

VICINITY MAP  
SCALE: 1" = 1000'

# CONSTRUCTION DRAWINGS FOR COROLLA BOAT CLUB - PHASE 1

A 6 LOT SUBDIVISION DEVELOPMENT  
MONTERAY SHORES PHASE 10

POPLAR BRANCH TOWNSHIP      CURRITUCK COUNTY      NORTH CAROLINA

**GENERAL NOTES:**

- PROJECT NAME: COROLLA BOAT CLUB - PHASE 1
- APPLICANT/DEVELOPER: OUTER BANKS VENTURES, INC.  
P.O. BOX 549  
COROLLA, NC 27927
- PROPERTY DATA:  
ADDRESS: MALIA DRIVE, COROLLA, NC  
PIN: 0115-000-010-0000  
RECORD DOCUMENT(S): DB-1161, PG:734; PC:K, SL: 49  
PROPERTY ZONING: SFO-PUD
- F.I.R.M. DATA:  
ZONES X, AE (3') AND SHADED X PER F.E.M.A. F.I.R.M. MAP NUMBER 3721803200 K,  
EFFECTIVE DATE DECEMBER 21, 2018. USE OF LAND WITHIN A FLOODWAY OR FLOOD  
PLAIN IS SUBSTANTIALLY RESTRICTED BY CHAPTER 7 OF THE CURRITUCK COUNTY  
UNIFIED DEVELOPMENT ORDINANCE.
- THIS PROPERTY CONTAINS ACOE "404" JURISDICTIONAL WETLANDS AS SHOWN AND  
CONFIRMED BY USACE AND MAY REQUIRE U.S. CORP OF ENGINEERS APPROVAL PRIOR  
TO DEVELOPMENT OF THE PROPERTY.
- SECTION 7.6.5 OF THE CURRITUCK U.D.O. SUBSTANTIALLY RESTRICTS DEVELOPMENT  
WITHIN A 30' RIPARIAN BUFFER TO CERTAIN WETLANDS.
- EXISTING CONDITION INFORMATION BASED ON A COMBINATION OF THE FOLLOWING:  
• 2022 AERIAL IMAGERY OBTAINED FROM NCONMAP.COM  
• FIELD TOPOGRAPHIC SURVEY DATA BY BISSELL PROFESSIONAL GROUP.  
• ELEVATIONS ARE REFERENCED TO NAVD 1988 VERTICAL DATUM.  
• WATER DEPTHS PER PLAN TITLED "WATER DEPTH SURVEY/CAMA FEASE" BY  
QUIBLE AND ASSOCIATES
- ALL UTILITIES ARE TO BE UNDERGROUND.
- A 10' EASEMENT FOR UTILITIES AND DRAINAGE ALONG REAR AND SIDE PROPERTY  
LINES AND A 25' EASEMENT ALONG FRONT PROPERTY LINES SHALL BE ESTABLISHED  
FOR DRAINAGE, UTILITIES, PEDESTRIAN WALKS & STREET TREES. A NON-EXCLUSIVE  
DRAINAGE EASEMENT IS HEREBY DEDICATED ACROSS ALL OPEN SPACE AREAS FOR  
PURPOSES OF OPERATION AND MAINTENANCE OF STORMWATER MANAGEMENT SYSTEM.

**DEVELOPMENT NOTES:**

- PHASE 1 PROPERTY AREA: 20.03 AC.  
PHASE 1 COASTAL WETLAND AREA: 6.22 AC.  
PHASE 1 SURFACE WATER & LAKE: 3.39 AC.  
TOTAL PHASE 1 PROJECT AREA: 10.42 AC.
- DEVELOPMENT SUMMARY  
TOTAL LOT AREA: 2.98 AC.  
R/W AREA: 0.58 AC.  
OPEN SPACE & FUTURE DEVELOPMENT AREA: 6.86 AC.  
TOTAL AREA: 10.42 AC.  
  
# OF SINGLE FAMILY LOTS: 5  
# OF COMMERCIAL LOTS: 1  
  
PROPOSED RIGHT-OF-WAY WIDTH: 30  
PROPOSED PAVED ROADWAY WIDTH: 25 FT. (W/ C&G)  
LINEAR FEET OF ROADWAY: 850 L.F.±
- IMPERVIOUS COVERAGE DATA (BUA):  
LOT COVERAGE: 54,502 SF  
ROADWAY: 25,080 SF  
PARKING: 3,311 SF  
SIDEWALKS: 14,600 SF  
ALLOWANCE FOR MISC. AMENITIES: 3,000 SF  
FUTURE ROADWAY COVERAGE: 8,400 SF  
TOTAL COVERAGE: 108,893 SF (24.00%)
- TOTAL PROPOSED DISTURBED AREA: 12 ACRES

Sheet List Table

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PLAN LEGEND	
	ROADWAY CENTERLINE
	RIGHT-OF-WAY
	PROPERTY BOUNDARY
	ADJOINING PROPERTY LINE
	EXISTING DITCH CENTERLINE
	EXISTING DITCH TOP OF BANK
	EXISTING WETLANDS
	30' UNDISTURBED BUFFER (COUNTY)
	PROPOSED SWALE W/ FLOW ARROW
	PROPOSED SWALE HIGH POINT
	EXISTING DITCH TO BE FILLED
	FEMA BOUNDARY LINE
	EXISTING GRADE CONTOUR
	PROPOSED GRADE CONTOUR
	EXISTING SPOT GRADE
	PROPOSED SPOT GRADE
	EXISTING CULVERT
	PROPOSED CULVERT
	PROPOSED DRAINAGE STRUCTURE
	EXISTING WATER LINE
	PROPOSED WATER LINE (SIZE AS NOTED)
	PROPOSED FIRE HYDRANT ASSEMBLY
	PROPOSED WATER SERVICE
	PROPOSED VALVE
	PROPOSED BLOW-OFF ASSEMBLY
	PROPOSED REDUCER
	PROPOSED SEWER FORCE MAIN
	PROPOSED SEWER COLLECTION MAIN
	PROPOSED SEWER MANHOLE
	PROPOSED LIMITS OF DISTURBANCE
	PROPOSED SILT FENCE
	PROPOSED INLET PROTECTION
	PROPOSED STABILIZED CONSTRUCTION ENTRANCE
	PROPOSED TEMPORARY CHECK DAM
PROFILE LEGEND	
	EXISTING GRADE @ ROAD C/A
	PROPOSED GRADE @ ROAD C/A
	PROPOSED WATER LINE (SIZE AS NOTED)
	PROPOSED HYDRANT ASSEMBLY
	PROPOSED GATE VALVE
	PROPOSED REDUCER

SURVEY LEGEND	
	SET CONCRETE MONUMENT
	EXISTING CONCRETE MONUMENT
	SET IRON ROD
	EXISTING IRON ROD
	EXISTING IRON PIPE
	CALCULATED POINT
	MAXIMUM BUILDING LIMIT
	NOT TO SCALE
	FLAT CABINET
	DEED BOOK
	SLIDE
	SQUARE FEET
	ACRES

**STORMWATER CERTIFICATE**

I, \_\_\_\_\_ OWNER/AGENT HEREBY CERTIFY THE INFORMATION INCLUDED ON THIS AND ATTACHED PAGES IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE.

ON THE PLAN ENTITLED, COROLLA BOAT CLUB - PHASE 1 - CONSTRUCTION DRAWINGS - GRADING, DRAINAGE AND STORMWATER MANAGEMENT PLAN, STORMWATER DRAINAGE IMPROVEMENTS SHALL BE INSTALLED ACCORDING TO THESE PLANS AND SPECIFICATIONS AND APPROVED BY CURRITUCK COUNTY. YEARLY INSPECTIONS ARE REQUIRED AS PART OF THE STORMWATER PLAN. THE OWNER IS RESPONSIBLE FOR ALL MAINTENANCE REQUIRED. CURRITUCK COUNTY ASSUMES NO RESPONSIBILITY FOR THE DESIGN, MAINTENANCE, OR PERFORMANCE OF THE STORMWATER IMPROVEMENTS.

DATE \_\_\_\_\_ OWNER/AGENT \_\_\_\_\_

THE FOLLOWING PERMITS ARE REQUIRED PRIOR TO PROJECT CONSTRUCTION:

PERMIT	AGENCY	REFERENCE NUMBER	DATE OF ISSUANCE
SEDIMENTATION AND EROSION CONTROL PERMIT	N.C.D.E.Q. - DIVISION OF LAND RESOURCES		
STORMWATER MANAGEMENT PERMIT	N.C.D.E.Q. - DIVISION OF LAND RESOURCES		
WATERLINE EXTENSION AUTHORIZATION TO CONSTRUCT	N.C.D.E.Q. - PUBLIC WATER SUPPLY		
WASTEWATER COLLECTION SYSTEM PERMIT	N.C.D.E.Q. - DIVISION OF WATER RESOURCES		
WETLAND PERMIT	U.S.A.C.O.E.		
CURRITUCK COUNTY PRELIMINARY PLAT & USE PERMIT	CURRITUCK COUNTY BOARD OF COMMISSIONERS		
CURRITUCK COUNTY CONSTRUCTION AUTHORIZATION	CURRITUCK COUNTY PLANNING STAFF		

North Carolina  
One-Call Center Inc.



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**NOTE:**  
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Bissell Professional Group  
3512 North Croatan Highway  
Kitty Hawk, North Carolina 27949  
P.O. Box 2055  
Kitty Hawk, NC 28539  
Tel: (252) 201-7760  
Fax: (252) 201-7760

**BISSELL**  
PROFESSIONAL GROUP  
Engineers, Planners, Surveyors  
and Environmental Specialists

COVER SHEET, DEVELOPMENT  
NOTES & SITE LOCATION  
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REVISIONS		
NO.	DATE	DESCRIPTION
1	2-15-23	REV PROJ AREA

DATE	SCALE
2-15-23	N/A

DESIGNED	CHECKED
BPG	MSB

DRAWN	APPROVED
DMK/KFW	BPG

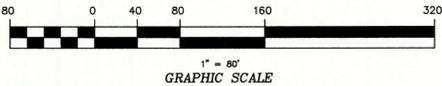
SHEET: 1 OF 16  
CAD FILE: 459600B3  
PROJECT NO: 4596



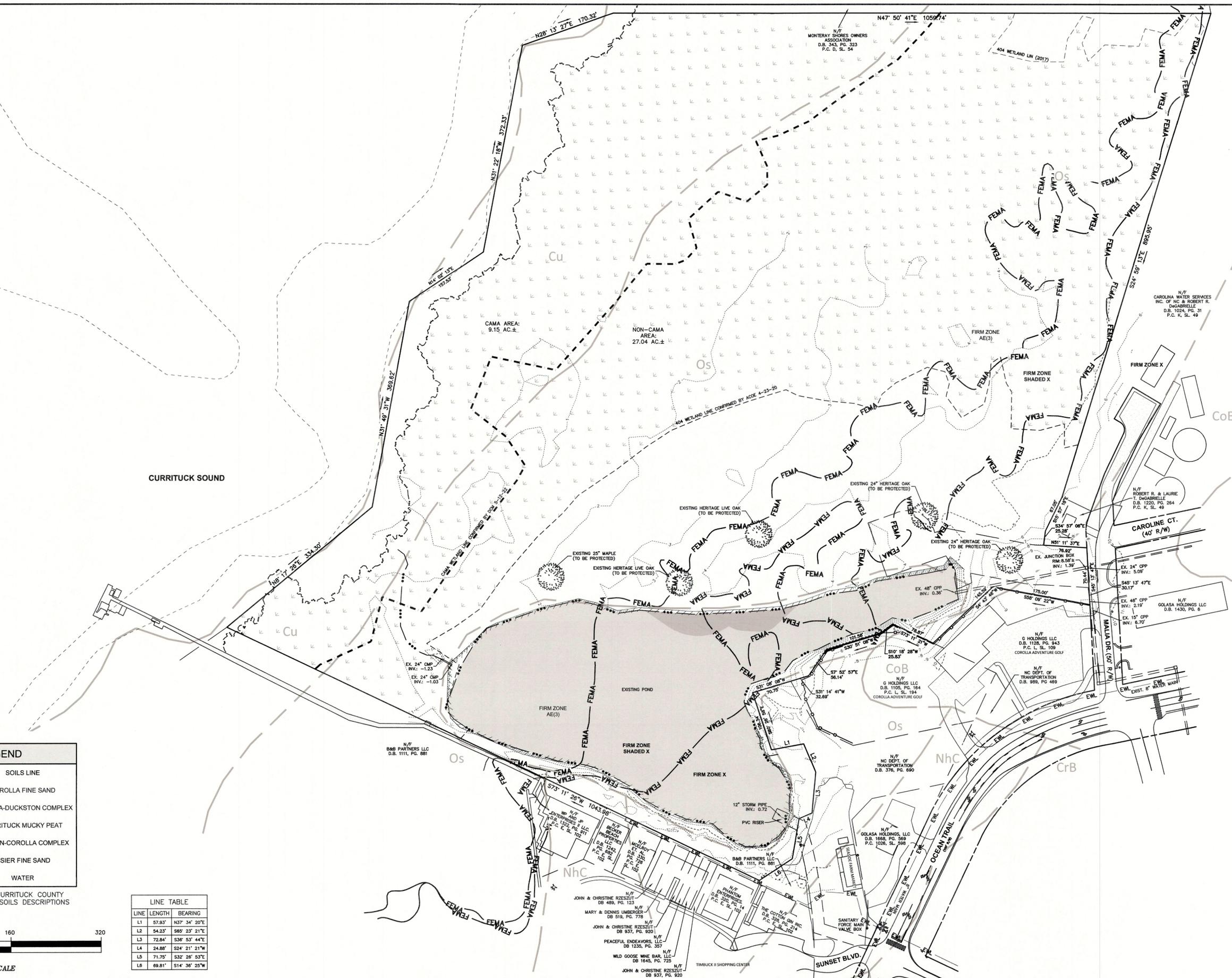
CURRITUCK SOUND

SOILS LEGEND	
SOILS	SOILS LINE
CoB	COROLLA FINE SAND
CrB	COROLLA-DUCKSTON COMPLEX
Cu	CURRITUCK MUCKY PEAT
NhC	NEWHAN-COROLLA COMPLEX
Os	OSIER FINE SAND
W	WATER

SCS - SOIL SURVEY OF CURRITUCK COUNTY  
SEE NOTES SHEET XX FOR SOILS DESCRIPTIONS



LINE TABLE		
LINE	LENGTH	BEARING
L1	57.93'	N37° 34' 20"E
L2	54.23'	S85° 23' 21"E
L3	72.84'	S36° 53' 44"E
L4	24.88'	S24° 21' 21"W
L5	71.75'	S32° 28' 53"E
L6	69.81'	S14° 36' 25"W



FINAL DRAWING  
NOT RELEASED FOR  
CONSTRUCTION

**BISSELL**  
Professional Group  
3515 North Carolina Highway  
Kitty Hawk, North Carolina 27949  
(252) 321-2271  
(252) 247-1790

Engineers, Planners, Surveyors  
and Environmental Specialists

**EXISTING CONDITIONS &  
SITE FEATURES MAP**

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**COROLLA BOAT CLUB - PHASE 1**  
NORTH CAROLINA  
POPULAR BRANCH TOWNSHIP CURRITUCK COUNTY

**CONSTRUCTION DRAWINGS**

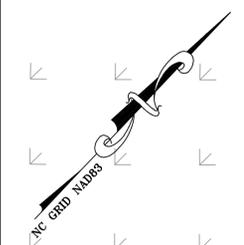
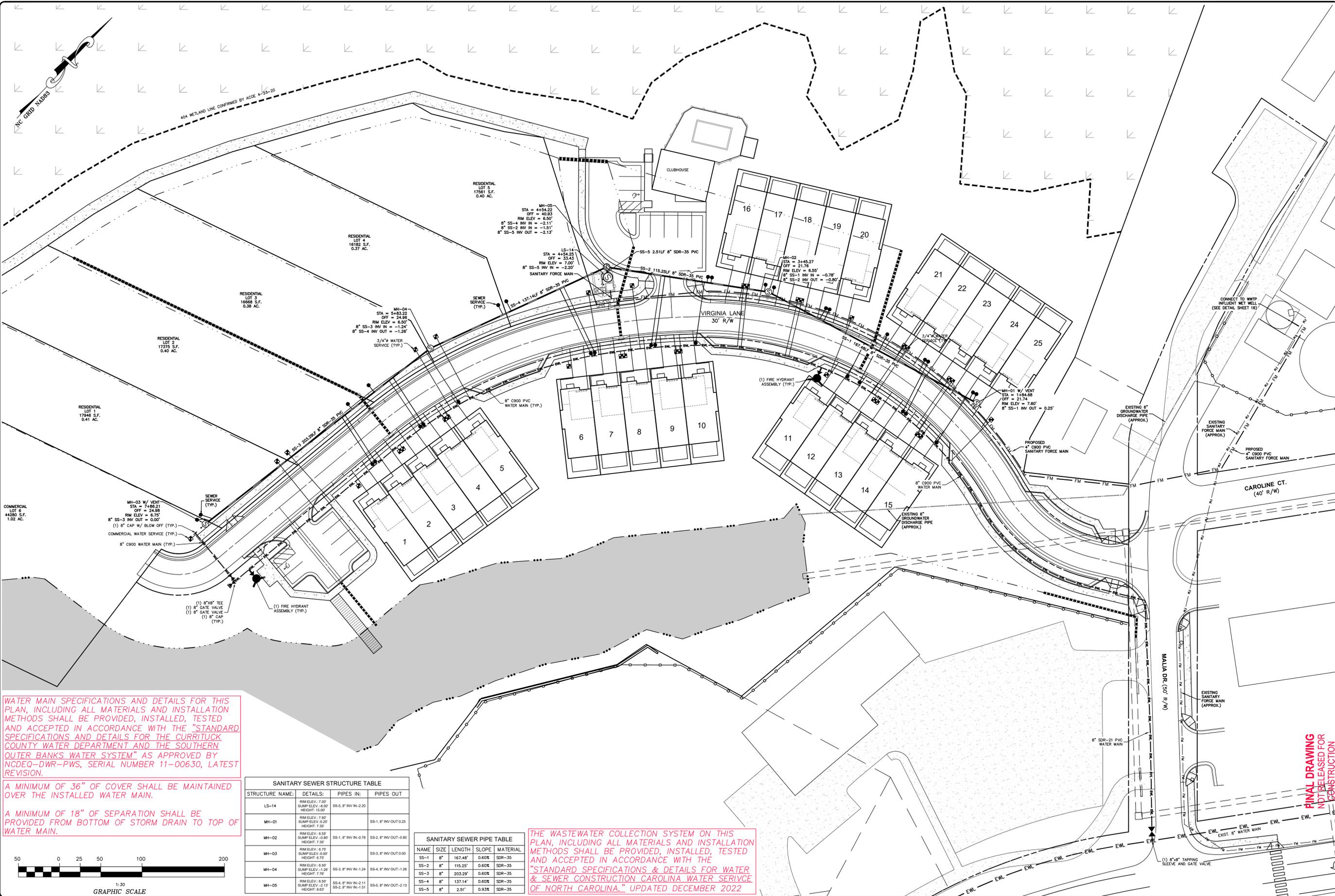
REVISIONS		DATE	SCALE
NO.	DATE		1"=80'
1	2-15-23		

DATE: 2-15-23 SCALE: 1"=80'  
DESIGNED: BPG CHECKED: MSB  
PROJECT: DMK/KFW APPROVED: BPG  
SHEET: 2 OF 16  
CAD FILE: 459600B3  
PROJECT NO.: 4596





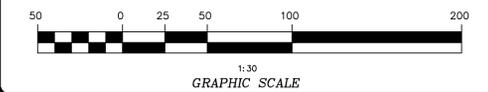




WATER MAIN SPECIFICATIONS AND DETAILS FOR THIS PLAN, INCLUDING ALL MATERIALS AND INSTALLATION METHODS SHALL BE PROVIDED, INSTALLED, TESTED AND ACCEPTED IN ACCORDANCE WITH THE "STANDARD SPECIFICATIONS AND DETAILS FOR THE CURRITUCK COUNTY WATER DEPARTMENT AND THE SOUTHERN OUTER BANKS WATER SYSTEM" AS APPROVED BY NCDEQ-DWR-PWS, SERIAL NUMBER 11-00630, LATEST REVISION.

A MINIMUM OF 36" OF COVER SHALL BE MAINTAINED OVER THE INSTALLED WATER MAIN.

A MINIMUM OF 18" OF SEPARATION SHALL BE PROVIDED FROM BOTTOM OF STORM DRAIN TO TOP OF WATER MAIN.



STRUCTURE NAME:	DETAILS:	PIPES IN:	PIPES OUT
LS-14	RIM ELEV: 7.00' SUMP ELEV: 14.00' HEIGHT: 15.00'	SS-5, 8" INV IN-2.20	
MH-01	RIM ELEV: 7.00' SUMP ELEV: 0.25' HEIGHT: 7.30'	SS-1, 8" INV IN-0.25	SS-1, 8" INV OUT-0.25
MH-02	RIM ELEV: 6.50' SUMP ELEV: 0.80' HEIGHT: 7.30'	SS-1, 8" INV IN-0.78	SS-2, 8" INV OUT-0.80
MH-03	RIM ELEV: 6.75' SUMP ELEV: 0.20' HEIGHT: 6.75'	SS-3, 8" INV IN-1.24	SS-3, 8" INV OUT-0.00
MH-04	RIM ELEV: 6.50' SUMP ELEV: 0.20' HEIGHT: 7.70'	SS-3, 8" INV IN-1.24	SS-4, 8" INV OUT-1.26
MH-05	RIM ELEV: 6.50' SUMP ELEV: 21.13' HEIGHT: 8.62'	SS-4, 8" INV IN-2.11	SS-5, 8" INV OUT-2.13

NAME	SIZE	LENGTH	SLOPE	MATERIAL
SS-1	8"	167.48'	0.60%	SDR-35
SS-2	8"	115.25'	0.60%	SDR-35
SS-3	8"	203.29'	0.60%	SDR-35
SS-4	8"	137.14'	0.60%	SDR-35
SS-5	8"	2.51'	0.93%	SDR-35

THE WASTEWATER COLLECTION SYSTEM ON THIS PLAN, INCLUDING ALL MATERIALS AND INSTALLATION METHODS SHALL BE PROVIDED, INSTALLED, TESTED AND ACCEPTED IN ACCORDANCE WITH THE "STANDARD SPECIFICATIONS & DETAILS FOR WATER & SEWER CONSTRUCTION CAROLINA WATER SERVICE OF NORTH CAROLINA," UPDATED DECEMBER 2022

**BISSELL**

PROFESSIONAL GROUP

Engineers, Planners, Surveyors  
and Environmental Specialists

WATER MAIN EXTENSION AND  
WASTEWATER COLLECTION PLAN

COROLLA BOAT CLUB - PHASE 1, (MONTEREY SHORES PHASE 10)

CONSTRUCTION DRAWINGS

RESIDENTIAL LOT 5  
17561 S.F.  
0.40 AC.

RESIDENTIAL LOT 4  
16182 S.F.  
0.37 AC.

RESIDENTIAL LOT 3  
16668 S.F.  
0.38 AC.

RESIDENTIAL LOT 2  
17273 S.F.  
0.40 AC.

RESIDENTIAL LOT 1  
17948 S.F.  
0.41 AC.

COMMERCIAL LOT 6  
44280 S.F.  
1.02 AC.

RESIDENTIAL LOT 16

RESIDENTIAL LOT 17

RESIDENTIAL LOT 18

RESIDENTIAL LOT 19

RESIDENTIAL LOT 20

RESIDENTIAL LOT 21

RESIDENTIAL LOT 22

RESIDENTIAL LOT 23

RESIDENTIAL LOT 24

RESIDENTIAL LOT 25

RESIDENTIAL LOT 6

RESIDENTIAL LOT 7

RESIDENTIAL LOT 8

RESIDENTIAL LOT 9

RESIDENTIAL LOT 10

RESIDENTIAL LOT 11

RESIDENTIAL LOT 12

RESIDENTIAL LOT 13

RESIDENTIAL LOT 14

RESIDENTIAL LOT 15

DATE: 2-15-23 SCALE: 1"=30'

DRAWN: BPG CHECKED: MSB

DESIGNED: KTF/DMK APPROVED: BPG

SHEET: 6 OF 16

CAD FILE: 459600B3

PROJECT NO: 4596



DATE: 2-15-23 SCALE: 1"=30'

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DESIGNED: KTF/DMK APPROVED: BPG

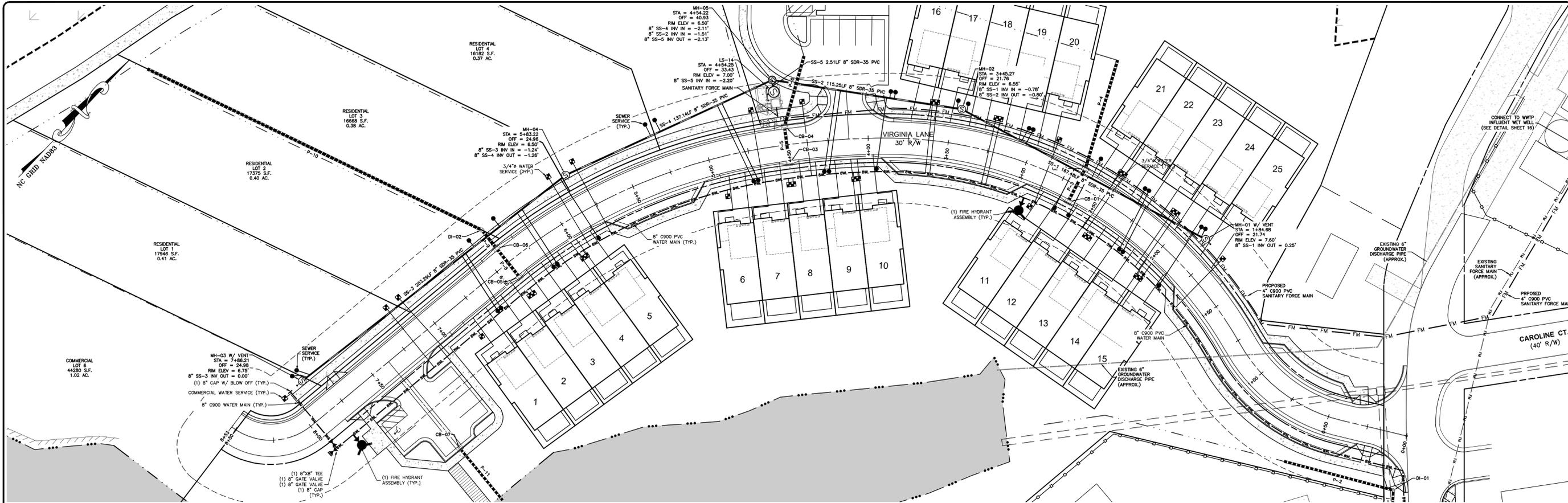
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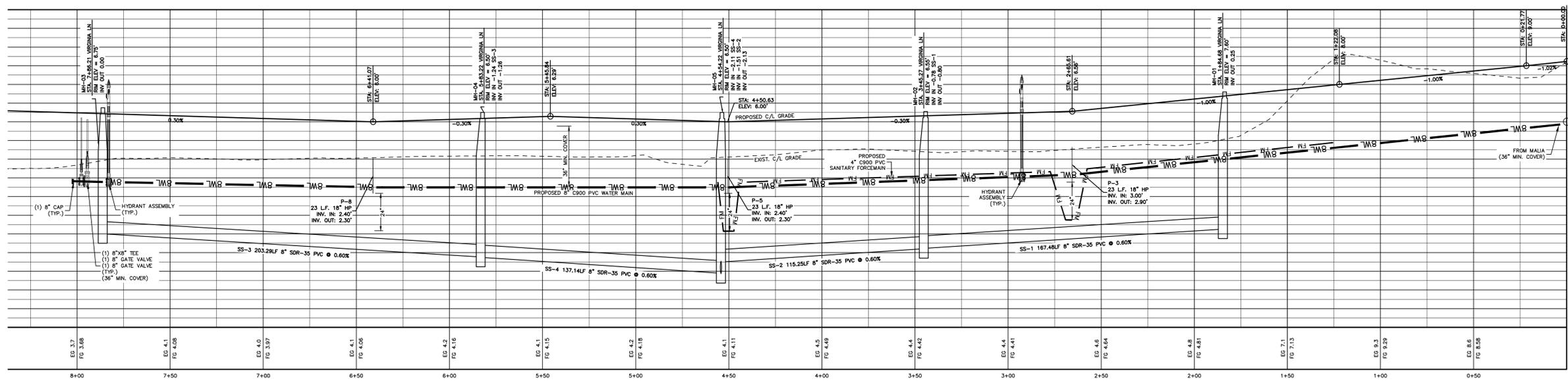
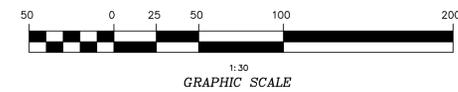
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FINAL DRAWING  
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CONSTRUCTION





ALIGNMENT: VIRGINIA LANE (STA 0+00 - 8+31)  
SCALE: HOR.: 1"=30' (PLAN VIEW)



ALIGNMENT: VIRGINIA LANE (STA 0+00 - 8+31)  
SCALE: HOR.: 1"=30', VERT.: 1"=3'

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VIRGINIA LANE (0+00 - 8+31)  
PLAN & PROFILE  
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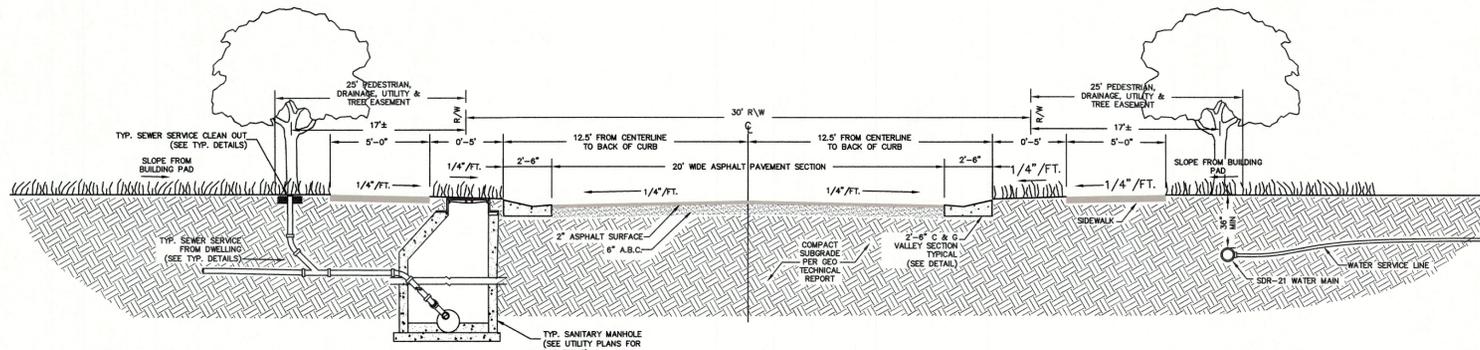
PROJECT: COROLLA BOAT CLUB - PHASE 1, MONTEREY SHORES PHASE 10  
NORTH CAROLINA  
CURRITUCK COUNTY  
CONSTRUCTION DRAWINGS

NO.	DATE	DESCRIPTION	BY	CHK
1	12-15-23	GRAVITY SEWER LAYOUT	DMK	DMK
2	12-15-23	ADDRESS MARK COMMENTS	DMK	DMK
3	12-15-23	ADDRESS MARK COMMENTS	DMK	DMK
4	12-15-23	UPDATE WATERLINE PLAN	DMK	DMK



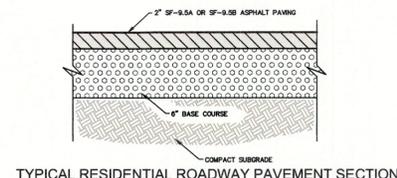
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PROJECT NO: 4596

FINAL DRAWING  
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CONSTRUCTION



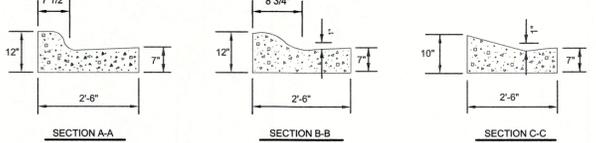
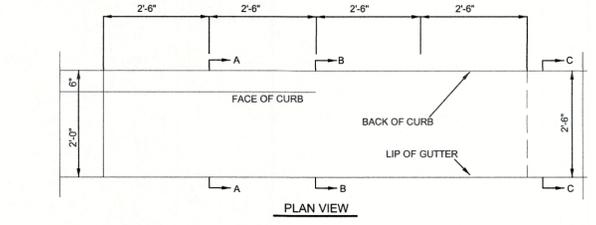
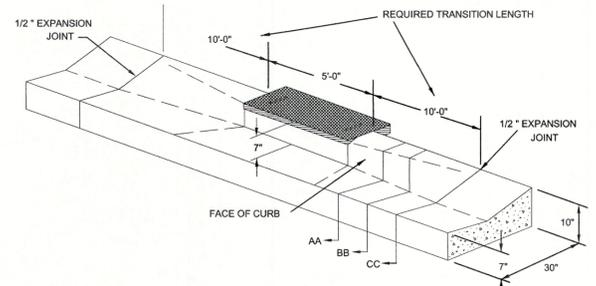
TYPICAL SUBDIVISION ROADWAY SECTION W/ UTILITIES

NOT TO SCALE SECTION VIEW



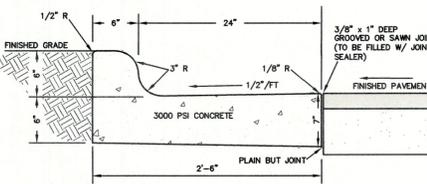
TYPICAL RESIDENTIAL ROADWAY PAVEMENT SECTION

NOTE: PAVING SHALL CONSIST OF FINE GRADING THE SPECIFIED PARKING & DRIVE AREAS AND INSTALLING 2\"/>



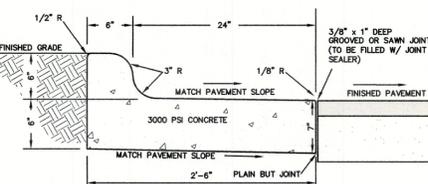
CURB & GUTTER TRANSITION SECTION

- GENERAL CURB & GUTTER NOTES:
- 1/2" x 1-1/2" DEEP CONTRACTION JOINTS SHALL BE PLACED AT 10' INTERVALS, EXCEPT THAT A 15' SPACING MAY BE USED WHEN A MACHINE IS USED OR WHEN SATISFACTORY SUPPORT FOR THE FACE FORM CAN BE OBTAINED WITHOUT THE USE OF TEMPLATES AT 10' INTERVALS.
  - 1/2" EXPANSION JOINTS SHALL BE PLACED AT 90' INTERVALS AND ADJACENT TO ALL RIGID OBJECTS.
  - JOINT SPACING MAY BE ALTERED IF REQUIRED BY ENGINEER.
  - CONTRACTION JOINTS MAY BE INSTALLED WITH THE USE OF TEMPLATES OR FORMED BY OTHER APPROVED METHODS. CONSTRUCT NON-TEMPLATE FORMED JOINTS A MIN. OF 1-1/2" DEEP.
  - FILL ALL JOINTS, EXCEPT IN 8"x6" MEDIAN CURB, WITH JOINT FILLER AND SEALER.



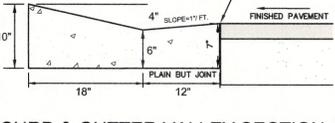
CURB & GUTTER COLLECTION SECTION

NOT TO SCALE NCDOT STD 846.01



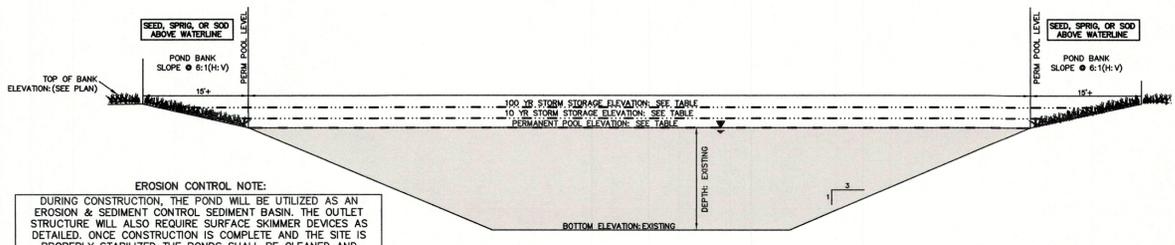
CURB & GUTTER DUMP SECTION

NOT TO SCALE NCDOT STD 846.01



CURB & GUTTER VALLEY SECTION

NOT TO SCALE



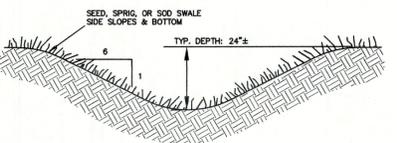
STORMWATER MANAGEMENT POND 1

TYPICAL CROSS SECTION NOT TO SCALE

STORMWATER POND	TOP ELEV (FMSL)	100YR STORM STAGE (FMSL)	10YR STORM STAGE (FMSL)	PERM. POOL ELEV. (FMSL)	BOTTOM POND ELEV. (FMSL)	DEPTH (FT)	SIDE SLOPE ABOVE N.M.L.	SIDE SLOPE BELOW N.M.L.
1	SEE PLAN	2.12±	1.62±	1.00	EXISTING	EXISTING	6:1	EXISTING

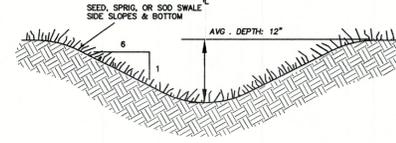
POND TABLE

- BMP CONSTRUCTION SEQUENCE NOTES:
- THE FOLLOWING SEQUENCE IS IN ADDITION TO THE "CONSTRUCTION SEQUENCE SCHEDULE" PROVIDED UNDER THE EROSION AND SEDIMENT CONTROL SPECIFICATIONS.
1. THE POND SHALL BE CONSTRUCTED AS DIRECTED ON THE PLAN AND DETAILS. PERIMETER SLOPE IMPROVEMENTS SHALL BE STABILIZED WITH TEMPORARY VEGETATION WITHIN 7 DAYS OF CONSTRUCTION. THIS WILL CREATE A TEMPORARY SEDIMENT BARRIER DURING PROJECT CONSTRUCTION. A GOOD TEMPORARY MEANS OF STABILIZATION IS A WET HYDROSEED MIX.
  2. THE POND MAY BE OVER EXCAVATED TO OBTAIN SUITABLE MATERIALS FOR CONSTRUCTION OF THE PROJECT. UNSUITABLE OVERBURDEN MATERIALS MAY BE PLACED BACK INTO THE POND, HOWEVER, THE FINAL BOTTOM SHALL NOT EXCEED THE ELEVATION NOTED ON THE PLAN AND DETAILS.
  3. DURING CONSTRUCTION, THE POND WILL BE UTILIZED AS AN EROSION & SEDIMENT CONTROL SEDIMENT BASIN. ONCE CONSTRUCTION IS COMPLETE AND THE SITE IS PROPERLY STABILIZED THE POND SHALL BE CLEANED AND RESTORED TO ITS DESIGN SPECIFICATIONS AND THE BANKS PERMANENTLY STABILIZED WITHIN 7 DAYS.
  4. FINAL PERMANENT WETLAND VEGETATION SHALL BE INSTALLED AND STABILIZED WITHIN 14 DAYS OF FINAL BMP GRADING. PLANTINGS SHALL BE IN ACCORDANCE WITH THE PLANTING SPECIFICATIONS PROVIDED AND ANY AMENDMENTS DETERMINED IN THE ABOVE SEQUENCE.



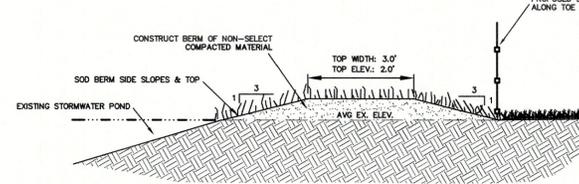
TYPICAL PRIMARY SWALE SECTION

NOT TO SCALE SLOPE PER INVERTS ON PLAN



TYPICAL PROPERTY LINE SWALE SECTION

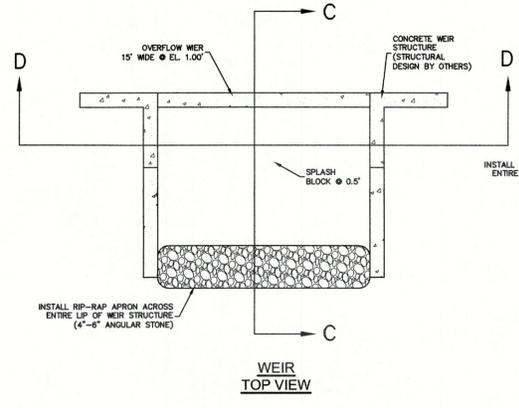
NOT TO SCALE SECTION VIEW



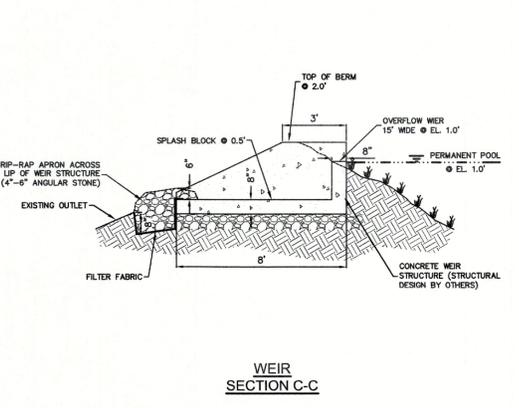
TYPICAL EARTHEN BERM SECTION

NOT TO SCALE LOCATION PER PLAN

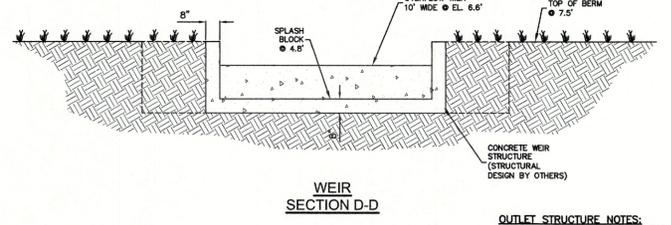
EROSION CONTROL NOTE: PERMANENTLY STABILIZED WITHIN 7 DAYS OF COMPLETION.



WEIR TOP VIEW



WEIR SECTION C-C



WEIR SECTION D-D

OUTLET CONTROL STRUCTURE DETAIL

N.T.S.

- OUTLET STRUCTURE NOTES:
1. STRUCTURE DESIGN SPECIFICATIONS SHALL CONFORM TO LATEST ASTM C813 SPECIFICATIONS FOR PRECAST CONCRETE WATER & WASTEWATER STRUCTURES.
  2. CONCRETE COMPRESSIVE STRENGTH SHALL BE A MINIMUM OF 3,000PSI.
  3. STEEL REINFORING DESIGN TO CONFORM TO THE REQUIREMENTS OF ASTM A618 SPECIFICATIONS FOR "STRUCTURAL DESIGN LOADING FOR WATER & WASTEWATER STRUCTURES" AND SHALL UTILIZE GRADE 60 RE-BARS CONFORMING TO THE REQUIREMENTS OF ASTM A618 OR WWT CONFORMING TO THE REQUIREMENTS OF ASTM A618 OR BOTH.
  4. PIPE PENETRATION TO BE AS SPECIFIED. PIPE TO BE INSTALLED AS PER NCDOT STANDARDS FOR JOINT AND JOINT CONNECTIONS.
  5. JOINTS TO BE SEALED WITH BUTYL RUBBER JOINT SEALANT CONFORMING TO THE REQUIREMENTS OF ASTM D638, OR MOTIF AS PER NCDOT REQUIREMENTS OR BOTH.
  6. ANY DEVIATIONS FROM THE APPROVED PLAN & SPECIFICATIONS SHALL BE APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION.

THE CONTRACTOR SHALL CONFIRM ALL STRUCTURE DIMENSIONS AND COORDINATE WITH MANUFACTURER BEFORE FABRICATION

**BISSELL** Professional Group  
 Firm License # C-856  
 P.O. Box 1088 Jordan Highway  
 Cary, NC 27513  
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 (919) 236-3300  
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**COROLLA BOAT CLUB - PHASE 1**  
 NORTH CAROLINA  
 CURRITUCK COUNTY  
 POPULAR BRANCH TOWNSHIP

ROADWAY, DRAINAGE & MISC. CONSTRUCTION DETAILS  
 CONSTRUCTION DRAWINGS

NO. DATE DESCRIPTION  
 1 2-15-23 SCALE: NO SCALE  
 DESIGNED: BPG CHECKED: MSB  
 DRAWN: KFW/DMK APPROVED: BPG  
 SHEET: 9 OF 16  
 CAD FILE: 459600B3  
 PROJECT NO: 4596

FINAL DRAWING NOT RELEASED FOR CONSTRUCTION



**GENERAL PROJECT NOTES:**

- PROJECT NAME: COROLLA BOAT CLUB - PHASE 1  
POPULAR BRANCH, CURRITUCK COUNTY, NORTH CAROLINA
- APPLICANT: OUTER BANKS VENTURES, INC.  
P.O. BOX 549  
COROLLA, NC 27827
- PROJECT DESCRIPTION: 6 LOT SUBDIVISION
- NEAREST RECEIVING STREAM: SANDERS BAY - INDEX NUMBER: 30-1-11
- STREAM CLASSIFICATION: SC - PASQUOTANK RIVER BASIN
- PROJECT AREA TABULATION:

TOTAL PROPERTY AREA:	36 AC.
TOTAL PROPOSED DISTURBED AREA:	12.0 AC.

**AREA CALCULATION NOTE:**  
All areas have been calculated utilizing properties within the Autocad software.

**MATERIAL BALANCE NOTE:**  
All excavated material occurring during the course of construction shall remain on-site for roadway construction and lot grading. See SCHEDULE OF LAND DISTURBING ACTIVITIES provided on Sheet 5 of this set for an estimated cut fill material balance for the project.

**WETLAND NOTE:**  
No 404 jurisdictional wetlands have been identified on the property.

**STABILIZATION NOTE:**  
The angle of graded slopes and fills shall be no greater than the angle that can be retained by vegetative cover or other adequate erosion control devices or structures. In any event, all disturbed areas left exposed will, WITHIN 14 CALENDAR DAYS OF COMPLETION of any phase of grading, be planted or otherwise provided with temporary or permanent ground cover, devices, or structures sufficient to restrain erosion. Additionally, certain critical areas as identified on the plan, such as, but not limited to, perimeter dikes, swales, slopes steeper than 3:1, and areas located within High Quality Water Zones, must be temporarily or permanently stabilized WITHIN 7 CALENDAR DAYS OF COMPLETION of any phase of grading in these areas. A permanent ground cover for all disturbed areas must be provided WITHIN 15 WORKING DAYS OR 90 CALENDAR DAYS (whichever is shorter) following completion of construction or development.

**SEDIMENTATION AND EROSION CONTROL NOTES:**

**A. NARRATIVE AND SITE DATA**  
COROLLA BOAT CLUB - PHASE 1 IS A MIXED USE DEVELOPMENT SLATED FOR CONSTRUCTION ON A VACANT TRACT OF LAND LOCATED WEST OF NC HWY 12 ALONG THE SOUTH SIDE OF MALIA DR IN THE COROLLA, CURRITUCK COUNTY. THE DEVELOPMENT IS ALSO KNOWN AS PHASE 10 OF THE MONTEREY SHORES PUD AND INCLUDES 1 COMMERCIAL LOT AND 5 RESIDENTIAL SINGLE FAMILY HOME LOTS. THE SUBDIVISION IS SERVED BY PROPOSED ROADWAY, DRAINAGE, UTILITY AND AMENITY IMPROVEMENTS. THE SITE'S EXISTING TOPOGRAPHY IS GENERALLY FLAT, WITH SLOPES RANGING BETWEEN 0.1% AND ELEVATIONS RANGING FROM 10 FT MSL TO BELOW 1 FT MSL. THE PROPERTY IS BOUNDED TO THE NORTH BY MALIA DR, TO THE EAST AND SOUTH BY EXISTING COMMERCIAL DEVELOPMENT AND TO THE WEST BY SANDERS BAY. THE PROPERTY IS CURRENTLY VACANT SURROUNDING DEVELOPMENT IS PRIMARILY COMMERCIAL. APPROX. 21 ACRES OF CMAA AND 404 JURISDICTIONAL WETLANDS EXIST BETWEEN THE SOUTH/EASTERN UPLAND AREAS AND THE BAY. ON-SITE DRAINAGE IS LIMITED TO AN EXISTING CULVERT EXTENDING FROM MALIA DR. TO AN EXISTING POND LOCATED ON THE PROPERTY. THE EXISTING CULVERT SERVICES AS A DRAINAGE OUTLET TO SURROUNDING COMMERCIAL DEVELOPMENTS. PURSUANT TO THE USDA SOIL SURVEY MANUAL OF CURRITUCK COUNTY, SITE SOILS ARE PRIMARILY COMPOSED OF OSIER FINE SAND ACROSS THE DEVELOPABLE UPLAND AREA AND CURRITUCK MUCKY PEAT ACROSS THE WETLANDS.

**CONSTRUCTION SEQUENCE SCHEDULE**

**CONSTRUCTION ACTIVITY**  
Construction Access— Construction entrance, construction routes, equipment parking areas

**Sediment Traps & Barriers**  
Basin traps, sediment fences, & outlet protection

**Runoff Control—**  
Diversion, perimeter dikes, water bars, and outlet protection

**Runoff Conveyance System—**  
Stables stream banks, storm drains, channels, inlet & outlet protection, slope drains

**Land Clearing & Grading—**  
Site preparation—cutting, filling & grading, sediment traps, barriers, diversions, drains, surface roughening devices, or structures sufficient to restrain erosion.

**Surface Stabilization—**  
Temporary & permanent seeding, mulching, sodding, rip rap.

**Building Construction—**  
Buildings, utilities, paving.

**Landscaping & Final Stabilization—**  
Topsoiling, trees & shrubs, permanent seeding, mulching, sodding, rip rap

**SCHEDULE CONSIDERATION**

**Final Land-Disturbing Activity—**Stabilize bare areas immediately with gravel & temporary vegetation as construction takes place.

**Install principal basins after construction site is accessed.** Install additional traps and barriers as needed during grading.

**Install key practices after principal sediments traps and before land grading.** Install additional runoff-control conveyance measures during grading.

**Where necessary, stabilize stream banks as early as possible.** Install principal runoff conveyance system with runoff-control measures. Install remainder of system after grading.

**Begin major clearing and grading after principal & key runoff-control measures are installed.** Clear borrow & disposal areas as needed. Install additional control measures as grading progresses. Mark trees & buffer areas for preservation.

**Apply temporary or permanent stabilization measures immediately on all critical areas identified on the plan, and, a permanent groundcover for all disturbed areas within 15 working days or 90 calendar days (whichever is shorter) following completion of construction or development.**

**Install necessary erosion & sedimentation control practices as work takes place.**

**Stabilize all open areas, including borrow & spoil areas.** Remove & stabilize all sediment control measures.

**LAND GRADING CONSTRUCTION SPECIFICATIONS**

- Construct & maintain all erosion & sedimentation control practices & measures in accordance with the approved sedimentation control plan and construction schedule.
- Remove good topsoil from areas to be graded and filled, and preserve it for use in finishing the grading of all critical areas.
- Scarify areas to be topsoiled to a minimum depth of 2 inches before placing topsoil.
- Clear & grub areas to be filled to remove trees, vegetation, roots, or other objectionable material that would affect the planned stability of fill.
- Ensure that fill material is free of brush, rubbish, rocks, logs, stumps, building debris, and other materials inappropriate for constructing stable fills.
- Place all fill in layers not to exceed 9 inches in thickness, and compact the layers as required to reduce erosion, slippage, settlement, or other related problems.
- Do not incorporate frozen material or soft, mucky, or highly compressible materials into fill slopes.
- Do not place fill on a frozen foundation, due to possible subsidence and slippage.
- Keep diversions and other water conveyance measures free of sediment during all phases of development.
- Handle seeps or springs encountered during construction in accordance with approved methods.
- Following completion of any phase of grading, provide a groundcover (temporary or permanent) on all exposed slopes within 14 calendar days, or 7 calendar days in critical areas identified on the plan, and, a permanent groundcover for all disturbed areas within 15 working days or 90 calendar days (whichever is shorter) following completion of construction or development.
- Provide adequate protection from erosion for all topsoil stockpiles, borrow areas, and spoil areas.

**MAINTENANCE**  
Periodically check all graded areas & the supporting erosion & sedimentation control practices, especially after heavy rainfalls. Promptly remove all sediment from diversions and other water-disposal practices. If washouts or breaks occur, repair them immediately. Prompt maintenance of small-eroded areas before they become significant gullies is an essential part of an effective erosion & sedimentation control plan.

**PERMANENT SEEDING**

The purpose of permanent seeding is to reduce erosion and decrease sediment yield from disturbed areas, and to permanently stabilize such areas in a manner that is economical, adapts to site conditions, and allows selection of the most appropriate seed materials. These areas must be seeded or planted within 15 working days or 90 calendar days after final grade is reached, unless temporary stabilization is applied.

**PERMANENT SEEDING SPECIFICATIONS**

**Seeding Recommendations for Summer**  
SEEDING DATES— April to July  
SEEDING MIXTURE  
Species Rate  
Common bermudagrass 10/1,000 sf (sprigs)  
1-2 lb/1,000 sf (seed)  
SOD (See Sodding Notes)

**Seeding Recommendations for Early Fall through Early Spring**  
SEEDING DATES— August to March (early fall and spring recommended)  
Species Rate  
Kentucky 31 Tall Fescue 6 lb/1,000 sf (broadcast seed)

**SEEDING NOTES—**  
1. Sprig or sod. Moisture is essential during initial establishment. Sod must be kept watered for 2-3 weeks, but can be planted earlier or later than sprigs.

**Soil Amendments—**  
It is highly recommended that soils be tested and amended as found necessary. If a soils are not tested follow these recommendations: Apply 3,000 lb/acre of ground agricultural limestone and 500 lb/acre of 10-10-10 starter fertilizer, or 50 lb/acre nitrogen from turf-type slow-release fertilizer. Add 25-50 lb/acre nitrogen at 2-3 week intervals through midsummer.

**Spriggs—**  
Plant sprigs in furrows with a tractor-drawn transplanter, or broadcast by hand. (Not recommended for Tall Fescue.)  
Furrows should be 4-8 inches deep and 2 feet apart. Place sprigs about 2 ft. apart in a row with one end at or above ground level.

**Broadcast at rates shown above, and press sprigs into the top 1/2-2 inches of soil with a disk set straight so that sprigs are not brought back toward the surface.**

**Mulch—**  
Do not mulch Bermuda Grass. For Tall Fescue seed, apply 4,000-lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch-anchoring tool. A disk with blades set nearly straight can be used as a mulch-anchoring tool.

**Maintenance—**  
Water as needed. Mow bermuda to 3/4 to 1-inch height and tall fescue to 2.5 - 3.5 inch height. Topdress bermuda with 40 lb/acre nitrogen in April, 50 lb in May, 50 lb in June, 50 lb in July, and 25 lb in August. Top dress tall fescue in mid September, again in November and February with turf-grade 3-1-2 or 4-1-2 ratio turf-grade fertilizer. Fertilize with 1 lb of actual nitrogen per 1,000 sf. Do not fertilize tall fescue between Mid March and Early September.

**TEMPORARY SEEDING**

The purpose of temporary seeding is to temporarily stabilize denuded areas that will not be brought to final grade or permanently seeded for a period of more than 14 calendar days, or 7 days in critical areas identified on the plan.

**TEMPORARY SEEDING SPECIFICATIONS**

**Seeding Recommendations for Late Winter & Early Spring**  
SEEDING DATES— December 1 to April 15  
SEEDING MIXTURE  
Species Rate (lb/acre)  
Winter Rye (grain) 120 (Annual Ryegrass shall not be used)  
Annual Lespedeza 50  
(Kobe)

**Soil Amendments—**  
Follow recommendations of soil tests or apply 2,000 lb/acre ground agricultural limestone and 750 lb/acre 10-10-10 fertilizer.

**Mulch—**  
Apply 4,000-lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch-anchoring tool. A disk with blades set nearly straight can be used as a mulch-anchoring tool.

**Maintenance—**  
Refer to fertilization if growth is not fully adequate. Reseed, fertilize and mulch immediately following erosion or other damage.

**Seeding Recommendations for Summer**  
SEEDING DATES— April 15 to August 15  
SEEDING MIXTURE  
Species Rate (lb/acre)  
German Millet 40

**Soil Amendments—**  
Follow recommendations of soil tests or apply 2,000 lb/acre ground agricultural limestone and 750 lb/acre 10-10-10 fertilizer.

**Mulch—**  
Apply 4,000-lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch-anchoring tool. A disk with blades set nearly straight can be used as a mulch-anchoring tool.

**Maintenance—**  
Refer to fertilization if growth is not fully adequate. Reseed, fertilize and mulch immediately following erosion or other damage.

**Seeding Recommendations for Fall**  
SEEDING DATES— August 15 to December 30  
SEEDING MIXTURE  
Species Rate (lb/acre)  
Winter Rye (grain) 120

**Soil Amendments—**  
Follow recommendations of soil tests or apply 2,000 lb/acre ground agricultural limestone and 1,000 lb/acre 10-10-10 fertilizer.

**Mulch—**  
Apply 4,000-lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch-anchoring tool. A disk with blades set nearly straight can be used as a mulch-anchoring tool.

**Maintenance—**  
Repair and refer to fertilization damaged areas immediately. Topdress with 50 lb/acre of nitrogen in March. If it is necessary to extend temporary cover beyond June 15, overseed with 50 lb/acre Kobe Lespedeza in late February or Early March.

**SODDING**

The purpose of permanent sodding is to prevent erosion and damage from sediment and runoff by stabilizing the soil surface with permanent vegetation for the purpose of:  
-To stabilize disturbed areas with a suitable plant material that cannot be established by seed.  
-To stabilize drainage ways & channels and other areas of concentrated flow where flow velocities will not exceed that specified grass lining.

**SODDING SPECIFICATIONS**

**Sod Quality**  
-Sod should be machine cut at a uniform depth of 1/2-2 inches  
-Sod should not have been cut in excessively wet or dry weather.  
-Sections of sod should be standard size as determined by the supplier, uniform, and unbroken.  
-Sections of sod should be strong enough to support their own weight and retain their size and shape when lifted by one end.  
-Harvest, delivery, and installation of sod should take place within a period of 36 hours.

**Soil Amendments—**  
Apply lime and fertilizer according to soil tests or apply 2 tons/acre of pulverized agricultural limestone and 1,000 lb/acre 10-10-10 fertilizer in the fall, or 5-10-10 in spring.

**Prior to laying sod, clear the soil surface of trash, debris, rocks, branches, stones, and clods larger than 2 inches in diameter. Fill, or level low spots in order to avoid standing water. Rake or harrow the site to achieve a smooth and level final grade. Complete soil preparation by rolling or cultipacking to firm soil.**

**Sod Installation—**  
1. Moistening the sod after it is unrolled helps maintain viability. Store in shade during installation.  
2. Rake the soil surface to break the crust just before laying sod. During the summer, lightly irrigate the soil, immediately before laying sod to cool the soil and reduce root burning & dieback.  
3. Do not sod on groy, frozen soils, or soils that have been treated recently with sterlants or herbicides.

4. Lay thin first row of sod in a straight line with subsequent rows placed parallel to and butting tightly against each other. Stagger strips in a brick-like pattern. Be sure that the sod is not stretched or overlapped and that all joints are butted lightly to prevent voids. Use a knife or sharp spade to trim and fit irregular shaped areas.  
5. Install strips of sod with their longest dimension perpendicular to the slope. On slopes of 3:1 or greater, or wherever erosion may be a problem, secure sod with pegs or staples.  
6. As sodding of clearly defined areas is completed, roll sod to provide good contact between rows and soil.

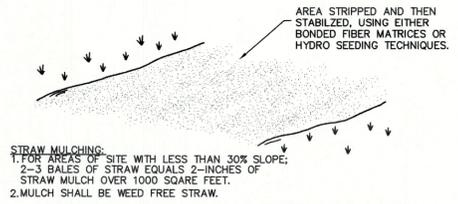
7. After rolling, irrigate until the soil is wet 4 inches below the sod.  
8. Keep sodded areas moist to a depth of 4 inches until the grass takes root. This can be determined by tugging on the sod.  
9. Mowing should not be attempted until the sod is firmly rooted, usually 2-3 weeks.

**Sodded Waterways**

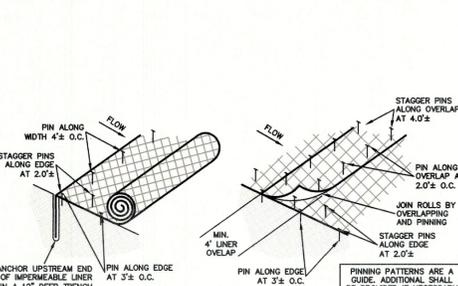
1. Prepare soil as described above.  
2. Lay sod strips perpendicular to the direction of flow, with the lateral joints staggered in a brick-like pattern. Butt edges tightly together.

**Maintenance—**  
After the first week, water as necessary to maintain adequate moisture in the root zone & prevent dormancy of the sod.  
Do not remove more than one-third of the shoot in any one mowing. Grass height should be maintained between 2-3 inches unless otherwise specified.

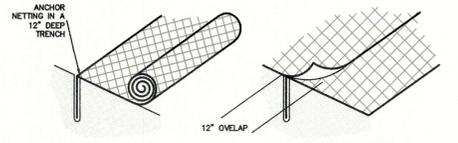
After first growing season, established sod requires fertilization, and may also require lime. Follow soil test recommendations.



**LAND DISTURBANCE & STABILIZATION DETAIL**  
NOT TO SCALE

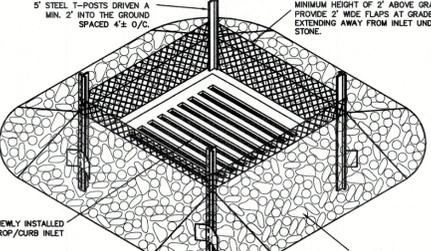


**ROLLED LINER CONNECTION DETAIL**  
NOT TO SCALE



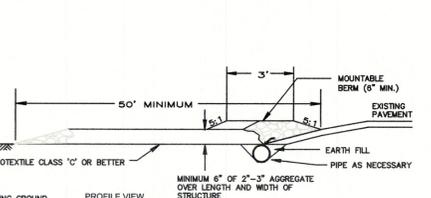
**ROLLED EROSION CONTROL MATTING DETAIL**  
NOT TO SCALE

- ROLLED EROSION CONTROL MATTING (R.E.C.M.) SPECIFICATIONS:**
- All areas identified on these plans as requiring an erosion control matting shall be lined with a protective covering to minimize erosion and protect seed until permanent vegetation is established.
  - Covering shall be composed of a bio or photo degradable material to minimize long term environmental impacts.
  - Mulching with straw or other organic materials can be utilized only when it will not impede the establishment of permanent vegetation. Mulches must be properly anchored which may be difficult in some environments. An example is straw mulch with jute netting stapled or pinned in place.
  - Pre-manufactured rolled erosion control products (RECP) are highly recommended for this application. RECP's shall be installed according to manufacturer specifications for channel linings. An example is a woven straw or wooden fiber Excelsior matting.



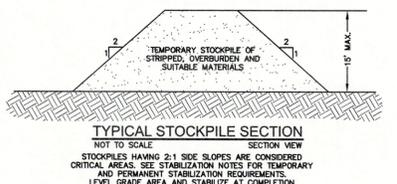
**DROP/CURB INLET PROTECTION**  
NOT TO SCALE

**INLET PROTECTION SPECIFICATIONS:**  
INLET PROTECTION SHALL BE CONSTRUCTED WITHIN 10' OF EACH SIGNIFICANT (1" OR GREATER) SURFACE EROSION AND REPAIR IMMEDIATELY. REMOVE DEBRIS FROM MESH AND REPLACE STONES AS NEEDED.  
REMOVE ONCE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED.



**CONSTRUCTION ENTRANCE SPECIFICATIONS**

- Length - minimum of 50' (\*30' for single residence lot).
- Width - 12' minimum, should be flared at the existing road to provide a turning radius.
- Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stone.
- Stones - crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.
- Surface Water - all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.
- Location - A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.



**TEMPORARY STOCKPILE SECTION**  
NOT TO SCALE



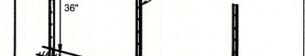
**TEMPORARY STONE CHECK DAM CONSTRUCTION SPECIFICATIONS:**

1. CLEAR, GRUB, AND STRIP THE AREA UNDER THE EMBANKMENT AND ROOT MAT. REMOVE ALL SURFACE SOIL CONTAINING HIGH AMOUNTS OF ORGANIC MATTER AND STOCKPILE OR DISPOSAL OF IT PROPERLY. HAUL ALL OBJECTIONABLE MATERIAL TO THE DESIGNATED DISPOSAL AREA.
2. PLACE STONE TO THE LINES AND DIMENSIONS SHOWN IN THE PLAN ON A FILTER FABRIC FOUNDATION.
3. KEEP THE CENTER STONE SECTION AT LEAST 9 INCHES BELOW NATURAL GROUND LEVEL WHERE THE DAM ABUTS THE CHANNEL BANKS.
4. EXTEND STONE AT LEAST 1.5 FEET BEYOND THE DITCH BANK TO KEEP WATER FROM CUTTING AROUND THE ENDS OF THE CHECK DAM.
5. ALL CUT AND FILL SLOPES SHOULD BE 2:1 OR FLATTER.
6. PROTECT THE CHANNEL AFTER THE LOWEST CHECK DAM FROM HEAVY FLOW THAT COULD CAUSE EROSION.
7. MATERIAL USED IN THE STONE SECTION SHOULD BE A WELL-GRADED MIXTURE OF STONE WITH A 450 SIZE OF 9 INCHES (CLASS B EROSION CONTROL STONE IS RECOMMENDED) AND A MAXIMUM STONE SIZE OF 14 INCHES. THE STONE MAY BE MACHINE PLACED AND THE SMALLER STONES WORKED INTO THE VOIDS OF THE LARGER STONES. THE STONE SHOULD BE HARD, ANGULAR, AND HIGHLY WEATHER-RESISTANT.
8. STABILIZE THE EMBANKMENT AND ALL DISTURBED AREAS ABOVE THE SEDIMENT POOL AND DOWNSTREAM FROM THE TRAP IMMEDIATELY AFTER CONSTRUCTION.
9. ENSURE THAT OTHER AREAS OF THE CHANNEL, SUCH AS CULVERT ENTRANCES BELOW THE CHECK DAMS, ARE NOT SUBJECT TO DAMAGE OR BLOCKAGE FROM DISPLACED STONES.

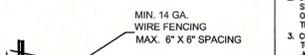
**MAINTENANCE OF TEMPORARY STONE CHECK DAMS:**

INSPECT CHECK DAMS AND CHANNELS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1" OR GREATER) RAINFALL EVENT AND REPAIR IMMEDIATELY. CLEAN OUT SEDIMENT, STRAW, LIMES, OR OTHER DEBRIS WHEN NEEDED. REMOVE SEDIMENT ACCUMULATION BEHIND THE DAMS AS NEEDED TO PREVENT DAMAGE TO CHANNEL VEGETATION. ALLOW THE CHANNEL TO DRAIN THROUGH THE STONE CHECK DAM, AND PREVENT LARGE FLOWS FROM CARRYING SEDIMENT OVER THE DAM. ADD STONES TO DAMS AS NEEDED TO MAINTAIN DESIGN HEIGHT AND CROSS SECTION.

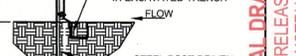
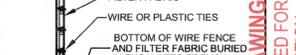
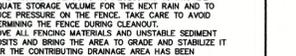
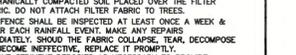
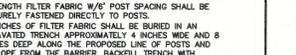
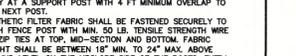
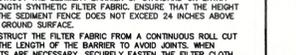
POSTS MUST BE 1.33 LB/LINEAR FT. STEEL WITH A MIN. LENGTH OF 5' POST SHALL HAVE PROJECTIONS TO FACILITATE FASTENING OF FILTER FABRIC.  
INSTALL POSTS @ 6' O.C. MAX WHEN STANDARD FABRIC & WIRE SUPPORT FENCE ARE UTILIZED.  
INSTALL POSTS @ 8' O.C. MAX WHEN EXTRA STRENGTH FABRIC WITHOUT WIRE FENCE IS UTILIZED.



WHEN STANDARD STRENGTH FILTER FABRIC IS UTILIZED WIRE FENCING MUST ALSO BE INSTALLED ON UPSTREAM SIDE OF POSTS.  
EXTEND MIN. 24\"/>



1. USE SYNTHETIC FILTER FABRIC OF AT LEAST 80S BY WEIGHT OF POLYOLEFINS OR POLYESTER, WHICH IS CERTIFIED BY THE MANUFACTURER AS CONFORMING TO THE REQUIREMENTS IN ASTM D 6641. FILTER FABRIC SHALL CONTAIN ULTRAVIOLET RAY INHIBITORS AND STABILIZERS TO PROVIDE A MINIMUM OF 6 MONTHS OF EXPECTED USABLE CONSTRUCTION LIFE AT A TEMPERATURE RANGE OF 0 TO 120°.
2. CONSTRUCT THE SEDIMENT BARRIER OF STANDARD OR EXTRA STRENGTH SYNTHETIC FILTER FABRIC. ENSURE THAT THE HEIGHT OF THE SEDIMENT FENCE DOES NOT EXCEED 24 INCHES ABOVE THE GROUND SURFACE.
3. CONSTRUCT THE FILTER FABRIC FROM A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID JOINTS. WHEN JOINTS ARE NECESSARY, SECURELY FASTEN THE FILTER CLOTH ONLY AT A SUPPORT POST WITH 4 FT MINIMUM OVERLAP TO THE NEXT POST.
4. SYNTHETIC FILTER FABRIC SHALL BE FASTENED SECURELY TO EACH FENCE POST WITH MIN. 50 LB. TENSILE STRENGTH WIRE OR ZIP TIES AT TOP, MID-SECTION AND BOTTOM. FABRIC HEIGHT SHALL BE BETWEEN 18\"/>
- 5. 12 INCHES OF FILTER FABRIC SHALL BE BURIED IN AN EXCAVATED TRENCH APPROXIMATELY 4 INCHES WIDE AND 8 INCHES DEEP ALONG THE PROPOSED LINE OF POSTS AND UPSLOPE FROM THE BARRIER. BACKFILL TRENCH WITH MECHANICALLY COMPACTED SOIL PLACED OVER THE FILTER FABRIC. DO NOT ATTACH FILTER FABRIC TO TREES.
- 6. SILT FENCE SHALL BE INSPECTED AT LEAST ONCE A WEEK & AFTER EACH RAIN EVENT. MAKE ANY REPAIRS IMMEDIATELY. SHOULD THE FABRIC COLLAPSE, TEAR, DECOMPOSE OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY.
- 7. REMOVE SEDIMENT DEPOSITS AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE FENCE. TAKE CARE TO AVOID UNDERMINING THE FENCE DURING CLEANOUT.
- 8. REMOVE ALL FENCING MATERIALS AND UNSTABLE SEDIMENT DEPOSITS AND BRING THE AREA TO GRADE AND STABILIZE IT AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.



**TYPICAL SILT FENCING DETAIL**  
NOT TO SCALE LOCATION AS NOTED ON PLAN

**BRSSELL**  
Professional Group  
Firm License # C-656  
10000 Highway  
P.O. Box 1008  
Carrboro, North Carolina 27949  
(252) 281-1760  
(252) 281-1760

**EROSION AND SEDIMENT CONTROL NOTES & DETAILS**

**COROLLA BOAT CLUB - PHASE 1**  
PROJECT: POPULAR BRANCH TOWNSHIP, CURRITUCK COUNTY, NORTH CAROLINA

**CONSTRUCTION DRAWINGS**

DATE: 2-15-23 SCALE: NO SCALE  
DESIGNED: BPG CHECKED: MSB  
DRAWN: KFW/DMK APPROVED: BPG  
SHEET: 11 OF 16  
CAD FILE: 459600B3  
PROJECT NO: 4596

REVISIONS  
NO. DATE DESCRIPTION  
1 2/15/23

FINAL DRAWING NOT RELEASED FOR CONSTRUCTION



**PART III  
SELF-INSPECTION, RECORDKEEPING AND REPORTING**

**SECTION A: SELF-INSPECTION**

Self-inspections are required during normal business hours in accordance with the table below. When adverse weather or site conditions would cause the safety of the inspection personnel to be in jeopardy, the inspection may be delayed until the next business day on which it is safe to perform the inspection. In addition, when a storm event of equal to or greater than 1.0 inch occurs outside of normal business hours, the self-inspection shall be performed upon the commencement of the next business day. Any time when inspections were delayed shall be noted in the Inspection Record.

Inspect	Frequency (during normal business hours)	Inspection records must include:
(1) Rain gauge maintained in good working order	Daily	Daily rainfall amounts. If no daily rain gauge observations are made during weekend or holiday periods, and no individual-day rainfall information is available, record the cumulative rain measurement for those unattended days (and this will determine if a site inspection is needed). Days on which no rainfall occurred shall be recorded as "zero." The permittee may use another rain-monitoring device approved by the Division.
(2) E&SC Measures	At least once per 7 calendar days and within 24 hours of a rain event $\geq$ 1.0 inch in 24 hours	1. Identification of the measures inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Indication of whether the measures were operating properly, 5. Description of maintenance needs for the measure, 6. Description, evidence, and date of corrective actions taken.
(3) Stormwater discharge outfalls (SDCs)	At least once per 7 calendar days and within 24 hours of a rain event $\geq$ 1.0 inch in 24 hours	1. Identification of the discharge outfalls inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Evidence of indicators of stormwater pollution such as oil sheen, floating or suspended solids or discoloration, 5. Indication of visible sediment leaving the site, 6. Description, evidence, and date of corrective actions taken.
(4) Perimeter of site	At least once per 7 calendar days and within 24 hours of a rain event $\geq$ 1.0 inch in 24 hours	If visible sedimentation is found outside site limits, then a record of the following shall be made: 1. Actions taken to clean up or stabilize the sediment that has left the site limits, 2. Description, evidence, and date of corrective actions taken, and 3. An explanation as to the actions taken to control future releases.
(5) Streams or wetlands onsite or offsite (where accessible)	At least once per 7 calendar days and within 24 hours of a rain event $\geq$ 1.0 inch in 24 hours	If the stream or wetland has increased visible sedimentation or a stream has visible increased turbidity from the construction activity, then a record of the following shall be made: 1. Description, evidence and date of corrective actions taken, and 2. Records of the required reports to the appropriate Division Regional Office per Part III, Section C, Item (2)(a) of this permit.
(6) Ground stabilization measures	After each phase of grading	1. The phase of grading (installation of perimeter E&SC measures, clearing and grubbing, installation of storm drainage facilities, completion of all land-disturbing activity, construction or redevelopment, permanent ground cover). 2. Documentation that the required ground stabilization measures have been provided within the required timeframe or an assurance that they will be provided as soon as possible.

NOTE: The rain inspection resets the required 7 calendar day inspection requirement.

**PART II, SECTION G, ITEM (4)  
DRAW DOWN OF SEDIMENT BASINS FOR MAINTENANCE OR CLOSE OUT**

Sediment basins and traps that receive runoff from drainage areas of one acre or more shall use outlet structures that withdraw water from the surface when these devices need to be drawn down for maintenance or close out unless this is infeasible. The circumstances in which it is not feasible to withdraw water from the surface shall be rare (for example, times with extended cold weather). Non-surface withdrawals from sediment basins shall be allowed only when all of the following criteria have been met:

- The E&SC plan authority has been provided with documentation of the non-surface withdrawal and the specific time periods or conditions in which it will occur. The non-surface withdrawal shall not commence until the E&SC plan authority has approved these items,
- The non-surface withdrawal has been reported as an anticipated bypass in accordance with Part III, Section C, Item (2)(c) and (d) of this permit,
- Dewatering discharges are treated with controls to minimize discharges of pollutants from stormwater that is removed from the sediment basin. Examples of appropriate controls include properly sited, designed and maintained dewatering tanks, weir tanks, and filtration systems,
- Vegetated, upland areas of the sites or a properly designed stone pad is used to the extent feasible at the outlet of the dewatering treatment devices described in Item (c) above,
- Velocity dissipation devices such as check dams, sediment traps, and riprap are provided at the discharge points of all dewatering devices, and
- Sediment removed from the dewatering treatment devices described in Item (c) above is disposed of in a manner that does not cause deposition of sediment into waters of the United States.

**PART III  
SELF-INSPECTION, RECORDKEEPING AND REPORTING**

**SECTION B: RECORDKEEPING**

**1. E&SC Plan Documentation**

The approved E&SC plan as well as any approved deviation shall be kept on the site. The approved E&SC plan must be kept up-to-date throughout the coverage under this permit. The following items pertaining to the E&SC plan shall be kept on site and available for inspection at all times during normal business hours.

Item to Document	Documentation Requirements
(a) Each E&SC measure has been installed and does not significantly deviate from the locations, dimensions and relative elevations shown on the approved E&SC plan.	Initial and date each E&SC measure on a copy of the approved E&SC plan or complete, date and sign an inspection report that lists each E&SC measure shown on the approved E&SC plan. This documentation is required upon the initial installation of the E&SC measures or if the E&SC measures are modified after initial installation.
(b) A phase of grading has been completed.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate completion of the construction phase.
(c) Ground cover is located and installed in accordance with the approved E&SC plan.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate compliance with approved ground cover specifications.
(d) The maintenance and repair requirements for all E&SC measures have been performed.	Complete, date and sign an inspection report.
(e) Corrective actions have been taken to E&SC measures.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate the completion of the corrective action.

**2. Additional Documentation to be Kept on Site**

In addition to the E&SC plan documents above, the following items shall be kept on the site and available for inspectors at all times during normal business hours, unless the Division provides a site-specific exemption based on unique site conditions that make this requirement not practical:

- This General Permit as well as the Certificate of Coverage, after it is received.
- Records of inspections made during the previous twelve months. The permittee shall record the required observations on the Inspection Record Form provided by the Division or a similar inspection form that includes all the required elements. Use of electronically-available records in lieu of the required paper copies will be allowed if shown to provide equal access and utility as the hard-copy records.

**3. Documentation to be Retained for Three Years**

All data used to complete the e-NOI and all inspection records shall be maintained for a period of three years after project completion and made available upon request. [40 CFR 122.41]

**PART III  
SELF-INSPECTION, RECORDKEEPING AND REPORTING**

**SECTION C: REPORTING**

**1. Occurrences that Must be Reported**

Permittees shall report the following occurrences:

- Visible sediment deposition in a stream or wetland.
- Oil spills if:
  - They are 25 gallons or more,
  - They are less than 25 gallons but cannot be cleaned up within 24 hours,
  - They cause sheen on surface waters (regardless of volume), or
  - They are within 100 feet of surface waters (regardless of volume).
- Releases of hazardous substances in excess of reportable quantities under Section 311 of the Clean Water Act (Ref: 40 CFR 110.3 and 40 CFR 117.3) or Section 102 of CERCLA (Ref: 40 CFR 302.4) or G.S. 143-215.85.
- Anticipated bypasses and unanticipated bypasses.
- Noncompliance with the conditions of this permit that may endanger health or the environment.

**2. Reporting Timeframes and Other Requirements**

After a permittee becomes aware of an occurrence that must be reported, he shall contact the appropriate Division regional office within the timeframes and in accordance with the other requirements listed below. Occurrences outside normal business hours may also be reported to the Department's Environmental Emergency Center personnel at (800) 858-0368.

Occurrence	Reporting Timeframes (After Discovery) and Other Requirements
(a) Visible sediment deposition in a stream or wetland	<ul style="list-style-type: none"> <li><b>Within 24 hours</b>, an oral or electronic notification.</li> <li><b>Within 7 calendar days</b>, a report that contains a description of the sediment and actions taken to address the cause of the deposition. Division staff may waive the requirement for a written report on a case-by-case basis.</li> <li>If the stream is named on the <a href="#">NC 303(d) list</a> as impaired for sediment-related causes, the permittee may be required to perform additional monitoring, inspections or apply more stringent practices if staff determine that additional requirements are needed to assure compliance with the federal or state impaired-waters conditions.</li> </ul>
(b) Oil spills and release of hazardous substances per Item 1(b)-(c) above	<ul style="list-style-type: none"> <li><b>Within 24 hours</b>, an oral or electronic notification. The notification shall include information about the date, time, nature, volume and location of the spill or release.</li> </ul>
(c) Anticipated bypasses [40 CFR 122.41(m)(3)]	<ul style="list-style-type: none"> <li><b>A report at least ten days before the date of the bypass, if possible.</b> The report shall include an evaluation of the anticipated quality and effect of the bypass.</li> </ul>
(d) Unanticipated bypasses [40 CFR 122.41(m)(3)]	<ul style="list-style-type: none"> <li><b>Within 24 hours</b>, an oral or electronic notification.</li> <li><b>Within 7 calendar days</b>, a report that includes an evaluation of the quality and effect of the bypass.</li> </ul>
(e) Noncompliance with the conditions of this permit that may endanger health or the environment [40 CFR 122.41(l)(7)]	<ul style="list-style-type: none"> <li><b>Within 24 hours</b>, an oral or electronic notification.</li> <li><b>Within 7 calendar days</b>, a report that contains a description of the noncompliance, and its causes; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time noncompliance is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. [40 CFR 122.41(l)(6)].</li> <li>Division staff may waive the requirement for a written report on a case-by-case basis.</li> </ul>



**NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING**

**EFFECTIVE: 04/01/19**

Bissell Professional Group  
5700 Lenoir Ave. Suite 200  
P.O. Box 1088  
Durham, NC 27710  
(919) 286-1329  
(919) 286-1330  
FAX (919) 286-1330



**NCG01 - SELF INSPECTION,  
RECORDKEEPING & REPORTING**

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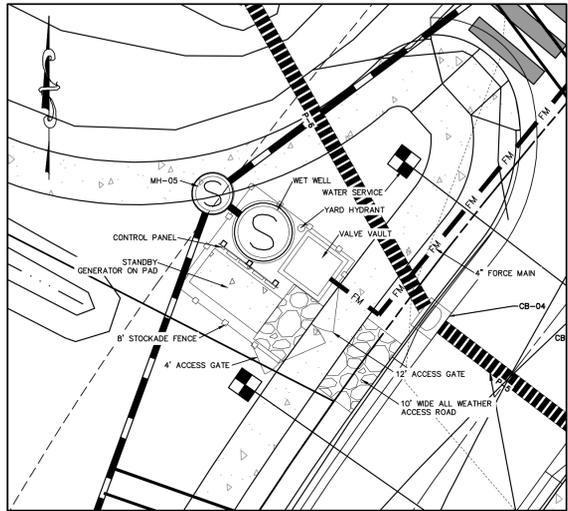
**COROLLA BOAT CLUB - PHASE 1**  
NORTH CAROLINA  
CURRITUCK COUNTY  
POPLAR BRANCH TOWNSHIP

NO.	DATE	DESCRIPTION	BY

DATE: 2-15-23 SCALE: NO SCALE  
DESIGNED: BPG CHECKED: MSB  
DRAWN: KFW/DMK APPROVED: BPG  
SHEET: 13 OF 16  
CAD FILE: 459600B3  
PROJECT NO: 4596

**FINAL DRAWING  
NOT RELEASED FOR  
CONSTRUCTION**

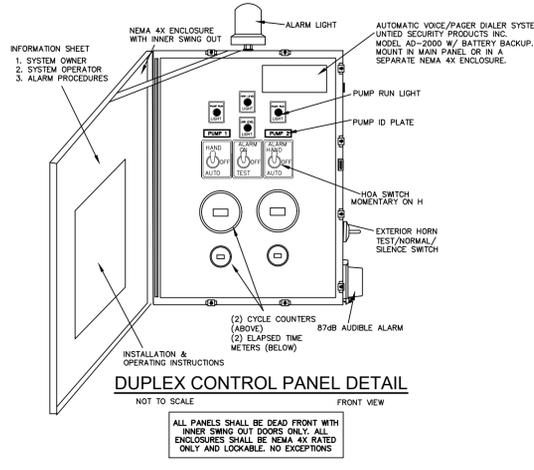




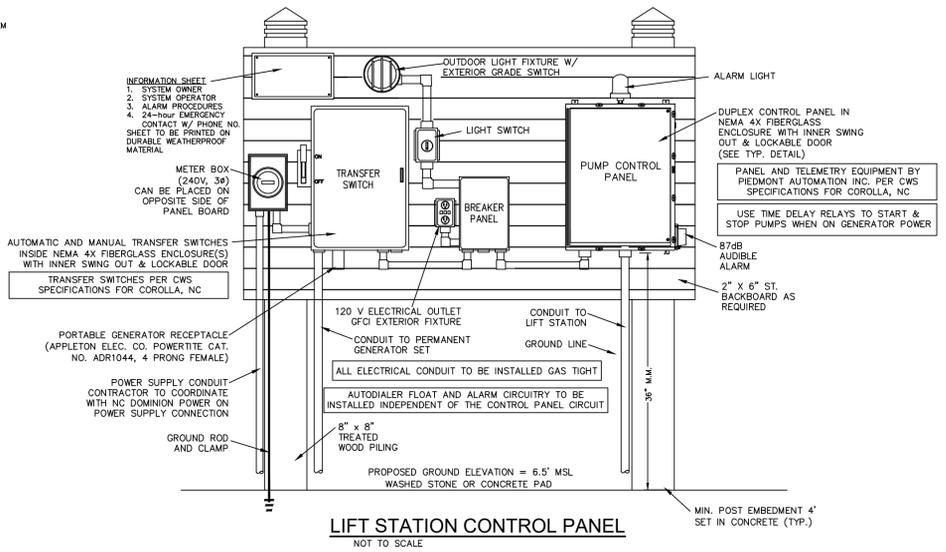
**COROLLA BOAT CLUB - PHASE 1  
LIFT STATION-14 SITE PLAN**  
SCALE: 1"=10' (PLAN VIEW)

- NOTES:**
- THIS PUMP STATION HAS BEEN DESIGNED TO COMPLY WITH NCAC 15A .27.0305 AND MEETS OR EXCEEDS ALL REQUIREMENTS OF FAST-TRACK PERMITTING, MINIMUM DESIGN CRITERIA.
  - DESIGN PUMPING CAPACITY: 82 GPM, 36.0' TDH
  - PUMP SELECTION: HOMA AMS434-170/4, 3T/C (OR APPROVED EQUAL).
  - ALL HATCHES SHALL BE PADLOCKED AT ALL TIMES.
  - ALL DIP DISCHARGE PIPING 12" AND SMALLER SHALL BE PRESSURE CLASS 350, SEE SPECS.
  - ALL PVC DISCHARGE PIPING 4" AND LARGER SHALL BE CLASS 235 DR 18 PER AWWA C900, SEE SPECS.
  - ALL CONTROL SYSTEM ENCLOSURES SHALL BE NEMA 4X RATED.
  - ALL TANKS SHALL BE LEAK TESTED IN ACCORDANCE WITH SPECS.
  - ALL COMPONENTS WITHIN THE PUMP TANK SHALL BE STAINLESS STEEL INCLUDING GUIDE RAILS, BRACKETS, BOLTS, LIFTING CHAIN, ETC.
  - PRECAST INLET BOOTS SHALL BE PROVIDED BY PRECAST LIFT STATION MANUFACTURER. ALL OPENINGS SHALL BE GROUDED.
  - PUMP LIFT-OUT RAIL SYSTEM SHALL BE HOMA WITH STAINLESS STEEL COMPONENTS, OR APPROVED EQUAL.
  - ACCESS HATCHES SHALL BE HALLIDAY MODELS, AS SPECIFIED ON DRAWINGS.
  - AN ALL WEATHER ACCESS ROAD SHALL BE PROVIDED TO THE LIFT STATION.
  - THE WET WELL, VALVE VAULT & CONTROL PANELS SHALL BE SECURELY LOCKED AT ALL TIMES.
  - CONTRACTOR TO BE RESPONSIBLE FOR VERIFYING EXISTING POWER VOLTAGE AND PHASE PRIOR TO ORDERING PUMPS & CONTROLS.
  - PUMP STATION DESIGN SPECIFICATIONS TO CONFORM TO LATEST ASTM C478 SPECIFICATIONS FOR "PRECAST REINFORCED CONCRETE MANHOLE SECTIONS." CONCRETE COMPRESSIVE STRENGTH SHALL BE 4000 PSI MINIMUM. MANHOLE STEPS SHALL BE STEEL REINFORCED COPOLYMER POLYPROPYLENE PLASTIC STEPS WHICH CONFORM TO LATEST ASTM C478 SPECIFICATIONS IN BOTH MATERIAL & DESIGN.
  - ADDITIONAL WASTEWATER FLOWS SHALL NOT BE MADE TRIBUTARY TO THE LIFT STATION UNTIL A REQUEST FOR A PERMIT MODIFICATION IS SUBMITTED & APPROVED BY NCCENR-DWQ.

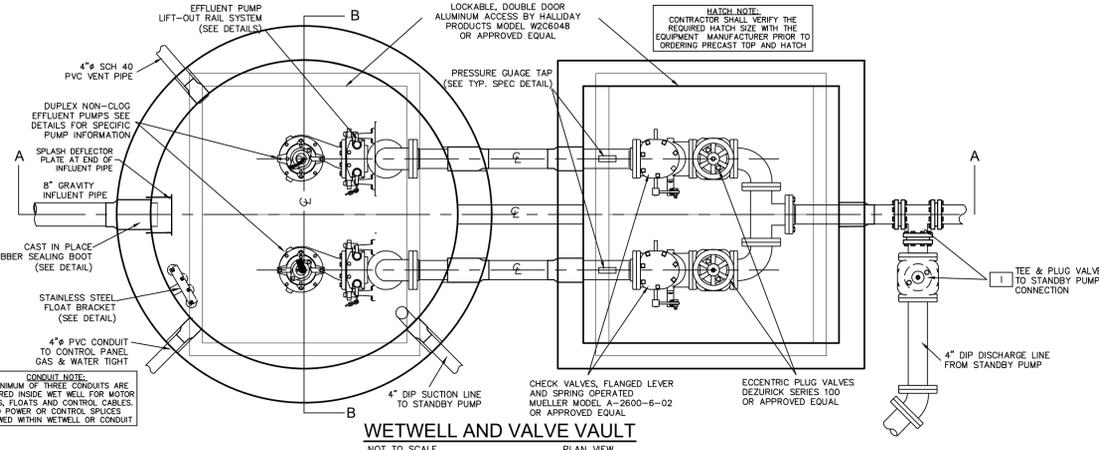
WASTEWATER COLLECTION SYSTEM LIFT STATION SCHEDULE	
DIMENSION	
A: TOP OF TANKS	7.00 M.S.L.
B: GROUND FLEV. (FINISHED)	6.50 M.S.L.
C: HEIGHT OF WET WELL	15.0'
D: INV. IN	-2.20 M.S.L.
E: BOTTOM OF WET WELL	-8.00 M.S.L.
F: DIAMETER OF TANK	6' Ø INSIDE
G: VALVE CHAMBER	5'X5' INSIDE
H: F.M. ELEV. OUT	2.78 M.S.L.
I: F.M. DIAMETER	4"
J: ALARM LEVEL	-3.00 M.S.L.
K: LAG PUMP ON	-3.50 M.S.L.
L: LEAD PUMP ON	-4.00 M.S.L.
M: BOTH PUMPS OFF	-6.00 M.S.L.
N: D = F	5.9'
O: BOTTOM OF VALVE VAULT	1.50 M.S.L.
P: AUTO DIALER FLOAT	-3.00 M.S.L.
<b>PUMP AND MOTOR DATA</b>	
DESIGN FLOW (Q)	82 GPM
TOTAL DYNAMIC HEAD (TDH)	36.0'
RECOMMENDED PUMP OR APPROVED EQUAL	HOMA AMS434-170/4, 3T/C 6" I" IMPELLER, 4.3 HP (OR APPROVED EQUAL)



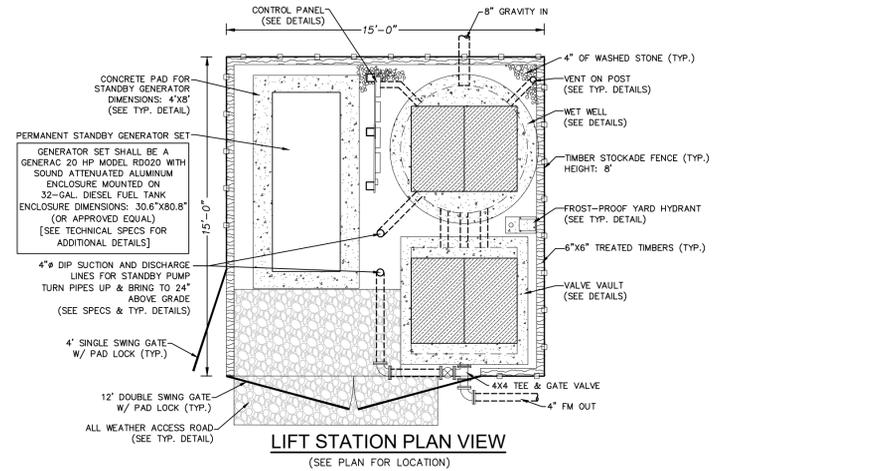
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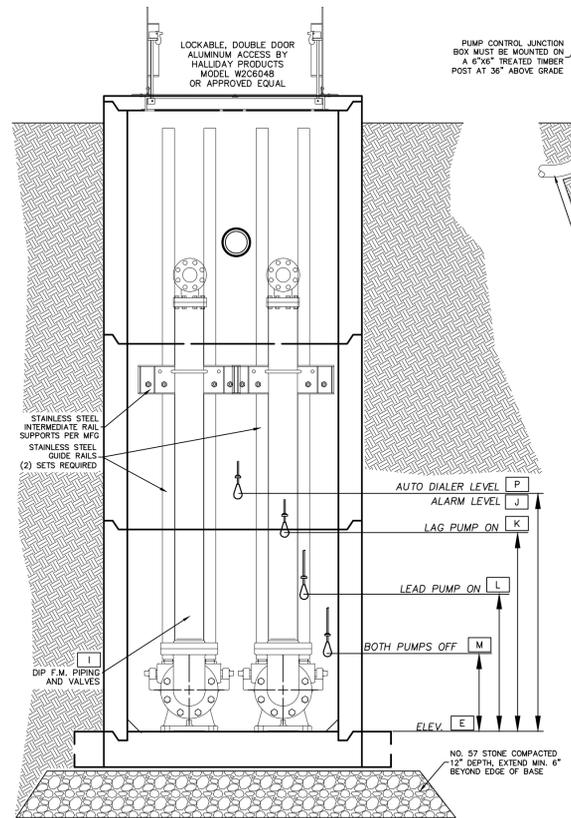
**LIFT STATION CONTROL PANEL**  
NOT TO SCALE



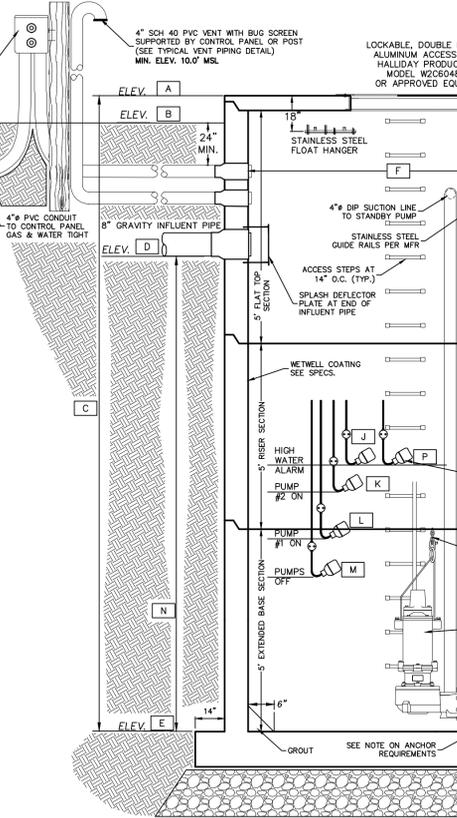
**WETWELL AND VALVE VAULT**  
NOT TO SCALE



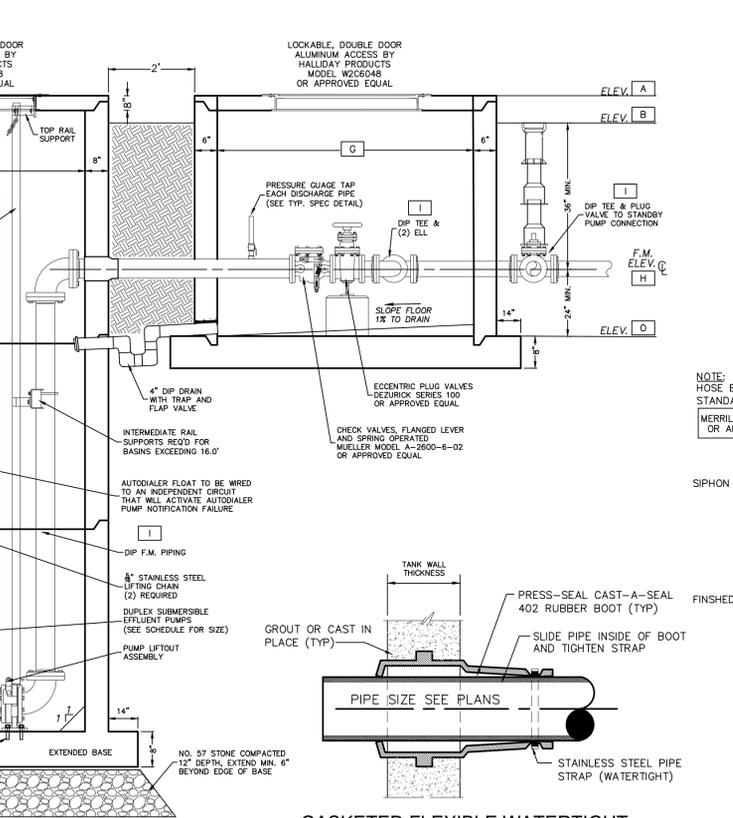
**LIFT STATION PLAN VIEW**  
(SEE PLAN FOR LOCATION)



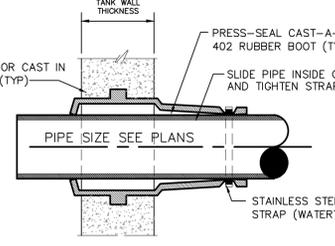
**SECTION B-B**



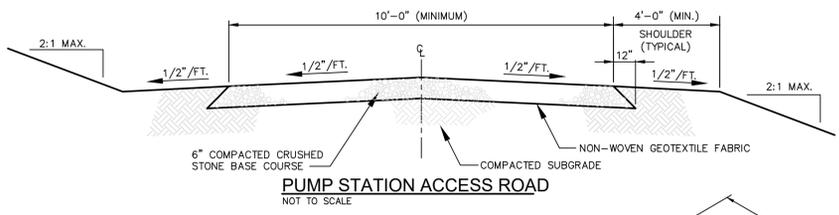
**WETWELL AND VALVE VAULT SECTION**  
NOT TO SCALE



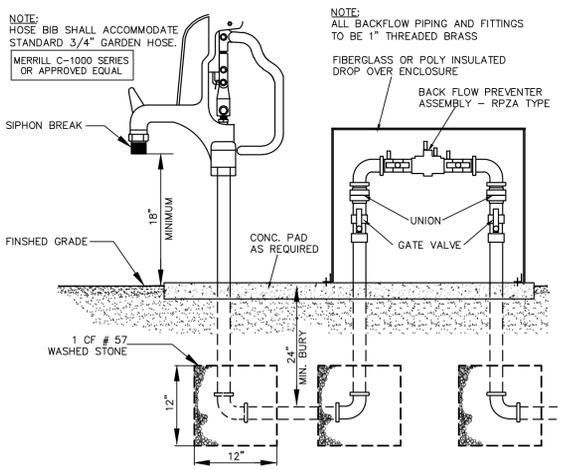
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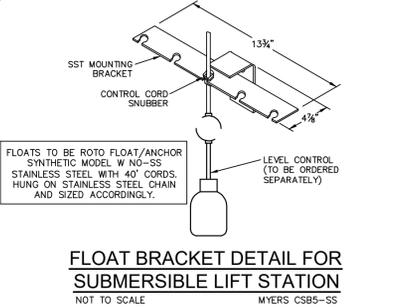
**GASKETED FLEXIBLE WATERTIGHT CONNECTION DETAIL**  
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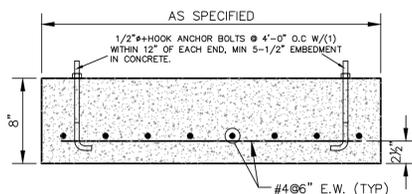
**PUMP STATION ACCESS ROAD**  
NOT TO SCALE



**FROST-PROOF YARD HYDRANT DETAIL**  
NOT TO SCALE



**FLOAT BRACKET DETAIL FOR SUBMERSIBLE LIFT STATION**  
NOT TO SCALE



**STANDBY PUMP/GENERATOR PAD DETAIL**  
NOT TO SCALE

**BISSELL**  
Professional Group  
Firm License # C-955  
P.O. Box 1068  
10000 North Carolina Highway 27149  
Charlotte, North Carolina 28217  
(704) 261-1100  
FAX (704) 261-1100

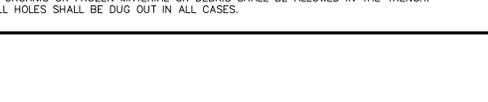
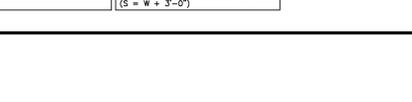
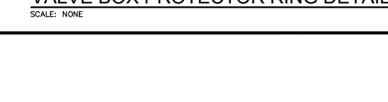
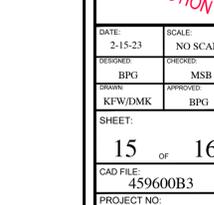
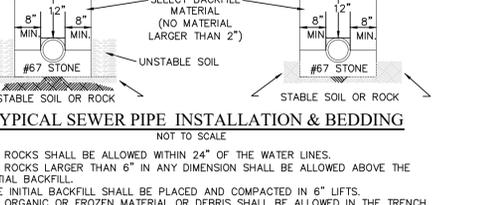
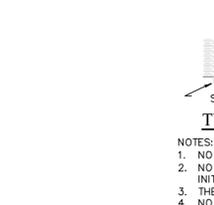
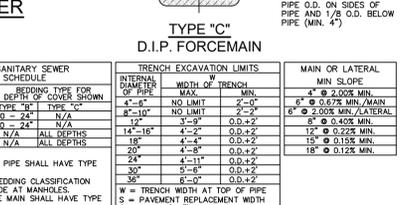
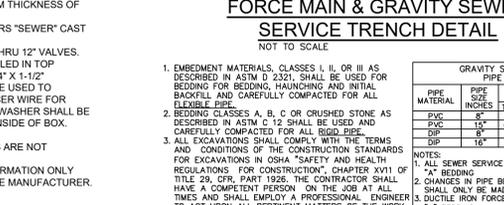
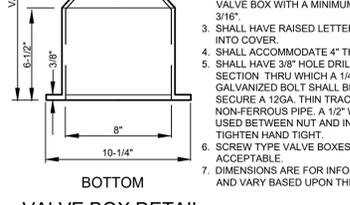
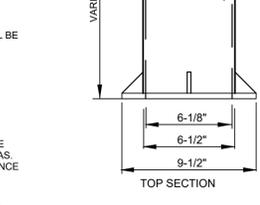
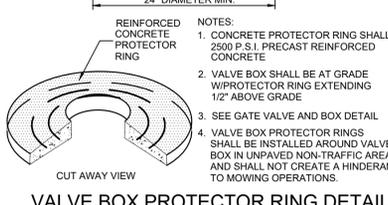
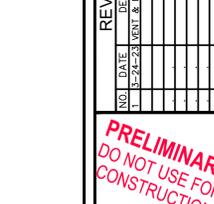
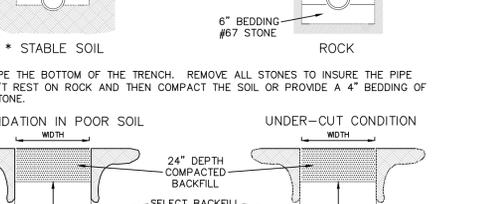
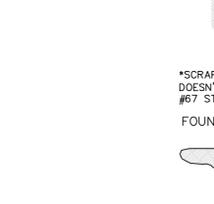
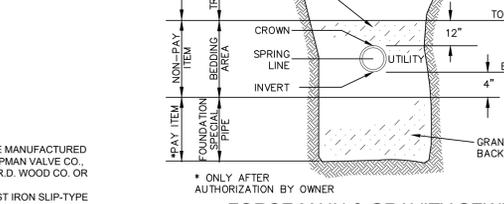
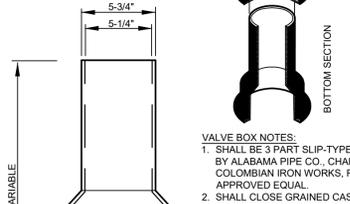
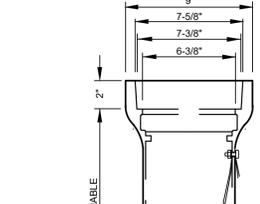
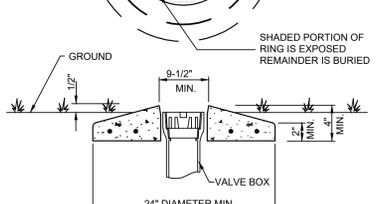
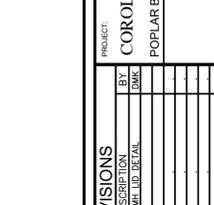
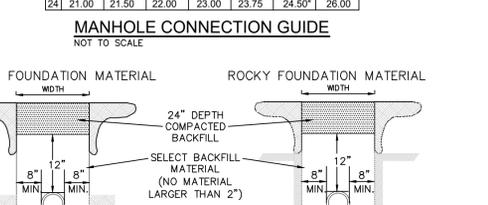
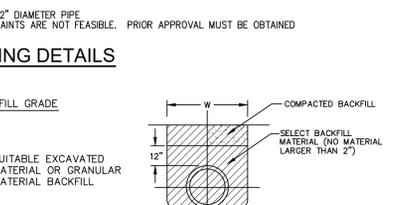
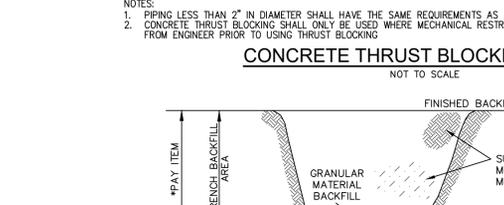
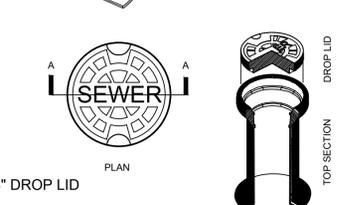
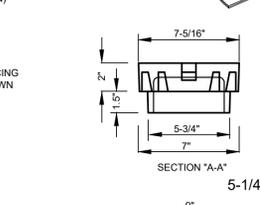
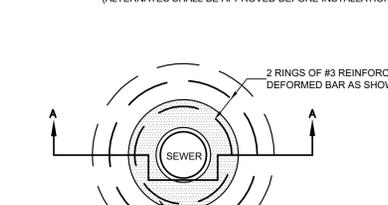
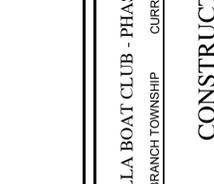
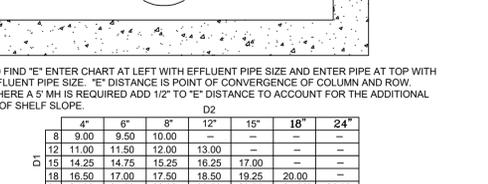
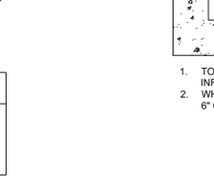
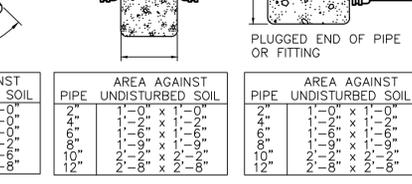
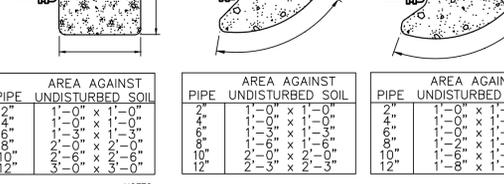
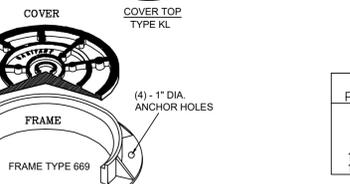
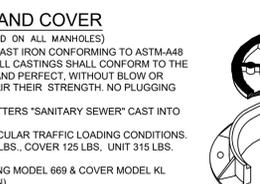
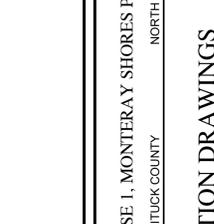
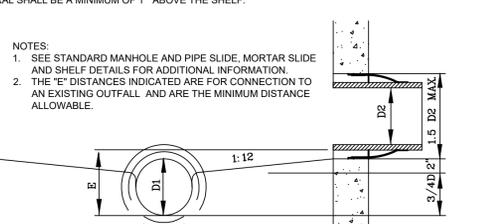
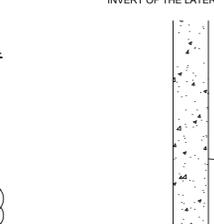
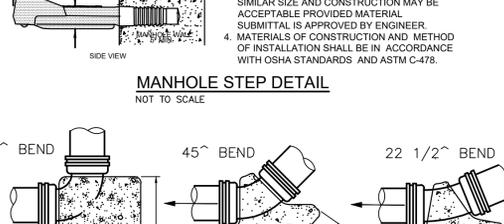
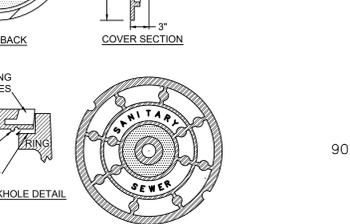
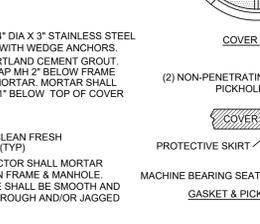
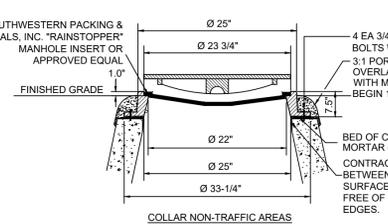
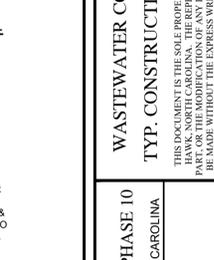
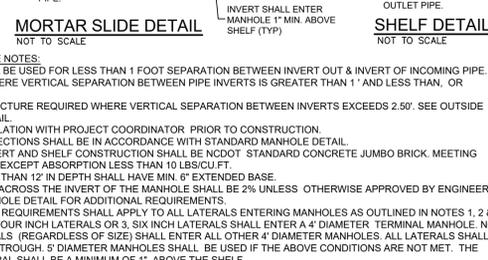
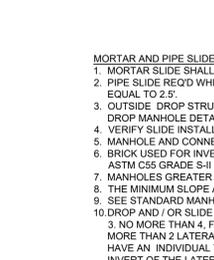
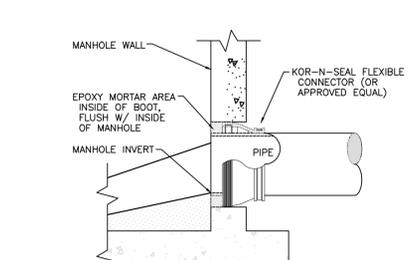
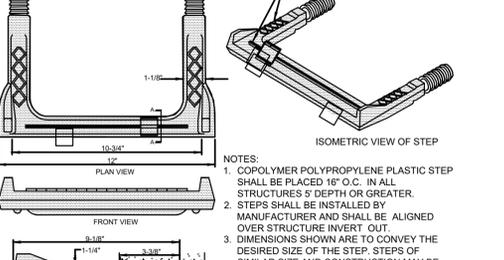
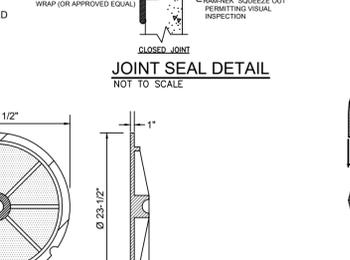
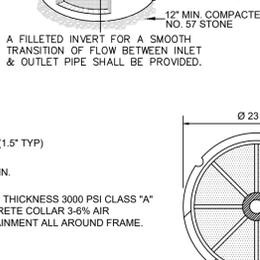
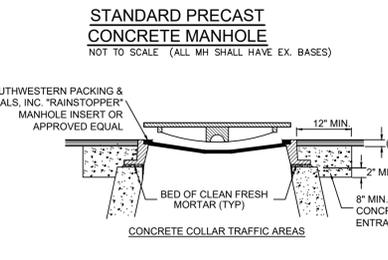
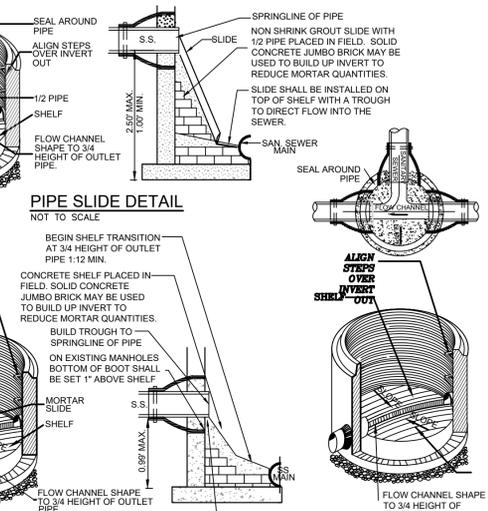
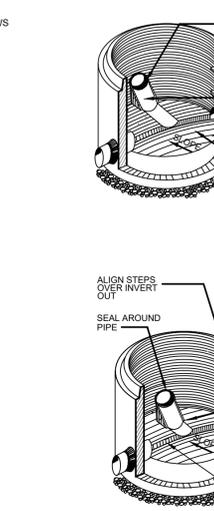
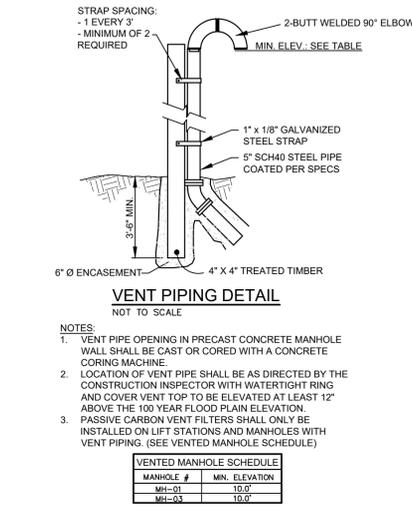
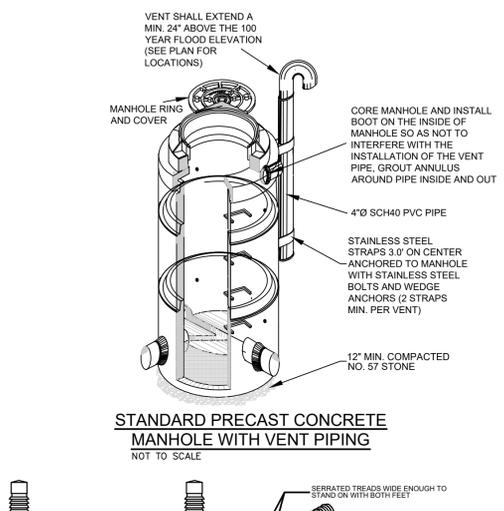
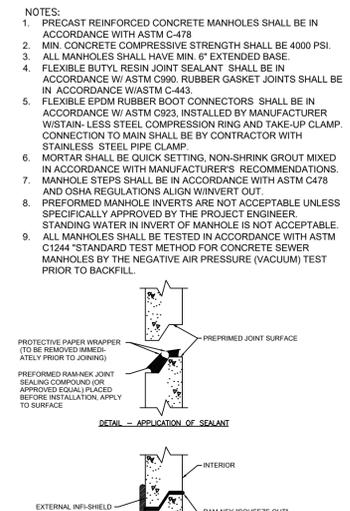
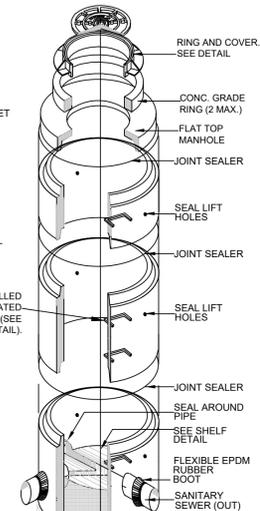
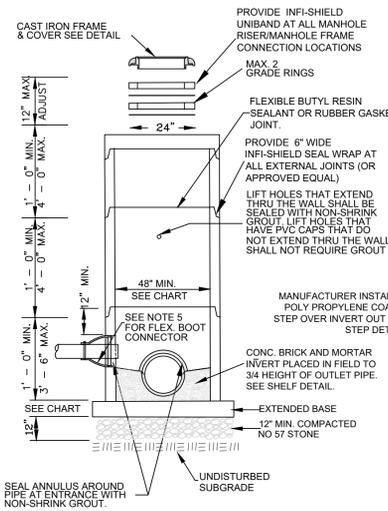
**WASTEWATER LIFT STATION**  
**CONSTRUCTION DETAILS**

PROJECT: COROLLA BOAT CLUB - PHASE 1, MONTEREY SHORES PHASE 10  
POPULAR BRANCH TOWNSHIP  
CURRITUCK COUNTY  
NORTH CAROLINA

DATE: 2-15-23  
DESIGNED: BPG  
CHECKED: MSB  
APPROVED: BPG  
SHEET: 14 OF 16  
CAD FILE: 459600B3  
PROJECT NO: 4596

**CONSTRUCTION DRAWINGS**

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PROJECT: COROLLA BOAT CLUB - PHASE 1, MONTERAY SHORES PHASE 10  
 CURRITUCK COUNTY, NORTH CAROLINA  
 CLIENT: COROLLA BOAT CLUB - PHASE 1, MONTERAY SHORES PHASE 10  
 CURRITUCK COUNTY, NORTH CAROLINA  
 DRAWING NO: 459600B3  
 DATE: 2-15-23  
 SCALE: NO SCALE  
 DESIGNED BY: BPG  
 CHECKED BY: MSB  
 APPROVED BY: BPG  
 SHEET: 15 OF 16  
 CAD FILE: 459600B3  
 PROJECT NO: 4596

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**Bissell**  
 WASTEWATER COLLECTION  
 TYP. CONSTRUCTION DETAILS  
 ENGINEERS, PLANNERS, SURVEYORS  
 AND ENVIRONMENTAL SPECIALISTS

WASTEWATER COLLECTION  
 TYP. CONSTRUCTION DETAILS

CONSTRUCTION DRAWINGS

PROJECT: COROLLA BOAT CLUB - PHASE 1, MONTERAY SHORES PHASE 10  
 CURRITUCK COUNTY, NORTH CAROLINA

CLIENT: COROLLA BOAT CLUB - PHASE 1, MONTERAY SHORES PHASE 10  
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SCALE: NO SCALE

SHEET: 15 OF 16

CAD FILE: 459600B3

PROJECT NO: 4596

PRELIMINARY  
DO NOT USE FOR  
CONSTRUCTION

**ORDER OF PRECEDENCE GENERAL NOTES/TECHNICAL SPECIFICATIONS**

1. THE NOTES CONTAINED HEREIN ARE INTENDED TO SUPPLEMENT THE TECHNICAL SPECIFICATIONS AND PROVIDE EASY REFERENCE FOR THE CONTRACTOR. IN NO CASE SHALL THESE NOTES VOID ANY PART, SECTION OR REQUIREMENT OF THE TECHNICAL SPECIFICATIONS. TECHNICAL SPECIFICATIONS CONTAINED IN THE CONTRACT DOCUMENTS. IF CONFLICTS OCCUR BETWEEN THE TECHNICAL SPECIFICATIONS AND THE NOTES CONTAINED HEREIN, THE TECHNICAL SPECIFICATIONS SHALL SUPERSEDE.

2. CONTRACTOR IS CHARGED WITH PERFORMING SITE INVESTIGATIONS TO ASCERTAIN EXISTING SITE CONDITIONS. PHOTOGRAPHIC DOCUMENTATION OF PRE-EXISTING CONSTRUCTION CONDITIONS WILL BE CONDUCTED BY THE ENGINEER FOR DETERMINATION OF COMPLIANCE WITH CONDITIONS NOTED HEREON.

**GENERAL NOTES**

- ACCESS TO SITES SHALL BE BY PUBLIC RIGHT-OF-WAYS AND UTILITY EASEMENTS. OTHER ACCESS LOCATIONS REQUIRED SHALL BE SECURED BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE OWNER. SUPPLEMENTAL EROSION CONTROL MEASURES SHALL BE REQUIRED TO INCLUDE CONSTRUCTION ENTRANCES, SILT FENCING, RESTORATION, ETC. ADDITIONAL MEASURES SHALL BE INCLUDED AS PART OF A SUPPLEMENTAL EROSION CONTROL PLAN PREPARED BY THE CONTRACTOR.
- THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE THE CONSTRUCTION STAGING AREA AT HIS EXPENSE.
- THE CONTRACTOR IS EXPECTED AND REQUIRED TO COOPERATE WITH THE PROPERTY OWNERS AFFECTED BY THE WORK. MAIL ADJOINING PROPERTY OWNER LETTERS TO EFFECTED PROPERTY OWNERS NOTIFYING THEM THAT WORK WILL BE OCCURRING WITHIN THE AREAS ADJOINING THEIR PROPERTIES. THIS LETTER SHALL GIVE PROPERTY OWNERS A MINIMUM OF 14 DAYS WRITTEN NOTICE PRIOR TO COMMENCEMENT OF CONSTRUCTION FOR REMOVAL OF ANY PERSONAL ITEMS FROM THE RIGHT-OF-WAY. THE LETTER OUTLINES THE EXTENT OF THE WORK TO BE PERFORMED TO INCLUDE DRAINWAY DISRUPTIONS.
- CONTRACTOR SHALL MAINTAIN A NEAT AND CLEAN JOB-SITE TO INCLUDE STAGING/STORAGE AREAS AS FOLLOWS:
  - PERFORM DUST CONTROL BY WATERING DAILY OR AS DIRECTED BY THE ENGINEER AND/OR CURRITUCK COUNTY.
  - SWEEP STREETS A MINIMUM OF ONCE WEEKLY (FRIDAY) OR AS DIRECTED BY THE ENGINEER AND/OR CURRITUCK COUNTY.
  - BLADE, LEVEL AND RE-COMPACT ALL EXPOSED TRENCHES WEEKLY (OR AS DIRECTED BY THE ENGINEER) TO PROVIDE A SMOOTH "TRIDE".
  - PERFORM DAILY CLEAN-UP OF ALL DIRT, DEBRIS AND SCRAP MATERIALS.
  - REMOVE EXCESS EQUIPMENT, MATERIALS, TOOLS, ETC. NOT NEEDED.
  - ANY DRIVEWAY REMOVALS MUST HAVE A TEMPORARY SURFACE INSTALLED WITHIN THE SAME DAY AS REMOVAL. APPROVED SURFACES MAY CONSIST OF EITHER ABC OR MILLINGS.

THE WORK WITHIN RIGHT OF WAY AREAS MUST BE KEPT IN AN ORDERLY AND NEAT FASHION. NO MATERIAL (SOILS, GRAVEL OR OTHER PROJECT FILL) CAN BE PLACED DIRECTLY ON ANY STREET SURFACE WITHOUT MATTING BEING PUT DOWN FIRST. ANY DAMAGE TO ANY ROAD SURFACE FROM CONSTRUCTION ACTIVITIES MUST BE REPAIRED AT OWNERS EXPENSE.

- EXCESS SUITABLE SOIL EXCAVATED DURING CONSTRUCTION SHALL BE STOCKPILED FOR USE ON THE PROJECT OR DISPOSED OF OFF-SITE AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL NOT BE ALLOWED TO STOCKPILE MATERIALS OR EXCESS MATERIALS IN THE STREET RIGHT-OF-WAYS AT ANY TIME. THE CONTRACTOR SHALL PROVIDE A SUFFICIENT AND SUITABLE STOCKPILE AREA AND LOCATION AT THE CONTRACTOR'S EXPENSE.
- CONTRACTOR SHALL PROVIDE MEASURES DURING CONSTRUCTION TO SECURE THE SITE AND EXCAVATION FROM THE GENERAL PUBLIC AND COMPLY WITH ALL OSHA REGULATIONS. JOB SITE SAFETY IS THE EXCLUSIVE AND SOLE RESPONSIBILITY OF THE CONTRACTOR. OPEN EXCAVATION LEFT UNPROTECTED OR OVERNIGHT IS NOT ACCEPTABLE AND SHALL BE FILLED IMMEDIATELY.
- CONTRACTOR SHALL REPAIR OR REPLACE DRIVES DISTURBED BY CONSTRUCTION TO EXISTING OR BETTER CONDITIONS. NO SEPARATE PAYMENT UNLESS OTHERWISE INDICATED.
- CONTRACTOR SHALL PROVIDE TEMPORARY FENCING WHERE FENCES ARE REMOVED FOR CONSTRUCTION. CONTRACTOR SHALL COORDINATE FENCE REMOVAL OR RESTAURATION WITH INDIVIDUAL PROPERTY OWNERS PRIOR TO REMOVAL. CONTRACTOR SHALL REINSTALL ALL SLEDS, FENCES, ETC. TO AS GOOD OR BETTER THAN EXISTING CONDITIONS UNLESS OTHERWISE INDICATED. (NO SEPARATE PAYMENT).
- CONTRACTOR SHALL REPLACE ALL DISTURBED MAILBOXES, SIGNS, ETC. DISTURBED DURING CONSTRUCTION WITHIN 24 HOURS OF DISTURBANCE. PERMANENT ROAD SIGNAGE DISTURBED SHALL BE REPLACED IMMEDIATELY AND IF NECESSARY ROADWAY SIGNS SHALL BE TEMPORARILY INSTALLED IN A LOCATION CONSISTENT WITH THE NCMUTCD TO PROVIDE CONTINUOUS TRAFFIC AWARENESS OF ROADWAY CONDITIONS. (NO SEPARATE PAYMENT).
- CONTRACTOR SHALL PROVIDE SECURITY FENCING, SECURITY GUARD, AND ANY AND ALL OTHER MEASURES CONTRACTOR DEEMS NECESSARY TO PROTECT EQUIPMENT AND MATERIALS STORED ON THE PROJECT. (NO SEPARATE PAYMENT).
- WHERE CONTRACTOR CEASES WORK OPERATIONS FOR A 72 HOUR PERIOD OR LONGER, SUCH AS HOLIDAYS, ETC., THE FOLLOWING SHALL BE ACCOMPLISHED PRIOR TO THE WORK STOPPAGE.
  - CONTRACTOR SHALL STORE ALL EQUIPMENT IN THE CONTRACTOR STAGING AREA OR OFF SITE.
  - THE CONTRACTOR SHALL SWEEP ALL STREETS, PERFORM GENERAL CLEANUP AND SHALL PERFORM MAINTENANCE ON ALL EXPOSED PATCHES.
- CONTRACTOR SHALL SCHEDULE WORK AND MATERIAL DELIVERIES SO THAT STORED MATERIAL QUANTITIES ON THE JOB SITE SHALL BE MINIMIZED.
- CONTRACTOR SHALL STORE ALL MATERIALS IN THE CONTRACTOR STAGING AREA 72 HOURS PRIOR TO INCORPORATING INTO THE WORK TO REDUCE OBSTRUCTIONS TO TRAFFIC AND INCONVENIENCE TO RESIDENTS. WHERE UTILITIES ARE BEING CONSTRUCTED IN EASEMENTS OUT OF TRAFFIC AREAS CONTRACTOR MAY STORE MATERIALS AHEAD OF CONSTRUCTION FOR A DISTANCE NOT GREATER THAN 1800 FEET UNLESS APPROVED OTHERWISE BY THE ENGINEER.
- CLEARING AND GRUBBING SHALL BE RESTRICTED TO PERMANENT EASEMENTS ONLY. CONTRACTOR SHALL LIMIT TREE/BUSH CLEARING IN THE TEMPORARY EASEMENTS, BETWEEN HOUSES AND ALONG PROPERTY LINES TO ONLY ABSOLUTELY NECESSARY FOR CONSTRUCTION.

**RELATION OF WATER MAINS TO SEWERS**

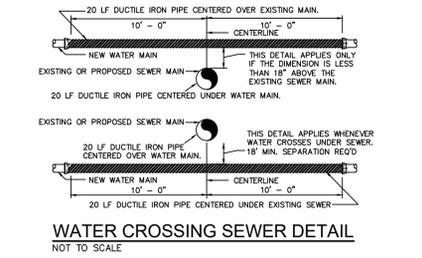
- LATERAL SEPARATION OF SEWERS AND WATER MAINS. WATER MAINS SHALL BE LAID AT LEAST 10 FEET LATERALLY FROM EXISTING OR PROPOSED SEWERS. UNLESS LOCAL CONDITIONS OR BARRIERS PREVENT A 10-FOOT LATERAL SEPARATION-IN WHICH CASE:
  - THE WATER MAIN IS LAID IN A SEPARATE TRENCH, WITH THE ELEVATION OF THE BOTTOM OF THE WATER MAIN AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER OR
  - THE WATER MAIN IS LAID IN THE SAME TRENCH AS THE SEWER WITH THE WATER MAIN LOCATED AT ONE SIDE ON A BENCH OF UNDISTURBED EARTH, AND WITH THE ELEVATION OF THE BOTTOM OF THE WATER MAIN AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER.
- CROSSING A WATER MAIN OVER A SEWER. WHENEVER IT IS NECESSARY FOR A WATER MAIN TO CROSS OVER A SEWER, THE WATER MAIN SHALL BE LAID AT SUCH AN ELEVATION THAT THE BOTTOM OF THE WATER MAIN IS AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER. UNLESS LOCAL CONDITIONS OR BARRIERS PREVENT AN 18 INCH VERTICAL SEPARATION-IN WHICH CASE BOTH THE WATER MAIN AND SEWER SHALL BE CONSTRUCTED OF FERROUS MATERIALS AND WITH JOINTS THAT ARE EQUIVALENT TO WATER MAIN STANDARDS FOR A DISTANCE OF 10 FEET ON EACH SIDE OF THE POINT OF CROSSING.
- CROSSING A WATER MAIN UNDER A SEWER. WHENEVER IT IS NECESSARY FOR A WATER MAIN TO CROSS UNDER A SEWER, BOTH THE WATER MAIN AND SEWER SHALL BE CONSTRUCTED OF FERROUS MATERIALS AND WITH JOINTS EQUIVALENT TO WATER MAIN STANDARDS FOR A DISTANCE OF 10 FEET ON EACH SIDE OF THE POINT OF CROSSING. A SECTION OF WATER MAIN PIPE SHALL BE CENTERED AT THE POINT OF CROSSING.

**CONSTRUCTION SEQUENCE NOTES**

- PRIOR TO COMMENCEMENT OF ANY WORK WITHIN EASEMENTS OR RIGHTS-OF-WAYS THE CONTRACTOR IS REQUIRED TO NOTIFY CONCERNED UTILITY COMPANIES IN ACCORDANCE WITH GS 87-102. CONTRACTOR SHALL VERIFY LOCATION OF EXISTING UTILITIES PRIOR TO BEGINNING CONSTRUCTION. NO SEPARATE PAYMENT. EXISTING UTILITIES SHOWN ARE TAKEN FROM MAPS FURNISHED BY VARIOUS UTILITY COMPANIES AND HAVE NOT BEEN PHYSICALLY LOCATED (I.E. TELEPHONE, GAS, CABLE, ETC.).
- THE CONTRACTOR SHALL DIG UP EACH UTILITY WHICH MAY CONFLICT WITH CONSTRUCTION 14 DAYS IN ADVANCE TO VERIFY LOCATIONS (HORIZONTALLY AND VERTICALLY) TO ALLOW THE ENGINEER AN OPPORTUNITY TO ADJUST THE DESIGN TO AVOID CONFLICTS (NO SEPARATE PAYMENT).
- ALL SANITARY SEWER & WATER CONSTRUCTION SHALL BE IN ACCORDANCE WITH STANDARDS AND SPECIFICATIONS OF THE NCDENR-DWQ & NCDENR-PWS. STORM DRAINAGE, STREET CONSTRUCTION AND PAVING SHALL BE IN ACCORDANCE WITH THE N.C.D.O.T.
- UTILITY SERVICES TO INDIVIDUAL PROPERTIES ARE NOT SHOWN IN THE PROFILES FOR SIMPLICITY OF THE DRAWINGS. SERVICES MAY INCLUDE WATER LATERALS, TELEPHONE, ELECTRIC, CABLE, GAS, ETC.
- CONTRACTOR SHALL COORDINATE WITH UTILITY OWNER AND BE RESPONSIBLE FOR TEMPORARY RELOCATION AND/OR SECURING EXISTING UTILITY POLES AND SIGNS AND/OR UTILITIES IN ACCORDANCE WITH UTILITY OWNER REQUIREMENTS DURING THE UTILITY MAIN INSTALLATION AND STREET CONSTRUCTION. (NO SEPARATE PAYMENT).
- CONTRACTOR SHALL PROVIDE TEMPORARY SUPPORTS FOR UTILITY CROSSINGS AND REPAIR DAMAGES DUE TO CONSTRUCTION TO THE SATISFACTION OF THE UTILITY INVOLVED AT NO ADDITIONAL EXPENSE TO THE OWNER. UNDERGROUND ELECTRICAL CROSSINGS SHALL BE CROSSED IN ACCORDANCE WITH THE NEC AND TECHNICAL SPECIFICATION SECTION UNDERGROUND ELECTRICAL CROSSING
- WHERE DEEMED NECESSARY BY THE ENGINEER THAT A SUBSURFACE DRAINAGE SYSTEM IS REQUIRED, THE CONTRACTOR SHALL PROVIDE ALL MATERIALS, TOOLS, LABOR, EQUIPMENT, TIE-INS TO EXISTING DRAINAGE STRUCTURES AND ALL OTHER INCIDENTALS NECESSARY TO PROVIDE COMPLETE INSTALLATION. IMPROPERLY INSTALLED AND NON-FUNCTIONING DRAINAGE SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE. EXISTING FRENCH DRAINAGE DAMAGED DURING CONSTRUCTION SHALL BE REPLACED AND OR REPAIRED AT NO ADDITIONAL EXPENSE TO THE OWNER.
- STORM DRAINAGE REPAIRS BY CONTRACTOR DUE TO CONSTRUCTION DAMAGE AND JOINTS EXPOSED DURING CONSTRUCTION SHALL BE INSPECTED BY THE OWNER PRIOR TO BACKFILLING.
- CONTRACTOR SHALL PROVIDE ALL LABOR, EQUIPMENT AND MATERIAL AND PERFORM ALL WORK REQUIRED FOR INSTALLATION OF SEWER LINES, MANHOLES AND APPURTENANCES AS OUTLINED ON DRAWINGS AND ON SPECIFICATIONS, ALL OF WHICH BECOME PART OF THE CONTRACT DOCUMENTS.
- ALL CONSTRUCTION OF SANITARY SEWER MAINS AND APPURTENANCES IN THE COLLECTION SYSTEMS SHALL BE IN STRICT ACCORDANCE WITH PLANS AND SPECIFICATIONS PREPARED AS PART OF THE CONTRACT DOCUMENTS AND AS APPROVED BY THE BPG, INC. ENGINEER. ALL MATERIALS SHALL BE NEW AND UNUSED. PRIOR TO CONSTRUCTION OF THE APPROVED SANITARY SEWER, CONTRACTOR SHALL PROVIDE FIELD STAKEOUT INCLUDING ADEQUATE LINE AND GRADE STAKES IN ORDER THAT SANITARY SEWER AND APPURTENANCES MAY BE CONSTRUCTED IN ACCORDANCE WITH CONTRACT DRAWINGS.

- PRECONSTRUCTION CONFERENCE SHALL BE HELD AT THE COMPLETION OF THE FIELD STAKEOUT WITH THE ENGINEER AN HIS/HER REPRESENTATIVE, CURRITUCK COUNTY REPRESENTATIVE, NCDENR REPRESENTATIVE, AND ANY REQUISITE UTILITY REPRESENTATIVES THAT WILL REQUIRE COORDINATION WITH DURING THE COURSE OF CONSTRUCTION. A MINIMUM OF 2 DAYS NOTICE SHALL BE GIVEN FOR MEETING REPRESENTATIVES.
- PREPARE PHOTOGRAPHIC DOCUMENTATION OF PRE-EXISTING CONDITIONS OF THE PROJECTED CONSTRUCTION ROUTE PRIOR TO COMMENCING WORK.
- IF ANY DEVIATION IS CONTEMPLATED IN LOCATION OR LINE GRADE OF ANY SEWER, STRUCTURE OR APPURTENANCE AS SHOWN ON THE CONTRACT DRAWINGS, A REVISION OF THE DRAWINGS SHOWING THE PROPOSED DEVIATION SHALL BE SUBMITTED TO THE BPG, INC. ENGINEER FOR REVIEW AND APPROVAL BEFORE ANY CHANGES ARE CONSTRUCTED. MINOR FIELD CHANGES MAY BE MADE WITH APPROVAL OF BPG, INC. APPOINTED FIELD INSPECTOR. SHOULD CONTRACTOR DISCOVER AND/OR DAMAGE ANY UNDERGROUND UTILITY FACILITIES, WHICH ARE NOT SHOWN ON DRAWINGS AND/OR MARKED ON THE GROUND, CONTRACTOR SHALL PROMPTLY NOTIFY UTILITY OWNER AND OWNER'S PROJECT REPRESENTATIVE. RELOCATION OF ANY UTILITIES SHALL BE APPROVED AND COORDINATED WITH THE APPROPRIATE UTILITY OWNER.
- EXCAVATION SHALL CONFORM TO THE LINES AND GRADES SHOWN ON THE PLANS. THE WIDTH OF EXCAVATION FOR TRENCHES SHALL BE A MINIMUM OF 24" EXCAVATION SHALL NOT BE CARRIED BELOW THE ESTABLISHED GRADES AND ANY EXCAVATION BELOW THE REQUIRED LEVEL SHALL BE BACKFILLED WITH SUITABLE, THOROUGHLY COMPACTED GRANULAR BEDDING MATERIAL. CONTRACTOR SHALL INSTALL ALL SHEETING, BRACING, AND SHORING NECESSARY TO PERFORM THE WORK, TO PROTECT EXISTING STRUCTURES AND ALL EXCAVATIONS AS REQUIRED UNDER NORTH CAROLINA OSHA REGULATIONS. COMPLIANCE WITH PROVISIONS OF THE OVERHEAD HIGH VOLTAGE LINE SAFETY ACT IS REQUIRED.

- DEWATERING EQUIPMENT SHALL BE SIZED TO MAINTAIN THE TRENCH IN A SATISFACTORY DEWATERED CONDITION SUITABLE FOR PIPE LAYING AND BACKFILLING. PIPE LAYING WILL BE PERMITTED ONLY WHERE THE DEPTH OF WATER IS MAINTAINED BELOW THE BEDDING MATERIAL. BEDDING MATERIAL SHALL NOT BE PLACED ON UNSTABLE TRENCH MATERIAL.
- NOT MORE THAN ONE HUNDRED FIFTY FEET (150') OF TRENCH SHALL BE OPENED IN ADVANCE OF THE COMPLETED PIPE LAYING. TRENCH WALLS SHALL BE PROTECTED IN ACCORDANCE WITH CURRENT OSHA REGULATIONS. EXCAVATION AT MANHOLES AND SIMILAR STRUCTURES SHALL PROVIDE A MINIMUM CLEARANCE OF EIGHTEEN INCHES (18") BETWEEN THE OUTER SURFACE OF THE STRUCTURE AND THE EMBANKMENT OR SHEETING.
- WHEREVER FOUNDATION MATERIAL IS UNSUITABLE, IT SHALL BE EXCAVATED UNTIL A STABLE FOUNDATION IS ACHIEVED. GRANULAR MATERIAL, #67 STONE PER ASTM C 12, SHALL THEN BE PLACED IN SIX INCH (6") LAYERS AND COMPACTED UNTIL THE TRENCH BOTTOM HAS BEEN STABILIZED. STANDARD GRANULAR PIPE BEDDING MATERIAL SHALL BE PLACED IN ACCORDANCE WITH ASTM D 2321 FOR PVC PIPE AND ASTM C 12 FOR DIP.
- ALL GRAVITY SEWER MAINS, SERVICE LATERALS AND FORCE MAINS SHALL HAVE A MINIMUM COVER OF THREE FEET (3') AS MEASURED FROM TOP OF PIPE TO FINISH GRADE. THE BPG, INC. ENGINEER MAY REQUIRE ADDITIONAL COVER AS NEEDED FOR PIPE PROTECTION. SEWERS, WHICH HAVE A DEPTH OF COVER LESS THAN THREE FEET (3'), SHALL BE APPROVED AND INSTALLED AS PER BPG, INC. ENGINEER'S WRITTEN INSTRUCTIONS.



- PIPE SHALL BE LAID TRUE TO LINE AND GRADE WITH BELLS UPSTREAM AND SHALL BE JOINTED TOGETHER SUCH THAT THE COMPLETED PIPE WILL HAVE A SMOOTH 'INVERT'. PIPE SHALL BE PUSHED HOME BY HAND. THE USE OF EQUIPMENT (I.E. BACKHOE) SHALL NOT BE PERMITTED. CUTTING OF PIPE SHALL BE PERFORMED BY SAWING. STANDARD BEDDING SHALL BE SHAPED TO THE CURVATURE OF BOTH THE BELL AND BARREL OF THE PIPE. THE TRENCH SHALL BE KEPT FREE OF WATER WHILE THE WORK IS IN PROGRESS. THE ENDS OF THE PIPE SHALL BE CLEARED SO THAT PROPER JOINTS CAN BE MADE. AS THE WORK PROGRESSES, THE INTERIOR OF THE PIPE SHALL BE CLEARED OF DIRT, CEMENT, OR OTHER DELETERIOUS MATERIAL.
- EXCEPT AS REQUIRED FOR USE OF A LASER LEVEL, EXPOSED END OF ALL PIPE AND FITTINGS SHALL BE FULLY CLOSED TO PREVENT EARTH, WATER OR OTHER SUBSTANCES FROM ENTERING PIPE. TRENCH SHALL BE COMPLETELY BACKFILLED AT END OF EACH WORKDAY. WHEN NEW PIPE IS TIED INTO AN EXISTING MANHOLE, NEW PIPE SHALL BE PLUGGED WITH A STANDARD SEWER PLUG AND SHALL REMAIN PLUGGED UNTIL ALL NEW LINE(S) THAT WILL FLOW TO EXISTING MANHOLE HAVE BEEN COMPLETED, TESTED, AND ACCEPTED.
- BACKFILL SHALL BEGIN AT THE TOP OF THE STANDARD GRANULAR BEDDING AND SHALL BE PLACED IN SIX INCH (6") LAYERS FOR THE INITIAL ONE FOOT OVER THE PIPE AND SHALL BE THOROUGHLY TAMPED TO NINETY-FIVE PERCENT (95%) OF THE MAXIMUM THEORETICAL COMPACTION DENSITY AS DETERMINED BY A STANDARD PROCTOR ON THE MATERIAL. REMAINDER OF THE BACKFILL SHALL BE IN TWO FOOT (2') FLOORS PROPERLY TAMPED.
- COMPLETION: BEFORE CONNECTING TO AN ACTIVE SYSTEM, THE LEAKAGE TESTS SHALL PROMPTLY FOLLOW INSTALLATION OF WASTEWATER PIPE INCLUDING SERVICES AND KEPT WITHIN A MAXIMUM OF 1000 FEET BEHIND THE WASTEWATER PIPE LAYING OPERATION.
- CONTRACTOR SHALL FURNISH WATCHES, STAND PIPES, PIPE PLUGS, WATER, PRESSURE GAUGES, STOP WATCHES, AIR COMPRESSOR, VACUUM PUMP, HOSE AND SUCH MATERIALS AND ASSISTANCE AS REQUIRED TO PERFORM THESE TESTS. ALL ACCEPTANCE TESTS SHALL BE CONDUCTED BY CONTRACTOR IN THE PRESENCE OF A BPG, INC. APPOINTED INSPECTOR.
- ACCEPTANCE TESTS SHALL NOT BE MADE UNTIL SANITARY SEWER, MANHOLES AND PROPOSED SEWER SERVICE CONNECTIONS, AS SHOWN ON THE APPROVED SEWER PLANS, HAVE BEEN INSTALLED, THE SEWER TRENCHES (INCLUDING MANHOLES AND CLEANOUT STACKS) BACKFILLED AND COMPACTED TO FINISHED SUB-GRADE.
- CONTRACTOR SHALL BE RESPONSIBLE AT ALL TIMES FOR MAINTAINING SEWER FLOWS DURING PROJECT TO INCLUDE ANY REQUIRED BY-PASS PUMPING OF WASTEWATER BETWEEN MANHOLES DURING INSTALLATION OF SEWER LINES AND/OR MANHOLES. BY-PASS PUMPING SYSTEM SHALL PROVIDE CONTINUOUS FULL CONVEYANCE AND CONTAINMENT OF WASTEWATER PRESENT DURING THE WORK AND SHALL NOT SURCHARGE THE UPSTREAM PUMP STATION BY MORE THAN TWO (2) FEET ABOVE THE NORMAL EFFLUENT LEVELS.
- ONCE ACCEPTANCE AND START OF THE COLLECTION SYSTEM HAS BEEN RECEIVED, THE CONTRACTOR SHALL PROCEED WITH THE ABANDONMENT PROCEDURES OF THE EXISTING WASTEWATER COLLECTION SYSTEM AS DESCRIBED HEREON.
- THE NOTES CONTAINED HEREIN ARE INTENDED TO SUPPLEMENT THE TECHNICAL SPECIFICATIONS AND PROVIDE EASY REFERENCE FOR THE CONTRACTOR. IN NO CASE SHALL THESE NOTES VOID ANY PART, SECTION OR REQUIREMENT OUTLINED IN THE TECHNICAL SPECIFICATIONS CONTAINED IN THE CONTRACT DOCUMENTS.

**TRENCH DEWATERING DURING SEWER LINE INSTALLATION**

- ALL GROUND WATER WHICH MAY BE FOUND IN THE TRENCHES AND ANY WATER WHICH MAY GET INTO THEM FROM ANY CAUSE WHATSOEVER SHALL BE PUMPED OR BAILED OUT SO THAT THE TRENCH SHALL BE DRY DURING THE PIPE LAYING PERIOD. NO WATER SHALL BE PERMITTED TO REACH CONCRETE UNTIL IT HAS SET SUFFICIENTLY. ALL WATER PUMPED FROM THE TRENCHES SHALL BE DISPOSED OF IN A MANNER SATISFACTORY TO THE OWNER. CONTRACTOR SHALL PROVIDE AT LEAST TWO (2) PUMPS FOR EACH TRENCH OPENED IN WET GROUND AND AT THE SAME TIME, HE SHALL HAVE ONE (1) PUMP IN RESERVE.
- IF, DURING ANY TIME THAT CONTRACTOR IS PERMITTED TO LAY PIPE IN A TRENCH CONTAINING UNAVOIDABLE TRENCH WATER AND CONSTRUCTION IS INTERRUPTED FOR ANY REASON, THE OPEN ENDS OF PIPE SHALL BE CLOSED BY WATER TIGHT PLUGS OR CAPS. MINOR FIELD CHANGES MAY BE MADE BY THE OWNER. IN ANY CASE, SUCH PROTECTION SHALL BE PROVIDED WHEN WORK IS SUSPENDED OVERNIGHT OR ON WEEKENDS AND HOLIDAYS, REGARDLESS OF THE CONDITION OF THE TRENCH WITH RESPECT TO WATER AT THE TIME THAT THE WORK IS SUSPENDED.

- CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL STRUCTURES, INCLUDING PIPES AND MANHOLES, AGAINST ANY TENDENCY TO FLOAT UNDER CONDITIONS OF HIGH WATER, WHETHER DUE TO HIGH GROUND WATER OR WATER WHICH MAY BE PERMITTED TO REACH CONCRETE UNTIL IT HAS SET SUFFICIENTLY. SUCH PROTECTION SHALL BE PROVIDED WHEN WORK IS SUSPENDED OVERNIGHT OR ON WEEKENDS AND HOLIDAYS, REGARDLESS OF THE CONDITION OF THE TRENCH WITH RESPECT TO WATER AT THE TIME THAT THE WORK IS SUSPENDED.
- COST OF THE NECESSARY PUMPS, WELL POINTS OR OTHER APPURTENANCES REQUIRED TO PREVENT FLOTATION SHALL BE INCLUDED IN THE UNIT PRICES BIDDING FOR THE PROPOSAL FOR THE VARIOUS BID ITEMS, AND NO EXTRA COMPENSATION SHALL BE ALLOWED FOR SUCH WORK. ANY DAMAGE WHICH MAY OCCUR TO ANY PART OF THE WORK AS THE RESULT OF THE FLOTATION EFFECT OF GROUND OR FLOOD WATERS SHALL BE REPAIRED IN A MANNER FULLY SATISFACTORY TO THE OWNER, AT NO ADDITIONAL COST TO THE OWNER.
- CONTRACTOR SHALL PROVIDE AND PLACE ALL NECESSARY FLUMES OR OTHER CHANNELS OF ADEQUATE SIZE TO CARRY TEMPORARILY ALL STREAMS, BROOKS, STORMWATER OR OTHER WATER WHICH MAY FLOW ALONG OR ACROSS THE LINES OF THE PIPE LINE. ALL FLUMES OR CHANNELS THUS UTILIZED SHALL BE TIGHT SO AS TO PREVENT LEAKAGE INTO THE TRENCHES. WATER PUMPED FROM TRENCHES SHALL BE LED TO NATURAL WATERCOURSES. EXISTING SEWERS SHALL NOT BE EMPLOYED AS A DRAIN FOR THE REMOVAL OF DEWATERING WATERS.

**SEWER SERVICE LATERAL NOTES**

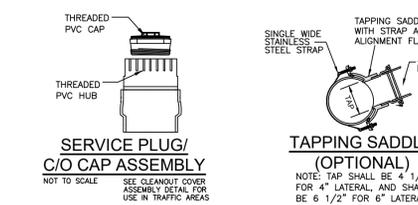
- CONTRACTOR SHALL MAKE UP STACK AND SUBMIT TO ENGINEER FOR APPROVAL AND SHALL SUBMIT TAPPING SADDLE IF USED TO ENGINEER FOR APPROVAL.
- HOLE IN SANITARY SEWER MAIN MUST BE CUT WITH SHELL CUTTER. NO HAMMER TAPS ALLOWED.
- LATERAL SHALL CONFORM TO ASTM SPECS. D-3034 SDR-35 UNLESS OTHERWISE INDICATED AS DUCTILE IRON.
- ALL PIPE AND FITTINGS SHALL BE 4" OR 6" UNLESS OTHERWISE SPECIFIED.
- ALL D.I. PIPE SHALL HAVE AN INTERIOR LINING OF CERAMIC EPOXY OR FUSED CALCIUM ALUMINATE CEMENT WITH FUSED CALCIUM ALUMINATE AGGREGATES. THE ENTIRE D.I. LATERAL SHALL BE COMPRISED OF D.I. PIPE AND MECHANICAL JOINT FITTINGS.
- ALL CONNECTIONS SHALL HAVE RUBBER GASKET SEALS INSTALLED.
- THE CONTRACTOR SHALL USE SDR 35 P.V.C. W/ FLOW CONNECTION TO SDR 35 P.V.C. PIPE OR DI TIE FOR CONNECTION TO DUCTILE IRON PIPE. PVC WYE SHALL BE ONE PIECE MOLDED OR FABRICATED.
- INSTALLATION OTHER THAN AS SHOWN MUST BE ENGINEER APPROVED.
- TAPPING PROCEED SHOWN SHALL BE USED FOR ALL SANITARY SEWER MAINS.
- SLOPE AND DEPTH OF THE SERVICE LATERAL SHALL BE DETERMINED BY THE FLUSHING SURVEY OF THE LOT AS APPROVED BY THE ENGINEER OR AS INDICATED ON THE DRAWINGS.
- SLOPE OF LATERALS SHALL CONFORM TO 1/4" PER FOOT MIN. FOR 4" PIPE AND 1/8" PER FOOT MIN. FOR 6" PIPE. MAXIMUM CLEAN OUT SPACING FOR 4" PIPE IS 75' 100' FOR 6" PIPE.
- ENTIRE SEWER LATERAL ASSEMBLY SHALL BE AIR TESTED CONCURRENTLY WITH SEWER MAIN.
- INDIVIDUAL LATERALS SHALL BE CLEANED AND FLUSHED PRIOR TO FLUSHING SANITARY SEWER MAINS.
- LATERAL SHALL NOT BE BACK-FILLED UNTIL INSPECTED BY THE PROJECT ENGINEER OR HIS REPRESENTATIVE.
- WYE CONNECTIONS SHALL NOT BE USED TO THE LATERALS INTO A MANHOLE, UNLESS OTHERWISE APPROVED BY ENGINEER.
- IF BENDS ARE APPROVED BY THE PROJECT ENGINEER, STONE BEDDING IS REQUIRED TO BE INSTALLED FROM UNDISTURBED SOIL TO BOTTOM OF BEND.
- PVC COMBINATIONS SHALL BE 2" PIECE TIE W/ GASKETED, SDR35, AS MANUFACTURED BY HARCO, GPK OR APPROVED EQUAL.

**UTILITY GENERAL NOTES**

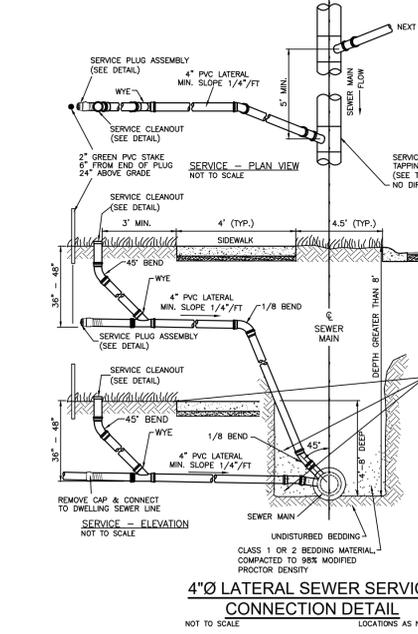
- PRIOR TO COMMENCEMENT OF ANY WORK WITHIN EASEMENTS OR RIGHTS-OF-WAYS THE CONTRACTOR IS REQUIRED TO NOTIFY CONCERNED UTILITY COMPANIES IN ACCORDANCE WITH GS 87-102. CONTRACTOR SHALL VERIFY LOCATION OF EXISTING UTILITIES PRIOR TO BEGINNING CONSTRUCTION. NO SEPARATE PAYMENT. EXISTING UTILITIES SHOWN ARE TAKEN FROM MAPS FURNISHED BY VARIOUS UTILITY COMPANIES AND HAVE NOT BEEN PHYSICALLY LOCATED (I.E. TELEPHONE, GAS, CABLE, ETC.).
- THE CONTRACTOR SHALL DIG UP EACH UTILITY WHICH MAY CONFLICT WITH CONSTRUCTION 14 DAYS IN ADVANCE TO VERIFY LOCATIONS (HORIZONTALLY AND VERTICALLY) TO ALLOW THE ENGINEER AN OPPORTUNITY TO ADJUST THE DESIGN TO AVOID CONFLICTS (NO SEPARATE PAYMENT).
- ALL SANITARY SEWER & WATER CONSTRUCTION SHALL BE IN ACCORDANCE WITH STANDARDS AND SPECIFICATIONS OF THE NCDENR-DWQ & NCDENR-PWS. STORM DRAINAGE, STREET CONSTRUCTION AND PAVING SHALL BE IN ACCORDANCE WITH THE N.C.D.O.T.
- UTILITY SERVICES TO INDIVIDUAL PROPERTIES ARE NOT SHOWN IN THE PROFILES FOR SIMPLICITY OF THE DRAWINGS. SERVICES MAY INCLUDE WATER LATERALS, TELEPHONE, ELECTRIC, CABLE, GAS, ETC.
- CONTRACTOR SHALL COORDINATE WITH UTILITY OWNER AND BE RESPONSIBLE FOR TEMPORARY RELOCATION AND/OR SECURING EXISTING UTILITY POLES AND SIGNS AND/OR UTILITIES IN ACCORDANCE WITH UTILITY OWNER REQUIREMENTS DURING THE UTILITY MAIN INSTALLATION AND STREET CONSTRUCTION. (NO SEPARATE PAYMENT).
- CONTRACTOR SHALL PROVIDE TEMPORARY SUPPORTS FOR UTILITY CROSSINGS AND REPAIR DAMAGES DUE TO CONSTRUCTION TO THE SATISFACTION OF THE UTILITY INVOLVED AT NO ADDITIONAL EXPENSE TO THE OWNER. UNDERGROUND ELECTRICAL CROSSINGS SHALL BE CROSSED IN ACCORDANCE WITH THE NEC AND TECHNICAL SPECIFICATION SECTION UNDERGROUND ELECTRICAL CROSSING
- WHERE DEEMED NECESSARY BY THE ENGINEER THAT A SUBSURFACE DRAINAGE SYSTEM IS REQUIRED, THE CONTRACTOR SHALL PROVIDE ALL MATERIALS, TOOLS, LABOR, EQUIPMENT, TIE-INS TO EXISTING DRAINAGE STRUCTURES AND ALL OTHER INCIDENTALS NECESSARY TO PROVIDE COMPLETE INSTALLATION IN ACCORDANCE WITH CITY OF FAYETTEVILLE STANDARDS. IMPROPERLY INSTALLED AND NON-FUNCTIONING DRAINAGE SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE. EXISTING FRENCH DRAINAGE DAMAGED DURING CONSTRUCTION SHALL BE REPLACED AND OR REPAIRED AT NO ADDITIONAL EXPENSE TO THE OWNER.
- ANY DRIVEWAY CULVERTS DAMAGED DURING CONSTRUCTION SHALL BE EITHER REPAIRED OR REPLACED AT CONTRACTOR'S EXPENSE. FILTER FABRIC CLOTH SHALL BE PLACED OVER EITHER CULVERT ENDS DURING THE COURSE OF CONSTRUCTION. ALL EX. DRAINAGE INFRASTRUCTURE WILL BE RETURNED TO PRE-EXISTING CONDITIONS PRIOR TO FINAL PROJECT APPROVALS.

**GENERAL NOTES SANITARY SEWER UTILITY**

- CLEANOUT ELEVATIONS AND/OR LOCATIONS MAY BE ADJUSTED IN THE FIELD AS DIRECTED BY THE ENGINEER WHEN NECESSARY. CLEANOUT STACK TOP ELEVATION IS DETERMINED BY INTERPOLATING FIELD DATA AND MAY NOT BE EXACT. CLEANOUT ELEVATION TOP SHALL BE SET IN ACCORDANCE WITH THE TYPICAL DETAIL DESCRIBED HEREON. (NO SEPARATE PAYMENT).
- WHERE SANITARY SEWER MAINS ARE TO BE CONSTRUCTED WITHIN 20' OF EXISTING RESIDENCES SPECIAL CONSIDERATION SHALL BE GIVEN TO MINIMIZE UNDERMINING OR OTHERWISE DISTURBING EXISTING RESIDENCES ADJACENT TO THE SEWER MAIN. THE CONTRACTOR SHALL USE A RUBBER TIRE BACK HOE, AND NO MECHANICAL PROTECTION EQUIPMENT IN THESE AREAS. THE TRENCH SHALL BE SHORED ADEQUATELY TO PREVENT ANY SLOTTING OF THE SIDE SLOPES. SUITABLE BACK FILL SHALL BE PLACED IN THE TRENCH. CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR REPAIR OF STRUCTURES, FOUNDATIONS, FOOTINGS, ETC. DAMAGED DUE TO CONSTRUCTION.
- SANITARY SEWER MANHOLE ELEVATION ANGLES ARE 180 DEGREES UNLESS NOTED OTHERWISE. ALL INVERT ELEVATIONS ARE SHOWN TO THE MANHOLE CENTERLINE.



**4"Ø LATERAL SEWER SERVICE CONNECTION DETAIL**  
NOT TO SCALE  
LOCATIONS AS NOTED

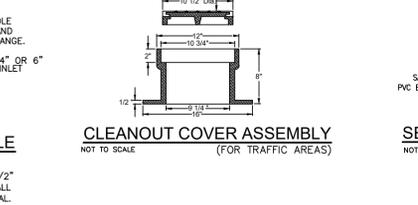


**UTILITY GENERAL NOTES**

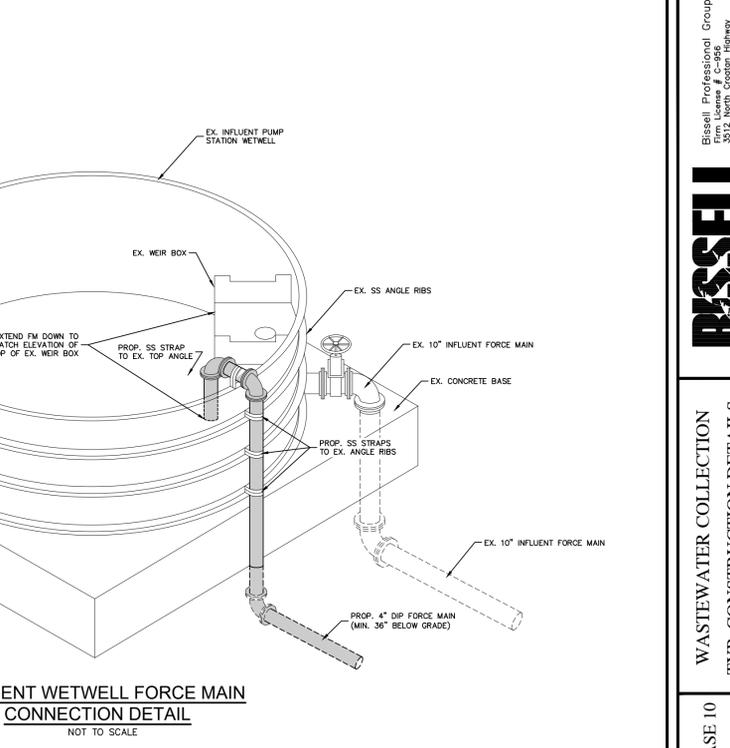
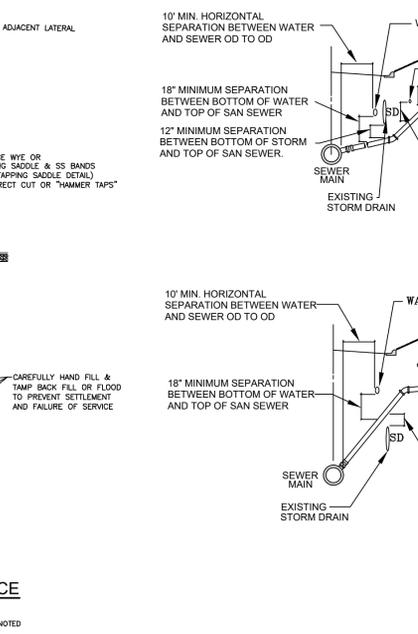
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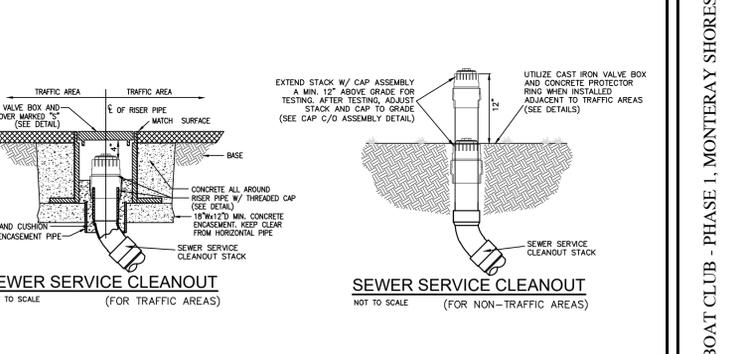
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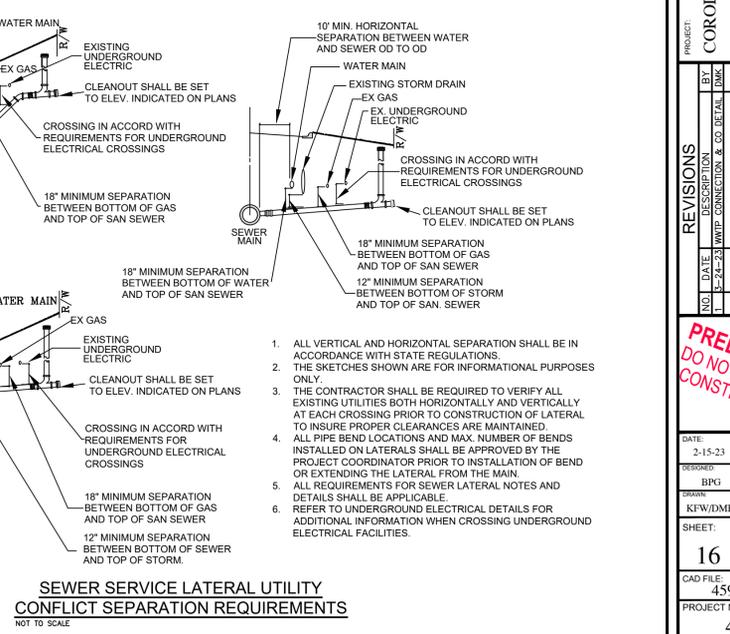
**SEWER SERVICE CLEANOUT**  
NOT TO SCALE  
(FOR TRAFFIC AREAS)



**INFLUENT WETWELL FORCE MAIN CONNECTION DETAIL**  
NOT TO SCALE



**SEWER SERVICE CLEANOUT**  
NOT TO SCALE  
(FOR NON-TRAFFIC AREAS)



**SEWER SERVICE LATERAL UTILITY CONFLICT SEPARATION REQUIREMENTS**  
NOT TO SCALE

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**BISSELL**  
Professional Group  
Engineers, Planners, Surveyors  
and Environmental Specialists

**WASTEWATER COLLECTION**  
**TYP. CONSTRUCTION DETAILS**

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**CONSTRUCTION DRAWINGS**

PROJECT: COROLLA BOAT CLUB - PHASE 1, MONTERAY SHORES PHASE 10  
NORTH CAROLINA  
CURRITUCK COUNTY  
POPULAR BRANCH TOWNSHIP

NO.	DATE	DESCRIPTION	BY	CHK
1	2-15-23	W/TP CONNECTION & CO. DETAIL	BPG	MSB

REVISIONS

**PRELIMINARY DO NOT USE FOR CONSTRUCTION**

DATE: 2-15-23 SCALE: NO SCALE  
DESIGNED: BPG CHECKED: MSB  
DRAWN: KTF/DMK APPROVED: BPG  
SHEET: 16 OF 16

CAO FILE: 459600B3  
PROJECT NO: 4596