

RECORD DRAWING
BASED ON CONTRACTOR MARKUPS,
NOT FIELD SURVEY.

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CITY MANAGER
JEFF JENKINS

DIRECTOR OF PUBLIC WORKS
STACY CAUDELL, P.E.

WRIGHT CONSTRUCTION COMPANY, INC.

[illegible]

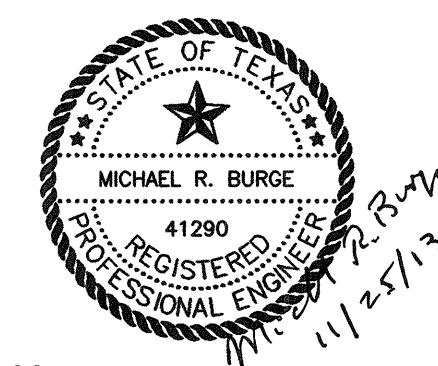
VICINITY MAP

BW2 JOB NO. 10-1424 AND 11-1471

APRIL 2012

"REVISED PER ADDENDA"

3 "REVISED PER FIELD CHANGES"



ENGINEER:

BW2

BW2 ENGINEERS, INC.

OWNER:

CITY OF LUCAS
151 COUNTRY CLUB ROAD
LUCAS, TEXAS 75002

1919 S. SHILOH ROAD
SUITE 500, L.B. 27
GARLAND, TEXAS 75042
Firm Registration No. F-5290

<u>3</u>	11/9/12	REVISED PER FIELD CHANGES	MRB
<u>2</u>	7/13/12	ADDED PER ADDENDUM NO. 4	MRB
<u>1</u>	7/13/12	ADDED PER ADDENDUM NO. 3	MRB
NO.	DATE	REVISION	REVIEWED

GENERAL NOTES:

1. It is the CONTRACTOR's responsibility to maintain neat and accurate plans of record.
2. The CONTRACTOR is responsible for maintaining adequate site drainage throughout the duration of this project.
3. The CONTRACTOR is responsible for obtaining all necessary permits and approvals before construction begins.
4. The CONTRACTOR shall replace all fence removed during construction in as good or better condition than before construction.
5. The CONTRACTOR shall take all necessary precautions to ensure that electric power and telephone poles are either moved to a safe location by the affected utility company or not disturbed during construction. All costs incurred for moving electric power and telephone poles shall be included in the price bid for the construction of the project.
6. The CONTRACTOR shall restore all property including driveways, public streets, sidewalks, public utilities, franchise utilities, private utilities, and all other improvements removed or damaged inside and outside the project limits during construction to as good or better condition than before construction. Restoration shall be made immediately after the property no longer interferes with construction.
7. The information shown on these drawings concerning type and location of underground and other utilities is not guaranteed to be accurate or all-inclusive. The CONTRACTOR is responsible for making his own determinations as to the type and location of underground utilities and other utilities as may be necessary to avoid damage thereto.
8. The CONTRACTOR shall not place fill or waste material on any private property without prior written permission from the property owner and written concurrence from the City. No excess excavated material shall be deposited in low areas or along natural drainage ways that will restrict the natural flow of water. If the CONTRACTOR places excavated material in low areas that will cause flood damage, CONTRACTOR will be responsible for all damage resulting from such fill, and he shall remove the fill at CONTRACTOR's expense.
9. All streets within the scope of the Contract shall be kept accessible to fire trucks, ambulances, and other emergency vehicles.
10. The CONTRACTOR shall be responsible for public safety during the duration of construction. All barricades, warning signs, lights, devices, etc., for the guidance and protection of traffic and pedestrians must conform to the installation shown in 1980 Texas Manual of Uniform Traffic Control Devices, as currently amended by the Texas Department of Transportation. CONTRACTOR shall at all times provide barricades, warning signs and lighting adequate to safeguard the public from any hazards resulting from open trenches during non-work hours.
11. Filter fabric fence for erosion control shall be provided in accordance with specifications and as shown on the plans and in accordance with the EPA regulations.
12. The CONTRACTOR shall use the public right-of-ways and existing utility easements for access to the job site.
13. The CONTRACTOR shall select the subcontractor to be utilized for testing and lab work. The CONTRACTOR shall be responsible for paying for testing and lab work. Selection of subcontractor for this purpose will be subject to approval by the City. Testing referred to herein includes any compaction and pressure testing required on this project. Testing shall also include testing of concrete required to determine and ascertain that concrete strengths in specifications are attained for all concrete members on the project.
14. The CONTRACTOR shall keep excavated trenches free of groundwater during construction. If necessary, the CONTRACTOR shall utilize dewatering procedures in order to control groundwater during construction such that it does not affect his construction work.
15. The CONTRACTOR shall provide means for adequately controlling and avoiding soil erosion during construction. The CONTRACTOR shall not store spoil in drainage ways during construction.
16. All disturbed earth areas are to be finish graded to original or proposed contours, and construction area is to be fertilized and hydromulched with bermuda seed according to NCTCOG specifications immediately after construction. Backfill to be select material free of rock and other debris. CONTRACTOR shall thoroughly water the hydromulch immediately after placement. The CONTRACTOR shall be responsible for continued maintenance and watering of the newly hydromulched areas until the entire project is completed and accepted by the City of Lucas. Watering of the bermuda hydromulch shall be done in a manner and quantity as directed by City of Lucas field representative.
17. No existing sprinkler/irrigations systems have been shown on the plans; however, they may exist in certain areas. It is the CONTRACTORS responsibility to locate any existing irrigation systems within the project limits and determine if they will be affected by this construction. If CONTRACTOR encounters any sprinkler systems during construction, he shall repair and/or replace in as good or better condition than before construction.
18. The CONTRACTOR shall maintain adequate sanitary facilities for use by workers throughout construction.
19. The CONTRACTOR shall conform to the Occupational Safety and Health Administration's (OSHA) standards for trench safety that are in effect during the period of construction.
20. All materials and workmanship shall conform to the City of Lucas Standards and Specifications and the North Central Texas Council of Government (NCTCOG) Standards and Specifications, except as noted. In the event of a conflict, the City of Lucas Standards and Specifications shall govern.
21. No existing trees shall be removed without approval of the City of Lucas.
22. CONTRACTOR shall provide all necessary construction staking.
23. CONTRACTOR's working hours shall be in accordance with the provisions of the current City Ordinance governing hours of construction work in the City.

GENERAL NOTES CONT'D.:

24. Driveways affected by construction shall be replaced with driveway of same type material and surface as that removed for installation of proposed pipeline. Driveway culverts shall be removed when necessary to allow for construction of water line. Culverts are to be replaced in the same location if condition of culvert is deemed satisfactory by City. If culvert cannot be salvaged, a new culvert of the same type removed will be installed by the CONTRACTOR. Driveways that are disturbed during construction shall be restored to as good or better condition than they were prior to construction and materials utilized to restore the driveway shall be the same material as what the driveway is presently made of.
25. All concrete shall have a minimum compressive strength of 4000 psi at 28 days (minimum 6 sacks of cement per cubic yard) unless otherwise noted. All reinforcing steel and dowel bars in pavement shall be supported and maintained at the correct clearances by the use of bar chairs or other approved support.
26. The CONTRACTOR shall phase his daily work schedule so that all driveway crossings are to be complete prior to the end of the day. No driveway crossings are to be left open overnight. During installation of the pipeline across driveways, the CONTRACTOR shall be prepared to provide access across trenches and driveways at all times in case of emergency.
27. The CONTRACTOR is responsible for keeping streets, parking areas, sidewalks, etc., adjacent to the project free of mud and debris from construction.
28. The CONTRACTOR shall assume responsibility for protection of public utilities in the construction of this project. All manholes, valve boxes, etc., must be adjusted to proper line and grade by the CONTRACTOR prior to and/or after placing any permanent paving. The CONTRACTOR shall also be responsible for support of existing utility poles, street signs, etc., when excavating in the vicinity of such poles.
29. The City of Lucas Public Works Department is to be notified 48 hours (2 working days) prior to any construction of paving and utilities in rights-of-way, easements and alleys.
30. Arrangements for construction water shall be made through the City of Lucas.
31. All locations of underground utility lines are approximate. CONTRACTOR shall contact the proper utility companies at least 48 hours prior to construction, shall inform them of beginning of construction and shall make arrangements to have utilities located by flagging. Flagging of utilities shall be completed prior to beginning construction.
32. Construction sites shall be secure at all times. Safety precautions shall be taken to protect the public from any injury which might result from construction activities.
33. As part of bid item, "EROSION CONTROL", the CONTRACTOR shall be responsible for implementing any and all erosion control measures as needed to control runoff of siltation from the project site. This shall include, but is not limited to, silt fencing, rock berms, inlet protection, etc. The CONTRACTOR shall maintain these erosion control measures as required until the construction is completed and sod has been placed over disturbed areas.
34. There is no separate pay resulting from any of the work required as a result of the requirements included in these General Notes. All work required shall be included in the price bid for the project.

GENERAL TRAFFIC CONTROL NOTES

1. All temporary signs, markings, cones, channelizing devices, warning lights and barricades shall be in accordance with the current State of Texas Manual on Uniform Traffic Control Devices (MUTCD).
2. Type "A" warning lights shall be placed on all advance warning signs. In addition, flags shall be placed on all advance warning signs that detour traffic.
3. Any existing conflicting markings shall be removed prior to shifting traffic.
4. All temporary pavement markings required during construction shall be of the removable type. Temporary markings and striping may be required to transition travel lanes between construction phases. All pavement markings and striping shall be reflective.
5. The spacing of signs and channelization devices may be adjusted to fit the geometric conditions encountered, such as driveways, intersecting roadways, vertical and horizontal alignment, etc., as approved by the City of Lucas.
6. Advance warning signs shall not be displayed more than forty-eight (48) hours before physical construction begins. Signs may be erected up to one week before needed, if the sign face is fully covered.
7. Use of barricades, portable barrier rails, vertical panels, and drums shall be limited to the immediate areas of construction where a hazard is present. These devices shall not be stored along the roadway within thirty (30) feet of the edge of the traveled way before or after use unless protected by guardrail, bridge rail, and/or barriers installed for other purposes. These devices shall be removed from the construction work zone when the City of Lucas determines they are no longer needed. Where there is insufficient right-of-way to provide for this thirty (30) foot setback, the City of Lucas shall approve alternate locations.
8. The posted speed for warning signage is to be determined at the site by the City of Lucas.
9. Reduced speed warning signage should be placed prior to and at regular intervals within the construction zone.
10. As part of the bid item, "Construction Barricading/Signing/Traffic Control," the CONTRACTOR is required to submit a traffic control plan for construction a minimum of 3 days prior to changes in traffic handling or movement. These plans are to be reviewed and approved by the City of Lucas prior to construction of that phase.
11. The CONTRACTOR shall accommodate existing traffic during construction and shall maintain at least one open lane of traffic at all times. Use of flag men, barricades, vertical panels, etc. shall be required and shall be considered subsidiary to "Construction Barricading/Signing/Traffic Control". Two-way traffic shall be re-established in each instance at the end of the work day.
12. CONTRACTOR shall be required to place temporary pavement markings and/or buttons as needed to maintain traffic in a safe and efficient manner after removal of existing markings. These temporary markings shall not be paid for separately but shall be considered subsidiary to "CONSTRUCTION BARRICADING/SIGNING/TRAFFIC CONTROL".

NTMWD NOTES:

1. North Texas Municipal Water District (NTMWD) water and wastewater transmission pipelines are located within limits of construction.
2. Operation of heavy earth moving equipment, compaction equipment or heavy construction equipment, such as concrete trucks, shall be restricted to specific crossing points across NTMWD easements, as approved by the NTMWD. The crossings shall be designated and verified to provide a minimum of five feet of cover.
3. To assure that placing of significant loads over the NTMWD pipeline does not damage the existing pipeline, no materials shall be stockpiled on the NTMWD easement without authorization from the NTMWD. If the CONTRACTOR desires to use NTMWD's easement for stockpile of materials, contact NTMWD Engineering at (972) 442-5405 so your plans for use of NTMWD's easement can be reviewed.
4. Unless otherwise shown or required, a minimum of one-foot clearance shall be provided for all utilities crossing the NTMWD pipelines.
5. The CONTRACTOR shall contact NTMWD Engineering at (972) 442-5404 at least 48 hours prior to performing any work in the vicinity of the NTMWD facilities.
6. For open cut where crossing under the NTMWD pipeline, within ten feet either side of centerline of pipeline, the trench width shall be limited to four-foot with vertical walls, no sloping banks and with the appropriate trench safety. The entire excavation within the limits noted above shall be backfilled with sand to one-foot above top of NTMWD pipeline. One-foot minimum vertical clearance is required between NTMWD pipeline and proposed utilities.
7. Limits of bore shall be a minimum of the NTMWD easement width.
8. The casing pipe shall terminate outside of the NTMWD easement.
9. Boring and receiving pits shall be located outside of NTMWD easements.
10. A minimum of two-foot horizontal and one-foot vertical clearance is required between proposed pipelines and NTMWD pipelines.
11. Pipelines crossing the NTMWD easement shall be installed in compliance with the applicable NTMWD Rules and Regulations.

RECORD DRAWING

BASED ON CONTRACTOR MARKUPS,
NOT FIELD SURVEY.

!! CAUTION !!

THERE ARE EXISTING AND/OR PROPOSED UTILITIES IN PROJECT AREA. UTILITY INFORMATION SHOWN ON PLANS REPRESENTS APPROXIMATE LOCATIONS OF EXISTING UTILITIES AND IS NOT NECESSARILY ALL-INCLUSIVE. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING EXACT LOCATIONS OF ALL EXISTING UTILITIES AND SHALL BE REQUIRED TO PROTECT UTILITIES TO AVOID DAMAGE.

PRIOR TO ANY EXCAVATION, CONTRACTOR SHALL CONTACT DIG-TESS, TEXAS ONE CALL, LONE STAR NOTIFICATION AND OTHERS AS REQUIRED TO LOCATE EXISTING UTILITIES.

CONTRACTOR SHALL ALSO CONTACT APPROPRIATE CITY UTILITY DEPARTMENT FOR FIELD LOCATES OF MUNICIPAL INFRASTRUCTURE 48 HOURS PRIOR TO CONSTRUCTION.

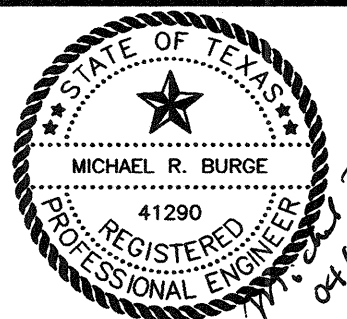
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NO.	DATE	REVISION	REVIEWED

DRAWN: _____ BW2
DESIGN: _____ MRB
REVIEWED: _____ JFW
SCALE: _____ NO SCALE
DATE: _____ APRIL 2012
DWG. NAME: _____ 1424GENNOTE



BW2 Engineers, Inc.

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(972) 864-8200 (T) (972) 864-8220 (F)
Firm Registration No. F-5290



WASTEWATER SYSTEM IMPROVEMENTS
WASTEWATER GRAVITY SEWER AND LIFT STATION

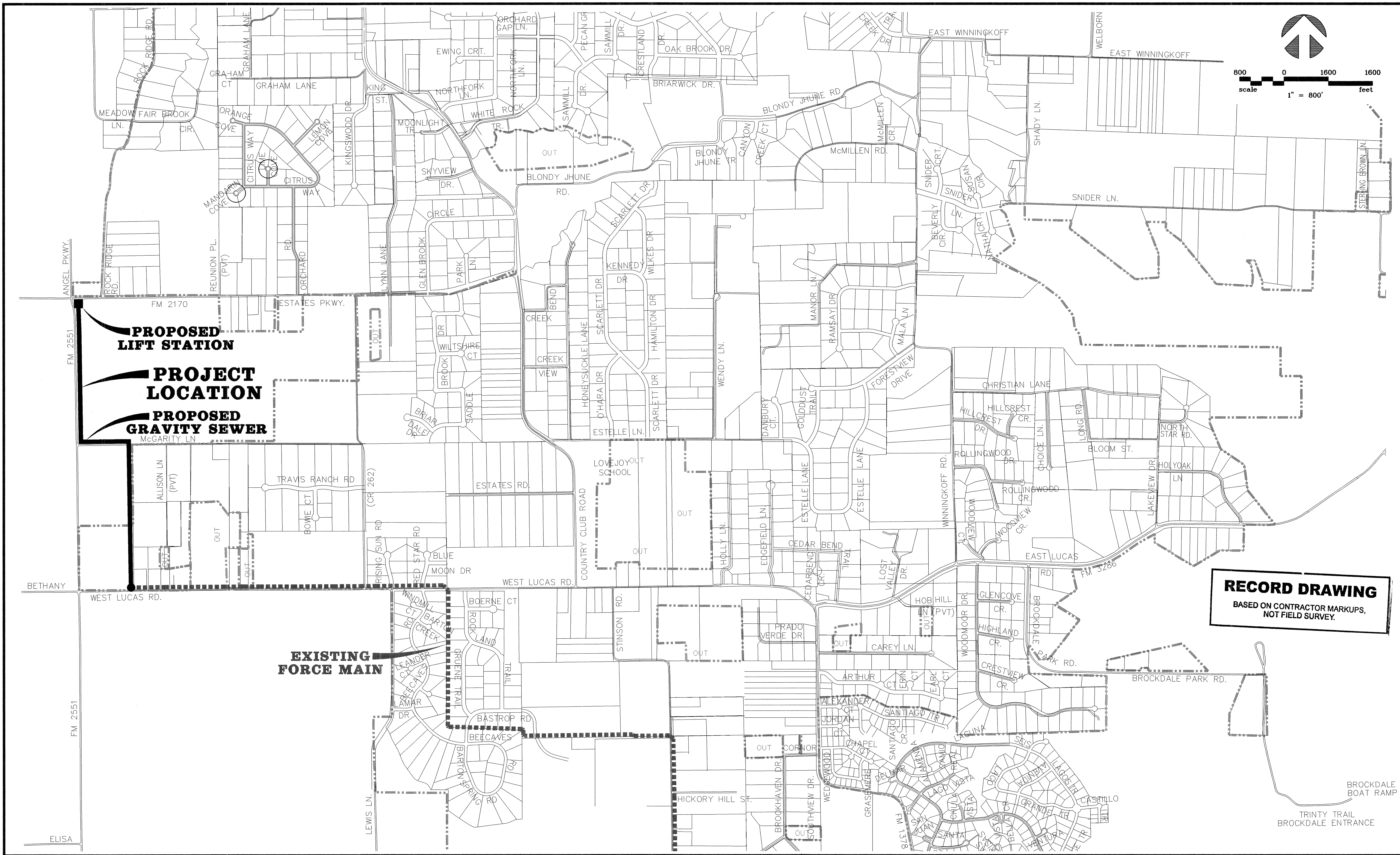
PROJECT GENERAL NOTES

CITY OF LUCAS

SHEET NO. C1

OF C18 SHEETS

JOB NO. 10-1424



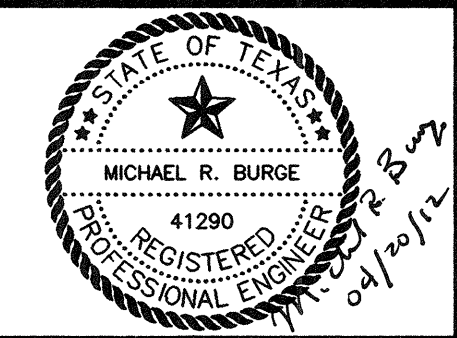
RECORD DRAWING
BASED ON CONTRACTOR MARKUPS,
NOT FIELD SURVEY.

6			
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NO.	DATE	REVISION	REVIEWED

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DESIGN: MRB
REVIEWED: JFW
SCALE: 1" = 800'
DATE: APRIL 2012
DWG. NAME: 1424LOCMAF

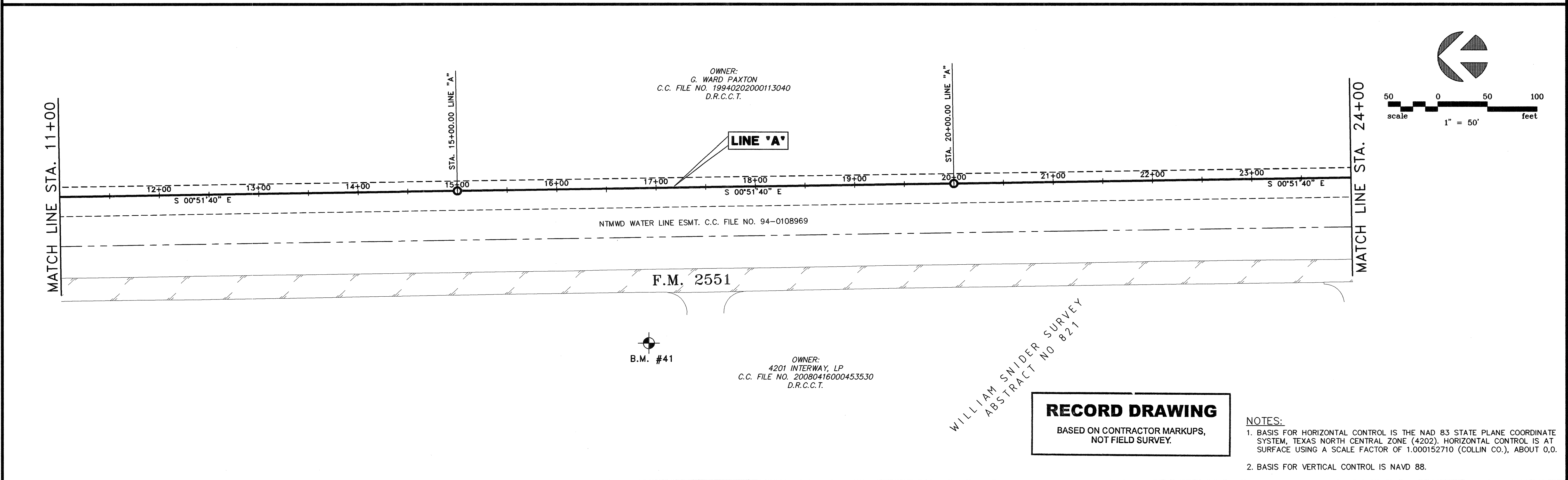
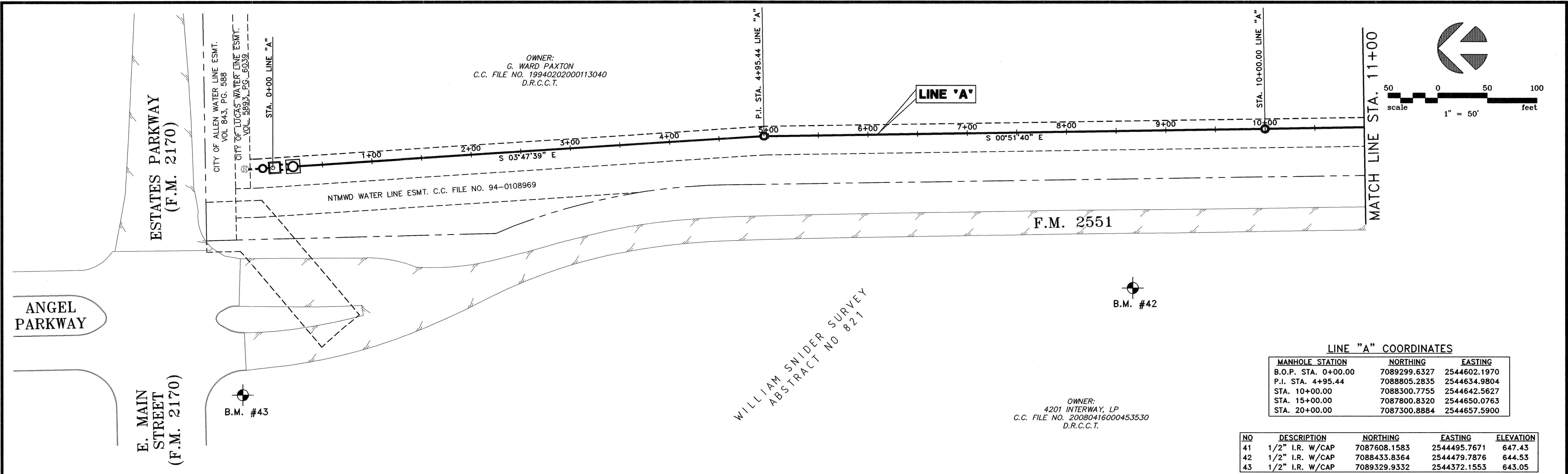


BW2 Engineers, Inc.
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(972) 864-8200 (T) (972) 864-8220 (F)
Firm Registration No. F-52290



WASTEWATER SYSTEM IMPROVEMENTS
WASTEWATER GRAVITY SEWER AND LIFT STATION
PROJECT LOCATION MAP
CITY OF LUCAS

SHEET NO. **C2**
OF **C18** SHEETS
JOB NO. **10-1424**



6				DRAWN: BW2	<div><div>BW2</div><div>BW2 Engineers, Inc. 1919 S. Shiloh Road Suite 500, L.B. 27 Garland, Texas 75042 (972) 864-8200 (T) (972) 864-8220 (F) Firm Registration No. F-5290</div></div>	<div><div><div>STATE OF TEXAS</div><div>★</div><div>MICHAEL R. BURGE</div><div>REGISTERED PROFESSIONAL ENGINEER</div><div>41290</div></div><div>1/16/2017 to 2/28/2017</div></div>	<div>WASTEWATER SYSTEM IMPROVEMENTS WASTEWATER GRAVITY SEWER AND LIFT STATION HORIZONTAL AND VERTICAL CONTROL PLAN (STA. 0+00 TO STA. 24+00) CITY OF LUCAS</div>	SHEET NO. C3
5			DESIGN: MRB	OF C18 SHEETS				
4			REVIEWED: JFW					
3			SCALE: 1" = 50'					
2			DATE: APRIL 2012					
1			DWG. NAME: 1389HORCTRL01					
NO.	DATE	REVISION	REVIEWED				JOB NO. 10-1424	

MATCH LINE STA. 24+00

OWNER:
G. WARD PAXTON
C.C. FILE NO. 19940202000113040
D.R.C.C.T.

F.M. 2551

NTMWD WATER LINE ESMT.
C.C. FILE NO. 94-0108969

P.I. STA. 24+85.94 LINE "A"

B.M. #5

CITY OF LUCAS UTILITY ESMT. VOL. 5517, PG. 167

McGARITY LANE

OWNER:
PENNINGTON PARTNERS, LTD.
VOL. 5184, PG. 1102
D.R.C.C.T.

WILLIAM SNIDER SURVEY
ABSTRACT NO 821

LINE "A"

N 89°34'05" E

N 89°34'05" E

P.I. STA. 33+74.63 LINE "A"

CITY OF LUCAS UTILITY ESMT. VOL. 5517, PG. 167

B.M. #4

S 00°28'06" E

ALLISON LANE

LOT 1

FOX GLEN ADDITION
CAB. 2007, SLIDE 142
D.R.C.C.T.

LOT 2

LINE "A" COORDINATES

MANHOLE	STATION	NORTHING	EASTING
P.I.	STA. 24+85.24	7086814.9987	2544664.8924
STA.	29+50.00	7086818.4972	2545128.9347
P.I.	STA. 33.74.63	7086821.6984	2545553.5526
STA.	39+00.00	7086296.3459	2545557.8480
P.I.	STA. 44+24.63	7085771.7335	2545562.1374
P.I.	STA. 47+20.00	7085476.3881	2545565.9548

HORIZONTAL AND VERTICAL CONTROL POINTS

NO	DESCRIPTION	NORTHING	EASTING	ELEVATION
4	1/2" I.R. W/CAP	7086760.2687	2545444.4776	642.35
5	1/2" I.R. W/CAP	7086783.9040	2544679.3375	646.49

MATCH LINE STA. 37+00

MATCH LINE STA. 37+00

FOX GLEN ADDITION
CAB. 2007, SLIDE 142
D.R.C.C.T.

LOT 2

LOT 3

LOT 4

LOT 5

LOT 6

OWNER:
ANITA & AHMADI ASAD
VOL. 4451, PG. 2441
D.R.C.C.T.

GRAVEL DRIVEWAY

GRAVEL DRIVEWAY

ALLISON LANE

GRAVEL DRIVEWAY

38+00

39+00

40+00

41+00

42+00

43+00

44+00

45+00

46+00

47+00

48+00

S 00°28'06" E

S 00°44'26" E

S 00°55'30" E

LINE "A"

P.I. STA. 44+24.63 LINE "A"

P.I. STA. 47+20.00 LINE "A"

MATCH LINE STA. 49+00

OWNER:
PENNINGTON PARTNERS, LTD.
VOL. 5184, PG. 1102
D.R.C.C.T.

OWNER:
S.C. LUCAS RD., LP
C.C. FILE NO. 20070604000748030
D.R.C.C.T.

OWNER:
S.C. LUCAS RD., LP
C.C. FILE NO. 20060410000467670
D.R.C.C.T.

RECORD DRAWING

BASED ON CONTRACTOR MARKUPS,
NOT FIELD SURVEY.

NOTES:

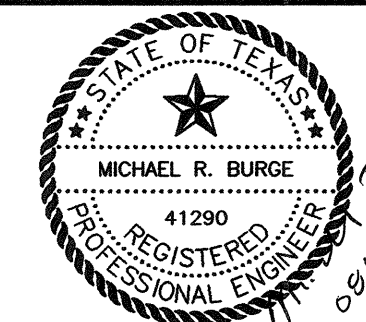
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2. BASIS FOR VERTICAL CONTROL IS NAVD 88.

6			
5			
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1	7/31/12	REVISED MANHOLE LOCATIONS PER FIELD CONDITIONS	MRB
NO.	DATE	REVISION	REVIEWED

DRAWN: BW2
DESIGN: MRB
REVIEWED: JFW
SCALE: 1" = 50'
DATE: APRIL 2012
DWG. NAME: 1389HORCTRL02



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Firm Registration No. F-5290



WASTEWATER SYSTEM IMPROVEMENTS
WASTEWATER GRAVITY SEWER AND LIFT STATION
HORIZONTAL AND VERTICAL CONTROL PLAN
(STA. 24+00 TO STA. 49+00)
CITY OF LUCAS

SHEET NO. C4
OF C18 SHEETS
JOB NO. 10-1424

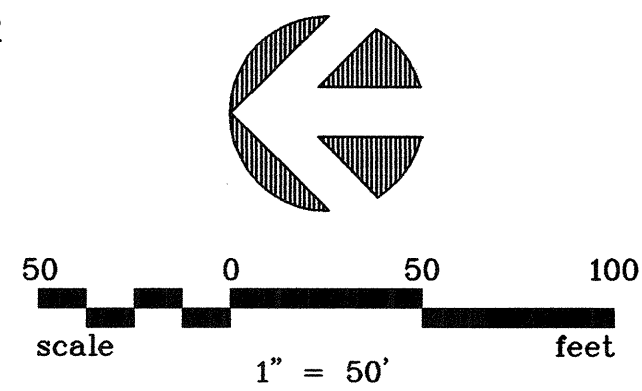
MATCH LINE STA. 49+00

OWNER:
ANITA & AHMADI ASAD
VOL. 4451, PG. 2441
D.R.C.C.T.

OWNER:
BILLY JAMES STRATTON
VOL. 770, PG. 183
D.R.C.C.T.

OWNERS:
PATTI STRATTON & MILTON FRIE
VOL. 1745, PG. 556
D.R.C.C.T.

LINE 'FM'
(BY OTHERS)



WILLIAM SNIDER SURVEY
ABSTRACT NO 821

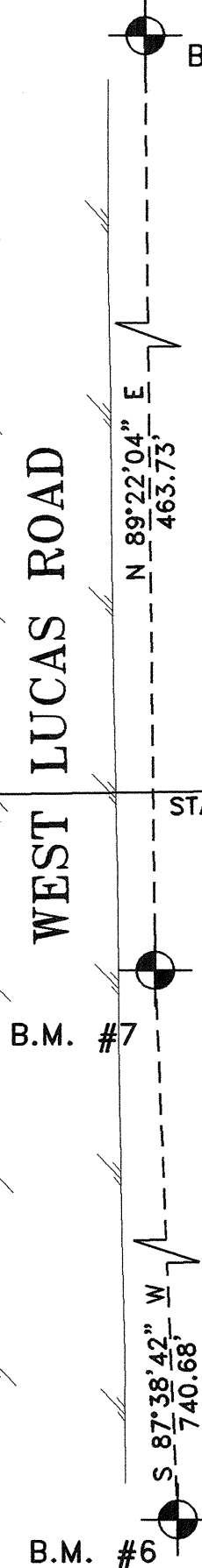
OWNER:
S.C. LUCAS RD., LP
C.C. FILE NO. 20060410000467670
D.R.C.C.T.

LINE 'A'

LINE "A" COORDINATES		
MANHOLE STATION	NORTHING	EASTING
P.I. STA. 52+17.00	7084979.4563	2545573.9783
P.I. STA. 57+25.00	7084471.5616	2545584.3225
E.O.P. STA. 60+53.75	7084142.8546	2545589.7884

HORIZONTAL AND VERTICAL CONTROL POINTS

NO	DESCRIPTION	NORTHING	EASTING	ELEVATION
6	1/2" I.R. W/CAP	7084059.3519	2544797.3657	640.92
7	1/2" I.R. W/CAP	7084089.7874	2545537.4245	631.58
5002	1/2" I.R. W/CAP	7084094.9050	2546001.1270	628.16



RECORD DRAWING

BASED ON CONTRACTOR MARKUPS,
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NOTES:

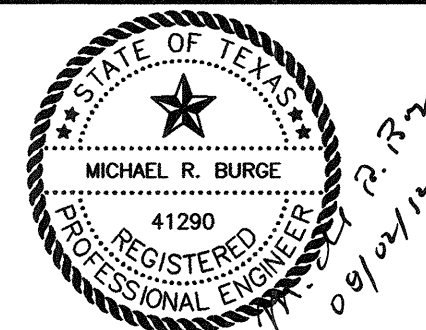
1. BASIS FOR HORIZONTAL CONTROL IS THE NAD 83 STATE PLANE COORDINATE SYSTEM, TEXAS NORTH CENTRAL ZONE (4202). HORIZONTAL CONTROL IS AT SURFACE USING A SCALE FACTOR OF 1.000152710 (COLLIN CO.), ABOUT 0.0.
2. BASIS FOR VERTICAL CONTROL IS NAVD 88.

6			
5			
4			
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2			
1	7/31/12	REVISED MANHOLE LOCATIONS PER FIELD CONDITIONS	MRB
NO.	DATE	REVISION	REVIEWED

DRAWN: BW2
DESIGN: MRB
REVIEWED: JFW
SCALE: 1" = 50'
DATE: APRIL 2012
DWG. NAME: 1389HORCTRL03

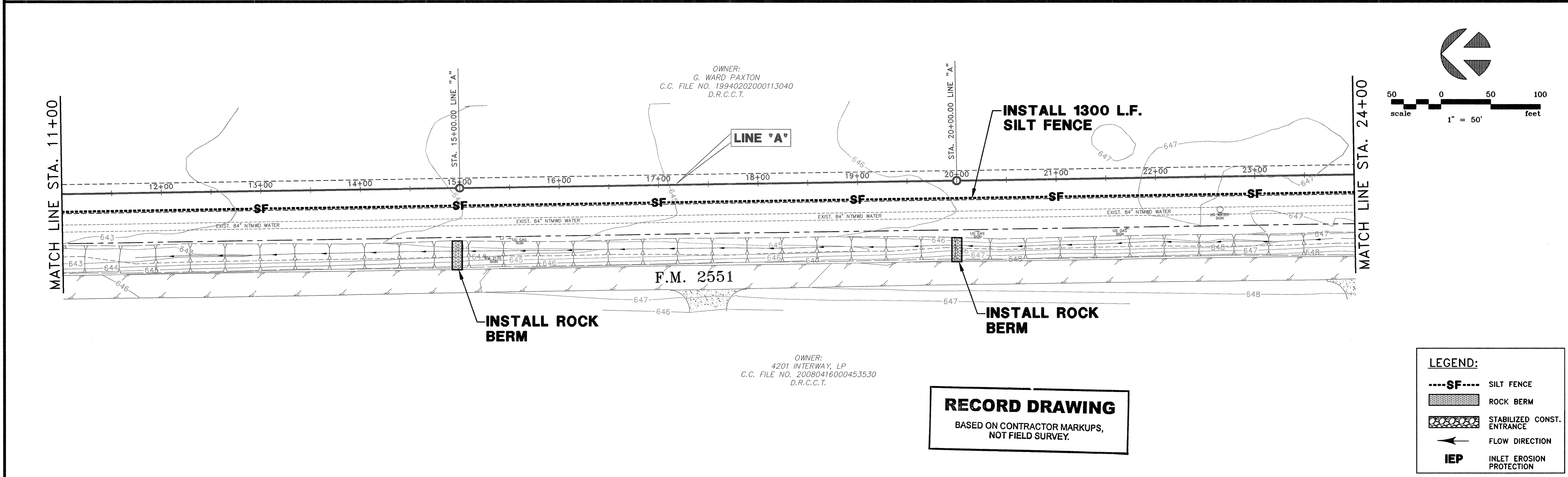
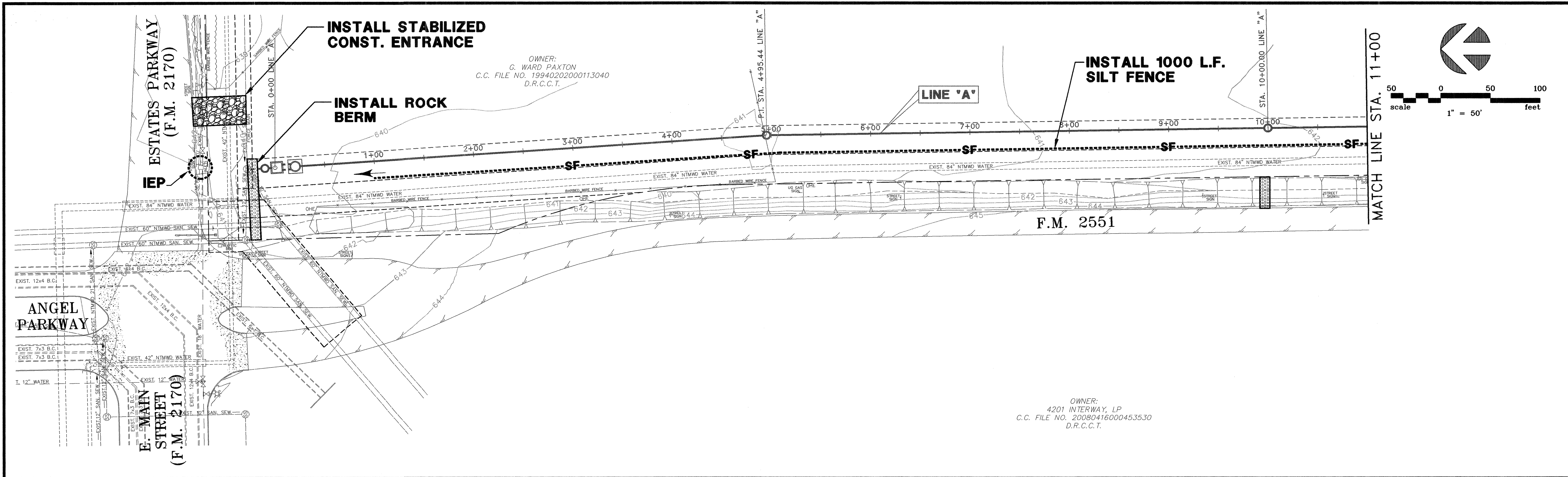


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Firm Registration No. F-5290



WASTEWATER SYSTEM IMPROVEMENTS
WASTEWATER GRAVITY SEWER AND LIFT STATION
HORIZONTAL AND VERTICAL CONTROL PLAN
(STA. 49+00 TO STA. 60+51.88)
CITY OF LUCAS

SHEET NO. **C5**
OF **C18** SHEETS
JOB NO. 10-1424

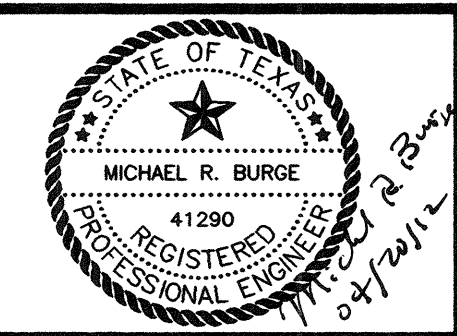


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NO.	DATE	REVISION	REVIEWED

DRAWN: BW2
 DESIGN: MRB
 REVIEWED: JFW
 SCALE: 1" = 50'
 DATE: APRIL 2012
 DWG. NAME: 1424EROSCTRL01



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 Firm Registration No. F-5290

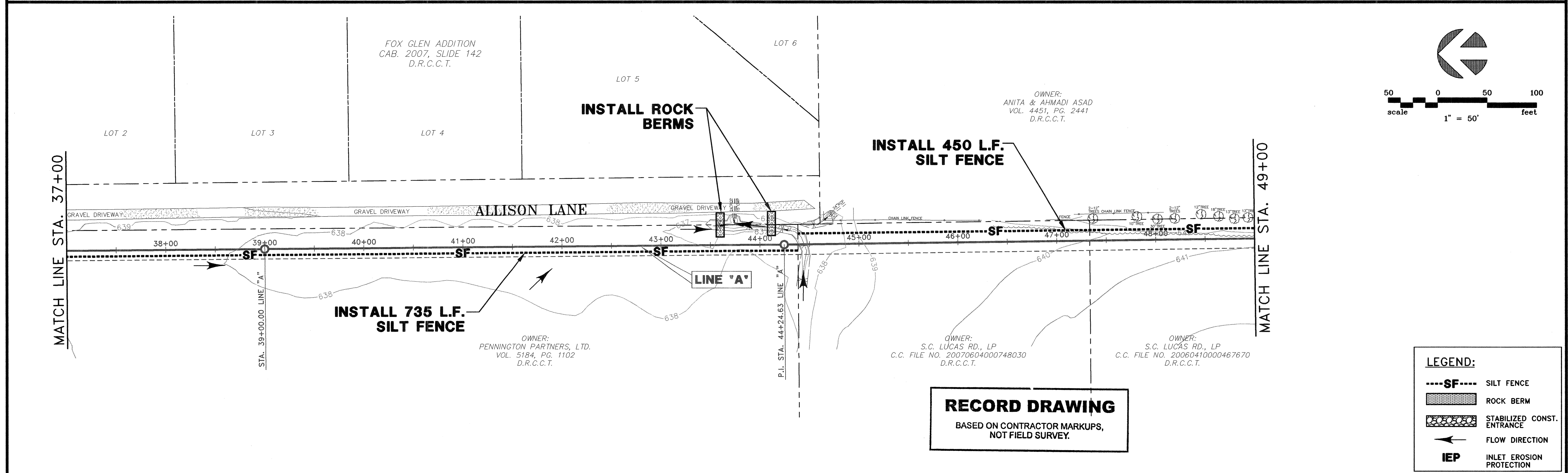
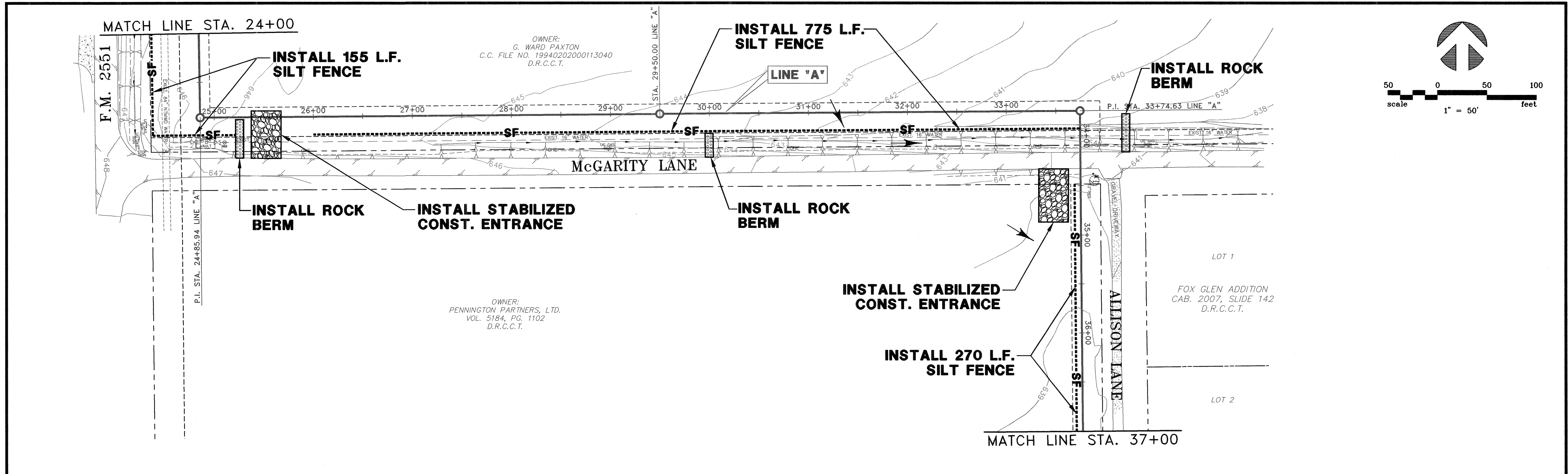


WASTEWATER SYSTEM IMPROVEMENTS
 WASTEWATER GRAVITY SEWER AND LIFT STATION
 EROSION CONTROL PLAN
 (STA. 0+00 TO STA. 24+00)
CITY OF LUCAS

SHEET NO. **C6**
 OF **C18** SHEETS
 JOB NO. **10-1424**

RECORD DRAWING
 BASED ON CONTRACTOR MARKUPS,
 NOT FIELD SURVEY.

LEGEND:	
---SF---	SILT FENCE
[Hatched Box]	ROCK BERM
[Stippled Box]	STABILIZED CONST. ENTRANCE
[Arrow]	FLOW DIRECTION
IEP	INLET EROSION PROTECTION



RECORD DRAWING
BASED ON CONTRACTOR MARKUPS,
NOT FIELD SURVEY.

LEGEND:

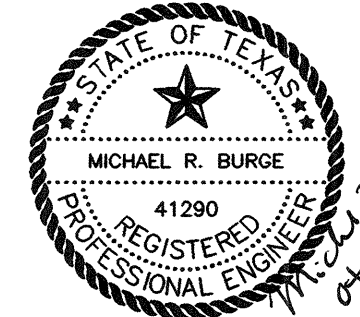
---SF---	SILT FENCE
[Pattern]	ROCK BERM
[Pattern]	STABILIZED CONST. ENTRANCE
→	FLOW DIRECTION
IEP	INLET EROSION PROTECTION

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NO.	DATE	REVISION	REVIEWED

DRAWN: BW2
DESIGN: MRB
REVIEWED: JFW
SCALE: 1" = 50'
DATE: APRIL 2012
DWG. NAME: 1424EROSCTRL02

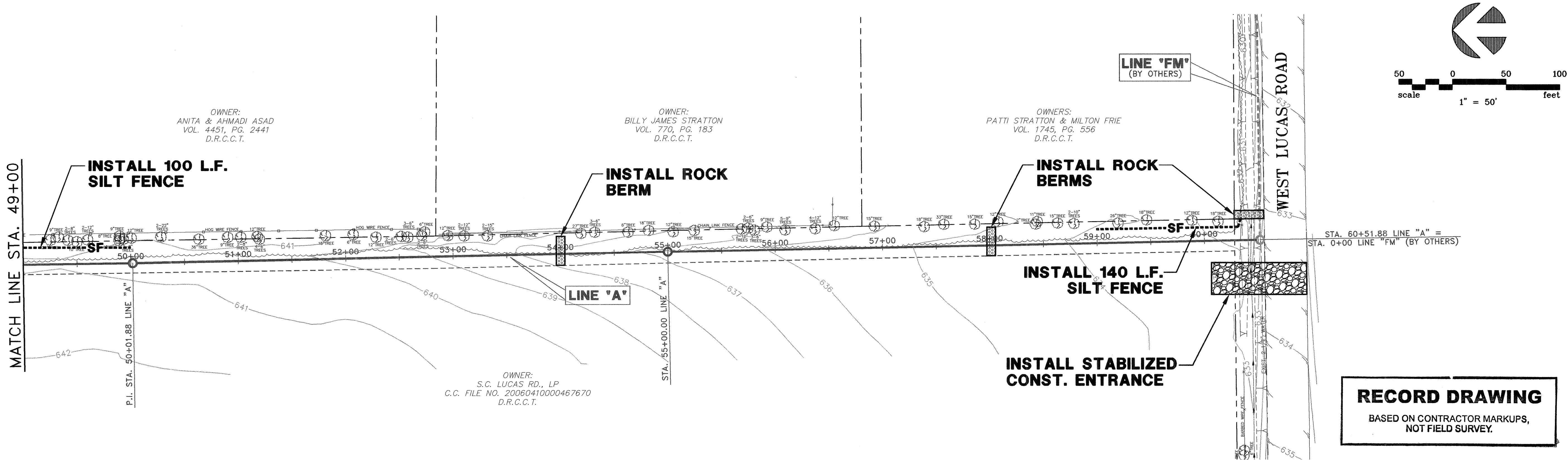


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**WASTEWATER SYSTEM IMPROVEMENTS
WASTEWATER GRAVITY SEWER AND LIFT STATION
EROSION CONTROL PLAN
(STA. 24+00 TO STA. 49+00)
CITY OF LUCAS**

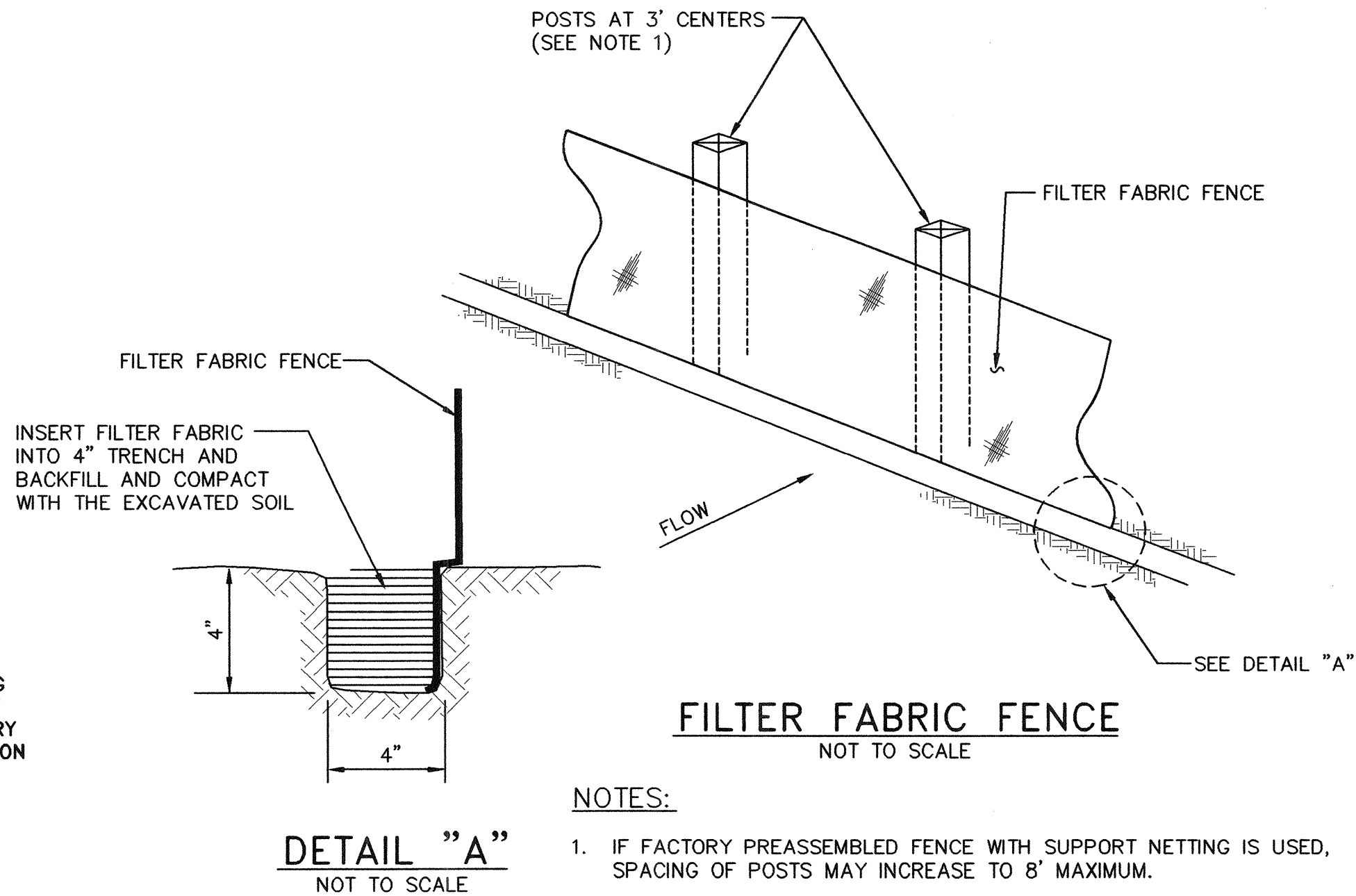
SHEET NO. **C7**
OF **C18** SHEETS
JOB NO. 10-1424



EROSION CONTROL NOTES:

- EROSION CONTROL DEVICES AS SHOWN ON THE EROSION CONTROL PLAN FOR THE PROJECT SHALL BE INSTALLED PRIOR TO THE START OF LAND DISTURBING ACTIVITIES ON THE PROJECT.
- ALL EROSION CONTROL DEVICES ARE TO BE INSTALLED IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS FOR THE PROJECT. CHANGES ARE TO BE APPROVED BEFORE CONSTRUCTION BY THE DESIGN ENGINEER AND CITY OF LUCAS.
- IF THE EROSION CONTROL PLANS AS APPROVED CANNOT CONTROL EROSION AND OFF-SITE SEDIMENTATION FROM THE PROJECT, THE EROSION CONTROL PLAN WILL BE REVISED AND/OR ADDITIONAL EROSION CONTROL DEVICES WILL BE REQUIRED ON SITE (NO SEPARATE PAY).
- IF OFF-SITE SOIL BORROW OR SPOIL SITES ARE USED IN CONJUNCTION WITH THIS PROJECT, THIS INFORMATION SHALL BE DISCLOSED AND SHOWN ON THE EROSION CONTROL PLAN. STAGING, BORROW, AND SPOIL AREAS (INCLUDING THOSE LOCATED OFF-SITE) ARE CONSIDERED A PART OF THE PROJECT SITE AND THEREFORE SHALL COMPLY WITH THE CITY OF LUCAS'S EROSION CONTROL REQUIREMENTS. PERIMETER CONTROLS WILL BE PROVIDED BY THE CONTRACTOR FOR THESE AREAS. THEY SHALL BE STABILIZED WITH PERMANENT GROUND COVER PRIOR TO FINAL APPROVAL OF THE PROJECT.
- ALL EROSION CONTROL DEVICES SHALL BE INSPECTED WEEKLY BY THE CONTRACTOR AND AFTER ALL MAJOR RAIN EVENTS. ANY DEVICES THAT ARE DAMAGED OR DISPLACED WILL BE RESTORED (NO SEPARATE PAY).
- ALL NON-IMPERVIOUS AREAS AFTER CONSTRUCTION SHALL BE COVERED WITH SOD OR LANDSCAPED IN ACCORDANCE WITH THE LANDSCAPE DRAWINGS. ALL OTHER REMAINING AREAS SHALL BE HYDROMULCHED OR COVERED WITH CURLEX BLANKET (WHERE SHOWN) AND MAINTAINED UNTIL ESTABLISHED.
- TEMPORARY STONE STABILIZED CONSTRUCTION ENTRANCE SHALL HAVE THE FOLLOWING MINIMUM DIMENSIONS (UNLESS OTHERWISE SHOWN): 25' WIDE X 50' LONG X 8" DEEP. (3"-5" COURSE AGGREGATE). PLACE FILTER FABRIC UNDER STONE PER NCTCOG ITEM 2.23.3.
- THE STABILIZED CONSTRUCTION ENTRANCE IS TO BE USED AS A VEHICLE WASH DOWN AREA FOR DEBRIS AND SOIL REMOVAL PRIOR TO EXITING THE SITE. THIS STABILIZED ENTRANCE SHALL BE TOP DRESSED WITH ADDITIONAL STONE AS NECESSARY. LOCATION OF STABILIZED ENTRANCE MAY BE MODIFIED IF APPROVED BY CITY OF LUCAS AND THE DESIGN ENGINEER.
- WHERE CONSTRUCTION ENTRANCES CROSS EXISTING BAR DITCHES, THE CONTRACTOR SHALL PLACE AND COMPACT A SUFFICIENT AMOUNT OF FILL (IN ADDITION TO THE COARSE AGGREGATE) TO CREATE A SUITABLE GRADE FOR CONSTRUCTION VEHICLES ACCESS. EXCEPT AS NOTED IN THE PLANS, A MINIMUM 18" PIPE CULVERT WILL BE PLACED UNDER EACH CONSTRUCTION ENTRANCE ALONG THE FLOW LINE OF THE BAR DITCH TO MAINTAIN EXISTING DRAINAGE PATTERNS. THE TEMPORARY CULVERT PIPE SHALL BE OF ADEQUATE STRUCTURAL STRENGTH TO HANDLE CONSTRUCTION TRAFFIC LOADS WITHOUT CRUSHING OR SHIFTING. THE CONTRACTOR SHALL REMOVE ALL TEMPORARY CONSTRUCTION ENTRANCES (INCLUDING ALL APPURTENANCES) AND RESTORE THE AFFECTED AREAS TO PRE-CONSTRUCTION CONDITION OR BETTER AFTER THE PROPOSED WORK IS COMPLETE. THERE WILL BE NO SEPARATE PAY FOR THE INSTALLATION, REPAIR AND REMOVAL OF THE CONSTRUCTION ENTRANCES AND APPURTENANCES.
- THE CONTRACTOR SHALL BE RESPONSIBLE, AS THE ENTITY EXERCISING OPERATIONAL CONTROL, FOR ALL PERMITTING AS REQUIRED BY THE EPA/TCEQ. THIS INCLUDES, BUT IS NOT LIMITED TO, MEETING ALL REQUIREMENTS OF TPDES GENERAL PERMIT TXR150000 AND PAYMENT OF ALL ASSOCIATED FEES.

- IT SHOULD BE NOTED THAT THE AREA OF IMPACT ON THIS PROJECT WILL REQUIRE A SMALL CONSTRUCTION PERMIT THROUGH TCEQ.
- IT IS VERY IMPORTANT THAT MUD AND OTHER DEBRIS BE KEPT OFF ALL ROADS. CONTRACTOR SHALL IMMEDIATELY REMOVE ANY MUD AND DEBRIS DEPOSITED ON ROADS.
- CONTRACTOR WILL REPLACE ANY EROSION CONTROL DEVICES THAT ARE DAMAGED AND/OR DISPLACED DURING CONSTRUCTION (NO SEPARATE PAY).



CONSTRUCTION ENTRANCE NOTES:

- LENGTH SHALL BE AS SHOWN ON THE CONSTRUCTION DRAWINGS, BUT NOT LESS THAN 50 FEET, UNLESS OTHERWISE SHOWN.
- THICKNESS SHALL NOT BE LESS THAN 8 INCHES.
- WIDTH SHALL NOT BE LESS THAN 25 FEET, UNLESS OTHERWISE SHOWN.
- STABILIZATION FOR OTHER AREAS SHALL HAVE THE SAME AGGREGATE THICKNESS AND WIDTH REQUIREMENTS AS THE STABILIZED CONSTRUCTION ENTRANCE, UNLESS OTHERWISE SHOWN ON THE CONSTRUCTION DRAWINGS.
- STABILIZED CONSTRUCTION ENTRANCES ARE REQUIRED FOR ANY STAGING, BORROW, AND SPOIL AREAS.
- CONTRACTOR SHALL UTILIZE ADEQUATELY SIZED TEMPORARY CULVERT PIPES TO MAINTAIN FLOW IN EXIST. DITCHES UNDER CONSTRUCTION ENTRANCES (NO SEPARATE PAY).

ROCK BERM DETAIL

- NOTE:
- REFER TO NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS (NCTCOG) INLET PROTECTION-DROP, BLOCK AND GRAVEL STANDARD DRAWING NO. 1130 AND STANDARD SPECIFICATION REFERENCE 201.14.

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NO.	DATE	REVISION	REVIEWED

DRAWN: BW2
DESIGN: MRB
REVIEWED: JFW
SCALE: 1" = 50'
DATE: APRIL 2012
DWG. NAME: 1424EROSCTRL03

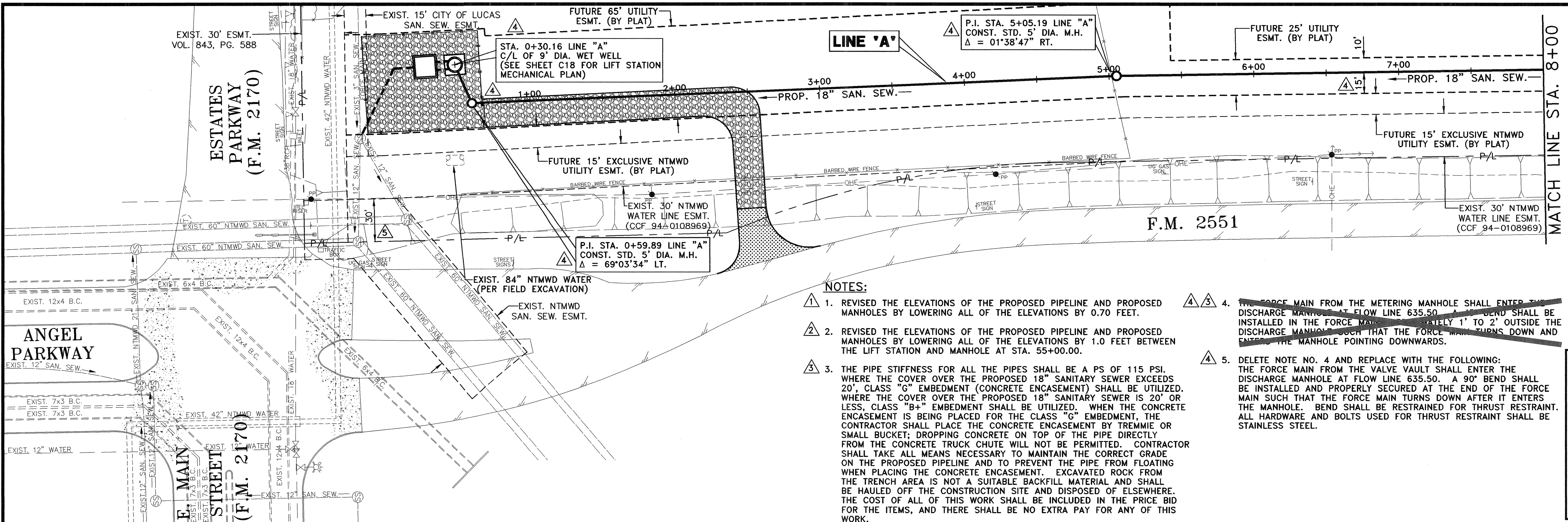


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**WASTEWATER SYSTEM IMPROVEMENTS
WASTEWATER GRAVITY SEWER AND LIFT STATION
EROSION CONTROL PLAN-NOTES AND DETAILS
(STA. 49+00 TO STA. 60+51.88)
CITY OF LUCAS**

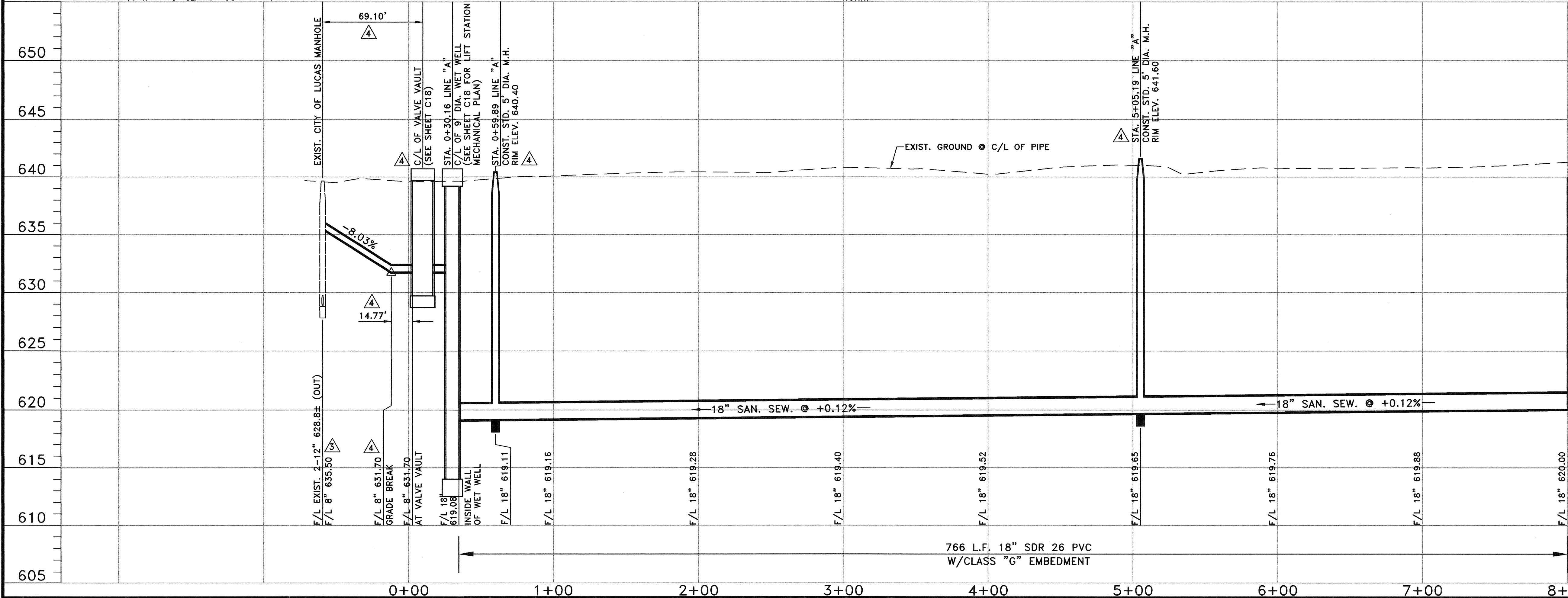
SHEET NO. C8
OF C18 SHEETS
JOB NO. 10-1424



RECORD DRAWING
BASED ON CONTRACTOR MARKUPS,
NOT FIELD SURVEY.

- NOTES:**
1. REVISED THE ELEVATIONS OF THE PROPOSED PIPELINE AND PROPOSED MANHOLES BY LOWERING ALL OF THE ELEVATIONS BY 0.70 FEET.
 2. REVISED THE ELEVATIONS OF THE PROPOSED PIPELINE AND PROPOSED MANHOLES BY LOWERING ALL OF THE ELEVATIONS BY 1.0 FEET BETWEEN THE LIFT STATION AND MANHOLE AT STA. 55+00.00.
 3. THE PIPE STIFFNESS FOR ALL THE PIPES SHALL BE A PS OF 115 PSI. WHERE THE COVER OVER THE PROPOSED 18" SANITARY SEWER EXCEEDS 20', CLASS "G" EMBEDMENT (CONCRETE ENCASEMENT) SHALL BE UTILIZED. WHERE THE COVER OVER THE PROPOSED 18" SANITARY SEWER IS 20' OR LESS, CLASS "B+" EMBEDMENT SHALL BE UTILIZED. WHEN THE CONCRETE ENCASEMENT IS BEING PLACED FOR THE CLASS "G" EMBEDMENT, THE CONTRACTOR SHALL PLACE THE CONCRETE ENCASEMENT BY TREMMIE OR SMALL BUCKET; DROPPING CONCRETE ON TOP OF THE PIPE DIRECTLY FROM THE CONCRETE TRUCK CHUTE WILL NOT BE PERMITTED. CONTRACTOR SHALL TAKE ALL MEANS NECESSARY TO MAINTAIN THE CORRECT GRADE ON THE PROPOSED PIPELINE AND TO PREVENT THE PIPE FROM FLOATING WHEN PLACING THE CONCRETE ENCASEMENT. EXCAVATED ROCK FROM THE TRENCH AREA IS NOT A SUITABLE BACKFILL MATERIAL AND SHALL BE HAULED OFF THE CONSTRUCTION SITE AND DISPOSED OF ELSEWHERE. THE COST OF ALL OF THIS WORK SHALL BE INCLUDED IN THE PRICE BID FOR THE ITEMS, AND THERE SHALL BE NO EXTRA PAY FOR ANY OF THIS WORK.
 4. THE FORCE MAIN FROM THE METERING MANHOLE SHALL ENTER THE DISCHARGE MANHOLE AT FLOW LINE 635.50. A 90° BEND SHALL BE INSTALLED IN THE FORCE MAIN MANHOLE AT STATION 1' TO 2' OUTSIDE THE DISCHARGE MANHOLE SUCH THAT THE FORCE MAIN TURNS DOWN AND ENTERS THE MANHOLE POINTING DOWNWARDS.
 5. DELETE NOTE NO. 4 AND REPLACE WITH THE FOLLOWING:
THE FORCE MAIN FROM THE VALVE VAULT SHALL ENTER THE DISCHARGE MANHOLE AT FLOW LINE 635.50. A 90° BEND SHALL BE INSTALLED AND PROPERLY SECURED AT THE END OF THE FORCE MAIN SUCH THAT THE FORCE MAIN TURNS DOWN AFTER IT ENTERS THE MANHOLE. BEND SHALL BE RESTRAINED FOR THRUST RESTRAINT. ALL HARDWARE AND BOLTS USED FOR THRUST RESTRAINT SHALL BE STAINLESS STEEL.

!! CAUTION !!
THERE ARE EXISTING AND/OR PROPOSED UTILITIES IN PROJECT AREA. UTILITY INFORMATION SHOWN ON PLANS REPRESENTS APPROXIMATE LOCATIONS OF EXISTING UTILITIES AND IS NOT NECESSARILY ALL-INCLUSIVE. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING EXACT LOCATIONS OF ALL EXISTING UTILITIES AND SHALL BE REQUIRED TO PROTECT UTILITIES TO AVOID DAMAGE.
PRIOR TO ANY EXCAVATION, CONTRACTOR SHALL CONTACT DIG-TESS, TEXAS ONE CALL, LONE STAR NOTIFICATION AND OTHERS AS REQUIRED TO LOCATE EXISTING UTILITIES.
CONTRACTOR SHALL ALSO CONTACT APPROPRIATE CITY UTILITY DEPARTMENT FOR FIELD LOCATES OF MUNICIPAL INFRASTRUCTURE 48 HOURS PRIOR TO CONSTRUCTION.

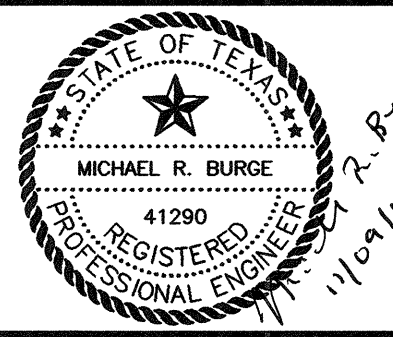


NO.	DATE	REVISION	REVIEWED
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9/17/12	MOVED PROP. SAN. SEW. 10' EAST PER FIELD CONDITIONS	MRB	
7/13/12	REVISED PER ADDENDUM NO. 5	MRB	
7/13/12	REVISED PER ADDENDUM NO. 4	MRB	
7/13/12	REVISED PER ADDENDUM NO. 2	MRB	

DRAWN: BW2
DESIGN: MRB
REVIEWED: JFW
SCALE: (H)1"=40', (V)1"=5'
DATE: APRIL 2012
DWG. NAME: 1424SSPP01

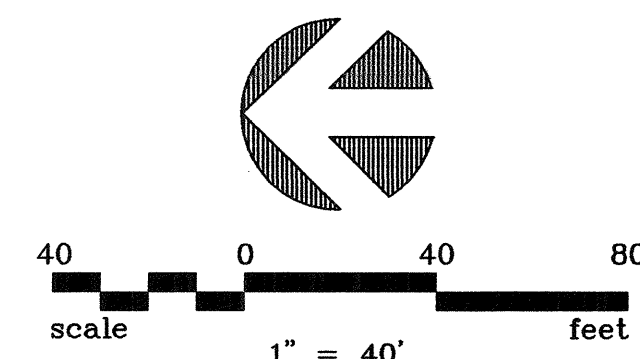


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WASTEWATER SYSTEM IMPROVEMENTS
WASTEWATER GRAVITY SEWER AND LIFT STATION
LINE "A" - PLAN AND PROFILE
(STA. 0+00 TO STA. 8+00)
CITY OF LUCAS

SHEET NO. C9
OF C18 SHEETS
JOB NO. 10-1424







BASED ON CONTRACTOR MARKUPS,
NOT FIELD SURVEY.

THERE ARE EXISTING AND/OR PROPOSED UTILITIES IN PROJECT AREA.
UTILITY INFORMATION SHOWN ON PLANS REPRESENTS
APPROXIMATE LOCATIONS OF EXISTING UTILITIES AND IS NOT
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CONTRACTOR SHALL ALSO CONTACT APPROPRIATE CITY UTILITY DEPARTMENT FOR FIELD LOCATES OF MUNICIPAL INFRASTRUCTURE 48 HOURS PRIOR TO CONSTRUCTION.

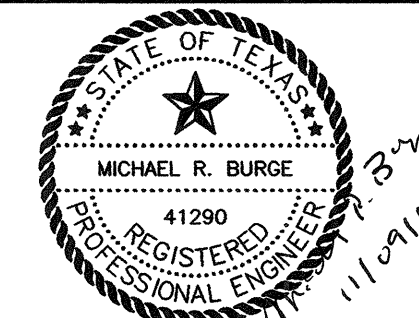
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	7/13/12	REVISED PER ADDENDUM NO. 5		MRB
	7/13/12	REVISED PER ADDENDUM NO. 4		MRB
	7/13/12	REVISED PER ADDENDUM NO. 2		MRB
NO.	DATE	R E V I S I O N		REVIEWED

DRAWN: _____ BW2
DESIGN: _____ MRB
REVIEWED: _____ JFW
SCALE: _____ (H)1"=40', (V)1"=5'
DATE: _____ APRIL 2012
DWG. NAME: _____ 1424SSPP02

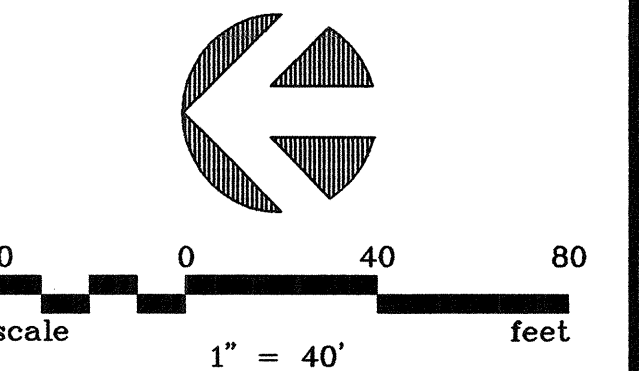
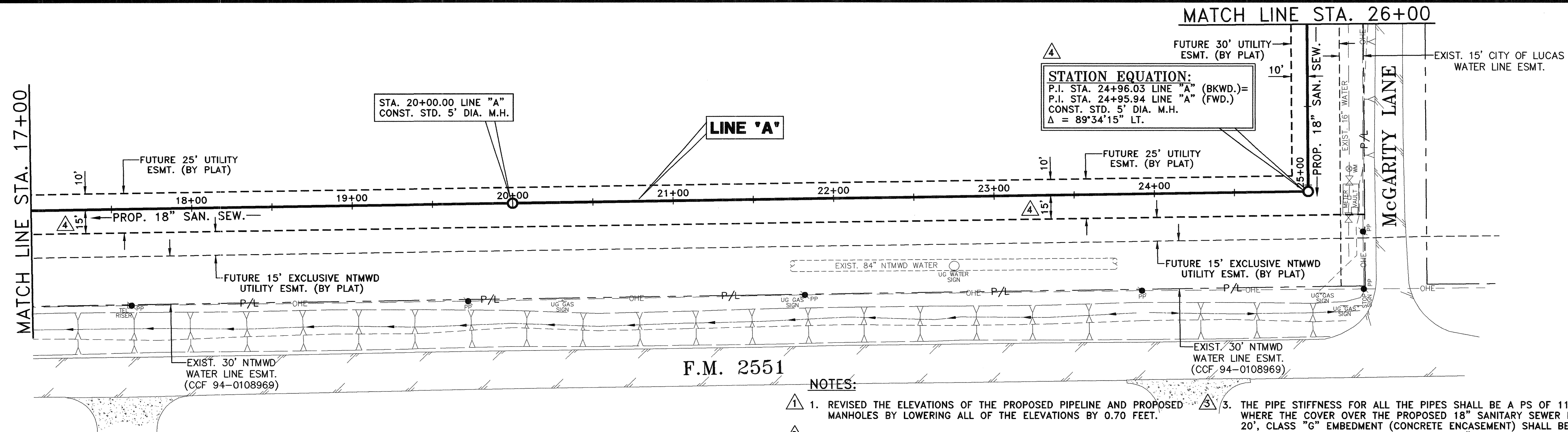


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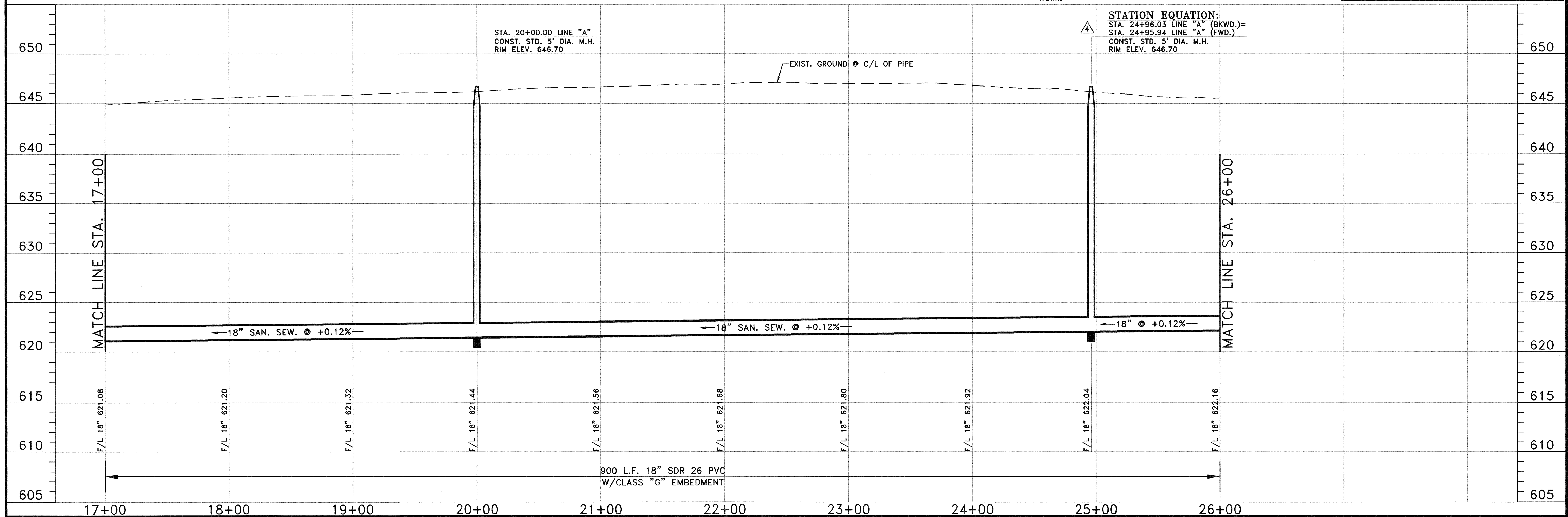
WASTEWATER SYSTEM IMPROVEMENTS
WASTEWATER GRAVITY SEWER AND LIFT STATION
LINE 'A' - PLAN AND PROFILE
(STA. 8+00 TO STA. 17+00)
CITY OF LUCAS

SHEET NO. C10
OF C18 SHEETS
JOB NO. 10-1424



RECORD DRAWING
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CONTRACTOR SHALL ALSO CONTACT APPROPRIATE CITY UTILITY DEPARTMENT FOR FIELD LOCATES OF MUNICIPAL INFRASTRUCTURE 48 HOURS PRIOR TO CONSTRUCTION.

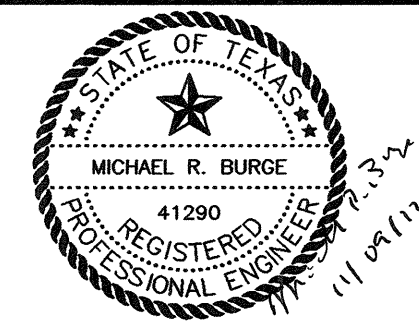


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2	7/13/12	REVISED PER ADDENDUM NO. 4	MRB
1	7/13/12	REVISED PER ADDENDUM NO. 2	MRB

DRAWN:	BW2
DESIGN:	MRB
REVIEWED:	JFW
SCALE:	(H)1"=40'. (V)1"=5'
DATE:	APRIL 2012
DWG. NAME:	1424SSPP03

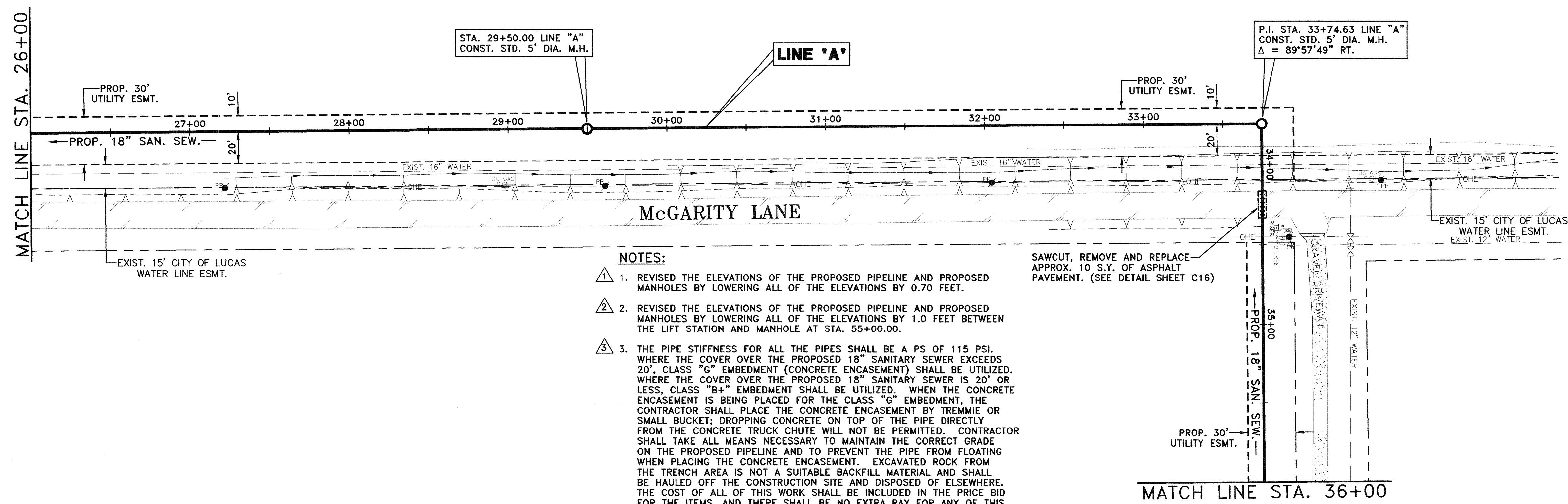
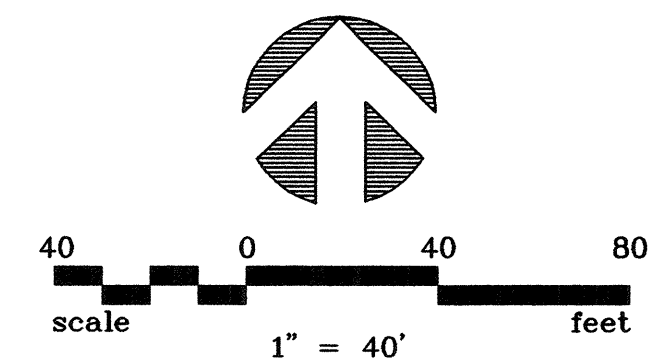


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**WASTEWATER SYSTEM IMPROVEMENTS
WASTEWATER GRAVITY SEWER AND LIFT STATION
LINE "A" - PLAN AND PROFILE
(STA. 17+00 TO STA. 26+00)**
CITY OF LUCAS

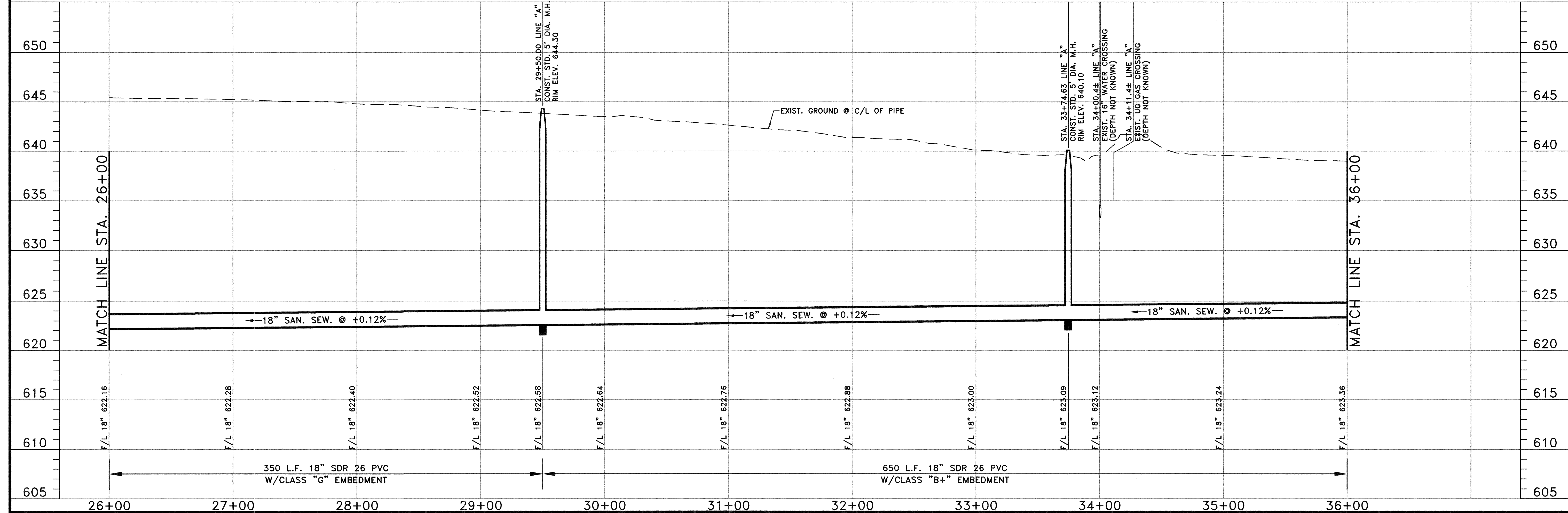
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OF C18 SHEETS
JOB NO. 10-1424



- NOTES:**
1. REVISED THE ELEVATIONS OF THE PROPOSED PIPELINE AND PROPOSED MANHOLES BY LOWERING ALL OF THE ELEVATIONS BY 0.70 FEET.
 2. REVISED THE ELEVATIONS OF THE PROPOSED PIPELINE AND PROPOSED MANHOLES BY LOWERING ALL OF THE ELEVATIONS BY 1.0 FEET BETWEEN THE LIFT STATION AND MANHOLE AT STA. 35+00.00.
 3. THE PIPE STIFFNESS FOR ALL THE PIPES SHALL BE A PS OF 115 PSI. WHERE THE COVER OVER THE PROPOSED 18" SANITARY SEWER EXCEEDS 20', CLASS "G" EMBEDMENT (CONCRETE ENCASEMENT) SHALL BE UTILIZED. WHERE THE COVER OVER THE PROPOSED 18" SANITARY SEWER IS 20' OR LESS, CLASS "B+" EMBEDMENT SHALL BE UTILIZED. WHEN THE CONCRETE ENCASEMENT IS BEING PLACED FOR THE CLASS "G" EMBEDMENT, THE CONTRACTOR SHALL PLACE THE CONCRETE ENCASEMENT BY TREMMIE OR SMALL BUCKET; DROPPING CONCRETE ON TOP OF THE PIPE DIRECTLY FROM THE CONCRETE TRUCK CHUTE WILL NOT BE PERMITTED. CONTRACTOR SHALL TAKE ALL MEANS NECESSARY TO MAINTAIN THE CORRECT GRADE ON THE PROPOSED PIPELINE AND TO PREVENT THE PIPE FROM FLOATING WHEN PLACING THE CONCRETE ENCASEMENT. EXCAVATED ROCK FROM THE TRENCH AREA IS NOT A SUITABLE BACKFILL MATERIAL AND SHALL BE HAULED OFF THE CONSTRUCTION SITE AND DISPOSED OF ELSEWHERE. THE COST OF ALL OF THIS WORK SHALL BE INCLUDED IN THE PRICE BID FOR THE ITEMS, AND THERE SHALL BE NO EXTRA PAY FOR ANY OF THIS WORK.

RECORD DRAWING
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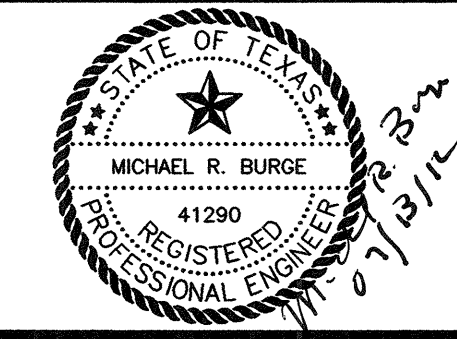


NO.	DATE	REVISION	REVIEWED
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Δ	7/13/12	REVISED PER ADDENDUM NO. 5	MRB
Δ	7/13/12	REVISED PER ADDENDUM NO. 4	MRB
Δ	7/13/12	REVISED PER ADDENDUM NO. 2	MRB

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SCALE: (H)1"=40', (V)1"=5'
DATE: APRIL 2012
DWG. NAME: 1424SSPP04

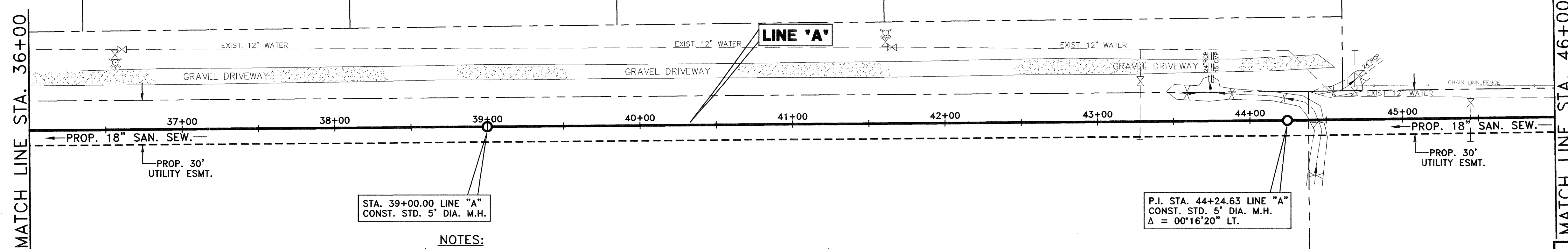
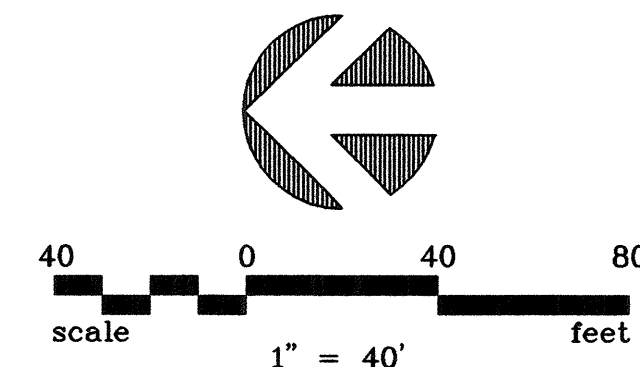


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WASTEWATER SYSTEM IMPROVEMENTS
WASTEWATER GRAVITY SEWER AND LIFT STATION
LINE 'A' - PLAN AND PROFILE
(STA. 26+00 TO STA. 36+00)
CITY OF LUCAS

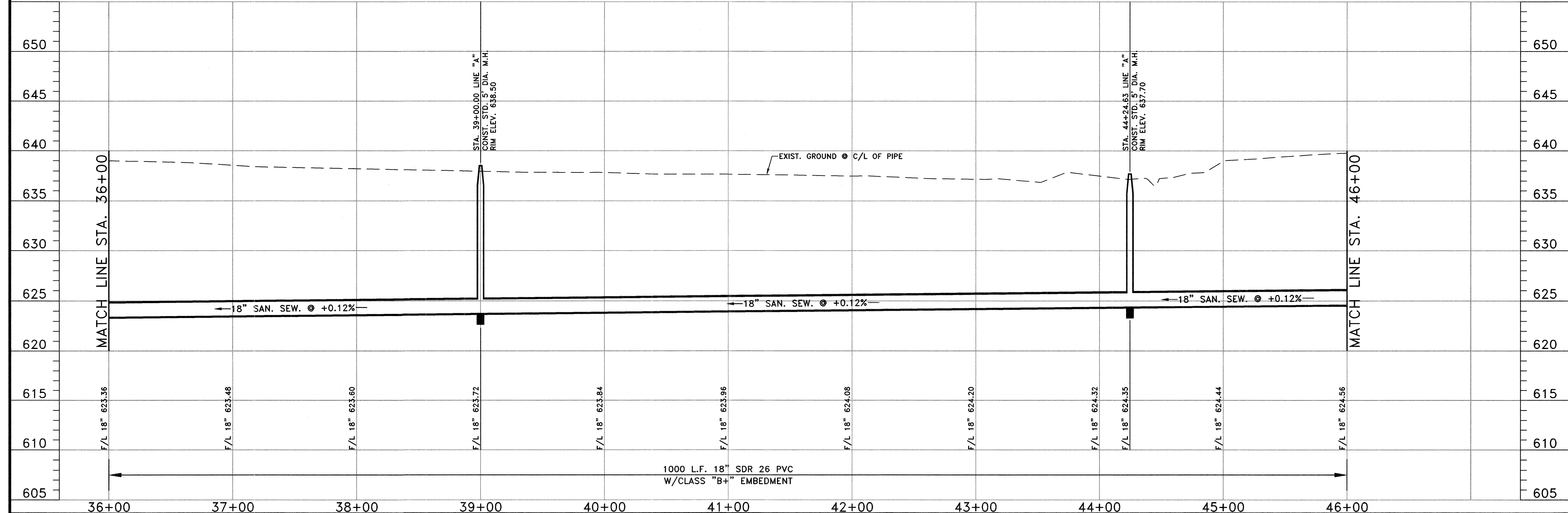
SHEET NO. C12
OF C18 SHEETS
JOB NO. 10-1424



RECORD DRAWING
BASED ON CONTRACTOR MARKUPS,
NOT FIELD SURVEY.

- NOTES:**
1. REVISED THE ELEVATIONS OF THE PROPOSED PIPELINE AND PROPOSED MANHOLES BY LOWERING ALL OF THE ELEVATIONS BY 0.70 FEET.
 2. REVISED THE ELEVATIONS OF THE PROPOSED PIPELINE AND PROPOSED MANHOLES BY LOWERING ALL OF THE ELEVATIONS BY 1.0 FEET BETWEEN THE LIFT STATION AND MANHOLE AT STA. 55+00.00.
 3. THE PIPE STIFFNESS FOR ALL THE PIPES SHALL BE A PS OF 115 PSI. WHERE THE COVER OVER THE PROPOSED 18" SANITARY SEWER EXCEEDS 20', CLASS "G" EMBEDMENT (CONCRETE ENCASEMENT) SHALL BE UTILIZED. WHERE THE COVER OVER THE PROPOSED 18" SANITARY SEWER IS 20' OR LESS, CLASS "B+" EMBEDMENT SHALL BE UTILIZED. WHEN THE CONCRETE ENCASEMENT IS BEING PLACED FOR THE CLASS "G" EMBEDMENT, THE CONTRACTOR SHALL PLACE THE CONCRETE ENCASEMENT BY TREMMIE OR SMALL BUCKET; DROPPING CONCRETE ON TOP OF THE PIPE DIRECTLY FROM THE CONCRETE TRUCK CHUTE WILL NOT BE PERMITTED. CONTRACTOR SHALL TAKE ALL MEANS NECESSARY TO MAINTAIN THE CORRECT GRADE ON THE PROPOSED PIPELINE AND TO PREVENT THE PIPE FROM FLOATING WHEN PLACING THE CONCRETE ENCASEMENT. EXCAVATED ROCK FROM THE TRENCH AREA IS NOT A SUITABLE BACKFILL MATERIAL AND SHALL BE HAULED OFF THE CONSTRUCTION SITE AND DISPOSED OF ELSEWHERE. THE COST OF ALL OF THIS WORK SHALL BE INCLUDED IN THE PRICE BID FOR THE ITEMS, AND THERE SHALL BE NO EXTRA PAY FOR ANY OF THIS WORK.

!! CAUTION !!
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PRIOR TO ANY EXCAVATION, CONTRACTOR SHALL CONTACT DIG-TESS, TEXAS ONE CALL, LONE STAR NOTIFICATION AND OTHERS AS REQUIRED TO LOCATE EXISTING UTILITIES.
CONTRACTOR SHALL ALSO CONTACT APPROPRIATE CITY UTILITY DEPARTMENT FOR FIELD LOCATES OF MUNICIPAL INFRASTRUCTURE 48 HOURS PRIOR TO CONSTRUCTION.

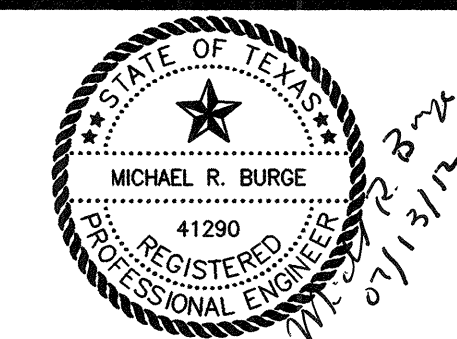


NO.	DATE	REVISION	REVIEWED
6			
5			
4			
Δ	7/13/12	REVISED PER ADDENDUM NO. 5	MRB
Δ	7/13/12	REVISED PER ADDENDUM NO. 4	MRB
Δ	7/13/12	REVISED PER ADDENDUM NO. 2	MRB

DRAWN: BW2
DESIGN: MRB
REVIEWED: JFW
SCALE: (H)1"=40', (V)1"=5'
DATE: APRIL 2012
DWG. NAME: 1424SSPP05

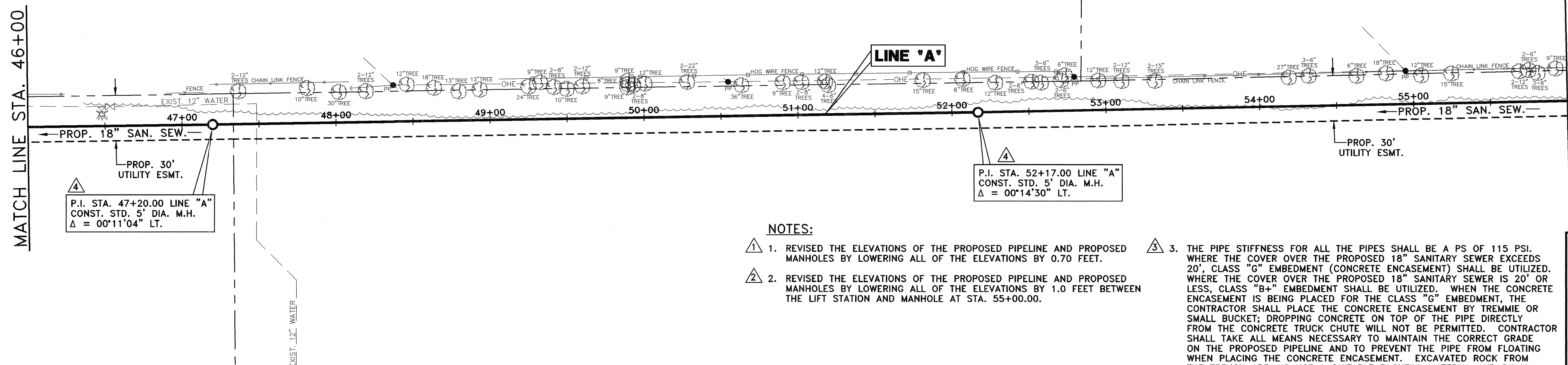
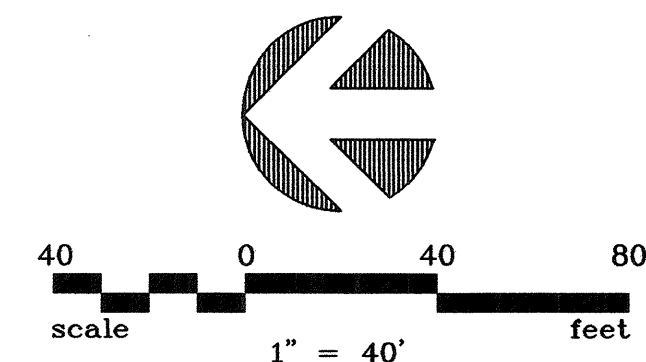


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Firm Registration No. F-5290



WASTEWATER SYSTEM IMPROVEMENTS
WASTEWATER GRAVITY SEWER AND LIFT STATION
LINE A - PLAN AND PROFILE
(STA. 36+00 TO STA. 46+00)
CITY OF LUCAS

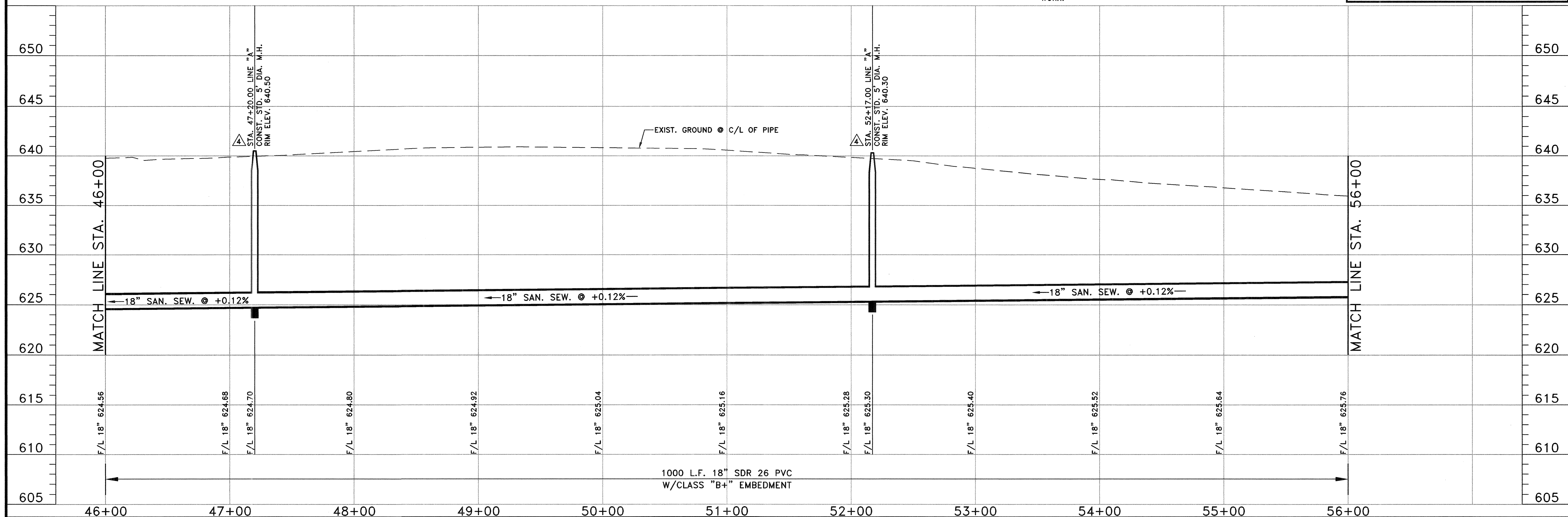
SHEET NO. C13
OF C18 SHEETS
JOB NO. 10-1424



RECORD DRAWING
BASED ON CONTRACTOR MARKUPS,
NOT FIELD SURVEY.

- NOTES:**
1. REVISED THE ELEVATIONS OF THE PROPOSED PIPELINE AND PROPOSED MANHOLES BY LOWERING ALL OF THE ELEVATIONS BY 0.70 FEET.
 2. REVISED THE ELEVATIONS OF THE PROPOSED PIPELINE AND PROPOSED MANHOLES BY LOWERING ALL OF THE ELEVATIONS BY 1.0 FEET BETWEEN THE LIFT STATION AND MANHOLE AT STA. 55+00.00.
 3. THE PIPE STIFFNESS FOR ALL THE PIPES SHALL BE A PS OF 115 PSI. WHERE THE COVER OVER THE PROPOSED 18" SANITARY SEWER EXCEEDS 20', CLASS "G" EMBEDMENT (CONCRETE ENCASEMENT) SHALL BE UTILIZED. WHERE THE COVER OVER THE PROPOSED 18" SANITARY SEWER IS 20' OR LESS, CLASS "B+" EMBEDMENT SHALL BE UTILIZED. WHEN THE CONCRETE ENCASEMENT IS BEING PLACED FOR THE CLASS "G" EMBEDMENT, THE CONTRACTOR SHALL PLACE THE CONCRETE ENCASEMENT BY TREMMIE OR SMALL BUCKET; DROPPING CONCRETE ON TOP OF THE PIPE DIRECTLY FROM THE CONCRETE TRUCK CHUTE WILL NOT BE PERMITTED. CONTRACTOR SHALL TAKE ALL MEANS NECESSARY TO MAINTAIN THE CORRECT GRADE ON THE PROPOSED PIPELINE AND TO PREVENT THE PIPE FROM FLOATING WHEN PLACING THE CONCRETE ENCASEMENT. EXCAVATED ROCK FROM THE TRENCH AREA IS NOT A SUITABLE BACKFILL MATERIAL AND SHALL BE HAULED OFF THE CONSTRUCTION SITE AND DISPOSED OF ELSEWHERE. THE COST OF ALL OF THIS WORK SHALL BE INCLUDED IN THE PRICE BID FOR THE ITEMS, AND THERE SHALL BE NO EXTRA PAY FOR ANY OF THIS WORK.

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PRIOR TO ANY EXCAVATION, CONTRACTOR SHALL CONTACT DIG-TESS, TEXAS ONE CALL, LONE STAR NOTIFICATION AND OTHERS AS REQUIRED TO LOCATE EXISTING UTILITIES.
CONTRACTOR SHALL ALSO CONTACT APPROPRIATE CITY UTILITY DEPARTMENT FOR FIELD LOCATES OF MUNICIPAL INFRASTRUCTURE 48 HOURS PRIOR TO CONSTRUCTION.



NO.	DATE	REVISION	REVIEWED
6			
5			
4	7/31/12	REVISED MANHOLE LOCATIONS PER FIELD CONDITIONS	MRB
3	7/13/12	REVISED PER ADDENDUM NO. 5	MRB
2	7/13/12	REVISED PER ADDENDUM NO. 4	MRB
1	7/13/12	REVISED PER ADDENDUM NO. 2	MRB

DRAWN: BW2
DESIGN: MRB
REVIEWED: JFW
SCALE: (H)1"=40', (V)1"=5'
DATE: APRIL 2012
DWG. NAME: 1424SSPP06

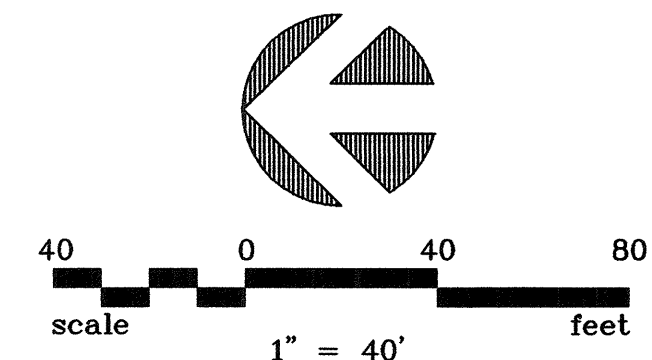


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WASTEWATER SYSTEM IMPROVEMENTS
WASTEWATER GRAVITY SEWER AND LIFT STATION
LINE 'A' - PLAN AND PROFILE
(STA. 46+00 TO STA. 56+00)
CITY OF LUCAS

SHEET NO. C14
OF C18 SHEETS
JOB NO. 10-1424



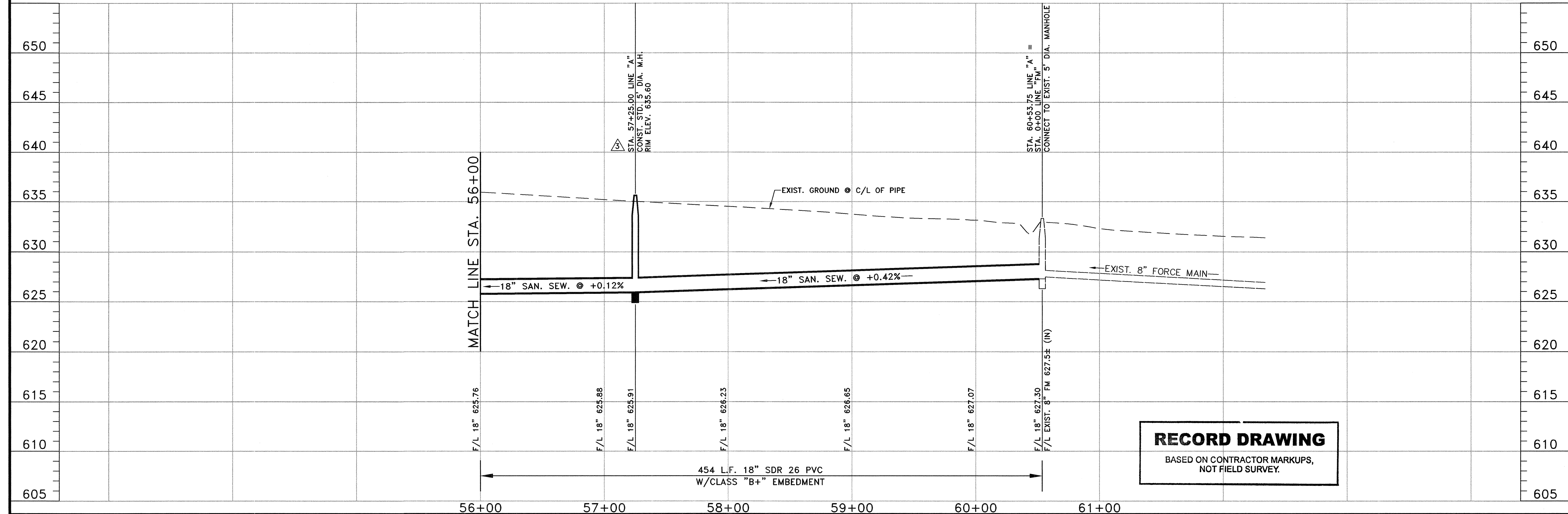
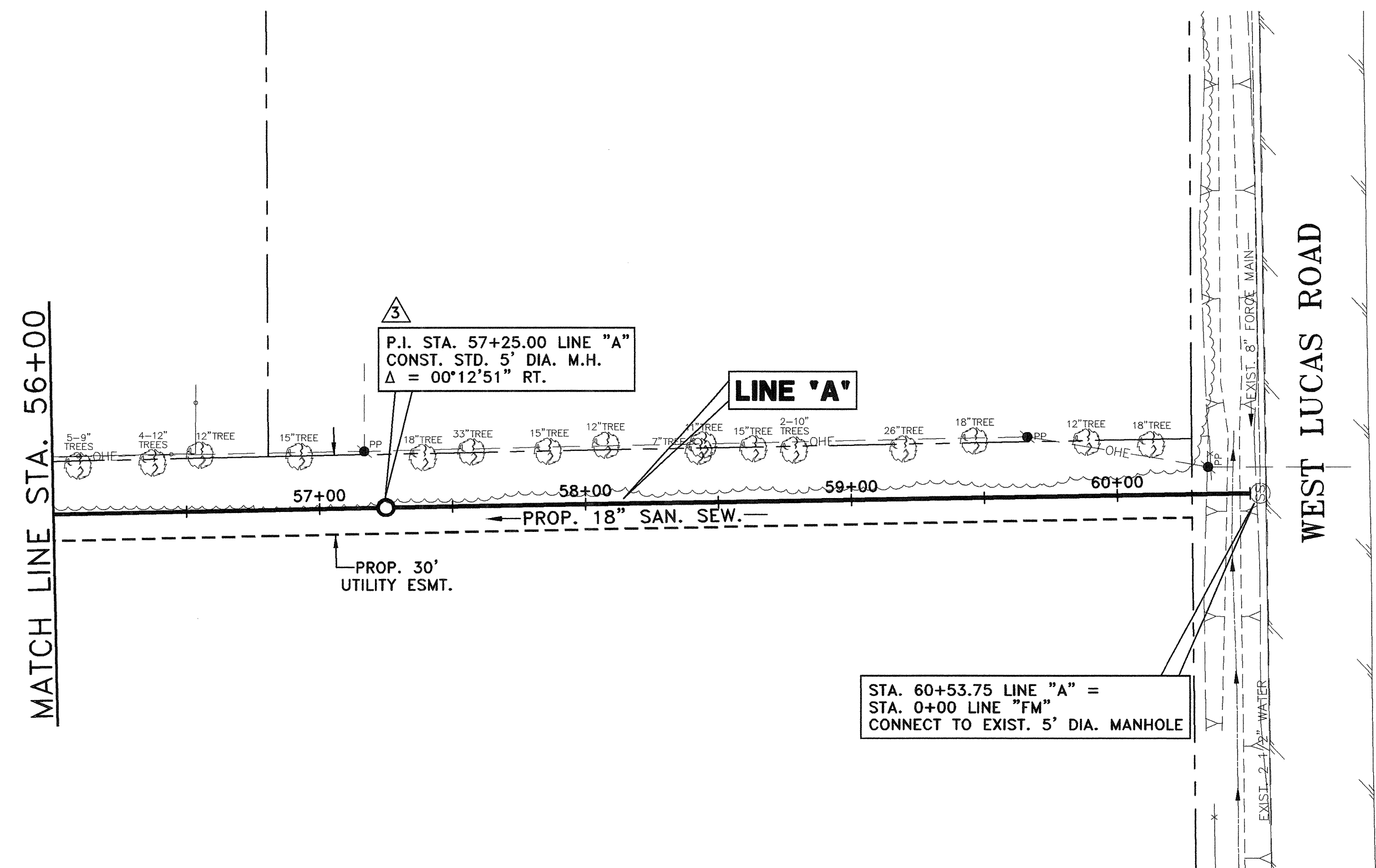
- NOTES:**
1. REVISED THE ELEVATIONS OF THE PROPOSED PIPELINE AND PROPOSED MANHOLES BY LOWERING ALL OF THE ELEVATIONS BY 0.70 FEET.
 2. THE PIPE STIFFNESS FOR ALL THE PIPES SHALL BE A PS OF 115 PSI. WHERE THE COVER OVER THE PROPOSED 18" SANITARY SEWER EXCEEDS 20', CLASS "C" EMBEDMENT (CONCRETE ENCASEMENT) SHALL BE UTILIZED. WHERE THE COVER OVER THE PROPOSED 18" SANITARY SEWER IS 20' OR LESS, CLASS "B+" EMBEDMENT SHALL BE UTILIZED. WHEN THE CONCRETE ENCASEMENT IS BEING PLACED FOR THE CLASS "C" EMBEDMENT, THE CONTRACTOR SHALL PLACE THE CONCRETE ENCASEMENT BY TREMMIE OR SMALL BUCKET; DROPPING CONCRETE ON TOP OF THE PIPE DIRECTLY FROM THE CONCRETE TRUCK CHUTE WILL NOT BE PERMITTED. CONTRACTOR SHALL TAKE ALL MEANS NECESSARY TO MAINTAIN THE CORRECT GRADE ON THE PROPOSED PIPELINE AND TO PREVENT THE PIPE FROM FLOATING WHEN PLACING THE CONCRETE ENCASEMENT. EXCAVATED ROCK FROM THE TRENCH AREA IS NOT A SUITABLE BACKFILL MATERIAL AND SHALL BE HAULED OFF THE CONSTRUCTION SITE AND DISPOSED OF ELSEWHERE. THE COST OF ALL OF THIS WORK SHALL BE INCLUDED IN THE PRICE BID FOR THE ITEMS, AND THERE SHALL BE NO EXTRA PAY FOR ANY OF THIS WORK.

!! CAUTION !!

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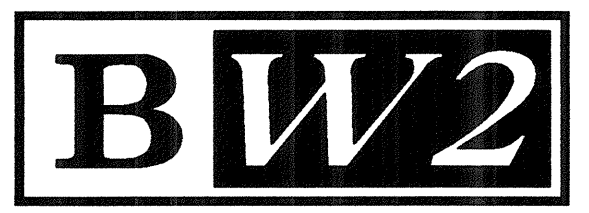


RECORD DRAWING

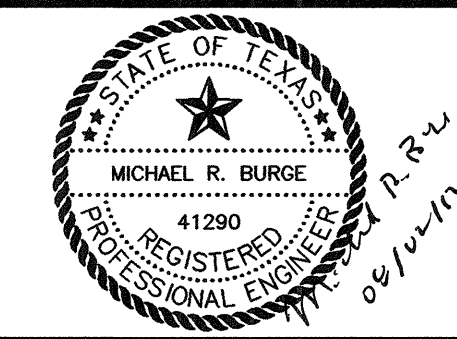
BASED ON CONTRACTOR MARKUPS,
NOT FIELD SURVEY.

NO.	DATE	REVISION	REVIEWED
6			
5			
4			
Δ	7/31/12	REVISED MANHOLE LOCATIONS PER FIELD CONDITIONS	MRB
Δ	7/13/12	REVISED PER ADDENDUM NO. 5	MRB
Δ	7/13/12	REVISED PER ADDENDUM NO. 2	MRB

DRAWN: BW2
DESIGN: MRB
REVIEWED: JFW
SCALE: (H)1"=40', (V)1"=5'
DATE: APRIL 2012
DWG. NAME: 1424SSPP06

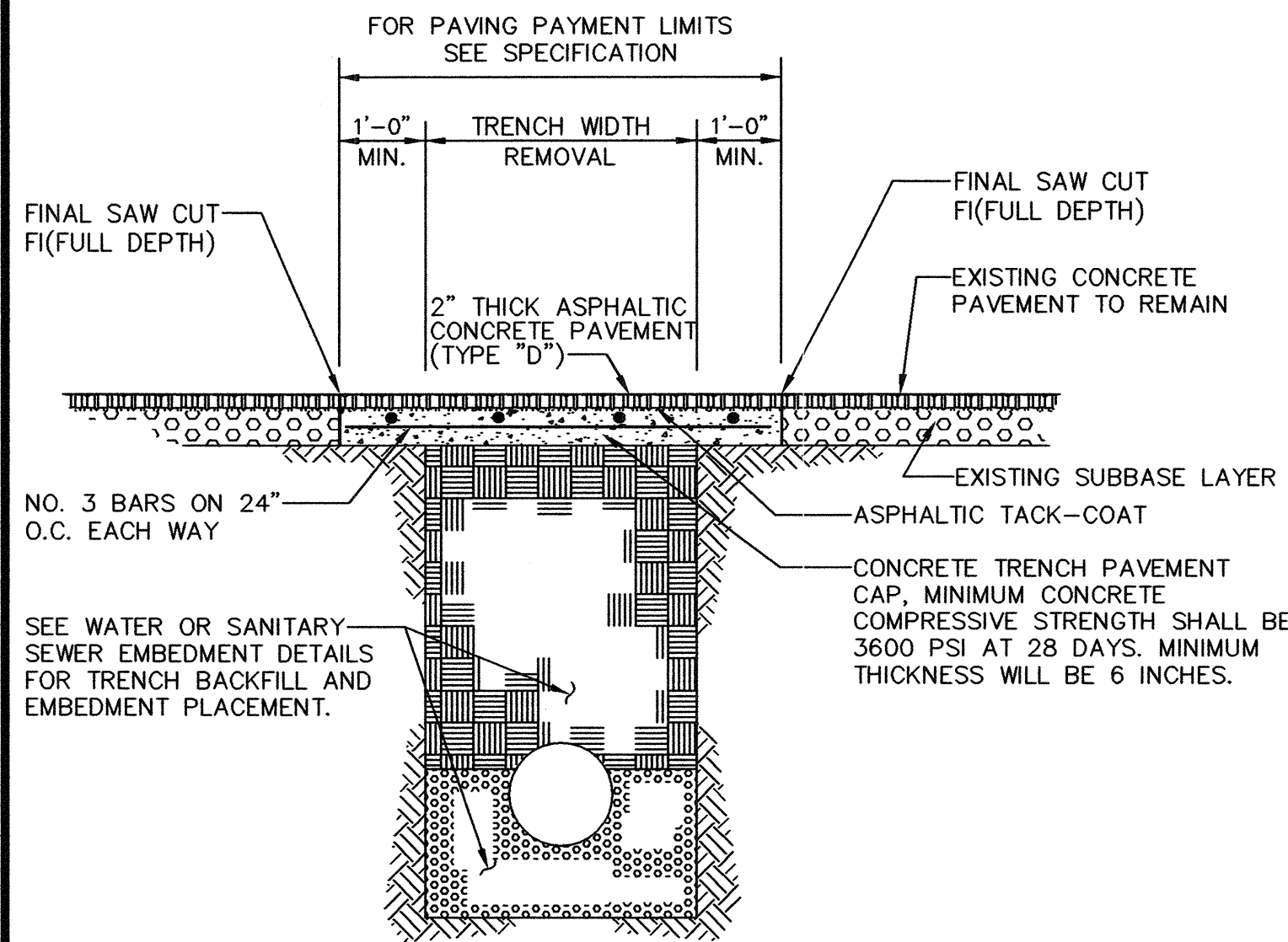


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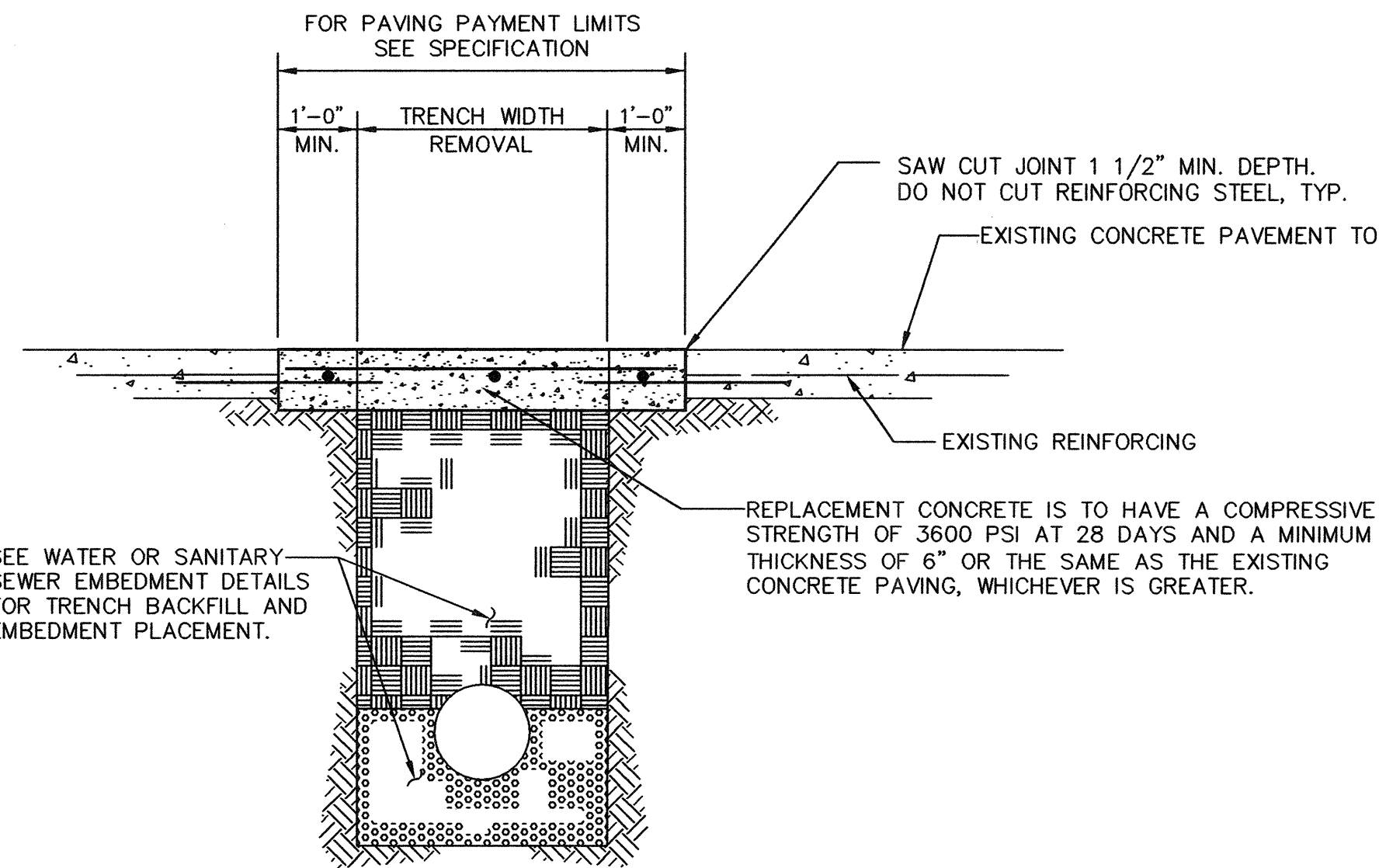


WASTEWATER SYSTEM IMPROVEMENTS
WASTEWATER GRAVITY SEWER AND LIFT STATION
LINE "A" - PLAN AND PROFILE
(STA. 56+00 TO STA. 60+53.75)
CITY OF LUCAS

SHEET NO. **C15**
OF **C18** SHEETS
JOB NO. **10-1424**



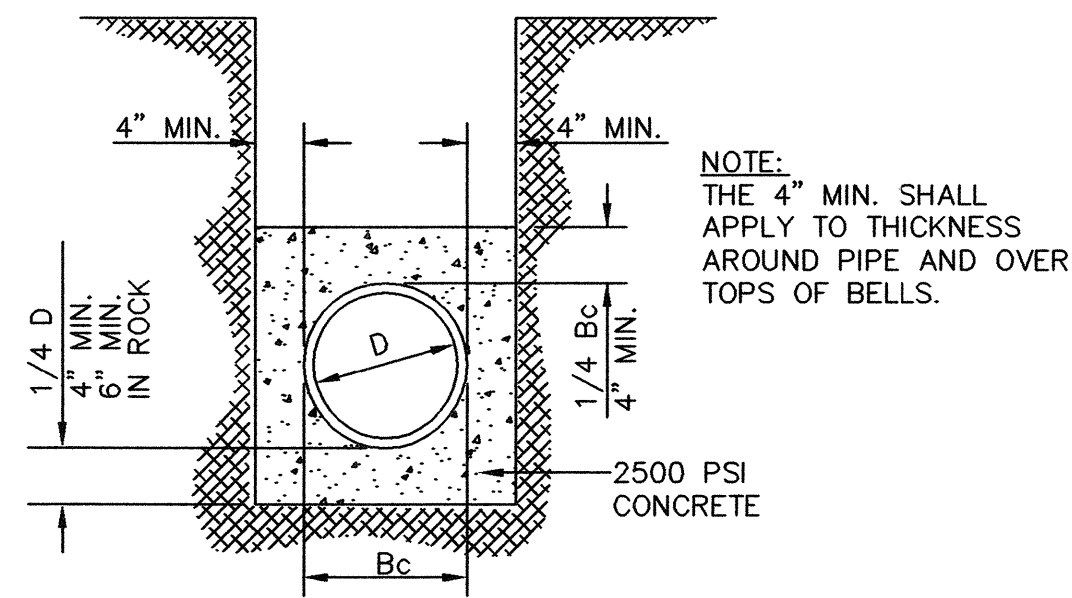
FLEXIBLE BASE AND ASPHALTIC CONCRETE SURFACE



REINFORCED CONCRETE PAVEMENT

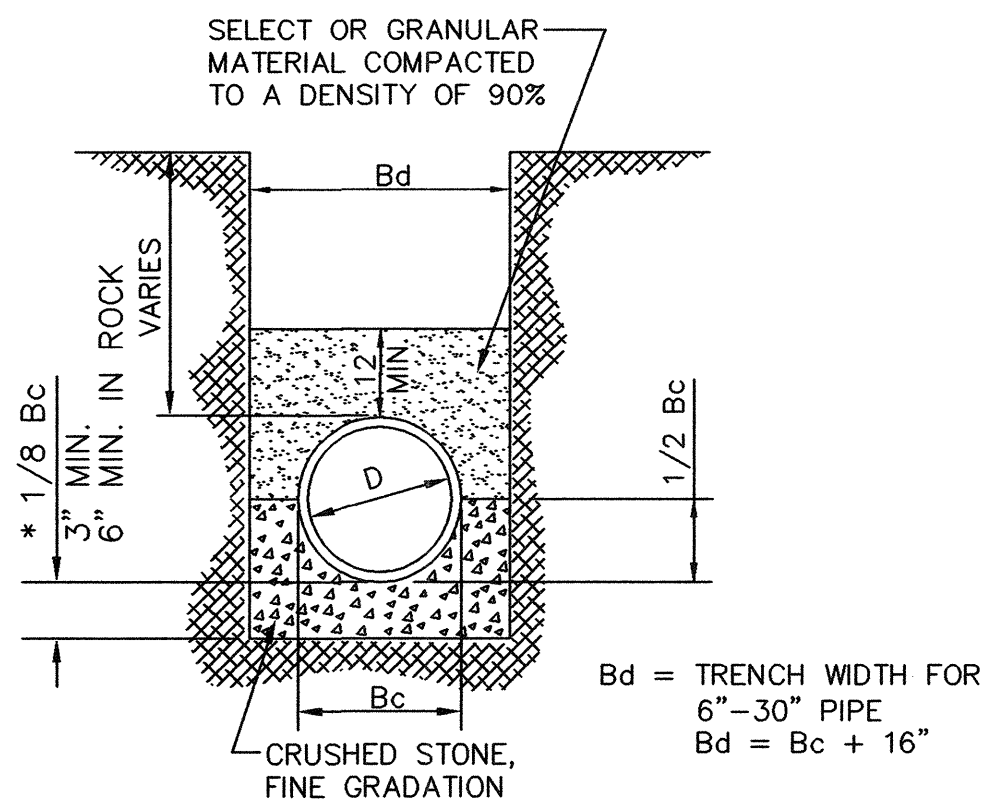
TYPICAL PAVEMENT REPAIR DETAILS

N.T.S.



CLASS "G" EMBEDMENT (CONCRETE ENCASEMENT)

N.T.S.



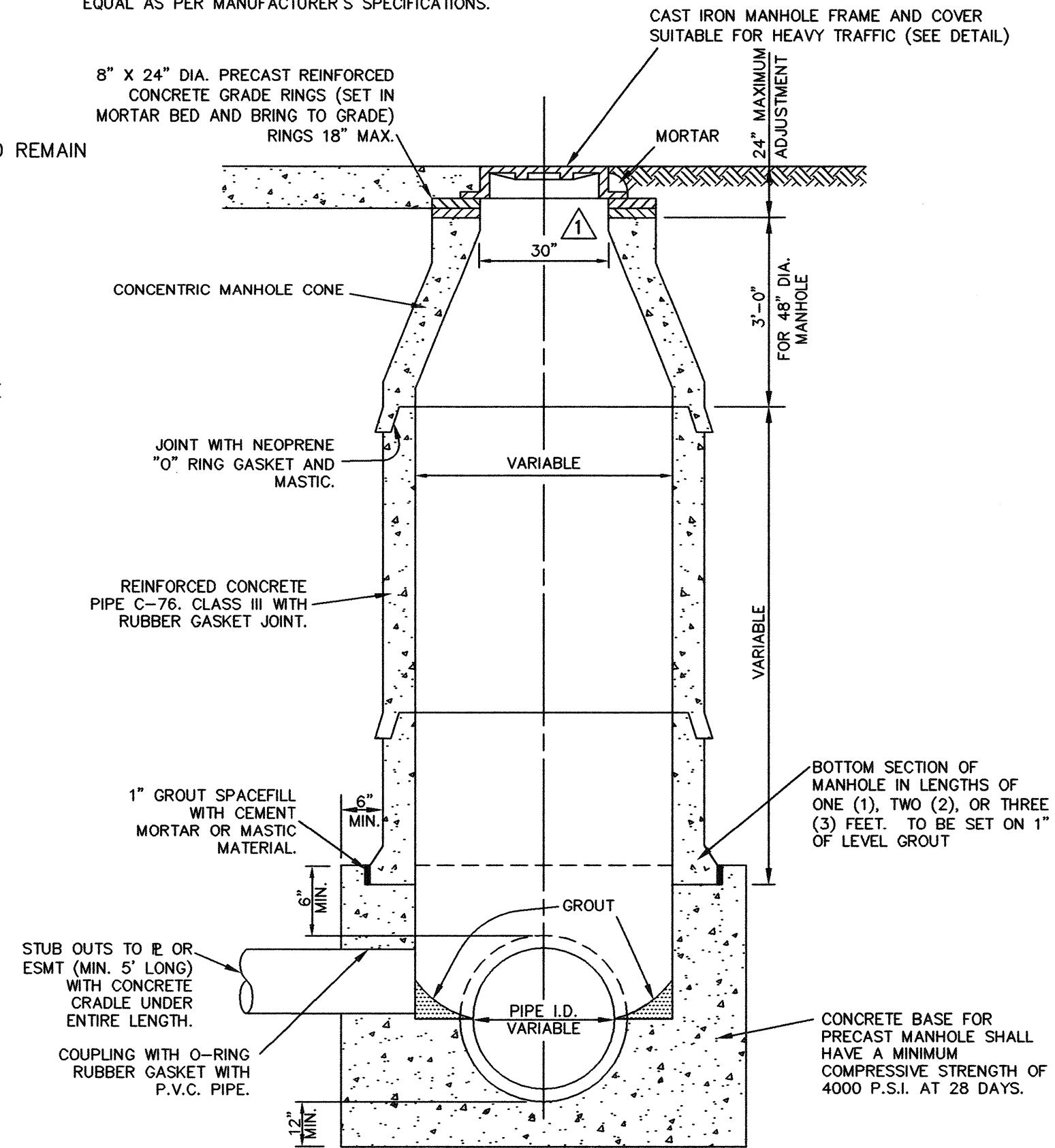
CLASS "B+" EMBEDMENT

N.T.S.

TRENCH BACKFILL AND EMBEDMENT NOTES:

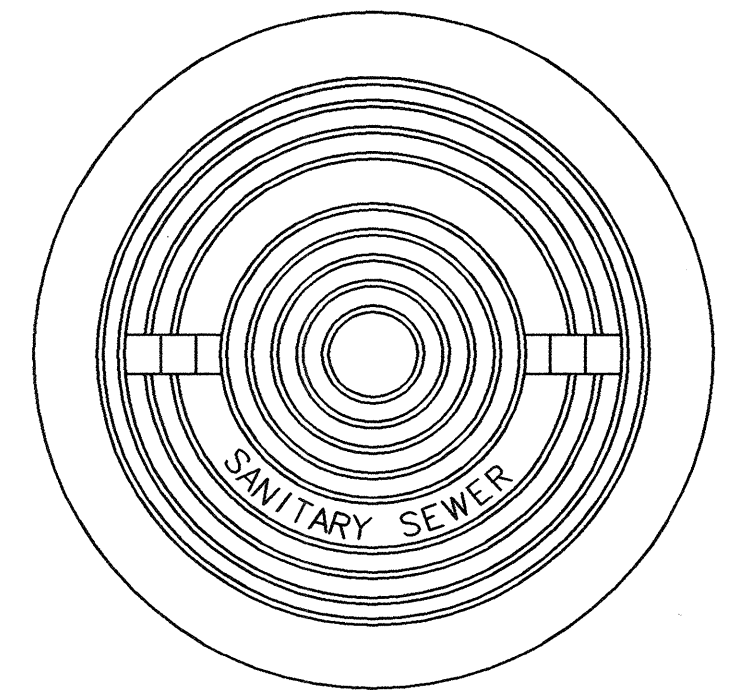
- UNLESS OTHERWISE NOTED, TRENCH BACKFILL AND EMBEDMENT SHALL BE AS SPECIFIED IN NTCOG SPECIFICATION ITEMS 2.1.8, 6.2.9, AND 6.2.10.
- ALL TRENCH BACKFILL SHALL BE COMPACTED TO 95% DENSITY WHEN UNDER PAVEMENT.
- SAND SHALL BE FREE FROM LUMPS, STONES, CLAY AND ORGANIC MATTER. ALL PARTICLES MUST PASS A NO. 8 SIEVE.
- GRANULAR MATERIAL SHALL BE DEFINED AS FREE FLOWING RIVER RUN, SANDY MATERIAL, FREE FROM LARGE STONES, CLAY AND ORGANIC MATERIAL. THE EMBEDMENT MATERIAL WILL NOT BE SUCH THAT WHEN WET, THE FINE MATERIAL FORMS MUD OR MUCK. THE EMBEDMENT MATERIAL SHALL BE COMPOSED OF TOUGH DURABLE PARTICLES, REASONABLY FREE FROM THIN, FLAT AND ELONGATED PIECES, AND OF SUITABLE QUALITY TO INSURE PERMANENCE IN THE TRENCH. THE P.I. OF THE FINES SHALL NOT EXCEED 3. LIGHT WEIGHT AGGREGATE IS NOT ACCEPTABLE FOR GRANULAR EMBEDMENT. STONES LARGER THAN 2" IN DIAMETER ARE NOT ALLOWED.
- STONES LARGER THAN 6" ARE NOT ALLOWED IN THE TRENCH BACKFILL.
- THE TOP 12" (MINIMUM) OF ALL TRENCHES SHALL BE TOPSOIL. STONES LARGER THAN 2" ARE NOT ALLOWED.

NOTE:
INSTALL INFA-SHIELD EXTERNAL MANHOLE SEAL, OR
EQUAL AS PER MANUFACTURER'S SPECIFICATIONS.

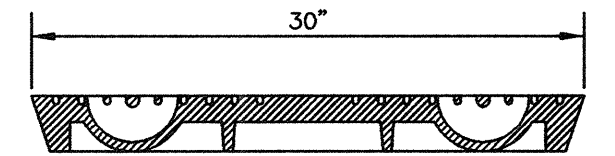


PRECAST CONCRETE PIPE MANHOLE

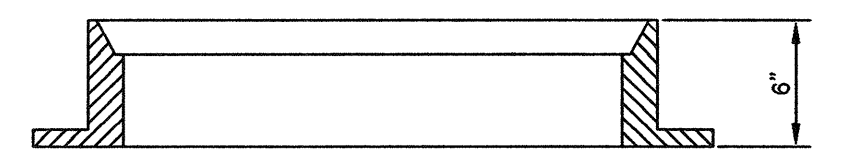
N.T.S.



ASSEMBLY PLAN VIEW



LID SECTION VIEW



FRAME SECTION VIEW

GENERAL NOTES:

- MANHOLE LID SHALL BE SOLID AND PROVIDED WITH PICK SLOTS ONLY
- 30" HEAVY DUTY MANHOLE FRAME AND COVER IS TO BE AS MANUFACTURED BY THE NEENAH FOUNDRY CO. TYPE R-1687 OR EQUAL. TOTAL WEIGHT OF THE MANHOLE AND RING SHALL BE APPROXIMATELY 410 LB.
- HORIZONTAL BEARING SURFACES ARE TO BE MACHINE FINISHED.
- THE SOLID LID WILL BE PROVIDED WITH MANUFACTURER'S STANDARD LETTERING: "SANITARY SEWER".

CAST IRON LID (SOLID) AND FRAME DETAIL

N.T.S.

RECORD DRAWING

BASED ON CONTRACTOR MARKUPS,
NOT FIELD SURVEY.

NOTES:

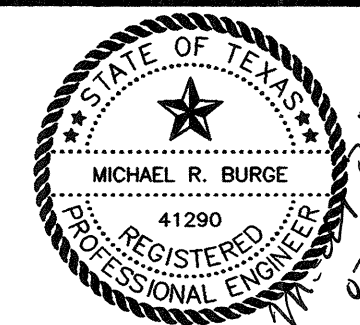
- DELETED BORING AND JACKING DETAILS.

6			
5			
4			
3			
2			
1	7/13/12	REVISED PER ADDENDUM NO. 5	MRB
NO.	DATE	REVISION	REVIEWED

DRAWN: BW2
DESIGN: MRB
REVIEWED: JFW
SCALE: N.T.S.
DATE: APRIL 2012
DWG. NAME: 1424DETAIL1

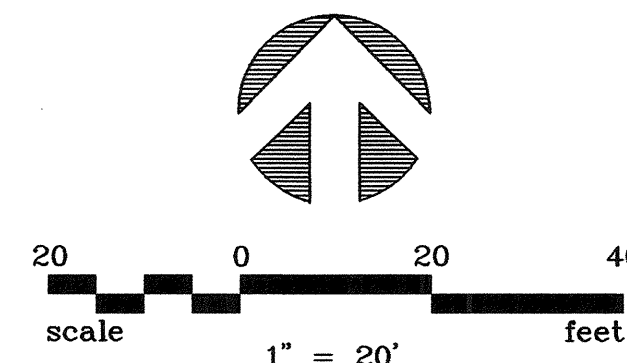


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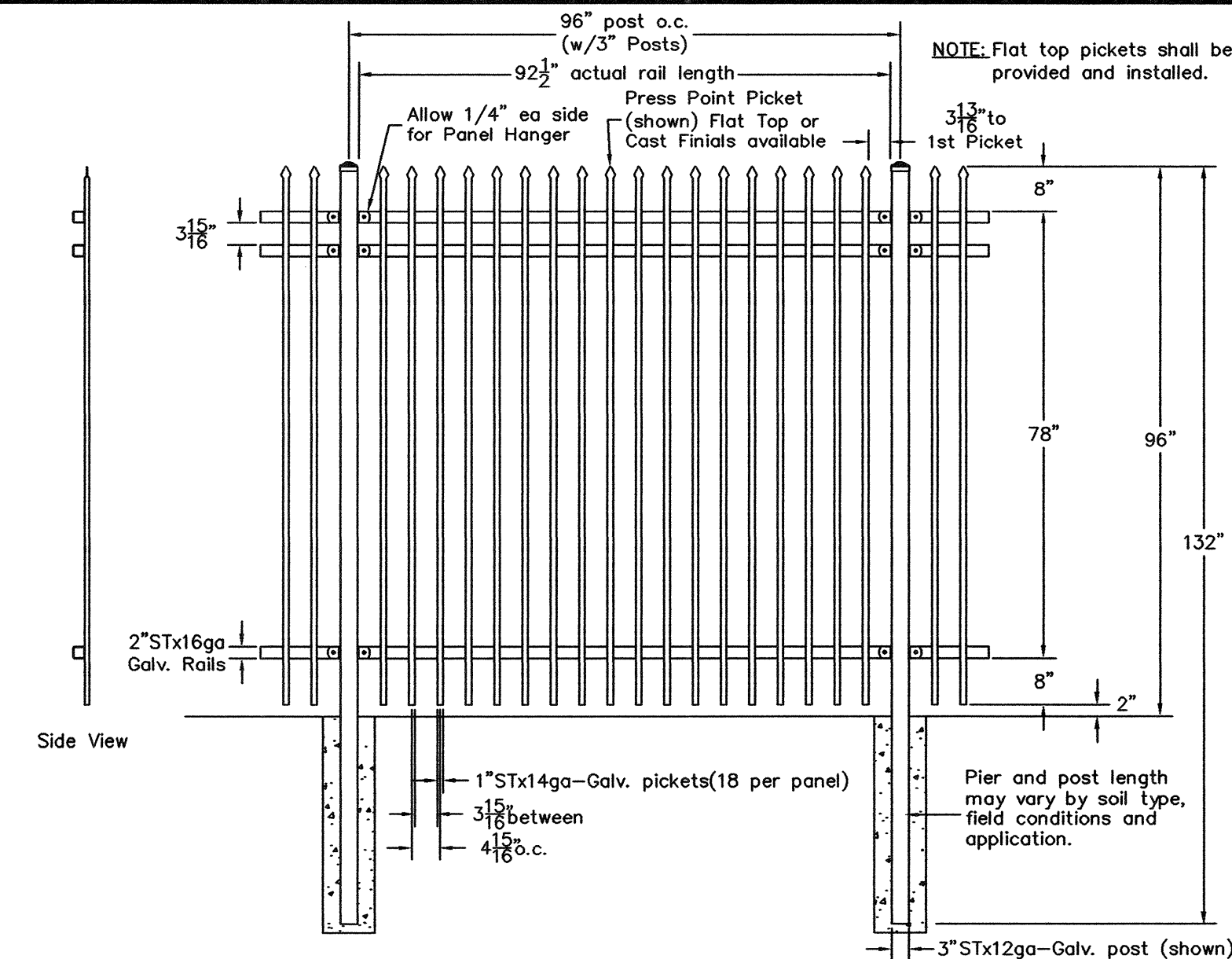
WASTEWATER SYSTEM IMPROVEMENTS
WASTEWATER GRAVITY SEWER AND LIFT STATION
GENERAL CONSTRUCTION DETAILS - SHEET 1
CITY OF LUCAS

SHEET NO. C16
OF C18 SHEETS
JOB NO. 10-1424

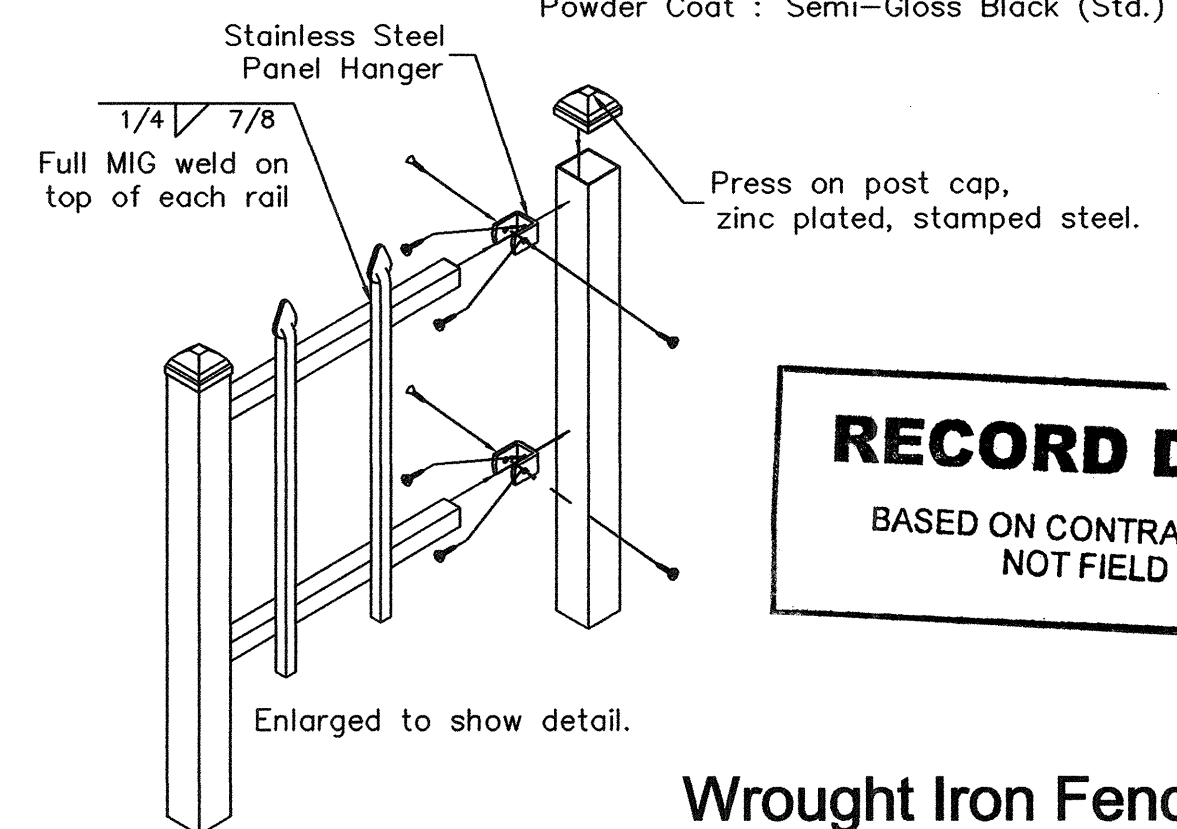


12. FURTHER ELECTRICAL DETAILS ARE INCLUDED IN THE ELECTRICAL DRAWINGS SHOWN IN THIS ADDENDUM. THE ELECTRICAL COMPONENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE DETAILS SHOWN ON THE ELECTRICAL DRAWINGS.

13. CONTRACTOR SHALL PLACE 8" OF FLEX BASE AT THE LIFT STATION SITE. THIS FLEX BASE SHALL COVER THE ENTIRE AREA INSIDE THE FENCED AREA. THE FLEX BASE SHALL BE COMPACTED TO 95% COMPACTION. THIS FLEX BASE SHALL BE CONSIDERED THE PARKING LOT AREA FOR THE LIFT STATION SITE FOR PAYMENT PURPOSES.







Payne Fence Products Number 5482-8P-0GB (or approved equal)
Galvanized Steel Tubing
Powder Coat : Semi-Gloss Black (Std.)



BASED ON CONTRACTOR MARKUPS,
NOT FIELD SURVEY.

Wrought Iron Fence Detail

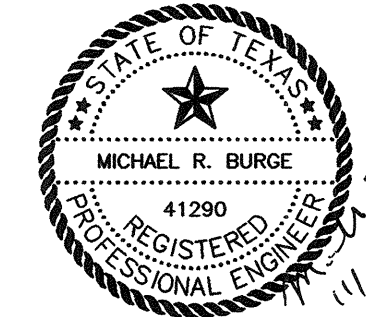
4. CONTRACTOR SHALL FURNISH AND INSTALL A WROUGHT IRON FENCE AROUND LIFT STATION SITE. WROUGHT IRON FENCE SHALL BE INSTALLED AT MINIMUM DISTANCE OF 10 FEET FROM EACH STRUCTURE, INCLUDING LIFT STATION, VALVE VAULT, AND METERING MANHOLE, EXCEPT ON EAST SIDE WHERE IT WILL BE INSTALLED AT MINIMUM DISTANCE OF 40 FEET FROM THESE STRUCTURES. WROUGHT IRON FENCE SHALL BE FURNISHED AND INSTALLED AS SHOWN ON THE DETAILS ON THIS SHEET. WROUGHT IRON FENCE SHALL INCLUDE 10 FOOT WIDE GATE TO BE LOCATED AT ACCESS ROAD ENTRANCE.
5. CONTRACTOR SHALL FURNISH AND INSTALL AN 8" MAGNETIC FLOW METER IN THE METERING MANHOLE. THE FLOW METER SHALL BE AN ENDRESS+HAUSER MODEL 53W OR APPROVED EQUAL. THE MAGNETIC FLOW METER SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH THE MAGNETIC FLOW METER SPECIFICATIONS ATTACHED AS SECTION T-22.
6. CONTRACTOR SHALL FURNISH AND INSTALL SUBMERSIBLE PUMPING UNITS IN LIFT STATION AND MOTOR CONTROL CENTER TO OPERATE PUMPS. PUMPING UNITS SHALL INCLUDE PUMPS AND MOTORS AND ALL APPURTENANCES TO PROVIDE COMPLETE WORKING SYSTEM. THE MOTOR CONTROL CENTER SHALL BE IN A WEATHERPROOF PANEL MOUNTED ON STEEL UNISTRUT TYPE OF SUPPORT FRAME ADJACENT TO AND FACING THE LIFT STATION. THE PUMPS, MOTORS, MOTOR CONTROLS, AND ALL ACCESSORIES TO PROVIDE WORKING SYSTEM SHALL BE SUPPLIED BY ONE PUMP MANUFACTURER. THE PUMPS SHALL BE FLYGT PUMP MODEL NO. NP-3127 OR APPROVED EQUAL. THE PUMPING UNITS FURNISHED AND INSTALLED SHALL BE FLYGT PUMP MODEL NO. NP-3127 OR AN APPROVED EQUAL (WHICH MATCHES THE FLYGT MODEL NP-3127 IN MATERIALS AND PERFORMANCE). THE PUMPING UNITS SHALL BE CAPABLE OF PUMPING 650 GPM TO 700 GPM AT 21' TO 22' OF TOTAL HEAD.
7. THE PROPOSED LIFT STATION SHALL BE CONNECTED INTO THE CITY'S SCADA SYSTEM. THE CITY HAS AN EXISTING SCADA PROVIDER FOR THE CITY'S SYSTEM. PER THE CITY'S DIRECTIONS, CONTRACTOR SHALL USE THE EQUIPMENT AND SERVICES OF THE CITY'S SCADA PROVIDER TO FURNISH AND INSTALL EQUIPMENT COMPATIBLE WITH CITY'S SCADA SYSTEM.
8. THREE PHASE POWER WILL BE BROUGHT TO THE SITE BY THE POWER COMPANY, AND THE POWER COMPANY WILL FURNISH AND INSTALL A TRANSFORMER. THE CONTRACTOR SHALL FURNISH AND INSTALL THE CONDUITS AND WIRING NECESSARY TO TAKE THE POWER FROM THE TRANSFORMER TO THE CONTROL PANEL.
9. FURTHER STRUCTURAL DETAILS ON THE LIFT STATION AND VALVE VAULT ARE INCLUDED IN THE STRUCTURAL DRAWINGS SHOWN IN ADDENDUM NO. 3. THESE STRUCTURES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE DETAILS SHOWN ON THE STRUCTURAL DRAWINGS. THE METERING MANHOLE SHALL BE 5' PRE-CAST DIAMETER MANHOLE CONE ON TOP WITH A 30" OPENING. THE BOTTOM SLAB SHALL BE REINFORCED WITH REINFORCING STEEL OF THE SAME STRENGTH AND PLACEMENT AS THE REINFORCING STEEL IN THE BOTTOM SLAB OF THE LIFT STATION WET WELL STRUCTURE.

6			
5			
	9/17/12	REVISED LIFT STATION SITE PER FIELD CONDITIONS	MRB
	7/13/12	REVISED PER ADDENDUM NO. 5	MRB
	7/13/12	REVISED PER ADDENDUM NO. 4	MRB
	7/13/12	REVISED PER ADDENDUM NO. 3	MRB
NO.	DATE	R E V I S I O N	REVIEWED

DRAWN: _____ BW2
DESIGN: _____ MRB
REVIEWED: _____ JFW
SCALE: _____ 1" = 20'
DATE: _____ APRIL 2012
DWG. NAME: _____ 1424LIFTSITE

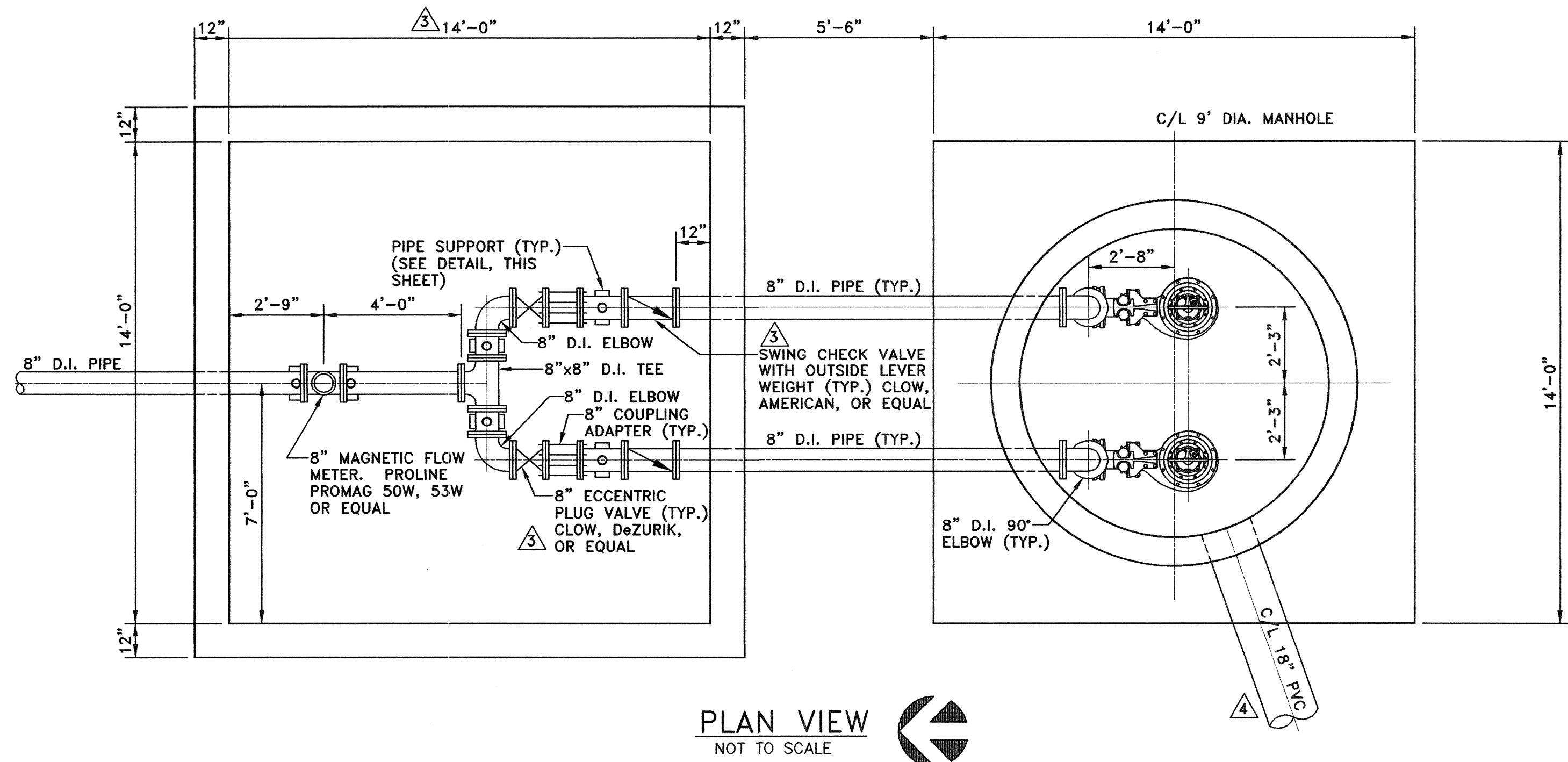


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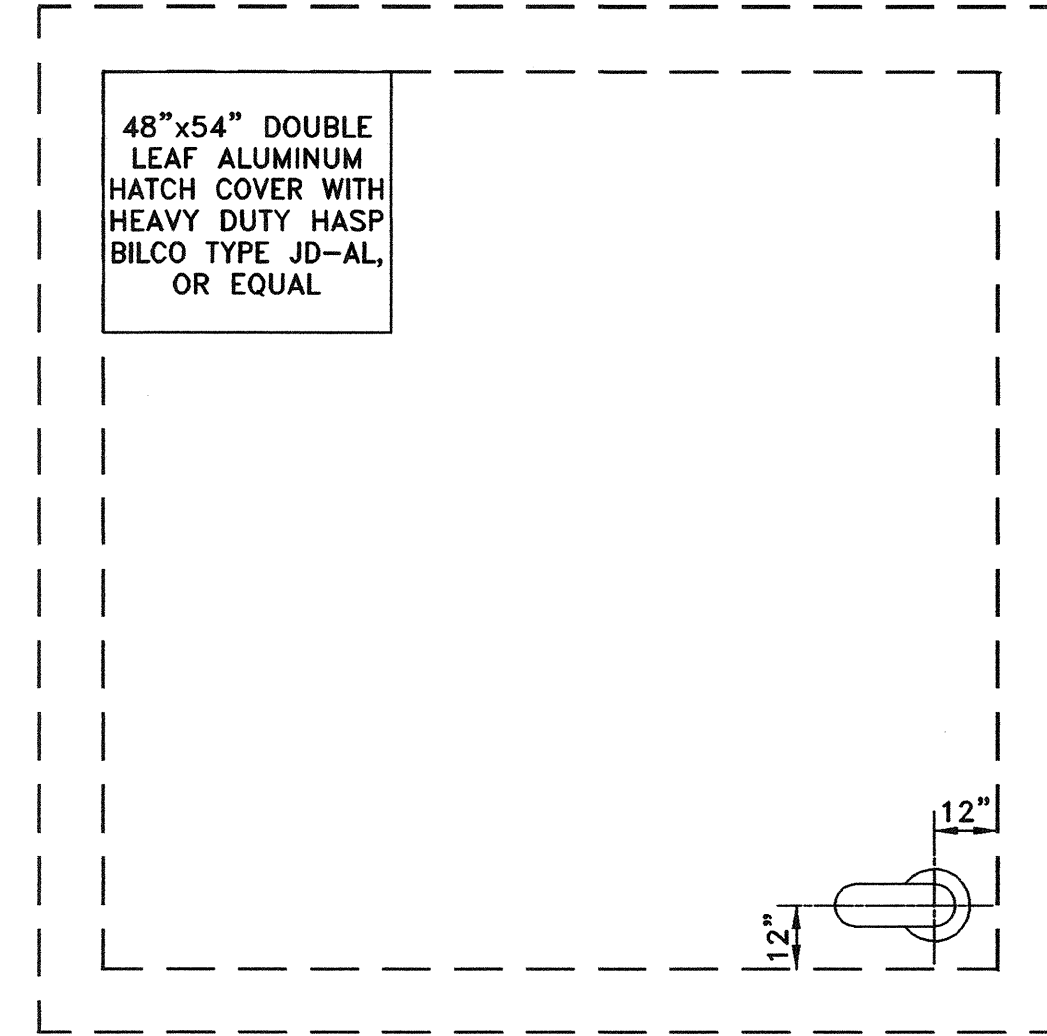


**WASTEWATER SYSTEM IMPROVEMENTS
WASTEWATER GRAVITY SEWER AND LIFT STATION
LIFT STATION - SITE PLAN
CITY OF LUCAS**

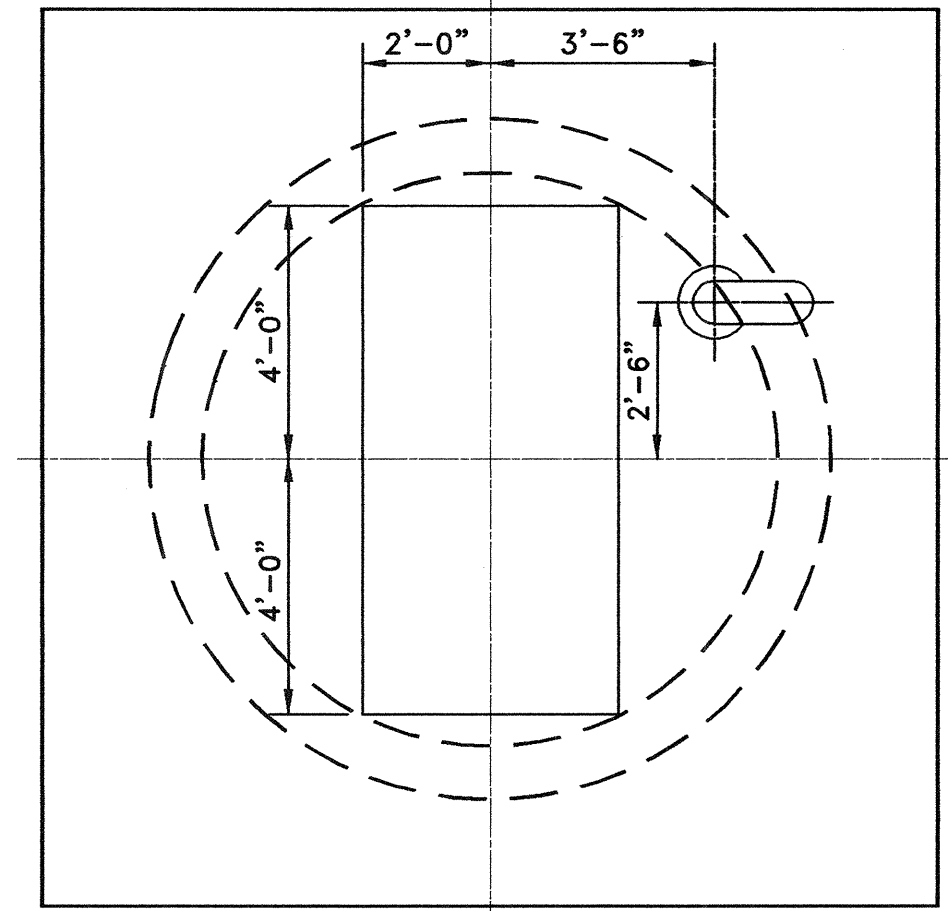
JOB NO. 11-1471



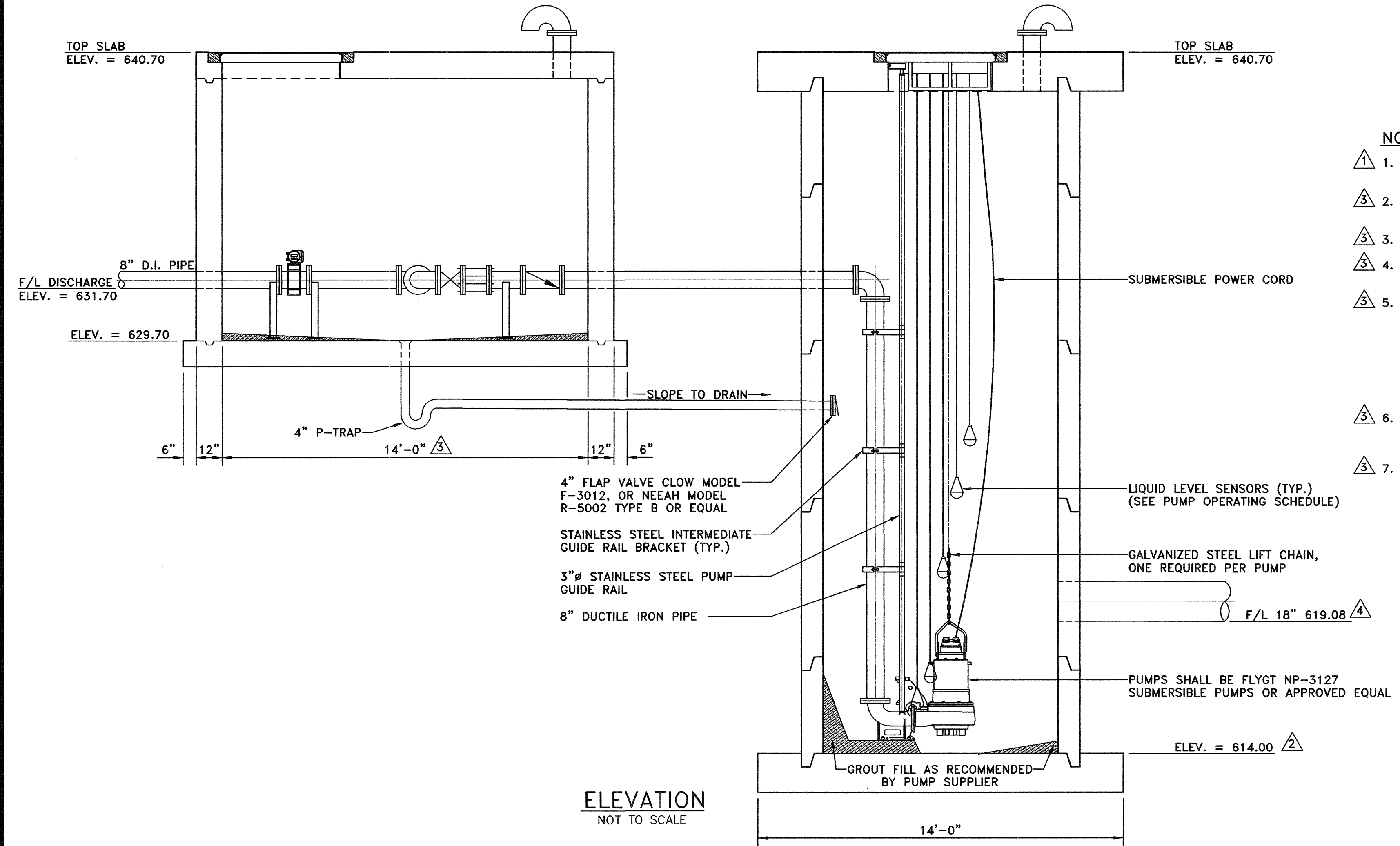
PLAN VIEW
NOT TO SCALE



TOP SLAB - PLAN VIEW
NOT TO SCALE



RECORD DRAWING
BASED ON CONTRACTOR MARKUPS,
NOT FIELD SURVEY.



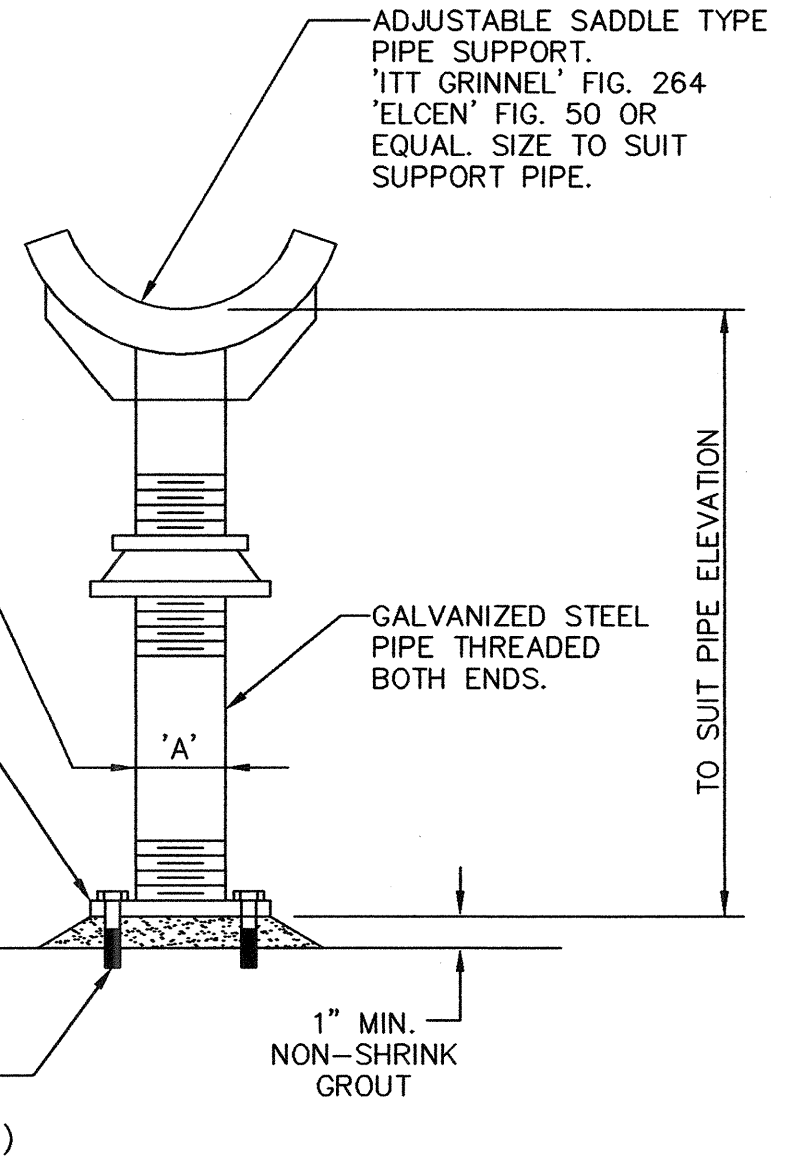
ELEVATION
NOT TO SCALE

- NOTES:**
1. REVISED THE BOTTOM SLAB OF THE LIFT STATION FROM AND ELEVATION OF 616.70 TO AN ELEVATION OF 614.00.
 2. THE DUCTILE IRON PIPE SHALL BE CEMENT LINED ON THE INSIDE AND PAINTED ON THE OUTSIDE PER THE PIPE MANUFACTURES RECOMMENDATIONS.
 3. FITTINGS AND MATERIALS FOR THIS PROJECT SHALL BE DOMESTICALLY MADE.
 4. MEGALUGS OR APPROVED EQUAL WILL BE FURNISHED AND INSTALLED ON ALL BURIED BENDS ON THE FORCE MAIN.
 5. FOR ODOR CONTROL, AN ACTIVATED CARBON CONTAINER (55 GALLON DRUM), AS MANUFACTURED BY CALGON OR EQUAL, SHALL BE FURNISHED AND INSTALLED ON THE VENT AT THE LIFT STATION WET WELL. A 16" STAINLESS STEEL INSERT SCREEN SHALL BE INSTALLED ON THE DISCHARGE PIPE FROM THE CARBON ABSORPTION CONTAINER. THIS ODOR CONTROL DEVICE SHALL BE INSTALLED PER THE MANUFACTURES RECOMMENDATIONS. THE COST FOR THESE ODOR CONTROL PROVISIONS SHALL BE INCLUDED IN THE BID ITEM FOR THE LIFT STATION WET WELL STRUCTURE.
 6. THE WET WELL STRUCTURE SHALL BE A PRE-CAST MANHOLE (MINIMUM 10" THICK WALLS), AND JOINTS SHALL BE SEALED TO ADEQUATELY PREVENT GROUND WATER FROM ENTERING THE WET WELL.
 7. REVISE THE INSIDE DIMENSIONS OF THE VALVE VAULT FROM 10' BY 10' TO 14' BY 14'. THE REINFORCING STEEL IN THE TOP SLAB AND THE BOTTOM SLAB SHALL BE INCREASED ACCORDINGLY TO ACCOMMODATE THE REVISED DIMENSIONS OF THE VALVE VAULT.

TABLE 1

SUPPORTED PIPE SIZE	'A'
LESS THAN 3-1/2"	2"
4" THRU 12"	3"
14" THRU 16"	4"
16" AND OVER	6"

NOMINAL DIA. SEE TABLE 1, 'A' DIMENSION



ADJUSTABLE PIPE SUPPORT
NOT TO SCALE

PUMP OPERATING SCHEDULE (PROPOSED LIFT STATION)

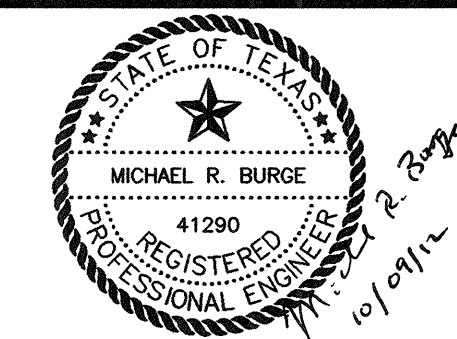
- | | |
|----------------|-----------------------------|
| ELEV. = 625.70 | HIGH WATER LEVEL ALARM "ON" |
| ELEV. = 623.70 | LAG PUMP "ON" |
| ELEV. = 620.70 | LEAD PUMP "ON" |
| ELEV. = 616.70 | ALL PUMPS "OFF" |
| ELEV. = 615.70 | LOW WATER LEVEL ALARM "ON" |

NO.	DATE	REVISION	REVIEWED
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5			
4	9/17/12	REVISED F/L PER FIELD CONDITIONS	MRB
3	7/13/12	REVISED PER ADDENDUM NO. 5	MRB
2	7/13/12	REVISED PER ADDENDUM NO. 4	MRB
1	7/13/12	REVISED PER ADDENDUM NO. 2 AND NO. 4	MRB

DRAWN:	BW2
DESIGN:	MRB
REVIEWED:	JFW
SCALE:	AS SHOWN
DATE:	APRIL 2012
DWG. NAME:	1471MECH



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WASTEWATER SYSTEM IMPROVEMENTS
WASTEWATER GRAVITY SEWER AND LIFT STATION
LIFT STATION - MECHANICAL PLAN
CITY OF LUCAS

SHEET NO. C18
OF C18 SHEETS
JOB NO. 11-1471

GENERAL TRAFFIC CONTROL NOTES

1. ALL TEMPORARY SIGNS, MARKINGS, CONES, CHANNELIZING DEVICES, WARNING LIGHTS AND BARRICADES SHALL BE IN ACCORDANCE WITH THE CURRENT STATE OF TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
2. TYPE "A" WARNING LIGHTS SHALL BE PLACED ON ALL ADVANCE WARNING SIGNS.
3. REDUCED SPEED WARNING SIGNAGE SHOULD BE PLACED PRIOR TO AND AT REGULAR INTERVALS NEAR CONSTRUCTION AREA.

GENERAL STRUCTURAL NOTES:

FOUNDATION:

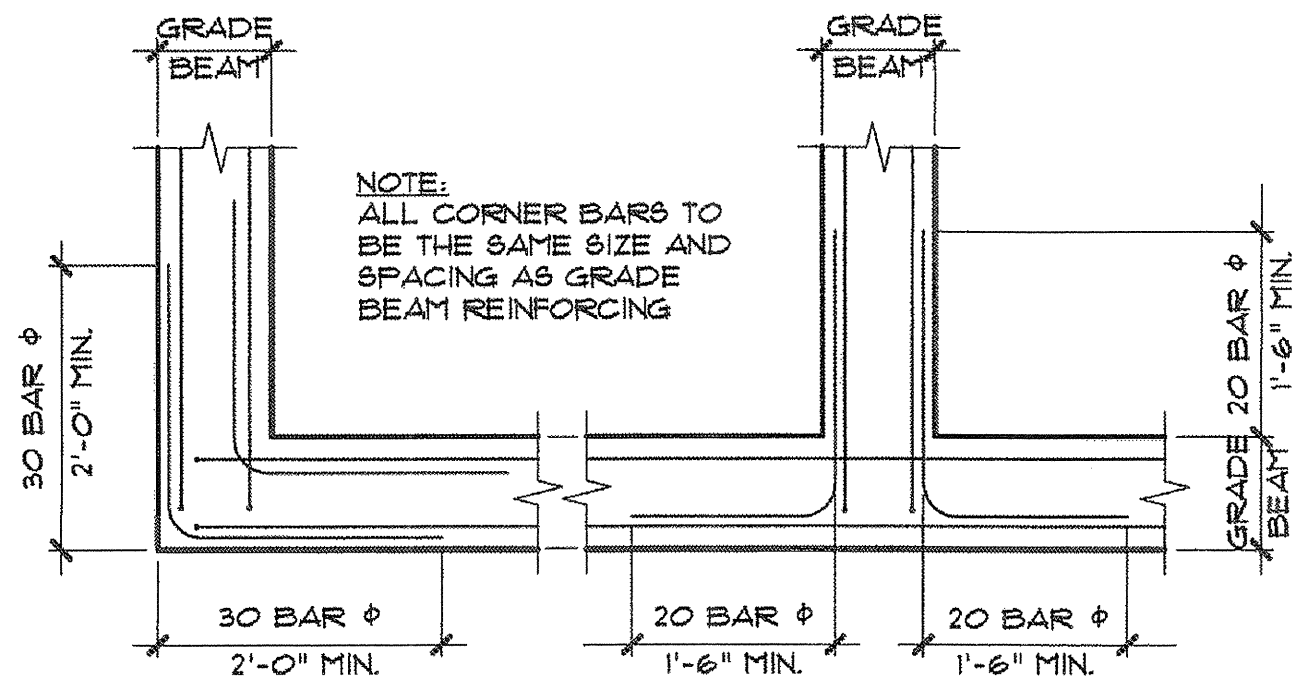
1. THE FOUNDATIONS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE SOILS REPORT PREPARED BY TERRACON DATED OCTOBER 6, 2011 PROJECT NO. 94115192.
2. THE CONTRACTOR AND ALL SUBCONTRACTORS SHOULD BE TOTALLY FAMILIAR WITH THE CONTENTS OF THE SOILS REPORT.
3. ANY CONDITION FOUND, PRIOR TO OR DURING CONSTRUCTION, THAT IS DIFFERENT THAN THAT DESCRIBED IN THE SOILS REPORT AND THAT WOULD AFFECT THE FOUNDATIONS AS DESIGNED, SHALL BE BROUGHT TO THE ATTENTION OF BW2 ENGINEERS AND/OR JOE P. HILL, P. E., INC.
4. IN NO CASE SHALL CONSTRUCTION PROCEED IF THE PERFORMANCE OF THE FOUNDATIONS, AS DESIGNED, WILL BE COMPROMISED.
5. PRIOR TO ANY NEW CONSTRUCTION, THE SITE SHALL BE CLEARED OF ANY AND ALL OBSTRUCTIONS THAT WOULD HINDER THE PROPER PREPARATION OF THE SITE FOR CONSTRUCTION.
6. ALL CLEARED DEBRIS SHALL BE REMOVED AND DISPOSED OF PROPERLY.
7. ANY FILL MATERIAL USED FOR GENERAL SITE FILL SHALL CONSIST OF ON-SITE MATERIALS OR IMPORTED MATERIALS AS APPROVED BY THE SOILS ENGINEERS, AND AS DESCRIBED IN THE SOILS REPORT (PG. 3)
8. IMPORTED FILL SHALL HAVE A LIQUID LIMIT LESS THAN 60.
9. IMPORTED FILL SHALL BE FREE OF ROOTS, VEGETATION OR ANY OTHER UNDESIRABLE MATTER IN THE SOIL AND HAVE NO ROCKS LARGER THAN 4 INCHES IN DIAMETER.
10. THE SELECT FILL SHALL BE PLACED IN LOOSE LIFTS OF NINE (9) INCHES OR LESS AND COMPACTED TO AT LEAST 95% OF ITS STANDARD PROCTOR DRY DENSITY AT A MOISTURE CONTENT RANGING FROM -1% TO +3% ABOVE ITS OPTIMUM VALUE.
11. BEFORE PLACING THE SELECT FILL, THE SUB GRADE SHALL BE SCARIFIED TO A DEPTH OF AT LEAST NINE (9) INCHES, MOISTURE CONDITIONED TO AT LEAST 2% ABOVE THE OPTIMUM VALUE (AT A WORKABLE MOISTURE LEVEL) AND COMPACTED TO AT LEAST 95% OF THE MAXIMUM STANDARD PROCTOR DRY DENSITY.
12. SITE GRADING OPERATIONS, WHERE REQUIRED, SHALL BE PERFORMED IN ACCORDANCE WITH THE RECOMMENDATIONS PROVIDED IN THE SOILS REPORT.
13. SITE GRADING PLANS AND CONSTRUCTION SHALL STRIVE TO ACHIEVE POSITIVE DRAINAGE AROUND ALL SIDES OF THE PROPOSED STRUCTURE.
14. INADEQUATE DRAINAGE AROUND STRUCTURES BUILT ON GRADE CAN CAUSE EXCESSIVE VERTICAL DIFFERENTIAL MOVEMENTS TO OCCUR.
15. THE GEOTECHNICAL ENGINEER SHALL MONITOR FOUNDATION CONSTRUCTION TO VERIFY CONDITIONS ARE AS ANTICIPATED.
16. FOUNDATION EXCAVATION SHALL BE DRY AND FREE OF LOOSE MATERIAL.
17. EXCAVATION FOR FOUNDATIONS SHALL BE FILLED WITH CONCRETE BEFORE THE END OF THE WORKDAY OR SOONER IF NECESSARY TO PREVENT DETERIORATION OF THE BEARING SURFACE.
18. ALL EXCAVATIONS SHALL BE SLOPED, SHORED OR SHIELDED IN ACCORDANCE WITH OSHA REQUIREMENTS.

CONCRETE:

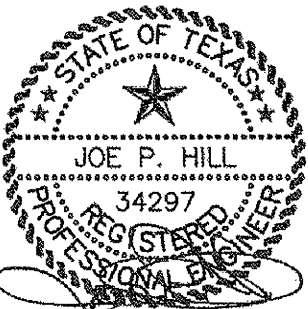
1. CONCRETE WORK SHALL BE EXECUTED IN STRICT ACCORDANCE WITH THE LATEST EDITION OF THE AMERICAN CONCRETE INSTITUTE BUILDING CODE (ACI 318-05).
2. CONCRETE AND REINFORCING SPECIFICATIONS AS FOLLOWS:
- | | 28 DAY STRENGTH | SACK CONTENT | AGGREGATE | SLUMP |
|---------|-----------------|--------------|-----------|----------|
| Typical | 4,000 PSI | 6/C.Y. | H.R. | 4" TO 6" |
3. PORTLAND CEMENT SHALL CONFORM TO ASTM C-33.
4. REINFORCING STEEL SHALL CONFORM TO ASTM 615, GRADE 60; GRADE 40 FOR STIRRUPS AND TIES.
5. ALL WELDED WIRE FABRIC SHALL CONFORM TO ASTM A82, GRADE 60.
6. REINFORCING STEEL SHALL BE DESIGNED, DETAILED, FABRICATED, AND PLACED IN ACCORDANCE WITH THE LATEST ACI "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES" (ACI 315).
7. SLAB REINFORCING SHALL BE LOCATED IN THE SLABS AS NOTED ON THE DRAWINGS.
8. ALL GRADE BEAM REINFORCING TO BE AS SHOWN IN SECTIONS ON THE DRAWINGS.
9. PROVIDE 2 - #5 BARS EACH SIDE OF ALL OPENINGS. EXTEND BARS TWO (2) FEET PAST OPENINGS EACH DIRECTION.
10. CORNER REINFORCING BARS SHALL BE USED AT ALL CORNERS AND INTERSECTIONS.
11. REINFORCING SPLICES SHALL OCCUR AT POINTS OF MINIMUM STRESS AND LAP THIRTY (30) BAR DIAMETERS UNLESS OTHERWISE NOTED.
12. LAP ALL WELDED WIRE FABRIC EIGHT (8) INCHES MINIMUM.
13. THE INTERIOR FLOOR AREAS THAT DO NOT RECEIVE RESILIENT FLOORING OR SURFACE MATERIAL SHALL BE SEALED. THE TIMING OF THE APPLICATION OF THIS MATERIAL MUST BE APPROVED BY THE ENGINEER. THE MATERIAL IS TO BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S PUBLISHED INSTRUCTIONS. (TWO COATS MINIMUM).
14. ALL INTERIOR CONCRETE FLOOR WORK SHALL BE COATED WITH CURING COMPOUND. APPLICATION SHALL BE IN STRICT ACCORDANCE WITH THE MANUFACTURER'S PUBLISHED INSTRUCTIONS.
15. ALL EXTERIOR CONCRETE WALKS AND DRIVES SHALL BE CONSTRUCTED USING AIR-ENTRAINED CONCRETE. SUFFICIENT AIR-ENTRAINING AGENT SHALL BE USED TO REDUCE THE WEIGHT OF THE CONCRETE BY 6% TO 8%.
16. SEE ARCHITECTURAL, CIVIL AND MECHANICAL PLANS FOR VERIFICATION OF ALL DEPRESSIONS, OPENINGS, CAST-IN-PLACE ACCESSORIES, ETC.

VALVE VAULT:

1. THE EXCAVATIONS FOR VALVE VAULT SHALL BE ADEQUATE ENOUGH IN SIZE AND DEPTH TO ACCOMPLISH THE NECESSARY FORMING AND CONCRETE PLACEMENT OPERATIONS.
2. SIDE WALLS FOR ALL EXCAVATION DEEPER THAN 3'-0" SHALL BE EITHER PROPERLY SLOPED BACK OR PROPERLY BRACED PER OSHA REQUIREMENTS.
3. MEANS AND METHODS ARE THE RESPONSIBILITY OF THE CONTRACTOR.
4. PROVIDE A SAND CUSHION BASE OF AT LEAST FOUR (4) INCHES BELOW THE BOTTOM OF THE VALVE VAULT.
5. THE SIDES SHALL BE WATERPROOFED AS REQUIRED.
6. BACKFILL AROUND THE PERIMETER OF THE VAULT, AFTER THEY ARE CONSTRUCTED, SHALL BE SELECT FILL OR GRAVEL, HAND TAMPED/COMPACTED IN PLACE, IN NINE (9) INCH LIFTS.
7. THE FINAL LIFT, TOP CAP, SHALL BE GOOD, CLEAN ON-SITE MATERIAL.



1 TYPICAL CORNER BAR DETAIL
N. T. S.



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RECORD DRAWING

BASED ON CONTRACTOR MARKUPS,
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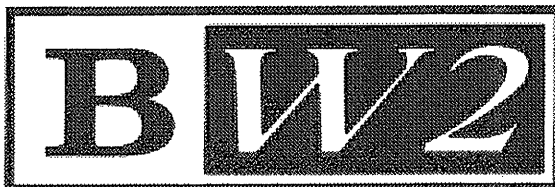
Jph

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Jph, P.E. Job No. 12073

JOE P. HILL P.E.
TEXAS FIRM REG. No. F-2335

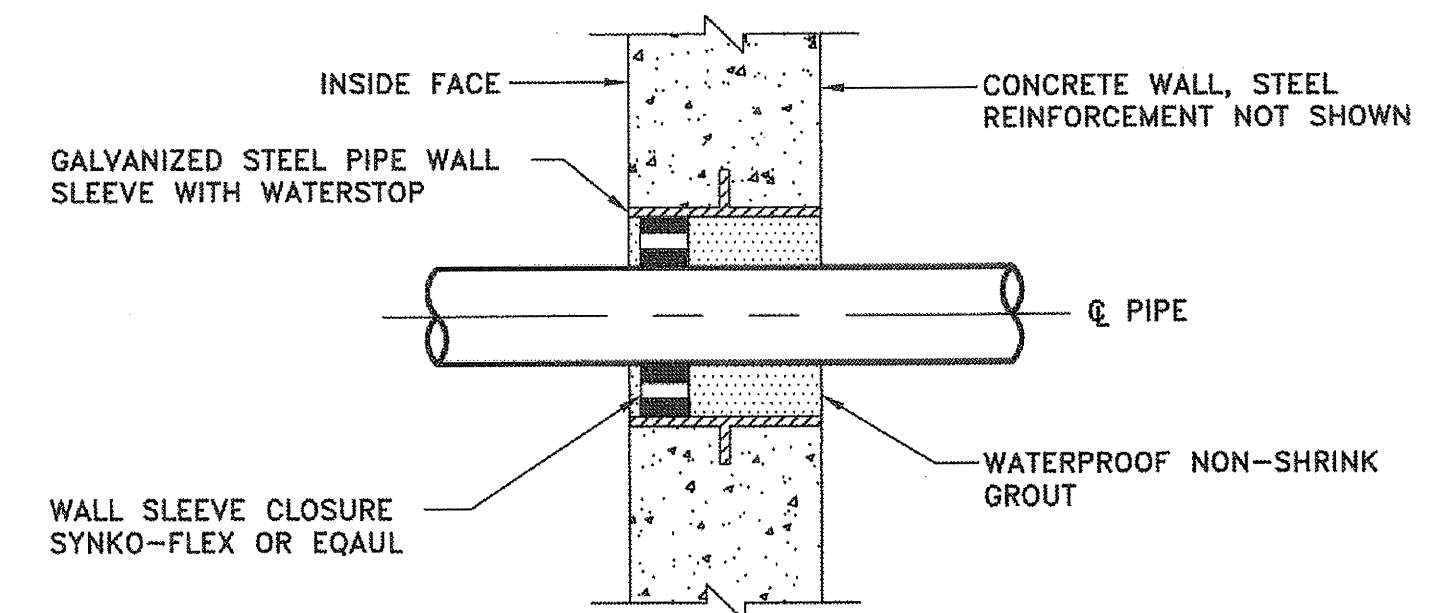
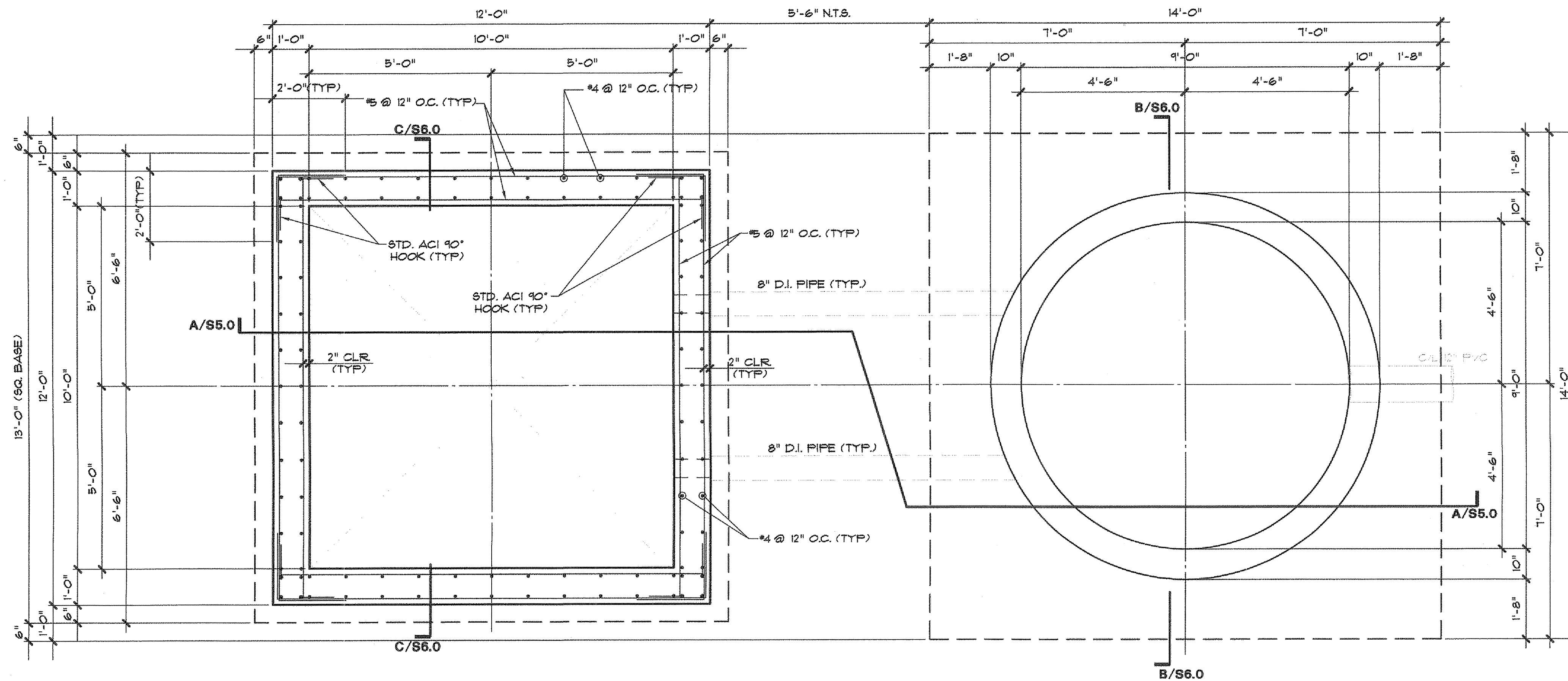
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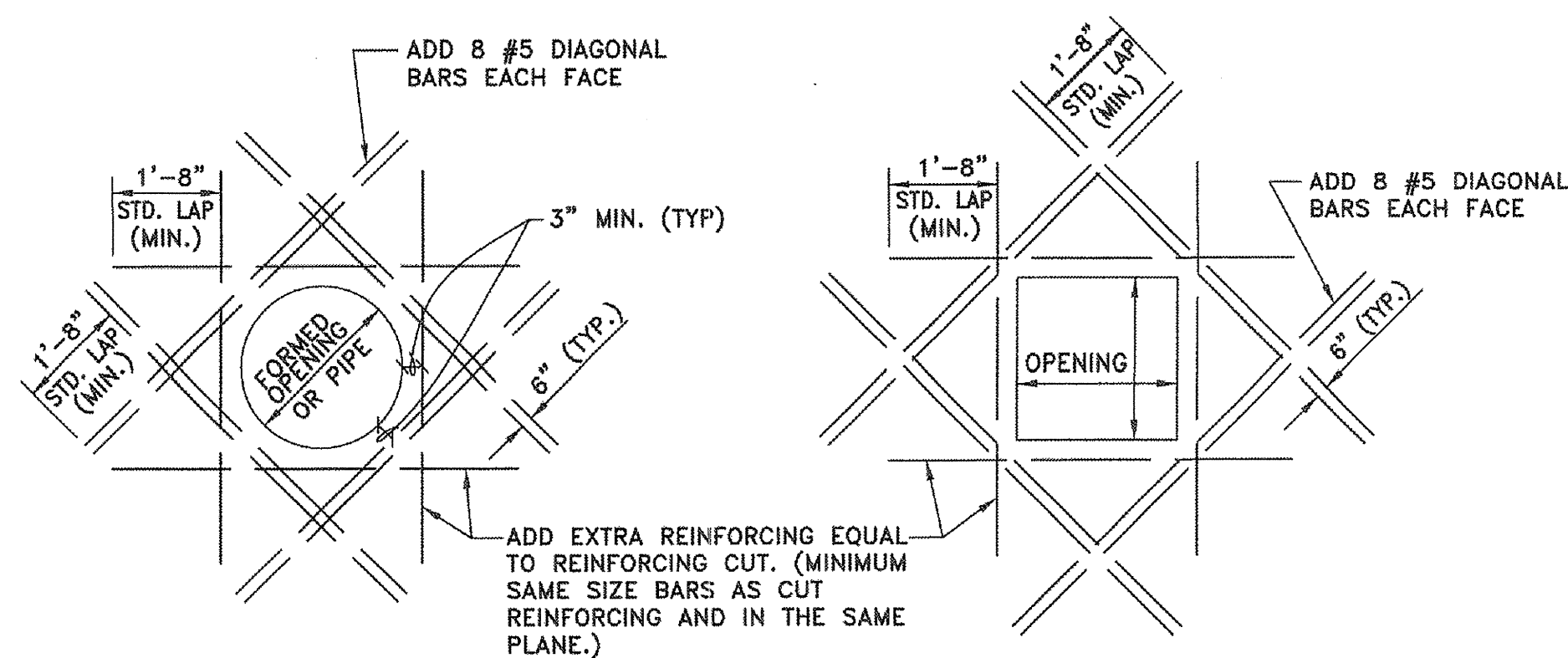
WASTEWATER SYSTEM IMPROVEMENTS
WASTEWATER GRAVITY SEWER AND LIFT STATION
LIFT STATION - GENERAL NOTES
CITY OF LUCAS

SHEET NO. S1.0
OF SHEETS
JOB NO. 11-1471



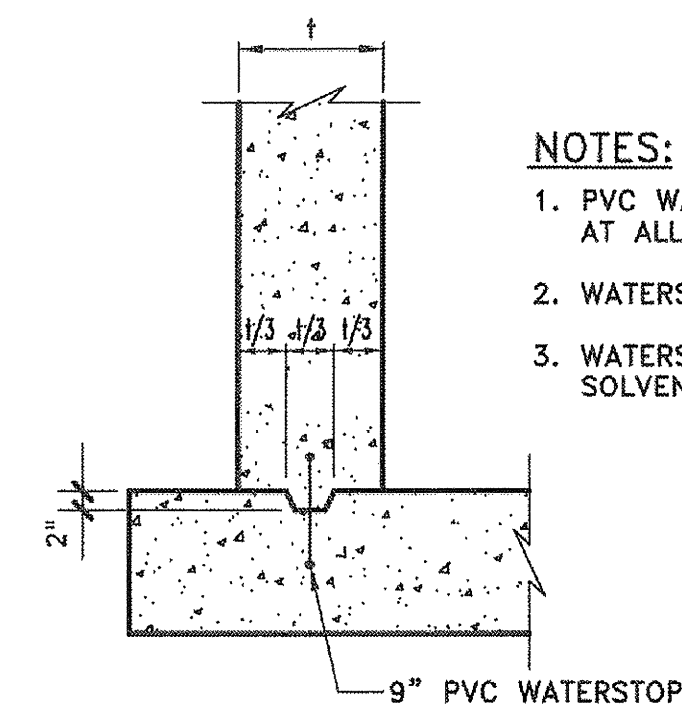
WALL SLEEVE CLOSURE DETAIL
NOT TO SCALE

01 PUMP / VALVE VAULT WALL REINFORCING PLAN
SCALE: 1/2" = 1'-0"



- NOTES:**
1. SPREAD AND/OR CUT REINFORCING AT OPENINGS. SPREAD BARS NO MORE THAN ONE HALF TYPICAL BAR SPACE.
 2. TWO ADDITIONAL #5 VERTICAL BARS SHALL BE LOCATED TO EITHER SIDE OF THE OPENING, EACH FACE.

REINFORCING AT WALL AND SLAB PENETRATION
SCALE: 1/2" = 1'-0"



- NOTES:**
1. PVC WATERSTOP SHALL BE INSTALLED AT ALL CONSTRUCTION JOINTS.
 2. WATERSTOP SHALL BE CONTINUOUS.
 3. WATERSTOP SPLICES SHALL BE SOLVENT WELDED.

WATERSTOP DETAIL
NOT TO SCALE

RECORD DRAWING

BASED ON CONTRACTOR MARKUPS,
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JOE P. HILL P.E.
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STD. ACI 90° HOOK
NOT TO SCALE

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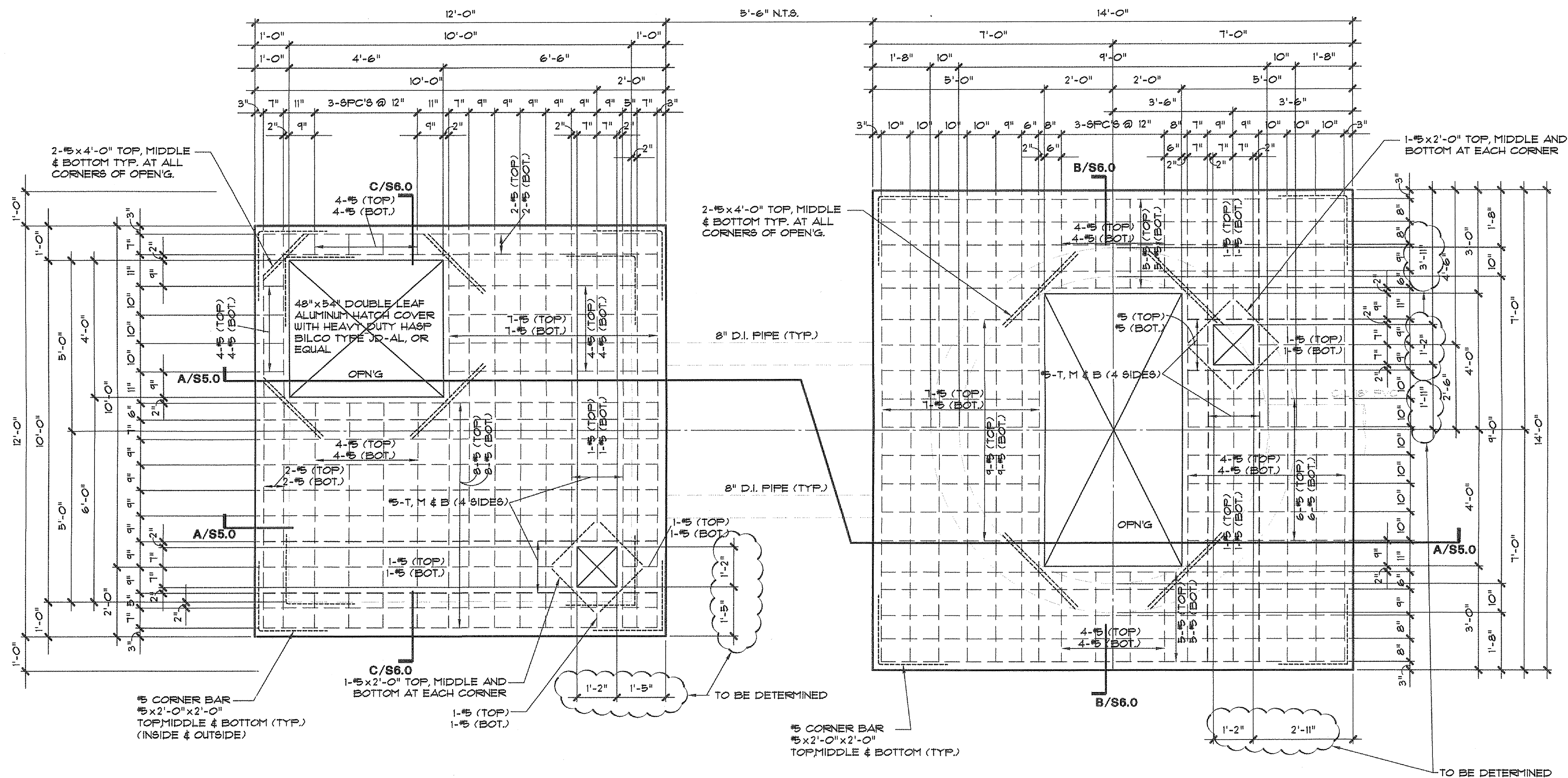
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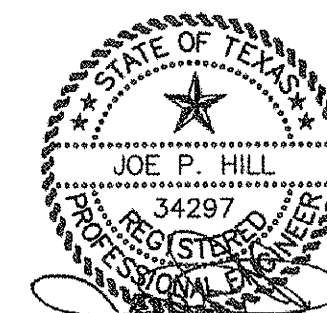
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WASTEWATER SYSTEM IMPROVEMENTS
WASTEWATER GRAVITY SEWER AND LIFT STATION
PUMP/VALVE VAULT WALL REINFORCING PLAN
CITY OF LUCAS

SHEET NO. **S3.0**
OF SHEETS
JOB NO. 11-1471



01 PUMP / VALVE VAULT TOP REINFORCING PLAN
SCALE: 1/2" = 1'-0"



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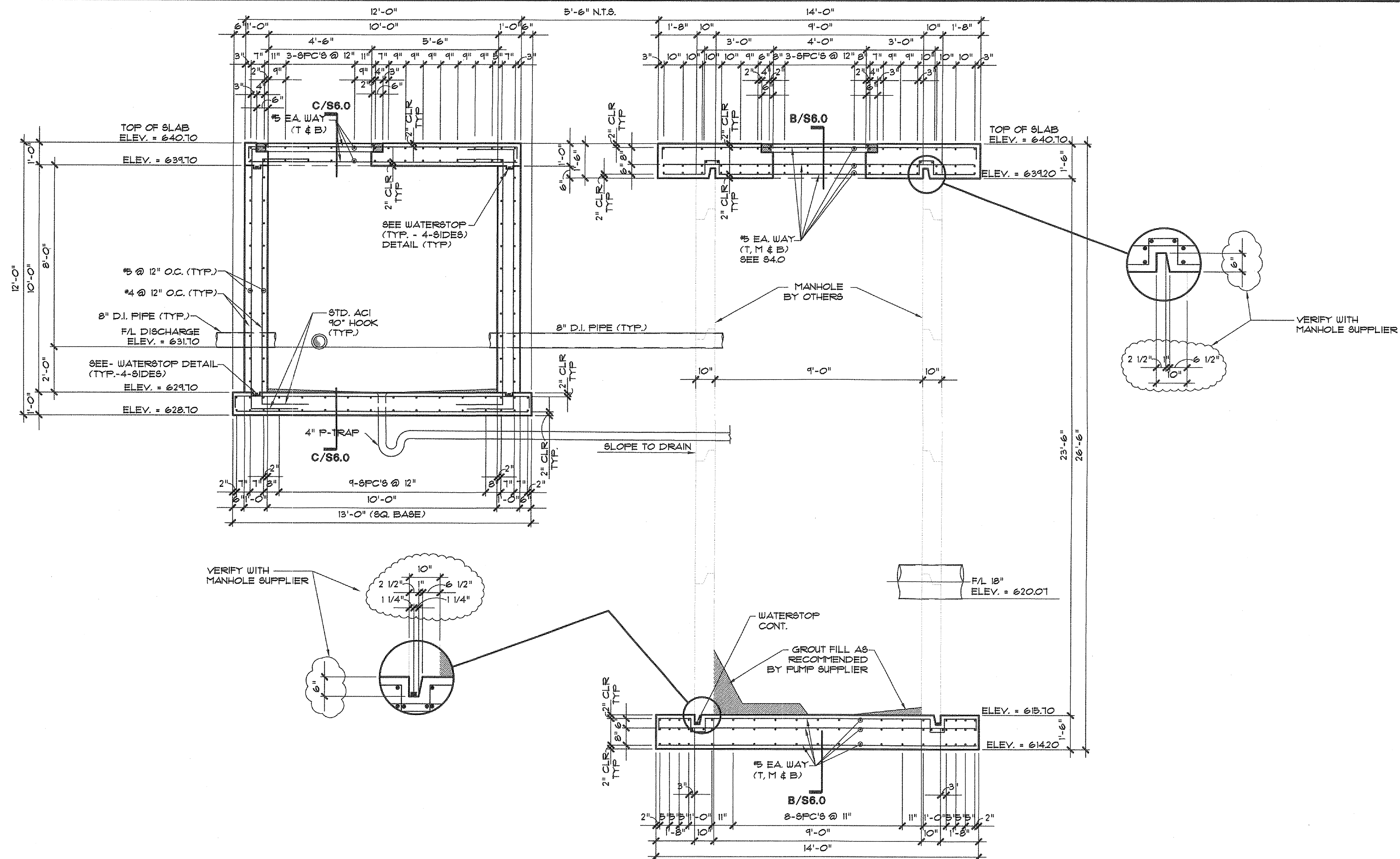
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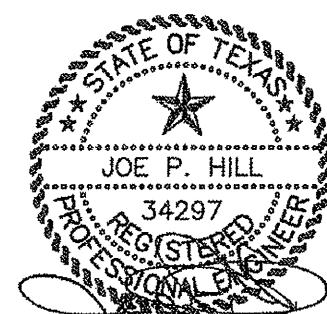
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WASTEWATER SYSTEM IMPROVEMENTS
WASTEWATER GRAVITY SEWER AND LIFT STATION
PUMP/VALVE VAULT TOP REINFORCING PLAN
CITY OF LUCAS

SHEET NO. **S4.0**
OF SHEETS
JOB NO. 11-1471



A-A PUMP / VALVE VAULT SECTIONS / REINFORCING
SCALE: 3/8" = 1'-0"



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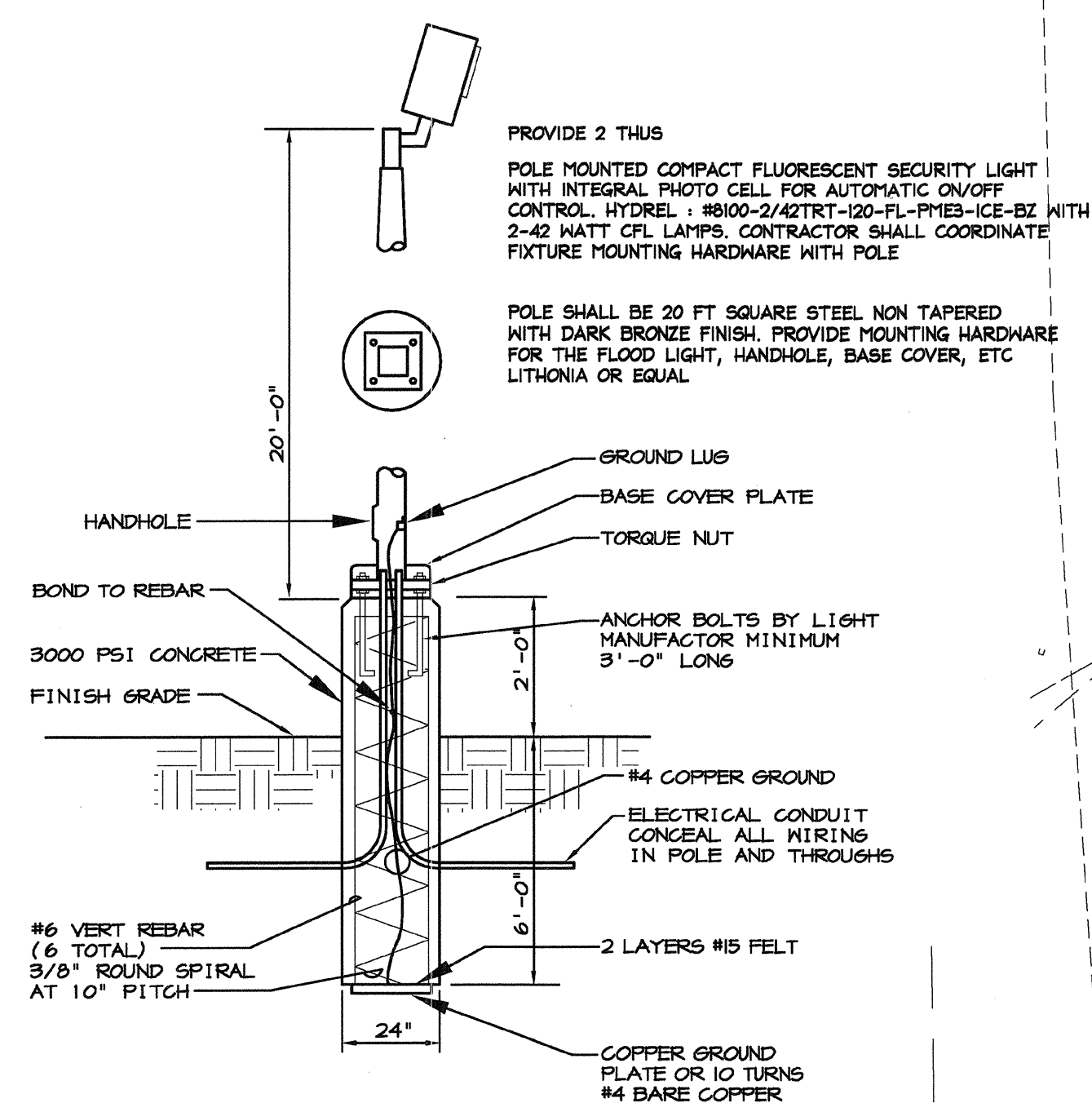


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WASTEWATER SYSTEM IMPROVEMENTS
WASTEWATER GRAVITY SEWER AND LIFT STATION
PUMP/VALVE VAULT SECTIONS / REINFORCING
CITY OF LUCAS

SHEET NO. **S5.0**
OF SHEETS
JOB NO. 11-1471



02 POLE BASE DETAIL
SCALE: NO SCALE

ELEC SERVICE : 120/240 V., 3 PH., 4 WIRE,
DELTA. REFER TO ONE LINE DIAGRAM ON SHEET
E3.0 ELECTRICAL CONTRACTOR SHALL COORDINATE
WITH THE OWNER AND VERIFY ALL REQUIREMENTS
PRIOR TO BIDDING PROJECT AND INSTALLATION.

(1) 2" PVC CONDUIT WITH LABELED NYLON PULL CORD
TO TELEPHONE SERVICE PROVIDER. ELECTRICAL
CONTRACTOR SHALL COORDINATE WITH PROVIDER TO
DETERMINE EXACT STUB UP LOCATION. PRIOR TO
BIDDING AND INSTALLATION.

- ELECTRIC METER
- MAIN SERVICE DISCONNECT
- PUMP CONTROLLER
MOTOR CONTROL
CENTER MCC
- PANEL 'LA'
- COMMUNICATIONS CABINET

FLOOD LIGHT
POLE REF TO 02
ON THIS SHEET

UTILITY
POLE

REFER TO DETAIL
02 ON SHEET E2.0
TYPICAL

REFER TO DETAIL
03 ON SHEET E2.0
TYPICAL

FLOOD LIGHT
POLE REF TO 02
ON THIS SHEET

01 SITE PLAN - ELECTRICAL
SCALE: 1/4" = 1'-0"

RECORD DRAWING
BASED ON CONTRACTOR MARKUPS,
NOT FIELD SURVEY.



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the date shown
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Consulting Engineer Mechanical / Electrical
Firm Registration No. 1-1584
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972/386-5629
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NO.	DATE	REVISION	REVIEWED

DRAWN: GCH
DESIGN: GCH
REVIEWED: RLN
SCALE: SEE PLAN
DATE: 06-05-2012
DWG. NAME:



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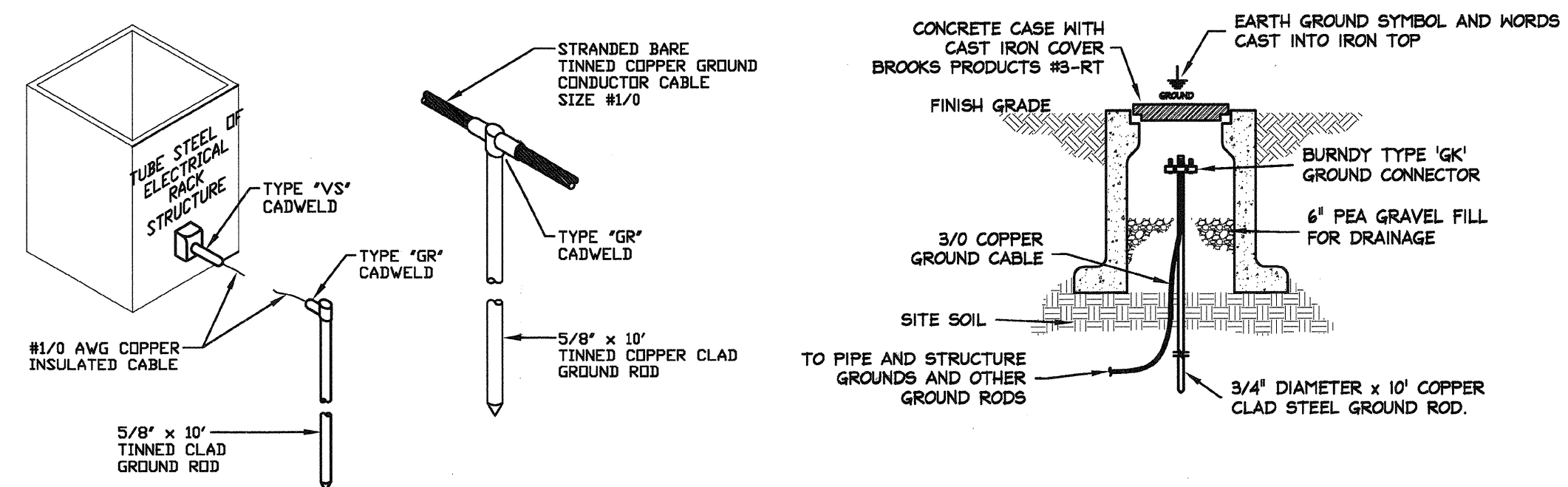
**WASTEWATER SYSTEM IMPROVEMENTS
WASTEWATER GRAVITY SEWER AND LIFT STATION
LIFT STATION - SITE PLAN
CITY OF LUCAS**

SHEET NO. **E-1**
OF SHEETS
JOB NO.



-
- A technical cross-section diagram showing the penetration of a multi-conductor motor cable through a pump access hatch cover. The diagram includes the following components and labels:
- BOLT AND CONDUIT TO BE INSTALLED AS CLOSE AS POSSIBLE TO HATCH COVER**: Points to the top of the conduit assembly.
 - PUMP ACCESS HATCH COVER**: The top plate of the hatch.
 - 3/4" DIAMETER, 316 STAINLESS STEEL BOLT WASHER. BOLT TO INCLUDE "HILTI" HSL HEAVY DUTY ANCHOR, MINIMUM DEPTH OF EMBEDMENT TO BE 4-1/2"**: Points to the bolt securing the hatch cover.
 - PVC COATED ALUMINUM CONDUIT**: The outer protective pipe for the cable.
 - BELL FITTING (TYP.) SIZE PER CONDUIT DIAMETER**: The fitting where the cable enters the conduit.
 - MULTI-CONDUCTOR MOTOR CABLE TO PUMP MOTOR (TYP.)**: The cable being protected by the conduit.
 - "KELLEMS" STRAIN RELIEF SPLIT GRIPS W/ STAINLESS STEEL LACE (TYP.) SIZE PER OUTSIDE DIAMETER OF CABLE**: The device used to secure the cable within the conduit.
- PUMP ACCESS HATCH CONDUIT PENETRATION DETAIL**

03 CONDUIT PENETRATION DETAIL



02 ELECTRICAL GROUND DETAILS

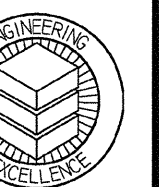
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Associates Inc., ou,
norris@stoubandassociat
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WASTEWATER SYSTEM IMPROVEMENTS
WASTEWATER GRAVITY SEWER AND LIFT STATION
LIFT STATION - SITE PLAN
CITY OF LUCAS

SHEET NO. E-2
F SHEETS
JOB NO.

PANEL 'LA'												
DESCRIPTION	POLES	TRIP	CIRCUIT	LIGHTING	POWER	POWER	LIGHTING	CIRCUIT	TRIP	POLES	DESCRIPTION	
SECURITY LIGHT	1P	20	1	125		7427		2		3P	CONTROL PANEL MCC	
LOCK OUT	1P	20	3			7427		4				
2 CONVENIENCE OUTLETS	1P	20	5		360	7427		6	100			
SPARE	1P	20	7					8	20	1P	SPARE	
SPARE	1P	20	9					10	20	1P	SPARE	
SPARE	1P	20	11					12	20	1P	SPARE	
GROUND BUS												
22K AIC RATED												
CONNECTED LIGHTING		125	X 1.25		158		DESIGNATION			PANEL 'LA'		
CONNECTED POWER				22641		MOUNTING			SURFACE			
TOTAL DESIGN LOAD				22799		VOLTAGE-PHASE-WIRE			120	240	3 PH	4 WIRE
TOTAL CONNECTED AMPS				54.91		MAINS TYPE			MCB			
						MAINS AMPS			100			