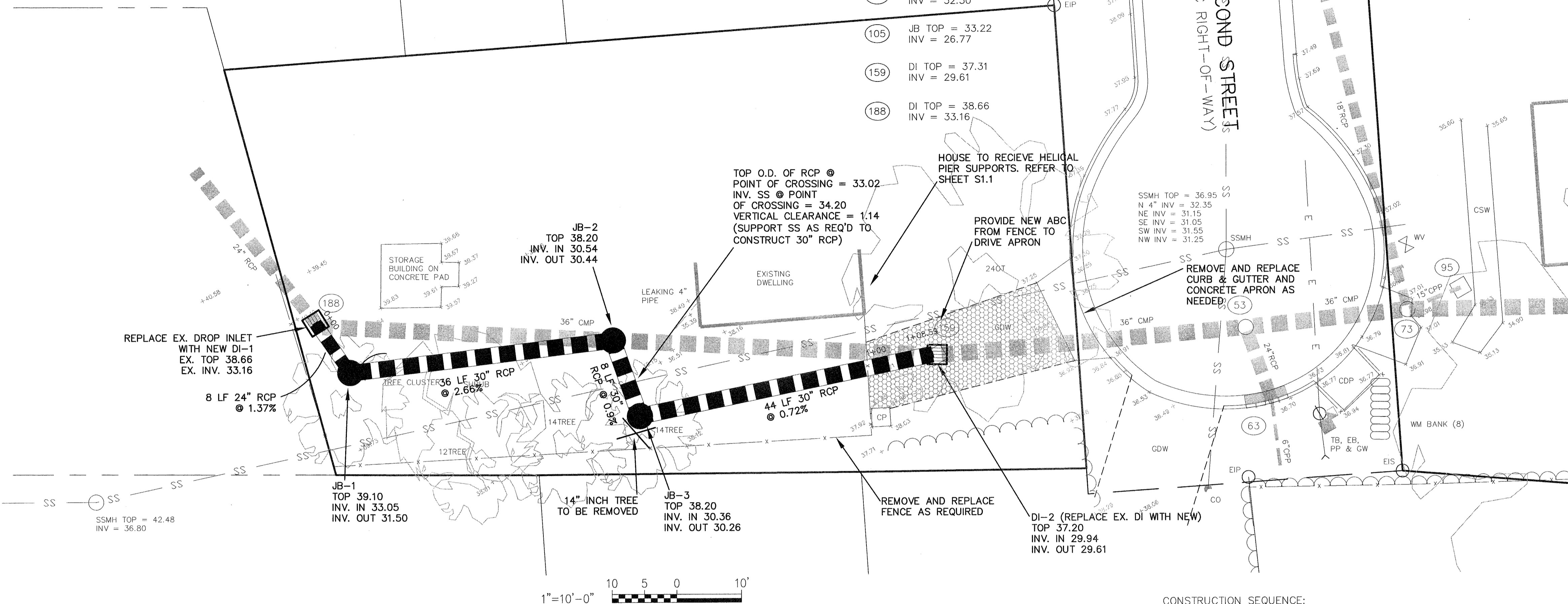


VICINITY MAP
NOT TO SCALE



- 53 JB TOP = 36.57
E INV = 32.17
N/S INV = 28.57
- 63 CB HOOD = 36.72
INV = 32.52
- 73 JB TOP = 36.95
N INV = 32.25
BOTTOM INV = 28.25
- 95 DI TOP = 34.92
INV = 32.30
- 105 JB TOP = 33.22
INV = 26.77
- 159 DI TOP = 37.31
INV = 29.61
- 188 DI TOP = 38.66
INV = 33.16

REPLACE EX. DROP INLET WITH NEW DI-1 EX. TOP 38.66 EX. INV. 33.16

8 LF 24" RCP @ 1.37%

36 LF 30" RCP @ 2.66%

36" CMP

44 LF 30" RCP @ 0.72%

DI-2 (REPLACE EX. DI WITH NEW) TOP 37.20 INV. IN 29.94 INV. OUT 29.61

REMOVE AND REPLACE CURB & GUTTER AND CONCRETE APRON AS NEEDED

REMOVE AND REPLACE FENCE AS REQUIRED

REMOVE AND REPLACE CURB & GUTTER AND CONCRETE APRON AS NEEDED

HOUSE TO RECEIVE HELICAL PIER SUPPORTS. REFER TO SHEET S1.1

PROVIDE NEW ABC FROM FENCE TO DRIVE APRON

TOP O.D. OF RCP @ POINT OF CROSSING = 33.02
INV. SS @ POINT OF CROSSING = 34.20
VERTICAL CLEARANCE = 1.14 (SUPPORT SS AS REQ'D TO CONSTRUCT 30" RCP)

REMOVE AND REPLACE CURB & GUTTER AND CONCRETE APRON AS NEEDED

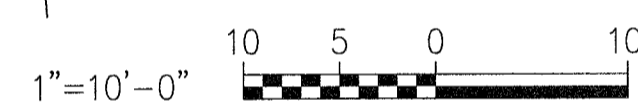
REMOVE AND REPLACE FENCE AS REQUIRED

DI-2 (REPLACE EX. DI WITH NEW) TOP 37.20 INV. IN 29.94 INV. OUT 29.61

REMOVE AND REPLACE CURB & GUTTER AND CONCRETE APRON AS NEEDED

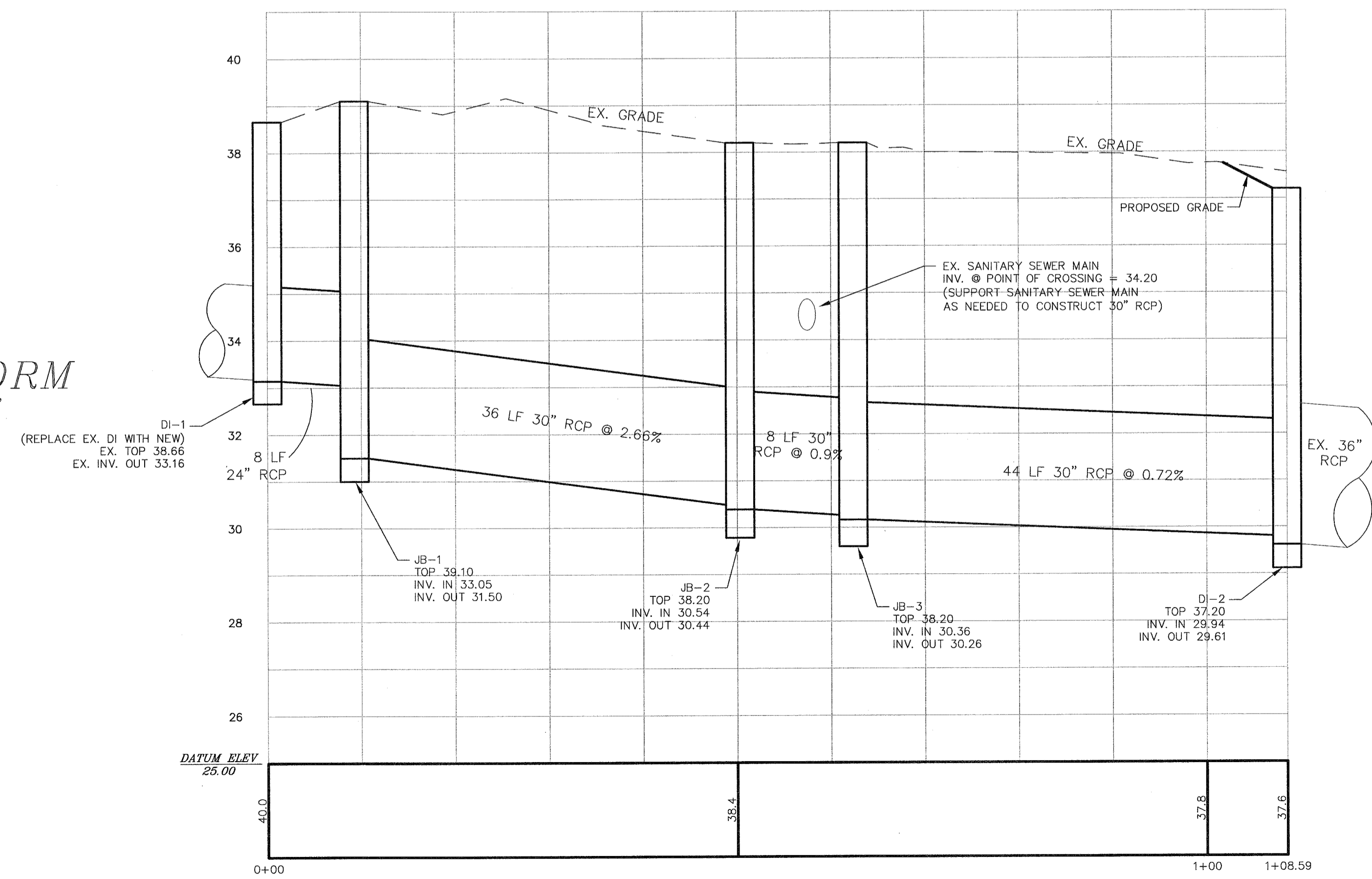
REMOVE AND REPLACE FENCE AS REQUIRED

DI-2 (REPLACE EX. DI WITH NEW) TOP 37.20 INV. IN 29.94 INV. OUT 29.61



PROPOSED STORM

HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 2'

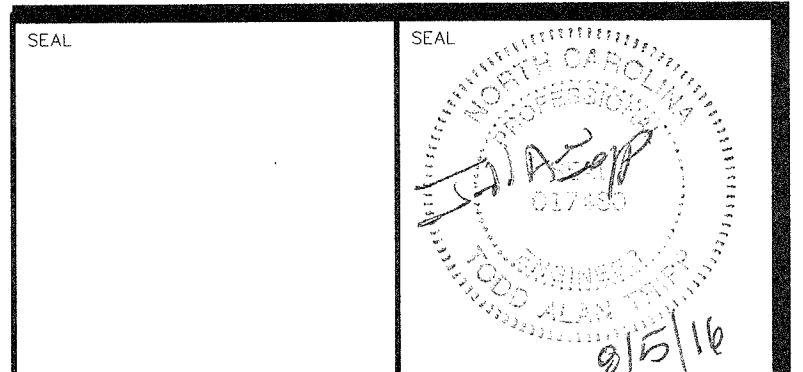


CONSTRUCTION SEQUENCE:

1. CALL 811 FOR UTILITY LOCATION IN ADVANCE OF WORK AS REQUIRED BY LAW. PROTECT EXISTING UTILITIES FROM DAMAGE.
2. FOUNDATION REPAIR CONTRACTOR TO CONSTRUCT HELICAL PIERS. REFER TO SHEET S1.1. SEE "GENERAL SEQUENCE OF CONSTRUCTION FOR HOUSE FOUNDATION REPAIR."
3. CONSTRUCT STORM DRAINAGE PIPING FROM DI-1 TO DI-2. MAINTAIN EXISTING STORM DRAINAGE AS REQUIRED.
4. MAINTAIN DEWATERING DURING CONSTRUCTION. PIPES AND STRUCTURES SHALL NOT BE PLACED IN WATER.
5. DIVERT DRAINAGE TO NEW PIPING AND FILL EXISTING PIPE WITH FLOWABLE FILL FROM DI-1 TO JB-2 AND JB-2 TO DI-2.
6. CONSTRUCT THE REMAINING STORM DRAINAGE PIPING.
7. CLEAN UP AND SEED THE SITE.
8. RESTORE DAMAGES TO DRIVE AND FENCE.

SPECIFICATIONS

1. TRENCH SAFETY SHALL BE IN ACCORDANCE WITH ALL APPLICABLE OSHA REGULATIONS. SPECIFIC EMPHASIS IS GIVEN TO 29 CFR SUBPART P 1926.651 INCLUDED IN THE CONTRACT BY REFERENCE.
2. UNLESS OTHERWISE SPECIFIED, ALL WORK SHALL BE IN ACCORDANCE WITH NORTH CAROLINA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES. THE STANDARD SPECIFICATIONS ARE AVAILABLE ONLINE AT [HTTPS://CONNECT.NCDOT.GOV/RESOURCES/SPECIFICATIONS/PAGES/2012STANDARDSPESIFICATIONS.ASPX](https://connect.ncdot.gov/resources/specifications/PAGES/2012STANDARDSPESIFICATIONS.ASPX)
3. CULVERT PIPE SHALL BE CLASS III MEETING NCDOT SECTION 1032-6(B) AND AASHTO M170 WITH BELL AND SPIGOT JOINTS.
4. IN LIEU OF THE BRICK STRUCTURES SHOWN IN DETAILS, JUNCTION BOXES AND DROP INLETS MAY BE PRECAST IN CONFORMANCE WITH NCDOT SECTION 840 AND ASTM C913 FOR H20 LOADING.
5. ALL CONCRETE PIPE AND CONCRETE PRECAST STRUCTURES SHALL RECEIVE ASTM C990 SEALANT JOINTS. IN ADDITION, ALL PRECAST CONCRETE PIPE AND ALL PRECAST CONCRETE STRUCTURES SHALL RECEIVE A 1"-FOOT WIDE EXTRUDED BUTYL ADHESIVE TAPE MEETING ASTM C877 (TYPE III). ALL LIFTING HOLES AND PENETRATIONS SHALL BE SEALED SILT-TIGHT. ALL PIPE OPENING TO BE GROUTED TO NCDOT REQUIREMENTS.
6. FRAMES AND GRATES SHALL BE ASTM A536, GRADE 60-40-18 DUCTILE IRON SUITABLE FOR A-16 STRUCTURAL LOADING. THE FRAMES SHALL BE COAL TAR EPOXY COATED. MINIMUM SIZE SHALL BE 24"x36" AND MAXIMUM OPENING SHALL BE 1'4" WITH A MINIMUM INLET FLOW AREA OF 2.0 SQUARE FEET.
7. FRAMES AND COVERS SHALL COMPLY WITH CITY OF GREENVILLE MANUAL OF STANDARD DESIGNS AND DETAILS (MSDD) 614.03. ALL CASTINGS TO BE COAL TAR EPOXY COATED.



LEGEND

- AL = AREA LIGHT
- CB = CATCH BASIN
- CMT = CREPE MYRTLE TREE/BUSH
- CP = CONCRETE PAD
- CSW = CONCRETE SIDEWALK
- DI = DROP INLET
- EB = ELECTRIC BOX
- FFE = FINISHED FLOOR ELEVATION
- FOCB = FIBER OPTIC CABLE BOX
- MT = MAPLE TREE
- OT = OAK TREE
- PIV = POST INDICATOR VALVE
- SI = SIGN
- SMH = STEAM MANHOLE
- SSMH = SANITARY SEWER MANHOLE
- TB = TELEPHONE BOX
- WV = WATER VALVE
- IW = IRRIGATION LINE
- T = TELEPHONE/COMMUNICATIONS LINE
- SS = EX. SANITARY SEWER
- E = OVERHEAD ELECTRIC LINE
- SD = EX. STORM DRAIN
- SDP = PROPOSED STORM DRAIN
- ABC = PROPOSED ABC DRIVEWAY

NOTES:

- 1) THIS PROPERTY IS LOCATED IN ZONE X AND IS NOT LOCATED IN A SPECIAL FLOOD HAZARD AREA AS TAKEN FROM N.F.I.P. RATE MAP DATED JANUARY 2, 2004 COMMUNITY PANEL 5720467700U.
- 2) ELEVATIONS SHOWN ARE RELATIVE TO NAVD 1988 AS ESTABLISHED FROM N.C.G.S. "PLANT".
- 3) FOR BUILDING SETBACK RESTRICTIONS REFER TO THE CITY OF GREENVILLE ZONING REQUIREMENTS.

08/03/16	ISSUE FOR BID	TJH	
06/07/16	ISSUE FOR COG REVIEW	SLJ	
REV. NO.	DATE	REVISIONS	BY

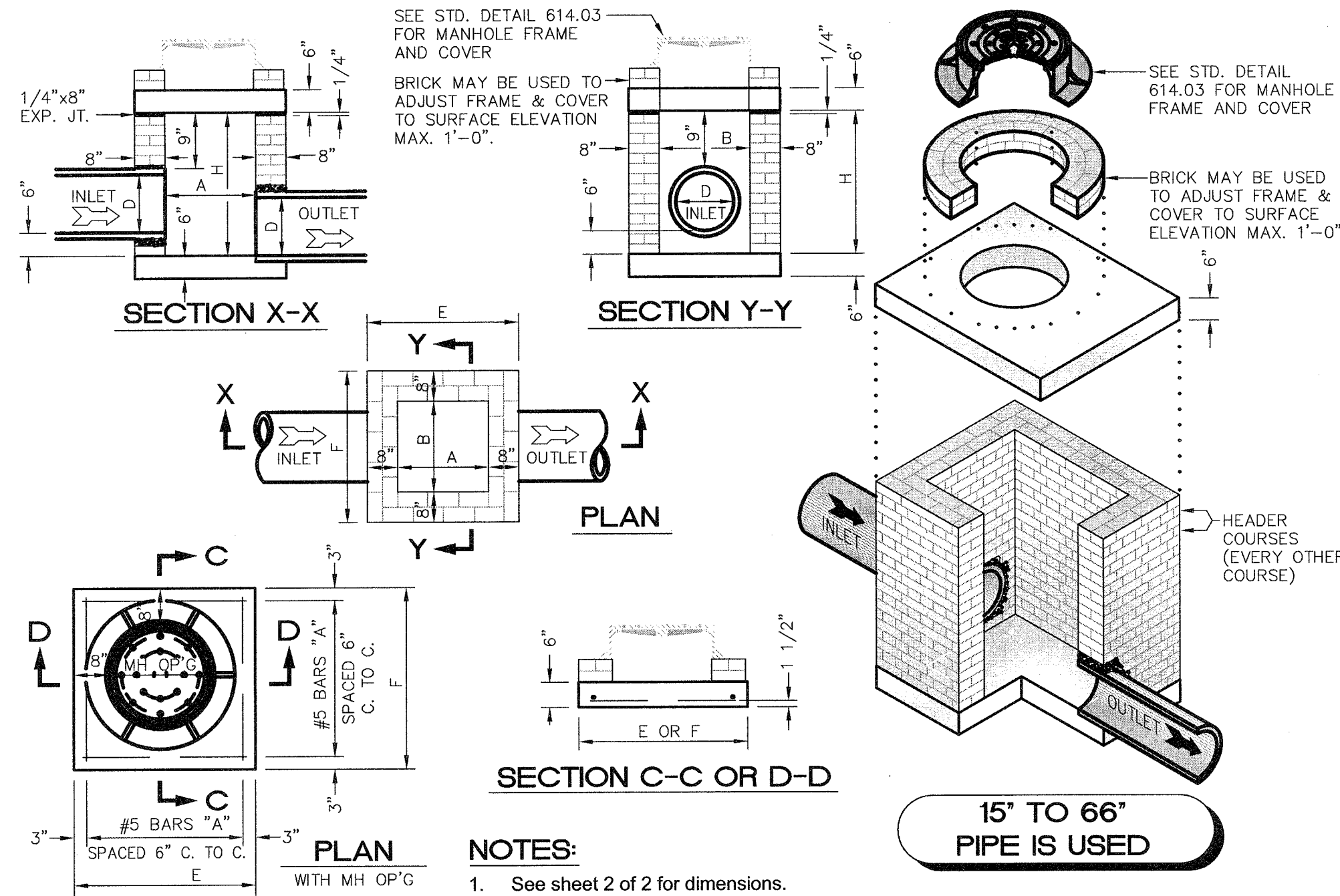


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PROJECT TITLE
**706 EAST 2ND STREET
CULVERT REPLACEMENT &
FOUNDATION RESTORATION
PROJECT**

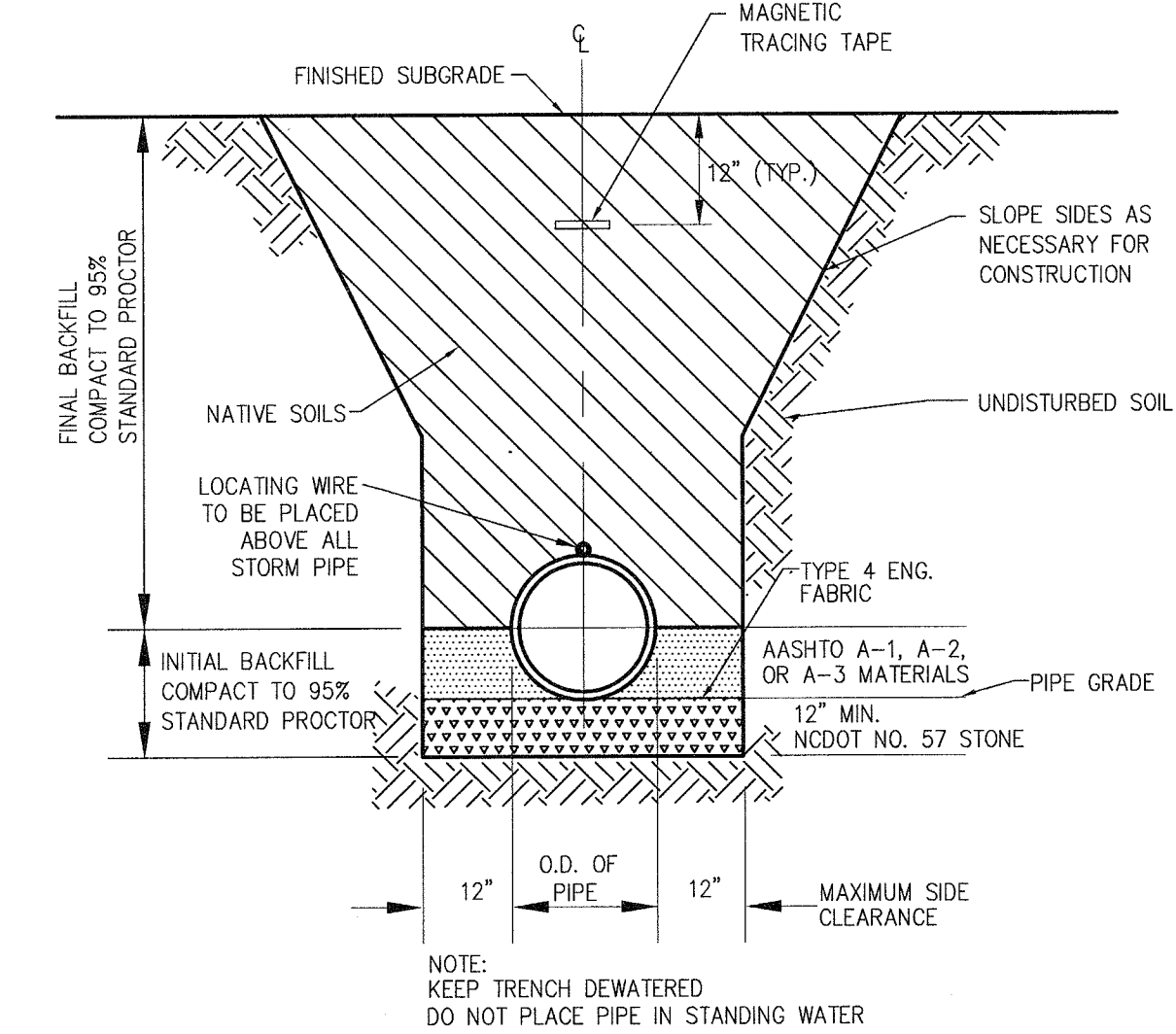
DRAWING TITLE
Site Plan

SCALE AS NOTED	DEPARTMENT CIVIL
DRAWN BY SLJ	SHEET No.
CHECKED SLJ	DRAWING NO.
APPROVED TAT	C1.1
PROJECT NO. 20160034	



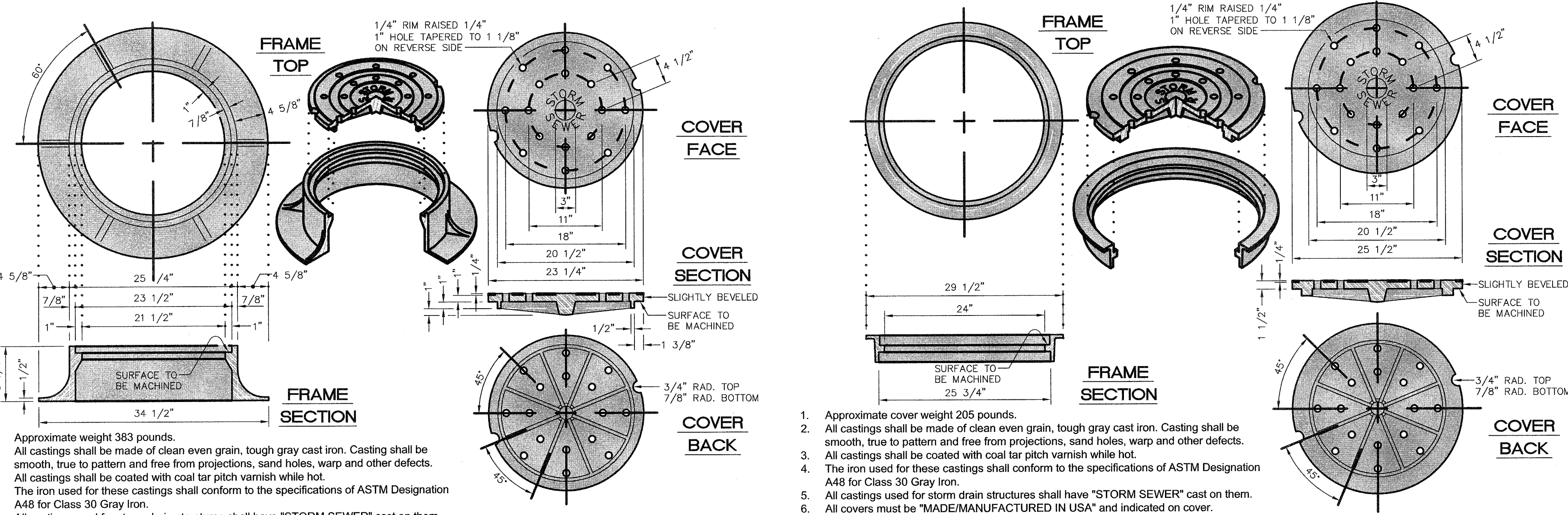
DIMENSIONS AND QUANTITIES FOR BRICK JUNCTION BOXES												
DIMENSIONS OF BOX & PIPE				REINFORCEMENT BARS		COVER DIMENSIONS		CUBIC YARDS			DEDUCTIONS FOR ONE PIPE CU. YDS.	
PIPE	SPAN	WIDTH	HEIGHT	Qty.	LENGTH	E	F	CONC. BASE & COVER CU. YD.	BRICK MASONRY MIN. HEIGHT CU. YD.	WALL PER FT. HT. CU. YD.	C.S.	R.C.
15"	2'-0"	2'-0"	2'-6"	12	3'-1"	3'-4"	3'-4"	0.412	0.867	0.263	0.031	0.047
18"	2'-4"	2'-4"	2'-6"	14	3'-5"	3'-8"	3'-8"	0.488	0.814	0.296	0.044	0.065
24"	3'-0"	3'-0"	3'-3"	16	4'-1"	4'-4"	4'-4"	0.695	1.178	0.362	0.078	0.133
30"	3'-4"	3'-4"	3'-6"	16	4'-5"	4'-8"	4'-8"	0.807	1.481	0.395	0.122	0.170
36"	4'-0"	4'-0"	4'-3"	20	5'-1"	5'-4"	5'-4"	1.053	1.959	0.481	0.176	0.238
42"	4'-6"	4'-6"	4'-9"	22	5'-9"	6'-0"	6'-0"	1.333	2.903	0.527	0.240	0.323
48"	5'-0"	5'-0"	5'-3"	24	6'-1"	6'-4"	6'-4"	1.486	2.940	0.560	0.313	0.422
54"	5'-6"	5'-6"	5'-9"	26	6'-7"	6'-10"	6'-10"	1.729	3.802	0.609	0.396	0.535
60"	6'-0"	6'-0"	6'-3"	28	7'-1"	7'-4"	7'-4"	1.992	4.118	0.658	0.489	0.660
66"	6'-6"	6'-6"	6'-9"	30	7'-7"	7'-10"	7'-10"	2.273	4.778	0.708	0.591	0.798

- JUNCTION BOX NOTES:**
- Use #5 bar dowels at 12" centers
 - If reinforced concrete pipe is set in base slab of box, add to base as shown on std. detail 610.03.
 - Adjust the steel, concrete and brick masonry quantities to include the addition of the manhole (i.e. diagonal bars shortened around opening in top slab, additional variable height brick masonry, opening in top slab.)
 - Maximum depth of this structure from top to bottom slab to top elevation is 12'-0".
 - See Std. detail No. 610.01 for standard notes.



2 STORM DRAIN TRENCH DETAIL
C2.1 N.T.S.

1 JUNCTION BOX DETAIL
C2.1 N.T.S.



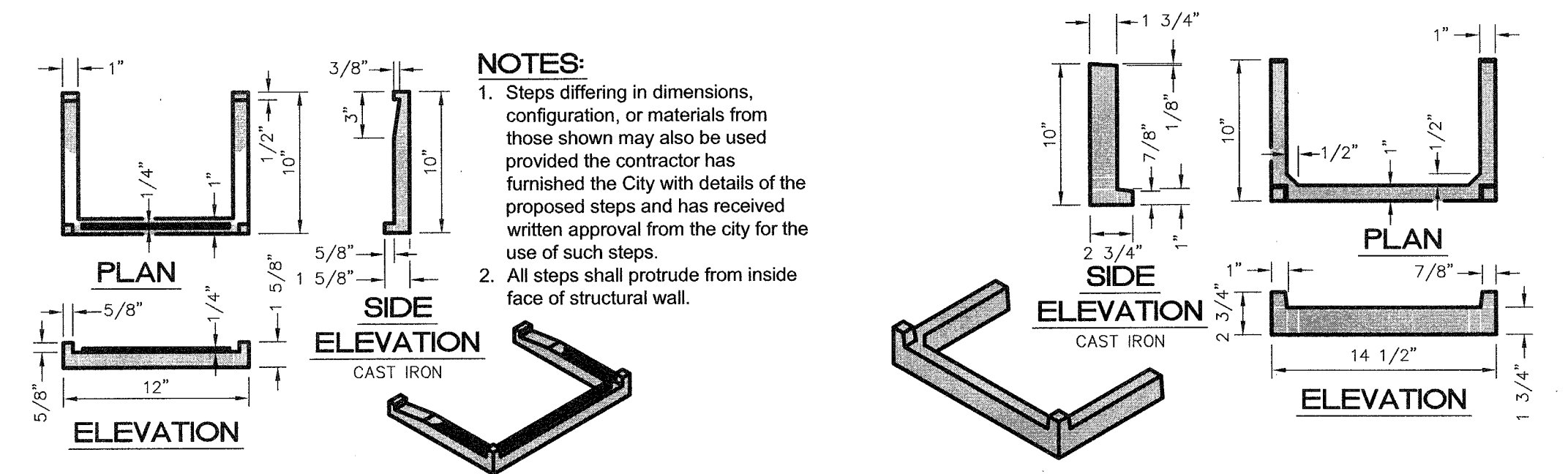
- Approximate weight 383 pounds.
- All castings shall be made of clean even grain, tough gray cast iron. Casting shall be smooth, true to pattern and free from projections, sand holes, warp and other defects.
- All castings shall be coated with coal tar pitch varnish while hot.
- The iron used for these castings shall conform to the specifications of ASTM Designation A48 for Class 30 Gray Iron.
- All castings used for storm drain structures shall have "STORM SEWER" cast on them.
- All covers must be "MADE/MANUFACTURED IN USA" and indicated on cover.

- Approximate cover weight 205 pounds.
- All castings shall be made of clean even grain, tough gray cast iron. Casting shall be smooth, true to pattern and free from projections, sand holes, warp and other defects.
- All castings shall be coated with coal tar pitch varnish while hot.
- The iron used for these castings shall conform to the specifications of ASTM Designation A48 for Class 30 Gray Iron.
- All castings used for storm drain structures shall have "STORM SEWER" cast on them.
- All covers must be "MADE/MANUFACTURED IN USA" and indicated on cover.

3 STANDARD MANHOLE FRAME & COVER DETAIL
C2.1 N.T.S.

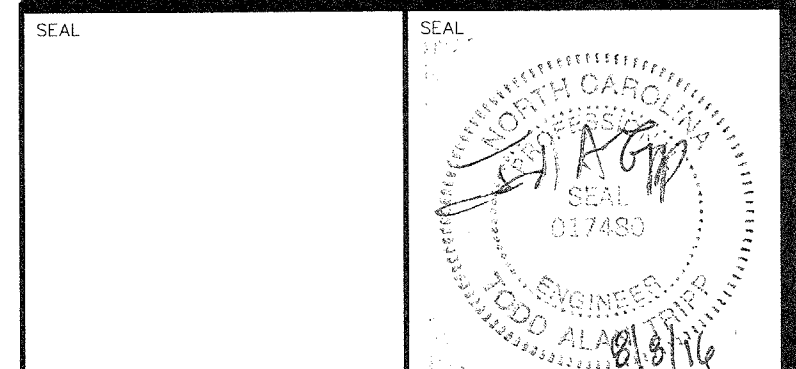
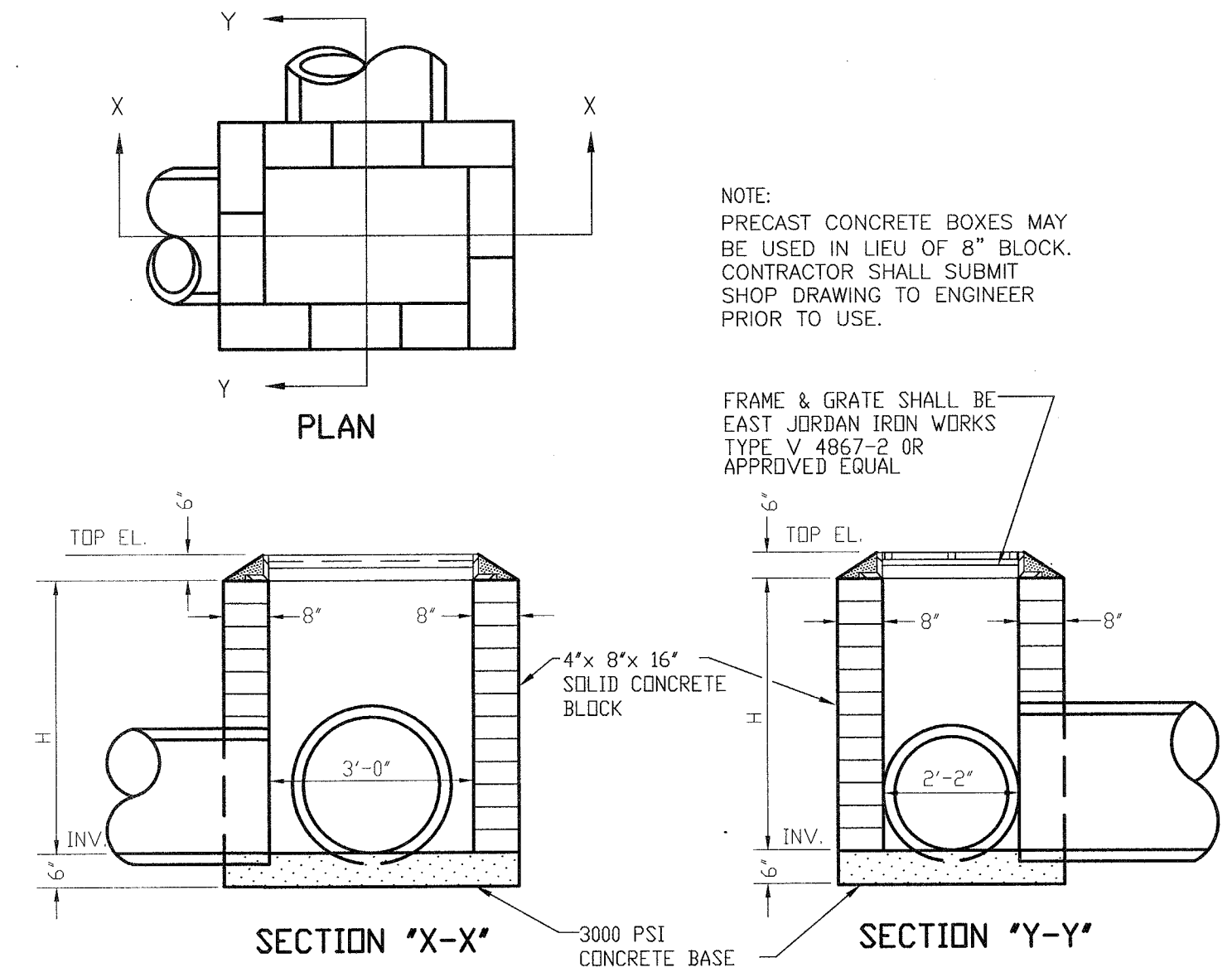
4 STANDARD MANHOLE FRAME & COVER DETAIL
C2.1 N.T.S.

5 DROP INLET DETAIL
C2.1 N.T.S.



- NOTES:**
- Steps differing in dimensions, configuration, or materials from those shown may also be used provided the contractor has furnished the City with details of the proposed steps and has received written approval from the city for the use of such steps.
 - All steps shall protrude from inside face of structural wall.

6 STANDARD STEP DETAILS
C2.1 N.T.S.



REV.	DATE	REVISIONS	BY
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06/07/16		ISSUE FOR COG REVIEW	SLJ

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PROJECT TITLE

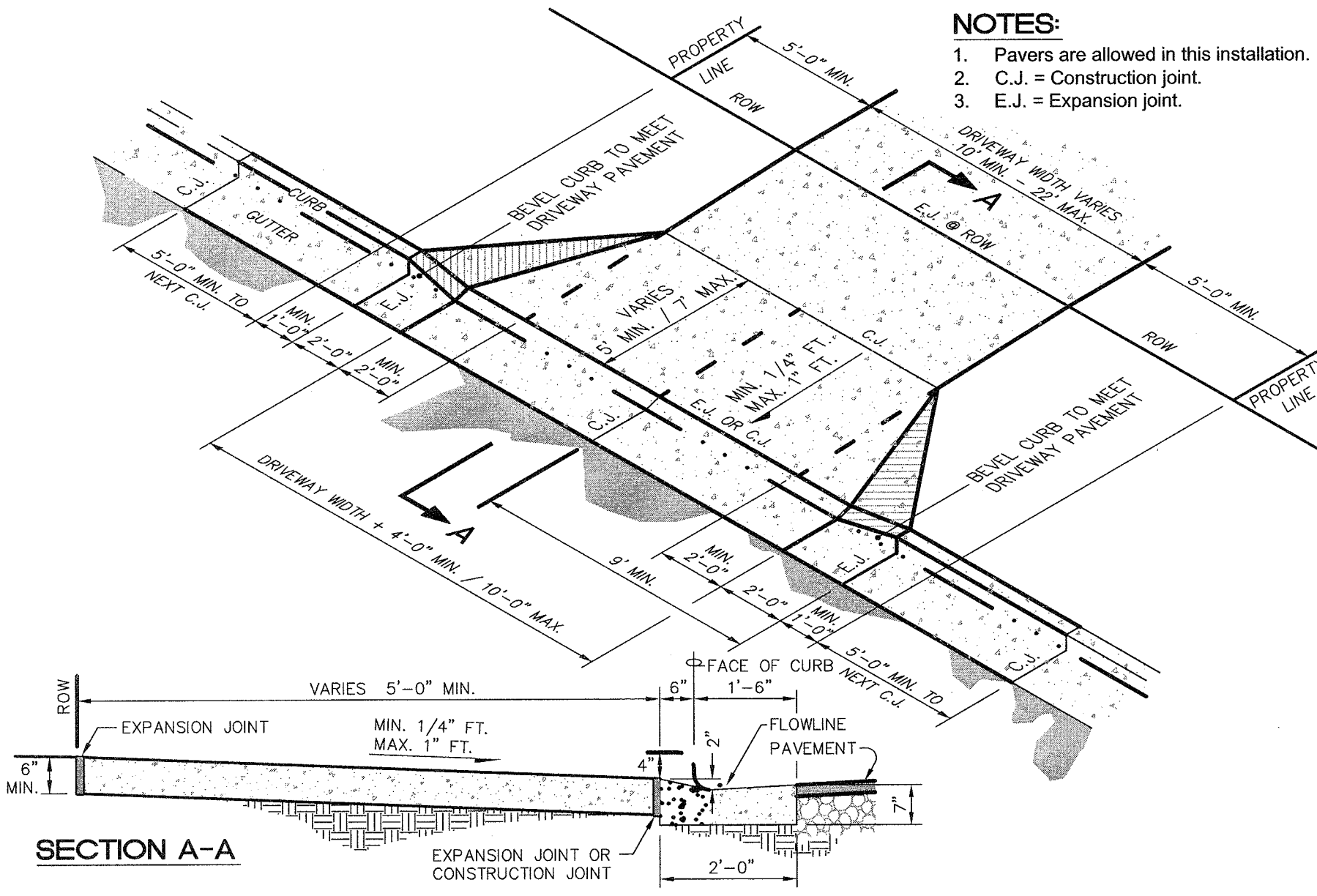
706 EAST 2ND STREET
CULVERT REPLACEMENT &
FOUNDATION RESTORATION
PROJECT

DRAWING TITLE

DETAILS

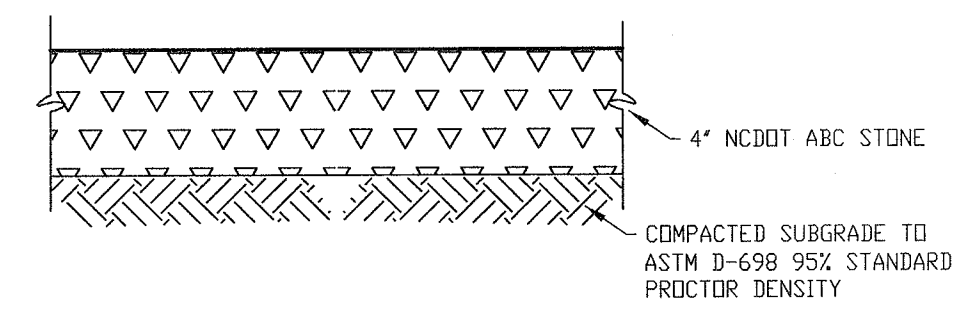
SCALE	AS NOTED	DEPARTMENT	CIVIL
DRAWN BY	SLJ	DATE STARTED	3/8/16
CHECKED	SLJ	DRAWING NO.	
APPROVED	TAT		
PROJECT NO.	20160034		

C2.1

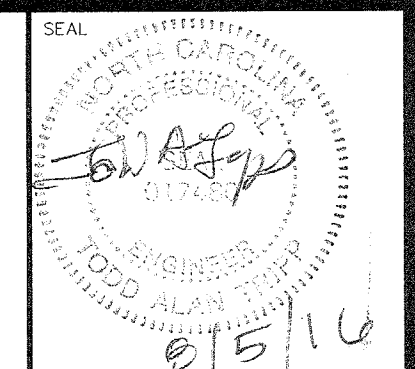


NOTES:
 1. Pavers are allowed in this installation.
 2. C.J. = Construction joint.
 3. E.J. = Expansion joint.

1
 C3.1 N.T.S.
 RESIDENTIAL DRIVEWAY DETAIL



2
 C3.1 N.T.S.
 STONE DRIVEWAY REPAIR DETAIL



REV. NO.	DATE	REVISIONS	BY
08/03/16	ISSUE FOR BID		TJH

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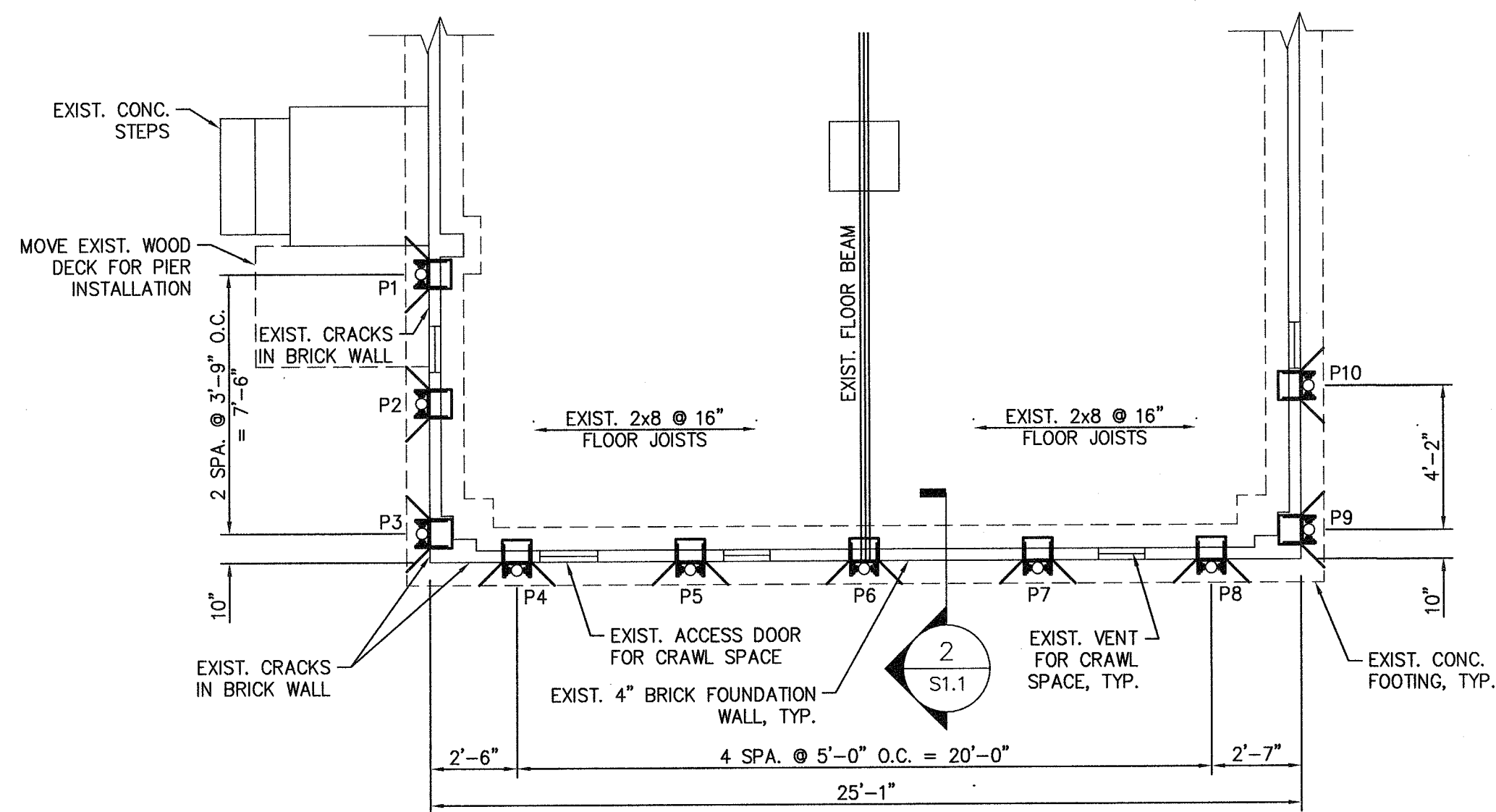
PROJECT TITLE
**706 EAST 2ND STREET
 CULVERT REPLACEMENT &
 FOUNDATION RESTORATION
 PROJECT**

DRAWING TITLE
DETAILS

SCALE AS NOTED	DEPARTMENT CIVIL
DRAWN BY SLJ	DATE STARTED 3/8/16
CHECKED SLJ	DRAWING NO.
APPROVED TAT	C3.1
PROJECT NO. 20160034	



12 11 10 9 8 7 6 5 4 3 2 1



1
S1.1 PARTIAL FOUNDATION PLAN (EAST END OF HOUSE)
1/4"=1'-0"

PIER INSTALLATION NOTE:

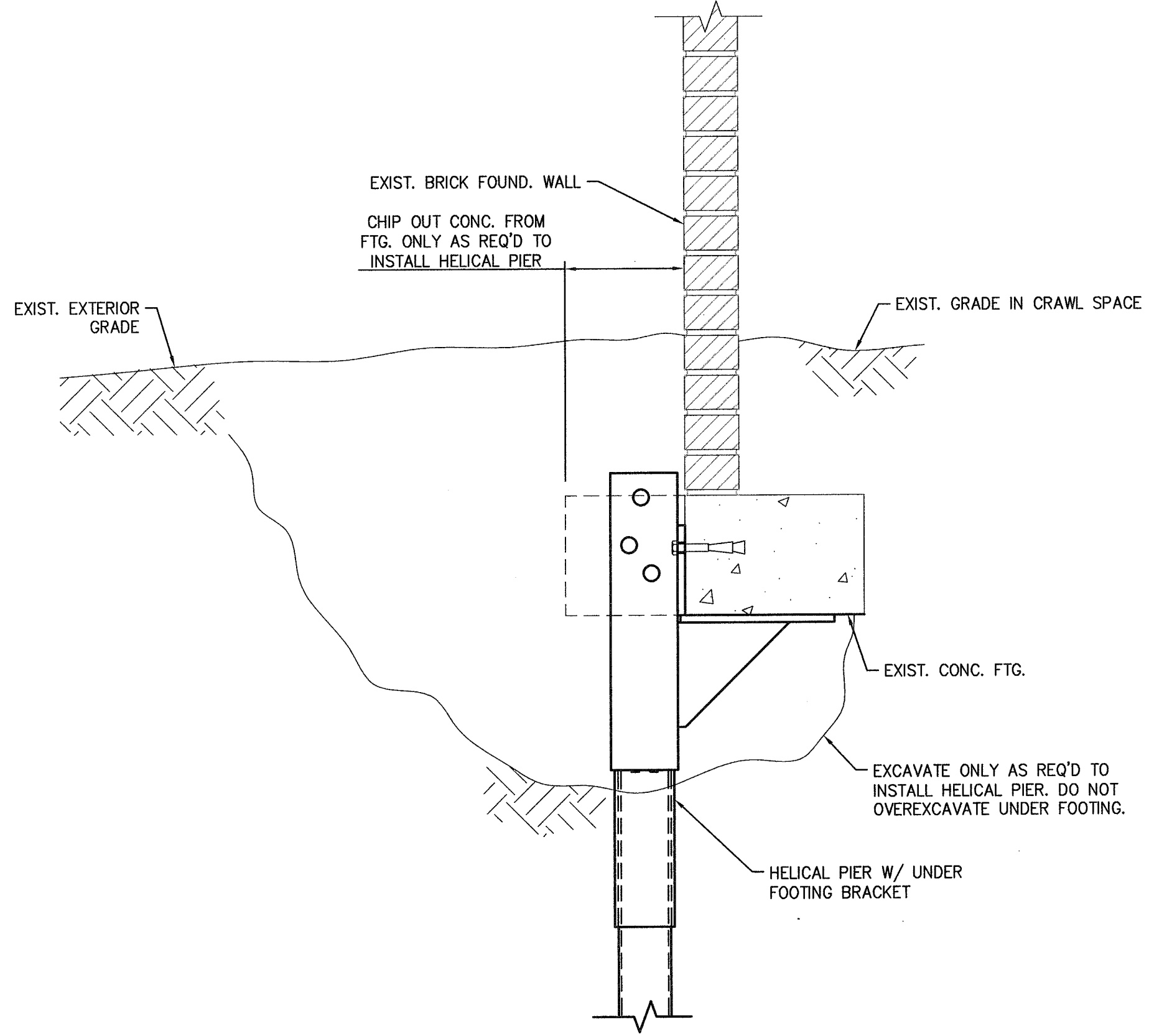
DURING EXCAVATION AND PIER INSTALLATION, DO NOT LEAVE FOOTING UNSUPPORTED FOR MORE THAN 3 FEET CONTINUOUS. MAINTAIN SUPPORT FOR FOOTING ON EACH SIDE OF EACH EXCAVATION BY A MINIMUM OF 3 FEET OF UNDISTURBED SUBGRADE OR BY A PREVIOUSLY INSTALLED PIER BRACKET. THIS REQUIRES THAT ADJACENT PIER EXCAVATIONS CANNOT OCCUR SIMULTANEOUSLY.

GENERAL NOTES

- GENERAL**
- METHODS, PROCEDURES & SEQUENCES OF CONSTRUCTION ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO INSURE & MAINTAIN THE INTEGRITY OF THE STRUCTURE AT ALL STAGES OF CONSTRUCTION.
- FOUNDATION REPAIR**
- CONTRACTOR SHALL REVIEW "GEOTECHNICAL ENGINEERING REPORT" FOR 2nd STREET SINK HOLE AT 706 E. 2nd STREET, BY TERRACON CONSULTANTS, DATED 5-5-16, AVAILABLE FROM OWNER OR ENGINEER.
 - EXCAVATION UNDER EDGE OF FOOTING SHALL BE MINIMIZED AND SHALL NOT EXCEED THAT REQUIRED TO INSTALL HELICAL PIERS. AFTER COMPLETION OF LOADING OF PIERS, BACKFILL AROUND PIERS AND TO RESTORE GRADE, COMPACTING SOIL AT MAXIMUM ONE FOOT INTERVALS.
 - REMOVAL OF CONCRETE AT FOOTINGS FOR PIER INSTALLATION SHALL PROCEED CAUTIOUSLY AND SHALL NOT EXCEED WIDTH OF FOOTING OUTSIDE WALL. SEE SECTION 2.
 - HELICAL PIERS SHALL BE SELECTED AND INSTALLED AT SITE TO SUPPORT DESIGN COMPRESSION LOADS AS FOLLOWS.
- | PIER # | LOAD |
|--------|---------------|
| P1-P4 | 5,000 LBS EA. |
| P5-P7 | 8,000 LBS EA. |
| P8-P10 | 5,000 LBS EA. |
- HELICAL PIERS SHALL BE GALVANIZED AND SHALL CONSIST OF A CENTRAL STEEL SHAFT, HELIX BEARING PLATES, FOOTING SUPPORT BRACKET, AND ALL REQUIRED CONNECTIONS DESIGNED AS A SYSTEM TO SUPPORT PUBLISHED LOAD AMOUNTS. CONTRACTOR SHALL PROVIDE SUBMITTAL OF DESIGN OF SELECTED PIERS BASED ON SITE REQUIREMENTS BY A NORTH CAROLINA REGISTERED PROFESSIONAL ENGINEER.
 - FINAL VERIFICATION OF PIER BEARING CAPACITIES CONSIDERING DEPTH AND INSTALLATION TORQUE SHALL BE BY GEOTECHNICAL ENGINEER.
- BRICK REPOINTING**
- REPOINTING MORTAR JOINTS AT CRACK LOCATIONS AT SE CORNER AND JUST EAST OF CONCRETE STEPS.
 - REMOVE EXISTING MORTAR TO DEPTH OF 3/4 INCH, WITH TOLERANCE OF PLUS OR MINUS 1/8 INCH. CONTRACTOR SHALL TAKE CARE NOT TO DAMAGE EXISTING BRICK DURING MORTAR REMOVAL. ANY BRICKS DAMAGED DURING MORTAR REMOVAL MAY HAVE TO BE REPLACED AT DIRECTION OF ENGINEER OR CITY. SOURCE OF REPLACEMENT BRICKS IS TO BE APPROVED BY ENGINEER.
 - SELECT NEW MORTAR MIX TO MATCH COLOR AND TEXTURE OF EXISTING UNWEATHERED MORTAR IN AREAS OF WALL ADJACENT TO REPOINTING. NEW MORTAR SHALL HAVE GREATER VAPOR PERMEABILITY AND BE SOFTER THAN EXISTING BRICK. NEW MORTAR SHALL CONFORM TO ASTM C270, MORTAR FOR UNIT MASONRY. MORTAR MATERIALS SELECTED SHALL CONFORM TO THE FOLLOWING:
 - SAND: ASTM C144
 - PORTLAND CEMENT: ASTM C150, WITH NOT MORE THAN 0.6% ALKALI
 - HYDRATED LINE: ASTM C207, TYPE S
 - PORTLAND CEMENT - LINE MIX: PACKAGED BLEND OF PORTLAND CEMENT AND HYDRATED LINE.
 - TOOL NEW MORTAR JOINTS TO MATCH EXISTING JOINTS.
 - CURE REPOINTED JOINTS WITH DAMP BURLAP.
 - CLEAN REPOINTED BRICK VENEER WITHOUT CHEMICALS.
 - ENGINEER SHALL APPROVE REPOINTING WORK FOR ACCEPTABLE MATCH OF MORTAR COLOR, TEXTURE, AND TOOLING. IF REPOINTING WORK IS UNACCEPTABLE, CONTRACTOR SHALL REDO WORK AS REQUIRED FOR ACCEPTANCE AT NO ADDITIONAL EXPENSE.

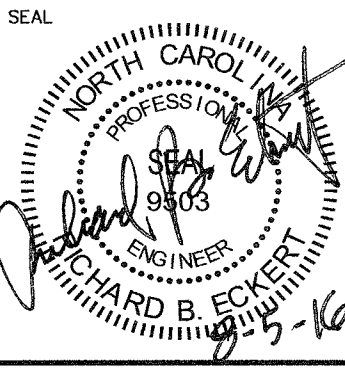
GENERAL SEQUENCE OF CONSTRUCTION FOR HOUSE FOUNDATION REPAIR

- PREPARE GROUND AS REQUIRED FOR INSTALLATION OF HELICAL PIERS. REMOVE BUSHES & TREES AND STORE ON SITE FOR REPLANTING. REMOVE FENCE AS REQUIRED FOR ACCESS. REMOVE WOOD DECK ADJACENT TO CONCRETE STEPS AND STORE ON SITE FOR REINSTALLATION.
- CLEAN OUT ANY LOOSE MATERIAL FROM CRACKED MORTAR JOINTS IN FOUNDATION WALL AT SE CORNER AND JUST EAST OF CONCRETE STEPS.
- EXCAVATE ONLY AS REQUIRED FOR PIER INSTALLATION. PREPARE FOOTINGS AND INSTALL HELICAL PIERS.
- JACK FOOTINGS FROM ALL PIERS IN A MANNER REQUIRED TO ACHIEVE THE FOLLOWING:
 - TRANSFER FOOTING LOADS FROM GROUND TO PIERS GRADUALLY IN A MANNER TO AVOID CRACKING OF BRICK FOUNDATION WALL.
 - LIFT SE CORNER OF FOUNDATION ONLY AS REQUIRED TO IMPROVE ALIGNMENT OF FOUNDATION WALL AND REDUCE CRACK WIDTHS.
 - MONITOR MOVEMENT OF FOUNDATION DURING JACKING. ATTEMPT TO SLIGHTLY IMPROVE ALIGNMENT OF FOUNDATION, BUT DO NOT WORSEN ANY SLOPE IN THE FOUNDATION.
 - STOP JACKING IMMEDIATELY IF ANY NEW CRACKS APPEAR AND CONTACT ENGINEER.
- BACKFILL AND COMPACT SOIL AROUND PIERS AND UNDER FOOTINGS. BACKFILL AND COMPACT IN LAYERS TO FINAL GRADE.
- REPOINT MORTAR IN BRICK JOINTS AT PREVIOUS CRACK LOCATIONS.
- REPLACE WOOD DECK. REPLANT BUSHES AND TREES. SEE CIVIL DRAWINGS FOR FINAL YARD REPAIR AND SEEDING.



2
S1.1 TYP. FOUNDATION SECTION AT HELICAL PEIR
1 1/2"=1'-0"

12 11 10 9 8 7 6 5 4 3 2 1



REFERENCE DRAWINGS

REV. NO.	DATE	REVISIONS	BY
	8/3/16	ISSUED FOR BID	DCB

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PROJECT TITLE
**706 EAST 2ND STREET
 CULVERT REPLACEMENT &
 FOUNDATION RESTORATION
 PROJECT**

DRAWING TITLE
**FOUNDATION
 PLAN, SECTION & NOTES**

SCALE AS NOTED	DEPARTMENT PFE
DRAWN BY D.BUCK	DATE STARTED 5/13/16
CHECKED	DRAWING NO.
APPROVED	S1.1
PROJECT NO. 20160034	