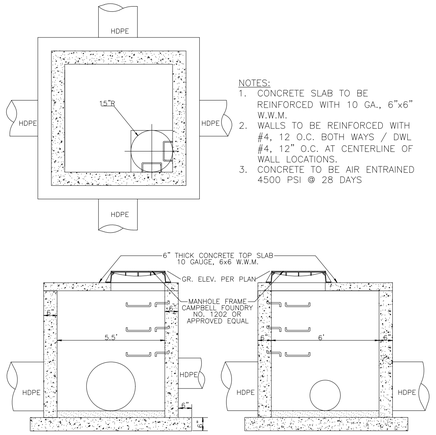
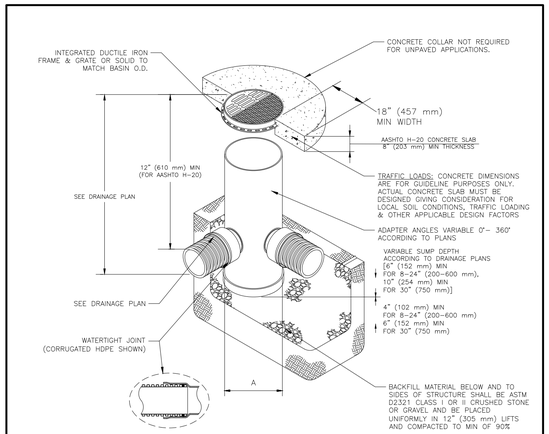


NOTES:
1. CONCRETE SLAB TO BE REINFORCED WITH 10 GA., 6"x6" W.W.M.
2. WALLS TO BE REINFORCED WITH #4, 12 O.C. BOTH WAYS / DWL #4, 12" O.C. AT CENTERLINE OF WALL LOCATIONS.
3. CONCRETE TO BE AIR ENTRAINED 4500 PSI @ 28 DAYS

DRAINAGE MANHOLE

01/22	DR#44
N.T.S.	NEWLINES



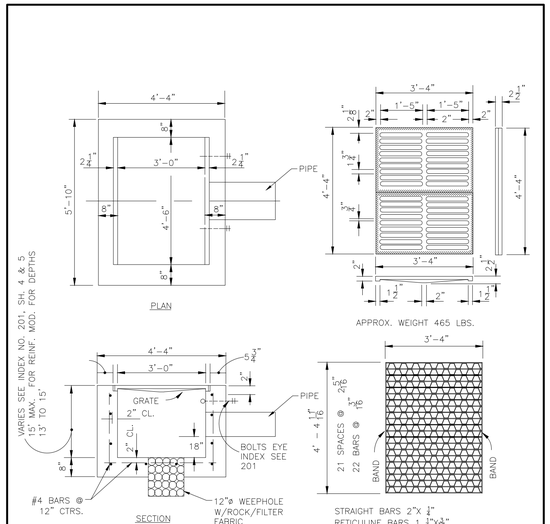
NOTES

1. 8-30" (200-750 mm) GRATES/SOLID COVERS SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05
2. 12-30" (300-750 mm) FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05
3. DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS
4. DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE & SDR 35 PVC
5. FOR COMPLETE DESIGN AND PRODUCT INFORMATION: **WWW.NYLOPLAST-US.COM**
6. TO ORDER CALL: **800-821-6710**

A	PART #	GRATE/SOLID COVER OPTIONS		
8" (200 mm)	2808AG	PEDESTRIAN LIGHT DUTY	STANDARD LIGHT DUTY	SOLID LIGHT DUTY
10" (250 mm)	2810AG	PEDESTRIAN LIGHT DUTY	STANDARD LIGHT DUTY	SOLID LIGHT DUTY
12" (300 mm)	2812AG	PEDESTRIAN AASHTO H-10	STANDARD AASHTO H-20	SOLID AASHTO H-20
15" (375 mm)	2815AG	PEDESTRIAN AASHTO H-10	STANDARD AASHTO H-20	SOLID AASHTO H-20
18" (450 mm)	2818AG	PEDESTRIAN AASHTO H-10	STANDARD AASHTO H-20	SOLID AASHTO H-20
24" (600 mm)	2824AG	PEDESTRIAN AASHTO H-10	STANDARD AASHTO H-20	SOLID AASHTO H-20
30" (750 mm)	2830AG	PEDESTRIAN AASHTO H-20	STANDARD AASHTO H-20	SOLID AASHTO H-20

INSPECTION PORT/DRAIN BASIN/YARD DRAIN DETAIL

06/23	DR #3
N.T.S.	NEWLINES

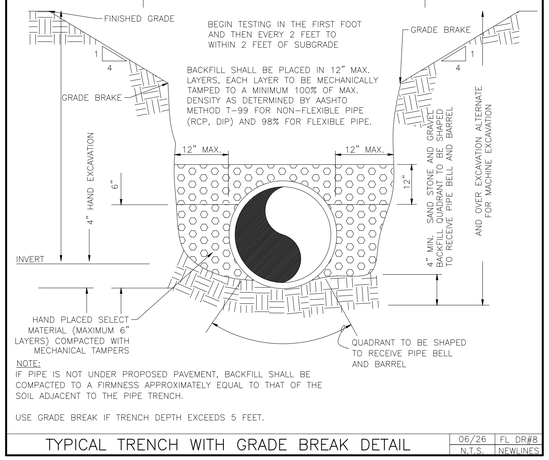


RECOMMENDED MAXIMUM PIPE SIZE:
3'-0" WALL-24" PIPE

NOTES:
1) STEEL GRATES ARE REQUIRED ON INLETS WITH TRAVERSABLE SLOTS AND ON INLETS WHERE BICYCLE TRAFFIC IS ANTICIPATED.
2) ALL INLETS WILL BE CAST TO PROVIDE A 18" SUMP BELOW LOWEST CULVERT INVERT

PRE-CAST TYPE 'E' CATCH BASIN

09/22	FL DR#6
N.T.S.	NEWLINES

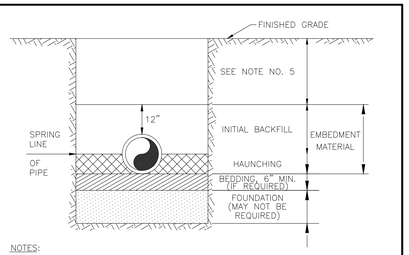


NOTE:
IF PIPE IS NOT UNDER PROPOSED PAVEMENT, BACKFILL SHALL BE COMPACTED TO A FIRMNESS APPROXIMATELY EQUAL TO THAT OF THE SOIL ADJACENT TO THE PIPE TRENCH.

USE GRADE BREAK IF TRENCH DEPTH EXCEEDS 5 FEET.

TYPICAL TRENCH WITH GRADE BREAK DETAIL

06/26	FL DR#8
N.T.S.	NEWLINES

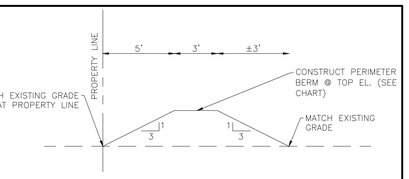


NOTES:

1. IN CERTAIN SOIL CONDITIONS A FOUNDATION MAY BE REQUIRED.
2. BEDDING IS REQUIRED PRIMARILY TO BRING THE TRENCH BOTTOM UP TO GRADE. BEDDING MATERIALS SHALL PROVIDE A UNIFORM AND ADEQUATE LONGITUDINAL SUPPORT UNDER THE PIPE.
3. HAUNCHING MATERIAL SHALL BE HAND PLACED TO THE SPRINGLINE OF THE PIPE. MATERIAL SHALL BE CONSOLIDATED UNDER THE PIPE AND HAND TAMPED TO PROVIDE ADEQUATE SIDE SUPPORT.
4. INITIAL BACKFILL MATERIAL SHALL BE HAND PLACED TO 12" ABOVE THE TOP OF PIPE. THE SOIL SHALL BE COMPACTED.
5. BACKFILL SHALL BE COMPACTED TO 100% OF MAX. DENSITY AS PER AASHTO T-99, TO A POINT 30" BELOW PROPOSED PROFILE GRADE OR EXISTING GRADE. THE FINAL 30" OF BACKFILL SHALL BE COMPACTED TO 98% OF MAX. DENSITY AS PER AASHTO T-180.
6. DENSITY TEST SHALL BE PREFORMED AT AREAS DETERMINED BY THE UTILITIES ENGINEER OR PERMIT AGENCY HAVING JURISDICTION, AT THE CONTRACTOR'S EXPENSE.

BACKFILLING REQUIREMENTS

09/22	FL DR#12
N.T.S.	NEWLINES



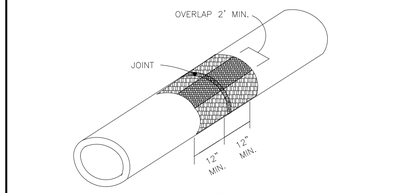
STRUCTURE	PHASE 1	PHASE 2	PHASE 3	PHASE 4
PERIMETER BERM	16.00'	16.00'	16.50'	16.50'
COMERCIAL PERIMETER BERM	18.90'	18.70'	18.90'	18.50'

NOTE:
SOD LIMITS OF SECTION

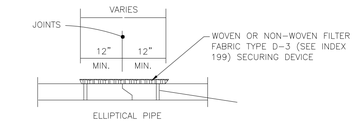
THE BERM SHOULD HAS A TRANSITION TO THE LOWER BERM WITH A LENGTH OF 15'.

PERIMETER BERM

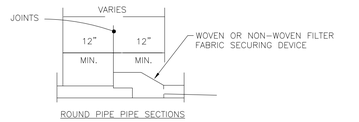
09/23	DR #7
N.T.S.	NEWLINES



ISOMETRIC VIEW



ELLIPTICAL PIPE



ROUND PIPE PIPE SECTIONS

COST OF FILTER FABRIC JACKET TO BE INCLUDED IN COST OF PIPE CULVERTS

FOR ALL PIPE TYPES

FILTER FABRIC JACKET

09/22	FL DR#14
N.T.S.	NEWLINES

CLASS "c"
ORDINARY BEDDING
FIRST TWO LIFTS - SHOVEL TAMPED
REMAINING LIFTS - USE PNEUMATIC TAMPER
IF IN SAND USE VIBRATORY COMPACTOR

STORM SEWER PIPE BEDDING

01/22	DR#31
N.T.S.	NEWLINES

NOTE:
UNLESS OTHERWISE NOTED THE CONTRACTOR IS RESPONSIBLE FOR TEMPORARY DE-WATERING OF STRUCTURES, SEWER LINE, DRAINAGE PIPE AND WATER LINES.

ALL CONCRETE TO BE CLASS 'B' 3500 PSI (UNLESS OTHERWISE NOTED)

THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGNS PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADOPTION BY STEVEN L. DOBBS, P.E., SHALL BE WITHOUT LIABILITY TO NEWLINES ENGINEERING & SURVEY AND STEVEN L. DOBBS ENGINEERING, LLC.

PHASE 1 - COMMERCIAL AREAS
LOCATED IN SECTIONS 34&35, TOWNSHIPS 38&39 SOUTH, RANGE 34 EAST, GLADES COUNTY, FLORIDA

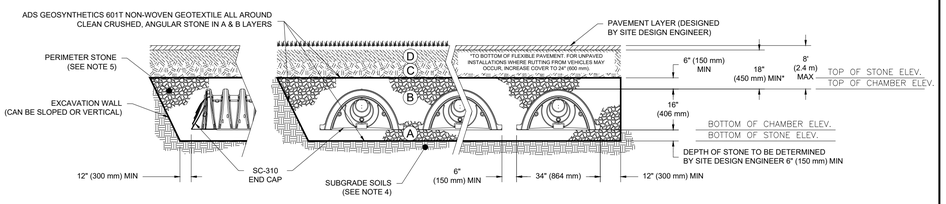
NEWLINES LAND CONSULTANTS
STEVEN L. DOBBS, P.E.
FLORIDA CERTIFICATE OF AUTHORIZATION NO. 00029206
STEVEN L. DOBBS ENGINEERING, LLC
1062 JAKES WAY OKEECHOBEE, FL 34974, PHONE (863) 824-7644

PROJECT No.	21534
DRAWN BY	YB/MB
SCALE	NTS
DATE	7/23/2024
SHEET No.	9 OF 16

ACCEPTABLE FILL MATERIALS: STORMTECH SC-310 CHAMBER SYSTEMS

	MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 18" (450 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE[2,3]

PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.



NOTES:

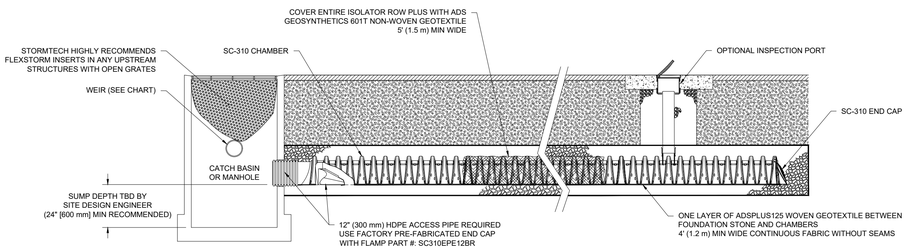
1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2922 (POLETHYLENE) OR ASTM F2418 (POLYPROPYLENE), "STANDARD SPECIFICATION FOR CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. SC-310 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 2".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2922 SHALL BE GREATER THAN OR EQUAL TO 400 LBS/FT/% AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

**THIS CROSS SECTION DETAIL REPRESENTS MINIMUM REQUIREMENTS FOR INSTALLATION. PLEASE SEE THE LAYOUT SHEET(S) FOR PROJECT SPECIFIC REQUIREMENTS.

STRUCTURE	TOP, CHAMBER ELEV.	TOP, STONE ELEV.	BOT, CHAMBER ELEV.	BOT, STONE ELEV.
COMMERCIAL CHAMBERS	14.63'	15.13'	13.30'	12.30'

SC-310 CROSS SECTION DETAIL

11/23 | DR #29
N.T.S. | NEWLINES



STRUCTURE
CS COMMERCIAL 1&8
CS COMMERCIAL 2-1
CS COMMERCIAL 2-2
CS COMMERCIAL 3
CS COMMERCIAL 4-1
CS COMMERCIAL 4-2
CS COMMERCIAL 4-3
CS COMMERCIAL 5
CS COMMERCIAL 6
CS COMMERCIAL 7
CS COMMERCIAL 9

SC-310 ISOLATOR ROW PLUS DETAIL

11/23 | DR #30
N.T.S. | NEWLINES

STRUCTURE	UPSTREAM PIPE DIAMETER	UPSTREAM PIPE INVERT ELEV.	DOWNSTREAM PIPE DIAMETER	DOWNSTREAM PIPE INVERT ELEV.	BLEEDER DIAMETER	BLEEDER INVERT ELEV.	WEIR DIMENSIONS	WEIR CREST ELEV.	GRATE ELEV.	GRATE DIMENSIONS	BUBBLEUP GRATE ELEV.	BUBBLEUP GRATE DIMENSIONS	STORMWATER MANAGEMENT TRACT
PHASE 1													
CS 1-1 EAST	-	-	18"	10.55	-	-	9x9"	12.30	14.00	24x36	-	-	POND #1-2
CS 1-2 WEST	-	-	18"	10.55	-	-	8x7"	12.30	15.00	24x36	-	-	POND #1-3
CSC 1 & 8	-	-	18"	8.00	-	-	3"	15.13	-	-	-	-	-
CSC 2-1	-	-	12"	8.00	-	-	3"	15.13	-	-	-	-	-
CSC 2-2	-	-	12"	8.00	-	-	3"	16.13	-	-	-	-	-
CSC 3	-	-	12"	8.00	-	-	3"	15.13	-	-	-	-	-
CSC 4-1	-	-	12"	8.00	-	-	3"	15.13	-	-	-	-	-
CSC 4-2	-	-	12"	8.00	-	-	3"	15.13	-	-	-	-	-
CSC 4-3	-	-	12"	8.00	-	-	3"	15.13	-	-	-	-	-
CSC 5	-	-	12"	8.00	-	-	3"	15.13	-	-	-	-	-
CSR 1-1	-	-	18"	8.80	3"	12.30	-	15.13	15.10	24x36	-	-	POND #1-2
CSR 1-2	-	-	18"	8.80	3"	12.30	-	15.13	15.10	24x36	-	-	POND #1-2
CSR 1-3	-	-	18"	8.80	3"	12.30	-	15.13	15.10	24x36	-	-	POND #1-3
CSR 1-4	-	-	18"	8.80	3"	12.30	-	15.13	15.10	24x36	-	-	POND #1-3
CSW 5	18"	7.00	-	7.00	6"	12.30	-	15.13	14.00	24x36	12.80	24x36	POND #1-1
CSW 6	18"	7.00	-	7.00	6"	12.30	-	15.13	15.00	24x36	12.80	24x36	POND #1-3
PHASE 2													
CS 2	-	-	18"	10.55	-	-	11x10"	12.30	13.90	24x36	-	-	POND #2
CSC 6	-	-	12"	8.00	-	-	3"	15.13	-	-	-	-	-
CSC 7	-	-	12"	8.00	-	-	3"	15.13	-	-	-	-	-
CSR 2-1	-	-	18"	8.80	3"	12.30	-	-	15.10	24x36	-	-	POND #2
CSR 2-2	-	-	18"	8.80	3"	12.30	-	-	15.10	24x36	-	-	POND #2
PHASE 3													
CS 3	-	-	18"	8.00	-	-	10x9"	12.30	14.45	24x36	-	-	POND #3-1
CSR 3-1	-	-	18"	8.80	3"	12.30	-	-	15.10	24x36	-	-	POND #3-2
CSR 3-2	-	-	18"	8.80	3"	12.30	-	-	15.10	24x36	-	-	POND #3-1
CSW 2	18"	7.00	-	7.00	3"	12.30	-	-	14.45	24x36	12.80	24x36	POND #3-1
CSW 3	18"	7.00	-	7.00	3"	12.30	-	-	14.45	24x36	12.80	24x36	POND #3-1
PHASE 4													
CS 4	-	-	18"	10.55	-	-	6x5"	12.30	15.45	24x36	-	-	POND #4
CSC 9	-	-	12"	8.00	-	-	3"	15.13	-	-	-	-	-
CSR 4-1	-	-	18"	8.80	3"	12.30	-	-	15.10	24x36	-	-	POND #4
CSR 4-2	-	-	18"	8.80	3"	12.30	-	-	15.10	24x36	-	-	POND #4
CSW 10	18"	12.30	18"	7.00	4"	12.30	-	-	15.45	24x36	12.80	24x36	POND #4

CONTROL STRUCTURE SUMMARY

05/23 | DR #1
N.T.S. | NEWLINES

NOTE:
UNLESS OTHERWISE NOTED THE CONTRACTOR IS RESPONSIBLE FOR TEMPORARY DE-WATERING OF STRUCTURES, SEWER LINE, DRAINAGE PIPE AND WATER LINES.

ALL CONCRETE TO BE CLASS 'B' 3500 PSI (UNLESS OTHERWISE NOTED)

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PHASE 1 - COMMERCIAL AREAS
LOCATED IN SECTIONS 34&35, TOWNSHIPS 38&39 SOUTH, RANGE 34 EAST, GLADES COUNTY, FLORIDA

NEWLINES LAND CONSULTANTS
STEVEN L. DOBBS, P.E.
FLORIDA CERTIFICATE OF AUTHORIZATION NO. 00029206
STEVEN L. DOBBS ENGINEERING, LLC
1062 JAKES WAY OKEECHOBEE, FL 34974, PHONE (863) 824-7644

PROJECT No.	21534
DRAWN BY	YB/MB
SCALE	NTS
DATE	7/23/2024
SHEET No.	10 OF 16

SEWER GENERAL NOTES

1. SEWERS SHALL BE LAID ACCURATELY TO BOTH GRADE AND LINE. THE OUA WILL NOT ACCEPT ANY LINE LAID WITH A SLOPE LESS THAN 10% OF THE MINIMUM SLOPE.

2. VISIBLE LEAKAGE, DEFLECTIONS, HORIZONTAL MISALIGNMENT, SIGNIFICANT BOWING, NON–CONSTANT SLOPES BETWEEN MANHOLES AND SAGGING JOINTS SHALL BE GROUNDS FOR REJECTION OF THE INSTALLED SYSTEM OR PORTIONS THEREOF.

3. THE MAXIMUM ACCEPTABLE DEVIATION SHALL BE 7.5% OF THE INSIDE DIAMETER OF THE PIPE WITH NO GREATER OCCURRENCE THAT ONE EACH HUNDRED FEET.

4. MINIMUM COVER ON A PVC SANITARY SEWER SHALL BE 4' TO THE INVERT, DIP SHALL BE PLACED FOR LENGTHS WITH LESS THAN MINIMUM COVER.

5. MANHOLES SHALL BE SET ACCORDING TO THE APPROVED CONSTRUCTION PLANS AND SHALL BE PRECAST IN ACCORDANCE WITH THE OUA'S STANDARD DETAILS.

6. ALL GRAVITY SEWER LINES SHALL BE INSPECTED AND TESTED IN ACCORDANCE WITH OUA MANUAL OF STANDARDS LATEST VERSION. 62–555.314 LOCATION OF PUBLIC WATER SYSTEM MAINS.

FOR THE PURPOSE OF THIS SECTION, THE PHRASE "WATER MAINS" SHALL MEAN MAINS, INCLUDING TREATMENT PLANT PROCESS PIPING, CONVEYING EITHER RAW, PARTIALLY TREATED, OR FINISHED DRINKING WATER; FIRE HYDRANT LEADS; AND SERVICE LINES THAT ARE UNDER THE CONTROL OF A PUBLIC WATER SYSTEM AND THAT HAVE AN INSIDE DIAMETER OF THREE INCHES OR GREATER.

1. HORIZONTAL SEPARATION BETWEEN UNDERGROUND WATER MAINS AND SANITARY OR STORM SEWERS, WASTEWATER OR STORMWATER FORCE MAINS, RECLAIMED WATER PIPELINES, AND ON–SITE SEWAGE TREATMENT AND DISPOSAL SYSTEMS.

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, STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62–610, F.A.C.

B. NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST THREE FEET, AND PREFERABLY TEN FEET, BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED VACUUM–TYPE SANITARY SEWER.

C. 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.

D. NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST TEN FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND ALL PARTS OF ANY EXISTING OR PROPOSED "ON–SITE SEWAGE TREATMENT AND DISPOSAL SYSTEM" AS DEFINED IN SECTION 381.0065(2), F.S., AND RULE 64E–6.002, F.A.C.

2. VERTICAL SEPARATION BETWEEN UNDERGROUND WATER MAINS AND SANITARY OR STORM SEWERS, WASTEWATER OR STORMWATER FORCE MAINS, AND RECLAIMED WATER PIPELINES.

A. 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.

B. NEW OR RELOCATED, UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED PRESSURE–TYPE SANITARY SEWER, WASTEWATER OR STORMWATER 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.

C. AT THE UTILITY CROSSINGS DESCRIBED IN PARAGRAPHS (A) AND (B) 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, STORMWATER 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.

3. SEPARATION BETWEEN WATER MAINS AND SANITARY OR STORM SEWER MANHOLES

A. NO WATER MAIN SHALL PASS THROUGH, OR COME INTO CONTACT WITH, ANY PART OF A SANITARY SEWER MANHOLE.

B. EFFECTIVE AUGUST 28, 2003, WATER MAINS SHALL NOT BE CONSTRUCTED OR ALTERED TO PASS THROUGH, OR COME INTO CONTACT WITH, ANY PART OF A STORM SEWER MANHOLE OR INLET STRUCTURE. WHERE IT IS NOT TECHNICALLY FEASIBLE OR ECONOMICALLY SENSIBLE TO COMPLY WITH THIS REQUIREMENT (I.E., WHERE THERE IS A CONFLICT IN THE ROUTING OF A WATER MAIN AND A STORM SEWER AND WHERE ALTERNATIVE ROUTING OF THE WATER MAIN OR THE STORM SEWER IS NOT TECHNICALLY FEASIBLE OR IS NOT ECONOMICALLY SENSIBLE), THE DEPARTMENT SHALL ALLOW EXCEPTIONS TO THIS REQUIREMENT (I.E., THE DEPARTMENT SHALL ALLOW CONSTRUCTION OF CONFLICT MANHOLES), BUT SUPPLIERS OF WATER OR PERSONS PROPOSING TO CONSTRUCT CONFLICT MANHOLES MUST FIRST OBTAIN A SPECIFIC PERMIT FROM THE DEPARTMENT IN ACCORDANCE WITH PART V OF THIS CHAPTER AND MUST PROVIDE IN THE PRELIMINARY DESIGN REPORT OR DRAWINGS, SPECIFICATIONS, AND DESIGN DATA ACCOMPANYING THEIR PERMIT APPLICATION THE FOLLOWING INFORMATION:

1. TECHNICAL OR ECONOMIC JUSTIFICATION FOR EACH CONFLICT MANHOLE.
2. A STATEMENT IDENTIFYING THE PARTY RESPONSIBLE FOR MAINTAINING EACH CONFLICT MANHOLE.
3. ASSURANCE OF COMPLIANCE WITH THE DESIGN AND CONSTRUCTION REQUIREMENTS IN SUB–SUBPARAGRAPHS A. THROUGH D. BELOW.
   a. EACH WATER MAIN PASSING THROUGH A CONFLICT MANHOLE SHALL HAVE A FLEXIBLE, WATERTIGHT JOINT ON EACH SIDE OF THE MANHOLE TO ACCOMMODATE DIFFERENTIAL SETTLING BETWEEN THE MAIN AND THE MANHOLE.
   b. WITHIN EACH CONFLICT MANHOLE, THE WATER MAIN PASSING THROUGH THE MANHOLE SHALL BE INSTALLED IN A WATERTIGHT CASING PIPE HAVING HIGH IMPACT STRENGTH (I.E., HAVING AN IMPACT STRENGTH AT LEAST EQUAL TO THAT OF 0.25–INCH–THICK DUCTILE IRON PIPE).
   c. EACH CONFLICT MANHOLE SHALL HAVE AN ACCESS OPENING, AND SHALL BE SIZED, TO ALLOW FOR EASY CLEANING OF THE MANHOLE.
   d. GRATINGS SHALL BE INSTALLED AT ALL STORM SEWER INLETS UPSTREAM OF EACH CONFLICT MANHOLE TO PREVENT LARGE OBJECTS FROM ENTERING THE MANHOLE.

4. SEPARATION BETWEEN FIRE HYDRANT DRAINS AND SANITARY OR STORM SEWERS, WASTEWATER OR STORMWATER FORCE MAINS, RECLAIMED WATER PIPELINES, AND ON–SITE SEWAGE TREATMENT AND DISPOSAL SYSTEMS. NEW OR RELOCATED FIRE HYDRANTS WITH UNDERGROUND DRAINS SHALL BE LOCATED SO THAT THE DRAINS ARE AT LEAST THREE FEET FROM ANY EXISTING OR PROPOSED STORM SEWER, STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62–610, F.A.C.; AT LEAST THREE FEET, AND PREFERABLY TEN FEET, FROM ANY EXISTING OR PROPOSED VACUUM–TYPE SANITARY SEWER; AT LEAST SIX FEET, AND PREFERABLY TEN FEET, FROM 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.; AND AT LEAST TEN FEET FROM ANY EXISTING OR PROPOSED "ON–SITE SEWAGE TREATMENT AND DISPOSAL SYSTEM "AS DEFINED IN SECTION 381.0065(2), F.S., AND RULE 64E–6.002, F.A.C.

5. EXCEPTIONS. WHERE IT IS NOT TECHNICALLY FEASIBLE OR ECONOMICALLY SENSIBLE TO COMPLY WITH THE REQUIREMENTS IN SUBSECTION (1) OR (2) ABOVE, THE DEPARTMENT (FDEP) SHALL ALLOW EXCEPTIONS TO THESE REQUIREMENTS IF SUPPLIERS OF WATER OR CONSTRUCTION PERMIT APPLICANTS PROVIDE TECHNICAL OR ECONOMIC JUSTIFICATION FOR EACH EXCEPTION AND PROVIDE ALTERNATIVE CONSTRUCTION FEATURES THAT AFFORD A SIMILAR LEVEL OF RELIABILITY AND PUBLIC HEALTH PROTECTION. ACCEPTABLE ALTERNATIVE CONSTRUCTION FEATURES INCLUDE THE FOLLOWING:

A. WHERE AN UNDERGROUND WATER MAIN IS BEING LAID LESS THAN THE REQUIRED MINIMUM HORIZONTAL DISTANCE FROM ANOTHER PIPELINE AND WHERE AN UNDERGROUND WATER MAIN IS CROSSING ANOTHER PIPELINE AND JOINTS IN THE WATER MAIN ARE BEING LOCATED LESS THAN THE REQUIRED MINIMUM DISTANCE FROM JOINTS IN THE OTHER PIPELINE:
1. USE OF PRESSURE–RATED PIPE CONFORMING TO THE AMERICAN WATER WORKS ASSOCIATION STANDARDS INCORPORATED INTO RULE 62–555.330, F.A.C., FOR THE OTHER PIPELINE IF IT IS A GRAVITY– OR VACUUM–TYPE PIPELINE;
2. USE OF WELDED, FUSED, OR OTHERWISE RESTRAINED JOINTS FOR EITHER THE WATER MAIN OR THE OTHER PIPELINE; OR
3. USE OF WATERTIGHT CASING PIPE OR CONCRETE ENCASEMENT AT LEAST FOUR INCHES THICK FOR EITHER THE WATER MAIN OR THE OTHER PIPELINE.

B. WHERE AN UNDERGROUND WATER MAIN IS BEING LAID LESS THAN THREE FEET HORIZONTALLY FROM ANOTHER PIPELINE AND WHERE AN UNDERGROUND WATER MAIN IS CROSSING ANOTHER PIPELINE AND IS BEING LAID LESS THAN THE REQUIRED MINIMUM VERTICAL DISTANCE FROM THE OTHER PIPELINE:
1. USE OF PIPE, OR CASING PIPE, HAVING HIGH IMPACT STRENGTH (I.E., HAVING AN IMPACT STRENGTH AT LEAST EQUAL TO THAT OF 0.25–INCH–THICK DUCTILE IRON PIPE) OR CONCRETE ENCASEMENT AT LEAST FOUR INCHES THICK FOR THE WATER MAIN; AND
2. USE OF PIPE, OR CASING PIPE, HAVING HIGH IMPACT STRENGTH (I.E., HAVING AN IMPACT STRENGTH AT LEAST EQUAL TO THAT OF 0.25–INCH–THICK DUCTILE IRON PIPE) OR CONCRETE ENCASEMENT AT LEAST FOUR INCHES THICK FOR THE OTHER PIPELINE IF IT IS NEW AND IS CONVEYING WASTEWATER OR RECLAIMED WATER.

NOTE: OKEECHOBEE UTILITY AUTHORITY MINIMUM DESIGN AND CONSTRUCTION STANDARDS (LATEST EDITION) ARE TO BE ADHERED TO AND WILL BE ENFORCED TO AT LEAST THESE MINIMUM STANDARDS.

NOTE: OKEECHOBEE UTILITY AUTHORITY OPERATING HOURS
MONDAY–THURSDAY 7:00 AM – 5:30 PM

GENERAL NOTES

FOR THE PURPOSE OF THE GENERAL NOTES BELOW, THE TERM DEPARTMENT SHALL MEAN OKEECHOBEE UTILITY AUTHORITY

1. THE CONTRACTOR SHALL CONTACT ALL CONCERNED UTILITIES AT LEAST 48 HOURS IN ADVANCE OF CONSTRUCTION OPERATIONS.

2. THE LOCATION AND SIZE OF ALL EXISTING UTILITIES SHOWN ON THE PLANS ARE APPROXIMATE AND ARE BASED ON THE BEST AVAILABLE INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION OF ALL EXISTING UTILITIES. THE CONTRACTOR SHALL VERIFY ALL UTILITIES BY ELECTRONIC METHOD AND BY HAND EXCAVATION IN COORDINATION WITH ALL UTILITY COMPANIES PRIOR TO BEGINNING ANY CONSTRUCTION OPERATIONS. ANY AND ALL CONFLICTS OF EXISTING UTILITIES WITH PROPOSED IMPROVEMENTS SHALL BE RESOLVED BY THE ENGINEER AND DEPARTMENT PRIOR TO BEGINNING ANY CONSTRUCTION OPERATIONS. THIS WORK BY THE CONTRACTOR SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT AND NO ADDITIONAL COMPENSATION SHALL BE ALLOWED.

3. LOCATION OF PROPOSED FACILITIES WILL BE STAKED BY CONTRACTOR. CONTRACTOR MUST GIVE 48 HOURS NOTICE TO THE DEPARTMENT IN ADVANCE OF LAYOUT.

4. THE LOCATION AND SIZE OF ALL EXISTING UTILITIES SHOWN ON THE PLANS ARE APPROXIMATE AND ARE BASED ON THE BEST AVAILABLE INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION OF ALL EXISTING UTILITIES. THE CONTRACTOR SHALL VERIFY ALL UTILITIES BY ELECTRONIC METHOD AND BY HAND EXCAVATION IN COORDINATION WITH ALL UTILITY COMPANIES PRIOR TO BEGINNING ANY CONSTRUCTION OPERATIONS. ANY AND ALL CONFLICTS OF EXISTING UTILITIES WITH PROPOSED IMPROVEMENTS SHALL BE RESOLVED BY THE ENGINEER AND DEPARTMENT PRIOR TO BEGINNING ANY CONSTRUCTION OPERATIONS. THIS WORK BY THE CONTRACTOR SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT AND NO ADDITIONAL COMPENSATION SHALL BE ALLOWED.

5. LOCATION OF PROPOSED FACILITIES WILL BE STAKED BY CONTRACTOR. CONTRACTOR MUST GIVE 48 HOURS NOTICE TO THE DEPARTMENT IN ADVANCE OF LAYOUT.

6. PROJECT SUPERINTENDENT: THE CONTRACTOR SHALL PROVIDE A QUALIFIED SUPERINTENDENT TO REMAIN ON THE JOB SITE AT ALL TIMES WHEN WORK IS BEING PERFORMED. THE SUPERINTENDENT SHALL BE PRESENT AT THE PRE–CONSTRUCTION MEETINGS. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT BY LETTER PRIOR TO THE PRE–CONSTRUCTION MEETING APPOINTING THE SUPERINTENDENT FOR THIS PROJECT INCLUDING A FORMAL RESUME SHOWING QUALIFICATIONS. IN THE EVENT THE SUPERINTENDENT WILL NOT BE PRESENT FOR ANY PERIOD OF TIME DURING CONTRACT WORK THE CONTRACTOR SHALL PROVIDE 48 HOURS NOTICE IN WRITING TO THE DEPARTMENT, INCLUDING THE APPOINTMENT OF A QUALIFIED REPLACEMENT SUPERINTENDENT WHO WILL BE PRESENT DURING THE CONSTRUCTION. WORK SHALL NOT BE ALLOWED TO PROCEED UNLESS THE ASSIGNED SUPERINTENDENT IS PRESENT.

7. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE HIS COMPLETE FAMILIARITY WITH THE PROJECT SITE AND COMPONENTS TO INCLUDE SUBSURFACE CONDITIONS OF SOIL AND GROUNDWATER TABLE. WARNING: EXACT LOCATION OF UNDERGROUND UTILITIES IS NOT KNOWN NOR IS THIS DRAWING TO BE CONSTRUED AS DEPICTING THE LOCATION OF ALL UNDERGROUND UTILITIES OR STRUCTURES. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINATION OF LOCATION PRIOR TO COMMENCEMENT OF WORK. THE CONTRACTOR IS RESPONSIBLE, THEREFORE, FOR ALL DAMAGE AND REPAIR COSTS.

8. DENSITY TESTS OF TRENCH BACKFILL MATERIAL SHALL BE REQUIRED AT INTERVALS OF NOT MORE THAN 500 FEET. DENSITY TESTS OF PAVEMENT OPEN–CUT AREAS INCLUDING ROADS, TURNLANES, AND DRIVES SHALL BE REQUIRED AT EACH OPEN–CUT AT INTERVALS OF NOT MORE THAN 50 FEET. ALL TESTS SHALL COMMENCE AT THE TOP OF CONDUIT AND EVERY 12 INCHES TO THE FINISH GRADE. COMPACTION SHALL BE IN ACCORDANCE WITH "TYPICAL TRENCH DETAIL" AND "FLEXIBLE PAVEMENT REPLACEMENT DETAIL". FLORIDA BEARING TESTS FOR THE STABILITY OF EXISTING SUBSOIL SHALL BE TAKEN AT INTERVALS OF NOT MORE THAN 500 FEET, AND CLOSER AS MIGHT BE NECESSARY IN THE EVENT OF VARIATIONS IN THE STRATA. A CERTIFIED COPY OF THE TESTS SHALL BE PROVIDED TO THE DEPARTMENT AND THE FLORIDA DEPARTMENT OF TRANSPORTATION OR COUNTY ENGINEERING DEPARTMENT DEPENDING ON JURISDICTION. CONTRACTORS BID PRICE SHALL INCLUDE PAYMENT FOR ALL TESTS CONDUCTED BY AN INDEPENDENT TESTING LAB.

9. ANY LANDSCAPING DISTURBED, UNLESS OTHERWISE SHOWN ON THE PLANS, SHALL BE REPLACED BY THE CONTRACTOR TO THE SATISFACTION OF THE DEPARTMENT AT THE CONTRACTORS EXPENSE.

10. ANY WALK, CURB AND GUTTER OR PAVEMENT DISTURBED, UNLESS OTHERWISE SHOWN ON PLANS, SHALL BE REPLACED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE. ALL CONSTRUCTION SHALL MEET ADA REQUIREMENTS.

11. ALL SOD IS TO BE PLACED FOR THE FULL WIDTH DISTURBED AT THE PER LINEAR FOOT UNIT PRICE FOR SOD. SOD SHALL BE REPLACED TO MATCH EXISTING KIND UNLESS OTHERWISE SHOWN ON PLANS.

12. ANY TREES AND/OR SCRUB OR OTHER VEGETATION NOT TO BE REPLACED SHALL BE REMOVED FROM THE PROJECT AT THE CONTRACTOR'S EXPENSE.

13. ALL RUBBLE AND UNSUITABLE MATERIAL MUST BE REMOVED FROM THE PROJECT AND DISPOSED OF PROPERLY BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.

14. MAILBOXES MUST BE MAINTAINED TO BE CAPABLE OF RECEIVING MAIL AT ALL TIMES. CONTRACTOR'S BID PRICE FOR PIPE SHALL INCLUDE MAILBOX MAINTENANCE.

15. ALL CONSTRUCTION DEWATERING (WELL POINTS, SUMPS, ETC.) WILL REQUIRE A DEWATERING PERMIT FROM SOUTH FLORIDA WATER MANAGEMENT DISTRICT. THIS SHALL BE OBTAINED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE PRIOR TO BEGINNING OF CONSTRUCTION. CONTRACTOR'S BID PRICE FOR PIPE SHALL INCLUDE DEWATERING.

16. THE "TRENCH SAFETY ACT" SHALL BE INCORPORATED INTO THIS CONTRACT AS ENACTED BY THE LEGISLATURE OF THE STATE OF FLORIDA TO BE IN EFFECT AS OF OCTOBER 1, 1990.

17. A PERMIT IS REQUIRED FOR ALL WORK WITHIN COUNTY RIGHT–OF–WAY. THIS PERMIT MUST BE OBTAINED BY THE CONTRACTOR FROM THE COUNTY ENGINEERING DEPARTMENT. ALL COSTS PAYABLE BY THE CONTRACTOR. A COPY OF THIS PERMIT MUST BE MAINTAINED ON THE PROJECT SITE AT ALL TIMES DURING CONSTRUCTION.

18. ALL CONCRETE AND ASPHALT DRIVES MUST BE REPLACED FROM SAW CUT TO EDGE OF PAVEMENT.

19. LOCATIONS OF FIRE HYDRANTS AND AIR RELEASE VALVES ARE APPROXIMATE ONLY. FINAL LOCATIONS WILL BE DETERMINED BY DEPARTMENT PERSONNEL IN FIELD.

20. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION AND RESTORATION (IF DAMAGED) OF ALL EXISTING STRUCTURES WITHIN THE CONSTRUCTION LIMITS OF THE PROJECT, INCLUDING BUT NOT LIMITED TO WALLS, FENCES, POWER POLES, MAIL BOXES, DRAINAGE PIPES AND STRUCTURES, ETC.

21. "RECORD DRAWINGS" SHALL INCLUDE FURNISHING THE DEPARTMENT WITH ALL INFORMATION NECESSARY FOR A COMPLETE SET OF RECORD DRAWINGS AS STIPULATED IN THE REFERENCED "MINIMUM DESIGN AND CONSTRUCTION STANDARDS."

22. THE CONTRACTOR SHALL PROTECT EXISTING UTILITIES FROM DAMAGE DURING CONSTRUCTION OPERATIONS. THE CONTRACTOR SHALL SUPPORT UTILITIES AND SHORE TRENCH AS REQUIRED TO PROTECT AND MAINTAIN EXISTING UTILITIES. THE CONTRACTOR SHALL NOTIFY EACH UTILITY PRIOR TO ATTEMPTING TO SUPPORT THEIR FACILITIES. IF THE UTILITY REQUIRES THAT ONLY THEIR CREWS SHALL BE ALLOWED TO SUPPORT THEIR FACILITIES, THEN IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO COORDINATE WORK AND PAY THE UTILITY FOR THEIR EXPENSES IF REQUIRED. ALL COSTS FOR THIS WORK SHALL BE AT THE CONTRACTORS EXPENSE AND INCLUDED IN THE CONTRACTORS BID PRICE.

23. OUA MUST BE NOTIFIED OF, CONDUCT INSPECTION, AND ACCEPT ALL MATERIAL DELIVERIES TO THE JOBSITE PRIOR TO INSTALLATION.

SPECIAL NOTE:

RIGHT OF WAYS / PROPERTY LINES AS SHOWN ON THE PLANS ARE APPROXIMATE. CONTRACTOR SHALL IDENTIFY ANY AREAS OF CONCERN AND VERIFY ACTUAL RIGHT OF WAY / PROPERTY LINES BY STAKING IN FIELD BY CERTIFIED PROFESSIONAL LAND SURVEYOR. CONTRACTOR SHALL BE RESPONSIBLE TO RELOCATE ANY NEW WATERMAINS THAT ARE PLACED ON PRIVATE PROPERTY. COST FOR THIS SURVEY WORK SHALL BE INCLUDED IN BID UNIT PRICES FOR WATER MAIN.

ALL CONCRETE TO BE CLASS
'B' 3500 PSI
(UNLESS OTHERWISE NOTED)

WATER GENERAL NOTES

1. ALL CONNECTIONS TO EXISTING MAINS SHALL BE OBSERVED BY THE DEPARTMENT. VALVES ON EXISTING MAINS SHALL BE OPERATED BY DEPARTMENT PERSONNEL OR UNDER THEIR DIRECT SUPERVISION. TAPPING SLEEVE AND VALVE SHALL BE PRESSURE TESTED PRIOR TO TAPPING. IF SERVICE MUST BE CUT OFF TO EXISTING CUSTOMERS, THE DEPARTMENT MUST HAVE THREE DAYS NOTICE TO MAKE NECESSARY NOTIFICATIONS. THE CONTRACTOR MAY BE REQUIRED TO ASSIST IN NOTIFICATIONS. IN THIS EVENT, CONTRACTOR SHALL BE READY TO PROCEED WITH AS MUCH MATERIAL PREASSEMBLED AS POSSIBLE AT THE SITE TO MINIMIZE THE LENGTH OF SERVICE INTERRUPTION. THE DEPARTMENT WILL POSTPONE A SERVICE CUT OFF IF THE CONTRACTOR IS NOT READY TO PROCEED ON SCHEDULE. SUCH CONNECTIONS SHALL BE MADE AT NIGHT TO MINIMIZE EFFECTS UNLESS OTHERWISE AUTHORIZED BY THE DEPARTMENT. NO CUSTOMER SHOULD BE WITHOUT SERVICE FOR MORE THAN FOUR HOURS. LOCAL CHLORINATION WILL BE REQUIRED FOR ALL PIPE AND FITTINGS USED TO COMPLETE CONNECTIONS WITH POTABLE WATER.

2. THE CONTRACTOR SHALL HAVE AVAILABLE AT THE JOB SITE AT ALL TIMES ONE COPY OF OKEECHOBEE UTILITY AUTHORITY MINIMUM DESIGN AND CONSTRUCTION STANDARDS, ONE COPY OF THE CONTRACT DOCUMENTS, INCLUDING PLANS, SPECIFICATIONS AND SPECIAL PROVISIONS, AND COPIES OF ANY REQUIRED CONSTRUCTION PERMITS.

3. CONTRACTOR SHALL PROVIDE PROPER BENDS TO MAINTAIN REQUIRED DEPTH AND ALIGNMENT OF PIPE. COST OF BENDS NOT DESIGNATED ON PLANS SHALL BE INCLUDED WITH THE UNIT PRICE FOR PIPE.

4. DEFLECT PIPE AS NECESSARY TO OBTAIN THE REQUIRED ALIGNMENT. USE APPROPRIATE FITTINGS WHEN DEFLECTION EXCEEDS 75% OF MANUFACTURER'S RECOMMENDED MAXIMUM DEFLECTION.

5. ALL FITTINGS SHALL BE MECHANICALLY RESTRAINED. REFER TO MECHANICAL RESTRAINT DETAIL.

6. MAXIMUM LENGTH OF WATER MAIN AND FORCE MAIN PRESSURE TEST SHALL BE 1500 FEET. WATER SOURCE FOR FLUSHING, FILLING AND PRESSURE TESTING THE WATER MAIN SHALL BE FROM A TREATED SOURCE APPROVED BY THE DEPARTMENT.

7. THE CONTRACTOR SHALL VERIFY THE LOCATION OF EXISTING WATER SERVICES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL PROTECT THE EXISTING WATER SERVICES FROM DAMAGE AND REPAIR ANY BREAKS IMMEDIATELY.

8. MECHANICALLY RESTRAIN THREE (3) FULL LENGTHS EACH SIDE OF ALL BENDS AND AS STIPULATED IN THE MECHANICAL RESTRAINT DETAIL. MECHANICAL RESTRAINTS SHALL BE EITHER EBBA, TYLER OR UNIFLANGE. THE CONTRACTORS BID PRICE FOR PIPE, GATE VALVES AND FITTINGS SHALL INCLUDE MECHANICAL RESTRAINT.

9. ALL PRESSURE TESTS SHALL BE IN ACCORDANCE WITH AWWA STANDARDS. CONTRACTOR'S BID PRICE FOR PIPE SHALL INCLUDE PRESSURE TESTING.

10. AIR RELEASE VALVE VAULT COVERS SHALL BE CONSTRUCTED PER DETAIL "STANDARD ALUMINUM COVER" AS SHOWN IN THE DEPARTMENTS MINIMUM DESIGN AND CONSTRUCTION STANDARDS. MINIMUM COVER SIZE TO MATCH VAULT INSIDE WALL DIMENSIONS.

11. ALL WATER SERVICES SHALL BE HORIZONTAL DIRECTIONAL DRILLED UNDER EXISTING PAVEMENT.

12. VALVE STEM RISER SHALL BE REQUIRED WHERE OPERATING NUT DEPTH EXCEEDS 4 FEET. THE RISER SHALL BE BOLTED TO THE VALVE NUT. METHOD AND MATERIALS SHALL BE APPROVED BY THE DEPARTMENT. COST FOR THIS WORK SHALL BE INCLUDED IN THE CONTRACTORS BID UNIT PRICE FOR GATE VALVES.

13. THE CONTRACTOR SHALL CLEAN MAINS USING APPROVED POLYURETHANE PIG(S). TEMPORARY CLEANING STATIONS SHALL BE CONSTRUCTED BY THE CONTRACTOR. THE CONTRACTOR SHALL PROVIDE A CLEANING PLAN SHOWING METHOD OF FILLING AND CLEANING MAINS PRIOR TO START OF CONSTRUCTION. THE CLEANING PLAN SHALL BE APPROVED BY THE DEPARTMENT PRIOR TO CONSTRUCTION. ALL COSTS FOR FILLING AND CLEANING SHALL BE AT THE CONTRACTORS EXPENSE AND INCLUDED IN BID PRICE FOR PIPE.

14. THE CONTRACTOR SHALL INSTALL TESTING POINTS FOR PRESSURE TESTING MAINS. THE CONTRACTOR SHALL INSTALL AND REMOVE AND PLUG CORP. STOPS PER DEPARTMENT STANDARDS. THE LOCATION OF TEST POINTS SHALL BE APPROVED BY THE DEPARTMENT.

15. WATER MAIN DISINFECTION SHALL BE IN ACCORDANCE WITH CURRENT AWWA, BULLETIN C–651.

16. WATER MAINS AND APPURTENANCES SHALL BE IN ACCORDANCE WITH CURRENT AWWA AND NSF STANDARDS.

17. MINIMUM COVER TO FINISHED GRADE OVER WATER MAINS SHALL BE 30 INCHES UP TO 8" DIAMETER; 10" OR LARGER SHALL HAVE 36" COVER OR GREATER TO PROVIDE A MINIMUM 18" COVER OVER OPERATING NUT OF GATE VALVES.

18. ALL MAINS SHALL BE TESTED FOR LEAKAGE. WATER SHALL BE SUPPLIED TO THE MAIN AND PUMPED TO THE REQUIRED 150 PSI PRESSURE.

19. NEWLY CONSTRUCTED FIRE HYDRANTS THROUGHOUT THE PROJECT SHALL HAVE A RED "OUT OF SERVICE" DISK (JOSEPH G. POLLARD CO. OR EQUAL) ATTACHED TO 4" PUMPER NOZZLE CAP. DISK TO BE REMOVED AFTER WATER SYSTEM HAS BEEN APPROVED FOR SERVICE BY THE DEPARTMENT.

20. FIRE HYDRANTS SHALL BE MARKED WITH AN APPROVED REFLECTOR AFFIXED TO THE ROADWAY SURFACE WHERE REQUIRED BY THE AHJ.

21. FIRE HYDRANTS SHALL BE MARKED WITH AN APPROVED FLAG OR OTHER DEVICE AFFIXED TO OR PROXIMATE TO THE FIRE HYDRANT WHERE REQUIRED BY THE AHJ.

22. WHERE REQUIRED BY THE AHJ, FIRE HYDRANTS SHALL BE COLOR CODED OR OTHERWISE MARKED WITH AN APPROVED SYSTEM INDICATING THE AVAILABLE FLOW CAPACITY.

THE DEPARTMENT SHALL BE NOTIFIED AT LEAST 48 HOURS IN ADVANCE OF ANY TESTING PROCEDURES. AFTER FLUSHING IS COMPLETED, LINE PRESSURE SHALL BE APPLIED TO THE WATER SYSTEM TO DETERMINE IF ANY MAJOR DEFECTS ARE PRESENT. THE COMPLETE WATER SYSTEM SHALL THEN BE TESTED AT A PRESSURE OF 150 PSI FOR A PERIOD OF NOT LESS THAN TWO HOURS. THE DEPARTMENT MAY, AT ITS DISCRETION, INCREASE THE PERIOD TO FOUR HOURS. MAXIMUM LENGTH OF LINE TO BE TESTED AT ONE TIME SHALL NOT EXCEED 1500 LINEAR FEET. AN OIL FILLED PRESSURE GAUGE UP TO 200 PSI AT 2 POUND INCREMENTS SHALL BE USED FOR ALL PRESSURE TESTS. NO VISIBLE MOVEMENT OF THE SYSTEM SHALL OCCUR AND LEAKAGE SHALL NOT EXCEED:

$$L = \frac{SD\sqrt{P}}{14,800}$$

WHERE: L=ALLOWABLE LEAKAGE IN GALLONS
S= LENGTH OF PIPE IN FEET
P = TEST PRESSURE IN PSI
D = DIAMETER OF PIPE IN INCHES

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PHASE 1 - COMMERCIAL AREAS
LOCATED IN SECTIONS 34&35, TOWNSHIPS 38&39 SOUTH, RANGE 34 EAST, GLADES COUNTY, FLORIDA

NEWLINES LAND CONSULTANTS
STEVEN L. DOBBS, P.E.
FLORIDA CERTIFICATE OF AUTHORIZATION NO. 00029206 DATE
STEVEN L. DOBBS ENGINEERING, LLC
1062 JAKES WAY OKEECHOBEE, FL 34974, PHONE (863) 824-7644

PROJECT No.	21534
DRAWN BY	YB/MB
SCALE	NTS
DATE	7/23/2024
SHEET No.	11 OF 16

MECHANICAL THRUST RESTRAINT CHART 1										
PIPE SIZE, in	90° BEND		45° BEND		22 1/2° BEND		11 1/4° BEND		DEADEND/VALVE	
	PVC	DIP	PVC	DIP	PVC	DIP	PVC	DIP	PVC	DIP
4	21	16	9	7	5	4	2	2	45	29
6	28	23	12	10	6	5	3	3	63	40
8	37	29	16	12	8	6	4	3	83	53
10	44	35	18	15	9	7	5	4	99	63
12	51	41	21	17	11	8	5	4	116	74
14	57	46	24	19	12	10	6	5	132	83
16	64	51	27	21	13	11	7	5	149	94
18	70	56	29	24	14	12	7	6	164	104
20	76	61	32	26	16	13	8	6	179	113
24	87	70	36	29	18	14	9	7	208	131

THRUST RESTRAINT CHART BASED UPON THE FOLLOWING:

PVC/DIP	PIPE MATERIAL, AS NOTED
SP	SOIL TYPE (designer to confirm)
1.5	SAFETY FACTOR (minimum)
3	TRENCH TYPE (designer to confirm)
2.5	DEPTH OF BURY, ft (designer to confirm)
150	TEST PRESSURE, psi (minimum)

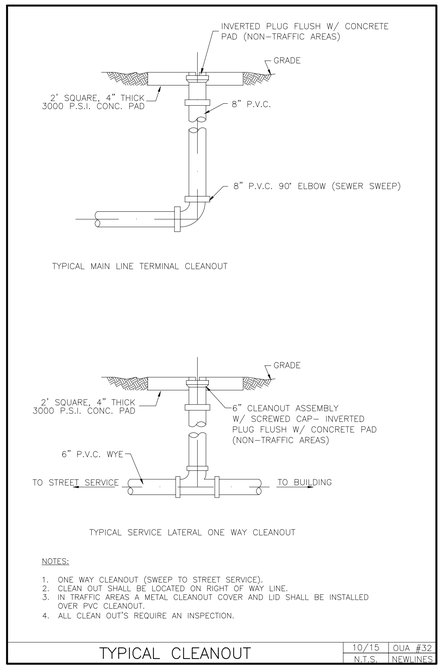
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NOTE 1:ANY CONDITION OTHER THAN THOSE LISTED ABOVE (including poly-wrapped DIP) SHALL REQUIRE REVISION OF THE TABLE IN ACCORDANCE WITH EBAA IRON, INC., RESTRAINT LENGTH CALCULATOR (V. 5.4). (http://www.ebaa.com/engineering.htm or http://rcp.ebaa.com)

NOTE 2:THE REVISED CHARTS SHALL BE SUBMITTED TO OUA AS A SHOP DRAWING SUBMITTAL.

WATER THRUST RESTRAINT

10/15	OUA #50
N.T.S.	NEWLINES

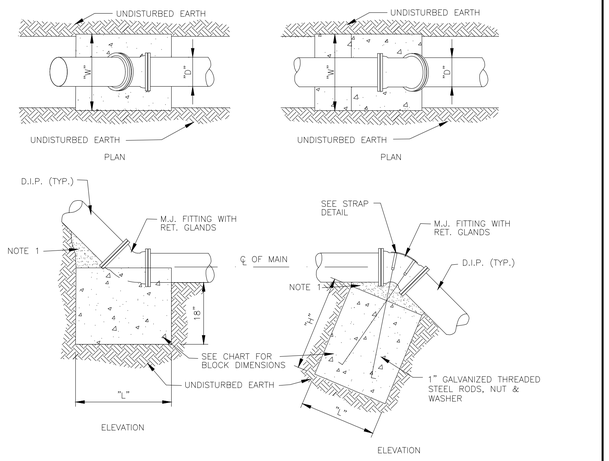


NOTES:

1. ONE WAY CLEANOUT (SWEEP TO STREET SERVICE).
2. CLEAN OUT SHALL BE LOCATED ON RIGHT OF WAY LINE.
3. IN TRAFFIC AREAS A METAL CLEANOUT COVER AND LID SHALL BE INSTALLED OVER PVC CLEANOUT.
4. ALL CLEAN OUT'S REQUIRE AN INSPECTION.

TYPICAL CLEANOUT

10/15	OUA #32
N.T.S.	NEWLINES



BLOCKING DETAIL FOR VERTICAL SAG — N.T.S.

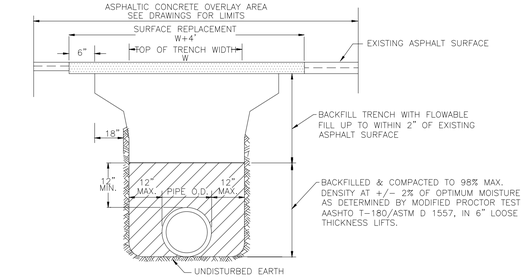
BLOCKING DETAIL FOR VERTICAL CREST — N.T.S.

NOTES:

1. ANY VOID BETWEEN MAIN AND GRAVITY BLOCK TO BE FILLED WITH GROUT BY CONTRACTOR
2. FITTINGS SHALL BE WRAPPED WITH SUITABLE COVERING TO PREVENT ADHERENCE TO GRAVITY BLOCK.
3. USE MEGALUGS ON ALL FITTINGS.
4. THRUST BLOCKS ONLY ON EXISTING LINES AND WHEN PRE-APPROVED BY THE EXECUTIVE DIRECTOR

GRAVITY BLOCKS FOR PRESSURE PIPING

10/15	OUA #14
N.T.S.	NEWLINES



NOTES:

1. BACKFILL MATERIALS AROUND AND UP TO 1 FOOT ABOVE PIPE SHALL CONSIST OF CLEAN EARTH FILL COMPRISED OF SAND, SAND AND CLAY, GRAVEL, CRUSHED ROCK OR OTHER MATERIALS FROM GROUPS A-1, A-2 OR A-3 AASHTO CLASSIFICATION FREE FROM ORGANIC MATTER AND VEGETATION, DEBRIS, LARGE CLODS OR EARTH OR STONES. UNSUITABLE IN-SITU MATERIALS SUCH AS MUCK, DEBRIS, LARGE ROCK AND ROOTS SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR.
2. FLOWABLE FILL FROM A POINT 12" ABOVE TOP OF PIPE TO 2" BELOW EXISTING ASPHALT SURFACE, SHALL BE READY-MIXED FLOWABLE FILL CONSISTING OF PORTLAND CEMENT, AGGREGATES, WATER AND MINERAL MIXTURES IN COMPLIANCE WITH F.D.O.T. STANDARD SPECIFICATIONS, SECTION 121.
3. THE PIPE SHALL BE FULLY SUPPORTED ALONG ENTIRE LENGTH.
4. THE PIPE TRENCH SHALL REMAIN DRY DURING PIPE LAYING OPERATIONS.
5. ALL TRENCH WORK SHALL CONFORM TO LATEST STANDARDS AS SET FORTH BY THE FLORIDA TRENCH SAFETY ACT AND OR OSHA.
6. FOUR INCH WIDE DETECTABLE TAPE SHALL BE PLACED APPROXIMATELY 12"-18" BELOW FINISHED GRADE AND DIRECTLY ABOVE ALL PRESSURE PIPING. TAPE, WORDING AND COLOR SHALL CONFORM TO O.U.A. STANDARDS.
7. SURFACE COURSE SHALL BE F.D.O.T. MIX, TO MATCH EXISTING PAVEMENT, WITH A THICKNESS EQUAL TO THE EXISTING OR 2", WHICHEVER IS GREATER.
8. PAVEMENT JOINTS SHALL BE MECHANICALLY SAWED BUTT JOINTS, HEATED, RAKED AND SPRAYED WITH A REJUVENATING AGENT. THE PATCH AREA SHALL BE A SMOOTH PLANE SUCH THAT A STRAIGHT EDGE PLACED ACROSS THE PATCH, PARALLEL TO THE TRAFFIC FLOW AND EXTENDING TO UNDISTURBED PAVEMENT SHALL SHOW NO MORE THAN 1/4" IRREGULARITY IN ANY 15 FT. SECTION. ANY IRREGULARITY SHALL BE CORRECTED IN ACCORDANCE WITH F.D.O.T. SPECIFICATIONS.
9. "COLD PATCH" SHALL BE USED FOR TEMPORARY REPAIRS ONLY, AND FOR A PERIOD NOT TO EXCEED 30 DAYS.
10. TRAFFIC LANE CLOSURES, MOT PLANS AND ROADWAY REPAIRS MATERIALS SHALL BE PER DIRECTION OF ROAD OWNER. CONTRACTOR TO INQUIRE WITH OWNER ABOUT REQUIREMENTS PRIOR TO BID.
11. 3M LOCATOR BALLS SHALL BE INSTALLED AT EACH FITTING IN THE PIPE LINE CHANGING DIRECTION AND AT EACH CONNECTION.
12. 3M LOCATORS TO BE PROVIDED BY DEVELOPER AS SPECIFIED BY O.U.A.

TRENCH REPAIR DETAILS PAVED AREAS WITH FLOWABLE FILL BACKFILL

10/15	OUA #13B
N.T.S.	NEWLINES

MECHANICAL THRUST RESTRAINT CHART 2							
MAIN RUN, in	BRANCH, in	TEE		LARGE SIZE	SMALL LARGE	REDUCER	
		PVC	DIP			PVC	DIP
4	4	1	1	6	4	33	21
6	4	1	1	8	4	60	38
6	6	1	1	8	6	35	22
8	4	1	1	10	4	81	51
8	6	1	1	10	6	61	39
8	8	7	5	10	8	33	21
10	6	1	1	12	4	101	64
10	8	1	1	12	6	85	54
10	10	21	14	12	8	62	39
12	6	1	1	16	4	138	87
12	8	1	1	16	6	126	79
12	12	36	24	16	8	109	68
16	6	1	1	16	12	63	40
16	8	1	1	18	4	154	97
16	16	65	43	18	6	144	91
18	6	1	1	18	8	129	81
18	8	1	1	20	4	171	107
18	18	79	52	20	6	161	101
20	6	1	1	20	8	148	93
20	8	1	1	20	12	113	71
20	20	92	61	24	4	201	127
24	6	1	1	24	6	194	122
24	8	1	1	24	8	183	115
24	24	118	78	24	12	154	97

THRUST RESTRAINT CHART BASED UPON THE FOLLOWING:

PVC/DIP	PIPE MATERIAL, AS NOTED
SP	SOIL TYPE (designer to confirm)
1.5	SAFETY FACTOR (minimum)
3	TRENCH TYPE (designer to confirm)
2.5	DEPTH OF BURY, ft (designer to confirm)
150	TEST PRESSURE, psi (minimum)

THE MINIMUM LENGTH OF PIPE OUT OF ANY VALVE OR FITTING SHOULD BE 20 LF.
FITTINGS NOT SHOWN TO BE CALCULATED UTILIZING THE CRITERIA LISTED ABOVE AND SUBMITTED IN A SHOP DRAWING
VALUES SHOWN IN CHART INDICATE LENGTH (LF) OF PIPE TO BE RESTRAINED ON EITHER SIDE OF ITEM LISTED

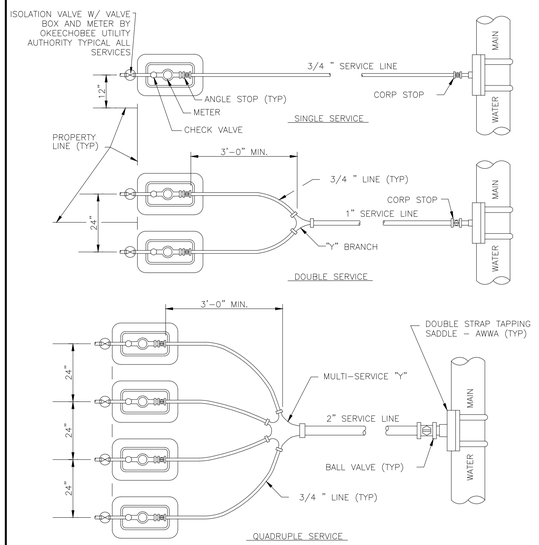
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NOTE 2:THE REVISED CHARTS SHALL BE SUBMITTED TO OUA AS A SHOP DRAWING SUBMITTAL.

WATER THRUST RESTRAINT

10/15	OUA #51
N.T.S.	NEWLINES

ALL CONCRETE TO BE CLASS 'B' 3500 PSI (UNLESS OTHERWISE NOTED)



NOTES:

1. AUTHORIZED SERVICE LINE MATERIAL SHALL BE POLYETHYLENE TUBING.
2. MULTIPLE SERVICE/METER INSTALLATIONS OF MORE THAN 4 METERS PER SERVICE AND SERVICE LINES LARGER THAN 2" IN DIAMETER SHALL BE HANDLED ON AN INDIVIDUAL BASIS.
3. NO FITTINGS BETWEEN CORP. STOP & ANGLE VALVE OR CORP. STOP & "Y" BRANCH FOR MULTIMETER INSTALLATIONS.

TYPICAL SERVICE FOR MULTIPLE SERVICES (TWO OR MORE)

10/15	OUA #2
N.T.S.	NEWLINES

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PHASE 1 - COMMERCIAL AREAS
LOCATED IN SECTIONS 34&35, TOWNSHIPS 38&39 SOUTH, RANGE 34 EAST, GLADES COUNTY, FLORIDA

NEWLINES LAND CONSULTANTS
STEVEN L. DOBBS, P.E.
FLORIDA CERTIFICATE OF AUTHORIZATION NO. 00020206
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1062 JAKES WAY OKEECHOBEE, FL 34974, PHONE (863) 824-7644

PROJECT No.	21534
DRAWN BY	YB/MB
SCALE	NTS
DATE	7/23/2024
SHEET No.	12 OF 16