SITE DEVELOPMENT PLANS

FOR

PROPOSED INDUSTRIAL SITE

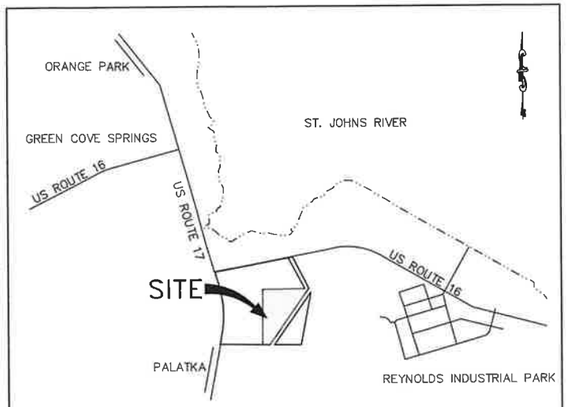
US 17 AT STATE ROAD 16
GREEN COVE SPRINGS, FLORIDA

PREPARED FOR:

CYPRESS MANAGEMENT & DESIGN L.L.C.

3418 Wall Road

Green Cove Springs FL 32043



VICINITY MAP

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COLIN D. GROFF, P.E.
REG. NO. 47609

NO.	REVISIONS	BY	DATE

BLACK CREEK ENGINEERING, INC.
3900 PASO FINO ROAD
GREEN COVE SPRINGS, FLORIDA 32043
PHONE (904) 759-8930
AUTHORIZATION NO. 27946

PROPOSED INDUSTRIAL SITE
SR 16 EAST, GREEN COVE SPRINGS, FL
CYPRESS MANAGEMENT & DESIGN, LLC

COVER SHEET

JOB NO. : 24-001
DATE: 01/25/2025
DRAWN BY : CdG
CHECKED BY : CdG
APPROVED BY : CdG
SCALE : 1"=100'

SHEET
1

NOT ISSUED FOR CONSTRUCTION

GENERAL NOTES

1. ALL WORK AND MATERIALS SHALL BE IN COMPLETE ACCORDANCE WITH ALL RELATIVE SECTIONS OF CITY STANDARDS, (LATEST REVISION) AND ALL CURRENT CITY STANDARD DETAILS.
2. ALL WORK SHALL BE PERFORMED IN A SAFE MANNER. ALL SAFETY RULES AND GUIDELINES OF O.S.H.A SHALL BE FOLLOWED. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ANY INJURIES OF HIS EMPLOYEES, AND ANY DAMAGE TO PRIVATE PROPERTY OR PERSONS DURING THE COURSE OF THIS PROJECT. ALL COSTS ASSOCIATED WITH COMPLYING WITH O.S.H.A. REGULATIONS AND THE FLORIDA TRENCH SAFETY ACT MUST BE INCLUDED IN THE CONTRACTORS BID.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VISITING THE JOB SITE PRIOR TO PREPARING THE BID FOR THE PURPOSE OF FAMILIARIZING HIMSELF WITH THE NATURE AND THE EXTENT OF THE WORK AND LOCAL CONDITIONS, EITHER SURFACE OR SUB-SURFACE, WHICH MAY AFFECT THE WORK TO BE PERFORMED, AND THE EQUIPMENT, LABOR AND MATERIALS REQUIRED. FAILURE TO DO SO WILL NOT RELIEVE THE CONTRACTOR OF COMPLETE PERFORMANCE UNDER THIS CONTRACT. THE CONTRACTOR IS ALSO URGED TO TAKE COLOR PHOTOGRAPHS ALONG THE ROUTE OF THE PROJECT TO RECORD EXISTING CONDITIONS PRIOR TO CONSTRUCTION, AND TO CONSTRUCTION OF THE PROJECT.
4. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO EITHER CONDUCT ANY FIELD EXPLORATION OR ACQUIRE ANY GEOTECHNICAL ASSISTANCE REQUIRED TO ESTIMATE THE AMOUNT OF UNSUITABLE MATERIAL THAT WILL REQUIRE REMOVAL AND/OR TO ESTIMATE THE AMOUNT OF OFF SITE BORROW THAT WILL BE REQUIRED.
5. ALL IMPROVEMENTS SHOWN ARE TO BE WARRANTED BY THE CONTRACTOR TO THE DEVELOPER AND THE CITY FOR A PERIOD OF ONE YEAR FROM DATE OF ACCEPTANCE BY THE OWNER AND THE CITY.
6. ELEVATIONS ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM (N.G.V.D.) UNITED STATES COAST AND GEODETIC SURVEY (U.S.C. & G.S.)
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND INSURANCE REQUIRED FOR THE PROJECT.
8. THE CONTRACTOR SHALL COORDINATE THE WORK WITHIN CITY OR STATE RIGHT-OF-WAY WITH THE PROPER AGENCIES FOR MAINTENANCE OF TRAFFIC AND METHOD OF CONSTRUCTION AND REPAIR.
9. "AS-BUILT" DRAWINGS - AS-BUILTS TO THE CITY AND THE FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION ARE REQUIRED TO BE SIGNED AND SEALED BY A FLORIDA REGISTERED LAND SURVEYOR THERFORE, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONTRACT WITH A LAND SURVEYOR REGISTERED IN THE STATE OF FLORIDA FOR THE PREPARATION, FIELD LOCATIONS, CERTIFIACTION, AND SUBMITTAL OF "AS-BUILT" DRAWINGS IN ACCORDANCE WITH CURRENT CITY STANDARDS AND SPECIFICATIONS AND FDEP REGULATIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROCESS THE "AS-BUILT" DRAWINGS FOR APPROVAL BY THE ENGINEER.
10. THE CONTRACTOR SHALL COORDINATE THEIR CONSTRUCTION WITH ALL OTHER CONTRACTORS. IN THE EVENT OF ANY CONFLICT WHATSOEVER, THE CONTRATOR SHALL NOTIFY THE ENGINEER AND OWNER PRIOR TO PROCEEDING WITH CONSTRUCTION.
11. ALL CLEARING AND GRUBBING REQUIRED FOR ALL ROADWAY, UTILITIES, DITCHES, AND BERMS INCLUDED IN THIS PROJECT AND THE CLEARING AND GRUBBING OF ALL RIGHT-OF-WAY OR EASEMENTS SHALL BE CONSIDERED AS PART OF THE PROJECT.
12. ALL AREAS SHOWN TO BE FILLED SHALL BE CLEARED AND GRUBBED IN ACCORDANCE WITH CITY STANDARDS AND SHALL BE FILLED WITH CLEAN STRUCTURAL FILL COMPACTED AND TESTED IN ACCORDANCE WITH THE GEOTECHNICAL INVESTIGATION REPORT.
13. CONTACTOR IS RESPONSIBLE FOR PROTECTION OF ALL SURVEY AND PROPERTY MONUMENTS. IF A MONUMENT IS DISTURBED, THE CONTRACTOR SHALL CONTRACT THE SURVEYOR OF RECORD FOR REINSTALLATION OF THE MONUMENT.
15. ALL DEBRIS RESULTING FROM ALL SITE WORK ACTIVITIES SHALL BE DISPOSED OF OFF-SITE BY CONTRACTOR.
14. ALL EXCESS SUITABLE AND UNSUITABLE MATERIAL SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR UNLESS DIRECTED OTHERWISE BY THE ENGINEER OR OWNER.
15. ALL EXISTING TREES TO REMAIN SHALL BE PRESERVED AND PROTECTED.
16. BURNING OF TREES, BRUSH, AND OTHER MATERIAL SHALL BE APPROVED, PERMITTED BY AND COORDINATED WITH THE CITY OF GREEN COVE SPRINGS CITY MANAGER.
17. ROADWAY UNDERDRAINS SHALL BE AS REQUIRED ON THE PLANS OR AS MAY BE DETERMINED NECESSARY BE THE GEOTECHNICAL ENGINEER DURING CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IF HIGH GROUND WATER CONDITIONS ARE PRESENT DURING THE PREPARTION OF THE ROADWAY SUB-BASE.
18. ALL DIMENSIONS ARE TO EDGE OF PAVEMENT UNLESS NOTED OTHERWISE ON PLANS.
19. THIS PROPERTY IS SITUATED IN FLOOD ZONE: X

UTILITY CONTRACTOR NOTES

1. THE LOCATION OF ALL EXISTING UTILITIES, STRUCTURES AND IMPROVEMENTS SHOWN ON THE DRAWINGS IS BASED ON LIMITED INFORMATION AND MAY NOT HAVE BEEN VERIFIED. THE LOCATIONS ARE APPROXIMATE. THE CONTRACTOR SHALL NOTIFY RESPECTIVE UTILITY OWNERS COMMMENCING ANY CONSTRUCTION. IF THE LOCATIONS SHOWN ARE CONTRARY TO THE ACTUAL LOCATIONS, THE CONTRACTOR SHALL NOTIFY THE OWNER AND ENGINEER OF THE DISCREPANCY. THE DISCREPANCY SHOULD BE RESOLVED PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN WORKING IN AREAS NEAR EXISTING UTILITIES AND IMPROVEMENTS AND SHALL BE RESPONSIBLE FOR AND SHALL REPAIR OR PAY FOR ALL DAMAGE MADE TO EXISTING UTILITIES OR OTHER IMPROVEMENTS. PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION, THE CONTRACTOR SHALL VERIFY ALL GRADES, INVERTS AND TYPE OF MATERIAL OF EXISTING UTILITIES TO WHICH HE SHALL CONNECT.
2. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS ON ALL MATERIALS TO THE ENGINEER FOR REVIEW AND APPROVAL, AND PRIOR TO PURCHASE OR CONSTRUCTION OF ANY UTILITY PIPE, FITTINGS, APPURTENANCES OR STRUCTURES. 3. UNSUITABLE MATERIALS UNDER WATER, SEWER PIPE, STORM PIPE OR STRUCTURES SHALL BE REMOVED AND REPLACED WITH SELECTED BACKFILL, PROPERLY COMPACTED. 4. ALL UNDERGROUND UTILITIES MUST BE INSTALLED PRIOR TO PREPARATION OF SUBGRADE FOR PAVEMENT. 5. ALL WATER AND SEWER CONSTRUCTION WITHIN THE CITY SHALL BE ACCOMPLISHED BY AN UNDERGROUND UTILITY CONTRACTOR LICENSED UNDER THE PROVISIONS OF CHAPTER 489 FLORIDA STATUTES.
6. ALL WATER LINES CROSSING SANITARY AND STORM SEWER LINES, AS WILL VALVES AND FITTINGS, MUST HAVE MINIMUM 18" VERTICAL SEPARATION. IF THIS CANNOT BE OBTAINED, THE WATER MAIN MUST BE CONSTRUCTED OF DUCTILE IRON PIPE FOR A DISTANCE OF 10' EITHER SIDE OF SANITARY OR STORM SEWER MAIN, OR INSTALL WATER MAIN IN D.I. SLEEVE MIN. LENGTH 20' CENTERED, ENDS OF SLEEVE TO BE GROUT FILLED, IN EITHER CASE, MINUMUM OF 6" OF VERTICAL SEPARATION SHALL BE MAINTAINED. 7. RESTRAINING JOINTS ARE REQUIRED IN ACCORDANCE WITH UTILITY STANDARDS WHERE WATER MAINS ARE TERMINATED AND AT ALL BENDS AND TEES. 8. UNLESS NOTHERWISE NOTED, ALL WATER MAIN 2" OR SMALLER SHALL BE SCHEDULE 80 PVC AND N.F.S.P.W. RATED 9. THE CONTRACTOR SHALL OBTAIN ALL PERMITS TO COMPLETE THE CONSTRUCTION.

GENERAL PAVING AND DRAINAGE NOTES

1. ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE SEEDED AND MULCHED AS PER SPECIFICATIONS. ALL DISTURBED AREAS IN PUBLIC ROW SHALL BE SODDED.
2. ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.
3. LOCATION, EXISTENCE OR NON-EXISTENCE OF ANY UTILITY DOES NOT CONSTITUTE RESPONSIBILITY BY THE ENGINEER.
4. THE CONTRACTOR SHALL NOTIFY THE UTILITY OWNER PRIOR TO CONSTRUCTION FOR VERIFICATION AND LOCATION OF ANY UTILITY.
5. GRADES SHOWN ON PLANS ARE FINISHED GRADES UNLESS OTHERWISE NOTED.
6. SHOULD THE SURFACE OR SUB-SURFACE CONDITIONS VARY FROM WHAT IS SHOWN ON THESE PLANS THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY.
7. ALL ELEVATIONS AND GRADES REFER TO NATIONAL GEODETIC SURVEY DATUM.
8. CARE SHALL BE EXERCISED TO AVOID DAMAGE TO EXISTING ABOVE AND IN-GROUND UTILITIES INCLUDING TELEPHONE, WATER, CABLE, ELECTRIC AND SEWER LINES.
9. CONTRACTOR SHALL PROVIDE DRAINAGE AS-BUILT DRAWINGS BY A REGISTERED SURVEYOR TO INCLUDE THE FOLLOWING:
   A) SIDE GRADES B) PIPE INVERTS C) DRIVEWAY GRADES
10. SOD ALL SIDE SLOPES GREATER THAN 4:1.
11. INSTALL CONSTRUCTION SIGNS & EROSION CONTROL MEASURES PRIOR TO CONSTRUCTION.

GENERAL EROSION CONTROL NOTES:

1. THESE PLANS INDICATE THE MINUMUM EROSION & SEDIMENT CONTROL MEASURES REQUIRED FOR THIS PROJECT. FOR ADDITIONAL INFORMATION ON SEDIMENT AND EROSION CONTROL REFER TO "THE FLORIDA DEVELOMENT MANUAL A GUIDE TO SOUND LAND AND WATER MANAGEMENT" FROM THE STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (F.D.E.P.) CHAPTER 6. THE CONTRACTOR SHALL PROVIDE EROSION PROTECTION AND TURBIDITY CONTROL AS REQUIRED TO INSURE CONFORMANCE TO STATE AND FEDERAL WATER QUALITY STANDARDS AND MAY NEED TO INSTALL ADDITIONAL CONTROLS TO CONFORM TO AGENCIES REQUIREMENTS. IF A WATER QUALITY VIOLATION OCCURS, THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL DAMAGE AND ALL COSTS WHICH MAY RESULT INCLUDING LEGAL FEES, CONSULTANT FEES, CONSTRUCTION COSTS AND FINES.
2. THE CONTRACTOR IS RESPONSIBLE FOR FOLLOWING THE BEST EROSION AND SEDIMENT CONTROL PRACTICES AS OUTLINED IN THE PLANS AND SPECIFICATIONS AND THE FDEP SPECIFICATIONS.
3. EROSION AND SEDIMENT CONTROL BARRIERS SHALL BE PLACED ADJACENT TO ALL WETLAND AREAS WHERE THERE IS POTENTIAL FOR DOWNSTREAM WATER QUALITY DEGRADATION.
4. IF DEWATERING CAPACITY REQUIRES A CONSUMPTIVE USE PERMIT (C.U.P.) IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO OBTAIN THE PERMIT THROUGH THE ST. JOHNS RIVER WATER MANAGEMENT DISTRICT.
5. 48 HOURS PRIOR TO COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR WILL SUBMIT A "NOTICE OF INTENT" TO THE EPA IN ACCORDANCE WITH NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM RULES AND REGULATIONS, IF REQUIRED. EPA IN ACCORDANCE WITH NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM RULES AND REGULATIONS, IF REQUIRED.
6. DURING CONSTRUCTION, ALL CONTRACTORS SHALL BE RESPONSIBLE FOR THE PREVENTION OF DOWNSTREAM/TURBIDITY/SILTATION THROUGH THE USE OF HAY BALES, SCREENS, SILTATION BASINS, CHEMICAL FLOCCULATION AND/OR ANY OTHER SUITABLE MEANS REQUIRED TO MEET FLORIDA STREAM STANDARDS. SEED AND MULCH ALL DISTURBED AREAS, SOD AS REQUIRED TO CONTROL EROSION THROUGH FINAL INSPECTION AND TO PRODUCE A UNIFORM STAND OF GRASS THROUGHOUT.

GENERAL AS-BUILT REQUIREMENTS

1. FIVE DAYS BEFORE THE FINAL INSPECTION, 2 SETS OF SIGNED AND SEALED AS-BUILTS AND 1 ELECTRONIC COPY ARE TO BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL. THEY FOLLOWING ARE THE GENERAL AS BUILT REQUIREMENTS:
2. AS-BUILTS SHALL BE SUBMITTED ON THE APPROVED GRADING/DRAINAGE PLAN PROVIDED BY THE ENGINEER OF RECORD FOR THE PROJECT.
3. ALL DRAINAGE STRUCTURES OUTSIDE OF THE ROADWAY SHALL BE LOCATED FROM BACK OF CURB AND THE PROPERTY LINE ADJACENT TO THE STRUCTURE.
4. ALL UNDERDRAIN AND STORM DRAIN LINES SHALL HAVE THE ELEVATIONS, SIZES, SLOPES, AND LENGTHS VERIFIED BOTH INSIDE AND OUTSIDE OF THE ROADWAY.
5. ALL PONDS SHALL BE CROSS-SECTIONED SHOWING THE BOTTOM, MID SLOPE, NORMAL WATER LINE AS DEPICTED BY EXISTING CONDITIONS AND TOP OF BANK.
6. ALL SWALES SHALL BE LOCATED AND CROSS-SECTIONED EVERY 25'. ELEVATIONS ARE TO BE BOTH TOP OF SLOPE AND CENTERLINE.
7. THE ROADWAY SHALL BE CROSS-SECTIONED EVERY 100' AND 50' ON ALL CURVES. THE CROSS SECTIONS SHALL INCLUDE ALL PC'S, PVI'S, PT'S AND CURB RETURNS.
8. ALL CUL-DE-SAC CURBING SHALL BE SURVEYED EVERY 25' AROUND STARTING AT THE BACK OF THE CUL-DE-SAC.
9. A BENCHMARK SHALL BE LOCATED ON EACH SHEET
10. AS-BUILTS SHALL BE SIGNED IN BY THE COMPANY DROPPING THEM OFF. IF REVISIONS ARE REQUIRED, THAT COMPANY WILL BE NOTIFIED TO PICK THEM UP FOR REVISION. ONCE REVISIONS HAVE BEEN MADE, THE DOCUMENTS SHALL BE SIGNED BACK IN.
11. SUBMIT ONE DIGITAL AS-BUILT AS A DGN OR DXF FILE (STANDARD DIGITAL EXCHANGE FORMAT AUTOCAD ETC.) IN CD ORDVD.
12. AS-BUILT MUST BE IN FLORIDA STATE PLANE COORDINATE SYSTEM USING THE NAD 83 DATUM AT A 1: 1 DRAWING SCALE IN US SURVEY FEET

    PROJECTED COORDINATE SYSTEM: NAD_1983_STATEPLANE_FLORIDA_EAST_FIPS_0901_FEET
    PROJECTION: TRANSVERSE_MERCATOR FALSE_BASTING: 656166.66666667 FALSE_NORTHING: 0.00000000
    CENTRAL_MERIDIAN: -81.00000000 SCALE_FACTOR: 0.99994118
    LATITUDE_OF_ORIGIN: 24.33333333 LINEAR UNIT: FOOT_US (0.304801) GEOGRAPHIC COORDINATE SYSTEM: GCS
    NORTH_AMERICAN_1983
    DATUM: D_NORTH_AMERICAN_1983 PRIME MERIDIAN: 0
    STATE PLANE COORDINATES FOR AT LEAST TWO BOUNDARY COWERS OF PROPOSED AS-BUILT DRAWING MUST BE SHOWN. THESE COORDINATES SHALL BE DERIVED FROM FIELD MEASUREMENTS IN CONFORMITY WITH F.S CHAPTER 472 AND F.A.C. RULE 61G17-6.005(2) WHICH REFERENCES 61G17-6.003(3). FURTHER SUB-SECTIONS IN 61G17-6.003 WHICH APPLY ARE (1)(A),(B) AND (3). SURVEY ACCURATE COORDINATE DATA IS REQUIRED PREMISED UPON THE INTENDED USE (E. RESOURCE GRADE DATA IS NOT ACCEPTABLE) THE INTENDED USE OF THESE COORDINATES IS FOR GIS BASE MAPPING PURPOSES.
13. ADJOINING/EXISTING STREETS MUST BE CLEARLY SHOWN AND LABELED.
14. NO EXTERNAL REFERENCE FILES ATTACHED
15. RECORDED SUBDIVISION NAME AS PER PLAT SHALL BE LABELED ON THE AS-BUILT.
16. ALL STORM SEWERS, PONDS AND OUTFALL AND STRUCTURES ARE TO BE CLEARLY LABELED.
17. THE ENGINEER WILL BE RESPONSIBLE FOR ANY ROTATION AND/OR TRANSLATION, BASE ON THE COORDINATE DATA SUBMITTED.

GENERAL FIRE DEPARTMENT REQUIREMENTS

Call Fire Prevention@ (904) 284-7703 at least Forty Eight hours in advance for all inspections

Fire protection line shall be install with a license Fire Protection Contractor.

Fire department connection for fire sprinkler system shall not be located on the building and shall be 5" Storz Connection.

The Back Flow Preventor Shall Be Protected from Freezing Weather.

Fire Protection Line shall be installed as per NFPA 24.

All joints accessories to Fire Protection Line shall be thoroughly coated with an Asphalt or other Corrosion retarding material after installation NFPA 24- 10.3.6.2

Notify Fire Prevention for inspection after completion of assembly of Fire Protection Line in trench

Fire Protection Line installing Contractor shall have Contractors Material and Test Certificate(s) readily available after completion of Fire Protection Line Hydrostatic Test NFPA 24-10.10.2

Fire Prevention shall witness flushing of Fire Protection Line

Clearances of 7½ ft. in front of and to the sides of the fire hydrant and fire protection appliance, and with 4ft. to the rear of the hydrant and fire protection appliance.

Contact Fire Prevention Bureau for permit card.

COLIN D. GROFF, P.E.
REG. NO. 47609

NO.	REVISIONS	BY	DATE

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3900 PASO FINO ROAD
GREEN COVE SPRINGS, FLORIDA 32043
PHONE (904) 759-8930
AUTHORIZATION NO. 27946

PROPOSED INDUSTRIAL SITE
SR 16 EAST, GREEN COVE SPRINGS, FL
CYPRESS MANAGEMENT & DESIGN, LLC

GENERAL NOTES

JOB NO. : 24-001
DATE: 01/25/2025
DRAWN BY : CdG
CHECKED BY : CdG
APPROVED BY : CdG
SCALE : 1"=100'

SHEET
2

NOT ISSUED FOR CONSTRUCTION

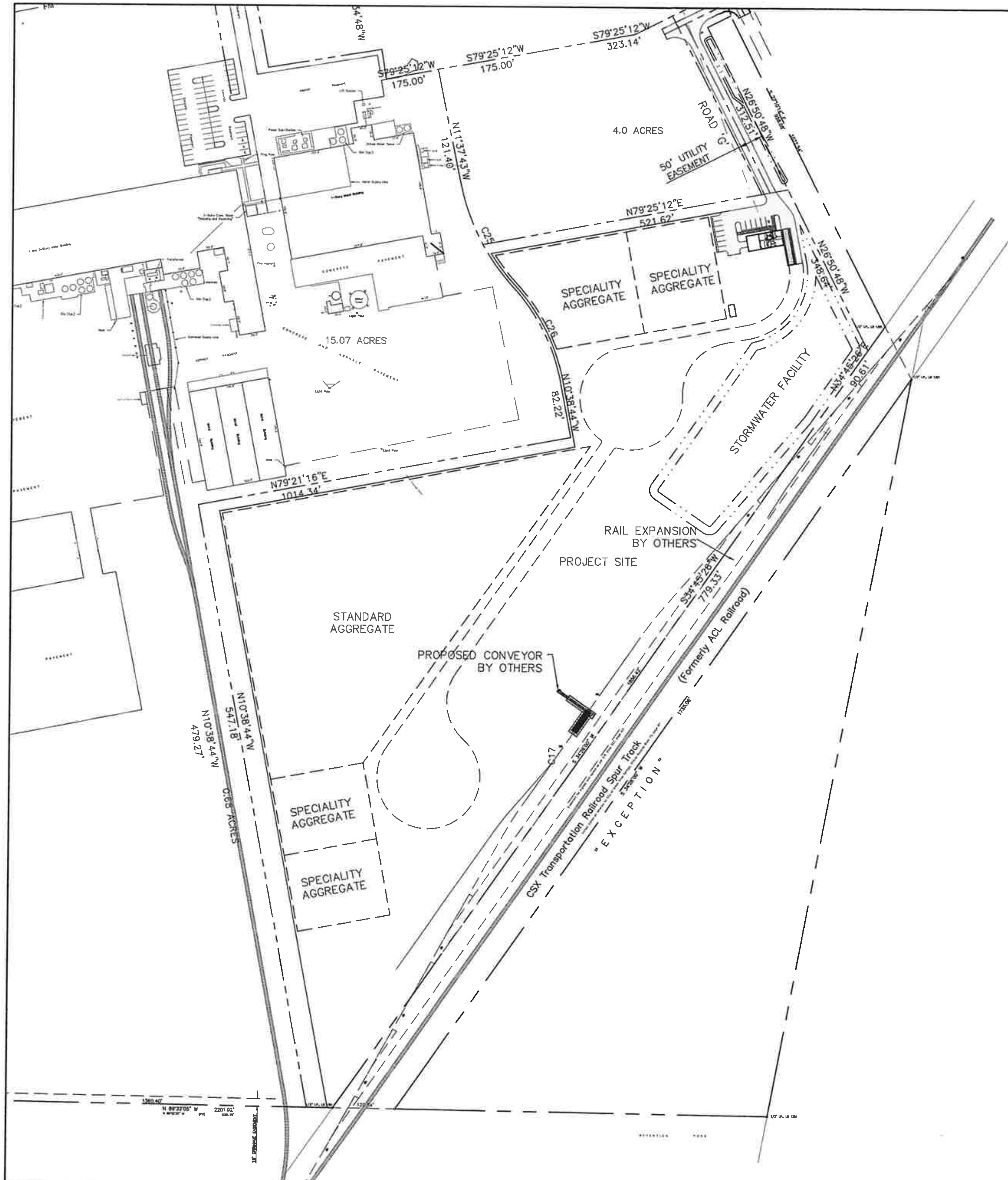
NORTH

SHEET 3	JOB NO. : 24-001	PROPOSED INDUSTRIAL SITE	BLACK CREEK ENGINEERING, INC.	NO.	REVISIONS	BY	DATE	COLIN D. GROFF, P.E. REG. NO. 47609
	DATE: 01/25/2025	SR 16 EAST, GREEN COVE SPRINGS, FL						
	DRAWN BY : CdG	CYPRESS MANAGEMENT & DESIGN, LLC	3900 PASO FIND ROAD GREEN COVE SPRINGS, FLORIDA 32043 PHONE (904) 759-8930					
	CHECKED BY : CdG							
	APPROVED BY : CdG	SITE PLAN	AUTHORIZATION NO. 27946					
	SCALE : 1"=100'							

NOT ISSUED FOR CONSTRUCTION

SHEET 4	JOB NO. : 24-001 DATE: 01/25/2025 DRAWN BY : CdG CHECKED BY : CdG APPROVED BY : CdG SCALE : 1"=100'	PROPOSED INDUSTRIAL SITE SR 16 EAST, GREEN COVE SPRINGS, FL CYPRESS MANAGEMENT & DESIGN, LLC STORMWATER POLLUTION PREVENTION PLAN	BLACK CREEK ENGINEERING, INC. 3900 PASO FINO ROAD GREEN COVE SPRINGS, FLORIDA 32043 PHONE (904) 759-8930 AUTHORIZATION NO. 27946	NO. / REVISIONS / BY / DATE		COLIN D. GROFF, P.E. REG. NO. 47609

NOT ISSUED FOR CONSTRUCTION



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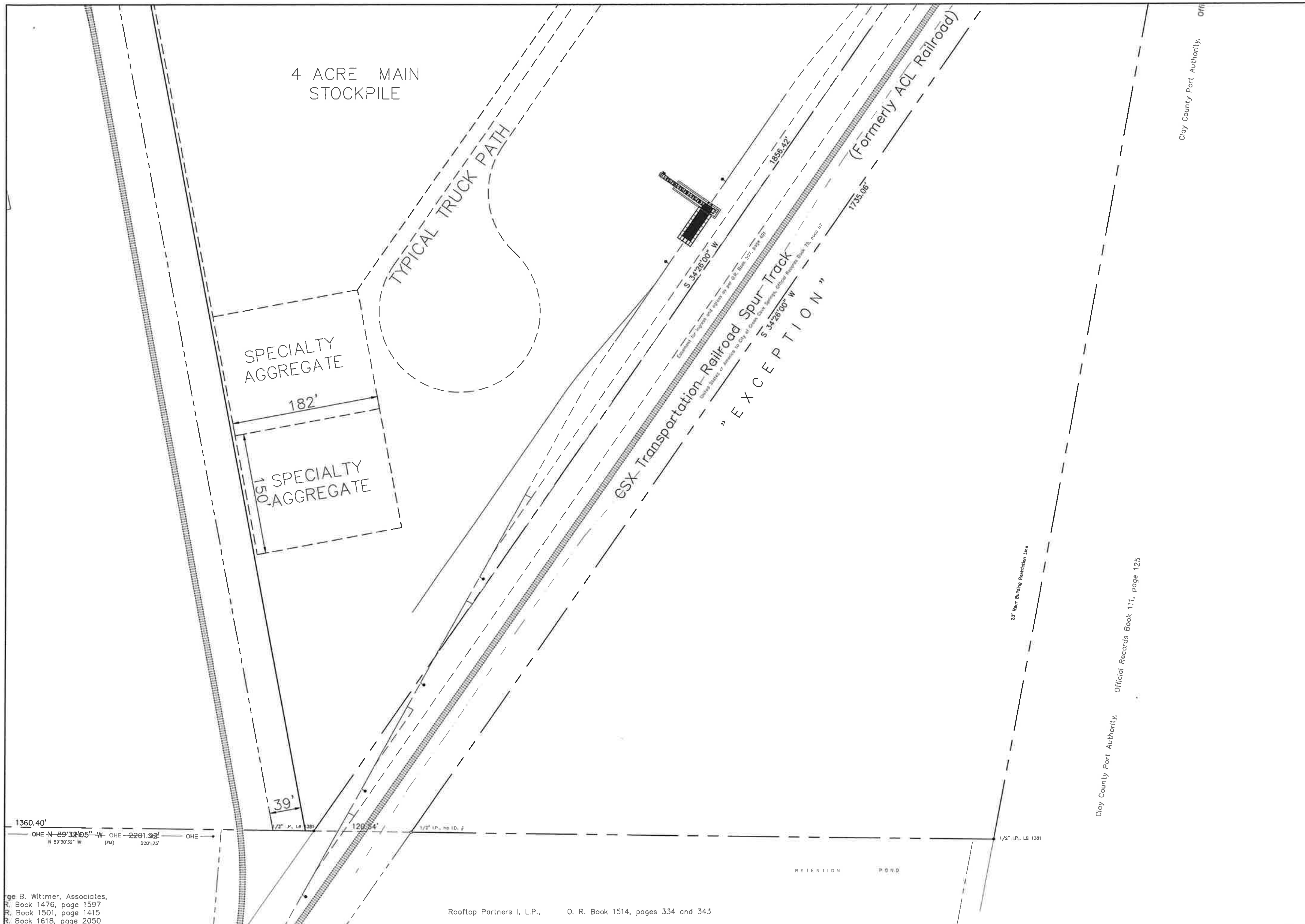
PROPOSED INDUSTRIAL SITE
SR 16 EAST, GREEN COVE SPRINGS, FL
CYPRESS MANAGEMENT & DESIGN, LLC

OVERALL SITE PLAN

JOB NO. : 24-001
DATE: [illegible]/25/2025
DRAWN BY : CdG
CHECKED BY : CdG
APPROVED BY : CdG
SCALE : 1"=100'

SHEET
5

NOT ISSUED FOR CONSTRUCTION



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PROPOSED INDUSTRIAL SITE

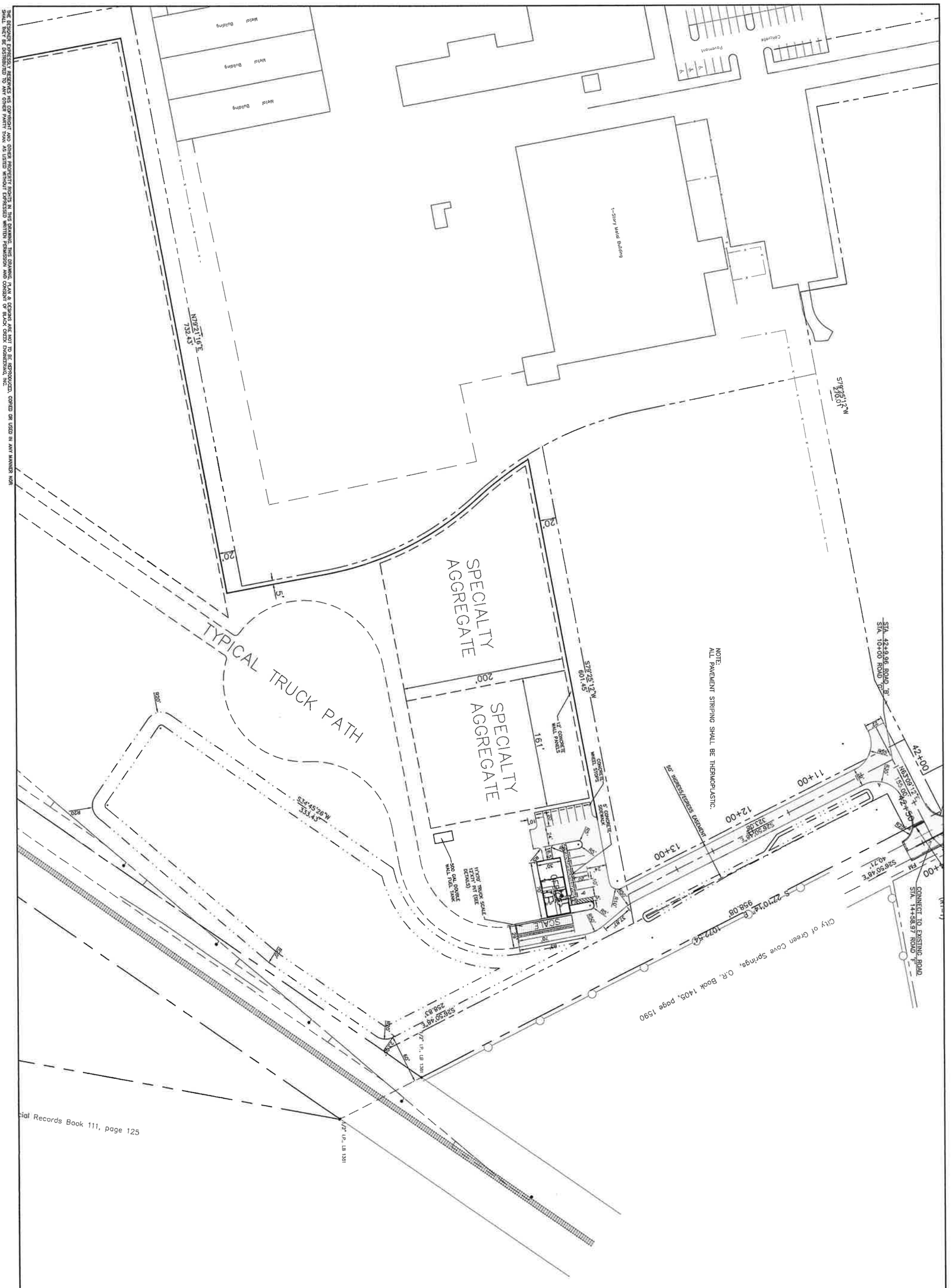
SR 16 EAST, GREEN COVE SPRINGS, FL
CYPRESS MANAGEMENT & DESIGN, LLC

GEOMETRIC PLAN

JOB NO. : 24-001
DATE: 01/25/2025
DRAWN BY : CdG
CHECKED BY : CdG
APPROVED BY : CdG
SCALE : 1"=60'

SHEET
6

NOT ISSUED FOR CONSTRUCTION



SHEET 2	JOB NO. : 24-001	PROPOSED INDUSTRIAL SITE	BLACK CREEK ENGINEERING, INC.	NO.	REVISIONS / BY / DATE
	DATE: 01/25/2025	SR 16 EAST, GREEN COVE SPRINGS, FL	3900 PASO FINO ROAD GREEN COVE SPRINGS, FLORIDA 32043 PHONE (904) 759-8930		
	DRAWN BY : CdG	CYPRESS MANAGEMENT & DESIGN, LLC	AUTHORIZATION NO. 27946		
	CHECKED BY : CdG	GEOMETRIC PLAN			
	APPROVED BY : CdG				
	SCALE : 1"=60'				

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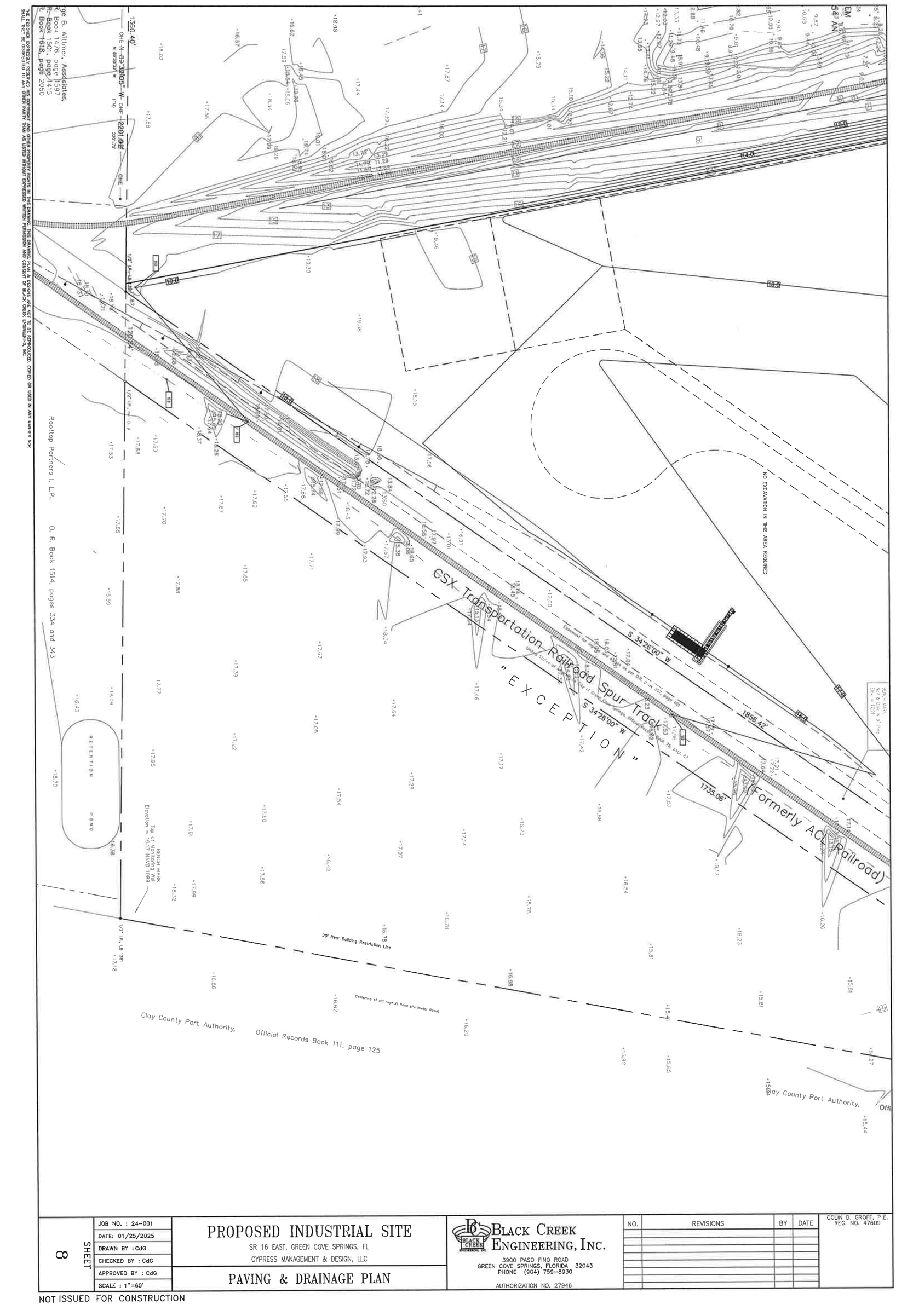

SHEET 8	JOB NO. : 24-001 DATE: 01/25/2025 DRAWN BY : CdG CHECKED BY : CdG APPROVED BY : CdG SCALE : 1"=60'	PROPOSED INDUSTRIAL SITE SR 16 EAST, GREEN COVE SPRINGS, FL CYPRESS MANAGEMENT & DESIGN, LLC PAVING & DRAINAGE PLAN	BLACK CREEK ENGINEERING, INC. 3900 PASO FINO ROAD GREEN COVE SPRINGS, FLORIDA 32043 PHONE (904) 759-8930 AUTHORIZATION NO. 27946	NO.	REVISIONS	BY / DATE	COLIN D. GROFF, P.E. REG. NO. 47609

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ST-36 (2) 30" MITERED END SECTIONS FDOT INDEX 272 INV. ELEV. = 5.04

ST-37 (2) 30" MITERED END SECTIONS FDOT INDEX 272 INV. ELEV. = 4.56

ST-83 TWIN 24" MITERED END SECTION – FDOT INDEX 272 INV. ELEV. = 2.70

ST-84 TWIN 24" MITERED END SECTION – FDOT INDEX 272 INV. ELEV. = 2.50

ST-35 36" MITERED END SECTION FDOT INDEX 272 INV. ELEV. = 9.00

ST-77 (2) 30" MITERED END SECTIONS FDOT INDEX 272 INV. ELEV. = 10.88

ST-79 (2) 30" MITERED END SECTIONS FDOT INDEX 272 INV. ELEV. = 10.88

ST-78 POND OUTLET CONTROL STRUCUTRE SEE DETAIL SHEET INV. ELEV. = 11.50 (N)

ST-81 POND 2 OUTLET CONTROL STRUCUTRE SEE DETAIL SHEET

ST-97 TYPE 'H' INLET GRATE ELEV. = 18.00 INV. ELEV. = 8.00

ST-98 54" MITERED END SECTION FDOT INDEX 272 INV. ELEV. = 7.73

ST-51 TYPE 'H' INLET GRATE ELEV. = 8.00 INV. ELEV. = 5.00

ST-69 18" MITERED END SECTION FDOT INDEX 272 INV. ELEV. = 7.02

STORMWATER FACILITY #2
TOP OF BANK ELEVATION = 10.0
BOTTOM OF POND = 8.0

MIN. F.F.E. = 15.00

730± LF OF FLAT BOTTOM SWALE
5' BOTTOM WIDTH, 4:1 SIDE SLOPES
@ S=0.78%

F.F.E.=17.00

RELOCATED SWALE

(2) 76 LF OF 30" RCP

RELOCATE EXISTING DITCH

30" MITERED END SECTION FDOT INDEX 272 INV. ELEV. = 11.80

24 LF OF 30" RCP FOR POND ACCESS

30" MITERED END SECTION FDOT INDEX 272 INV. ELEV. = 11.90

GROUT FILL EXISTING 36" CULVERT

CLOSE EXISTING BERM AND CONNECT EXISTING DITCH TO RELOCATED DITCH ALONG PROPERTY LINE

STORMWATER FACILITY #1
TOB = 15.0
BOT = 11.0
SHGW = 10.0

425 LF OF 48" ADS

1-Story Metal Building

Concrete Pavement

Metal Building

City of Green Cove Springs, O.R. Book 1405, page 1590

Official Records Book 111, page 125

NOTE:
SEE SHEET 16 FOR STRUCTURE TABLE.

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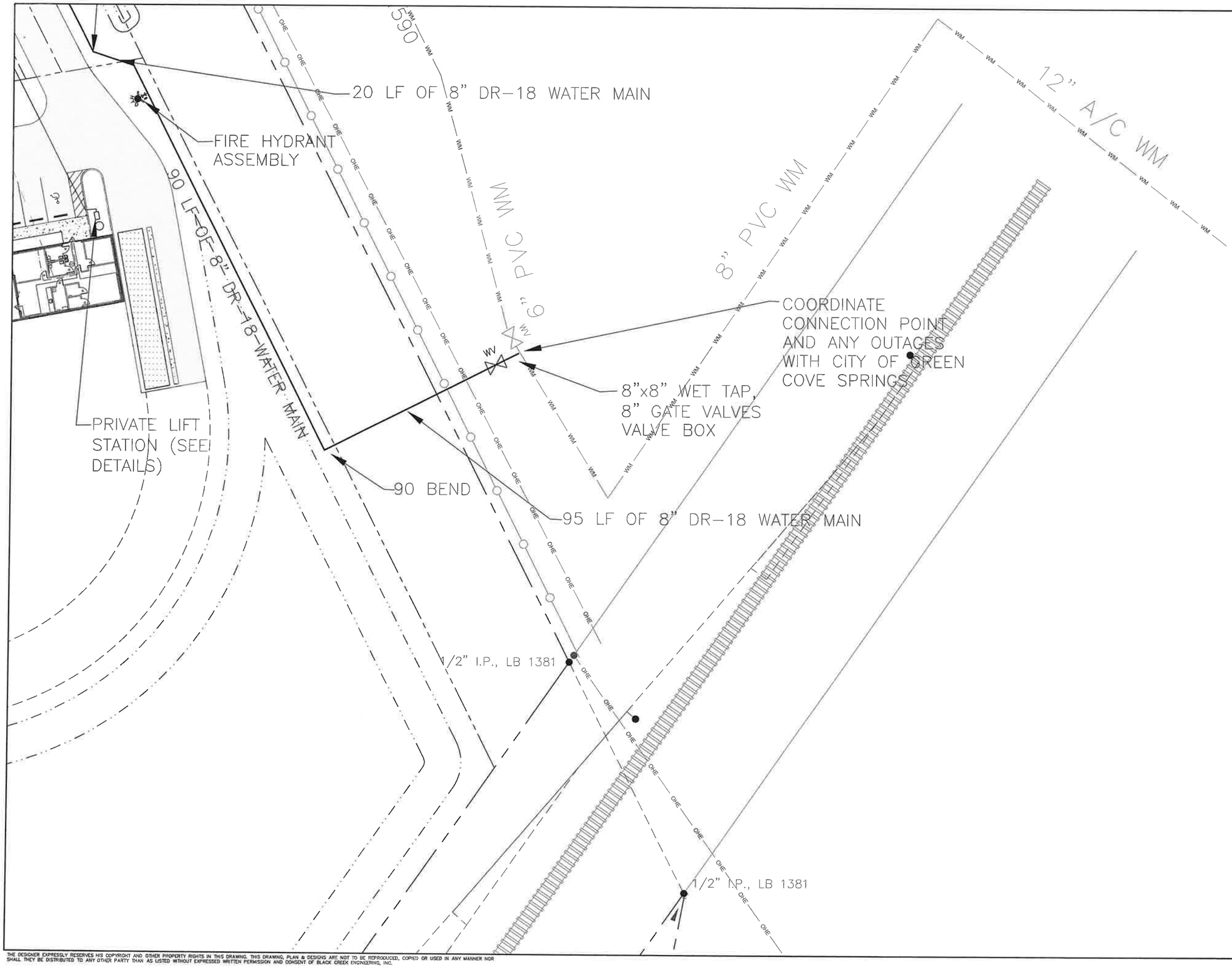
CYPRESS MANAGEMENT & DESIGN, LLC

PAVING & DRAINAGE PLAN

JOB NO. : 24-001
DATE: 01/25/2025
DRAWN BY : CdG
CHECKED BY : CdG
APPROVED BY : CdG
SCALE : 1"=60'

SHEET
9

NOT ISSUED FOR CONSTRUCTION



COUN D. GROFF, P.E.
REG. NO. 47609

NO.	REVISIONS	BY	DATE

BLACK CREEK ENGINEERING, INC.
3900 PASO FINO ROAD
GREEN COVE SPRINGS, FLORIDA 32043
PHONE (904) 759-8830
AUTHORIZATION NO. 27946

PROPOSED INDUSTRIAL SITE

SR 16 EAST, GREEN COVE SPRINGS, FL.
CYPRESS MANAGEMENT & DESIGN, LLC

UTILITY PLAN

JOB NO. : 24-001
DATE: 01/25/2025
DRAWN BY : CdG
CHECKED BY : CdG
APPROVED BY : CdG
SCALE : 1"=60'

SHEET
10

NOT ISSUED FOR CONSTRUCTION

2"x2"x2" TEE,
2" GATE VALVE
VALVE BOX

100 LF OF 2" DR-18 FM

(2) 45 BENDS

100 LF OF 8" DR-18 WATER MAIN

2" MJ CAP AND MARK

8" MJ CAP AND MARK

8"x8"x8" TEE,
(2) 8" GATE VALVES,
WITH (2) VALVE BOXES

FIRE HYDRANT
ASSEMBLY

360 LF OF 2" DR-18 FM

388 LF OF 8" SDR-21 WM

3-PHASE OH ELECTRIC

(2) 45 BENDS

Fire Hydrant

City of Green Cove Springs, O.R. Book 1405, page 1590

COLIN D. GROFF, P.E.
REG. NO. 47609

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GREEN COVE SPRINGS, FLORIDA 32043
PHONE (904) 759-8930
AUTHORIZATION NO. 27946

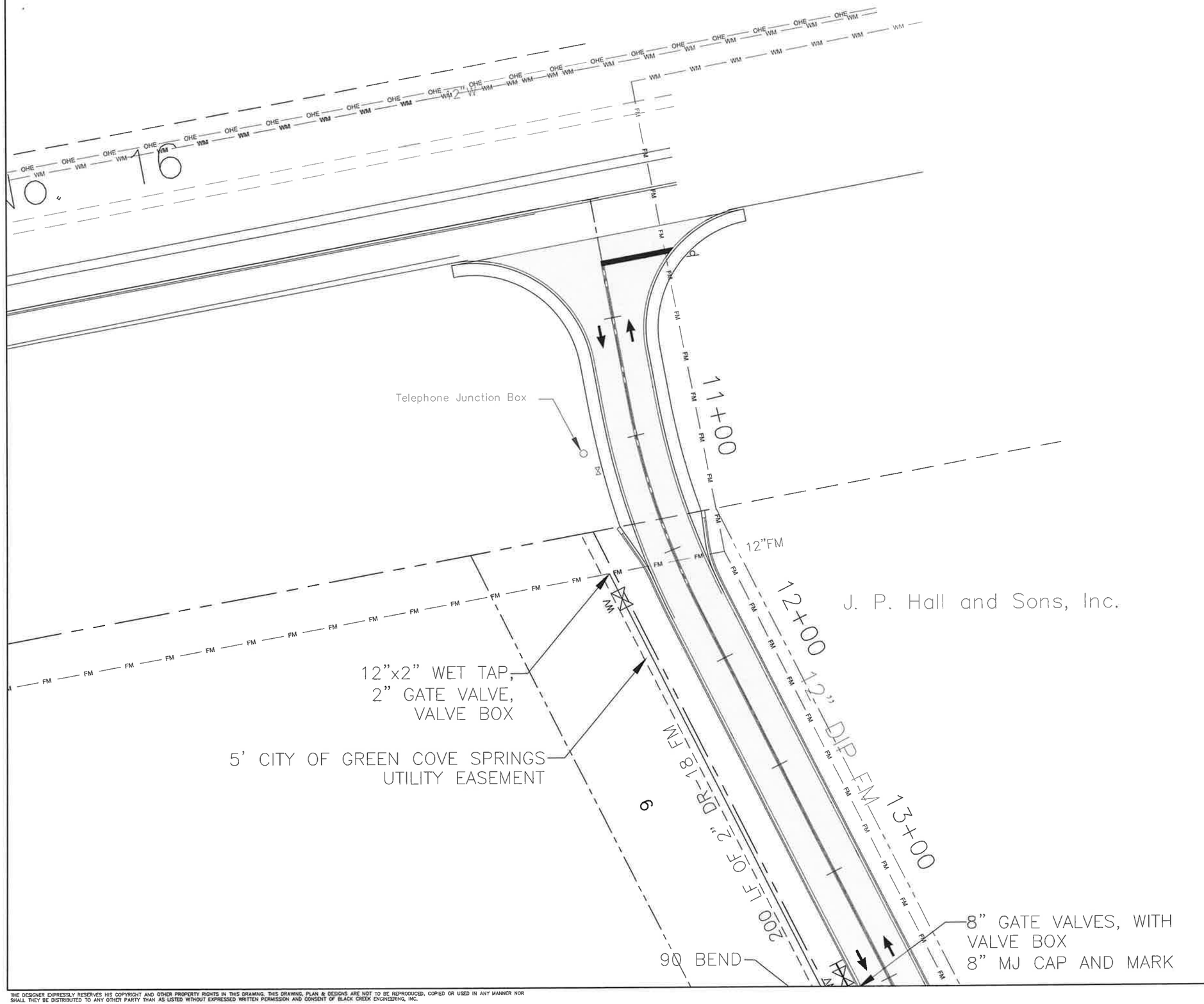
PROPOSED INDUSTRIAL SITE
SR 16 EAST, GREEN COVE SPRINGS, FL
CYPRESS MANAGEMENT & DESIGN, LLC

UTILITY PLAN

JOB NO. : 24-001	SCALE : 1"=60'
DATE: 01/25/2025	APPROVED BY : CdG
DRAWN BY : CdG	CHECKED BY : CdG

SHEET
11

NOT ISSUED FOR CONSTRUCTION



NO.	REVISIONS	BY	DATE

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REG. NO. 47609

BLACK CREEK ENGINEERING, INC.
3900 PASO FINO ROAD
GREEN COVE SPRINGS, FLORIDA 32043
PHONE (904) 759-8930
AUTHORIZATION NO. 27946

PROPOSED INDUSTRIAL SITE

SR 16 EAST, GREEN COVE SPRINGS, FL
CYPRESS MANAGEMENT & DESIGN, LLC

UTILITY PLAN

JOB NO. : 24-001
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DRAWN BY : CdG
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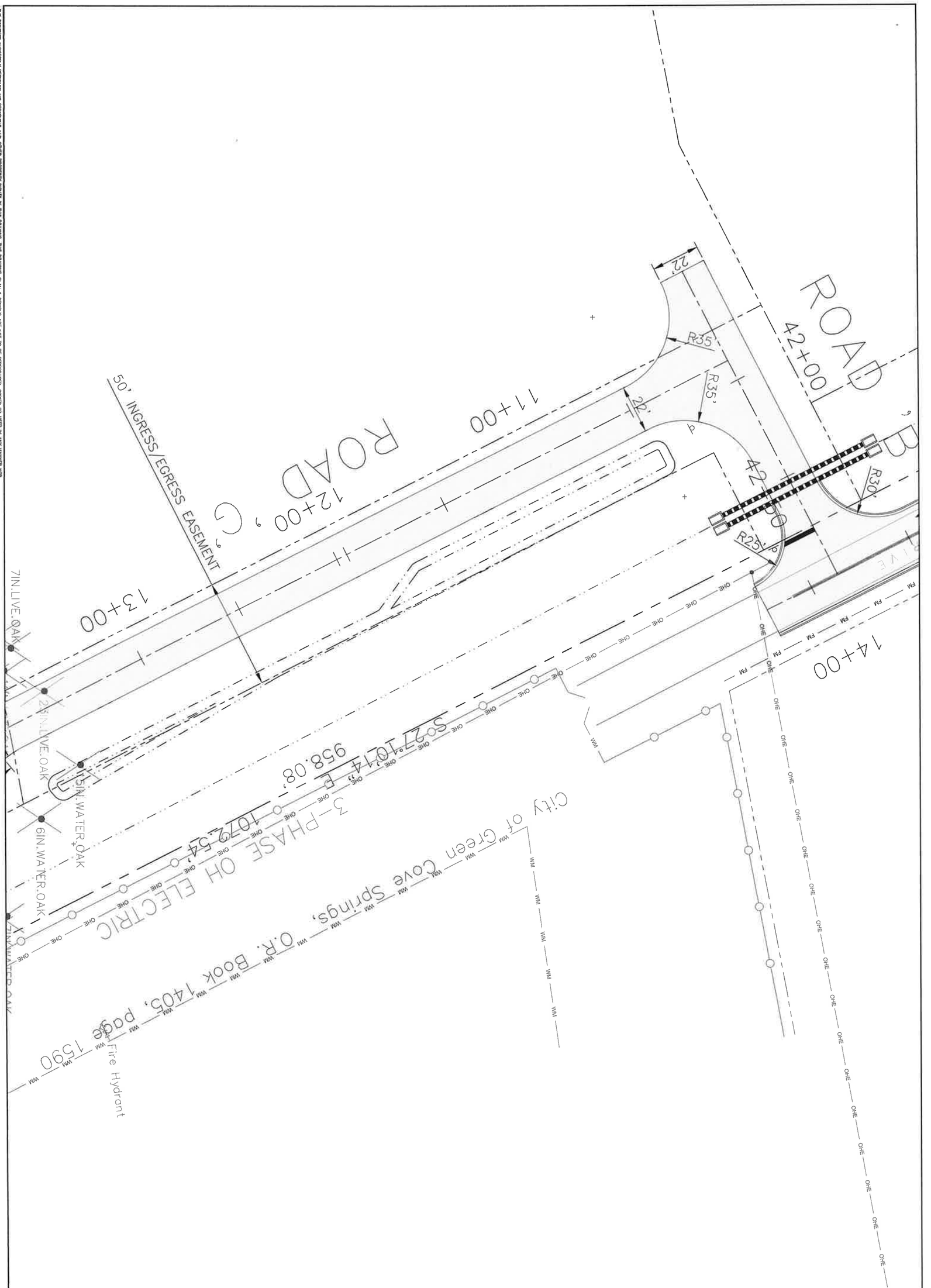
APPROVED BY : CdG
SCALE : 1"=60'

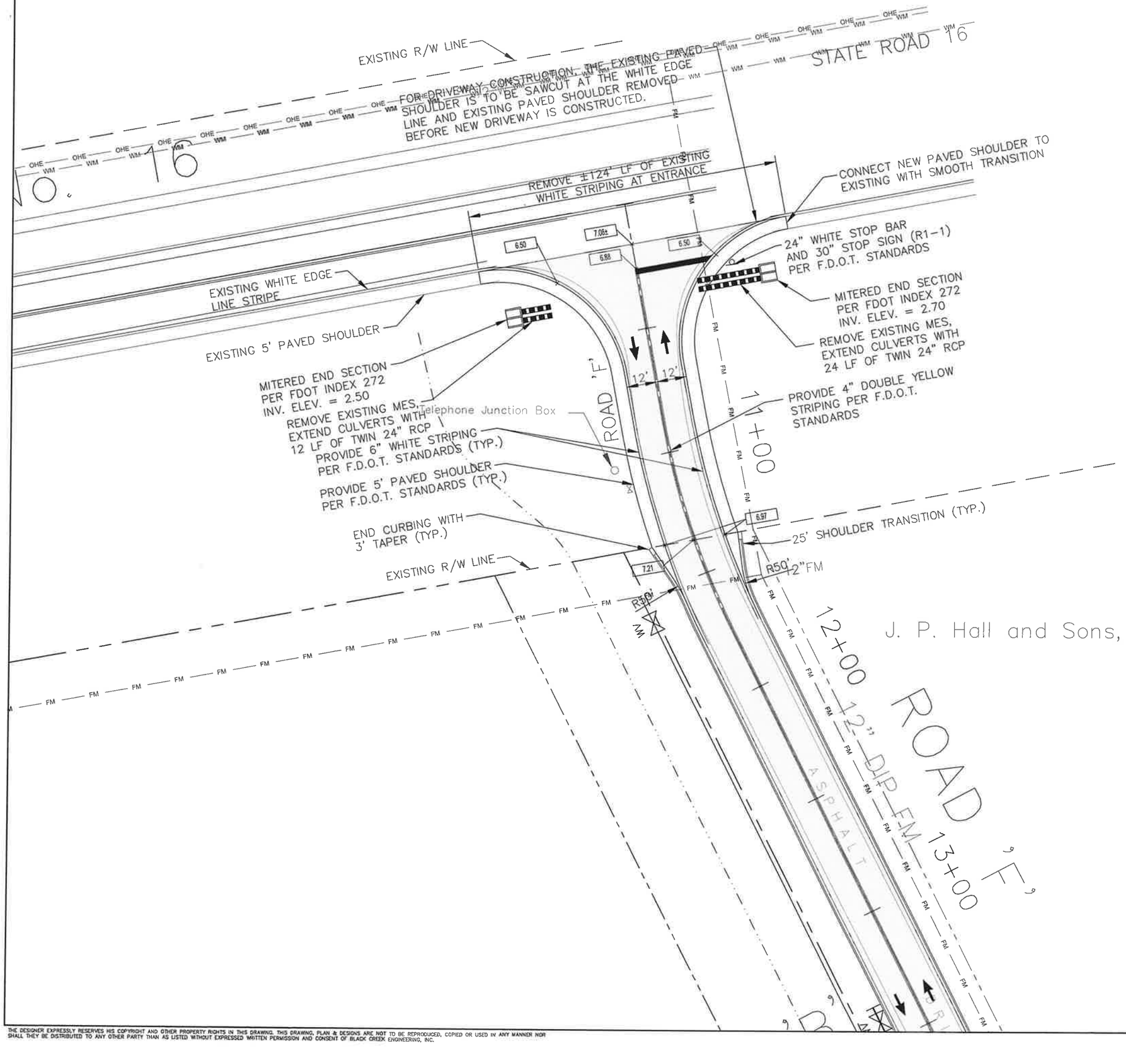
SHEET
12

NOT ISSUED FOR CONSTRUCTION



SHEET 13	JOB NO. : 24-001 DATE: 01/25/2025 DRAWN BY : CdG CHECKED BY : CdG APPROVED BY : CdG SCALE : 1"=20'	PROPOSED INDUSTRIAL SITE SR 16 EAST, GREEN COVE SPRINGS, FL CYPRESS MANAGEMENT & DESIGN, LLC OFFSITE ROAD IMPROVEMENT GEOMETRY	BLACK CREEK ENGINEERING, INC. 3900 PASO FINO ROAD GREEN COVE SPRINGS, FLORIDA 32043 PHONE (904) 759-8930 AUTHORIZATION NO. 27946	NO. / REVISIONS / BY / DATE		COLIN D. GROFF, P.E. REG. NO. 47609

NOT ISSUED FOR CONSTRUCTION



COLIN D. GROFF, P.E.
REG. NO. 47609

NO.	REVISIONS	BY	DATE

BLACK CREEK ENGINEERING, INC.
3900 PASO FINO ROAD
GREEN COVE SPRINGS, FLORIDA 32043
PHONE (904) 759-8930
AUTHORIZATION NO. 27946

PROPOSED INDUSTRIAL SITE

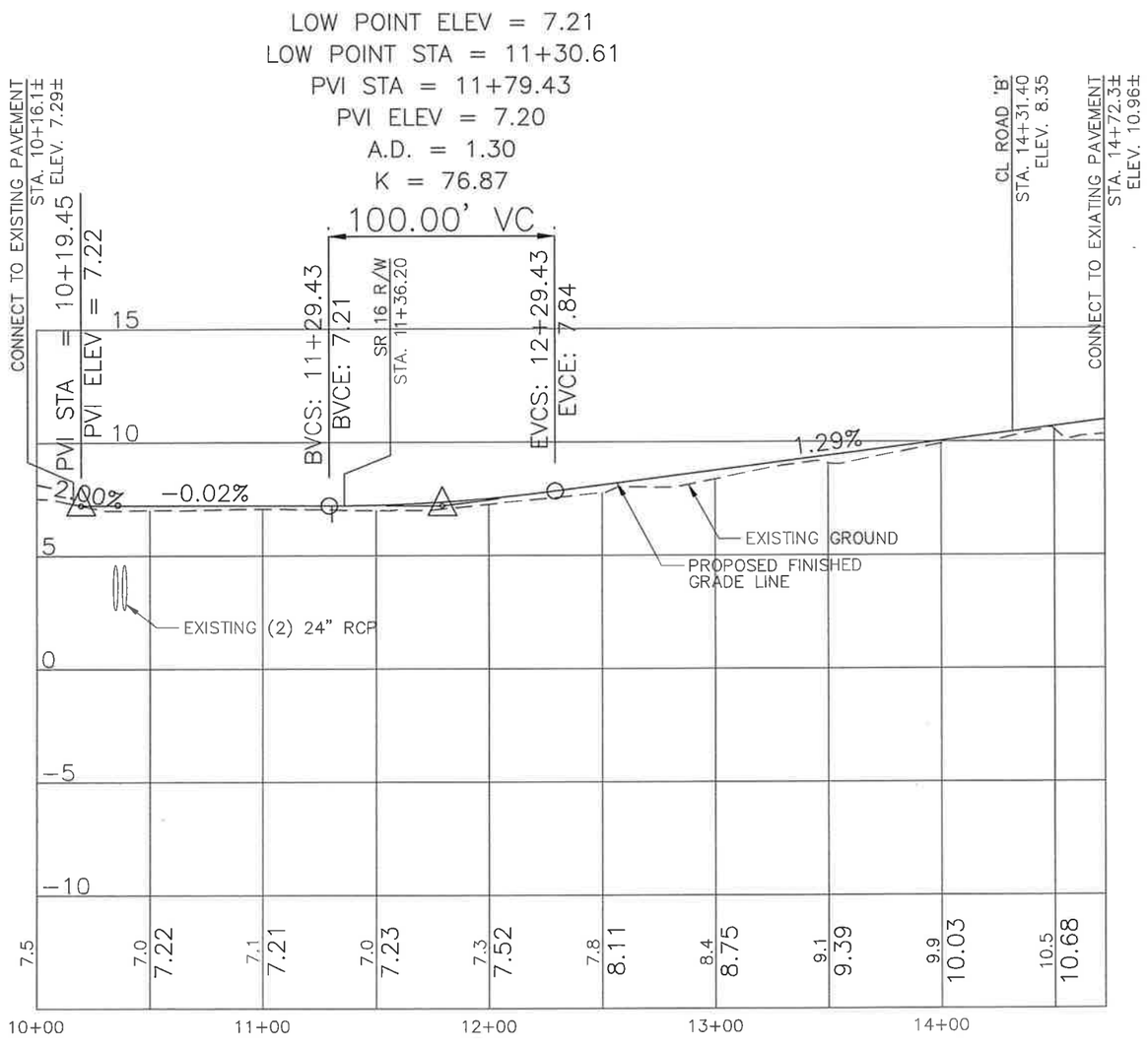
SR 16 EAST, GREEN COVE SPRINGS, FL
CYPRESS MANAGEMENT & DESIGN, LLC

OFFSITE ROAD IMPROVEMENT GEOMETRY

JOB NO. :	24-001
DATE:	01/25/2025
DRAWN BY :	CdG
CHECKED BY :	CdG
APPROVED BY :	CdG
SCALE :	1"=20'

SHEET
14

NOT ISSUED FOR CONSTRUCTION



SR 16 EAST ENTRY ROAD

ROAD 'F'

COLIN D. GROFF, P.E.
REG. NO.: 47609

NO.	REVISIONS	BY	DATE

BLACK CREEK ENGINEERING, INC.
3900 PASO FINO ROAD
GREEN COVE SPRINGS, FLORIDA 32043
PHONE (904) 759-9930
AUTHORIZATION NO. 27946

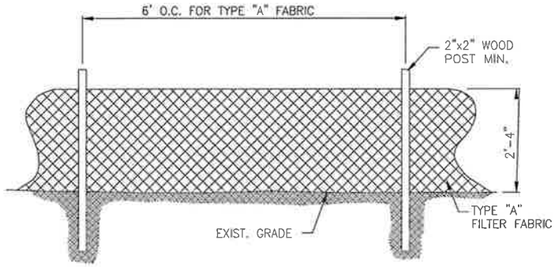
PROPOSED INDUSTRIAL SITE
SR 16 EAST, GREEN COVE SPRINGS, FL
CYPRESS MANAGEMENT & DESIGN, LLC

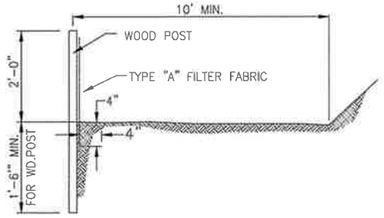
ROAD PROFILES

JOB NO. : 24-001
DATE: 01/25/2025
DRAWN BY : CdG
CHECKED BY : CdG
APPROVED BY : CdG
SCALE : 1"=20'

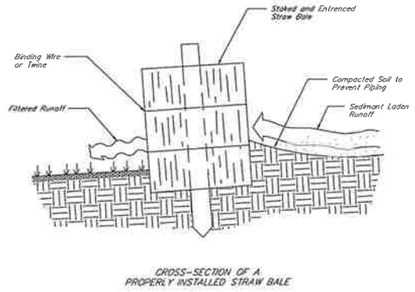
SHEET
15

NOT ISSUED FOR CONSTRUCTION



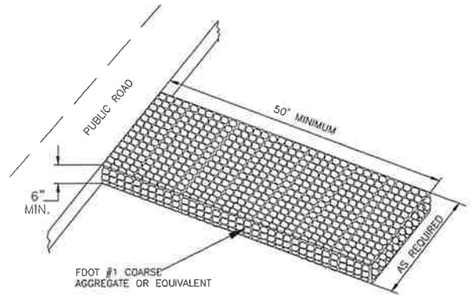


TEMPORARY SILT FENCE



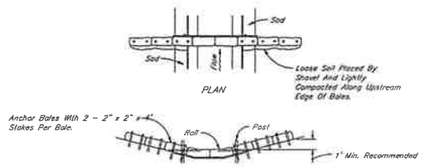
CROSS-SECTION OF A PROPERLY INSTALLED STRAW BALE

STAKED HAY BALE



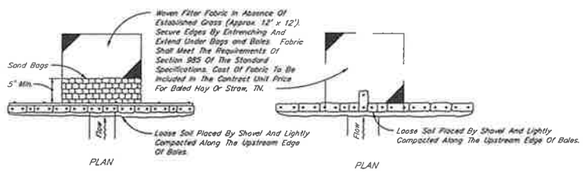
STABILIZED CONSTRUCTION ENTRANCE

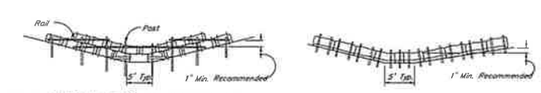
N.T.S.



Spacing: Bale barriers for paved ditches should be spaced in accordance with Chart 1, Sheet 1 of 3, Index No. 102

BARRIER FOR PAVED DITCH



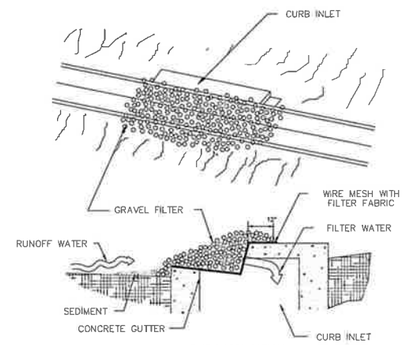


Application and Spacing: The use of Types I & II bale barriers should be limited to the conditions outlined in Chart 1, Sheet 1 of 3, Index No. 102 (F.D.O.T.)

TYPE II TYPE I

BARRIER FOR UNPAVED DITCHES

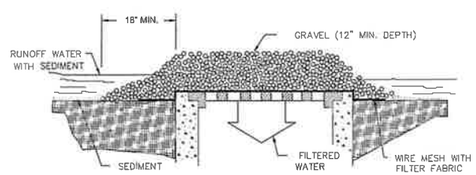
HAY BALE BARRIERS TYPE I & II



SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE AT CURB INLETS WHERE PONDING IN FRONT OF THE STRUCTURE IS NOT LIKELY TO CAUSE INCONVENIENCE OR DAMAGE TO ADJACENT STRUCTURES AND UNPROTECTED AREAS.

GRAVEL CURB INLET SEDIMENT FILTER



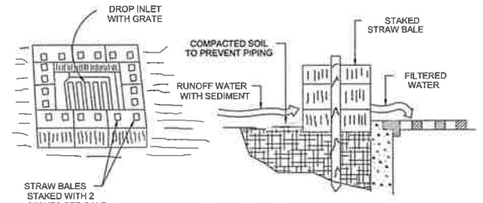
SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE HEAVY CONCENTRATED FLOWS ARE EXPECTED, BUT NOT WHERE PONDING AROUND THE STRUCTURE MIGHT CAUSE EXCESSIVE INCONVENIENCE OR DAMAGE TO ADJACENT STRUCTURES AND UNPROTECTED AREAS.

GRAVEL AND WIRE MESH DROP INLET SEDIMENT FILTER

GRAVEL INLET SEDIMENT TRAP

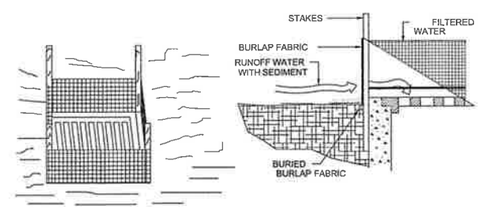
N.T.S.



HAY BALE SEDIMENT FILTER

SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE THE INLET DRAINS A RELATIVELY FLAT AREA (SLOPES NO GREATER THAN 5 PERCENT) WHERE SHEET OR OVERLAND FLOWS (NOT EXCEEDING 0.5 cfs) ARE TYPICAL. THE METHOD SHALL NOT APPLY TO INLETS RECEIVING CONCENTRATED FLOWS, SUCH AS IN STREET OR HIGHWAY MEDIANS.



FABRIC SEDIMENT FILTER

SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE THE INLET DRAINS A RELATIVELY FLAT AREA (SLOPES NO GREATER THAN 5 PERCENT) WHERE SHEET OR OVERLAND FLOWS (NOT EXCEEDING 0.5 cfs) ARE TYPICAL. THE METHOD SHALL NOT APPLY TO INLETS RECEIVING CONCENTRATED FLOWS, SUCH AS IN STREET OR HIGHWAY MEDIANS.

DROP INLET SEDIMENT TRAP

N.T.S.

COLIN D. GROFF, P.E.
REG. NO. 47609

NO.	REVISIONS	BY	DATE

BLACK CREEK ENGINEERING, INC.
3900 PASO FINO ROAD
GREEN COVE SPRINGS, FLORIDA 32043
PHONE (904) 759-8500
AUTHORIZATION NO. 27946

PROPOSED INDUSTRIAL SITE

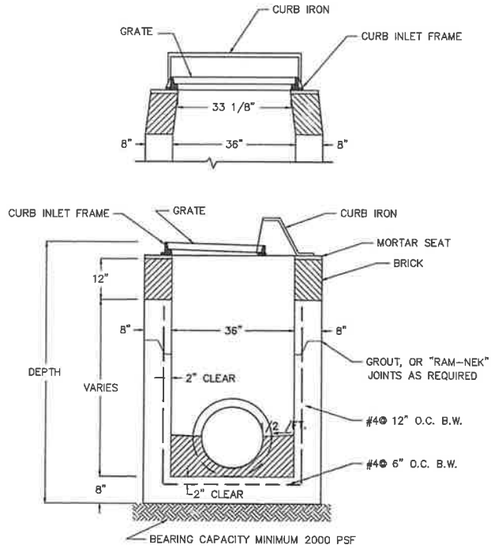
SR 16 EAST, GREEN COVE SPRINGS, FL
CYPRESS MANAGEMENT & DESIGN, LLC

SWPPP DETAILS

JOB NO. : 24-001
DATE: 01/25/2025
DRAWN BY : CdG
CHECKED BY : CdG
APPROVED BY : CdG
SCALE : 1"=60'

SHEET 16

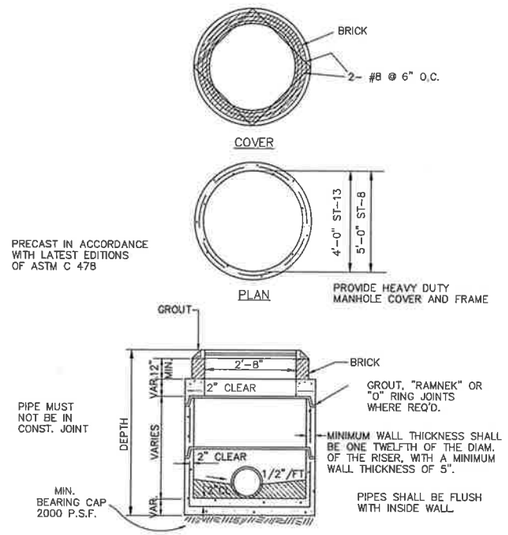
NOT ISSUED FOR CONSTRUCTION



NOTES:
1. CONC. DESIGN STRENGTH 4,000 PSI
2. PIPES SHALL BE FLUSH WITH INSIDE WALL
3. PIPE MUST NOT BE IN CONST. JOINT

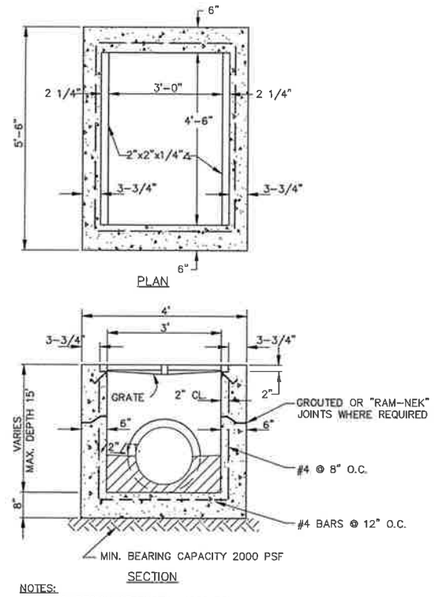
CURB INLET DETAIL

NOT TO SCALE



STORM SEWER MANHOLE

NOT TO SCALE

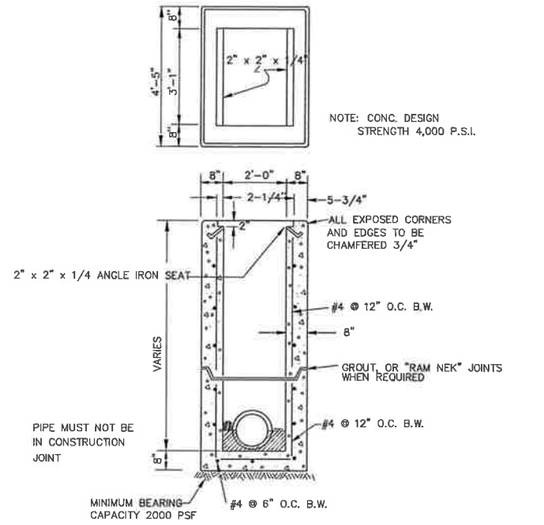


SECTION

NOTES:
1. CONC. DESIGN STRENGTH 4000 PSI.
2. PIPES SHALL BE FLUSH WITH INSIDE WALL.
3. PIPE MUST NOT BE IN CONST. JOINT.
4. SLOT OPENINGS SHALL NOT BE IN WALLS WITH GRATE SEAT.

TYPE 'E' INLET DETAIL

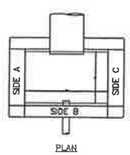
NOT TO SCALE



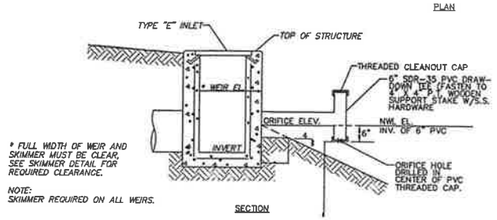
TYPE 'C' INLET DETAIL

NOT TO SCALE

	POND 1		
TOP OF BANK ELEV.	15.00		
GRATE ELEV.	14.80		
WEIR ELEV.	12.90		
ORIFICE ELEV.	0.00		
INVERT ELEV.	10.00		
ORIFICE SIZE (INCHES)	0.00		
WEIR LENGTH – SIDE A	36.0		
WEIR LENGTH – SIDE B	0.00		
WEIR LENGTH – SIDE C	36.0		
OUTLET PIPE SIZE	36"		



PLAN

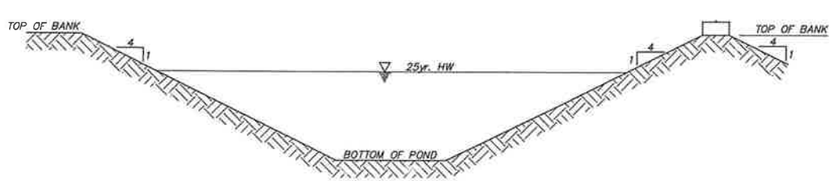


SECTION

OUTLET CONTROL STRUCTURE DETAIL

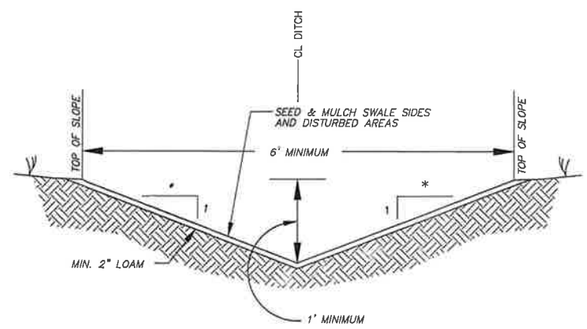
NOT TO SCALE

	POND 1	POND 2	
TOP OF BANK ELEV.	15.00	10.00	
NORMAL WATER LEVEL	N/A	N/A	
BOTTOM OF POND	11.00	8.00	
MEAN ANNUAL WATER LEVEL	10.00	7.00	
25 yr. WATER LEVEL	14.69	9.80	



POND TYPICAL SECTION

NOT TO SCALE



* SIDE SLOPES = 3:1 OR FLATTER.

TYPICAL SWALE SECTION

NOT TO SCALE

COLIN D. GROFF, P.E.
REG. NO. 47609

BLACK CREEK ENGINEERING, INC.
3900 PASO FINO ROAD
GREEN COVE SPRINGS, FLORIDA 32043
PHONE (904) 759-8830
AUTHORIZATION NO. 27946

NO.	REVISIONS	BY	DATE

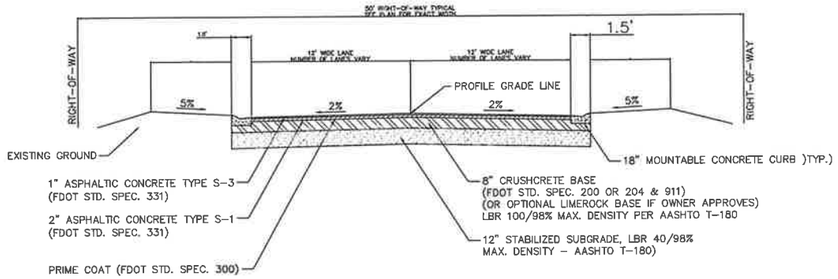
PROPOSED INDUSTRIAL SITE
SR 16 EAST, GREEN COVE SPRINGS, FL
CYPRESS MANAGEMENT & DESIGN, LLC

CONSTRUCTION DETAILS

JOB NO. : 24-001
DATE: 01/25/2025
DRAWN BY : CdG
CHECKED BY : CdG
APPROVED BY : CdG
SCALE : 1"=60'

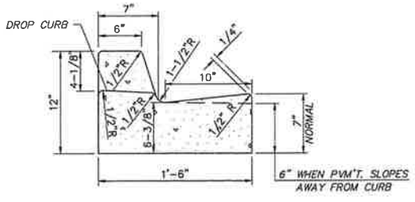
SHEET
17

NOT ISSUED FOR CONSTRUCTION



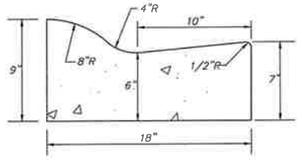
TYPICAL ROAD SECTION

NOT TO SCALE



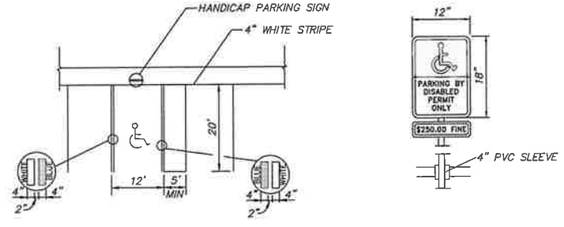
18" CURB AND GUTTER DETAIL

NOT TO SCALE



18" GUTTER DETAIL

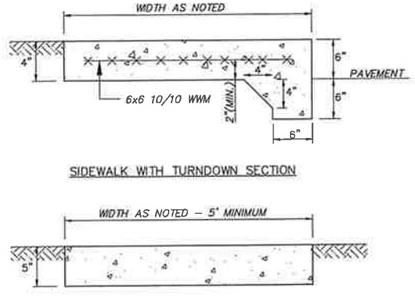
NOT TO SCALE



NOTE
EACH SUCH PARKING SPACE SHALL BE CONSPICUOUSLY OUTLINED IN BLUE PAINT, AND SHALL BE POSTED AND MAINTAINED WITH A PERMANENT, ABOVE-GRADE SIGN BEARING THE INTERNATIONAL SYMBOL OF ACCESSIBILITY OR THE CAPTION "PARKING BY DISABLED PERMIT ONLY", OR BEARING BOTH SUCH SYMBOLS AND CAPTION. SUCH SIGNS SHALL NOT BE OBSCURED BY A VEHICLE PARKED IN THE SPACE. ALL HANDICAPPED PARKING SPACES MUST BE DESIGNED AND MARKED IN ACCORDANCE WITH THE STANDARDS ADOPTED BY THE DEPARTMENT OF TRANSPORTATION.

HANDICAP PARKING DETAIL

NOT TO SCALE



NOTES:

1. CONCRETE SHALL BE 3000 PSI, MIN. SLUMP 5".
2. SAW CUT CONTROL JOINTS AT SPACING EQUAL TO WIDTH OF SIDEWALK.
3. INSTALL EXPANSION JOINT AT EVERY FOURTH CONTROL JOINT (25' MAX.).
4. USE TURNDOWN SECTION WHERE SIDEWALK ABUTS PAVEMENT.

SIDEWALK SECTIONS

NOT TO SCALE

COLIN D. GROFF, P.E.
REG. NO. 47609

NO.	REVISIONS	BY	DATE

BLACK CREEK ENGINEERING, INC.
3900 PASO FINO ROAD
CAPE CORAL, FLORIDA 33993
PHONE (904) 759-8930

AUTHORIZATION NO. 27946

PROPOSED INDUSTRIAL SITE
SR 16 EAST, GREEN COVE SPRINGS, FL
CYPRESS MANAGEMENT & DESIGN, LLC

CONSTRUCTION DETAILS

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SCALE : 1"=60'

SHEET
18

NOT ISSUED FOR CONSTRUCTION

CUSTOM PUMP & CONTROLS, INC.
PACKAGED FIBERGLASS PUMP LIFT STATIONS
PACKAGED FIBERGLASS VALVE BOXES
D.E.P. OR STANDARD CONTROL PANELS
JAX. (800) 940-3758 TAMPA (800) 940-3309

FURNISH AND INSTALL A COMPLETE PRE-PACKAGE CUSTOM PUMP & CONTROL GRINDER PUMP STATION AS DESCRIBED BELOW

SPECIFICATIONS

DESIGN CONDITIONS

MODEL	WG30-WGX30-3 HP	H.P.	3
VOLT	230	PHASE	3
DISCHARGE	2"	IMPELLER	4 3/4
GPM	78	TDH	54'

PUMP

THE PUMP SHALL BE A MYERS "SUPER-GRIND" AND HAVE AN INTEGRALLY BUILT IN GRINDER UNIT AND SUBMERSIBLE TYPE MOTOR. THE PUMP SHALL BE SUSPENDED IN THE BASIN BY TWO (2) 1-1/4" STAINLESS STEEL GUIDE RAILS AND QUICK DISCONNECT LIFT OUT MOUNTING ASSEMBLY. SOLIDS SHALL BE FED IN AN UPFLOW DIRECTION TO THE GRINDER MECHANISM WITH NO OBSTRUCTIONS BELOW THE GRINDER INLET.

THE GRINDER UNIT SHALL BE CAPABLE OF CUTTING SOLID MATERIAL FOUND IN NORMAL DOMESTIC SEWAGE, INCLUDING REASONABLE AMOUNTS OF FOREIGN OBJECTS, SUCH AS WOOD PLASTIC, GLASS, RUBBER, SANITARY NAPKINS, DISPOSABLE DIAPERS AND PANTY HOSE INTO A FINE SLURRY THAT WILL PASS FREELY THROUGH THE PUMP, SERVICE LINE AND FORCE MAIN.

MOTOR

THE PUMP MOTOR SHALL BE OF THE SUBMERSIBLE TYPE RATED FOR 3, 5, 7-1/2 HORSEPOWER AT 3450 RPM. MOTOR SHALL BE SINGLE PHASE, OR THREE PHASE, 60 HERTZ. SINGLE PHASE MOTORS SHALL BE OF THE CAPACITOR START-CAPACITOR RUN TYPE FOR HIGH STARTING TORQUE.

THE STATOR WINDING SHALL BE THE OPEN TYPE WITH CLASS F INSULATION RATED FOR 105° C MAXIMUM OPERATING TEMPERATURE. THE WINDING HOUSING WILL BE FILLED WITH CLEAN DIELECTRIC OIL THAT WILL LUBRICATE BEARINGS, SEALS AND TRANSFER HEAT FROM THE WINDINGS TO THE OUTER SHELL. THE MOTOR STATOR IS TO BE PRESSED INTO THE MOTOR HOUSING FOR OPTIMUM CONCENTRICITY AND ALIGNMENT, AND MAXIMUM HEAT TRANSFER. THE MOTOR SHALL BE CAPABLE OF OPERATING OVER FULL RANGE OF PERFORMANCE CURVE WITHOUT OVERLOADING MOTOR AND CAUSING ANY OBJECTIONAL NOISE OR VIBRATION.

THE MOTOR SHALL HAVE TWO BALL BEARINGS TO SUPPORT THE ROTOR: AN UPPER BALL BEARING TO ACCOMMODATE THRUST LOADS AND A LOWER BALL BEARING TO TAKE RADIAL LOADS. BALL BEARINGS SHALL BE DESIGNED FOR A LB-10 LIFE (50,000 HOURS)

A HEAT SENSOR THERMOSTAT AND OVERLOAD SHALL BE ATTACHED TO THE TOP END OF THE MOTOR WINDINGS AND SHALL STOP THE MOTOR IF THE MOTOR WINDING TEMPERATURE REACHES 200° F. THE HIGH TEMPERATURE SHUTOFF WILL CAUSE THE PUMP TO CEASE OPERATION. SHOULD A CONTROL FAILURE CAUSE THE PUMP TO RUN IN A DRY WET WELL. THE THERMOSTAT SHALL RESET AUTOMATICALLY WHEN THE MOTOR COOLS TO A SAFE OPERATING TEMPERATURE.

SEAL CHAMBER

THE MOTOR SHALL BE PROTECTED BY TWO (2) ROTARY SHAFT SEALS MOUNTED IN TANDEM WITH AN OIL FILLED CHAMBER SEPARATING THE SEALS. THE SEALS SHALL HAVE CARBON AND CERAMIC SEAL FACES DIAMOND LAPPED TO A TOLERANCE OF ONE LIGHT BAND. METAL PARTS AND SPRINGS FOR SEALS SHALL BE STAINLESS STEEL. AN ELECTRICAL SENSING PROBE SHALL BE MOUNTED IN THE SEAL CHAMBER TO DETECT ANY WATER LEAKAGE PAST THE LOWER SEAL.

GRINDER ASSEMBLY & CONSTRUCTION

THE GRINDER ASSEMBLY SHALL CONSIST OF A ROTATING RADIAL CUTTER AND A STATIONARY SHREDDING RING, AND SHALL BE MOUNTED DIRECTLY BELOW THE VOLUTE PASSAGE. THE ROTATING CUTTER SHALL BE THREADED ONTO THE STAINLESS STEEL SHAFT AND SHALL BE LOCKED WITH A SCREW AND WASHER. THE STATIONARY SHREDDING RING SHALL BE PRESSED ONTO AN IRON HOLDING FLANGE FOR EASY REMOVAL. THE FLANGE SHALL BE PROVIDED WITH TAPPED BACK-OFF HOLES SO THAT SCREWS CAN BE USED TO PUSH THE SHREDDING RING FROM THE HOUSING. BOTH THE RADIAL CUTTER AND SHREDDING RING SHALL BE REMOVABLE FROM THE OUTSIDE WITHOUT DISMANTLING PUMP. GRINDER ASSEMBLY SHALL BE OF SUCH CONSTRUCTION THAT NO CLEARANCE ADJUSTMENTS ARE REQUIRED WHEN ASSEMBLING. ALL GRINDING OF SOLIDS SHALL BE FROM THE ACTION OF THE RADIAL CUTTER AGAINST THE SHREDDING RING. THE RADIAL CUTTER AND SHREDDING RING SHALL BE OF #440 STAINLESS STEEL HARDENED TO 58-60 ROCKWELL C.

PUMP IMPELLER

THE PUMP IMPELLER SHALL BE OF THE RECESSED TYPE TO PROVIDE AN OPEN UNOBSTRUCTED PASSAGE THROUGH THE VOLUTE FOR THE GROUND SOLIDS. THE IMPELLER SHALL BE CONSTRUCTED OF CAST IRON AND SHALL HAVE PUMP OUT VANES ON THE BACK SIDE OF THE IMPELLER TO KEEP SOLIDS FROM LOWER SEAL AND REDUCE PRESSURE AT THE SEAL FACES. IMPELLER SHALL BE THREADED ONTO THE STAINLESS STEEL SHAFT.

PUMP & MOTOR CASTINGS

ALL IRON CASTING SHALL BE OF HIGH TENSILE CAST IRON AND SHALL BE PROPERLY CLEANED, PRE-TREATED WITH CHROMIC RINSE, AND PAINTED WITH A HIGH QUALITY ENAMEL PAINT. ALL PUMP COMPONENTS THAT ARE NOT CAST IRON OR STAINLESS STEEL SHALL BE GALVANIZED OR PAINTED WITH BAKED-ON EPOXY. ALL FASTENERS SHALL BE #302 STAINLESS STEEL.

SERVICE

PUMPS, PARTS, & AND SERVICE SHALL BE AVAILABLE FROM AN AUTHORIZED MANUFACTURERS (MYERS) WARRANTY SERVICE STOCKING DISTRIBUTOR.

WET WELL

SHALL BE A FILAMENT WOUND FIBERGLASS BASIN USING A COMMERCIAL GRADE OF GLASS FIBER HAVING A COUPLING AGENT WHICH WILL PROVIDE A SUITABLE BOND BETWEEN THE GLASS REINFORCEMENT AND THE RESIN. THE LAMINATE SHALL CONSIST OF AN INNER SURFACE, AN INTERIOR LAYER, AND AN EXTERIOR LAYER OF LAMINATE BODY. THE INNER SURFACE SHALL BE FREE OF CRACKS AND CRAZING WITH A SMOOTH FINISH. SOME WAVINESS IS PERMISSIBLE AS LONG AS THE SURFACE IS SMOOTH AND FREE OF PITS. BETWEEN 0.010 AND 0.020 INCHES OF RESIN-RICH SURFACE SHALL BE PROVIDED. THE BASIN SHALL BE PROVIDED WITH AN ANTI-FLOATATION RING TO PREVENT RISING. WETWELL PKG. SHALL BE AS PROVIDED BY CUSTOM PUMP & CONTROLS UTILIZING RESILIENT MOUNT PIPE CONNECTION ASSEMBLIES TO ALLOW FOR VARIATIONS IN SETTING PIPING ALIGNMENTS AND CHANGES FROM BACKFILLING AFTER SETTING. RIGID CAST IN PIPE FITTINGS OR FIBERGLASS RIGID HUBS WILL NOT BE CONSIDERED EQUAL OR ACCEPTABLE.

INLET HUB

SHALL BE C.P.C. RESILIENT MOUNT SEALING SYSTEM, COMPLETE WITH, GASKETS AND FLEXIBLE PIPE COUPLER, STAINLESS STEEL MOUNTING HARDWARE

SIZE SHALL BE	___ 4 INCHES	X 6 INCHES	___ 8 INCHES	___ 10 INCHES
QUANTITY	___ 4 INCHES	2 6 INCHES	___ 8 INCHES	___ 10 INCHES

VALVE BOX

SHALL BE CPC MODEL VB3242 FIBERGLASS VALVE BOX WITH U.S. FOUNDRY APS-150 ALUMINUM VALVE BOX COVER. VALVE BOX SHALL BE COMPLETELY PRE-PLUMBED USING ALL SCHEDULE 80 PVC PIPING AND FITTINGS, AND SHALL INCLUDE TWO (2), 2" SCHEDULE 80 PVC FLANGED BALL CHECK VALVES, AND THREE (3), 2" SCHEDULE 80 PVC FLANGED GATE VALVES. (ONE (1) 2" GATE VALVE IS SUPPLIED AS AN EMERGENCY PUMP-OUT). PVC PIPING IN VALVE BOX, AND WET WELL SHALL BE CONNECTED AND HELD IN PLACE BY CPC MODEL 32 RESILIENT MOUNT SEALING SYSTEM TO COMPENSATE FOR POSSIBLE UNEVEN SETTLING OF BASIN OR VALVE BOX. SYSTEM SHALL BE PRESSURE TESTED AT 150 P.S.I. PRIOR TO SHIPMENT.

ALUMINUM HATCH COVERS

SHALL BE FABRICATED FROM 1/4" ALUMINUM DIAMOND PLATE AND BUILT TO WITHSTAND A LOAD OF 150 LB. P.S.F. AND SHALL BE MANUFACTURED BY U.S. FOUNDRY, HALLIDAY, OR EQUAL.
STAINLESS STEEL BOLTS, NUTS AND HINGES - LOCKING STAPLE.

FLOATS

SHALL BE S.J. ELECTRO SENSOR MASTER MECHANICAL FLOAT SWITCHES RATED AT 5 AMPS AT 120 OR 230V. NO MERCURY WILL BE ALLOWED IN WETWELL.

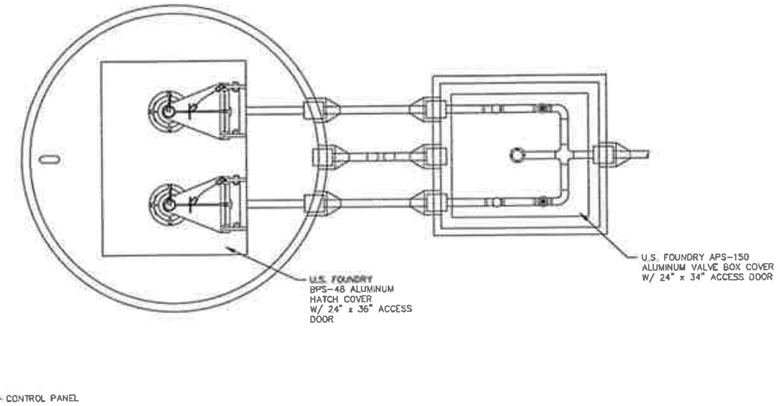
ACCESSORIES

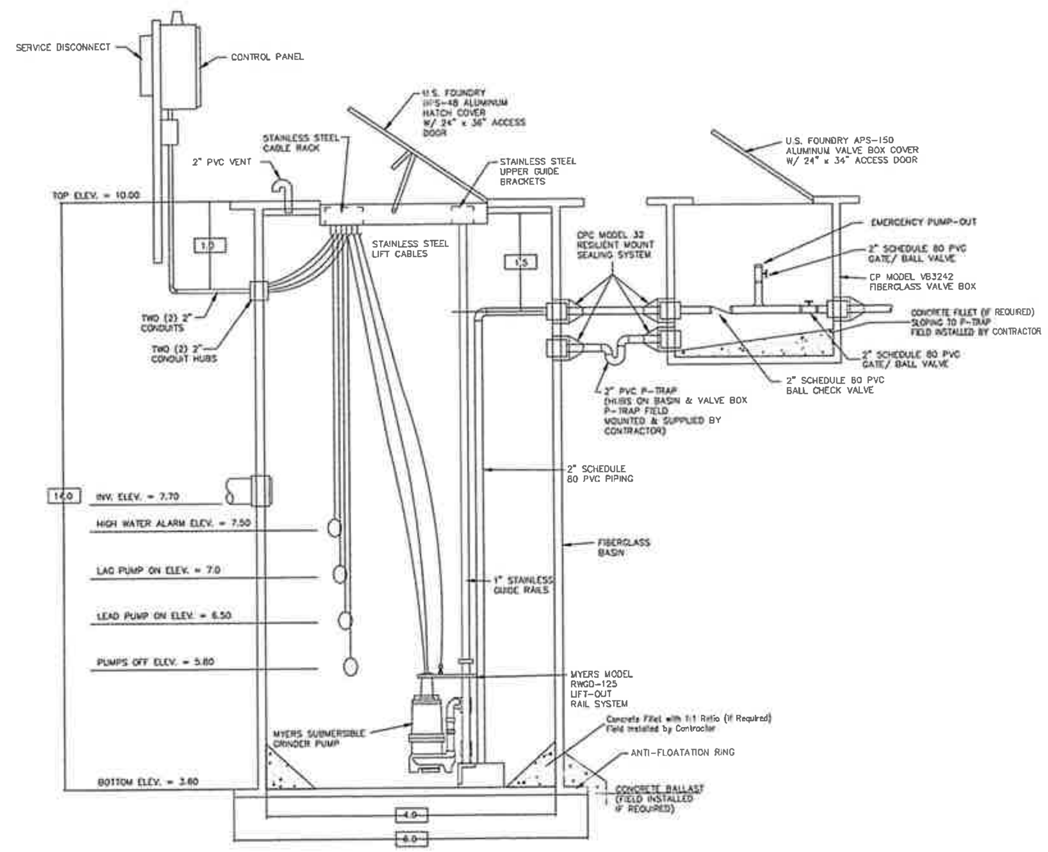
-- STAINLESS STEEL UPPER GUIDE BRACKETS
-- STAINLESS STEEL GUIDE RAILS
-- STAINLESS STEEL CABLE RACK
-- STAINLESS STEEL LIFT CABLES - CHAIN

ANTI-FLOATATION

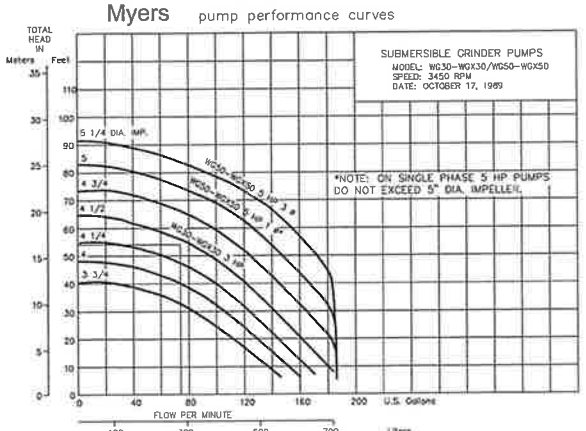
CONCRETE IS RECOMMENDED TO PREVENT FLOATATION OF THE FIBERGLASS BASIN. THE FOLLOWING LISTS THE CUBIC FEET REQUIRED PER FOOT OF BASIN DEPTH

BASIN DIAMETER	CUBIC FEET OF CONCRETE REQUIRED PER FOOT OF BASIN DEPTH
24"	2
30"	3.5
36"	5
48"	8.5
60"	12



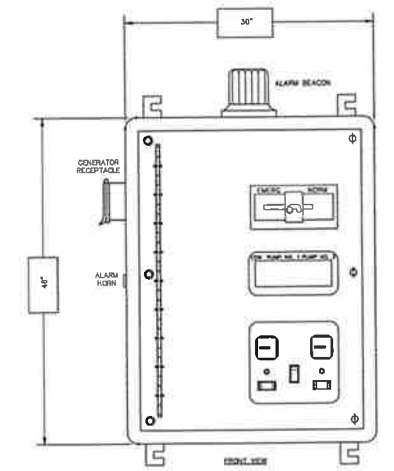


PUMP PERFORMANCE CURVE



ENCLOSURE MAT _X_ FG. ___ SS _X_ GPS ___
H.P. _3.0_ PHASE _3_ VOLTAGE _230_
SERVICE SYSTEM 3 WIRE ___ 4 WIRE _X_

* NOTE: CONTRACTOR TO FIELD VERIFY PHASE AND VOLTAGE



NEMA RATED OUTDOOR ENCLOSURE WITH MATERIAL COMPOSITION AS SPECIFIED BELOW

CONTROL PANEL
PER D.E.P. REQUIREMENTS

SPECIFICATIONS FOR DUPLEX D.E.P. TYPE CONTROL PANEL

EACH PANEL SHALL CONTROL TWO _3.0_ HP, _230_ VOLT, _3_ PHASE, 60 Hz PUMPS.

A NEUTRAL SHALL BE SUPPLIED TO THE PANEL FOR 120 VOLT CONTROL POWER.

PANEL ENCLOSURE

ENCLOSURE SHALL BE NEMA _4_ FABRICATED FROM _X_ FIBERGLASS, ___ STAINLESS STEEL, ___ ALUMINUM, OR ___ GALVANIZED PAINTED STEEL. OUTER DOOR SHALL HAVE HINGES AND MEANS FOR PADLOCKING. INNER DEADFRONT DOOR SHALL BE 5052-H32 ALLOY ALUMINUM. ALL MOUNTING HOLES SHALL BE DRILLED AND TAPPED, SELF TAPPING SCREW NOT ACCEPTABLE. ALL BOLTS, NUTS, LOCK WASHERS, AND MACHINE SCREWS SHALL BE STAINLESS STEEL.

THE FOLLOWING MAJOR COMPONENTS ARE REQUIRED:

1) MAIN BREAKER
2) EMERGENCY INTAKER AND GENERATOR RECEPTACLE-RUSSELL STOLL
3) PUMP BREAKERS
4) CONTROL CIRCUIT BREAKER
5) ALTERNATOR
6) HIGH LEVEL FLASHING ALARM LIGHT
7) HIGH LEVEL HORN ALARM WITH SILENCE - WHEN SILENCE LIGHT STAYS ON
8) LIGHTNING ARRESTOR
9) SURGE SUPPRESSER
10) PHASE/UNDER VOLTAGE MONITORING RELAY IF 3 PHASE, UNDER VOLTAGE MONITORING RELAY IF SINGLE PHASE
11) NEMA RATED MOTOR STARTERS WITH OVERLOAD PROTECTION FOR ALL POWER LEGS
12) ELAPSE TIME METERS
13) CAPACITORS AND START-RELAYS AS APPROVED FOR MYERS PUMPS ON SINGLE PHASE SYSTEMS.

TYPICAL SEQUENCE OF OPERATION:

ON RISE LEVEL:

LOWEST FLOAT WILL CLOSE CIRCUIT TO RELAY. LEAD PUMP ON FLOAT CLOSES TO BRING LEAD PUMP ON. IF LEAD DOES NOT RECEDE AND CONTINUES TO RISE, THE LAG FLOAT WILL CLOSE AND BRING ON THE LAG PUMP. FURTHER RISING OF LEVEL IN WETWELL WILL CLOSE 4TH FLOAT (HIGH LEVEL) AND ACTIVATE THE HIGH LEVEL ALARM LIGHT AND HORNS.

ON FALLING LEVEL:

ALL PUMPS WILL DE-ENERGIZE AT THE OPENING OF THE LOWEST (OFF) FLOAT

CONTROL CIRCUITRY WILL BE SUCH THAT NO FLOAT WILL DEPEND ON ANOTHER FLOAT FOR ITS CONTROL POWER.

CONTROL PANEL SCHEMATICS, IN PLASTIC LAMINATE, IS TO BE AFFIXED TO THE INSIDE OF THE OUTER DOOR.

ALL WIRING SHALL BE NUMBERED.

IN THE EVENT THE PUMPS BEING FURNISHED REQUIRE SEAL FAILURE COMPONENTS AND INDICATION TO VALIDATE WARRANTY, THESE COMPONENTS SHALL BE FURNISHED AS REQUIRED.

ALL COMPONENT LABELS SHALL BE OF THE LAZER PRINTED MYLAR PLASTIC LABELS.

A 24 HOUR EMERGENCY TELEPHONE CONTACT SHALL BE DISPLAYED BY THE OWNER.

For Complete Technical Assistance Call:

Custom Pump & Controls, Inc.
6034 Jet Port Industrial Blvd.
Tampa FL 33634

TEL: (813) 886-6255
FAX: (813) 886-3508

TOLERANCES	REVISIONS			CUSTOM PUMP & CONTROLS INC. JACKSONVILLE-TAMPA, FLORIDA			
	NO.	DATE	BY	2 H.P. PACKAGED GRINDER PUMP-FIBERGLASS LIFT STATION			
DECIMAL	1						
FRACTIONAL	2						
	3			DRAWN BY	SCALE N.T.S.	MATERIAL	
ANGULAR	4			CHK'D	DATE 3-25-93	DRAWING NO.	C9315
	5			TRACED	REVISED 08-14-01		

COLIN D. GROFF, P.E.
REG. NO. 47609

NO.	REVISIONS	BY	DATE

BLACK CREEK ENGINEERING, INC.
3300 PASO FINO ROAD
GREEN COVE SPRINGS, FLORIDA 32043
PHONE (904) 759-6930
AUTHORIZATION NO. 27946

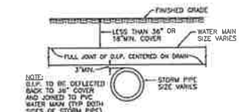
PROPOSED INDUSTRIAL SITE
SR 16 EAST, GREEN COVE SPRINGS, FL
CYPRESS MANAGEMENT & DESIGN, LLC

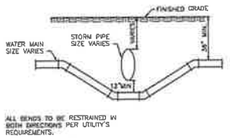
PRIVATE LIFT STATION

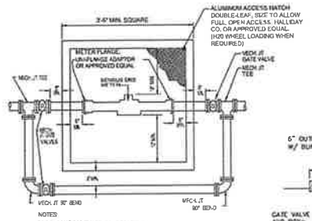
JOB NO. : 24-001
DATE: 01/25/2025
DRAWN BY : CdG
CHECKED BY : CdG
APPROVED BY : CdG
SCALE : 1"=20'

SHEET
19

NOT ISSUED FOR CONSTRUCTION







NOTE:
D.I.P. TO BE DEFLECTED BACK TO 36" COVER AND JOINED TO PVC WATER MAIN (TYP BOTH SIDES OF STORM PIPE) ENTIRE ASSEMBLY TO BE RESTRAINED PER MFGR'S RECOMMENDATIONS TO WITHSTAND 150 P.S.I. PRESSURE TEST

DRAIN CONFLICT CASE "A"

ALL BENDS TO BE RESTRAINED IN BOTH DIRECTIONS PER UTILITY'S REQUIREMENTS.

DRAIN CONFLICT CASE "B"

NOTES

METER VAULT - 3" AND LARGER METERS

BACKFLOW PREVENTER SIZES 6" & ABOVE WHERE BACKFLOW IS BETWEEN RECLAIMED & POTABLE

BACKFLOW PREVENTER NOTE
DESIGNS SHOWN FOR BACKFLOW PREVENTER INSTALLATIONS ARE REQUIRED FOR G.C.S. OWNED INSTALLATIONS AND ARE OPTIONAL FOR THOSE TO BE OWNED AND MAINTAINED BY DEVELOPER OR CUSTOMER.

REDUCED PRESSURE ZONE BACKFLOW PREVENTER SIZES 3" & ABOVE

BACKFLOW PREVENTER NOTE
DESIGNS SHOWN FOR BACKFLOW PREVENTER INSTALLATIONS ARE REQUIRED FOR G.C.S. OWNED INSTALLATIONS AND ARE OPTIONAL FOR THOSE TO BE OWNED AND MAINTAINED BY DEVELOPER OR CUSTOMER.

REDUCED PRESSURE ZONE BACKFLOW PREVENTER DETAIL 2" DIAMETER AND SMALLER

L = MINIMUM LENGTH TO BE RESTRAINED ON EACH SIDE OF FITTING (IN FEET)

NOMINAL PIPE SIZE (INCHES)	11 1/4° HORIZONTAL BEND	22 1/2° HORIZONTAL BEND	45° HORIZONTAL BEND	90° HORIZONTAL BEND	HORIZONTAL TEES		HORIZONTAL PLUGS AND VALVES	45° VERTICAL OFFSET (UPPER LENGTH) / 45° VERTICAL OFFSET (LOWER LENGTH)	22 1/2° VERTICAL OFFSET (UPPER LENGTH) / 22 1/2° VERTICAL OFFSET (LOWER LENGTH)	REDUCER TO ONE SIZE SMALLER (LENGTH ON LARGER SIZE SIDE)
4	2	4	7	16	20 - RUN	1 - BRANCH	39	16 / 3	8 / 1	N/A
6	2	5	10	26	20 - RUN	1 - BRANCH	46	23 / 4	11 / 2	28
8	3	6	13	30	20 - RUN	1 - BRANCH	72	32 / 5	14 / 3	30
10	4	8	16	38	20 - RUN	1 - BRANCH	88	38 / 6	17 / 3	29
12	4	9	19	45	20 - RUN	1 - BRANCH	107	42 / 8	20 / 4	34
14	5	10	21	51	20 - RUN	11 - BRANCH	116	48 / 9	25 / 4	36
16	6	11	23	57	20 - RUN	23 - BRANCH	122	54 / 10	28 / 5	36
18	6	12	26	62	20 - RUN	41 - BRANCH	111	65 / 11	28 / 5	28
20	7	13	28	68	20 - RUN	10 - BRANCH	156	66 / 12	35 / 6	28
24	8	16	30	79	20 - RUN	15 - BRANCH	195	77 / 11	37 / 7	54
30	9	18	38	92	20 - RUN	41 - BRANCH	221	92 / 12	44 / 8	77
36	10	21	44	103	20 - RUN	113 - BRANCH	208	114 / 20	53 / 10	77

NOTES:
1. TABLE ASSUMPTIONS: PVC PIPE, SAFETY FACTOR = 1.5, [illegible] WILL REQUIRE ADDITIONAL CALCULATIONS.
2. ALL FITTINGS MUST BE RESTRAINED. ONE OF THE FOLLOWING METHODS MAY BE USED:
A. MECHANICAL RESTRAINTS AT FITTING AND AT ADJACENT JOINTS TO A LENGTH AS SPECIFIED ON CHART
B. TIE RODS AT FITTING AND THROUGH JOINTS TO A LENGTH AS SPECIFIED IN CHART
3. APPROVED RESTRAINTS: UNI-FLANGE SERIES 1300 & 1350 OR APPROVED EQUAL
4. VALVES SHALL BE RESTRAINED THE SAME DISTANCE AS HORIZONTAL PLUGS

RESTRAINED JOINT SCHEDULE

FH TO BE AMERICAN FLOW CONTROL B-84-B PAINTED RED WITH WHITE BONNET. A 6" THICK 24" SQUARE SHALL BE POURED AROUND THE BARREL OF THE FIRE HYDRANT BELOW THE BREAKABLE FLANGE.

FIRE HYDRANT - STANDARD

NOTE:
1. DOUBLE DETECTOR CHECK VALVE W/ 3/4" BYPASS ASSEMBLY W/ METERS ARE REQUIRED ON ALL ON-SITE FIRE SPRINKLER SYSTEMS.
2. PROVIDE FREEZE PROTECTION FOR COMPLETE ASSEMBLY.

DOUBLE DETECTOR CHECK VALVE BACKFLOW PREVENTER WITHOUT ABOVE GROUND ENCLOSURE - 3" AND ABOVE WITH FIRE DEPARTMENT CONNECTION

NOTE:
1. DOUBLE DETECTOR CHECK VALVE W/ 3/4" BYPASS ASSEMBLY W/ METERS ARE REQUIRED ON ALL ON-SITE FIRE SPRINKLER SYSTEMS.
2. PROVIDE FREEZE PROTECTION FOR COMPLETE ASSEMBLY.

DOUBLE DETECTOR CHECK VALVE BACKFLOW PREVENTER WITHOUT ABOVE GROUND ENCLOSURE - 3" & ABOVE WITHOUT FIRE DEPARTMENT CONNECTION

① (2) RETAINER GLANDS (D.I. PIPE) OR MODEL 1300 UNIFLANGE RESTRAINERS (FOR PVC PIPE)
② (4) 3/4" X 24" S.S. THREADED ROD
③ (4) 3/4" EYE BOLTS
④ (8) 3/4" S.S. WASHERS
⑤ (8) 3/4" S.S. NUTS

NOTES:
1. RETAINER GLANDS OVER CARRIER PIPE SHALL BE SNUG TO PIPE
2. THREADED ROD TO TIE RETAINER GLAND OR RESTRAINER TO CASING THRU EYE BOLT
3. EYE BOLTS TO BE WELDED TO SIDE OF THE STEEL CASING BY BORING CONTRACTOR
4. NUMBER OF RODS PER CASING:
8" CASING - 2 RODS
10" & 12" CASING - 4 RODS
16" CASING - 6 RODS
18" TO 24" CASING - 8 RODS

NOTE 1) CASING SPACERS SHALL BE "CENTERLINE TYPE" SPACERS AS NOTED IN GCS APPROVED MATERIAL MANUAL

CASING DETAIL

N.T.S.
(FOR PRESSURE LINES)

FIRE HYDRANT - LIMITED SPACE

FIRE HYDRANT NOTE:
FIRE HYDRANT CANNOT BE LOCATED LESS THAN 5'-0" FROM BACK OF CURB AND NO MORE THAN 22'-0" BACK OF CURB.

RESTRAIN BOTH THE UPSTREAM AND DOWNSTREAM SIDES OF FITTING WITH ADDITIONAL PIPE RESTRAINT IN ORDER TO PREVENT MOVEMENT.

VALVE & BOX

NOTE: TOP OF BOX AND COVER TO BE FLUSH WITH FINISHED GRADE

NOTE: PROVIDE CENTER SECTION EXTENSION AS NEEDED

VALVE BOX AND COVER

PRECAST CONCRETE VALVE BOX COLLAR

O.D. OF BELL (DR-18)	CARRIER PIPE SIZE	OUTSIDE DIAMETER OF STEEL CASING PIPE												
		10"	12"	16"	18"	20"	24"	30"	36"	42"	48"	54"	60"	66"
6.5"	4"	NR												
9.0"	6"		NR											
11.6"	8"			NR										
14.1"	10"				NR									
16.7"	12"					NR								
21.23"	16"						NR							
23.74"	18"							NR						
26.18"	20"							NR						
31.22"	24"								NR					

NR - [illegible]

CASING SIZE SCHEDULE

NTS

NOTES:
1. CONC. BOX SHALL BE 42" MIN. DEPTH BUT SHALL BE DEEP ENOUGH TO ACCOMMODATE THE SIZE PIPE AND TYPE OF AIR RELEASE VALVE REQUIRED. WITH OPEN BOTTOM, PRECAST WITH NOTCH TO ACCOMMODATE PIPE INSTALLED WITH 36" COVER FROM TOP OF PIPE TO FINISH GRADE. ON 12" OF #57 STONE WITH FILTER FABRIC ABOVE AND BELOW THE STONE.
2. CONTRACTOR SHALL PROVIDE SHOP DRAWING OF BOX WITH DIMENSIONS FOR APPROVAL BY G.C.S.
3. DIMENSIONS SHOWN ARE MINIMUM AND SHALL BE INCREASED BASED UPON ACTUAL SIZE OF PIPE INSTALLED

WATER MAIN AIR RELEASE VALVE VAULT

TO BE USED ON ALL PIPES 12" OR LARGER

FOR PIPE 10" OR SMALLER A 4' DIAMETER NOTCHED MANHOLE CAN BE USED FOR AIR RELEASE VALVE

SET MANHOLE ON MIN. OF 4 SOLID CONCRETE BLOCKS SPACED EVENLY AROUND THE MANHOLE ON A MIN. OF 12" #57 STONE WITH FILTER FABRIC ABOVE AND BELOW THE STONE.

WATER MAIN AIR RELEASE VALVE VAULT

TO BE USED ON ALL PIPES 10" OR SMALLER

COLIN D. GROFF, P.E.
REG. NO. 47609

NO.	REVISIONS	BY	DATE

BLACK CREEK ENGINEERING, INC.
3900 PASO FINO ROAD
GREEN COVE SPRINGS, FLORIDA 32043
PHONE (904) 759-8930
AUTHORIZATION NO. 27946

PROPOSED INDUSTRIAL SITE

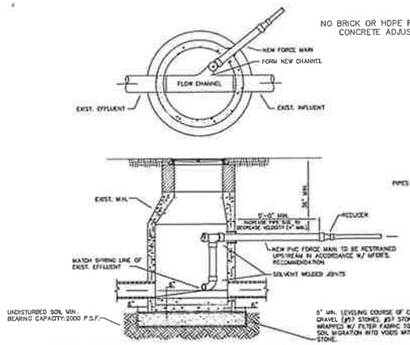
SR 16 EAST, GREEN COVE SPRINGS, FL
CYPRESS MANAGEMENT & DESIGN, LLC

WATER SYSTEM DETAILS

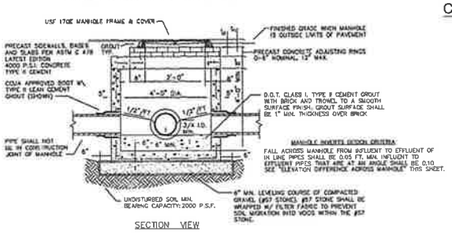
JOB NO. : 24-001
DATE: 01/25/2025
DRAWN BY : CdG
CHECKED BY : CdG
APPROVED BY : CdG
SCALE : 1"=20'

SHEET
20

NOT ISSUED FOR CONSTRUCTION



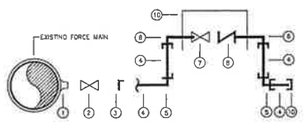
TYP. FORCE MAIN CONNECTION TO MANHOLE



NOTE:
1. THIS MANHOLE AND THE NEXT TWO MANHOLES DOWNSTREAM (AS REQUIRED BY UTILITY) ARE TO HAVE POLYETHYLENE LINER AS MANUFACTURED BY STANDARD PRECAST CO. (AGRU SURE GRIP) OR APPROVED EQUAL.
2. IF CONNECTION IS BEING MADE TO AN EXISTING MANHOLE, THAT MANHOLE AND THE NEXT TWO MANHOLES DOWNSTREAM (AS REQUIRED BY UTILITY), SHALL BE LINED WITH "SPECTRASHIELD" OR APPROVED EQUAL.
3. SIZE OF DROP PIPE CONNECTION TO MANHOLE SHALL BE DESIGNED BY THE PROJECT ENGINEER. MINIMUM SIZE SIZE SHALL BE 4". CONNECTION AND DROP PIPE SHALL BE SIZED TO REDUCE THE VELOCITY AND PREVENT "SPLASHOVER" WITHIN THE MANHOLE. 5'-0" MINIMUM DISTANCE FROM MANHOLE TO REDUCER MAY BE INCREASED TO ASSIST IN THIS VELOCITY REDUCTION.

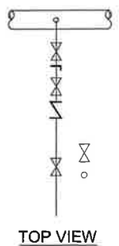
SECTION VIEW

SHALLOW SANITARY SEWER MANHOLE

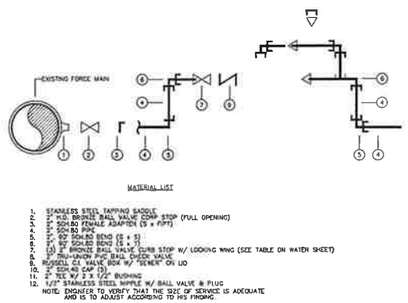


NOTE: ENGINEER TO VERIFY THAT THE SIZE OF SERVICE IS ADEQUATE AND IS TO ADJUST ACCORDING TO HIS FINDING.

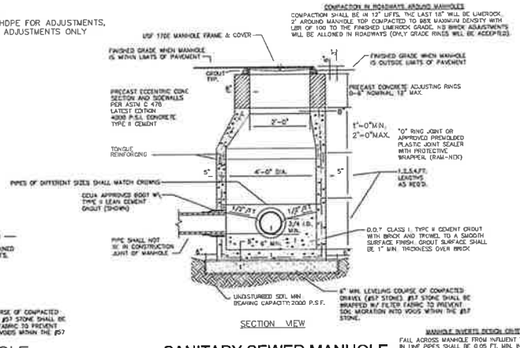
2" SEWAGE FORCE MAIN MANIFOLD SERVICE CONNECTION DETAIL FOR MEDIUM TO HIGH PRESSURE CONNECTION SYSTEMS



TOP VIEW

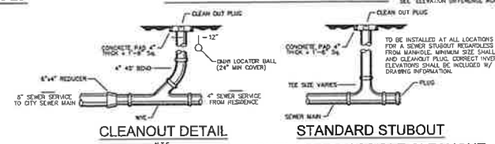


" SEWAGE FORCE MAIN MANIFOLD SERVICE CONNECTION / WITH PRESSURE GAUGE FITTING / FOR LOW PRESSURE RECEIVING SYSTEMS FOR CREATING ARTIFICIAL HEAD PRESSURE



SECTION VIEW

SANITARY SEWER MANHOLE



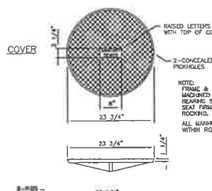
N.T.S.

CLEANOUT DETAIL

TO BE INSTALLED AT ALL LOCATIONS CALLING FOR A SEWER STUBOUT REGARDLESS OF DISTANCE FROM MANHOLE. MINIMUM SIZE SHALL BE 4" PIPE AND CLEANOUT PLUG. CORRECT INVERT AND ELEVATIONS SHALL BE INCLUDED W/ THE AS-BUILT DRAWING INFORMATION.

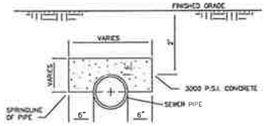
N.T.S.

STANDARD STUBOUT SURVEY ACCESSIBLE CLEANOUT



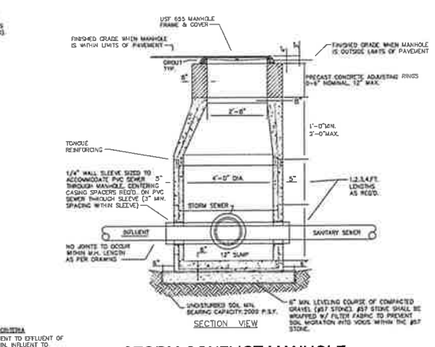
MANHOLE FRAME AND COVER SHALL BE USF CO. MOD. NO. 170E

SANITARY SEWER MANHOLE FRAME & COVER



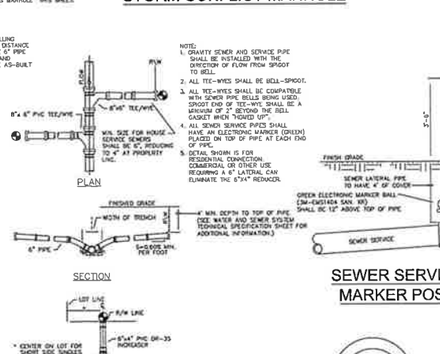
REQUIRED WHERE TOP OF SEWER PIPE IS WITHIN 2' OF FINISHED GRADE UNLESS ALTERNATE DETAIL IS APPROVED BY THE CLAY COUNTY UTILITY AUTHORITY.

CONCRETE CAP FOR SEWER PIPES



SECTION VIEW

STORM CONFLICT MANHOLE

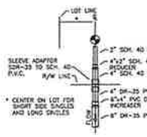


SECTION VIEW

SHALLOW SANITARY SEWER MANHOLE

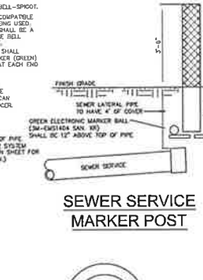
SINGLE FAMILY RESIDENTIAL SERVICE
DENOTES SERVICE MARKER POST

STANDARD SINGLE SEWER SERVICE LATERALS

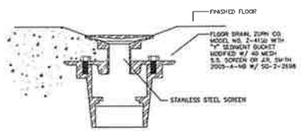


SINGLE SERVICE
DENOTES SERVICE MARKER POST

GRINDER PUMP STATION FORCE MAIN CONNECTION TO SINGLE GRAVITY SERVICE



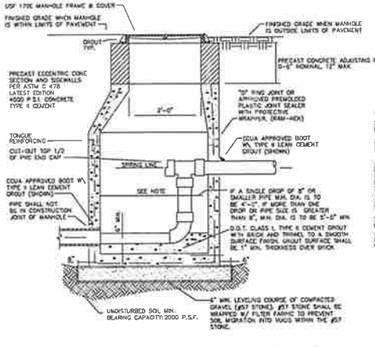
ELEVATION DIFFERENCE ACROSS MANHOLE



NOTE:
FIXTURES WITH FLOOR DRAINS AND WITHOUT A GREASE TRAP SHALL INSTALL THIS MODEL FLOOR DRAIN AND ONLY WITH PRIOR APPROVAL FROM THE CLAY COUNTY UTILITY AUTHORITY.

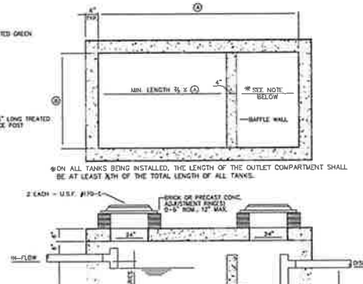
FLOOR DRAIN WITH STRAINER DETAIL

TAPPING OR CUTTING IN SERVICE LATERAL TO EXISTING SEWER MAIN



NOTE: FOR ADDITIONAL MANHOLE SPECIFICATIONS, SEE "SANITARY SEWER MANHOLE" DETAIL THIS SHEET. MAXIMUM ALLOWABLE DIFFERENCE IN INVERT ELEVATION WITHOUT INTERNAL DROP CONNECTION IS 24". SEE "ELEVATION DIFFERENCE ACROSS MANHOLE" THIS SHEET.

TYPICAL GRAVITY SEWER DROP PIPE CONNECTION TO MANHOLE



SEWER SERVICE MARKER POST

*ON ALL TANKS BEING INSTALLED, THE LENGTH OF THE OUTLET COMPARTMENT SHALL BE AT LEAST ⅓ OF THE TOTAL LENGTH OF ALL TANKS.

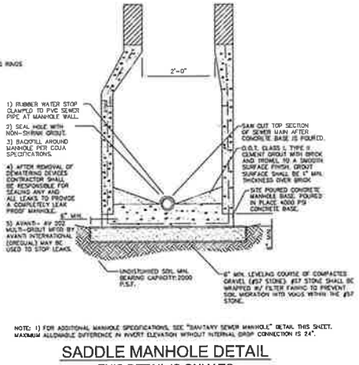
CAPACITY IN GALLONS	
Dia/LENGTH	1,250
A	7'-0"
B	5'-0"
C	4'-0"
D	3'-0"

	10'-0"
	4'-0"
	4'-2"
	5'-0"

COMPLIES WITH A.S.T.M. C-913, PRECAST CONCRETE WATER AND WASTEWATER STRUCTURES AND A.S.T.M. C-890, MINIMUM STRUCTURAL DESIGN LOADING FOR MONOLITHIC OR SECTIONAL PRECAST CONCRETE WATER AND WASTEWATER STRUCTURES

NOTES:
1. GREASE TRAP SHALL BE SIZED BY THE PROJECT ENGINEER USING THE ANTICIPATED PEAK FLOW OF WATER ENTERING THE GREASE TRAP IN ACCORDANCE WITH THE 2003 STATE OF FLORIDA BUILDING CODE – PLUMBING.
2. ROUND-UP TO MATCH THE CLOSEST CAPACITY IN GALLONS PER THE CHART.

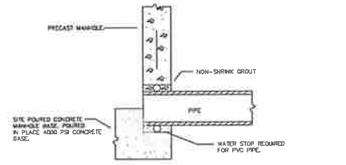
GREASE INTERCEPTOR DETAIL



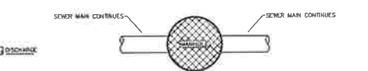
NOTE: 1) FOR ADDITIONAL MANHOLE SPECIFICATIONS, SEE "SANITARY SEWER MANHOLE" DETAIL THIS SHEET. MAXIMUM ALLOWABLE DIFFERENCE IN INVERT ELEVATION WITHOUT INTERNAL DROP CONNECTION IS 24".

SADDLE MANHOLE DETAIL

THIS DETAIL IS ONLY TO BE USED WITH SPECIFIC APPROVAL BY CITY OF GCS.



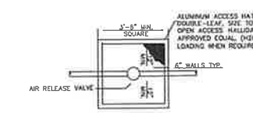
SADDLE MANHOLE DETAIL SECTION

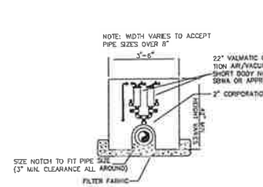


PROCEDURES FOR CONNECTING TO A GRAVITY STUB

NOTE: BEFORE CONNECTING TO ANY GRAVITY STUB, EXCAVATE AND SHOOT THE ELEVATION OF THE STUB INVERT AND THE ELEVATION OF THE INVERT OF THE SAME PIPE COMING OUT OF THE IMMEDIATE DOWNSTREAM MANHOLE. MEASURE THE DISTANCE FROM THE MANHOLE TO THE STUB, CALCULATE THE PIPE GRADE. IF THE GRADE ON THE PIPE IS LESS THAN PLAN DESIGN THEN CONTACT THE C.G.C.S. PUBLIC WORKS DEPARTMENT AND THE PROJECT ENGINEER BEFORE PROCEEDING FURTHER. THE PROJECT ENGINEER AND THE C.G.C.S. PUBLIC WORKS DEPARTMENT WILL MAKE THE DECISION ON HOW TO RESOLVE THE DISCREPANCY BEFORE THE CONTRACTOR CAN PROCEED FURTHER.

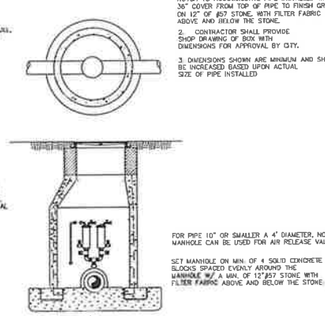
NO WORK WILL BE ALLOWED ON A GRAVITY LINE UPSTREAM OF THE CONNECTION POINT TO THE C.G.C.S. SYSTEM WITHOUT PRIOR APPROVAL OF THE C.G.C.S. PUBLIC WORKS DEPARTMENT..





SANITARY SEWAGE FORCE MAIN AIR RELEASE VALVE VAULT

TO BE USED ON ALL PIPES 12" OR LARGER



NOTES:
1. CONC. BOX SHALL BE 42" MIN. DEPTH BUT SHALL BE DEEP ENOUGH TO ACCOMMODATE THE SIZE PIPE AND TYPE OF AIR RELEASE VALVE REQUIRED, WITH OPEN BOTTOM, PRECAST WITH NOTCH TO ACCOMMODATE PIPE INSTALLED WITH 36" COVER FROM TOP OF PIPE TO FINISH GRADE, ON 12" OF #57 STONE, WITH FILTER FABRIC ABOVE AND BELOW THE STONE.
2. CONTRACTOR SHALL PROVIDE SHOP DRAWING OF BOX WITH DIMENSIONS FOR APPROVAL BY CITY.
3. DIMENSIONS SHOWN ARE MINIMUM AND SHALL BE INCREASED BASED UPON ACTUAL SIZE OF PIPE INSTALLED

SANITARY SEWAGE FORCE MAIN AIR RELEASE VALVE VAULT

TO BE USED ON ALL PIPES 10" OR SMALLER

COLIN D. GROFF, P.E.
REG. NO. 47609

BLACK CREEK ENGINEERING, INC.
3900 PASO FINO ROAD
GREEN COVE SPRINGS, FLORIDA 32043
PHONE (904) 759-9930
AUTHORIZATION NO. 27946

NO.	REVISIONS	BY	DATE

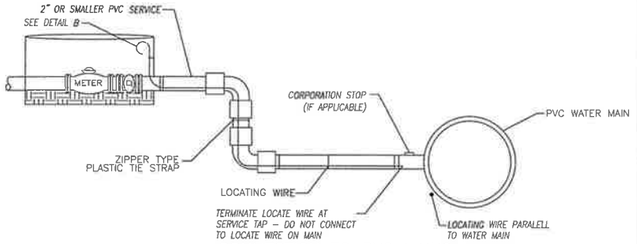
PROPOSED INDUSTRIAL SITE
SR 16 EAST, GREEN COVE SPRINGS, FL
CYPRESS MANAGEMENT & DESIGN, LLC

SEWER SYSTEM DETAILS

JOB NO. : 24-001
DATE: 01/25/2025
DRAWN BY : CdG
CHECKED BY : CdG
APPROVED BY : CdG
SCALE : 1"=20'

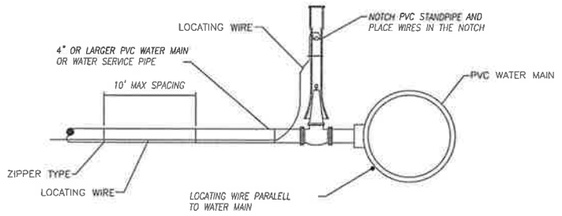
SHEET 21

NOT ISSUED FOR CONSTRUCTION



CONNECTION TO PVC MAINS

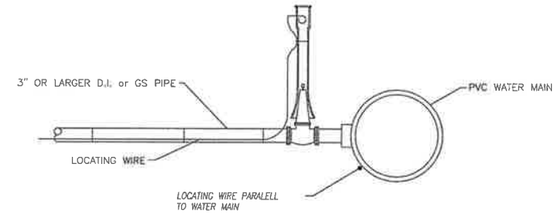
2" OR SMALLER WATER SERVICE
(LONG SERVICES ONLY)



CONNECTION TO PVC MAINS

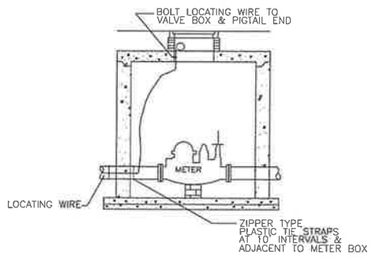
4" OR LARGER PVC WATER MAIN OR WATER SERVICE PIPE

DETAIL – A



CONNECTION TO PVC MAINS

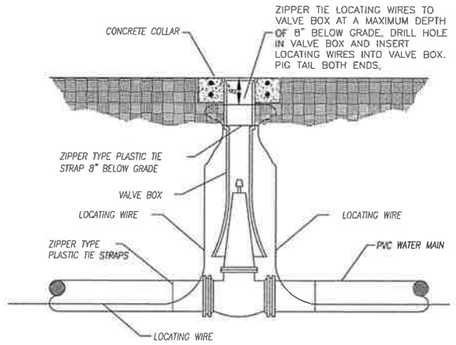
w/3" OR LARGER D.I. OR GS WATER SERVICE OR WATER MAIN



PRECAST METER BOX & COVER
(3" OR LARGER)

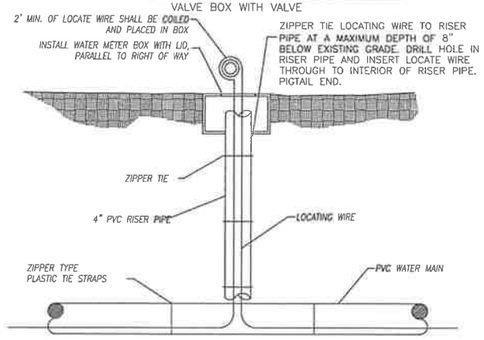
CONNECTION AT METERS BOXES
w/ PVC WATER SERVICE

DETAIL – B



IN LINE LOCATING STATION– PVC PIPE

VALVE BOX WITH VALVE



IN LINE LOCATING STATION – PVC PIPE

METER BOX

DETAIL – C

LOCATE WIRE

LOCATE WIRE TESTING REQUIREMENTS

Installed locate wiring shall be tested by the contractor as part of the final inspection procedure, using a certified tester and approved testing equipment. The contractor shall request and obtain approval from the GCS field representative (inspector), of the locate wire field testing schedule. The GCS field representative may elect to be present during the testing period, and have the authority to request tester to retest sections if inspector suspects any problems within that section. The contractor shall provide the Certified Tester a copy of the project site drawings (as-builts preferred). A tone shall be put on the locate wire. The technician shall trace the entire length of the installed wire and spot point the location at least at 100-foot intervals along the route. The depth shall be tested at 100-foot intervals and tester shall record the depth of pipe/wire on the report at each 100' interval. The certified tester shall report (show on drawings), where the pipe/wire has less than the allowable minimum cover (36 inches) or more than the maximum allowable cover (60 inches) unless called for on the plans or requested and approved by GCS during the installation of said piping. All lateral stub-outs shall be marked with pain and the depth recorded. A final Locate Wire Report (statement by the certified tester), shall be submitted to GCS for review and approval. The report shall include a signed statement from the certified tester which certifies that all installed wire (where shown on the drawing), was successfully (sounded), traced with no open breaks. The report shall also include a copy of the project site drawings which indicate all field notes, breaks found/repaired, depths (if installed outside the acceptable cover limits), and other applicable field remarks by the certified tester. A Certified copy of the report and marked-up drawings shall be furnished to GCS prior to final acceptance of the project or as approved otherwise by GCS.

Definitions: Approved Testing Equipment shall include variable frequency controls, digital depth read-out and tone continuity. The following is a list of approved equipment – Dynatel (3M)-2273 Cable/Fault Locator, Metrotech 9800XT, Ditch Witch 950 R/T or GCS pre-approved equal.

Certified Tester – A person or company that has been certified by the Manufacturer of the approved testing equipment as proficient in the use of the equipment has 8 months experience in the use of the equipment including documented proof of past performance.

GCS Approval: CITY OF GREEN COVE SPRINGS shall have the authority to approve Certified Tester, or deny the approval of Certified Tester to work on Utility's System. GCS shall have the authority to remove any previously Certified Tester from its approved list of Certified Testers as GCS deems necessary.

LOCATE WIRE INSTALLATION

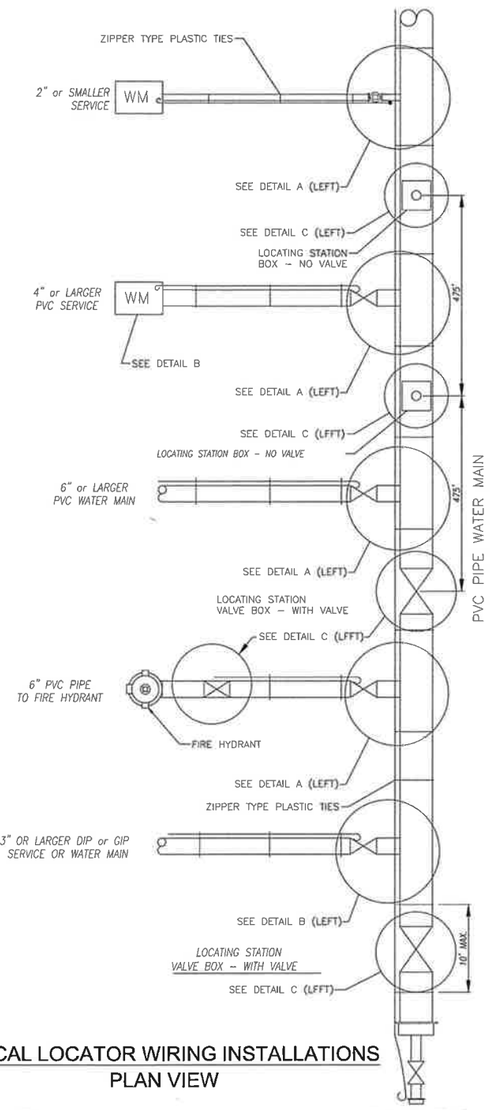
Contractor shall furnish and install locate wiring on all water mains, sewer force mains, and reclaimed water mains (both PVC and ductile iron) and on all service sidestub greater. Locate wire must be attached to mains and services with duct tape or approved plastic zipper ties, (pulled tight to keep wire from rotating out of location), at each side of bell joint or fitting and at 10 foot intervals along pipeline (at a minimum). Locate wire shall be brought to grade within a valve box or locating station box, as required, at 475 foot intervals (see note # 2 this page). Locate wire shall be installed in box and along pipeline as detailed in the GCS Standard Details. Locate wire shall be installed beneath the pipe line at the 5:00 to 7:00 o'clock position on the pipe. Connection or splices underground which are not inside a locate box (or valve box), shall be prohibited unless approved otherwise by GCS. The request to make an underground connection or wire splice shall be done in writing to GCS. The request shall contain the complete job name, name of street, station number as shown on plans and scaled as close as possible to the location of splice or connection, and the reason for request. GCS shall have at least 48 hrs. to respond verbally and 5 working days to respond in writing. If an underground connection is unavoidable and approved by GCS, then the wire shall be first tied in a knot (to minimize future separation), then the wire ends shall be connected utilizing an electric wire nut, then make the connection water tight by using either vinyl mastic tape (4" wide X 0.09" thick by 3M-Scotch 2210), or plastic enclosure (Snaploc Model LV 9500/951-4 large by TKH) or GCS approved equipment.

LOCATE WIRE BOX INSTALLATION

Where utility mains are to be installed beneath sidewalks, valve boxes shall be installed instead of locate wire boxes. The valve box lids shall indicate the type of line (i.e. water, sewer, or reclaimed water). The valve box shall be adjusted so the top of valve box is flush with the finished sidewalk grade. If for any reason a locate wire box must be offset from the C/L of pipeline, then the contractor shall have installed an adequate length of wire to avoid splices and the exact location of the locate box including the amount of the offset distance shall be recorded on the As-builts.

AS-BUILT DRAWINGS

See general note No. 1 of standard water and sewer system outline technical specifications for submitting as-builts on locate wire boxes.



TYPICAL LOCATOR WIRING INSTALLATIONS

PLAN VIEW

NOTES:

1. LOCATING WIRE SHALL BE 10 GAUGE, SINGLE STRAND UF RATED (DIRECT BURIAL), COPPER WIRE.

2. LOCATE BOXES SHALL BE INSTALLED AT THE LOT LINE IN RESIDENTIAL SUBDIVISIONS, OR COMMERCIAL PROPERTIES. BOXES SHALL NOT BE LOCATED IN SIDEWALKS OR DRIVEWAYS. LOCATE BOXES SPACING SHALL NOT EXCEED 500 FEET.

3. WHERE IT IS NOT POSSIBLE TO LOCATE THE BOX OUTSIDE OF A PAVED STREET OR PARKING LOT THE LOCATE WIRE SHALL BE PLACED IN A VALVE BOX INSTEAD OF A ROWE BOX. VALVE BOX LID SHALL BE MARKED ACCORDING TO THE TYPE OF PIPE SERVED.

COLIN D. GROFF, P.E.
REG. NO. 47609

NO.	REVISIONS	BY	DATE

BLACK CREEK ENGINEERING, INC.
3900 PASO FINO ROAD
GREEN COVE SPRINGS, FLORIDA 32043
PHONE (904) 759-8930
AUTHORIZATION NO. 27946

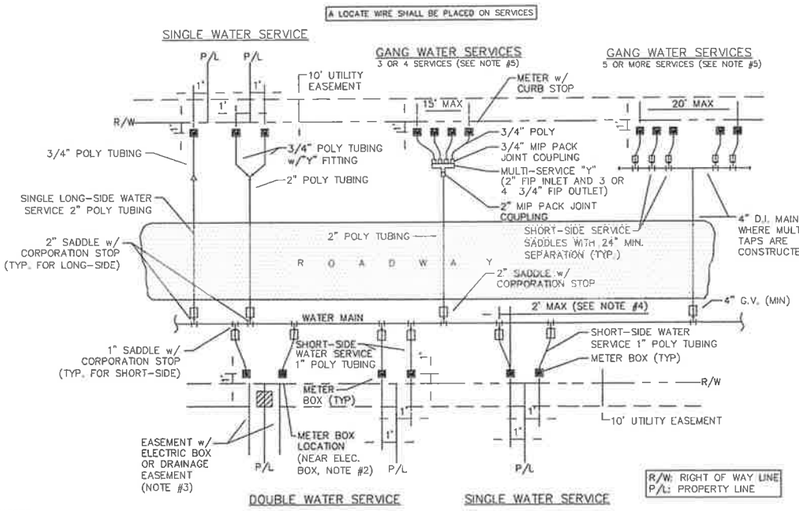
PROPOSED INDUSTRIAL SITE
SR 16 EAST, GREEN COVE SPRINGS, FL
CYPRESS MANAGEMENT & DESIGN, LLC

TRACER WIRE DETAILS

JOB NO. : 24-001	
DATE: 01/25/2025	
DRAWN BY : CdG	
CHECKED BY : CdG	
APPROVED BY : CdG	
SCALE : 1"=20'	

SHEET
22

NOT ISSUED FOR CONSTRUCTION



NOTES

1. THE SKETCHES ABOVE INDICATE TYPICAL WATER SERVICE AND METER BOX LOCATIONS. ACTUAL LOCATIONS OF BOXES MAY VARY SLIGHTLY ACCORDING TO FIELD CONDITIONS ENCOUNTERED. TYPICALLY, THE METER BOX SHALL BE LOCATED 1.0' OFF OF THE R/W LINE.

2. UNLESS SPECIFIED OTHERWISE BY THE CITY OF GREEN COVE SPRINGS, THE METER BOX SHALL BE LOCATED 1.0' OFF OF THE R/W LINE, AND 1.0' FOOT INSIDE OF THE PROLONGATION OF ONE OF THE SIDE PROPERTY LINES. IF A CONFLICT EXISTS WITH OTHER UTILITIES, THE METER BOX MAY BE ADJUSTED TO FOUR FEET (MAX.) INSIDE PROPERTY LINES (IN LIEU OF 1.0' FEET), UNLESS APPROVED OTHERWISE BY THE CITY, THE WATER METER BOX SHALL BE LOCATED IN NON-TRAFFIC AREAS (NOT IN SIDEWALKS OR DRIVEWAYS). IF AN UNAPPROVED METER BOX IS IDENTIFIED BY THE CITY, THEN THE CONTRACTOR OR CUSTOMER SHALL BE RESPONSIBLE FOR THE COST OF RELOCATING ANY METER BOX WHICH IS LOCATED IN THE SIDEWALK OR DRIVEWAY OR THE COST TO PROVIDE THE CORRECT METER BOX. THE CITY SHALL APPROVE ALL DEVIATIONS TO THE ABOVE PRIOR TO CONSTRUCTION.

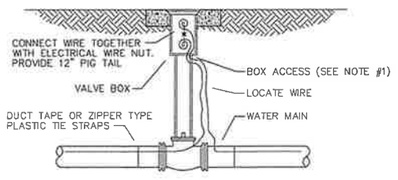
3. IF DRAINAGE OR OTHER EASEMENT IS LOCATED BETWEEN LOTS, METER BOXES SHALL BE LOCATED AT THE EASEMENT LINE BUT OUTSIDE THE EASEMENT AREA.

4. FOR SINGLE SERVICES, THE HORIZONTAL DISTANCE (PERPENDICULAR TO THE MAIN) BETWEEN THE SERVICE'S SADDLE AND THE METER BOX SHALL BE 2 FEET MAXIMUM. FOR DOUBLE 3/4 SERVICES, THE 2 POLY MAIN SHALL BE LOCATED CENTERED BETWEEN THE TWO METER BOXES. LOCATE WIRE IS REQUIRED ON ALL SERVICES. THE WIRE SHALL RUN FROM THE METER BOX TO THE MAIN (WITH NO CONNECTION TO MAIN WIRE WITH THE LAST 24 INCHES STRIPPED OF INSULATION/BARE WIRE AS GROUND). ALL EXCEPTIONS TO THIS REQUIREMENT MUST BE APPROVED BY THE CITY OF GREEN COVE SPRINGS. THIS WILL ASSIST IN LOCATING EXISTING SERVICE LINES IN THE FUTURE.

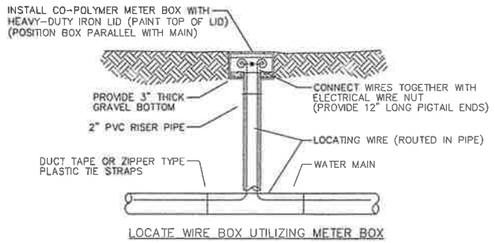
5. GANG WATER SERVICES: FOR 3 OR 4 SERVICES IN ONE AREA, A DUCTICLE IRON PIPE (D.I.P.) WATER MAIN EXTENSION W/LOCATE WIRE MAY BE UTILIZED ON EITHER SHORT-SIDE OR LONG-SIDE SERVICES WHERE SHOWN ON THE DRAWINGS. LOCATE WIRE SHALL EXTEND FROM ONE METER BOX TO CURB STOP AT WATER MAIN. FOR 5 OR MORE SERVICES IN ONE AREA, A WATER MAIN EXTENSION W/LOCATE WIRE MAY BE UTILIZED ON EITHER SHORT-SIDE OR LONG-SIDE SERVICES WHERE SHOWN ON THE DRAWINGS (TAPS STAGGERED AND AT 2 FEET ON CENTER (MIN). FOR WATER SUPPLY HEADERS WHERE 5 OR MORE TAPS ARE CONSTRUCTED, THE HEADER PIPE SHALL BE 4" AT A MINIMUM. EXAMPLE: CONSTRUCT A 4" MAIN D.I. CROSSING THE STREET FOR 5 RESIDENTIAL CUSTOMERS, UTILIZING 4" G.V., 4" PIPE, 4"X1" SADDLES AND 1" CURB STOPS (NO GLUED TEE FITTINGS). THE 4" OR LARGER D.I.P. WATER MAIN MUST BE SIZED AND DESIGNED BY THE ENGINEER.

6. ALL COMMERCIAL WATER SERVICES SHALL BE 2" POLYETHYLENE PIPING CONNECTED TO 2" CURB STOP IN METER BOX, UNLESS OTHERWISE APPROVED BY THE CITY.

WATER SERVICE INSTALLATIONS 2" AND SMALLER METER



LOCATE WIRE BOX UTILIZING VALVE BOX

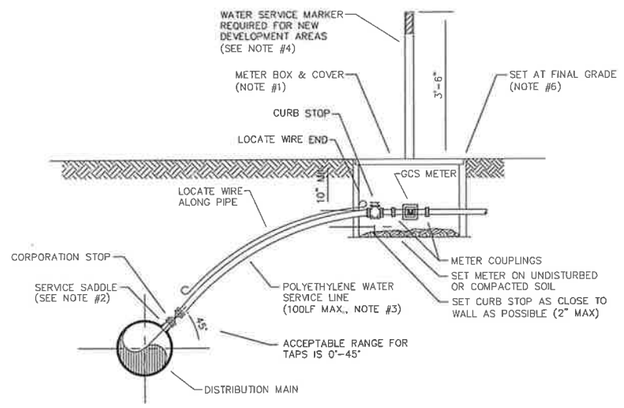


LOCATE WIRE BOX UTILIZING METER BOX

NOTES

1. LOCATE WIRE SHALL ENTER THE VALVE BOX THROUGH A "V" CUT IN THE 6" PVC RISER PIPE.

LOCATE WIRE BOX



NOTES

1. SEE CITY OF GREEN COVE SPRINGS APPROVED MATERIALS MANUAL AND SYSTEM DETAILS FOR REQUIREMENTS.

2. SINGLE BAND SADDLES MAYBE UTILIZED ON NEW 1" WATER SERVICES WHICH ARE INSTALLED ON A DRY 10" SIZE OR SMALLER WATER MAIN (NEW WATER MAIN CONSTRUCTION). FOR WET TAPS OR WATER MAINS 12" SIZE AND LARGER, A DOUBLE BAND SADDLE IS REQUIRED.

3. NO OPEN CUT UNDER ROADWAY PAVING ALLOWED UNLESS THE ROADWAY IS BEING RECONSTRUCTED OR IF DIRECTED OTHERWISE BY CITY OF GREEN COVE SPRINGS. CONSTRUCT POLY LINE WITH 36" (MIN.) COVER UNDER ROADWAYS. THE POLY WATER SERVICE LINE SHALL BE SAME SIZE AS THE METER (3/4" MINIMUM) AND BE INSTALLED PERPENDICULAR TO THE MAIN AND NOT EXCEED 100LF UNLESS OTHERWISE APPROVED BY CITY OF GREEN COVE SPRINGS.

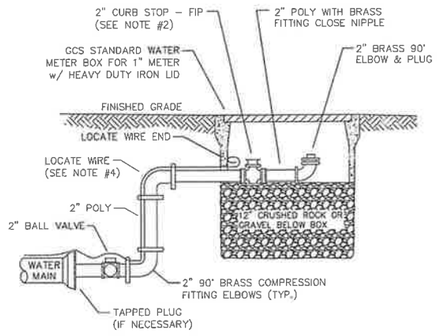
4. INSTALL PVC PLUG IN ALL CURB STOPS IF WATER SERVICE IS "NOT IN USE" (I.E.: IF NO METER IS INSTALLED). IN ADDITION, INSTALL A 6', 6" P.T. FENCE POST (TOP PAINTED BLUE) 12" OFF SIDE OF METER BOX, THE REMOVAL OR TRANSFER OF A WATER SERVICE SHALL INCLUDE BRASS METER COUPLINGS (HEX ON BARREL TYPE).

5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OR REPLACEMENT OF THE BOXES, METERS OR ELECTRONIC DEVICES IF DAMAGED BY THE CONTRACTOR DURING THE CONSTRUCTION PERIOD.

6. METER BOX AND TOP SHALL BE CLEAR OF ALL DEBRIS TO ALLOW FULL ACCESS TO BOX (I.E., NO DIRT, TRASH OR OTHER DEBRIS PLACED ON TOP OF BOX).

7. LOCATE WIRING REQUIRED ON ALL LONG AND SHORT SERVICES.

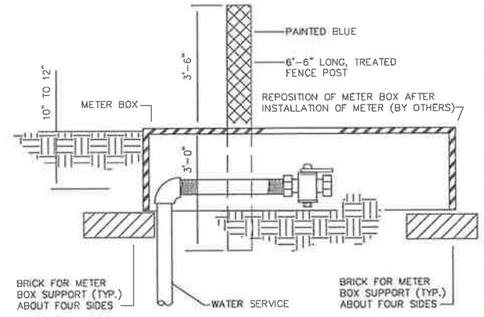
WATER SERVICE DETAIL- 2" AND SMALLER METER



NOTES

1. PIPE SHALL BE POLYETHYLENE. FITTINGS SHALL BE BRASS.
2. THE 2" CURB STOP SHALL BE ALL BRONZE. FITTINGS SHALL BE BRASS.
3. CANNOT BE PLACED UNDER CONCRETE OR PAVEMENT.
4. PLACE 2 FEET PAST LAST WATER MAIN SERVICE CONNECTION.

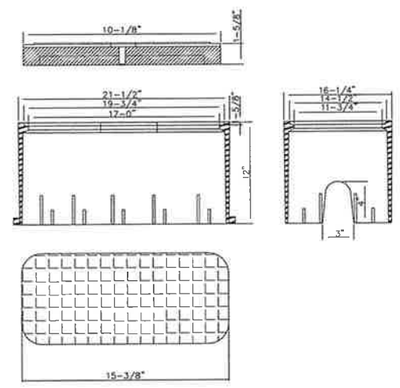
FLUSHING VALVE BELOW GRADE



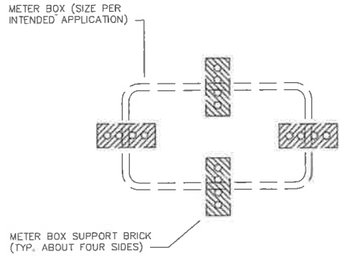
WATER SERVICE MARKER POST

NOTE:
ALL SERVICES ARE TO BE CLEARLY MARKED BY A TREATED 6'-6" LONG MARKER POST PAINTED BLUE. ALL SERVICES ARE TO BE EXTENDED ABOVE GRADE UNTIL COMPLETION OF ALL GRADING ACTIVITIES. ONCE FINAL ROAD GRADING IS COMPLETE, LOWER SERVICES BY CUTTING OFF RISER 10" TO 12" BELOW FINAL GRADE AND INSTALL 90° BEND, NIPPLE AND LW BALL VALVE AT THAT ELEVATION. SET METER BOX OVER ENTIRE HORIZONTAL SECTION OF SERVICE LINE FROM LAST 90° BEND TO THE END OF THE CURB STOP. BOX TO BE REPOSITIONED WHEN THE METER IS INSTALLED. MARKER POST TO BE INSTALLED ADJACENT TO AND LOCATED AT THE MID SECTION OF THE METER BOX.

NOTE:
MIN. WALL THIKNESS: .25"
DOUBLE WALL BODY w/STRUCTURAL SUPPORT RIBS w/MIN. THINCKNESS: 1/8"
1" BOTTOM FLANGE
BOX IS INJECTED MOLDED STRUCTURAL FOAM RECYCLED POLYPROPYLENE MATERIAL



METER BOX & SOLID BLUE LID



METER BOX SUPPORT DETAIL

COLIN D. GROFF, P.E.
REG. NO. 47609

NO.	REVISIONS	BY	DATE

BLACK CREEK ENGINEERING, INC.
3900 PASO FINO ROAD
GREEN COVE SPRINGS, FLORIDA 32043
PHONE (904) 759-8530
AUTHORIZATION NO. 27946

PROPOSED INDUSTRIAL SITE
SR 16 EAST, GREEN COVE SPRINGS, FL
CYPRESS MANAGEMENT & DESIGN, LLC

WATER SERVICE DETAILS

JOB NO. : 24-001
DATE: 01/25/2025
DRAWN BY : CdG
CHECKED BY : CdG
APPROVED BY : CdG
SCALE : 1"=20'

SHEET
23

NOT ISSUED FOR CONSTRUCTION

OUTLINE SPECIFICATIONS FOR CONSTRUCTION OF SEWAGE COLLECTION SYSTEM

01. INTENTION. It is the declared and acknowledged intention to secure a new sewerage system, complete, in accordance with the plans, specifications, and contract documents. All new work shall be in accordance with the City of Green Cove Springs Specifications and Details and with C.G.C.S. Approved Materials Manual and C.G.C.S. Public Works Department Details and Specifications and any other Government Regulatory Agency. All work shall conform to the above whether or not specifically called out or noted on the plans.

02. GENERAL. All materials shall be of those listed in the C.G.C.S. Approved Materials Manual. The installation shall be warranted by the Contractor as to materials, workmanship and accuracy of the As-built drawings for a period of two years from the date of completion of the work or beneficial use of the facilities. Workmanship shall be of good quality; i.e., sewers shall be laid true to line and grade, fittings shall be properly installed and restrained, trenches shall be properly excavated and backfilled, manholes shall be installed at locations and to elevations shown on the plans.

02.1 CONTRACTOR LICENSE AND APPROVAL. Utility reserves the right to approve or deny approval of contractor prior to construction of any on-site or off-site utility facilities. Contractor must hold a State Of Florida Under Ground Utility contractors license, that named contracting company being the one doing the work on project, and demonstrate acceptable experience in the field of utility construction.

03. SURVEYS. The Utility Contractor shall provide all surveys necessary for the layout and construction of the work of his contract.

04. EARTHWORK. Earthwork shall include all excavation, fill and backfill (hand/machine), compaction and rough grading of materials encountered. No unsuitable materials clay, muck, or peat removed from pipe trenches are to be used for backfill. All fill or backfill shall be either sand or sandy clay, free of roots, trash or other debris. All backfill alongside of and to a height twenty-four inches above all pipe shall be free of clay or organic material, compacted in lifts, the first of which shall be to the spring line of the pipe by either hand or machine operation carefully to 98%. All other backfill shall be compacted by either hand or machine operation carefully to 95% (outside of paving), 98% (under paving) of its optimum moisture content as determined by ASTM D698, latest. Copies of compaction density test reports from a licensed testing agency shall be made available to C.G.C.S. if requested.

05. MANHOLES. Manhole bases, sections and cones shall conform to the requirements of ASTM C478, Specifications for Precast Reinforced Concrete Manhole Sections. Cement shall meet the requirements of ASTM C150, Specifications for Portland Cement, Type II. Concrete shall meet the minimum requirements for Class "A" Concrete Work. Minimum wall thickness shall be 1/12 the inside diameter in inches plus one (1) inch. Bases for manholes shall be cast integrally with the bottom manhole section. Joint contact surfaces shall be formed with machined castings; they shall be exactly parallel with a 2 degree slope and nominal 1/16 inch clearance with the tongue equipped with a proper recess for the installation of an O-ring rubber gasket, conforming to ASTM C443. Joints for circular Concrete sewer and Culvert pipe using Rubber gasket, or RAM-NEK premolded Plastic Joint Sealer with joints Manhole adjustment materials shall be Precast concrete adjustment rings only as manufactured by Taylor Precast Co. (or equal). Precast manhole walls shall not be coated, unless otherwise noted. Cement grout for manhole bottoms shall be a stiff rich mix of Type II Portland Cement and sharp plaster sand. Calcium chloride may be added (maximum of 2%) to aid in obtaining a faster set. At permanent pump station locations, the first upstream manhole from the station shall be lined with a polyethylene liner as manufactured and installed by Taylor Precast Co. or approved equal.

05.1 CAST IRON MANHOLE FRAMES AND COVERS. Cast iron manhole frames and covers shall be as detailed on drawings. Castings shall meet the requirements of ASTM A48, Specifications for Gray Iron Castings, Class No. 30, or Grade 65-45-12, Ductile Iron meeting the requirements of ASTM A536, Standard Specification for Ductile Iron Castings. In either case, manhole frame and cover shall be designed to withstand an HS20-44 loading defined in the AASHTO Specifications. Frames and covers shall be machined or ground at touching surfaces so as to seat firmly and prevent rocking.

05.2 FLEXIBLE MANHOLE CONNECTOR. All connections between sewer pipe and pre-cast concrete manholes shall be accomplished by a Flexible Connector, "Kor-N-Seal", as manufactured by National Pollution Control Systems, Inc. or approved equal.

05.3 FLOW CHANNELS. Flow channels in manhole base shall be formed of D.O.T. Class I, Type II cement grout with brick or rubble and trowel to a smooth surface finish. Grout surface shall be 1" min. thickness over brick or rubble. While the manholes are under construction, cut off pipes at inside face of the manhole and construct the invert to the shape and sizes of pipe indicated. All inverts shall provide a constant gradient from influent pipe to effluent pipe through manhole. Changes in direction of the sewer and entering branch or branches shall be laid out in smooth curves of the longest possible radius which is tangent to the center lines of adjoining pipelines.

05.4 DROP INLETS. Where shown on the drawings, drop inlets to the manholes shall be constructed as shown on the drawings and specified herein.

06. POLYVINYL CHLORIDE PIPE. Polyvinyl Chloride Sewer Pipe shall conform to the requirements of ASTM D-3034, SDR 26. The PVC compound conforming to ASTM D-1784. Pipe shall be clearly marked in 5 Ft. intervals or less, indicating manufacturers name, nominal size, cell classification and legend. Joints shall be push-on rubber gasketed, conforming to ASTM D-3034. Pipe and fittings shall be installed in accordance with recommended practice ASTM D-2321. Maximum depth of gravity sewer without prior approval shall be 15 feet. Sewers over 15' in depth shall be DR-18 P.V.C. pipe and shall have C.G.C.S. approval prior to design or installation of said sewer.

07. PIPE BETWEEN MANHOLES. All piping installed between manholes shall be the same material and class. No dissimilar pipe material will be allowed anywhere within a single run of pipe.

08. SANITARY SERVICE LATERALS. Sanitary service laterals shall be Polyvinyl Chloride Pipe conforming to the requirements of ASTM D-3034, SDR 26 where cover over top of pipe is 36 inches or greater. Where cover over top of pipe is less than 36 inches, specific construction conditions shall be directed by the City of Green Cove Springs. All sanitary service laterals shall be a minimum of 4'-0" deep at the right-of-way line to top of pipe. Any sanitary service lateral which must be more than 5'-0" deep shall not be installed prior to obtaining permission from the C.G.C.S. field inspector or C.G.C.S. Public Works Department. All sanitary service laterals shall be 6-inch diameter from the main to the right-of-way line with a minimum slope of 0.60% (0.6 feet per hundred feet). In single family residential developments, services shall reduce to 4" in size and terminated at the property line with a cleanout constructed of a PVC wye and bend with a maximum angle of 45 degrees (see Standard Sewer System Cleanout Detail) utilizing the proper fittings for the type of pipe specified.

09. FORCE MAINS. Force mains shall be C900 DR-18 PVC and conform to the requirements of ASTM D-1784, D-2241, D-3139 and F-477. Pipe shall be color coded and marked "FORCE MAIN" on at least two sides and at every 12" along the barrel of the pipe. Ductile iron pipe for force main service shall be polylined. Ductile iron pipe is not to be used without prior approval of the Clay County Utility Authority. Fittings shall be C110 gray iron and shall be polylined. Force mains less than 3" shall be SCH.80 PVC. All force mains shall be installed with tracer wire per C.G.C.S. standard location wire details.

09.1 LIFT STATION VALVES. Plug valves shall be Dezurik, Clow or M&H, with full port opening. Check valves shall be M&H, Mueller or American Darling.

09.2 FORCE MAIN VALVE. Gate valve, resilient seated, same as specified in Water Distribution System Specifications Section 12 below. Except valve bodies shall be gray iron. Valve box shall have the word "SEWER" cast into the cover.

09.3 FORCE MAIN JOINT RESTRAINT. All fittings shall be properly and adequately restrained against lateral movement at all force main tees, crosses, valves and bends. Restrainers shall be Uni-Flange Series 1300, 1350, 1390 or approved equal installed per manufacturer's recommendations and C.G.C.S. standard details and specifications.

09.4 FORCE MAIN PIPE FLUSHING. All force main piping shall be flushed clean with water utilizing full pipe diameter flushing for all piping up to and including 8" diameter.

10. INSTALLATION. All sewer lines, manholes, and appurtenances shall be constructed to the dimensions and elevations indicated on the drawings. Trenches shall be excavated to a width approximately twelve inches greater than the outside diameter of the pipe. Machine excavation shall be to a depth one-fourth pipe diameter above proposed pipe grade; the remaining depth shall be hand excavated and shaped to give full support to the lower one-fourth of each pipe. Each section of pipe shall be inspected for defects prior to being lowered into the trench. The inside of each bell and the outside of each spigot shall be thoroughly cleaned of all foreign matter, prior to making the joint. All sewer lines shall be constructed with the spigot ends pointing in the direction of the flow. Both the bell and the spigot of each joint shall be lubricated with the lubricant recommended by the pipe manufacturer. All sewer lines shall be cleaned of foreign matter as construction progresses, and shall be in a clean condition upon completion of construction operations. Pipe materials shall remain the same on runs between manholes and / or other structures.

11. INSPECTIONS. Each section of the completed sewer system shall be inspected for proper alignment. Inspection shall consist of "lamping" from manhole to manhole. Any section of the sewer system which does not display true, concentric alignment shall be reinstalled at no additional expense to the Owner. A written log of inspection shall be kept indicating location of test, potential problems in sewer, dips and depth of water, service locations, and other irregularities in the pipe lines. A video tape in VCR format shall be made of the television inspection and submitted to the Engineer and the City of GCS. Copies of compaction density test reports from a licensed testing agency shall be made available to City of GCS if requested.

11.1 Television inspection will be required on all new gravity sewers constructed. This service shall be provided by the Contractor as a part of this Contract. The newly constructed sewers shall be televised in the presence of the Inspector of the City of GCS. A full report as to the condition of pipe, type, depth, location of services, length, type, joint and distance between manholes, etc. shall be furnished to the City of GCS inspector prior to the final acceptance of the system. Any pipe found to be cracked, leaking or otherwise defective shall be removed and replaced with new pipe at no additional costs to the Owner. Deflection testing with 7.5% mandrel also required. Any section not passing the mandrel test shall be corrected. Sewer mains shall be televised after curb and lime rock are in place but prior to paving. Curb and limerock shall be installed, finish graded prior to televising the gravity sewer. Limerock priming and paving operations shall not take place until the City of GCS inspector has reviewed the television tape and approves the gravity sewer system. This will be strictly enforced. All gravity sewers must be flushed no sooner than 4 hours prior to any television inspection. Force main lines shall be pressure tested and approved prior to paving, but not prior to subgrade mixing operation and limerock installation, finish graded and compacted. Sewer services shall be viewed by a camera capable of viewing into service lateral connections. Adequate water must be placed within the upstream manhole to flow through the downstream manhole before inspecting with the camera. All work must be accomplished in the presence of the City of GCS inspector and a 48 hour notice must be provided. Contractor shall provide City of GCS with a 48 hr. notice of intent to televise and inspect sewer main. City of GCS inspector shall report to job site at the time specified by contractor at the time of the call-in. City of GCS inspectors will wait at the job site no more than one hour for the televising to begin before leaving the job site. Contractor shall reschedule televising giving City of GCS 48 hrs. notice if the above occurs.

11.2 TEST, INFILTRATION: After completion, the sewers or sections thereof, shall be tested and gauged for infiltration. To check the amount of infiltration, the Contractor, at no added compensation over the contract price for the sewers, shall furnish, and install and maintain a V-notch sharp crested weir in a wood frame on the main sewers as directed by the Engineer. Maximum allowable infiltration shall be 50 gallons per mile, per inch of dia. of sewer per 24 hour day at any time.

11.3 TEST, EXFILTRATION: In areas where ground water is not encountered in sewer construction, or it is desired to run exfiltration tests, the Contractor shall furnish and install all necessary materials, equipments, shall supply water, etc., and shall run exfiltration tests to determine acceptance of the sewer. The maximum allowable exfiltration shall be 50 gallons per mile per inch of diameter of sewer per 24 hour day at any time based on two foot minimum internal head.

OUTLINE SPECIFICATIONS FOR CONSTRUCTION OF WATER DISTRIBUTION SYSTEM

01. INTENTION. It is the declared and acknowledged intention to secure a new water distribution system, complete, in accordance with the plans and specifications, and contract documents. All new work shall be in accordance with C.G.C.S. Specifications and Details and Approved Materials Manual and C.G.C.S. Public Works Department Details and Specifications and any other Government Regulatory Agency. All work shall conform to the above whether or not specifically called out or noted on the plans.

02.1 CONTRACTOR LICENSE AND APPROVAL. Utility reserves the right to approve or deny approval of contractor prior to construction of any on-site or off-site utility facilities. Contractor must hold a State Of Florida Under Ground Utility contractors license, that named contracting company being the one doing the work on project, and demonstrate acceptable experience in the field of utility construction.

02. GENERAL. All materials shall be of those listed in the C.G.C.S. Approved Materials Manual. Materials shall be warranted by the Contractor as to materials, workmanship and accuracy of As-built drawings for a period of two years from the date of completion of the work or beneficial use of the facilities. Workmanship shall be of good quality; i.e., mains shall be laid in a uniform alignment, fittings shall be properly restrained, trenches shall be properly excavated and backfilled, fire hydrants and valve boxes shall be adjusted to finished grade. All water mains shall be installed with tracer wire per C.G.C.S. standard location wire details.

03. SURVEYS. The Utility Contractor shall provide all surveys necessary for the layout and construction of the work of his contract.

04. EARTHWORK. Earthwork shall include all excavation, fill and backfill (hand/machine), compaction and rough grading of materials encountered. No unsuitable materials clay, muck, or peat removed from pipe trenches are to be used for backfill. All fill or backfill shall be either sand or sandy clay, free of roots, trash or other debris. All backfill alongside of and to a height twenty-four inches above all pipe shall be free of clay or organic material, compacted by either hand or machine operation carefully to 98%. All other backfill shall be compacted by either hand or machine operation carefully to 95% (outside of paving), 98% (under paving) of its optimum moisture content as determined by ASTM D698, latest. Copies of compaction density test reports from a licensed testing agency shall be made available to C.G.C.S. if requested.

05. JOINT RESTRAINT. All fittings shall be properly and adequately restrained against lateral movement at all water main tees, crosses, valves bends and fire hydrants. Restrainers shall be Uni-Flange Series 1300, 1350, 1390 or approved equal installed per manufacturer's recommendations and C.G.C.S. Details and Specifications.

06. DUCTILE IRON PIPE. Ductile iron pipe shall conform to ANSI Specification A21.50 (AWWA C150) latest, "Thickness Design of Ductile Iron Pipe", Table 50.5, laying condition Type 2, internal operating pressure of 250 p.s.i. for an 8-foot depth of cover, Class 51 minimum and shall be ANSI A21.51 (AWWA C151), latest centrifugally cast pipe. Laying lengths shall each length clearly marked with pressure rating, thickness be 20 feet or less, class, height of pipe without lining, length, and manufacturer. Ductile iron pipe for water service shall be furnished with cement lining per AWWA C110, C115 and C151. The pipe shall have design values of 60,000 P.S.I. minimum tensile strength, and 42,000 P.S.I. minimum yield strength. Ductile Iron pipe for water or service lines shall be used in any easement, right-of-way, between lots, and any instance where a building foundation or other permanent appurtenance is within 10' of the water main or a service line larger than 3".

07. DUCTILE IRON FITTINGS shall be C153 cement lined and suitable for the type and class of pipe to which connected. Gaskets shall be suitable for potable, domestic water service. Minimum working pressure shall be 150 P.S.I.

08. POLYVINYL CHLORIDE PIPE. Polyvinyl chloride pipe for water mains 4 inch in diameter and larger, shall be P.V.C. C900, DR-18, conforming to ASTM D-1784, D-2241, D-3139 and F-477, latest, and shall bear the seal of the National Sanitation Foundation. Pipe shall be color coded and marked on at least 2 sides with the word "WATER" and at every 12" along the barrel of the pipe. Couplings shall be rubber gasketed, push-on type conforming to ASTM D-2122. DR-18 shall be used for fire mains.

09. STEEL CASING PIPE. Steel casing pipe shall be of size indicated on the Drawings and shall conform to ASTM A139, with a minimum yield strength of 35,000 p.s.i.

10. POLYETHYLENE PIPE shall be SDR 9, AWWA C901, ASTM D2737, PE 3408, colored blue, NSF Seal, with Type 316 stainless steel inserts. Fittings shall be suitable for type of installation required. All piping smaller than 4" shall be Polyethylene.

11. GATE VALVES AND BOXES. Gate valves shall be non-rising stem type and shall be suitable for a 200 p.s.i. non-shock working pressure Gate valves shall be mechanical joint, flanged or screwed. Gate valves shall have a 2" operating nut and open left. Gate valves shall have joints suitable for the type of main on which installed. Valves 2" & 3" shall be iron body, bronze fitted (distribution mains only). Valves 4" and larger shall be iron body, bronze fitted with resilient seat. Valves shall be of domestic (American) manufacture and shall be A.F.C., M&H, Mueller or approved equal. Valves 16" and larger shall be AWWA C-509, M&H Valve Co. Valve boxes with screw extensions shall be provided for all gate valves. Boxes shall be of cast iron construction, 7/32" minimum wall thickness and shall be nontacky tar enamel coated. The word "WATER" shall be cast in the cover. Other ball valves 2" and smaller shall be Ford Ball Valve or Mueller with F.I.P.T.

12. WATER METER BOXES. Meter boxes for flushing hydrants and 3/4" meters shall be DFW Plastics, Inc., model DFW36C-12-3T. Meter boxes for 1" meters shall be DFW Plastics, Inc., model DFW37C-12-3T. Meter boxes for 1-1/2" and 2" meters shall be DFW Plastics, Inc., model DFW1730C-12-3T. Developer shall be responsible for installation of meter boxes on all water services as part of the water main installation. All curb stops shall be adjusted to the proper elevation and shall be accessible for the installation of the water meter. The contractor shall be required to open all boxes for the C.G.C.S. inspector at the final inspection. A treated 6'-6" fence post marker shall be painted blue for identification.

13. CURB STOPS. Curb stops shall be cast bronze, inverted key stop, roundway, with check, lock wing type, for locking in the closed position. Curb stops shall be Ford Ball Valve or Mueller.

14. CORP STOPS. Corp stops shall be cast bronze, inverted key stop, roundway, with check, lock wing type, for locking in the closed position. Corp stops shall be Ford Ball Valve or Mueller.

15. FIRE HYDRANTS. Fire hydrants shall be traffic type, 150 pound working pressure, AWWA Standard C502, latest revisions, with two 2 1/2" nozzles, one 4 1/2" nozzle and 5 1/4" main valve. Fire hydrant shall be be compression type with breakable coupling and bolts. Pipe connection shall be mechanical joint. American Flow Control, AFC B-84-B, painted red w/white bonnets and with 1 1/2" penta nuts, opening left.

16. INSTALLATION. The minimum cover over top of potable water main shall be 36" minimum. All water lines and appurtenances shall be thoroughly cleaned of all foreign matter before being lowered into the trench and shall be kept clean during laying operations by means of plugs or other approved methods. All pipe shall be checked for defects before being lowered into the trench. Defective pipe shall not be used. Pipe found to be defective, after installation, shall be removed and replaced with sound pipe at no additional expense to the Owner. The full length of each section of pipe shall rest solidly upon the pipe bed, with recesses excavated to accommodate the bells and joints. All pipe that has the grade or joint disturbed after laying shall be taken up and reinstalled. The pipe shall not be laid in water, or, when trench or weather conditions are unsuitable for the work. All joints shall be cleaned of all foreign matter before making the joint. Fittings at bends in the pipe shall be properly restrained with joint restrainers adequately sized to prevent movement and dislocating or blowing off when the line is under pressure. Service laterals shall terminate at the point noted in the details.

17. TESTS. After the pipe is laid, the joints completed, and the trench backfilled, the newly laid pipe and appurtenances shall be subjected to a Hydrostatic and Leakage test of 150 pounds per square inch for a period of at least two hours. During this period, all joints shall be inspected to determine water tightness of the system. Any leaks detected shall be corrected. Tests shall be in accordance with the C.G.C.S.'s requirements and specifications. Water main lines shall be pressure tested and approved prior to paving, but not prior to subgrade mixing operation and limerock installation, finish graded and compacted. If C.G.C.S. inspector detects the water main has been damaged during priming or paving he shall require the contractor to repair the water main and retest the water main.

18. STERILIZATION. After completion of construction and testing, the water system shall be sterilized with chlorine in accordance with AWWA Standard C651 latest, and State of Florida Department of Environmental Protection requirements before acceptance for domestic operation. The amount of chlorine applied shall be sufficient to provide a dosage of 50 parts per million or more. The chlorine solution shall remain in the system for a period of at least 8 hours, during which time every valve in the system shall remain opened and closed several times to assure contact with every surface of the system. After completion of sterilization procedures, the system shall be flushed using chlorinated water from a domestic water source having a chlorine residual of at least 1 part per million. The contractor shall obtain all bacteriological clearances as required by the Florida Department of Environmental Protection. After bacteriological clearances, the pressure in the main shall not drop below 20 P.S.I. Clearance report to be submitted to the Engineer. The contractor should be aware that there is a timing maximum related to bacteriological clearance of the main, completion of as-built drawings and Engineer / C.G.C.S. completion of Certificate of Completion. In any project where the bacteriological clearances are greater than 30 days old at the time of submittal of Certificate of Completion to F.D.E.P., the contractor may be required to pull more samples and obtain more bacteriological clearances. Prior to introducing the chlorine solution, the lines shall be thoroughly flushed with clean water utilizing full pipe diameter flushing for pipe up to and including 8" diameter. Contractor shall be responsible for dechlorination of the disinfectant water prior to any discharge to any ditch or surface waters.

19. BACTERIOLOGICAL SAMPLING. Contractor shall assure the project construction is completely finished prior to any bacteriological sampling and testing.

GENERAL NOTES

1. AS-BUILT DRAWINGS AND ASSOCIATED COSTS. All cost records pertaining to the cost of water, reclaim and sewer facilities donated to the utility shall be provided to the Utility by applicant. Prior to acceptance of any extension to the Utility's system that is completed by a licensed underground utility contractor, the Utility will require that the applicant's contractor provide the Utility, to retain for its permanent records, all field as-built data. During the daily progress of the work, the contractor's job superintendent shall record on his field set of drawings all work installed. All manholes, gravity sewers, force mains, laterals, valves, fittings, fire hydrants, etc. shall be located in two directions. One location shall be referenced perpendicular to the right-of-way lines and or property lines (preferably both) or existing permanent utility structures are acceptable (i.e. manholes, catch basins, fire hydrants, head/end walls, etc.). No power/utility poles may be used for reference. Elevations of manhole inverts and center of cover shall be shown to the nearest hundredth of a foot. Size, type, class and slope of sewer main shall be shown (i.e. 8" PVC, SDR-35). The top elevation of each manhole may be determined by measuring from a surveyed pipe invert to the final adjusted manhole top. Size, type and class of water mains, valves, fittings, fire hydrants, etc. shall be shown (i.e., 8" D.I.P., 6" gate valve). All locations where the top of the water main is less than 36" deep or more than 50" deep shall be noted on the as-builts. Water as-builts, sewer as-builts and reclaim water as-builts shall be on separate sheets. <u>ASBUILTS SHALL BE IN NAD 1983 FL EAST-FOOT--STATE PLANE COORDINATES AND REFERENCE THE BM USED FOR THE PROJECT.</u>

Each page of the as-built drawings shall bear the name, date and original signature of the general contractor responsible for the Work and the name, date, original signature and seal of the registered land surveyor or registered professional engineer who provided the horizontal and vertical dimensions and elevations on the as-built drawing. The signatures shall certify that the as-built drawings do, in fact, reflect the true as-built conditions as located under the direct supervision of the registered surveyor and/or professional engineer. The as-builts shall be at the contractor's expense. A copy of the AutoCAD® <u>ASBUILT DATA SHALL BE FURNISHED ON COMPACT DISK (CD) PLUS (2) SIGNED FULL SIZE PRINTED SET PLUS (1) MYLAR SET by either the design engineer or the applicant's contractor.</u>

2. CONSTRUCTION WARRANTY AND WARRANTY SECURITY PERIOD. Developer shall warranty Utility against defects in material and workmanship for the portion of the onsite system to be owned by the Utility. Developer shall secure from its Contractor a written and fully assignable warranty that the system installed will be and remain free from all defects, latent or otherwise with respect to workmanship, materials, installation, and accuracy of his as-built drawings in accordance with the Utility approved plans and specifications for a period of two years from the date of the system acceptance by the Utility and immediately assign the same and the right to enforce the same to Utility on or before the date of the Utility's acceptance of the system for ownership and maintenance.

3. CLEAN-UP. All surplus materials of construction shall be removed from the site and disposed of by the Contractor as part of his contract with the owner.

4. RESTORATION. New Sanitary Sewer and Water Main Construction in earthen areas shall be seeded and mulched in accordance with Section 570 of Standard Specifications of the Florida Dept. of Transportation (latest edition). In locations where existing grassed (sodded) areas are disturbed, sod shall be replaced to preconstruction condition and to limits of construction or where directed by the engineer.

5. PERMITS. The Contractor shall be responsible for obtaining all permits required for performing work under this contract, except that the F.D.E.P. permits, and wetland permits, if required, will be secured by the owner or developer.

6. PIPE BEDDING. In the event unsuitable or unstable bedding material is encountered at or below the limits of the excavation required for installation, such material shall be removed and replaced with suitable compacted backfill material specified by the design engineer and approved by the C.G.C.S so as to provide a stable trench bedding surface suitable for proper pipe installation.

6-A. Pipe Bedding (Rock Bedding Material) Rock material used for pipe bedding shall be #57 stone or crushed concrete (crush-crete) in a #57 size. Rock bedding material shall be completely wrapped in a heavy filter fabric material, overlapped a minimum of one foot, rock bedding shall be installed to the correct grade and compacted to a density which will prevent any settlement, either by mechanical tamping equipment or by compressing the rock using the bottom of the backhoe bucket. The compaction shall be approved by C.G.C.S. inspector. The contractor shall be required to have submittal approved by design engineer and C.G.C.S. prior to use of such rock bedding material.

7. DEWATERING. The contractor shall at all time during construction provide ample means and equipment with which to promptly remove and dispose of all water entering the trench and structure excavations and shall keep said excavations acceptably dry until the piping and / or structures to be built therein are completed. All water pumped or drained from the work area shall be disposed of in a manner as to not damage sewer, water, electrical or any other piping, structures or property. No pipe shall be laid in water and no water shall be allowed to rise above the bottom of any pipe while it is being jointed, except as may be approved in writing by the C.G.C.S.

8. HYDROSTATIC TESTING. After all pressure pipes (water mains, services, and force mains) are laid, the joints completed, and the trench backfilled, the newly laid pipe and appurtenances shall be subjected to a hydrostatic test of 150 P.S.I. for a period of at least two hours. The engineer and the C.G.C.S. Public Works must be notified 48 hours before a test is to be performed. Test shall be as set forth in AWWA standard C600. Any leaks detected shall be corrected and the section of pipeline retested. The two hour test period shall begin when all joints have been determined to be water tight. Leakage shall be limited to that allowance set forth in Section 4 of AWWA Standard C600-87. Hydrostatic and leakage test and blow-down (zeroing of gage) must occur before sampling for bacteriological test. The maximum allowable pressure loss is 5 P.S.I. regardless of the length of pipe.

9. REPORTS. Reports of hydrostatic and leakage tests and sterilization of the newly completed systems shall be submitted to the C.G.C.S. prior to requesting acceptance of the system.

10. DENSITY TESTING. In-place density tests are required at intervals not to exceed 150' along pipelines for every other lift. A minimum of one test between manholes is required for every other lift regardless of the distance between sanitary sewer manholes.

11. CONCRETE. All Portland Cement concrete shall be of Type II Portland Cement, 2,500 P.S.I. minimum, ready mixed. All concrete shall be placed before the initial set has taken place. Stale or retempered concrete shall not be used.

12. GATE VALVES AND BOXES. Gate valves shall have a 2" operating nut and open left. Gate valves shall have joints suitable for the type main on which installed. Valves 2" and 3" shall be iron body, bronze fitted. Valves 4" and larger shall be iron body, bronze fitted with resilient seat. The word "WATER" on water boxes and "SEWER" on force main boxes shall be cast in the covers.

13. SEPARATION OF WATER AND SEWER MAINS. Horizontal and vertical separation between potable water system mains and or appurtenances and sanitary or storm sewers, wastewater or storm water force mains, and reclaimed water mains shall be in accordance with Rule 62-555.314 FAC

(a) New or relocated, underground water mains shall be laid to provide a horizontal distance of at least three feet between the outside of the water main and the outside of any existing or proposed storm sewer, storm water force main, reclaimed water main regulated under Part III of Chapter 62-610, F.A.C. or proposed vacuum-type sanitary sewer.

(b) New or relocated, underground water mains shall be laid to provide a horizontal distance of at least six feet, and preferably ten feet, between the outside of the water main and the outside of any existing or proposed gravity- or pressure-type sanitary sewer, wastewater force main, or pipeline conveying reclaimed water not regulated under Part III of Chapter 62-610, F.A.C. The minimum horizontal separation distance between water mains and gravity-type sanitary sewers shall be reduced to three feet where the bottom of the water main is laid at least six inches above the top of the sewer.

(c) New or relocated, underground water mains crossing any existing or proposed gravity- or vacuum-type sanitary sewer or storm sewer shall be laid so the outside of the water main is at least six inches, and preferably 12 inches, above or at least 12 inches below the outside of the other pipeline. However, it is preferable to lay the water main above the other pipeline.

(d) New or relocated, underground water mains crossing any existing or proposed pressure-type sanitary sewer, wastewater or storm water force main, or pipeline conveying reclaimed water shall be laid so the outside of the water main is at least 12 inches above or below the outside of the other pipeline. However, it is preferable to lay the water main above the other pipeline.

(e) At the utility crossings described in paragraphs (c) and (d) above, one full length of water main pipe shall be centered above or below the other pipeline so the water main joints will be as far as possible from the other pipeline. Alternatively, at such crossings, the pipes shall be arranged so that all water main joints are at least three feet from all joints in vacuum-type sanitary sewers, storm sewers, storm water force mains, or pipelines conveying reclaimed water regulated under Part III of Chapter 62-610, F.A.C., and at least six feet from all joints in gravity- or pressure-type sanitary sewers, wastewater force mains, or pipelines conveying reclaimed water not regulated under Part III of Chapter 62-610, F.A.C.

14. NEW CONNECTION TO EXISTING MAIN. New connection to existing main in service shall be accomplished by the "wet tap" method utilizing full circle stainless steel tapping sleeve and mechanical joint tapping valve. Tapping sleeve shall be rated at 200 P.S.I., non-shock working pressure conforming to AWWA Standard C110, latest revision. Stainless steel tapping sleeves shall be from those listed in C.G.C.S. approved material manual. Tapping valve shall be mechanical joint one end and standard flanged joint on other end. Valve shall conform to Section 12. of these specifications.

15. JOBSITE SAFETY. While on the job site, the contractor shall at all times observe all Federal, State and local safety rules, regulations and laws. This includes, but not limited to, confined spaces and excavation protection systems as per O.S.H.A. standards.

GENERAL NOTES

16. CLOSE OUT / COMPLETION. Minimum items required for Close Out / Completion for submittal to the City of Green Cove Springs will include:
  (a.) Construction Warranty from Developer in the form of a Bond, Letter of Credit or Cashier's Check for a two-year period.
  (b.) Warranty Certificate for a two-year warranty from the contractor to the Developer and assignment of same to the City of Green Cove Springs (C.G.C.S.)
  (c.) Developer's Affidavit certifying there is no outstanding debt against utility assets to be deeded to C.G.C.S.
  (d.) Value of Acceptance Report showing value of assets to be deeded to the C.G.C.S.
  (e.) Bill of Sale to C.G.C.S.
  (f.) Bacteriological Test(s)
  (g.) Pressure Test(s)
  (h.) Television Reports and Tapes
  (i.) Density Reports
  (j.) PROPER Final As-Built Drawings and disks

17. C.G.C.S. Shop Drawing and Submittal Process. A signed acknowledgment by the Contractor and the Material Supplier, on the "Shop Drawings and C.G.C.S.'s Approved Materials List Form", that all materials will be in accordance with C.G.S.S.'s Specifications, C.G.C.S.'s Details and C.G.C.S.'s Approved Materials Manual, is the only submittal C.G.C.S. will require for each item of materials with the following exception: any alternate materials requested by the Engineer; any materials not listed in the C.G.C.S. Materials Manual; and materials associated with pumping stations and plant installations. Those exceptions shall have an individual shop drawing submitted for C.G.C.S.'s review and approval prior to any installation of said materials.

This is C.G.C.S.'s procedure and it does not preclude the design engineer from requiring additional submittals and shop drawings as he deems necessary for the project.

18. PUMP STATIONS (TEMPORARY OR PERMANENT). All pump stations shall be constructed in accordance with C.G.C.S. standards, rules and regulations and be approved by C.G.C.S. All work and materials shall meet the requirements of C.G.C.S. Standard Pump Station Details and Specifications or the plans, details and specifications for that specific pump station. A driveway shall be provided from the street (roadway) to within 2 feet of the pump station wetwell, minimum 10 feet wide x 5 inches thick 3,000 P.S.I. concrete. Submersible pump stations shall be fenced completely about the perimeter of the pump station site (location of the pump station site as noted on the plans), including gates and all other items required to make a completely fenced installation. The entire pump station site within the fenced area shall be covered with #57 stone, 6 inch thick minimum, placed over 8 mil visqueen.

19. Information shown on the Drawings as to the location of existing utilities has been prepared from the most reliable data available to the Engineer. The Contractor shall be responsible for requesting underground utility locates and shall assist the utility companies, by every means possible to determine said locations and the locations of recent additions to the systems not shown. Extreme caution shall be exercised to eliminate any possibility of any damage to utilities resulting from Contractor's activities. The locations of all overhead utilities shall also be verified by the Contractor. The Engineer shall be notified of any conflict that may occur. The Contractor shall be responsible for determining which poles will need shoring during excavation and shall provide such shoring and support as required.

20. C.G.C.S. details and specifications (latest available copy) shall be included in all plans submitted for work within the C.G.C.S. utility system. No person shall modify, change, omit, replace any portion of those details and specifications without the express written consent of C.G.C.S.. In any instance where the design engineer has included his written specifications or details in the plans then the more stringent of the two shall govern.

21. All materials to be used for any project within C.G.C.S.'s utility system shall conform to those materials listed in the C.G.C.S. approved material manual in effect at the time final plans for that project are approved by C.G.C.S.

22. Under no circumstance shall any trees be planted within a C.G.C.S. utility easement without;
  a.) C.G.C.S. approving landscape and irrigation plans.
  b.) C.G.C.S. being notified prior to the planting of trees and giving approval.
  c.) C.G.C.S. inspecting the installation of root barrier material (required at all trees which are closer than 10' to any C.G.C.S. utility line) as shown in C.G.C.S. approved material manual and C.G.C.S. roadway cross section details, whether or not shown on the plans.

23. At all Jack & Bore locations a C.G.C.S. inspector shall inspect the casing spacers to verify they are the correct size and have been installed correctly on the pipe prior to the pipe being installed into the pipe casing. The pipe casing shall be clean and free of all dirt, and shall be cleaned with a Vac-Con if necessary. A C.G.C.S. inspector shall be present at all time during this work.

FINAL INSPECTION PROCEDURES

PRIOR TO FINAL INSPECTION, THE CONTRACTOR shall PROVIDE THE FOLLOWING:
1. The sewer line T.V. report and tape
2. The pressure test and bacteriological clearance analysis report.
3. The engineer of record certification to D.E.P. This can be done with completed as-builts.
4. Completed as-builts showing at least the following:
  a.) Location of valves, mains, services, manholes and locate wire boxes.
  b.) Elevation of sewer lines in the manhole, and stub-outs.
5. All services and valves to be plainly marked with a treated fence post, and electronic locate marker when needed.
6. Pump station start-up report with draw down data for each pump and with both pumps in operation. All electrical components to be completely installed and in proper working condition.

PRIOR TO FINAL ACCEPTANCE FOR OWNERSHIP, THE FOLLOWING MUST BE COMPLETED:
1. All manhole rings and covers have to be adjusted to finish grade.
2. Water services must be lowered and meter boxes installed, valve boxes must be set on all gate valves.
3. As-built drawings shall have been updated to accommodate the C.G.C.S. comments and the final elevation of the manhole tops must be included.
4. All valves, locate wire boxes, sewer, water and reclaimed services shall be scribed in curb and painted the correct color.
5. As-builts, must be accepted and approved by the City of Green Cove Springs Public Works.

PRIOR TO FINAL ACCEPTANCE FOR OWNERSHIP, THE FOLLOWING MUST BE COMPLETED:
1. A preliminary inspection must be coordinated by the underground utility contractor and held a minimum of fifteen (15) working days prior to the final inspection/start-up. The preliminary inspection will compare the approved design drawings to the actual site installation, noting any deficiencies.
2. The following must be represented at the preliminary and final inspection:
  a.) The C.G.C.S.'s inspection and distribution and collection departments
  b.) The project's developer and/or general contractor
  c.) The underground utility contractor
  d.) All subcontractors associated with the lift station (electrical, pump manufacturer, control panel manufacturer, etc.)

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COLIN D. GROFF, P.E.
REG. NO. 47609

NO.	REVISIONS	BY	DATE

BLACK CREEK
ENGINEERING, INC.
3900 PASO FINO ROAD
GREEN COVE SPRINGS, FLORIDA 32043
PHONE (904) 759-8930
AUTHORIZATION NO. 27946

PROPOSED INDUSTRIAL SITE
SR 16 EAST, GREEN COVE SPRINGS, FL
CYPRESS MANAGEMENT & DESIGN, LLC

UTILITY SYSTEM NOTES

JOB NO. : 24-001
DATE: 01/25/2025
DRAWN BY : CdG
CHECKED BY : CdG
APPROVED BY : CdG
SCALE : 1"=20'

SHEET
24

NOT ISSUED FOR CONSTRUCTION

NORTH

SHEET 25			
JOB NO. : 24-001	PROPOSED INDUSTRIAL SITE	BLACK CREEK ENGINEERING, INC.	COLIN D. GROFF, P.E. REG. NO. 47609
DATE: 01/25/2025	SR 16 EAST, GREEN COVE SPRINGS, FL	3900 PASO FINO ROAD GREEN COVE SPRINGS, FLORIDA 32043 PHONE (904) 759-8930	
DRAWN BY : CdG	CYPRESS MANAGEMENT & DESIGN, LLC		
CHECKED BY : CdG	PRE-DEVELOPMENT DRAINAGE BASINS	AUTHORIZATION NO. 27946	
APPROVED BY : CdG			
SCALE : 1"=100'			

NO.	REVISIONS	BY	DATE

NOT ISSUED FOR CONSTRUCTION

SHEET 26	JOB NO. : 24-001 DATE: 01/25/2025 DRAWN BY : CdG CHECKED BY : CdG APPROVED BY : CdG SCALE : 1"=100'	PROPOSED INDUSTRIAL SITE SR 16 EAST, GREEN COVE SPRINGS, FL CYPRESS MANAGEMENT & DESIGN, LLC POST DEVELOPMENT DRAINAGE BASINS	BLACK CREEK ENGINEERING, INC. 3900 PASO FINO ROAD GREEN COVE SPRINGS, FLORIDA 32043 PHONE (904) 759-8930 AUTHORIZATION NO. 27946	NO.	REVISIONS	BY	DATE	COLIN D. GROFF, P.E. REG. NO. 47609

NOT ISSUED FOR CONSTRUCTION