

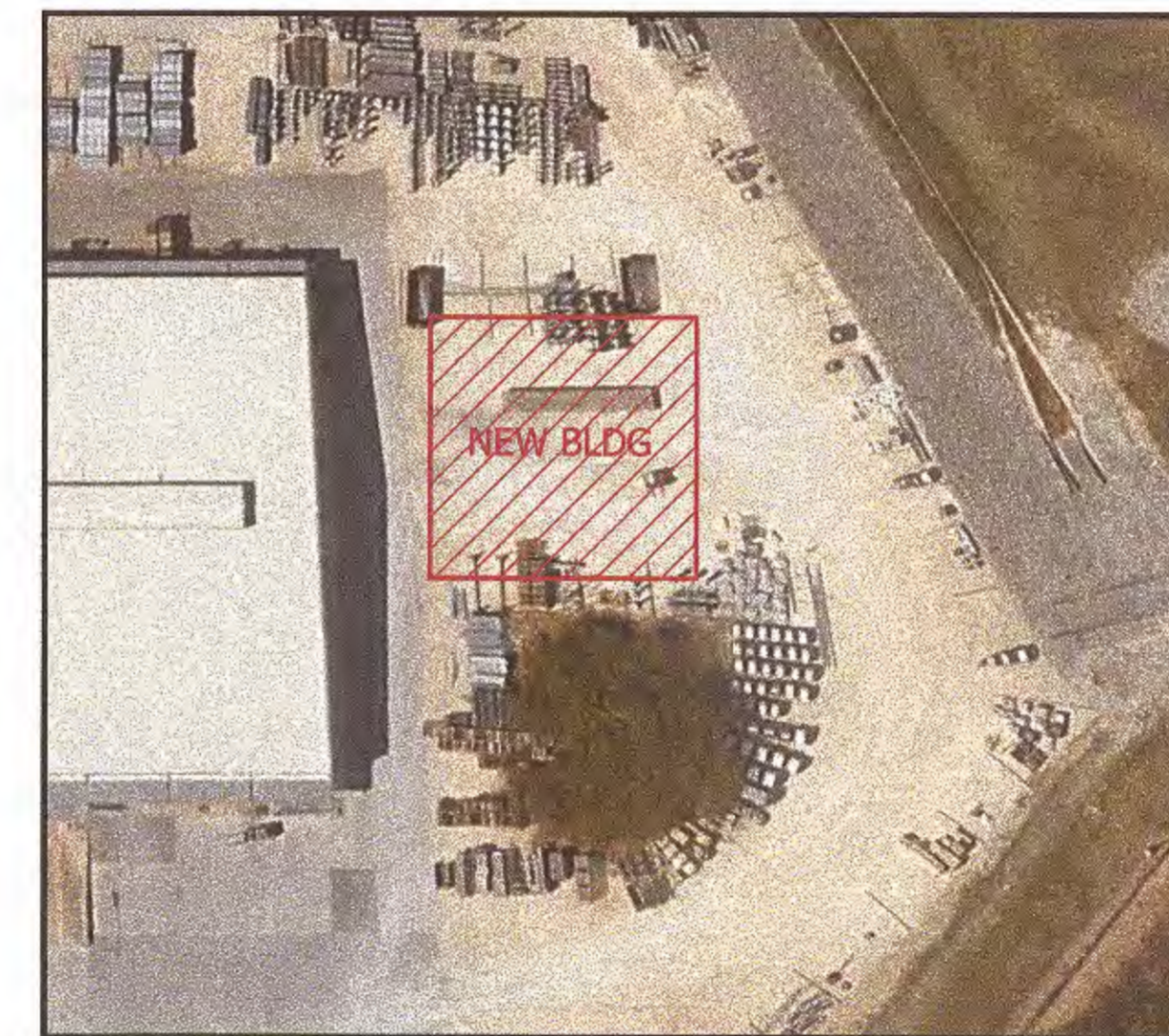
# LOWER COLORADO RIVER AUTHORITY

## STRUCTURAL & CIVIL ENGINEERING

### BUILDING S FACILITIES UPGRADE

#### ABBREVIATIONS

A.B.C.	AGGREGATE BASE COURSE
A/C	AIR CONDITIONER
A.F.F.	ABOVE FINISHED FLOOR
ALT.	ALTERNATE
A.B.	ANCHOR BOLT
⊙	AT (MEASUREMENT)
BM	BEAM
B.F.F.	BELOW FINISHED FLOOR
B.O.B.	BOTTOM OF BEAM
B.O.D.	BOTTOM OF DECK
B.O.F.	BOTTOM OF FOOTING
BRG	BEARING
C.I.P.	CAST IN PLACE
C.L.	CENTERLINE
C.L.B.	CENTERLINE OF BEAM
C.L.C.	CENTERLINE OF COLUMN
C.L.F.	CENTERLINE OF FOOTING
C.L.W.	CENTERLINE OF WALL
CLR	CLEAR
CONC	CONCRETE
C.J.	CONSTRUCTION JOINT
C.T.J.	CONTROL JOINT
C.M.U.	CONCRETE MASONRY UNIT
CONN	CONNECTION
CONT	CONTINUOUS
D.L.	DEAD LOAD
∅ OR DIA.	DIAMETER
DN	DOWN
DWG(S)	DRAWING(S)
E.O.S.	EDGE OF SLAB
E.F.	EACH FACE
EQ	EQUAL
EQUIP	EQUIPMENT
EXP. BOLT	EXPANSION BOLT
EXP. JT (E.J.)	EXPANSION JOINT
E.W.	EACH WAY
F.F.	FINISHED FLOOR
F.O.M.	FACE OF MEMBER
F.O.S.	FACE OF STEEL
F.O.W.	FACE OF WALL
F.V.	FIELD VERIFY
GA	GAGE
GALV	GALVANIZED
G.S.N.	GENERAL STRUCTURAL NOTES
GLB (GLULAM)	GLUED-LAMINATED BEAM
I.F.W.	INSIDE FACE OF WALL
HORIZ.	HORIZONTAL
K(KIP)	1000 POUNDS
L.L.	LIVE LOAD
LBS (#)	POUNDS
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
MFR(S)	MANUFACTURER(S)
MAS C.J.	MASONRY CONTROL JOINT
MECH'L	MECHANICAL
N/A	NOT APPLICABLE
N.I.C.	NOT IN CONTRACT
N.T.S.	NOT TO SCALE
O.C.	ON CENTER
O.F.W.	OUTSIDE FACE OF WALL
OPP	OPPOSITE
P.C.	PRECAST CONCRETE
PEMB	PRE-ENGINEERED METAL BUILDING
PLF	POUNDS PER LINEAR FOOT
PREFAB	PREFABRICATED
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
REINF	REINFORCING
SLH	SHORT LEG HORIZONTAL
SLV	SHORT LEG VERTICAL
SIM	SIMILAR
SO.	SQUARE
STD	STANDARD
T.L.	TOTAL LOAD
T.O.B.	TOP OF BEAM
T.O.C.	TOP OF CONCRETE
T.O.D.	TOP OF DECK
T.O.F.	TOP OF FOOTING
T.O.L.	TOP OF LEDGER
T.O.M.	TOP OF MASONRY
T.O.P.	TOP OF PLATE
T.O.S.	TOP OF STEEL
T.O.W.	TOP OF WALL
TRANS.	TRANSVERSE
TYP	TYPICAL
U.N.O.	UNLESS NOTED OTHERWISE
VERT.	VERTICAL
W.W.F.	WELDED WIRE FABRIC
W/O	WITHOUT



**PROJECT LOCATION**  
LCRA DALCHAU SERVICE CENTER  
3505 MONTOPOLIS DR.  
AUSTIN, TX 78744



**DALCHAU SERVICE CENTER**

**BLDG S**

**PROJECT LOCATION**

**VICINITY MAP**

#### NEW BUILDING S DESIGN DRAWINGS

SHEET No.	DRAWING TITLE
B-101-S-1117	COVER SHEET, LOCATION MAP AND DRAWING INDEX
B-101-S-1118	GENERAL NOTES
B-101-C-0005	EXISTING TOPO PLAN (ISSUED FOR REFERENCE)
B-101-C-1002	CIVIL SITE PLAN
B-101-C-1008	SITE UTILITY PLAN
ESC-1	EROSION AND SEDIMENTATION CONTROL PLAN
ESC-2	EROSION AND SEDIMENTATION CONTROL DETAILS
B-101-S-1119	FOUNDATION PLAN
B-101-S-1120	FOUNDATION DETAILS
B-101-S-1121	ENVIRONMENTAL DETAILS
AB1, AB2 & AB3	METAL BLDG. DRAWINGS

CONTACT INFORMATION		
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AZAM S. WAUGH, P.E.	ENGINEER	512-922-6563
JOSEPH J. LUKE, P.E.	ENGINEER	512-426-2210
FELIX SOLIS	ENGINEERING TECHNICIAN	512 294-6934

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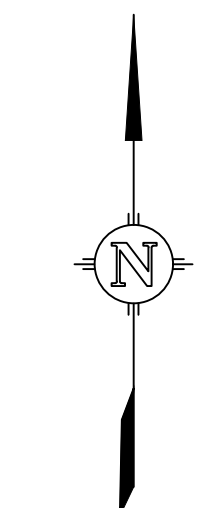
Rev.	Date	Revision	By	Chkd.	Appd.	Appd.	Rev.	Date	Revision	By	Chkd.	Appd.	Appd.
3							4						
2							5						
1	02/08/2024	ISSUE FOR CONSTRUCTION - BUILDING S FACILITIES UPGRADE	FS	EV	JL		6						
DRAWN BY: F. SOLIS													
CHKD. BY: E. Vera													
APPD. BY: J. Luke													
APPD. BY:													



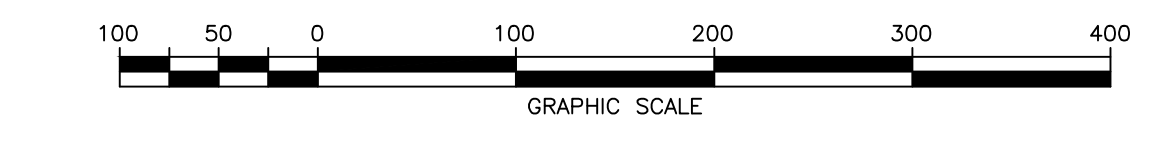
LOWER COLORADO RIVER AUTHORITY AUSTIN, TEXAS	TITLE
LOCATION	BUILDING S FACILITIES UPGRADE
DALCHAU SERVICE CENTER	ABBREVIATIONS, LOCATION MAP & DRAWING INDEX

DATE	12/07/23
SCALE	AS NOTED
DWG. NO.	B-101-S-1117



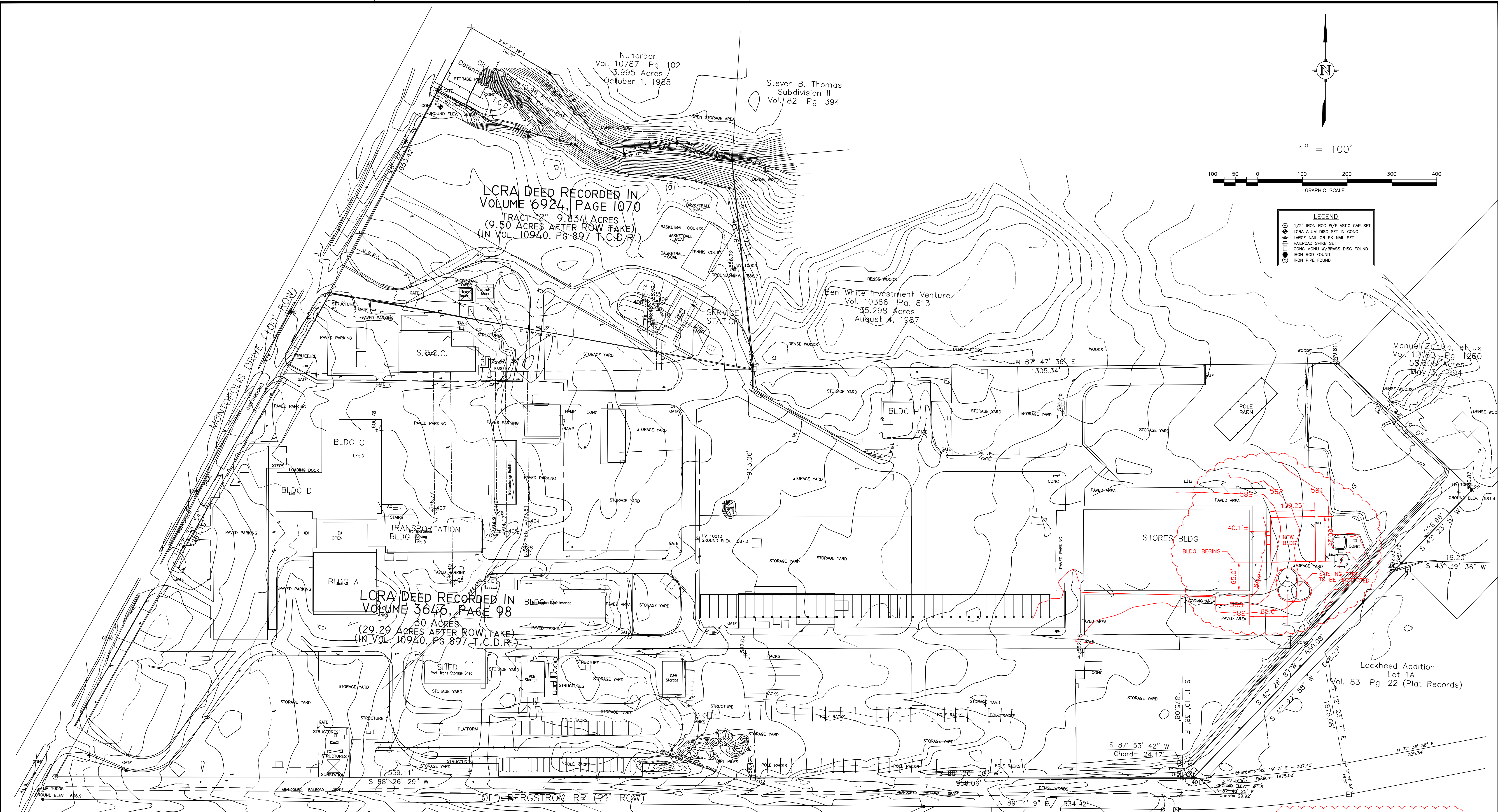


1" = 100'



**LEGEND**

- ⊙ 1/2" IRON ROD W/PLASTIC CAP SET
- ⊕ LCRA ALUM DISC SET IN CONC
- ⊕ LARGE NAIL OR PK NAIL SET
- ⊕ RAILROAD SPIKE SET
- ⊕ CONC MONU W/BRASS DISC FOUND
- ⊕ IRON ROD FOUND
- ⊕ IRON PIPE FOUND



NuHarbor  
Vol. 10787 Pg. 102  
3,995 Acres  
October 1, 1988

Steven B. Thomas  
Subdivision II  
Vol. 82 Pg. 394

LCRA DEED RECORDED IN  
VOLUME 6924, PAGE 1070  
TRACT "2" 9.834 ACRES  
(9.50 ACRES AFTER ROW TAKE)  
(IN VOL. 10940, PG 897 T.C.D.R.)

Ben White Investment Venture  
Vol. 10366 Pg. 813  
35,298 Acres  
August 4, 1987

Manuel Zuniga, et ux  
Vol. 12180 Pg. 1260  
58,808 Acres  
May 3, 1994

LCRA DEED RECORDED IN  
VOLUME 3646, PAGE 98  
30 ACRES  
(29.29 ACRES AFTER ROW TAKE)  
(IN VOL. 10940, PG 897 T.C.D.R.)

**GRADING SHOWN IN RED IS BASED  
ON 2002 SURVEY. CONTRACTOR  
TO VERIFY SITE GRADING PRIOR  
TO BEGINNING CONSTRUCTION.**

ISSUED FOR INFORMATION ONLY

NOTE: Source Of Vertical Control: NGS BM Mkd K-1222  
Published NGVD 29 Elevation of NGS BM K-1222= 597.59'  
NOTE: Source Of Horizontal Control: City Of Austin GPS Monuments  
NOTE: Horizontal Datum is NAD 83 - Bearing Basis: Lambert Grid Texas Central Zone

FIELD BOOK: 93-02 PG 1-10		DRAWN: TEFETLN		W.A. NO. D12130		LOWER COLORADO RIVER AUTHORITY AUSTIN, TEXAS		DATE 01/09/93	
BEARING BASIS: Texas Lambert Grid, Central Zone, NAD 83		CHECKED: T.L.N.				LOCATION		SCALE 1" = 100'	
WP FILES: N/A		ENG. DEPT. - SURVEYING & MAPPING				LCRA AUSTIN SERVICE CENTER		FINAL BOUNDARY SURVEY AFTER MONTOPOLIS ROW TAKE AND LOCATION OF WATER MONITORING WELLS	
REFERENCE:		APPROVED:						DWG. NO. B101-C-0005	
Ltr.	Date	Revision	By	Chkd.	Appd.				

TAG #	DESCRIPTION	TAG #	DESCRIPTION	TAG #	DESCRIPTION	TAG #	DESCRIPTION
347	9" HB	398	12" HB	444	10" HB	493	9" HB
348	10" CE	397	9" HB	445	13" HB	494	10" HB
349	10" MES	398	12" HB	446	17" HB	495	8" HB
350	10" BDA	399	10" BDA	447	11" HB	496	14" HB
351	8" MES	400	13" HB	448	14" HB	497	12" HB
352	13" MES	401	13" MES	449	9" MES	498	12" CB
353	10" BDA	402	10" HB	450	11" MES	499	9" BDA
354	14" CE	403	24" MES	451	12" HB	500	8" BDA
355	10" CE	404	8" HB	452	9" MES	501	11" HB
356	13" CE	405	9" HB	453	8" HB	502	9" HB
357	13" CE	406	10" HB	454	11" HB	503	9" CB
358	9" HB	407	9" HB	455	15" HB	504	10" HB
359	8" HB	408	11" BDA	456	9" MES	505	10" CB
360	10" WE	409	9" BDA	457	14" HB	506	12" HB
361	11" HB	410	9" BDA	458	15" HB	507	18" HB
362	18" WE	411	9" HB	459	12" HB	508	10" HB
363	8" CE	412	8" BDA	460	10" MES	509	10" CB
364	14" CE	413	9" BDA	461	9" HB	510	12" HB
365	17" CE	414	9" HB	462	9" HB	511	15" MES
366	16" CE	415	9" HB	463	10" HB	512	10" CB
367	8" CE	416	9" HB	464	13" HB	513	10" HB
368	9" HB	417	9" HB	465	9" HB	514	10" HB
369	13" HB	418	9" HB	466	13" HB	515	12" HB
370	10" HB	419	11" BDA	467	12" HB	516	10" HB
371	8" HB	420	12" HB	468	9" HB	517	10" CB
372	11" CE	421	8" HB	469	14" HB	518	10" HB
373	11" CE	422	8" HB	470	9" HB	519	10" CE
374	9" HB	423	11" HB	471	12" HB	520	9" CB
375	8" HB	424	12" HB	472	10" HB	521	9" HB
376	10" CE	425	9" HB	473	12" HB	522	9" HB
377	9" CE	426	11" HB	474	11" HB	523	12" HB
378	9" HB	427	13" BDA	475	10" HB	524	10" HB
379	10" BDA	428	10" HB	476	10" HB	525	10" HB
380	8" CE	429	9" CE	477	10" HB	526	10" HB
381	17" MES	430	9" BDA	478	10" HB	527	12" HB
382	14" MES	431	11" HB	479	8" HB	528	11" MES
383	10" MES	432	11" HB	480	9" HB	529	10" HB
384	10" MES	433	9" CE	481	9" HB	530	9" CB
385	10" CE	434	9" HB	482	9" HB	531	9" HB
386	9" CE	435	10" HB	483	9" HB	532	10" HB
387	10" CE	436	15" HB	484	8" HB	533	8" HB
388	11" HB	437	9" HB	485	8" HB	534	10" HB
389	17" CE	438	17" BDA	486	10" HB	535	9" CE
390	8" HB	439	9" HB	487	11" HB	536	10" MES
391	8" HB	440	9" HB	488	11" HB	537	17" CE
392	12" CE	441	10" HB	489	9" CB	538	10" MES
393	12" CE	442	10" HB	490	8" HB	539	9" HB
394	10" HB	443	13" HB	491	8" CB	540	8" MES
395	11" MES	444	10" HB	492	11" CB	541	11" MES

TREE LIST  
 BDA - BOIS D'ARC  
 HB - HICKBERRY  
 MES - MESQUITE  
 CB - CHINA BERRY  
 CE - CEDAR ELM  
 WE - WATER ELM



- NOTES
1. MOBILE HOME TO BE REMOVED (PER CONVERSATION WITH THE OWNER)
  2. COORDINATE EXACT ISLAND AND CONDUIT LOCATION WITH LCRA
  3. ADD ALTERNATES # 1 & 2 TO BE COORDINATED WITH ARCHITECT
  4. MBGF SHALL INCLUDE TERMINAL ANCHOR SECTIONS AT ENDS

- LEGEND
- 1/2" IRON ROD FOUND (UNLESS NOTED)
  - 1/2" IRON PIPE FOUND (UNLESS NOTED)
  - 1/2" IRON ROD W/ PLASTIC CAP SET
  - CONCRETE MONUMENT FOUND
  - NAL FOUND
  - DIRECTIONAL CONTROL
  - CENTERLINE OF CREEK
  - WOOD FENCE
  - PIPE FENCE
  - CHAIN LINK FENCE
  - WIRE FENCE
  - ASPHALT
  - OVERHEAD UTILITIES
  - POWER POLE
  - LIGHT POLE
  - MANHOLE
  - RECORD INFORMATION
  - P.R.T.C.I.R.A. PROPERTY RECORDS, TRAVIS COUNTY
  - D.R.T.C.I.A. DEED RECORDS, TRAVIS COUNTY
  - P.R.T.C.I.A. PLAT RECORDS, TRAVIS COUNTY
  - ARCHEOLOGY SITE
  - WLT LANDS
  - TREE TO REMAIN
  - TREE TO BE REMOVED
  - PROPOSED CONCRETE PAVEMENT
  - PROPOSED H.M.A.C. PAVEMENT
  - PROPOSED LIGHT POST

(RECORD LINE CHART)

LINE	BEARING	DISTANCE
L1	N05°27'53"E	459.84
L2	N01°52'59"E	12.83
L3	N83°38'52"E	281.57
L4	N63°17'54"E	88.04
L5	S53°12'59"E	79.43
L6	S12°54'03"E	N/A
L7	N66°17'53"E	160.37
L8	N61°55'24"E	361.47
L9	N1°20'45"E	214.63
L10	N00°11'49"E	215.19
L11	N69°48'30"E	130.00
L12	S20°18'00"E	353.17
L13	N76°12'48"E	290.59
L14	S61°02'50"E	124.36
L15	N79°02'30"E	392.15
L16	S10°04'06"E	93.12
L17	XXXXXX	XXXXXX

\* MULTIPLE COURSES REFERENCE

CURVE TABLE

CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING
C1	327.61	17.96	17.96	N85°05'07"E
C2	368.27	99.42	99.12	S68°16'25"W
C3	24.98	39.21	35.31	N66°51'06"W
C4	25.00	39.23	35.37	S24°59'16"W

(RECORD CURVE CHART)

CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING
C1	327.61	17.96	17.96	N85°05'15"E
C2	368.27	99.39	99.10	N68°16'04"E
C3	24.98	39.26	35.34	N65°10'37"W
C4	25.00	39.27	35.43	S24°59'16"W

- TBM'S SET
- #1 COTTON SPINDLE SET IN 8" ASH  
ELEV. = 544.74
  - #2 COTTON SPINDLE SET IN 6" BOIS D'ARC  
ELEV. = 549.38
  - #3 COTTON SPINDLE SET IN 9" CHINA BERRY  
ELEV. 580.76
  - #4 COTTON SPINDLE SET IN 10" CHINA BERRY  
ELEV. = 572.05
  - #5 COTTON SPINDLE SET IN 11" HICKBERRY  
ELEV. = 580.83
  - #6 COTTON SPINDLE SET IN 10" MESQUITE  
ELEV. = 557.91

RECORD DRAWINGS

NO.	REVISION	DATE
1	1/9/04	
2	5/08/01	
3	02/09/04	
4		



Graeber, Simmons & Cowan, Inc.  
 AUSTIN • SAN ANTONIO  
 400 Bowie Street, Austin, Texas 78703

DENMON ENGINEERING *OF TEXAS*  
 1101 Capital of Texas Highway South, Building E, Suite 230  
 Austin, Texas 78746

TENSCO CONSOLIDATION  
 PHASE 1  
 DALCHAU SERVICE CENTER  
 3505 MONTOPOLIS, AUSTIN, TEXAS

LCRA LOWER COLORADO RIVER AUTHORITY  
 THE POWER TO MAKE A DIFFERENCE.  
 P.O. BOX 220  
 AUSTIN, TEXAS 78767

PROJECT	200012800
DRAWN BY	BRB
CHECKED BY	BRB
DATE	1/9/04

SHEET TITLE  
**CIVIL SITE PLAN**

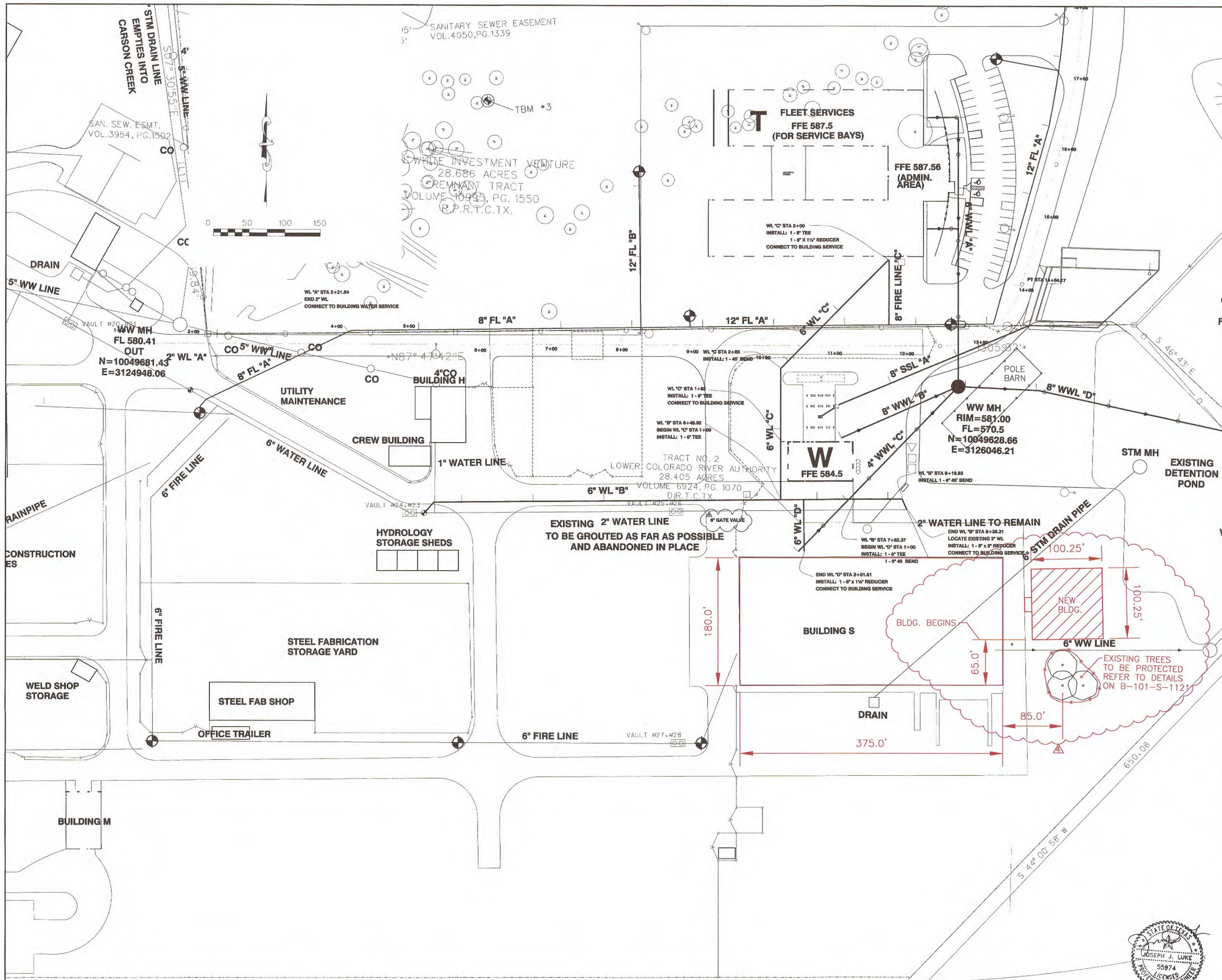
SCALE  
**1"=100'**



NOTE: AS-BUILT RECORD DRAWINGS PREPARED FROM RECORD SETS MAINTAINED ON-SITE BY CONTRACTOR.  
 B-101-C-1002

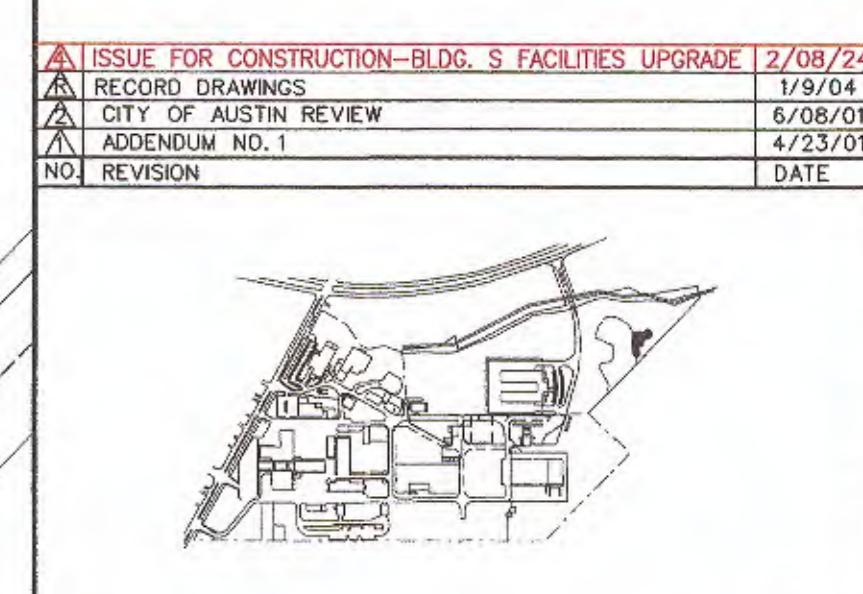
12:00 BRB  
 C:\y-y.dgn  
 03/29/01

LCRA TENSCO CONSOLIDATION DALCHAU SERVICE CENTER AUSTIN TEXAS GSC P.L.# 200012800



NOTES

▲ ISSUE FOR CONSTRUCTION-BLDG. S FACILITIES UPGRADE	2/08/24
▲ RECORD DRAWINGS	1/9/04
▲ CITY OF AUSTIN REVIEW	6/08/01
▲ ADDENDUM NO. 1	4/23/01
NO. REVISION	DATE



Graeber, Simmons & Cowan, Inc.  
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 400 Bowie Street, Austin, Texas 78703

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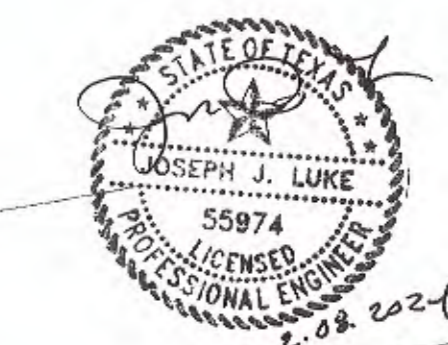
**TENSCO CONSOLIDATION PHASE 1**  
 DALCHAU SERVICE CENTER  
 3505 MONTOPOLIS, AUSTIN, TEXAS

**LCRA** LOWER COLORADO RIVER AUTHORITY  
 P.O. BOX 220  
 AUSTIN, TEXAS 78767

PROJECT	200012800
DRAWN BY	BRB
CHECKED BY	BRB
DATE	1/9/04

SHEET TITLE  
**SITE UTILITIES PLAN**

SCALE  
 1"=50'  
**C3-2-Y**



NOTE: AS-BUILT RECORD DRAWINGS PREPARED FROM RECORD SETS MAINTAINED ON-SITE BY CONTRACTOR.

B-101-C-1008

12:00 BRB

C3-2-Y.dgn  
 03/29/01

LCRA TENSCO CONSOLIDATION DALCHAU SERVICE CENTER AUSTIN TEXAS GSC PRJ# 200012800



**Erosion/Sedimentation Control General Notes**

- The Contractor shall install erosion/sedimentation controls prior to any site preparation work (clearing, grubbing or excavation).
- The placement of erosion/sedimentation controls shall be in accordance with the LCRA Water Quality Management Technical Manual and the approved Erosion and Sedimentation Control Plan.
- A pre-construction conference shall be held on-site with the Contractor, Design Engineer/Permit Applicant and LCRA Watershed Management Inspector after installation of the erosion/sedimentation controls and prior to beginning any site preparation work. The Contractor shall notify the LCRA Inspector, at least three days prior to the meeting date.
- Any major variation in materials or locations of controls or fences from those shown on the approved plans will require a revision and must be approved by the LCRA Watershed Management Program. Minor changes to be made as field revisions to the Erosion and Sedimentation Control Plan may be required by the LCRA Watershed Management Inspector during the course of construction to correct control inadequacies.
- The Contractor is required to inspect the controls and fences at weekly intervals and after rainfall events in excess of 0.5" to insure that they are functioning properly. The person(s) responsible for maintenance of controls and fences shall immediately make any necessary repairs to damaged areas. Silt accumulation at controls must be removed when the depth reaches six (6) inches.
- Prior to final acceptance by the LCRA, haul roads and waterway crossings constructed for temporary contractor access must be removed, accumulated sediment removed from the waterway and the area restored to the original grade and revegetated. All land clearing debris shall be disposed of in approved spoil disposal sites.
- Permanent Erosion Control: All disturbed areas shall be restored as noted below.

A. A minimum of four inches of topsoil shall be placed on all disturbed areas (except rock outcrop). Salvaged topsoil from the site should be used whenever possible. Imported topsoil shall be weed free with a minimum 20% organic content. Topsoil placed on slopes exceeding 5 horizontal to 1 vertical shall have a relatively high resistivity to erosion.

B. The seeding for permanent erosion control shall be applied over areas disturbed by construction as follows (select one of the three seed combinations listed below):

Dates	Climate	Species (lb/ac)	
Year Round	Permanent Cool/Warm Season (Native Species)	Purple three-awn (Aristida purpurea)	1.4
		Sideoats grama (Bouteloua curtipendula)	2.0
		Silver bluestem (Bothriochloa laguroides)	6.0
		Buffalograss (Buchloe dactyloides)	1.4
		Canadian wildrye (Elymus Canadensis)	1.4
		Engelmann's daisy (Engelmannia pinnatifida)	0.6
		Green sprangletop (Leptochloa dubia)	2.6
		Mexican hat (Ratibida columnifera)	1.0
		Little bluestem (Schizachyrium scoparium)	1.8
		Indiangrass (Sorghastrum nutans)	1.8
Texas Wintergrass (Nassella leucotricha)	15.0		
	<b>Total</b>	<b>35.0</b>	
Mar 30-Oct 1	Permanent Warm Season	Bermuda (Cynodon dactylon)(hulled)	45.0

Oct 1-Mar 30	Permanent Cool/Warm Season	Bermuda (Cynodon dactylon)(unhulled)	70.0
		*Cereal Rye (Secale cereale)	90.0
		<b>Total</b>	<b>160.0</b>

Take care to distribute seed evenly, by sowing fine and large seeds separately or by using a fine seed box. When broadcasting seeding, the application rate should be doubled and the area rolled to ensure a good seed/soil contact

\*From September 15 to March 1, Oats (21 lb/acre) and Winter Wheat (30 lb/acre) may be substituted for Rye.

Mulch type used shall be hay, straw or mulch applied at a rate of 3500 lb/acre (hay), 4500 lb/acre (straw) or 2500 lb/acre (hydraulic mulch). Tackifier, if used shall be biodegradable.

C. The planted area shall be irrigated or sprinkled in a manner that will not erode the topsoil, but will sufficiently soak the soil to a depth of six inches. The irrigation shall occur at ten-day intervals during the first two months. Rainfall occurrences of 1/2 inch or more shall postpone the watering schedule for one week.

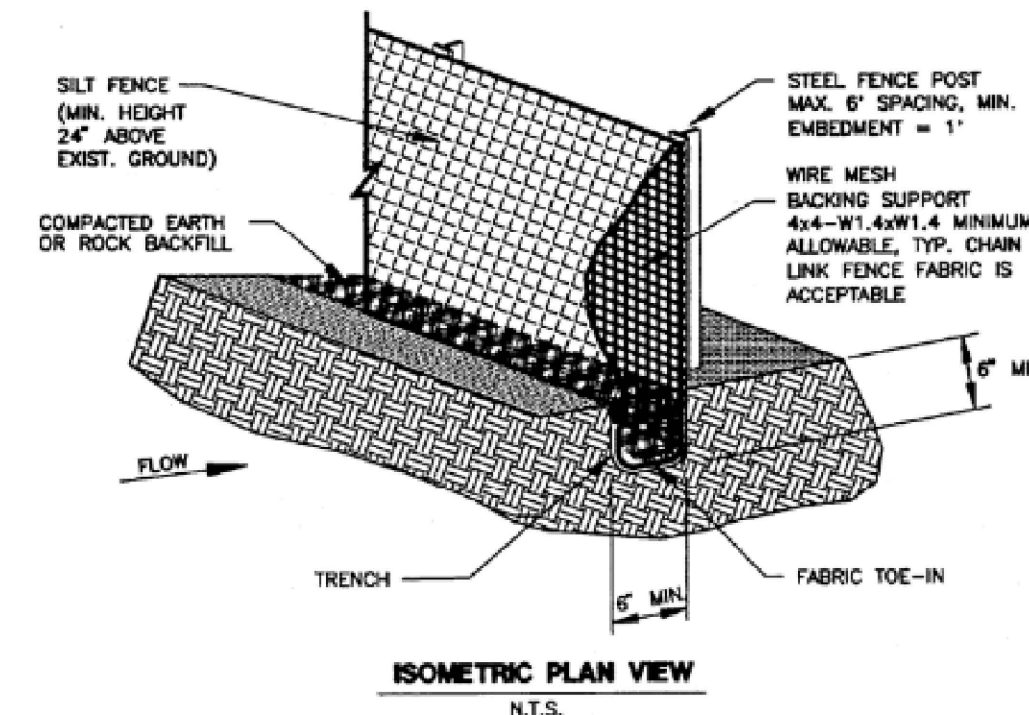
D. Restoration shall be acceptable when the grass has grown at least 1 1/2 inches high with 70% coverage, provided no bare spots larger than 16 square feet exist. Critical areas including creek crossings, slopes, stormwater discharge points must be completely stabilized. Permanent Water quality BMPs must attain 80% coverage.

**Silt Fence**

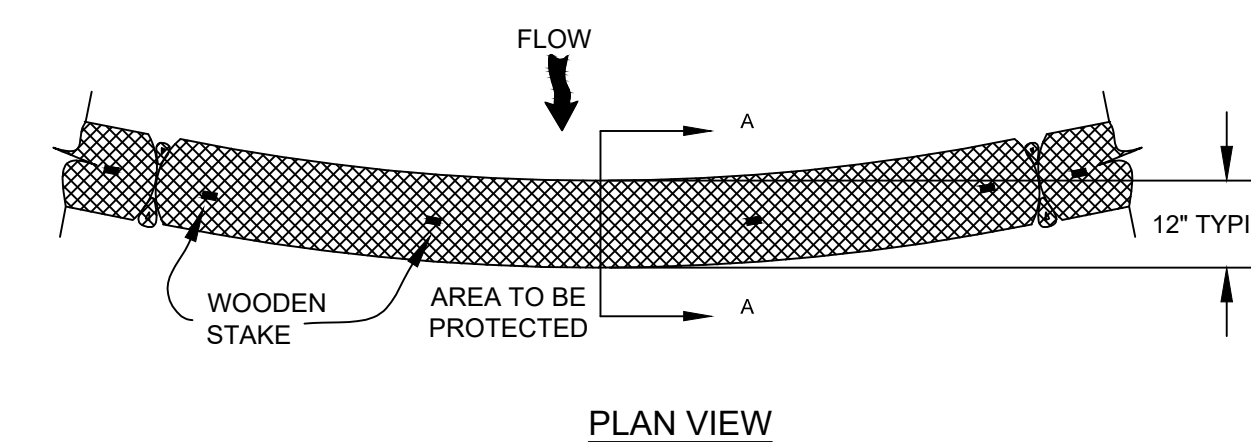
The purpose of a silt fence is to intercept and detain water-borne sediment from unprotected areas of a limited extent (maximum contributing drainage area of 2 acres).

**Notes:**

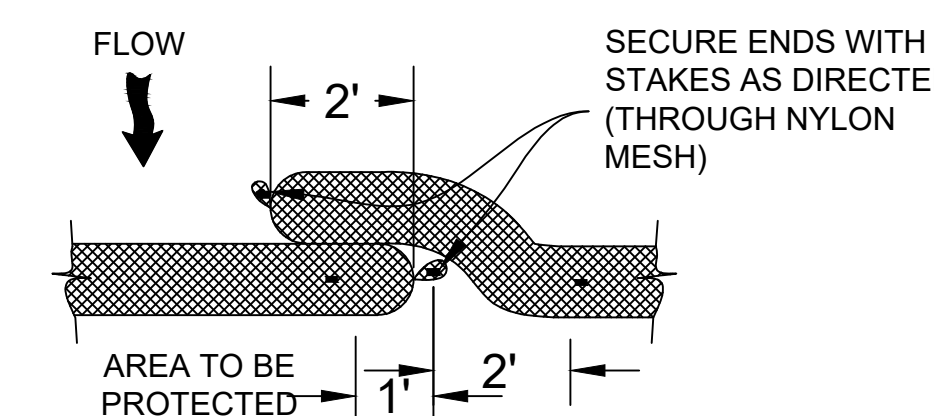
- Use polypropylene, polyethylene or polyamide woven or nonwoven fabric (36 inches wide, weighing 4 oz/yd) and 2" x 4", 12 gauge minimum woven wire backing.
- Use steel fence posts, at least 4 feet long, embedded 1-foot deep and spaced not more than 8 feet on center.
- Toe in the silt fence so that the down-slope face of the trench is flat and perpendicular to the line of flow (6" x 6" trench). Where fence cannot be trenched in (e.g., pavement or rock outcrop), weight fabric flap with 3 inches of pea gravel on uphill side to prevent flow from seeping under fence.
- Use J-hooks as needed when silt fences cross contour lines to create catchment areas and slow flow velocity. Use J-hooks at downhill fence ends to prevent runoff from escaping around sides. Refer to the J-hook placement detail found below.
- Inspect silt fences weekly and after each rain event (of 0.5 inch or more) to locate and repair any damage. Replace any torn fabric and repair any sections crushed or collapsed in the course of construction activity.
- Remove sediment when buildup reaches 6 inches. Dispose of sediment in a manner that will not cause additional siltation.
- When construction is complete, properly dispose of any sediment buildup and restore the prior location of the silt fence. The fence materials should be disposed of in an approved landfill or reused if in serviceable condition.



**Schematic of a Silt Fence Installation**

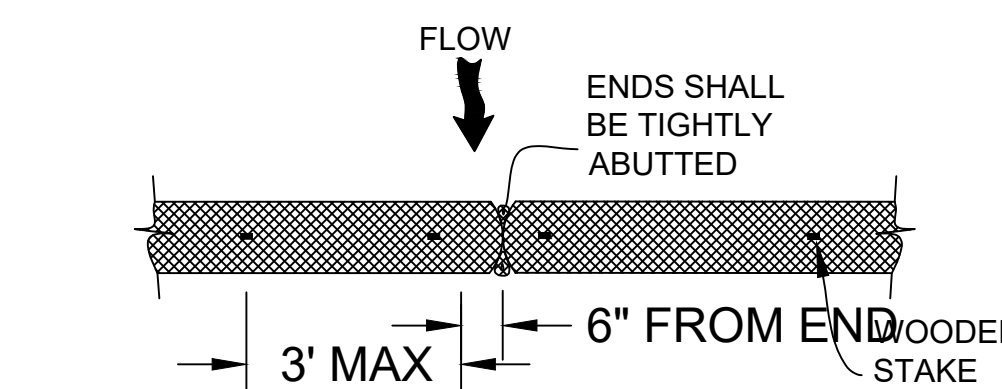


**PLAN VIEW**



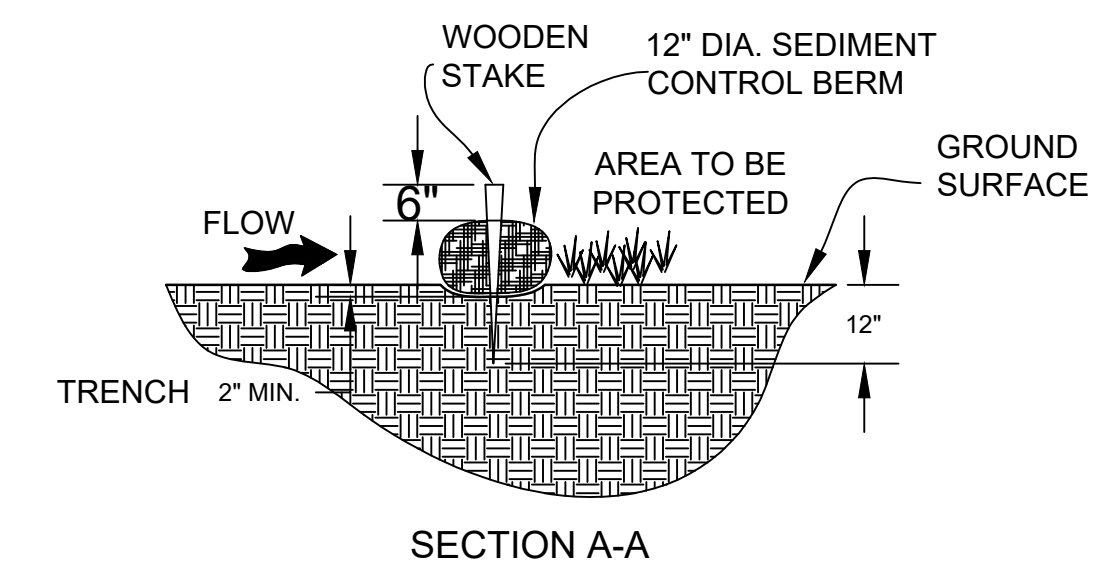
**DETAIL (OVERLAPPED)**

OR



**DETAIL (ABUTTED)**

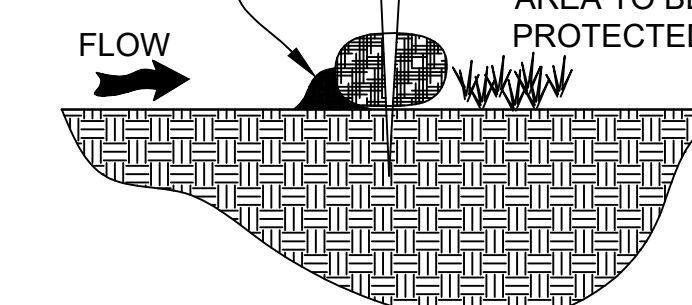
**SEDIMENT CONTROL BERM**



**SECTION A-A**

OR

AS AN ALTERNATIVE TO TRENCHING-IN THE BERM, IT IS ACCEPTABLE TO PACK MULCH AGAINST THE INSIDE EDGE OF THE BERM AS SHOWN.



**SECTION A-A (ALTERNATIVE)**

**NOTES FOR SEDIMENT CONTROL BERM:**

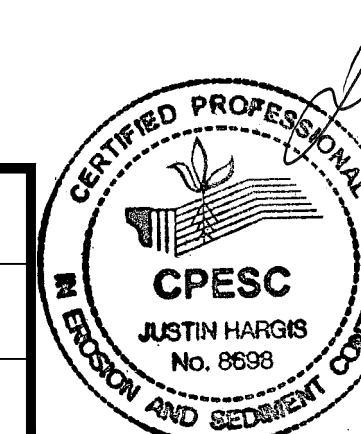
- EXCEPT WHERE SPECIFICALLY CALLED OUT IN PLANS, MATERIAL MAY BE COMPOST, MULCH, ASPEN EXCELSIOR WOOD FIBERS, CHIPPED SITE VEGETATION, AGRICULTURAL RICE OR WHEAT STRAW, COCONUT FIBERS, 100% RECYCLABLE FIBERS, OR ANY OTHER ACCEPTABLE MATERIAL. NO MORE THAN 5% OF THE MATERIAL IS PERMITTED TO ESCAPE FROM MESH. THE MIXTURE RATIO SHALL BE APPROXIMATELY 1 TO 3 (FINE TO COARSE).
- FURNISH CONTAINMENT MESH THAT IS 100% BIODEGRADABLE, PHOTODEGRADABLE OR RECYCLABLE SUCH AS BURLAP, TWINE, UV PHOTODEGRADABLE PLASTIC, POLYESTER, OR ANY OTHER ACCEPTABLE MATERIAL. USE BIODEGRADABLE OR PHOTODEGRADABLE CONTAINMENT MESH WHEN BERM WILL REMAIN IN PLACE AS PART OF A VEGETATIVE SYSTEM. USE RECYCLABLE CONTAINMENT MESH FOR TEMPORARY INSTALLATIONS.
- SEDIMENT CONTROL BERMS SHALL BE 12 INCH, 18 INCH, OR 24 INCH IN DIAMETER.
- SEDIMENT CONTROL BERM SHALL BE TRENCHED INTO THE GROUND A MINIMUM OF 2 INCHES, OR AS AN ALTERNATIVE, MULCH MAY BE PACKED AGAINST THE INSIDE OF FLOW SIDE OF BERM.
- FILLED MESH SHALL BE CLAMPED WITH PLASTIC LOCK TIES OR KNOTTED IN SUCH A WAY AS TO INSURE THE PERMANENT CLOSURE OF BOTH ENDS. INDIVIDUAL PEICES OF BERM SHALL BE OVERLAPPED OR ABUTTED END TO END SUCH THAT WATER WILL NOT PASS THROUGH THE SPACE BETWEEN THE BERMS.
- ANCHOR BERMS IS A METHOD ADEQUATE TO PREVENT DISPLACEMENT AS A RESULT OF NORMAL RAIN EVENTS. STAKES USED FOR ANCHORING SHALL BE DRIVEN FROM THE UPSTREAM SIDE. STAKING SHALL BE AT EACH END AND PLACED AT A MINIMUM OF 4 FEET AND A MAXIMUM OF 6 FEET ALONG THE LENGTH OF THE BERM.

Ltr.	Date	Revision	By	Chkd.	Appd.	Ltr.	Date	Revision	By	Chkd.	Appd.
C						F					
B						E					
A						D					

DRAWN: BB

CHECKED: JH

APPROVED: JH



Justin Hargis  
01/12/2024



LCRA TRANSMISSION SERVICES CORPORATION  
AUSTIN, TEXAS  
LOCATION  
DALCHAU SERVICE CENTER

TRANSMISSION  
EROSION & SEDIMENTATION  
CONTROL DETAILS

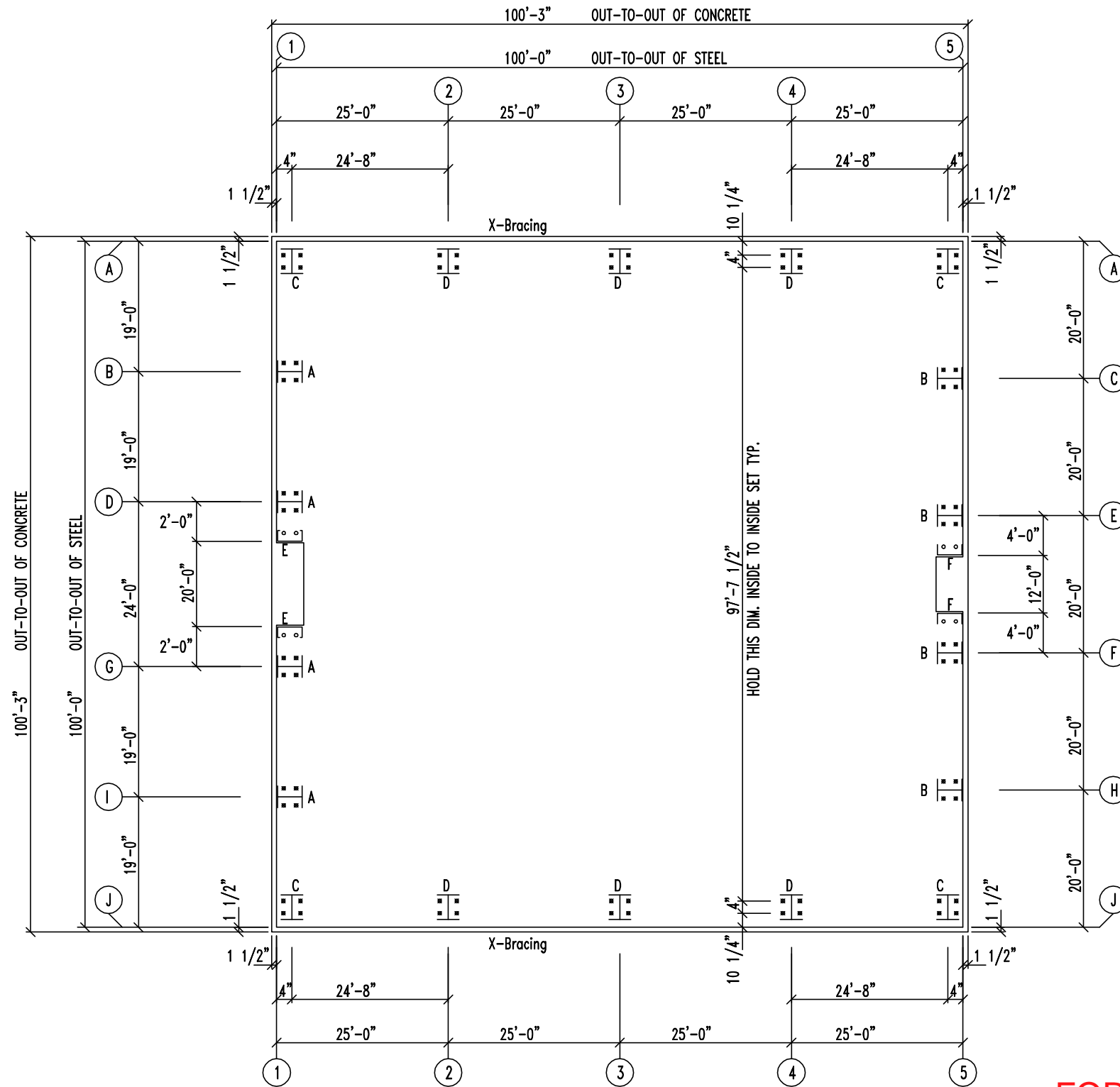
DATE  
JANUARY 2024  
SCALE  
1"=50'-0"  
DWG. NO.  
ESC-2











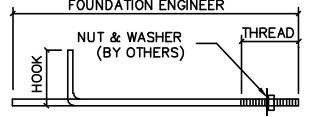
FOR INFORMATION ONLY

ANCHOR BOLT PLAN  
NOTE: All Base Plates @ 100'-0" (U.N.)

ANCHOR BOLT DIAMETERS HAVE BEEN DESIGNED BY THE METAL BUILDING MANUFACTURER BASED ON AISC METHOD WITH COMBINED SHEAR AND TENSION.

DEVELOPMENT, EMBEDMENT AND HOOK LENGTH OF ANCHOR BOLTS IN THE CONCRETE ARE DESIGN RESPONSIBILITY OF OTHERS. ALSO DESIGN OF SHEAR ANGLES, TENSION PLATES, HAIRPINS, AND ANY OTHER EMBEDDED MATERIAL IN THE CONCRETE SHALL BE DESIGNED AND PROVIDED BY OTHERS.


NOTE: ANCHOR BOLT PROJECTION IS FROM BOTTOM OF BASE PLATE, ADJUST FOR GROUT AS REQUIRED.

ANCHOR BOLT DETAIL		DIA.	QTY.	LENGTH	THRD	HOOK	PROJ
LENGTH TO BE DETERMINED BY FOUNDATION ENGINEER		1/2"	*	*	*	*	1 1/2"
		5/8"	8	*	*	*	2 1/4"
		3/4"	72	*	*	*	2 1/2"
		7/8"	*	*	*	*	3 1/2"
		1"	*	*	*	*	3 1/2"
		1 1/8"	*	*	*	*	3 1/2"
ANCHOR BOLTS (BY OTHERS)		1 1/4"	*	*	*	*	3 1/2"

\* = DETERMINED BY OTHERS

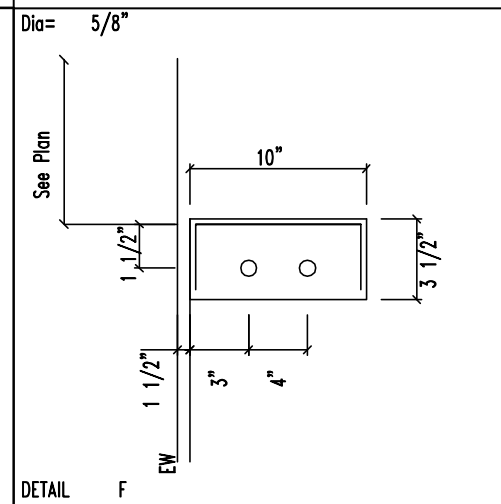
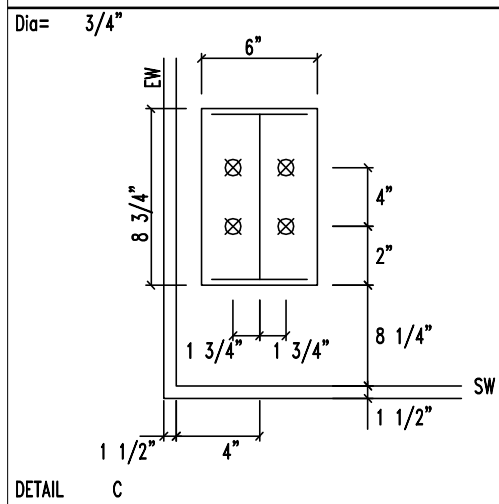
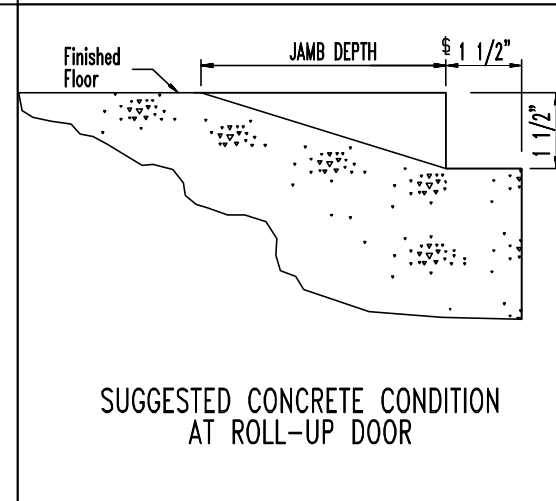
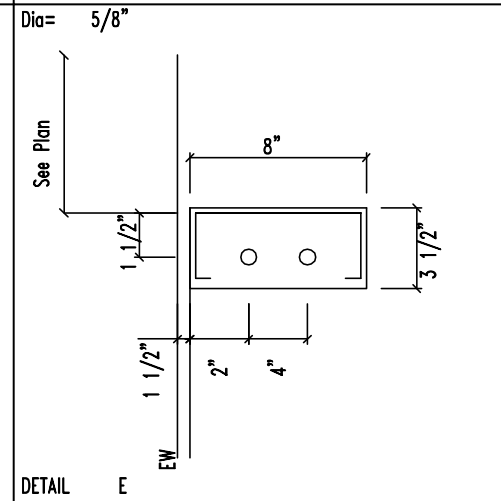
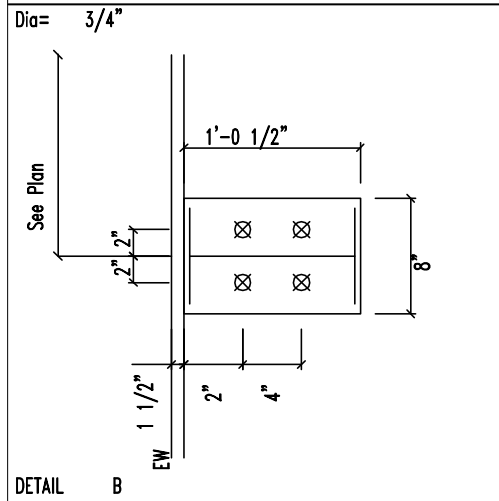
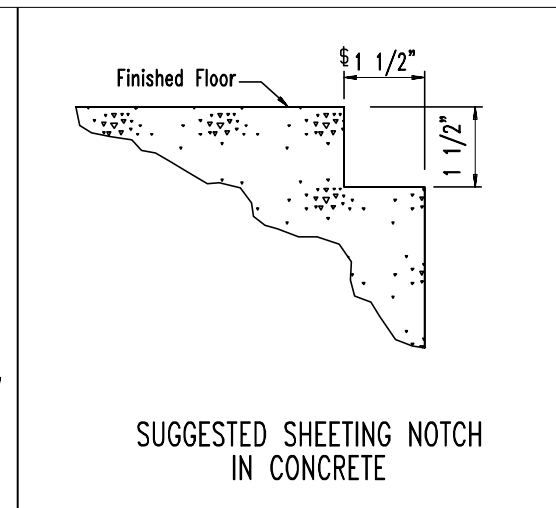
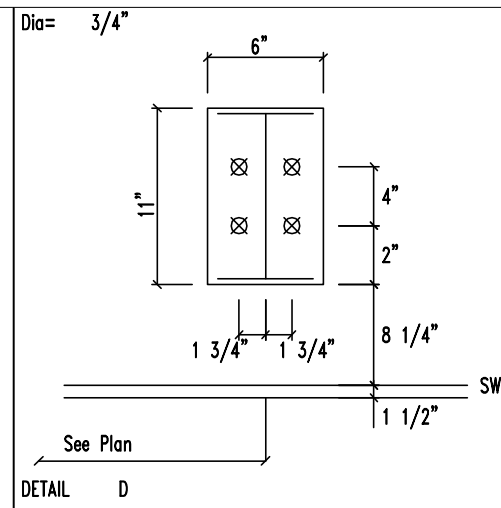
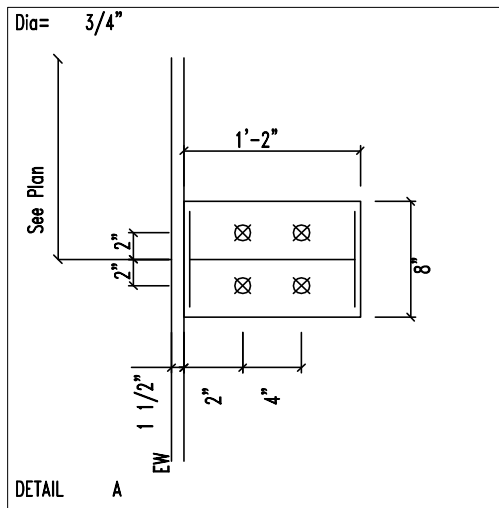
DRAWING STATUS	
<input type="checkbox"/>	FOR APPROVAL: THESE DRAWINGS, BEING FOR APPROVAL, ARE BY DEFINITION NOT FINAL AND ARE FOR CONCEPTUAL REPRESENTATION ONLY. THEIR PURPOSE IS TO CONFIRM PROPER INTERPRETATION OF THE PROJECT DOCUMENTS. ONLY DRAWINGS ISSUED "FOR CONSTRUCTION" CAN BE CONSIDERED AS COMPLETE.
<input type="checkbox"/>	FOR PERMIT: THESE DRAWINGS, BEING FOR PERMIT, ARE BY DEFINITION NOT FINAL IN THAT, AS A MINIMUM, PIECE MARKINGS ARE NOT IDENTIFIED. ONLY DRAWINGS ISSUED "FOR CONSTRUCTION" CAN BE CONSIDERED AS COMPLETE.
<input checked="" type="checkbox"/>	FOR CONSTRUCTION: FINAL DRAWINGS.

REVISIONS			
NO.	DATE	DESCRIPTION	BY
0	11/27/23	ANCHOR BOLT FOR CONSTRUCTION	ASB



32916 FM 529  
BROOKSHIRE, TX 77423  
(281) 375-2020

DESCRIPTION		ANCHOR BOLT PLAN	
SIZE		100'-0" x 100'-0" x 28'-0"	
CUSTOMER		LCRA	
LOCATION		AUSTIN TX 78744	
DRN. BY	CK'D BY	DATE	SCALE
ASB	CK'D	11/27/23	NONE
QUOTE NO.		JOB NO.	
		23-8142	
SHEET NO.		ISSUE	
AB1 OF 3		0	



FOR INFORMATION ONLY

DRAWING STATUS		REVISIONS				STRAIGHT LINE METAL BUILDINGS		32916 FM 529 BROOKSHIRE, TX 77423 (281) 375-2020	
<input type="checkbox"/>	FOR APPROVAL: THESE DRAWINGS, BEING FOR APPROVAL, ARE BY DEFINITION NOT FINAL AND ARE FOR CONCEPTUAL REPRESENTATION ONLY. THEIR PURPOSE IS TO CONFIRM PROPER INTERPRETATION OF THE PROJECT DOCUMENTS. ONLY DRAWINGS ISSUED "FOR CONSTRUCTION" CAN BE CONSIDERED AS COMPLETE.	NO.	DATE	DESCRIPTION	BY	CK'D	DESIGN • FABRICATION • ERECTION DESCRIPTION ANCHOR BOLT DETAILS SIZE 100'-0" x 100'-0" x 28'-0" CUSTOMER LCRA LOCATION AUSTIN TX 78744 DRN. BY ASB CK'D BY CK'D DATE 11/27/23 SCALE NONE QUOTE NO. JOB NO. 23-8142 SHEET NO. AB2 OF 3 ISSUE 0		
<input type="checkbox"/>	FOR PERMIT: THESE DRAWINGS, BEING FOR PERMIT, ARE BY DEFINITION NOT FINAL IN THAT, AS A MINIMUM, PIECE MARKINGS ARE NOT IDENTIFIED. ONLY DRAWINGS ISSUED "FOR CONSTRUCTION" CAN BE CONSIDERED AS COMPLETE.	0	11/27/23	ANCHOR BOLT FOR CONSTRUCTION	ASB	CK'D			
<input checked="" type="checkbox"/>	FOR CONSTRUCTION: FINAL DRAWINGS.								

**NOTES FOR REACTIONS**

- All loading conditions are examined and only maximum/minimum H or V and the corresponding H or V are reported.
- Positive reactions are as shown in the sketch. Foundation loads are in opposite directions.
- Bracing reactions are in the plane of the brace with the H pointing away from the braced bay. The vertical reaction is downward.
- Building reactions are based on the following building data:
  - Width (ft) = 100.0
  - Length (ft) = 100.0
  - Eave Height (ft) = 28.0/ 28.0
  - Roof Slope (rise/12) = 3.0/ 3.0
  - Dead Load (psf) = 2.0
  - Collateral Load (psf) = 0.5
  - Roof Live Load (psf) = 20.0
  - Frame Live Load (psf) = 12.0
  - Snow Load (psf) = 3.8
  - Wind Speed (mph) = 115.0
  - Wind Code = IBC 21
  - Exposure = C
  - Closure = Enclosed
  - Importance Wind = 1.00
  - Importance Seismic = 1.25
  - Seismic Zone = A
  - Seismic Coeff (Fe\*Se) = 0.08
- Loading conditions are:
  - 1 Dead+Collateral+Live
  - 2 0.6Dead+0.6Wind\_Left1
  - 3 0.6Dead+0.6Wind\_Right1
  - 4 0.6Dead+0.6Wind\_Long1L
  - 5 0.6Dead+0.6Wind\_Long2L
  - 6 1.01Dead+1.01Collateral+0.52Seismic\_LongR
  - 7 0.6Dead+0.6Wind\_Right2+0.6Wind\_Suction
  - 8 0.6Dead+0.6Wind\_Pressure+0.6Wind\_Long2L

**RIGID FRAME:**

		BASIC COLUMN REACTIONS (k)											
Frame Line	Column Line	---Dead---		---Collateral---		---Live---		---Snow---		---Wind_Left1---		---Wind_Right1---	
		Horiz	Vert	Horiz	Vert	Horiz	Vert	Horiz	Vert	Horiz	Vert	Horiz	Vert
1	A	1.1	2.7	0.2	0.3	3.7	7.6	1.2	2.4	-9.3	-15.3	-1.9	-11.3
1	J	-1.1	2.7	-0.2	0.3	-3.7	7.6	-1.2	2.4	1.9	-11.3	9.3	-15.3
		---Wind_Left2---		---Wind_Right2---		---Wind_Long1---		---Wind_Long2---		---Seismic_Left---		---Seismic_Right---	
1	A	-8.3	-8.8	-0.8	-4.9	-1.8	-13.7	-3.3	-11.8	-0.1	-0.1	0.1	0.1
1	J	0.8	-4.9	8.3	-8.8	3.3	-11.8	1.8	-13.7	-0.1	0.1	0.1	-0.1
		---MIN_SNOW---		F1UNB_SL_L-		F1UNB_SL_R-							
1	A	1.7	3.5	1.3	2.8	1.3	1.8						
1	J	-1.7	3.5	-1.3	1.8	-1.3	2.8						
		---Dead---		---Collateral---		---Live---		---Snow---		---Wind_Left1---		---Wind_Right1---	
5	A	1.1	2.7	0.2	0.3	3.7	7.6	1.2	2.4	-9.3	-15.3	-1.9	-11.3
5	J	-1.1	2.7	-0.2	0.3	-3.7	7.6	-1.2	2.4	1.9	-11.3	9.3	-15.3
		---Wind_Left2---		---Wind_Right2---		---Wind_Long1---		---Wind_Long2---		---Seismic_Left---		---Seismic_Right---	
5	A	-8.3	-8.8	-0.8	-4.9	-1.8	-13.7	-3.3	-11.8	-0.1	-0.1	0.1	0.1
5	J	0.8	-4.9	8.3	-8.8	3.3	-11.8	1.8	-13.7	-0.1	0.1	0.1	-0.1
		---MIN_SNOW---		F2UNB_SL_L-		F2UNB_SL_R-							
5	A	1.7	3.5	1.3	2.8	1.3	1.8						
5	J	-1.7	3.5	-1.3	1.8	-1.3	2.8						
		---Dead---		---Collateral---		---Live---		---Snow---		---Wind_Left1---		---Wind_Right1---	
2*	A	2.0	4.4	0.4	0.6	8.4	15.0	2.7	4.8	-20.0	-30.2	-5.2	-22.3
2*	J	-2.0	4.4	-0.4	0.6	-8.4	15.0	-2.7	4.8	5.2	-22.3	20.0	-30.2
		---Wind_Left2---		---Wind_Right2---		---Wind_Long1---		---Wind_Long2---		---Seismic_Left---		---Seismic_Right---	
2*	A	-17.3	-17.4	-2.6	-9.6	-4.8	-46.1	-7.6	-42.3	-0.2	-0.1	0.2	0.1
2*	J	2.6	-9.6	17.3	-17.4	7.6	-42.3	4.8	-46.1	-0.1	0.1	0.1	-0.1
		---Seismic_Long---		---MIN_SNOW---		F3UNB_SL_L-		F3UNB_SL_R-					
2*	A	0.0	-0.7	3.8	6.9	3.0	5.5	3.0	3.6				
2*	J	0.0	-0.7	-3.8	6.9	-3.0	3.6	-3.0	5.5				
2*	Frame lines:		2 3 4										

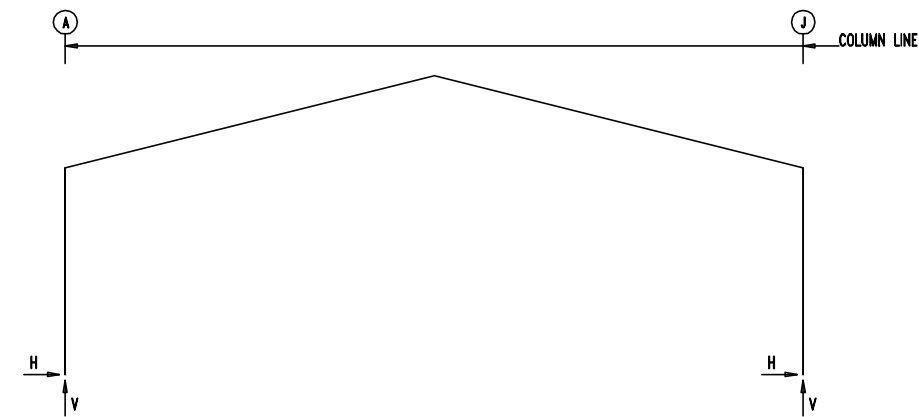
**ENDWALL COLUMN:**

		BASIC COLUMN REACTIONS (k)				
Frm Line	Col Line	Dead	Wind Press	Wind Sucl	Seis Long	
						Horz
1	B	0.7	-7.8	8.7	0.0	
1	D	0.8	-10.2	11.3	0.0	
1	G	0.8	-10.2	11.3	0.0	
1	I	0.7	-7.8	8.7	0.0	
5	H	0.6	-8.3	9.2	0.0	
5	F	0.8	-9.7	10.7	0.0	
5	E	0.8	-9.7	10.7	0.0	
5	C	0.6	-8.3	9.2	0.0	

**ENDWALL COLUMN:**

		MAXIMUM REACTIONS, ANCHOR BOLTS, & BASE PLATES											
Frm Line	Col Line	Column_Reactions(k)					Bolt(in)	Dia	Base_Plate(in)		Thick	Grout (in)	
		Load Id	Hmax H	V Vmax	Load Id	Hmin H			V Vmin	Width			Length
1	B	7	5.2	0.4	8	-4.7	4	0.750	8.000	14.00	0.375	0.0	
1	D	7	6.8	0.5	8	-6.1	4	0.750	8.000	14.00	0.375	0.0	
1	G	7	6.8	0.5	8	-6.1	4	0.750	8.000	14.00	0.375	0.0	
1	I	7	5.2	0.4	8	-4.7	4	0.750	8.000	14.00	0.375	0.0	
5	H	7	5.5	0.4	8	-5.0	4	0.750	8.000	12.50	0.375	0.0	
5	F	7	6.4	0.5	8	-5.8	4	0.750	8.000	12.50	0.375	0.0	
5	E	7	6.4	0.5	8	-5.8	4	0.750	8.000	12.50	0.375	0.0	
5	C	7	5.5	0.4	8	-5.0	4	0.750	8.000	12.50	0.375	0.0	

**FRAME LINES:** 1 2 3 4 5



**RIGID FRAME:**

		MAXIMUM REACTIONS, ANCHOR BOLTS, & BASE PLATES											
Frm Line	Col Line	Column_Reactions(k)					Bolt(in)	Dia	Base_Plate(in)		Thick	Grout (in)	
		Load Id	Hmax H	V Vmax	Load Id	Hmin H			V Vmin	Width			Length
1	A	1	5.0	10.7	2	-4.9	4	0.750	6.000	8.750	0.500	0.0	
1	J	3	4.9	-7.5	1	-5.0	4	0.750	6.000	8.750	0.500	0.0	
		1	-5.0	10.7	3	4.9	-7.5						
1	Frame lines:		2 3 4										

**RIGID FRAME:**

		MAXIMUM REACTIONS, ANCHOR BOLTS, & BASE PLATES											
Frm Line	Col Line	Column_Reactions(k)					Bolt(in)	Dia	Base_Plate(in)		Thick	Grout (in)	
		Load Id	Hmax H	V Vmax	Load Id	Hmin H			V Vmin	Width			Length
2*	A	1	10.8	20.0	2	-10.8	4	0.750	6.000	11.00	0.750	0.0	
2*	J	3	10.8	-15.5	1	-10.8	4	0.750	6.000	11.00	0.750	0.0	
		1	-10.8	20.0	5	1.7	-25.1						
2*	Frame lines:		2 3 4										

**RIGID FRAME:**

		MAXIMUM REACTIONS, ANCHOR BOLTS, & BASE PLATES											
Frm Line	Col Line	Column_Reactions(k)					Bolt(in)	Dia	Base_Plate(in)		Thick	Grout (in)	
		Load Id	Hmax H	V Vmax	Load Id	Hmin H			V Vmin	Width			Length
5	A	1	5.0	10.7	2	-4.9	4	0.750	6.000	8.750	0.500	0.0	
5	J	3	4.9	-7.5	1	-5.0	4	0.750	6.000	8.750	0.500	0.0	
		1	-5.0	10.7	3	4.9	-7.5						

**BUILDING BRACING REACTIONS**

Loc	Wall Line	Col Line	± Reactions(k)				Panel_Shear (lb/ft)		Note
			Horz	Vert	Horz	Vert	Wind	Seis	
L_EW	1								(h)
F_SW	J	2,3	18.2	19.1	0.7	0.7			(h)
R_EW	5								
B_SW	A	3,2	18.2	19.1	0.7	0.7			

(h)Rigid frame at endwall

Reaction values for seismic shear force, Eh  
 Reaction values shown are unfactored  
 Maximum load combination factors are:  
 Wind : 0.60  
 Seismic : 0.70

**FOR INFORMATION ONLY**

**DRAWING STATUS**

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- FOR CONSTRUCTION: FINAL DRAWINGS.

**REVISIONS**

NO.	DATE	DESCRIPTION	BY	CK'D
0	11/27/23	ANCHOR BOLT FOR CONSTRUCTION	ASB	CK'D



32916 FM 529  
 BROOKSHIRE, TX 77423  
 (281) 375-2020

DESCRIPTION		ANCHOR BOLT REACTIONS	
SIZE		100'-0" x 100'-0" x 28'-0"	
CUSTOMER		LCRA	
LOCATION		AUSTIN TX 78744	
DRN. BY	CK'D BY	DATE	SCALE
ASB	CK'D	11/27/23	NONE
QUOTE NO.	JOB NO.	CAD BY	MEM
	23-8142		
SHEET NO.	ISSUE		
AB3 OF 3	0		