FIRST BAPTIST CHURCH OF SOUTHWEST BROWARD

Cooper City, Broward County, FL

SITE PLAN

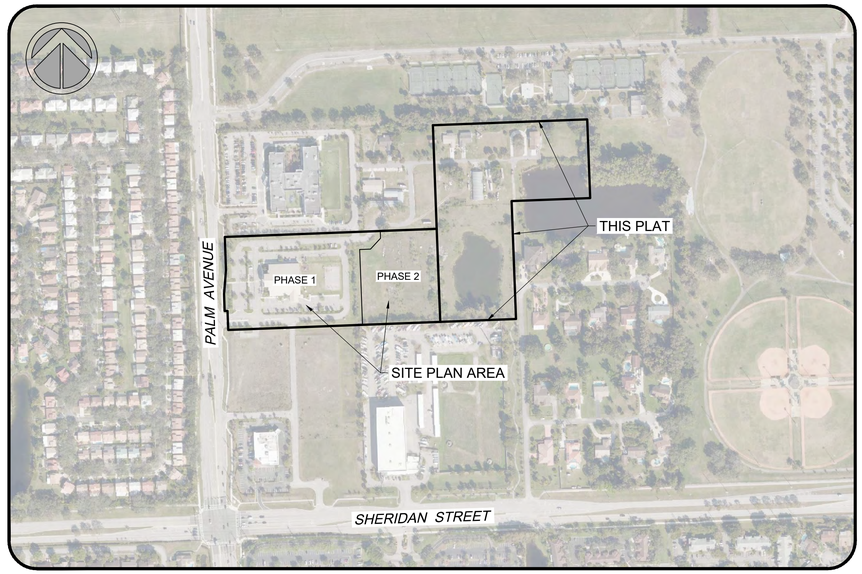
OWNER:
FIRST BAPTIST CHURCH OF
SOUTHWEST BROWARD
2700 N PALM AVENUE
COOPER CITY, FL 33026
(954) 404-7706

ARCHITECT:
BARRANCO GONZALEZ ARCHITECTURE
1915 SW 4TH AVENUE
FORT LAUDERDALE, FL 33316
(954) 335-1880
(954) 335-1885 (FAX)

CIVIL ENGINEER:
SUN-TECH ENGINEERING, INC.
4577 NOB HILL ROAD SUITE 102
SUNRISE, FL 33351
(954) 777-3123
(954) 777-3114 (FAX)

SURVEYOR:
PULICE LAND SURVEYORS, INC.
5381 NOB HILL ROAD
SUNRISE, FL 33351
(954) 572-1777
(954) 572-1778 (FAX)

LANDSCAPE ARCHITECT:
BARRANCO, RLA INC.
888 S ANDREWS AVENUE SUITE 300
FORT LAUDERDALE, FL 33316
(954) 224-0432



SECTION 5, TOWNSHIP 51 SOUTH, RANGE 41 EAST

LOCATION MAP

SCALE 1"=300'

INDEX OF DRAWINGS	
SHEET NO.	TITLE
CS1	COVER SHEET
P1 - P2	PLAT
S1 - S2	SURVEY
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SP3	SCHOOL DROP-OFF STACKING PLAN
A-101	OVERALL FLOOR PLAN
A-201	BUILDING ELEVATIONS
AS-501	MISCELLANEOUS SITE DETAILS
PH-101	PHOTOMETRICS PLAN
GN1, GN2	GENERAL NOTES
PD1 - PD2	PAVING, GRADING & DRAINAGE PLAN
PD3 - PD4	PAVING & DRAINAGE DETAILS
WS1 - WS2	WATER AND SEWER PLAN
WS3 - WS5	WATER AND SEWER DETAILS
PMS1 - PMS2	PAVEMENT MARKING & SIGNAGE PLAN
FP1 - FP2	FIRE PROTECTION PLAN
SWPP1 - SWPP2	STORMWATER POLLUTION PREVENTION PLAN AND DETAILS
L-100	TREE DISPOSITION PLAN
L-200	LANDSCAPE PLAN

LEGAL DESCRIPTION:

PARCEL "A" OF "FBCCC" ACCORDING TO THE PLAT THEREOF, AS RECORDED IN PLAT BOOK 180, PAGE 193, OF THE PUBLIC RECORDS OF BROWARD COUNTY, FLORIDA.

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Fax (954) 777-3114

NOTE:
ALL ELEVATIONS IN N.A.V.D. 88

CLIFFORD R. LOUTH
LICENSE
No. 56890
STATE OF FLORIDA
PROFESSIONAL ENGINEER

Date: August 30, 2022

Always call 811 two full business days before you dig to have underground utilities located and marked.
Sunshine811.com

PROJECT NO. 21-4077
DESIGN DATE: MAY 2021

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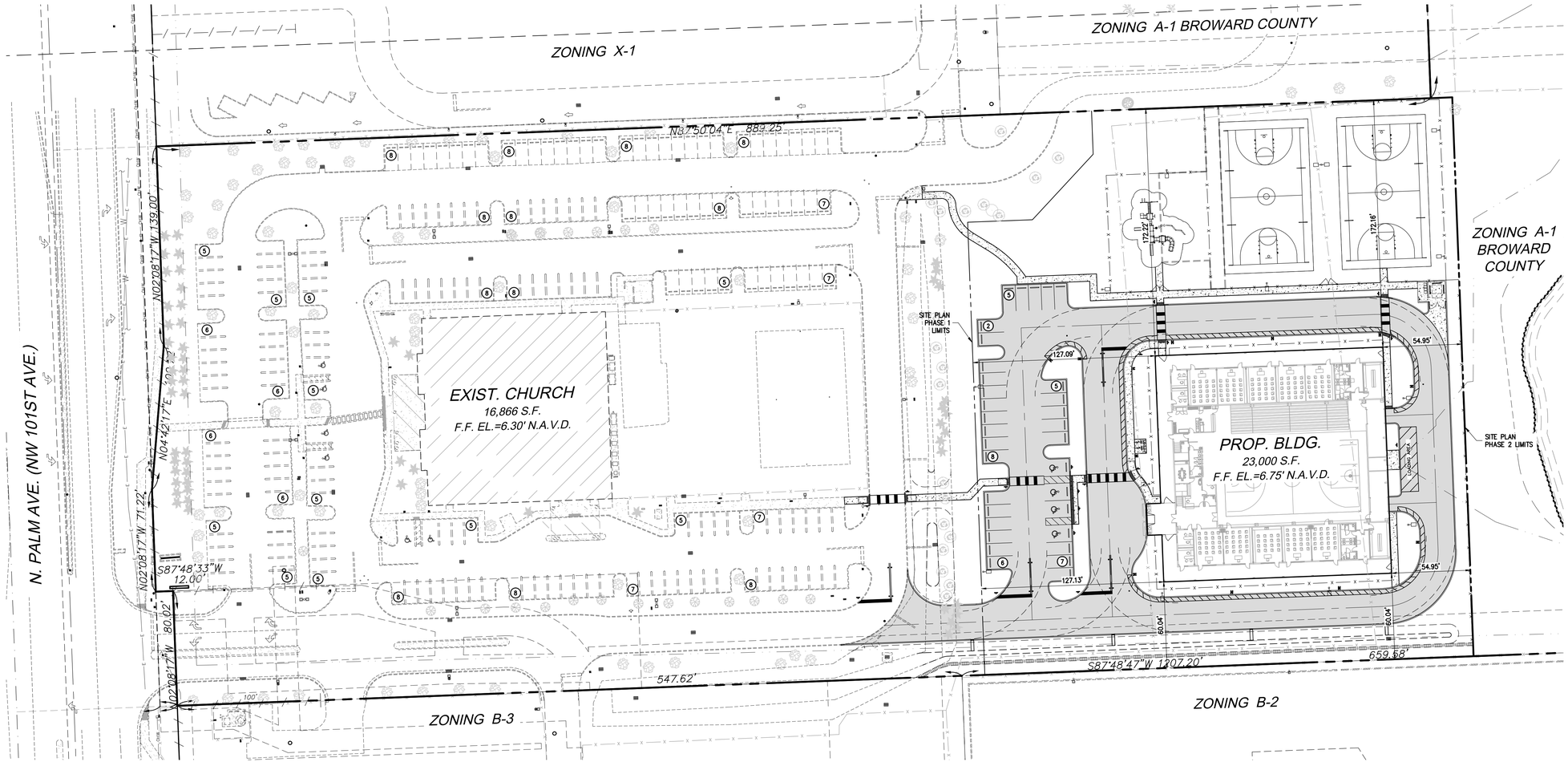
FILE: K:\PROJECTS\21-xxx\21-4077\dwg\4077c.dwg
PLOT DATE: 8/30/2022 7:46 AM BY: Miguel A. Soso
LAYOUT: [COV-SP]



SITE PLAN DATA

	CHURCH / SCHOOL (PHASE 1)			SCHOOL / GYM (PHASE 2)			PHASE 1 & PHASE 2 (COMBINED)		
	S.F.	AC.	%	S.F.	AC.	%	S.F.	AC.	%
GREEN SPACE AREA	84,984 *	1.951	37.30%	31,962	0.734	26.30%	116,946	2.685	33.48%
PAVEMENT AREA	96,518 **	2.216	42.36%	36,380	0.835	29.94%	132,898	3.051	38.04%
CONCRETE AREA	6,093 ***	0.140	2.67%	3,764	0.086	3.10%	9,857	0.226	2.82%
PROP. BUILDING	16,866	0.387	7.40%	23,000	0.528	18.93%	39,866	0.915	11.41%
BASKETBALL COURT	11,643	0.267	5.11%	20,664	0.474	17.01%	32,307	0.742	9.25%
PLAYGROUND	11,730	0.269	5.15%	5,740	0.132	4.72%	17,470	0.401	5.00%
TOTAL AREA	227,834	5.230	100.00%	121,509	2.789	100.00%	349,343	8.020	100.00%

PERVIOUS CALCULATIONS

	S.F.	AC.	%	S.F.	AC.	%	S.F.	AC.	%
PERVIOUS	84,984	1.95	37.30%	31,962	0.73	26.30%	116,946	2.68	33.48%
IMPERVIOUS	142,850	3.28	62.70%	89,548	2.06	73.70%	232,398	5.34	66.52%

* SUBTRACTED 2,595 S.F
** INCLUDES AN ADDITIONAL 1,916 S.F. FROM PHASE 2
*** INCLUDES AN ADDITIONAL 679 S.F. FROM PHASE 2

PARKING/STUDENT TABULATION

CHURCH / SCHOOL (PHASE 1)		SCHOOL / GYM (PHASE 2)		PHASE 1 & PHASE 2 (COMBINED)	
CHURCH REQUIRED PARKING: 16,866 S.F. @ 1 SPACE PER 100 S.F.	169 SPACES	BLEACHERS SEATING REQUIRED PARKING: 434 SEATS @ 1 SPACE PER 4 SEATS	109 SPACES		
ELEMENTARY REQUIRED PARKING: 2 CLASSROOMS @ 1 SPACE PER CLASSROOM 1 STUDENT @ 20 S.F. = 48 STUDENTS	2 SPACES	ELEMENTARY REQUIRED PARKING: 2 CLASSROOMS @ 1 SPACE PER CLASSROOM	2 SPACES		
MIDDLE SCHOOL REQUIRED PARKING: 4 CLASSROOMS @ 1.25 SPACES PER CLASSROOM 1 STUDENT @ 20 S.F. = 91 STUDENTS	5 SPACES	MIDDLE SCHOOL REQUIRED PARKING: 3 CLASSROOMS @ 1 SPACES PER CLASSROOM = 3 60 STUDENTS @ 1 SPACE PER 10 STUDENTS = 6	9 SPACES		
HIGH SCHOOL REQUIRED PARKING: 1,280 S.F. @ 1 SPACE PER 200 S.F. 1 STUDENT @ 20 S.F. = 51 STUDENTS	7 SPACES	HIGH SCHOOL REQUIRED PARKING: 5 CLASSROOMS @ 1 SPACE PER CLASSROOM = 5 100 STUDENTS @ 1 SPACE PER 10 STUDENTS = 10	15 SPACES		
OFFICES REQUIRED PARKING: 485 S.F. @ 1 SPACE PER 200 S.F.	3 SPACES	OFFICES REQUIRED PARKING: 1,250 S.F. @ 1 SPACE PER 200 S.F.	7 SPACES		
TOTAL PARKING REQUIRED	186 SPACES	TOTAL PARKING REQUIRED	142 SPACES	GRAND TOTAL PARKING REQUIRED	328 SPACES
PARKING PROVIDED					
9'x18' STD. SPACES (PAVED)	138 SPACES	9'x18' STD. SPACES (PAVED)	29 SPACES		
9'x18' STD. SPACES (GRASS 20% OF REQ. ALLOWED)	34 SPACES	12'x18' HANDICAP SPACES (PAVED)	4 SPACES		
12'x18' HANDICAP SPACES (PAVED)	6 SPACES				
9'x18' STD. SPACES (ADDITIONAL GRASS PARKING)	25 SPACES				
TOTAL PARKING PROVIDED	203 SPACES	TOTAL PARKING PROVIDED	33 SPACES	GRAND TOTAL PARKING PROVIDED	236 SPACES *

NOTES:

* 1. THE REQUIRED PARKING FOR THE MAXIMUM 200 STUDENTS IN PHASE 2 IS 33 SPACES. THE REQUIRED PARKING HAS BEEN PROVIDED FOR ON-SITE WITHIN PHASE 2 LIMITS. THE REQUIRED PARKING FOR THE GYMNASIUM OF 109 SPACES WILL BE PROVIDED FOR ON THE CHURCH PROPERTY IN PHASE 1, AND ARE PART OF THE 203 SPACES WITHIN PHASE 1, ALONG WITH 33 SPACES WITHIN PHASE 2. ACTIVITIES WITHIN THE GYMNASIUM WILL BE LIMITED TO SCHOOL DAYS UNTIL 6 PM. THERE WILL BE NO GYMNASIUM ACTIVITIES ON WEEKENDS.

2. PROPOSED BUILDING WILL PROVIDE SMOKE DETECTORS AND FIRE SPRINKLER SYSTEM.

DEVELOPMENT STANDARDS

ITEM	REQUIRED	PROVIDED
MIN. LOT FRONTAGE	0'-0"	0'-0"
MIN. LOT SIZE (S.F.)	0.00	121,509
MAX. BUILDING COVERAGE	0.00	11.41%
SIDE SETBACK	0'-0"	60.04'
FRONT SETBACK	0'-0"	127.09'
REAR SETBACK	0'-0"	54.95'

APPLICABLE CODE REFERENCES

EXIST. ZONING (PHASE 1)	X-1 (CIVIC DISTRICT)
EXIST. ZONING (PHASE 2)	A-1 (BROWARD COUNTY)
PROP. ZONING (PHASE 2)	X-1 (CIVIC DISTRICT)
EXIST. LAND USE	E-ESTATE
PROP. LAND USE	E-ESTATE
FLOOR AREA RATIO (PHASE 2)	0.189
BUILDING HEIGHT (PHASE 2)	42'-0"'

STE Sun-Tech Engineering, Inc.
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Sunrise, FL 33351
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Certificate of Auth. #7097/LB 7019
Phone (954) 777-3123
Fax (954) 777-3114

REVISIONS

NO.	DATE:	DESCRIPTION

FIRST BAPTIST CHURCH OF S.W. BROWARD
COOPER CITY FLORIDA
OVERALL SITE PLAN

DATE: MAY 2021
SCALE: 1"=40'
DESIGNED BY: M.G.
DRAWN BY: M.A.S.
JOB #: 21-4077

CLIFFORD R. LOFMAN LICENSE No. 56890 STATE OF FLORIDA PROFESSIONAL ENGINEER
Date: **August 30, 2022**

SHEET No.
SP1

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PLOT DATE: 8/30/2022 7:46 AM BY: Miguel A. Sosa
LAYOUT: [SP1]

ZONING A-1 BROWARD COUNTY

PROPERTY LINE

PROP. 6' HIGH VINYL COATED CHAN-LINK FENCE

PROP. 4' HIGH VINYL COATED CHAN-LINK FENCE

PROP. 5' CONC. SIDEWALK

MULCH

PLAYGROUND STRUCTURE

PROP. LIGHT POLE (TYP.)

SITE PLAN PHASE 1 LIMITS

PROP. FIRE TRUCK RADII (TYP.)

PROP. TYPE "D" CURB (TYP.)

PROP. 6' HIGH VINYL COATED CHAN-LINK SECURITY FENCE

COVERED WALKWAY

MULTI-PURPOSE COURTS

PROP. DUMPSTER (TYP.)

SITE PLAN PHASE 2 LIMITS

PROP. BLDG.
23,000 S.F.
F.F. EL.=6.75' N.A.V.D.

20 STUDENTS ELEMENTARY

20 STUDENTS MIDDLE

20 STUDENTS HIGH

LOADING AREA

PROP. CONC. WHEELSTOP (TYP.)

PROP. BIKE RACK

STUDENT DROP-OFF AREA

PROP. FLAT BOTTOM SWALE

30' DRAINAGE EASEMENT O.R.B. 47448, PG. 1764

EXIST. 30' DRAINAGE EASEMENT (ORB 47448 PG. 1764)

S87°48'47"W 1207.20'

659.58'

ZONING B-2

PROPERTY LINE

NORTH LINE PARCEL "A"

SOUTH LINE PARCEL "B"

NORTH LINE PARCEL "B"

FLOOD ZONE: AE

FLOOD ZONE: AH

GRAPHIC SCALE
1" = 20'

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REVISIONS

NO.	DATE:	DESCRIPTION

FIRST BAPTIST CHURCH OF S.W. BROWARD

COOPER CITY FLORIDA

SITE PLAN

DATE:	MAY 2021
SCALE:	1"=20'
DESIGNED BY:	M.G.
DRAWN BY:	M.A.S.
JOB #:	21-4077

CLIFFORD R. LOUTAY
LICENSE
No. 56890
STATE OF FLORIDA
PROFESSIONAL ENGINEER

Date: **August 30, 2022**

SHEET No.
SP2

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LAYOUT: [SP2]

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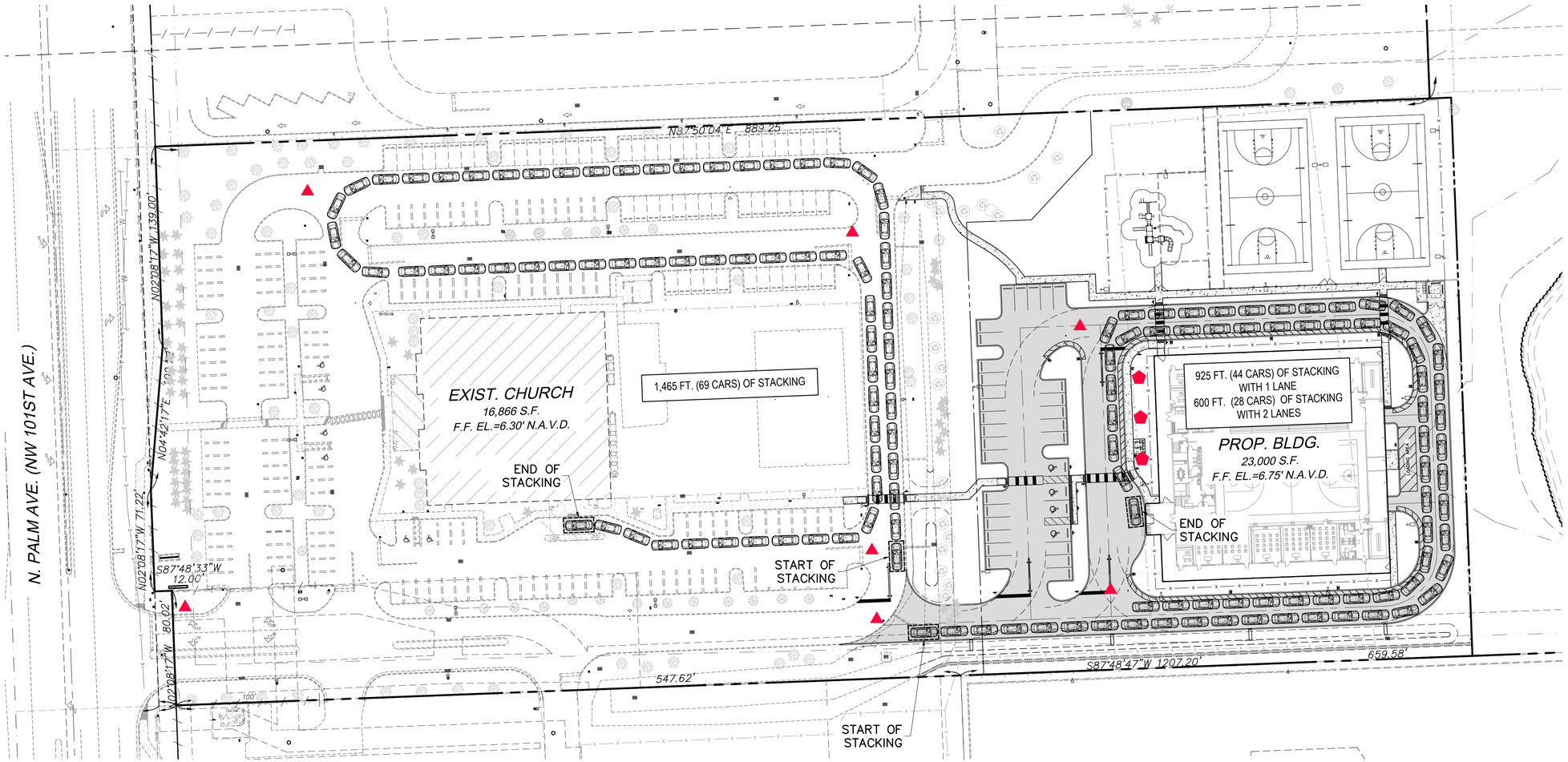
GRAPHIC SCALE
1" = 40'



LEGEND:

- STAFF MEMBER
- TRAFFIC CONTROL PERSON

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STE Sun-Tech Engineering, Inc.
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REVISIONS

NO.	DATE:	DESCRIPTION

FIRST BAPTIST CHURCH OF S.W. BROWARD

COOPER CITY FLORIDA

SCHOOL DROP-OFF STACKING PLAN

DATE:	MAY 2021
SCALE:	1"=40'
DESIGNED BY:	M.G.
DRAWN BY:	M.A.S.
JOB #:	21-4077

CLIFFORD R. LOUTAN
LICENSE
No. 56890
STATE OF FLORIDA
PROFESSIONAL ENGINEER

Date: **August 30, 2022**

SHEET No.
SP3

FILE: K:\PROJECTS\21-xxx\21-4077\dwg\4077sp3.dwg
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LAYOUT: [SP3]

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BROWARD COUNTY DEPARTMENT OF PLANNING AND ENVIRONMENTAL PROTECTION
NOTES ON WATER SEWER SEPARATION:

1. NOTES ON WATER SEWER SEPARATION:

A. SANITARY SEWERS AND FORCE MAINS SHOULD CROSS UNDER WATER MAINS WHENEVER POSSIBLE. SANITARY SEWERS AND FORCE MAINS CROSSING WATER MAINS SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF 18 INCHES BETWEEN THE INVERT OF THE UPPER PIPE AND THE CROWN OF THE LOWER PIPE WHENEVER POSSIBLE.

WHERE SANITARY SEWERS OR FORCE MAINS MUST CROSS A WATER MAIN WITH LESS THAN 18 INCHES OF VERTICAL DISTANCE, BOTH THE SEWER AND THE WATER MAIN SHALL BE CONSTRUCTED OF DUCTILE IRON PIPE (D.I.P.) AT THE CROSSING. SUFFICIENT LENGTHS OF D.I.P. MUST BE USED TO PROVIDE A MINIMUM SEPARATION OF 10 FEET BETWEEN ANY TWO JOINTS. ALL JOINTS ON THE WATER MAIN WITHIN 20 FEET OF THE CROSSING MUST BE MECHANICALLY RESTRAINED. A MINIMUM VERTICAL CLEARANCE OF 6 INCHES MUST BE MAINTAINED AT ALL CROSSINGS.

ALL CROSSING SHALL BE ARRANGED SO THAT THE SEWER PIPE JOINTS AND THE WATER MAIN PIPE JOINTS ARE EQUAL DISTANCE FROM THE POINT OF CROSSING (PIPES CENTERED ON THE CROSSING).

WHERE A NEW PIPE CONFLICTS WITH AN EXISTING PIPE WITH LESS THAN 18 INCHES VERTICAL CLEARANCE, THE NEW PIPE SHALL BE ARRANGED TO MEET THE CROSSING REQUIREMENTS ABOVE.

B. A MINIMUM 10-FOOT HORIZONTAL SEPARATION SHALL BE MAINTAINED BETWEEN ANY TYPE OF SEWER AND WATER MAIN PARALLEL INSTALLATIONS WHENEVER POSSIBLE. IN CASES WHERE IT IS NOT POSSIBLE TO MAINTAIN 10-FOOT HORIZONTAL SEPARATION, THE WATER MAIN MUST BE LAID IN A SEPARATE TRENCH OR ON AN UNDISTURBED EARTH SHELF LOCATED ON ONE SIDE OF THE SEWER OR FORCE MAIN AT SUCH AN ELEVATION THAT THE BOTTOM OF THE WATER MAIN IS AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER. WHERE IT IS NOT POSSIBLE TO MAINTAIN A VERTICAL DISTANCE OF 18 INCHES IN PARALLEL INSTALLATIONS, THE WATER MAIN SHALL BE CONSTRUCTED OF D.I.P. AND THE SANITARY SEWER OR THE FORCE MAIN SHALL BE CONSTRUCTED OF D.I.P. WITH A MINIMUM VERTICAL DISTANCE OF 6 INCHES. THE WATER MAIN SHOULD ALWAYS BE ABOVE THE SEWER. JOINTS ON THE WATER SHALL BE LOCATED AS FAR APART AS POSSIBLE FROM JOINTS ON THE SEWER OR FORCE MAIN (STAGGERED JOINTS).

C. ALL D.I.P. SHALL BE CLASS 50 OR HIGHER. ADEQUATE PROTECTIVE MEASURE AGAINST CORROSION SHALL BE USED AS DETERMINED BY DESIGN.

GENERAL NOTE: THE CONTRACTOR SHALL CONFORM TO THE MOST CURRENT AND MOST STRINGENT STANDARDS AND SPECIFICATION REQUIREMENTS FOR THE BROWARD COUNTY DEPARTMENT OF NATURAL RESOURCE PROTECTION AND THE COOPER CITY, PERTAINING TO ALL UTILITY PIPE SEPARATIONS AND CLEARANCES.

X. EARTHWORK AND COMPACTION

A. GENERAL:
1. NONE OF THE EXISTING MATERIAL IS TO BE INCORPORATED IN THE LIMEROCK BASE.
2. ALL SUBGRADE UNDER PAVED AREAS SHALL HAVE A MINIMUM LBR VALUE OF 40 AND AND SHALL BE COMPACTED TO 98% OF THE MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180.
3. ALL FILL MATERIAL IN AREAS NOT TO BE PAVED SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180.
4. A 2" BLANKET OF TOP SOIL SHALL BE PLACED OVER ALL AREAS TO BE SODDED.
5. SOD SHALL BE ST. AUGUSTINE, BITTER BLUE OR FLORATAM AND SHALL BE PLACED ON THE GRADED TOP SOIL AND WATERED TO INSURE SATISFACTORY CONDITION UPON FINAL ACCEPTANCE OF THE PROJECT.
6. WHEN WORKING IN AND AROUND EXISTING DRAINAGE CANALS OR LAKES, APPROPRIATE SILT BARRIERS SHALL BE INSTALLED.

B. ON-SITE:
1. ALL ORGANIC AND OTHER UNSUITABLE MATERIAL WITHIN THREE FEET OF AREAS TO BE PAVED SHALL BE REMOVED.
2. SUITABLE BACKFILL SHALL BE MINIMUM LBR 40 MATERIAL COMPACTED TO 98% OF THE MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180 FOR THREE (3) FEET BEYOND THE PERIMETER OF THE PAVING.

XI. STORM DRAINAGE

A. CONTRACTOR MAY UTILIZE ONE OF THE FOLLOWING MATERIALS.

1. REINFORCED CONCRETE PIPE (RCP)
CONCRETE PIPE FOR STORM SEWERS SHALL CONFORM TO ASTM L70-79, TABLE III, WALL B, OR LATEST REVISION. ALL PIPE SHALL HAVE MODIFIED TONGUE AND GROOVE JOINTS, AND HAVE RUBBER GASKETS, UNLESS OTHERWISE SPECIFIED.

2. MISCELLANEOUS
A. BEDDING AND INITIAL BACKFILL OVER DRINAGE PIPES SHALL BE SAND WITH NO ROCK LARGER THAN 1" DIAMETER.

B. BACKFILL MATERIAL UNDER PAVED AREAS SHALL BE COMPACTED TO 98% OF THE MAXIMUM DENSITY AS DETERMINED BY ASSHTO T-180.

C. BACKFILL MATERIAL UNDER AREAS NOT TO BE PAVED SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180.

D. CATCH BASINS SHALL BE PRECAST MINIMUM 3000 PSI CONCRETE AND GRADE 40 REINFORCED STEEL

3. INSTALLATION:
A. PIPE SHALL BE PLACED ON STABLE GRANULAR MATERIAL FREE OF ROCK FORMATION OTHER FOREIGN FORMATIONS, AND CONSTRUCTED TO UNIFORM GRADE AND LINE.

B. BACKFILL MATERIAL SHALL BE WELL GRADED GRANULAR MATERIAL WELL TAMPED IN LAYERS NOT TO EXCEED SIX INCHES (6").

C. PROVIDE A MINIMUM PROTECTIVE COVER OF 18 INCHES OVER STORM SEWER AND AVOID UNNECESSARY CROSSING BY HEAVY CONSTRUCTION VEHICLES DURING CONSTRUCTION
D. THE CONTRACTOR SHALL NOTIFY THE LOCAL WATER CONTROL DISTRICT AT LEAST 24 HOURS PRIOR TO THE START OF THE CONSTRUCTION AND INSPECTION.

XII. STORM DRAINAGE PRE-TREATMENT/EXFILTRATION SYSTEM

A. ANY CONFLICT WITH EXISTING OR PROPOSED UTILITIES SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER. ANY IMPERMEABLE MATERIAL ENCOUNTERED IN THE EXCAVATION FOR THE DRAIN FIELD SHALL BE REMOVED AS DIRECTED BY THE ENGINEER.

B. THE TRENCH LINER SHALL BE TYPAR SPUN BONDED POLYPROPYLENE FILTER FABRIC AS MANUFACTURED BY THE DUPONT COMPANY, OR APPROVED EQUAL. IT SHALL BE USED ON THE SIDES AND TOP OF DRAIN FIELD DITCH. THE TOP SECTION OF THE MATERIAL SHALL BE LAPPED A MINIMUM OF 24 INCHES AND THE CONTRACTOR SHALL TAKE EXTREME CARE IN BACKFILLING TO AVOID BUNCHING OF THE FABRIC.

C. SLOTTED PIPE WITHIN THE DRAIN FIELD SHALL HAVE 3/8 INCH PERFORATIONS 360° AROUND THE PIPE WITH APPROXIMATELY 120 PERFORATIONS PER FOOT OF PIPE.

D. SLOTTED PIPE SHALL TERMINATE FIVE FEET (5') FROM THE DRAINAGE STRUCTURE. THE REMAINING FIVE FEET (5') SHALL BE NON-PERFORATED PIPE.

E. PIPES SHALL TERMINATE TWO FEET (2') FROM THE END OF THE TRENCH OR CONNECT TO ADDITIONAL CATCH BASINS.

XIII. PAVING

A. GENERAL:

1. ALL UNDERGROUND UTILITIES SHALL BE COMPLETED PRIOR TO THE CONSTRUCTION OF OF LIMEROCK BASE AND PRIOR TO PLACEMENT OF THE PAVEMENT.

2. ALL EXISTING PAVEMENT CUT OR DAMAGED BY CONSTRUCTION SHALL BE PROPERLY RESTORED AT THE CONTRACTOR'S EXPENSE.

3. WHERE PROPOSED PAVEMENT IS TO BE CONNECTED TO EXISTING PAVEMENT, THE EXISTING EDGE OF PAVEMENT SHALL BE SAW CUT.

4. ALL STREET CORNER PAVEMENT RADII SHALL BE 25 FEET UNLESS OTHERWISE NOTED ON THE PLANS.

5. UPON COMPLETION OF DRAINAGE IMPROVEMENTS AND LIMEROCK BASE CONSTRUCTION (AND BEFORE PLACING ASPHALT PAVEMENT) THE CONTRACTOR SHALL FURNISH THE ENGINEER OF RECORD AND THE COOPER CITY "AS-BUILT" PLANS FOR THESE IMPROVEMENTS, SHOWING THE LOCATIONS AND THE PERTINENT GRADES OF ALL DRAINAGE INSTALLATIONS AND THE FINISHED ROCK GRADES OF THE ROAD CROWN AND EDGE OF PAVEMENT AT 50 FEET INTERVALS. THESE "AS-BUILTS" SHALL BE APPROVED BY THE TOWN PRIOR TO THE PLACEMENT OF ASPHALT.

B. MATERIALS:

1. BASE COURSE SHALL BE CRUSHED LIMEROCK MIAMI OOLITE WITH A MINIMUM OF 70% CARBONATES OF CALCIUM AND MAGNESIUM (60% FOR LOCAL STREETS AND PARKING AREAS) AND A MINIMUM LIMEROCK BEARING RATIO 100.

2. PRIME COAT AND TACK COAT SHALL MEET F.D.O.T. STANDARDS.

3. SURFACE COURSE SHALL BE EQUAL TO F.D.O.T. TYPE S-3 ASPHALT.

4. REINFORCED CONCRETE SLABS SHALL BE CONSTRUCTED OF CLASS I CONCRETE WITH A MINIMUM STRENGTH OF 3,000 PSI AND SHALL BE REINFORCED WITH A 6" x 6" No. 6 GAUGE WIRE MESH.

C. INSTALLATION:

1. LIMEROCK BASE MATERIAL SHALL BE 8 INCHES THICK AND SHALL BE COMPACTED TO 98% OF THE MAXIMUM DENSITY AS DETERMINED BY AASHTO T80-C.

2. LIMEROCK BASE MATERIAL SHALL BE PLACED IN MAXIMUM 6" LIFTS.BASES GREATER THAN 6" SHALL BE PLACED IN TWO OR MORE EQUAL LIFTS.

3. ASPHALTIC CONCRETE SHALL BE A MINIMUM OF 1 1/2" THICK AND SHALL BE PLACED TWO 3/4" LIFTS. (NOTE: SECOND LIFT TO BE PLACED AFTER A MINIMUM OF 80% OF THE HOUSES HAVE BEEN COMPLETED OR AS DIRECTED BY THE TOWN ENGINEER.

4. PRIME COAT SHALL BE PLACED ON ALL LIMEROCK BASES IN ACCORDANCE WITH F.D.O.T. STANDARDS.

5. TACK COAT SHALL BE PLACED AS REQUIRED IN ACCORDANCE WITH F.D.O.T. STANDARDS.

D. TESTING:

ALL SUBGRADE, LIMEROCK AND ASPHALT TESTS REQUIRED SHALL BE TAKEN AT THE DIRECTION OF THE ENGINEER AND/OR THE COOPER CITY.

1. THE FINISHED SURFACE OF THE BASE COURSE AND THAT OF THE WEARING SURFACE SHALL NOT VARY MORE THAN 1/4" FROM THE TEMPLET. ANY IRREGULARITIES EXCEEDING THIS LIMIT SHALL BE CORRECTED.

2. DENSITY TESTS SHALL BE TAKEN BY AN INDEPENDENT TESTING LABORATORY, CERTIFIED BY THE STATE OF FLORIDA, AND TAKEN AS DIRECTED BY THE ENGINEER AND THE TOWN OF DAVIE.

3. ALL TESTING COSTS (PAVING) SHALL BE PAID FOR BY THE OWNER EXCEPT THOSE TESTS FAILING TO MEET THE SPECIFIED REQUIREMENTS, WHICH ARE TO BE PAID BY THE CONTRACTOR.

XIV. SIGNING AND MARKING

A. ALL PAVEMENT MARKINGS SHALL BE HOT APPLIED THERMOPLASTIC MANUFACTURED AND APPLIED IN ACCORDANCE WITH F.D.O.T. STANDARD SPECIFICATION'S SECTION 711 AND BROWARD COUNTY TRAFFIC ENGINEERING DIVISION STANDARDS WHERE APPLICABLE.

B. ALL SIGNS SHALL BE MANUFACTURED AND INSTALLED IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND BROWARD COUNTY TRAFFIC ENGINEERING DIVISION STANDARDS.

C. REFLECTIVE PAVEMENT MARKERS SHALL BE CLASS B MARKERS MANUFACTURED IN ACCORDANCE WITH F.D.O.T. STANDARD SPECIFICATIONS 706 AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDED PROCEDURES.

CBWCD GENERAL NOTES

1) THE FOLLOWING GENERAL NOTES ARE REQUIRED BY CENTRAL BROWARD WATER CONTROL DISTRICT. THEY ARE NOT MEANT TO BE ALL INCLUSIVE, AND IT IS THE ENGINEER OF RECORDS' RESPONSIBILITY TO ADD ANY NOTES WHICH WILL INFORM THE OWNER AND THE CONTRACTOR OF ANY ADDITIONAL REQUIREMENT OF THE CENTRAL BROWARD WATER CONTROL DISTRICT.

2) ANY REVISIONS TO THESE PLANS MUST BE APPROVED BY THE CENTRAL BROWARD WATER CONTROL DISTRICT PRIOR TO CONSTRUCTION.

3) BONDS: UPON DISTRICT BOARD OF COMMISSIONERS APPROVAL OF PLANS, BUT BEFORE CONSTRUCTION CAN COMMENCE, THE FOLLOWING ITEMS MUST BE COMPLIED WITH:

A) BOND (CASH OR SURETY), IN THE DISTRICT'S FAVOR, MUST BE POSTED IN THE AMOUNT OF 110 PERCENT OF THE DEVELOPER'S ENGINEER OF RECORD'S ESTIMATE OF COST OF CONSTRUCTION OF THE PAVING AND DRAINAGE WORKS. (SUBJECT TO APPROVAL OF THE COST ESTIMATE BY THE DISTRICT SECRETARY/MANAGER OR DISTRICT ENGINEER.)

B) SWALES, LAKE/POND BANKS, SLOPES, CANALS, AND OTHER EXCAVATIONS SHALL BE BONDED SEPARATELY FROM OTHER DRAINAGE IMPROVEMENTS AND WILL BE HELD BY THE DISTRICT UNTIL SUCCESSFUL COMPLETION. THE AMOUNT OF THIS SEPARATE BOND WILL BE DETERMINED BY THE DISTRICT BOARD OF COMMISSIONERS AND BY RECOMMENDATION OF THE DISTRICT SECRETARY/MANAGER.

C) THE DISTRICT'S BOND FORM IS THE ONLY FORM APPROVED FOR USE, AND IT SHALL BE A RECORDED INSTRUMENT. RELEASE OR REDUCTION FROM THE RECORDED INSTRUMENT SHALL BE THE RESPONSIBILITY OF THE APPLICANT.

D) BONDS SHALL BE PROVIDED BY THE PRINCIPALS OF DEVELOPMENT ONLY. CONTRACTOR OR SUB-CONTRACTOR BONDS ARE NOT ACCEPTABLE.

E) UPON SUCCESSFUL COMPLETION OF CONSTRUCTION, AND ACCEPTANCE OF "AS- BUILTS/RECORD DRAWINGS" BY THE DISTRICT BOARD OF COMMISSIONERS, A PERCENTAGE OF THE PERFORMANCE BOND AS DETERMINED BY THE DISTRICT MAY BE RELEASED. THE BALANCE OF BOND SHALL REMAIN IN FULL FORCE AND EFFECT FOR AN ADDITIONAL TWELVE (12) MONTHS AFTER FINAL INSPECTION AND APPROVAL, UNLESS SUPPLEMENTED BY NEW BOND FORMS IN THE REQUIRED AMOUNTS AND APPROVED BY
THE DISTRICT ATTORNEY.

4) INSPECTIONS: WHEN CONSTRUCTION IS IN PROGRESS, THE DISTRICT'S INSPECTOR WILL INSPECT THE INSTALLATION OF DRAINAGE WORKS, ACCORDING TO AN INSPECTION SCHEDULE ESTABLISHED BY THE BOARD OF COMMISSIONERS. INSPECTION MUST BE MADE BY DISTRICT PERSONNEL BEFORE BACKFILLING OF ANY STORM DRAIN STRUCTURES, PIPES, EXFILTRATION TRENCHES, WORK IN DISTRICT CANALS, AND BEFORE PLACEMENT OF ASPHALT OR CONCRETE PAVEMENT. CALL (954) 432-5110 FOR AN INSPECTION APPOINTMENT A MINIMUM OF TWENTY-FOUR (24) HOURS IN ADVANCE. ALL COSTS OF PERIODIC INSPECTIONS OF CONSTRUCTION BY THE DISTRICT SHALL BE BORNE BY THE DEVELOPER.

5) LIMEROCK BASE COURSE SHALL CONFORM TO THE REQUIREMENTS OF SECTION 911 OF FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, EXCEPT THE MINIMUM PERCENTAGE OF CARBONATES OF CALCIUM AND MAGNESIUM SHALL BE SIXTY PERCENT (60 %).

6) ALL MUCK AND DELETERIOUS SOILS SHALL BE REMOVED FROM THE TOP OF BANK TO TOP OF BANK LIMITS OF DRY DETENTION/RETENTION AREAS, AND EXFILTRATION TRENCHES DOWN TO A MINIMUM OF FIVE FEET (5') BELOW THE WATER CONTROL ELEVATION AND REPLACED WITH SUITABLE WELL-DRAINING SOILS.

7) ALL NUISANCE VEGETATION SHALL BE REMOVED FROM WITHIN THE PROJECT LIMITS AND WITHIN THE PORTION OF THE CBWCD CANAL THAT FALLS WITHIN THE PROPERTY BOUNDARY. THIS ALSO APPLIES WHEN THE PROPERTY ABUTS A ROADWAY AND THE DISTRICT CANAL IS LOCATED ON THE OPPOSITE SIDE OF THE OAD WITH RESPECT TO THE PROPERTY. IN THIS CASE, NUISANCE VEGETATION SHALL BE REMOVED FROM HE CANAL BANK NEAREST THE PROPERTY LINE.

8) EXISTING STORM SEWERS SHALL BE CLEANED FROM THE POINT OF CONNECTION WITH NEW STORM SEWERS OR DRAINAGE STRUCTURES TO THE FIRST EXISTING STRUCTURE UPSTREAM AND DOWNSTREAM OF THE POINT OF CONNECTION. TELEVISION INSPECTION OF THE PIPES SHALL BE REVIEWED AND CERTIFIED THAT THEY ARE CLEAN BY THE ENGINEER OF RECORD PRIOR TO SUBMITTAL OF AS-BUILT DRAWINGS TO THE DISTRICT.

9) THE LIMITS OF ANY EASEMENT TO BE DEDICATED TO THE DISTRICT SHALL BE STAKED PRIOR TO INSTALLING TREES TO BE LOCATED WITHIN THREE (3) FEET OF A DISTRICT EASEMENT. THE STAKES SHALL REMAIN IN PLACE UNTIL THE SITE OR LANDSCAPE CONTRACTOR VERIFIES THE INTENDED PLANT LOCATION DOES NOT ENCROACH INTO A DISTRICT EASEMENT.

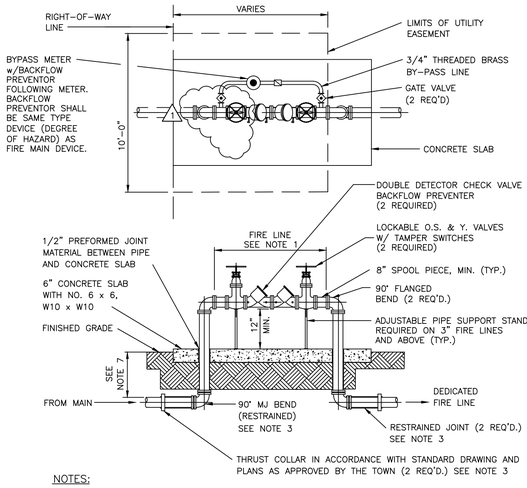
10) THE DISTRICT SECRETARY/MANAGER AND DISTRICT ENGINEER SHALL BE NOTIFIED PRIOR TO THE SUBMITTAL OF AS-BUILT/RECORD DRAWINGS OF ANY ENCROACHMENT WITHIN A DISTRICT EASEMENT NOT EXPRESSLY APPROVED BY THE DISTRICT BOARD OF COMMISSIONERS.

11) AS-BUILT SURVEY AND RECORD DRAWING: "AS-BUILT" PLANS FROM THE SURVEYOR OF RECORD MUST BE CERTIFIED AS "RECORD DRAWINGS" BY THE ENGINEER OF RECORD. THE SURVEYOR'S CERTIFICATION SHALL INCLUDE THE LAST DATE OF FIELD DATA ACQUISITION. THE ENGINEER'S CERTIFICATION SHALL INCLUDE THE CBWCD PERMIT COMPLIANCE STATEMENT. AS-BUILTS SHALL
BE PROVIDED AS AN OVERLAY ON THE APPROVED CONSTRUCTION DRAWINGS AT THE SAME SCALE FOR COMPARISON PURPOSES. ALL REFERENCES TO "PROPOSED" SHALL BE STRUCK THROUGH AND REPLACED WITH THE AS-BUILT CONDITION. AS-BUILT SUBMITTALS SHALL FOLLOW THE SAME FORMAT OF GENERAL REVIEW AS DESCRIBED IN THE CENTRAL BROWARD WATER CONTROL DISTRICT'S STORMWATER MANAGEMENT REGULATIONS, STANDARDS, PROCEDURES, AND DESIGN CRITERIA MANUAL.

12) LAKE/POND, CANAL, AND DRY DETENTION/RETENTION AREA AS-BUILTS WILL BE CROSS-SECTIONED SHOWING THE DESIGNED SECTION AS DASHED, AS-BUILT SECTION AS SOLID, AND HAVE THE TOP OF BANK REFERENCE TO THE LAKE/CANAL MAINTENANCE EASEMENT. SPACING BETWEEN EACH CROSS-SECTION SHALL BE SUCH AS TO PROVIDE ENOUGH DATA TO DETERMINE IF THE LAKE/POND/CANAL/DRY DETENTION/RETENTION AREA WAS CONSTRUCTED AS DESIGNED. THE MAXIMUM SPACING BETWEEN CROSS SECTIONS SHALL BE 100'.

13) THE CONTRACTOR SHALL PROVIDE STABLE AND PERMANENT ELEVATION BENCHMARKS ON THE TOP OF EACH HEADWALL CAP FOR PIPES DISCHARGING INTO DISTRICT CANALS AND DRIVEWAY CULVERTS ALONG DISTRICT CANALS. THE BENCHMARK ELEVATION SHALL BE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) AND INCLUDE THE DATUM REFERENCE USING NATIONAL GEODETIC SURVEY BENCHMARKS OR FLORIDA DEPARTMENT OF TRANSPORTATION BENCHMARKS IN NAVD88 AND ONLY CONVERTED BACK TO NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD29). THE OTHER SHALL BE BASED ON NGVD29 AND INCLUDE THE DATUM REFERENCE. EACH HEADWALL SHALL HAVE ONE (1) NAVD88 AND ONE (1) NGVD29 BENCHMARK. CULVERTS CONNECTING DISTRICT CANALS ONLY REQUIRE ONE (1) BENCHMARK PER EACH PAIR OF HEADWALLS.

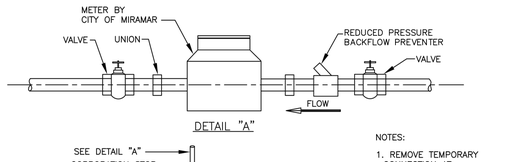
14) THE SURVEYOR OF RECORD SHALL ANNOTATE THE BENCHMARK ELEVATIONS ON THE AS-BUILT DRAWING IN THE FORMAT PROVIDED BY THE DISTRICT ENGINEER. THE BENCHMARK DATA SHALL ALSO INCLUDE A NORTHING/EASTING COORDINATE AT THE CENTER OF EACH HEADWALL. THE HORIZONTAL DATUM SHALL BE BASED ON STATE PLANE, FLORIDA EAST ZONE, NORTH AMERICAN DATUM OF 1983/1990 (NAD83/90).



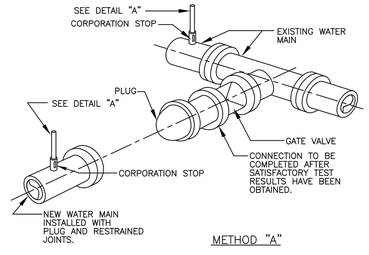
NOTES:

1. ALL PIPE AND FITTINGS 2" AND SMALLER SHALL BE THREADED BRASS.
2. ALL PIPE FITTINGS 4" DIA. AND LARGER SHALL BE CEMENT-LINED DUCTILE IRON WITH FLANGED FITTINGS FOR ABOVEGROUND USE. MECHANICAL JOINT FITTINGS SHALL BE USED UNDERGROUND.
3. MEGALUGS, OR APPROVED EQUAL, CAN BE USED IN PLACE OF RESTRAINED JOINTS ON ALL UNDERGROUND PIPING.
4. PAINT ALL ABOVEGROUND DUCTILE PIPING, FITTINGS AND VALVES.
5. GUARD POSTS ARE REQUIRED WHENEVER BACKFLOW PREVENTOR IS WITHIN 5 FEET OF CURBLINE.
6. BACKFLOW PREVENTOR CONTROL VALVES SHALL BE MONITORED BY AN ELECTRONIC TAMPER SWITCH CONNECTED TO A CENTRAL ALARM SERVICE.
7. DEPTH OF COVER TO TOP OF UNDERGROUND PIPING:
   - 30" MINIMUM (TYP.)
   - 36" MINIMUM UNDER DRIVING SURFACES

DOUBLE DETECTOR CHECK VALVE BACKFLOW PREVENTER ASSEMBLY DETAIL

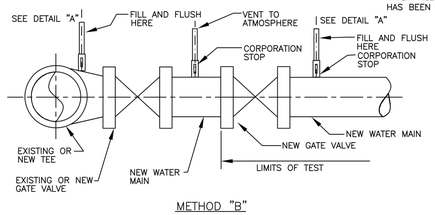


DETAIL "A"



NOTES:
1. REMOVE TEMPORARY CONNECTION AT CORPORATION STOP ON EXISTING MAIN AFTER FILLING AND FLUSHING OF NEW LINE.
2. DO NOT REMOVE TEMPORARY CONNECTION AT CORPORATION STOP ON NEW MAIN UNTIL ALL TESTING HAS BEEN COMPLETED.

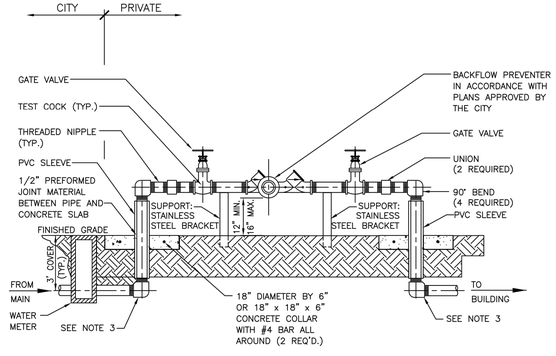
METHOD "A"



NOTE:
1. REMOVE TEMPORARY CONNECTION AT CORPORATION STOPS ON NEW MAIN AFTER FILLING AND FLUSHING HAS BEEN COMPLETED.

METHOD "B"

FILL AND FLUSHING CONNECTION DETAIL



NOTES:

1. ALL PIPE AND FITTINGS 2" AND SMALLER SHALL BE THREADED BRASS. ALL 3" PIPE TO BE GALVANIZED STEEL.
2. ALL PIPE FITTINGS 4" AND LARGER SHALL BE CEMENT-LINED DUCTILE IRON WITH FLANGED FITTINGS FOR ABOVEGROUND USE. MECHANICAL JOINT FITTINGS SHALL BE USED UNDERGROUND WITH RESTRAINED JOINTS AND THRUST COLLARS.
3. APPROVED RESTRAINED ALL JOINTS ON UNDERGROUND DUCTILE IRON PIPING 4" AND LARGER.
4. ALL ABOVEGROUND DUCTILE PIPING, FITTINGS AND VALVES SHALL BE PAINTED RUST-OLEUM BLUE OR APPROVED EQUAL.
5. PROVIDE STAINLESS STEEL SUPPORT BRACKET AND PVC SLEEVE AS SHOWN ON DETAIL.

REDUCED PRESSURE BACKFLOW PREVENTER

STE Sun-Tech Engineering, Inc.
Engineers • Planners • Surveyors
4577 Nob Hill Road, Suite 102
Sunrise, FL 33351
www.suntecheng.com
Certificate of Auth. #7097/LB 7019
Phone (954) 777-3123
Fax (954) 777-3114

REVISIONS

NO.	DATE:	DESCRIPTION

FIRST BAPTIST CHURCH OF S.W. BROWARD
COOPER CITY FLORIDA

GENERAL NOTES

DATE:	MAY 2021
SCALE:	N.T.S.
DESIGNED BY:	M.G.
DRAWN BY:	M.A.S.
JOB #:	21-4077

CLIFFORD R. LOTAN
LICENSE
No. 56890
STATE OF FLORIDA
PROFESSIONAL ENGINEER
Date: **August 30, 2022**

SHEET No.
GN1

FILE: K:\PROJECTS\21-xxx\21-4077\dwg\4077gn.dwg
PLOT DATE: 8/30/2022 7:47 AM BY: Miguel A. Sosa
LAYOUT: [GN1]

I. APPLICABLE CODES

A. GENERAL:

ALL CONSTRUCTION AND MATERIALS SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE COOPER CITY, BROWARD COUNTY DEPARTMENT OF PLANNING AND AND ENVIRONMENTAL PROTECTION (BCDPEP), BROWARD COUNTY HEALTH DEPARTMENT (BCHD), CENTRAL BROWARD WATER CONTROL DISTRICT (CBWCD), SOUTH FLORIDA WATER MANAGEMENT DISTRICT (SFWMD), AND ALL OTHER LOCAL AND NATIONAL CODES WHERE APPLICABLE.

B. CONSTRUCTION SAFETY:

ALL CONSTRUCTION SHALL BE DONE IN A SAFE MANNER, SPECIFICALLY, THE RULES AND REGULATIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) AND THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) SHALL BE STRICTLY OBSERVED.

C. TRENCH SAFETY ACT

1. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR COMPLIANCE WITH THE STATE OF FLORIDA TRENCH SAFETY ACT.
2. WHERE EXCAVATIONS TO A DEPTH IN EXCESS OF FIVE FEET (5') ARE REQUIRED THE CONTRACTOR SHALL INCLUDE THE FOLLOWING INFORMATION IN THE BID.
   A. A REFERENCE TO THE SAFETY STANDARDS THAT WILL BE IN EFFECT DURING THE PERIOD OF CONSTRUCTION OF THE PROJECT.
   B. WRITTEN ASSURANCES BY THE CONTRACTOR PERFORMING THE TRENCH EXCAVATION THAT SUCH CONTRACTOR WILL COMPLY WITH THE APPLICABLE TRENCH SAFETY STANDARDS.
   C. A SEPERATE ITEM IDENTIFYING THE COST OF COMPLIANCE WITH THE APPLICABLE TRENCH SAFETY STANDARDS.
3. WHERE A BID IS NOT SUBMITTED, THE CONTRACTOR SHALL SUBMIT THE INFORMATION LISTED IN ITEM 2, TO THE ENGINEER PRIOR TO STARTING WORK.

D. SURVEY DATA:

ALL ELEVATIONS ON THE PLANS OR REFERENCED IN THE SPECIFICATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM (N.A.V.D. 88.)

II. PRECONSTRUCTION RESPONSIBILITY

A. UPON RECEIPT OF NOTICE OF AWARD, THE CONTRACTOR SHALL ARRANGE A PRECONSTRUCTION CONFERENCE TO INCLUDE THE COOPER CITY ENGINEERING DIVISION, THE OWNER, AND THE ENGINEER, AFTER OBTAINING A CONSTRUCTION PERMIT FROM THE ENGINEERING DIVISION

B. THE CONTRACTOR SHALL OBTAIN A "SUNSHINE CERTIFICATION NUMBER" AT LEAST 48 HOURS PRIOR TO BEGINNING ANY EXCAVATION.

C. PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL VERIFY THE SIZE, LOCATION, ELEVATION, AND MATERIAL OF ALL EXISTING UTILITIES WITHIN THE AREA OF CONSTRUCTION.

D. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO ANY EXISTING UTILITIES FOR WHICH HE FAILS TO REQUEST LOCATIONS SUNSHINE CERTIFICATION NUMBER. HE IS RESPONSIBLE AS WELL FOR DAMAGE TO ANY EXISTING UTILITIES WHICH ARE PROPERLY LOCATED.

E. IF UPON EXCAVATION, AN EXISTING UTILITY IS FOUND TO BE IN CONFLICT WITH THE PROPOSED CONSTRUCTION OR TO BE OF A SIZE OR MATERIAL DIFFERENT FROM THAT SHOWN ON THE PLANS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER, WHO WILL IN TURN NOTIFY THE COOPER CITY UTILITIES DEPARTMENT.

III. INSPECTIONS

THE CONTRACTOR SHALL NOTIFY THE COOPER CITY, CENTRAL BROWARD WATER CONTROL DISTRICT, AND THE ENGINEER OF RECORD AT LEAST 24 HOURS PRIOR TO THE INSPECTION OF THE FOLLOWING ITEMS:

A. 1. STORM DRAINAGE.
   2. SANITARY SEWER.
   3. WATER SYSTEM.
   4. SUBGRADE; SUBMIT AND HAVE APPROVED DENSITIES PRIOR TO PLACEMENT OF ROCK.
   5. LIMEROCK BASE; SUBMIT AND HAVE APPROVED DENSITIES AND AS-BUILTS PRIOR TO THE PLACEMENT OF ANY ASPHALT.
   6. ASPHALTIC CONCRETE.
   7. FINAL.

B. ALL INSPECTIONS MADE BY THE COOPER CITY, CBWCD, AND FDOT THE ENGINEER OF RECORD WILL PROVIDE CONSTRUCTION OBSERVATION SERVICES.

IV. SHOP DRAWINGS

A. PRIOR TO ISSUANCE OF A CONSTRUCTION PERMIT, A MATERIAL LIST SHALL BE SUBMITTED TO AND REVIEWED BY THE ENGINEER OF RECORD AND THE COOPER CITY FOR SANITARY MANHOLES, HYDRANTS, VALVES, PIPING, LIFT STATIONS AND OTHER ACCESSORIES. CATALOGUE LITERATURE SHALL BE SUBMITTED FOR WATER AND SEWER PIPES, FITTINGS AND APPURTENANCES.

B. ANY PRODUCT THAT IS NOT ON THIS LIST MUST BE APPROVED IN ADVANCE BY THE ENGINEER OF RECORD AND THE COOPER CITY ENGINEERING DIVISION. SUCH APPROVAL REQUIRES THE SUBMISSION OF A SHOP DRAWING (SIX COPIES) FOR EACH PRODUCT. SHOP DRAWINGS WILL ALSO BE REQUIRED FOR ALL NON-STANDARD ITEMS

C. INDIVIDUAL SHOP DRAWINGS FOR ALL PRECAST STRUCTURES ARE REQUIRED. CATALOGUE LITERATURE WILL NOT BE ACCEPTED FOR PRECAST STRUCTURES.

V. TEMPORARY FACILITIES

A. TEMPORARY UTILITIES:

1. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ARRANGE FOR OR SUPPLY TEMPORARY WATER SERVICE, SANITARY FACILITIES AND ELECTRICITY TO HIS EMPLOYEE AND SUBCONTRACTORS FOR THEIR USE DURING CONSTRUCTION.
2. OBTAIN CONSTRUCTION METER FOR ALL WATER USED ON JOB. ALL WATER USED FOR CLEANING, TESTING, ETC. WILL BE PAID FOR BY THE CONTRACTOR. IF WATER CAN NOT BE METERED THEN IT WILL BE CALCULATED.

B. TRAFFIC REGULATION:

1. MAINTENANCE OF TRAFFIC IN THE PUBLIC RIGHT-OF-WAY SHALL BE IN ACCORDANCE WITH THE MUTCD AND BCTED.
2. ALL OPEN TRENCHES AND HOLES ADJACENT TO ROADWAYS OR WALKWAYS SHALL BE MARKED AND BARRICADED TO ASSURE THE SAFETY OF BOTH VEHICULAR AND PEDESTRIAN TRAFFIC.
3. NO TRENCHES OR HOLES NEAR WALKWAYS OR IN ROADWAYS OR THEIR SHOULDERS ARE TO BE LEFT OPEN DURING NIGHTTIME HOURS WITHOUT EXPRESS PERMISSION OF THE COOPER CITY.

VI. PROJECT CLOSE OUT

A. CLEANING UP:

1. DURING CONSTRUCTION, THE PROJECT SITE AND ALL ADJACENT AREAS SHALL BE MAINTAINED IN A NEAT AND CLEAN MANNER. UPON FINAL CLEAN UP, THE PROJECT SITE SHALL BE LEFT CLEAR OF ALL SURPLUS MATERIAL OR TRASH. THE PAVED AREAS SHALL BE SWEPT BROOM CLEAN.
2. THE CONTRACTOR SHALL RESTORE OR REPLACE, WHEN AND AS DIRECTED BY THE ENGINEER OR THE COOPER CITY, ANY PUBLIC OR PRIVATE PROPERTY DAMAGED BY HIS WORK, EQUIPMENT, EMPLOYEES OR THOSE OF HIS SUBCONTRACTORS TO A CONDITION AT LEAST EQUAL TO THAT EXISTING IMMEDIATELY PRIOR TO THE BEGINNING OF OPERATIONS. TO THIS END, THE CONTRACTOR SHALL DO AS REQUIRED, ALL NECESSARY HIGHWAY OR DRIVEWAY, SIDEWALK AND LANDSCAPING WORK. SUITABLE MATERIALS AND METHODS SHALL BE USED FOR SUCH RESTORATION.
3. WHERE MATERIAL OR DEBRIS HAS WASHED OR FLOWED INTO OR BEEN PLACED IN WATER WATER COURSES, GRAVITY SEWER, DITCHES, DRAINS, CATCH BASINS, OR ELSEWHERE AS A RESULT OF THE CONTRACTOR'S OPERATIONS, SUCH MATERIAL OR DEBRIS SHALL BE REMOVED AND SATISFACTORILY DISPOSED OF DURING PROGRESS OF THE WORK, AND THE AREA KEPT IN A CLEAN AND NEAT CONDITION.
4. WHEN WORKING IN AND AROUND EXISTING DRAINAGE CANALS, APPROPRIATE SILT BARRIERS SHALL BE INSTALLED AS REQUIRED BY CENTRAL BROWARD WATER CONTROL DISTRICT.

B. PROJECT RECORD DOCUMENTS:

1. THE CONTRACTOR SHALL MAINTAIN ACCURATE AND COMPLETE RECORDS OF ALL WORK ITEMS COMPLETED.
2. ALL "AS-BUILT" INFORMATION SUBMITTED TO THE ENGINEER SHALL BE SUFFICIENTLY ACCURATE, CLEAR AND LEGIBLE TO SATISFY THE ENGINEER THAT THE INFORMATION PROVIDED A TRUE REPRESENTATION OF THE IMPROVEMENTS CONSTRUCTED.
3. UPON COMPLETION OF CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER OF RECORD ONE COMPLETE SET OF "AS-BUILT" CONSTRUCTION DRAWINGS. THESE DRAWINGS SHALL BE MARKED TO SHOW "AS-BUILT" CONSTRUCTION CHANGES AND DIMENSIONED LOCATIONS AND ELEVATIONS OF ALL IMPROVEMENTS AND SHALL BE SIGNED BY THE CONTRACTOR.
4. ALL "AS-BUILT" INFORMATION ON ELEVATIONS, STATIONING OFFSETS AND TIES OF THE WATER, SANITARY SEWER, PAVING AND DRAINAGE SHALL BE CERTIFIED BY A REGISTERED LAND SURVEYOR.
5. "AS-BUILT" INFORMATION ON THE WATER SYSTEM SHALL INCLUDE, BUT IS NOT LIMITED TO LOCATIONS OF ALL VALVES, FITTINGS, FIRE HYDRANTS AND WATER SERVICES AND TOP-OF-PIPE ELEVATION ON 100-FOOT INTERVALS AT A MINIMUM.
6. PRIOR TO A FINAL INSPECTION BY THE COOPER CITY, THE ENGINEER SHALL SUBMIT TWO (2) SETS OF BLUEPRINTS OF "AS-BUILT" CONSTRUCTION DRAWINGS.
7. UPON A FINAL INSPECTION BY THE COOPER CITY, THE ENGINEER SHALL SUBMIT TO THE CITY ONE (1) COMPLETE SET OF REPRODUCIBLE MYLARS AND THREE (3) SETS OF BLUEPRINTS OF "AS-BUILT" CONSTRUCTION DRAWINGS THAT HAVE BEEN CERTIFIED BY A REGISTERED LAND SURVEYOR AND THE ENGINEER OF RECORD AND COMPUTER FILES OF "AS-BUILT" CONSTRUCTION DRAWINGS ON DISKS IN AUTOCAD FORMAT LATEST REVISION.
8. PRIOR TO PLACEMENT OF ANY ASPHALT OR CONCRETE PAVEMENT, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER "AS-BUILT" PLANS SHOWING LIMEROCK BASE GRADES AND ALL DRAINAGE, WATER, AND SEWER IMPROVEMENTS. PAVING OPERATIONS SHALL NOT COMMENCE UNTIL THE ENGINEER AND THE COOPER CITY HAVE REVIEWED AND APPROVED THE "AS-BUILTS".
9. ALL REQUIRED DENSITY AND LBR TEST RESULTS FOR SUBGRADE SHALL BE PROVIDED TO AND AND APPROVED BY THE ENGINEER AND THE COOPER CITY PRIOR TO THE PLACING THE LIMEROCK BASE MATERIAL.
10. ALL REQUIRED DENSITY AND LBR TEST RESULTS FOR LIMEROCK SHALL BE PROVIDED TO AND APPROVED BY THE ENGINEER AND THE COOPER CITY PRIOR TO PLACING ASPHALT.

VII. WATER DISTRIBUTION AND/OR SEWAGE FORCE MAIN SYSTEM

A. GENERAL:

1. THE CONTRACTOR SHALL NOTIFY THE COOPER CITY UTILITIES DEPARTMENT AND THE ENGINEER OF RECORD NO LATER 24 HOUR PRIOR TO MAKING CONNECTIONS TO EXISTING SYSTEMS. A COOPER CITY ENGINEERING DIVISION REPRESENTATIVE AND THE ENGINEER OF RECORD MUST BE PRESENT.
2. SEPARATION OF WATER AND SEWER MAINS:
   a. PARALLEL WATER AND SEWER MAINS SHALL HAVE A MINIMUM 10 FEET HORIZONTAL SEPARATION. WHERE THIS IS NOT POSSIBLE, THE SEWER MAIN SHALL BE IN A SEPARATE TRENCH AND BE AT LEAST 18 INCHES BELOW THE WATER MAIN OR BOTH MAINS SHALL BE DUCTILE IRON WITH A MINIMUM 12' CLEARANCE, PER PRESSURE PIPE SPECIFICATIONS.
   b. THE SEWER MAIN SHALL CROSS BELOW ALL WATER MAINS WITH A MINIMUM OF 18 INCHES VERTICAL CLEARANCE. WHERE THE CLEARANCE IS LESS THAN 18 INCHES, THE SEWER MAIN AND THE WATER MAIN SHALL BE DUCTILE IRON PIPE, WITH A MINIMUM 12" CLEARANCE, FOR 20 FEET CENTERED ON THE POINT OF CROSSING. ALL JOINTS ON THE WATER MAIN WITHIN 20 FEET OF THE CROSSING SHALL BE MECHANICALLY RESTRAINED.
   c. IF A SEWER MAIN MUST CROSS ABOVE A WATER MAIN, REGARDLESS OF VERTICAL CLEARANCE, THE PRECAUTION IN ITEM (b.) ABOVE SHALL BE TAKEN.
3. NO CONNECTIONS TO THE EXISTING LINES SHALL BE MADE UNTIL PRESSURE TESTS FOR THE WATER MAINS AND SEWER FORCE MAINS, AND BACTERIOLOGICAL TESTS HAVE BEEN PERFORMED AND THE SYSTEM IS ACCEPTABLE TO THE COOPER CITY AND THE BROWARD COUNTY HEALTH DEPARTMENT.
4. CLEANING OF NEWLY INSTALLED PIPING SYSTEMS SHALL BE ACCOMPLISHED USING PIPE PIGGING METHODS. OPEN FLUSHING SHALL NOT BE ALLOWED WITHOUT PRIOR APPROVAL OF THE UTILITIES DEPARTMENT. ALL WATER WILL BE ACCOUNTED FOR.
5. ALL EFFORTS SHALL BE MADE SO THAT WATER AND FORCE MAINS CROSS ABOVE DRAINAGE LINES WITH ADEQUATE COVER AND SEPARATION. IF THIS IS NOT POSSIBLE, IT SHALL BE INDICATED ON THE PLANS.
6. A THREE (3) FOOT LATERAL SEPARATION SHALL BE MAINTAINED BETWEEN WATER/SEWER LINES AND OBSTRUCTIONS (I.E.., CATCH BASINS, CONCRETE POLES, ETC.), FIVE (5) FEET FROM TREES.
7. THE MAXIMUM DEPTH TO THE BOTTOM OF THE PRESSURE MAIN INSTALLED SHALL NOT EXCEED SIX (6) FEET UNLESS APPROVED BY THE COOPER CITY ENGINEERING DIVISION.
8. RESTRAINED JOINTS SHALL BE USED, IN LIEU OF CONCRETE THRUST BLOCKS, AT ALL CHANGES IN DIRECTION OF WATER MAINS, SEWAGE FORCE MAINS AND ELSEWHERE AS INDICATED ON THE DRAWINGS. RESTRAIN ALL PIPE JOINTS WITHIN THE DISTANCES ON EACH SIDE OF FITTINGS AS AS REQUIRED TO PROPERLY RESTRAIN AND SUPPORT BENDS, TEES, VALVES, DEAD ENDS AND OTHER SUCH FITTINGS WITH THE EXCEPTION OF FIRE HYDRANTS.

B. MATERIAL:

1. PIPE:
   a. THE WATER MAIN AND/OR SEWAGE FORCE MAIN SHALL BE EITHER POLYVINYL CHLORIDE (PVC) OR DUCTILE IRON PIPE (DIP) AND SHALL BE DESIGNED FOR A MINIMUM WORKING PRESSURE OF 150 PSI.
      i. PVC PIPE SHALL BE ASTM 1120 PRESSURE PIPE WITH IRON O.D., CLASS 150 (DR 18), CONFORMING TO ANSI/AWWA C900-97 OR C905-97 AND SHALL HAVE PUSH RUBBER GASKET JOINTS.
      ii. DIP SHALL BE CLASS 350 WALL THICKNESS (UP TO 12"), CLASS 300 (14"-18"), CLASS 250 (20" OR GREATER) WITH INTERIOR CEMENT LINING AND EXTERIOR COAL TAR COATING CONFORMING TO ANSI/AWWA C151/A21.51-02, OR LATEST REVISION. SEWAGE PIPE SHALL BE EITHER DOUBLE CEMENT CONFORMING TO ANSI/AWWA C104/A21.4-03 OR LATEST REVISION, OR POLYETHYLENE LINED CONFORMING TO ANSI/AWWA C105/A21.5-05 OR LATEST REVISION, OR APPROVED EQUAL. THE PIPE SHALL WITHSTAND A WORKING PRESSURE OF 350 PSI. THE JOINTS SHALL BE BELL AND SPIGOT PUSH ON TYPE, MECHANICAL JOINT OR FLANGED. FLANGED PIPE SHALL CONFORM WITH THE PHYSICAL AND CHEMICAL REQUIREMENTS AS SET FORTH IN THE HANDBOOK OF DUCTILE IRON PIPE OF THE CAST IRON PIPE RESEARCH ASSOCIATION.
   b. ALL WATER MAIN PIPE SHALL CONFORM TO 62-555.320(21)(B)(3), F.A.C., AND SHALL BE COLOR CODED OR MARKED USING BLUE AS A PREDOMINANT COLOR TO DIFFERENTIATE DRINKING WATER FROM RECLAIMED OR OTHER WATER. UNDERGROUND PLASTIC PIPE SHALL BE SOLID-WALL BLUE PIPE, SHALL HAVE A CO-EXTRUDED BLUE EXTERNAL SKIN, OR SHALL BE WHITE OR BLACK PIPE WITH BLUE STRIPES INCORPORATED INTO, OR APPLIED TO, THE PIPE WALL; AND UNDERGROUND METAL OR CONCRETE PIPE SHALL HAVE BLUE STRIPES APPLIED TO THE PIPE WALL. PIPE STRIPED DURING MANUFACTURING OF THE PIPE SHALL HAVE CONTINUOUS STRIPES THAT RUN PARALLEL TO THE AXIS OF THE PIPE, THAT ARE LOCATED AT NO GREATER THAN 90-DEGREE INTERVALS AROUND THE PIPE, AND THAT WILL REMAIN INTACT DURING AND AFTER INSTALLATION OF THE PIPE. IF TAPE OR PAINT IS USED TO STRIPE PIPE DURING INSTALLATION OF THE PIPE, THE TAPE OR PAINT SHALL BE APPLIED IN A CONTINUOUS LINE THAT RUNS PARALLEL TO THE AXIS OF THE PIPE AND THAT IS LOCATED ALONG THE TOP OF THE PIPE; FOR PIPES WITH AN INTERNAL DIAMETER OF 24 INCHES OR GREATER, TAPE OR PAINT SHALL BE APPLIED IN CONTINUOUS LINES ALONG EACH SIDE OF THE PIPE AS WELL AS ALONG THE TOP OF THE PIPE. ABOVEGROUND PIPE AT DRINKING WATER TREATMENT PLANTS SHALL BE COLOR CODED AND LABELED IN ACCORDANCE WITH SUBSECTION 62-555.320(10), F.A.C., AND ALL OTHER ABOVEGROUND PIPE SHALL BE PAINTED BLUE OR SHALL BE COLOR CODED OR MARKED LIKE UNDERGROUND PIPE.
2. FITTINGS:

   FITTINGS SHALL BE DUCTILE IRON COMPACT MECHANICAL JOINT AND SHALL BE CLASS 350 THROUGH 24" CONFORMING TO ANSI/AWWA C153/A21.53-00, OR LATEST REVISION, AND CLASS 250 IN SIZES 24" AND LARGER, CONFORMING TO ANSI/AWWA C110/A21.10 03, OR LATEST REVISION, COMPLETE WITH GLANDS, GASKETS, BOLTS AND NUTS. ALL FITTINGS SHALL BE CEMENT LINED AND SEAL COATED WITH THE SAME AS PIPE.
3. VALVES:
   a. VALVES SHALL BE GATE VALVES FOR WATER (4"-12" SIZE), BUTTERFLY VALVES FOR FOR WATER (16" AND UP SIZE), OR PLUG VALVES FOR FORCE MAIN (ALL SIZES).
      i. GATE VALVES SHALL BE IRON BODY, FULLY RESILIENT SEAT, BRONZE MOUNTED NON-RISING STEM, DOUBLE DISC, RATED AT 200 PSI AND CONFORMING TO ANSI/AWWA C509-01 OR LATEST REVISION. EXPOSED VALVES SHALL BE OUTSIDE
      ii. BUTTERFLY VALVES AND OPERATORS SHALL CONFORM TO ANSI/AWWA C504-00 STANDARD FOR RUBBER SEATED BUTTERFLY VALVES, OR LATEST REVISIONS. VALVES SHALL BE CLASS 150 A OR B.
      iii. PLUG VALVES SHALL BE SEMI-STEEL BODY, NON-LUBRICATED, ECCENTRIC TYPE, WITH RESILIENT FACED PLUGS, AND CAPABLE OF DRIP-TIGHT SHUT OFF AT THE RATED PRESSURE IF APPLIED AT EITHER PORT. VALVES ARE TO BE EQUIPPED WITH ACTUATING NUTS, CAST IRON HANDWHEELS OR CHAIN OPERATORS, WITH GALVANIZED STEEL CHAINS, AS APPROPRIATE FOR THE INSTALLATION AND TYPE OF OPERATOR.
   b. A REFLECTIVE PAVEMENT MARKER SHALL BE INSTALLED IN THE CENTER OF THE NEAREST LANE OF ROAD PAVEMENT ADJACENT TO ALL VALVE LOCATIONS OUTSIDE THE ROAD PAVEMENT. WATER MARKERS SHALL BE WHITE, SEWER MARKERS SHALL BE GREEN.
4. FIRE HYDRANTS:
   a. FIRE HYDRANTS SHALL HAVE A MINIMUM 5 1/4" VALVE OPENING AND SHALL OPEN AGAINST THE PRESSURE AND CLOSE WITH THE FLOW. HYDRANTS SHALL MEET OR EXCEED ANSI/AWWA C502-05, C503-05 OR LATEST REVISION, AND SHALL COMPLY WITH FACTORY MUTUAL RESEARCH CORPORATION AND UNDERWRITERS LABORORIES UL246 STANDARD.
   b. A BLUE REFLECTIVE PAVEMENT MARKER SHALL BE PROVIDED IN THE CENTER OF THE NEAREST LANES OF ROAD PAVEMENT ADJACENT TO ALL FIRE HYDRANT LOCATIONS.
5. DETECTOR TAPE:

   DETECTOR TAPE SHALL BE 3" WIDE BLUE TAPE FOR WATER MAIN AND BROWN TAPE FOR FORCE MAIN, WITH A METALLIZED FOIL CORE LAMINATED BETWEEN 2 LAYERS OF PLASTIC FILM. THE WORDS "CAUTION WATER LINE BURIED BELOW" OR "CAUTION FORCE MAIN BURIED BELOW" SHALL BE PRINTED AT 30" INTERVALS ALONG THE TAPE. TAPE SHALL BE PLACED 18" BELOW GRADE ABOVE ALL PVC MAINS AND SERVICES OR AS RECOMMENDED BY MANUFACTURER. NONMETALLIC TAPE SHALL BE USED ABOVE DUCTILE IRON PIPE.
6. SERVICE CONNECTIONS:
   a. SERVICE SADDLES SHALL BE DUCTILE IRON EPOXY OR NYLON COATED WITH DOUBLE STAINLESS STEEL STRAPS OR SINGLE WIDE STRAP. SADDLES SHALL CONFORM TO ANSI/AWWA C111/21.11-00 AND ASTM A-588 OR LATEST REVISION.
   b. SERVICE LINES SHALL BE POLYETHYLENE (PE) TUBING AS DESCRIBED IN ANSI/AWWA C901-02 OR LATEST REVISION, WITH A WORKING PRESSURE OF 200 PSI (DR 9). PIPE JOINTS SHALL BE OF THE COMPRESSION TYPE TOTALLY CONFINED GRIP SEAL AND COUPLING NUT. POLYETHYLENE SHALL BE EXTRUDED FROM PE 3408 HIGH MOLECULAR WEIGHT MATERIAL AND MUST CONFORM TO ASTM D-2737.
   c. CORPORATION STOPS SHALL BE MANUFACTURED OF BRASS ALLOY IN ACCORDANCE ASTM B-62 WITH THREADED ENDS.
   d. METER STOPS SHALL BE THE 90 DEGREE LOCKWING TYPE AND SHALL BE OF BRONZE CONSTRUCTION IN ACCORDANCE WITH ASTM B-62. METER STOPS SHALL BE CLOSED BUTTON DESIGN AND RESILIENT "O" RING SEALED AGAINST EXTERNAL LEAKAGE AT THE TOP. STOPS SHALL BE EQUIPPED WITH A METER COUPLING NUT ON THE OUTLET SIDES.
   e. METER AND METER BOXES 2" OR LESS ARE SUPPLIED BY THE COOPER CITY AT THE OWNER'S EXPENSE.
7. TAPPING SLEEVES:

   TAPPING SLEEVES SHALL BE DUCTILE IRON, ASTM GRADE 65-45-12.
8. VALVE BOXES:
   a. VALVE BOXES FOR WATER MAINS AND SEWER FORCE MAINS SHALL BE ADJUSTABLE SCREW TYPE WITH 5-1/4" SHAFT, 18 TO 24 INCH EXTENSION, CAST IRON ASTM-A48 CLASS 30 MARKED WATER OR SEWER.
   b. VALVE BOXES FOR BLOW-OFF ASSEMBLY SHALL BE CAST IRON ASTM A-48 CLASS 30 MARKED "W".
9. RETAINER GLANDS:

   RETAINER GLANDS SHALL CONFORM TO ANSI/AWWA C111/A21.11-00 OR LATEST REVISION. ALL GLANDS SHALL BE MANUFACTURED FROM DUCTILE IRON AS LISTED BY UNDERWRITERS LABORATORIES FOR 250 PSI MINIMUM WATER PRESSURE RATING.

INSTALLATION:

1. GENERAL:

   CONNECTION OF ALL NEW SYSTEMS TO EXISTING MAINS SHALL BE DONE USING ONE OF THE THREE FOLLOWING METHODS:
   a. METHOD "A" PER BROWARD COUNTY PUBLIC HEALTH UNIT STANDARDS, WHICH INVOLVES A REDUCED SIZE TEMPORARY CONNECTION BETWEEN THE EXISTING MAIN AND THE NEW MAIN.
   b. METHOD "B" PER BROWARD COUNTY PUBLIC HEALTH UNIT STANDARDS, WHICH INVOLVES A DIRECT CONNECTION BETWEEN THE NEW AND EXISTING MAINS USING TWO GATE VALVES SEPARATED BY A SLEEVE WITH A VENT PIPE.
   c. METHOD "C" APPROVED BY THE BROWARD COUNTY PUBLIC HEALTH UNIT, WHICH INVOLVES A TAP WITH ONE GATE VALVE REQUIRING DISINFECTION OF THE NEW SYSTEM PRIOR TO CONDUCTING THE PRESSURE TEST.
2. BEDDING:

   BEDDING AND INITIAL BACKFILL (12 INCHES ABOVE PIPE) FOR ALL PIPES SHALL BE SAND WITH NO ROCK LARGER THAN 1" IN DIAMETER. PEAROCK OR 3/4" WASHED ROCK WILL BE IN WATER OR WHERE UNSUITABLE BEDDING EXISTS AT THE DISCRETION OF THE CITY OF COOPER CITY. ALL OTHER FILL SHALL NOT HAVE ROCK LARGER THAN 6" IN DIAMETER.
3. PVC PIPE:
   a. PVC PIPE SHALL BE INSTALLED IN ACCORDANCE WITH THE UNI-BELL PLASTIC PIPE PLASTIC PIPE ASSOCIATION'S GUIDE FOR INSTALLATION OF PVC PRESSURE PIPE FOR MUNICIPAL WATER DISTRIBUTION SYSTEMS.
   b. PVC PIPE SHALL BE INSTALLED WITH A MINIMUM OF 36" COVER.
   c. DETECTOR TAPE SHALL BE INSTALLED THE FULL LENGTH OF ALL PVC MAINS APPROXIMATELY 18" BELOW GRADE, COLOR SIDE UP.
4. DUCTILE IRON PIPE:
   a. DIP SHALL BE INSTALLED IN ACCORDANCE WITH ANSI/AWWA C600-05 OR LATEST REVISION.
   b. DIP SHALL BE INSTALLED WITH A MINIMUM OF 30" COVER.
   c. IDENTIFICATION TAPE SHALL BE INSTALLED THE FULL LENGTH OF ALL DIP MAINS APPROXIMATELY 18" ABOVE THE MAIN, COLOR SIDE UP.
5. VALVES:
   a. ALL VALVES SHALL BE INSTALLED WITH ADJUSTABLE CAST IRON VALVE BOXES WITH THE WORD "WATER" OR "SEWER" CAST IN THE COVER.
   b. MAIN VALVES SHALL BE LOCATED ON AN EXTENSION OF THE RIGHT-OF-WAY LINE UNLESS DIMENSIONED OTHERWISE.
   c. MAIN VALVES SHALL BE INSTALLED AWAY FROM PARKING AREAS. IF THIS IS UNAVOIDABLE, PROPER MEASURES SHALL BE TAKEN TO AVOID THE PARKING OF VEHICLES OVER THE VALVES. HYDRANT VALVES SHALL BE INSTALLED AS CLOSE TO THE MAIN AS POSSIBLE. VALVES LOCATED IN NON-PAVED AREAS OR IN PARKING STALLS REQUIRE A REFLECTIVE PAVEMENT MARKER ON THE CENTER OF THE NEAREST LANE OF ROAD PAVEMENT. WHITE REFLECTORS FOR WATER MAIN VALVES, GREEN REFLECTORS FOR FORCE MAIN VALVES.
   d. THE DISTANCE FROM THE TOP OF THE VALVE ACTUATOR NUT TO FINAL GRADE SHALL BE A MINIMUM OF 12 INCHES AND A MAXIMUM OF 18 INCHES.
6. SERVICE:
   a. COVER OVER SERVICE LINES SHALL BE 18 INCHES MINIMUM, 24 INCHES MAXIMUM BELOW FINISHED GRADE AND 24 INCHES UNDER PAVEMENT.
   b. POLYETHYLENE SHALL BE BEDDED IN BACKFILL OF SAND WITH NO ROCK GREATER THAN 1 INCH IN DIAMETER.
   c. METER STOPS SHALL HAVE 8 INCHES TO 10 INCHES COVER OR AS REQUIRED FOR PROPER METER/BOX INSTALLATION.
   d. WATER SERVICES UNDER PAVEMENT SHALL BE ENCASED IN A SCHEDULE 80 PVC SLEEVE FOR THE FULL LENGTH OF THE PAVEMENT AND FOR 2 FEET BEYOND THE EDGE.
   e. THE END OF EACH SERVICE CONNECTION SHALL BE MARKED WITH A 2" x 4" TREATED STAKE, PAINTED BLUE, EXTENDING 18 INCHES (MINIMUM) ABOVE GRADE UNLESS INDICATED OTHERWISE.

D. TESTING:

1. THE PHYSICAL CONNECTION OF THE NEW SYSTEM TO THE EXISTING SYSTEM SHALL BE DONE IN ACCORDANCE WITH SECTION "C.-1." (THIS DOCUMENT) WHICH WILL DICTATE THE ORDER OF THE PRESSURE TESTING AND DISINFECTION.
2. THE COMPLETE WATER SYSTEM SHALL BE PRESSURE TESTED AND DISINFECTED. THE PRESSURE TEST SHALL BE FOR TWO HOURS AT 150 PSI MINIMUM TEST PRESSURE IN ACCORDANCE WITH ANSI/AWWA C600-05 OR LATEST REVISION. THE PRESSURE TEST SHALL NOT VARY MORE THAN 5 PSI DURING THE TEST. LEAKAGE ALLOWANCES WILL NOT BE MADE FOR FITTINGS OR VALVES.
3. ALLOWABLE LEAKAGE SHALL NOT EXCEED THE FORMULA OF:

$$L \text{ (GALLONS PER HOUR)} = \frac{S\ D\ (P)^{0.5}}{148{,}000}$$

L = ALLOWABLE LEAKAGE IN GALS/HR (NO ALLOWABLE LEAKAGE FOR VALVES)
S = LENGTH OF PIPE TESTED IN FEET
D = NOMINAL DIAMETER OF PIPE
P = AVERAGE TEST PRESSURE DURING TEST IN LBS/SQ. IN.

4. THE PRESSURE TEST SHALL BE WITNESSED BY A REPRESENTATIVE OF COOPER CITY UTILITIES DEPARTMENT AND THE ENGINEER OF RECORD.
5. SAMPLING POINTS SHALL BE PROVIDED AT THE LOCATIONS SHOWN ON THE PLANS OR AS DIRECTED BY THE BROWARD COUNTY HEALTH DEPARTMENT. IF NOT SPECIFIED, SAMPLING POINTS SHALL BE PROVIDED AT INTERVALS OF 1200 FEET MAXIMUM FOR LINES GREATER THAN 1200 FEET IN LENGTH. PROVIDE A MINIMUM OF TWO SAMPLING POINTS FOR ALL OTHER TEST SEGMENTS.
6. BEFORE ACCEPTANCE FOR OPERATION, THE WATER SYSTEM SHALL BE DISINFECTED IN ACCORDANCE WITH ANSI/AWWA C651-05 OR LATEST REVISION WITH APPROVED BACTERIOLOGICAL SAMPLES AND PROPER DOCUMENTATION BY BROWARD COUNTY HEALTH DEPARTMENT. COLLECTION OF SAMPLES IS THE CONTRACTOR'S RESPONSIBILITY AND WILL BE WITNESSED BY A COOPER CITY ENGINEERING DIVISION REPRESENTATIVE.

VIII. GRAVITY SEWAGE COLLECTION SYSTEM

A. MATERIALS:

1. SEWER PIPE AND FITTINGS:
   a. PVC SEWER PIPE AND FITTINGS SHALL BE NON-PRESSURE POLYVINYL CHLORIDE PIPE CONFORMING TO ASTM D-3034, SDR 35, WITH PUSH-ON RUBBER GASKET JOINTS UNLESS OTHERWISE NOTED.
   b. DUCTILE IRON PIPE (DIP) SHALL BE DOUBLE CEMENT CONFORMING TO ANSI/AWWA C104/A21.4-95, OR LATEST REVISION, OR POLYETHYLENE LINED INSIDE CONFORMING TO ANSI/AWWA C105/A21.5-99, OR APPROVED EQUAL AND SHALL HAVE A COAL TAR EPOXY COATING, MANUFACTURED IN ACCORDANCE TO ANSI/AWWA C151/A21.51-02, OR LATEST REVISION, MINIMUM WALL THICKNESS CLASS 350 (UNLESS OTHERWISE SPECIFIED).
   c. ALL FITTINGS AND ACCESSORIES SHALL BE AS MANUFACTURED OR SUPPLIED BY THE PIPE MANUFACTURER.
2. MANHOLES:
   a. MANHOLES SHALL BE PRECAST PER ASTM C-478 TYPE II WITH 4000 PSI CONCRETE AND GRADE 40 STEEL. MONOLITHICALLY POURED BASES ONLY.
   b. MANHOLE OPENINGS ARE TO BE SEALED WITH ANTI-HYDRO CEMENT OR APPROVED EQUAL. NO MOLDING PLASTER WILL BE ALLOWED.
   c. MANHOLE JOINTS SHALL BE SEALED WITH "RAMNEK" GASKETS OR APPROVED EQUAL AND WITH ANTI-HYDRO CEMENT ON THE INSIDE AND OUTSIDE.

B. INSTALLATION

1. PIPE AND FITTINGS:
   a. SEWER PIPE SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D-2321, AND THE UNI-BELL PLASTIC PIPE ASSOCIATION'S "RECOMMENDED PRACTICE FOR THE INSTALLATION OF PVC SEWER PIPE".
   b. DIP SHALL BE INSTALLED IN ACCORDANCE WITH ANSI/AWWA C600-99, OR LATEST REVISION.
   c. BEDDING AND INITIAL BACKFILL 12 INCHES OVER SEWER MAINS AND SERVICES SHALL BE SAND WITH NO ROCK LARGER THAN 1 INCH IN DIAMETER. PEAROCK OR 3/4" WASHED ROCK WILL BE USED IN WATER OR WHERE UNSUITABLE BEDDING EXISTS AT THE DISCRETION OF THE COOPER CITY. ALL OTHER FILL SHALL NOT HAVE ROCK LARGER THAN 6 INCH IN DIAMETER.
   d. PIPE CONNECTION INTO MANHOLE WALL SHALL BE DUCTILE IRON PIPE, GROUTED IN PLACE, OR CAST-IN NEOPRENE RUBBER BOOT, OR EQUAL AS APPROVED BY THE COOPER CITY.
   e. GRAVITY SEWER MAINS INSTALLED DEEPER THAN TWELVE (12) FEET SHALL BE D.I.P. AND SHALL BE INSTALLED IN ACCORDANCE WITH ANSI/AWWA C600-99 OR LATEST REVISION.
2. MANHOLES:
   a. MANHOLES SHALL BE SET PLUMB TO LINE AND GRADE ON FIRM CLEAN SUBGRADE PROVIDING UNIFORM BEARING UNDER THE BASE.
   b. ALL OPENINGS AND JOINTS SHALL BE SEALED WATER-TIGHT.
   c. THE ENTIRE INSIDE OF THE MANHOLES SHALL BE PAINTED WITH TWO COATS (8 MILS EACH, DRY) OF KOPPER'S 300-M BITUMASTIC COATING, OR APPROVED EQUAL. FIRST COAT RED, SECOND COAT BLACK. THE OUTSIDE OF EACH MANHOLE REQUIRES ONLY ONE COAT (8 MILS, DRY) OF THE SAME TYPE OF COATING.
   d. MANHOLES SHALL BE INSTALLED AWAY FROM PARKING AREAS ON THE CENTERLINE OF THE ROADWAY. IF THIS IS UNAVOIDABLE, PROPER MEASURES SHALL BE TAKEN TO PROHIBIT THE PARKING OF VEHICLES OVER MANHOLES.
   e. ORANGE REFLECTIVE PAVEMENT MARKERS SHALL BE PROVIDED ON THE CENTER OF THE NEAREST LANE OF ROAD PAVEMENT ADJACENT TO ALL MANHOLE LOCATIONS OUTSIDE THE ROAD PAVEMENT.
   f. ALL LIDS SHALL BE PROVIDED WITH A POLYETHYLENE WATER TIGHT MANHOLE INSERT.
3. SERVICE:
   a. MINIMUM SLOPE OF ALL SERVICE LINES SHALL BE AS INDICATED IN THE "SOUTH FLORIDA BUILDING CODE" BROWARD COUNTY EDITION.
   b. SERVICE LATERALS SHALL TERMINATE AT A DEPTH 30" BELOW FINISHED GRADE.
   c. EACH SERVICE CONNECTION SHALL BE PLUGGED WATERTIGHT WITH AN APPROVED PLUG.
   d. THE END OF EACH SERVICE CONNECTION SHALL BE MARKED WITH A 2" x 4" TREATED STAKE PAINTED RED, EXTENDING 18 INCHES (MINIMUM) ABOVE GRADE.
   e. CONTRACTOR SHALL ROUGH IN RISER TO 1 FOOT ABOVE FINISHED GRADE AND PLUG. AT PROJECT COMPLETION, CUT BACK TO FINISHED GRADE.

C. TESTING:

1. AFTER CONSTRUCTION OF THE SEWER SYSTEM, THE ENTIRE SYSTEM SHALL BE LAMPED. SEWER LAMPING SHALL BE WITNESSED BY THE ENGINEER OF RECORD AND A REPRESENTATIVE FROM THE COOPER CITY ENGINEERING DIVISION.
2. AFTER CONSTRUCTION OF THE SEWER SYSTEM, THE COOPER CITY OR THE ENGINEER OF RECORD MAY REQUIRE A VISUAL INFILTRATION AND/OR EXFILTRATION TEST TO BE PERFORMED ON THE ENTIRE SYSTEM OR ANY PART THEREOF.
3. AN AIR TEST MAY BE SUBSTITUTED FOR THE WATER EXFILTRATION TEST, UPON APPROVAL OF THE COOPER CITY.
4. MANHOLE EXFILTRATION LEAKAGE SHALL NOT EXCEED 4 GALLONS PER DAY PER UNIT.
5. SEWER PIPE EXFILTRATION LEAKAGE SHALL NOT EXCEED 10 GALLONS PER DAY PER INCH DIAMETER PER MILE IN A TWO HOUR TEST PERIOD FOR ANY SECTION TESTED.
6. VISIBLE MANHOLE AND SEWER PIPE INFILTRATION LEAKAGE SHALL NOT BE PERMITTED.
7. SANITARY SEWER SHALL BE TELEVISED, AT DEVELOPER'S EXPENSE, PRIOR TO FINAL APPROVAL OF CONSTRUCTION. VIDEO TAPE AND REPORT SHALL BE EXAMINED BY THE COOPER CITY ENGINEERING DIVISION. OWNER / CONTRACTOR SHALL BE RESPONSIBLE FOR CORRECTING OF ANY DEFICIENCIES PRIOR TO THE CITY'S CERTIFICATION OF COMPLETION TO ANY AGENCY.

PIPE MARKINGS:

ALL PIPE AND PIPE FITTINGS INSTALLED UNDER THIS PROJECT WILL BE COLOR CODED OR MARKED IN ACCORDANCE WITH SUBPARAGRAPH 62-555.320(21)(B)3, F.A.C., USING BLUE AS A PREDOMINANT COLOR. (UNDERGROUND PLASTIC PIPE WILL BE SOLID-WALL BLUE PIPE, WILL HAVE A CO-EXTRUDED BLUE EXTERNAL SKIN, OR WILL BE WHITE OR BLACK PIPE WITH BLUE STRIPES INCORPORATED INTO, OR APPLIED TO, THE PIPE WALL; AND UNDERGROUND METAL OR CONCRETE PIPE WILL HAVE BLUE STRIPES APPLIED TO THE PIPE WALL. PIPE STRIPED DURING MANUFACTURING OF THE PIPE WILL HAVE CONTINUOUS STRIPES THAT RUN PARALLEL TO THE AXIS OF THE PIPE, THAT ARE LOCATED AT NO GREATER THAN 90-DEGREE INTERVALS AROUND THE PIPE, AND THAT WILL REMAIN INTACT DURING AND AFTER INSTALLATION OF THE PIPE. IF TAPE OR PAINT IS USED TO STRIPE PIPE DURING INSTALLATION OF THE PIPE, THE TAPE OR PAINT WILL BE APPLIED IN A CONTINUOUS LINE THAT RUNS PARALLEL TO THE AXIS OF THE PIPE AND THAT IS LOCATED ALONG THE TOP OF THE PIPE; FOR PIPE WITH AN INTERNAL DIAMETER OF 24 INCHES OR GREATER, TAPE OR PAINT WILL BE APPLIED IN CONTINUOUS LINES ALONG EACH SIDE OF THE PIPE AS WELL AS ALONG THE TOP OF THE PIPE. ABOVEGROUND PIPE WILL BE PAINTED BLUE OR WILL BE COLOR CODED OR MARKED LIKE UNDERGROUND PIPE.)

FILE: K:\PROJECTS\21-xxx\21-4077\dwg\4077gn.dwg
PLOT DATE: 8/30/2022 7:47 AM BY: Miguel A. Sosa
LAYOUT: [GN2]

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STE Sun-Tech Engineering, Inc.
Engineers • Planners • Surveyors
4577 Nob Hill Road, Suite 102
Sunrise, FL 33351
www.suntecheng.com
Certificate of Auth. #7097/LB 7019
Phone (954) 777-3123
Fax (954) 777-3114

REVISIONS

NO.	DATE:	DESCRIPTION

FIRST BAPTIST CHURCH OF
S.W. BROWARD
COOPER CITY
FLORIDA

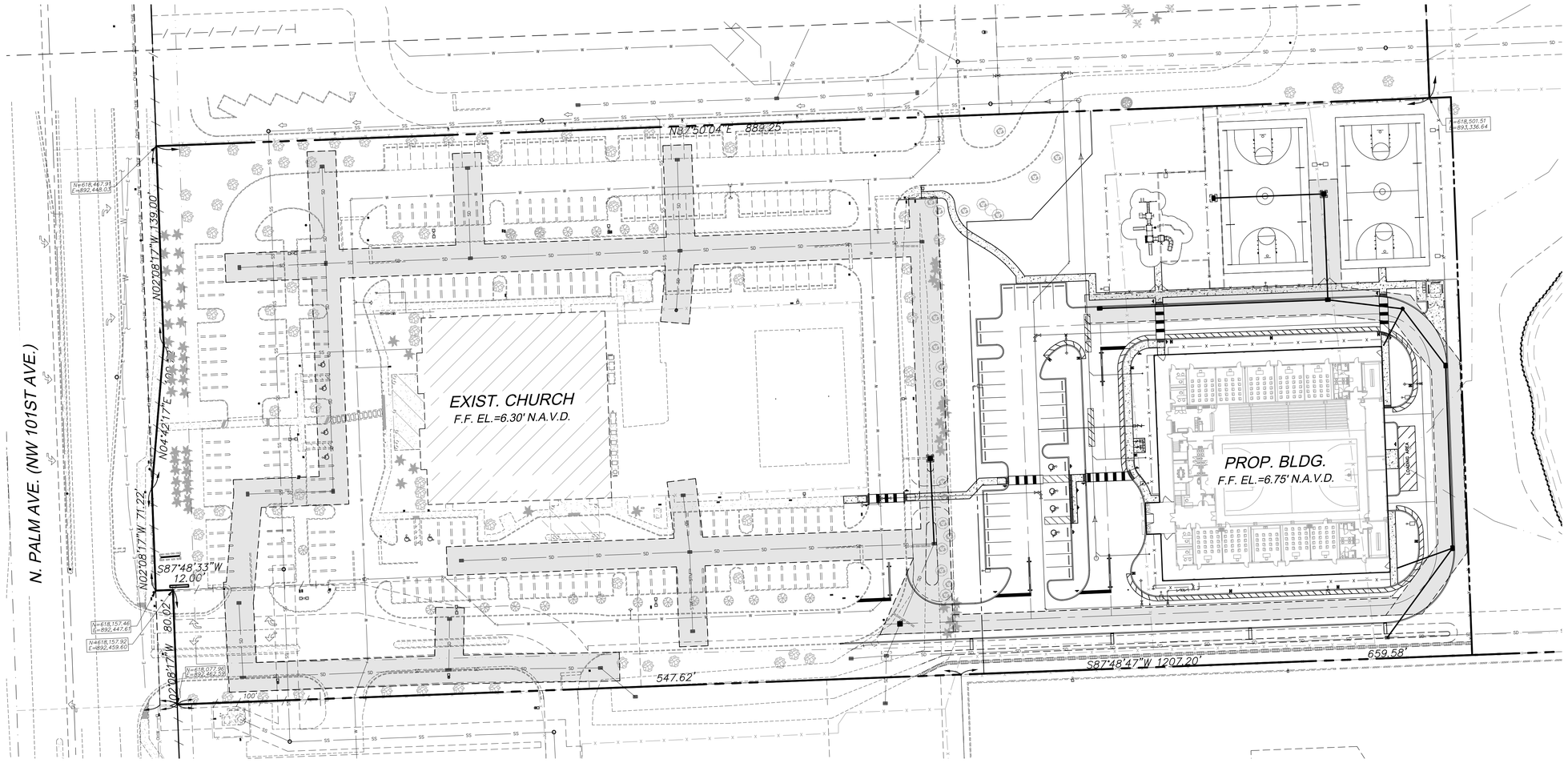
GENERAL NOTES

DATE: MAY 2021
SCALE: N.T.S.
DESIGNED BY: M.G.
DRAWN BY: M.A.S.
JOB #: 21-4077

CLIFFORD R. LOUTAN
LICENSE No. 56890
STATE OF FLORIDA
PROFESSIONAL ENGINEER

Date: **August 30, 2022**

SHEET No.
GN2



STORMWATER MANAGEMENT DESIGN DATA TABLE

ITEM	ELEVATION IN FEET	
	REQUIRED	PROVIDED
ELEVATION IN THESE DRAWINGS ARE BASED UPON NGVD29 TO NAVD88 CONVERSION FACTOR	0.00 NGVD29 = (−)1.61 NAVD88	
MINIMUM FINISHED FLOOR CRITERIA		
FEMA MIN. BASE FLOOD PLAN ELEVATION WITH ASCE 24 MODIFIER	6.00 NAVD88	6.75 NAVD88
BROWARD COUNTY 100−YEAR FLOOD ELEVATION	5.50 NAVD88	6.75 NAVD88
100 YEAR 3−DAY ZERO DISCHARGE PEAK STAGE	* 6.39 NAVD88	6.75 NAVD88
18" ABOVE NEAREST ROAD CROWN ELEVATION RESIDENTIAL STRUCTURE	N/A	N/A
6" ABOVE NEAREST ROAD CROWN ELEVATION NON−RESIDENTIAL STRUCTURES	6.30 NAVD88	6.75 NAVD88
MINIMUM CROWN OF ROAD ELEVATION CRITERIA		
BROWARD COUNTY 10−YEAR FLOOD ELEVATION	5.00 NAVD88	5.00 NAVD88
10−YEAR 1−DAY PEAK STAGE	* 4.89 NAVD88	5.00 NAVD88
MINIMUM PERIMETER BERM ELEVATION	* 3.89 NAVD88	5.00 NAVD88
* PER MASTER PERMIT NO. 06−00382		

PAVING & DRAINAGE LEGEND

	PROPERTY LINE
	RIGHT−OF−WAY LINE
R.E.	RIM ELEVATION
G.E.	GRATE ELEVATION
I.E.	INVERT ELEVATION
	DIRECTION OF FLOW
150' @ 0.5%	PAVEMENT SLOPE
P.R.B.	POLLUTION RETARDANT BASIN
F.F.= 10.00	FINISHED FLOOR ELEVATION
	EXISTING OR FUTURE UTILITIES
CATCH BASIN G.E. = I.E. =	STRUCTURE DESIGNATION
100 L.F./ 15"	LENGTH, SIZE OF STORM DRAIN
	EXISTING GRADE
0.00	PROPOSED GRADE
	D.I.P. PIPE
	25 YR. PERIMETER BERM

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Fax (954) 777-3114

REVISIONS

NO.	DATE:	DESCRIPTION

FIRST BAPTIST CHURCH OF S.W. BROWARD

COOPER CITY, FLORIDA

OVERALL PAVING GRADING AND DRAINAGE PLAN

DATE:	MAY 2021
SCALE:	1"=40'
DESIGNED BY:	M.G.
DRAWN BY:	M.A.S.
JOB #:	21-4077

CLIFFORD R. LOUTAN
LICENSE
No. 56890
STATE OF FLORIDA
PROFESSIONAL ENGINEER

Date: **August 30, 2022**

SHEET No.
PD1

FILE: K:\PROJECTS\21-xxx\21-4077\dwg\4077d.dwg
PLOT DATE: 8/30/2022 7:47 AM BY: Miguel A. Sosa
LAYOUT: [PD1]

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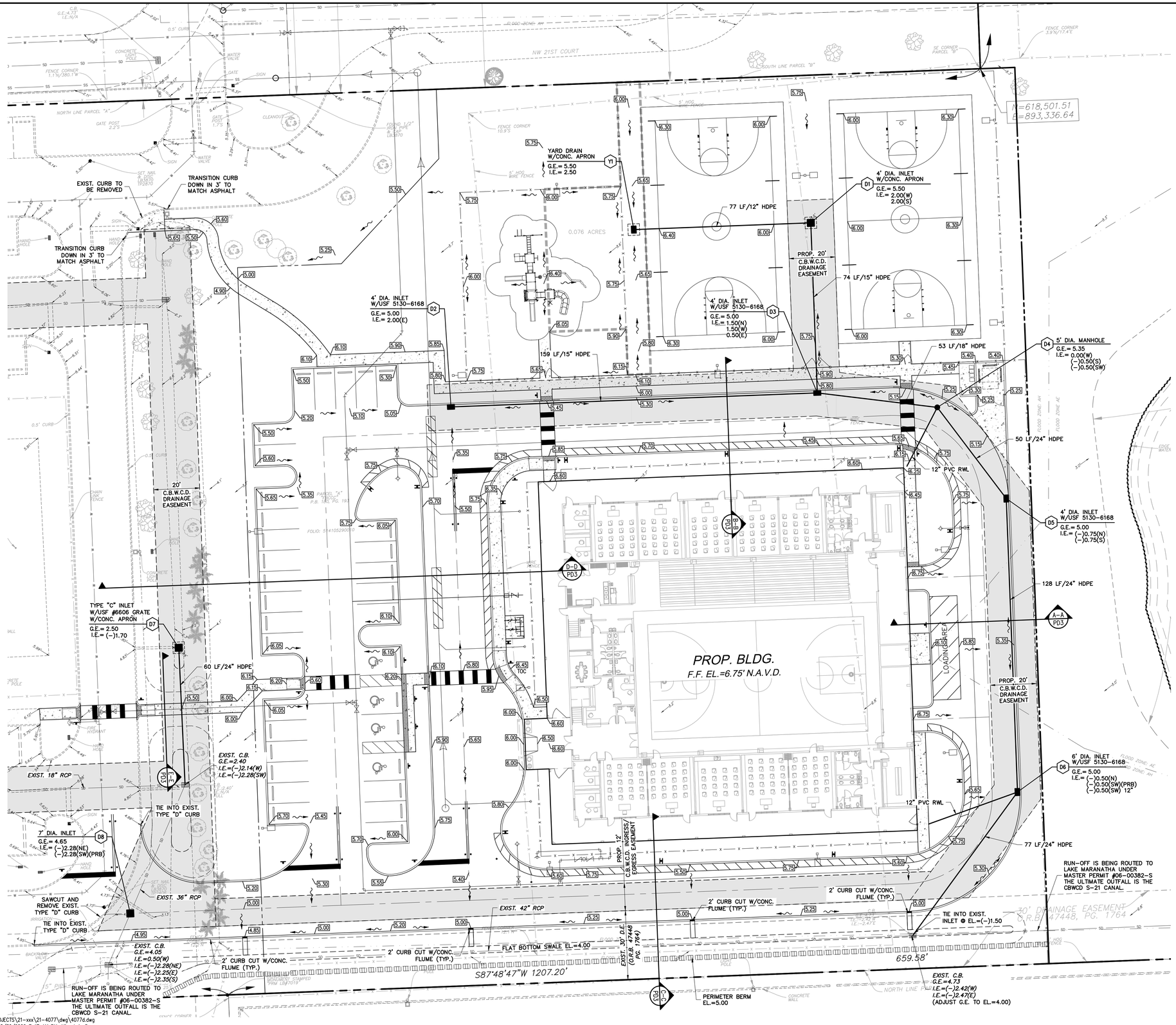

NOTES:

1. NO TREES OR PLANTS SHALL BE PLACED WITHIN C.B.W.C.D. DRAINAGE EASEMENTS.
2. CONTRACTOR SHALL CLEAN EXISTING 42" OUTFALL PIPE TO LAKE MARANATHA OUTFALL AND PROVIDE C.B.W.C.D. CCTV INSPECTION VIDEO OF THE SAME WITH THE SUBMITTAL OF PAVING, GRADING AND DRAINAGE AS-BUILTS.
3. ALL ELEVATIONS IN N.A.V.D. 88

PAVING & DRAINAGE LEGEND

	PROPERTY LINE
	RIGHT-OF-WAY LINE
R.E.	RIM ELEVATION
G.E.	GRATE ELEVATION
I.E.	INVERT ELEVATION
	DIRECTION OF FLOW
150' @ 0.5%	PAVEMENT SLOPE
P.R.B.	POLLUTION RETARDANT BASIN
F.F.= 10.00	FINISHED FLOOR ELEVATION
	EXISTING OR FUTURE UTILITIES
CATCH BASIN G.E.= I.E.=	STRUCTURE DESIGNATION
100 L.F./ 15"	LENGTH, SIZE OF STORM DRAIN
5.00	EXISTING GRADE
0.00	PROPOSED GRADE
	D.I.P. PIPE
	25 YR. PERIMETER BERM

4577 Nob Hill Road, Suite 102
Sunrise, FL 33351
www.sunteceng.com
Certificate of Auth. #7097/LB 7019
Phone (954) 777-3123
Fax (954) 777-3114
STE Sun-Tech Engineering, Inc.
Engineers • Planners • Surveyors

REVISIONS

NO.	DATE:	DESCRIPTION

FIRST BAPTIST CHURCH OF S.W. BROWARD

COOPER CITY FLORIDA

PAVING, GRADING AND DRAINAGE PLAN

DATE:	MAY 2021
SCALE:	1"=20'
DESIGNED BY:	M.G.
DRAWN BY:	M.A.S.
JOB #:	21-4077

CLIFFORD R. LOVAN LICENSE No. 56890 STATE OF FLORIDA PROFESSIONAL ENGINEER

Date: **August 30, 2022**

SHEET No.
PD2

K:\PROJECTS\21-xxx\21-4077\dwg\4077dwg\4077d.dwg, PD2, 8/30/2022 7:47:45 AM, 1:1, Sun-Tech Engineering, Inc. (MAS)
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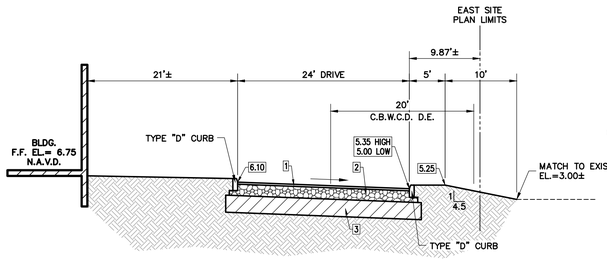
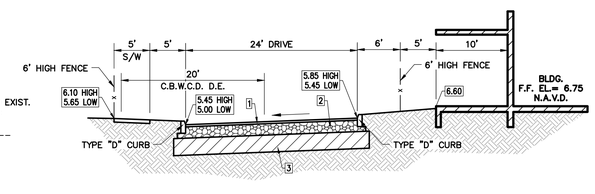
PLOT DATE: 8/30/2022 7:47 AM BY: Miguel A. Sosa
LAYOUT: [PD2]



SECTION A-A

SCALE: 1"=10'



SECTION B-B

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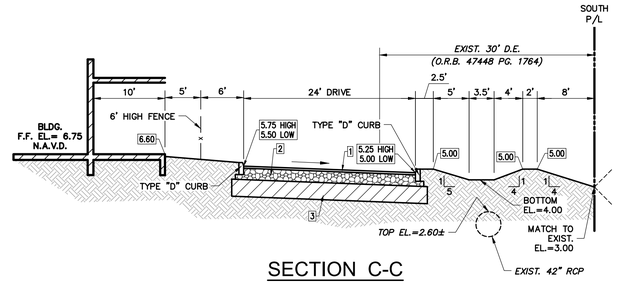
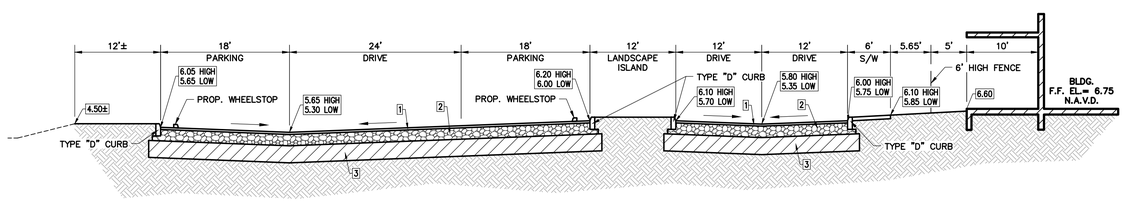


SECTION C-C

SCALE: 1"=10'

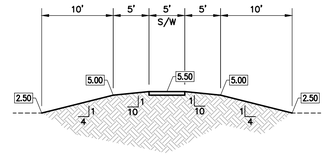
ON-SITE PAVEMENT NOTES:

1. THE WEARING SURFACE SHALL BE 1½" THICK DBL. COURSE S-III (2) ¾" LIFTS. LIMEROCK TO BE PRIMED AND TACK COAT TO BE APPLIED BETWEEN FIRST AND SECOND LIFT OF ASPHALT.
2. THE BASE COURSE SHALL BE LIMEROCK (70% CALCIUM), 8" THICK COMPACTED IN ACCORDANCE WITH A.A.S.H.T.O. SPECIFICATION T-180 TO 98% DENSITY. MIN. LBR TO BE 100.
3. ALL ORGANIC AND YIELDING MATERIAL WITHIN THE LIMITS SHOWN SHALL BE REMOVED AND REPLACED WITH CLEAN FILL. THE SUB-BASE SHALL EXTEND 12" BEYOND THE BASE COURSE, SHALL HAVE A MINIMUM DRY DENSITY OF 115 PCF AND SHALL BE COMPACTED TO 98% OF MAXIMUM DRY DENSITY PER A.A.S.H.T.O. SPECIFICATION T-180, METHOD "C". MINIMUM LBR TO BE 40.
4. THE WEARING SURFACE SHALL BE 11/2" THICK SP-12.5 (BOTTOM) 1" THICK FC 9.5 (TOP). TACK COAT TO BE APPLIED BETWEEN FIRST AND SECOND LIFT OF ASPHALT.
5. 2. THE BASE COURSE SHALL BE LIMEROCK (70% CALCIUM), 12" THICK COMPACTED IN 6" LIFTS IN ACCORDANCE WITH AASHTO SPECIFICATION T-180 TO 98% DENSITY, MIN. LBR 100. CONSTRUCTION TO CONFORM TO SECTION 200. BASE TO BE PRIMED AFTER COMPACTION. MIN. LBR TO BE 100.



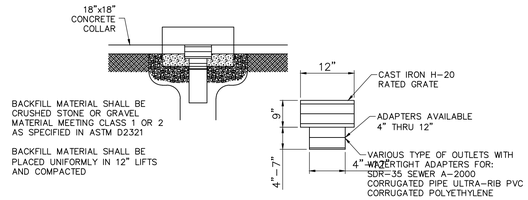
SECTION D-D

SCALE: 1"=10'

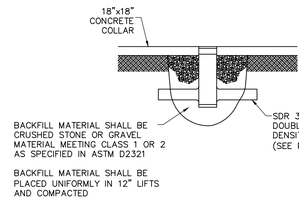


SECTION E-E

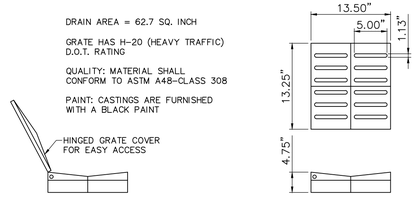
SCALE: 1"=10'



12" INLINE DRAIN

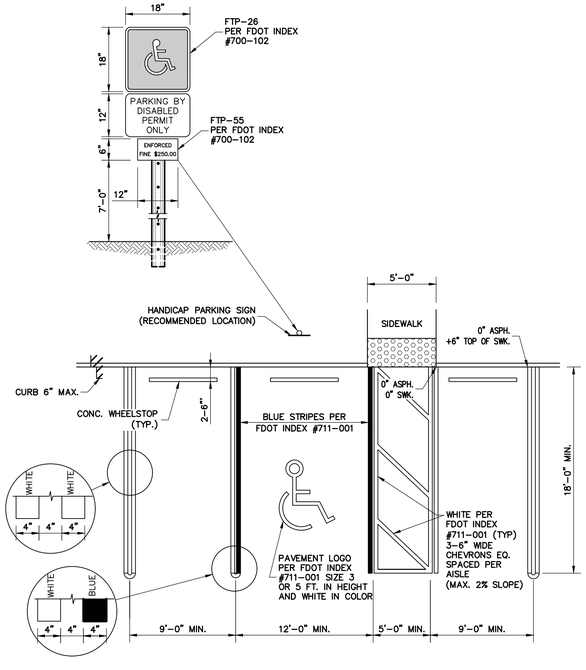


12" DRAIN BASIN



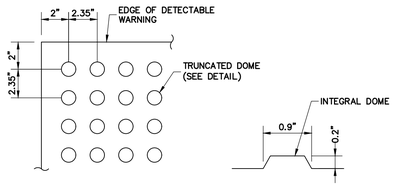
12" CAST IRON GRATE

YARD DRAIN DETAIL



TYPICAL HANDICAP PARKING DETAIL

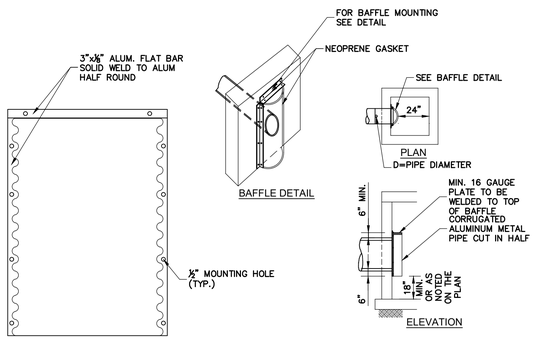
NOTE:
1. PARKING SPACES ACCESS AISLES SHALL BE LEVEL WITH SURFACE SLOPES NOT EXCEEDING 1:50 (2%) ALL DIRECTIONS.
2. DETECTABLE WARNINGS WILL ONLY BE INSTALLED IF REQUIRED BY THE CITY.



All Sidewalk Ramps Shall Have Detectable Warning Surfaces That Extend The Full Width Of The Ramp And In The Direction Of Travel 36" Inches From The Back Of Curb.

CURB RAMP DETECTABLE WARNING

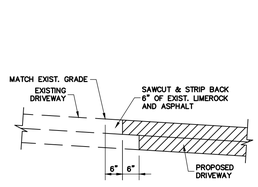
N.T.S.



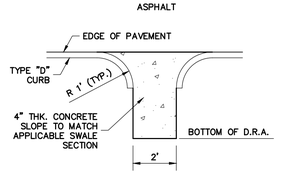
1. SECTION OF CAP CUT IN HALF. BAFFLE DIAMETER SHALL BE ONE SIZE LARGER THAN THE DISCHARGE PIPE.

POLLUTION RETARDANT BASIN

(ALL STRUCTURES SEE PLAN FOR BAFFLE LOCATION)

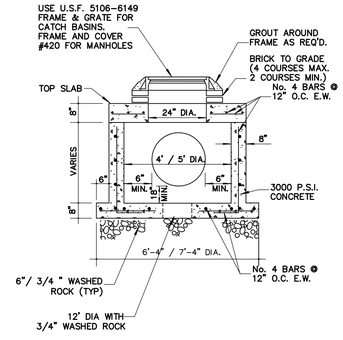


ASPHALT TIE-IN DETAIL



CURB CUT w/CONC. FLUME DETAIL

N.T.S.



4' / 5' DIAMETER STRUCTURE

N.T.S.

4577 Nob Hill Road, Suite 102
Sunrise, FL 33351
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STE Sun-Tech Engineering, Inc.
Engineers • Planners • Surveyors

REVISIONS

NO.	DATE:	DESCRIPTION

FIRST BAPTIST CHURCH OF S.W. BROWARD

COOPER CITY FLORIDA

PAVING & DRAINAGE DETAILS

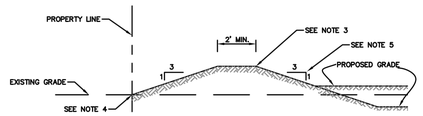
DATE:	MAY 2021
SCALE:	AS SHOWN
DESIGNED BY:	M.G.
DRAWN BY:	M.A.S.
JOB #:	21-4077

CLIFFORD R. LOUTA LICENSE No. 56890 STATE OF FLORIDA PROFESSIONAL ENGINEER

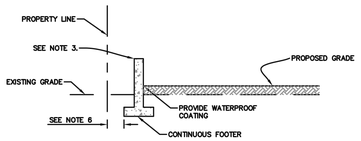
Date: **August 30, 2022**

SHEET No.
PD3

FILE: K:\PROJECTS\21-xxx\21-4077\dwg\4077ddt.dwg
PLOT DATE: 8/30/2022 7:48 AM BY: Miguel A. Sosa
LAYOUT: [PD3]



BERM DETAIL
NTS

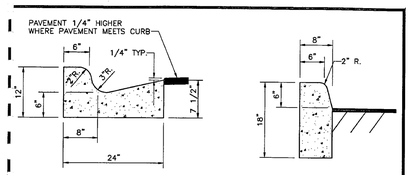


ALTERNATE RETAINING WALL DETAIL
NTS

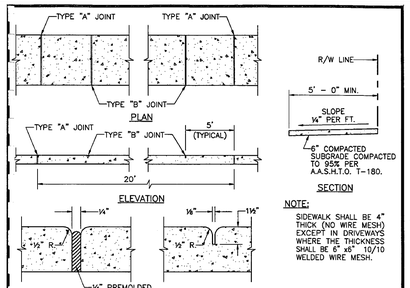
N.T.S.

NOTES:

1. BERM TO BE CONSTRUCTED OF SUITABLE FILL MATERIAL. NO MUCK OR OPEN GRADED SILICA (SUGAR) SAND WILL BE ACCEPTABLE.
2. BERM TO BE COMPACTED TO 92% DENSITY AND SODDED OR STABILIZED IN AN APPROVED METHOD TO PREVENT EROSION.
3. TOP OF BERM OR WALL TO BE CONSTRUCTED TO A MINIMUM ELEVATION EQUAL TO THE PROJECTED 25 YEAR EVENT STORM.
4. NO TEMPORARY OR PERMANENT GRADING WORK SHALL ENCROACH ON ADJACENT PROPERTY.
5. SLOPES MUST BE 4H:1V OR SHALLOWER WHEN BANK IS PART OF A DRY DETENTION/RETENTION AREA.
6. PROVIDE ADEQUATE SEPARATION FROM PROPERTY LINE TO AVOID ABOVE OR BELOW GROUND ENCROACHMENTS ONTO ADJACENT PROPERTY DURING AND AFTER CONSTRUCTION.
7. WALLS SHALL BE DESIGNED PER THE STRUCTURAL DESIGN CRITERIA OF THE FLORIDA BUILDING CODE, LATEST EDITION.



CITY OF COOPER CITY ENGINEERING STANDARDS COOPER CITY, FLORIDA	SCALE: N.T.S. / REVISED:	STANDARD ROAD DETAILS TYPICAL CONCRETE CURB & GUTTER SECTIONS	R-9



NOTE:
SIDEWALK SHALL BE 4" THICK (NO WIRE MESH) EXCEPT IN DRIVEWAYS WHERE THE THICKNESS SHALL BE 6" x6" 10/10 WELDED WIRE MESH.

SIDEWALK JOINTS

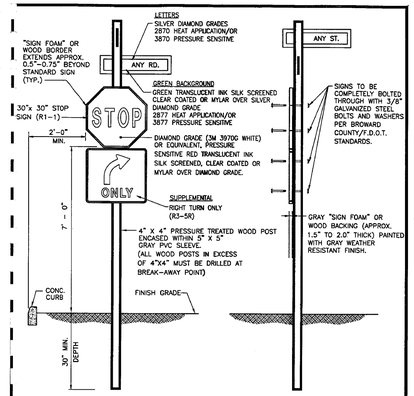
TABLE OF SIDEWALK THICKNESS	
RESIDENTIAL AREAS	4"
AT DRIVEWAYS AND OTHER AREAS	6"

TABLE OF SIDEWALK WIDTHS	
SINGLE – FAMILY AREAS	5'
MULTI – FAMILY AREAS	5'
OTHER AREAS AS SPECIFIED BY THE CITY ENGINEER.	

TABLE OF SIDEWALK JOINTS	
TYPE	LOCATION
'A'	20'–0" CENTER TO CENTER P.C. AND P.T. OF CURVES, JUNCTION OF EXISTING AND NEW SIDEWALKS. * WHERE SIDEWALK ABUTS CONCRETE CURBS, DRIVEWAYS, AND SIMILAR STRUCTURES.
'B'	5'–0" CENTER TO CENTER ON SIDEWALKS.

* AT THE DISCRETION OF THE ENGINEER.

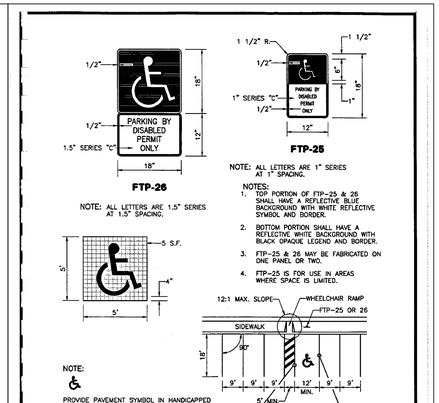
CITY OF COOPER CITY ENGINEERING STANDARDS COOPER CITY, FLORIDA	SCALE: N.T.S. / REVISED:	STANDARD ROAD DETAIL SIDEWALK JOINT DETAILS & TYPICAL CONSTRUCTION	R-10



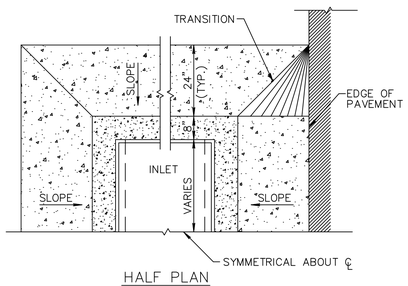
NOTES:

1. ALL SIGNS TO CONSIST OF HIGH INTENSITY REFLECTIVE MATERIALS.
2. INSTALLATION MUST MAINTAIN SIZE, SHAPE AND COLOR OF STANDARD M.U.T.C.D. SIGN. ALL SIGNS TO BE INSTALLED IN CONFORMANCE WITH THE M.U.T.C.D. AND ALL APPLICABLE BROWARD COUNTY AND F.D.O.T. STANDARDS.
3. SIMILAR, BUT SOMEWHAT DIFFERENT AESTHETIC INSTALLATIONS MAY BE IMPLEMENTED ON PRIVATE PROPERTY SUBJECT TO CITY APPROVAL.

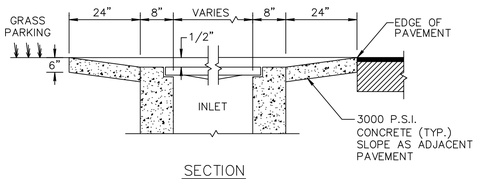
CITY OF COOPER CITY ENGINEERING STANDARDS COOPER CITY, FLORIDA	SCALE: N.T.S. / REVISED:	STANDARD ROAD DETAIL TYPICAL STOP SIGN AND STREET NAME ASSEMBLY	R-11



CITY OF COOPER CITY ENGINEERING STANDARDS COOPER CITY, FLORIDA	SCALE: N.T.S. / REVISED:	STANDARD ROAD DETAIL HANDICAPPED PARKING SIGN & STRIPING DETAIL	R-13

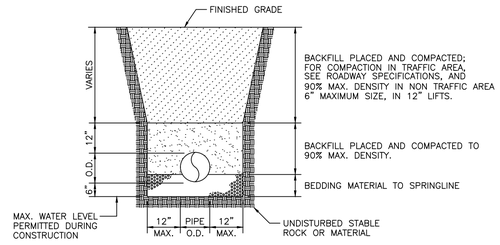


HALF PLAN



SECTION

CONCRETE INLET APRON DETAIL



NOTES:

1. WHERE SOIL CONDITION CANNOT BE MAINTAINED AS SHOWN ABOVE, PROVIDE APPROVED MEANS OF CONSTRUCTION.
2. WHERE REQUIRED SHEETING AND SHORING SHALL BE IN ACCORDANCE WITH THE LOCAL GOVERNMENTAL AGENCY.
3. MUCK OR OTHER UNSUITABLE MATERIAL SHALL BE COMPLETELY REMOVED.
4. WHEN THE PIPE IS LAID IN THE PREPARED TRENCH, TRUE TO LINE AND GRADE, THE PIPE BARREL SHALL RECEIVE CONTINUOUS UNIFORM SUPPORT. WHERE NECESSARY, COURSE SAND, PEA ROCK OR 3/4 " LIMESTONE GRAVEL SHALL BE USED TO PROVIDE UNIFORM BEDDING.
5. JOINTS MAY BE REQUIRED TO BE WRAPPED AT THE DISCRETION OF THE DISTRICT AND THE SITE CONDITIONS.
6. BACKFILL MATERIAL SHALL BE NON–COHESIVE AND NON–PLASTIC SOIL THAT IS FREE OF ALL DEBRIS, LUMPS, WOOD BROKEN PAVING OR ANY ORGANIC OR UNSUITABLE MATERIAL. BACKFILL MATERIAL PLACED WITHIN 12" OF THE PIPE SHALL CONTAIN NO ROCKS OR STONES LARGER THAN 1–1/2" INCHES IN DIAMETER. NO ROCKS OR STONES LARGER THAN 6" IN DIAMETER WILL BE PERMITTED IN THE REMAINING BACKFILL UNLESS OTHERWISE SPECIFIED.
7. TRENCH BACKFILL SHALL BE COMPACTED TO NOT LESS THAN 90 PERCENT OF THE MAXIMUM DRY DENSITY DETERMINED BY AASHTO T–180. BACKFILL AND COMPACTION SHALL BE IN ACCORDANCE TO THE STANDARD ENGINEERING DESIGN REQUIRED BY THE LOCAL GOVERNMENTAL AGENCY.

TYPICAL TRENCH EXCAVATION AND PIPE BEDDING DETAIL

"PROCEDURE FOR RESTORATION OF FLEXIBLE PAVEMENT"

THE PROCEDURE FOR BACKFILL AND PAVEMENT RESTORATION SHALL BE AS FOLLOWS:

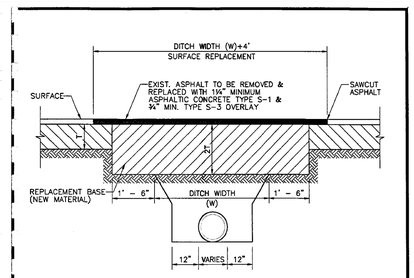
"DENSITY TEST OF COMPACTED FILL, BACKFILL AND/OR BASE SHALL BE TAKEN AT EACH LIFT. PRIOR TO PLACEMENT OF THE SUCCEEDING LIFT OF MATERIAL, DENSITY TESTS SHALL BE TAKEN AT EACH 6" LIFT FOR BASE ROCK AND EACH 8" LIFT FOR COMPACTED FILL OR BACKFILL, ACCORDING TO THE FOLLOWING SCHEDULE".

1. FOR ANY ROAD CROSSING IN WHICH THE ROAD IS CUT AND RESTORED ONE LANE AT A TIME, ONE DENSITY TEST SHALL BE TAKEN IN EACH LANE AT EACH LIFT.
2. FOR ANY ROAD CROSSING IN WHICH THE ROAD IS CUT AND RESTORED TWO LANES AT A TIME, DENSITIES SHALL BE TESTED IN ONE LANE PER LIFT, ALTERNATING LANES WITH EACH LIFT.
3. FOR ANY ROAD CROSSING IN WHICH THE ROAD IS CUT AND RESTORED THREE LANES AT A TIME, DENSITIES SHALL BE TESTED IN TWO LOCATIONS PER LIFT, STAGGERING LOCATIONS WITH EACH SUCCESSIVE LIFT.
4. CUTS ACROSS ROADS SHALL NOT BE LEFT OPEN OVER–NIGHT UNLESS ABSOLUTELY NECESSARY. TRENCHES SHALL BE BACKFILLED AND A TEMPORARY ASPHALT APPLIED TO MAKE A SMOOTH LEVEL PATCH. THE TRENCHES SHALL THEN BE EXCAVATED THE NEXT DAY AND PERMANENT BACKFILL AND PAVEMENT INSTALLED IN ACCORDANCE WITH THESE STANDARDS. THE ONLY EXCEPTIONS WILL BE IN CASES WHERE THE FACILITY INSTALLED MUST BE TESTED BEFORE THE ROADS ARE RESTORED. IN THESE CASES, THE PERMANENT RESTORATION MUST BE PERFORMED ON THE DAY OF TESTING OR THE NEXT DAY.
5. IN CASES WHERE THE INSTALLATION PARALLELS THE ROADWAY AND DAMAGES THE PAVEMENT, THE DENSITY TESTS SHALL BE MADE EVERY 100 L.F. AT EACH LIFT, WITH TEST LOCATIONS STAGGERED 25' EACH LIFT.
6. ROADWAY BASE MATERIAL SHALL BE COMPACTED TO A MINIMUM OF 98% OF MAXIMUM DRY DENSITY, AS DETERMINED BY A.A.S.H.T.O. T–180 (MODIFIED PROCTOR TEST). SUBGRADE MATERIAL UNDER PAVED AREAS SHALL BE COMPACTED TO A MINIMUM OF 95% OF MAXIMUM DRY DENSITY. SHOULDER AREAS AND SWALE AREAS BEYOND SHOULDERS SHALL BE COMPACTED TO A MINIMUM OF 98% OF MAXIMUM DRY DENSITY, ALL AS DETERMINED BY A.A.S.H.T.O. T–180–C (STANDARD PROCTOR TEST).
7. RESTORATION OF STRIPING, SIGNING AND SIGNALIZATION DEVICES SHALL BE ACCOMPLISHED IMMEDIATELY AFTER PAVEMENT RESTORATION IS COMPLETED.

A COPY OF ALL PROCTOR AND FIELD DENSITY TESTS SHALL BE FURNISHED TO THE ENGINEERING DIVISION UPON REQUEST.

NOTE: THE ABOVE LISTED REPRESENTS THE MINIMUM PROCEDURE. THE INSPECTOR MAY REQUIRE ADDITIONAL TESTING IF, IN HIS/HER OPINION, CONDITIONS OR PRIOR TEST RESULTS WARRANT THEM.

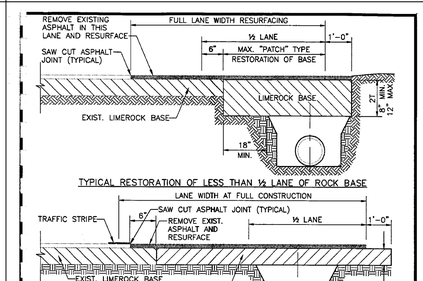
CITY OF COOPER CITY ENGINEERING STANDARDS COOPER CITY, FLORIDA	SCALE: N.T.S. / REVISED:	STANDARD ROAD DETAIL PROCEDURE FOR RESTORATION OF FLEXIBLE PAVEMENT	R-14



NOTES:

1. REPLACED BASE MATERIAL OVER DITCH SHALL BE TWICE THE THICKNESS OF THE ORIGINAL BASE. (6" MIN. & 18" MAX.)
2. BASE MATERIAL SHALL BE PLACED IN 6" LAYERS AND EACH LAYER COMPACTED TO 98% DENSITY PER A.A.S.H.T.O. T–180.
3. SUBGRADE MATERIAL SHALL BE PLACED IN A 12" LAYER AND COMPACTED TO 95% DENSITY PER A.A.S.H.T.O. T–180.
4. ASPHALT CONCRETE PAVEMENT JOINTS SHALL BE MECHANICALLY SAWED.
5. BASE MATERIAL SHALL HAVE A MINIMUM LBR OF 100 AND A MINIMUM CARBONATE CONTENT OF 70% (60% FOR LOCAL STREETS).
6. IF THE DITCH IS FILLED TEMPORARILY, IT SHALL BE COVERED WITH A 2" THICK ASPHALTIC CONCRETE PATCH TO KEEP THE FILL MATERIAL FROM RAVELING, UNTIL PLACED WITH A PERMANENT PATCH.

CITY OF COOPER CITY ENGINEERING STANDARDS COOPER CITY, FLORIDA	SCALE: N.T.S. / REVISED:	STANDARD ROAD DETAIL PAVEMENT RESTORATION PERPENDICULAR CROSSING	R-15



TYPICAL RESTORATION OF ½ LANE OR MORE OF ROCK BASE

NOTES:

1. BASE MATERIAL SHALL HAVE A MINIMUM LBR OF 100 AND A MINIMUM CARBONATE CONTENT OF 70% (60% FOR LOCAL STREETS).
2. BASE SHALL BE PLACED IN 6" MAXIMUM THICK LAYERS WITH EACH LAYER COMPACTED TO 98% DENSITY PER A.A.S.H.T.O. T–180 AND TESTED PRIOR TO PLACEMENT OF SUCCEEDING LAYERS.
3. SUBGRADE MATERIAL SHALL BE GRANULAR AND ANGULAR AND SHALL HAVE A MINIMUM LBR. OF 40 AND COMPACTED TO 95% DENSITY PER A.A.S.H.T.O. T–180.
4. BACKFILL SHALL BE PLACED AND COMPACTED IN 12" LAYERS; TESTING WILL BEGIN 12" ABOVE THE INSTALLED FACILITY.
5. ALL EDGES OF EXISTING ASPHALT PAVEMENT WHERE RESURFACING WILL ABUT SHALL BE SAWCUT IN STRAIGHT LINES PARALLEL TO OR PERPENDICULAR TO THE ROADWAY, PRIOR TO RESURFACING.
6. RESURFACING MATERIAL SHALL BE CONSISTENT WITH EXISTING SURFACE, AND SHALL BE APPLIED A MINIMUM OF ONE INCH AND A MAXIMUM OF TWO INCHES IN THICKNESS.

CITY OF COOPER CITY ENGINEERING STANDARDS COOPER CITY, FLORIDA	SCALE: N.T.S. / REVISED:	STANDARD ROAD DETAIL PAVEMENT RESTORATION LONGITUDINAL	R-16

STE Sun-Tech Engineering, Inc.
Engineers • Planners • Surveyors
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Fax (954) 777-3114

REVISIONS

NO.	DATE:	DESCRIPTION

FIRST BAPTIST CHURCH OF S.W. BROWARD

COOPER CITY FLORIDA

PAVING & DRAINAGE DETAILS

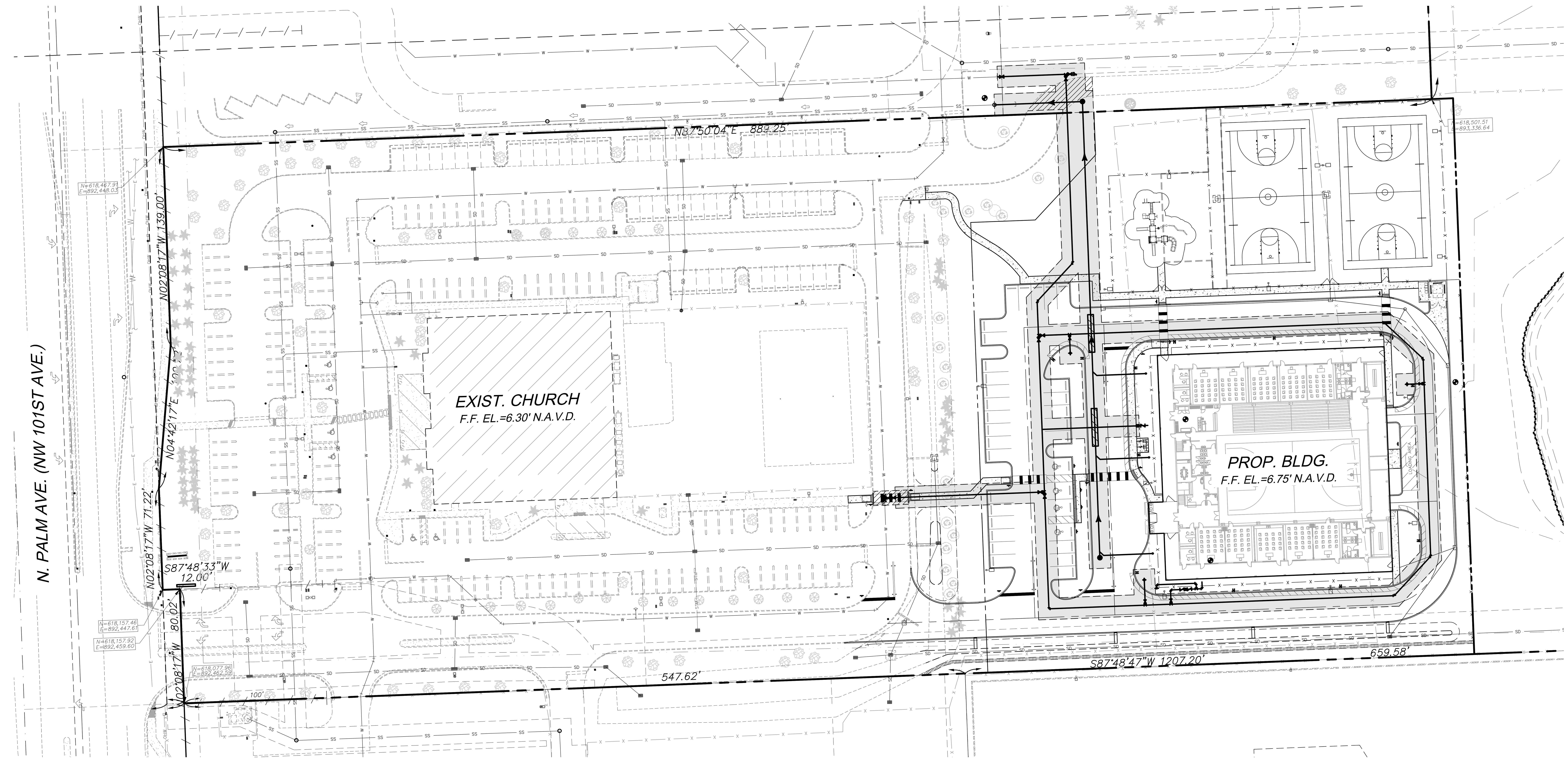
DATE:	MAY 2021
SCALE:	N.T.S.
DESIGNED BY:	M.G.
DRAWN BY:	M.A.S.
JOB #:	21-4077

CLIFFORD R. LOUAN LICENSE No. 56890 STATE OF FLORIDA PROFESSIONAL ENGINEER

Date: **August 30, 2022**

SHEET No.
PD4

FILE: K:\PROJECTS\21-xxx\21-4077\dwg\4077ddt.dwg
PLOT DATE: 8/30/2022 7:48 AM BY: Miguel A. Sosa
LAYOUT: [PD4]



SUN-TECH ENGINEERING, INC
4577 NOB HILL ROAD, SUITE 102
SUNRISE, FL 33351

DATE:6/2/2021
BY: F.V
REV: C.L

FIRST BAPTIST CHURCH OF SW BROWARD
STE PROJECT # 21-4077

FIRE FLOW CALCULATION (I.S.O METHOD)			
Formula NFF= [18F(Ai)^0.5](Oi)[(1+(X+P)]			
Address:	Cooper City, Florida 33024	STE Project No.	21-4077
Project Name:	FIRST BAPTIST CHURCH OF SW BROWARD	Occupancy Type:	C-2
Construction Type:	ISO: 2 (IBC: IIIB)	Number of Stories:	1

STEP 1 Take the area, which is 100% sq. ft. of the first floor plus the following percentage of the total area of the other floors.

First Floor 23,000 Sq. Ft. @ 100%

Buildings classified as construction classes 1-4: 50% of all other floors
Buildings classified as construction classes 5 or 6: Fire Resistive
1) If all vertical openings are protected, 25% of the area not exceeding the two other largest floors.
2) If one or more vertical openings in the building are unprotected, 50% of the area of not exceeding 8 other floors

Total other floors 0
Total Area All 23,000

STEP 2 Take the Square Root of the Area 152
Now mulitiply by "F", which is the coefficient for the construction type:

F = Coefficient related to the class of construction

Construction Type	Class	F Value
Wood Frame	1	1.50
Joisted Masonry Construction	2	1.00
Non-Combustible Construction (metal)	3	0.80
Masonry Non-Combustible Construction	4	0.80
Modified Fire-Resistive Construction	5	0.60
Fire-Resistive Construction	6	0.60

F Value Selected 1.00
Square Root of the Area x F 152
Square Root of the Area x F x 18 2730 = C Value

STEP 3 Round off the C value to the nearest 250 GPM (round up or down) up to 2250 & to 500 for 2500 & above

C values ranging from	Use
500 to 625	500
626 to 875	750
876 to 1125	1000
1126 to 1375	1250
1376 to 1625	1500
1626 to 1875	1750
1876 to 2125	2000
2126 to 2375	2250
2376 to 2750	2500
2751 to 3249	3000
3250 to 3750	3500
3751 to 4249	4000

Rounded to the nearest 250 or 500 GPM 2500 GPM

K:\Project Docs\21-XXXX\21-4077 First Baptist Church of SW Broward\Calcs\Fire Flow\21-4077 Fire Flow 06-02-2021

PAGE 1 OF 2

SUN-TECH ENGINEERING, INC
4577 NOB HILL ROAD, SUITE 102
SUNRISE, FL 33351

DATE:6/2/2021
BY: F.V
REV: C.L

		Occupancy Factor
STEP 4	Multiply result of rounded off GPM by the Occupancy Factor (Oi)	
	Noncombustible (C-1) = No active fuel loads such as storage of asbestos, clay, glass, marble, stone, or metal products.	**0.75**
	Limited - Combustible (C-2) = Limited fuel loads such as airports, apartments, art studios, auto repair, auto showroom, aviaries, banks, barber shops, beauty shops, churches, clubs, cold storage warehouses, day care center, educational occupancies, gas stations, green houses, health clubs, hospital, jails, libraries, medical labs, motels, museums, nursing homes, offices, radio stations, recreation centers, and rooming houses.	**0.85**
	Combustible (C-3) = Moderate fuel loads such as auto part stores, auto repair training center, bakery, bookstores, bowling centers, casinos, commercial laundries, contractor equipment storage, dry cleaners with no flammable fluids, leather processing, municipal storage buildings, nursery sales stores, pavilions, pet shops, photographic supplies, printers, restaurants, shoe repair, supermarkets, theaters, vacant buildings, and most wholesale & retail sales ocuppancies.	**1.0**
	Free-Burning (C-4) = Active fuel loads such as aircraft hangers, cabinet making, combustible metals, dry cleaners using flammable fluids, feed stores, furniture stores, kennels, lumber, packaging and crating, paper products manufacturing, petroleum bulk distribution centers, tire manufacturers, tire recapping or retreading, wax products, and wood working shops.	**1.15**
	Rapid-Burning (C-5) = Contents that burn with great intensity, spontaneously ignite, have have flammable or explosive vapors, or large quantities of dust such as ammunition, feed mills, fireworks, flammable compressed gases, flammable liquids, flour mills, highly flammable solids, matches, mattress factories, nitrocellulose-based products, rag storage, upholstery shops & waste paper storage.	**1.25**
	Occupancy Factor Selected 0.85	
	Rounded GPM x Oi 2,125	

STEP 5 **Approved Fire Sprinkler System Credit** 50%

Take fire flow from step 4 and apply the sprinkler credit of 50%
Sprinkler credit 1,063

Fire Flow Required 1,063

STEP 6 Take value from step 5 and
Round to nearest 250 gpm under 2,500 gpm
Round to nearest 500 gpm over 2,500 gpm

Needed Fire Flow 1,000 GPM

K:\Project Docs\21-XXXX\21-4077 First Baptist Church of SW Broward\Calcs\Fire Flow\21-4077 Fire Flow 06-02-2021

PAGE 2 OF 2

WATER AND SEWER DEMAND		
ELEMENTARY STUDENTS	40 @ 10 GPD PER STUDENT	400 GPD
MIDDLE SCHOOL STUDENTS	60 @ 10 GPD PER STUDENT	600 GPD
HIGH SCHOOL STUDENTS	100 @ 15 GPD PER STUDENT	1500 GPD
GYM	434 SEATS @ 2GPD PER SEAT	864 GPD
TOTAL		3,364 GPD

WATER & SEWER LEGEND

- PROPERTY LINE
- RIGHT-OF-WAY LINE
- DOUBLE WATER METER SERVICE
- SINGLE WATER METER SERVICE
- 85 L.F./8" W.M. — LENGTH, SIZE & TYPE OF WATER MAIN
- FIRE HYDRANT, GATE VALVE & TEE ASSEMBLY
- PROPOSED GATE VALVE
- PROPOSED CHECK VALVE
- S.P. #2 — BACTERIOLOGICAL SAMPLING POINT
- EXISTING OR FUTURE UTILITIES
- DRAINAGE STRUCTURE w/PIPE
- D.I.P. PIPE
- R.E. — RIM ELEVATION
- I.E. — INVERT ELEVATION
- MANHOLE G.E. = 0.00 I.E. = 0.00 — MANHOLE DESIGNATION
- 25 L.F./8" S.S. @ 0.42% — LENGTH & SLOPE OF PIPE
- DOUBLE SEWER LATERAL
- SINGLE SEWER LATERAL
- C.O.T.G. — CLEAN OUT TO GRADE
- PROP LIGHT POLE

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REVISIONS

NO.	DATE:	DESCRIPTION

FIRST BAPTIST CHURCH OF S.W. BROWARD

COOPER CITY FLORIDA

OVERALL WATER AND SEWER PLAN

DATE:	MAY 2021
SCALE:	1"=40'
DESIGNED BY:	M.G.
DRAWN BY:	M.A.S.
JOB #:	21-4077

CLIFFORD R. LOUTAN
LICENSE
No. 56890
STATE OF FLORIDA
PROFESSIONAL ENGINEER

Date: **August 30, 2022**

SHEET No.
WS1

FILE: K:\PROJECTS\21-xxx\21-4077\dwg\4077ws.dwg
PLOT DATE: 8/30/2022 7:48 AM BY: Miguel A. Sosa
LAYOUT: [WS1]

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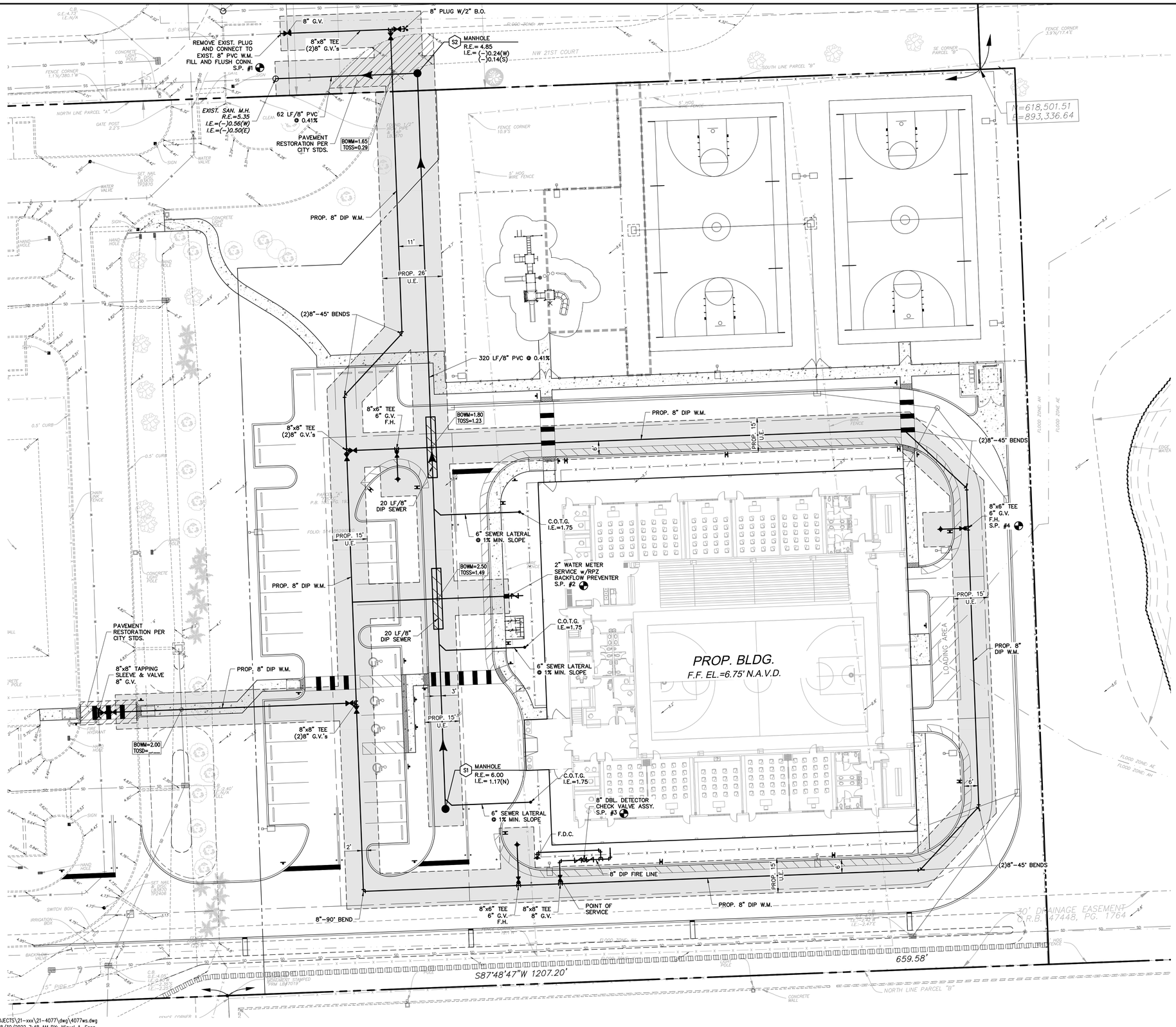

WATER & SEWER LEGEND

- PROPERTY LINE
- RIGHT–OF–WAY LINE
- DOUBLE WATER METER SERVICE
- SINGLE WATER METER SERVICE
- 85 L.F./8" W.M. — LENGTH, SIZE & TYPE OF WATER MAIN
- FIRE HYDRANT, GATE VALVE & TEE ASSEMBLY
- PROPOSED GATE VALVE
- PROPOSED CHECK VALVE
- S.P. #2 — BACTERIOLOGICAL SAMPLING POINT
- EXISTING OR FUTURE UTILITIES
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- R.E. — RIM ELEVATION
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- 1 MANHOLE C.E. = 0.00 I.E. = 0.00 — MANHOLE DESIGNATION
- 25 L.F./8" S.S. @ 0.42% — LENGTH & SLOPE OF PIPE
- DOUBLE SEWER LATERAL
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REVISIONS

NO.	DATE:	DESCRIPTION

FIRST BAPTIST CHURCH OF S.W. BROWARD

COOPER CITY FLORIDA

WATER AND SEWER PLAN

DATE:	MAY 2021
SCALE:	1"=20'
DESIGNED BY:	M.G.
DRAWN BY:	M.A.S.
JOB #:	21-4077

CLIFFORD R. LOUTAN LICENSE No. 56690 STATE OF FLORIDA PROFESSIONAL ENGINEER

Date: **August 30, 2022**

SHEET No.
WS2

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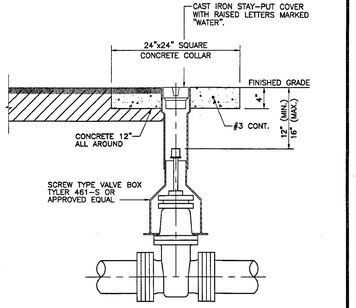
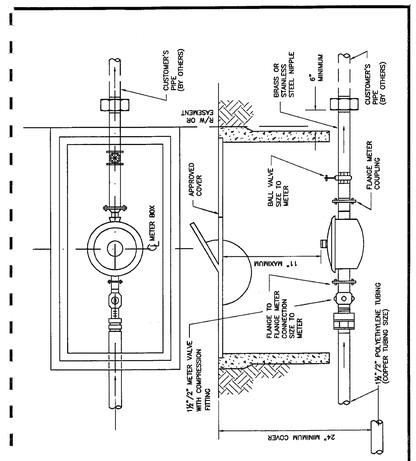
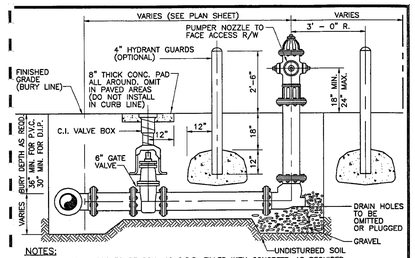


CITY OF COOPER CITY ENGINEERING STANDARDS COOPER CITY, FLORIDA	SCALE: N.T.S. / REVISED:	STANDARD WATER SUPPLY DETAIL TYPICAL VALVE SETTING	W-1

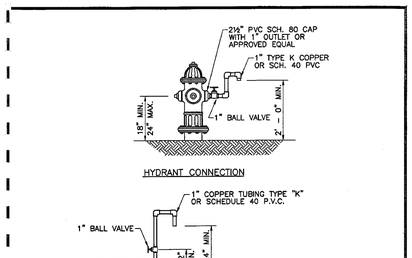


CITY OF COOPER CITY ENGINEERING STANDARDS COOPER CITY, FLORIDA	SCALE: N.T.S. / REVISED:	STANDARD WATER SUPPLY DETAIL WATER METER INSTALLATION FOR 1-1/2" & 2" METERS	W-4



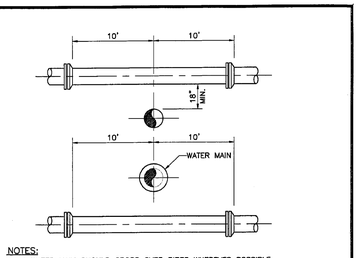
NOTES:
1. HYDRANT GUARDS TO BE SCH. 40 G.S.P. FILLED WITH CONCRETE, AS REQUIRED BY THE UTILITY DEPARTMENT.
2. OMIT REAR GUARDS IN LOCATIONS WHERE SIDEWALKS EXIST.
3. TIE RODS MAY BE OMITTED WHEN OTHER APPROVED ANCHORS ARE USED.
4. HYDRANT SET BACK SHALL CONFORM TO D.O.T. REQUIREMENTS WHERE APPLICABLE.
5. HYDRANT CENTERLINE TO BE LOCATED AT P.C. OF BLOCK CORNER RADIUS OR AT COMMON PROPERTY LINE BETWEEN ADJACENT LOTS.
6. HYDRANT SHALL BE 3 WAY 5¼" WITH 3'-6" BURY DEPTH. PUMPER NOZZLE TO FACE STREET.
7. HYDRANT VALVE TO BE INSTALLED AS CLOSE TO MAIN AS POSSIBLE.
8. HYDRANT BURY LINE TO MATCH STREET CROWN ELEVATION.
9. A 7.5 FOOT CLEAR RADIUS SHALL BE MAINTAINED AROUND HYDRANT.
10. FIRE HYDRANTS SHALL BE AMERICAN (B-84-B) OR APPROVED EQUAL. HYDRANTS OWNED BY CITY SHALL BE PAINTED "FIRE HYDRANT RED" WITH WHITE FLUORESCENT CAPS. PRIVATELY MAINTAINED HYDRANTS SHALL BE PAINTED YELLOW.
11. ENTIRE FIRE HYDRANT ASSEMBLY TO BE RESTRAINED W/SERIES 1100 "MEGALUG" OR APPROVED EQUAL.
12. THREE BLUE REFLECTIVE PAVEMENT MARKERS SHALL BE PROVIDED IN THE CENTER OF THE NEAREST ROADWAY LANE ADJACENT TO ALL FIRE HYDRANT LOCATIONS.

CITY OF COOPER CITY ENGINEERING STANDARDS COOPER CITY, FLORIDA	SCALE: N.T.S. / REVISED:	STANDARD WATER SUPPLY DETAIL FIRE HYDRANT DETAIL	W-6



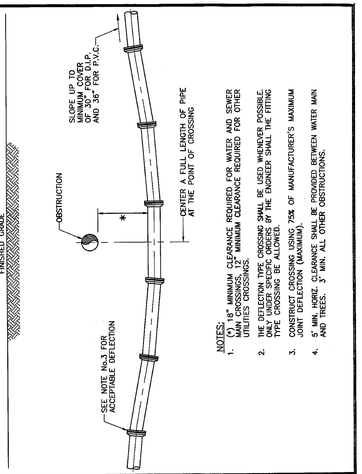
NOTE:
SEE 2" TERMINAL BLOW OFF DETAIL.

CITY OF COOPER CITY ENGINEERING STANDARDS COOPER CITY, FLORIDA	SCALE: N.T.S. / REVISED:	STANDARD WATER SUPPLY DETAIL BACTERIOLOGICAL SAMPLING POINTS	W-7



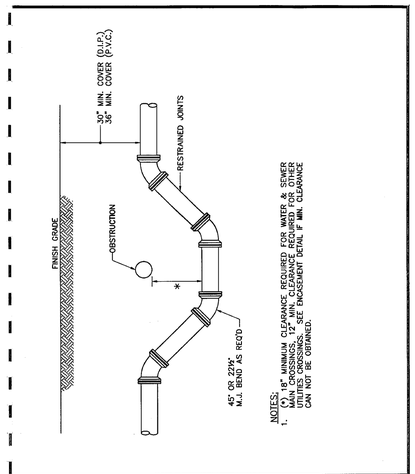
NOTES:
1. A WATER MAIN SHOULD CROSS OVER PIPES WHEREVER POSSIBLE MAINTAINING A 36 INCH COVER FOR P.V.C., 30 INCH COVER FOR D.I.P. AND 18 INCH SEPARATION AS MINIMUMS.
2. WHEREVER A WATER MAIN CROSSES UNDER A SEWER MAIN, OR CROSSES OVER WITH LESS THAN 18 INCHES VERTICAL SEPARATION, THEN D.I.P. SHALL BE USED FOR BOTH PIPES FOR A DISTANCE OF 20 FEET CENTERED ON CROSSING WITH NO JOINTS WITHIN 10 FEET OF THE CROSSING.
3. 18 INCH SEPARATION SHOULD BE MAINTAINED BETWEEN ALL PIPES (STORM, SEWER, WATER) WHENEVER POSSIBLE. 12 INCHES IS THE ABSOLUTE MINIMUM SEPARATION WITH D.I.P. ALLOWED FOR ANY SEPARATION LESS THAN 18 INCHES.
4. MAINTAIN 10 FEET HORIZONTAL SEPARATION BETWEEN WATER AND SEWER AS A MINIMUM.
5. 3 FOOT HORIZONTAL CLEARANCE SHALL BE PROVIDED BETWEEN WATER MAINS AND UTILITY OBSTRUCTIONS (CATCH BASINS, CONCRETE POLES, ETC.)

CITY OF COOPER CITY ENGINEERING STANDARDS COOPER CITY, FLORIDA	SCALE: N.T.S. / REVISED:	STANDARD WATER SUPPLY DETAIL UTILITY CROSSING GENERAL REQUIREMENTS	W-8



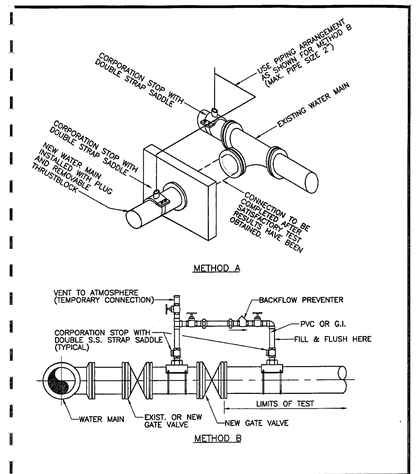
NOTES:
1. (1) 18" MINIMUM CLEARANCE REQUIRED FOR WATER AND SEWER MAIN CROSSINGS. 12" MINIMUM CLEARANCE REQUIRED FOR OTHER UTILITIES CROSSINGS.
2. THE DEFLECTION TYPE CROSSING SHALL BE USED WHENEVER POSSIBLE. ONLY UNDER SPECIFIC ORDERS BY THE ENGINEER SHALL THE FITTING TYPE CROSSING BE ALLOWED.
3. CONSTRUCT CROSSING USING 75% OF MANUFACTURER'S MAXIMUM ALLOWABLE DEFLECTION.
4. 5' MIN. HORIZ. CLEARANCE SHALL BE PROVIDED BETWEEN WATER MAIN AND TREES. 3' MIN. ALL OTHER OBSTRUCTIONS.

CITY OF COOPER CITY ENGINEERING STANDARDS COOPER CITY, FLORIDA	SCALE: N.T.S. / REVISED:	STANDARD WATER SUPPLY DETAIL UTILITY CROSSING DEFLECTION TYPE	W-9



NOTES:
1. MIN. 18" MINIMUM CLEARANCE REQUIRED FOR WATER & SEWER MAIN CROSSINGS. 12" MIN. CLEARANCE REQUIRED FOR OTHER UTILITIES CROSSINGS. SEE ENCASEMENT DETAIL IF MIN. CLEARANCE CAN NOT BE OBTAINED.

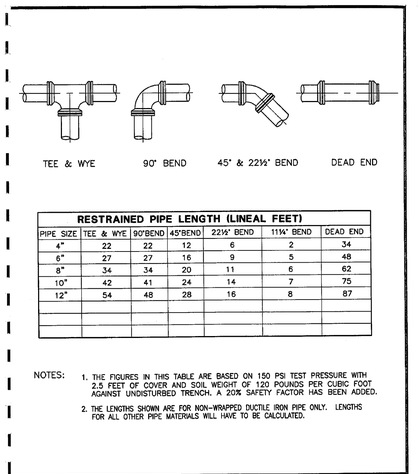
CITY OF COOPER CITY ENGINEERING STANDARDS COOPER CITY, FLORIDA	SCALE: N.T.S. / REVISED:	STANDARD WATER SUPPLY DETAIL UTILITY CROSSING FITTING TYPE	W-10



CITY OF COOPER CITY ENGINEERING STANDARDS COOPER CITY, FLORIDA	SCALE: N.T.S. / REVISED:	STANDARD WATER SUPPLY DETAIL FILLING & FLUSHING	W-11

NOTES:
1. WATER MAIN TO BE PRESSURE TESTED AND DISINFECTED ACCORDING TO BROWARD COUNTY HEALTH DEPARTMENT, AWWA, AND MUNICIPAL SPECIFICATIONS IN EFFECT.
2. BACTERIOLOGICAL TESTS ARE TO BE PERFORMED BY THE CONTRACTOR AND AN APPROVED TESTING LABORATORY.
3. REMOVE TEMPORARY CONNECTION AT SADDLE ON NEW MAINS AFTER FILLING AND FLUSHING HAS BEEN COMPLETED AND REPLACE WITH BRASS PLUG.
4. PROVIDE ALL NECESSARY THRUSTBLOCKS OR OTHER RESTRAINTS.
5. FILLING AND FLUSHING LOCATIONS SHALL BE COORDINATED BY THE CONTRACTOR, ENGINEER, AND CITY.
6. VENT TO ATMOSPHERE SHALL REMAIN OPEN DURING ALL PHASES OF PRESSURE TESTING.

CITY OF COOPER CITY ENGINEERING STANDARDS COOPER CITY, FLORIDA	SCALE: N.T.S. / REVISED:	STANDARD WATER SUPPLY DETAIL FILLING & FLUSHING	W-11A



RESTRAINED PIPE LENGTH (LINEAL FEET)

PIPE SIZE	TEE & WYE	90°BEND	45°BEND	22½° BEND	11¼° BEND	DEAD END
4"	22	22	12	6	2	34
6"	27	27	16	9	5	48
8"	34	34	20	11	6	62
10"	42	41	24	14	7	75
12"	54	48	28	16	8	87

NOTES:
1. THE FIGURES IN THIS TABLE ARE BASED ON 150 PSI TEST PRESSURE WITH 2.5 FEET OF COVER AND SOIL WEIGHT OF 120 POUNDS PER CUBIC FOOT AGAINST UNDISTURBED TRENCH. A 20% SAFETY FACTOR HAS BEEN ADDED.
2. THE LENGTHS SHOWN ARE FOR NON-WRAPPED DUCTILE IRON PIPE ONLY. LENGTHS FOR ALL OTHER PIPE MATERIALS WILL HAVE TO BE CALCULATED.

CITY OF COOPER CITY ENGINEERING STANDARDS COOPER CITY, FLORIDA	SCALE: N.T.S. / REVISED:	STANDARD WATER SUPPLY DETAIL RESTRAINED JOINT DETAIL	W-12

4577 Nob Hill Road, Suite 102
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Certificate of Auth. #7097/LB 7019
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STE Sun-Tech Engineering, Inc.
Engineers • Planners • Surveyors

REVISIONS

NO.	DATE:	DESCRIPTION

FIRST BAPTIST CHURCH OF S.W. BROWARD

COOPER CITY FLORIDA

WATER AND SEWER DETAILS

DATE: MAY 2021
SCALE: N.T.S.
DESIGNED BY: M.G.
DRAWN BY: M.A.S.
JOB #: 21-4077

CLIFFORD R. FOUNTAIN
LICENSE No. 56890
STATE OF FLORIDA
PROFESSIONAL ENGINEER

Date: **August 30, 2022**

SHEET No.
WS3

FILE: K:\PROJECTS\21-xxx\21-4077\dwg\4077wsdt.dwg
PLOT DATE: 8/30/2022 7:49 AM BY: Miguel A. Sosa
LAYOUT: [WS3]

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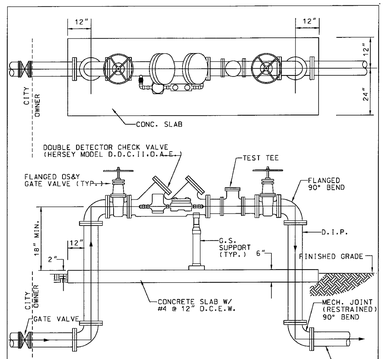
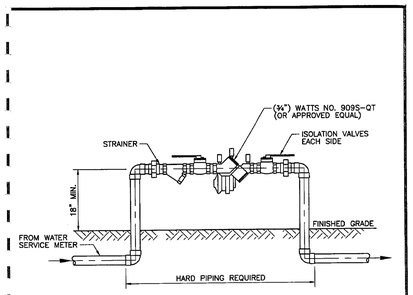


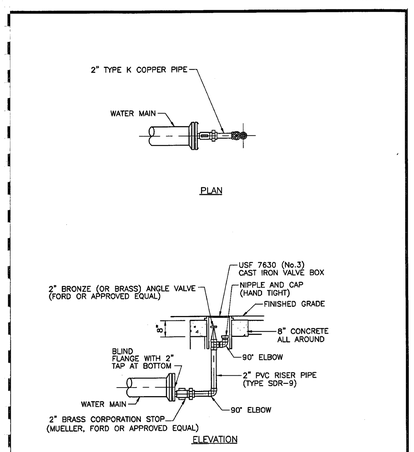
NOTES:

1. ALL PIPING SHALL BE D.I.P. CL 350 AS APPLICABLE TO MINIMUM STANDARDS.
2. ALL LOW FLOW METER PIPING SHALL BE BRASS OR COPPER.
3. PIPING & ASSEMBLY SHALL BE PAINTED WITH POLYURETHANE SYSTEM.

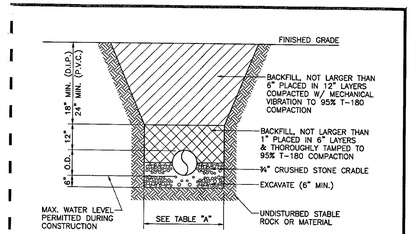
CITY OF COOPER CITY ENGINEERING STANDARDS COOPER CITY, FLORIDA	SCALE: N.T.S. REVISED: 11/02/09	STANDARD WATER DETAIL DOUBLE DETECTOR CHECK VALVE FOR FIRE LINE	W-13



CITY OF COOPER CITY ENGINEERING STANDARDS COOPER CITY, FLORIDA	SCALE: N.T.S. REVISED:	STANDARD WATER SUPPLY DETAIL BACKFLOW PREVENTER	W-14



CITY OF COOPER CITY ENGINEERING STANDARDS COOPER CITY, FLORIDA	SCALE: N.T.S. REVISED:	STANDARD WATER SUPPLY DETAIL 2" TERMINAL BLOW OFF	W-15



NOTE:

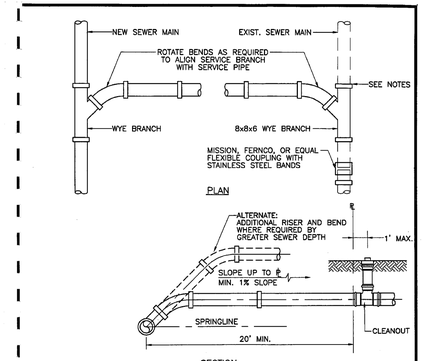
1. MAXIMUM DENSITY AS DETERMINED BY A.A.S.H.T.O. T-180.

TABLE "A"

PIPE SIZE	DEPTH OF BACKFILL AT WHICH TRENCH WIDTH IS TO BE LIMITED	MAXIMUM TRENCH WIDTH
6"	15"	2'-0"
8"	15"	3'-0"
10"	12"	3'-0"
12"	12"	3'-3"

DIMENSIONS SHOWN APPLY TO ALL FOUNDATIONS

CITY OF COOPER CITY ENGINEERING STANDARDS COOPER CITY, FLORIDA	SCALE: N.T.S. REVISED:	STANDARD WATER SUPPLY DETAIL TRENCH DETAIL UNPAVED AREAS	W-16

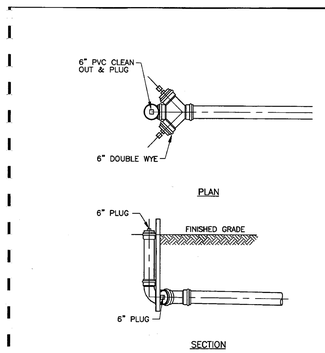


SECTION

NOTES:

1. SINGLE SERVICE CONNECTIONS SHALL USE 6" PIPE AND FITTINGS.
2. USE RISER CONNECTIONS WHERE INVERT OF SEWER IS MORE THAN 7'-0" DEEP.
3. WHERE BELL WYE AND SPIGOT OF EXISTING MAIN ARE NOT COMPATIBLE, USE A SECOND FLEXIBLE COUPLING.
4. RIGID COUPLINGS ARE ALSO ACCEPTABLE.
5. CONNECTION SHALL NOT BE MADE BELOW SPRINGLINE OF MAIN.

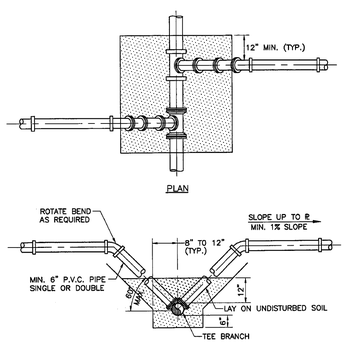
CITY OF COOPER CITY ENGINEERING STANDARDS COOPER CITY, FLORIDA	SCALE: N.T.S. REVISED:	STANDARD SANITARY SEWER DETAIL WYE BRANCH CONNECTION	S-1



NOTES:

1. SINGLE SERVICE CONNECTIONS SHALL USE 6" PIPE AND FITTINGS.
2. USE RISER CONNECTIONS WHERE INVERT OF SEWER IS MORE THAN 7'-0" DEEP.
3. WHERE BELL WYE AND SPIGOT OF EXISTING MAIN ARE NOT COMPATIBLE, USE A SECOND FLEXIBLE COUPLING.
4. RIGID COUPLINGS ARE ALSO ACCEPTABLE.
5. CONNECTION SHALL NOT BE MADE BELOW SPRINGLINE OF MAIN.

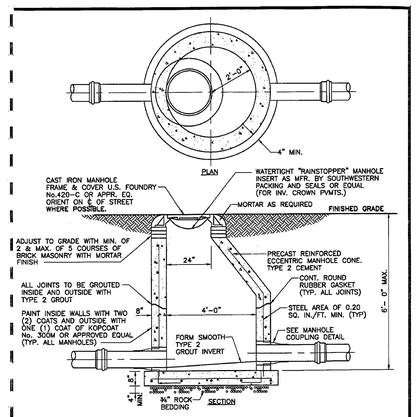
CITY OF COOPER CITY ENGINEERING STANDARDS COOPER CITY, FLORIDA	SCALE: N.T.S. REVISED:	STANDARD SANITARY SEWER DETAIL RESIDENTIAL WYE BRANCH CONNECTION	S-1A



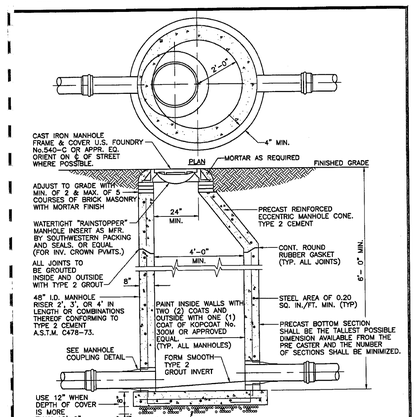
NOTES:

1. MODIFIED RISER CONNECTION TO BE USED ONLY WHEN DIRECTED BY ENGINEER.
2. ¾" DRAINFIELD LIMEROCK SHALL BE USED AS BEDDING OVER UNDISTURBED SOIL, FOR P.V.C. PIPE, AT WYE CONNECTION TO MAIN.

CITY OF COOPER CITY ENGINEERING STANDARDS COOPER CITY, FLORIDA	SCALE: N.T.S. REVISED:	STANDARD SANITARY SEWER DETAIL ALT. RISER CONNECTION (7' OR DEEPER)	S-2



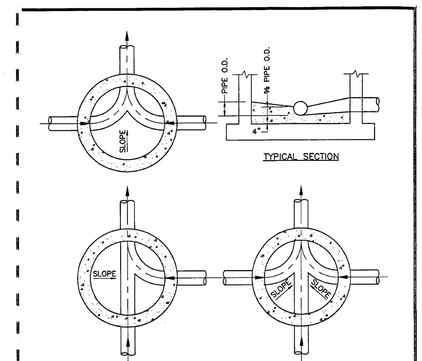
CITY OF COOPER CITY ENGINEERING STANDARDS COOPER CITY, FLORIDA	SCALE: N.T.S. REVISED:	STANDARD SANITARY SEWER DETAIL SHALLOW MANHOLE (6'-0" DEPTH & UNDER)	S-4



NOTE:

1. SPECIAL DESIGN CONSIDERATION SHOULD BE GIVEN WHEN DEPTH OF COVER EXCEEDS 12'-0" AND/OR THE SIZE AND NUMBER OF PIPES ENTERING THE MANHOLE RESULTS IN UNUSUAL CONDITIONS. MANHOLE SHALL BE 5'-0" DIA. WHEN DEPTH EXCEEDS 12'-0".

CITY OF COOPER CITY ENGINEERING STANDARDS COOPER CITY, FLORIDA	SCALE: N.T.S. REVISED:	STANDARD SANITARY SEWER DETAIL ECCENTRIC MANHOLE (6'-0" DEPTH & GREATER)	S-6



NOTES:

1. INVERT CHANNELS TO BE CONSTRUCTED FOR SMOOTH FLOW WITH NO OBSTRUCTIONS.
2. SPILLWAYS SHALL BE CONSTRUCTED BETWEEN PIPES WITH DIFFERENT INVERT ELEVATIONS PROVIDING FOR SMOOTH FLOWS.
3. CHANNELS TO BE FORMED IN ALL MANHOLES TO ACCEPT T.V. CAMERA.
4. WHEN DIRECTIONAL CHANNELS EXCEEDING 45° OCCUR, AN EXTRA FLOW LINE ELEVATION DROP OF 0.05" ACROSS MANHOLE SHALL BE PROVIDED.

CITY OF COOPER CITY ENGINEERING STANDARDS COOPER CITY, FLORIDA	SCALE: N.T.S. REVISED:	STANDARD SANITARY SEWER DETAIL MANHOLE FLOW CHANNELS	S-7

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Phone (954) 777-3123
Fax (954) 777-3114

REVISIONS

NO.	DATE:	DESCRIPTION

FIRST BAPTIST CHURCH OF S.W. BROWARD

COOPER CITY FLORIDA

WATER AND SEWER DETAILS

DATE:	MAY 2021
SCALE:	N.T.S.
DESIGNED BY:	M.G.
DRAWN BY:	M.A.S.
JOB #:	21-4077

CLIFFORD R. LOUGHAN
LICENSE
No. 56890
STATE OF FLORIDA
PROFESSIONAL ENGINEER

Date: **August 30, 2022**

SHEET No.
WS4

K:\PROJECTS\21-xxx\21-4077\dwg\4077wsdt.dwg, WS4, 8/30/2022 7:49:01 AM, 1:1, Sun-Tech Engineering, Inc (MAS)

FILE: K:\PROJECTS\21-xxx\21-4077\dwg\4077wsdt.dwg
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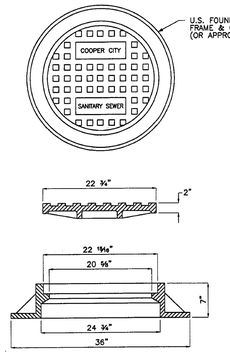
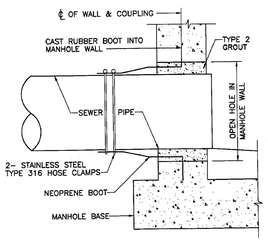
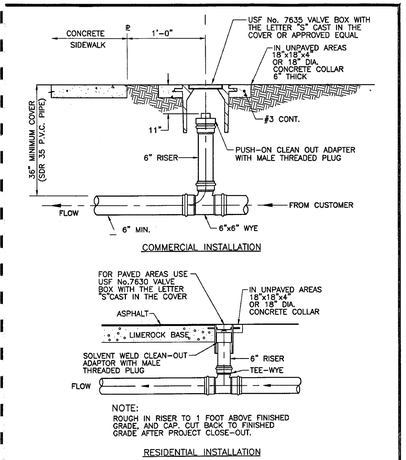
LAYOUT: [WS4]



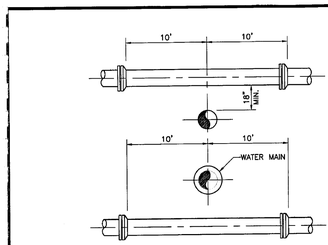
CITY OF COOPER CITY ENGINEERING STANDARDS COOPER CITY, FLORIDA	SCALE: N.T.S. / REVISED:	STANDARD SANITARY SEWER DETAIL FRAME & COVER DETAIL	S-8



CITY OF COOPER CITY ENGINEERING STANDARDS COOPER CITY, FLORIDA	SCALE: N.T.S. / REVISED:	STANDARD SANITARY SEWER DETAIL MANHOLE COUPLING DETAIL	S-9

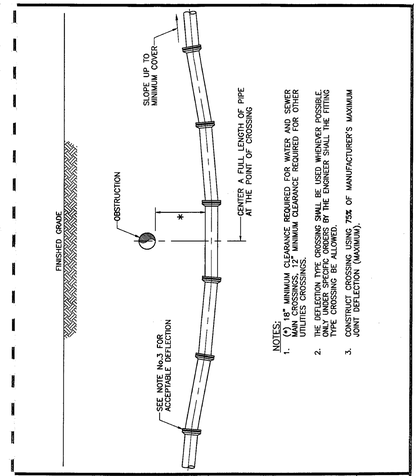


CITY OF COOPER CITY ENGINEERING STANDARDS COOPER CITY, FLORIDA	SCALE: N.T.S. / REVISED:	STANDARD SANITARY SEWER DETAIL CLEANOUT	S-10



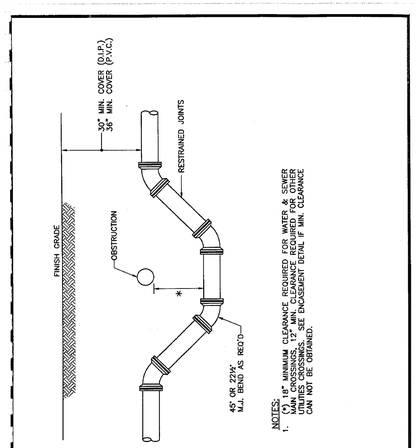
NOTES:
1. A WATER MAIN SHOULD CROSS OVER A SEWER MAIN WHEREVER POSSIBLE MAINTAINING A 36 INCH COVER FOR P.V.C., 30 INCH COVER FOR D.I.P. AND 18 INCH SEPARATION AS MINIMUMS.
2. WHEREVER A WATER MAIN CROSSES UNDER A SEWER MAIN, OR CROSSES OVER WITH LESS THAN 18 INCHES VERTICAL SEPARATION, THEN D.I.P. SHALL BE USED FOR BOTH PIPES FOR A DISTANCE OF 20 FEET CENTERED ON CROSSING WITH NO JOINTS WITHIN 10 FEET OF THE CROSSING.
3. 18 INCH SEPARATION SHOULD BE MAINTAINED BETWEEN ALL PIPES (STORM, SEWER, WATER) WHENEVER POSSIBLE. 12 INCHES IS THE ABSOLUTE MINIMUM SEPARATION WITH D.I.P. ALLOWED FOR ANY SEPARATION LESS THAN 18 INCHES.
4. MAINTAIN 10 FEET HORIZONTAL SEPARATION BETWEEN WATER AND SEWER AS A MINIMUM.
5. 3 FOOT HORIZONTAL CLEARANCE SHALL BE PROVIDED BETWEEN SEWER MAINS AND UTILITY OBSTRUCTIONS (CATCH BASINS, CONCRETE POLES, ETC.)

CITY OF COOPER CITY ENGINEERING STANDARDS COOPER CITY, FLORIDA	SCALE: N.T.S. / REVISED:	STANDARD SANITARY SEWER DETAIL UTILITY CROSSING GENERAL REQUIREMENTS	S-11



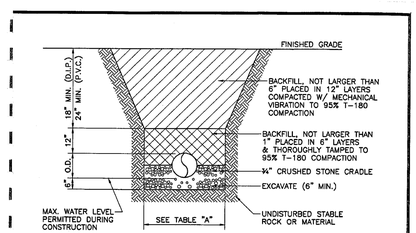
NOTES:
1. (*) 18" MINIMUM CLEARANCE REQUIRED FOR WATER AND SEWER MAINS, 12" MINIMUM CLEARANCE REQUIRED FOR OTHER UTILITIES CROSSINGS.
2. THE DEFLECTION TYPE CROSSING SHALL BE USED WHENEVER POSSIBLE. ONLY UNDER SPECIFIC ORDERS BY THE ENGINEER SHALL THE FITTING TYPE UNDER SECTION S-13 BE USED.
3. CONSTRUCT CROSSING USING 75% OF MANUFACTURER'S MAXIMUM JOINT DEFLECTION (MAXIMUM).

CITY OF COOPER CITY ENGINEERING STANDARDS COOPER CITY, FLORIDA	SCALE: N.T.S. / REVISED:	STANDARD SANITARY SEWER DETAIL UTILITY CROSSING DEFLECTION TYPE	S-12



NOTES:
1. (*) 18" MINIMUM CLEARANCE REQUIRED FOR WATER & SEWER MAIN CROSSINGS, 12" MIN. CLEARANCE REQUIRED FOR OTHER UTILITIES CROSSINGS. IF SIZE ENCASEMENT DETAIL IF MIN. CLEARANCE CAN NOT BE OBTAINED.

CITY OF COOPER CITY ENGINEERING STANDARDS COOPER CITY, FLORIDA	SCALE: N.T.S. / REVISED:	STANDARD SANITARY SEWER DETAIL UTILITY CROSSING FITTING TYPE	S-13



NOTE:
1. MAXIMUM DENSITY AS DETERMINED BY A.A.S.H.T.O.

TABLE "A"

PIPE SIZE	DEPTH OF BACKFILL AT WHICH TRENCH WIDTH IS TO BE LIMITED	MAXIMUM TRENCH WIDTH
6"	15"	2'-6"
8"	15"	3'-0"
10"	12"	3'-0"

DIMENSIONS SHOWN APPLY TO ALL FOUNDATIONS

CITY OF COOPER CITY ENGINEERING STANDARDS COOPER CITY, FLORIDA	SCALE: N.T.S. / REVISED:	STANDARD SANITARY SEWER DETAIL TRENCH DETAIL UNPAVED AREAS	S-16

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REVISIONS

NO.	DATE:	DESCRIPTION

FIRST BAPTIST CHURCH OF S.W. BROWARD
COOPER CITY FLORIDA
WATER AND SEWER DETAILS

DATE:	MAY 2021
SCALE:	N.T.S.
DESIGNED BY:	M.G.
DRAWN BY:	M.A.S.
JOB #:	21-4077

CLIFFORD R. LOUIAN
LICENSE No. 56890
STATE OF FLORIDA
PROFESSIONAL ENGINEER
Date: **August 30, 2022**

SHEET No.
WS5

FILE: K:\PROJECTS\21-xxx\21-4077\dwg\4077wsdt.dwg
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LAYOUT: [WS5]

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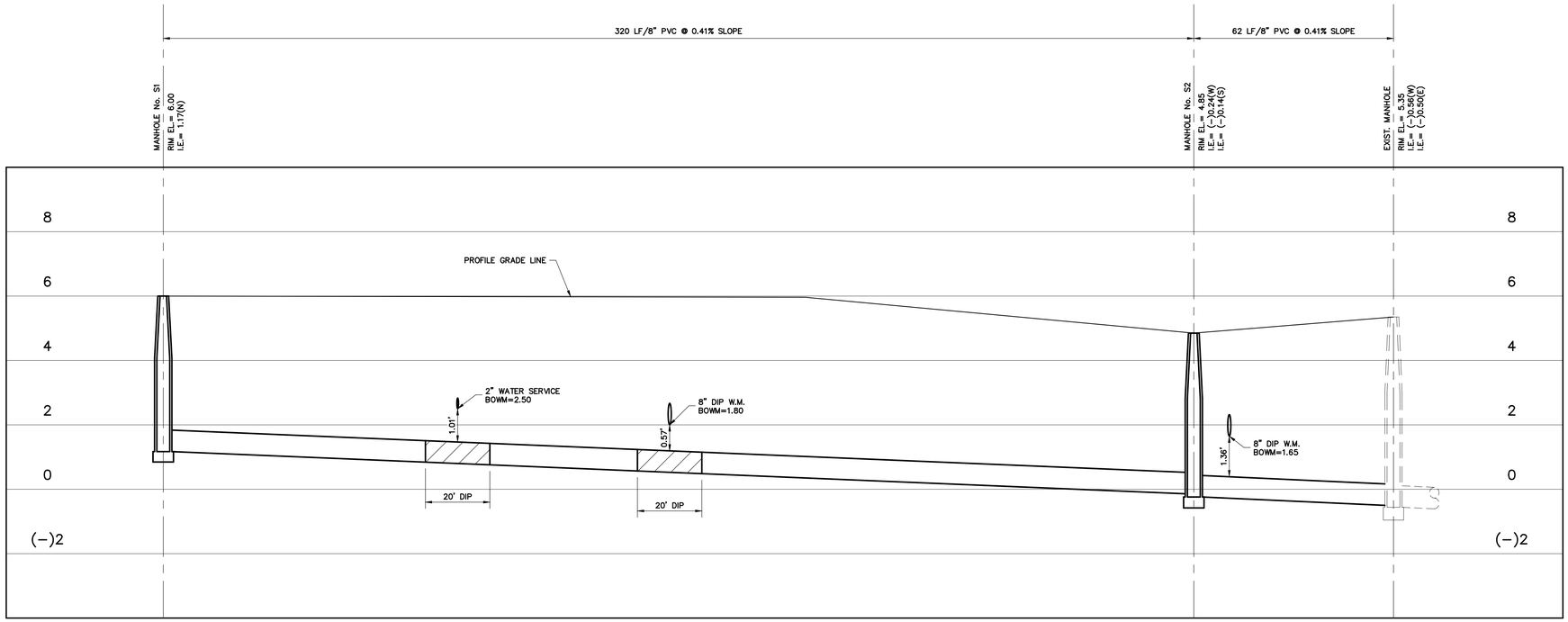

LEGEND

8" DUCTILE IRON PIPE

8" PVC PIPE

8" PVC PIPE (SDR-26)

NOTE:
ALL SANITARY SEWER SHALL BE 8" P.V.C. SDR 35 (UNLESS NOTED OTHERWISE)

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PLOT DATE: 8/30/2022 7:49 AM BY: Miguel A. Sosa
LAYOUT: [SSP1]

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REVISIONS

NO.	DATE:	DESCRIPTION

FIRST BAPTIST CHURCH OF S.W. BROWARD

COOPER CITY FLORIDA

SANITARY SEWER PROFILES

DATE: MAY 2021
SCALE: H:1=30'; V:1=3'
DESIGNED BY: M.G.
DRAWN BY: M.A.S.
JOB #: 21-4077

CLIFFORD R. LOUTAN
LICENSE
No. 56890
STATE OF FLORIDA
PROFESSIONAL ENGINEER

Date: **August 30, 2022**

SHEET No.
SSP1

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REVISIONS

NO.	DATE:	DESCRIPTION

FIRST BAPTIST CHURCH OF COOPER CITY
S.W. BROWARD

OVERALL PAVEMENT MARKINGS & SIGNAGE PLAN

DATE:	MAY 2021
SCALE:	1"=40'
DESIGNED BY:	M.G.
DRAWN BY:	M.A.S.
JOB #:	21-4077

CLIFFORD R. LOUPAN
LICENSE
No. 56890
STATE OF FLORIDA
PROFESSIONAL ENGINEER

Date: **August 30, 2022**

SHEET No.
PMS1

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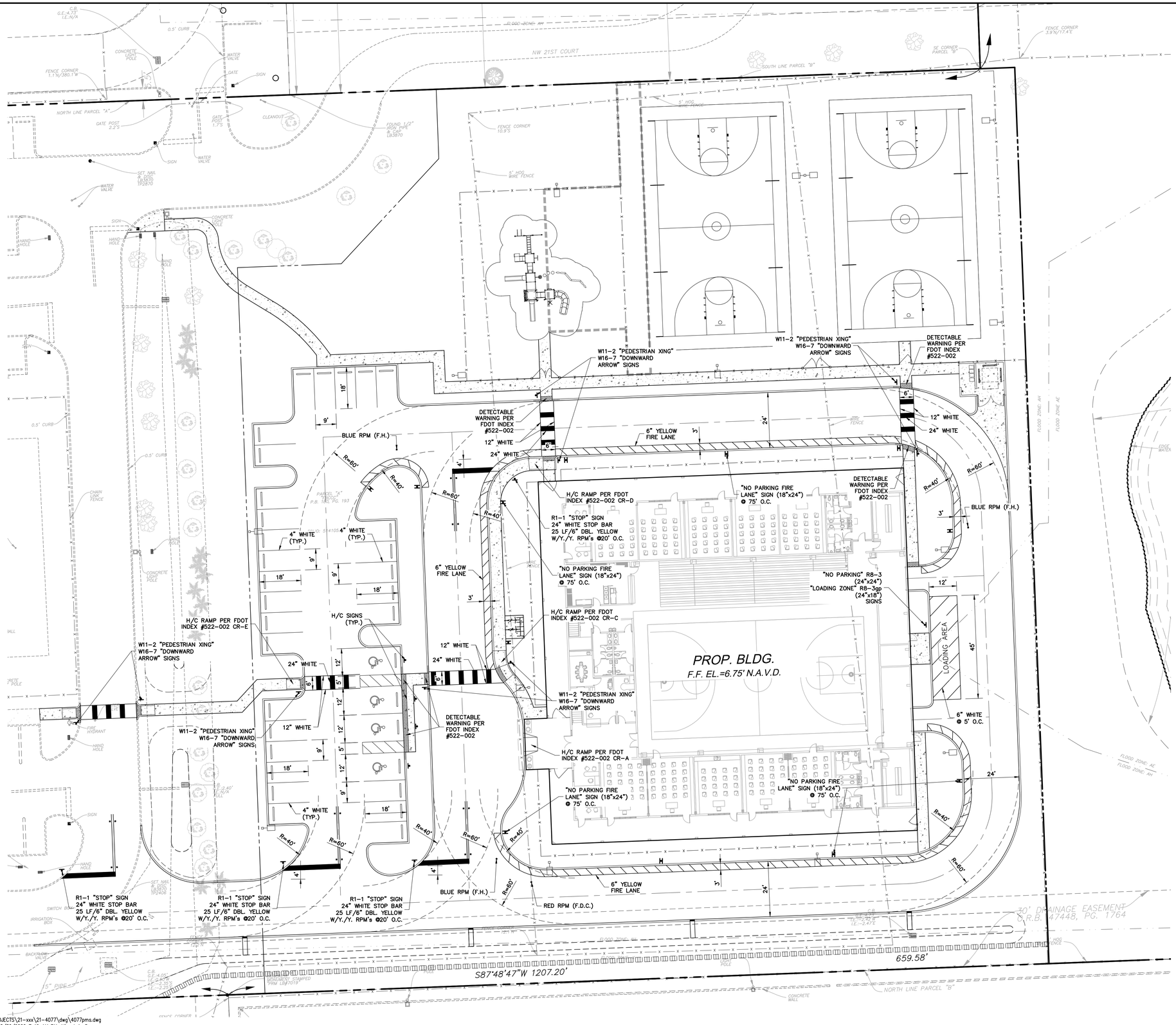

GRAPHIC SCALE
1" = 20'

NOTE:

ALL FIRE DEPARTMENT STRIPING TO BE THERMOPLASTIC.

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REVISIONS

NO.	DATE:	DESCRIPTION

FIRST BAPTIST CHURCH OF S.W. BROWARD

COOPER CITY FLORIDA

PAVEMENT MARKINGS AND SIGNAGE PLAN

DATE:	MAY 2021
SCALE:	1"=20'
DESIGNED BY:	M.G.
DRAWN BY:	M.A.S.
JOB #:	21-4077

CLIFFORD R. LOVAN
LICENSE
No. 56890
STATE OF FLORIDA
PROFESSIONAL ENGINEER

Date: **August 30, 2022**

SHEET No.
PMS2

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LAYOUT: [PMS2]

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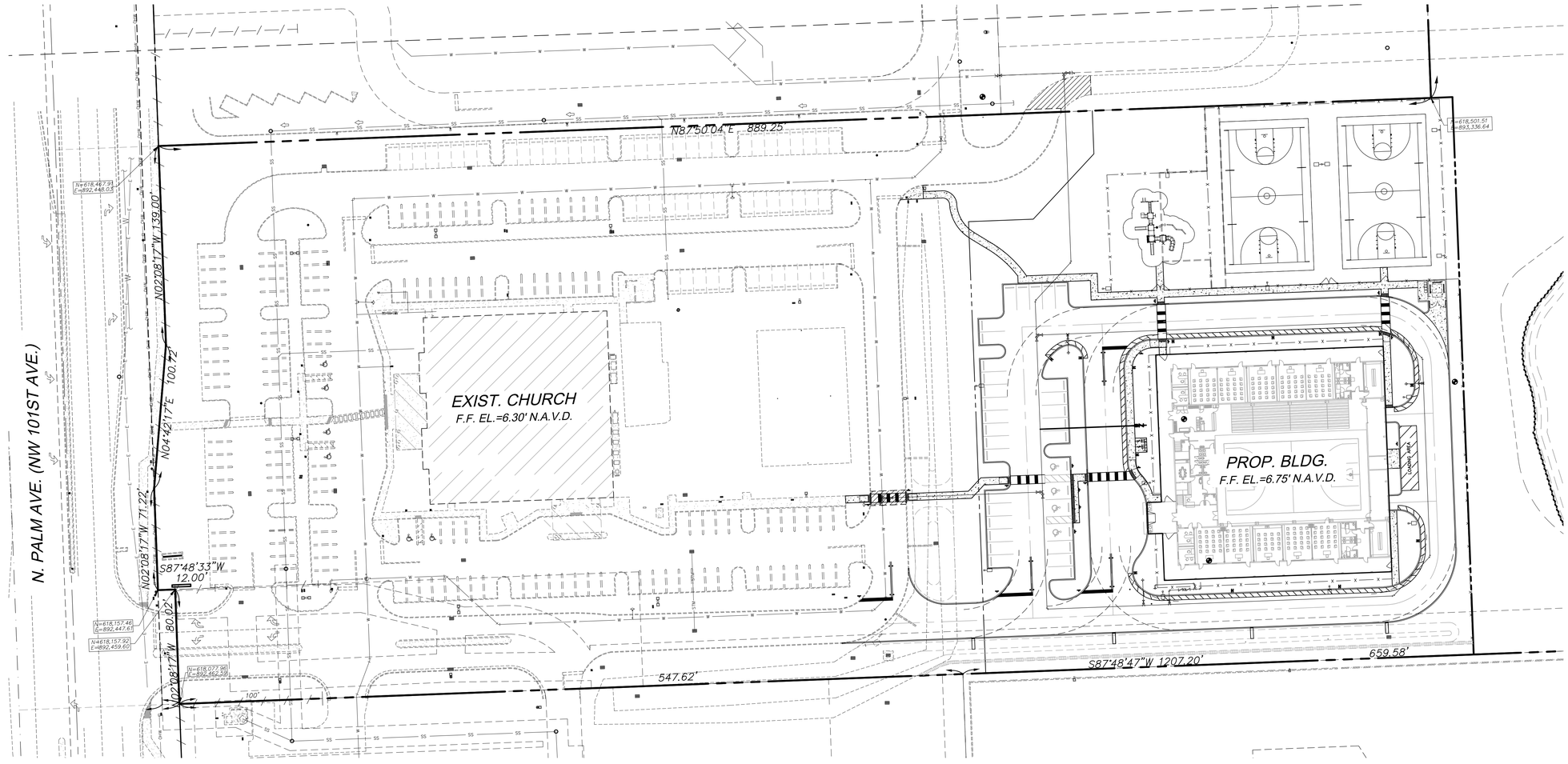

FIRE PROTECTION NOTES:

1. FIRE ACCESS ROADS SHALL BE 20 FEET MIN. OF UNOBSTRUCTED WIDTH, LANES SHALL BE DESIGNATED BY YELLOW THERMOPLASTIC PAINT, STRIPING, OR MARKING OF CURBS AND ROADWAY BETWEEN EACH FIRE LANE; SIGN(S) SHALL BE PROVIDED.
2. FIRE LANE SIGNS SHALL BE 18" BY 24" WHITE BACKGROUND WITH RED LETTERS, STATING "NO PARKING FIRE LANE B Y ORDER OF THE FIRE/POLICE DEPARTMENT". THESE SIGNS SHALL BE A MAXIMUM OF 7' IN HEIGHT FROM THE ROADWAY TO THE BOTTOM PART OF THE FIRE LANE'S SIGNS. SUCH SIGNS SHALL FACE THE TRAFFIC FLOW AND BE NO FURTHER THAN 75 FEET APART. CITY ORDINANCE 93.12
3. BUILDINGS WITH STANDPIPES/SPRINKLERS REQUIRE A FIRE HYDRANT WITHIN 100 FEET OF EACH STANDPIPE/SPRINKLER FIRE DEPARTMENT CONNECTION.
4. NO TREE, BUSH, HEDGE, OR SHRUB, SHALL BE PLANTED WITHIN 15 FEET DIAMETER OF A HYDRANT AND ALL GRASS AND WEEDS SHALL BE KEPT TRIMMED SUCH THAT THE HYDRANTS SHALL BE FULLY VISIBLE FROM THE STREET.
5. HYDRANTS SHALL BE PROTECTED WITH BOLLARDS IF SUBJECT TO MECHANICAL DAMAGE.
6. ALL APARTMENT BUILDINGS, COMMERCIAL BUILDINGS, INDUSTRIAL BUILDINGS, AND MULTI-STORY BUILDINGS WITHIN THE CITY SHALL BE NUMBERED WITH THE STREET ADDRESS, FRONT & REAR AND/OR SIDE DOORS, WITH THE NUMBERS BEING NOT LESS THAN SIX, NOR MORE THAN NINE INCHES IN HEIGHT. THE NUMERALS SHALL CONTRAST WITH THEIR BACKGROUND AND BE KEPT FREE OF OBSTRUCTIONS. THE NUMBERS SHALL ALSO BE MAINTAINED IN A CONSPICUOUS PLACE WHERE THEY CAN BE SEEN AND READ FROM THE STREET.
7. UNLESS OTHERWISE DIRECTED BY THE AUTHORITY HAVING JURISDICTION, FIRE DEPARTMENT CONNECTION SHALL BE ON THE STREET SIDE OF THE BUILDING WITH A RED REFLECTOR IN THE MIDDLE AND FACING THE ROADWAY AND SHALL BE LOCATED AND ARRANGED SO THAT ANY NEARBY OBJECTS, INCLUDING, FENCES, POSTS, OR OTHER FIRE DEPARTMENT CONNECTIONS. THE LOCATION SHALL BE BASED ON THE REQUIREMENTS OF THE FIRE DEPARTMENT.
8. FIRE DEPARTMENT CONNECTIONS SHALL BE OF THE SAME PIPE DIAMETER AS THE LARGEST STANDPIPE CONNECTED AND SHALL BE PROTECTED BY A UL LISTED CHECK VALVE AND SHALL BE INSTALLED NOT LESS THAN 18" NOR MORE THAN 4' ABOVE GRADE. FIRE DEPARTMENT REQUIRES FDC TO BE INSTALLED 3' ABOVE GRADE.
9. A PERMANENT SIGN CONSTRUCTED OF WEATHER RESISTANT METAL OR RIGID PLASTIC MATERIALS WITH RED AND WHITE LETTERS AT LEAST ONE INCH HIGH SHALL BE ATTACHED TO THE EXTERIOR OF THE BUILDING ADJACENT TO THE CONNECTION OR ON THE CONNECTION, SECURED WITH SUBSTANTIAL AND CORROSION RESISTANT FASTENERS, AND SHALL READ "STANDPIPE" AND/OR "SPRINKLER" AS APPLICABLE.
10. A FLORIDA CERTIFIED SPRINKLER CONTRACTOR SHALL PULL PERMIT AND BEGIN WORK FROM THE POINT OF SERVICE PER STATE STATUES 4A-46.040.
11. PORTABLE FIRE EQUIPMENT IN ACCORDANCE WITH NFPA-1 MUST BE PRESENT ON SITE DURING CONSTRUCTION.
12. THE ANGLE OF APPROACH AND DEPARTURE FOR ANY MEANS OF THE FIRE DEPARTMENT ACCESS ROAD SHALL NOT EXCEED 1 FT. DROP IN 20 FT. OR DESIGN LIMITATIONS OF THE FIRE APPARATUS OF THE FIRE DEPARTMENT.
13. WHERE UNDERGROUND WATER MAINS AND HYDRANTS ARE TO BE PROVIDED, THEY SHALL BE INSTALLED, COMPLETED, AND IN SERVICE PRIOR TO COMMENCING CONSTRUCTION WORK ON ANY STRUCTURE.
14. FIRE DEPARTMENT ACCESS ROADS SHALL BE DESIGNED AND MAINTAINED TO SUPPORT THE IMPOSED LOADS OF FIRE APPARATUS (WEIGHTING A MINIMUM OF 32 TONS) AND SHALL BE PROVIDED WITH AN ALL-WEATHER DRIVING SURFACE.
15. FIRE DEPARTMENT CONNECTIONS SHOULD BE LOCATED AND ARRANGED SO THAT HOSE LINES CAN BE READILY AND CONVENIENTLY ATTACHED WITHOUT INTERFERENCE FROM NEARBY OBJECTS, INCLUDING BUILDINGS, FENCES POSTS, OR OTHER DEPARTMENT CONNECTIONS.
16. COMPLIANCE WITH THE CODE, REVIEW AND APPROVAL BY THE AHJ SHALL NOT RELIEVE THE APPLICANT FROM THE RESPONSIBILITY OF COMPLIANCE WITH THIS CODE. NFPA 1-1.14.4
17. ACCESS BOX(S). THE AHJ SHALL HAVE THE AUTHORITY TO REQUIRE AN ACCESS BOX(S) TO BE INSTALLED IN AN ACCESSIBLE LOCATION WHERE ACCESS TO OR WITHIN A STRUCTURE OR AREA IS DIFFICULT BECAUSE OF SECURITY. A KNOX BOX KEY BOX SHALL BE PROVIDED ON ALL BUILDINGS THAT HAVE REQUIRED SPRINKLER SYSTEMS, STANDPIPES SYSTEMS OR FIRE ALARM SYSTEMS. PLEASE CONTACT THE DIVISION OF FIRE PREVENTION FOR A KNOX BOX APPLICATION FORM AT 954-435-6531. NFPA 1-18.2.2.1
18. FIRE FLOW CALCULATIONS FOR MANUAL FIRE SUPPRESSION PURPOSES ARE REQUIRED TO BE PROVIDED IN ACCORDANCE WITH NFPA-1:18.4. (FIRE FLOW CALCULATIONS MUST BE PROVIDED ON SEPARATE SHEETS, SIGN AND SEALED BY A PROFESSIONAL ENGINEER.) SEE TABLE 18.4.5.1.2.
19. DRIVING LANES SHALL HAVE A MINIMUM CLEAR WIDTH OF 24 FEET FOR TWO-WAY TRAFFIC, 15 FEET FOR ONE-WAY TRAFFIC.
20. THERE SHALL BE A 14' MINIMUM WIDTH AT LEVEL 6' TO 8' FROM ROADWAY TO ACCOMMODATE VEHICLE MIRRORS WHERE APPLICABLE. (APPLICABLE AREAS ARE TRUCK ACCESS ROUTES.)
21. AT LEAST ONE LIFT OF ASPHALT SHALL BE PROVIDED ON ROADS FOR FIRE AND EMERGENCY VEHICLE ACCESS OF BUILDINGS UNDER CONSTRUCTION.
22. A WATER SUPPLY FOR FIRE PROTECTION, EITHER TEMPORARY OR PERMANENT, SHALL BE MADE AVAILABLE AS SOON AS COMBUSTIBLES MATERIAL ACCUMULATES.
23. LIGHT WEIGHT CONSTRUCTION IDENTIFICATION PLACARD. NOTICE REQUIRED FOR STRUCTURES WITH LIGHT-FRAME TRUSS-TYPE CONSTRUCTION FOR NEW AND EXISTING STRUCTURES, EFFECTIVE 12-13-09. DECLARE IF STRUCTURE(S) ARE TO BE CONSTRUCTED WITH LIGHT-FRAME TRUSS-TYPE CONSTRUCTION: (PLEASE PROVIDE A DETAIL ON SITE PLANS ADDRESSING TYPE OF CONSTRUCTION AND PLACARD TO BE POSTED) FAC 69A-60.0081
24. TWO-WAY RADIO COMMUNICATION ENHANCEMENT SYSTEMS. NFPA 1-11.10, 2012 EDITION. IN ALL NEW AND EXISTING BUILDINGS, MINIMUM RADIO SIGNAL STRENGTH FOR FIRE DEPARTMENT COMMUNICATIONS SHALL BE MAINTAINED AT A LEVEL DETERMINED BY THE AHJ. NFPA 1-11.10.1 WHERE REQUIRED BY THE AHJ, TWO-WAY RADIO COMMUNICATION ENHANCEMENT SYSTEMS SHALL COMPLY WITH NFPA 72. NFPA 1-11.10.2 WHERE A TWO-WAY RADIO COMMUNICATION ENHANCEMENT SYSTEM IS REQUIRED AND SUCH SYSTEM, COMPONENTS, OR EQUIPMENT HAS A NEGATIVE IMPACT ON THE NORMAL OPERATIONS OF THE FACILITY AT WHICH IT IS INSTALLED, THE AHJ SHALL HAVE THE AUTHORITY TO ACCEPT AN AUTOMATICALLY ACTIVATED RESPONDER SYSTEM. NFPA 1-11.10.3
25. RED RPM'S WILL NEED TO BE INSTALLED IN THE STREET DIRECTLY IN FRONT OF THE FIRE DEPARTMENT CONNECTION (F.D.C.), AND BLUE RPM'S WILL BE INSTALLED DIRECTLY IN FRONT OF THE FIRE HYDRANTS.

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REVISIONS

NO.	DATE:	DESCRIPTION

FIRST BAPTIST CHURCH OF
S.W. BROWARD

COOPER CITY FLORIDA

OVERALL
FIRE PROTECTION PLAN

DATE:	MAY 2021
SCALE:	1"=40'
DESIGNED BY:	M.G.
DRAWN BY:	M.A.S.
JOB #:	21-4077

CLIFFORD R. LOFTIN
LICENSE
No. 56890
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

Date: **August 30, 2022**

SHEET No.
FP1

FILE: K:\PROJECTS\21-xxx\21-4077\dwg\4077fp.dwg
PLOT DATE: 8/30/2022 7:49 AM BY: Miguel A. Sosa
LAYOUT: [FP1]

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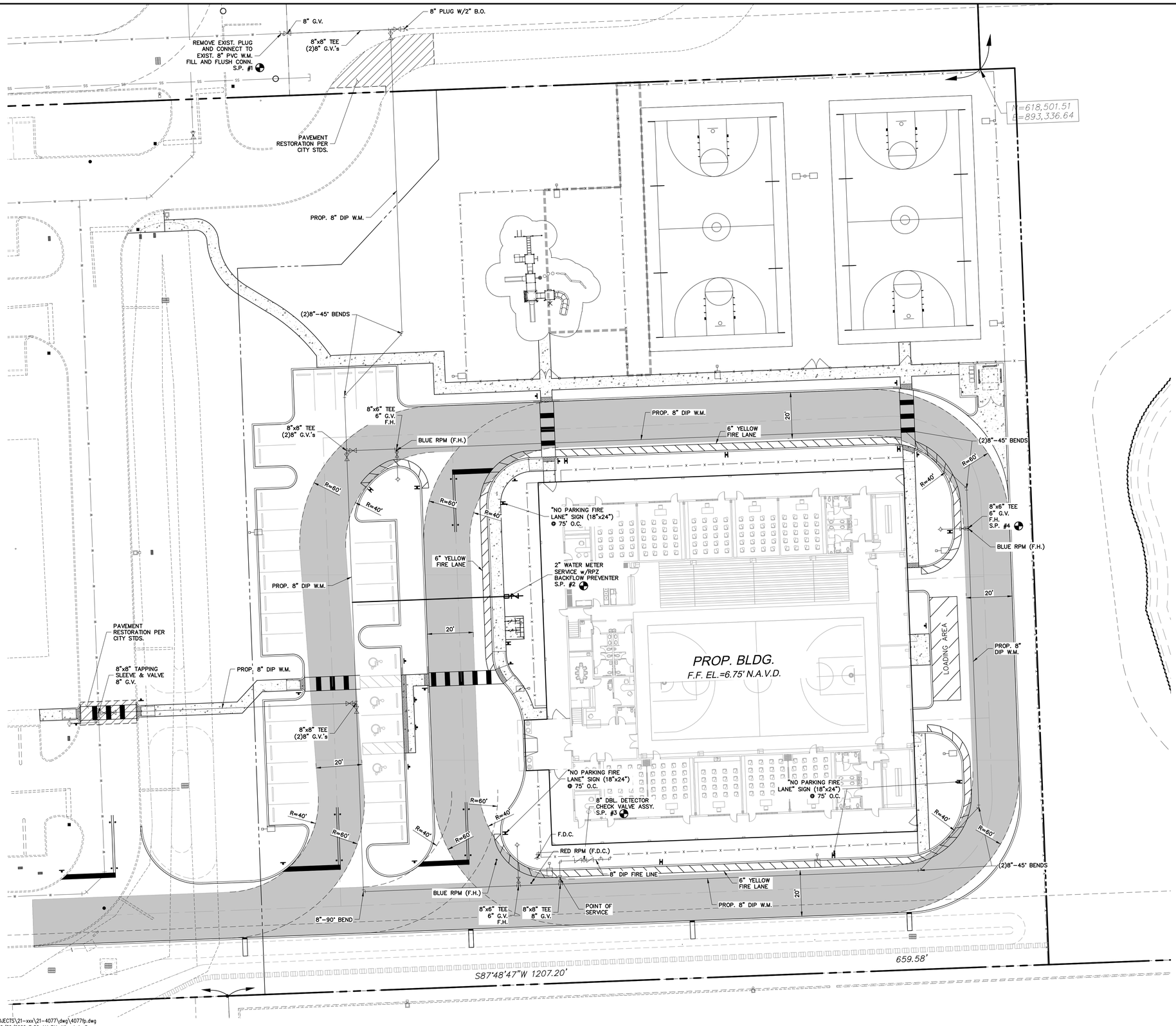

NOTE:

ALL FIRE DEPARTMENT STRIPING TO BE THERMOPLASTIC.

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REVISIONS

NO.	DATE:	DESCRIPTION

FIRST BAPTIST CHURCH OF S.W. BROWARD

COOPER CITY FLORIDA

FIRE PROTECTION PLAN

DATE:	MAY 2021
SCALE:	1"=20'
DESIGNED BY:	M.G.
DRAWN BY:	M.A.S.
JOB #:	21-4077

CLIFFORD R. LOVE, JR. LICENSE No. 56890 STATE OF FLORIDA PROFESSIONAL ENGINEER

Date: **August 30, 2022**

SHEET No.
FP2

FILE: K:\PROJECTS\21-xxx\21-4077\dwg\4077fp.dwg
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LAYOUT: [FP2]

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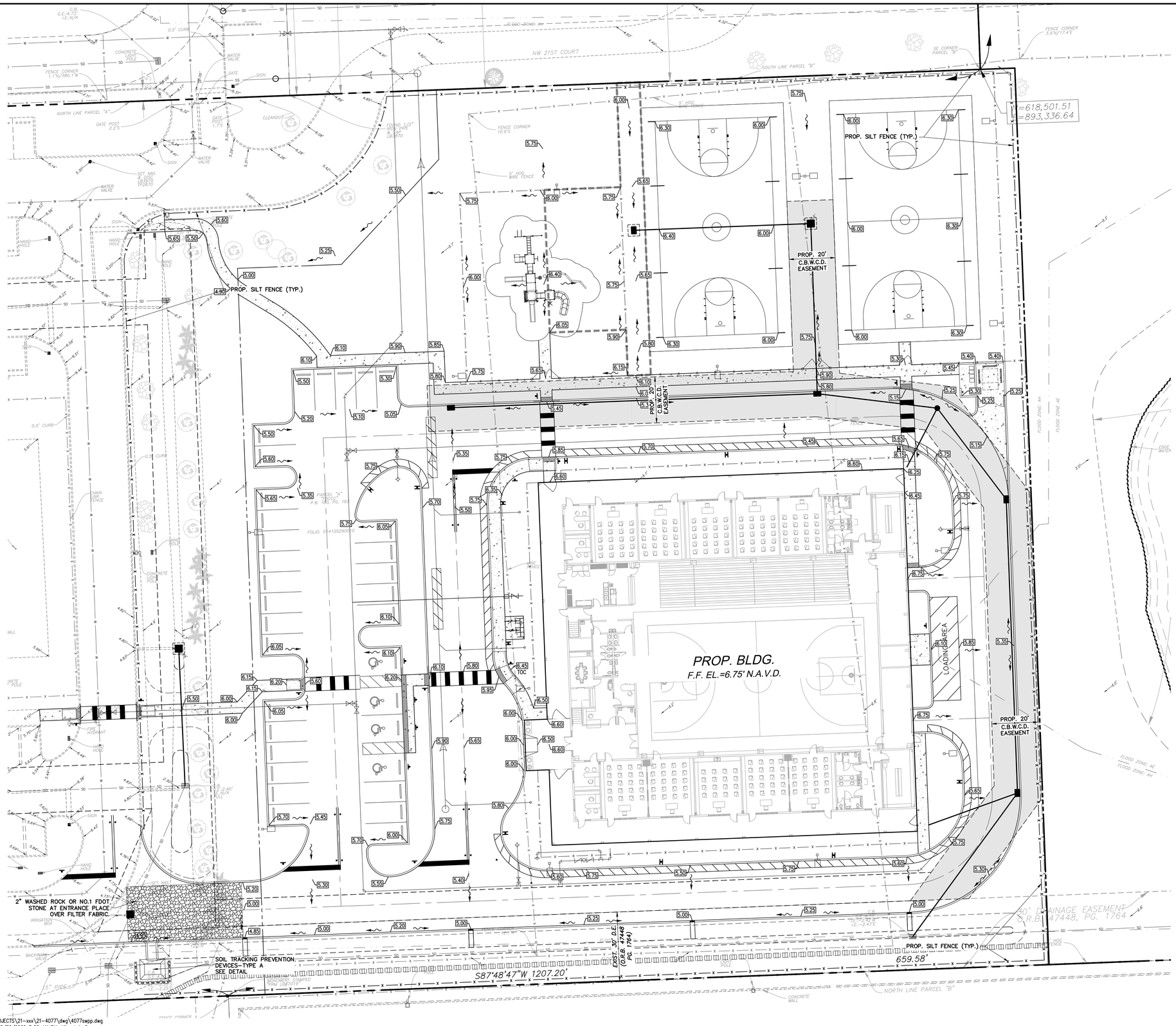

NOTES:

1. THIS PLAN REFLECTS REQUIREMENTS APPLICABLE TO PROTECTING SURFACE WATER RESOURCES IN STORMWATER MANAGEMENT SITE PLANS OR SITE PERMITS APPROVED BY STATE, TRIBAL OR LOCAL OFFICIALS.

2. SEDIMENT CONTROL MEASURES ARE TO BE MAINTAINED SO THAT SEDIMENT IS REMOVED FROM SEDIMENT BARRIERS WHEN THE DESIGN CAPACITY IS REDUCED BY 50%

TOTAL SITE = 2.79 Ac.
SITE AREA TO BE DISTURBED = 2.79 Ac.
WETLAND AREA TO BE MITIGATED = 00.00 Ac.

RUNOFF COEFFICIENT "C"
BEFORE CONSTRUCTION = 0.90
DURING CONSTRUCTION = 0.70
AFTER CONSTRUCTION = 0.80

LEGEND

OVERLAND FLOW

0.00 PROPOSED GRADE

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REVISIONS

NO.	DATE:	DESCRIPTION

FIRST BAPTIST CHURCH OF S.W. BROWARD

COOPER CITY, FLORIDA

STORMWATER POLLUTION PREVENTION PLAN

DATE: MAY 2021
SCALE: 1"=20'
DESIGNED BY: M.G.
DRAWN BY: M.A.S.
JOB #: 21-4077

CLIFFORD R. LOVE JR. LICENSE No. 56890 STATE OF FLORIDA PROFESSIONAL ENGINEER

Date: **August 30, 2022**

SHEET No.
SWPP1

FILE: K:\PROJECTS\21-xxx\21-4077\dwg\4077swpp.dwg
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LAYOUT: [SWPP1]

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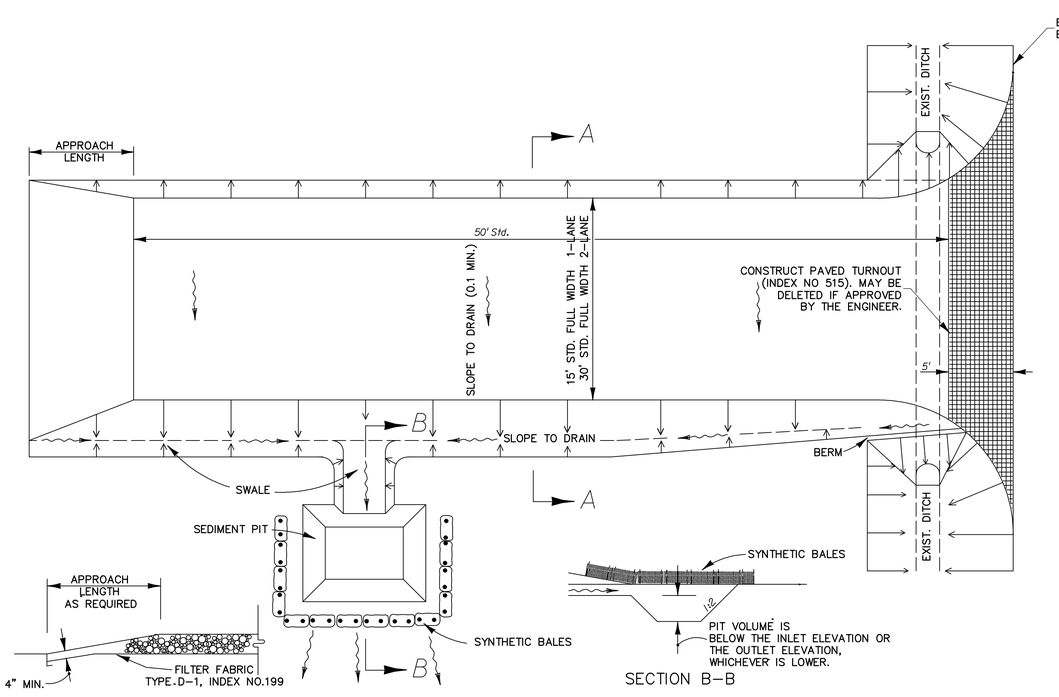
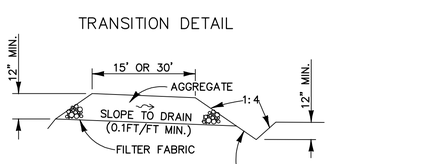


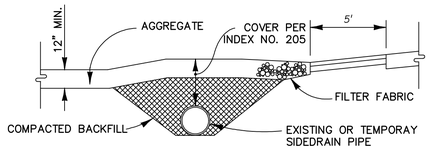
TRANSITION DETAIL

SECTION B–B



SECTION A–A

TO BE STABILIZED AS REQUIRED
BASED ON FLOW AND GRADE.



RURAL CONNECTION
DETAIL

SOIL TRACKING PREVENTION DEVICE - TYPE 'A'

GENERAL NOTES

1. A SOIL TRACKING PREVENTION DEVICE (S.T.P.D.) SHALL BE CONSTRUCTED AT ALL LOCATIONS 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 S.T.P.D. BARRIERS, FLAGGING, OR OTHER POSITIVE MEANS SHALL BE USED AS REQUIRED TO LIMIT AND DIRECT VEHICULAR EGRESS ACROSS THE S.T.P.D.

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

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

4. AGGREGATES SHALL BE AS DESCRIBED IN SECTION 901 EXCLUDING 901–2.3. AGGREGATES SHALL BE FDOT SIZE #1. IF THIS SIZE IS NOTE 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 S.T.P.D. IS ISOLATED FROM OTHER DRAINAGE AREAS, THE FOLLOWING PIT VOLUMES WILL SATISFY THIS REQUIREMENT:

   $15'x50' = 100\ FT^3$ $30'x50' = 200\ FT^3$

   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 A SWALE IS USED, SYNTHETIC BALES OR SILT FENCE SHALL BE PLACE ALONG THE ENTIRE LENGTH.

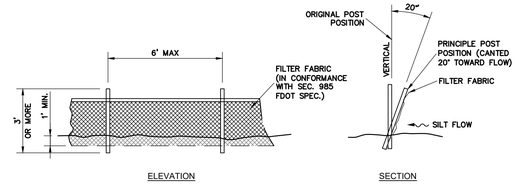
7. THE SWALE DITCH DRAINING THE S.T.P.D, SHALL HAVE A 0.2% MINIMUM AND A 1.0% MAXIMUM GRADE ALONG THE S.T.P.D. AND TO THE SEDIMENT PIT.

6. MITERED END SECTIONS ARE NOT REQUIRED WHEN THE SIDE DRAIN PIPE SATISFIES THE CLEAR ZONE REQUIREMENTS.

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

9. A S.T.P.D. 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 S.T.P.D.; INCLUDING BUT NOT LIMITED TO EXCAVATION, GRADING, TEMPORARY PIPE (INCLUDING M.E.S. 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 S.T.P.D. AND CLEANING OF PUBLIC ROADS, GRASSING AND SOD. SYNTHETIC BALES OR BALE TYPE BARRIER SHALL BE PAID FOR UNDER THE CONTRACT UNIT PRICE FOR SYNTHETIC HAY BALES, LF. SILT FENCE SHALL BE PAID FOR UNDER THE CONTRACT UNIT PRICE FOR STAKED SILT FENCE, LF.

10. THE NOMINAL SIZE OF A STANDARD S.T.P.D. IS 15'x50' UNLESS OTHERWISE SHOWN IN THE PLANS. IF THE VOLUME OF ENTERING AND EXITING VEHICLES WARRANT, A 30' WIDTH S.T.P.D. MAY BE USED IF APPROVED BY THE ENGINEER. WHEN A DOUBLE WIDTH (30') S.T.P.D. IS USED, THE PAY QUANTITY SHALL BE 2 FOR EACH LOCATION.



SILT FENCE DETAIL

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REVISIONS

NO.	DATE:	DESCRIPTION

FIRST BAPTIST CHURCH OF COOPER CITY
S.W. BROWARD
COOPER CITY FLORIDA
STORMWATER POLLUTION PREVENTION DETAILS

DATE:	MAY 2021
SCALE:	1"=20'
DESIGNED BY:	M.G.
DRAWN BY:	M.A.S.
JOB #:	21-4077

CLIFFORD R. LOVIAN
LICENSE
No. 56890
STATE OF FLORIDA
PROFESSIONAL ENGINEER

Date: **August 30, 2022**

SHEET No.
SWPP2

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