

EXHIBIT 1

CONSTRUCTION DRAWINGS



DeKalb County
GEORGIA

DEKALB COUNTY DEPARTMENT OF WATERSHED MANAGEMENT NORRIS RESERVE LIFT STATION FORCE MAIN RE-ROUTE SEPTEMBER 2018

OWNER & PERMITTEE

18
DEKALB COUNTY DEPARTMENT OF WATERSHED MANAGEMENT
4572 MEMORIAL DRIVE
DECATUR, GEORGIA 30032
CONTACT: TINA STRICKLAND,
PHONE: (770) 414-2385
TSTRICKLAND@DEKALBCOUNTY.GA.GOV

OFFICERS
CHIEF EXECUTIVE OFFICER MICHAEL THURMOND

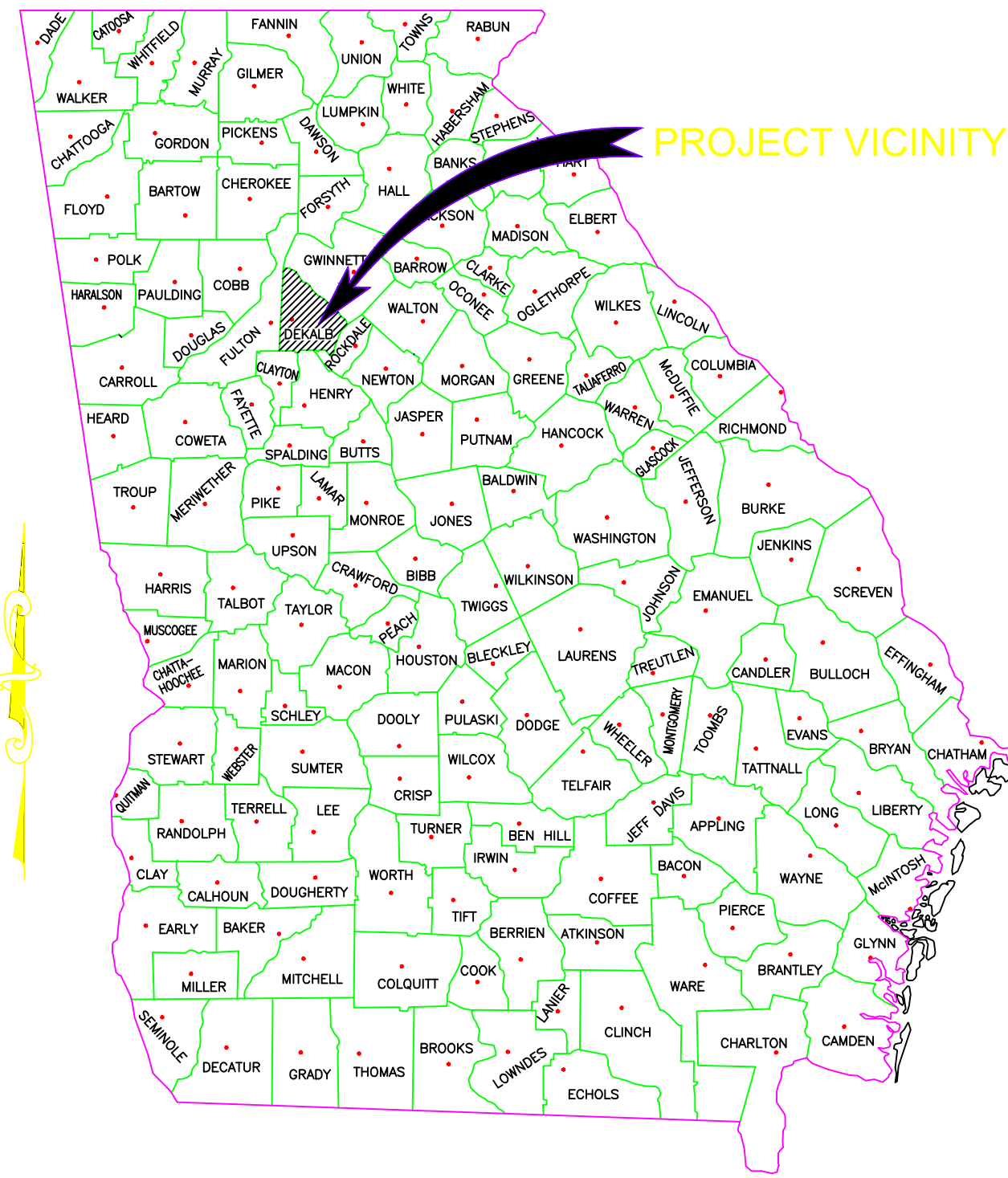
DEKALB COUNTY BOARD OF COMMISSIONERS
DISTRICT 1 NANCY JESTER
DISTRICT 2 JEFF RADER
DISTRICT 3 LARRY JOHNSON
DISTRICT 4 STEVE BRADSHAW
DISTRICT 5 MEREDA DAVIS JOHNSON
DISTRICT 6 KATHIE GANNON
DISTRICT 7 LORRAINE COCHRAN-JOHNSON
DEPARTMENT OF WATERSHED MANAGEMENT
DIRECTOR REGINALD WELLS

DESIGNER
ATKINS, NORTH AMERICA
1600 RIVEREDGE PARKWAY, SUITE 700
ATLANTA, GEORGIA 30328
AP# 1243025
24 HOUR CONTACT: BILL LIVINGSTON 678-581-3494

NOTES:

- ALL EROSION AND SEDIMENTATION CONTROLS AND ALL TREE PROTECTION MEASURES SHALL BE INSTALLED PRIOR TO GRADING.
- CONTACTS:
DEKALB WATERSHED MANAGEMENT:
TINA STRICKLAND, PHONE: (770) 414-2385

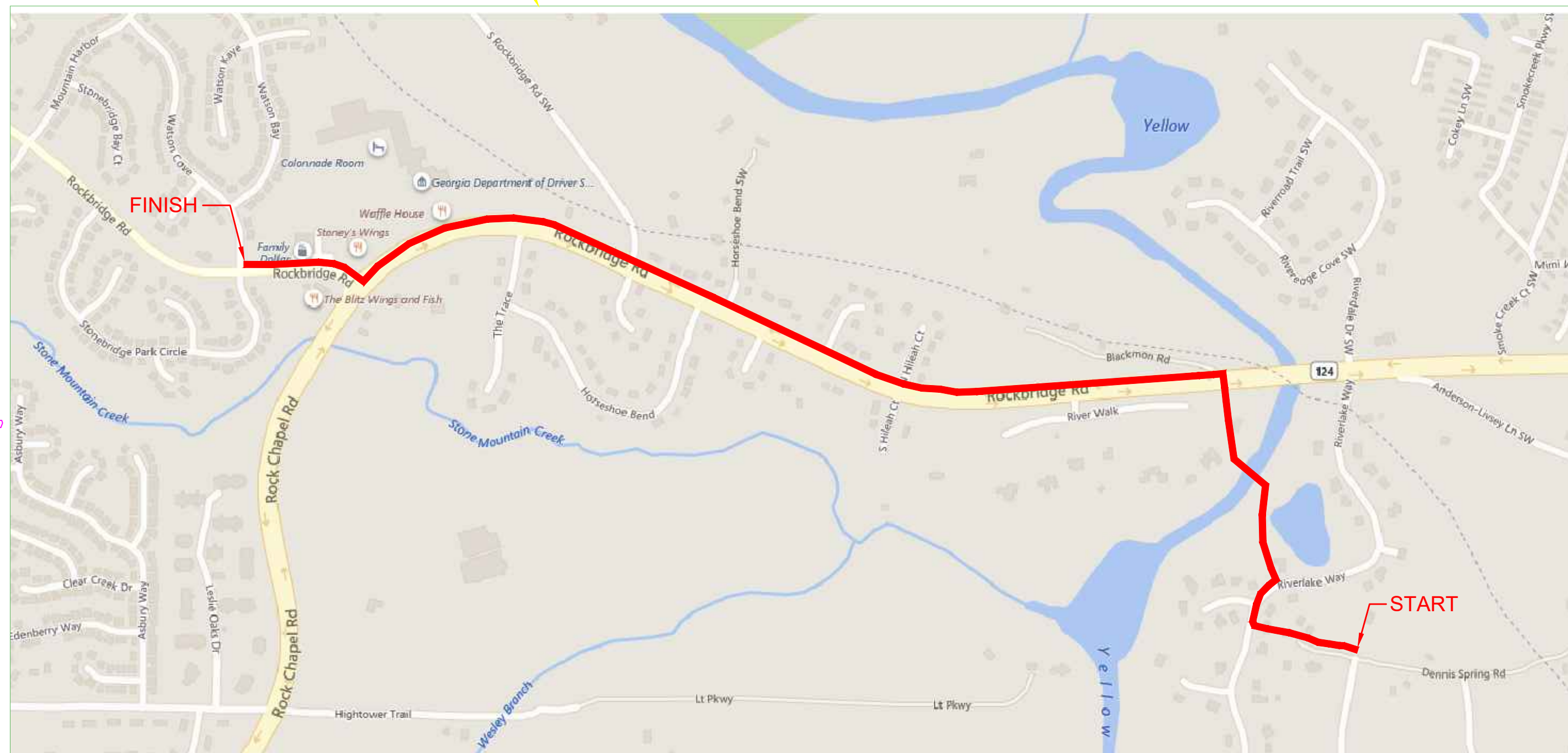
GDOT DISTRICT ACCESS MANAGEMENT ENGINEER:
CHRISTOPHER MCKINNEY, PHONE (770) 986-7070
GDOT AREA 1 OFFICE, PHONE (404) 299-4381
- NECESSARY BARRICADES, SUFFICIENT LIGHTS, SIGNS AND OTHER TRAFFIC CONTROL METHODS AS MAY BE NECESSARY FOR THE PROTECTION AND SAFETY OF THE PUBLIC SHALL BE PROVIDED AND MAINTAINED THROUGHOUT WIDENING OF AND CONSTRUCTION ON DEKALB COUNTY ROADS.
- BEGIN CONSTRUCTION: N: 33 46 05.02 W: 84 03 24.92
END CONSTRUCTION: N: 33 46 27.53 W: 84 04 43.14
- PROJECT AREA= 7.03 ACRES
DISTURBED AREA= 7.03 ACRES
NPDES FEES= 7.03 x \$40.00 = \$281.20
PAID TO DEKALB COUNTY AND \$281.20
PAID TO EPD.
- PROJECT INCLUDES 8 PROPOSED ACCESS MANHOLES, 3210 L.F. 8" DIP FORCE MAIN AND 5245 L.F. 8" HDPE SLIP LINED IN AN EXISTING ABANDONED 24" DIP FORCE MAIN.
- 72 HRS NOTICE IS REQUIRED TO GEORGIA 811 UTILITY PROTECTION CENTER BEFORE ANY PLANNED DIGGING.
<http://WWW.GEORGIA811.COM>
- DEKALB COUNTY IS NOT RESPONSIBLE FOR ANY ERRORS OR OMISSIONS BY ENGINEERS OR OTHER DESIGN PROFESSIONALS ON DESIGN OR COUNTY CODE REQUIREMENTS FOR THIS PROJECT.
- CONTRACTOR SHALL PREVENT TRACKING OR FLOW OF MUD AND OR SEDIMENT ONTO FLOODWAY, STREETS AND ADJACENT PROPERTIES. ALL MATERIALS SPILLED, DROPPED, WASHED OR TRACKED FROM VEHICLES OR SITES ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY BY THE CONTRACTOR.
- CONTRACTOR IS RESPONSIBLE OF ACQUIRING RIGHT OF ENTRIES FOR ACCESS/CONSTRUCTION PRIOR TO BEGINNING OF CONSTRUCTION.
- A PORTION OF THIS PROJECT IS LOCATED WITHIN A 100 YEAR FLOODPLAIN AS SHOWN ON "F.I.A. OFFICIAL HAZARD MAP" COMMUNITY NO. 13135C0150F, DATED 9/29/2006.
- THERE ARE NO WETLANDS LOCATED ON OR WITHIN 200 FEET OF THIS PROJECT.
- ALL STATE WATERS WITHIN 200 FEET OF THIS PROJECT HAVE BEEN DELINEATED.
- PROJECT IS WITHIN 13089C0114J AND 13089C0118J DATED 5/16/2016.



SITE LOCATION MAP
NOT TO SCALE

17
SITE LOCATION:

FROM THE INTERSECTION OF OLIVIA DR. & DENNIS SPRINGS RD. TO STONEBRIDGE PARK CIRCLE AND ROCK BRIDGE ROAD SW, DEKALB COUNTY, GEORGIA

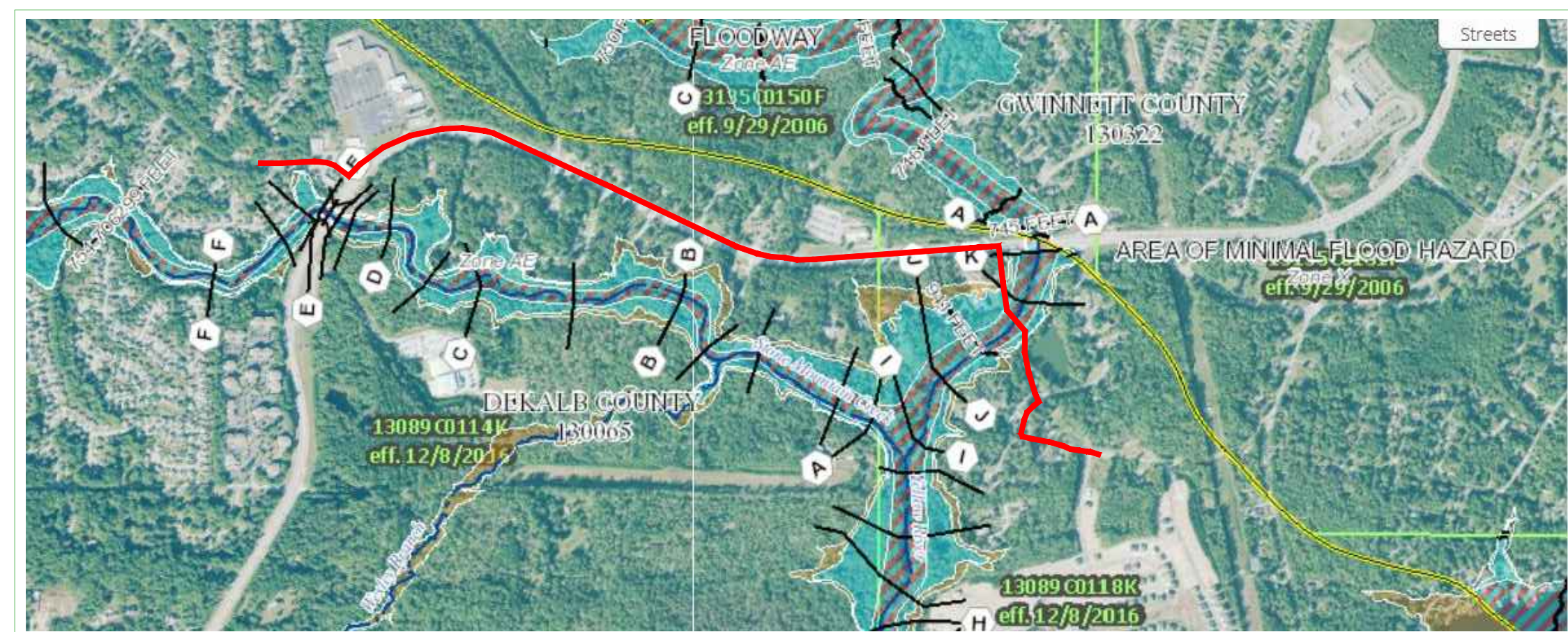


VICINITY MAP
NOT TO SCALE

WATER AND SEWER NOTES

- ALL DESIGN AND CONSTRUCTION SHALL COMPLY WITH DEKALB COUNTY DEPARTMENT OF WATERSHED MANAGEMENT DESIGN STANDARDS 2017 EDITION, VERSION 1.0.
- THE DESIGN STANDARDS 2017 EDITION IS PROVIDED ON THE DWM ECMS WEBSITE.
- www.dekalbcountryga.gov/watershed-management/office-engineering-construction-management-services
- CONTRACTOR SHALL PROVIDE RECORD DRAWINGS "AS-BUILT PLANS" AND "FINAL PLANS" (IF APPLICABLE) IN HARD COPY AND ELECTRONIC FORMAT (AUTOCAD OR MICROSTATION).
- FIELD CHANGES DURING CONSTRUCTION MUST BE SUBMITTED FOR REVIEW AND APPROVAL TO THE DWM CONSTRUCTION MANAGER.
- DWM WILL BE RESPONSIBLE FOR PROVIDING ON-SITE CONSTRUCTION INSPECTION FOR THE PROJECT.
- CONTRACTOR MUST NOTIFY WATER AND SEWER CONSTRUCTION INSPECTOR 72 HOURS PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES.

DISTRICT 15: LONNIE KELLEY (404) 371-2149
DISTRICT 16: DAVID OBRIEN (404) 867-4050
DISTRICT 18 (NW): DANIEL TUCKER (404) 732-6411
DISTRICT 18 (MIDDLE): MECO FAVORS (404) 371-2135
DISTRICT 18 (EAST): MARCELIN DENIS (404) 371-2110



FEMA FLOOD MAP
NOT TO SCALE

I certify under penalty of law that this Plan was prepared after a site visit to the locations described herein by myself or my authorized agent, under my supervision.

Professional Engineer
GSWCC Level II Certified Design Professional
Certification # 21845, Expires November 4, 2021



Know what's below
Call before you dig

100% SUBMITTAL



ATKINS

1600 Riveredge Parkway, Suite 700
Atlanta, Ga 30328
P: 770-933-0280



DeKalb County
GEORGIA

REVISION DATES		
REV	DATE	BY
ADDED NOTES	8-12-19	WFL
ADDED FEMA PANEL	8-12-19	WFL

DEKALB COUNTY DWM
NORRIS RESERVE LIFT STATION
FORCE MAIN RE-ROUTE
COVER SHEET

DRAWING No.
COV

GENERAL NOTES FOR WASTE WATER FORCE MAIN RELOCATION

1. A PRECONSTRUCTION CONFERENCE MUST BE HELD WITH MEMBERS OF DEKALB DEPARTMENT OF WATERSHED MANAGEMENT (DWM) AND THE CONTRACTOR OF RECORD BEFORE ANY WORK CAN BE DONE ON SITE. CONTRACTOR TO NOTIFY DEKALB COUNTY PROJECT MANAGER 72 HOURS BEFORE THE BEGINNING OF EACH PHASE OF CONSTRUCTION.
2. ALL WORK SHALL COMPLY WITH THE LATEST EDITIONS OF MASTER SPECIFICATIONS AND DESIGN STANDARDS FOR DEKALB COUNTY DEPARTMENT OF WATERSHED MANAGEMENT "POTABLE WATER MAIN, GRAVITY SANITARY SEWER, AND SANITARY SEWER AND FORCE MAIN DESIGN STANDARDS: LATEST EDITION. IN ADDITION TO APPLICABLE STATE, FEDERAL, AND LOCAL CODES, ALL NECESSARY LICENSES AND PERMITS SHALL BE OBTAINED BY THE CONTRACTOR AT HIS OWN EXPENSE UNLESS PREVIOUSLY OBTAINED BY DWM.
3. DEVIATION FROM THESE PLANS WITHOUT THE PRIOR CONSENT OF DWM OR HIS REPRESENTATIVE OR THE ENGINEER MAY BE CAUSE FOR THE WORK TO BE UNACCEPTABLE.
4. IF THE CONTRACTOR DAMAGES ANY EXISTING UTILITIES DURING CONSTRUCTION, HE SHALL, AT HIS OWN EXPENSE, HAVE REPLACED OR REPAIRED THE UTILITIES TO THEIR ORIGINAL OR BETTER CONDITION AND QUALITY, AS APPROVED BY THE REPRESENTATIVE OF THE APPROPRIATE UTILITY COMPANY.
5. CONTRACTOR IS TO MEET ALL LOCAL UTILITY COMPANY REGULATIONS IN ANY READJUSTMENT OR RELOCATION OF EXISTING SERVICES.
6. CONTRACTOR SHALL ADJUST NEW PIPELINE LOCATION BASED ON FIELD CONDITIONS AND FIELD INSPECTOR REQUIREMENTS.
7. EXISTING INFORMATION, AND PROFILE DRAWINGS PROVIDED BY DEKALB COUNTY FROM RECORD AS-BUILT DRAWINGS OF EXISTING 24" ABANDONED LINE.
8. INSTALLATION OF EROSION CONTROL MEASURES AND PRACTICES SHALL TAKE PLACE PRIOR TO AND CONCURRENT WITH LAND DISTURBING ACTIVITIES. ALL EROSION AND CONTROL MEASURES SHALL BE MAINTAINED AT ALL TIMES AND SHALL BE INSPECTED REGULARLY USING THE EROSION AND SEDIMENT CONTROL CHECKLIST. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED IF DEEMED NECESSARY BY THE OWNER.
9. DRAINAGE SYSTEMS SHALL BE MAINTAINED, KEPT FREE OF DEBRIS, AND IN OPERATING CONDITION AT ALL TIMES DURING CONSTRUCTION OF THIS PROJECT. THIS MAY INCLUDE, BUT NOT LIMITED TO, REPLACEMENT OR RECONSTRUCTION OF EXISTING DRAINAGE STRUCTURES THAT HAVE BEEN DAMAGED OR REMOVED OR RE-GRADED AS REQUIRED BY THE ENGINEER, EXCEPT FOR THOSE DRAINAGE ITEMS SHOWN AT SPECIFIC LOCATIONS IN THE PLANS AND HAVING SPECIFIC PAY ITEMS IN THE DETAILED ESTIMATE. NO SEPARATE PAYMENT WILL BE MADE FOR ANY COSTS INCURRED TO COMPLY WITH THIS REQUIREMENT.
10. ALL SIGNS, MAILBOXES, FENCING, LANDSCAPING, ETC. SHALL BE PROTECTED DURING CONSTRUCTION. SHOULD IT BE REQUIRED TO REMOVE OR DISTURB SUCH ITEMS, THE CONTRACTOR SHALL SEEK APPROVAL FROM THE OWNER FIRST AND IF APPROVED, THE REMOVAL OR DISTURBANCE OF SUCH ITEMS WILL BE DONE AT NO ADDITIONAL COST TO THE OWNER. SHOULD THE OWNER DEEM ANY ITEMS AS DAMAGED, THE CONTRACTOR SHALL REPLACE THE ITEM IN LIKE AND KIND AT NO ADDITIONAL EXPENSE TO DEKALB COUNTY. TRANSPLANTED AND/OR REPLACED ITEMS SHALL BE GUARANTEED BY THE CONTRACTOR FOR ONE YEAR AFTER WORK IS COMPLETED. TRAFFIC CONTROL SIGNS AND MAIL BOXES SHALL BE REPLACED THE DAY OF THEIR REMOVAL.
11. CONTRACTOR SHALL FURNISH SUITABLE BORROW MATERIAL FOR THE PROJECT THAT SHALL BE APPROVED BY THE DEKALB DWM INSPECTOR PRIOR TO USE. ALL SPOIL MATERIALS, REFUSE, AND DEBRIS SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR AND LEGALLY DISPOSED OF AT AN APPROPRIATE OFFSITE LOCATION. BURNING OF REFUSE, DEBRIS, OR SPOIL MATERIAL AT THE PROJECT SITE IS NOT ALLOWED.
12. ALL PROJECT SITE AREAS DISTURBED BY CONTRACTOR OPERATIONS SHALL BE STABILIZED WITH PERMANENT GRASSING UNLESS OTHERWISE NOTED. PERMANENT GRASSING SHALL BE SOD UNLESS OTHERWISE SPECIFICALLY NOTED IN THE CONTRACT DOCUMENTS OR APPROVED BY THE OWNER. ANY AREAS OUTSIDE THE PROJECT SITE AREA THAT ARE DISTURBED SHALL BE RESTORED AT THE EXPENSE OF THE CONTRACTOR.
13. THE CONTRACTOR SHALL RESTORE ALL DISTURBED GRAVEL, PAVED, OR CONCRETE ENTRANCES, DRIVES, DRIVEWAYS, AND APRONS TO PRECONSTRUCTION CONDITIONS AND IN ACCORDANCE WITH APPLICABLE DOT AND DEKALB COUNTY STANDARDS AND REQUIREMENTS.
14. THE SIZE, TYPE, MATERIALS, AND LOCATIONS OF EXISTING UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE BASED THE BEST AVAILABLE INFORMATION. SUBSURFACE UTILITY INFORMATION SHOWN IS APPROXIMATE ONLY AND NO GUARANTEE IS MADE THAT ALL UTILITIES AND OTHER FEATURES ARE REPRESENTED ON THE PLANS ARE CORRECT. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE LOCATION AND SIZE OF ALL EXISTING UTILITIES PRIOR TO BEGINNING CONSTRUCTION.
15. IF THE CONTRACTOR ENCOUNTERS SUBSURFACE CONDITIONS DIFFERENT FROM THOSE SHOWN ON THE PLANS, HE SHALL IMMEDIATELY NOTIFY THE OWNER AND ENGINEER. NO EXISTING UTILITY SHALL BE DISTURBED WITHOUT PROPERTY AUTHORITY AND THEN ONLY IN SUCH A MANNER AS PRESCRIBED AND APPROVED BY THE OWNER OF THE EXISTING UTILITY.
16. SHOULD IT BECOME NECESSARY TO DISTURB AN EXISTING UTILITY, THE CONTRACTOR IS TO NOTIFY THE OWNER AND THE OWNER OF THE UTILITY WHEN NECESSARY. CONTRACTOR IS TO CEASE WORK UNTIL SATISFACTORY ARRANGEMENTS HAVE BEEN MADE WITH THE UTILITY OWNER TO PROPERLY CARE FOR AND RELOCATE THE UTILITY. NO CLAIMS SHALL BE ALLOWED THE CONTRACTOR ON ACCOUNT OF ANY DELAY OCCASIONED THEREBY.
17. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING UTILITIES FROM DAMAGE. ANY DAMAGE TO EXISTING UTILITIES CAUSED BY THE CONTRACTOR SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. EITHER THE CONTRACTOR OR UTILITY OWNER WILL PERFORM THE REPAIR AT THE DISCRETION OF THE UTILITY OWNER. NO CLAIMS FOR DAMAGES SHALL BE ALLOWED THE CONTRACTOR ON ACCOUNT OF ANY DELAY OCCASIONED THEREBY.
18. THE CONTRACTOR SHALL PROVIDE ALL PIPE FITTINGS AND APPURTENANCES REQUIRED FOR THE COMPLETE INSTALLATION OF THE PROPOSED PIPELINE. WHETHER OR NOT SUCH ITEMS ARE SHOWN OR CALLED OUT ON THE PLANS, THE CONTRACTOR IS ADVISED THAT FIELD ADJUSTMENTS MAY BE REQUIRED BASED ON ACTUAL SUBSURFACE CONDITIONS AND LOCATIONS OF EXISTING BURIED UTILITIES ENCOUNTERED DURING CONSTRUCTION. THE CONTRACTOR SHALL NOT RECEIVE ANY ADDITIONAL PAYMENT OR TIME EXTENSION FOR ITEMS NOT BEING SHOWN IN PLANS OR FOR FIELD ADJUSTMENTS MADE DUE TO ACTUAL SUBSURFACE CONDITIONS AND UTILITY LOCATION.
19. AT COMPLETION OF CONSTRUCTION, ALL VALVE BOXES, METERS, AND APPURTENANCES SHALL BE SET FOR PROPER FINISH GRADE. PRECAST STRUCTURES, MANHOLE FRAMES AND COVERS ARE TO BE SET FLUSH WITH FINISHED GRADE UNLESS OTHERWISE INDICATED IN THE PLANS OR SPECIFICATIONS.

ADDITIONAL NOTES

1. THE CONTRACTOR IS REQUIRED TO PERFORM PRE-CONSTRUCTION VIDEO OF THE ENTIRE CONSTRUCTION AREA PRIOR TO ANY CONSTRUCTION. THE CONTRACTOR SHALL REPAIR ANY DAMAGED PROPERTY WITHIN THEIR CONSTRUCTION AREA THAT DIFFERS OR IS NOT SHOWN ON THE PRE-CONSTRUCTION VIDEO.
 2. TRENCH DEWATERING DIRECTLY INTO A STREAM IS PROHIBITED. ALL DEWATERING MUST BE FILTERED THROUGH METHODS DEFINED IN THE MANUAL FOR SEDIMENT AND EROSION CONTROL IN GEORGIA, LATEST EDITION.
 3. CONTRACTOR IS RESPONSIBLE FOR THE HORIZONTAL/VERTICAL LOCATING OF EXISTING UTILITIES (INCLUDING ANY UTILITIES NOT SHOWN ON PLANS) AND MAINTAINING UTILITY SERVICES AND SHALL REPAIR AND/OR REPLACE ANY DAMAGED SERVICES AS SOON AS POSSIBLE.
 4. STORM WATER MANAGEMENT FOR THIS PROJECT IS PROVIDED (ON-SITE) STORM WATER MANAGEMENT FOR THIS PROJECT CONSISTS OF TEMPORARY EROSION AND SEDIMENT CONTROLS TO BE INSTALLED DURING THE PROPOSED WORK. AT THE COMPLETION OF THE PROJECT THE TEMPORARY MEASURE SHALL BE REMOVED.
 5. THERE SHALL BE NO INCREASE IN FLOWS OR COMPENSATION IN OTHER DRAINAGE AREAS, WHICH RESULT IN AN INCREASED PEAK DISCHARGE ONTO ADJACENT PROPERTY.
 6. THE CONTRACTOR IS RESPONSIBLE FOR ALL SITE SAFETY AS WELL AS THE WAYS, MEANS AND METHODS OF CONSTRUCTION.
 7. WHERE CONCRETE IS USED FOR BLOCKING, SUPPORTING, BACKFILLING, OR ANY APPLICATION WHERE IT MAY CONTACT PROPOSED OR EXISTING FITTINGS OR VALVES, THE FITTING OR VALVE SHALL BE WRAPPED IN POLYETHYLENE TO PREVENT BONDING.
 8. ALL VALVES SHALL BE PROVIDED WITH VALVE BOX AND SHALL BE MARKED BY CONCRETE VALVE MARKERS.
 9. CONTRACTOR SHALL PROVIDE PROPER RESTRAINT NECESSARY FOR PRESSURE TESTING.
 10. WATER AND SEWER FEES NEED TO BE PAID BY THE CONTRACTOR UNDER THE FOLLOWING CIRCUMSTANCES: NEW CONSTRUCTION, REDEVELOPMENT, ADDITIONS, CHANGE OF USE, ETC. CONTRACTOR TO DETERMINE COST PRIOR TO BID AND INCLUDE INCIDENTAL TO THE WORK. THESE FEES ARE PAID AT 330 W. PONCE DE LEON AVENUE, 2ND FLOOR. FAILURE TO SETTLE THESE FEES SHALL RESULT IN DELAYS FOR OBTAINING WATER AND SEWER APPROVAL. CALL (404) 371-4918 FOR FEE CALCULATIONS AND ANY QUESTIONS.
 11. FIELD CHANGES DURING CONSTRUCTION MUST BE SUBMITTED FOR REVIEW AND APPROVAL BY THE DWM ENGINEER / PROJECT MANAGER BEFORE CHANGES ARE IMPLEMENTED.
 12. ALL ITEMS WHICH MUST BE REMOVED DURING CONSTRUCTION AND ARE NOT SPECIFICALLY SHOWN TO BE PAID FOR OTHERWISE, SHALL BE REMOVED AND PAID FOR IN THE UNIT PRICE BID FOR FORCE MAIN. NO CLAIMS WILL BE CONSIDERED FOR EXTRA COMPENSATION.
 13. CONTRACTOR TO SEQUENCE FORCE MAIN INSTALLATION SO AS NOT TO DAMAGE EXISTING FORCE MAINS AND/OR DISRUPT EXISTING SERVICE.
 14. THE CONTRACTOR IS TO MAINTAIN COMPLETE RECORDS AS LINE-WORK PROGRESSES AND SUBMIT WITH MONTHLY PAY APPLICATION.
 15. USED BEDDING AS RECOMMENDED PER STANDARD. BEDDING SHALL NOT BE MEASURED SEPARATELY FOR PAYMENT. COST SHALL BE INCLUDED IN THE UNIT PRICE BID FOR FORCE MAINS. NO CLAIM WILL BE CONSIDERED FOR EXTRA COMPENSATION.
 16. THE CONTRACTOR IS REQUIRED TO NOTIFY, IN ADVANCE IN WRITING, ALL RESIDENTS IN THE AREA AFFECTED BY THE WORK TO BE PERFORMED. THE NOTICE SHALL SHOW THE STARTING AND FINISHING DATES.
 17. PLUG OF EXISTING FORCE MAINS SHALL NOT BE MEASURED SEPARATELY FOR PAYMENT. COST SHALL BE INCLUDED IN OTHER WORK. NO CLAIMS WILL BE CONSIDERED FOR EXTRA COMPENSATION.
 18. THRUST BLOCKS ARE REQUIRED FOR FORCE MAIN WHEREVER PIPE CHANGES DIRECTION (TEES, BENDS, ETC.) OR WHERE UNBALANCED FORCES ARE PRESENT.
 19. ALL MANHOLES LOCATED WITHIN ROADWAYS SHALL BE INSTALLED WITH CONCRETE COLLARS AND TRAFFIC RATED MANHOLE FRAMES AND COVERS PER GDOT STANDARDS.
- TRAFFIC CONTROL NOTES**
1. ALL CONSTRUCTION IS TO BE PERFORMED WITHIN THE CURRENT APPLICABLE GEORGIA DEPARTMENT OF TRANSPORTATION STANDARDS. THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES - PART 6 - TEMPORARY TRAFFIC CONTROL AND GDOT PLAN SPECIFICATIONS.
 2. ALL TRAFFIC CONTROL DEVICES SHALL AS APPROVED BY DEKALB COUNTY. ADDITIONAL DEVICES MAY BE REQUIRED AS DIRECTED BY DEKALB COUNTY WITHIN THE DEPARTMENT OF WATERSHED MANAGEMENT.
 3. TRAFFIC CONTROL PLAN, SIGNAGE PLAN, DETOUR PLAN, ALL RELATED DRAINAGE, DETAILS AND OTHER REQUIREMENTS SHALL BE PROVIDED BY THE CONTRACTOR. CONTRACTOR IS RESPONSIBLE FOR OBTAINING APPROVAL OF ALL TRAFFIC MANAGEMENT PLANS FROM APPLICABLE AGENCIES PRIOR TO CONSTRUCTION.
 4. ACCESS SHALL BE MAINTAINED AT ALL TIMES TO SIDE STREETS AND DRIVEWAYS.
 5. THE CONTRACTOR SHALL MAINTAIN ADEQUATE POSITIVE DRAINAGE AT ALL TIMES.
 6. WHEN THE CONSTRUCTION AREA HAS INTERSECTIONS, WORK WILL BE PERFORMED IN SUCH A MANNER TO PERMIT TRAFFIC TO OPERATE WITH THE LEAST AMOUNT OF INCONVENIENCE AS POSSIBLE. ADDITIONAL CHANNELIZATION AND SIGNING SHALL BE INSTALLED, AS REQUIRED, TO ALLOW TRAFFIC TO REMAIN AS OPERATIONAL AS POSSIBLE. WHEN ENTRANCE RAMPS/INTERSECTIONS ARE INOPERABLE, FLAGGERS WILL BE UTILIZED TO CONTROL AND PROHIBIT MOVEMENT INTO THE PROJECT AT THAT POINT UNTIL CONSTRUCTION HAS CLEARED THE RESTRICTION SUFFICIENT TO RETURN TO OPERATIONAL STATUS.
 7. WORK SPACE SHALL BE LIMITED TO THE SHORTEST DISTANCE PRACTICAL FOR THE DAY'S CONSTRUCTION ACTIVITY. WORK AREA NOT TO EXCEED 400' UNLESS APPROVED BY DEKALB COUNTY.
 8. CONTRACTOR TO PROVIDE A MINIMUM OF TWO ELECTRONIC CHANGEABLE MESSAGE SIGNS THROUGHOUT THE PROJECT.
 9. CONTRACTOR SHALL PROVIDE NIGHT WATCHMAN IF SIGNALS ARE PROVIDED AND PROVIDE FLAG CONTROL, IF NECESSARY.
 10. CONTRACTOR TO COORDINATE WITH DEKALB COUNTY BOARD OF EDUCATION AND EMERGENCY RESPONSE.
 11. WHERE FLAGGERS ARE PROVIDED, CONTRACTOR SHALL MAINTAIN A MINIMUM OF TWO CERTIFIED FLAGGERS AT ALL TIMES.
 12. ON NO OCCASION SHALL TRAFFIC BE DETOURED ONTO RESIDENTIAL SUBDIVISION STREETS.
 13. TRENCHES SHALL NOT BE LEFT OPEN OVERNIGHT.
 14. ROADWAY PAVEMENT SPECIFICATIONS AND CURB AND GUTTER DETAIL MUST MEET DEKALB COUNTY STANDARDS.
 15. CONTRACTOR IS TO PROVIDE DEKALB COUNTY ENCROACHMENT PERMIT FOR ALL WORK WITHIN THE RIGHT-OF-WAY. ANY TRAFFIC SIGNAL OR UTILITY RELOCATIONS WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.
 16. ALL UTILITY LOCATES AND RELOCATIONS AND/OR DAMAGE WILL BE THE RESPONSIBILITY OF THE CONTRACTOR. CONTRACTOR MUST CONTACT DEKALB COUNTY LOCATE PERSONNEL DIRECTLY FOR THE TRAFFIC SIGNAL LOCATES.
 17. CONTRACTOR TO MAINTAIN SIDEWALK CONTINUITY THROUGHOUT THE CONSTRUCTION ZONE. SIGNAGE TO BE PROVIDED THROUGH MUTCD PART VI.
 18. CONTRACTOR IS RESPONSIBLE FOR REPLACEMENT OF ALL DAMAGED TRAFFIC SIGNAL LOOPS.
 19. CONTRACTOR IS RESPONSIBLE FOR REPLACEMENT OF CURB AND GUTTER THAT IS DAMAGED DURING CONSTRUCTION.
 20. ALL STRIPING MUST BE REPLACED WITH TRAFFIC PAINT.

LEGEND

	EXISTING WATER MAIN
	PROPOSED FORCE MAIN
	EXISTING SANITARY SEWER MAIN
	EXISTING GAS MAIN
	EXISTING POWERLINE
	EXISTING POWERLINE OVERHEAD
	EXISTING TELEPHONE
	EXISTING TELEPHONE OVERHEAD
	EXISTING RIGHT-OF-WAY
	EXISTING PROPERTY LINE
	PROPOSED FILL LINE
	PROPOSED CUT LINE
	PROPOSED FIRE HYDRANT
	EXISTING FIRE HYDRANT
	PROPOSED VALVE
	EXISTING VALVE
	PROPOSED WATER METER
	EXISTING WATER METER
	EXISTING SANITARY SEWER MANHOLE
	EXISTING GAS METER
	IRON PIN FOUND
	EXISTING POWER POLE

DRAWING INDEX

NUMBER	SHEET TITLE
COV	COVER SHEET
G-1.0	DRAWING INDEX, GENERAL NOTES AND LEGEND
C-1.0	PLAN AND PROFILE
C-2.0	PLAN AND PROFILE
C-3.0	PLAN AND PROFILE
C-4.0	***VOID - NOT USED***
C-5.0	PLAN AND PROFILE
C-6.0	PLAN AND PROFILE
C-7.0	PLAN AND PROFILE
C-8.0	PLAN AND PROFILE
C-9.0	PLAN AND PROFILE
CMP-0.1	COMPREHENSIVE PLAN
CMP-0.2	COMPREHENSIVE PLAN
EC-0.1	EROSION CONTROL GENERAL NOTES
EC-0.4	EROSION, SEDIMENT & POLLUTION CONTROL CHECKLIST
EC-0.5	EROSION, SEDIMENT & POLLUTION CONTROL CHECKLIST
EC-0.6	SOIL MAP
EC-0.7	RECEIVING WATERS BASIN MAP
EC-1.0	EROSION CONTROL PLANS
EC-2.0	EROSION CONTROL PLANS
EC-3.0	EROSION CONTROL PLANS
EC-4.0	EROSION CONTROL PLANS
EC-5.0	EROSION CONTROL PLANS
ECD-1.0	EROSION CONTROL DETAILS
ECD-2.0	EROSION CONTROL DETAILS
ECD-3.0	EROSION CONTROL DETAILS
ECD-4.0	EROSION CONTROL DETAILS
SD - 1.0	STANDARD DETAILS
SD - 2.0	STANDARD DETAILS
SD - 3.0	STANDARD DETAILS
SD - 4.0	STANDARD DETAILS
SD - 5.0	STANDARD DETAILS
SD - 6.0	STANDARD DETAILS
SD - 7.0	STANDARD DETAILS
SD - 8.0	STANDARD DETAILS

100% SUBMITTAL



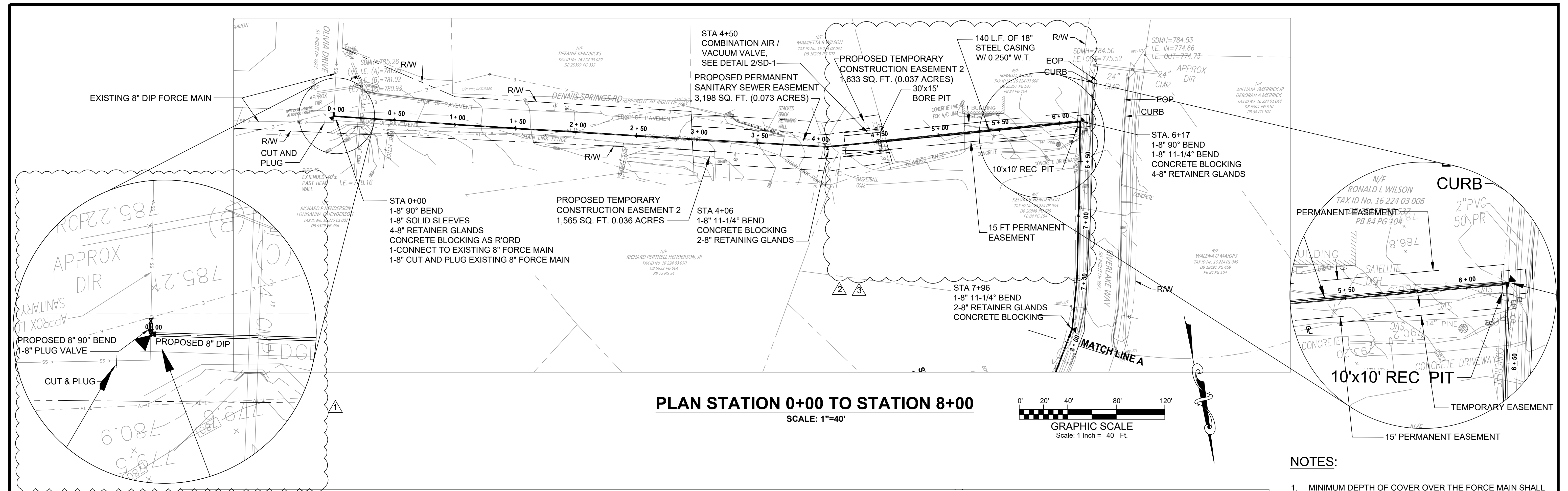
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 1600 Riveredge Parkway, Suite 700
 Atlanta, Ga 30328
 P: 770-933-0280



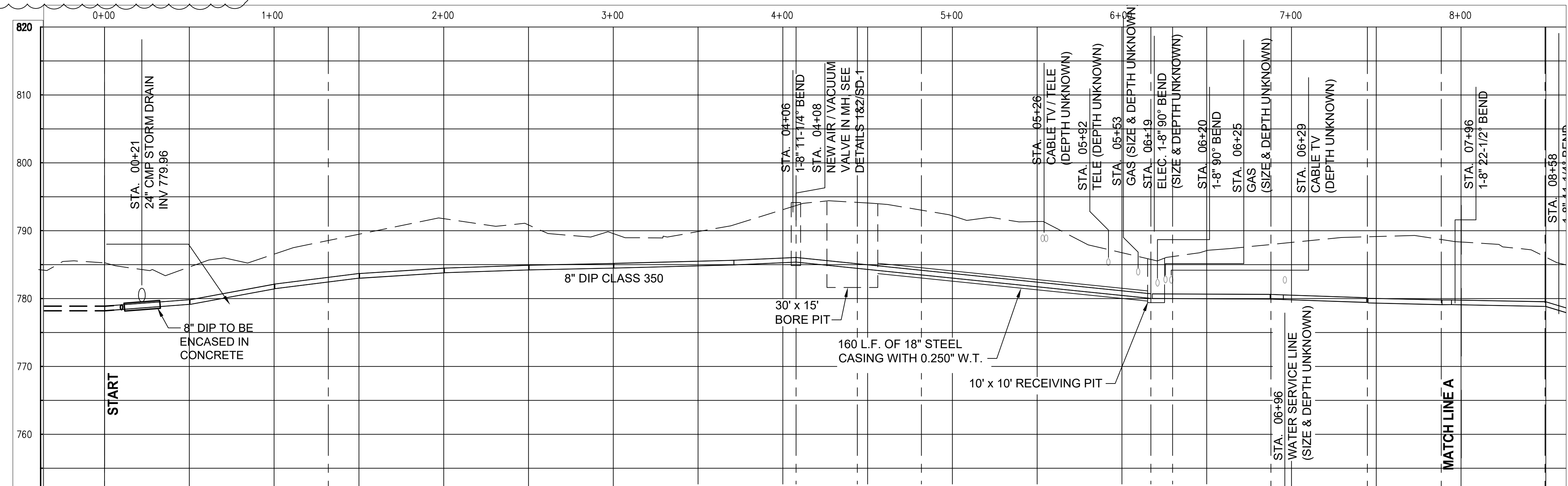
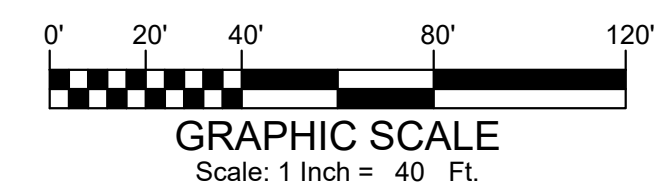
REVISION DATES		
REV	DATE	BY
1	1/16/19	WFL

DEKALB COUNTY DWM
 NORRIS RESERVE LIFT STATION
 FORCE MAIN RE-ROUTE
 DRAWING INDEX, GENERAL
 NOTES & LEGEND

DRAWING No.
G-1.0



PLAN STATION 0+00 TO STATION 8+00
SCALE: 1"=40'



PROFILE STATION 0+00 TO STATION 8+00

SCALE:
1"=40' HORZ.
1"=10' VERT.

NOTES:

1. MINIMUM DEPTH OF COVER OVER THE FORCE MAIN SHALL BE 4 FEET.
2. THE NEW 8" DIP SHALL BE CLASS 350.
3. SEE SHEET G-1.0 FOR GENERAL NOTES PERTAINING TO FORCE MAIN RELOCATION.
4. THERE SHALL BE NO CHANGE IN PRECONSTRUCTION CONTOURS (EXCESS MATERIAL MUST BE REMOVED TO AN UPLAND DISPOSAL AREA). NO FILL WITHIN THE FLOODPLAIN.



- FM ——— FORCE MAIN
- SS ——— SEWER MAIN
- W ——— WATER MAIN
- RIGHT-OF-WAY
- PROPERTY LINE
- E ——— OVERHEAD ELECTRICAL
- CREEK
- ▲ ——— STREAM BUFFER
- ——— GUARDRAIL
- SIDEWALK
- EOP
- T-TV OVERHEAD TELE / TV



1600 Riveredge Parkway, Suite 700
Atlanta, Ga 30328
P: 770-933-0280

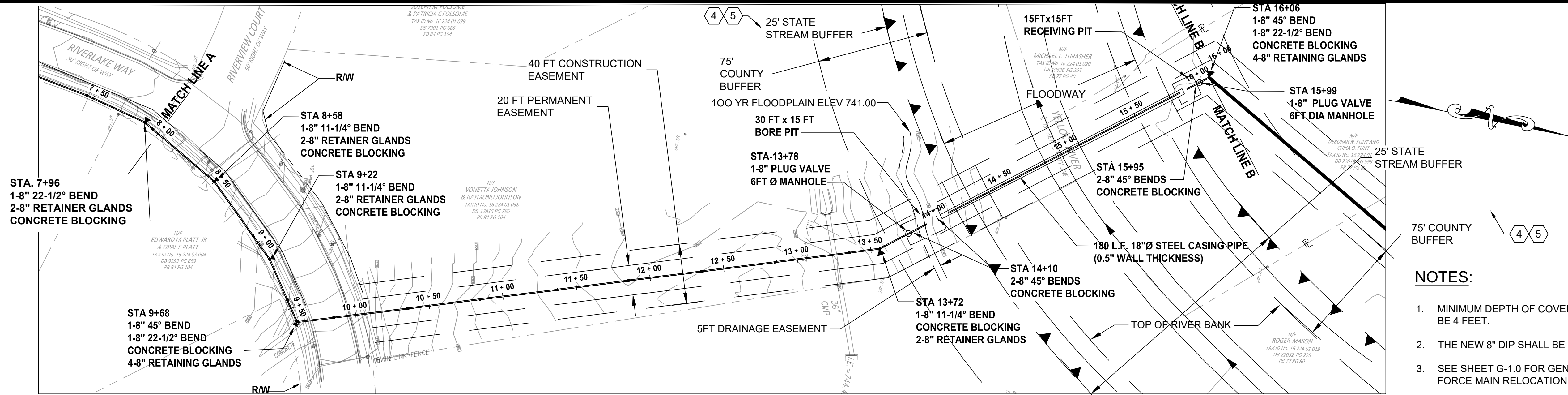


REVISION DATES		
REV	DATE	BY
1	1/16/19	WFL
2	2/14/19	WFL
3	2/27/19	WFL

DEKALB COUNTY DWM
NORRIS RESERVE LIFT STATION
FORCE MAIN RE-ROUTE
PLAN AND PROFILE

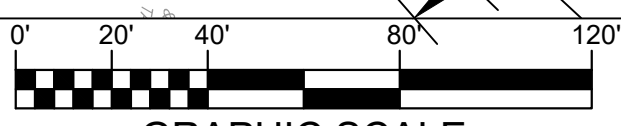
DRAWING No.
C-1.0

100% SUBMITTAL



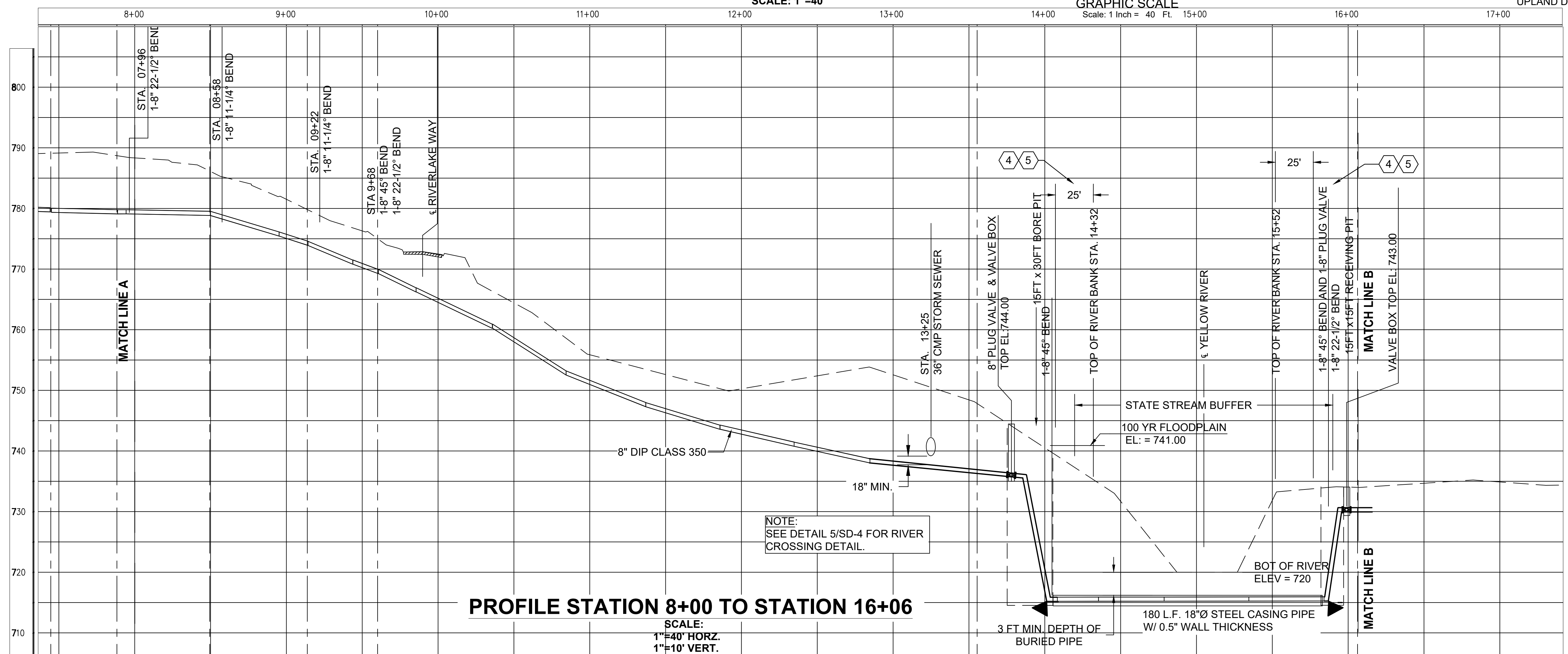
PLAN STATION 8+00 TO STATION 16+06

SCALE: 1"=40'



NOTES:

1. MINIMUM DEPTH OF COVER OVER THE FORCE MAIN SHALL BE 4 FEET.
2. THE NEW 8" DIP SHALL BE CLASS 350.
3. SEE SHEET G-1.0 FOR GENERAL NOTES PERTAINING TO FORCE MAIN RELOCATION.
4. THERE SHALL BE NO CHANGE IN PRECONSTRUCTION CONTOURS (EXCESS MATERIAL MUST BE REMOVED TO AN UPLAND DISPOSAL AREA). NO FILL WITHIN THE FLOODPLAIN.



PROFILE STATION 8+00 TO STATION 16+06

SCALE:
1"=40' HORIZ.
1"=10' VERT.

100% SUBMITTAL



— FM —	FORCE MAIN	— C —	CREEK
— SS —	SEWER MAIN	▲ —▲ —▲ —▲ —	STREAM BUFFER
— W —	WATER MAIN	— □ — □ —	GUARDRAIL
- - - - -	RIGHT-OF-WAY	— — — — —	SIDEWALK
— — — — —	PROPERTY LINE	— — — — —	EOP
- - - - - E	OVERHEAD ELECTRICAL	— — — — —	T-TV
			OVERHEAD TELE / TV

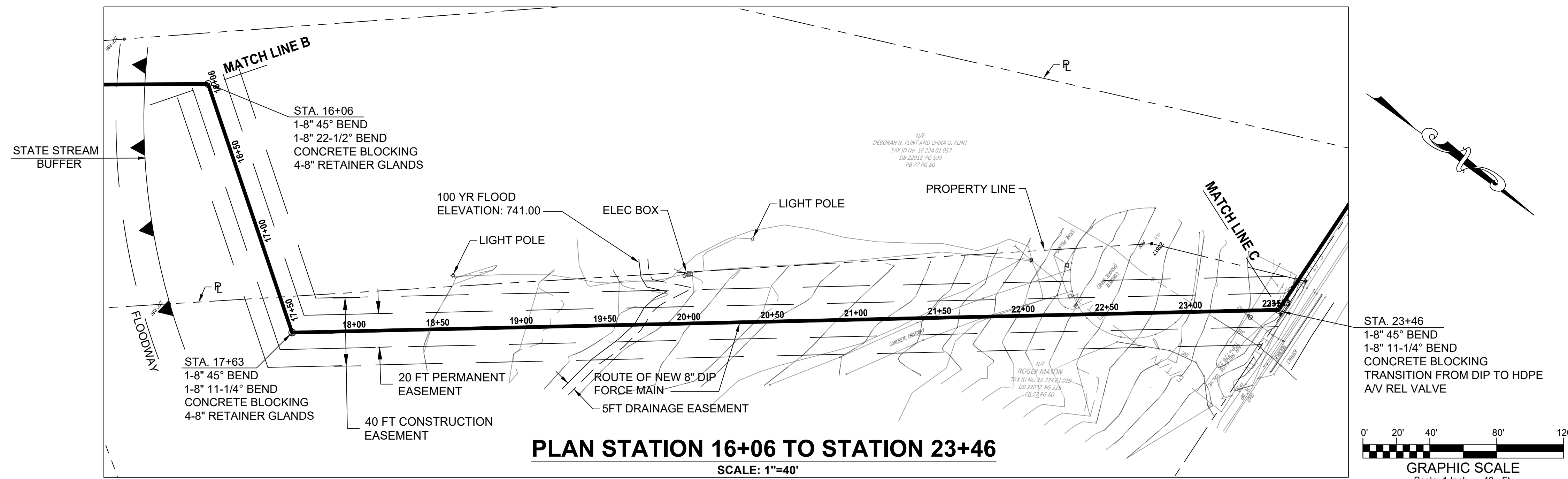
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Atlanta, Ga 30328
P: 770-933-0280



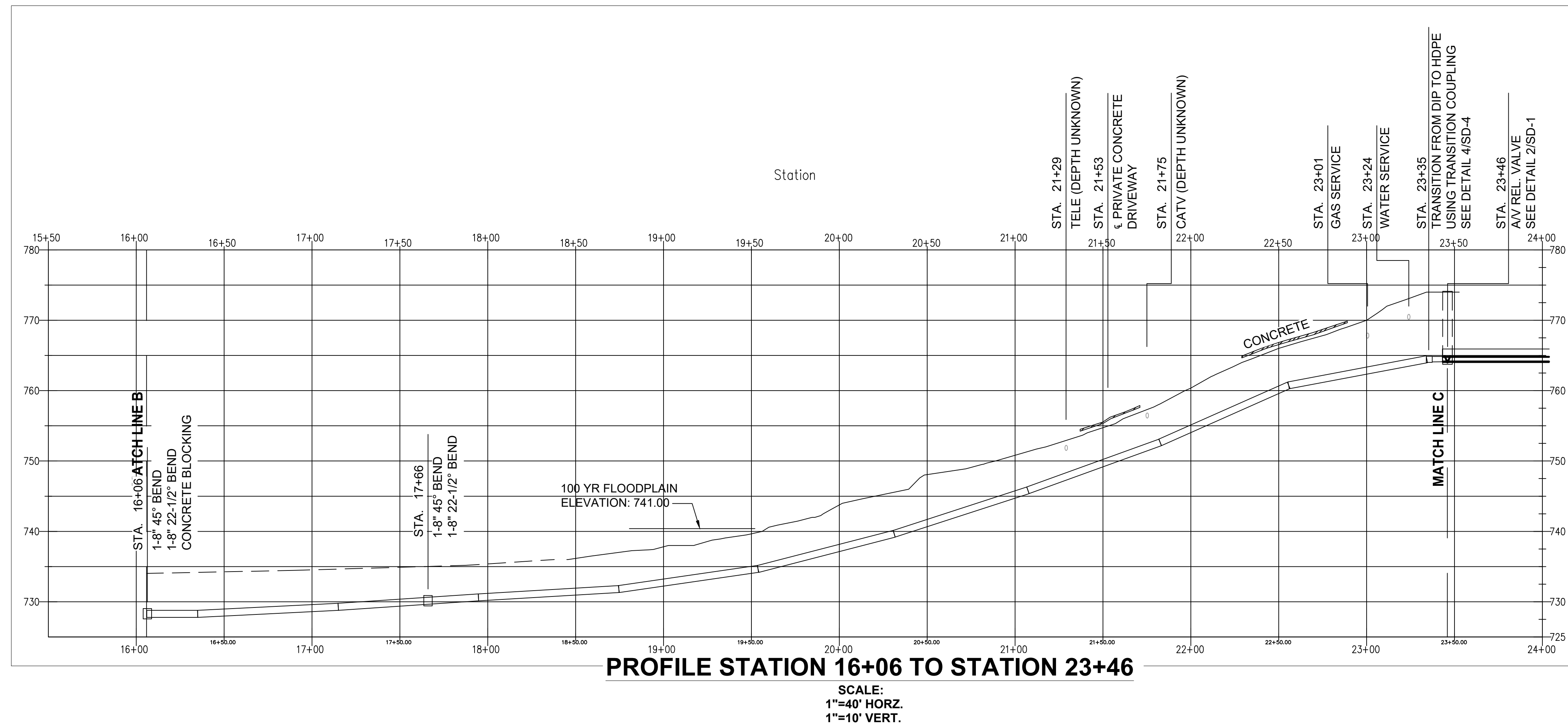
REVISION DATES		
REV	DATE	BY
ADDED FLOODPLAIN	8/12/19	WFL
ADDED NOTE	8/12/19	WFL

DEKALB COUNTY DWM
NORRIS RESERVE LIFT STATION
FORCE MAIN RE-ROUTE
PLAN AND PROFILE

DRAWING No.
C-2.0



- NOTES:**
1. MINIMUM DEPTH OF COVER OVER THE FORCE MAIN SHALL BE 4 FEET.
 2. THE NEW 8" DIP SHALL BE CLASS 350.
 3. SEE SHEET G-1.0 FOR GENERAL NOTES PERTAINING TO FORCE MAIN RELOCATION.
 4. THERE SHALL BE NO CHANGE IN PRECONSTRUCTION CONTOURS (EXCESS MATERIAL MUST BE REMOVED TO AN UPLAND DISPOSAL AREA). NO FILL WITHIN THE FLOOD PLAIN.



100% SUBMITTAL



— FM —	FORCE MAIN	— C —	CREEK
— SS —	SEWER MAIN	▲▲▲▲	STREAM BUFFER
— W —	WATER MAIN	— G —	GUARDRAIL
— R —	RIGHT-OF-WAY	— S —	SIDEWALK
— P —	PROPERTY LINE	— E —	EOP
— E —	OVERHEAD ELECTRICAL	— T —	OVERHEAD TELE / TV

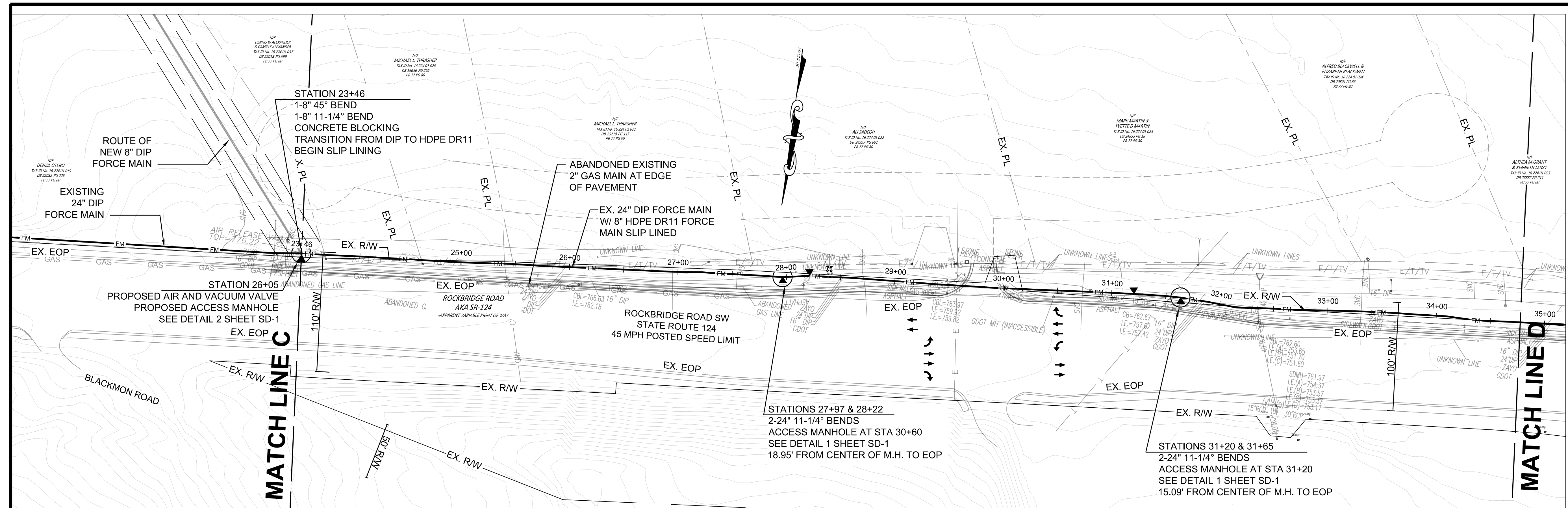
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REVISION DATES		
REV	DATE	BY

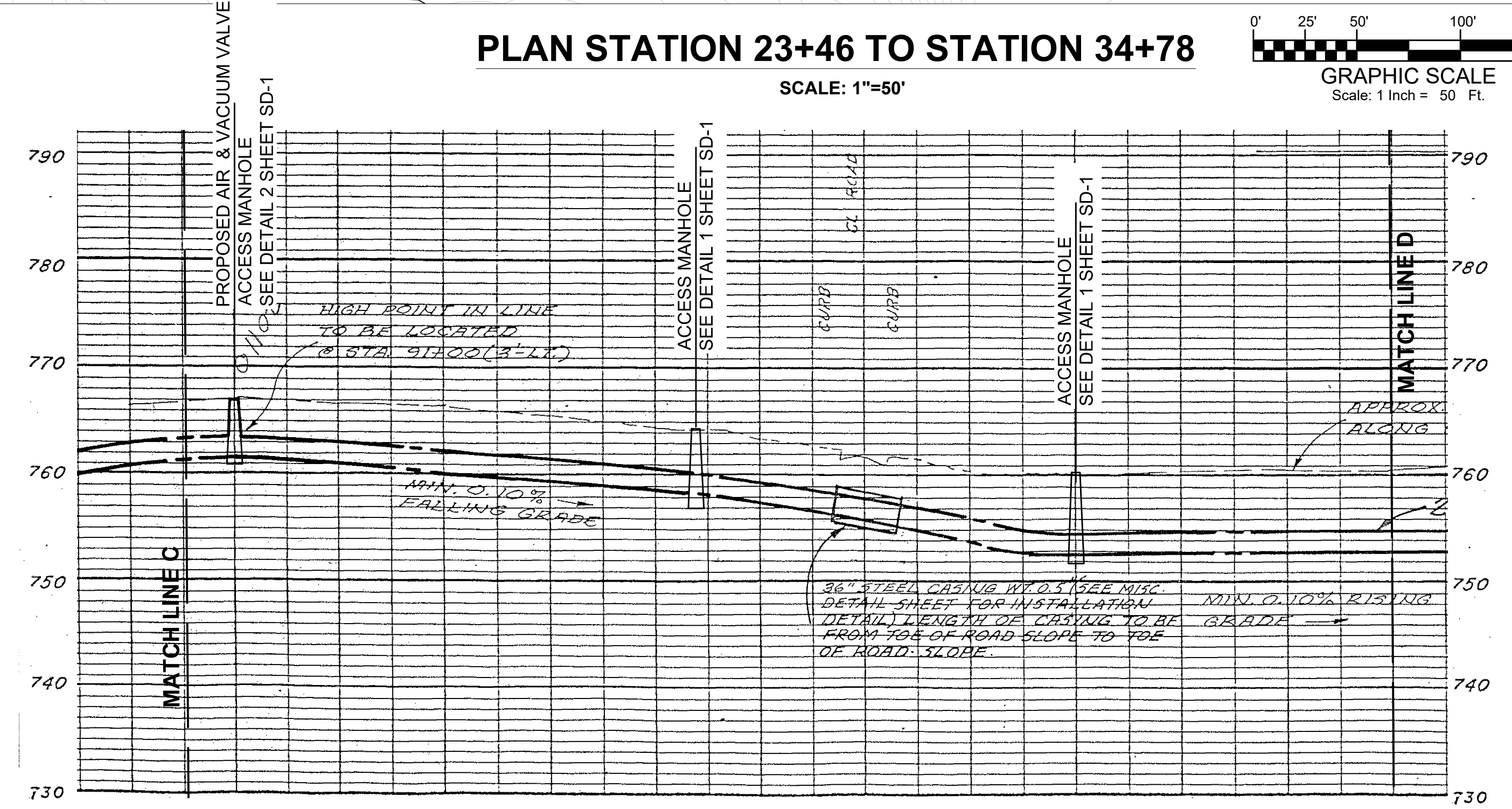
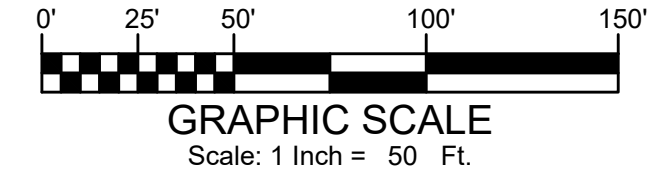
DEKALB COUNTY DWM
NORRIS RESERVE LIFT STATION
FORCE MAIN RE-ROUTE
PLAN AND PROFILE

DRAWING No.
C-3.0



PLAN STATION 23+46 TO STATION 34+78

SCALE: 1"=50'



PROFILE STATION 23+46 TO STATION 34+78

SCALE:
1"=100' HORIZ.
1"=10' VERT.

NOTES:

1. PROFILE INFORMATION SHOWN IS FROM RECORD DRAWINGS. CONTRACTOR SHALL VERIFY FIELD CONDITIONS PRIOR TO CONSTRUCTION.
2. ANNULAR SPACE BETWEEN NEW 8" HDPE DR11 PIPE AND EXISTING 24" DIP SHALL BE FILLED WITH FLOWABLE FILL MIX FOLLOWING SUCCESSFUL PRESSURE TESTING OF THE HDPE SEGMENT.
3. CONTRACTOR TO CLEAN AND CCTV EXISTING ABANDONED 24" DIP FORCE MAIN BEFORE STARTING WORK.
4. THERE SHALL BE NO CHANGE IN PRECONSTRUCTION CONTOURS (EXCESS MATERIAL MUST BE REMOVED TO AN UPLAND DISPOSAL AREA). NO FILL WITHIN THE FLOODPLAIN.

100% SUBMITTAL



- FM ——— FORCE MAIN
- SS ——— SEWER MAIN
- W ——— WATER MAIN
- - - - - RIGHT-OF-WAY
- - - - - PROPERTY LINE
- - - - - OVERHEAD ELECTRICAL
- ▲ ——— CREEK
- ▲ ——— STREAM BUFFER
- |—|— GUARDRAIL
- |—|— SIDEWALK
- |—|— EOP
- |—|— OVERHEAD TELE / TV

ATKINS

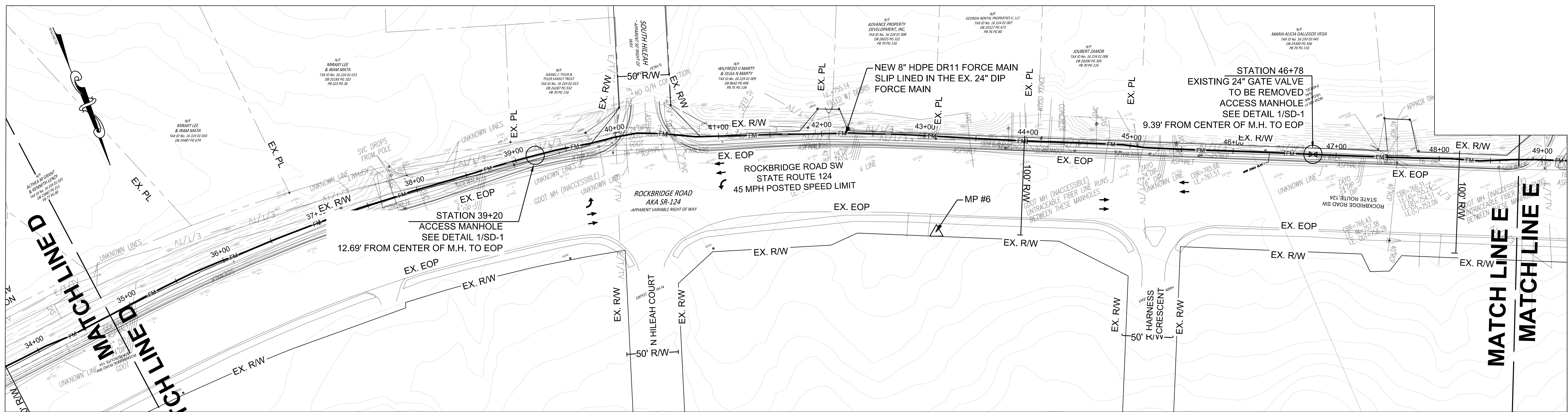
1600 Riveredge Parkway, Suite 700
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REVISION DATES		
REV	DATE	BY

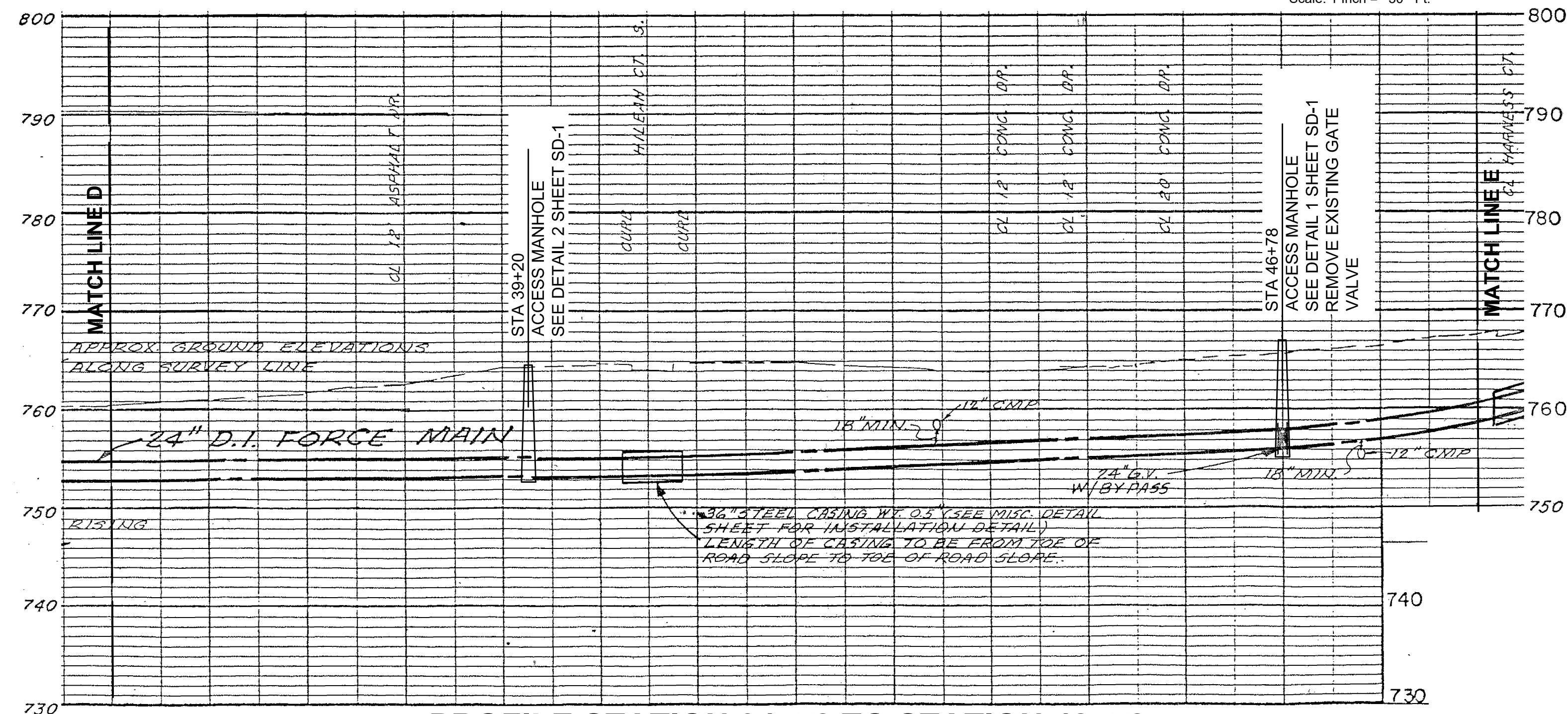
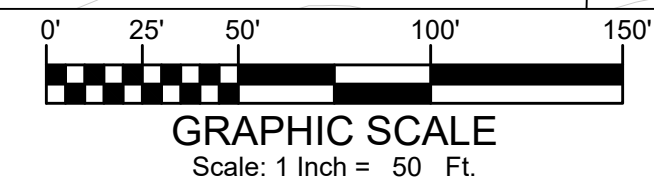
DEKALB COUNTY DWM
NORRIS RESERVE LIFT STATION
FORCE MAIN RE-ROUTE
PLAN AND PROFILE

DRAWING No.
C-5.0



PLAN STATION 34+78 TO STATION 48+78

SCALE: 1"=50'



PROFILE STATION 34+78 TO STATION 48+78

SCALE:
1"=100' HORZ.
1"=10' VERT.

- NOTES:
1. PROFILE INFORMATION SHOWN IS FROM RECORD DRAWINGS. CONTRACTOR SHALL VERIFY FIELD CONDITIONS PRIOR TO CONSTRUCTION.
 2. ANNULAR SPACE BETWEEN NEW 8" HDPE DR11 PIPE AND EXISTING 24" DIP SHALL BE FILLED WITH FLOWABLE FILL MIX FOLLOWING SUCCESSFUL PRESSURE TESTING OF THE HDPE SEGMENT.
 3. CONTRACTOR TO CLEAN AND CCTV EXISTING ABANDONED 24" DIP FORCE MAIN BEFORE STARTING WORK.
 4. THERE SHALL BE NO CHANGE IN PRECONSTRUCTION CONTOURS (EXCESS MATERIAL MUST BE REMOVED TO AN UPLAND DISPOSAL AREA). NO FILL WITHIN THE FLOODPLAIN.

100% SUBMITTAL



- FM — FORCE MAIN
- SS — SEWER MAIN
- W — WATER MAIN
- RIGHT-OF-WAY
- PROPERTY LINE
- E — OVERHEAD ELECTRICAL
- T-TV — OVERHEAD TELE / TV
- ▲ — CREEK
- ▲ — STREAM BUFFER
- — GUARDRAIL
- — SIDEWALK
- — EOP
- — OVERHEAD TELE / TV

ATKINS

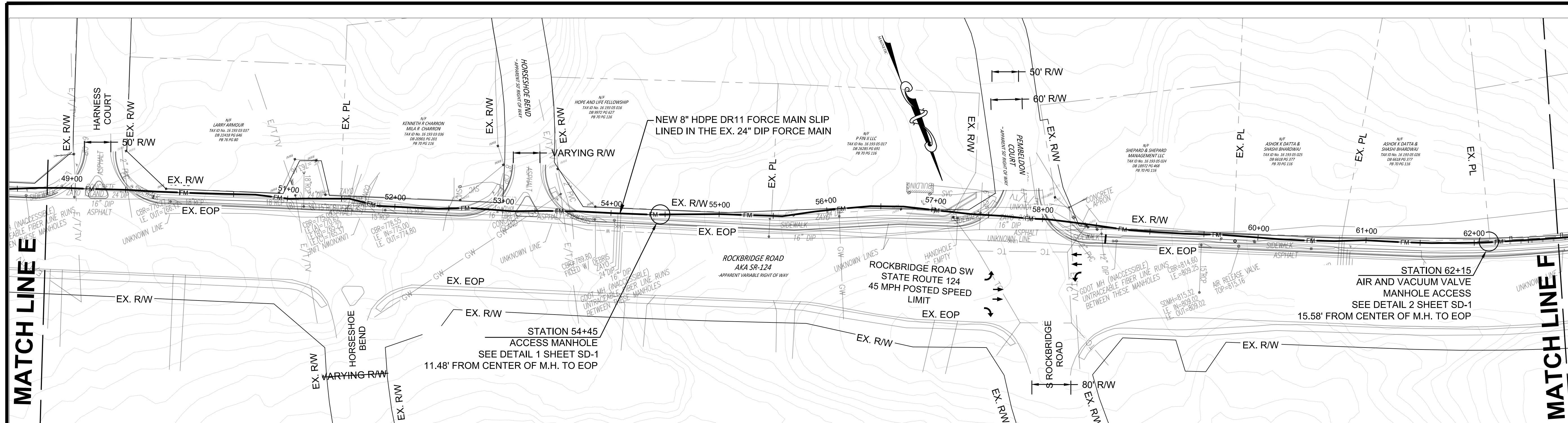
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REVISION DATES		
REV	DATE	BY

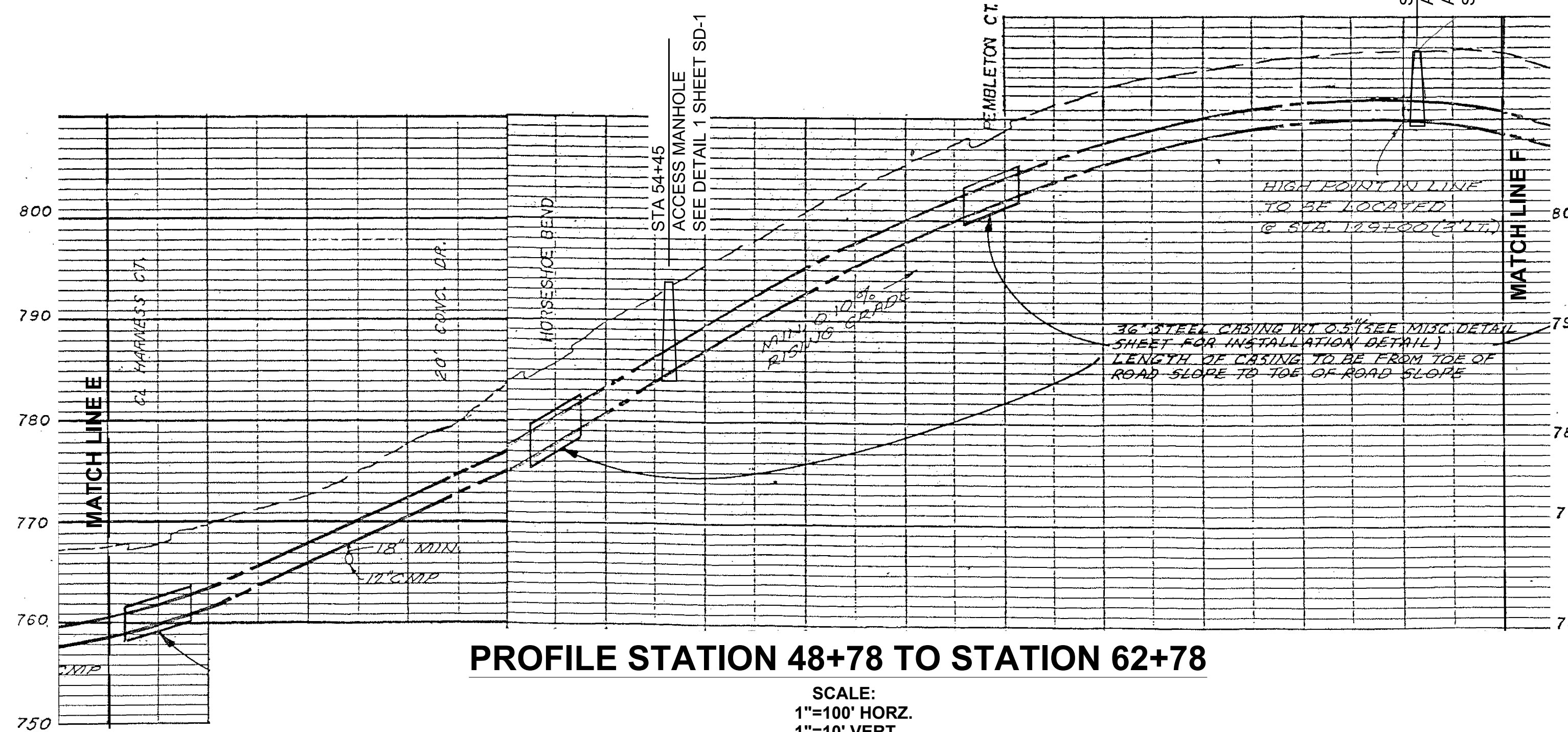
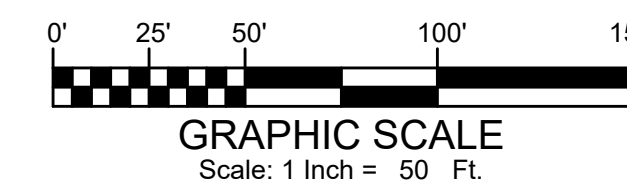
DEKALB COUNTY DWM
NORRIS RESERVE LIFT STATION
FORCE MAIN RE-ROUTE
PLAN AND PROFILE

DRAWING No.
C-6.0



PLAN STATION 48+78 TO STATION 62+78

SCALE: 1"=50'



PROFILE STATION 48+78 TO STATION 62+78

SCALE:
1"=100' HORZ.
1"=10' VERT.

NOTES:

1. PROFILE INFORMATION SHOWN IS FROM RECORD DRAWINGS. CONTRACTOR SHALL VERIFY FIELD CONDITIONS PRIOR TO CONSTRUCTION.
2. ANNULAR SPACE BETWEEN NEW 8" HDPE DR11 PIPE AND EXISTING 24" DIP SHALL BE FILLED WITH FLOWABLE FILL MIX FOLLOWING SUCCESSFUL PRESSURE TESTING OF THE HDPE SEGMENT.
3. CONTRACTOR TO CLEAN AND CCTV EXISTING ABANDONED 24" DIP FORCE MAIN BEFORE STARTING WORK.
4. THERE SHALL BE NO CHANGE IN PRECONSTRUCTION CONTOURS (EXCESS MATERIAL MUST BE REMOVED TO AN UPLAND DISPOSAL AREA). NO FILL WITHIN THE FLOODPLAIN.

100% SUBMITTAL



- FM — FORCE MAIN
- SS — SEWER MAIN
- W — WATER MAIN
- - - - RIGHT-OF-WAY
- — — — PROPERTY LINE
- - - - E — OVERHEAD ELECTRICAL
- ▲ — CREEK
- ▲ — STREAM BUFFER
- — — — GUARDRAIL
- — — — SIDEWALK
- — — — EOP
- — — — T-TV — OVERHEAD TELE / TV

ATKINS

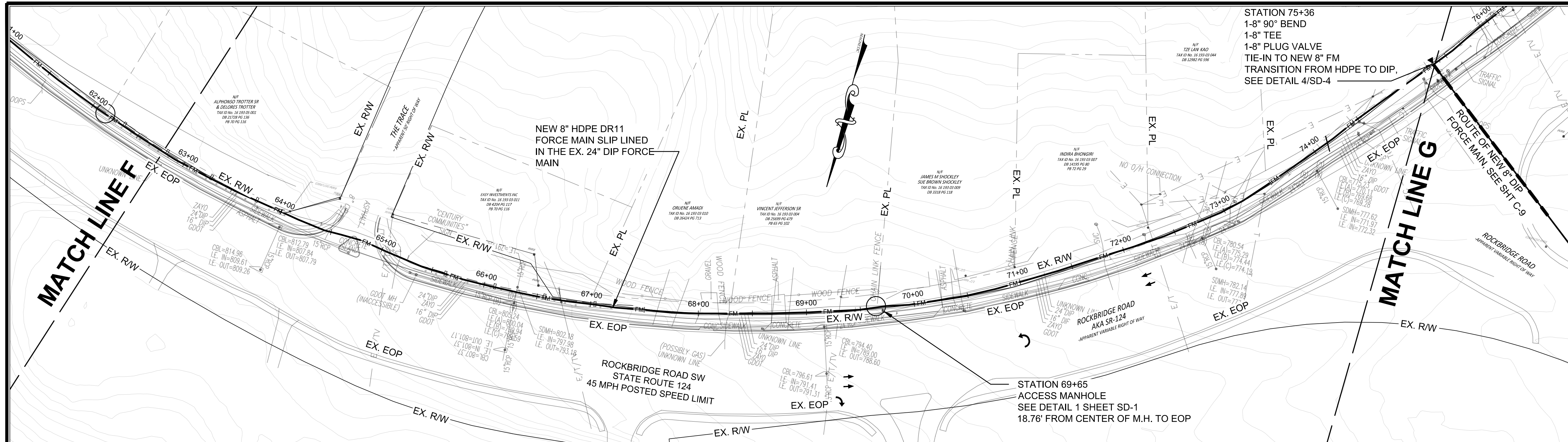
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REVISION DATES		
REV	DATE	BY

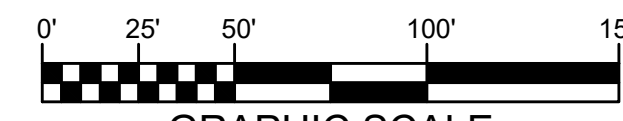
DEKALB COUNTY DWM
NORRIS RESERVE LIFT STATION
FORCE MAIN RE-ROUTE
PLAN AND PROFILE

DRAWING No.
C-7.0

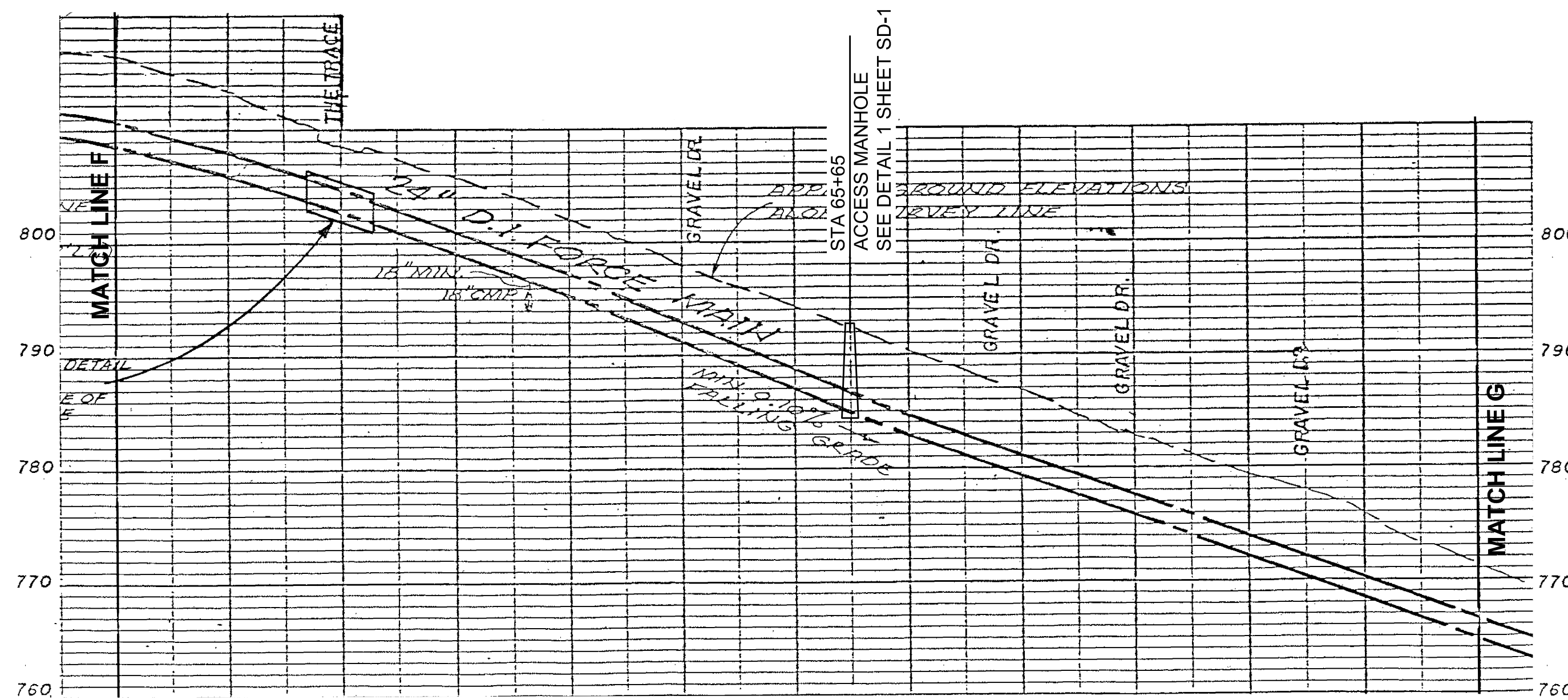


PLAN STATION 62+78 TO STATION 75+36

SCALE: 1"=50'



GRAPHIC SCALE
Scale: 1 Inch = 50 Ft.



PROFILE STATION 62+78 TO STATION 75+36

SCALE:
1"=100' HORZ.
1"=10' VERT.

NOTES:

1. PROFILE INFORMATION SHOWN IS FROM RECORD DRAWINGS. CONTRACTOR SHALL VERIFY FIELD CONDITIONS PRIOR TO CONSTRUCTION.
2. ANNULAR SPACE BETWEEN NEW 8" HDPE DR11 PIPE AND EXISTING 24" DIP SHALL BE FILLED WITH FLOWABLE FILL MIX FOLLOWING SUCCESSFUL PRESSURE TESTING OF THE HDPE SEGMENT.
3. CONTRACTOR TO CLEAN AND CCTV EXISTING ABANDONED 24" DIP FORCE MAIN BEFORE STARTING WORK.
4. THERE SHALL BE NO CHANGE IN PRECONSTRUCTION CONTOURS (EXCESS MATERIAL MUST BE REMOVED TO AN UPLAND DISPOSAL AREA). NO FILL WITHIN THE FLOODPLAIN.

100% SUBMITTAL



- FM — FORCE MAIN
- SS — SEWER MAIN
- W — WATER MAIN
- - - - - RIGHT-OF-WAY
- — — — — PROPERTY LINE
- - - - - E — OVERHEAD ELECTRICAL
- ▲ — CREEK
- ▲ — STREAM BUFFER
- — — — — GUARDRAIL
- — — — — SIDEWALK
- — — — — EOP
- — — — — T-TV — OVERHEAD TELE / TV

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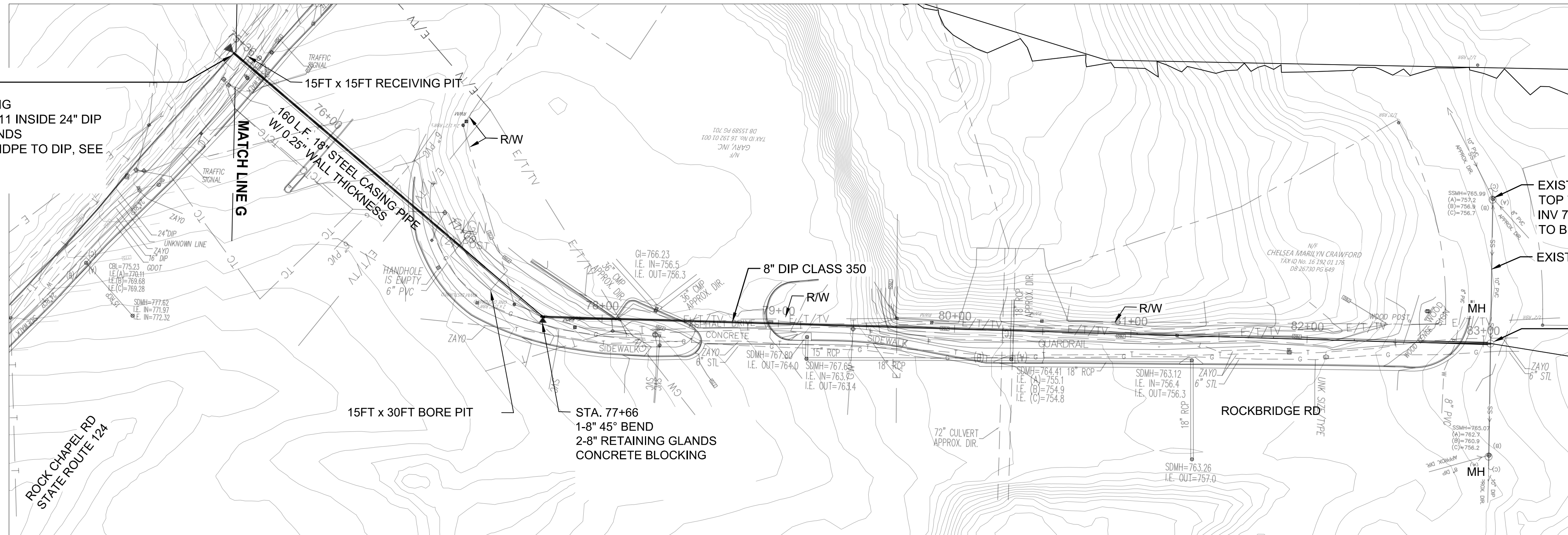


REVISION DATES		
REV	DATE	BY

DEKALB COUNTY DWM
NORRIS RESERVE LIFT STATION
FORCE MAIN RE-ROUTE
PLAN AND PROFILE

DRAWING No.
C-8.0

STA. 75+36
1-8" 90° BEND
CONCRETE BLOCKING
TIE DIP TO HDPE DR11 INSIDE 24" DIP
2-8" RETAINING GLANDS
TRANSITION FROM HDPE TO DIP, SEE
DETAIL 4/SD-4
END SLIP LINING

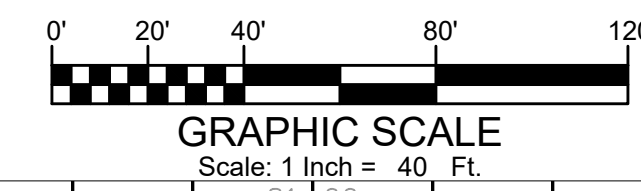


EXISTING MANHOLE
TOP 765.66
INV 756.46
TO BE EPOXY COATED
EXISTING 10" SANITARY SEWER

STA. 83+04 CONNECT TO EXISTING
10" SANITARY SEWER
1-4FT DIA MANHOLE
PROPOSED DOG-HOUSE
10" INV OUT 759.15
TO BE POLYMER CONCRETE
MANHOLE

PLAN STATION 75+36 TO END STATION 83+04

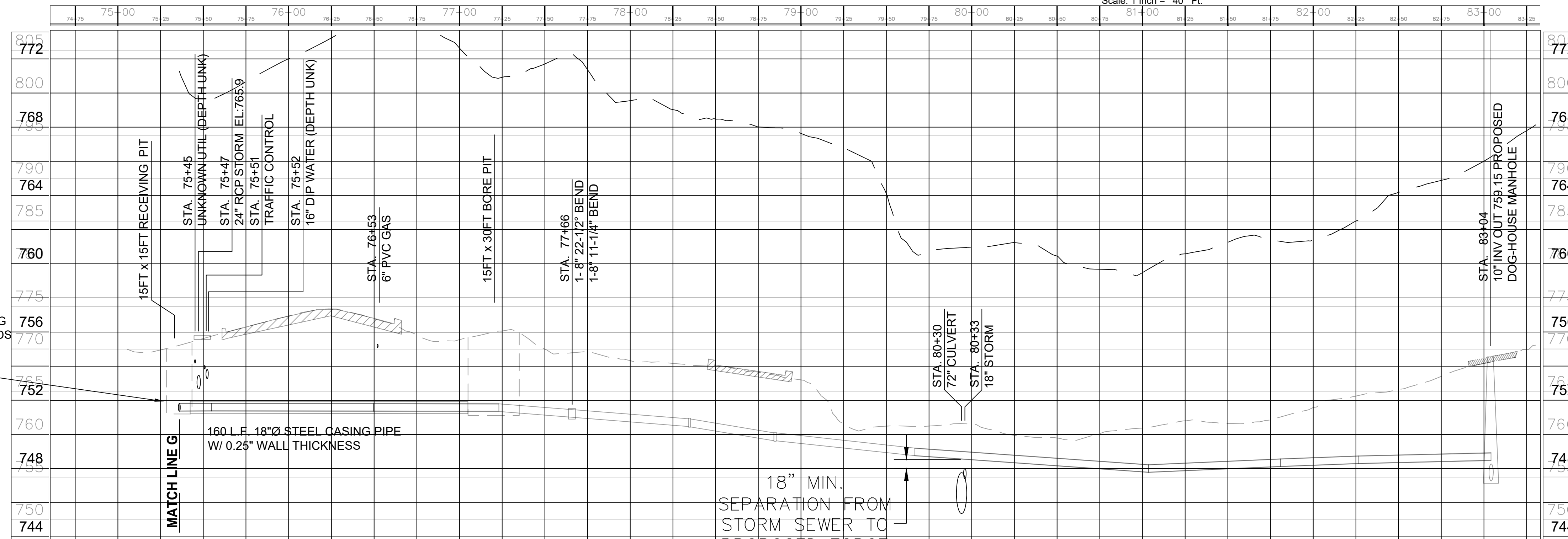
SCALE: 1"=40'



NOTES:

1. MINIMUM DEPTH OF COVER OVER THE FORCE MAIN SHALL BE 4 FEET.
2. THE NEW 8" DIP SHALL BE CLASS 350.
3. SEE SHEET G-1.0 FOR GENERAL NOTES PERTAINING TO FORCE MAIN RELOCATION.
4. THERE SHALL BE NO CHANGE IN PRECONSTRUCTION CONTOURS (EXCESS MATERIAL MUST BE REMOVED TO AN UPLAND DISPOSAL AREA). NO FILL WITHIN THE FLOODPLAIN.

STA. 75+36
1-8" 90° BEND
CONCRETE BLOCKING
2-8" RETAINER GLANDS
TRANSITION FROM
HDPE TO DIP, SEE
DETAIL 4/SD-4



PROFILE STATION 75+36 TO END STATION 83+04

SCALE:
1"=40' HORIZ.
1"=10' VERT.

100% SUBMITTAL



— FM —	FORCE MAIN	— C —	CREEK
— SS —	SEWER MAIN	▲ —▲—▲—▲—	STREAM BUFFER
— W —	WATER MAIN	— G —	GUARDRAIL
---	RIGHT-OF-WAY	— S —	SIDEWALK
---	PROPERTY LINE	— EOP —	EOP
---	OVERHEAD ELECTRICAL	— T-TV —	OVERHEAD TELE / TV

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REVISION DATES		
REV	DATE	BY
1	1/16/19	WFL

DEKALB COUNTY DWM
NORRIS RESERVE LIFT STATION
FORCE MAIN RE-ROUTE
PLAN AND PROFILE

DRAWING No.
C-9.0

COMPREHENSIVE MONITORING PLAN NOTES:

1. A Comprehensive Monitoring Plan (CMP) must be implemented as part of the project's Erosion, Sedimentation and Pollution Control Plan in compliance with the EPD's General Permit No. 100002 (NPDES) prior to conducting any construction activity. The contractor shall keep a copy of the Erosion, Sedimentation, and Pollution Control Plan on site at all times from project beginning until final stabilization is achieved.
2. This CMP has been prepared by a Design Professional in accordance with the Permit.
3. For linear construction, the monitoring may be phased so that a monitor is always downstream of active construction. Monitoring of outfalls (drainage ditches) and streams is not required for inactive phases or for areas that have undergone final stabilization and all storm water discharges associated with construction activity from that phase have ceased.
4. **MONITORING SITES**
For the monitoring of this linear infrastructure project, four monitoring sites have been selected and are shown on the map on Sheet CMP-0.2 of these plans. The two monitors, A and B, are to be installed in Yellow River. Monitor C is in Stone Mountain Creek and monitor D is in Wesley Branch.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure certified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

WILLIAM F. LIVINGSTON, JR., P.E.
GSWCC LEVEL II

I certify that the permittee's Erosion, Sedimentation and Pollution Control Plan provides for an appropriate and comprehensive system of best management practices required by the Georgia Water Quality Control Act and the document "Manual for Erosion and Sediment Control in Georgia" (Manual) published by the State Soil and Water Conservation Commission as of January 1 of the year in which the land-disturbing activity was permitted, provides for the sampling of the receiving water(s) or the sampling of the storm water outfalls and that the designed system of best management practices and sampling methods is expected to meet the requirements contained in the General NPDES Permit No. Gar 100002.

William F. Livingston, Jr., Professional Engineer
GSWCC LEVEL II Certified Design Professional Certification # 21845

I CERTIFY UNDER PENALTY OF LAW THAT THIS PLAN WAS PREPARED AFTER A SITE VISIT TO THE LOCATION DESCRIBED HERE-IN BY MYSELF OR MY AUTHORIZED AGENT UNDER MY DIRECT SUPERVISION.

William F. Livingston, Jr., Professional Engineer
GSWCC LEVEL II Certified Design Professional Certification # 21845

- a. Monitor A - This monitor shall be installed in Yellow River, approximately 20 feet downstream of the confluence of Yellow River and Rock Bridge Road / State Rt 124. This monitor shall monitor turbidity levels in Yellow River to compare with the levels recorded at Monitor B. No Force Main construction will be upstream of Monitor A while the measurements at Monitor A are being compared with the readings at Monitor B. Storm water from approximately 51,652 acres (80.70 square miles) of drainage basin flows to this point.
- b. Monitor B - This monitor shall be installed in Yellow River, approximately 3000 feet downstream of the confluence of Yellow River and Rock Bridge Rd / State Rt 124. This monitor should be approximately 1600 feet downstream of the bore under Yellow River so that all of the storm water leaving the Force Main construction enters Yellow River upstream of the monitor, and shall monitor turbidity levels to compare with the levels recorded at Monitor A, C and D. This monitoring site will collect samples of storm water from all of the proposed force main construction related to this project. The area flowing to this location includes approximately 7.03 acres of disturbed area and a total acreage of approximately 65,600 acres (102.5 square miles). The allowable increase in the NTU value for this stream between Monitors A and B is 25 NTUs. Existing land use is residential, woodlands, governmental, commercial and pasture.
- c. Monitor C - This monitor shall be installed in Stone Mountain Creek approximately 200 feet upstream of the confluence of Stone Mountain Creek and Rock Chaple Road. This monitor shall monitor turbidity levels in the Stone Mountain Creek to compare with the levels recorded at monitor B. No Force Main construction will be upstream of monitor C while the measurements of monitor C are being compared with the reading of monitor B. Storm water from approximately 12,913 acres, 20,176 square miles of drainage flow to this point.

d. Monitor D - This monitor shall be installed in Wesley Branch approximately 100 foot down stream of the confluence of Wesley branch and Hightower Parkway. This monitor shall monitor turbidity levels in Wesley Branch to compare with the levels recorded at monitor "B". No force main construction will be upstream of monitor "D" while the measurements of monitor "D" are being compared with the readings of monitor "B". Storm water from approximately 430 acres of drainage flow to this point.

5. COMPLIANCE WITH THE EPD'S NPDES GAR 100002 PERMIT

This project is expected to disturb approximately 7.03 acres of land. This in turn requires the Contractor and Owner to comply with the NPDES GAR 100002 Permit. A copy of the permit is included in the bid documents. This contract has been set up to have the Design Professional prepare the Erosion, Sedimentation and Pollution Control Plan (the Plan). The Contractor's environmental engineer will prepare and submit the NOI and the NOT to the EPD and the local issuing authority as the permit requires. If the site exceeds 50 acres, the Plan will be submitted with the NOI. The Contractor has to sign the NOI and the NOT as the primary permittee. The Contractor will be responsible for the installation and maintenance of the BMPs, daily inspections as required by the Permit and daily rainfall measurements as stated in the Erosion Control Notes shown on sheet EC-01. The Contractor will employ the services of an environmental engineer approved by the Owner to be responsible for the implementation of the Comprehensive Monitoring Plan (CMP), the storm water flow monitoring, the 14-day and monthly inspections of the BMPs, collection of records, paying all required fees, and the required report preparation and submittal. Reports are required for every month during which samples are taken in accordance with this permit. As noted above, certain parts of the compliance have been assigned to the Contractor and certain parts have been assigned to the sub-contracted environmental engineer. The bid proposal has been set up to pay the contractor on a unit price basis per month for all of the monitoring, inspecting, filing of notices and reporting required by the GAR 100002. Since the design, installation and maintenance of the BMPs presents a complete defense against actions by the EPD for violations, and the Contractor is responsible for the installation and maintenance of the BMPs, the Contractor shall be responsible for any fines imposed by the EPD against the project, and the Owner shall be held blameless. The environmental engineer is also responsible for suggesting revisions and improvements to the BMPs. The Design Professional shall inspect the installation of the BMPs within seven days after construction activities begin as required by the permit.

6. The contractor shall submit copies of all inspection and monitoring reports to the owner and to the engineer on a monthly basis and to the EPD when the permit requires. Failure to comply with this requirement shall result in the owner holding payments due to the contractor.

7. COLLECTION AND ANALYSIS OF STORM WATER SAMPLES

All sampling shall be collected by "grab samples" and the analysis of these samples must be conducted in accordance with the methodology and test procedures established by 40 CFR Part 136, entitled "NPDES Storm Water Sampling Guidance Document, EPA 833-B-92-001" and other guidance documents that may be prepared by the EPD. Sample containers should be labeled prior to collecting the samples. Samples should be well mixed before transferring to a secondary container. Large mouth, well cleaned and rinsed glass or plastic jars should be used for collecting samples. The jar should be cleaned thoroughly to avoid contamination. Manual or automatic sampling may be utilized. (If automatic samplers are used, use only those samplers approved for use by the Georgia EPD.) Samples required by this permit should be analyzed immediately, but in no case later than 48 hours after collection. However, samples from automatic samplers must be collected no later than the next business day after their accumulation, unless flow through automated analysis is utilized. Dilution of samples is not required. Samples may be analyzed directly with a properly calibrated turbidimeter. Samples are not required to be cooled. Sampling and analysis of the receiving waters or outfalls beyond the minimum frequency required by this permit must be reported to the EPD as specified in Section IV.E of the permit. Samples taken for the purpose of compliance with this permit must be representative of the monitored activity and representative of the water quality of the receiving waters and/or outfalls using the following guidelines, detailed in section IV.D.6.c:

- a. The upstream sample for each receiving water must be taken immediately upstream of the confluence of the first storm water discharge from the construction project, but downstream of any other storm water discharges not associated with the construction of this project.
- b. The downstream sample for each receiving water must be taken downstream of the confluence of the last storm water discharge from the construction project, but upstream of any other storm water discharges not associated with the construction of this project.
- c. Ideally, the samples should be taken from the horizontal and vertical center of the receiving water(s) or the storm water outfall channel(s).
- d. Care should be taken to avoid stirring the bottom sediments in the receiving water or outfall channel.
- e. The sampling container should be held so that the opening faces upstream.
- f. The samples should be kept free from floating debris.

8. PHASING OF SAMPLING AREAS

If the Contractor chooses to use automated sample collection equipment, the Contractor's approved environmental engineer shall provide a minimum of six sampling assemblies to work in a sequence so as not to delay the construction of the project. In a typical area, the Contractor shall arrange to have the sample collectors installed to monitor the area that was just seeded, the area where work is currently ongoing, and the next area to be worked in. Please note that no work can occur in a drainage basin until a monitor is operational in that basin. Please also note that areas where the work is complete and the area has been seeded must be monitored until the area has reached final stabilization. For these purposes, final stabilization is defined as meaning that at least 70% of the soil surface is uniformly covered in permanent vegetation or equivalent permanent stabilization measures (such as rip-rap, permanent mulches or geo-textiles). Permanent vegetation shall consist of: planted trees, shrubs, perennial vines, a crop of perennial vegetation appropriate for the time of year and region, or a crop of annual vegetation and a seeding of target crop perennials appropriate for the region such that within the growing season a 70% coverage by perennial vegetation shall be achieved. Once an area has achieved final stabilization, as determined by the Engineer, the monitor can be removed and relocated to a site in advance of the construction.

9. SAMPLING FREQUENCY

The Contractor's environmental engineer must sample at least once for each rainfall event described below. For a qualifying event, samples must be taken within 45 minutes of:

- i. the accumulation of the minimum amount of rainfall, if the storm water discharge to a monitored receiving water or outfall has begun at or prior to the accumulation, or
- ii. the beginning of any storm water discharge to a monitored receiving water or outfall, if the discharge begins after the accumulation of the minimum amount of rainfall.

However, where manual and automatic sampling are impossible, as defined in the permit, or are beyond the Contractor's control, the Contractor shall take the sample as soon as possible, but in no case more than 12 hours after the beginning of the storm water discharge.

Sampling by the Contractor's environmental engineer shall occur for the following events:

- a. For each area of the site that discharges to a receiving stream, the first rain event that reaches or exceeds 0.5 inch and allows for monitoring during normal business hours* (Monday thru Friday, 8:00 AM to 5:00 PM and Saturday 8:00 AM to 5:00 PM, excluding all non-working Federal holidays, when construction activity is being conducted by the Primary permittee) that occurs after all clearing and grubbing operations have been completed in the drainage area of the location selected;
- b. In addition to (a) above, for each area of the site that discharges to a receiving stream, the first rain event that reaches or exceeds 0.5 inch and allows for monitoring during normal business hours* that occurs either 90 days after the first sampling event or after all mass grading operations have been completed in the drainage area of the location selected, whichever comes first;
- c. At the time of sampling performed pursuant to (a) and (b) above, if BMPs are found to be properly designed, installed and maintained, no further action is required. If BMPs in any area of the site that discharges to a receiving stream are not properly designed, installed and maintained, corrective action shall be defined and implemented within 2 business days, and turbidity samples shall be taken from discharges from that area of the site for each subsequent rain event that reaches or exceeds 0.5 inch during normal business hours* until the selected turbidity standard is attained, or until post-storm event inspections determine that BMPs are properly designed, installed and maintained.

*Note that the Permittee may choose to meet the requirements of (a) and (b) above by collecting turbidity samples from any rain event that reaches or exceeds 0.5 inch and allows for monitoring at any time of the day or week.

10. INSPECTIONS AND RAINFALL MEASUREMENTS

Inspections of erosion control measures shall occur in accordance with Erosion Control Note Number 32 on Sheet EC-01. Records of rainfall measurements shall be kept on a daily basis in accordance with Erosion Control Note Number 32 on Sheet EC-01. Rainfall must be measured adjacent to the active phases of the project.

11. REPORTING

1. The contractor is required to submit a summary of the monitoring results to the EPD at the address shown below by the fifteenth day of the month following the reporting period. Reporting periods are months during which samples are taken in accordance with this permit. Sampling results shall be in clearly legible format. Upon written notification, EPD may require the applicable permittee to submit the sampling results on a more frequent basis. The sampling reports must be signed in accordance with Part V.G. Sampling reports must be submitted to EPD until such time as a NOT is submitted in accordance with Part VI.
2. All written correspondence required by this permit shall be submitted by return receipt certified mail (or similar service) to the District Office of the EPD shown below. The permittee shall retain a copy of the proof of submittal at the construction site or the proof of submittal shall be readily available at a designated location from commencement of construction until such time as a NOT is submitted in accordance with Part VI.

Summary reports shall be submitted as required to:

Mountain District - Cartersville Office
Georgia Environmental Protection Division
P.O. Box 3250
Cartersville, Georgia 30120-1705

3. The contractor shall be familiar with and adhere to all requirements included in this EPD NPDES Permit GAR 100002 with regards to inspections, monitoring and reporting. The contractor shall also submit copies of all reports and monitoring results to the owner and the design professional.

4. All monitoring results shall include the following information:

- a. The date, exact place and time of sampling or measurements.
- b. The name(s) of the individual(s) who performed the sampling and measurements.
- c. The date(s) analyses were performed.
- d. The time(s) analyses were initiated.
- e. The names of the individuals who performed the analyses.
- f. References and written procedures, when available, for the analytical techniques or methods used; A quality control program must be included in the written procedures.
- g. The results of such analyses, including the bench sheets, instrument readouts, computer disks or tapes, etc., used to determine these results;
- h. Results which exceed 1000 NTU shall be reported as "exceeds 1000 NTU".
- i. The summary report detailing the findings of the daily, 14-day, and monthly inspections of the BMPs, including the log of the erosion control measures and rainfall.

12. RETENTION OF RECORDS

1. The primary permittee (contractor) shall retain the following records at the construction site or the records shall be readily available at a designated alternate location from commencement of construction until such time as a NOT is submitted in accordance with Part VI:
 - a. A copy of all Notices of Intent submitted to EPD (NOIs, NOTs, etc.);
 - b. A copy of the Erosion, Sedimentation and Pollution Control Plan required by this permit;
 - c. The design professional's report of the results of the inspection conducted in accordance with Part IV.A.5 of this permit;
 - d. A copy of all monitoring information, results and reports required by this permit;
 - e. A copy of all inspection reports generated in accordance with Part IV.D.4.a of this permit.
 - f. A copy of all violation summaries and violation summary reports generated in accordance with Part III.D of this permit; and
 - g. Daily rainfall information collected in accordance with Part IV.D.4.a.(1) of this permit.
2. Copies of all Notices of Intent, Notices of Termination, reports, plans, monitoring reports, monitoring information, including all calibration and maintenance reports and all original strip chart recordings for continuous monitoring instrumentation, Erosion, Sedimentation and Pollution Control Plans, records of all data used to complete the Notice of Intent to be covered by this permit and all other records required by this permit shall be retained by the contractor and owner for a period of at least three years from the date that the NOT is submitted in accordance with Part VI of this permit. These records must be maintained at the contractor's and owner's primary places of business or at a designated location once the construction activity has ceased at the permitted site. This period may be extended by request of the EPD at any time upon written notification to the contractor.

100% SUBMITTAL



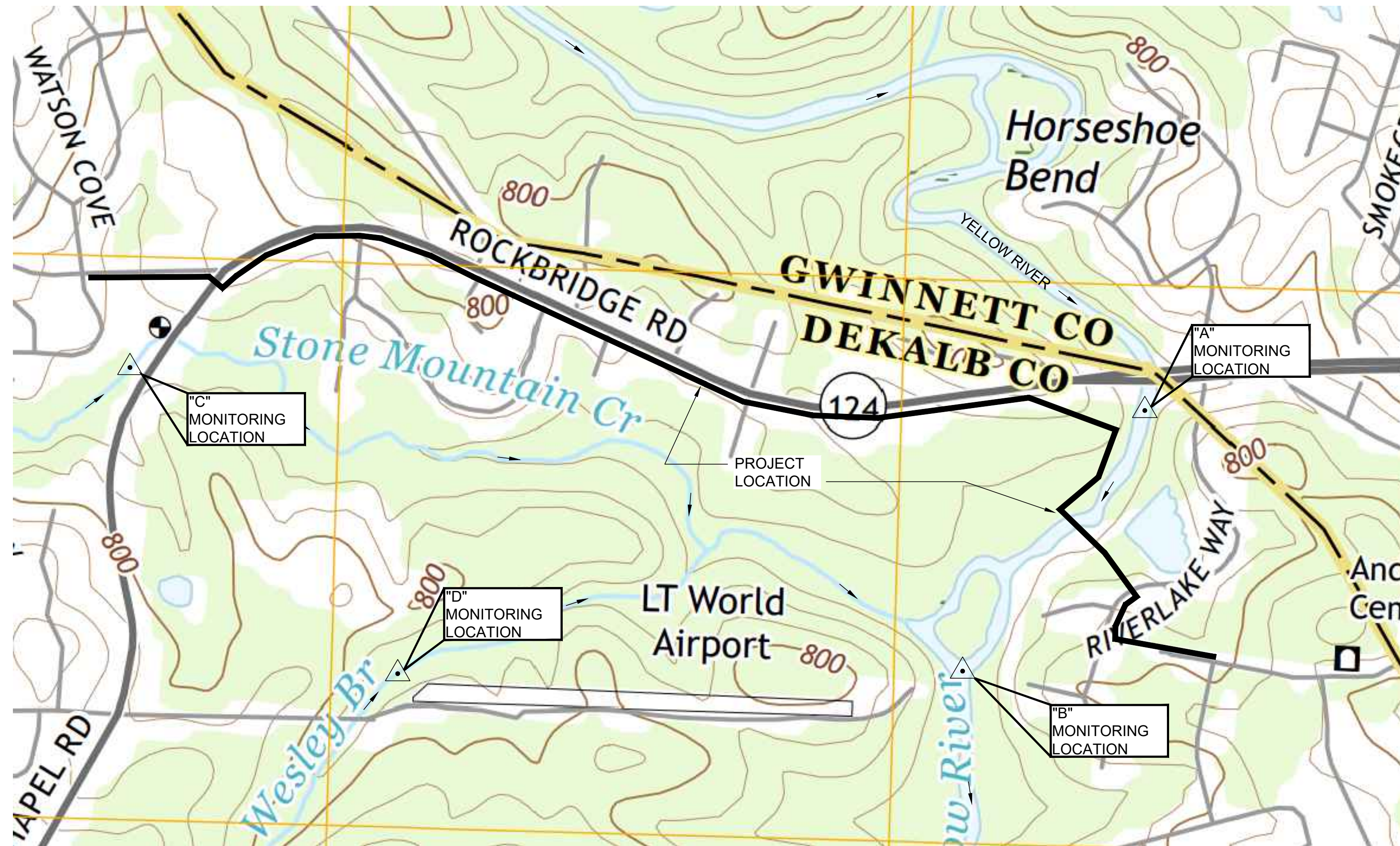
ATKINS
1600 Riveredge Parkway, Suite 700
Atlanta, Ga 30328
P: 770-933-0280



REVISION DATES		
REV	DATE	BY
1	1/16/19	WFL

DEKALB COUNTY DWM
NORRIS RESERVE LIFT STATION
FORCE MAIN RE-ROUTE
COMPREHENSIVE
MONITORING PLAN
GENERAL NOTES

DRAWING No.
CMP-0.1



GENERAL NOTES:

1. SEE SHEET EC-0.1 EROSION CONTROL GENERAL NOTES FOR MORE INFORMATION.
2. SEE SHEET CMP-0.2 COMPREHENSIVE MONITORING PLAN GENERAL NOTES FOR MORE INFORMATION.



LEGEND:

MONITORING LOCATION

COMPREHENSIVE MONITORING PLAN

SCALE: 1" = 500'

1
CMP-0.2



100% SUBMITTAL



ATKINS

1600 Riveredge Parkway, Suite 700
Atlanta, Ga 30328
P: 770-933-0280



REVISION DATES		
REV	DATE	BY

DEKALB COUNTY DWM
NORRIS RESERVE LIFT STATION
FORCE MAIN RE-ROUTE
COMPREHENSIVE
MONITORING
PLAN

DRAWING No.
CMP-0.2

EROSION CONTROL NOTES:

- 1. AT ALL TIMES, THE CONTRACTOR SHALL ADHERE TO LOCAL, STATE AND FEDERAL EROSION AND SEDIMENT CONTROL REGULATIONS AND TO THE LATEST EDITION OF THE "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA". BEST MANAGEMENT PRACTICES (BMP'S) SHALL BE EXERCISED TO CONTROL EROSION AND SEDIMENTATION FOR ALL RAINFALL EVENTS IN ACCORDANCE WITH THE "GREEN BOOK".
- 2. EROSION CONTROL MEASURES WILL BE MAINTAINED AT ALL TIMES. IF FULL IMPLEMENTATION OF THE APPROVED PLANS DOES NOT PROVIDE FOR EFFECTIVE EROSION CONTROL, ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED TO CONTROL OR TREAT THE SEDIMENT SOURCE.
- 3. THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES AND PRACTICES PRIOR TO, OR CONCURRENT WITH, LAND DISTURBING ACTIVITIES.
- 4. ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN FOURTEEN (14) CALENDAR DAYS SHALL BE STABILIZED WITH MULCH, TEMPORARY SEEDING, OR ANIONIC POLYACRYLAMIDE (PAM) IN ACCORDANCE WITH PART I.I.D.1 OF THE NPDES PERMIT.
- 5. IN CONCENTRATED FLOW AREAS, ALL SLOPES STEEPER THAN 2.5:1 AND WITH HEIGHT 10 FEET OR GREATER, AND CUTS AND FILLS WITHIN STREAM BUFFER, SHALL BE STABILIZED WITH THE APPROPRIATE EROSION CONTROL MATTING OR BLANKET.
- 6. WASHING DOWN AND CLEANING OF ALL CONCRETE TRUCKS AND EQUIPMENT IS NOT ALLOWED ON SITE.
- 7. STRIPPING OF VEGETATION, REGRADING, AND OTHER DEVELOPMENT ACTIVITIES SHALL BE CONDUCTED IN SUCH A MANNER, SO AS TO MINIMIZE EROSION.
- 8. CUT AND FILL OPERATIONS SHALL BE KEPT TO A MINIMUM.
- 9. DEVELOPMENT PLANS MUST CONFORM TO TOPOGRAPHY AND SOIL TYPE, SO AS TO CREATE THE LOWEST PRACTICABLE EROSION POTENTIAL.
- 10. WHENEVER FEASIBLE, NATURAL VEGETATION SHALL BE RETAINED, PROTECTED AND SUPPLEMENTED.
- 11. THE DISTURBED AREA AND THE DURATION OF EXPOSURE TO EROSION ELEMENTS SHALL BE KEPT TO A PRACTICABLE MINIMUM.
- 12. DISTURBED SOIL SHALL BE STABILIZED AS QUICKLY AS PRACTICABLE.
- 13. TEMPORARY VEGETATION OR MULCHING SHALL BE EMPLOYED TO PROTECT EXPOSED CRITICAL AREAS DURING DEVELOPMENT.
- 14. PERMANENT VEGETATION AND STRUCTURAL EROSION CONTROL MEASURES SHALL BE INSTALLED AS SOON AS PRACTICABLE.
- 15. TO THE EXTENT NECESSARY, SEDIMENT IN RUN-OFF WATER SHALL BE TRAPPED BY THE USE OF SILT TRAPS, FILTER RINGS, OR SIMILAR MEASURES UNTIL THE DISTURBED AREA IS STABILIZED.
- 16. ADEQUATE PROVISIONS SHALL BE PROVIDED TO MINIMIZE DAMAGE FROM SURFACE WATER TO THE CUT FACE OF EXCAVATIONS OR THE SLOPING SURFACES OF FILLS.
- 17. CUTS AND FILLS SHALL NOT ENDANGER ADJOINING PROPERTY.
- 18. FILLS SHALL NOT ENCRoACH UPON NATURAL WATER COURSES OR CONSTRUCTED CHANNELS IN A MANNER, SO AS TO ADVERSELY AFFECT OTHER PROPERTY OWNERS.
- 19. GRADING EQUIPMENT SHALL CROSS FLOWING STREAMS BY THE MEANS OF BRIDGES OR CULVERTS, EXCEPT WHEN SUCH METHODS ARE NOT FEASIBLE, PROVIDED IN ANY CASE THAT SUCH CROSSINGS SHALL BE KEPT TO A MINIMUM.
- 20. PROVISIONS SHALL BE PROVIDED FOR TREATMENT OR CONTROL OF ANY SOURCE OF SEDIMENT AND ADEQUATE SEDIMENTATION CONTROL FACILITIES TO RETAIN SEDIMENTS ON SITE OR PRECLUDE SEDIMENTATION OF ADJACENT WATERS BEYOND THE LEVELS SPECIFIED IN THE NPDES PERMIT.
- 21. ALL WASTE AND DEBRIS GENERATED BY THE PROPOSED CONSTRUCTION IS TO BE DISPOSED OF PROPERLY AND IN AN APPROVED AREA. ALL DISTURBED AREAS ARE TO BE STABILIZED WITH PERMANENT VEGETATION AS SOON AS PRACTICAL.
- 22. CLEAN UP AND/OR CONTAIN FUEL AND OIL SPILLS IMMEDIATELY. REPORT ANY CHEMICAL SPILLS INTO WATERWAYS IMMEDIATELY TO THE GEORGIA EPD EMERGENCY RESPONSE PROGRAM (1-800-241-4113). IF FUEL AND OIL ARE TO BE STORED ON-SITE, THEY MUST BE STORED IN ACCORDANCE WITH THE GEORGIA FIRE MARSHAL'S RULES AND REGULATIONS. A DIKE OF SUFFICIENT HEIGHT TO CONTAIN THE VOLUME OF FUEL OR OIL BEING STORED ALONG WITH MATERIALS AND PRODUCTS MADE FOR THE ABSORPTION OF PETROLEUM PRODUCTS ARE REQUIRED ON-SITE. ANY USED ABSORBING MATERIAL MUST BE DISPOSED OF IN AN APPROVED WASTE DISPOSAL SITE.
- 23. THE TOTAL AREA ENCOMPASSED AND EXPECTED TO BE DISTURBED BY THIS PROJECT IS APPROXIMATELY 7.03 ACRES. 7.03 ACRES x \$40.00=\$281.20 NPDES FEES PAID TO DEKALB COUNTY AND \$281.20 PAID TO EPD.
- 24. THE CONTRACTOR SHALL PLACE TEMPORARY MULCH OR GRASSING WITHIN TWO DAYS AFTER THE COMPLETION OF ANY LAND DISTURBING ACTIVITY OR IF THE ACTIVITY IS DISCONTINUED FOR A PERIOD OF ONE WEEK OR LONGER. PERMANENT GRASSING SHALL BE PLACED AS SOON AS PRACTICABLE.
- 25. THE CONTRACTOR SHALL PERFORM REGULAR MAINTENANCE ON EROSION CONTROL DEVICES AND KEEP THE REQUIRED RECORDS OF THE MAINTENANCE AND REPAIR OF THE DEVICES IN ACCORDANCE WITH THE EPD GENERAL PERMIT NO. GAR 100002 (NPDES). SEDIMENT SHALL BE REMOVED ONCE IT HAS ACCUMULATED TO ONE-HALF THE ORIGINAL HEIGHT OF THE BARRIER.
- 26. THE LIMITS OF DISTURBANCE AND CLEARING FOR THE PROJECT IS THE ROAD RIGHT-OF-WAY AND CONSTRUCTION EASEMENT FOR THE PROJECT. THE CONTRACTOR SHALL NOT CLEAR BEYOND THIS LIMIT. THE CONTRACTOR SHALL PAY PARTICULAR ATTENTION TO ANY SPECIAL CONDITIONS REGARDING CLEARING THAT ARE ATTACHED TO EASEMENT AGREEMENTS.
- 27. STORMWATER FROM THIS LINEAR PROJECT SITE DISCHARGES INTO VARIOUS CREEKS AND OUTFALLS WHICH EVENTUALLY FLOW INTO: YELLOW RIVER. NO NEIGHBORING AREA OFF SITE WILL BE AFFECTED BY POST-DEVELOPED RUN-OFF FROM THIS CONSTRUCTION SITE.
- 28. OFF-SITE VEHICLE TRACKING OF DIRT, SOILS, AND SEDIMENTS AND THE GENERATION OF DUST SHALL BE MINIMIZED OR ELIMINATED TO THE MAXIMUM EXTENT PRACTICABLE. UTILIZE BMP'S AS SHOWN ON EROSION CONTROL PLAN SHEETS.
- 29. EROSION CONTROL PRACTICES MUST COMPLY WITH THE BEST MANAGEMENT PRACTICES FOR EROSION CONTROL, AND SHALL COMPLY WITH THE STANDARDS/SPECIFICATIONS IN THE MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA.
- 30. MULCH, TEMPORARY VEGETATION, OR PERMANENT (PERENNIAL) VEGETATION SHALL BE COMPLETED ON ALL EXPOSED AREAS WITHIN 7 DAYS AFTER DISTURBANCE.
- 31. THE PRIMARY PERMITTEE SHALL BE RESPONSIBLE FOR COMPLYING WITH SECTION IV.D.4 OF THE EPD GAR 100002 PERMIT. THIS SECTION STATES THAT RAINFALL MEASUREMENTS MUST BE RECORDED DAILY AT THE SITE (WITH EXCEPTIONS DEFINED IN THE PERMIT), AND STATES THAT EVERY DAY THAT CONSTRUCTION ACTIVITY HAS TAKEN PLACE, THE PRIMARY PERMITTEE SHALL INSPECT ALL AREAS WHERE PETROLEUM PRODUCTS ARE STORED, USED OR HANDLED FOR SPILLS AND LEAKS FROM VEHICLES AND EQUIPMENT. THE PRIMARY PERMITTEE SHALL ALSO INSPECT DAILY ALL LOCATIONS WHERE THE WORKERS ENTER OR EXIT THE SITE FOR EVIDENCE OF OFF-SITE SEDIMENT TRACKING. THIS INSPECTION MUST CONTINUE UNTIL A N.O.T. IS SUBMITTED. THESE RAINFALL RECORDS AND INSPECTION REPORTS SHALL BE INCLUDED IN THE REPORTS PREPARED BY THE PRIMARY PERMITTEE AND THE RECORDS RETAINED BY THE OWNER.
- 32. INSPECTIONS AS REQUIRED BY THE EPD GAR 100002 (NPDES) PERMIT SHALL BE IMPLEMENTED AS SHOWN IN NOTE 11 ON THE CMP NOTE SHEETS.
- 33. SOURCES OF NON-STORM WATER ASSOCIATED WITH THIS CONSTRUCTION PROJECT MAY INCLUDE FIRE HYDRANT FLUSHING, WATER LINE FLUSHING, SPRINGS AND UNCONTAMINATED GROUND WATER. WATER FROM DISINFECTED WATER LINES SHALL BE DECHLORINATED WITH A NEUTRALIZING AGENT IN ACCORDANCE WITH APPENDIX B OF AWWA C651. SEDIMENT FROM EROSION RESULTING FROM THE FLUSHING OF FIRE HYDRANTS SHALL BE MINIMIZED BY PLACING RIP-RAP ADJACENT TO THE HYDRANTS AND TRAPPING ANY SEDIMENT IN A MANNER CONSISTENT WITH THE GEORGIA MANUAL FOR EROSION AND SEDIMENT CONTROL.

- 34. WHEN HAND PLANTING, MULCH (HAY OR STRAW) SHOULD BE UNIFORMLY SPREAD OVER SEEDED AREA WITHIN 24 HOURS OF SEEDING.
- 35. MULCH WILL BE USED AS TEMPORARY COVER (D6t1), ON SLOPES GREATER THAN 4:1, MULCH, IF USED, WILL BE ANCHORED.
- 36. NO CLEARING OF THE SITE UNTIL SILT FENCE AND OTHER EROSION AND SEDIMENT CONTROL DEVICES ARE INSTALLED, STABILIZED, AND FUNCTIONAL IN ACCORDANCE WITH THE NPDES PERMIT. PLEASE CALL (770) 422-1902 WITH ENOUGH LEAD-TIME FOR INSPECTION TO MEET YOUR SCHEDULE.
- 37. SEDIMENT/EROSION CONTROL DEVICES MUST BE CHECKED AFTER EACH STORM EVENT AS REQUIRED BY THE EPD GAR 100002 NPDES PERMIT. EACH DEVICE IS TO BE MAINTAINED OR REPLACED IF SEDIMENT ACCUMULATION HAS REACHED ONE HALF THE CAPACITY OF THE DEVICE. ADDITIONAL DEVICES MUST BE INSTALLED IF NEW CHANNELS HAVE DEVELOPED.
- 38. NON-EXEMPT ACTIVITIES SHALL NOT BE CONDUCTED WITHIN THE 25 FOOT OR 50 FOOT UNDISTURBED STREAM BUFFERS AS MEASURED FROM THE POINT OF WRESTED VEGETATION OR WITHIN 25-FEET OF THE COASTAL MARSHLAND BUFFER AS MEASURED FROM THE JURISDICTIONAL DETERMINATION LINE WITHOUT FIRST ACQUIRING THE NECESSARY VARIANCES AND PERMITS.
- 39. FOR INFRASTRUCTURE PROJECTS THAT BEGIN CONSTRUCTION ACTIVITY AFTER THE EFFECTIVE DATE OF THIS PERMIT, THE PRIMARY PERMITTEE MUST RETAIN THE DESIGN PROFESSIONAL WHO PREPARED THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN, OR AN ALTERNATIVE DESIGN PROFESSIONAL APPROVED BY EPD IN WRITING, TO INSPECT (a) THE INSTALLATION OF THE SEDIMENT STORAGE REQUIREMENTS AND PERIMETER CONTROL BMP'S FOR THE "INITIAL SEGMENT" OF THE LINEAR INFRASTRUCTURE PROJECT AND (b) ALL SEDIMENT BASINS WITHIN THE ENTIRE LINEAR INFRASTRUCTURE PROJECT WITHIN SEVEN (7) DAYS AFTER INSTALLATION. FOR THE PURPOSE OF THE SPECIFIC REQUIREMENTS IN PART IV.A.5, THE DISTURBED ACREAGE OF THE "INITIAL SEGMENT" OF A LINEAR INFRASTRUCTURE PROJECT MUST BE EQUAL TO OR GREATER THAN 10% OF THE TOTAL ESTIMATED DISTURBED ACREAGE FOR THE LINEAR INFRASTRUCTURE PROJECT BUT NOT LESS THAN ONE (1) ACRE. THE DESIGN PROFESSIONAL SHALL DETERMINE IF THESE BMP'S HAVE BEEN INSTALLED AND ARE BEING MAINTAINED AS DESIGNED. THE DESIGN PROFESSIONAL SHALL REPORT THE RESULTS OF THE INSPECTION TO THE PRIMARY PERMITTEE WITHIN SEVEN (7) DAYS AND THE PERMITTEE MUST CORRECT ALL DEFICIENCIES WITHIN TWO (2) BUSINESS DAYS OF RECEIPT OF THE INSPECTION REPORT FROM THE DESIGN PROFESSIONAL, UNLESS WEATHER RELATED SITE CONDITIONS ARE SUCH THAT ADDITIONAL TIME IS REQUIRED.
- 40. AMENDMENTS / REVISIONS TO THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN WHICH HAVE A SIGNIFICANT EFFECT ON BEST MANAGEMENT PRACTICES WITH A HYDRAULIC COMPONENT MUST BE CERTIFIED BY THE DESIGN PROFESSIONAL.
- 41. THE ENGINEER'S 24-HOUR CONTACT FOR EROSION CONTROL IS BILL LIVINGSTON, PHONE (678) 581-3494 WITH ATKINS IN ATLANTA, GEORGIA.
- 42. PRIOR TO SEEDING AND LANDSCAPING, ROCK, GRAVEL, AND DEBRIS SHALL BE REMOVED. SOIL SHALL BE SUITABLY COMPACTED AND FINELY GRADED. ALL ROOTS SHALL BE REMOVED.
- 43. THE CONTRACTOR SHALL INSTALL ANY ADDITIONAL EROSION CONTROL DEVICES AS REQUIRED BY DEKALB COUNTY DWM OR THE GDOT.
- 44. THE CONTRACTOR SHALL PLACE MULCH OR BEGIN GRASSING WITHIN TWO DAYS AFTER COMPLETION OF ANY LAND DISTURBING ACTIVITY OR IF ACTIVITY IS DISCONTINUED FOR A PERIOD OF A MAXIMUM SEVEN (7) DAY SOIL EXPOSURE.
- 45. ALL STATE WATERS AND WETLANDS LOCATED ON OR WITHIN 200 FEET OF THE PROJECT SITE HAVE BEEN DELINEATED. THERE ARE NO WETLANDS WITHIN THE CONSTRUCTION CORRIDOR FOR THIS PROJECT.
- 46. WASTE MATERIALS FROM THIS SITE SHALL NOT BE DISCHARGED TO WATERS OF THE STATE, EXCEPT AS AUTHORIZED BY A SECTION 404 PERMIT.
- 47. SANITARY WASTE AND WASTE MATERIALS FROM THIS SITE SHALL NOT BE DISCHARGED TO WATERS OF THE STATE, EXCEPT AS AUTHORIZED BY A SECTION 404 PERMIT.
- 48. ALL SANITARY WASTE UNITS WILL BE LOCATED IN AN AREA WHERE THE LIKELIHOOD OF THE UNIT CONTRIBUTING TO STORM WATER DISCHARGE IS NEGLIGIBLE. ADDITIONAL CONTAINMENT BMP'S MUST BE IMPLEMENTED, SUCH AS GRAVEL BAGS OR SPECIALLY DESIGNED PLASTIC SKID CONTAINERS AROUND THE BASE, TO PREVENT WASTES FROM CONTRIBUTING TO STORM WATER DISCHARGES. THE LOCATION OF SANITARY WASTE UNITS MUST BE IDENTIFIED ON THE EROSION CONTROL PLAN GRADING PHASE, BY THE CONTRACTOR ONCE THE LOCATIONS HAVE BEEN DETERMINED.
- 49. HAZARDOUS WASTES ALL HAZARDOUS WASTE MATERIALS WILL BE DISPOSED OF IN THE MANNER SPECIFIED BY LOCAL, STATE, AND OR FEDERAL REGULATIONS AND BY THE MANUFACTURER OF SUCH PRODUCTS. THE JOB SITE SUPERINTENDENT, WHO WILL ALSO BE RESPONSIBLE FOR SEEING THAT THESE PRACTICES ARE FOLLOWED, WILL INSTRUCT SITE PERSONNEL IN THESE PRACTICES. MATERIAL SAFETY DATA SHEETS (MSDS'S) FOR EACH SUBSTANCE WITH HAZARDOUS PROPERTIES THAT IS USED ON THE JOB SITE WILL BE OBTAINED AND USED FOR THE PROPER MANAGEMENT OF POTENTIAL WASTE THAT MAY RESULT FROM THESE PRODUCTS. AN MSDS WILL BE POSTED IN THE IMMEDIATE AREA WHERE SUCH PRODUCT IS STORED AND OR USED AND ANOTHER COPY OF EACH MSDS WILL BE MAINTAINED IN THE ESPOP FILE AT THE JOB SITE OFFICE. THE PERSONNEL WHO MUST HANDLE A SUBSTANCE WITH HAZARDOUS PROPERTIES WILL BE INSTRUCTED ON THE USE OF MSDS SHEETS AND THE SPECIFIC INFORMATION IN THE APPLICABLE MSDS FOR THE PRODUCT HE/SHE IS USING, PARTICULARLY REGARDING SPILL CONTROL TECHNIQUES.
- 50. THE CONTRACTOR WILL IMPLEMENT THE SPILL PREVENTION CONTROL AND COUNTERMEASURES (SPCC) PLAN FOUND WITHIN THIS ESPOP AND WILL TRAIN ALL PERSONNEL IN THE PROPER CLEANUP AND HANDLING OF SPILLED MATERIALS. NO SPILLED HAZARDOUS MATERIALS OR HAZARDOUS WASTES WILL BE ALLOWED TO COME INTO CONTACT WITH STORMWATER DISCHARGES. IF SUCH CONTACT OCCURS, THE STORMWATER DISCHARGE WILL BE CONTAINED ON SITE UNTIL APPROPRIATE MEASURES IN COMPLIANCE WITH STATE AND FEDERAL REGULATIONS ARE TAKEN TO DISPOSE OF SUCH CONTAMINATED STORMWATER. IT SHALL BE THE RESPONSIBILITY OF THE JOB SITE SUPERINTENDENT TO PROPERLY TRAIN ALL PERSONNEL IN THE USE OF THE SPCC PLAN.
- 51. A BRIEF DESCRIPTION OF THE EROSION CONTROL MEASURES PROPOSED TO BE IMPLEMENTED AT THE CONSTRUCTION SITE INCLUDE: SILT FENCE, CHECK DAMS, FILTER RINGS, ROCK FILTER DAMS, STORM DRAIN OUTLET PROTECTION, SLOPE STABILIZATION, CONSTRUCTION EXITS, AND GRASSING.
- 52. THE RUNOFF COEFFICIENT PRIOR TO AND AFTER CONSTRUCTION ACTIVITIES AT THE SITE IS APPROXIMATELY 0.35.
- 53. BANK STABILIZATION (RIP-RAP) SHALL ONLY BE PLACED WHERE NECESSARY FOR THE PREVENTION OF EROSION. NO RIP-RAP SHALL BE PLACED IN EXCESS OF THE MINIMUM REQUIRED FOR PROTECTION FROM EROSION.
- 54. NO RIP-RAP SHALL BE PLACED IN ANY WETLAND AREA OR IN ANY LOCATION OR MANNER TO IMPAIR SURFACE WATER FLOW INTO OR OUT OF ANY WETLAND AREA.
- 55. ALL EROSION AND SEDIMENT CONTROL MEASURES WILL BE CHECKED DAILY BY THE CONTRACTOR AND ANY DEFICIENCIES NOTED WILL BE CORRECTED BY THE END OF THE DAY.
- 56. CLEARING WILL BE KEPT TO AN ABSOLUTE MINIMUM. VEGETATION AND MULCH WILL BE APPLIED TO APPLICABLE AREAS IMMEDIATELY AFTER GRADING IS COMPLETE. LAND DISTURBING WILL BE SCHEDULED TO LIMIT EXPOSURE OF BARE SOILS TO EROSION ELEMENTS.
- 57. NO STORM WATER WILL BE CONTAINED ON THIS PROJECT.
- 58. CERTIFIED PERSONNEL FOR PRIMARY PERMITTEES SHALL CONDUCT INSPECTIONS AT LEAST TWICE EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF THE STORM THAT IS 0.5 INCHES RAINFALL OR GREATER IN ACCORDANCE WITH PART IV.D.4.a.(3)(a)-(c); SECONDARY PERMITTEES, PART IV.D.4.b.(3)(a)-(c); AND TERTIARY PART IV.D.4.c.(3)(a)-(c).
- 59. SOIL CLEANUP AND CONTROL PRACTICES LOCAL, STATE AND MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP WILL BE CLEARLY POSTED AND PROCEDURES WILL BE MADE AVAILABLE TO SITE PERSONNEL. MATERIAL AND EQUIPMENT NECESSARY FOR SPILL CLEANUP WILL BE KEPT IN THE MATERIAL STORAGE AREAS. TYPICAL MATERIALS AND EQUIPMENT INCLUDE, BUT IS NOT LIMITED TO, BROOMS, DUSTPANS, MOPS, RAGS, GLOVES, GOGGLES, CAT LITTER, SAND, SAWDUST AND PROPERLY LABELED PLASTIC AND METAL WASTE CONTAINERS.
- 60. SPILL PREVENTION PRACTICES AND PROCEDURES WILL BE REVIEWED AFTER A SPILL AND ADJUSTED AS NECESSARY TO PREVENT FUTURE SPILLS.
- 61. ALL SPILLS WILL BE CLEANED UP IMMEDIATELY UPON DISCOVERY. ALL SPILLS WILL BE REPORTED IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.
- 62. FOR SPILLS THAT IMPACT SURFACE WATER (LEAVE A SHEEN ON SURFACE WATER), THE NATIONAL RESPONSE CENTER (NRC) WILL BE CONTACTED WITHIN 24 HOURS AT 1-800-426-2675.

- 63. FOR SPILLS OF AN UNKNOWN AMOUNT, THE NATIONAL CENTER (NRC) WILL BE CONTACTED WITHIN 24 HOURS AT 1-800-426-2675.
- 64. FOR SPILLS GREATER THAN 25 GALLONS AND NO SURFACE WATER IMPACTS, THE GEORGIA EPD WILL BE CONTACTED WITHIN 24 HOURS.
- 65. FOR SPILLS LESS THAN 25 GALLONS AND NO SURFACE WATER IMPACTS, THE SPILL WILL BE CLEANED UP AND LOCAL AGENCIES WILL BE CONTACTED AS REQUIRED.
- 66. THE CONTRACTOR SHALL NOTIFY THE LICENSED PROFESSIONAL WHO PREPARED THIS PLAN IF MORE THAN 1320 GALLONS OF PETROLEUM IS STORED ON-SITE (THIS INCLUDES CAPACITIES OF EQUIPMENT) OR IF ANY ONE PIECE OF EQUIPMENT HAS A CAPACITY GREATER THAN 560 GALLONS. THE CONTRACTOR WILL NEED A SPILL PREVENTION CONTAINMENT AND COUNTERMEASURES PLAN PREPARED BY THAT LICENSED PROFESSIONAL.
- 67. DESCRIPTION OF APPROPRIATE CONTROLS AND MEASURES THAT WILL BE IMPLEMENTED AT THE CONSTRUCTION SITE: INITIAL START OF PROJECT, SILT FENCE, FILTER RINGS, ROCK FILTER DAMS, AND CHECK DAMS WILL BE INSTALLED ALONG CONSTRUCTION TO PREVENT ANY SEDIMENT FROM ESCAPING THE SITE DURING THE CLEARING OF ANY TREES OR GROUND COVER AND CONSTRUCTION EXITS WILL BE ESTABLISHED TO PREVENT SEDIMENT FROM BEING TRACKED OFF THE PROJECT SITE. INTERMEDIATE OR SECOND PHASE OF CONSTRUCTION, ALL EROSION CONTROL DEVICES WILL HAVE BEEN INSTALLED. THIS SHALL INCLUDE SILT FENCE, CHECK DAMS, ROCK FILTER DAMS, FILTER RINGS, SLOPE STABILIZATION MATTING, CONSTRUCTION EXITS, STORM DRAIN OUTLET PROTECTION, STRAW COVER OVER EXPOSED AREAS THAT WILL NOT BE COVERED WITHIN 7 DAYS AND ANY ADDITIONAL EROSION CONTROL DEVICES DEEMED NECESSARY TO CONTROL EROSION AS DIRECTED BY THE ON SITE INSPECTOR. FINAL STAGE OR END OF CONSTRUCTION, ALL EROSION CONTROL DEVICES AND CONSTRUCTION EXITS SHALL BE REMOVED AND THE ENTIRE SITE WILL BE COVERED BY PERMANENT VEGETATION TO CONTROL ANY FUTURE EROSION FROM THE SITE.
- 68. THE EROSION CONTROL MEASURES PROPOSED DURING THE CONSTRUCTION PROCESS TO ASSIST IN CONTROL OF THE POLLUTION IN STORM WATER THAT WILL OCCUR AFTER CONSTRUCTION OPERATIONS HAVE BEEN COMPLETED ARE: DURING THE CONSTRUCTION PROCESS OF THIS PIPELINE PROJECT, THE EROSION CONTROL DEVICES INSTALLED ARE TO CONTROL SEDIMENT FROM ESCAPING FROM THE SITE. WHEN THE PROJECT IS COMPLETED AND BEFORE EROSION CONTROL DEVICES ARE REMOVED, A STAND OF GRASS IS ESTABLISHED TO CONTROL EROSION AND TO PREVENT SEDIMENT FROM LEAVING THE SITE.
- 69. PRACTICES THAT WILL BE USED TO REDUCE THE POLLUTANTS IN STORM WATER DISCHARGES ARE AS FOLLOWS: PETROLEUM BASED PRODUCTS - CONTAINERS FOR PRODUCTS SUCH AS FUELS, LUBRICANTS AND TARS WILL BE INSPECTED DAILY FOR LEAKS AND SPILLS. THIS INCLUDES ON-SITE VEHICLE AND MACHINERY DAILY INSPECTIONS AND REGULAR PREVENTATIVE MAINTENANCE OF SUCH EQUIPMENT. EQUIPMENT MAINTENANCE AREAS WILL BE LOCATED AWAY FROM STATE WATERS, NATURAL DRAINS AND STORM WATER DRAINAGE INLETS. IN ADDITION, TEMPORARY FUELING TANKS SHALL HAVE A SECONDARY CONTAINMENT LINER TO PREVENT MINOR SPILLS FROM ESCAPING. DISCHARGE OF OILS, FUELS AND LUBRICANTS IS PROHIBITED. PROPER DISPOSAL METHODS WILL INCLUDE COLLECTION IN A SUITABLE CONTAINER AND DISPOSAL AS REQUIRED BY LOCAL AND STATE REGULATIONS. PAINTS / FINISHES / SOLVENTS - ALL PRODUCTS WILL BE STORED IN TIGHTLY SEALED ORIGINAL CONTAINERS WHEN NOT IN USE. EXCESS PRODUCTS WILL NOT BE DISCARDING. WASTE WATER COLLECTION SYSTEM. EXCESS PRODUCT MATERIALS USED WITH THESE PRODUCTS AND PRODUCT CONTAINERS WILL BE DISPOSED OF ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS. FERTILIZER AND HERBICIDES - THESE PRODUCTS WILL BE APPLIED AT RATES THAT DO NOT EXCEED THE MANUFACTURER'S SPECIFICATIONS OR ABOVE THE GUIDELINES SET FORTH IN THE CROP ESTABLISHMENT OR IN THE GSWCC MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA. ANY STORAGE OF THESE MATERIALS WILL BE UNDER ROOF IN SEALED CONTAINERS. BUILDING MATERIALS - NO BUILDING OR CONSTRUCTION MATERIALS WILL BE BURIED OR DISPOSED OF ON SITE. ALL SUCH MATERIAL WILL BE DISPOSED OF IN PROPER WASTE DISPOSAL PROCEDURES.
- 70. RATIONALE FOR NOT USING SEDIMENT BASINS (Sd3): THIS PROJECT IS A LINEAR INFRASTRUCTURE PROJECT, INSTALLING A FORCE MAIN PARALLEL TO THE ROADWAY, CROSSING SEVERAL PEAKS AND VALLEYS FOLLOWING THE GRADES OF THE ROADS, WITH THE FORCE MAIN TYPICALLY INSTALLED IN THE LINEAR SPACE BETWEEN THE EDGE OF PAVEMENT AND THE RIGHT-OF-WAY LINE. EROSION AND SEDIMENT CONTROL IS ACCOMPLISHED THROUGH THE USE OF SILT FENCE IN AREAS WHERE THE STORM WATER LEAVES THE SITE VIA SHEET FLOW AND THROUGH THE USE OF STONE CHECK DAMS (Cd-S), ROCK FILTER DAMS (RFD), FILTER RINGS (R), STORM DRAIN OUTLET PROTECTION (SD), AND SLOPE STABILIZATION (Ss) IN THE AREAS WHERE STORM WATER IS CONTAINED IN CONCENTRATED FLOW DITCHES. A DOUBLE ROW OF SILT FENCE FOR SENSITIVE AREAS IS USED ANYWHERE THE FORCE MAIN INSTALLATION IS WITHIN 200 FEET OF A STATE WATER. THERE IS NO MASS GRADING TO BE DONE FOR THIS FORCE MAIN PROJECT. AREAS DISTURBED DUE TO THE INSTALLATION OF THE PROPOSED FORCE MAIN SHALL BE BACKFILLED, GRADED, RESTORED AND STABILIZED WITH MULCH AT THE END OF EACH WORKING DAY. THIS FORCE MAIN PROJECT SHALL NOT CAUSE A CHANGE IN THE RUN-OFF COEFFICIENT, THE RUN-OFF VOLUME, OR THE EXISTING CONTOURS OF THE CONSTRUCTION CORRIDOR. AS SUCH, THE USE OF TEMPORARY SEDIMENT BASINS ARE NOT PROPOSED FOR THIS LINEAR PROJECT.
- 71. ALL STORM WATER OUTFALLS LEAVING THE FORCE MAIN CONSTRUCTION CORRIDOR ARE BEING SAMPLED. THEREFORE THERE IS NO REPRESENTATIVE SAMPLING PROPOSED. THERE IS NO CERTIFICATION STATEMENT INCLUDED REGARDING REPRESENTATIVE SAMPLING. THIS IS DUE TO THE NATURE OF A MOVING WATER MAIN INSTALLATION, ONE OUTFALL IS NEVER REPRESENTATIVE OF ANOTHER SINCE THE DISTURBED AREA MOVES WITH THE INSTALLATION SPOT OF THE FORCE MAIN.
- 72. THE DESIGN PROFESSIONAL WHO PREPARED THE ESAPC PLAN IS TO INSPECT THE INSTALLATION OF THE INITIAL SEDIMENT STORAGE REQUIREMENTS, PERIMETER CONTROL BMP'S, AND SEDIMENT BASINS IN ACCORDANCE WITH PART IV.A.5 WITHIN 7 DAYS AFTER INSTALLATION.
- 73. A LARGE SIGN (MINIMUM 4 FEET X 8 FEET) MUST BE ON THE SITE ON THE ACTUAL START DATE OF CONSTRUCTION VISIBLE FROM A PUBLIC ROADWAY IDENTIFYING THE CONSTRUCTION SITE, PERMITTEE(S), AND THE CONTACT PERSON(S) AND TELEPHONE NUMBER(S) UNTIL A NOT HAS BEEN SUBMITTED.
- 74. LIMIT THE AMOUNT OF DISTURBED AREA AT ANY ONE TIME TO NO GREATER THAN 25 ACRES OR 50% OF THE TOTAL PLANNED SITE, WHICHEVER IS LESS.
- 75. PROJECT IS LOCATED IN THE DEKALB COUNTY GEORGIA LAND DISTRICT 16, LAND LOTS 192, 193, 224 & 225. LAND USE DESIGNATION IS RESIDENTIAL (R190 L.F. OF 8' HDPE DR11 SLIPPED IN AN EXISTING ABANDONED 24" DIP AND 3378 L.F. OF 8" HDPE FORCE MAIN.
- 76. THE PROPOSED RECEIVING WATER IS THE YELLOW RIVER AND STONE MOUNTAIN CREEK.
- 77. SEDIMENT STORAGE DESIGN: THIS IS A LINEAR PROJECT AND THERE IS NOT ONE SINGLE LOCATION WHERE A SEDIMENT POND CAN BE CONSTRUCTED IN ORDER TO CONTROL THE DRAINAGE FROM THIS PROJECT, SO EQUIVALENT CONTROLS (SILT FENCE) HAVE BEEN INSTALLED TO CONTROL ANY FLOW FROM THE SITE. SEE CALCULATIONS. DETERMINE STORAGE VOLUME REQUIREMENTS: SILT FENCE: 100 L.F. PER 0.25 ACRES DISTURBED AREA, WHEN OTHER METHODS OF STORAGE ARE NOT USED. DISTURBED AREA: 7.03 ACRES. SILT FENCE REQUIRED: 100 L.F. x (7.03 AC/0.25 AC) = 2,812 L.F. SILT FENCE PROVIDED: 4,578 L.F. = (OK) SEDIMENT STORAGE: 67 C.Y. PER 1.0 ACRES DISTURBED AREA. DISTURBED AREA: 7.03 ACRES. SEDIMENT STORAGE REQUIRED: 67 CY x (7.03 AC/1.0 AC) = 471 CY. SEDIMENT STORAGE PROVIDED: (4,578 L.F. x 3' x 2' x 0.5) / 27 = 558.6 CY (OK)
- 78. CUT AND FILL SLOPES SHALL NOT EXCEED 3H:1V ON RESIDENTIAL PROJECTS AND SHALL NOT EXCEED 2H:1V ON ALL OTHER PROJECTS.

37 WEEKLY EROSION AND SEDIMENT CONTROL REPORTS SHALL BE SUBMITTED TO THE DEVELOPMENT DEPARTMENT STARTING WITH THE ISSUANCE OF THE DEVELOPMENT PERMIT AND ENDING WHEN THE PROJECT IS RELEASED BY THE INSPECTOR.

38 I CERTIFY THAT THE PERMITTEE'S EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN PROVIDES FOR AN APPROPRIATE AND COMPREHENSIVE SYSTEM OF BEST MANAGEMENT PRACTICES REQUIRED BY THE GEORGIA WATER QUALITY CONTROL ACT AND THE DOCUMENT "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA" (MANUAL PUBLISHED BY THE STATE SOIL AND WATER CONSERVATION COMMISSION AS OF JANUARY 1 OF THE YEAR IN WHICH THE LAND-DISTURBING ACTIVITY WAS PERMITTED, PROVIDES FOR THE SAMPLING OF THE RECEIVING WATER(S) OR THE SAMPLING OF THE STORM WATER OUTFALLS AND THAT THE DESIGNED SYSTEM OF BEST MANAGEMENT PRACTICES AND SAMPLING METHODS IS EXPECTED TO MEET THE REQUIREMENTS CONTAINED IN THE GENERAL NPDES PERMIT NO. GAR 100002.

William F. Livingston, Jr., Professional Engineer
GSWCC LEVEL II Certified Design Professional Certification # 21845
EXPIRES NOV. 4, 2021

- 79. FILE NOTICE OF INTENT AND NOTICE OF TERMINATION WITH GA. E.P.D. AND DEKALB COUNTY, IF LAND DISTURBANCE IS ONE (1) ACRE OR MORE OR WITHIN 200 FEET OF STATE WATERS. SUBMISSION MUST BE 14 DAYS PRIOR TO START OF LAND DISTURBANCE ACTIVITIES.
- 80. INSPECTIONS BY QUALIFIED PERSONNEL PROVIDED BY THE PRIMARY PERMITTEE AND THE ACCOCIATED RECORDS SHALL BE KEPT ON SITE IN COMPLIANCE WITH GAR. 1000-2.
- 81. AS REQUIRED BY THE N.P.D.E.S. PERMIT, THE PRIMARY PERMITTEE MUST RETAIN THE DESIGN PROFESSIONAL WHO PREPARED THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN OR SOMEONE UNDER HIS DIRECT SUPERVISION TO INSPECT THE INSTALLATION OF THE INITIAL SEDIMENT STORAGE REQUIREMENTS AND PERIMETER CONTROLS (BMP'S) WHICH THE DESIGN PROFESSIONAL DESIGNED WITHIN SEVEN (7) DAYS AFTER INSTALLATION. THE DESIGN PROFESSIONAL OR SOMEONE UNDER HIS SUPERVISION SHALL DETERMINE IF THESE BMP'S HAVE BEEN INSTALLED AND ARE BEING MAINTAINED AS DESIGNED. THE DESIGN PROFESSIONAL SHALL REPORT THE RESULTS OF THE INSPECTION TO THE PRIMARY PERMITTEE WITHIN SEVEN (7) DAYS AND THE PERMITTEE MUST CORRECT THE DEFICIENCIES WITHIN TWO (2) BUSINESS DAYS OF RECEIPT OF THE INSPECTION REPORT FROM THE DESIGN PROFESSIONAL UNLESS WEATHER RELATED SITE CONDITIONS ARE SUCH THAT ADDITIONAL TIME IS REQUIRED.
- 82. ANY AMENDMENTS / REVISIONS TO THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN WHICH HAVE A SIGNIFICANT EFFECT ON BEST MANAGEMENT PRACTICES WITH A HYDRAULIC COMPONENT MUST BE CERTIFIED BY THE DESIGN PROFESSIONAL.
- 83. ALL WASTE AND DEBRIS GENERATED BY THE PROPOSED CONSTRUCTION IS TO BE DISPOSED OF PROPERLY AND IN AN APPROVED AREA. ALL DISTURBED AREAS ARE TO BE STABILIZED WITH PERMANENT VEGETATION AS SOON AS PRACTICAL.
- 84. NO WASTE WILL BE DISPOSED OF INTO STORM WATER INLETS OR WATERS OF THE STATE, EXCEPT AS AUTHORIZED BY A SECTION 404 PERMIT.
- 85. NO BUFFER ENCROACHMENTS OR VARIANCES IS REQUIRED FOR THIS PROJECT.
- 86. ANY IMPERVIOUS WATER RUNOFF FROM LOTS BY PASSING WATER QUALITY POND MUST BE TREATED ON A LOT PER LOT BASIS.
- 87. INSTALLATION OF WATER QUALITY DEVICES SHALL BE CONCURRENT WITH FINAL STABILIZATION AND/OR PRIOR TO MAINTENANCE/PERFORMANCE POND EXPIRATION.
- 88. THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES AND PRACTICES PRIOR TO, OR CONCURRENT WITH LAND DISTURBING ACTIVITIES.
- 89. EROSION CONTROL MEASURES WILL BE MAINTAINED AT ALL TIMES. IF FULL IMPLEMENTATION OF THE PLAN DOES NOT PROVIDE FOR EFFECTIVE EROSION CONTROL, ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED TO CONTROL OR TREAT THE SEDIMENT SOURCE.
- 90. DISTURBED AREAS LEFT IDLE FOR 5 DAYS, AND NOT TO FINAL GRADE, WILL BE ESTABLISHED WITH TEMPORARY VEGETATION (DS2). ALL AREAS TO FINAL GRADE WILL BE ESTABLISHED WITH PERMANENT VEGETATION IMMEDIATELY UPON COMPLETION.



39 I certify under penalty of law that this Plan was prepared after a site visit to the locations described herein by myself or my authorized agent, under my supervision.

40

Professional Engineer
GSWCC Level II Certified Design Professional
Certification # 21845, Expires November 4, 2021

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REVISION DATES		
REV	DATE	BY
ADDED NOTES	8-13-2019	WFL

DEKALB COUNTY DWM
NORRIS RESERVE LIFT STATION
FORCE MAIN RE-ROUTE
EROSION CONTROL
GENERAL NOTES

DRAWING No.
EC-0.1

100% SUBMITTAL

**EROSION, SEDIMENTATION & POLLUTION CONTROL PLAN CHECKLIST
INFRASTRUCTURE CONSTRUCTION PROJECTS**

SWCD: SOIL AND WATER CONSERVATION DISTRICT OF DEKALB COUNTY

Project Name: NORRIS RESERVE LIFT STATION FORCE MAIN REROUTE **Address:** ROCKBRIDGE ROAD
City/County: LITHONIA / DEKALB COUNTY **Date on Plans:** 8-12-2019

Name & email of person filling out checklist: WILLIAM LIVINGSTON WILLIAM.LIVINGSTONJR@ATKINGGLOBAL.COM

Plan	Included	TO BE SHOWN ON ES&PC PLAN	
Page #	Y/N		
EC-0.4	Y		
COV	Y		
COV	Y		
COV	Y		
COV	Y		
COV	Y		
COV	Y		
COV	Y		
COV	Y		
COV	Y		
COV	Y		
EC-0.1	Y		
NOTE 66			
NOTE 67			
COV	Y		
EC-0.1	Y		
NOTE 71			
	N/A		
EC-0.1	Y		
NOTE 63			
NOTE 74			
EC-0.1	Y		
NOTE 38			
NOTE 78			
EC-0.1	Y		
EC-0.1	Y		
NOTE 40			
EC-0.1	Y		
NOTE 46			

- The applicable Erosion, Sedimentation and Pollution Control Plan Checklist established by the Commission as of January 1 of the year in which the land-disturbing activity was permitted.
(The completed Checklist must be submitted with the ES&PC Plan or the Plan will not be reviewed)
- Level II certification number issued by the Commission, signature and seal of the certified design professional.
(Signature, seal and Level II number must be on each sheet pertaining to ES&PC Plan or the Plan will not be reviewed)
- The name and phone number of the 24-hour local contact responsible for erosion, sedimentation and pollution controls.
- Provide the name, address, **email address**, and phone number of primary permittee.
- Note total and disturbed acreage of the project or phase under construction.
- Provide the GPS locations of the beginning and end of the Infrastructure project. Give the Latitude and Longitude in decimal degrees.
- Initial date of the Plan and the dates of any revisions made to the Plan including the entity who requested the revisions.
- Description of the nature of construction activity.
- Provide vicinity map showing site's relation to surrounding areas. Include designation of specific phase, if necessary.
- Identify the project receiving waters and describe all sensitive adjacent areas including streams, lakes, residential areas, wetlands, marshlands, etc. which may be affected.
- Design professional's certification statement and signature that the site was visited prior to development of the ES&PC Plan as stated on **Part IV page 21** of the permit.
- Design professional's certification statement and signature that the permittee's ES&PC Plan provides for an appropriate and comprehensive system of BMPs and sampling to meet permit requirements as stated on **Part IV page 20** of the permit.*
- Design professional certification statement and signature that the permittee's ES&PC Plan provides for representative sampling as stated on **Part IV.D.6.c.(3) page 37** of the permit as applicable.*
- Clearly note the statement that "The design professional who prepared the ES&PC Plan is to inspect the installation of the initial sediment storage requirements, perimeter control BMPs, and sediment basins within 7 days after installation." in accordance with **Part IV.A.5 page 26** of the permit.*
- Clearly note the statement that "Non-exempt activities shall not be conducted within the 25 or 50-foot undisturbed stream buffers as measured from the point of wrested vegetation or within 25-feet of the coastal marshland buffer as measured from the Jurisdictional Determination Line without first acquiring the necessary variances and permits."
- Provide a description of any buffer encroachments and indicate whether a buffer variance is required.
- Clearly note the statement that "Amendments/revisions to the ES&PC Plan which have a significant effect on BMPs with a hydraulic component must be certified by the design professional."
- Clearly note the statement that "Waste materials shall not be discharged to waters of the State, except as authorized by a Section 404 permit."

- | | | | |
|---------------|-----|----|--|
| EC-0.1 | Y | 19 | Clearly note statement that "The escape of sediment from the site shall be prevented by the installation of erosion and sediment control measures and practices prior to land disturbing activities." |
| NOTE 81 | | | |
| EC-0.1 | Y | 20 | Clearly note statement that "Erosion control measures will be maintained at all times. If full implementation of the approved Plan does not provide for effective erosion control, additional erosion and sediment control measures shall be implemented to control or treat the sediment source." |
| NOTE 82 | | | |
| EC-0.1 | Y | 21 | Clearly note the statement "Any disturbed area left exposed for a period greater than 14 days shall be stabilized with mulch or temporary seeding." |
| NOTE 83 | | | |
| | N/A | 22 | Any construction activity which discharges storm water into an Impaired Stream Segment, or within 1 linear mile upstream of and within the same watershed as, any portion of an Biota Impaired Stream Segment must comply with Part III. C. of the permit. Include the completed Appendix 1 listing all the BMPs that will be used for those areas of the site which discharge to the Impaired Stream Segment.* |
| | N/A | 23 | If a TMDL Implementation Plan for sediment has been finalized for the Impaired Stream Segment (identified in item 22 above) at least six months prior to submittal of NOI, the ES&PC Plan must address any site-specific conditions or requirements included in the TMDL Implementation Plan.* |
| NOTE 6 | | | |
| EC-0.1 | Y | 24 | BMPs for concrete washdown of tools, concrete mixer chutes, hoppers and the rear of the vehicles. Washout of the drum at the construction site is prohibited.* |
| NOTES 22 & 57 | | | |
| EC-0.1 | Y | 25 | Provide BMPs for the remediation of all petroleum spills and leaks. |
| EC-0.1 | Y | 26 | Description of the measures that will be installed during the construction process to control pollutants in storm water that will occur after construction operations have been completed.* |
| NOTE 59 | | | |
| | N/A | 27 | Description of practices to provide cover for building materials and building products on site.* |
| NOTE 60 | | | |
| EC-0.1 | Y | 28 | Description of the practices that will be used to reduce the pollutants in storm water discharges.* |
| EC-0.5 | Y | 29 | Description and chart or timeline of the intended sequence of major activities which disturb soils for the major portions of the site (i.e., initial perimeter and sediment storage BMPs, clearing and grubbing activities, excavation activities, utility activities, temporary and final stabilization). |
| NOTE 31 | | | |
| EC-0.1 | Y | 30 | Provide complete requirements of inspections and record keeping by the primary permittee.* |
| NOTE 9 | | | |
| CMP-0.1 | Y | 31 | Provide complete requirements of sampling frequency and reporting of sampling results.* |
| NOTE 12 | | | |
| CMP-0.1 | Y | 32 | Provide complete details for retention of records as per Part IV.F. of the permit.* |
| CMP-0.1 | Y | 33 | Description of analytical methods to be used to collect and analyze the samples from each location.* |
| CMP-0.1 | Y | 34 | Appendix B rationale for NTU values at all outfall sampling points where applicable.* |
| CMP-0.1 | Y | 35 | Delineate all sampling locations, perennial and intermittent streams and other water bodies into which storm water is discharged also provide a summary chart of the justification and analysis for the representative sampling as applicable.* |
| EC-0.1 | Y | 36 | A description of appropriate controls and measures that will be implemented at the construction site including: (1) initial sediment storage requirements and perimeter control BMPs, (2) intermediate grading and drainage BMPs, and (3) final BMPs. For construction sites where there will be no mass grading and the initial perimeter control BMPs, intermediate grading and drainage BMPs, and final BMPs are the same, the Plan may combine all of the BMPs into a single phase.* |
| NOTE 58 | | | |
| EC-0.1 | Y | 37 | Graphic scale and North arrow. |
| EC-0.1 | Y | 38 | Existing and proposed contour lines with contour lines drawn at an interval in accordance with the following: |
- | | |
|-------------------|-------------------------------------|
| Existing Contours | USGS 1": 2000' Topographical Sheets |
| Proposed Contours | 1" : 400' Centerline Profile |
- FORCE MAIN CONSTRUCTION WILL NOT CHANGE CONTOURS

- | | | | |
|---------|-----|----|--|
| | N/A | 39 | Use of alternative BMPs whose performance has been documented to be equivalent to or superior to conventional BMPs as certified by a Design Professional (unless disapproved by EPD or the Georgia Soil and Water Conservation Commission). Please refer to the Alternative BMP Guidance Document found at www.gaswcc.org. |
| | N/A | 40 | Use of alternative BMP for application to the Equivalent BMP List. Please refer to Appendix A-2 of the Manual for Erosion & Sediment Control in Georgia 2016 Edition.* |
| EC-1.0 | Y | 41 | Delineation of the applicable 25-foot or 50-foot undisturbed buffers adjacent to State waters and any additional buffers required by the Local Issuing Authority. Clearly note and delineate all areas of impact. |
| EC-1.0 | Y | 42 | Delineation of on-site wetlands and all State waters located on and within 200 feet of the project site. |
| EC-0.7 | Y | 43 | Delineation and acreage of contributing drainage basins on the project site. |
| EC-0.7 | Y | 44 | Delineate on-site drainage and off-site watersheds using USGS 1" :2000' topographical sheets. |
| EC-0.1 | Y | 45 | An estimate of the runoff coefficient or peak discharge flow of the site prior to and after construction activities are completed. |
| NOTE 49 | | | |
| | N/A | 46 | Storm-drain pipe and weir velocities with appropriate outlet protection to accommodate discharges without erosion. Identify/Delineate all storm water discharge points. |
| EC-0.6 | Y | 47 | Soil series for the project site and their delineation. |
| EC-1.0 | Y | 48 | The limits of disturbance for each phase of construction. |
| EC-0.1 | Y | 49 | Provide a minimum of 67 cubic yards of sediment storage per acre drained using a temporary sediment basin, retrofitted detention pond, and/or excavated inlet sediment traps for each common drainage location. Sediment storage volume must be in place prior to and during all land disturbance activities until final stabilization of the site has been achieved. A written justification explaining the decision to use equivalent controls when a sediment basin is not attainable must be included in the Plan for each common drainage location in which a sediment basin is not provided. A written justification as to why 67 cubic yards of storage is not attainable must also be given. Worksheets from the Manual must be included for structural BMPs and all calculations used by the design professional to obtain the required sediment storage when using equivalent controls. When discharging from sediment basins and impoundments, permittees are required to utilize outlet structures that withdraw water from the surface, unless infeasible. If outlet structures that withdraw water from the surface are not feasible, a written justification explaining this decision must be included in the Plan. |
| NOTE 18 | | | |
| NOTE 68 | | | |
| EC-1.0 | Y | 50 | Location of Best Management Practices that are consistent with and no less stringent than the Manual for Erosion and Sediment Control in Georgia. Use uniform coding symbols from the Manual, Chapter 6, with legend. |
| EC-1.0 | Y | 51 | Provide detailed drawings for all structural practices. Specifications must, at a minimum, meet the guidelines set forth in the Manual for Erosion and Sediment Control in Georgia. |
| EC-0.1 | Y | 52 | Provide vegetative plan, noting all temporary and permanent vegetative practices. Include species, planting dates and seeding, fertilizer, lime and mulching rates. Vegetative plan shall be site specific for appropriate time of year that seeding will take place and for the appropriate geographic region of Georgia. |
| NOTE 58 | | | |
- *If using this checklist for a project that is less than 1 acre and not part of a common development but within 200 ft of a perennial stream the * checklist items would be N/A.

Effective January 1, 2019



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 1600 Riveredge Parkway, Suite 700
 Atlanta, Ga 30328
 P: 770-933-0280



REVISION DATES		
REV	DATE	BY

DEKALB COUNTY DWM
 NORRIS RESERVE LIFT STATION
 FORCE MAIN RE-ROUTE
 EROSION, SEDIMENT & POLLUTION
 CONTROL CHECKLIST

DRAWING No.
EC-0.4

100% SUBMITTAL

Erosion and Sediment Control (E&S&C) Plan Review Checklist

- PLAN INCLUDED
- EC-1.0 Show graphic scale and north arrow.
 - COV Provide vicinity map showing site's relation to surrounding area, including designation of specific phase, if necessary.
 - N/A Provide existing and proposed contours. (Force Main Construction will not change contours).
 - C-2.0 Delineate all wetlands and state waters located on or within 200 feet of the project site.
 - C-2.0 Delineate 25-foot undisturbed state buffers of state waters and 50-foot buffers along designated trout streams from wrested point of vegetation.
 - C-2.0 Delineate 75-foot undisturbed county buffers of state waters from wrested point of vegetation.
 - EC-0.7 Identify the project receiving waters and describe adjacent areas – such as streams, lakes, drainage ditches, residential areas etc., which might be affected. Show distance.
 - N/A Variance from DeKalb County required for encroachment in 75-foot state waters buffers.
 - N/A Variance from GA. E.P.D. required for encroachment in 25-foot state waters buffers.
 - EC-2.0 Show double row Type –C silt fence between land disturbing activity and state waters, wetlands, and/or I.R.F.
 - EC-0.1 File notice of intent and notice of termination with GA. E.P.D. and DeKalb County, if land disturbance is one (1) acre or more or within 200 feet of state waters. Submission must be 14 days prior to start of land disturbance activities.
 - EC-0.1 Phase E&S&C plans into an initial perimeter control E&S&C plan, intermediate E&S&C plan for grading and drainage and a final phase E&S&C plan.
 - EC-0.1 Show total and disturbed acreage (the disturbed area shall be the total estimated disturbed area of the primary and secondary permittees) of the project or phase under construction. Provide calculations for required NPDES fee. Fees are \$40.00 per disturbed acre paid to DeKalb County and \$40.00 per disturbed acre paid to E.P.D. (Show on cover and E&S&C sheets).
 - EC-0.6 Show soil series and their delineation.
 - EC-1.0 Show limits of disturbance on E&S&C plans.
 - EC-1.0 Provide revision and/or initial date on E&S&C plans.
 - EC-0.1 Provide description of existing land use at project site and description of proposed project. Include land lot and district numbers for site location. Describe critical areas and what measures will be utilized for these areas.
 - COV Provide name, address and phone number of developer/owner.
 - EC-0.1 Provide name and phone number of 24 – hour local erosion and sediment control contact.
 - EC-0.1 Show certification number, signature and seal of qualified plan designer. Show GSWCC Level II certification
 - N/A Provide an E&S&C plan for a typical lot and each situational lot.
 - EC-0.1 Provide a narrative for location, method of containment and disposal procedures for concrete truck or mixer wash out.
 - EC-0.1 Provide a narrative for storage location, method of containment and emergency procedures in the event of a spill or reportable quantity of petroleum products.
 - EC-0.1 Provide a narrative for paint and/or other chemicals with respect to storage, clean-up and disposal.
 - EC-0.5 Provide construction activity schedule – show anticipated starting and completion dates, and detailed sequence of events for all activities, including but not limited to:
 - Installation of sediment control measures
 - Installation of temporary sediment basins
 - Installation of detention facilities
 - Clearing, Grubbing and grading operations
 - Grassing – including mulching, temporary and permanent vegetation
 - Maintenance of erosion and sediment control measures
 - Installation of Water Quality devices
 - Final landscaping grassing, cleaning of storm drains, etc.
 - ECD-3.0 Provide vegetative plan for all temporary and permanent vegetative practices, including species, planting dates, seeding, fertilizer, and mulching rates.
 - EC-1.0 Show location and detail of erosion and sediment control practices, using uniform coding symbols from the manual for Erosion and Sediment Control in Georgia, Chapter 6. Practices may include, but not limited to:
 - Construction exit
 - Sediment Barrier per DeKalb STD. 900
 - Retrofitting
 - Storm Outlet Protection
 - Temporary sediment basin and calculations
 - Storm drain inlet sediment traps
 - Check dams
 - Rock filter dams
 - Down drains
 - Temporary creek crossings

- PLAN INCLUDED
- EC-1.0 Mat blankets
 - N/A Other
 - N/A Show location of topsoil stockpile on plan (initial phase). Show location of topsoil spread. (final phase)
 - N/A Provide location, details and calculations for Water Quality devices. Infeasibility due to space on linear project. Going to use silt fence. Contours are unchanged with no change in runoff.
 - EC-0.1 Note 68 Provide 67 cubic yards per acre sediment storage.

Notes on Plan:

- EC-0.1 Note 3 The escape of sediment from the site shall be prevented by the installation of erosion and sediment control measures and practices prior to, or concurrent with, land disturbing activities.
- EC-0.1 Note 2 Erosion control measures will be maintained at all times. If full implementation of the approved plans does not provide for effective erosion control, additional erosion and sediment control measures shall be implemented to control or treat the sediment source.
- EC-0.1 Note 2 Additional erosion and sediment control measures and practices will be installed if deemed necessary by the on-site inspector.
- EC-0.1 Note 4 Any disturbed area left exposed for a period greater than 14 days shall be stabilized with mulch or temporary seeding.
- EC-0.1 Note 35 Erosion and sediment control measures and practices to be inspected daily.
- EC-0.1 Note 69 Cut and fill slopes shall not exceed 3H: 1V on residential projects and shall not exceed 2H: 1V on all other projects.
- EC-0.1 Note 70 Weekly erosion and sediment control reports shall be submitted to the development department starting with the issuance of the development permit and ending when the project is released by the inspector.
- EC-0.1 Note 71 " I certify that the permittee's erosion, sedimentation and pollution control plan provides for an appropriate and comprehensive system of best management practices required by the Georgia Water Quality Control Act and the document "Manual for Erosion and Sediment control in Georgia", published by the State Soil and Water Conservation Commission as of January of the year in which the land disturbing activity was permitted, provides for the sampling of the receiving water(s) or the sampling of the storm water outfalls and the designed system of Best Management Practices and sampling methods is expected to meet the requirements contained in the General NPDES Permit NO. Gar 10000- "(1,2 or 3).
- EC-0.1 TTL BLK " I certify under penalty of law that this plan was prepared after a site visit to the locations described herein by myself or my authorized agent, under my direct supervision"

- EC-0.1 Note 73 Inspections by qualified personnel provided by the primary permittee and the associated records shall be kept on site in compliance with Gar.10000- (1,2 or 3).
- EC-0.1 Note 79 Any impervious water runoff from lots by-passing Water Quality pond must be treated on a lot per lot basis.
- EC-0.1 Note 80 Installation of Water Quality devices shall be concurrent with final stabilization and/or prior to maintenance/performance bond expiration.
- Comprehensive NPDES Monitoring Plan:**
 - EC-0.1 Note 74 Indication that the design professional who prepared the E&S&C Plan is to inspect the installation of BMP's within 7 days after initial construction.
 - EC-0.1 Note 75 Indication that amendments/revisions to the E&S&C plan which have a significant effect on BMP's with a hydraulic component must be certified by the design professional.
 - EC-0.1 Note 49 Show an estimate of the runoff coefficient or peak discharge flow of the site prior to and after construction activities is completed.
 - CMP-02 Delineate/ identify all storm water discharge points and all sampling locations.
 - EC-0.1 Note 77 Provide indication that waste materials shall not be discharged to waters of the state, except as authorized by a section 404 permits.
 - EC-0.1 Note 78 Show documentation that the E&S&C Plan is in compliance with waste disposal, sanitary sewer, or septic tank regulations.
 - CMP-01 Details on required inspections and record keeping by the primary, secondary and tertiary permittees.
 - CMP-01 Describe the analytical methods to be used to collect and analyze the samples from each location.
 - CMP-01 Show information on sampling frequency and reporting requirements.
 - EC-0.7 Show delineation and acreage of contributing drainage basins on the project site. and off-site watersheds using USGS 1":2000' topographical sheets.

ANTICIPATED BEGINNING OF CONSTRUCTION 3/01/20
 ANTICIPATED END OF CONSTRUCTION 3/01/21

CONSTRUCTION ACTIVITY SCHEDULE

ITEM	MONTH 1	MONTH 2	MONTH 3	MONTH 4	MONTH 5	MONTH 6	MONTH 7	MONTH 8	MONTH 9	MONTH 10	MONTH 11	MONTH 12
MOBILIZATION	█											
INSTALLATION AND MAINTENANCE OF SEDIMENT CONTROL	█	█	█	█	█	█	█	█	█	█	█	█
INSTALLATION OF WATER QUALITY DEVICES		█	█	█	█	█	█	█	█	█	█	█
CLEARING & GRUBBING	█	█	█	█	█	█	█	█	█	█	█	█
CONCRETE SIDEWALK AND CURB RESTORATION			█	█	█	█	█	█	█	█	█	█
PAVEMENT REPAIR			█	█	█	█	█	█	█	█	█	█
INSTALLATION OF FORCE MAIN			█	█	█	█	█	█	█	█	█	█
GRASSING – MULCHING, TEMPORARY VEGETATION			█	█	█	█	█	█	█	█	█	█
GRASSING – PERMANENT VEGETATION								█	█	█	█	█
FINAL LANDSCAPING GRASSING, CLEANING OF STORM DRAINS								█	█	█	█	█
REMOVE TEMPORARY SEDIMENT CONTROL STRUCTURES											█	█
DEMOBILIZATION												█

25

16

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DEKALB COUNTY DWM
 NORRIS RESERVE LIFT STATION
 FORCE MAIN RE–ROUTE
 EROSION, SEDIMENT & POLLUTION
 CONTROL CHECKLIST

DRAWING No.
EC-0.5

MAP INFORMATION

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: DeKalb County, Georgia
 Survey Area Data: Version 9, Oct 2, 2017

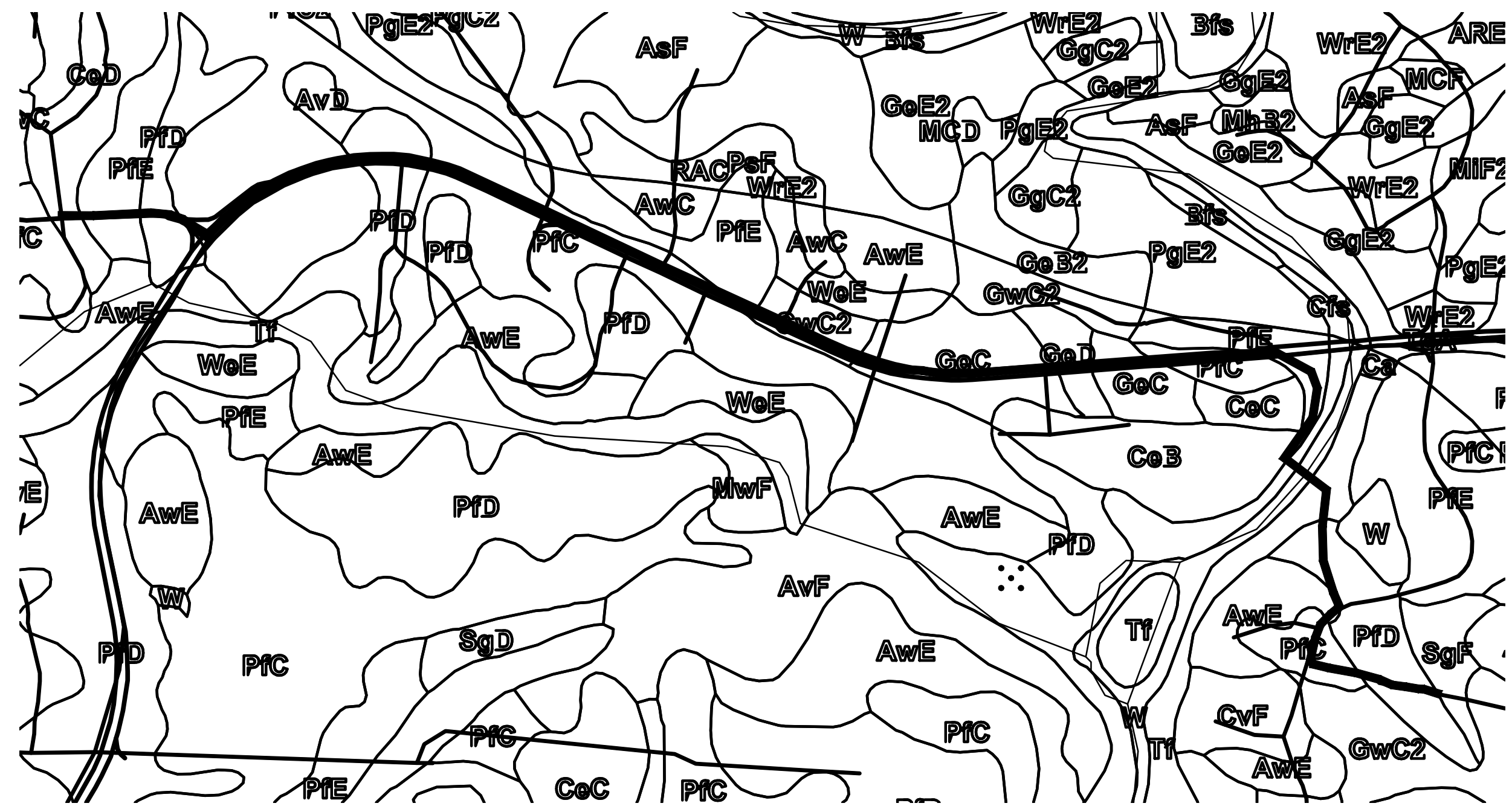
Soil Survey Area: Gwinnett County, Georgia
 Survey Area Data: Version 8, Oct 5, 2017

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 4, 2014—Jun 18, 2014

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.



SOILS MAP 1
 NTS **EC-0.6**

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AmB	Appling sandy loam, 2 to 6 percent slopes	2.3	0.1%
AmC	Appling sandy loam, 6 to 10 percent slopes	7.6	0.5%
AvD	Ashlar sandy loam, very rocky, 6 to 15 percent slopes	3.6	0.2%
AvF	Ashlar sandy loam, very rocky, 15 to 45 percent slopes	76.3	4.8%
AwC	Ashlar-Wedowee complex, 2 to 10 percent slopes	29.0	1.8%
AwE	Ashlar-Wedowee complex, 10 to 25 percent slopes	169.0	10.7%
Ca	Cartecay silt loam, frequently flooded	22.3	1.4%
CeB	Cecil sandy loam, 2 to 6 percent slopes	25.1	1.6%
CeC	Cecil sandy loam, 6 to 10 percent slopes	19.6	1.2%
CeD	Cecil sandy loam, 10 to 15 percent slopes	11.2	0.7%
CvF	Cheslatee stony sandy loam, 15 to 45 percent slopes	7.9	0.5%
GeC	Gwinnett sandy loam, 6 to 10 percent slopes	11.9	0.8%
GeD	Gwinnett sandy loam, 10 to 15 percent slopes	11.2	0.7%
GwC2	Gwinnett sandy clay loam, 2 to 10 percent slopes, eroded	27.0	1.7%
GwD2	Gwinnett sandy clay loam, 10 to 15 percent slopes, eroded	7.7	0.5%
MdC	Madison sandy loam, 6 to 10 percent slopes	18.1	1.1%
MdD	Madison sandy loam, 10 to 15 percent slopes	3.2	0.2%
MdE	Madison sandy loam, 15 to 30 percent slopes	14.5	0.9%
MwD	Musella stony sandy clay loam, 6 to 15 percent slopes	6.1	0.4%
MwF	Musella stony sandy clay loam, 15 to 45 percent slopes	11.4	0.7%
PIC	Pacolet sandy loam, 2 to 10 percent slopes	215.3	13.6%
PID	Pacolet sandy loam, 10 to 15 percent slopes	153.7	9.7%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
PfE	Pacolet sandy loam, 15 to 30 percent slopes	57.4	3.6%
PgC2	Pacolet sandy clay loam, 2 to 10 percent slopes, eroded	4.3	0.3%
PgD2	Pacolet sandy clay loam, 10 to 15 percent slopes, moderately eroded	4.8	0.3%
Rx	Rock outcrop	3.1	0.2%
SgD	Sweetapple-Grover complex, 6 to 15 percent slopes	5.3	0.3%
SgF	Sweetapple-Grover complex, 15 to 45 percent slopes	7.2	0.5%
Tf	Toccoa sandy loam, 0 to 2 percent slopes, frequently flooded	69.5	4.4%
W	Water	12.6	0.8%
WeC	Wedowee sandy loam, 6 to 10 percent slopes	2.5	0.2%
WeE	Wedowee sandy loam, 10 to 25 percent slopes	13.2	0.8%
Subtotals for Soil Survey Area		1,033.8	65.4%
Totals for Area of Interest		1,580.5	100.0%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AmC2	Appling sandy loam, 6 to 10 percent slopes, moderately eroded	1.8	0.1%
AnC2	Appling sandy clay loam, 6 to 10 percent slopes, eroded	5.1	0.3%
ARE	Ashlar, Rion, and Waterree soils, 10 to 25 percent slopes	50.9	3.2%
AsF	Ashlar-Waterree complex, 15 to 45 percent slopes, stony	36.4	2.3%
ATD	Ashlar and Wedowee soils, 6 to 15 percent slopes	3.5	0.2%
Bfs	Buncombe loamy fine sand	19.0	1.2%
Cfs	Chewacta silt loam, 0 to 2 percent slopes, frequently flooded	8.7	0.6%
Cus	Congaree loam	7.8	0.5%
GeB2	Gwinnett clay loam, 2 to 6 percent slopes, eroded	20.8	1.3%
GeC2	Gwinnett clay loam, 6 to 10 percent slopes, eroded	41.4	2.6%
GeE2	Gwinnett clay loam, 10 to 25 percent slopes, eroded	68.5	4.3%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
GgB2	Gwinnett loam, 2 to 6 percent slopes, eroded	8.6	0.5%
GgC2	Gwinnett loam, 6 to 10 percent slopes, eroded	5.0	0.3%
GgE2	Gwinnett loam, 10 to 25 percent slopes, eroded	22.3	1.4%
HdB	Hard Labor sandy loam, 2 to 6 percent slopes	4.2	0.3%
MCD	Musella cobbly loam, 6 to 15 percent slopes	1.4	0.1%
MCF	Musella cobbly loam, 15 to 45 percent slopes	3.8	0.2%
MhB2	Madison gravelly sandy loam, 2 to 6 percent slopes, eroded	3.6	0.2%
MIC2	Madison sandy clay loam, 6 to 10 percent slopes, moderately eroded	0.0	0.0%
MID2	Madison sandy clay loam, 10 to 15 percent slopes, moderately eroded	4.9	0.3%
MIF2	Madison sandy clay loam, 15 to 45 percent slopes, eroded	37.6	2.4%
PfB2	Pacolet sandy loam, 2 to 6 percent slopes, moderately eroded	15.1	1.0%
PfC2	Pacolet sandy loam, 6 to 10 percent slopes, moderately eroded	9.3	0.6%
PgC2	Pacolet sandy clay loam, 6 to 10 percent slopes, moderately eroded	10.0	0.6%
PgD2	Pacolet sandy clay loam, 10 to 15 percent slopes, moderately eroded	33.2	2.1%
PgE2	Pacolet sandy clay loam, 15 to 25 percent slopes, moderately eroded	40.4	2.6%
PaF	Pacolet-Saw complex, 15 to 45 percent slopes, stony	9.8	0.6%
RAC	Rawlings and Rion soils, 2 to 10 percent slopes	13.1	0.8%
RNF	Rion and Bethlehem soils, 15 to 45 percent slopes, stony	0.5	0.0%
ToA	Toccoa fine sandy loam, 0 to 4 percent slopes, frequently flooded	22.5	1.4%
W	Water	19.1	1.2%
WrE2	Wedowee sandy loam, 10 to 25 percent slopes, eroded	18.3	1.2%

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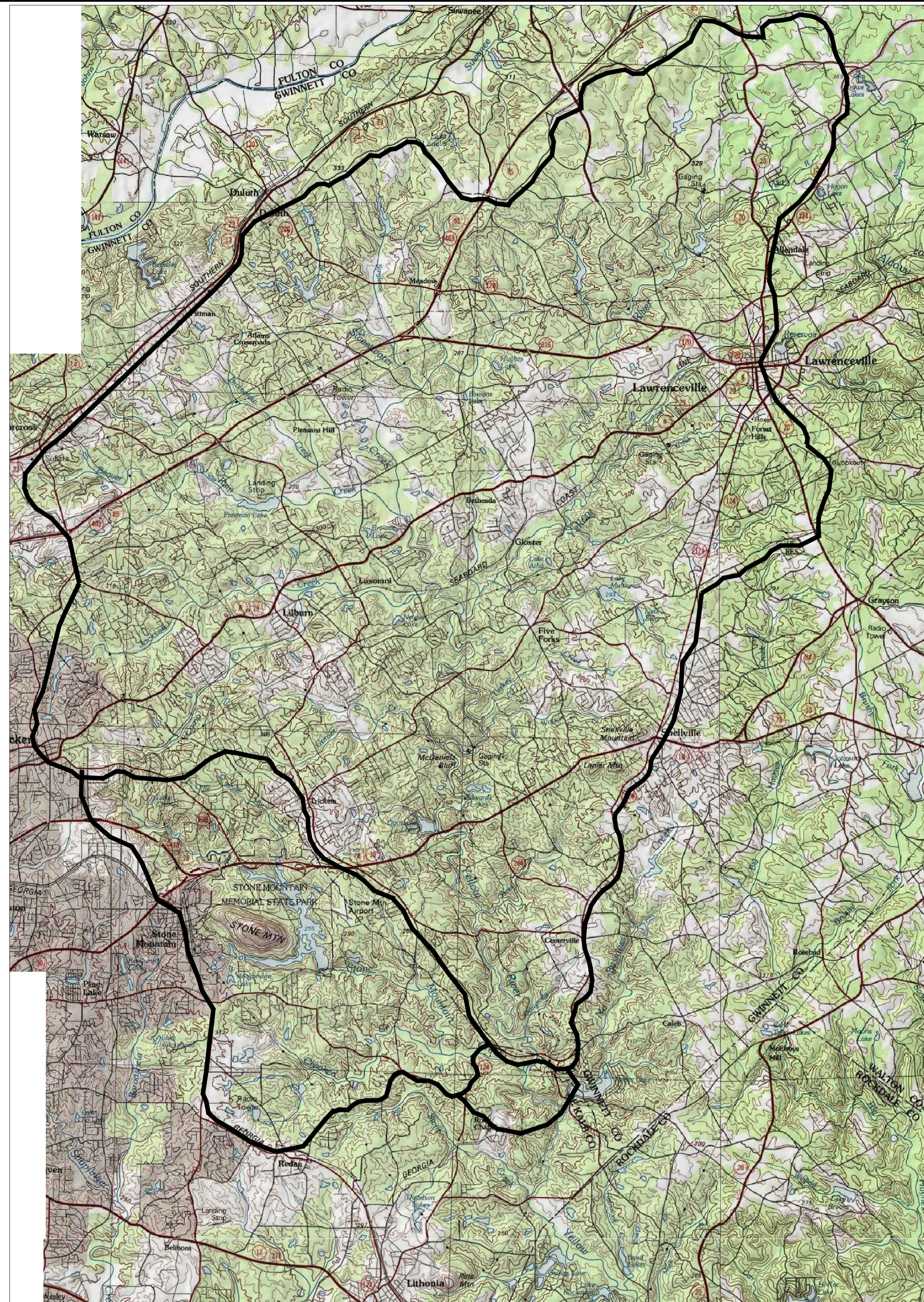
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REVISION DATES		
REV	DATE	BY

DEKALB COUNTY DWM
 NORRIS RESERVE LIFT STATION
 FORCE MAIN RE-ROUTE
 SOIL MAP

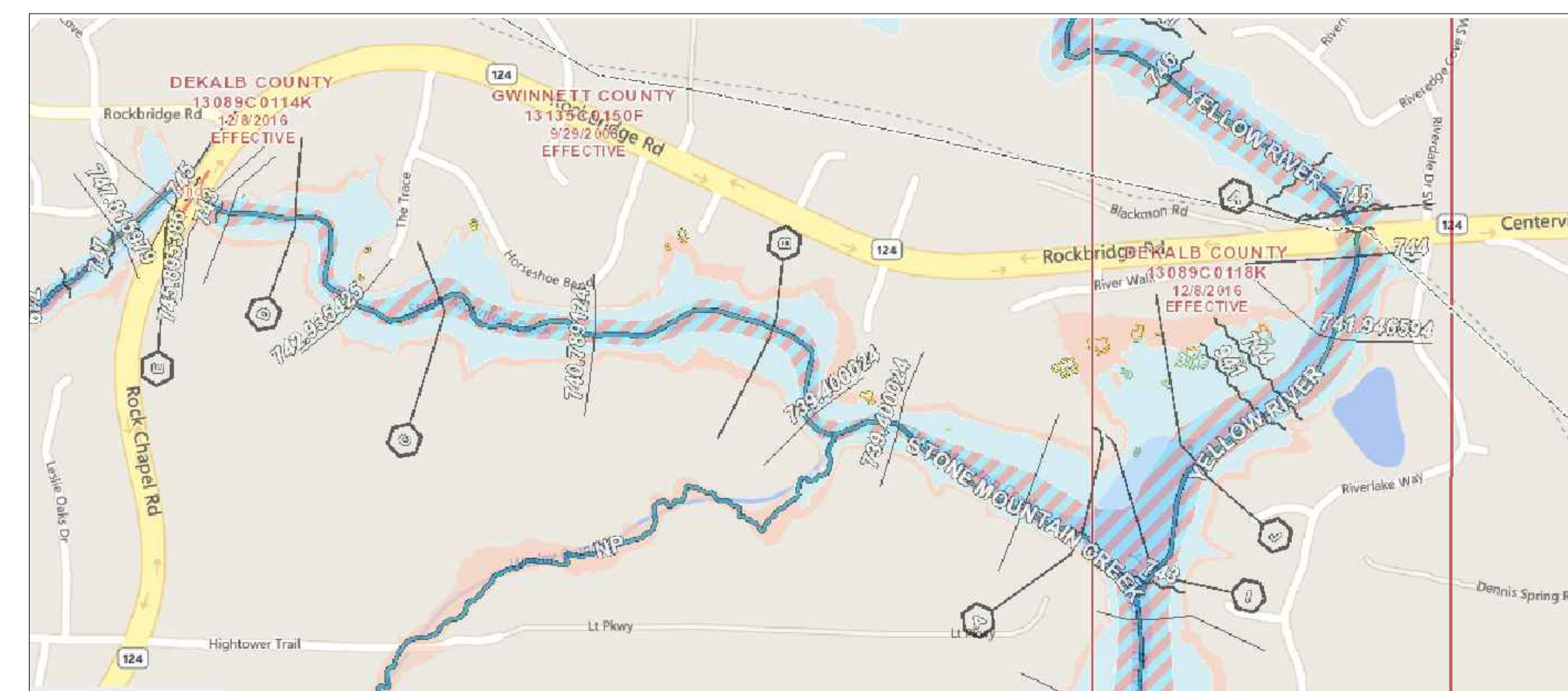
DRAWING No.
EC-0.6



YELLOW RIVER BASIN ABOVE MONITORING LOCATION "A" = 51,652 ACRES.

STONE MOUNTAIN CREEK ABOVE MONITORING LOCATION "C" = 12,913 ACRES.

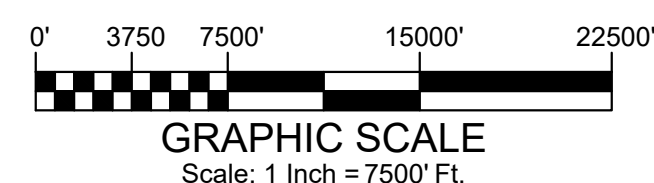
YELLOW RIVER AND STONE MOUNTAIN CREEK BASINS ABOVE MONITORING LOCATION "B" = 65,600 ACRES.



DEKALB CO. 13089C0114K 12/8/16
 DEKALB CO. 13089C0118K 12/8/16

FLOOD MAP **2**
 NTS **EC-0.7**

RECEIVING WATERS BASIN MAP **1**
 NTS **EC-0.7**



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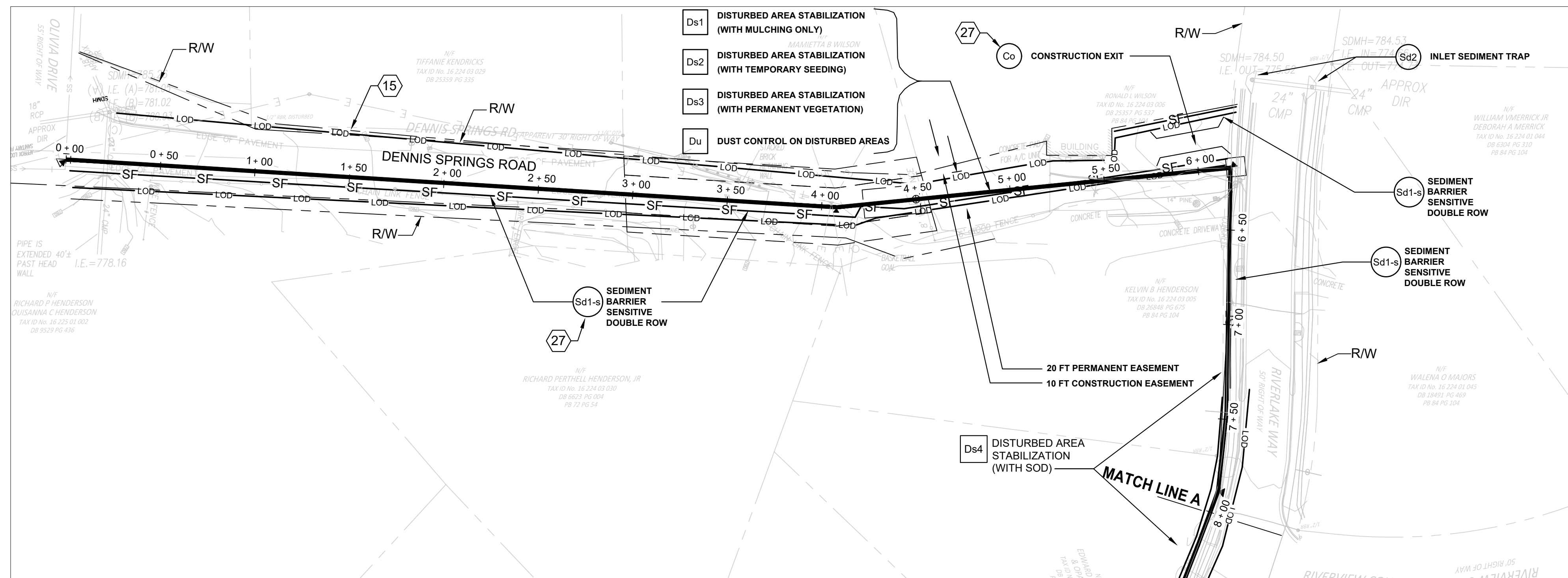
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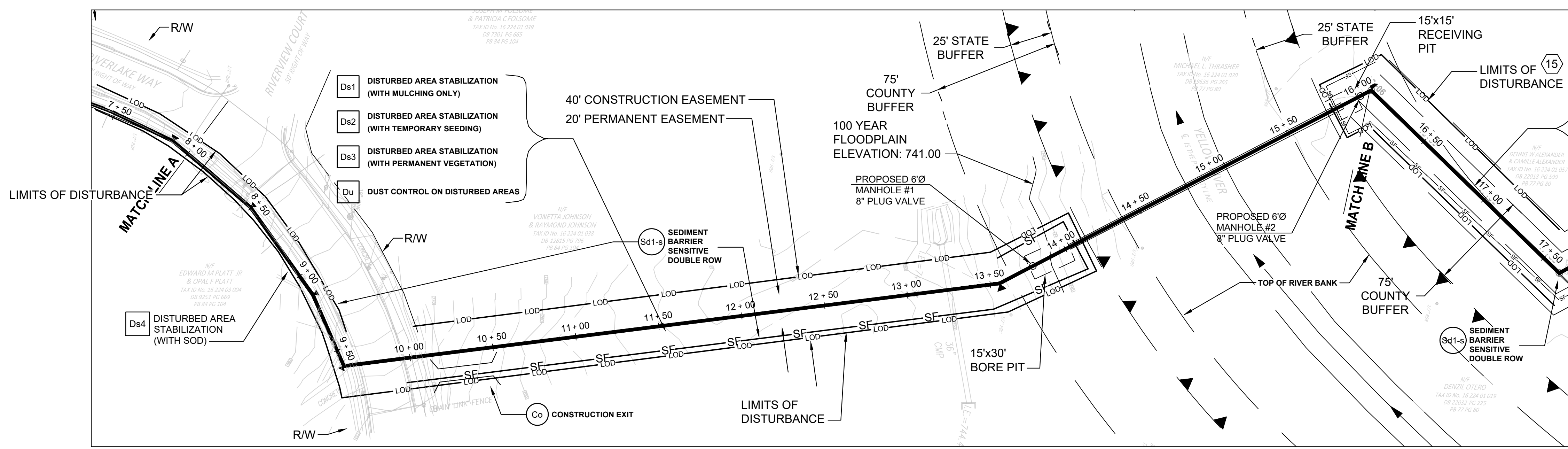
DEKALB COUNTY DWM
 NORRIS RESERVE LIFT STATION
 FORCE MAIN RE-ROUTE
 RECEIVING WATERS
 BASIN MAP

DRAWING No.
EC-0.7



21 EROSION CONTROL PLAN STATION 0+00 TO STATION 8+00
SCALE: 1"=40'

- GENERAL NOTES:**
- SEE SHEET EC-0.1 EROSION CONTROL GENERAL NOTES FOR MORE INFORMATION.
 - SEE ECD SHEETS FOR EROSION CONTROL STANDARD DETAILS.

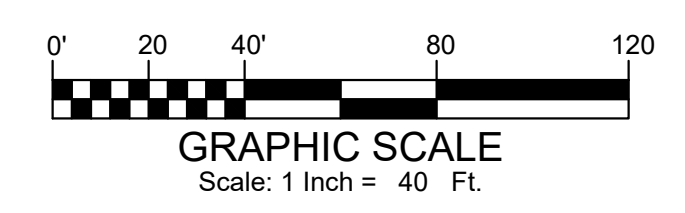


21 EROSION CONTROL PLAN STATION 8+00 TO STATION 16+06
SCALE: 1"=40'

- Ds1** DISTURBED AREA STABILIZATION (WITH MULCHING ONLY)
- Ds2** DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING)
- Ds3** DISTURBED AREA STABILIZATION (WITH PERMANENT VEGETATION)
- Du** DUST CONTROL ON DISTURBED AREAS

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure certified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

WILLIAM F. LIVINGSTON, JR., P.E.
GSWCC LEVEL II



I certify under penalty of law that this Plan was prepared after a site visit to the locations described herein by myself or my authorized agent, under my supervision.

Professional Engineer
GSWCC Level II Certified Design Professional
Certification # 21845, Expires November 4, 2021

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—SF—SF— SILT FENCE
—LOD—LOD— LIMITS OF DISTURBANCE

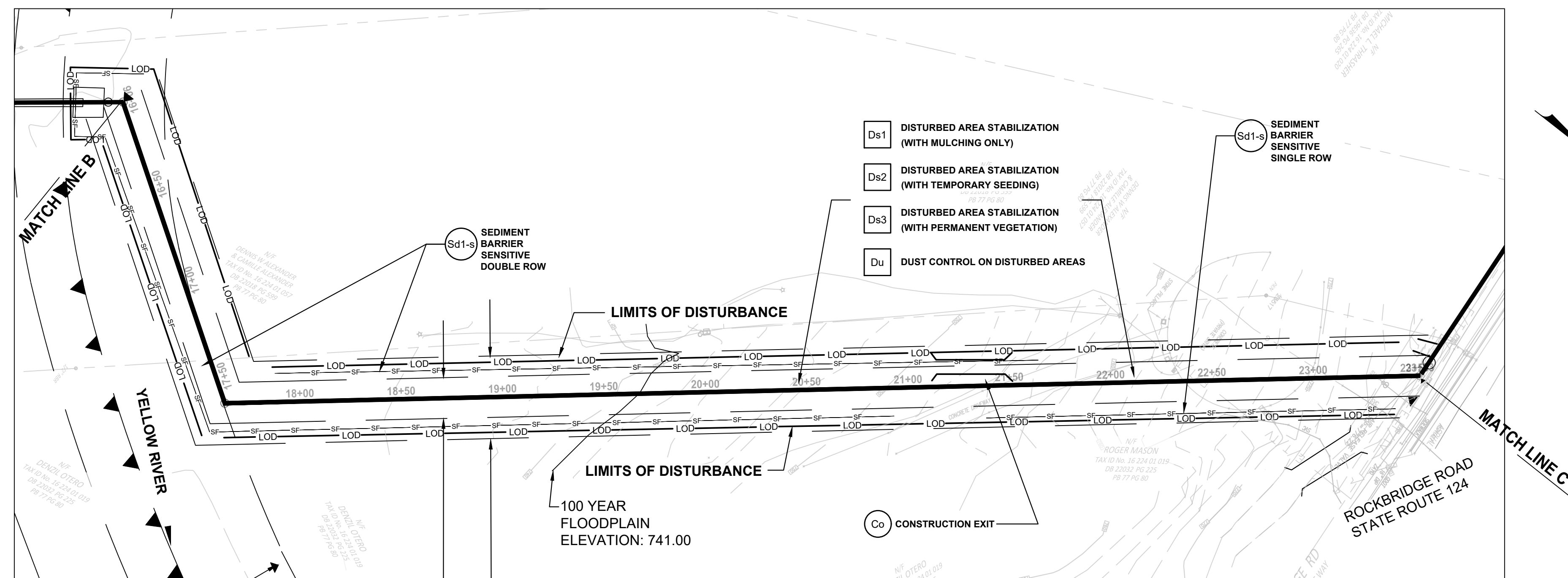
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FORCE MAIN RE-ROUTE
EROSION CONTROL PLANS

DRAWING No.
EC-1.0



EROSION CONTROL STATION 16+06 TO STATION 23+46

SCALE: 1"=40'

GENERAL NOTES:

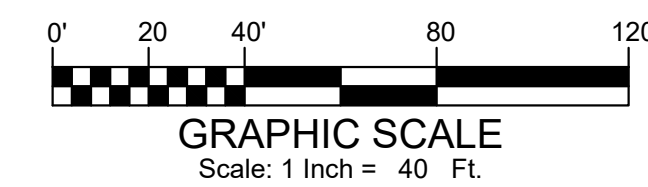
1. SEE SHEET EC-0.1 EROSION CONTROL GENERAL NOTES FOR MORE INFORMATION.
2. SEE ECD SHEETS FOR EROSION CONTROL STANDARD DETAILS.

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Professional Engineer
GSWCC Level II Certified Design Professional
Certification # 21845, Expires November 4, 2021



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— SF — SF — SILT FENCE
— LOD — LOD — LIMITS OF DISTURBANCE

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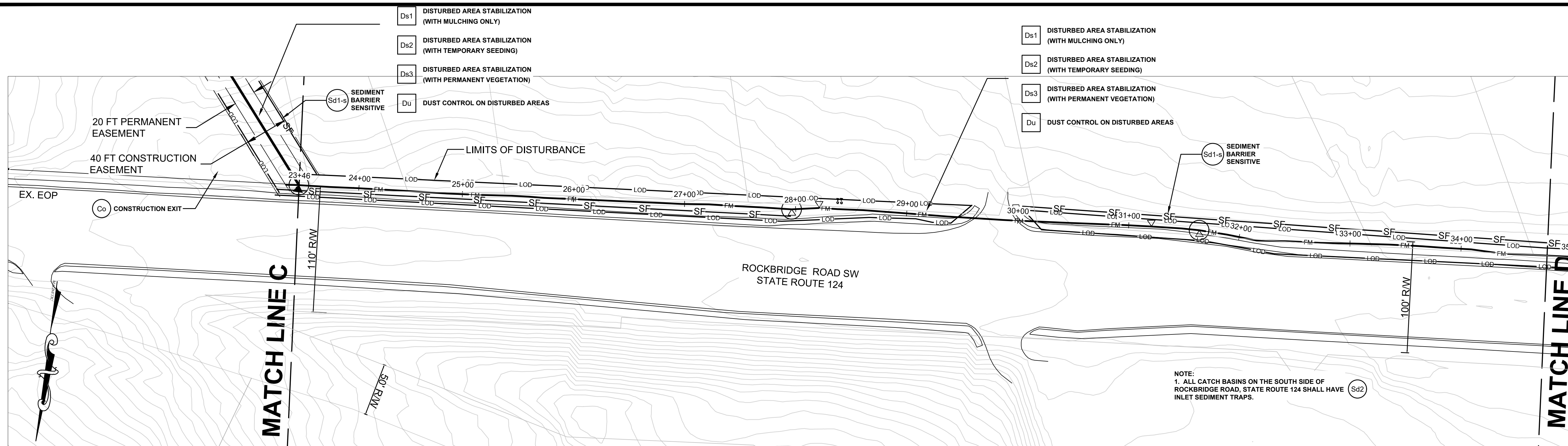
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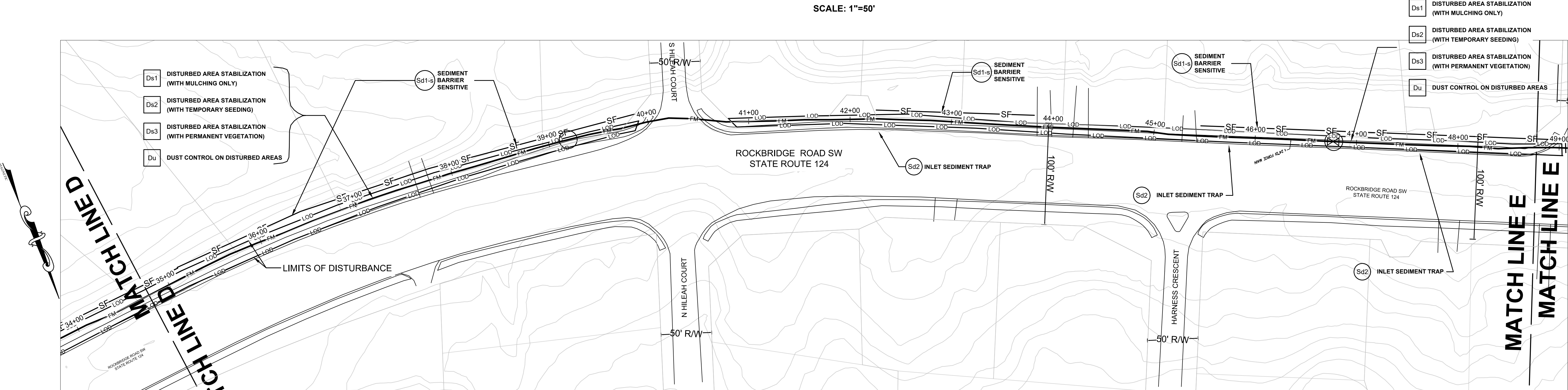
DEKALB COUNTY DWM
NORRIS RESERVE LIFT STATION
FORCE MAIN RE-ROUTE
EROSION CONTROL PLANS

DRAWING No.
EC-2.0



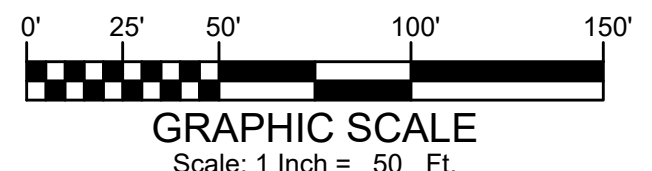
EROSION CONTROL STATION 23+46 TO STATION 34+78

SCALE: 1"=50'



EROSION CONTROL STATION 34+78 TO STATION 48+78

SCALE: 1"=50'



I certify under penalty of law that this Plan was prepared after a site visit to the locations described herein by myself or my authorized agent, under my supervision.

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GSWCC Level II Certified Design Professional
Certification # 21845, Expires November 4, 2021

WILLIAM F. LIVINGSTON, JR., P.E.
GSWCC LEVEL II

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	FORCE MAIN		CREEK
	SEWER MAIN		STREAM BUFFER
	WATER MAIN		GUARDRAIL
	RIGHT-OF-WAY		SIDEWALK
	PROPERTY LINE		EOP

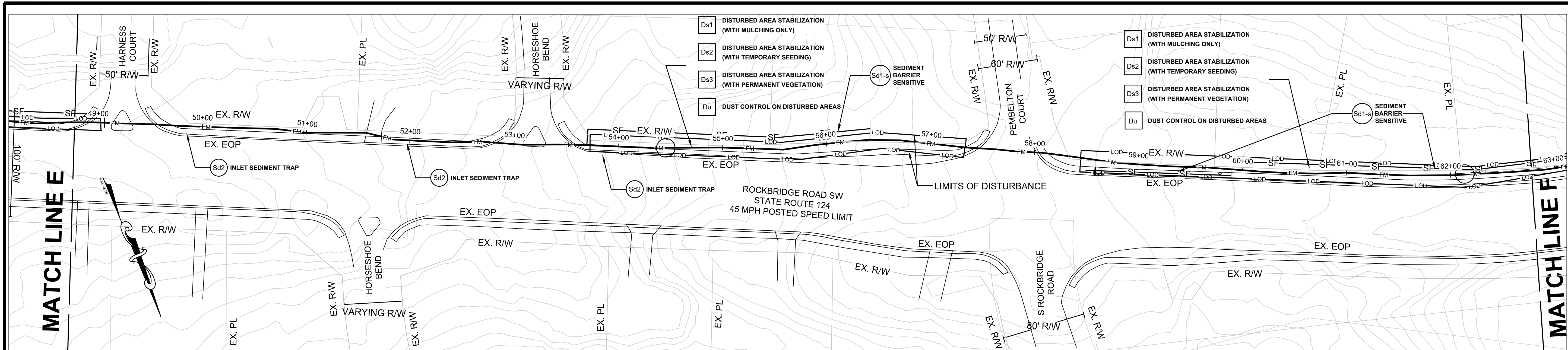
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NORRIS RESERVE LIFT STATION
FORCE MAIN RE-ROUTE
EROSION CONTROL PLANS

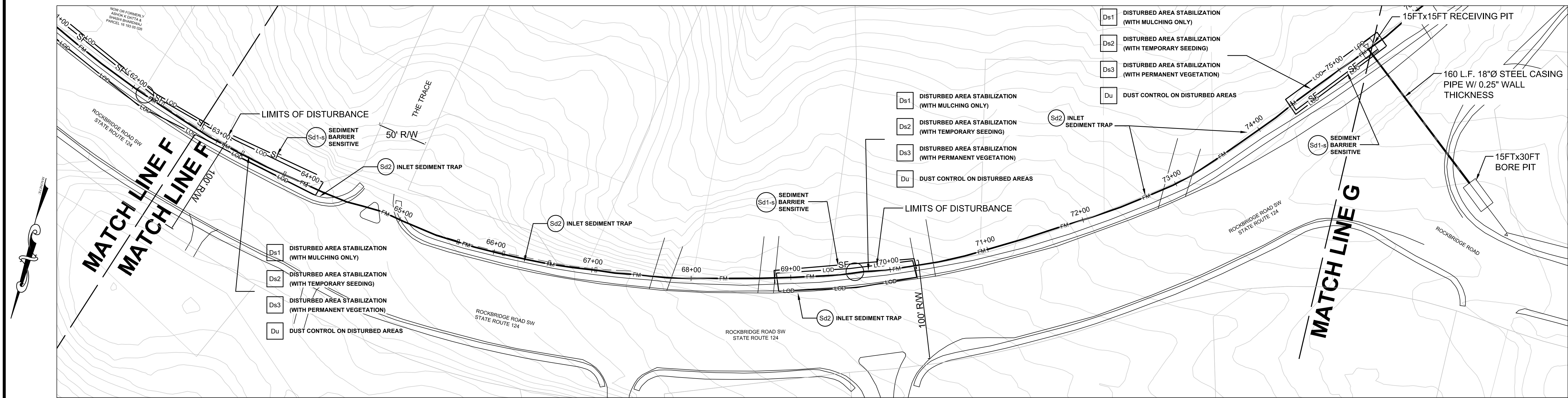
DRAWING No.
EC-3.0



EROSION CONTROL STATION 48+78 TO STATION 62+78

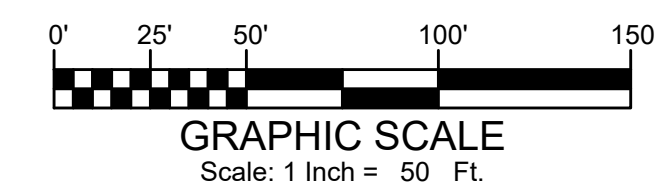
SCALE: 1"=50'

NOTE:
1. ALL CATCH BASINS ON THE SOUTH SIDE OF ROCKBRIDGE ROAD, STATE ROUTE 124 SHALL HAVE INLET SEDIMENT TRAPS.



PROFILE STATION 62+78 TO STATION 75+36

SCALE: 1"=50'



I certify under penalty of law that this Plan was prepared after a site visit to the locations described herein by myself or my authorized agent, under my supervision.

Professional Engineer
GSWCC Level II Certified Design Professional
Certification # 21845, Expires November 4, 2021

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	FORCE MAIN		CREEK
	SEWER MAIN		STREAM BUFFER
	WATER MAIN		GUARDRAIL
	RIGHT-OF-WAY		SIDEWALK
	PROPERTY LINE		EOP

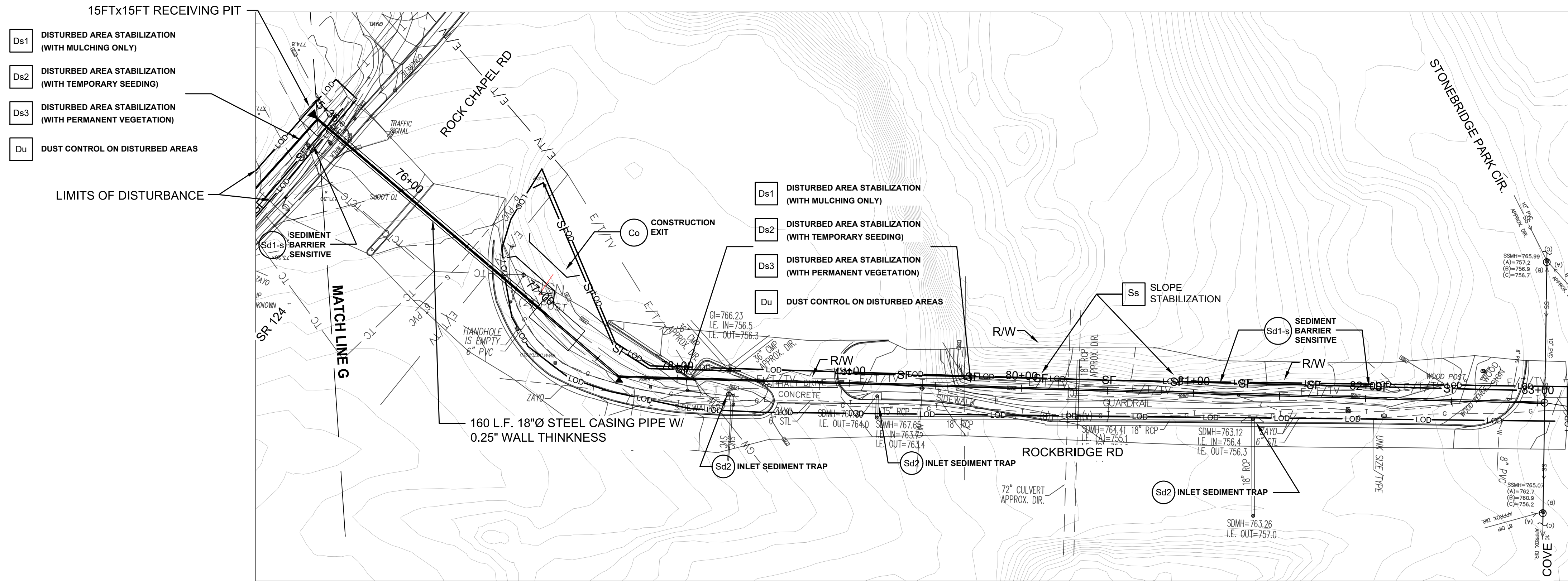
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REVISION DATES		
REV	DATE	BY

DEKALB COUNTY DWM
NORRIS RESERVE LIFT STATION
FORCE MAIN RE-ROUTE
EROSION CONTROL PLANS

DRAWING No.
EC-4.0



EROSION CONTROL PLAN STATION 75+36 TO STATION 83+04
SCALE: 1"=40'

NOTE:
1. ALL CATCH BASINS ON THE SOUTH SIDE OF ROCKBRIDGE ROAD, STATE ROUTE 124 SHALL HAVE (Sd2) INLET SEDIMENT TRAPS.

I certify under penalty of law that this Plan was prepared after a site visit to the locations described herein by myself or my authorized agent, under my supervision.

Professional Engineer
GSWCC Level II Certified Design Professional
Certification # 21845, Expires November 4, 2021

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REVISION DATES		
REV	DATE	BY
ADDED	Ss 8/13/19	WFL

DEKALB COUNTY DWM
NORRIS RESERVE LIFT STATION
FORCE MAIN RE-ROUTE
EROSION CONTROL PLANS

DRAWING No.
EC-5.0

Sd1 SILT FENCE - TYPE SENSITIVE

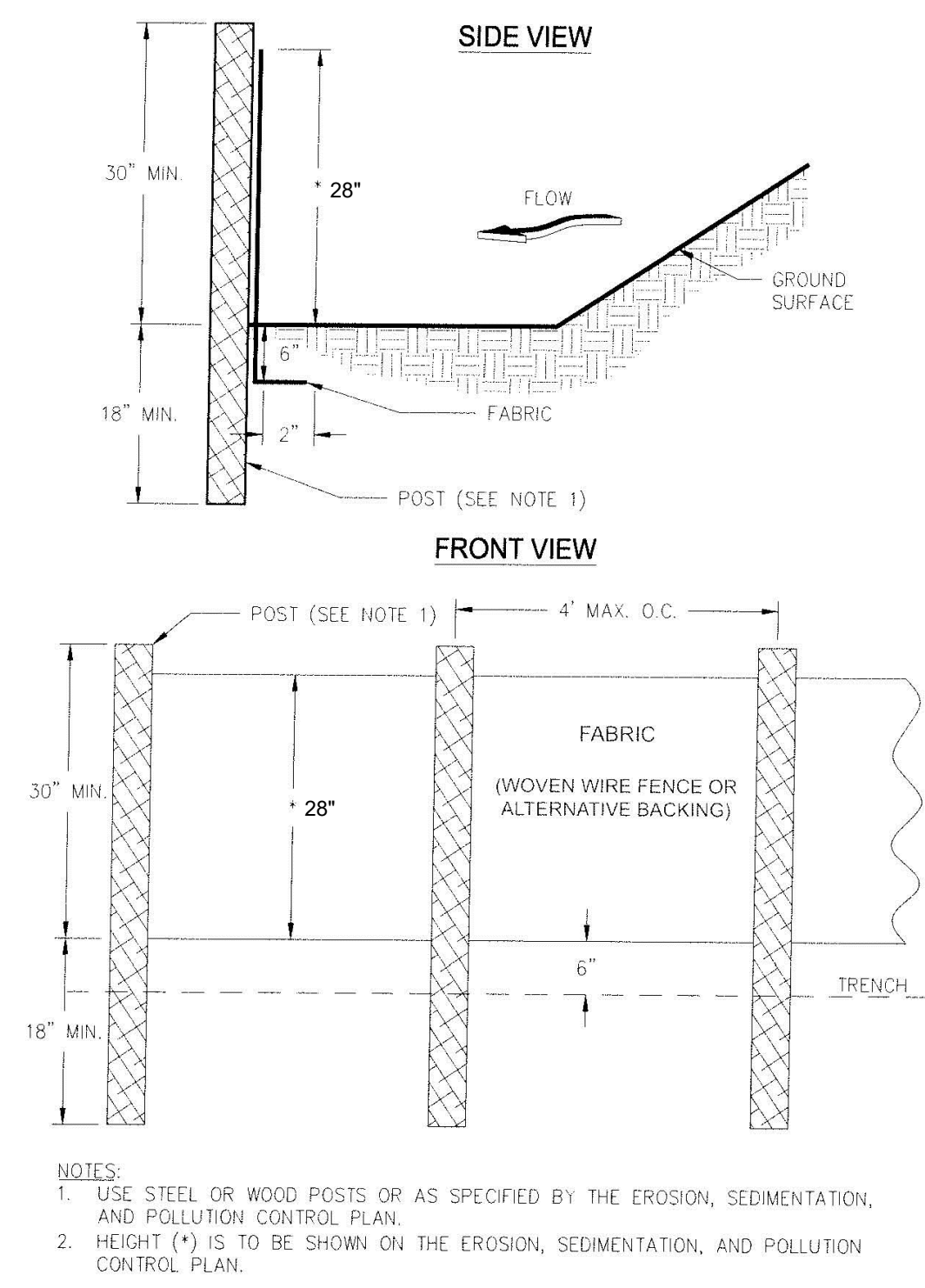


Figure 6-27.2

Table 6-27.2 Post Size

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

Table 6-27.3 Fasteners for Wood Posts

	Guage	Crown	Legs	Staples / Post
Wire Staples	17 min.	3/4" wide	1/2" long	5 min.
	Guage	Length	Button Heads	Nail/ Post
Nails	14 min.	1"	3/4"	4 min.

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

FASTENERS FOR SILT FENCES

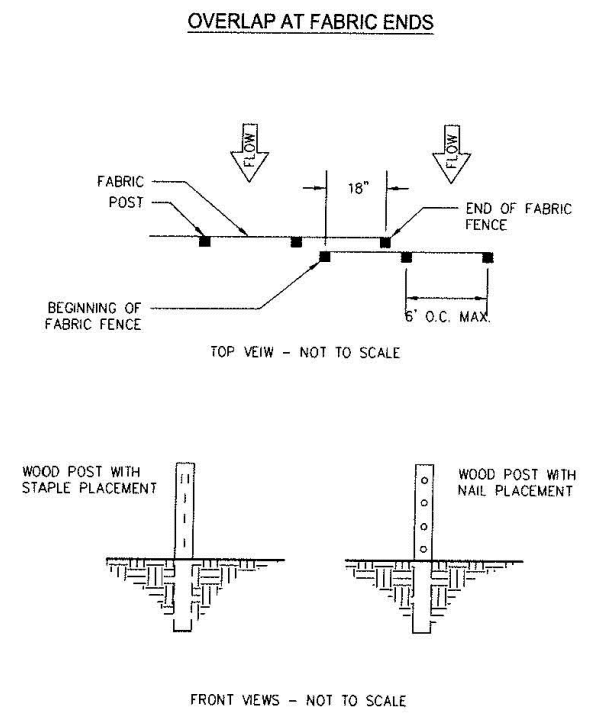


Figure 6-27.5

GSWCC (Amended - 2013)

6-197

Sd2 CURB INLET FILTER "PIGS IN BLANKET"

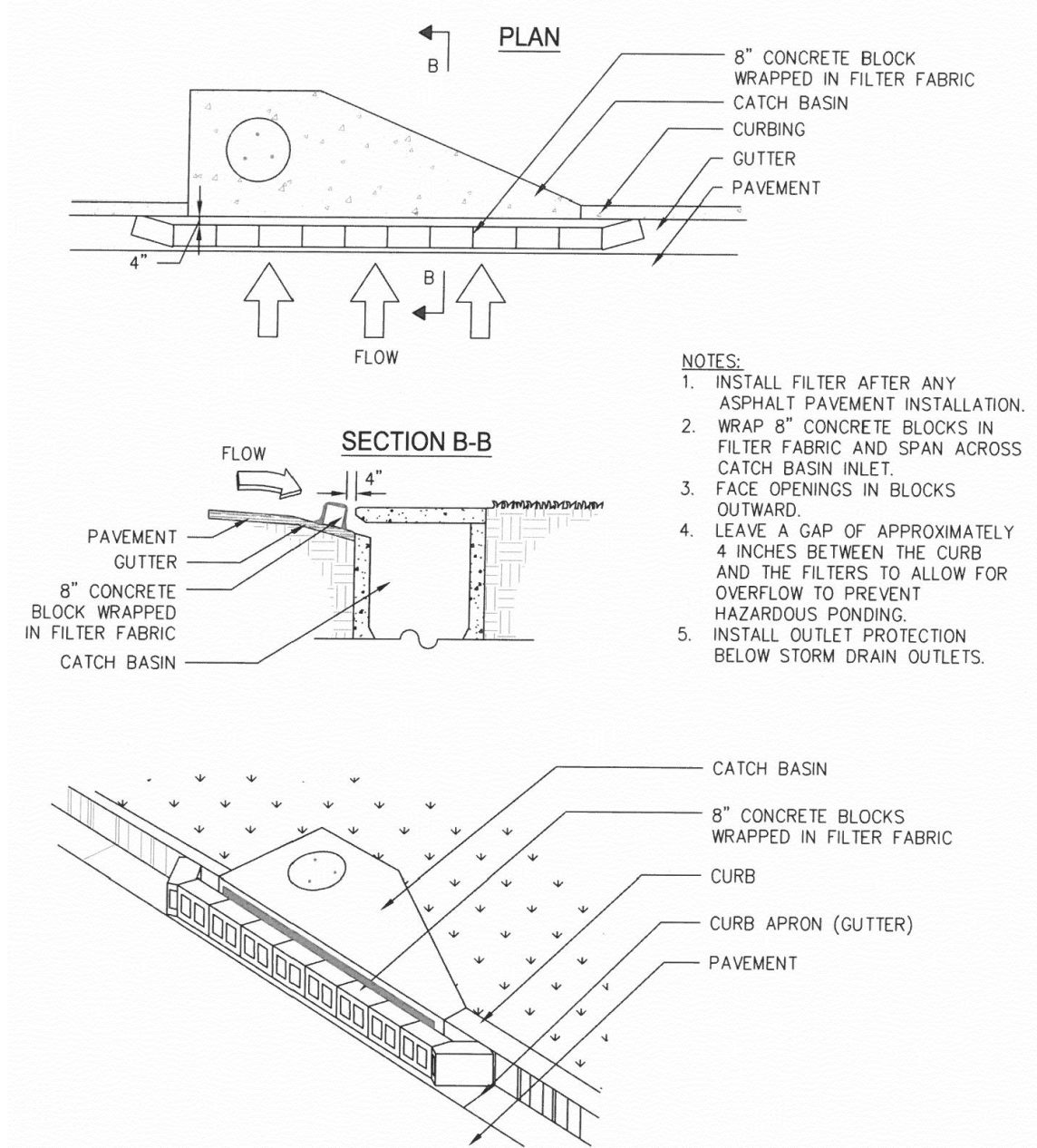


Figure 6-28.6 Curb Inlet Filter "Pigs in Blanket"

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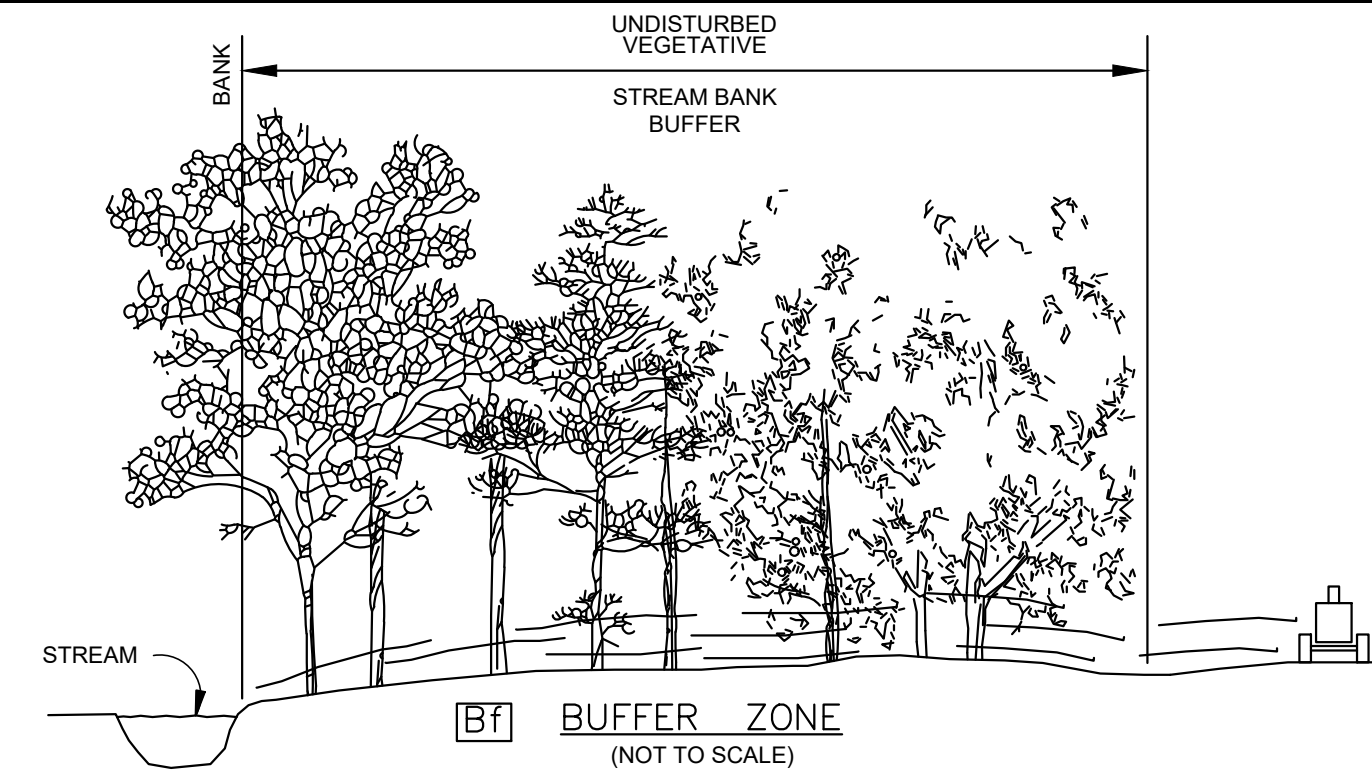
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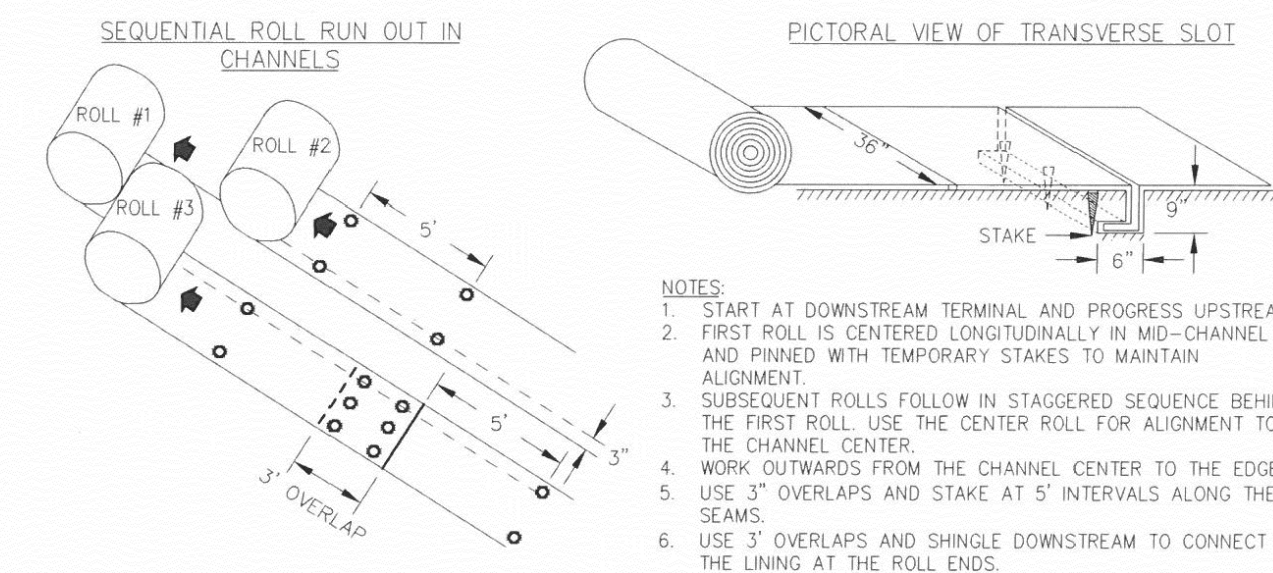
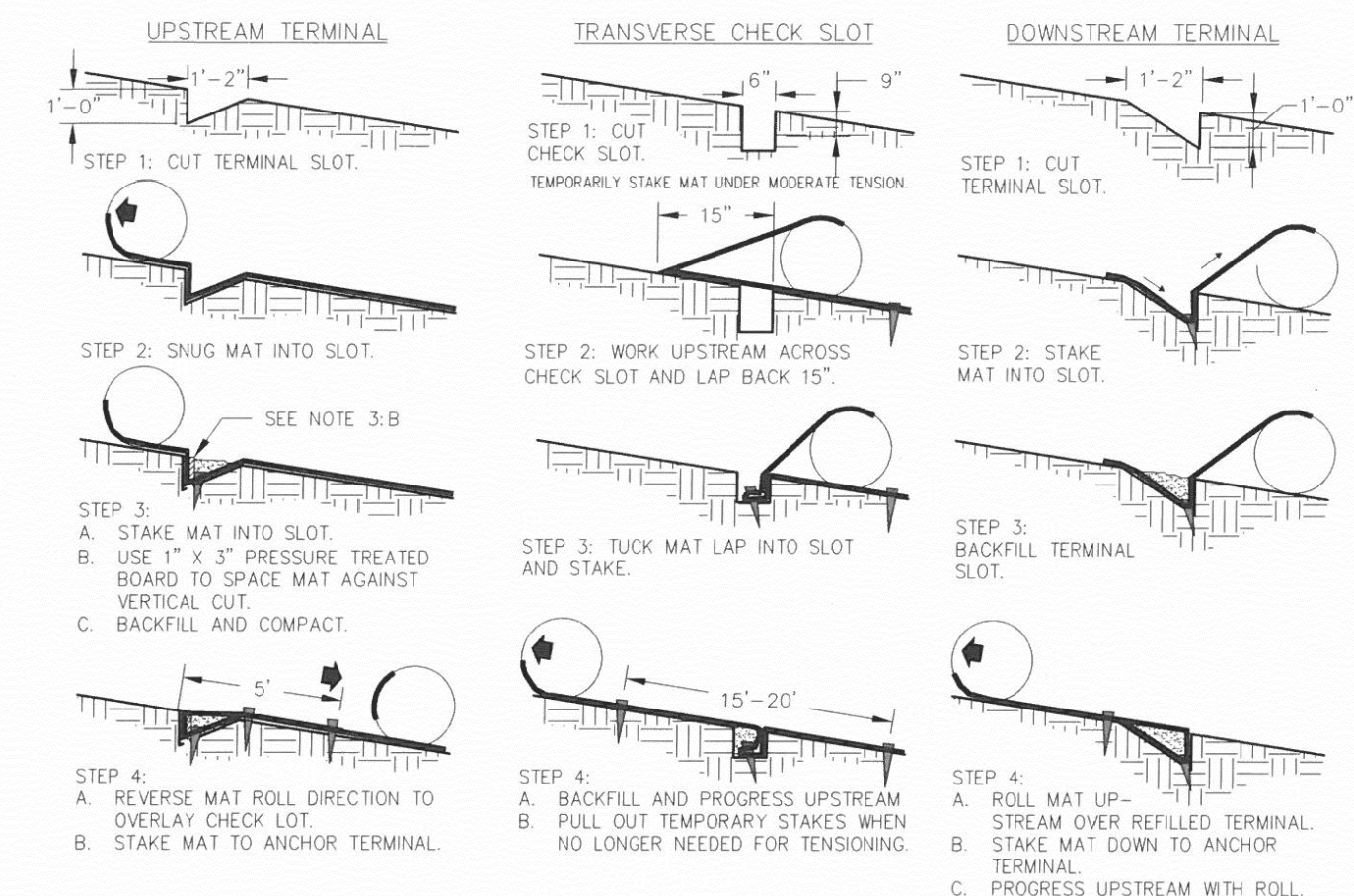
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TYPICAL INSTALLATION GUIDELINES FOR ROLLED EROSION CONTROL PRODUCTS (RECP)

BLANKET AND MATTING CROSS-SECTIONS



- NOTES:**
1. START AT DOWNSTREAM TERMINAL AND PROGRESS UPSTREAM.
 2. FIRST ROLL IS CENTERED LONGITUDINALLY IN MID-CHANNEL AND PINNED WITH TEMPORARY STAKES TO MAINTAIN ALIGNMENT.
 3. SUBSEQUENT ROLLS FOLLOW IN STAGGERED SEQUENCE BEHIND THE FIRST ROLL. USE THE CENTER ROLL FOR ALIGNMENT TO THE CHANNEL CENTER.
 4. WORK OUTWARDS FROM THE CHANNEL CENTER TO THE EDGE. USE 3" OVERLAPS AND STAKE AT 5' INTERVALS ALONG THE SEAMS.
 5. USE 3" OVERLAPS AND SHINGLE DOWNSTREAM TO CONNECT THE LINING AT THE ROLL ENDS.

Figure 6-10.1 - Typical Installation Guidelines for Matting and Blankets

Slope Stabilization

Ss



DEFINITION

A protective covering used to prevent erosion and establish temporary or permanent vegetation on steep slopes, shore lines, or channels.

PURPOSE

To provide a cover layer that stabilizes the soil and acts as a rain drop impact dissipater while providing a microclimate which protects young vegetation and promotes its establishment. If using slope stabilization to reinforce channels, please refer to specification, **Ch- Channel Stabilization**.

CONDITIONS

Slope stabilization can be applied to flat areas or slopes where the erosion hazard is high and slope protection is needed during the establishment of vegetation.

PERFORMANCE EVALUATION

For a product or practice to be approved as slope stabilization, that product or practice must have a documented C- factor of 0.080, as specified by GSWCC. For complete test procedures and approved products list please visit www.gaswcc.georgia.gov.

PLANNING CONSIDERATIONS

Care must be taken to choose the type of slope stabilization product which is most appropriate for the specific needs of a project. Two general types of slope stabilization products are discussed within this specification.

Rolled Erosion Control Products (RECP)

A natural fiber blanket with single or double

photodegradable or biodegradable nets.

Hydraulic Erosion Control Products (HECP)

HECP shall utilize straw, cotton, wood or other natural based fibers held together by a soil binding agent which works to stabilize soil particles. Paper mulch should not be used for erosion control.

CRITERIA

Rolled Erosion Control Products (RECPs) and Hydraulic Erosion Control Products (HECPs):

- Installation and stapling of RECPs and application rates for the HECPs shall conform to manufacturer's guidelines for application

- Products shall have a maximum C-factor (ASTM D6459) for the following slope grade:

Slope (H:V)	C-Factor (max.)
3:1 or greater	0.080

Materials – HECP

Hydraulic erosion control products shall be prepackaged from the manufacturer. Field mixing of performance enhancing additives will not be allowed. Fibrous components should be all natural or biodegradable.

Products shall be determined to be non-toxic in accordance with EPA-821-R-02-012.

Materials – RECP

Blankets shall be nontoxic to vegetation, seed, or wildlife. Products shall be determined to be non-toxic in accordance with EPA-821-R-02-012. At minimum, the plastic or biodegradable netting shall be stitched to the fibrous matrix to maximize strength and provide for ease of handling.

RECPs are categorized as follows:

a. **Short-Term**
(functional longevity 12 mo.)

i. Photodegradable

Straw blankets with a top and bottom side photo degradable net. The maximum size of the mesh shall be openings of ½" X ½". The blanket



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Mulching Application Requirements

Material	Rate	Depth
Straw or hay	2 1/2 Ton/Acre	6" to 10"
Wood waste chips, sawdust, bark	6 to 9 Ton/Acre	2" to 3"
Cutback asphalt	1200 gal./acre or 1/4 gal./sq. yd.	
Polyethylene film	Secure with soil anchors, weights	
Geotextiles, jute matting, netting, etc.	See manufacturer's recommendations	

Ds1 DISTURBED AREA STABILIZATION (WITH MULCHING ONLY)

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GENERAL
THIS VEGETATIVE PLAN WILL BE CARRIED OUT ON ROAD CUT AND FILL SLOPES. SHOULDERS AND OTHER CRITICAL AREAS CREATED BY CONSTRUCTION. SEEDING WILL BE DONE AS SOON AS CONSTRUCTION IN AN AREA IS COMPLETED. PLANS WILL BE MADE TO CONTROL EROSION, TO REDUCE DAMAGES FROM SEDIMENT AND RUNOFF TO DOWNSTREAM AREAS AND TO IMPROVE THE SAFETY AND BEAUTY OF THE DEVELOPMENT AREA.

SOIL CONDITIONS
DUE TO GRADING AND CONSTRUCTION THE AREAS TO BE TREATED ARE MAINLY SUBSOIL AND SUBSTRATA. FERTILITY IS LOW AND THE PHYSICAL CHARACTERISTICS OF THE EXPOSED MATERIAL ARE UNFAVORABLE TO ALL BUT THE MOST HARDY PLANTS.

TREATMENT SPECIFICATIONS
CONVENTIONAL SEEDING EQUIPMENT
GRADE SHAPE AND SMOOTH WHERE NEEDED TO PROVIDE FOR SAFE EQUIPMENT OPERATION AT SEEDING TIME AND FOR MAINTENANCE PURPOSES. THE LIME AND FERTILIZER IN DRY FORM WILL BE SPREAD UNIFORMLY OVER THE AREA IMMEDIATELY BEFORE SEEDBED PREPARATION. A SEEDBED WILL BE PREPARED BY SCARIFYING TO A DEPTH OF 1 TO 4 INCHES AS DETERMINED ON SITE. THE SEEDBED MUST BE WELL PULVERIZED, SMOOTHED AND FIRMED. SEEDING WILL BE DONE WITH CULTIPACKER-SEEDER, DRILL ROTARY SEEDER OR OTHER MECHANICAL OR HAND SEEDER. SEED WILL BE DISTRIBUTED UNIFORMLY OVER A FRESHLY PREPARED SEEDBED AND COVERED LIGHTLY. WITHIN 24 HOURS AFTER SEEDING, STRAW OR HAY MULCH WILL BE SPREAD UNIFORMLY OVER THE AREA LEAVING ABOUT 25 PERCENT OF THE GROUND SURFACE EXPOSED. MULCH WILL BE SPREAD WITH BLOWER-TYPE MULCH EQUIPMENT OR BY HAND AND ANCHORED IMMEDIATELY AFTER IT IS SPREAD. A DISK HARROW WITH THE DISK SET STRAIGHT OR A SPECIAL PACKER DISK MAY BE USED TO PRESS THE MULCH INTO THE SOIL. THE PER ACRE APPLICATION RATES ARE AS FOLLOWS:

A. SEEDING WITH MULCH: (CONVENTIONAL SEEDING EQUIPMENT ON SLOPES LESS THAN 3:1)

AGRICULTURAL LIMESTONE	4000 lbs./acre
FERTILIZER, 5-10-15	1500 lbs./acre
MULCH, STRAW OR HAY	5000 lbs./acre

SEED SPECIES	APPLICATION RATE/ACRE	PLANTING DATES
HULLED COMMON BERMUDA GRASS	10 lbs.	3/1 - 8/15
FESCUE	50 lbs.	9/1 - 10/31
FESCUE	50 lbs.	11/1 - 2/28
RYE GRASS	50 lbs.	11/1 - 2/28
HAY MULCH FOR TEMPORARY COVER	5000 lbs.	6/15 - 8/31

B. TOP DRESSING: APPLY WHEN PLANTS ARE 2 TO 4 INCHES TALL
FERTILIZER (AMMONIUM NITRATE 33.5%) 300 lbs./acre
C. SECOND- YEAR FERTILIZER: (5-10-15 OR EQUIVALENT) 800 lbs./acre

GENERAL
THIS VEGETATIVE PLAN WILL BE CARRIED OUT ON ROAD CUT AND FILL SLOPES. SHOULDERS AND OTHER CRITICAL AREAS CREATED BY CONSTRUCTION. SEEDING WILL BE DONE AS SOON AS CONSTRUCTION IN AN AREA IS COMPLETED. PLANS WILL BE MADE TO CONTROL EROSION, TO REDUCE DAMAGES FROM SEDIMENT AND RUNOFF TO DOWNSTREAM AREAS AND TO IMPROVE THE SAFETY AND BEAUTY OF THE DEVELOPMENT AREA.

SOIL CONDITIONS
DUE TO GRADING AND CONSTRUCTION THE AREAS TO BE TREATED ARE MAINLY SUBSOIL AND SUBSTRATA. FERTILITY IS LOW AND THE PHYSICAL CHARACTERISTICS OF THE EXPOSED MATERIAL ARE UNFAVORABLE TO ALL BUT THE MOST HARDY PLANTS.

TREATMENT SPECIFICATIONS
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GRADE SHAPE AND SMOOTH WHERE NEEDED TO PROVIDE FOR SAFE EQUIPMENT OPERATION AT SEEDING TIME AND FOR MAINTENANCE PURPOSES. THE LIME AND FERTILIZER IN DRY FORM WILL BE SPREAD UNIFORMLY OVER THE AREA IMMEDIATELY BEFORE SEEDBED PREPARATION. A SEEDBED WILL BE PREPARED BY SCARIFYING TO A DEPTH OF 1 TO 4 INCHES AS DETERMINED ON SITE. THE SEEDBED MUST BE WELL PULVERIZED, SMOOTHED AND FIRMED. SEEDING WILL BE DONE WITH CULTIPACKER-SEEDER, DRILL ROTARY SEEDER OR OTHER MECHANICAL OR HAND SEEDER. SEED WILL BE DISTRIBUTED UNIFORMLY OVER A FRESHLY PREPARED SEEDBED AND COVERED LIGHTLY. WITHIN 24 HOURS AFTER SEEDING, STRAW OR HAY MULCH WILL BE SPREAD UNIFORMLY OVER THE AREA LEAVING ABOUT 25 PERCENT OF THE GROUND SURFACE EXPOSED. MULCH WILL BE SPREAD WITH BLOWER-TYPE MULCH EQUIPMENT OR BY HAND AND ANCHORED IMMEDIATELY AFTER IT IS SPREAD. A DISK HARROW WITH THE DISK SET STRAIGHT OR A SPECIAL PACKER DISK MAY BE USED TO PRESS THE MULCH INTO THE SOIL. THE PER ACRE APPLICATION RATES ARE AS FOLLOWS:

A. SEEDING WITH MULCH: (CONVENTIONAL SEEDING EQUIPMENT ON SLOPES LESS THAN 3:1)

AGRICULTURAL LIMESTONE	4000 lbs./acre
FERTILIZER, 5-10-15	1500 lbs./acre
MULCH, STRAW OR HAY	5000 lbs./acre

SEED SPECIES	APPLICATION RATE/ACRE	PLANTING DATES
MILLET, PEARL	50 lbs.	5/1 - 8/1
MILLET, BROWNTOP	40 lbs.	4/15 - 7/1
OATS	128 lbs.	9/15 - 11/15
SUDANGRASS	60 lbs.	5/1 - 8/1
RYE GRASS, ANNUAL	40 lbs.	9/1 - 12/15
BARLEY	144 lbs.	9/15 - 11/1
LESPEDEZA, ANNUAL	40 lbs.	3/1 - 4/1
LOVEGRASS, WEEPING	4 lbs.	4/1 - 6/1
WHEAT	180 lbs.	10/1 - 12/15

B. TOP DRESSING: APPLY WHEN PLANTS ARE 2 TO 4 INCHES TALL
FERTILIZER (AMMONIUM NITRATE 33.5%) 300 lbs./acre
C. SECOND- YEAR FERTILIZER: (5-10-15 OR EQUIVALENT) 800 lbs./acre

Ds3 DISTURBED AREA STABILIZATION (WITH PERMANENT VEGETATION)

Du Dust Control on Disturbed Areas



DEFINITION
Controlling surface and air movement of dust on construction sites, roads, and demolition sites.

PURPOSE
• To prevent surface and air movement of dust from exposed soil surfaces.
• To reduce the presence of airborne substances which may be harmful or injurious to human health, welfare, or safety, or to animals or plant life.

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

A. Temporary Methods
Mulches. See standard Ds1 - Disturbed Area Stabilization (With Mulching Only). Synthetic resins may be used instead of asphalt to bind mulch material. Refer to specification Tac - Tackifiers. Resins such as Curasol or Terratack should be used according to manufacturer's recommendations.

Vegetative Cover. See specification Ds2 - Disturbed Area Stabilization (With Temporary Seeding).

Spray-on Adhesives. These are used on mineral soils (not effective on muck soils). Keep traffic off these areas. Refer to specification Tac - Tackifiers.

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 rate that will keep surface moist. May need retreatment.

B. Permanent Methods

Permanent Vegetation. See specification Ds3 - 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 erosive soil material. See specification Tp - Topsoiling.

Stone. Cover surface with crushed stone or coarse gravel. See specification Cr-Construction Road Stabilization.

Ds2 DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING)

EROSION CONTROL LEGEND

Co CONSTRUCTION EXIT	Ds4 DISTURBED AREA STABILIZATION (WITH SODDING)
Sd1 SEDIMENT BARRIER	Du DUST CONTROL ON DISTURBED AREAS
Bf BUFFER ZONE	Ss SLOPE STABILIZATION
Ds1 DISTURBED AREA STABILIZATION (WITH MULCHING ONLY)	Sd2 INLET SEDIMENT TRAP
Ds2 DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING)	
Ds3 DISTURBED AREA STABILIZATION (WITH PERMANENT VEGETATION)	

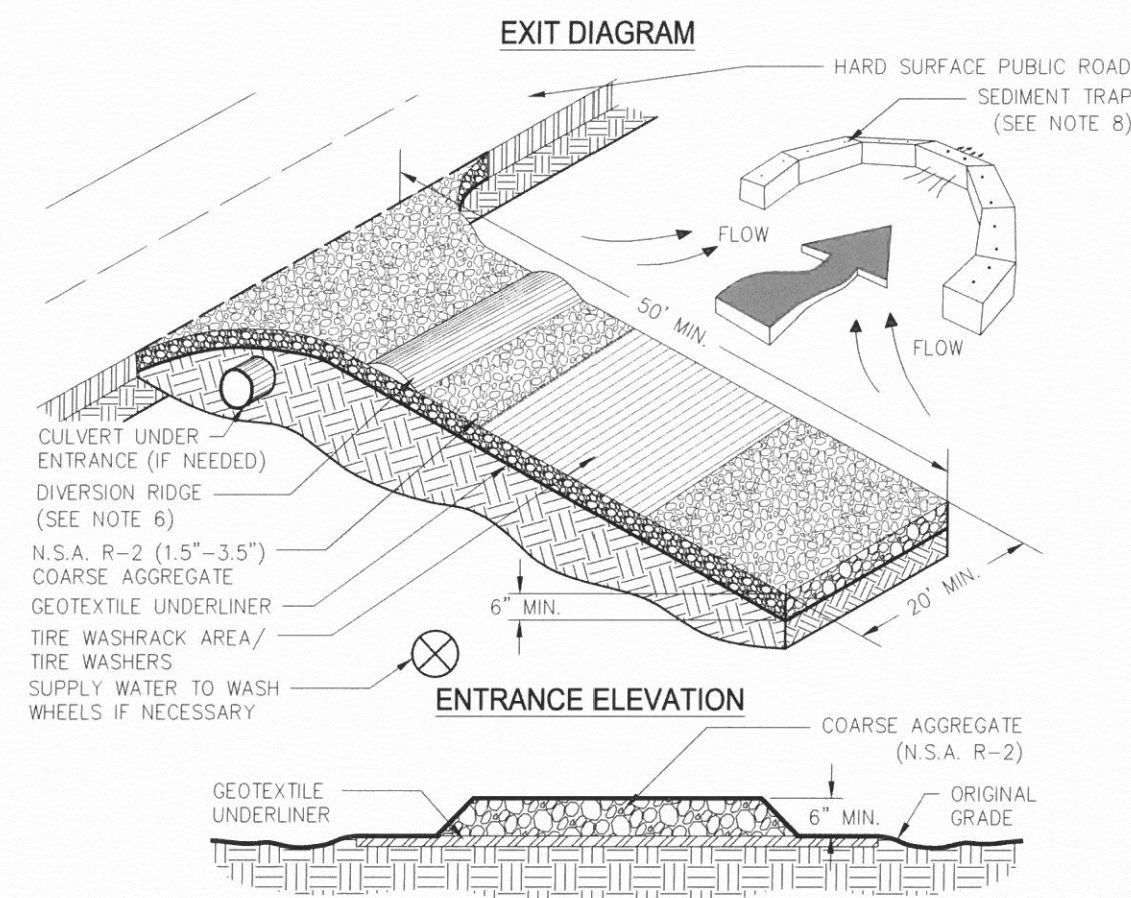
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MAINTENANCE

The exit shall be maintained in a condition which will prevent tracking or flow of mud onto public rights-of-way. This may require periodic top dressing with 1.5-3.5 inch stone, as conditions demand, and repair and/or cleanout of any structures to trap sediment. All materials spilled,

dropped, washed, or tracked from vehicles or site onto roadways or into storm drains must be removed immediately.

CRUSHED STONE CONSTRUCTION EXIT



- 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.

Figure 6-14.1



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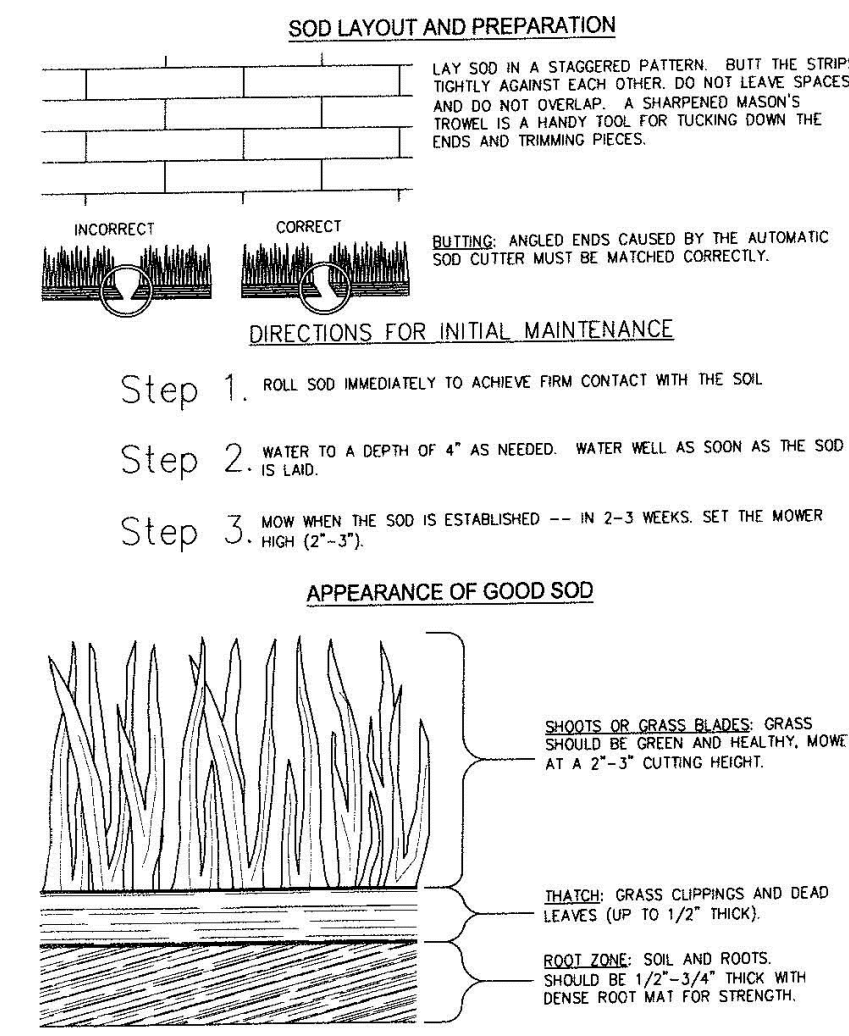
SOD MAINTENANCE AND INSTALLATION

Table 6-6.2 Sod Planting Requirements

Grass	Varieties	Resource Area	Growing Season
Bermudagrass	Common Tifway Tifgreen Tifawn	M-L, P/C P/C P/C P/C	warm weather
Bahiagrass	Pensacola	P/C	warm weather
Centipede	-	P/C	warm weather
St. Augustine	Common Biltmore Raleigh	C	warm weather
Zoysia	Emerald Myer	P/C	warm weather
Tall Fescue	Kentucky	M-L, P	cool weather

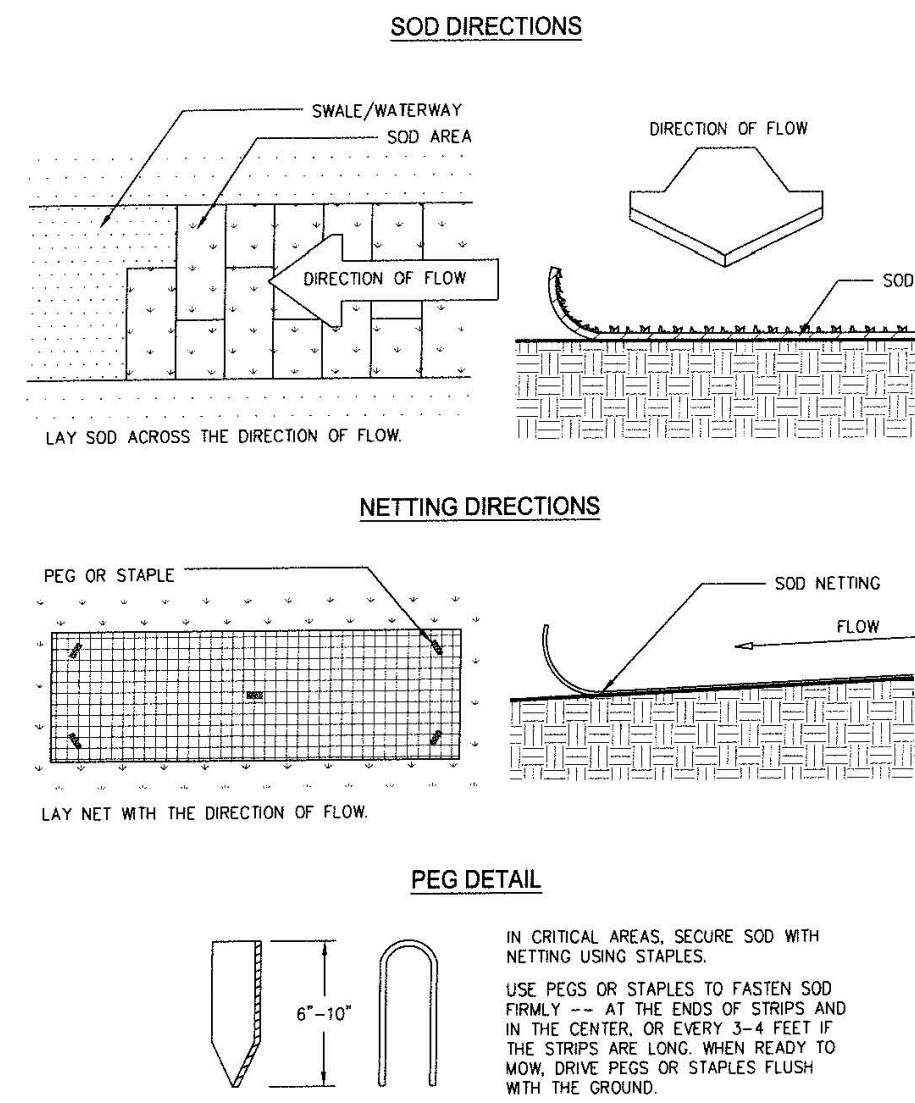
Table 6-6.3 Fertilizer Requirements for Sod

Types of Species	Planting Year	Fertilizer (N-P-K)	Rate (lb./1000)	Nitrogen Top Dressing Rate (lb./acre)
cool season grasses	first maintenance	6-12-12	1500	50-100
	second maintenance	6-12-12 10-10-10	800 400	30
warm season grasses	first maintenance	6-12-12	1500	50-100
	second maintenance	6-12-12 10-10-10	800 400	30



Source: Va. DSWC
Figure 6-6.2

SODDED WATERWAYS

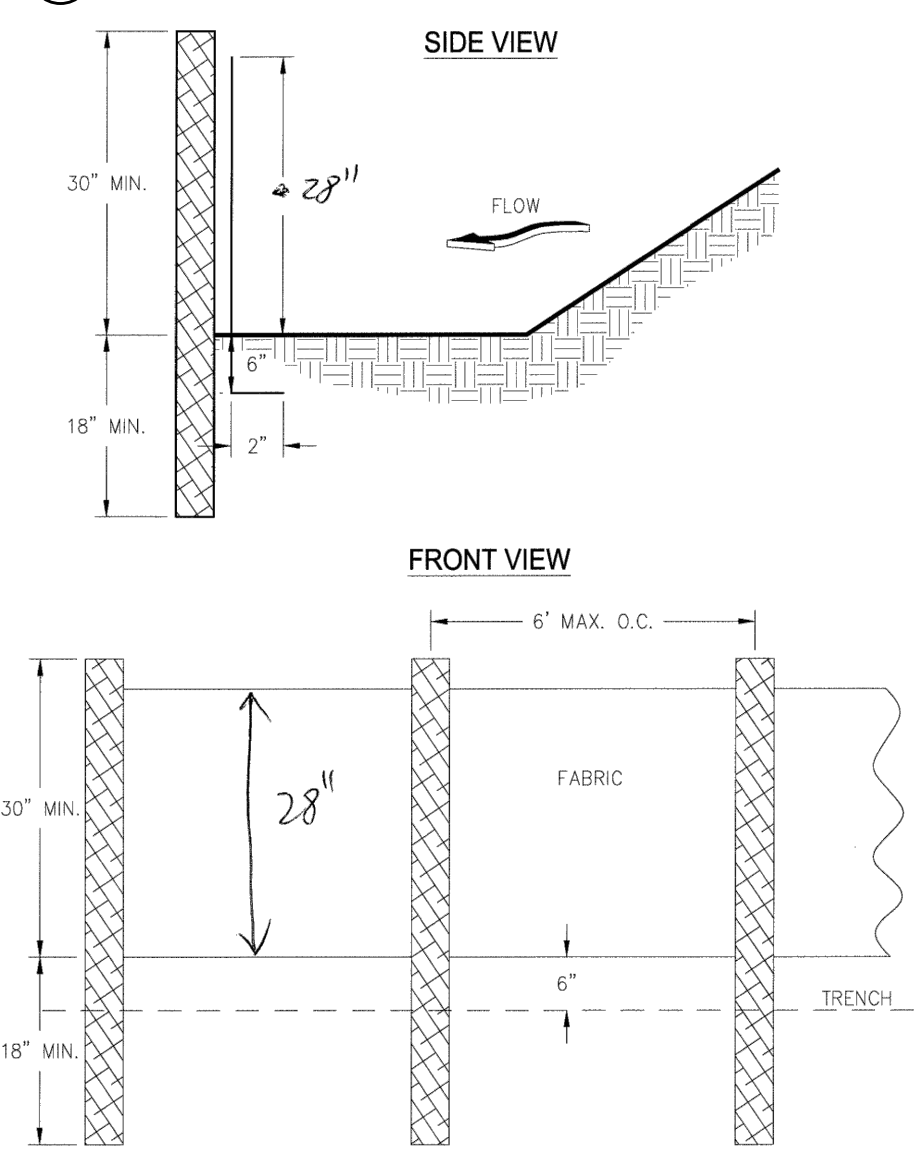


Source: Va. DSWC
Figure 6-6.1

DISTURBED AREA STABILIZATION (WITH SODDING)

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Sd1 SILT FENCE - TYPE NON-SENSITIVE



NOTES:
 1. USE STEEL OR WOOD POSTS OR AS SPECIFIED BY THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.
 2. HEIGHT (*) IS TO BE SHOWN ON THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.

Figure 6-27.1

GSWCC (Amended - 2013) 6-193

Table 6-27.2 Post Size

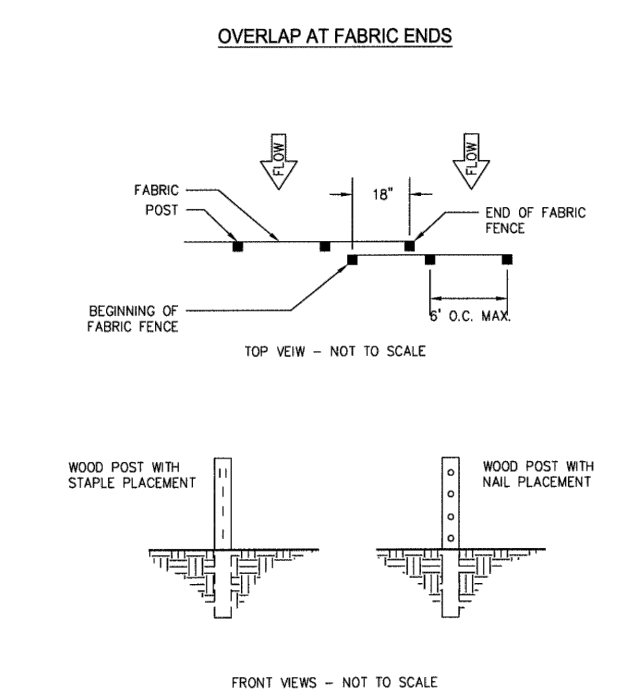
Type	Min Length	Type of Post	Size of Post
NS	4'	Soft wood Oak Steel	3" dia or 2x4 1.5" x 1.5" 1.3lb./ft. min
S	4'	Steel Oak	1.3lb./ft. min 2"x2"

Table 6-27.3 Fasteners for Wood Posts

	Gauge	Crown	Legs	Staples / Post
Wire Staples	17 min.	3/4" wide	1/2" long	5 min.
	Gauge	Length	Button Heads	Nail/ Post
Nails	14 min.	1"	3/4"	4 min.

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

FASTENERS FOR SILT FENCES



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 PILET.

Figure 6-27.5

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I certify under penalty of law that this Plan was prepared after a site visit to the locations described herein by myself or my authorized agent, under my supervision.

Professional Engineer GSWCC Level II Certified
 Design Professional Certification # 21845,
 Expires November 4, 2018

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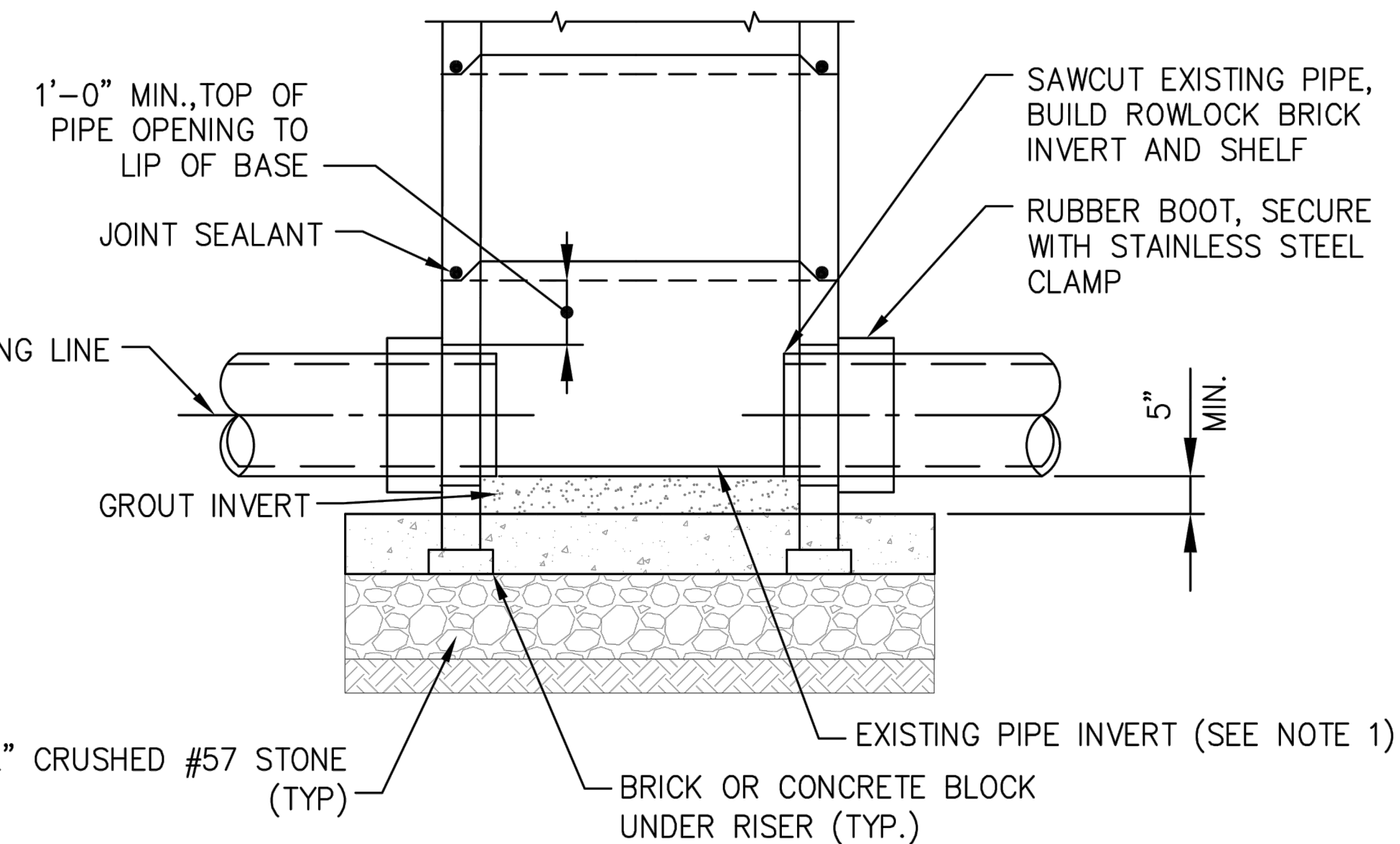
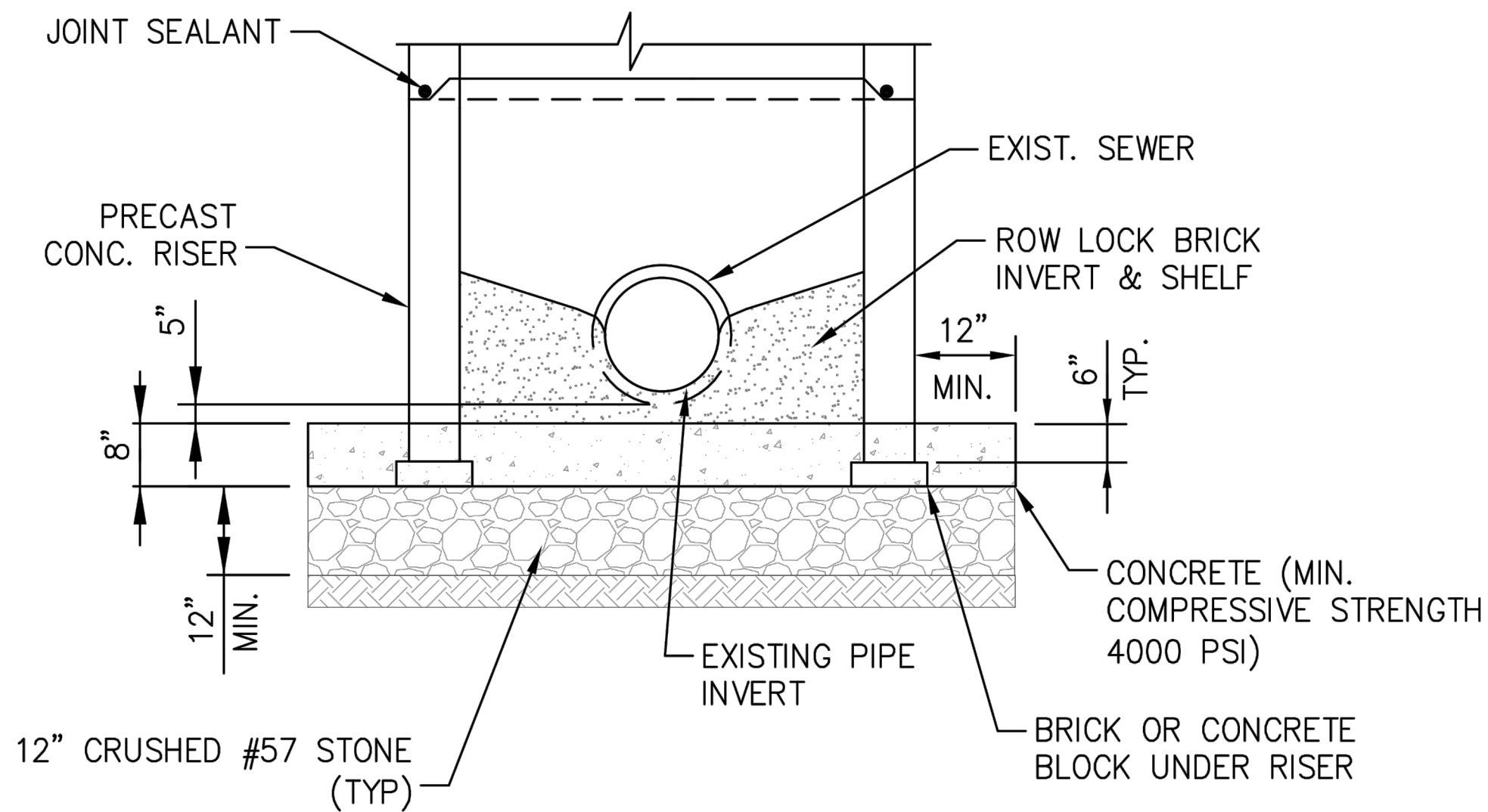


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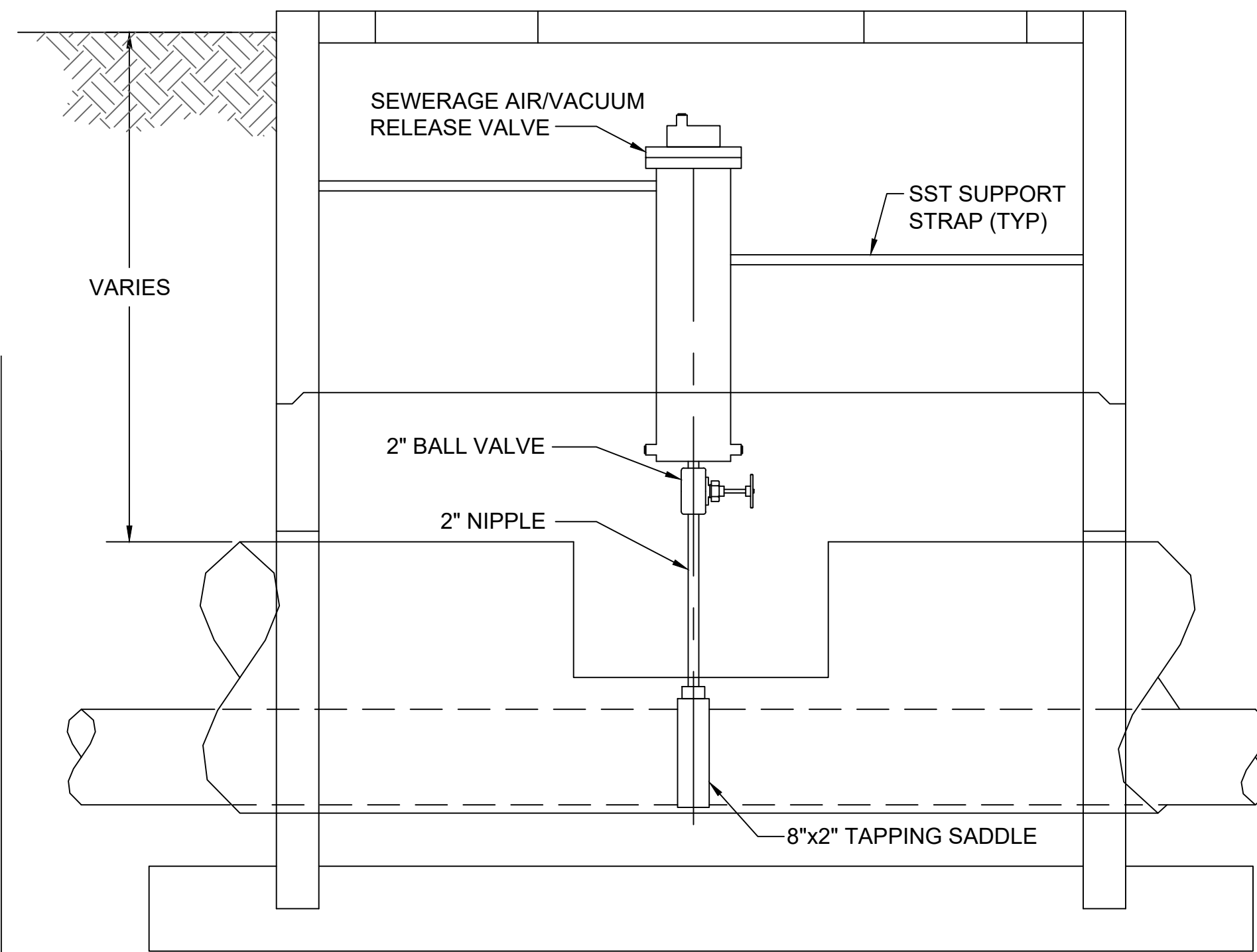
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NOTE:
1. MAY USE THE EXISTING PIPE AS THE MANHOLE CHANNEL WITH DCDWM APPROVAL. SHALL BE SAWCUT AT SPRING LINE AND SHELF.

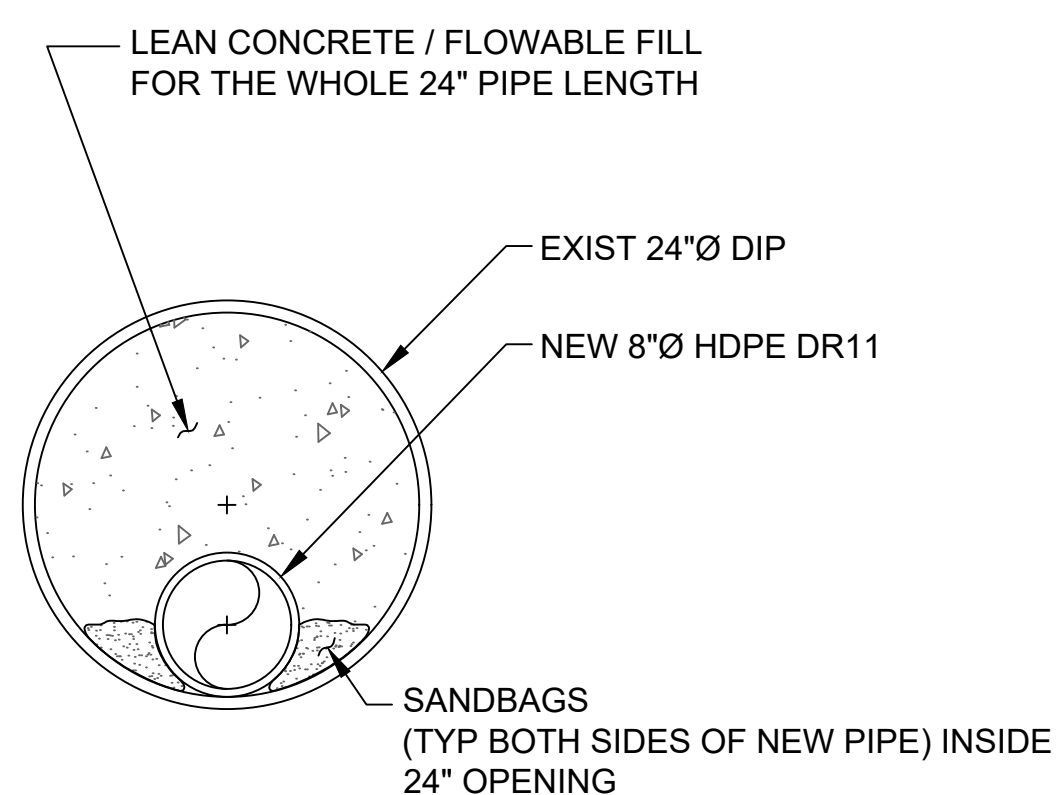
DOG-HOUSE MANHOLE DETAIL 1 NTS SD-1.0



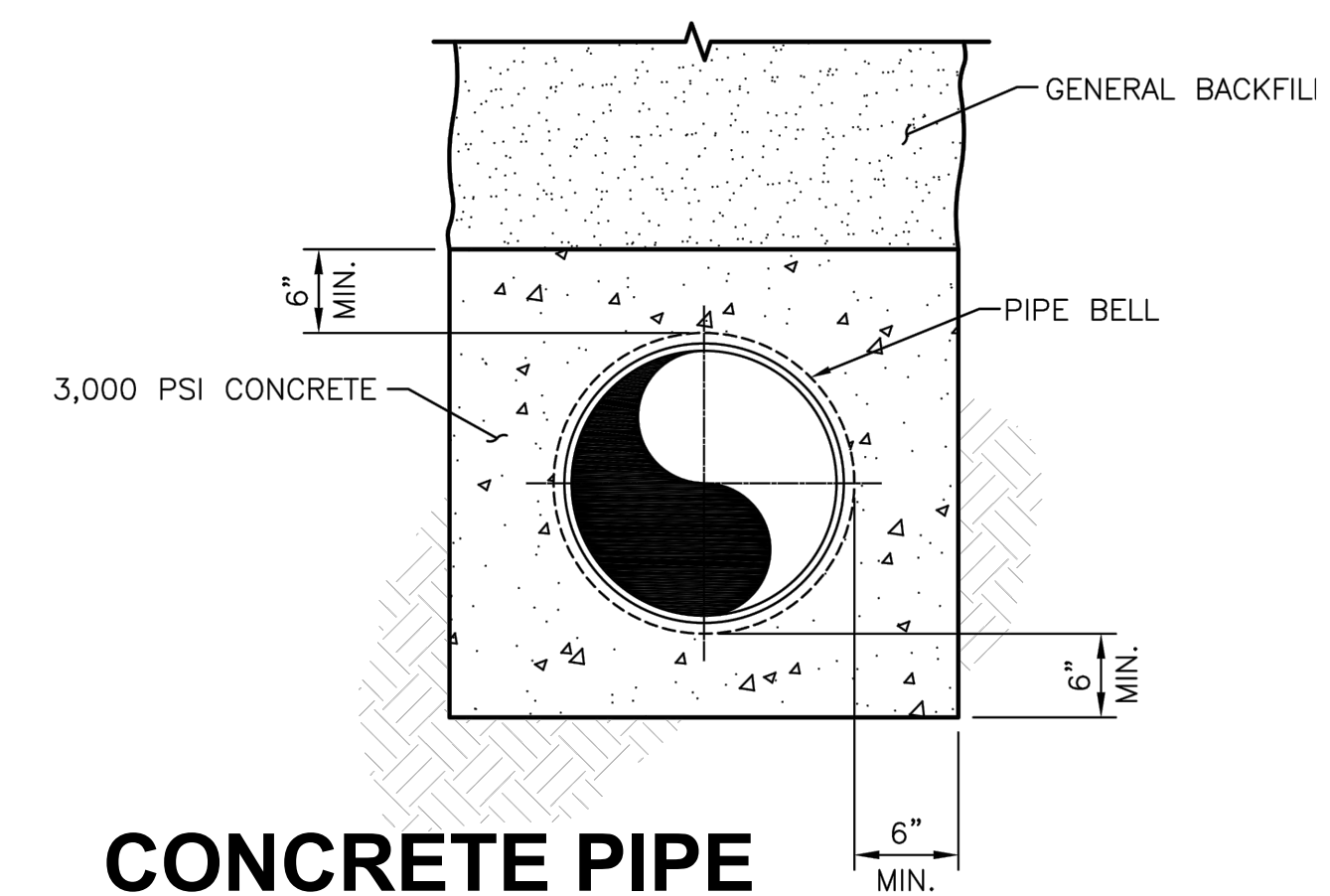
NOTES:

1. ABOVE DETAIL IS BASED ON 2" SEWERAGE AIR/VACUUM RELEASE VALVE. CHANGES TO PIPE AND FITTINGS MUST BE APPROVED BY DCDWM PRIOR TO INSTALLATION.
2. THE MINIMUM DIMENSION FROM THE TOP OF THE PIPE TO THE FINISHED GRADE SHALL BE 4.0 FEET.
3. FRAME AND COVER SHALL BE EQUIVALENT TO U.S. FOUNDRY USF 170-E-ORS.
4. FRENCH DRAIN BEDDING BEYOND VALVE VAULT SHALL CONSIST OF 24"x24" TRENCH LINED W/ 6" MIN #57 STONE BEDDING AROUND FRENCH DRAIN CENTERED IN TRENCH.

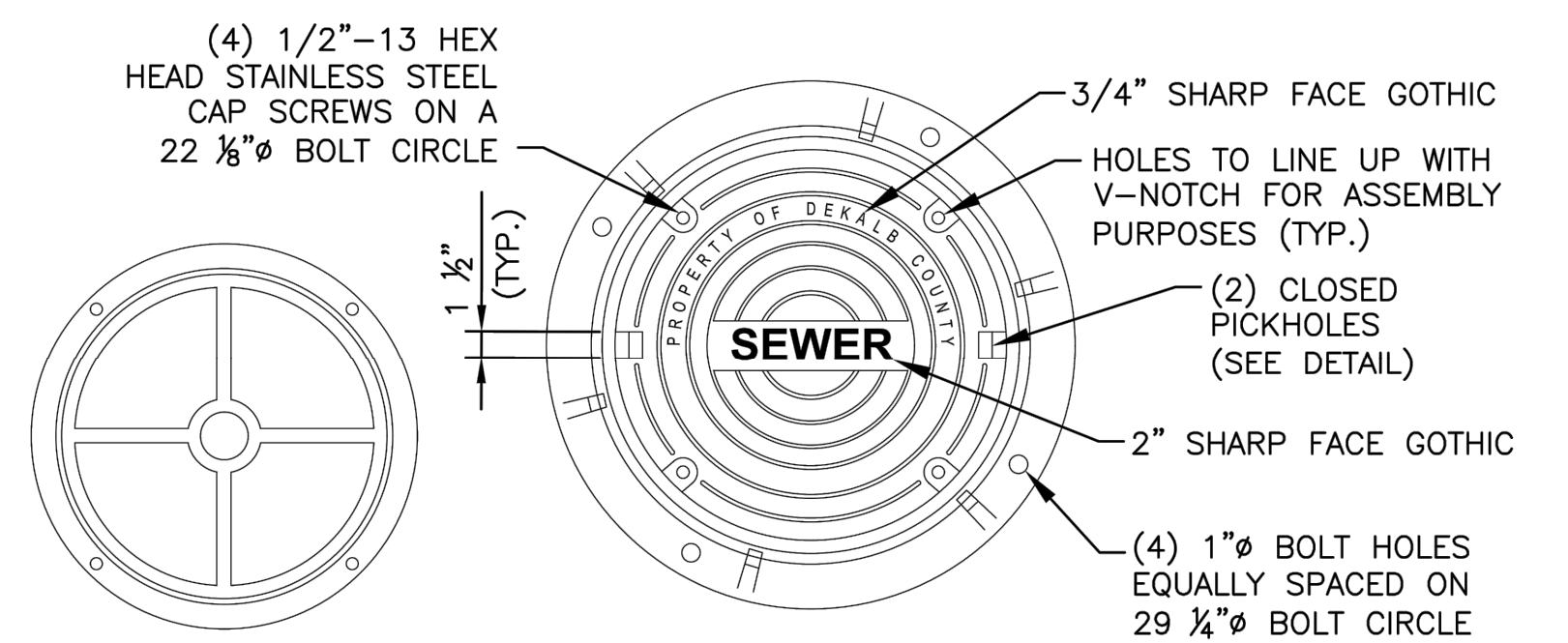
AIR & VACUUM RELEASE VALVE INSTALLATION DETAIL 2 NTS SD-1.0



CROSS SECTION DETAIL 3 NTS SD-1.0



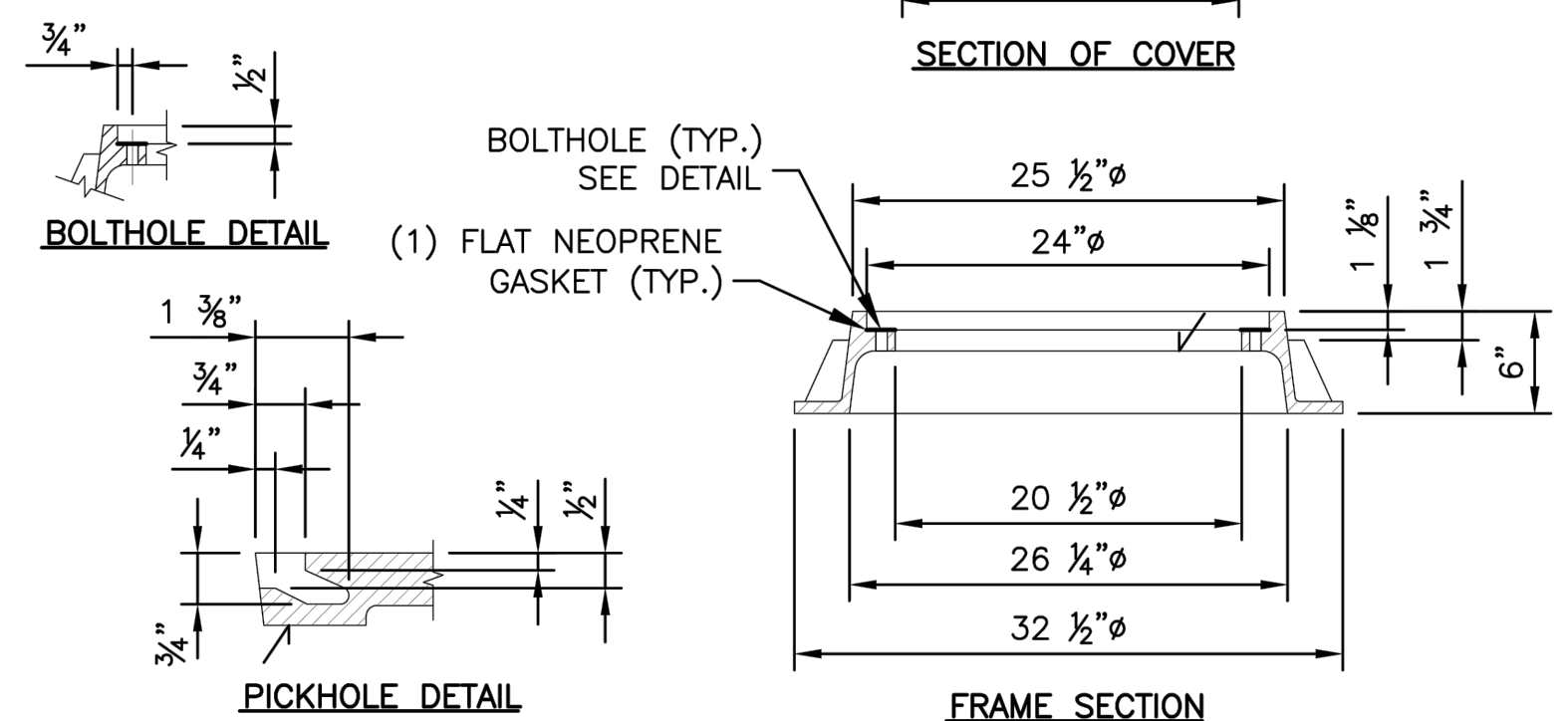
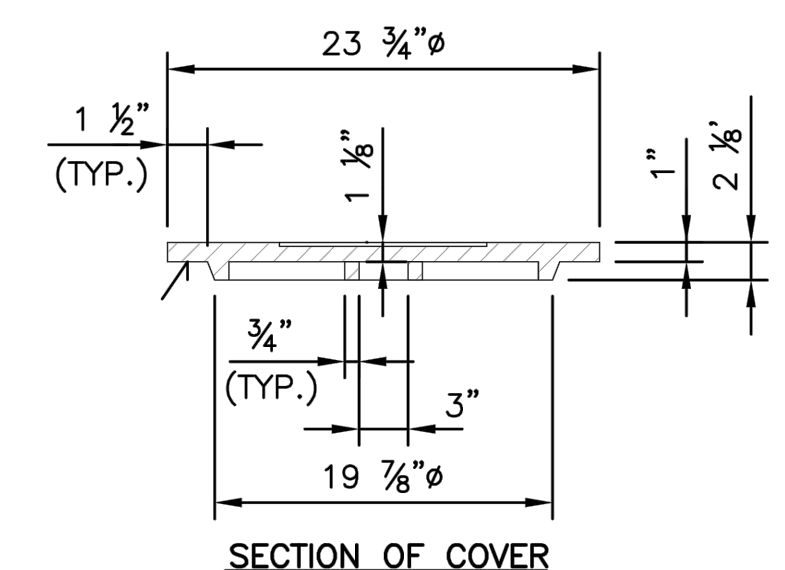
CONCRETE PIPE ENCASEMENT DETAIL 5 NTS SD-1.0



COVER BACK

- DESIGN FEATURES
- MATERIALS:
FRAME: GRAY IRON (CL35B)
COVER: GRAY IRON (CL35B)
- DESIGN LOAD
HEAVY DUTY
- COATING: UNDIPPED
- / DESIGNATES MACHINED SURFACE

- CERTIFICATION
- ASTM A48
- COUNTRY OF ORIGIN: USA



BOLT-DOWN MANHOLE FRAME & COVER DETAIL 4 NTS SD-1.0

100% SUBMITTAL



ATKINS

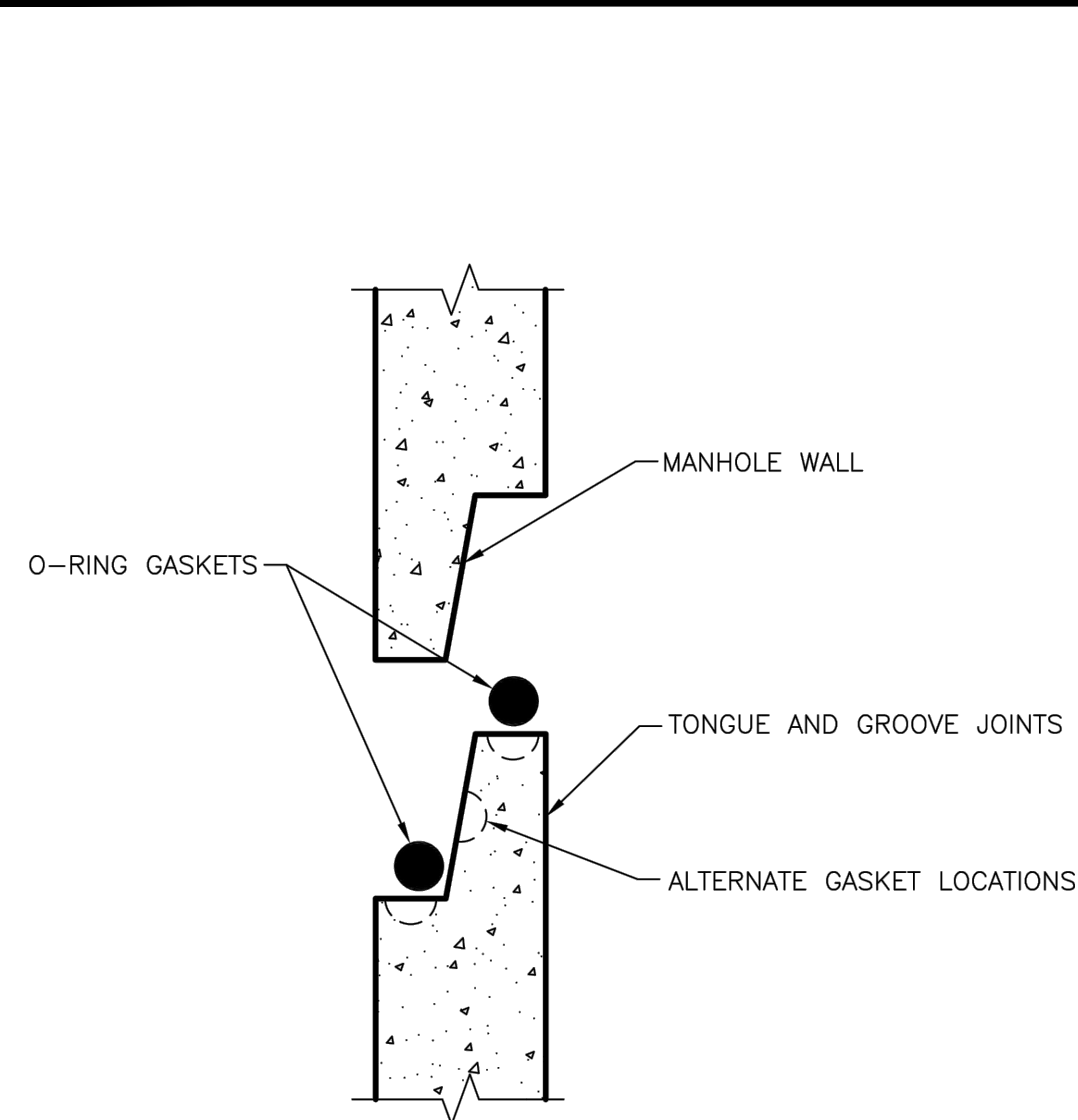
1600 Riveredge Parkway, Suite 700
Atlanta, Ga 30328
P: 770-933-0280



REVISION DATES		
REV	DATE	BY

DEKALB COUNTY DWM
NORRIS RESERVE LIFT STATION
FORCE MAIN RE-ROUTE
STANDARD DETAILS

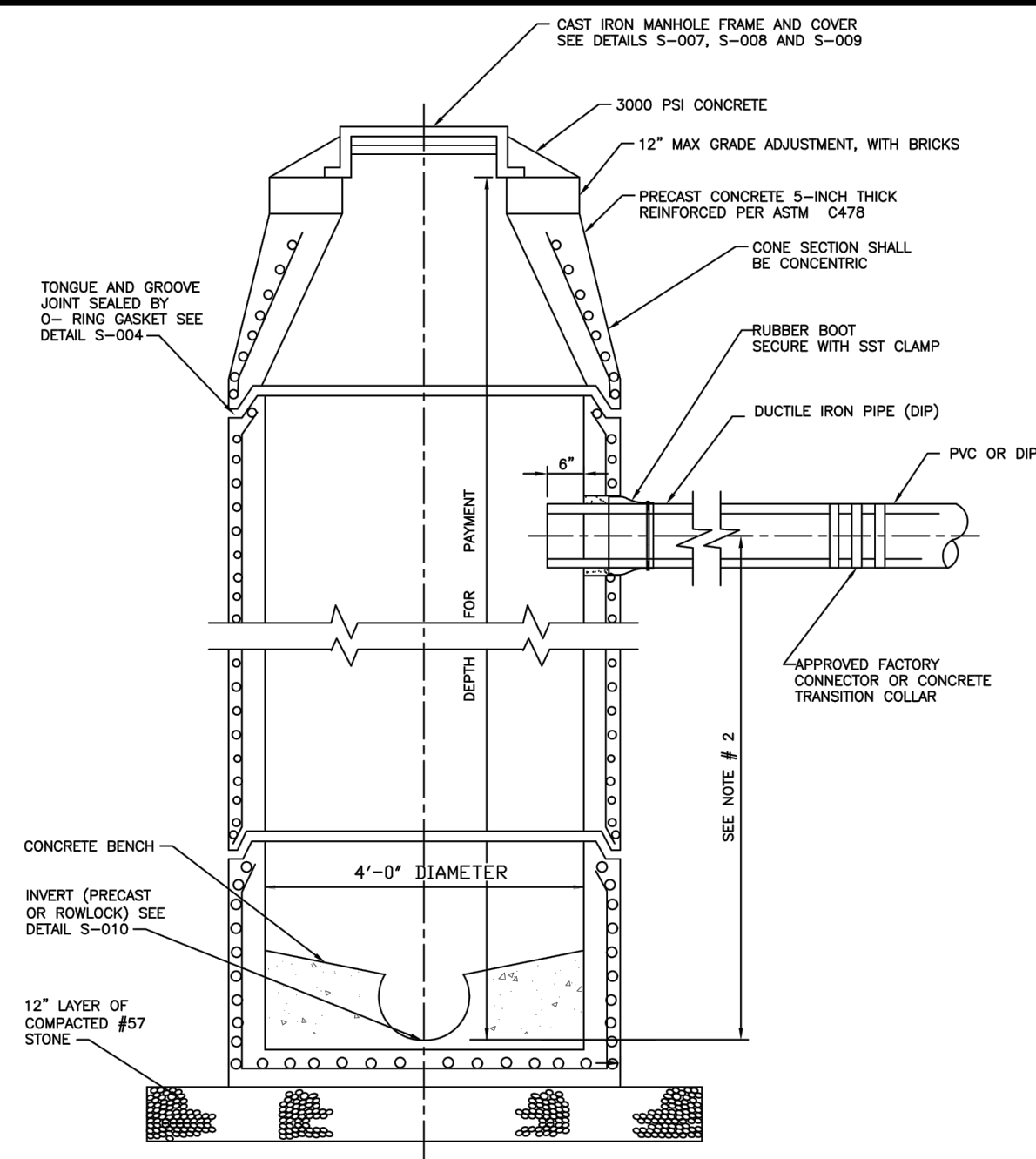
DRAWING No.
SD-1.0



NOTE:
AFTER INSTALLATION JOINTS SHALL BE GROUTED SMOOTH WITH CEMENT GROUT ON INSIDE AND OUT. ALSO AN EXTERNAL WRAP SUCH AS INFI-SHIELD GATOR WRAP OR EQUAL SHALL SEAL EACH OUTSIDE JOINT.

MANHOLE JOINT DETAIL WITH JOINT WRAP

NTS **1**
SD-2.0



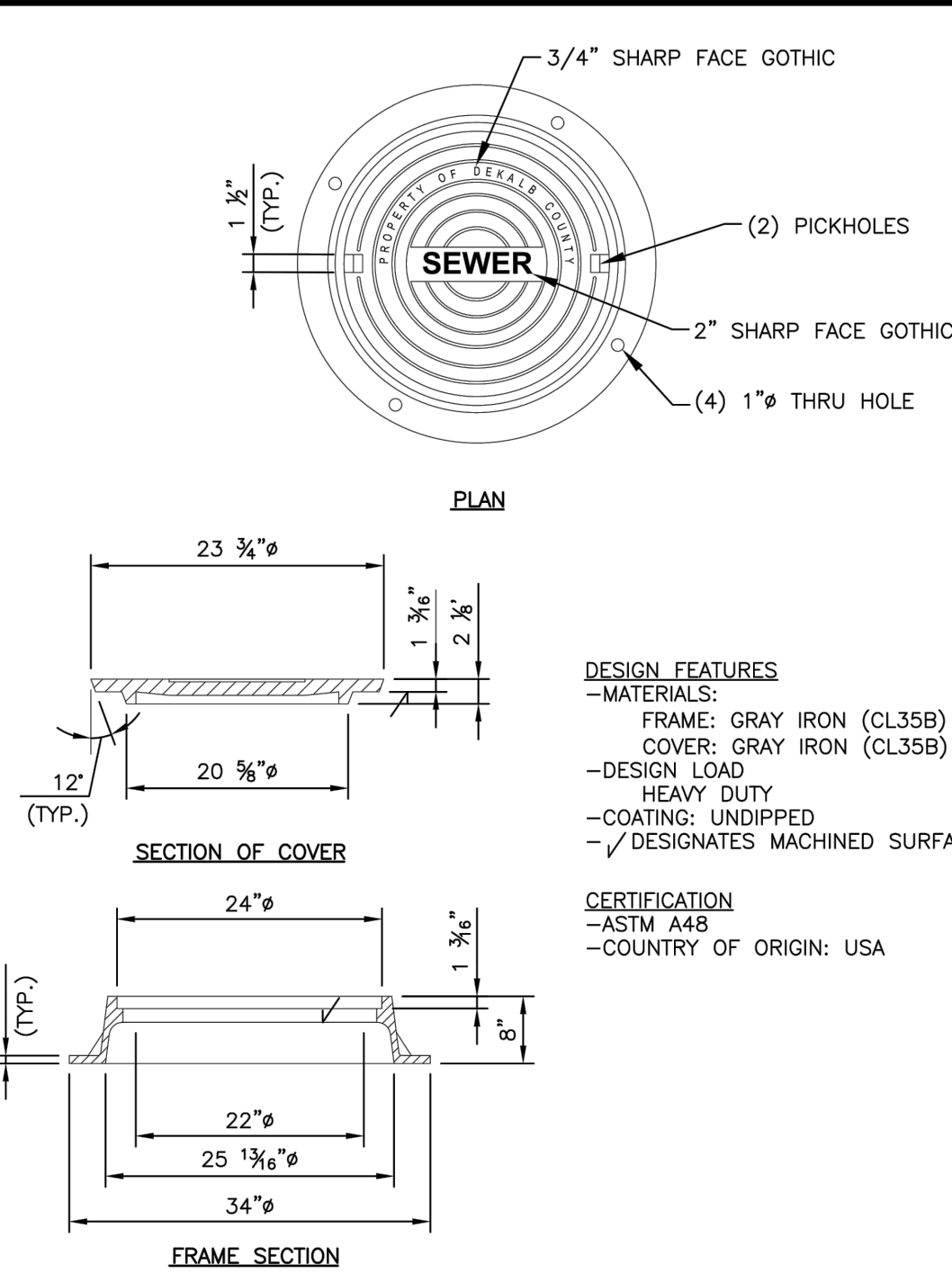
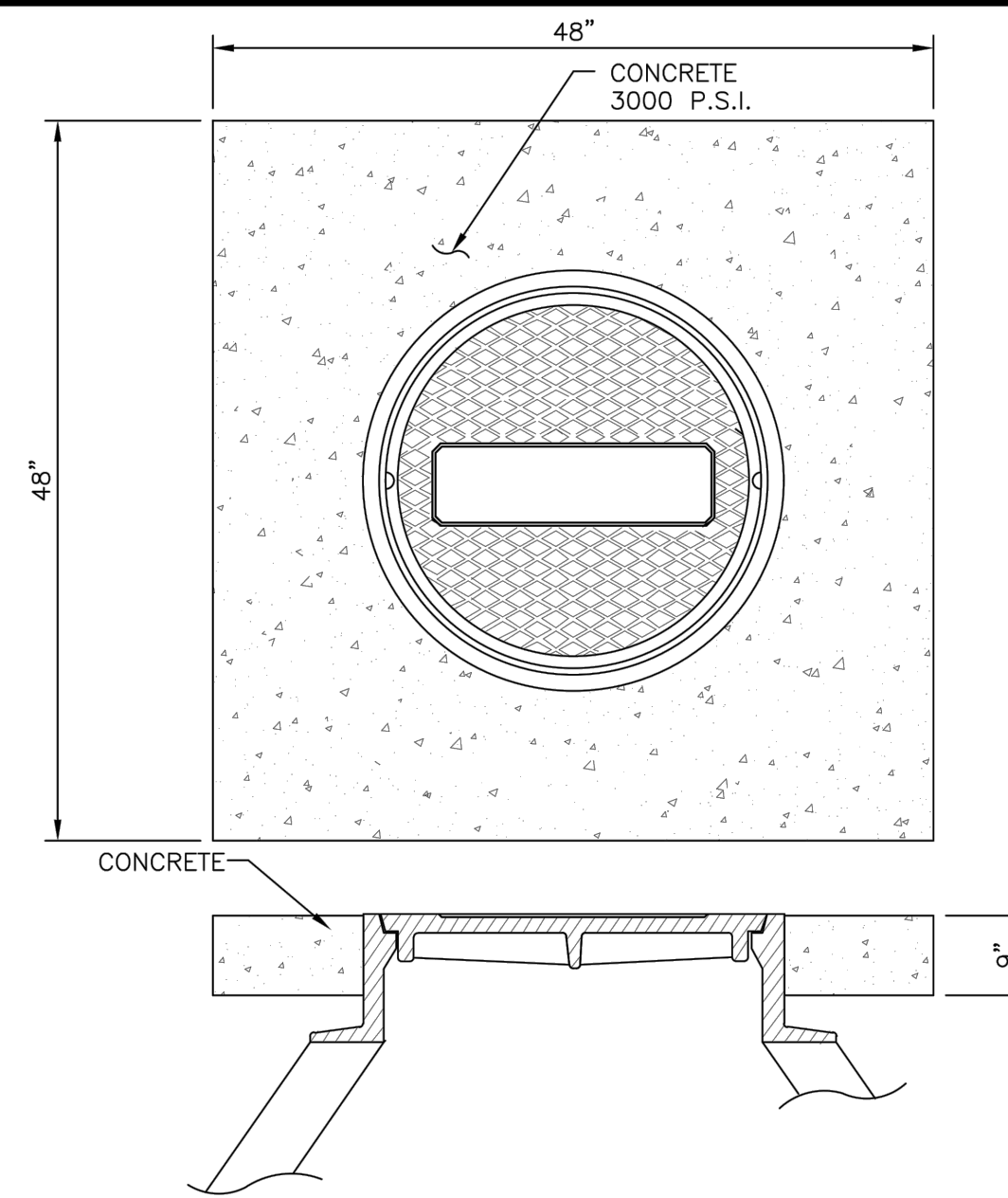
NOTES:
1. WHERE NECESSARY TO CONSTRUCT MANHOLE OVER EXISTING SEWER, 9" THICK CONCRETE FOAMED-IN-PLACE FOOTING/FOUNDATION MAY BE USED IN LIEU OF PRECAST BOTTOM SECTION.
2. WHERE DROP FROM INVERT OF MANHOLE TO INVERT OF INFLUENT PIPE(S) EXCEEDS 2'-0", AN INSIDE DROP CONNECTION SHALL BE REQUIRED EXCEPT WHEN DCCM SPECIFICALLY APPROVES ITS ELIMINATION. SEE DETAILS S-003 OR S-007.
3. PRECAST ALL OPENINGS FOR PIPE IN BASE AND RISER UNITS.

STANDARD PRECAST MANHOLE

NTS **2**
SD-2.0

CONCRETE COLLAR FOR MANHOLE FRAME AND COVER

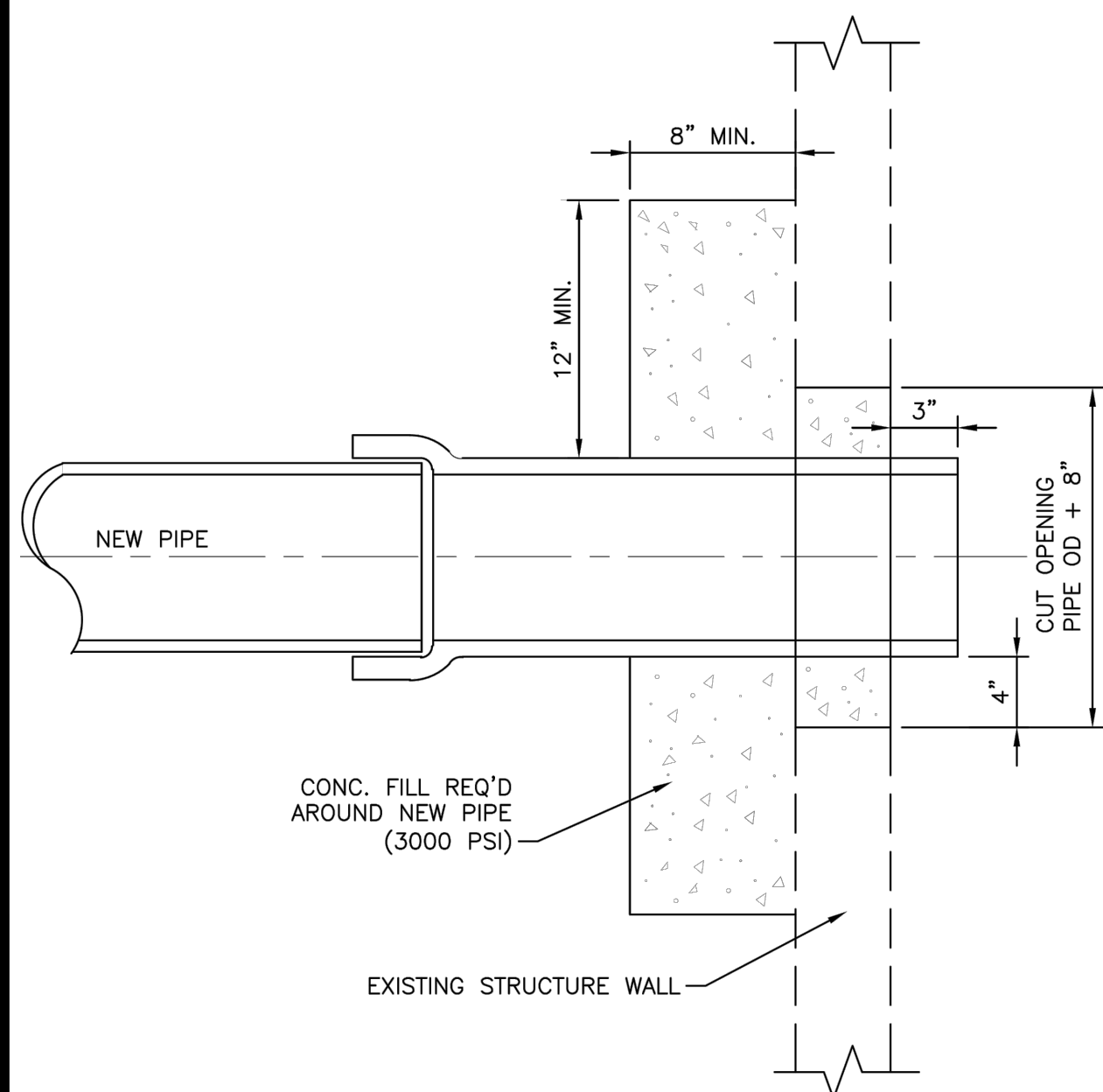
NTS **3**
SD-2.0



DESIGN FEATURES
- MATERIALS:
- FRAME: GRAY IRON (CL35B)
- COVER: GRAY IRON (CL35B)
- DESIGN LOAD
- HEAVY DUTY
- COATINGS: UNDIPTED
- √ DESIGNATES MACHINED SURFACE
CERTIFICATION
- ASTM A48
- COUNTRY OF ORIGIN: USA

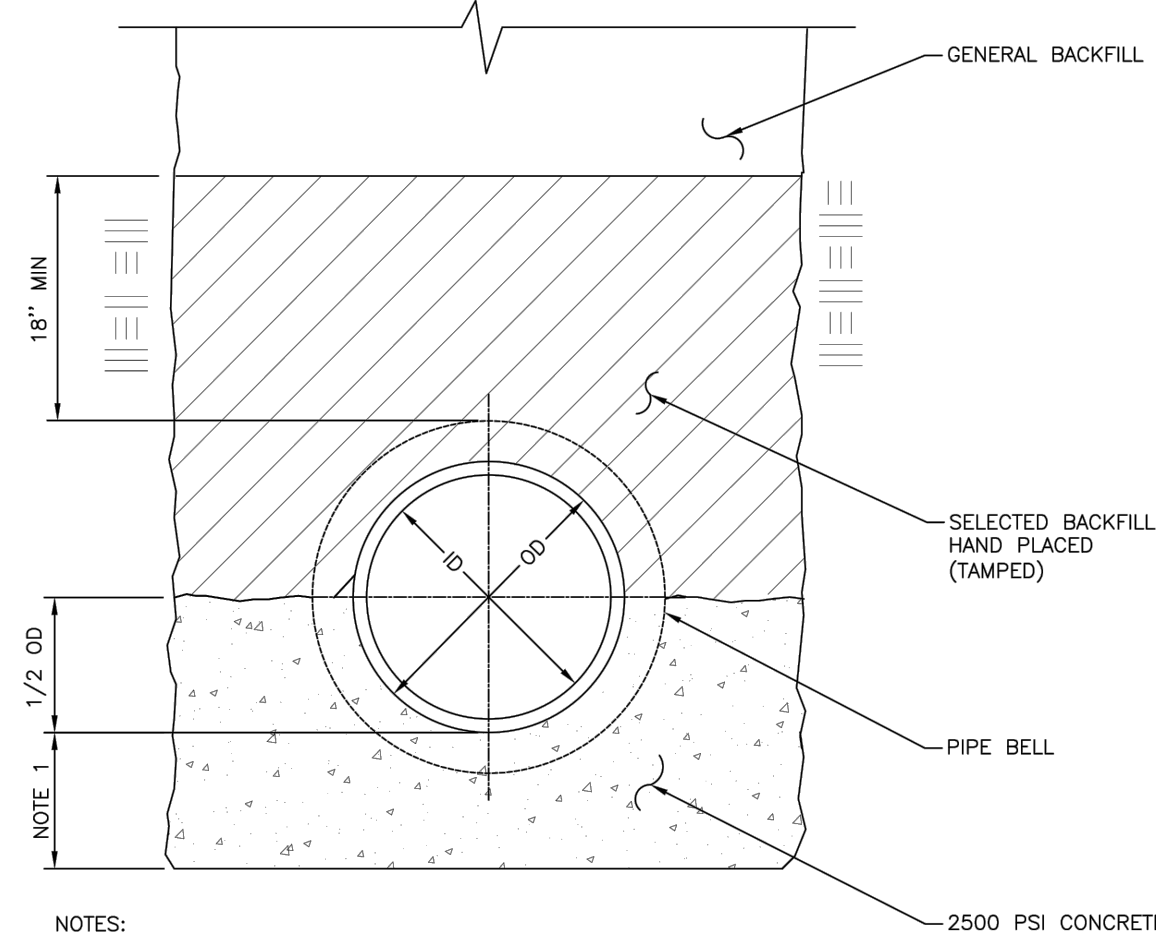
TRAFFIC MANHOLE FRAME AND COVER

NTS **4**
SD-2.0



NEW LINE CONNECTION TO AN EXISTING STRUCTURE

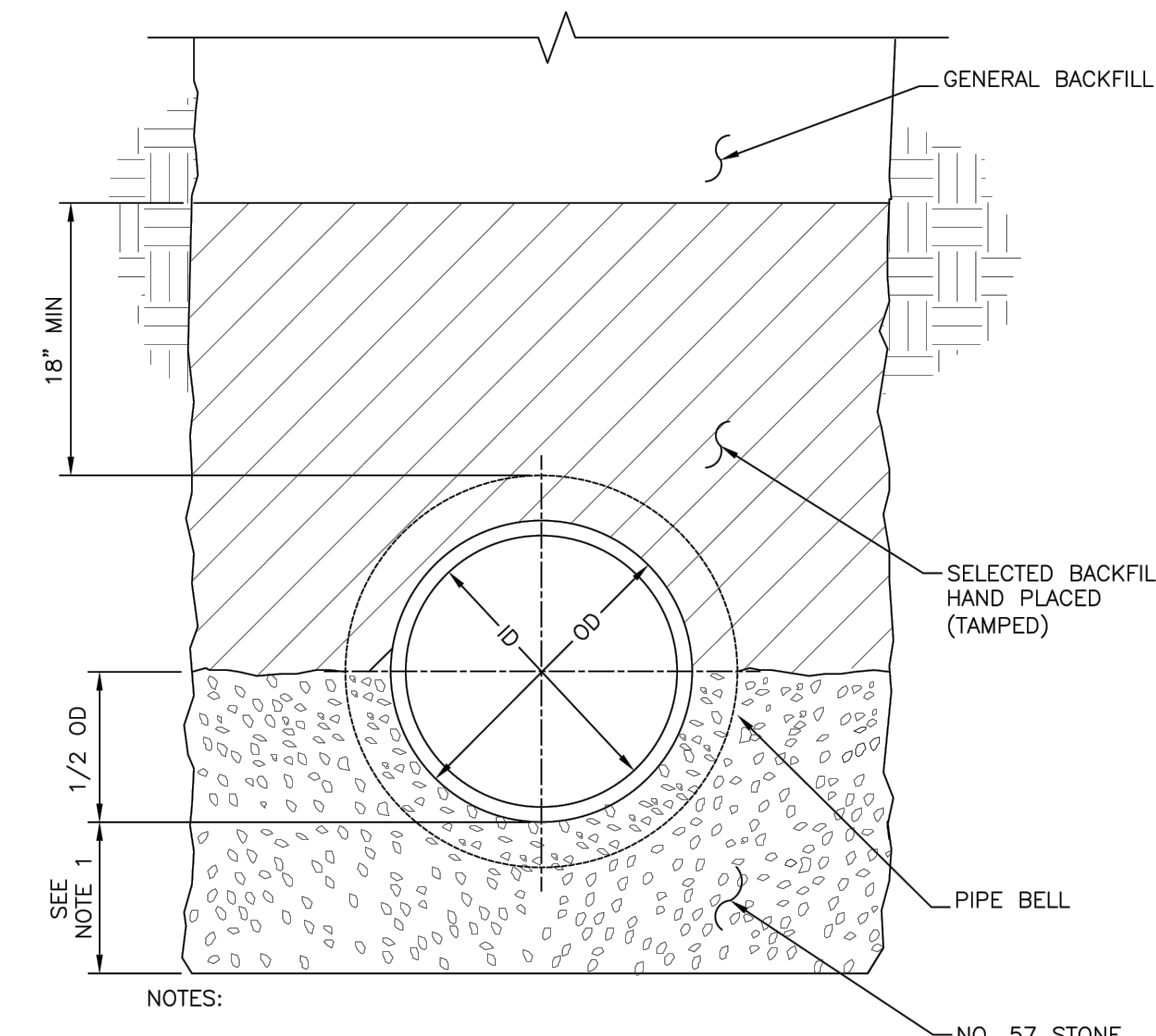
NTS **5**
SD-2.0



NOTES:
1. CONCRETE DEPTH BELOW PIPE:
a.) PIPE DIAMETER UP TO 12":
i.) EQUAL TO 1/2 TIMES THE OUTSIDE DIAMETER (OD)
ii.) MINIMUM 6"
b.) PIPE DIAMETER GREATER THAN 12":
i.) EQUAL TO 1/4 TIMES THE OUTSIDE DIAMETER (OD)
ii.) MINIMUM 6"
c.) MAXIMUM 12"

CLASS "A" BEDDING

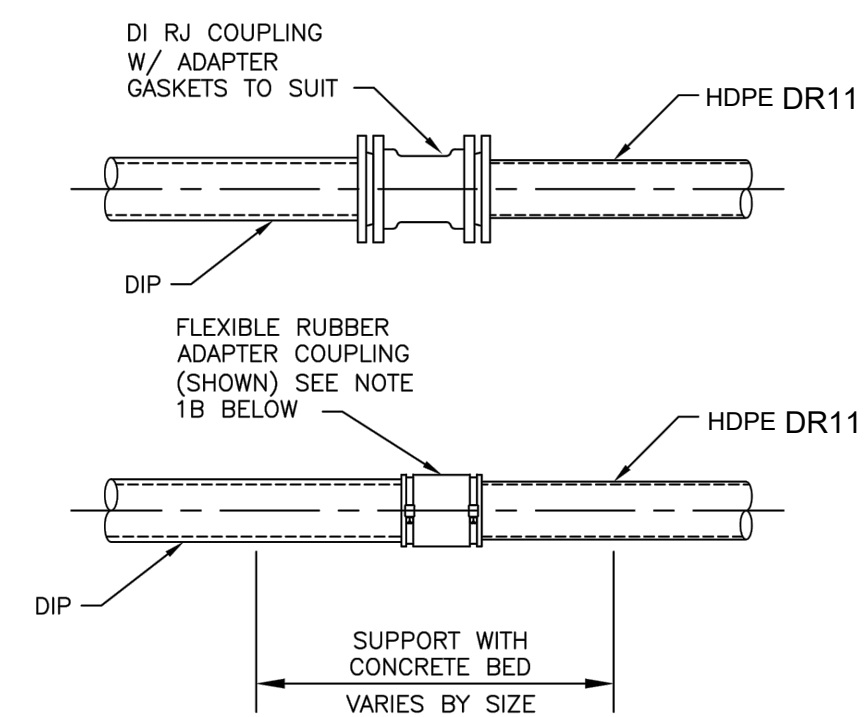
NTS **6**
SD-2.0



NOTES:
1. BEDDING DEPTH BELOW PIPE:
a.) PIPE DIAMETER UP TO 12":
i.) EQUAL TO 1/2 TIMES THE OUTSIDE DIAMETER (OD)
ii.) MINIMUM 6"
b.) PIPE DIAMETER GREATER THAN 12":
i.) EQUAL TO 1/4 TIMES THE OUTSIDE DIAMETER (OD)
ii.) MINIMUM 6"
c.) MAXIMUM 12"

CLASS "B" BEDDING

NTS **7**
SD-2.0



NOTES:
1. TRANSITION JOINTS: THE FOLLOWING SHALL BE UTILIZED FROM DUCTILE IRON PIPE TO HDPE FOR PIPE SIZES LESS THAN 12 INCHES:
A. WATER MAIN TYPE COMPRESSION COUPLINGS WITH ADAPTER GASKETS AS NEEDED.
B. "FERNCO" TYPE FLEXIBLE RUBBER ADAPTER COUPLING (SHOWN) OR APPROVED EQUAL.
2. TRANSITION COUPLINGS SHALL BE CONSTRUCTED AS SHOWN ABOVE.

TRANSITION COUPLING DETAIL

NTS **8**
SD-2.0



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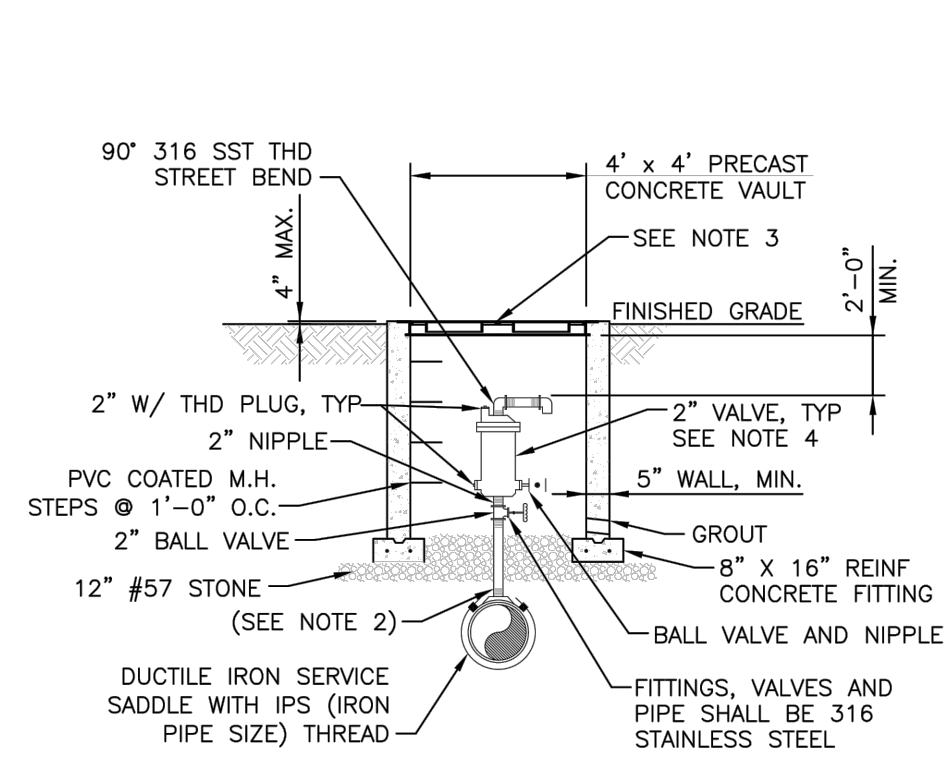


REVISION DATES		
REV	DATE	BY

DEKALB COUNTY DWM
NORRIS RESERVE LIFT STATION
FORCE MAIN RE-ROUTE
STANDARD DETAILS

DRAWING No.
SD-2.0

100% SUBMITTAL

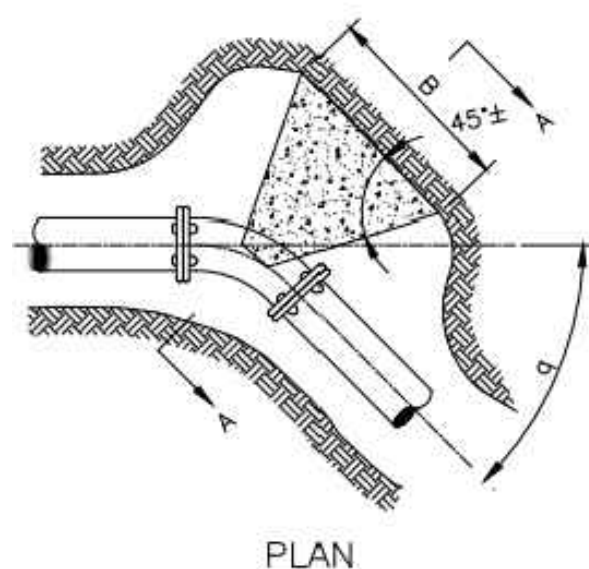


(FOR REFERENCE ONLY)

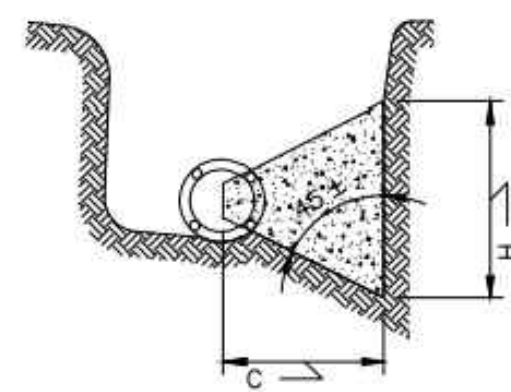
- NOTES:
1. COMBINATION AIR-VACUUM VALVES SHALL BE DETERMINED BY THE DEVELOPER'S ENGINEER AND APPROVED BY DCDWM PRIOR TO INSTALLATION.
 2. THE MINIMUM DIMENSION FROM TOP OF PIPE TO FINISHED GRADE SHALL BE 4.0 FEET.
 3. FRAME AND COVER SHALL BE EQUIVALENT TO U.S. FOUNDRY USF 170-E--ORS.
 4. VALVE SHALL BE VALMATIC 28A W/BWA OR EQUAL. SIZE SHALL BE BASED ON FORCE MAIN SIZE.
 5. THE WASTEWATER AIR/VACUUM RELEASE VALVE VAULT SHALL BE DESIGNED FOR VEHICULAR TRAFFIC LOADS.

COMBINATION AIR-VACUUM VALVE DETAIL

NTS **2** SD-3.0

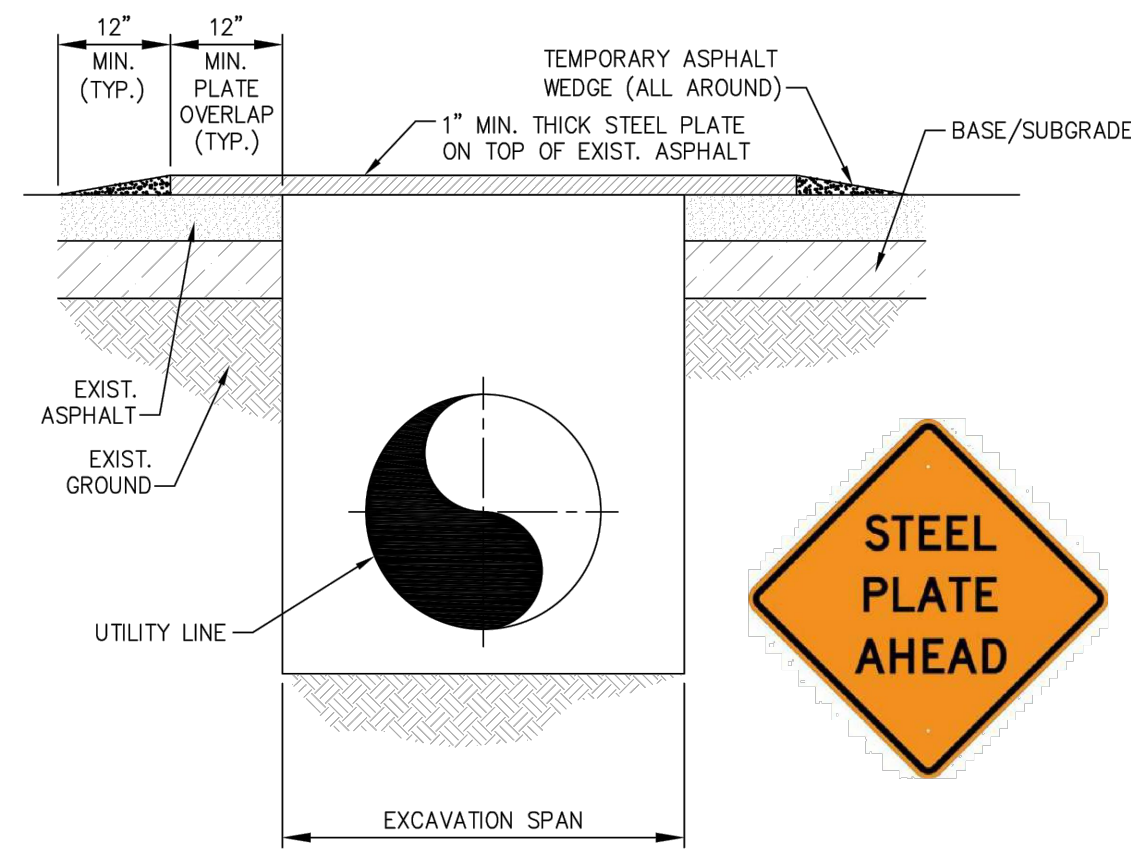


PLAN



SECTION A-A

FITTING Ø	B (IN)	H (FT)	C (FT)	VOL (YD ³)
6	0.9	0.8	0.45	0.010
8	1.2	1.1	0.60	0.022
10	1.5	1.3	0.75	0.041
12	1.8	1.6	0.90	0.071
16	2.3	2.2	1.15	0.149
22-1/2	3.0	2.8	1.50	0.222
30	3.8	3.7	1.90	0.530
36	4.6	4.4	2.30	0.921
45	5.5	5.0	2.55	1.303
60	6.4	5.9	3.05	1.942
72	7.3	6.8	3.60	2.721
84	8.2	7.7	4.15	3.642
96	9.1	8.6	4.75	4.713
108	10.0	9.5	5.40	5.944
120	10.9	10.4	6.05	7.335
132	11.8	11.3	6.75	8.886
144	12.7	12.2	7.50	10.597
156	13.6	13.1	8.25	12.468
168	14.5	14.0	9.00	14.500
180	15.4	14.9	9.75	16.693
192	16.3	15.8	10.50	19.047
204	17.2	16.7	11.25	21.562
216	18.1	17.6	12.00	24.237
228	19.0	18.5	12.75	27.072
240	19.9	19.4	13.50	30.067
252	20.8	20.3	14.25	33.222
264	21.7	21.2	15.00	36.537
276	22.6	22.1	15.75	40.012
288	23.5	23.0	16.50	43.647
300	24.4	23.9	17.25	47.442
312	25.3	24.8	18.00	51.397
324	26.2	25.7	18.75	55.512
336	27.1	26.6	19.50	59.787
348	28.0	27.5	20.25	64.222
360	28.9	28.4	21.00	68.817
372	29.8	29.3	21.75	73.572
384	30.7	30.2	22.50	78.487
396	31.6	31.1	23.25	83.562
408	32.5	32.0	24.00	88.797
420	33.4	32.9	24.75	94.192
432	34.3	33.8	25.50	99.747
444	35.2	34.7	26.25	105.462
456	36.1	35.6	27.00	111.337
468	37.0	36.5	27.75	117.372
480	37.9	37.4	28.50	123.567
492	38.8	38.3	29.25	129.922
504	39.7	39.2	30.00	136.437
516	40.6	40.1	30.75	143.112
528	41.5	41.0	31.50	149.947
540	42.4	41.9	32.25	156.942
552	43.3	42.8	33.00	164.097
564	44.2	43.7	33.75	171.422
576	45.1	44.6	34.50	178.917
588	46.0	45.5	35.25	186.582
600	46.9	46.4	36.00	194.417
612	47.8	47.3	36.75	202.422
624	48.7	48.2	37.50	210.597
636	49.6	49.1	38.25	218.942
648	50.5	50.0	39.00	227.457
660	51.4	50.9	39.75	236.142
672	52.3	51.8	40.50	245.007
684	53.2	52.7	41.25	254.052
696	54.1	53.6	42.00	263.277
708	55.0	54.5	42.75	272.682
720	55.9	55.4	43.50	282.267
732	56.8	56.3	44.25	292.032
744	57.7	57.2	45.00	301.977
756	58.6	58.1	45.75	312.102
768	59.5	59.0	46.50	322.407
780	60.4	59.9	47.25	332.892
792	61.3	60.8	48.00	343.557
804	62.2	61.7	48.75	354.402
816	63.1	62.6	49.50	365.427
828	64.0	63.5	50.25	376.632
840	64.9	64.4	51.00	388.017
852	65.8	65.3	51.75	399.582
864	66.7	66.2	52.50	411.327
876	67.6	67.1	53.25	423.252
888	68.5	68.0	54.00	435.357
900	69.4	68.9	54.75	447.642
912	70.3	69.8	55.50	460.107
924	71.2	70.7	56.25	472.752
936	72.1	71.6	57.00	485.577
948	73.0	72.5	57.75	498.582
960	73.9	73.4	58.50	511.767
972	74.8	74.3	59.25	525.132
984	75.7	75.2	60.00	538.677
996	76.6	76.1	60.75	552.402
1008	77.5	77.0	61.50	566.307
1020	78.4	77.9	62.25	580.392
1032	79.3	78.8	63.00	594.657
1044	80.2	79.7	63.75	609.102
1056	81.1	80.6	64.50	623.727
1068	82.0	81.5	65.25	638.532
1080	82.9	82.4	66.00	653.517
1092	83.8	83.3	66.75	668.682
1104	84.7	84.2	67.50	684.027
1116	85.6	85.1	68.25	699.552
1128	86.5	86.0	69.00	715.257
1140	87.4	86.9	69.75	731.142
1152	88.3	87.8	70.50	747.207
1164	89.2	88.7	71.25	763.452
1176	90.1	89.6	72.00	779.877
1188	91.0	90.5	72.75	796.482
1200	91.9	91.4	73.50	813.267
1212	92.8	92.3	74.25	830.232
1224	93.7	93.2	75.00	847.377
1236	94.6	94.1	75.75	864.702
1248	95.5	95.0	76.50	882.207
1260	96.4	95.9	77.25	900.892
1272	97.3	96.8	78.00	919.757
1284	98.2	97.7	78.75	938.802
1296	99.1	98.6	79.50	958.027
1308	100.0	99.5	80.25	977.432
1320	100.9	100.4	81.00	997.017
1332	101.8	101.3	81.75	1016.782
1344	102.7	102.2	82.50	1036.727
1356	103.6	103.1	83.25	1056.852
1368	104.5	104.0	84.00	1077.157
1380	105.4	104.9	84.75	1097.642
1392	106.3	105.8	85.50	1118.307
1404	107.2	106.7	86.25	1139.152
1416	108.1	107.6	87.00	1160.177
1428	109.0	108.5	87.75	1181.382
1440	109.9	109.4	88.50	1202.767
1452	110.8	110.3	89.25	1224.332
1464	111.7	111.2	90.00	1246.077
1476	112.6	112.1	90.75	1267.992
1488	113.5	113.0	91.50	1290.077
1500	114.4	113.9	92.25	1312.332
1512	115.3	114.8	93.00	1334.757
1524	116.2	115.7	93.75	1357.352
1536	117.1	116.6	94.50	1380.117
1548	118.0	117.5	95.25	1403.052
1560	118.9	118.4	96.00	1426.157
1572	119.8	119.3	96.75	1449.432
1584	120.7	120.2	97.50	1472.877
1596	121.6	121.1	98.25	1496.492
1608	122.5	122.0	99.00	1520.277
1620	123.4	122.9	99.75	1544.232
1632	124.3	123.8	100.50	1568.357
1644	125.2	124.7	101.25	1592.652
1656	126.1	125.6	102.00	1617.117
1668	127.0	126.5	102.75	1641.752
1680	127.9	127.4	103.50	1666.557
1692	128.8	128.3	104.25	1691.532
1704	129.7	129.2	105.00	1716.677
1716	130.6	130.1	105.75	1741.992
1728	131.5	131.0	106.50	1767.477
1740	132.4	131.9	107.25	1793.132
1752	133.3	132.8	108.00	1818.957
1764	134.2	133.7	108.75	1844.952
1776	135.1	134.6	109.50	1871.117
1788	136.0	135.5	110.25	1897.452
1800	136.9	136.4	111.00	1923.957
1812	137.8	137.3	111.75	1950.632
1824	138.7	138.2	112.50	1977.477
1836	139.6	139.1	113.25	2004.492
1848	140.5	140.0	114.00	2031.677
1860	141.4	140.9	114.75	2059.032
1872	142.3	141.8	115.50	2086.557
1884	143.2	142.7	116.25	2114.252
1896	144.1	143.6	117.00	2142.117
1908	145.0	144.5	117.75	2170.152
1920	145.9	145.4	118.50	2198.357
1932	146.8	146.3	119.25	2226.732
1944	147.7	147.2	120.00	2255.277
1956	148.6	148.1	120.75	2284.092
1968	149.5	149.0	121.50	2313.177
1980	150.4	149.9	122.25	2342.532
1992	151.3	150.8	123.00	2372.157
2004	152.2	151.7	123.75	2402.052
2016	153.1	152.6	124.50	2432.217
2028	154.0	153.5	125.25	2462.652
2040	154.9	154.4	126.00	2493.357
2052	155.8	155.3	126.75	2524.332
2064	156.7	156.2	127.50	2555.577
2076	157.6	157.1	128.25	2587.092
2088	158.5	158.0	129.00	2618.877
2100	159.4	158.9	129.75	2650.932
2112	160.3	159.8	130.50	2683.257
2124	161.2	160.7	131.25	2715.852
2136	162.1	161.6	132.00	2748.717
2148	163.0	162.5	132.75	2781.852
2160	163.9	163.4	133.50	2815.257
2172	164.8	164.3	134.25	2848.932
2184	165.7	165.2	135.00	2882.877
2196	166.6	166.1	135.75	2917.092
2208	167.5	167.0	136.50	2951.577
2220	168.4	167.9	137.25	2986.332
2232	169.3	168.8	138.00	3021.357
2244	170.2	169.7	138.75	3056.652
2256	171.1	170.6	139.50	3092.217
2268	172.0	171.5	140.25	3128.052
2280	172.9	172.4	141.00	3164.157
2292	173.8	173.3	141.75	3200.532
2304	174.7	174.2	142.50	3237.177
2316	175.6	175.1	143.25	3274.092
2328	176.5	176.0	144.00	3311.277
2340	177.4	176.9	144.75	3348.732
2352	178.3	177.8	145.50	3386.457
2364	179.2	178.7	146.25	3424.452
2376	180.1	179.6	147.00	3462.717
2388	181.0	180.5	147.75	3501.252
2400	181.9	181.4	148.50	3540.057
2412	182.8	182.3	149.25	3579.132
2424	183.7	183.2	150.00	3618.477
2436	184.6	184.1	150.75	3658.092
2448	185.5	185.0	151.50	3697.977
2460	186.4	185.9	152.25	3738.132
2472	187.3	186.8	153.00	3778.557
2484	188.2	187.7		

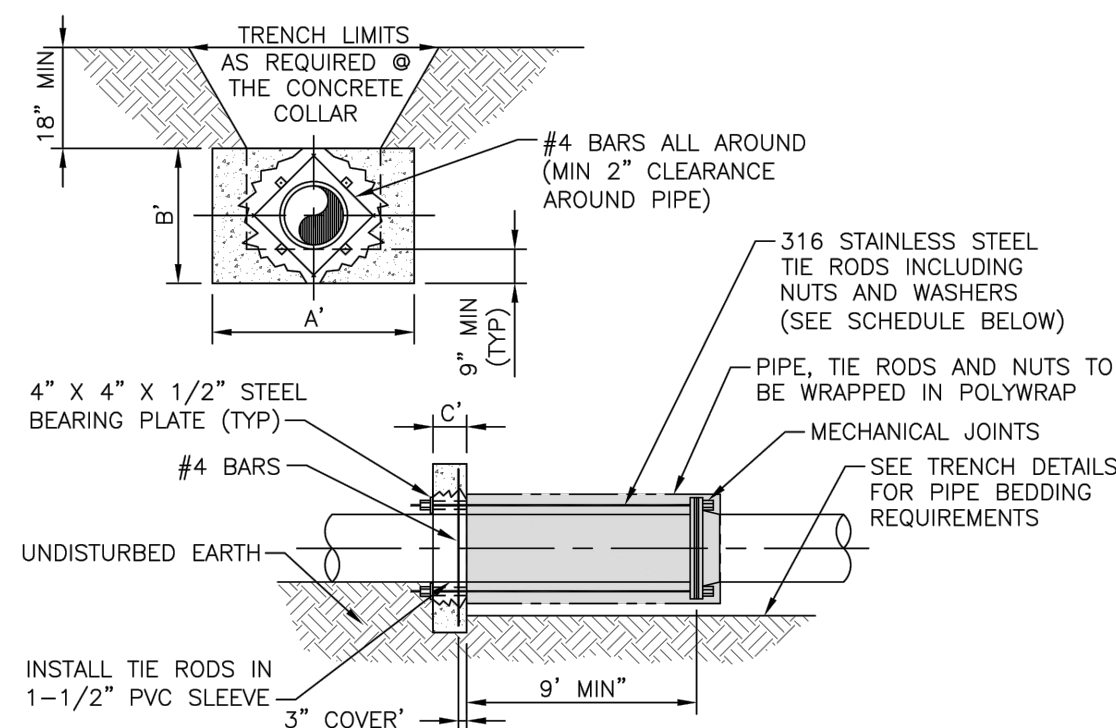


NOTES:

- INSTALLATION SHALL BE USED IN AREAS WHERE BACKFILLING OPERATIONS OF AN EXCAVATION IN THE ROADWAY CANNOT MEET THE MINIMUM COMPACTION REQUIREMENTS AND PERMANENT PATCHING PLACEMENT WITHIN THE SAME DAY.
- ALL EXCAVATIONS SHALL BE BACKFILLED WITHIN THE ROADWAY.
- EACH PLATE IS TO OVERLAP EXISTING PAVEMENT 12" MINIMUM IN EVERY DIRECTION AND MULTIPLE PLATES SHALL ABUT AND BE SECURED TO EACH OTHER.
- EACH STEEL PLATE SHALL BE ANCHORED SECURELY TO PREVENT MOVEMENT.
- TEMPORARY PAVING WITH A COLD ASPHALT MIX OR APPROVED EQUAL SHALL BE USED TO FEATHER EDGES OF THE PLATE TO FORM A WEDGED TAPER TO COVER THE EDGES OF THE STEEL PLATE.
- THE STEEL PLATE SHALL BE REMOVED WITHIN 30 DAYS OF PLACEMENT WITH THE EXCAVATION MEETING THE MINIMUM COMPACTION REQUIREMENTS AND PERMANENT PATCHING INSTALLED.
- ANY DITCH LINE NEEDING A STEEL PLATE LONGER THAN 30 DAYS SHALL REQUIRE DCDWM'S WRITTEN APPROVAL.
- WARNING SIGNS ADVISING MOTORIST THAT THEY SHOULD EXPECT TO ENCOUNTER STEEL PLATES SHALL BE PLACED APPROXIMATELY 100 FEET IN ADVANCE OF THE STEEL PLATE LOCATION. THE SIGNS SHALL MEET MUTCD SIGN SIZE REQUIREMENTS, SHALL STATE STEEL PLATE AHEAD, AND SHALL BE VISIBLE TO THE MOTORIST.

**STEEL PLATE
INSTALLATION DETAIL**

NTS **1**
SD-4.0



SCHEDULE OF DIMENSIONS AND MATERIALS

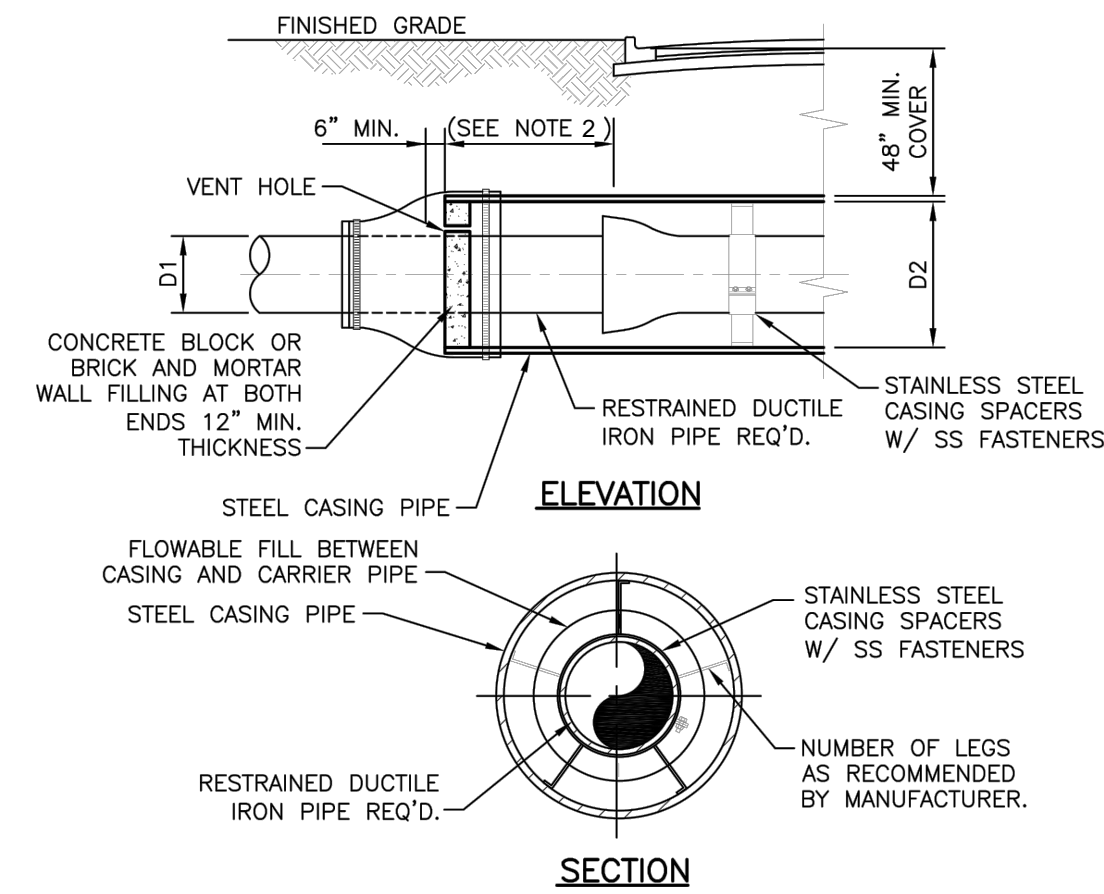
PIPE SIZE (INCHES)	DIMENSIONS (FT.)			TIE RODS REQ'D	
	A	B	C	DIA. INCHES	NO.
6	2.0	2.0	1.0	3/4	2
8	2.5	2.5	1.0	3/4	2
10	3.5	3.0	1.0	3/4	2
12	5.0	3.0	1.0	3/4	2
16	6.0	4.0	1.5	3/4	4
20	8.0	5.0	1.5	3/4	6
24	9.0	6.0	1.5	3/4	8

NOTE: THRUST COLLAR AREAS TO BE COMPUTED ON BASIS OF 2000 LBS/SF SOIL RESTRAINT BEARING.

- NOTES:
- ADDITIONAL REINFORCEMENTS SHALL BE AS SPECIFIED BY THE ENGINEER.
 - MINIMUM COMPRESSIVE STRENGTH FOR CONCRETE SHALL BE 3000 PSI.
 - BEDDING, BACKFILL AND COMPACTION SHALL BE AS SPECIFIED ELSEWHERE IN THE STANDARDS.
 - ALL FORM BOARDS SHALL BE REMOVED PRIOR TO BACKFILL.
 - NO ALLOWANCE SHALL BE MADE FOR FRICTION BETWEEN THE PIPE WALL AND THE THRUST COLLAR.
 - DESIGN PRESSURE: 150 PSI.
 - PIPE SIZE GREATER THAN 24" DIAMETER SHALL HAVE THRUST RESTRAINT DESIGNED BY A REGISTERED P.E.

**THRUST RESTRAINT (150
PSI) TIE-ROD DETAIL**

NTS **2**
SD-4.0



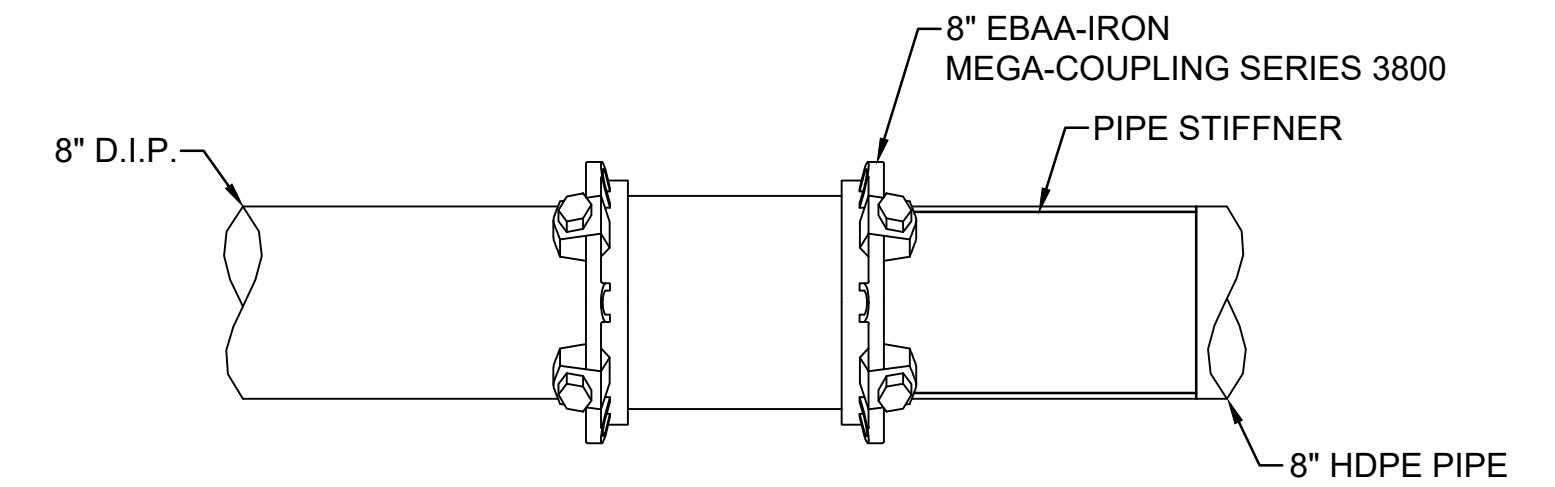
CARRIER PIPE AND CASING PIPE SIZES (MIN.)

CARRIER PIPE NOM. DIA. (D1)	2	4	6	8	10	12	14	16	20	24
CASING PIPE NOM. DIA. (D2)	6	14	16	18	20	22	24	30	32	36
WALL THICKNESS (IN.) COATED	0.250	0.250	0.250	0.250	0.281	0.312	0.344	0.406	0.438	0.469
WALL THICKNESS (IN.) UNCOATED	0.282	0.282	0.313	0.313	0.344	0.375	0.407	0.469	0.501	0.532

- NOTES:
- STAINLESS STEEL CASING SPACERS ARE REQUIRED AS SHOWN.
 - WHERE PRACTICAL, CASING SHALL EXTEND A MIN. OF 10'-0" BEYOND EDGE OF PAVEMENT OR LONGER AS REQUIRED BY LOCAL PERMITTING AGENCIES.
 - A MINIMUM OF 3 CASING SPACERS PER JOINT OF INSTALLED CARRIER PIPE SHALL BE PROVIDED.

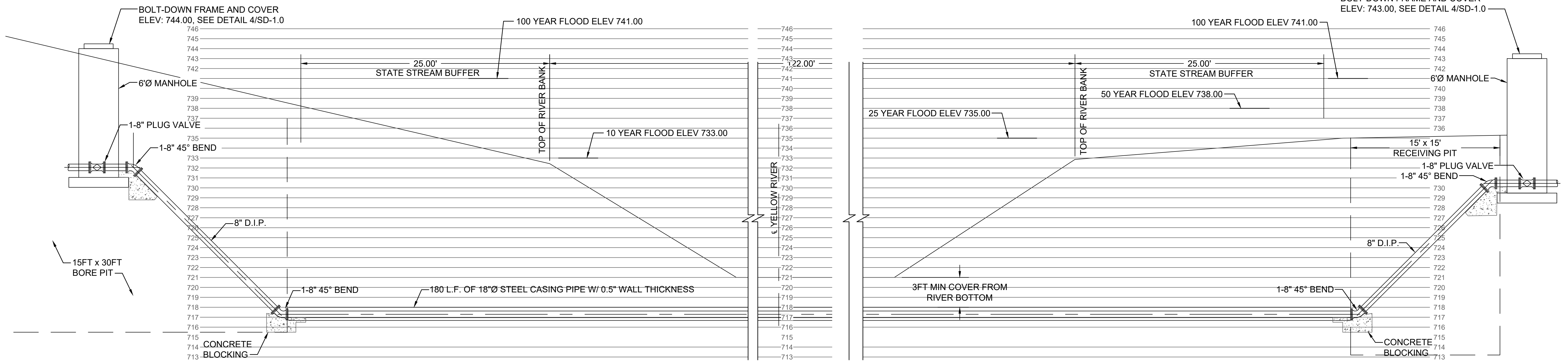
**CASING AND PIPE
SUPPORT INSTALLATION**

NTS **3**
SD-4.0



**D.I.P. TO HDPE
TRANSITION COUPLING DETAIL**

NTS **4**
SD-4.0



FORCE MAIN CREEK CROSSING DETAIL

NTS **5**
SD-4.0

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REVISION DATES		
REV	DATE	BY

DEKALB COUNTY DWM
NORRIS RESERVE LIFT STATION
FORCE MAIN RE-ROUTE
STANDARD DETAILS

DRAWING No.
SD-4.0

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

DIMENSIONS						QUANTITIES ONE STRAIGHT ENDWALL				
OPENING	WALL	FOOTING		CLASS 'B' CONCRETE		STEEL TIE RODS	CLASS 'B' CONCRETE	TOTAL	CLASS 'B' CONCRETE	
		D	F	CU. FT.	CU. YD.					CU. FT.
12"	0.8	4'0"	2'0"	1'0"	1'0"	7.2	7.3	14.5	0.54	0.25
15"	1.2	5'0"	2'3"	1'2"	1'2"	9.9	10.7	20.6	0.76	0.36
18"	1.8	6'0"	2'6"	1'3"	1'3"	13.6	14.4	28.0	1.04	0.48
24"	3.1	8'0"	3'0"	1'4"	2'0"	22.3	21.3	43.6	1.62	0.74
30"	4.9	10'0"	3'6"	1'6"	2'2"	34.7	32.5	67.2	2.49	1.13
36"	7.1	12'0"	4'0"	1'8"	2'4"	50.5	46.7	97.2	3.60	1.62
42"	9.6	14'0"	4'6"	1'10"	2'6"	70.3	70.0	140.3	5.20	2.13
48"	12.6	16'0"	5'0"	2'1"	2'9"	96.9	88.0	184.9	6.85	2.58
54"	16.0	18'0"	5'6"	2'4"	3'0"	129.4	108.0	237.4	8.79	3.07
60"	19.6	20'0"	6'0"	2'6"	3'2"	164.6	126.7	291.3	10.79	3.53

FOR EACH ADDITIONAL PIPE LINE, ADD TO G: 0D+10D OR 3 FEET, WHICHEVER IS SMALLER)

DIMENSIONS						QUANTITIES ONE 'U' ENDWALL				
OPENING	WALL	FOOTING		CLASS 'B' CONCRETE		STEEL TIE RODS	CLASS 'B' CONCRETE	TOTAL	CLASS 'B' CONCRETE	
		D	F	CU. FT.	CU. YD.					CU. FT.
12"	0.8	3'8"	2'0"	1'0"	1'3"	2'2"	6.6	7.3	13.9	0.52
15"	1.2	3'11"	2'3"	1'5"	1'3"	2'7"	8.3	9.1	17.4	0.64
18"	1.8	4'2"	2'6"	1'9"	1'3"	2'11"	9.9	10.7	20.6	0.76
24"	3.1	4'8"	3'0"	2'6"	1'6"	3'8"	13.9	15.5	29.4	1.09
30"	4.9	5'2"	3'6"	3'3"	1'6"	4'5"	18.7	20.0	38.7	1.43
36"	7.1	5'8"	4'0"	4'0"	1'9"	5'2"	21.2	26.2	50.4	1.87
42"	9.6	6'2"	4'6"	4'9"	2'0"	5'11"	30.3	33.2	63.5	2.35
48"	12.6	6'8"	5'0"	5'6"	2'0"	6'8"	37.3	39.6	76.9	2.85
54"	16.0	7'2"	5'6"	6'3"	2'0"	7'5"	44.2	45.9	90.1	3.33
60"	19.6	7'8"	6'0"	7'0"	2'0"	8'2"	51.1	49.1	100.2	3.71

DIMENSIONS						QUANTITIES ONE ENDWALL WITH 45° WING WALLS				
OPENING	WALL	FOOTING		CLASS 'B' CONCRETE		STEEL TIE RODS	CLASS 'B' CONCRETE	TOTAL	CLASS 'B' CONCRETE	
		D	F	CU. FT.	CU. YD.					CU. FT.
18"	1.8	2'6"	3'0"	1'2"	1'7"	1'3"	9.3	10.7	20.0	0.74
24"	3.1	3'0"	4'4"	1'5"	2'1"	1'4"	13.1	14.4	27.5	1.02
30"	4.9	3'6"	4'10"	1'9"	2'5"	1'6"	17.4	18.8	36.7	1.34
36"	7.1	4'0"	5'4"	2'0"	2'11"	1'8"	22.6	24.6	47.2	1.75
42"	9.6	4'6"	5'10"	2'3"	3'6"	2'0"	29.1	34.6	63.7	2.36
48"	12.6	5'0"	6'4"	2'6"	4'0"	2'0"	35.9	39.1	75.0	2.78
54"	16.0	5'6"	6'10"	2'9"	4'6"	2'0"	42.9	46.6	89.5	3.31
60"	19.6	6'0"	7'4"	3'0"	5'0"	2'0"	51.8	51.1	102.9	3.81

DIMENSIONS						QUANTITIES ONE 'L' ENDWALL			
D	AREA SQ. FT.	H	4D TYP.	D+30 TYP.	CU. YD. CONC.	STEEL TIE RODS	CLASS 'B' CONCRETE	TOTAL	CLASS 'B' CONCRETE
15"	1.2	2'3"	5'0"	3'9"	1.08	2-3/4" DIA. x 5'0"	1.08	1.08	1.08
18"	1.8	2'6"	6'0"	4'0"	1.24	2-3/4" DIA. x 6'0"	1.24	1.24	1.24
24"	3.1	3'0"	8'0"	4'6"	1.59	2-3/4" DIA. x 8'0"	1.59	1.59	1.59
30"	4.9	3'6"	10'0"	5'0"	2.00	2-3/4" DIA. x 10'0"	2.00	2.00	2.00
36"	7.1	4'0"	12'0"	5'6"	2.46	2-3/4" DIA. x 12'0"	2.46	2.46	2.46
42"	9.6	4'6"	14'0"	6'0"	2.98	2-3/4" DIA. x 14'0"	2.98	2.98	2.98
48"	12.6	5'0"	16'0"	6'6"	3.53	2-3/4" DIA. x 16'0"	3.53	3.53	3.53
54"	16.0	5'6"	18'0"	7'0"	4.13	2-3/4" DIA. x 18'0"	4.13	4.13	4.13
60"	19.6	6'0"	20'0"	7'6"	4.85	2-3/4" DIA. x 20'0"	4.85	4.85	4.85

3/4 FILL SLOPES

NOTE: THE 3'-0" DIMENSION IS BASED ON DITCH SECTION IF DEEP, VARY ACCORDING TO DITCH SECTION SO AS TO KEY 1'0" INTO BACK SLOPE OF DITCH.

CONCRETE ENDWALLS WITH 'L' TYPE WINGS

NOTE: THESE QUANTITIES WILL VARY ACCORDING TO DITCH SECTION AND ARE TO BE USED FOR ESTIMATING PURPOSES ONLY. PAYMENT TO BE MADE ACCORDING TO QUANTITIES MEASURED AS ACTUALLY PLACED.

NOTE: QUANTITIES OF CONCRETE ARE BASED ON INSIDE DIAMETER OF PIPE. NO DEDUCTIONS SHALL BE MADE FOR SHELL THICKNESS OR SKEW OF PIPE IN COMPUTING PAY QUANTITIES.

NOTE: GRADE GENERALLY TO FOLLOW SLOPE OF STREAM.

SECTION SHOWING MINIMUM COVER OVER CULVERTS

NOTE TO DESIGNER

THIS STANDARD IS LIMITED FOR USE ONLY AT SPECIAL CONDITIONS, OTHERWISE, SEE CURRENT STANDARDS 1120 & 1125.

HEADWALLS ARE NOT TO BE PLACED INSIDE THE CLEAR ZONE.

DATE		DEPARTMENT OF TRANSPORTATION	
REVISION		STATE OF GEORGIA	
NO SCALE		STANDARD PIPE CULVERT CONCRETE HEADWALL	
DESIGNED		REV. & REDR. AUG. 1999	
TRACED		NUMBER	
CHECKED		1001-B	

PIPE CULVERT CONCRETE HEADWAL DETAIL

NTS 1 SD-5.0

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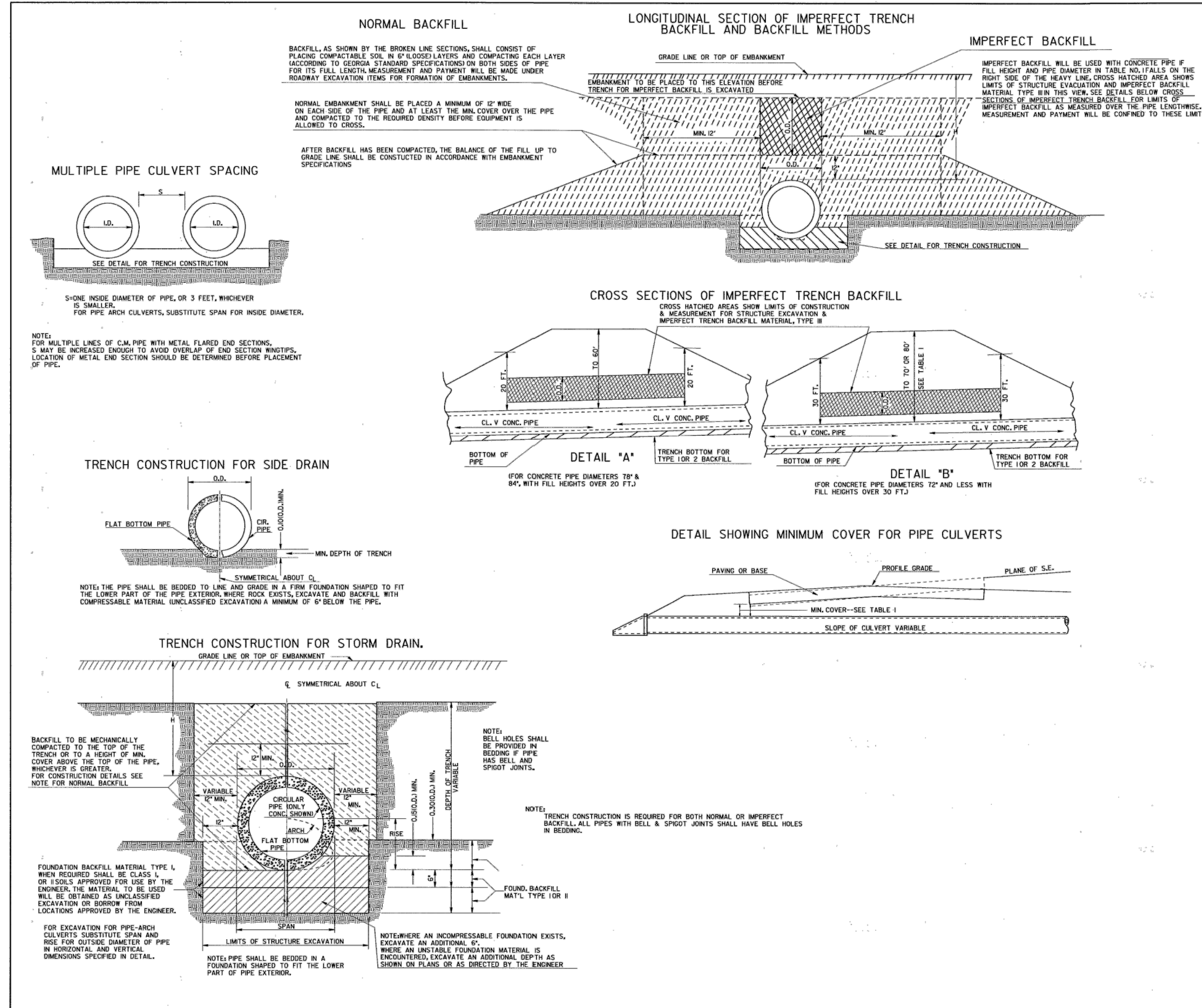


REVISION DATES		
REV	DATE	BY

DEKALB COUNTY DWM
NORRIS RESERVE LIFT STATION
FORCE MAIN RE-ROUTE
STANDARD DETAILS

DRAWING No.
SD-5.0

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			



NOTE:
 1. FOR FILL HEIGHT TABLES SEE SHEET 2 OF 3 AND SHEET 3 OF 3.
 2. ONLY ONE CLASS OR THICKNESS OF PIPE WILL BE SPECIFIED FOR EACH INDIVIDUAL LOCATION. THE CLASS OR THICKNESS WILL BE DETERMINED BY THE MAXIMUM HEIGHT OF FILL.

DATE		DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA	
REVISION		STANDARD CONCRETE & METAL PIPE CULVERTS SHEET 1 OF 3 (TRENCH CONSTRUCTION, BEDDING, BACKFILLING)	
NO SCALE		REV. & REDR.: SEPT., 2001	
DES.	(SUBMITTED)	NUMBER	1030D
TRA.	(APPROVED)	CHIEF ENGINEER	

**CONCRETE AND METAL
 PIPE CULVERTS DETAIL-1** 1
 NTS SD-6.0

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REVISION DATES		
REV	DATE	BY

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 FORCE MAIN RE-ROUTE
 STANDARD DETAILS

DRAWING No.
SD-6.0

TABLE NO. 1 R ROUND PIPE - SPIRAL RIB STEEL - SPIRAL RIB ALUMINUM
MINIMUM THICKNESS OF STEEL AND ALUMINUM
HEIGHT OF FILL FEET ABOVE TOP OF PIPE

PIPE DIAMETER (INCHES)	TYPE	MINIMUM COVER (INCHES)	HEIGHT OF FILL FEET ABOVE TOP OF PIPE												PIPE DIAMETER (INCHES)				
			1-10	10-15	15-20	20-25	25-30	30-35	35-40	40-50	50-60	60-70	70-80	80-90					
12																			12
15																			15
18	STEEL R ALUM R	12	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	18
24	STEEL R ALUM R	12	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	24
30	STEEL R ALUM R	12	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	30
36	STEEL R ALUM R	12	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	36
42	STEEL R ALUM R	12	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	42
48	STEEL R ALUM R	12	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	48
54	STEEL R ALUM R	15	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	.064 .060	54
60	STEEL R ALUM R	15	.079 .075	.079 .075	.079 .075	.079 .075	.079 .075	.079 .075	.079 .075	.079 .075	.079 .075	.079 .075	.079 .075	.079 .075	.079 .075	.079 .075	.079 .075	.079 .075	60
66	STEEL R ALUM R	18	.079 .075	.079 .075	.079 .075	.079 .075	.079 .075	.079 .075	.079 .075	.079 .075	.079 .075	.079 .075	.079 .075	.079 .075	.079 .075	.079 .075	.079 .075	.079 .075	66
72	STEEL R ALUM R	18	.109 .105	.109 .105	.109 .105	.109 .105	.109 .105	.109 .105	.109 .105	.109 .105	.109 .105	.109 .105	.109 .105	.109 .105	.109 .105	.109 .105	.109 .105	.109 .105	72
78	STEEL R	21	.109	.109	.109	.109	.109	.109	.109	.109	.109	.109	.109	.109	.109	.109	.109	.109	78
84	STEEL R	21	.109	.109	.109	.109	.109	.109	.109	.109	.109	.109	.109	.109	.109	.109	.109	.109	84
90																			90
96																			96
102																			102
108																			108
114																			114
120																			120

R DENOTES SPIRAL RIB PROFILE 3/4" X 3/4" X 7-1/2"

TABLE VALUES FOR ALUMINUM SPIRAL RIB PIPE ARE COMPUTED BASED UPON ALCLAD ALLOY 3004-H34 HAVING MINIMUM YIELD STRENGTH, $f_y=24,000$ PSI. IF ALUMINUM PIPE IS OTHERWISE FURNISHED AS 3004-H32 ($f_y=20,000$ PSI), ALLOWABLE FILL HEIGHTS SHALL BE ADJUSTED AS FOLLOWS:

- A. ALL MINIMUM COVER VALUES SHALL BE INCREASED BY 15 PERCENT. (EXAMPLE: 12 IN. BECOMES 13.8 IN.)
- B. ALL HEIGHT OF FILL VALUES SHALL BE DECREASED BY 15 PERCENT. (EXAMPLE: 35-40 FT. BECOMES 29.7-34.0 FT.)

MINIMUM COVER VALUES APPLY TO HS-20 LIVE LOAD. MINIMUM COVER NEEDED FOR CONSTRUCTION VEHICLES MAY BE GREATER AND IS THE RESPONSIBILITY OF THE CONTRACTOR. TRENCH CONSTRUCTION IS REQUIRED FOR ALL INSTALLATIONS.

TABLE NO. 2 (PIPE-ARCH)
TABLE SHOWING MINIMUM THICKNESS IN INCHES OF CORRUGATED STEEL AND ALUMINUM PIPE AND MAXIMUM HEIGHTS OF FILL IN FEET

DIAMETER EQUAL PERIPHERY (INCHES)	NON-MIN. RISE (INCHES)	NON-MIN. SPAN (INCHES)	CORR. STEEL		CORR. ALUMINUM		MAX. HT. FILL (FEET)
			MIN. THICKNESS (INCHES)	MAX. HEIGHT (FEET)	MIN. THICKNESS (INCHES)	MAX. HEIGHT (FEET)	
15	17	13	.064	12	.060	12	12
18	21	15	.064	12	.060	12	12
21	24	18	.064	12	.060	12	12
24	28	20	.064	12	.060	12	12
30	35	24	.064	12	.060	12	12
36	42	29	.064	12	.060	12	12
42	49	33	.079	12	.060	12	12
48	57	38	.079	12	.060	12	12
54	64	43	.079	12	.060	12	12
60	71	47	.079	12	.060	12	12
66	77	52	.079	12	.060	12	12
72	83	57	.079	12	.060	12	12
78	89	62	.079	12	.060	12	12
84	95	67	.079	12	.060	12	12
90	103	71	.079	12	.060	12	12

NOTE: FOR TABLE NO. 2 COMBINATIONS FOR PIPE-ARCHES, HAVING EQUAL PERIPHERY TO THAT SHOWN, MAY BE SUBSTITUTED IF LISTED IN AASHTO SPECIFICATION.

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD
CONCRETE & METAL PIPE CULVERTS
SHEET 3 OF 3
(FILL HEIGHTS FOR SPIRAL RIB METAL PIPE & FOR PIPE ARCH)

NO SCALE
DESIGNED: [Signature]
TRACED: [Signature]
CHECKED: [Signature]
REVISED: [Signature]

SEPTE., 2001
NUMBER 1030D

CONCRETE AND METAL
PIPE CULVERTS DETAIL-3
NTS 1
SD-8.0



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