulsa, OK 74107
(918) 584-6464

Seal: STATE OF OKLAHOMA ... LANDSCAPE ARCHITECT 1.17.12

Buffalo Trail and Tri State Monument

Downstream Casino Quapaw Nation

Planting and Irrigation Plan

Revisions:

North

Design	JM	1/1/12
Drawn	JM	1/1/12
Checked	KF	1/1/12
Approved		

PROJECT NUMBER: 481.00

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STRUCTURAL NOTES:

All detailing, fabrication and placing of reinforcing steel shall conform to the ACI standard "Details and Detailing of concrete reinforcement (ACI315)".

Concrete for the shelter slab on grade shall develop a 28 day minimum compressive strength of 3000 psi and meet ODOT class A Standards. All concrete for footings shall develop a 28 day minimum compressive strength of 3500 psi and meet ODOT class A standards.

All reinforcing steel shall be deformed bars conforming to ASTM a 615, grade 60.
All reinforcing bar hooks shall be ACI standard 90 degree hooks, unless otherwise noted. All reinforcing bar splices shall be 44 diameters

For unit masonry, construction shall be in accordance with ACI 530.1
Design parameters:
- FM–1500 psi
- Light weight concrete block
- Grout–2000 psi, course
- Reinforcement–FY–60KSI (24 KSI allowable stress)
- Type S mortar
- Running bond

For stone masonry, use the following parameters:
- Type S mortar in color the be selected by owner.

All walls, columns, and concrete pavement shall be reinforced. See details for specific sizes and amounts of reinforcing.

All bond beams and cells containing reinforcing steel, anchors, embedments, etc, shall be filled with grout. All hollow concrete masonry in contact with earth shall be filled with grout.

In all masonry walls provide horizontal joint reinforcement at 16" on center max.
Horizontal joint reinforcement shall be prefabricated ladder type such as Durawall or approved equal by engineer. Side rods will be lapped 6" min. at splices.

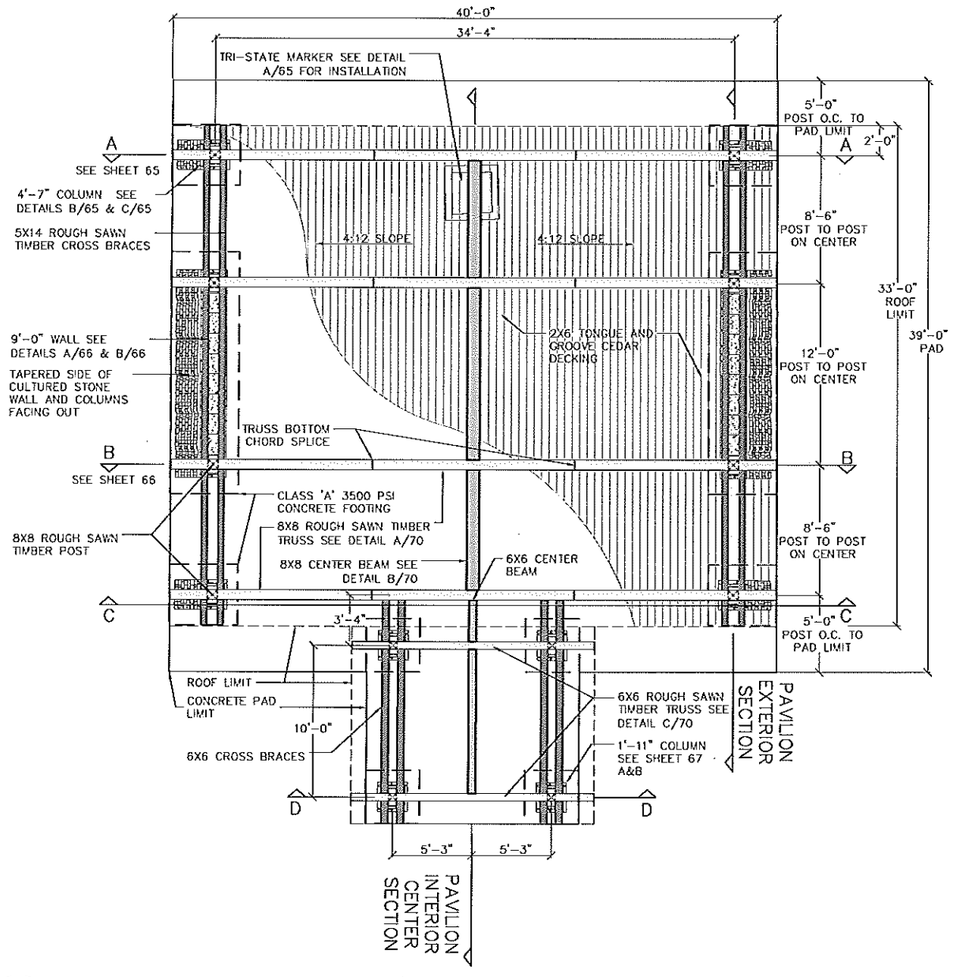
All wood members shall be rough sawn cedar. All tongue and groove decking shall be 2x6x12 in a combination simple and two span lay–up. In western red cedar. Install per manufacturer's instructions. Provide submittal for approval with type of wood specified, dimensions and quality. Finish with a clear polyurethane sealer, 2 coats. Provide submittal on sealer.

PAINT NOTE:

All hardware shall be painted Dark Bronze. All steel fabrication to include surface preparation as recommended by paint manufacturer including a clean, dry surface free of oil, dust, grease, dirt and rust or any other foreign material that will not allow adequate adhesion. refer to product application bulletin for detailed surface preparation. min. recommended surface preparation for steel is as follows:
Atmospheric: SSPC–SP6, 2 mil profile
Immersion: SSPC–SP10, 2 mil profile
Recommended paint will be 3 part application Sherwin Williams Industrial and marine coatings or approved equal. For primer use intermediate coat use Macropoxy 646 fast cure Epoxyseries. For top coat use HI–Solids Polyurethane.
Color shall be Dark Bronze.

ELECTRICAL LEGEND

- 2 1/2" LIGHTING CONDUIT
- 3/4" BURIED PVC LIGHTING CONDUIT
- 3/4" GALVANIZED STEEL ELECTRICAL CONDUIT
- PROPOSED DECORATIVE MEDLEY X IN 6', 4' AND 2' LENGTHS USE WALL MOUNT BRACKET–SM
- PROPOSED DECORATIVE MASQUE I SPOT LIGHT USE WALL MOUNT BRACKET–SM
- 12" ROUND CONCRETE PULL BOX TYPE 3
- NEMA 6–20R RECEPTACLE



A/64 PAVILION STRUCTURAL PLAN

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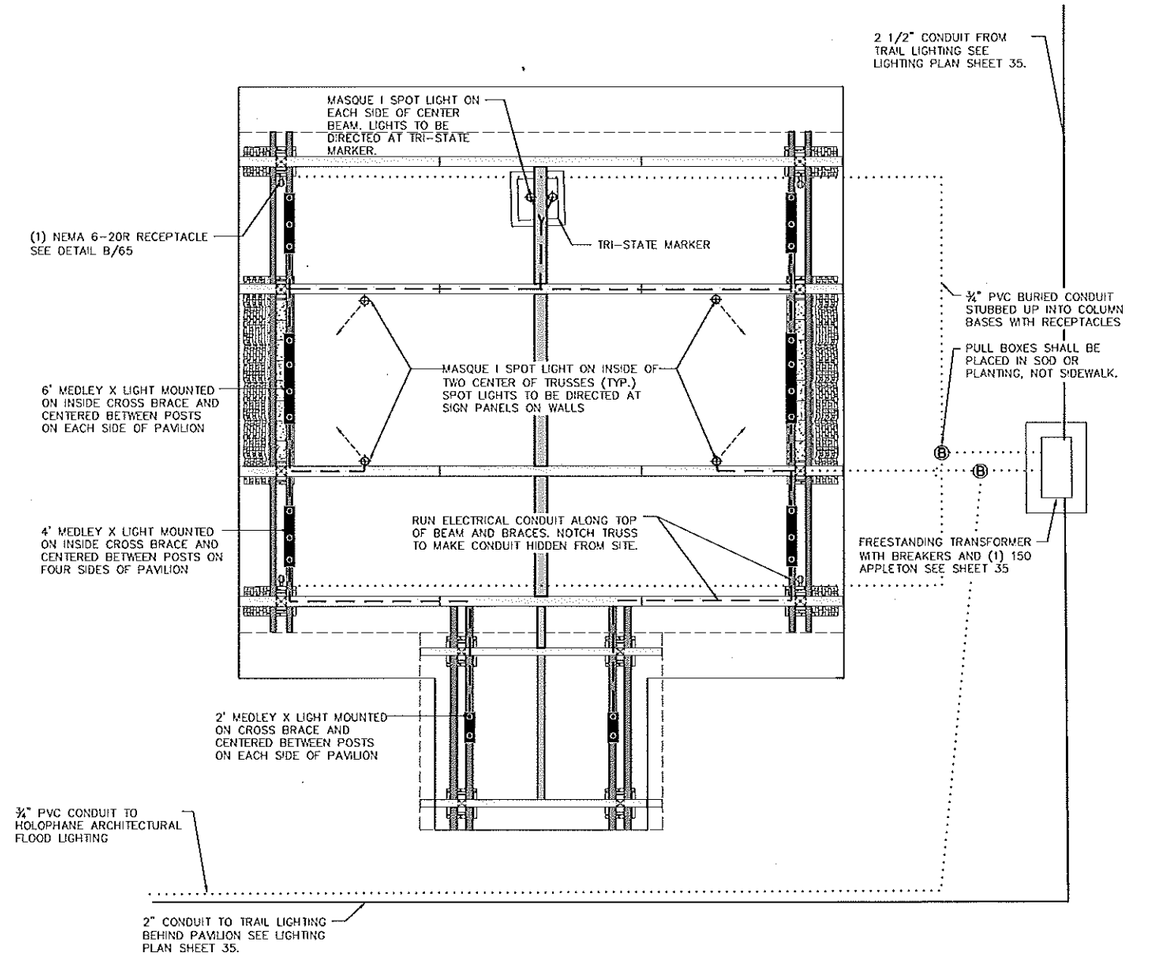

B/64 PAVILION ELECTRICAL PLAN

0 5 10 15

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1110 West 23rd
Tulsa, OK 74107
(918) 584–6464

Seal:

REGISTERED PROFESSIONAL ENGINEER DONALD E. LASLEY 14883 OKLAHOMA

10-30-12

Buffalo Trail and Tri State Gathering Area

Quapaw Tribe of Oklahoma (O-Gah-Pah)

Pavilion Structural /Electrical Plan

Revisions:

North

Design	JM	11/11
Drawn	JM	11/11
Checked	KF	11/11
Approved		

PROJECT NUMBER: 481

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Sheet: 64 of 72

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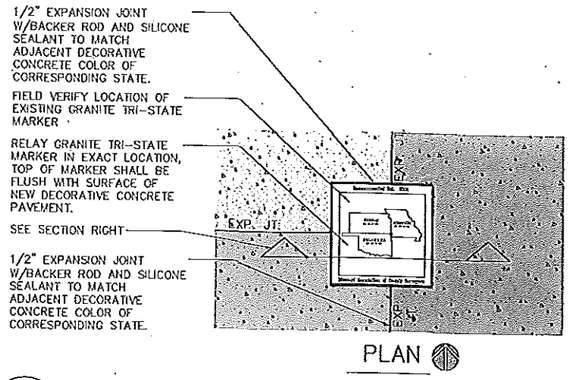
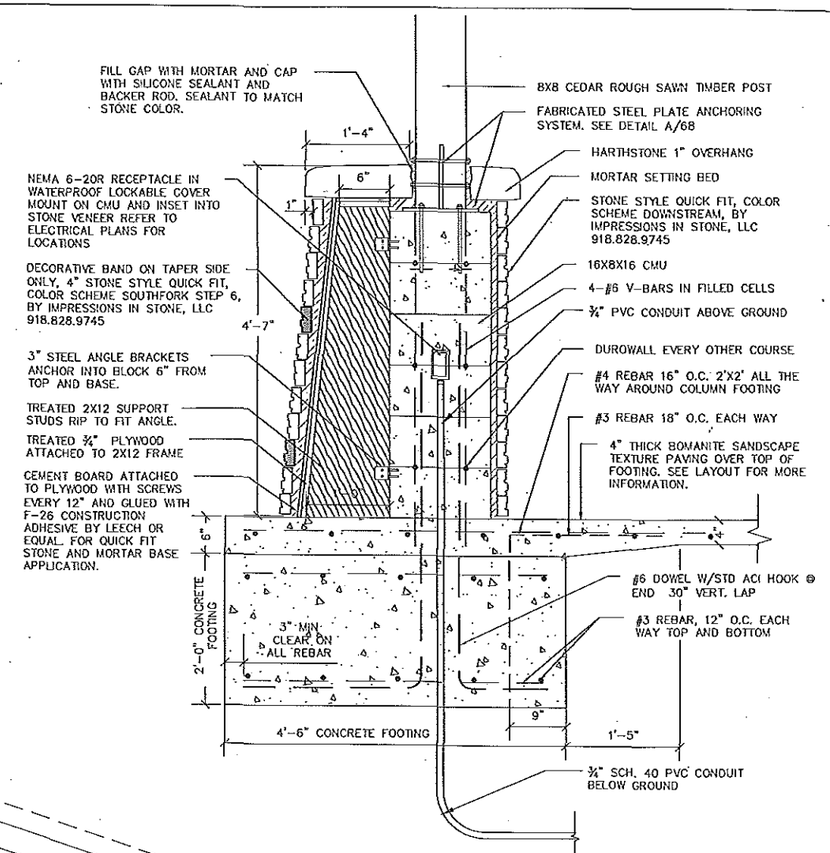


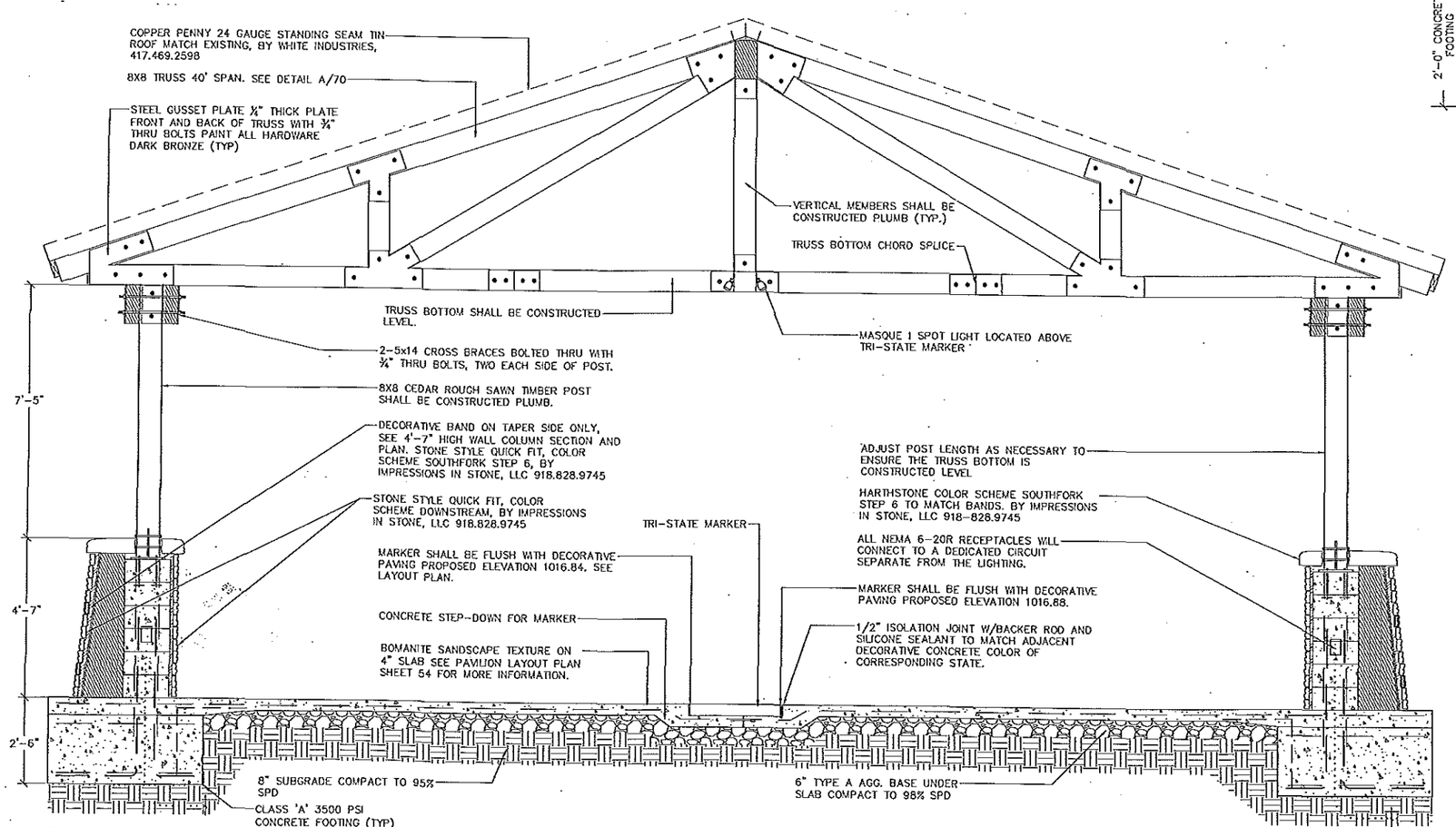
A / 65 TRI-STATE MARKER INSTALLATION

NOT TO SCALE



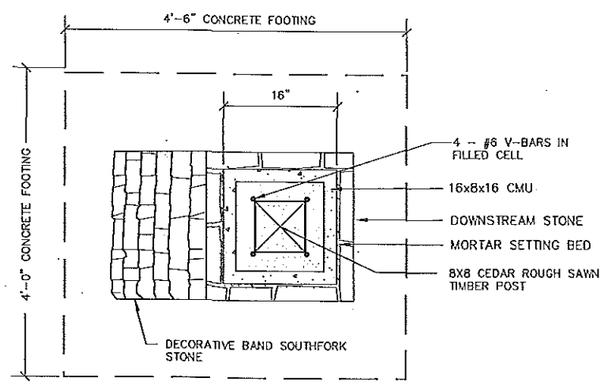
B / 65 SECTION- 4'-7" HIGH COLUMN

NOT TO SCALE



D / 65 PAVILION FRONT SECTION CUT 'A'-'A'

NOT TO SCALE



C / 65 PLAN- 4'-7" HIGH COLUMN BASE

NOT TO SCALE

LANDPLAN CONSULTANTS INCORPORATED
1110 West 23rd
Tulsa, OK 74107
(918) 584-6464

Seal: REGISTERED PROFESSIONAL ENGINEER DONALD E. LASLEY 14653 OKLAHOMA 10 Jan 2012

Buffalo Trail and Tri State Gathering Area

Quapaw Tribe of Oklahoma (O-Gah-Pah)

Pavilion Structural Details (2)

Revisions:

North

Design	JM	11/11
Drawn	JM	11/11
Checked	KF	11/11
Approved		

PROJECT NUMBER: 481

BEFORE YOU DIG -- 1-800-522-6543 CALL OKIE

Sheet: 65 of 72

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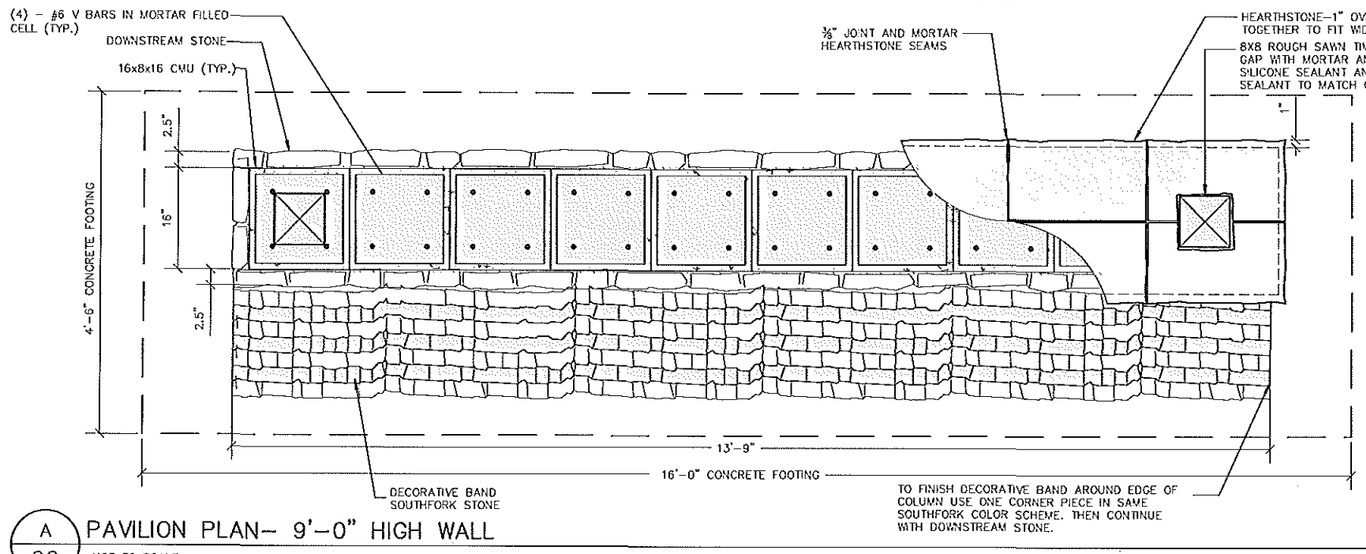
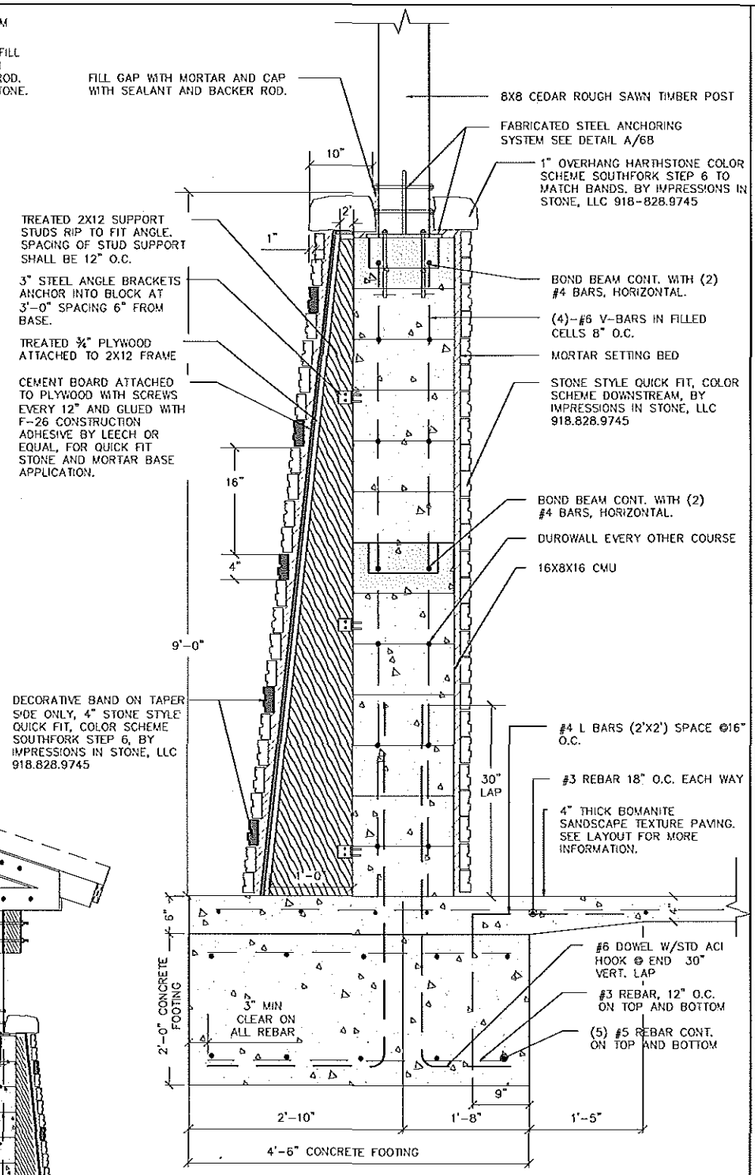


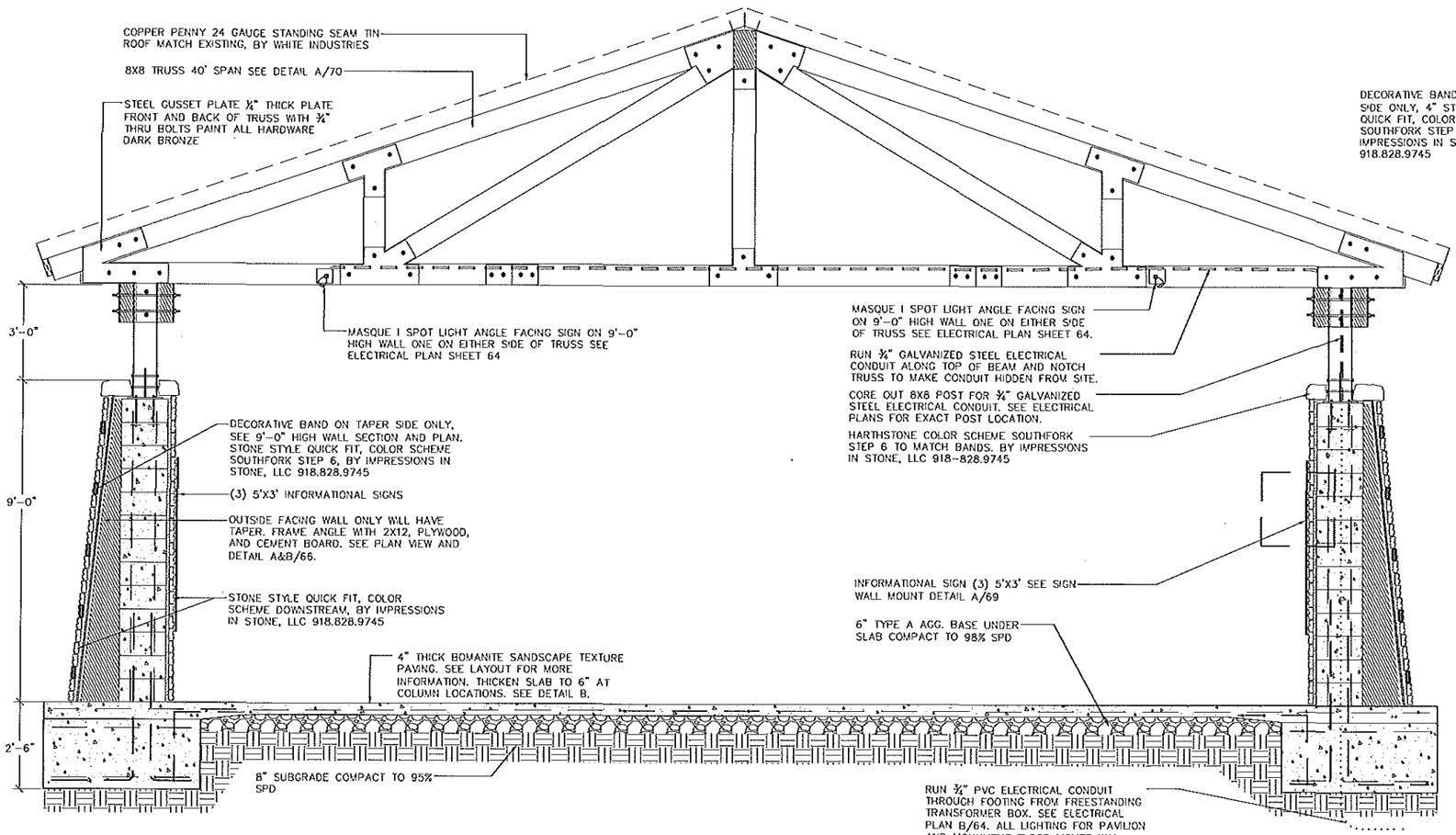
A / 66 PAVILION PLAN– 9'–0" HIGH WALL

NOT TO SCALE



B / 66 SECTION– 9'–0" HIGH WALL

NOT TO SCALE



C / 66 PAVILION MIDDLE SECTION CUT 'B'–'B'

NOT TO SCALE

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1110 West 23rd
Tulsa, OK 74107
(918) 584-6464

Seal: REGISTERED PROFESSIONAL ENGINEER DONALD E. LASLEY 14683 OKLAHOMA 1/13/2012

Buffalo Trail and Tri State Gathering Area

Quapaw Tribe of Oklahoma (O-Gah-Pah)

Pavilion Structural Details (3)

Revisions:

North

Design	JM	11/11
Drawn	JM	11/11
Checked	KF	11/11
Approved		

PROJECT NUMBER: 481

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Sheet: 66 of 72

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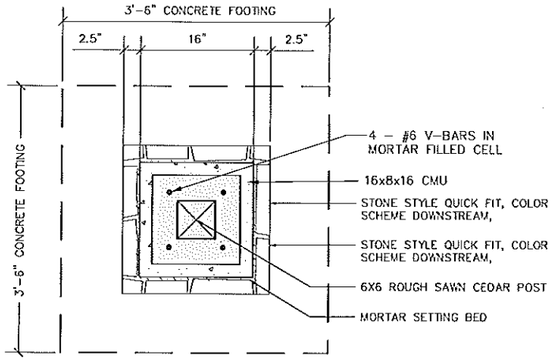
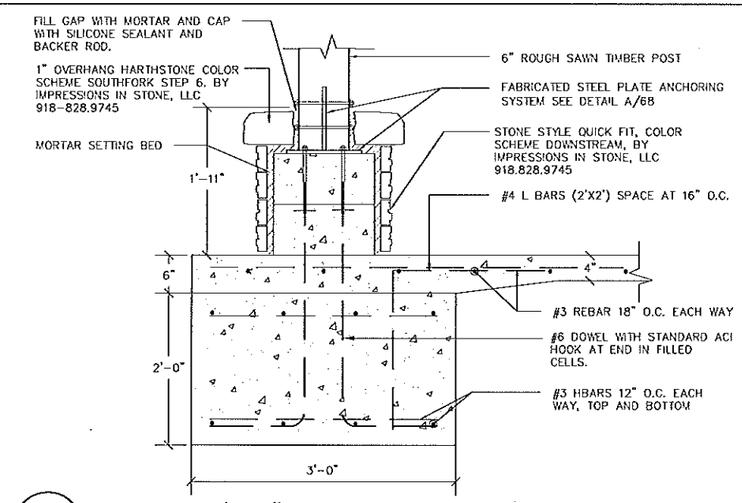


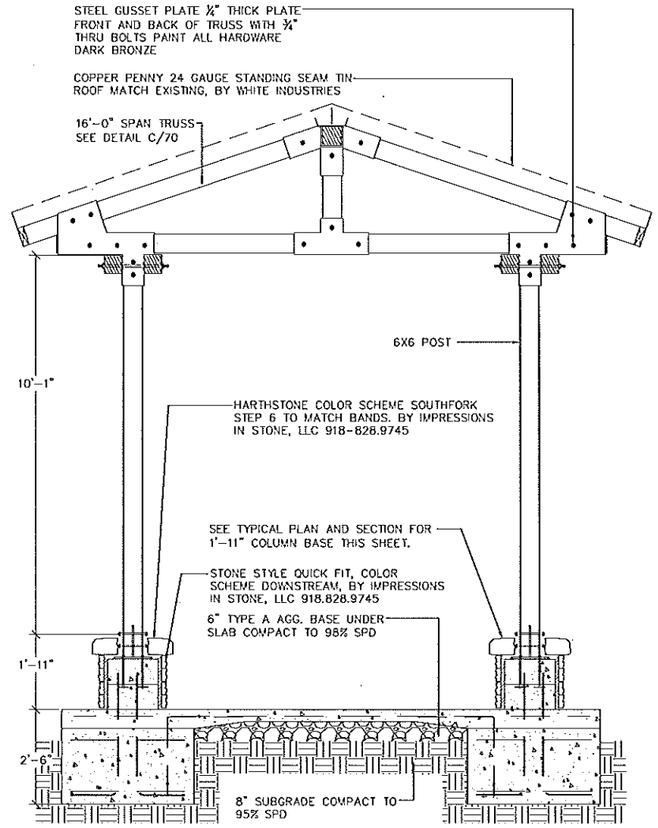
A/67 PLAN– 1'–11" HIGH COLUMN

NOT TO SCALE



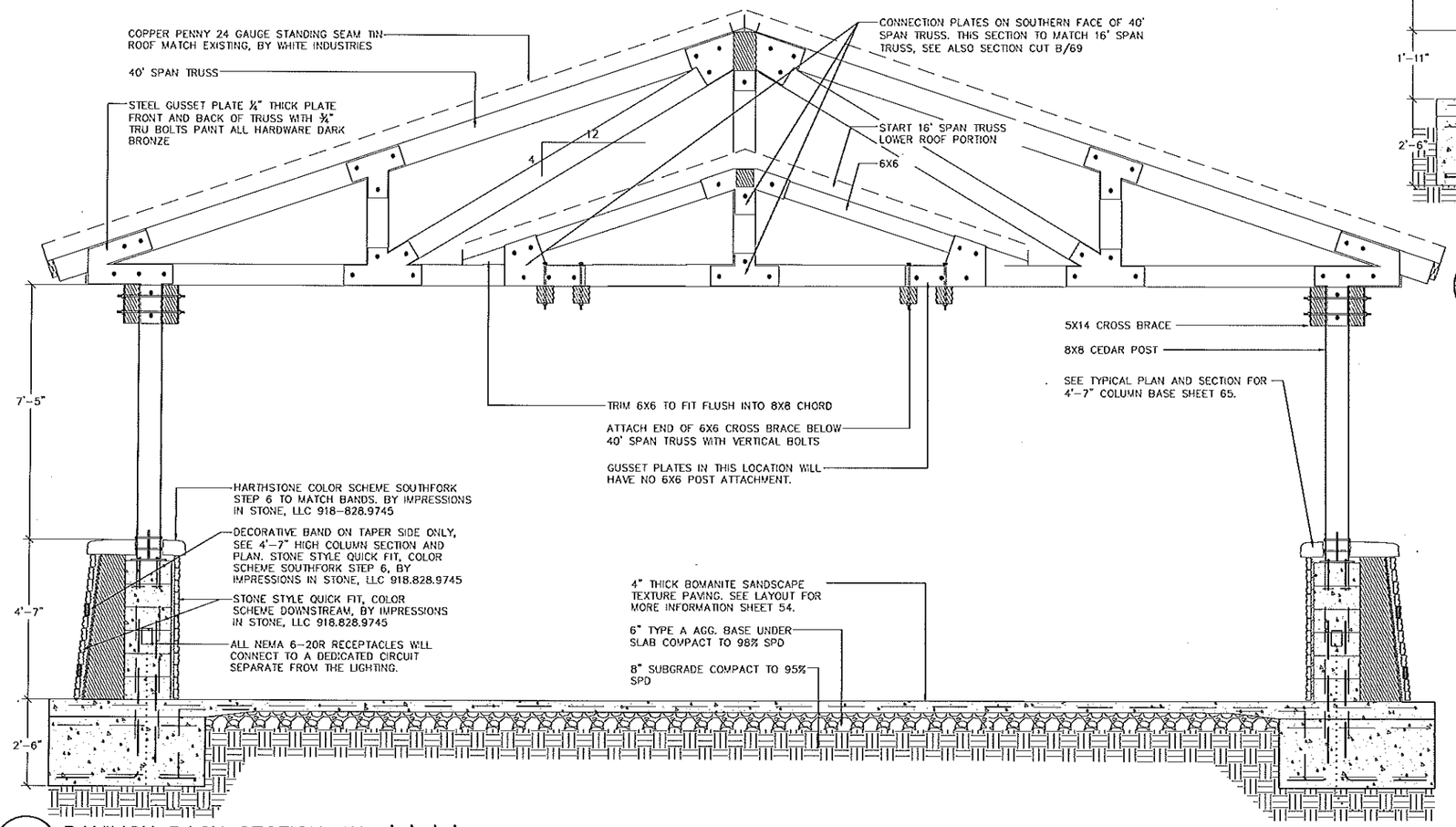
B/67 SECTION– 1'–11" HIGH COLUMN

NOT TO SCALE



D/67 PAVILION BACK SECTION CUT 'D'–'D'

NOT TO SCALE



C/67 PAVILION BACK SECTION CUT 'C'–'C'

NOT TO SCALE

LANDPLAN CONSULTANTS INCORPORATED
1110 West 23rd
Tulsa, OK 74107
(918) 584-6464

Seal:

REGISTERED PROFESSIONAL LANDSCAPE ARCHITECT DONALD E. LASLEY 14683 OKLAHOMA

Buffalo Trail and Tri State Gathering Area

Quapaw Tribe of Oklahoma (O-Gah-Pah)

Pavilion Structural Details (4)

Revisions:

North

Design	JM	11/11
Drawn	JM	11/11
Checked	KF	11/11
Approved		

PROJECT NUMBER: 481

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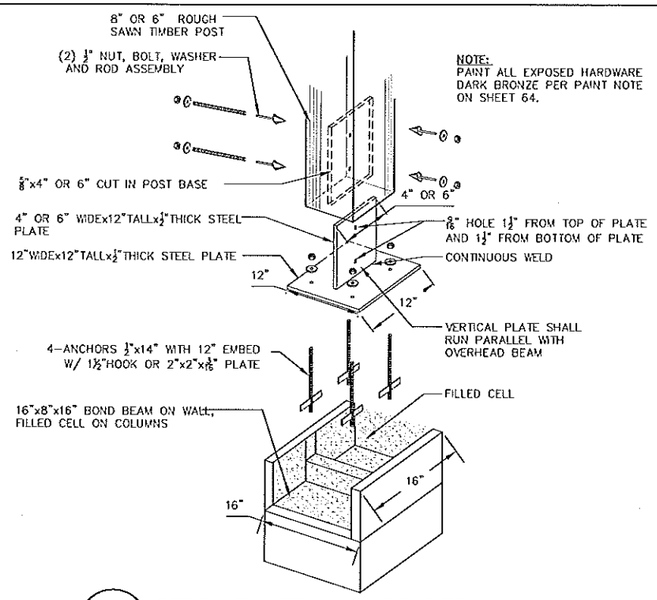
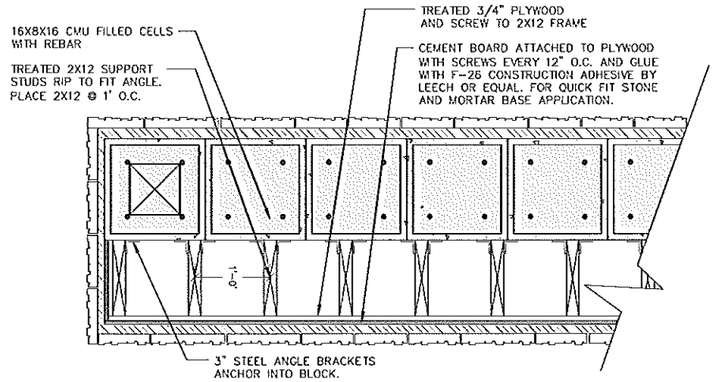
Sheet: 67 of 72

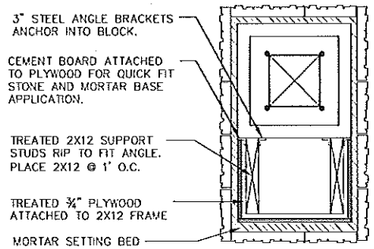
F:\481-Buffalo Trail and Tri State Monument\Final\481-structural DETAILS.dwg, 1/12/2012 1:52:54 PM



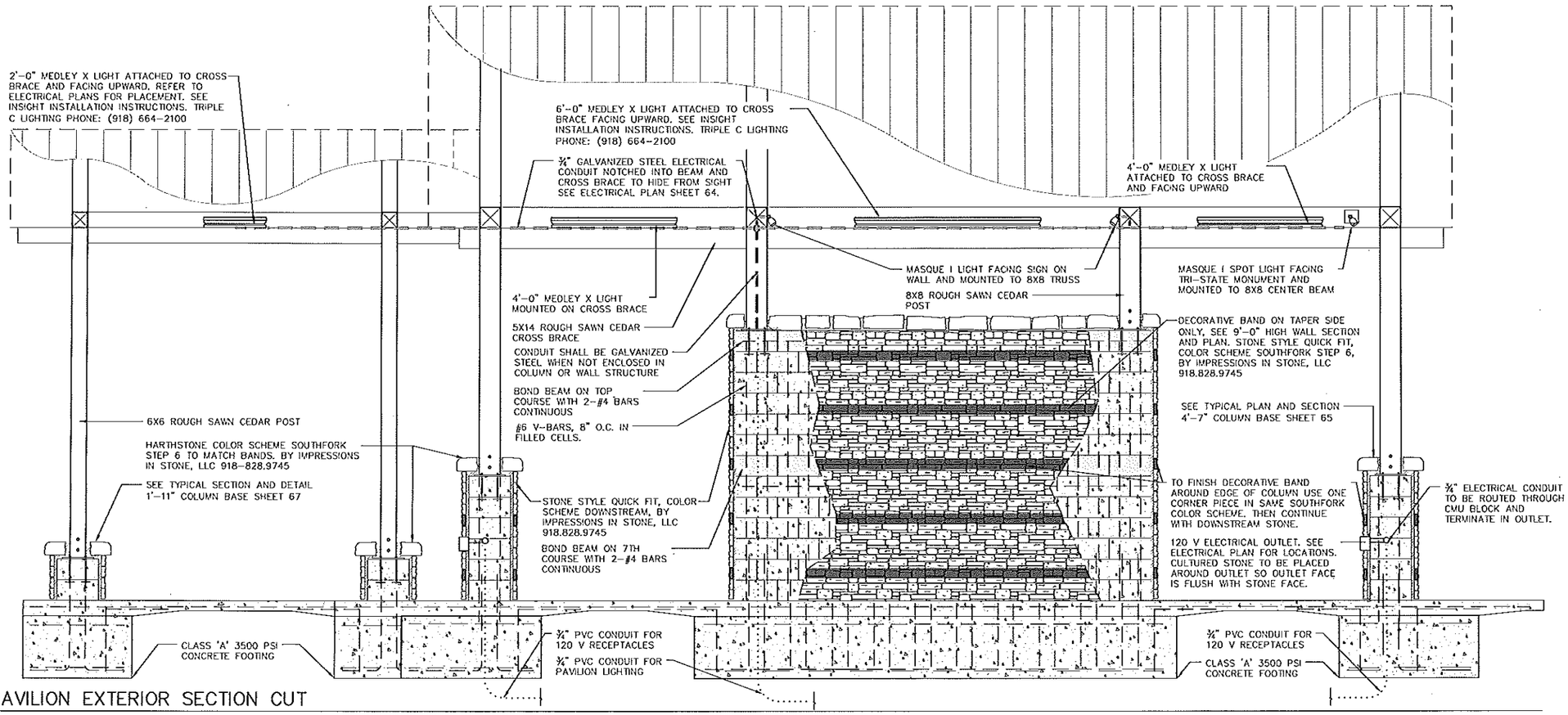
NOTE:
PAINT ALL EXPOSED HARDWARE DARK BRONZE PER PAINT NOTE ON SHEET 64.

A 68 STEEL PLATE ANCHOR DETAIL
NOT TO SCALE





B 68 FRAME DETAIL FOR TAPER ON WALL AND COLUMN
NOT TO SCALE



C 68 PAVILION EXTERIOR SECTION CUT
NOT TO SCALE

LANDPLAN CONSULTANTS INCORPORATED
1110 West 23rd
Tulsa, OK 74107
(918) 584-6464

Seal:

REGISTERED PROFESSIONAL ENGINEER
DONALD E. LASLEY
14683
OKLAHOMA

Buffalo Trail and Tri State Gathering Area
Quapaw Tribe of Oklahoma (O-Gah-Pah)
Pavilion Structural Details (5)

Revisions:

North

Design	JM	11/11
Drawn	JM	11/11
Checked	KF	11/11
Approved		

PROJECT NUMBER: 481

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Sheet: 68 of 72

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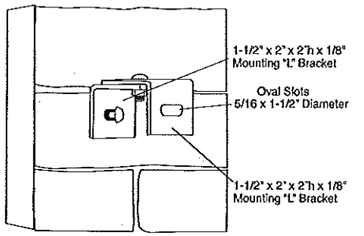
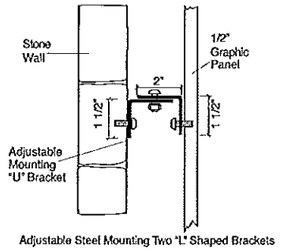
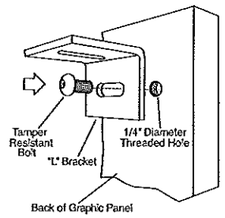




Adjustable Steel Mounting Two "L" Shaped Brackets



1/2" Graphic Panel
Tamper Resistent Bolt:
- Button Head Anti-Vandal Screws
- 1/2" long x 1/4"-20 Thread
- Stainless Steel

SPECIFICATIONS FOR DIGITAL HIGH PRESSURE LAMINATE GRAPHIC PANEL WALL MOUNT

THE PRODUCTS WE ARE REQUESTING ARE (9) 36" W X 60" H X 1/2" THICK, EXTERIOR GRADE, THREADED, DIGITAL HIGH-PRESSURE LAMINATE (DHPL) GRAPHIC PANELS WITH A 10 YEAR WARRANTY. ARTWORK WILL BE PROVIDED BY THE OWNER. THE PANELS SHALL BE INSTALLED ONTO THE STONE FAÇADE /CONCRETE BLOCK WALL USING THE ADJUSTABLE MOUNTING "U" BRACKET ASSEMBLY. THIS SECURITY BOLT / "U" BRACKET ASSEMBLY SHALL BE REPEATED FOR EACH CORNER OF THE GRAPHIC PANEL. (SEE ILLUSTRATION)

PRODUCTS AND SUGGESTED VENDORS ARE AS FOLLOWS:

* (9) 36" W X 60" H X 1/2" THICK DIGITAL HIGH-PRESSURE LAMINATE (DHLP) GRAPHIC PANELS WITH A 10 YEAR WARRANTY

SUGGESTED VENDORS:

ALLEN SIGN STUDIO, LLC
WWW.ALLENSIGNSTUDIO.COM

IZONE IMAGING
WWW.IZONEIMAGING.COM

FOLIA INC.
WWW.FOLIA.CA

KVO INDUSTRIES
WWW.KVOINDUSTRIES.COM

* ¼"-20 X 1/2" ROUND HEAD, STAINLESS STEEL, MACHINE SECURITY SCREWS FOR THE PANEL MOUNT; ¼"-20 X 1½" ROUND HEAD, STAINLESS STEEL, MACHINE SECURITY SCREWS FOR THE STONE FAÇADE MOUNT.

SUGGESTED VENDORS:
FASTENAL
HTTP://WWW.FASTENAL.COM

HUDSON FASTENERS
HTTP://WWW.HUDSONFASTENERS.COM

TAMPERPROOF
HTTP://TAMPERPROOF.COM

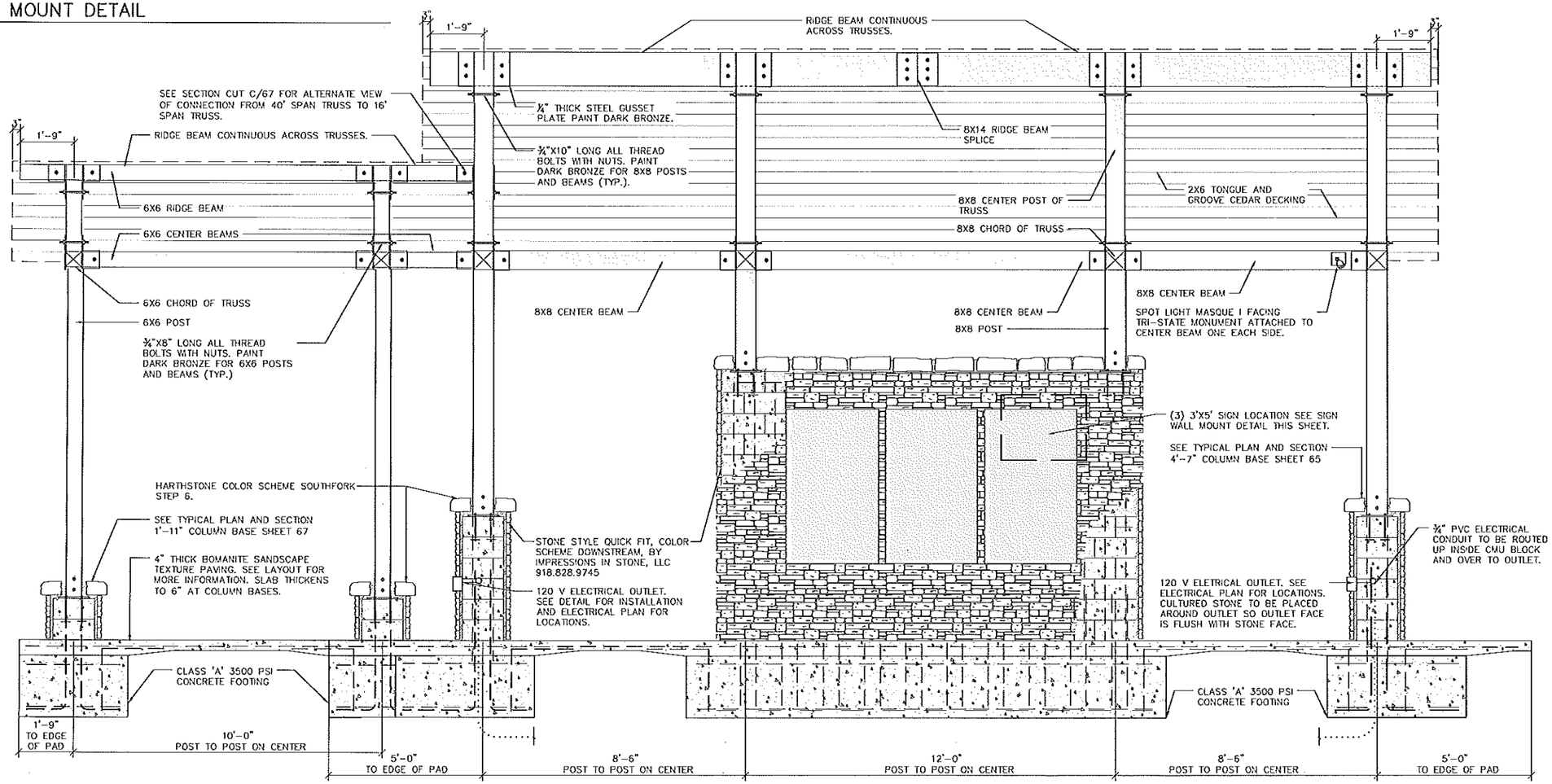
* CONCRETE SINGLE EXPANSION ANCHORS ¼" X 20 X 1 3/8" FOR USE IN THE STONE FAÇADE MOUNT.

CONCRETE FASTENING SYSTEMS
HTTP://WWW.CONFAST.COM/PRODUCTS/SINGLE-EXPANSION-FASTENER.ASPX

CONCRETE FASTENERS, INC.
HTTP://WWW.CONCRETEFASTENERS.COM/

MARBRI SUPPLY, INC.
HTTP://MARBRI.NET/PRODUCT8-152.PHP

A / 69 SIGN WALL MOUNT DETAIL
NOT TO SCALE



B / 69 PAVILION INTERIOR CENTER SECTION CUT
NOT TO SCALE

LANDPLAN CONSULTANTS INCORPORATED
1110 West 23rd
Tulsa, OK 74107
(918) 584-6464

Seal: REGISTERED PROFESSIONAL ENGINEER DONALD E LASLEY 14683 OKLAHOMA 6 June 2012

Buffalo Trail and Tri State Gathering Area

Quapaw Tribe of Oklahoma (O-Gah-Pah)

Pavilion Structural Details (6)

Revisions:

North

Design	JM	11/11
Drawn	JM	11/11
Checked	KF	11/11
Approved		

PROJECT NUMBER: 481

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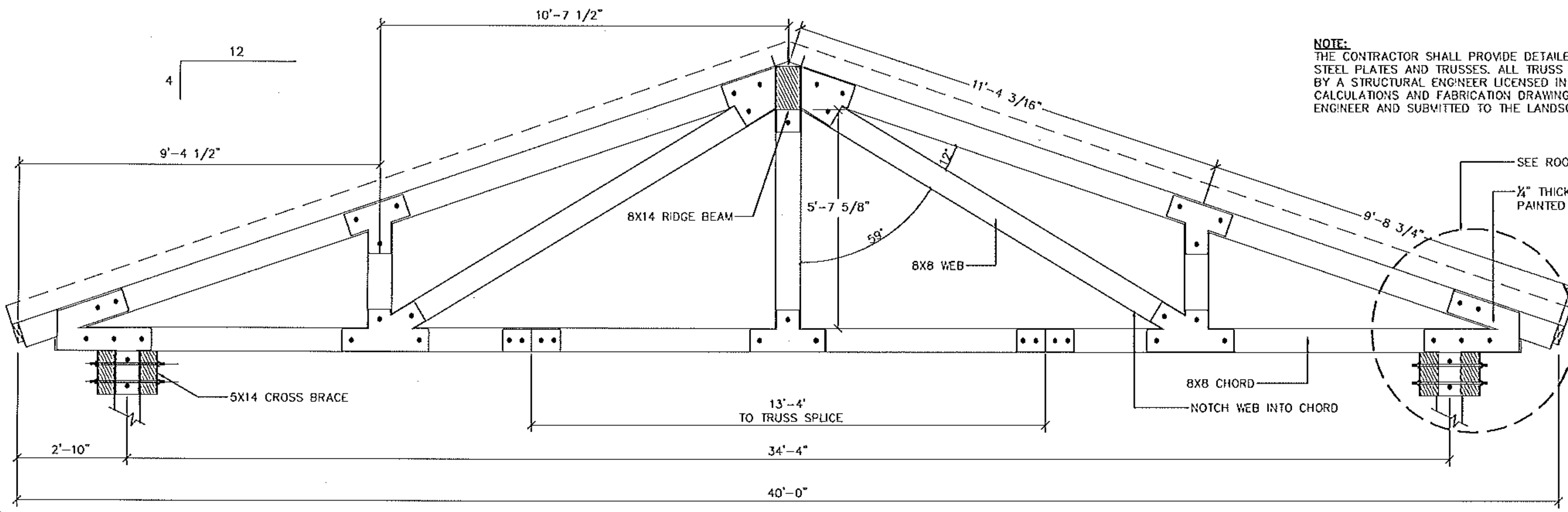
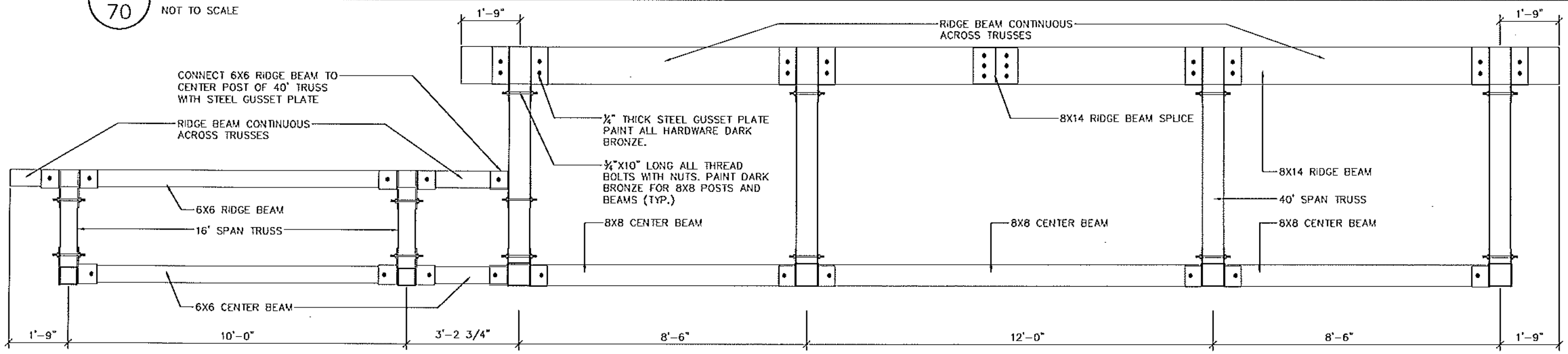
Sheet: 69 of 72

F:\481-Buffalo Trail and Tri State Monument\Final\481-structural DETAILS.dwg, 1/12/2012 2:01:46 PM

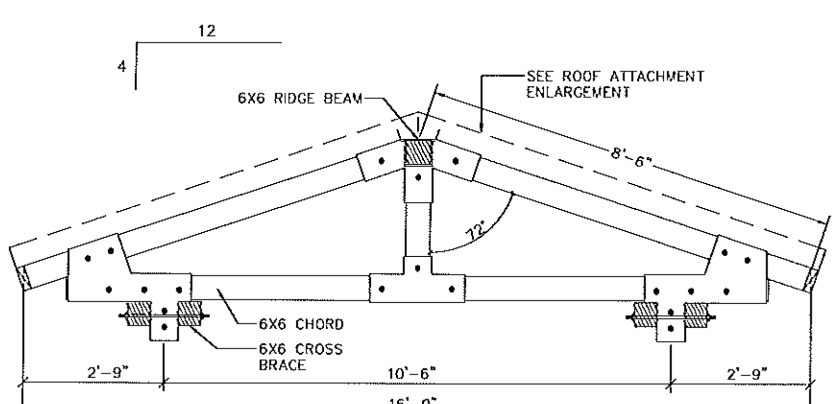
NOTE:
THE CONTRACTOR SHALL PROVIDE DETAILED SHOP DRAWINGS FOR ALL STEEL PLATES AND TRUSSES. ALL TRUSS DESIGN SHALL BE PERFORMED BY A STRUCTURAL ENGINEER LICENSED IN THE STATE OF OKLAHOMA. CALCULATIONS AND FABRICATION DRAWINGS SHALL BE SEALED BY AN ENGINEER AND SUBMITTED TO THE LANDSCAPE ARCHITECT FOR REVIEW.



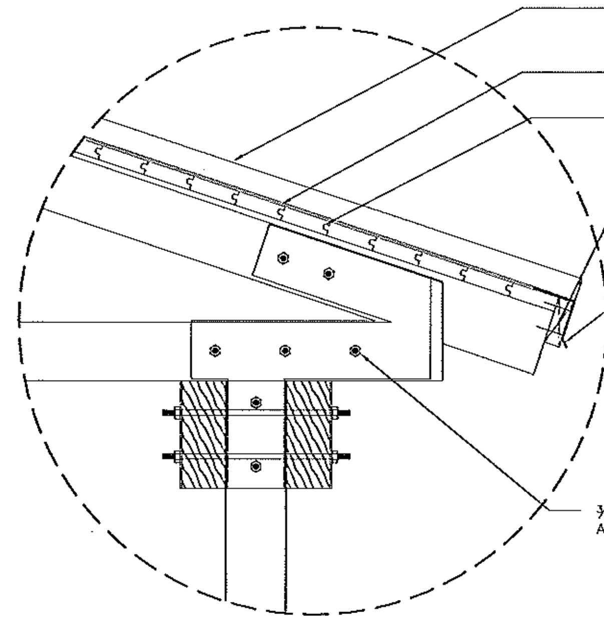
A/70 40'-0" SPAN TRUSS DETAIL
NOT TO SCALE



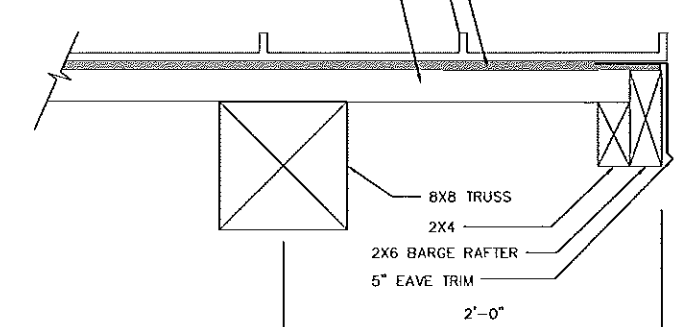
B/70 SECTION OF CENTER WITH TRUSS/BEAM CONNECTION
NOT TO SCALE



C/70 16'-0" SPAN TRUSS DETAIL
NOT TO SCALE



D/70 ROOF ATTACHMENT ENLARGEMENT
NOT TO SCALE



E/70 BARGE RAFTER ON GABLE END
NOT TO SCALE

LANDPLAN CONSULTANTS INCORPORATED
1110 West 23rd
Tulsa, OK 74107
(918) 584-6464

Seal: REGISTERED PROFESSIONAL ENGINEER DONALD E. LASLEY 14883 OKLAHOMA

Buffalo Trail and Tri State Gathering Area
Quapaw Tribe of Oklahoma (O-Gah-Pah)
Pavilion Structural Details (7)

Revisions:

North

Design	JM	11/11
Drawn	JM	11/11
Checked	KF	11/11
Approved		

PROJECT NUMBER: 481

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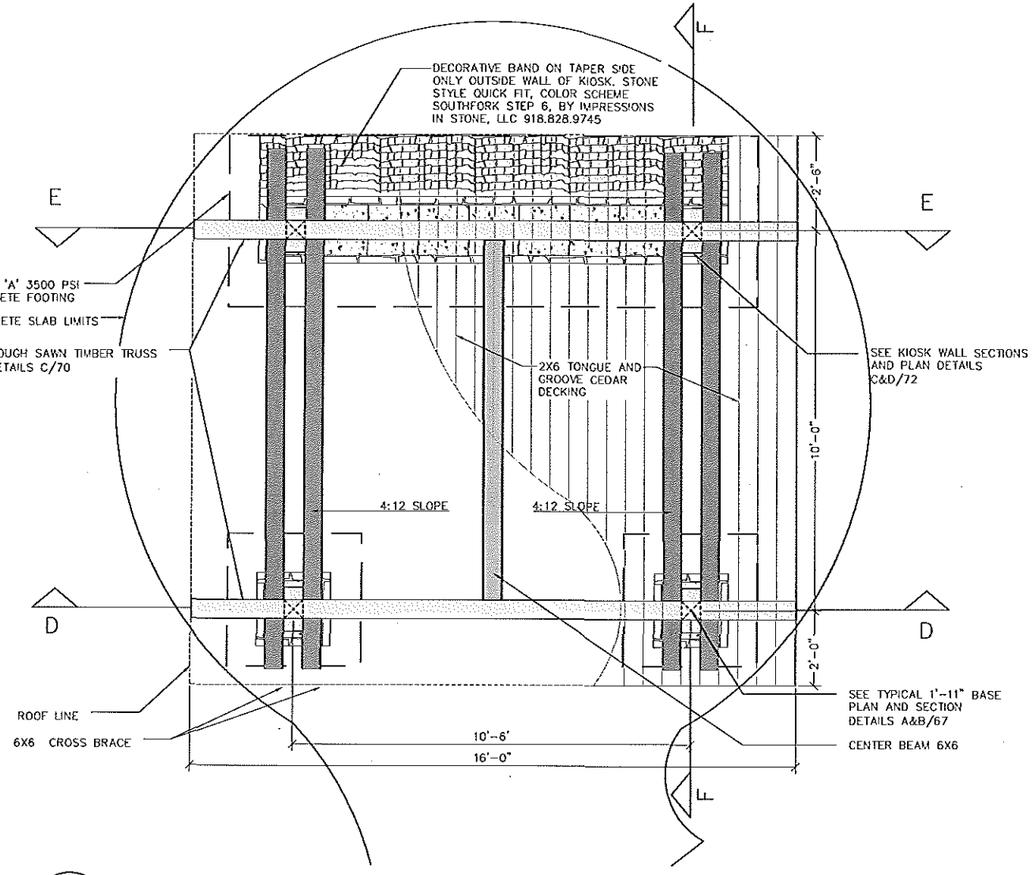
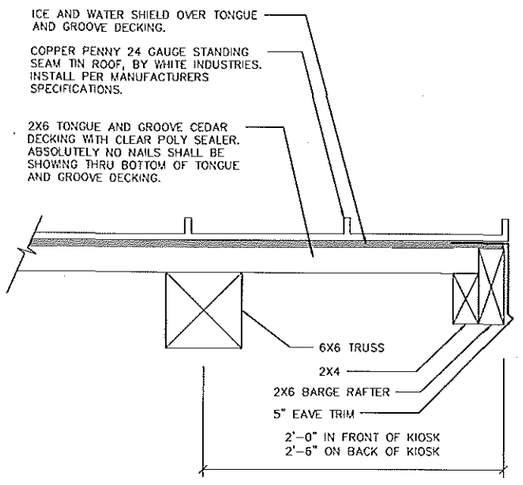
F:\481-Buffalo Trail and Tri State Monument\Final\481-structural DETAILS.dwg, 1/12/2012 2:11:50 PM



A/71 STRUCTURAL PLAN

0 2 4 6

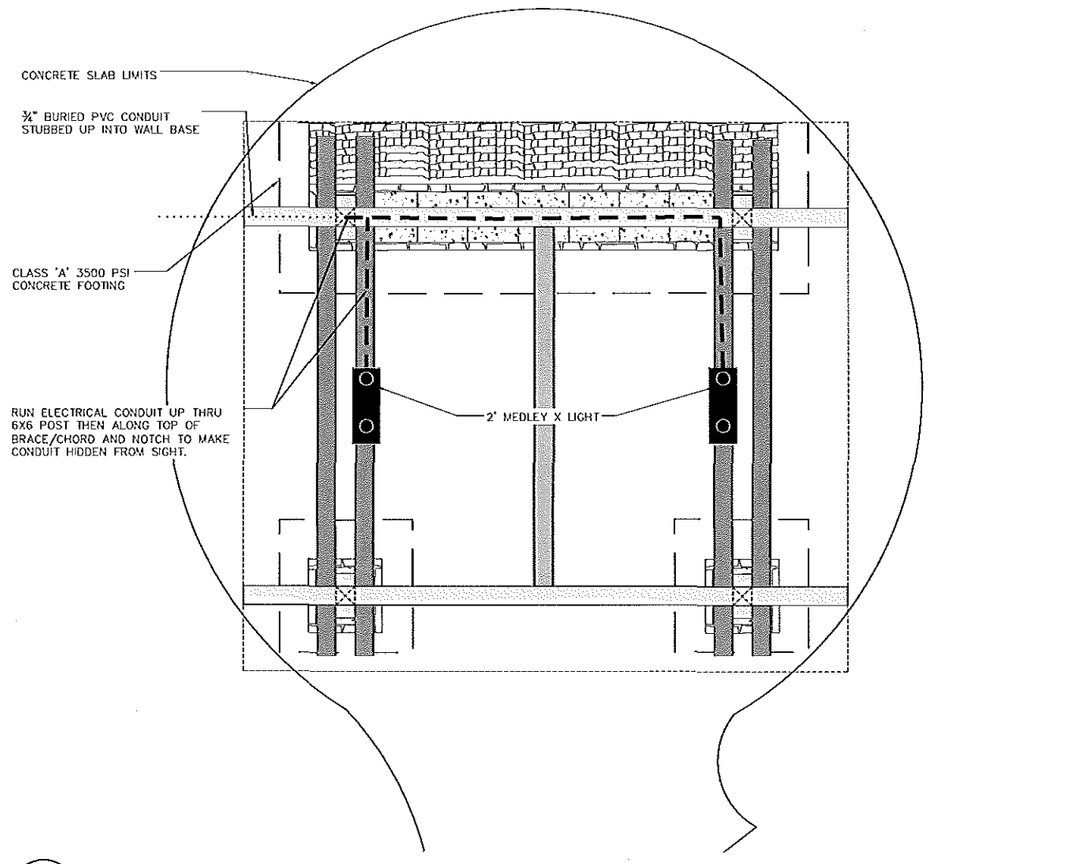


C/71 BARGE RAFTER ON GABLE END

NOT TO SCALE

ELECTRICAL LEGEND

- 2 1/2" LIGHTING CONDUIT
- 3/4" BURIED PVC LIGHTING CONDUIT
- 3/4" GALVANIZED STEEL ELECTRICAL CONDUIT
- PROPOSED DECORATIVE MEDLEY X IN 6', 4' AND 2' LENGTHS USE WALL MOUNT BRACKET-SM
- PROPOSED DECORATIVE MASQUE I SPOT LIGHT USE WALL MOUNT BRACKET-SM
- (B) 12" ROUND CONCRETE PULL BOX TYPE 3
- NEMA 6-20R RECEPTACLE



B/71 ELECTRICAL PLAN

0 2 4 6

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Tulsa, OK 74107
(918) 584-6464

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Buffalo Trail and Tri State Gathering Area

Quapaw Tribe of Oklahoma (O-Gah-Pah)

Kiosk Structural/Electrical Plans

Revisions:

North

Design	JM	11/11
Drawn	JM	11/11
Checked	KF	11/11
Approved		

PROJECT NUMBER: 481

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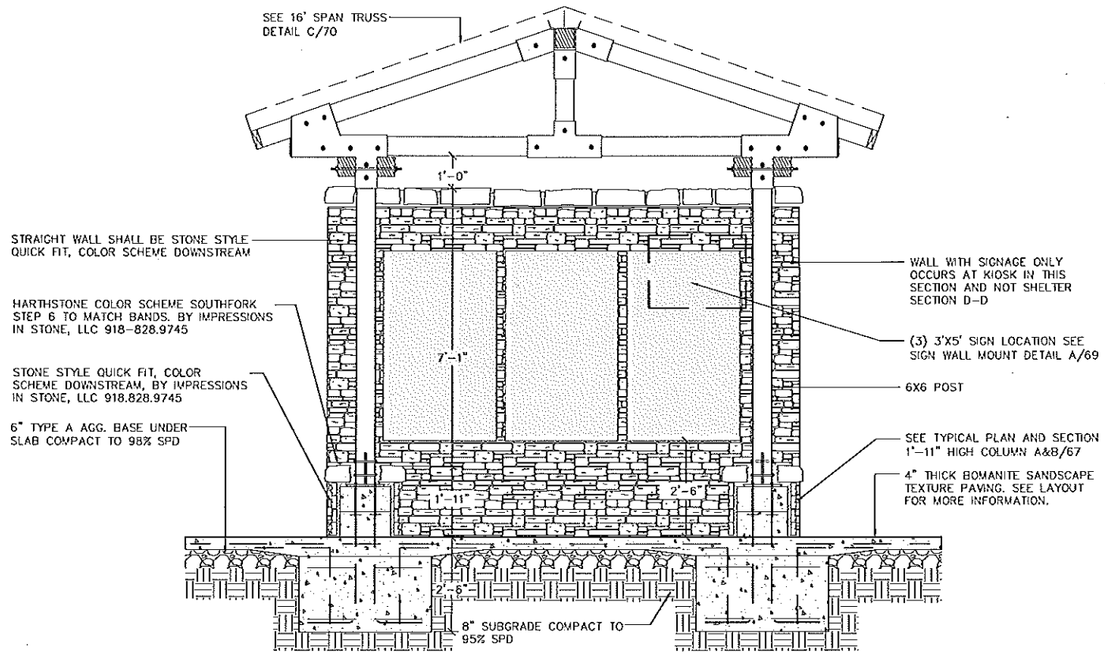
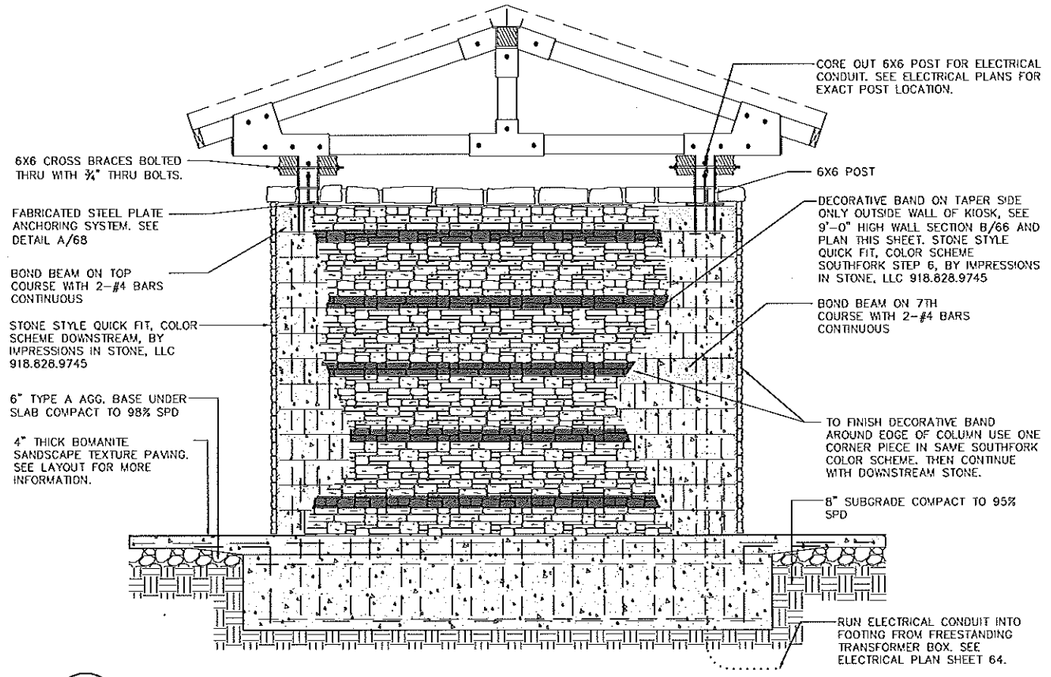
Sheet: 71 of 72

F:\481-Buffalo Trail and Tri State Monument\Final\481-structural DETAILS.dwg, 1/12/2012 2:12:15 PM



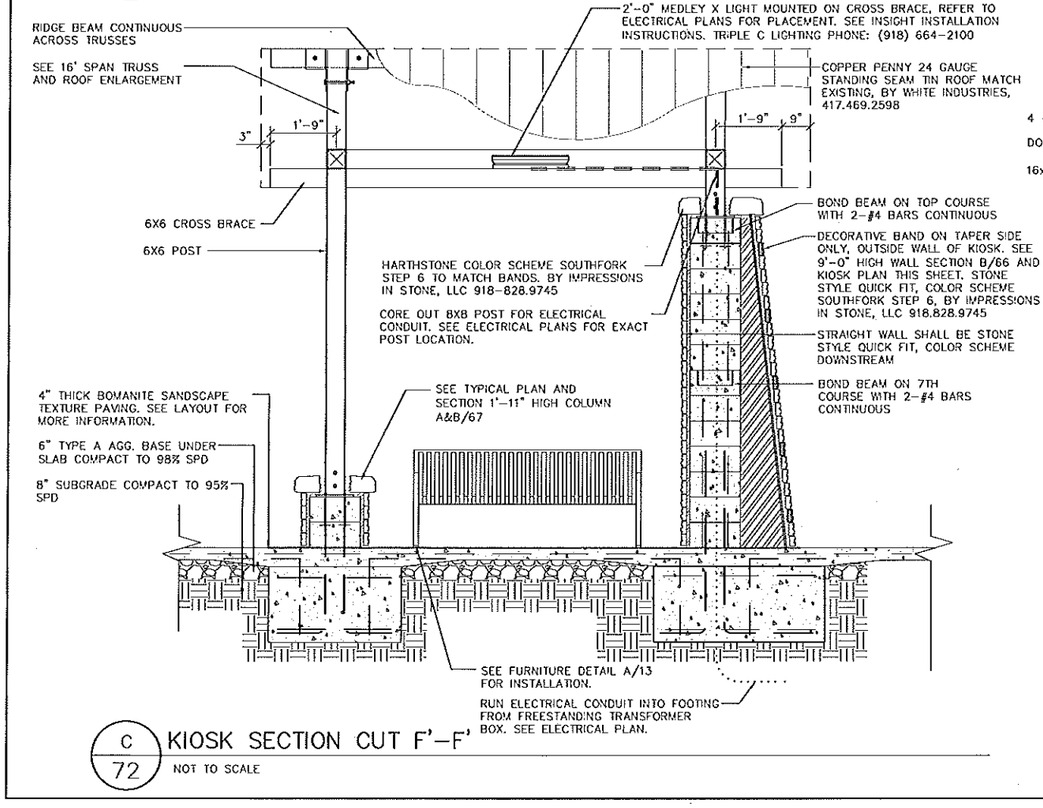
A/72 KIOSK SECTION CUT D'-D'

NOT TO SCALE



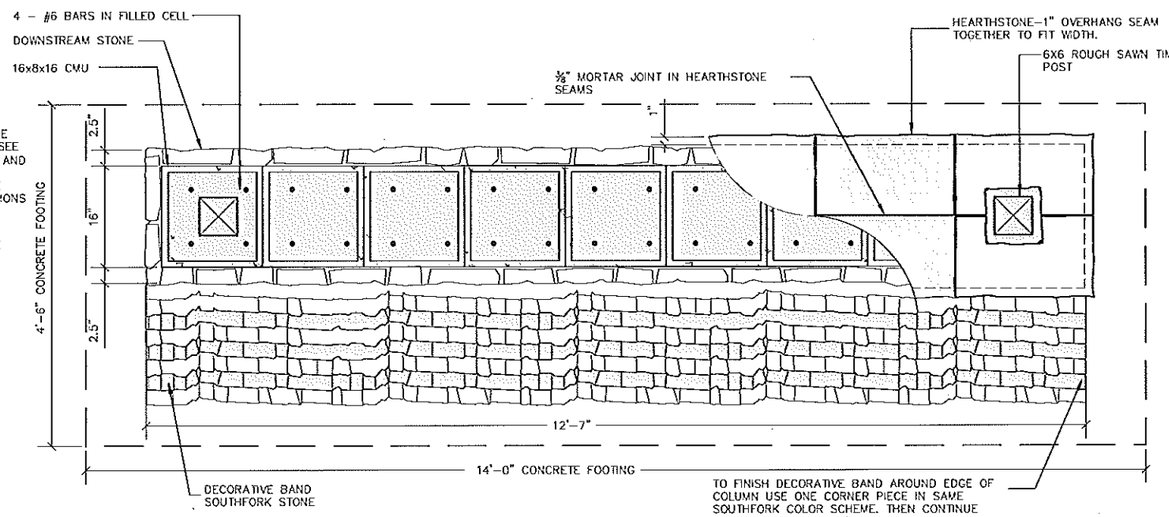
B/72 KIOSK SECTION CUT E'-E'

NOT TO SCALE



C/72 KIOSK SECTION CUT F'-F'

NOT TO SCALE



D/72 PLAN- KIOSK WALL 9'-0" HIGH

NOT TO SCALE

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Seal: PROFESSIONAL ENGINEER DONALD E. LASLEY 14883 OKLAHOMA 2012

Buffalo Trail and Tri State Gathering Area

Quapaw Tribe of Oklahoma (O-Gah-Pah)

Kiosk Structural Details (2)

Revisions:

North

Design	JM	11/11
Drawn	JM	11/11
Checked	KF	11/11
Approved		

PROJECT NUMBER: 481

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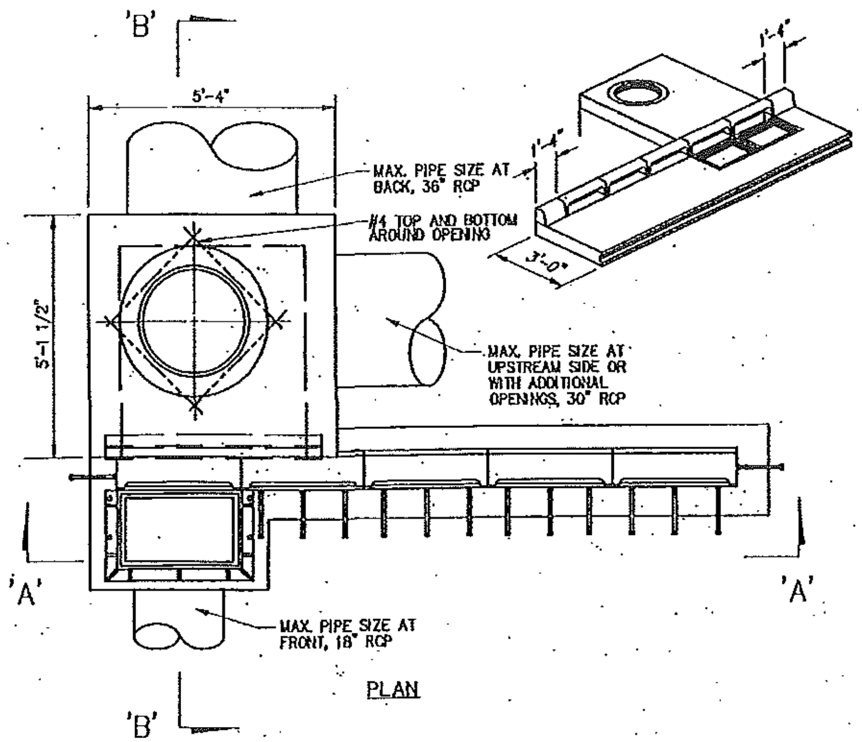
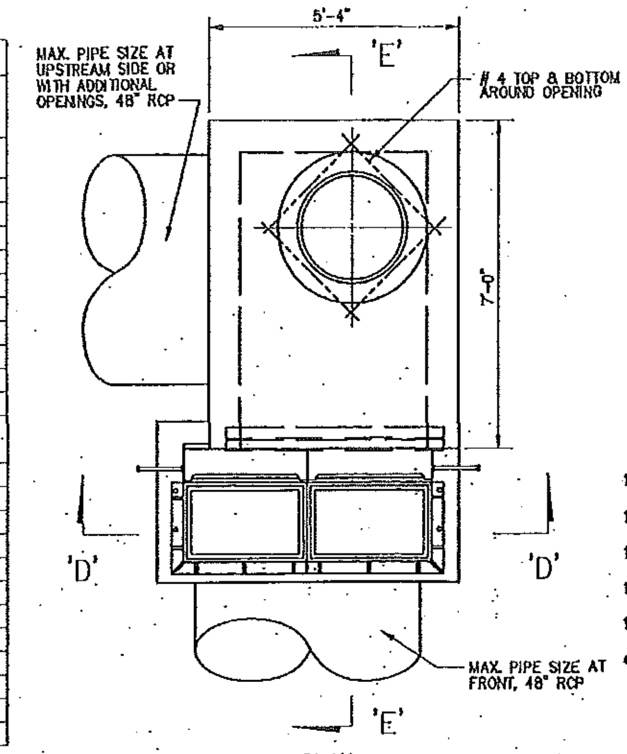
Sheet: 72 of 72



PLAN

QUANTITIES FOR INLETS							
INLET	CURB OPENING	CLASS "A" CONCRETE	INLET		INLET FRAME AND GRATE	CAST IRON CURB INLET	MH FRAME AND COVER
DESIGN	DESIGNATION	CU. YD.	BASE AM'T.	ADD'L. C.F. PER VERT. FT.	EACH	EACH	EACH
1 WITH SMALL JUNCT. BOX		1.50	43.56	15.84	1	1	1
	"A"	1.60	47.34	17.43	1	2	1
	"B"	1.73	55.44	21.03	1	3	1
	"C"	1.86	62.26	24.63	1	4	1
	"D"	1.99	68.03	28.23	1	5	1
2 WITH SMALL JUNCT. BOX		1.70	47.84	17.40	2	2	1
	"A"	1.83	57.01	21.00	2	3	1
	"B"	1.96	64.66	24.60	2	4	1
	"C"	2.08	71.70	28.20	2	5	1
	"D"	2.21	77.28	31.80	2	6	1
1 WITH LARGE JUNCT. BOX		2.11	50.44	18.34	1	1	1
	"A"	2.21	54.22	19.93	1	2	1
	"B"	2.34	62.32	23.53	1	3	1
	"C"	2.47	69.14	27.13	1	4	1
	"D"	2.60	74.91	30.73	1	5	1
2 WITH LARGE JUNCT. BOX		2.31	54.72	19.90	2	2	1
	"A"	2.43	63.89	23.50	2	3	1
	"B"	2.57	71.74	27.10	2	4	1
	"C"	2.69	78.58	30.70	2	5	1
	"D"	2.82	84.16	34.30	2	6	1

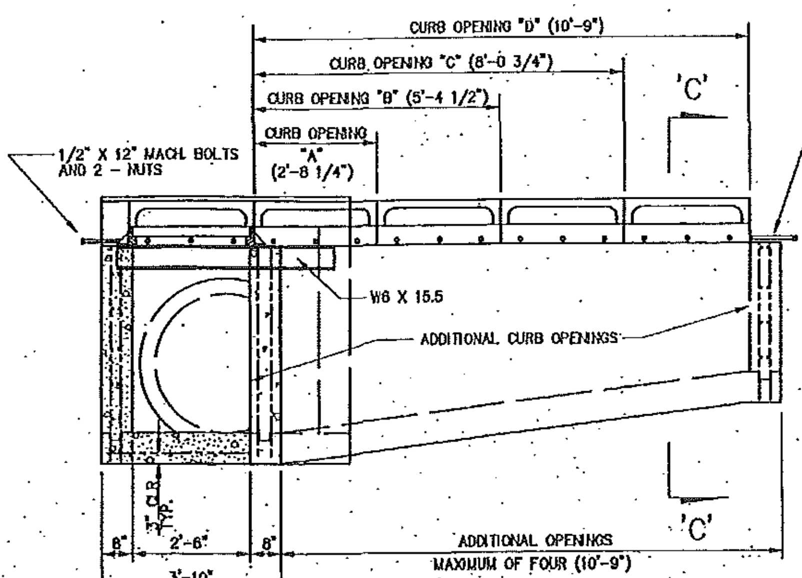


PLAN

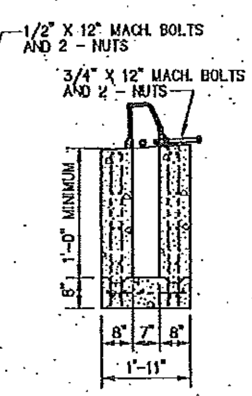
NOTES:

1. (a) WHEN THE INLET IS BUILT IN EXISTING PAVEMENT, THE APRON AROUND THE INLET SHALL BE OF THE SIZE SHOWN IN THE PLAN ON THIS SHEET, AND BUILT OF P.C. CONCRETE TO A MINIMUM 8" THICKNESS.
   (b) THERE WILL BE NO DEDUCTION OF PAYMENT FOR CONCRETE CURB AND GUTTER FOR THE LENGTH OR AREA OCCUPIED BY THE CONSTRUCTON OF CAST IRON CURB INLETS OR CAST IRON CURB INLET FRAME AND GRATE.
2. RUBBER COATED REINFORCED STEEL STEPS SHALL BE PLACED AT THE HEADERS IN ALL INLETS 4' OR MORE IN DEPTH. COST OF STEPS SHALL BE INCLUDED IN THE PRICE BID FOR INLET.
3. GRATING AND FRAMES TO BE USED IN THIS INLET ARE SHOWN ON THE STANDARD DRAWINGS STD 765, STD 766, DESIGNATED AS "STANDARD STORM SEWER GRATES AND FRAMES."
4. THE STANDARD DRAWING DESIGNATION NO., DESIGN NO., AND NUMBER OF ADDITIONAL OPENINGS SHALL BE INDICATED ON THE PLANS.
5. COST OF STRUCTURAL STEEL I-BEAMS AND ANGLE IRON TO BE INCLUDED IN THE PRICE BID FOR INLET. ANGLE IRON SHALL CONFORM TO ASTM-A7 OR A36.
6. CASTING SHALL CONFORM TO ASTM SPECIFICATION FOR GREY IRON CASTINGS, SERIAL DESIGNATION A-48-CLASS 20.
7. NO WORDING OR MARKING OF ANY KIND OTHER THAN THOSE SHOWN ON THE PLANS WILL BE PERMITTED ON THESE CASTINGS.
8. ALL NUTS AND BOLTS REQUIRED FOR THESE STRUCTURES SHALL BE CADMIUM PLATED OR GALVANIZED.
9. CAST IRON CURBS TO BE USED ON THIS INLET ARE SHOWN ON STANDARD DRAWING DESIGNATED AS "STANDARD CAST IRON CURB."
10. ALL MORTAR JOINTS TO BE 3/8" MAXIMUM, EVERY FIFTH COURSE OF BRICK MASONRY TO BE HEADER COURSE.
11. CURB INLETS SHALL BE PLACED ON UPSTREAM SIDE OF GRATE INLETS FOR TYPICAL INSTALLATIONS.
12. CONCRETE TROUGH FOR CURB INLETS AND STORM SEWER INLETS SHALL BE CONSTRUCTED AS ONE UNIT.
13. IF PRECAST INLET IS USED, FLOWABLE FILL MUST BE USED AS BACKFILL AROUND THE ENTIRE INLET.
14. USE MANHOLE FRAME AND COVER AS SHOWN ON STANDARD DRAWING NO. 754.

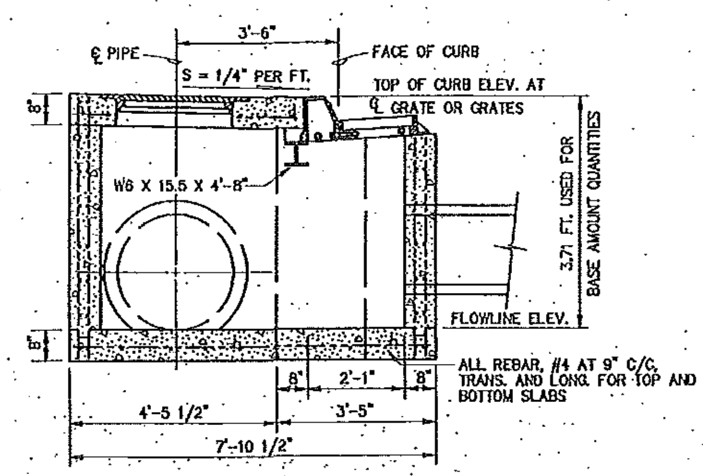
* BASES TO BE FORMED WITH 1 X 6 FORMS AND POURED IN PLACE.



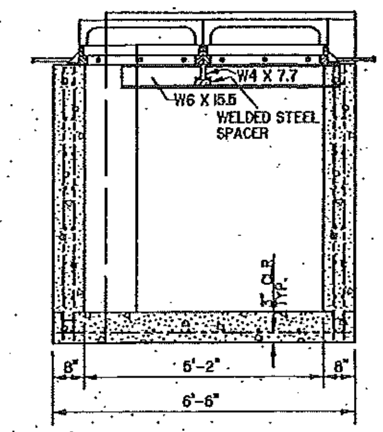
SECTION 'A-A'



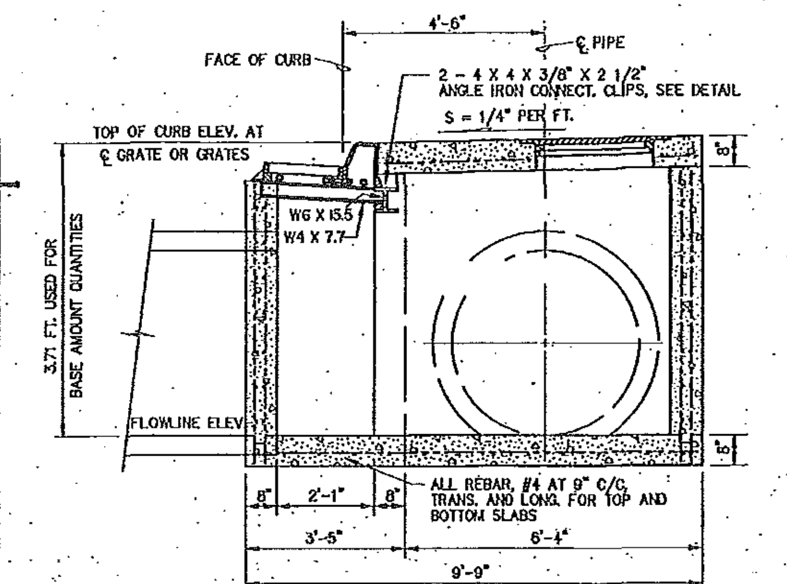
SECTION 'C-C'



SECTION 'B-B'



SECTION 'D-D'



SECTION 'E-E'

DOUBLE GRATE CURB INLET WITH JUNCTION BOX

(DESIGN 2 WITH LARGE JUNCTION BOX SHOWN)

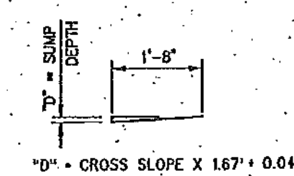
18" THRU 30" LONGITUDINAL PIPE REQUIRES SMALL JUNCTION BOX

ALL REBAR IN WALLS # 4 @ 12" CTRS EA WAY (TYPICAL)

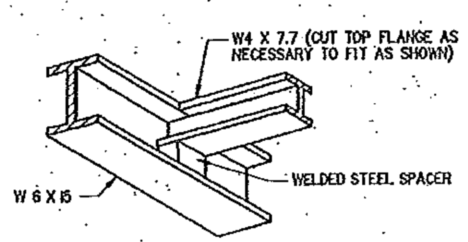
SINGLE GRATE CURB INLET WITH JUNCTION BOX

(DESIGN 1-D WITH SMALL JUNCTION BOX SHOWN)

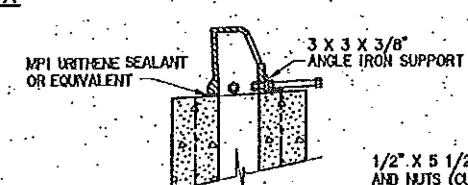
ALL REBAR IN WALLS # 4 @ 12" CTRS EA WAY (TYPICAL)



"D" = CROSS SLOPE X 1.67' + 0.04

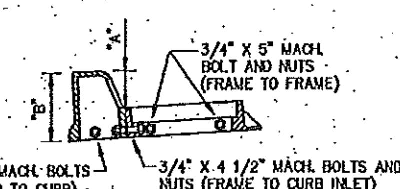


I-BEAM CONNECTION DETAIL FOR DOUBLE GRATE



ADDITIONAL CURB OPENING DETAILS

ANGLE IRON LENGTHS	
OPENING	LENGTH
"A"	2'-5 3/8"
"B"	5'-1 5/8"
"C"	7'-9 7/8"
"D"	10'-6 1/8"



FRAME AND CURB DETAILS

C.I. CURB HEIGHTS		
TYPE	"A"	"B"
4" MOUNTABLE	4 1/2"	9 1/2"
6" MOUNTABLE	6 1/2"	11 1/2"
6" BARRIER	6 1/2"	11 1/2"
8" BARRIER	8 1/2"	13 1/2"

BASIS OF PAYMENT		
ITEM NO.	ITEM	UNIT
6 11.06 (E)	INLET	EA.
6 11.06 (F)	ADDITIONAL DEPTH IN INLET	VERT. FT.
6 11.06 (G)	INLET FRAME AND GRATE	EA.
6 11.06 (D)	MANHOLE FRAME AND COVER	EA.
6 11.06 (K)	CAST IRON CURB INLETS.	EA.

REVISION	BY	DATE

DIRECTOR, PUBLIC WORKS AND DEVELOPMENT

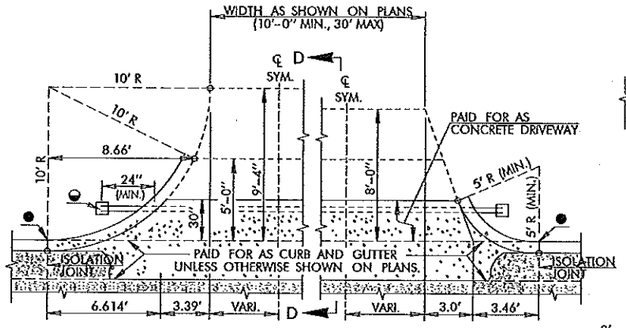
DEPUTY DIRECTOR

CITY OF TULSA, OKLAHOMA
PUBLIC WORKS
AND DEVELOPMENT DEPARTMENT

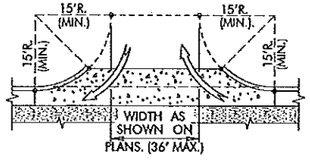
STANDARD INLETS AND GRATES
W/ACCESS MANHOLE BACK OF CURB

DATE: MAY 2005

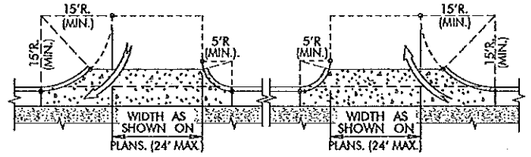
STD. 761



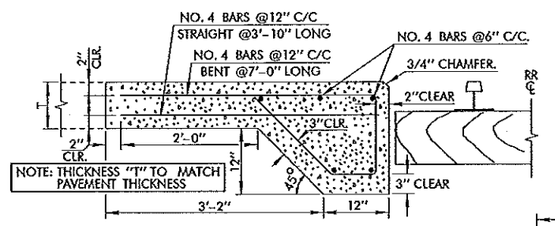
TYPE 1 DRIVEWAYS
(PRIVATE OR RESIDENTIAL)



TYPE 2 DRIVEWAY
(TWO-WAY OPERATION)

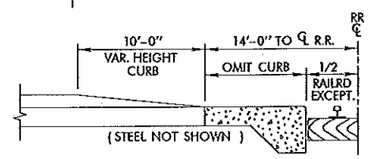


TYPE 2A DRIVEWAYS
(ONE-WAY OPERATIONS)

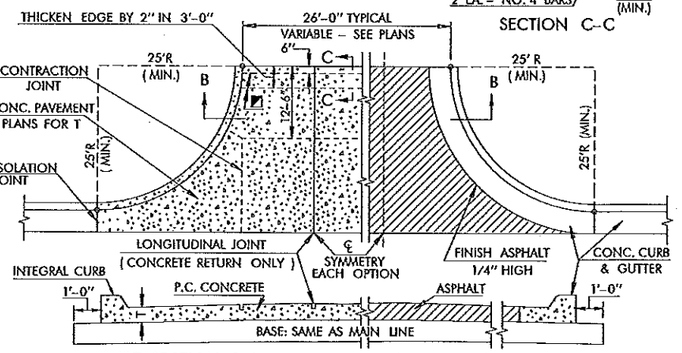


P. C. RAILROAD APPROACH SLAB WITH
THICKENED EDGE AT RAILROAD CROSSING

THICKENED EDGE OF CONCRETE RAILROAD APPROACH SLAB SHALL EXTEND FROM OUTSIDE TO OUTSIDE OF SHOULDERS. COST OF CLASS A CONCRETE & REINFORCING STEEL TO BE INCLUDED IN THE PRICE BID FOR RAILROAD APPROACH SLAB.



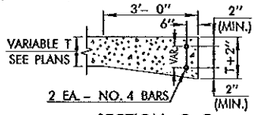
DETAIL OF CURBS ADJACENT
TO RAILROAD CROSSINGS



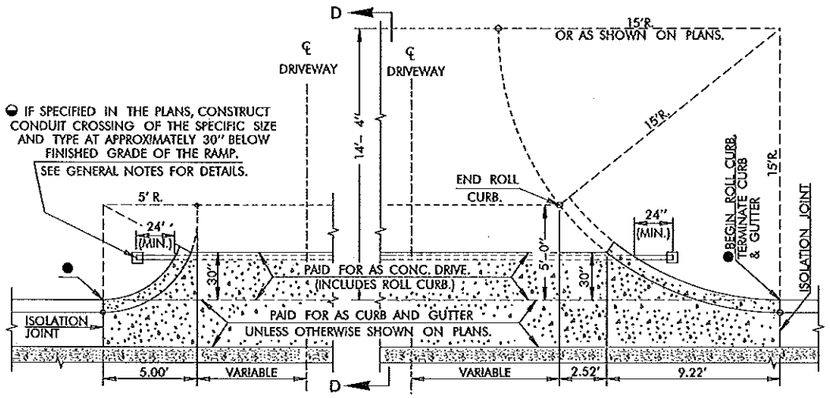
ALT. SECTION B-B
CONCRETE RETURN

ALT. SECTION B-B
ASPHALT RETURN
(WHERE CURB AND GUTTER IS USED)

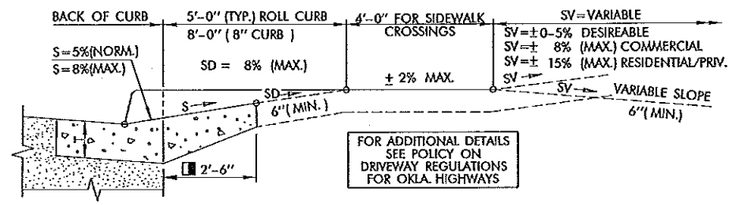
TYPICAL STREET RETURN



SECTION C-C

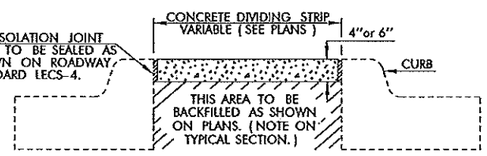


TYPE 2 & 2A COMMERCIAL DRIVEWAYS

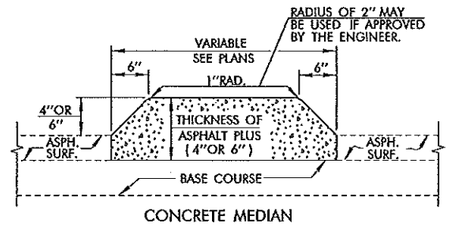


SECTION D-D ALONG ℄ DRIVE

◨ WHEN SIDEWALK IS BUILT DIRECTLY BEHIND CURB, THE CONCRETE DRIVEWAY SHOULD BE CONSTRUCTED & EXTENDED TO THE BACK EDGE OF SIDEWALK.



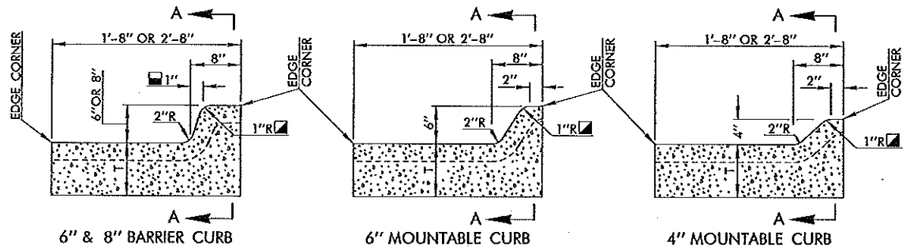
CONCRETE DIVIDING STRIP



CONCRETE MEDIAN
MOUNTABLE CURB TYPE
(TO BE PAID FOR AS CLASS A CONCRETE.)

GENERAL NOTES

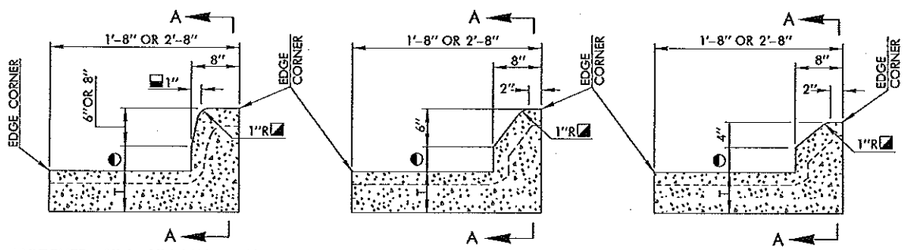
1. ALL CONSTRUCTION AND MATERIAL REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE 2009 ODOT STANDARD SPECIFICATIONS.
2. COST OF JOINT FILLERS, SEALING AND REINFORCING STEEL SHALL BE INCLUDED IN PRICE BID FOR OTHER ITEMS OF WORK.
3. TRANSVERSE ISOLATION JOINTS FOR CONCRETE DIVIDING STRIP AND CONCRETE MEDIAN (MOUNTABLE CURB TYPE) TO BE 1/2" ISOLATION JOINT FILLER AT 50' C/C, 1/4" ISOLATION JOINT MATERIAL AT 1/3 POINTS BETWEEN 1/2" ISOLATION JOINTS. FILLER MATERIAL TO BE PREMOLDED AND JOINTS TO BE SEALED AS SHOWN ON ROADWAY STANDARD LECS-4.
4. COMBINED CURB & GUTTER SHALL HAVE 3/4" ISOLATION JOINTS AT 100' CTRS. AND AT THOSE LOCATIONS SHOWN ON THE PLANS. BUTT OR SAWED JOINTS SHALL BE SPACED AT 20'-0" CENTERS MAX. JOINT FILLER IN THE CURBS SHALL EXTEND TO WITHIN 2" OF THE FACE & TOP OF CURB. ALL JOINTS SHALL BE SEALED AS SHOWN ON ROADWAY STANDARD LECS-4.
5. ALL CONDUIT CROSSINGS ARE TO BE TRENCHED, PLACED, BACKFILLED AND COMPACTED PRIOR TO SURFACING. BORING OR PUSHING PROCEDURES MAY BE USED WHERE SURFACING IS ALREADY IN PLACE AND IF APPROVED BY THE ENGINEER.
6. IF CONDUIT IS NOT CONTINUOUS BETWEEN DRIVEWAYS OR RAMPS, CAP BOTH ENDS OF EACH CONDUIT CROSSING AND PLACE MARKER TO PREVENT DAMAGE DURING CONSTRUCTION.
7. CONDUIT SHALL NOT TERMINATE BELOW A SURFACED AREA, BUT SHALL EXTEND A MINIMUM OF 2'-0" PAST EDGE OF PAVING.
8. FOR PULL BOX INSTALLATION DETAILS, SEE TRAFFIC STANDARD PBD1-1 (PULL BOX DETAILS).



6" & 8" BARRIER CURB

6" MOUNTABLE CURB

4" MOUNTABLE CURB



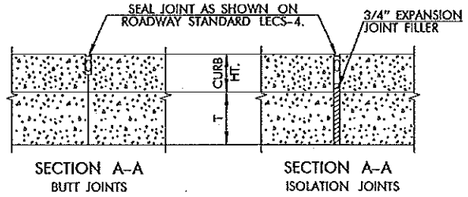
NOTCHED 6" & 8" BARRIER CURB

NOTCHED 6" MOUNTABLE CURB

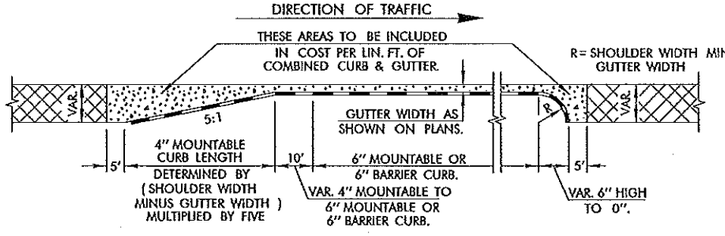
NOTCHED 4" MOUNTABLE CURB

COMBINED CURB & GUTTER TYPICAL SECTIONS

NOTE: T DIMENSION EQUALS THE THICKNESS SHOWN ON TYPICAL SECTION. (MIN.=6")
◐ DIMENSION EQUALS THE THICKNESS ASPHALT CONC. SHOWN ON TYPICAL SECTION. (MIN.=2"; MAX.=4")
◪ RADIUS OF 2" MAY BE USED IF APPROVED BY THE ENGINEER.
▬ BATTER OF 2" MAY BE USED IF APPROVED BY THE ENGINEER.



CURB & GUTTER JOINTS
BUTT & ISOLATION JOINTS TO EXTEND THROUGH CURB & GUTTER TO BACK OF CURB



BEGINNING CURB & GUTTER

ENDING CURB & GUTTER

BASIS OF PAYMENT

ITEM NO.	ITEM	UNIT
414 (H)	P. C. RAILROAD APPROACH SLABS	S.Y.
509 (B)	CLASS A CONCRETE	C.Y.
609.(B)	■ COMBINED CURB & GUTTER (▲)	L.F.
610 (B)	▼ CONCRETE DRIVEWAY	S.Y.
610 (C)	▼ CONCRETE DIVIDING STRIP	S.Y.
610 (H)	▼ ASPHALT DIVIDING STRIP	S.Y.

■ WIDTH OF CURB & GUTTER WILL BE SPECIFIED.
▲ HEIGHT & TYPE OF CURB SHALL BE SPECIFIED.
▼ THICKNESS WILL BE SPECIFIED

APPROVED BY ROADWAY ENGINEER: Timothy A. Peeler DATE: 12/2/09

ROADWAY STANDARD

ASPHALT SURFACING CONSTRUCTION DETAILS

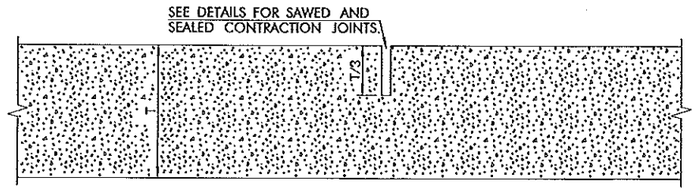
2009 SPECIFICATIONS

ASCD-5 | 0 | R-11

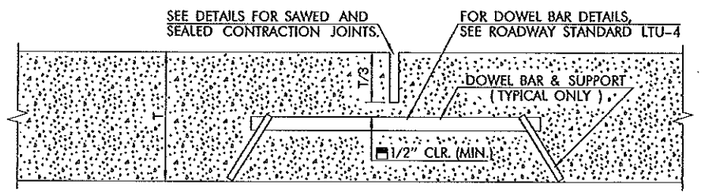
REVISIONS

DESCRIPTION	DATE

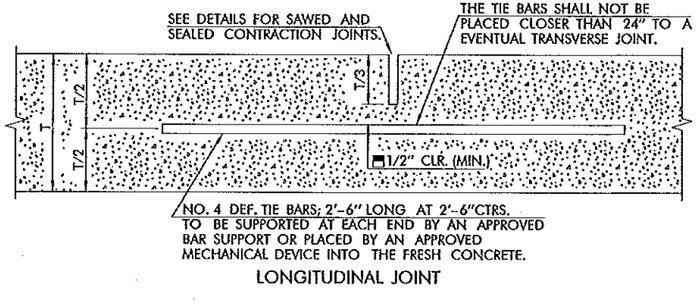
REVISIONS	
DESCRIPTION	DATE



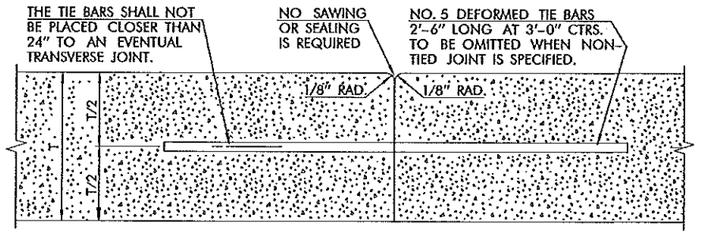
NON-DOWELED CONTRACTION JOINT



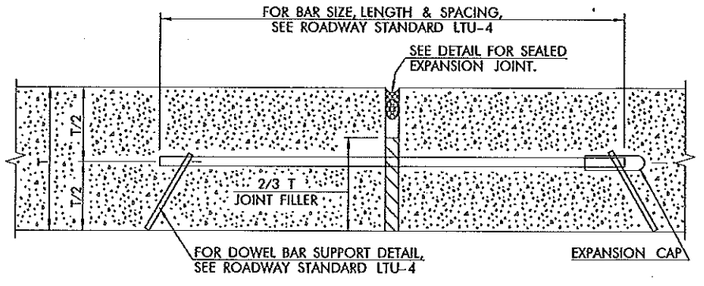
◒ DOWELED CONTRACTION JOINT



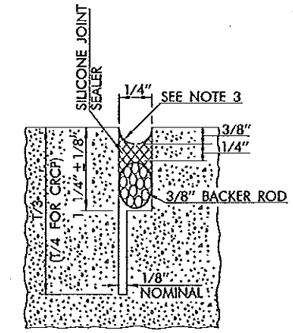
LONGITUDINAL JOINT



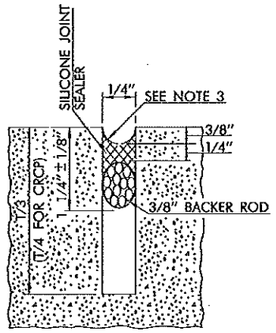
TIED BUTT JOINT AND
LONGITUDINAL CONSTRUCTION JOINT



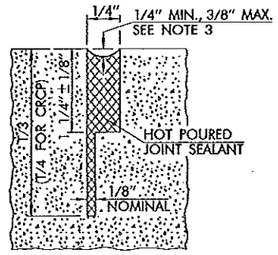
EXPANSION JOINT / ISOLATION JOINT
OMIT DOWEL BARS, CAPS & SUPPORTS FOR ISOLATION JOINTS



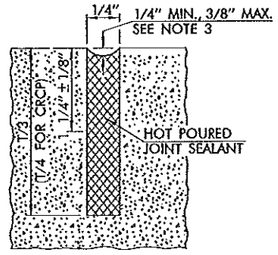
SILICONE SEALANT OPTION



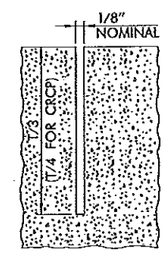
SILICONE SEALANT OPTION



HOT POUR OPTION

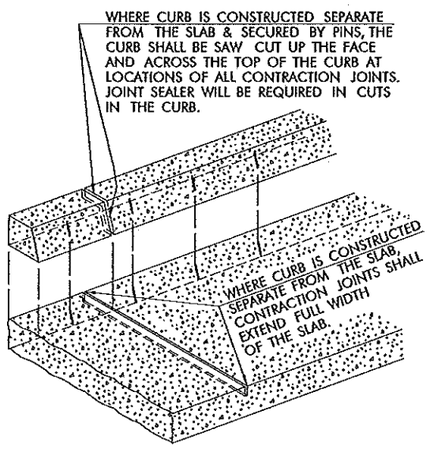


HOT POUR OPTION

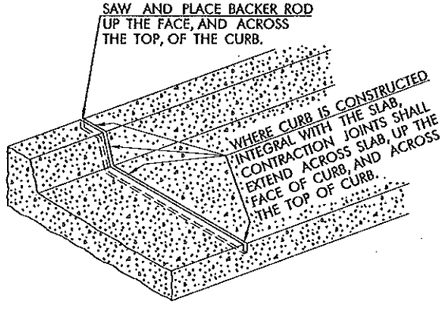


NO SEALANT OPTION

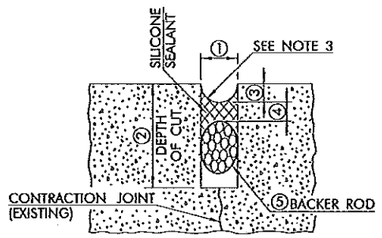
SAWED AND SEALED, CONTRACTION AND LONGITUDINAL JOINTS ALTERNATE DETAILS
UNLESS OTHERWISE SPECIFIED IN THE PLANS, ONLY THE SILICONE SEALANT OPTIONS WILL BE ALLOWED.



CONTRACTION JOINT WITH
SEPARATE CURB

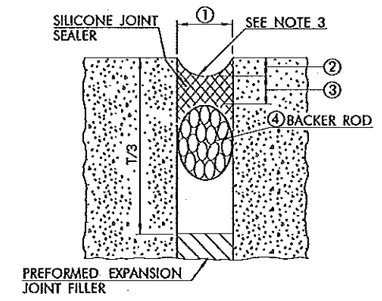


CONTRACTION JOINT WITH
INTEGRAL CURB



JOINT REHABILITATION DETAILS

JOINT REHABILITATION TREATMENT TABLE				
SILICONE SEALANT				
JOINT WIDTH ①	DEPTH OF CUT ②	SEALANT RECESS DEPTH ③	SEALANT THICKNESS ④	BACKER ROD DIAMETER ⑤
3/8"	1 1/4"	3/8"	3/16"	1/2"
1/2"	1 3/4"	3/8"	1/4"	5/8"
3/4"	1 3/4"	3/8"	3/8"	7/8"
7/8"	1 3/4"	1/2"	7/16"	1"
1"	2"	1/2"	1/2"	1 1/8"
OVER 1"	OVER 2"	1/2"	1/2"	1 1/4"



EXPANSION JOINTS / ISOLATION JOINTS
HOT POURED JOINT SEALANT MAY BE USED IN LIEU OF BACKER ROD AND SILICONE SEALANT, IF APPROVED BY THE ENGINEER

EXPANSION JOINT / ISOLATION JOINT TREATMENT TABLE			
JOINT WIDTH ①	SEALANT RECESS DEPTH ②	SILICONE SEALANT THICKNESS ③	BACKER ROD DIAMETER ④
1/2"	3/8"	1/4"	5/8"
3/4"	3/8"	3/8"	7/8"
1"	3/8"	1/2"	1 1/4"
1 1/2"	1/2"	3/4"	2"
2"	1/2"	3/4"	2 1/2"

EXPANSION OR ISOLATION JOINT WIDTH SHALL BE 1/2", UNLESS OTHERWISE SPECIFIED ON THE PLANS. TABLE VALUES, AS SHOWN THIS TABLE, SHALL BE USED IN THOSE SPECIFIED CASES.

GENERAL NOTES

1. ALL CONSTRUCTION AND MATERIALS REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE 2009 ODOT STANDARD SPECIFICATIONS.
2. ALL CONCRETE JOINT SEALING SHALL BE IN ACCORDANCE WITH SECTION 415 OF THE SPECIFICATIONS.
3. THE SHAPE FACTOR, COMBINED WITH THE JOINT CLEANLINESS, IS THE CRITICAL COMBINATION NECESSARY TO GUARANTEE DESIRED BONDING AND FUNCTION OF SEALED JOINTS. THE JOINT SHAPE FACTOR IS DEFINED AS THE FINAL PRESSED SHAPE OF THE SILICONE MATERIAL. THE TOOLING OPERATION WILL FIRMLY PRESS THE FRESHLY APPLIED MATERIAL INTIMATELY AGAINST THE CUT SIDES OF THE RECESS AND THE BACKER ROD SURFACES. THE ROUNDED SHAPE ON TOP AND BOTTOM OF THE SILICONE ALLOWS THE SEALANT TO PROPERLY FLEX BUT MAINTAIN ADHERANCE TO THE PAVING. SELF LEVELING SEALANTS WILL BE INSTALLED TO BE FLUSH WITH THE PAVEMENT SURFACE.
4. ◒ ON JOINTED PORTLAND CEMENT CONCRETE PAVEMENTS, DOWELLED CONTRACTION JOINTS SHALL BE USED ON DRIVING LANES ONLY. CONCRETE SHOULDERS SHALL NOT BE DOWELLED UNLESS SPECIFIED ON THE PLANS.
5. LONGITUDINAL JOINTS BETWEEN PAVEMENT AND TIED CONCRETE SHOULDERS SHALL NOT BE SAWED OR SEALED UNLESS OTHERWISE SHOWN ON THE PLANS.
6. ⬒ ON ALL SAWED JOINTS, THE KERF DEPTH SHALL CLEAR DOWEL BARS, TIE BARS AND/OR REINFORCING STEEL BY A MINIMUM OF 1/2".
7. CONTRACTION JOINTS IN JOINTED P. C. PAVEMENT SHALL BE AT APPROXIMATELY 15'-0" CENTERS, UNLESS OTHERWISE SPECIFIED ON THE PLANS.

APPROVED BY ROADWAY ENGINEER: Timothy A Taylor DATE: 12/2/09

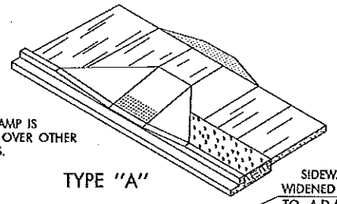
ROADWAY STANDARD

JOINTS AND SEALERS – LONGITUDINAL, EXPANSION, & CONTRACTION

2009 SPECIFICATIONS

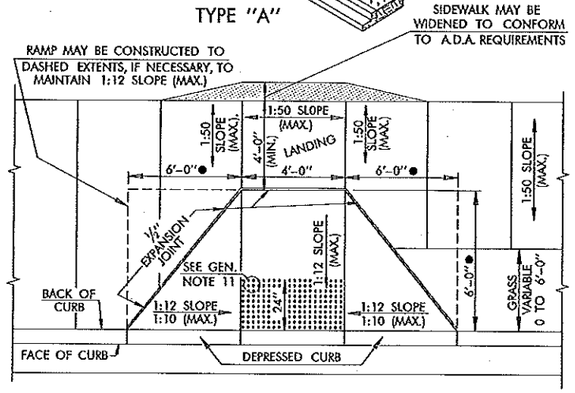
LECS-4	0
	R-14

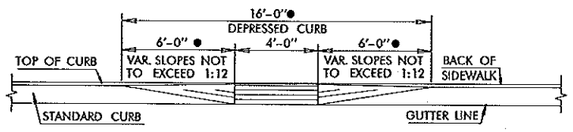
REVISIONS	
DESCRIPTION	DATE



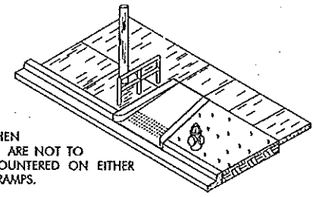
TYPE "A" RAMP IS PREFERRED OVER OTHER RAMP TYPES.

TYPE "A"



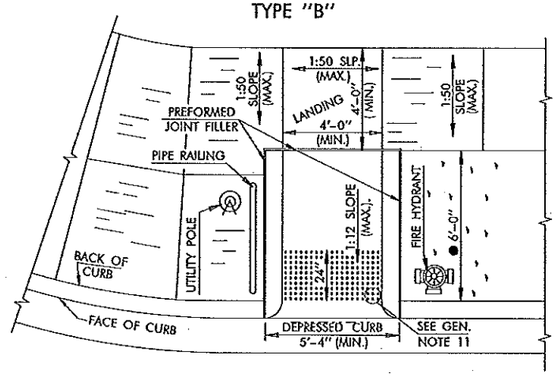


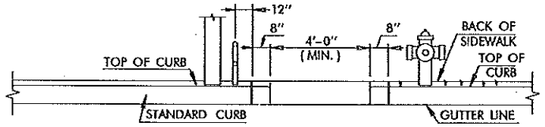
ELEVATION



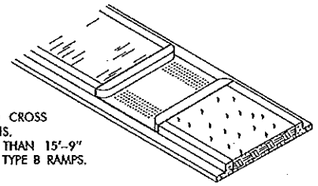
USE TYPE "B" RAMP WHEN OBSTRUCTIONS, WHICH ARE NOT TO BE REMOVED, ARE ENCOUNTERED ON EITHER SIDE OF WHEELCHAIR RAMPS.

TYPE "B"



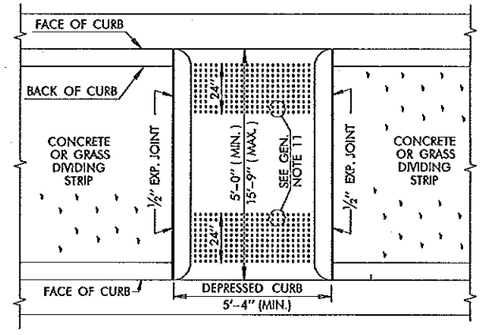


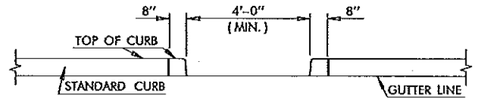
ELEVATION



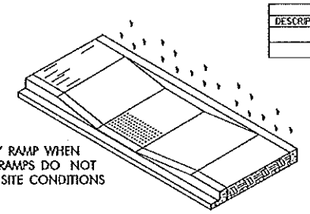
USE TYPE "C" RAMP TO CROSS 15'-9" OR LESS MEDIANS. FOR MEDIANS GREATER THAN 15'-9" USE SIDEWALK WITH 2 TYPE B RAMPS.

TYPE "C"



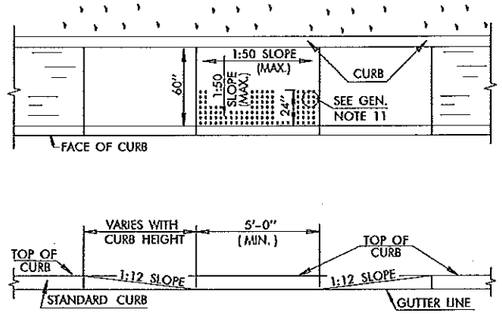


ELEVATION



USE TYPE "D" RAMP WHEN OTHER TYPE RAMPS DO NOT WORK WITH SITE CONDITIONS

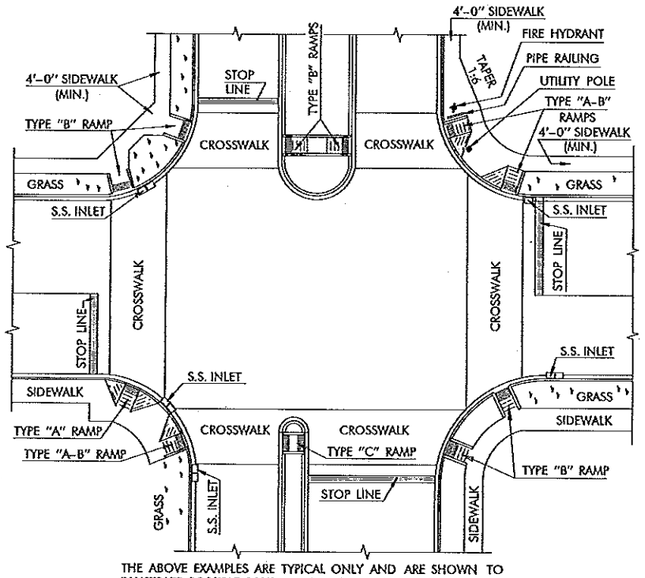
TYPE "D"



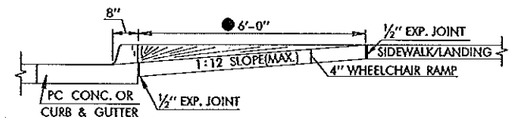
ELEVATION

GENERAL NOTES

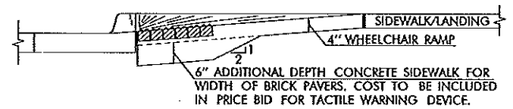
1. ALL CONSTRUCTION AND MATERIAL REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE 2009 ODOT STANDARD SPECIFICATIONS.
2. THERE WILL BE NO DEDUCTION OF PAYMENT FOR CONCRETE CURB & GUTTER AND/OR INTEGRAL CURB FOR THE LENGTH OF THE DEPRESSED CURB.
3. ● RAMP DIMENSIONS SHOWN ARE BASED ON A CURB HEIGHT OF SIX INCHES. THE DIMENSIONS SHOULD BE ADJUSTED FOR OTHER CURB HEIGHTS. THE MAXIMUM PERMISSIBLE SLOPES OF THE WHEELCHAIR RAMPS IS 8.33% (1:12). RAMP SLOPE MAY BE 1:10 (MAX.) ALONG FACE OF TAPERED CURB.
4. DRAINAGE STRUCTURES SHALL NOT BE PLACED IN LINE WITH THE RAMPS.
5. THE NORMAL GUTTER LINE PROFILE SHALL BE MAINTAINED THROUGH THE AREA OF THE RAMP WITH A 1:50 SLOPE (MAX.), SEE NOTE NO. 10.
6. WHEELCHAIR RAMPS SHOULD BE LOCATED SO THAT THE RAMP WILL BE ON THE TRAFFIC APPROACH SIDE OF ANY OBSTACLE.
7. WHEELCHAIR RAMPS SHOULD BE BUILT AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER. THE TYPE OF RAMP WILL BE DESIGNATED ON THE PLANS. IF A RAMP IS TO BE CONSTRUCTED AS A COMBINATION OF TWO TYPES, (ONE SIDE TYPE A AND ONE SIDE TYPE B) THE RAMP SHALL BE DESIGNATED AS TYPE A-B.
8. PIPE RAILING CONSTRUCTION DETAILS, WHEN REQUIRED AT TYPE B WHEEL CHAIR RAMPS, WILL BE SHOWN ON THE PLANS.
9. EXCAVATION, BACKFILL, EXPANSION JOINT MATERIAL, SEALERS, AND OTHER RELATED MISCELLANEOUS ITEMS WILL NOT BE PAID FOR SEPARATELY BUT THE COST THEREOF SHALL BE INCLUDED IN THE COST OF THE SIDEWALK.
10. ALL FEATURES OF CONSTRUCTION INCLUDING, BUT NOT LIMITED TO, SIDEWALKS, CURB RAMPS AND CROSSWALK MARKINGS SHALL COMPLY WITH THE AMERICANS WITH DISABILITIES ACT, ACCESSIBILITY GUIDELINES (ADAAG). WHERE SPATIAL LIMITATIONS OR EXISTING FEATURES WITHIN THE LIMITS OF THE PROJECT PREVENT FULL COMPLIANCE WITH THE ADAAG, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER UPON DISCOVERY OF SUCH FEATURE(S). THE CONTRACTOR SHALL NOT PROCEED WITH ANY ASPECT OF THE WORK WHICH IS NOT IN FULL COMPLIANCE WITH THE ADAAG WITHOUT PRIOR WRITTEN APPROVAL FROM THE ENGINEER. ANY WORK WHICH IS NOT PERFORMED WITHIN THE GUIDELINES OF THE ADAAG, FOR WHICH THE CONTRACTOR DOES NOT HAVE WRITTEN APPROVAL, SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.
11. ALL WHEELCHAIR RAMP CURBS SHALL BE INCLUDED IN COST OF SIDEWALK.
12. FOR DETAILS OF TACTILE WARNING DEVICES, SEE STANDARD TWD-1.



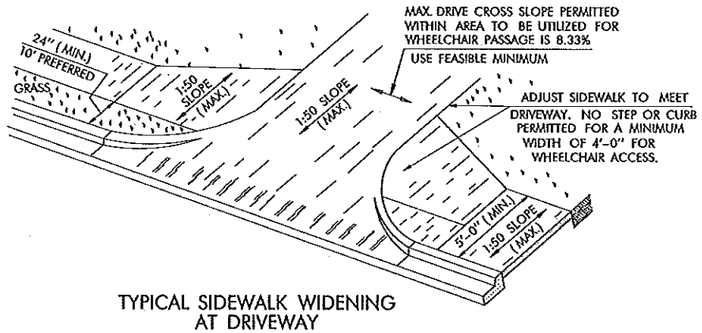
THE ABOVE EXAMPLES ARE TYPICAL ONLY AND ARE SHOWN TO ILLUSTRATE POSSIBLE RAMP TYPES, POSSIBLE RAMP LOCATIONS, POSSIBLE INLET LOCATIONS, AND HOW THE RAMP WILL BE DESIGNATED ON THE PLANS. CARE SHOULD BE EXERCISED TO ASSURE THAT MEDIAN RAMP AND CURB RAMP LINE UP, AND THAT RAMPS THROUGHOUT A PROJECT ARE LOCATED WITH SOME DEGREE OF UNIFORMITY.



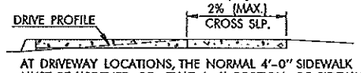
WHEELCHAIR RAMP PROFILES
(TYPE A OR B)



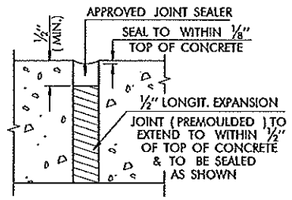
SIDEWALK THICKENING FOR TYPE A TACTILE WARNING DEVICES



TYPICAL SIDEWALK WIDENING AT DRIVEWAY



AT DRIVEWAY LOCATIONS, THE NORMAL 4'-0" SIDEWALK MUST BE WIDENED SO THAT A 4' PORTION OF SIDEWALK IS ALIGNED WITH SIDEWALK CROSSING SHELF IN THE DRIVEWAY PROFILE. A WIDER SIDEWALK (5'-0" TYP.) SHALL ALSO BE USED AT INTERVALS LESS THAN 200 FEET, TO ASSURE WHEELCHAIR PASSAGE.



1/2" EXPANSION JOINT

JOINT FILLER SHALL MEET THE REQUIREMENTS OF SECTION 701.08 OF THE SPECIFICATIONS.

JOINT FILLER SHALL BE USED BETWEEN SIDEWALK AND CURBS, WHEELCHAIR RAMPS, DRIVEWAYS, STREETS, RETAINING WALLS, ETC.

BASIS OF PAYMENT		
ITEM NO.	ITEM	UNIT
610 (A)	■ CONCRETE SIDEWALK	S.Y.
622 (A)	PIPE RAILING	L.F.

■ SIDEWALK THICKNESS SHALL BE SPECIFIED IN INCHES.

APPROVED BY ROADWAY ENGINEER: Timothy A. Taylor DATE: 12/2/09

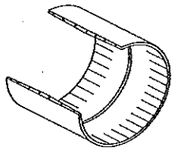
ROADWAY STANDARD

WHEELCHAIR RAMPS

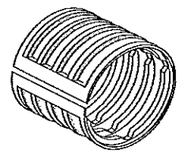
2009 SPECIFICATIONS

WCR-3	0
	R-22

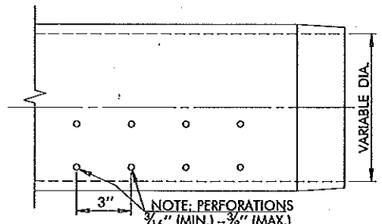
REVISIONS	
DESCRIPTION	DATE

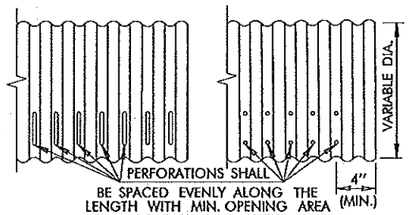


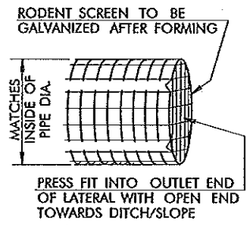
TYPICAL COUPLING FOR
PVC PIPE UNDERDRAIN
1/4 SECTION REMOVED



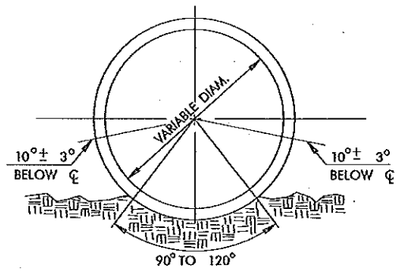
TYPICAL CORRUGATED COUPLING
OR AN APPROVED EQUAL



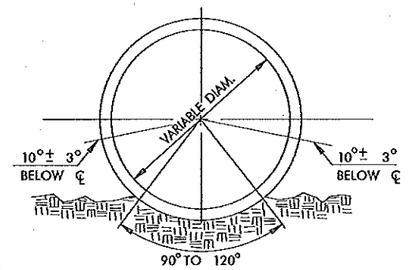




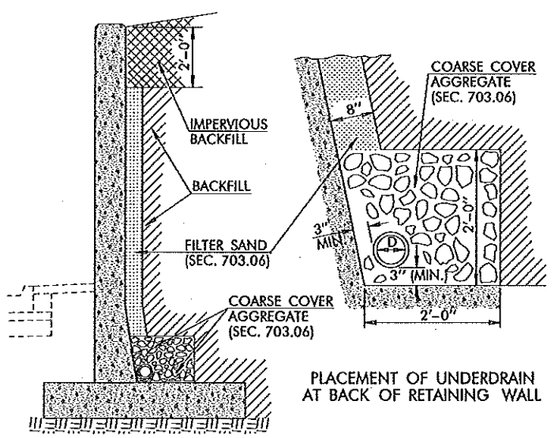
TYPICAL RODENT SCREEN



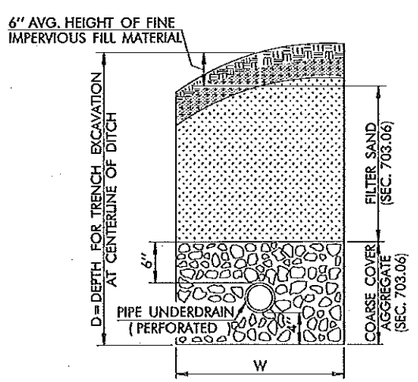
POLYVINYL (PVC) PIPE UNDERDRAIN



CORRUGATED POLYETHYLENE PIPE UNDERDRAIN



PLACEMENT OF UNDERDRAIN
AT BACK OF RETAINING WALL



DETAIL
TRENCH EXCAVATION
PERFORATED PIPE
UNDERDRAIN INSTALLATIONS

INSTALLATION TECHNIQUE: (12" DIAMETER OR SMALLER)

PERFORATED PIPE UNDERDRAIN, WHEN INSTALLED IN A TRENCH, SHALL BE BEDDED ON 4" OF COARSE COVER AGGREGATE. THE INSTALLED PIPE SHALL THEN BE CAREFULLY BACKFILLED WITH THE REMAINING COARSE COVER AGGREGATE TO 6" ABOVE THE TOP OF THE PIPE. FILTER SAND SHALL BE INSTALLED TO APPROXIMATELY 6" BELOW THE ORIGINAL NATURAL GROUND AS APPROVED BY THE ENGINEER.

NON-PERFORATED PIPE UNDERDRAIN, WHEN INSTALLED IN A TRENCH, SHALL BE BEDDED IN A 4" LAYER CONSISTING OF COARSE AGGREGATE COVER MATERIAL OR A 50-50 MIX OF COARSE AGGREGATE COVER MATERIAL AND FILTER SAND. BEDDING MATERIAL LAYER SHALL CONFORM TO THE REQUIREMENTS OF SECTION 703.04. COST OF NON-PERFORATED PIPE UNDERDRAIN BEDDING LAYER TO BE INCLUDED WITH PIPE UNDERDRAIN COVER MATERIAL. THE REMAINING BACKFILL MAY BE NATIVE SOIL REMOVED IN THE TRENCHING OPERATION, FILTER SAND OR BACKFILLED ACCORDING TO THE ENGINEER. COST TO BE INCLUDED IN OTHER ITEMS OF WORK. SEE GENERAL NOTE NUMBERS 5 & 6.

GENERAL NOTES

1. ALL CONSTRUCTION AND MATERIAL REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE 2009 ODOT STANDARD SPECIFICATIONS.
2. THE EXTENT, LOCATION AND DEPTH OF DRAINS MAY BE ADJUSTED BY THE ENGINEER TO SUIT CONDITIONS FOUND DURING CONSTRUCTION.
3. COST OF ALL FITTINGS TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF PIPE UNDERDRAIN.
4. FOR PIPE UNDERDRAIN OF UP TO 12" IN DIAMETER,
   W = 24" WITHOUT SHEETING AND SHORING.
   W = 36" WHEN SHEETING AND SHORING IS USED.
   SEE ROADWAY STANDARD SPI-4 FOR SHEETING & SHORING NOTES.
5. FOR PIPE UNDERDRAIN LARGER THAN 12" IN DIAMETER, SEE ROADWAY STANDARD SPI-4 FOR ADDITIONAL TRENCH EXCAVATION DETAILS.
6. NON-PERFORATED UNDERDRAIN PIPES, LARGER THAN 12", SHALL BE TREATED AS PIPE CONDUITS: I.E., PAY ITEMS SHALL CONSIST OF TRENCH EXCAVATION AND BEDDING MATERIAL. SEE STANDARD SPB-1.
7. MATERIALS SHOWN HERE ARE TYPICAL ONLY AND ARE NOT THE ONLY CHOICE FOR SUBSURFACE DRAINAGE PURPOSES.
8. OUTLET OPENING SHALL HAVE INSTALLED A REMOVABLE RODENT SCREEN HAVING A WIRE MESH DESIGN & 0.23" to 0.50" (NOM.) SQUARE OPENINGS. SCREEN MATERIAL MAY BE STAINLESS STEEL OR GALVANIZED WITH WIRE THICKNESS OF BETWEEN 0.023" & 0.038", AFTER SHAPING AND FABRICATION. RODENT SCREEN DESIGN SHALL BE APPROVED BY THE ENGINEER.
9. THE FINAL SECTION OF THE OUTLET LATERAL CONDUIT SHALL BE NON-PERFORATED, SCHEDULE 40 OR TYPE S HIGH DENSITY POLYETHYLENE AND A MINIMUM 20'-0" IN LENGTH, INCLUDING COUPLINGS.

BASIS OF PAYMENT

ITEM NO.	ITEM	UNIT
613 (H)	■ PERFORATED PIPE UNDERDRAIN	L.F.
613 (I)	■ NON-PERFORATED PIPE UNDERDRAIN	L.F.
613 (Q)	OUTLET LATERAL HEADWALL	EA.
613 (S)	STANDARD BEDDING MATERIAL, CLASS B	C.Y.
613 (U)	PIPE UNDERDRAIN COVER MATERIAL	C.Y.
613 (V)	TRENCH EXCAVATION	C.Y.

■ DIMENSION TO BE SPECIFIED IN INCHES

APPROVED BY
ROADWAY ENGINEER: Timothy A. Ziegler DATE: 12/21/09

ROADWAY STANDARD

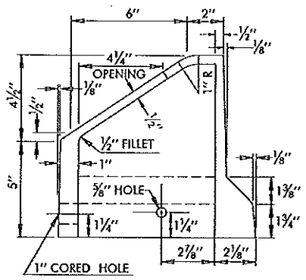
PIPE UNDERDRAIN INSTALLATION

2009 SPECIFICATIONS

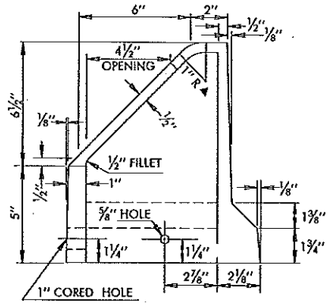
PUD-3	0

R-53

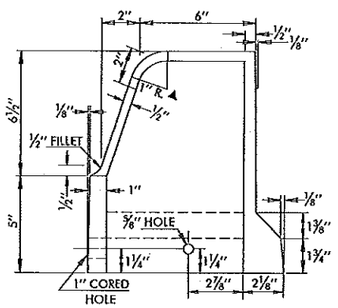
REVISIONS	
DESCRIPTION	DATE



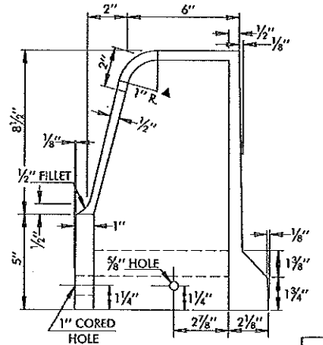
4" MOUNTABLE CURB HOOD



6" MOUNTABLE CURB HOOD

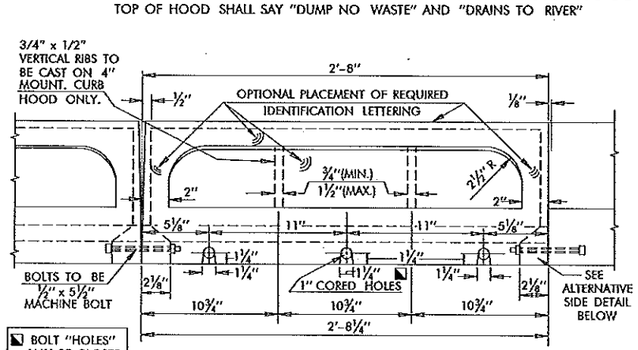


6" BARRIER CURB HOOD

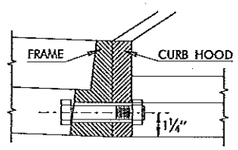


8" BARRIER CURB HOOD

TOP OF HOOD SHALL SAY "DUMP NO WASTE" AND "DRAINS TO RIVER"

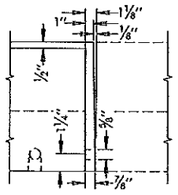


CAST IRON HOOD ELEVATION

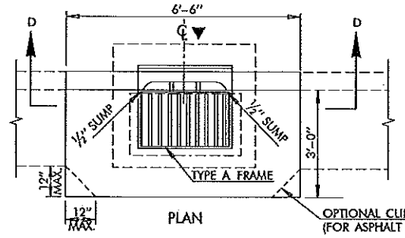


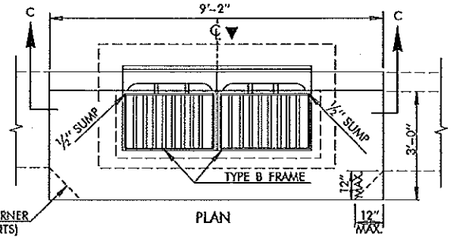
DETAIL OF CONNECTION
FRAME & CAST IRON HOOD

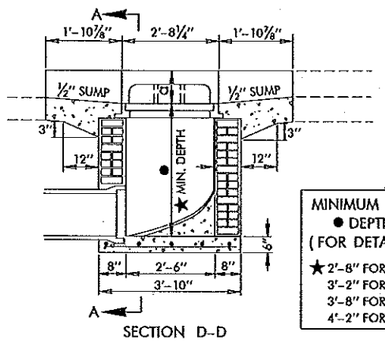
NOTE: FRAME TO BE BOLTED TO THE HOOD WITH 3 EA.– 3/4" x 4 1/2" MACHINE BOLTS. FOR FRAME DETAILS, SEE ROADWAY STANDARD SSIF–4



ALTERNATE SIDE DETAIL

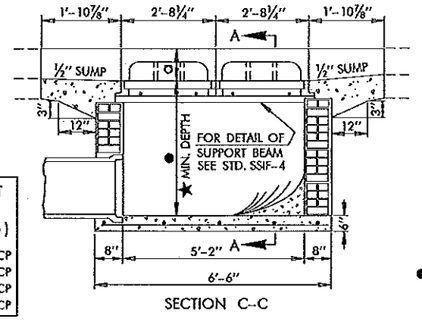




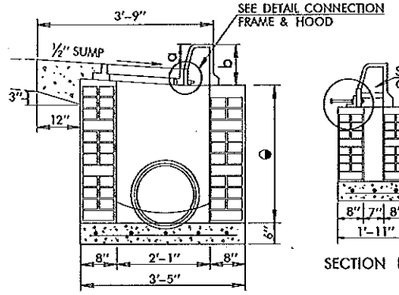


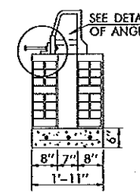
DESIGN 1
(SINGLE GRATE)

MINIMUM INLET
● DEPTH
(FOR DETAILING)
★2'–8" FOR 18" RCP
3'–2" FOR 24" RCP
3'–8" FOR 30" RCP
4'–2" FOR 36" RCP

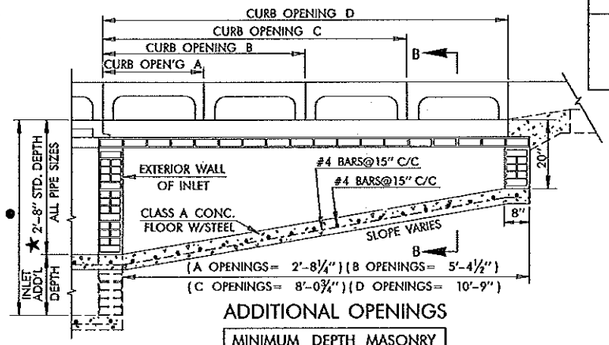


DESIGN 2 (DOUBLE GRATING)
DESIGN 3 (MULTIPLE DOUBLE GRATING)



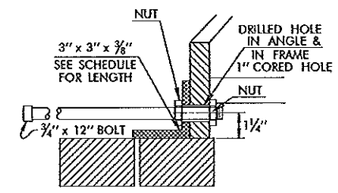


DESIGN NO.	TYPE OF CURB	DIMENSIONS a	DIMENSIONS b
1	4" MOUNTABLE	4½"	9½"
	6" MOUNTABLE	6½"	11½"
	6" BARRIER	6½"	11½"
	8" BARRIER	8½"	13½"
2	4" MOUNTABLE	4½"	9½"
	6" MOUNTABLE	6½"	11½"
	6" BARRIER	6½"	11½"
	8" BARRIER	8½"	13½"
3	4" MOUNTABLE	4½"	9½"
	6" MOUNTABLE	6½"	11½"
	6" BARRIER	6½"	11½"
	8" BARRIER	8½"	13½"



ADDITIONAL OPENINGS

MINIMUM DEPTH MASONRY
● OR PRECAST WALLS
2'– 3" FOR 18" RCP
2'– 9" FOR 24" RCP
3'– 3" FOR 30" RCP
3'– 9" FOR 36" RCP



DETAIL OF CONNECTION
ANGLE IRON & CAST IRON HOOD

NOTE: ANGLE IRON TO BE BOLTED TO HOOD WITH 3 EACH – 3/4 " x 12" MACHINE BOLTS IN EACH HOOD SECTION.

QUANTITIES (FOR 18" R.C.PIPE AND MIN. DEPTH) ☒									
INLET	CURB OPENING	CLASS A CONCRETE	INLET		INLET FRAME & GRATE	CAST IRON HOOD	ANGLE IRON		
DESIGN	DESIGNATION	CU. YD.	BASE AM'T.	ADD'L C.F. PER VERT FT.	EACH	EACH	NO.	LENGTH	
1	STD.	0.24	17.76	7.89	1	1	–	–	–
	A	0.34	23.84	7.89	1	2	1	2'–5⅜"	–
	B	0.43	30.11	7.89	1	3	1	5'–1⅝"	–
	C	0.53	36.38	7.89	1	4	1	7'–9⅞"	–
	D	0.63	42.66	7.89	1	5	1	10'–6⅛"	–
	2A	0.43	29.91	7.89	1	3	2	2'–5⅜"	2'–5⅜"
	A–B	0.53	36.19	7.89	1	4	2	2'–5⅜"	5'–1⅝"
	A–C	0.62	42.46	7.89	1	5	2	2'–5⅜"	7'–9⅞"
	2B	0.62	42.46	7.89	1	5	2	5'–1⅝"	5'–1⅝"
	B–C	0.72	48.74	7.89	1	6	2	5'–1⅝"	7'–9⅞"
	2C	0.82	55.01	7.89	1	7	2	7'–9⅞"	7'–9⅞"
2	STD.	0.41	25.76	11.45	2	2	–	–	–
	B	0.60	38.11	11.45	2	4	1	5'–1⅝"	–
	C	0.73	44.39	11.45	2	5	1	7'–9⅛"	–
	D	0.79	50.66	11.45	2	6	1	10'–6⅛"	–
	2B	0.79	50.46	11.45	2	6	2	5'–1⅝"	5'–1⅝"
	2C	0.98	63.01	11.45	2	8	2	7'–9⅛"	7'–9⅛"
	B–D	0.98	63.01	11.45	2	8	2	5'–1⅝"	10'–6⅛"
	2D	1.17	75.56	11.45	2	10	2	10'–6⅛"	10'–6⅛"
■ 3	STD.	0.74	41.27	18.34	4	4	–	–	–
	B	0.93	53.62	18.34	4	6	1	5'–1⅝"	–
	D	1.12	66.17	18.34	4	8	1	10'–6⅛"	–
	2B	1.12	65.98	18.34	4	8	1	5'–1⅝"	5'–1⅝"
	B–D	1.31	78.52	18.34	4	10	2	5'–1⅝"	10'–6⅛"
	2D	1.50	91.07	18.34	4	12	2	10'–6⅛"	10'–6⅛"

☒ DEPTH OF 2'–8" SHALL BE USED FOR STANDARD DEPTH FOR ALL PIPE SIZES AND/OR PIPE TYPES. FOR INLET DEPTHS GREATER THAN STANDARD DEPTH, A PAY ITEM FOR ADDITIONAL DEPTH, VERTICAL FEET, SHALL BE USED. TO DETERMINE TOTAL INLET QUANTITY FOR INLET DEPTHS GREATER THAN 2'–8", MULTIPLY ADDTIONAL DEPTH BY ADDITIONAL CU. FT. PER VERTICAL FOOT AND ADD TO THE BASE AMOUNT.

■ QUANTITIES SHOWN ARE FOR 2 DOUBLE GRATED INLETS.

PAYMENT FOR ALL CLASS A CONCRETE AND ANY REINFORCING STEEL USED TO CONSTRUCT CAST IN PLACE INLET WALLS OR FLOORS SHALL BE INCLUDED IN THE PRICE BID FOR THE INLET.

PRECAST INLET ALTERNATIVES MAY BE ACCEPTED, IN LIEU OF BRICK MASONRY OR CAST–IN–PLACE CONCRETE, IF APPROVED BY THE ENGINEER.

SPECIAL DESIGN CASTINGS, HOODS, FRAMES OR GRATES MAY BE USED, IN LIEU OF STANDARD DESIGNS SHOWN ON THIS SHEET, IF APPROVED BY THE ENGINEER.

GENERAL NOTES

1. ALL CONSTRUCTION AND MATERIAL REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE 2009 ODOT STANDARD SPECIFICATIONS.
2. STANDARD SSIF–4 FRAMES AND STANDARD CIG–3 GRATES TO BE USED WITH THESE INLETS UNLESS OTHERWISE SPECIFIED.
3. WHEN THE INLET IS BUILT IN NEW CONCRETE PAVEMENT, THE APRON AROUND THE INLET MAY BE BUILT INTEGRAL WITH PAVEMENT OR MAY BE SEPERATE AND OF THE SIZE SHOWN IN THE PLAN OF INLETS ON THIS SHEET. THE THICKNESS SHALL BE THE SAME AS THE CONCRETE PAVEMENT OR CURB AND GUTTER. IF CONSTRUCTED IN ANY OTHER AREA OR IN EXISTING PAVEMENT, THE APRON AROUND THE INLET SHALL BE THE SIZE SHOWN IN THE PLAN (THIS SHEET) AND BUILT OF P.C. CONCRETE TO A MINIMUM 8 INCH THICNESS.
4. THERE WILL BE NO DEDUCTION OF PAYMENT FOR CONCRETE CURB AND GUTTER OR P.C. CONCRETE THRU THE EXTENTS OF THE INLET HOODS. DEDUCTION WILL BE MADE FOR THE PAYMENT OF INTEGREL CURB THROUGH THE EXTENTS OF THE INLET HOODS.
5. ALL LETTERING TO BE RECESSED 1/16 INCH AND SHALL NOT EXCEED ONE INCH IN HEIGHT. INFORMATION REQUIRED SHALL BE AS STATED IN THE SPECIFICATIONS. LOCATION OF LETTERING TO BE AS SHOWN, WITH ADDITIONAL IDENTIFICATION LETTERING AT OTHER LOCATIONS PERMITTED.
6. CAST IN PLACE CONCRETE WALLS MEETING MIX REQUIREMENTS OF CLASS A CONCRETE MAY BE BUILT IN LIEU OF THE BRICK MASONRY TO THE SAME DIMENSIONS AS SHOWN THIS SHEET. NO. 4 REINFORCING STEEL BARS SPACED 30" VERTICALLY AND 12" HORIZONTALLY WILL BE REQUIRED FOR ALL CAST IN PLACE INLET WALLS EXCEEDING 5.0 FEET IN DEPTH (GUTTERLINE TO FLOWLINE). COST OF STEEL REINFORCING TO BE INCLUDED IN THE COST OF THE INLET.
7. ALL CAST IN PLACE CLASS A CONCRETE INLET FLOORS SHALL HAVE NO. 4 REINFORCING STEEL PLACED AT 15" MAXIMUM C/C SPACING IN BOTH DIRECTIONS.
8. THE STANDARD DRAWING, DESIGN NO., DESIGNATION NO., AND NUMBER OF ADDITIONAL OPENINGS SHALL BE INDICATED ON THE PLANS, I.E., EXAMPLE: STD. CI–1, DES. 1(A–B).
9. TYPE B & C FRAMES TO BE USED FOR MULTIPLE DOUBLE GRATES. SEE ROADWAY STD. SSIF–4 FOR DETAILS.
10. BOLT(S) WITH EXPANSION DEVICES OR EPOXY TYPE PUTTY TO BE USED TO INSTALL CAST IRON HOOD INTO CONCRETE CURB. COST OF INSTALLATION TO BE INCLUDED IN PRICE BID FOR THE CURB INLET.
11. CASTINGS AS SHOWN HERE SHALL BE CAST STEEL, DUCTILE IRON OR GRAY IRON CONFORMING TO SECTION 725 OF THE SPECIFICATIONS.

▲ 12. TWO INCH RADIUS MAY BE USED IF APPROVED BY THE ENGINEER.

▼ 13. CONSTRUCTION STATIONING OF CURB INLETS IS DETERMINED BY THE CENTERLINE (℄) OF THE SURFACE GRATES.

BASIS OF PAYMENT		
ITEM NO.	ITEM	UNIT
611 (G)	INLET (CI DES. ■)	EA.
611 (H)	ADDITIONAL DEPTH IN INLET (CI DES. ■)	V.F.
611 (I)	REPLACEMENT OF INLET FRAME AND GRATE	EA.
611 (J)	REPLACEMENT OF INLET FRAME	EA.
611 (K)	REPLACEMENT OF INLET GRATE	EA.
611 (M)	REPLACEMENT OF CAST IRON HOOD	EA.

■ SPECIFY INLET DESIGN & CURB OPENING DESIGNATION.

■ SPECIFY INLET DESIGN 1, 2 OR 3.

APPROVED BY ROADWAY ENGINEER: Timothy A. Tegeler DATE: 12/2/09

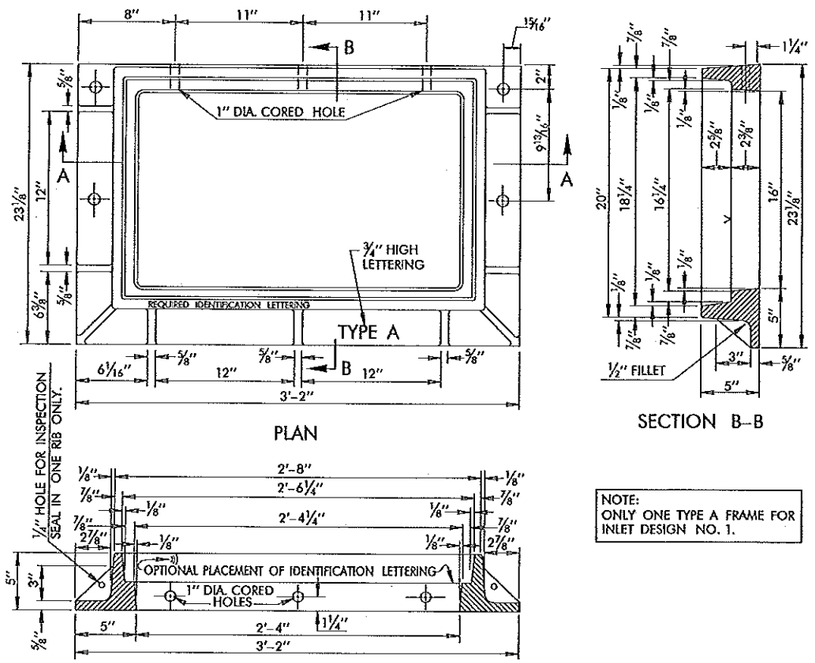
ROADWAY STANDARD

CURB INLETS

2009 SPECIFICATIONS

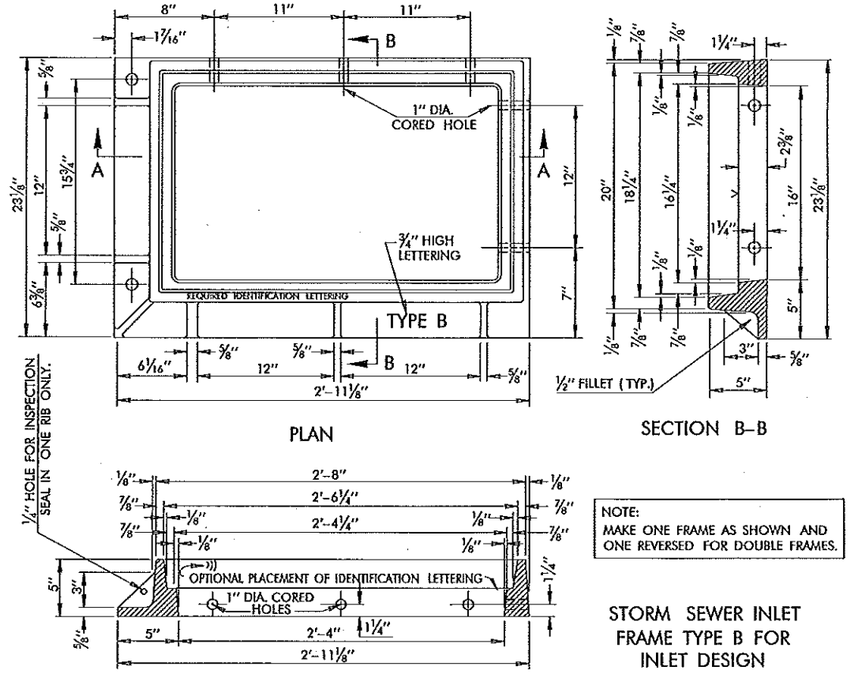
CI–1 | 0

R–39



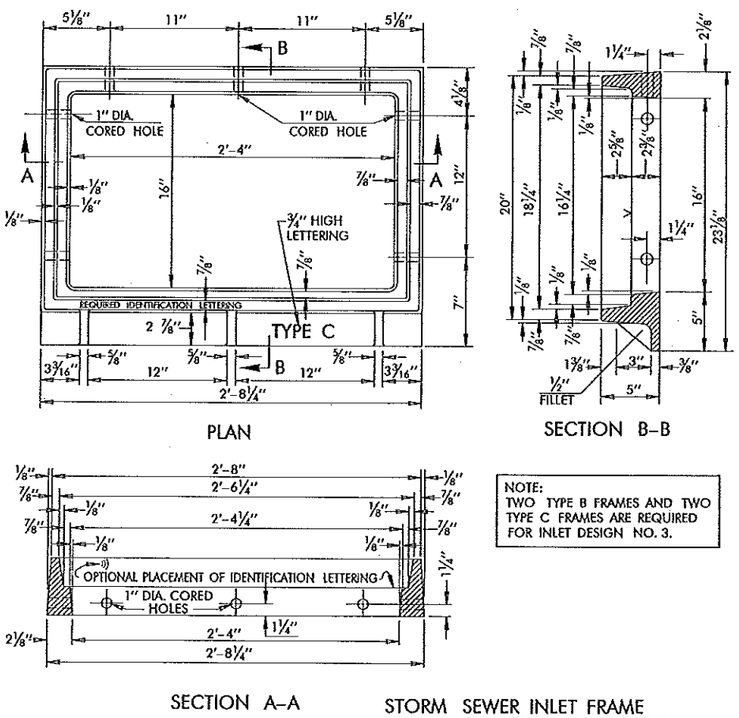
NOTE:
ONLY ONE TYPE A FRAME FOR INLET DESIGN NO. 1.

STORM SEWER INLET FRAME TYPE A FOR INLET DESIGN NO. 1



NOTE:
MAKE ONE FRAME AS SHOWN AND ONE REVERSED FOR DOUBLE FRAMES.

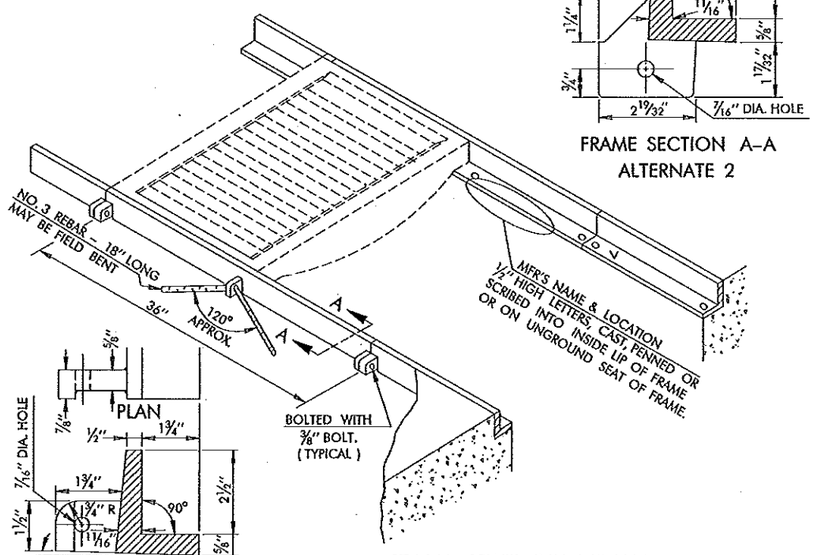
STORM SEWER INLET FRAME TYPE B FOR INLET DESIGN NO. 2 AND 3



NOTE:
TWO TYPE B FRAMES AND TWO TYPE C FRAMES ARE REQUIRED FOR INLET DESIGN NO. 3.

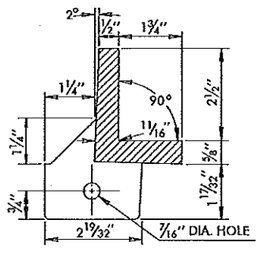
STORM SEWER INLET FRAME TYPE C FOR INLET DESIGN NO. 3

NOTE: ONE PAY UNIT OF TYPE TR FRAME IS COMPOSED OF TWO 36" LONG SECTIONS OF FRAME. ONE TYPE TR FRAME REQUIRES TWO TRENCH TYPE GRATES (SEE ROADWAY STANDARD CIG–3). DO NOT USE FRAME TYPE GRATES IN A TRENCH INSTALLATION. COST OF BOLTS AND REBARS TO BE INCLUDED IN PRICE BID FOR INLET FRAME. FRAME MEMBERS MAY BE FURNISHED AS TWO 18" LONG PIECES, END–MATCHED, TO PROVIDE ONE 36" LONG UNIT.



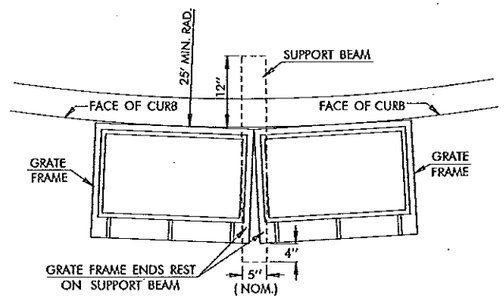
STORM SEWER INLET FRAME TYPE TR FOR TRENCH INLET

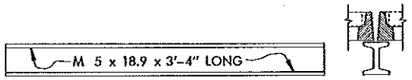
INLET FOR USE WITH INLET FRAME TR WILL NORMALLY BE A SPECIAL DESIGN REINFORCED CONCRETE BOX WITH PART(S) OF THE TOP REMOVED.



REVISIONS

DESCRIPTION	DATE





ALTERNATE SUPPORT BEAM
TO BE USED IN LIEU OF S 4 x 7.7, WHEN STRUCTURE IS BUILT ALONG CURVED CURB

GENERAL NOTES

1. ALL CONSTRUCTION AND MATERIAL REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE 2009 ODOT STANDARD SPECIFICATIONS.
2. INLET DESIGN NO. 1 REQUIRES ONE TYPE A FRAME.
3. INLET DESIGN NO. 2 REQUIRES TWO TYPE B FRAMES AND 2 EA.–3/4" x 5" BOLTS WITH NUTS AND ONE S 4 x 7.7 x 3'–4" LONG SUPPORT BEAM. IF BUILT ON CURVED CURB, THE INLET REQUIRES 1 EA. 3/4" x 5" BOLT WITH NUT AND 1 EA. 3/4" x 6 1/2" BOLT WITH NUT AND ONE M 5 x 18.9 x 3'–4" LONG SUPPORT BEAM .
4. INLET DESIGN NO. 3 REQUIRES THE SAME APPURTENANCES AS DESIGN NO. 2 WITH TWO OR MORE TYPE C FRAMES LOCATED BETWEEN THE TWO TYPE B FRAMES AND ONE ADDITIONAL SUPPORT BEAM AND A PAIR OF BOLTS WITH NUTS FOR EACH ADDED TYPE C FRAME, PLUS ONE ADDITIONAL PAIR OF BOLTS AND SUPPORT BEAM.
5. ALL LETTERING TO BE RECESSED 1/16" AND SHALL NOT EXCEED 1" IN HEIGHT. INFORMATION REQUIRED SHALL BE STATED IN THE SPECIFICATIONS. LOCATION OF LETTERING TO BE AS SHOWN WITH ADDITIONAL IDENTIFICATION LETTERING AT OTHER LOCATIONS ACCEPTABLE.
6. FRAMES SHALL BE CAST STEEL, DUCTILE IRON, OR GRAY IRON CONFORMING TO SECTION 725 OF THE SPECIFICATIONS.
7. INLET FRAMES AND GRATES INSTALLED DURING ORIGINAL CONSTRUCTION SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE OF THE ORIGINAL INLET.

NOTE: MACHINING (SYMBOL ∧) MAY BE ACCOMPLISHED BY MILLING OR BY LEVEL GRINDING.

BASIS OF PAYMENT

ITEM NO.	ITEM	UNIT
611 (I)	REPLACEMENT OF INLET FRAME AND GRATE (■)	EA.
611 (J)	REPLACEMENT OF INLET FRAME (■)	EA.

■ TYPE OF FRAME AND TYPE OF GRATE SHALL BE SPECIFIED.

TYPE A, B, OR C FRAMES AS SHOWN HERE WITH GRATES FROM STD. CIG–3 (TYPE VG–F OR RVG–F) COMPRISE THE PAY ITEM. SEE NOTE THIS SHEET FOR PAY UNIT.

APPROVED BY
ROADWAY ENGINEER: Timothy A. Tegeler DATE: 12/2/09

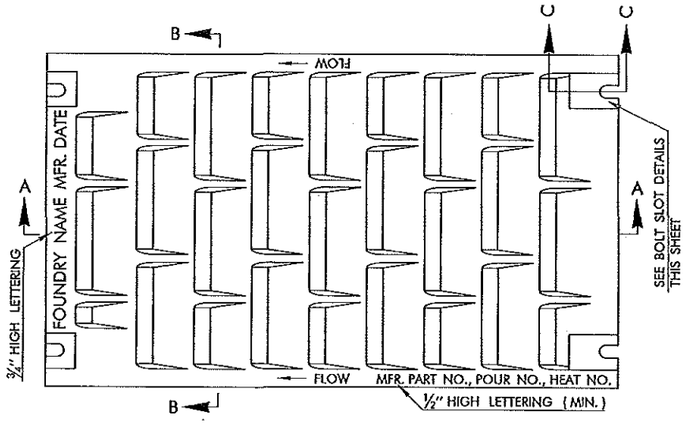
ROADWAY STANDARD

STORM SEWER INLET FRAMES (CURB INLETS)

2009 SPECIFICATIONS

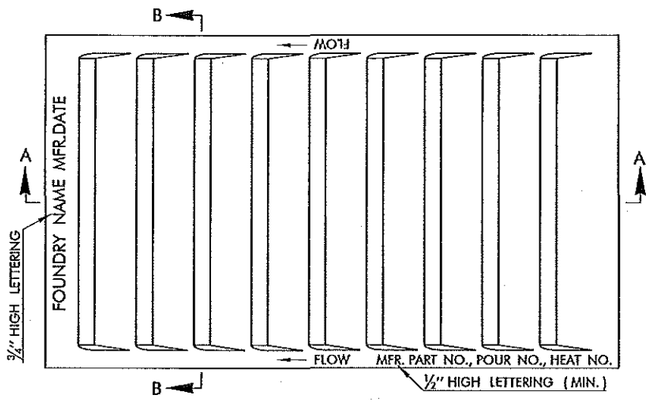
SSIF–4	0
	R–40

REVISIONS	
DESCRIPTION	DATE



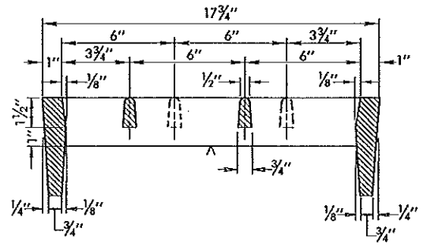
PLAN – RIBBED VANE GRATE
(SHOWN FOR TRENCH INSTALLATION)

TYPE RVG–F (FRAME INSTALLATION)
TYPE RVG–T (TRENCH INSTALLATION)

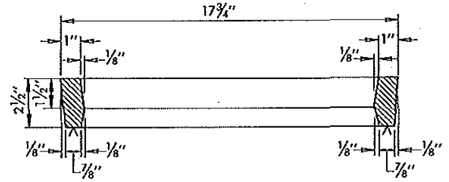


PLAN – VANE GRATE
(SHOWN FOR FRAME INSTALLATION)

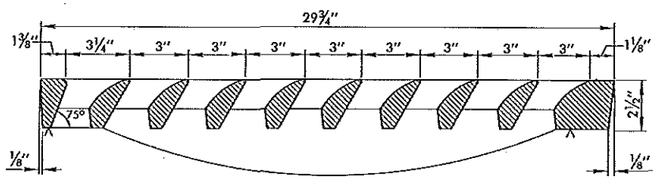
TYPE VG–F (FRAME INSTALLATION)
TYPE VG–T (TRENCH INSTALLATION)



SECTION B – B (TRENCH INSTALLATION)

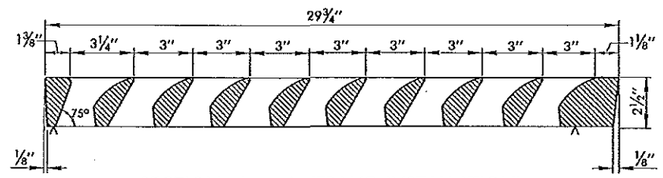


SECTION B – B (FRAME INSTALLATION)



SECTION A – A (TRENCH INSTALLATION)

∧ MACHINING ONLY ON END BEARING AREAS.

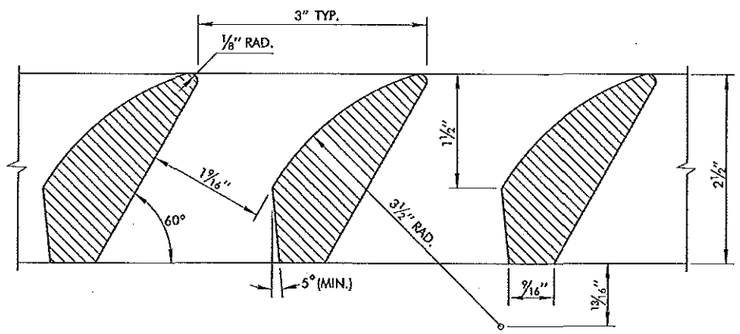


SECTION A – A (FRAME INSTALLATION)

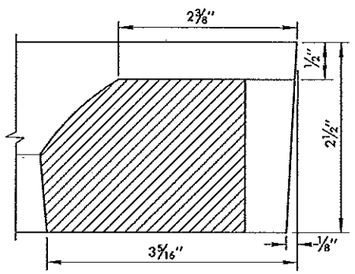
GENERAL NOTES

1. ALL CONSTRUCTION AND MATERIAL REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE 2009 ODOT STANDARD SPECIFICATIONS.
2. FRAME TYPE GRATES SHALL NOT TO BE USED IN TRENCH INSTALLATIONS.
3. GRATES SHALL BE INSTALLED IN THE FRAME WITH FLOW ARROW POINTING DOWNSTREAM OR TOWARD THE LOW POINT IN A SUMP.
4. ALL LETTERING IS TO BE RECESSED 1/16". ALL INFORMATION REQUIRED SHALL BE SUFFICIENT FOR IDENTIFICATION, AS SHOWN.
5. GRATES SHALL BE CAST STEEL, DUCTILE IRON, OR GRAY IRON CONFORMING TO SECTION 725 OF THE SPECIFICATIONS.
6. ALL GRATES INSTALLED IN A TRENCH FRAME (STD. SSIF–4) SHALL HAVE A BOLTED HOLD–DOWN FEATURE. IF INSTALLED IN AN ANGLE IRON FRAME OR RESTING ON A CONCRETE SHOULDER, A POSITIVE HOLD–DOWN FEATURE, APPROVED BY THE ENGINEER, SHALL BE USED.
7. INLET FRAMES, GRATES AND COVER GRATES INSTALLED DURING ORIGINAL CONSTRUCTION SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE OF THE ORIGINAL INLET OR MANHOLE.

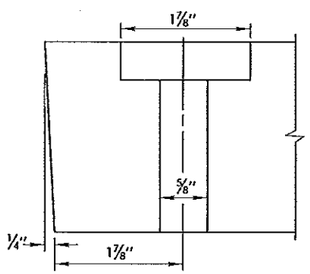
NOTE: MACHINING (SYMBOL ∧) MAY BE ACCOMPLISHED BY MILLING OR BY LEVEL GRINDING.



TYPICAL SECTION THRU VANES



SECTION C – C



END VIEW

BOLT SLOT DETAILS

BASIS OF PAYMENT		
ITEM NO.	ITEM	UNIT
▼ 611 (1)	REPLACEMENT OF INLET FRAME AND GRATE	EA.
611 (K)	REPLACEMENT OF INLET GRATE (TYPE ■)	EA.

▼ ANY FRAME TYPE GRATE ON THIS DRAWING INSTALLED IN A PROPER FRAME, AS SHOWN ON ROADWAY STANDARD SSIF–4 (TYPE A, B, C) WILL COMPRISE THE PAYITEM.

■ CAST INLET GRATE NOMENCLATURE	
TYPE VG–F	VANE GRATE – FRAME TYPE
TYPE VG–T	VANE GRATE – TRENCH TYPE
TYPE RVG–F	RIBBED VANE GRATE – FRAME TYPE
TYPE RVG–T	RIBBED VANE GRATE – TRENCH TYPE

APPROVED BY ROADWAY ENGINEER: Timothy A. Tegeler DATE: 12/2/09

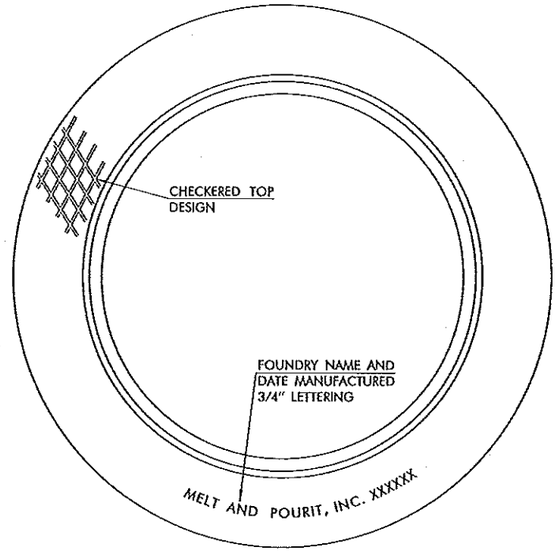
ROADWAY STANDARD

CAST IRON GRATES (CURB INLETS)

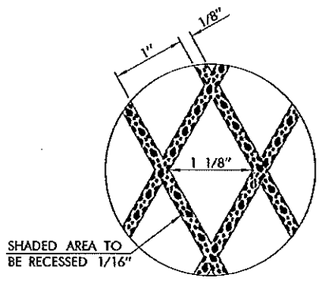
2009 SPECIFICATIONS

CIG–3	0
	R–41

REVISIONS	
DESCRIPTION	DATE



TOP SIDE OF FRAME FOR OUT OF PAVING INSTALLATION



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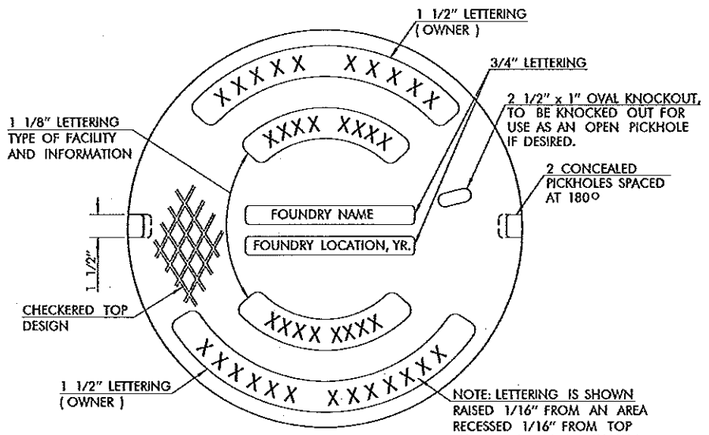
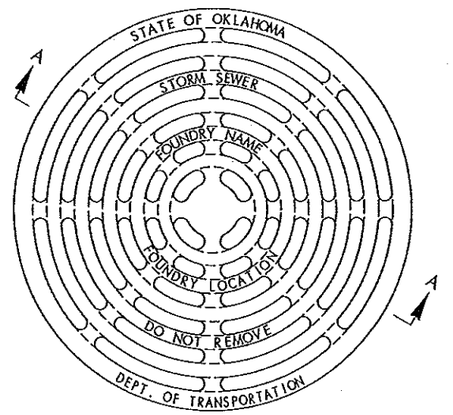
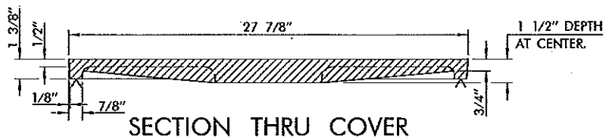


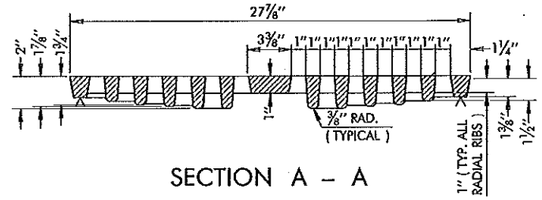
TOP SIDE OF COVER



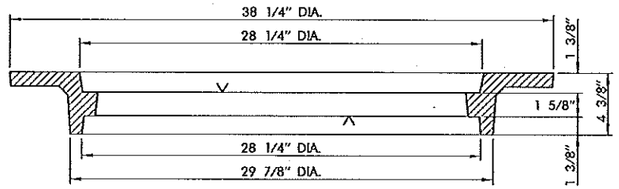
TOP SIDE OF COVER GRATE



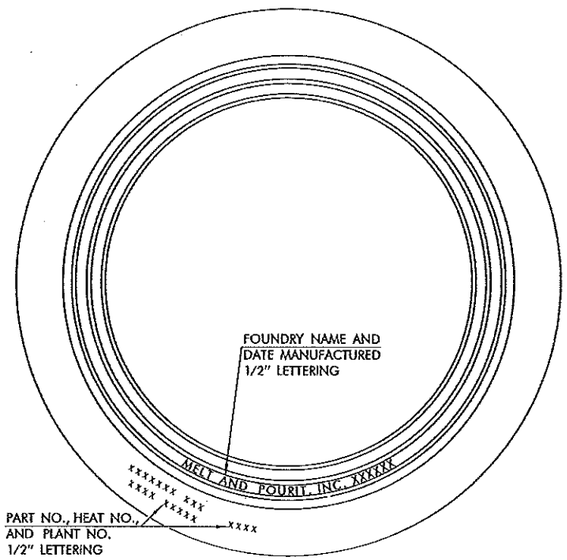
SECTION THRU COVER



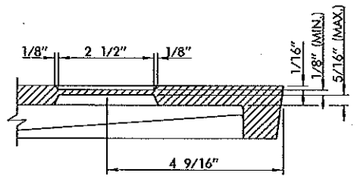
SECTION A – A



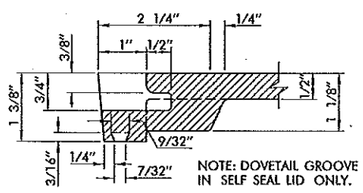
REVERSIBLE FRAME



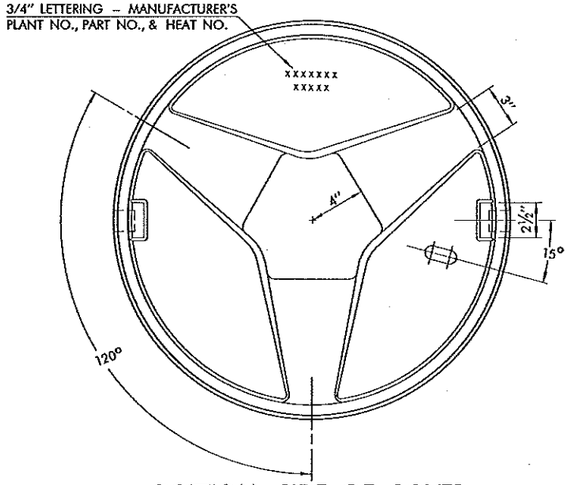
TOP SIDE OF FRAME FOR IN PAVING INSTALLATION



SECTION THRU OVAL KNOCKOUT



SECTION THRU PICKHOLE



BOTTOM SIDE OF COVER

GENERAL NOTES

1. ALL CONSTRUCTION AND MATERIAL REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE 2009 ODOT STANDARD SPECIFICATIONS.
2. COVERS WILL BE FURNISHED WITH A PLAIN SEAT, UNLESS A SELF-SEAL SEAT OR A LOCKING DEVICE IS SPECIFIED IN THE PLANS.
3. LETTERING TO DENOTE OWNERSHIP AND TYPE OF USAGE WILL BE AT THE DISCRETION OF THE OWNER.
4. FRAMES AND COVERS SHALL BE CAST STEEL, DUCTILE IRON, OR GRAY IRON CONFORMING TO SECTION 725 OF THE SPECIFICATIONS.
5. MANHOLE FRAMES, COVERS AND COVER GRATES INSTALLED DURING ORIGINAL CONSTRUCTION SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE OF THE ORIGINAL MANHOLE.

NOTE: MACHINING (SYMBOL ⏥) MAY BE ACCOMPLISHED BY MILLING OR BY LEVEL GRINDING.

BASIS OF PAYMENT		
ITEM NO.	ITEM	UNIT
611 (C)	REPLACEMENT OF MANHOLE FRAME AND COVER	EA.
611 (D)	REPLACEMENT MANHOLE FRAME	EA.
611 (E)	REPLACEMENT OF MANHOLE COVER	EA.
611 (F)	REPLACEMENT OF MANHOLE COVER GRATE	EA.

APPROVED BY ROADWAY ENGINEER: Timothy A. Ziegler DATE: 12/2/09

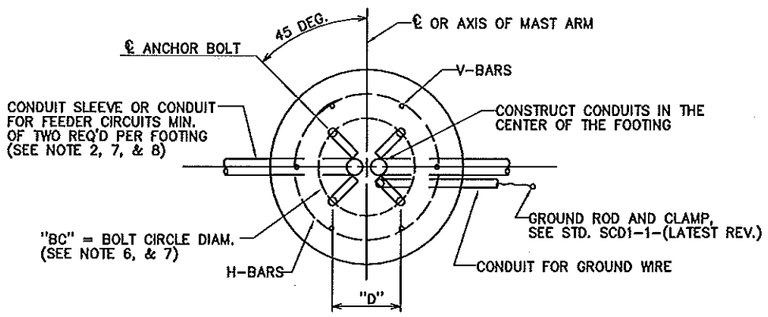
ROADWAY STANDARD

MANHOLE FRAME AND COVER

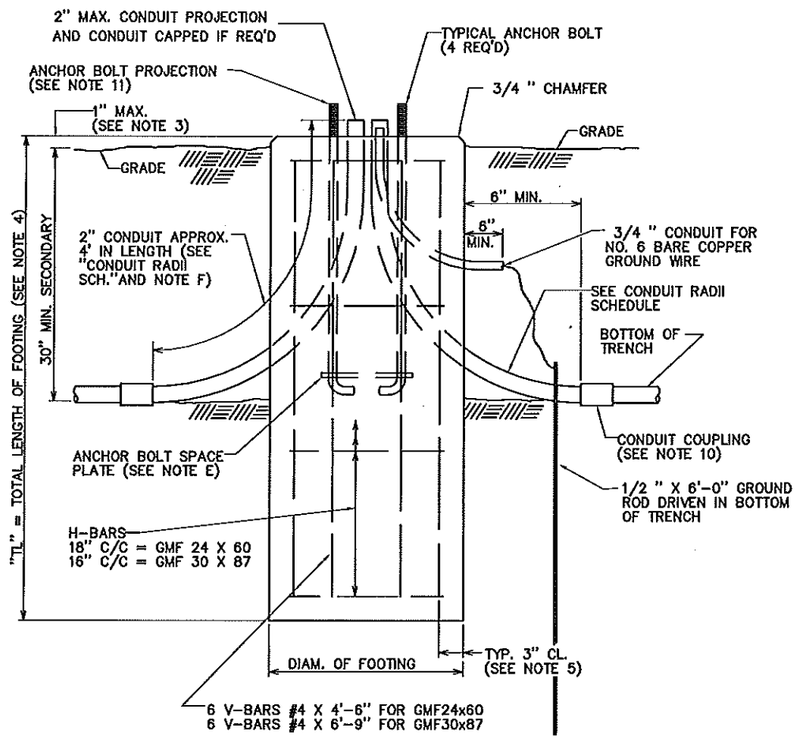
2009 SPECIFICATIONS

MFC-4	0
R-42	

DESCRIPTION	REVISIONS	DATE



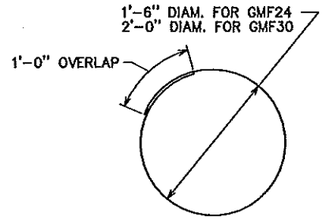
PLAN VIEW



SIDE VIEW

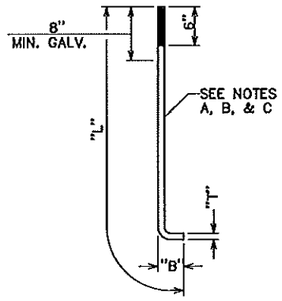
FOOTING ID. NO.	POLE MOUNTING HEIGHT	FOOTING DIAM.	TOTAL LENGTH OF FOOTING "TL"	CLASS "A" CONC. C.Y.	REINF. STEEL LBS.
GMF24x60	40' AND LESS	2'-0"	5'-0"	0.58	33.40
			EA. FOOT ADD	0.12	7.85
GMF30x87	41' TO 50'	2'-6"	7'-3"	1.32	56.45
			EA. FOOT ADD	0.18	8.90

LIGHT POLE FOOTING DETAIL



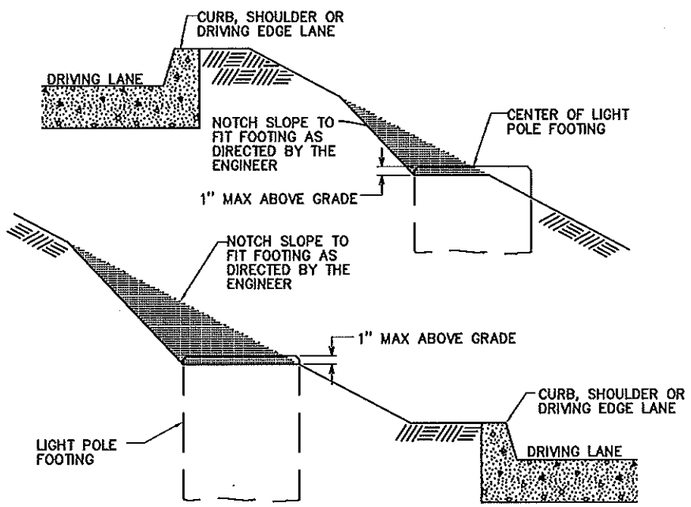
H-BAR #4 x 5'-9" FOR GMF24
H-BAR #4 x 7'-4" FOR GMF30

#4 H-BAR



POLE MOUNTING HEIGHT	NO. OF MAST ARM	"T"	"L"	"B"	UNC THREADS PER INCH
40' AND LESS	1	1"	40"	4"	8
	2	1-1/4"	48"	6"	7
41' TO 50'	1	1-1/4"	48"	6"	7
	2	1-1/4"	48"	6"	7

ANCHOR BOLT



PLACEMENT OF LIGHT POLE FOOTING IN SLOPE

CONDUIT RADII SCHEDULE	
CONDUIT DIAM. (INCHES)	MININUM RADIUS (INCHES)
1/2, 3/4, 1, 1-1/4	12
1-1/2	18
2	24
2-1/2,3	30
4	36
5	48

ANCHOR BOLT DATA	
BOLT CIRCLE DIAM. "BC" (INCHES)	ANCHOR BOLT SQ. "D" (INCHES)
10	7 1/8
10 1/2	7 1/2
11	7 3/4
11 1/2	8 1/8
12	8 1/2
12 1/2	8 7/8
13	9 1/4
13 1/2	9 1/2
14	10
14 1/2	10 1/4
15	10 5/8
15 1/2	11
16	11 3/8
16 1/2	11 3/4
17	12

MATERIAL SPECIFICATIONS

A. ANCHOR BOLTS – 4 REQ'D AND SHALL BE HOT BENT AND MEET THE REQUIREMENTS OF ASTM A36-M55 AND HAVE A MINIMUM YEILD STRENGTH OF 55,000 PSI.
HEX NUTS – 4 REQ'D AND SHALL MEET THE REQUIREMENTS OF ASTM A-563 GRADE A, OR ANSI B18.2.2 HEX TYPE.
FLAT WASHERS – 4 REQ'D AND SHALL MEET THE REQUIREMENTS OF ANSI B27.2
HEAVY WASHERS. NOTE: IF BREAKAWAY BASE DESIGN A, B, OR C IS TO BE INSTALLED, ADDITIONAL EXTRA THICK FLAT WASHERS REQUIRED. SEE STANDARD BBD1-1- (LATEST REVISION)
LOCK WASHERS – 4 REQ'D AND SHALL MEET THE REQUIREMENTS OF ANSI B18.21.1 HEAVY WASHERS.

B. ALL BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A-153 (AASHTO M-232).

C. ANCHOR BOLTS, NUTS, AND WASHERS SHALL BE FURNISHED WITH EACH ANCHOR BASE AND TRANSFORMER BASE MOUNTED POLE.

D. ALL CONCRETE SHALL BE CLASS "A" AND REINFORCING STEEL SHALL BE AASHTO M-31, GRADE 40.

E. ANCHOR BOLT SPACE PLATES SHALL BE AASHTO M-183 (ASTM A-36), MIN. PLATE THICKNESS OF 0.0598" (16 GUAGE).

F. ELECTRICAL CONDUIT OR CONDUIT SLEEVES SHALL BE IN ACCORDANCE WITH THE 1999 STANDARD SPECIFICATIONS AND MAY BE EITHER RIGID GALV. STEEL OR SCH. 40 PVC PLASTIC.

G. ELECTRICAL CONDUCTORS SHALL BE IN ACCORDANCE WITH THE 1999 STANDARD SPECIFICATIONS.

GENERAL NOTES

1. A TEMPLATE SHALL BE PROVIDED TO FIX THE LOCATION OF THE ANCHOR BOLTS AND CONDUITS THAT PROJECT OUT OF THE CONCRETE FOOTING.
2. FOOTING SHALL BE CONSTRUCTED WITH AT LEAST TWO ELECTRICAL SERVICE ENTRY CONDUITS, SOME MAY REQUIRE MORE. SEE THE PLANS FOR LOCATIONS AND NUMBER OF CONDUITS REQUIRED. ANY UNUSED CONDUIT SHALL BE CAPPED ON BOTH ENDS.
3. IF A BREAKAWAY DEVICE IS TO BE INSTALLED, THE FOOTING SHALL BE AS CLOSE TO GROUND LEVEL AS POSSIBLE TO ASSURE THE PROPER ACTION OF THE BREAKAWAY DEVICE AND TO PREVENT DAMAGE TO THE FOOTING OR UNDERSIDE OF AN IMPACTING VEHICLE.
4. IF SPECIFIED, THE FOOTING MAY BE EXTENDED EXTRA LENGTH EITHER ABOVE OR BELOW GRADE, SEE THE PLANS FOR LOCATION AND LENGTH. ALSO THE V-BAR LENGTH AND THE NUMBER OF H-BARS AND CONDUIT LENGTHS SHALL BE ADJUSTED ACCORDINGLY.
5. THE FOOTING SHALL BE FORMED A MIN. OF 6" FROM TOP OF FOOTING OR TO BELOW GRADE, WHICH EVER IS GREATER AND ALL REINFORCING STEEL SHALL HAVE A TYPICAL 3" CLEARANCE FROM THE OUTSIDE EDGE OF THE FOOTING.
6. IF ANCHOR BOLT DATA IS NOT SPECIFIED IN THE PLANS, THE BOLT SIZE AND PLACEMENT FOR NEW POLES SHALL BE IN ACCORDANCE WITH THE APPROVED SHOP DRAWINGS. ANCHOR BOLTS FOR USED LIGHT POLES SHALL BE INSTALLED TO FIT THE RESET POLE ASSEMBLY.
7. IF THE FOOTING IS CONSTRUCTED BY A CONTRACTOR OTHER THAN THE LIGHTING CONTRACTOR, THE FOLLOWING ADDITIONAL REQUIREMENTS WILL APPLY:
   (A) AN ANCHOR BOLT SPACE PLATE SHALL BE INSTALLED.
   (B) THE CONDUIT SLEEVES FOR THE POWER CONDUCTORS SHALL BE 2" RIGID GALV. STEEL AND EXTEND APPROXIMATELY 6" FROM THE EDGE OF THE FOOTING AND BE CAPPED ON BOTH ENDS, UNLESS THE CONDUIT SYSTEM IS DESIGNED TO EXTEND TO ANOTHER POINT OF TERMINATION.
   (C) THE SIZE OF THE ANCHOR BOLT AND THE BOLT CIRCLE DIMENSIONS SHALL BE AS SHOWN IN THE PLANS.
8. IF THE CONTRACTOR ELECTS TO INSTALL CABLE-IN-DUCT (CID) TRENCHED CONDUIT PRIOR TO CONSTRUCTING THE FOOTING, THE CID CONDUIT MAY BE PLACED IN THE CONCRETE FOOTING WITHOUT A CONDUIT SLEEVE. IF THE TRENCHED CID CONDUIT IS TO BE INSTALLED AFTER THE FOOTING IS CONSTRUCTED, A CONDUIT SLEEVE WILL BE REQUIRED. THE CONDUIT SLEEVE SHALL BE SIZED TO ACCOMODATE THE CID SPECIFIED IN THE PLANS. THEREFORE 2" CID REQUIRES A 3" DIAM. SLEEVE.
9. THE ANCHOR BOLTS, CONDUIT SLEEVES, SPACE PLATE, GROUND ROD, GROUND WIRE, CLAMP AND THE CONDUIT FOR THE GROUND WIRE WILL NOT BE MEASURED FOR PAYMENT BUT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE FOOTING MATERIALS. THE ELECT. CONDUIT SHALL BE MEASURED FOR PAYMENT AND PAID FOR AT THE UNIT PRICE BID FOR THE ELECT. CONDUIT OF THE SIZE/TYPE SPECIFIED IN THE PLANS.
10. INSTALL A CONDUIT COUPLING, ADAPTOR, OR COMPRESSION COUPLING IF NECESSARY TO CONNECT CONDUITS OF DISSIMILAR MATERIALS.
11. THE ANCHOR BOLT PROJECTION SHALL BE EITHER;
   (A) 2-1/2" MIN., 3-1/2" MAX. FOR ANCHOR BASE POLE.
   (B) 3" MIN., 4" MAX. FOR TRANSFORMER BASE.
   (C) AS REQ'D FOR DOUBLE NUT LEVELING.
12. THE CONTRACTOR SHALL CONSTRUCT THE TOP OF THE LIGHT POLE FOOTINGS LEVEL TO AVOID THE USE OF SHIMS WHEN INSTALLING THE LIGHT POLES ON THE FOOTINGS.

APPROVED BY TRAFFIC ENGINEER DATE

OKLAHOMA DEPT. OF TRANSPORTATION
TRAFFIC STANDARD (ENGLISH)

TYPICAL GROUND MOUNTED LIGHT POLE FOOTING DETAILS

1999 SPECIFICATIONS | GMF1-1 | 00E

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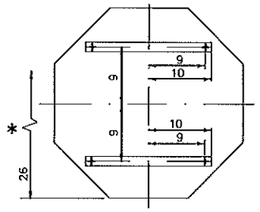
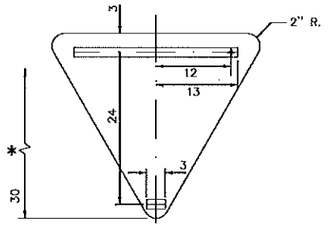
DESCRIPTION	REVISIONS	DATE



B-30(O)

(1) 2-1/4" SQUARE POST
(1) 2" PIPE POST



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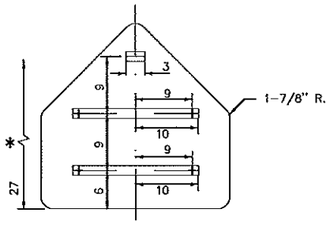

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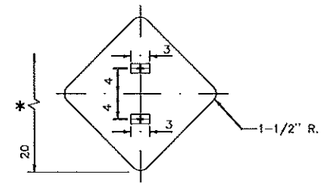

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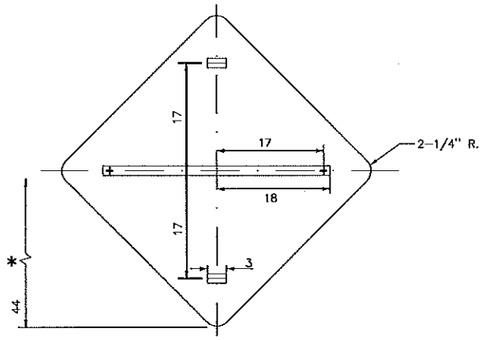

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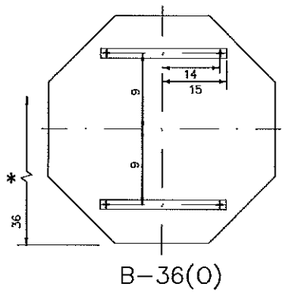

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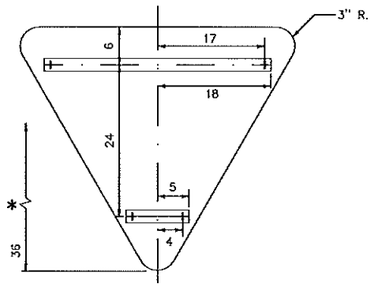
(1) 2-1/2" PIPE POST



B-48(T)

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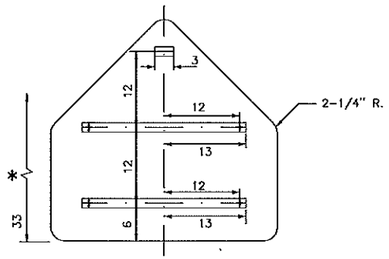

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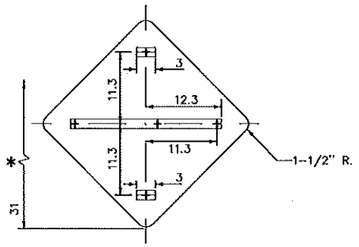

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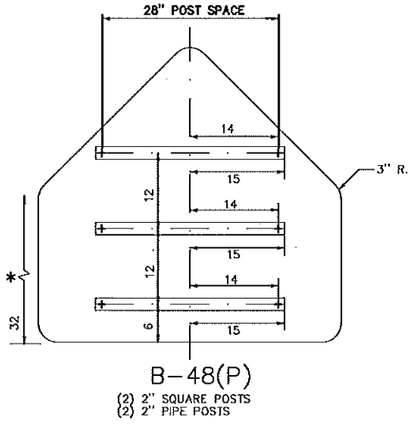

B-48(P)

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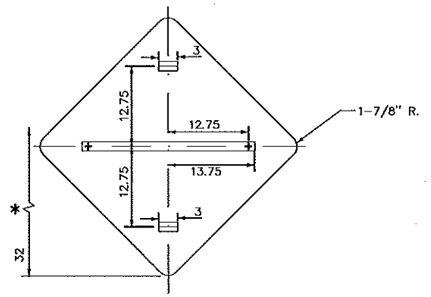
(2) 2" PIPE POSTS



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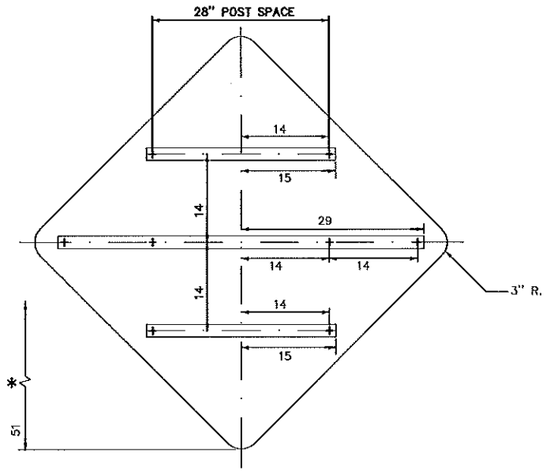

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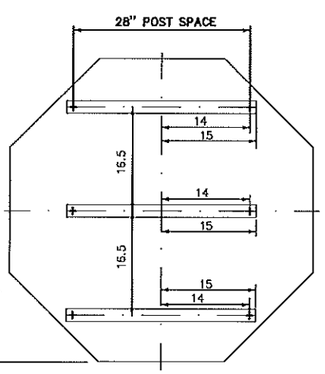
(2) 2-1/2" PIPE POSTS



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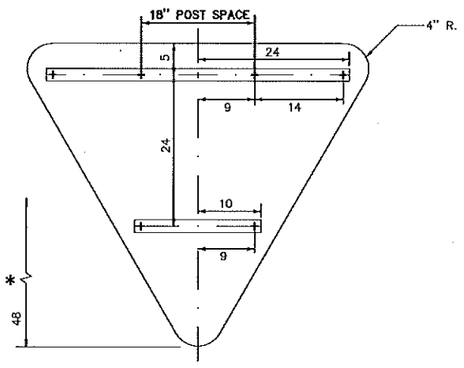
(2) 2-1/2" PIPE POSTS



B-60(T)

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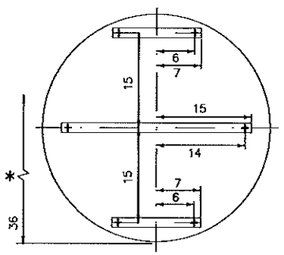
(2) 2" PIPE POSTS



B-36(R)

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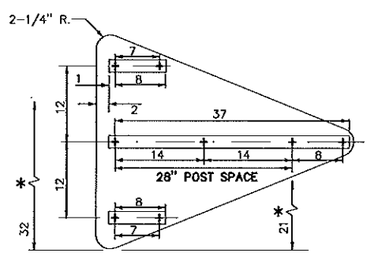
(1) 2-1/2" PIPE POST



B-4836(T)

(2) 2" SQUARE POSTS
(2) 2" PIPE POSTS

CONSTRUCTION NOTES:

(1) ALL FLAT SHEET SIGNS SHALL USE GALVANIZED STEEL POSTS.

(2) THICKNESS OF MATERIALS FOR FLAT SHEET SIGNS SHALL BE AS FOLLOWS, DETERMINED BY THE LONGEST DIMENSION OF THE SIGN UNLESS OTHERWISE SPECIFIED.

ALUMINUM ALLOY 6061-T6 OR 5052-H38	GALVANIZED STEEL
0.063" FOR SIGNS THROUGH 24"	16 GAUGE FOR SIGNS THROUGH 24"
0.080"FOR SIGNS 25" THROUGH 35"	14 GAUGE FOR SIGNS 25" THROUGH 35"
0.100" FOR SIGNS 36" AND LARGER	12 GAUGE FOR SIGNS 36" AND LARGER

(3) SIGN BRACKETS SHALL BE GALVANIZED STEEL OR ALUMINUM. HOLES FOR MOUNTING BRACKETS TO SIGN SHALL BE 5/16" D. HOLES FOR MOUNTING SIGN AND BRACKETS TO POST SHALL BE 3/8" D. HOLES SHALL BE PUNCHED BEFORE GALVANIZING. SIZE OF BRACKETS SHALL BE AS FOLLOWS: SIGNS THROUGH 36" SHALL USE A GALVANIZED STEEL OR ALUMINUM CHANNEL 1-1/2" X 1/2" X 1/8". SIGNS LARGER THAN 36" SHALL USE A GALVANIZED STEEL OR ALUMINUM CHANNEL 2" X 1/2" X 1/8". ALUMINUM SIGN BRACKETS SHALL BE ALLOY 6061-T6, 6062-T6 OR 6063-T6.

(4) ALL BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED STEEL OR CADMIUM PLATED. ALL BOLT ENDS SHALL BE SUFFICIENTLY BRADDED AFTER INSTALLATION TO MINIMIZE REMOVAL BY VANDALISM.

(5) ALL POSTS SHALL EXTEND 2" ABOVE THE TOP SIGN BRACKET, BUT NOT ABOVE THE TOP OF THE SIGN.

*(6) CORNER RADIUS FOR ALL FLAT SHEET SIGNS SHALL BE AS SHOWN.

(7) ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED.

APPROVED BY TRAFFIC ENGINEER DATE

OKLAHOMA DEPT. OF TRANSPORTATION
TRAFFIC STANDARD (ENGLISH)

SIGN BLANK AND BRACKET DETAILS

1999 SPECIFICATIONS	SBS1-1	00E

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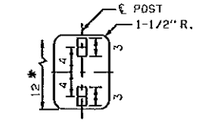

B-0912 ■

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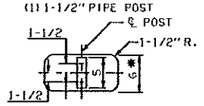
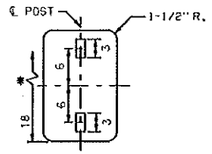
(1) 1-1/2" PIPE POST



B-1206 ■



B-1218 ■

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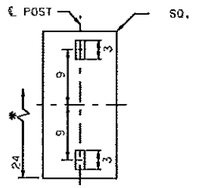
(1) 1-1/2" PIPE POST



B-1224 ■

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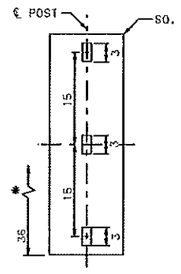
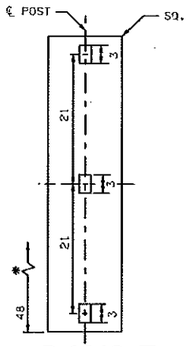
(1) 1-1/2" PIPE POST



B-1236 ◢ ■

(1) 1-3/4" SQUARE POST
(1) 1-1/2" PIPE POST



B-1248 ■

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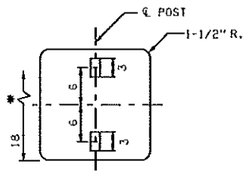
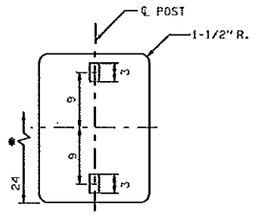
(1) 1-1/2" PIPE POST



B-18(S) ■

(1) 1-3/4" SQUARE POST
(1) 1-1/2" PIPE POST



B-1824 ■

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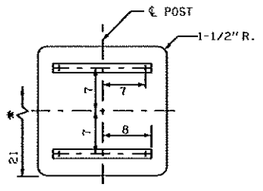
(1) 1-1/2" PIPE POST



B-21(S)

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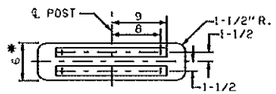
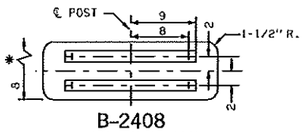


B-2406

(1) 1-3/4" SQUARE POST
(1) 1-1/2" PIPE POST



B-2408

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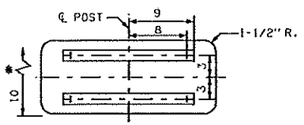
(1) 1-1/2" PIPE POST



B-2410

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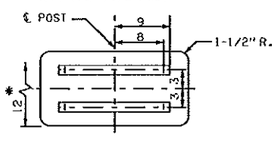
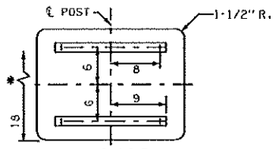
(1) 1-1/2" PIPE POST



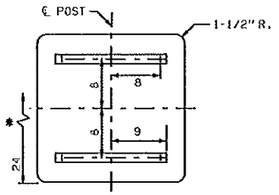
B-2412

(1) 1-3/4" SQUARE POST
(1) 1-1/2" PIPE POST



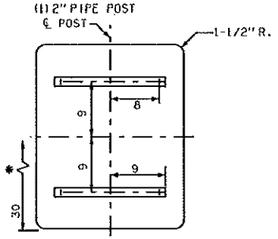
B-2418

(1) 1-3/4" SQUARE POST
(1) 1-1/2" PIPE POST



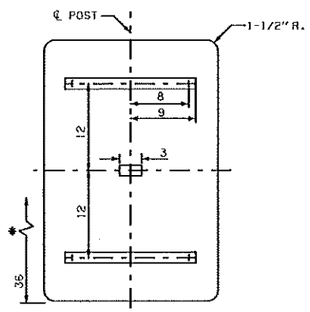
B-24(S)

(1) 1-3/4" SQUARE POST
(1) 2" PIPE POST



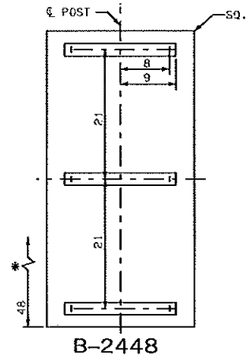
B-2430

(1) 2-1/4" SQUARE POST
(1) 2" PIPE POST



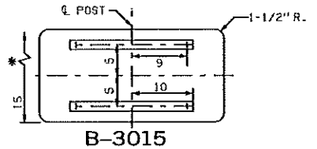
B-2436

(1) 2-1/4" SQUARE POST
(1) 2-1/2" PIPE POST



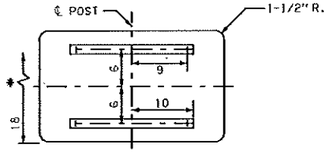
B-2448

(1) 2-1/4" SQUARE POST
(1) 2-1/2" PIPE POST



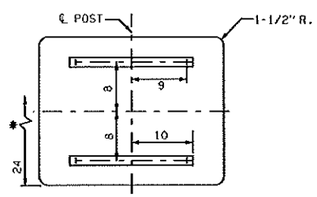
B-3015

(1) 2-1/4" SQUARE POST
(1) 1-1/2" PIPE POST



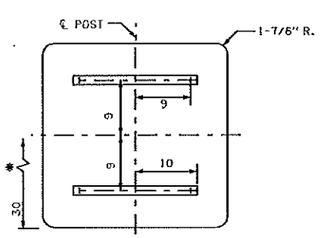
B-3018

(1) 2-1/4" SQUARE POST
(1) 1-1/2" PIPE POST



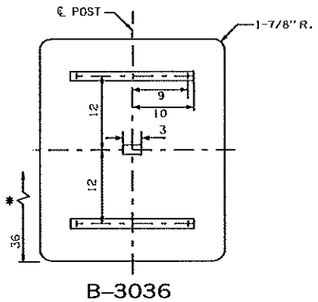
B-3024

(1) 2-1/4" SQUARE POST
(1) 2" PIPE POST



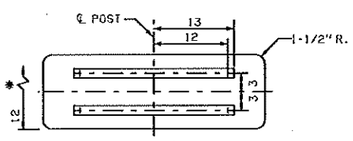
B-30(S)

(1) 2-1/4" SQUARE POST
(1) 2" PIPE POST



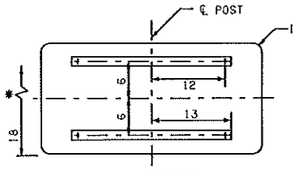
B-3036

(1) 2-1/4" SQUARE POST
(1) 2-1/2" PIPE POST



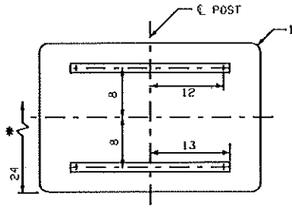
B-3612

(1) 2-1/4" SQUARE POST
(1) 2" PIPE POST



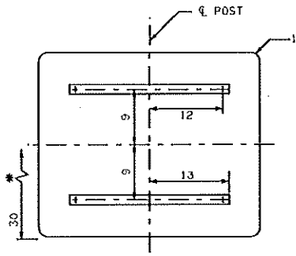
B-3618

(1) 2-1/4" SQUARE POST
(1) 2" PIPE POST



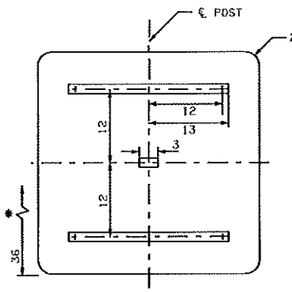
B-3624

(1) 2-1/4" SQUARE POST
(1) 2" PIPE POST



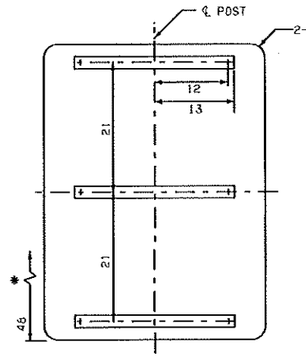
B-3630

(1) 2-1/4" SQUARE POST
(1) 2-1/2" PIPE POST



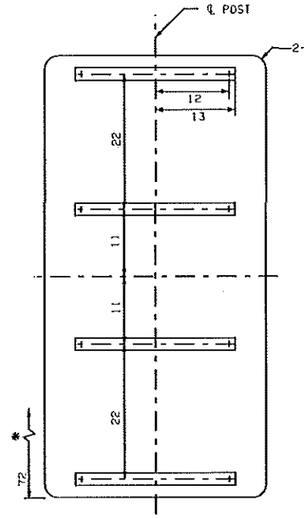
B-36(S)

(1) 2-1/4" SQUARE POST
(1) 2-1/2" PIPE POST



B-3648

(2) 2" SQUARE POSTS
(1) 3" PIPE POST



B-3672

(1) 3-1/2" PIPE POST

DESCRIPTION	REVISIONS	DATE

NOTES:

* ALL POSTS SHALL EXTEND 2" ABOVE THE TOP SIGN BRACKET, BUT NOT ABOVE THE TOP OF THE SIGN.

◢ SIGN BLANK THICKNESS SHALL BE .060" ALUMINUM OR 16 GAUGE STEEL.

■ VERTICAL SIGN BRACKET ONLY.

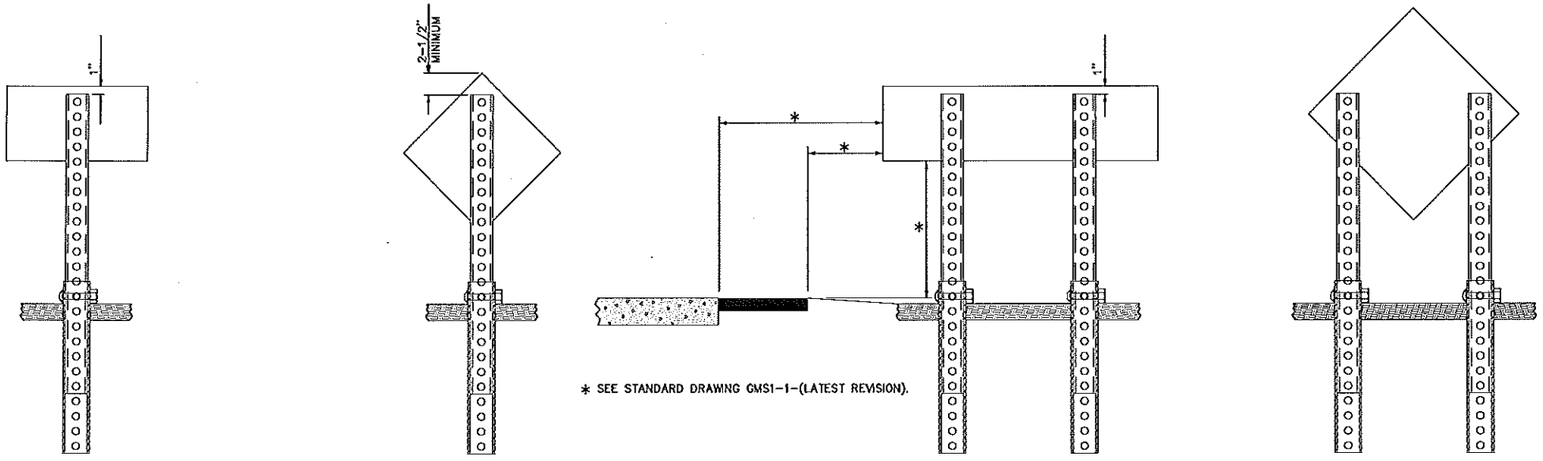
ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED.

APPROVED BY TRAFFIC ENGINEER — DATE

OKLAHOMA DEPT. OF TRANSPORTATION
TRAFFIC STANDARD (ENGLISH)
SIGN BLANK AND BRACKET DETAILS

1999 SPECIFICATIONS	SBS2-1	00E
		T-56E

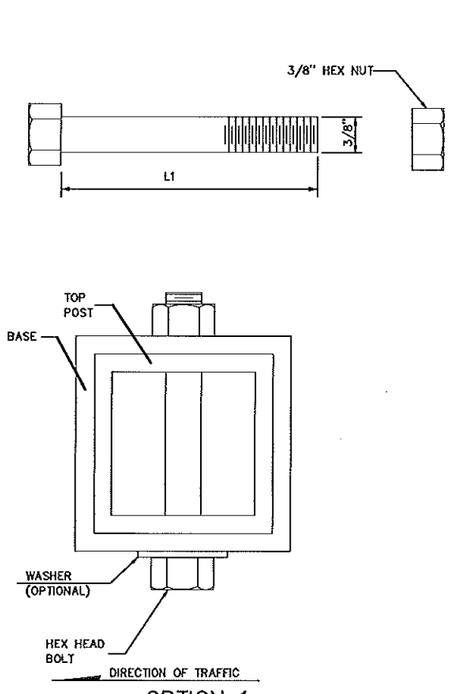
REVISIONS	
DESCRIPTION	DATE



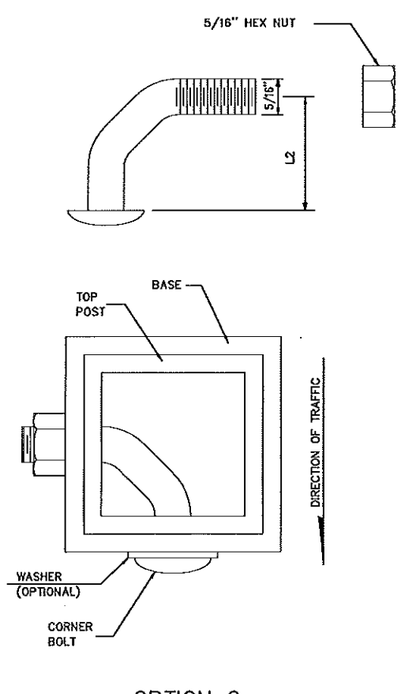
TYPICAL SINGLE POST INSTALLATION

TYPICAL DOUBLE POST INSTALLATION

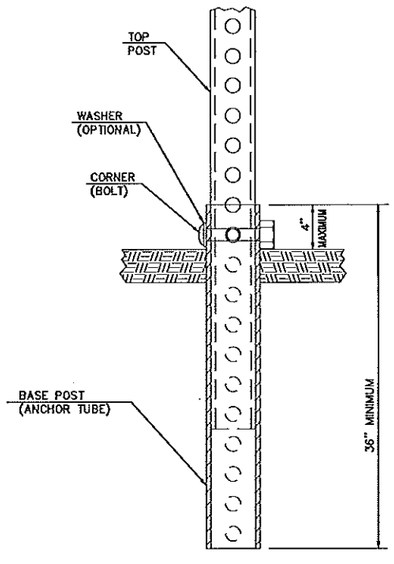
SQUARE TUBE SIZE	L1	L2	MAXIMUM SQUARE FEET OF SIGN
1-3/4" (SINGLE) (14 GA.)	2-3/4"	1"	4.0
1-3/4" (DOUBLE) (14 GA.)	2-3/4"	1"	10.0
2-1/4" (SINGLE) (14 GA.)	3-1/2"	1-3/16"	10.0
2" (DOUBLE) (12 GA.)	3"	1"	18.0



OPTION 1
BOLT DESIGN



OPTION 2
BOLT DESIGN



ANCHOR TUBE DETAILS

GENERAL NOTES

1. SIGN POST AND ANCHOR TUBES SHALL BE HOT ROLLED CARBON SHEET STEEL, STRUCTURAL QUALITY, ASTM A570-79. THE FINISH SHALL BE IN-LINE, HOT-DIP GALVANIZED ZINC COATING PER AASHTO M-120, FOLLOWED BY A CHROMATE CONVERSION COATING AND A CLEAR ORGANIC EXTERIOR COATING. POST SHALL HAVE 7/16" DIAMETER HOLES OR PERFORATED HOLES SPACED 1" ON CENTER ALONG THE CENTER LINE OF EACH OF THE FOUR SIDES.

2. ANCHOR TUBES SHALL BE ONE SIZE LARGER THAN POST, A MINIMUM OF 36" LONG INSTALLED IN THE SOIL USING AN APPROVED DRIVER, LEAVING A MAXIMUM OF 4" ABOVE THE GROUND. THE UPPER SIGN POST SHALL TELESCOPE INSIDE THE ANCHOR APPROXIMATELY 8" TO 12".

3. SEE STANDARD DRAWINGS SSA2-1, MSD5-1, SBS1-1, SBS2-1, AND SBS3-1 (LATEST REVISION) FOR PROPER BRACKET PLACEMENT ON THE SIGN AND POST SPACING FOR TWO POST INSTALLATION.

4. FOR VERTICAL AND LATERAL CLEARANCE, SEE STANDARD DRAWING GMS1-1-, AND GMS2-1-(LATEST REVISION).

5. SIGNS SHALL BE ATTACHED TO THE POSTS WITH BOLTS AS SHOWN ON STANDARD DRAWING SSA2-1-(LATEST REVISION).

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OKLAHOMA DEPT. OF TRANSPORTATION
TRAFFIC STANDARD (ENGLISH)

SQUARE SIGN POST DETAILS

1999 SPECIFICATIONS	SSP1-1	00E

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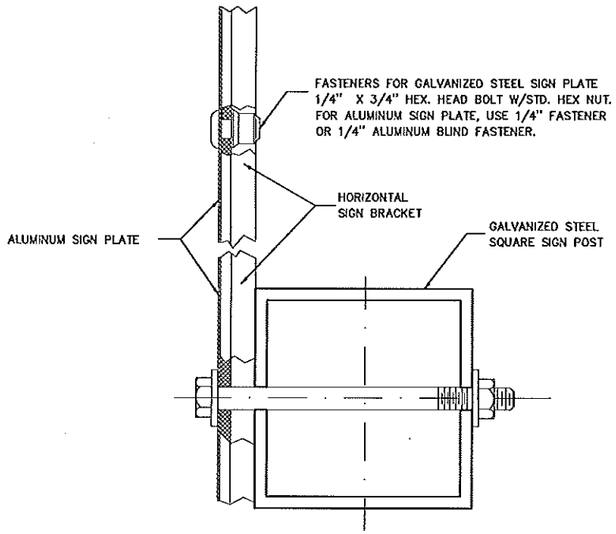
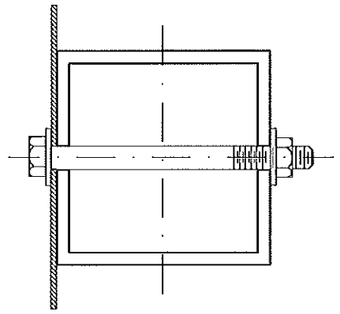
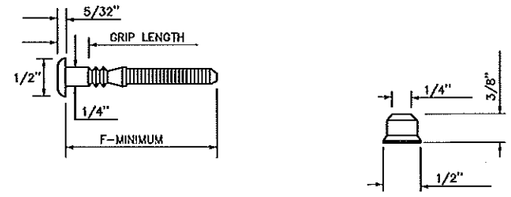
DESCRIPTION	REVISIONS	DATE



TOP VIEW

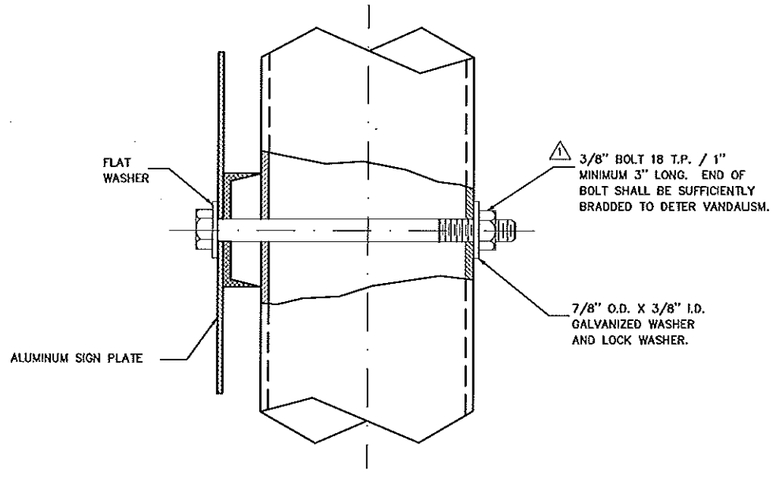


TOP VIEW



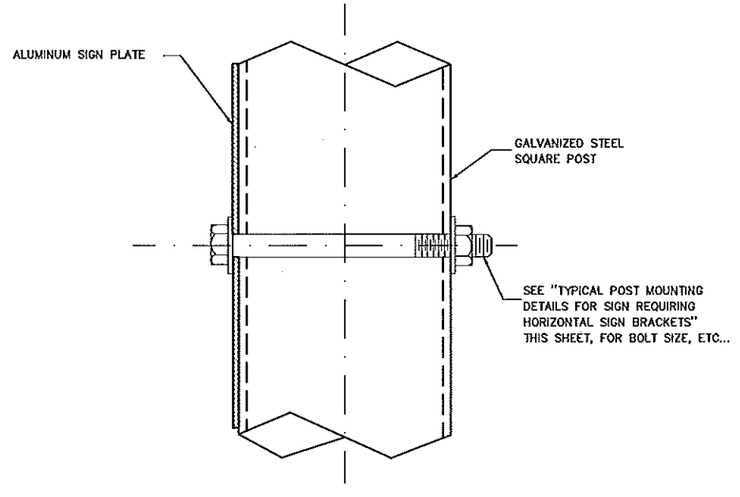
1/4" FASTENER AND 1/4" COLLAR (TYPICAL)

GRIP NO.	GRIP LENGTH (INCHES)	F-MIN.
2	0.094 – 0.156	1-7/16"
3	0.157 – 0.218	1-1/2"
4	0.219 – 0.281	1-9/16"
5	0.282 – 0.343	1-5/8"
6	0.344 – 0.406	1-11/16"
17	0.407 – 1.093	2-3/8"



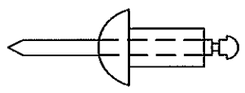
SIDE VIEW

TYPICAL POST MOUNTING DETAILS FOR SIGN REQUIRING HORIZONTAL SIGN BRACKETS



SIDE VIEW

TYPICAL POST MOUNTING DETAILS FOR SIGN 18" WIDE AND UNDER



ALUMINUM ALLOY BODY AND MANDREL. GRIP RANGE 1/16" TO 1/4".

1/4" BLIND FASTENERS

NOTE: ALL NUTS SHALL BE SELF-LOCKING.

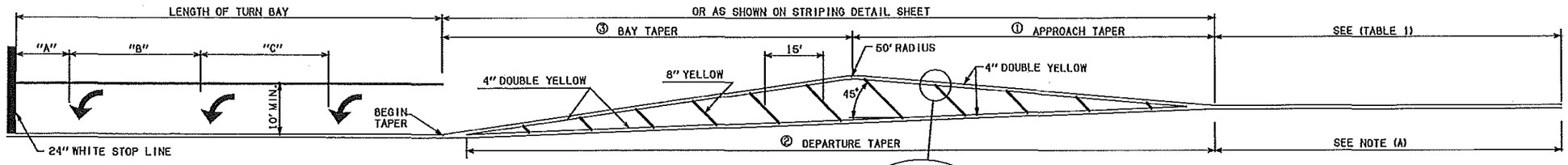
APPROVED BY TRAFFIC ENGINEER DATE

OKLAHOMA DEPT. OF TRANSPORTATION
TRAFFIC STANDARD (ENGLISH)

SHEET SIGN ASSEMBLY DETAILS

1999 SPECIFICATIONS	SSA1-1	00E

DESCRIPTION	REVISIONS	DATE



LEFT TURN BAY AND STRIPED MEDIAN DETAIL

SEE PLANS FOR LENGTH OF LEFT TURN BAYS AND TAPERS ON STRIPED MEDIANS

① THE PREFERRED APPROACH TAPER RATE IS V:1, WHERE V IS THE DESIGN SPEED. FOR V≤40 MPH, IT IS ACCEPTABLE FOR THE APPROACH TAPER TO BE $(V^2/60):1$.

② THE PREFERRED DEPARTURE TAPER RATE IS V:1, WHERE V IS THE DESIGN SPEED. FOR V≤40 MPH, IT IS ACCEPTABLE FOR THE DEPARTURE TAPER TO BE $(V^2/60):1$.

③ SEE RECOMMENDED BAY TAPER RATES TABLE.

RECOMMENDED BAY TAPER RATES

DESIGN SPEED (MPH)	TAPER RATE
V < 30	8:1
30 ≤ V ≤ 50	10:1
50 > V	15:1

THE FOLLOWING MINIMUM VALUES MAY APPLY IN RESTRICTED LOCATIONS:
1. RIGHT-TURN LANES. A 4:1 BAY TAPER MAY BE USED WHERE PAINTED CHANNELIZATION IS USED.
2. LEFT-TURN LANES. IN SEVERELY RESTRICTED LOCATIONS, A 4:1 BAY TAPER MAY BE USED WHERE PAINTED CHANNELIZATION IS USED.

(A) NO PASS LINE ON APPROACH SIDE WITH SKIP CENTER LINE ON DEPARTURE SIDE UNLESS DOUBLE YELLOW CENTER LINE IS REQUIRED.

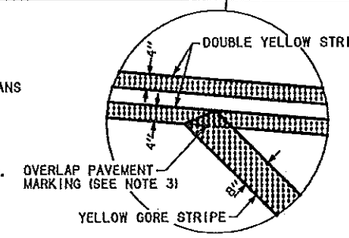


TABLE 1	
POSTED SPEED	NO PASS LENGTH (MINIMUM)
60 MPH	790'
55 MPH	725'
50 MPH	660'
45 MPH	590'
40 MPH	360'
35 MPH	260'
30 MPH	200'
25 MPH	150'

MATERIAL SPECIFICATIONS

A. UNLESS OTHERWISE SPECIFIED, RETROREFLECTIVE PAVEMENT MARKING SHALL BE APPLIED BY THE EXTRUSION METHOD.

B. THE THICKNESS OF THE PLASTIC PAVEMENT MARKING SHALL BE MEASURED FROM THE PLANE OF THE PAVEMENT SURFACE WITH A DEVICE SUPPLIED BY CONTRACTOR AND SUITABLE TO THE ENGINEER. THICKNESSES ARE AS FOLLOWS:

LANE LINES, STOP LINES, WORDS, ARROWS AND SYMBOLS.....0.120" MIN. & 0.188" MAX.
EDGE, GORE AND DIAGONAL LINES.... 0.090" MIN. & 0.188" MAX.

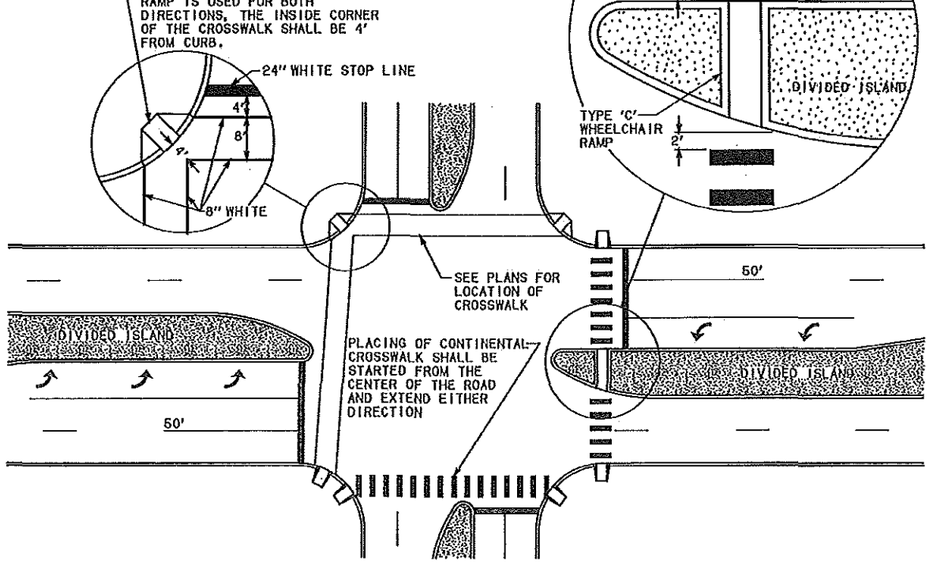
C. THE THICKNESS OF THE MULTI-POLYMER PAVEMENT MARKING SHALL BE MEASURED FROM THE PLANE OF THE PAVEMENT SURFACE WITH A DEVICE SUPPLIED BY CONTRACTOR AND SUITABLE TO THE ENGINEER. THICKNESSES ARE AS FOLLOWS:

LANE LINES, STOP LINES, WORDS, ARROWS, SYMBOLS, EDGE, GORE AND DIAGONAL LINES.... 0.020" MIN. & 0.025" MAX.

GENERAL NOTES

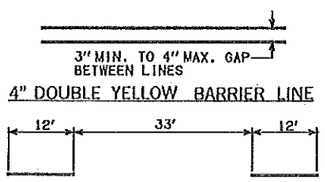
1. LANE WIDTH IS THE DISTANCE BETWEEN PAVEMENT MARKINGS, OR PAVEMENT MARKING AND EDGE OF PAVEMENT. LANE WIDTH IS MEASURED FROM CENTER OF STRIPE TO CENTER OF STRIPE.
2. LANE LINES SHALL BE PLACED LEFT OF THE LONGITUDINAL PAVEMENT JOINTS.
3. ALL PAVEMENT MARKING SHALL OVERLAP WHERE IT MEETS OTHER PAVEMENT MARKING.

TURN BAY TABLE			
LENGTH OF BAY FT.	"A" FT.	"B" FT.	"C" FT.
75 TO 99	20	35	--
100 TO 149	20	35	35
150 TO 200	30	55	55



CROSSWALK INSTALLATIONS

FOR SPACING OF ARROWS SEE "TURN BAY TABLE"



4" DOUBLE YELLOW BARRIER LINE

4" DASHED WHITE LANE LINE

TYPICAL PAVEMENT MARKING DETAILS

BASIS OF PAYMENT

ITEM NO.	ITEM	UNIT
854(A)	TRAFFIC STRIPE (PAINT) (4" WIDE)	LF
854(B)	TRAFFIC STRIPE (PAINT) (ARROW, WORDS, OR SYMBOLS)	EA
855(A)	TRAFFIC STRIPE (PLASTIC) (4" WIDE)	LF
855(A)	TRAFFIC STRIPE (PLASTIC) (6" WIDE)	LF
855(A)	TRAFFIC STRIPE (PLASTIC) (8" WIDE)	LF
855(A)	TRAFFIC STRIPE (PLASTIC) (24" WIDE)	LF
855(B)	TRAFFIC STRIPE (PLASTIC) (ARROW)	EA
855(B)	TRAFFIC STRIPE (PLASTIC) (WORDS)	EA
856(A)	TRAFFIC STRIPE (MULTI-POLYMER) (4" WIDE)	LF
856(A)	TRAFFIC STRIPE (MULTI-POLYMER) (6" WIDE)	LF
856(A)	TRAFFIC STRIPE (MULTI-POLYMER) (8" WIDE)	LF
856(A)	TRAFFIC STRIPE (MULTI-POLYMER) (24" WIDE)	LF
856(B)	TRAFFIC STRIPE (MULTI-POLYMER) (SYMBOLS, WORDS, ETC)	EA

APPROVED BY TRAFFIC ENGINEER: [signature] DATE: 8/5/10

TRAFFIC STANDARD

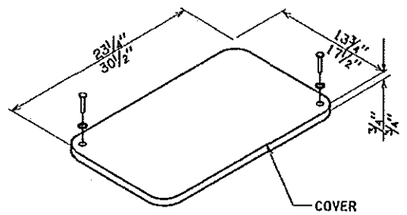
PAVEMENT MARKING (CROSSWALKS AND LEFT TURN BAY)

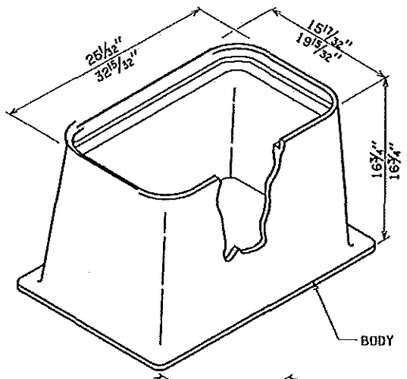
2009 SPECIFICATIONS

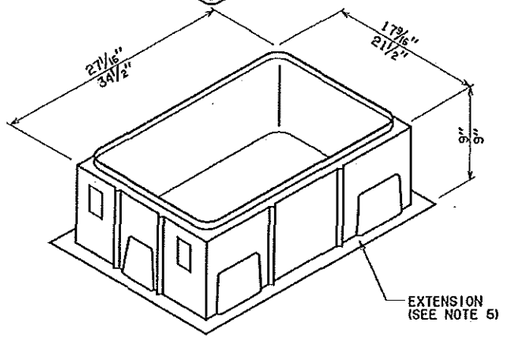
PM1-1 | 00

T-101

DESCRIPTION	REVISIONS	DATE

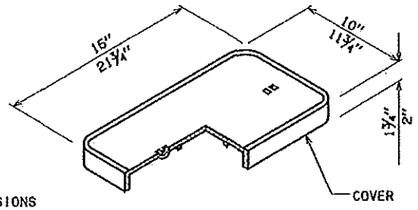


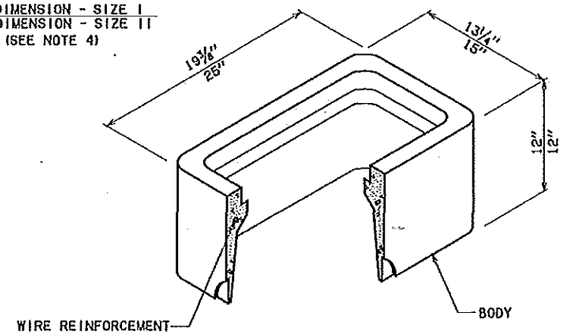


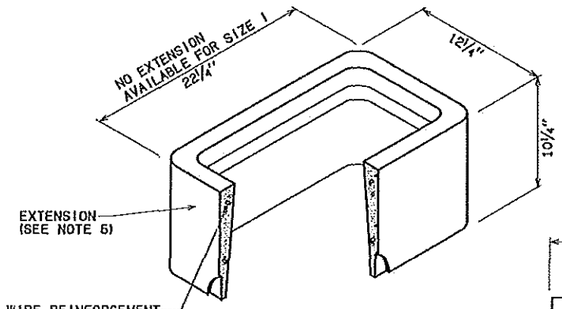


PLASTIC PULL BOX
SIZE I & II

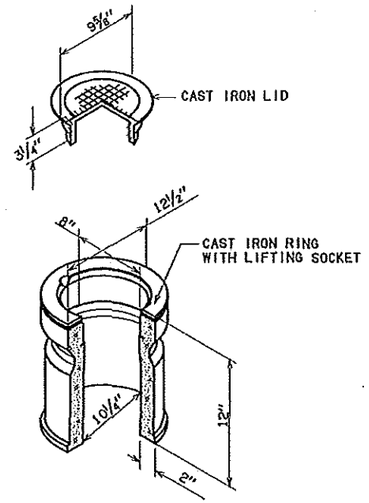
EXPLANATION OF DIMENSIONS
TOP DIMENSION - SIZE I
BOTTOM DIMENSION - SIZE II
(SEE NOTE 4)



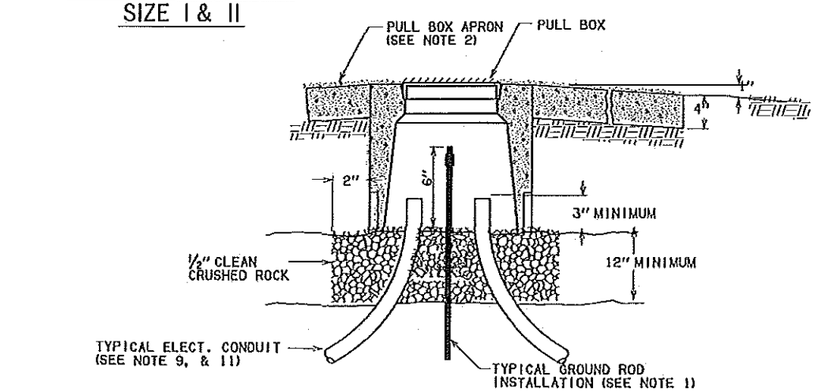




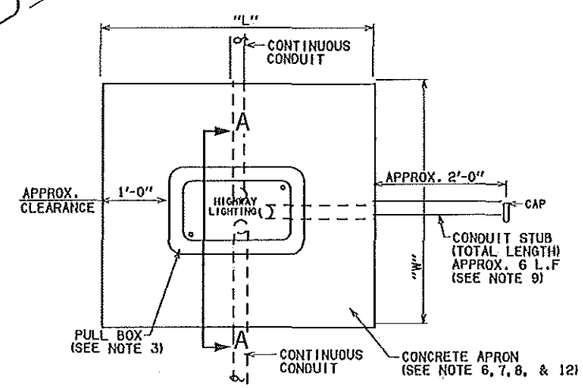
CONCRETE PULL BOX
SIZE I & II



CONCRETE PULL BOX
SIZE III



SECTION "A-A"



PULL BOX SIZE	"L"	"W"	CLASS "A" CONCRETE C.Y. **
I	3'-6"	3'-6"	.13
II	4'-0"	4'-0"	.17
III	3'-0"	3'-0"	.11

PULL BOX APRON AND CONDUIT STUB DETAIL
**FOR INFORMATION ONLY

MATERIAL SPECIFICATIONS

A. THE PRE-CAST CONCRETE BODY AND THE PRE-CAST REINFORCED PLASTIC PULL BOX BODY AND COVER SHALL CONFORM TO THE 2009 STANDARD SPECIFICATIONS OR SPECIAL PROVISIONS.

B. THE GRAY IRON CAST COVER & ELECTRICAL CONDUITS SHALL CONFORM TO THE 2009 STANDARD SPECIFICATIONS.

C. THE CONCRETE APRON SHALL BE CLASS "A" CONCRETE.

D. THE GRAVEL OR CRUSHED ROCK BASE SHALL BE CLEAN, TOUGH, DURABLE, PRACTICALLY FREE FROM CLAY OR OTHER FOREIGN SUBSTANCES AND SHALL PASS A 5/8" SIEVE 100%.

E. THE WIRE REINFORCEMENT SHALL BE 9 GAUGE WELDED WIRE FABRIC.

GENERAL NOTES

1. IF SPECIFIED IN THE PLANS, A GROUND ROD SHALL BE INSTALLED AND ALL COSTS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE "PULL BOX".
2. THE PULL BOX SHALL BE BUILT TO FIT THE EXISTING FIELD CONDITION AND BE PRESENTED WITH A NEAT WORKMAN LIKE APPEARANCE. EACH PULL BOX SHALL BE INSTALLED WITH THE APPROPRIATE SIZED CONCRETE APRON. IF THE PULL BOX IS TO BE INSTALLED IN A SIDEWALK OR OTHER PAVED AREA, NO APRON WILL BE REQUIRED UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
3. THE PULL BOX COVER SHALL HAVE THE APPROPRIATE LEGEND. WHEN A PULL BOX IS INSTALLED BY THE GRADING OR SURFACING CONTRACTOR THE LEGEND FOR THE COVER SHALL READ "TRAFFIC SIGNALS", UNLESS OTHERWISE SPECIFIED IN THE PLANS. OTHER APROPRIATE LEGENDS ARE; "HIGHWAY LIGHTING", "STREET LIGHTING", "DANGER", ETC... NO ADVERTISING OTHER THAN THE MANUFACTURERS LOGO WILL BE ALLOWED ON THE PULL BOX COVER.
4. THE DIMENSIONS FOR THE PULL BOXES ARE NOMINAL AND MAY VARY SLIGHTLY BY THE MANUFACTURER'S DESIGN.
5. PULL BOX BODY EXTENSIONS SHALL BE INSTALLED BELOW THE PULL BOX BODY AT THE LOCATION SHOWN IN THE PLANS.
6. THE COST OF THE CONCRETE APRON AND GRAVEL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE PULL BOX UNLESS OTHERWISE SPECIFIED.
7. A CIRCULAR CONCRETE APRON MAY BE USED IN LIEU OF THE SQUARE APRON SHOWN PROVIDING THE 1'-0" MINIMUM CLEARANCE IS MAINTAINED.
8. THE CONCRETE APRON THICKNESS AND SIZE MAY BE ALTERED AT THE DIRECTION OF THE ENGINEER. IF ALTERED, THE ADDITIONAL CONCRETE WILL BE PAID FOR AS "STRUCTURAL CONC." C.Y.
9. THE NUMBER, SIZE, TYPE AND LOCATION OF THE CONDUIT STUBS FOR FUTURE CONDUIT RUNS SHALL BE AS SHOWN ON THE PLANS, SEE STANDARD CCD1-1-(LATEST REVISION).
10. CONDUCTORS HAVING UNLIKE VOLTAGES SHALL HAVE SEPARATE CONDUITS AND PULL BOXES.
11. FOR BENDING RADII OF CONDUIT, SEE STANDARD CCD1-1-(LATEST REVISION).
12. A CONCRETE APRON SHALL BE INSTALLED AROUND ANY RESET PULLBOX OR EXISTING PULLBOX THAT DOES NOT HAVE AN APRON OR IS NOT INSTALLED IN A PAVED AREA. THE CONCRETE AND THE INSTALLATION OF THE APRON SHALL BE PAID FOR IN OTHER ITEMS OF WORK.

BASIS OF PAYMENT		
ITEM NO.	ITEM	UNIT
803(A)	PULL BOX	EA

APPROVED BY TRAFFIC ENGINEER [signature] DATE: 3/5/10

TRAFFIC STANDARD

TYPICAL PULL BOX DETAILS

2009 SPECIFICATIONS

PBD1-1	00
	T-303

4.1.2 ACCESSIBLE SITES AND EXTERIOR FACILITIES: AN ACCESSIBLE SITE SHALL MEET THE FOLLOWING MINIMUM REQUIREMENTS:

IF PARKING SPACES ARE PROVIDED FOR SELF-PARKING BY EMPLOYEES OR VISITORS, OR BOTH, THEN ACCESSIBLE SPACES COMPLYING WITH 4.6 SHALL BE PROVIDED IN EACH SUCH PARKING AREA IN CONFORMANCE WITH TABLE 1. SPACES REQUIRED BY THE TABLE NEED NOT BE PROVIDED IN THE PARTICULAR LOT. THEY MAY BE PROVIDED IN A DIFFERENT LOCATION IF EQUIVALENT OR GREATER ACCESSIBILITY, IN TERMS OF DISTANCE FROM AN ACCESSIBLE ENTRANCE, COST AND CONVENIENCE IS ENSURED. EXCEPT AS PROVIDED IN (B), ACCESS AISLES ADJACENT TO ACCESSIBLE SPACES SHALL BE 60 IN. (1525 MM) WIDE MINIMUM.

ONE IN EVERY EIGHT ACCESSIBLE SPACES, BUT NOT LESS THAN ONE, SHALL BE SERVED BY AN ACCESS AISLE 96 IN. (2440 MM) WIDE MINIMUM AND SHALL BE DESIGNATED "VAN ACCESSIBLE" AS REQUIRED BY 4.6.4. THE VERTICAL CLEARANCE AT SUCH SPACES MAY BE GROUPED ON ONE LEVEL OF A PARKING STRUCTURE.

IF PASSENGER LOADING ZONES ARE PROVIDED, THEN AT LEAST ONE PASSENGER LOADING ZONE SHALL COMPLY WITH 4.6.6.

AT FACILITIES PROVIDING MEDICAL CARE AND OTHER SERVICES FOR PERSONS WITH MOBILITY IMPAIRMENTS, PARKING SPACES COMPLYING WITH 4.6. EXCEPT AS FOLLOWS.
(A) OUTPATIENT UNITS AND FACILITIES: 10 PERCENT OF THE TOTAL NUMBER OF PARKING SPACES PROVIDED SERVING EACH SUCH OUTPATIENT UNIT OR FACILITY.
(B) UNITS AND FACILITIES THAT SPECIALIZE IN TREATMENT OR SERVICES FOR PERSONS WITH MOBILITY IMPAIRMENTS: 20 PERCENT OF THE TOTAL NUMBER OF PARKING SPACES PROVIDED SERVING EACH SUCH UNIT OR FACILITY.

VALET PARKING FACILITIES SHALL PROVIDE A PASSENGER LOADING ZONE COMPLYING WITH 4.6.6 LOCATED ON AN ACCESSIBLE ROUTE TO THE ENTRANCE OF THE FACILITY.

4.6 PARKING AND PASSENGER LOADING ZONES:

4.6.1 MINIMUM NUMBER: PARKING SPACES REQUIRED TO BE ACCESSIBLE SHALL COMPLY WITH 4.6.2 THROUGH 4.6.5. PASSENGER LOADING ZONES REQUIRED TO BE ACCESSIBLE SHALL COMPLY WITH 4.6.5 AND 4.6.6.

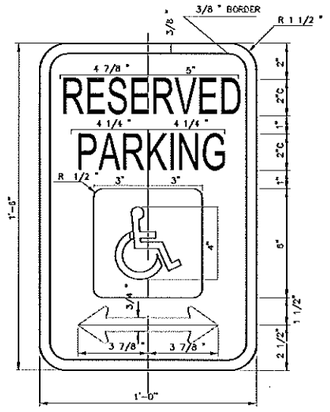
4.6.2 LOCATION: ACCESSIBLE PARKING SPACES SERVING A PARTICULAR BUILDING SHALL BE LOCATED ON THE SHORTEST ACCESSIBLE ROUTE OF TRAVEL FROM ADJACENT PARKING TO AN ACCESSIBLE ENTRANCE. IN PARKING FACILITIES THAT DO NOT SERVE A PARTICULAR BUILDING, ACCESSIBLE PARKING SHALL BE LOCATED ON THE SHORTEST ACCESSIBLE ROUTE ROUTE OF TRAVEL TO AN ACCESSIBLE PEDESTRIAN ENTRANCE OF THE PARKING FACILITY. IN BUILDINGS WITH MULTIPLE ACCESSIBLE ENTRANCES WITH ADJACENT PARKING, ACCESSIBLE PARKING SPACES SHALL BE DISPERSED AND LOCATED CLOSEST TO THE ACCESSIBLE ENTRANCES.

4.6.3 PARKING SPACES: ACCESSIBLE PARKING SPACES SHALL BE AT LEAST 96 IN. (2440 MM) WIDE. PARKING ACCESS AISLES SHALL BE PART OF AN ACCESSIBLE ROUTE TO THE BUILDING OR FACILITY ENTRANCE. TWO ACCESSIBLE PARKING SPACES MAY SHARE A COMMON ACCESS AISLE. PARKING VEHICLE OVERHANGS SHALL NOT REDUCE THE CLEAR WIDTH OF AN ACCESSOBLE ROUTE. PARKING SPACES AND ACCESS AISLES SHALL BE LEVEL WITH SURFACE SLOPES NOT EXCEEDING 1:50 (2%) IN ALL DIRECTIONS.

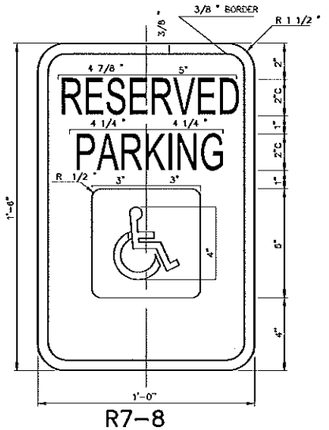
4.6.4 SIGNAGE: ACCESSIBLE PARKING SPACES SHALL BE DESIGNATED AS RESERVED BY A SIGN SHOWING THE SYMBOL OF ACCESSIBILITY. SPACES COMPLYING WITH 4.1.2 SHALL HAVE AN ADDITIONAL SIGN "VAN ACCESSIBLE" MOUNTED BELOW THE SYMBOL OF ACCESSIBILITY SUCH SIGNS SHALL BE LOCATED SO THEY CANNOT BE OBSCURED BY A VEHICLE PARKING IN THE SPACE.

4.6.5 VERTICAL CLEARANCE: PROVIDE MINIMUM VERTICAL CLEARANCE OF 114 IN. (2895 MM) AT ACCESSIBLE PASSENGER LOADING ZONES AND ALONG AT LEAST ONE VEHICLE ACCESS ROUTE TO SUCH AREAS FROM SITE ENTRANCE(S) AND EXIT(S). AT PARKING SPACES COMPLYING WITH 4.1.2, PROVIDE MINIMUM CLEARANCE OF 98 IN. (2490 MM) AT THE PARKING SPACE AND ALONG AT LEAST ONE VECHICLE ACCESS ROUTE TO SUCH SPACES FROM SITE ENTRANCES(S) AND EXIT(S).

4.6.6 PASSENGER LOADING ZONES: PASSENGER LOADING ZONES SHALL PROVIDE AN ACCESS AISLE AT LEAST 60 IN. (1525 MM) WIDE AND 20 FT. (240 IN.)(6100 MM)LONG ADJACENT AND PARALLEL TO THE VEHICLE PULL-UP SPACE. IF THERE ARE CURBS BETWEEN THE ACCESS AISLE AND THE VEHICLE PULL-UP SPACE, THEN A CURB RAMP SHALL BE PROVIDED.

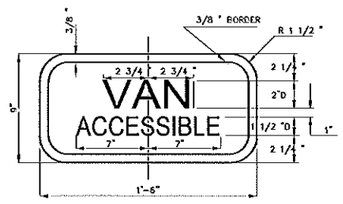


R7-8(ARROW)

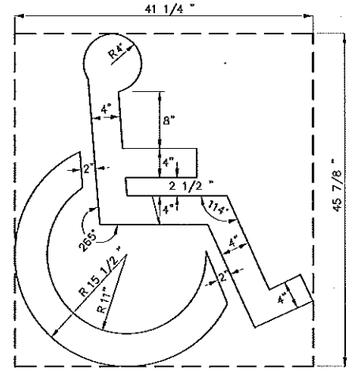


R7-8

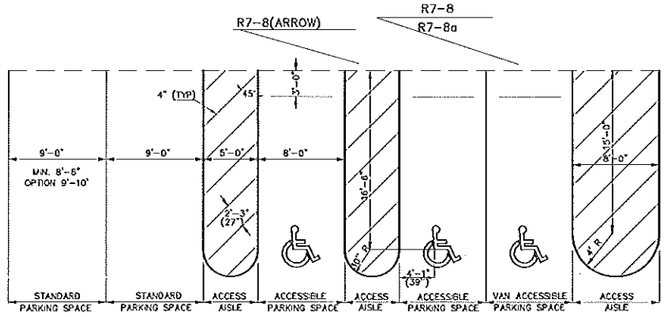
COLORS
LEGEND AND BORDER - GREEN
WHITE SYMBOL ON BLUE BACKGROUND
BACKGROUND - WHITE



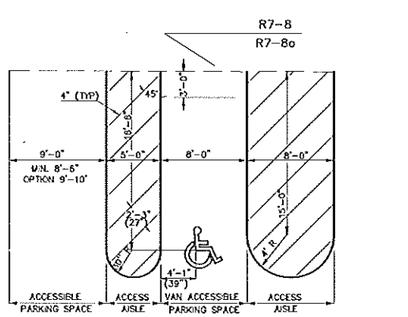
R7-8a



WHEELCHAIR
PAVEMENT MARKING



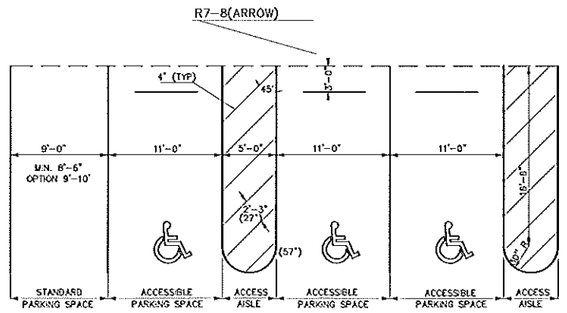
TYPICAL LAYOUT FOR
MULTI- HANDICAPPED PARKING SPACE



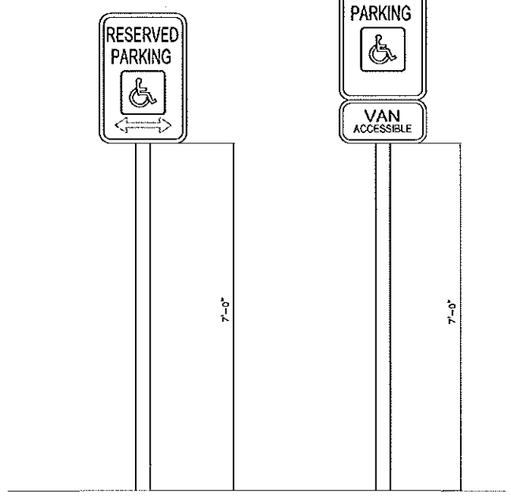
TYPICAL LAYOUT FOR
SINGLE HANDICAPPED PARKING SPACE

TOTAL PARKING IN LOT	REQUIRED MINIMUM NUMBER OF ACCESSIBLE
1 to 25	1
26 to 50	2
51 to 75	3
76 to 100	4
101 to 150	5
151 to 200	6
201 to 300	7
301 to 400	8
401 to 500	9
501 to 1000	2 PRECENT OF TOTAL
1001 and over	20 PLUS 1 EACH 100 OVER 1000

TABLE 1



UNIVERSAL PARKING DETAIL



SIGN MOUNTING HEIGHT

OKLA. DEPT. OF TRANSPORTATION
STD. NO.
REVISIONS DATE

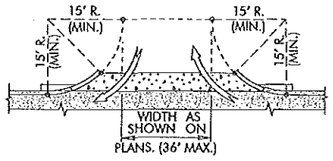
	BY CK.		
DESIGN		SNG	6/92
DRAWN		SNG	6/92
CHECKED			
APPROVED			DATE
OPERATIONS ENGINEER			
APPROVED			DATE
CHIEF TRAFFIC ENG.			

OKLAHOMA DEPARTMENT OF TRANSPORTATION

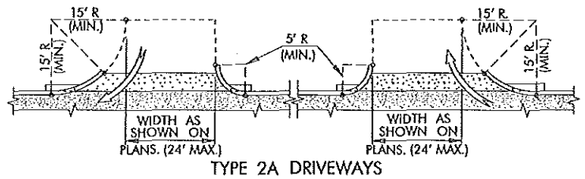
HANDICAPPED PARKING DETAILS

OKLA. DEPT. OF TRANSPORTATION
TRAFFIC ENGINEERING DIVISION
STD. NO.

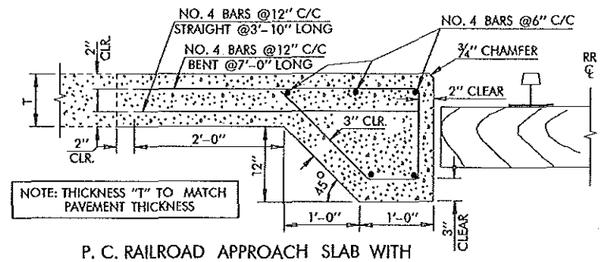
P:\LPStandards\ODOT Details\98roadway\wchair-R.dwg, WCHAIR-R, 12/2/2009 2:51:27 PM, barbara, 1:2



TYPE 2 DRIVEWAY
(TWO-WAY OPERATION)

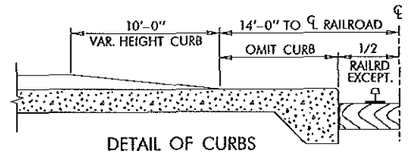


TYPE 2A DRIVEWAYS
(ONE-WAY OPERATION)



NOTE: THICKNESS "T" TO MATCH PAVEMENT THICKNESS

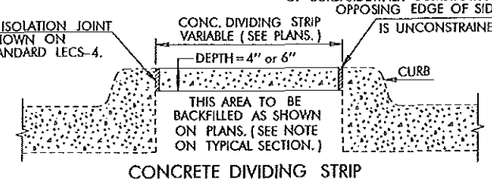
P. C. RAILROAD APPROACH SLAB WITH THICKENED EDGE AT RAILROAD CROSSING



DETAIL OF CURBS
ADJACENT TO RAILROAD CROSSINGS

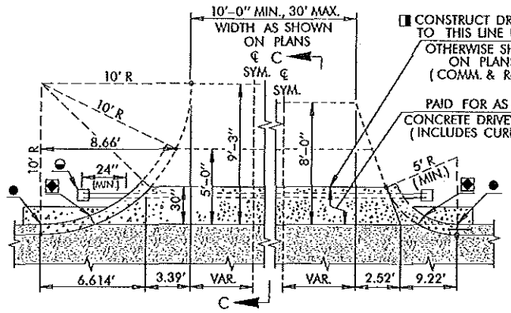
REVISIONS	
DESCRIPTION	DATE

IN CURB/SIDEWALK APPLICATIONS SEALANT & EXPANSION MATERIAL NOT REQUIRED BETWEEN STRAIGHT SECTIONS OF CURB/SIDEWALK COMBINATIONS WHEN OPPOSING EDGE OF SIDEWALK IS UNCONSTRAINED

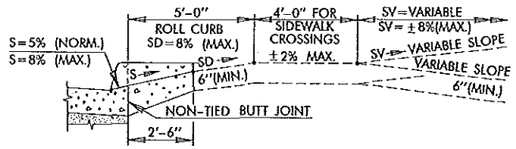


CONCRETE DIVIDING STRIP

TRANSVERSE EXPANSION JOINTS TO BE 1/2" EXPAN. JOINT FILLER AT 50'-0" C/C, 1/4" EXPANSION JOINT MATERIAL AT 1/3 POINTS BETWEEN 1/2" EXPANSION JOINTS. FILLER MATERIAL TO BE PREMOLDED & JOINTS TO BE SEALED AS SHOWN ON STANDARD DRAWING LECS-4. JOINTS IN DIVIDING STRIP SHOULD ALIGN WITH CURB EXPANSION JOINTS.



TYPE I DRIVEWAYS
(PRIVATE OR RESIDENTIAL)

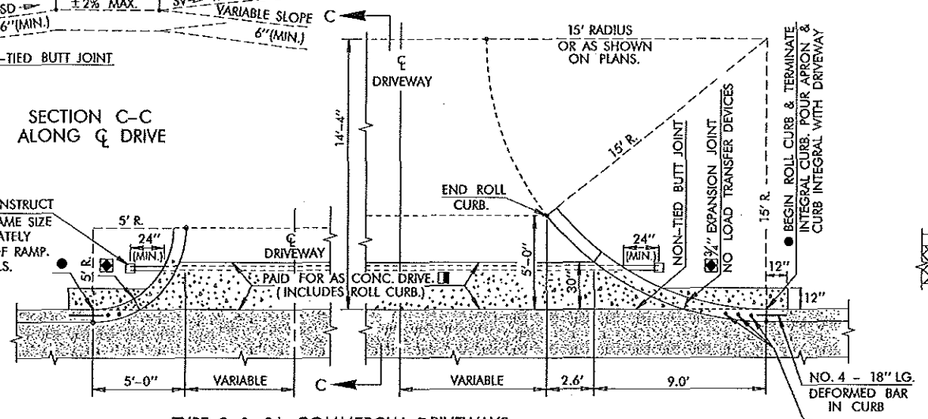


FOR ADDITIONAL DETAILS SEE POLICY ON DRIVEWAY REGULATIONS FOR OKLA. HIGHWAYS

SECTION C-C
ALONG ℄ DRIVE

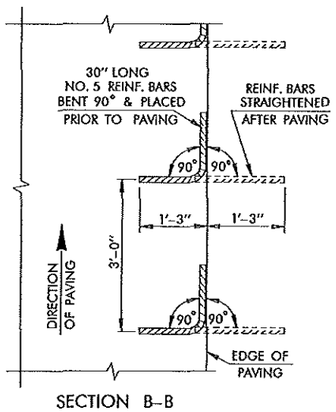
IF SPECIFIED IN THE PLANS, CONSTRUCT CONDUIT CROSSING OF THE SAME SIZE & TYPE SPECIFIED AT APPROXIMATELY 30" BELOW FINISHED GRADE OF RAMP. SEE GENERAL NOTES FOR DETAILS.

FOR STREET RETURN DETAILS SEE ROADWAY STD. ASCD-5.

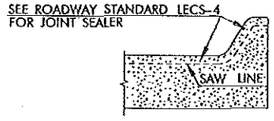


TYPE 2 & 2A COMMERCIAL DRIVEWAYS

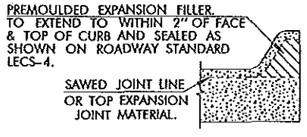
WHEN SIDEWALK IS BUILT DIRECTLY BEHIND THE CURB, THE CONCRETE DRIVEWAY SHOULD BE CONSTRUCTED & EXTENDED TO THE BACK EDGE OF SIDEWALK



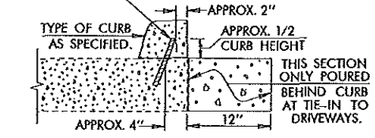
SECTION B-B



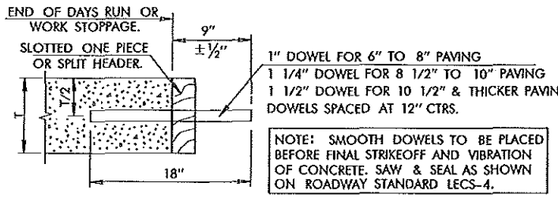
ALTERNATE
CURB JOINT



CURB JOINT WITH
EXPANSION MATERIAL

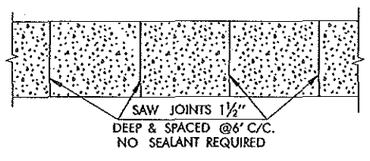


OPTIONAL CURB CONSTRUCTION
FOR SLIP FORM PAVING



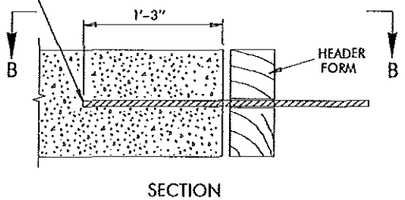
NOTE: SMOOTH DOWELS TO BE PLACED BEFORE FINAL STRIKEOFF AND VIBRATION OF CONCRETE. SAW & SEAL AS SHOWN ON ROADWAY STANDARD LECS-4.

TRANSVERSE CONSTRUCTION JOINT
(TO BE USED AT END OF DAYS PLACEMENT OF CONCRETE OR ANY STOPPAGE OF 30 MINUTES OR MORE.)



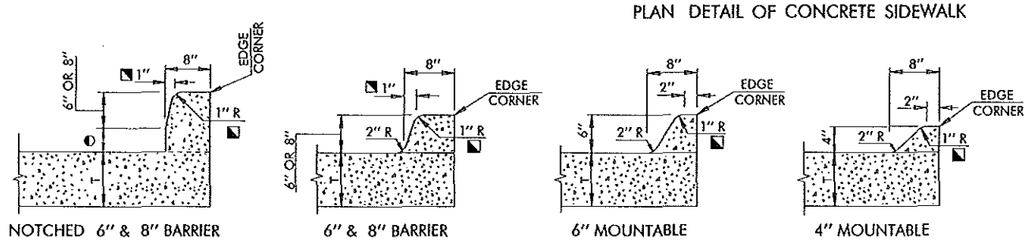
PLAN DETAIL OF CONCRETE SIDEWALK

NO. 5 DEF. TIE BAR SPACED @3'-0" C/C MAY BE PRE-BENT 90° AND PLACED INTO EDGE OF SLAB AND POSITIONED BEFORE OR DURING SLIP FORM OPERATIONS AND THEN STRAIGHTENED BEFORE PAVING THE ADJACENT PARALLEL LANE. STRAIGHT BARS MAY ALSO BE PLACED THROUGH DRILLED HOLES IN FORMS PRIOR TO PAVING.



SECTION
TIED LONGITUDINAL BUTT JOINT
(TO BE USED BETWEEN ADJACENT PAVING LANES)

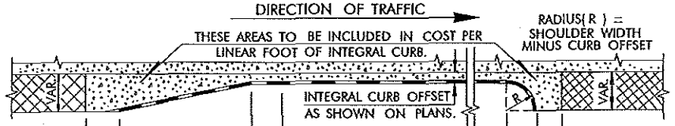
NOTE: LONGITUDINAL BUTT JOINT TIE BAR STEEL AND PLACEMENT METHOD NOT COVERED ON THIS STANDARD SHALL BE APPROVED BY THE ENGINEER.



NOTCHED 6" & 8" BARRIER
6" & 8" BARRIER
6" MOUNTABLE
4" MOUNTABLE

INTEGRAL CURB TYPICAL SECTIONS

- RADIUS OF 2" MAY BE USED IF APPROVED BY THE ENGINEER.
- BATTER OF 2" MAY BE USED IF APPROVED BY THE ENGINEER.
- DIMENSION EQUALS THICKNESS OF ASPHALT CONCRETE SHOWN ON TYPICAL SECTION ASPHALT CONCRETE THICKNESS (2" MIN. ; 4" MAX.)



CURB BEGINNING
CURB ENDING

GENERAL NOTES

1. ALL CONSTRUCTION AND MATERIAL REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE 2009 ODOT STANDARD SPECIFICATIONS.
2. ALL COST OF CLASS A CONCRETE & REINFORCING STEEL IN THICKENED EDGE AT RAILROAD CROSSINGS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR APPROACH SLAB-RAILROAD.
3. COST OF JOINT FILLERS, SEALING AND REINFORCING STEEL SHALL BE INCLUDED IN PRICE BID FOR OTHER ITEMS OF WORK.
4. CONTRACTION JOINTS IN JOINTED P.C. PAVEMENT SHALL BE AT APPROXIMATELY 15'-0" CENTERS, UNLESS OTHERWISE SHOWN ON THE PLANS.
5. CURB & GUTTER SHALL BE PLACED INTEGRAL WITH THE PAVING SLAB UNLESS OTHERWISE SHOWN IN THE PLANS. TRANSVERSE JOINTS SHALL BE EXTENDED THE FULL WIDTH OF SLAB.
6. ALL CONDUIT CROSSINGS ARE TO BE TRENCHED, PLACED, BACKFILLED, AND COMPACTED PRIOR TO SURFACING. BORING OR PUSHING PROCEDURES MAY BE USED WHERE SURFACING IS ALREADY IN PLACE AND IF APPROVED BY THE ENGINEER.
7. IF CONDUIT IS NOT CONTINUOUS BETWEEN DRIVEWAYS/RAMPS, CAP BOTH ENDS OF EACH CONDUIT CROSSING AND PLACE MARKER TO PREVENT DAMAGE DURING CONSTRUCTION.
8. CONDUIT SHALL NOT TERMINATE BELOW A SURFACED AREA, BUT SHALL EXTEND MINIMUM OF 24" PAST EDGE OF PAVING.
9. FOR PULL BOX INSTALLATION DETAILS, SEE TRAFFIC STANDARD PBD1-1.

BASIS OF PAYMENT

ITEM NO.	ITEM	UNIT
414 (H)	P. C. RAILROAD APPROACH SLABS	S.Y.
609 (A)	■ CONCRETE CURB (INTEGRAL)	L.F.
610 (A)	▼ CONCRETE SIDEWALK	S.Y.
610 (B)	▼ CONCRETE DRIVEWAY	S.Y.
610 (C)	▼ CONCRETE DIVIDING STRIP	S.Y.

■ HEIGHT & SHAPE OF CURB SHALL BE SPECIFIED.
▼ THICKNESS SHALL BE SPECIFIED IN INCHES.

APPROVED BY ROADWAY ENGINEER: Timothy A. Tegeler DATE: 12/2/09

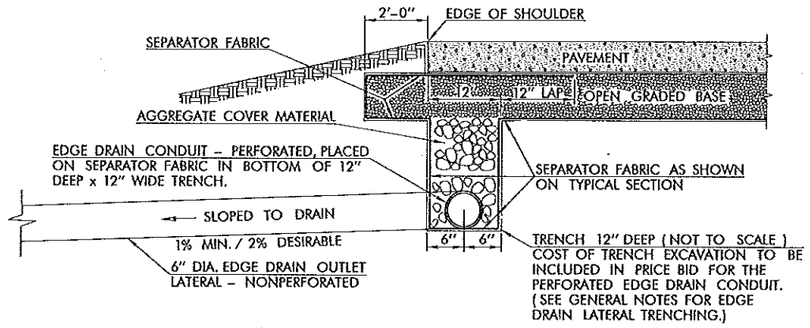
ROADWAY STANDARD

CONCRETE SURFACING CONSTRUCTION DETAILS

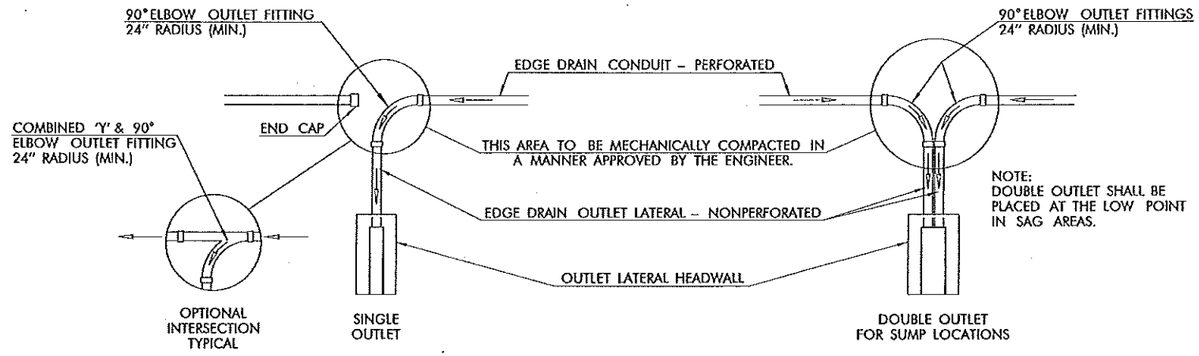
2009 SPECIFICATIONS

CSCD-5	0
	R-12

REVISIONS	
DESCRIPTION	DATE



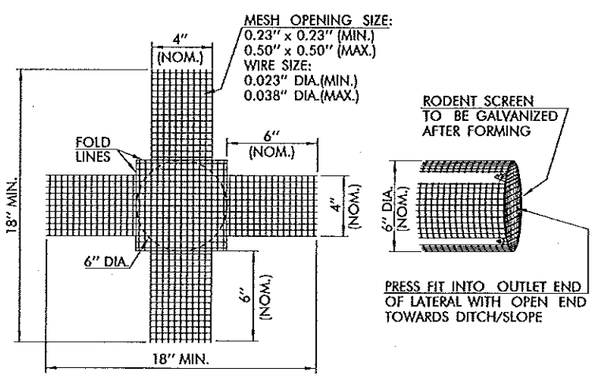
EDGE DRAIN INSTALLATION – TYPICAL SECTION



OUTLET LATERAL CONNECTIONS – PLAN

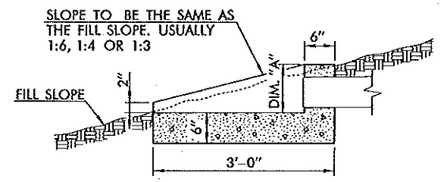
GENERAL NOTES

1. ALL CONSTRUCTION AND MATERIAL REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE 2009 ODOT STANDARD SPECIFICATIONS.
2. INSTALLATION OF OUTLET LATERAL PIPES SHOULD BE SCHEDULED CONCURRENT WITH THE INSTALLATION OF PAVEMENT EDGE DRAIN.
3. PAVEMENT EDGE DRAIN CONDUIT SHALL NOT BE LEFT IN PLACE LONGER THAN 48 HOURS WITHOUT BEING CONNECTED TO OUTLET LATERAL PIPES.
4. OUTLET ELBOWS (90°) SHALL BE USED WHEN PIPE EDGE DRAIN SLOPE EXCEEDS TWO (2) PERCENT.
5. CONNECTION OF THE OUTLET LATERAL PIPE TO THE OUTLET FITTING SHALL BE DONE IN A MANNER APPROVED BY THE ENGINEER. COST OF ALL CAPS, FITTINGS, LATERAL PIPE, BONDING MATERIALS, RODENT SCREENS, TRENCHING AND BACKFILLING NEEDED TO INSTALL OUTLET LATERAL PIPE SHALL BE INCLUDED IN THE PRICE BID FOR EDGE DRAIN OUTLET LATERAL (NON-PERFORATED).
6. EDGE DRAINS AND OUTLET LATERALS SHALL BE LOCATED ON LOW SIDE OF SUPER ELEVATED SECTIONS AT CURVES.
7. PRICE BID FOR OUTLET LATERAL HEADWALL INCLUDES SURFACE PREPARATION, CLASS A CONCRETE, LABOR AND ANY INCIDENTALS NECESSARY FOR CONSTRUCTION.
8. CLASS A CONCRETE SHALL MEET REQUIREMENTS OF SECTION 509 OF THE SPECIFICATIONS.
9. AGGREGATE COVER MATERIAL SHALL MEET THE REQUIREMENTS OF SECTION 701.06 OF THE SPECIFICATIONS, AGGREGATE NO. 57. COST OF AGGREGATE COVER MATERIAL TO BE INCLUDED IN PRICE BID FOR EDGE DRAIN CONDUIT – PERFORATED.
10. DETAILS ON THIS SHEET ARE BASED ON 6" DIA. EDGE DRAIN CONDUIT. THE CONTRACTOR SHALL MAKE ALL NECESSARY ADJUSTMENTS TO ACCOMODATE OTHER SIZE EDGE DRAINS.



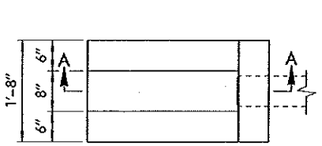
RODENT SCREEN DETAIL

THIS RODENT SCREEN DETAIL IS TYPICAL ONLY AND OTHER DESIGN LAYOUT PATTERNS MAY BE ALLOWED IF APPROVED BY THE ENGINEER. NO TOLERANCE SHALL BE ALLOWED ON MATERIAL SPECIFICATIONS. RODENT SCREEN DIMENSIONS WILL CHANGE PROPORTIONATELY FOR ALTERNATE SIZE OUTLET LATERAL CONDUIT.

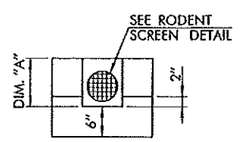


SECTION A – A

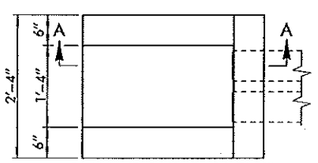
OUTLET LATERAL HEADWALL SCHEDULE			
FILL SLOPE	DIM. "A"	CLASS A CONCRETE QUANTITY	
		SINGLE OUTLET	DOUBLE OUTLET
1 : 3	1'-0"	0.18 C.Y.	0.23 C.Y.
1 : 4	9 1/2"	0.17 C.Y.	0.21 C.Y.
1 : 6	7"	0.16 C.Y.	0.19 C.Y.



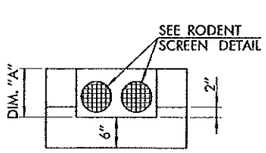
PLAN (SINGLE OUTLET)



END VIEW (SINGLE)



PLAN (DOUBLE OUTLET)



END VIEW (DOUBLE)

OUTLET LATERAL HEADWALL

NOTE: OPENING FOR LATERAL PIPE WILL VARY IN SIZE AND SHAPE, DEPENDING ON THE SIZE OF THE OUTLET LATERAL PIPE AND THE SLOPE OF THE STRUCTURE. THE OUTLET LATERAL PIPE SHALL BE CUT TO CONFORM TO THE TOP SURFACE OF THE OUTLET HEADWALL.

BASIS OF PAYMENT		
ITEM NO.	ITEM	UNIT
613 (J)	EDGE DRAIN CONDUIT – PERFORATED	L.F.
613 (K)	EDGE DRAIN OUTLET LATERAL – NONPERFORATED	L.F.
613 (Q)	OUTLET LATERAL HEADWALL	EA.

APPROVED BY ROADWAY ENGINEER: Timothy A. Tegeler DATE: 12/24/09

ROADWAY STANDARD

PAVEMENT EDGE DRAIN

2009 SPECIFICATIONS

PED-3 | 0

R-20

REVISIONS	
DESCRIPTION	DATE

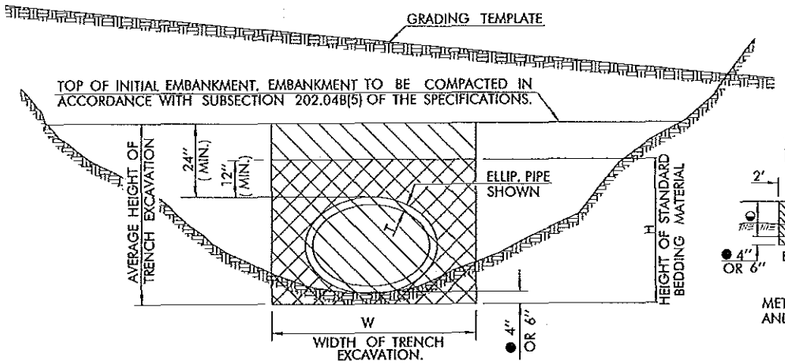
TRENCHING DIMENSIONS AND STANDARD BEDDING MATERIAL QUANTITIES

	PIPE DIAM. OR DESIGN EQUIV.	H ■	T	SINGLE PIPE STANDARD TRENCHING		DOUBLE PIPE STANDARD TRENCHING		TRIPLE PIPE STANDARD TRENCHING		SPECIAL TRENCHING SINGLE, DOUBLE & TRIPLE PIPE OPTIONS W+12"
				W	STANDARD BEDDING MATERIAL ■	W	STANDARD BEDDING MATERIAL ■	W	STANDARD BEDDING MATERIAL ■	ADD'L STANDARD BEDDING MATERIAL
	IN.	FT.	FT.	FT.	C.Y./L.F.	FT.	C.Y./L.F.	FT.	C.Y./L.F.	C.Y./L.F.
ROUND PIPE	18	3.25	0.208	3.17	0.274	5.67	0.468	8.17	0.663	0.120
	24	3.83	0.25	4.00	0.386	7.00	0.629	10.00	0.873	0.142
	30	4.42	0.292	4.58	0.474	8.33	0.811	12.08	1.146	0.163
	▩ 36	5	0.333	6.17	0.751	10.67	1.193	15.17	1.636	0.185
	▩ 42	5.58	0.375	6.75	0.870	12.00	1.429	17.25	1.989	0.207
	▩ 48	6.17	0.417	7.33	0.996	13.33	1.688	19.33	2.379	0.228
	▩ 54	6.75	0.458	7.92	1.126	14.67	1.960	21.42	2.794	0.250
	▩ 60	7.33	0.5	9.50	1.532	17.00	2.521	24.50	3.510	0.271
	▩ 66	8.08	0.542	10.08	1.757	18.33	2.965	26.58	4.173	0.299
	▩ 72	8.67	0.583	10.67	1.931	19.67	3.327	28.67	4.724	0.321
	▩ 78	9.25	0.625	11.25	2.107	20.75	3.615	30.25	5.122	0.343
	▩ 84	9.83	0.667	11.83	2.288	21.83	3.908	31.83	5.529	0.364
	▩ 90	10.42	0.708	12.42	2.479	22.92	4.219	33.42	5.959	0.386
	▩ 96	11	0.75	13.00	2.671	24.00	4.527	35.00	6.383	0.407
ARCH PIPE	18	2.88	0.208	3.50	0.271	6.33	0.471	9.17	0.671	0.106
	21	3.08	0.229	4.12	0.338	7.29	0.567	10.46	0.796	0.114
	24	3.33	0.250	4.38	0.374	7.75	0.624	11.13	0.874	0.123
	30	3.79	0.291	6.10	0.603	10.13	0.915	14.16	1.227	0.140
	36	4.20	0.333	6.81	0.700	11.67	1.097	16.53	1.493	0.156
	42	4.69	0.375	7.50	0.813	13.17	1.308	18.83	1.802	0.173
	▩ 48	5.17	0.416	9.21	1.180	15.71	1.842	22.21	2.504	0.191
	▩ 54	5.58	0.458	9.83	1.243	17.05	1.946	24.28	2.649	0.207
	▩ 60	6.08	0.500	10.58	1.392	18.69	2.228	26.81	3.064	0.225
	▩ 66	6.75	0.542	11.00	1.488	19.56	2.365	28.11	3.242	0.250
	▩ 72	7.00	0.583	12.00	1.690	21.78	2.803	31.55	3.917	0.259
	▩ 78	7.83	0.625	12.42	1.854	22.64	3.071	32.86	4.288	0.272
	▩ 84	7.83	0.667	13.33	1.983	24.67	3.385	36.00	4.788	0.290
	▩ 90	8.92	0.708	14.50	2.382	27.08	4.131	39.67	5.881	0.330
	▩ 96	9.46	0.750	15.17	2.625	28.33	4.549	41.50	6.473	0.350
HORIZONTAL ELLIPTICAL PIPE	18	2.96	0.229	3.62	0.282	6.54	0.487	9.46	0.691	0.109
	24	3.46	0.27	4.54	0.387	8.04	0.640	11.54	0.893	0.128
	30	3.96	0.312	6.29	0.629	10.51	0.954	14.74	1.28	0.147
	36	4.50	0.375	7.00	0.743	12.00	1.153	17.00	1.564	0.167
	▩ 42	5.00	0.416	7.75	0.862	13.64	1.379	19.53	1.896	0.185
	▩ 48	5.42	0.458	9.42	1.170	16.08	1.788	22.75	2.406	0.200
	▩ 54	5.92	0.5	10.17	1.311	17.72	2.050	25.28	2.789	0.219
	▩ 60	6.42	0.541	10.92	1.478	19.36	2.368	27.81	3.259	0.238
	▩ 66	6.91	0.583	11.58	1.626	20.81	2.648	30.03	3.67	0.256
	▩ 72	7.41	0.625	12.33	1.807	22.44	3.004	32.56	4.201	0.275
	▩ 78	7.91	0.667	13.00	1.962	23.89	3.305	34.78	4.649	0.293
	▩ 84	8.58	0.708	13.75	2.239	25.53	3.850	37.31	5.462	0.318
	▩ 90	9.00	0.75	14.42	2.364	26.83	4.062	39.25	5.759	0.333
	▩ 96	9.5	0.791	15.17	2.570	28.25	4.408	41.33	6.245	0.352

NOTE: QUANTITIES FOR 66" & 78" EQUIV. DIAM. ARCH PIPE BASED ON METAL PIPE & ESTIMATED WALL THICKNESS.

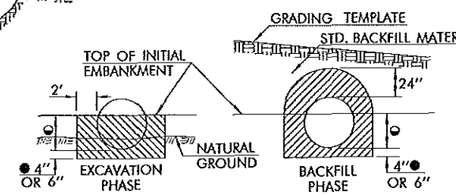
■ FOR PIPES UNDER PAVEMENT, THE H DIMENSION AND THE STANDARD BEDDING MATERIAL QUANTITY, SHALL BE INCREASED TO GO TO THE TOP OF THE TRENCH.

▩ BEDDING MATERIAL VALUES SHOWN FOR STANDARD TRENCHING CONDITIONS MAY BE USED ONLY FOR VERTICAL WALL TRENCHES. ⬓



METHOD NO. 1

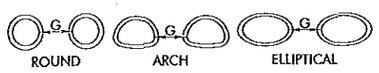
● EMBANKMENT HEIGHT PRIOR TO EXCAVATION
PIPE SIZES FROM 18" TO 42" = 30"
PIPE SIZES FROM 48" TO 84" = 2/3 DIAM.
PIPE SIZES LARGER THAN 84" = 60"



METHOD NO. 1 PAY QUANTITIES WILL BE CALCULATED AND PAID FOR WHEN METHOD NO. 2 IS USED.

METHOD NO. 2
(OPTIONAL INSTALLATION FOR R. C. PIPE)

	CONDUIT SHAPE			DIST.
	ROUND	ARCH	ELLIPTICAL	G
FOR DIA. OR SPAN	UP TO 24"	UP TO 36"	UP TO 36"	12"
	25" TO 72"			D/2"
		37" TO 108"	37" TO 108"	D/3"
	OVER 73"	OVER 108"	OVER 108"	36"



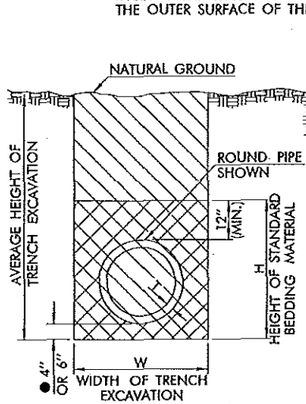
DOUBLE PIPE INSTALLATION
(USED WITH CET END TREATMENTS)

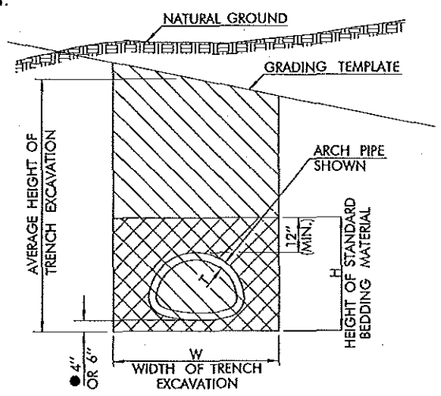
TRENCH EXCAVATION IN EMBANKMENT SECTIONS

LIMITS OF STANDARD BEDDING MATERIAL

QUANTITIES FOR BEDDING MATERIAL DO NOT INCLUDE THE SPACE WITHIN AND BOUNDED BY THE OUTER SURFACE OF THE PIPE CONDUIT.

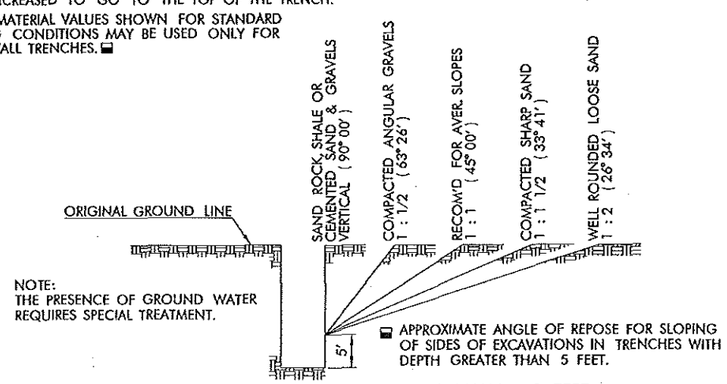
LIMITS OF TRENCH EXCAVATION





GENERAL NOTES

1. ALL CONSTRUCTION AND MATERIAL REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE 2009 ODOT STANDARD SPECIFICATIONS.
2. TRENCH EXCAVATION AND BEDDING MATERIAL WILL NOT BE REQUIRED FOR PIPE INSTALLATIONS OF SIDE DRAINS UNLESS OTHERWISE NOTED ON THE PLANS.
3. FOR PIPE UNDERDRAIN INSTALLATIONS, SEE ROADWAY STANDARD PUD-3.
4. ⬓ SPECIAL TRENCHING CONDITIONS ARE THOSE AS DEFINED BY O.S.H.A. REGULATIONS, TITLE 29 CFR CHAPTER XVII, PART 1926.650, 1926.651 & 1926.652, SO DEFINED WILL APPLY UNTIL THEY ARE IN CONFLICT WITH CURRENT SPECIFICATIONS, FOR TRENCH DEPTHS OVER FIVE FEET. WHERE O.S.H.A. REGULATIONS FOR SPECIAL TRENCHING ARE APPLIED, QUANTITIES AND DIMENSIONS FOR SPECIAL TRENCHING WILL BE USED FOR COMPUTING QUANTITIES. SEE TABLE OF TRENCHING DIMENSIONS AND STANDARD BEDDING MATERIAL QUANTITIES.
5. NORMAL BACKFILLING OPERATIONS SHALL FOLLOW BEDDING AND PIPE INSTALLATION AS CLOSELY AS PRACTICAL. IN NO CASE SHALL A PIPE INSTALLATION SUBJECT TO SUDDEN FLOW DEVELOPMENT BE LEFT WITHOUT SUFFICIENT BACKFILL TO RESTRAIN THE CONDUIT AND PREVENT JOINT SEPARATION AND/OR PIPING SCOUR. PHYSICALLY RESTRAINING THE CONDUIT MAY BE USED TO AUGMENT OR REPLACE THIS IMMEDIATE BACKFILL REQUIREMENT.
6. ANY EXCESS EXCAVATION NOT USED FOR BACKFILL WILL BECOME THE PROPERTY OF THE CONTRACTOR AND DISPOSED OF, BY HIM, IN A MANNER APPROVED BY THE ENGINEER.
7. ☐ STANDARD BEDDING QUANTITIES FOR ROUND PIPE ARE BASED ON AASHTO DESIGNATED CLASS III (WALL B) REINFORCED CONCRETE PIPE.
8. ⬓ WHEN REQUIRED, THE SIDES OF THE TRENCHES SHALL BE SHEETED AND SHORED OR OTHERWISE SUPPORTED WHEN THE TRENCH IS MORE THAN 5.0 FEET IN DEPTH. IN LIEU OF SHEETING, THE SIDES OF THE TRENCH ABOVE THE 5.0 FOOT LEVEL MAY BE SLOPED TO PRECLUDE COLLAPSE, SEE OPTIONAL TRENCHES DETAIL THIS SHEET.
9. ▩ PROPER COMPACTION OF BACKFILL REQUIRES A VERTICAL WALLED TRENCH TO 24 INCHES ABOVE TOP OF PIPE, REGARDLESS OF EXCAVATION ABOVE THAT ELEVATION.
10. ● EQUIVALENT PIPE SIZES 66 INCHES AND LARGER REQUIRE 6 INCHES OF BEDDING MATERIAL BELOW PIPE CONDUIT.
11. ◑ ELLIPTICAL PIPE DIMENSIONS CONFORM TO AASHTO M 207, AS DESIGNATED RISE BY SPAN.
12. FOR COMPUTING TRENCH EXCAVATION & STANDARD BEDDING QUANTITIES, THE LENGTH OF THE CULVERT SHALL INCLUDE END SECTION AND END TREATMENT LENGTHS.
13. MULTIPLE PIPE INSTALLATIONS WILL REQUIRE A MINIMUM OF 12" BETWEEN PIPES FOR PROPER COMPACTION.



⬓ APPROXIMATE ANGLE OF REPOSE FOR SLOPING OF SIDES OF EXCAVATIONS IN TRENCHES WITH DEPTH GREATER THAN 5 FEET.

⬓ OPTIONAL TRENCHES WITH DEPTH GREATER THAN 5.0 FEET

EXCAVATION AND BEDDING MATERIAL WILL BE MEASURED AND PAID FOR AS IF SHEETING & SHORING WAS USED. (SPECIAL TRENCHING = STD. WIDTH TRENCH + 12")

TRENCH EXCAVATION IN CUT SECTIONS

TABLE OF EQUIVALENT PIPES

EQUIV. DIA.	REINF. CONC. ARCH PIPE	STEEL ARCH PIPE	ALUMINUM ARCH PIPE	REINF. CONC. ELLIPTICAL PIPE ◑
18"	22" x 13"	21" x 15"	21" x 15"	14" x 23"
21"	26" x 15"	24" x 18"	24" x 18"	
24"	28" x 18"	28" x 20"	28" x 20"	19" x 30"
27"				22" x 34"
30"	36" x 22"	35" x 24"	35" x 24"	24" x 38"
36"	43" x 26"	42" x 29"	42" x 29"	29" x 45"
42"	51" x 31"	49" x 33"	49" x 33"	34" x 53"
48"	58" x 36"	57" x 38"	57" x 38"	38" x 60"
54"	65" x 40"	64" x 43"	64" x 43"	43" x 68"
60"	73" x 45"	71" x 47"	71" x 47"	48" x 76"
66"		77" x 52"	77" x 52"	53" x 83"
72"	88" x 54"	83" x 57"	83" x 57"	58" x 91"
78"		87" x 63"	92" x 65" ▲	63" x 98"
84"	102" x 62"	95" x 67"	95" x 67" ▲	68" x 106"
90"	115" x 72"	103" x 71"	103" x 71" ▲	72" x 113"
96"	122" x 77"	112" x 75"	112" x 75" ▲	77" x 121"

▲ STRUCTURAL PLATE ARCH.

BASIS OF PAYMENT

ITEM NO.	ITEM	UNIT
613 (R)	STANDARD BEDDING MATERIAL, CLASS A	C.Y.
613 (S)	STANDARD BEDDING MATERIAL, CLASS B	C.Y.
613 (T)	STANDARD BEDDING MATERIAL, CLASS C	C.Y.
613 (V)	TRENCH EXCAVATION	C.Y.

APPROVED BY ROADWAY ENGINEER: Timothy A. Ziegler DATE: 12/21/09

ROADWAY STANDARD

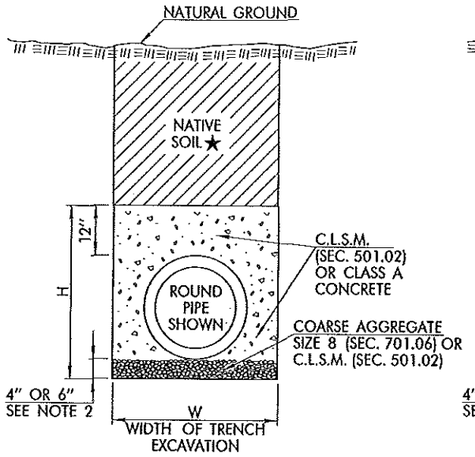
STANDARD PIPE INSTALLATION

2009 SPECIFICATIONS

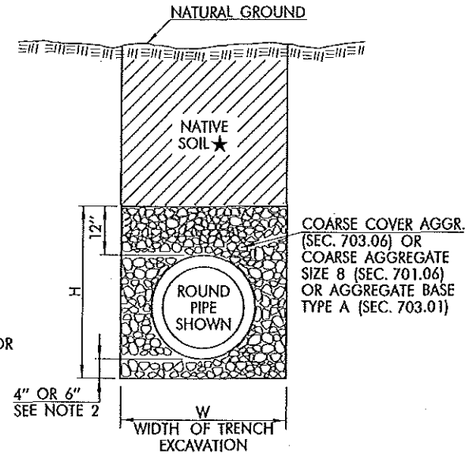
SPI-4 | 0

R-47

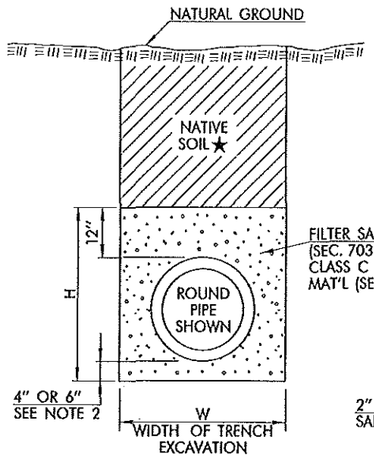
REVISIONS	
DESCRIPTION	DATE



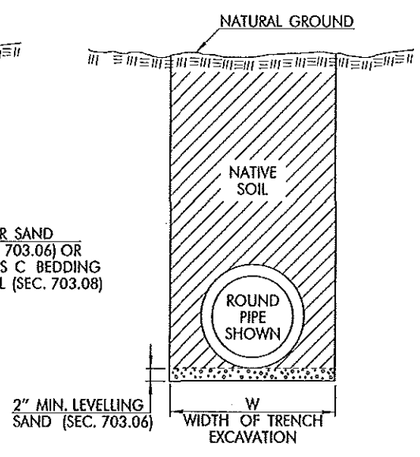
CLASS A BEDDING



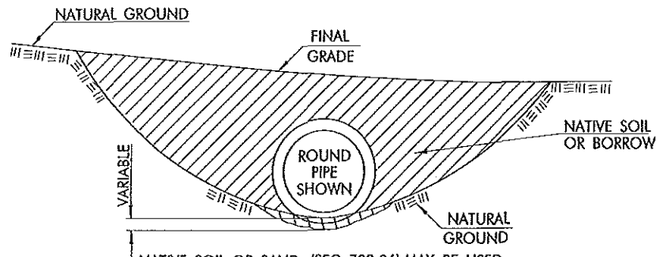
CLASS B BEDDING



CLASS C BEDDING



CLASS D BEDDING
ALTERNATE 1



NATIVE SOIL OR SAND (SEC. 703.06) MAY BE USED TO ADJUST FLOWLINE OF NATURAL DITCH TO PROVIDE SMOOTH BEDDING SURFACE FOR PIPE CONDUIT AND ATTAIN PROPER DESIGN GRADE. SEE SECTION 613.04.G

CLASS D BEDDING
ALTERNATE 2

PIPE BEDDING CLASS/DESIGN TABLE

TYPE OF PIPE	■ UNDER PAVING				OUTSIDE PAVING		
	CROSS DRAIN (NHS OR ADT > 6000 VPD)	CROSS DRAIN (OTHER)	STORM SEWER (NHS OR ADT > 6000 VPD)	STORM SEWER (OTHER)	CROSS DRAIN	SIDE DRAIN	STORM SEWER
REINFORCED CONCRETE PIPE	B	C	B	C	C	D	C
CORRUGATED GALV. STEEL PIPE (CGSP)	NA	B	NA	B	C	D	C
MILL PRECOATED CGSP	NA	B	NA	B	C	D	C
CORRUGATED GALV. STRUCT. PLATE	NA	B	NA	B	C	D	C
ALUMINIZED TYPE II CSP	NA	B	NA	B	C	D	C
CORRUGATED POLYETHYLENE / PVC	NA	A	NA	A	B	B	B
POLYVINYL CHLORIDE (SC 40/80 PVC)	NA	NA	NA	NA	NA	NA	NA

■ WHEN THERE IS ANY POSSIBILITY OF THE PAVEMENT BEING WIDENED DURING THE LIFE OF THE DRAINAGE STRUCTURE, THE BEDDING SHALL MEET THE 'UNDER PAVING SECTION' CRITERIA FOR THE FULL EXTENT OF ANY ANTICIPATED EXPANSION TO THE FACILITY.

GENERAL NOTES

1. ALL CONSTRUCTION AND MATERIAL REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE 2009 ODOT STANDARD SPECIFICATIONS.
2. EQUIVALENT PIPE SIZES 66 INCHES AND LARGER REQUIRE 6 INCHES OF BEDDING MATERIAL BELOW PIPE CONDUIT.
3. NATIVE SOIL FOR BACKFILL, TO BE COMPACTED IN ACCORDANCE WITH SECTION 202.04 OF THE STANDARD SPECIFICATIONS.
4. A BETTER CLASS OF BEDDING MAY BY SUBSTITUTED FOR THE NEXT LOWER CLASS. EXAMPLE: CLASS A STANDARD BEDDING CAN BE USED IN LIEU OF CLASS B STANDARD BEDDING.
5. FOR TRENCH WIDTH (W), BEDDING HEIGHT (H), PIPE DATA, MULTIPLE PIPE SPACING & BEDDING DATA, SEE ROADWAY STANDARDS SPI-4 & FPI-3.
6. DATA TABLE WILL DISPLAY 'NA' WHEN PIPE MATERIALS ARE NOT ALLOWED.
7. STANDARD BEDDING CLASS D MATERIAL(S) (ALTERNATE 1) WILL BE CONSIDERED AS INCIDENTAL AND NOT BE PAID FOR SEPARATELY. COST FOR BORROW OR FILL MATERIAL, NEEDED FOR ALTERNATE 2, WILL BE INCLUDED IN THE PRICE OF THE PIPE.
8. PIPE MATERIAL(S)/PRODUCT(S) NOT SHOWN IN THE PIPE BEDDING TABLE WILL BE EVALUATED AND APPROVED ON A CASE BY CASE BASIS.
9. ALL TEMPORARY PIPES SHALL BE CLASS D BEDDING UNLESS OTHERWISE SHOWN IN THE PLANS.
10. BEDDING MATERIAL TYPE B, C, AND D, SHALL BE PLACED IN 6" LAYERS AND COMPACTED TO THE SPECIFED DENSITY USING HAND OPERATED EQUIPMENT ONLY.

★11. WHEN PIPE INSTALLATION IS UNDER PAVING, IN LIEU OF BACKFILLING WITH NATIVE SOIL, PLACE BEDDING MATERIAL ALL THE WAY TO TOP OF TRENCH.

BASIS OF PAYMENT

ITEM NO.	ITEM	UNIT
613 (R)	STANDARD BEDDING MATERIAL (CLASS A)	C.Y.
613 (S)	STANDARD BEDDING MATERIAL (CLASS B)	C.Y.
613 (T)	STANDARD BEDDING MATERIAL (CLASS C)	C.Y.

APPROVED BY ROADWAY ENGINEER: Timothy A. Taylor DATE: 12/21/09

ROADWAY STANDARD

STANDARD PIPE BEDDING

2009 SPECIFICATIONS

SPB-1	0
	R-49