

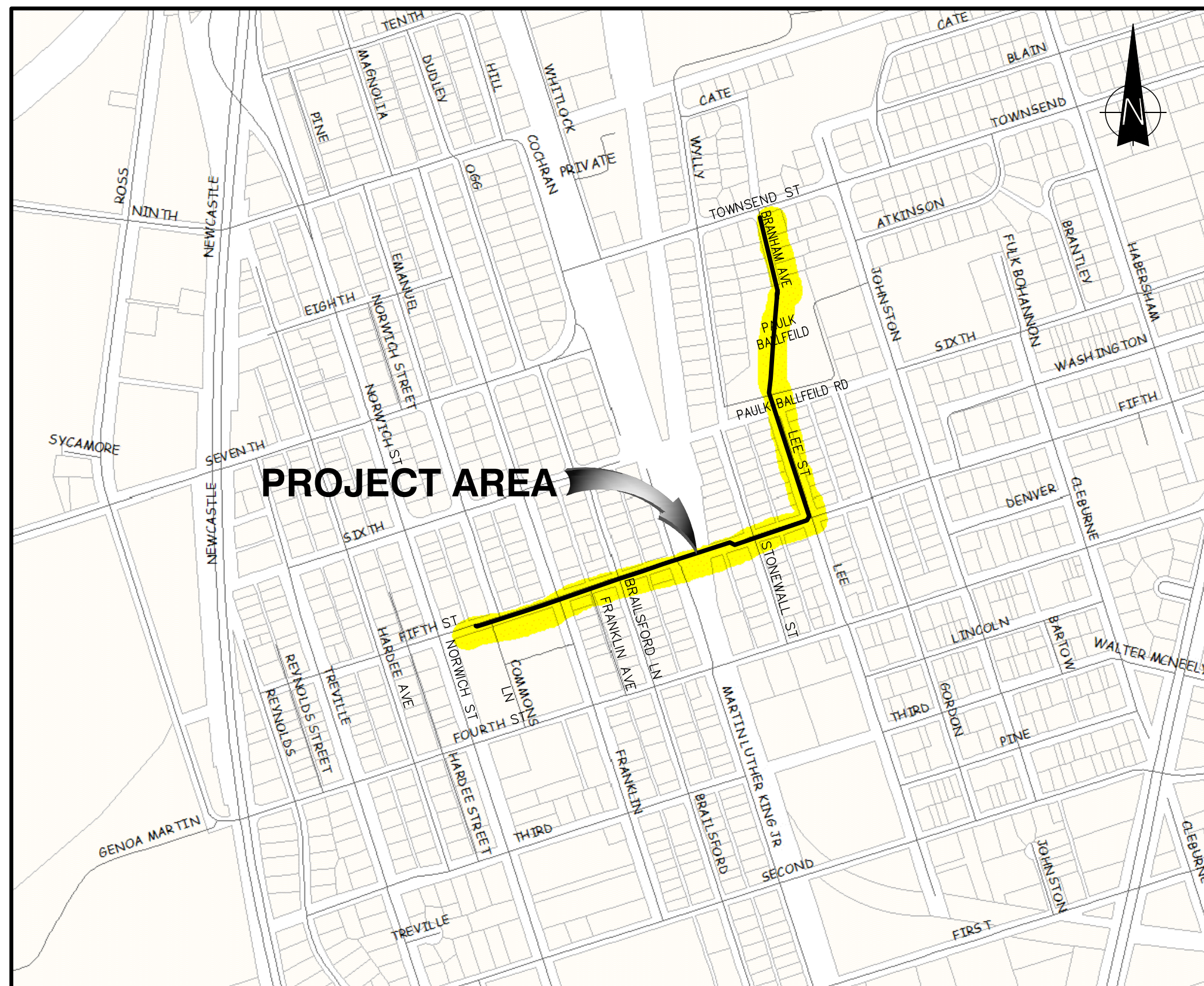
LIFT STATION 4048 FORCE MAIN IMPROVEMENTS

BGJWSC PROJECT NO. 701

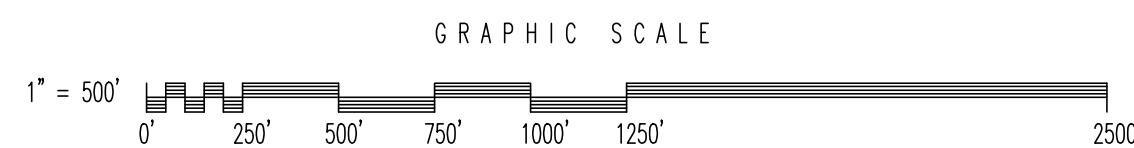
FOR THE

BRUNSWICK-GLYNN COUNTY

JOINT WATER & SEWER COMMISSION



VICINITY MAP
SCALE: 1" = 500'



MARCH 2017

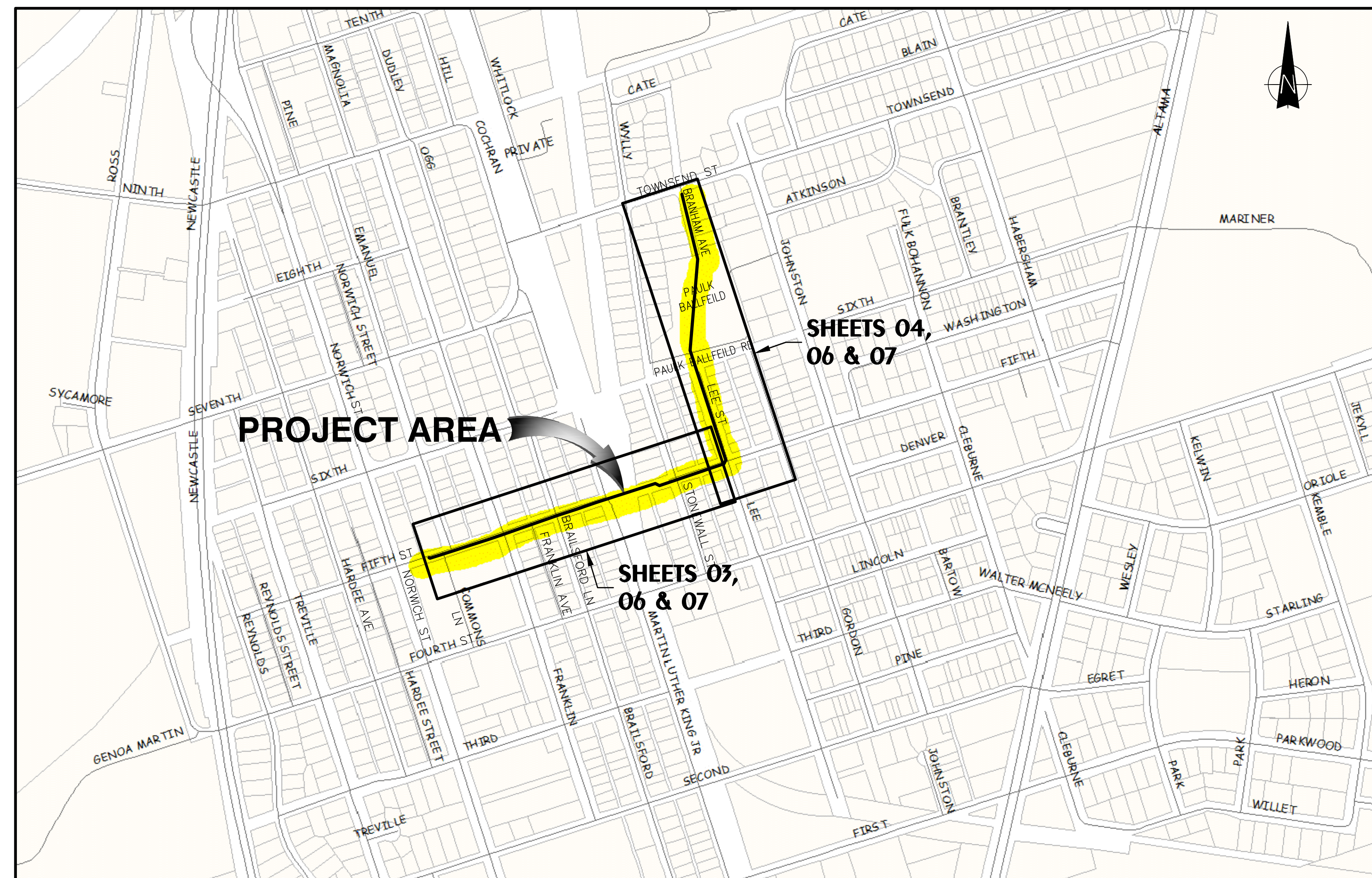
HUSSEY GAY BELL

Established 1958

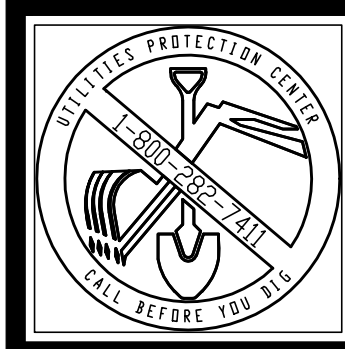
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SCHEDULE OF DRAWINGS

01	COVER - VICINITY - SCHEDULE OF DRAWINGS
02	PROJECT MAP - LEGEND - GENERAL NOTES
03	FORCE MAIN PLAN AND PROFILE
04	FORCE MAIN PLAN AND PROFILE
05	SANITARY SEWER AND FORCE MAIN DETAILS
06	REMOVE AND REPLACE ASPHALTIC CONCRETE PLAN
07	EROSION AND SEDIMENT CONTROL PLAN
08	LDA SCHEDULES NOTES & DETAILS
09	LDA SCHEDULES NOTES & DETAILS



ISSUED FOR BID

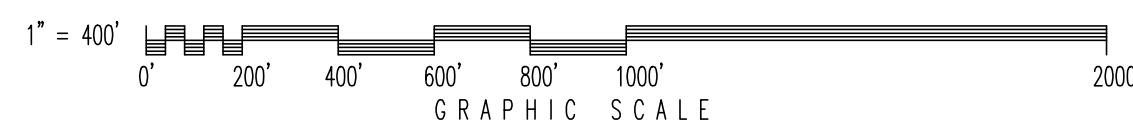


HUSSEY GAY BELL
Established 1958
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HUSSEY GAY BELL 03/20/2017

PROJECT MAP

SCALE: 1" = 400'



GENERAL NOTES

- It is the requirement of the contractor to make his own interpretation of all surface and subsurface data that is presented as to the nature and extent of the materials to be excavated, graded and compacted. The information shown on these plans and within the specifications does not in any way guarantee the amount or the nature of the material which may be encountered.
- The contractor shall notify the engineer of any conflict with existing utilities not shown on these plans prior to the installation of any pipe.
- All property/right-of-way lines are approximate, unless monument or pin locations are shown.
- All property monuments and R/W monuments that are disturbed or damaged shall be replaced by a licensed surveyor. Concrete monument markers shall be a minimum 4" x 4" x 2'6".
- All fences, posts, sheds, stored items, etc., moved to perform the work shall be replaced or moved back to the original location and any damage caused by removal and replacement shall be repaired so as to place the item in a condition equal to or better than existing at the start of the work.
- The contractor shall provide a legible set of as-built marked prints to the engineer showing in detail all changes from the design drawings. The locations of all service lines shall be shown with dimensions to permanent structures or manholes.
- All work shall be performed in a manner as to permit traffic to operate with the least amount of inconvenience possible. At least one travel lane must remain open at all times. All traffic control devices, signs, striping, and flagging shall be furnished by the contractor.
- All existing drive and crossroads will be provided ingress/egress routes at all times during the construction activities.
- The contractor shall not leave drainage ditches blocked, except for a brief time during actual installation of pipe. Provide temporary bypass drainage as required to have property functioning drainage at all other times. Regrade all ditches disturbed by installation of pipe.
- All ditch banks, existing grass shoulders, and other areas that are disturbed shall be reseeded.
- All items which are to be removed and are not shown to be reused shall become the property of the contractor and shall be removed from the site. The contractor shall be responsible for the proper final disposal of such material.
- The contractor is required to contact all utility companies and have utilities located before work begins. It is the contractor's responsibility to protect all utilities. Any damage to utilities shall be repaired at the expense of the contractor. If trench of pipe is within 5ft. of power poles, contractor must notify power company and take all precautions as required by power company. Backfilling and compaction required the same day as excavation occurs.

- It is the contractor's responsibility to coordinate with utility company for any guy wire relocation, or temporary utility line disconnections. All fees by the utility company for conducting these services shall be paid by the contractor.
- The contractor shall pay special attention to underground telephone fiber optic cables, and the underground gas mains and overhead power cables. The contractor must stay a minimum of 7.5 ft. away from power lines for safety of construction activities. The contractor shall comply with the High Voltage Act of Georgia. The contractor shall take every precaution necessary for safety purposes. In areas where construction activities require such, the contractor shall have utility company wrap lines, support poles, etc. The contractor shall pay all fees to the utility company for their work.
- Required shutdown of utility lines shall be coordinated with the Brunswick-Glynn County Joint Water & Sewer Commission. All requests for disruption shall be made at least by 9:00AM the working day prior to the scheduled interruption.
- The engineer shall approve any dewatering plan prior to its implementation.
- All water main piping shall have a minimum of 36" of cover.
- All force main piping shall have a minimum of 36" of cover.
- All valves and fittings shall be restrained.
- Clearing shall be performed to the extent necessary to construct the work within designated clearing easements.
- The contractor shall schedule and accomplish the work so as to avoid damage to private property and to minimize any inconvenience to property owners and their customers.

NOTE:
HORIZONTAL DATUM IS ON GEORGIA STATE PLANE COORDINATES,
EAST ZONE, DERIVED FROM EGPS NETWORK OBSERVATIONS.

VERTICAL DATUM IS NAVD88, DERIVED FROM EGPS NETWORK OBSERVATIONS.

LEGEND

EXISTING	PROPOSED	EXISTING	PROPOSED
	SIGN		IRON PIN
	SPIGOT		CONCRETE MONUMENT
	DITCH		RAILROAD
	STORM DRAIN LINE		ASPHALT PAVEMENT
	DRAINAGE INLET		CASING
	SANITARY SEWER LINE		FENCE
	SANITARY SEWER MANHOLE		RIGHT-OF-WAY
	FORCE MAIN		ROAD CENTERLINE
	AIR RELEASE VALVE IN MANHOLE		WOODS LINE
	PLUG VALVE IN MANHOLE		TREE OR BUSH
	FIRE HYDRANT ASSEMBLY		LIMITS OF DISTURBANCE
	VALVE		TEMPORARY SEDIMENT BARRIER
	WATER METER		TEMPORARY SEDIMENT TRAP
	WATER LINE		S=SENSITIVE(DOUBLE) NS=NON SENSITIVE
	WATER VALVE		TEMPORARY SEDIMENT BASIN
	LIGHT POLE		BRUSH BARRIER
	GUY POLE		INLET SEDIMENT TRAP
	TELEPHONE POLE		DUST CONTROL
	TELEPHONE BOX		MULCHING
	POWER POLE		TEMPORARY GRASSING
	GAS METER		PERMANENT GRASSING
	TRANSFORMER		TEMPORARY CONSTRUCTION EXIT
	POWER LINE		STORM DRAIN OUTLET PROTECTION
	TELEPHONE LINE		CONTOURS
	ELECTRIC LINE		WETLANDS
	GAS LINE		UTILITY/CONSTRUCTION EASEMENT
	FIBER OPTIC CABLE		
	UNDERGROUND CABLE		
	MAILBOX		

REVISIONS:

DESIGNED	DRAWN	CHECKED
CB	JK	JO

DATE: MARCH 2017

JOB NO. 116291602

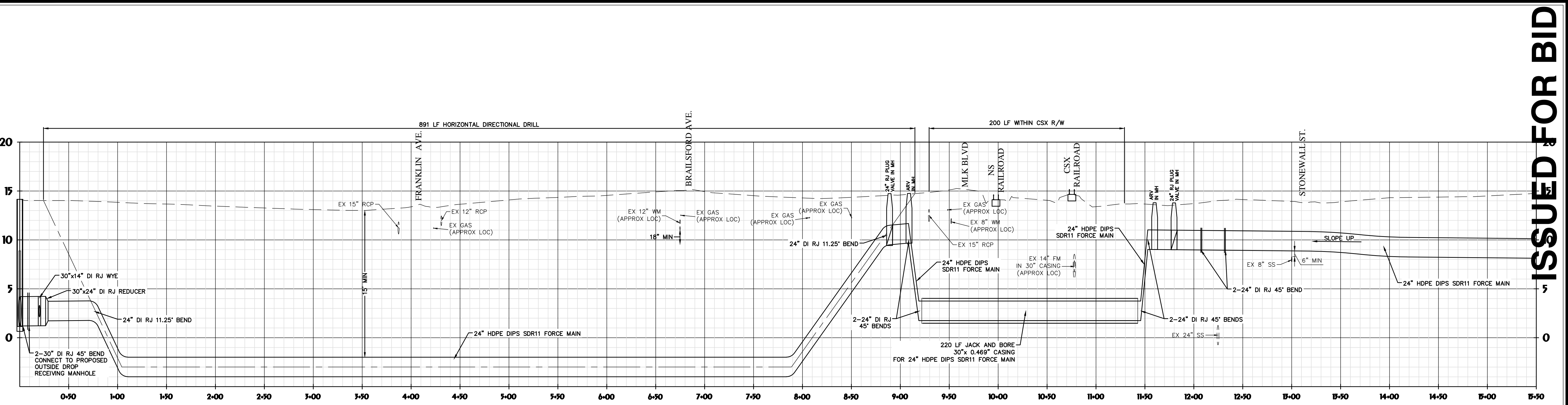
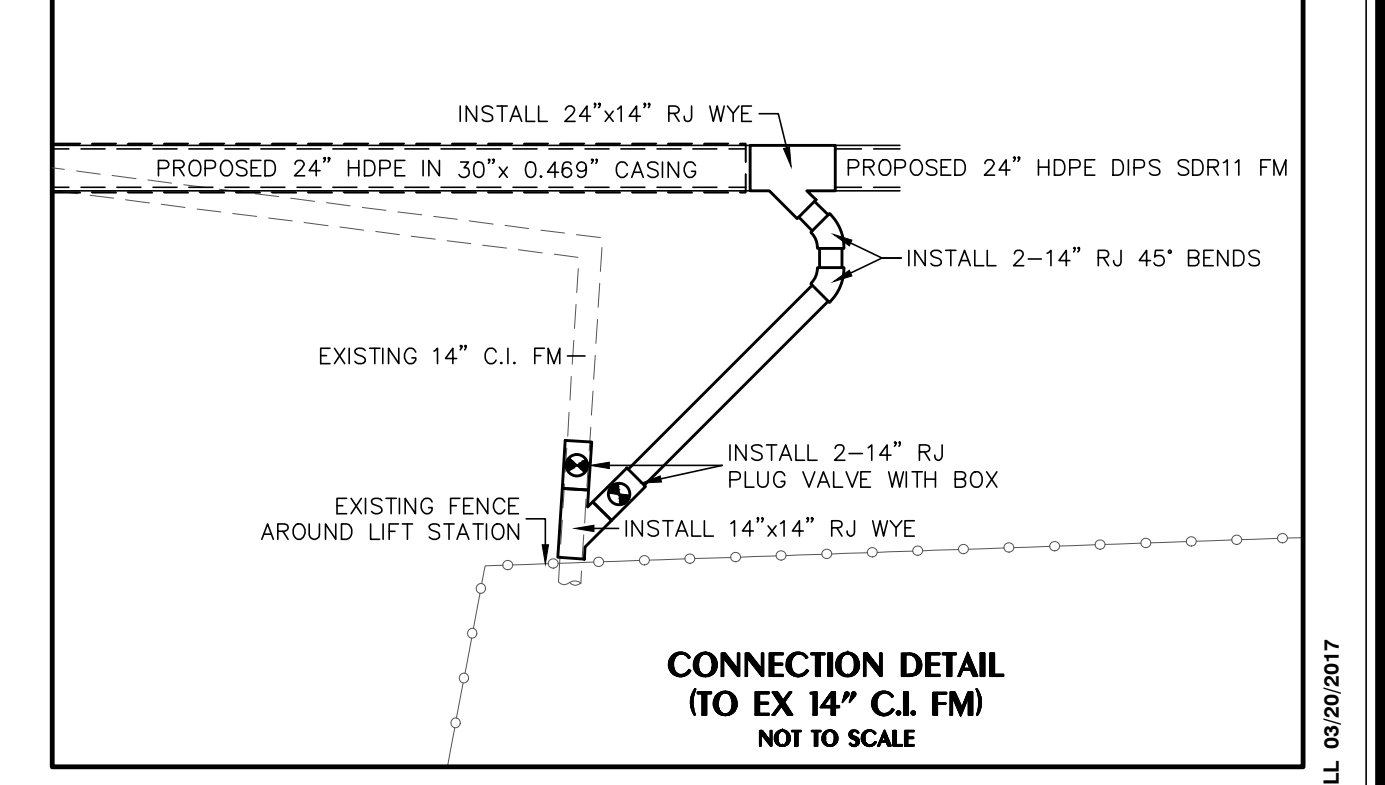
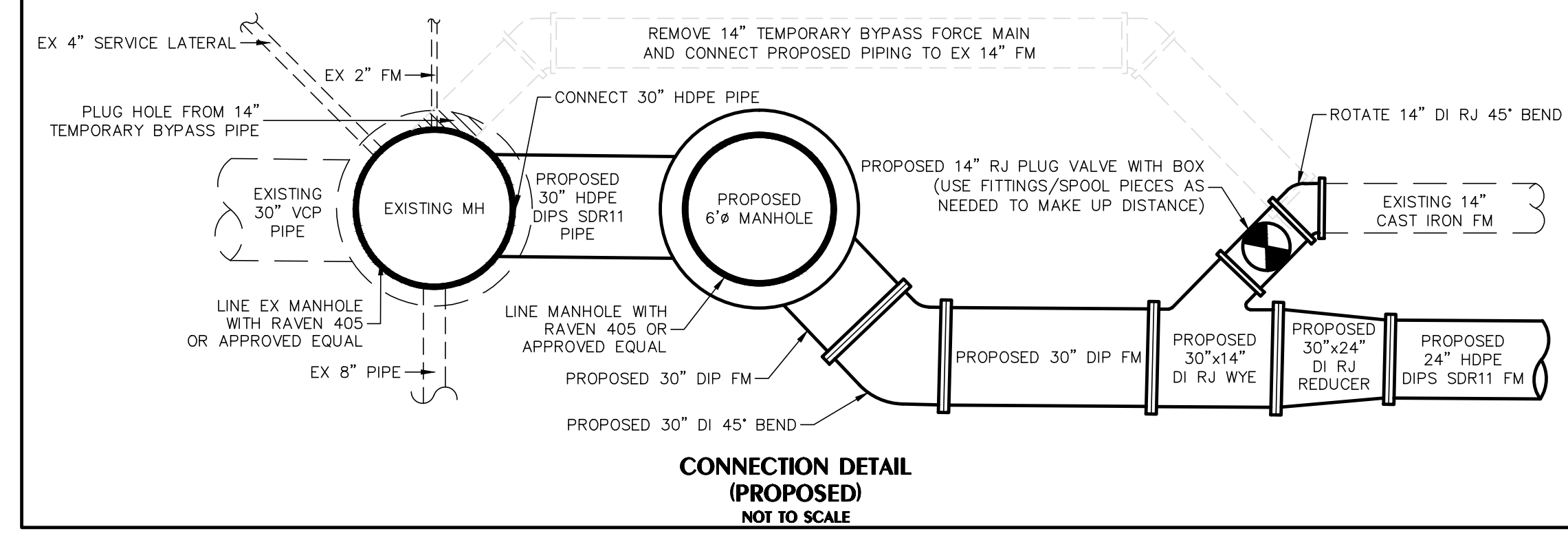
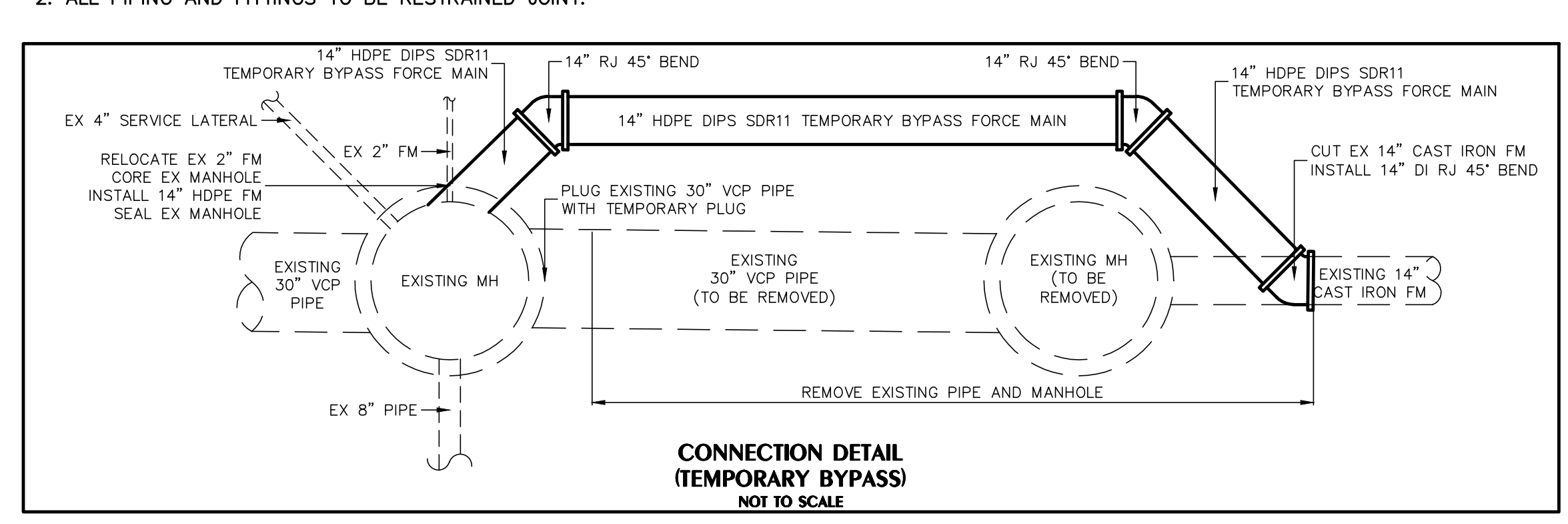
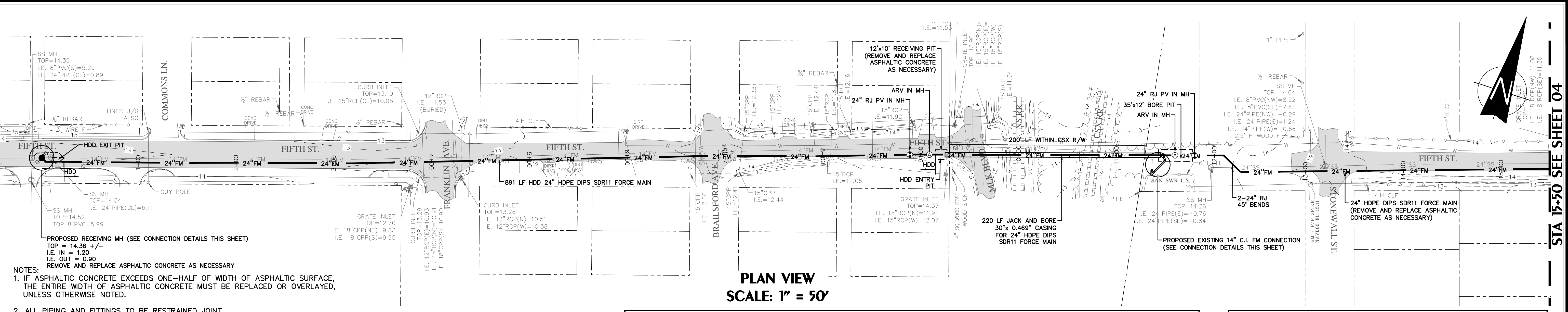
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LIFT STATION 4048 FORCE MAIN IMPROVEMENTS
BOWSC PROJECT NO. 701
FOR THE
BRUNSWICK-GLYNN COUNTY
JOINT WATER & SEWER COMMISSION
PROJECT MAP - LEGEND - GENERAL NOTES

DRAWING NUMBER

02

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 E:\BG\JWSC\116291602 Lift Station 4048 FM Reroute CON_DRAW03 FORCE MAIN PLAN AND PROFILE(BID).dwg



ISSUED FOR BID

GEORGIA REGISTERED PROFESSIONAL ENGINEER
 No. 25429
HUSSEY GAY BELL
 Design Professional
 Cert. #0000033758

HUSSEY GAY BELL
Established 1958
 329 COMMERCIAL DRIVE, SAVANNAH, GA 31406 / T:912.354.4626

REVISIONS:

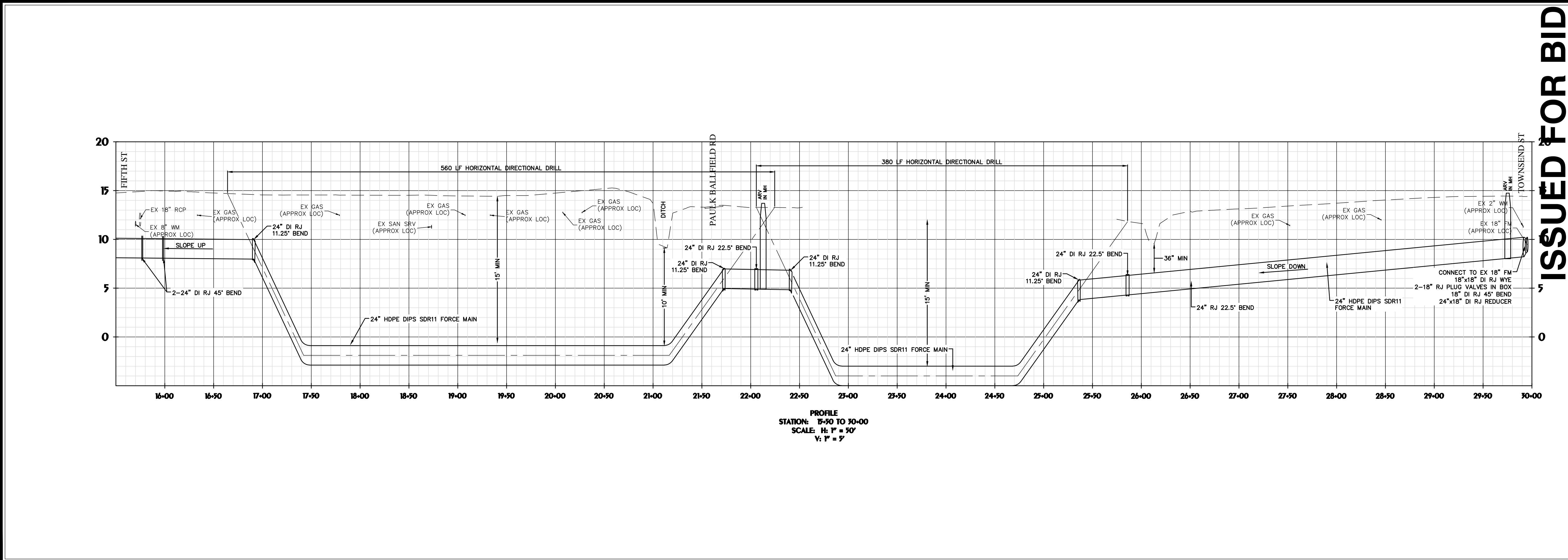
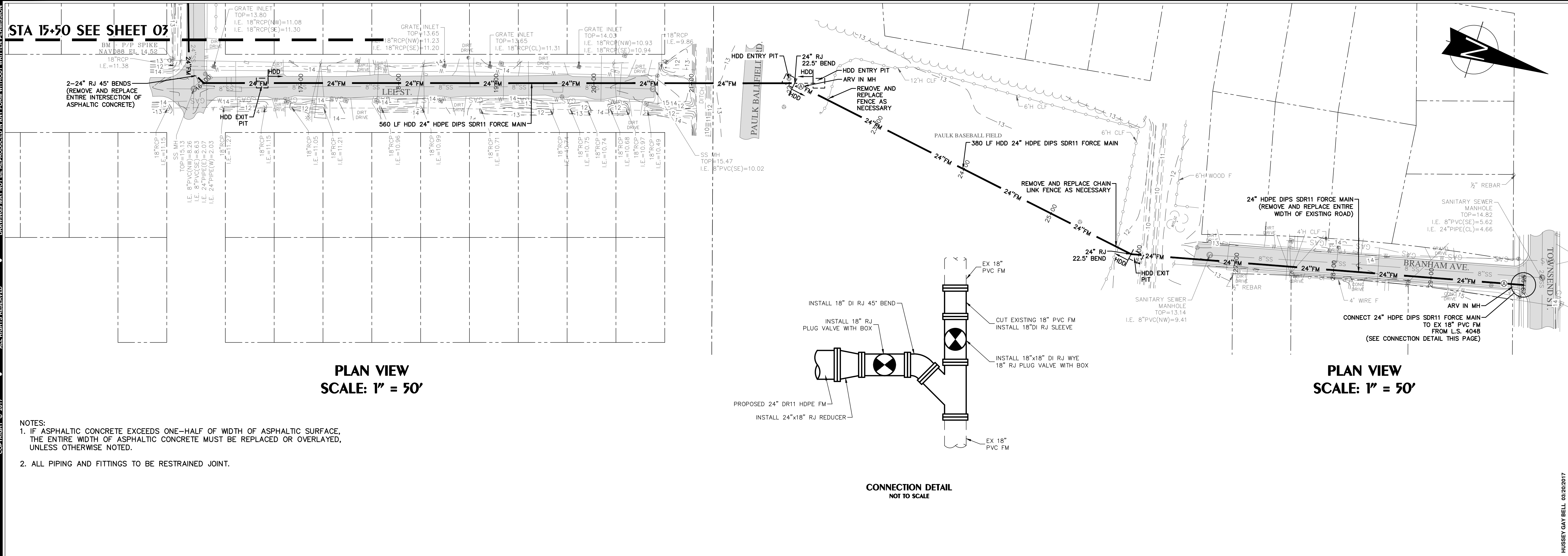
NO.	DATE	DESCRIPTION

DESIGNED: CB DRAWN: JK CHECKED: JO
 DATE: MARCH 2017
 JOB NO. 116291602
 SCALE: H:1"=50' V:1"=5'

LIFT STATION 4048 FORCE MAIN IMPROVEMENTS
 BOWSC PROJECT NO. 701
 FOR THE
BRUNSWICK-GLYNN COUNTY
JOINT WATER & SEWER COMMISSION
FORCE MAIN PLAN AND PROFILE

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03

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REVISIONS:

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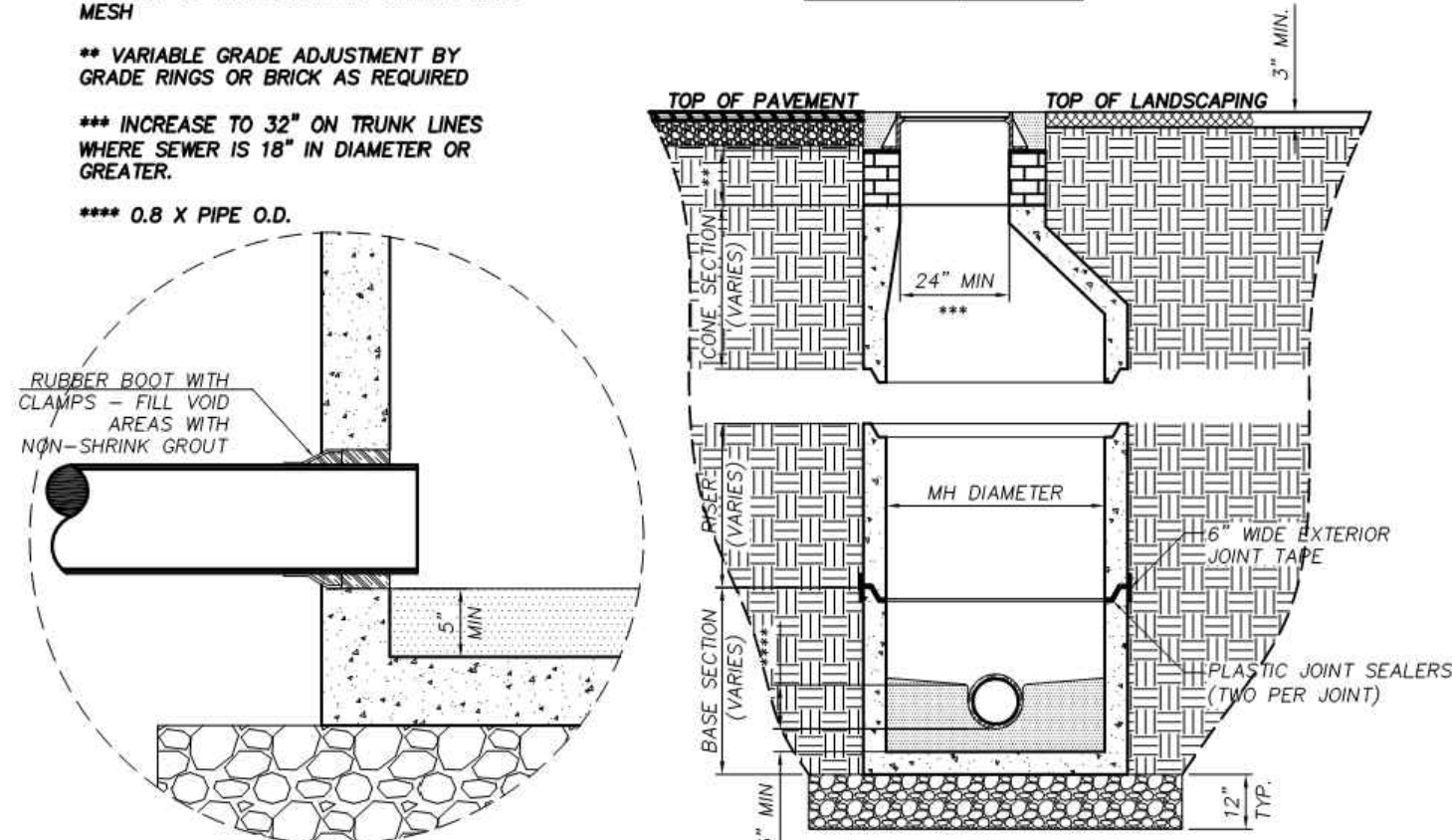
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LIFT STATION 4048 FORCE MAIN IMPROVEMENTS
 BOIWSC PROJECT NO. 701
 FOR THE
BRUNSWICK-GLYNN COUNTY
JOINT WATER & SEWER COMMISSION
FORCE MAIN PLAN AND PROFILE

DRAWING NUMBER
04

GENERAL NOTES
 CONCRETE: 4000 PSI TYPE II CEMENT
 WALL REINFORCING: ASTM C-478
 BOTTOM REINFORCING: #4@12" O.C.E.W. (*)
 * GRADE 40 OR EQUIVALENT WELDED WIRE MESH
 ** VARIABLE GRADE ADJUSTMENT BY GRADE IRONS OR BRICK AS REQUIRED
 *** INCREASE TO 32" ON TRUNK LINES WHERE SEWER IS 18" IN DIAMETER OR GREATER.
 **** 0.8 X PIPE O.D.

PIPE SIZE	MANHOLE DIAMETER
6" THRU 15"	4'-0"
18" THRU 30"	5'-0"
36" THRU 48"	6'-0"
> 48"	8'-0"



NOT TO SCALE

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JOINT WATER & SEWER COMMISSION
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STANDARD MANHOLE SECTION

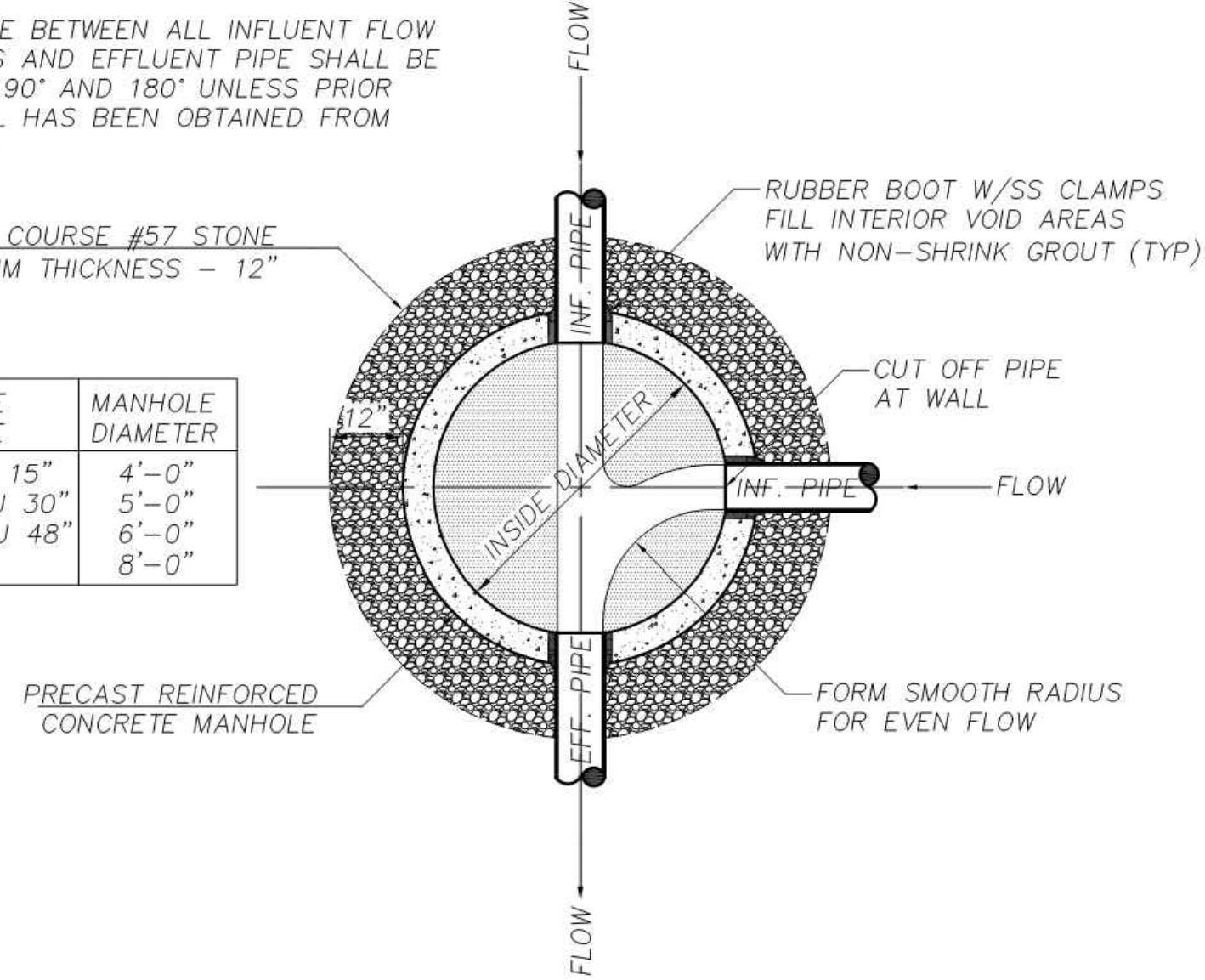
JWSC STANDARD DETAIL 3-2A

Date: AUGUST 2011

NOTE:
 THE ANGLE BETWEEN ALL INFLUENT FLOW CHANNELS AND EFFLUENT PIPE SHALL BE BETWEEN 90° AND 180° UNLESS PRIOR APPROVAL HAS BEEN OBTAINED FROM THE JWSC

LEVELING COURSE #57 STONE
 MINIMUM THICKNESS - 12"

PIPE SIZE	MANHOLE DIAMETER
6" THRU 15"	4'-0"
18" THRU 30"	5'-0"
36" THRU 48"	6'-0"
> 48"	8'-0"



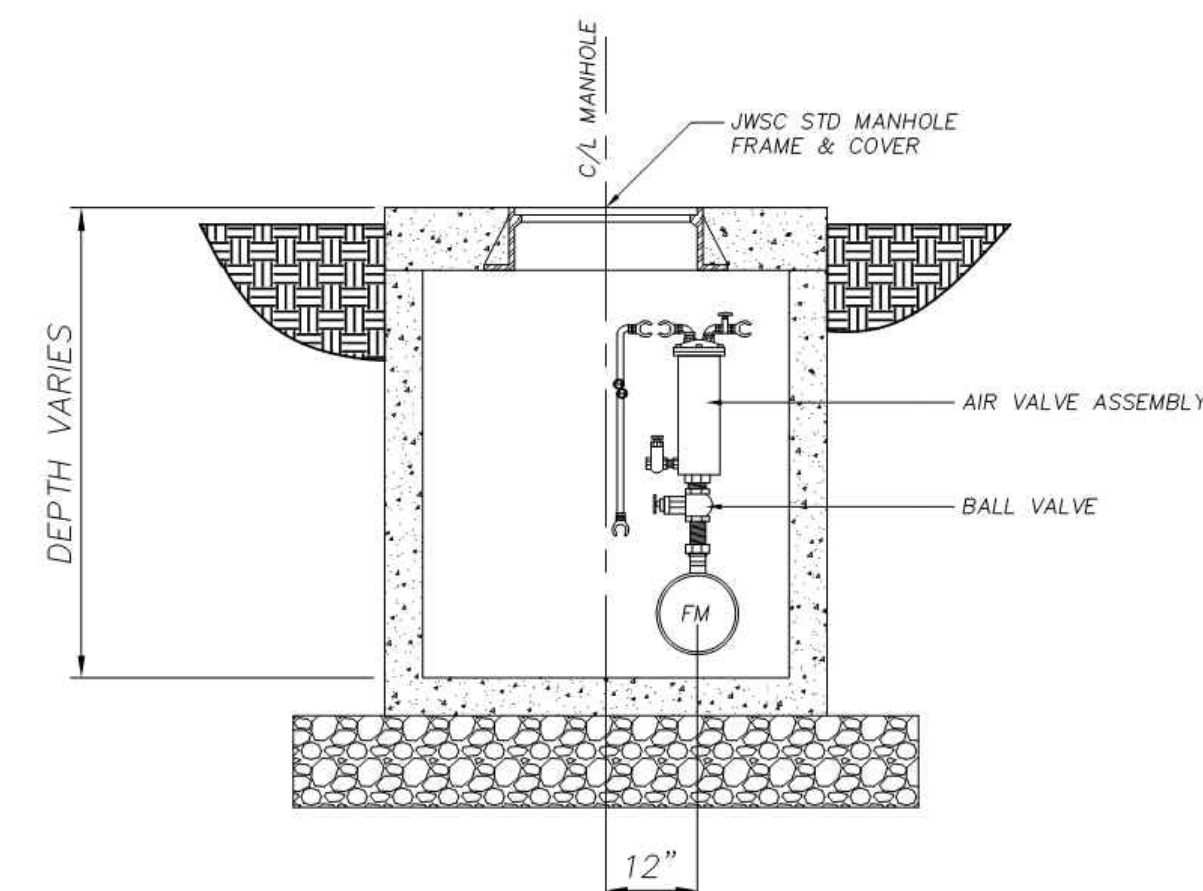
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STANDARD MANHOLE PLAN

JWSC STANDARD DETAIL 3-2B

Date: AUGUST 2011



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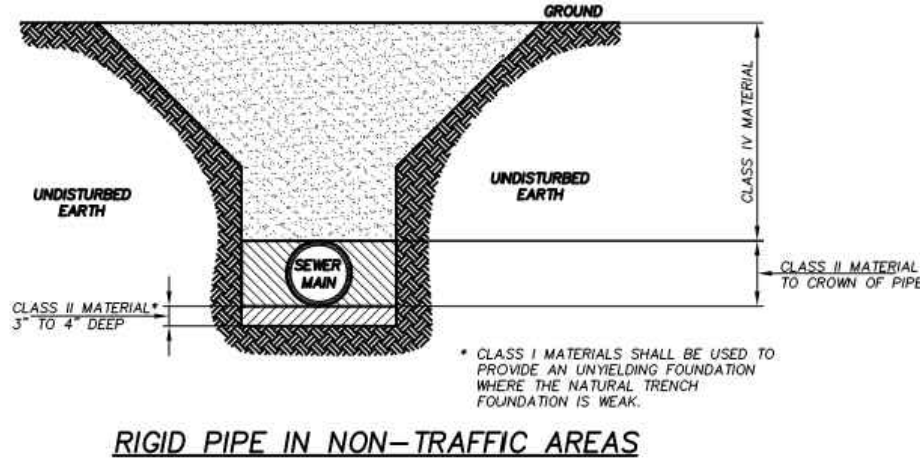
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 Brunswick, Georgia 31520 Fax: (912) 261-7178
 Website: www.hjwsc.org

ARV MANHOLE

JWSC STANDARD DETAIL 4-4

Date: OCTOBER 2011

PIPE BEDDING MATERIALS		
CLASS	TYPE	DESCRIPTION
I		MANUFACTURED ANGULAR GRANULAR MATERIAL 1/2" TO 1 1/2" SIZE, INCLUDING MATERIALS HAVING REGIONAL SIGNIFICANCE SUCH AS CRUSHED STONE OR ROCK.
II	GW	WELL-GRADED GRAVELS AND GRAVEL-SAND MIXTURES; LITTLE OR NO FINES; 50% OR MORE OF COARSE FRACTION RETAINED ON NO. 4 SEIVE; MORE THAN 50% RETAINED ON NO. 200 SEIVE; CLEAN.
	DP	POORLY GRADED GRAVELS AND GRAVEL-SAND MIXTURES; LITTLE OR NO FINES; 50% OR MORE OF COARSE FRACTION RETAINED ON NO. 4 SEIVE; MORE THAN 50% RETAINED ON NO. 200 SEIVE; CLEAN.
	SW	WELL-GRADED SANDS AND GRAVELLY SANDS; LITTLE OR NO FINES; MORE THAN 50% OF COARSE FRACTION PASSES NO. 4 SEIVE; MORE THAN 50% RETAINED ON NO. 200 SEIVE; CLEAN.
	SP	POORLY GRADED SANDS AND GRAVELLY SANDS; LITTLE OR NO FINES; MORE THAN 50% OF COARSE FRACTION PASSES NO. 4 SEIVE; MORE THAN 50% RETAINED ON NO. 200 SEIVE; CLEAN.
III	GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES; 50% OR MORE OF COARSE FRACTION RETAINED ON NO. 4 SEIVE; MORE THAN 50% RETAINED ON NO. 200 SEIVE.
	GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES; 50% OR MORE OF COARSE FRACTION RETAINED ON NO. 4 SEIVE; MORE THAN 50% OF COARSE FRACTION PASSES NO. 4 SEIVE; MORE THAN 50% RETAINED ON NO. 200 SEIVE.
	SM	SILTY SANDS, SAND-SILT MIXTURES; MORE THAN 50% OF COARSE FRACTION PASSES NO. 4 SEIVE; MORE THAN 50% RETAINED ON NO. 200 SEIVE.
	SC	CLAYEY SANDS, SAND-CLAY MIXTURES; MORE THAN 50% OF COARSE FRACTION PASSES NO. 4 SEIVE; MORE THAN 50% RETAINED ON NO. 200 SEIVE.
IV	ML	INORGANIC SILTS, VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS; LIQUID LIMIT 50% OR LESS; 50% OR MORE PASSES NO. 200 SEIVE.
	CL	INORGANIC SILTS, CLAYS OF LOW TO MEDIUM PLASTICITY; GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS; LIQUID LIMIT 50% OR LESS; 50% OR MORE PASSES NO. 200 SEIVE.
	MH	INORGANIC SILTS, MUCKS OF ORGANIC OR NON-ORGANIC FINE SANDS OR SILTS; ELASTIC SILTS; LIQUID LIMIT GREATER THAN 50%; 50% OR MORE PASSES NO. 200 SEIVE.
	OH	INORGANIC SILTS, CLAYS OF HIGH PLASTICITY; FAT CLAYS; LIQUID LIMIT GREATER THAN 50%; 50% OR MORE PASSES NO. 200 SEIVE.



NOT TO SCALE

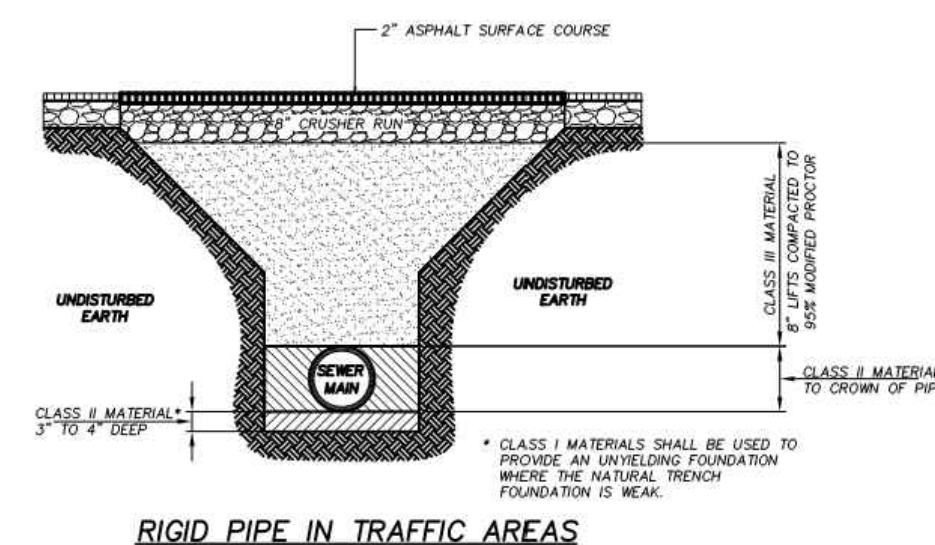
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JOINT WATER & SEWER COMMISSION
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 Website: www.hjwsc.org

TRENCH DETAIL - RIGID PIPE

JWSC STANDARD DETAIL 3-10A

Date: OCTOBER 2011

PIPE BEDDING MATERIALS		
CLASS	TYPE	DESCRIPTION
I		MANUFACTURED ANGULAR GRANULAR MATERIAL 1/2" TO 1 1/2" SIZE, INCLUDING MATERIALS HAVING REGIONAL SIGNIFICANCE SUCH AS CRUSHED STONE OR ROCK.
II	GW	WELL-GRADED GRAVELS AND GRAVEL-SAND MIXTURES; LITTLE OR NO FINES; 50% OR MORE OF COARSE FRACTION RETAINED ON NO. 4 SEIVE; MORE THAN 50% RETAINED ON NO. 200 SEIVE; CLEAN.
	DP	POORLY GRADED GRAVELS AND GRAVEL-SAND MIXTURES; LITTLE OR NO FINES; 50% OR MORE OF COARSE FRACTION RETAINED ON NO. 4 SEIVE; MORE THAN 50% RETAINED ON NO. 200 SEIVE; CLEAN.
	SW	WELL-GRADED SANDS AND GRAVELLY SANDS; LITTLE OR NO FINES; MORE THAN 50% OF COARSE FRACTION PASSES NO. 4 SEIVE; MORE THAN 50% RETAINED ON NO. 200 SEIVE; CLEAN.
	SP	POORLY GRADED SANDS AND GRAVELLY SANDS; LITTLE OR NO FINES; MORE THAN 50% OF COARSE FRACTION PASSES NO. 4 SEIVE; MORE THAN 50% RETAINED ON NO. 200 SEIVE; CLEAN.
III	GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES; 50% OR MORE OF COARSE FRACTION RETAINED ON NO. 4 SEIVE; MORE THAN 50% OF COARSE FRACTION PASSES NO. 4 SEIVE; MORE THAN 50% RETAINED ON NO. 200 SEIVE.
	GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES; 50% OR MORE OF COARSE FRACTION RETAINED ON NO. 4 SEIVE; MORE THAN 50% OF COARSE FRACTION PASSES NO. 4 SEIVE; MORE THAN 50% RETAINED ON NO. 200 SEIVE.
	SM	SILTY SANDS, SAND-SILT MIXTURES; MORE THAN 50% OF COARSE FRACTION PASSES NO. 4 SEIVE; MORE THAN 50% RETAINED ON NO. 200 SEIVE.
	SC	CLAYEY SANDS, SAND-CLAY MIXTURES; MORE THAN 50% OF COARSE FRACTION PASSES NO. 4 SEIVE; MORE THAN 50% RETAINED ON NO. 200 SEIVE.
IV	ML	INORGANIC SILTS, VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS; LIQUID LIMIT 50% OR LESS; 50% OR MORE PASSES NO. 200 SEIVE.
	CL	INORGANIC SILTS, CLAYS OF LOW TO MEDIUM PLASTICITY; GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS; LIQUID LIMIT 50% OR LESS; 50% OR MORE PASSES NO. 200 SEIVE.
	MH	INORGANIC SILTS, MUCKS OF ORGANIC OR NON-ORGANIC FINE SANDS OR SILTS; ELASTIC SILTS; LIQUID LIMIT GREATER THAN 50%; 50% OR MORE PASSES NO. 200 SEIVE.
	OH	INORGANIC SILTS, CLAYS OF HIGH PLASTICITY; FAT CLAYS; LIQUID LIMIT GREATER THAN 50%; 50% OR MORE PASSES NO. 200 SEIVE.



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JOINT WATER & SEWER COMMISSION
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 Brunswick, Georgia 31520 Fax: (912) 261-7178
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TRENCH DETAIL - RIGID PIPE

JWSC STANDARD DETAIL 3-10B

Date: OCTOBER 2011

ISSUED FOR BID

GEORGIA REGISTERED PROFESSIONAL ENGINEER
 No. 25429
 C. C. BURKE
 GSWCC Level II
 Design Professional
 Cert. #0000033758



HUSSEY GAY BELL
 Established 1958
 329 COMMERCIAL DRIVE, SAVANNAH, GA 31406 / T:912.354.4626

REVISIONS:

DESIGNED	DRAWN	CHECKED
CB	JK	JO

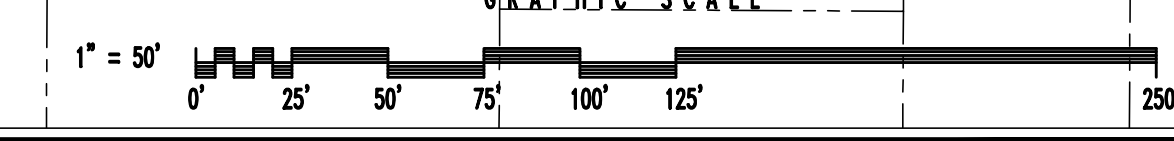
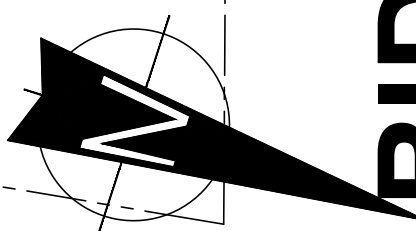
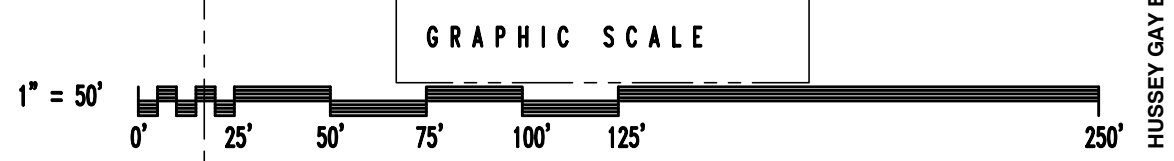
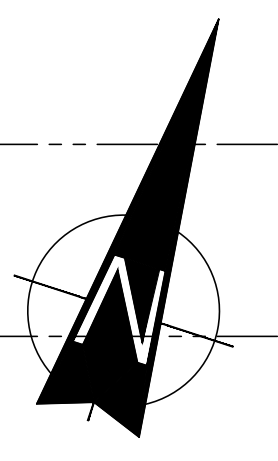
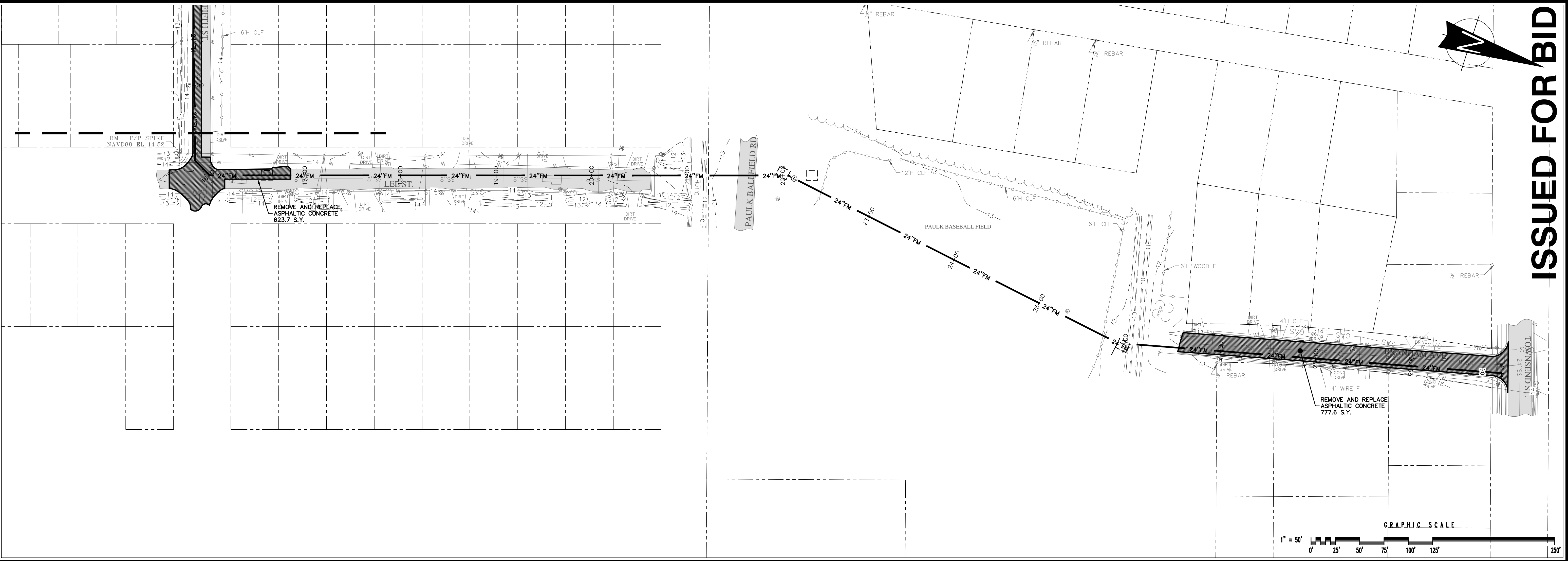
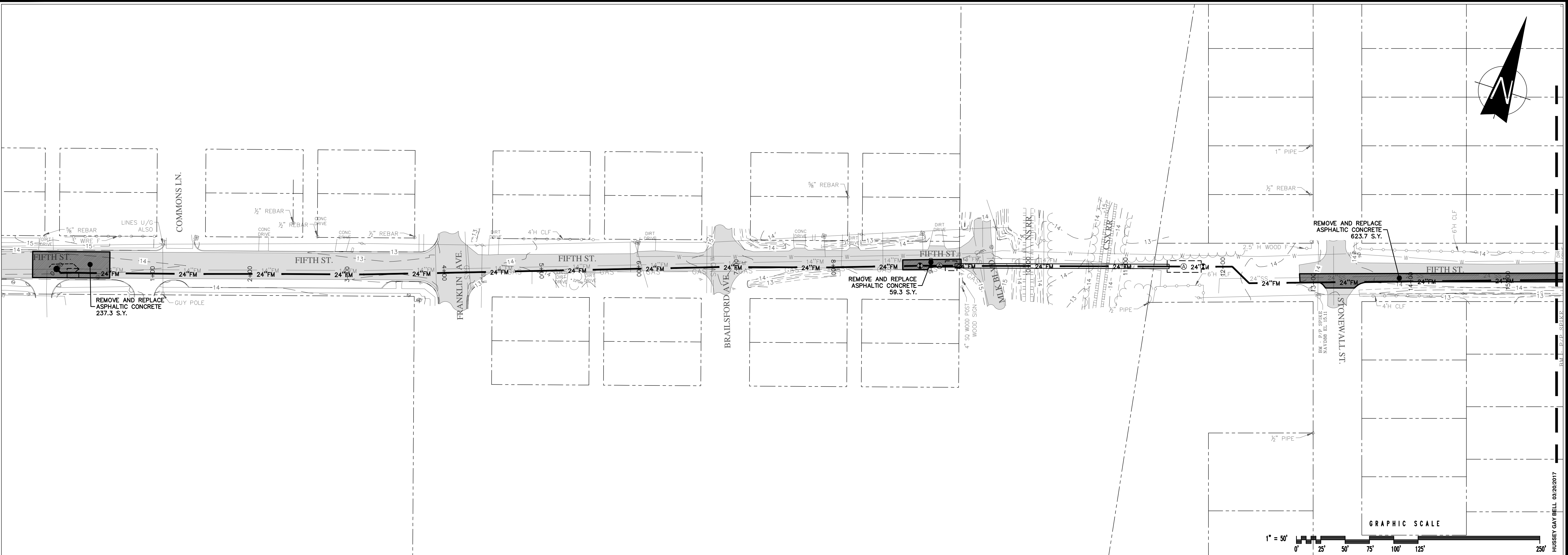
DATE: MARCH 2017
 JOB NO. 116291602
 SCALE: N.T.S.

LIFT STATION 4048 FORCE MAIN IMPROVEMENTS
 BOWSC PROJECT NO. 701
 FOR THE
BRUNSWICK-GLYNN COUNTY
JOINT WATER & SEWER COMMISSION
SANITARY SEWER AND FORCE MAIN DETAILS

DRAWING NUMBER

05

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 — Established 1958 —
 329 COMMERCIAL DRIVE, SAVANNAH, GA 31406 / T:912.354.4626

REVISIONS:

NO.	DATE	DESCRIPTION

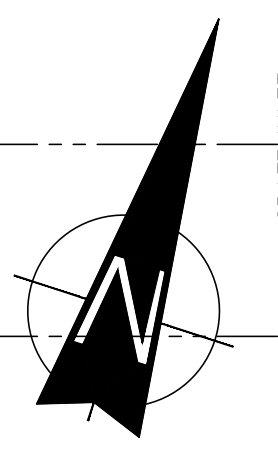
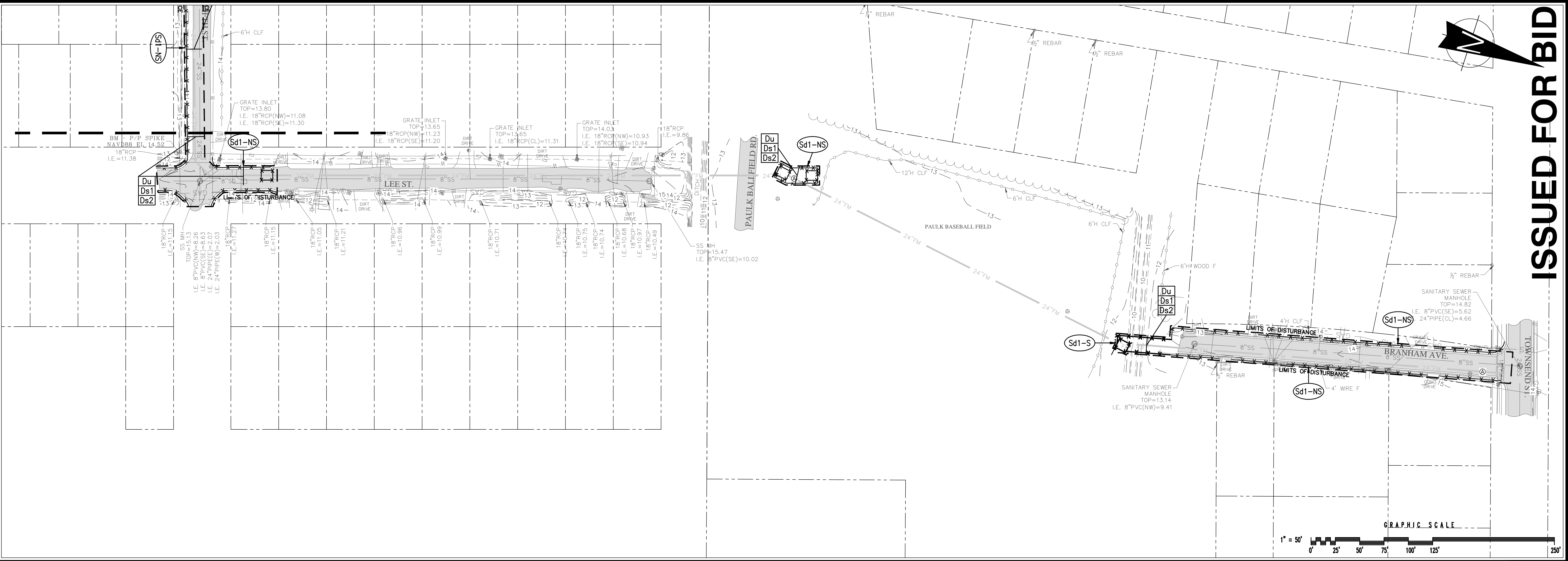
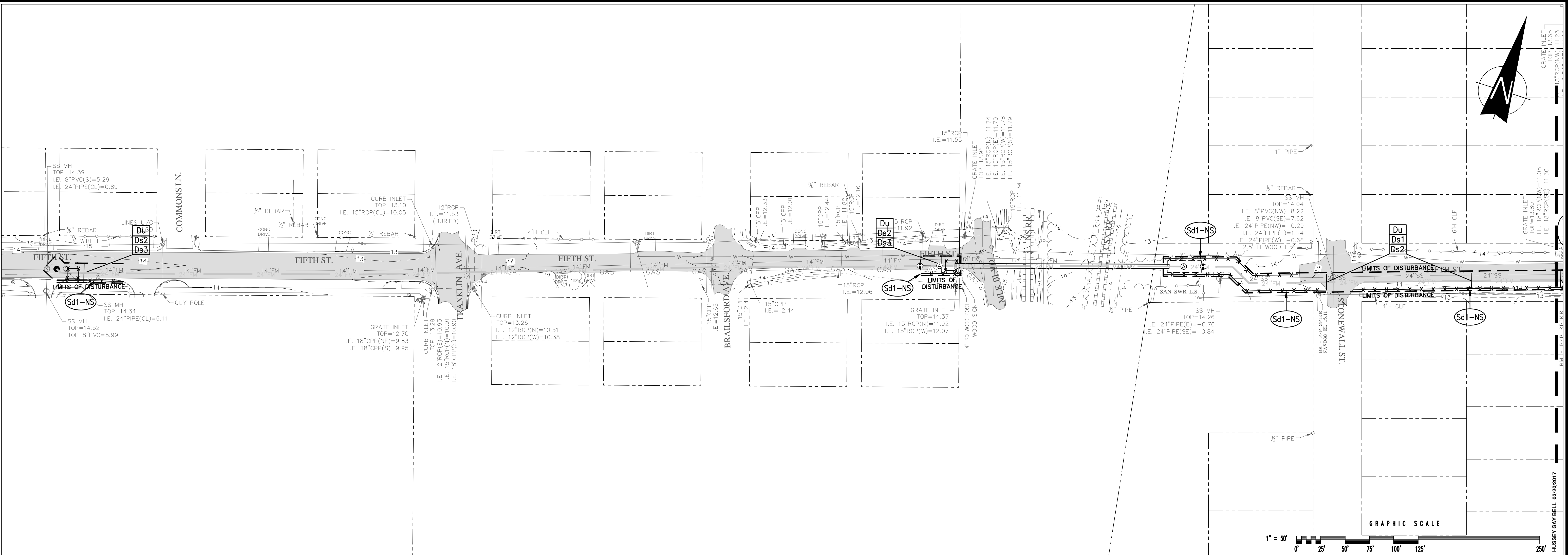
DESIGNED	DRAWN	CHECKED
CB	JK	JO
DATE: MARCH 2017		
JOB NO. 116291602		
SCALE: 1" = 50'		

LIFT STATION 4048 FORCE MAIN IMPROVEMENTS
 BOWSC PROJECT NO. 701
 FOR THE
BRUNSWICK-GLYNN COUNTY
JOINT WATER & SEWER COMMISSION
RMV & RPLCE ASPH CONC PLN

DRAWING NUMBER
06

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GEORGIA
 REGISTERED PROFESSIONAL ENGINEER
 No. 25429
 C. BURKE
 GSWCC Level II
 Design Professional
 Cert. #000033758



HUSSEY GAY BELL
Established 1958
 329 COMMERCIAL DRIVE, SAVANNAH, GA 31406 / T:912.354.4626

REVISIONS:

DESIGNED	DRAWN	CHECKED
CB	JK	JO

DATE: MARCH 2017
 JOB NO. 116291602
 SCALE: 1" = 50'

LIFT STATION 4048 FORCE MAIN IMPROVEMENTS
 BOWSC PROJECT NO. 701
 FOR THE
BRUNSWICK-GLYNN COUNTY
JOINT WATER & SEWER COMMISSION
EROSION AND SEDIMENT CONTROL PLAN

DRAWING NUMBER
07

ISSUED FOR BID

49 TEMPORARY SEDIMENT DETAILS

SPRAY ON ADHESIVE REQUIREMENTS				
ADHESIVE	EMULSION	WATER DILUTION	NOZZLE TYPE	APPLICATION (GAL/AC)
ANIONIC ASPHALT	7:1	COARSE		1,200
LATEX	12.5:1	FINE		235
RESIN-IN-WATER	4:1	FINE		300

Du DUST CONTROL

CONDITIONS: THIS PRACTICE IS APPLICABLE TO AREAS SUBJECT TO SURFACE AND AIR MOVEMENT OF DUST WHERE ON AND OFF-SITE DAMAGE MAY OCCUR WITHOUT TREATMENT.

METHOD AND MATERIALS:

- TEMPORARY METHODS
 - MULCHES (Ds1) - DISTURBED AREA STABILIZATION (WITH MULCHING ONLY). SYNTHETIC RESINS MAY BE USED INSTEAD OF ASPHALT TO BIND MULCH MATERIAL. REFER TO STANDARD TB-TACKIFIERS AND BINDERS. RESINS SUCH AS CURASOL OR TERRATAK SHOULD BE USED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
 - VEGETATIVE COVER - DISTURBED AREA STABILIZATION WITH TEMPORARY SEEDING.
 - SPRAY ON ADHESIVES - THESE ARE USED ON MINERAL SOILS (NON EFFECTIVE ON MUCK SOILS). KEEP TRAFFIC OFF THESE AREAS. REFER TO TACKIFIERS AND BINDERS.
 - TILLAGE - THIS PRACTICE IS DESIGNED TO ROUGHEN AND BRING CLODS TO THE SURFACE. IT IS AN EMERGENCY MEASURE WHICH SHOULD BE USED BEFORE WIND EROSION STARTS. BEGIN PLOWING ON WINDWARD SIDE OF SITE. CHISEL-TYPE PLOWS SPACED ABOUT 12 INCHES APART. SPRING TOOTHED HARROWS, AND SIMILAR PLOWS ARE EXAMPLES OF EQUIPMENT WHICH MAY PRODUCE THE DESIRED EFFECT.
 - IRRIGATION - THIS IS GENERALLY DONE AS AN EMERGENCY TREATMENT. SITE IS SPRINKLED WITH WATER UNTIL THE SURFACE IS WET. REPEAT AS NEEDED.
 - BARRIERS - SOLID BOARD FENCES, SNOWFENCES, BURLAP FENCES, CRATE WALLS, BALES OF HAY AND SIMILAR MATERIAL CAN BE USED TO CONTROL AIR CURRENTS AND SOIL BLOWING. BARRIERS PLACED AT RIGHT ANGLES TO PREVAILING CURRENTS AT INTERVALS OF ABOUT 15 TIMES THEIR HEIGHT ARE EFFECTIVE IN CONTROLLING WIND EROSION.
 - CALCIUM CHLORIDE - APPLY AT A RATE THAT WILL KEEP SURFACE MOIST. MAY NEED RETREATMENT.
- PERMANENT METHODS
 - PERMANENT VEGETATION - DISTURBED AREA STABILIZATION (WITH PERMANENT VEGETATION. EXISTING TREES AND LARGE SHRUBS MAY AFFORD VALUABLE PROTECTION IF LEFT IN PLACE.
 - TOPSOILING - THIS ENTAILS COVERING THE SURFACE WITH LESS ERODIBLE SOIL MATERIAL.
 - STONE - COVER SURFACE WITH CRUSHED STONE OR COARSE GRAVEL.

Ds1 MULCHING ONLY

MULCH OR TEMPORARY GRASSING SHALL BE APPLIED TO ALL EXPOSED AREAS WITHIN 14 DAYS OF DISTURBANCE. MULCH CAN BE USED AS A SINGLE EROSION CONTROL DEVICE FOR UP TO SIX MONTHS, BUT IT SHALL BE APPLIED AT THE APPROPRIATE DEPTH, DEPENDING ON THE MATERIAL USED. ANCHORED AND HAVE A CONTINUOUS 90% COVER OR GREATER OF THE SOIL SURFACE. MAINTENANCE SHALL BE REQUIRED TO MAINTAIN APPROPRIATE DEPTH AND 90% COVER. TEMPORARY VEGETATION MAY BE EMPLOYED INSTEAD OF MULCH IF THE AREA WILL REMAIN UNDISTURBED FOR LESS THAN SIX MONTHS. IF ANY AREA WILL REMAIN UNDISTURBED FOR GREATER THAN SIX MONTHS, PERMANENT VEGETATIVE TECHNIQUES SHALL BE EMPLOYED. REFER TO DS2 -DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING), DS3 - DISTURBED AREA STABILIZATION (WITH PERMANENT SEEDING), AND DS4 - DISTURBED AREA STABILIZATION (WITH SOODING).

MULCHING MATERIALS - SELECT ONE OF THE FOLLOWING MATERIALS AND APPLY AT THE DEPTH INDICATED:
 1. DRY STRAW OR HAY SHALL BE APPLIED AT A DEPTH OF 2 TO 4 INCHES PROVIDING COMPLETE SOIL COVERAGE.
 2. WOOD WASTE (CHIPS, SAWDUST OR BARK) SHALL BE APPLIED AT A DEPTH OF 2 TO 3 INCHES. ORGANIC MATERIAL FROM THE CLEARING STAGE OF DEVELOPMENT SHOULD REMAIN ON SITE, BE CHIPPED, AND APPLIED AS MULCH. THIS METHOD OF MULCHING CAN GREATLY REDUCE EROSION CONTROL COSTS.
 3. POLYETHYLENE FILM SHALL BE SECURED OVER BANKS OR STOCKPILED SOIL MATERIAL FOR TEMPORARY PROTECTION. THIS MATERIAL CAN BE SALVAGED AND RE-USED.

Ds2 TEMPORARY GRASSING

MULCH OR TEMPORARY GRASSING SHALL BE APPLIED TO ALL EXPOSED AREAS WITHIN 14 DAYS OF DISTURBANCE. TEMPORARY GRASSING, INSTEAD OF MULCH, CAN BE APPLIED TO ROUGH GRADED AREAS THAT WILL BE EXPOSED FOR LESS THAN SIX MONTHS. IF AN AREA IS EXPECTED TO BE UNDISTURBED FOR LONGER THAN SIX MONTHS, PERMANENT PERENNIAL VEGETATION SHALL BE USED. IF OPTIMUM PLANTING CONDITIONS FOR TEMPORARY GRASSING IS LACKING, MULCH CAN BE USED AS A SINGLE EROSION CONTROL DEVICE FOR UP TO SIX MONTHS BUT IT SHALL BE APPLIED AT THE APPROPRIATE DEPTH, ANCHORED, AND HAVE A CONTINUOUS 90% COVER OR GREATER OF THE SOIL SURFACE. REFER TO SPECIFICATION DS1-DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING).

SEEDING: SELECT A GRASS OR GRASS-LEGUME MIXTURE SUITABLE TO THE AREA AND SEASON OF THE YEAR. SEED SHALL BE APPLIED UNFORMALLY BY HAND, CYCLONE SEEDER, DRILL, CULTI-PACKER-SEEDER, OR HYDRAULIC SEEDER (SLURRY INCLUDING SEED AND FERTILIZER). DRILL OR CULTI-PACKER SEEDERS SHOULD NORMALLY SEED ONE-QUARTER TO ONE-HALF INCH DEEP. APPROPRIATE DEPTH OF PLANTING IS TEN TIMES THE SEED DIAMETER. SOIL SHOULD BE "RAKED" LIGHTLY TO COVER SEED WITH SOIL IF SEED BY HAND.

Ds2 GRASSING SCHEDULE (FOR TEMPORARY)

SPECIES	PLS RATE	DATES	LIME
RYEGRASS (ANNUAL)	40 LBS./AC.	8/15 - 4/1	1 TON/ACRE
WEeping LOVEGRASS (PERENNIAL)	4 LBS./AC.	3/15 - 6/15	1 TON/ACRE
SUDANGRASS	60 LBS./AC.	4/1 - 8/15	1 TON/ACRE

FERTILIZER REQUIREMENTS				
TYPE OF SPECIES	YEAR	ANALYSIS OR EQUIVALENT N-P-K	RATE	N TOP DRESSING RATE
1. COOL SEASON GRASSES	FIRST	6-12-12	1500 LBS PER ACRE	50-100 LBS PER ACRE 1- 2-
	SECOND MAINTENANCE	6-12-12	1000 LBS PER ACRE	-
2. COOL SEASON GRASSES AND LEGUMES	FIRST	6-12-12	1500 LBS PER ACRE	0-50 LBS PER ACRE 1-
	SECOND MAINTENANCE	0-10-10	1000 LBS PER ACRE	-
3. GROUND COVERS	FIRST	10-10-10	1300 LBS PER ACRE 3-	-
	SECOND MAINTENANCE	10-10-10	1100 LBS PER ACRE 3-	-
4. PINE SEEDLINGS	FIRST	20-10-5	ONE 21-GRAM PELLET PER SEEDLING PLACED IN THE CLOSING HOLE	-
5. SHRUB LESPEDEZA	FIRST	0-10-10	700 LBS PER ACRE	-
	MAINTENANCE	0-10-10	700 LBS PER ACRE 4-	-
6. TEMPORARY COVER CROPS SEEDING ALONE	FIRST	10-10-10	500 LBS PER ACRE	30 LBS PER ACRE 5-
7. WARM SEASON GRASSES	FIRST	6-12-12	1500 LBS PER ACRE	50-100 LBS PER ACRE 2- 6-
	SECOND MAINTENANCE	6-12-12	800 LBS PER ACRE	50-100 LBS PER ACRE 2-
8. WARM SEASON GRASSES AND LEGUMES	FIRST	6-12-12	1500 LBS PER ACRE	50 LBS/ACRE 6-
	SECOND MAINTENANCE	0-10-10	800 LBS PER ACRE	-
			400 LBS PER ACRE	-

- 1- APPLY IN SPRING FOLLOWING SEEDING. 2- APPLY IN SPLIT APPLICATIONS WHEN HIGH RATES ARE USED. 3- APPLY IN 3 SPLIT APPLICATIONS.
- 4- APPLY WHEN PLANTS ARE PRUNED. 5- APPLY TO GRASS SPECIES ONLY. 6- APPLY WHEN PLANTS GROW TO A HEIGHT OF 2 TO 4 INCHES.

Ds3 PERMANENT GRASSING

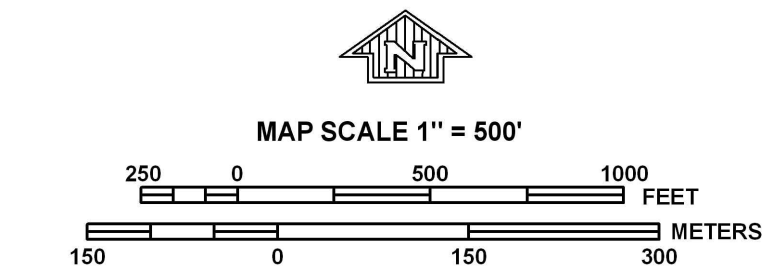
THIS PRACTICE SHALL BE APPLIED IMMEDIATELY TO ROUGH GRADED AREAS THAT WILL BE UNDISTURBED FOR LONGER THAN SIX MONTHS. THIS PRACTICE OR SOODING SHALL BE APPLIED IMMEDIATELY TO ALL AREAS AT FINAL GRADE. FINAL STABILIZATION MEANS THAT ALL SOIL DISTURBING ACTIVITIES AT THE SITE HAVE BEEN COMPLETED, AND THAT FOR UNPAVED AREAS AND AREAS NOT COVERED BY PERMANENT STRUCTURES AND AREAS LOCATED OUTSIDE THE WASTE DISPOSAL LIMITS OF A LANDFILL CELL THAT HAS BEEN CERTIFIED BY THE GA EPD FOR WASTE DISPOSAL, 100% OF THE SOIL SURFACE IS UNIFORMLY COVERED IN PERMANENT VEGETATION WITH A DENSITY OF 70% OR GREATER, OR LANDSCAPED ACCORDING TO THE PLAN (UNIFORMLY COVERED WITH LANDSCAPING MATERIALS IN PLANNED LANDSCAPED AREAS), OR EQUIVALENT PERMANENT STABILIZATION MEASURES. PERMANENT VEGETATION SHALL CONSIST OF, PLANTED TREES, SHRUBS, PERENNIAL VINES; OR A CROP OF PERENNIAL VEGETATION APPROPRIATE FOR THE REGION, SUCH THAT WITHIN THE GROWING SEASON A 70% COVERAGE BY PERENNIAL VEGETATION SHALL BE ACHIEVED. FINAL STABILIZATION APPLIES TO EACH PHASE OF CONSTRUCTION. FOR LINEAR CONSTRUCTION PROJECTS ON LAND USED FOR AGRICULTURAL OR SILVICULTURAL PURPOSES, FINAL STABILIZATION MAY BE ACCOMPLISHED BY STABILIZING THE DISTURBED LAND FOR ITS AGRICULTURAL OR SILVICULTURAL USE. UNTIL THIS STANDARD IS SATISFIED AND PERMANENT CONTROL MEASURES AND FACILITIES ARE OPERATIONAL, INTERIM STABILIZATION MEASURES AND TEMPORARY EROSION AND SEDIMENTATION.

PLANTS SHALL BE SELECTED ON THE BASIS OF SPECIES CHARACTERISTICS, SITE AND SOIL CONDITIONS, PLANNED USE AND MAINTENANCE OF THE AREA; TIME OF YEAR OF PLANTING, METHOD OF PLANTING; AND THE NEEDS AND DESIRES OF THE LAND USER.

Stand Alone Crops	Broadcast		Dates
	lbs/Acre	Drilled lbs/Acre	
Fescue	50	25	September 1 - March 15
Bermuda Hulled	20	10	April 15 - September 1
Bermuda Unhulled	25	15	January 1 - September 1
Bahia	50	25	April 15 - September 1
Lespedeza, Seresia	50	30	April 15 - September 1
Weeping Lovegrass	5	2	April 15 - September 1
Browtop millet (Temporary)	30	15	April 15 - September 1
Annual Ryegrass (Temporary)	50	30	September 1 - March 15
Rye Grass (Temporary)	75	40	September 1 - March 15

- ALL SEEDING RATES ARE EXPRESSED AS PURE LIVE SEED (PLS).
- SLOPE STABILIZATION (Ss) ARE REQUIRED ON SLOPES STEEPER THAN 2H:1V.
- THE LANDSCAPE PLANS, IF ANY WILL SUPERCEDE THIS DETAIL FOR PERMANENT VEGETATION.
- MULCHING ONLY (Ds1) OR TEMPORARY GRASSING (Ds2) SHALL BE APPLIED TO ALL EXPOSED AREAS WITHIN 14 DAYS OF DISTURBANCE AND WHEN ROUGH GRADED DISTURBANCE WILL LAST FOR LESS THAN SIX MONTHS, IF ROUGH GRADED AREAS WILL BE UNDISTURBED FOR LONGER THAN SIX MONTHS OR AREA IS AT FINAL GRADE, THEN PERMANENT VEGETATION (DS3) SHALL BE USED.
- BLOCK SOO (Ds4) PROVIDES IMMEDIATE COVER AND IS ESPECIALLY EFFECTIVE IN CONTROLLING EROSION ADJACENT TO CONCRETE FENCES AND OTHER STRUCTURES.
- THE CONTRACTOR SHALL SELECT A BMP SUITABLE TO THE SEASON OF THE YEAR AND THE GRADING STATUS OF THE AREA TO BE STABILIZED.
- CONSTRUCTION SPECIFICATIONS FOR EACH BMP SHALL BE AS PUBLISHED IN THE MANUAL FOR SEDIMENT AND EROSION CONTROL IN GEORGIA, LATEST EDITION.

Du Ds1 Ds2 Ds3 DUST CONTROL / DISTURBED AREA STABILIZATION



PANEL 0217F

FIRM
FLOOD INSURANCE RATE MAP

GLYNN COUNTY, GEORGIA AND INCORPORATED AREAS

PANEL 217 OF 345

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

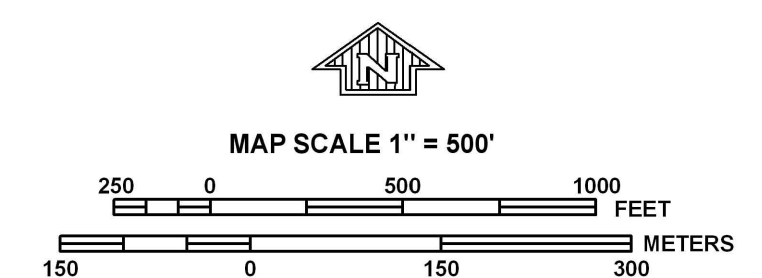
COMMUNITY	NUMBER	PANEL	SUFFIX
BRUNSWICK CITY OF GLYNN COUNTY	130093	0217	F
	130092	0217	F

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER
13127C0217F

EFFECTIVE DATE
SEPTEMBER 6, 2006

Federal Emergency Management Agency



PANEL 0236F

FIRM
FLOOD INSURANCE RATE MAP

GLYNN COUNTY, GEORGIA AND INCORPORATED AREAS

PANEL 236 OF 345

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
BRUNSWICK CITY OF GLYNN COUNTY	130093	0236	F
	130092	0236	F

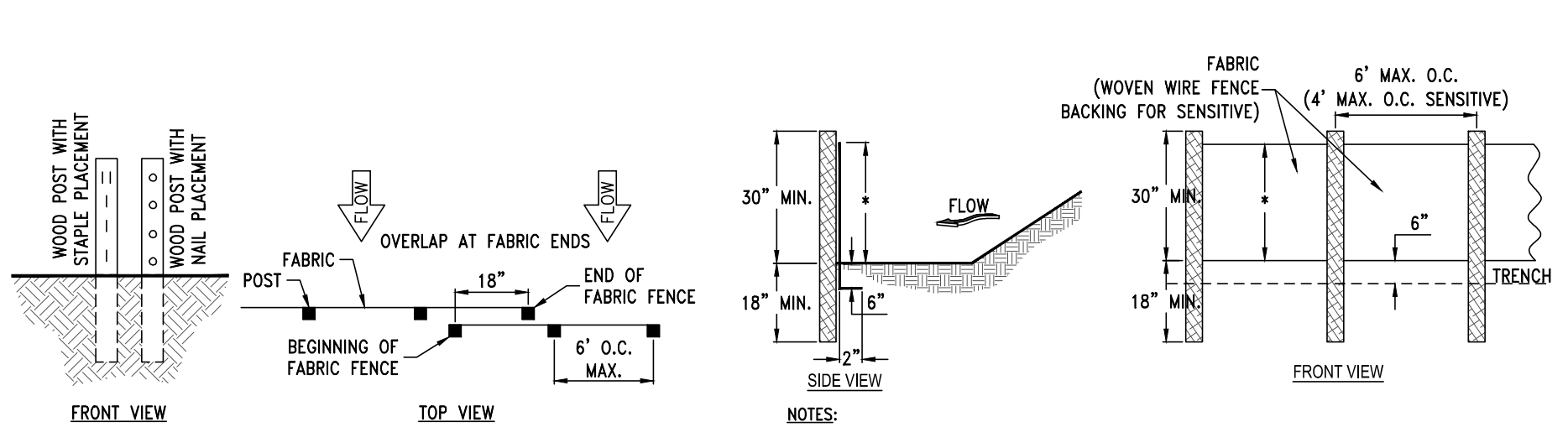
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MAP NUMBER
13127C0236F

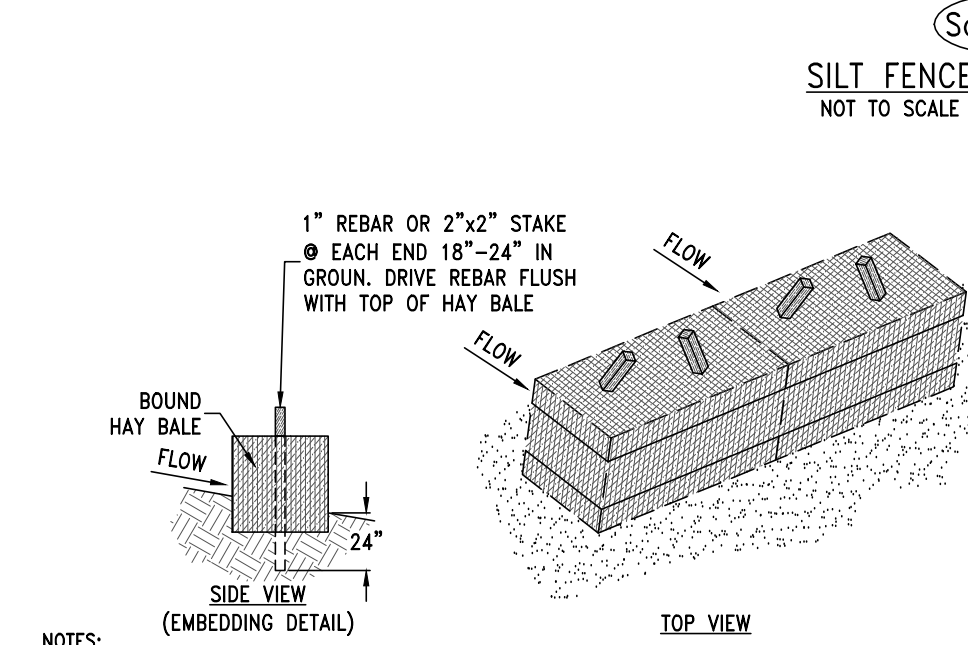
EFFECTIVE DATE
SEPTEMBER 6, 2006

Federal Emergency Management Agency

FEMA FLOODPLAIN MAPS



- NOTES:
1. THE FABRIC AND WIRE SHOULD BE SECURELY FASTENED TO POSTS AND FABRIC ENDS MUST BE OVERLAPPED A MINIMUM OF 18" OR WRAPPED TOGETHER AROUND A POST TO PROVIDE A CONTINUOUS FABRIC BARRIER AROUND THE INLET.
 2. USE STEEL OR WOOD POSTS OR AS SPECIFIED BY THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.
 3. HEIGHT (H) IS TO BE SHOWN ON THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.



- NOTES:
1. TEMPORARY HAY BALES SHALL BE PLACED AS SHOWN TO PREVENT SEDIMENT FROM LEAVING THE SITE.
 2. THE CONTRACTOR WILL BE RESPONSIBLE FOR MAINTAINING, REPLACING AND REMOVING THE TEMPORARY HAY BALES AS NECESSARY DURING CONSTRUCTION.
 3. ANCHOR AND EMBED INTO SOIL TO PREVENT WASHOUT OR WATER WORKING UNDER BARRIER.
 4. REPAIR OR REPLACEMENT MUST BE MADE PROMPTLY AS NEEDED.

Type	Min Length	Type of Post	Size of Post
NS	4'	Soft wood	3" dia. or 2x4
		Oak	1.5"x1.5"
S	4'	Steel	1.3lb./ft. min.
		Steel	1.3lb./ft. min.
		Oak	2"x2"

Wire Staples	Crown	Legs	Staples / Post
17 min.	3/4" wide	1 1/2" long	5 min.
Guage	Length	Button Heads	Nail/ Post
		3/4"	4 min.

Note: Filler Fabric may also be attached to the post by wire, chains, and pockets or any other method provided minimum P-factor, as required by GSWCC, is met.

CONSTRUCTION SPECIFICATIONS

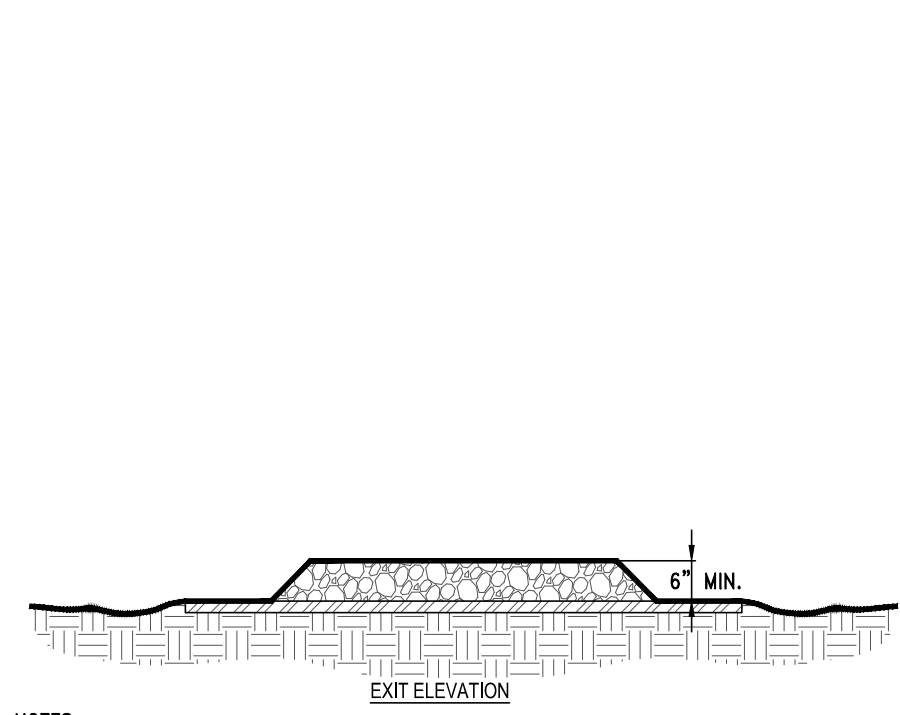
TYPE NS SEDIMENT BARRIER-NONSENSITIVE AREAS
 SEDIMENT BARRIERS BEING USED AS TYPE NS SHALL HAVE A SUPPORT SPACING OF NO GREATER THAN 6 FEET, ON CENTER, WITH EACH DRIVEN INTO THE GROUND A MINIMUM OF 18 INCHES. TYPE NS SEDIMENT BARRIERS SHALL HAVE A P-FACTOR NO GREATER THAN 0.045.

TYPE S SEDIMENT BARRIER-SENSITIVE AREAS
 SEDIMENT BARRIERS BEING USED AS TYPE S SHALL HAVE A SUPPORT SPACING OF NO GREATER THAN 4 FEET ON CENTER, WITH EACH DRIVEN INTO THE GROUND 18 INCHES. TYPE S SEDIMENT BARRIERS SHALL HAVE A P-FACTOR NO GREATER THAN 0.030.

INSTALLATION
 TEMPORARY SEDIMENT BARRIERS SHALL BE INSTALLED ACCORDING TO THE FOLLOWING SPECIFICATIONS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE DESIGN PROFESSIONAL. ALONG ALL STATE WATERS AND OTHER SENSITIVE AREAS, TWO ROWS OF TYPE S SEDIMENT BARRIERS SHALL BE USED. THE TWO ROWS TYPE S SHOULD BE PLACED A MINIMUM OF 36 INCHES APART. FOR INSTALLATION OF THE BARRIERS, SEE FIGURES 6-27.1, 6-27.2, 6-27.3 AND 6-27.4, RESPECTIVELY. IT IS IMPORTANT TO REMEMBER THAT NOT ALL SEDIMENT BARRIERS NEED TO BE TRENCHED INTO THE GROUND BUT MOST TALLER SEDIMENT BARRIERS DO. POST INSTALLATION SHALL START AT THE CENTER OF A LOW POINT (IF APPLICABLE) WITH THE REMAINING POSTS SPACED NO GREATER THAN 6 FEET APART FOR TYPE NS SEDIMENT BARRIERS AND NO GREATER THAN 4 FEET APART FOR TYPE S SEDIMENT BARRIERS. FOR POST SIZE REQUIREMENTS, SEE TABLE 6-27.2. FASTENERS FOR WOOD POSTS ARE LISTED IN TABLE 6-27.3.

MAINTENANCE
 SEDIMENT SHALL BE REMOVED ONCE IT HAS ACCUMULATED TO ONE-HALF THE ORIGINAL HEIGHT OF THE BARRIER. THIS IS EXTREMELY IMPORTANT WHEN SELECTING BMPs WITH A LOWER PROFILE. SEDIMENT BARRIERS SHALL BE REPLACED WHENEVER THEY HAVE DEGRADED TO SUCH AN EXTENT THAT THE EFFECTIVENESS OF THE PRODUCT IS REDUCED (APPROXIMATELY SIX MONTHS) OR THE HEIGHT OF THE PRODUCT IS NOT MAINTAINING BOX OF ITS PROPERLY INSTALLED HEIGHT. TEMPORARY SEDIMENT BARRIERS SHALL REMAIN IN PLACE UNTIL DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED. ALL SEDIMENT ACCUMULATED AT THE BARRIER SHALL BE REMOVED AND PROPERLY DISPOSED OF BEFORE THE BARRIER IS REMOVED.

PRODUCTS
 ALL ALLOWABLE PRODUCTS MUST BE ON THE GEORGIA SOIL AND WATER CONSERVATION COMMISSION'S SEDIMENT BARRIERS APPROVED PRODUCTS LIST (APL).



- NOTES:
1. AVOID LOCATING ON STEEP SLOPES OR AT CURVES ON PUBLIC ROADS.
 2. REMOVE ALL VEGETATION AND OTHER UNSUITABLE MATERIAL FROM THE FOUNDATION AREA, GRADE, AND CROWN FOR POSITIVE DRAINAGE.
 3. AGGREGATE SIZE SHALL BE IN ACCORDANCE WITH NATIONAL STONE ASSOCIATION R-2 (1.5"-3.5" STONE).
 4. GRAVEL PAD SHALL HAVE A MINIMUM THICKNESS OF 6".
 5. PAD WIDTH SHALL BE EQUAL FULL WIDTH AT ALL POINTS OF VEHICULAR EGRESS, BUT NO LESS THAN 20'.
 6. A DIVERSION RIDGE SHOULD BE CONSTRUCTED WHEN GRADE TOWARD PAVED AREA IS GREATER THAN 2%.
 7. INSTALL PIPE UNDER THE ENTRANCE IF NEEDED TO MAINTAIN DRAINAGE DITCHES.
 8. WHEN WASHING IS REQUIRED, IT SHOULD BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN (DIVERT ALL SURFACE RUNOFF AND DRAINAGE FROM THE ENTRANCE TO A SEDIMENT CONTROL DEVICE).
 9. WASHRACKS AND/OR TIRE WASHERS MAY BE REQUIRED DEPENDING ON SCALE AND CIRCUMSTANCE. IF NECESSARY, WASHRACK DESIGN MAY CONSIST OF ANY MATERIAL SUITABLE FOR TRUCK TRAFFIC THAT REMOVE MUD AND DIRT.
 10. MAINTAIN AREA IN A WAY THAT PREVENTS TRACKING AND/OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.

TEMPORARY CRUSHED STONE CONSTRUCTION EASEMENT NOT TO SCALE

ISSUED FOR BID



HUSSEY GAY BELL
Established 1958
 329 COMMERCIAL DRIVE, SAVANNAH, GA 31406 / T:912.354.4626

REVISIONS:

NO.	DATE	DESCRIPTION

DESIGNED	DRAWN	CHECKED
CB	JK	JO

DATE: MARCH 2017
 JOB NO. 116291602
 SCALE: NTS

LIFT STATION 4048 FORCE MAIN IMPROVEMENTS
 BCGWSC PROJECT NO. 701
BRUNSWICK-GLYNN COUNTY
JOINT WATER & SEWER COMMISSION
LDA SCHEDULES NOTES & DETAILS

DRAWING NUMBER

09