

three inches = one foot
one and one half inches = one foot
one inch = one foot
three quarters inch = one foot
one half inch = one foot
three eighths inch = one foot
one eighth inch = one foot

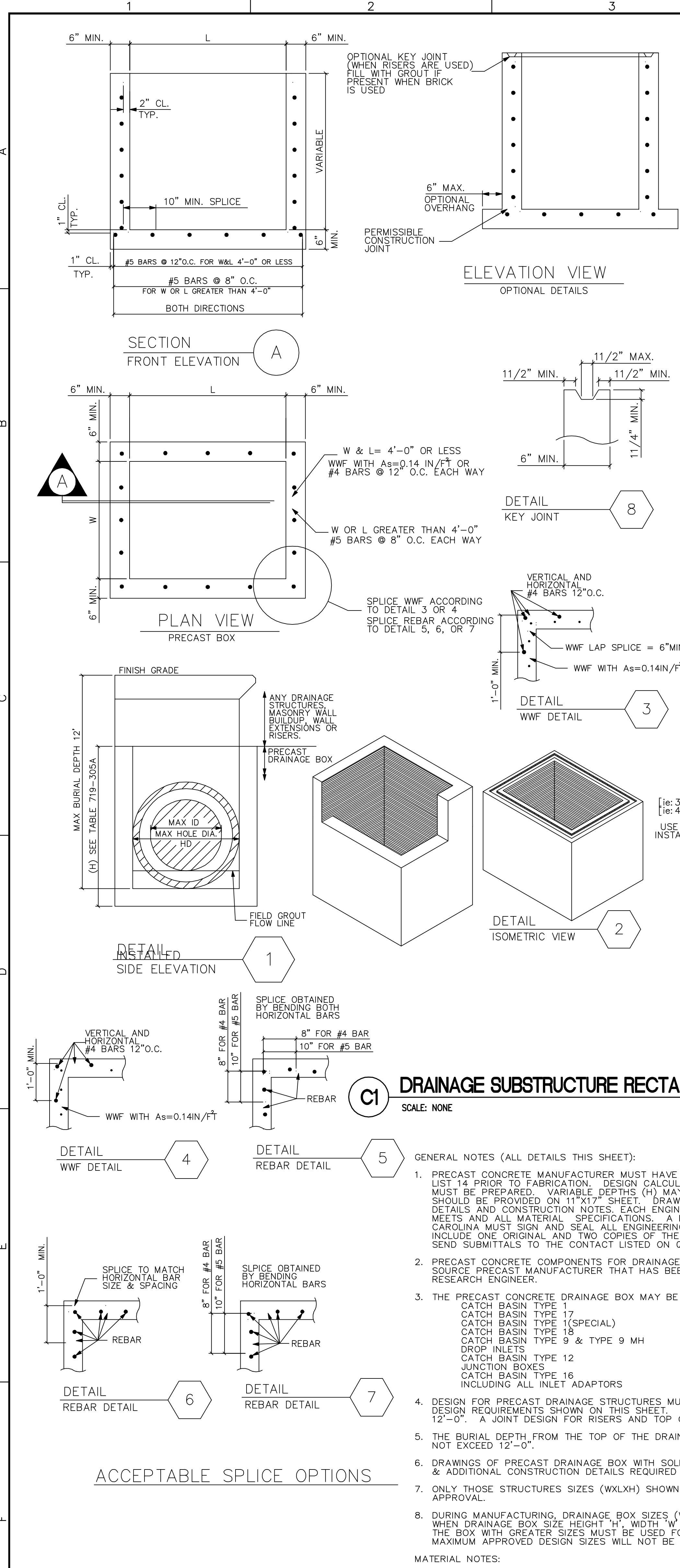
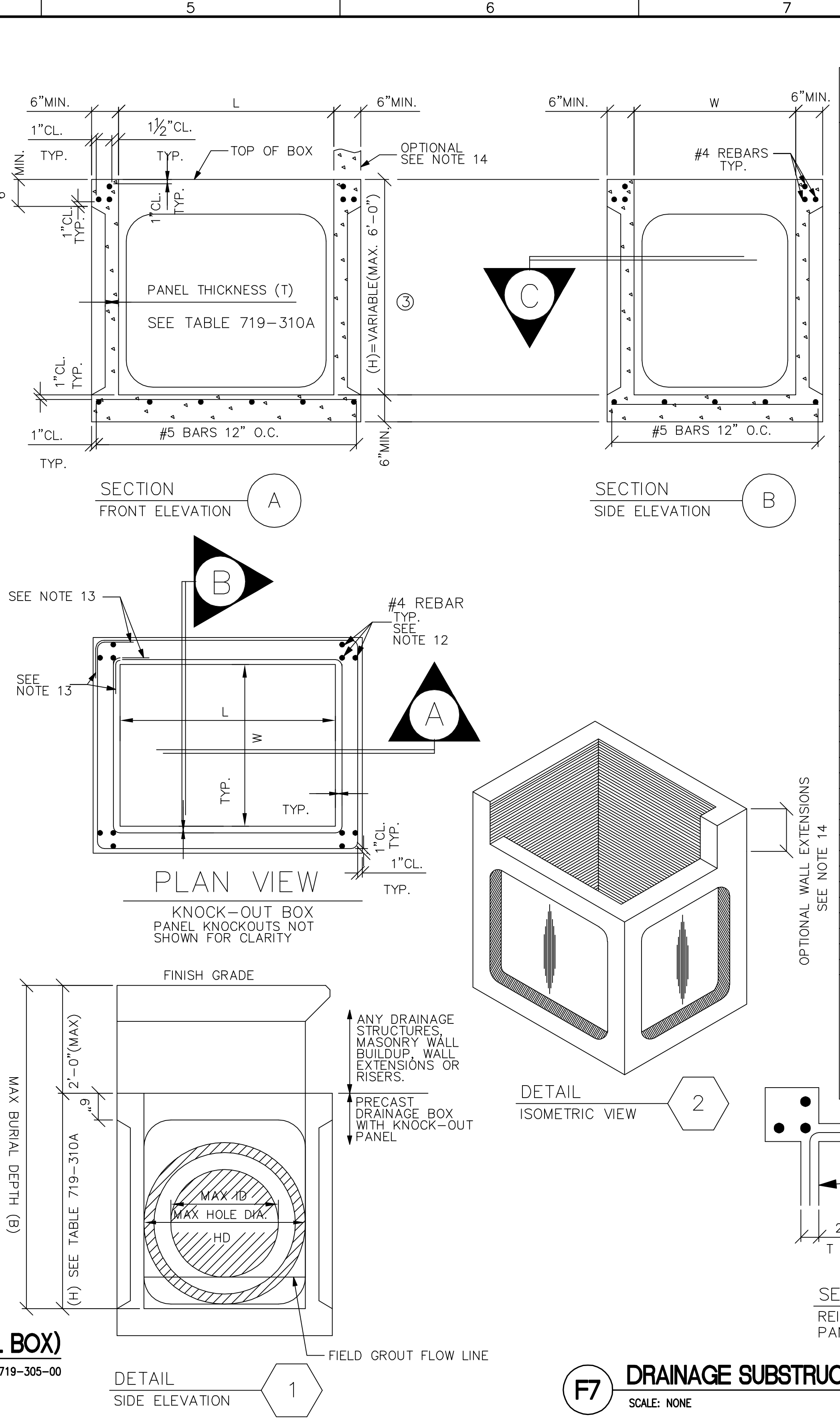


TABLE 719-305A		
STANDARD BOX SIZE (WxLxH)	SUGGESTED MAX. PIPE DIA. IN (OD) SEE 714	MAX. HOLE DIA. IN (LONG SIDE OF BOX) (HD)
2'x2'x2'	23"	24"
2'x2'x3'	23"	24"
2'x2'x4'	23"	24"
2'x2'x5'	23"	24"
2'x2'x6'	23"	24"
2'x2'x7'	23"	24"
2'x2'x8'	23"	24"
2'x2'x9'	23"	24"
2'x2'x10'	23"	24"
2'x2'x11'	23"	24"
2'x2'x12'	23"	24"
2'x2'x13'	23"	24"
2'x2'x14'	23"	24"
2'x2'x15'	23"	24"
2'x2'x16'	23"	24"
2'x2'x17'	23"	24"
2'x2'x18'	23"	24"
2'x2'x19'	23"	24"
2'x2'x20'	23"	24"
2'x2'x21'	23"	24"
2'x2'x22'	23"	24"
2'x2'x23'	23"	24"
2'x2'x24'	23"	24"
2'x2'x25'	23"	24"
2'x2'x26'	23"	24"
2'x2'x27'	23"	24"
2'x2'x28'	23"	24"
2'x2'x29'	23"	24"
2'x2'x30'	23"	24"
2'x2'x31'	23"	24"
2'x2'x32'	23"	24"
2'x2'x33'	23"	24"
2'x2'x34'	23"	24"
2'x2'x35'	23"	24"
2'x2'x36'	23"	24"
2'x2'x37'	23"	24"
2'x2'x38'	23"	24"
2'x2'x39'	23"	24"
2'x2'x40'	23"	24"
2'x2'x41'	23"	24"
2'x2'x42'	23"	24"
2'x2'x43'	23"	24"
2'x2'x44'	23"	24"
2'x2'x45'	23"	24"
2'x2'x46'	23"	24"
2'x2'x47'	23"	24"
2'x2'x48'	23"	24"
2'x2'x49'	23"	24"
2'x2'x50'	23"	24"
2'x2'x51'	23"	24"
2'x2'x52'	23"	24"
2'x2'x53'	23"	24"
2'x2'x54'	23"	24"
2'x2'x55'	23"	24"
2'x2'x56'	23"	24"
2'x2'x57'	23"	24"
2'x2'x58'	23"	24"
2'x2'x59'	23"	24"
2'x2'x60'	23"	24"
2'x2'x61'	23"	24"
2'x2'x62'	23"	24"
2'x2'x63'	23"	24"
2'x2'x64'	23"	24"
2'x2'x65'	23"	24"
2'x2'x66'	23"	24"
2'x2'x67'	23"	24"
2'x2'x68'	23"	24"
2'x2'x69'	23"	24"
2'x2'x70'	23"	24"
2'x2'x71'	23"	24"
2'x2'x72'	23"	24"



PRECAST ITEMS TABLE 719-310A				
APPROVED BOX SIZE (WxLxH)	MINIMUM PANEL THICKNESS-(T)		MAXIMUM BURIAL DEPTH (B)	SUGGESTED PIPE DIA. INSIDE (ID)
	REINF.	NON-REINF.		
2'x2'x2'	2"	2"	4'	12"
2'x2'x2.5'	2"	2"	4.5'	15"
2'x2'x3'	2"	2"	5'	15"
2'x2'x4'	2"	2"	6'	15"
2'x2'x5'	2"	2"	7'	15"
2'x2'x6'	2"	2.5"	8'	15"
2'x3'x2'	2"	2"	4'	12"
2'x3'x3'	2"	2.5"	5'	18"
2'x3'x4'	2"	2.5"	6'	18"
2'x3'x5'	2"	3"	7'	24"
2'x3'x6'	2"	3"	8'	24"
2'x4'x2'	2"	2"	4'	12"
2'x4'x3'	2"	2.5"	5'	18"
2'x4'x4'	2"	3"	6'	30"
2'x4'x5'	2"	3.5"	7'	36"
2'x4'x6'	2"	4"	8'	48"
3'x3'x2'	2"	2"	4'	12"
3'x3'x3'	2"	2.5"	5'	18"
3'x3'x3.5'	2"	2.5"	5.5'	24"
3'x3'x4'	2"	2.5"	6'	24"
3'x3'x5'	2"	3"	7'	24"
3'x3'x6'	2"	3"	8'	24"
3'x4'x2'	2"	2"	4'	12"
3'x4'x3'	2"	2.5"	5'	18"
3'x4'x4'	2"	3"	6'	30"
3'x4'x5'	2"	3.5"	7'	36"
3'x4'x6'	2"	4"	8'	48"
3'x5'x2'	2"	2"	4'	12"
3'x5'x3'	2"	2.5"	5'	18"
3'x5'x4'	2"	3"	6'	30"
3'x5'x5'	2"	3"	7'	42"
3'x5'x6'	2"	4"	8'	48"
3'x5'x7'	2"	4.5"	9'	60"
4'x4'x2'	2"	2"	4'	12"
4'x4'x3'	2"	2.5"	5'	18"
4'x4'x4'	2"	3"	6'	30"
4'x4'x4.5'	2"	3.5"	6.5'	36"
4'x4'x5'	2"	3.5"	7'	36"
4'x4'x6'	2"	4"	8'	48"
4'x5'x2'	2"	2"	4'	12"
4'x5'x3'	2"	2.5"	5'	18"
4'x5'x4'	2"	3"	6'	30"
4'x5'x5'	2"	3"	7'	42"
4'x5'x6'	2"	4"	8'	48"
4'x5'x7'	2"	4.5"	9'	60"
5'x5'x2'	2"	2"	4'	12"
5'x5'x3'	2"	2.5"	5'	18"
5'x5'x4'	2"	3"	6'	30"
5'x5'x5'	2"	3"	7'	42"
5'x5'x6'	2"	4"	8'	48"
5'x5'x7'	2"	4.5"	9'	60"

MAX PIPE OUTSIDE DIAMETER=HD-0.5"
TO FIND MAX HOLE DIA. IN SHORT SIDE,
FIND SQUARE BOX WITH SAME H
[ie: 3'x5'x5' BOX⇒ 3'x3'x5' = HD⇒36" IN THE 3' SIDE]

DRAINAGE SUBSTRUCTURE RECTANGULAR (PRECAST SOLID WALL BOX)

SCALE: NONE
SCDOT CAD DETAIL #: 719-305-00

- GENERAL NOTES (ALL DETAILS THIS SHEET):
- PRECAST CONCRETE MANUFACTURER MUST HAVE THEIR BOX INCLUDED ON THE DEPARTMENT'S QUALIFIED PRODUCT LIST 14 PRIOR TO FABRICATION. DESIGN CALCULATION AND ENGINEERING DRAWINGS OF EACH SIZE BOX (WxL) MUST BE PREPARED. VARIABLE DEPTHS (H) MAY BE INCLUDED ON THE SAME DRAWING. ENGINEERING DRAWINGS SHOULD BE PROVIDED ON 11"x17" SHEET. DRAWING MUST INCLUDE ALL DIMENSIONS, CLEARANCES, STEEL LAYOUT DETAILS AND CONSTRUCTION NOTES. EACH ENGINEERING DRAWING MUST STATE THE ASTM SPECIFICATION THAT IT MEETS AND ALL MATERIAL SPECIFICATIONS. A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF SOUTH CAROLINA MUST SIGN AND SEAL ALL ENGINEERING DRAWINGS AND DESIGN CALCULATIONS. SUBMITTALS MUST INCLUDE ONE ORIGINAL AND TWO COPIES OF THE DESIGN CALCULATIONS WITH DRAWINGS AS SPECIFIED ABOVE. SEND SUBMITTALS TO THE CONTACT LISTED ON QUALIFIED PRODUCT POLICY 14.
 - PRECAST CONCRETE COMPONENTS FOR DRAINAGE ITEMS AT EACH LOCATION MUST BE SUPPLIED FROM A SINGLE SOURCE PRECAST MANUFACTURER THAT HAS BEEN INSPECTED AND APPROVED BY THE MATERIALS AND RESEARCH ENGINEER.
 - THE PRECAST CONCRETE DRAINAGE BOX MAY BE USED WITH THE FOLLOWING DRAINAGE STRUCTURES:
CATCH BASIN TYPE 1
CATCH BASIN TYPE 17
CATCH BASIN TYPE 1(SPECIAL)
CATCH BASIN TYPE 18
CATCH BASIN TYPE 9 & TYPE 9 MH
DROP INLETS
CATCH BASIN TYPE 12
JUNCTION BOXES
CATCH BASIN TYPE 16
INCLUDING ALL INLET ADAPTORS
 - DESIGN FOR PRECAST DRAINAGE STRUCTURES MUST MEET OR EXCEED ASTM C 890 OR ASTM C 913 AND THE DESIGN REQUIREMENTS SHOWN ON THIS SHEET. ALL DESIGN COMPUTATIONS WILL BE PROVIDED FOR A DEPTH OF 12'-0". A JOINT DESIGN FOR RISERS AND TOP OF BOX MUST ALSO BE PROVIDED.
 - THE BURIAL DEPTH FROM THE TOP OF THE DRAINAGE BOX BOTTOM SLAB TO THE TOP OF THE GROUND SHALL NOT EXCEED 12'-0".
 - DRAWINGS OF PRECAST DRAINAGE BOX WITH SOLID WALLS SHALL INDICATE LOCATION OF CONSTRUCTION JOINTS & ADDITIONAL CONSTRUCTION DETAILS REQUIRED BY THE MANUFACTURER.
 - ONLY THOSE STRUCTURES SIZES (WxLxH) SHOWN IN TABLE 719-305A WILL BE SUBMITTED FOR DESIGN APPROVAL.
 - DURING MANUFACTURING, DRAINAGE BOX SIZES (WxLxH), MAY VARY BETWEEN THE APPROVED DESIGN BOX SIZES. WHEN DRAINAGE BOX SIZE HEIGHT, WIDTH, W OR LENGTH FALLS BETWEEN THE APPROVED DESIGN SIZES, THE BOX WITH GREATER SIZES MUST BE USED FOR DESIGN OF THAT BOX. BOX HEIGHT 'H' GREATER THAN THE MAXIMUM APPROVED DESIGN SIZES WILL NOT BE STANDARD.
- MATERIAL NOTES:

DRAINAGE SUBSTRUCTURE RECTANGULAR (PRECAST KNOCKOUT WALL BOX)

SCALE: NONE
SCDOT CAD DETAIL #: 719-310-00

- CONCRETE FOR PRECAST STRUCTURES SHALL BE CLASS 4000P MEETING THE REQUIREMENTS OF SECTION 701 OF THE SCDOT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (LATEST EDITION).
- REINFORCING STEEL SHALL BE ASTM A-706, LOW-ALLOY STEEL DEFORMED BARS FOR CONCRETE REINFORCEMENT, GRADE 60. WIRE MESH SHALL CONFORM TO AASHTO M 55, OR M 221.
- DETAIL NOTES:
11. BRICK MASONRY OR CLASS 4000 CONCRETE MAY BE USED TO FINISH THE PORTION ABOVE THE TOP OF THE BOX (2 FT. MAX.) TO BRING TO GRADE OR TO COMPLETE AN INLET STRUCTURE. THESE MATERIALS SHALL CONFORM TO SECTION 719 OF THE SCDOT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (LATEST EDITION).
12. LIFT HOLES AND/OR DEVICES MAY BE PLACED AS NECESSARY. ALL LIFT HOLES SHALL BE GROUTED PRIOR TO COMPLETION OF THE INSTALLATION. ALL LIFTING METHODS MUST MEET OSHA REGULATIONS.
13. FORM OPENINGS FOR PIPE AS REQUIRED TO ACCOMMODATE PIPE SIZE AND LOCATION SPECIFIED. ORIENT PRECAST DRAINAGE STRUCTURE SO THAT PIPES ENTER THROUGH THE WALLS. PIPES MAY ENTER THROUGH THE CORNERS OF SOLID WALL BOXES IF A MINIMUM OF 6" OF WALL IS PROVIDED ABOVE THE HOLE TO THE TOP OF THE BOX OR TO ANOTHER OPENING.
14. DURING MANUFACTURING OF THE PRECAST DRAINAGE BOX, THE WALL (FULL THICKNESS) MAY BE EXTENDED A MAXIMUM OF 2 FEET ABOVE THE TOP OF THE BOX TO BRING TO GRADE OR TO COMPLETE AN INLET STRUCTURE. IF THIS OPTION IS TO BE USED, THE SHOP DRAWING SUBMITTAL MUST INCLUDE ALL DIMENSIONS AND DETAILS FOR THESE BOXES. CONTINUE REINFORCEMENT FROM BOX INTO THE EXTENDED HEIGHT.
15. TOP OF WALL SHALL BE CAST WITH A KEY JOINT WHEN PRECAST RISERS ARE USED.
16. THE HEIGHT OF PRECAST DRAINAGE BOX WITH SOLID WALLS CAN BE INCREASED BY USE OF RISERS TO THE REQUIRED DEPTH UP TO A MAXIMUM BURIAL DEPTH OF 12' (SEE STD. 719-315-00).
17. JOINTS SHALL BE SEALED WITH A FLEXIBLE BUTYL OR BITUMINOUS SEALANT CONFORMING TO AASHTO M 199.
18. WHEN BURIAL DEPTH EXCEEDS 4'-6", PLACE STEPS IN ACCORDANCE WITH STANDARD DRAWING NO. 719-550-00.
19. GROUT THE FLOW LINE FROM THE BASE TO THE OUTLET PIPE TO MAINTAIN A CONTINUOUS FLOW. GROUT SHALL BE TYPE M MORTAR MATERIAL IN ACCORDANCE WITH SECTION 718 OF THE SCDOT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (LATEST EDITION).
20. THE MINIMUM STEEL REINFORCEMENT REQUIRED FOR ALL BOX SIZES SHALL BE AS SHOWN ON THIS SHEET.
21. PRECAST CONCRETE CIRCULAR STRUCTURES (AS SHOWN ON 719-420-00) ARE REQUIRED FOR THE FOLLOWING APPLICATIONS UNLESS PROHIBITED BY THE PLANS OR SPECIAL PROVISIONS.
21.a. ON DRAINAGE STRUCTURES WITH A DEPTH EQUAL TO OR GREATER THAN 12 FEET.
21.b. ON DRAINAGE STRUCTURES WHERE THE FLOW LINE ELEVATION OF THE INLET PIPE IS EQUAL TO OR HIGHER THAN THE INSIDE TOP (SOFFIT) OF THE OUTLET PIPE.
21.c. AS REQUIRED BY THE PROJECT PLANS.

100% CONSTRUCTION DOCUMENTS

REVISION NO. REVISION DESCRIPTION

Revisions By Date

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Recommended Approvals:

1. MEDICAL DIRECTOR	6. OPERATIONS SERVICE LINE MANAGER
2. ASSOCIATE DIRECTOR	7. INFECTION CONTROL MANAGER
3. CHIEF OF STAFF	8. SAFETY MANAGER
4. ASSOC. DIRECTOR	9. GENERAL ENGINEER
5. SERVICE LINE MGRS.	10. COTR

Drawing Title
STORM DRAINAGE DETAILS

★ BUILDING IS FULLY SPRINKLERED ★

Project Title
REPLACE BOILER PLANT/ COGEN/CHP

Drawn	Building Number 21	AutoCAD File Name
Checked	Reviewed	Const. Contract No.

Date
April 30, 2012

Project Number
544-11-101

DRAWING No.
GS0012