CIRRUS

FINAL PUD / PRELIMINARY SUBDIVISION / LARGE-SCALE SITE PLAN
SECTION 18, TOWNSHIP 24 SOUTH, RANGE 36 EAST
CITY OF COCOA, BREVARD COUNTY, FLORIDA

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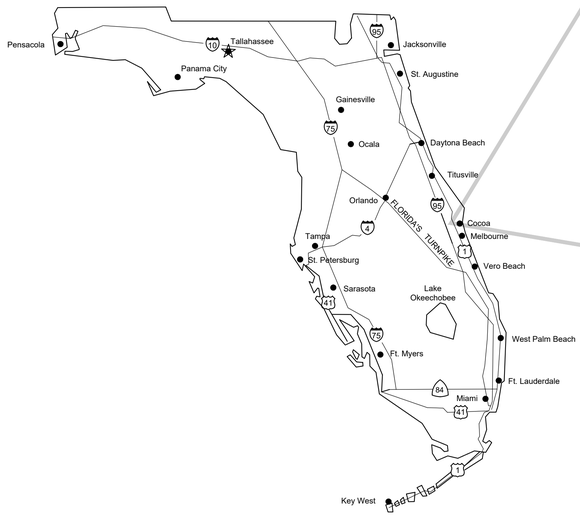

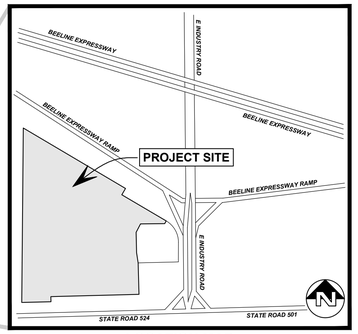

LOCATION MAP
N.T.S.

LEGAL DESCRIPTION
LOT 1 OF HOME DEPOT COCOA, ACCORDING TO THE PLAT THEREOF RECORDED IN PLAT BOOK 57, PAGES 87 THROUGH 93, OF THE PUBLIC RECORDS OF BREVARD COUNTY, FLORIDA.

GENERAL PROJECT STATEMENT
THE CIRRUS PROJECT CONSISTS OF THE REDEVELOPMENT OF LOT 1 (PB57 PGS 87-93) FROM A COMMERCIAL/RETAIL DEVELOPMENT TO A MIXED USE PUD. THE MULTI-FAMILY COMPONENT OF THE PROJECT INCLUDES TWO (2) RESIDENTIAL BUILDINGS CONTAINING A TOTAL OF 280 UNITS WITH AN INTEGRATED VERTICAL CLUBHOUSE, POOL AND LOUNGE AREAS, AND SINGLE-STORY PARKING GARAGES. THE COMMERCIAL AREA, ALONG SR 524, AT THIS TIME WILL CONTINUE TO EXIST AS A PARKING AREA. ANY FUTURE PLANS TO DEVELOP THIS AREA WILL NEED TO BE SUBMITTED TO THE CITY OF COCOA FOR REVIEW/APPROVAL. THE CIRRUS PROJECT WILL CONTINUE TO USE THE EXISTING/FUNCTIONING STORMWATER MANAGEMENT SYSTEM AND ITS ASSOCIATED OUTFALLS.

LAND USE: COMMERCIAL
ZONING: MIXED USE PUD (PLANNED UNIT DEVELOPMENT)

NOTES:
1. LIGHTING SHALL BE DESIGNED, INSTALLED, AND MAINTAINED AND DIRECTED SOA S TO AVOID GLARE ON ADJOINING PROPERTIES AND RIGHT-OF-WAY THROUGH THE USE OF SEMI- AND FULL-CUTOFF SHIELDS.

OWNER
FRAMEWORK GROUP, LLP
1200 W. PLATT ST., SUITE 201
TAMPA, FL 33606
(813) 244-3865

ENGINEER
B.S.E.CONSULTANTS, INC.
312 SOUTH HARBOR CITY BOULEVARD
SUITE 4
MELBOURNE, FLORIDA 32901
(321) 725-3674

ARCHITECT
CHARLAN BROCK ASSOCIATES
1770 FENNELL ST.
MAITLAND FL 32751
(407) 660-8900 EXT. 49

LANDSCAPE ARCHITECT
BOOTH DESIGN GROUP
146 SECOND STREET NORTH, SUITE 302
ST. PETERSBURG, FL 33701
(727) 821-5699

FRAMEWORK GROUP, LLP
1200 W. PLATT ST., SUITE 201
TAMPA, FL 33606
(813) 244-3865

- PREPARED BY -

B.S.E. CONSULTANTS, INC.
CONSULTING - ENGINEERING - LAND SURVEYING
312 SOUTH HARBOR CITY BOULEVARD, SUITE 4 MELBOURNE, FLORIDA 32901
PHONE: (321) 725-3674 / FAX: (321) 723-1159
CERTIFICATE OF PROFESSIONAL ENGINEERS BUSINESS AUTHORIZATION: 4905

B.S.E. CONSULTANTS, INC.
CONSULTING - ENGINEERING - LAND SURVEYING
312 SOUTH HARBOR CITY BOULEVARD, SUITE 4
MELBOURNE, FLORIDA 32901
PHONE: (321) 725-3674 FAX: (321) 723-1159
CERTIFICATE OF PROFESSIONAL ENGINEERS
BUSINESS AUTHORIZATION: 4905
CERTIFICATE OF LAND SURVEYING
BUSINESS AUTHORIZATION: LB0004905

SCOTT M. GLAUBITZ, P.E. & P.L.S.
STATE OF FLORIDA, No. 33659 No. 4151

HASSAN A. KAMAL, P.E.
STATE OF FLORIDA, No. 41951

VERTICAL DATUM: NAVD88

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1	CITY COMMENTS	01/28/21
1	CITY COMMENTS	10/30/20
DATE:	08/31/20
DESIGN/DRAWN:	ALS/DRB

PROJECT TITLE
CIRRUS

SHEET TITLE
COVER SHEET

PROJECT NO.
11545

DRAWING NO.
11545_400_001

SHEET
1 of 19

SYMBOLS SHOWN ARE GRAPHIC IN NATURE; DUE TO SCALE, ALL DESIGN ELEMENTS ARE NOT NECESSARILY SHOWN ON PLAN VIEWS. THE CONTRACTOR SHALL ALSO REFER TO SPECIFICATION AND DETAIL SHEETS AS WELL AS THE COMPLETE PLAN SET.

LANDSCAPE SYMBOL LEGEND

- CABBAGE PALM TREE
- CYPRUS TREE
- HOLLY TREE
- MAPLE TREE
- PALM TREE
- PINE TREE
- OAK TREE
- TREE LINE
- SHURB 1
- SHRUB 2

IRRIGATION SYMBOL LEGEND

- SPRINKLER
- RAINBIRD 1/4
- RAINBIRD 1/2
- RAINBIRD 3/4
- RAINBIRD FULL

LINE TYPES

- BEL — EXISTING BURIED ELECTRIC
- BTL — EXISTING BURIED TELEPHONE
- CATV — EXISTING CABLE TV
- X — FENCE (TYPE, HEIGHT AS NOTED)
- FM — EXISTING FORCE MAIN (SIZE, TYPE AS NOTED)
- FO — EXISTING FIBER OPTIC
- GAS — EXISTING GAS LINE
- IRR — EXISTING IRRIGATION (SIZE, TYPE AS NOTED)
- OHE — EXISTING OVERHEAD ELECTRIC
- OHU — EXISTING OVERHEAD UTILITY
- RM — EXISTING REUSE MAIN (SIZE, TYPE AS NOTED)
- SF — SILT FENCE
- SS — EXISTING SANITARY SEWER (SIZE, TYPE AS NOTED)
- WM — EXISTING WATER MAIN (SIZE, TYPE AS NOTED)
- CENTERLINE
- BASIN BOUNDARY
- COLUMN / WALL
- GUARD RAIL
- TREE LINE
- DRAINAGE PIPE (SIZE, TYPE AS NOTED)

SYMBOL LEGEND

- EXISTING SANITARY MANHOLE
- EXISTING MANHOLE (TYPE NOTED)
- PROPOSED MANHOLE
- TYPE 2 INLET
- TYPE 3 INLET
- TYPE 4 INLET
- TYPE 5 INLET
- CATCH BASIN
- YARD DRAIN
- FLARED END SECTION
- MITERED END SECTION
- EXISTING GATE VALVE
- PROPOSED GATE VALVE
- EXISTING FIRE HYDRANT
- PROPOSED FIRE HYDRANT
- EXISTING BLOW-OFF
- PROPOSED BLOW-OFF ASSEMBLY WITH GATE VALVE
- EXISTING FIRE DEPT. CONNECTION
- PROPOSED FIRE DEPT. CONNECTION
- EXISTING WATER METER
- PROPOSED WATER METER
- EXISTING WATER SERVICE
- PROPOSED WATER SERVICE
- EXISTING REUSE SERVICE
- PROPOSED REUSE SERVICE
- SANITARY SERVICE
- STUB OUT
- EXISTING AIR RELEASE VALVE
- AIR RELEASE VALVE
- EXISTING CLEAN OUT
- CLEAN OUT
- CROSS TEE
- TEE
- BACK FLOW PREVENTION DEVICE
- REDUCER
- POST INDICATOR VALVE
- UTILITY RISER
- CONCRETE POWER POLE
- WOOD UTILITY POLE
- GUY WIRE
- GUY POLE
- EXISTING LIGHT POLE
- PROPOSED LIGHT POLE
- EXISTING SIGN
- PROPOSED SIGN
- DIRT PAD ELEVATION
- FINISHED FLOOR ELEVATION
- TYPE A LOT DRAINAGE
- TYPE B LOT DRAINAGE
- 12 — LOT NUMBER
- FLOW ARROW

ABBREVIATIONS

'	MINUTES/FEET
"	SECONDS/INCHES
°	DEGREES
(C)	CALCULATED DIMENSION
(D)	DEED DIMENSION
(F)	FIELD MEASURED DIMENSION
(M)	METER(S)
(NR)	NOT RADIAL
(P)	PLAT DIMENSION
A/C	AIR CONDITIONER
AC	ACRES
ADS	ADVANCED DRAINAGE SYSTEMS (CPP)
AL	ARC LENGTH
ARV	AIR RELEASE VALVE
AVE	AVENUE
BLVD	BOULEVARD
BM	BENCH MARK
BVC	BEGIN VERTICAL CURVE
BVP	BEGIN VERTICAL PROFILE
C/L	CENTERLINE
C/O	CLEAN OUT
CA	CENTRAL ANGLE
CATV	CABLE TELEVISION
CB	CHORD BEARING
CBS	CONCRETE BLOCK STRUCTURE
CH	CHORD LENGTH
CM	CONCRETE MONUMENT
CMP	CORRUGATED METAL PIPE
CONC	CONCRETE
COR	CORNER
CPP	CORRUGATED PLASTIC PIPE
DE	DRAINAGE EASEMENT
DEL	DELTA/CENTRAL ANGLE
DI	DITCH INLET/ CATCH BASIN
DIP	DUCTILE IRON PIPE
DS	DRAINAGE STRUCTURE
E	EAST
EG	EXISTING GROUND
ELEC	ELECTRIC
EL/ELEV	ELEVATION
EOP	EDGE OF PAVEMENT
EOW	EDGE OF WATER
ERCP	ELLIPTICAL REINFORCED CONCRETE PIPE
ESMT	EASEMENT
EVC	END VERTICAL CURVE
EVP	END VERTICAL PROFILE
EX	EXISTING
FD	FOUND
FDC	FIRE DEPARTMENT CONNECTION
FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION
FES	FLARED END SECTION
FFE	FINISHED FLOOR ELEVATION
FH	FIRE HYDRANT
FL	FLOW LINE
FM	FORCE MAIN
FPL	FLORIDA POWER AND LIGHT
FT	FEET
GLO	GENERAL LAND OFFICE
GR	GROUND
GV	GATE VALVE(S)
H/C	HANDICAP
HP	HIGH POINT
HWY	HIGHWAY
ID#	IDENTIFICATION NUMBER
INV	INVERT
IP	IRON PIPE
IPC	IRON PIPE AND CAP
IR	IRON ROD
IRC	IRON ROD AND CAP
JCT	JUNCTION
LF	LINEAR FEET
L	LEFT
LP	LOW POINT

ABBREVIATIONS

LS	LANDSCAPE
LWP	LIGHTER WOOD POST
MAX	MAXIMUM
MES	MITERED END SECTION
MH	MANHOLE
MHW	MEAN HIGH WATER
MI	MILE(S)
MIN	MINIMUM
N	NORTH
N&D	NAIL AND DISK
NAVD88	NORTH AMERICAN VERTICAL DATUM 1988
NGVD29	NATIONAL GEODETIC VERTICAL DATUM 1929
NG	NATURAL GROUND
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
NWL	NORMAL WATER LEVEL
OHE	OVERHEAD ELECTRIC/ UTILITY
OR/ORB	OFFICIAL RECORDS BOOK
P/L	PROPERTY LINE
PAVT	PAVEMENT
PB	PLAT BOOK
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
PCP	PERMANENT CONTROL POINT
PD&UE	PUBLIC DRAINAGE AND UTILITY EASEMENT
PDE	PUBLIC DRAINAGE EASEMENT
PG(S)	PAGE(S)
PGL	PROPOSED GRADE LINE
PK	PARKER-KALEN
POB	POINT OF BEGINNING
POC	POINT OF COMMENCEMENT
POL	POINT ON LINE
PP	POWER/UTILITY POLE
PR	PRIVATE
PRC	POINT OF REVERSE CURVATURE
PT	POINT OF TANGENCY
PVC	POLYVINYL CHLORIDE PIPE
PVI	POINT OF VERTICAL INTERSECTION
R	RADIUS/RIGHT
R/W	RIGHT-OF-WAY
RAD	RADIAL
RB	RADIAL BEARING
RCP	REINFORCED CONCRETE PIPE
REF	REFERENCE
RGE	RANGE
RM	REUSE MAIN
RND	ROUND
RPB	ROAD PLAT BOOK
RR	RAILROAD
S	SOUTH
SEC	SECTION
SF	SQUARE FOOT
SMH	SEWER MANHOLE
SPK	SPIKE
SS	SANITARY SEWER
ST	STREET
STA	STATION
SVC	SERVICE
SW	SIDEWALK
TEL	TELEPHONE
TOB	TOP OF BANK
TOE	TOE OF SLOPE
TWP	TOWNSHIP
TYP	TYPICAL
UE	UTILITY EASEMENT
UG	UNDERGROUND
UTIL	UTILITY
W	WEST
WM	WATER MAIN

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PROJECT TITLE

CIRRUS

SHEET TITLE

SYMBOLS AND ABBREVIATIONS

PROJECT NO.

11545

DRAWING NO.

11545_400_002

SHEET

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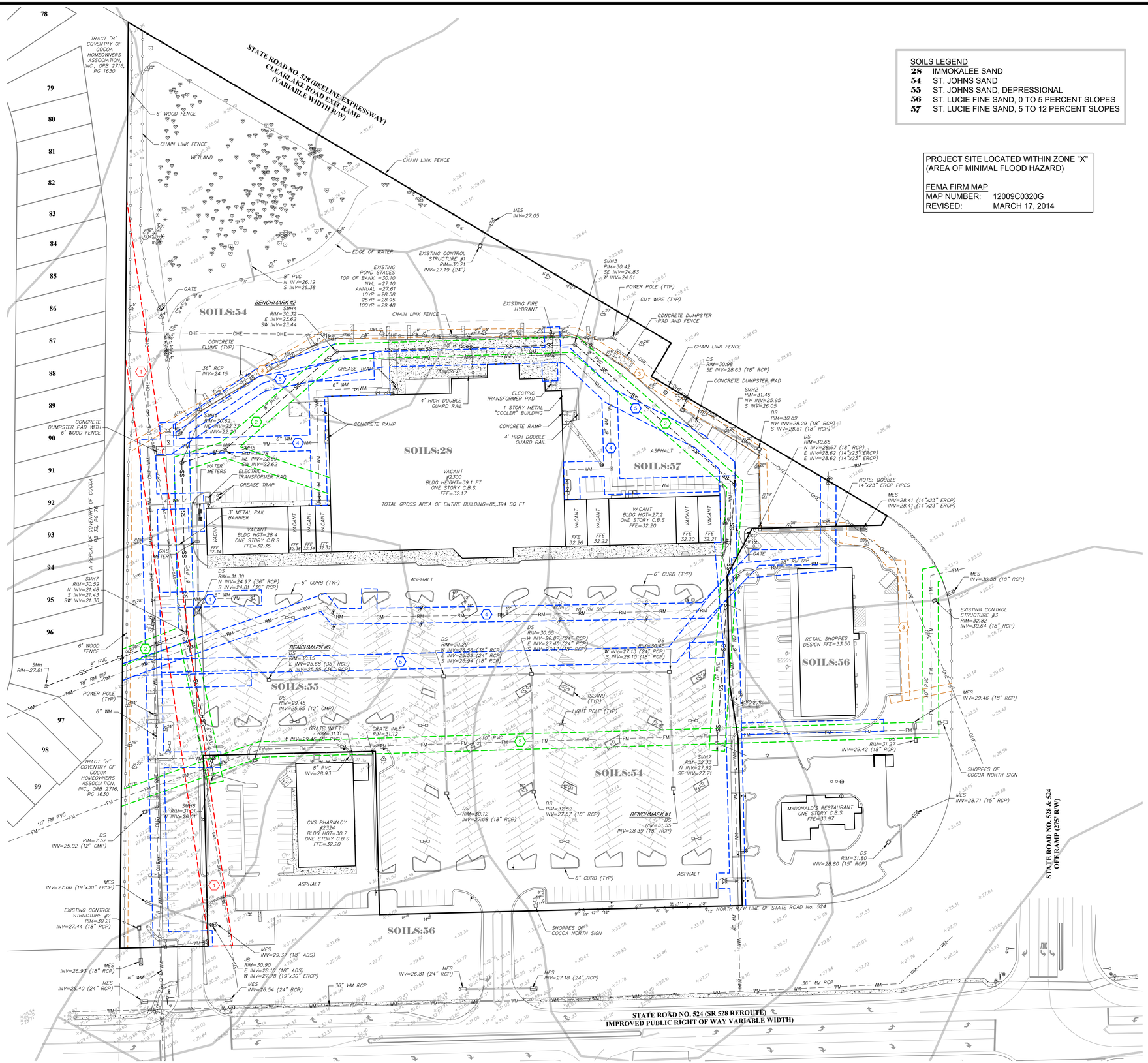
SYMBOLS SHOWN ARE GRAPHIC IN NATURE; DUE TO SCALE, ALL DESIGN ELEMENTS ARE NOT NECESSARILY SHOWN ON PLAN VIEWS. THE CONTRACTOR SHALL ALSO REFER TO SPECIFICATION AND DETAIL SHEETS AS WELL AS THE COMPLETE PLAN SET.



SOILS LEGEND

28	IMMOKALEE SAND
54	ST. JOHNS SAND
55	ST. JOHNS SAND, DEPRESSIONAL
56	ST. LUCIE FINE SAND, 0 TO 5 PERCENT SLOPES
57	ST. LUCIE FINE SAND, 5 TO 12 PERCENT SLOPES

PROJECT SITE LOCATED WITHIN ZONE "X"
(AREA OF MINIMAL FLOOD HAZARD)

FEMA FIRM MAP
MAP NUMBER: 12009C0320G
REVISED: MARCH 17, 2014

TREE LEGEND

- CYPRUS TREE
- HOLLY TREE
- MAPLE TREE
- PALM TREE
- PINE TREE
- OAK TREE

SEE SHEET 2 FOR ADDITIONAL SYMBOL LEGENDS AND ABBREVIATIONS

1. GAS EASEMENT (ORB 599, PG 315)
2. SEWER/FORCE MAIN EASEMENT (ORB 3372, PG 4486) (ORB 5557, PG 4594)
3. TELEPHONE LINE EASEMENT (ORB 3387, PG 3308)
4. WATER/REUSE EASEMENT (ORB 5510, PG 1779)
5. INGRESS/EGRESS, WATER, SEWER, REUSE EASEMENT (PB 57, PG 87)

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PHONE: (321) 725-3674 FAX: (321) 723-1159
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PROJECT TITLE
CIRRUS

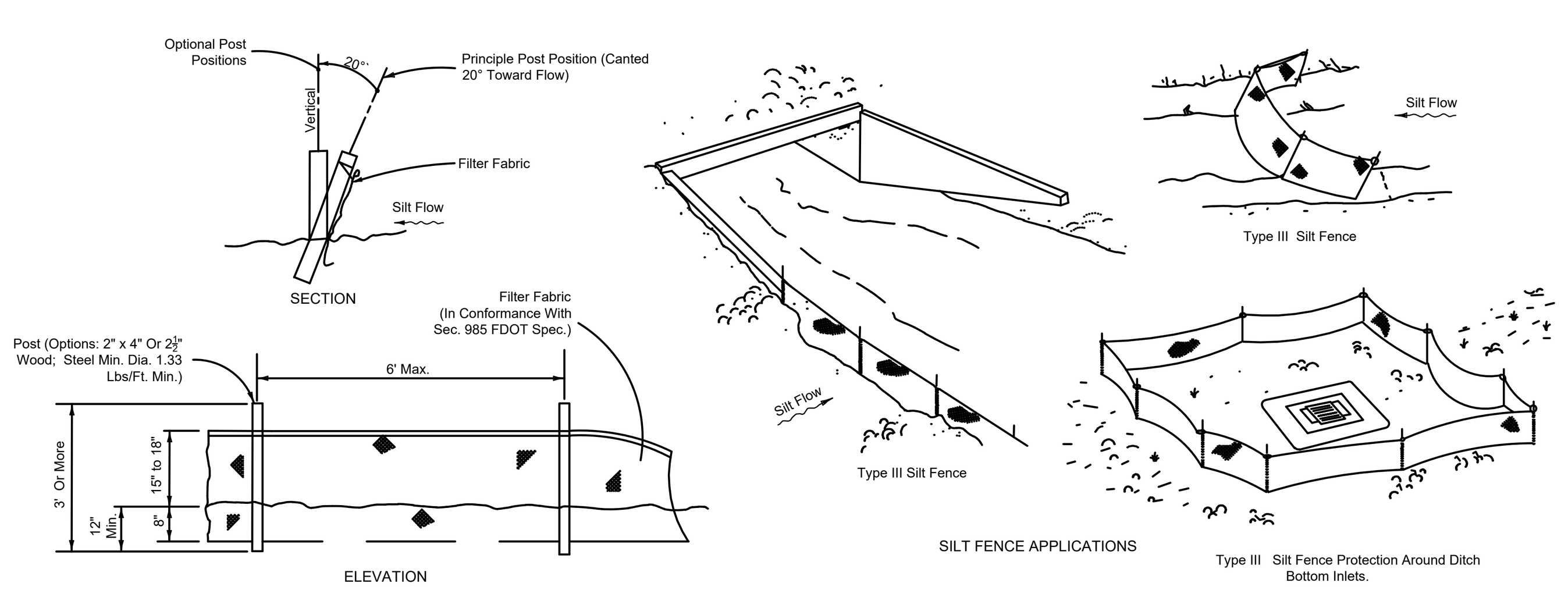
SHEET TITLE
EXISTING CONDITIONS PLAN

PROJECT NO.
11545

DRAWING NO.
11545_400_003

SHEET
3 of 19

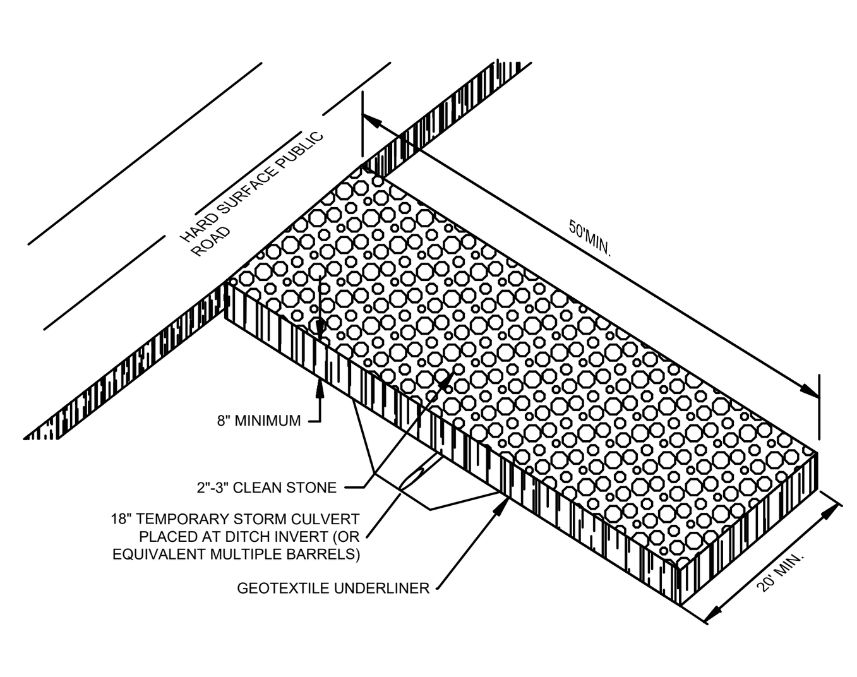
Soil data provided by: Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Soil Survey Geographic (SSURGO) Database for Brevard County, Florida.



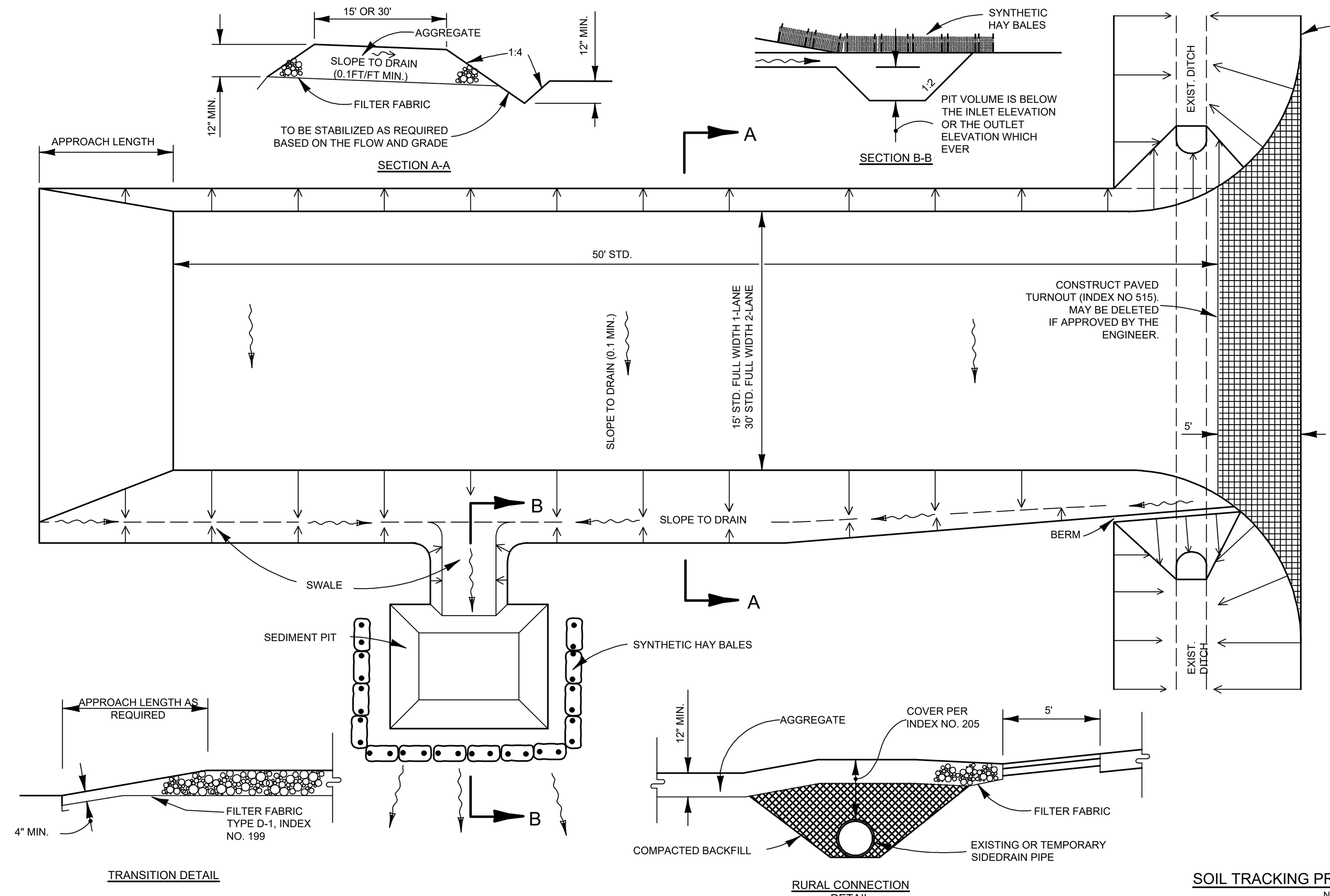
Do not deploy in a manner that silt fences will act as a dam across permanent flowing watercourses. Silt fences are to be used at upland locations and turbidity barriers used at permanent bodies of water.

TYPICAL SILT FENCE
N.T.S.
FIGURE 1

Note: Silt Fence to be paid for under the contract unit price for Staked Silt Fence (LF).



CONSTRUCTION ENTRANCE
NTS
FIGURE 2



GENERAL NOTES

1. A SOIL TRACKING PREVENTION DEVICE (STPD) SHALL BE CONSTRUCTED AT LOCATION DESIGNATED BY THE ENGINEER FOR POINTS OF EGRESS FROM UNSTABILIZED AREAS OF THE PROJECT TO PUBLIC ROADS WHERE OFFSITE TRACKING OF MUD COULD OCCUR. TRAFFIC FROM UNSTABILIZED AREAS OF THE CONSTRUCTION PROJECT SHALL BE DIRECTED THRU A STPD. BARRIERS, FLAGGING, OR OTHER POSITIVE MEANS SHALL BE USED AS REQUIRED TP LIMIT AND DIRECT VEHICULAR EGRESS ACROSS STPD.

2. THE CONTRACTOR MAY PROPOSE AN ALTERNATIVE TECHNIQUE TO MINIMIZE OFFSITE TRACKING OF SEDIMENT. THE ALTERNATIVE MUST BE REVIEWED AND APPROVED BY THE ENGINEER PRIOR TO ITS USE.

3. ALL MATERIALS SPILLED, DROPPED, OR TRACKED ONTO PUBLIC ROADS (INCLUDING THE STPD AGGREGATE AND CONSTRUCTION MUD) SHALL BE REMOVED DAILY, OR MORE FREQUENTLY IF SO DIRECTED BY THE ENGINEER.

4. AGGREGATES SHALL BE DESCRIBED IN SECTION 901 EXCLUDING 901-2.3. AGGREGATES SHALL BE FDOT SIZE #1. IF THIS SIZE IS NOT AVAILABLE, THE NEXT AVAILABLE SMALLER SIZE AGGREGATE MAY BE SUBSTITUTED WITH THE APPROVAL OF THE ENGINEER. SIZES CONTAINING EXCESSIVE SMALL AGGREGATE WILL TRACK OFF THE PROJECT AND ARE UNSUITABLE.

5. THE SEDIMENT PIT SHOULD PROVIDE A RETENTION VOLUME OF 3600 CUBIC FEET/ACRE OF SURFACE AREA DRAINING TO THE PIT.
WHEN THE STPD IS ISOLATED FROM OTHER DRAINAGE AREAS, THE FOLLOWING PIT VOLUMES WILL SATISFY THIS REQUIREMENT:
15' X 50' = 100 CU. FT. 30' X 50' = 200 CU. FT.

6. AS AN OPTION TO THE SEDIMENT PIT, THE WIDTH OF THE SWALE BOTTOM CAN BE INCREASED TO OBTAIN THE VOLUME. WHEN THE SEDIMENT PIT OR SWALE VOLUME HAS BEEN REDUCED TO ONE HALF, IT SHALL BE CLEANED. WHEN THE SWALE IS USED, SYNTHETIC HAY BALES OR SILT FENCE SHALL BE PLACED ALONG THE ENTIRE LENGTH.

7. THE SWALE DITCH DRAINING THE STPD SHALL HAVE A 0.2% MINIMUM AND A 0.1% MAXIMUM GRADE ALONG THE STPD AND TO THE SEDIMENT PIT.

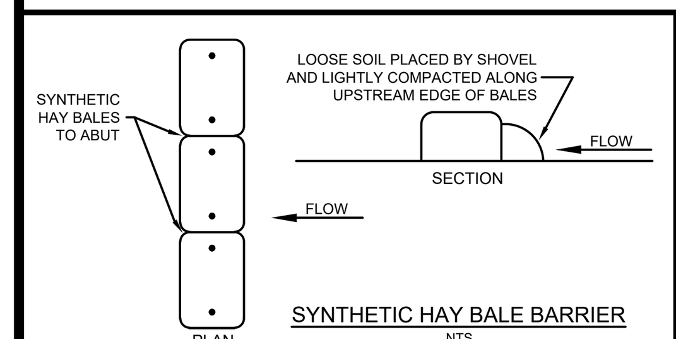
8. MITERED AND SECTIONS ARE NOT REQUIRED WHEN THE SIDEDRAIN PIPE SATISFIES THE CLEAR ZONE REQUIREMENTS.

9. THE STPD SHALL BE MAINTAINED IN A CONDITION THAT WILL ALLOW IT TO PERFORM ITS FUNCTION. TO PREVENT OFFSITE TRACKING, THE STPD SHALL BE RINSED (DAILY WHEN IN USE) TO MOVE ACCUMULATED MUD DOWNWARD THRU THE STONE. ADDITIONAL STABILIZATION OF THE VEHICULAR ROUTE LEADING TO THE STPD MAY BE REQUIRED TO LIMIT THE MUD TRACKED.

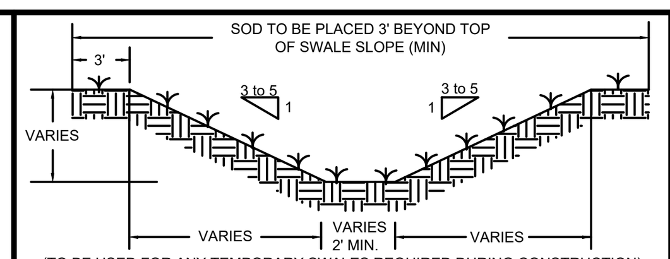
10. A STPD SHALL BE PAID FOR UNDER THE CONTRACT UNIT PRICE FOR SOIL TRACKING PREVENTION DEVICE, EA. THE UNIT PRICE SHALL CONSTITUTE FULL COMPENSATION FOR CONSTRUCTION, MAINTENANCE, REPLACEMENT OF MATERIALS, REMOVAL, AND RESTORATION OF THE AREA UTILIZED FOR THE STPD; INCLUDING BUT NOT LIMITED TO EXCAVATION, GRADING, TEMPORARY PIPE (INCLUDING MES WHEN REQUIRED), FILTER FABRIC, AGGREGATE, PAVED TURNOUT (INCLUDING ASPHALT AND BASE CONSTRUCTION), DITCH STABILIZATION, APPROACH ROUTE STABILIZATION, SEDIMENT REMOVAL AND DISPOSAL, WATER, RINSING AND CLEANING OF THE STPD AND CLEANING OF THE PUBLIC ROADS, GRASSING AND SOD, SYNTHETIC HAY BALES SHALL BE PAID FOR UNDER THE CONTRACT UNIT PRICE FOR HAY OR STRAW BAILED, EA. SILT FENCE SHALL BE PAID FOR UNDER THE CONTRACT UNIT PRICE FOR STAKED SILT FENCE, LF.

11. THE NOMINAL SIZE OF A STANDARD STPD IS 15' X 50' UNLESS OTHERWISE SHOWN IN THE PLANS. IF THE VOLUMES OF ENTERING AND EXITING VEHICLES WARRANT, A 30' WIDTH STPD MAY BE USED IF APPROVED BY THE ENGINEER, WHEN A DOUBLE WIDTH (30') STPD IS USED, THE PAY QUANTITY SHALL BE 2 FOR EACH LOCATION.

SOIL TRACKING PREVENTION DEVICE
NTS
FIGURE 2A

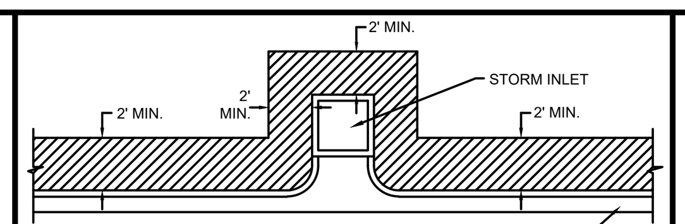


SYNTHETIC HAY BALE BARRIER
NTS
FIGURE 3



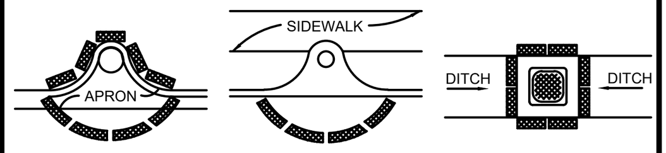
(TO BE USED FOR ANY TEMPORARY SWALES REQUIRED DURING CONSTRUCTION)
NOTE: SLOPES SHALL BE 3 TO 5 UNLESS OTHERWISE NOTED (TYP)

TYPICAL SWALE SECTION
N.T.S.
FIGURE 4



SOD ALONG CURB AND AROUND INLET
N.T.S.
FIGURE 5

ANCHOR SYNTHETIC BALES WITH 2-2" x 2" x 4' STAKES PER BALE.



PROTECTION AROUND INLETS OR SIMILAR STRUCTURES:SYNTHETIC HAY BALES
N.T.S.
FIGURE 6

NOTE: SEE ** STORMWATER MANAGEMENT CRITERIA FOR MINIMUM STANDARDS.

THIS PLAN IS INTENDED TO COMPLY WITH APPROPRIATE CONDITIONS OF THE BREVARD COUNTY LAND DEVELOPMENT REGULATIONS, THE RULES OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION, CHAPTER 17-25, F.A.C., AND THE ST. JOHN'S RIVER WATER MANAGEMENT DISTRICT, DURING ALL CONSTRUCTION ACTIVITIES. THE PLAN ADDRESSES THE FOLLOWING AREAS:

1. GENERAL EROSION CONTROL
2. PROTECTION OF SURFACE WATER QUALITY DURING AND AFTER CONSTRUCTION.
3. CONTROL OF WIND EROSION.

THE VARIOUS TECHNIQUES OR ACTIONS IDENTIFIED UNDER EACH SECTION INDICATE THE APPROPRIATE SITUATION WHEN THE TECHNIQUES SHOULD BE EMPLOYED. ALSO IDENTIFIED IS A CROSS-REFERENCE TO A DIAGRAM OR FIGURE REPRESENTING THE TECHNIQUE.

IT SHOULD BE NOTED THAT THE MEASURES IDENTIFIED ON THIS PLAN ARE ONLY SUGGESTED BMP(S). THE CONTRACTOR SHALL PROVIDE POLLUTION PREVENTION AND EROSION CONTROL MEASURES AS REQUIRED BY NPDES AND AS NECESSARY FOR EACH SPECIFIC APPLICATION.

SECTION 1 GENERAL EROSION CONTROL

GENERAL EROSION CONTROL BMP'S SHALL BE EMPLOYED TO MINIMIZE SOIL EROSION AND POTENTIAL LAKE SLOPE CAVE-INS. WHILE THE VARIOUS TECHNIQUES REQUIRED WILL BE SITE AND PLAN SPECIFIC, THEY SHOULD BE EMPLOYED AS SOON AS POSSIBLE DURING CONSTRUCTION ACTIVITIES.

CLEARED SITE DEVELOPMENT AREAS NOT CONTINUALLY SCHEDULED FOR CONSTRUCTION ACTIVITIES SHALL BE COVERED WITH HAY OR OVER SEEDED AND PERIODICALLY WATERED SUFFICIENTLY TO STABILIZE THE TEMPORARY GROUND COVER.

SLOPES OF BANKS OF RETENTION / DETENTION PONDS SHALL BE CONSTRUCTED NOT STEEPER THAN 3H:1V FROM TOP OF BANK TO TWO FEET BELOW NORMAL WATER LEVEL UNLESS SPECIFIED OTHERWISE.

SOD SHALL BE PLACED IN A MINIMUM OF A 2- FOOT WIDE STRIP ADJOINING ALL CURBING AND AROUND ALL INLETS AS SHOWN IN FIGURE 5 OR AS REQUIRED BY THE LANDSCAPE PLAN OR CONTRACT DOCUMENTS. SOD SHALL BE PLACED BEFORE SILT BARRIERS, SHOWN IN FIGURE 8, ARE REMOVED.

SECTION 2 PROTECTION OF SURFACE WATER QUALITY DURING AND AFTER CONSTRUCTION.

SURFACE WATER QUALITY SHALL BE MAINTAINED BY EMPLOYING, AT A MINIMUM, THE FOLLOWING BMP'S AND OTHER MEASURES AS REQUIRED IN THE PLANNING AND CONSTRUCTION OF ALL IMPROVEMENTS.

WHERE PRACTICAL, STORM WATER SHALL BE CONVEYED BY SWALES.

EROSION CONTROL MEASURES SHALL BE EMPLOYED TO MINIMIZE TURBIDITY OF SURFACE WATERS LOCATED DOWNSTREAM OF ANY CONSTRUCTION ACTIVITY. WHILE THE VARIOUS MEASURES REQUIRED WILL BE SITE SPECIFIC, THE FOLLOWING MEASURES SHALL BE UTILIZED AS A MINIMUM.

IN GENERAL EROSION SHALL BE CONTROLLED AT THE FURTHEST PRACTICAL UPSTREAM LOCATION.

STORM WATER INLETS SHALL BE PROTECTED DURING CONSTRUCTION AS SHOWN IN FIGURES 5,6, AND 8. PROTECTION MEASURES SHALL BE EMPLOYED AS SOON AS PRACTICAL DURING THE VARIOUS STAGES OF INLET CONSTRUCTION. SILT BARRIERS SHALL REMAIN IN PLACE UNTIL SODDING AROUND INLETS IS COMPLETE OR AS OTHERWISE REQUIRED.

HEAVY CONSTRUCTION EQUIPMENT PARKING AND MAINTENANCE AREAS SHALL BE DESIGNED TO PREVENT OIL, GREASE, AND LUBRICANTS FROM ENTERING SITE DRAINAGE FEATURES INCLUDING STORM WATER COLLECTION AND TREATMENT SYSTEMS. CONTRACTOR SHALL PROVIDE BROAD DIKES, SYNTHETIC HAY BALES OR SILT SCREENS AROUND, AND SEDIMENT SUMPS WITHIN, SUCH AREAS AS REQUIRED TO CONTAIN SPILLS OF OIL, GREASE OR LUBRICANTS. CONTRACTORS SHALL HAVE AVAILABLE AND SHALL USE ABSORBENT FILTER PADS OR OTHER METHODS TO CLEAN UP SPILLS AS SOON AS POSSIBLE AFTER OCCURRENCE.

SILT BARRIERS SHALL BE ERECTED AS SHOWN PRIOR THE INITIATION OF CLEARING OR EARTHWORK AND SHALL REMAIN UNTIL VEGETATIVE COVER OR ALL DISTURBED AREAS HAVE BEEN ESTABLISHED OR AS REQUIRED BY THE OWNER. SILT BARRIERS SHALL BE CONTINUOUSLY MAINTAINED FOR ENTIRE PROJECT DURATION. SILT BARRIERS SHALL NOT BE REMOVED UNTIL APPROVED BY THE OWNER. SILT BARRIERS, ANY SILT WHICH ACCUMULATES BEHIND THE BARRIERS, AND ANY FILL USED TO ANCHOR THE BARRIERS SHALL BE REMOVED PROMPTLY AFTER THE END OF THE MAINTENANCE PERIOD SPECIFIED FOR THE BARRIERS.

WHERE REQUIRED TO PREVENT EROSION FROM SHEET FLOW ACROSS BARE GROUND FROM ENTERING A LAKE OR SWALE AND IN THE ABSENCE OF AN ACCEPTABLE TEMPORARY LAKE OR SUMP AREA, A TEMPORARY SUMP SHALL REMAIN IN PLACE UNTIL VEGETATION IS ESTABLISHED ON THE GROUND DRAINING TO THE SUMP.

SECTION 3 CONTROL OF WIND EROSION

WIND EROSION SHALL BE CONTROLLED BY EMPLOYING BMP'S WHICH SHALL INCLUDE THE FOLLOWING AND/OR OTHER METHODS AS A MINIMUM:

BARE EARTH AREAS SHALL BE WATERED DURING CONSTRUCTION AS NECESSARY TO MINIMIZE THE TRANSPORT OF FUGITIVE DUST. IT MAY BE NECESSARY TO LIMIT CONSTRUCTION VEHICLE SPEED IF BARE EARTH HAS NOT BEEN EFFECTIVELY WATERED. IN NO CASE SHALL FUGITIVE DUST BE ALLOWED TO LEAVE THE SITE UNDER CONSTRUCTION.

AS SOON AS PRACTICAL AFTER COMPLETION OF CONSTRUCTION, BARE EARTH AREAS SHALL BE VEGETATED.

AT ANY TIME BOTH DURING AND AFTER SITE CONSTRUCTION THAT WATERING AND/OR VEGETATION ARE NOT EFFECTIVE IN CONTROLLING WIND EROSION AND/OR TRANSPORT OF FUGITIVE DUST, OTHER METHODS AS ARE NECESSARY FOR SUCH CONTROL SHALL BE EMPLOYED. THESE METHODS MAY INCLUDE ERECTION OF DUST CONTROL FENCES. IF REQUIRED, DUST CONTROL FENCES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE DETAIL FOR A SILT FENCE SHOWN IN FIGURE 1 EXCEPT THE MINIMUM HEIGHT SHALL BE 4 FEET.

SWPPP COORDINATOR DUTIES

THE CONTRACTOR SHALL COMPLY WITH THE FOLLOWING AND ALL OTHER REQUIREMENTS OF THE EPA, FDEP, SJRWMD, AND BREVARD COUNTY REGULATIONS:

1. MAINTAIN RECORDS OF CONSTRUCTION ACTIVITIES, INCLUDING:
   DATES WHEN MAJOR GRADING ACTIVITIES OCCUR.
   DATES WHEN CONSTRUCTION ACTIVATES TEMPORARILY CEASE ON A PORTION OF THE SITE.
   DATES WHEN STABILIZATION MEASURES ARE INITIATED ON SITE.
   RECORDS MUST BE MAINTAINED AT THE JOB SITE.
2. PREPARE INSPECTION REPORTS SUMMARIZING:
   QUALIFICATIONS OF INSPECTOR.
   DAILY RAINFALL TOTALS.
   MEASURES/AREAS INSPECTED.
   CHANGES NECESSARY TO THE SWPPP.
   INSPECTIONS SHALL BE COMPLETED ON A WEEKLY BASIS; AND AFTER RAINFALL EVENTS EXCEEDING 1/2" INTENSITY.
3. A SAMPLE INSPECTION FORM SHALL BE SUPPLIED TO THE CONTRACTOR FOR HIS USE. CONTRACTOR MUST UTILIZE THIS INSPECTION FORM OR AN APPROVED EQUIVALENT.
4. CONTRACTOR MUST EXECUTE NPDES CERTIFICATION FORM AND INSURE THAT ALL SUBCONTRACTORS RESPONSIBLE FOR EROSION CONTROL MEASURES EXECUTE THE NPDES CERTIFICATION FORM. COPIES OF THIS CERTIFICATION MUST BE PROVIDED TO THE OWNER PRIOR TO THE START OF ANY NEW CONSTRUCTION, AND COPIES SHALL BE MAINTAINED AT THE JOB SITE.
5. REPORT RELEASES OF REPORTABLE QUANTITIES OF OIL OR HAZARDOUS MATERIALS (IF THEY OCCUR):
   NOTIFY NATIONAL RESPONSE CENTER @ 1-800-424-8802.
   NOTIFY PERMITTING AUTHORITY IN WRITING WITHIN 14 DAYS.
   MODIFY THE POLLUTION PREVENTION PLAN TO INCLUDE IMPROVED MANAGEMENT CONTROLS.
6. MODIFY THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) AS NECESSARY TO:
   COMPLY WITH MINIMUM PERMIT REQUIREMENTS WHEN NOTIFIED BY THE EPA, ADDRESS CHANGES IN DESIGN, CONSTRUCTION OPERATION OR MAINTENANCE WHICH HAVE AN AFFECT ON THE POTENTIAL FOR DISCHARGE OF POLLUTANTS INTO STATE WATERS.
   PREVENT REOCCURRENCE OF REPORTABLE QUANTITY RELEASES HAZARDOUS MATERIAL, OIL, AND OR FUEL.
7. AT THE COMPLETION OF THE PROJECT AND AS A CONDITION OF FINAL PAYMENT, CONTRACTOR SHALL PROVIDE THE OWNER WITH TWO COPIES OF THE THE ABOVE DESCRIBED REPORTS IN A CONSOLIDATED REPORT FORMAT; THREE RING BINDERS OR EQUIVALENT.
8. CONTRACTOR SHALL BE RESPONSIBLE FOR FOLLOWING AND MAINTAINING A COPY OF DEP DOCUMENT NO. 62-621.300(4)(A). THIS PERMIT IS THE STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION GENERIC PERMIT FOR STORMWATER DISCHARGE FROM CONSTRUCTION ACTIVITIES THAT DISTURB ONE OR MORE ACRES OF LAND.
9. ALL FERTILIZERS, HERBICIDES, AND PESTICIDES TO BE APPLIED, STORED, AND DISPOSED OF PER THE MANUFACTURER RECOMMENDATIONS.
10. CONTRACTOR IS RESPONSIBLE TO ASSURE THAT ALL WASTE, SUCH AS DISCARDED BUILDING MATERIALS, CHEMICALS, LITTER, AND SANITARY WASTE ARE PROPERLY CONTROLLED AND DISPOSED OF IN ACCORDANCE WITH ALL APPLICABLE STATE, LOCAL, AND FEDERAL REGULATIONS.

GENERAL MAINTENANCE PLAN

THE FOLLOWING MAINTENANCE PLAN IS GENERAL IN NATURE AND IS INTENDED TO PROVIDE A GUIDELINE FOR THE CONTRACTOR. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO COMPLETE THE PROJECT IN CONFORMANCE WITH THE NPDES STANDARDS AND APPROVED PLANS AND PERMITS.

SHORT TERM:

1. ALL EROSION CONTROL PRACTICES WILL BE CHECKED FOR STABILITY AND OPERATION FOLLOWING EVERY 1/2" RAINFALL EVENT, BUT IN NO CASE LESS THAN ONCE EVERY WEEK. ALL NEEDED REPAIRS WILL BE RECORDED AND MADE IMMEDIATELY TO MAINTAIN ALL PRACTICES AS DESIGNED.
2. SEDIMENT BUILDUP WILL BE CLOSELY MONITORED AND REMOVED FROM INLET PROTECTION DEVICES TO ENSURE PROPER MANAGEMENT AND STORAGE CAPACITIES. SEDIMENT CONTROL DEVICES SHALL BE CLEANED OR REPLACED WHEN THE SEDIMENT CONTROL NO LONGER WORKS EFFECTIVELY AS DESIGNED.
3. THE SEDIMENT CONTROLLING SILT FENCE SHALL BE MAINTAINED AND/OR REPLACED AS NECESSARY TO MAINTAIN A BARRIER.
4. ALL SEEDED AREAS SHALL BE RESEEDED AS NECESSARY, AND MULCHED ACCORDING TO SPECIFICATIONS IN THE VEGETATIVE PLAN TO MAINTAIN A VEGETATIVE COVER, ADEQUATE TO PREVENT EROSION TO OFFSITE AREAS.
5. AS NEEDED, NEW OR ADDITIONAL WORKERS WILL BE INFORMED OF THE PLAN DETAILS IN THE OPERATION AND MAINTENANCE OF PLAN FEATURES.

LONG TERM:

1. ALL VEGETATED AREAS WILL BE MAINTAINED IN ADEQUATE CONDITION TO PROVIDE PROPER GROUND COVER, THEREBY REDUCING EROSION POTENTIAL.
2. AREAS WHERE VEGETATION IS LOST WILL BE RESTABILIZED AND MAINTAINED AS NECESSARY TO RESTORE PROPER GROUND COVER.
3. STRUCTURAL MEASURES WILL BE EXAMINED AT LEAST ANNUALLY AND MAINTENANCE PERFORMED AS NEEDED.

GENERAL CONSTRUCTION SEQUENCING PLAN

THE FOLLOWING CONSTRUCTION SEQUENCING IS GENERAL IN NATURE AND IS INTENDED TO PROVIDE A GUIDELINE FOR THE CONTRACTOR. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO COMPLETE THE PROJECT IN CONFORMANCE WITH THE NPDES STANDARDS AND APPROVED PLANS AND PERMITS.

1. OBTAIN PLAN APPROVAL AND OTHER APPLICABLE PERMITS.
2. FLAG THE WORK LIMITS OF CONSTRUCTION AND IDENTIFY AREAS NOT TO BE DISTURBED.
3. HOLD PRE CONSTRUCTION CONFERENCE AT LEAST ONE WEEK PRIOR TO STARTING CONSTRUCTION. WEEKLY REVIEWS OF EROSION, SEDIMENT, AND STORM WATER CONTROLS WILL BE CONDUCTED. REVIEWS WILL ALSO BE CONDUCTED WITHIN 24 HOURS FOLLOWING ALL RAIN EVENTS EXCEEDING 1/2" INTENSITY.
4. INSTALL SEDIMENT CONTROLS AS THE FIRST CONSTRUCTION ACTIVITY.
5. INSTALL STORM DRAIN WITH STABILIZED INLET PROTECTION AT THE CONSTRUCTION ENTRANCE/EXIT.
6. INSTALL TEMPORARY STABILIZED CONSTRUCTION ENTRANCE/EXIT.
7. COMPLETE SITE CLEARING EXCEPT FOR AREAS DESIGNATED NOT TO BE DISTURBED.
8. ROUGH GRADE SITE, STOCKPILE TOPSOIL, CONSTRUCT WATERWAYS, INSTALL CULVERTS AND OUTLET PROTECTION (INSTALL SEDIMENT CONTROLS AND SILT FENCING AS NEEDED).
   BARE AREAS OF EXPOSED LAND SHALL BE MULCHED AND SEEDED ONCE GRADING HAS BEEN COMPLETED.
9. FINISH THE SLOPES AROUND BUILDING DIRT PADS AS SOON AS ROUGH GRADING IS COMPLETE.
10. COMPLETE FINAL GRADING FOR ROADS AND STABILIZE WITH APPROVED MATERIAL.
11. COMPLETE FINAL GRADING OF GROUNDS, TOPSOIL CRITICAL AREAS, AND PERMANENTLY VEGETATE, LANDSCAPE, AND MULCH.
12. ALL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE INSPECTED WEEKLY AND FOLLOWING 1/2" RAINFALL EVENTS. NEEDED REPAIRS WILL BE RECORDED WITHIN 24 HOURS, AND CORRECTED IMMEDIATELY.
13. AFTER SITE IS STABILIZED, REMOVE ALL TEMPORARY MEASURES AND INSTALL PERMANENT VEGETATION ON THE DISTURBED AREAS.

SPECIAL NOTICE:

THE CERTIFICATIONS BELOW ARE INCLUDED FOR INFORMATIONAL PURPOSES ONLY. OFFICIAL EXECUTED CERTIFICATIONS ARE KEPT IN THE PROJECT FILE.

CONTRACTORS CERTIFICATION

"I CERTIFY UNDER PENALTY OF LAW THAT I UNDERSTAND AND SHALL COMPLY WITH, THE TERMS AND CONDITIONS OF THE STATE OF FLORIDA GENERIC PERMIT FOR STORMWATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES AND THIS STORMWATER POLLUTION PREVENTION PLAN PREPARED THEREUNDER."

NAME:..___________________
TITLE:..___________________
COMPANY NAME:........................___________________
COMPANY ADDRESS:.................___________________

COMPANY PHONE #:.................(___) ___-____
PROJECT SITE DESCRIPTION:....

SIGNATURE:___________________

DATE OF CERTIFICATION:___________________

ENGINEERS CERTIFICATION

"I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHERED AND EVALUATED THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS."

NAME:.. Scott M. Glaubitz, P.E./Hassan Kamal, P.E.
TITLE:.. President/Vice President
COMPANY NAME...................... B.S.E. Consultants, Inc.
COMPANY ADDRESS:.............. 312 S. Harbor City Blvd., Suite 4
Melbourne, Florida 32901
COMPANY PHONE #:.................(321) 725-3674
PROJECT SITE DESCRIPTION:....

SIGNATURE:___________________

DATE OF CERTIFICATION:___________________

CORPORATE OFFICERS CERTIFICATION

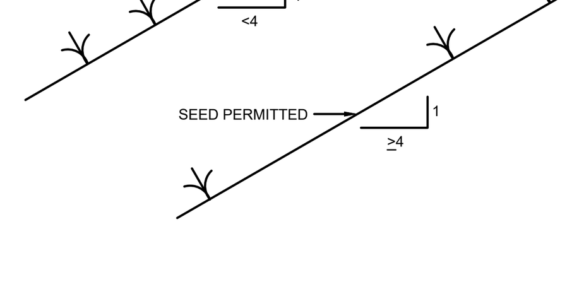
"I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHERED AND EVALUATED THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS."

NAME:..
TITLE:..
COMPANY NAME.........................
COMPANY ADDRESS:..................

COMPANY PHONE #:.................
PROJECT SITE DESCRIPTION:....

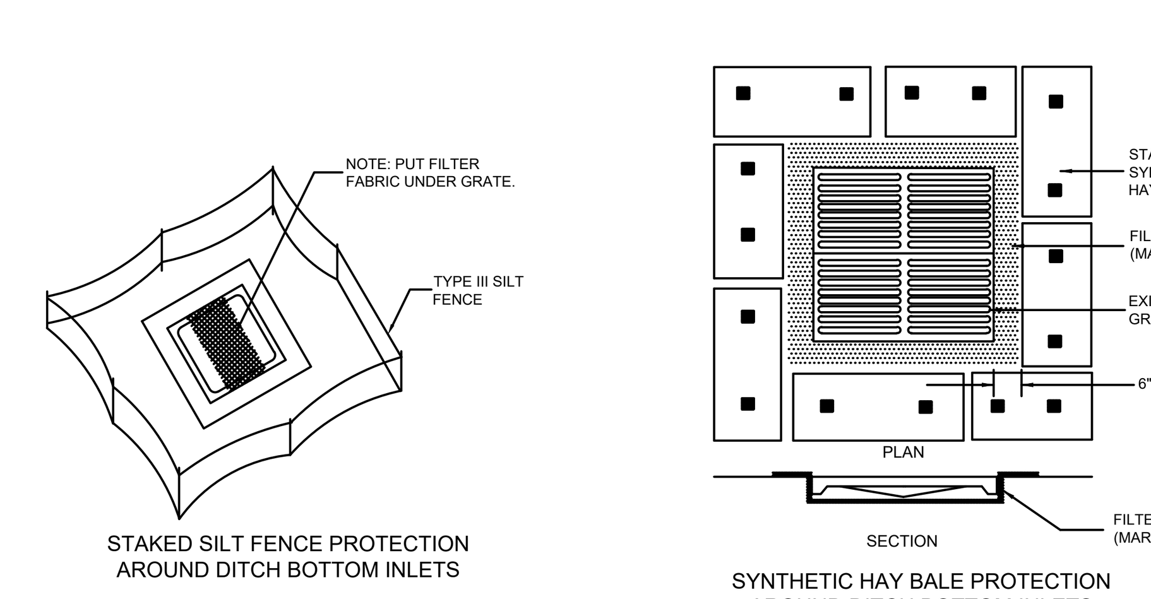
SIGNATURE:___________________

DATE OF CERTIFICATION:___________________



NOTE: REFER TO SPECIFICATIONS AND POND CROSS SECTIONS AND DETAILS FOR SLOPE PLANTING AND ANY SPECIALTY EROSION AND CONTROL MEASURES

GRASS SLOPES
N.T.S.
FIGURE 7



STAKED SILT FENCE PROTECTION AROUND DITCH BOTTOM INLETS

SYNTHETIC HAY BALE PROTECTION AROUND DITCH BOTTOM INLETS

SEDIMENT CONTROL DETAIL
NTS
FIGURE 8

NON-SYNTHETIC HAY BALES SHALL NOT BE PERMITTED

GENERAL SITE INFORMATION

SITE DESCRIPTION:
DEVELOPMENT OF A 280 UNIT MULTI-FAMILY PROJECT

TOTAL AREA:
±15.74 ACRES

DISTURBED AREA:
±9.5 ACRES

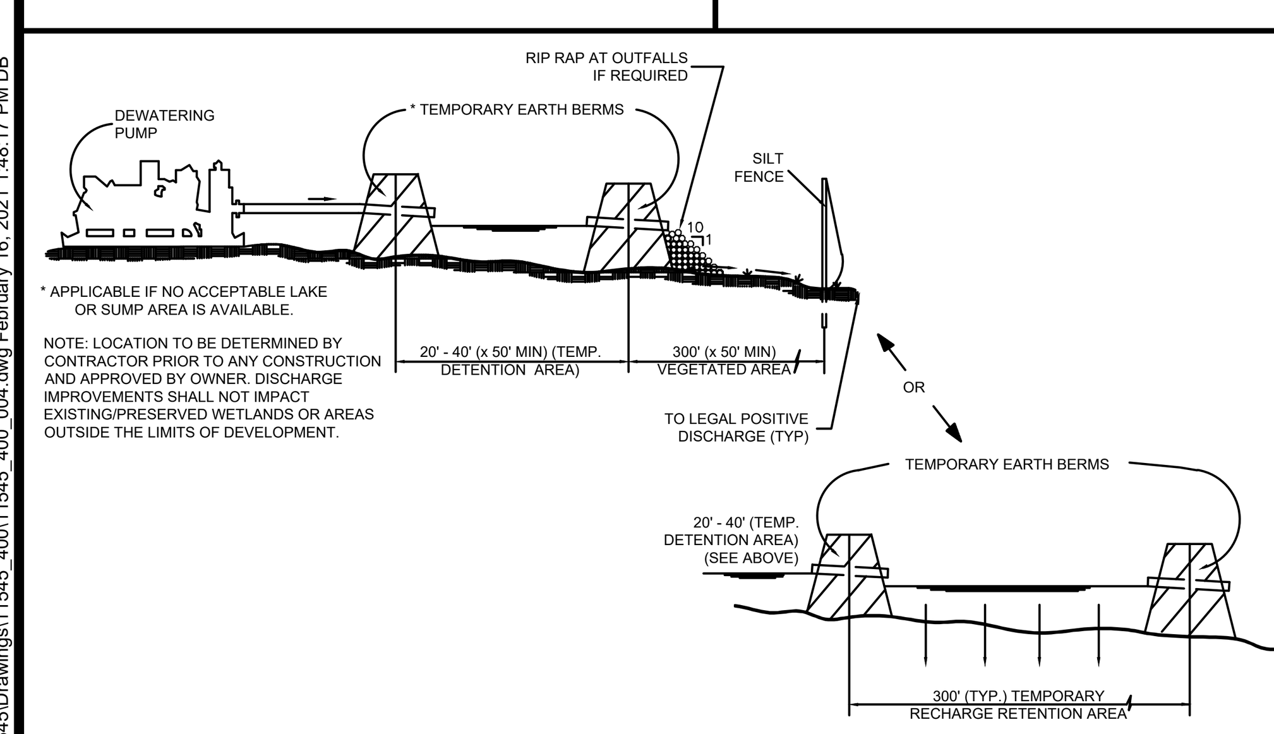
QUALITY RECEIVING SURFACE WATERS AND WETLANDS:
EXISTING STORM WATER POND WITH DISCHARGE TO FDOT DITCH

EXISTING SOIL TYPES:
IMMOKOLEE, ST JOHNS AND ST LUCIE SANDS

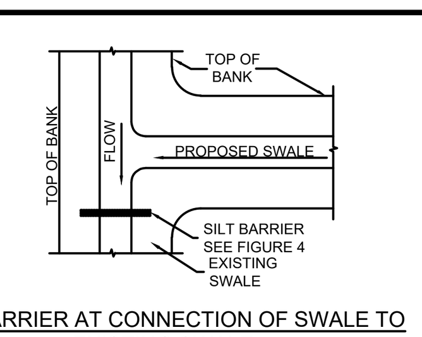
STORM WATER POLLUTION PREVENTION MEASURES & CONTROLS:
THERE ARE A VARIETY OF CONTROLS PROPOSED FOR THIS SITE. SOME CONTROLS ARE INTENDED TO FUNCTION TEMPORARILY AND WILL BE USED AS NEEDED FOR POLLUTANT CONTROL. THESE INCLUDE TEMPORARY SEDIMENT BARRIERS AND SILT FENCES. FOR MOST DISTURBED AREAS, PERMANENT STABILIZATION WILL BE ACCOMPLISHED BY COVERING THE SOIL WITH PAVEMENT OR VEGETATION.

SOIL STABILIZATION:
THE PURPOSE OF SOIL STABILIZATION IS TO PREVENT SOIL FROM LEAVING THE SITE. IN THE NATURAL CONDITION, SOIL IS STABILIZED BY NATIVE VEGETATION. THE PRIMARY TECHNIQUES TO BE USED AT THIS PROJECT FOR STABILIZATION AFTER CONSTRUCTION WILL BE TO PROVIDE PROTECTIVE TURF GRASS OR PAVEMENT.

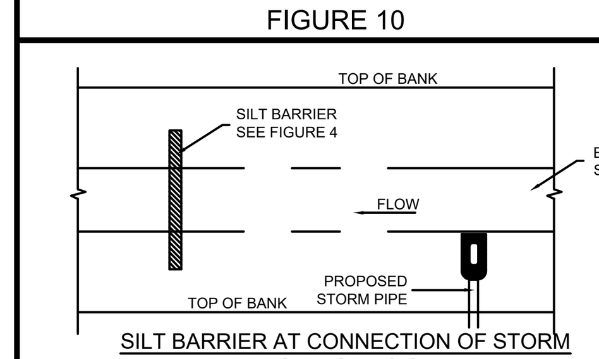
NOTES:
ACCESS SHALL BE PROVIDED BY AN UNOBSTRUCTED ALL WEATHER DRIVING SURFACE CAPABLE OF SUPPORTING THE LOADS IMPOSED BY RESPONDING APPARATUS OF NOT LESS THAN 20 FEET AND SHALL BE MAINTAINED DURING CONSTRUCTION (SEE FIGURE 2). THE LOCATION OF EROSION CONTROL FEATURES SHOWN ON THIS PLAN REPRESENTS MINIMUM REQUIREMENTS. DEPENDING UPON THE CONTRACTORS OPERATIONS, IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO INSTALL AND MAINTAIN ANY NECESSARY EROSION CONTROL FACILITIES NEEDED TO CONTROL EROSION OR THE DISCHARGE OF TURBIDITY INTO DOWNSTREAM WATERS OR ADJACENT PROPERTY.



TYPICAL DEWATERING DISCHARGE PLAN
NTS
FIGURE 9

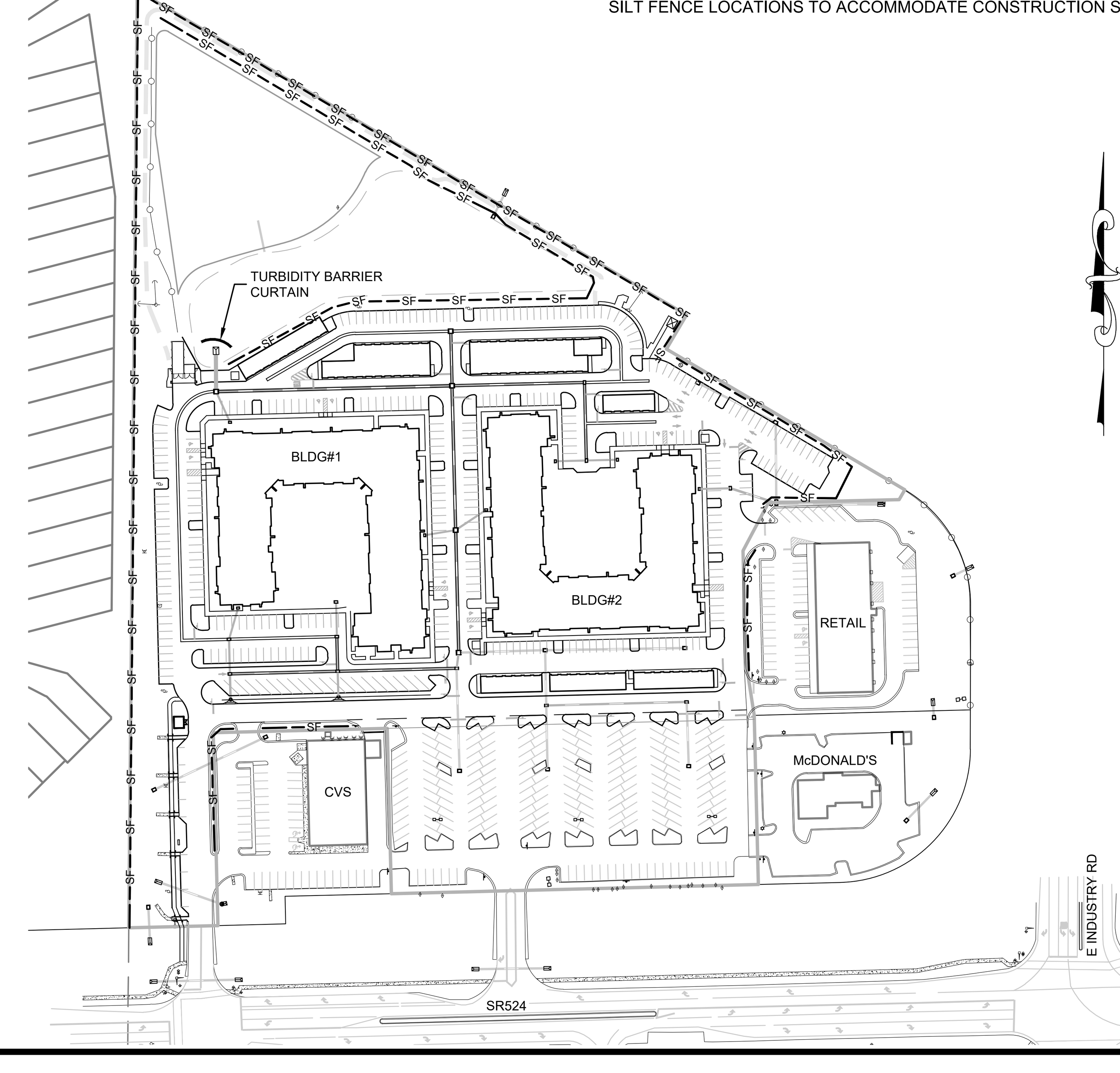


SILT BARRIER AT CONNECTION OF SWALE TO EXISTING SWALE
N.T.S.
FIGURE 10



SILT BARRIER AT CONNECTION OF STORM PIPE TO EXISTING SWALE
N.T.S.
FIGURE 11

NOTE: SILT FENCE LOCATION IS SCHEMATIC REPRESENTATION. CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING SILT FENCE AT THE LOCATION NEEDED TO PREVENT THE TRANSPORT OF SEDIMENT OFFSITE AND NOT INTERFERE WITH THE REQUIRED ONSITE CONSTRUCTION. CONTRACTOR MAY NEED TO RELOCATE/REPLACE/ADJUST SILT FENCE LOCATIONS TO ACCOMMODATE CONSTRUCTION SEQUENCING.



B.S.E. CONSULTANTS, INC.
CONSULTING - ENGINEERING - LAND SURVEYING
312 SOUTH HARBOR CITY BOULEVARD, SUITE 4
MELBOURNE, FLORIDA 32901
PHONE: (321) 725-3674 FAX: (321) 723-1159
CERTIFICATE OF PROFESSIONAL ENGINEERS BUSINESS AUTHORIZATION: 4905
CERTIFICATE OF LAND SURVEYING BUSINESS AUTHORIZATION: LB0004905

SCOTT M. GLAUBITZ, P.E. & P.L.S.
STATE OF FLORIDA, No. 33659 No. 4151

HASSAN A. KAMAL, P.E.
STATE OF FLORIDA, No. 41951

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2	CITY COMMENTS	01/28/21
1	CITY COMMENTS	10/30/20

DATE: 08/31/20
DESIGN/DRAWN: ALS/DRB

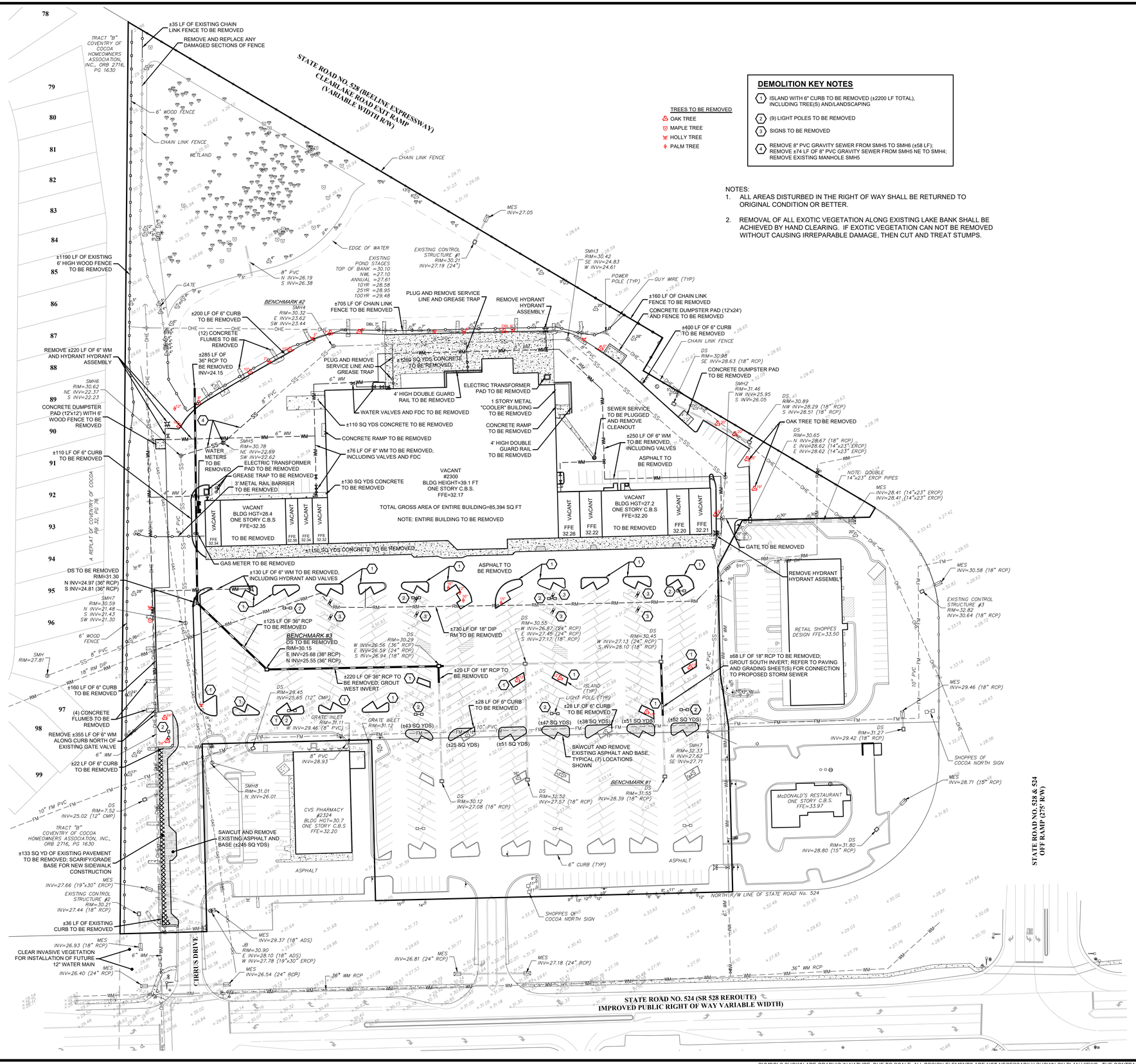
PROJECT TITLE
CIRRUS

SHEET TITLE
STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

PROJECT NO.
11545

DRAWING NO.
11545_400_004

SHEET
4 of 19



TREES TO BE REMOVED
- OAK TREE
- MAPLE TREE
- HOLLY TREE
- PALM TREE

DEMOLITION KEY NOTES

1. ISLAND WITH 6" CURB TO BE REMOVED (±2200 LF TOTAL), INCLUDING TREE(S) AND/LANDSCAPING
2. (9) LIGHT POLES TO BE REMOVED
3. SIGNS TO BE REMOVED
4. REMOVE 8" PVC GRAVITY SEWER FROM SMH5 TO SMH6 (±58 LF); REMOVE ±74 LF OF 8" PVC GRAVITY SEWER FROM SMH5 NE TO SMH4; REMOVE EXISTING MANHOLE SMH5

NOTES:
1. ALL AREAS DISTURBED IN THE RIGHT OF WAY SHALL BE RETURNED TO ORIGINAL CONDITION OR BETTER.
2. REMOVAL OF ALL EXOTIC VEGETATION ALONG EXISTING LAKE BANK SHALL BE ACHIEVED BY HAND CLEARING. IF EXOTIC VEGETATION CAN NOT BE REMOVED WITHOUT CAUSING IRREPARABLE DAMAGE, THEN CUT AND TREAT STUMPS.

B.S.E. CONSULTANTS, INC.
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312 SOUTH HARBOR CITY BOULEVARD, SUITE 4
MELBOURNE, FLORIDA 32901
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STATE OF FLORIDA, No. 41951

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PROJECT TITLE
CIRRUS

SHEET TITLE
DEMOLITION PLAN

PROJECT NO.
11545

DRAWING NO.
11545_400_005

SHEET
5 of 19

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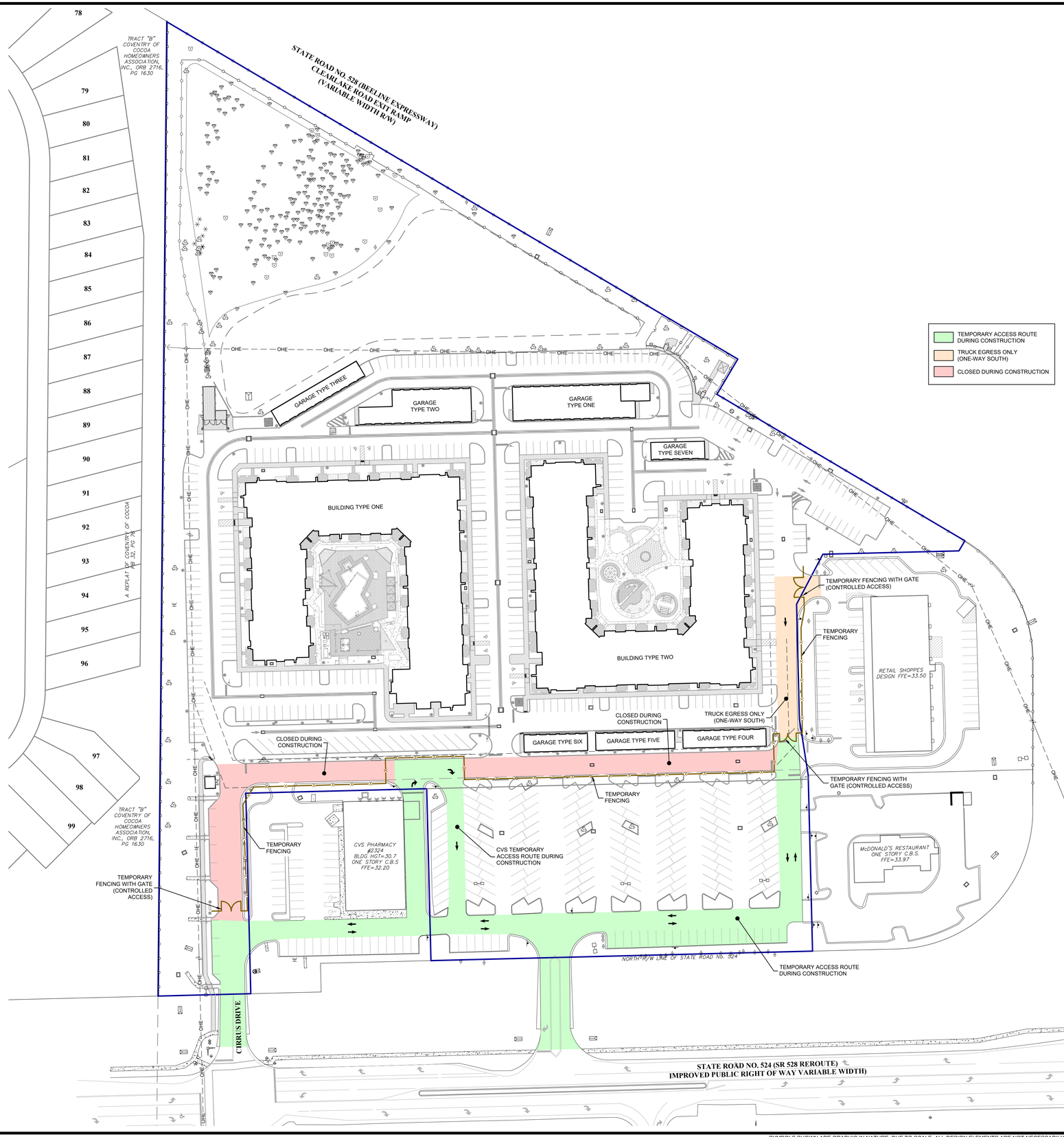

B.S.E. CONSULTANTS, INC.
CONSULTING - ENGINEERING - LAND SURVEYING

312 SOUTH HARBOR CITY BOULEVARD, SUITE 4
MELBOURNE, FLORIDA 32901
PHONE: (321) 725-3674 FAX: (321) 723-1159

CERTIFICATE OF PROFESSIONAL ENGINEERS
BUSINESS AUTHORIZATION: 4905
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DATE:	08/31/20
DESIGN/DRAWN:	ALS/DRB

PROJECT TITLE

CIRRUS

SHEET TITLE

MAINTENANCE OF TRAFFIC (MOT) DURING CONSTRUCTION

PROJECT NO.
11545

DRAWING NO.
11545_400_006

SHEET
6 of 19

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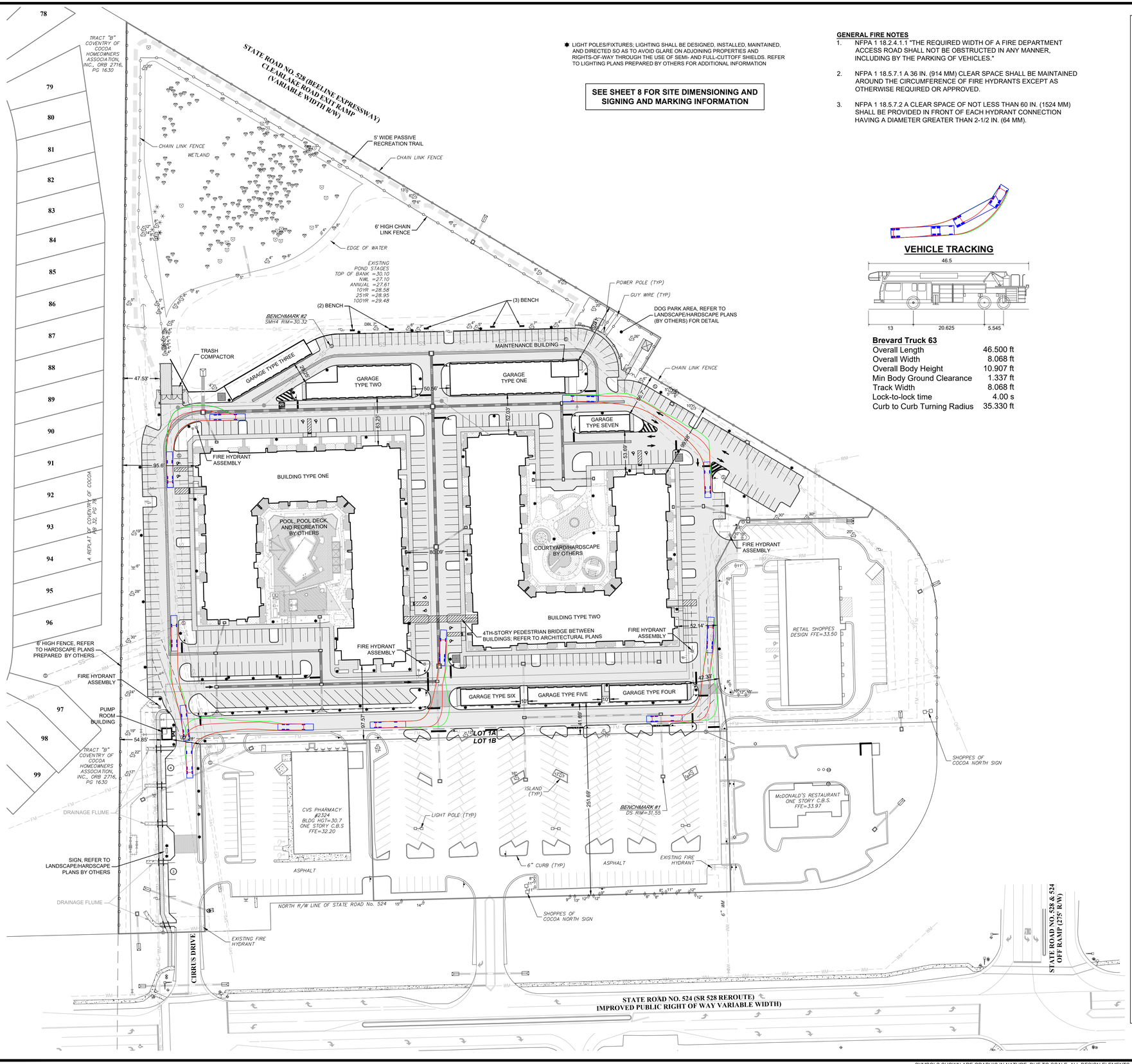
SYMBOLS SHOWN ARE GRAPHIC IN NATURE; DUE TO SCALE, ALL DESIGN ELEMENTS ARE NOT NECESSARILY SHOWN ON PLAN VIEWS. THE CONTRACTOR SHALL ALSO REFER TO SPECIFICATION AND DETAIL SHEETS AS WELL AS THE COMPLETE PLAN SET.



* LIGHT POLES/FIXTURES; LIGHTING SHALL BE DESIGNED, INSTALLED, MAINTAINED, AND DIRECTED SO AS TO AVOID GLARE ON ADJOINING PROPERTIES AND RIGHTS-OF-WAY THROUGH THE USE OF SEMI- AND FULL-CUTTOFF SHIELDS. REFER TO LIGHTING PLANS PREPARED BY OTHERS FOR ADDITIONAL INFORMATION

SEE SHEET 8 FOR SITE DIMENSIONING AND SIGNING AND MARKING INFORMATION

GENERAL FIRE NOTES

1. NFPA 1 18.2.4.1.1 "THE REQUIRED WIDTH OF A FIRE DEPARTMENT ACCESS ROAD SHALL NOT BE OBSTRUCTED IN ANY MANNER, INCLUDING BY THE PARKING OF VEHICLES."
2. NFPA 1 18.5.7.1 A 36 IN. (914 MM) CLEAR SPACE SHALL BE MAINTAINED AROUND THE CIRCUMFERENCE OF FIRE HYDRANTS EXCEPT AS OTHERWISE REQUIRED OR APPROVED.
3. NFPA 1 18.5.7.2 A CLEAR SPACE OF NOT LESS THAN 60 IN. (1524 MM) SHALL BE PROVIDED IN FRONT OF EACH HYDRANT CONNECTION HAVING A DIAMETER GREATER THAN 2-1/2 IN. (64 MM).

VEHICLE TRACKING

Brevard Truck 63	
Overall Length	46.500 ft
Overall Width	8.068 ft
Overall Body Height	10.907 ft
Min Body Ground Clearance	1.337 ft
Track Width	8.068 ft
Lock-to-lock time	4.00 s
Curb to Curb Turning Radius	35.330 ft

ZONING
EXISTING ZONING = GENERAL COMMERCIAL (C-G)
PROPOSED ZONING = MIXED-USE PUD
FUTURE LAND USE = COMMERCIAL

UTILITIES
ALL PROPOSED UTILITIES SHALL BE UNDERGROUND INSTALLATION.

SANITARY SEWER EASEMENTS SHALL BE CENTERED OVER THEIR FINAL AS-BUILT LOCATION.

OVERALL SITE AREA = ±15.74 ACRES
MULTI-FAMILY PARCEL (LOT 1A) = ±13.49 ACRES
COMMERCIAL PARCEL (LOT 1B) = ± 2.25 ACRES
EXISTING STORMWATER LAKE = ± 1.21 ACRES
EXISTING WETLAND/SURROUNDING AREA = ±1.6 ACRES

GROSS SITE AREA = OVERALL SITE AREA (±15.74 AC) - PRESERVATION AREAS (±1.6 AC) = ±14.14 ACRES

BUILDINGS
BUILDING HEIGHTS:
BUILDING TYPES ONE AND TWO TOP RIDGE OF BUILDING ROOF NOT TO EXCEED 57 FEET
GARAGES = 13 FEET MAXIMUM

PROPOSED # OF MULTI-FAMILY UNITS = 280 TOTAL

BUILDING TYPE 1 (WEST) 4 STORIES

1ST FLOOR	=	44,408 SQ FT
2ND FLOOR	=	44,439 SQ FT
3RD FLOOR	=	44,667 SQ FT
4TH FLOOR	=	44,853 SQ FT
TOTAL	=	178,367 SQ FT

FLOOR AREA RATIO = (178,367 / 685,685) = 26.0%

BUILDING TYPE 2 (EAST) 4 STORIES

1ST FLOOR	=	43,728 SQ FT
2ND FLOOR	=	44,444 SQ FT
3RD FLOOR	=	44,696 SQ FT
4TH FLOOR	=	44,959 SQ FT
TOTAL	=	177,827 SQ FT

FLOOR AREA RATIO = (177,827 / 685,685) = 25.9%

GARAGE TYPE ONE	=	6,585 SQ FT
GARAGE TYPE TWO	=	4,860 SQ FT
GARAGE TYPE THREE	=	2,560 SQ FT
GARAGE TYPE FOUR	=	2,125 SQ FT
GARAGE TYPE FIVE	=	2,015 SQ FT
GARAGE TYPE SIX	=	1,625 SQ FT
GARAGE TYPE SEVEN	=	1,396 SQ FT
TOTAL	=	21,166 SQ FT

PUMP ROOM	=	202 SQ FT
TRASH COMPACTOR	=	1,154 SQ FT
POOL PAVILION	=	2,801 SQ FT
TOTAL	=	4,157 SQ FT

LOT 1A IMPERVIOUS AREA

BUILDINGS	= 113,459 SQ FT	2.60 ACRES	19.30%
SIDEWALK/CONCRETE	= 24,245 SQ FT	0.55 ACRES	4.12%
PAVEMENT	= 179,568 SQ FT	4.12 ACRES	30.56%
TOTAL	= 317,272 SQ FT	7.28 ACRES	53.98%

LOT 1A PERVIOUS AREA

GREEN SPACE	= 147,735 SQ FT	3.39 ACRES	25.13%
EXISTING POND	= 53,069 SQ FT	1.21 ACRES	9.03%
EXISTING WETLAND/ SURROUNDING AREA	= 69,701 SQ FT	1.60 ACRES	11.86%
TOTAL	= 270,505 SQ FT	6.21 ACRES	46.02%
LOT 1A TOTAL AREA	= 587,777 SQ FT	13.49 ACRES	100.00%

LOT 1B IMPERVIOUS AREA

CURB/CONCRETE	= 975 SQ FT	0.02 ACRES	0.89%
PAVEMENT	= 84,827 SQ FT	1.95 ACRES	86.67%
TOTAL	= 85,802 SQ FT	1.97 ACRES	87.56%

LOT 1B PERVIOUS AREA

GREEN SPACE	= 12,106 SQ FT	0.28 ACRES	12.44%
LOT 1B TOTAL AREA	= 97,908 SQ FT	2.25 ACRES	100.00%

OPEN SPACE REQUIREMENTS
15% RECREATION SPACE REQUIRED = 2.12 ACRES (14.14 ACRES x15%)
RECREATION SPACE PROVIDED

BUILDING 1		
CLUBHOUSE	= 11,800 SQ FT	= 0.27 ACRES
POOL COURTYARD	= 16,840 SQ FT	= 0.39 ACRES
BUILDING 2		
ROOFTOP LOUNGE/DECK	= 1,651 SQ FT	= 0.04 ACRES
COURTYARD	= 15,463 SQ FT	= 0.35 ACRES
DOG PARK	= 4,800 SQ FT	= 0.11 ACRES
PASSIVE RECREATION TRAIL (5' WIDE)	= 39,525 SQ FT	= 0.91 ACRES
PASSIVE STORMWATER POND AREA	= 5,900 SQ FT	= 0.14 ACRES

TOTAL RECREATION SPACE PROVIDED = 2.2 ACRES > REQUIRED 2.12 ACRES

PARKING
TYPICAL STANDARD PARKING STALL PROVIDED SHALL HAVE A RECTANGULAR AREA A MINIMUM OF 9.5 FEET IN WIDTH AND 18 FEET IN LENGTH.

COMPACT PARKING SPACES ARE PROVIDED AND SHALL HAVE A RECTANGULAR AREA A MINIMUM OF 8.5 FEET IN WIDTH AND 16 FEET IN LENGTH.

THE WIDTH OF PARKING SPACES FOR DISABLED PERSONS SHALL BE IN ACCORDANCE WITH STATE AND FEDERAL REQUIREMENTS.

REQUIRED PARKING

TYPE	# OF UNITS		
EFFICIENCY	20	1 SPACE/UNIT	= 20 SPACES
1 BEDROOM	133	1.5 SPACE/UNIT	= 200 SPACES
2 OR MORE BEDROOM	127	2 SPACE/UNIT	= 254 SPACES
TOTAL	280		= 474 SPACES

PROVIDED PARKING

9'x22' PARALLEL PARKING	=	7
9.5'x18' STANDARD PARKING	=	230
12'x18' HANDICAP PARKING	=	10
8.5'x16' COMPACT PARKING	=	112 (25.5%)
GARAGE UNITS	=	79
TOTAL PARKING PROVIDED	=	438 SPACES
		1.56 SPACES PER UNIT

MINIMUM REQUIRED NUMBER OF HANDICAP STALLS = 9 STALLS
10 PROVIDED HANDICAP STALLS

B.S.E. CONSULTANTS, INC.
CONSULTING - ENGINEERING - LAND SURVEYING
312 SOUTH HARBOR CITY BOULEVARD, SUITE 4
MELBOURNE, FLORIDA 32901
PHONE: (321) 725-3674 FAX: (321) 723-1159
CERTIFICATE OF PROFESSIONAL ENGINEERS BUSINESS AUTHORIZATION: 4905
CERTIFICATE OF LAND SURVEYING BUSINESS AUTHORIZATION: LB0004905

SCOTT M. GLAUBITZ, P.E. & P.L.S.
STATE OF FLORIDA, No. 33659 No. 4151

HASSAN A. KAMAL, P.E.
STATE OF FLORIDA, No. 41951

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VERTICAL DATUM: NAVD88

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12 CITY COMMENTS	10/30/20
DATE:	08/31/20
DESIGN/DRAWN:	ALS/DRB

PROJECT TITLE
CIRRUS

SHEET TITLE
OVERALL SITE PLAN

PROJECT NO.
11545

DRAWING NO.
11545_400_007

SHEET
7 of 19

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TRACT "B" COVENTRY OF COCOA HOMEOWNERS ASSOCIATION, INC., ORB 2716, PG 1630

CHAIN LINK FENCE

EXISTING POND STAGES
TOP OF BANK =30.10
NWL =27.10
ANNUAL =27.61
10YR =28.58
25YR =28.95
100YR =29.48

BENCHMARK #2
SMH4 RIM=30.32

(3) BENCHES

(2) BENCHES

EDGE OF WATER

POWER POLE (TYP)

GUY WIRE (TYP)

STATE ROAD NO. 528 (BEELINE EXPRESSWAY)
CLEARLAKE ROAD EXIT RAMP
(VARIABLE WIDTH R/W)

DOG PARK AREA, REFER TO LANDSCAPE/HARDSCAPE PLANS (BY OTHERS) FOR DETAIL

TRASH COMPACTOR

GARAGE TYPE THREE

GARAGE TYPE TWO

GARAGE TYPE ONE

MAINTENANCE BUILDING

GARAGE TYPE SEVEN

6" YELLOW STRIPE AND 18" YELLOW GORE

WHITE "YIELD" STRIPING

24" STOP BAR AND STOP SIGN (TYP)

6' SIDEWALK

PROVIDE WHITE DIRECTIONAL ARROWS AS SHOWN

BUILDING TYPE ONE

POOL, POOL DECK, AND RECREATION BY OTHERS

COURTYARD/HARDSCAPE BY OTHERS

BUILDING TYPE TWO

RETAIL SHOPPES
DESIGN FFE=33.50

"ONE WAY DO NOT ENTER" SIGN

WHITE DIRECTIONAL ARROW

GARAGE TYPE SIX

GARAGE TYPE FIVE

GARAGE TYPE FOUR

6" HEADER CURB

6" CURB (TYP)

ASPHALT

PUMP ROOM BUILDING

6' HIGH FENCE, REFER TO HARDSCAPE PLANS PREPARED BY OTHERS

CVS PHARMACY
#2324
BLDG HGT=30.7
ONE STORY C.B.S
FFE=32.20

ISLAND (TYP)

BENCHMARK #1
DS RIM=31.55

McDONALD'S RESTAURANT
ONE STORY C.B.S.
FFE=33.97

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PARKING COUNTERS

STANDARD
COMPACT
GARAGE

30 0 15 30
(IN FEET)

VERTICAL DATUM: NAVD88

1 CITY COMMENTS	01/28/21
1 CITY COMMENTS	10/30/20
DATE:	08/31/20
DESIGN/DRAWN:	ALS/DRB

PROJECT TITLE

CIRRUS

SHEET TITLE

SITE PLAN

PROJECT NO. 11545

DRAWING NO. 11545_400_008

SHEET 8 of 19

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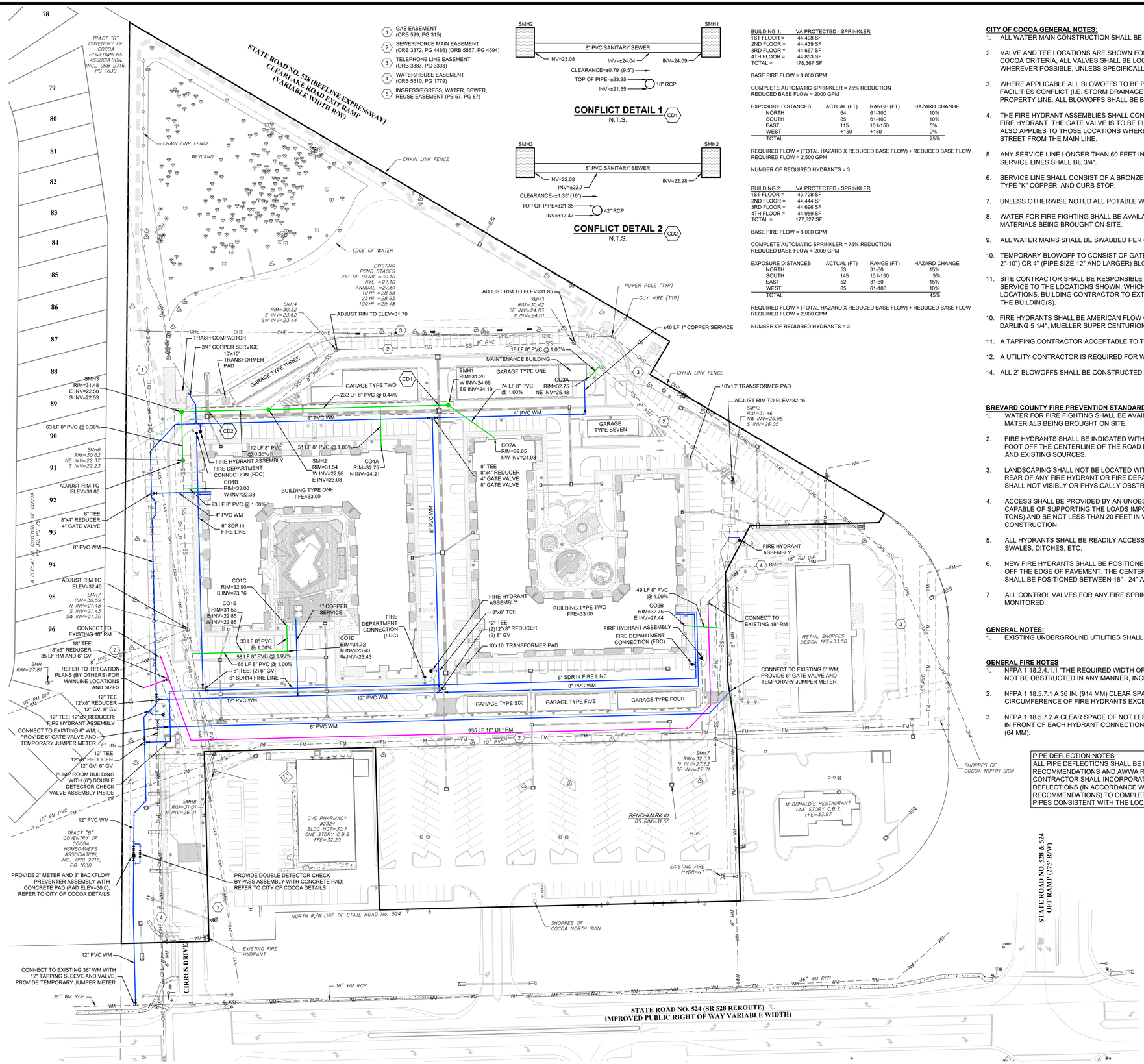

BUILDING 1:	VA PROTECTED - SPRINKLER
1ST FLOOR =	44,408 SF
2ND FLOOR =	44,439 SF
3RD FLOOR =	44,667 SF
4TH FLOOR =	44,853 SF
TOTAL =	178,367 SF

BASE FIRE FLOW = 8,000 GPM

COMPLETE AUTOMATIC SPRINKLER = 75% REDUCTION
REDUCED BASE FLOW = 2000 GPM

EXPOSURE DISTANCES	ACTUAL (FT)	RANGE (FT)	HAZARD CHANGE
NORTH	64	61-100	10%
SOUTH	85	61-100	10%
EAST	115	101-150	5%
WEST	+150	+150	0%
TOTAL			25%

REQUIRED FLOW = (TOTAL HAZARD X REDUCED BASE FLOW) + REDUCED BASE FLOW
REQUIRED FLOW = 2,500 GPM

NUMBER OF REQUIRED HYDRANTS = 3

BUILDING 2:	VA PROTECTED - SPRINKLER
1ST FLOOR =	43,728 SF
2ND FLOOR =	44,444 SF
3RD FLOOR =	44,696 SF
4TH FLOOR =	44,959 SF
TOTAL =	177,827 SF

BASE FIRE FLOW = 8,000 GPM

COMPLETE AUTOMATIC SPRINKLER = 75% REDUCTION
REDUCED BASE FLOW = 2000 GPM

EXPOSURE DISTANCES	ACTUAL (FT)	RANGE (FT)	HAZARD CHANGE
NORTH	53	31-60	15%
SOUTH	145	101-150	5%
EAST	52	31-60	15%
WEST	85	61-100	10%
TOTAL			45%

REQUIRED FLOW = (TOTAL HAZARD X REDUCED BASE FLOW) + REDUCED BASE FLOW
REQUIRED FLOW = 2,900 GPM

NUMBER OF REQUIRED HYDRANTS = 3

CITY OF COCOA GENERAL NOTES:

1. ALL WATER MAIN CONSTRUCTION SHALL BE PER CITY OF COCOA CRITERIA.
2. VALVE AND TEE LOCATIONS ARE SHOWN FOR GRAPHIC CLARITY ONLY. PER CITY OF COCOA CRITERIA, ALL VALVES SHALL BE LOCATED ADJACENT TO TEES (WITHIN 2') WHEREVER POSSIBLE, UNLESS SPECIFICALLY LOCATED OTHERWISE.
3. WHERE APPLICABLE ALL BLOWOFFS TO BE PLACED AT PROPERTY LINE. IF OTHER FACILITIES CONFLICT (I.E. STORM DRAINAGE) BLOWOFFS TO BE SET WITHIN 3' OF PROPERTY LINE. ALL BLOWOFFS SHALL BE BRASS PER THE CITY OF COCOA CRITERIA.
4. THE FIRE HYDRANT ASSEMBLIES SHALL CONSIST OF A HYDRANT TEE, GATE VALVE, AND FIRE HYDRANT. THE GATE VALVE IS TO BE PLACED AT THE HYDRANT TEE. THIS NOTE ALSO APPLIES TO THOSE LOCATIONS WHERE THE HYDRANT IS LOCATED ACROSS THE STREET FROM THE MAIN LINE.
5. ANY SERVICE LINE LONGER THAN 60 FEET IN LENGTH WILL NEED TO BE 1". ALL OTHER SERVICE LINES SHALL BE 3/4".
6. SERVICE LINE SHALL CONSIST OF A BRONZE SERVICE SADDLE, CORPORATION STOP, TYPE "K" COPPER, AND CURB STOP.
7. UNLESS OTHERWISE NOTED ALL POTABLE WATER SERVICES TO BE 1" COPPER.
8. WATER FOR FIRE FIGHTING SHALL BE AVAILABLE FOR USE PRIOR TO COMBUSTIBLE MATERIALS BEING BROUGHT ON SITE.
9. ALL WATER MAINS SHALL BE SWABBED PER CITY OF COCOA CRITERIA.
10. TEMPORARY BLOWOFF TO CONSIST OF GATE VALVE, 20 LF OF MJ DIP, AND 2" (PIPE SIZE 2"-10") OR 4" (PIPE SIZE 12" AND LARGER) BLOWOFF. SEE CITY OF COCOA DETAIL.
11. SITE CONTRACTOR SHALL BE RESPONSIBLE FOR EXTENDING THE POTABLE WATER SERVICE TO THE LOCATIONS SHOWN, WHICH REPRESENT FUTURE WATER METER LOCATIONS. BUILDING CONTRACTOR TO EXTEND SERVICE FROM METER LOCATION TO THE BUILDING(S).
10. FIRE HYDRANTS SHALL BE AMERICAN FLOW CONTROL MODEL #B-84-B; 6", AMERICAN DARLING 5 1/4", MUELLER SUPER CENTURION 250 5 1/4" OR CLOW MEDALLION 5 1/4".
11. A TAPPING CONTRACTOR ACCEPTABLE TO THE CITY OF COCOA IS REQUIRED FOR TAPS.
12. A UTILITY CONTRACTOR IS REQUIRED FOR WATER MAIN INSTALLATION.
14. ALL 2" BLOWOFFS SHALL BE CONSTRUCTED OF BRASS PER CITY OF COCOA CRITERIA.

BREVARD COUNTY FIRE PREVENTION STANDARD NOTES:

1. WATER FOR FIRE FIGHTING SHALL BE AVAILABLE FOR USE PRIOR TO COMBUSTIBLE MATERIALS BEING BROUGHT ON SITE.
2. FIRE HYDRANTS SHALL BE INDICATED WITH A BLUE ROADWAY REFLECTOR, PLACED 1 FOOT OFF THE CENTERLINE OF THE ROAD FACING THE HYDRANT. THIS INCLUDES NEW AND EXISTING SOURCES.
3. LANDSCAPING SHALL NOT BE LOCATED WITHIN 7.5 FEET SIDE & FRONT AND 4.5' TO THE REAR OF ANY FIRE HYDRANT OR FIRE DEPARTMENT CONNECTION. LANDSCAPING SHALL NOT VISIBLY OR PHYSICALLY OBSTRUCT FIRE HYDRANT LOCATIONS.
4. ACCESS SHALL BE PROVIDED BY AN UNOBSTRUCTED ALL WEATHER DRIVING SURFACE CAPABLE OF SUPPORTING THE LOADS IMPOSED BY RESPONDING APPARATUS (32 TONS) AND BE NOT LESS THAN 20 FEET IN WIDTH, AND SHALL BE MAINTAINED DURING CONSTRUCTION.
5. ALL HYDRANTS SHALL BE READILY ACCESSIBLE WITHOUT THE NEED TO TRAVERSE SWALES, DITCHES, ETC.
6. NEW FIRE HYDRANTS SHALL BE POSITIONED NOT MORE THAN 8', NOR LESS THAN 6' OFF THE EDGE OF PAVEMENT. THE CENTERLINE OF THE STEAMER CONNECTION (4 1/2") SHALL BE POSITIONED BETWEEN 18" - 24" ABOVE THE FINISHED GRADE.
7. ALL CONTROL VALVES FOR ANY FIRE SPRINKLER SYSTEM SHALL BE ELECTRONICALLY MONITORED.

GENERAL NOTES:

1. EXISTING UNDERGROUND UTILITIES SHALL BE RELOCATED AS REQUIRED.

GENERAL FIRE NOTES

1. NFPA 1 18.2.4.1.1 "THE REQUIRED WIDTH OF A FIRE DEPARTMENT ACCESS ROAD SHALL NOT BE OBSTRUCTED IN ANY MANNER, INCLUDING BY THE PARKING OF VEHICLES."
2. NFPA 1 18.5.7.1 A 36 IN. (914 MM) CLEAR SPACE SHALL BE MAINTAINED AROUND THE CIRCUMFERENCE OF FIRE HYDRANTS EXCEPT AS OTHERWISE REQUIRED OR APPROVED.
3. NFPA 1 18.5.7.2 A CLEAR SPACE OF NOT LESS THAN 60 IN. (1524 MM) SHALL BE PROVIDED IN FRONT OF EACH HYDRANT CONNECTION HAVING A DIAMETER GREATER THAN 2-1/2 IN. (64 MM).

PIPE DEFLECTION NOTES
ALL PIPE DEFLECTIONS SHALL BE PER THE MANUFACTURER'S RECOMMENDATIONS AND AWWA REQUIREMENTS FOR MAXIMUM DEFLECTION. CONTRACTOR SHALL INCORPORATE THE APPROPRIATE FITTINGS ON PIPE DEFLECTIONS (IN ACCORDANCE WITH PIPE MANUFACTURER'S RECOMMENDATIONS) TO COMPLETE THE INSTALLATION OF ALL WATER MAIN PIPES CONSISTENT WITH THE LOCATIONS DEPICTED UPON THESE PLANS.

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PROJECT TITLE
CIRRUS

SHEET TITLE
UTILITY PLAN

PROJECT NO. 11545

DRAWING NO. 11545_400_009

SHEET 9 of 19

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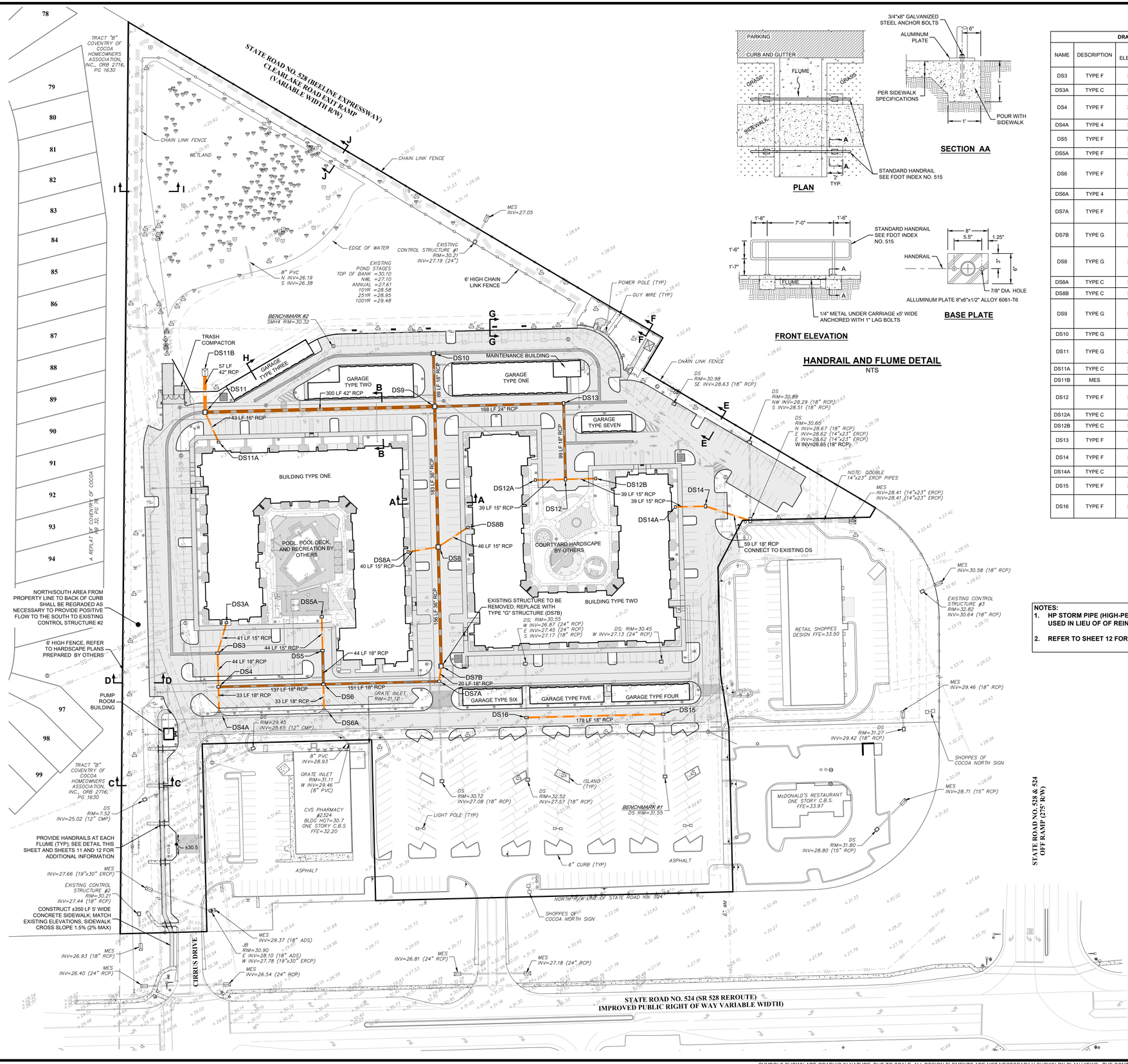

PLAN

SECTION AA

FRONT ELEVATION

BASE PLATE

HANDRAIL AND FLUME DETAIL
NTS

DRAINAGE STRUCTURE TABLE						
NAME	DESCRIPTION	TOP ELEVATION	INVERTS	SIZE	PIPE LENGTH (FEET)	TO
DS3	TYPE F	31.00	S =27.05 N =27.30	18" RCP 15" RCP	44	DS4
DS3A	TYPE C	31.85	S =27.50	15" RCP	41	DS3
DS4	TYPE F	31.00	N =26.85 S =26.85 E =26.85	18" RCP 18" RCP 18" RCP	137	DS6
DS4A	TYPE 4	31.37	N =27.00	18" RCP	33	DS4
DS5	TYPE F	31.00	N =26.40 S =26.40	15" RCP 18" RCP	44	DS6
DS5A	TYPE F	31.50	S =26.75	15" RCP	44	DS5
DS6	TYPE F	31.00	W =26.15 E =26.15 N =26.15 S =26.15	18" RCP 18" RCP 18" RCP 18" RCP	151	DS7A
DS6A	TYPE 4	31.37	N =26.50	18" RCP	33	DS6
DS7A	TYPE F	31.00	W =25.40 N =25.40 S =26.95	18" RCP 18" RCP 18" RCP	20	DS7B
DS7B	TYPE G	31.30	S =25.30 N =23.80 E =26.60	18" RCP 36" RCP 24" RCP	156	DS8
DS8	TYPE G	31.00	S =23.00 N =23.00 W =24.75 NE =24.75	36" RCP 36" RCP 15" RCP 15" RCP	183	DS9
DS8A	TYPE C	31.50	E =25.00	15" RCP	40	DS8
DS8B	TYPE C	31.50	SW =25.00	15" RCP	46	DS8
DS9	TYPE G	31.10	S =20.00 N =21.50 E =21.00 W =19.50	36" RCP 18" RCP 24" RCP 42" RCP	300	DS11
DS10	TYPE G	31.00	S =22.00	18" RCP	69	DS9
DS11	TYPE G	31.15	N =17.50 SE =27.50 E =17.50	42" RCP 15" RCP 42" RCP	57	DS11B
DS11A	TYPE C	31.75	NW =27.80	15" RCP	43	DS11
DS11B	MES		S =17.25	42" RCP		
DS12	TYPE F	31.00	N =25.00 W =25.75 E =25.75	18" RCP 15" RCP 15" RCP	99	DS13
DS12A	TYPE C	31.55	E =26.00	15" RCP	39	DS12
DS12B	TYPE C	31.80	W =26.00	15" RCP	39	DS12
DS13	TYPE F	31.30	S =24.00 W =23.50	18" RCP 24" RCP	168	DS9
DS14	TYPE F	31.00	E =28.80 W =28.80	18" RCP 15" RCP	59	
DS14A	TYPE C	31.50	E =29.00	15" RCP	39	DS14
DS15	TYPE F	31.75	W =28.25 S =28.25	18" RCP 18" RCP	178	DS16
DS16	TYPE F	32.00	E =27.35 S =27.35 N =27.35	18" RCP 18" RCP 18" RCP		

NOTES:
1. **HP STORM PIPE (HIGH-PERFORMANCE POLYPROPYLENE PIPE) MAY BE USED IN LIEU OF OF REINFORCED CONCRETE PIPE (RCP).**
2. **REFER TO SHEET 12 FOR SECTION DETAILS: (A-A, B-B, C-C, D-D, E-E, F-F, G-G, H-H, I-I, J-J)**

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STATE OF FLORIDA, No. 41951

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(IN FEET)
VERTICAL DATUM: NAVD88

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21	CITY COMMENTS 01/28/21
22	CITY COMMENTS 10/30/20
DATE:	08/31/20
DESIGN/DRAWN:	ALS/DRB

PROJECT TITLE
CIRRUS

SHEET TITLE
OVERALL PAVING, GRADING, AND DRAINAGE PLAN

PROJECT NO.
11545

DRAWING NO.
11545_400_010

SHEET
10 of 19

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SYMBOLS SHOWN ARE GRAPHIC IN NATURE; DUE TO SCALE, ALL DESIGN ELEMENTS ARE NOT NECESSARILY SHOWN ON PLAN VIEWS. THE CONTRACTOR SHALL ALSO REFER TO SPECIFICATION AND DETAIL SHEETS AS WELL AS THE COMPLETE PLAN SET.

NOTES:
1. HP STORM PIPE (HIGH-PERFORMANCE POLYPROPYLENE PIPE) MAY BE USED IN LIEU OF OF REINFORCED CONCRETE PIPE (RCP).
2. ALL ON-SITE CURB SHALL BE 6" HEADER CURB UNLESS NOTED OTHERWISE.
3. REFER TO SHEET 12 FOR SECTION DETAILS: (A-A, B-B, C-C, D-D, E-E, F-F, G-G, H-H)

EXISTING POND STAGES
TOP OF BANK =30.10
NWL =27.10
ANNUAL =27.61
10YR =28.58
25YR =28.95
100YR =29.48

BENCHMARK #2
SMH4 RIM=30.32

CHAIN LINK FENCE

TRACT "B" COVENTRY OF COCOA HOMEOWNERS ASSOCIATION, INC., ORB 2716, PG 1630

EDGE OF WATER

RETAINING WALL

STATE ROAD NO. 528 (BEELINE EXPRESSWAY) CLEARLAKE ROAD EXIT RAMP (VARIABLE WIDTH R/W)

GUY WIRE (TYP)

POWER POLE (TYP)

DS10 RIM=31.00 S INV=22.00

3' VALLEY CURB (TYP WHERE SHOWN)

6" THICK CONCRETE

DS11B S INV=17.25

DS11 RIM=31.15 N INV=17.50 SE INV=27.50 E INV=17.50

10'x10' TRANSFORMER PAD

57 LF 42" RCP

GARAGE TYPE THREE

GARAGE TYPE TWO

GARAGE TYPE ONE

DS9 RIM=31.10 S INV=20.00 N INV=21.50 E INV=21.00 W INV=19.50

DS13 RIM=31.30 S INV=24.00 W INV=23.50

DS RIM=30.98 SE INV=28.63 (18" RCP)

168 LF 24" RCP

300 LF 42" RCP

43 LF 15" RCP

DS11A RIM=31.75 NW INV=27.80

GARAGE TYPE SEVEN

10'x10' TRANSFORMER PAD

DS RIM=30.89 NW INV=26.29 (18" RCP) S INV=28.51 (18" RCP)

BUILDING TYPE ONE

FFE=33.00

99 LF 18" RCP

39 LF 15" RCP

DS12A RIM=31.55 E INV=26.00

DS12 RIM=31.00 N INV=25.00 W INV=25.75 E INV=25.75

DS12B RIM=31.80 W INV=26.00

DS14A RIM=31.50 E INV=29.00

DS14 RIM=31.00 E INV=28.80 W INV=28.80

39 LF 15" RCP

59 LF 18" RCP

NOTE: DOUBLE 14"x23" ERCP PIPES

DS RIM=30.65 N INV=28.67 (18" RCP) E INV=28.62 (14"x23" ERCP) E INV=28.62 (14"x23" ERCP) W INV=28.65 (18" RCP)

POOL, POOL DECK, AND RECREATION AMENITIES (BY OTHERS) SHALL INCLUDE EXTENSION OF YARD DRAINS AND ASSOCIATED DRAINAGE IN THIS AREA

COURTYARD AMENITIES (BY OTHERS) SHALL INCLUDE EXTENSION OF YARD DRAINS AND ASSOCIATED DRAINAGE IN THIS AREA

DS8B RIM=31.50 SW INV=25.00

DS8 RIM=31.00 S INV=23.00 N INV=23.00 W INV=24.75 NE INV=24.75

40 LF 15" RCP

DS8A RIM=31.50 E INV=25.00

150 LF 36" RCP

DS5A RIM=31.50 S INV=26.75

DS3A RIM=31.85 S INV=27.50

41 LF 15" RCP

DS3 RIM=31.00 S INV=27.05 N INV=27.30

44 LF 15" RCP

DS5 RIM=31.00 N INV=26.40 S INV=26.40

44 LF 18" RCP

3" VALLEY CURB (TYP WHERE SHOWN)

DS7B RIM=31.30 S INV=25.30 N INV=23.80 E INV=26.60

151 LF 18" RCP

137 LF 18" RCP

33 LF 18" RCP

DS4 RIM=31.00 N INV=26.85 S INV=26.85 E INV=26.85

DS6 RIM=31.00 W INV=26.15 E INV=26.15 N INV=26.15 S INV=26.15

DS7A RIM=31.00 W INV=25.40 N INV=25.40 S INV=26.95

20 LF 18" RCP

10'x10' TRANSFORMER PAD

ADJUST RIM TO ELEV=31.20

ADJUST RIM TO ELEV=31.00

DS RIM=30.55 W INV=26.87 (24" RCP) E INV=27.45 (24" RCP) S INV=27.17 (18" RCP)

DS RIM=30.45 W INV=27.13 (24" RCP)

6" THICK CONCRETE

GARAGE TYPE SIX

GARAGE TYPE FIVE

GARAGE TYPE FOUR

RETAIL SHOPPES DESIGN FFE=33.50

BUILDING TYPE TWO

DS16 RIM=32.00 E INV=27.35 S INV=27.35 N INV=27.35

176 LF 18" RCP

DS15 RIM=31.75 W INV=28.25 S INV=28.25

CONSTRUCT PARKING ISLANDS AS SHOWN

ASPHALT

6" CURB (TYP)

ISLAND (TYP)

BENCHMARK #1
DS RIM=31.55 E INV=28.39 (18" RCP)

McDONALD'S RESTAURANT ONE STORY C.B.S. FFE=33.97

CVS PHARMACY #2324 BLDG HGT=30.7 ONE STORY C.B.S FFE=32.20

GRATE INLET RIM=31.12

8" PVC INV=28.93

GRATE INLET RIM=31.11 W INV=29.46 (8" PVC)

DS RIM=29.45 INV=25.65 (12" CMP)

DS RIM=7.52 INV=25.02 (12" CMP)

DS RIM=30.12 INV=27.08 (18" RCP)

DS RIM=32.52 INV=27.57 (18" RCP)

CONSTRUCT ADA COMPLIANT RAMP WITH TRUNCATED DOMES

PUMP ROOM BUILDING

6' HIGH FENCE, REFER TO HARDSCAPE PLANS PREPARED BY OTHERS

5' WIDE CONCRETE SIDEWALK: PROVIDE HANDRAILS AT FLUMES, SEE SHEET 10 AND 12 FOR DETAILS

MATCH EXISTING; SEE BUTT JOINT DETAIL, SHEET 12

MATCH EXISTING; SEE BUTT JOINT DETAIL, SHEET 12

B.S.E. CONSULTANTS, INC.
CONSULTING - ENGINEERING - LAND SURVEYING

312 SOUTH HARBOR CITY BOULEVARD, SUITE 4
MELBOURNE, FLORIDA 32901
PHONE: (321) 725-3674 FAX: (321) 723-1159

CERTIFICATE OF PROFESSIONAL ENGINEERS BUSINESS AUTHORIZATION: 4905
CERTIFICATE OF LAND SURVEYING BUSINESS AUTHORIZATION: LB0004905

SCOTT M. GLAUBITZ, P.E. & P.L.S.
STATE OF FLORIDA, No. 33659 No. 4151

HASSAN A. KAMAL, P.E.
STATE OF FLORIDA, No. 41951

30 0 15 30
(IN FEET)
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PROJECT TITLE
CIRRUS

SHEET TITLE
PAVING, GRADING, AND DRAINAGE PLAN

PROJECT NO. 11545

DRAWING NO. 11545_400_011

SHEET 11 of 19

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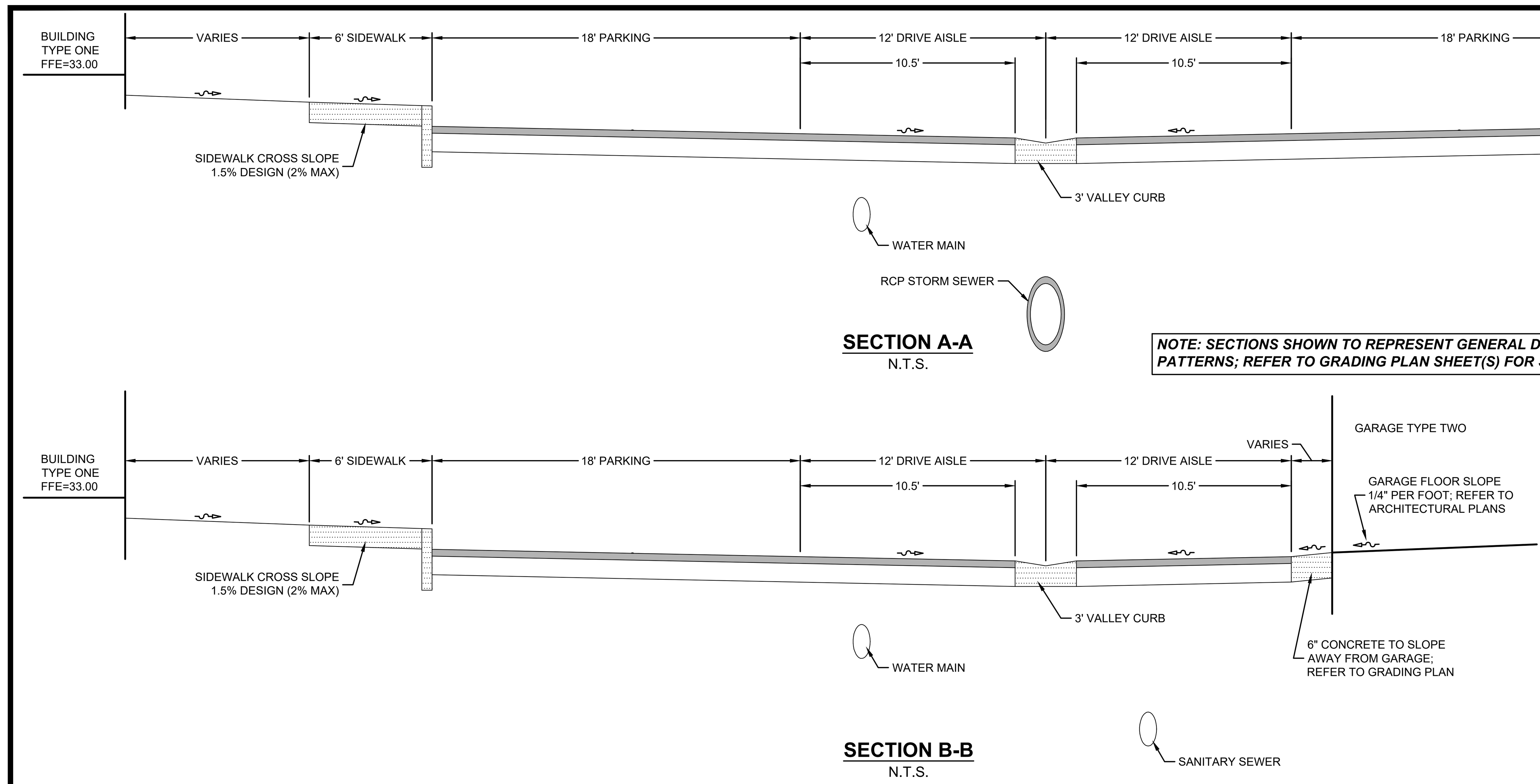
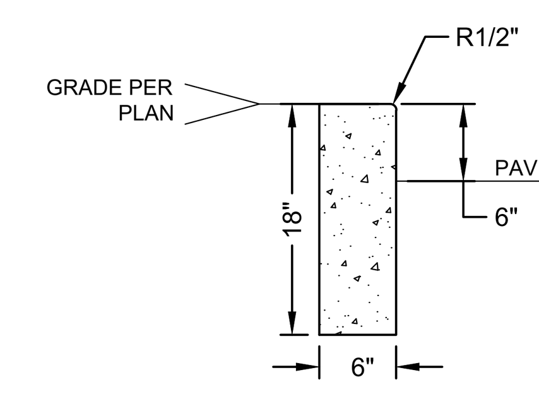


SECTION A-A
N.T.S.

NOTE: SECTIONS SHOWN TO REPRESENT GENERAL DRAINAGE FLOW PATTERNS; REFER TO GRADING PLAN SHEET(S) FOR SITE ELEVATIONS

SECTION B-B
N.T.S.



HEADER CURB
N.T.S.

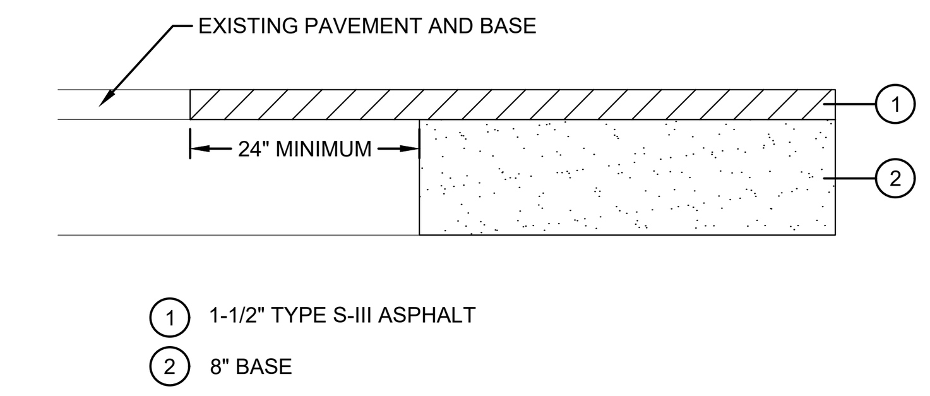
TYPICAL PAVEMENT SECTION

1. 1-1/2" TYPE SP-12.5 ASPHALTIC CONCRETE
2. 8" BASE WITH FDOT APPROVED PRIME/TACK COAT — OPTIONS:
   - LIMEROCK, L.B.R. 100 MIN.
   - CEMENTED COQUINA SHELL, F.D.O.T. APPROVED, L.B.R. 100 MIN., COMPACTED TO 98% MAX. DENSITY PER AASHTO T-180
3. 8" STABILIZED SUB-GRADE, L.B.R. 50 MIN., COMPACTED TO 98% MAX. DENSITY PER AASHTO T-180 (EXTEND 12" BEYOND CURB)

OR

ALTERNATE PAVEMENT SECTION

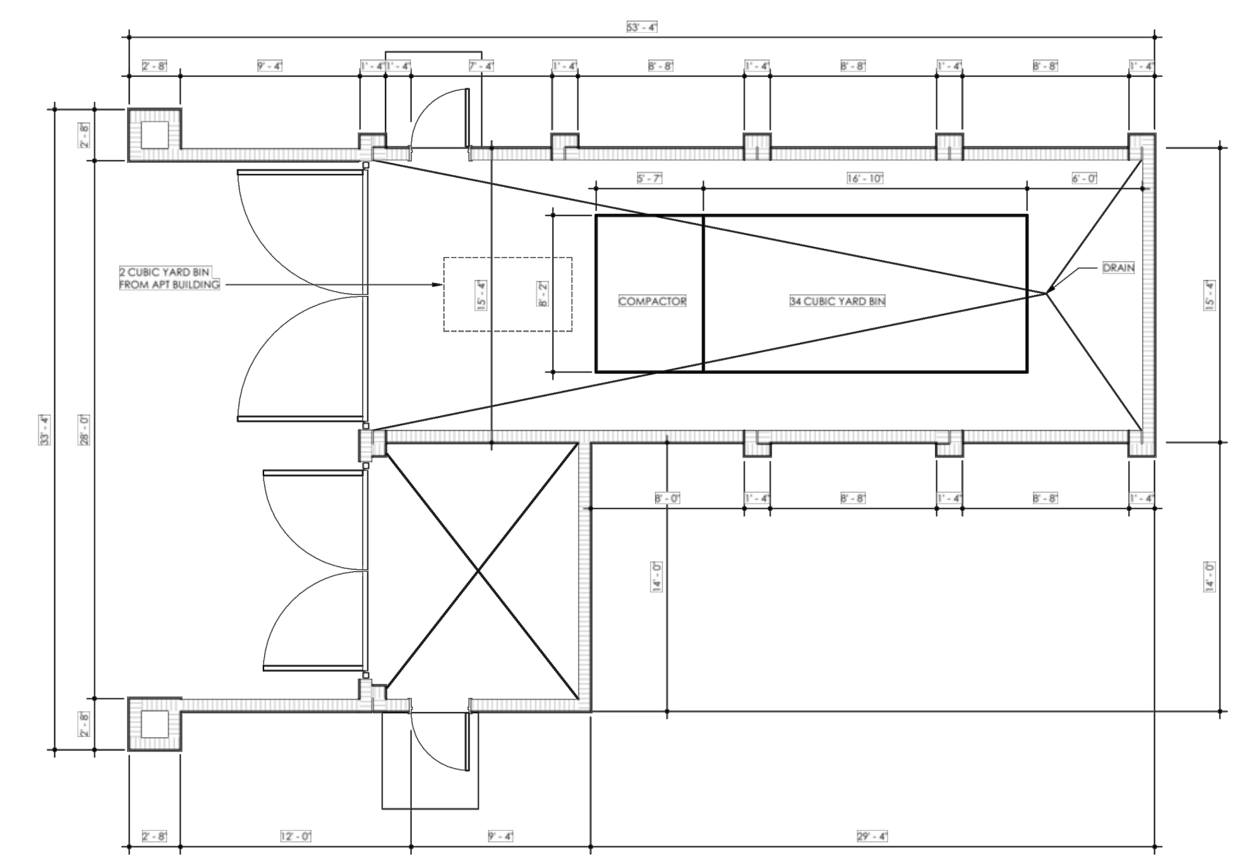
1. 1-1/2" TYPE SP-12.5 ASPHALTIC CONCRETE
2. 12" BASE WITH FDOT APPROVED PRIME/TACK COAT — OPTIONS:
   - LIMEROCK, L.B.R. 100 MIN.
   - CEMENTED COQUINA SHELL, F.D.O.T. APPROVED, L.B.R. 100 MIN., COMPACTED TO 98% MAX. DENSITY PER AASHTO T-180



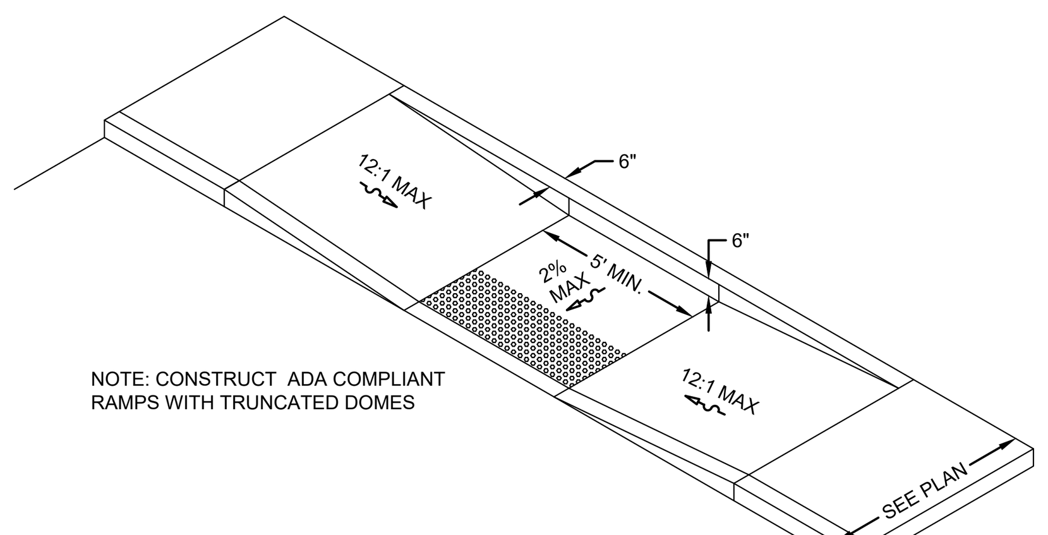
1. 1-1/2" TYPE S-III ASPHALT
2. 8" BASE

NOTE:
THE EXISTING ASPHALT WEARING SURFACE SHALL BE SAW CUT AND REMOVED 24" FROM THE END OF THE TRAVEL LANE WHERE NEW PAVEMENT SHALL ABUT THE EXISTING PAVEMENT.

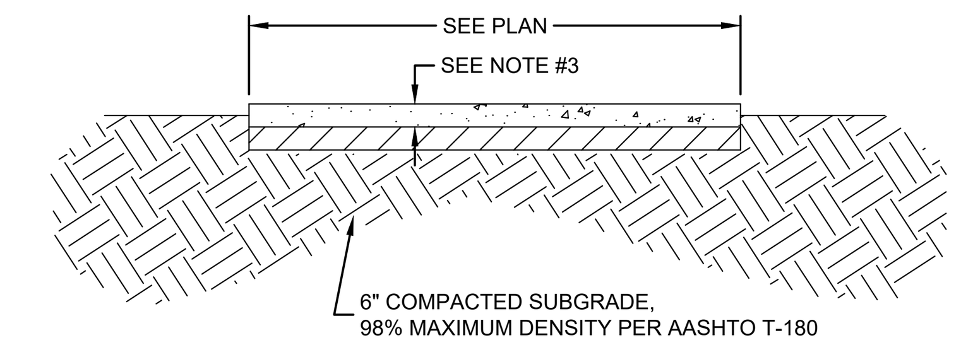
BUTT JOINT
MATCH EXISTING PAVEMENT CONNECTION
N.T.S.



TRASH COMPACTOR DETAIL

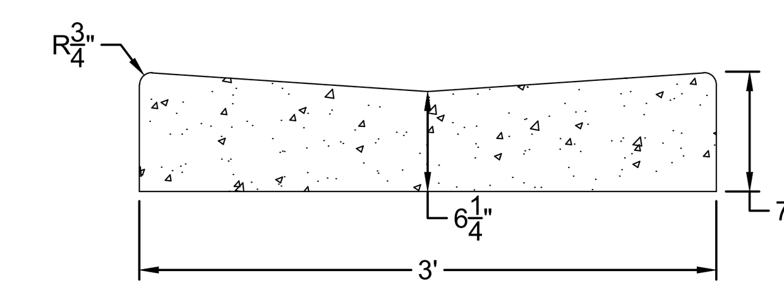


SIDEWALK RAMP DETAIL
N.T.S.

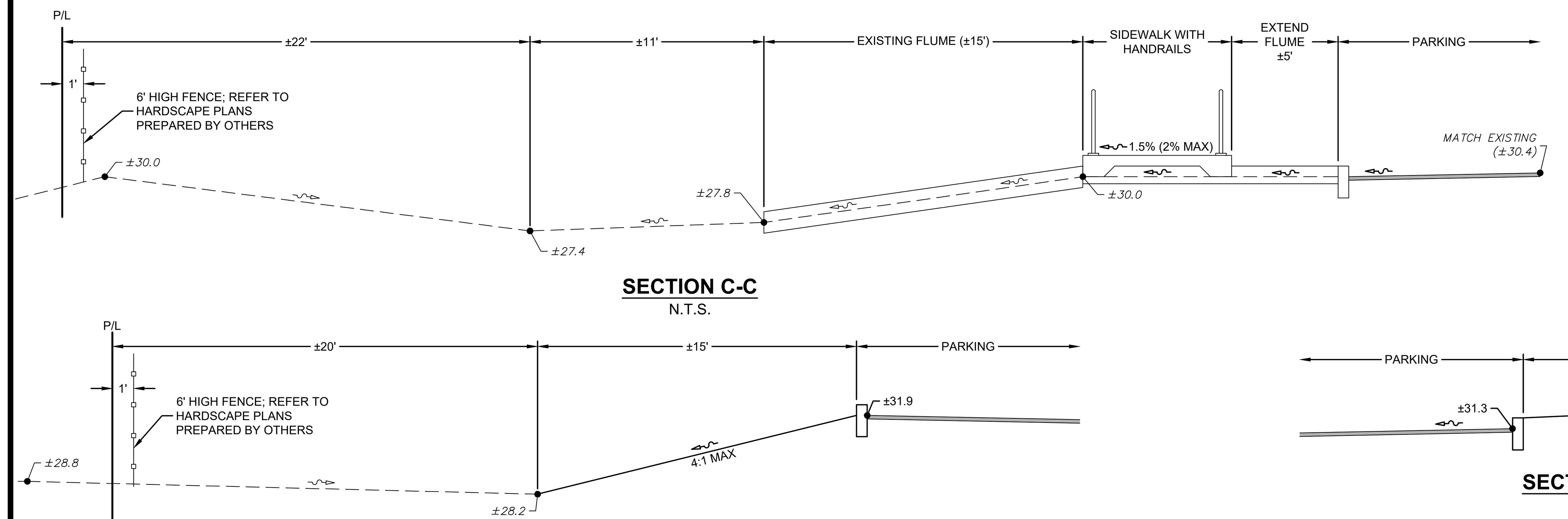


NOTE:
1. UNLESS OTHERWISE NOTED ALL CONCRETE USED SHALL HAVE A REQUIRED MINIMUM COMPRESSIVE STRENGTH OF 3,000 P.S.I. IN 28 DAYS.
2. JOINT SPACING SHALL BE AT WIDTH OF WALK, 10' MAXIMUM.
3. ALL ON-SITE SIDEWALKS, OUTSIDE PUBLIC OR PRIVATE RIGHT-OF-WAY SHALL BE 4" THICK, UNLESS NOTED OTHERWISE.

SIDEWALK DETAIL
N.T.S.

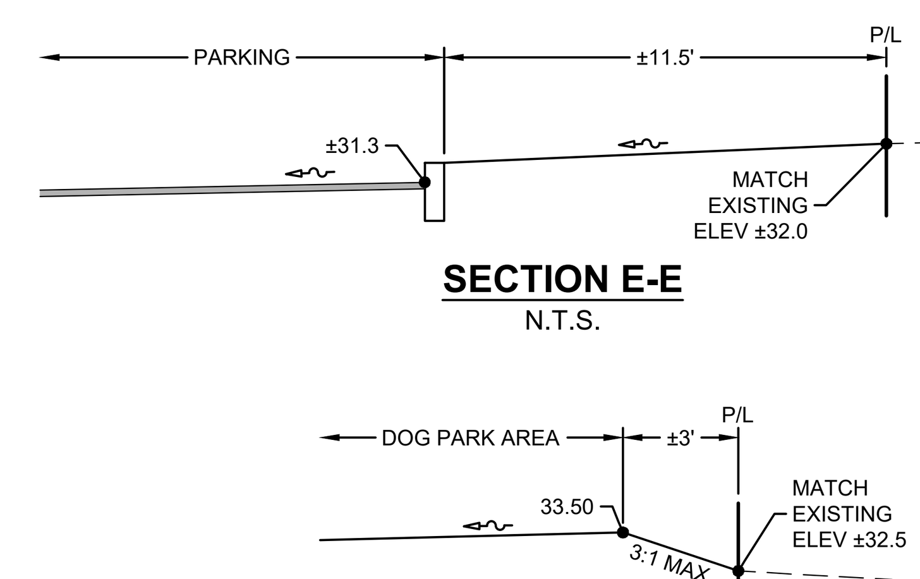


3' VALLEY CURB
N.T.S.



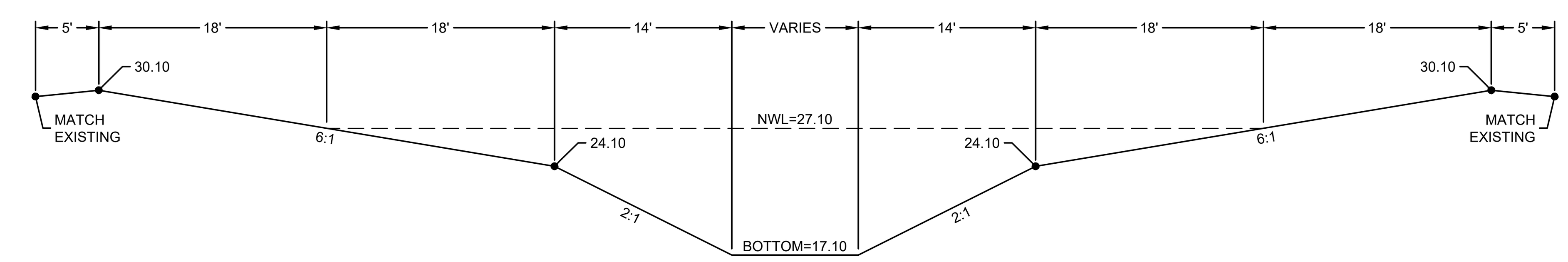
SECTION C-C
N.T.S.

SECTION D-D
N.T.S.

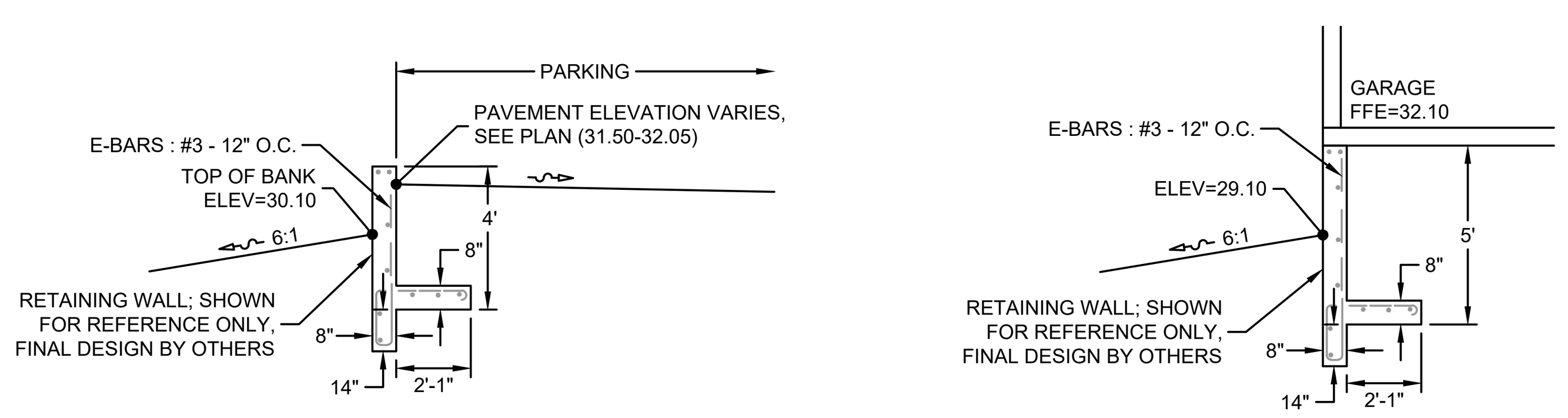


SECTION E-E
N.T.S.

SECTION F-F
N.T.S.



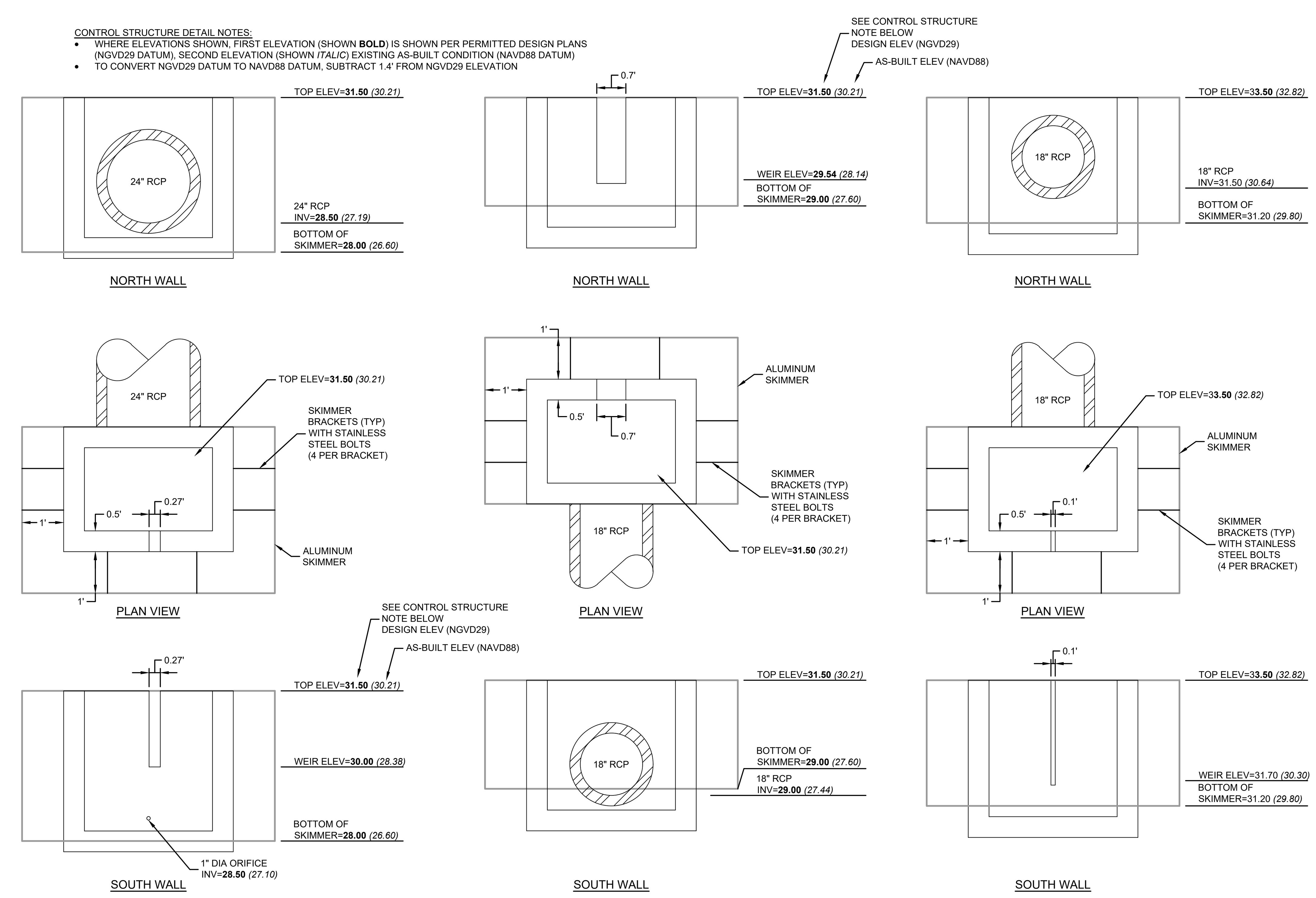
EXISTING POND SECTION
N.T.S.



SECTION G-G
N.T.S.

SECTION H-H
N.T.S.

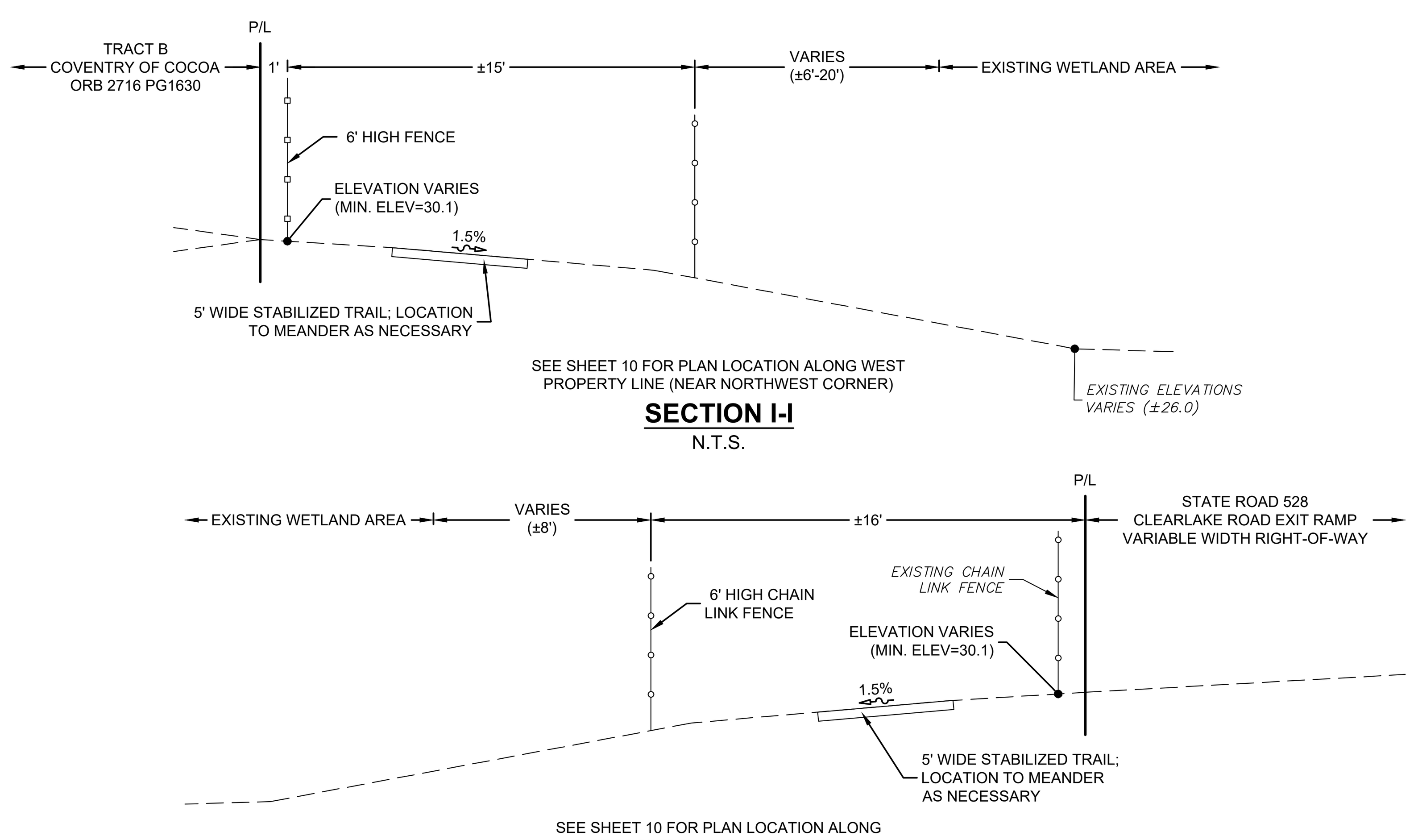
CONTROL STRUCTURE DETAIL NOTES:
- WHERE ELEVATIONS SHOWN, FIRST ELEVATION (SHOWN **BOLD**) IS SHOWN PER PERMITTED DESIGN PLANS (NGVD29 DATUM), SECOND ELEVATION (SHOWN *ITALIC*) EXISTING AS-BUILT CONDITION (NAVD88 DATUM)
- TO CONVERT NGVD29 DATUM TO NAVD88 DATUM, SUBTRACT 1.4' FROM NGVD29 ELEVATION



EXISTING CONTROL STRUCTURE #1 DETAIL

EXISTING CONTROL STRUCTURE #2 DETAIL

EXISTING CONTROL STRUCTURE #3 DETAIL



SECTION I-I
N.T.S.

SECTION J-J
N.T.S.

STREET NAME SIGN NOTES:
1. SIGNS IN PUBLIC R.O.W. SHALL BE GREEN WITH 5/8" WHITE BORDER AND WHITE LETTERS AND NUMBERS.
2. SIGNS IN PRIVATE R.O.W. SHALL BE WHITE WITH 5/8" BLACK BORDER AND BLACK LETTERS AND NUMBERS.
3. STREET NAME BLADES SHALL BE RIVETED TOGETHER AT EACH CORNER WITH 5/16" SMALL FLANGE AVEX RIVETS. ATTACH BLADES TO POST WITH CHERRY-MATE ALUMINUM RIVETS, # SALMIBP14, OR 5/16" X 2-1/2" S.S. BOLTS, 1-1/4" X 5/16" S.S. FENDER WASHERS, W/ S.S. STOP HEX NUT HAVING NYLON INSERTS (LOCK NUTS).

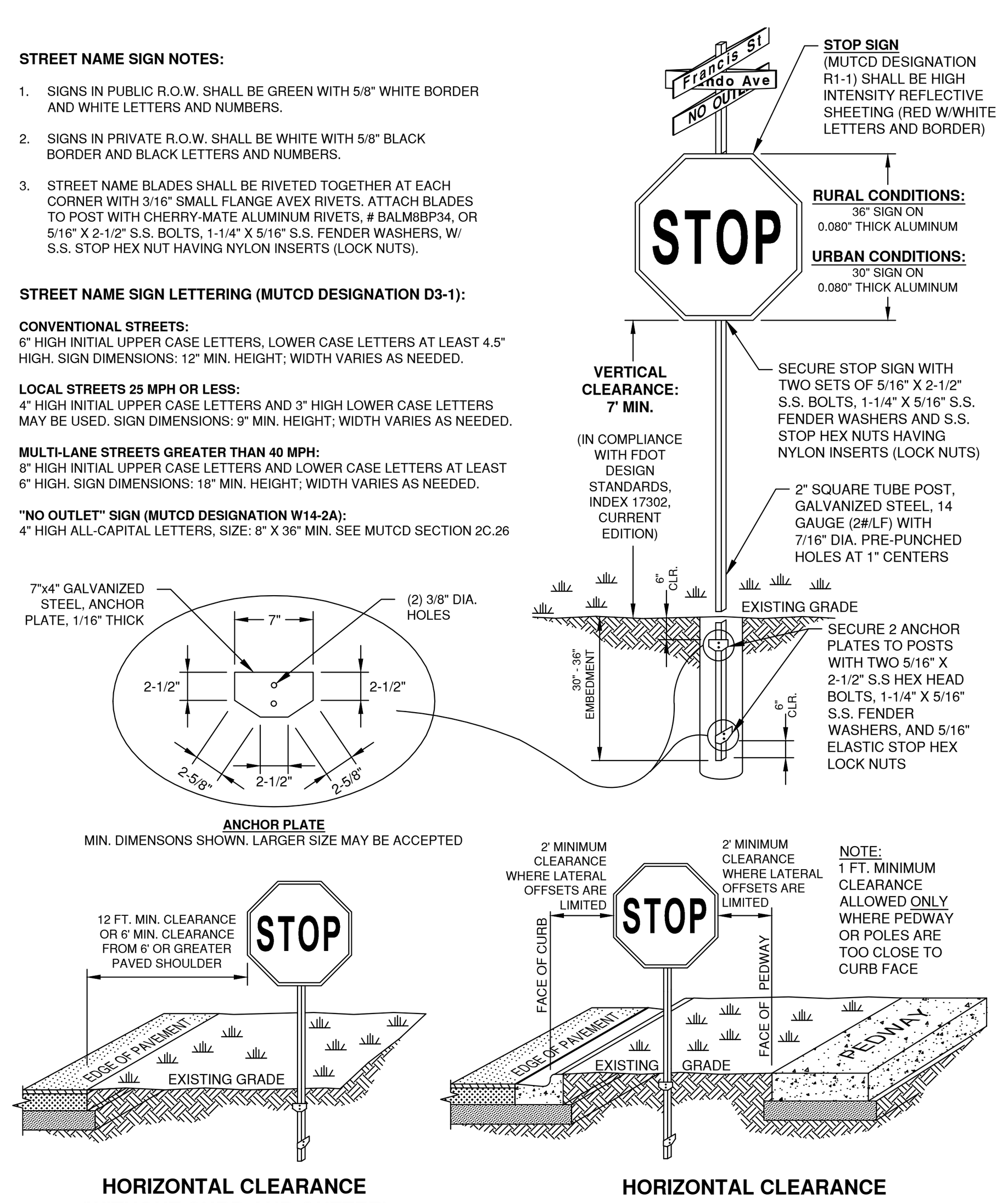
STREET NAME SIGN LETTERING (MUTCD DESIGNATION D3-1):

CONVENTIONAL STREETS:
6" HIGH INITIAL UPPER CASE LETTERS, LOWER CASE LETTERS AT LEAST 4.5" HIGH. SIGN DIMENSIONS: 12" MIN. HEIGHT; WIDTH VARIES AS NEEDED.

LOCAL STREETS 25 MPH OR LESS:
4" HIGH INITIAL UPPER CASE LETTERS AND 3" HIGH LOWER CASE LETTERS MAY BE USED. SIGN DIMENSIONS: 8" MIN. HEIGHT; WIDTH VARIES AS NEEDED.

MULTI-LANE STREETS GREATER THAN 40 MPH:
8" HIGH INITIAL UPPER CASE LETTERS AND LOWER CASE LETTERS AT LEAST 6" HIGH. SIGN DIMENSIONS: 18" MIN. HEIGHT; WIDTH VARIES AS NEEDED.

"NO OUTLET" SIGN (MUTCD DESIGNATION W14-2A):
4" HIGH ALL-CAPITAL LETTERS. SIZE: 8" X 36" MIN. SEE MUTCD SECTION 2C.26



STOP SIGN AND STREET MARKER DETAILS

B.S.E. CONSULTANTS, INC.
CONSULTING - ENGINEERING - LAND SURVEYING
312 SOUTH HARBOR CITY BOULEVARD, SUITE 4
MELBOURNE, FLORIDA 32901
PHONE: (321) 725-3674 FAX: (321) 723-1159
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SHEET
12 of 19

SYMBOLS SHOWN ARE GRAPHIC IN NATURE; DUE TO SCALE, ALL DESIGN ELEMENTS ARE NOT NECESSARILY SHOWN ON PLAN VIEWS. THE CONTRACTOR SHALL ALSO REFER TO SPECIFICATION AND DETAIL SHEETS AS WELL AS THE COMPLETE PLAN SET.

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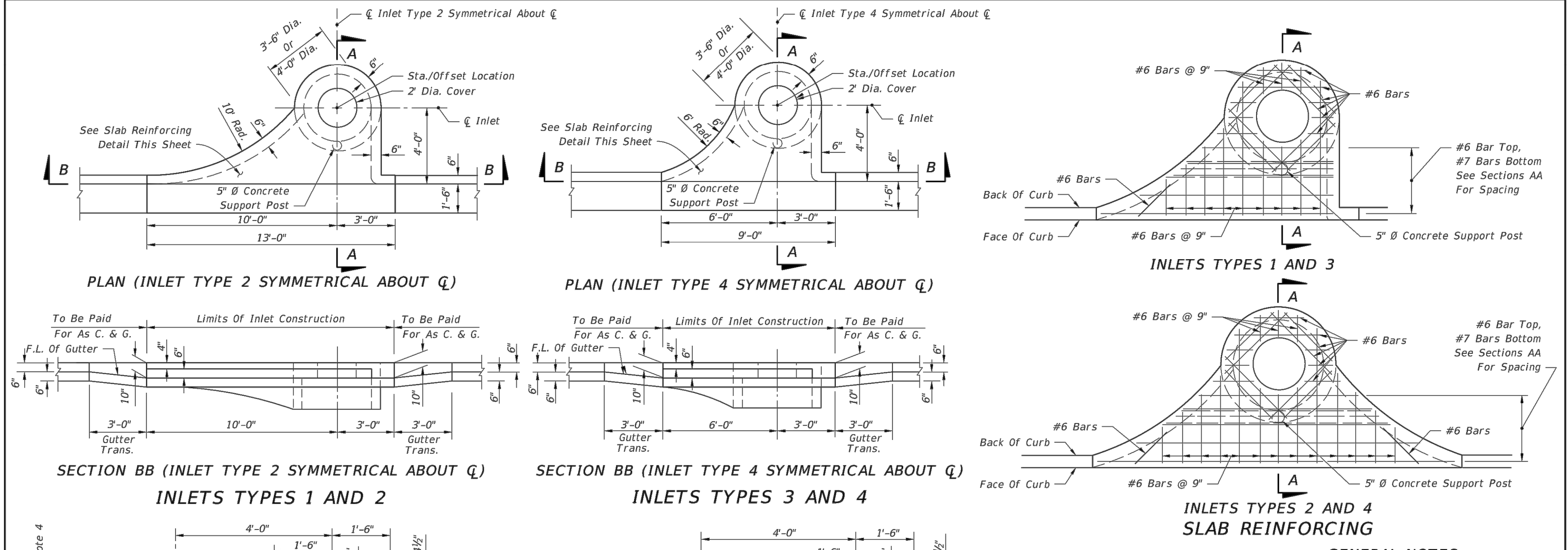
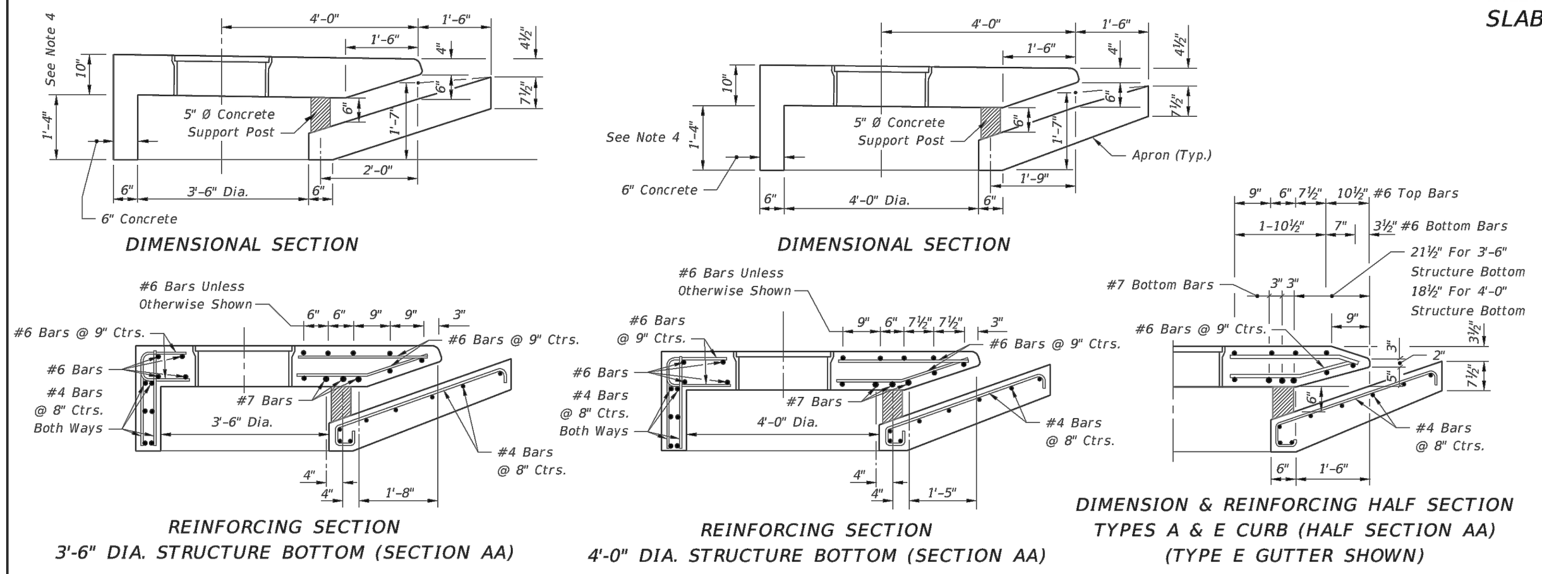


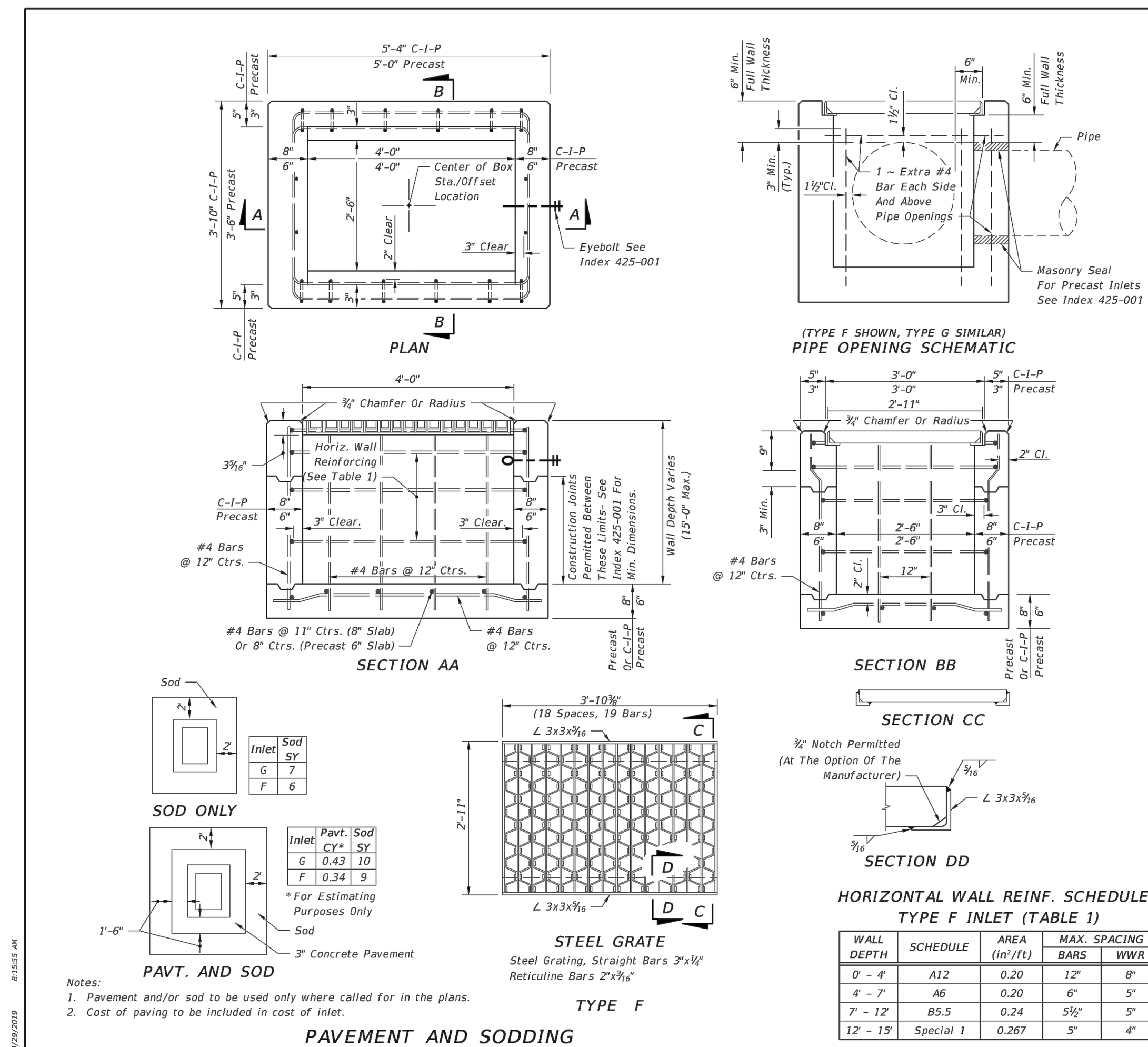


TRANSVERSE SECTIONS FOR INLETS TYPES 1, 2, 3 & 4

GENERAL NOTES

1. The finished grade and slope of the inlet tops are to conform with the finished cross slope and grade of the proposed sidewalk and/or border.
2. When inlets are to be constructed on a curve, refer to the plans to determine the radius and, where necessary, modify the inlet details accordingly. Bend steel when necessary.
3. All steel in inlet top shall have 1¼" minimum cover unless otherwise shown. Inlet tops shall be either cast-in-place or precast concrete.
4. For precast units the rear wall and apron may be precast as a separate piece from the top slab. Provide a minimum of 7 ~ #4 dowels in accordance with Index 425-001 "OPTIONAL CONSTRUCTION JOINTS".
5. For supplemental details see Index 425-001.
6. Only round concrete support post will be acceptable.
7. These inlets are designed for use with standard curb and gutter Types E and Type F. Locate inlet outside of pedestrian crosswalks.
8. For structure bottoms see Index 425-010.
9. Inlet to be paid for under the contract unit price for inlets (Curb) (Type_), Each.

LAST REVISION 11/01/17 | REVISION | DESCRIPTION: | FDOT | FY 2020-21 STANDARD PLANS | CURB INLET TOPS TYPES 1, 2, 3 AND 4 | INDEX 425-020 | SHEET 1 of 1



PAVEMENT AND SODDING

HORIZONTAL WALL REINF. SCHEDULES
TYPE F INLET (TABLE 1)

WALL DEPTH	SCHEDULE	AREA (in²/ft)	MAX. SPACING	
			BARS	WWR
0' - 4'	A12	0.20	12"	8"
4' - 7'	A6	0.20	6"	5"
7' - 12'	B5.5	0.24	5½"	5"
12' - 15'	Special 1	0.267	5"	4"

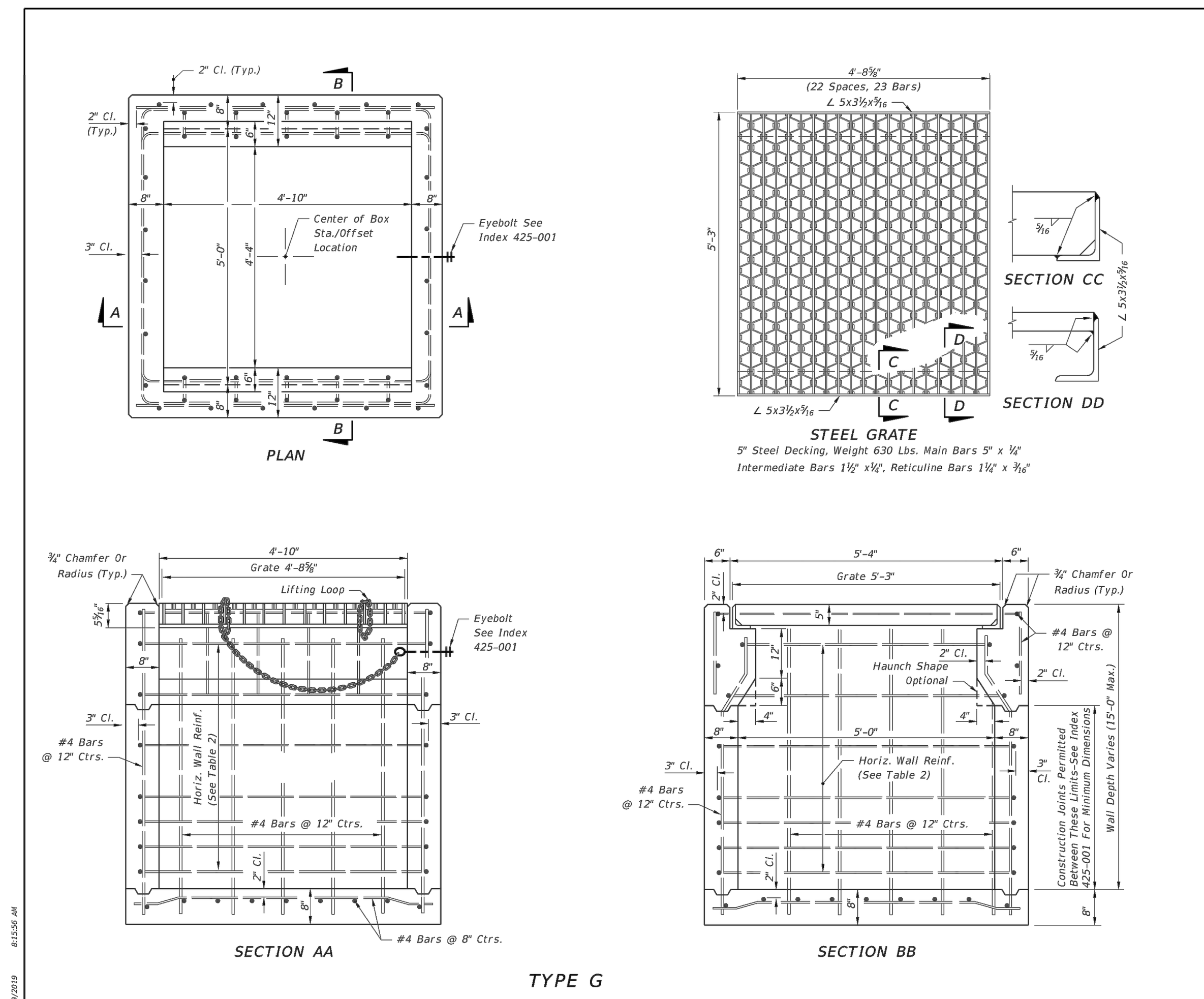
GENERAL NOTES

1. These inlets are designed for use in ditches, medians, pavement areas, or other areas subject to heavy wheel loads, minimal debris, and bicycle traffic. This inlet may be placed in areas subject to occasional pedestrian traffic such as landscaped areas and pavement areas where pedestrians can walk around the inlet. When inlet is placed in areas subject to bicycle traffic, install filler bar when clearance or gap is greater than ⅝" as shown in Index 425-031.
2. When Alternate G grate is specified in plans, the grate is to be hot dip galvanized after fabrication.
3. These inlets may be used with Alternate B structure bottoms, Index 425-010. The inlet and bottom combinations are to be paid for under the contract unit price for inlets (DT Bot) (Type F (or G)) (J Bot, Depth), Ea.
4. All exposed edges and corners shall be ¾" chamfer or tooled to ¼" radius.
5. For supplemental details, see Index 425-001.
6. All reinforcing is Grade 60 bars with 2" min. cover unless otherwise noted. Bars to be cut or bent for 1½" clearance around pipe opening. Provide one additional #4 bar above and at each side of pipe opening, as shown.
7. All dimensions are for both precast and cast-in-place inlets unless otherwise noted.

RECOMMENDED MAXIMUM PIPE SIZES	
INLET INSIDE WIDTH	PIPE SIZE
2'-6" (Type F)	18"
4'-0" (Type F)	30"
4'-10" / 5'-0" (Type G)	42"

Note: Recommended sizes are for concrete pipe. Sizes for other types of pipe must be verified for fit in accordance with Index 425-001. For larger pipe sizes see Note 3.

LAST REVISION 11/01/17 | REVISION | DESCRIPTION: | FDOT | FY 2020-21 STANDARD PLANS | DITCH BOTTOM INLET TYPES F AND G | INDEX 425-053 | SHEET 1 of 2



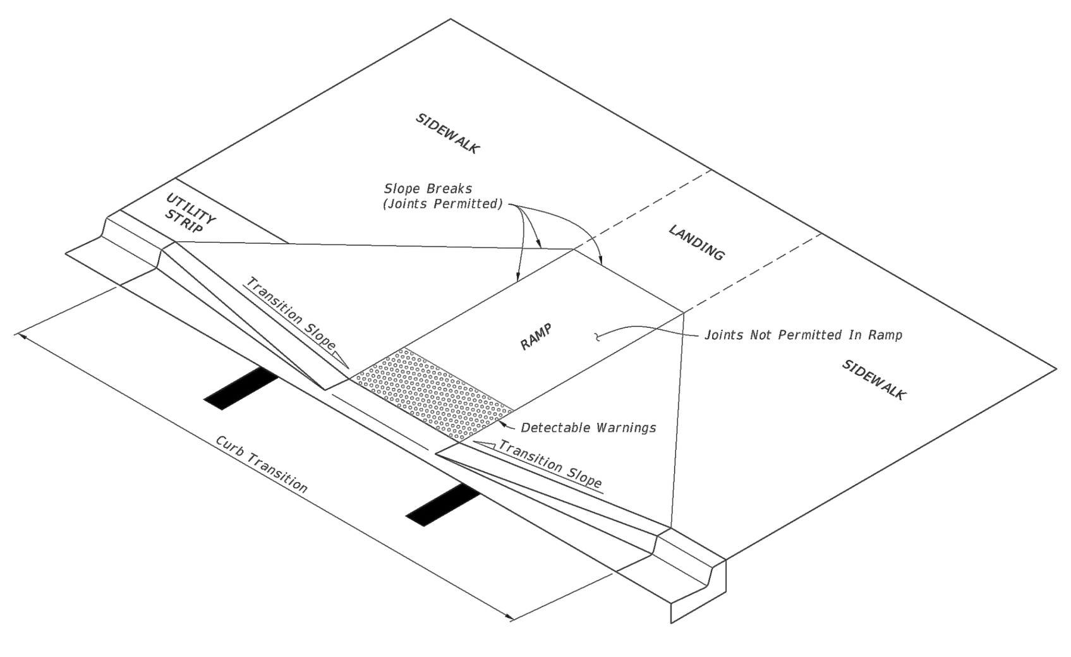
TYPE G INLET (TABLE 2)

WALL DEPTH	SCHEDULE	AREA (in²/ft)	MAX. SPACING	
			BARS	WWR
0' - 3'	A12	0.20	12"	8"
3' - 7'	A6	0.20	6"	5"
7' - 10'	B5.5	0.24	5½"	5"
10' - 15'	C6.5	0.37	6½"	6"

LAST REVISION 11/01/17 | REVISION | DESCRIPTION: | FDOT | FY 2020-21 STANDARD PLANS | DITCH BOTTOM INLET TYPES F AND G | INDEX 425-053 | SHEET 2 of 2

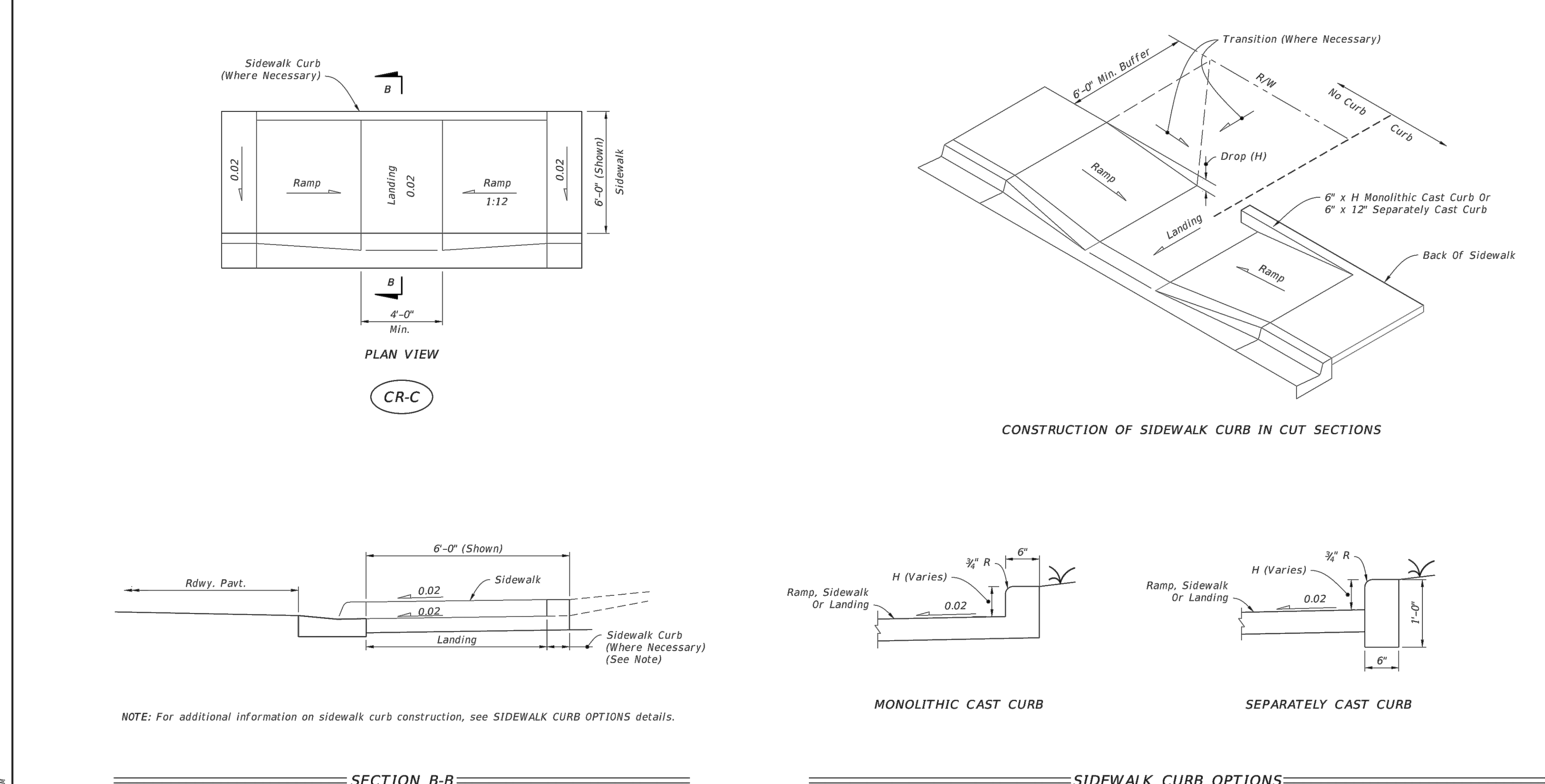
GENERAL NOTES:

1. Cross Slopes and Grades:
   A. Sidewalk, ramp, and landing slopes (i.e. 0.02, 0.05, and 1:12) shown in this Index are maximums. With approval of the Engineer, provide the minimum feasible slope where the requirements cannot be met.
   B. Landings must have cross-slopes less than or equal to 0.02 in any direction.
   C. Maintain a single longitudinal slope along each side of the curb ramp. Ramp slopes are not required to exceed 15 feet in length.
   D. Joints permitted at the location of Slope Breaks. Otherwise locate joints in accordance with Index 522-001. No joints are permitted within the ramp portion of the Curb Ramp.
2. Curb, Curb and Gutter and/or Sidewalk:
   A. Refer to Index 522-001 for concrete thickness and sidewalk details.
   B. Remove any existing curb, curb and gutter, or sidewalk to the nearest joint beyond the curb transition or to the extent that no remaining section is less than 5 feet long.
3. Curb Ramp Alpha-Identification:
   A. Sidewalk curb ramp alpha-identifications (e.g. CR-A) are provided for reference purposes in the Plans.
   B. Alpha-identifications CR-I and CR-J are intentionally omitted.
4. Detectable Warnings:
   A. Install detectable warnings in accordance with Specification 527.
   B. Place detectable warnings across the full width of the ramp or landing, to a minimum depth of 2 feet measured perpendicular to the curb line and no greater than 5 feet from the back of the curb or edge of pavement.
   C. If detectable warnings are shown in the Plans on slopes greater than 5%, align the truncated domes with the centerline of the ramp; otherwise, the truncated domes are not required to be aligned.
5. Detectable Warnings - Acceptance Criteria:
   A. Color and texture shall be complete and uniform.
   B. 90% of individual truncated domes shall be in accordance with the Americans with Disabilities Act Standards for Transportation Facilities, Section 705.
   C. There shall be no more than 4 non-compliant domes in any one square foot.
   D. Non-compliant domes shall not be adjacent to other non-compliant domes.
   E. Surfaces shall not deviate more than 0.10" from a true plane.



CURB RAMP NOMENCLATURE

LAST REVISION 11/01/19 | REVISION | DESCRIPTION: | FDOT | FY 2020-21 STANDARD PLANS | DETECTABLE WARNINGS AND SIDEWALK CURB RAMPS | INDEX 522-002 | SHEET 1 of 8

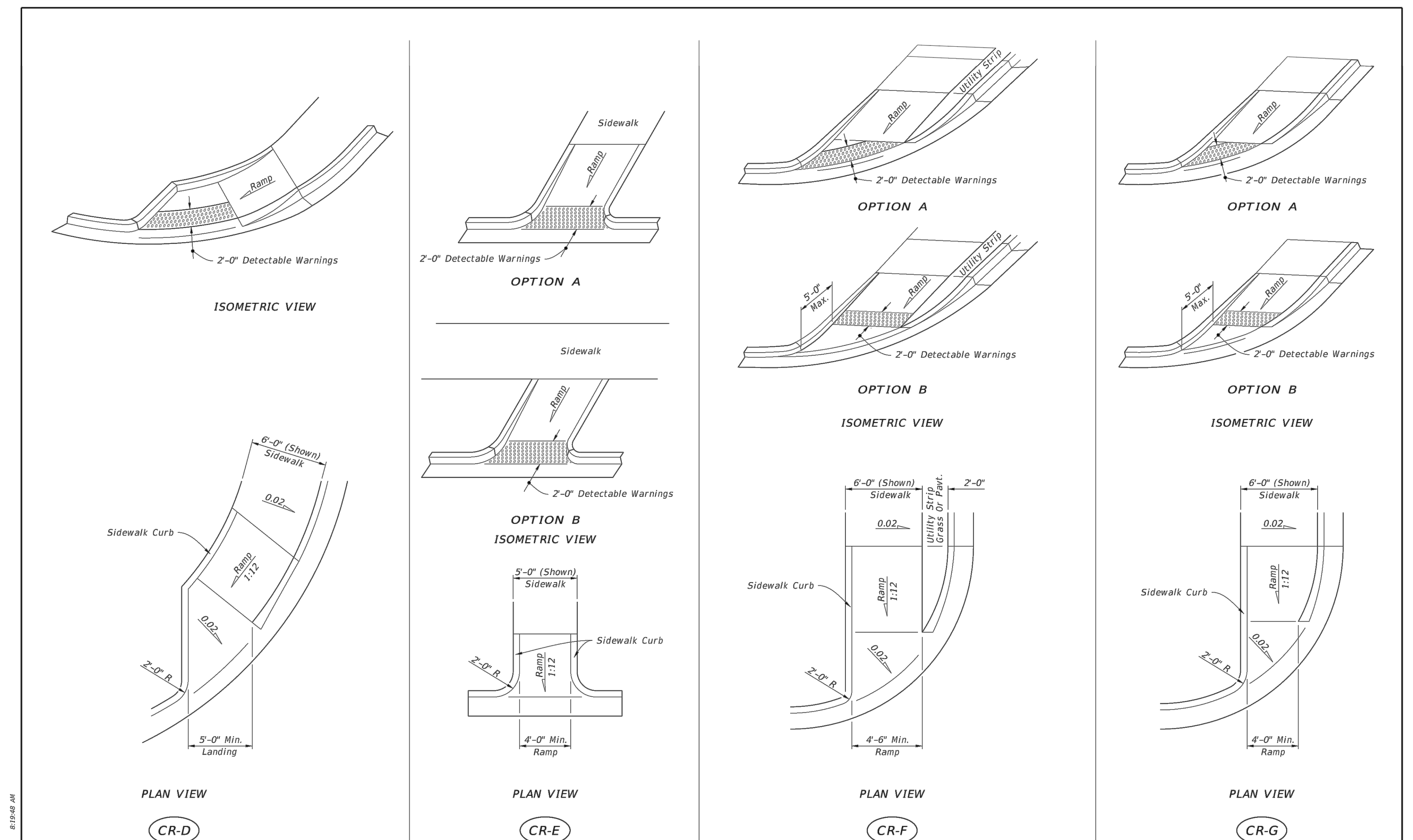


SECTION B-B

SIDEWALK CURB OPTIONS

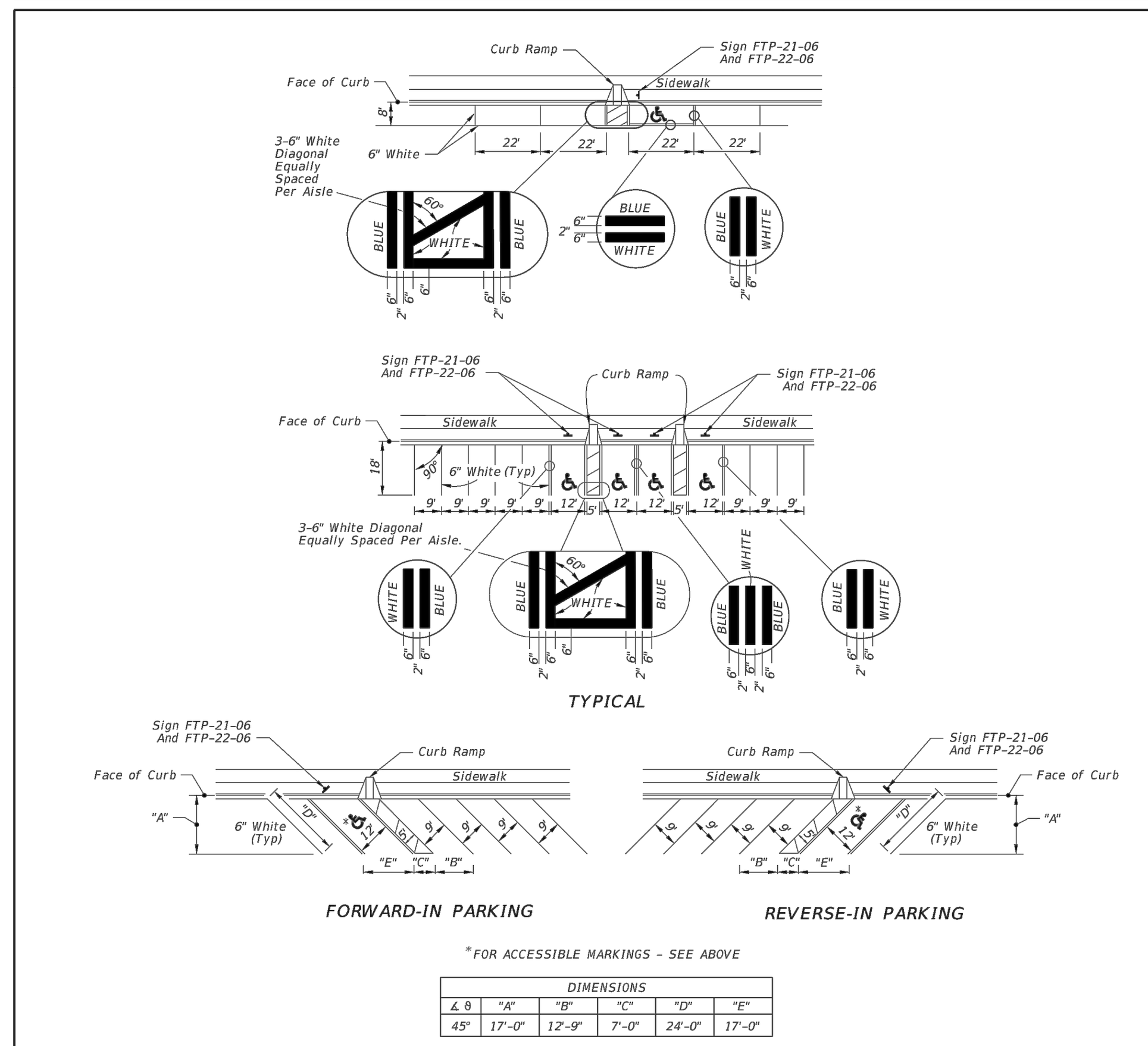
SIDEWALK CURB RAMPS CR-C AND SIDEWALK CURB

LAST REVISION 11/01/18 | REVISION | DESCRIPTION: | FDOT | FY 2020-21 STANDARD PLANS | DETECTABLE WARNINGS AND SIDEWALK CURB RAMPS | INDEX 522-002 | SHEET 3 of 8

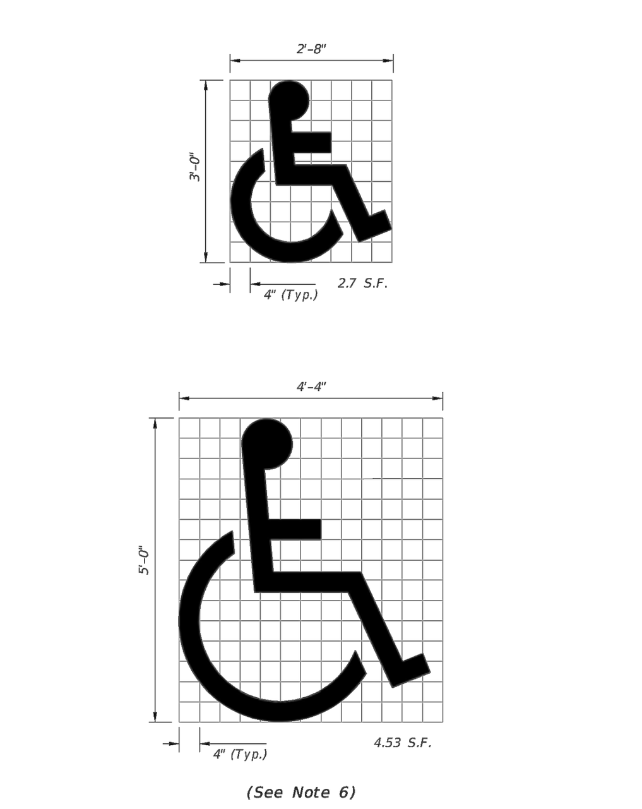


SIDEWALK CURB RAMPS CR-D, CR-E, CR-F & CR-G

LAST REVISION 11/01/18 | REVISION | DESCRIPTION: | FDOT | FY 2020-21 STANDARD PLANS | DETECTABLE WARNINGS AND SIDEWALK CURB RAMPS | INDEX 522-002 | SHEET 4 of 8



PAVEMENT MARKING FOR PARKING



(See Note 6)

UNIVERSAL SYMBOL OF ACCESSIBILITY

NOTES:

1. Dimensions are to the centerline of markings.
2. An Access Aisle is required for each accessible space when angle parking is used.
3. Criteria for pavement markings only, not public sidewalk curb ramp locations. For ramp locations refer to plans.
4. Tint blue pavement markings to match color 15180 of Federal Standards 595a.
5. Mount FTP-22-06 sign below the FTP-21-06 sign.
6. Use of the pavement symbol in accessible parking spaces is optional. When pavement symbol is used, the symbol is either 3'-0" or 5"-0" high and white in color.

LAST REVISION 11/01/19 | REVISION | DESCRIPTION: | FDOT | FY 2020-21 STANDARD PLANS | PAVEMENT MARKINGS | INDEX 711-001 | SHEET 12 of 13

B.S.E. CONSULTANTS, INC.
CONSULTING - ENGINEERING - LAND SURVEYING
312 SOUTH HARBOR CITY BOULEVARD, SUITE 4
MELBOURNE, FLORIDA 32901
PHONE: (321) 725-3674 FAX: (321) 723-1159
CERTIFICATE OF PROFESSIONAL ENGINEERS
BUSINESS AUTHORIZATION: 4905
CERTIFICATE OF LAND SURVEYING
BUSINESS AUTHORIZATION: LB0004905

SCOTT M. GLAUBITZ, P.E. & P.L.S.
STATE OF FLORIDA, No. 33659 No. 4151

HASSAN A. KAMAL, P.E.
STATE OF FLORIDA, No. 41951

VERTICAL DATUM: NAVD88

1	CITY COMMENTS	10/30/20

DATE: 08/31/20
DESIGN/DRAWN: ALS/DRB

PROJECT TITLE
CIRRUS

SHEET TITLE
FDOT DETAILS

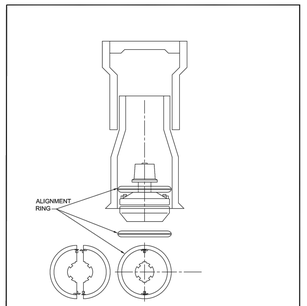
PROJECT NO.
11545

DRAWING NO.
11545_400_013

SHEET
13 of 19

SYMBOLS SHOWN ARE GRAPHIC IN NATURE; DUE TO SCALE, ALL DESIGN ELEMENTS ARE NOT NECESSARILY SHOWN ON PLAN VIEWS. THE CONTRACTOR SHALL ALSO REFER TO SPECIFICATION AND DETAIL SHEETS AS WELL AS THE COMPLETE PLAN SET.

H:\Projects Folder\11545\Drawings\11545_400\11545_400_013-019.dwg November 4, 2020 5:28:47 PM DB

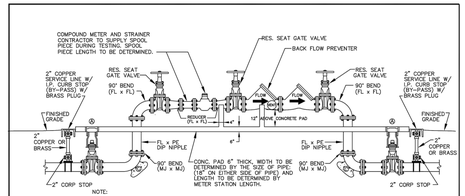


NOTES:
1. FOR ALL VALVES REGARDLESS OF SIZE AND DEPTH.

CITY OF COCOA — Brevard County, Florida — UTILITIES DEPARTMENT — ENGINEERING DIVISION

ALIGNMENT RING

DRAWN BY: J. WILLIAMS	SCALE: NOT TO SCALE
CHECKED BY: P. DAVIS	DATE: MARCH 2020
DESIGN BY:	SHEET: 1 OF 1
ACAD NAME: ALIGNMENT RING	



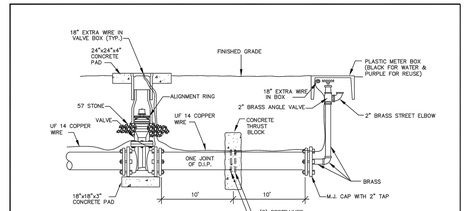
NOTE:
1. ASSEMBLY IS TO BE PAINTED RUST-O-THANE NO. 9407-1854 (BLUE)
2. ALL ABOVE GROUND BOLTS AND NUTS TO BE #304 STAINLESS STEEL.
3. ALTHREAD ROD WILL NOT BE PERMITTED.
4. 12" MIN. CLEARANCE FROM THE VENT ON THE BACKFLOW PREVENTER TO THE CONCRETE PAD.
5. 45° BENDS MAY BE USED WHEN PRIOR APPROVED BY ENGINEER.
6. ALL FITTINGS ARE RESTRAINED.
7. IN LIEU OF CONCRETE SUPPORTS, ADJUSTABLE STAINLESS STEEL SUPPORTS ALLOWED.
8. 2" COPPER SERVICE LINE TO BE INSTALLED ON BRASS SADDLE OR WELDED BOSS. 2" BRASS MAY BE USED IN LIEU OF COPPER.

Ⓐ REFER TO GATE VALVE & VALVE BOX DETAIL.
Ⓑ REFER TO THRUST BLOCK NOTES & DETAILS.

CITY OF COCOA — Brevard County, Florida — UTILITIES DEPARTMENT — ENGINEERING DIVISION

3 INCH AND LARGER METER WITH BACKFLOW PREVENTER ABOVE GROUND INSTALLATION

DRAWN BY: J. WILLIAMS	SCALE: NOT TO SCALE
CHECKED BY: P. DAVIS	DATE: MARCH 2020
DESIGN BY:	SHEET: 1 OF 1
ACAD NAME: 3 IN AND LARGER METER WITH BACKFLOW rev	



NOTE: PERMANENT BLOW-OFFS DO NOT REQUIRE A JOINT OF D.I.P. OR A VALVE. ALSO ALL BLOW-OFFS NEED TO BE PLACED AT PROPERTY LINES.

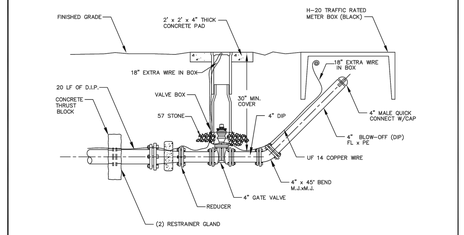
PROPER AMOUNT OF RESTRAINED PIPE UPSTREAM OF VALVE MAY BE USED IN LIEU OF THRUST COLLAR.

2" BLOW-OFF FOR 10" WATER MAINS AND SMALLER

CITY OF COCOA — Brevard County, Florida — UTILITIES DEPARTMENT — ENGINEERING DIVISION

BLOW-OFF DETAIL 1

DRAWN BY: J. WILLIAMS	SCALE: NOT TO SCALE
CHECKED BY: P. DAVIS	DATE: MARCH 2020
DESIGN BY:	SHEET: 1 OF 1
ACAD NAME: BLOW OFF DETAIL 1	

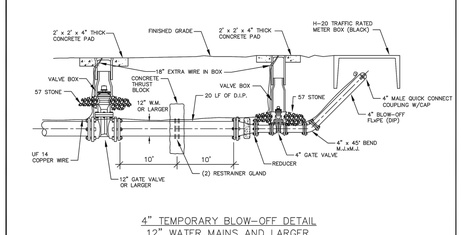


4" PERMANENT BLOW-OFF FOR 12" WATER MAINS AND LARGER

CITY OF COCOA — Brevard County, Florida — UTILITIES DEPARTMENT — ENGINEERING DIVISION

BLOW-OFF DETAIL 2

DRAWN BY: J. WILLIAMS	SCALE: NOT TO SCALE
CHECKED BY: P. DAVIS	DATE: MARCH 2020
DESIGN BY:	SHEET: 2 OF 3
ACAD NAME: BLOW OFF DETAIL 2	

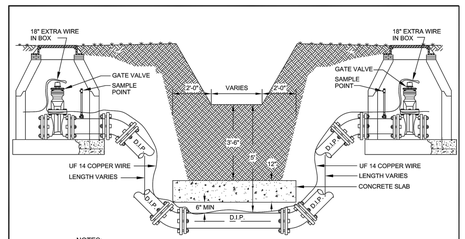


4" TEMPORARY BLOW-OFF DETAIL
12" WATER MAINS AND LARGER

CITY OF COCOA — Brevard County, Florida — UTILITIES DEPARTMENT — ENGINEERING DIVISION

BLOW-OFF DETAIL 3

DRAWN BY: J. WILLIAMS	SCALE: NOT TO SCALE
CHECKED BY: P. DAVIS	DATE: MARCH 2020
DESIGN BY:	SHEET: 3 OF 3
ACAD NAME: BLOW OFF DETAIL 3	

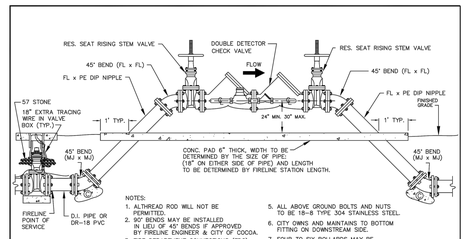


NOTES:
1. MAIN SHALL BE RESTRAINED JOINT D.I. PIPE AND EXTEND 5' ON EITHER SIDE OF THE DRAINAGE DITCH.
2. CONCRETE SLAB SHALL BE 2' WIDER THAN THE PIPE O.D. AND A MINIMUM WIDTH OF 6'.
3. CONCRETE SHALL BE 2500 PSI COMPRESSIVE STRENGTH WITH FIBERMESH REINFORCEMENT.
4. PER FDEP, ISOLATION VALVE CLOSEST TO THE WATER SOURCE WILL HAVE TWO PERMANENT TAPS AND WILL BE IN A MANHOLE.

CITY OF COCOA — Brevard County, Florida — UTILITIES DEPARTMENT — ENGINEERING DIVISION

CANAL OR DRAINAGE DITCH CROSSING

DRAWN BY: J. WILLIAMS	SCALE: NOT TO SCALE
CHECKED BY: P. DAVIS	DATE: MARCH 2020
DESIGN BY:	SHEET: 1 OF 1
ACAD NAME: CANAL OR DRAINAGE DITCH CROSSING	



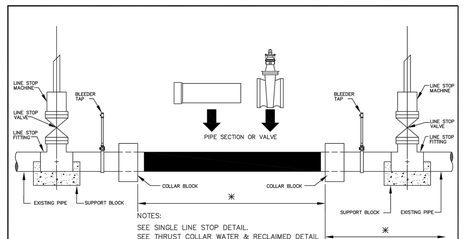
NOTES:
1. ALTHREAD ROD WILL NOT BE PERMITTED.
2. 90° BENDS MAY BE INSTALLED IN LIEU OF 45° BENDS IF APPROVED BY FIRELINE ENGINEER & CITY OF COCOA.
3. FIRE DEPARTMENT CONNECTIONS (FDC) WILL NOT BE PERMITTED ON ABOVE GROUND PIPING.
4. ASSEMBLY TO BE PAINTED RUST-OLEUM 9400 SYSTEM (RED) BY THE CITY, PAID FOR BY THE CONTRACTOR.
5. ALL ABOVE GROUND BOLTS AND NUTS TO BE 18-8 TYPE 304 STAINLESS STEEL.
6. CITY OWNS AND MAINTAINS TO BOTTOM FITTING ON DOWNSTREAM SIDE.
7. FOUR TO SIX BOLLARDS MAY BE REQUIRED, SPACED 18" FROM CENTERLINE.
8. A FIRELINE CONTRACTOR SHALL BE REQUIRED FROM THE FIRELINE POINT OF SERVICE.

Ⓒ REFER TO THRUST BLOCK NOTES & DETAILS.

CITY OF COCOA — Brevard County, Florida — UTILITIES DEPARTMENT — ENGINEERING DIVISION

DOUBLE CHECK DETECTOR ASSEMBLY

DRAWN BY: J. WILLIAMS	SCALE: NOT TO SCALE
CHECKED BY: P. DAVIS	DATE: MARCH 2020
DESIGN BY:	SHEET: 1 OF 1
ACAD NAME: DOUBLE CHECK DETECTOR ASSEMBLY	

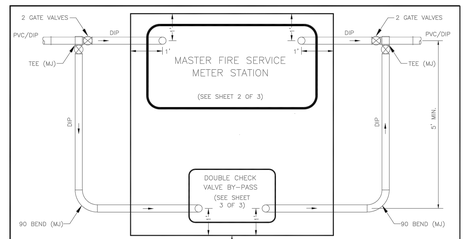


NOTES:
SEE SINGLE LINE STOP DETAIL.
SEE THRUST COLLAR WATER & RECLAIMED DETAIL
4"–8" LINE STOP REQUIRES 1" BLEEDER TAP
10" AND LARGER REQUIRES 2" BLEEDER TAP
SEE "SERVICE CONNECTIONS" SPECIFICATIONS
SEE APPENDIX "A" FOR APPROVED MATERIAL
✳ SEE RESTRAINED PIPE TABLE

CITY OF COCOA — Brevard County, Florida — UTILITIES DEPARTMENT — ENGINEERING DIVISION

DOUBLE LINE STOP DETAIL

DRAWN BY: J. WILLIAMS	SCALE: NOT TO SCALE
CHECKED BY: P. DAVIS	DATE: MARCH 2020
DESIGN BY:	SHEET: 1 OF 1
ACAD NAME: DOUBLE LINE STOP DETAIL	

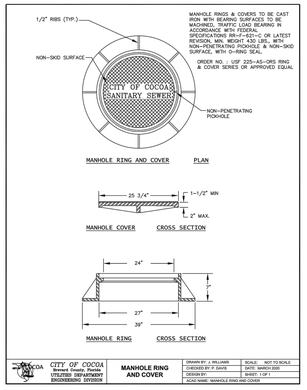


NOTES:
1. ALL UNDERGROUND PIPING IS TO BE DUCTILE IRON WITH RESTRAINED MECHANICAL JOINTS, POLYETHYLENE WRAPPED
2. PIPING SIZES TO BE DETERMINED BY THE ENGINEER OF RECORD AND APPROVED BY COCOA UTILITIES
3. ALL WORK IS TO CONFORM TO CITY OF COCOA STANDARDS.

CITY OF COCOA — Brevard County, Florida — UTILITIES DEPARTMENT — ENGINEERING DIVISION

MASTER METER ASSEMBLY PLAN

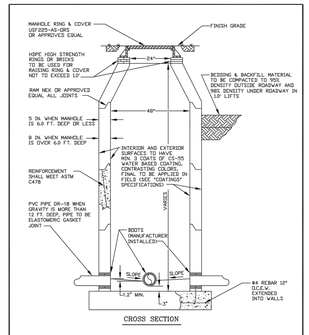
DRAWN BY: J. WILLIAMS	SCALE: NOT TO SCALE
CHECKED BY: P. DAVIS	DATE: MARCH 2020
DESIGN BY:	SHEET: 1 OF 3
ACAD NAME: MASTERMETERASSEMBLY1	



CITY OF COCOA — Brevard County, Florida — UTILITIES DEPARTMENT — ENGINEERING DIVISION

MANHOLE RING AND COVER

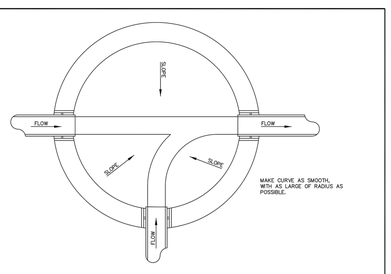
DRAWN BY: J. WILLIAMS	SCALE: NOT TO SCALE
CHECKED BY: P. DAVIS	DATE: MARCH 2020
DESIGN BY:	SHEET: 1 OF 1
ACAD NAME: MANHOLE RING AND COVER	



CITY OF COCOA — Brevard County, Florida — UTILITIES DEPARTMENT — ENGINEERING DIVISION

TYPICAL MANHOLE

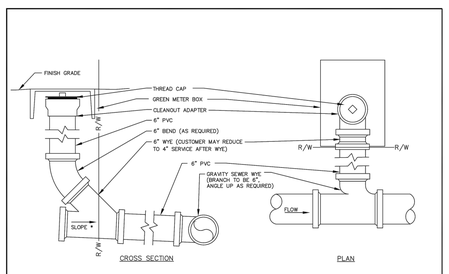
DRAWN BY: J. WILLIAMS	SCALE: NOT TO SCALE
CHECKED BY: P. DAVIS	DATE: MARCH 2020
DESIGN BY:	SHEET: 1 OF 1
ACAD NAME: TYPICAL MANHOLE	



CITY OF COCOA — Brevard County, Florida — UTILITIES DEPARTMENT — ENGINEERING DIVISION

MANHOLE INVERT

DRAWN BY: J. WILLIAMS	SCALE: NOT TO SCALE
CHECKED BY: P. DAVIS	DATE: MARCH 2020
DESIGN BY:	SHEET: 1 OF 1
ACAD NAME: MANHOLE INVERT	

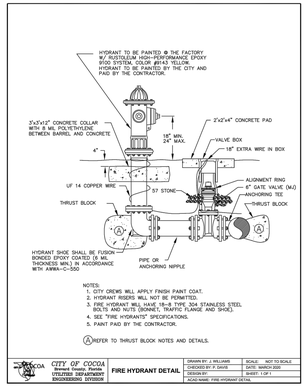


* MINIMUM SLOPE PER TECHNICAL SPECIFICATIONS

CITY OF COCOA — Brevard County, Florida — UTILITIES DEPARTMENT — ENGINEERING DIVISION

SINGLE SERVICE DETAIL

DRAWN BY: J. WILLIAMS	SCALE: NOT TO SCALE
CHECKED BY: P. DAVIS	DATE: MARCH 2020
DESIGN BY:	SHEET: 1 OF 1
ACAD NAME: SINGLE SERVICE DETAIL	



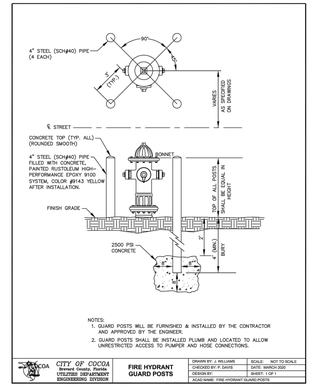
NOTES:
1. CITY CREWS WILL APPLY FINISH PAINT COAT.
2. HYDRANT RISERS WILL NOT BE PERMITTED.
3. FIRE HYDRANT BOLTS (BONNET, TRAFFIC FLANGE AND SHOE).
4. SEE "FIRE HYDRANTS" SPECIFICATIONS.
5. PAINT PAID BY THE CONTRACTOR.

Ⓐ REFER TO THRUST BLOCK NOTES AND DETAILS.

CITY OF COCOA — Brevard County, Florida — UTILITIES DEPARTMENT — ENGINEERING DIVISION

FIRE HYDRANT DETAIL

DRAWN BY: J. WILLIAMS	SCALE: NOT TO SCALE
CHECKED BY: P. DAVIS	DATE: MARCH 2020
DESIGN BY:	SHEET: 1 OF 1
ACAD NAME: FIRE HYDRANT DETAIL	

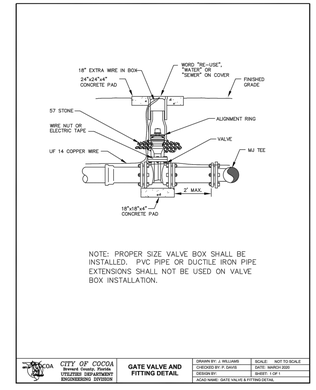


NOTES:
1. GUARD POSTS WILL BE FURNISHED & INSTALLED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER.
2. GUARD POSTS SHALL BE INSTALLED PLUMB AND LOCATED TO ALLOW UNRESTRICTED ACCESS TO PUMPER AND HOSE CONNECTIONS.

CITY OF COCOA — Brevard County, Florida — UTILITIES DEPARTMENT — ENGINEERING DIVISION

FIRE HYDRANT GUARD POSTS

DRAWN BY: J. WILLIAMS	SCALE: NOT TO SCALE
CHECKED BY: P. DAVIS	DATE: MARCH 2020
DESIGN BY:	SHEET: 1 OF 1
ACAD NAME: FIRE HYDRANT GUARD POSTS	

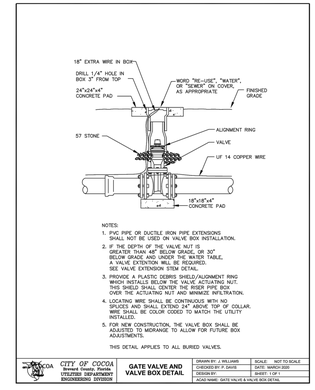


NOTE: PROPER SIZE VALVE BOX SHALL BE INSTALLED. PVC PIPE OR DUCTILE IRON PIPE EXTENSIONS SHALL NOT BE USED ON VALVE BOX INSTALLATION.

CITY OF COCOA — Brevard County, Florida — UTILITIES DEPARTMENT — ENGINEERING DIVISION

GATE VALVE AND FITTING DETAIL

DRAWN BY: J. WILLIAMS	SCALE: NOT TO SCALE
CHECKED BY: P. DAVIS	DATE: MARCH 2020
DESIGN BY:	SHEET: 1 OF 1
ACAD NAME: GATE VALVE & FITTING DETAIL	



NOTES:
1. PVC PIPE OR DUCTILE IRON PIPE EXTENSIONS SHALL NOT BE USED ON VALVE BOX INSTALLATION.
2. IF THE DEPTH OF THE VALVE NUT IS GREATER THAN 48" BELOW GRADE, OR 30" BELOW GRADE IN PAVED AREAS OR TABLE, A VALVE EXTENTION WILL BE REQUIRED. SEE VALVE EXTENSION STEM DETAIL.
3. PROVIDE A PLASTIC DEBRIS SHIELD/ALIGNMENT RING WHICH INSTALLS BELOW THE VALVE ACTUATING NUT. THIS SHIELD SHALL CENTER THE RISER PIPE BOX OVER THE ACTUATING NUT AND MINIMIZE INFILTRATION.
4. LOCATING WIRE SHALL BE CONTINUOUS WITH NO SPLICES AND SHALL EXTEND 24" ABOVE TOP OF COLLAR. WIRE SHALL BE COLOR CODED TO MATCH THE UTILITY INSTALLED.
5. FOR NEW CONSTRUCTION, THE VALVE BOX SHALL BE ADJUSTED TO MIDRANGE TO ALLOW FOR FUTURE BOX ADJUSTMENTS.

THIS DETAIL APPLIES TO ALL BURIED VALVES.

CITY OF COCOA — Brevard County, Florida — UTILITIES DEPARTMENT — ENGINEERING DIVISION

GATE VALVE AND VALVE BOX DETAIL

DRAWN BY: J. WILLIAMS	SCALE: NOT TO SCALE
CHECKED BY: P. DAVIS	DATE: MARCH 2020
DESIGN BY:	SHEET: 1 OF 1
ACAD NAME: GATE VALVE & VALVE BOX DETAIL	

CITY OF COCOA UTILITIES TECHNICAL PROVISIONS

RESTRAINED PIPE TABLE
WATER AND RECLAIMED WATER MAINS

TYPE	MINIMUM LENGTH (FT) TO BE RESTRAINED ON EACH SIDE OF FITTING(S) PIPE SIZE						
	4"	6"	8"	10"	12"	16"	20"	24"
90°BEND	21	29	38	45	53	66	79	91
45°BEND	9	12	16	19	22	45	33	38
22-1/2°BEND	5	6	8	9	11	14	16	19
11-1/4°BEND	3	3	4	5	6	7	8	9
PLUG, BRANCH OF TEE, VALVE	58	82	107	128	151	193	234	273

NOTES:
1. FITTINGS SHALL BE RESTRAINED JOINTS.
2. INSTALL FULL LENGTH JOINTS WITH TOTAL LENGTH EQUAL TO OR GREATER THAN SHOWN IN THE TABLE.
3. WHERE TWO OR MORE FITTINGS ARE TOGETHER, USE FITTING WHICH YIELDS GREATEST LENGTH OF RESTRAINED PIPE.
4. ALL LINE VALVES AND THROUGH RUN OF TEES SHALL BE RESTRAINED.
5. LENGTHS SHOWN IN THE TABLE HAVE BEEN CALCULATED IN ACCORDANCE WITH THE PROCEDURE OUTLINED IN "THRUST RESTRAINT DESIGN FOR DUCTILE IRON PIPE" AS PUBLISHED BY DIPRA, WITH THE FOLLOWING ASSUMPTIONS:

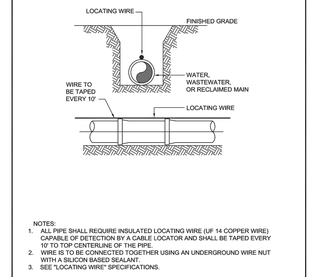
   WORKING PRESSURE: 150 PSI
   SOIL DESIGNATION: SM (SAND SILT)
   LAYING CONDITIONS: 3

6. TABLE IS FOR PVC AND WRAPPED DUCTILE IRON.

CITY OF COCOA — Brevard County, Florida — UTILITIES DEPARTMENT — ENGINEERING DIVISION

RESTRAINED PIPE TABLE WATER & RECLAIMED WATER MAINS

DRAWN BY: J. WILLIAMS	SCALE: NOT TO SCALE
CHECKED BY: P. DAVIS	DATE: MARCH 2020
DESIGN BY:	SHEET: 1 OF 1
ACAD NAME: RESTRAINED PIPE TABLE (WATER AND RECLAIMED	

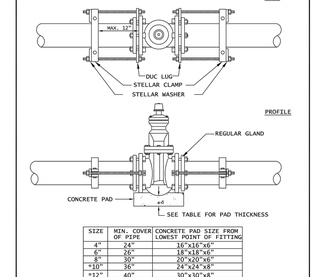


NOTES:
1. ALL PIPE SHALL REQUIRE INSULATED LOCATING WIRE (UF 14 COPPER WIRE) CAPABLE OF DETECTION BY A CABLE LOCATOR AND SHALL BE TAPED EVERY 10' TO TOP CENTERLINE OF THE PIPE.
2. WIRE IS TO BE CONNECTED TOGETHER USING AN UNDERGROUND WIRE NUT WITH A SILICON BASED SEALANT.
3. SEE "LOCATING WIRE" SPECIFICATIONS.

CITY OF COCOA — Brevard County, Florida — UTILITIES DEPARTMENT — ENGINEERING DIVISION

LOCATING WIRE DETAIL

DRAWN BY: J. WILLIAMS	SCALE: NOT TO SCALE
CHECKED BY: P. DAVIS	DATE: MARCH 2020
DESIGN BY:	SHEET: 1 OF 1
ACAD NAME: LOCATION WIRE DETAIL	



SIZE	MIN. COVER OF PIPE	CONCRETE PAD SIZE FROM LOWEST POINT OF FITTING
4"	24"	16"x16"x6"
6"	26"	18"x18"x6"
8"	30"	20"x20"x6"
*10"	36"	24"x24"x8"
*12"	40"	30"x30"x8"

* NOTE: 10" AND 12" REQUIRE TWO CLAMPS AND FOUR RODS PER SIDE.

VALVES INSTALLED PER MANUFACTURER'S RECOMMENDATION ON DIP AND PVC.

CITY OF COCOA — Brevard County, Florida — UTILITIES DEPARTMENT — ENGINEERING DIVISION

VALVE INSERT FOR A.C. PIPE

DRAWN BY: J. WILLIAMS	SCALE: NOT TO SCALE
CHECKED BY: P. DAVIS	DATE: MARCH 2020
DESIGN BY:	SHEET: 1 OF 1
ACAD NAME: VALVE INSERT	

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CONSULTING - ENGINEERING - LAND SURVEYING

312 SOUTH HARBOR CITY BOULEVARD, SUITE 4
MELBOURNE, FLORIDA 32901
PHONE: (321) 725-3674 FAX: (321) 723-1159

CERTIFICATE OF PROFESSIONAL ENGINEERS BUSINESS AUTHORIZATION: 4905
CERTIFICATE OF LAND SURVEYING BUSINESS AUTHORIZATION: LB0004905

SCOTT M. GLAUBITZ, P.E. & P.L.S.
STATE OF FLORIDA, No. 33659 No. 4151

HASSAN A. KAMAL, P.E.
STATE OF FLORIDA, No. 41951

VERTICAL DATUM: NAVD88

⚠ CITY COMMENTS	10/30/20
DATE:	08/31/20
DESIGN/DRAWN:	ALS/DRB

PROJECT TITLE

CIRRUS

SHEET TITLE

CITY OF COCOA DETAILS

PROJECT NO. 11545

DRAWING NO. 11545_400_014

SHEET 14 of 19

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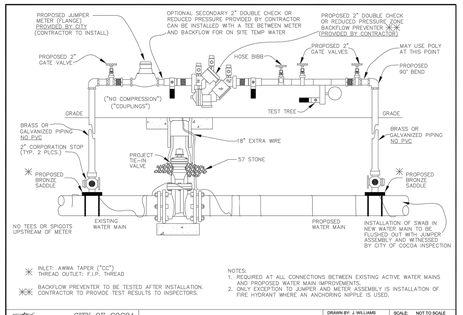
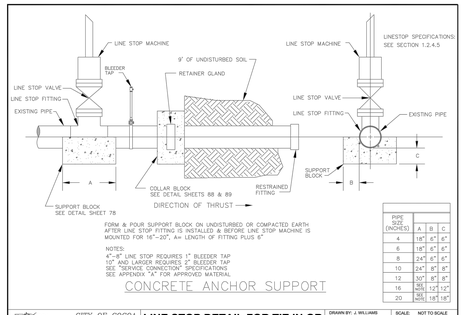


CITY OF COCOA, Brevard County, Florida, UTILITIES DEPARTMENT, ENGINEERING DIVISION

JUMPER METER ASSEMBLY

DRAWN BY: J. WILLIAMS	SCALE: NOT TO SCALE
CHECKED BY: P. DAVIS	DATE: MARCH 2020
DESIGN BY:	SHEET: 1 OF 1
ACAD NAME: JUMPER METER ASSEMBLY	



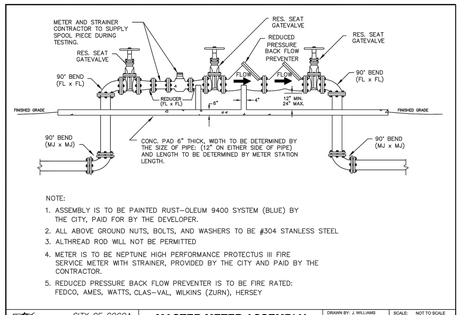
CONCRETE ANCHOR SUPPORT

PIPE SIZE (INCHES)	A	B	C
4	18"	6"	6"
6	18"	6"	6"
8	24"	6"	6"
10	24"	8"	8"
12	30"	8"	8"
16	36"	12"	12"
20	48"	18"	18"

CITY OF COCOA, Brevard County, Florida, UTILITIES DEPARTMENT, ENGINEERING DIVISION

LINE STOP DETAIL FOR TIE IN OR CAPPING EXISTING WATER MAIN

DRAWN BY: J. WILLIAMS	SCALE: NOT TO SCALE
CHECKED BY: P. DAVIS	DATE: MARCH 2020
DESIGN BY:	SHEET: 1 OF 1
ACAD NAME: LINE STOP DETAIL FOR TIE IN OR CAPPING EXISTING WATER MAIN	

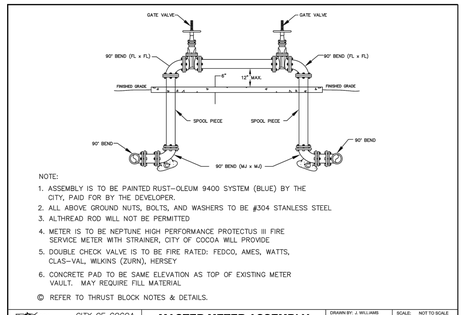


NOTE:
1. ASSEMBLY IS TO BE PAINTED RUST–OLEUM 9400 SYSTEM (BLUE) BY THE CITY, PAID FOR BY THE DEVELOPER.
2. ALL ABOVE GROUND NUTS, BOLTS, AND WASHERS TO BE #304 STANLESS STEEL
3. ALTHREAD ROD WILL NOT BE PERMITTED
4. METER IS TO BE NEPTUNE HIGH PERFORMANCE PROTECTUS III FIRE SERVICE METER WITH STRAINER, PROVIDED BY THE CITY AND PAID BY THE CONTRACTOR.
5. REDUCED PRESSURE BACK FLOW PREVENTER IS TO BE FIRE RATED: FEDCO, AMES, WATTS, CLAS–VAL, WILKINS (ZURN), HERSEY

CITY OF COCOA, Brevard County, Florida, UTILITIES DEPARTMENT, ENGINEERING DIVISION

MASTER METER ASSEMBLY METER STATION DETAIL

DRAWN BY: J. WILLIAMS	SCALE: NOT TO SCALE
CHECKED BY: P. DAVIS	DATE: MARCH 2020
DESIGN BY:	SHEET: 3 OF 3
ACAD NAME: MASTERMETERSTATIONDETAIL V2	



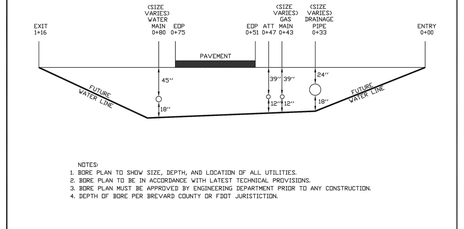
NOTE:
1. ASSEMBLY IS TO BE PAINTED RUST–OLEUM 9400 SYSTEM (BLUE) BY THE CITY, PAID FOR BY THE DEVELOPER.
2. ALL ABOVE GROUND NUTS, BOLTS, AND WASHERS TO BE #304 STANLESS STEEL
3. ALTHREAD ROD WILL NOT BE PERMITTED
4. METER IS TO BE NEPTUNE HIGH PERFORMANCE PROTECTUS III FIRE SERVICE METER WITH STRAINER, CITY OF COCOA WILL PROVIDE
5. DOUBLE CHECK VALVE IS TO BE FIRE RATED: FEDCO, AMES, WATTS, CLAS–VAL, WILKINS (ZURN), HERSEY
6. CONCRETE PAD TO BE SAME ELEVATION AS TOP OF EXISTING METER VAULT, MAY REQUIRE FILL MATERIAL

© REFER TO THRUST BLOCK NOTES & DETAILS.

CITY OF COCOA, Brevard County, Florida, UTILITIES DEPARTMENT, ENGINEERING DIVISION

MASTER METER ASSEMBLY DOUBLE CHECK BYPASS

DRAWN BY: J. WILLIAMS	SCALE: NOT TO SCALE
CHECKED BY: P. DAVIS	DATE: MARCH 2020
DESIGN BY:	SHEET: 3 OF 3
ACAD NAME: MASTERMETERSTATIONDETAIL V3	



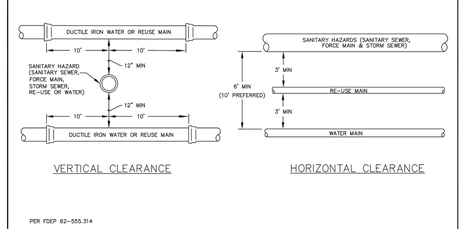
NOTES:
1. ALTHREAD ROD WILL NOT BE PERMITTED.
2. FIRE DEPARTMENT CONNECTIONS (FDC) WILL NOT BE PERMITTED ON ABOVE GROUND PIPING.
3. ASSEMBLY TO BE PAINTED RUST–O–THANE RED NO. 9405–1611
4. ALL ABOVE GROUND BOLTS AND NUTS TO BE 18–8 TYPE 304 STAINLESS STEEL.
5. CITY OWNS AND MAINTAINS TO BOTTOM FITTING ON DOWNSTREAM SIDE.
6. FOUR TO SIX BOLLARDS MAY BE REQUIRED, SPACED 18" FROM CENTERLINE.
7. A FIRELINE CONTRACTOR SHALL BE REQUIRED FROM THE FIRELINE POINT OF SERVICE.

© REFER TO "THRUST BLOCK" NOTES & DETAILS.

CITY OF COCOA, Brevard County, Florida, UTILITIES DEPARTMENT, ENGINEERING DIVISION

"N" PATTERN DOUBLE CHECK DETECTOR ASSEMBLY

DRAWN BY: J. WILLIAMS	SCALE: NOT TO SCALE
CHECKED BY: P. DAVIS	DATE: MARCH 2020
DESIGN BY:	SHEET: 1 OF 1
ACAD NAME: N PATTERN DOUBLE CHECK DETECTOR ASSEMBLY	



STEP–1 PLACE TUBE OF POLYETHYLENE MATERIAL AROUND PIPE PRIOR TO LOWERING PIPE INTO TRENCH.

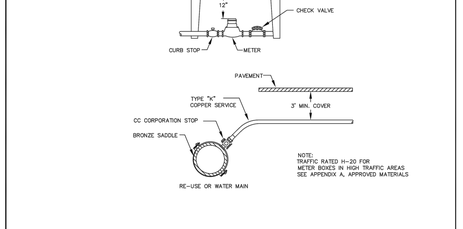
STEP–2 PULL THE TUBE OVER THE LENGTH OF THE PIPE. TAPE TUBE TO PIPE AT JOINT. FOLD MATERIAL AROUND THE ADJACENT SPIGOT END AND WRAP WITH THREE HORIZONTAL TURNS OF TWO–INCH WIDE PLASTIC TAPE TO HOLD PLASTIC TUBE AROUND SPIGOT END.

STEP–3 ADJACENT TUBE OVERLAPS FIRST TUBE AND IS SECURED WITH PLASTIC ADHESIVE TAPE. THE POLYETHYLENE TUBE MATERIAL COVERING THE PIPE WILL BE LOOSE. EXCESS MATERIAL SHALL BE NEATLY DRAWN UP AROUND THE PIPE BARREL, FOLDED INTO AN OVERLAP ON TOP OF THE PIPE AND HELD IN PLACE BY MEANS OF PIECES OF THE PLASTIC TAPE AT APPROXIMATELY THREE TO FIVE FOOT INTERVALS.

CITY OF COCOA, Brevard County, Florida, UTILITIES DEPARTMENT, ENGINEERING DIVISION

POLYETHYLENE WRAP

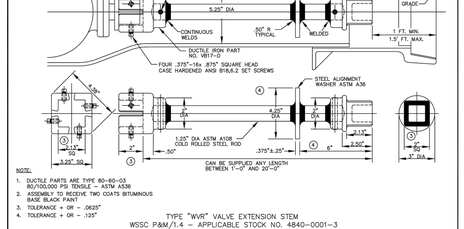
DRAWN BY: J. WILLIAMS	SCALE: NOT TO SCALE
CHECKED BY: P. DAVIS	DATE: MARCH 2020
DESIGN BY:	SHEET: 1 OF 1
ACAD NAME: POLY WRAP	



CITY OF COCOA, Brevard County, Florida, UTILITIES DEPARTMENT, ENGINEERING DIVISION

SOLID SLEEVE DETAIL

DRAWN BY: J. WILLIAMS	SCALE: NOT TO SCALE
CHECKED BY: P. DAVIS	DATE: MARCH 2020
DESIGN BY:	SHEET: 1 OF 1
ACAD NAME: SOLID SLEEVE DETAIL	



A–RESTRAINED JOINT
B–45° BEND (MJ)

* ALL PIPING UNDER STORM DRAINAGE TO BE DIP PER CITY SPECIFICATIONS
ALL PIPE CLEARANCES TO BE PER FDEP SPECIFICATIONS (CHAPTER – 62 – 610 FAC)

PER FDEP 62–555.314

CITY OF COCOA, Brevard County, Florida, UTILITIES DEPARTMENT, ENGINEERING DIVISION

STORM DRAIN CROSSING

DRAWN BY: J. WILLIAMS	SCALE: NOT TO SCALE
CHECKED BY: P. DAVIS	DATE: MARCH 2020
DESIGN BY:	SHEET: 1 OF 1
ACAD NAME: STORM DRAIN CROSSING	

NOTE: FOR VALVE ASSEMBLY, SEE "VALVE" DETAIL

CITY OF COCOA, Brevard County, Florida, UTILITIES DEPARTMENT, ENGINEERING DIVISION

TAPPING SADDLE AND VALVE

DRAWN BY: J. WILLIAMS	SCALE: NOT TO SCALE
CHECKED BY: P. DAVIS	DATE: MARCH 2020
DESIGN BY:	SHEET: 1 OF 1
ACAD NAME: TAPPING SADDLE AND VALVE	

THRUST BLOCK NOTES

1.) WRAP ALL FITTINGS WITH POLYETHYLENE FILM BEFORE POURING THRUST BLOCK, MARKING CERTAIN TO KEEP CONCRETE AWAY FROM ALL BOLTS, GLANDS, AND FLANGES.

2.) THRUST BLOCKS TO BE POURED AGAINST UNDISTURBED EARTH.

3.) REQUIRED VOLUMES OF BEARING AREAS TO BE AS SHOWN IN CHART. ADJUSTMENTS, IF NEEDED, WILL BE ALLOWED TO CONFORM TO TEST PRESSURE AND ALLOWABLE SOIL BEARING STRESS AS SHOWN IN SPECIFICATIONS.

4.) BEARING AREA FOR TRANSIT BLOCKS ON HORIZONTAL BENDS IS BASED ON A TEST PRESSURE OF 150 P.S.I. AND SOIL BEARING STRESS OF 2,000 P.S.F., THE DEPTH TO THE THRUST BLOCK BASE TO BE EQUAL TO OR GREATER THAN TWICE THE HEIGHT. (EXAMPLE: IF BLOCK IS 2' THICK, THE BASE IS TO BE NO GREATER THAN 4' BELOW GRADE.)

5.) VERTICAL BEND THRUST BLOCKS TO BE THE SAME AS HORIZONTAL BENDS.

6.) BEARING AREA OF THRUST BLOCK TO BE NOT LESS THAN ONE SQUARE FOOT.

MINIMUM BEARING AREA (SQ. FT.)

LETTER	PIPE SIZE 4"	6"	8"	10"	12"	16"	20"
A	1–1/2	2–3/4	5	7–1/4	10–1/4	18	27–1/2
B(22–1/2)	3/4	1	2	3	4	7	11
B (45°)	1	2–1/4	3–3/4	5–1/2	8	13–3/4	21
C	2	4	7	11–1/4	16–1/2	25–1/4	39

THE FIGURES IN THIS TABLE REPRESENT AREA OF CONCRETE BLOCKING AGAINST THE VERTICAL TRENCH WALL OF UNDISTURBED EARTH IN SQUARE FEET AT 2000 P.S.F. SOIL BEARING CAPACITY.

CITY OF COCOA, Brevard County, Florida, UTILITIES DEPARTMENT, ENGINEERING DIVISION

THRUST BLOCK NOTES & DETAILS

DRAWN BY: J. WILLIAMS	SCALE: NOT TO SCALE
CHECKED BY: P. DAVIS	DATE: MARCH 2020
DESIGN BY:	SHEET: 1 OF 1
ACAD NAME: THRUST BLOCK NOTES & DETAILS	

CITY OF COCOA, Brevard County, Florida, UTILITIES DEPARTMENT, ENGINEERING DIVISION

THRUST COLLAR WATER AND RECLAIMED

DRAWN BY: J. WILLIAMS	SCALE: NOT TO SCALE
CHECKED BY: P. DAVIS	DATE: MARCH 2020
DESIGN BY:	SHEET: 1 OF 2
ACAD NAME: THRUST COLLAR WATER AND RECLAIMED 1 OF 2	

SCHEDULE OF DIMENSIONS AND MATERIALS

PIPE SIZE (INCHES)	DIMENSIONS (FT.) A	B	C	D	TIE RODS REQ'D DIA. (in.)	NO.
4	2.0	2.0	1.0	2.0	3/4	2
6	2.0	2.0	1.0	4.0	3/4	2
8	3.0	3.0	1.0	5.0	3/4	2
10	4.0	3.0	1.0	8.0	3/4	4
12	5.0	3.0	1.0	10.0	3/4	4
16	*	*	*	*	*	*
20	*	*	*	*	*	*
24	*	*	*	*	*	*

NOTE: THRUST COLLAR AREAS TO BE COMPUTED ON BASIS OF 2000 LBS/SF SOIL RESTRAINT BEARING. SOIL DENSITY ASSUMED 120 PCF. SOIL COHESION 20°.

NOTES:
1. ADDITIONAL REINFORCEMENTS SHALL BE AS SPECIFIED BY THE ENGINEER.
2. MINIMUM COMPRESSIVE STRENGTH FOR CONCRETE SHALL BE 3000 PSI.
3. BEDDING, BACKFILL AND COMPACTION SHALL BE AS SPECIFIED ELSEWHERE IN THE STANDARD DRAWINGS.
4. ALL FORM BOARDS SHALL BE REMOVED PRIOR TO BACKFILL.
5. NO ALLOWANCE SHALL BE MADE FOR FRICTION BETWEEN THE PIPE WALL AND THE THRUST COLLAR.
6. DESIGN PRESSURE: 150 PSI.
7. TIE RODS TO BE 3/4" SS 18-8 TYPE 304.

★ TO BE DESIGNED BY ENGINEER OF RECORD.

CITY OF COCOA, Brevard County, Florida, UTILITIES DEPARTMENT, ENGINEERING DIVISION

THRUST COLLAR WATER AND RECLAIMED

DRAWN BY: J. WILLIAMS	SCALE: NOT TO SCALE
CHECKED BY: P. DAVIS	DATE: MARCH 2020
DESIGN BY:	SHEET: 2 OF 2
ACAD NAME: THRUST COLLAR WATER AND RECLAIMED 2 OF 2	

NOTES:
1. BORE PLAN TO SHOW SIZE, DEPTH, AND LOCATION OF ALL UTILITIES.
2. BORE PLAN TO BE IN ACCORDANCE WITH LATEST TECHNICAL PROVISIONS.
3. BORE PLAN MUST BE APPROVED BY ENGINEERING DEPARTMENT PRIOR TO ANY CONSTRUCTION.
4. DEPTH OF BORE PER BREVARD COUNTY OR FDOT JURISTICTION.

CITY OF COCOA, Brevard County, Florida, UTILITIES DEPARTMENT, ENGINEERING DIVISION

TYPICAL BORE PLAN

DRAWN BY: J. WILLIAMS	SCALE: NOT TO SCALE
CHECKED BY: P. DAVIS	DATE: MARCH 2020
DESIGN BY:	SHEET: 1 OF 1
ACAD NAME: TYPICAL BORE PLAN	

1. IF DEPTH IS 30" OR >, PIPE MAY BE PVC PER CITY SPECIFICATIONS
2. IF DEPTH IS 30" TO 24", PIPE TO BE DIP PER CITY SPECIFICATIONS

VERTICAL CLEARANCE

HORIZONTAL CLEARANCE

PER FDEP 62–555.314

CITY OF COCOA, Brevard County, Florida, UTILITIES DEPARTMENT, ENGINEERING DIVISION

TYPICAL REQUIRED SEPARATION

DRAWN BY: J. WILLIAMS	SCALE: NOT TO SCALE
CHECKED BY: P. DAVIS	DATE: MARCH 2020
DESIGN BY:	SHEET: 1 OF 1
ACAD NAME: TYPICAL REQUIRED SEPARATION	

CITY OF COCOA, Brevard County, Florida, UTILITIES DEPARTMENT, ENGINEERING DIVISION

TYPICAL 3/4"– 2" SERVICE LINE

DRAWN BY: J. WILLIAMS	SCALE: NOT TO SCALE
CHECKED BY: P. DAVIS	DATE: MARCH 2020
DESIGN BY:	SHEET: 1 OF 1
ACAD NAME: TYPICAL SERVICE LINE	

NOTE:
1. DUCTILE PARTS ARE TYPE 80–60–03 80,700,000 PSI TENSILE – ASTM A536
2. ASSEMBLY TO RECEIVE TWO COATS BITUMINOUS BASE BLACK PAINT
3. TOLERANCE + OR – .0625"
4. TOLERANCE + OR – .125"

TYPE "WVR" VALVE EXTENSION STEM
WSSC P&M/1.4 – APPLICABLE STOCK NO. 4840–0001–3

CITY OF COCOA, Brevard County, Florida, UTILITIES DEPARTMENT, ENGINEERING DIVISION

VALVE EXTENSION STEM FOR W.S.S.C. VALVE BOXES

DRAWN BY: J. WILLIAMS	SCALE: NOT TO SCALE
CHECKED BY: P. DAVIS	DATE: MARCH 2020
DESIGN BY:	SHEET: 1 OF 1
ACAD NAME: VALVE EXTENSION STEM	

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CONSULTING - ENGINEERING - LAND SURVEYING
312 SOUTH HARBOR CITY BOULEVARD, SUITE 4
MELBOURNE, FLORIDA 32901
PHONE: (321) 725-3674 FAX: (321) 723-1159
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STATE OF FLORIDA, No. 41951

VERTICAL DATUM: NAVD88

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1 CITY COMMENTS	10/30/20
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DESIGN/DRAWN:	ALS/DRB

PROJECT TITLE
CIRRUS

SHEET TITLE
CITY OF COCOA DETAILS

PROJECT NO.
11545

DRAWING NO.
11545_400_015

SHEET
15 of 19

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SYMBOLS SHOWN ARE GRAPHIC IN NATURE; DUE TO SCALE, ALL DESIGN ELEMENTS ARE NOT NECESSARILY SHOWN ON PLAN VIEWS. THE CONTRACTOR SHALL ALSO REFER TO SPECIFICATION AND DETAIL SHEETS AS WELL AS THE COMPLETE PLAN SET.

1.1 GENERAL

These Technical Provisions and Standard Details identifies design, installation, inspection, and acceptance specifications to be used for water, wastewater, and reclaimed water systems that will be maintained and operated by the City of Cocoa. All potable water, wastewater, and reclaimed water mains and appurtenances must be installed in accordance with this Manual, the City of Cocoa Cross Connection Control Program Manual, the City of Cocoa Utilities Handbook, and the approved plans.

Contractor requirements include:

Furnishing all labor, materials, tools and equipment necessary or incidental to the construction.

Obtaining and paying for all permits, inspections, and other official fees in connection with the work.

Arranging a pre-construction conference with the Engineering Inspection Division. **All fees must be paid prior to the pre-construction meeting.** It is required that the pre-construction meeting be held prior to ordering materials.

Scheduling materials inspection (24-hour notice), open ditch inspection, pressure/leakage test, and final inspection.

Provide all documents per the project requirement letter, including but not limited to As Built Drawings, Bills of Sale, Easements, etc.

Make certain that no public water/wastewater lines are placed on private property.

Any deviation from these requirements must be approved in writing by the Utilities Director or his designee prior to commencement of construction.

Fees charged by the City are set by City Council by resolution and are listed on the appendix "Water Service Rates and Charges" made a part of the Utilities Handbook. Fees are subject to change without notice. The most current fees will be charged.

The Utilities Department and Engineering Division are located at 351 Shearer Blvd., Cocoa, Florida, 32922. The telephone number is (321) 433-8701; facsimile number is (321) 433-8708.

1.2 DEFINITIONS

The term "**approved equal**" is used to mean a part or item that has been approved in writing by the Technical Provision and Standard Details Advisory Committee or the Utilities Director. A written request must be made in order to have an item accepted as an approved equal. Written specifications on the part or item must be furnished with the request.

Approved Tapping/Linestop Contractor - A Contractor who has been approved by the Engineering Division to perform taps or linestops within the Cocoa Water System. A current list is maintained and available through the Engineering Division.

Backflow Preventer Assembly - A backflow preventer assembly, also called a cross connection control (CCC) device, is a mechanical or non-mechanical device used to prevent the flow of water from a non-potable source to the potable water distribution system. Approved backflow preventers are testable assemblies composed of two independently acting, approved check valves, including tightly closing resilient seated shutoff valves attached at each end of the assembly, and fitted with properly located resilient seated test cocks.

Canal - A trench, the bottom of which is normally covered by water, with the upper edges of its two sides normally above water.

City - Means the City of Cocoa.

Collection Mains - Wastewater gravity mains.

Competent Person - A person who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

Distribution Main - Any water main twelve inches (12") and smaller.

Domestic - Means made or manufactured in the USA.

Drainage Ditch or Irrigation Ditch - A man-made trench which is dug for the purpose of draining water from the land or for transporting water for use on the land and which is not built for navigational purposes.

Force Main - Wastewater main under pressure.

Manual - City of Cocoa Utilities Technical Specification and Standard Details Manual

Normal Working Day - Monday through Friday, excluding CITY holidays.

Normal Working Hours - Hours are between the hours of 8:00 a.m. to 5:00 p.m. of a NORMAL WORKING DAY.

Passivated - Treated or coated metal to reduce the chemical reactivity of its surface.

Stainless Steel - A steel alloy with a minimum of 10.5% to 11% chromium.

Substantial Completion - The point when the construction project has been finished to the point that the City of Cocoa can use the project for the purpose it was intended.

Swale - A manmade trench which:

A. Has a top width-to-depth ratio of the cross-section equal to or greater than 6:1, or side slopes equal to or greater than three feet horizontal to one foot vertical;
B. Contains contiguous areas of standing or flowing water only following a rainfall event; C. Is planted with or has stabilized vegetation suitable for soil stabilization, stormwater treatment, and nutrient uptake;
D. Is designed to take into account the soil erodibility, soil percolation, slope, slope length, and drainage area to prevent erosion and reduce pollutant concentration of any discharge.

Technical Provision and Standard Details Committee - Committee whose members shall consist of the manager, or their designee, of the following UTILITIES staff: Engineering, Inspections, Water Field Operations, and Sewer Field Operations. The committee evaluates and proposes revisions for the design standards, specifications, drawings, products and procedures for the Manual.

Transmission Main - Any water main sixteen inch (16") and larger. Fourteen-inch (14") pipelines are not acceptable.

Utilities - Utilities Department of the City of Cocoa, Cocoa, Florida, and/or its designated representative(s).

Utilities Handbook - The City of Cocoa Utilities Handbook produced by the Customer Service Division of the Finance Department.

Whenever a specification from a specific source is cited, the most current revision of that specification will be used. **The word "shall" is mandatory, and the word "may" is permissive.**

Unless otherwise specified, "**City**" means City of Cocoa; "**Utilities Department**" means City of Cocoa Utilities Department; "**Engineering Division**" means City of Cocoa Utilities Engineering Division, **"Inspections or Inspector"** means City of Cocoa Utilities Engineering Inspections Division.

1.3 ABBREVIATIONS

American Association of State Highway and Transportation Officials - AASHTO
Asbestos Cement - AC
Association of PVC Pipe Manufacturers - Uni-Bell American National Standards Institute - ANSI American Society of Civil Engineers - ASCE American Society of Mechanical Engineers - ASME American Society for Testing and Materials - ASTM American Water Works Association - AWWA
American Water Works Association Tapered Thread - CC American Society of Sanitary Engineers - ASSE
Automatic Transfer Switch - ATS
City of Cocoa - CoC Copper Clad Steel - CCS
Copper Development Association - CDA Cross Connection Control - CCC Dimension Ratio - DR
Double Check Backflow Assembly - DC Double Check Detector Assemblies - DCDA Dry Film Thickness - DFT
Ductile Iron Pipe Research Association - DIPRA Ductile Iron Pipe - DIP
Engineer of Record - EOR
Florida Administrative Code - FAC
Florida Department of Environmental Protection - FDEP Florida Department of Transportation - FDOT
Florida East Coast Rail Road - FECRR
Foundation for Cross-Connection Control and Hydraulic Research - FCCCHR Flange - FL
Factory Mutual - FM
High-Density Polyethylene - HDPE Horizontal Directional Drilling - HDD Jack and Bore - J&B
Maintenance of Traffic - MOT
Manual on Uniform Traffic Control Devices - MUTCD National Association of Corrosion Engineers - NACE National Fire Protection Association - NFPA
National Sanitation Foundation - NSF National Standard Thread - NST
Non-rising stem - NRS
Original Equipment Manufacturer - OEM Outside Screw and Yoke - OS&Y
National Pollution Discharge Elimination System - NPDES Plain End - PE
Polyvinylchloride - PVC
Precautionary Boil Water Notice - PBWN Portable Changeable Message Signs - PCMS
Pre-stressed Concrete Cylinder Pressure Pipe - PCCP Project Manager - PM
Pounds per Square Inch - PSI Raised Pavement Marker - RPM
Reduced Pressure Backflow Assembly - RP Reduced Pressure Detector Assembly- RPDA Reinforced Concrete Pressure Pipe - RCP Stainless Steel - SS
Technical Provision and Standard Details - TPSD Traffic Control Plan - TCP
Underwriters Laboratories - UL Unified Numbering System - UNS Variable Frequency Drive - VFD

2.1 WATER MAIN CROSSINGS

2.1.1 GENERAL

In all cases where sanitary gravity or force mains cross water mains the crossing shall meet the vertical and horizontal separation requirements of FAC Rule 62-555.314. When separation requirements cannot be met, the Engineer of Record must propose an alternative solution that meets the requirements of FAC 62-555.314 for approval by the Engineering Division. The water main should cross above the sanitary main, when the water main must cross below the sanitary main, the minimum separation shall be 12 inches.

2.2 MATERIALS SPECIFICATIONS

2.2.1 PIPE

2.2.1.1 Polyvinyl Chloride Pressure Pipe, 4" - 12"

Polyvinyl chloride pressure pipe (sizes 4" through 12") will be cast iron pipe equivalent outside diameter Class 235 (DR 18) conforming to the American Water Works Association's (AWWA) specification C900 and will be blue or white in color. Pipe will be in standard 20-foot lengths. All joints will be of the elastomeric-gasket type with thickened, integral solid-wall bell or coupling with the same DR as the barrel. All PVC pipe and couplings will bear the UL label and NSF approval for potable water.

2.2.1.2 Fusible Polyvinyl Chloride Pipe, 4" - 12"

Polyvinyl chloride pressure pipe (size 4" through 12") will be cast iron pipe equivalent outside diameter and a pressure rating of 235 PSI (DR 18) conforming to AWWA specification C900 and will be blue or white in color. Fusible PVC pipe shall be supplied by Underground Solutions, Inc. It shall be installed in accordance with the suppliers' specifications. All PVC pipe will bear the UL label and NSF approval for potable water.

2.2.1.3 Ductile Iron Pipe

Ductile iron pipe will be cement-lined pressure Class 350 for 12-inch diameter and smaller and Class 250 for 16-inch and larger conforming to AWWA specification C151. Water main and storm drain crossing conflicts will be properly designed by the project engineer and approved by theUtilities Department prior to installation. Water mains that are less than 10 feet apart from building foundations or other permanent objects will be ductile iron pipe. In no case will water mains be located less than 5 feet from foundations. The above distances will be doubled for water mains larger than 8" in diameter. Polyethylene sleeve conforming to AWWA specification C105 will be provided for all installations. The polyethylene sleeve will be sealed with tape and shall be blue for water mains.

2.2.1.4 High Density Polyethylene (HDPE) Pipe

HDPE pipe is generally not accepted in the City of Cocoa water system, except as a carrier pipe for a pressurized utility main.

2.2.1.5 Reclaimed Water

PVC pipe installed in reclaimd water systems will be Class 235 (DR 18) conforming to AWWA specification C900 and will be purple in color. Ductile iron pipe installed in the reclaimed water system will be pressure Class 350 for 12" and smaller and pressure Class 250 for 16" and larger, provided 3 feet of cover can be maintained. Where cover is less than 3 feet, pressure Class 350 is required. Polyethylene sleeve conforming to AWWA specification C105 will be provided for all installations. The polyethylene sleeve will be sealed with tape and shall be purple for reclaimed water mains.

2.2.2 VALVES, VALVE BOXES, AND VALVE EXTENSIONS

2.2.2.1 Resilient Seat Gate Valves, 4" - 36"

Resilient seat gate valves will have mechanical joint ends as manufactured by **American Flow Control; AVK; M&H; U.S. Pipe; Clow; Mueller** or an approved equal. The resilient seat gate valves must conform to AWWA specification C509 or C515 and be manufactured in the U.S.A. Resilient seats will be of natural or synthetic rubber and be fully encapsulated to gate. Valves will have 18-8 Type 304 Stainless Steel bolts and nuts. The interior and exterior of the valve body will be fusion-bonded epoxy coated in accordance with AWWA specification C550 in order to provide a corrosion-resistant seat. The coating must be applied in a manner to withstand the action of line fluids and operation of the sealing gate under long-term service. Valve seats must seal by compression only. Wedging or sliding of the resilient seat is not acceptable. Valves will be supplied with 2"-square operating nuts and be designed to provide a bubble tight seal regardless of direction of flow. Opening the valve will be in the counterclockwise direction. Valves 16" and larger will have Bevel Gear Operators. For gate valves 16" and larger to be stood up straight, the 2" operating nut must have 12" of cover. Engineer of Record or Contractor must demonstrate the 12" of cover over the 2" operating nut can be achieved by showing all pertinent dimensions. Tapping valves shall have a centering ring.

2.2.2.2 Butterfly Valves, 16" and Larger

Butterfly valves shall be used for above ground service. Butterfly valves shall have flanged ends, be rubber seated, 90o tight closing type, short body. The interior and exterior will be fusion-bonded epoxy coated in accordance with AWWA specification C550. The valve shaft will be of 316 Stainless Steel. Body dimensions and minimum shaft diameter will be in accordance with Tables 1 and 3 of AWWA specification C504. The valve seat will be of molded natural or synthetic rubber, will be mechanically secured to the disc or to the valve body, and will mate against a stainless-steel seat surface. The gear ratio will be such as to require not more than 50-foot pounds of input torque to operate the valve against the worst case of a water flow velocity of 10 feet per second at a pressure of 100 psi differential. A torque-limiting device will be supplied if the allowable operator input is less than 450-foot pounds. Butterfly valves will have a factory installed hand wheel. The valve will open when the operator nut is turned counterclockwise. **Butterfly valves will not be used for buried service.**

2.2.2.3 Valves, 2"

Two-inch valves for use with the 2" blow-off gate valve will be rated at 125 SWP or 200 WOG. All 2" gate valves must meet all EPA and DEP requirements regarding lead and zinc contents. Brass fittings and 2" brass wheel valves are shall be used on blow-offs. All valves must be manufactured in the U.S.A.

2.2.2.4 Valve Boxes

Valve boxes and lids must be manufactured in the U.S.A. Boxes and lids must be structurally equal to those produced by **East Jordan Iron Works** or **Tyler** and must have 5-1/4" minimum inside diameter. Cast iron valve boxes will consist of a circular cast iron top and bottom section. The depth must be determined, and the appropriate valve box must be installed. No PVC or Ductile is permitted in the valve box. Boxes must be set flush with finished ground surface in such a manner as to permit easy use of a valve wrench and to prevent surface loads from being transmitted to the valve or pipe. Box sections must be telescopic and adjustable. Valve box lids should have the word "WATER" or "SEWER" or "REUSE", as appropriate, cast on the top. A concrete pad (24" L x 24" W x 4" D) will be poured around all boxes at finished grade level unless the valve is located in a paved roadway or parking lot. A Valve identification plate engraved to indicate the type, size, and number of turns will be securely anchored to the concrete pad. Valve identification plates for valves 12" and larger will also indicate the torque necessary for actuation.

2.2.2.5 Valve Extensions

If the depth of the valve nut is greater than 48" below grade, or 30" below grade and under the water table, a valve extension stem will be required. The extension will have a centering collar and will be mechanically attached to the valve operating nut, such as extensions manufactured by the General Engineering Company, Model #4840-0001-3, or an approved equal to be determined by the Engineering Supervisor or his/her designee.

2.2.2.6 Valve Box Debris Shield

All buried valves 4-inch through 12-inch requiring a valve box shall be furnished with a valve box shield (alignment device). The device shall minimize debris infiltration and center the valve box over the operating nut. The device shall be of HDPE or plastic and colored white or black. It shall be furnished in two pieces that will lock together under the operating nut without requiring the removal of the operating nut. The device shall not affect the operation of the valve. No one-piece device will be accepted. The device shall be **Box Lok**, **American** or approved equal.

2.2.2.7 Insert Valve Specification

The Insert Valve shall conform to the following:

The Ductile Iron 250 p.s.i.g. Insert Valve shall be a Resilient Wedge Gate Valve designed for use in potable water, raw water, reclaimed water, wastewater and backflow control systems. The host pipe shall not be a permanent component of the Insert Valve. The ductile iron body, bonnet, and wedge provide strength and a pressure rating that meets or exceeds the requirements of AWWA C515. Insert Valve shall be ductile iron construction meeting ASTM A536 Grade 65-45-12.Sizes 12" and smaller must be capable of working on Cast/Grey Iron or Ductile Iron Class A, B, C and D, IPS PVC, C900 and C909 PVC, Steel, AC pipe diameters without changing either top or bottom portion of split valve body. The Insert Valve shall have a 250 psig maximum working pressure. The pressure rating markings must be cast into the body of the insert valve. The construction of the Resilient Wedge shall comply with AWWA C509 requirements. The ductile iron wedge shall be fully encapsulated with EPDM rubber by a high pressure and high temperature compression or injection mold process. The resilient wedge shall seat on the valve body and not the pipe to obtain the optimum seating and flow control results. The resilient wedge shall be totally independent of the carrier pipe. The resilient wedge shall not come into contact with the carrier pipe or depend on the carrier pipe to create a seal. The Resilient wedge must ride inside the body channels to maintain wedge alignment throughout its travel. The insert valve is fully epoxy coated on the interior and the exterior. Valve shall be coated with a minimum of 10 mils epoxy in compliance with AWWA C550 and certified to ANSI/NSF-61. The stuffing box, operating stem and resilient wedge (complete bonnet and all moving parts) shall be removable, repairable and or replaceable under pressure.

See "Appendix A" Approved Materials for approved Insert Gate Valves.

2.2.3 BACKFLOW PREVENTERS

2.2.3.1 General

All connections to the City of Cocoa potable water system shall contain a backflow preventer assembly as required in the "City of Cocoa Cross Connection Control Program Manual". Backflow preventer assemblies shall be in accordance with AWWA specification C510, ASSE 1048, UL 1469, and as listed in "Appendix A" of this document. All backflow preventers shall be installed per Standard Details in "Appendix B". Backflow preventers on fire line and commercial services shall have test certifications submitted and approved prior to final inspection.

Backflow preventers will have interior fusion bonded epoxy coating 5 to 12 mils and will be installed above grade in accordance with manufacturer's recommendations on a concrete slab adjacent to the meter. Check valves must have bronze seats.

Commercial Services: Cross connection control device required for commercial service, including multi-family residences, shall be a reduced pressure (RP) backflow preventer unless otherwise approved by the Engineering Division.

Residential Services: Cross connection control device required for residential service shall be a dual check backflow preventer.

Construction Sites: Cross connection control device required for temporary construction jumpers shall be a double check backflow preventer. The Contractor shall provide test certifications on the jumper backflow preventer before the jumper is placed into service.

2.2.3.2 Fire Services

Cross connection control devices for fire line systems shall be double check detector assemblies (DCDA) or reduced pressure detector assemblies (RPDA). DCDA and RPDA shall meet the requirements of the Florida Building Code and must be supplied with a ¾-inch or larger bypass assembly. DCDA will be accepted as a complete approved assembly in accordance with the section on "Backflow Prevention and Cross-Connection Control" in the Utilities Handbook. The Engineering Division will inspect the interior of the DCDA prior to installation. DCDA must be installed horizontally above ground in a grassed or non-traffic area. The DCDA will be installed with 24" minimum and 30" maximum clearance from finished grade. "N" shaped DCDA will be accepted on a case-by-case basis. Fire lines requiring an RP2 will be handled on a case-by-case base. The Engineering Division shall paint the DCDA, to be paid for by the Developer/Contractor.

2.2.3.3 Meter Station Backflow Preventer

Backflow Preventers for the large meter stations (3-inch and larger) are a Reduced Pressure Zone Assembly and manufactured in accordance with AWWA C511. The assembly will be installed so as the relief valve opening will be a minimum of 12" above concrete slab. If the meter station is in a planter, the top of the planter is considered the flood rim and the relief valve opening shall be 12" above the concrete slab. The Engineering Division shall paint the meter station assembly, to be paid for by the Developer/Contractor.

2-inch meter stations may be allowed on a case-by-case basis as approved by the Engineering Division.

2.2.3.4 Backflow Preventer Certification Test

The Contractor will provide test certifications on the jumper backflow preventer before jumper is placed into service. Backflow preventers on fire-line and meter stations will have test certifications submitted and approved prior to final inspection.

2.2.4 FITTINGS

All fittings must be of the mechanical joint type with an approved joint restraint, or push-on joint with a gasket joint field restraint system. All fittings must be manufactured in the U.S.A.

2.2.4.1 Cast Iron

Cast iron fittings will be AWWA specification C110; Class 250, cement lined with inside seal coating. The fittings will be bituminous coated on the outside and be wrapped with 6 mil polyethylene (sealed with tape). Cast iron fittings are only to be used in larger applications where ductile iron fittings are not available.

2.2.4.2 Ductile Iron, 4" - 16"

Ductile iron compact fittings (sizes 4" through 16") must conform to AWWA specification C153. Ductile iron compact fittings will be mechanical joint with an interior cement lining with seal coating and an exterior bituminous coating. All fittings will be wrapped with 6 mil polyethylene (sealed with tape).

2.2.4.3 Bolts

All buried mechanical joint bolts and nuts must be CORTEN Steel. All above ground bolts and nuts for flanged fittings must be 18-8 Type 304 stainless steel. Never-seize/Anti-seize shall be applied to all SS bolts and nuts.

2.2.4.4 Tapping Sleeve

Tapping sleeves on mains 4" to 12" in diameter will be all Stainless Steel Sleeves.

The All Stainless Steel Sleeve shall be fabricated from 304 Stainless Steel. They shall have a pass through bolt design and full circumferential gasket to provide 360° seal around the pipe. The tapping sleeve is to be fully passivated to return the stainless steel to its highest corrosion resistance stage.

Sleeves on mains 16" to 24" in diameter will be fabricated steel with O-ring seal, fusion bonded, epoxy coated with 304 stainless steel nuts and bolts or M.J. ductile iron body. Sleeves on mains larger than 24" will be handled on a case-by-case basis.

Tapping Sleeves for reinforced concrete mains will be handled on a case-by-case basis. The sleeves will have a fusion-bonded epoxy coating on the entire body and throat assembly. The straps and bolts shall be 18-8 Type 304 stainless steel.

The tapping valve must have centering ring and conform to Section 2.2.2.1 "Resilient Seat Gate Valves" in these Technical Provisions.

Tapping saddles to be placed on asbestos concrete (AC) pipe shall be an **JCM A432** All Stainless-Steel Sleeve or equal.

2.2.4.5 Line Stop Sleeve Specifications

Sizes 4" through 12"

Sleeve/Body

The entire Line Stop sleeve shall be fabricated from 304 Stainless Steel. They shall have a pass-through bolt design and provide 360° seal around the pipe. The line stop sleeve is to be fully passivated to return the stainless steel to its highest corrosion resistance stage. Outlet on sleeve will be full port, i.e. on 8" sleeve, outlet will be 8", on 6" sleeve, outlet will be 6".

Bolts, Nuts & Washers

18-8 Type 304 Stainless Steel, the bolts shall be track head type and furnished with permanently lubricated heavy-hex nuts and stainless washers.

Gasket

The full circumferential gasket shall be molded of synthetic rubber compounded for use with water salt solutions, mild acids, bases and sewage. The gasket shall have a gridded surface, be a full 1/4" thick with 304 stainless steel bridge plates molded flush into the gasket and have a raised hydromechanical outlet seal to seal against line surges and water hammer.

Pressure Rating

The sleeves shall be rated at 150 PSI hydrostatic with a test pressure of 200 PSI on pipe with a full circumferential break.

Line Stop Sleeves shall be a **JCM A440 Line Stop Sleeve** or approved equal.

2.2.5 FIRE HYDRANTS

Fire hydrants must be manufactured in accordance with AWWA specification C502. Hydrants must have bronze-to-bronze main seat threading surfaces. They will be traffic type with drain holes plugged at the factory. Fire hydrants will have 18-8 Type 304 Stainless Steel bolts and nuts (bonnet, traffic flange and shoe).

Hydrants will have a minimum 5-1/4" main valve opening, with one 4-1/2" pumper nozzle, and two 2-1/2" hose nozzles. Nozzles to have NST threads. Stem couplings are to be cast iron or stainless steel. The upper valve plate must be bronze. The hydrant shoe will be coated inside with fusion-bonded epoxy, 6 mil minimum. All hydrants will be painted at the factory with Rustoleum high-performance epoxy 9100 system, non-lead, dry film thickness 5 to 8 mils, color #9143 Yellow. City crews will apply finish paint to each new fire hydrant after the Contractor has paid the appropriate fees.

Finish grade is to be established and the proper length hydrant is to be installed by the Contractor prior to acceptance by the City. All nozzles will be a minimum of 18" and a maximum of 24" above finished grade. A 6" mechanical joint hydrant connection will be provided using a hydrant valve-anchoring tee with integrally cast standard mechanical joint gland on 6" plain end branch. The Contractor will not be allowed to install risers on hydrants. At final inspection, if it is determined that a fire hydrant is not at grade, the Contractor shall purchase a proper length hydrant and install it under the direction of the Engineering Division.

2.2.6 SERVICE CONNECTIONS, 3/4"-2"

All service connections will be single connections. Services that are 3/4" and 1" are to be type K annealed temper soft copper. All connections are to be of the flare type. 1-1/2" and 2" services are to be of type K drawn temper in straight lengths or annealed temper if furnished in coils. Absolutely no lead-based solder joints will be accepted. Any repairs of service lines will be by flare-to-flare coupling. No compression fittings will be accepted. Taps in the pipe will be the same nominal diameter as the service line. Service taps in PVC pipe will be drilled with a shellcutter designed to cut PVC pipe, and the PVC plug will be removed.

Brass goods furnished under this specification shall be new and unused. All fittings shall conform to ANSI/AWWA Standard C800, latest revision.

All brass components in contact with potable water must be made from either CDA/UNS Brass Alloys C89520 or C89833 with a maximum lead content of .25% by weight. Brass alloys not listed in ANSI/AWWA C800 Paragraph 4.1.2 are not approved. All service fittings shall be certified as suitable for contact with drinking water by an ANSI accredited organization in accordance with ANSI/NSF Standard 61. All fittings shall be stamped or embossed with a mark or name indicating that the product is manufactured from the low-lead alloy as specified above.

Brass saddles shall be made from CDA/UNS C83600 and are exempt from the "no lead" requirement.

2.2.6.1 Saddles

Saddles must be used for all connections to PVC, AC and D.I. pipe. Saddles must be all brass with "CC" threads as manufactured by **Mueller Company**, or **Ford Meter Box Company**. The pipe sizes for these manufacturers are noted below (approved materials are also listed in "Appendix A"):

MUELLER: For ductile iron pipe sizes 4" to 12", for 3/4" and 1" services, the single strap design must be used. For 1-1/2" and 2" services, the BR 2 B double strap design must be used.

FORD: For pipe sizes 4" to 12", for 3/4" and 1" services, the style 101B single strap design must be used. For 1-1/2" and 2" services, the style 202B double strap design must be used. For pipe sizes 16" and larger, for 3/4", 1", 1-1/2," and 2" services, the style 202B double strap design must be used.

An approved equal may be used in lieu of any of the above-listed designs/models.

2.2.6.2 Curb Stops, 3/4" - 2"

Curb stops 3/4" and 1" in size will be flare-by-meter coupling. **Curb stops must have locking wings and a swivel meter nut.** Curb stops that are 1-1/2" or 2" will be flare-by-meter flange with locking wing or an approved equal. All curb stops shall be centered in the meter box and installed in a horizontal position.

CITY OF COCOA
Brevard County, Florida
UTILITIES DEPARTMENT

WATER
TECHNICAL PROVISIONS

DRAWN BY:	SCALE:
CHECKED BY:	DATE: APRIL 2020
DRAWING No. :	SHEET: 1 OF 3
ACAD NAME:	

B.S.E. CONSULTANTS, INC.
CONSULTING - ENGINEERING - LAND SURVEYING
312 SOUTH HARBOR CITY BOULEVARD, SUITE 4
MELBOURNE, FLORIDA 32901
PHONE: (321) 725-3674 FAX: (321) 723-1159
CERTIFICATE OF PROFESSIONAL ENGINEERS BUSINESS AUTHORIZATION: 4905
CERTIFICATE OF LAND SURVEYING BUSINESS AUTHORIZATION: LB0004905

SCOTT M. GLAUBITZ, P.E. & P.L.S.
STATE OF FLORIDA, No. 33659 No. 4151

HASSAN A. KAMAL, P.E.
STATE OF FLORIDA, No. 41951

VERTICAL DATUM: NAVD88

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CITY COMMENTS	10/30/20
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DESIGN/DRAWN:	ALS/DRB

PROJECT TITLE

CIRRUS

SHEET TITLE

CITY OF COCOA TECHNICAL PROVISIONS

PROJECT NO.

11545

DRAWING NO.

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SHEET

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SYMBOLS SHOWN ARE GRAPHIC IN NATURE; DUE TO SCALE, ALL DESIGN ELEMENTS ARE NOT NECESSARILY SHOWN ON PLAN VIEWS. THE CONTRACTOR SHALL ALSO REFER TO SPECIFICATION AND DETAIL SHEETS AS WELL AS THE COMPLETE PLAN SET.

2.2.6.3 Corporation Stops, 3/4" - 2"

All corporation stops for water service ¾" thru 2" will be brass and have "CC" inlet threads and copper flare outlet. 2" Corporation stops for "jumpers" will be "CC"-by- F.I.P.

2.2.6.4 Meter Boxes

Meter boxes for traditional meters are to be plastic with an iron flipper lid with a full pin hinge. Meter boxes for radio-read meters must have a lid compatible with City's AMR meter antennae (4-1/2" round). Service locations will be permanently cut and painted on concrete curb or the street with a blue "W" for potable water or a purple "R" for reclaimed. Reclaimed services will be located at the opposite lot corner from water services where practical or with five feet minimum separation.

For larger 1-1/2 and 2-inch meters, 17" x 30" meter boxes shall be used.
For areas that are anticipated for high traffic areas, a traffic rate H-20-meter box shall be used. Reclaimed Water services will be set in purple meter boxes of materials per above. They are also required to have a 3" x 5" permanent plastic tag, secured to the curb stop with a nylon tie wrap, which will be supplied. Tags will be inscribed, "RECLAIMED WATER DO NOT DRINK".

2.3 PROTECTION OF PROPERTY AND OBSTRUCTIONS

2.3.1 PROTECTION

Temporary supports and/or adequate protection and maintenance must be provided on all underground and surface structures encountered in the progress of the work. Structures that have been disturbed will be restored to a condition equal to their original state upon completion of the work.

2.3.2 OBSTRUCTIONS

All utility owners must be notified prior to beginning construction. Any known obstructions will be shown on the plans; however, Contractor is solely responsible for field verifying existing conditions. The utmost caution will be taken in all operations to avoid damage to existing obstructions whether or not shown on the plans. Damage to other utilities will be at the Contractor's expense.

If the Contractor encounters any unforeseen obstructions during construction, the Contractor shall immediately cease work in that area and notify the Engineer of Record (EOR). The EOR shall design and provide detailed drawings to correct the situation. The drawings shall be submitted to the Engineering Division for approval. After approval by the Engineering Division, a set of approved drawings will be given to the contractor and they may resume work.

2.3.3 EXISTING ASBESTOS CEMENT WATERMAINS

In areas where asbestos cement water mains are existing, water main relocations or replacements may be necessary. If new construction of facilities is over, under, or near asbestos cement water mains, it shall require that the asbestos cement water main be changed out to polyvinyl chloride pipe or ductile iron pipe. All asbestos cement pipe that is replaced shall be removed and disposed of by the contractor unless specifically directed in writing by the City to abandon in place. New pipe material shall depend upon the type and location of the facilities being constructed. The Developers Engineer shall design the replacement and submit it for the Engineering Division approval. The Developer is responsible for all design, materials, labor, equipment, testing, and costs for the replacement. Contractor shall remove and dispose of AC pipe in accordance with FAC Codes 62-204.800 and 62-257.

2.3.4 ABANDONMENT OF ASBESTOS CEMENT PIPE

Where asbestos cement water mains have been directed by the City to be abandoned in place they shall be filled with a sand/cement grout by the contractor. Grout shall be injected within the pipe sections to be abandoned where the ends of the sections shall be capped and or plugged. The grouting program shall consist of pumping sand-cement grout with suitable chemical additives at pressures necessary to fill the pipe sections to prevent the potential for future collapse. The rate of pumping shall not exceed six (6) cubic feet per minute. The pumping pressures shall be in the range of 100 to 150 psi.

The Contractor shall provide standpipes and/or additional means of visual inspections as required by the City to determine if adequate grout material has filled the entire pipe section(s).

2.4 TRENCH PREPARATION

2.4.1 EXCAVATION

A trench will be opened so that the pipe can be installed to the alignment and depth required. It will be excavated only so far in advance of pipe placement as necessary. The trench will be excavated to the depth required to provide a uniform and continuous bearing support for the pipe or undisturbed ground. Bell holes will be provided at each joint to permit jointing to be made and inspected properly.

During excavation, if ashes, cinders, muck or other organic material considered unsuitable is discovered at the bottom of the trench at sub-grade, unsuitable material will be removed and backfilled with approved material. This material will be compacted in layers to provide a uniform and continuous bearing characteristic of that area's soil condition. Where the bottom of the trench at sub-grade consists of unstable material to such a degree that it cannot be removed and replaced with an approved material to support the pipe properly, a suitable foundation must be constructed. Excavated material will be piled in such a manner that it will not endanger work or obstruct natural watercourses, sidewalks or driveways. Fire hydrants under pressure, valve boxes, or other utility controls will be left unobstructed and accessible at all times. Gutters will be kept clear or other satisfactory provisions will be made for street drainage.

2.4.2 SHORING AND BRACING

Open cut trenches must be sloped, shored or braced as required by all governing State law, municipal ordinances, OSHA Standards, and as may be necessary to protect life, property, or the work. Trench bracing may be removed after backfilling has been completed or has been brought up to such an elevation as to permit its safe removal. The use of a trenching box may be used in place of sheeting and bracing where appropriate. The Contractor is required to have a Competent Person designated and in charge at all times while workers are in the trench.

2.4.3 DE-WATERING

Excess water must not be allowed in the trench at any time. An adequate supply of well points, headers or pumps, all in first-class operating condition, may be used to remove the water. The use of gravel and pumps will also be an acceptable means of removing the water. The trench will be excavated no more than the available pumping facilities are capable of de-watering. Discharge from pumps will be accommodated in accordance with the St. Johns River Water Management District's requirements. The Contractor is responsible for obtaining all de-watering permits such as NPDES permit.

2.5 PIPE LINE CONSTRUCTION

2.5.1 GENERAL

All water mains, service lines, and appurtenances must be installed as specified on the approved plans and in accordance with the Standard Detail Sheet. Installation will conform to AWWA specification C600 except as modified herein.

Domestic water service can only come from a Distribution main. When water service is requested and the only water main available is a Transmission main, a large tap and section of pipe shall be installed on the Transmission Main for the water service.

The minimum size tap on a Transmission Main shall be a six (6) inch.

2.5.2 MATERIAL HANDLING

2.5.2.1 Precautions

Every precaution will be taken to prevent damage to pipe and piping materials during transportation and delivery to the work site. Under no condition will pipe be dropped, bumped, dragged or picked up by inserting forks into end of pipe. Pipe lifted by placing forks into pipe shall be removed from job site.

2.5.2.2 Damaged Materials

If in the process of transportation, unloading or handling, any pipe or fitting is damaged, it will be rejected and removed from the site.

2.5.2.3 Storage

Pipe fittings and specials will be stored in a manner which will assure the protection of the material from damage and which will keep it clean.

2.5.3 INSPECTION OF MATERIALS

Materials delivered to the job site will be subject to inspection by the Engineering Division prior to installation. Contractor shall notify Inspections 24 hours in advance. All materials found to be defective or not meeting specifications during inspection or during the progress of the work will be rejected and removed from the job site without delay. All materials delivered to the job site will be in accordance with the materials specifications. Materials not inspected by the Engineering Division prior to installation will be uncovered by the Contractor at their expense to verify compliance with these specifications. The Contractor will furnish copies of the packing list(s) for materials upon demand.

2.5.4 PIPE PLACEMENT

The bottom of the trench will not be excavated below the specified grade. If undercutting occurs, the bottom of the trench will be brought up to the original grade with approved material and thoroughly compacted, as directed by the Engineering Division. Before placing pipe into the trench, the outside of the spigot and the inside of the bell will be wiped clean, dry, and free from oil and grease. Every precaution will be taken to prevent foreign material from entering the pipe. During placement operation, no debris, tools, clothing or other material will be placed in the pipe.

All mechanical joints will be made up in strict accordance with the manufacturer's specifications. Beveled ends will be removed from PVC pipe entering a mechanical joint. The bell will be carefully cleaned before the gasket is inserted. Gaskets must be evenly seated, the gland placed in position with the bolts, and evenly tightened. All slip joints will be made up in strict accordance with the manufacturer's specifications.

After placing a length of pipe in the trench, the spigot end will be centered in the bell, the pipe forced home, brought to correct alignment, and covered with an approved backfill material. Ductile iron pipe will be backfilled to the centerline of the pipe and compacted to ninety-five percent (95%) of standard Proctor T-99.

PVC pipe will be backfilled in accordance with the manufacture's recommendations for the laying conditions.

Pipe will be installed with 30" minimum cover. Maximum cover of 42" will be accepted. Cover depth will be determined from proposed finish grade as indicated on the plans. At times when pipe placement is not in progress, the open ends of pipe must be closed by a watertight plug or other approved means. This provision will apply during the lunch hour as well as overnight. If water is in the trench, the seal will remain in place until the trench is pumped completely dry.

All underground water main shall meet the horizontal and vertical separation requirements in FAC 62-555.314 as related to sanitary force main and gravity main, reclaim mains, and storm water gravity and force mains.

Pipe installed under swales shall be D.I. and have 3 feet minimum cover. D.I. pipe to be centered on swale. If more than one joint of pipe is necessary, restrained joint pipe is required. See "Swale Crossing" detail and definitions.

Pipe installed under canal or drainage ditch shall conform to all FDEP requirements. Pipe shall be restrained joint D.I. pipe with gate valves on both sides of canal/ditch. D.I. pipe shall have 5 feet minimum cover with a concrete cap. See "Canal or Drainage Ditch Crossing" detail and definitions.

2.5.5 LOCATING WIRE

A UF 14 Copper Wire that allows for the location of the pipe using an induced current line locator will be installed on all potable water, reclaimed water, and wastewater mains. The wire must be placed on the top of the pipe and taped approximately every ten feet. A run of wire must run from the main to each hydrant. Each fire hydrant must have one wrap of the wire around the barrel located at final grade.

Wire color shall be blue for water, green for wastewater, and purple for reclaimed.

A run of wire will also be brought up in each valve box. The wire will have 18 inches of excess length. Wire is to be connected together using an underground wire nut with a **silicone-based sealant.**

The CCS wire shall meet the following requirements. HDPE Insulation of 30 mils, #14 AWG conductor, maximum Ohms resistance of 8.28 ohms per 1000 ft., breaking load 256 lbs.

When directional drilling is used, one continuous #10 CCS **extra high strength** locator wire shall be installed. The CCS wire shall meet the following requirements. HDPE Insulation of 45 mils, #10 AWG conductor, maximum Ohms resistance of 0.999 ohms per 1000 ft., breaking load 1150 lbs.

2.5.6 SERVICE LINE LOCATION

Service lines will be located at alternating lot lines outside the sidewalk within two feet of the right-of-way line as shown on approved plans or in a grassed area behind the curb if located in other than a subdivision.

Reclaimed service line is to be located adjacent to sewer cleanouts.

2.5.7 BACKFILLED MATERIAL AND INSPECTION

All backfilling material will be free from cinders, ashes, refuse, vegetable or organic material, boulders, rocks, stones, or other material which is considered unsuitable. When backfill material is not specified on the plans, backfilling with the excavated material may be acceptable provided that such material is suitable for backfilling. Pipe should be backfilled as soon as possible to minimize the length of open trench. Pipe joints, valves, fittings, and thrust blocks will be left uncovered until inspection by the Engineering Division has been completed.

2.5.8 VALVES AND FITTINGS

All valves and fittings will be set and joined to the pipe in the proper location as shown on the plans. Valves should be installed outside of the pavement where practical. A roadway valve box will be provided for every valve. This valve box must not transmit shock or stress to the valve. Valve will have alignment ring installed and valve box centered and plumb over the wrench nut of the valve. The box cover is to be flush with the surface of the finished pavement or grade level as specified in the plans. A 24"-square concrete pad 4" in thickness will be poured around the valve box when it is located outside of pavement. A bronze or stainless-steel disc will be cast into the pad for all valves 12" or larger. Valve nomenclature to be stamped into the disc will include the valve size, type, manufacturer's initials, number of turns, and direction to open the valve. (Example: 12" G.V. U.S.P. 20 c.c.w.)

All valves will be located within two feet of the tee, see detail "Gate Valve and Fitting."

When solid sleeves or couplings are used to join/tie-in pipelines, a Spacer Piece shall be installed if there is a gap in the pipeline.

2.5.9 FIRE HYDRANTS

All fire hydrants (hydrants) will be located as shown on the plans and marked on the pavement with a blue reflector. On unpaved streets, a blue reflector will be affixed to a post and placed as close to the edge of the road as feasible to be easily visible. The hydrants will be located in such a manner as to provide complete accessibility and in a manner so that the possibility of damage from vehicles or injury to pedestrians will be minimized. All hydrants must stand plumb and the bury line of the hydrant at the finished grade. Hydrants installed in State highway rights-of-way will be placed in accordance with any F.D.O.T. requirements. Contractors shall not turn or add risers to hydrants. All hydrants will be connected to the main in the manner shown on the Standard Detail Sheet. If the installation of the hydrant requires the hydrant to be greater than 40 ft. away from the fire hydrant valve, an additional valve shall be installed. If the fire hydrant valve ends up in asphalt of a major road (not subdivision) an additional hydrant valve regardless of distance shall be installed.

2.5.10 RESTRAINED PIPE JOINTS

The Engineer of Record shall provide a restrained joint detail on drawings submitted to the City for approval. Restraining is to apply to all new fittings installed as part of the job, including tapping saddles.

2.5.11 THRUST BLOCKS AND COLLARS

Restrained joint systems are the preferred method. Thrust blocks may only be used with the City's prior approval at bends, fire hydrants, and as specified on the plans, in accordance with the Standard Detail Sheet. Metal harnesses, tie rods, or clamps of adequate strength to prevent movement may be installed at locations where thrust blocks are not practical. Rods and clamps will be stainless steel. A 20-foot length of ductile iron pipe will be installed at all main endings and a concrete thrust collar will be poured around the pipe at a distance of 10 feet from the end of the joint. In lieu of concrete thrust collar, restrained pipe upstream of the proposed concrete thrust collar may be used.

2.5.12 JACK AND BORE, PIPE INSTALLED IN CASINGS

Pipe to be installed under pavement where open trenching is not permitted will be installed through a steel casing that has been jacked and bored. The casing pipe will be six to eight inches larger than the outside diameter of the bells on the Ductile Iron pipe. The Engineer of Record will design the casing and bore to meet FDOT or FECRR requirements.

Ductile Iron pipe of the appropriate Class will be installed in the casing. Water mains must be pushed or pulled through the casing on stainless steel casing spacers with polyethylene skids attached to the pipe with stainless steel straps. The stainless-steel casing spacers with polyethylene skids will be placed in accordance with manufacturer's recommendations. Casing spacers must be manufactured by Cascade or an approved equal. Restrained joints are required on mains installed inside casings.

JACK AND BORE

J&B installed under FDOT roadways shall conform to the latest FDOT Road and Bridge Construction design standards. J&B installed under FECRR shall conform to FECRR requirements.

2.5.13 HORIZONTAL DIRECTIONAL DRILLING

Only DIP and Fusible PVC may be horizontal directional drilled (HDD) under pavement or surface waterway crossings. The HDD pipe shall only extend to 10 feet on each side of the crossing. Then the piping will change to the standard piping material.

HDD installed under FDOT roadways shall conform to the latest FDOT Road and Bridge Construction design standards.

ENGINEERING PROCEDURE HORIZONTAL DIRECTIONAL DRILLS

PRECONSTRUCTION CONFERENCE

1. A preconstruction conference will be required. The preferred attendees for the preconstruction shall be but not limited to:

   The directional bore contractor (preferably the Field Superintendent) The

   permitting agency

   Engineer of Record

   City Engineering Division Representative

   Inspector for the project

HDD CONTRACTOR

1. Approval required prior to the HDD, the HDD contractor shall submit a bore plan (see sample drawing in "Appendix B") to the Engineering Division for approval. The bore plan shall be a scaled drawing or computer generated drawing showing the following information but not limited to: (see drawing "Typical Bore Plan")

   The entrance and exit location

   Profile of the bored pipe

   All utilities including their depths and clearances from reamer

   Width of the right of way

   Pavement width

   Length of the bore

   The bore plan shall be signed by the responsible person in charge of the bore.

2. The HDD contractor shall follow the minimum clearances as shown below from the bottom of the water main to the top of the reamer:

   Water mains 12" and greater minimum clearance is 18" Water

   mains 10" and less minimum clearance is 12"

3. The HDD contractor will be responsible for obtaining locates for all utilities in accordance with Chapter 556 of the Florida Statutes.
4. The HDD contractor shall notify the City of Cocoa Inspection Division 48 hours in advance of the bore and notify the appropriate permitting agency per the conditions of the permit.

ENGINEERING INSPECTOR

1. An approved copy of the bore plan will be given to Engineering Inspection Division.
2. The Inspector for the project will have a copy of the bore plan at the project site.
3. Prior to the HDD the Inspector shall verify that the materials at the project site for the directional bore are in accordance with the City of Cocoa's latest technical provisions and standard details.
4. The Inspector shall verify the following prior to the commencement of the HDD:

   a. Verify that the HDD contractor has obtained his/her utility locates;
   b. Verify that all utilities have been visually spotted by the HDD contractor;
   c. Verify that the permitting agency has been notified of the HDD; and d. Witness the calibration of the sonde.

5. The Inspector shall remain at the project site until completion of the HDD. Any discrepancies shall be immediately reported to the Engineering Division. Once the corrective action is determined, the proper authority will be notified.

COMPLETION OF THE BORE

1. A bore log shall be submitted to the Engineering Division after completion of the bore.

2.5.14 BLOWOFFS

Flushing blow-offs are to be installed and constructed as shown on the Standard Detail Sheet. Blow-off materials include 2" brass for nipples, brass threaded fittings, 2" brass angle wheel valve, and plastic meter box (purple for reclaimed). The plastic meter box is to be installed at grade over the wheel valve. The angle wheel valve will be within six inches of finished grade and will be plugged with a brass plug. 4" blow-offs will be required on both potable water and reclaimed water mains 12" and larger and must be constructed as shown on the Standard Detail Sheet. A reclaimed tag will be installed on reclaimed main blow-offs in a reclaimed meter box.

Brass used in potable water shall meet the low lead requirements as set forth in Section 2.1.6, "Service Connections".

2.6 TIE-INS TO EXISTING SYSTEMS

2.6.1 GENERAL

The Contractor is not to operate any valve or remove any thrust block from City-owned mains except under direct supervision of an Inspector of the Engineering Division. The Contractor may need a post restraining the existing piping for the tie-in as required by the Engineering Division. All Contractors must follow the procedures listed below for connecting new mains to existing water systems.

2.6.1.1 Mains 8" and smaller

Existing tie-in valves will be operated and pressure tested to verify water tightness prior to the proposed tie-in. Existing system valves that are not water tight, shall have a new valve installed immediately adjacent (within 2') to the existing valve. The Contractor will provide a 2" tap on the new main and a 2" tap on the existing main at the tie-in valve. A 2" jumper equipped with a City supplied meter and contractor supplied backflow preventer (double check) will be installed. The jumper will be utilized for filling the main, flushing the main, providing water for bacteriological sampling, and maintaining pressure in the main after a successful bacteriological test. The proposed tie-in valve is not to be operated and the jumper is not to be removed until clearance has been obtained from FDEP and the City. The Engineer of Record will be required to provide an executed FDEP certificate of completion prior to clearance. After clearance, the tie- in valve will be opened, the jumper removed, and the main thoroughly flushed under the supervision of the Inspector. All other existing valves closed as part of the job will be opened by the contractor under the supervision of Engineering Division.

2.6.1.2 Mains 10" and Larger

The same procedure as noted for mains 8" and smaller will be used for mains 10" and larger except that the jumper will be utilized only for filling the main, providing water for bacteriological sampling, and maintaining pressure in the main after a successful bacteriological test. The tie-in valve can be opened for flushing and during chlorination only under the supervision of the Engineering Inspection Division. The tie-in valve is not to be operated and the jumper is not to be removed until clearance has been obtained from FDEP and the City. After clearance, the tie- in valve will be opened, the jumper removed, and the main thoroughly flushed under the supervision of the Inspector. All other existing valves closed as part of the job will be opened by the contractor under the supervision of the Inspector.

2.7 TESTING

2.7.1 GENERAL

All newly installed pipe and services that have been backfilled must be tested in accordance with AWWA specification C651.

2.7.2 JUMPER METER ASSEMBLY

All filling, and flushing, must be accomplished through a jumper meter assembly. The jumper meter assembly shall consist of a meter (provided by the City, paid for by the Developer/Contractor), and a double check backflow preventer and galvanized piping (provided by the Contractor). The jumper meter assembly shall be installed by the Contractor under the direct supervision of the Engineering Division. After installation, the Contractor shall have the backflow preventer certified by a backflow technician, and a copy of the test report shall be provided to the Engineering Division.

1. A temporary jumper connection is required at ALL connections between existing active water mains and proposed new water main improvements, per the City of Cocoa Utilities Handbook. The only exception is the installation of a new fire hydrant involving a tap and using an anchoring/swivel nipple. In this case, all fittings and fire hydrant SHALL be swabbed with a 100 ppm chlorine solution prior to installation.

2. The details for filling any water main from existing active water mains and for flushing of new mains up to 8" diameter (2.5 FPS minimum velocity) and for pulling bacteriological samples from any new water main of any size can be found in **Section 2.7.3-Flushing and Swabbing**. The jumper connection shall be maintained until after filling, flushing, testing, and disinfection of the new main has been successfully completed and clearance for use from the Florida Department of Environmental Protection (FDEP) and other pertinent agencies has been received. The jumper connection shall also be used to maintain pressure in the new mains all the time after disinfection and until the FDEP clearance letter is obtained. Adequate thrust blocking and/or restraints shall be provided temporarily, as required. Pipe and fittings used for connecting the new pipe to the existing pipe shall be disinfected prior to installation in accordance with AWWA C651. The tapping sleeve and the exterior of the main to be tapped shall be disinfected by spraying or swabbing per Section II of AWWA C561.

3. Flushing of 10" diameter and larger water mains may be done through the tie-in valve, under the direct supervision of the Engineering Division. The Engineering Division will be notified in writing 48 hours prior to the flushing of said mains.

   The following procedures shall be followed:

   A. The existing tie-in valves shall be operated and pressure tested in the presence of the Engineering Division or Engineer to verify water tightness prior to the proposed tie-in. Valves which are not watertight shall be replaced or a new valve installed immediately adjacent to the leaking valve.

   B. The temporary jumper connection shall be constructed as detailed. The jumper connection shall be used to fill the new water main and for providing water for bacteriological sampling of the new main as required by the FDEP permit.

- Flushing shall not be attempted during peak demand hours of the existing water main.
- All downstream valves in the new system must be open prior to opening the tie-in valve.
- Provide for and monitor the pressure at the tie-in point, the pressure in the existing main must not drop below 35 psi.
- Tie-in valve shall be opened a few turns only, ensuring a pressure drop across the valve is always greater than 10 psi.

4. The contractor shall provide documentation demonstrating that the double check backflow prevention device has been tested and is in good working order at the time of installation. The test shall be performed by a qualified backflow prevention technician.
5. Except as required to flush lines of greater than 8" in diameter, the tie-in valve shall remain closed. The tie-in valve shall remain closed until the new system has been cleared for use by FDEP and all other pertinent agencies.
6. Upon receipt of clearance for use from FDEP and all other pertinent agencies, the contractor shall remove the jumper connection. The corporation stops are to be closed and plugged with 2" brass plugs.
7. All installation and maintenance of the temporary jumper connection and associated backflow prevention device fittings, valve, etc., shall be the responsibility of the contractor.

CITY OF COCOA
Brevard County, Florida
UTILITIES DEPARTMENT

WATER
TECHNICAL PROVISIONS

DRAWN BY:	SCALE:
CHECKED BY:	DATE: APRIL 2020
DRAWING No. :	SHEET: 2 OF 3
ACAD NAME:	

B.S.E. CONSULTANTS, INC.
CONSULTING - ENGINEERING - LAND SURVEYING
312 SOUTH HARBOR CITY BOULEVARD, SUITE 4
MELBOURNE, FLORIDA 32901
PHONE: (321) 725-3674 FAX: (321) 723-1159
CERTIFICATE OF PROFESSIONAL ENGINEERS BUSINESS AUTHORIZATION: 4905
CERTIFICATE OF LAND SURVEYING BUSINESS AUTHORIZATION: LB0004905

SCOTT M. GLAUBITZ, P.E. & P.L.S.
STATE OF FLORIDA, No. 33659 No. 4151

HASSAN A. KAMAL, P.E.
STATE OF FLORIDA, No. 41951

VERTICAL DATUM: NAVD88

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1 CITY COMMENTS	10/30/20
DATE:	08/31/20
DESIGN/DRAWN:	ALS/DRB

PROJECT TITLE

CIRRUS

SHEET TITLE

CITY OF COCOA TECHNICAL PROVISIONS

PROJECT NO.

11545

DRAWING NO.

11545_400_017

SHEET

17 of 19

2.7.3 FLUSHING AND SWABBING

The City will provide an adequate volume of water for the filling, flushing, and testing of mains. The Contractor will notify the Engineering Division prior to flushing or filling mains. The pressure in the City's system will be monitored during the flushing; at no time should the pressure in the City's system be allowed to drop below 35 psi. Water used during flushing will be billed to the Contractor.

The City of Cocoa Engineering Division requires all new mains regardless of size or material to be pigged/swabbed. In an effort to make sure all footages of a pipeline are pigged, the following procedures are to be used as a guide and in no way to be construed as means and methods.

The following terminology may be used in the discussion or operation of the

pigging procedure. Pigs shall be manufactured of a 2 pounds per cubic foot

density open cell polyurethane foam

body (swab) complete with rear polyurethane drive
seal.

Pig launching station may be a "wye", "tee", or simply inserting the pig at the very beginning of the pipeline. The beginning of the pipeline is defined at the jumper assembly location.

Pig retrieval point or cannon is a "wye", "tee" or open end of pipe at which point the pig will exit the pipeline.

The pipeline will be filled through the jumper assembly the day before of the pigging operation.

The pig will be advanced through the pipeline at a rate of 2 feet per second, 80 gpm for 4"; 180 gpm for 6"; 320 gpm for 8". Flow rates and jumper assemblies for mains 10" and larger will be determined by the Engineer of Record and approved by the City of Cocoa Engineering Division.

The pig retrieval point or cannon will project at least one foot above the surrounding grade. The water from the pig retrieval station discharge and its location to discharge shall be approved by the Engineering Division. The contractor will be responsible for following the National Pollutant Discharge Elimination System (NPDES) requirements to remove chlorine from discharge as well as protect retrieval area from erosion. Retrieval cannons will not be left in place. After pigging and flushing are complete, the cannon will be removed and capped below ground in accordance with Engineer of Record details or City of Cocoa Standard Details.

The contractor may insert the pig into the first section of pipe between the isolation valve and the downstream point of jumper assembly. By inserting the pig between the isolation valve and the downstream jumper assembly point it will allow the pipeline to be filled without moving the pig down the pipeline. If the pig is moved during filling operation another pig will be inserted into the pipeline. The isolation valve may be cracked open for a few seconds under the direction of the Engineering Division to move the pig past the jumper assembly downstream point so the jumper assembly can advance the pig through the pipeline.

When the pig exits the pipeline, the flushing will continue until the water is clear. A simple way to determine if water is running clear is to capture some water in a WHITE cup. If water is clear and no particles in cup then flushing is complete; if not, flushing will continue until water is clear.

2.7.4 HYDROSTATIC TEST

A blow-off or fire hydrant will be installed at the end of the pipeline under test. The line being tested will be slowly filled with water to the specified test pressure. Before applying the specified test pressure, all air will be expelled from the test section including service connections. If fire hydrants or blow-offs are not available at high elevations, taps at points of highest elevation will be made to facilitate air removal and testing. When testing is complete, the service lines installed for air removal must be removed.

The line must hold the 150-psi test pressure for a two-hour test period and must be performed under the direct supervision of the Engineering Division. Sufficient human resources are to be employed to ensure inspection. If the line fails to meet the test, it will be repaired and re-tested until the test requirements are satisfied. Line pressure will be maintained to within 5 psi of the test pressure at all times.

2.7.5 LEAKAGE TEST

A leakage test at 150 psi will be performed on all newly installed sections of pipe in accordance with AWWA C600 or C605 after installation of all service connections. Any leakage observed must be less than the following per thousand feet of pipe:

Size (in)	Allowable Leakage (gal/hour)
2	0.20
4	0.33
6	0.50
8	0.67
10	0.83
12	1.06
14	1.16
16	1.32

$$L = \frac{SD\sqrt{P}}{148000}$$

L = testing allowance (makeup water), in gallons per hour

S = length of pipe in feet

D = nominal diameter of pipe, in inches

P = average test pressure during the hydrostatic test, in pounds per square inch (gauge). P has the square root taken.

On small main extensions where the allowable leakage loss cannot be reasonable measured (.25 gallons or less), NO LOSS OF PRESSURE shall be allowed.

2.8 DISINFECTION AND BACTERIOLOGICAL TESTING

2.8.1 GENERAL

The Contractor must flush potable mains and arrange for complete disinfection by chlorination in coordination with the Engineering Division. Work will conform to applicable provisions of AWWA specification C651-14, "Disinfecting Water Mains". Water with a chlorine concentration of 50 ppm will be evenly distributed throughout the pipe system and allowed to remain in the pipe for twenty-four hours. Transmission mains may be chlorinated using the "slug method". If the slug method is used, a detailed written procedure shall be submitted for approval. The main shall be dechlorinated to zero ppm chlorine before any flushing is performed. The method for dechlorination shall be approved by the Engineer of Record. After flushing, the water shall remain in the pipe for 24 hours before sampling. Service connections and tie-ins made before testing must be disinfected in accordance with AWWA specification C651. Samples will be taken by an Engineering Division approved laboratory. Two consecutive day samples are required for potable water mains. Water mains shall not be flushed between samples. The Contractor will be responsible for ALL bacteriological testing fees. Sample points are determined by the Engineer of Record and approved by FDEP. If samples taken do not demonstrate satisfactory results, re- chlorination and retesting of all sample locations is required at the Contractors expense.

CONTRACTORS WORKING ON EXISTING MAINS

When existing water mains are taken out of service by contractors, and water service to existing customers is interrupted causing a precautionary boil water notice (PBWN), the water main will be taken out of service on Monday or Tuesday. If for some reason the water main cannot be taken out of service on Monday or Tuesday, then the contractor at their expense shall have the laboratory perform bacteriological testing after normal working hours. This procedure is to lessen the time water customers are under a PBWN.

2.9 WET TAP CONNECTIONS TO EXISTING SYSTEM

2.9.1 GENERAL

Tap Being Performed **Parties Allowed to Perform the Tap**
Taps 2" and smaller — Approved tapping and line stop contractor
Contractor approved to tap mains solely for their own project
○ Contractor must perform 5 successful taps under the supervision of the inspection team and demonstrate possession of proper tapping equipment
Taps 2"-16" — Approved tapping and line stop contractor
Taps 16" and greater — Approved tapping and line stop contractor
○ Each tap requires independent review and approval
○ The tap must be performed under direct supervision of the engineering division
Taps on concrete transmission mains — Contractor approved for taps on City of Cocoa transmission mains
○ Tapping plan must be submitted by the contractor prior to the tap

On transmission mains, the approved tapping and line stop contractor will install the tapping saddle and valve. For all connections from 4"-12" the contractor may install tapping saddles under direct supervision of the Engineering Division.

For all water main connections, the Contractor must obtain all required permits, provide a dry pit area, provide pit preparation including shoring and bracing, provide maintenance of traffic, provide all right-of- way restoration, and notify all utilities prior to construction. Connections must be completed under direct supervision of the Engineering Division.
The list of approved contractors may be found on pg. 158.

Tapping saddles and valves supplied by the Contractor will be inspected by the Engineering Division prior to installation. The installed tapping saddle and valve must be tested with water at 100 psi for 15 minutes prior to tapping to ensure a watertight installation. Saddles installed on concrete pressure pipe will be tested 10% over line pressure. The pressure test will be performed by the Contractor and supervised by the Engineering Division. After the pressure test of the saddle has been completed, an Approved Tapping Contractor can tap the main.

2.9.2 TAPPING AND LINESTOP PROCEDURES

ALL TAPS or LINESTOPS on City of Cocoa potable, reclaimed, and wastewater mains will be performed by an **Approved Tapping Contractor**.*

Absolutely NO taps or linestops will be performed on Friday or any day preceding a holiday.

Approved Contractors must disinfect tapping machine with AWWA approved disinfectant.

This will be witnessed by the Inspector.

The Contractor's tapping or linestop machines will be in good working order with appropriate bits and shell cutters for the type of pipe being worked on (i.e. shellcutter for PVC).**

When taps or linestops are installed on Transmission Mains (> 12"), a preconstruction meeting will be held with the tapping contractor prior to ANY work being performed. The meeting may be held at the job site.

Taps and linestops on the Utilities concrete pressure mains will be a two (2) day process and will require a pre-construction meeting. Day one the saddle is installed and grouted, Day two tighten straps, cut pre-stressing wires, install throat and valve. Pressure test on saddle is 10% over line pressure for 30 minutes. After successfully completing pressure test, tap can be made.

Toggle bolts will be required for PCCP taps to assure the entire coupon remains intact. The coupon must be provided to the City.

ALL excavations must conform to current OSHA Trench Safety Act.

The City of Cocoa reserves the right to remove any contractor from the approved list for any work considered substandard.

* Tap or linestop to include: Material, installation, labor, drilling, and testing

** Bit, boring bar, and adaptor

2.10 FINAL CLEAN-UP AND ACCEPTANCE

2.10.1 GENERAL

Upon completion of the work and before acceptance by the Engineering Division, the Contractor will meet all permit conditions, remove all debris, and complete sodding, sprigging, or seeding if required by the plans. The Contractor will leave all areas affected by operations in a neat and presentable condition.

Acceptance of completed work by the City will be contingent on the following work items completed to the satisfaction of the Engineering Division.

Pressure Test

Bacteriological Testing

Restoration

Payment of fees

Approved As-Builts

Easements

Bill of Sale

Fire line DCDA certification, as needed

Final Inspection

2.11 FIRE SERVICE

2.11.1 GENERAL

All Fire Lines shall be installed by a licensed Fire Line Contractor in accordance with Florida Statute Chapter 633 and Rule Chapter: 69A-46. Where wet pipe sprinkler service is used, an RPDA or DCDA will be installed in accordance with the "Backflow Prevention and Cross- Connection Control" Section of the Utilities Handbook and as described in the "City of Cocoa Cross Connection Control Program Manual".

Fire line backflow preventer assemblies shall be installed in non-traffic areas. Four to six bollards may be required.

2.12 CONNECTION OF BUILDINGS OVER FOUR FLOORS

2.12.1 GENERAL

Connection of domestic water supply systems serving buildings over four floors in height to the
City's water distribution system will be subject to the following requirements:

A fixture unit analysis will be performed by the Owner's engineer to determine peak domestic flow requirements. This analysis is to be provided to the Engineering Division.

A water meter and a reduced pressure backflow preventer, sized in accordance with the domestic flow requirements, will be installed above ground at the developer's expense.

Upon written request, the City will provide the site engineer with the minimum expected system pressure. The site engineer will be responsible for providing this information to the architect and building owner. Means for providing an adequate supply of domestic water and fire protection to all parts of the building during periods of minimum pressure will be the responsibility of the building Architect or Engineer of Record.

Repair costs for damage to the water meter caused by flows exceeding its rated capacity will be charged to the customer.

2.13 BACKFLOW PREVENTERS

2.13.1 GENERAL

All connections to the City of Cocoa potable water system shall contain a backflow preventer assembly per the Standard Details in "Appendix B." Backflow preventer requirements for each service type are described in the "City of Cocoa Cross Connection Control Program Manual" and are summarized in Paragraph 2.1.3, "Backflow Preventers" and "Appendix A" of this document.

2.14 RECORD DRAWINGS

2.14.1 GENERAL

Record drawings are required for all systems to be accepted by the Engineering Division. Record drawings will be prepared by a surveyor or an engineer registered in the State of Florida and will contain the following information:

Location of all valves, service lines, fittings, and fire hydrants using at least two ties to permanent points (manholes, curbs, or storm water inlets). An acceptable station and offset system may be used for service lines and fittings only.

Location of mains from property easement lines or edge of pavement at intervals of 300 feet.

Elevations to the top of the water line at intervals of 300 feet and at all drainage and sewer main crossings. Benchmark to be shown on record drawings.

Separation between reclaimed water or force mains and water mains, if they are installed within 10 feet of water mains.

Water main material and distance of mains from buildings or structures within 20 feet of the water main.

Distance from hydrant to hydrant valve.

Pertinent easement information.

A minimum of two (2) northings and eastings geographic coordinates.

Certification by the surveyor or Engineer of Record accepting responsibility for accuracy of information supplied on the record drawings and a statement certifying that all mains are within easements and/or public right-of-way. The name "City of Cocoa" must appear on all record drawings survey information.

Record drawings will be drawn at an engineering scale that is legible and readable as determined by City staff. Areas requiring additional detail may be enlarged as necessary. Right-of-way, easements, and lot lines will be accurately shown. After the surveyor or engineer has certified the locations, the engineer will certify on DEP Form 62-555.900(9) that the system depicted on the record drawing was constructed in substantial conformance with approved plans and will function as intended. Lot, block numbers, and street names will be included. Provide two (2) sets of signed and sealed record drawings and one (1) digital file including all reference files in .DWG format (AutoCAD 2013 or higher).

CITY OF COCOA
Brevard County, Florida
UTILITIES DEPARTMENT

WATER
TECHNICAL PROVISIONS

DRAWN BY:	SCALE:
CHECKED BY:	DATE: APRIL 2020
DRAWING No. :	SHEET: 3 OF 3
ACAD NAME:	

B.S.E. CONSULTANTS, INC.
CONSULTING - ENGINEERING -
LAND SURVEYING

312 SOUTH HARBOR CITY BOULEVARD, SUITE 4
MELBOURNE, FLORIDA 32901
PHONE: (321) 725-3674 FAX: (321) 723-1159

CERTIFICATE OF PROFESSIONAL ENGINEERS
BUSINESS AUTHORIZATION: 4905
CERTIFICATE OF LAND SURVEYING
BUSINESS AUTHORIZATION: LB0004905

SCOTT M. GLAUBITZ, P.E. & P.L.S.
STATE OF FLORIDA, No. 33659 No. 4151

HASSAN A. KAMAL, P.E.
STATE OF FLORIDA, No. 41951

VERTICAL DATUM: NAVD88

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DATE:	08/31/20
DESIGN/DRAWN:	ALS/DRB

PROJECT TITLE

CIRRUS

SHEET TITLE

CITY OF COCOA TECHNICAL PROVISIONS

PROJECT NO.
11545

DRAWING NO.
11545_400_018

SHEET
18 of 19

3.1 MATERIAL SPECIFICATIONS

3.1.1 GENERAL

The Contractor will furnish all new materials of the size and kind shown on the drawings which will meet the following specifications or requirements. If the type of material is not specified on the drawings, the Contractor may use any of the types listed in this specification. The use of concrete for repairs on gravity sewer piping and lateral tie-ins is not permitted.

3.1.2 CONCRETE STRUCTURES

3.1.2.1 Precast Manholes

Precast manholes must be constructed in accordance with American Society of Testing and Manufacturing (ASTM) specification C478. Concrete will have a minimum 28-day compressive strength of 4,000 PSI. Cement will be Type II sulfide resistant. Steel will be minimum Grade 40 and placed as shown on the drawings. Shop drawings of manholes and lift station wet wells will be submitted to the Engineering Division for approval prior to casting. Chairs for supporting reinforcing steel will be non-corrosive plastic or Grade 316 stainless steel. Standard manholes will be 4 feet in diameter with a wall thickness of 5" for manholes of 6 feet in depth or less and wall thickness of 8" for manholes deeper than 6 feet.

Resilient connectors (boots) shall be used where PVC pipe penetrates manhole walls. Boots shall be NPC Kor-N-Seal or approved equal, watertight and shall be manufactured of materials resistant to decay caused by the sanitary sewer environment or by ambient soil conditions. All hardware shall be stainless steel. Boots shall be installed in accordance with manufacturer's recommendations.

3.1.2.2 Flotation Uplift of Fiberglass Manhole

When a fiberglass manhole is specified, the EOR shall provide the design analysis showing where flotation uplift is counteractive.

3.1.3 PIPE

3.1.3.1 PVC Pipe and Fittings, DR 35

PVC pipe and fittings (DR 35) will be manufactured in accordance with ASTM specification C3034. DR 35 pipe is acceptable on gravity installations with a depth of 12.0 feet or less. Pipe will be of the elastomeric gasket joint type supplied in lengths of 12.5 feet. Solid wall ribbed PVC pipe with a stiffness of 60 psi or greater will be considered on a case-by-case basis at the discretion of the Engineering Division. Critical installations, as determined by the Engineering Division, will require use of poly-lined ductile iron pipe, coated with Protecto 401 ceramic Epoxy.

3.1.3.2 PVC Pipe, DR 18

PVC pipe (DR-18) will be manufactured in accordance with AWWA specification C900. DR-18 pipe is required for pressure force main installation. Pipe will be of the elastomeric gasket joint type. Color-coded identification tape will be installed on all force mains.

3.1.3.3 Ductile Iron

Ductile iron pipe will be coated with Protecto 401 ceramic Epoxy for force main, gravity, and valve pit installation. Exposed piping in valve pits will be pressure Class 350 with coal tar epoxy exterior coating. Buried ductile iron pipe will be wrapped in a color-coded polyethylene encasement in accordance with ANSI/AWWA T1/C105.

3.1.4 MANHOLE ACCESS COVERS

3.1.4.1 Cast Iron

Cast iron manhole covers and rings must be traffic load bearing and have an O-Ring seal similar to **USF No. 225-AS ORS**. Bearing surfaces will be machined to produce a tight, even seating surface without rocking. Minimum clear opening will be 24". The words "CITY OF COCOA" and "SANITARY SEWER" will be cast into manhole covers. Manholes installed in high water areas will be sealed by a method approved by the Engineering Division.

3.1.4.2 Aluminum

Aluminum access covers will be designed for 300 PSF live load and will be equipped with stainless steel hinges, automatic lock mechanism in the open position, closed position lock hasp, and retractable grip for opening.

See Detail Sheets:

- Manhole Ring and Cover
- Check Valve Vault
- Lift Station

3.1.5 COATINGS

3.1.5.1 Water Based Acrylic

The interior and exterior surfaces of manholes shall be coated with a three-coat water based acrylic coating. The interior and exterior coats shall be factory applied to the coating manufacturer's recommendation with a minimum total DFT of 12 mils. Each of the coats will be 4 mils thick of contrasting colors. The interior shall be coated red, black, and a final gray coat. The exterior shall be coated red, gray, and a final black coat.

3.1.5.2 HDPE Sheet Lining

Where an HDPE liner is specified, the entire wall surface of the manhole will be protected with a high-density polyethylene liner cast into the concrete. This liner must be **AGRU Sure Grip as manufactured by Alois Gruber** or approved equal. All joints will be heat fusion welded to create a watertight lining. The liner shall be installed and tested per the manufacturer's guidelines. Such lining must be warranted against defects in materials and workmanship for a period of five years from date of installation.

3.1.5.3 Exposed Piping

Exposed piping, pumps, and equipment exposed to raw sewage in manholes, valve pits, and wet wells will be coated with a two-coat coal tar epoxy exterior coating system with a minimum DFT of 12-15 mils. Coal tar epoxy will be Rustoleum 9578 or approved equal. Equipment and pump information tags will not be painted. Pump discharge piping in lift station wet wells will be Grade 316 10S stainless steel, refer to Section 3.8.3.2, "Exposed Piping".

3.1.6 MISCELLANEOUS MATERIALS

3.1.6.1 Manhole Steps

Manhole steps are not permitted.

3.1.6.2 Hardware

All nuts, bolts, washers, anchors, and, brackets inside the wet well or manhole must be manufactured from Grade 316 stainless steel. Bolts for fastening flanged fittings inside the valve pit may be steel, coated with the specified piping coating system. Never-seize/Anti-seize shall be applied to all SS bolts and nuts.

3.2 CONSTRUCTION

3.2.1 LOCATION AND GRADE OF SEWERS

The line and the grade of the sewer, as well as the location of manholes, services, and all other appurtenances, will be as shown on the drawings. The grade line as given on the drawings indicates the grade of the invert of the sewer pipe.

Gravity sewer shall be designed and constructed with the following maximum and minimum slopes:

Minimum and Maximum Slopes for Gravity Sewers

Size (in)	Maximum (%)	Minimum (%)
4	1.141.046	0.660.608
6	0.360.331	00.280.25
120.220.20		

The Engineer of Record shall certify that the slopes of the gravity sewer meet the above maximum and minimum slopes. Sewer lines with slopes not meeting the above maximum and minimum slopes will be rejected.

"As-built" drawings shall show the gravity line slopes.

Sewers shall be laid with uniform slope and straight alignment between manholes. Gravity sewer pipe shall be installed with the bell end upstream. The pipe shall be installed from downstream to upstream unless specific permission is obtained from the Engineering Division. Manholes shall

be designed with a minimum difference of 0.04 feet between the invert elevations of the incoming and outgoing sewers.

3.2.2 MATERIAL HANDLING

3.2.2.1 Precautions

All supplies shall be stored and maintained by the contractor per manufacturer's recommendations. Every precaution will be taken to prevent injury to pipe and piping materials during transportation and delivery to the work site. Under no condition will pipe be dropped, bumped, dragged, or picked up by inserting forks into the end of pipe. Pipe lifted by placing forks into pipe shall be removed from job site.

3.2.2.2 Damaged Materials

If in the process of transportation, unloading, or handling, any pipe or fitting is damaged, it will be rejected and removed from the site.

3.2.2.3 Storage

Pipe fittings and specials will be stored in a manner which will assure the protection of the material from damage and which will keep it clean. Sun damaged materials exposed to adverse conditions will be rejected.

3.2.3 TRENCH EXCAVATION, SHORING, AND SHEETING

3.2.3.1 Trenches

Sewer trenches will not be opened in advance of the placing of the sewer pipe for a distance greater than that required to install the sewer pipe. In no case will the open trench ahead of the sewer pipe exceed 25 feet. Backfill in the pipe zone will be accomplished immediately after jointing the pipe to prevent movement.

3.2.3.2 Shoring, Sheeting, and Bracing of Excavations

The excavation must be sheeted and braced when necessary to prevent cave-in during excavation in unstable material or to protect adjacent structure, property, workers, and the public. The sheeting will be maintained in place until the pipe or structure has been placed and backfilled. Shoring and sheeting will be removed, as the backfilling is done, in a manner that will not damage the pipe or structure or permit voids in the backfill. All sheeting, shoring, and bracing of excavations will conform to the Trench Safety Act and requirements of the Federal, State, or local public agency having jurisdiction. The most stringent of these requirements will apply. The Contractor shall have a Competent Person (trench safety) on the job site at ALL times.

3.2.4 CONTROL OF WATER

3.2.4.1 Equipment

The contractor will furnish, install, and, operate all necessary machinery, appliances, and equipment to keep the excavations reasonably free from water during construction. The Contractor will de-water and dispose of the water so as not to cause damage to public or private property or to cause a nuisance or a menace to the public. The Contractor will at all times have on hand sufficient pumping equipment and machinery in good working condition for all ordinary emergencies and will have available at all times competent human resources for the operation of the pumping equipment. The de-watering system will not be shut down between shifts, on holidays or on weekends, or during work stoppages.

All equipment shall conform to The City of Cocoa's noise ordinance Chapter 13.5, Article II, Section 13.5-21 through Section 13.5-26.

3.2.4.2 Ground Water

The control of ground water must be such that softening of the bottom of excavations or formation of "quick" conditions or "boils" will be prevented. De-watering systems will be designed and operated to prevent the removal of the natural soils. Discharge from pumps will be accommodated in accordance with the St. Johns River Water Management District's requirements. The Contractor is responsible for obtaining all de-watering permits such as NPDES permit.

3.2.4.3 Static Water

The static water level will be drawn down below the bottom of the excavation to maintain the undisturbed state of the natural soils and allow the placement of backfill to the required density. The de-watering system will be installed and operated so that the ground water level outside the excavation is not reduced to the extent that would damage or endanger adjacent structures or property.

3.2.5 PIPE PLACEMENT AND JOINTING

Pipe placement will progress upgrade with the spigot ends of the pipe pointing in the direction of flow. Each pipe will be placed true to line and grade with a laser beam system. All pipes will be joined in a professional manner and in accordance with the manufacturer's instructions.

Pipe ends will be carefully cleaned prior to jointing. Pipe will be placed either on a prepared bed of undisturbed earth in the bottom of the trench shaped as required to fit the pipe or upon a layer of properly placed bedding material.

3.2.6 MATERIAL FOR BEDDING AND BACKFILLING

3.2.6.1 Unsuitable Material

Wherever excavations of the trench expose unsuitable materials such as peat, soft clay, quicksand, rock, boulders, stones, or unstable material in the bottom of the trench which, in the opinion of the Engineer of Record or Inspector, is unsuitable foundation upon which to lay or support the pipe, backfill, and expected superimposed loads, such unsuitable materials will be removed to a depth necessary to reach material having adequate bearing capacity and at a width of trench at least equal to the minimum trench width as specified. The space created by removal of this unsuitable material will be backfilled using suitable backfill or bedding material as specified.

3.2.6.2 Suitable Material

Suitable material for bedding and backfilling will be dry, clean natural sand or gravel. The material will be placed in 6" layers and compacted, using mechanical compacting equipment, to a dry density equal to 98 percent (98%) of the maximum dry density as determined by the standard Proctor compaction test ASTM specification D698, each layer being compacted to the required density prior to placing the next layer. The Engineering Division shall require the density to be checked by a licensed laboratory at each manhole and at two points between manholes as selected by the Engineer of Record or Inspector, at no cost to the City.

3.2.7 MANHOLE INSTALLATION

3.2.7.1 Base Unit

The base unit for manholes and wet wells will be reinforced concrete with a monolithically poured base and bottom riser section. The base unit will be placed before the sewer pipe is

placed to or away from the manhole. The base unit will be placed in a dry hole on a bedding of 6" to 8" of ¾" to 1" rock (57 stone or recycled concrete aggregate per FDOT specifications).

3.2.7.2 Manhole Channel

Invert channels will be constructed, smooth and semicircular in shape, conforming to the inside of the adjacent sewer section. Changes in direction of flow will be made in a smooth curve of as large a radius as possible. Changes in size and grade of channels will be made gradually and evenly. Invert channels will be formed by one of the following methods; formed directly into a poured concrete manhole base, built up with brick and mortar, half tile set in concrete, or full section of sewer pipe installed through the manhole with the top half cut out. The manhole floor outside of channels will be made smooth and will be sloped toward channels. Free drop connections inside manholes are not allowed. All drop connections will be constructed outside the manhole.

3.2.7.3 Joints

Precast manhole joints must be watertight and sealed with plastic pre-formed joint filler similar to **Ram-Nek**. All joint areas will be factory primed. Manhole-to-pipe connections will be by factory-supplied flexible boots.

3.2.7.4 Non-Shrink Grout

The annular space between the sewer pipe and the opening in the manhole will be grouted with non-shrink grout to ensure a watertight joint.

3.2.7.5 Coating

The interior and exterior surfaces of manholes shall be coated in accordance with Section 3.1.5, "Coatings".

3.3 WATER MAIN CROSSINGS

3.3.1 GENERAL

In all cases where sanitary gravity or force mains cross water mains the crossing shall meet the vertical and horizontal separation requirements of FAC Rule 62-555.314. When separation requirements cannot be met, the Engineer of Record must propose an alternative solution that

meets the requirements of FAC 62-555.314 for approval by the Engineering Division. The water main should cross above the sanitary main, when the water main must cross below the sanitary main, the minimum separation shall be 12 inches.

3.4 SERVICE CONNECTIONS

3.4.1 GENERAL

The contractor must install commercially manufactured wye branches compatible with the material used in the sewer main. Where the service line piping is of a different material than the sewer main, the fittings and transition pieces will be specially designed for the connection of the different materials and must be approved by the Engineering Division.

3.4.1.1 Connecting to Manholes

Service connections made directly to a manhole shall be core drilled and fitted with a flexible coupling to provide a seal around pipe. Pipe will be a minimum of 6" in diameter and shall include a wye and clean-out in a green meter box located on the Customer side of the right-of-way or easement (see "Typical Lot Service Line Location" detail). Connections requiring a drop will be piped to the bottom of the manhole on the outside (see "Manhole with Outside Drop" detail).

Force mains coming from private lift stations into a gravity manhole requiring a drop will be piped to the bottom on the outside of the manhole and fitted with 45-degree bends directed toward the invert of the gravity main (see detail "Force Main Connection to Manhole").

3.5 FIELD TESTING OF SEWER SYSTEMS

3.5.1 GENERAL

All sewer lines will be subject to a leakage test at the discretion of the Engineering Division. The test shall be either an infiltration, exfiltration, or air pressure test as determined by the Engineering Division. The test will be conducted by and at the expense of the Contractor in the presence of the Inspector.

Maximum allowable leakage is 100 gallons per day, per inch diameter of pipe, per mile of pipe. If the amount of maximum leakage is exceeded, the Contractor will make the necessary repairs and schedule a re-test. Acceptable methods of repairing leaks are by excavation.

3.5.1.1 Visible Leaks

All visible leaks in structures will be eliminated regardless of the amount of flow.

3.5.1.2 Televised Inspection

Television inspection must be provided by the contractor and will be performed after final compaction of the job site or roadway. A Digital Video Disc (DVD) record of the inspection with an audible description of the run, including its direction and location, the location and description of any service laterals, and a description of any defect or abnormality must be included.

3.5.1.3 Pressure Testing

Force mains will be hydrostatically tested at a pressure of 100 psi for one hour. The contractor will install air reliefs as necessary for relieving air prior to testing. The maximum allowable leakage of water per thousand feet of pipe is as indicated in the following table:

Maximum Allowable Leakage per 1,000 Feet of Pipe

Size (in)	Allowable Leakage (gal/hour)						
4	0.276	0.414	0.552	0.690	1.104	1.656	2.208
6	0.414	0.621	0.828	1.035	1.656	2.484	3.312
8	0.552	0.828	1.104	1.380	2.208	3.312	4.416
10	0.690	1.035	1.380	1.725	2.760	4.140	5.520
12	0.828	1.242	1.656	2.070	3.312	4.968	6.624
15	1.035	1.553	2.070	2.588	4.140	6.210	8.280
18	1.242	1.863	2.484	3.105	4.968	7.452	9.936
21	1.449	2.173	2.898	3.623	5.796	8.694	11.592
24	1.656	2.484	3.312	4.140	6.624	9.936	13.248
27	1.863	2.794	3.726	4.657	7.452	11.178	14.904
30	2.070	3.105	4.140	5.175	8.280	12.420	16.560
33	2.277	3.415	4.554	5.692	9.108	13.662	18.216
36	2.484	3.726	4.968	6.210	9.936	14.904	19.872

3.5.1.4 Vacuum Testing of Manholes

All sewer manholes shall be required to meet the requirements of the vacuum test as per the current ASTM C 1244 "Standard Test Method for Concrete Sewer Manholes by the negative Air Pressure (Vacuum) Test" prior to acceptance. Manholes and connected piping must be backfilled to finished grade prior to testing.

A vacuum of 10 inches of mercury shall be drawn and the vacuum pump shut off. With the valves closed, the time for the vacuum to drop to 9 inches of mercury shall not be less than that shown in the following table:

Vacuum Testing for Given Manhole Size

Manhole Depth (Ft)	Time Elapsed* (Sec)
48	60
72	75
96	90
120	105

*Times shown are minimum elapsed times, in seconds, for a drop in vacuum of 1 inch of mercury.

3.6 RECORD DRAWINGS

3.6.1 GENERAL

Record drawings are required for all systems to be accepted by the Engineering Division. Record drawings will be prepared by a surveyor or an engineer registered in the State of Florida and will contain the following information:

- Location of all gate valves, valve pits, force main check valves, fittings, air release valves, tapping saddles, manholes, lift stations, wet wells, and cleanouts using at least two ties to permanent points (manholes, curbs, or storm water inlets). An acceptable station and offset system shall be used for lateral lines.
- The as-builts must include the location of the wye branch, the end of the sewer service referenced to the next downstream manhole of each run, the offset of the end of the service referenced from the centerline of the main sewage pipe, and the depth at the end of the service.
- Location of sewer mains from property easement lines or edge of pavement at intervals of 300 feet.
- Separation between reclaimed water or force mains and water mains if they are installed within 10 feet of water mains.
- Sewer main material, diameter, length of run, and distance of mains from buildings or structures within 20 feet of the sewer main.
- Elevations of the top (rim) and pipe inverts at each manhole and the length and slope of each run of pipe are required on the as-builts (all elevations must be tied to NAVD 88).
- Pertinent easement information.
- A minimum of two (2) northings and eastings geographic coordinates.
- Certification by the surveyor or Engineer of Record accepting responsibility for accuracy of information supplied on the record drawings and a statement certifying that all mains are within easements and/or public right-of-way. The name "City of Cocoa" must appear on all record drawings survey information.

Record drawings will be drawn at an engineering scale that is legible and readable as determined by city staff. Areas requiring additional detail may be enlarged as necessary. Right-of-way, easements, and lot lines must be accurately shown. After the surveyor or engineer has certified the locations, the engineer will certify on DEP Form 62-604.300(8)(b) that the system depicted on the record drawing was constructed in substantial conformance with approved plans and will function as intended. Lot, block numbers, and street names will be included. Provide two (2) sets of signed and sealed record drawings and one (1) digital file including all reference files in
.DWG format (AutoCAD 2013 or higher).

3.7 FORCE MAIN VALVES

3.7.1 GENERAL

Valves for use in force mains must be epoxy coated resilient seat gate valves. The resilient seating surface will be bonded to the gate and will seal under compression without wedging or sliding.

Requirements stated in Potable & Reclaimed Water Section 2.2.2, "Valves, Valve Boxes, and Valve Extensions" and Section 2.5.8, "Valves and Fittings" shall also be met for force main valves.

Air release valves will be of the Combination Air Release and Vacuum (CARV) type. CARV valves shall have a working pressure range of 3-150psi, testing pressure of 250psi, maximum operating temperature of 140°F, 2" threaded inlet and 1.5" outlet, reinforced nylon body, 316 SS internal parts. See "Appendix A", Approved Materials.

CARV valves will be installed in a concrete pit at high points in the main. See Detail "Air Release Valve".

3.8 FORCE MAIN PIPE

3.8.1 RESTRAINED PIPE JOINTS

The Engineer of Record shall provide a restrained joint detail on drawings submitted to the City for approval. Restraining is to apply to all new fittings installed as part of the job, including tapping saddles.

3.9 LIFT STATIONS

3.9.1 PRECAST WET WELLS

Precast wet wells must be constructed in accordance with ASTM specification C478. Concrete will have a minimum 28-day compressive strength of 4,000 PSI. Cement will be Type II sulfide resistant. Reinforcement steel will be minimum Grade 40 and placed as shown on the drawings ("Lift Station" Sheets 1 and 2 of 4). Shop drawings of manholes and lift station wet wells will be submitted to the Engineering Division Supervisor for approval prior to casting. Chairs for supporting reinforcing steel will be non-corrosive plastic or Grade 316 stainless steel. Linings for wet wells shall conform to Section 3.9.3, "Coatings". EOR shall approve precast wet well design.

3.9.2 WET WELL ACCESS COVERS

Aluminum access covers will be designed for 300 PSF live load with a safety factor of three (3). There shall be two 24" x 48" swing covers equipped with Grade 316 stainless steel hinges and Grade 316 stainless steel tamper-proof fasteners, closed position lock hasp, and retractable grip for opening. The cover will open to 90 degrees and lock automatically in the open position with a stainless steel positive locking arm. The release will be made by a stainless steel release handle. The cover will be flush with the top of the frame and rest on a ¾-inch wide lip around the inside of the frame. The hatch will be a **Bilco** or **Halliday** product. Hatch size of the cover will be determined by the wet well size and pump size to provide at least 12" of clearance on all sides of the pump with a minimum hatch dimension of 48" x 48". The wet well access cover needs to be flush with the top of the concrete.

3.9.3 COATINGS

3.9.3.1 HDPE Sheet Lining

The entire interior wall and top surface of the wet well will be protected with an HDPE liner designed to protect concrete from corrosion in a collection system pump wet well. The liner shall be a minimum thickness of 0.079 inches. Anchoring studs shall be the same material, and shall be integrally extruded with the sheet and shall have a minimum height of 0.39 inches and a length of 0.55 inches. The HDPE sheeting will be cast into the concrete. This liner will be **AGRU Sure Grip** as manufactured by **AGRU America, Inc**. or approved equal. Flat liner used for overlapping joints shall have a minimum thickness of 0.018 inches. All joints will be heat fusion welded to create a watertight lining. Such lining shall be warranted against defects in materials and workmanship for a period of five years from date of installation.

3.9.3.2 Exposed Piping

Pump discharge riser pipes and fittings inside the wet well will be Grade 316 10S stainless steel with flanged fittings. Piping exposed to raw sewage in valve pits will be coated with a two-coat coal tar epoxy exterior coating system with a minimum DFT of 12-15 mils. Coal tar epoxy will be **Rustoleum 9578** or approved equal. Equipment and pump information tags will not be painted.

3.9.4 SUBMERSIBLE PUMPS

Lift station submersible pumps will be **Hydromatic, ABS**, or **Flyght** with three-phase power and 3" minimum solids handling capacity. Pump volute, seal housing, and motor housing will be cast iron. Pump impeller will be two vane, one-piece cast iron construction. Pump shaft will be one-

piece 316 stainless steel, equipped with tandem seals with separate chambers for each seal. Seals will have tungsten carbide faces with 316 stainless steel hardware. Seal chambers will be equipped with probes to detect water intrusion. Motors will be oil-filled with automatic reset over-temperature sensors embedded in the motor windings. Pumps will be equipped with a stainless steel slide rail system, dual rail type. The pump discharge coupling will be flanged cement-lined ductile iron, 4" minimum diameter, bolted to the wet well floor by 316 stainless steel fasteners. Flanges will be machine threaded. (Compression-type flanges will not be allowed) Flange bolts, washers, and nuts will be 316 stainless steel. All pipes entering or exiting the wet well shall be sealed in a manner that will prevent water leaks around pipes.

3.9.5 VALVE PIT

A separate valve pit shall be constructed adjacent to the wet well to house a check valve for each pump, a gate valve for each pump, and one gate valve for emergency pump-out. The valve pit shall be configured to allow a minimum of 8 inches between the bottom of pipe flanges and the floor or wall. The emergency pump outlet will include a brass 4" male quick-disconnect complete with brass cover. The cross will be tapped to accommodate a brass gate valve with a threaded on 0-100 PSI glycerin filled pressure gauge. The valve pit is to be made of precast or cast-in-place concrete with a cast concrete cover equipped with an aluminum access hatch cast in the concrete. Aluminum access covers will be designed for 300 PSF live load with a safety factor of three (3). There shall be two 24" x 48" swing covers equipped with Grade 316 stainless steel hinges and Grade 316 stainless steel tamper-proof fasteners, closed position lock hasp, and retractable grip for opening. The cover will open to 90 degrees and lock automatically in the open position with a stainless steel positive locking arm. The release will be made by a stainless steel release handle. The cover will be flush with the top of the frame and rest on a ¾-inch wide lip around the inside of the frame. The dual swing access hatch will be a **Bilco** or **Halliday** product. Hatch size will be determined by the installation with a minimum dimension of 48 x 48 inches. The valve pit access cover needs to be flush with the top of the concrete. The valve pit depth is a maximum of 36" deep.

3.9.6 CHECK VALVES

Check valves will be flanged, with fusion bonded epoxy coating with an outside weight and lever, cast iron housing, 316 stainless steel seat ring, clapper with neoprene sealing surface, O-ring- sealed stuffing box (minimum size 4"). Bolts, washers, and nuts will be Grade 316 stainless steel. Check valves shall meet AWWA specification C508. Flanged end dimensions will be drilled to ANSI standard B16.1 class 125.

3.9.7 GATE VALVES

Gate valves will be resilient seated, 4" minimum diameter, with flanged ends, hand wheel operated, non-rising stem, epoxy coated, equipped with double O-ring-sealed stuffing box and Grade 316 stainless steel fasteners. Gate valves will meet AWWA specification C509 and C515. Flanged end dimensions will be drilled to ANSI standard B16.1 class 125.

3.9.8 CONTROL PANEL

The control panel will be isolated with a 200-amp fusible breaker disconnect housed in a NEMA 4X, stainless steel lockable cabinet.

The control panel enclosure will be Grade 316 stainless steel, NEMA 4X rated with a heat- reflecting hood. The minimum inside dimensions will be 36" wide x 48" high x 12" deep. Control voltage will be 120 VAC. **Control voltage transformer will be sized to support a 20 Amp circuit.** Control wiring will be 14 AWG stranded. The enclosure will be equipped with an aluminum dead front inner panel with cutouts for all circuit breakers; elapsed time meter (non-reset, hour and one-tenth hour, five digits); one duplex 120 VAC convenience outlet (GFI protected); a top mounted LED work light minimum 24 inches in length; hand-off-automatic (HOA) switch for each pump; seal failure light for each pump (amber); run light for each pump (red); one trip light for each pump (amber), SCADA bypass switch, inside and outside light on-off switch.

Floats will be used to provide level control. There will be one float for pump shut-off, one for lead pump turn-on, one for lag pump turn-on, and one for high-level alarm. Floats will be Roto- Float type-S as manufactured by Anchor Scientific with all weights and switches encapsulated. Floats will operate on normal 24 VAC supplied from a step-down 120 VAC to 24 VAC transformer located in the control panel. Float wiring from control panel to pump J-box will be a minimum of
#14 AWG copper wire. City will provide signal cable that will run from the control panel to the pump J-box in the same conduit as the float wiring.

Motor starters will be NEMA-rated with three-leg protection, circuit breakers (molded case), and all pilot devices (switches, relays, lights) will be manufactured by **Square-D**.

The control panel will be equipped with a **Russel Stoll model JRS 1044FR 100-amp emergency generator receptacle** and emergency main circuit breaker with lockout from the normal main breaker. Panel will be equipped with ground and neutral terminal bars. A power distribution block will be installed after the main breaker. Two 10 feet by 3/4 inches copper-clad ground rod will be driven into the ground adjacent to the control panel and must test less than 25 ohms resistance. Grounding wire will be Cad welded to the ground rod. The door will be equipped with a three-point latching system with hasp and staple for locking. The wiring system will be configured to allow the pumps to operate on floats if the SCADA system is by-passed. A separate by-pass switch will be installed. A **Time Mark** or **Diversified Electronics** phase sequence and loss relay with fault light will be installed for each pump. Line voltage will be monitored with a **Time Mark 257B or A257B**. The control panel will be mounted on aluminum channel or stainless steel unistrut and hardware supported by a minimum of three 4-inch square concrete posts. The post will be a minimum of 10 foot in length and located adjacent to the wet well. When the panel door is open, a minimum of 4-foot separation between the wet well edge and the panel.

A NEMA 4X, 316 stainless steel junction box with back plate, a terminal strip, a power distribution block for each pump, and a ground bar will be installed near the main control panel with a 1 ¼ inch diameter conduit for float wiring and a 2-inch diameter conduit for the pumps. The J-Box will be the minimum specified on the plans and will be located next to and same height as the control panel. The box will be connected to the control panel with a 1 ¼-inch diameter conduit for float wiring and a 2-inch diameter conduit for each pump. The conduits will be equipped with seal-offs between the control panel and the pump J-box to protect electrical equipment from corrosive atmosphere in the wet well. The terminal strip will be mounted on DIN rail and terminals will be Phoenix Contacts with sufficient room to add thirty-five (35) Phoenix Contact terminal blocks. The motor conductors will be one size larger than required by the current National Electric Code. Motor seal failure and over-temperature wiring will be a minimum #14 AWG copper conductors consisting of Black, Red, White, and Green. One set of these four colors will be for each motor. These conductors are to be in the same 2-inch conduit for the motor conductors. Four #12 AWG copper conductors will also be installed in the same 2-inch conduit for future use. These will be Black, Red, White, and Green.

A laminated as-built electrical wiring diagram (minimum 8.5" x 11") will be securely attached to the inside of the control panel door. A separate copy of the as-built wiring diagram will be provided to City of Cocoa Engineering Division. An information plate will also be located inside panel door and will include Cocoa's station number, pump information, and station voltage. An information plate with the address of the lift station will be located on the exterior of the meter can. If a high leg is present, identify the leg with orange color.

A site meeting will be held for each project to determine the exact placement of the panel components.

3.9.8.1 Disconnect Panel

A lightning suppressor shall be installed on the exterior side of the disconnect panel. It will not be permitted on the inside of the control panel. The disconnect panel will be a 200-amp fusible or breaker disconnect housed in a NEMA 4X, 316 stainless steel, 3 poles lockable cabinet rated for 600 volts AC. The disconnect panel is to be located next to the meter housing.

3.9.8.2 SCADA

SCADA equipment will be housed in a separate Eurobex, model number 5412 ESSPCH, lockable, NEMA 4X cabinet with an inner panel for equipment mounting and a separate inner panel on the door for mounting radio. Lift station operation and monitoring will be accomplished via SCADA, utilizing Motorola Moscad-L Remote Terminal Unit (RTU) consisting of one 15X15 chassis-part# FHN6028, frame-part# FHN5890, 3 I/O motherboard-part # FRNS809, a 117 vac transformer- part# FPN5554, power supply module-part# FPN5555, Central Processing Unit (CPU)-part# F6836, external radio interface board-part # FRNS907, three mixed I/O modules-part# FRNS819, battery bracket-part # FHN6058, battery-part# FLN9059, UHF radio 438-470 MHt-part# FUE1067, radio install kit-part# FLN3268, one antenna cable-part# FKN4473, TCP/IP interface to port 1- part# V527, and all associated cables. For more information, refer to the RTU detail sheets in "Appendix B".

The antenna shall be a gold anodized fully welded UHF directional Yagis, model Y4503, as manufactured by Antenex. The antenna shall be mounted on a minimum 20-foot-tall galvanized mast. The mast shall be rigid pipe, two and one half inches in diameter at the base. The upper 5 feet of mast will be rigid pipe, one and one quarter inches in diameter. The bottom of the mast will be set 3 foot below ground level and encased in a column of concrete a minimum of 12 inches in diameter and 3 foot deep. The mast will be located in close proximity to the SCADA/RTU panel. Antenna cable shall be Times Microwave Systems 3/8 inch diameter flexible low loss coaxial cable, part# LMR-400-DB and shall be fed into a 1-inch rigid metal conduit, mounted next to the antenna mast and shall be supported a minimum of three times along the length of the mast. The cable is to be fed into the underside of the SCADA/RTU panel. The mast shall be grounded to separate ground rod. A 20-foot copper-clad ground rod will be driven into the ground adjacent to the mast and must test less than 25 ohms resistance. Grounding wire will be Cad welded to the ground rod. Coordination of SCADA programming will be provided by the City's EOR.

The interface between the control cabinet and the separate SCADA cabinet will be through Phoenix Contact terminals and component plugs and relay bases (catalog # 700-HN121), or approved equals. An isolated 20 Amp circuit will be provided to power SCADA equipment. Pumps will be controlled by SCADA RTU.

SCADA will be our new system and will be provided by the City. Existing antenna will be used. Coaxial cable may need to be replaced at the sole responsibility of the Contractor.

3.9.8.3 Surge Protection

A surge protection unit as manufactured by Ditek, model KX-(applied voltage) shall be installed in a separate cabinet.

3.9.8.4 Emergency Generator

Stand-alone emergency electrical generators may be required for some pumping stations will be determined by the Engineering Division at the time of plan review. Generator location to be determined by the City. Provide a concrete slab with a minimum thickness of 6 inches. Generator will be mounted on approved rubber pads for vibration dampening. Installation must meet NFPA and NEC requirements. Generators shall be manufactured by Kohler or an approved equal and equipped with a John Deere, Cummins, or Caterpillar diesel engine with a minimum 60 kW output. Generator will be equipped with a fuel tank sized to provide a minimum of 32 hours operations under full load conditions with a minimum capacity of 250 gallons. Automatic Transfer Switch (ATS) will be installed in a separate NEMA 4X enclosure. ATS to be sized to the incoming electric service voltage and amp rating.

3.9.9 Site Lighting

Total number of lights will be determined by total area of the lift station site and equipment location. At least one light and pole will be located near the wet well and valve pit. Exact location to be determined by the City. Light pole must be aluminum, square, and bronze in color. Pole must be wind rated for the location. Total pole height, including in-ground base, will not exceed 16 feet above finished grade. Light must be RAB Lighting #ALED3T15O or an approved equal.

3.10 CONDUIT

Exposed electrical conduit will be Rigid Metal Conduit (galvanized rigidRMC) with protective coating where it penetrates concrete. Buried conduit will be Schedule 80 PVC. Conduits will be sized in accordance with NEC or larger with a minimum diameter of 2 inches. PVC conduits for pump and float wiring will be installed through the side of the wet well, below the lid, and above the high-water level.

Each pump power cable will be installed through a separate conduit from the wet well to the control panel junction box. All conduits from wet well to J-Box will be 2-inch Schedule 80 PVC

and consist of double 45-degree bends. Seal failure and over-temperature wiring for the pump will be installed in the same conduit. One (1) conduit will be provided to accommodate float wiring. Conduits for power and float wiring will be installed in close proximity and located to provide the straightest possible run to the junction box. Wiring from the wet well will be terminated in the junction box. Continuous wiring through the box will not be permitted.

A separate 2-inch diameter PVC conduit will be installed through the side of the wet well with the ends capped for future use. This conduit will be located at 90, 180, or 270 degrees from the others. The Engineering Division will determine the exact location during plan review.

B.S.E. CONSULTANTS, INC.
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MELBOURNE, FLORIDA 32901
PHONE: (321) 725-3674 FAX: (321) 723-1159
CERTIFICATE OF PROFESSIONAL ENGINEERS BUSINESS AUTHORIZATION: 4905
CERTIFICATE OF LAND SURVEYING BUSINESS AUTHORIZATION: LB0004905

SCOTT M. GLAUBITZ, P.E. & P.L.S.
STATE OF FLORIDA, No. 33659 No. 4151

HASSAN A. KAMAL, P.E.
STATE OF FLORIDA, No. 41951

VERTICAL DATUM: NAVD88

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CITY COMMENTS	10/30/20
DATE:	08/31/20
DESIGN/DRAWN:	ALS/DRB

PROJECT TITLE

CIRRUS

SHEET TITLE

CITY OF COCOA TECHNICAL PROVISIONS (WASTEWATER)

PROJECT NO.

11545

DRAWING NO.

11545_400_019

SHEET

19 of 19

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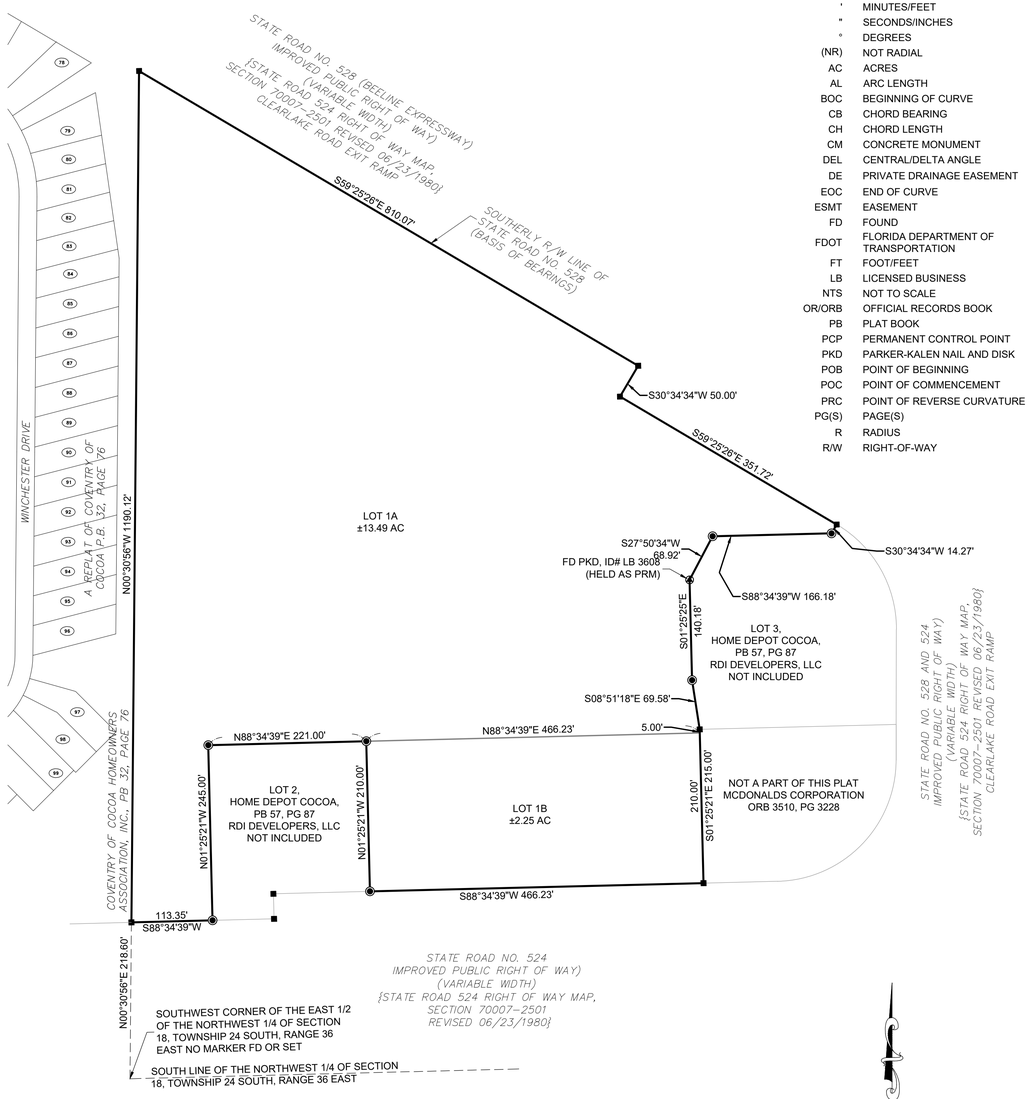
SYMBOLS SHOWN ARE GRAPHIC IN NATURE; DUE TO SCALE, ALL DESIGN ELEMENTS ARE NOT NECESSARILY SHOWN ON PLAN VIEWS. THE CONTRACTOR SHALL ALSO REFER TO SPECIFICATION AND DETAIL SHEETS AS WELL AS THE COMPLETE PLAN SET.

CIRRUS

BEING A RE-PLAT OF LOT 1, HOME DEPOT COCOA ACCORDING TO THE PLAT THEREOF AS RECORDED IN PLAT BOOK 57, PAGE 87, PUBLIC RECORDS BREVARD COUNTY FLORIDA, LYING IN SECTION 18, TOWNSHIP 24 SOUTH, RANGE 36 EAST, CITY OF COCOA, BREVARD COUNTY, FLORIDA

PRELIMINARY PLAT



ABBREVIATIONS

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AL	ARC LENGTH
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DE	PRIVATE DRAINAGE EASEMENT
EOC	END OF CURVE
ESMT	EASEMENT
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FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION
FT	FOOT/FEET
LB	LICENSED BUSINESS
NTS	NOT TO SCALE
OR/ORB	OFFICIAL RECORDS BOOK
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PCP	PERMANENT CONTROL POINT
PKD	PARKER-KALEN NAIL AND DISK
POB	POINT OF BEGINNING
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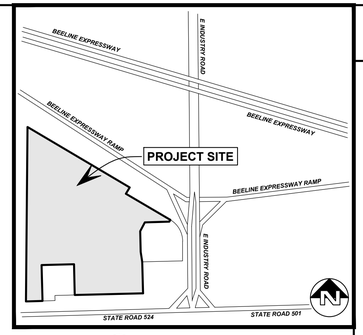
PG(S)	PAGE(S)
R	RADIUS
R/W	RIGHT-OF-WAY

SURVEY SYMBOL LEGEND

- ■ PERMANENT REFERENCE MONUMENT (PRM); FD 4X4 INCH CONCRETE MONUMENT WITH DISK STAMPED PRM LB4905, UNLESS OTHERWISE NOTED
- ◉ SET 5/8" IRON ROD & CAP STAMPED "PRM LB4905" UNLESS OTHERWISE NOTED
- ▲ SET MAG NAIL & DISK STAMPED "PRM LB4905" UNLESS OTHERWISE NOTED

NOTICE: THIS PLAT, AS RECORDED IN ITS GRAPHIC FORM, IS THE OFFICIAL DEPICTION OF THE SUBDIVIDED LANDS DESCRIBED HEREIN AND WILL IN NO CIRCUMSTANCES BE SUPPLANTED IN AUTHORITY BY ANY OTHER GRAPHIC OR DIGITAL FORM OF THE PLAT. THERE MAY BE ADDITIONAL RESTRICTIONS THAT ARE NOT RECORDED ON THIS PLAT THAT MAY BE FOUND IN THE PUBLIC RECORDS OF THIS COUNTY.



LOCATION MAP
NTS

PLAT NOTES:

1. BEARING REFERENCE: ASSUMED BEARING OF N00°30'56"E ON THE WEST LINE OF LOT 1, HOME DEPOT COCOA AS RECORDED IN PLAT BOOK 57, PAGE 87, PUBLIC RECORDS OF BREVARD COUNTY, FLORIDA.
2. SURVEY MONUMENTATION WITHIN THE SUBDIVISION SHALL BE SET IN ACCORDANCE WITH FLORIDA STATUTES, CHAPTER 177.091(9).
3. ALL PLATTED PUBLIC UTILITY EASEMENTS SHALL ALSO BE EASEMENTS FOR THE CONSTRUCTION, INSTALLATION, MAINTENANCE, AND OPERATION OF CABLE TELEVISION SERVICES; PROVIDED, HOWEVER, NO SUCH CONSTRUCTION, INSTALLATION, MAINTENANCE, AND OPERATION OF CABLE TELEVISION SERVICES SHALL INTERFERE WITH THE FACILITIES AND SERVICES OF AN ELECTRIC, TELEPHONE, GAS, OR OTHER PUBLIC UTILITY. IN THE EVENT A CABLE TELEVISION COMPANY DAMAGES THE FACILITIES OF A PUBLIC UTILITY, IT SHALL BE SOLELY RESPONSIBLE FOR THE DAMAGES. THIS SECTION SHALL NOT APPLY TO THOSE PRIVATE EASEMENTS GRANTED TO OR OBTAINED BY A PARTICULAR ELECTRIC, TELEPHONE, GAS, OR OTHER PUBLIC UTILITY. SUCH CONSTRUCTION, INSTALLATION, MAINTENANCE, AND OPERATION SHALL COMPLY WITH THE NATIONAL ELECTRICAL SAFETY CODE AS ADOPTED BY THE FLORIDA PUBLIC SERVICE COMMISSION.
4. THE LANDS PLATTED HEREON ARE SUBJECT TO THE TERMS AND CONDITIONS OF THAT CERTAIN EASEMENT IN FAVOR OF FLORIDA GAS TRANSMISSION COMPANY AS REFERENCED IN FINAL JUDGMENT RECORDED IN OFFICIAL RECORDS BOOK 599, PAGE 315.
5. THE LANDS PLATTED HEREON ARE SUBJECT TO THE TERMS, COVENANTS, CONDITIONS, EASEMENTS, RESTRICTIONS AND OTHER PROVISIONS SET FORTH IN DECLARATION OF RESTRICTIONS AND GRANT OF EASEMENTS BY INTERCHANGE ASSOCIATES, INC., A DELAWARE CORPORATION, RECORDED IN OFFICIAL RECORDS BOOK 3299, PAGE 3156
6. THE 36' SHARED ACCESS EASEMENT SHOWN ON LOT 1B IS HEREBY DEDICATED TO THE OWNERS OF LOT 1A FOR VEHICULAR AND PEDESTRIAN ACCESS.
7. THE LANDS PLATTED HEREON ARE SUBJECT TO THE TERMS AND CONDITIONS OF THAT CERTAIN TWENTY (20) FOOT WIDE REUSE MAIN AND INGRESS/EGRESS EASEMENT IN FAVOR OF THE CITY OF COCOA SET FORTH IN REUSE MAIN AND WATER LINE & INGRESS/EGRESS EASEMENT RECORDED IN OFFICIAL RECORDS BOOK 3372, PAGE 4481. NOTE: THE TWENTY (20) FOOT WIDE WATER LINE AND INGRESS/EGRESS EASEMENT WHICH WAS ALSO GRANTED IN SAID INSTRUMENT WAS VACATED BY RESOLUTION NO. 2005-65 RECORDED IN OFFICIAL RECORDS BOOK 5510, PAGE 2725.
8. THE LANDS PLATTED HEREON ARE SUBJECT TO THE TERMS AND CONDITIONS OF THAT CERTAIN TWENTY (20) FOOT WIDE EASEMENT FOR SANITARY SEWER FORCE MAIN AND A TWENTY (20) FOOT WIDE EASEMENT FOR SANITARY SEWER LINE IN FAVOR OF THE CITY OF COCOA SET FORTH IN FORCE MAIN AND SEWER LINE & INGRESS/EASEMENT RECORDED IN OFFICIAL RECORDS BOOK 3372, PAGE 4486. NOTE: A PORTION OF SAID EASEMENT(S) WAS/WERE VACATED BY RESOLUTION NO. 2005-100 RECORDED IN OFFICIAL RECORDS BOOK 5557, PAGE 4594.
9. THE LANDS PLATTED HEREON ARE SUBJECT TO THE TERMS AND CONDITIONS OF THAT CERTAIN RIGHT OF WAY EASEMENT FROM INTERCHANGE ASSOCIATES, INC. IN FAVOR OF SOUTHERN BELL TELEPHONE AND TELEGRAPH COMPANY RECORDED IN OFFICIAL RECORDS BOOK 3387, PAGE 3308.
10. COVENANT SET FORTH IN SHORT FORM LEASE BY AND BETWEEN INTERCHANGE ASSOCIATES, INC., LANDLORD, AND ECKERD CORPORATION, TENANT, RECORDED IN OFFICIAL RECORDS BOOK 3511, PAGE 710, AS ASSIGNED, MODIFIED, SUPPLEMENTED AND/OR AMENDED BY THE DOCUMENTS LISTED ON EXHIBIT A OF THAT CERTAIN INSTRUMENT BY AND BETWEEN CVS EGL 524 COCOA FL, L.L.C., SUCCESSOR IN INTEREST TO ECKERD CORPORATION, TENANT, RDI DEVELOPERS, LLC, SUCCESSOR IN INTEREST TO INTERCHANGE ASSOCIATES, INC., LANDLORD, ET AL, RECORDED IN OFFICIAL RECORDS BOOK 5583, PAGE 8287.

LEGAL DESCRIPTION

LOT 1 OF HOME DEPOT COCOA, ACCORDING TO THE PLAT THEREOF RECORDED IN PLAT BOOK 57, PAGES 87 THROUGH 93, OF THE PUBLIC RECORDS OF BREVARD COUNTY, FLORIDA.

- THIS PLAT PREPARED BY -

B.S.E. CONSULTANTS, INC.
CONSULTING - ENGINEERING - LAND SURVEYING
312 SOUTH HARBOR CITY BOULEVARD, SUITE 4 MELBOURNE, FL 32901
PHONE: (321) 725-3674 FAX: (321) 723-1159
CERTIFICATE OF BUSINESS AUTHORIZATION: 4905
CERTIFICATE OF LAND SURVEYING BUSINESS AUTHORIZATION: LB0004905

DATE: 08/31/20
DESIGN/DRAWN: ALS/AH
DRAWING# 11545_300_001
PROJECT# 11545

PLAT BOOK _____, PAGE _____
SHEET 1 OF 4
SECTION 18, TOWNSHIP 24 SOUTH, RANGE 36 EAST

DEDICATION

KNOW ALL MEN BY THESE PRESENTS, COCOA RETAIL, LLC, a North Carolina Limited Liability Company, being the owner in fee simple of the lands described in

CIRRUS

Hereby dedicates said lands and plat for the uses and purposes therein expressed and dedicates all public drainage and utility easements as further described in the notes or as shown hereon. The owner hereby dedicates to the public and the City of Cocoa, Florida, all easements shown hereon as public easements and a perpetual public easement over and across Lot 1A and Lot 1B for ingress and egress for law enforcement and emergency vehicles, emergency access and emergency maintenance.

By:_____
Printed Name:

SEAL

Attest:_____
Printed Name:

Attest:_____
Printed Name:

COCOA RETAIL, LLC
1111 METROPOLITAN AVENUE
SUITE 700
CHARLOTTE, NORTH CAROLINA 28236

STATE OF _____ COUNTY OF _____

The foregoing instrument was acknowledged before me by means of ____ physical presence ____ or online notarization, this _____ by the above named Limited Liability Company under the laws of the State of _____, on behalf of the company, who is personally known to me ___ or has produced _____ as identification.

IN WITNESS WHEREOF, I have hereunto set my hand and seal on the above date.

_____ SEAL
NOTARY PUBLIC
My Comm. Expires _____

CERTIFICATE OF SURVEYOR

KNOW ALL MEN BY THESE PRESENTS, That the undersigned, being a licensed professional surveyor and mapper, does hereby certify that on 11/11/2019 he completed a boundary survey of the lands shown on the foregoing plat; and that said plat was prepared under his direction and supervision and that said plat complies with all of the survey requirements of Chapter 177, part 1, Florida Statutes, and that said lands are located in the City of Cocoa, Brevard County, Florida.

_____ Registration Number 5611
LESLIE E. HOWARD
B.S.E. Consultants, Inc.
312 South Harbor City Boulevard, Suite #4
Melbourne, Fla. 32901
Certificate of Authorization Number: LB-0004905

CERTIFICATE OF REVIEWING SURVEYOR

I HEREBY CERTIFY, That I have reviewed the foregoing plat and find that it is in conformity with Chapter 177, part 1, Florida Statutes.

_____
J. Barry. Cabannis
Reg. Florida Surveyor & Mapper #4524
Reviewing Surveyor for the City of Cocoa

CERTIFICATE OF APPROVAL OF MUNICIPALITY

THIS IS TO CERTIFY, That on _____, the foregoing plat was approved by the City Council of the City of Cocoa, Florida.

_____
Michael C. Blake, MAYOR

ATTEST: _____
Carie Shealy, CITY CLERK

CERTIFICATE OF CLERK

I HEREBY CERTIFY, That I have examined the foregoing plat and find that it complies in form with all the requirements of Chapter 177, Part 1, Florida Statutes, and was filed for record on _____ at _____.

File No. _____

ATTEST: _____
Clerk of the Circuit Court in and for Brevard County, Fla.

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PLAT BOOK _____, PAGE _____
SHEET 2 OF 4
SECTION 18, TOWNSHIP 24 SOUTH, RANGE 36 EAST

CIRRUS

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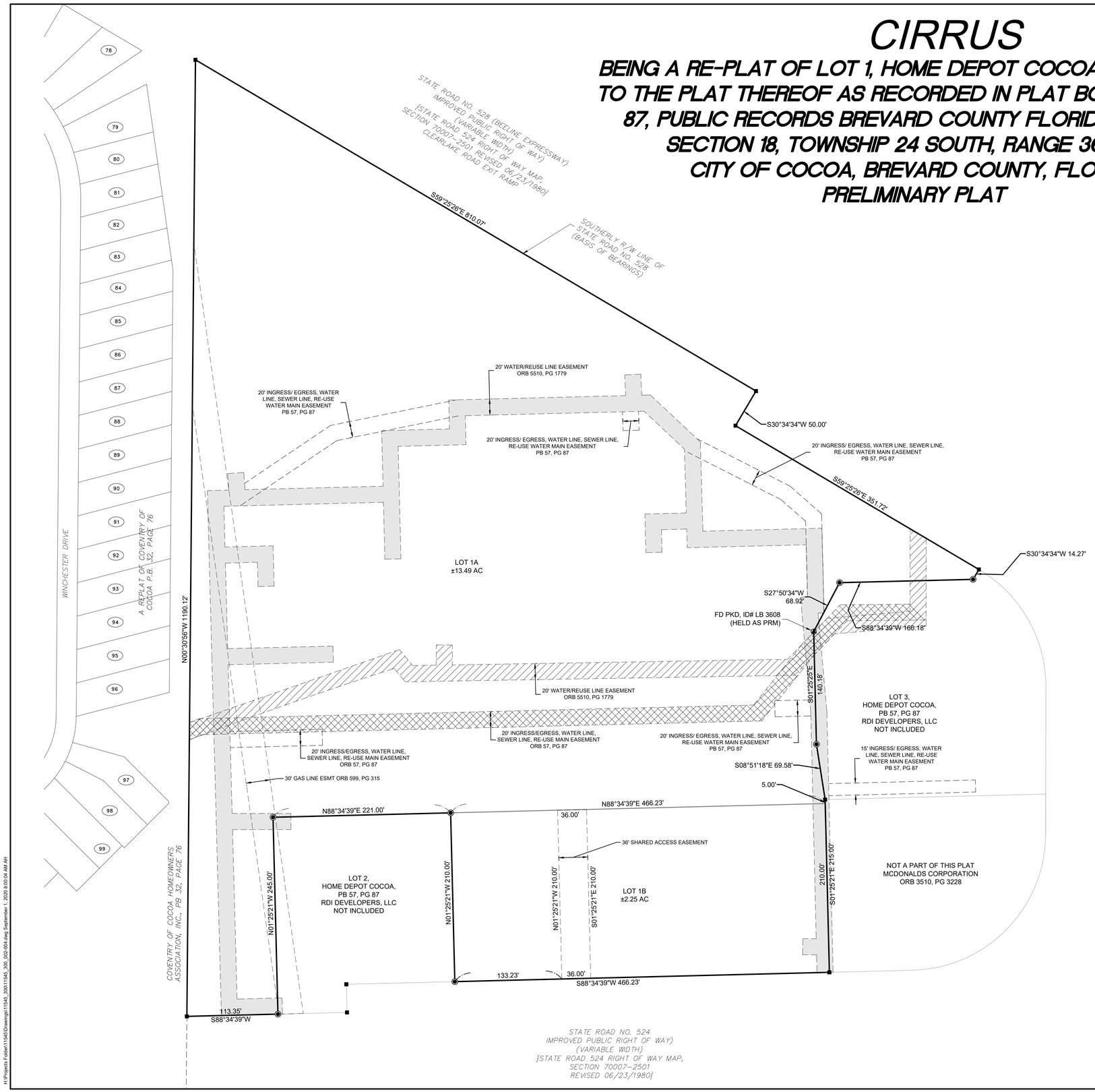

SURVEY SYMBOL LEGEND

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PG(S)	PAGE(S)
R	RADIUS
R/W	RIGHT-OF-WAY
SEC	SECTION
S	SOUTH
W	WEST

60 0 30 60
1 INCH = 60 FEET

- THIS PLAT PREPARED BY -

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CERTIFICATE OF BUSINESS AUTHORIZATION: 49925
CERTIFICATE OF LAND SURVEYING BUSINESS AUTHORIZATION: LB0004905

DATE: 08/31/20
DESIGN/DRAWN: ALS/AH
DRAWING# 11545_300_002
PROJECT# 11545

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PLAT BOOK _____, PAGE _____
SHEET 3 OF 4
SECTION 18, TOWNSHIP 24 SOUTH, RANGE 36 EAST

CIRRUS

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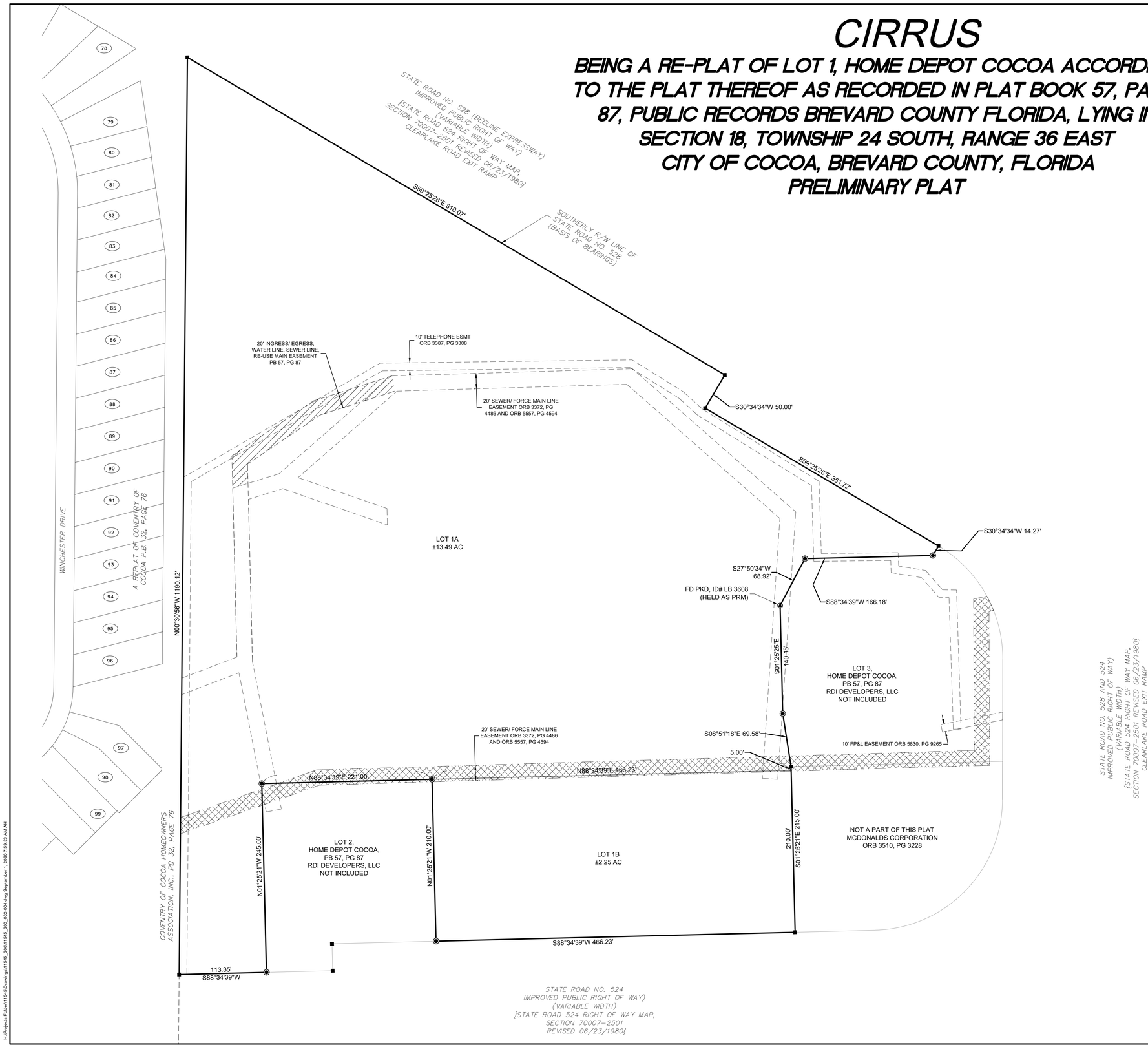

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1 INCH = 60 FEET

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DESIGN/DRAWN: ALS/AH
DRAWING# 11545_300_003
PROJECT# 11545

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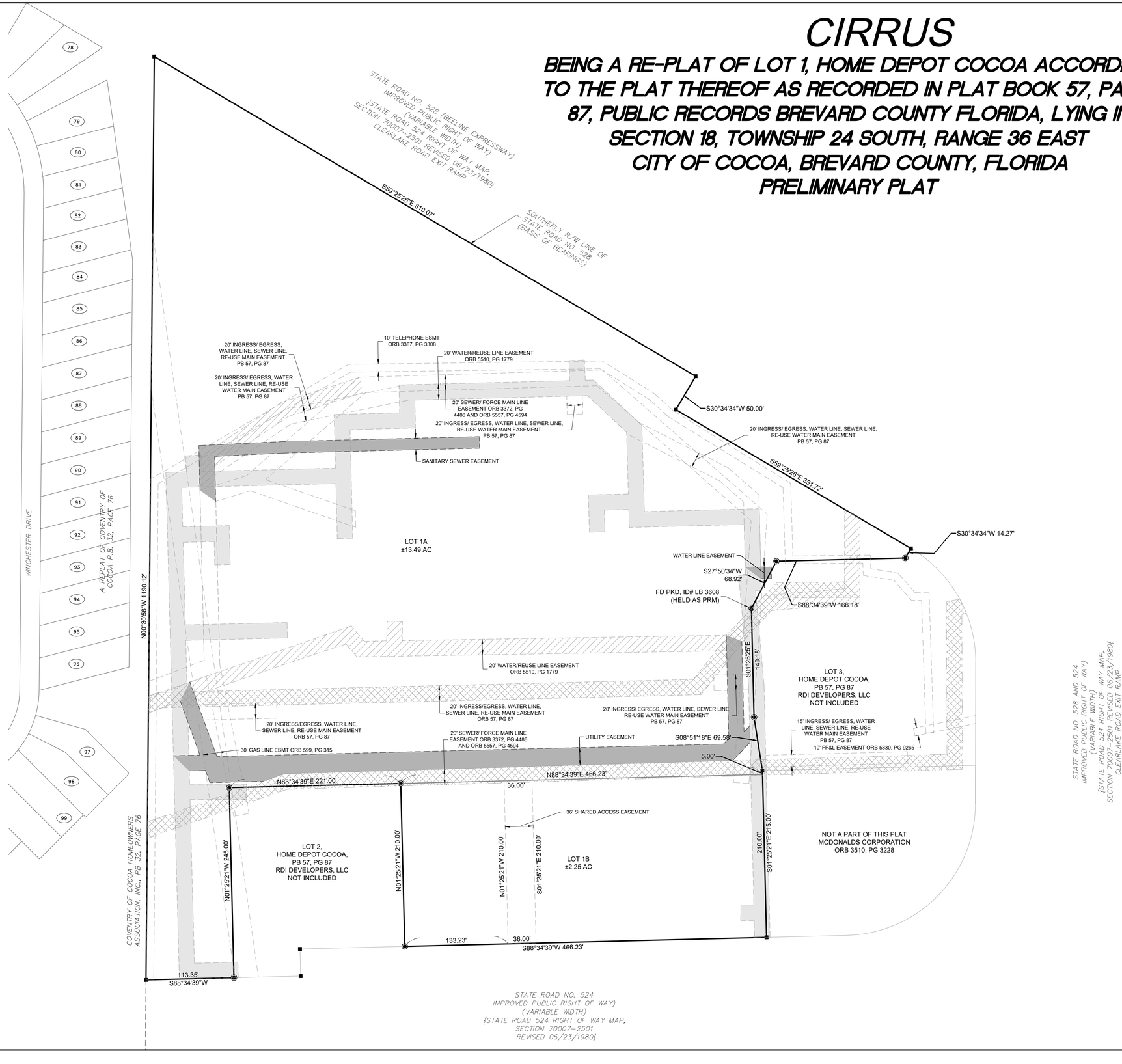
PLAT BOOK _____, PAGE _____
SHEET 4 OF 4
SECTION 18, TOWNSHIP 24 SOUTH, RANGE 36 EAST

CIRRUS

BEING A RE-PLAT OF LOT 1, HOME DEPOT COCOA ACCORDING TO THE PLAT THEREOF AS RECORDED IN PLAT BOOK 57, PAGE 87, PUBLIC RECORDS BREVARD COUNTY FLORIDA, LYING IN SECTION 18, TOWNSHIP 24 SOUTH, RANGE 36 EAST CITY OF COCOA, BREVARD COUNTY, FLORIDA PRELIMINARY PLAT



SURVEY SYMBOL LEGEND

- ■ PERMANENT REFERENCE MONUMENT (PRM); FD 4X4 INCH CONCRETE MONUMENT WITH DISK STAMPED PRM LB4905, UNLESS OTHERWISE NOTED
- ● SET 5/8" IRON ROD & CAP STAMPED "PRM LB4905" UNLESS OTHERWISE NOTED
- ▲ SET MAG NAIL & DISK STAMPED "PRM LB4905" UNLESS OTHERWISE NOTED

ABBREVIATIONS

'	MINUTES/FEET
"	SECONDS/INCHES
°	DEGREES
(NR)	NOT RADIAL
AC	ACRES
AL	ARC LENGTH
BOC	BEGINNING OF CURVE
CB	CHORD BEARING
CDD	CENTRAL DRAINAGE DISTRICT
CH	CHORD LENGTH
CM	CONCRETE MONUMENT
DEL	CENTRAL/DELTA ANGLE
DE	PRIVATE DRAINAGE EASEMENT
E	EAST
EOC	END OF CURVE
ESMT	EASEMENT
FD	FOUND
FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION
FT	FOOT/FEET
LB	LICENSED BUSINESS
N	NORTH
NTI	NON-TANGENT INTERSECTION
NTS	NOT TO SCALE
OR/ORB	OFFICIAL RECORDS BOOK
PB	PLAT BOOK
PCC	POINT OF COMPOUND CURVATURE
PCP	PERMANENT CONTROL POINT
PKD	PARKER-KALEN NAIL AND DISK
POB	POINT OF BEGINNING
POC	POINT OF COMMENCEMENT
PRC	POINT OF REVERSE CURVATURE
PG(S)	PAGE(S)
R	RADIUS
R/W	RIGHT-OF-WAY
SEC	SECTION
S	SOUTH
W	WEST

60 0 30 60

1 INCH = 60 FEET

- THIS PLAT PREPARED BY -

B.S.E. CONSULTANTS, INC.
CONSULTING - ENGINEERING - LAND SURVEYING
312 SOUTH HARBOR CITY BOULEVARD, SUITE 4 MELBOURNE, FL 32901
PHONE: (321) 725-3674 FAX: (321) 723-1102
CERTIFICATE OF BUSINESS AUTHORIZATION: 4905
CERTIFICATE OF LAND SURVEYING BUSINESS AUTHORIZATION: LB0004905

DATE: 08/31/20
DESIGN/DRAWN: ALS/AH
DRAWING# 11545_300_004
PROJECT# 11545

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SURVEY NOTES:

SURVEY OF A PARCEL OF LAND IN SECTION 18,TOWNSHIP 24 SOUTH, RANGE 36 EAST, BREVARD COUNTY, FLORIDA.

SURVEY FOR BOUNDARY AND LOCATIONS OF PERTINENT VISIBLE ABOVEGROUND IMPROVEMENTS.

UNDERGROUND IMPROVEMENTS AND/OR UTILITIES SHOWN AND NOTED HEREON WERE TAKEN FROM A PREVIOUS SURVEY OF THIS AREA PERFORMED BY THIS COMPANY.

BEARING REFERENCE: ASSUMED BEARING OF S85°25'26"E ON THE SOUTHERLY RIGHT-OF-WAY LINE OF STATE ROAD NO. 528 (BEELINE EXPRESSWAY) CLEARLAKE ROAD EAST BOUND EXIT RAMP, ACCORDING TO THE PLAT OF HOME DEPOT COCOA, AS RECORDED IN PLAT BOOK 57, PAGE 87, PUBLIC RECORDS OF BREVARD COUNTY, FLORIDA.

THE SURVEYOR RELIED SOLELY ON INFORMATION CONTAINED WITHIN THAT CERTAIN FIRST AMERICAN TITLE INSURANCE COMPANY ALTA COMMITMENT FOR TITLE INSURANCE FILE NO.: 2061-4486840, ISSUING OFFICE FILE NUMBER: 2320-TBD, COMMITMENT DATE: OCTOBER 1, 2019 AT 8:00 A.M FOR INFORMATION REGAGRDING EASEMENTS AFFECTING AND/OR ENCUMBERING THE LANDS SURVEYED HEREON

THIS SURVEY IS NOT VALID WITHOUT THE SIGNATURE AND ORIGINAL RAISED SEAL OF A FLORIDA LICENSED PROFESSIONAL SURVEYOR AND MAPPER UNLESS ELECTRONICALLY SIGNED AND SEALED IN ACCORDANCE WITH FLORIDA STATUTES CHAPTER 472.025.

THIS SURVEY MEETS THE STANDARDS OF PRACTICE FOR SURVEYS AS REQUIRED BY FLORIDA STATUTES CHAPTER 472 AND THE MINIMUM TECHNICAL STANDARDS FOR SURVEYS AS REQUIRED BY CHAPTER 5J-17, FLORIDA ADMINISTRATIVE CODE.

ALL BUILDING SET BACK REQUIREMENTS ARE GRAPHICALLY DEPICTED HEREON.

THIS PROPERTY HAS DIRECT ACCESS TO A DEDICATED PUBLIC STREET VIA DRIVEWAY CONNECTIONS ON STATE ROAD 528 RE-ROUTE (STATE ROAD 524).

ELEVATIONS SHOWN ARE REFERENCED TO NORTH AMERICAN VERTICAL DATUM, 1988 (NAVD88)

DATUM CONVERSION: NAVD88 + 1.35 = NGVD29

THIS SURVEY IS SUBJECT TO ANY ADDITIONAL EASEMENTS, RESTRICTIONS, RESERVATIONS AND RIGHTS-OF-WAY OF RECORD, (EITHER PUBLIC OR PRIVATE), WHICH MAY EXIST AND WERE NOT FURNISHED TO THE SURVEYOR.

BUILDING HEIGHT RESTRICTED TO 66 FEET AS PER CITY OF COCOA, FLORIDA CODES

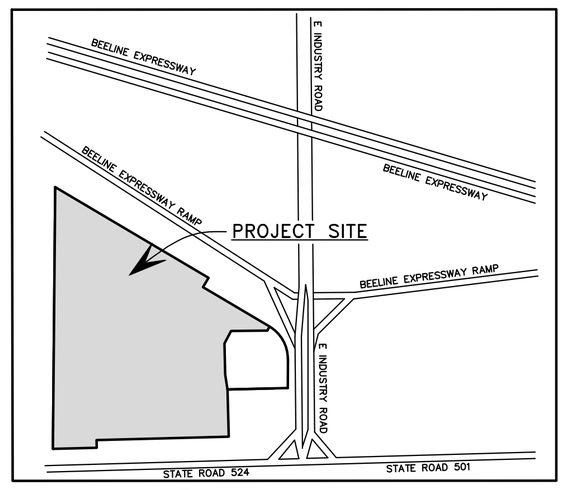
PROPERTY ADDRESS: 2320 HIGHWAY 524 UNIT HOMEDE, COCOA, FLORIDA 32926

DATE OF LAST FIELD WORK: 11/11/19

DESCRIPTION FROM EXHIBIT "A" IN THAT CERTAIN FIRST AMERICAN TITLE INSURANCE COMPANY ALTA COMMITMENT FOR TITLE INSURANCE FILE NO.: 2061-4486840, ISSUING OFFICE FILE NUMBER: 2320-TBD, COMMITMENT DATE: OCTOBER 1, 2019 AT 8:00 A.M:

PARCEL 1 (FEE PARCEL): LOT 1 OF HOME DEPOT COCOA, ACCORDING TO THE PLAT THEREOF RECORDED IN PLAT BOOK 57, PAGES 87 THROUGH 93, OF THE PUBLIC RECORDS OF BREVARD COUNTY, FLORIDA.

PARCEL 2 (EASEMENT PARCEL): TOGETHER WITH THOSE CERTAIN EASEMENTS FOR ACCESS, UTILITIES AND SIGNAGE FOR THE BENEFIT OF PARCEL 1 ABOVE AS MORE FULLY DESCRIBED AND SET FORTH IN THAT CERTAIN RESTRICTIVE COVENANTS AND EASEMENT AGREEMENT BY AND BETWEEN RDI DEVELOPERS, LLC, A NEW YORK LIMITED LIABILITY COMPANY AND HOME DEPOT U.S.A., INC. RECORDED IN OFFICIAL RECORDS BOOK 5859, PAGE 8905, AS AMENDED AND MODIFIED BY FIRST AMENDMENT TO RESTRICTIVE COVENANTS AND EASEMENT AGREEMENT BY AND BETWEEN RDI DEVELOPERS, LLC, A NEW YORK LIMITED LIABILITY COMPANY AND HOME DEPOT U.S.A., INC. RECORDED IN OFFICIAL RECORDS BOOK 5868, PAGE 8944, OF THE PUBLIC RECORDS OF BREVARD COUNTY, FLORIDA.



LOCATION MAP
NTS

DESCRIPTION OF "THE PROPERTY" BY SURVEYOR:

PART OF LOT 1, HOME DEPOT COCOA, ACCORDING TO THE MAP OR PLAT THEREOF AS RECORDED IN PLAT BOOK 57, P AGES 87 THROUGH 93, INCLUSIVE, OF THE PUBLIC RECORDS OF BREVARD COUNTY, FLORIDA, LYING IN SECTION 18, TOWNSHIP 24 SOUTH, RANGE 36 EAST, BREVARD COUNTY, FLORIDA BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

LOT 1 OF SAID HOME DEPOT COCOA, LESS AND EXCEPT THE FOLLOWING DESCRIBED PARCEL OF LAND:

COMMENCE AT THE SOUTHWEST CORNER OF SAID LOT 1 AND RUN ALONG THE BOUNDARY OF SAID LOT 1, N88°34'39"E A DISTANCE OF 113.35 FEET TO THE SOUTHWEST CORNER OF LOT 2 OF SAID HOME DEPOT COCOA; THENCE N01°25'21"W, ALONG THE WEST LINE OF SAID LOT 2, A DISTANCE OF 245.00 FEET TO THE NORTHWEST CORNER OF SAID LOT 2; THENCE N88°34'39"E A DISTANCE OF 221.00 FEET TO THE NORTHEAST CORNER OF SAID LOT 2 AND THE POINT OF BEGINNING OF THE PARCEL OF LAND HEREIN DESCRIBED; THENCE CONTINUE N88°34'39"E, ALONG THE EASTERLY EXTENSION OF THE NORTH LINE OF SAID LOT 2, A DISTANCE OF 466.23 FEET TO THE EASTERLY LINE OF SAID LOT 1; THENCE S01°25'21"E, ALONG SAID EASTERLY LINE, A DISTANCE OF 210.00 FEET TO THE SOUTHEAST CORNER OF SAID LOT 1, (SAID POINT ALSO BEING A POINT ON THE NORTH RIGHT-OF-WAY LINE OF STATE ROAD NO. 524); THENCE S88°34'39"W, ALONG SAID NORTH RIGHT-OF-WAY LINE, A DISTANCE OF 466.24 FEET TO THE SOUTHEAST CORNER OF SAID LOT 2; THENCE N01°25'21"W, ALONG THE EAST LINE OF SAID LOT 2, A DISTANCE OF 210.00 FEET TO THE POINT OF BEGINNING. CONTAINING 2.25 ACRES, MORE OR LESS.

CONTAINING 13.49 NET ACRES, MORE OR LESS.

DESCRIPTION OF "RETAINED BY SELLER" AREA BY SURVEYOR:

PART OF LOT 1, HOME DEPOT COCOA, ACCORDING TO THE MAP OR PLAT THEREOF AS RECORDED IN PLAT BOOK 57, P AGES 87 THROUGH 93, INCLUSIVE, OF THE PUBLIC RECORDS OF BREVARD COUNTY, FLORIDA, LYING IN SECTION 18, TOWNSHIP 24 SOUTH, RANGE 36 EAST, BREVARD COUNTY, FLORIDA BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCE AT THE SOUTHWEST CORNER OF SAID LOT 1 AND RUN ALONG THE BOUNDARY OF SAID LOT 1, N88°34'39"E A DISTANCE OF 113.35 FEET TO THE SOUTHWEST CORNER OF LOT 2 OF SAID HOME DEPOT COCOA; THENCE N01°25'21"W, ALONG THE WEST LINE OF SAID LOT 2, A DISTANCE OF 245.00 FEET TO THE NORTHWEST CORNER OF SAID LOT 2; THENCE N88°34'39"E A DISTANCE OF 221.00 FEET TO THE NORTHEAST CORNER OF SAID LOT 2 AND THE POINT OF BEGINNING OF THE PARCEL OF LAND HEREIN DESCRIBED; THENCE CONTINUE N88°34'39"E, ALONG THE EASTERLY EXTENSION OF THE NORTH LINE OF SAID LOT 2, A DISTANCE OF 466.23 FEET TO THE EASTERLY LINE OF SAID LOT 1; THENCE S01°25'21"E, ALONG SAID EASTERLY LINE, A DISTANCE OF 210.00 FEET TO THE SOUTHEAST CORNER OF SAID LOT 1, (SAID POINT ALSO BEING A POINT ON THE NORTH RIGHT-OF-WAY LINE OF STATE ROAD NO. 524); THENCE S88°34'39"W, ALONG SAID NORTH RIGHT-OF-WAY LINE, A DISTANCE OF 466.24 FEET TO THE SOUTHEAST CORNER OF SAID LOT 2; THENCE N01°25'21"W, ALONG THE EAST LINE OF SAID LOT 2, A DISTANCE OF 210.00 FEET TO THE POINT OF BEGINNING. CONTAINING 2.25 ACRES, MORE OR LESS.

ZONING INFORMATION PER CITY OF COCOA, FLORIDA CODES:

ZONING CLASSIFICATION: GENERAL COMMERCIAL (C-G)

SETBACKS:
- FRONT: 40 FEET
- SIDE: 30 FEET WHEN CONTIGUOUS TO RESIDENTIAL AND 15 FEET WHEN CONTIGUOUS TO ANY OTHER ZONING
- REAR: 30 FEET WHEN CONTIGUOUS TO RESIDENTIAL AND 20 FEET WHEN CONTIGUOUS TO ANY OTHER ZONING

DESCRIPTION OF "SHARED ACCESS EASEMENT" AREA BY SURVEYOR:

PART OF LOT 1, HOME DEPOT COCOA, ACCORDING TO THE MAP OR PLAT THEREOF AS RECORDED IN PLAT BOOK 57, P AGES 87 THROUGH 93, INCLUSIVE, OF THE PUBLIC RECORDS OF BREVARD COUNTY, FLORIDA, LYING IN SECTION 18, TOWNSHIP 24 SOUTH, RANGE 36 EAST, BREVARD COUNTY, FLORIDA BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCE AT THE SOUTHWEST CORNER OF SAID LOT 1 AND RUN ALONG THE BOUNDARY OF SAID LOT 1, N88°34'39"E A DISTANCE OF 113.35 FEET TO THE SOUTHWEST CORNER OF LOT 2 OF SAID HOME DEPOT COCOA; THENCE N01°25'21"W, ALONG THE WEST LINE OF SAID LOT 2, A DISTANCE OF 245.00 FEET TO THE NORTHWEST CORNER OF SAID LOT 2; THENCE N88°34'39"E A DISTANCE OF 221.00 FEET TO THE NORTHEAST CORNER OF SAID LOT 2; THENCE CONTINUE N88°34'39"E, ALONG THE EASTERLY EXTENSION OF THE NORTH LINE OF SAID LOT 2, A DISTANCE OF 133.23 FEET TO THE POINT OF BEGINNING OF THE PARCEL OF LAND HEREIN DESCRIBED; THENCE CONTINUE N88°34'39"E, ALONG SAID EASTERLY EXTENSION OF THE NORTH LINE OF SAID LOT 2, A DISTANCE OF 36.00 FEET; THENCE S01°25'21"E A DISTANCE OF 210.00 FEET A POINT ON THE NORTH RIGHT-OF-WAY LINE OF STATE ROAD NO. 524; THENCE S88°34'39"W, ALONG SAID NORTH RIGHT-OF-WAY LINE, A DISTANCE OF 36.00 FEET; THENCE N01°25'21"W A DISTANCE OF 210.00 FEET TO THE POINT OF BEGINNING. CONTAINING 7560 SQUARE FEET, MORE OR LESS.

NATIONAL FLOOD INSURANCE PROGRAM

1. MAP No. 12009C0320G
2. COMMUNITY No. 120020
3. PANEL No. 0320
4. SUFFIX: G
5. MAP REVISED: MARCH 17, 2014
6. THIS PROPERTY IS LOCATED IN FLOOD ZONE "X UNSHADED" - AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN

ITEM NUMBERS BELOW ARE IN DIRECT RELATIONSHIP TO THOSE NUMBERS IN SCHEDULE B-II EXCEPTIONS IN CERTAIN FIRST AMERICAN TITLE INSURANCE COMPANY ALTA COMMITMENT FOR TITLE INSURANCE FILE NO.: 2061-4486840, ISSUING OFFICE FILE NUMBER: 2320-TBD, COMMITMENT DATE: OCTOBER 1, 2019 AT 8:00 A.M:

1. *SURVEYOR HAS NO KNOWLEDGE OF ANY* DEFECTS, LIENS, ENCUMBRANCES, ADVERSE CLAIMS OR OTHER MATTERS, IF ANY, CREATED, FIRST APPEARING IN THE PUBLIC RECORDS OR ATTACHING SUBSEQUENT TO THE EFFECTIVE DATE BUT PRIOR TO THE DATE THE PROPOSED INSURED ACQUIRES FOR VALUE OF RECORD THE ESTATE OR INTEREST OR MORTGAGE THEREON COVERED BY THIS COMMITMENT.
2. *SURVEYOR HAS NO KNOWLEDGE OF* ANY RIGHTS, INTERESTS, OR CLAIMS OF PARTIES IN POSSESSION OF THE LAND NOT SHOWN BY THE PUBLIC RECORDS.
3. *SURVEYOR HAS NO KNOWLEDGE OF* ANY ENCROACHMENT, ENCUMBRANCE, VIOLATION, VARIATION OR ADVERSE CIRCUMSTANCE AFFECTING THE TITLE *OTHER THAN AS MAY BE NOTED AND/OR SHOWN HEREON*.
4. *SURVEYOR HAS NO KNOWLEDGE OF* ANY LIEN, FOR SERVICES, LABOR, OR MATERIALS IN CONNECTION WITH IMPROVEMENTS, REPAIRS OR RENOVATIONS PROVIDED BEFORE, ON, OR AFTER DATE OF POLICY, NOT SHOWN BY THE PUBLIC RECORDS.
5. *SURVEYOR HAS NO KNOWLEDGE OF* ANY DISPUTE AS TO THE BOUNDARIES CAUSED BY A CHANGE IN THE LOCATION OF ANY WATER BODY WITHIN OR ADJACENT TO THE LAND PRIOR TO DATE OF POLICY, AND ANY ADVERSE CLAIM TO ALL OR PART OF THE LAND THAT IS, AT DATE OF POLICY, OR WAS PREVIOUSLY UNDER WATER.
6. TAXES OR SPECIAL ASSESSMENTS NOT SHOWN AS LIENS IN THE PUBLIC RECORDS OR IN THE RECORDS OF THE LOCAL TAX COLLECTING AUTHORITY, AT DATE OF POLICY. *NOT A SURVEY MATTER*
7. *SURVEYOR HAS NO KNOWLEDGE OF* ANY MINERALS OR MINERAL RIGHTS LEASED, GRANTED OR RETAINED BY CURRENT OR PRIOR OWNERS.
8. TAXES AND ASSESSMENTS FOR THE YEAR 2019 AND SUBSEQUENT YEARS, WHICH ARE NOT YET DUE AND PAYABLE. *NOT A SURVEY MATTER*

   NOTES FOR STANDARD EXCEPTIONS: STANDARD EXCEPTIONS FOR PARTIES IN POSSESSION, FOR MECHANICS LIENS, AND FOR TAXES OR SPECIAL ASSESSMENTS NOT SHOWN AS LIENS IN THE PUBLIC RECORDS SHALL BE DELETED UPON RECEIPT OF AN ACCEPTABLE NON-LIEN AND POSSESSION AFFIDAVIT ESTABLISHING WHO IS IN POSSESSION OF THE LANDS, THAT THERE ARE NO LIENS OR ENCUMBRANCES UPON THE LANDS OTHER THAN AS SET FORTH IN THE COMMITMENT, THAT NO IMPROVEMENTS TO THE LANDS HAVE BEEN MADE WITHIN THE PAST 90 DAYS OR ARE CONTEMPLATED TO BE MADE BEFORE CLOSING THAT WILL NOT BE PAID IN FULL, AND THAT THERE ARE NO UNRECORDED TAXES OR ASSESSMENTS THAT ARE NOT SHOWN AS EXISTING LIENS IN THE PUBLIC RECORDS. ANY POLICIES ISSUED HEREUNDER MAY BE SUBJECT TO A SPECIAL EXCEPTION FOR MATTERS DISCLOSED BY SAID AFFIDAVIT.

   STANDARD EXCEPTION(S) FOR QUESTIONS OF SURVEY MAY BE DELETED UPON RECEIPT AND REVIEW OF A PROPERLY CERTIFIED SURVEY MEETING THE FLORIDA MINIMUM TECHNICAL STANDARDS FOR ALL LAND SURVEYS DATED NO MORE THAN 90 DAYS PRIOR TO CLOSING OR SUCH OTHER PROOF AS MAY BE ACCEPTABLE TO THE COMPANY. ANY POLICIES ISSUED HEREUNDER MAY BE SUBJECT TO A SPECIAL EXCEPTION FOR MATTERS DISCLOSED BY SAID SURVEY OR PROOF.
9. EASEMENT IN FAVOR OF FLORIDA GAS TRANSMISSION COMPANY AS REFERENCED IN FINAL JUDGMENT RECORDED IN OFFICIAL RECORDS BOOK 599, PAGE 315. *AFFECTS PROPERTY, SHOWN AND NOTED HEREON*
10. TERMS, COVENANTS, CONDITIONS, EASEMENTS, RESTRICTIONS AND OTHER PROVISIONS SET FORTH IN DECLARATION OF RESTRICTIONS AND GRANT OF EASEMENTS BY INTERCHANGE ASSOCIATES, INC., A DELAWARE CORPORATION, RECORDED IN OFFICIAL RECORDS BOOK 3299, PAGE 3156. *AFFECTS PROPERTY, EASEMENTS ARE BLANKET TYPE AND ARE NOT PLOTTED OR SHOWN HEREON*
11. SHORT FORM LEASE BY AND BETWEEN INTERCHANGE ASSOCIATES, INC., A DELAWARE CORPORATION, LANDLORD, AND WINN-DIXIE STORES, INC., TENANT, RECORDED IN OFFICIAL RECORDS BOOK 3299, PAGE 3164 AND THE TERMS, COVENANTS, CONDITIONS, EASEMENTS, RESTRICTIONS AND OTHER PROVISIONS CONTAINED THEREIN. *LEASE TERMINATED PER TERMS IN DOCUMENT*
12. A TWENTY (20) FOOT WIDE REUSE MAIN AND INGRESS/EGRESS EASEMENT IN FAVOR OF THE CITY OF COCOA SET FORTH IN REUSE MAIN AND WATER LINE & INGRESS/EGRESS EASEMENT RECORDED IN OFFICIAL RECORDS BOOK 3372, PAGE 4481. NOTE: THE TWENTY (20) FOOT WIDE WATER LINE AND INGRESS/EGRESS EASEMENT WHICH WAS ALSO GRANTED IN SAID INSTRUMENT WAS VACATED BY RESOLUTION NO. 2005-65 RECORDED IN OFFICIAL RECORDS BOOK 5510, PAGE 2725. *EASEMENT TERMINATED AND NO LONGER IN EFFECT PER REFERENCED RESOLUTION*
13. TWENTY (20) FOOT WIDE EASEMENT FOR SANITARY SEWER FORCE MAIN AND A TWENTY (20) FOOT WIDE EASEMENT FOR SANITARY SEWER LINE IN FAVOR OF THE CITY OF COCOA SET FORTH IN FORCE MAIN AND SEWER LINE & INGRESS/EASEMENT RECORDED IN OFFICIAL RECORDS BOOK 3372, PAGE 4486. NOTE: A PORTION OF SAID EASEMENT(S) WAS/WERE VACATED BY RESOLUTION NO. 2005-100 RECORDED IN OFFICIAL RECORDS BOOK 5557, PAGE 4594. *AFFECTS PROPERTY, NOTED AND SHOWN HEREON*
14. BILL OF SALE (SEWER LINES, WATER MAINS AND APPURTENANCES) FROM INTERCHANGE ASSOCIATES, INC. TO THE CITY OF COCOA RECORDED IN OFFICIAL RECORDS BOOK 3372, PAGE 4491. *NOT A SURVEY MATTER*
15. BILL OF SALE (WATER LINES, WATER MAINS AND APPURTENANCES) FROM INTERCHANGE ASSOCIATES, INC. TO THE CITY OF COCOA RECORDED IN OFFICIAL RECORDS BOOK 3372, PAGE 4495. *NOT A SURVEY MATTER*
16. RIGHT OF WAY EASEMENT FROM INTERCHANGE ASSOCIATES, INC. IN FAVOR OF SOUTHERN BELL TELEPHONE AND TELEGRAPH COMPANY RECORDED IN OFFICIAL RECORDS BOOK 3387, PAGE 3308. *AFFECTS PROPERTY, SHOWN AND NOTED HEREON*
17. COVENANT SET FORTH IN SHORT FORM LEASE BY AND BETWEEN INTERCHANGE ASSOCIATES, INC., LANDLORD, AND ECKERD CORPORATION, TENANT, RECORDED IN OFFICIAL RECORDS BOOK 3511, PAGE 710, AS ASSIGNED, MODIFIED, SUPPLEMENTED AND/OR AMENDED BY THE DOCUMENTS LISTED ON EXHIBIT A OF THAT CERTAIN INSTRUMENT BY AND BETWEEN CVS EGL 524 COCOA FL, L.L.C., SUCCESSOR IN INTEREST TO ECKERD CORPORATION, TENANT, RDI DEVELOPERS, LLC, SUCCESSOR IN INTEREST TO INTERCHANGE ASSOCIATES, INC., LANDLORD, ET AL, RECORDED IN OFFICIAL RECORDS BOOK 5583, PAGE 8287. *NOT A SURVEY MATTER*
18. SHOPPING CENTER EASEMENT AGREEMENT BY AND BETWEEN INTERCHANGE ASSOCIATES, INC. AND MCDONALD'S CORPORATION RECORDED IN OFFICIAL RECORDS BOOK 3516, PAGE 4332, AS AFFECTED BY ASSIGNMENT OF MAINTENANCE CONTRIBUTION BY AND BETWEEN RDI DEVELOPERS, LLC, A NEW YORK LIMITED LIABILITY COMPANY (SUCCESSOR TO INTERCHANGE ASSOCIATES, INC.), ASSIGNOR, AND HOME DEPOT U.S.A., INC., A DELAWARE CORPORATION, ASSIGNEE, RECORDED IN OFFICIAL RECORDS BOOK 5859, PAGE 8901. *AFFECTS PROPERTY, EASEMENTS ARE BLANKET TYPE AND ARE NOT PLOTTED OR SHOWN HEREON*
19. WATER LINE & INGRESS/EGRESS EASEMENT AGREEMENT BY AND BETWEEN INTERCHANGE ASSOCIATES, INC. AND THE CITY OF COCOA RECORDED IN OFFICIAL RECORDS BOOK 5510, PAGE 1779. *AFFECTS PROPERTY, NOTED AND SHOWN HEREON*
20. EASEMENT GRANTED BY RDI DEVELOPERS TO FAVOR OF FLORIDA POWER & LIGHT COMPANY RECORDED IN OFFICIAL RECORDS BOOK 5830, PAGE 9265. (NOTE: THERE IS NO EXHIBIT A, AS REFERRED TO IN SAID INSTRUMENT, RECORDED AS PART OF SAID INSTRUMENT.) *EASEMENT DOES NOT ENCUMBER PROPERTY. EASEMENT IS LOCATED OUTSIDE OF PROPERTY BOUNDARY AND IS NOTED AND SHOWN HEREON*
21. RESTRICTIONS, DEDICATIONS, CONDITIONS, RESERVATIONS, EASEMENTS AND OTHER MATTERS CONTAINED ON THE PLAT OF HOME DEPOT COCOA, AS RECORDED IN PLAT BOOK 57, PAGES 87 THROUGH 93, BUT OMITTING ANY COVENANTS OR RESTRICTIONS, IF ANY, BASED UPON RACE, COLOR, RELIGION, SEX, SEXUAL ORIENTATION, FAMILIAL STATUS, MARITAL STATUS, DISABILITY, HANDICAP, NATIONAL ORIGIN, ANCESTRY, OR SOURCE OF INCOME, AS SET FORTH IN APPLICABLE STATE OR FEDERAL LAWS, EXCEPT TO THE EXTENT THAT SAID COVENANT OR RESTRICTION IS PERMITTED BY APPLICABLE LAW, AS AFFECTED BY SCRIVENER'S ERROR AFFIDAVITS RECORDED IN OFFICIAL RECORDS BOOK 5870, PAGE 4433 AND OFFICIAL RECORDS BOOK 5873, PAGE 5734 AND AS FURTHER AFFECTED BY RELEASE FROM RDI DEVELOPERS, LLC, A NEW YORK LIMITED LIABILITY COMPANY OF THE RESERVATION SET FORTH IN ITEM 3 OF THE 'PLAT NOTES' SET FORTH UPON THE PLAT OF HOME DEPOT COCOA RECORDED IN OFFICIAL RECORDS BOOK _____, PAGE _____. *AFFECTS PROPERTY, PLOTTABLE EASEMENTS REFERENCED ON THE ABOVE NAMED PLAT ARE SHOWN AND NOTED HEREON*
22. BILL OF SALE FROM RDI DEVELOPERS, LLC, A NEW YORK LIMITED LIABILITY COMPANY, TO HOME DEPOT U.S.A., INC., A DELAWARE CORPORATION, RECORDED IN OFFICIAL RECORDS BOOK 5859, PAGE 8898. *NOT A SURVEY MATTER*
23. TERMS, CONDITIONS, RESTRICTIONS, EASEMENTS AND OTHER PROVISIONS CONTAINED IN THAT CERTAIN RESTRICTIVE COVENANTS AND EASEMENT AGREEMENT BY AND BETWEEN RDI DEVELOPERS, LLC, A NEW YORK LIMITED LIABILITY COMPANY AND HOME DEPOT U.S.A., INC. RECORDED IN OFFICIAL RECORDS BOOK 5859, PAGE 8905, AS AMENDED AND MODIFIED BY FIRST AMENDMENT TO RESTRICTIVE COVENANTS AND EASEMENT AGREEMENT BY AND BETWEEN RDI DEVELOPERS, LLC, A NEW YORK LIMITED LIABILITY COMPANY AND HOME DEPOT U.S.A., INC. RECORDED IN OFFICIAL RECORDS BOOK 5868, PAGE 8944. *AFFECTS PROPERTY, EASEMENTS ARE BLANKET TYPE AND ARE NOT PLOTTED OR SHOWN HEREON*
24. RESTRICTIVE COVENANT SET FORTH IN SPECIAL WARRANTY DEED FROM HOME DEPOT U.S.A., INC., A DELAWARE CORPORATION TO COCOA RETAIL, LLC, A NORTH CAROLINA LIMITED LIABILITY COMPANY, RECORDED IN OFFICIAL RECORDS BOOK 7783, PAGE 2688. *AFFECTS PROPERTY, NO PLOTTABLE EASEMENTS FOUND IN DOCUMENT*
25. *SURVEYOR HAS NO KNOWLEDGE OF ANY* TERMS, COVENANTS, CONDITIONS AND OTHER MATTERS CONTAINED IN ANY UNRECORDED LEASE(S) AND ALL RIGHTS THEREUNDER OF THE LESSEE(S) AND OF ANY PERSON CLAIMING BY, THROUGH OR UNDER THE LESSEE(S).

SHEET INDEX	
1	GENERAL NOTES, SITE DATA, DESCRIPITIONS AND CERTIFICATIONS
2	OVERALL BOUNDARY
3	IMPROVEMENTS, ENCHROACHEMENTS AND EASEMENTS
4	TOPOGRAPHY, CONTOURS AND SPOT ELEVATIONS

ABBREVIATIONS

A/C	AIR CONDITIONER
AL	ARC LENGTH
AVE	AVENUE
BLVD	BOULEVARD
BM	BENCH MARK
BOC	BEGINNING OF CURVE
C/L	CENTERLINE
CA	CENTRAL ANGLE
CB	CHORD BEARING
CBS	CONCRETE BLOCK STRUCTURE
CH	CHORD LENGTH
CM	CONCRETE MONUMENT
CMP	CORRUGATED METAL PIPE
CONC	CONCRETE
COR	CORNER
DEL	DELTA / CENTRAL ANGLE
DRI	DEVELOPMENT OF REGIONAL IMPACT
ELEC	ELECTRIC
EL/ELEV	ELEVATION
EOC	END OF CURVE
EOP	EDGE OF PAVEMENT
EOW	EDGE OF WATER
ERCP	ELLIPTICAL REINFORCED CONCRETE PIPE
ESMT	EASEMENT
FD	FOUND
FFE	FINISHED FLOOR ELEVATION
FH	FIRE HYDRANT
FP&L	FLORIDA POWER AND LIGHT
FT	FEET
HWY	HIGHWAY
ID#	IDENTIFICATION NUMBER
INV	INVERT
IR	IRON ROD
IRC	IRON ROD AND CAP
LB	LICENSED BUSINESS
LWP	LIGHTER WOOD POST
N#	NEIGHBORHOOD IDENTIFICATION
N&D	NAIL AND DISK
NAVD88	NORTH AMERICAN VERTICAL DATUM 1988
NGVD29	NATIONAL GEODETIC VERTICAL DATUM 1929
NTI	NON-TANGENT INTERSECTION
NTL	NON-TANGENT LINE
NTS	NOT TO SCALE
OHE	OVERHEAD ELECTRIC/ UTILITY
OR/ORB	OFFICIAL RECORDS BOOK
PB	PLAT BOOK
PCC	POINT OF COMPOUND CURVATURE
PCP	PERMANENT CONTROL POINT
PG(S)	PAGE(S)
PK	PARKER-KALEN
POB	POINT OF BEGINNING
POC	POINT OF COMMENCEMENT
PP	POWER/UTILITY POLE
PRC	POINT OF REVERSE CURVATURE
PUD	PLANNED UNIT DEVELOPMENT
PVC	POLYVINYL CHLORIDE PIPE
R	RADIUS
R/W	RIGHT-OF-WAY
RCP	REINFORCED CONCRETE PIPE
RR	RAILROAD
ST	STREET
TYP	TYPICAL

SURVEY LEGEND

- ■ PERMANENT REFERENCE MONUMENT (PRM); FD 4X4 INCH CONCRETE MONUMENT WITH DISK STAMPED PRM LB4905, UNLESS OTHERWISE NOTED
- BENCHMARK FOUND (MARKED AS NOTED)
- CONTROL POINT SET (MARKED AS NOTED)
- CONTROL POINT FOUND (MARKED AS NOTED)
- 1/2" IRON ROD & CAP SET (STAMPED "L.B. 4905")
- IRON ROD & CAP FOUND (MARKED AS NOTED)
- PERMANENT CONTROL POINT SET (METAL MARKER WITH A METAL DISK STAMPED "PCP–L.B. 4905")
- PERMANENT CONTROL POINT FOUND (MARKED AS NOTED)

TOPOGRAPHIC LEGEND

- EXISTING STORM DRAINAGE PIPE
- OHW — EXISTING OVERHEAD WIRE
- WM — EXISTING WATER MAIN
- SS — EXISTING SANITARY SEWER
- RWLM — EXISTING REUSE WATER MAIN
- FM — EXISTING FORCE MAIN
- SANITARY MANHOLE (SMH)
- SANITARY SEWER CLEANOUT (CO)
- GATE VALVE (GV)
- FIRE HYDRANT (FH)
- BLOWOFF (BO)
- TYPE 4 DRAINAGE STRUCTURE (DS)
- DRAINAGE STRUCTURE (DS)
- JUNCTION BOX (JB)
- MITERED END SECTION (MES)
- FLARED END SECTION (FES)
- UTILITY POLE
- GUY ANCHOR
- LIGHT POLE
- TELEPHONE MANHOLE
- TELEPHONE RISER
- SIGN
- PARKING SPACE NUMBERS
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- TRAFFIC SIGNAL CONTROL BOX
- TRAFFIC SIGNAL MAST ARM POLE
- PEDESTRIAN TRAFFIC SIGNAL POLE
- TRAFFIC SIGNAL CONTROL SENSOR BOX
- CONCRETE

ALTA CERTIFICATION:

TO: FRAMEWORK GROUP, LLP, AKERMAN, LLP, COCOA RETAIL, LLC AND FIRST AMERICAN TITLE INSURANCE COMPANY:

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2016 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 1 THROUGH 6, 7(a), 7(b)(1), 7(c), 8, 9, 11, 13, 14 AND 16 OF TABLE A THEREOF. THE FIELDWORK WAS COMPLETED ON 11/11/19.

FIELD BOOK: COCOA BK 2
PAGE(S): 34

7	
6	
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1 REVISIONS PER CLIENT	06/22/2020

DESIGN/DRAWN: LEH **DATE:**06/08/2020

B.S.E. CONSULTANTS, INC.
CONSULTING - ENGINEERING - LAND SURVEYING
312 SOUTH HARBOR CITY BOULEVARD, SUITE 4
MELBOURNE, FLORIDA 32901
PHONE: (321) 725-3674 FAX: (321) 723-1159
CERTIFICATE OF PROFESSIONAL ENGINEERS BUSINESS AUTHORIZATION: 4905
CERTIFICATE OF LAND SURVEYING BUSINESS AUTHORIZATION: LB0004905

LOT 1, HOME DEPOT COCOA

ALTA/NSPS LAND TITLE SURVEY

SCOTT M. GLAUBITZ
PROFESSIONAL LAND SURVEYOR
FLORIDA LICENSE NUMBER 4151

LESLIE E. HOWARD
PROFESSIONAL SURVEYOR & MAPPER
FLORIDA LICENSE NUMBER 5611

PROJECT NO. 11545
DRAWING NO. 11545_100_001
SHEET 1 of 4

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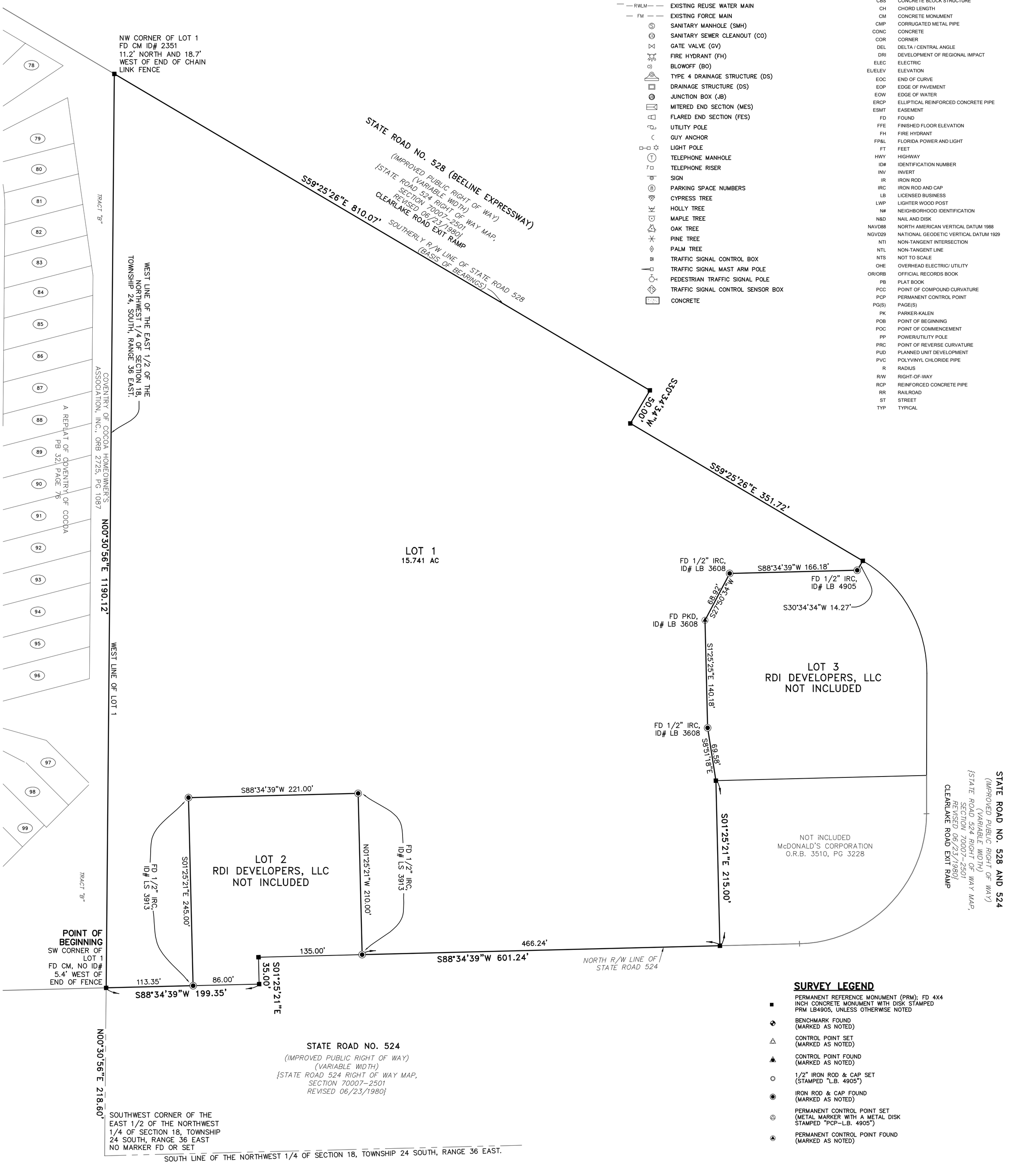

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ABBREVIATIONS

A/C	AIR CONDITIONER
AL	ARC LENGTH
AVE	AVENUE
BLVD	BOULEVARD
BM	BENCH MARK
BOC	BEGINNING OF CURVE
C/L	CENTERLINE
CA	CENTRAL ANGLE
CB	CHORD BEARING
CBS	CONCRETE BLOCK STRUCTURE
CH	CHORD LENGTH
CM	CONCRETE MONUMENT
CMP	CORRUGATED METAL PIPE
CONC	CONCRETE
COR	CORNER
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DRI	DEVELOPMENT OF REGIONAL IMPACT
ELEC	ELECTRIC
EL/ELEV	ELEVATION
EOC	END OF CURVE
EOP	EDGE OF PAVEMENT
EOW	EDGE OF WATER
ERCP	ELLIPTICAL REINFORCED CONCRETE PIPE
ESMT	EASEMENT
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FFE	FINISHED FLOOR ELEVATION
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(IN FEET)

FIELD BOOK: COCOA BK 2
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7
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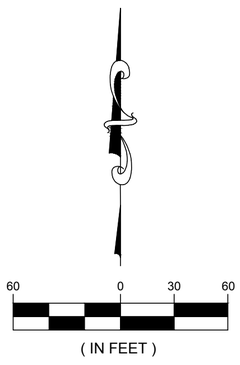

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SCHEDULE B–II, FROM THAT CERTAIN FIRST AMERICAN TITLE INSURANCE COMPANY ALTA COMMITMENT FOR TITLE INSURANCE FILE NO.: 2061–4486840, ISSUING OFFICE FILE NUMBER: 2320–TBD, COMMITMENT DATE: OCTOBER 1, 2019 AT 8:00 A.M.

ITEM NUMBER	RECORDING INFORMATION	LIST TYPE	GRANTEE	STATUS
9	ORB 599, PAGE 315	GAS EASEMENT	FLORIDA GAS TRANSMISSION COMPANY	SHOWN & NOTED ON SURVEY
10	ORB 3299, PAGE 3156	BLANKET EASEMENT	VARIOUS	AFFECTS ENTIRE SITE, NOT PLOTTED
13	ORB 3372, PAGE 4486 AND ORB 5557, PAGE 4594	SEWER/FORCE MAIN LINE EASEMENT	CITY OF COCOA, FLA.	SHOWN & NOTED ON SURVEY
14	ORB 3372, PAGE 4491	BILL OF SALE	CITY OF COCOA, FLA.	AFFECTS ALL EXISTING ON SITE SEWER LINES AND WATER MAINS, EXISTING SEWER LINES AND WATER MAINS SHOWN AND NOTED ON HEREON
15	ORB 3372, PAGE 4495	BILL OF SALE	CITY OF COCOA, FLA.	AFFECTS ALL EXISTING ON SITE WATER LINES, WATER MAINS AND APPURTENANCES, EXISTING WATER LINES, WATER MAINS AND APPURTENANCES SHOWN AND NOTED ON HEREON
16	ORB 3387, PAGE 3308	TELEPHONE LINE EASEMENT	SOUTHERN BELL TELEPHONE AND TELEGRAPH COMPANY	SHOWN & NOTED ON SURVEY
18	ORB 3516, PAGE 4332 AND ORB 5859, PAGE 8901	BLANKET EASEMENT	McDONALD'S CORPORATION	AFFECTS ENTIRE SITE, NOT PLOTTABLE
19	ORB 5510, PAGE 1779	WATER/REUSE LINE EASEMENT	CITY OF COCOA, FLA.	SHOWN & NOTED ON SURVEY
20	ORB 5830, PAGE 9265	FP&L EASEMENT	FLORIDA POWER & LIGHT COMPANY	SHOWN & NOTED ON SURVEY. OUTSIDE BOUNDARIES OF SURVEYED PARCEL
21	PLAT BOOK 57, PAGE 87	INGRESS/EGRESS, WATER LINE, SEWER LINE, RE–USE WATER MAIN	CITY OF COCOA, FLA.	SHOWN AND NOTED ON SURVEY
23	ORB 5859, PAGE 8905 AND ORB 5868, PAGE 8944	BLANKET EASEMENT	RDI DEVELOPERS, LLC	AFFECTS ENTIRE SITE, NOT PLOTTED

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RR	RAILROAD
ST	STREET
TYP	TYPICAL

STATE ROAD NO. 528 (BEELINE EXPRESSWAY)
CLEARLAKE ROAD EXIT RAMP
(VARIABLE WIDTH R/W)

STATE ROAD NO. 524 (SR 528 REROUTE)
(IMPROVED PUBLIC RIGHT OF WAY VARIABLE WIDTH)

STATE ROAD NO. 528 & 524
OFF RAMP (275' R/W)

SOUTHERLY R/W LINE OF STATE ROAD No. 528

SOUTHERLY RIGHT OF WAY LINE

NORTH R/W LINE OF STATE ROAD No. 524

SOUTH LINE OF THE NORTHWEST 1/4 OF SECTION 18, TOWNSHIP 24 SOUTH, RANGE 36 EAST.

WEST LINE OF THE EAST 1/2F OF THE NORTHWEST 1/4 OF SECTION 18

A REPLAT OF COVENTRY OF COCOA P.B. 32, PAGE 76 ZONED PUD

TRACT "B" COVENTRY OF COCOA HOMEOWNERS ASSOCIATION, INC., ORB 2716, PG 1630

"THE PROPERTY" 13.49 AC. +/-

LOT 1
15.741 ACRES
ZONED C-G

LOT 2
NOT INCLUDED

LOT 3
NOT INCLUDED

McDONALDS
NOT INCLUDED

VACANT
#2300
BLDG HGT 39.1
ONE STORY C.B.S
FFE 32.17

TOTAL GROSS SQUARE FOOTAGE OF ENTIRE BUILDING AREA = 85,394

VACANT
BLDG HGT 28.4
ONE STORY C.B.S
FFE 32.35

VACANT
BLDG HGT 27.2
ONE STORY C.B.S.
FFE 32.20

1 STORY METAL "COOLER" BUILDING

BENCHMARK# 1
DS RIM 31.55
INV 18" RCP N 28.39

BENCHMARK# 2
SMH4 RIM 30.32
INV=23.62(E)
INV=23.44(SW)

BENCHMARK# 3
DS RIM 30.15

N00°30'56"E 1190.12'

S59°25'26"E 810.07'

S59°25'26"E 351.72'

S30°34'34"W 50.00'

N30°34'34"E 14.27'

N88°34'39"E 166.18'

N27°50'34"E 68.92'

AL=176.34' R=169.69'
Del=59°32'34" Ch=168.52'
CB=S29°39'09"E

N01°25'25"W 140.18'

N08°51'18"W 69.58'

S00°07'09"W 132.98'

S00°07'09"W 49.90'

S88°34'39"W 274.56'

N01°25'21"W 215.00'

AL=261.96'
R=169.68'
Del=88°27'30" Ch=236.71'
CB=S44°20'54"W

S88°34'39"W 103.60'

N88°34'39"E 601.24'

N01°25'21"W 35.00'

N88°34'39"E 199.35'

N00°30'56"E 218.60'

724' +/-

283.39'

121.82'

155.9'

67.1'

65.7'

12.0'

159.3'

46.6'

40.7'

32.7'

20.0'

20.9'

18.8'

17.4'

16.0'

37.7'

140.3'

200.0'

160.0'

25' FRONT SETBACK

25' SIDE SETBACK

±0.96'

5.0'±

5.10'

5.31'

6' WOOD FENCE

CHAIN LINK FENCE

CHAIN LINK FENCE ALONG RIGHT OF WAY LINE

WETLAND

POND

EDGE OF WATER

6' WOOD FENCE W/ 6' WOOD FENCE

CONCRETE DUMPSTER PAD W/ 6' WOOD FENCE

6" WOOD FENCE

6" WOOD FENCE

CONCRETE FLUME TYP.

CONCRETE RAMP

CONCRETE RAMP

GREASE TRAP

GREASE TRAP

4' HIGH DOUBLE GUARD RAIL

4' HIGH DOUBLE GUARD RAIL

ELECTRIC TRANSFORMER PAD

ELECTRIC TRANSFORMER PAD

CONCRETE DUMPSTER PAD

WATER METER BOXES

ASPHALT

CONCRETE

6" CURB TYP.

CART RETURN (TYP.)

ISLAND (TYP)

LIGHT POLE (TYP.)

SHOPPES OF COCOA NORTH SIGN

POWER POLE (TYP.)

GUY WIRE (TYP.)

CONCRETE DUMPSTER PAD

SMH 2
RIM 31.48
INV=25.95(NW)
INV=26.05(S)

SMH 3
RIM 30.42
INV=24.83(SE)
INV=24.61(W)

SMH 4
RIM 30.32
INV=23.62(E)
INV=23.44(SW)

SMH 5
RIM 30.78
INV=22.69(NE)
INV=22.62(SW)

SMH 6
RIM 30.62
INV=22.37(NE)
INV=22.23(S)

SMH 7
RIM 30.59
INV=21.48(N)
INV=21.43(S)
INV=21.30(SW)

SMH 7
RIM 32.33
INV=27.62(N)
INV=27.71(SE)

SMH 8
RIM 31.01
INV=26.01(N)

SMH RIM 27.81

DS RIM 30.21
24" RCP INV 27.19

DS RIM 30.98
INV 18" RCP SE 28.63

DS RIM 30.83
INV 18" RCP NW 28.29
INV 18" RCP S 28.51

DS RIM 30.65
INV 18" RCP N 28.67
INV 14"X23" RCP E 28.62 AND 28.62

DS RIM 30.29
36" RCP W INV 26.87
24" RCP E INV 27.48
18" RCP S INV 27.18

DS RIM 30.55
24" RCP W INV 26.87
24" RCP E INV 27.48
18" RCP S INV 27.18

DS RIM 30.13
36" RCP N INV 25.55

DS RIM 30.15
36" RCP N INV 24.97
36" RCP S INV 24.81

DS RIM 29.45
12" CMP W INV 25.65

DS RIM 30.15
18" RCP INV 27.08

DS RIM 32.52
18" RCP N INV 27.57

DS RIM 27.52
12" CMP E INV 25.02

DS RIM 30.21
18" RCP INV 27.44

GRATE INLET RIM 31.11
8" PVC W INV 29.46

GRATE INLET RIM 31.12

CI RIM 31.30
36" RCP N INV 24.97
36" RCP S INV 24.81

JB RIM 30.96
18" ADS E INV 28.10
19"X30" W INV 27.78

MES 24" RCP INV 27.05

MES 8" PVC INV 26.19

MES 8" PVC INV 26.38

MES 36" RCP INV 24.15

MES 9"X30" RCP INV 27.66

MES 18" ADS INV 29.37

MES 18" RCP INV 26.93

MES 24" RCP INV 26.40

MES 24" RCP INV 26.54

MES 24" RCP INV 26.81

MES 24" RCP INV 27.18

MES 14"X23" RCP INV 28.41

MES 14"X23" RCP INV 25.94

MES 14"X23" RCP INV 26..19

MES 14"X23" RCP INV 28.23

MES 14"X23" RCP INV 28.34

8" SS PVC

6" WM

8" WM

36" WM RCP

10" FM PVC

8" FM PVC

18" RM DIP

18" RM DIP

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7 | 6 | 5 | 4 | 3 | 2 | 1
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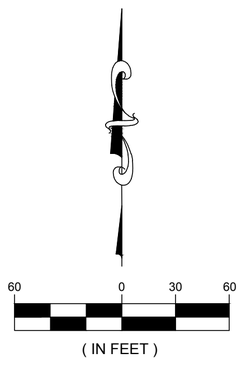

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EL/ELEV	ELEVATION
EOC	END OF CURVE
EOP	EDGE OF PAVEMENT
EOW	EDGE OF WATER
ERCP	ELLIPTICAL REINFORCED CONCRETE PIPE
ESMT	EASEMENT
FD	FOUND
FFE	FINISHED FLOOR ELEVATION
FH	FIRE HYDRANT
FP&L	FLORIDA POWER AND LIGHT
FT	FEET
HWY	HIGHWAY
ID#	IDENTIFICATION NUMBER
INV	INVERT
IR	IRON ROD
IRC	IRON ROD AND CAP
LB	LICENSED BUSINESS
LWP	LIGHTER WOOD POST
N#	NEIGHBORHOOD IDENTIFICATION
N&D	NAIL AND DISK
NAVD88	NORTH AMERICAN VERTICAL DATUM 1988
NGVD29	NATIONAL GEODETIC VERTICAL DATUM 1929
NTI	NON-TANGENT INTERSECTION
NTL	NON-TANGENT LINE
NTS	NOT TO SCALE
OHE	OVERHEAD ELECTRIC/ UTILITY
OR/ORB	OFFICIAL RECORDS BOOK
PB	PLAT BOOK
PCC	POINT OF COMPOUND CURVATURE
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PG(S)	PAGE(S)
PK	PARKER-KALEN
POB	POINT OF BEGINNING
POC	POINT OF COMMENCEMENT
PP	POWER/UTILITY POLE
PRC	POINT OF REVERSE CURVATURE
PUD	PLANNED UNIT DEVELOPMENT
PVC	POLYVINYL CHLORIDE PIPE
R	RADIUS
R/W	RIGHT-OF-WAY
RCP	REINFORCED CONCRETE PIPE
RR	RAILROAD
ST	STREET
TYP	TYPICAL

TOPOGRAPHIC LEGEND

- EXISTING STORM DRAINAGE PIPE
- OHW — EXISTING OVERHEAD WIRE
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- TRAFFIC SIGNAL CONTROL SENSOR BOX
- CONCRETE

SURVEY LEGEND

- ■ PERMANENT REFERENCE MONUMENT (PRM); FD 4X4 INCH CONCRETE MONUMENT WITH DISK STAMPED PRM LB4905, UNLESS OTHERWISE NOTED
- BENCHMARK FOUND (MARKED AS NOTED)
- CONTROL POINT SET (MARKED AS NOTED)
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- 1/2" IRON ROD & CAP SET (STAMPED "L.B. 4905")
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- PERMANENT CONTROL POINT SET (METAL MARKER WITH A METAL DISK STAMPED "PCP–L.B. 4905")
- PERMANENT CONTROL POINT FOUND (MARKED AS NOTED)

STATE ROAD NO. 528 (BEELINE EXPRESSWAY)
CLEARLAKE ROAD EXIT RAMP
(VARIABLE WIDTH R/W)

S59°25'26"E 810.07'

SOUTHERLY R/W LINE OF STATE ROAD No. 528

WEST LINE OF THE EAST 1/2F OF THE NORTHWEST 1/4 OF SECTION 18

A REPLAT OF COVENTRY OF COCOA P.B. 32, PAGE 76 ZONED PUD

N00°30'56"E 1190.12'

TRACT "B" COVENTRY OF COCOA HOMEOWNERS ASSOCIATION, INC., ORB 2716, PG 1630

6' WOOD FENCE, 10.3' SOUTH AND 4.7' EAST OF FD C.M.

25' FRONT SETBACK

CHAIN LINK FENCE ALONG RIGHT OF WAY LINE

CHAIN LINK FENCE

6' WOOD FENCE

WETLAND

POND

EDGE OF WATER

8" PVC INV 26.19

8" PVC INV 26.38

MES 24" RCP INV 27.05

DS RIM 30.21 24" RCP INV 27.19

283.39'

BENCHMARK# 2
SMH4 RIM 30.32
INV=23.62(E)
INV=23.44(SW)

SMH 3 RIM 30.42 INV=24.83(SE) INV=24.61(W)

POWER POLE (TYP.)

OHE WIRE (TYP.)

CONCRETE DUMPSTER PAD

S30°34'34"W 50.00'

121.83'

8" SS PVC

6" WM

CONCRETE FLUME TYP.

36" RCP INV 24.15

CONCRETE GREASE TRAP

40.7'

46.6'

159.3'

4' HIGH DOUBLE GUARD RAIL

ELECTRIC TRANSFORMER PAD

1 STORY METAL "COOLER" BUILDING

CONCRETE RAMP

4' HIGH DOUBLE GUARD RAIL

DS RIM 30.98 INV 18" RCP SE 28.63

ASPHALT

CONCRETE DUMPSTER PAD

SMH 2 RIM 31.46 INV=25.95(NW) INV=26.05(S)

CHAIN LINK FENCE

S59°25'26"E 351.72'

SOUTHERLY RIGHT OF WAY LINE

25' FRONT SETBACK

87.15'

DS RIM 30.69 INV 18" RCP NW 28.29 INV 18" RCP S 28.51

DS RIM 30.65 INV 18" RCP N 28.67 INV 14"X23" RCP E 28.62 AND 28.62

N30°34'34"E 14.27'

N88°34'39"E 166.18'

MES 14"X23" RCP INV 28.41

MES 14"X23" RCP INV 28.41

18" RM DIP

N27°50'34"E 68.92'

N01°25'25"W 140.18'

LOT 3 NOT INCLUDED

N08°51'18"W 69.58'

S00°07'09"W 132.98'

S88°34'39"W 274.56'

S00°07'09"W 49.90'

STATE ROAD NO. 528 & 524 OFF RAMP (275' R/W)

N01°25'21"W 215.00'

BENCHMARK# 1
DS RIM 31.55
INV 18" RCP N 28.39

McDONALDS NOT INCLUDED

SMH 7 RIM 32.33 INV=27.62(N) INV=27.71(SE)

10" FM PVC

VACANT #2300 BLDG HGT 39.1 ONE STORY C.B.S FFE 32.17

TOTAL GROSS SQUARE FOOTAGE OF ENTIRE BUILDING AREA = 85,394

"THE PROPERTY" 13.49 AC. +/-

VACANT BLDG HGT 28.4 ONE STORY C.B.S

FFE 32.35

VACANT BLDG HGT 27.2 ONE STORY C.B.S.

FFE 32.20

LOT 1
15.741 ACRES
ZONED C-G

LOT 2 NOT INCLUDED

TRACT "B" COVENTRY OF COCOA HOMEOWNERS ASSOCIATION, INC., ORB 2716, PG 1630

25' SIDE SETBACK

SMH 6 RIM 30.62 INV=22.37(NE) INV=22.23(S)

SMH 5 RIM 30.78 INV=22.69(NE) INV=22.62(SW)

SMH 7 RIM 30.59 INV=21.48(N) INV=21.43(S) INV=21.30(SW)

SMH RIM 27.81

CONCRETE DUMPSTER PAD W/ 6' WOOD FENCE

WATER METER BOXES

ELECTRIC TRANSFORMER PAD

GREASE TRAP

GAS METER

CI RIM 31.30
36" RCP N INV 24.97
36" RCP S INV 24.81

6" CURB TYP.

ASPHALT

BENCHMARK# 3
DS RIM 30.15
36" RCP E INV 25.68
36" RCP N INV 25.55

DS RIM 30.29 36" RCP W INV 26.56 24" RCP E INV 26.59 18" RCP S INV 26.94

DS RIM 30.55 24" RCP W INV 26.87 24" RCP E INV 27.45 18" RCP S INV 27.17

DS RIM 30.45 24" RCP W INV 27.13 18" RCP S INV 28.10

DS RIM 29.45 12" CMP W INV 25.65

GRATE INLET RIM 31.11 8" PVC W INV 29.46

GRATE INLET RIM 31.12

ISLAND (TYP)

LIGHT POLE (TYP.)

SMH 8 RIM 31.01 INV=26.01(N)

DS RIM 27.52 12" CMP E INV 25.02

DS RIM 30.12 18" CP S INV 27.08

DS RIM 32.52 18" RCP N INV 27.57

SHOPPES OF COCOA NORTH SIGN

MES 19"X30" RCP INV 27.66

JB RIM 30.90 18" ADS E INV 28.10 19"X30" W INV 27.78

DS RIM 30.21 18" RCP INV 27.44

MES 18" ADS INV 29.37

N01°25'21"W 35.00'

N88°34'39"E 601.24'

N88°34'39"E 199.35'

N00°30'56"E 218.60'

NORTH R/W LINE OF STATE ROAD No. 524

S88°34'39"W 103.60'

PROPOSED "SHARED ACCESS EASEMENT" AREA

PROPOSED "RETAINED BY SELLER" AREA

MES 18" RCP INV 26.93

MES 24" RCP INV 26.40

MES 24" RCP INV 26.54

MES 24" RCP INV 27.18

36" WM RCP

STATE ROAD NO. 524 (SR 528 REROUTE)

(IMPROVED PUBLIC RIGHT OF WAY VARIABLE WIDTH)

MES 14"X23" RCP INV 26.19

MES 14"X23" RCP INV 27.34

MES 14"X23" RCP INV 28.15

SOUTH LINE OF THE NORTHWEST 1/4 OF SECTION 18, TOWNSHIP 24 SOUTH, RANGE 36 EAST.

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FIELD BOOK: COCOA BK 2
PAGE(S): 34
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DESIGN/DRAWN: LEH **DATE:** 04/20/2020

B.S.E. CONSULTANTS, INC.
CONSULTING - ENGINEERING - LAND SURVEYING
312 SOUTH HARBOR CITY BOULEVARD, SUITE 4
MELBOURNE, FLORIDA 32901
PHONE: (321) 725-3674 FAX: (321) 723-1159
CERTIFICATE OF PROFESSIONAL ENGINEERS
BUSINESS AUTHORIZATION: 4905
CERTIFICATE OF LAND SURVEYING
BUSINESS AUTHORIZATION: LB0004905

LOT 1, HOME DEPOT COCOA

ALTA/NSPS LAND TITLE SURVEY

SCOTT M. GLAUBITZ
PROFESSIONAL LAND SURVEYOR
FLORIDA LICENSE NUMBER 4151

LESLIE E. HOWARD
PROFESSIONAL SURVEYOR & MAPPER
FLORIDA LICENSE NUMBER 5611

PROJECT NO. 11545
DRAWING NO. 11545_100_001
SHEET 4 of 4

SURVEY LEGEND

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- CONCRETE

ABBREVIATIONS

A/C	AIR CONDITIONER
AL	ARC LENGTH
AVE	AVENUE
BLVD	BOULEVARD
BM	BENCH MARK
BOC	BEGINNING OF CURVE
C/L	CENTERLINE
CA	CENTRAL ANGLE
CB	CHORD BEARING
CBS	CONCRETE BLOCK STRUCTURE
CH	CHORD LENGTH
CM	CONCRETE MONUMENT
CMP	CORRUGATED METAL PIPE
CONC	CONCRETE
COR	CORNER
DEL	DELTA / CENTRAL ANGLE
DRI	DEVELOPMENT OF REGIONAL IMPACT
ELEC	ELECTRIC
EL/ELEV	ELEVATION
EOC	END OF CURVE
EOP	EDGE OF PAVEMENT
EOW	EDGE OF WATER
ERCP	ELLIPTICAL REINFORCED CONCRETE PIPE
ESMT	EASEMENT
FD	FOUND
FFE	FINISHED FLOOR ELEVATION
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TYP	TYPICAL

SURVEY NOTES:

SURVEY OF LOT 1, HOME DEPOT COCOA, ACCORDING TO THE PLAT THEREOF AS RECORDED IN PLAT BOOK 57, PAGE 87, PUBLIC RECORDS OF BREVARD COUNTY, FLORIDA LYING IN SECTION 18,TOWNSHIP 24 SOUTH, RANGE 36 EAST, BREVARD COUNTY, FLORIDA.

SURVEY FOR LOCATIONS, TYPES AND SIZES OF ONSITE TREES.

BOUNDARY INFORMATION AND MONUMENTATION SHOWN WERE TAKEN FROM AN ALTA/NSPS AMERICAN LAND TITLE SURVEY OF THIS PROPERTY PREPARED BY THIS COMPANY, DRAWING

UNDERGROUND IMPROVEMENTS AND/OR UTILITIES SHOWN AND NOTED HEREON WERE TAKEN FROM A PREVIOUS SURVEY OF THIS AREA PERFORMED BY THIS COMPANY, DRAWING NO. 11545_100_001, PROJECT NO. 11545 DATED 06/08/2020 AND LAST REVISED 06/22/2020.

BEARING REFERENCE: ASSUMED BEARING OF S85°25'26"E ON THE SOUTHERLY RIGHT-OF-WAY LINE OF STATE ROAD NO. 528 (BEELINE EXPRESSWAY) CLEARLAKE ROAD EAST BOUND EXIT RAMP, ACCORDING TO THE PLAT OF HOME DEPOT COCOA, AS RECORDED IN PLAT BOOK 57, PAGE 87, PUBLIC RECORDS OF BREVARD COUNTY, FLORIDA.

THE SURVEYOR RELIED SOLELY ON INFORMATION CONTAINED WITHIN THAT CERTAIN FIRST AMERICAN TITLE INSURANCE COMPANY ALTA COMMITMENT FOR TITLE INSURANCE FILE NO.: 2061-4486840, ISSUING OFFICE FILE NUMBER: 2320-TBD, COMMITMENT DATE: OCTOBER 1, 2019 AT 8:00 A.M FOR INFORMATION REGAGRDING EASEMENTS AFFECTING AND/OR ENCUMBERING THE LANDS SURVEYED HEREON

THIS SURVEY IS NOT VALID WITHOUT THE SIGNATURE AND ORIGINAL RAISED SEAL OF A FLORIDA LICENSED PROFESSIONAL SURVEYOR AND MAPPER UNLESS ELECTRONICALLY SIGNED AND SEALED IN ACCORDANCE WITH FLORIDA STATUTES CHAPTER 472.025.

THIS SURVEY MEETS THE STANDARDS OF PRACTICE FOR SURVEYS AS REQUIRED BY FLORIDA STATUTES CHAPTER 472 AND THE MINIMUM TECHNICAL STANDARDS FOR SURVEYS AS REQUIRED BY CHAPTER 5J-17, FLORIDA ADMINISTRATIVE CODE.

ALL BUILDING SET BACK REQUIREMENTS ARE GRAPHICALLY DEPICTED HEREON.

THIS PROPERTY HAS DIRECT ACCESS TO A DEDICATED PUBLIC STREET VIA DRIVEWAY CONNECTIONS ON STATE ROAD 528 RE-ROUTE (STATE ROAD 524).

ELEVATIONS SHOWN ARE REFERENCED TO NORTH AMERICAN VERTICAL DATUM, 1988 (NAVD88)

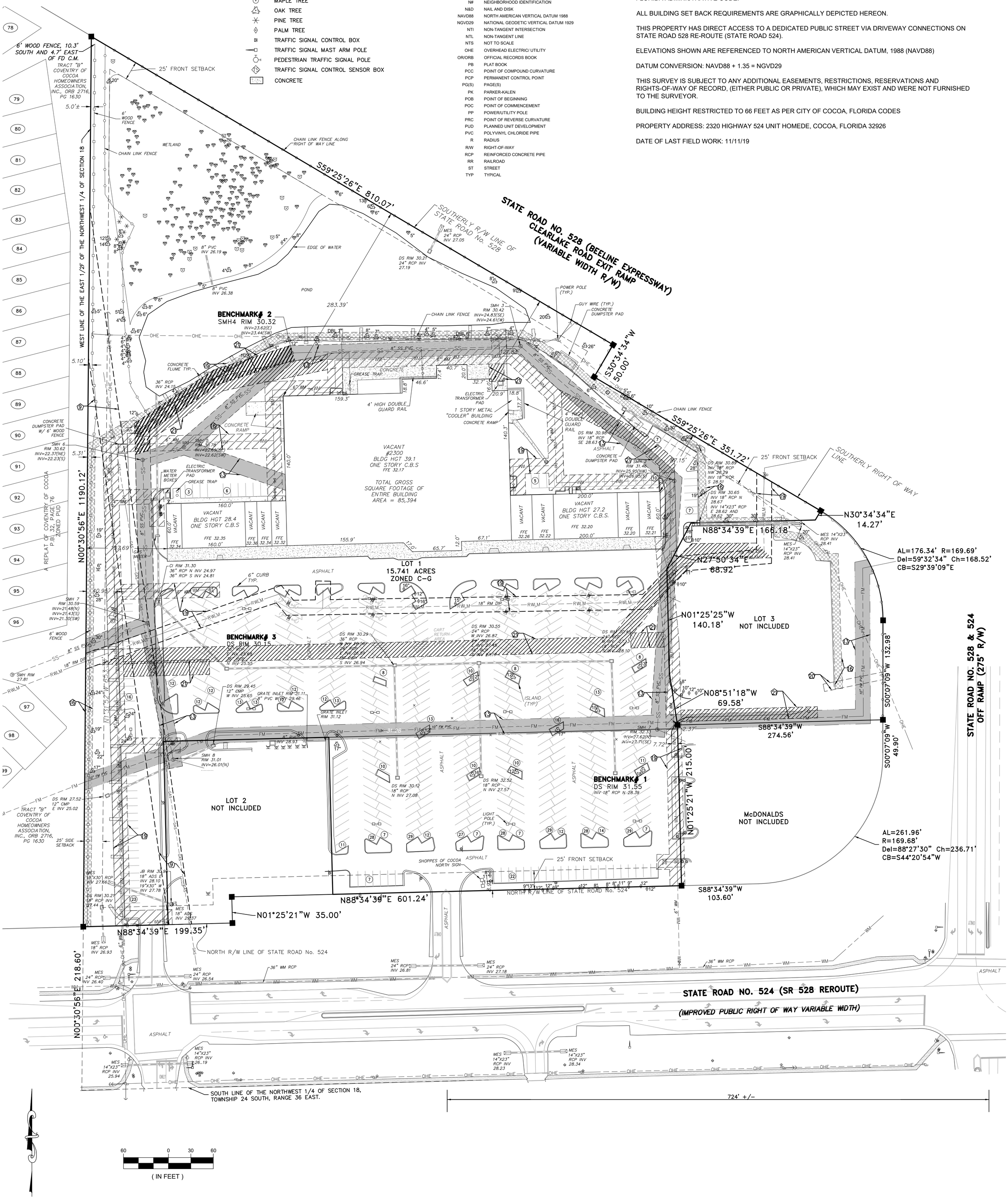
DATUM CONVERSION: NAVD88 + 1.35 = NGVD29

THIS SURVEY IS SUBJECT TO ANY ADDITIONAL EASEMENTS, RESTRICTIONS, RESERVATIONS AND RIGHTS-OF-WAY OF RECORD, (EITHER PUBLIC OR PRIVATE), WHICH MAY EXIST AND WERE NOT FURNISHED TO THE SURVEYOR.

BUILDING HEIGHT RESTRICTED TO 66 FEET AS PER CITY OF COCOA, FLORIDA CODES

PROPERTY ADDRESS: 2320 HIGHWAY 524 UNIT HOMEDE, COCOA, FLORIDA 32926

DATE OF LAST FIELD WORK: 11/11/19



FIELD BOOK: COCOA BK 2	
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DESIGN/DRAWN: LEH/IT	**DATE:** 08/26/2020

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LOT 1, HOME DEPOT COCOA

TREE SURVEY

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FLORIDA LICENSE NUMBER 5611

PROJECT NO. 11545

DRAWING NO. 11545_100_009

SHEET 1 of 1