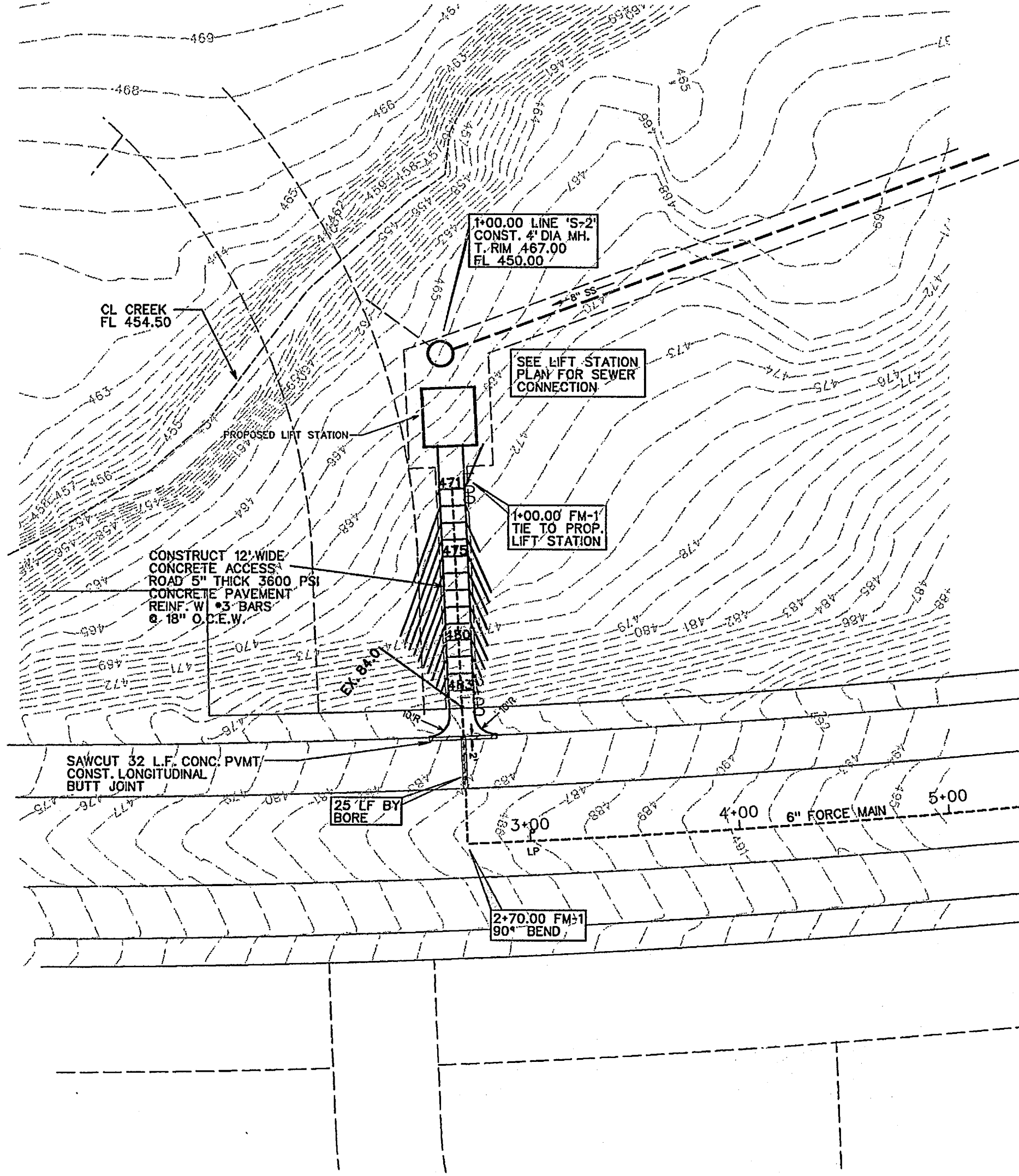
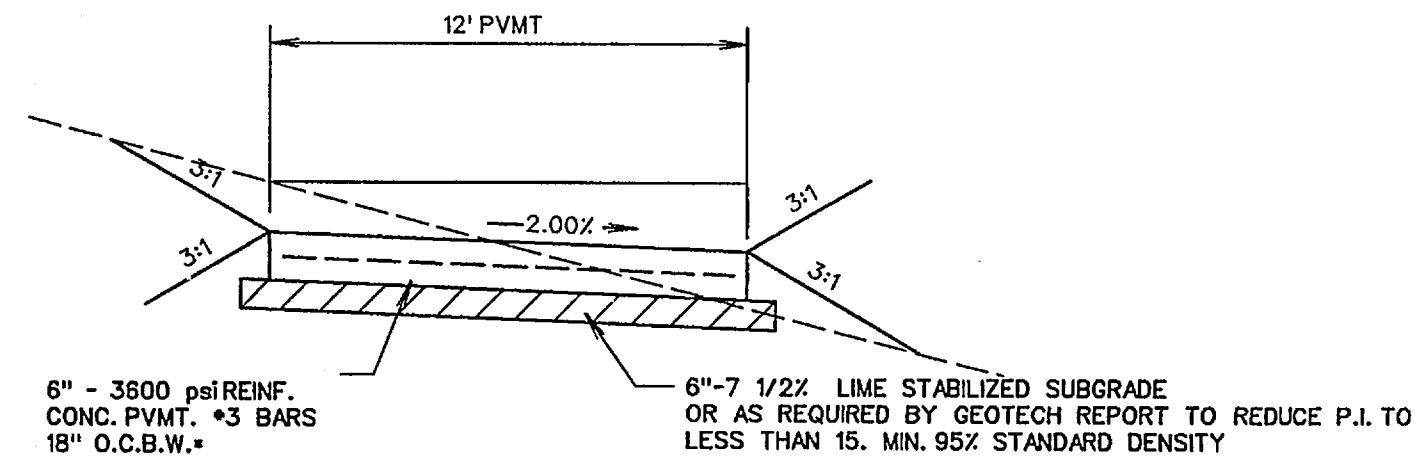


CURVE TABLE

| CURVE NO. | DELTA     | RADIUS   | LENGTH   | TANGENT |
|-----------|-----------|----------|----------|---------|
| 1.        | 14°57'53" | 5005.00' | 1307.23' | 657.36' |



NOTES FOR CONSTRUCTION WITH THE NORTH TEXAS MUNICIPAL WATER DISTRICT EASEMENT

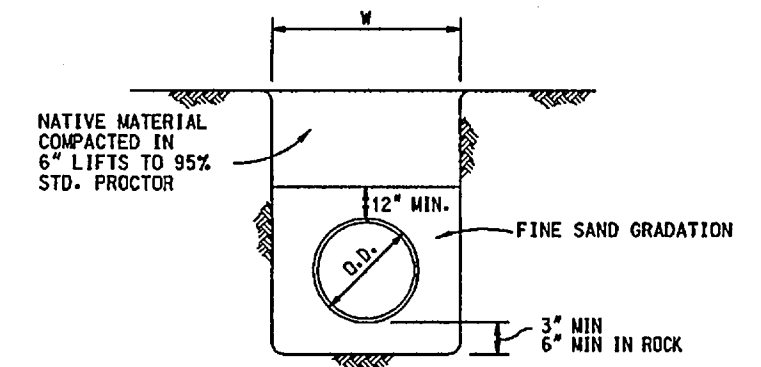
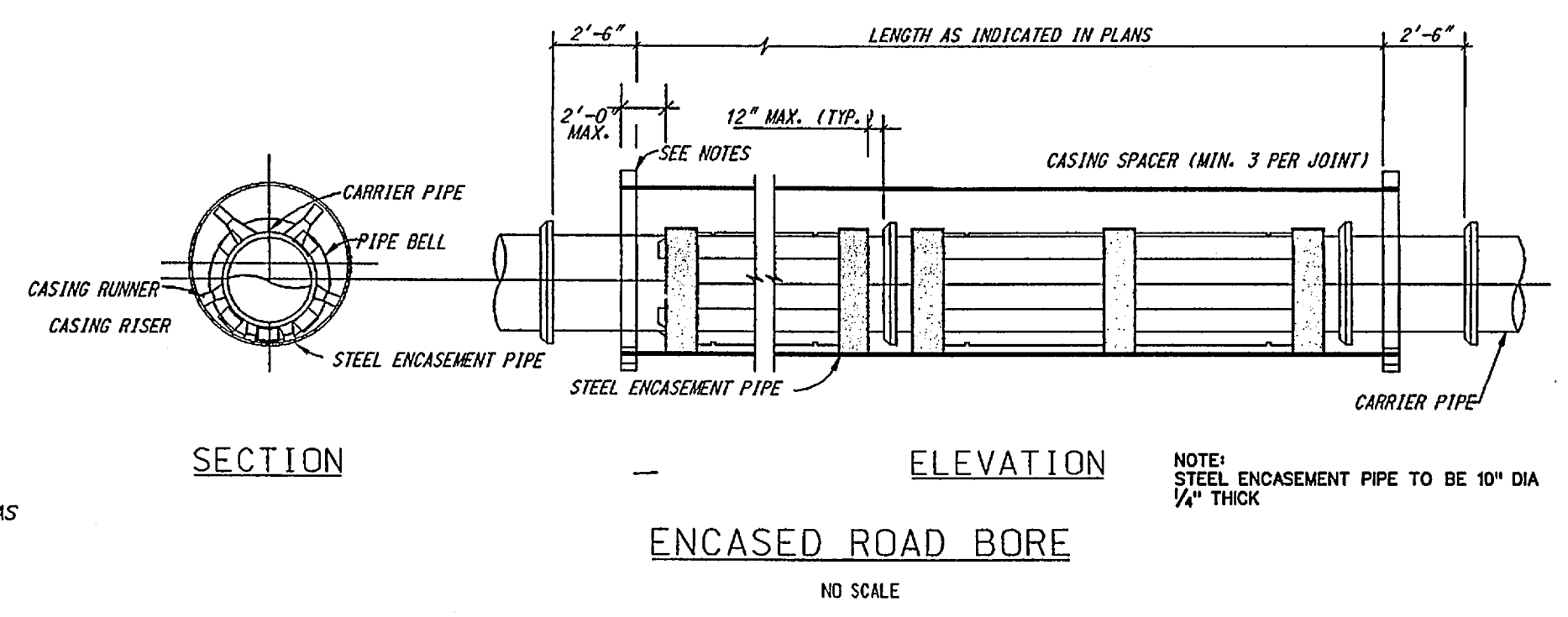
- A. North Texas Municipal Water District (NTMWD's) 30-inch water transmission pipeline is located within the limits of construction.
- B. Operation of heavy earthmoving equipment, compaction equipment or heavy construction equipment, such as concrete trucks, shall be restricted to specific crossing points across NTMWD easements, as approved by the NTMWD. The crossing shall be designated and verified to provide a minimum of five-feet of cover.
- C. 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's Engineering Department at (972) 442-5405 so your plans for use of NTMWD's easement can be reviewed.
- D. A minimum of three feet separation between the bottom of the pavement and top of NTMWD pipeline is required. In addition, if separation between the bottom of the pavement and the top of the pipeline is less than 3.5 feet, a thickened pavement section is required.
- E. Crossing of the NTMWD easement with other utilities, such as TV cable, phone, gas and electric, shall be coordinated with the NTMWD to avoid damage to the NTMWD facilities.
- F. Outdoor lighting, landscaping, screening walls or other facilities shall not be installed in NTMWD easements without written approval of the NTMWD.
- G. Unless otherwise shown or required a minimum of one-foot clearance shall be provided for all utilities crossing the NTMWD pipelines.
- H. The contractor shall contact NTMWD Engineering at (972) 442-5405 at least 48 hours prior to performing any work in the vicinity of the NTMWD facilities.
- I. For open cut where crossing under the NTMWD pipeline, within ten feet either side of centerline of pipeline, the trench width to be cut shall be limited to four-foot vertical walls, no sloping bank with the appropriate trench safety. The entire excavation within the limits noted above shall be backfilled with gravel to one-foot above top of NTMWD pipeline. One-foot minimum vertical clearance is required between NTMWD pipeline and proposed utilities.
- J. Limits of bore shall be a minimum of the NTMWD easement width centered on NTMWD's pipeline.
- K. The casing pipe shall terminate outside of NTMWD's easement.
- L. All proposed sanitary sewer crossings where installed above NTMWD's pipeline shall be comprised of a minimum 150-PSI pressure rated carrier pipe and casing pipe. Installation of this carrier pipe and casing pipe shall be installed across the entire NTMWD easement.
- M. Water and sewer lines crossing the NTMWD easement shall be installed in compliance with the Rules and Regulations for Public Water Systems Paragraph 290.44 (e), Location of Water lines.

GENERAL NOTES FOR BORING JACKING OR TUNNELING

1. CONTRACTOR SHALL BE RESPONSIBLE FOR PROPERLY LOCATING ALL EXISTING UTILITIES PRIOR TO BEGINNING ANY INSTALLATION ACTIVITIES.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH REPAIR OR REPLACEMENT OF ANY PAVEMENT AND UNDERGROUND UTILITIES DAMAGED AS A RESULT OF CONSTRUCTION OPERATIONS.
3. DRY BORE SHALL BE UTILIZED UNLESS OTHER METHODS SPECIFICALLY ARE APPROVED IN WRITING BY THE CITY.

NOTES:

- 1) CONTRACTOR SHALL PROVIDE SUPPORT UNDER CARRIER PIPE TO HAVE MIN. 1.5" CLEARANCE BETWEEN PIPE BELL AND ENCASEMENT PIPE.
- 2) ENDS OF ENCASEMENT PIPE SHALL BE PLUGGED WITH BRICK AND MORTAR FOR ROADWAY CROSSINGS.
- 3) CONTRACTOR SHALL FURNISH & INSTALL A MINIMUM OF 3 CASING SPACERS PER JOINT OF PIPE. CASING SPACERS SHALL BE INSTALLED ACCORDING TO MANUFACTURERS RECOMMENDATIONS. CASING SPACERS SHALL BE AS MANUFACTURED BY P.S.I. OR APPROVED EQUAL.



- LEGEND
- FM- FORCE MAIN
  - TS- TRAFFIC SIGN
  - FOC- FIBER OPTIC CABLE MARKER
  - ICV- IRRIGATION CONTROL VALVE
  - LP- LIGHT POLE
  - WV- WATER VALVE
  - PP- POWER POLE
  - GW- GUY WIRE
  - ELCO- ELECTRIC MARKER
  - TEL- TELEPHONE MARKER
  - ATT- ATT MARKER OR BOX
  - SWB- TELEPHONE MARKER
  - WL- WATER LINE
  - RCB- REINFORCED CONCRETE PIPE
  - RCB- REINFORCED CONCRETE BOX



The seal appearing on this document was authorized by Warren L. Corwin, P.E. 57875, on June 21, 2013

AS-BUILT APRIL 2014  
INFORMATION PROVIDED BY CONTRACTORS (NOT FIELD VERIFIED)

|   |                      |                  |           |
|---|----------------------|------------------|-----------|
| <p>CORWIN ENGINEERING, INC.<br/>200 W. BELMONT, SUITE E<br/>ALLEN, TEXAS 75013 (972) 396-1200<br/>TBPE FIRM #5951</p> |                      |                  |           |
| <p>DEVELOPMENT PLANS FOR<br/><b>BREEZY HILL<br/>FORCE MAIN</b><br/>ROCKWALL, TEXAS</p>                                |                      |                  |           |
| <p>FORCE MAIN PLAN</p>  |                      |                  |           |
| DRAWN BY  | DESIGNED BY          | CHECKED BY       | SHEET NO. |
| JOB NUMBER<br>12003F  | DATE<br>JANUARY 2013 | SCALE:<br>1"=50' | 1 OF 9    |