

**Texas Department of Transportation  
Book 2 - Technical Provisions**

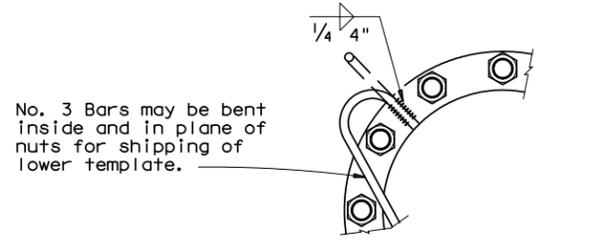
**IH 35E Managed Lanes Project**

**Attachment 17-1**

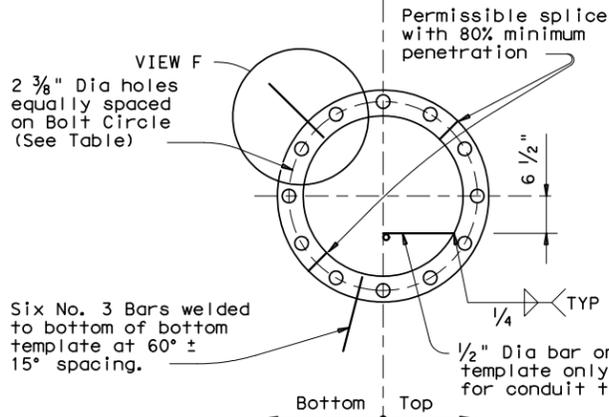
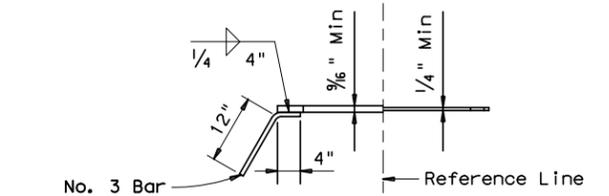
**Tolling and ITS Exhibits**

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

ACC:	
LEVELS DISPLAYED	
1	
2	
3	

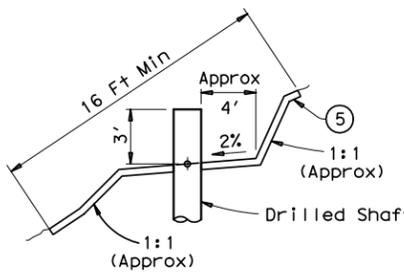


VIEW F

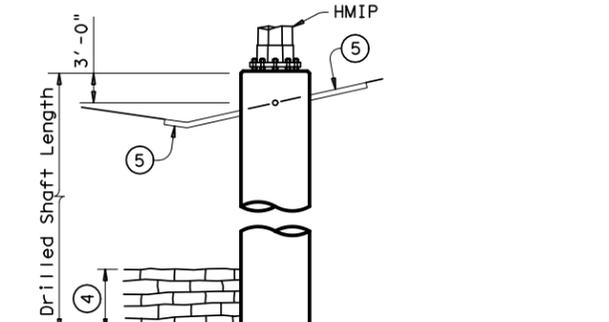


Six No. 3 Bars welded to bottom of bottom template at 60° ± 15° spacing. 1/2" Dia bar on top template only for conduit tie.

ANCHOR BOLT TEMPLATES

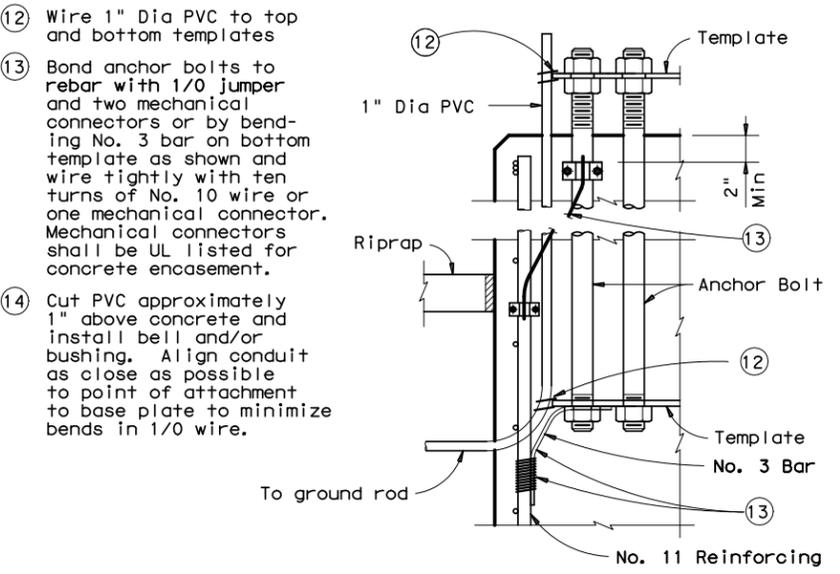
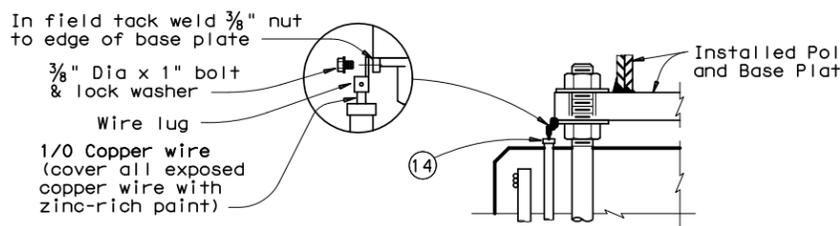


RIPRAP ON SLOPES

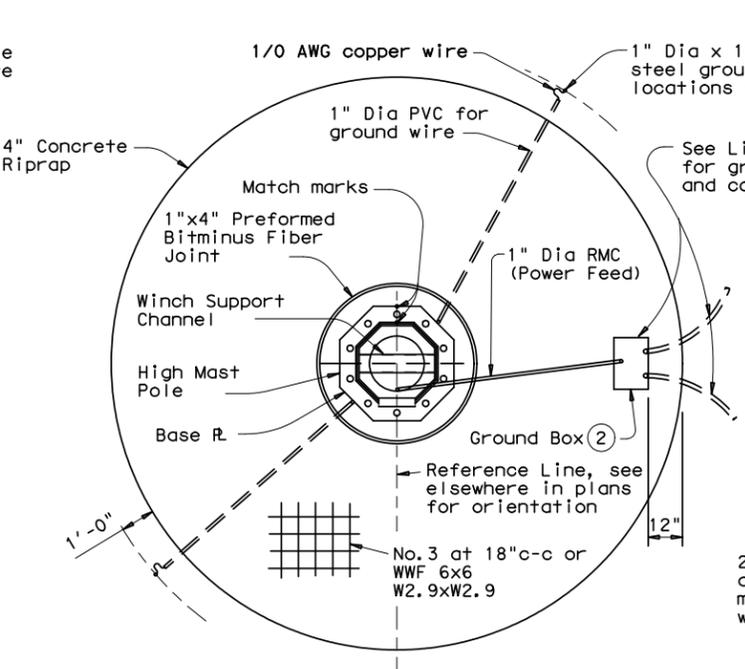


5 Match slope of finished ground if slope is less than approx 4 to 1. For steeper slopes, bench to provide work area with approx 2% slope around pole base. Other configurations may be shown elsewhere on the plans.

4 If rock is encountered, the Drilled Shaft shall extend a minimum of two diameters into solid rock.

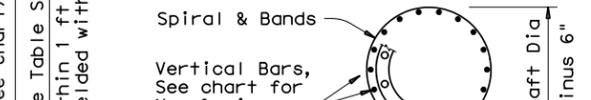
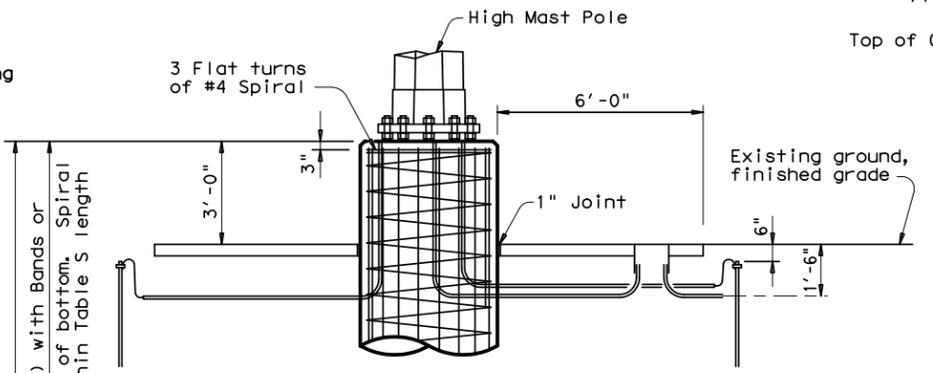
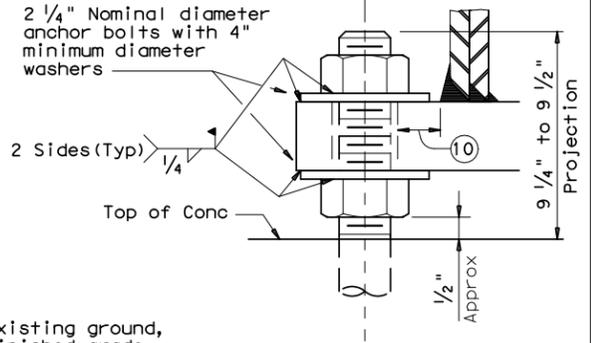


LIGHTNING PROTECTION SYSTEM

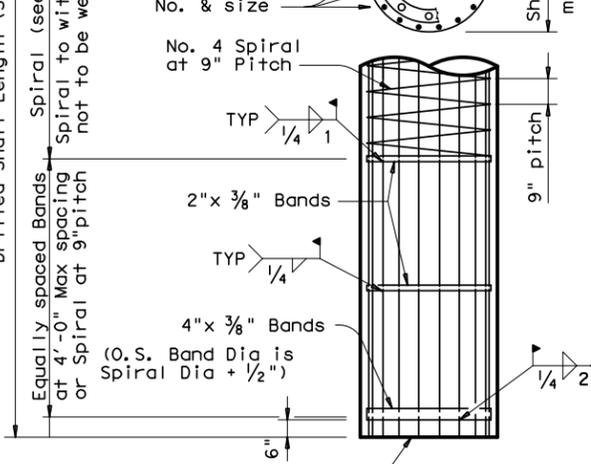


2 Place ground box cover flush with riprap.

10 If, due to tolerances in fabrication, the anchor bolt hole to ground sleeve weld is less than approx 1/8 inch, clipped 1/2 inch thick washers shall be supplied at those

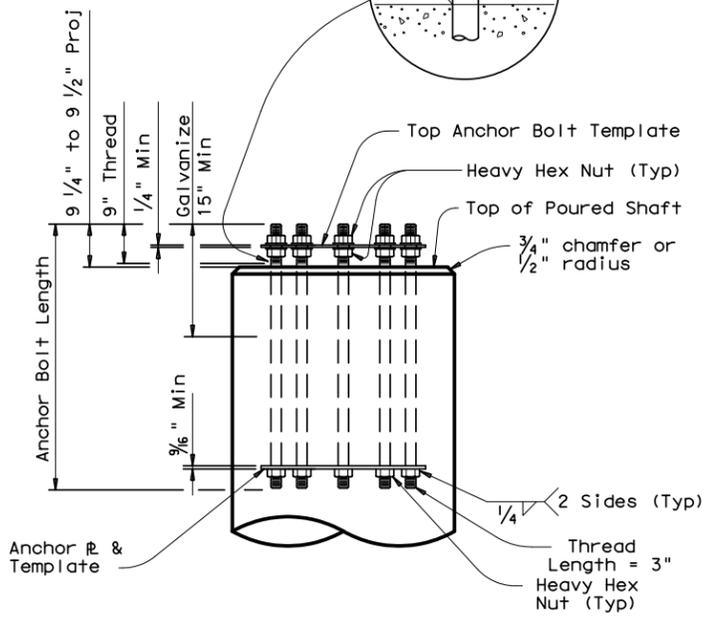


Shaft Dia (inches)	Min Spiral Length (feet)
48	19
54	21
60	23
66	26



Vertical bars may be supported on bottom of drilled hole if material is firm enough to do so when concrete is placed

DRILLED SHAFT FOUNDATION DETAIL



ANCHOR BOLT ASSEMBLY

(See Anchor Bolt Table for number of bolts required)

STANDARD PLANS  
TEXAS DEPARTMENT OF TRANSPORTATION  
Traffic Operations Division

HIGH MAST ILLUMINATION POLE FOUNDATIONS

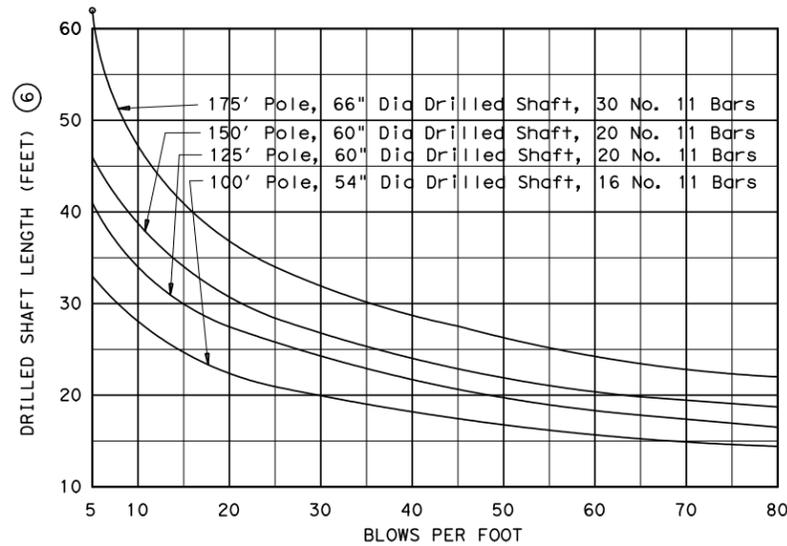
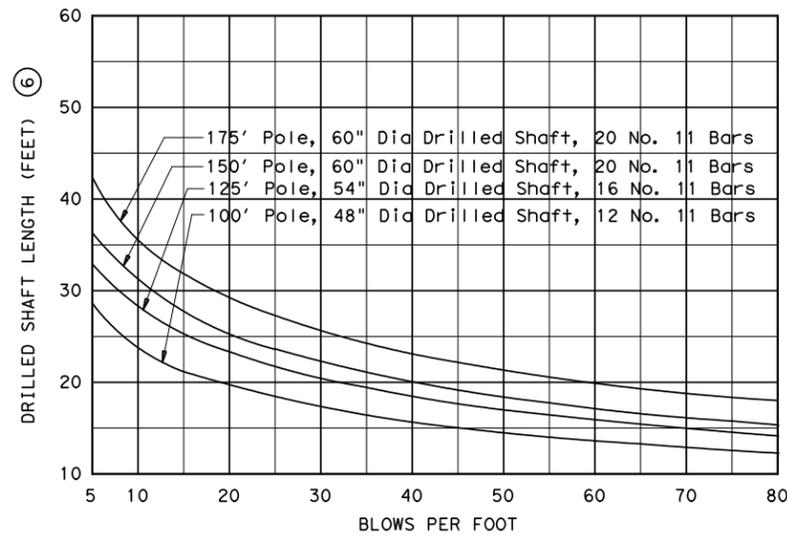
SHEET 1 OF 2 HMIF (1) - 98

© TxDOT August 1995	REV. NO.	STATE DISTRICT	FEDERAL REGION	FEDERAL AID PROJECT	SHEET
11-97	5-98 - Anchor Bolt Circle Dia	TEXAS	6	CM ( )	124
		COUNTY	CONTROL	SECTION	JOB
		DALLAS	0442	02	143 IH 35E

DISCLAIMER:  
The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

LEVELS DISPLAYED  
ACC:  
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16  
17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32  
33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48  
49 50 51 52 53 54 55 56 57 58 59 60 61 62 63

⑥ Includes normal 3 Ft exposure.  
Shafts with more than 3 Ft exposure must have additional length.



**TEXAS CONE PENETROMETER TEST TABLES**

NOTE: Use average "N" value over the top third of the embedded shaft. Ignore the top 2' of soil.

ANCHOR BOLT TABLE						
Pole Height (feet)	Bolt Diameter (inches)	Bolt Length (feet)	Bolt Templates		No. of Bolts	Bolt Cir Dia (inches)
			O D (inches)	I D (inches)		
8 SIDED POLE						
175	2.25	4.83	45.5	36.5	16	41
150	2.25	4.83	42.5	33.5	12	38
125	2.25	4.83	39.5	30.5	8	35
100	2.25	4.83	35.5	26.5	6	31
12 SIDED POLE						
175	2.25	4.83	48.5	39.5	12	44
150	2.25	4.83	45.5	36.5	10	41
125	2.25	4.83	40.5	31.5	8	36
100	2.25	4.83	36.5	27.5	6	32
8 SIDED POLE						
175	2.25	4.83	50.5	41.5	20	46
150	2.25	4.83	47.5	38.5	16	43
125	2.25	4.83	43.5	34.5	12	39
100	2.25	4.83	38.5	29.5	10	34
12 SIDED POLE						
175	2.25	4.83	50.5	41.5	16	46
150	2.25	4.83	48.5	39.5	12	44
125	2.25	4.83	44.5	35.5	10	40
100	2.25	4.83	40.5	31.5	6	36

MISCELLANEOUS QUANTITIES - ONE HMIF			
Shaft Diameter (in) ⑦	48	54	60
Concrete Riprap (CY)	2.33	2.44	2.56
Reinforcing (Lbs) ⑧	94	99	103
Ground Box (ea)	1	1	1
R O W Marker (ea) ⑨	1	1	1

- ⑦ See elsewhere on plans for length of Drilled Shaft required.
- ⑧ For Contractors information only.
- ⑨ Designated elsewhere on plans if required.

**GENERAL NOTES:**

Unless otherwise noted, the welded steel bands may be replaced with spiral as shown on the foundation details.

Anchor bolts shall be placed in foundation so there are always two bolts on reference line.

Drilled shaft lengths as determined from the foundation design chart or other acceptable methods are to be as shown elsewhere on the plans.

ODSR may not be used for HMIF drilled shafts.

Concrete for drilled shafts shall be Class C.

Repair welded areas with zinc-rich paint.

All Anchor Bolts, Nuts and Washers shall be galvanized in accordance with Item 445, "Galvanizing".



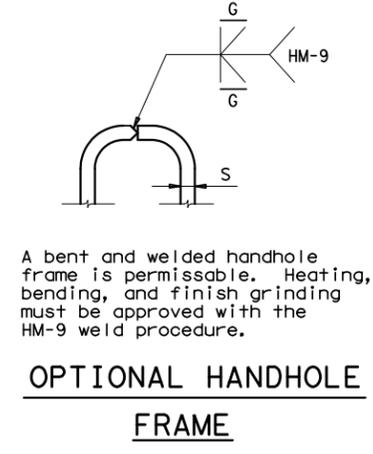
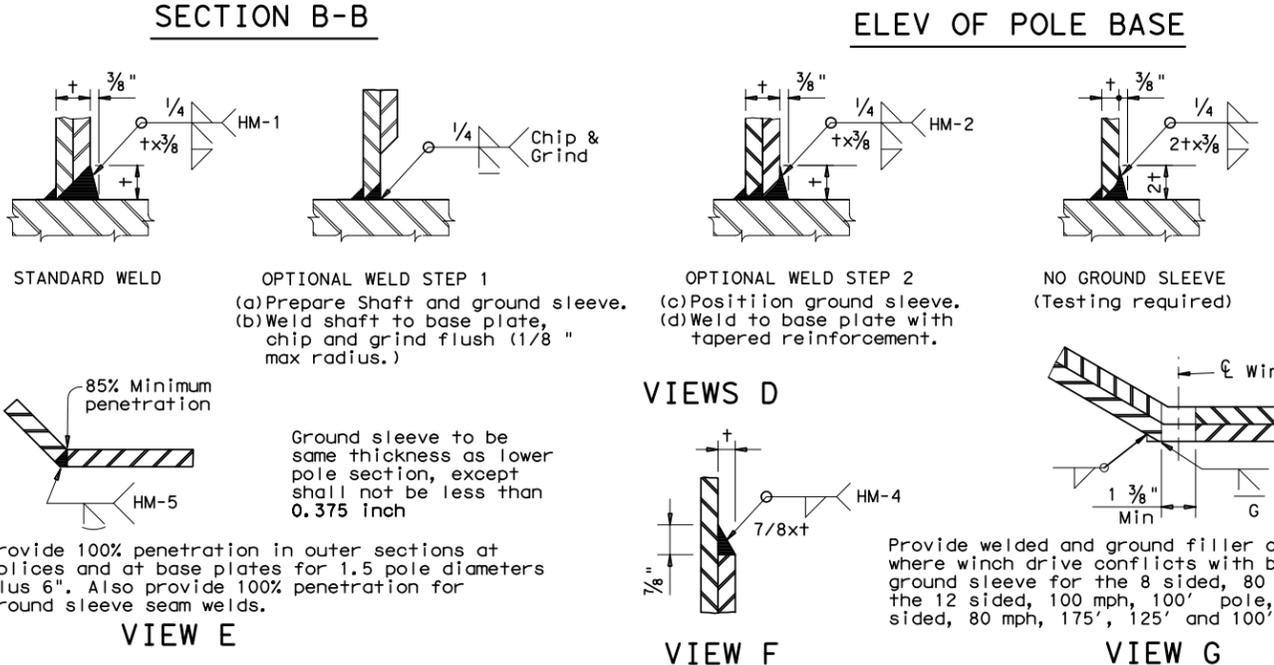
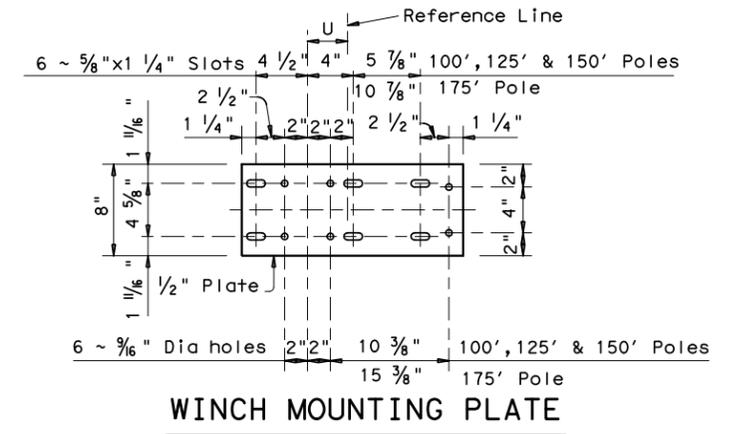
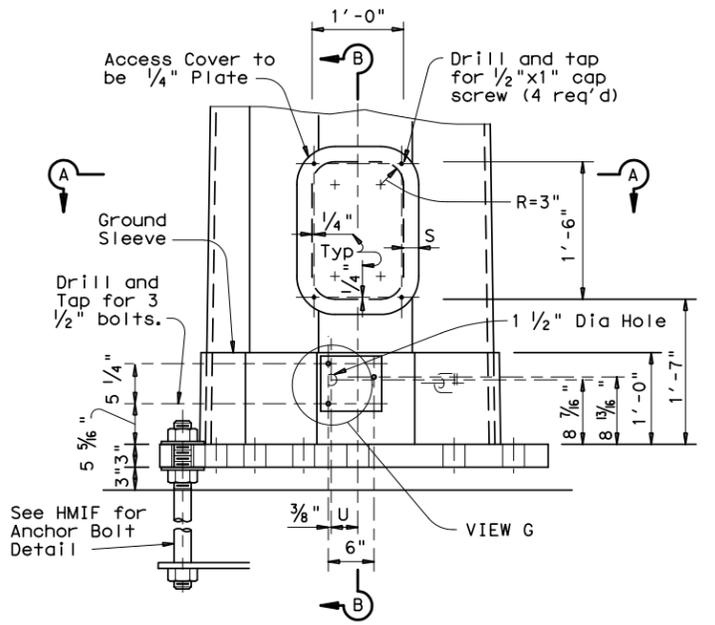
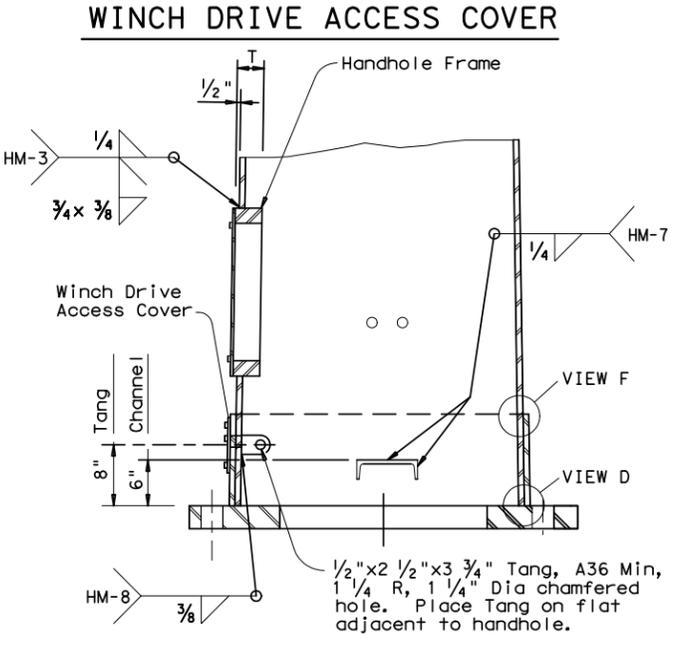
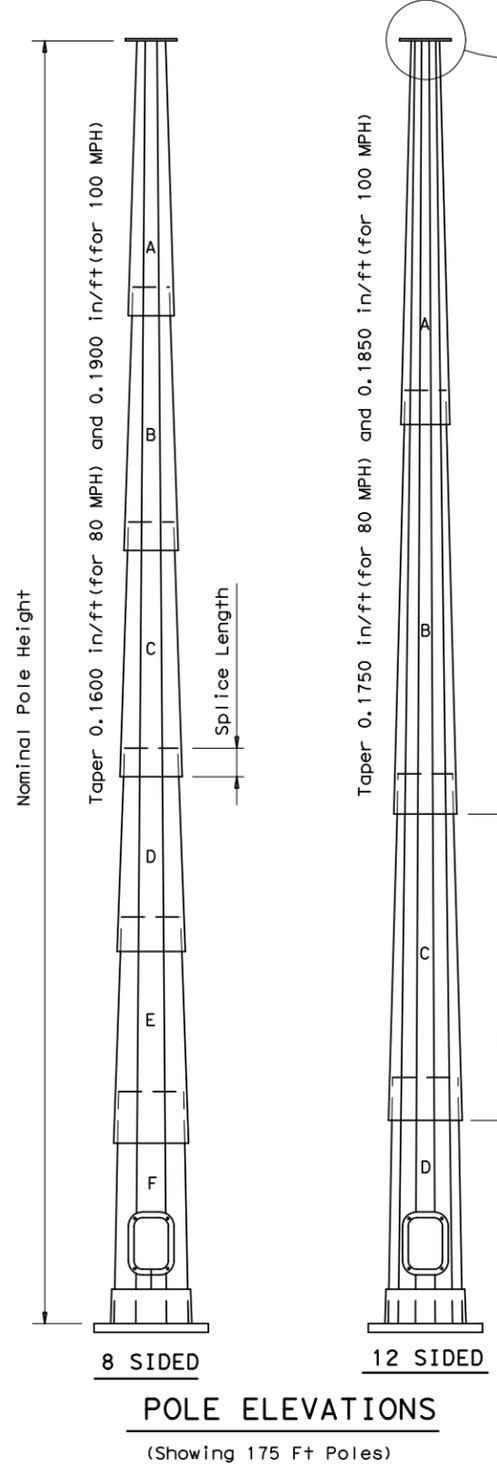
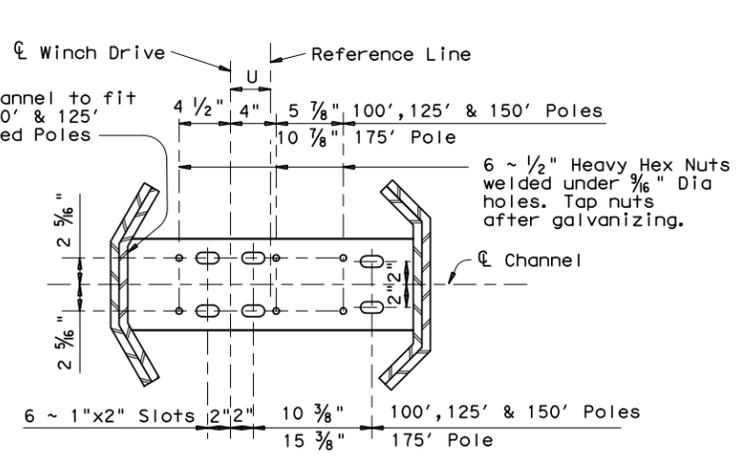
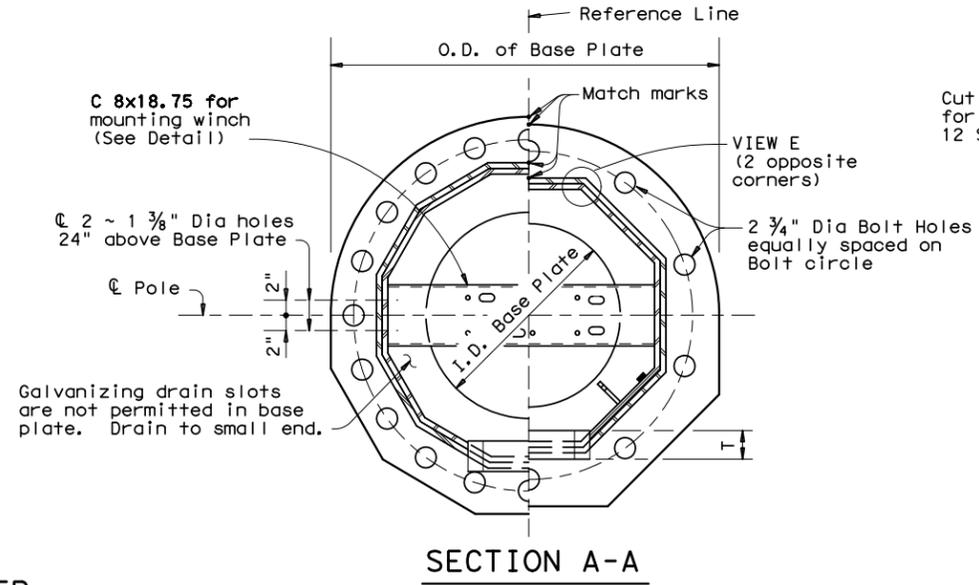
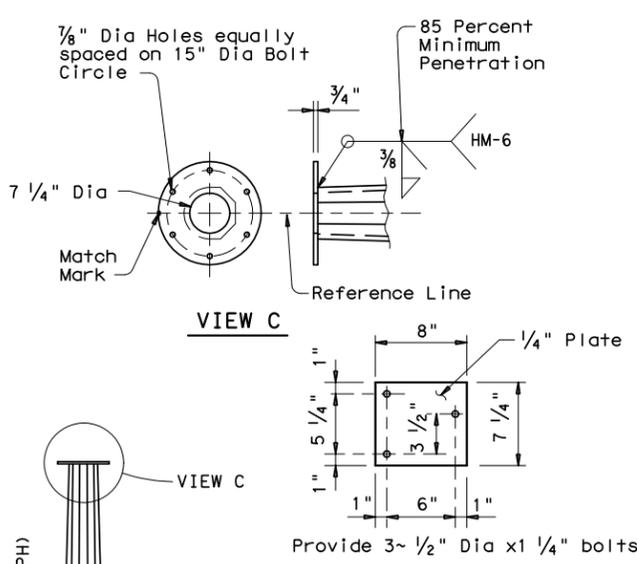
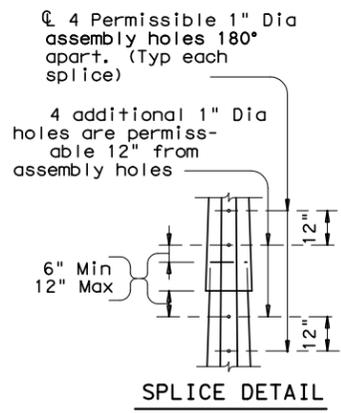
**HIGH MAST ILLUMINATION POLE FOUNDATIONS**

SHEET 2 OF 2 HMIF (2) - 98

© TxDOT August 1995	REVISED	STATE DISTRICT	FEDERAL REGION	FEDERAL AID PROJECT	SHEET
5-98 ~ Anchor Bolt Circle Dia		TEXAS	6	CM ( )	125
		COUNTY	CONTROL	SECTION	JOB
		DALLAS	0442	02	143 IH 35E

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

LEVELS DISPLAYED  
 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32  
 ACC: 1 7 1 8 1 9 2 0 2 1 2 2 2 3 2 4 2 5 2 6 2 7 2 8 2 9 3 0 3 1 3 2  
 3 3 3 4 3 5 3 6 3 7 3 8 3 9 4 0 4 1 4 2 4 3 4 4 4 5 4 6 4 7 4 8  
 4 9 5 0 5 1 5 2 5 3 5 4 5 5 5 6 5 7 5 8 5 9 6 0 6 1 6 2 6 3  
 (L1=1, 2 for English; 1, 3 for Metric)



STANDARD PLANS  
 TEXAS DEPARTMENT OF TRANSPORTATION  
 Traffic Operations Division

HIGH MAST  
 ILLUMINATION POLES  
 100' - 125' - 150' - 175'

SHEET 1 OF 2 HMIP(1)-98

© TxDOT August 1995	REV. NO.	STATE DISTRICT	FEDERAL REGION	FEDERAL AID PROJECT	NEG. NO. 1
11-97	5-98 - Anchor Bolt Circle Dia	TEXAS	6	CM ( )	126
		COUNTY	CONTROL	SECTION	JOB
		DALLAS	0442	02	143 IH 35E

DISCLAIMER:  
The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

LEVELS DISPLAYED  
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16  
ACC: 1 7 1 8 19 10 11 12 13 14 15 16  
1 7 1 8 19 10 11 12 13 14 15 16  
3 3 3 4 3 5 6 7 8 9 10 11 12 13 14 15 16  
4 9 6 0 5 1 5 2 6 3 5 6 5 7 5 8 6 0 6 1 6 2 6 3  
(L) = 1, 2 for English; 1, 3 for Metric

TABLE OF VARIABLE POLE DIMENSIONS												
Ht (ft)	Section	8 SIDED POLE					12 SIDED POLE					
		Diameter (Inches)		Thickness (Inches)	Length (feet)	Splice (Inches)	Diameter (Inches)		Thickness (Inches)	Length (feet)	Splice (Inches)	
		Bottom	Top				Bottom	Top				
80 MPH DESIGNS	175	A	13.083	7.750	.250	33.33	19	16.792	7.750	.250	51.67	24
		B	17.792	12.205	.375	34.92	25	24.858	15.817	.313	51.67	36
		C	22.250	16.583	.375	35.42	32	32.625	23.583	.313	51.67	48
		D	25.375	20.948	.438	27.67	36	36.250	31.175	.375	29.00	~
		E	28.375	23.895	.500	28.00	41					
		F	31.250	26.703	.500	28.42	~					
150	150	A	13.083	7.750	.250	33.33	19	16.792	7.750	.250	51.67	24
		B	17.792	12.205	.375	34.92	25	24.858	15.817	.313	51.67	36
		C	22.250	16.583	.375	35.42	32	32.625	23.583	.313	51.67	~
		D	25.375	20.948	.438	27.67	36					
		E	28.375	23.895	.500	28.00	~					
		F	31.250	26.703	.500	28.42	~					
125	125	A	13.083	7.750	.250	33.33	19	16.792	7.750	.250	51.67	24
		B	17.792	12.205	.375	34.92	25	24.858	15.817	.313	51.67	36
		C	22.250	16.583	.375	35.67	32	28.250	23.583	.313	26.67	~
		D	25.375	20.948	.438	27.67	~					
		A	13.083	7.750	.250	33.33	19	16.792	7.750	.250	51.67	24
		B	17.792	12.205	.375	34.67	25	24.625	15.817	.313	50.33	~
100	100	A	13.083	7.750	.250	33.33	19	16.792	7.750	.250	51.67	24
		B	17.792	12.205	.375	34.67	25	24.625	15.817	.313	50.33	~
		C	22.250	16.583	.375	35.67	~					
		A	14.208	7.875	.313	33.33	20	17.433	7.875	.375	51.67	25
		B	19.792	13.142	.375	35.00	28	25.747	16.173	.438	51.75	37
		C	25.250	18.473	.438	35.67	36	33.750	24.176	.438	51.75	49
150	150	A	14.208	7.875	.313	33.33	20	17.433	7.875	.375	51.67	25
		B	19.792	13.142	.375	35.00	28	25.747	16.173	.438	51.75	37
		C	25.250	18.473	.438	35.67	36	33.750	24.176	.438	51.75	~
		D	29.00	23.680	.500	28.00	42					
		E	32.625	27.210	.563	28.50	~					
		F	36.125	30.631	.563	28.92	~					
125	125	A	14.208	7.875	.313	33.33	20	17.433	7.875	.375	51.67	25
		B	19.792	13.142	.375	35.00	28	25.747	16.173	.438	51.75	37
		C	25.250	18.473	.438	35.67	36	29.125	24.176	.438	26.75	~
		D	29.00	23.680	.500	28.00	~					
		A	14.208	7.875	.313	33.33	20	17.433	7.875	.375	51.67	25
		B	19.792	13.142	.375	35.00	28	25.500	16.173	.375	50.42	~
100	100	A	14.208	7.875	.313	33.33	20	17.433	7.875	.375	51.67	25
		B	19.792	13.142	.375	35.00	28	25.500	16.173	.375	50.42	~
		C	25.250	18.473	.438	35.67	~					

Diameters are measured across the flats.

TABLE OF VARIABLE BASE DIMENSIONS							
Ht (ft)	O.D. (inches)	I.D. (inches)	Bolt Cir (inches)	No. Bolts	S (inches)	T (inches)	U (inches)
80 MPH DESIGNS							
8 SIDED POLE							
175'	47	22	41	16	2.00	3.75	4.50
150'	44	18	38	12	2.00	4.00	3.50
125'	41	16	35	8	2.00	4.50	3.50
100'	37	14	31	6	2.00	5.00	3.50
12 SIDED POLE							
175'	50	24	44	12	1.75	3.50	3.50
150'	47	22	41	10	1.75	3.50	2.50
125'	42	18	36	8	1.75	3.75	2.50
100'	38	13	32	6	1.75	4.00	2.50
100 MPH DESIGNS							
8 SIDED POLE							
175'	52	27	46	20	1.75	3.50	4.50
150'	49	23	43	16	1.75	4.00	3.50
125'	45	21	39	12	1.75	4.50	3.50
100'	40	17	34	10	1.75	4.50	3.50
12 SIDED POLE							
175'	52	27	46	16	1.75	3.25	3.50
150'	50	25	44	12	1.75	3.50	2.50
125'	46	22	40	10	1.75	3.75	2.50
100'	42	19	36	6	1.75	4.00	2.50

NOTE: Base Plate may be round or with 8 or 12 equal segments matching the pole.

GENERAL NOTES:

Design conforms to AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaries, and Traffic Signals and Interim Revisions thereto. The Design Wind Speed is 80 mph or 100 mph.

The required design height and wind speed shall be as shown elsewhere in the plans.

Each pole section, top flange plate and base plate shall be permanently marked on the reference line. The required mark locations are shown on the baseplate, top plate, and foundation plan details. These marks shall be used in pole assembly and erection alignment. The reference line and anchor bolt orientation shall be parallel to roadway centerline unless otherwise shown on Lighting Layouts.



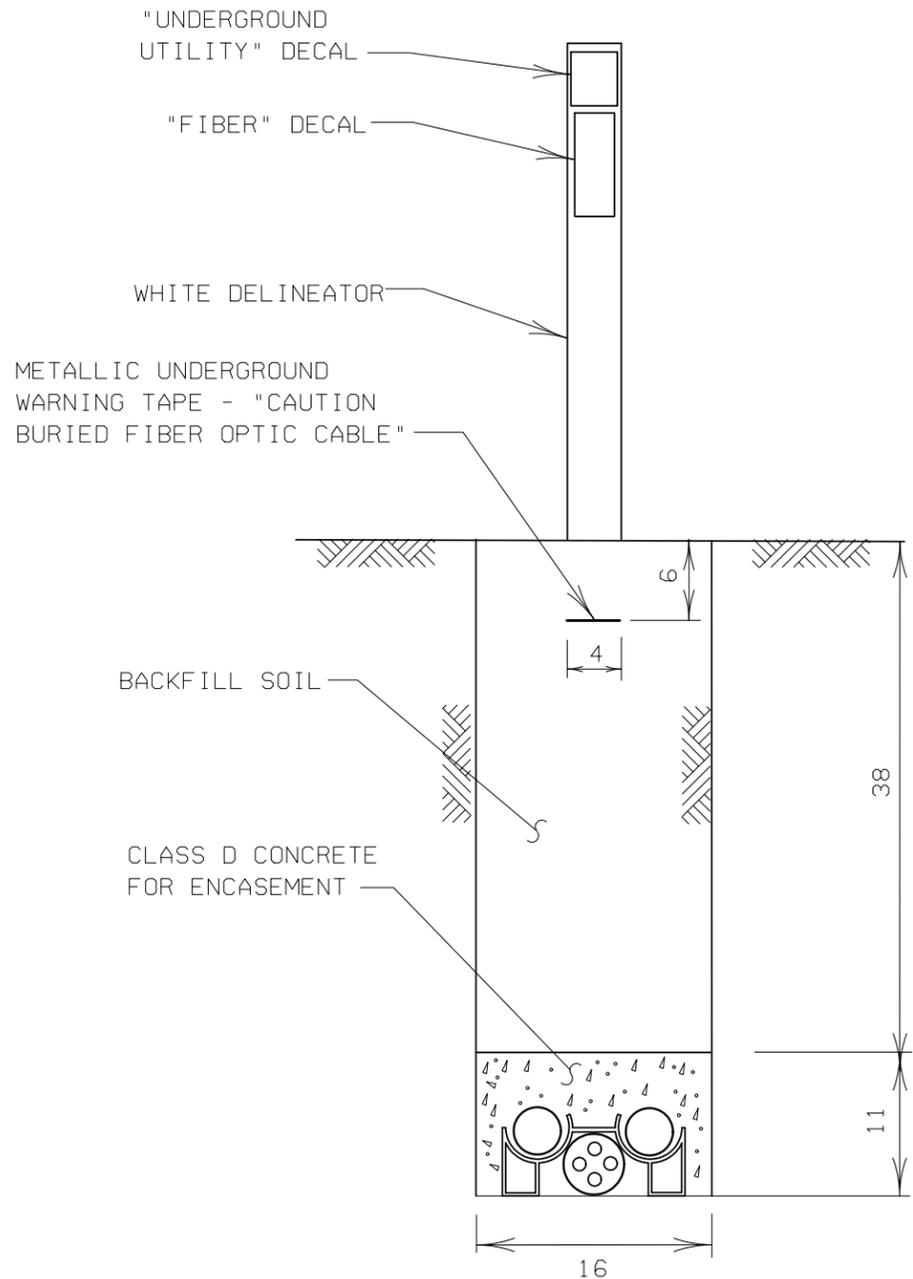
STANDARD PLANS  
TEXAS DEPARTMENT OF TRANSPORTATION  
Traffic Operations Division  
  
HIGH MAST  
ILLUMINATION POLES  
100' - 125' - 150' - 175'

SHEET 2 OF 2 HMIP (2) - 98

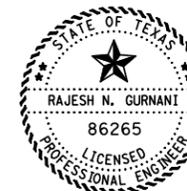
© TxDOT August 1995	REVISED	STATE	FEDERAL	FEDERAL AID PROJECT	SHEET
5-98 ~ Anchor Bolt Circle Dia	TEXAS	6	CM	( )	127
	COUNTY	CONTROL	SECTION	JOB	HIGHWAY
	DALLAS	0442	02	143	IH 35E

# TYPICAL CONDUIT CROSS SECTION

2 - 3 IN. PVC AND 1 - 4 IN. PVC MULTIDUCT (CONCRETE ENCASED), AND



ALL DIMENSIONS ARE IN INCHES  
UNLESS OTHERWISE NOTED



The seal appearing on this document was authorized by Rajesh N. Gurnani, P.E. 86265, on

\_\_\_\_\_, P.E.  
Signature of Registrant & Date



## "ITS" MISCELLANEOUS ITEMS SHEET

SHEET 2 OF 2

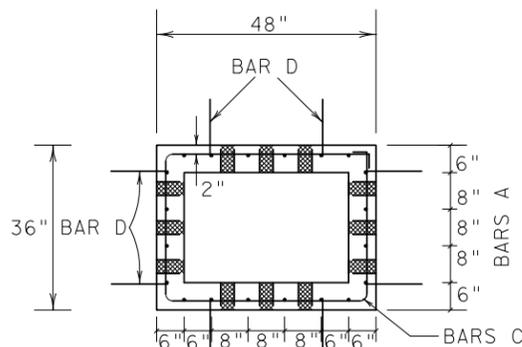
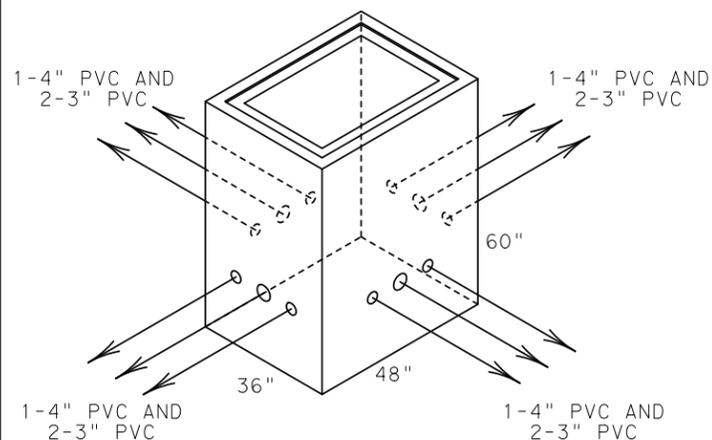
DESIGN	FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
DK/LMT	6	CM	( )	IH 35E
GRAPHICS	STATE	DISTRICT	COUNTY	SHEET NO.
DK	TEXAS	DALLAS	DALLAS	112
CHECK	CONTROL	SECTION	JOB	
RNG	0442	02	143	

LEVELS

1	2	3	4	5	6	7
8	10	11	12	13	14	
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	32	33	34	35
36	37	38	39	40	41	42
43	44	45	46	47	48	49
50	51	52	53	54	55	56
57	58	59	60	61	62	63

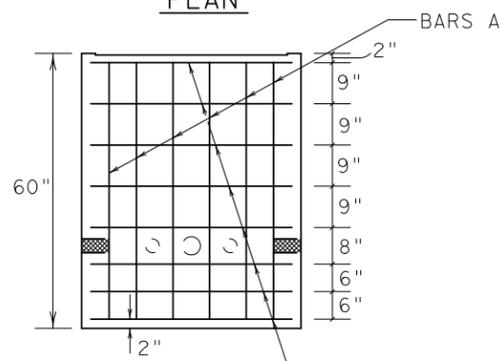
# "ITS" GROUND BOX TYPE 1

(MIN. INSIDE DIMENSIONS OF 2 FT X 3 FT)

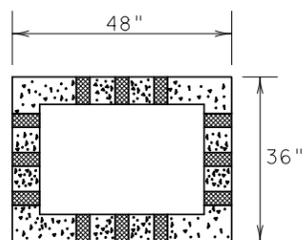


NOTE: BAR SPACING IS THE SAME ON OPPOSING SIDES.

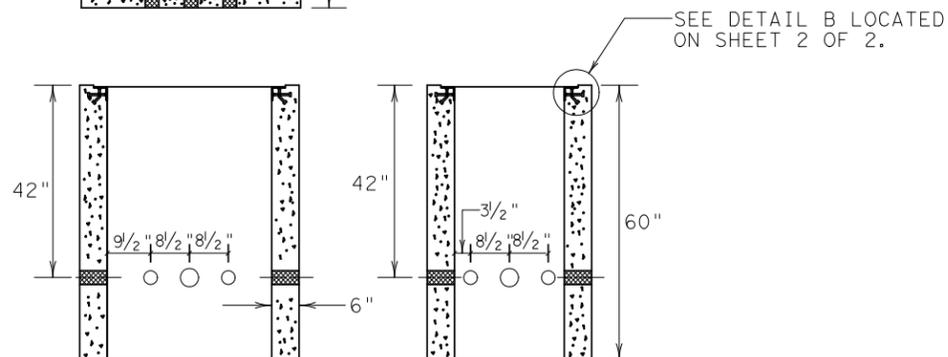
PLAN



ELEVATION

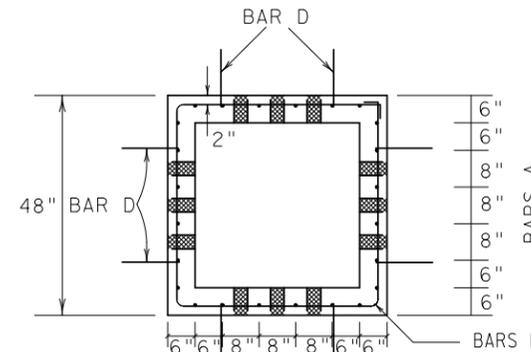
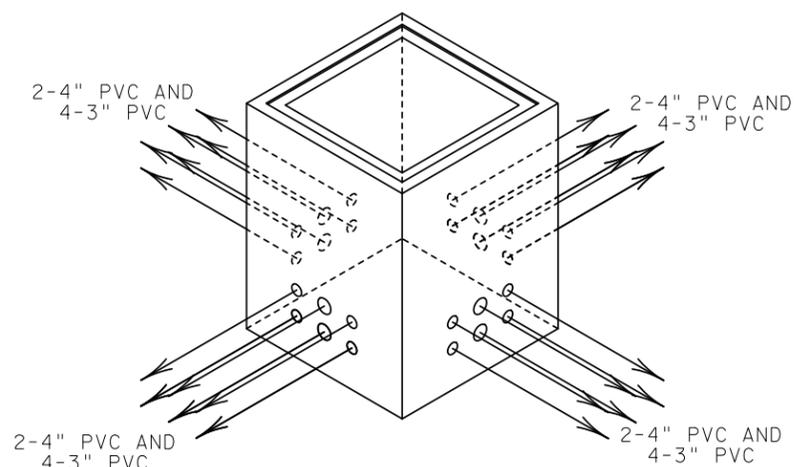


ADAPTER FOR PVC CONDUIT.  
(REQUIRED CONDUIT SIZES  
ARE AS SHOWN ABOVE.)



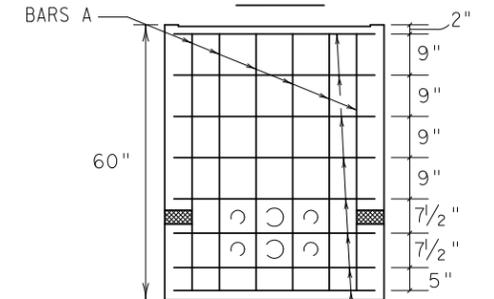
# "ITS" GROUND BOX TYPE 2

(MIN. INSIDE DIMENSIONS OF 3 FT X 3 FT)

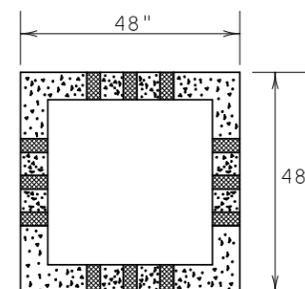


NOTE: BAR SPACING IS THE SAME ON ALL SIDES

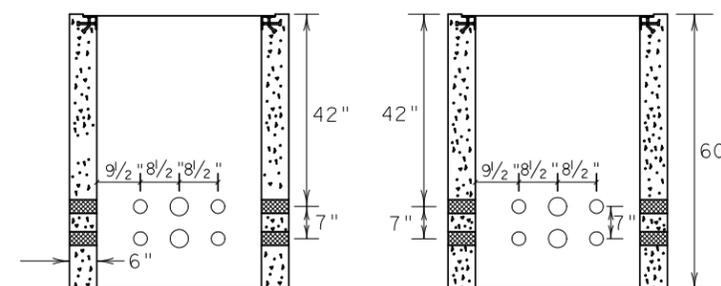
PLAN



ELEVATION

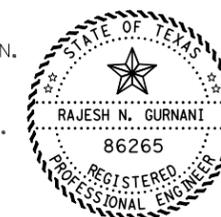


ADAPTER FOR PVC CONDUIT.  
(REQUIRED CONDUIT SIZES  
ARE AS SHOWN ABOVE.)



NOTES:

1. CONCRETE FOR "ITS" GROUND BOXES SHALL BE CLASS A.
2. ADAPTERS FOR THE PVC CONDUITS ARE PLACED SYMETRICALLY ABOUT THE CENTERLINE OF THE BOX AT THE DEPTHS SHOWN, UNLESS OTHERWISE NOTED.
3. ADAPTERS SHALL BE APPROPRIATELY SIZED FOR THE CONDUITS INDICATED ON THIS DRAWING. THE ADAPTERS SHALL PROVIDE AN AIR TIGHT AND WATER TIGHT CONNECTION.
4. "ITS" GROUND BOX BOTTOMS SHALL BE LEFT OPEN.
5. ALL "ITS" GROUND BOXES SHALL BE PROVIDED WITH A SECURABLE, TAMPER-PROOF LID. SEE "ITS" GROUND BOX LID DETAIL.
6. ALL "ITS" GROUND BOXES ARE TO BE INSTALLED ON A 24-INCH BASE OF CRUSHED STONE WHICH EXTENDS 6 INCHES IN ALL DIRECTIONS FROM THE PERIMETER OF THE BOX. THE CRUSHED STONE WILL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED SUBSIDIARY TO ITEM 624, GROUND BOXES.
7. SEE SHEET 2 OF 2 FOR BAR BENDING DETAILS AND FOR REINFORCING STEEL AND CONCRETE CHART.
8. FOR GROUND BOX APRON DETAIL SEE STANDARD SHEET ED (3)-03.
9. STEEL COVERS SHALL BE GROUNDED AS DESCRIBED IN THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE.
10. FOR DETAILS OF THE TYPE D GROUND BOX SEE STANDARD SHEET ED(3)-03.
11. ADAPTERS THAT DO NOT HAVE CONDUITS ATTACHED SHALL BE CAPPED AND SEALED.



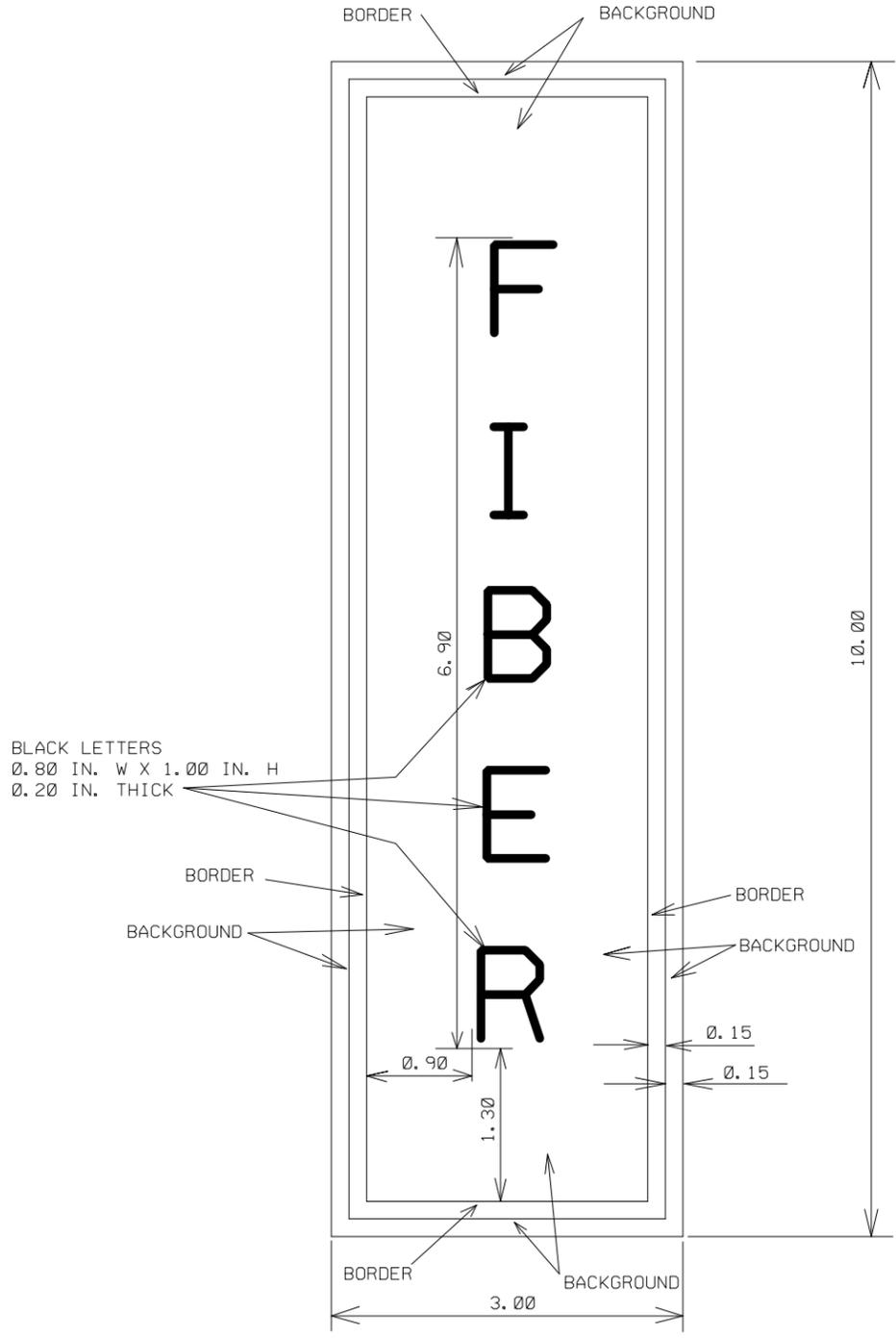
Signature \_\_\_\_\_, P.E. Date \_\_\_\_\_



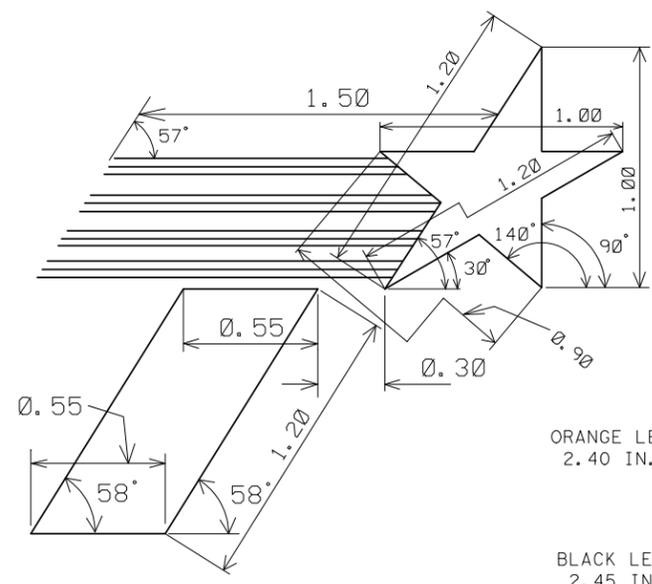
## "ITS" GROUND BOX DETAILS

SHEET 1 OF 2

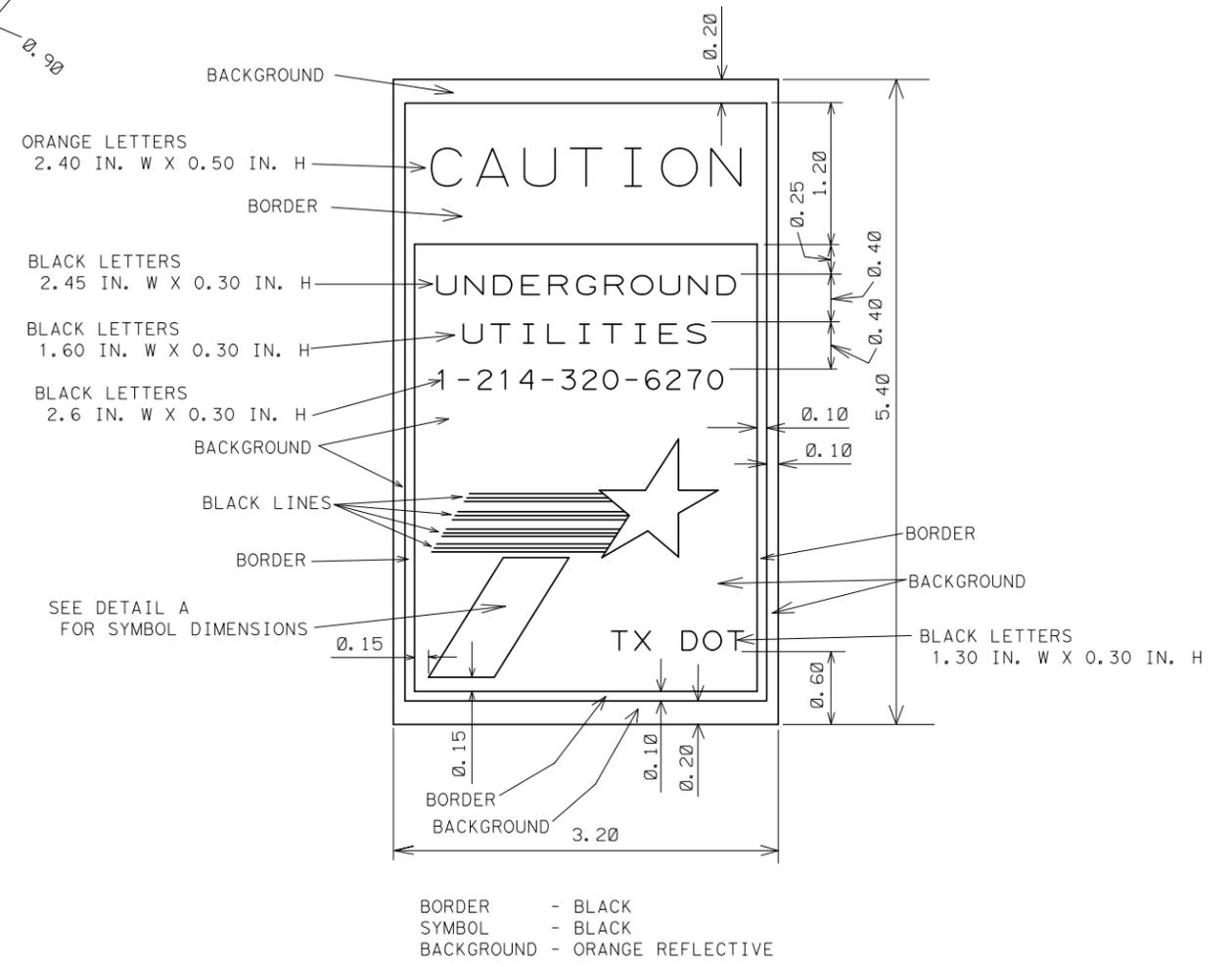
DESIGN	FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
DK	6	CM	( )	IH 35E
GRAPHICS	STATE	DISTRICT	COUNTY	SHEET NO.
DK	TEXAS	DALLAS	DALLAS	
CHECK	CONTROL	SECTION	JOB	
RNG	0442	02	143	
CHECK				



"FIBER" DECAL DETAIL



DETAIL A



"UNDERGROUND UTILITIES" DECAL DETAIL

LEVELS

1	2	3	4	5	6	7
8	10	11	12	13	14	
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	32	33	34	35
36	37	38	39	40	41	42
43	44	45	46	47	48	49
50	51	52	53	54	55	56
57	58	59	60	61	62	63

ALL DIMENSIONS ARE IN INCHES  
UNLESS OTHERWISE NOTED



The seal appearing on this document was authorized by Rajesh N. Gurnani, P.E. 86265, on

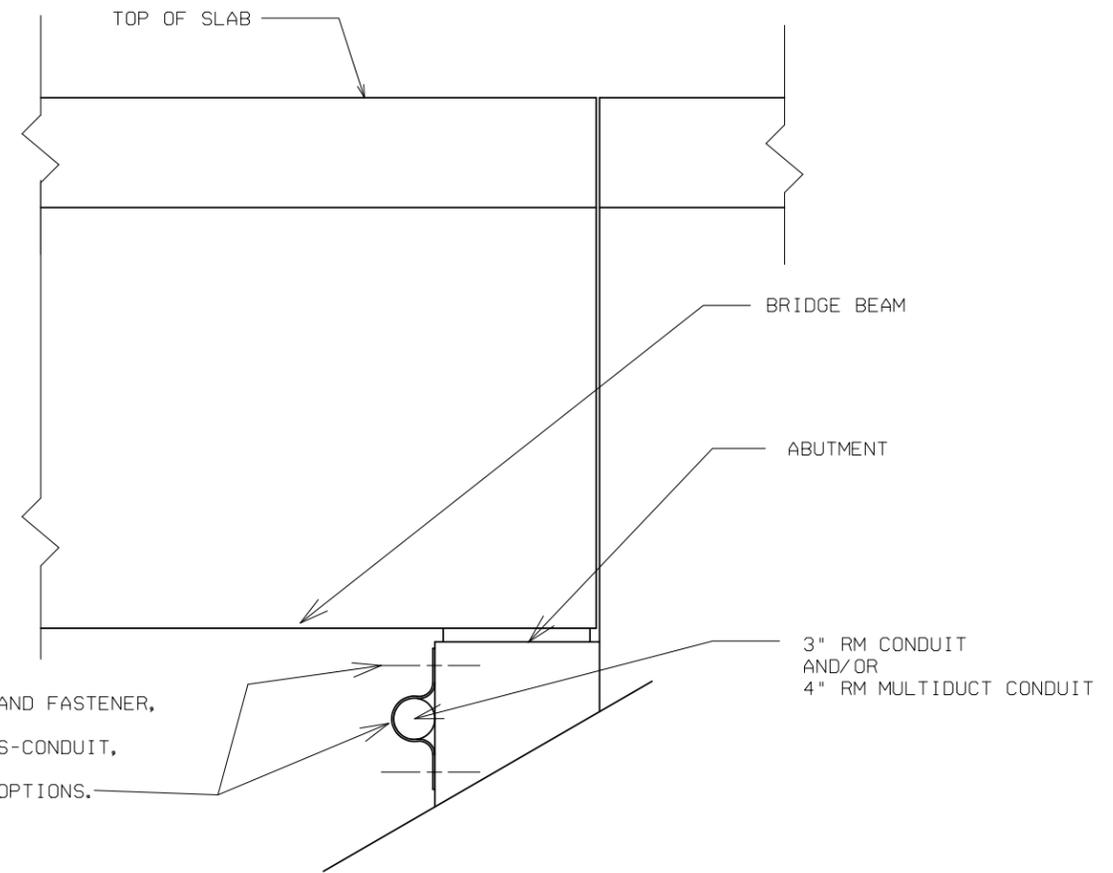
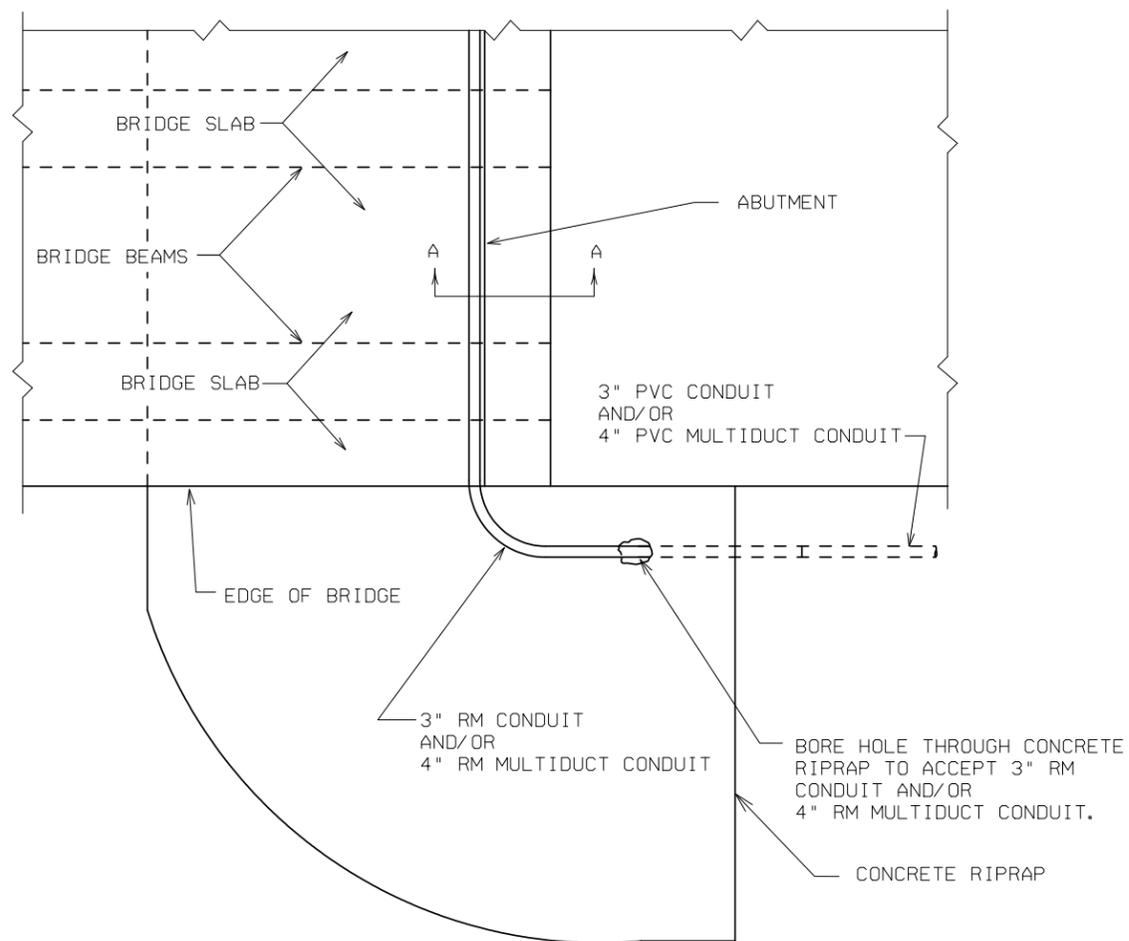
Signature of Registrant & Date



"ITS" MISCELLANEOUS ITEMS SHEET

SHEET 1 OF 2

DESIGN DK/LMT	FED. RD. DIV. NO. 6	FEDERAL AID PROJECT NO. CM ( )		HIGHWAY NO. IH 35E
GRAPHICS DK	STATE TEXAS	DISTRICT DALLAS	COUNTY DALLAS	SHEET NO. 111
CHECK RNG	CONTROL 0442	SECTION 02	JOB 143	

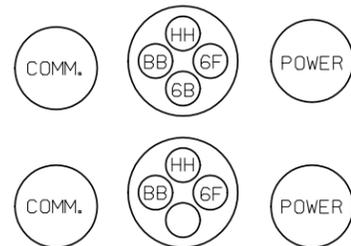


CONDUIT MOUNTING AND FASTENER,  
AS SHOWN ON  
ELECTRICAL DETAILS-CONDUIT,  
ED(1)-00,  
CONDUIT MOUNTING OPTIONS.

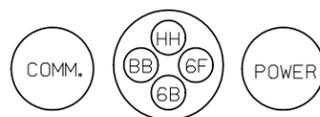
SECTION A - A

TYPICAL ATTACHMENT OF CONDUIT TO BRIDGE ABUTMENT

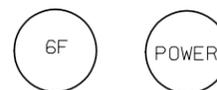
2-4" MULTIDUCT CONDUIT  
AND  
4-3" PVC CONDUIT



1-4" MULTIDUCT CONDUIT  
AND  
2-3" PVC CONDUIT



2-3" PVC CONDUITS



TYPICAL CONDUIT FILL DETAILS

LEGEND

- HH - SINGLEMODE HUB TO HUB FIBER
- BB - SINGLEMODE BACKBONE FIBER
- 6F - 6-STRAND SINGLEMODE FIBER
- 6B - #6 AWG BARE (FOR TRACE)
- COMM. - COMMUNICATIONS (COMM CABLE, TELEPHONE AND TWISTED PAIR)



The seal appearing on  
this document was  
authorized by  
Rajesh N. Gurnani,  
P.E. 86265, on

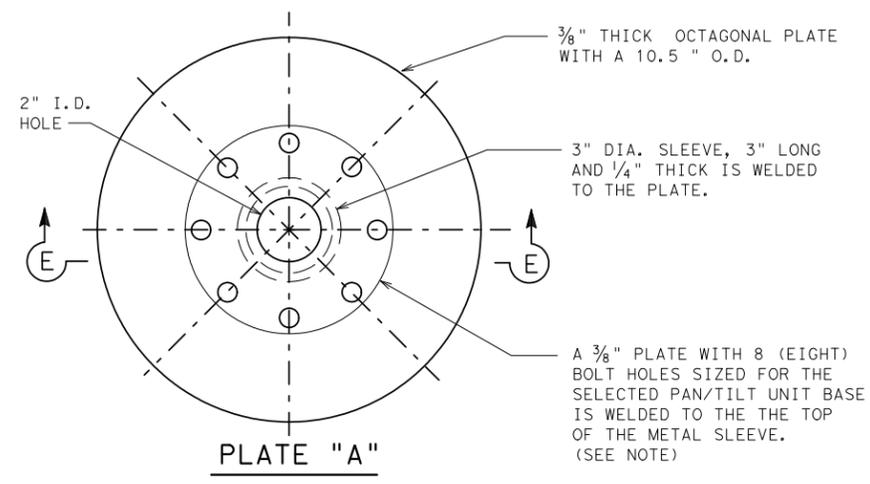
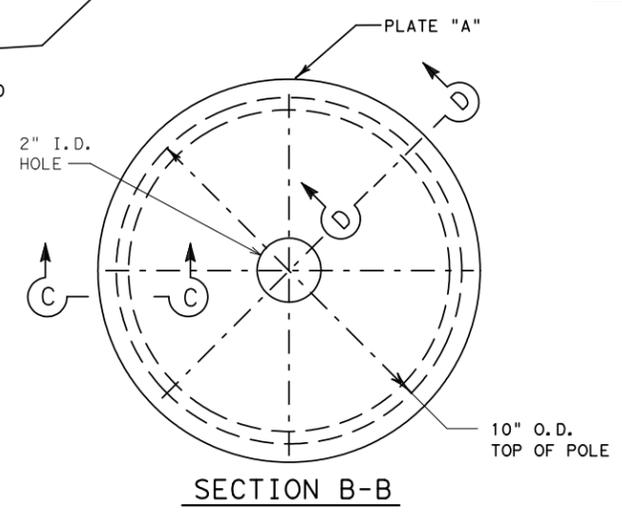
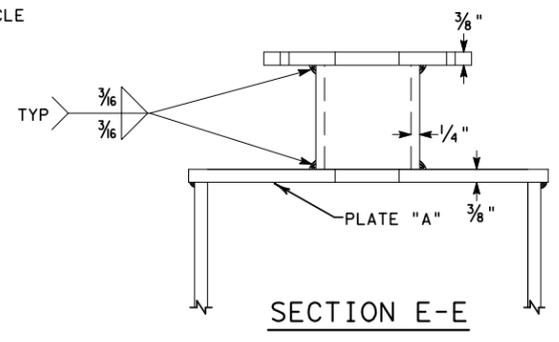
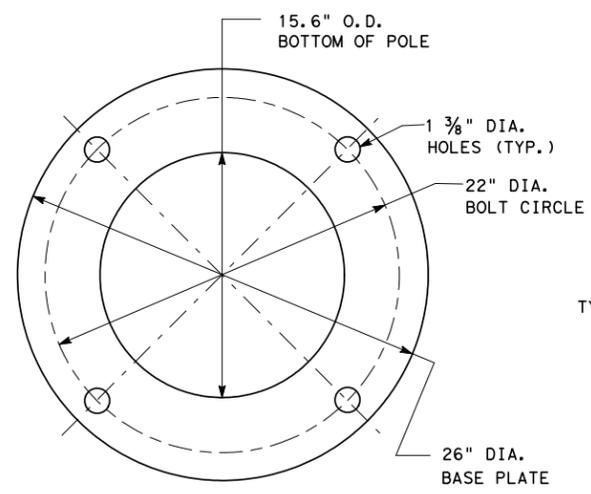
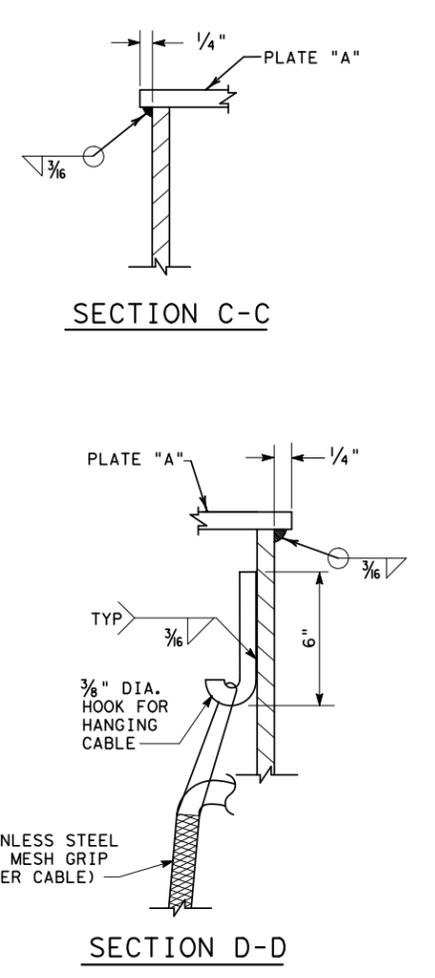
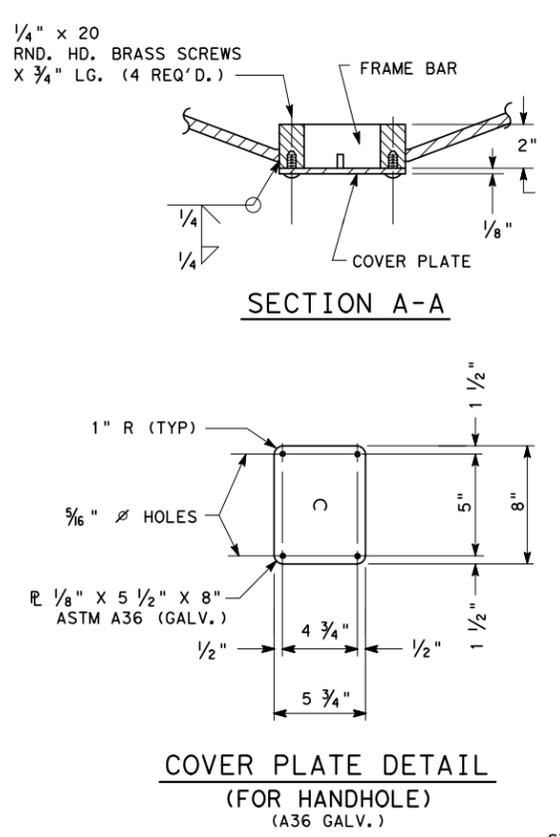
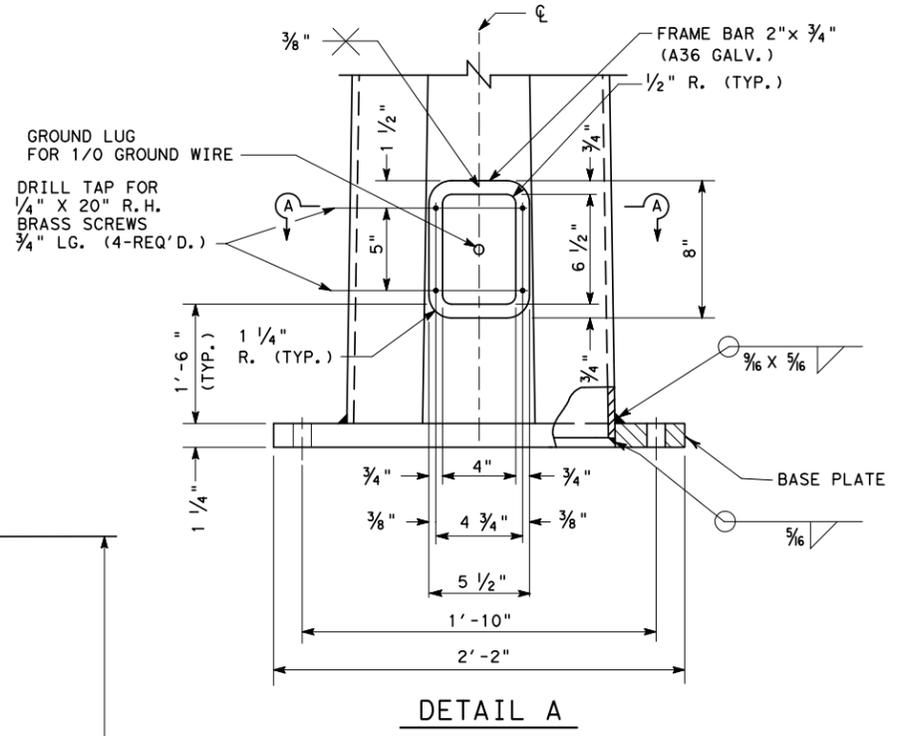
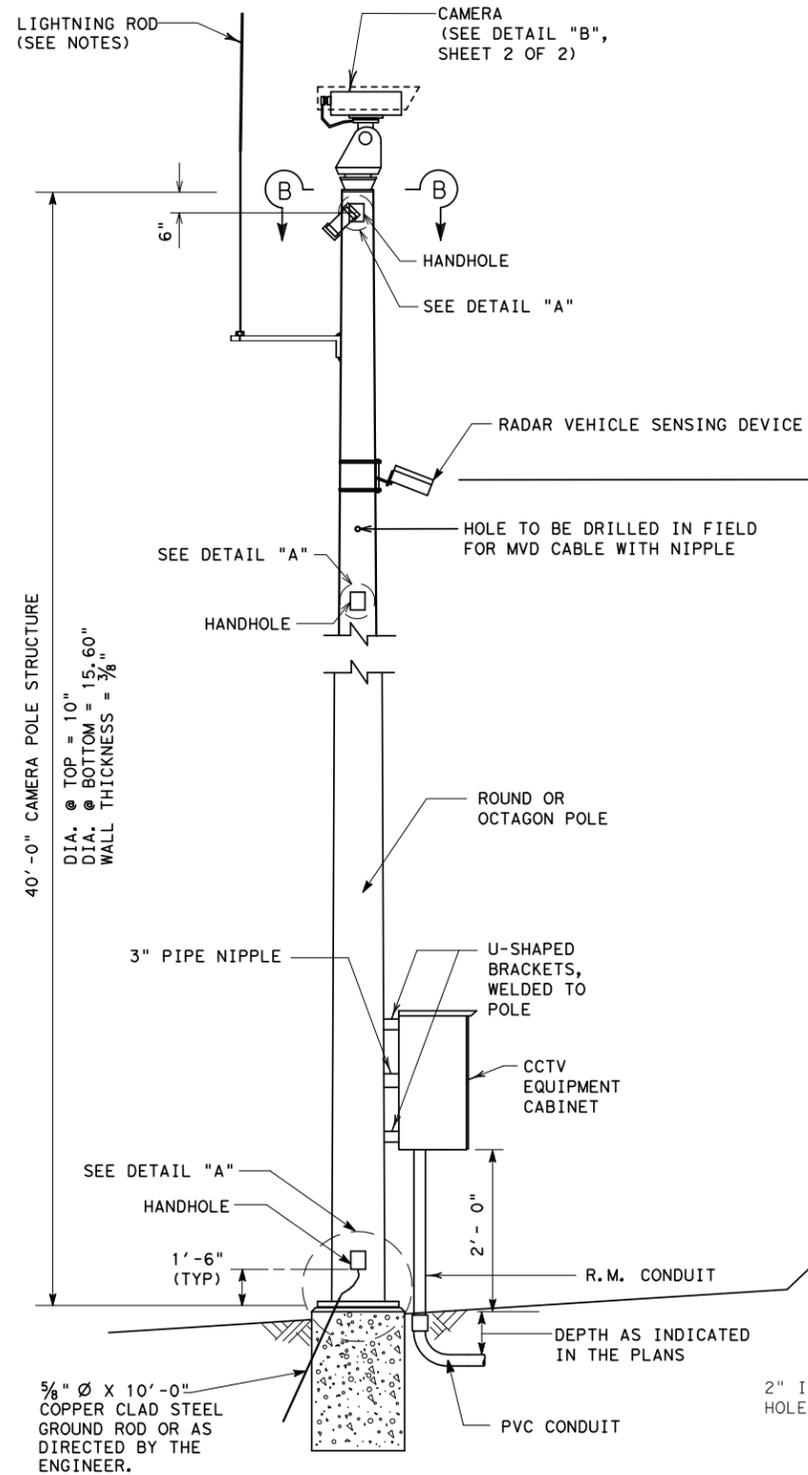
\_\_\_\_\_, P.E.  
Signature of Registrant & Date



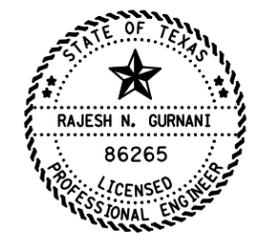
"ITS" MISCELLANEOUS  
DETAILS SHEET

SHEET 1 OF 1

DESIGN DK/LMT	FED. RD. DIV. NO. 6	FEDERAL AID PROJECT NO. CM ( )		HIGHWAY NO. IH 35E
GRAPHICS DK	STATE TEXAS	DISTRICT DALLAS	COUNTY DALLAS	SHEET NO. 113
CHECK RNG	CONTROL 0442	SECTION 02	JOB 143	
CHECK				



NOTE: SEE "ITS" PLAN SHEETS FOR NUMBER, TYPE AND SIZE OF CONDUIT.  
 THE CONTRACTOR SHALL PERFORM A SITE SURVEY TO DETERMINE WHICH SIDE OF THE CAMERA POLE, THE CCTV EQUIPMENT CABINET, AND THE LIGHTNING ROD SUPPORT BAR SHALL BE MOUNTED.  
 THE CAMERA POLE SHALL BE MOUNTED SO THAT THE CCTV EQUIPMENT CABINET SHALL FACE THE HIGH SIDE OF THE GROUND SLOPE.  
 THE LIGHTNING ROD SUPPORT BAR SHALL BE MOUNTED ON THE SIDE OF THE POLE, AWAY FROM TRAFFIC.



The seal appearing on this document was authorized by Rajesh N. Gurnani, P.E. 86265, on

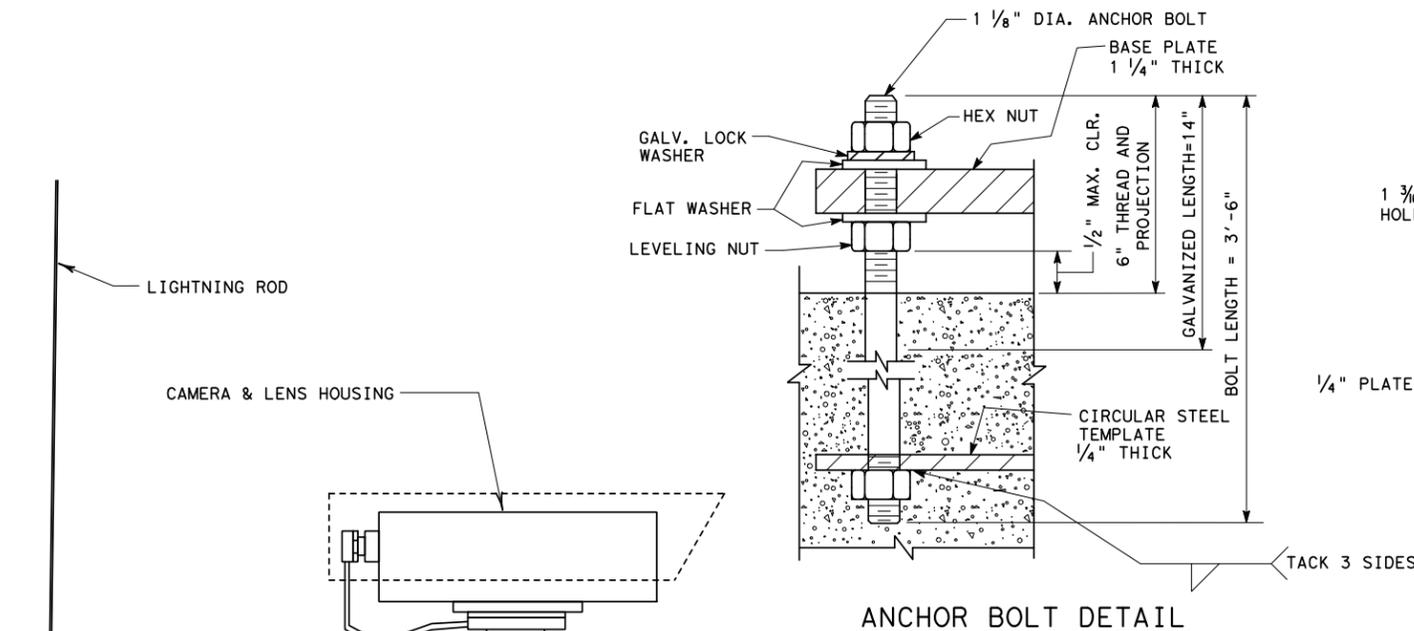
Signature of Registrant & Date

Texas Department of Transportation © 2008

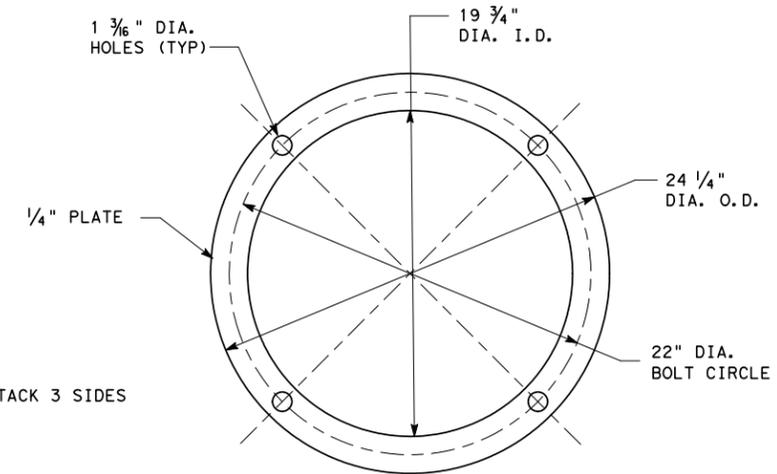
### CCTV CAMERA AND RVSD INSTALLATION DETAILS

SHEET 1 OF 2

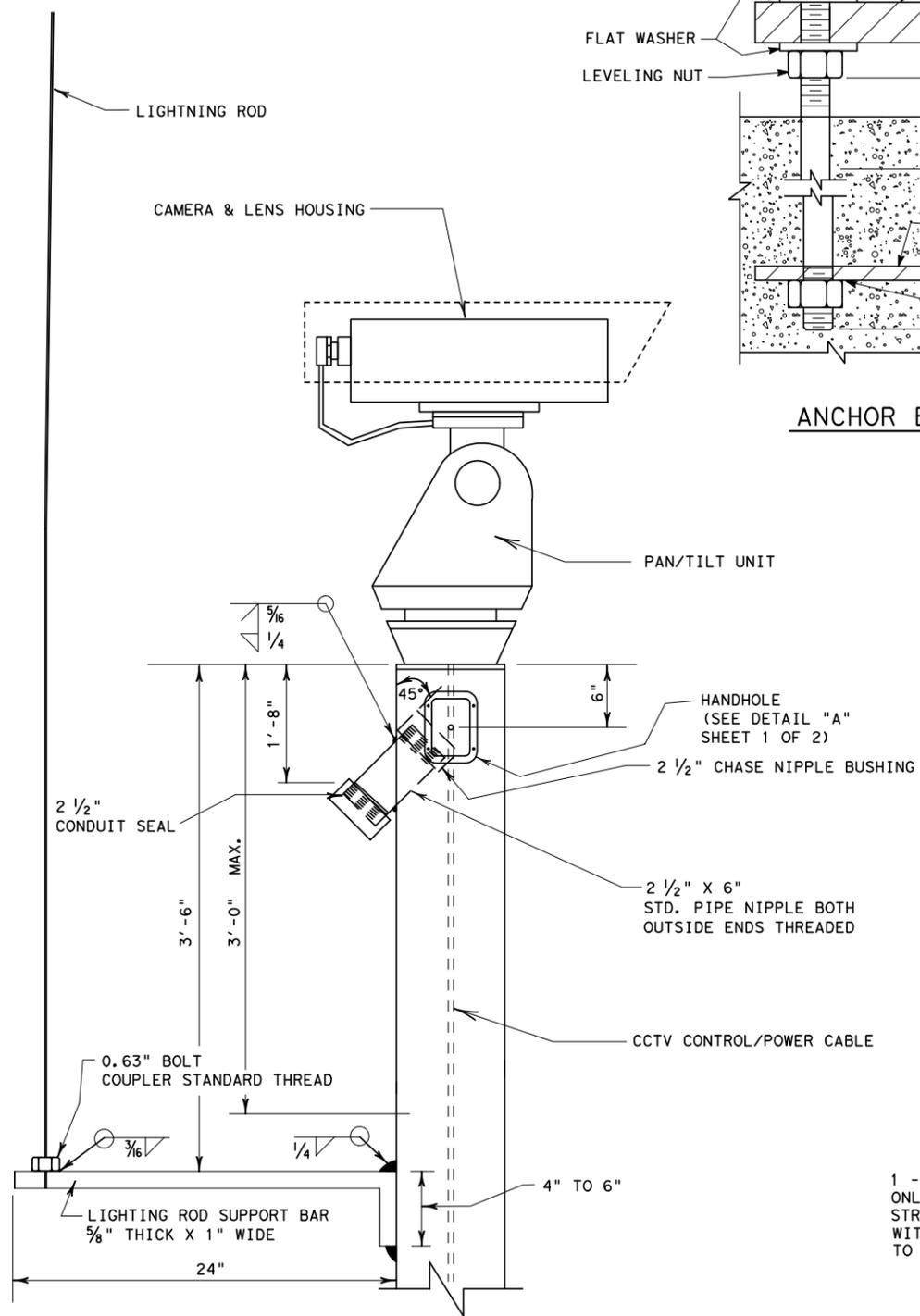
DESIGN	FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
DK/LMT	6	CM	( )	IH 35E
GRAPHICS	STATE	DISTRICT	COUNTY	SHEET NO.
DK	TEXAS	DALLAS	DALLAS	102
CHECK	CONTROL	SECTION	JOB	
RNG	0442	02	143	
CHECK				



**ANCHOR BOLT DETAIL**

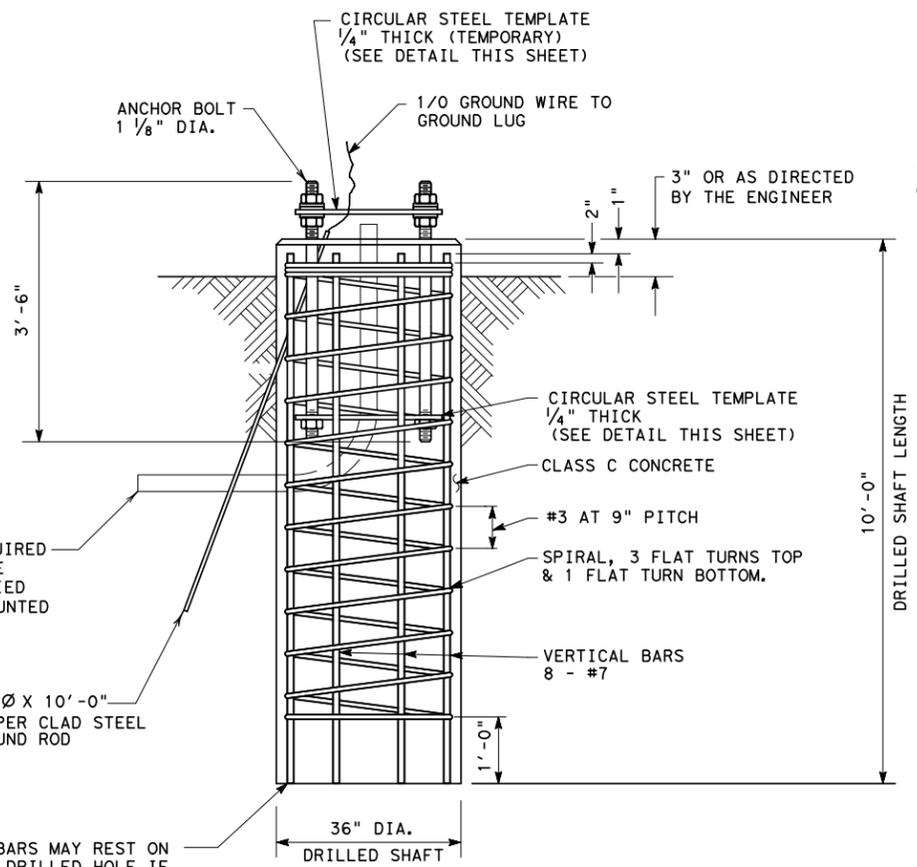


**TOP AND BOTTOM CIRCULAR STEEL TEMPLATE**



**DETAIL B TYPICAL**

THE 2 1/2" STD. PIPE NIPPLE AND LIGHTNING ROD SUPPORT BAR SHALL BE MOUNTED PLUS OR MINUS 1 DEGREE HORIZONTAL DEFLECTION ON THE SAME SIDE OF THE POLE.



**FOUNDATION DETAILS ELEVATION**

VERTICAL BARS MAY REST ON BOTTOM OF DRILLED HOLE IF MATERIAL IS FIRM ENOUGH TO DO SO WHEN CONCRETE IS PLACED.

1 - 3" CONDUIT REQUIRED ONLY IF CAMERA POLE STRUCTURE IS SUPPLIED WITHOUT CABINET MOUNTED TO POLE.

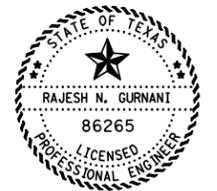
**NOTES:**

DESIGN CONFORMS TO 1975 AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS. DESIGN WIND SPEED EQUALS 80 MPH PLUS A 1.3 GUST FACTOR.  
 STRUCTURAL STEEL FOR THE POLE SHALL CONFORM TO ASTM A595 GR A OR ASTM 570 GR50 OR ASTM A607 GR50 OR ASTM A572 GR50 OR A36M50.  
 STRUCTURAL STEEL FOR PLATES SHALL CONFORM TO ASTM A36 OR A572 GR50 OR A595 GR A OR A36M50.  
 FABRICATION AND WELDING OF STRUCTURES SHALL BE IN ACCORDANCE WITH ITEM "STEEL STRUCTURES". THE FABRICATOR SHALL SUBMIT PROPOSED WELDING PROCEDURES WITH THE SHOP DRAWINGS. THE SHOP DRAWINGS, WHEN SUBMITTED, SHALL INCLUDE THE WELDING PROCEDURE NUMBER ASSIGNED BY THE DIVISION OF MATERIALS AND TEST OF THE TEXAS DEPARTMENT OF TRANSPORTATION. THIS WELDING PROCEDURE NUMBER SHALL BE PLACED ADJACENT TO THE APPROPRIATE WELDING SYMBOL.  
 ANCHOR BOLTS SHALL CONFORM TO A-193 B7. NUTS FOR ANCHOR BOLTS SHALL BE HEAVY HEX AND CONFORM TO ASTM A-194 GR 2H. THE TOP 14 INCHES OF THE ANCHOR BOLT AND NUTS AND WASHERS SHALL BE GALVANIZED. UNLESS OTHERWISE NOTED, ALL PARTS SHALL BE GALVANIZED IN ACCORDANCE WITH THE SPECIFICATIONS.  
 REINFORCING STEEL SHALL CONFORM TO ITEM 440. ALL REINFORCING STEEL SHALL BE MINIMUM GRADE 60. CONCRETE SHALL BE CLASS C.  
 THE CONTRACTOR SHALL FIELD VERIFY ALL ANCHOR BOLT MEASUREMENTS PRIOR TO FABRICATION OF BASE PLATES. THE CONTRACTOR SHALL CLEAN ALL ABRASIONS AND FIELD WELDS WITH A WIRE BRUSH AND SHALL APPLY TWO COATS OF ZINC RICH PAINT TO THE UNGALVANIZED AREAS OF THE STRUCTURE. THE CONTRACTOR SHALL HANG ALL CABLING INSIDE CAMERA POLE STRUCTURE WITH STAINLESS STEEL WIRE MESH GRIPS.  
 BOLT POSITIONING IN THE TOP PLATE FOR THE PAN/TILT BASE WILL BE DETERMINED IN THE FIELD. THE 8 (EIGHT) BOLT HOLES REQUIRED WILL ALLOW POSITIONING OF THE LIMIT SWITCH SO THAT THE CAMERA BLIND ZONE IS PROPERLY LOCATED. THE ENGINEER WILL DETERMINE THE CAMERA'S BLIND ZONE AT EACH LOCATION.

- A LIGHTNING ROD SHALL BE PROVIDED ON THE POLE AND SHALL MEET THE FOLLOWING REQUIREMENTS.
- A. POSITION - IN CENTER OF LEAST UTILIZED FIELD OF VIEW.
- B. HEIGHT - CAMERA EQUIPMENT TO BE WITHIN 30 DEGREE PROTECTIVE ZONE TERMINAL.
- C. CONDUCTIVITY - EQUIVALENT TO #6 AWG COPPER CONDUCTOR.
- D. CLEARANCE - 24" TO CLOSEST CAMERA APPROACH.
- E. BONDING - POLE-LIGHTNING ROD TO BE WELDED OR EQUIVALENT CLAMPING.
- F. CONFIGURATION - MAXIMUM RADIUS BENDS TO BE EMPLOYED.
- G. STRUCTURE - WITHSTAND ENVIRONMENT WITHOUT VIBRATION.

THE CONTRACTOR SHALL FURNISH ALL MATERIALS NECESSARY TO INSTALL THE CCTV CAMERA POLE. SUCH WORK SHALL BE PAID FOR UNDER THE ITEM "CAMERA POLE STRUCTURE WITH CABINET."

THE CAMERA POLE SHALL BE FABRICATED AS EITHER A ROUND OR OCTAGONAL TUBE.



The seal appearing on this document was authorized by Rajesh N. Gurnani, P.E. 86265, on

Signature of Registrant & Date



**CCTV CAMERA AND RVSD INSTALLATION DETAILS**

SHEET 2 OF 2

DESIGN	FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
DK/LMT	6	CM	( )	IH 35E
GRAPHICS	STATE	DISTRICT	COUNTY	SHEET NO.
DK	TEXAS	DALLAS	DALLAS	103
CHECK	RNG	CONTROL	SECTION	JOB
CHECK	0442	02	143	

**NOTES:**

DESIGN CONFORMS TO 1975 AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS. DESIGN WIND SPEED EQUALS 80 MPH PLUS A 1.3 GUST FACTOR.

STRUCTURAL STEEL FOR THE POLE SHALL CONFORM TO ASTM A595 GR A OR ASTM 570 GR50 OR ASTM A607 GR50 OR ASTM A572 GR50 OR A36M50.

STRUCTURAL STEEL FOR PLATES SHALL CONFORM TO ASTM A36 OR A572 GR50 OR A595 GR A OR A36M5D.

FABRICATION AND WELDING OF STRUCTURES SHALL BE IN ACCORDANCE WITH ITEM "STEEL STRUCTURES". THE FABRICATOR SHALL SUBMIT PROPOSED WELDING PROCEDURES WITH THE SHOP DRAWINGS. THE SHOP DRAWINGS, WHEN SUBMITTED, SHALL INCLUDE THE WELDING PROCEDURE NUMBER ASSIGNED BY THE DIVISION OF MATERIALS AND TEST OF THE TEXAS DEPARTMENT OF TRANSPORTATION. THIS WELDING PROCEDURE NUMBER SHALL BE PLACED ADJACENT TO THE APPROPRIATE WELDING SYMBOL.

ANCHOR BOLTS SHALL CONFORM TO A-193 B7. NUTS FOR ANCHOR BOLTS SHALL BE HEAVY HEX AND CONFORM TO ASTM A-194 GR 2H. THE TOP 14 INCHES OF THE ANCHOR BOLT AND NUTS AND WASHERS SHALL BE GALVANIZED. UNLESS OTHERWISE NOTED, ALL PARTS SHALL BE GALVANIZED IN ACCORDANCE WITH THE SPECIFICATIONS. REINFORCING STEEL SHALL CONFORM TO ITEM 440. ALL REINFORCING STEEL SHALL BE MINIMUM GRADE 60. CONCRETE SHALL BE CLASS C.

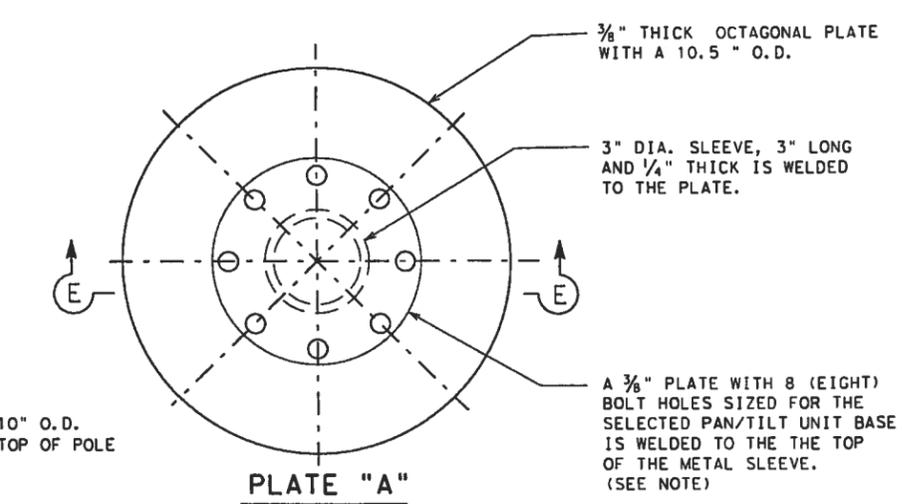
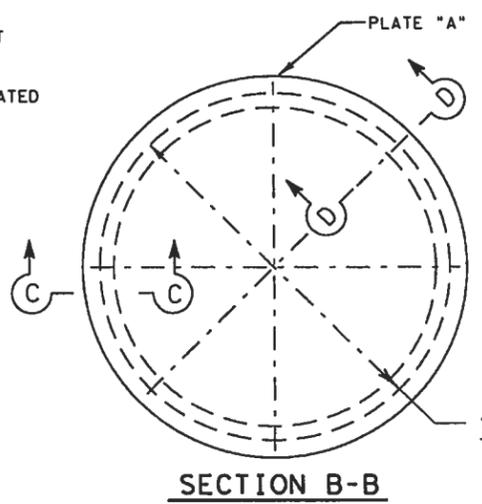
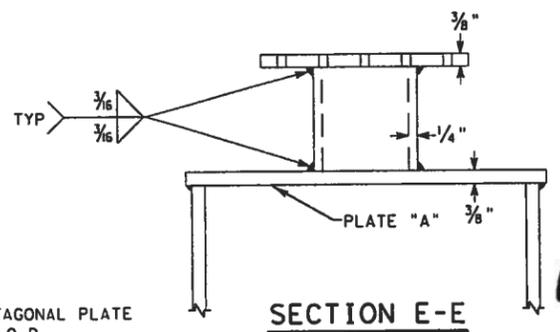
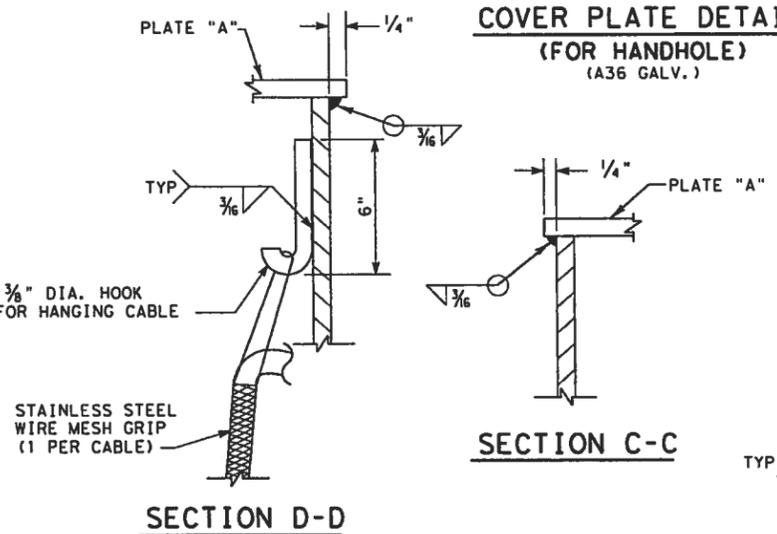
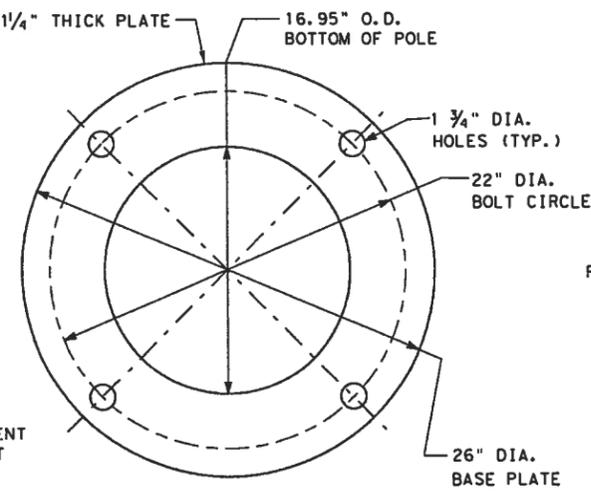
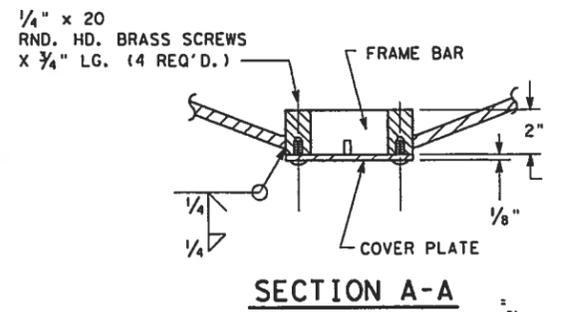
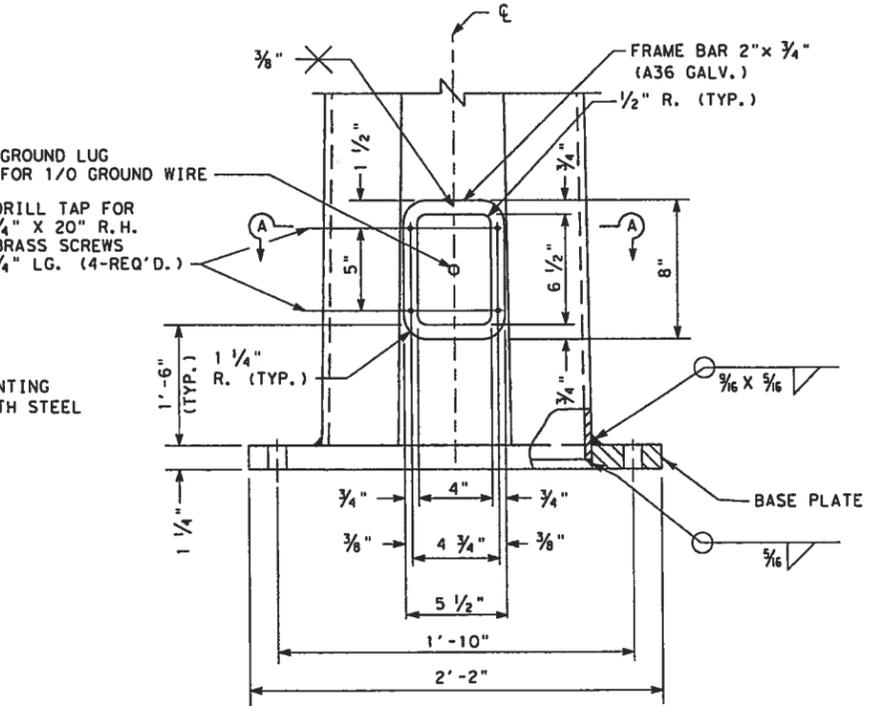
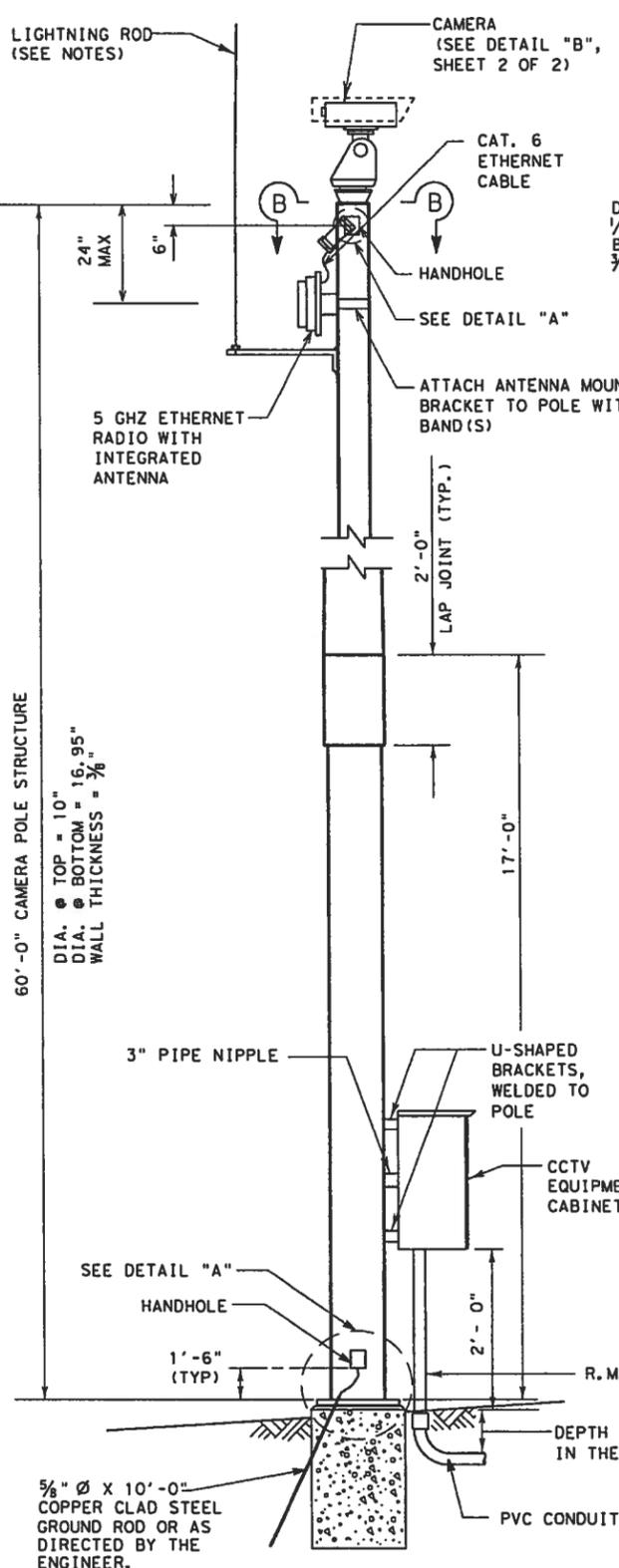
THE CONTRACTOR SHALL FIELD VERIFY ALL ANCHOR BOLT MEASUREMENTS PRIOR TO FABRICATION OF BASE PLATES. THE CONTRACTOR SHALL CLEAN ALL ABRASIONS AND FIELD WELDS WITH A WIRE BRUSH AND SHALL APPLY TWO COATS OF ZINC RICH PAINT TO THE UNGALVANIZED AREAS OF THE STRUCTURE. THE CONTRACTOR SHALL HANG ALL CABLING INSIDE CAMERA POLE STRUCTURE WITH STAINLESS STEEL WIRE MESH GRIPS.

A LIGHTNING ROD SHALL BE PROVIDED ON THE POLE AND SHALL MEET THE FOLLOWING REQUIREMENTS.

A. POSITION - IN CENTER OF LEAST UTILIZED FIELD OF VIEW.  
 B. HEIGHT - CAMERA EQUIPMENT TO BE WITHIN 30 DEGREE PROTECTIVE ZONE TERMINAL.  
 C. CONDUCTIVITY - EQUIVALENT TO #6 AWG COPPER CONDUCTOR.  
 D. CLEARANCE - 24" TO CLOSEST CAMERA APPROACH.  
 E. BONDING - POLE-LIGHTNING ROD TO BE WELDED OR EQUIVALENT CLAMPING.  
 F. CONFIGURATION - MAXIMUM RADIUS BENDS TO BE EMPLOYED.  
 G. STRUCTURE - WITHSTAND ENVIRONMENT WITHOUT VIBRATION.

THE CONTRACTOR SHALL FURNISH ALL MATERIALS NECESSARY TO INSTALL THE CCTV CAMERA POLE. SUCH WORK SHALL BE PAID FOR UNDER THE ITEM "CAMERA POLE STRUCTURE WITH CABINET."

THE CAMERA POLE SHALL BE FABRICATED AS EITHER A ROUND OR OCTAGONAL TUBE.



**NOTE:** SEE "ITS" PLAN SHEETS FOR NUMBER, TYPE AND SIZE OF CONDUIT.

THE CONTRACTOR SHALL PERFORM A SITE SURVEY TO DETERMINE WHICH SIDE OF THE CAMERA POLE, THE CCTV EQUIPMENT CABINET, AND THE LIGHTNING ROD SUPPORT BAR SHALL BE MOUNTED.

THE CAMERA POLE SHALL BE MOUNTED SO THAT THE CCTV EQUIPMENT CABINET SHALL FACE THE HIGH SIDE OF THE GROUND SLOPE.

THE LIGHTNING ROD SUPPORT BAR SHALL BE MOUNTED ON THE SIDE OF THE POLE, AWAY FROM TRAFFIC.

1/13/12

STATE OF TEXAS  
 REGISTERED PROFESSIONAL ENGINEER  
 ALAN P. MCNEIL  
 69951

*Alan P. McNeil*

<b>Texas Department of Transportation</b> © 2012				
<b>60 FT. CCTV CAMERA POLE INSTALLATION DETAILS</b>				
SHEET 1 OF 2				
DESIGN DK	FED. RD. DIV. NO. 6	FEDERAL AID PROJECT NO. (SEE TITLE SHEET)		HIGHWAY NO. IH 4
GRAPHICS DK	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK RAC	TEXAS	DALLAS	DALLAS	51
CHECK APM	CONTROL	SECTION	JOB	
	0092	14	079	

**TYPICAL CAMERA POLE ELEVATION**

**SECTION B-B**

**PLATE "A"**

**SECTION C-C**

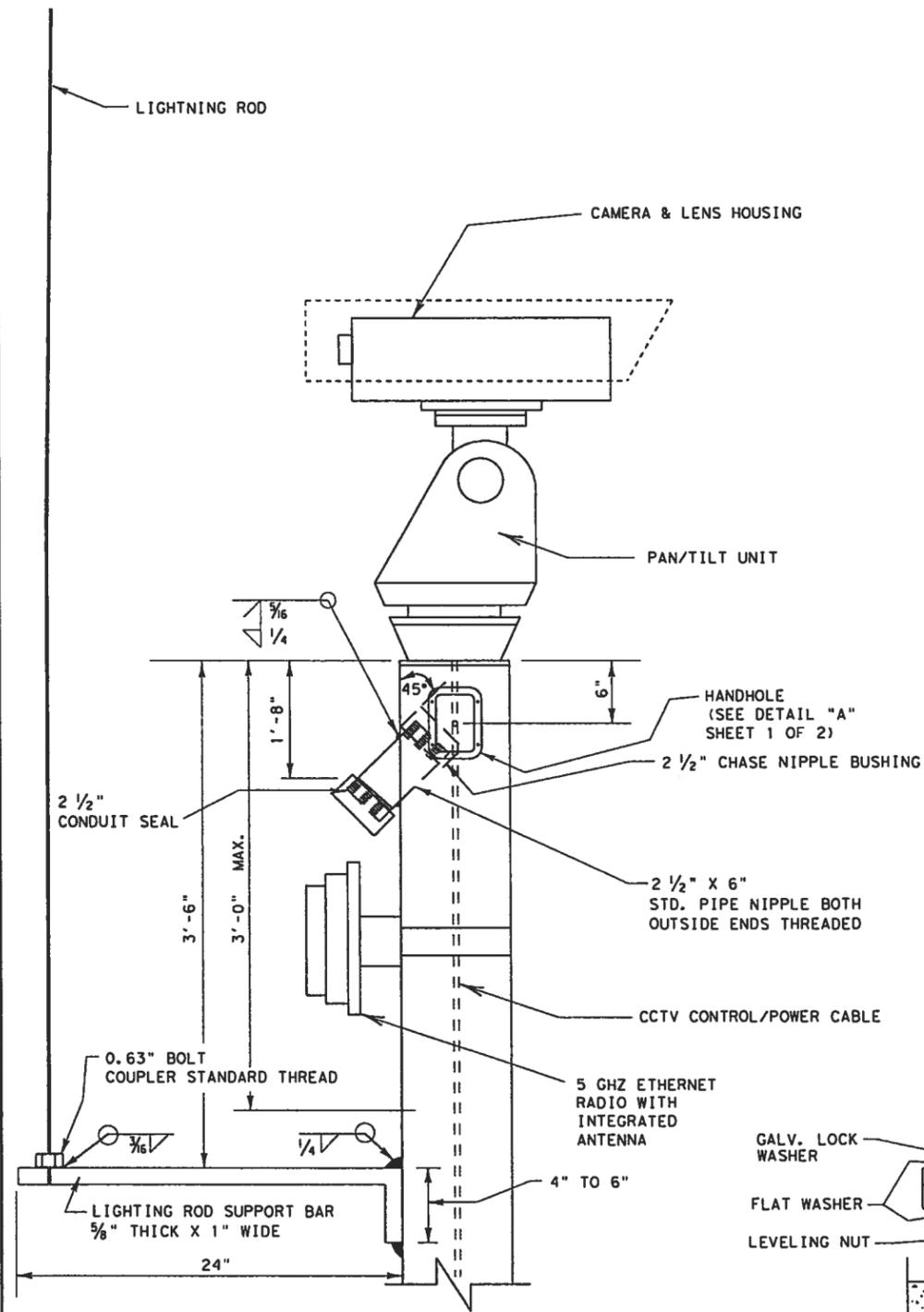
**SECTION D-D**

**BASE PLATE PLAN**

**COVER PLATE DETAIL (FOR HANDHOLE) (A36 GALV.)**

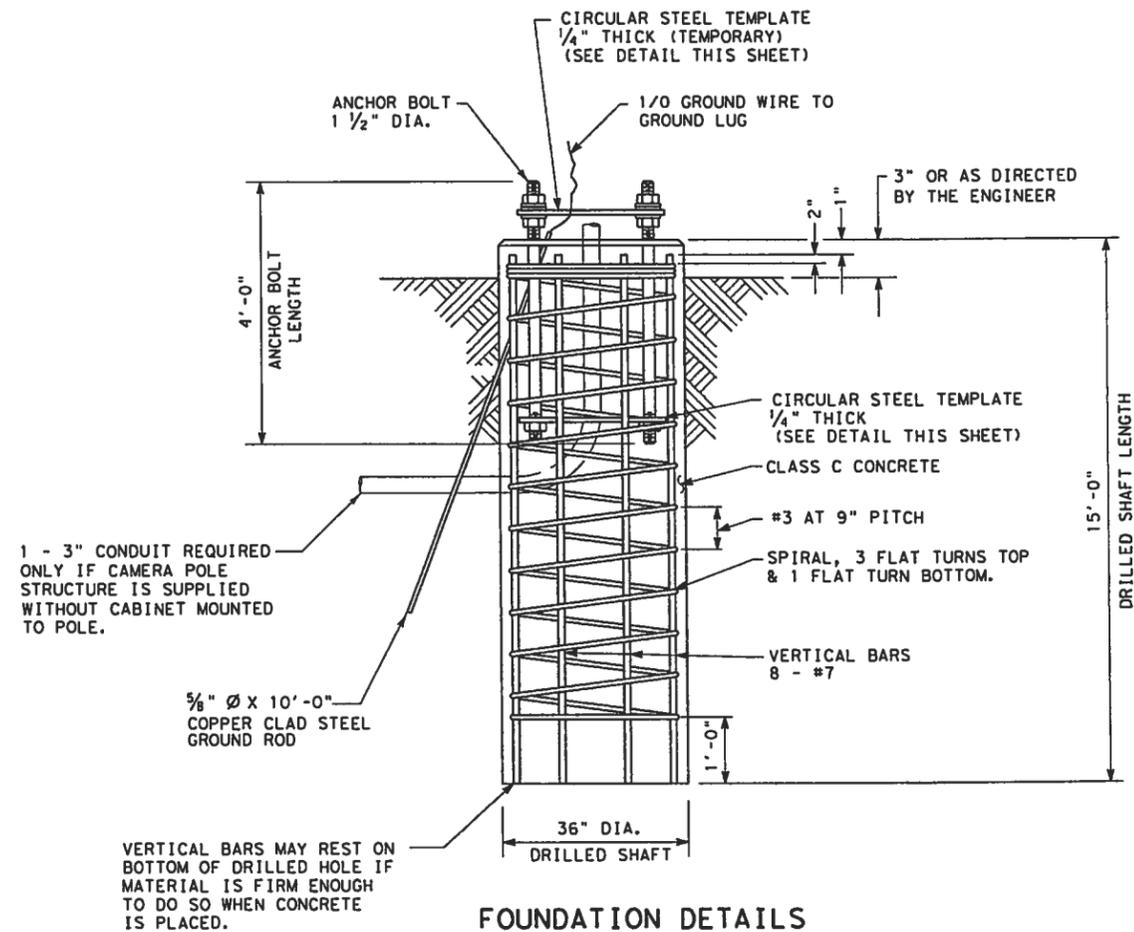
**DETAIL "A"**

**SECTION A-A**

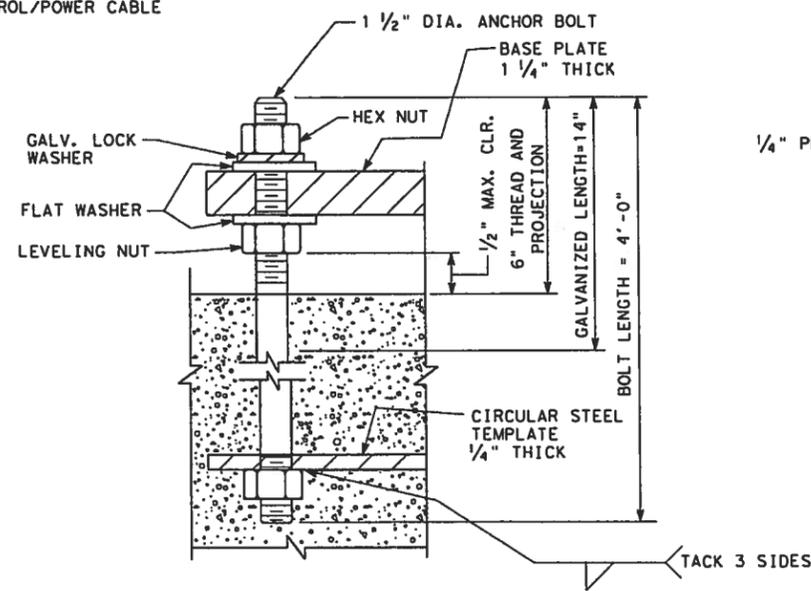


THE 2 1/2" STD. PIPE NIPPLE AND LIGHTNING ROD SUPPORT BAR SHALL BE MOUNTED PLUS OR MINUS 1 DEGREE HORIZONTAL DEFLECTION ON THE SAME SIDE OF THE POLE.

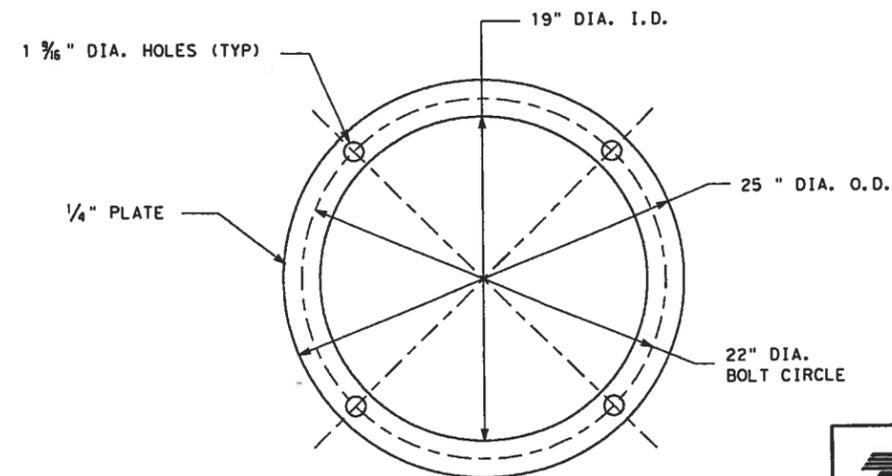
**DETAIL B  
TYPICAL**



**FOUNDATION DETAILS  
ELEVATION**



**ANCHOR BOLT DETAIL**



**TOP AND BOTTOM  
CIRCULAR STEEL TEMPLATE**



*Alan P. McNeil*

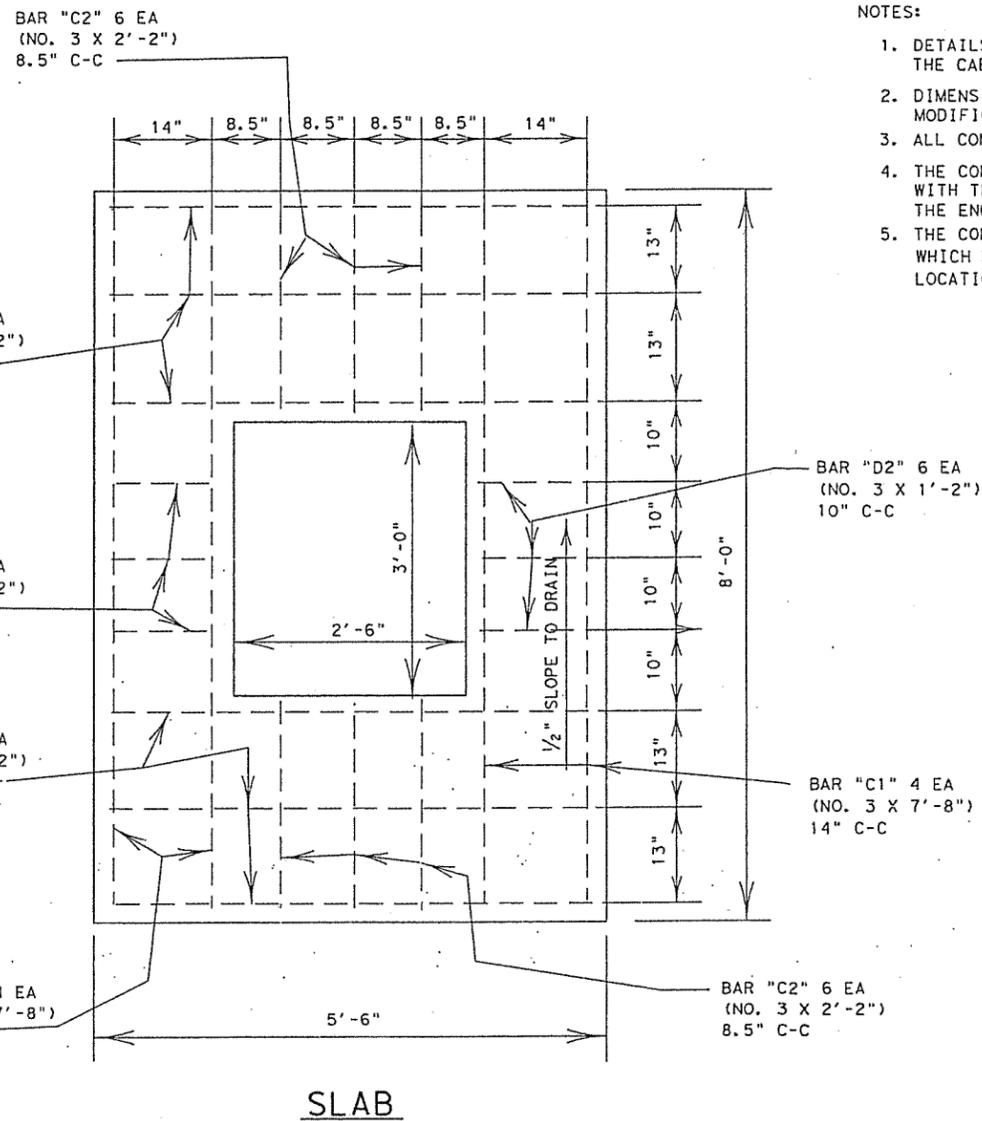
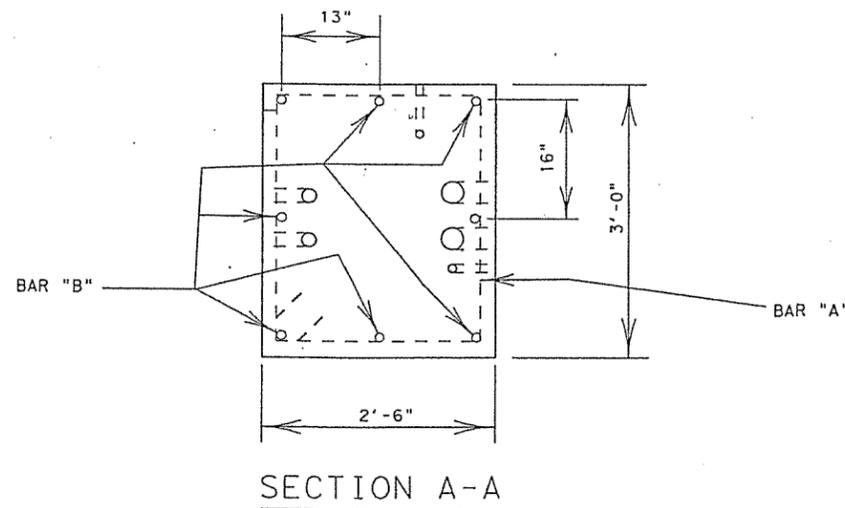
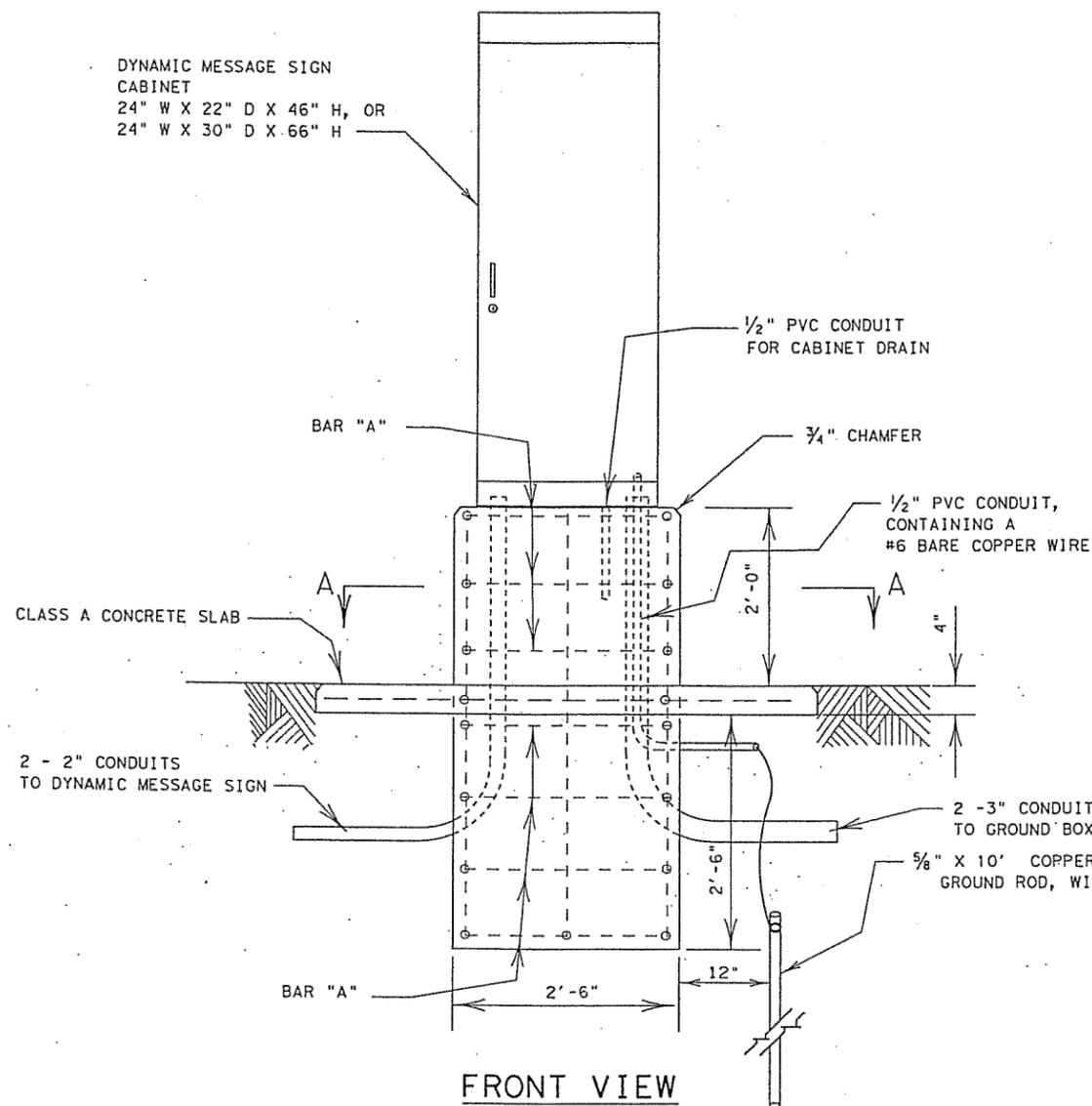
**Texas Department of Transportation**  
© 2012

**60 FT. CCTV CAMERA POLE  
INSTALLATION DETAILS**

SHEET 2 OF 2

DESIGN	FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
DK GRAPHICS	6	(SEE TITLE SHEET)		IH 4
CHECK	STATE	DISTRICT	COUNTY	SHEET NO.
RAC	TEXAS	DALLAS	DALLAS	52
CHECK	CONTROL	SECTION	JOB	
APM	0092	14	079	

DYNAMIC MESSAGE SIGN  
CABINET  
24" W X 22" D X 46" H, OR  
24" W X 30" D X 66" H



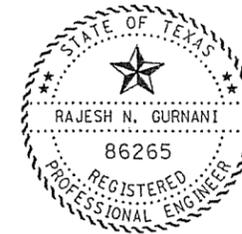
NOTES:

1. DETAILS OF ANCHOR BOLT PATTERN TO BE FURNISHED BY THE CABINET MANUFACTURER.
2. DIMENSIONS SHOWN FOR CONCRETE BASE WILL BE SUBJECT TO MODIFICATION TO FIT REQUIRED CABINET TYPE.
3. ALL CONCRETE WILL BE CLASS "A".
4. THE CONTRACTOR IS TO SET THE CABINET FOUNDATION LEVEL WITH THE GROUND SURFACE, OR AS APPROVED BY THE ENGINEER.
5. THE CONTRACTOR WILL FURNISH ANY ADDITIONAL CONCRETE WHICH MAY BE NECESSARY TO STABILIZE FOUNDATION AT UNUSUAL LOCATIONS.

BAR	NO.	BARS	SIZE	LENGTH	SPACING
A	7		NO. 5	10'-8"	9" C-C
B	8		NO. 5	4'-6"	VARIES
C1	4		NO. 3	7'-8"	14" C-C
C2	6		NO. 3	2'-2"	8.5" C-C
D1	6		NO. 3	5'-2"	13" C-C
D2	6		NO. 3	1'-2"	10" C-C

PROVIDE 2" MIN. COVER FOR TOP OR SIDES

NOT TO SCALE



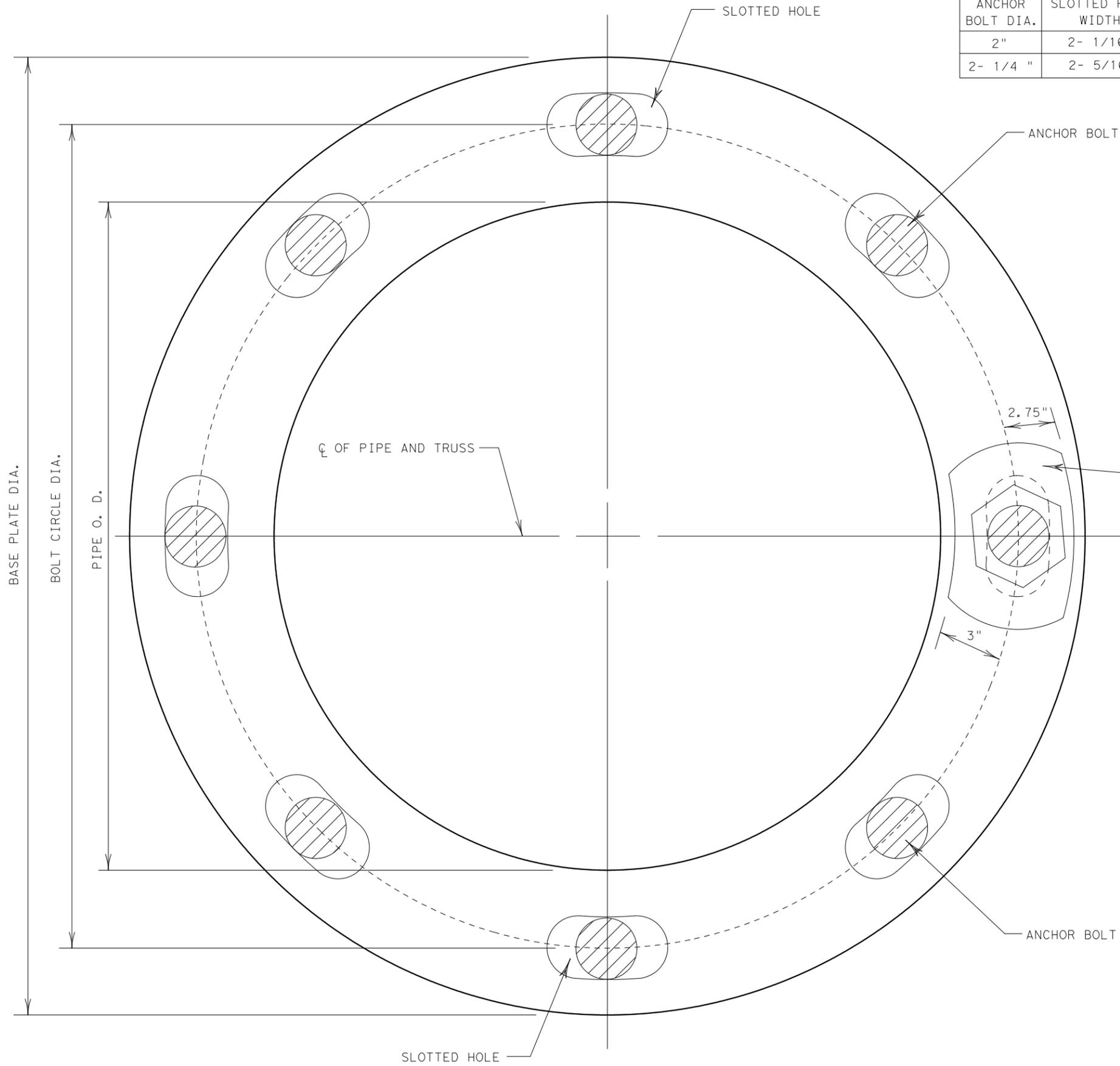
The seal appearing on this document was authorized by Rajesh N. Gurnani P.E. 86265, on

*Rajesh N. Gurnani* P.E. 05/01/07  
Signature of Registrant & Date

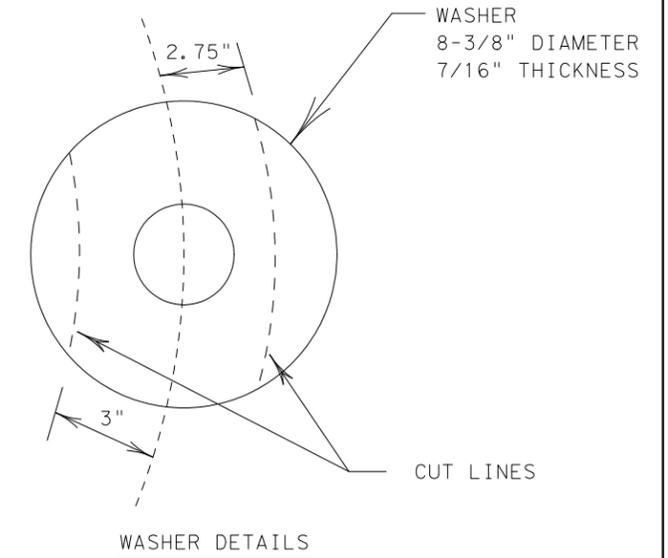
Texas Department of Transportation  
© 2007

### DYNAMIC MESSAGE SIGN CABINET FOUNDATION DETAIL SHEET

DESIGN MF	FED. RD. DIV. NO. 6	FEDERAL AID PROJECT NO. CM 2007 (520)	HIGHWAY NO. LOOP 12
GRAPHICS MF	STATE TEXAS	DISTRICT DALLAS	COUNTY DALLAS
CHECK	CONTROL	SECTION	JOB 138A
	0581	02	114



ANCHOR BOLT DIA.	SLOTTED HOLE WIDTH	SLOTTED HOLE LENGTH
2"	2- 1/16 "	5-7/16"
2- 1/4 "	2- 5/16 "	5-7/16"



EACH WASHER SHALL BE CONSTRUCTED OF A SINGLE PIECE OF THE SAME STRUCTURAL GRADE MATERIAL AS THE BASE PLATE. WASHER SHALL BE PLACED ON THE TOP AND BOTTOM OF THE BASE PLATE ON EACH ANCHOR BOLT.

NOTES:  
 WASHER SHALL COVER THE SLOTTED HOLE AT ALL TIMES, NO MATTER THE POSITION OF THE TOWER PIPE.  
 THE SLOTTED HOLES SHOULD BE CONCENTRIC TO THE BOLT CIRCLE.  
 THE ROTATION ALLOWED WILL BE ABOUT 3 DEGREES EACH WAY FROM SLOT CENTER.



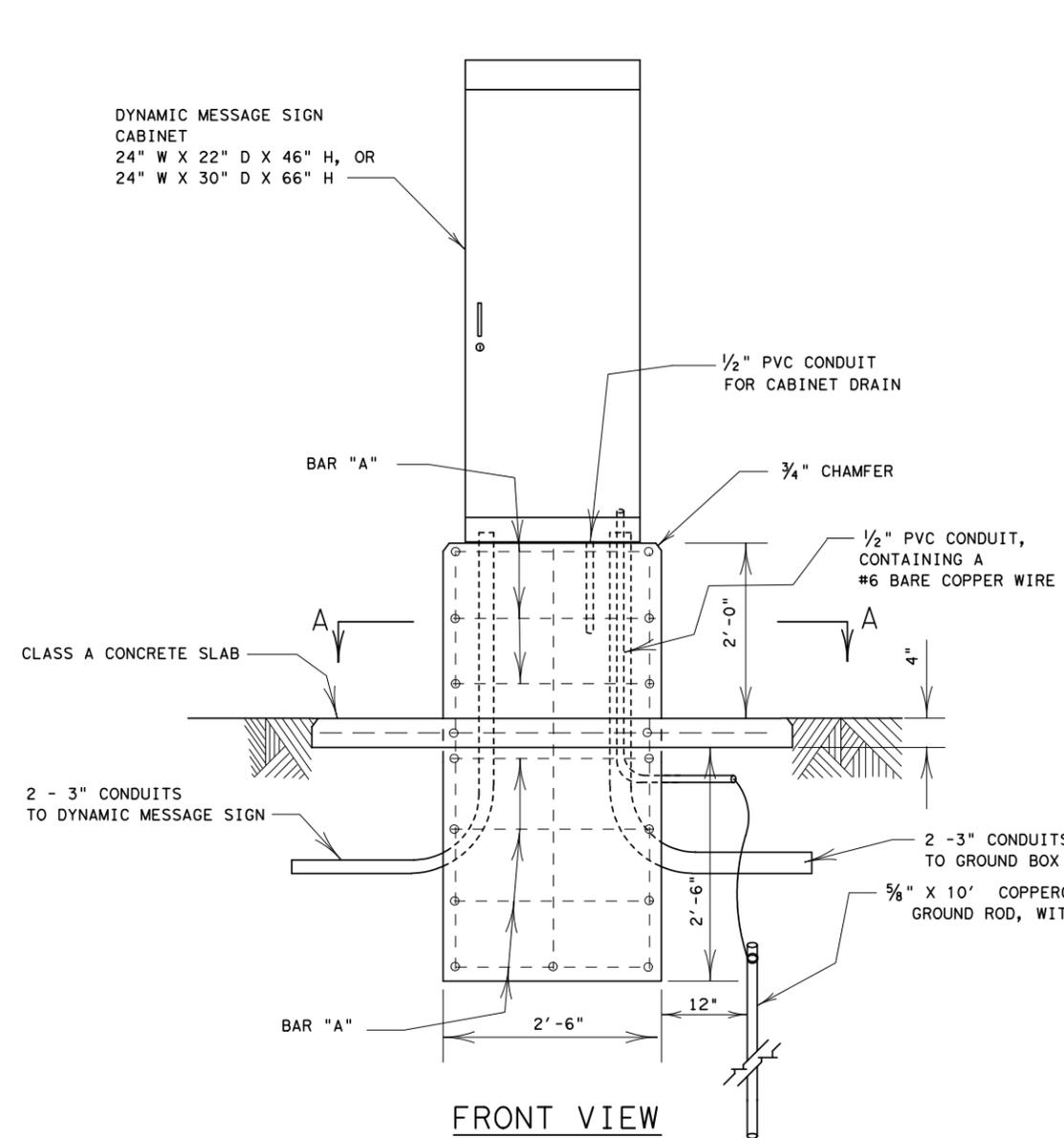
The seal appearing on this document was authorized by Rajesh N. Gurnani, P.E. 86265, on

Signature of Registrant, P.E. & Date

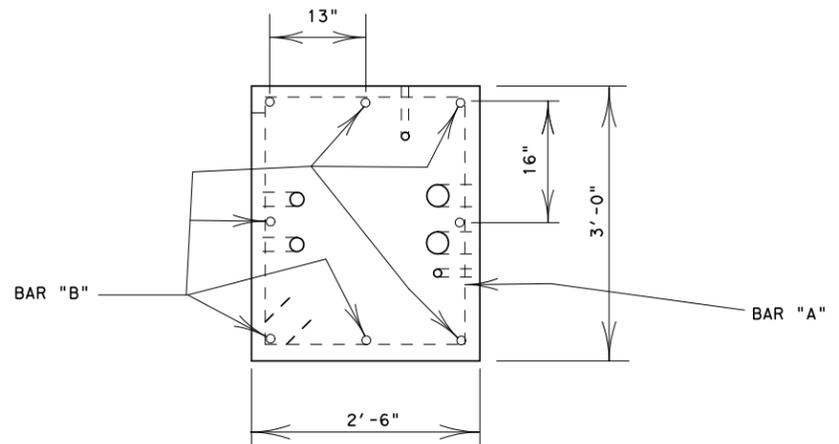


### BASE PLATE SLOTTED HOLE AND BOLT DIAGRAM

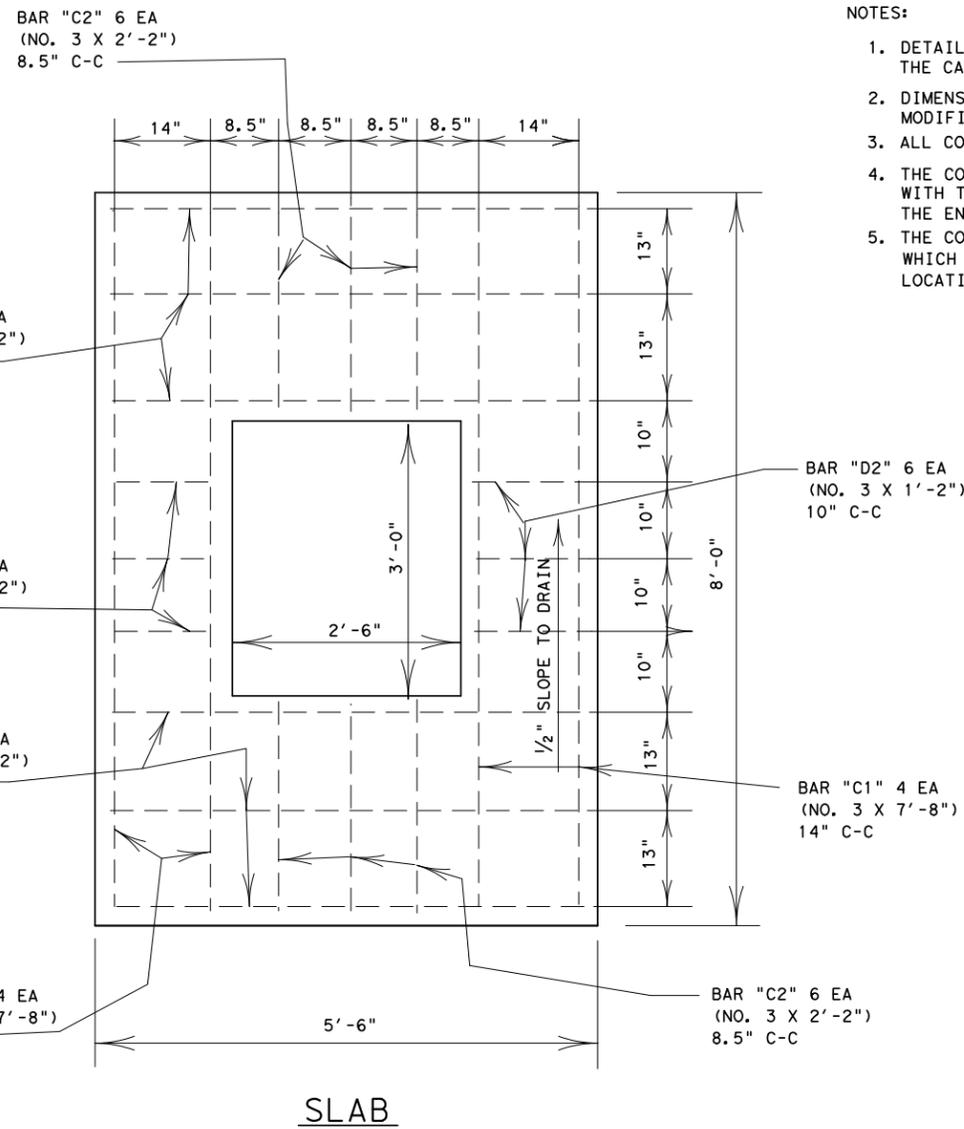
DESIGN	FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
DK/LMT	6	CM	( )	IH 35E
DK	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DALLAS	DALLAS	100
RNG	CONTROL	SECTION	JOB	
CHECK	0442	02	143	



FRONT VIEW



SECTION A-A



SLAB

NOTES:

1. DETAILS OF ANCHOR BOLT PATTERN TO BE FURNISHED BY THE CABINET MANUFACTURER.
2. DIMENSIONS SHOWN FOR CONCRETE BASE WILL BE SUBJECT TO MODIFICATION TO FIT REQUIRED CABINET TYPE.
3. ALL CONCRETE WILL BE CLASS "A".
4. THE CONTRACTOR IS TO SET THE CABINET FOUNDATION LEVEL WITH THE GROUND SURFACE, OR AS APPROVED BY THE ENGINEER.
5. THE CONTRACTOR WILL FURNISH ANY ADDITIONAL CONCRETE WHICH MAY BE NECESSARY TO STABILIZE FOUNDATION AT UNUSUAL LOCATIONS.

BAR	NO. BARS	SIZE	LENGTH	SPACING
A	7	NO. 5	10'-8"	9" C-C
B	8	NO. 5	4'-6"	VARIES
C1	4	NO. 3	7'-8"	14" C-C
C2	6	NO. 3	2'-2"	8.5" C-C
D1	6	NO. 3	5'-2"	13" C-C
D2	6	NO. 3	1'-2"	10" C-C

PROVIDE 2" MIN. COVER FOR TOP OR SIDES

NOT TO SCALE



DYNAMIC MESSAGE SIGN  
CABINET  
FOUNDATION DETAIL SHEET



The seal appearing on this document was authorized by Rajesh N. Gurnani P.E. 86265, on

Signature of Registrant & Date

DESIGN	FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
DK/LMT	6	CM	( )	IH 35E
GRAPHICS	STATE	DISTRICT	COUNTY	SHEET NO.
DK	TEXAS	DALLAS	DALLAS	101
CHECK	RNG	CONTROL	SECTION	JOB
CHECK		0442	02	143

- NOTES
1. MATERIAL - 5052-H32, 0.1875" ALUMINUM.
  2. OUTER DIMENSIONS ARE ± 2"
  3. ALL DIMENSIONS ARE IN INCHES.
  4. ALL REQUIRED TEXT SHALL BE SILK SCREENED.
  5. SERVICE TO THE CABINET SHALL BE 120/240 VAC 3-WIRE SINGLE PHASE.

AT THE POWER PANEL, SERVICE SHALL BE SEPARATED INTO TWO (2) 120 VAC, 2-WIRE SINGLE PHASE LINES. EACH 120 VAC LINE SHALL BE PROTECTED BY A LINE FILTER AND LIGHTNING ARRESTOR.

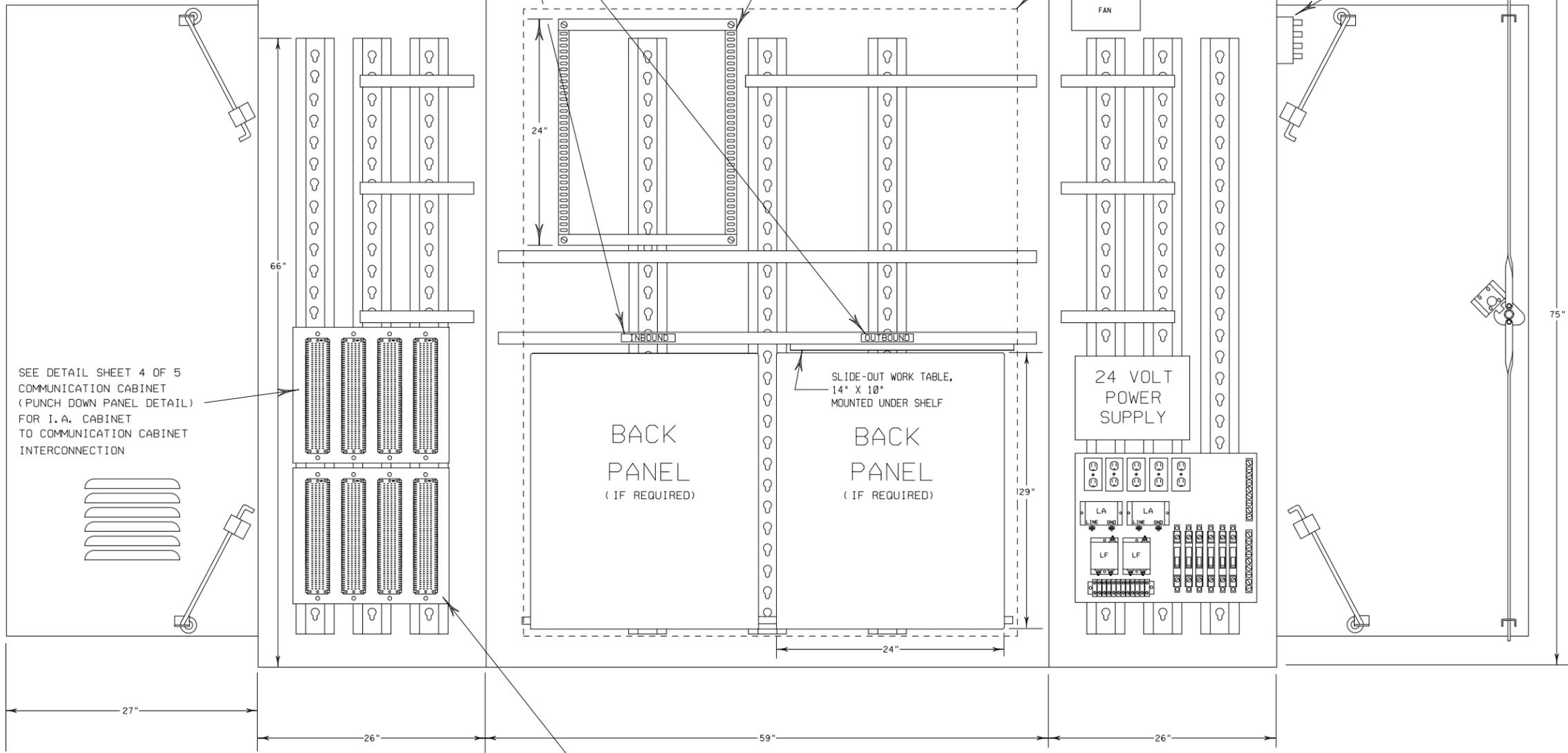
4 MOMENTARY SWITCHES, NORMALLY CLOSED (NC), FOR LIGHT, CABINET DOOR ALARM AND 2 SPARES.

FAN TEST SWITCH    THERM.    FLUORESCENT LAMP

INBOUND, OUTBOUND LETTERINGS SHALL BE SILK SCREENED ON ALUMINUM TAGS (1/2" H X 3" W) MOUNTED TO SHELF, ABOVE BACK PANEL, WITH SELF-TAPPING SHEET METAL SCREWS.

19" RACK, EQUIPMENT MOUNTING RAILS, SHALL BE PROVIDED FOR MOUNTING OF CCTV EQUIPMENT, D/I MULDEM, ETC. RACK SHALL HAVE A MIN. DEPTH OF 15"

DOOR OPENING HEIGHT 66.25" WIDTH 53"



The seal appearing on this document was authorized by Rajesh N. Gurnani, P.E. 86265, on

\_\_\_\_\_, P.E.  
Signature of Registrant & Date

SEE DETAIL SHEET 3 OF 5 COMMUNICATION CABINET (PUNCH DOWN PANEL DETAIL) FOR IA TO COMMUNICATION CABINET INTERCONNECTION

COMMUNICATION CABINET  
(EXPLODED DETAIL)

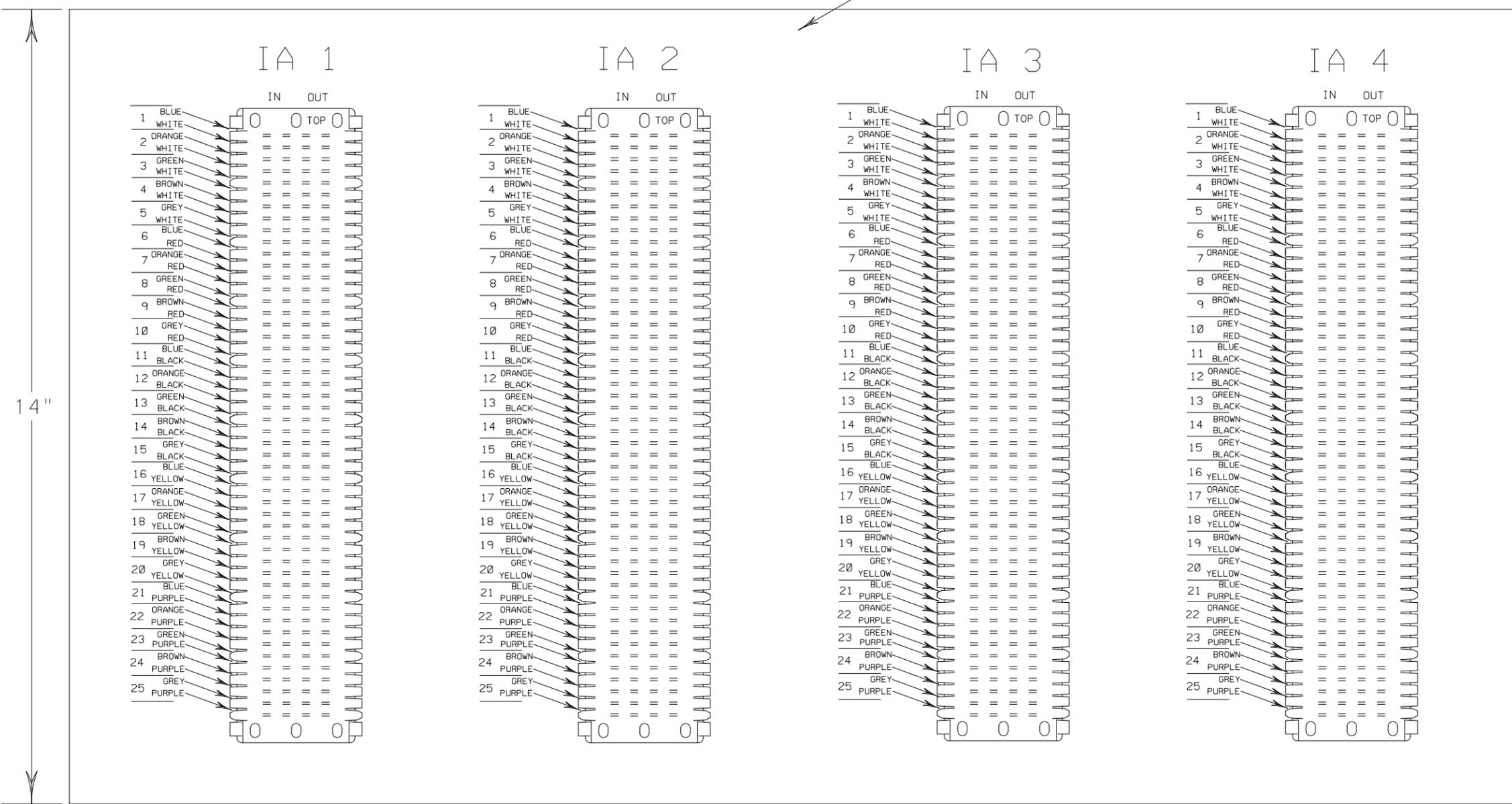


COMMUNICATION CABINET DETAILS

SCALE: N/A SHEET 2 OF 5

DESIGN	FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
GRAPHICS	6	(See Title Sheet)		IH 35E
CHECK	STATE	DISTRICT	COUNTY	SHEET NO.
RNG	TEXAS	DALLAS	DALLAS	105
CHECK	CONTROL	SECTION	JOB	
	0442	02	143	

0.125" (3 mm) ALUMINUM



14"

16"



The seal appearing on this document was authorized by Rajesh N. Gurnani, P.E. 86265, on

Signature of Registrant & Date

LS		IDENT	LS1	LS2	LS3	LS4	LS5	LS6	LS7	LS8
		LANE	1	2	3	4	5	6	123 Y	456 Y
I N	RED X	6	TB5-4A	TB5-8A	TB5-12A	TB5-16A	TB5-20A	TB5-24A	TB5-11A	TB5-23A
	YEL ↗	8	TB5-2A	TB5-6A	TB5-10A	TB5-14A	TB5-18A	TB5-22A	TB5-7A	TB5-19A
	GRN Y	10	TB5-1A	TB5-5A	TB5-9A	TB5-13A	TB5-17A	TB5-21A	TB5-3A	TB5-15A
O U T	RED X	3	TB9-4	TB9-8	TB9-12	TB10-4	T10-8	TB10-12	TB9-11	TB10-11
	YEL ↗	5	TB9-2	TB9-6	TB9-10	TB10-2	T10-6	TB10-10	TB9-7	TB10-7
P W R	GRN Y	7	TB9-1	TB9-5	TB9-9	TB10-1	T10-5	TB10-9	TB9-3	TB10-3
	+24VDC	9								•TB8-1A
	CHAS GND	2								•TB8-22
T20 VAC	1				•TB8-16					•TB8-16A

LOAD SWITCH CONNECTIONS  
COMMUNICATION CABINET  
(PUNCH DOWN PANEL DETAIL)

NOTE  
1. ALL REQUIRED TEXT SHALL BE SILK SCREENED.

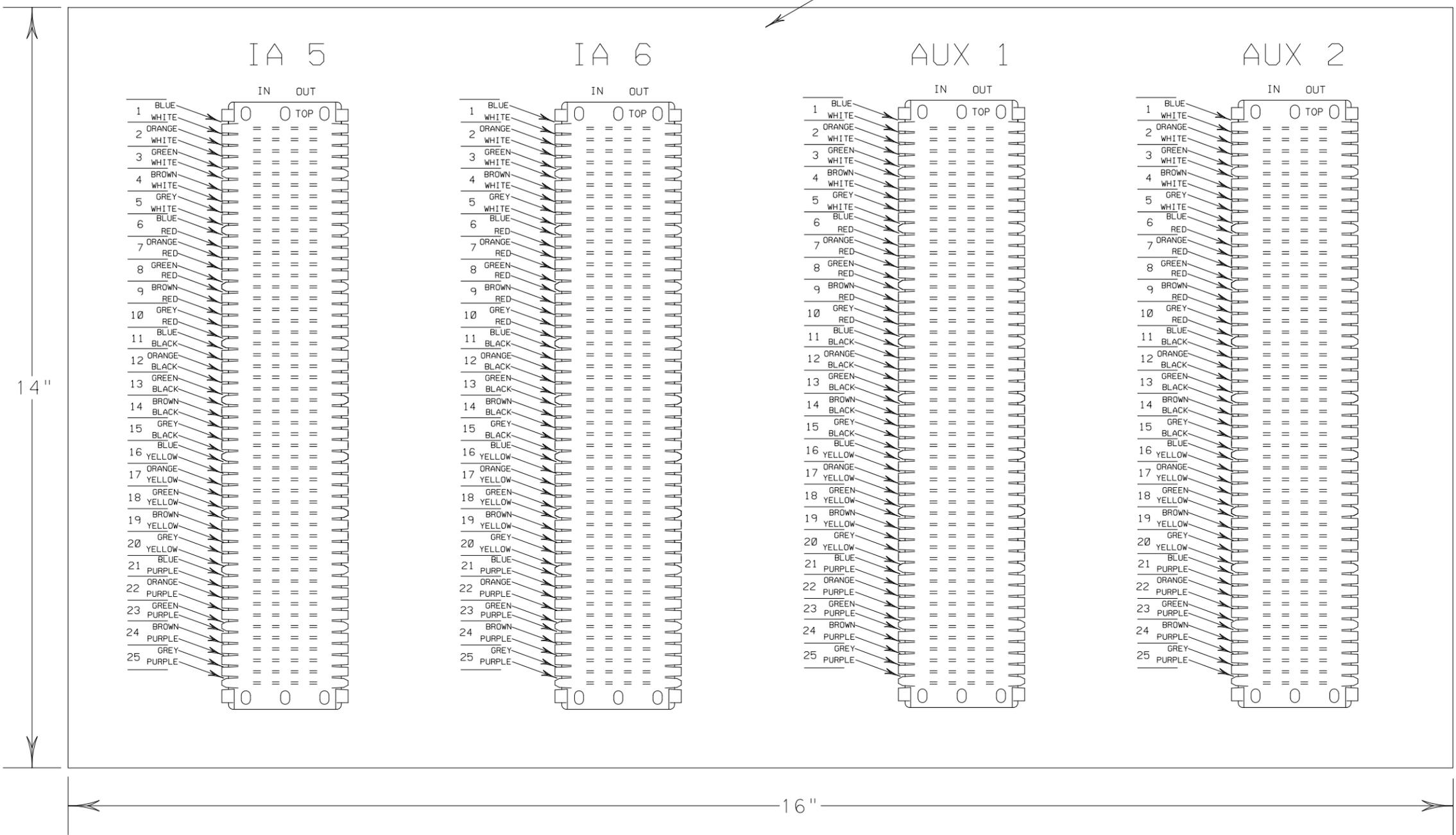
TEMPLATED REVISED: 10-23-02



COMMUNICATION CABINET DETAILS

SCALE: N/A		SHEET 3 OF 5	
DESIGN	FED. RD. DIV. NO. 6	FEDERAL AID PROJECT NO. (See Title Sheet)	
GRAPHICS	STATE TEXAS	DISTRICT DALLAS	COUNTY DALLAS
CHECK	CONTROL 0442	SECTION 02	JOB 143
RNG			
CHECK			
			106

0.125" (3 mm) ALUMINUM



The seal appearing on this document was authorized by Rajesh N. Gurnani, P.E. 86265, on

\_\_\_\_\_, P.E.  
Signature of Registrant & Date

COMMUNICATION CABINET  
(PUNCH DOWN PANEL DETAIL)

NOTE  
1. ALL REQUIRED TEXT SHALL BE SILK SCREENED.

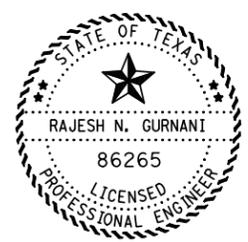
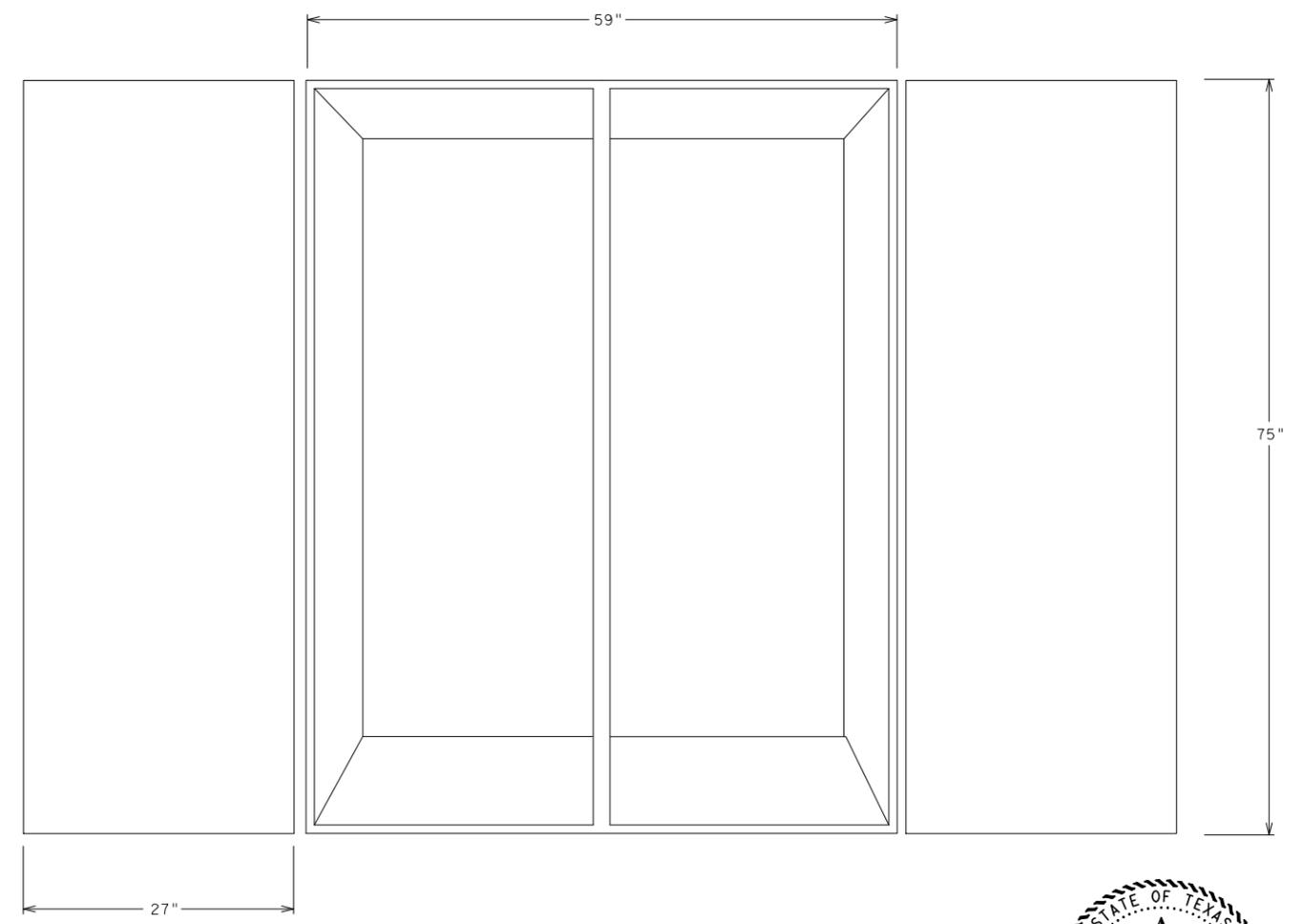
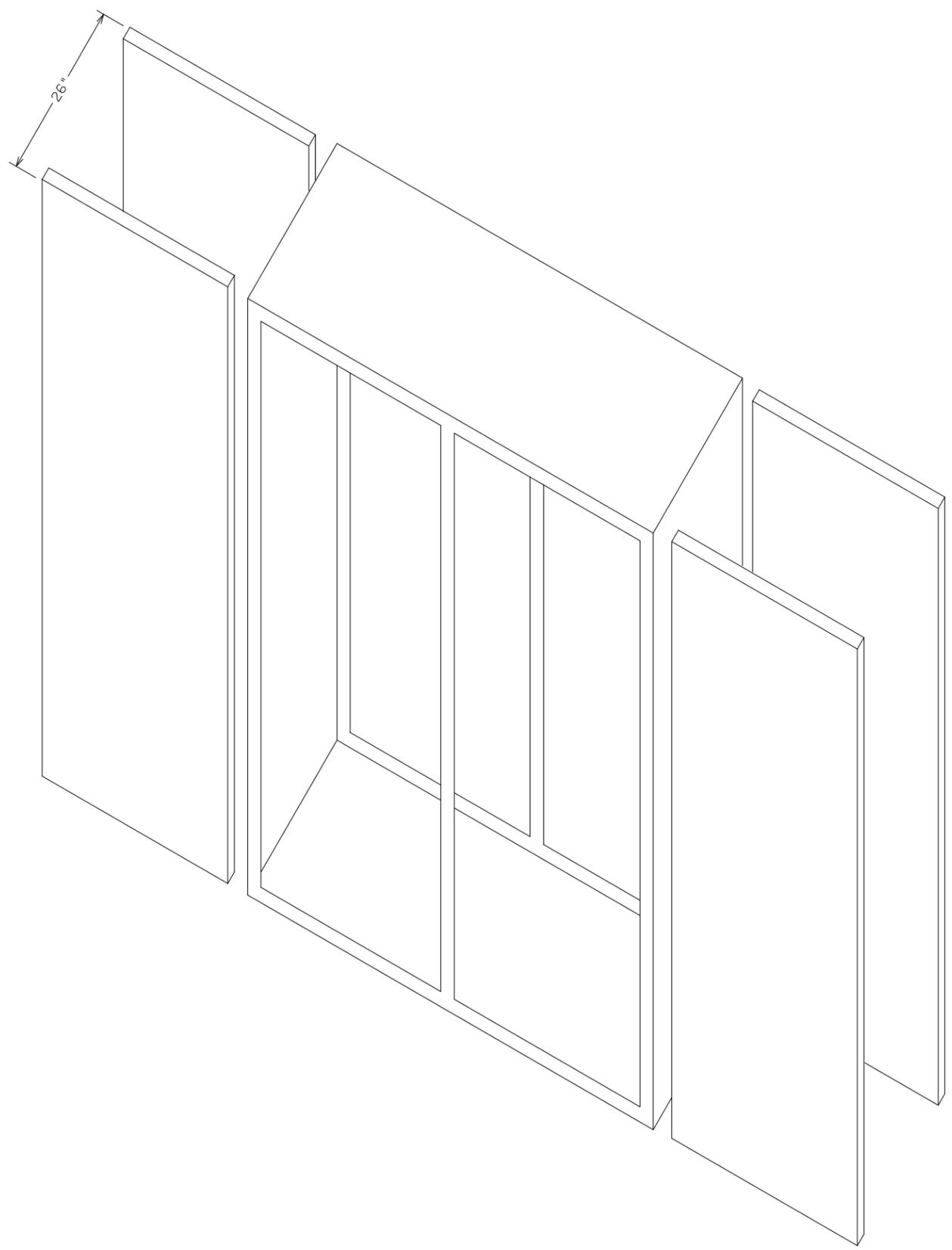
TEMPLATED REVISED: 10-23-02



COMMUNICATION CABINET DETAILS

SCALE: N/A SHEET 4 OF 5

DESIGN	FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
GRAPHICS	6	(See Title Sheet)		IH 35E
CHECK	STATE	DISTRICT	COUNTY	SHEET NO.
RNG	TEXAS	DALLAS	DALLAS	107
CHECK	CONTROL	SECTION	JOB	
	0442	02	143	



The seal appearing on this document was authorized by Rajesh N. Gurnani, P.E. 86265, on

\_\_\_\_\_, P.E.  
Signature of Registrant & Date

COMMUNICATION CABINET  
SHOWING FRONT & BACK DOUBLE DOORS

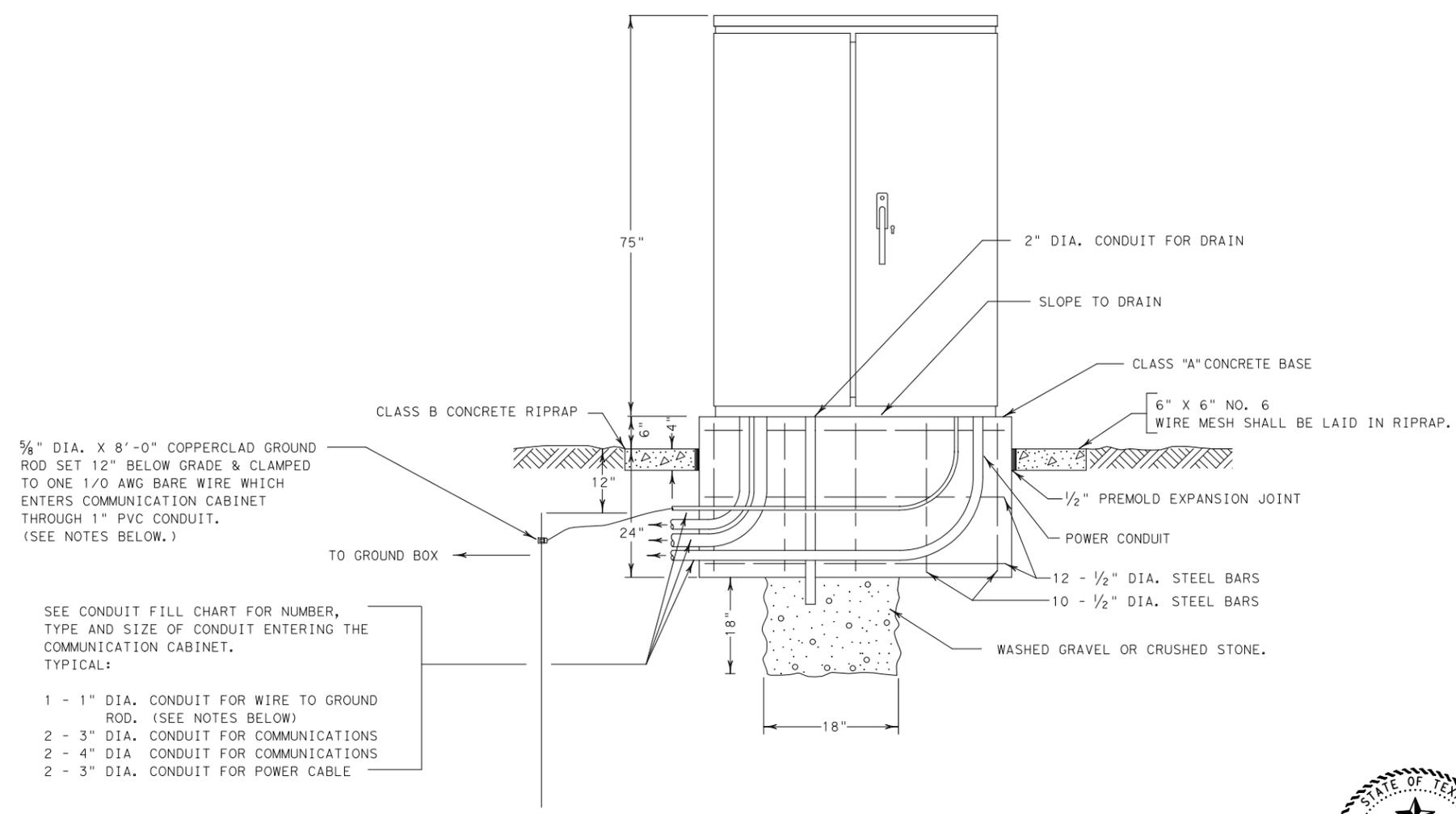
TEMPLATED REVISED: 10-23-02



COMMUNICATION CABINET DETAILS

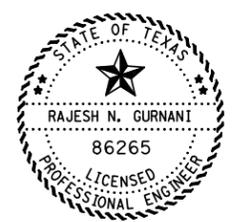
SCALE: N/A SHEET 5 OF 5

DESIGN	FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
GRAPHICS	6	(See Title Sheet)		IH 35E
CHECK	STATE	DISTRICT	COUNTY	SHEET NO.
RNG	TEXAS	DALLAS	DALLAS	108
CHECK	CONTROL	SECTION	JOB	
	0442	02	143	



- SEE CONDUIT FILL CHART FOR NUMBER, TYPE AND SIZE OF CONDUIT ENTERING THE COMMUNICATION CABINET. TYPICAL:
- 1 - 1" DIA. CONDUIT FOR WIRE TO GROUND ROD. (SEE NOTES BELOW)
  - 2 - 3" DIA. CONDUIT FOR COMMUNICATIONS
  - 2 - 4" DIA. CONDUIT FOR COMMUNICATIONS
  - 2 - 3" DIA. CONDUIT FOR POWER CABLE

ELEVATION OF COMMUNICATION CABINET FOUNDATION



The seal appearing on this document was authorized by Rajesh N. Gurnani, P.E. 86265, on

Signature of Registrant & Date

NOTES:

CABINET AND BASE DIMENSIONS AND DETAILS ARE SHOWN AS EXAMPLES ONLY. CABINETS OF ANY MANUFACTURER WHICH COMPLY WITH THE SPECIFICATIONS SHALL BE DEEMED ACCEPTABLE. CONCRETE BASE DIMENSIONS AND CABINET BOLT SPACING SHALL ACCOMMODATE THE CABINET USED. THE ANCHOR BOLTS SHALL BE PLACED ON THE INSIDE OF THE CABINET.

THE COMMUNICATION CABINET SHALL NOT HAVE A FLOOR.

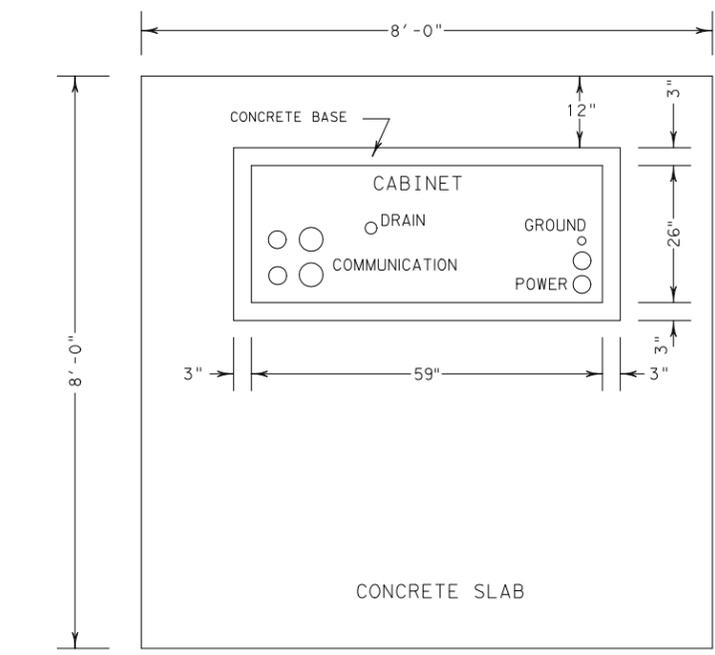
THE CONTRACTOR SHALL USE CLEAR SILICONE SEALANT AROUND THE INSIDE AND OUTSIDE OF THE COMMUNICATION CABINET BASE.

THE FURNISHING AND INSTALLING OF 1" PVC CONDUIT, GROUND ROD, 1/0 AWG GROUND WIRE, GROUND ROD CLAMP, AND ALL OTHERS MATERIALS, LABOR, TOOLS, EQUIPMENT, AND INCIDENTALS NECESSARY TO COMPLETE THE GROUNDING OF THE COMMUNICATION CABINET AS PER NEC SHALL BE SUBSIDIARY TO THIS ITEM.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING CABINET OF APPROPRIATE DESIGN, AT NO ADDITIONAL EXPENSE TO THE DEPARTMENT, SUCH THAT THE CABINET SHALL BE LEVEL WHEN MOUNTED ON THE FOUNDATION. THE FOUNDATION DESIGN SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO PLACEMENT.

CIRCUIT BREAKERS 2, 5, AND 6 SHALL BE SERVICED BY LINE 1 (120 VAC, 2 WIRE SINGLE PHASE) FROM THE POWER PANEL. CIRCUIT BREAKERS 1, 3, AND 4 SHALL BE SERVICED BY LINE 2 FROM THE POWER PANEL.

COMMUNICATION CABINET



SPACING OF COMMUNICATION CABINET ON CONCRETE SLAB

TEMPLATED REVISED: 10-23-02

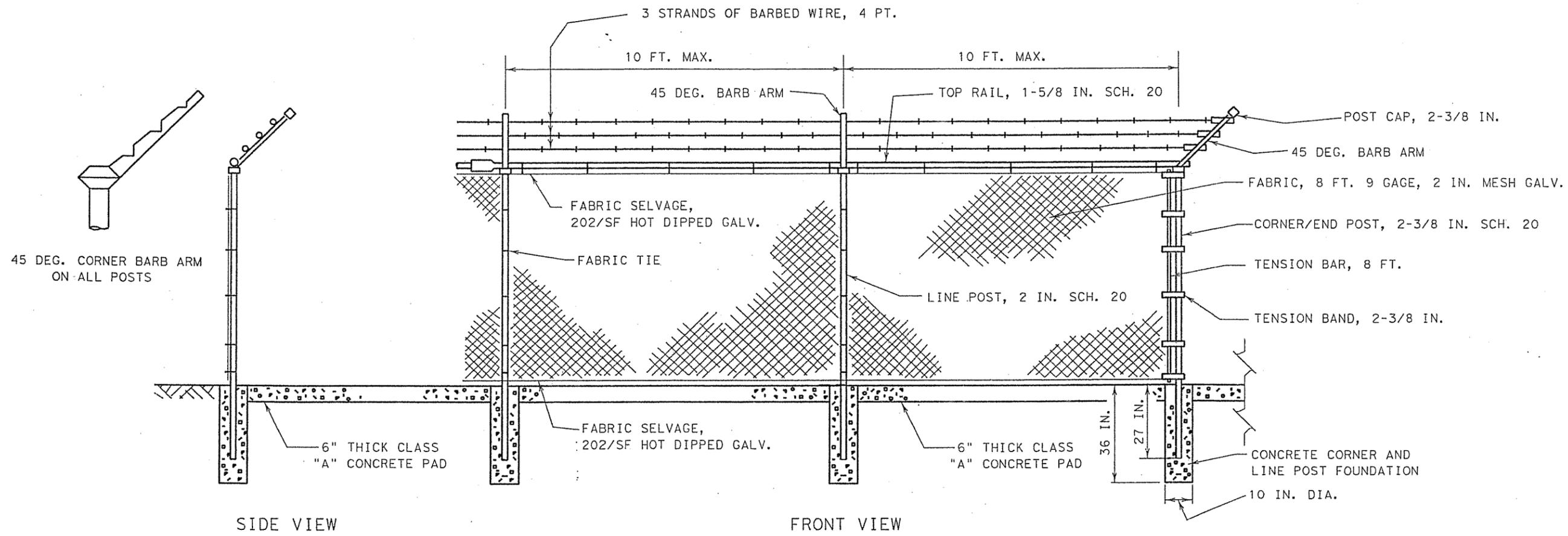
Texas Department of Transportation  
© 2008

COMMUNICATION CABINET DETAILS

SCALE: N/A SHEET 1 OF 5

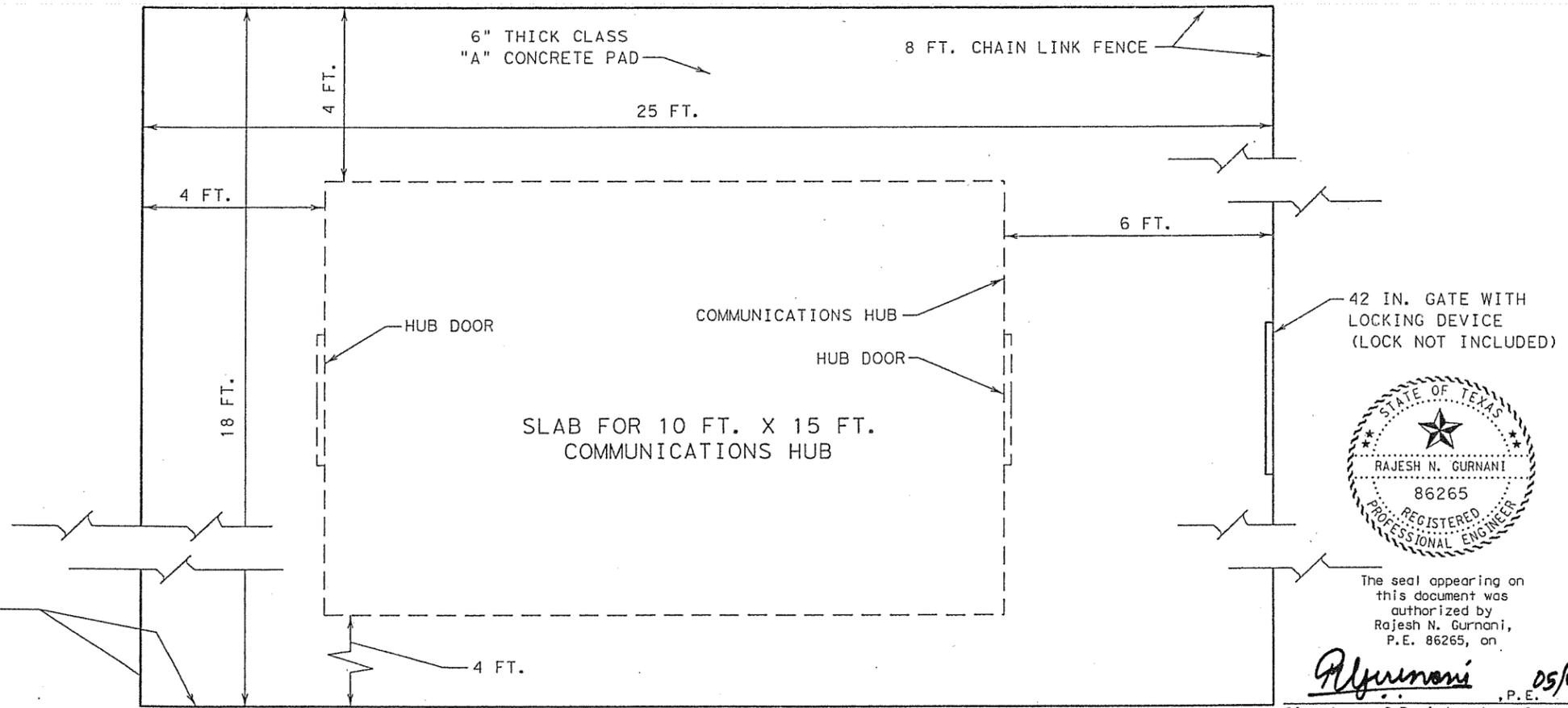
DESIGN	FED. RD. DIV. NO.:	FEDERAL AID PROJECT NO.		HIGHWAY NO.:
GRAPHICS	6	(See Title Sheet)		IH 35E
CHECK	STATE	DISTRICT	COUNTY	SHEET NO.
RNG	TEXAS	DALLAS	DALLAS	104
CHECK	CONTROL	SECTION	JOB	
	0442	02	143	

US: VENGUATAVLUUP 12\1115 STANDARDS\LOOP 12\ INFENCE. DGN



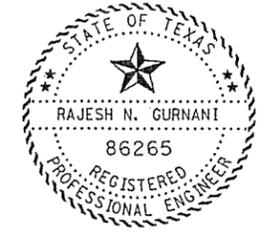
SIDE VIEW

FRONT VIEW



NOTES

- FENCE SHALL BE TOPPED WITH 3 STRAND BARBED WIRE.
- ALL POSTS SHALL BE GALVANIZED.
- NOT TO SCALE



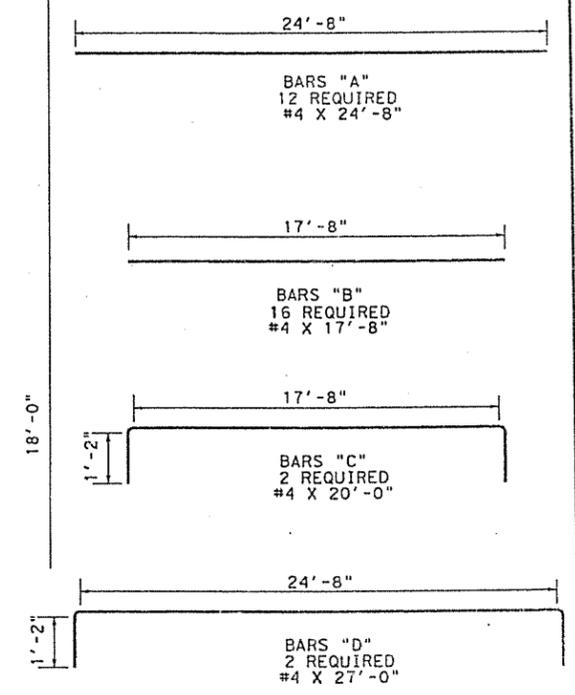
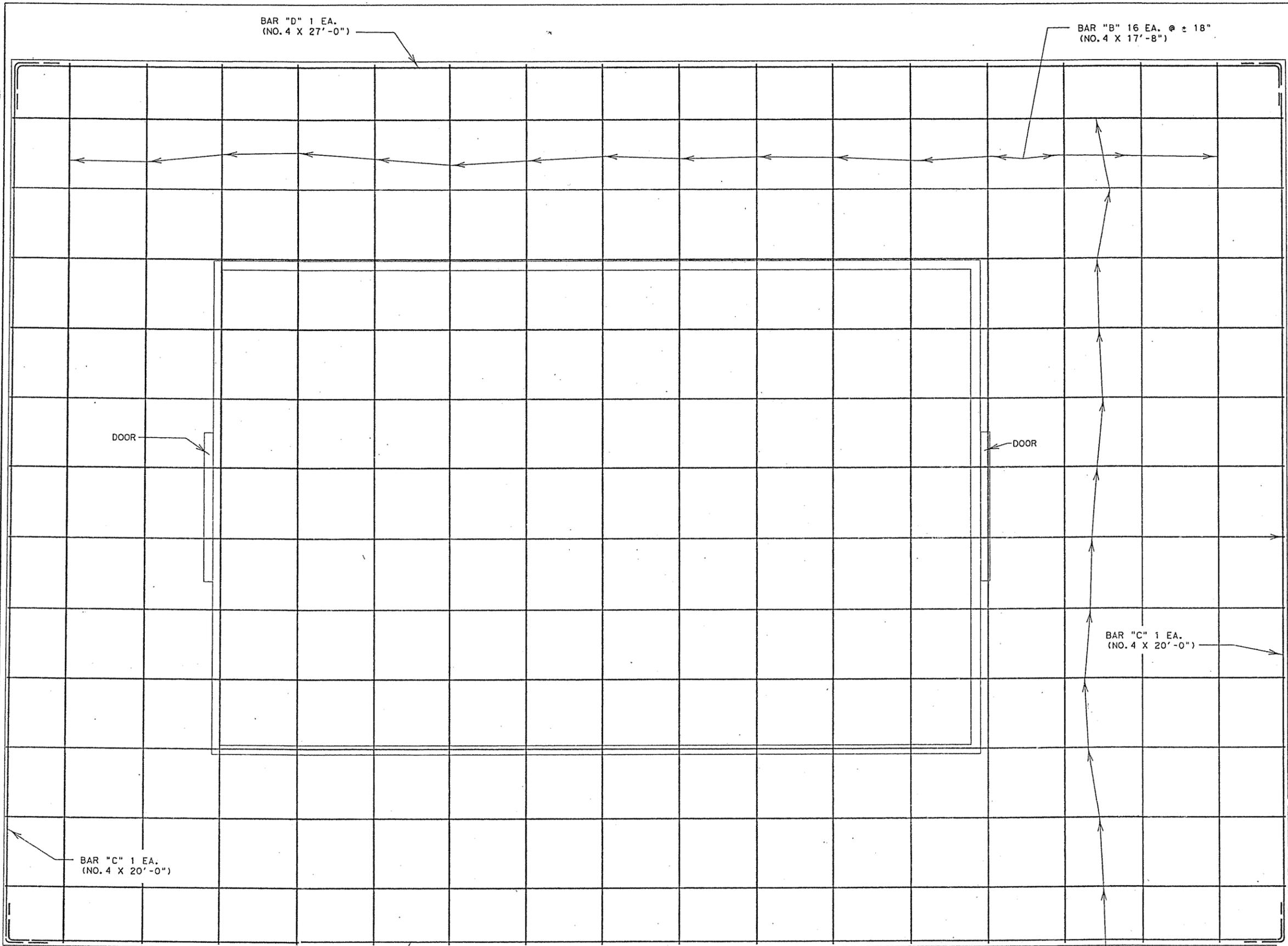
The seal appearing on this document was authorized by Rajesh N. Gurnani, P.E. 86265, on *Rajesh N. Gurnani*, P.E. 05/01/07  
Signature of Registrant & Date

Texas Department of Transportation  
© 2007

**SATELLITE COMMUNICATIONS HUB (10 FT. X 15 FT.)  
8 FT. CHAIN LINK FENCE**

DESIGN	FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
M F	6	CM 2007 (520)		LOOP 12
GRAPHICS	STATE	DISTRICT	COUNTY	SHEET NO.
M F	TEXAS	DALLAS	DALLAS	138
CHECK	CONTROL	SECTION	JOB	
CHECK	0581	02	114	

U:\ENCDATA\LOOP 12\ITS STANDARDS\LOOP 12.MHUB.DGN



NOT TO SCALE



The seal appearing on this document was authorized by Rajesh N. Gurnani, P.E. 86265, on Rajesh N. Gurnani, P.E. 05/03/07  
Signature of Registrant & Date

Texas Department of Transportation © 2007

SATELLITE COMMUNICATIONS HUB (10 FT. X 15 FT.) AND FOUNDATION DETAILS SHEET 2 OF 2

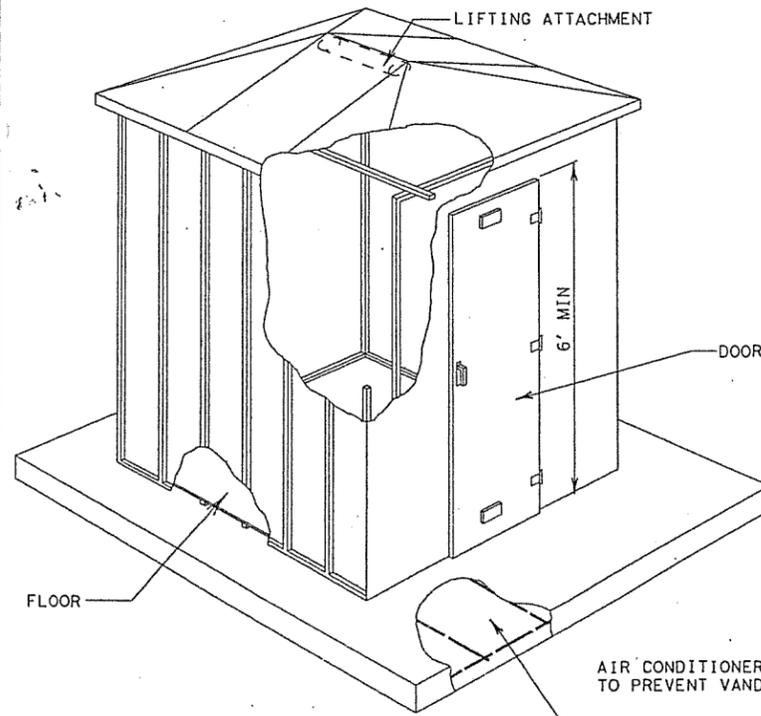
DESIGN	FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
M F	6	CM 2007 (620)		LOOP 12
GRAPHICS	STATE	DISTRICT	COUNTY	SHEET NO.
M F	TEXAS	DALLAS	DALLAS	137
CHECK	CONTROL	SECTION	JOB	
	0581	02	114	

FOUNDATION PLAN VIEW

NOTES: THE FOUNDATION WILL BE INSTALLED ON A DIRT SURFACE.

ANCHOR BUILDING TO CONCRETE PAD WITH 3/4" BOLTS, SET IN THE CONCRETE PAD.  
 THE CONTRACTOR SHALL FURNISH AND INSTALL TWO 15,000 BTU AIR CONDITIONERS THAT WILL HELP PREVENT HEAT RELATED FAILURE TO THE EQUIPMENT. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR THE ATTACHMENT OF THE AIR CONDITIONER TO THE BUILDING FOR APPROVAL BY THE ENGINEER. THIS AIR CONDITIONER WILL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED SUBSIDIARY TO ITEM "FIBER COMMUNICATIONS HUB (10' X 15')".

THE SATELLITE COMMUNICATIONS HUB (10 FT. X 15 FT.) WILL BE SURROUNDED BY AN 8 FT. CHAIN LINK FENCE, SEE "SATELLITE COMMUNICATIONS HUB (10 FT. X 15 FT.) 8 FT. CHAIN LINK FENCE" DETAILS.



PERSPECTIVE VIEW

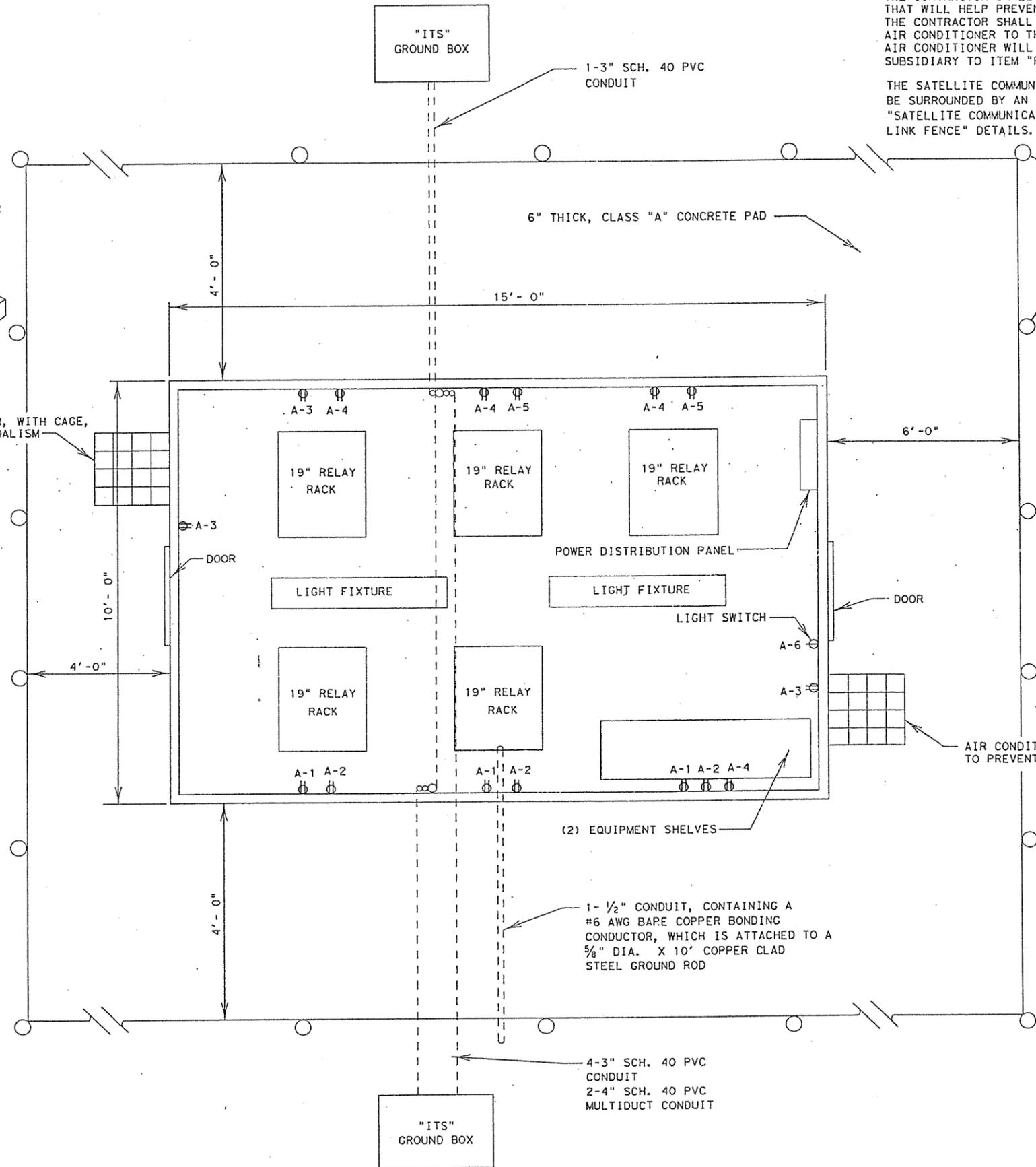
6" THICK, CLASS "A" CONCRETE PAD WITH NO. 4 REBAR TO EXTEND BEYOND OUTSIDE WALLS AS SHOWN. CONCRETE PAD SLOPE SHALL BE 1/8"/FT.

TYPICAL EQUIPMENT IN SATELLITE COMMUNICATIONS HUB (10 FT. X 15 FT.)

- 10/100 ETHERNET SWITCH
- FO COLOR VIDEO AND DATA RECEIVERS
- FIBER OPTIC INTERCONNECT HOUSING
- MPEG-II VIDEO ENCODERS
- MPEG-II VIDEO DECODER
- CCTV CENTRAL EQUIPMENT
- FIBER OPTIC MODEMS
- TERMINAL SERVERS
- WORKSTATION

BRANCH BREAKERS:

- A-1 30 AMP ONE POLE
- A-2 30 AMP ONE POLE
- A-3 20 AMP ONE POLE
- A-4 30 AMP ONE POLE
- A-5 20 AMP ONE POLE
- A-6 15 AMP ONE POLE



BUILDING PLAN VIEW

NOT TO SCALE



The seal appearing on this document was authorized by Rajesh N. Gurnani, P.E. 86265, on

*Rajesh N. Gurnani* 05/01/07  
 Signature of Registrant & Date

Texas Department of Transportation  
 © 2007

SATELLITE COMMUNICATIONS HUB (10 FT. X 15 FT.) AND FOUNDATION DETAILS  
 SHEET 1 OF 2

DESIGN	FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
M F	6	CM 2007 (520)		LOOP 12
GRAPHICS	STATE	DISTRICT	COUNTY	SHEET NO.
M F	TEXAS	DALLAS	DALLAS	136
CHECK	CONTROL	SECTION	JOB	
	0581	02	114	