CONSTRUCTION PLAN

FOR:

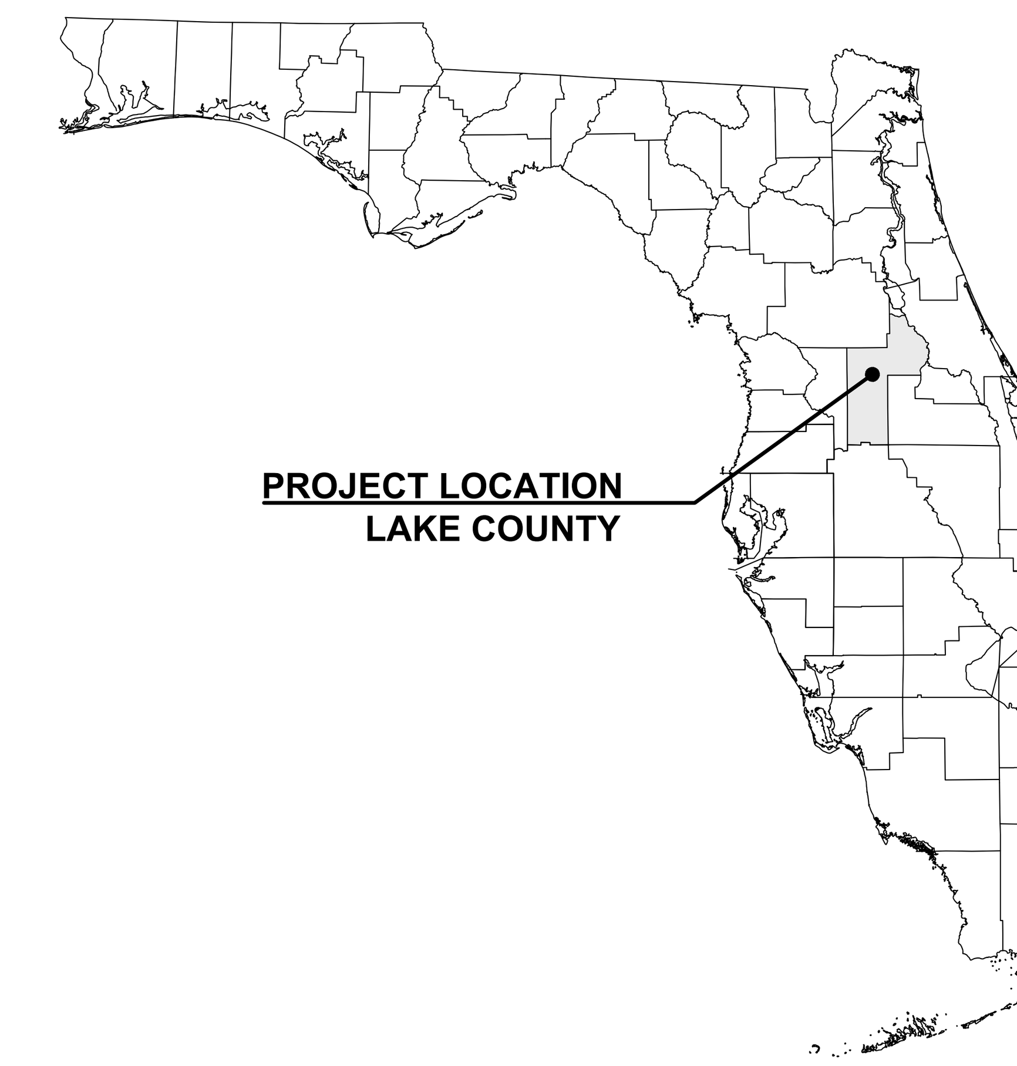
LAKE HILLS MAIN BLVD. & MASS GRADING

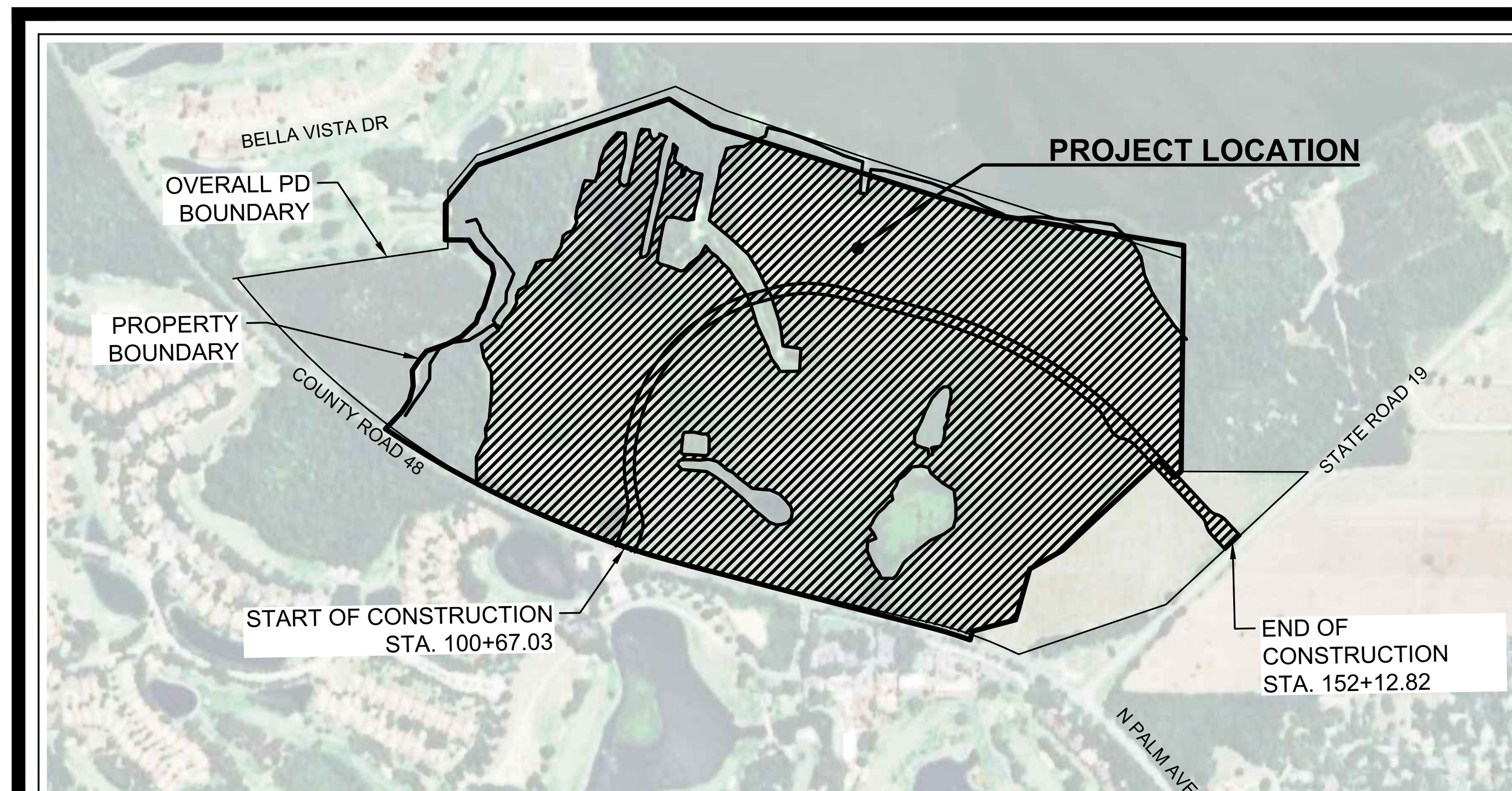
TOWN OF HOWEY IN THE HILLS, LAKE COUNTY, FLORIDA 34737

SECTIONS 22, TOWNSHIP 20, RANGE 25

STA. 100+62.54 - STA. 152+12.82

NOVEMBER 2024





VICINITY MAP

NTS

PARCEL ID

23-20-25-0004-000-00200
23-20-25-0004-000-01000
23-20-25-0001-000-01400
23-20-25-0002-000-00600
23-20-25-0002-000-01100
23-20-25-0004-000-01000

LEGAL DESCRIPTION

PARCEL 1:

GOVERNMENT LOTS 2, 4, 5, 6, 7, 8 AND 9, LYING NORTH OF HIGHWAY 48 AND THE WESTERLY OF HIGHWAY 19, ALL LYING IN SECTION 23, TOWNSHIP 20 SOUTH, RANGE 25 EAST, LAKE COUNTY, FLORIDA, LESS THE FOLLOWING DESCRIBED PARCEL OF LAND: BEGIN AT SOUTHEAST CORNER OF THE NORTHWEST ¼ OF THE SOUTHEAST ¼ OF SECTION 23, TOWNSHIP 20 SOUTH, RANGE 25 EAST, LAKE COUNTY, FLORIDA, AND RUN NORTH 00°04'21" EAST 1314.20 FEET, MORE OR LESS, TO THE SOUTHERLY WATERS EDGE OF LAKE HARRIS AND A POINT HEREBY DESIGNATED AS POINT "A"; RETURN TO THE POINT OF BEGINNING AND RUN SOUTH 89°35'28" WEST ALONG THE SOUTH LINE OF THE NORTHWEST ¼ OF THE SOUTHEAST ¼ OF SECTION 23 A DISTANCE OF 1100.00 FEET; THENCE NORTH 00°27'54" EAST 1484.76 FEET, MORE OR LESS, TO THE SOUTHERLY WATERS EDGE OF LAKE HARRIS; THENCE EASTERLY ALONG SAID SOUTHERLY WATERS EDGE OF LAKE HARRIS TO POINT "A".

LESS any portion conveyed in those certain deeds recorded in Official Records Book 6019, Page 212 and Official Records Book 6068, Page 2222.

LESS AND EXCEPT COMMERCIAL 1

A PORTION OF GOVERNMENT LOTS 2, 8, AND 9 LYING WESTERLY OF HIGHWAY 19, ALL LYING IN SECTION 23, TOWNSHIP 20 SOUTH, RANGE 25 EAST, LAKE COUNTY, FLORIDA BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS: AS A POINT OF REFERENCE COMMENCE AT SOUTHWEST CORNER OF THE SOUTHWEST ¼ OF SECTION 23, TOWNSHIP 20 SOUTH, RANGE 25 EAST, LAKE COUNTY, FLORIDA AND PROCEED N 00°53'14" E, ALONG THE WEST BOUNDARY OF THE SOUTHWEST 1/4 OF SAID SECTION 23, A DISTANCE OF 1171.08 FEET TO A POINT ON THE NORTHERLY RIGHT OF WAY LINE OF COUNTY ROAD 48 SAID POINT LYING ON A CURVE CONCAVE NORTHEASTERLY HAVING A RADIUS OF 5679.58 FEET AND A CHORD BEARING AND DISTANCE OF S 69°35'43" E, A DISTANCE OF 1186.12 FEET; THENCE ALONG THE ARC OF SAID CURVE TO THE LEFT AND SAID NORTHERLY RIGHT OF WAY LINE, A DISTANCE OF 1188.29 FEET; THENCE S 75°35'20" E, ALONG SAID NORTHERLY RIGHT OF WAY LINE, A DISTANCE OF 1460.31 FEET TO A POINT OF CURVATURE OF A CURVE CONCAVE SOUTHWESTERLY HAVING A RADIUS OF 2341.83 FEET AND A CHORD BEARING AND DISTANCE OF S 72°35'58" E, A DISTANCE OF 223.25 FEET; THENCE ALONG THE ARC OF SAID CURVE TO THE RIGHT AND ALONG SAID NORTHERLY RIGHT OF WAY LINE, A DISTANCE OF 223.33 FEET; THENCE LEAVING SAID NORTHERLY RIGHT OF WAY LINE, N 15°36'38" E, A DISTANCE OF 52.62 FEET; THENCE N 75°08'12" E, A DISTANCE OF 258.80 FEET TO THE POINT OF BEGINNING; THENCE N 15°36'16" E, A DISTANCE OF 306.32 FEET; THENCE N 60°15'03" E, A DISTANCE OF 218.37 FEET; THENCE N 46°59'01" E, A DISTANCE OF 705.92 FEET; THENCE S 43°00'59" E, A DISTANCE OF 404.25 FEET TO A POINT OF CURVATURE OF A CURVE CONCAVE SOUTHWESTERLY HAVING A RADIUS OF 100.00 FEET AND A CHORD BEARING AND DISTANCE OF S 27°52'48" E, A DISTANCE OF 52.22 FEET; THENCE ALONG THE ARC OF SAID CURVE TO THE RIGHT, A DISTANCE OF 52.84 FEET TO A POINT OF REVERSE CURVATURE OF A CURVE CONCAVE NORTHEASTERLY HAVING A RADIUS OF 120.00 FEET AND A CHORD BEARING AND DISTANCE OF S 27°52'48" E, A DISTANCE OF 62.67 FEET; THENCE ALONG THE ARC OF SAID CURVE TO THE LEFT, A DISTANCE OF 63.40 FEET; THENCE S 43°00'59" E, A DISTANCE OF 125.00 FEET TO A POINT ON THE WESTERLY RIGHT OF WAY LINE OF STATE ROAD 19; THENCE S 46°59'01" W, ALONG SAID WESTERLY RIGHT OF WAY LINE, A DISTANCE OF 650.20 FEET TO A POINT ON THE NORTHERLY RIGHT OF WAY LINE OF STATE ROAD 19; THENCE S 75°06'54" W, ALONG SAID NORTHERLY RIGHT OF WAY LINE, A DISTANCE OF 210.88; THENCE LEAVING SAID NORTHERLY RIGHT OF WAY LINE, N 41°20'52" W, A DISTANCE OF 270.98 FEET TO A POINT OF CURVATURE OF A CURVE CONCAVE NORTHWESTERLY HAVING A RADIUS OF 133.42 FEET AND A CHORD BEARING AND DISTANCE OF S 62°15'27" W, A DISTANCE OF 62.77 FEET; THENCE ALONG THE ARC OF SAID CURVE TO THE RIGHT, A DISTANCE OF 63.36 FEET; THENCE S 75°51'45" W, A DISTANCE OF 298.03 FEET; THENCE S 75°08'12" W, A DISTANCE OF 229.89 FEET; THENCE S 15°36'38" W, A DISTANCE OF 28.52 FEET TO A POINT ON THE AFOREMENTIONED NORTHERLY RIGHT OF WAY LINE OF COUNTY ROAD 48 AND A POINT ON A CURVE CONCAVE SOUTHWESTERLY HAVING A RADIUS OF 2341.83 FEET AND A CHORD BEARING AND DISTANCE OF N 69°15'12" W, A DISTANCE OF 50.20 FEET; THENCE ALONG THE ARC OF SAID CURVE TO THE LEFT AND ALONG SAID NORTHERLY RIGHT OF WAY LINE, A DISTANCE OF 50.20 FEET TO THE POINT OF BEGINNING.

SAID PARCEL CONTAINING 630854 SQUARE FEET OR 14.48 ACRES MORE OR LESS.

LESS AND EXCEPT COMMERCIAL 2

A PORTION OF GOVERNMENT LOT 9 LYING WESTERLY OF HIGHWAY 19, ALL LYING IN SECTION 23, TOWNSHIP 20 SOUTH, RANGE 25 EAST, LAKE COUNTY, FLORIDA BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS: AS A POINT OF REFERENCE COMMENCE AT SOUTHWEST CORNER OF THE SOUTHWEST ¼ OF SECTION 23, TOWNSHIP 20 SOUTH, RANGE 25 EAST, LAKE COUNTY, FLORIDA AND PROCEED N 00°53'14" E, ALONG THE WEST BOUNDARY OF THE SOUTHWEST 1/4 OF SAID SECTION 23, A DISTANCE OF 1171.08 FEET TO A POINT ON THE NORTHERLY RIGHT OF WAY LINE OF COUNTY ROAD 48 SAID POINT LYING ON A CURVE CONCAVE NORTHEASTERLY HAVING A RADIUS OF 5679.58 FEET AND A CHORD BEARING AND DISTANCE OF S 69°35'43" E, A DISTANCE OF 1186.12 FEET; THENCE ALONG THE ARC OF SAID CURVE TO THE LEFT AND SAID NORTHERLY RIGHT OF WAY LINE, A DISTANCE OF 1188.29 FEET; THENCE S 75°35'20" E, ALONG SAID NORTHERLY RIGHT OF WAY LINE, A DISTANCE OF 1460.31 FEET TO A POINT OF CURVATURE OF A CURVE CONCAVE SOUTHWESTERLY HAVING A RADIUS OF 2341.83 FEET AND A CHORD BEARING AND DISTANCE OF S 68°56'00" E, A DISTANCE OF 521.94 FEET; THENCE ALONG THE ARC OF SAID CURVE TO THE RIGHT AND ALONG SAID NORTHERLY RIGHT OF WAY LINE, A DISTANCE OF 523.03 FEET TO A POINT ON THE NORTHERLY RIGHT OF WAY LINE OF STATE ROAD 19; THENCE N 75°06'54" E, ALONG SAID NORTHERLY RIGHT OF WAY LINE, A DISTANCE OF 742.75 FEET TO A POINT ON THE WESTERLY RIGHT OF WAY LINE OF STATE ROAD 19; THENCE N 46°59'01" E, ALONG SAID WESTERLY RIGHT OF WAY LINE, A DISTANCE OF 1328.28 TO THE POINT OF BEGINNING; THENCE LEAVING SAID WESTERLY RIGHT OF WAY LINE, N 89°48'40" W, A DISTANCE OF 738.20; THENCE S 46°59'01" W, A DISTANCE OF 50.00 FEET; THENCE S 43°00'59" E, A DISTANCE OF 269.48 FEET TO A POINT OF CURVATURE OF A CURVE CONCAVE NORTHEASTERLY HAVING A RADIUS OF 100.00 FEET AND A CHORD BEARING AND DISTANCE OF S 58°09'10" E, A DISTANCE OF 52.22 FEET; THENCE ALONG THE ARC OF SAID CURVE TO THE LEFT, A DISTANCE OF 52.84 FEET TO A POINT OF REVERSE CURVATURE OF A CURVE CONCAVE SOUTHWESTERLY HAVING A RADIUS OF 120.00 FEET AND A CHORD BEARING AND DISTANCE OF S 58°09'10" E, A DISTANCE OF 62.67 FEET; THENCE ALONG THE ARC OF SAID CURVE TO THE RIGHT, A DISTANCE OF 63.40 FEET; THENCE S 43°00'59" E, A DISTANCE OF 125.00 FEET TO A POINT ON THE AFOREMENTIONED WESTERLY RIGHT OF WAY OF STATE ROAD 19; THENCE N 46°59'01" E, ALONG SAID RIGHT OF WAY LINE, A DISTANCE OF 558.08 FEET TO THE POINT OF BEGINNING.

SAID PARCEL CONTAINING 155,772 SQUARE FEET OR 3.58 ACRES MORE OR LESS.

LESS AND EXCEPT ACCESS EASEMENT

COMMENCE AT THE NORTHEAST CORNER OF THE SOUTHEAST 1/4 SECTION 23-20-25; THENCE SOUTH 00°28'42" WEST ALONG THE EAST LINE OF THE SOUTHEAST 1/4 OF SECTION 25, A DISTANCE OF 765.11 FEET TO THE NORTHERLY RIGHT OF WAY OF STATE ROAD 19; THENCE SOUTH 46°59'01" WEST ALONG THE NORTHERLY RIGHT OF WAY, A DISTANCE OF 1,350.12 FEET TO THE POINT OF BEGINNING; THENCE CONTINUE SOUTH 46°59'01" WEST, A DISTANCE OF 120.00 FEET; THENCE NORTH 43°00'59" WEST, A DISTANCE OF 125.00 FEET; TO A POINT OF CURVATURE OF A CURVE CONCAVE NORTHEASTERLY, HAVING A RADIUS OF 120.00 FEET AND A CHORD WHICH BEARS NORTH 27°52'48" WEST, A DISTANCE 62.67 FEET; THENCE ALONG THE ARC OF SAID CURVE TO THE RIGHT, A DISTANCE OF 63.40 FEET; TO A POINT OF REVERSE CURVATURE OF A CURVE HAVING A RADIUS OF 100.00 FEET AND A CHORD WHICH BEARS NORTH 27°52'48" WEST, AND A DISTANCE OF 52.22 FEET; THENCE ALONG THE ARC OF SAID CURVE TO THE LEFT, A DISTANCE OF 52.84 FEET; THENCE NORTH 43°00'59" WEST, A DISTANCE OF 404.25 FEET; THENCE NORTH 46°59'01" EAST, A DISTANCE OF 60.00 FEET; THENCE SOUTH 43°00'59" EAST, A DISTANCE OF 404.25 FEET; TO A POINT OF CURVATURE OF A CURVE CONCAVE NORTHEASTERLY, HAVING A RADIUS OF 100.00 FEET AND A CHORD WHICH BEARS SOUTH 58°09'10" EAST, A DISTANCE 52.22 FEET; THENCE ALONG THE ARC OF SAID CURVE TO THE LEFT, A DISTANCE OF 52.84 FEET; TO A POINT OF REVERSE CURVATURE OF A CURVE HAVING A RADIUS OF 120.00 FEET AND A CHORD WHICH BEARS SOUTH 58°09'10" EAST, AND A DISTANCE OF 62.67 FEET; THENCE ALONG THE ARC OF SAID CURVE TO THE RIGHT, A DISTANCE OF 63.40 FEET; THENCE SOUTH 43°00'59" EAST, A DISTANCE OF 125.00 FEE; TO THE POINT OF BEGINNING.

CONTAINING 49,343.34 SQUARE FEET OR 1.13 ACRES, MORE OR LESS.

PARCEL 2:

BEGIN AT THE NORTHEAST CORNER OF THE SOUTHEAST ¼ OF SECTION 22, TOWNSHIP 20 SOUTH, RANGE 25 EAST, LAKE COUNTY, FLORIDA, RUN SOUTH 89°09'42" WEST ALONG THE NORTH LINE OF THE SOUTHEAST ¼ A DISTANCE OF 330 FEET; THENCE SOUTH 81°15'42" WEST TO THE EAST LINE OF TRACT "I", OF DRAKE POINT PARK REPLAT, ACCORDING TO THE PLAT THEREOF RECORDED IN PLAT BOOK 10, PAGE 63, OF THE PUBLIC RECORDS OF LAKE COUNTY, FLORIDA; THENCE CONTINUE SOUTH 81°15'42" WEST TO THE NORTHEASTERLY RIGHT-OF-WAY LINE OF STATE ROAD 48; THENCE SOUTHEASTERLY ALONG SAID NORTHEASTERLY RIGHT-OF-WAY LINE OF STATE ROAD 48 TO THE EAST LINE OF THE SOUTHEAST ¼ OF SECTION 22; THENCE NORTH ALONG THE EAST LINE OF THE SOUTHEAST ¼ TO THE POINT OF BEGINNING.

PARCEL 3:

FROM THE SOUTHEAST CORNER OF THE NORTHEAST ¼ OF SECTION 22, TOWNSHIP 20 SOUTH, RANGE 25 EAST, LAKE COUNTY, FLORIDA, RUN SOUTH 89°09'42" WEST ALONG THE SOUTH LINE OF THE NORTHEAST ¼ A DISTANCE OF 330 FEET; THENCE NORTH 00°15'45" WEST 210 FEET; THENCE NORTH 38°44'24" EAST 583.17 FEET FOR THE POINT OF BEGINNING; THENCE NORTH 89°10'02" EAST 1177 FEET TO THE WATERS OF LAKE HARRIS; THENCE SOUTHEASTERLY ALONG SAID WATERS OF LAKE HARRIS TO A POINT ON THE EAST LINE OF THE NORTHWEST ¼ OF SECTION 23, TOWNSHIP 20 SOUTH, RANGE 25 EAST, LAKE COUNTY, FLORIDA; THENCE SOUTH ALONG THE EAST LINE OF THE NORTHWEST ¼ TO THE SOUTHEAST CORNER OF THE NORTHWEST ¼ OF SECTION 23; THENCE WEST ALONG THE SOUTH LINE OF THE NORTHWEST ¼ TO THE SOUTHWEST CORNER OF THE NORTHWEST ¼ OF SECTION 23, SAID POINT HEREBY DESIGNATED AS POINT "A", RETURN TO THE POINT OF BEGINNING AND RUN SOUTH 38°44'24" WEST TO A POINT ON THE WEST LINE OF THE NORTHWEST ¼ OF SAID SECTION 23; THENCE SOUTH ALONG THE WEST LINE OF THE NORTHWEST ¼ TO POINT "A". LESS AND EXCEPT THAT PORTION DESCRIBED IN THAT CERTAIN CORRECTIVE WARRANTY DEED RECORDED IN BOOK 4103, PAGE 313, PUBLIC RECORDS OF LAKE COUNTY, FLORIDA.

PARCEL 4:

THAT PART OF THE N.W. 1/4 OF THE S.E. 1/4 OF SECTION 23, TOWNSHIP 20 SOUTH, RANGE 25 EAST, IN LAKE COUNTY, FLORIDA, BOUNDED AND DESCRIBED AS FOLLOWS: BEGIN AT A CONCRETE MONUMENT (NO NUMBER) AT THE SOUTHEAST CORNER OF THE N.W. 1/4 OF THE S.E. 1/4 OF SAID SECTION 23, TOWNSHIP 20 SOUTH, RANGE 25 EAST, AND RUN N.00°04'21"E ALONG THE EAST LINE OF THE N.W. 1/4 OF THE S.E. 1/4 A DISTANCE OF 1202.20 FEET TO AN IRON PIN LABELED L.B. 707; THENCE CONTINUE N.00°04'21"E ALONG THE EAST LINE OF THE N.W. 1/4 OF THE S.E. 1/4 A DISTANCE OF 112 FEET, MORE OR LESS, TO A POINT ON THE SOUTHERLY WATERS EDGE OF LAKE HARRIS AND A POINT HEREBY DESIGNATED AS POINT "A", RETURN TO THE POINT OF BEGINNING AND RUN S.89°35'28"W. ALONG THE SOUTH LINE OF THE N.W. 1/4 OF THE S.E. 1/4 OF SAID SECTION 23 A DISTANCE OF 1100.00 FEET TO AN IRON PIN LABELED L.B. 707; THENCE N.00°27'54"E. 1451.76 FEET TO AN IRON ROD PIN LABELED L.B. 707; THENCE CONTINUE N00°27'54"E, 33 FEET, MORE OR LESS, TO A POINT ON THE SOUTHERLY WATERS EDGE OF LAKE HARRIS; THENCE EASTERLY ALONG AND WITH SAID SOUTHERLY WATERS EDGE OF LAKE HARRIS TO INTERSECT THE AFOREMENTIONED POINT "A".

SUBJECT TO AND TOGETHER WITH AN EASEMENT FOR INGRESS AND EGRESS LYING OVER, UPON AND THROUGH THE FOLLOWING DESCRIBED PARCEL OF LAND; THE NORTH 50 FEET OF THE S.E. 1/4 OF THE S.E. 1/4 OF SECTION 23, TOWNSHIP 20 SOUTH, RANGE 25 EAST, IN LAKE COUNTY, FLORIDA LYING WEST OF THE NORTHWESTERLY RIGHT-OFWAY LINE OF STATE HIGHWAY NO. 19, AND AN EASEMENT FOR INGRESS AND EGRESS LYING OVER, UPON AND THROUGH THE FOLLOWING DESCRIBED PARCEL OF LAND: BEGIN AT THE SOUTHEAST CORNER OF THE N.W. 1/4 OF THE S.E. 1/4 OF SECTION 23, TOWNSHIP 20 SOUTH, RANGE 25 EAST, IN LAKE COUNTY, FLORIDA AND RUN S.00°04'21"W, ALONG THE EAST LINE OF THE N.W. 1/4 OF THE S.E. 1/4 OF SAID SECTION 23 A DISTANCE OF 50.00 FEET TO A POINT AT THE BEGINNING OF A CURVE CONCAVE NORTHEASTERLY AND HAVING A RADIUS OF 100.00 FEET AND A RADIAL BEARING OF S.00°02'52"W.; THENCE WESTERLY AND NORTHWESTERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 28°35'47" AN ARC LENGTH OF 49.91 FEET TO THE END OF SAID CURVE AND THE BEGINNING OF A CURVE CONCAVE SOUTHWESTERLY AND HAVING A RADIUS OF 100.00 FEET; THENCE NORTHWESTERLY AND WESTERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 28°35'47" AN ARC LENGTH OF 49.91 FEET TO THE END OF SAID CURVE; THENCE S.89°35'28" W., PARALLEL WITH THE SOUTH LINE OF THE N.W. 1/4 OF THE S.E. 1/4 OF THE AFOREMENTIONED SECTION 23 A DISTANCE OF 1029.81 FEET; THENCE N.00°27'54"E., 1510 FEET, MORE OR LESS TO A POINT ON THE SOUTHERLY WATERS EDGE OF LAKE HARRIS AND A POINT HEREBY DESIGNATED AS POINT "A"; RETURN TO THE POINT OF BEGINNING AND RUN N.00°04'21"E LONG THE EAST LINE OF THE N.W. 1/4 OF THE S.E. 1/4 OF THE AFOREMENTIONED SECTION 23 A DISTANCE OF 25.00 FEET; THENCE S.89°35"28'W., PARALLEL WITH THE SOUTH LINE OF THE N.W. 1/4 OF THE S.E. 1/4 A DISTANCE OF 1074.82 FEET; THENCE N.00°27'54"E., 1459 FEET, MORE OR LESS, TO A POINT ON THE SOUTHERLY WATERS EDGE OF LAKE HARRIS; THENCE WESTERLY ALONG AND WITH SAID SOUTHERLY WATERS EDGE OF LAKE HARRIS TO INTERSECT THE AFOREMENTIONED POINT "A".

PARCEL 5:

BEGIN AT THE SOUTHEAST CORNER OF THE NORTHEAST 1/4 OF SECTION 22, TOWNSHIP 20 SOUTH, RANGE 25 EAST, LAKE COUNTY, FLORIDA, RUN SOUTH 89°09'42" WEST ALONG THE SOUTH LINE OF THE NORTHEAST 1/4 A DISTANCE OF 330 FEET; THENCE NORTH 00°15'45" WEST, 210 FEET; THENCE NORTH 38°44'24" EAST TO A POINT ON THE EAST LINE OF THE NORTHEAST 1/4 OF SECTION 22; THENCE SOUTH ALONG THE EAST LINE OF THE NORTHEAST 1/4 TO THE POINT OF BEGINNING. LESS AND EXCEPT THAT PORTION DESCRIBED IN THAT CERTAIN CORRECTIVE WARRANTY DEED RECORDED IN BOOK 4103, PAGE 313, PUBLIC RECORDS OF LAKE COUNTY, FLORIDA.

PARCEL 6:

THAT PART OF SECTION 23, TOWNSHIP 20 SOUTH, RANGE 25 EAST, IN LAKE COUNTY, FLORIDA, BOUNDED AND DESCRIBED AS FOLLOWS: COMMENCE AT A CONCRETE MONUMENT (NO NUMBER) AT THE SOUTHEAST CORNER OF THE NORTHEAST 1/4 OF SECTION 22, TOWNSHIP 20 SOUTH, RANGE 25 EAST, IN LAKE COUNTY, FLORIDA, SAID POINT ALSO BEING THE SOUTHWEST CORNER OF THE NORTHWEST 1/4 OF SECTION 23, TOWNSHIP 20 SOUTH, RANGE 25 EAST, IN LAKE COUNTY, FLORIDA, RUN S.89°52'11" W. ALONG THE SOUTH LINE OF THE NORTHEAST 1/4 OF SECTION 22, A DISTANCE OF 330.00 FEET TO AN IRON PIPE LABELED LB707; THENCE N.00°09'33"E., 210.05 FEET TO A CONCRETE MONUMENT LABELED LS1916; THENCE N.39°31'51" E., 583.79 FEET TO AN IRON PIN LABELED LB7514; THENCE N.89°52'31"E., 468.45 FEET TO THE POINT OF BEGINNING OF THIS DESCRIPTION, FROM SAID POINT OF BEGINNING RUN N.70°57'18"E., 519 FEET MORE OR LESS TO A POINT ON THE SOUTHWESTERLY WATERS EDGE OF LAKE HARRIS AND A POINT HEREBY DESIGNATED AS POINT "A", RETURN TO THE POINT OF BEGINNING AND RUN N.89°52'31"E., 708.81 FEET TO AN IRON PIN LABELED LB7514; THENCE CONTINUE N.89°52'31"E., 30 FEET MORE OR LESS TO A POINT ON THE SOUTHWESTERLY WATERS EDGE OF LAKE HARRIS; THENCE NORTHWESTERLY ALONG AND WITH SAID SOUTHWESTERLY WATERS EDGE OF LAKE HARRIS TO INTERSECT THE AFOREMENTIONED POINT "A".

SHEET LIST INDEX

SUBMITTAL LOG

DATE	SUBMITTAL	BY

Digitally signed by David A Stokes
Date: 2024.11.07 13:51:32 -05'00'

This item has been electronically signed and sealed by David Ashley Stokes, P.E. using a digital signature and date. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

DAVID ASHLEY STOKES LICENSE NO. 66527 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been digitally signed and sealed by David Ashley Stokes, PE on the date adjacent to the seal.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

MADDEN
MOORHEAD & STOKES, LLC
CIVIL ENGINEERS

431 E. Horatio Avenue, Suite 260
Maitland, Florida 32751
(407) 629-8330
CA# 0007723

PREPARED FOR:

ENGINEER

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(407) 629-8330
dstokes@madden-eng.com

SURVEYOR

HAMILTON ENGINEERING AND SURVEYING, LLC
ATTN: AARON MURPHY, PSM
3409 W LEMON STREET
TAMPA, FLORIDA 33609
(813) 250-3535
AaronM@hamiltonengineering.us

OWNER/DEVELOPER

READER & PARTNERS, LLC
ATTN: DEAN BARBERREE, PRESIDENT
5850 TG LEE BOULEVARD, SUITE 200
ORLANDO, FL 32822
P: (407) 856-4899
dean@readercommunities.com

READER COMMUNITIES

NOT FOR CONSTRUCTION

ZONING

PLANNED UNIT DEVELOPMENT

FUTURE LAND USE

VMU - VILLAGE MIXED USE
CON- CONSERVATION

AGENCIES TO BE NOTIFIED / UTILITY PROVIDERS

HOWEY IN THE HILLS
101 N. PALM AVENUE
HOWEY-IN-THE-HILLS, FL 34737
P: (352) 324-2290

WATER & WASTE WATER
HOWEY- IN-THE-HILLS
101 N. PALM AVENUE
HOWEY-IN-THE-HILLS, FL 34737
P: (352) 540-4368

SJRWMD
2501 S. BINION ROAD
APOPKA, FL 32703
P: (407) 659-4821

DUKE ENERGY
WILLIAM COPPINGER
150 PROGRESS ENERGY WAY
LONGWOOD, FL 32750

QUANTUM
JOSTIN BURBIDGE
P: (941) 815-6317

CABLE- COMCAST
THOMAS OSEBOLD

Sunshine 811

Call 811 or visit sunshine811.com two full business days before digging to have buried facilities located and marked.

Check positive response codes before you dig!

LAKE HILLS MAIN BLVD. & MASS GRADING - CONSTRUCTION PLANS
JOB No. 23019

GENERAL NOTES

1. ALL CONSTRUCTION WORK SHALL BE IN ACCORDANCE WITH THE LATEST LOCAL AGENCY DETAILS, THE FDOT "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" INCLUDING ALL SUPPLEMENTS THERETO, AND THE FDOT "STANDARD PLANS", WHICHEVER IS MORE STRINGENT.

2. ALL FDOT DESIGN INDICES ARE HEREBY INCORPORATED AS PLAN REFERENCES HEREIN. CONTRACTOR IS RESPONSIBLE FOR OBTAINING COMPLETE COPIES OF ALL APPLICABLE INDEX DRAWINGS AND CONSTRUCTING ALL WORKS IN CONFORMANCE WITH THE FDOT STANDARD PLANS, LATEST EDITION.

3. THE LOCATIONS OF EXISTING UTILITIES SUCH AS WATER MAINS, SEWER MAINS, GAS LINES, ETC., AS SHOWN ON THE PLANS, WITH THE EXCEPTION OF THE LOCATIONS OF EXISTING UTILITIES AT ALL POINTS OF CONNECTION TO AND AT ALL AREAS OF CONFLICT WITH UTILITY PROVIDER MAINS, WHICH HAVE BEEN FIELD VERIFIED, HAVE BEEN DETERMINED FROM THE BEST AVAILABLE INFORMATION AND ARE PROVIDED FOR THE CONVENIENCE OF THE CONTRACTOR. HOWEVER, THE ENGINEER AND OWNER DO NOT ASSUME RESPONSIBILITY FOR THE SIZES AND LOCATIONS SHOWN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFICATION OF THE SIZE AND LOCATION OF ALL EXISTING UTILITIES SHOWN AND NOT SHOWN ON THESE PLANS.

4. CONTRACTOR, INCLUDING ANY SUB-CONTRACTORS, IS RESPONSIBLE TO ENSURE THAT ALL REQUIRED PERMITS ARE OBTAINED AND ARE IN HAND AT THE JOB SITE PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. CONTRACTOR SHALL ABIDE BY ALL CONDITIONS CONTAINED THEREIN. PERMITS INCLUDED (BUT NOT NECESSARILY LIMITED TO) ARE:
   - ACOE NATIONWIDE OR INDIVIDUAL DREDGE AND FILL
   - FDEP WATER DISTRIBUTION
   - FDEP SANITARY SEWER COLLECTION AND TRANSMISSION
   - FDEP REUSE
   - FDEP DREDGE AND FILL
   - FDEP NPDES GENERIC PERMIT FOR STORM WATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES
   - FDOT DRIVEWAY CONNECTION
   - FDOT UTILITY
   - FDOT STORMWATER DISCHARGE CONNECTION
   - FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION PERMIT FOR IMPACTS TO PROTECTED SPECIES
   - LOCAL RIGHT OF WAY USE
   - LOCAL UNDERGROUND UTILITIES
   - WATER MANAGEMENT DISTRICT CONSUMPTIVE USE FOR CONSTRUCTION DEWATERING (CUP)
   - WATER MANAGEMENT DISTRICT ENVIRONMENTAL RESOURCE PERMIT (ERP)

5. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL SETBACKS AND EASEMENTS BEFORE BEGINNING CONSTRUCTION.

6. BENCHMARKS AND OTHER REFERENCE POINTS SHALL BE CAREFULLY MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD. IF DISTURBED OR DESTROYED, THESE POINTS SHALL BE REPLACED BY A LICENSED FLORIDA PROFESSIONAL LAND SURVEYOR (P.L.S.) AT CONTRACTOR'S EXPENSE.

7. DIFFERING SITE CONDITIONS FROM THAT WHICH IS REPRESENTED HEREON, WHETHER ABOVE, ON, OR BELOW THE SURFACE OF THE GROUND, SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ENGINEER AND OWNER IN WRITING. NO CLAIM FOR EXPENSES INCURRED BY THE CONTRACTOR DUE TO DIFFERING SITE CONDITIONS WILL BE ALLOWED IF CONTRACTOR FAILS TO PROVIDE THE REQUIRED WRITTEN NOTIFICATION OF SUCH CONDITIONS TO THE ENGINEER AND OWNER.

8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEMOLITION AND REMOVAL OF ALL EXISTING STRUCTURES, ETC., UNLESS OTHERWISE NOTED. ALL SOIL STRIPPINGS AND ANY UNSUITABLE MATERIAL SHALL BE REMOVED FROM THE SITE AND DISPOSED OF BY THE CONTRACTOR UNLESS OTHERWISE DIRECTED BY THE OWNER.

9. THE CONTRACTOR SHALL PROTECT ALL EXISTING STRUCTURES AND UTILITIES NOTED TO REMAIN FROM DAMAGE OR DISPLACEMENT DURING CONSTRUCTION. IN THE EVENT OBSTRUCTIONS ARE ENCOUNTERED, THE CONTRACTOR SHALL PROMPTLY NOTIFY THE ENGINEER AND THE UTILITY COMPANY. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL COSTS INCURRED TO REPAIR DAMAGE OR CORRECT DISPLACEMENT.

10. CONTRACTOR SHALL BE EXTREMELY CAUTIOUS WHEN WORKING NEAR TREES WHICH ARE TO BE SAVED, WHETHER SHOWN IN THE PLANS OR DESIGNATED IN THE FIELD. CONTRACTOR SHALL BECOME FAMILIAR WITH AND CONFORM WITH ALL TREE PROTECTION/PRESERVATION PROVISIONS OF THE PRELIMINARY SUBDIVISION PLAN / DEVELOPMENT PLAN AND LOCAL GOVERNMENT. CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACEMENT AND MITIGATION COSTS FOR ANY TREES REMOVED THAT WERE DESIGNATED TO BE PRESERVED.

11. WHEN DETAILS ARE PROVIDED, CONTRACTOR SHALL CONSTRUCT JOB PER SPECIFIC DETAILS, AND NOT BY SCALING FROM THESE PLANS.

12. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE ANY REQUIRED TRAFFIC CONTROL PLANS. ALL WORK SHALL BE EXECUTED UNDER THE ESTABLISHED PLAN AND FDOT, AND LOCAL AGENCY APPROVED PROCEDURES.

13. THE CONTRACTOR SHALL RESTORE OFF SITE CONSTRUCTION AREAS TO EQUAL OR BETTER CONDITION THAN EXISTED PRIOR TO COMMENCEMENT OF CONSTRUCTION.

14. AS-BUILT DRAWINGS SHALL BE KEPT BY THE CONTRACTOR AND SUBMITTED TO THE PROJECT ENGINEER UPON PROJECT COMPLETION.

15. CONTRACTOR SHALL COMPLY WITH ALL LOCAL AGENCY REQUIREMENTS FOR INSPECTION AND TESTING.

16. ALL NEW UTILITIES AND UPGRADED UTILITIES PROVIDED TO OR ON THE SITE MUST BE INSTALLED UNDERGROUND.

17. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE RESTORATION OF ANY TRAFFIC SIGNAL EQUIPMENT INCLUDING BUT NOT LIMITED TO FIBER LOOP SENSORS PULL BOXES, CONDUIT TRAFFIC SIGNALS, AND CABINETS. ANY ITEMS DAMAGED BY THE CONTRACTOR WILL BE RESTORED TO THEIR ORIGINAL CONDITIONS UNLESS OTHERWISE AGREED UPON BY THE COUNTY TRAFFIC ENGINEER.

18. ALL CONSTRUCTION MUST BE IN ACCORDANCE WITH UTILITY PROVIDER'S STANDARDS AND CONSTRUCTION SPECIFICATIONS, LATEST EDITION.

19. CONTRACTOR SHALL NOTIFY ALL APPROPRIATE UTILITY COMPANIES OF PROPOSED START OF WORK IN ACCORDANCE WITH THEIR STANDARD REQUIREMENTS; INCLUDING BUT NOT LIMITED TO, WATER, RECLAIMED WATER, SEWER, POWER, TELEPHONE, GAS AND CABLE TV COMPANIES.

20. PRIOR TO COMMENCEMENT, CONTRACTOR SHALL PROVIDE ENGINEER WITH CONSTRUCTION SCHEDULE FOR VARIOUS SITE WORK ELEMENTS SO THAT PERIODIC SITE VISITS MAY BE COORDINATED TO ENSURE TIMELY CERTIFICATION OF COMPLETION TO AGENCIES AND AVOID DELAYS IN ISSUANCE OF CERTIFICATES OF OCCUPANCY/COMPLETION.

21. ALL RECOMMENDATIONS AND REQUIREMENTS OF INSPECTION PERSONNEL OTHER THAN OWNER/OWNER'S REPRESENTATIVE SHALL BE REPORTED TO ENGINEER/OWNER/OWNER'S REPRESENTATIVE PRIOR TO IMPLEMENTATION. COMPENSATION WILL NOT BE ALLOWED FOR WORK THAT IS NOT AUTHORIZED BY ENGINEER/OWNER/OWNER'S REPRESENTATIVE.

22. CONTRACTOR SHALL CONFIRM COMPATIBILITY OF PIPE SLOPES AND INVERTS DURING SHOP DRAWING AND MATERIALS ORDERING PHASE OF PROJECT AND ADVISE ENGINEER OF ANY DISCREPANCIES.

23. NO EXISTING MATERIAL SHALL BE USED IN NEW CONSTRUCTION UNLESS APPROVED DURING THE SHOP DRAWING APPROVAL PROCESS BY ENGINEER/OWNER/OWNER'S REPRESENTATIVE IN WRITING.

24. CONTRACTOR SHALL STAKE ALL IMPROVEMENTS USING THE PLAT(S), ROAD CENTERLINE GEOMETRY, AND BUILDING COORDINATES PROVIDED IN THESE PLANS. CONTRACTOR SHALL CONFIRM WITH THE ENGINEER THAT THE PLAT IS CURRENT PRIOR TO CONSTRUCTION.

25. CONTRACTOR SHALL CONFIRM THE BUILDING DIMENSIONS SHOWN HEREIN WITH THOSE IN THE FINAL ARCHITECTURAL DRAWINGS PRIOR TO STAKEOUT. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO COMPLETELY STAKE AND CHECK ALL IMPROVEMENTS TO ENSURE ADEQUATE POSITIONING, BOTH HORIZONTAL AND VERTICAL, INCLUDING MINIMUM BUILDING SETBACKS PRIOR TO THE INSTALLATION OF ANY IMPROVEMENT.

PAVING AND DRAINAGE

1. THE CONTRACTOR SHALL CONSTRUCT PAVEMENT IN ACCORDANCE WITH TYPICAL PAVEMENT SECTIONS AND LOCAL AGENCY SPECIFICATIONS. THE FINISHED PAVEMENT GRADES SHALL CONFORM TO THOSE SPECIFIED ON THE GRADING PLAN.

2. FLORIDA LAW (F.S. 553.851) PROTECTION OF UNDERGROUND PIPELINES MANDATES THAT "NO EXCAVATOR SHALL COMMENCE OR PERFORM ANY EXCAVATION IN ANY PUBLIC OR PRIVATE STREET, ALLEY, RIGHT-OF-WAY DEDICATED TO THE PUBLIC USE, OR GAS UTILITY EASEMENT WITHOUT FIRST OBTAINING INFORMATION CONCERNING THE POSSIBLE LOCATION OF GAS PIPELINES IN THE AREA OF THE PROPOSED EXCAVATION." THIS INCLUDES ANY OPERATION UTILIZING HAND TOOLS OR POWER TOOLS WHICH MOVES OR REMOVES ANY STRUCTURE, EARTH, ROCK, OR OTHER MASS OF MATERIAL BY SUCH METHODS AS DIGGING, BACKFILLING, DEMOLITION, GRADING, DITCHING, DRILLING, BORING AND CABLE PLOWING. THE EXCAVATOR MUST NOTIFY THE GAS UTILITY A MINIMUM OF 48 HOURS AND A MAXIMUM OF 5 DAYS PRIOR TO EXCAVATING (EXCLUDING SATURDAYS, SUNDAYS, AND LEGAL HOLIDAYS).

3. EXCAVATION, PAVING, AND STORM SEWER WORK SHALL BE DONE IN ACCORDANCE WITH FDOT "STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION", LATEST EDITION, AND LOCAL AGENCY SPECIFICATIONS.

4. UNLESS OTHERWISE NOTED, GRADE TO MEET EXISTING ELEVATIONS AT PROPERTY LINES. CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE OF THE SITE TO THE RETENTION PONDS AS SHOWN BY PROPOSED GRADES AND FLOW ARROWS.

5. DURING CONSTRUCTION, THE CONTRACTOR SHALL PROVIDE ADEQUATE DRAINAGE AND PROPER SOIL EROSION CONTROL MEASURES FOR PROTECTION OF ALL DRAINAGE AND SEWER STRUCTURES AND AT ALL ADJACENT LANDS AND ROADS.

6. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY AND ALL GEOTECHNICAL REPORTS PREPARED FOR THE SITE. GEOTECHNICAL RECOMMENDATIONS ARE NOT THE RESPONSIBILITY OF ENGINEER. ENGINEER HAS RELIED ON THE GEOTECHNICAL REPORT(S) IN PREPARATION OF THE DRAWINGS. ANY CONFLICT BETWEEN INFORMATION WITHIN THE REPORT AND THESE DRAWINGS SHALL BE REPORTED TO ENGINEER/OWNER /OWNER'S REPRESENTATIVE. ENGINEER ASSUMES NO RESPONSIBILITY FOR THE CORRECTNESS, COMPLETENESS, OR ACCURACY OF GEOTECHNICAL INFORMATION.

7. THE SITE SHALL BE CLEARED OF ALL TREES EXCEPT THOSE WHICH ARE DESIGNATED TO BE SAVED OR RELOCATED. BEFORE CONSTRUCTION, THE CONTRACTOR SHALL MEET AT THE SITE WITH THE OWNER. AT THIS TIME, ANY TREES TO BE SAVED SHALL BE POINTED OUT AND TAGGED. THESE TREES SHALL BE PROTECTED FROM DAMAGE.

8. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE SUPERVISING ENGINEER IF A PAVEMENT OR FOUNDATION STAKE IS DISTURBED.

9. THE CONTRACTOR SHALL INSTALL DROP CURBS AND HANDICAP RAMPS AT ALL INTERSECTIONS OF THE SIDEWALK WITH THE PROPOSED PAVEMENT, UNLESS OTHERWISE SPECIFIED.

10. FOR HORIZONTAL AND VERTICAL CLEARANCES BETWEEN STORM PIPES AND WATER MAINS/SERVICES, SEE WATER NOTES ON THIS SHEET AND FDEP SEPARATION TABLE ON UTILITY PLAN.

11. ALL PUBLIC STORM PIPE MATERIALS SHALL BE REINFORCED CONCRETE PIPE (RCP) ASTM C-76 CLASS III, UNLESS OTHERWISE SPECIFIED. LIFTING HOLES ARE PROHIBITED.

12. ALL PRIVATE STORM PIPE MATERIALS SHALL BE AS FOLLOWS:
    - 12.1. DIAMETERS LESS THAN OR EQUAL TO 12-INCH SHALL BE HIGH DENSITY POLYETHYLENE (HDPE) PIPE
    - 12.2. DIAMETERS GREATER THAN OR EQUAL TO 15-INCH SHALL BE POLYPROPYLENE (PP) PIPE.

13. MINIMUM COVER OVER ALL PIPE SHALL BE 36-INCHES FROM TOP OF PIPE TO FINISHED GRADE, UNLESS OTHERWISE NOTED.

14. ALL STORM SYSTEM MANHOLE AND INLET STRUCTURES SHALL BE PRECAST CONCRETE.

15. THE CONTRACTOR SHALL USE CONCRETE WITH A MINIMUM 28 DAY STRENGTH OF 3,000 P.S.I..

16. ALL SIDEWALK WIDTHS SHALL BE AS NOTED ON THE SITE PLAN AND SHALL HAVE 1-INCH DEEP CONTRACTION JOINTS EVERY 5-FEET AND AN EXPANSION JOINT EVERY 20-FEET (MINIMUM). MAXIMUM SIDEWALK CROSS SLOPES SHALL BE 2.00% AND MAXIMUM SIDEWALK RUNNING SLOPES SHALL BE 5.00% EXCEPT AT RAMP LOCATIONS. MAXIMUM RAMP SLOPES SHALL BE 8.33%.

17. PROVIDE FDOT TYPE III SILT FENCE ALONG THE PROPERTY LINES AND PHASE LINES AS WELL AS ANY CONSTRUCTION WITHIN THE OTHER PHASES THAT IS DEEMED NECESSARY.

18. ALL TEST REPORTS GENERATED BY A TESTING FIRM ARE TO HAVE COPIES SENT DIRECTLY TO THE LOCAL AGENCY AS SOON AS THEY ARE GENERATED. CLEARANCE FROM THE LOCAL AGENCY SHALL BE RECEIVED PRIOR TO PAVING.

19. THE BASE COURSE SHALL NOT BE CONSTRUCTED UNTIL AFTER SUBGRADE CONSTRUCTION HAS BEEN COMPLETED AND REQUIRED SUBGRADE TEST RESULTS HAVE BEEN SUBMITTED TO AND APPROVED BY THE LOCAL AGENCY'S ENGINEER.

20. THE FINISHED BASE COURSE SHALL BE PRIMED WITHOUT DELAY, PROTECTED FROM HEAVY TRAFFIC, AND CONTINUOUSLY MAINTAINED FREE OF DAMAGE UNTIL THE WEARING SURFACE IS APPLIED. ALL BAD AREAS SHALL BE CUT OUT AND REPLACED PRIOR TO APPLYING WEARING SURFACE.

21. ASSUMING ACCEPTABLE CURING, THE WEARING SURFACE SHALL BE APPLIED NO SOONER THAN SEVEN (7) DAYS AND NO LATER THAN THIRTY (30) DAYS AFTER BASE COMPLETION.

22. ALL CONCRETE PIPE JOINTS SHALL BE WRAPPED IN FILTER FABRIC.

23. ROADWAY MARKING, STRIPING, SIGNS, AND OTHER TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS" (MUTCD), INCLUDING SUBSEQUENT REVISIONS AND ADDENDUMS, AS PUBLISHED BY THE USDOT FEDERAL HIGHWAY ADMINISTRATION AS WELL AS FDOT AND LOCAL AGENCY STANDARDS AND SPECIFICATIONS.

24. ALL OFFSITE ROADWAY MARKING/STRIPING MATERIAL SHALL BE THERMOPLASTIC UNLESS OTHERWISE SPECIFIED.

25. ALL ONSITE ROADWAY MARKING/STRIPING MATERIAL SHALL BE PAINT UNLESS OTHERWISE SPECIFIED.

26. REGULATORY SIGNS AND MARKINGS SHALL BE IN PLACE PRIOR TO FINAL INSPECTION OF PAVING AND DRAINAGE IMPROVEMENTS.

27. PAVEMENT RETURN RADII SHALL BE MEASURED TO THE EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.

28. POND SLOPES AND BERMS SHALL BE SODDED TO TWO (2) FEET BELOW THE NORMAL WATER LINE (N.W.L.). IN THE CASE OF DRY BOTTOM PONDS, THE BOTTOM WILL BE SEEDED AND MULCHED UNLESS OTHERWISE SPECIFIED.

29. ALL PRECAST DRAINAGE STRUCTURES TO HAVE STEEL FRAME. ALL STRUCTURES IN PAVED AREAS TO HAVE STEEL RECTILINEAR GRATES WITH H-20 LOADING.

30. CONTRACTOR SHALL NOT COMPACT, STABILIZE, OR CONSTRUCT BASE COURSE WITHIN LANDSCAPE ISLANDS, TRACTS OR MEDIANS. WHERE SUCH TREATMENT DOES OCCUR, IT SHALL BE REMOVED AND REPLACED WITH SUITABLE PLANTING SOILS ACCEPTABLE TO LANDSCAPE ARCHITECT.

31. YARD DRAINS SHALL BE NYLOPLAST INLINE DRAINS AND DRAIN BASINS, OR APPROVED EQUAL, WITH CAST IRON GRATES AND WATERTIGHT ADAPTER CONNECTIONS. DOMED GRATES SHALL BE PROVIDED IN NON-SODDED AREAS.

32. ALL FIRE HYDRANT LOCATIONS SHALL BE MARKED BY PLACING BLUE REFLECTIVE PAVEMENT MARKERS IN THE CENTER OF THE NEAREST TRAVEL LANE.

33. MINIMUM LONGITUDINAL SLOPE OF CURB SHALL BE 0.30% UNLESS SPECIFIED OTHERWISE.

PAVING AND DRAINAGE (CONTINUED)

34. FINISHED FLOOR ELEVATION IS TYPICALLY 8" INCHES ABOVE DESIGN FINISHED GRADE AT OUTSIDE PERIMETER OF BUILDINGS EXCEPT AT ENTRIES AND WHERE OTHERWISE SHOWN.

35. CONTRACTOR SHALL REMOVE ALL MUCK DEPOSITS IN CONSTRUCTION AREAS AND AREAS TO BE FILLED. SEE GEOTECHNICAL REPORT.

36. DRAINAGE MANHOLES AND INLETS (NOT INCLUDING CONTROL STRUCTURES) IN THE PLANS ARE IDENTIFIED BY TOP TYPE ONLY. CONTRACTOR SHALL PROVIDE STANDARD DITCH BOTTOM INLET TOPS AND TYPE 'J' OR 'P' STRUCTURE BOTTOMS, SIZED AS REQUIRED TO ACCOMMODATE PIPE SIZES AND ORIENTATIONS SHOWN. SHOP DRAWINGS SHALL BE SUBMITTED WHICH CLEARLY REPRESENT SUCH DATA.

37. CONTRACTOR SHALL STABILIZE AND PROTECT ALL END WALL, MITERED END SECTION, FLARED END SECTION, ETC. STRUCTURES THROUGHOUT THE PROJECT UNTIL THE BANK SLOPES OF THE RECEIVING WATER BODY ARE STABILIZED AND ACCEPTED BY OWNER.

SANITARY SEWER

1. ROOF DRAINS, FOUNDATION DRAINS OR OTHER STORM WATER CONNECTIONS TO THE SANITARY SEWER ARE PROHIBITED.

2. GRAVITY SEWER PIPE SHALL BE SDR35 PVC AND SHALL MEET ASTM D3034, UNLESS OTHERWISE SPECIFIED.

3. ALL SANITARY SERVICE LATERALS SHALL BE 6-INCH DIAMETER PVC AND SHALL END WITH A CLEAN OUT.

4. ALL SANITARY SEWER PIPE SHALL BE COLORED GREEN.

5. ALL SANITARY SEWER MANHOLES SHALL HAVE A MINIMUM DIAMETER OF 48-INCHES AND A MINIMUM ACCESS DIAMETER OF 22-INCHES.

6. MINIMUM COVER OVER ALL PIPE SHALL BE 36-INCHES FROM TOP OF PIPE TO FINISHED GRADE, UNLESS OTHERWISE NOTED.

7. FOR HORIZONTAL AND VERTICAL CLEARANCES BETWEEN SANITARY SEWER MAINS/ LATERALS AND WATER MAINS/SERVICES, SEE WATER NOTES ON THIS SHEET AND FDEP SEPARATION TABLE ON UTILITY PLAN.

8. WHERE SOIL REPORT INDICATES THE POSSIBILITY OF UNSUITABLE MATERIAL IN THE VICINITY OF SANITARY LINES, THE CONTRACTOR SHALL DETERMINE THE NATURE AND EXTENT OF THIS UNSUITABLE MATERIAL, PREPARE TRENCH, AND INSTALL THE SEWER LINE IN ACCORDANCE WITH ASTM D-2321. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE ENGINEER OF THIS UNSUITABLE MATERIAL.

9. THE CONTRACTOR SHALL BE REQUIRED TO PERFORM INFILTRATION OR EXFILTRATION TEST, WHICHEVER IS APPLICABLE. INFILTRATION SHALL NOT EXCEED 50 GALLONS PER DAY PER INCH OF DIAMETER PER MILE OF LENGTH, OR THE COMPUTED EQUIVALENT FOR SHORTER LENGTHS OF TIME. THE CONTRACTOR SHALL MEET ALL REQUIREMENTS, CODES, AND ORDINANCES OF THE WASTEWATER TRANSMISSION AUTHORITY INCLUDING ADVANCED NOTIFICATION PRIOR TO CONSTRUCTION AND TESTING.

10. MADDEN, MOORHEAD & STOKES, INC. SHALL BE NOTIFIED A MINIMUM OF FIVE (5) FULL WORKING DAYS PRIOR TO CONSTRUCTION AND TESTING OF THE SANITARY SEWER, PHONE (407)-629-8330.

11. THE CONTRACTOR SHALL SUPPLY COMPLETE "AS BUILT" INFORMATION RELATIVE TO INVERTS, RIM ELEVATIONS, LOCATION OF MANHOLES AND LENGTHS OF PIPE. LATERALS SHALL BE LOCATED FROM THE CENTERLINE OF THE NEAREST DOWNSTREAM MANHOLE. THE INFORMATION SHALL BE SUBMITTED ON LEGIBLY MARKED-UP PRINTS TO THE ENGINEER WITHIN TWO (2) WEEKS OF COMPLETION OF SEWER CONSTRUCTION.

12. CONTRACTOR SHALL RECEIVE SEWER CERTIFICATION PRIOR TO PLACEMENT OF BASE COURSE.

13. MINIMUM SLOPE ON ALL SANITARY SEWER GRAVITY MAINS SHALL BE IN ACCORDANCE WITH UTILITY PROVIDER'S STANDARDS AND CONSTRUCTION SPECIFICATIONS, LATEST EDITION.

14. ALL SANITARY SERVICE LOCATIONS SHALL BE MARKED BY CUTTING AN "S" INTO THE CURB.

15. MARK RESIDENTIAL LATERALS WITH 6-FOOT HIGH PIECE OF 2"x4" PLANK PAINTED GREEN WITH LOT NUMBER CLEARLY MARKED AND AN 'S' IMPRESSED IN THE CURB.

16. AIR RELEASE VALVES SHALL BE REQUIRED AT ALL HIGH POINTS ALONG THE FORCE MAIN.

17. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT AN EVEN TRANSITION IS MAINTAINED WHERE ASPHALT PAVING ABUTS MANHOLE/VALVE COVERS IN PAVED AREAS. AT EACH OF THESE LOCATIONS THE CONTRACTOR SHALL POUR AN 8-INCH THICK CONCRETE APRON AROUND THE MANHOLE/VALVE COVER A MINIMUM OF 4'x4' AT MANHOLES, AND 2'x2' AT VALVE COVERS LEVEL WITH THE FINAL LIFT OF ASPHALT.

18. PIPE LENGTHS SHOWN REPRESENT SCALED DISTANCES BETWEEN MANHOLE CENTERLINE.

19. INVERTS OF SANITARY SERVICE LATERALS AT THEIR CONNECTION TO SANITARY MANHOLES SHALL BE NO MORE THAN ONE (1) FOOT ABOVE THE MANHOLE INVERT.

20. PRIOR TO PAVING, CONTRACTOR SHALL VERIFY THE AS-BUILT SANITARY SEWER PIPE SLOPES. MINIMUM SLOPES SHALL BE IN ACCORDANCE WITH THE GREATER OF FDEP OR THE UTILITY PROVIDER'S MINIMUM CRITERIA. ANY LINE NOT MEETING MINIMUM SLOPES SHALL BE RELAYED BY CONTRACTOR TO MEET THE MINIMUM SLOPE REQUIREMENT AT NO ADDITIONAL COST.

21. MANHOLE LIFT HOLES AND GRADE ADJUSTMENT RINGS SHALL BE SEALED WITH NON-SHRINKING MORTAR OR OTHER APPROPRIATE MATERIAL.

22. INLET AND OUTLET PIPES SHALL BE JOINED TO THE MANHOLE WITH A GASKETED FLEXIBLE WATER-TIGHT CONNECTION OR ANOTHER WATER-TIGHT CONNECTION ARRANGEMENT THAT ALLOWS DIFFERENTIAL SETTLEMENT OF THE PIPE AND MANHOLE WALL.

23. WATER-TIGHT MANHOLE COVERS SHALL BE USED WHEREVER THE MANHOLE TOPS MAY BE FLOODED BY STREET RUNOFF OF HIGH WATER.

WATER

1. ALL MATERIALS AND CONSTRUCTION REQUIREMENTS FOR THE FIRE SERVICE, WATER LINES, CHECK VALVES, BACKFLOW PREVENTERS, GATE VALVES, ETC., SHALL BE IN ACCORDANCE WITH LOCAL AGENCY STANDARD DETAILS AND CONSTRUCTION SPECIFICATIONS.

2. ALL CONSTRUCTION AND MATERIALS SHALL BE IN COMPLIANCE WITH AWWA STANDARDS AND IN ACCORDANCE WITH LOCAL AGENCY STANDARDS.

3. ALL PUBLIC WATER SYSTEM COMPONENTS, EXCLUDING FIRE HYDRANTS, THAT WILL BE INSTALLED UNDER THIS PROJECT AND THAT WILL COME INTO CONTACT WITH DRINKING WATER WILL CONFORM TO NSF INTERNATIONAL STANDARD 61 AND WILL BE MARKED WITH THE NSF SEAL OF APPROVAL.

4. CONTRACTOR SHALL VERIFY SIZE AND TYPE OF EXISTING MAIN PRIOR TO ORDERING TAPPING MATERIALS FOR TIE-INS.

5. SITE CONTRACTOR SHALL COORDINATE AND VERIFY ALL UTILITY SERVICES WITH FINAL ARCHITECTURAL DRAWINGS AND BUILDING CONTRACTOR.

6. SITE UTILITY WORK SHALL TERMINATE 5-FEET FROM BUILDINGS UNLESS OTHERWISE STATED.

7. MINIMUM COVER OVER ALL PIPE SHALL BE 36-INCHES FROM TOP OF PIPE TO FINISHED GRADE, UNLESS OTHERWISE NOTED.

8. THE WATER MAIN SHALL BE LOCATED ABOVE THE STORMWATER AND SANITARY MAINS AT CONFLICTS, WHERE POSSIBLE.

WATER (CONTINUED)

9. VERTICAL SEPARATION BETWEEN UNDERGROUND POTABLE WATER MAINS AND SANITARY OR STORM SEWERS, WASTEWATER OR STORMWATER FORCE MAINS, AND RECLAIMED WATER PIPELINES:
    - 9.1. NEW OR RELOCATED, UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED GRAVITY- OR VACUUM-TYPE SANITARY SEWER OR STORM SEWER SHALL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST 12 INCHES ABOVE OR BELOW THE OUTSIDE OF THE OTHER PIPELINE. HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE OTHER PIPELINE.
    - 9.2. NEW OR RELOCATED, UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED PRESSURE-TYPE SANITARY SEWER, WASTEWATER OR STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER SHALL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST 12 INCHES ABOVE OR BELOW THE OUTSIDE OF THE OTHER PIPELINE. HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE OTHER PIPELINE.

10. HORIZONTAL SEPARATION BETWEEN UNDERGROUND WATER MAINS AND SANITARY OR STORM SEWERS, WASTEWATER OR STORMWATER FORCE MAINS, RECLAIMED WATER PIPELINES, AND ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEMS:
    - 10.1. NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST THREE FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED STORM SEWER, STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.
    - 10.2. NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST THREE FEET, AND PREFERABLY TEN FEET, BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED VACUUM-TYPE SANITARY SEWER.
    - 10.3. NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST SIX FEET, AND PREFERABLY TEN FEET, BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED GRAVITY- OR PRESSURE-TYPE SANITARY SEWER, WASTEWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C. THE MINIMUM HORIZONTAL SEPARATION DISTANCE BETWEEN WATER MAINS AND GRAVITY-TYPE SANITARY SEWERS SHALL BE REDUCED TO THREE FEET WHERE THE BOTTOM OF THE WATER MAIN IS LAID AT LEAST SIX INCHES ABOVE THE TOP OF THE SEWER.
    - 10.4. NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST TEN FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND ALL PARTS OF ANY EXISTING OR PROPOSED "ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEM" AS DEFINED IN SECTION 381.0065(2), F.S., AND RULE 64E-6.002, F.A.C.

11. AT THE UTILITY CROSSINGS DESCRIBED IN NOTES 8 AND 9 ABOVE, ONE FULL LENGTH OF WATER MAIN PIPE SHALL BE CENTERED ABOVE OR BELOW THE OTHER PIPELINE SO THE WATER MAIN JOINTS WILL BE AS FAR AS POSSIBLE FROM THE OTHER PIPELINE. ALTERNATIVELY, AT SUCH CROSSING, THE PIPES SHALL BE ARRANGED SO THAT ALL WATER MAIN JOINTS ARE AT LEAST THREE FEET FROM ALL JOINTS IN VACUUM-TYPE SANITARY SEWERS, STORM SEWERS, STORMWATER FORCE MAINS, OR PIPELINES CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C., AND AT LEAST SIX FEET FROM ALL JOINTS IN GRAVITY-OR PRESSURE-TYPE SANITARY SEWERS, WASTEWATER FORCE MAINS, OR PIPELINES CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.

12. WATER LINES 2-INCHES, OR LESS, IN DIAMETER SHALL BE POLYETHYLENE TUBING.

13. WATER LINES 4-INCH TO 12-INCH IN DIAMETER SHALL BE NSF LOGO PVC PIPE CONFORMING TO AWWA C-900 AND BE DR-18.

14. ALL FITTINGS SHALL BE DUCTILE IRON (D.I.) OR GRAY IRON MECHANICAL JOINTS WITH A MINIMUM PRESSURE RATING OF 250 P.S.I. CONFORMING TO ANSI A-21.10 / AWWA C-110, OR D.I. COMPACT FITTINGS FOR DIAMETERS 4-INCH TO 12-INCH CONFORMING TO ANSI A-21.53 / AWWA C-153.

15. FROM THE POINT OF SERVICE (P.O.S.) FORWARD AS DESIGNATED BY F.S. 633, FIRE SUPPLY PIPE SHALL BE DR-14 AND TESTED AT 200 PSI FOR TWO HOURS.

16. GATE VALVES SHALL CONFORM TO AWWA C-509-87, WITH WRENCH NUT EXTENSION STEMS AND OTHER APPURTENANCES AS REQUIRED AND SHALL BE IRON BODY, FULL BRONZE MOUNTED, DOUBLE DISK, PARALLEL SEAT, NON-RISING STEM VALVES WITH O-RING SEALS AND END CONNECTIONS AS CALLED FOR ON THE PLANS. ALL TEES, CAPS, PLUGS, BENDS, VALVES, ETC., SHALL BE PROVIDED WITH GRIP RING RESTRAINTS.

17. ALL NON-METALLIC WATER MAINS SHALL BE INSTALLED WITH A CONTINUOUS, INSULATED 10 GAUGE COPPER WIRE INSTALLED DIRECTLY ON TOP OF THE PIPE FOR LOCATION PURPOSES. IN ADDITION, ALL PVC WATER MAINS SHALL BE A SOLID BLUE COLOR. ALL LETTERING SHALL APPEAR LEGIBLY ON PIPE AND SHALL RUN THE ENTIRE LENGTH OF THE PIPE. LETTERING SHALL READ AS IS ACCEPTABLE FOR THE INTENDED USE.

18. SERVICE MAINS FOR FIRE HYDRANTS SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 24, LATEST EDITION.

19. NEW FIRE HYDRANTS SHALL BE INSTALLED SO THAT 5-1/4" INCH PORT IS FACING THE ROADWAY BY WHICH IT IS ACCESSED. HYDRANTS SHALL BE POSITIONED NOT MORE THAN 5 FEET AWAY FROM THE CURB OR BERM OF THE ROADWAY.

20. HYDROSTATIC TESTING AND THE DISINFECTION OF THE WATER DISTRIBUTION SYSTEM SHALL BE DONE IN ACCORDANCE WITH AWWA STANDARDS. HYDROSTATIC TESTING TO BE DONE IN ACCORDANCE WITH AWWA C-600 FOR DUCTILE IRON PIPE AND C-605 FOR PVC PIPE. DISINFECTING AND BACTERIOLOGICAL EVALUATION TO BE DONE IN ACCORDANCE WITH AWWA C-651 AND RULE 62-555.340 F.A.C.

21. THE CONTRACTOR SHALL SUPPLY COMPLETE AS-BUILT INFORMATION RELATIVE TO LOCATION AND ELEVATION OF ALL WATER LINES AND SERVICES. THE INFORMATION SHALL BE SUBMITTED ON LEGIBLY MARKED-UP PRINTS TO THE ENGINEER WITHIN TWO (2) WEEKS OF THE COMPLETION OF THE WATER LINE CONSTRUCTION.

22. CONTRACTOR SHALL COORDINATE ALL UTILITIES SYSTEMS TEST SCHEDULING TO ALLOW ENGINEER'S ATTENDANCE PROVIDING MINIMUM NOTICE OF FIVE (5) WORKING DAYS. CONTRACTOR'S FAILURE TO PROPERLY NOTIFY ENGINEER MAY RESULT IN RETESTING AT ENGINEER'S OPTION AND AT CONTRACTOR'S EXPENSE.

23. NEW HYDRANTS SHALL BE TESTED AND IN PROPER WORKING ORDER WITH DOCUMENTATION SUPPLIED TO THE FIRE MARSHAL PRIOR TO ANY COMBUSTIBLE CONSTRUCTION. (I.E. FIRE FLOW TEST SHALL BE PERFORMED)

24. DEFLECTIONS AT PIPE JOINTS SHALL NOT EXCEED THE LESSOR OF THOSE RECOMMENDED BY THE PIPE MANUFACTURER OR UTILITY PROVIDER'S CONSTRUCTION SPECIFICATIONS.

25. ALL PIPE AND PIPE FITTINGS INSTALLED UNDER THIS PROJECT SHALL BE COLOR CODED IN ACCORDANCE WITH SUB PARAGRAPH 62-555.320(21)(B)3, F.A.C. USING BLUE AS A PREDOMINANT COLOR. ALL DUCTILE IRON WATER MAINS SHALL BE MARKED WITH A CONTINUOUS STRIPE LOCATED WITHIN THE TOP 90 DEGREES OF THE PIPE. SAID STRIPE SHALL BE A MINIMUM 2 INCHES IN WIDTH AND SHALL BE BLUE IN COLOR. BACKFILL SHALL NOT BE PLACED FOR 30 MINUTES FOLLOWING PAINT APPLICATION. FOR PIPE WITH AN INTERNAL DIAMETER OF 24" OR GREATER, TAPE OR PAINT SHALL BE APPLIED IN CONTINUOUS LINES A LONG EACH SIDE OF THE PIPE AS WELL AS ALONG THE TOP OF THE PIPE.

26. MARK RESIDENTIAL SERVICES WITH 6-FOOT HIGH PIECE OF 2"x4" PLANK PAINTED BLUE WITH LOT NUMBER CLEARLY MARKED AND A 'W' IMPRESSED IN THE CURB. IT IS THE INTENT THAT EVERY LOT IS PROVIDED WITH A WATER SERVICE; THEREFORE IT IS THE CONTRACTOR'S RESPONSIBILITY TO INSTALL A WATER SERVICE TO EACH LOT.

WATER (CONTINUED)

27. PIPE MATERIALS:
    PVC MAINS - ALL PIPE, PIPE FITTINGS, PIPE JOINT PACKING AND JOINTING MATERIALS, VALVES, FIRE HYDRANTS, AND METERS INSTALLED UNDER THIS PROJECT SHALL CONFORM TO APPLICABLE AWWA STANDARDS AND SHALL BE MANUFACTURED IN ACCORDANCE WITH AWWA STANDARD C900, LATEST EDITION. PVC SHALL BE MANUFACTURED IN ACCORDANCE WITH AWWA STANDARD C900. THE PVC SHALL HAVE A MINIMUM WORKING PRESSURE OF 150 P.S.I. AND SHALL HAVE A DIMENSION RATIO (DR) OF 18. PIPE SHALL BE THE SAME O.D. AS DUCTILE IRON PIPE.
    PVC JOINTS - SHALL BE IN ACCORDANCE WITH ASTM D3139.
    DUCTILE IRON MAINS - SHALL CONFORM TO ANSI/AWWA C150/C151. A MINIMUM OF CLASS 50 PIPE SHALL BE SUPPLIED.
    DUCTILE IRON JOINTS - SHALL BE IN ACCORDANCE WITH ANSI A21.11 AND AWWA C111.
    SERVICES - SHALL BE IN ACCORDANCE WITH AWWA C901/C800 STANDARDS FOR POLYETHYLENE TUBING, CLASS 160.

28. WATER MAIN CONNECTION SHALL BE MADE UNDER THE SUPERVISION OF THE UTILITY PROVIDER. ALL VALVES SHALL BE OPERATED BY UTILITY PROVIDER PERSONNEL ONLY.

29. ALL PIPE AND PIPE FITTINGS INSTALLED UNDER THIS PROJECT SHALL CONTAIN NO MORE THAN 8.0% LEAD, AND ANY SOLDER OR FLUX USED IN THIS PROJECT SHALL CONTAIN NO MORE THAN 0.2% LEAD.

30. NEW OR ALTERED FIRE HYDRANT LEADS SHALL HAVE A MINIMUM INSIDE DIAMETER OF 6-INCH AND SHALL INCLUDE AN AUXILIARY VALVE.

31. A CONTINUOUS AND UNIFORM BEDDING WILL BE PROVIDED IN TRENCHES FOR UNDERGROUND PIPE INSTALLED UNDER THIS PROJECT; BACKFILL MATERIAL WILL BE TAMPED IN LAYERS AROUND UNDERGROUND PIPE INSTALLED UNDER THIS PROJECT AND TO A SUFFICIENT HEIGHT ABOVE THE PIPE TO ADEQUATELY SUPPORT AND PROTECT THE PIPE; AND UNSUITABLY SIZED STONES (AS DESCRIBED IN APPLICABLE AWWA STANDARDS OR MANUFACTURERS' RECOMMENDED INSTALLATION PROCEDURES) FOUND IN TRENCHES WILL BE REMOVED FOR A DEPTH OF A LEAST SIX INCHES BELOW THE BOTTOM OF UNDERGROUND PIPE INSTALLED UNDER THIS PROJECT.

32. CONTRACTOR SHALL NOT ACTIVATE WATER SERVICE UNTIL FDEP HAS CLEARED THE SYSTEM FOR USE AND THE CLEARANCE LETTER HAS BEEN RECEIVED BY THE OWNER.

33. ENGINEER RESERVES THE RIGHT TO WITHHOLD AUTHORIZATION OF PAYMENT FOR ANY PORTION OF THE UTILITIES PIPE WORK WHICH HAS NOT BEEN TESTED, OBSERVED BY ENGINEER, AND REPORTED TO CONFORM TO PROJECT SPECIFICATIONS.

RECLAIMED WATER

1. POLYVINYL CHLORIDE PLASTIC PIPE (PVC) 4-INCH THROUGH 12-INCH SHALL BE MANUFACTURED IN ACCORDANCE WITH ANSI/AWWA C900 (LATEST EDITION) AND SHALL HAVE A MINIMUM WORKING PRESSURE OF 150 PSI AND HAVE A DR (DIMENSION RATIO) OF 18. PIPE SHALL BE PURPLE AND LABELED "RECLAIMED WATER" OR "NON POTABLE WATER" PROMINENTLY ON EACH PIPE JOINT. JOINTS SHALL BE OF THE PUSH-ON TYPE AND COUPLINGS SHALL CONFORM TO ASTM D3139 DR18 PIPE.

2. DUCTILE IRON PIPE (DIP) SHALL BE STANDARD PRESSURE CLASS 350 IN SIZES 4-INCH THROUGH 12-INCH AND CONFORM TO ANSI/AWWA C150/A21.50 (LATEST EDITION). ALL DUCTILE IRON PIPE SHALL HAVE CEMENT MORTAR LINING AS SPECIFIED IN ANSI/AWWA C104/A21.4 (LATEST EDITION). PIPE JOINTS SHALL BE OF THE PUSH-ON RUBBER GASKET TYPE CONFORMING TO ANSI/AWWA C111/A21.11 (LATEST EDITION).

3. PIPE SIZES GREATER THAN 12" IN BOTH PVC AND DUCTILE IRON SHALL BE SEPARATELY SPECIFIED ON THE PLANS; WITH THICKNESS CLASSES TO BE SHOWN BASED ON WORKING PRESSURES, PIPE DEPTH AND TRENCH CONDITIONS.

4. COMPACT FITTINGS FOR DUCTILE IRON PIPE AND PVC C900 PIPE SHALL BE DUCTILE IRON AND SHALL CONFORM TO ANSI/AWWA C153/A21.53 (LATEST EDITION) AND SHALL BE CEMENT LINED IN CONFORMANCE WITH ANSI/AWWA C104/A21.4 (LATEST EDITION). 350 PSI MINIMUM PRESSURE RATING.

5. GATE VALVES SHALL BE RESILIENT SEAT AND SHALL CONFORM TO ANSI/AWWA C509 (LATEST EDITION) WITH 2-INCH SQUARE WRENCH NUT, EXTENSION STEMS AND OTHER APPURTENANCES AS REQUIRED. MANUFACTURER'S CERTIFICATION OF THE VALVES' COMPLIANCE WITH AWWA C509 (LATEST EDITION) AND TESTS LISTED THEREIN WILL BE REQUIRED. VALVES SHALL BE CLOW, MUELLER, KENNEDY, M&H, AMERICAN DARLING, OR APPROVED EQUAL.

6. VALVE BOX PADS SHALL BE 18"x18"x4" THICK CONCRETE WITH FOUR (4) REINFORCING BARS. PAD IS TO BE SET AT FINISH GRADE.

7. UNDERGROUND VALVE IDENTIFICATION (UVI) MARKERS SHALL BE PROVIDED AT EACH VALVE LOCATION. MARKERS SHALL BE 3-INCH DIAMETER AND 1/8-INCH THICK SOLID HARD BRASS WITH 1/4-INCH ROD ANCHOR WITH "TAMPER-PROOF" HOOK END. SURFACE SHALL BE ENGRAVED WITH 1/4-INCH TO 3/8-INCH CAPITAL LETTERS APPROXIMATELY .015-INCH DEEP - HAND PUNCHED LETTERS NOT ACCEPTABLE. FOR MARKER TEXT, REFER TO UNDERGROUND VALVE MARKER DETAIL. SURFACE GROUND SMOOTH AND EPOXY COATED TO PREVENT TARNISHING. MARKERS ARE TO BE WAGCO MARKERS, OR APPROVED EQUAL.

8. BUTTERFLY VALVES SHALL MEET OR EXCEED THE DESIGN STRENGTH TESTING AND PERFORMANCE REQUIREMENTS OF AWWA C504 (LATEST EDITION), CLASS 150. VALVES SHALL BE DUCTILE IRON, RESILIENT SEAT, AND BE MANUFACTURED BY KENNEDY, MUELLER, M&H, AMERICAN DARLING, OR APPROVED EQUAL. BUTTERFLY VALVES TO BE USED FOR SIZES GREATER THAN 12-INCH.

9. AIR RELEASE VALVES SHALL BE PLACED AT HIGH POINTS OF THE TRANSMISSION MAIN TO PERMIT ESCAPE OF TRAPPED AIR. THE VALVE SIZE, LOCATION, AND METHOD OF INSTALLATION SHALL BE INDICATED ON THE DRAWINGS, OR AS DIRECTED BY THE ENGINEER. AIR RELEASE VALVES SHALL BE VALMATIC OR APPROVED EQUAL.

10. VALVE BOXES ON BURIED RECLAIMED WATER SHALL BE ADJUSTABLE, CAST IRON CONSTRUCTION, WITH A MINIMUM INTERIOR DIAMETER OF 5-INCH WITH COVERS CAST WITH THE INSCRIPTION IN LEGIBLE LETTERING ON THE TOP: RECLAIMED WATER. BOXES SHALL BE SUITABLE FOR THE APPLICABLE SURFACE LOADING AND VALVE SIZE, AND SHALL BE MANUFACTURED BY MUELLER COMPANY, MODEL 10364, OR APPROVED EQUAL.

11. PIPE INSTALLATION OF PVC RECLAIMED WATER MAIN SHALL BE IN CONFORMANCE WITH ASTM D2774 (LATEST EDITION). INSTALLATION OF DUCTILE IRON PIPE RECLAIMED WATER MAIN SHALL BE IN CONFORMANCE WITH AWWA C600 (LATEST EDITION).

12. RECLAIMED WATER SYSTEM PIPES SHALL BE INSTALLED SO AS TO GIVE A MINIMUM HORIZONTAL SEPARATION OF 5 FEET (CENTER OF PIPE TO CENTER OF PIPE) FROM POTABLE WATER LINES AND MINIMUM 3-FOOT SEPARATION FORM OUTSIDE WALL TO OUTSIDE WALL AS WELL AS 18-INCH VERTICAL SEPARATION. IN THE CASE OF A CONFLICT WHERE THESE SEPARATIONS CANNOT BE MAINTAINED THE REUSE MAIN SHALL BE UPGRADED TO DIP.

13. COMPACTED BACKFILL SHALL BE TO 98 % MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180 UNDER ALL PAVEMENTS WITH 12-INCH MAXIMUM LIFT THICKNESS. OTHER COMPACTION OF BACKFILL SHALL BE TO 95% MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180 WITH 12-INCH MAXIMUM LIFT THICKNESS. SEE PIPE TRENCHING DETAILS.

14. MINIMUM COVER OVER ALL PIPE SHALL BE 36-INCHES FROM TOP OF PIPE TO FINISHED GRADE, UNLESS OTHERWISE NOTED.

15. INDICATOR TAPE SHALL BE BURIED IN THE RECLAIMED WATER MAIN TRENCH 18-INCH DIRECTLY ABOVE THE MAIN. A CONTINUOUS COPPER DETECTOR WIRE SHALL BE ATTACHED AS SHOWN ON THE PIPE DETECTOR WIRE MARKER DETAIL. INDICATOR TAPE SHALL CALL OUT THAT A RECLAIMED OR NON POTABLE SYSTEM IS BELOW. PIPE SHALL BE COLOR CODED PURPLE IN ADDITION TO MARKINGS. SIGNS IN ENGLISH, SPANISH, AND INTERNATIONAL SYMBOLS SHALL BE INSTALLED NOTING THAT NO DRINKING IS ALLOWED. CONTINUITY CHECK WILL BE PERFORMED AND MUST BE ACCEPTABLE.

16. ALLOWABLE LEAKAGE FOR PVC PRESSURE MAINS WILL BE IN ACCORDANCE WITH AWWA M23.

RECLAIMED WATER (CONTINUED)

17. THE CONTRACTOR SHALL PROVIDE AT HIS OWN EXPENSE ALL NECESSARY TEST PUMPING EQUIPMENT, WATER, WATER METERS, PRESSURE GAUGES, AND OTHER EQUIPMENT, MATERIAL AND FACILITIES REQUIRED FOR ALL HYDROSTATIC AND LEAKAGE TESTING. CONTRACTOR SHALL CONTACT LOCAL AGENCY, UTILITY PROVIDER, AND ENGINEER IN WRITTEN FORM, FORTY-EIGHT (48) HOURS IN ADVANCE OF PROPOSED TESTING. THE CONTRACTOR SHALL PERFORM SATISFACTORY PRE-TESTING PRIOR TO NOTIFICATION. NO TESTING WILL BE SCHEDULED ON A MONDAY OR FRIDAY.

18. THE RECLAIMED WATER SYSTEM SHALL BE TESTED FOR LEAKAGE AT 150 PSI FOR TWO (2) HOURS PER UTILITY PROVIDER STANDARDS.

19. ALL RECLAIMED WATER PIPES SHALL BE INSTALLED USING WATER PIPE CRITERIA. MAINS SHALL BE CLASS 52 D.I. PIPE. IF 24-INCHES TO 30-INCHES OF COVER IS PROVIDED AND CLASS 51 IF 30-NICHES TO 36-INCHES OF COVER IS PROVIDED.

20. SIGNS SHALL BE POSTED IN THE VICINITY OF PUBLIC RECLAIMED WATER RECLAIMED WATER IRRIGATION SYSTEMS, ADVISING THE PUBLIC THAT RECLAIMED WATER IS PRACTICED.

FIRE

THE 7TH EDITION OF THE FLORIDA FIRE PREVENTION CODE IS HEREBY INCORPORATED
NFPA 1, 2018 EDITION
NFPA 13, 2016 EDITION
NFPA 14, 2016 EDITION
NFPA 24, 2016 EDITION
NFPA 101, 2018 EDITION

DEMOLITION NOTES

1. EXISTING UNDERGROUND UTILITIES, UNLESS OTHERWISE NOTED, MAY BE CAPPED/PLUGGED AND ABANDONED IN PLACE EXCEPT WITHIN 30 FT. OF BUILDING. CAPPED AND PLUGGED PIPE ENDS SHALL BE ENCASED IN CONCRETE, 6" MINIMUM THICKNESS AROUND PIPE. MANHOLE BASES MAY BE LEFT IN PLACE PROVIDED THAT PIPE OPENINGS ARE PLUGGED AND REMAINING BASES ARE FILLED WITH CONCRETE 6" MINIMUM ABOVE HIGHEST INVERT.

2. CONTRACTOR SHALL BE KNOWLEDGEABLE OF THE CONSTRUCTION DOCUMENTS AND BE RESPONSIBLE FOR PROTECTING ANY EXISTING FACILITY SO DESIGNATED OR DESIGNATED TO BE UTILIZED IN THE WORK.

3. CONTRACTOR SHALL REMOVE ALL FOUNDATIONS, CONCRETE SLABS, AND UNDERGROUND STRUCTURES EXISTING ON THE SITE AT THE TIME OF BIDDING UNLESS OTHERWISE DIRECTED.

4. CONTRACTOR SHALL COORDINATE WITH APPLICABLE UTILITY COMPANIES AND BE RESPONSIBLE FOR THE TERMINATION, CAPPING-OFF AND REMOVAL OF ALL UNDERGROUND AND ABOVE-GROUND UTILITY SERVICES EXISTING AT THE TIME OF BIDDING UNLESS DIRECTED TO BID OTHERWISE.

5. CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING AND DISPOSING ALL WASTE MATERIALS CONSISTENT WITH ALL RULES AND REGULATIONS APPLICABLE TO THE SPECIFIC MATERIAL FOUND.

SPECIAL PURPOSE

1. THE EXISTENCE AND LOCATION OF ANY OVERHEAD OR UNDERGROUND UTILITY LINES, PIPES, OR STRUCTURES SHOWN ON THESE PLANS ARE OBTAINED BY A RESEARCH OF THE AVAILABLE RECORDS. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO AVOID DAMAGE TO SAME. THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN WORKING NEAR OVERHEAD UTILITIES SO AS TO SAFELY PROTECT ALL PERSONNEL AND EQUIPMENT AND SHALL BE RESPONSIBLE FOR ALL COST AND LIABILITY IN CONNECTION THEREWITH.

MADDEN
MOORHEAD & STOKES, LLC
CIVIL ENGINEERS
431 E. Horatio Avenue
Suite 260
Maitland, Florida 32751
(407) 629-8330
CA# 0007723

GENERAL NOTES

FOR

LAKE HILLS MAIN BLVD. & MASS GRADING

HOWEY-IN-THE-HILLS
FLORIDA

READER & PARTNERS, LLC
5850 TG LEE BOULEVARD, SUITE 200
ORLANDO, FL 32822
(407) 856-4899

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DAVID ASHLEY STOKES
LICENSE NO. 66527

This item has been digitally signed and sealed by David Ashley Stokes, PE on the date adjacent to the seal.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

ENGINEER OF RECORD
November 7, 2024

JOB # 23019
DATE: 11/7/24
DATUM: NAVD 88
DESIGNED BY: KAC
DRAWN BY: JSK
APPROVED BY: DAS

C002

N
W E
S
0 150' 300' 600'
SCALE: 1"=300'

SOIL LEGEND

MAP UNIT SYMBOL	MAP UNIT NAME
1	SPARR SAND, 0 TO 5 % SLOPES
4	ANCLOTE AND MYAKKA SOILS
8	CANDLER SAND, 0 TO 5 % SLOPES
9	CANDLER SAND, 5 TO 12 % SLOPES
10	CANDLER SAND, 12 TO 40 % SLOPES
17	ARENTS
20	IMMOKALEE SAND
21	LAKE SAND, 0 TO 5 % SLOPES
28	MYAKKA-MYAKKA, WET, SANDS, 0 TO 2 % SLOPES
44	SWAMP
45	TAVARES SAND, 0 TO 5 % SLOPES
50	BORROW PITS
99	WATER

LEGEND

- SOIL TYPE LIMIT
- WETLAND LINE
- FLOOD ZONE LINE (ZONE X / ZONE AE)
- WETLAND BUFFER
- WETLANDS

FLOOD ZONE:

ACCORDING TO FIRM MAP PANEL NOS. 12069C0485E DATED 12/18/2012, MAJORITY OF THIS PROPERTY LIES WITHIN FLOOD ZONE 'X' - AND IS NOT LOCATED WITHIN THE 100 YEAR FLOOD HAZARD AREA WITH A PORTION OF THE PROPERTY LYING WITHIN FLOOD ZONE "A" & "AE" AND IS IN A SPECIAL FLOOD HAZARD AREA SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD.

NOTE:
THIS EXHIBIT WAS PREPARED FOR ILLUSTRATIVE PURPOSES ONLY. THE LATEST AVAILABLE DIGITAL AERIAL FILES HAVE BEEN USED. HOWEVER, THIS MAY NOT ACCURATELY DEPICT CURRENT SITE CONDITIONS. ADDITIONAL ENGINEERING, ENVIRONMENTAL REVIEWS, FIELD SURVEYING AND DATA COLLECTION ARE NECESSARY TO CORRECTLY PORTRAY ACTUAL SITE CONDITIONS. THIS EXHIBIT IS SUBJECT TO CHANGE WITHOUT NOTICE BASED ON THE ABOVE.

DATE OF PHOTO: 12/2023

MADDEN
MOORHEAD & STOKES, LLC
CIVIL ENGINEERS
431 E. Horatio Avenue
Suite 260
Maitland, Florida 32751
(407) 629-8330
CA# 0007723

AERIAL SITE PLAN
FOR
LAKE HILLS MAIN BLVD. & MASS GRADING
HOWEY-IN-THE-HILLS FLORIDA

READER & PARTNERS, LLC
3850 TG LEE BOULEVARD, SUITE 200
ORLANDO, FL 32822
(407) 858-4899

DATE	REVISIONS
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DAVID ASHLEY STOKES
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NO. 66527
STATE OF FLORIDA
PROFESSIONAL ENGINEER

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C003

H:\Data\23\MMS\190-Lake Hills PD\Howey-In-The-Hills\Eng\Final\Mass Infrastructure (6F ROW)\SHEETS\23019-C007-AERIAL SITE PLAN.dwg November 7, 2024 9:18 AM

LEGEND

Symbol	Description
——SF——	STAKED EROSION CONTROL FENCE
	PROPERTY BOUNDARY
	CONTOUR
	CONSTRUCTION LIMITS
	FEMA FLOOD ZONE LINE
XXXXXXXXXX	TO BE DEMOLISHED
	WETLAND IMPACT
	WETLAND
——x——x——	EXISTING FENCE

DEMOLITION NOTES

1. TEMPORARY CONSTRUCTION ENTRANCE (SEE DETAIL SHEET C004)
2. SINGLE STAKED SILT FENCE.
3. SIGNS TO BE REMOVED
4. EXIST. FENCE TO BE DEMO'D. (APPROX. 1,915 LF)
5. DOUBLE STAKED SILT FENCE.

NOTES:

1. DROP INLET SEDIMENT BARRIERS ARE TO BE USED FOR SMALL, NEARLY LEVEL DRAINAGE AREAS. (LESS THAN XX%)
2. THE TOP OF STRUCTURE (PONDING HEIGHT) MUST BE WELL BELOW THE GROUND ELEVATION DOWNSLOPE TO PREVENT RUNOFF FROM BYPASSING THE INLET. EXCAVATION OF A BASIN ADJACENT TO THE DROP INLET OR A TEMPORARY DIKE ON THE DOWNSLOPE OF THE STRUCTURE MAY BE NECESSARY.
3. ALL INLETS LOCATED ON EXISTING ROAD TO HAVE INLET PROTECTION DURING CONSTRUCTION.
4. ALL SILT FENCE INSTALLED TO BE FDOT TYPE XXXX.
5. WATER TRUCK SHALL BE ONSITE DURING CONSTRUCTION TO KEEP DUST LEVEL AT A MINIMUM. (OR USE OTHER METHODOLOGY FOR DUST ABATEMENT/CONTROL APPROVED BY COUNTY)

FLOOD ZONE:

ACCORDING TO FIRM MAP PANEL NOS. 12069C0485E DATED 12/18/2012, MAJORITY OF THIS PROPERTY LIES WITHIN FLOOD ZONE 'X' - AND IS NOT LOCATED WITHIN THE 100 YEAR FLOOD HAZARD AREA WITH A PORTION OF THE PROPERTY LYING WITHIN FLOOD ZONE "A" & "AE" AND IS IN A SPECIAL FLOOD HAZARD AREA SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD.

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DEMO AND EROSION PLAN

FOR

LAKE HILLS MAIN BLVD. & MASS GRADING

HOWEY-IN-THE-HILLS FLORIDA

READER & PARTNERS, LLC
5850 TG LEE BOULEVARD, SUITE 200
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DAVID ASHLEY STOKES
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NO. 66527
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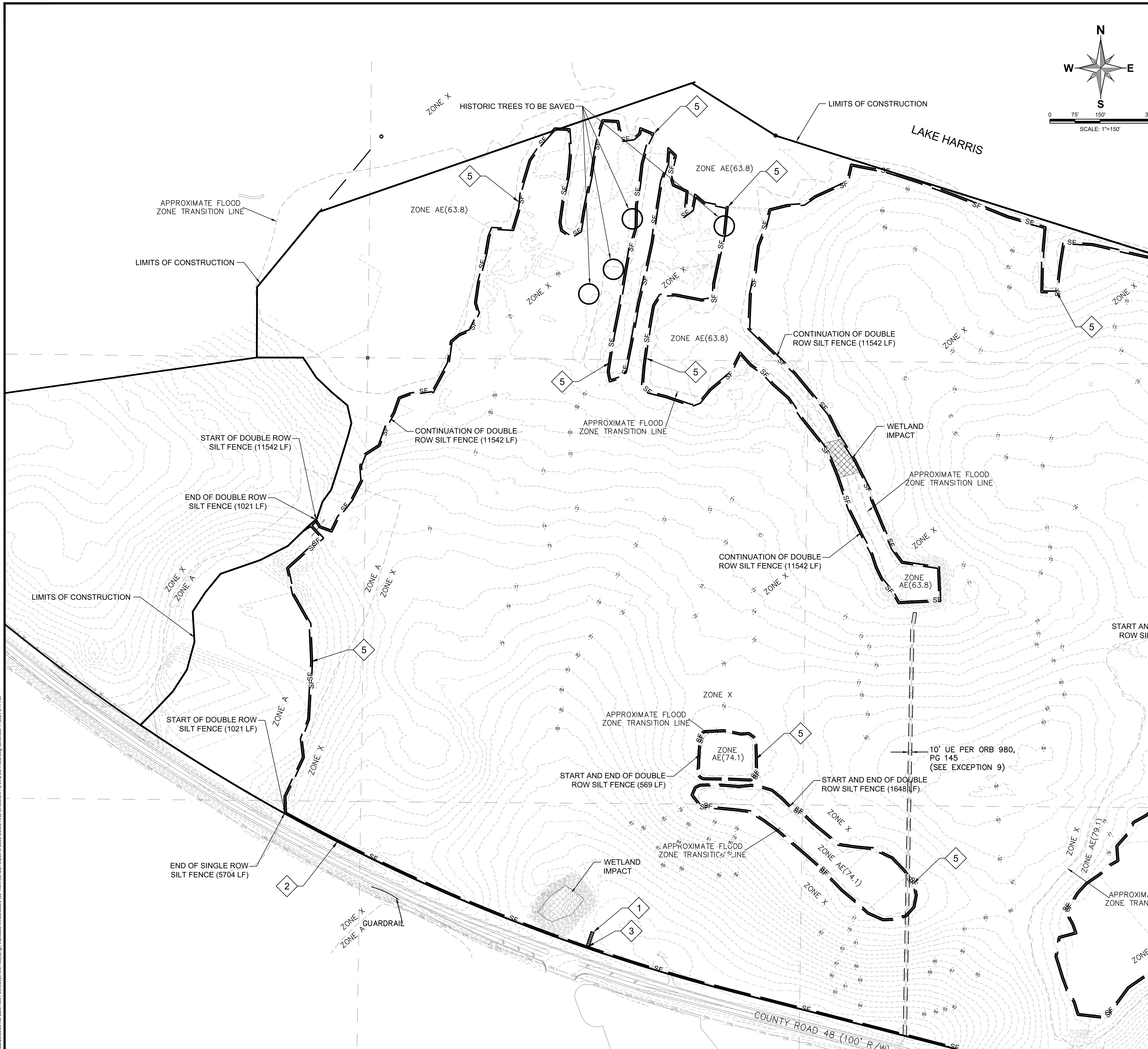
C004



LEGEND

SF	STAKED EROSION CONTROL FENCE
	PROPERTY BOUNDARY
85	CONTOUR
	CONSTRUCTION LIMITS
	FEMA FLOOD ZONE LINE
XXXXXXXXXX	TO BE DEMOLISHED
	WETLAND IMPACT
	WETLAND
X X	EXISTING FENCE

DEMOLITION NOTES

1. TEMPORARY CONSTRUCTION ENTRANCE (SEE DETAIL SHEET C004)
2. SINGLE STAKED SILT FENCE.
3. SIGNS TO BE REMOVED
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CA# 0007723

DEMO AND EROSION PLAN

FOR

LAKE HILLS MAIN BLVD. & MASS GRADING

HOWEY-IN-THE-HILLS FLORIDA

READER & PARTNERS, LLC
5850 TG LEE BOULEVARD, SUITE 200
ORLANDO, FL 32822
(407) 856-4899

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DAVID ASHLEY STOKES LICENSE NO. 66527 STATE OF FLORIDA PROFESSIONAL ENGINEER

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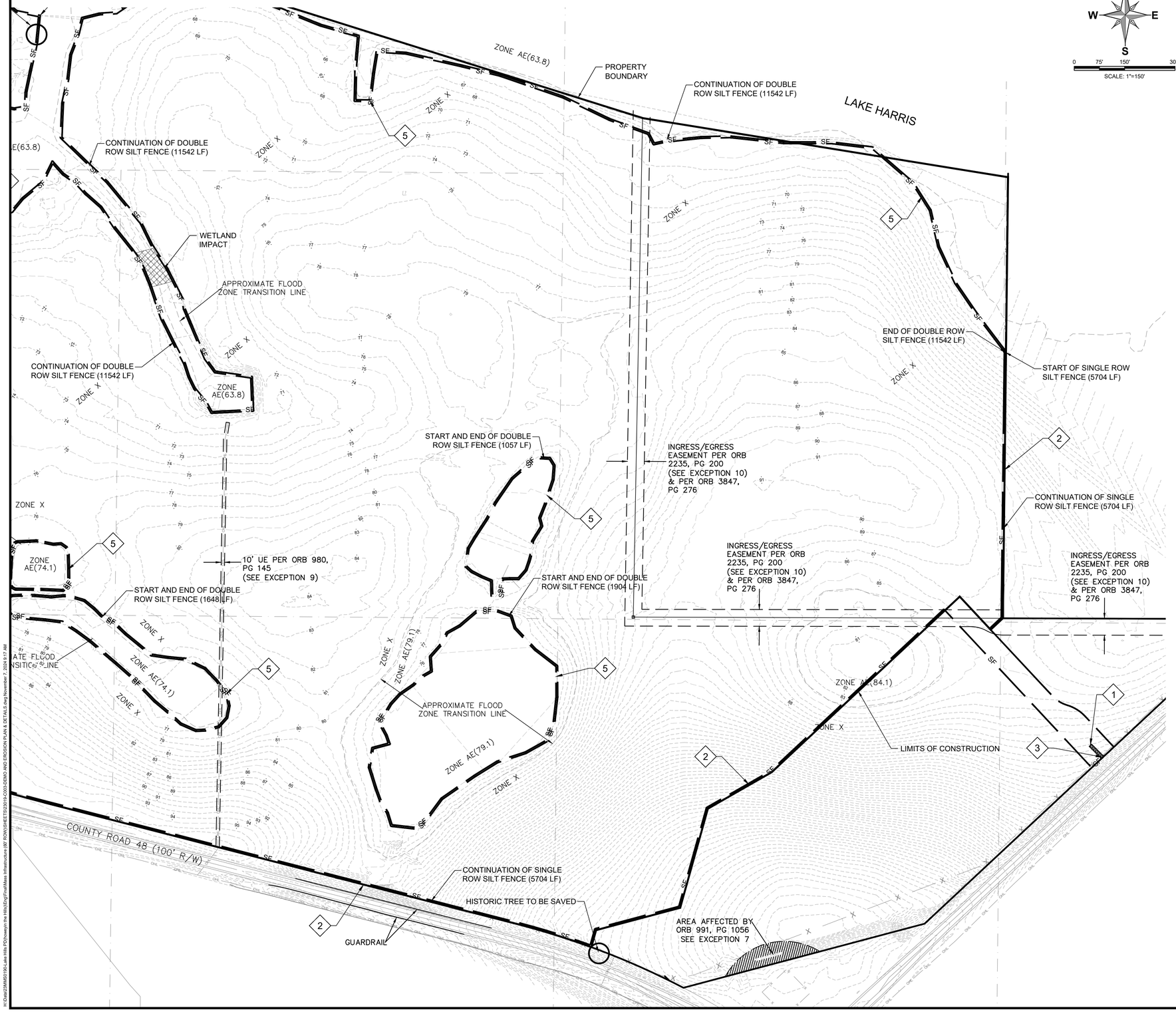
ENGINEER OF RECORD
November 7, 2024

JOB #	23019
DATE:	11/7/24
DATUM:	NAVD 88
DESIGNED BY:	KAC
DRAWN BY:	JSK
APPROVED BY:	DAS

C005



LEGEND

- SF — STAKED EROSION CONTROL FENCE
- PROPERTY BOUNDARY
- 85 — CONTOUR
- CONSTRUCTION LIMITS
- FEMA FLOOD ZONE LINE
- XXXXXXXXXX — TO BE DEMOLISHED
- WETLAND IMPACT
- WETLAND
- X X — EXISTING FENCE

DEMOLITION NOTES

1. TEMPORARY CONSTRUCTION ENTRANCE (SEE DETAIL SHEET C004)
2. SINGLE STAKED SILT FENCE.
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DEMO AND EROSION PLAN

FOR

LAKE HILLS MAIN BLVD. & MASS GRADING

HOWEY-IN-THE-HILLS FLORIDA

READER & PARTNERS, LLC
5850 TG LEE BOULEVARD, SUITE 200
ORLANDO, FL 32822
(407) 855-4899

#	DATE	REVISIONS
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DAVID ASHLEY STOKES LICENSE NO. 66527 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been digitally signed and sealed by David Ashley Stokes, PE on the date adjacent to the seal.

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ENGINEER OF RECORD
November 7, 2024

JOB #	23019
DATE:	11/7/24
DATUM:	NAVD 88
DESIGNED BY:	KAC
DRAWN BY:	JSK
APPROVED BY:	DAS

C006

FODS TRACKOUT CONTROL SYSTEM INSTALLATION GUIDE

THE PURPOSE AND DESIGN OF THE FODS TRACKOUT CONTROL SYSTEM IS TO EFFECTIVELY REMOVE MOST SEDIMENT FROM VEHICLE TIRES AS THEY EXIT A DISTURBED LAND AREA ONTO A PAVED STREET. THIS MANUAL IS A PLATFORM FROM WHICH TO INSTALL A FODS TRACKOUT CONTROL SYSTEM. (NOTE: THIS IS NOT A ONE SIZE FITS ALL GUIDE.) THE INSTALLATION MAY NEED TO BE MODIFIED TO MEET THE EXISTING CONDITIONS, EXPECTATIONS, OR DEMANDS OF A PARTICULAR SITE. THIS IS A GUIDELINE. ULTIMATELY THE FODS TRACKOUT CONTROL SYSTEM SHOULD BE INSTALLED SAFELY WITH PROPER ANCHORING AND SIGNS PLACED AT THE ENTRANCE AND EXIT TO CAUTION USERS AND OTHERS.

KEY NOTES:

A. FODS TRACKOUT CONTROL SYSTEM MAT.
B. FODS SAFETY SIGN.
C. ANCHOR POINT.
D. SILT OR ORANGE CONSTRUCTION FENCE.

INSTALLATION:

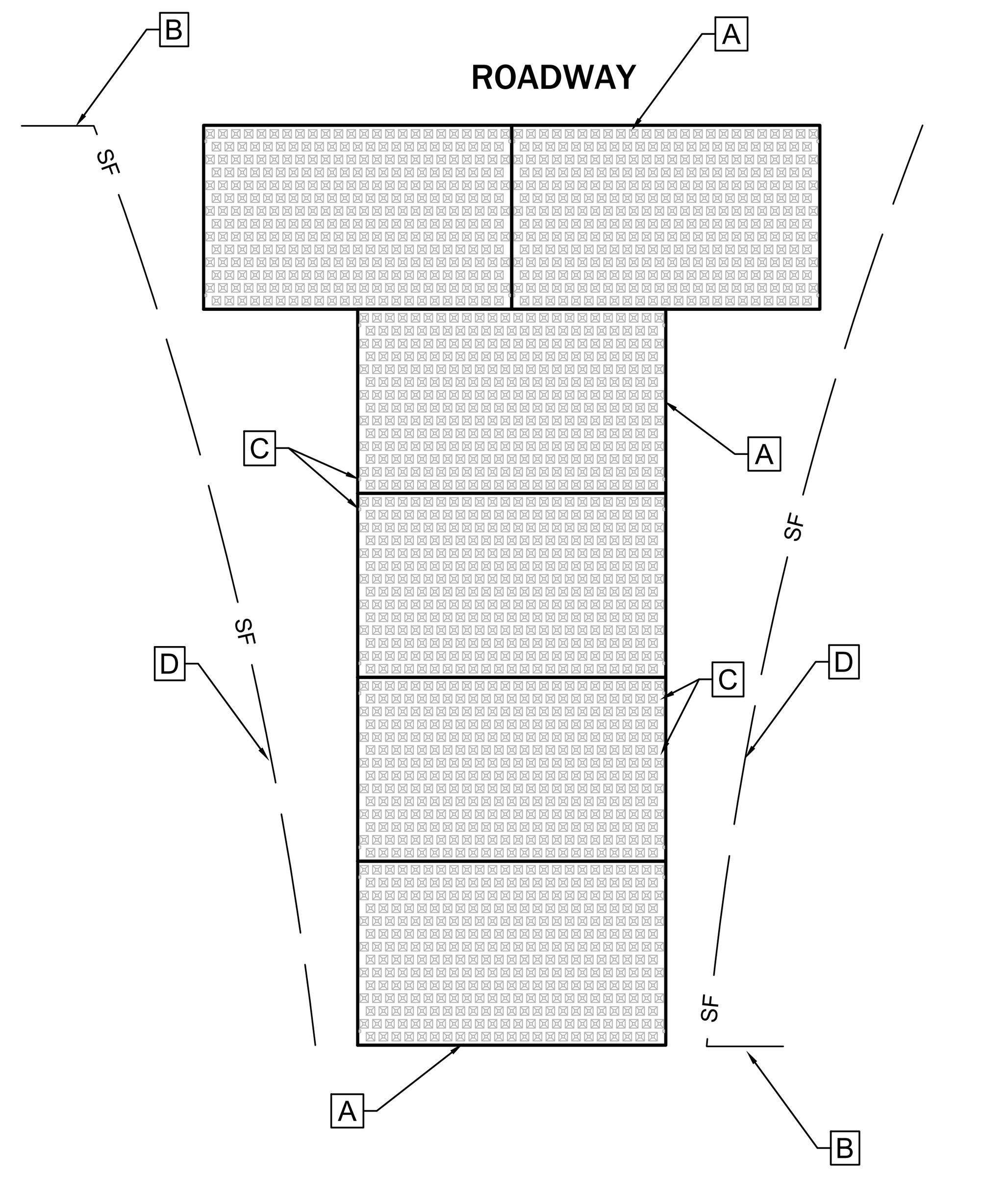
1. THE SITE WHERE THE FODS TRACKOUT CONTROL SYSTEM IS TO BE PLACED SHOULD CORRESPOND TO BEST MANAGEMENT PRACTICES AS MUCH AS POSSIBLE. THE SITE WHERE FODS TRACKOUT CONTROL SYSTEM IS PLACED SHOULD ALSO MEET OR EXCEED THE LOCAL JURISDICTION OR STORM WATER POLLUTION PREVENTION PLAN (SWPPP) REQUIREMENTS.
2. CALL FOR UTILITY LOCATES 3 BUSINESS DAYS IN ADVANCE OF THE OF FODS TRACKOUT CONTROL SYSTEM INSTALLATION FOR THE MARKING OF UNDERGROUND UTILITIES. CALL THE UTILITY NOTIFICATION CENTER AT 811.
3. ONCE THE SITE IS ESTABLISHED WHERE FODS TRACKOUT CONTROL SYSTEM IS TO BE PLACED, ANY EXCESSIVE UNEVEN TERRAIN SHOULD BE LEVELED OUT OR REMOVED SUCH AS LARGE ROCKS, LANDSCAPING MATERIALS, OR SUDDEN ABRUPT CHANGES IN ELEVATION.
4. THE INDIVIDUAL MATS CAN START TO BE PLACED INTO POSITION. THE FIRST MAT SHOULD BE PLACED NEXT TO THE CLOSEST POINT OF EGRESS. THIS WILL ENSURE THAT THE VEHICLE WILL EXIT STRAIGHT FROM THE SITE ONTO THE PAVED SURFACE.
5. AFTER THE FIRST MAT IS PLACED DOWN IN THE PROPER LOCATION, MATS SHOULD BE ANCHORED TO PREVENT THE POTENTIAL MOVEMENT WHILE THE ADJOINING MATS ARE INSTALLED. ANCHORS SHOULD BE PLACED AT EVERY ANCHOR POINT (IF FEASIBLE) TO HELP MAINTAIN THE MAT IN ITS CURRENT POSITION.
6. AFTER THE FIRST MAT IS ANCHORED IN ITS PROPER PLACE, AN H BRACKET SHOULD BE PLACED AT THE END OF THE FIRST MAT BEFORE ANOTHER MAT IS PLACED ADJACENT TO THE FIRST MAT.
7. ONCE THE SECOND MAT IS PLACED ADJACENT TO THE FIRST MAT, MAKE SURE THE H BRACKET IS CORRECTLY SITUATED BETWEEN THE TWO MATS, AND SLIDE MATS TOGETHER.
8. NEXT THE CONNECTOR STRAPS SHOULD BE INSTALLED TO CONNECT THE TWO MATS TOGETHER.
9. UPON PLACEMENT OF EACH NEW MAT IN THE SYSTEM, THAT MAT SHOULD BE ANCHORED AT EVERY ANCHOR POINT TO HELP STABILIZE THE MAT AND ENSURE THE SYSTEM IS CONTINUOUS WITH NO GAPS IN BETWEEN THE MATS.
10. SUCCESSIVE MATS CAN THEN BE PLACED TO CREATE THE FODS TRACKOUT CONTROL SYSTEM REPEATING THE ABOVE STEPS.

USE AND MAINTENANCE

1. VEHICLES SHOULD TRAVEL DOWN THE LENGTH OF THE TRACKOUT CONTROL SYSTEM AND NOT CUT ACROSS THE MATS.
2. DRIVERS SHOULD TURN THE WHEEL OF THEIR VEHICLES SUCH THAT THE VEHICLE WILL MAKE A SHALLOW S-TURN ROUTE DOWN THE LENGTH OF THE FODS TRACKOUT CONTROL SYSTEM.
3. MATS SHOULD BE CLEANED ONCE THE VOIDS BETWEEN THE PYRAMIDS BECOME FULL OF SEDIMENT. TYPICALLY THIS WILL NEED TO BE PERFORMED WITHIN TWO WEEKS AFTER A STORM EVENT. BRUSHING IS THE PREFERRED METHOD OF CLEANING, EITHER MANUALLY OR MECHANICALLY.
4. THE USE OF ICE MELT, ROCK SALT, SNOW MELT, DE-ICER, ETC. SHOULD BE UTILIZED AS NECESSARY DURING THE WINTER MONTHS AND AFTER A SNOW EVENT TO PREVENT ICE BUILDUP.

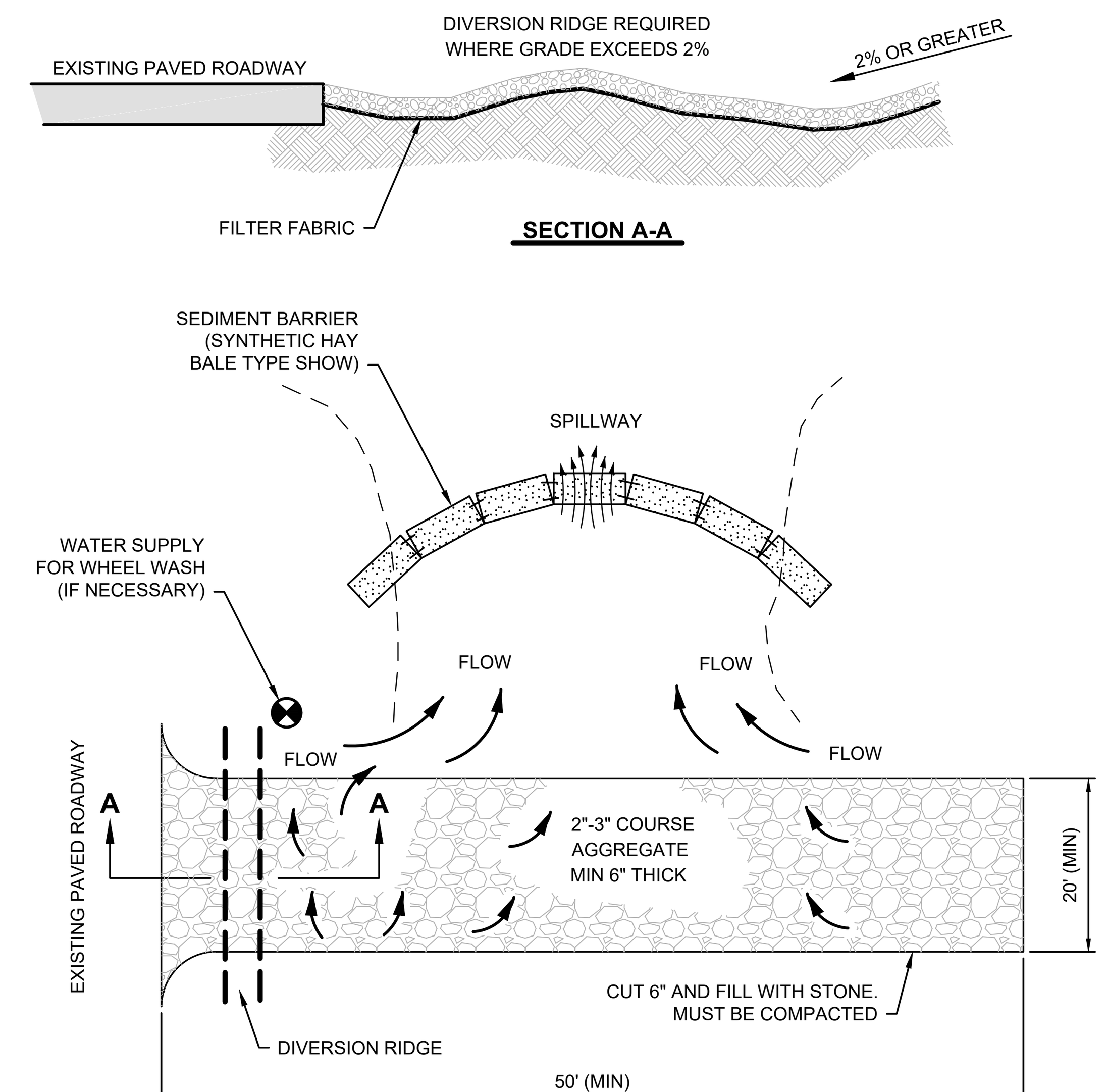
REMOVAL

1. REMOVAL OF FODS TRACKOUT CONTROL SYSTEM IS REVERSE ORDER OF INSTALLATION.
2. STARTING WITH THE LAST MAT, THE MAT THAT IS PLACED AT THE INNERMOST POINT OF THE SITE OR THE MAT FURTHEST FROM THE EXIT OR PAVED SURFACE SHOULD BE REMOVED FIRST.
3. THE ANCHORS SHOULD BE REMOVED.
4. THE CONNECTOR STRAPS SHOULD BE UNBOLTED AT ALL LOCATIONS IN THE FODS TRACKOUT CONTROL SYSTEM.
5. STARTING WITH THE LAST MAT IN THE SYSTEM, EACH SUCCESSIVE MAT SHOULD THEN BE MOVED AND STACKED FOR LOADING BY FORKLIFT OR EXCAVATOR ONTO A TRUCK FOR REMOVAL FROM THE SITE.



TYPICAL FODS TRACKOUT CONTROL SYSTEM LAYOUT

NTS

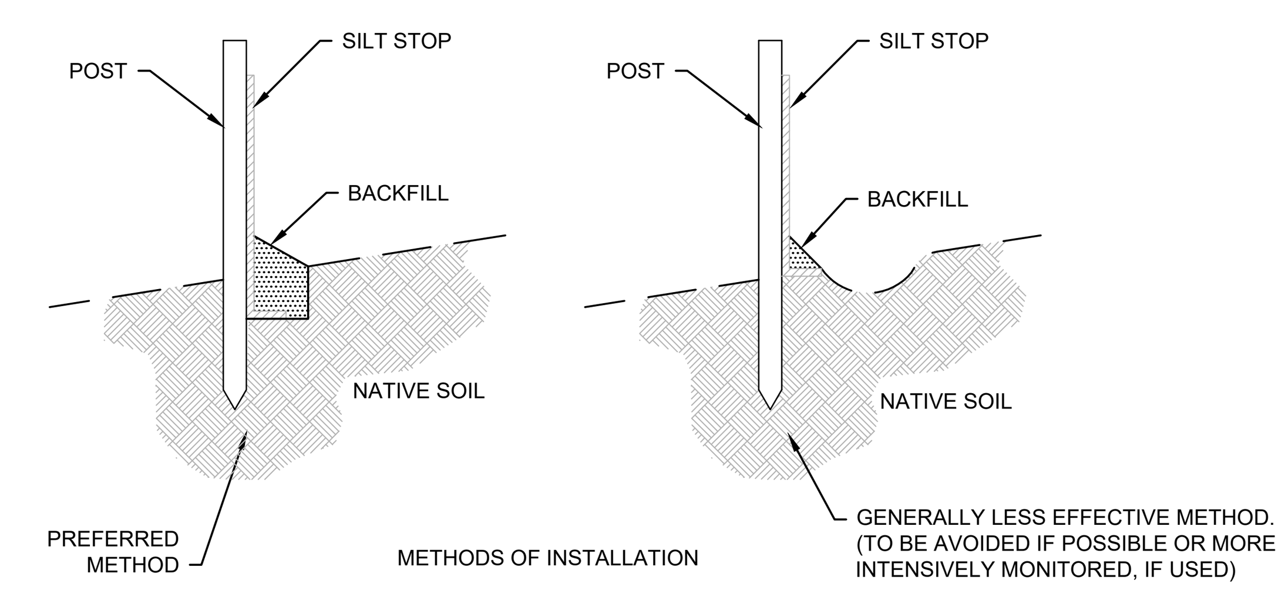


NOTES:

1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF WAY OR STORM WATER SYSTEMS. THEY MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE INTO THE PUBLIC RIGHT-OF-WAY.
3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.

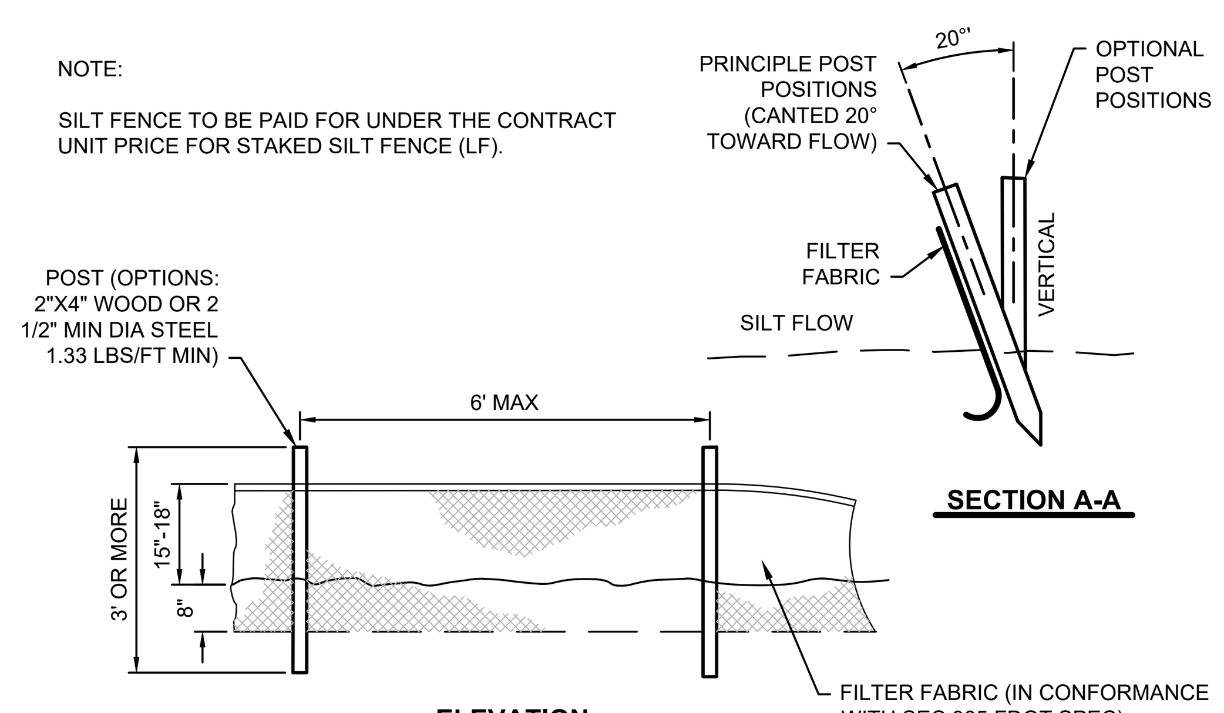
TEMPORARY CONSTRUCTION ENTRANCE (CE)

NTS



NOTE:

SILT FENCE TO BE PAID FOR UNDER THE CONTRACT UNIT PRICE FOR STAKED SILT FENCE (LF).



NOTE:

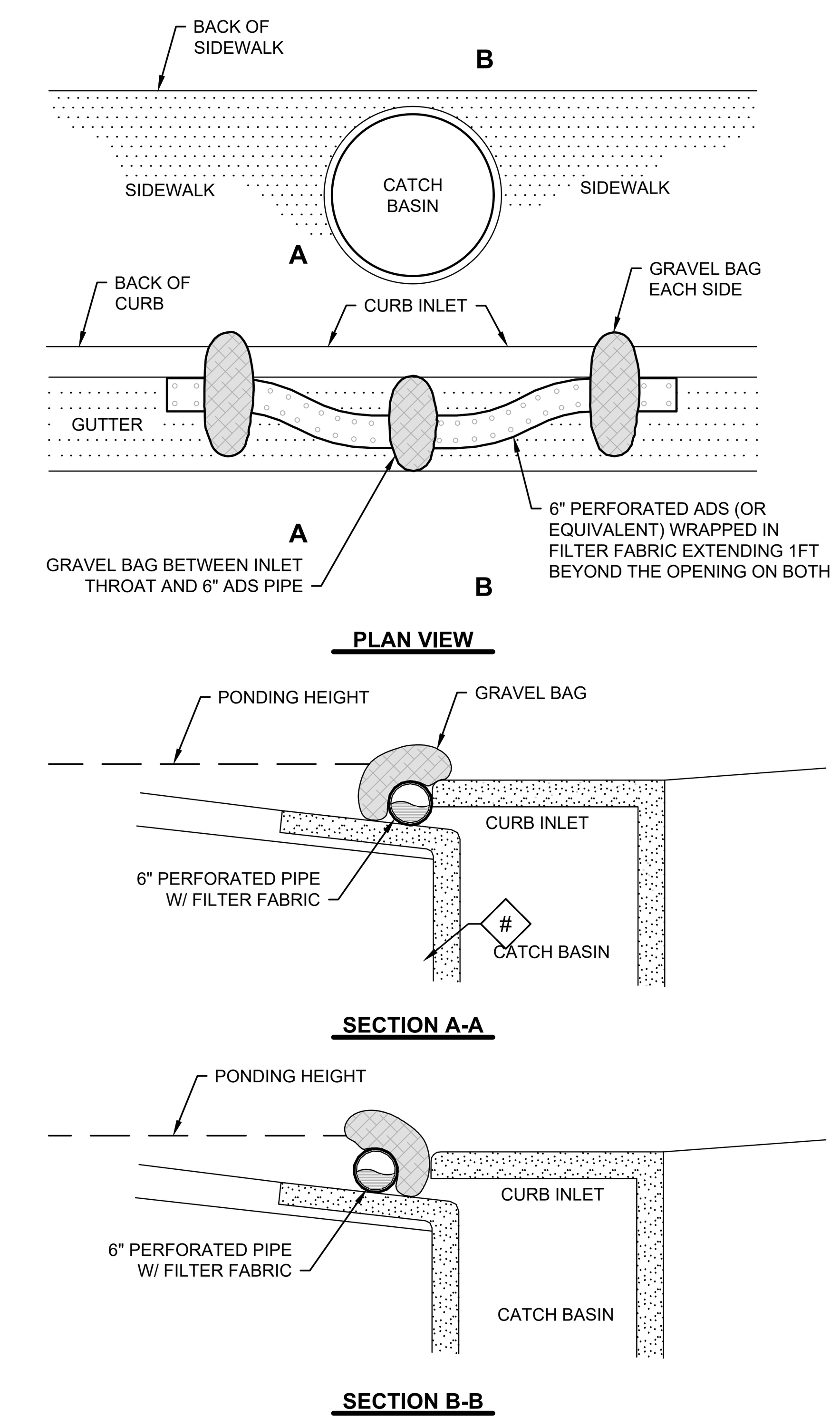
THE EROSION BARRIER, AS SHOWN, IS NOT TO BE CONSTRUED TO MEAN THAT IT IS ALL THAT MAY BE REQUIRED. THE CONTRACTOR IS TO TAKE WHATEVER MEASURES NECESSARY TO CONTROL EROSION THROUGHOUT THE PROJECT. EROSION CONTROL WILL BE INSTALLED PRIOR TO LAND CLEARING AND SHALL REMAIN IN PLACE UNTIL THE AREA IS STABILIZED. (SEE OTHER EROSION AND TURBIDITY NOTES ON THE GENERAL NOTES SHEET OF THIS PLAN SET.)

STAKED EROSION CONTROL (SILT FENCE) (SF)

NTS

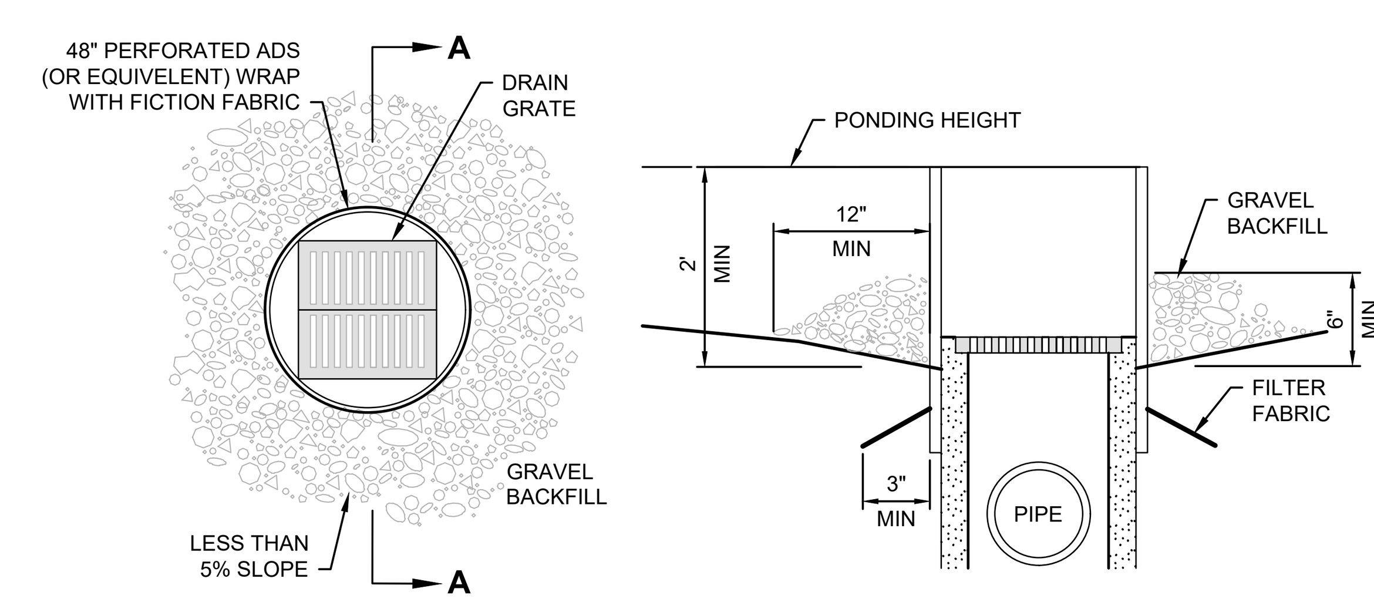
NOTES:

1. DROP INLET SEDIMENT BARRIERS ARE TO BE USED FOR SMALL, NEARLY LEVEL DRAINAGE AREAS. (LESS THAN 5%)
2. THE TOP OF STRUCTURE (PONDING HEIGHT) MUST BE WELL BELOW THE GROUND ELEVATION DOWNSLOPE TO PREVENT RUNOFF FROM BYPASSING THE INLET. EXCAVATION OF A BASIN ADJACENT TO THE DROP INLET OR A TEMPORARY DIKE ON THE DOWNSLOPE OF THE STRUCTURE MAY BE NECESSARY.
3. ALL EXISTING INLETS LOCATED ON EXISTING ROAD TO HAVE INLET PROTECTION DURING CONSTRUCTION.
4. ALL SILT FENCE INSTALLED (SINGLE OR DOUBLE) TO BE FDOT TYPE III.
5. WATER TRUCK SHALL BE ONSITE DURING CONSTRUCTION TO KEEP DUST LEVEL AT A MINIMUM. (OR USE OTHER METHODOLOGY FOT DUST ABATEMENT/CONTROL APPROVED BY COUNTY)
6. IF CONTRACTOR PERFORMS ANY WORK 100 FT OF THE EXISTING WETLAND DOUBLE ROW SILT FENCE TO BE INSTALLED.



CURB INLET SEDIMENT BARRIER (CIP)

NTS (INLET PROTECTION)



NOTES:

1. USE PIPE AND GRAVEL TYPE SEDIMENT BARRIER WHEN CURB INLET IS LOCATED IN GENTLY SLOPING STREET SEGMENT, WHERE WATER CAN POND AND ALLOW SEDIMENT TO SEPARATE FROM RUNOFF.
2. BARRIER SHALL ALLOW FOR OVERFLOW FROM SEVERE STORM EVENT.
3. INSPECT BARRIERS AND REMOVE SEDIMENT AFTER EACH STORM EVENT. SEDIMENT AND GRAVEL MUST BE REMOVED FROM THE TRAVELED WAY IMMEDIATELY.

DROP INLET SEDIMENT BARRIER (IP)

NTS (INLET PROTECTION)

MADDEN
MOORHEAD & STOKES, LLC
CIVIL ENGINEERS
431 E. Horatio Avenue
Suite 260
Maitland, Florida 32751
(407) 629-8330
CA# 0007723

DEMO AND EROSION DETAILS

FOR

LAKE HILLS MAIN BLVD. & MASS GRADING

HOWEY-IN-THE-HILLS FLORIDA

READER & PARTNERS, LLC
5850 TG LEE BOULEVARD, SUITE 200
ORLANDO, FL 32822
(407) 856-4899

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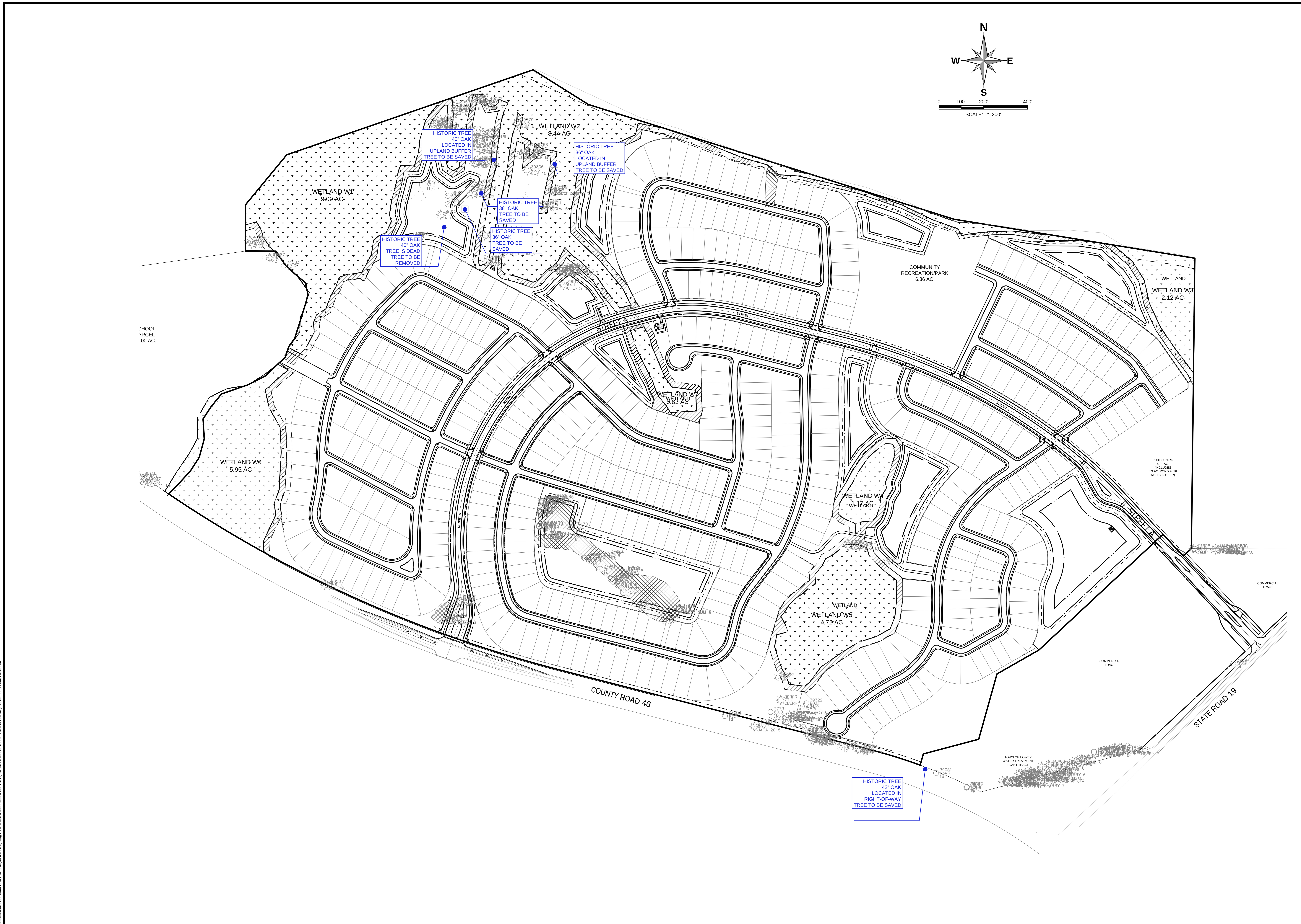
C007



MADDEN
MOORHEAD & STOKES, LLC
CIVIL ENGINEERS
431 E. Horatio Avenue
Suite 260
Maitland, Florida 32751
(407) 629-8330
CA# 0007723

HISTORICAL TREE SAVE PLAN
FOR
LAKE HILLS MAIN BLVD. & MASS GRADING
HOWEY-IN-THE-HILLS
FLORIDA

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C008

TREE POINT #	TREE ø (IN)	TREE TYPE	TREE TO BE REMOVED OR SAVED	TREE POINT #	TREE ø (IN)	TREE TYPE	TREE TO BE REMOVED OR SAVED	TREE POINT #	TREE ø (IN)	TREE TYPE	TREE TO BE REMOVED OR SAVED		TREE ø (IN)	TREE TYPE	TREE TO BE REMOVED OR SAVED
27264	22	OAK	SAVE	38177	17	PALM	REMOVE	39489	8	OAK	SAVE	40042	7	TREE CAMP	SAVE
27265	17	OAK	SAVE	38178	17	PALM	REMOVE	39490	25	OAK	SAVE	40044	6	TREE CAMP	SAVE
27266	10	OAK	SAVE	38179	15	PALM	REMOVE	39491	7	TREE GUM	SAVE	40046	6	TREE CAMP	SAVE
27267	7	OAK	SAVE	38181	16	PALM	REMOVE	39492	25	TREE GUM	SAVE	40047	8	TREE CAMP	SAVE
27268	11	OAK	SAVE	38182	16	PALM	REMOVE	39501	7	TREE A	SAVE	40049	12	OAK	SAVE
27269	7	OAK	SAVE	38183	16	PALM	REMOVE	39502	9	TREE GUM	SAVE	40050	18	OAK	SAVE
27270	16	OAK	SAVE	38184	16	PALM	REMOVE	39503	6	TREE CBERRY	SAVE	40051	15	OAK	SAVE
27271	11	OAK	SAVE	38185	14	PALM	REMOVE	39505	32	OAK	SAVE	40052	14	CHERRY	SAVE
27272	16	OAK	SAVE	38186	15	PALM	REMOVE	39517	10	OAK	SAVE	40053	15	TREE CAMP	SAVE
27273	11	OAK	SAVE	38187	15	PALM	REMOVE	39518	10	OAK	SAVE	40054	12	OAK	SAVE
27274	10	OAK	SAVE	38188	15	PALM	REMOVE	39535	30	OAK	REMOVE	40055	27	OAK	SAVE
27275	8	OAK	SAVE	38189	15	PALM	REMOVE	39540	25	OAK	SAVE	40058	15	OAK	SAVE
27276	6	SWEET GUM	SAVE	38190	17	PALM	REMOVE	39667	14	OAK	SAVE	40062	22	OAK	SAVE
27277	17	OAK	SAVE	38191	13	PALM	REMOVE	39668	15	OAK	SAVE	40063	29	OAK	SAVE
27278	6	SWEET GUM	SAVE	38192	14	PALM	REMOVE	39669	18	TREE GUM	SAVE	40065	21	OAK	SAVE
27279	9	OAK	SAVE	38193	14	PALM	REMOVE	39671	26	OAK	SAVE	40067	6	TREE CAMP	SAVE
27280	9	OAK	SAVE	38194	14	PALM	REMOVE	39672	15	PALM	SAVE	40068	10	TREE CAMP	SAVE
27281	9	PALM	SAVE	38195	14	PALM	REMOVE	39678	20	OAK	SAVE	40070	10	OAK	SAVE
27282	12	OAK	SAVE	38196	16	PALM	REMOVE	39679	33	OAK	SAVE	40072	12	PALM	SAVE
27283	11	OAK	SAVE	38199	27	OAK	SAVE	39683	34	OAK	SAVE	40073	7	TREE GUM	SAVE
27284	8	OAK	SAVE	39000	10	OAK	REMOVE	39687	29	OAK	SAVE	40078	18	OAK	SAVE
27285	10	OAK	SAVE	39001	7	OAK	REMOVE	39690	9	OAK	SAVE	40080	29	OAK	SAVE
27286	18	OAK	REMOVE	39002	8	OAK	REMOVE	39693	19	OAK	SAVE	40087	40	OAK	SAVE
27287	32	OAK	SAVE	39003	9	OAK	REMOVE	39694	10	OAK	REMOVE	40088	33	OAK	SAVE
27288	22	OAK	REMOVE	39004	13	OAK	REMOVE	39695	10	OAK	REMOVE	40092	26	OAK	REMOVE
27289	5	SWEET GUM	REMOVE	39005	22	OAK	REMOVE	39701	29	OAK	SAVE	40095	38	OAK	SAVE
27290	10	OAK	REMOVE	39006	33	OAK	REMOVE	39702	20	OAK	REMOVE	40097	28	OAK	SAVE
27291	9	OAK	REMOVE	39007	8	OAK	REMOVE	39703	14	OAK	REMOVE	40099	27	OAK	SAVE
27292	9	OAK	REMOVE	39008	18	OAK	REMOVE	39706	14	OAK	REMOVE	40102	18	OAK	REMOVE
27293	25	OAK	REMOVE	39009	14	OAK	REMOVE	39707	21	OAK	REMOVE	40103	20	OAK	REMOVE
27294	11	OAK	REMOVE	39010	11	PALM	REMOVE	39709	8	OAK	SAVE	40106	30	OAK	REMOVE
27295	10	OAK	REMOVE	39011	12	PALM	REMOVE	39754	13	OAK	SAVE	40107	10	OAK	REMOVE
27296	10	OAK	REMOVE	39012	22	OAK	REMOVE	39755	6	OAK	SAVE	40108	9	OAK	REMOVE
27297	9	OAK	REMOVE	39013	32	OAK	REMOVE	39756	27	OAK	REMOVE	40109	10	OAK	REMOVE
27298	10	OAK	REMOVE	39014	30	OAK	REMOVE	39757	10	TREE GUM	SAVE	40110	16	OAK	REMOVE
27299	8	OAK	REMOVE	39015	11	TREE A	REMOVE	39758	10	TREE GUM	SAVE	40111	8	OAK	REMOVE
27301	13	PALM	SAVE	39017	36	OAK	SAVE	39759	8	TREE GUM	SAVE	40112	11	OAK	REMOVE
27302	14	PALM	SAVE	39018	30	OAK	REMOVE	39760	13	OAK	SAVE	40115	40	OAK	REMOVE
27304	22	OAK	SAVE	39020	14	OAK	REMOVE	39761	18	OAK	SAVE	40124	9	OAK	REMOVE
27305	6	OAK	SAVE	39021	14	OAK	REMOVE	39762	13	OAK	SAVE	40125	8	OAK	REMOVE
27306	9	OAK	SAVE	39022	10	OAK	REMOVE	39763	13	OAK	SAVE	40127	11	OAK	REMOVE
27307	12	PALM	SAVE	39023	18	OAK	REMOVE	39764	13	OAK	SAVE	40128	7	CHERRY	REMOVE
27308	10	OAK	SAVE	39024	10	OAK	REMOVE	39765	7	OAK	SAVE	40129	10	OAK	REMOVE
27309	11	SWEET GUM	SAVE	39025	8	OAK	REMOVE	39766	8	OAK	SAVE	40130	7	OAK	REMOVE
27310	7	SWEET GUM	SAVE	39052	10	OAK	SAVE	39767	13	OAK	SAVE	40131	17	OAK	REMOVE
27312	22	OAK	SAVE	39068	16	OAK	SAVE	39768	12	TREE CAMP	SAVE	40132	7	OAK	REMOVE
27313	7	OAK	SAVE	39106	12	TREE CBERRY	SAVE	39772	17	OAK	SAVE	40134	20	OAK	REMOVE
27314	24	OAK	REMOVE	39107	12	TREE CBERRY	SAVE	39775	22	OAK	SAVE	40135	26	OAK	REMOVE
27315	14	OAK	SAVE	39110	14	TREE CBERRY	SAVE	39776	13	OAK	SAVE	40136	16	PINE	REMOVE
27317	10	OAK	SAVE	39117	16	OAK	SAVE	39779	8	TREE GUM	SAVE	40137	9	OAK	REMOVE
27318	9	OAK	SAVE	39118	6	TREE CBERRY	SAVE	39782	24	OAK	SAVE	40138	10	OAK	REMOVE
27319	10	OAK	SAVE	39119	10	OAK	SAVE	39787	22	OAK	REMOVE	40139	7	OAK	REMOVE
27320	23	OAK	SAVE	39120	8	OAK	SAVE	39788	17	OAK	REMOVE	40140	22	OAK	REMOVE
27321	36	OAK	SAVE	39300	9	TREE CBERRY	SAVE	39789	9	OAK	SAVE	40141	11	OAK	REMOVE
27322	26	OAK	REMOVE	39307	6	OAK	SAVE	39791	10	OAK	SAVE	40142	10	OAK	REMOVE
27324	14	OAK	REMOVE	39308	6	OAK	SAVE	39794	10	CHERRY	SAVE	40143	10	OAK	REMOVE
27325	24	OAK	REMOVE	39318	6	OAK	SAVE	39795	19	OAK	SAVE	40144	7	OAK	REMOVE
27327	17	OAK	REMOVE	39322	14	PALM	SAVE	39796	11	OAK	SAVE	40145	15	OAK	REMOVE
27730	7	PALM	SAVE	39323	12	OAK	SAVE	39797	14	OAK	SAVE	40407	17	OAK	REMOVE
27731	16	PALM	SAVE	39328	6	OAK	SAVE	39806	10	TREE GUM	REMOVE	40408	15	OAK	REMOVE
27738	10	OAK	SAVE	39332	6	TREE A	SAVE	39808	24	OAK	REMOVE	40411	8	OAK	REMOVE
27739	14	OAK	SAVE	39335	12	TREE CBERRY	SAVE	39809	18	OAK	REMOVE	40412	6	OAK	REMOVE
27741	13	PALM	SAVE	39336	12	TREE CBERRY	SAVE	39813	17	OAK	REMOVE	40413	7	OAK	REMOVE
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27920	10	OAK	REMOVE	39339	13	PINE	SAVE	39819	14	PALM	REMOVE	40415	12	OAK	REMOVE
27921	8	OAK	REMOVE	39339	13	PINE	SAVE	39859	26	OAK	SAVE	40417	9	OAK	REMOVE
27922	9	OAK	REMOVE	39406	10	OAK	REMOVE	39864	25	TREE GUM	SAVE	40419	7	OAK	REMOVE
27923	13	PALM	REMOVE	39408	10	OAK	REMOVE	39866	14	OAK	REMOVE	40420	19	OAK	REMOVE
27924	13	PALM	REMOVE	39409	12	OAK	REMOVE	39867	22	OAK	REMOVE	40421	7	OAK	REMOVE
27925	11	PALM	REMOVE	39410	10	OAK	REMOVE	39869	26	OAK	REMOVE	40422	10	OAK	REMOVE
27926	13	PALM	REMOVE	39413	18	OAK	REMOVE	39873	23	OAK	REMOVE	40423	10	OAK	REMOVE
27927	12	PALM	REMOVE	39415	11	OAK	REMOVE	39875	8	OAK	REMOVE	40424	8	OAK	REMOVE
27928	9	PINE	REMOVE	39416	13	OAK	REMOVE	39876	20	OAK	REMOVE	40426	15	OAK	REMOVE
27929	7	SWEET GUM	REMOVE	39419	17	OAK	REMOVE	39877	29	OAK	REMOVE	40427	11	OAK	REMOVE
27930	6	SWEET GUM	REMOVE	39420	13	OAK	REMOVE	39879	18	OAK	REMOVE	40429	16	OAK	REMOVE
27931	6	SWEET GUM	REMOVE	39423	12	OAK	REMOVE	39880	10	OAK	REMOVE	40431	13	OAK	REMOVE
27932	13	PALM	REMOVE	39424	10	OAK	REMOVE	39881	9	OAK	REMOVE	40556	13	PALM	SAVE
27933	12	PALM	REMOVE	39425	8	OAK	REMOVE	39883	14	OAK	REMOVE	40557	11	PALM	SAVE
27934	13	PALM	REMOVE	39426	10	OAK	REMOVE	39885	10	OAK	REMOVE	40558	10	TREE CAMP	SAVE
27935	6	PINE	REMOVE	39428	16	OAK	REMOVE	39886	24	OAK	REMOVE	40561	13	PALM	SAVE
27936	11	PALM	REMOVE	39430	11	PINE	REMOVE	39890	14	OAK	REMOVE	40562	10	TREE GUM	SAVE
27937	19	PINE	REMOVE	39431	14	OAK	REMOVE	39893	28	OAK	REMOVE	40563	6	TREE GUM	SAVE
27938	11	PINE	REMOVE	39432	16	OAK	REMOVE	39906	18	OAK	REMOVE	40564	10	TREE GUM	SAVE
27939	9	PINE	REMOVE	39434	7	OAK	REMOVE	39907	15	OAK	REMOVE	40565	14	PALM	SAVE
27940	8	PINE	REMOVE	39437	16	OAK	SAVE	39908	11	OAK	REMOVE	40566	8	OAK	SAVE
27941	14	PINE	REMOVE	39438	25	OAK	REMOVE	39909	11	OAK	REMOVE	40567	13	PALM	SAVE
27942	10	PALM	REMOVE	39439	7	OAK	REMOVE	39912	9	CHERRY	REMOVE	40568	7	OAK	SAVE
27944	10	PALM	REMOVE	39443	24	OAK	SAVE	39913	21	OAK	REMOVE	40569	8	OAK	SAVE
27945	7	PALM	REMOVE	39445	10	OAK	SAVE	39914	32	OAK	REMOVE	40570	16	OAK	REMOVE
28200	6	OAK	REMOVE	39446	7	OAK	SAVE	39918	9	CHERRY	REMOVE	40571	8	TREE CBERRY	REMOVE
28201	9	OAK	REMOVE	39447	6	OAK	SAVE	39919	9	TREE GUM	REMOVE	40572	7	TREE CBERRY	REMOVE
28202	12	OAK	REMOVE	39448	17	OAK	SAVE	39920	9	TREE GUM	REMOVE	40573	6	OAK	REMOVE
28203	11	OAK	REMOVE	39449	7	OAK	SAVE	39921	15	TREE GUM	REMOVE	40574	6	OAK	REMOVE
28205	11	OAK	REMOVE	39450	7	OAK	SAVE	39924	10	TREE GUM	REMOVE	40575	10	OAK	REMOVE
28206	18	OAK	REMOVE	39451	8	OAK	SAVE	40001	22	OAK	REMOVE	40576	9	OAK	REMOVE
28207	12	OAK	REMOVE	39452	8	OAK	SAVE	40002	11	OAK	REMOVE	40577	24	OAK	REMOVE
28208	6	OAK	REMOVE	39454	7	OAK	SAVE	40003	16	OAK	REMOVE	40579	31	TREE CAMP	REMOVE
28209	6	OAK	REMOVE	39455	10	OAK	SAVE	40004	20	OAK	SAVE	40580	16	TREE CAMP	REMOVE
28210	12	OAK	REMOVE	39456	8	OAK	SAVE	40006	16	OAK	REMOVE	40588	12	OAK	REMOVE
28211	6	OAK	REMOVE	39457	8	OAK	SAVE	40007	15	OAK	REMOVE	40589	16	OAK	REMOVE
28212	12	OAK	REMOVE	39458	14	OAK	SAVE	40008	11	OAK	REMOVE	40590	15	PALM	REMOVE
28213	8	OAK	REMOVE	39459	14	OAK	SAVE	40009	14	TREE CAMP	REMOVE	40591	13	PALM	REMOVE
28214	11	OAK	REMOVE	39460	12	CHERRY	SAVE	40010	22	TREE CAMP	SAVE	40592	10	OAK	REMOVE
28215	7	OAK	REMOVE	39461	7	CHERRY	SAVE	40012	11	OAK	REMOVE	40593	8	OAK	REMOVE
28217	18	OAK	REMOVE	39462	10	OAK	SAVE	40013	10	OAK	REMOVE	40594	18	OAK	REMOVE
28218	13	OAK	REMOVE	39463	8	OAK	SAVE	40015	29	OAK	REMOVE	40595	18	OAK	REMOVE
28219	7	OAK	REMOVE	39464	8	OAK	SAVE	40016	16	OAK	SAVE	40596	18	OAK	REMOVE
28220	9	OAK	REMOVE	39465	11	OAK	SAVE	40017	19	OAK	SAVE	40597	13	OAK	REMOVE
28221	9	OAK	REMOVE	39467	6	OAK	SAVE	40018	15	TREE CAMP	SAVE	40598	22	OAK	REMOVE
28222	14	OAK	REMOVE	39468	6	TREE CAMP	SAVE	40019	9	TREE CAMP	SAVE	40599	17	OAK	REMOVE
28224	10	OAK	REMOVE	39470	20	OAK	SAVE	40020	10	TREE CAMP	SAVE	40600	16	OAK	REMOVE
28225	23	OAK	REMOVE	39471	10	OAK	SAVE	40022	10	OAK	SAVE	40601	16	OAK	REMOVE
28226	8	OAK	REMOVE	39474	14	OAK	SAVE	40023	20	OAK	SAVE	40602	15	OAK	REMOVE
28227	16	OAK	REMOVE	39475	19	TREE GUM	SAVE	40024	19	OAK	SAVE	40801	10	OAK	SAVE
28228	10	OAK	REMOVE	39476	8	OAK	SAVE	40027	24	OAK	SAVE	40802	24	OAK	SAVE
28229	9	OAK	REMOVE	39477	8	OAK	SAVE	40028	17	TREE CAMP	SAVE	41590	28	OAK	SAVE
28230	10	OAK	REMOVE	39478	16	TREE GUM	SAVE	40029	20	TREE CAMP	SAVE	41592	14	TREE GUM	SAVE
28231	13	OAK	REMOVE	39479	10	TREE GUM	SAVE	40032	9	OAK	SAVE	41593	7	OAK	SAVE
28232	23	OAK	REMOVE	39480	10	OAK	SAVE	40033	15	OAK	SAVE	41594	18	TREE CAMP	SAVE
38170	18	PALM	REMOVE	39481	15	OAK	SAVE	40034	13	OAK	SAVE	41595	27	OAK	SAVE
38171	18	PALM	REMOVE	39482	9	OAK	SAVE	40035	6	TREE CAMP	SAVE				
38172	17	PALM	REMOVE	39483	7	OAK	SAVE	40036	6	TREE CAMP	SAVE				
38173	17	PALM	REMOVE	39484	8	TREE GUM	SAVE	40037	18	OAK	SAVE				
38174	15	PALM	REMOVE	39486	6	OAK	SAVE	40039	11	OAK	SAVE				
38175	17	PALM	REMOVE	39487	9	OAK	SAVE	40040	14	OAK	SAVE				
38176	17	PALM	REMOVE	39488	8	OAK	SAVE	40041	15	OAK	SAVE				

COUNT OF TREES TO BE REMOVED: 268
INCHES OF TREES TO BE REMOVED: 3736
COUNT OF TREES TO BE SAVED: 231

MADDEN
MOORHEAD & STOKES, LLC
CIVIL ENGINEERS
431 E. Horatio Avenue
Suite 260
Maitland, Florida 32751
(407) 629-8330
CA# 0007723

TREE REMOVAL TABLE

FOR

LAKE HILLS MAIN BLVD. & MASS GRADING

HOWEY-IN-THE-HILLS FLORIDA

READER & PARTNERS, LLC
5850 TG LEE BOULEVARD, SUITE 200
ORLANDO, FL 32822
(407) 856-4899

	DATE	REVISIONS
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DAVID ASHLEY STOKES LICENSE NO. 66527 STATE OF FLORIDA PROFESSIONAL ENGINEER

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ENGINEER OF RECORD
November 7, 2024

JOB #: 23019
DATE: N/A 11/7/24
DATUM: NAVD 88
DESIGNED BY: KAC
DRAWN BY: JSK
APPROVED BY: DAS

LAND USE RANGES PERMITTED IN PUD					
TOTAL PROJECT AREA			=	265.13	AC
PUD NET DEVELOPABLE LAND AREA			=	192.97	AC
INSTITUTIONAL			=	22.50	AC
CITY WATER TREATMENT PLANT			=	3.23	AC
PUBLIC/CIVIC USE	MIN	5%	=	2.89	AC
5% OF NON RESIDENTIAL AREA	PROVIDED		=	25.73	AC
PUBLIC PARK	MIN		=	4.00	AC
	PROVIDED		=	4.21	AC
RESIDENTIAL	MIN	70%	=	135.08	AC
	MAX	85%	=	164.02	AC
	PROVIDED		=	146.63	AC
TOTAL NON-RESIDENTIAL AREAS	MIN	15%	=	28.95	AC
	MAX	30%	=	57.89	AC
	PROVIDED		=	29.94	AC
OPEN SPACE	MIN	25%	=	66.28	AC
	PROVIDED BY RESIDENTIAL		=	55.05	AC
	PROVIDED BY OTHER USES		=	11.23	AC
RECREATIONAL	MIN	10%	=	5.13	AC
MIN 10% OF USEABLE OPEN SPACE	PROVIDED BY RESIDENTIAL		=	10.57	AC
	PROVIDED BY OTHER USES		=	TBD	AC

RESIDENTIAL PROJECT NET DEVELOPABLE AREA CALCULATION				
TOTAL PROJECT AREA		=	220.21	AC
WETLANDS	1	=	9.09	AC
	2 (INCLUDES SW1,2,3,5)	=	8.44	AC
	3	=	2.12	AC
	4	=	1.17	AC
	5	=	4.72	AC
	6	=	5.50	AC
	7(PORTION OF SW5)	=	0.81	AC
	TOTAL	=	31.85	AC
WETLAND AREA FOR OPEN SPACE (50%)		=	15.93	AC
WETLAND AREA NOT USED AS OPEN SPACE		=	15.93	AC
SURFACE WATER (TO BE IMPACTED)	4	=	0.21	AC
	5	=	0.15	AC
	6	=	0.42	AC
	7	=	1.82	AC
	TOTAL	=	2.60	AC
REQUIRED OPEN SPACE (25%)		=	55.05	AC
NET DEVELOPABLE AREA = TOTAL AREA - WETLANDS NOT USED AS OPEN SPACE - SURFACE WATER - REQUIRED OPEN SPACE				
RESIDENTIAL NET DEVELOPABLE AREA		=	146.63	AC

NOTE: ALL AREAS BASED ON PREDEVELOPMENT SURVEY

OPEN SPACE IS CALCULATED OVER THE ENTIRE PUD. AS EACH PHASE IS DEVELOPED THE OPEN SPACE CALCS WILL BE CALCULATED BY TOTALING ALL EXISTING PHASES IN ADDITION TO THE PROPOSED PHASE TO SHOW COMPLIANCE WITH THE PUD.

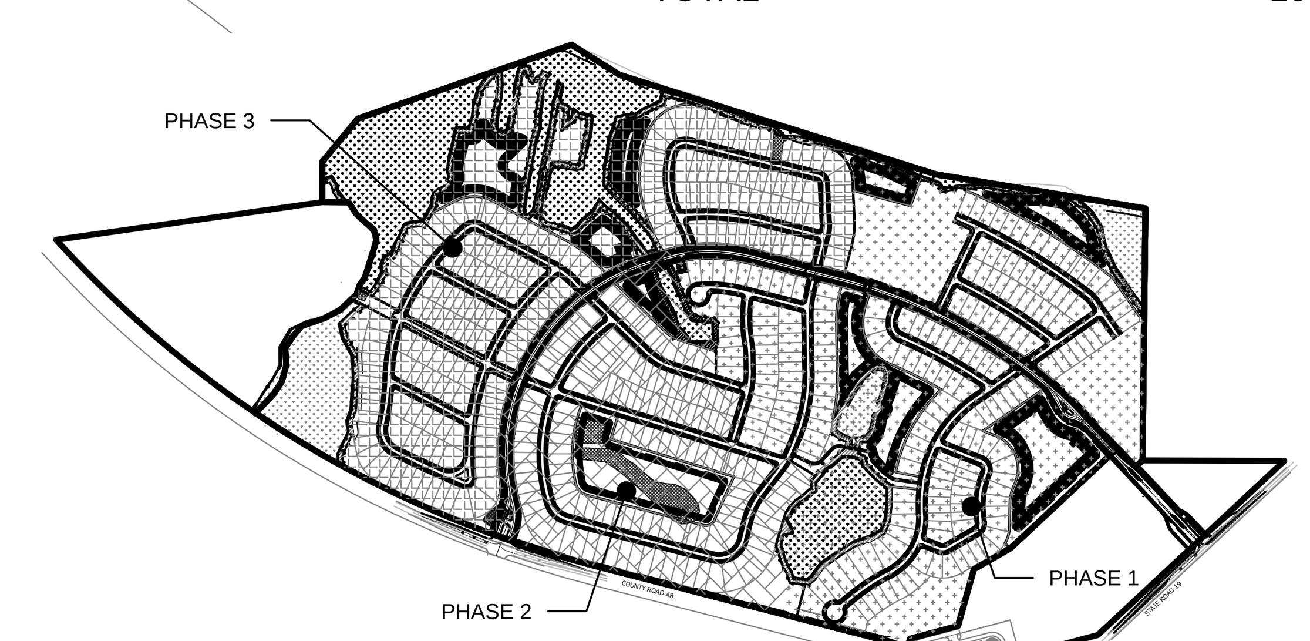
PUD NET DEVELOPABLE AREA CALCULATION			
TOTAL PROJECT AREA	=	265.13	AC
WETLANDS	=	30.42	AC
SURFACE WATER	=	5.88	AC
REQUIRED OPEN SPACE (25%)	=	66.28	AC
NET DEVELOPABLE AREA = TOTAL AREA - WETLANDS NOT USED AS OPEN SPACE - SURFACE WATER - REQUIRED OPEN SPACE			
PUD NET DEVELOPABLE AREA	=	192.97	AC

NOTE: ALL AREAS TAKEN FROM PUD CONCEPTUAL LAND USE PLAN LOCATED IN ATTACHMENT B OF THE DEVELOPMENT AGREEMENT FOR THE LAKE HILLS PUD

NOTE PUD NOTED ALL WETLANDS WERE USED AS OPEN SPACE SINCE THEY MADE UP LESS THAN 50% OF REQUIRED OPEN SPACE

PROPOSED LOT COUNT:

LOT	LOT TYPE	PHASE 1	PHASE 2	PHASE 3	TOTAL
40'	PAIRED HOME	18	34	40	92
50'	SINGLE FAMILY	99	87	84	270
60'	SINGLE FAMILY	92	26	78	196
TOTAL		209	147	202	558



NOTE: PHASING SHOWN IS CONCEPTUAL AND SUBJECT TO CHANGE WITH FINAL ENGINEERING PLANS. PHASES MAY BE CONSTRUCTED NON-CONSECUTIVELY.

PHASING MAP

NOTE: PHASING SHOWN IS CONCEPTUAL AND SUBJECT TO CHANGE WITH FINAL ENGINEERING PLANS. PHASES MAY BE CONSTRUCTED NON-CONSECUTIVELY.

MADDEN
MOORHEAD & STOKES, LLC
CIVIL ENGINEERS
431 E. Horatio Avenue
Suite 260
Maitland, Florida 32751
(407) 629-8330
CA# 0007723

OVERALL PD PLAN
FOR
LAKE HILLS MAIN BLVD. & MASS GRADING
HOWEY-IN-THE-HILLS FLORIDA

READER & PARTNERS, LLC
5850 TG LEE BOULEVARD, SUITE 200
ORLANDO, FL 32822
(407) 856-4899

REVISIONS | DATE
1 2 3 4 5 6 7 8 9 10 11

DAVID ASHLEY STOKES
LICENSE
NO. 66527
STATE OF FLORIDA
PROFESSIONAL ENGINEER

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ENGINEER OF RECORD
November 7, 2024

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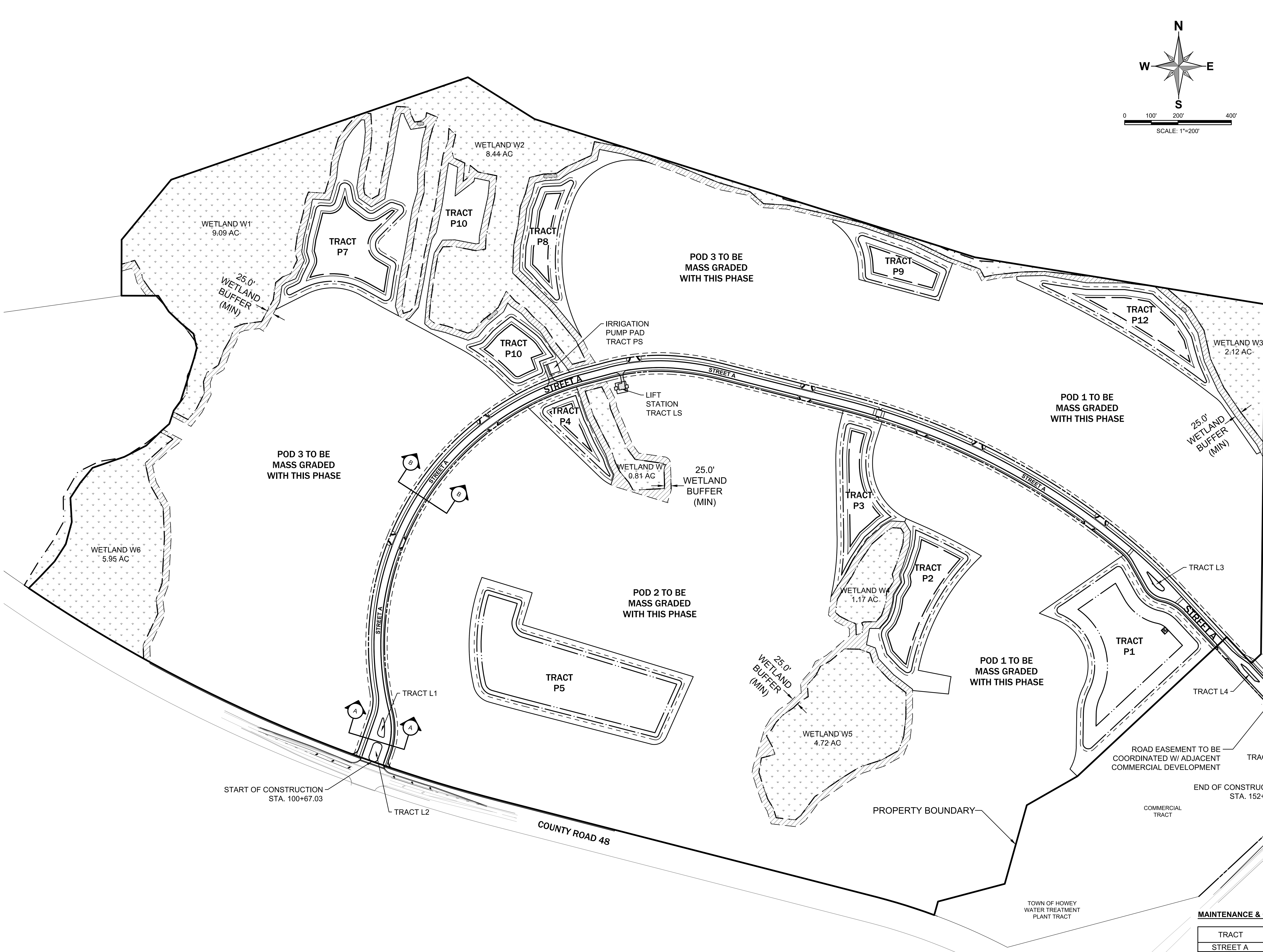
APPROVED BY: DAS

C010



ZONING:
CURRENT ZONING IS "PUD" (PLANNED UNIT DEVELOPMENT)

FUTURE LAND USE:
VMU - VILLAGE MIXED USE
CON- CONSERVATION

SITE DATA:

TOTAL AREA	220.21 AC	
WETLAND AREA:	32.30 AC	
WETLAND BUFFER AREA:	8.24 AC	
STREET A PHASE 1 TOTAL AREA:	179.67 AC	100%
PAVEMENT AREA:	3.00 AC	1.67%
SIDEWALK AREA:	1.91 AC	1.06%
POND BOTTOM (P2 - P12):	6.38 AC	3.55%
IMPERVIOUS AREA:	11.29 AC	6.28%
PERVIOUS AREA:	168.38 AC	93.72%

FLOOD ZONE:
ACCORDING TO FIRM MAP PANEL NOS. 12069C0485E DATED 12/18/2012, MAJORITY OF THIS PROPERTY LIES WITHIN FLOOD ZONE 'X' - AND IS NOT LOCATED WITHIN THE 100 YEAR FLOOD HAZARD AREA WITH A PORTION OF THE PROPERTY LYING WITHIN FLOOD ZONE "A" & "AE" AND IS IN A SPECIAL FLOOD HAZARD AREA SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD.

UTILITIES
WATER -HOWEY-IN-THE-HILLS UTILITIES DEPARTMENT
SEWER - HOWEY-IN-THE-HILLS UTILITIES DEPARTMENT
POWER- DUKE ENERGY

PARCEL KEY NO:
23-20-25-0004-000-00200
23-20-25-0004-000-01000
23-20-25-0001-000-01400
23-20-25-0002-000-00600
23-20-25-0002-000-01100
23-20-25-0004-000-01000

AGENT:
DAVID STOKES, PE
MADDEN MOORHEAD & STOKES LLC.
431 E. HORATIO AVE, MAITLAND, FL, 32751
OFFICE: (407) 629-8330

PHASING:
THIS PORTION OF ROAD A. TO BE CONSTRUCT IN 1 PHASE.

MAINTENANCE & OPERATION TABLE:

TRACT	OWNERSHIP	MAINTENANCE	AREA
STREET A	HOWEY-IN-THE-HILLS	HOWEY-IN-THE-HILLS	7.74 AC
TRACT P1	H.O.A.	H.O.A.	5.42 AC
TRACT P2	H.O.A.	H.O.A.	2.78 AC
TRACT P3	H.O.A.	H.O.A.	1.96 AC
TRACT P4	H.O.A.	H.O.A.	1.01 AC
TRACT P5	H.O.A.	H.O.A.	6.14 AC
TRACT P7	H.O.A.	H.O.A.	4.47 AC
TRACT P8	H.O.A.	H.O.A.	1.84 AC
TRACT P9	H.O.A.	H.O.A.	1.49 AC
TRACT P10	H.O.A.	H.O.A.	2.75 AC
TRACT P12	H.O.A.	H.O.A.	2.63 AC
TRACT L1	H.O.A.	H.O.A.	0.03 AC
TRACT L2	H.O.A.	H.O.A.	0.05 AC
TRACT L3	H.O.A.	H.O.A.	0.02 AC
TRACT L4	H.O.A.	H.O.A.	0.01 AC
TRACT L5	H.O.A.	H.O.A.	0.02 AC
TRACT LS	HOWEY-IN-THE-HILLS	HOWEY-IN-THE-HILLS	0.04 AC
TRACT PS	H.O.A.	H.O.A.	0.04 AC

MADDEN
MOORHEAD & STOKES, LLC
CIVIL ENGINEERS
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CA# 0007723

SITE PLAN
FOR
LAKE HILLS MAIN BLVD. & MASS GRADING
HOWEY-IN-THE-HILLS FLORIDA

READER & PARTNERS, LLC
5850 TG LEE BOULEVARD, SUITE 200
ORLANDO, FL 32822
(407) 856-4899

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DAVID ASHLEY STOKES
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NO. 66527
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FLORIDA
PROFESSIONAL ENGINEER

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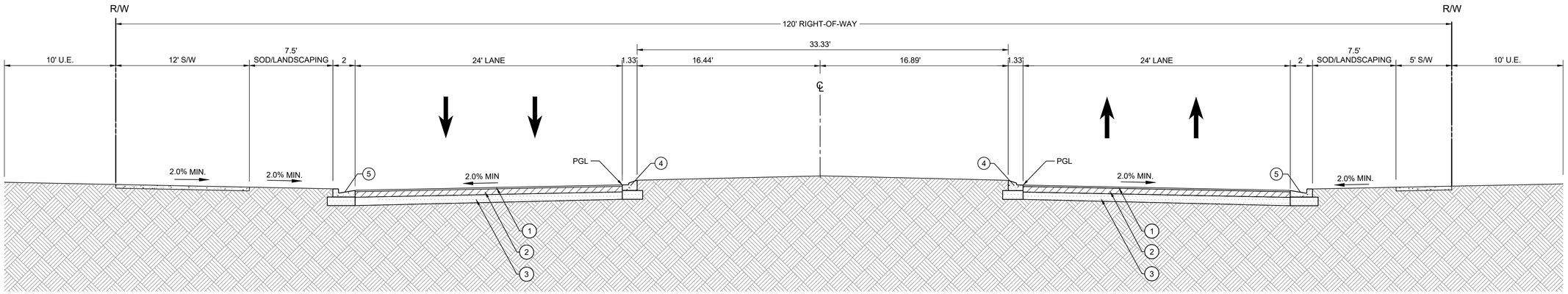
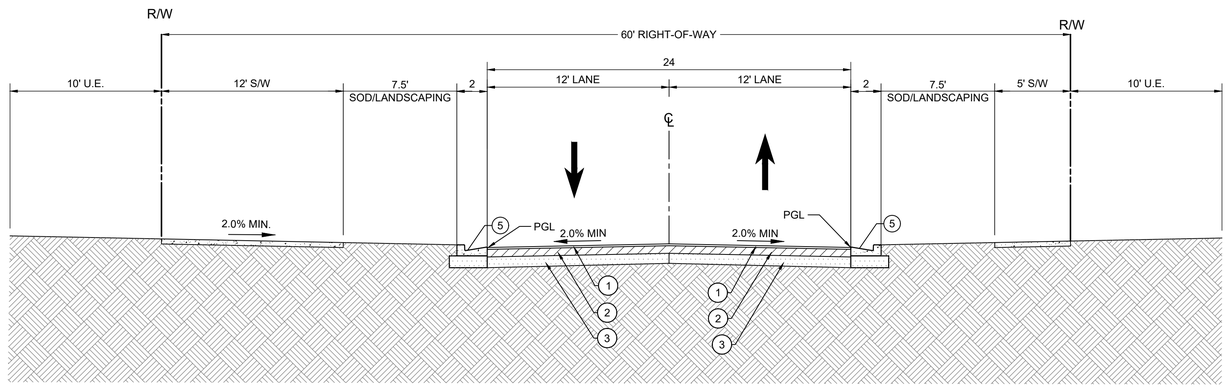
C011



TYPICAL ROAD SECTION A-A - 120' RIGHT-OF-WAY VARIES

NTS



TYPICAL ROAD SECTION B-B - 60' RIGHT-OF-WAY

NTS

LEGEND

1. 2" SP-9.5 PLACED AND COMPACTED PER FDOT SPECIFICATIONS
2. 8" CRUSHED CONCRETE OR LIMEROCK BASE - COMPACTED T0 98% AASHTO T-180 METHOD - LBR 100
3. 12" STABILIZED SUBGRADE - MINIMUM LBR EQUAL TO 40, AND COMPACTED TO A MINIMIMUM DENSITY EQUIVALENT TO 98 PERCENT OF THE SOIL'S MODIFIED PROCTOR DENSITY VALUE AS DETERMINED BY AASHTO T-180 TEST METHOD
4. TYPE A CURB PER FDOT INDEX #520-001
5. TYPE F CURB PER FDOT INDEX #520-001

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TYPICAL SECTIONS

FOR

LAKE HILLS MAIN BLVD. & MASS GRADING

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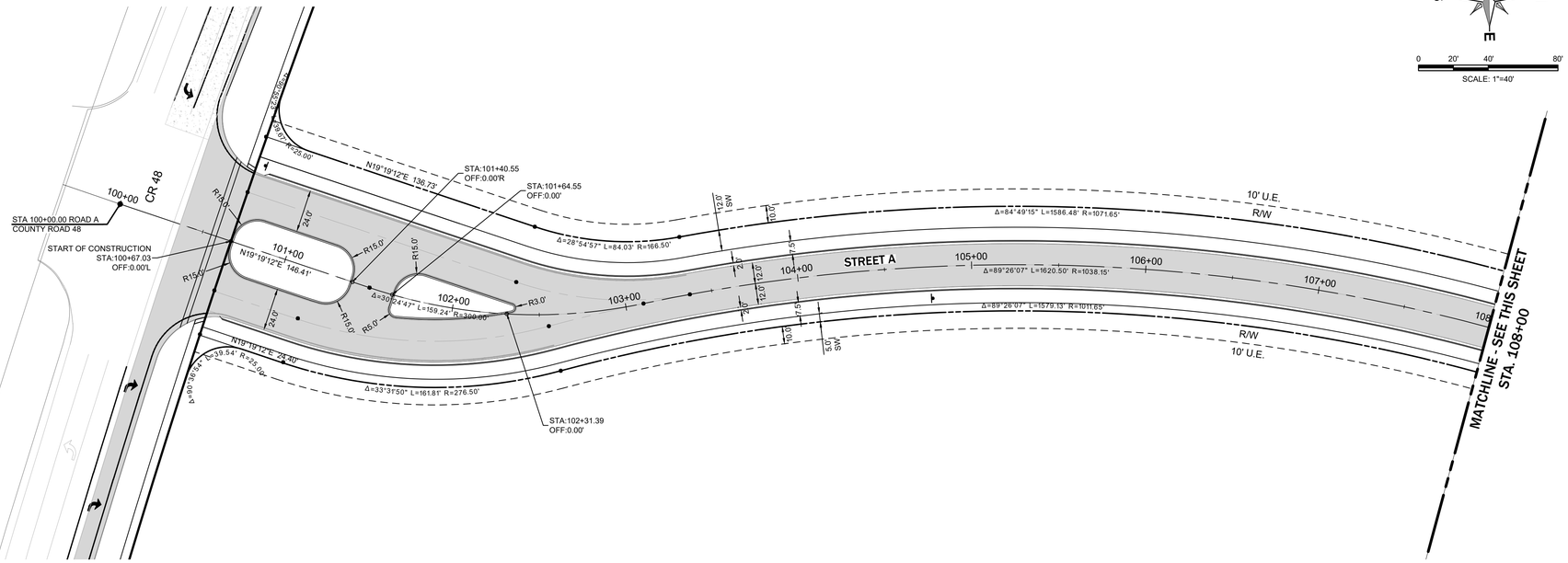
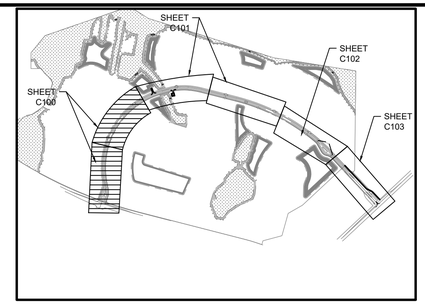
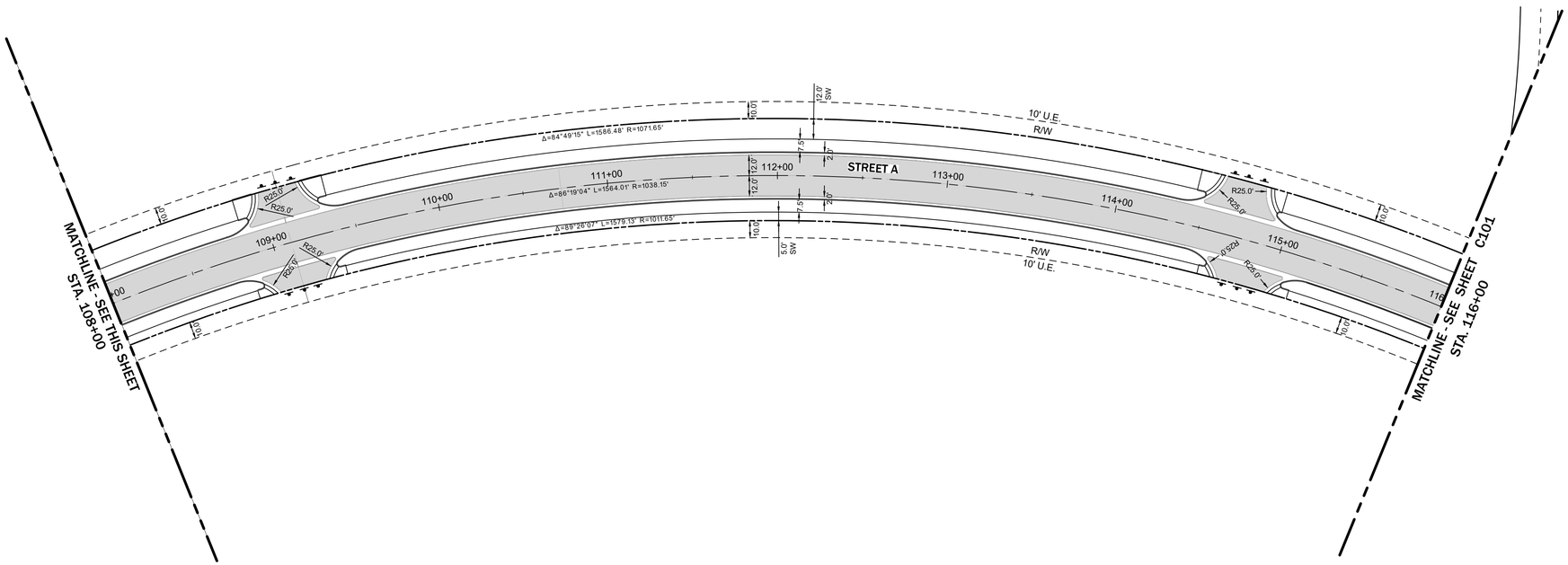




KEY MAP
NTS

N S E W

0 20' 40' 80'
SCALE: 1"=40'



N S E W

0 20' 40' 80'
SCALE: 1"=40'

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GEOMETRY PLAN
FOR
LAKE HILLS MAIN BLVD. & MASS GRADING
HOWEY-IN-THE-HILLS FLORIDA

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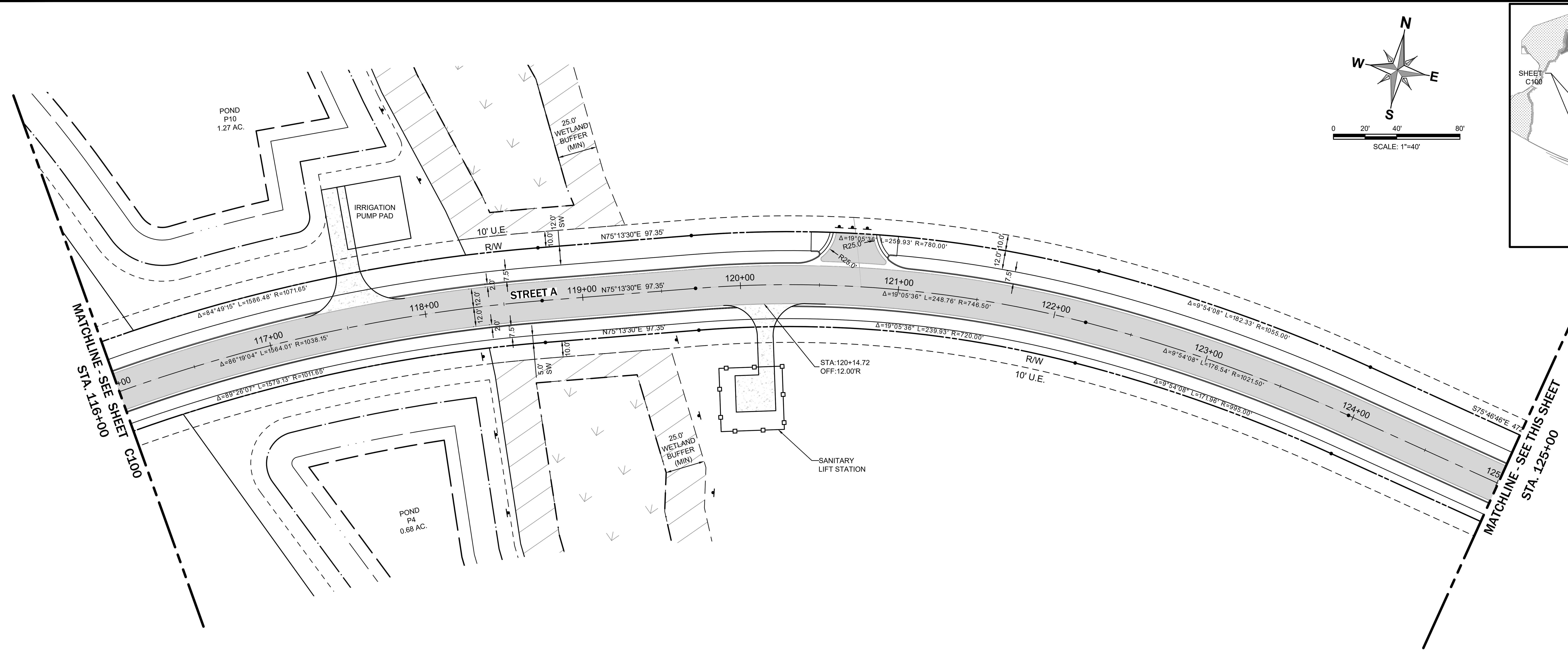

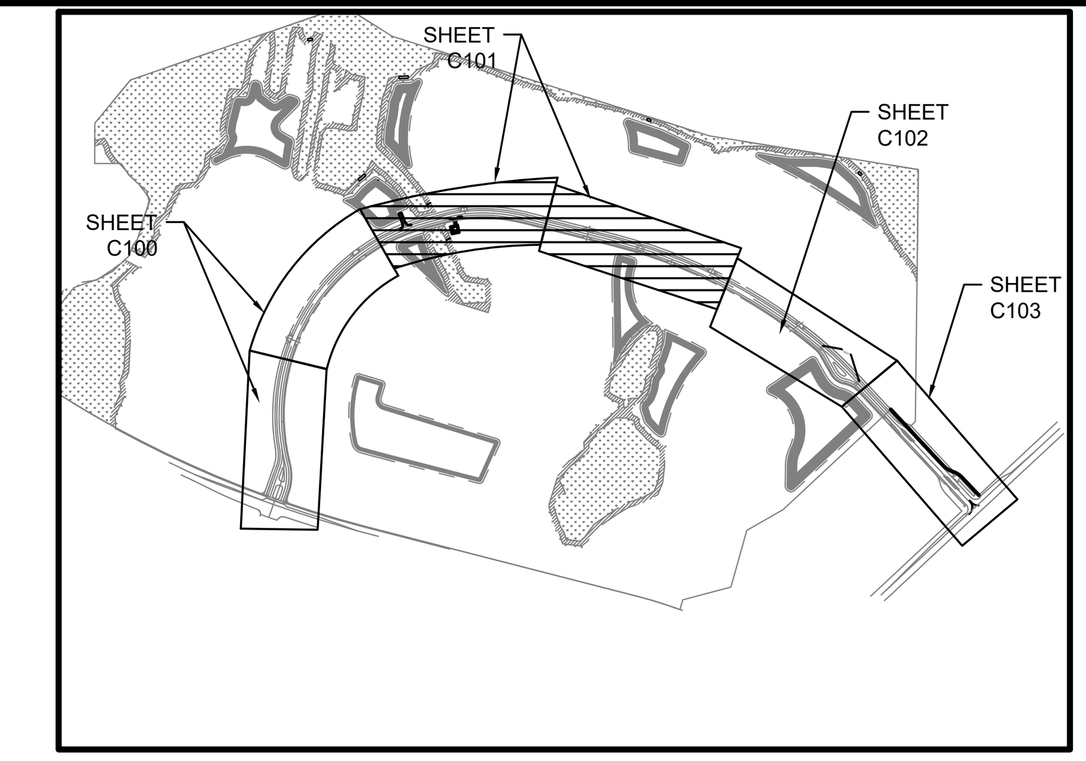

KEY MAP

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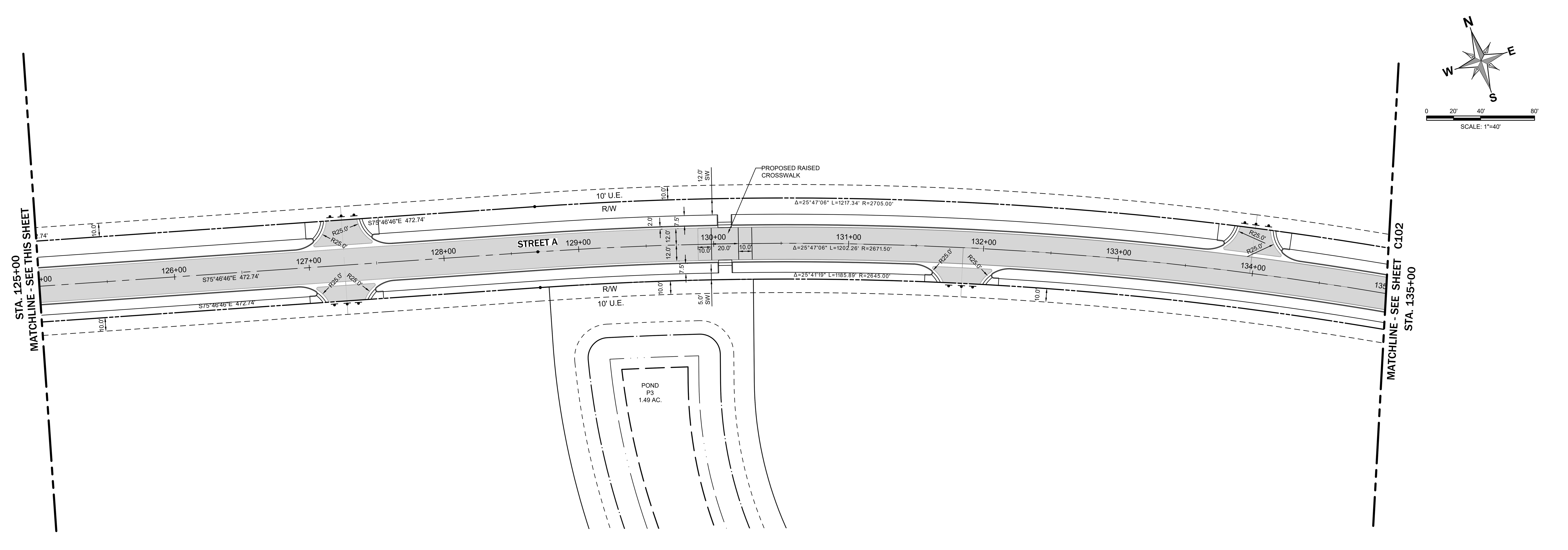

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GEOMETRY PLAN

FOR

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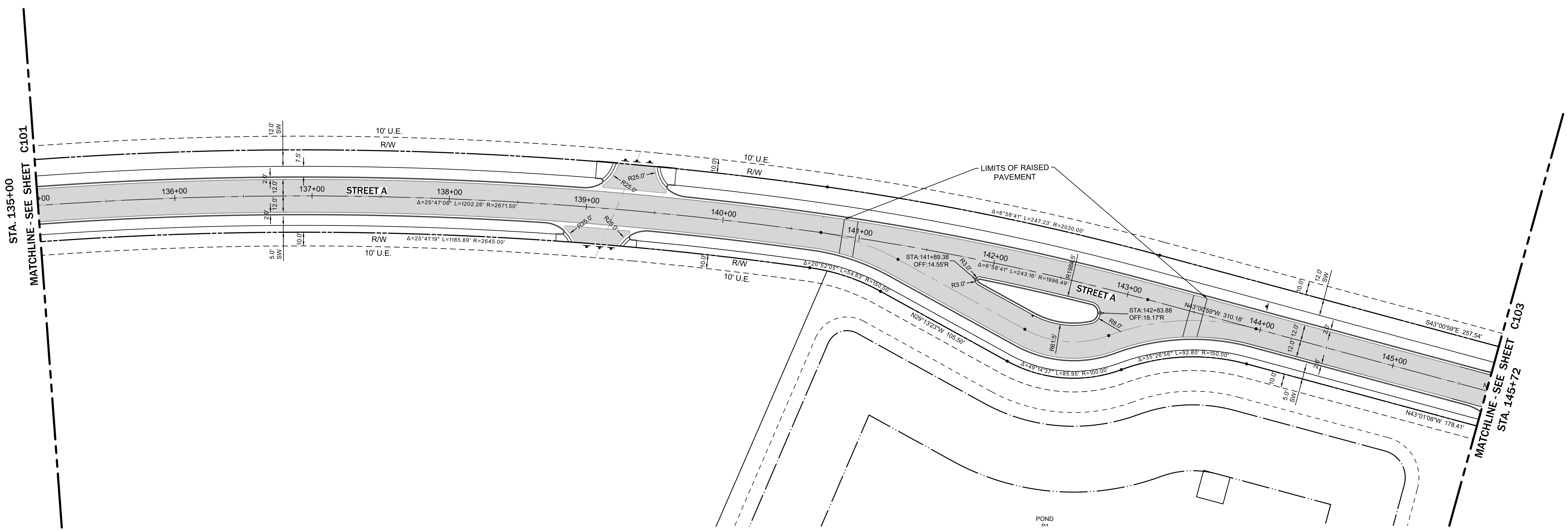

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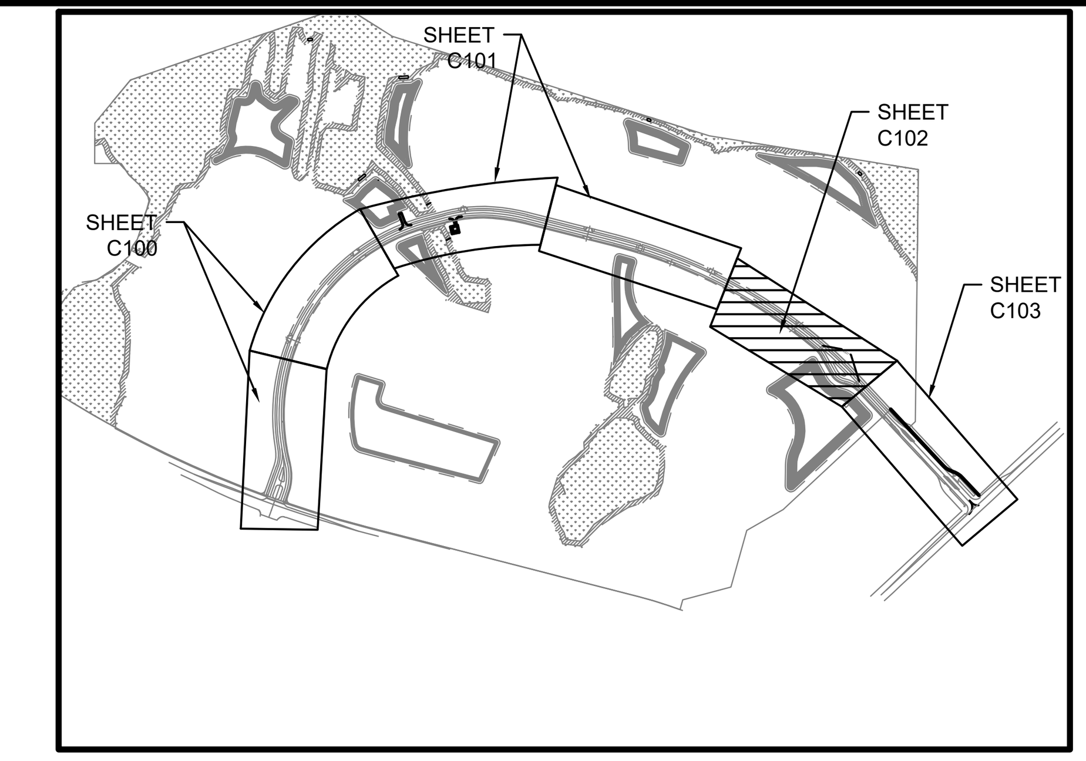

KEY MAP
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GEOMETRY PLAN
FOR
LAKE HILLS MAIN BLVD. & MASS GRADING
HOWEY-IN-THE-HILLS FLORIDA

READER & PARTNERS, LLC
5850 TG LEE BOULEVARD, SUITE 200
ORLANDO, FL 32822
(407) 856-4899

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DAVID ASHLEY STOKES
LICENSE
NO. 66527
STATE OF FLORIDA
PROFESSIONAL ENGINEER

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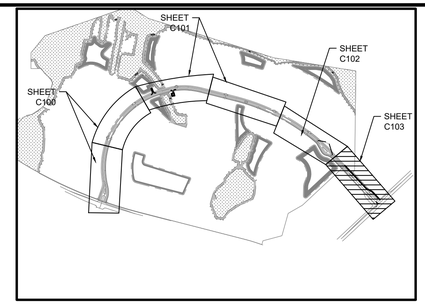
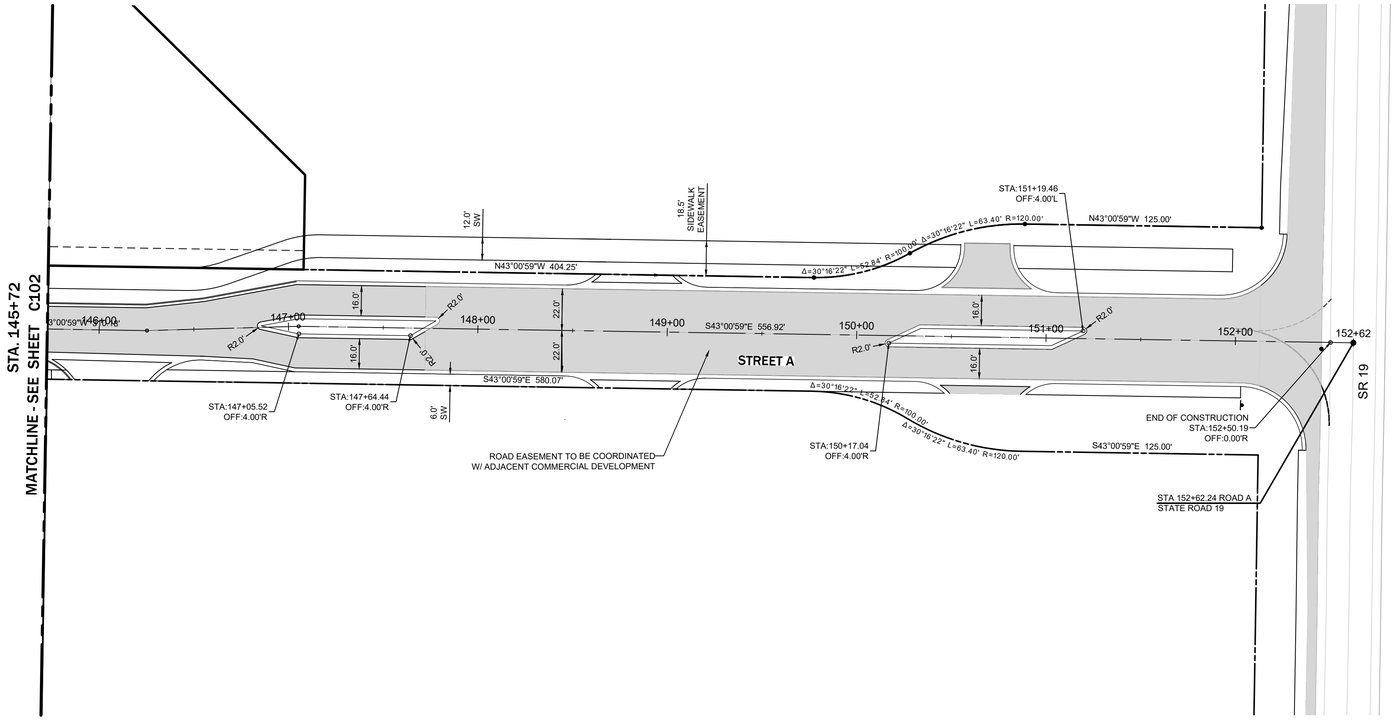
ENGINEER OF RECORD
November 7, 2024

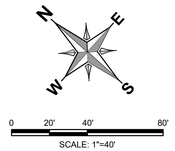
JOB #	23019
DATE:	11/7/24
DATUM:	NAVD 88
DESIGNED BY:	KAC
DRAWN BY:	JSK
APPROVED BY:	DAS

C102



KEY MAP
NTS





MADDEN
MOORHEAD & STOKES, LLC
CIVIL ENGINEERS
431 E. Horatio Avenue
Suite 260
Maitland, Florida 32751
(407) 629-8330
CA# 0007723

GEOMETRY PLAN
FOR
LAKE HILLS MAIN BLVD. & MASS GRADING
HOWEY-IN-THE-HILLS FLORIDA

READER & PARTNERS, LLC
5850 T.G LEE BOULEVARD, SUITE 200
ORLANDO, FL. 32822
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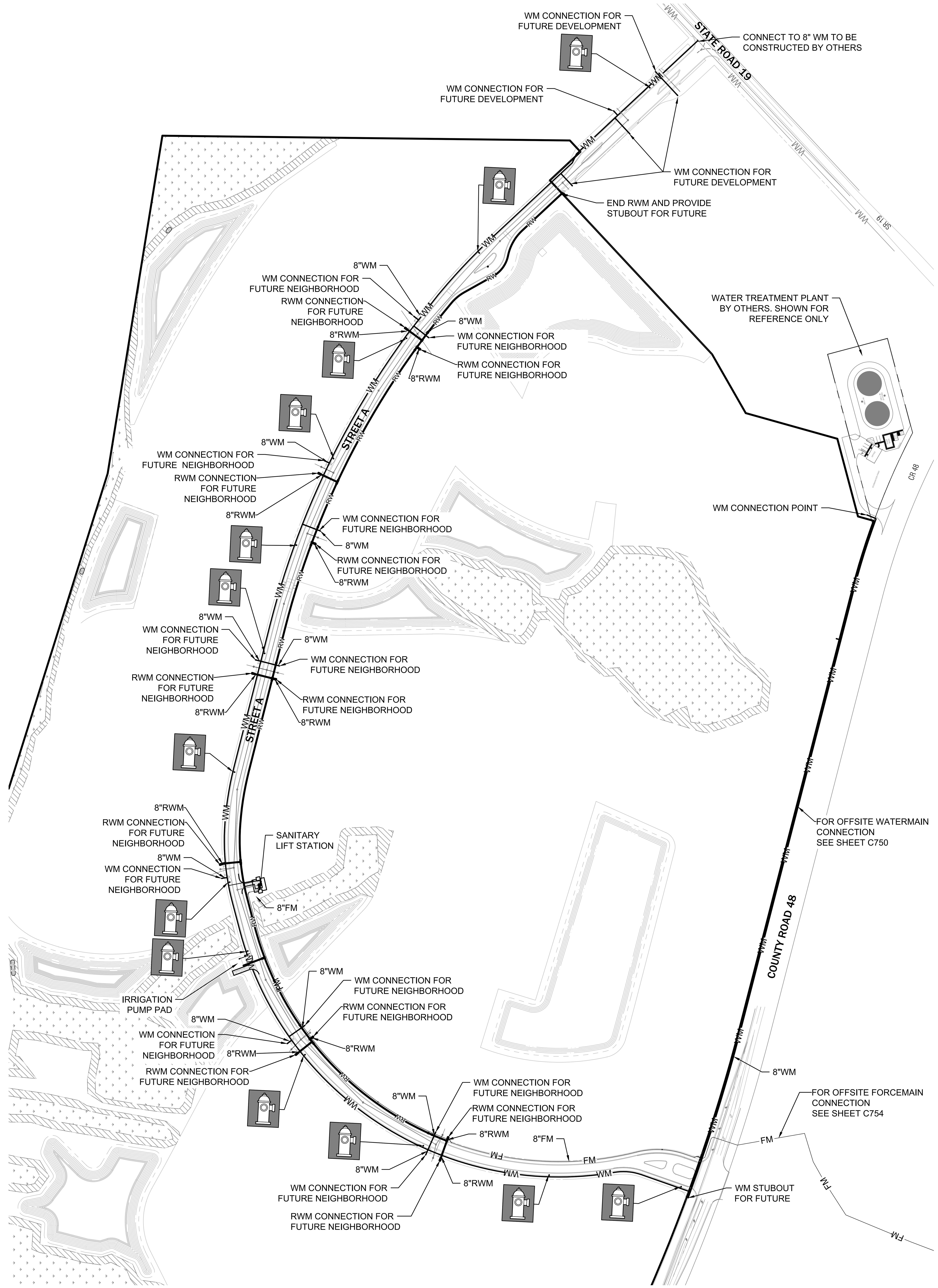
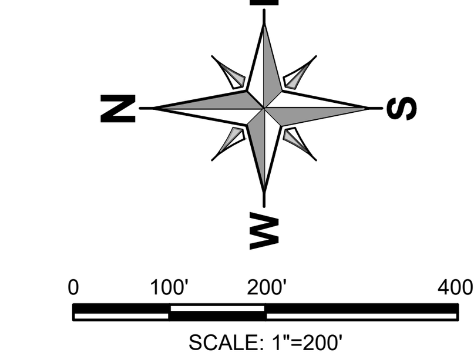
C103





LEGEND

EXISTING	PROPOSED	
		BOUNDARY
		RIGHT OF WAY (MAJOR)
		RIGHT OF WAY (MINOR)
		TRACT LINE
		LOT LINE
		LOT SETBACK
		UTILITY EASEMENT (U.E.)
		DRAINAGE EASEMENT (D.E.)
		EASEMENT (OTHER)
		TOP OF BANK
		TOE OF SLOPE
		DITCH CENTER
		CURB
		CONCRETE WALK
		ASPHALT PAVEMENT
30	30	CONTOUR (MAJOR)
29	29	CONTOUR (MINOR)
	DS100	STORM STRUCTURE NUMBER
		STORM DRAINAGE MANHOLE
		STORM DRAINAGE INLET
	6"WM	WATER MAIN (WM)
	2"W	WATER SERVICE LINE (W)
		FIRE HYDRANT
	OR	WATER METER
		GATE VALVE & BOX
		PLUG VALVE & BOX
		BUTTERFLY VALVE & BOX
		CHECK VALVE
		BLOW-OFF VALVE ASSEMBLY
	OR	TEE
		REDUCER
	DDCV	BACKFLOW PREVENTER
		JUMPER CONNECTION
	BFP	BACKFLOW PREVENTER
		FIRE HYDRANT
	WDSP #00	WATER DISTRIBUTION SYSTEM SAMPLING POINT
	4"RW	RECLAIM WATER MAIN (RM)
	OR	RECLAIM WATER METER
	6"FM	FORCE MAIN (FM)
	SS-100	SANITARY SEWER STRUCTURE #
	S	SANITARY SEWER
		GAS LINE

MADDEN
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OVERALL UTILITY PLAN
FOR
LAKE HILLS MAIN BLVD. & MASS GRADING
HOWEY-IN-THE-HILLS FLORIDA

READER & PARTNERS, LLC
5850 TG LEE BOULEVARD, SUITE 200
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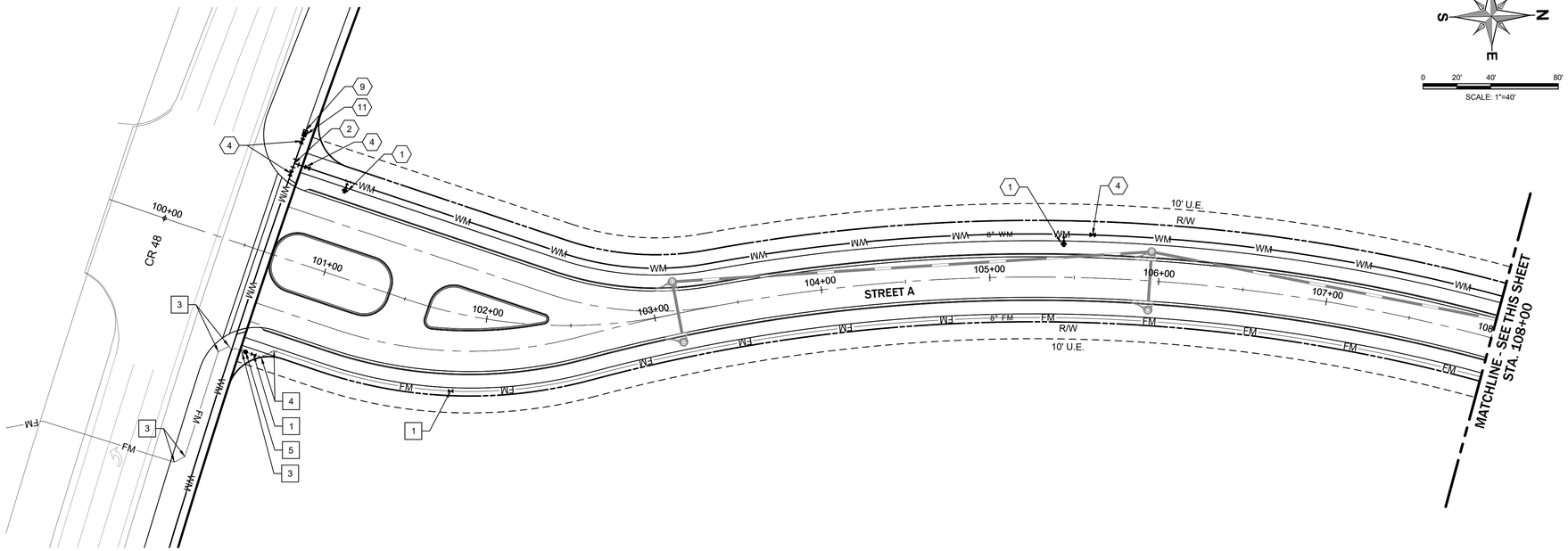
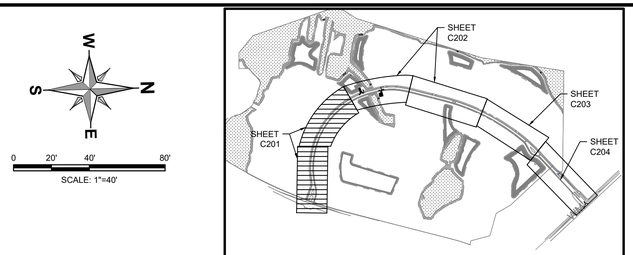
C200





KEY MAP

NTS

LEGEND

EXISTING | PROPOSED

- BOUNDARY
- RIGHT OF WAY (MAJOR)
- RIGHT OF WAY (MINOR)
- TRACT LINE
- LOT LINE
- LOT SETBACK
- UTILITY EASEMENT (U.E.)
- DRAINAGE EASEMENT (D.E.)
- EASEMENT (OTHER)
- TOP OF BANK
- TOE OF SLOPE
- DITCH CENTER
- CURB
- CONCRETE WALK
- ASPHALT PAVEMENT
- 30 CONTOUR (MAJOR)
- 29 CONTOUR (MINOR)
- DS-100 STORM STRUCTURE NUMBER
- STORM DRAINAGE MANHOLE
- STORM DRAINAGE INLET
- WATER MAIN (WM)
- WATER SERVICE LINE (W)
- FIRE HYDRANT
- OR WATER METER
- GATE VALVE & BOX
- PLUG VALVE & BOX
- BUTTERFLY VALVE & BOX
- CHECK VALVE
- BLOW-OFF VALVE ASSEMBLY
- OR TEE
- REDUCER
- BACKFLOW PREVENTER
- JUMPER CONNECTION
- FIRE HYDRANT
- WDSP #00 WATER DISTRIBUTION SYSTEM SAMPLING POINT
- RECLAIM WATER MAIN (RM)
- OR RECLAIM WATER METER
- FORCE MAIN (FM)
- SS-100 SANITARY SEWER STRUCTURE #
- S SANITARY SEWER
- GAS LINE

WATER NOTES

1. 8" FIRE HYDRANT ASSEMBLY
2. 8" TEE
3. 8" X 8" CROSS
4. 8" GATE VALVE
5. 90° BEND
6. 45° BEND
7. 23° BEND
8. 12° BEND
9. 8" CAP
10. 2" BLOW OFF
11. AUTOMATIC AIR RELEASE VALVE

RECLAIM NOTES

1. 8" TEE
2. 8" x 8" CROSS
3. 8" GATE VALVE
4. 90° BEND
5. 45° BEND
6. 23° BEND
7. 8" CAP
8. 2" BLOW OFF
9. AUTOMATIC AIR RELEASE VALVE

FORCE MAIN NOTES

1. 8" GATE VALVE
2. 8" 90° BEND
3. 8" 45° VERT. BEND
4. 8" 45° HORZ. BEND
5. AUTOMATIC AIR RELEASE VALVE

SANITARY NOTES

1. CLEANOUT

MADDEN
MOORHEAD & STOKES, LLC
CIVIL ENGINEERS
431 E. Horatio Avenue
Suite 260
Maitland, Florida 32751
(407) 629-8330
CA# 0007723

UTILITY PLAN

FOR

LAKE HILLS MAIN BLVD. & MASS GRADING

HOWEY-IN-THE-HILLS
FLORIDA

READER & PARTNERS, LLC
5850 TG LEE BOULEVARD, SUITE 200
ORLANDO, FL 32822
(407) 856-4899

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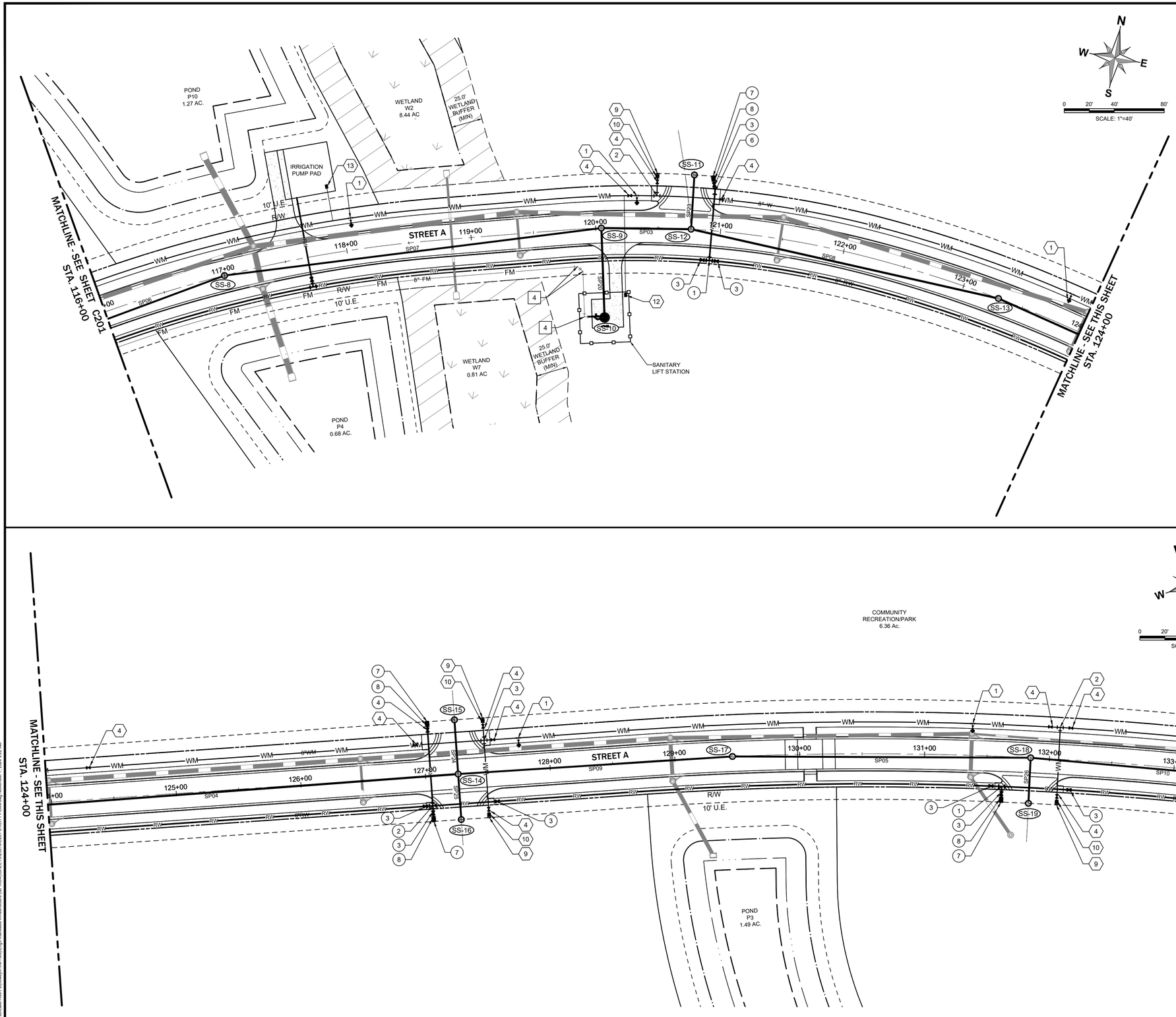
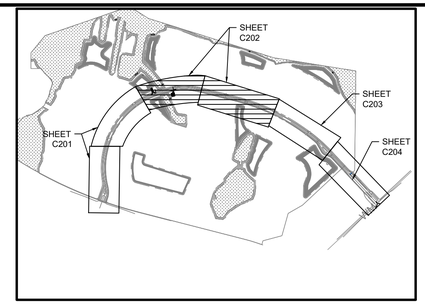
C201





KEY MAP
NTS

LEGEND

EXISTING	PROPOSED	
		BOUNDARY
		RIGHT OF WAY (MAJOR)
		RIGHT OF WAY (MINOR)
		TRACT LINE
		LOT LINE
		LOT SETBACK
		UTILITY EASEMENT (U.E.)
		DRAINAGE EASEMENT (D.E.)
		EASEMENT (OTHER)
		TOP OF BANK
		TOE OF SLOPE
		DITCH CENTER
		CURB
		CONCRETE WALK
		ASPHALT PAVEMENT
30	30	CONTOUR (MAJOR)
29	29	CONTOUR (MINOR)
	DS-100	STORM STRUCTURE NUMBER
		STORM DRAINAGE MANHOLE
		STORM DRAINAGE INLET
		FORCE MAIN (FM)
		WATER SERVICE LINE (W)
		FIRE HYDRANT
	OR	WATER METER
		GATE VALVE & BOX
		PLUG VALVE & BOX
		BUTTERFLY VALVE & BOX
		CHECK VALVE
		BLOW-OFF VALVE ASSEMBLY
	OR	TEE
		REDUCER
		BACKFLOW PREVENTER
		JUMPER CONNECTION
		FIRE HYDRANT
	WDSP #00	WATER DISTRIBUTION SYSTEM SAMPLING POINT
		RECLAIM WATER MAIN (RM)
	OR	RECLAIM WATER METER
		WATER MAIN (WM)
	SS-100	SANITARY SEWER STRUCTURE #
	S	SANITARY SEWER
		GAS LINE

#WATER NOTES
1. 8" FIRE HYDRANT ASSEMBLY
2. 8" TEE
3. 8" X 8" CROSS
4. 8" GATE VALVE
5. 90° BEND
6. 45° BEND
7. 23° BEND
8. 12" BEND
9. 8" CAP
10. 2" BLOW OFF
11. AUTOMATIC AIR RELEASE VALVE
12. 2" WATER SERVICE
13. 1" WATER SERVICE

#RECLAIM NOTES
1. 8" TEE
2. 8" x 8" CROSS
3. 8" GATE VALVE
4. 90° BEND
5. 45° BEND
6. 23° BEND
7. 8" CAP
8. 2" BLOW OFF

#FORCE MAIN NOTES
1. 8" GATE VALVE
2. 8" 90° BEND
3. 8" 45° VERT. BEND
4. 8" 45° HORZ. BEND

#SANITARY NOTES
1. CLEANOUT

MADDEN
MOORHEAD & STOKES, LLC
CIVIL ENGINEERS
431 E. Horatio Avenue
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UTILITY PLAN
FOR
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READER & PARTNERS, LLC
9850 TG LEE BOULEVARD, SUITE 200
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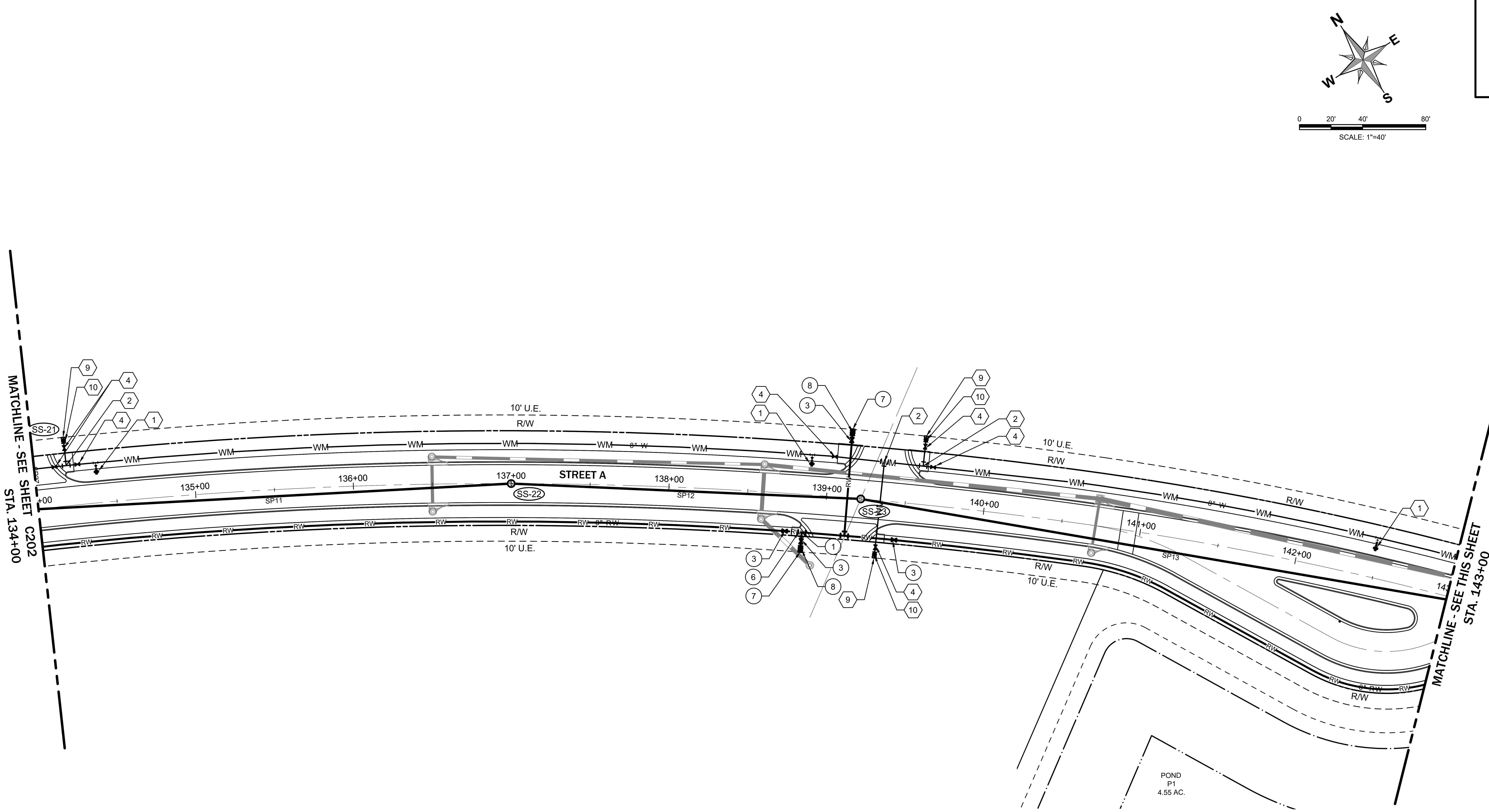
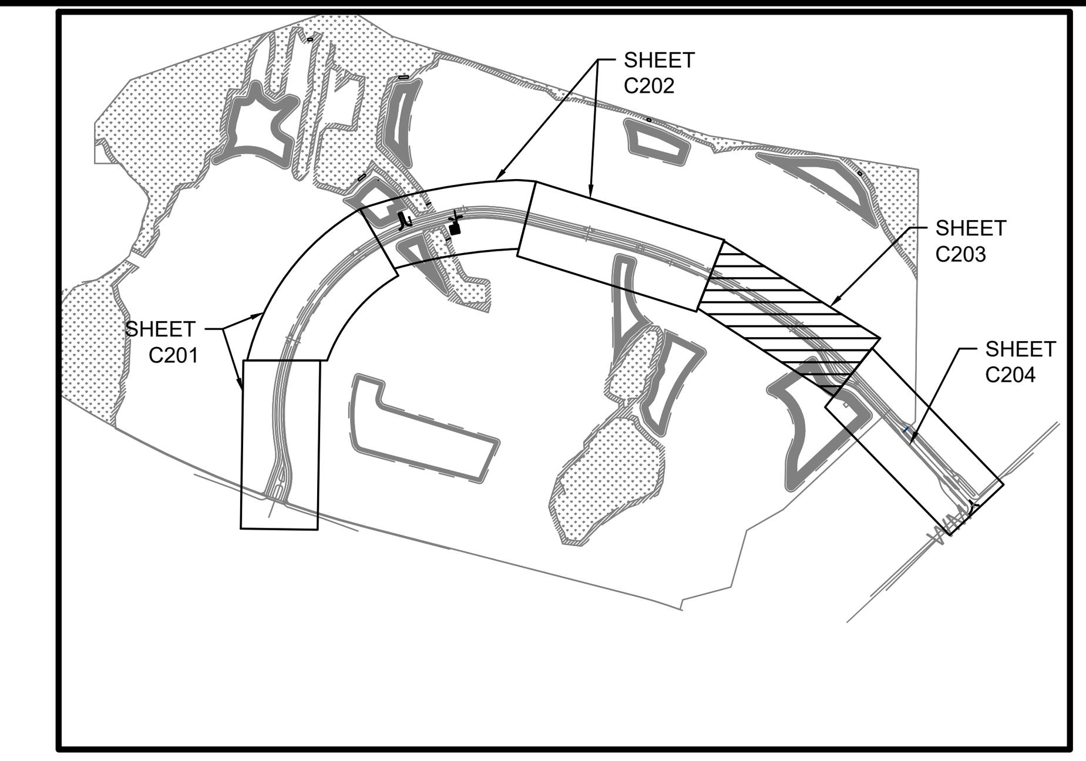
C202





KEY MAP
NTS

LEGEND

EXISTING	PROPOSED	
		BOUNDARY
		RIGHT OF WAY (MAJOR)
		RIGHT OF WAY (MINOR)
		TRACT LINE
		LOT LINE
		LOT SETBACK
		UTILITY EASEMENT (U.E.)
		DRAINAGE EASEMENT (D.E.)
		EASEMENT (OTHER)
		TOP OF BANK
		TOE OF SLOPE
		DITCH CENTER
		CURB
		CONCRETE WALK
		ASPHALT PAVEMENT
30	30	CONTOUR (MAJOR)
29	29	CONTOUR (MINOR)
	DS-100	STORM STRUCTURE NUMBER
		STORM DRAINAGE MANHOLE
		STORM DRAINAGE INLET
		WATER MAIN (WM)
		WATER SERVICE LINE (W)
		FIRE HYDRANT
	OR	WATER METER
		GATE VALVE & BOX
		PLUG VALVE & BOX
		BUTTERFLY VALVE & BOX
		CHECK VALVE
		BLOW-OFF VALVE ASSEMBLY
	OR	TEE
		REDUCER
		BACKFLOW PREVENTER
		JUMPER CONNECTION
		FIRE HYDRANT
	WDSP #00	WATER DISTRIBUTION SYSTEM SAMPLING POINT
		RECLAIM WATER MAIN (RM)
	OR	RECLAIM WATER METER
		FORCE MAIN (FM)
	SS-100	SANITARY SEWER STRUCTURE #
	S	SANITARY SEWER
		GAS LINE

WATER NOTES

1. 8" FIRE HYDRANT ASSEMBLY
2. 8" TEE
3. 8" X 8" CROSS
4. 8" GATE VALVE
5. 90° BEND
6. 45° BEND
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8. 12° BEND
9. 8" CAP
10. 2" BLOW OFF
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RECLAIM NOTES

1. 8" TEE
2. 8" x 8" CROSS
3. 8" GATE VALVE
4. 90° BEND
5. 45° BEND
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7. 8" CAP
8. 2" BLOW OFF

FORCE MAIN NOTES

1. 8" GATE VALVE
2. 8" 90° BEND
3. 8" 45° VERT. BEND
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SANITARY NOTES

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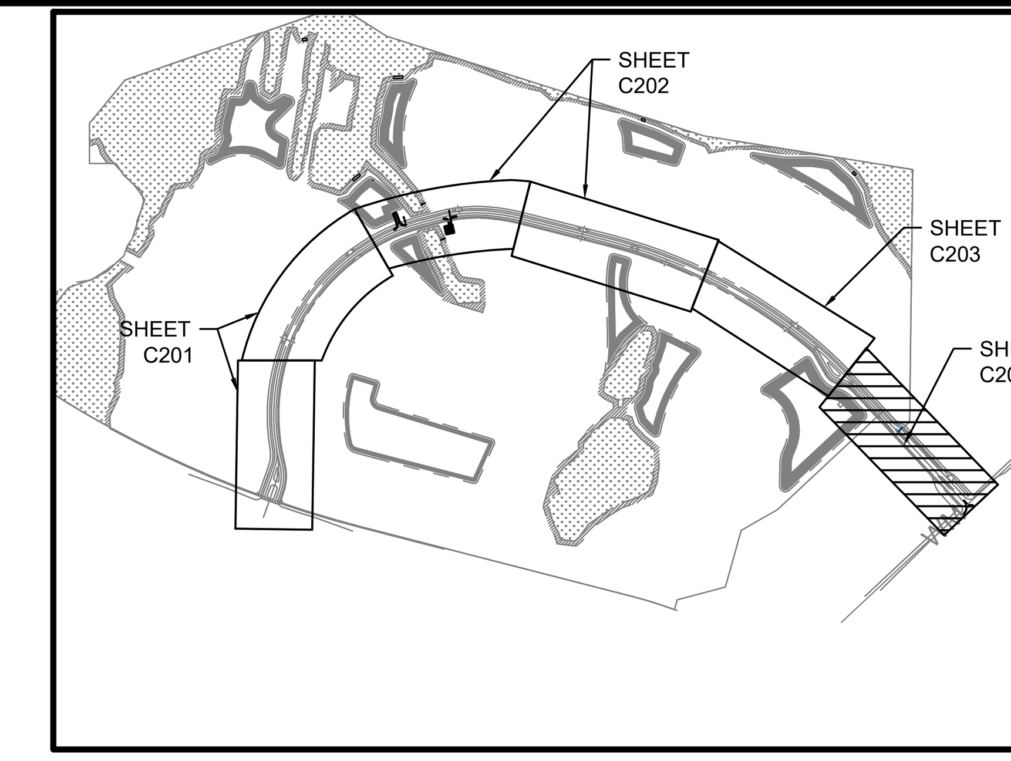
C203



KEY MAP
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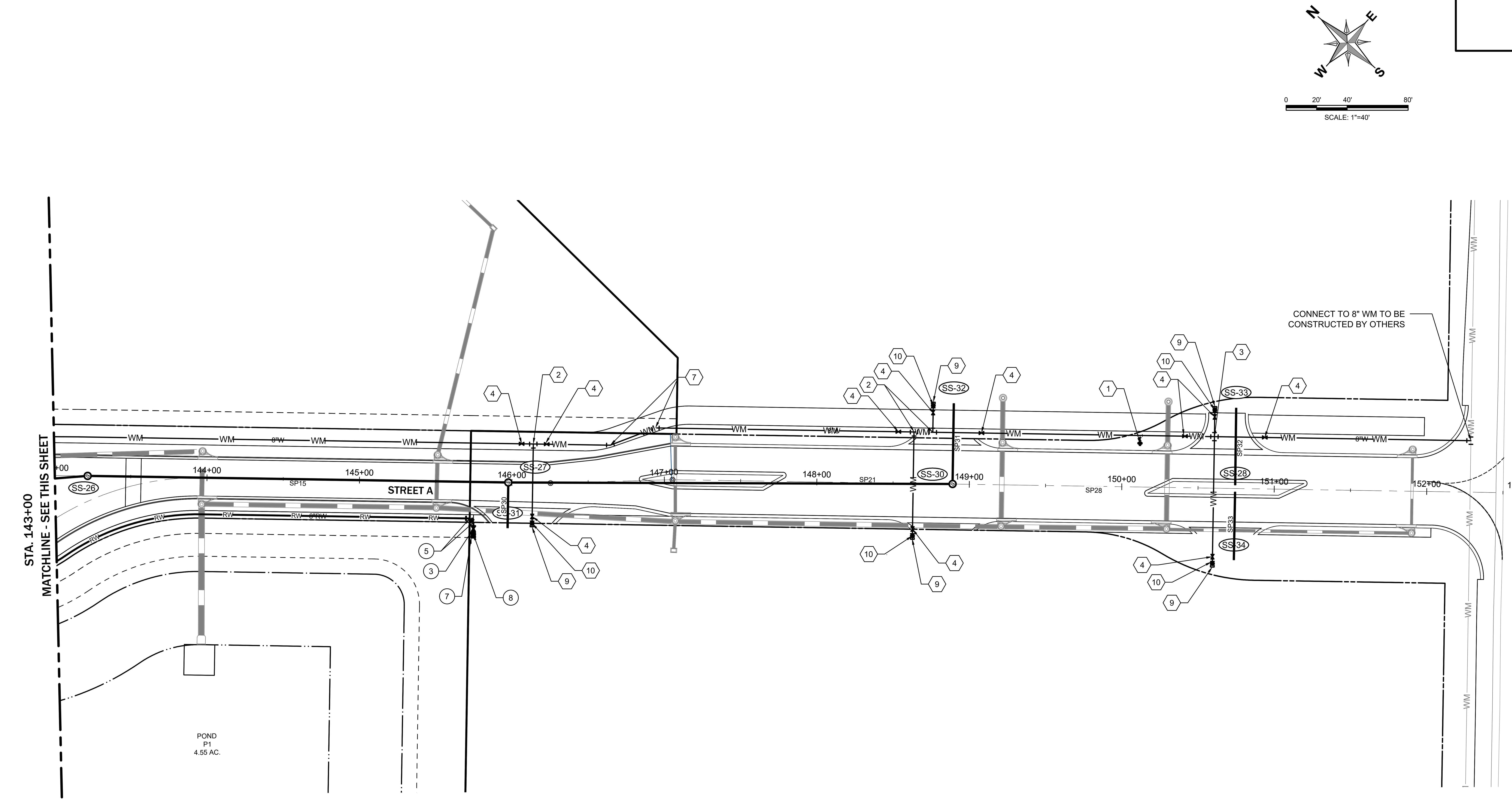

LEGEND

EXISTING	PROPOSED	
		BOUNDARY
		RIGHT OF WAY (MAJOR)
		RIGHT OF WAY (MINOR)
		TRACT LINE
		LOT LINE
		LOT SETBACK
		UTILITY EASEMENT (U.E.)
		DRAINAGE EASEMENT (D.E.)
		EASEMENT (OTHER)
		TOP OF BANK
		TOE OF SLOPE
		DITCH CENTER
		CURB
		CONCRETE WALK
		ASPHALT PAVEMENT
30	30	CONTOUR (MAJOR)
29	29	CONTOUR (MINOR)
	DS-100	STORM STRUCTURE NUMBER
		STORM DRAINAGE MANHOLE
		STORM DRAINAGE INLET
		WATER MAIN (WM)
		WATER SERVICE LINE (W)
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	OR	WATER METER
		GATE VALVE & BOX
		PLUG VALVE & BOX
		BUTTERFLY VALVE & BOX
		CHECK VALVE
		BLOW-OFF VALVE ASSEMBLY
	OR	TEE
		REDUCER
		BACKFLOW PREVENTER
		JUMPER CONNECTION
		FIRE HYDRANT
	WDSP #00	WATER DISTRIBUTION SYSTEM SAMPLING POINT
		RECLAIM WATER MAIN (RM)
	OR	RECLAIM WATER METER
		FORCE MAIN (FM)
	SS-100	SANITARY SEWER STRUCTURE #
	S	SANITARY SEWER
		GAS LINE

WATER NOTES

1. 8" FIRE HYDRANT ASSEMBLY
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8. 12° BEND
9. 8" CAP
10. 2" BLOW OFF
11. AUTOMATIC AIR RELEASE VALVE

RECLAIM NOTES

1. 8" TEE
2. 8" x 8" CROSS
3. 8" GATE VALVE
4. 90° BEND
5. 45° BEND
6. 23° BEND
7. 8" CAP
8. 2" BLOW OFF

FORCE MAIN NOTES

1. 8" GATE VALVE
2. 8" 90° BEND
3. 8" 45° VERT. BEND
4. 8" 45° HORZ. BEND

SANITARY NOTES

1. CLEANOUT

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UTILITY PLAN
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C204

SANITARY STRUCTURE TABLE	
SANITARY STRUCTURE NAME	SANITARY STRUCTURE DETAILS
SS-1	RIM = 81.30* STA = 109+10.87 4' SSWR MH 36.50' R NW 8" INV OUT = 68.95
SS-2	RIM = 80.90* STA = 109+19.12 4' SSWR DROP MH 0.00' W 8" INV IN = 63.10 SE 8" INV IN = 68.00 NE 8" INV OUT = 62.52
SS-3	RIM = 80.66* STA = 109+11.24 4' SSWR MH -43.50' L E 8" INV OUT = 63.30
SS-4	RIM = 77.53* STA = 111+90.78 4' SSWR MH 0.00' SW 8" INV IN = 61.27 NE 8" INV OUT = 61.17
SS-5	RIM = 73.80* STA = 114+76.13 4' SSWR MH 36.50' R NW 8" INV OUT = 63.70
SS-6	RIM = 74.00* STA = 114+76.39 4' SSWR DROP MH 0.00' SW 8" INV IN = 59.88 NW 8" INV IN = 59.80 SE 8" INV IN = 63.00 NE 8" INV OUT = 58.59
SS-7	RIM = 73.44* STA = 114+69.64 4' SSWR MH -43.50' L SE 8" INV OUT = 60.02
SS-8	RIM = 70.40* STA = 117+00.00 4' SSWR MH 0.00' SW 8" INV IN = 57.59 E 8" INV OUT = 57.49
SS-9	RIM = 71.64* STA = 120+04.56 4' SSWR MH 0.00' W 8" INV IN = 56.13 E 10" INV IN = 56.05 S 10" INV OUT = 55.95
SS-10	RIM = 73.28* STA = 120+04.56 4' SSWR MH 71.64' R N 10" INV IN = 55.60
SS-11	RIM = 71.66* STA = 120+76.41 4' SSWR MH -43.50' L S 8" INV OUT = 56.72
SS-12	RIM = 72.00* STA = 120+76.41 4' SSWR MH 0.00' E 10" INV IN = 56.56 N 8" INV IN = 56.52 W 10" INV OUT = 56.42
SS-13	RIM = 73.94* STA = 123+29.56 4' SSWR MH 0.00' E 10" INV IN = 57.80 W 10" INV OUT = 57.70
SS-14	RIM = 76.98* STA = 127+26.16 4' SSWR DROP MH 0.00' E 8" INV IN = 59.68 N 8" INV IN = 60.95 S 8" INV IN = 66.90 W 10" INV OUT = 59.58
SS-15	RIM = 76.55* STA = 127+26.16 4' SSWR MH -43.50' L S 8" INV OUT = 62.52
SS-16	RIM = 77.31* STA = 127+26.16 4' SSWR MH 36.50' R N 8" INV OUT = 67.10

SANITARY STRUCTURE TABLE	
SANITARY STRUCTURE NAME	SANITARY STRUCTURE DETAILS
SS-17	RIM = 78.24* STA = 129+46.16 4' SSWR MH 0.00' E 8" INV IN = 60.77 W 8" INV OUT = 60.67
SS-18	RIM = 79.50* STA = 131+84.92 4' SSWR DROP MH 0.00' SE 8" INV IN = 61.95 S 8" INV IN = 73.83 W 8" INV OUT = 61.85
SS-19	RIM = 80.05* STA = 131+84.92 4' SSWR MH 36.50' R N 8" INV OUT = 73.99
SS-20	RIM = 81.97* STA = 133+97.94 4' SSWR DROP MH 0.00' SE 8" INV IN = 74.97 NE 8" INV IN = 63.01 NW 8" INV OUT = 62.91
SS-21	RIM = 80.90* STA = 133+97.94 4' SSWR MH -43.50' L SW 8" INV OUT = 63.20
SS-22	RIM = 85.54* STA = 137+00.00 4' SSWR MH 0.00' SE 8" INV IN = 76.50 NW 8" INV OUT = 76.40
SS-23	RIM = 86.67* STA = 139+21.73 4' SSWR MH 0.00' SE 8" INV IN = 80.67 NW 8" INV OUT = 78.87
SS-26	RIM = 91.20* STA = 143+21.73 4' SSWR MH 0.00' L SE 8" INV IN = 84.70 NW 8" INV OUT = 84.60
SS-27	RIM = 95.98* STA = 145+97.62 4' SSWR MH 0.00' SE 8" INV IN = 86.04 SW 8" INV IN = 86.04 NW 8" INV OUT = 85.94
SS-28	RIM = 104.48* STA = 150+74.35 4' SSWR MH 0.00' L SW 8" INV IN = 99.50 NE 8" INV IN = 95.50 NW 8" INV OUT = 91.00
SS-30	RIM = 104.30* STA = 148+89.02 4' SSWR DROP MH -0.07' L SE 8" INV IN = 90.00 NE 8" INV IN = 95.50 NW 8" INV OUT = 87.35
SS-31	RIM = 96.15* STA = 145+97.63 SSWR CO 30.03' R NE 8" INV OUT = 86.73
SS-32	RIM = 104.00* STA = 148+89.01 SSWR CO -53.05' L SW 8" INV OUT = 96.00
SS-33	RIM = 104.00* STA = 150+74.22 SSWR CO -52.97' L SW 8" INV OUT = 96.00
SS-34	RIM = 104.88* STA = 150+74.24 SSWR CO 47.02' R NE 8" INV OUT = 100.00

SANITARY PIPE DATA			
PIPE NAME	LENGTH	DIA & TYPE	SLOPE
SP01	271'	8"	0.46%
SP02	285'	8"	0.45%
SP03	72'	10"	0.52%
SP04	397'	10"	0.45%
SP05	239'	8"	0.45%
SP06	223'	8"	0.45%
SP07	304'	8"	0.45%
SP08	252'	10"	0.45%
SP09	220'	8"	0.45%
SP10	213'	8"	0.45%
SP11	302'	8"	0.47%
SP12	222'	8"	1.07%
SP13	399'	8"	0.98%
SP15	276'	8"	0.45%
SP16	44'	8"	0.46%
SP17	37'	8"	2.57%
SP18	44'	8"	0.50%
SP19	37'	8"	1.92%
SP20	72'	10"	0.49%
SP21	291'	8"	0.45%
SP23	43'	8"	0.46%
SP24	43'	8"	3.64%
SP25	36'	8"	0.55%
SP26	36'	8"	0.45%
SP27	43'	8"	0.45%
SP28	185'	8"	0.54%
SP30	30'	8"	2.30%
SP31	53'	8"	0.94%
SP32	53'	8"	0.94%
SP33	47'	8"	1.06%

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CIVIL ENGINEERS
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CA# 0007723

SANITARY STRUCTURE TABLES
FOR
LAKE HILLS MAIN BLVD. & MASS GRADING
HOWEY-IN-THE-HILLS FLORIDA

READER & PARTNERS, LLC
5850 TG LEE BOULEVARD SUITE 200
ORLANDO, FL 32822
(407) 856-4899

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DAVID ASHLEY STOKES
LICENSE
NO. 66527
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

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ENGINEER OF RECORD
November 7, 2024

JOB # 23019
DATE: 11/7/24
DATUM: NAVD 88
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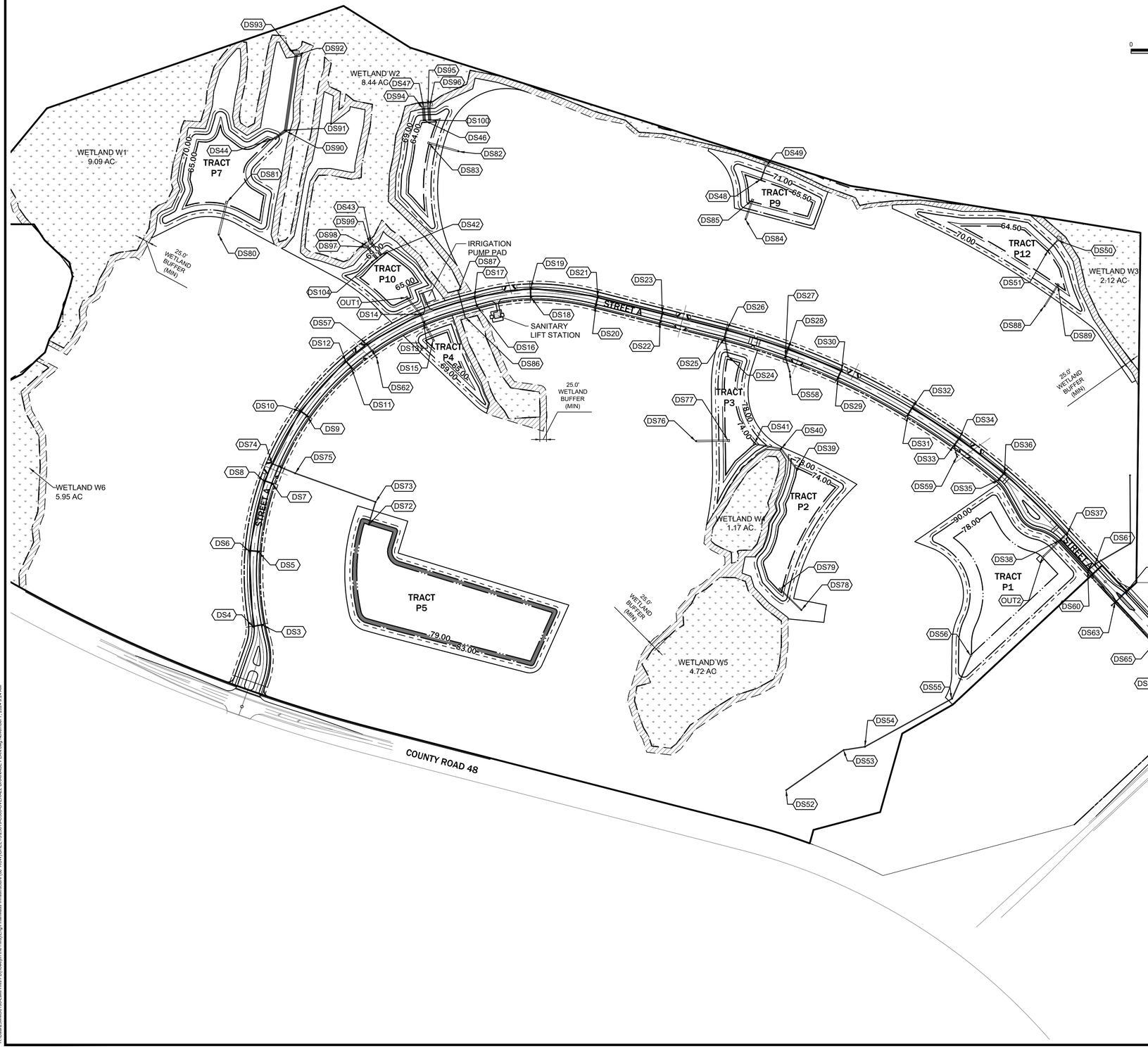
APPROVED BY: DAS

C205



N
W E
S
0 100' 200' 400'
SCALE: 1"=200'

LEGEND

EXISTING	PROPOSED	
		BOUNDARY
		RIGHT OF WAY (MAJOR)
		RIGHT OF WAY (MINOR)
		TRACT LINE
		LOT LINE
		LOT SETBACK
		UTILITY EASEMENT (U.E.)
		DRAINAGE EASEMENT (D.E.)
		EASEMENT (OTHER)
		CURB
		CURB AND GUTTER
		MIAMI CURB
		CONCRETE WALK
+XX.XX EX.	0.00 OR 0.00 TC 0.00 EP OR 0.00 TW 0.00 BW	SPOT ELEVATION
	0.00 LP 0.00 HP	ROAD ℄ ELEVATION
30	30	CONTOUR (MAJOR)
29	29	CONTOUR (MINOR)
		DIRECTION OF SURFACE FLOW
		NORMAL WATER LEVEL
		SEASON HIGH WATER LEVEL
		POND MAINTENANCE BERM
DS-100	DS-100	STORM STRUCTURE NUMBER
30		STORM DRAINAGE MANHOLE
	OR OR	STORM DRAINAGE INLET
	OR	CONTROL STRUCTURE
	OR OUT-1	OUTFALL STRUCTURE
		PIPE END (OUTFALL)
B-1		SOIL BORING
R-1		SOIL BORING (ROADWAY)
P-1		SOIL BORING (POND)
	D.S.	DOWNSPOUT

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CA# 0007723

OVERALL DRAINAGE PLAN
FOR
LAKE HILLS MAIN BLVD. & MASS GRADING
HOWEY-IN-THE-HILLS FLORIDA

READER & PARTNERS, LLC
3950 TG LEE BOULEVARD, SUITE 200
ORLANDO, FL 32822
(407) 856-4899

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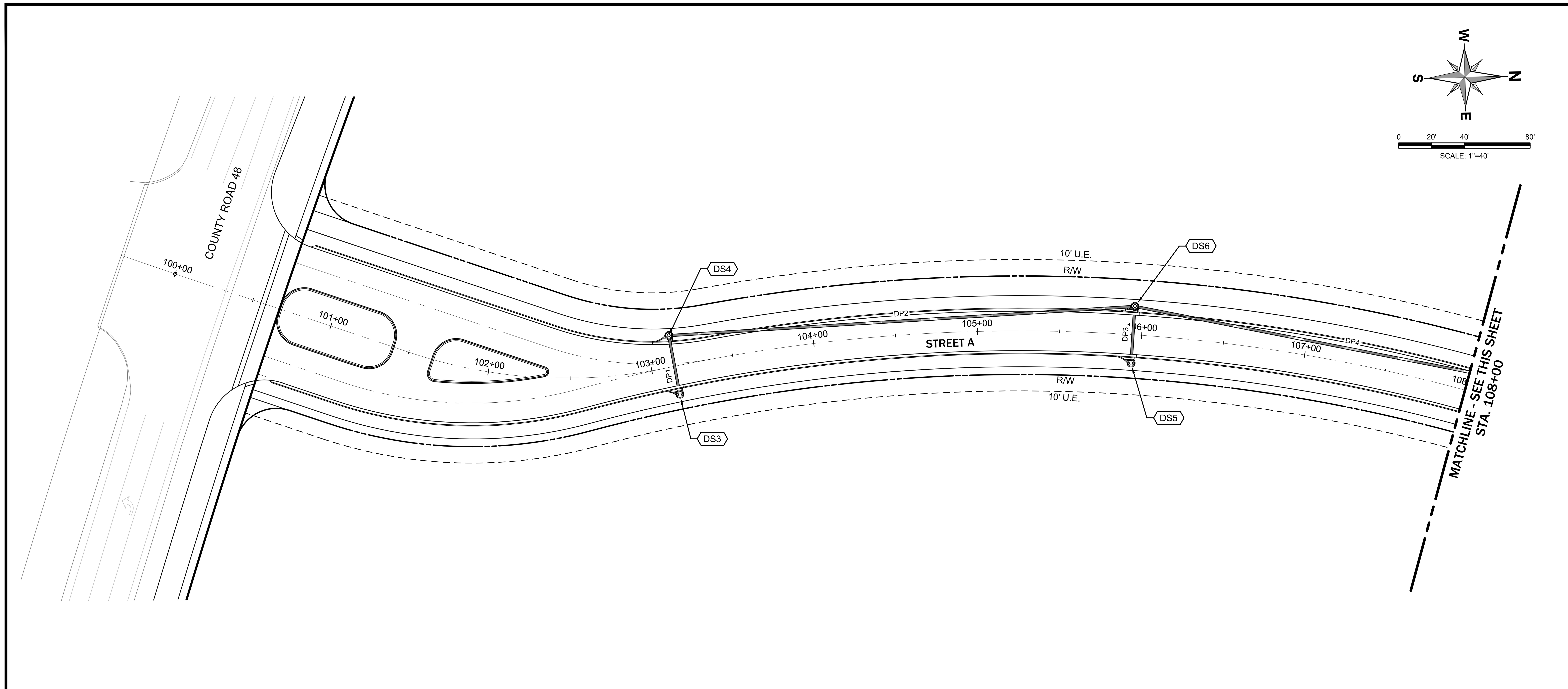
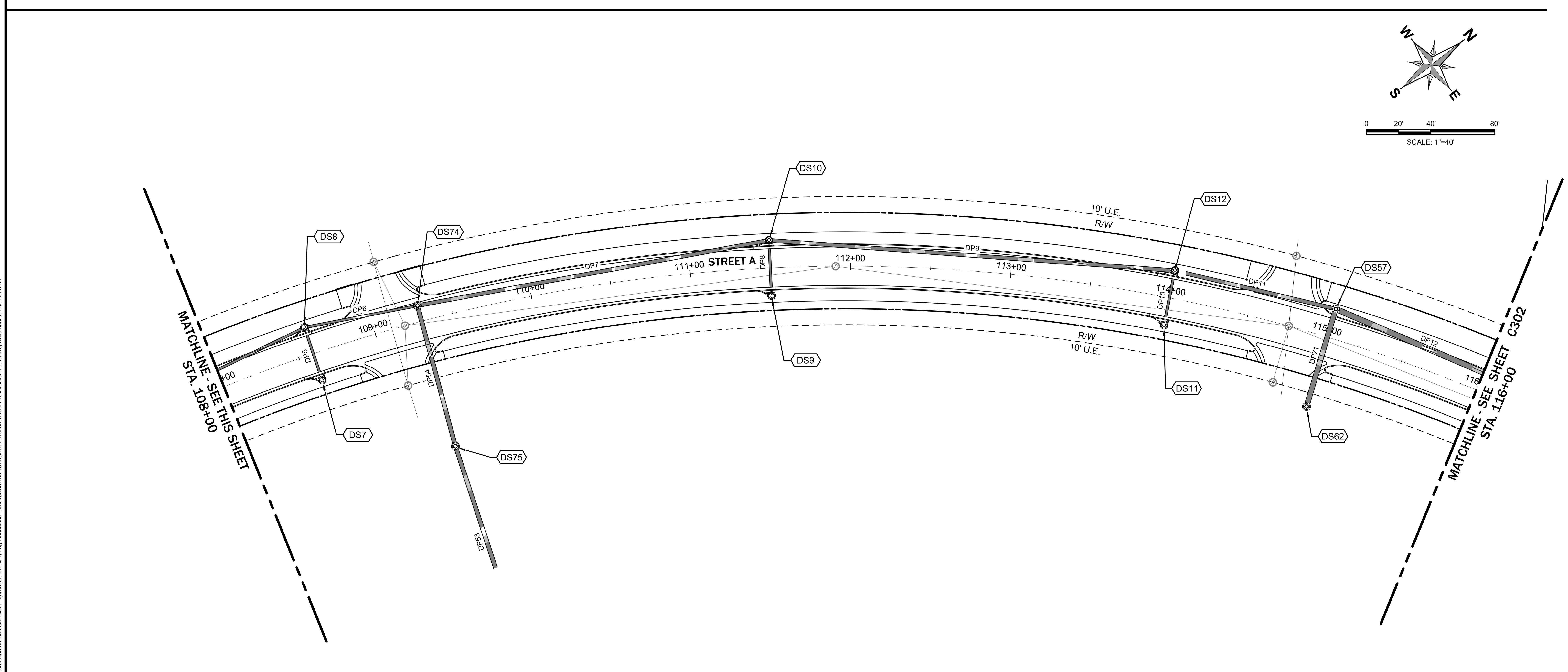
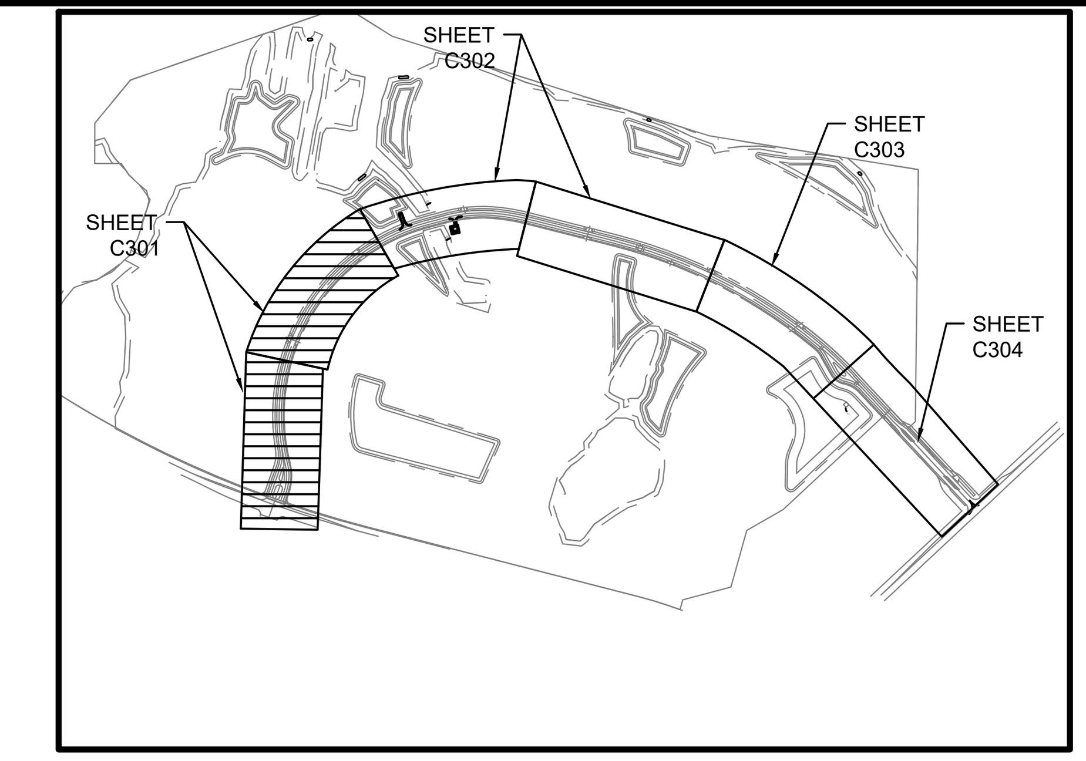
C300







KEY MAP

NTS

LEGEND

EXISTING	PROPOSED	
		BOUNDARY
		RIGHT OF WAY (MAJOR)
		RIGHT OF WAY (MINOR)
		TRACT LINE
		LOT LINE
		LOT SETBACK
		UTILITY EASEMENT (U.E.)
		DRAINAGE EASEMENT (D.E.)
		EASEMENT (OTHER)
		CURB
		CURB AND GUTTER
		MIAMI CURB
		CONCRETE WALK
0.00 EX	0.00 OR 0.50 TC / 0.00 EP OR 0.00 TW / 0.00 BW	SPOT ELEVATION
	0.00 LP / 0.00 HP	ROAD ℄ ELEVATION
30	30	CONTOUR (MAJOR)
29	29	CONTOUR (MINOR)
		DIRECTION OF SURFACE FLOW
		NORMAL WATER LEVEL
		SEASON HIGH WATER LEVEL
		POND MAINTENANCE BERM
DS-100	DS-100	STORM STRUCTURE NUMBER
		STORM DRAINAGE MANHOLE
	OR OR	STORM DRAINAGE INLET
		CONTROL STRUCTURE
	OR	OUTFALL STRUCTURE
	OUT-1	PIPE END (OUTFALL)
B-1		SOIL BORING
R-1		SOIL BORING (ROADWAY)
P-1		SOIL BORING (POND)
	D.S.	DOWNSPOUT

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Maitland, Florida 32751
(407) 629-8330
CA# 0007723

DRAINAGE PLAN

FOR

LAKE HILLS MAIN BLVD. & MASS GRADING

HOWEY-IN-THE-HILLS FLORIDA

READER & PARTNERS, LLC
5850 TG LEE BOULEVARD SUITE 200
ORLANDO, FL 32822
(407) 856-4899

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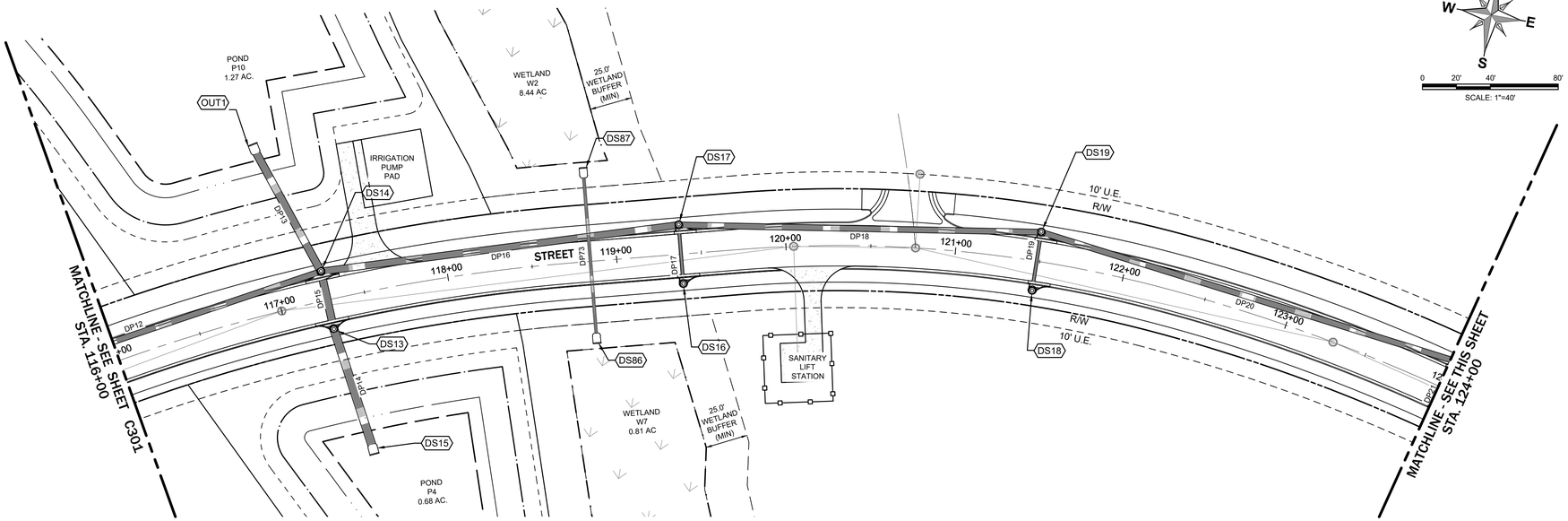
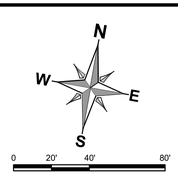
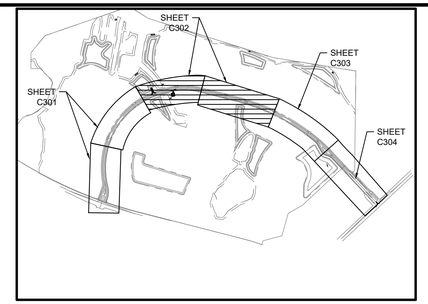
C301



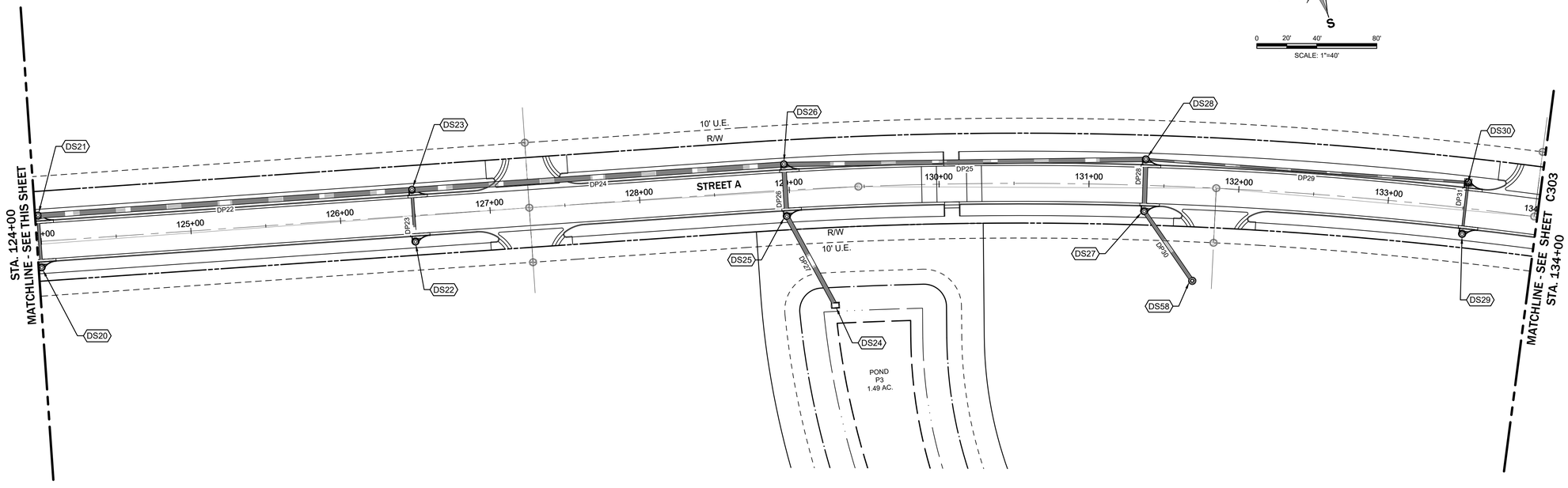




KEY MAP
NTS

LEGEND

EXISTING	PROPOSED	
		BOUNDARY
		RIGHT OF WAY (MAJOR)
		RIGHT OF WAY (MINOR)
		TRACT LINE
		LOT LINE
		LOT SETBACK
		UTILITY EASEMENT (U.E.)
		DRAINAGE EASEMENT (D.E.)
		EASEMENT (OTHER)
		CURB
		CURB AND GUTTER
		MIAMI CURB
		CONCRETE WALK
+0.00 EX.	• 0.00 OR 0.50 TC / 0.00 EP OR • 0.00 TW • 0.00 BW • 0.00 LP • 0.00 HP	SPOT ELEVATION
		ROAD ℄ ELEVATION
30	30	CONTOUR (MAJOR)
29	29	CONTOUR (MINOR)
		DIRECTION OF SURFACE FLOW
		NORMAL WATER LEVEL
		SEASON HIGH WATER LEVEL
		POND MAINTENANCE BERM
DS-100	DS-100	STORM STRUCTURE NUMBER
	OR OR	STORM DRAINAGE MANHOLE
		STORM DRAINAGE INLET
		CONTROL STRUCTURE
	OR	OUTFALL STRUCTURE
	OUT-1	PIPE END (OUTFALL)
B-1		SOIL BORING
R-1		SOIL BORING (ROADWAY)
P-1		SOIL BORING (POND)
	D.S.	DOWNSPOUT



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CA# 0007723

DRAINAGE PLAN
FOR
LAKE HILLS MAIN BLVD. & MASS GRADING
FLORIDA
HOWEY-IN-THE-HILLS

READER & PARTNERS, LLC
9850 TG LEE BOULEVARD, SUITE 200
ORLANDO, FL 32822
(407) 856-4899

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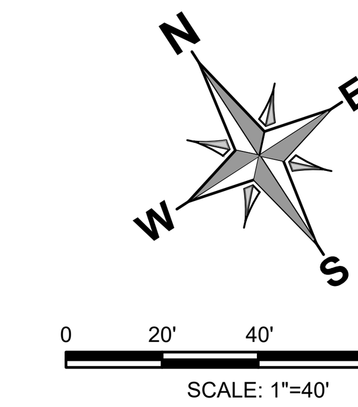
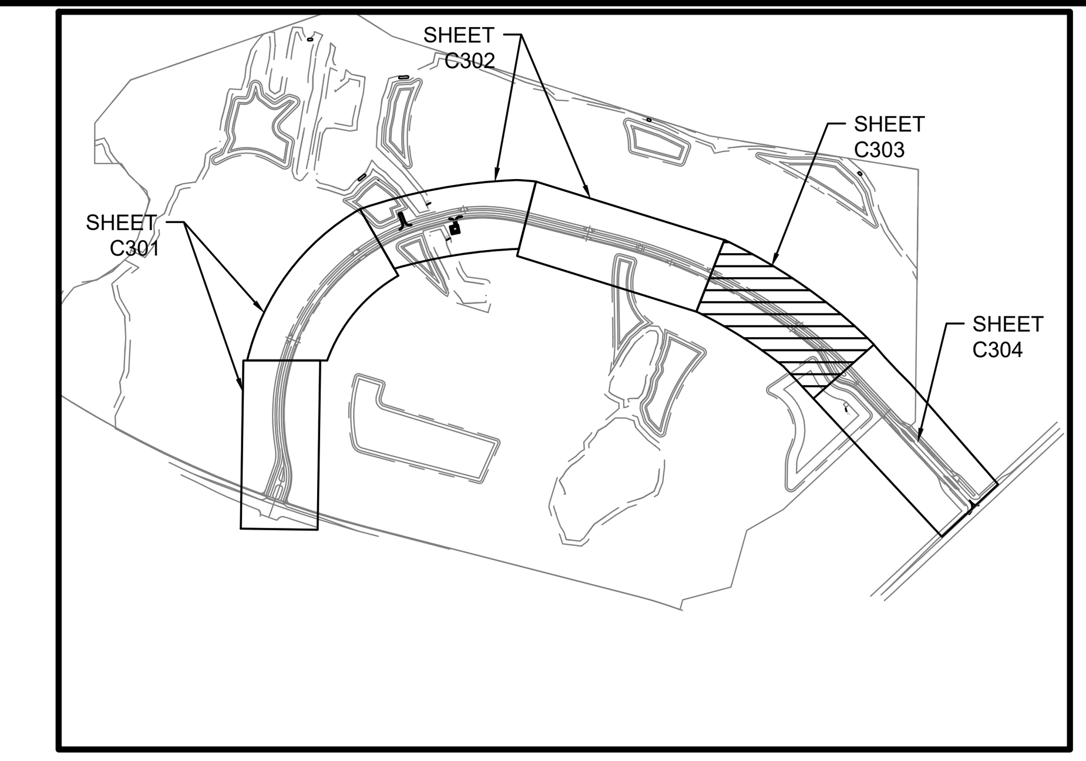
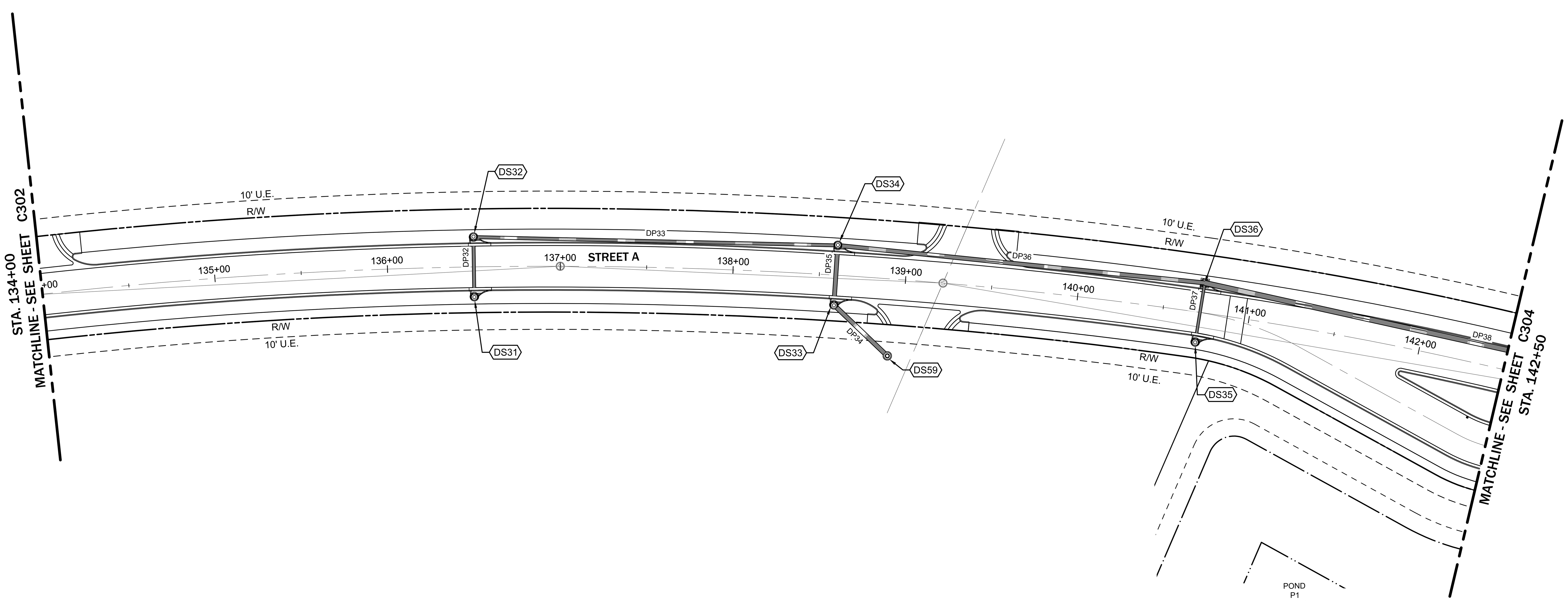
APPROVED BY:	DAS

C302





KEY MAP
NTS



LEGEND

EXISTING | PROPOSED

- BOUNDARY
- RIGHT OF WAY (MAJOR)
- RIGHT OF WAY (MINOR)
- TRACT LINE
- LOT LINE
- LOT SETBACK
- UTILITY EASEMENT (U.E.)
- DRAINAGE EASEMENT (D.E.)
- EASEMENT (OTHER)
- CURB
- CURB AND GUTTER
- MIAMI CURB
- CONCRETE WALK
- SPOT ELEVATION
- ROAD ℄ ELEVATION
- CONTOUR (MAJOR)
- CONTOUR (MINOR)
- DIRECTION OF SURFACE FLOW
- NORMAL WATER LEVEL
- SEASON HIGH WATER LEVEL
- POND MAINTENANCE BERM
- STORM STRUCTURE NUMBER
- STORM DRAINAGE MANHOLE
- STORM DRAINAGE INLET
- CONTROL STRUCTURE
- OUTFALL STRUCTURE
- PIPE END (OUTFALL)
- SOIL BORING
- SOIL BORING (ROADWAY)
- SOIL BORING (POND)
- DOWNSPOUT

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MOORHEAD & STOKES, LLC
CIVIL ENGINEERS
431 E. Horatio Avenue
Suite 260
Maitland, Florida 32751
(407) 629-8330
CA# 0007723

DRAINAGE PLAN
FOR
LAKE HILLS MAIN BLVD. & MASS GRADING
HOWEY-IN-THE-HILLS FLORIDA

READER & PARTNERS, LLC
5850 TG LEE BOULEVARD, SUITE 200
ORLANDO, FL 32822
(407) 856-4899

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DAVID ASHLEY STOKES
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NO. 66527
STATE OF FLORIDA
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November 7, 2024

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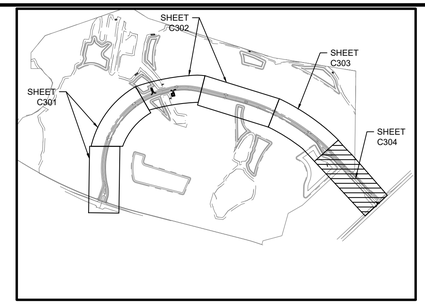
APPROVED BY: DAS

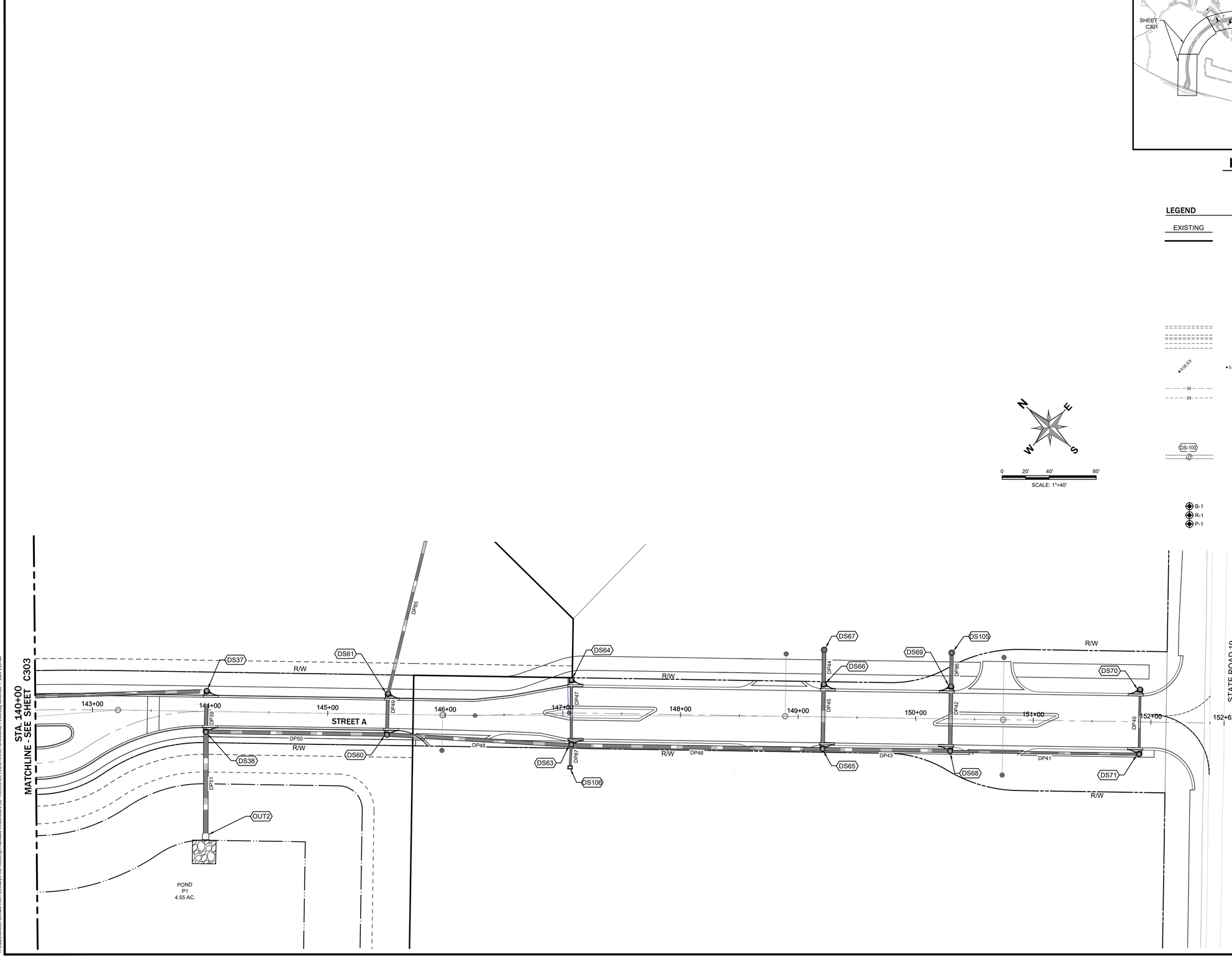
C303



KEY MAP
NTS

LEGEND

EXISTING	PROPOSED	
		BOUNDARY
		RIGHT OF WAY (MAJOR)
		RIGHT OF WAY (MINOR)
		TRACT LINE
		LOT LINE
		LOT SETBACK
		UTILITY EASEMENT (U.E.)
		DRAINAGE EASEMENT (D.E.)
		EASEMENT (OTHER)
		CURB
		CURB AND GUTTER
		MIAMI CURB
		CONCRETE WALK
+0.00 EX.	• 0.00 OR 0.00 EP / 0.00 TC OR • 0.00 TW • 0.00 BW • 0.00 LP • 0.00 HP	SPOT ELEVATION
		ROAD ℄ ELEVATION
30	30	CONTOUR (MAJOR)
29	29	CONTOUR (MINOR)
		DIRECTION OF SURFACE FLOW
		NORMAL WATER LEVEL
		SEASON HIGH WATER LEVEL
		POND MAINTENANCE BERM
DS-100 / DS-100	DS-100	STORM STRUCTURE NUMBER
		STORM DRAINAGE MANHOLE
	OR OR	STORM DRAINAGE INLET
		CONTROL STRUCTURE
	OR	OUTFALL STRUCTURE
	OUT-1	PIPE END (OUTFALL)
B-1		SOIL BORING
R-1		SOIL BORING (ROADWAY)
P-1		SOIL BORING (POND)
	D.S.	DOWNSPOUT



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CA# 0007723

DRAINAGE PLAN
FOR
LAKE HILLS MAIN BLVD. & MASS GRADING
HOWEY-IN-THE-HILLS FLORIDA

READER & PARTNERS, LLC
5850 TG LEE BOULEVARD, SUITE 200
ORLANDO, FL 32822
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DAVID ASHLEY STOKES
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ENGINEER OF RECORD
November 7, 2024

JOB # 23019
DATE: 11/7/24
DATUM: NAVD 88
DESIGNED BY: KAC
DRAWN BY: JSK
APPROVED BY: DAS

C304

STORM STRUCTURE DATA	
NO.	STRUCTURE
DS3	RIM = 90.58' STA = 103+13.80, +17.3'R FDOT TYPE 1 INLET 15"(W) INV = 86.08
DS4	RIM = 90.56' STA = 103+14.41, -19.0'L FDOT TYPE 1 INLET 15"(E) INV = 85.90 15"(N) INV = 85.90
DS5	RIM = 86.62' STA = 105+94.68, +17.3'R FDOT TYPE 1 INLET 15"(W) INV = 82.25
DS6	RIM = 86.62' STA = 105+94.69, -17.2'L FDOT TYPE 1 INLET 15"(S) INV = 82.12 15"(E) INV = 82.12 15"(N) INV = 82.12
DS7	RIM = 82.16' STA = 108+59.36, +17.3'R FDOT TYPE 1 INLET 15"(W) INV = 77.80
DS8	RIM = 82.16' STA = 108+59.40, -17.2'L FDOT TYPE 1 INLET 15"(S) INV = 77.66 15"(E) INV = 77.66 15"(NE) INV = 77.66
DS9	RIM = 78.34' STA = 111+49.99, +17.3'R FDOT TYPE 1 INLET 15"(NW) INV = 73.50
DS10	RIM = 78.34' STA = 111+50.01, -17.2'L FDOT TYPE 1 INLET 24"(SW) INV = 72.84 15"(SE) INV = 73.34 24"(NE) INV = 72.84
DS11	RIM = 75.24' STA = 114+00.00, +17.3'R FDOT TYPE 1 INLET 15"(NW) INV = 70.40
DS12	RIM = 75.24' STA = 114+00.01, -17.3'L FDOT TYPE 1 INLET 24"(SW) INV = 69.74 15"(SE) INV = 70.24 24"(NE) INV = 69.74
DS13	RIM = 70.61' STA = 117+27.63, +17.2'R FDOT TYPE 2 INLET 48"(NW) INV = 61.45 48"(SE) INV = 61.30
DS14	RIM = 70.61' STA = 117+27.67, -17.2'L FDOT TYPE 2 INLET 36"(SW) INV = 64.00 48"(SE) INV = 61.30 42"(E) INV = 63.50 48"(NW) INV = 61.30
DS15	RIM = 244.82' STA = 117+35.39, +90.7'R MES 48"(NW) INV = 61.00
DS16	RIM = 71.61' STA = 119+38.00, +17.3'R FDOT TYPE 1 INLET 18"(N) INV = 67.15
DS17	RIM = 71.61' STA = 119+38.00, -17.2'L FDOT TYPE 1 INLET 36"(E) INV = 64.80 18"(S) INV = 67.00 42"(W) INV = 64.40
DS18	RIM = 72.85' STA = 121+48.25, +17.2'R FDOT TYPE 1 INLET 18"(N) INV = 68.00
DS19	RIM = 72.85' STA = 121+48.22, -17.2'L FDOT TYPE 1 INLET 36"(E) INV = 66.75 18"(S) INV = 67.85 36"(W) INV = 66.25
DS20	RIM = 74.77' STA = 123+98.89, +17.3'R FDOT TYPE 1 INLET 18"(N) INV = 70.27
DS21	RIM = 74.77' STA = 123+98.89, -17.2'L FDOT TYPE 1 INLET 36"(E) INV = 68.70 18"(S) INV = 70.10 36"(W) INV = 68.70
DS22	RIM = 76.68' STA = 126+48.89, +17.3'R FDOT TYPE 1 INLET 18"(N) INV = 71.68
DS23	RIM = 76.68' STA = 126+48.89, -17.3'L FDOT TYPE 1 INLET 18"(S) INV = 71.55 36"(E) INV = 70.30 36"(W) INV = 70.30

STORM STRUCTURE DATA	
NO.	STRUCTURE
DS24	RIM = 75.60' STA = 129+27.05, +78.5'R FDOT TYPE E INLET 30"(N) INV = 71.00
DS25	RIM = 78.28' STA = 128+97.33, +17.3'R FDOT TYPE 1 INLET 30"(S) INV = 70.60 30"(N) INV = 70.60
DS26	RIM = 78.28' STA = 128+97.35, -17.2'L FDOT TYPE 1 INLET 30"(E) INV = 73.00 30"(S) INV = 70.45 36"(W) INV = 72.15
DS27	RIM = 79.55' STA = 131+37.35, +17.3'R FDOT TYPE 1 INLET 24"(S) INV = 74.00 30"(N) INV = 74.00
DS28	RIM = 79.55' STA = 131+37.38, -17.2'L FDOT TYPE 1 INLET 15"(E) INV = 75.05 30"(S) INV = 73.85 30"(W) INV = 73.85
DS29	RIM = 81.72' STA = 133+51.38, +17.2'R FDOT TYPE 1 INLET 15"(NE) INV = 77.22
DS30	RIM = 81.73' STA = 133+51.50, -17.2'L FDOT TYPE 1 INLET 15"(SW) INV = 77.10 15"(W) INV = 77.10
DS31	RIM = 85.56' STA = 136+50.00, +17.2'R FDOT TYPE 1 INLET 18"(NE) INV = 80.28
DS32	RIM = 85.56' STA = 136+50.01, -17.2'L FDOT TYPE 1 INLET 18"(SW) INV = 80.20 18"(SE) INV = 80.20
DS33	RIM = 86.65' STA = 138+59.50, +17.3'R FDOT TYPE 1 INLET 24"(S) INV = 81.00 24"(NE) INV = 81.00
DS34	RIM = 86.65' STA = 138+59.62, -17.2'L FDOT TYPE 1 INLET 24"(SW) INV = 80.80 18"(NW) INV = 79.67 24"(SE) INV = 79.67
DS35	RIM = 88.17' STA = 140+71.09, +17.4'R FDOT TYPE 1 INLET 15"(NE) INV = 79.30
DS36	RIM = 88.17' STA = 140+71.78, -17.2'L FDOT TYPE 1 INLET 15"(SW) INV = 79.13 24"(NW) INV = 79.13 30"(SE) INV = 79.13
DS37	RIM = 92.22' STA = 143+96.83, -17.2'L FDOT TYPE 1 INLET 30"(NW) INV = 78.32 30"(SW) INV = 78.32
DS38	RIM = 92.24' STA = 143+96.73, +17.3'R FDOT TYPE 1 INLET 30"(NE) INV = 78.23 30"(SE) INV = 78.33 42"(SW) INV = 78.23
DS39	RIM = 146.15' STA = 133+53.88, +390.7'R MES 36"(NW) INV = 71.00
DS40	RIM = 78.00' STA = 132+55.06, +343.6'R FDOT TYPE C INLET 36"(SE) INV = 71.00 36"(W) INV = 71.00
DS41	RIM = 73.15' STA = 131+39.35, +362.9'R MES 36"(E) INV = 71.00
DS42	RIM = 67.40' STA = 116+87.94, -281.3'L FDOT TYPE H INLET 24"(NW) INV = 63.50 24"(NW) INV = 63.50
DS43	RIM = 130.65' STA = 116+79.35, -337.6'L MES 24"(SE) INV = 63.30
DS44	RIM = 68.90' STA = 115+92.05, -853.6'L FDOT TYPE H INLET 30"(NE) INV = 65.80 30"(NE) INV = 65.80

STORM STRUCTURE DATA	
NO.	STRUCTURE
DS46	RIM = 67.50' STA = 119+25.06, -707.1'L FDOT TYPE H INLET 30"(N) INV = 64.15 30"(N) INV = 64.15
DS47	RIM = 67.15' STA = 119+37.20, -753.7'L MES 30"(S) INV = 64.00
DS48	RIM = 67.55' STA = 128+80.63, -594.2'L FDOT TYPE C INLET 24"(N) INV = 65.40
DS49	RIM = 135.15' STA = 128+84.25, -645.0'L MES 24"(S) INV = 65.00
DS50	RIM = 66.06' STA = 137+59.54, -838.0'L MES 24"(SW) INV = 63.91
DS51	RIM = 66.45' STA = 137+52.94, -786.9'L FDOT TYPE C INLET 24"(NE) INV = 64.05
DS52	RIM = 97.00' STA = 143+80.71, +1407.8'R FDOT TYPE C INLET 24"(NE) INV = 92.50
DS53	RIM = 97.00' STA = 144+17.63, +1148.2'R FDOT TYPE C INLET 24"(SW) INV = 91.70 24"(E) INV = 91.70
DS54	RIM = 99.66' STA = 144+63.21, +1081.2'R FDOT MANHOLE 24"(W) INV = 91.40 24"(NE) INV = 95.00
DS55	RIM = 102.00' STA = 145+54.47, +719.0'R FDOT MANHOLE 24"(SW) INV = 92.00 24"(NE) INV = 85.00
DS56	RIM = 73.25' STA = 144+84.26, +556.9'R MES 24"(SW) INV = 78.00
DS57	RIM = 73.75' STA = 115+01.36, -18.3'L FDOT MANHOLE 24"(SW) INV = 68.21 30"(SE) INV = 65.00 36"(NE) INV = 65.00
DS58	RIM = 80.17' STA = 131+71.61, +62.5'R FDOT MANHOLE 24"(N) INV = 74.67
DS59	RIM = 86.79' STA = 138+92.70, +44.6'R FDOT MANHOLE 24"(N) INV = 81.20
DS60	RIM = 95.03' STA = 145+50.65, +17.3'R FDOT TYPE 1 INLET 24"(NE) INV = 80.50 30"(SE) INV = 84.27 30"(NW) INV = 80.50
DS61	RIM = 95.04' STA = 145+51.00, -17.3'L FDOT TYPE 1 INLET 24"(NE) INV = 80.60 24"(SW) INV = 80.60
DS62	RIM = 73.67' STA = 115+01.48, +45.2'R FDOT MANHOLE 30"(NW) INV = 65.40
DS63	RIM = 103.50' STA = 147+07.58, +26.7'R TYPE 1 INLET 30"(SE) INV = 88.73 18"(NE) INV = 93.93 18"(SW) INV = 91.65 30"(NW) INV = 88.73
DS64	RIM = 99.62' STA = 147+06.77, -27.8'L TYPE 1 INLET 18"(SW) INV = 94.33
DS65	RIM = 104.74' STA = 149+21.23, +26.9'R TYPE 1 INLET 30"(NE) INV = 89.55 30"(SE) INV = 92.80 30"(NW) INV = 89.48
DS66	RIM = 104.72' STA = 149+21.37, -27.6'L TYPE 1 INLET 30"(NE) INV = 93.50 30"(SW) INV = 89.75

STORM STRUCTURE DATA	
NO.	STRUCTURE
DS67	RIM = 104.00' STA = 149+21.20, -57.0'L FDOT MANHOLE 30"(SW) INV = 94.00
DS68	RIM = 104.72' STA = 150+29.69, +27.1'R FDOT TYPE 1 INLET 18"(SE) INV = 98.35 30"(NE) INV = 93.30 30"(NW) INV = 93.30
DS69	RIM = 109.18' STA = 150+29.60, -27.4'L TYPE 1 INLET 30"(NE) INV = 93.50 30"(SW) INV = 93.50
DS70	RIM = 104.19' STA = 151+90.36, -27.3'L TYPE 1 MANHOLE 15"(SW) INV = 99.00
DS71	RIM = 104.19' STA = 151+90.40, +27.2'R TYPE 1 INLET 15"(NE) INV = 98.83 18"(NW) INV = 98.83
DS72	RIM = 81.50' STA = 108+17.05, +406.2'R FDOT TYPE C INLET 24"(N) INV = 77.00
DS73	RIM = 83.48' STA = 109+62.07, +400.1'R FDOT MANHOLE 24"(S) INV = 76.50 24"(W) INV = 76.50
DS74	RIM = 80.56' STA = 109+29.80, -10.1'L FDOT MANHOLE 15"(SW) INV = 76.92 24"(SE) INV = 75.10 24"(NE) INV = 75.10
DS75	RIM = 81.60' STA = 109+30.40, +80.8'R FDOT MANHOLE 24"(E) INV = 75.50 24"(NW) INV = 75.50
DS76	RIM = 79.13' STA = 128+90.88, +418.1'R FDOT MANHOLE 54"(E) INV = 68.05
DS77	RIM = 77.85' STA = 130+27.85, +382.6'R MES 54"(W) INV = 67.50
DS78	RIM = 82.82' STA = 136+98.63, +848.4'R FDOT MANHOLE 30"(NW) INV = 74.00
DS79	RIM = 83.86' STA = 135+40.02, +821.1'R MES 30"(SE) INV = 69.00
DS80	RIM = 71.51' STA = 113+70.66, -687.4'L FDOT MANHOLE 54"(N) INV = 60.30
DS81	RIM = 64.46' STA = 114+30.79, -759.7'L MES 54"(S) INV = 59.50
DS82	RIM = 70.42' STA = 119+98.80, -562.6'L FDOT MANHOLE 48"(W) INV = 61.40
DS83	RIM = 126.84' STA = 119+19.71, -620.2'L MES 48"(E) INV = 58.50
DS84	RIM = 73.66' STA = 128+63.24, -434.1'L FDOT MANHOLE 42"(N) INV = 62.00
DS85	RIM = 64.38' STA = 128+70.53, -509.6'L MES 42"(S) INV = 60.50
DS86	RIM = 0.81' STA = 118+84.50, +44.5'R MES 15"(N) INV = 66.70
DS87	RIM = 130.81' STA = 118+84.49, -51.5'L MES 15"(S) INV = 65.10

STORM STRUCTURE DATA	
NO.	STRUCTURE
DS88	RIM = 74.37' STA = 138+36.66, -605.4'L FDOT MANHOLE 36"(NE) INV = 61.30
DS89	RIM = 137.70' STA = 138+33.01, -699.9'L MES 36"(SW) INV = 60.00
DS90	RIM = 69.16' STA = 116+19.59, -856.4'L FDOT MANHOLE 30"(SW) INV = 65.70 30"(N) INV = 65.70
DS91	RIM = 69.24' STA = 116+17.66, -862.2'L FDOT MANHOLE 30"(SW) INV = 65.70 30"(N) INV = 65.70
DS92	RIM = 132.02' STA = 117+03.99, -1094.5'L MES 30"(S) INV = 65.00
DS93	RIM = 131.92' STA = 117+01.17, -1097.0'L MES 30"(S) INV = 65.00
DS94	RIM = 66.40' STA = 119+31.31, -754.8'L MES 30"(S) INV = 64.00
DS95	RIM = 128.25' STA = 119+50.94, -751.0'L MES 30"(S) INV = 64.00
DS96	RIM = 2.25' STA = 119+56.83, -749.8'L MES 30"(S) INV = 64.00
DS97	RIM = 193.25' STA = 116+60.23, -331.5'L MES 24"(SE) INV = 63.30
DS98	RIM = 128.25' STA = 116+64.66, -332.9'L MES 24"(SE) INV = 63.30
DS99	RIM = 128.25' STA = 116+74.95, -336.1'L MES 24"(SE) INV = 63.30
DS100	RIM = 67.50' STA = 119+44.64, -703.1'L FDOT TYPE H INLET 30"(N) INV = 64.15 30"(N) INV = 64.15
DS102	RIM = 86.00' STA = 143+96.71, -340.6'L FDOT TYPE C INLET 18"(S) INV = 81.65
DS103	RIM = 86.00' STA = 145+85.29, -166.7'L FDOT TYPE C INLET 18"(N) INV = 81.00 24"(SW) INV = 81.00
DS104	RIM = 67.40' STA = 116+72.64, -276.5'L FDOT TYPE H INLET 24"(NW) INV = 63.50 24"(NW) INV = 63.50
DS105	RIM = 104.00' STA = 150+29.73, -56.2'L FDOT MANHOLE 30"(SW) INV = 94.00
DS106	RIM = 98.75' STA = 147+06.83, +46.3'R FDOT TYPE C INLET 18"(NE) INV = 91.80
OUT1	RIM = 243.15' STA = 117+07.17, -95.5'L MES 48"(SE) INV = 61.00
OUT2	RIM = 151.63' STA = 143+97.90, +105.5'R MES 42"(NE) INV = 78.00

STORM PIPE DATA			
PIPE NAME	LENGTH	DIA & RCP	SLOPE
DP1	36'	15" RCP	0.50%
DP2	284'	15" RCP	1.33%
DP3	34'	15" RCP	0.38%
DP4	268'	15" RCP	1.66%
DP5	34'	15" RCP	0.41%
DP6	72'	15" RCP	1.03%
DP7	223'	24" RCP	1.01%
DP8	35'	15" RCP	0.46%
DP9	254'	24" RCP	1.22%
DP10	35'	15" RCP	0.46%
DP11	103'	24" RCP	1.48%
DP12	230'	36" RCP	0.44%
DP13	81'	48" RCP	0.37%
DP14	74'	48" RCP	0.41%
DP15	34'	48" RCP	0.43%
DP16	213'	42" RCP	0.42%

STORM PIPE DATA			
PIPE NAME	LENGTH	DIA & RCP	SLOPE
DP17	35'	18" RCP	0.43%
DP18	214'	36" RCP	0.68%
DP19	34'	18" RCP	0.43%
DP20	255'	36" RCP	0.77%
DP21	34'	18" RCP	0.49%
DP22	250'	36" RCP	0.64%
DP23	35'	18" RCP	0.38%
DP24	249'	36" RCP	0.74%
DP25	241'	30" RCP	0.35%
DP26	34'	30" RCP	0.43%
DP27	68'	30" RCP	0.59%
DP28	35'	30" RCP	0.43%
DP29	215'	15" RCP	0.95%
DP30	56'	24" RCP	1.19%
DP31	34'	15" RCP	0.35%
DP32	34'	18" RCP	0.25%

STORM PIPE DATA			
PIPE NAME	LENGTH	DIA & RCP	SLOPE
DP49	35'	24" RCP	0.29%
DP50	154'	30" RCP	1.41%
DP51	88'	42" RCP	0.26%
DP52	89'	24" RCP	0.56%
DP53	320'	24" RCP	0.31%
DP54	91'	24" RCP	0.44%
DP55	97'	36" RCP	0.00%
DP56	102'	36" RCP	0.00%
DP57	262'	24" RCP	0.31%
DP58	81'	24" RCP	0.37%
DP59	374'	24" RCP	0.80%
DP60	177'	24" RCP	3.96%
DP61	122'	54" RCP	0.45%
DP62	76'	42" RCP	1.98%
DP63	95'	36" RCP	1.37%
DP64	125'	54" RCP	0.64%

STORM PIPE DATA			
PIPE NAME	LENGTH	DIA & RCP	SLOPE
DP33	211'	18" RCP	0.25%
DP34	43'	24" RCP	0.47%
DP35	34'	24" RCP	0.58%
DP36	213'	24" RCP	0.25%
DP37	35'	15" RCP	0.49%
DP38	327'	30" RCP	0.25%
DP39	35'	30" RCP	0.25%
DP40	53'	15" RCP	0.32%
DP41	161'	18" RCP	0.30%
DP42	55'	30" RCP	0.37%
DP43	108'	30" RCP	0.46%
DP44	30'	30" RCP	1.69%
DP45	55'	30" RCP	0.36%
DP46	214'	30" RCP	0.35%
DP47	55'	18" RCP	0.73%
DP48	157'	30" RCP	2.84%

STORM PIPE DATA			
PIPE NAME	LENGTH	DIA & RCP	SLOPE
DP65	115'	48" RCP	2.51%
DP66	50'	30" RCP	0.20%
DP67	57'	24" RCP	0.35%
DP68	48'	30" RCP	0.31%
DP69	51'	24" RCP	0.78%
DP70	52'	24" RCP	0.27%
DP71	63'	30" RCP	0.63%
DP72	112'	30" RCP	4.45%
DP73	96'	15" RCP	1.67%
DP74	47'	30" RCP	0.21%
DP75	289'	30" RCP	0.24%
DP76	285'	30" RCP	0.25%
DP77	48'	30" RCP	0.31%
DP78	48'	30" RCP	0.31%
DP79	48'	30" RCP	0.31%
DP80	57'	24" RCP	0.35%

STORM PIPE DATA			
PIPE NAME	LENGTH	DIA & RCP	SLOPE
DP81	57'	24" RCP	0.35%
DP82	57'	24" RCP	0.35%
DP84	257'	18" RCP	0.25%
DP85	153'	24" RCP	0.26%
DP86	29'	30" RCP	1.74%
DP87	20'	18" RCP	0.76%

MADDEN
MOORHEAD & STOKES, LLC
CIVIL ENGINEERS
431 E. Horatio Avenue
Suite 260
Maitland, Florida 32751
(407) 629-8330
CA# 0007723

DRAINAGE STRUCTURE TABLES

FOR

LAKE HILLS MAIN BLVD. & MASS GRADING

HOWEY-IN-THE-HILLS FLORIDA

READER & PARTNERS, LLC
5850 TG LEE BOULEVARD, SUITE 200
ORLANDO, FL 32822
(407) 856-4899

	DATE	REVISIONS
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DAVID ASHLEY STOKES
LICENSE
NO. 66527
STATE OF FLORIDA
PROFESSIONAL ENGINEER

This item has been digitally signed and sealed by David Ashley Stokes, PE on the date adjacent to the seal.

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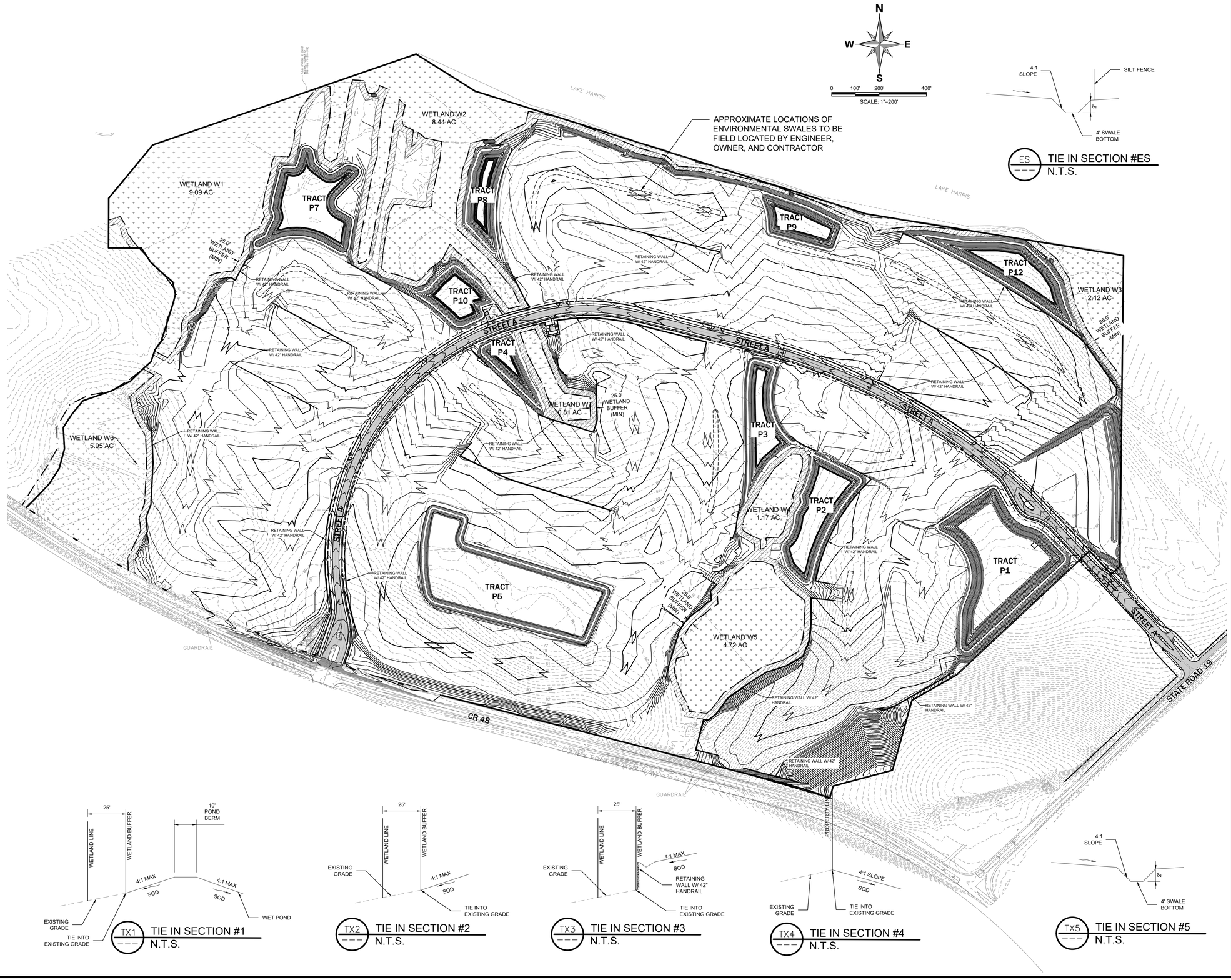
ENGINEER OF RECORD
November 7, 2024

JOB #: 23019
DATE: 11/7/24
DATUM: NAVD 88
DESIGNED BY: KAC
DRAWN BY: JSK
APPROVED BY: DAS

C305



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CIVIL ENGINEERS
431 E. Horatio Avenue
Suite 260
Maitland, Florida 32751
(407) 629-8330
CA# 0007723

OVERALL GRADING PLAN

FOR

LAKE HILLS MAIN BLVD. & MASS GRADING

HOWEY-IN-THE-HILLS FLORIDA

READER & PARTNERS, LLC
3850 TG LEE BOULEVARD, SUITE 200
ORLANDO, FL 32822
(407) 856-4899

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DESIGNED BY:	KAC
DRAWN BY:	JSK
APPROVED BY:	DAS

C400

PROPERTY BOUNDARY

WETLAND W1
9.09 AC

50.0' (TYP.)

420
C900
TYPICAL
CONSERVATION SIGN

TX1
C400

TX3
C400

ES
C400

TRACT
P7
100YR/24HR: 69.90
25YR/24HR: 68.32
10YR/24HR: 67.66

PB-15

END OF WALL: 72.0

67.1 BW
71.1 TW

RETAINING WALL
W/ 42" HANDRAIL

67.9 BW
73.8 TW

67.3 BW
73.0 TW

START OF WALL: 67.0

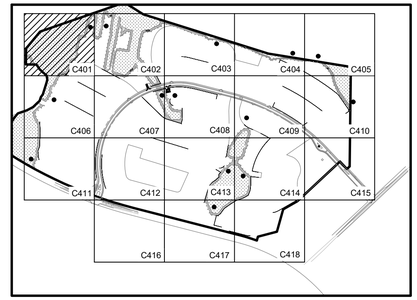
74.4 TW

APPROXIMATE LOCATION OF
ENVIRONMENTAL SWALE TO BE
FIELD LOCATED BY ENGINEER,
OWNER AND CONTRACTOR

MATCHLINE - SEE SHEET C402

MATCHLINE - SEE SHEET C406

N
W E
S
0 20' 40' 80'
SCALE: 1"=40'



KEY MAP
NTS

LEGEND

EXISTING	PROPOSED	
		BOUNDARY
		RIGHT OF WAY (MAJOR)
		RIGHT OF WAY (MINOR)
		TRACT LINE
		LOT LINE
		LOT SETBACK
		UTILITY EASEMENT (U.E.)
		DRAINAGE EASEMENT (D.E.)
		EASEMENT (OTHER)
		CURB
		CURB AND GUTTER
		MIAMI CURB
		CONCRETE WALK
	22.80TC / 22.30EP	SPOT ELEVATION
	26.80 OR / 26.80LP	ROAD ℄ ELEVATION
30	30	CONTOUR (MAJOR)
29	29	CONTOUR (MINOR)
		DIRECTION OF SURFACE FLOW
		NORMAL WATER LEVEL
		SEASON HIGH WATER LEVEL
		POND MAINTENANCE BERM
ST-10	ST-10	STORM STRUCTURE NUMBER
		STORM DRAINAGE MANHOLE
	OR OR	STORM DRAINAGE INLET
	OR	CONTROL STRUCTURE
		OUTFALL STRUCTURE
	OUT-1	PIPE END (OUTFALL)
B-1		SOIL BORING
R-1		SOIL BORING (ROADWAY)
P-1		SOIL BORING (POND)
	D.S.	DOWNSPOUT

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GRADING PLAN
FOR
LAKE HILLS MAIN BLVD. & MASS GRADING
FLORIDA
HOWEY-IN-THE-HILLS

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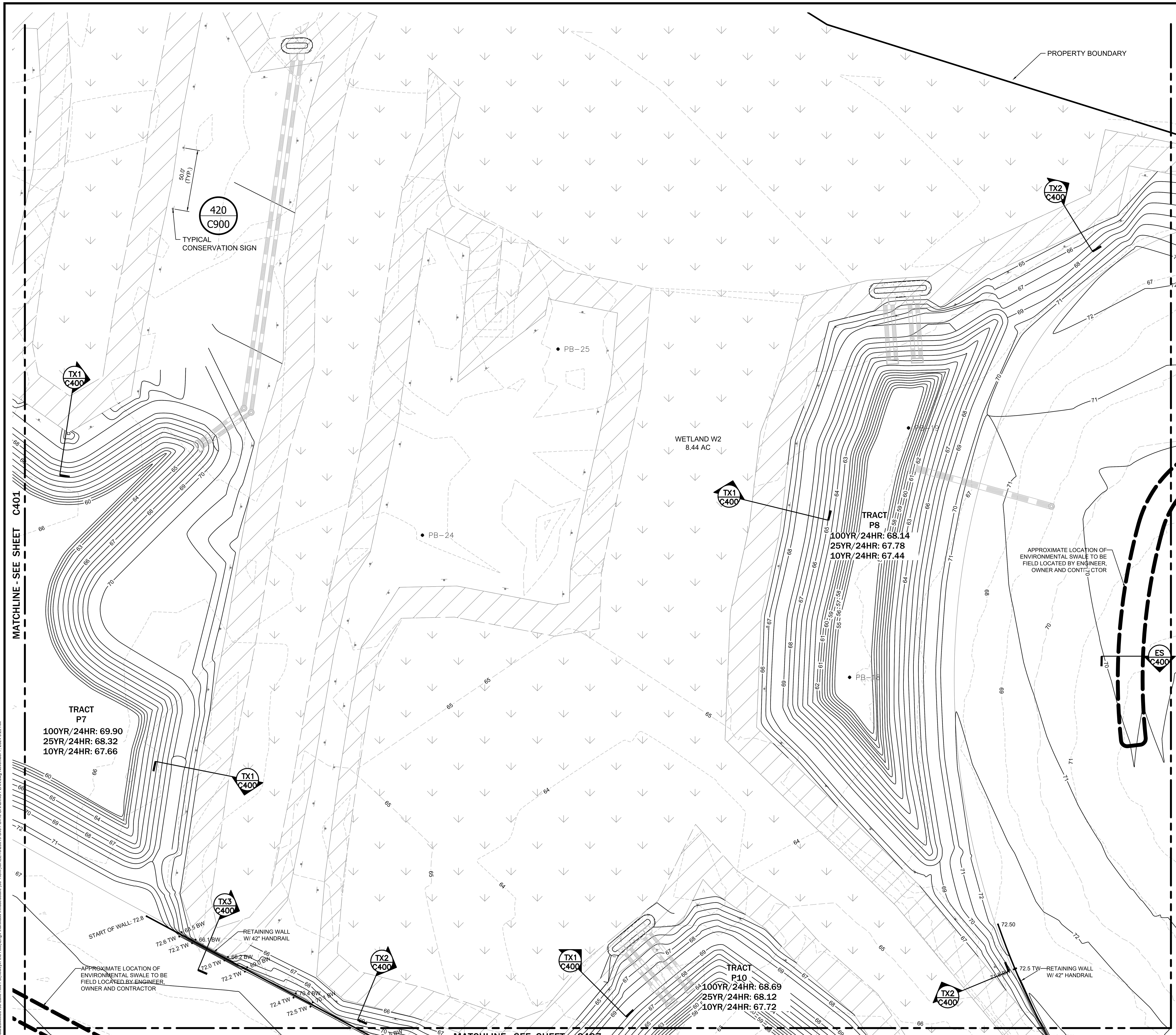
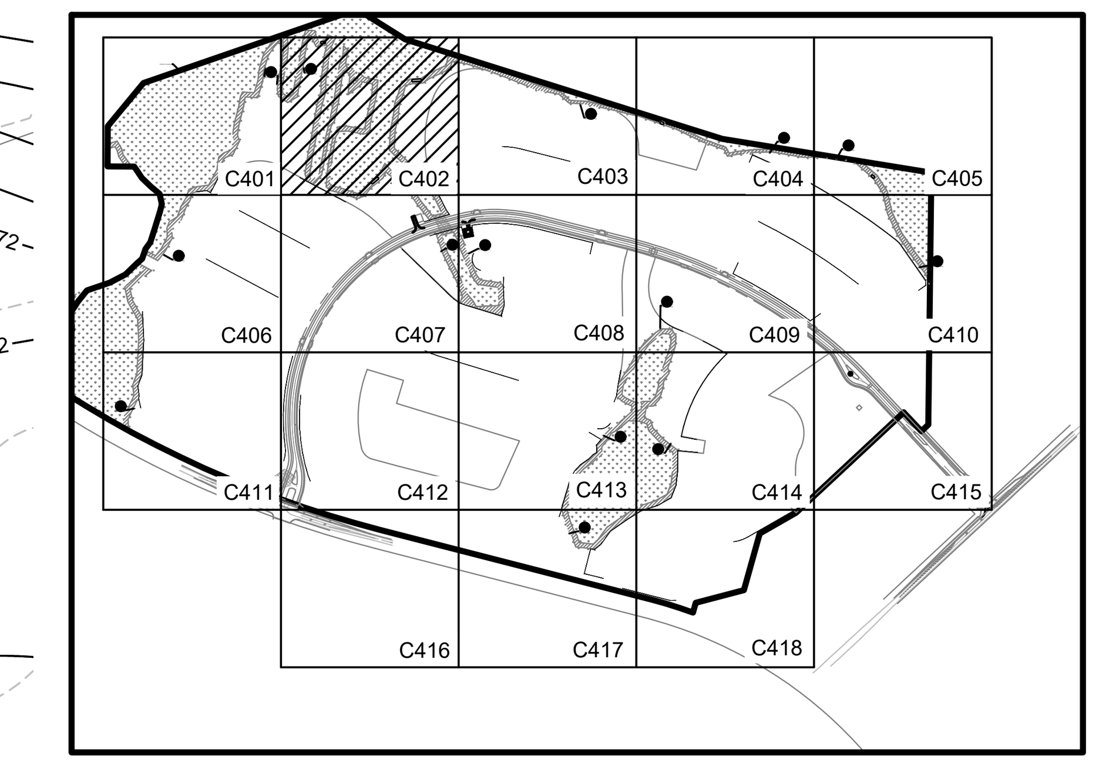
C401





KEY MAP

NTS

LEGEND

EXISTING	PROPOSED	
		BOUNDARY
		RIGHT OF WAY (MAJOR)
		RIGHT OF WAY (MINOR)
		TRACT LINE
		LOT LINE
		LOT SETBACK
		UTILITY EASEMENT (U.E.)
		DRAINAGE EASEMENT (D.E.)
		EASEMENT (OTHER)
		CURB
		CURB AND GUTTER
		MIAMI CURB
		CONCRETE WALK
	22.80TC / 22.30EP OR 26.80 / 26.80LP OR	SPOT ELEVATION
		ROAD ℄ ELEVATION
30	30	CONTOUR (MAJOR)
29	29	CONTOUR (MINOR)
		DIRECTION OF SURFACE FLOW
		NORMAL WATER LEVEL
		SEASON HIGH WATER LEVEL
		POND MAINTENANCE BERM
ST-10	ST-10	STORM STRUCTURE NUMBER
		STORM DRAINAGE MANHOLE
	OR	STORM DRAINAGE INLET
		CONTROL STRUCTURE
	OR	OUTFALL STRUCTURE
	OUT-1	PIPE END (OUTFALL)
B-1		SOIL BORING
R-1		SOIL BORING (ROADWAY)
P-1		SOIL BORING (POND)
D.S.		DOWNSPOUT

MADDEN

MOORHEAD & STOKES, LLC

CIVIL ENGINEERS
431 E. Horatio Avenue
Suite 260
Maitland, Florida 32751
(407) 629-8330
CA# 0007723

GRADING PLAN

FOR

LAKE HILLS MAIN BLVD. & MASS GRADING

HOWEY-IN-THE-HILLS FLORIDA

READER & PARTNERS, LLC
5850 TG LEE BOULEVARD SUITE 200
ORLANDO, FL 32822
(407) 856-4899

	DATE	REVISIONS
1		
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DAVID ASHLEY STOKES LICENSE NO. 66527 STATE OF FLORIDA PROFESSIONAL ENGINEER

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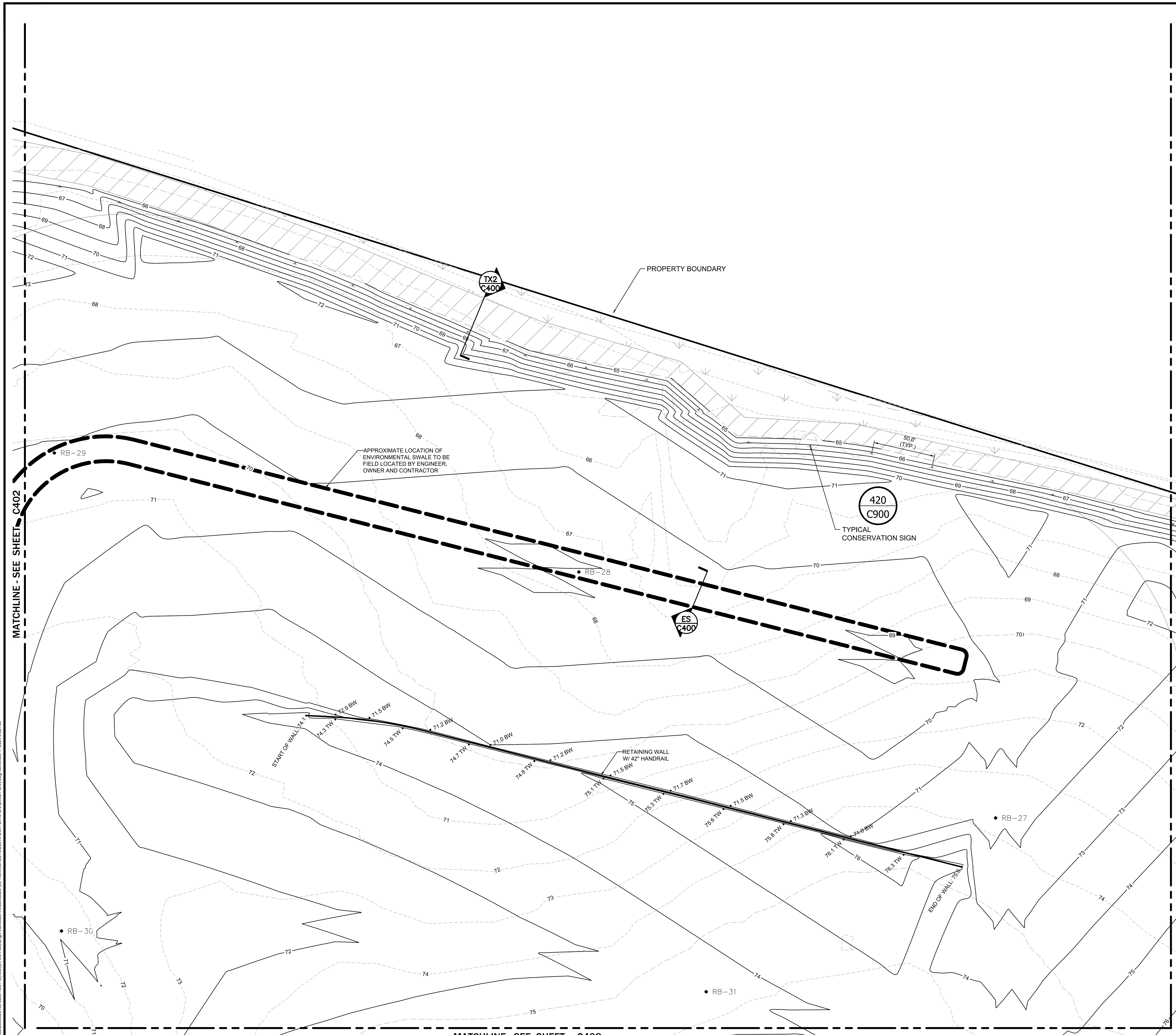
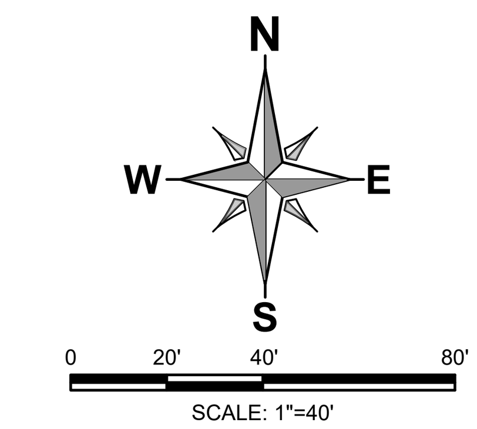
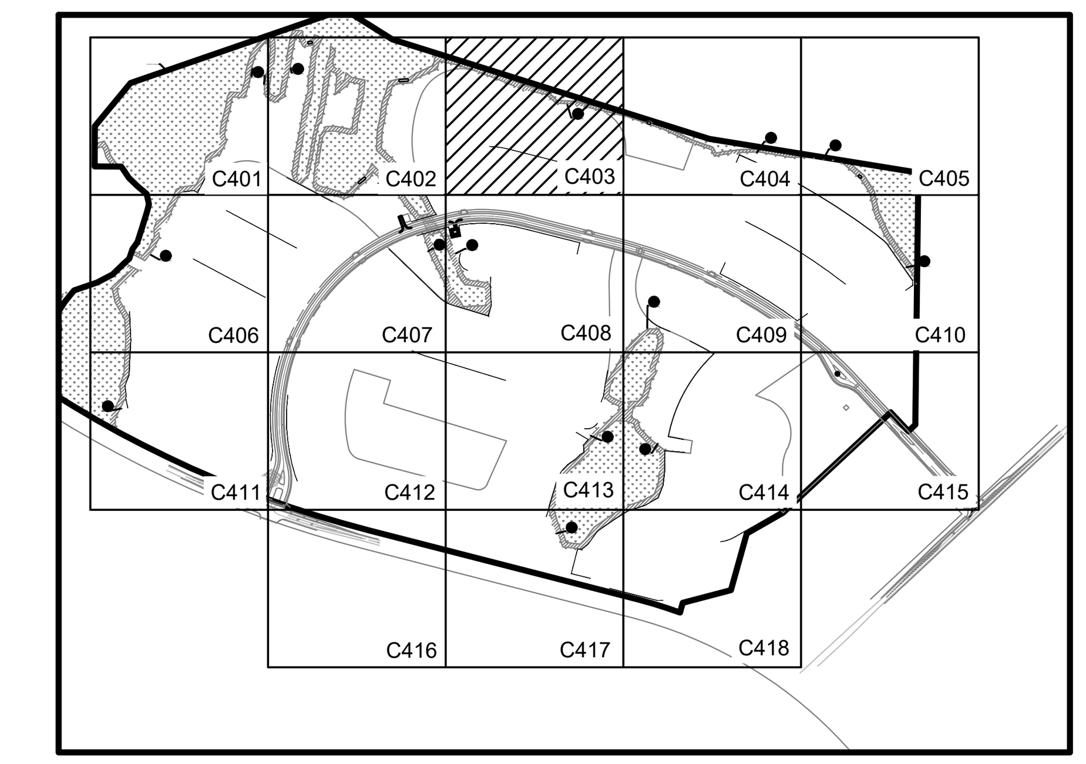
ENGINEER OF RECORD
November 7, 2024

JOB #	23019
DATE:	11/7/24
DATUM:	NAVD 88
DESIGNED BY:	KAC
DRAWN BY:	JSK
APPROVED BY:	DAS

C402







KEY MAP

NTS

LEGEND

EXISTING | PROPOSED

- BOUNDARY
- RIGHT OF WAY (MAJOR)
- RIGHT OF WAY (MINOR)
- TRACT LINE
- LOT LINE
- LOT SETBACK
- UTILITY EASEMENT (U.E.)
- DRAINAGE EASEMENT (D.E.)
- EASEMENT (OTHER)
- CURB
- CURB AND GUTTER
- MIAMI CURB
- CONCRETE WALK
- SPOT ELEVATION (22.80TC / 22.30EP OR 26.80; 26.80LP OR 26.80)
- ROAD ℄ ELEVATION
- CONTOUR (MAJOR) (30)
- CONTOUR (MINOR) (29)
- DIRECTION OF SURFACE FLOW
- NORMAL WATER LEVEL
- SEASON HIGH WATER LEVEL
- POND MAINTENANCE BERM
- STORM STRUCTURE NUMBER (ST-10)
- STORM DRAINAGE MANHOLE
- STORM DRAINAGE INLET (OR / OR)
- CONTROL STRUCTURE
- OUTFALL STRUCTURE (OR)
- PIPE END (OUTFALL) (OUT-1)
- B-1 SOIL BORING
- R-1 SOIL BORING (ROADWAY)
- P-1 SOIL BORING (POND)
- D.S. DOWNSPOUT

MADDEN
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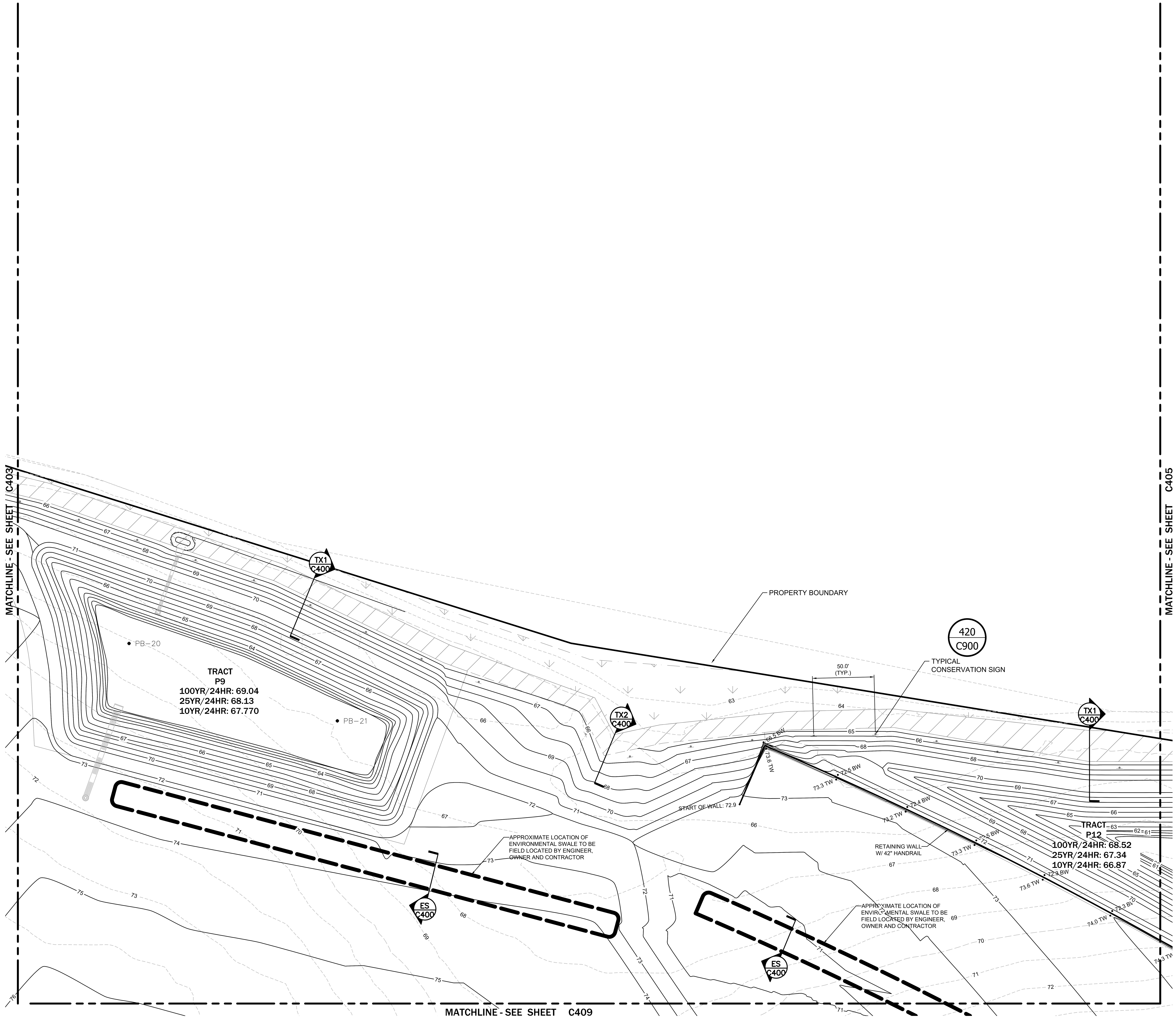
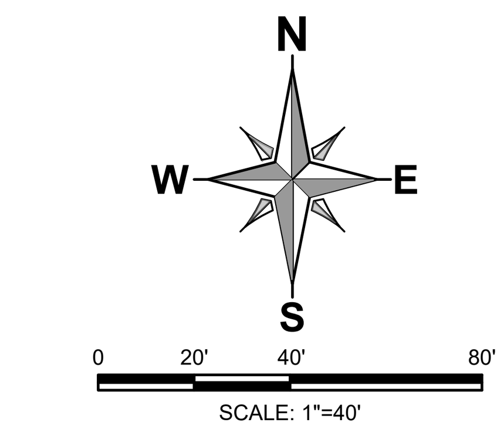
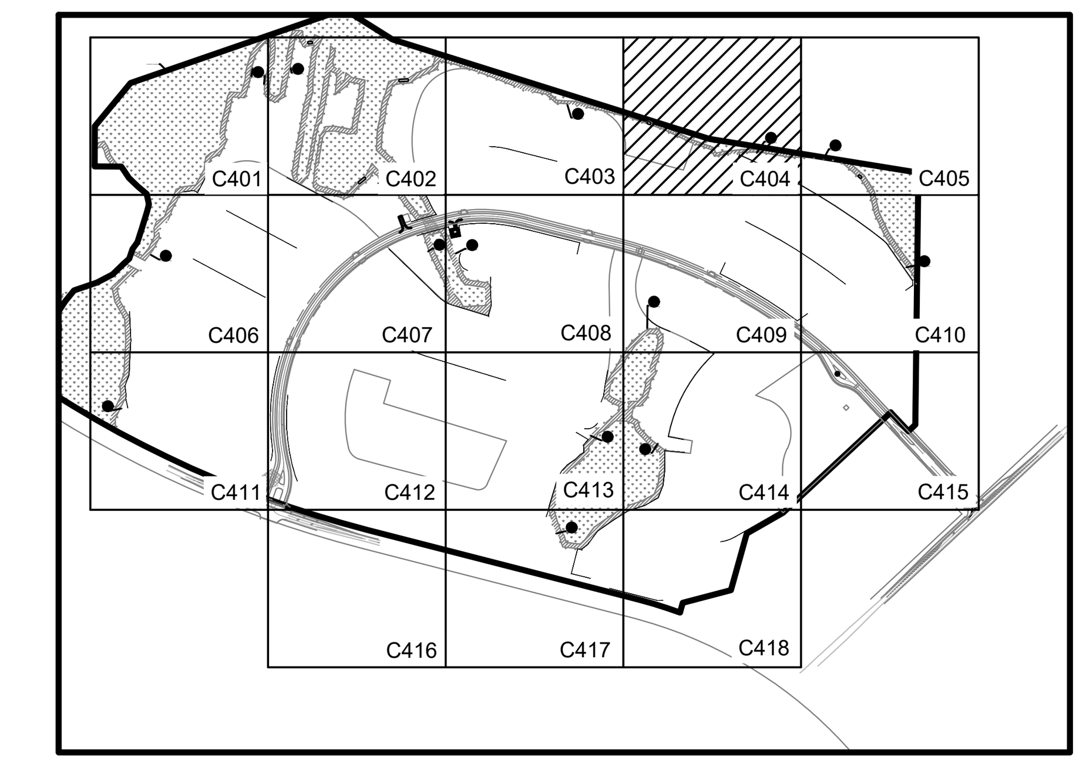
C403







KEY MAP

NTS

LEGEND

EXISTING	PROPOSED	
		BOUNDARY
		RIGHT OF WAY (MAJOR)
		RIGHT OF WAY (MINOR)
		TRACT LINE
		LOT LINE
		LOT SETBACK
		UTILITY EASEMENT (U.E.)
		DRAINAGE EASEMENT (D.E.)
		EASEMENT (OTHER)
		CURB
		CURB AND GUTTER
		MIAMI CURB
		CONCRETE WALK
	22.80TC / 22.30EP OR 26.80 / 26.80LP OR 26.80	SPOT ELEVATION
		ROAD ℄ ELEVATION
30	30	CONTOUR (MAJOR)
29	29	CONTOUR (MINOR)
		DIRECTION OF SURFACE FLOW
		NORMAL WATER LEVEL
		SEASON HIGH WATER LEVEL
		POND MAINTENANCE BERM
ST-10	ST-10	STORM STRUCTURE NUMBER
		STORM DRAINAGE MANHOLE
	OR / OR	STORM DRAINAGE INLET
		CONTROL STRUCTURE
	OR	OUTFALL STRUCTURE
	OUT-1	PIPE END (OUTFALL)
B-1		SOIL BORING
R-1		SOIL BORING (ROADWAY)
P-1		SOIL BORING (POND)
	D.S.	DOWNSPOUT

MADDEN
MOORHEAD & STOKES, LLC
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FOR
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HOWEY-IN-THE-HILLS FLORIDA

READER & PARTNERS, LLC
5850 TG LEE BOULEVARD, SUITE 200
ORLANDO, FL 32822
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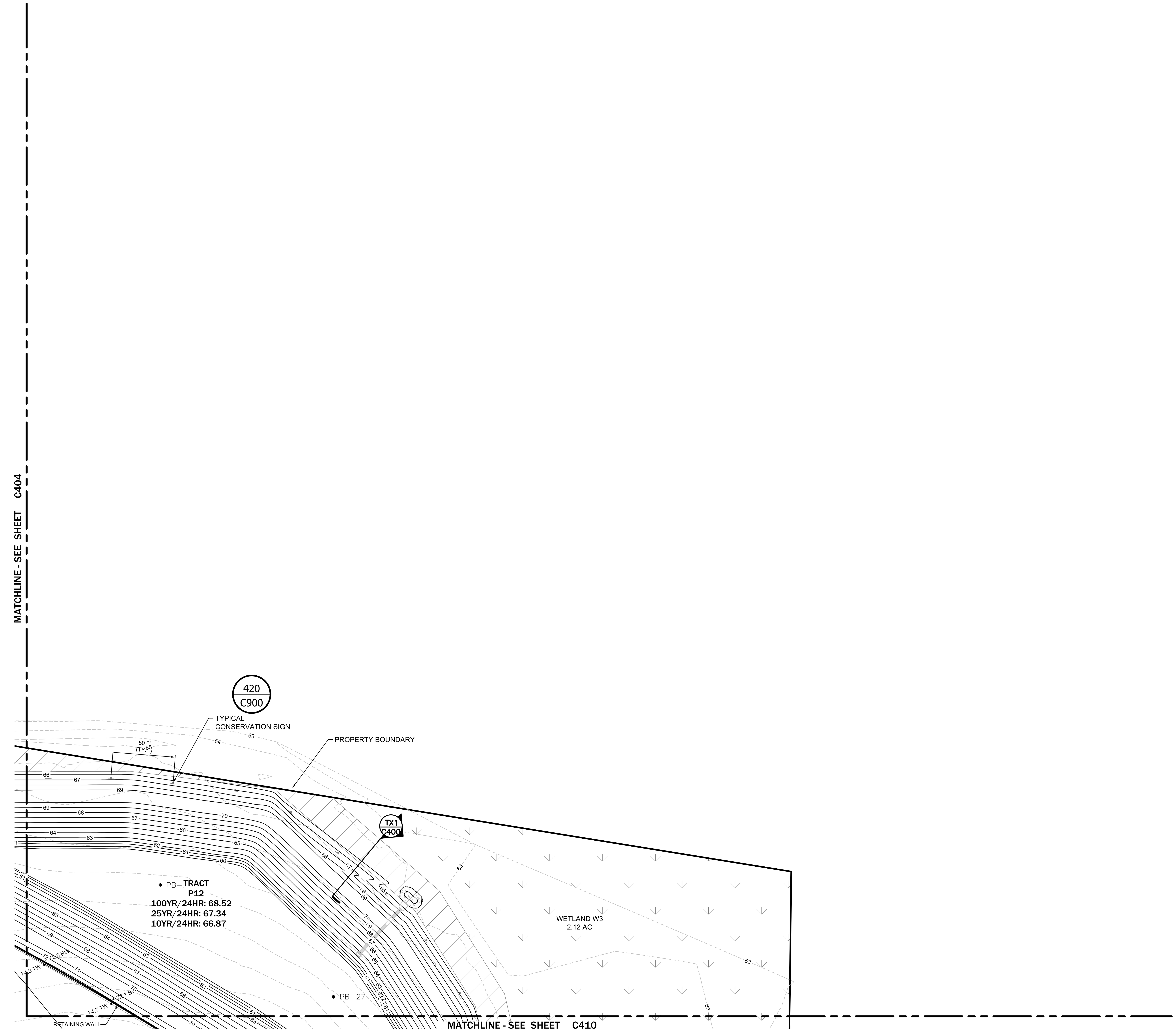

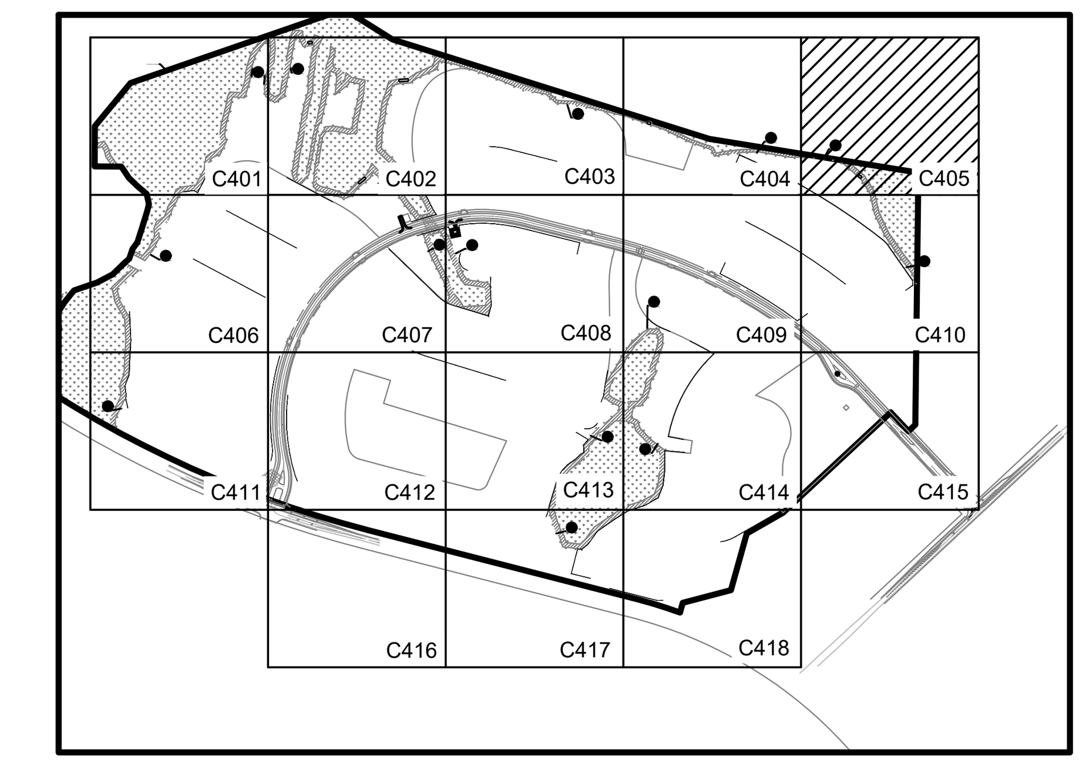

KEY MAP
NTS

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- PIPE END (OUTFALL)
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- DOWNSPOUT

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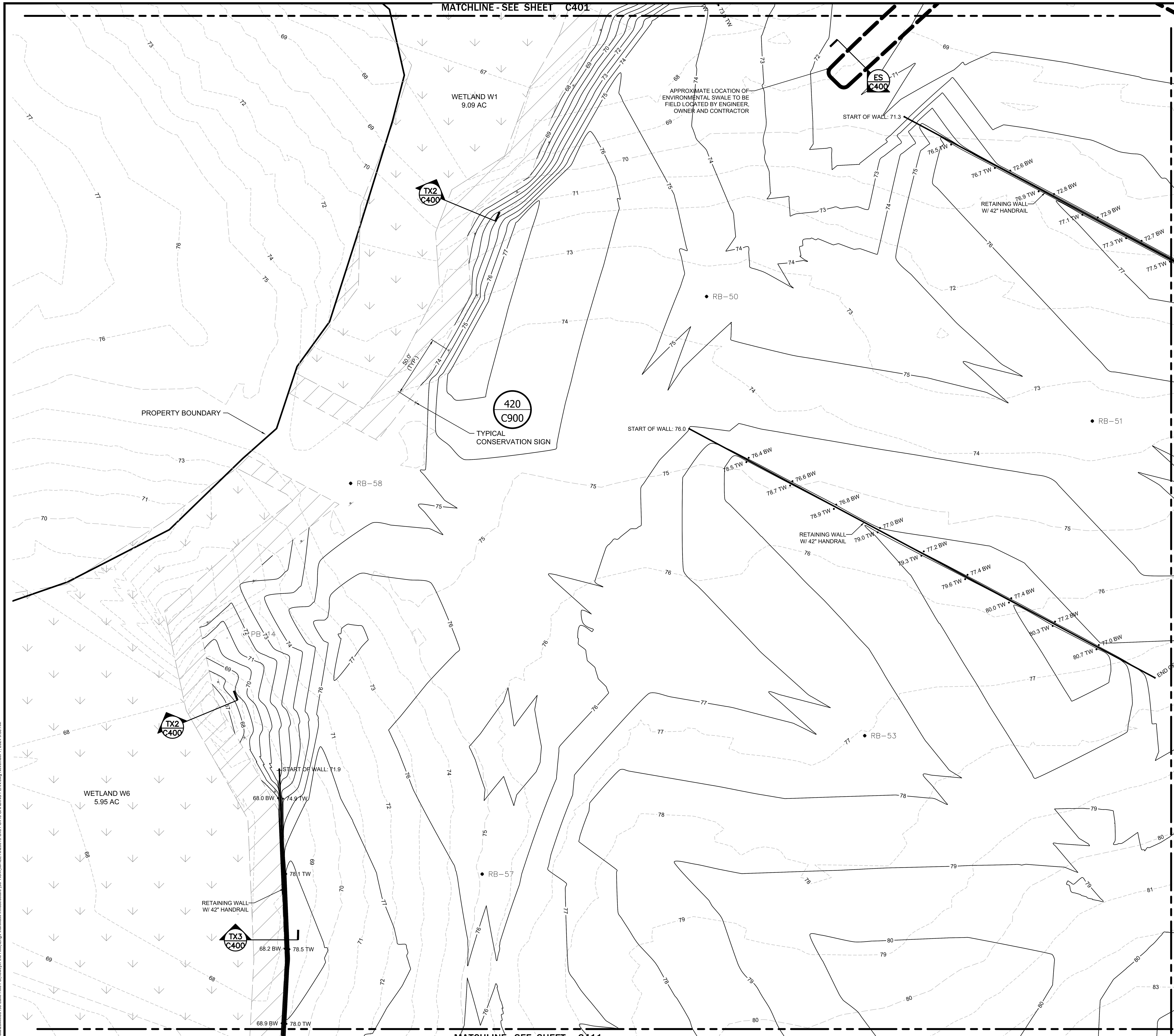
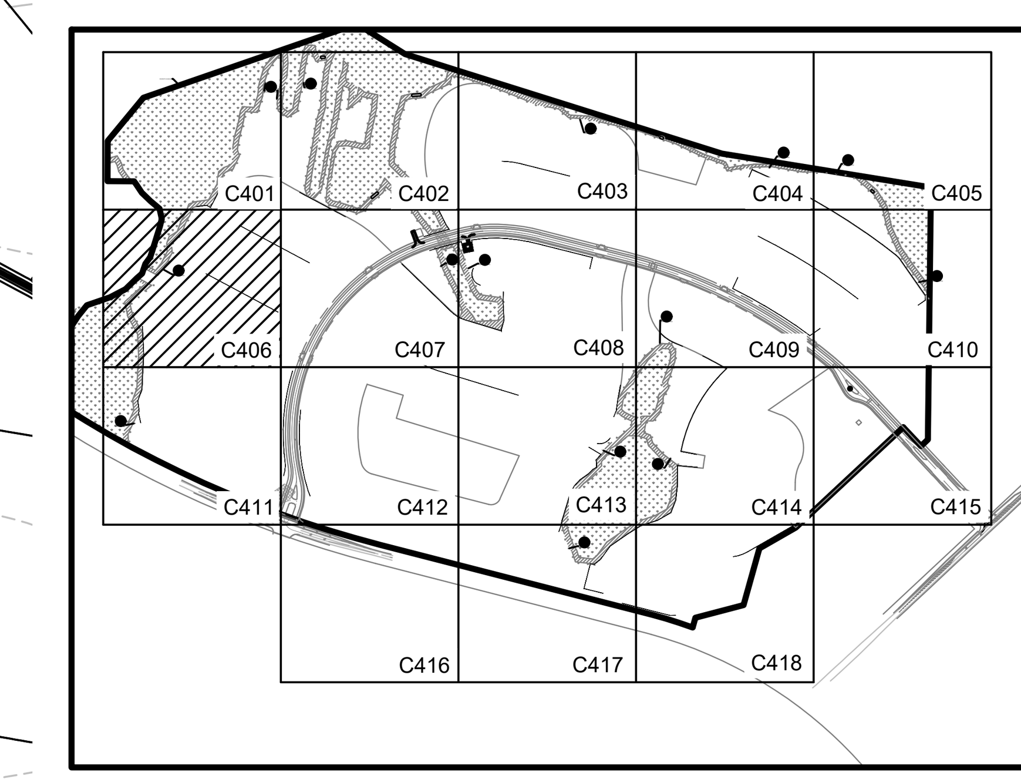
C405



N
W E
S

0 20' 40' 80'

SCALE: 1"=40'



KEY MAP

NTS

LEGEND

EXISTING	PROPOSED	
		BOUNDARY
		RIGHT OF WAY (MAJOR)
		RIGHT OF WAY (MINOR)
		TRACT LINE
		LOT LINE
		LOT SETBACK
		UTILITY EASEMENT (U.E.)
		DRAINAGE EASEMENT (D.E.)
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		CURB
		CURB AND GUTTER
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		NORMAL WATER LEVEL
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	D.S.	DOWNSPOUT

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GRADING PLAN

FOR

LAKE HILLS MAIN BLVD. & MASS GRADING

HOWEY-IN-THE-HILLS FLORIDA

READER & PARTNERS, LLC
5850 TG LEE BOULEVARD, SUITE 200
ORLANDO, FL 32822
(407) 856-4899

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APPROVED BY:	DAS

C406

MATCHLINE - SEE SHEET C402

MATCHLINE - SEE SHEET C406

MATCHLINE - SEE SHEET C408

MATCHLINE - SEE SHEET C412

TRACT
P10
100YR/24HR: 68.69
25YR/24HR: 68.12
10YR/24HR: 67.72

TRACT
P4
100YR/24HR: 68.94
25YR/24HR: 68.17
10YR/24HR: 67.73

WETLAND W7
0.81 AC

RETAINING WALL
W/ 42" HANDRAIL

END OF WALL: 72.9

START OF WALL: 71.3

START OF WALL: 74.6

END OF WALL: 74.6

END OF WALL: 77.5

APPROXIMATE LOCATION OF ENVIRONMENTAL SWALE TO BE FIELD LOCATED BY ENGINEER, OWNER AND CONTRACTOR

IRRIGATION PUMP PAD

TYPICAL CONSERVATION SIGN

RB-1 RB-2 RB-3 RB-4 RB-45 RB-46 RB-52

ES C400

TX1 C400

TX3 C400

420 C900

N W E S

0 20' 40' 80'

SCALE: 1"=40'

KEY MAP
NTS

C401 C402 C403 C404 C405
C406 C407 C408 C409 C410
C411 C412 C413 C414 C415
C416 C417 C418

LEGEND

EXISTING	PROPOSED	
		BOUNDARY
		RIGHT OF WAY (MAJOR)
		RIGHT OF WAY (MINOR)
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GRADING PLAN
FOR
LAKE HILLS MAIN BLVD. & MASS GRADING
HOWEY-IN-THE-HILLS FLORIDA

READER & PARTNERS, LLC
5850 T.G. LEE BOULEVARD, SUITE 200
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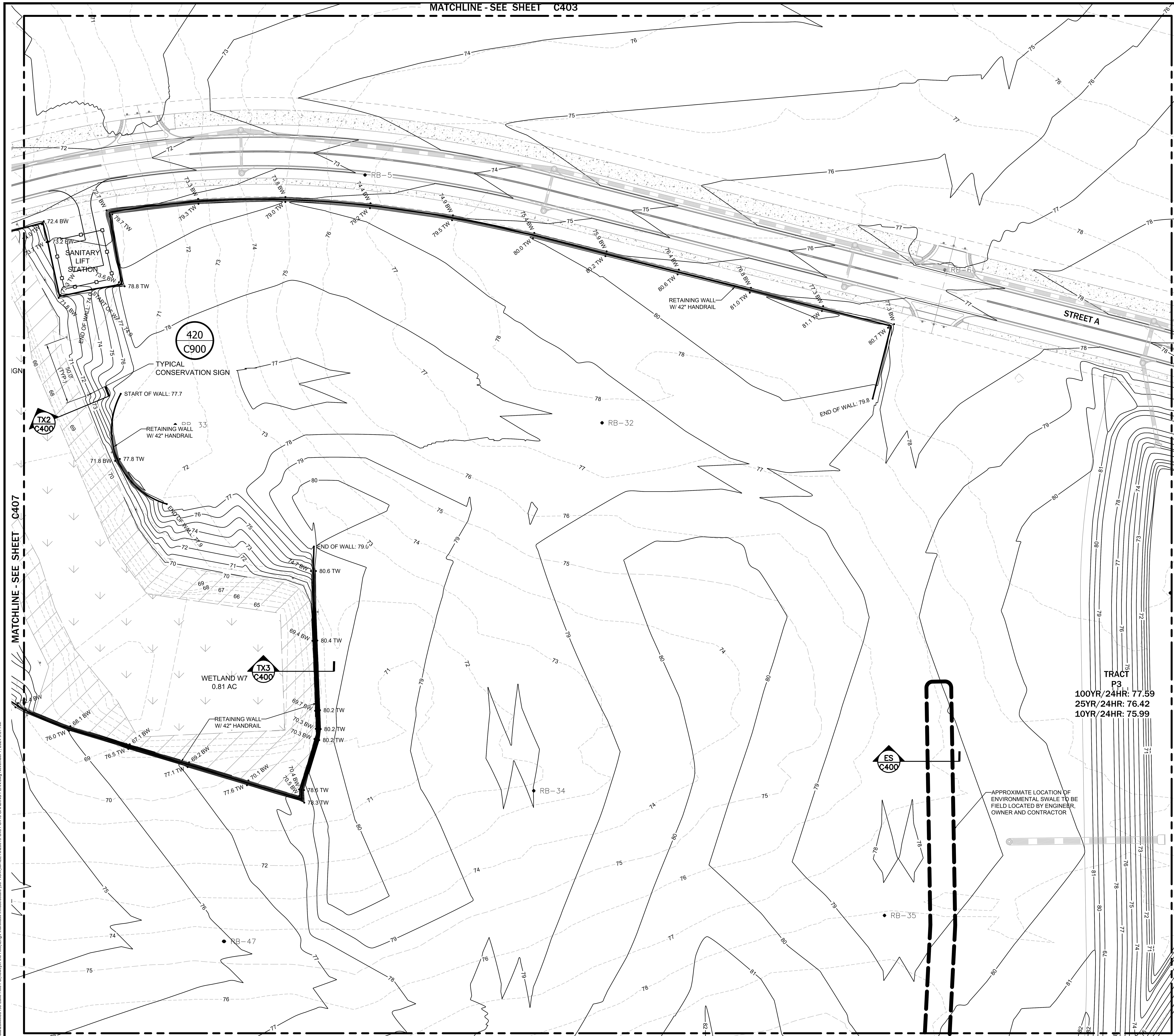
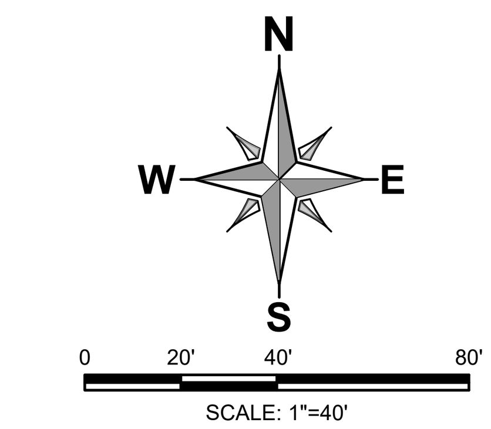
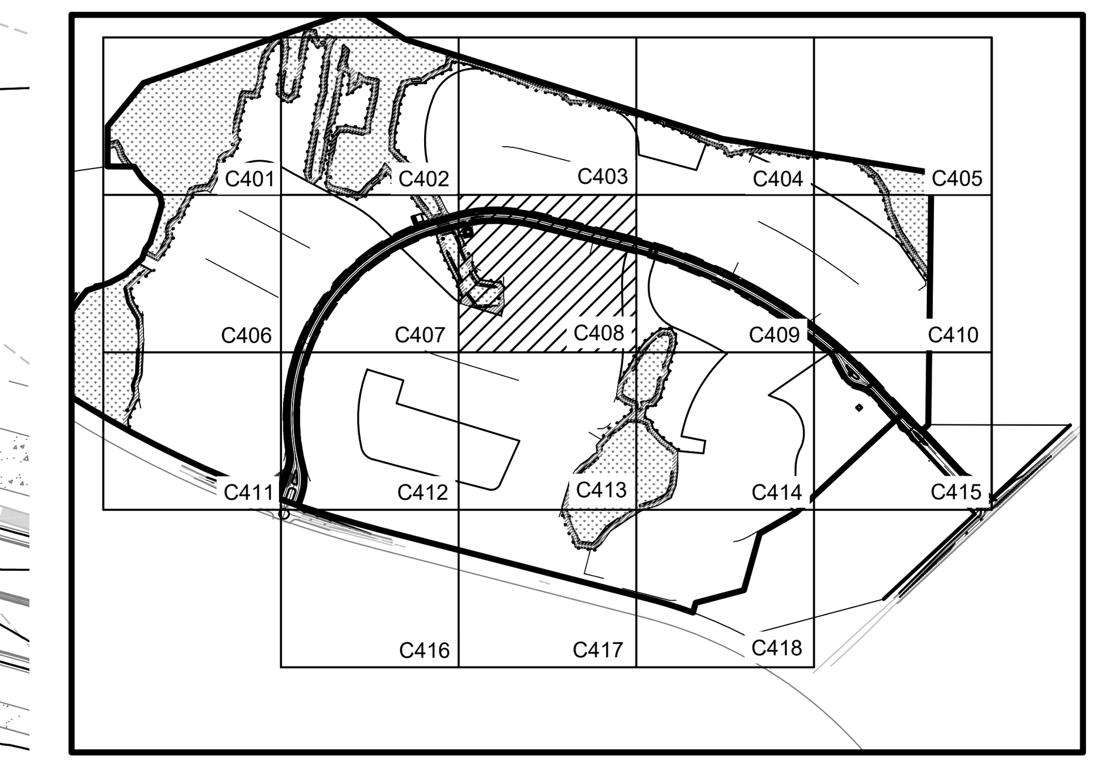
C407







KEY MAP

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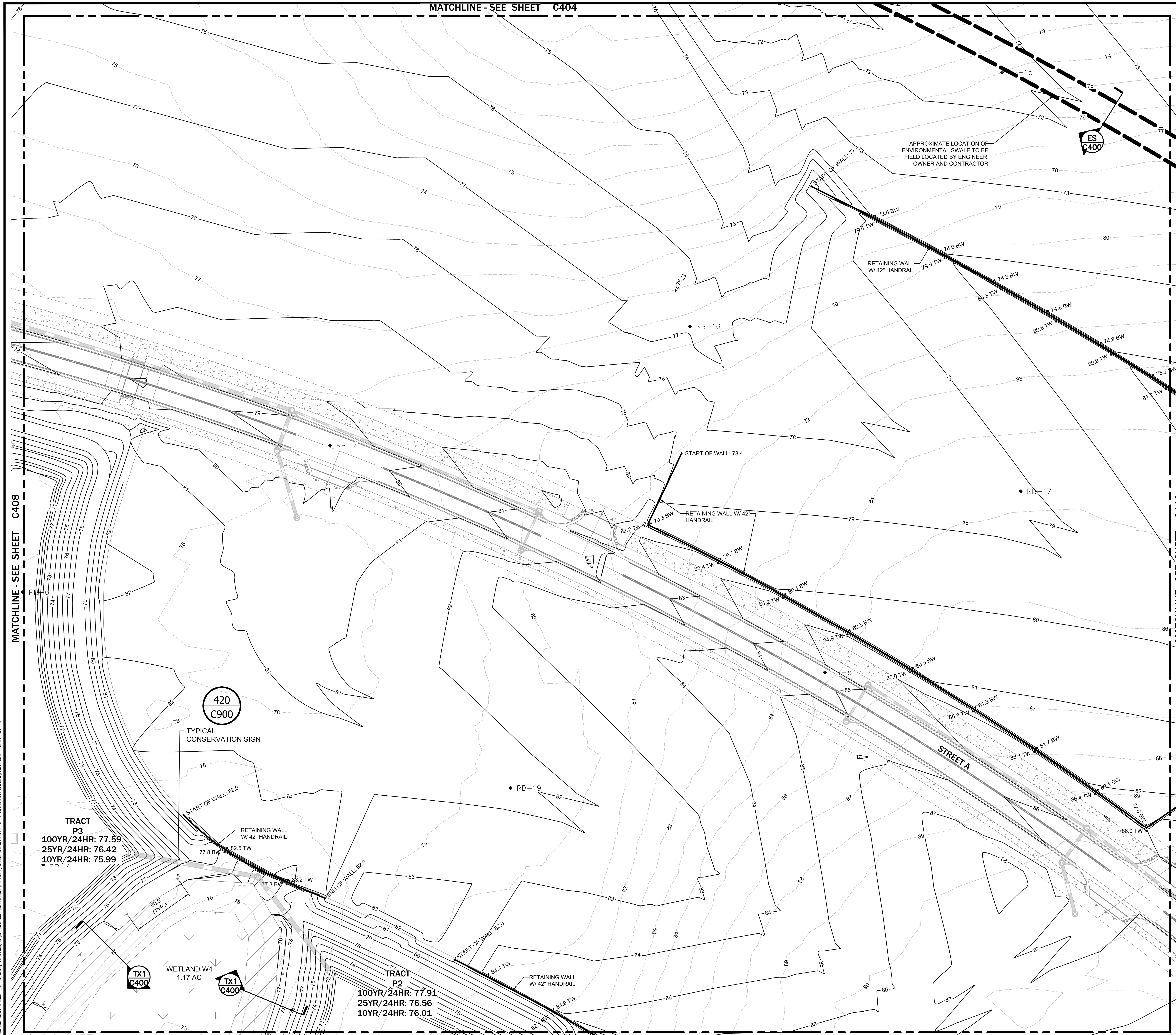
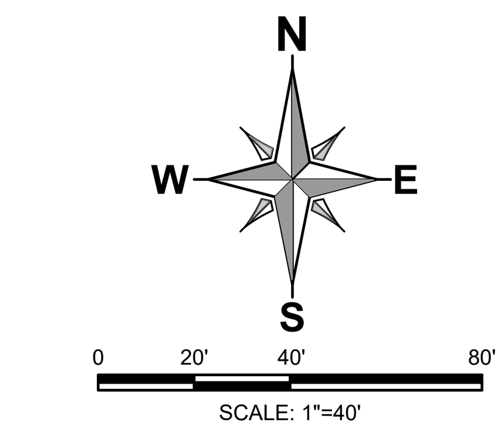
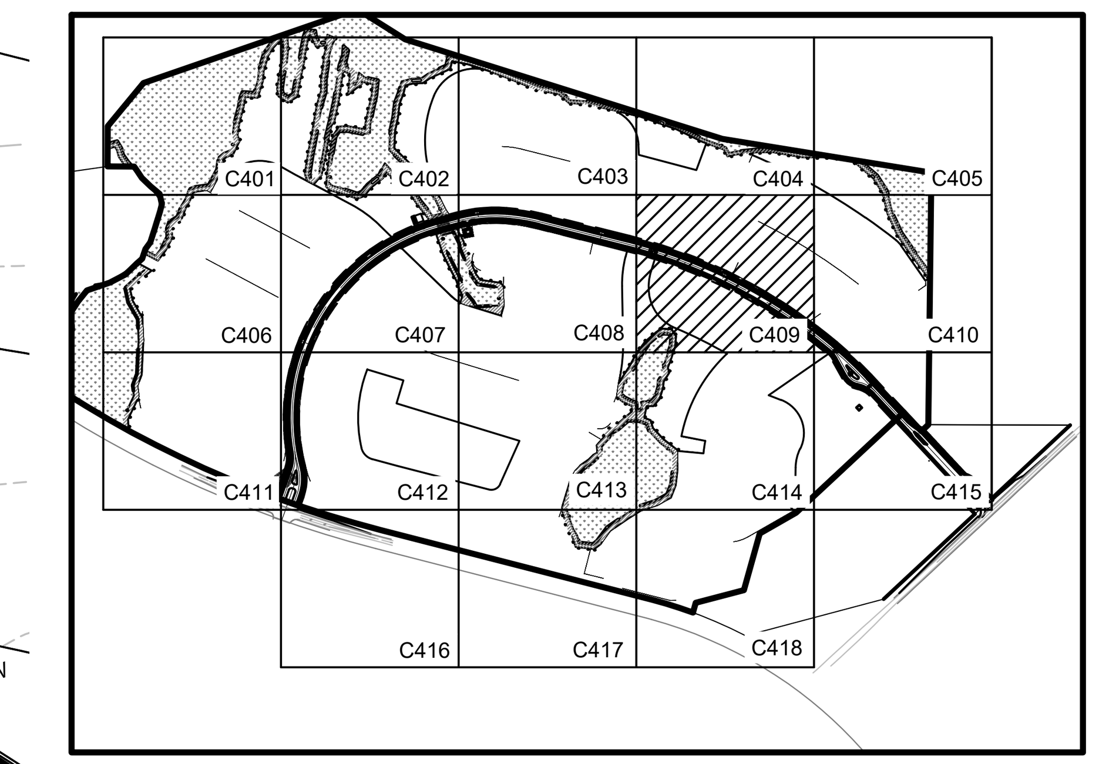
C408







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C409

MATCHLINE - SEE SHEET C405

MATCHLINE - SEE SHEET C409

MATCHLINE - SEE SHEET C415

TRACT
P12
100YR/24HR: 68.52
25YR/24HR: 67.34
10YR/24HR: 66.87

TRACT
P13

PROPERTY BOUNDARY

WETLAND W3
2.12 AC

RETAINING WALL W/ 42" HANDRAIL

APPROXIMATE LOCATION OF ENVIRONMENTAL SWALE TO BE FIELD LOCATED BY ENGINEER, OWNER AND CONTRACTOR

END OF WALL: 77.0

END OF WALL: 78.6

END OF WALL: 81.7

TYPICAL CONSERVATION SIGN

TX1 C400

TX2 C400

TX4 C400

ES C400

4 2J C900

PB-13

PB-14

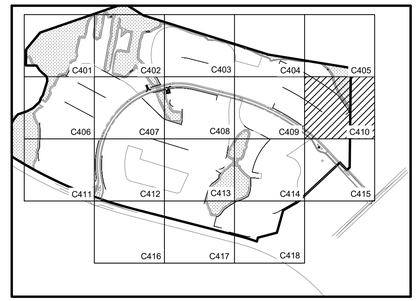
RB-13

RB-14

RB-15

60.0' (TYP.)

N
W E
S
0 20' 40' 80'
SCALE: 1"=40'



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		EASEMENT (OTHER)
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		CURB AND GUTTER
		MIAMI CURB
		CONCRETE WALK
	22.80TC OR 22.30IP / 26.80LP OR 26.80	SPOT ELEVATION
		ROAD ℄ ELEVATION
30	30	CONTOUR (MAJOR)
29	29	CONTOUR (MINOR)
		DIRECTION OF SURFACE FLOW
		NORMAL WATER LEVEL
		SEASON HIGH WATER LEVEL
		POND MAINTENANCE BERM
ST-10	ST-10	STORM STRUCTURE NUMBER
		STORM DRAINAGE MANHOLE
	OR OR	STORM DRAINAGE INLET
	OR	CONTROL STRUCTURE
	OR	OUTFALL STRUCTURE
	OUT-1	PIPE END (OUTFALL)
B-1		SOIL BORING
R-1		SOIL BORING (ROADWAY)
P-1		SOIL BORING (POND)
	D.S.	DOWNSPOUT

MADDEN
MOORHEAD & STOKES, LLC
CIVIL ENGINEERS
431 E. Horatio Avenue
Suite 260
Maitland, Florida 32751
(407) 629-8330
CA# 0007723

GRADING PLAN
FOR
LAKE HILLS MAIN BLVD. & MASS GRADING
HOWEY-IN-THE-HILLS FLORIDA

READER & PARTNERS, LLC
5850 T.G. LEE BOULEVARD, SUITE 200
ORLANDO, FL 32822
(407) 856-4899

NO.	DATE	REVISIONS
1		
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DAVID ASHLEY STOKES
LICENSE
NO. 66527
STATE OF FLORIDA
PROFESSIONAL ENGINEER

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ENGINEER OF RECORD
November 7, 2024

JOB #	23019
DATE:	11/7/24
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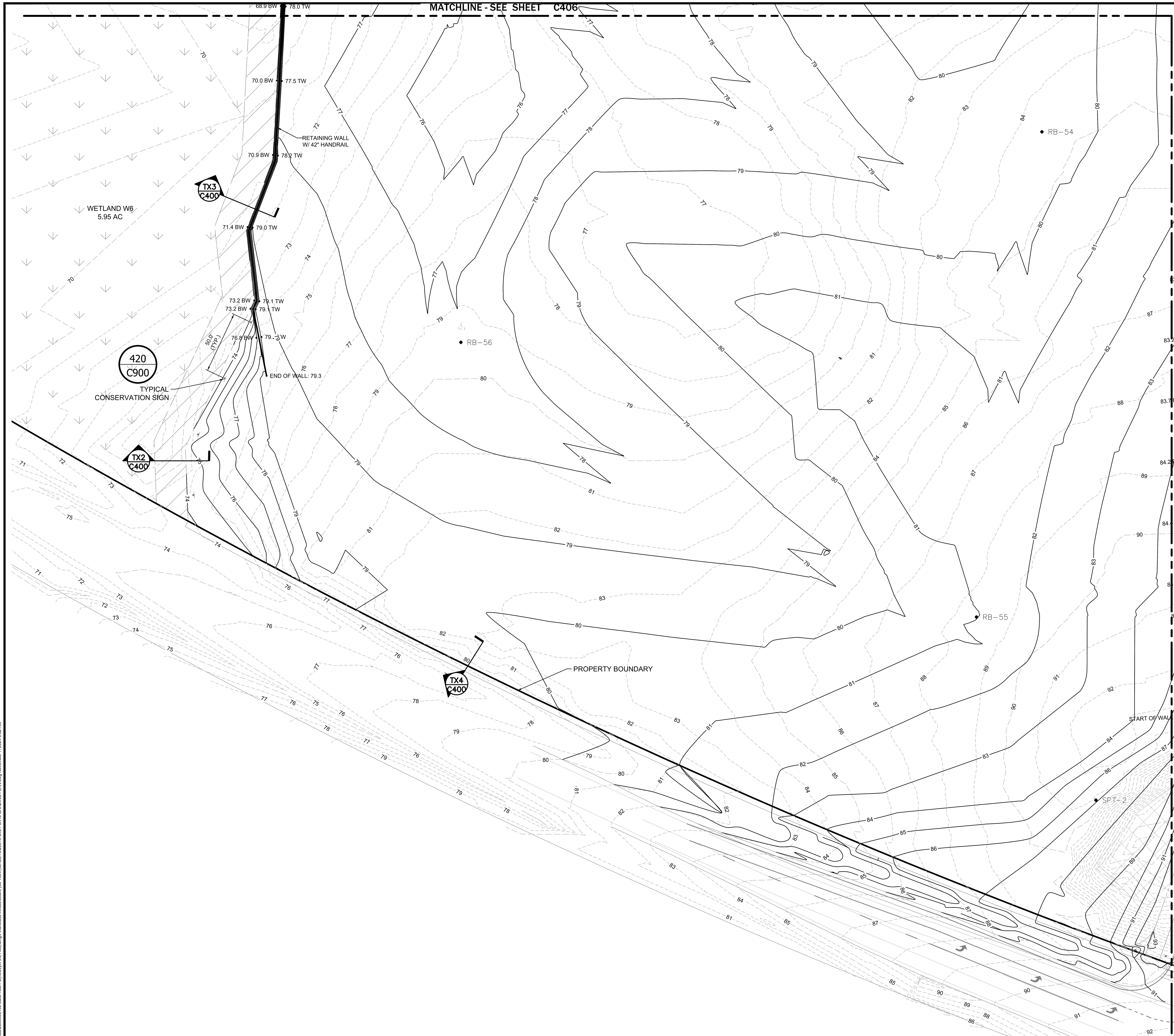
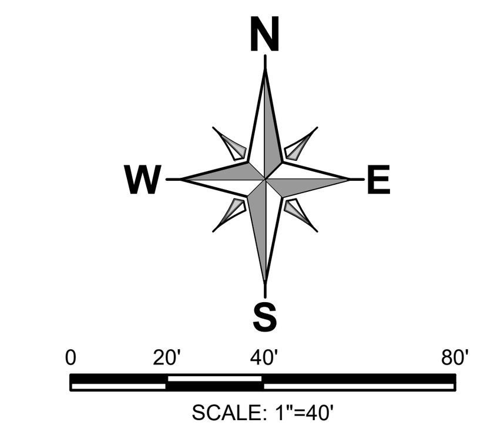
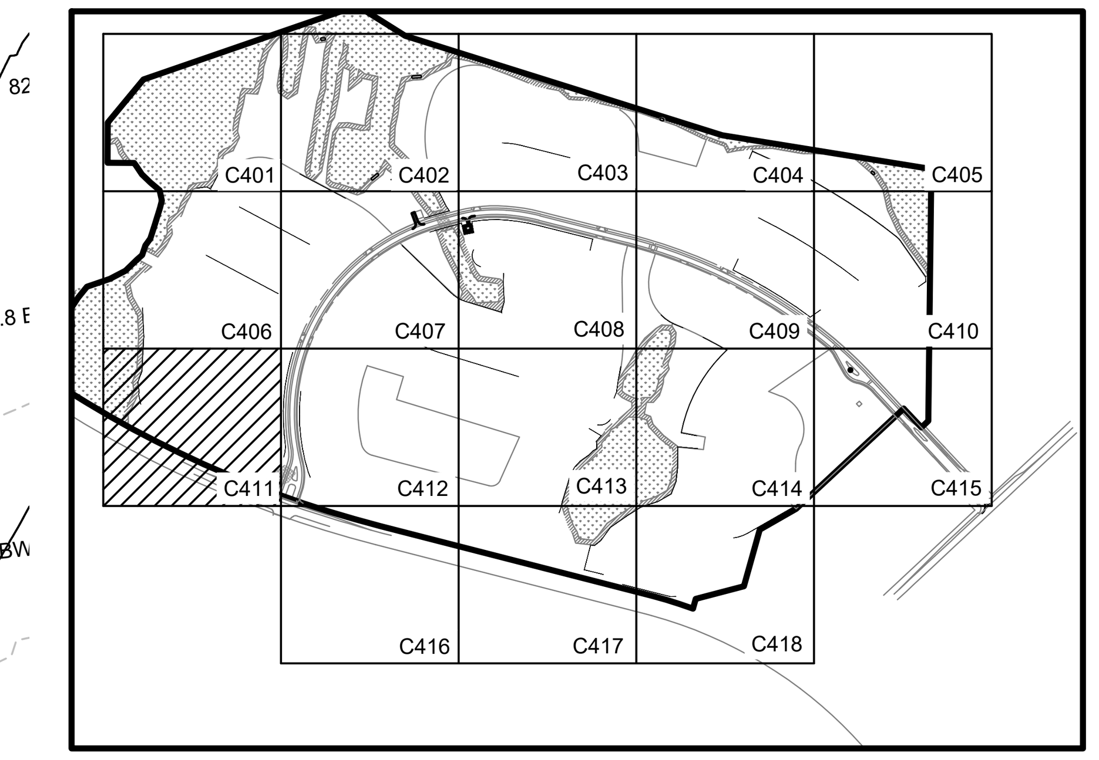
DESIGNED BY:	KAC
DRAWN BY:	JSK
APPROVED BY:	DAS

C410







KEY MAP

NTS

LEGEND

EXISTING	PROPOSED	
		BOUNDARY
		RIGHT OF WAY (MAJOR)
		RIGHT OF WAY (MINOR)
		TRACT LINE
		LOT LINE
		LOT SETBACK
		UTILITY EASEMENT (U.E.)
		DRAINAGE EASEMENT (D.E.)
		EASEMENT (OTHER)
		CURB
		CURB AND GUTTER
		MIAMI CURB
		CONCRETE WALK
	22.80TC OR 26.80 / 22.30EP	SPOT ELEVATION
	26.80LP OR 26.80	ROAD ℄ ELEVATION
30	30	CONTOUR (MAJOR)
29	29	CONTOUR (MINOR)
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	OR OR	STORM DRAINAGE INLET
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		OUTFALL STRUCTURE
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R-1		SOIL BORING (ROADWAY)
P-1		SOIL BORING (POND)
	D.S.	DOWNSPOUT

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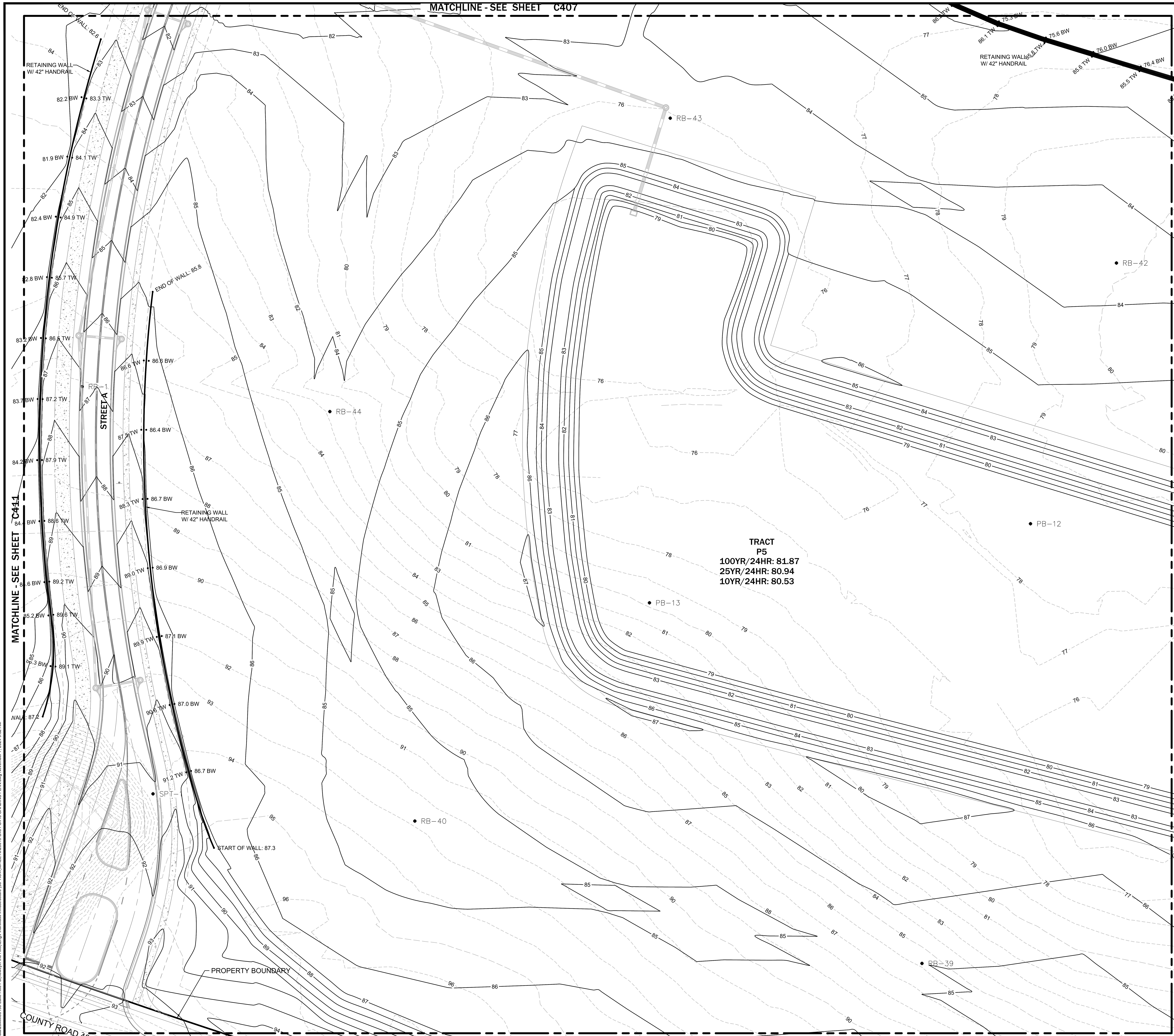

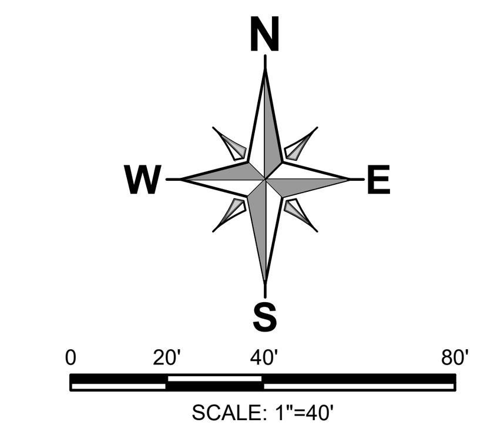

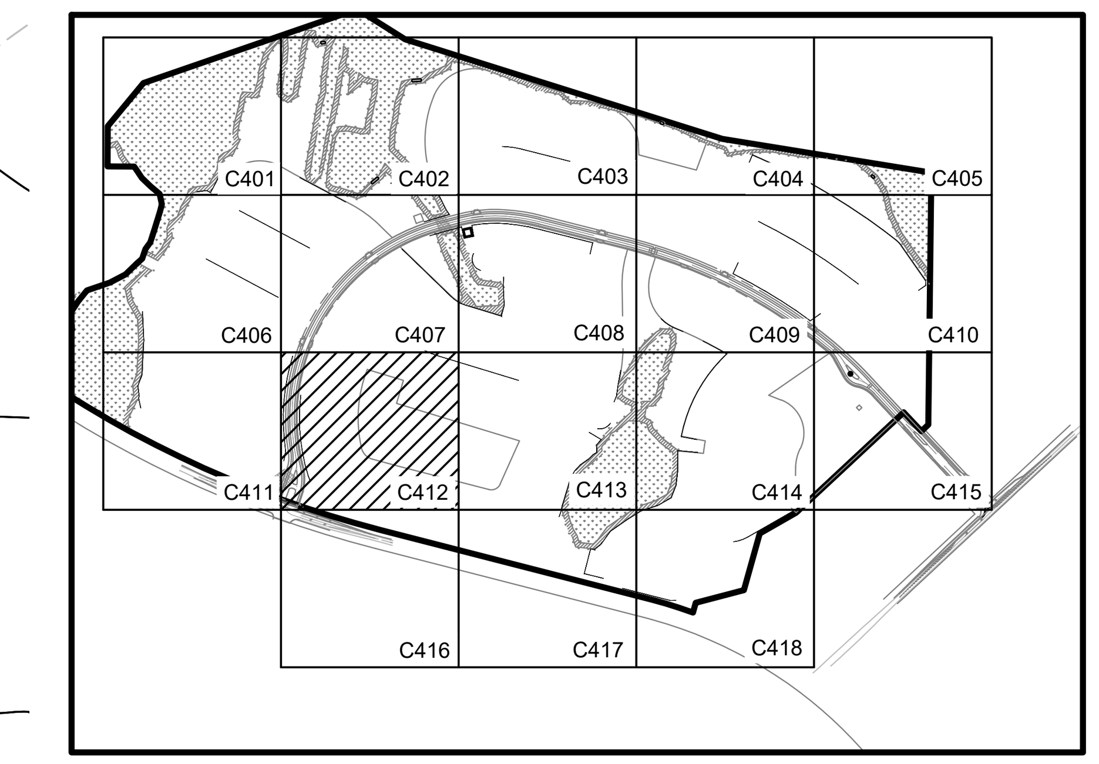

KEY MAP
NTS

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DRAWN BY: JSK
APPROVED BY: DAS

C412

MATCHLINE - SEE SHEET C408

MATCHLINE - SEE SHEET C412

MATCHLINE - SEE SHEET C414

MATCHLINE - SEE SHEET C417

RETAINING WALL W/ 42" HANDRAIL

START OF WALL: 84.0

RB-41

RB-36

RB-37

PB-11

TRACT P5
100YR/24HR: 81.87
25YR/24HR: 80.94
10YR/24HR: 80.53

TRACT P3

APPROXIMATE LOCATION OF ENVIRONMENTAL SWALE TO BE FIELD LOCATED BY ENGINEER, OWNER AND CONTRACTOR

WETLAND W4
1.17 AC

WETLAND W5
4.72 AC

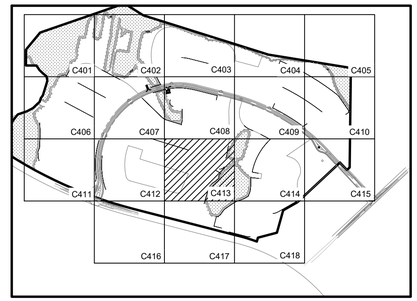
ES C400

TX3 C400

420 C900
TYPICAL CONSERVATION SIGN

50.0' (TYP.)

N
W E
S
0 20' 40' 80'
SCALE: 1"=40'



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		DOWNSPOUT

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C413

MATCHLINE - SEE SHEET C405

MATCHLINE - SEE SHEET C413

MATCHLINE - SEE SHEET C415

MATCHLINE - SEE SHEET C418

WETLAND W4
1.17 AC

WETLAND W5
4.72 AC

TRACT
P2
100YR/24HR: 77.91
25YR/24HR: 76.56
10YR/24HR: 76.01

TRACT
P1
100YR/24HR: 86.17
25YR/24HR: 83.84
10YR/24HR: 82.52

TRACT
P1

TX1
C400

TX3
C400

TX4
C400

ES
C400

420
C900
TYPICAL
CONSERVATION SIGN

50.0'
(TYP.)

RETAINING WALL
W/ 42" HANDRAIL

END OF WALL: 89.0

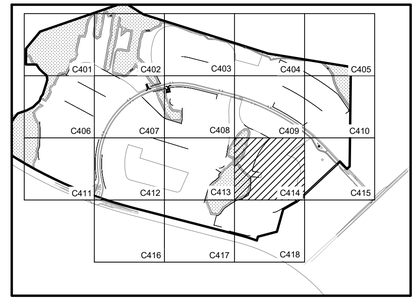
START OF WALL: 88.8

APPROXIMATE LOCATION OF ENVIRONMENTAL SWALE TO BE FIELD LOCATED BY ENGINEER, OWNER AND CONTRACTOR

PB-4
PB-5
PB-8
RB-21
RB-22
RB-23
RB-24

N
W
E
S

0 20' 40' 80'
SCALE: 1"=40'



KEY MAP
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EXISTING	PROPOSED	
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		RIGHT OF WAY (MINOR)
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		LOT SETBACK
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P-1		SOIL BORING (POND)
	D.S.	DOWNSPOUT

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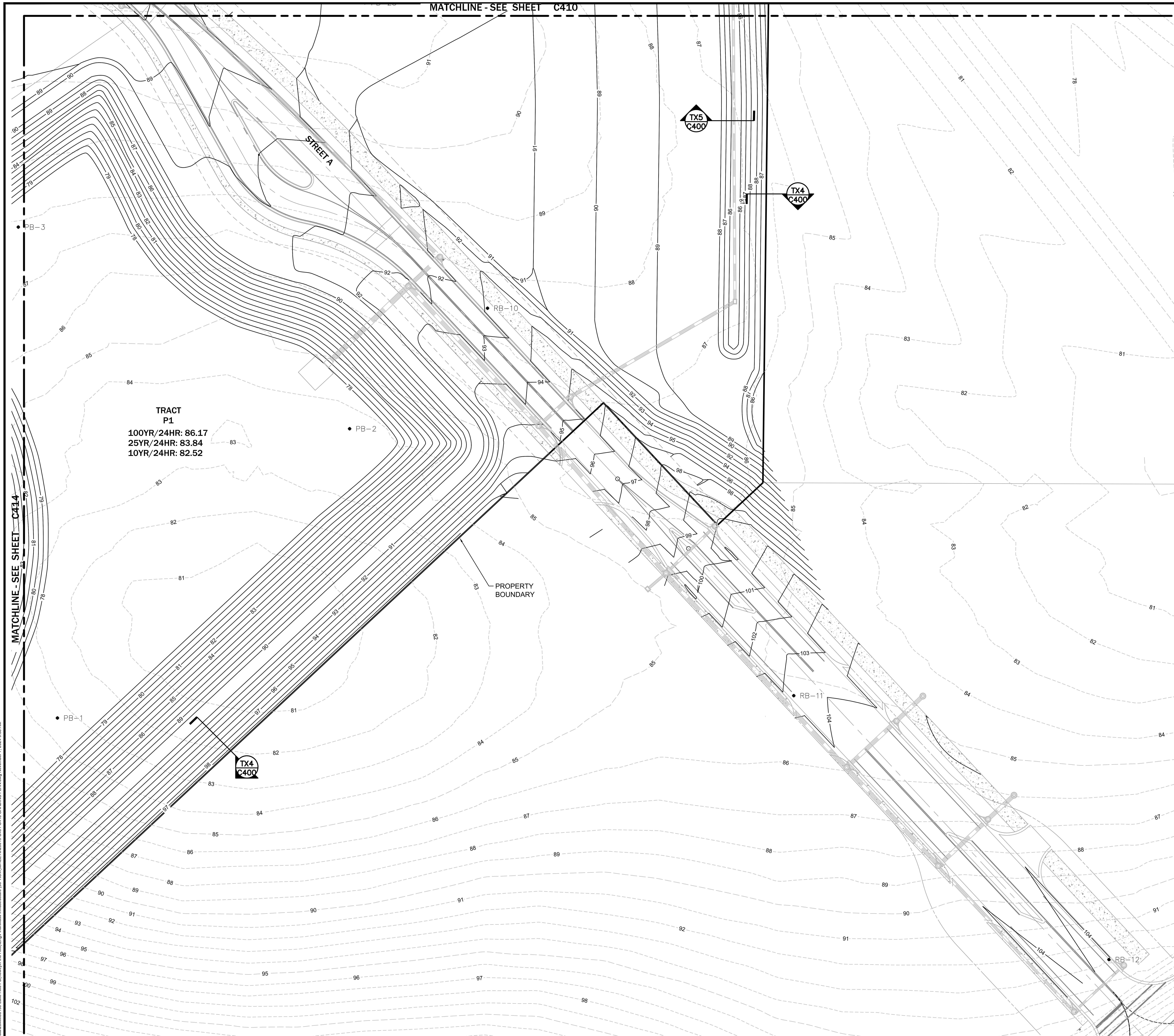

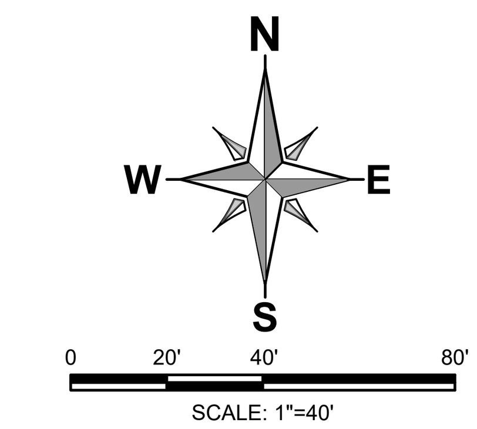

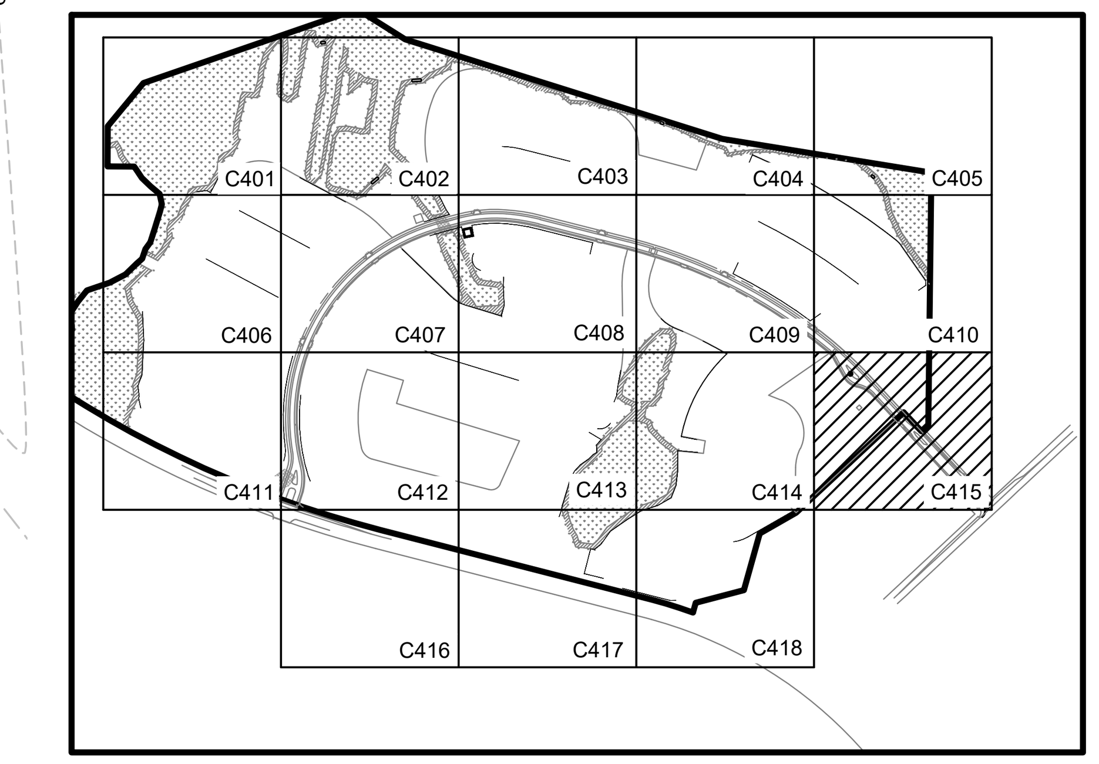

KEY MAP

NTS

LEGEND

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		BOUNDARY
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		LOT LINE
		LOT SETBACK
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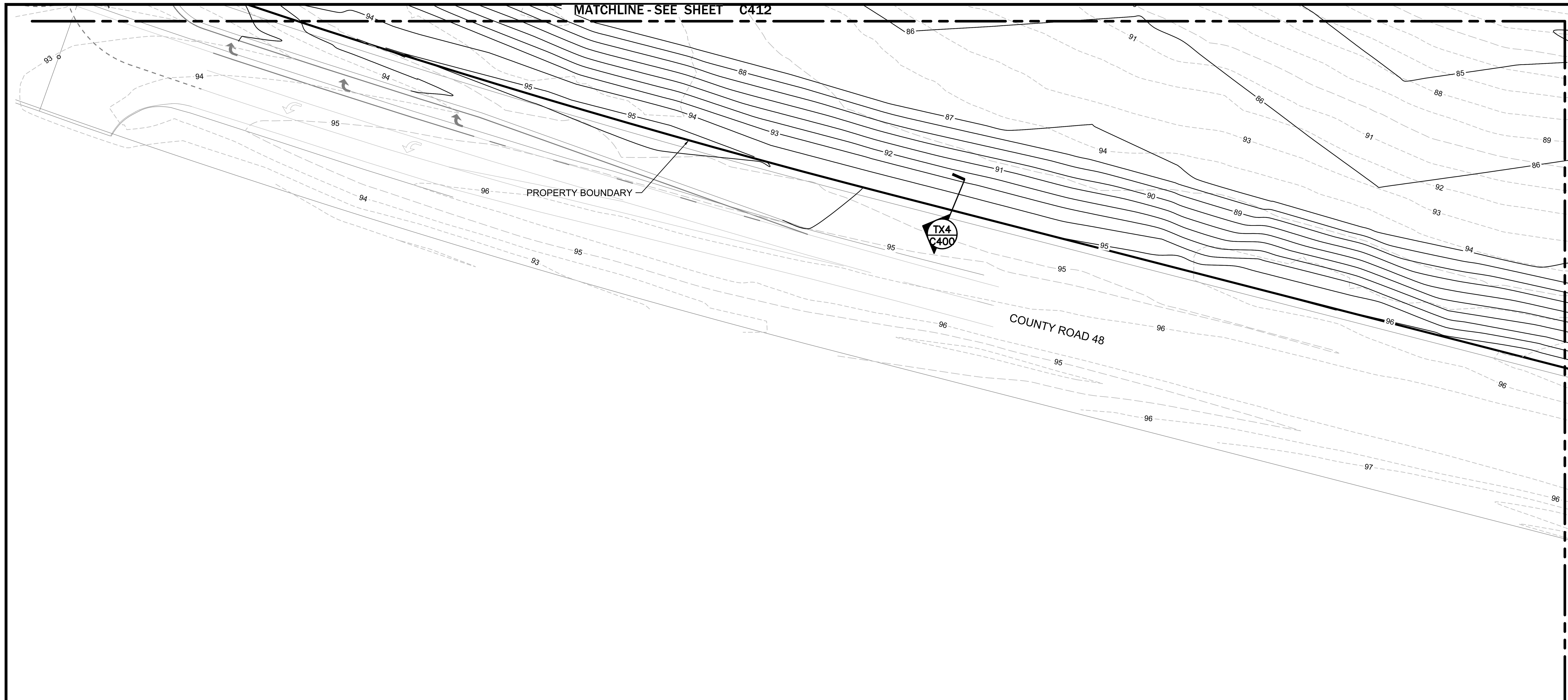
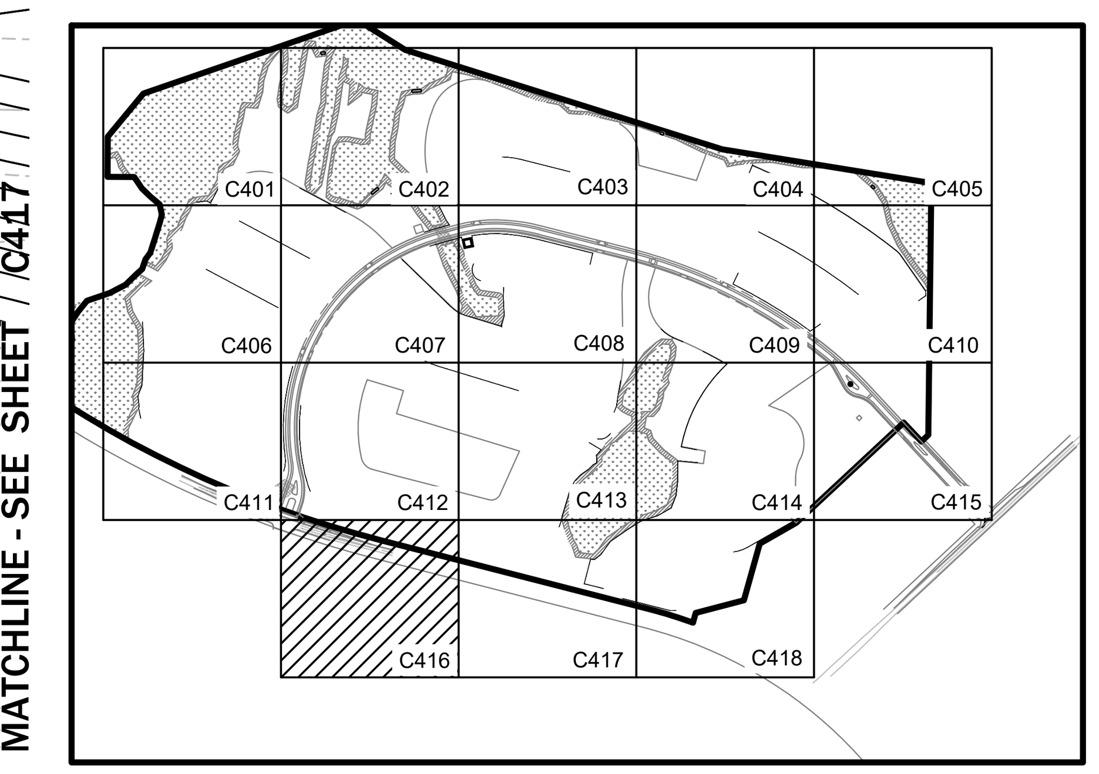
C415





KEY MAP

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		TRACT LINE
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C416

MATCHLINE - SEE SHEET C413

MATCHLINE - SEE SHEET C416

MATCHLINE - SEE SHEET C418

RETAINING WALL W/ 12" HANDRAIL

WETLAND W5
4.72 AC

420
C900
TYPICAL CONSERVATION SIGN

50.0' (TYP.)

RETAINING WALL W/ 42" HANDRAIL

TX3
C400

TX4
C400

PROPERTY BOUNDARY

COUNTY ROAD 48

END OF WALL: 96.6

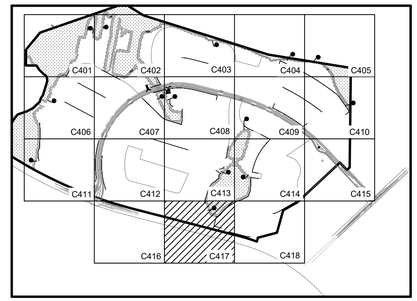
START OF WALL: 96.3

RB-38

PB-9

PB-10

N
W E
S
0 20' 40' 80'
SCALE: 1"=40'



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ENGINEER OF RECORD
November 7, 2024

JOB #	23019
DATE:	11/7/24
DATUM:	NAVD 88
DESIGNED BY:	KAC
DRAWN BY:	JSK
APPROVED BY:	DAS

C417

MATCHLINE - SEE SHEET C414

MATCHLINE - SEE SHEET C417

RETAINING WALL W/ 42" HANDRAIL

START OF WALL 97.0

END OF WALL 118.0

PROPERTY BOUNDARY

TX5 C400

TX4 C400

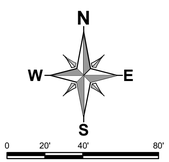
SB-25

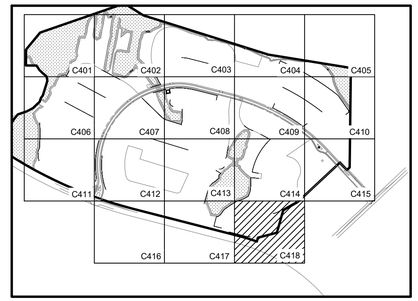
SB-26

SB-27

SB-28

SB-29





KEY MAP
NTS

LEGEND

EXISTING	PROPOSED	
		BOUNDARY
		RIGHT OF WAY (MAJOR)
		RIGHT OF WAY (MINOR)
		TRACT LINE
		LOT LINE
		LOT SETBACK
		UTILITY EASEMENT (U.E.)
		DRAINAGE EASEMENT (D.E.)
		EASEMENT (OTHER)
		CURB
		CURB AND GUTTER
		MIAMI CURB
		CONCRETE WALK
	22.80TC 22.30EP 26.80LP	SPOT ELEVATION
	CR 26.80 OR 26.80	ROAD ℄ ELEVATION
30	30	CONTOUR (MAJOR)
29	29	CONTOUR (MINOR)
		DIRECTION OF SURFACE FLOW
		NORMAL WATER LEVEL
		SEASON HIGH WATER LEVEL
		POND MAINTENANCE BERM
ST-10	ST-10	STORM STRUCTURE NUMBER
		STORM DRAINAGE MANHOLE
	OR OR	STORM DRAINAGE INLET
	OR	CONTROL STRUCTURE
		OUTFALL STRUCTURE
	OUT-1	PIPE END (OUTFALL)
B-1		SOIL BORING
R-1		SOIL BORING (ROADWAY)
P-1		SOIL BORING (POND)
		DOWNSPOUT

MADDEN
MOORHEAD & STOKES, LLC
CIVIL ENGINEERS
431 E. Horatio Avenue
Suite 260
Maitland, Florida 32751
(407) 629-8330
CA# 0007723

GRADING PLAN
FOR
LAKE HILLS MAIN BLVD. & MASS GRADING
HOWEY-IN-THE-HILLS FLORIDA

READER & PARTNERS, LLC
3850 TG LEE BOULEVARD, SUITE 200
ORLANDO, FL 32822
(407) 856-8899

REVISIONS	DATE
1	
2	
3	
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11	

DAVID ASHLEY STOKES LICENSE NO. 66527 STATE OF FLORIDA PROFESSIONAL ENGINEER

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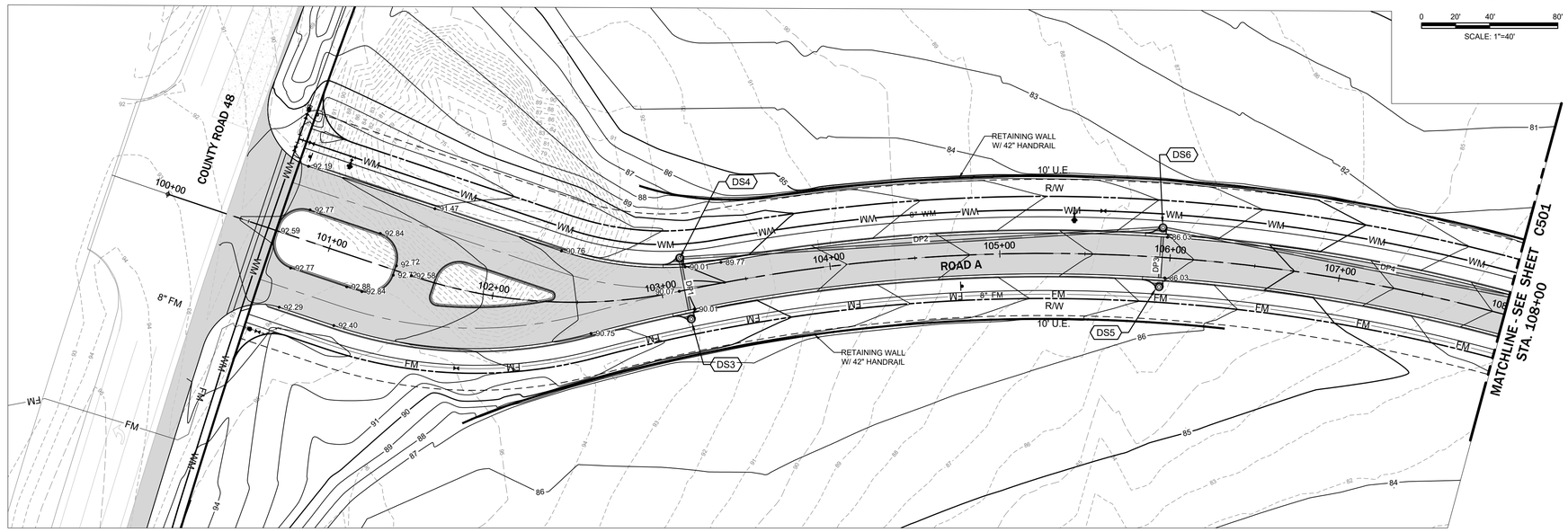
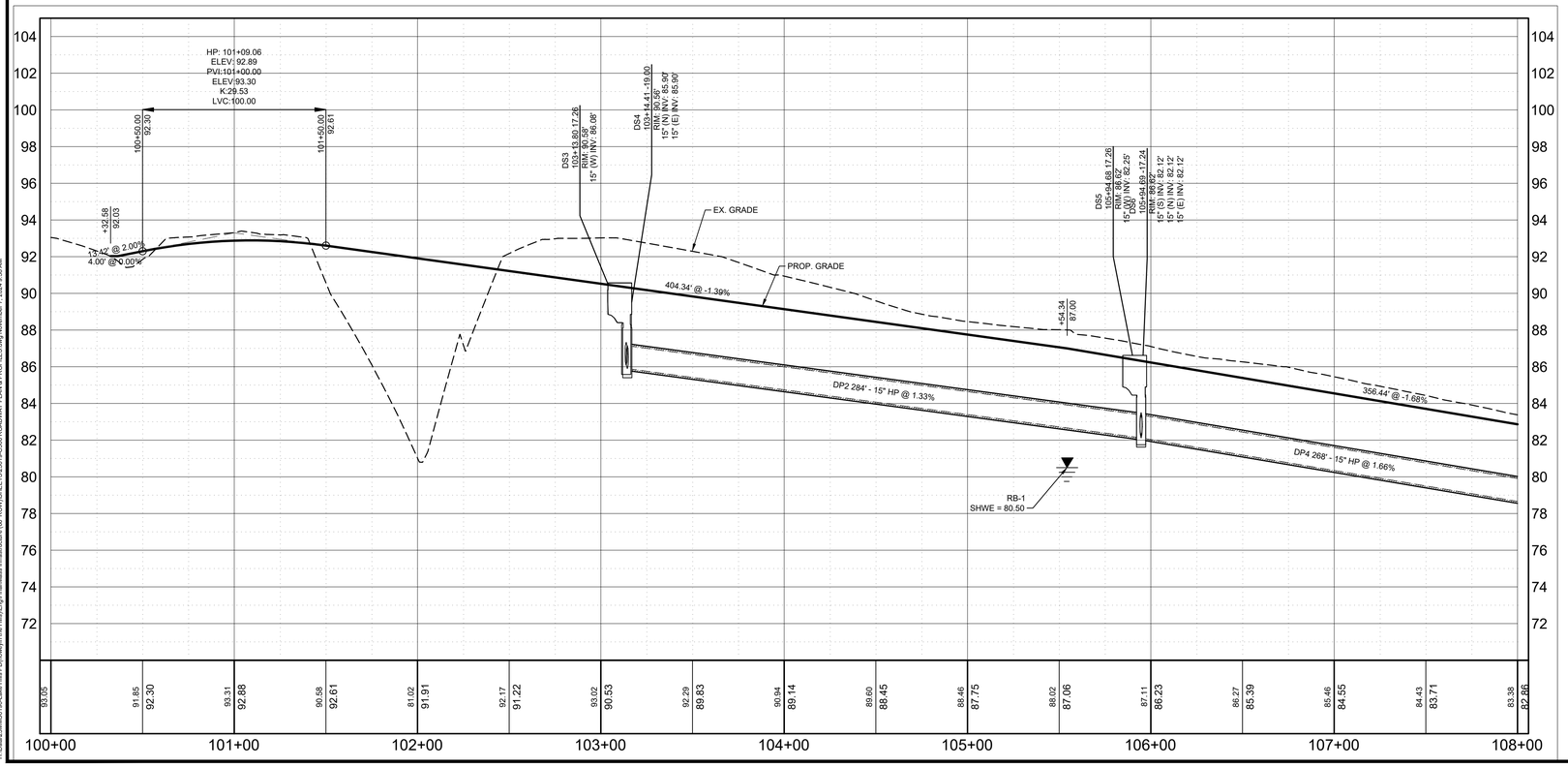
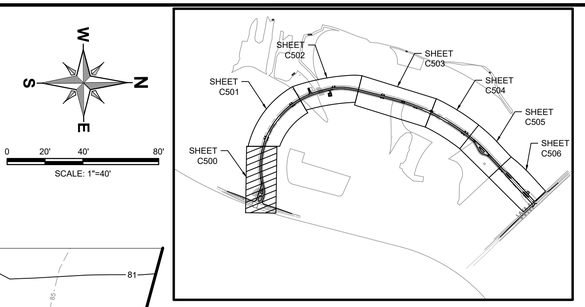
APPROVED BY: DAS

C418



ROAD "A"





KEY MAP

NTS

LEGEND

EXISTING	PROPOSED	
		BOUNDARY
		RIGHT OF WAY (MAJOR)
		RIGHT OF WAY (MINOR)
		TRACT LINE
		LOT LINE
		LOT SETBACK
		UTILITY EASEMENT (U.E.)
		DRAINAGE EASEMENT (D.E.)
		EASEMENT (OTHER)
		CURB
		CURB AND GUTTER
		MIAMI CURB
		CONCRETE WALK
• 0.00 EX	• 0.00 OR 0.50 TC, 0.00 EP OR • 0.00 TW • 0.00 BW	SPOT ELEVATION
	• 0.00 LP • 0.00 HP	ROAD ℄ ELEVATION
30	30	CONTOUR (MAJOR)
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		OUTFALL STRUCTURE
	OUT-1	PIPE END (OUTFALL)
B-1		SOIL BORING
R-1		SOIL BORING (ROADWAY)
P-1		SOIL BORING (POND)
	D.S.	DOWNSPOUT

HORZ. SCALE: 1" = 40'

VERT. SCALE: 1" = 4'

ESTIMATED WET SEASON WATER TABLE AND WATER TABLE LOCATED ON PROFILE BASED ON BOREHOLES. (YOVAISH ENGINEERING SERVICES, LLC, PROJECT NO. 24-EZ180.02)

WATER MAIN AND RE-USE WATER LINES SHALL BE BURIED WITH A MINIMUM 36" GROUND COVER.

ENGINEER OF RECORD MUST INSPECT ALL WATER MAIN AND SEWER LINE CONFLICTS PRIOR TO BACKFILLING. CONTRACTOR TO PROVIDE ENGINEER 24 HOUR ADVANCE NOTICE TO SCHEDULE INSPECTION.

▽ ESTIMATED SEASONAL HIGH WATER LEVEL

MADDEN
MOORHEAD & STOKES, LLC
CIVIL ENGINEERS
431 E. Horatio Avenue
Suite 260
Maitland, Florida 32751
(407) 629-8330
CA# 0007723

ROADWAY PLAN & PROFILES

FOR

LAKE HILLS MAIN BLVD. & MASS GRADING

HOWEY-IN-THE-HILLS FLORIDA

READER & PARTNERS, LLC
9850 T/G LEE BOULEVARD, SUITE 200
ORLANDO, FL 32822
(407) 856-4899

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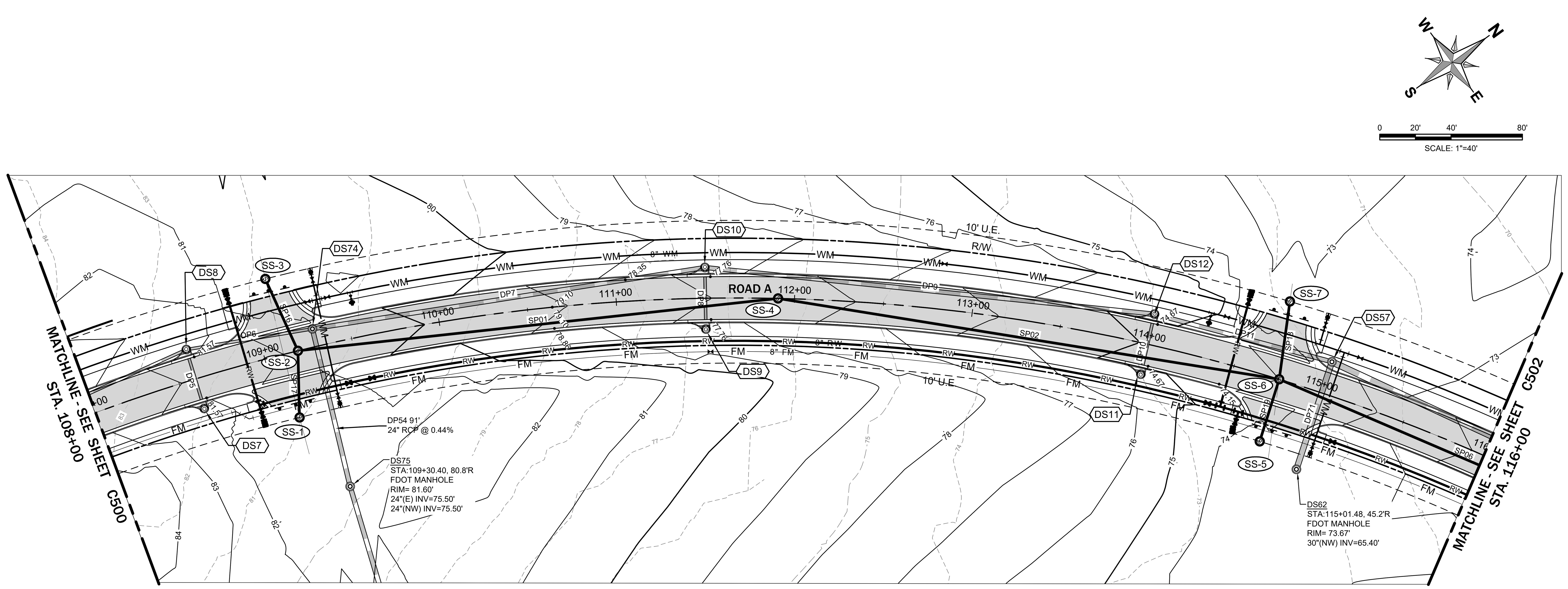
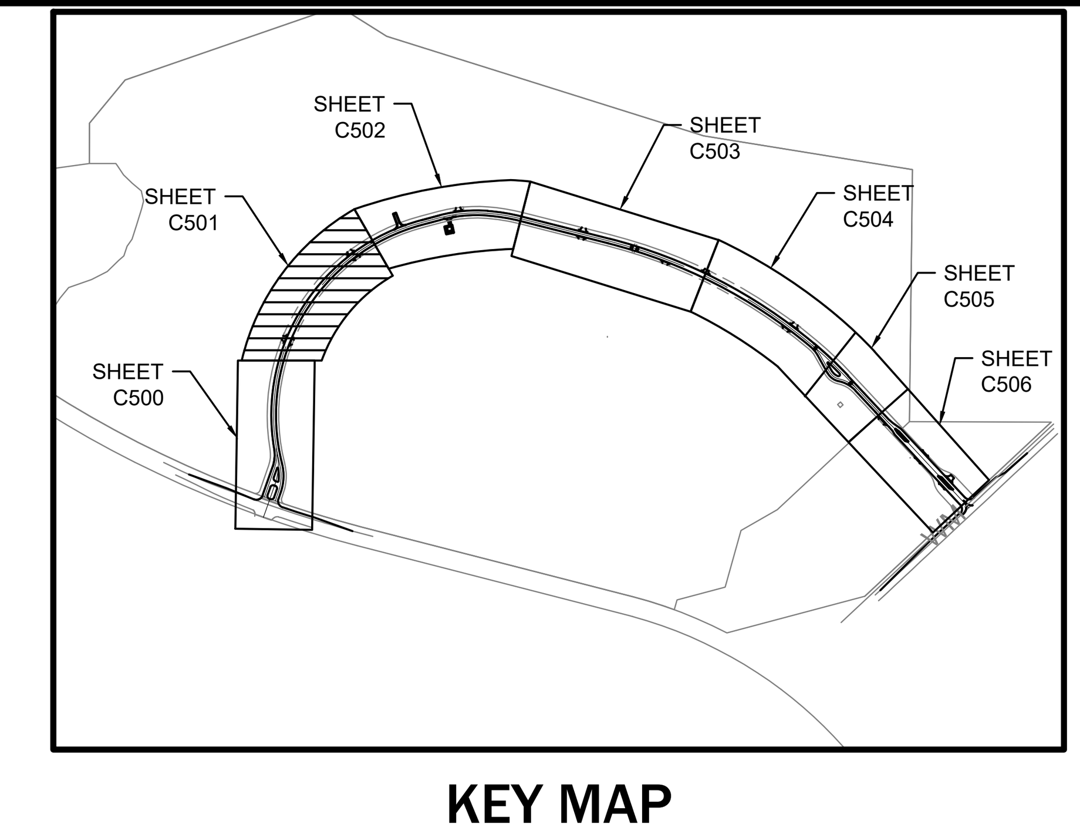
APPROVED BY:	DAS

C500





KEY MAP
NTS

LEGEND

EXISTING	PROPOSED	
		BOUNDARY
		RIGHT OF WAY (MAJOR)
		RIGHT OF WAY (MINOR)
		TRACT LINE
		LOT LINE
		LOT SETBACK
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		EASEMENT (OTHER)
		CURB
		CURB AND GUTTER
		MIAMI CURB
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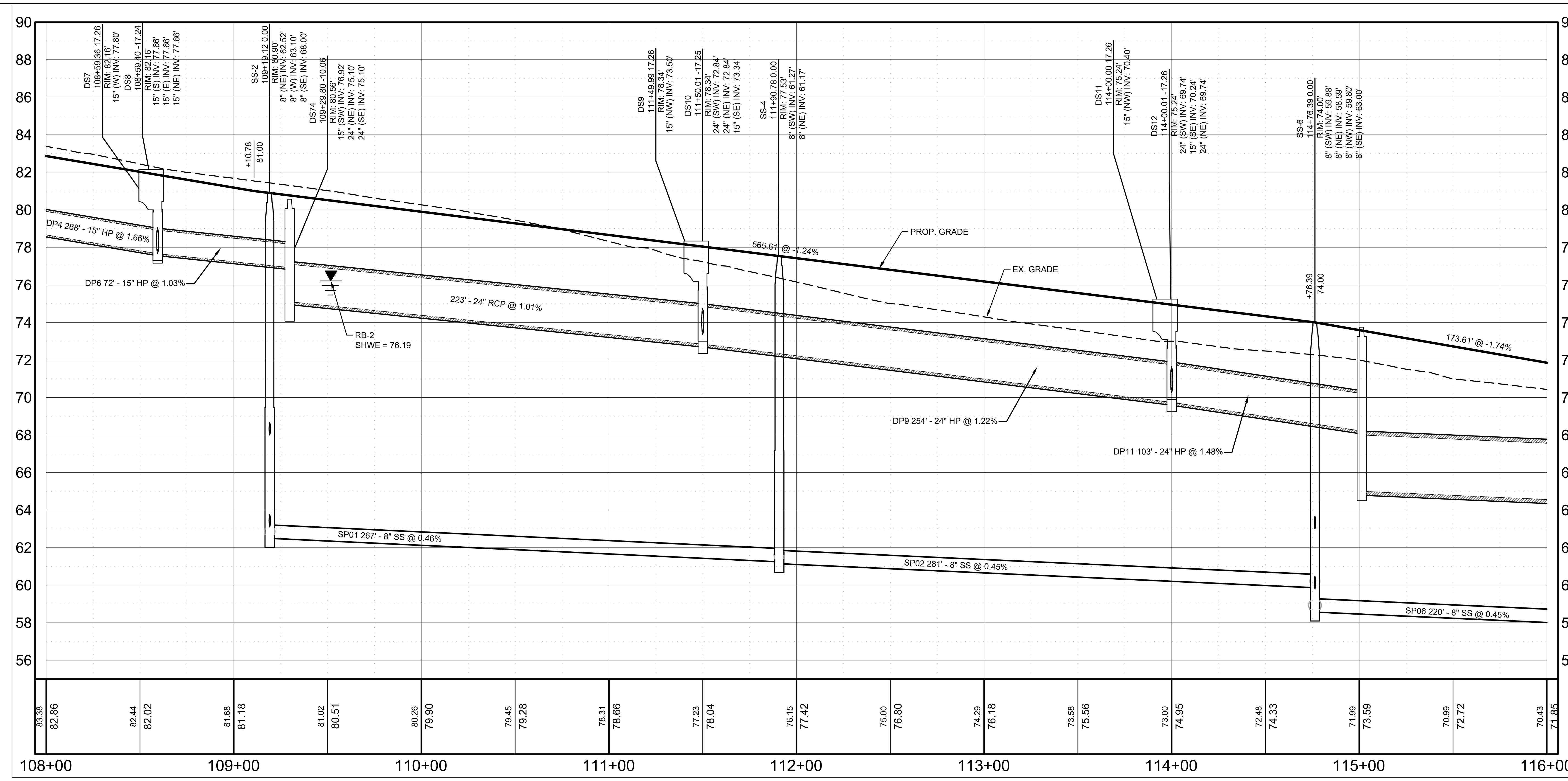
P-1		SOIL BORING (POND)
	D.S.	DOWNSPOUT

ROAD "A"

HORZ. SCALE: 1" = 40'
VERT. SCALE: 1" = 4'



ESTIMATED WET SEASON WATER TABLE AND WATER TABLE LOCATED ON PROFILE BASED ON BOREHOLES. (YOVAISH ENGINEERING SERVICES, LLC, PROJECT NO. 24-EZ180.02)

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ESTIMATED SEASONAL HIGH WATER LEVEL

MADDEN
MOORHEAD & STOKES, LLC
CIVIL ENGINEERS
431 E. Horatio Avenue
Suite 260
Maitland, Florida 32751
(407) 629-8330
CA# 0007723

ROADWAY PLAN & PROFILES
FOR
LAKE HILLS MAIN BLVD. & MASS GRADING
HOWEY-IN-THE-HILLS FLORIDA

READER & PARTNERS, LLC
5850 TG LEE BOULEVARD, SUITE 200
ORLANDO, FL 32822
(407) 856-4899

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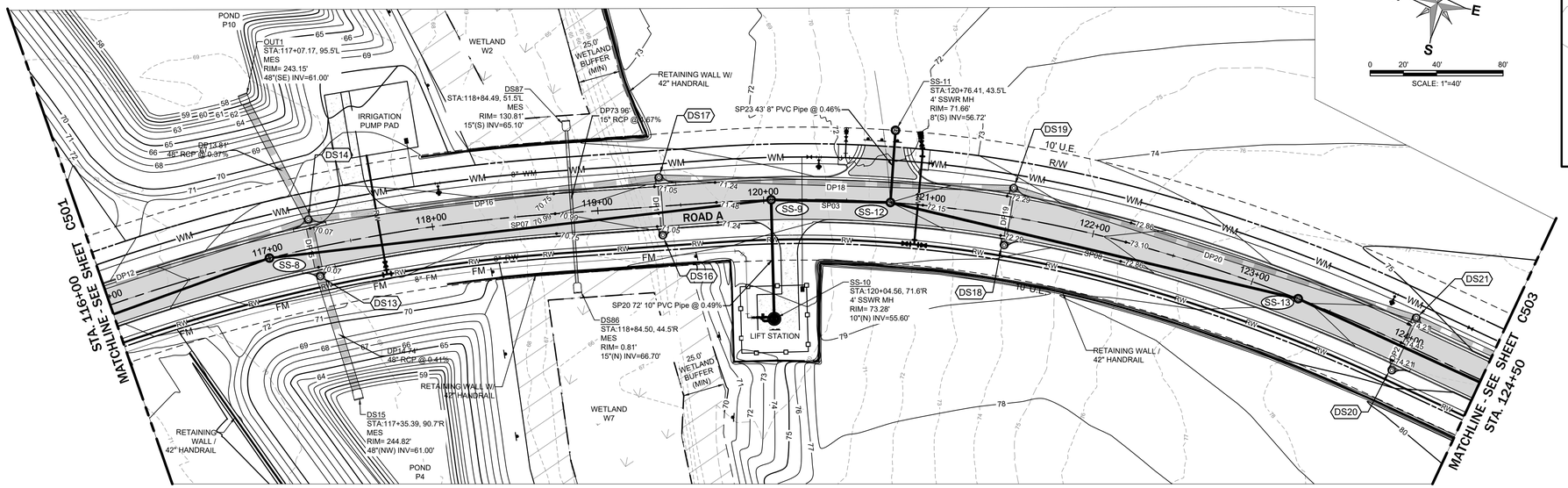
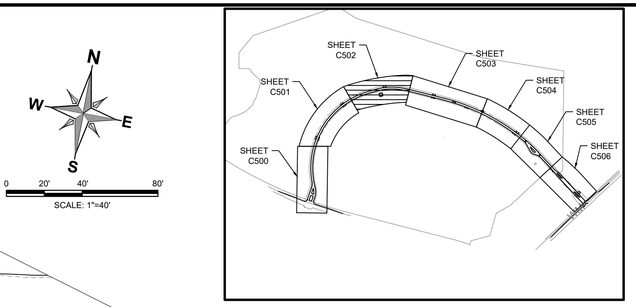
APPROVED BY: DAS

C501





N
W
E
S
0 20' 40' 80'
SCALE: 1"=40'

KEY MAP
NTS

LEGEND

EXISTING	PROPOSED	
		BOUNDARY
		RIGHT OF WAY (MAJOR)
		RIGHT OF WAY (MINOR)
		TRACT LINE
		LOT LINE
		LOT SETBACK
		UTILITY EASEMENT (U.E.)
		DRAINAGE EASEMENT (D.E.)
		EASEMENT (OTHER)
		CURB
		CURB AND GUTTER
		MIAMI CURB
		CONCRETE WALK
0.00 EX	0.50 TC, 0.00 EP OR 0.00 TW, 0.00 BW; 0.00 LP, 0.00 HP	SPOT ELEVATION
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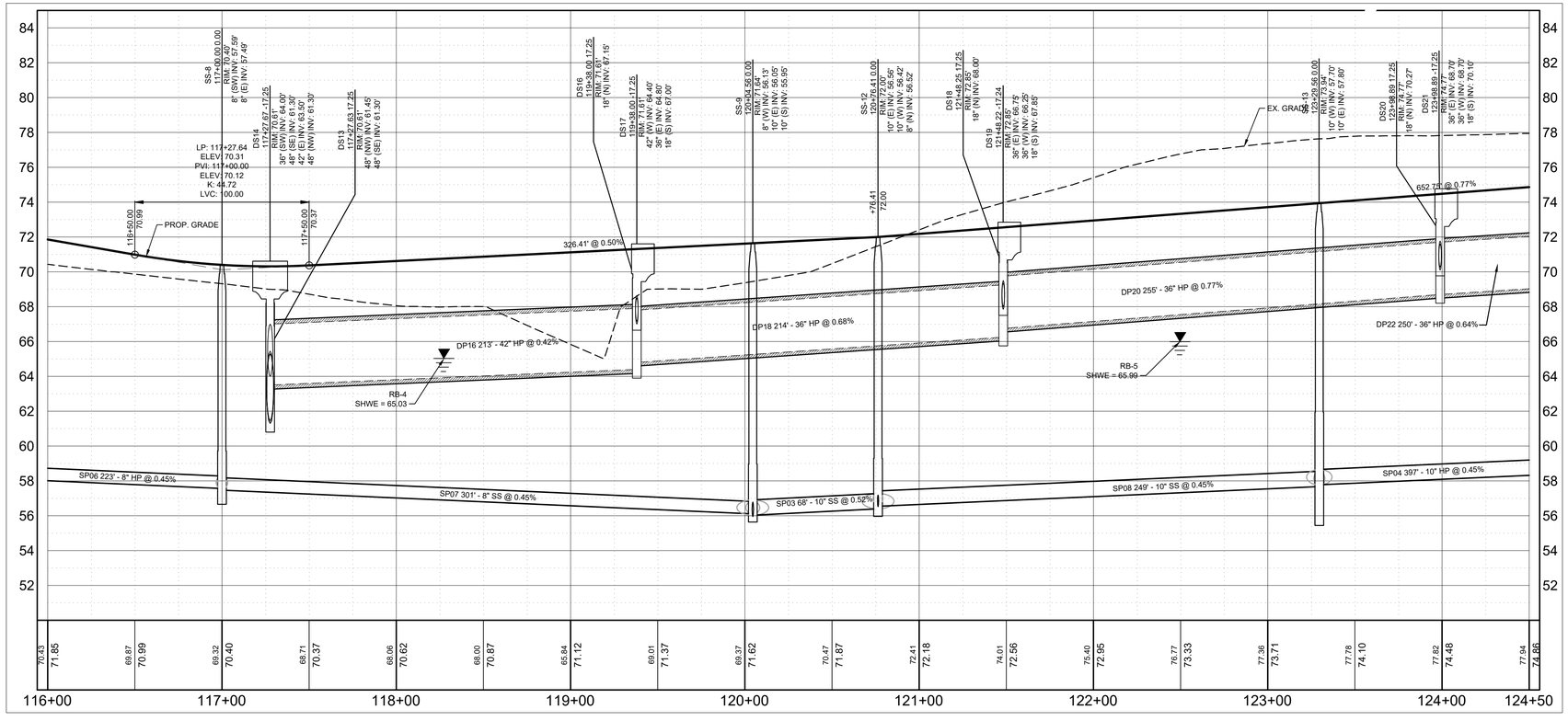
	D.S.	DOWNSPOUT

HORZ. SCALE: 1" = 40'
VERT. SCALE: 1" = 4'

ROAD "A"



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▽ ESTIMATED SEASONAL HIGH WATER LEVEL

MADDEN
MOORHEAD & STOKES, LLC
CIVIL ENGINEERS
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Maitland, Florida 32751
(407) 629-8330
CA# 0007723

ROADWAY PLAN & PROFILES
FOR
LAKE HILLS MAIN BLVD. & MASS GRADING
HOWEY-IN-THE-HILLS FLORIDA

READER & PARTNERS, LLC
5850 T.G LEE BOULEVARD, SUITE 200
ORLANDO, FL 32822
(407) 856-4899

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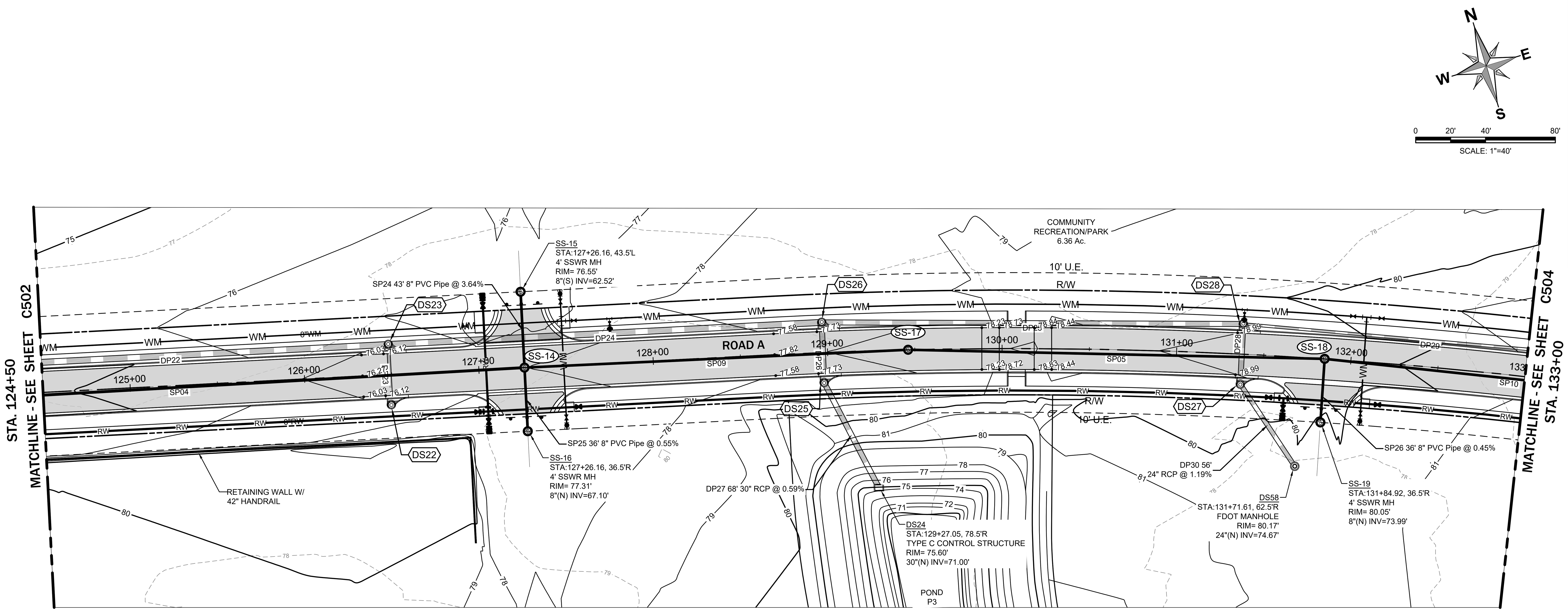
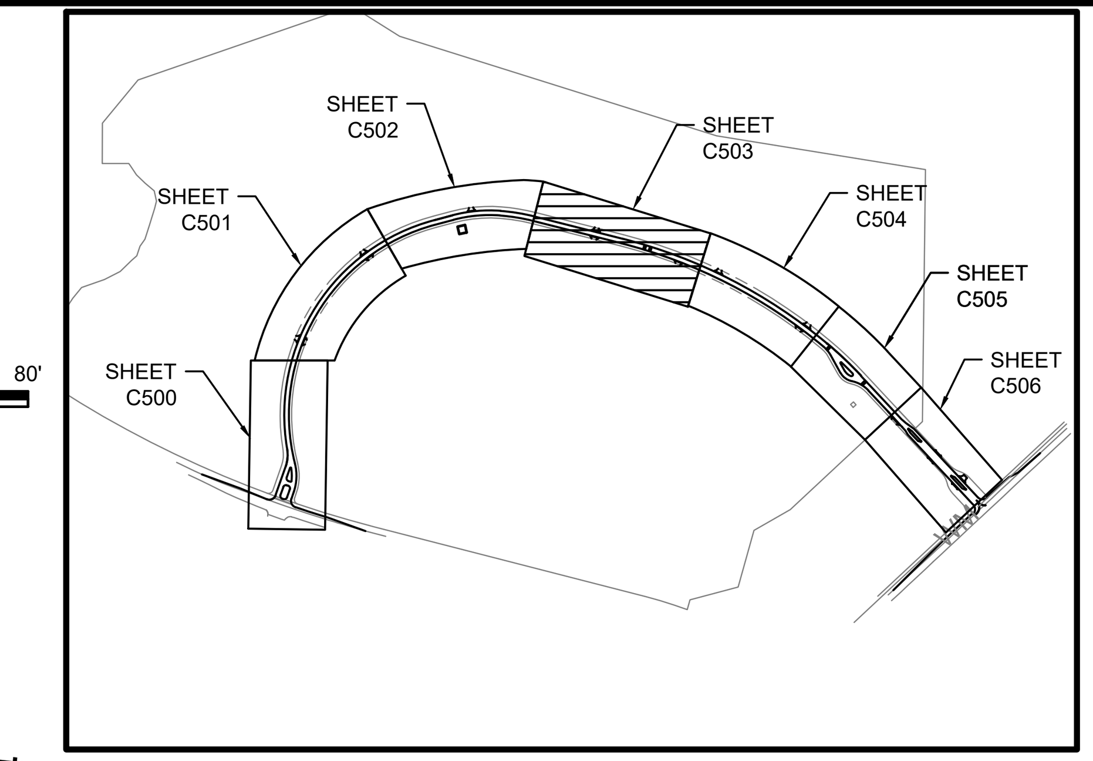
C502





KEY MAP
NTS

LEGEND

EXISTING	PROPOSED	
		BOUNDARY
		RIGHT OF WAY (MAJOR)
		RIGHT OF WAY (MINOR)
		TRACT LINE
		LOT LINE
		LOT SETBACK
		UTILITY EASEMENT (U.E.)
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0.00 EX	0.00 OR 0.50 TC / 0.00 EP OR 0.00 TW / 0.00 BW; 0.00 LP; 0.00 HP	SPOT ELEVATION
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ROAD "A"

HORZ. SCALE: 1" = 40'
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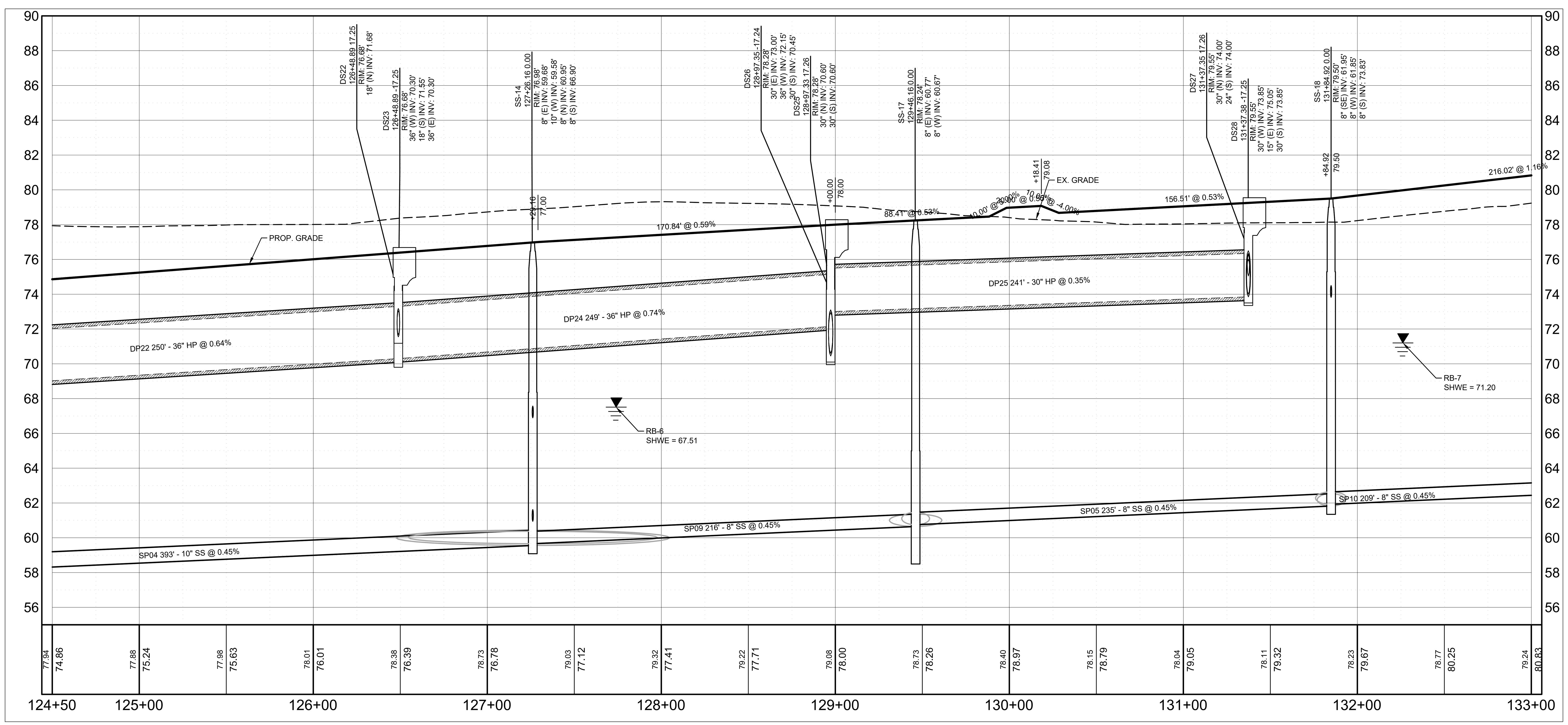

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REVISIONS | DATE

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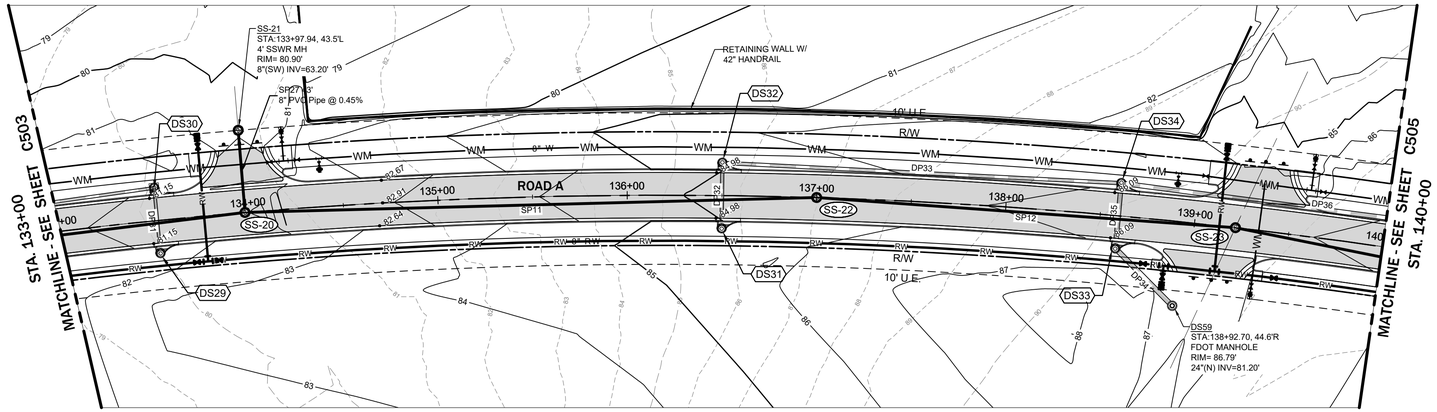
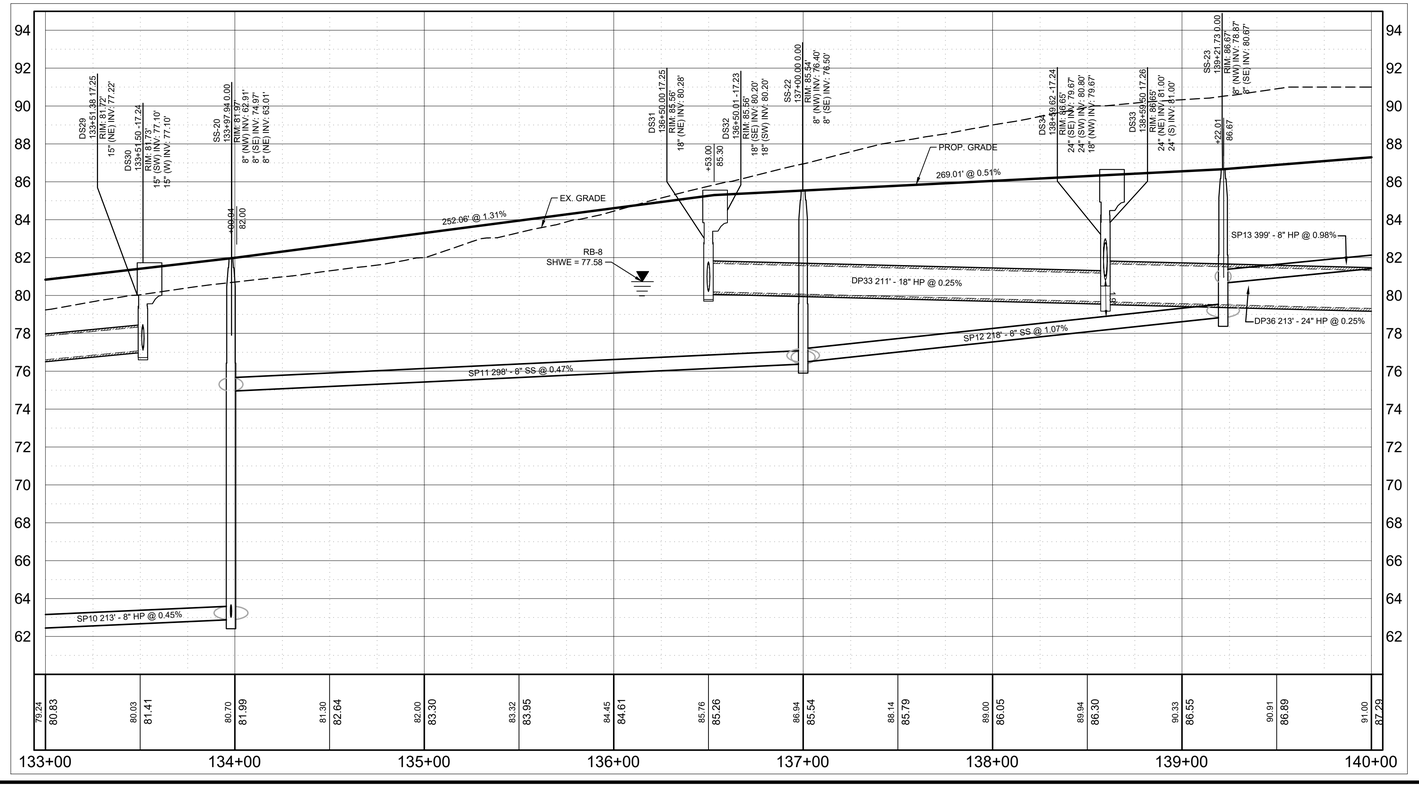
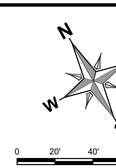
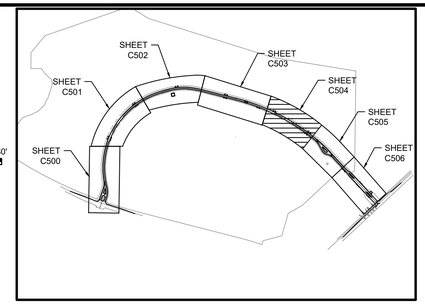


ROAD "A"







KEY MAP
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LEGEND

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		BOUNDARY
		RIGHT OF WAY (MAJOR)
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		TRACT LINE
		LOT LINE
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	D.S.	DOWNSPOUT

HORZ. SCALE: 1" = 40'

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ROADWAY PLAN & PROFILES
FOR
LAKE HILLS MAIN BLVD. & MASS GRADING
FLORIDA
HOWEY-IN-THE-HILLS

READER & PARTNERS, LLC
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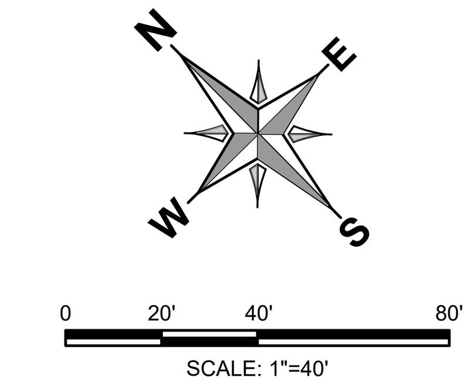
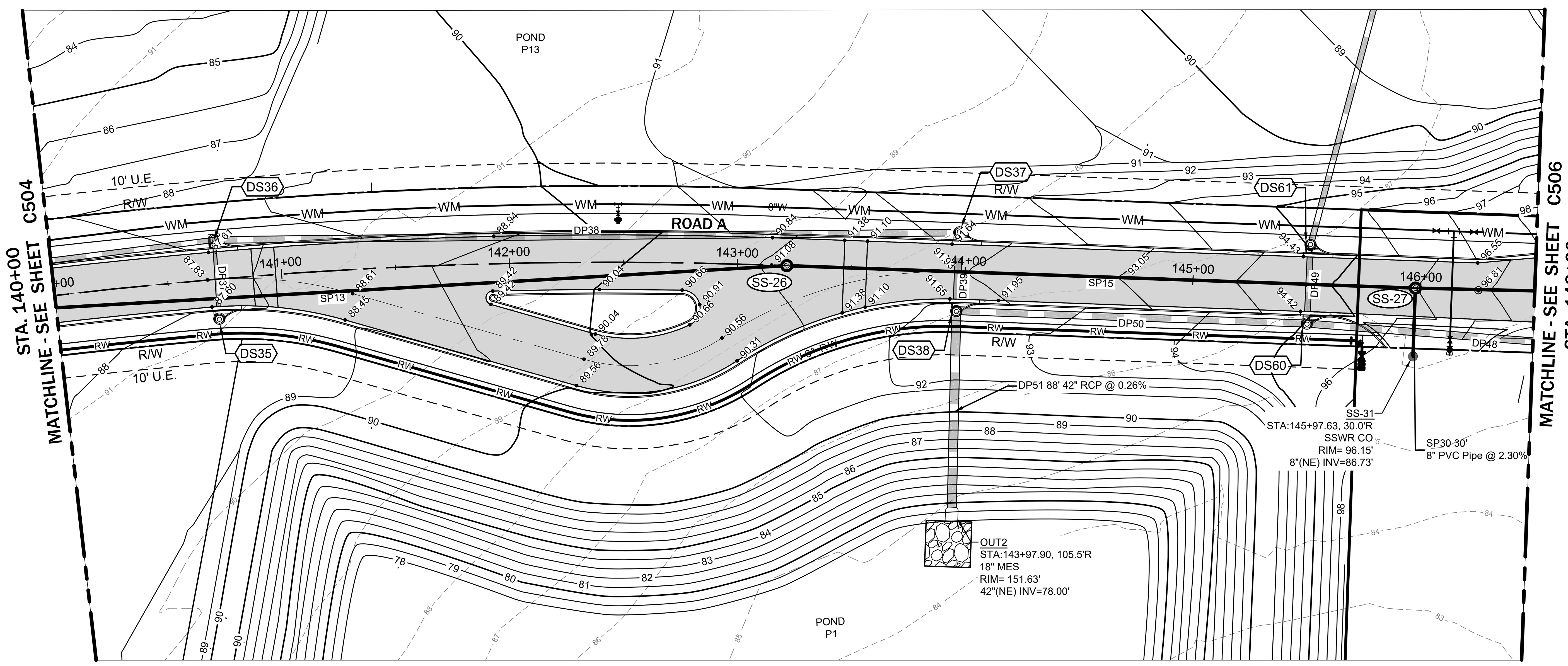
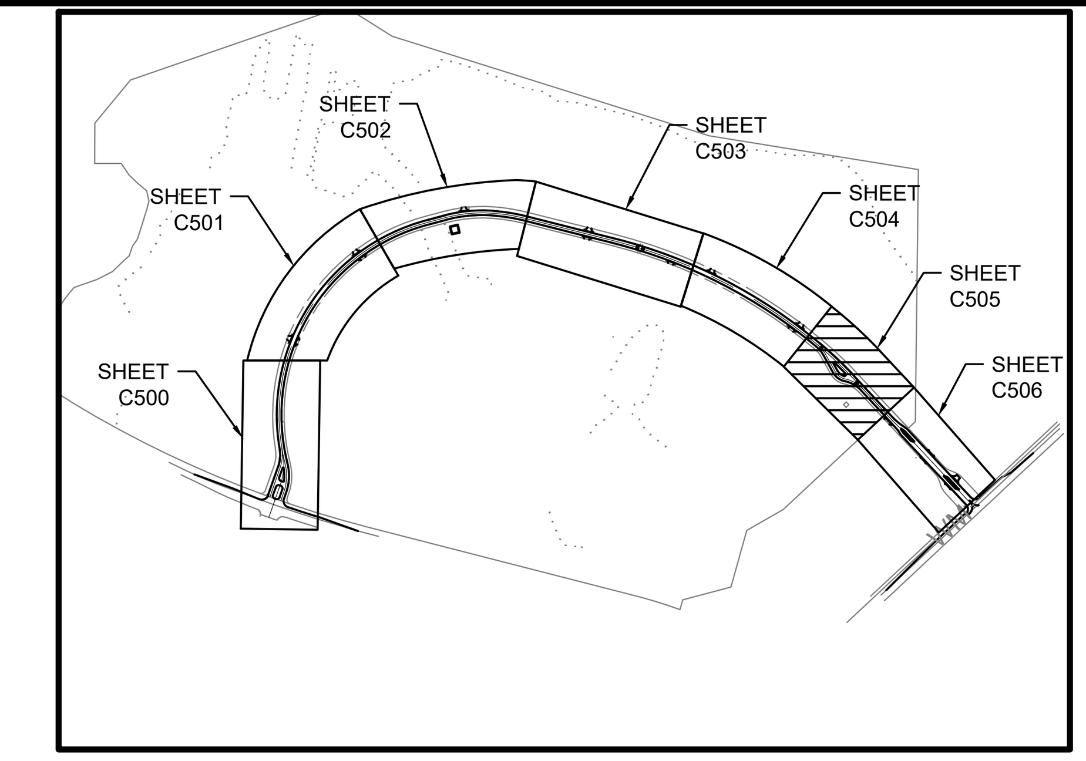




ROAD "A"



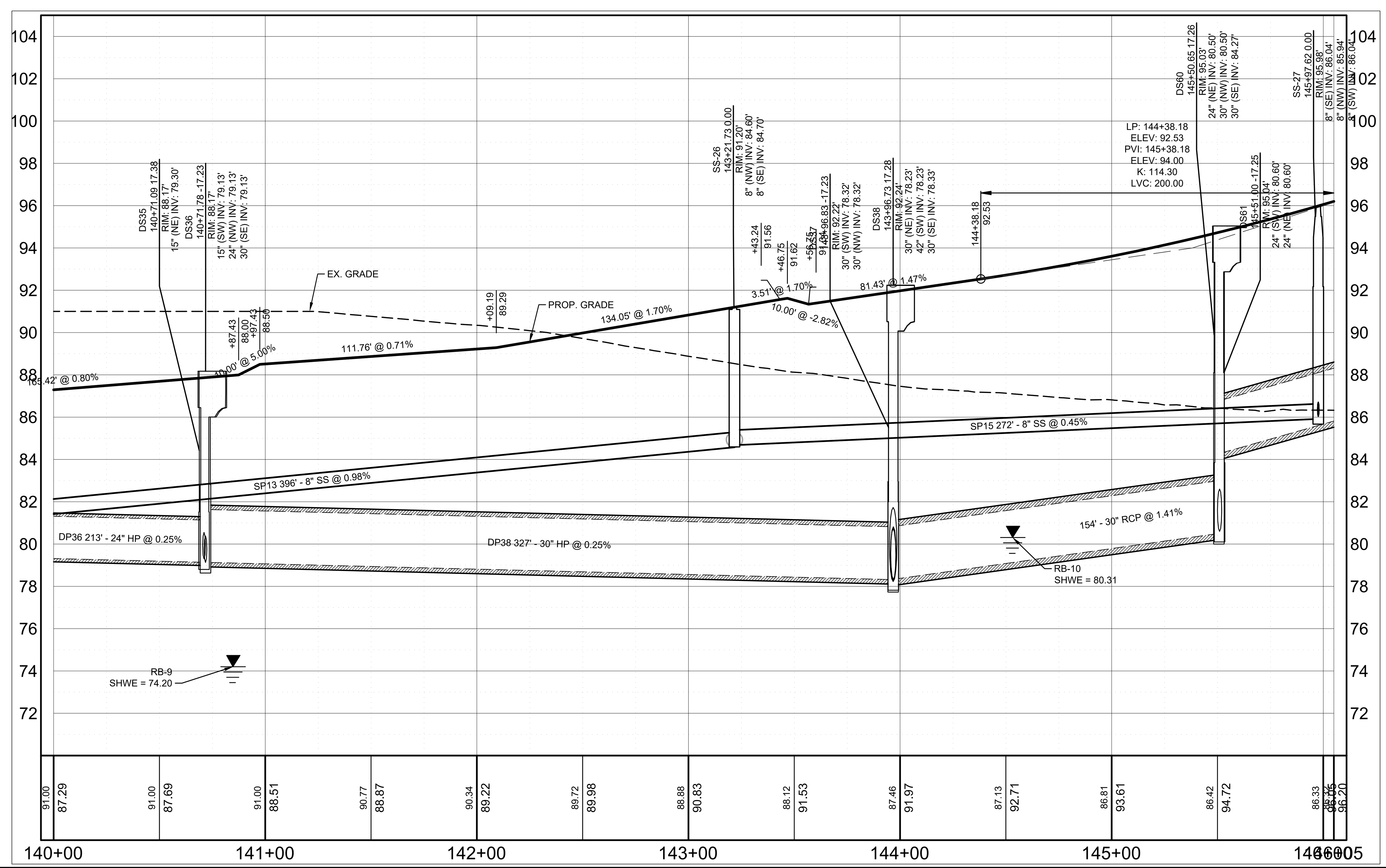
KEY MAP

NTS

LEGEND

EXISTING	PROPOSED	
		BOUNDARY
		RIGHT OF WAY (MAJOR)
		RIGHT OF WAY (MINOR)
		TRACT LINE
		LOT LINE
		LOT SETBACK
		UTILITY EASEMENT (U.E.)
		DRAINAGE EASEMENT (D.E.)
		EASEMENT (OTHER)
		CURB
		CURB AND GUTTER
		MIAMI CURB
		CONCRETE WALK
0.00 EX	0.00 OR 0.50 TC / 0.00 EP OR 0.00 TW / 0.00 BW; 0.00 LP / 0.00 HP	SPOT ELEVATION
		ROAD ℄ ELEVATION
30	30	CONTOUR (MAJOR)
29	29	CONTOUR (MINOR)
		DIRECTION OF SURFACE FLOW
		NORMAL WATER LEVEL
		SEASON HIGH WATER LEVEL
		POND MAINTENANCE BERM
ST-10	ST-10	STORM STRUCTURE NUMBER
		STORM DRAINAGE MANHOLE
	OR OR	STORM DRAINAGE INLET
		CONTROL STRUCTURE
		OUTFALL STRUCTURE
	OR OUT-1	PIPE END (OUTFALL)
B-1		SOIL BORING
R-1		SOIL BORING (ROADWAY)
P-1		SOIL BORING (POND)
	D.S.	DOWNSPOUT

HORZ. SCALE: 1" = 40'
VERT. SCALE: 1" = 4'



ESTIMATED WET SEASON WATER TABLE AND WATER TABLE LOCATED ON PROFILE BASED ON BOREHOLES. (YOVAISH ENGINEERING SERVICES, LLC, PROJECT NO. 24-EZ180.02)

WATER MAIN AND RE-USE WATER LINES SHALL BE BURIED WITH A MINIMUM 36" GROUND COVER.

ENGINEER OF RECORD MUST INSPECT ALL WATER MAIN AND SEWER LINE CONFLICTS PRIOR TO BACKFILLING. CONTRACTOR TO PROVIDE ENGINEER 24 HOUR ADVANCE NOTICE TO SCHEDULE INSPECTION.

▽ ESTIMATED SEASONAL HIGH WATER LEVEL

MADDEN
MOORHEAD & STOKES, LLC
CIVIL ENGINEERS
431 E. Horatio Avenue
Suite 260
Maitland, Florida 32751
(407) 629-8330
CA# 0007723

ROADWAY PLAN & PROFILES

FOR

LAKE HILLS MAIN BLVD. & MASS GRADING

HOWEY-IN-THE-HILLS FLORIDA

READER & PARTNERS, LLC
5850 TG LEE BOULEVARD, SUITE 200
ORLANDO, FL 32822
(407) 856-4899

	DATE	REVISIONS
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DAVID ASHLEY STOKES
LICENSE
NO. 66527
STATE OF FLORIDA
PROFESSIONAL ENGINEER

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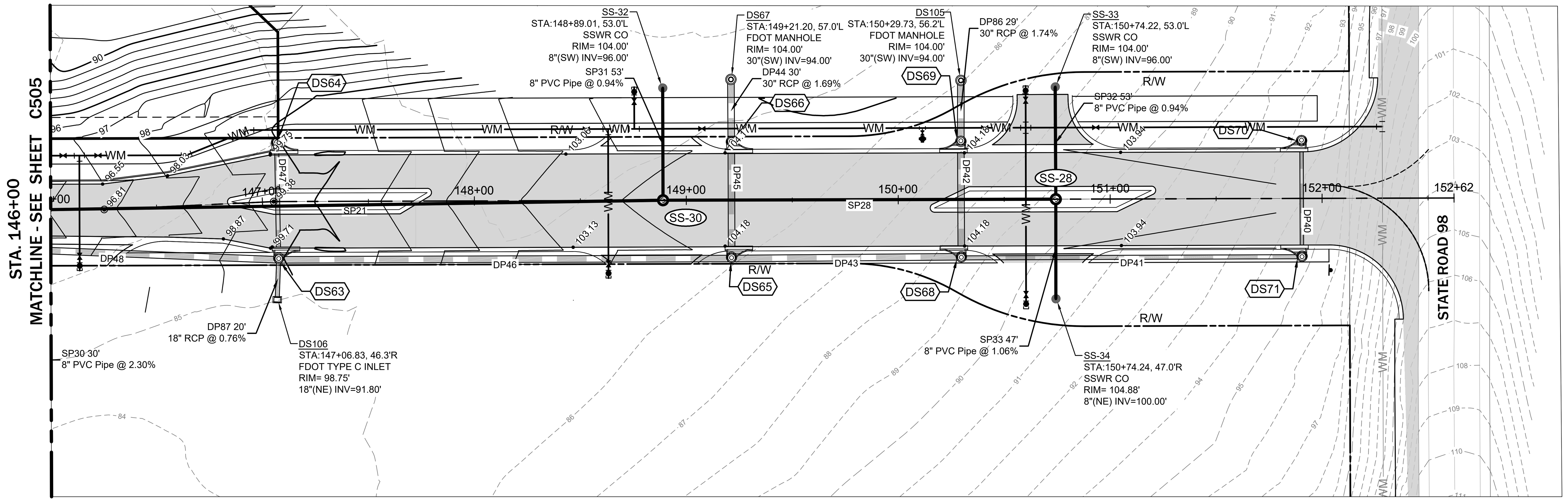
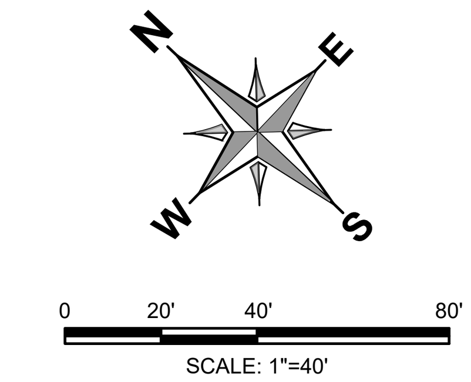
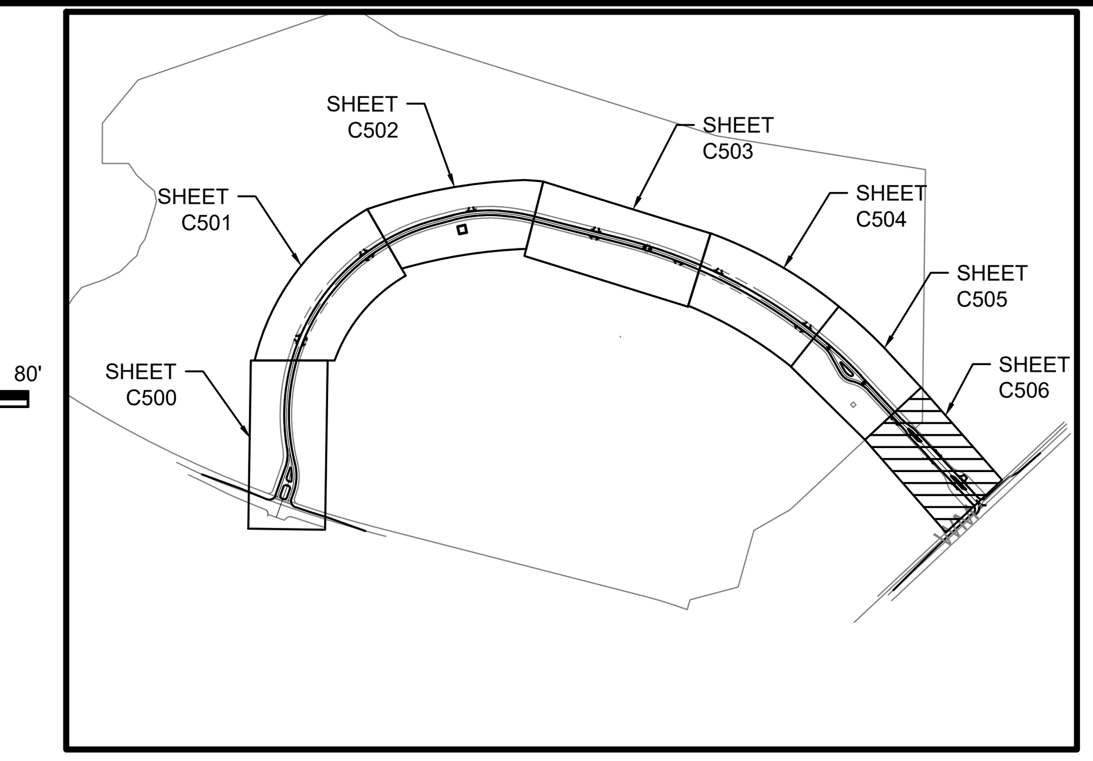
ENGINEER OF RECORD
November 7, 2024

JOB #	23019
DATE:	11/7/24
DATUM:	NAVD 88
DESIGNED BY:	KAC
DRAWN BY:	JSK
APPROVED BY:	DAS

C505



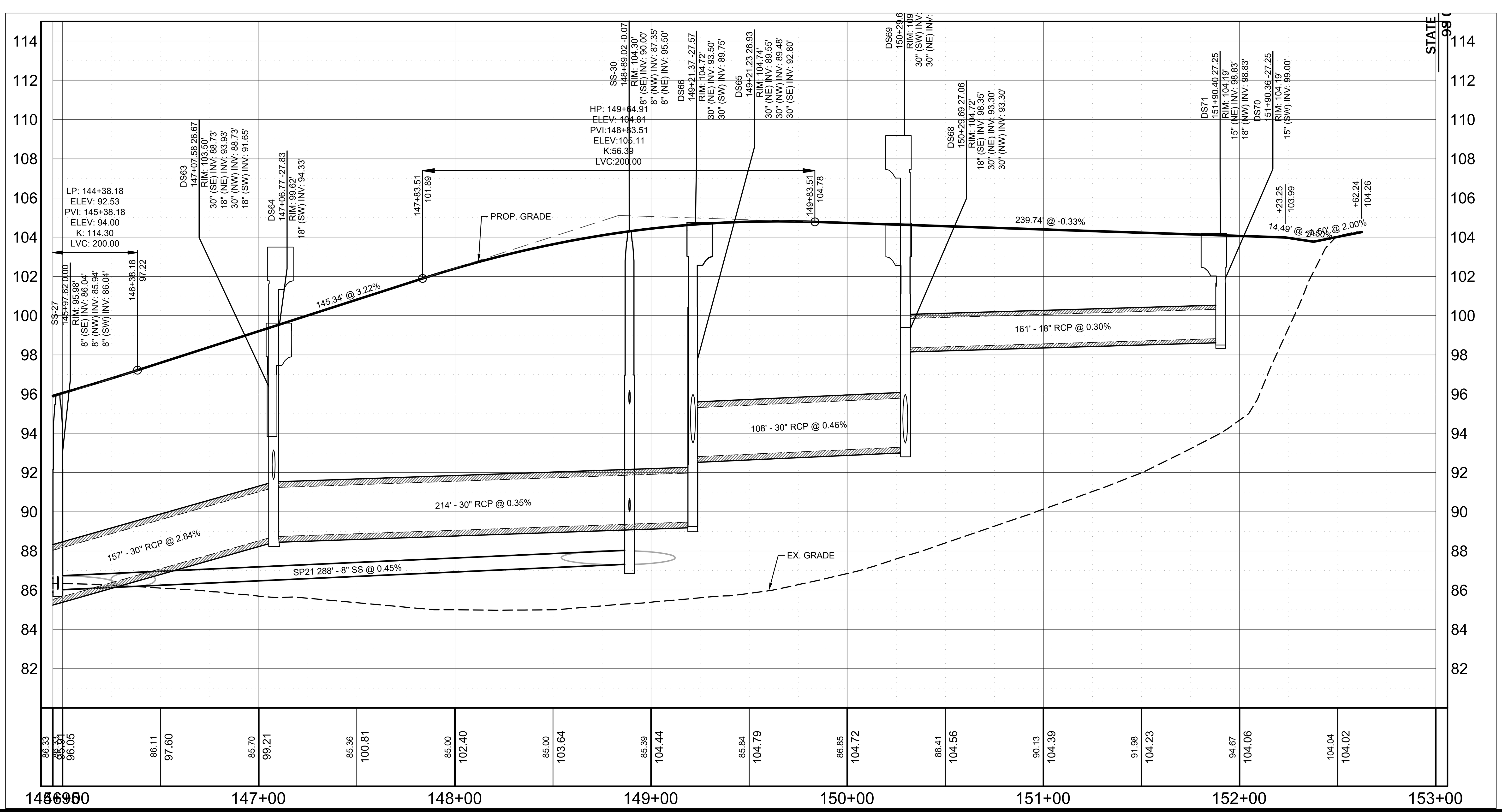




KEY MAP

NTS

ROAD "A"



HORZ. SCALE: 1" = 40'
VERT. SCALE: 1" = 4'

LEGEND

EXISTING	PROPOSED	
		BOUNDARY
		RIGHT OF WAY (MAJOR)
		RIGHT OF WAY (MINOR)
		TRACT LINE
		LOT LINE
		LOT SETBACK
		UTILITY EASEMENT (U.E.)
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		EASEMENT (OTHER)
		CURB
		CURB AND GUTTER
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0.00 EX	0.00 OR 0.50 TC / 0.00 EP OR 0.00 TW / 0.00 BW	SPOT ELEVATION
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		NORMAL WATER LEVEL
		SEASON HIGH WATER LEVEL
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▽ ESTIMATED SEASONAL HIGH WATER LEVEL

MADDEN
MOORHEAD & STOKES, LLC
CIVIL ENGINEERS
431 E. Horatio Avenue
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Maitland, Florida 32751
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CA# 0007723

ROADWAY PLAN & PROFILES

FOR

LAKE HILLS MAIN BLVD. & MASS GRADING

HOWEY-IN-THE-HILLS FLORIDA

READER & PARTNERS, LLC
5850 TG LEE BOULEVARD, SUITE 200
ORLANDO, FL 32822
(407) 856-4899

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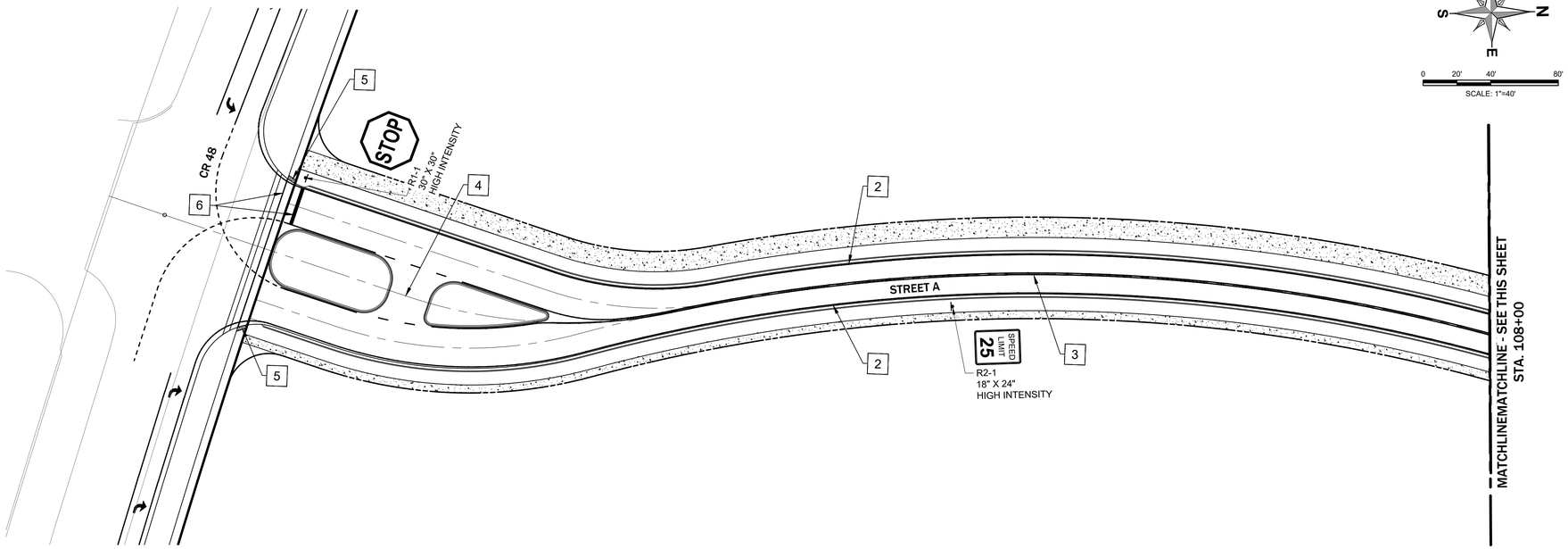
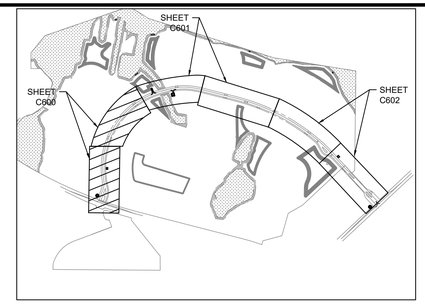
APPROVED BY:	DAS

C506





KEY MAP
NTS

SIGNAGE NOTES

1. ALL STREET NAME SIGNS ARE TO BE WHITE ON BLUE INDICATING PRIVATE ROADS (NON-COUNTY).
2. ALL STREET SIGNS TO BE DECORATIVE.
3. ALL TEMPORARY DEAD END (9) BUTTON SIGN ARE TO BE NON-DECORATIVE.
4. CONTRACTOR MUST SUBMIT SIGNAGE SHOP DRAWINGS FOR APPROVAL.
5. ALL STRIPING WITHIN RIGHT OF WAY TO BE THERMOPLASTIC.
6. ALL REFLECTIVE PAVEMENT MARKINGS SHALL BE INSTALL PER FDOT INDEX 17352.

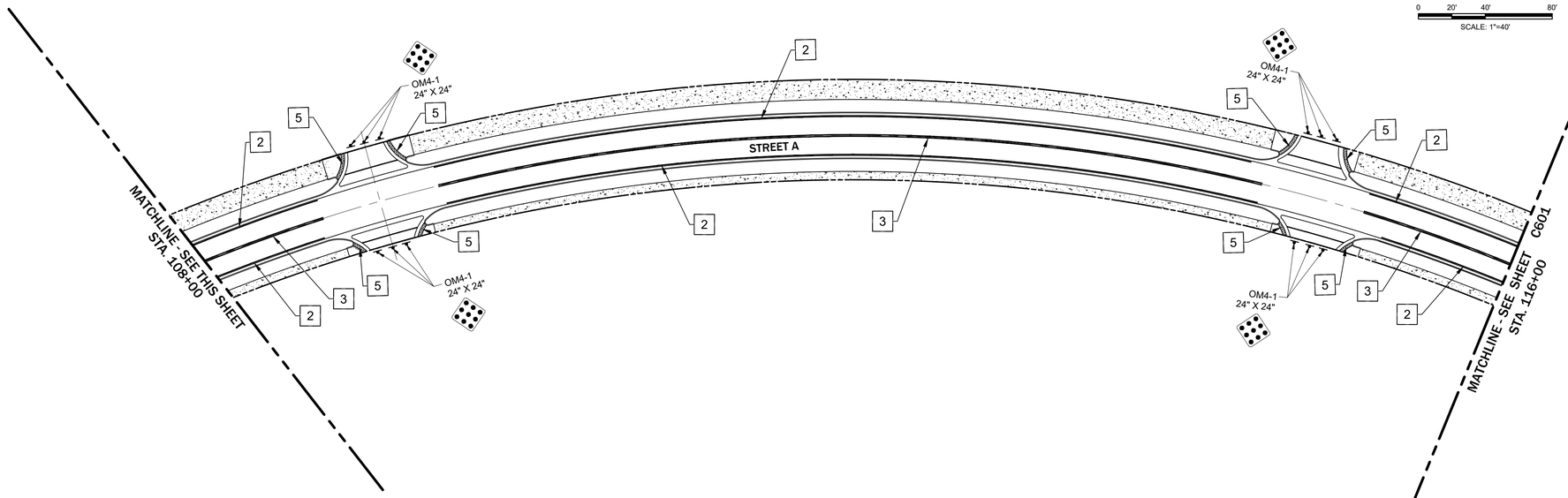
SIGN LEGEND: (PER FDOT INDEX 17349)

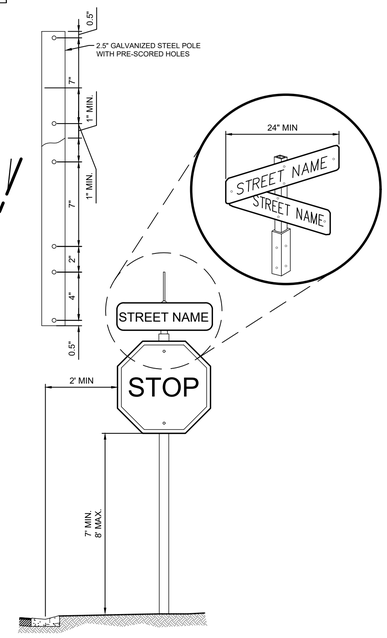
OM4-1
24" x 24"

R1-1
30" x 30"
HIGH INTENSITY

R2-1
18" x 24"
HIGH INTENSITY

#	PAVEMENT MARKING NOTES
1	WHITE THERMOPLASTIC TURN ARROWS (TYP.) PER FDOT STANDARD PLAN 711-001
2	6" WHITE SOLID THERMOPLASTIC PER FDOT STANDARD PLAN 711-001
3	6" DOUBLE WHITE SOLID THERMOPLASTIC PER FDOT STANDARD PLAN 711-00
4	6" WHITE (2'-4') THERMOPLASTIC (TYP.) PER FDOT STANDARD PLAN 711-001
5	DETECTABLE WARNINGS PER FDOT STANDARD PLAN 522-002
6	STOP BAR AND CROSSWALK PER FDOT STANDARD PLAN 711.001





SIGN MOUNTING DETAIL
NTS

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MOORHEAD & STOKES, LLC
CIVIL ENGINEERS
431 E. Horatio Avenue
Suite 260
Maitland, Florida 32751
(407) 629-8330
CA# 0007723

PAVEMENT MARKING & SIGNAGE PLAN
FOR
LAKE HILLS MAIN BLVD. & MASS GRADING
HOWEY-IN-THE-HILLS FLORIDA

READER & PARTNERS, LLC
5850 T.G. LEE BOULEVARD, SUITE 200
ORLANDO, FL 32822
(407) 855-4899

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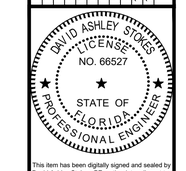

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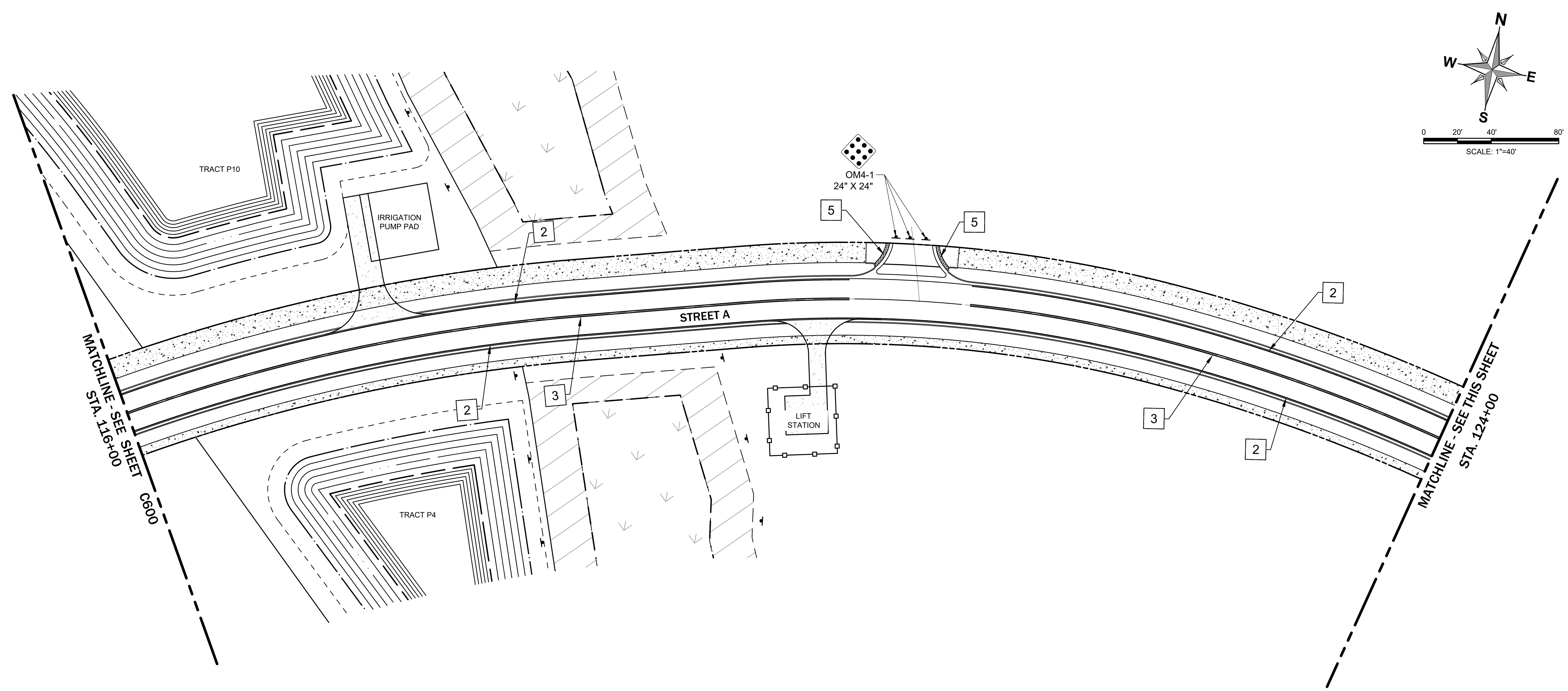
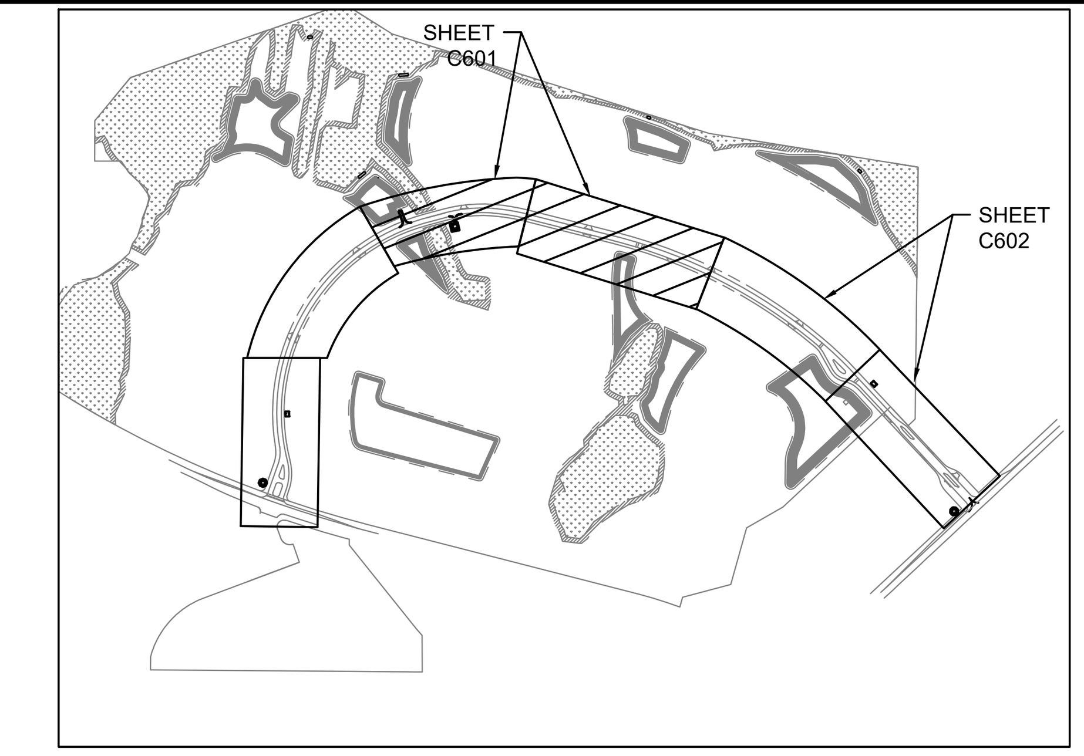
APPROVED BY:	DAS

C600





KEY MAP

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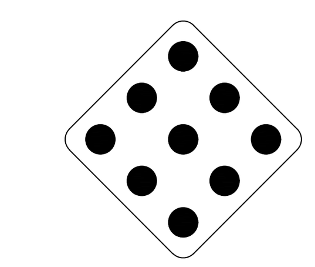
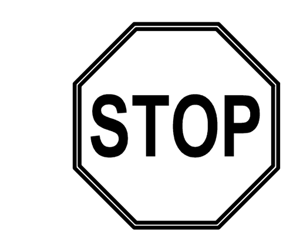
5. ALL STRIPING WITHIN RIGHT OF WAY TO BE THERMOPLASTIC.
6. ALL REFLECTIVE PAVEMENT MARKINGS SHALL BE INSTALL PER FDOT INDEX 17352.

SIGN LEGEND: (PER FDOT INDEX 17349)

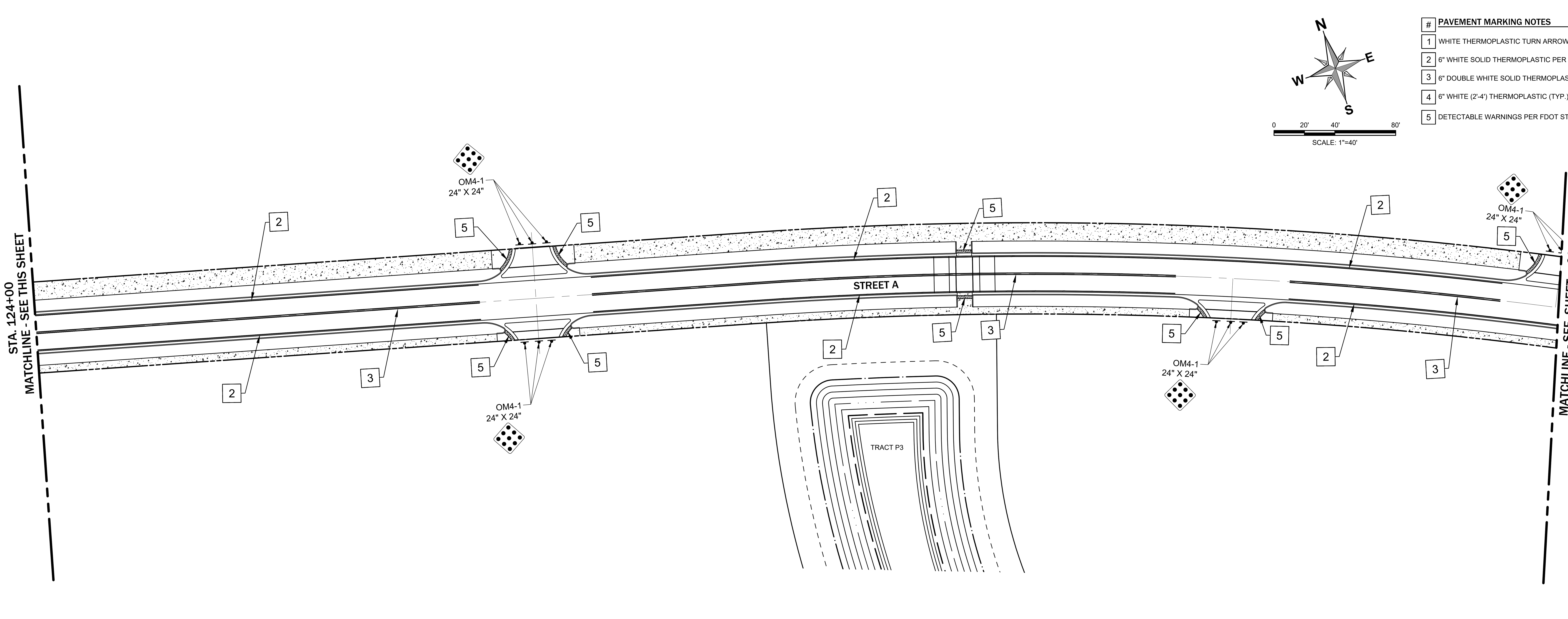


OM4-1
24" x 24"



R1-1
30" x 30"
HIGH INTENSITY

R2-1
18" x 24"
HIGH INTENSITY



#	PAVEMENT MARKING NOTES
1	WHITE THERMOPLASTIC TURN ARROWS (TYP.) PER FDOT STANDARD PLAN 711-001
2	6" WHITE SOLID THERMOPLASTIC PER FDOT STANDARD PLAN 711-001
3	6" DOUBLE WHITE SOLID THERMOPLASTIC PER FDOT STANDARD PLAN 711-00
4	6" WHITE (2'-4') THERMOPLASTIC (TYP.) PER FDOT STANDARD PLAN 711-001
5	DETECTABLE WARNINGS PER FDOT STANDARD PLAN 522-002

MADDEN
MOORHEAD & STOKES, LLC
CIVIL ENGINEERS
431 E. Horatio Avenue
Suite 260
Maitland, Florida 32751
(407) 629-8330
CA# 0007723

PAVEMENT MARKING & SIGNAGE PLAN

FOR

LAKE HILLS MAIN BLVD. & MASS GRADING

HOWEY-IN-THE-HILLS FLORIDA

READER & PARTNERS, LLC
5850 TG LEE BOULEVARD, SUITE 200
ORLANDO, FL 32822
(407) 856-4899

REVISIONS	DATE
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DAVID ASHLEY STOKES
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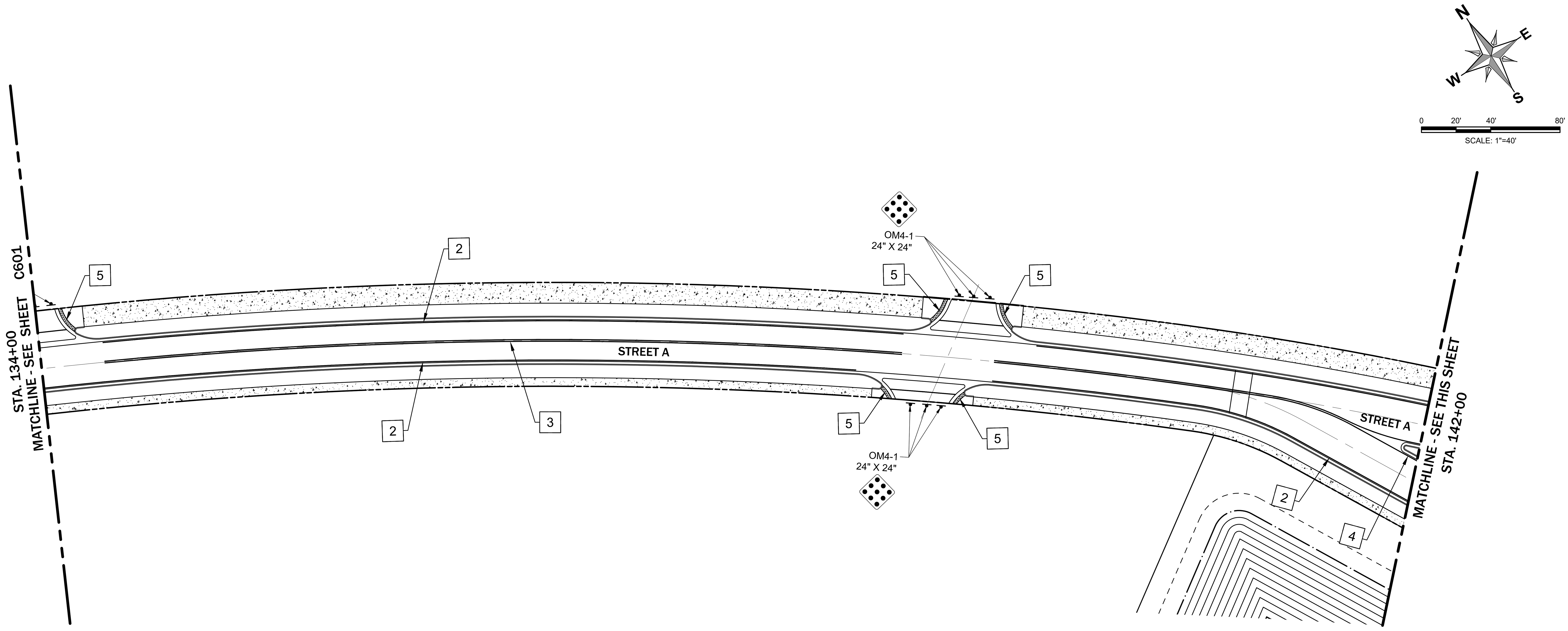
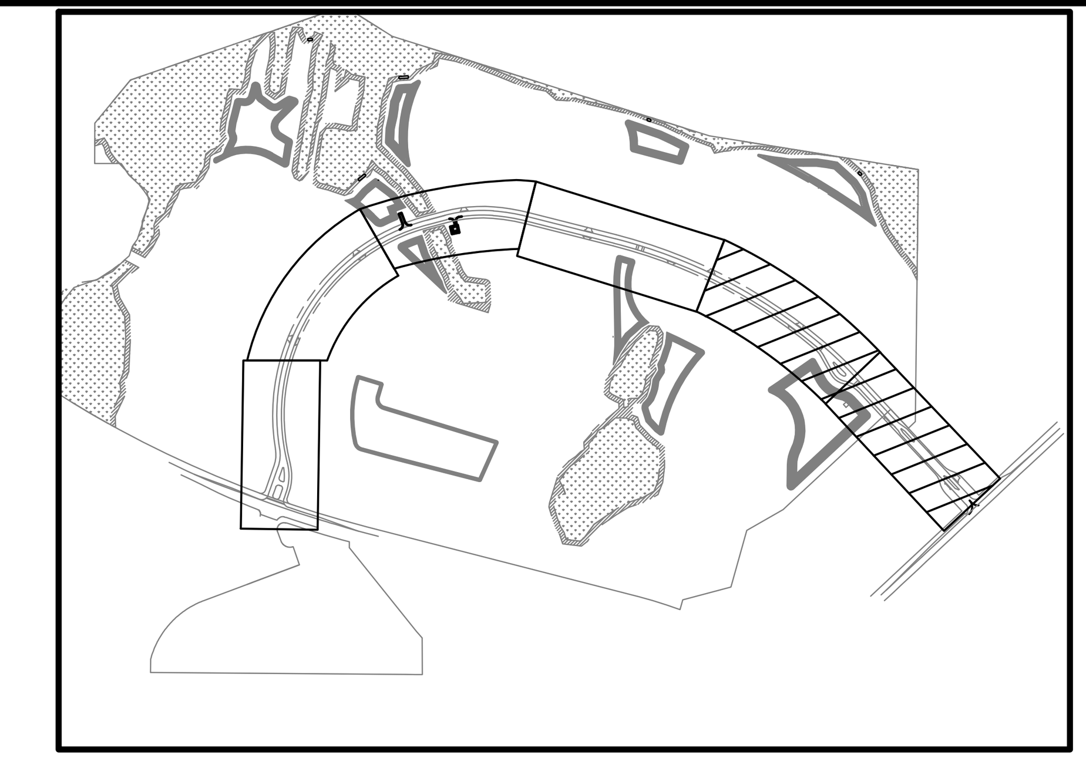
APPROVED BY: DAS

C601





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SIGN LEGEND: (PER FDOT INDEX 17349)

OM4-1	STOP	SPEED LIMIT 25
OM4-1 24" x 24"	R1-1 30" x 30" HIGH INTENSITY	R2-1 18" x 24" HIGH INTENSITY

#	PAVEMENT MARKING NOTES
1	WHITE THERMOPLASTIC TURN ARROWS (TYP.) PER FDOT STANDARD PLAN 711-001
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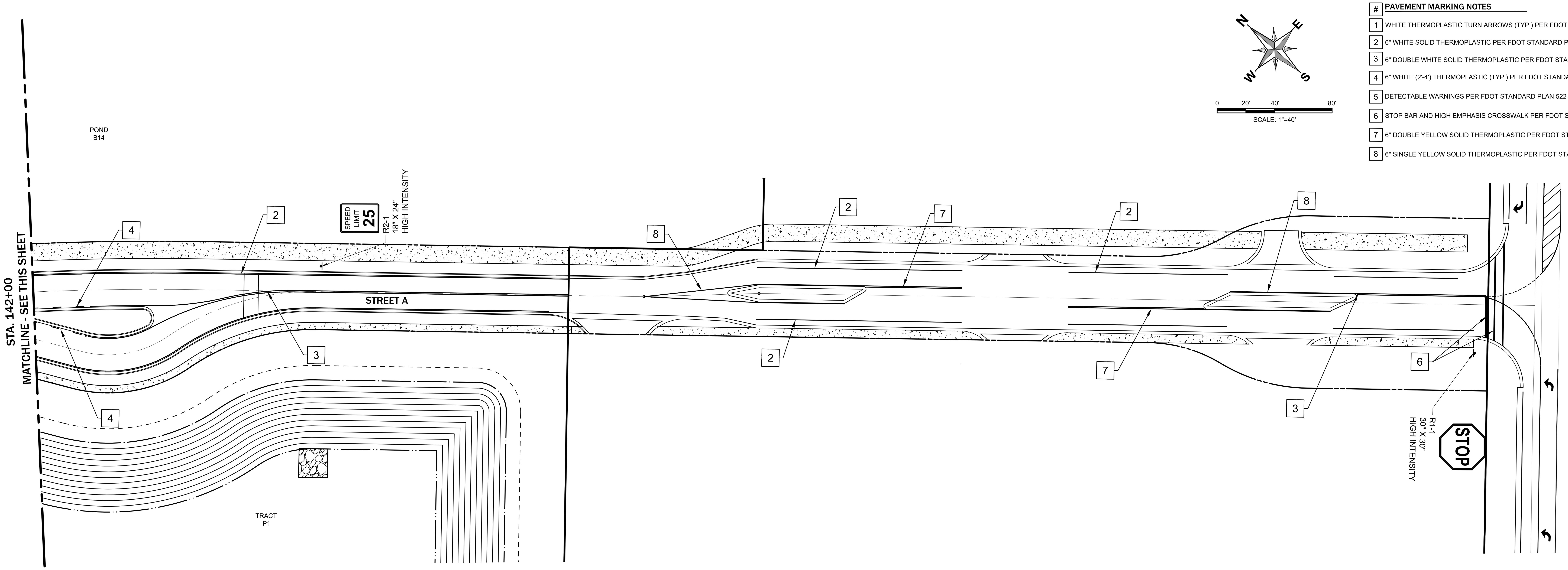
4	6" WHITE (2'-4') THERMOPLASTIC (TYP.) PER FDOT STANDARD PLAN 711-001
5	DETECTABLE WARNINGS PER FDOT STANDARD PLAN 522-002
6	STOP BAR AND HIGH EMPHASIS CROSSWALK PER FDOT STANDARD PLAN 711.001
7	6" DOUBLE YELLOW SOLID THERMOPLASTIC PER FDOT STANDARD PLAN 711-00
8	6" SINGLE YELLOW SOLID THERMOPLASTIC PER FDOT STANDARD PLAN 711-00



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PAVEMENT MARKING & SIGNAGE PLAN

FOR

LAKE HILLS MAIN BLVD. & MASS GRADING

HOWEY-IN-THE-HILLS FLORIDA

READER & PARTNERS, LLC
5850 TG LEE BOULEVARD, SUITE 200
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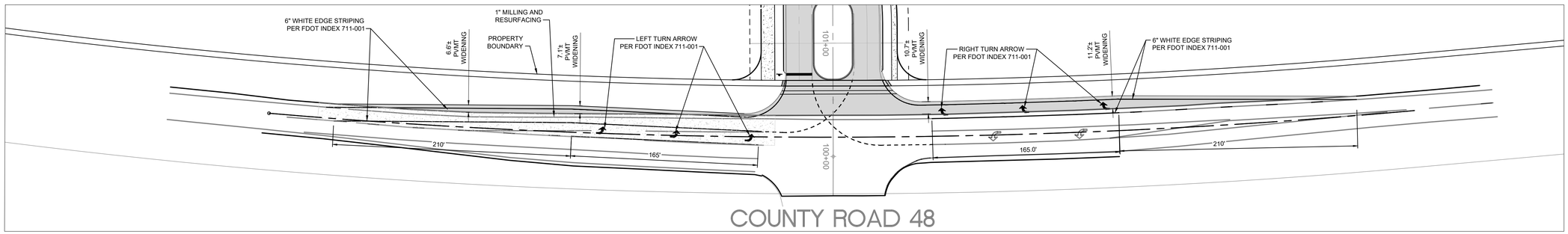

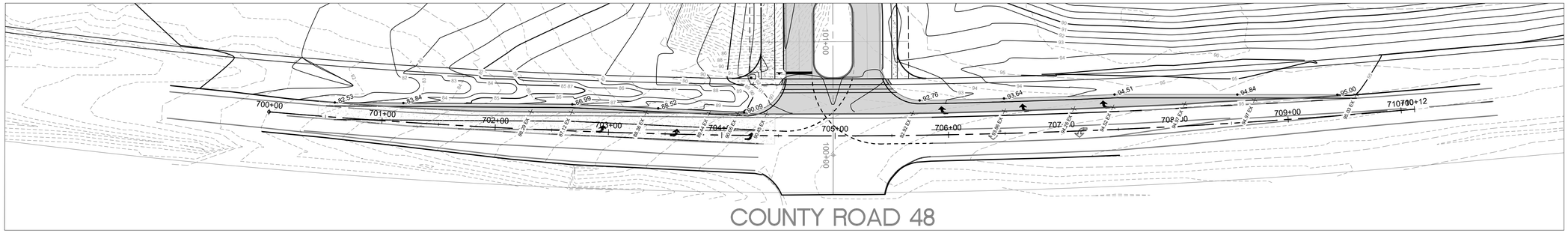

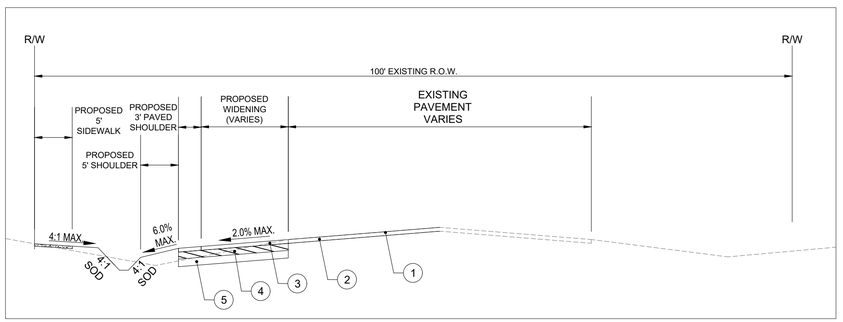

TYPICAL SECTION – 100' R.O.W.

COUNTY ROAD 48 N.T.S.

ROADWAY PAVEMENT SPECIFICATIONS

1. 1.5" FRICTION COURSE FC 12.5
2. 0.5" LEVELING COURSE
3. 2" SP 12.5 STRUCTURAL ASPHALT, FLUSH WITH MILLED OR LEVELED SURFACE
4. 10" LIMEROCK; 2 LIFTS, 98% COMP. EACH LIFT, AASHTO T-180, PRIMED AND SANDED
5. 12" TYPE B STABILIZED SUBGRADE, 98% COMPACTION, AASHTO T-180, MINIMUM LBR 40

NOTES:

1. MILL EXISTING ROADWAY FULL WIDTH TO 1" MINIMUM DEPTH
2. FINISH GRADE OF SHOULDER TO BE BELOW EDGE OF PAVEMENT TO ALLOW FOR SOD PER FDOT STANDARD PLANS INDEX 570-010 (FORMERLY INDEX 105)
3. ALL DISTURBED AREAS SHALL BE SODDED
4. ALL UNPAVED AREAS WITHIN ROW SHALL BE SODDED
5. ALL LANE STRIPING TO BE 6" THERMOPLASTIC, UNLESS OTHERWISE NOTED
6. FOR SUPERPAVE UTILIZE TRAFFIC LEVEL C
7. ALL CONSTRUCTION MATERIALS AND ROADWAY DESIGN SHALL BE IN ACCORDANCE WITH THE LATEST LAKE COUNTY STANDARDS
8. ALL SIDEWALKS, DETECTABLE WARNING MATS AND CURB RAMPS SHALL BE BUILT AND INSPECTED TO MEET ADA REQUIREMENTS (MAX DESIGN CROSS-SLOPE = 1.50%; MAX DESIGN LOGITUDINAL SLOPE = 5.00%)
9. ANY DRIVEWAYS DISTURBED BY CONSTRUCTION SHALL BE REBUILT TO EXISTING CONDITIONS OR BETTER
10. ALL MAINTENANCE OF TRAFFIC SHALL BE IN ACCORDANCE WITH FDOT STANDARD PLAN INDEXES (PREFIX 102) 600-608, 625, 628, & 655 AS APPLICABLE

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OFF-SITE IMPROVEMENT PLAN
FOR
LAKE HILLS MAIN BLVD. & MASS GRADING
HOWEY-IN-THE-HILLS FLORIDA

READER & PARTNERS, LLC
5850 TG LEE BOULEVARD, SUITE 200
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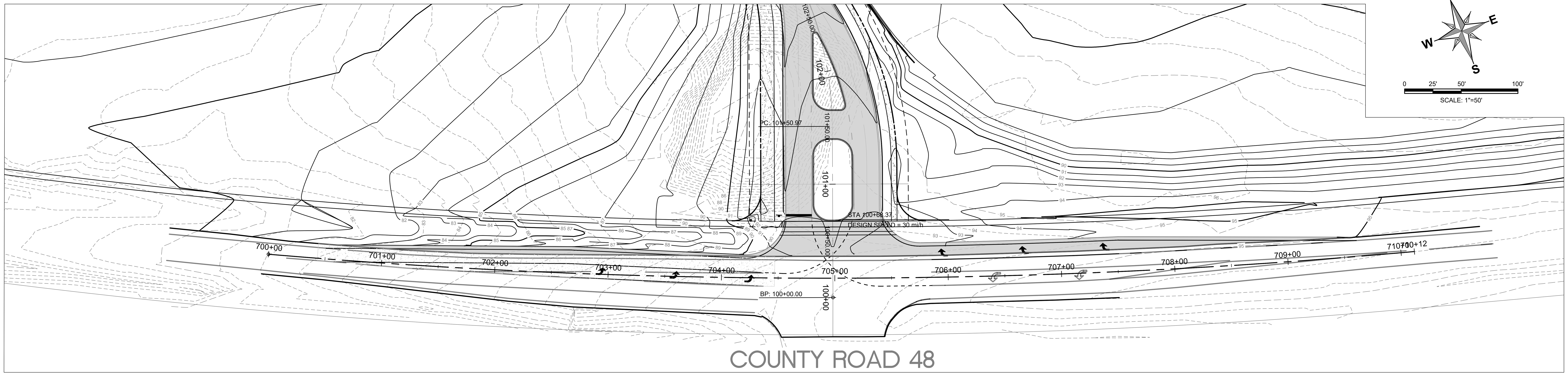

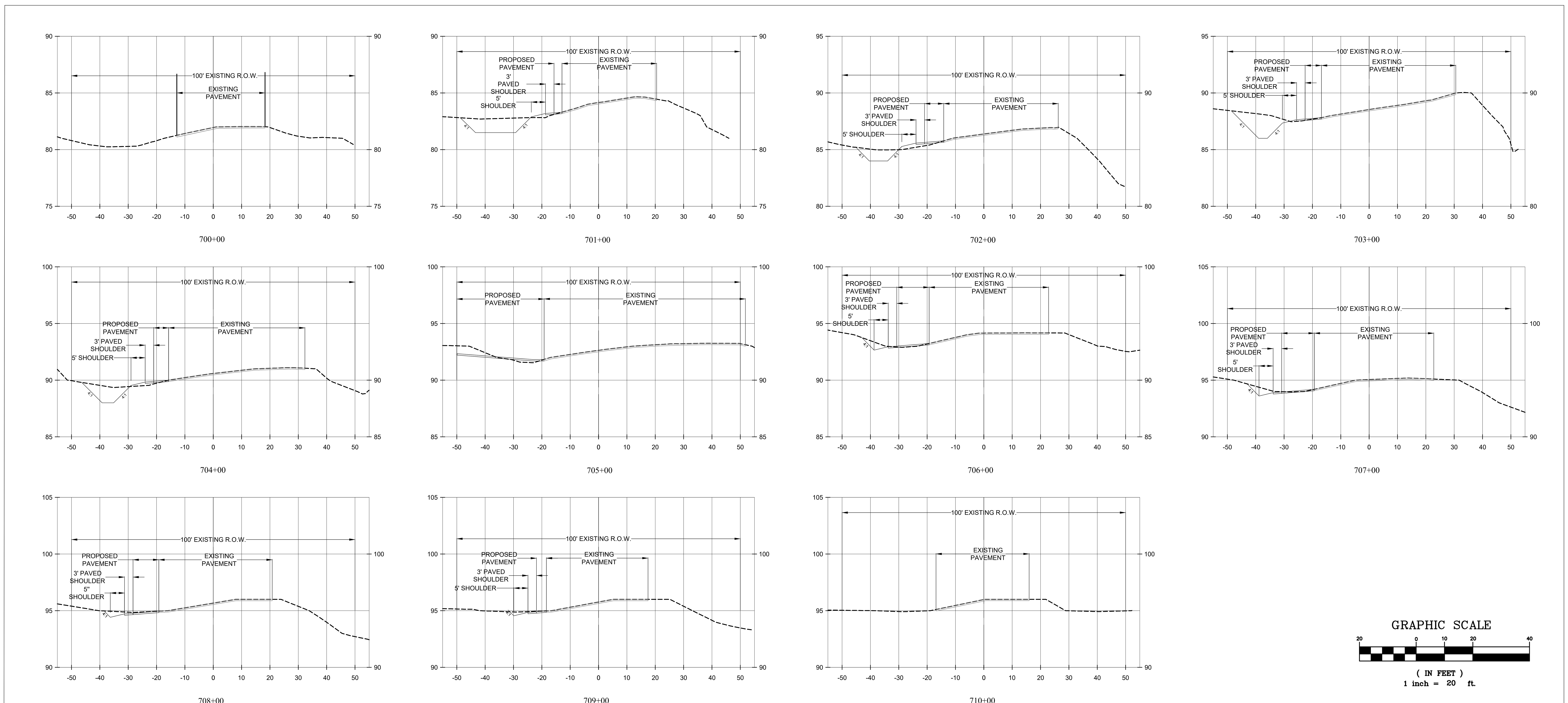

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Suite 260
Maitland, Florida 32751
(407) 629-8330
CA# 0007723

OFF-SITE IMPROVEMENTS PLAN VIEW & SECTIONS

FOR

LAKE HILLS MAIN BLVD. & MASS GRADING

HOWEY-IN-THE-HILLS FLORIDA

READER & PARTNERS, LLC
5850 TG LEE BOULEVARD, SUITE 200
ORLANDO, FL 32822
(407) 856-4899

	DATE	REVISIONS
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DAVID ASHLEY STOKES LICENSE NO. 66527 STATE OF FLORIDA PROFESSIONAL ENGINEER

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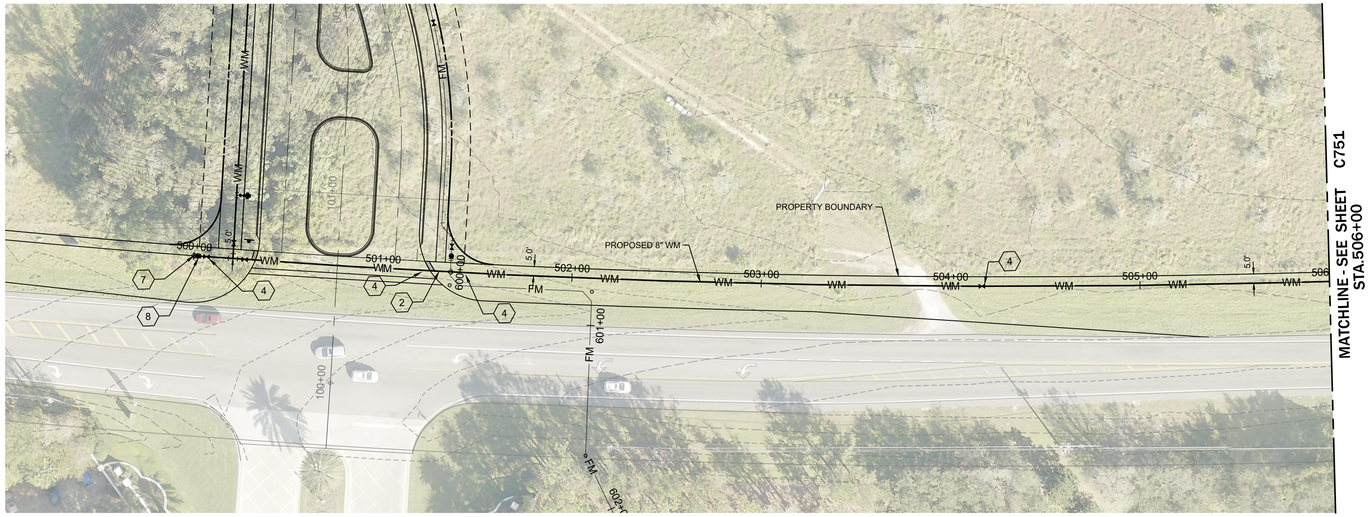
ENGINEER OF RECORD
November 7, 2024

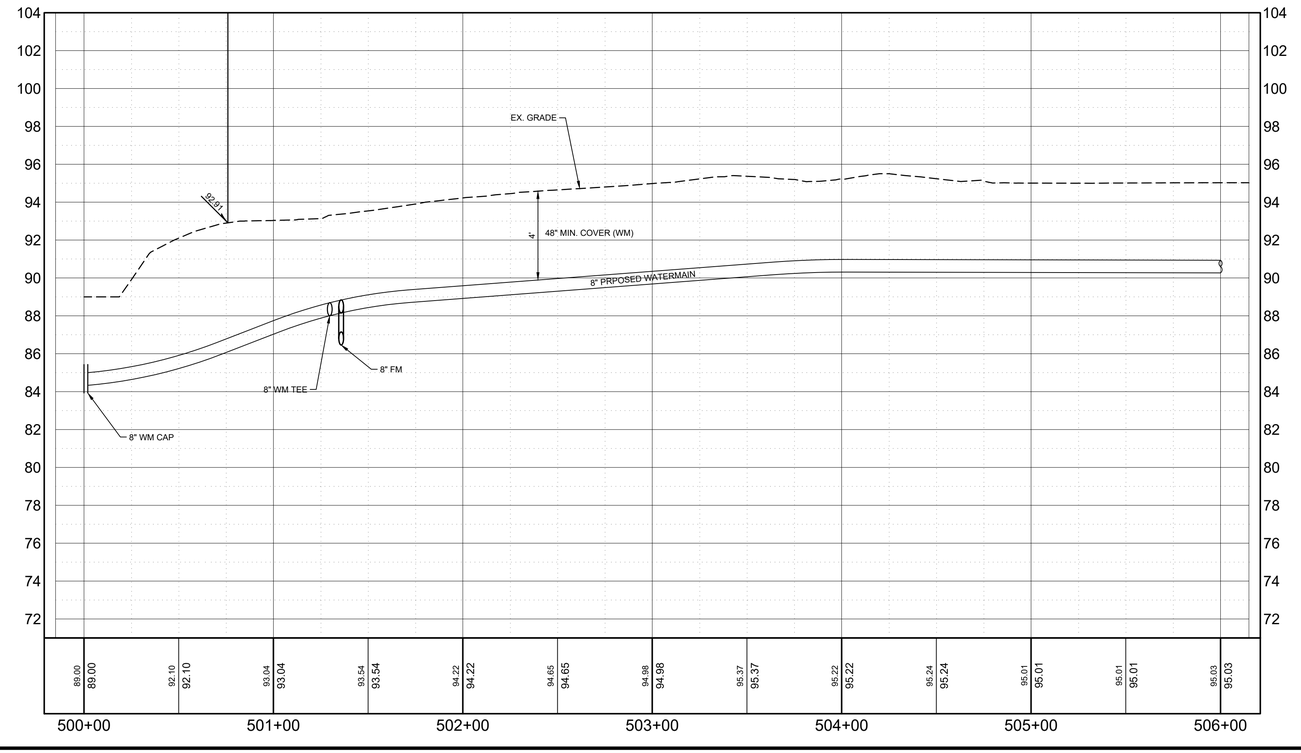
JOB #	23019
DATE:	11/7/24
DATUM:	NAVD 88
DESIGNED BY:	KAC
DRAWN BY:	JSK
APPROVED BY:	DAS

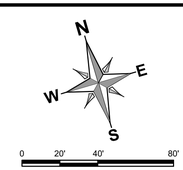
C701

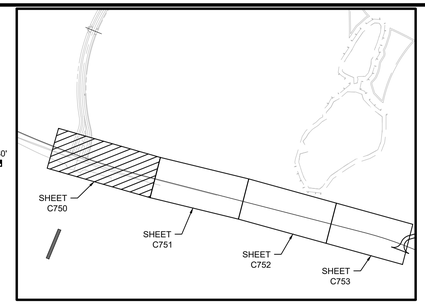
Xref ..\XREFS\#####-Tblock.dwg



OFFSITE WATERMAIN







KEY MAP
NTS

LEGEND

EXISTING	PROPOSED	
		BOUNDARY
		RIGHT OF WAY (MAJOR)
		RIGHT OF WAY (MINOR)
		TRACT LINE
		LOT LINE
		LOT SETBACK
		UTILITY EASEMENT (U.E.)
		DRAINAGE EASEMENT (D.E.)
		EASEMENT (OTHER)
		CURB
		CURB AND GUTTER
		MIAMI CURB
		CONCRETE WALK
● 0.00 EX	● 0.00 OR 0.50 TC 0.00 EP OR ● 0.00 TW ● 0.00 BW ● 0.00 LP ● 0.00 HP	SPOT ELEVATION
		ROAD ℄ ELEVATION
30	30	CONTOUR (MAJOR)
29	29	CONTOUR (MINOR)
		DIRECTION OF SURFACE FLOW
		NORMAL WATER LEVEL
		SEASON HIGH WATER LEVEL
		POND MAINTENANCE BERM
ST-10	ST-10	STORM STRUCTURE NUMBER
		STORM DRAINAGE MANHOLE
	OR OR OR	STORM DRAINAGE INLET
	OR	CONTROL STRUCTURE
	OR	OUTFALL STRUCTURE
	OUT-1	PIPE END (OUTFALL)
B-1		SOIL BORING
R-1		SOIL BORING (ROADWAY)
P-1		SOIL BORING (POND)
	D.S.	DOWNSPOUT

HORZ. SCALE: 1" = 40'

VERT. SCALE: 1" = 4'

#WATER NOTES

1. 8" FIRE HYDRANT ASSEMBLY
2. 8" TEE
3. 8" X 8" CROSS
4. 8" GATE VALVE
5. 90° BEND
6. 45° BEND
7. 23° BEND
8. 12° BEND
9. 8" CAP
10. 2" BLOW OFF
11. AUTOMATIC AIR RELEASE VALVE

WATER MAIN AND RE-USE WATER LINES SHALL BE BURIED WITH A MINIMUM 36" GROUND COVER.

ENGINEER OF RECORD MUST INSPECT ALL WATER MAIN AND SEWER LINE CONFLICTS PRIOR TO BACKFILLING. CONTRACTOR TO PROVIDE ENGINEER 24 HOUR ADVANCE NOTICE TO SCHEDULE INSPECTION.

▽ ESTIMATED SEASONAL HIGH WATER LEVEL

MADDEN
MOORHEAD & STOKES, LLC
CIVIL ENGINEERS
431 E. Horatio Avenue
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HOWEY-IN-THE-HILLS FLORIDA

READER & PARTNERS, LLC
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JOB # 23019
DATE: 11/7/24
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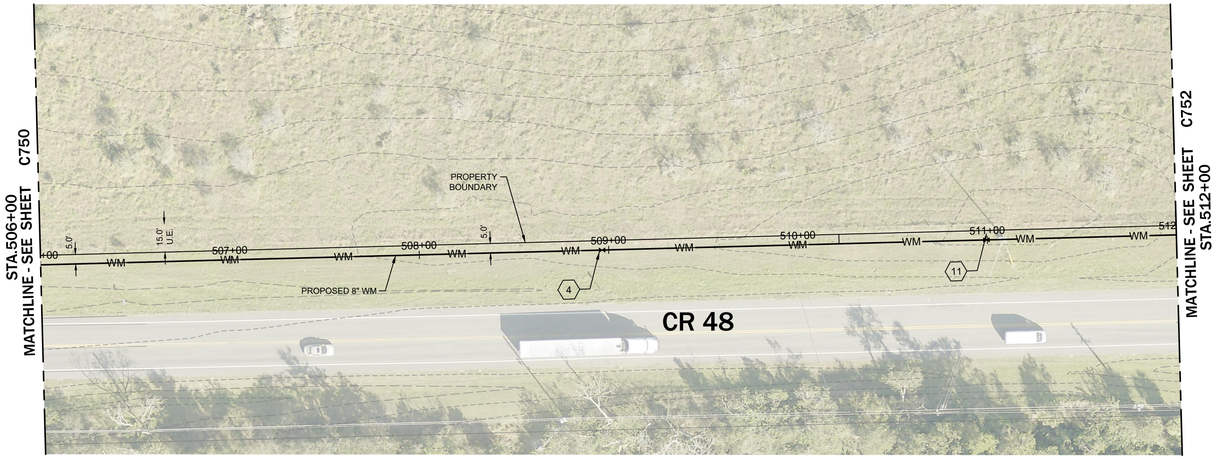
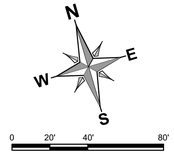
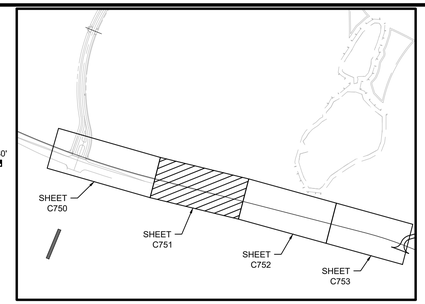
APPROVED BY: DAS

C750







KEY MAP
NTS

LEGEND

EXISTING	PROPOSED	
		BOUNDARY
		RIGHT OF WAY (MAJOR)
		RIGHT OF WAY (MINOR)
		TRACT LINE
		LOT LINE
		LOT SETBACK
		UTILITY EASEMENT (U.E.)
		DRAINAGE EASEMENT (D.E.)
		EASEMENT (OTHER)
		CURB
		CURB AND GUTTER
		MIAMI CURB
		CONCRETE WALK
● 0.00 EX.	● 0.00 OR 0.50 TC 0.00 EP OR ● 0.00 TW ● 0.00 BW	SPOT ELEVATION
	● 0.00 LP ● 0.00 HP	ROAD ℄ ELEVATION
30	30	CONTOUR (MAJOR)
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B-1		SOIL BORING
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	D.S.	DOWNSPOUT

HORZ. SCALE: 1" = 40'
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OFFSITE WATERMAIN

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November 7, 2024

JOB # 23019
DATE: 11/7/24
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DESIGNED BY: KAC
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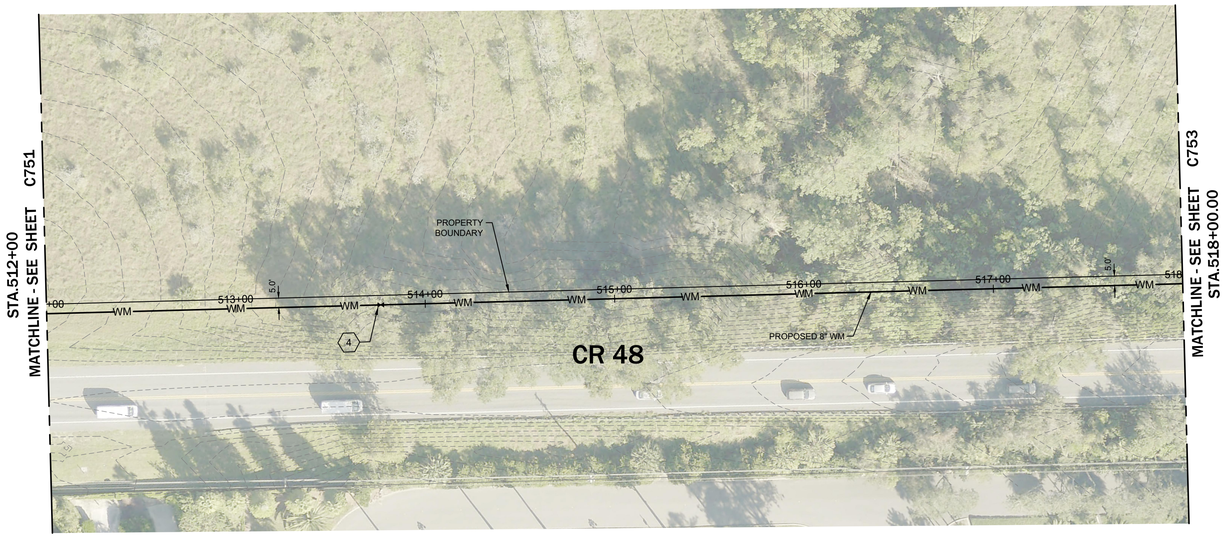
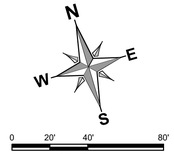
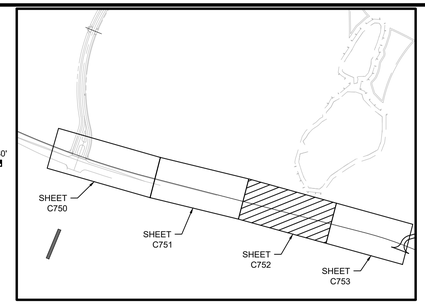
APPROVED BY: DAS

C751







KEY MAP
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		BOUNDARY
		RIGHT OF WAY (MAJOR)
		RIGHT OF WAY (MINOR)
		TRACT LINE
		LOT LINE
		LOT SETBACK
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OFFSITE WATERMAIN

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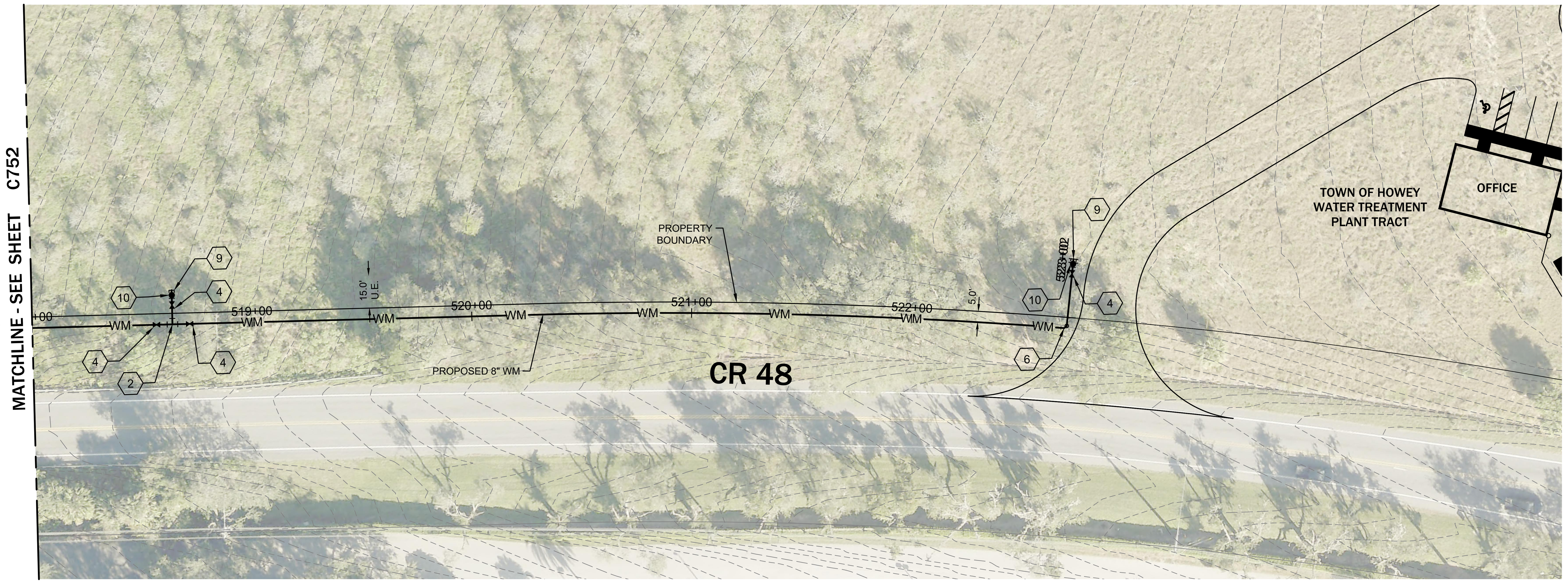
C752



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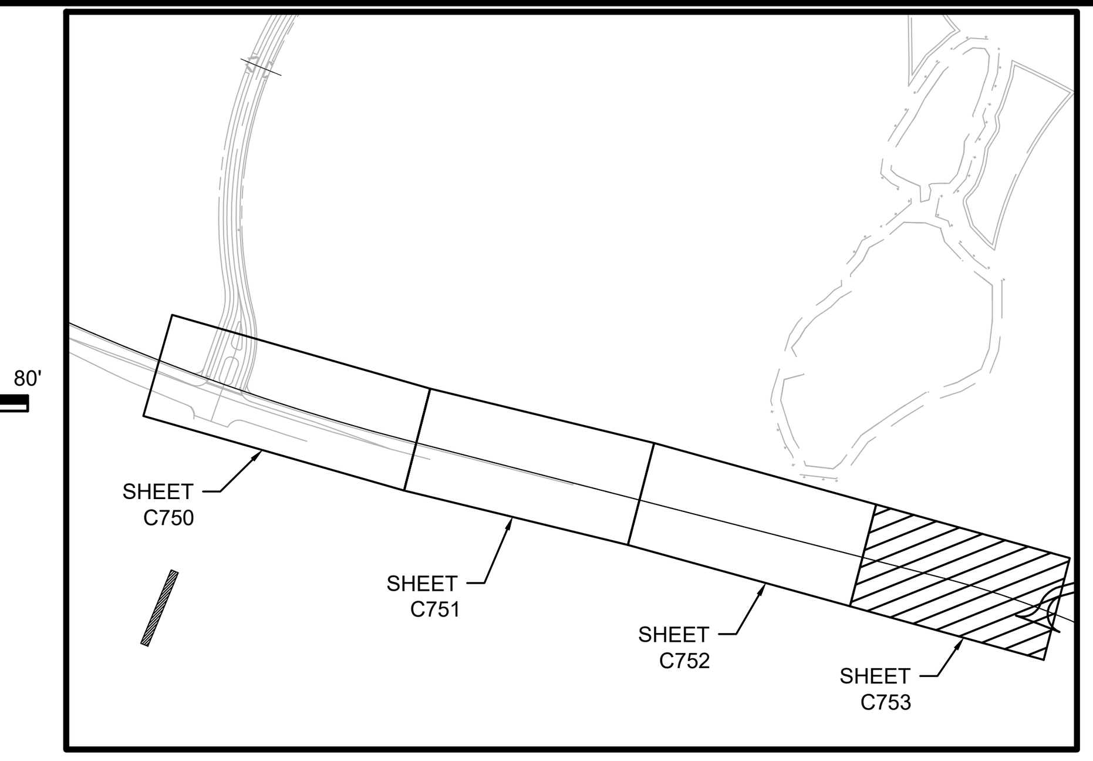
0 20' 40' 80'
SCALE: 1"=40'



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OFFSITE WATERMAIN

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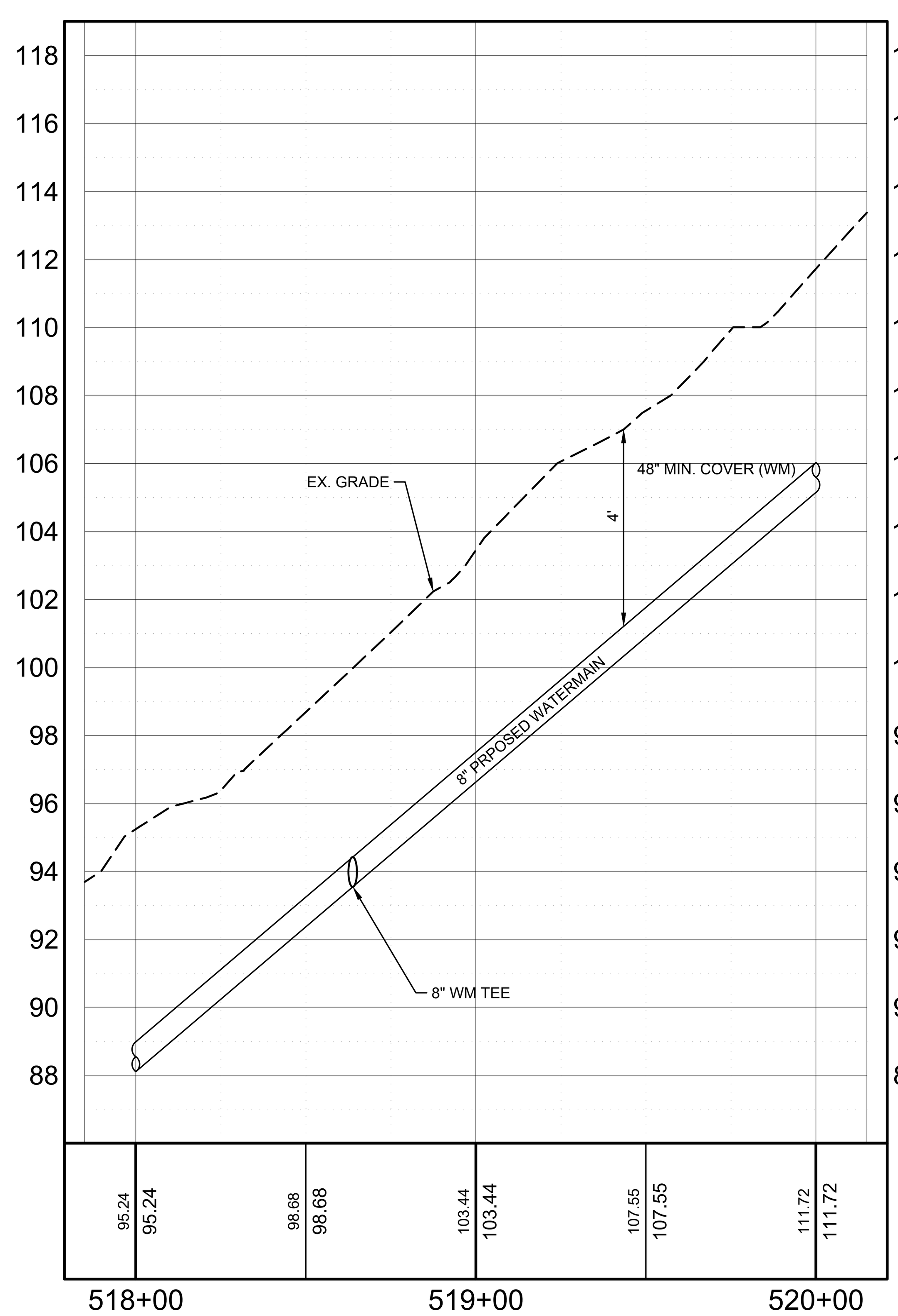

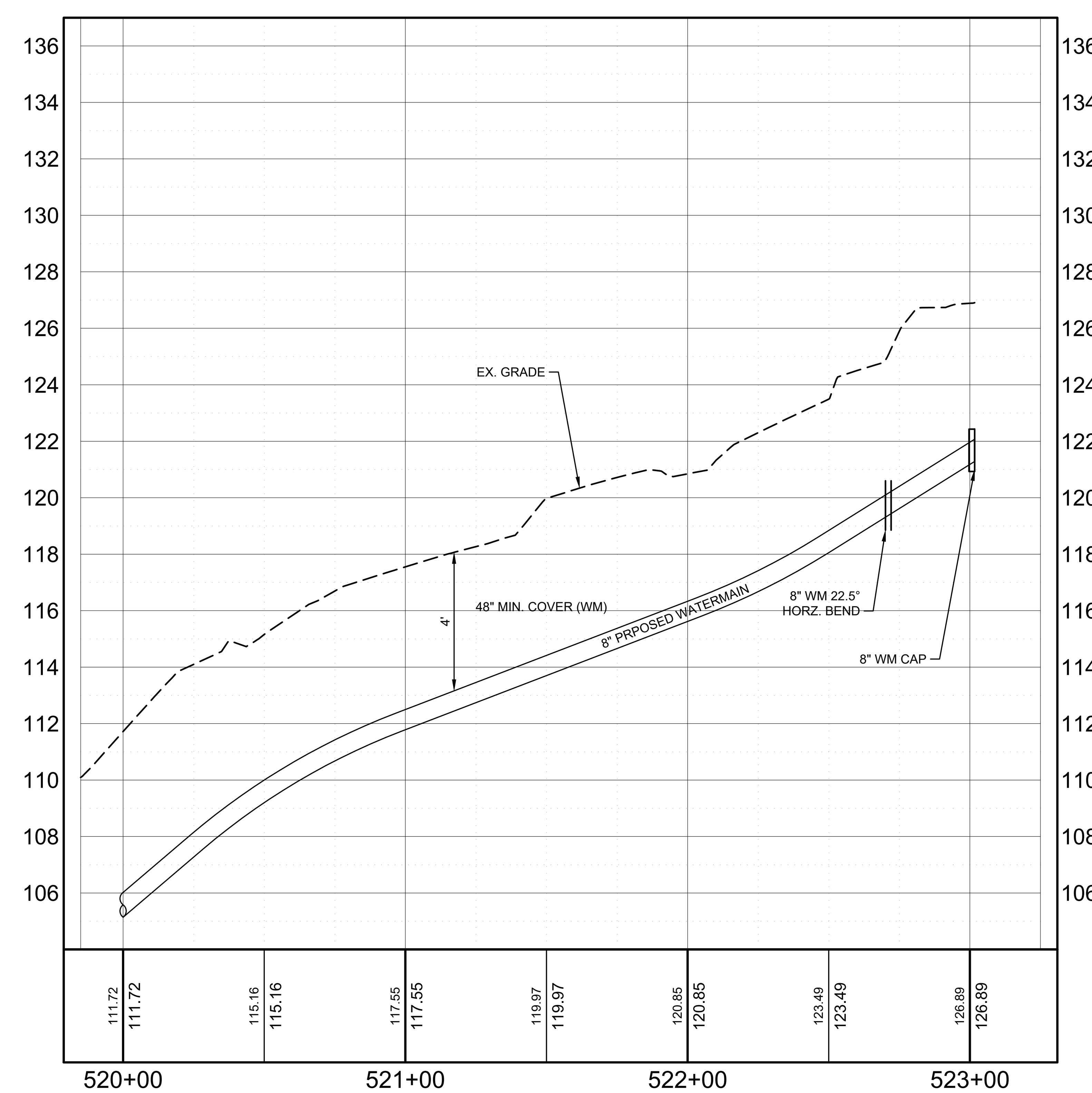

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ESTIMATED SEASONAL HIGH WATER LEVEL

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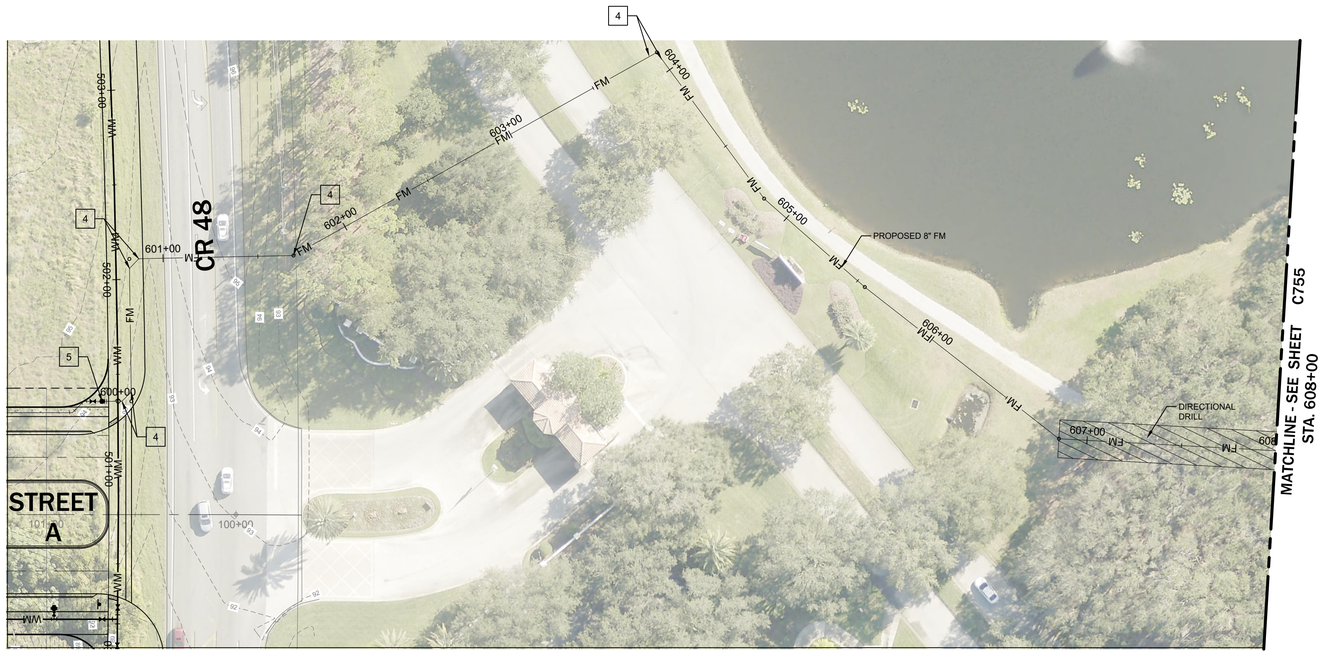

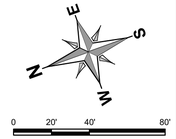

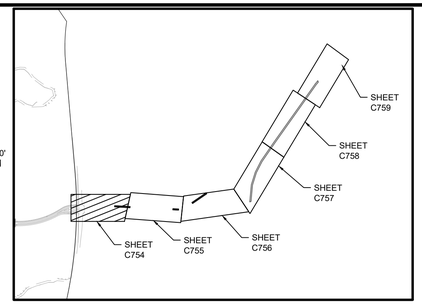

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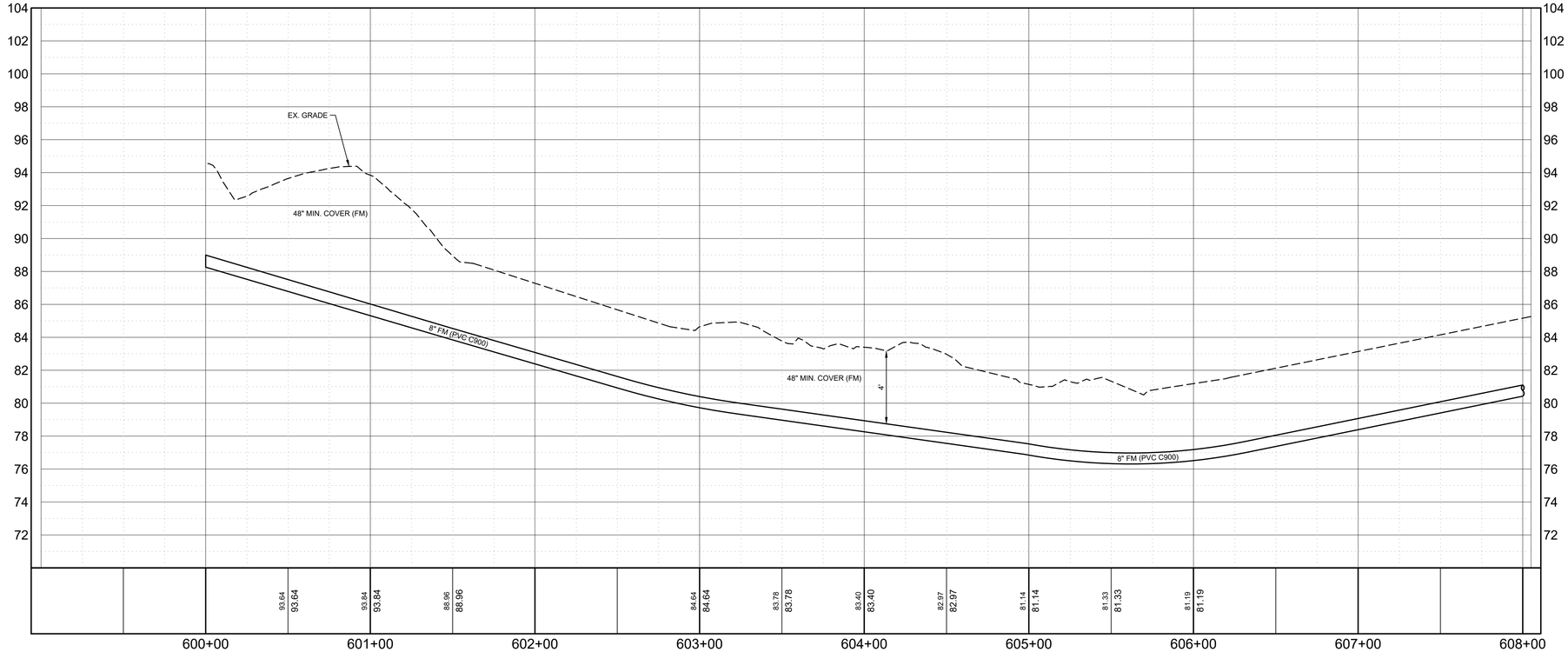
	D.S.	DOWNSPOUT

OFFSITE FORCEMAIN

HORZ. SCALE: 1" = 40'
VERT. SCALE: 1" = 4'



FORCE MAIN NOTES

1. 8" GATE VALVE
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3. 8" 45° VERT. BEND
4. 8" 45° HORZ. BEND
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PRIOR TO CONSTRUCTION CONTRACTOR TO STAKE OUT ALIGNMENT OF PROPOSED FM FOR ALL PARTIES TO REVIEW PRIOR TO CONSTRUCTION.

CONSTRUCTION SEQUENCE PLAN AND CONSTRUCTION SCHEDULE TO BE REVIEWED BY ALL PARTIES PRIOR TO CONSTRUCTION.

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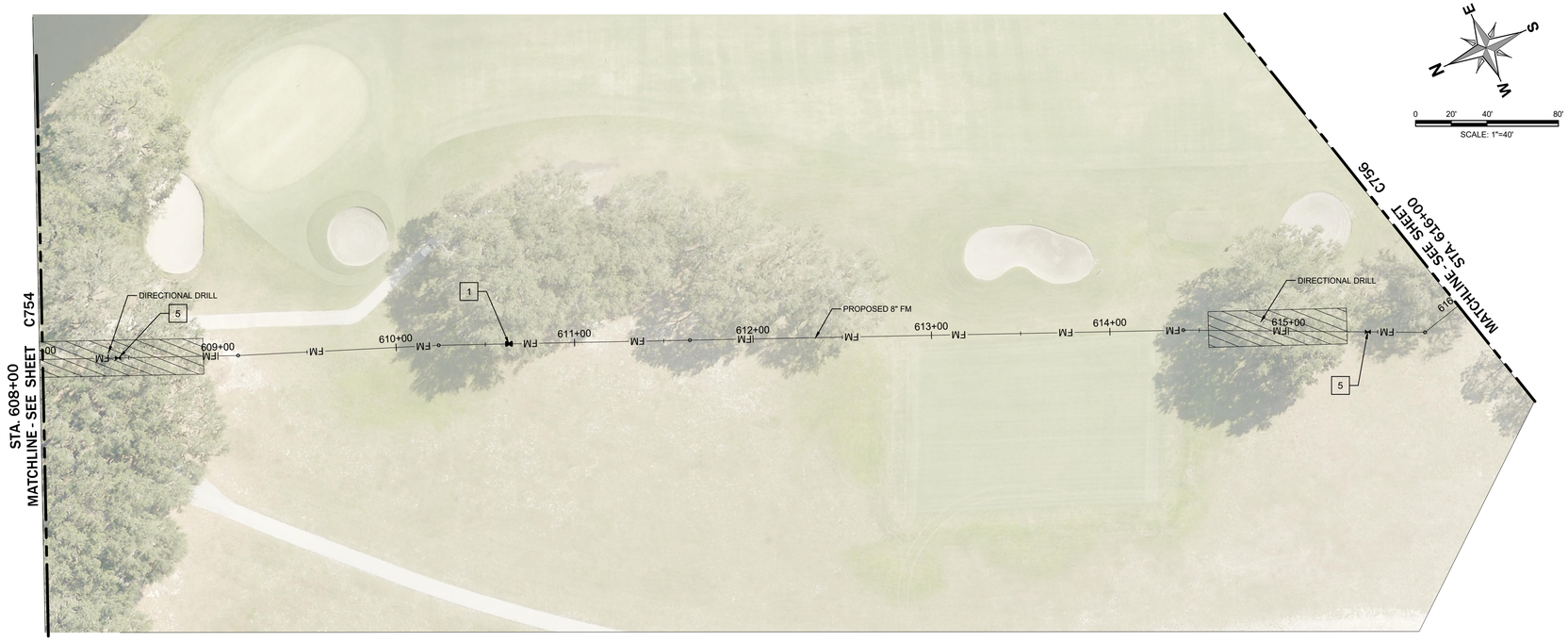
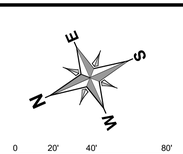
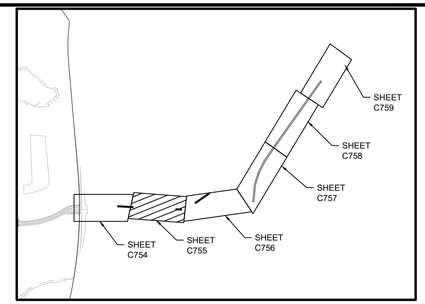






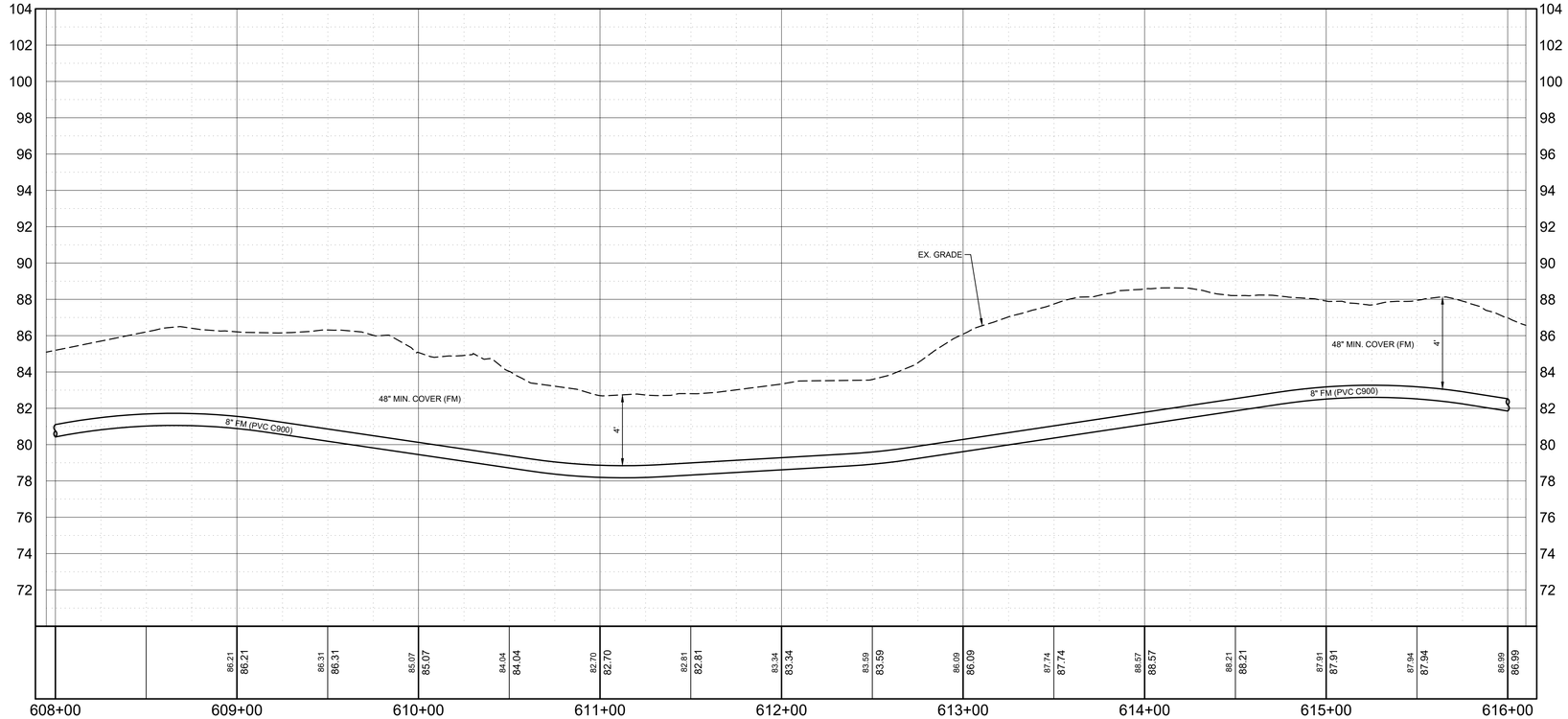
KEY MAP
NTS

LEGEND

EXISTING	PROPOSED	
		BOUNDARY
		RIGHT OF WAY (MAJOR)
		RIGHT OF WAY (MINOR)
		TRACT LINE
		LOT LINE
		LOT SETBACK
		UTILITY EASEMENT (U.E.)
		DRAINAGE EASEMENT (D.E.)
		EASEMENT (OTHER)
		CURB
		CURB AND GUTTER
		MIAMI CURB
		CONCRETE WALK
● 0.00 EX	● 0.00 OR 0.50 TC / 0.00 EP ● 0.00 TW ● 0.00 BW ● 0.00 LP ● 0.00 HP	SPOT ELEVATION
		ROAD ℄ ELEVATION
30	30	CONTOUR (MAJOR)
29	29	CONTOUR (MINOR)
		DIRECTION OF SURFACE FLOW
		NORMAL WATER LEVEL
		SEASON HIGH WATER LEVEL
		POND MAINTENANCE BERM
ST-10	ST-10	STORM STRUCTURE NUMBER
		STORM DRAINAGE MANHOLE
	OR OR	STORM DRAINAGE INLET
		CONTROL STRUCTURE
	OR	OUTFALL STRUCTURE
	OUT-1	PIPE END (OUTFALL)
B-1		SOIL BORING
R-1		SOIL BORING (ROADWAY)
P-1		SOIL BORING (POND)
	D.S.	DOWNSPOUT

OFFSITE FORCEMAIN

HORZ. SCALE: 1" = 40'
VERT. SCALE: 1" = 4'



FORCE MAIN NOTES

1. 8" GATE VALVE
2. 8" 90° BEND
3. 8" 45° VERT. BEND
4. 8" 45° HORZ. BEND
5. 8" AIR RELEASE VALVE

WATER MAIN AND RE-USE WATER LINES SHALL BE BURIED WITH A MINIMUM 36" GROUND COVER.

ENGINEER OF RECORD MUST INSPECT ALL WATER MAIN AND SEWER LINE CONFLICTS PRIOR TO BACKFILLING. CONTRACTOR TO PROVIDE ENGINEER 24 HOUR ADVANCE NOTICE TO SCHEDULE INSPECTION.

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CONSTRUCTION SEQUENCE PLAN AND CONSTRUCTION SCHEDULE TO BE REVIEWED BY ALL PARTIES PRIOR TO CONSTRUCTION.

MADDEN
MOORHEAD & STOKES, LLC
CIVIL ENGINEERS
431 E. Horatio Avenue
Suite 260
Maitland, Florida 32751
(407) 629-8330
CA# 0007723

OFFSITE UTILITY PLAN & PROFILES
FOR
LAKE HILLS MAIN BLVD. & MASS GRADING
HOWEY-IN-THE-HILLS FLORIDA

READER & PARTNERS, LLC
5850 T.G. LEE BOULEVARD, SUITE 200
ORLANDO, FL 32822
(407) 856-4899

#	DATE	REVISIONS
1		
2		
3		
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11		

DAVID ASHLEY STOKES LICENSE NO. 66527 STATE OF FLORIDA PROFESSIONAL ENGINEER

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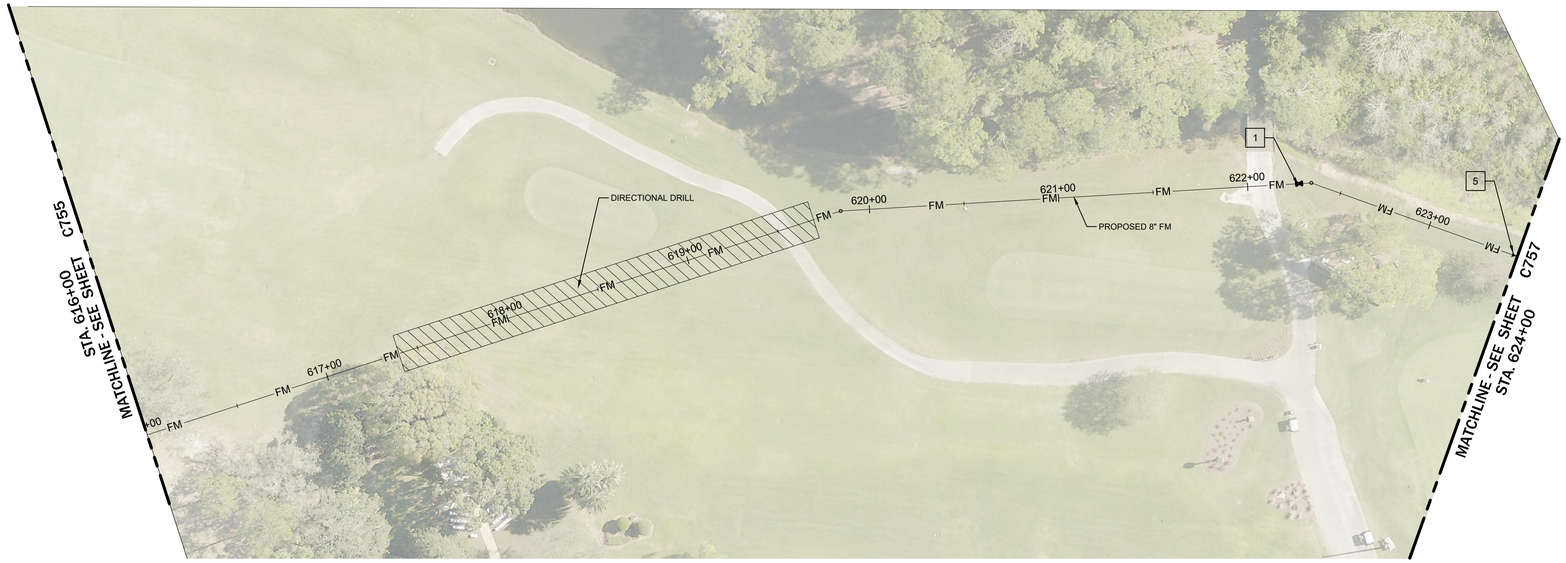
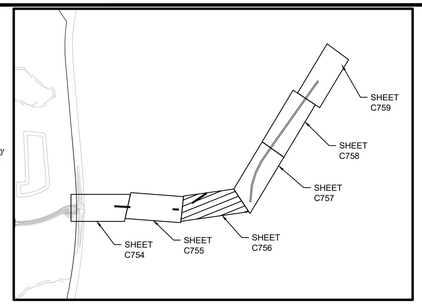
ENGINEER OF RECORD
November 7, 2024

JOB # 23019
DATE: 11/7/24
DATUM: NAVD 88
DESIGNED BY: KAC
DRAWN BY: JSK
APPROVED BY: DAS

C755





KEY MAP
NTS

LEGEND

EXISTING	PROPOSED	
		BOUNDARY
		RIGHT OF WAY (MAJOR)
		RIGHT OF WAY (MINOR)
		TRACT LINE
		LOT LINE
		LOT SETBACK
		UTILITY EASEMENT (U.E.)
		DRAINAGE EASEMENT (D.E.)
		EASEMENT (OTHER)
		CURB
		CURB AND GUTTER
		MIAMI CURB
		CONCRETE WALK
×0.00 EX.	• 0.00 OR 0.50 TC 0.00 EP OR • 0.00 TW • 0.00 BW	SPOT ELEVATION
	• 0.00 LP • 0.00 HP	ROAD ℄ ELEVATION
30	30	CONTOUR (MAJOR)
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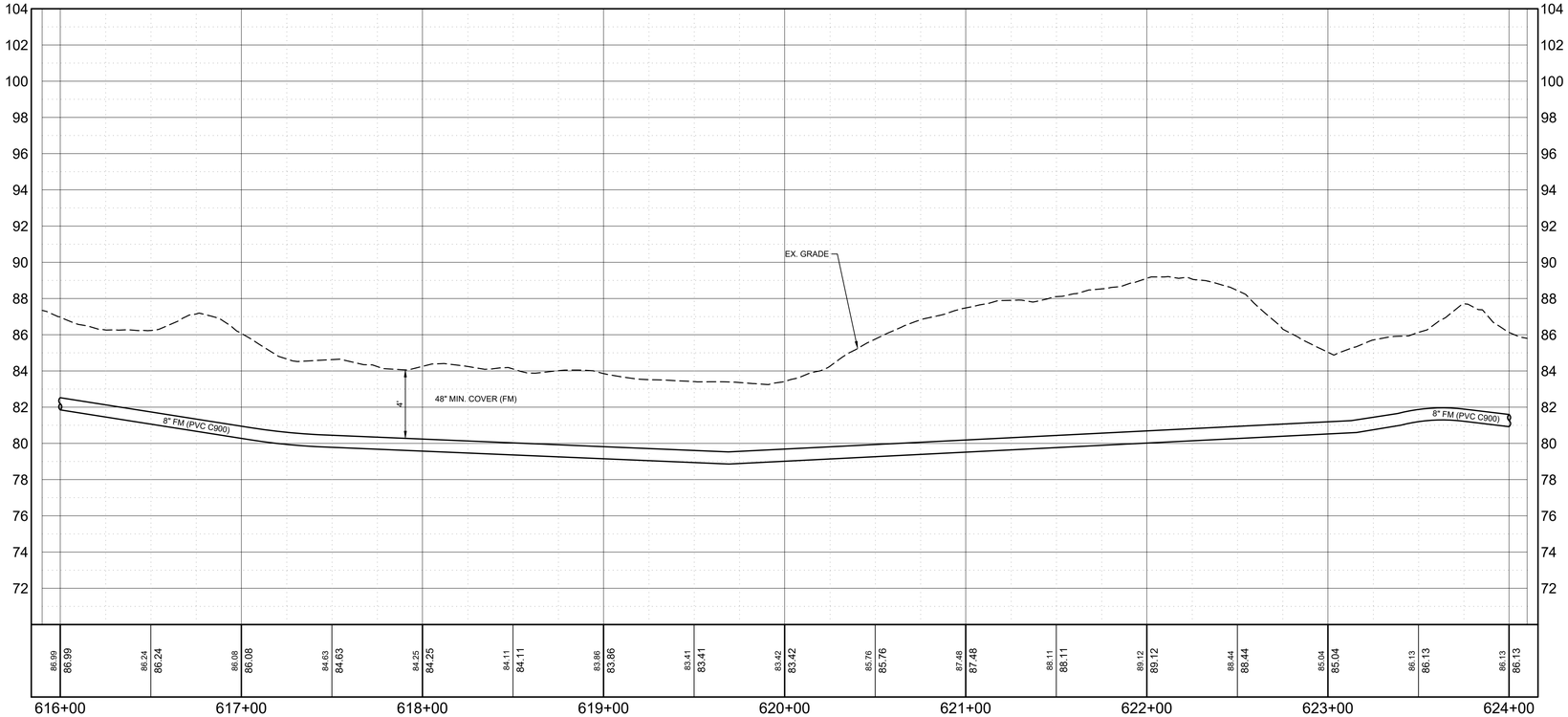
	OUT-1	PIPE END (OUTFALL)
B-1		SOIL BORING
R-1		SOIL BORING (ROADWAY)
P-1		SOIL BORING (POND)
	D.S.	DOWNSPOUT

OFFSITE FORCEMAIN

HORZ. SCALE: 1" = 40'
VERT. SCALE: 1" = 4'



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CA# 0007723

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HOWEY-IN-THE-HILLS FLORIDA

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5850 T.G. LEE BOULEVARD, SUITE 200
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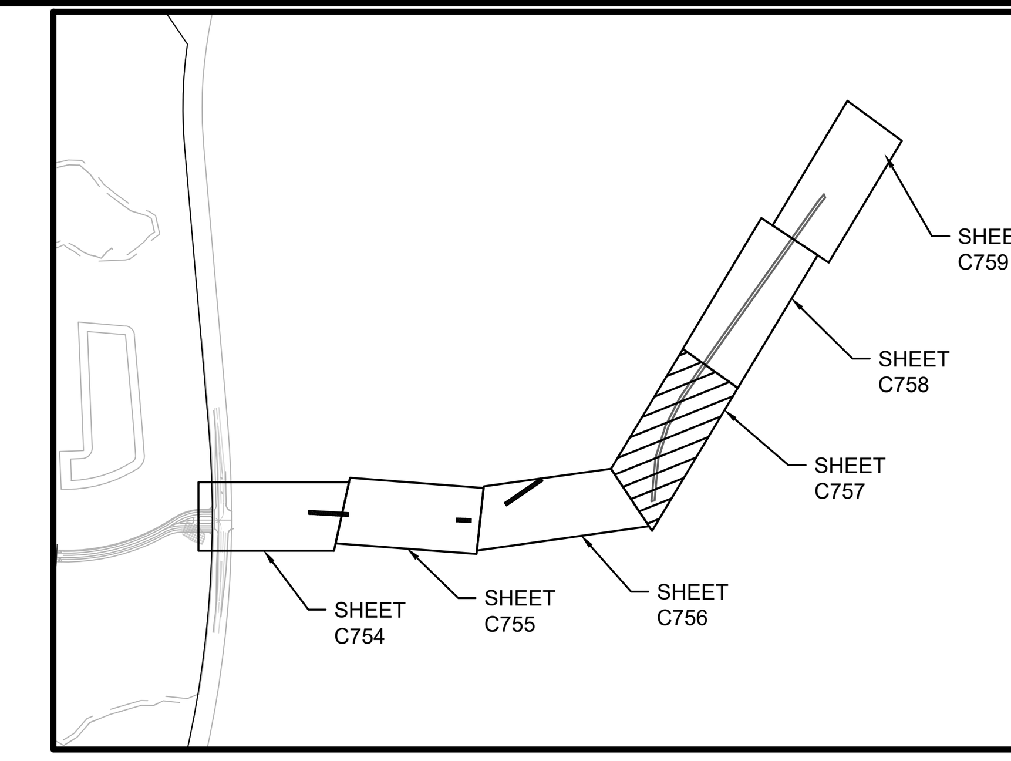
ENGINEER OF RECORD
November 7, 2024

JOB # 23019
DATE: 11/7/24
DATUM: NAVD 88
DESIGNED BY: KAC
DRAWN BY: JSK
APPROVED BY: DAS

C756



KEY MAP

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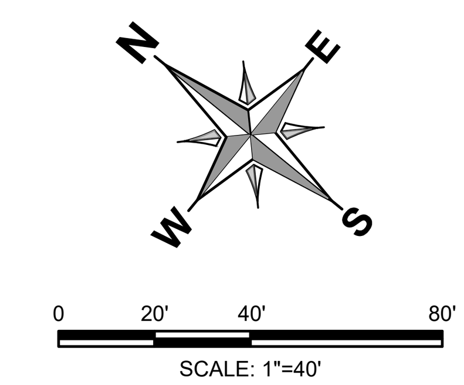

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		BOUNDARY
		RIGHT OF WAY (MAJOR)
		RIGHT OF WAY (MINOR)
		TRACT LINE
		LOT LINE
		LOT SETBACK
		UTILITY EASEMENT (U.E.)
		DRAINAGE EASEMENT (D.E.)
		EASEMENT (OTHER)
		CURB
		CURB AND GUTTER
		MIAMI CURB
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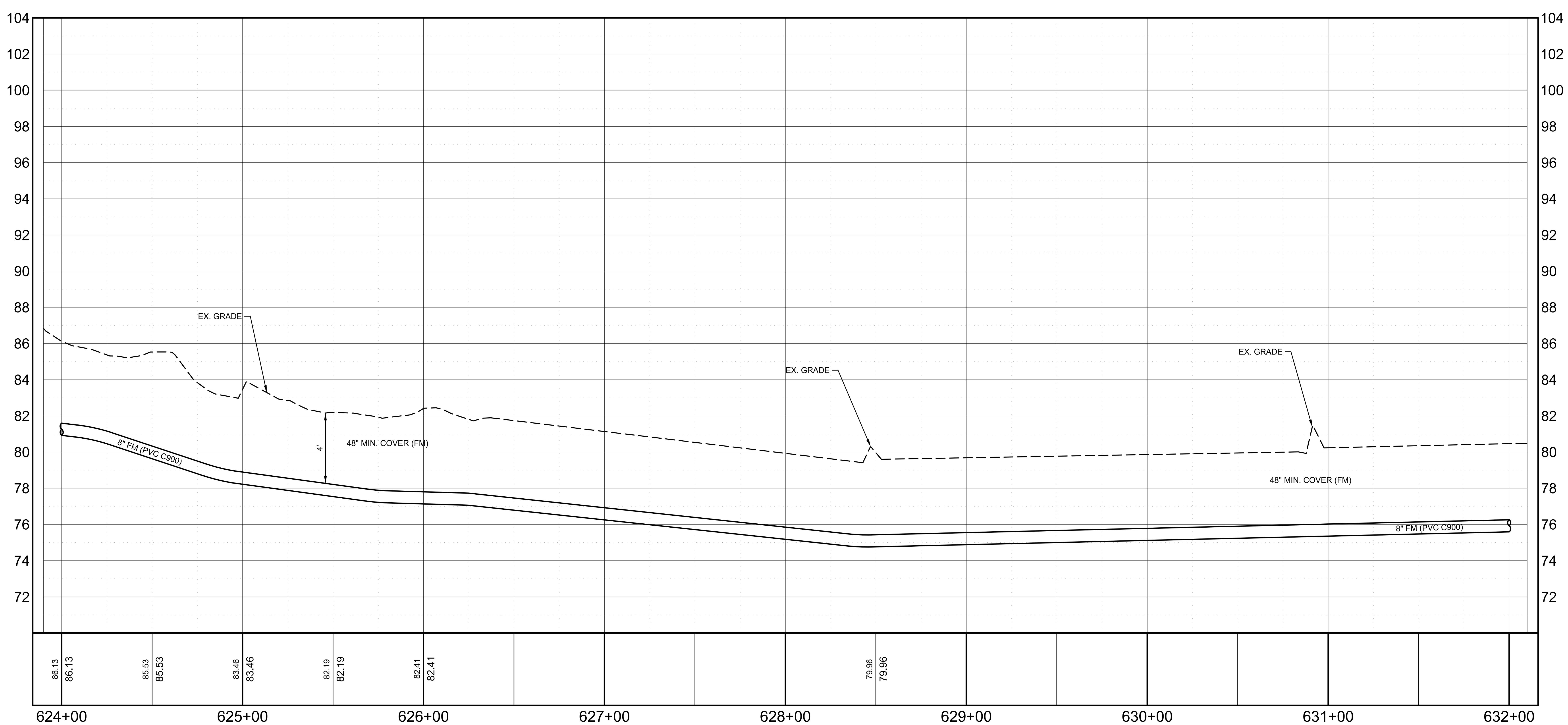
	D.S.	DOWNSPOUT

OFFSITE FORCEMAIN

HORZ. SCALE: 1" = 40'
VERT. SCALE: 1" = 4'



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HOWEY-IN-THE-HILLS FLORIDA

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(407) 856-4899

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DAVID ASHLEY STOKES
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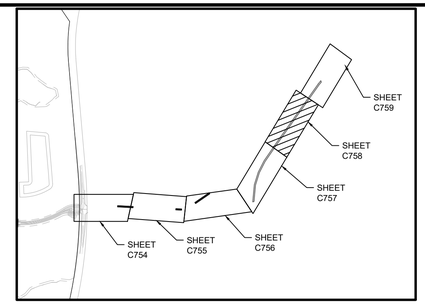
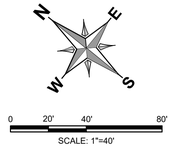
ENGINEER OF RECORD
November 7, 2024

JOB #	23019
DATE:	11/7/24
DATUM:	NAVD 88
DESIGNED BY:	KAC
DRAWN BY:	JSK
APPROVED BY:	DAS

C757



KEY MAP
NTS



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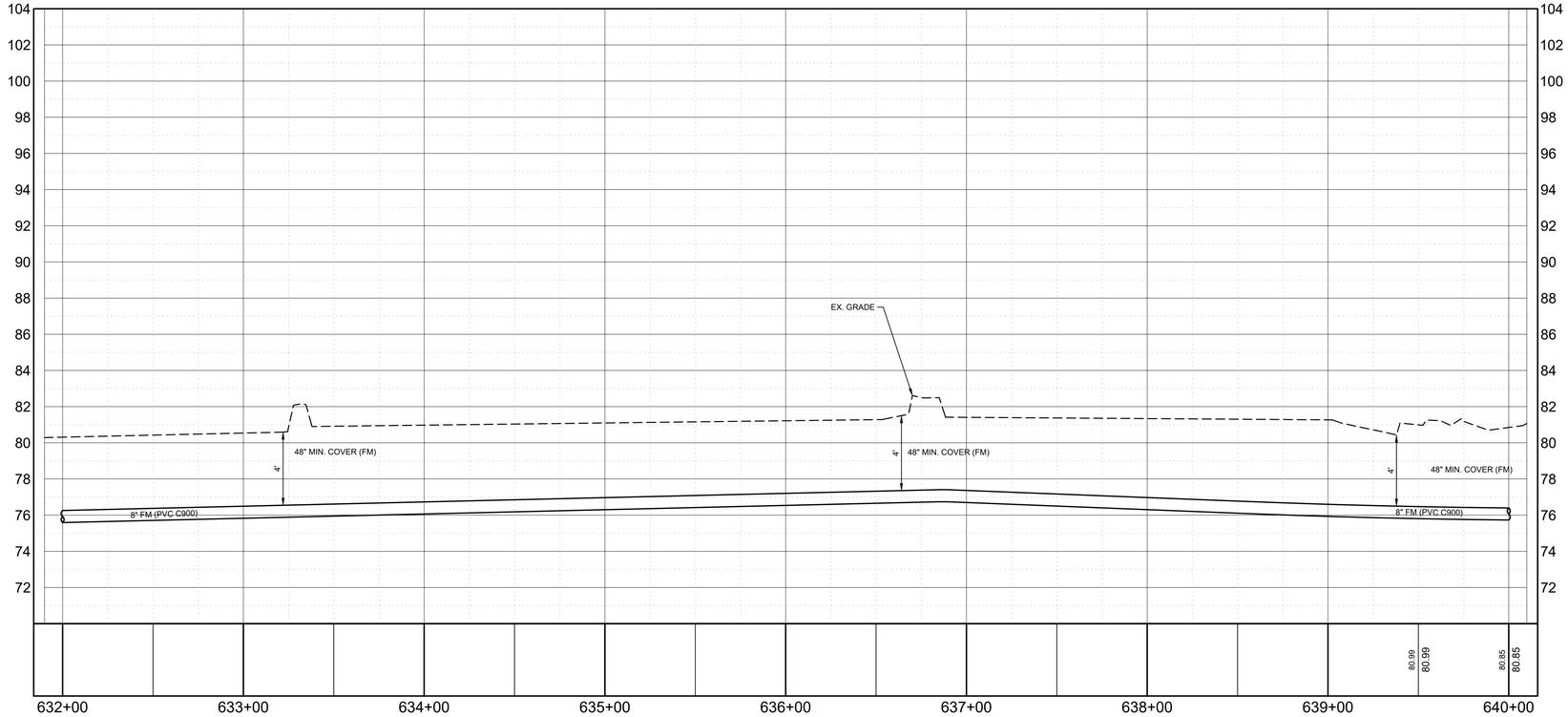

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OFFSITE UTILITY PLAN & PROFILES
FOR
LAKE HILLS MAIN BLVD. & MASS GRADING
FLORIDA
HOWEY-IN-THE-HILLS

READER & PARTNERS, LLC
5850 T.G. LEE BOULEVARD, SUITE 200
ORLANDO, FL 32822
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APPROVED BY: DAS

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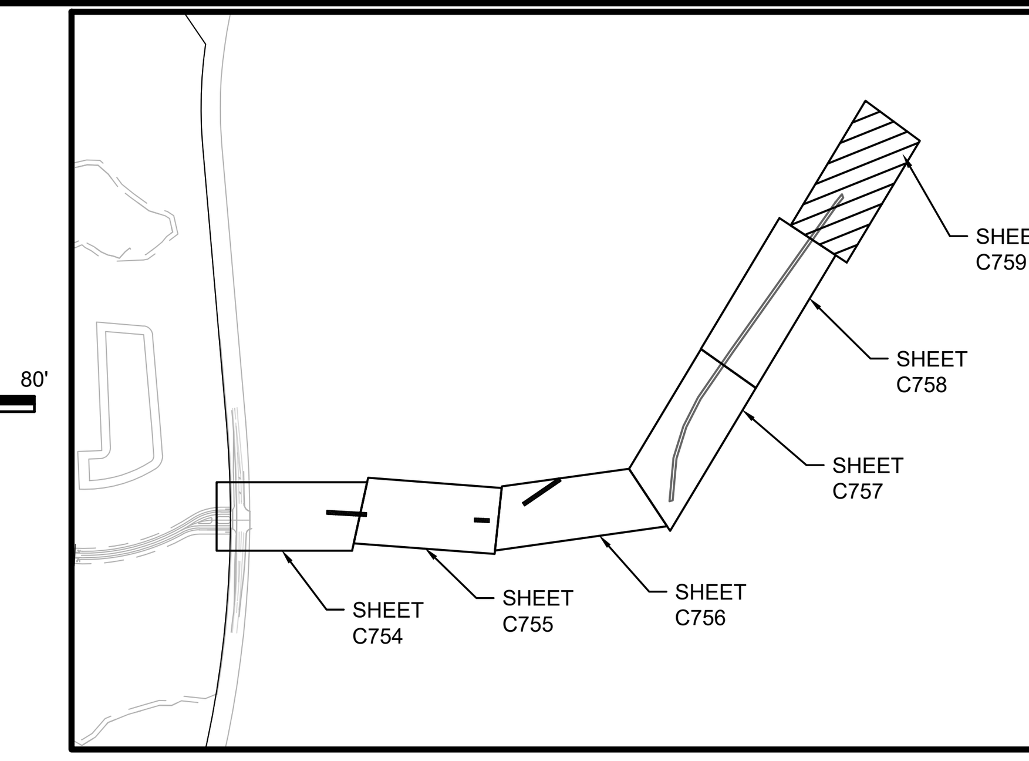

KEY MAP

NTS

LEGEND

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OFFSITE FORCEMAIN

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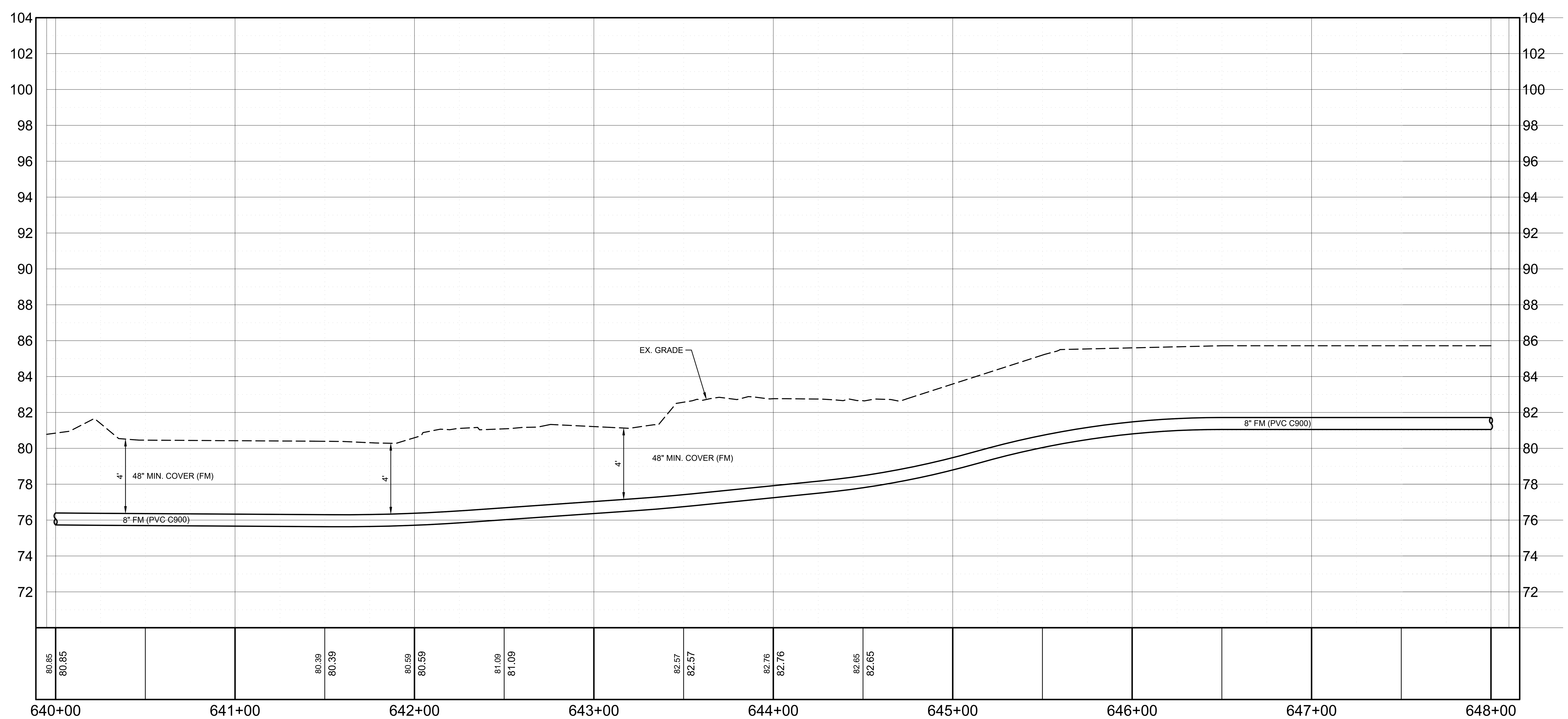

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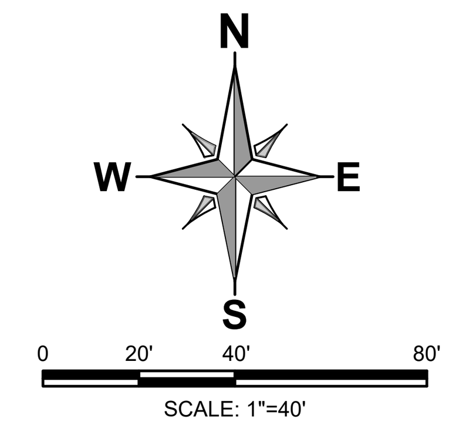
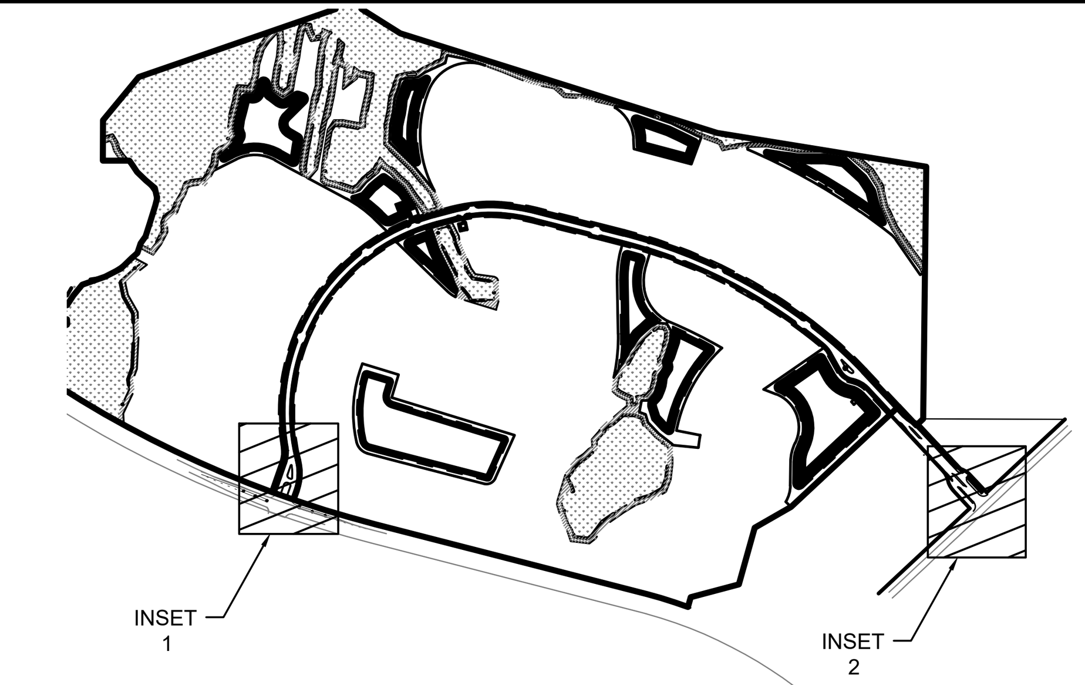
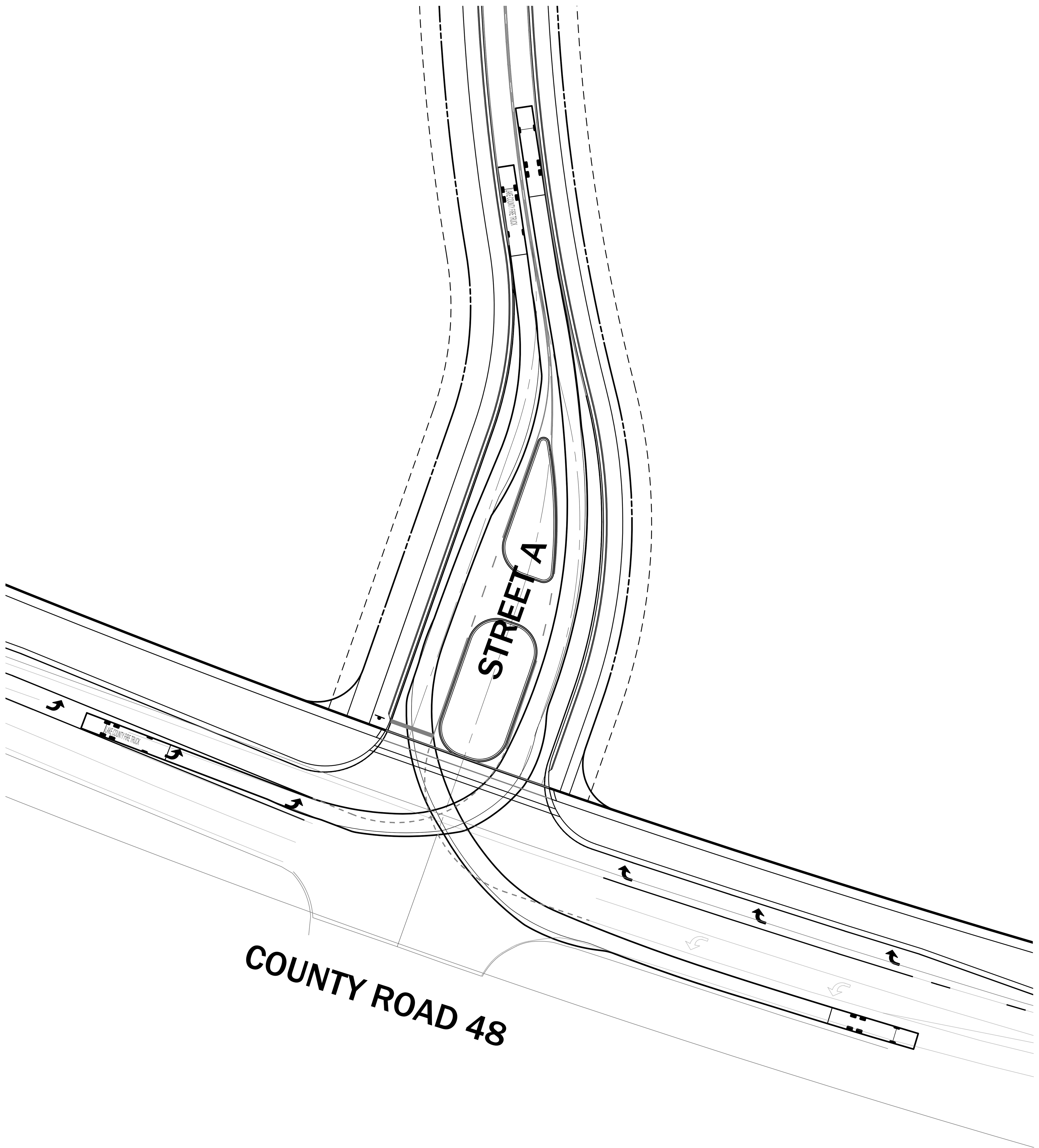
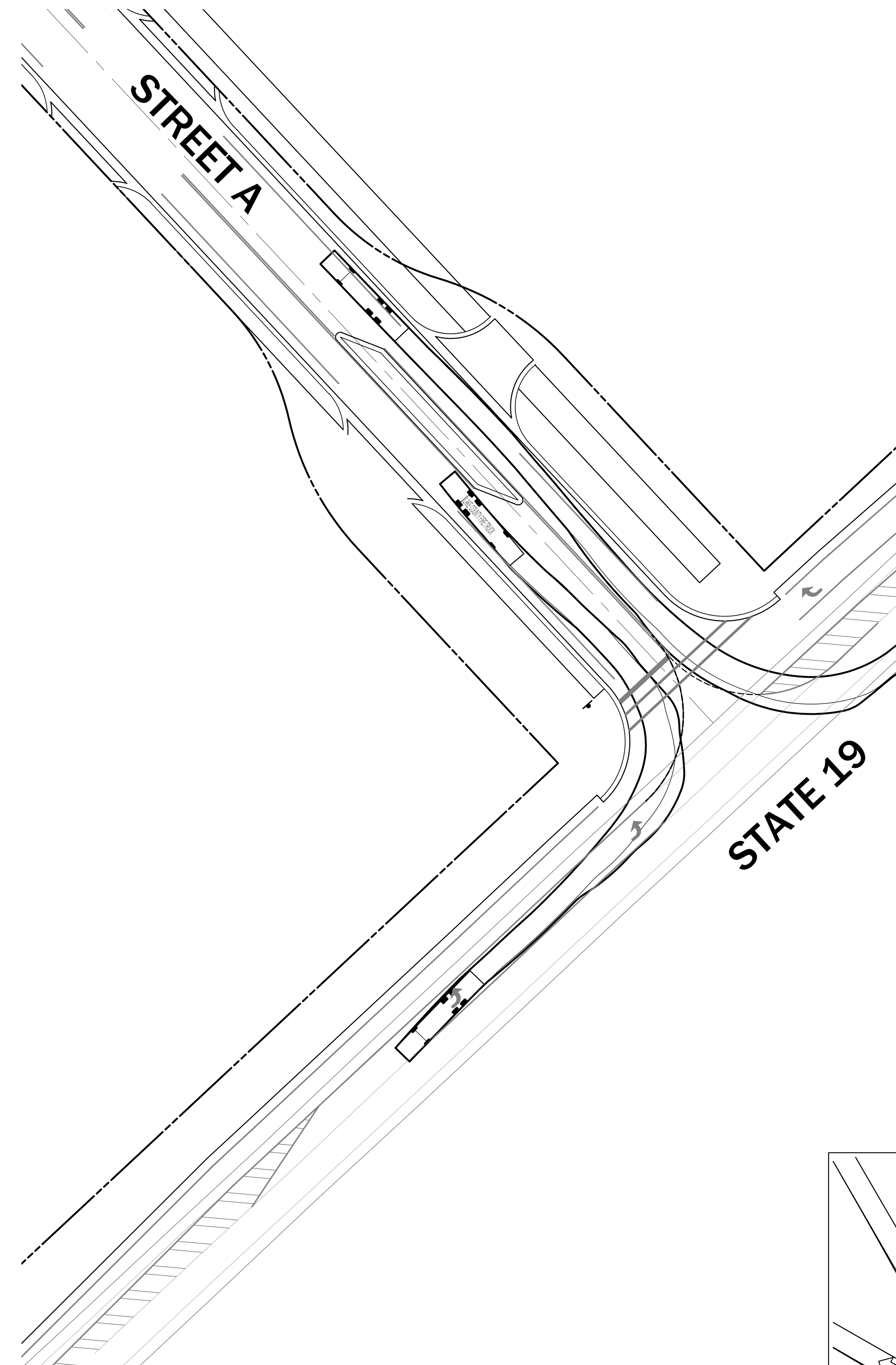




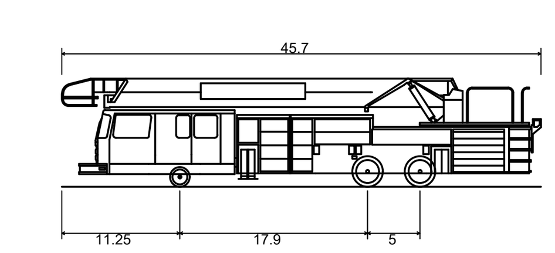
KEY MAP
NTS



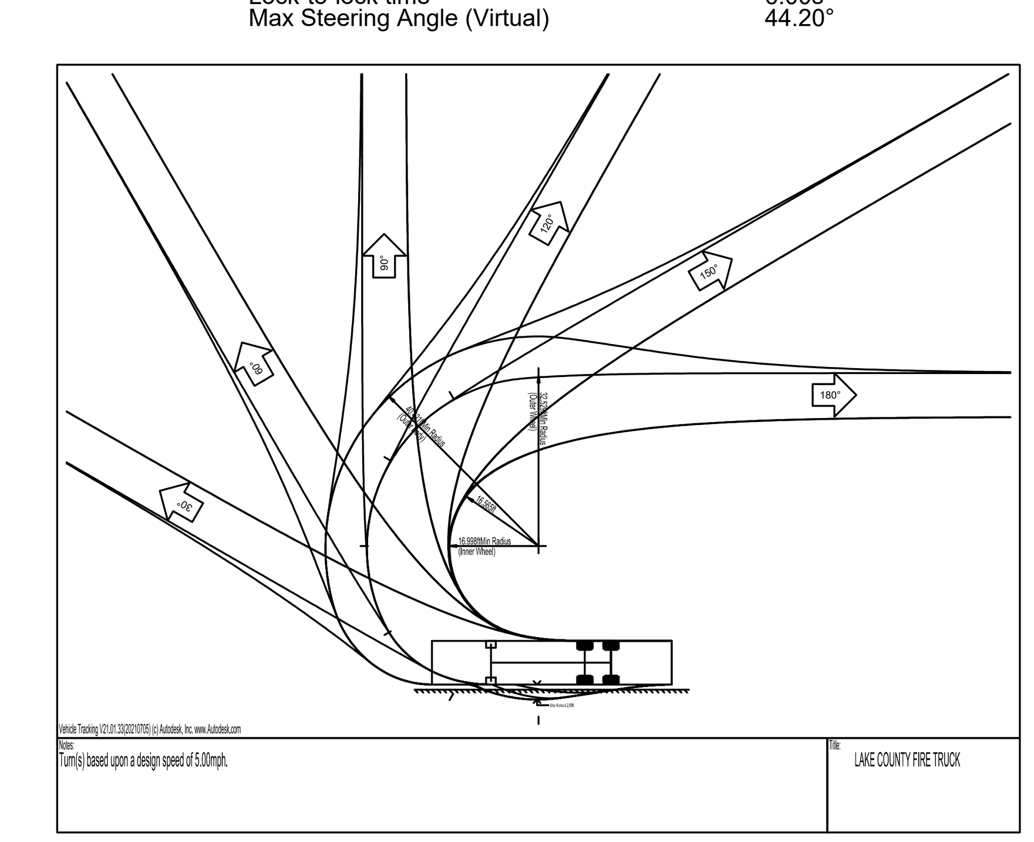
INSET 1



INSET 2



LAKE COUNTY FIRE TRUCK	
Overall Length	45.700ft
Overall Width	8.330ft
Overall Body Height	10.316ft
Min Body Ground Clearance	0.746ft
Track Width	8.330ft
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	44.20°



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VEHICULAR CIRCULATION PLAN
FOR
LAKE HILLS MAIN BLVD. & MASS GRADING
HOWEY-IN-THE-HILLS FLORIDA

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5850 TG LEE BOULEVARD, SUITE 200
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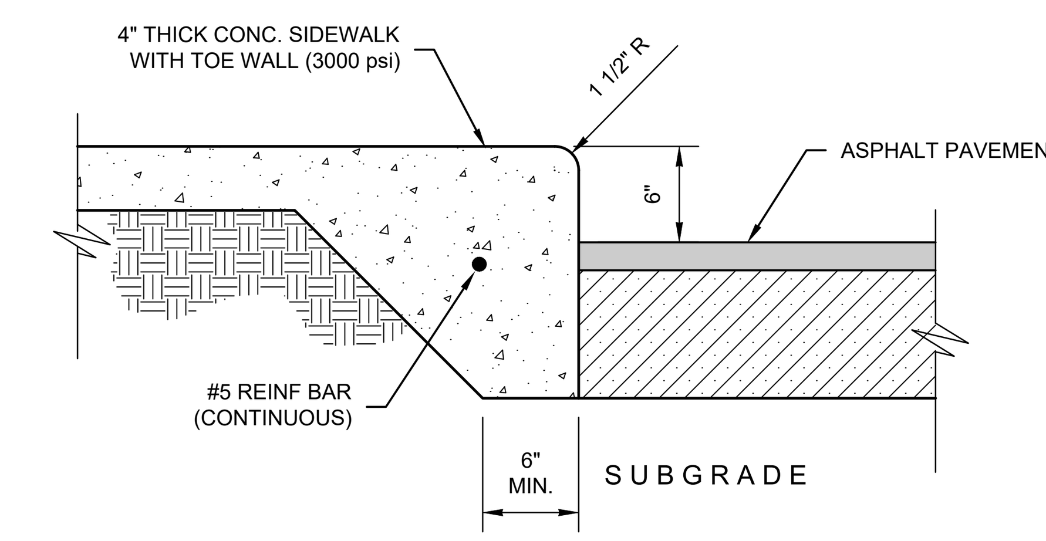
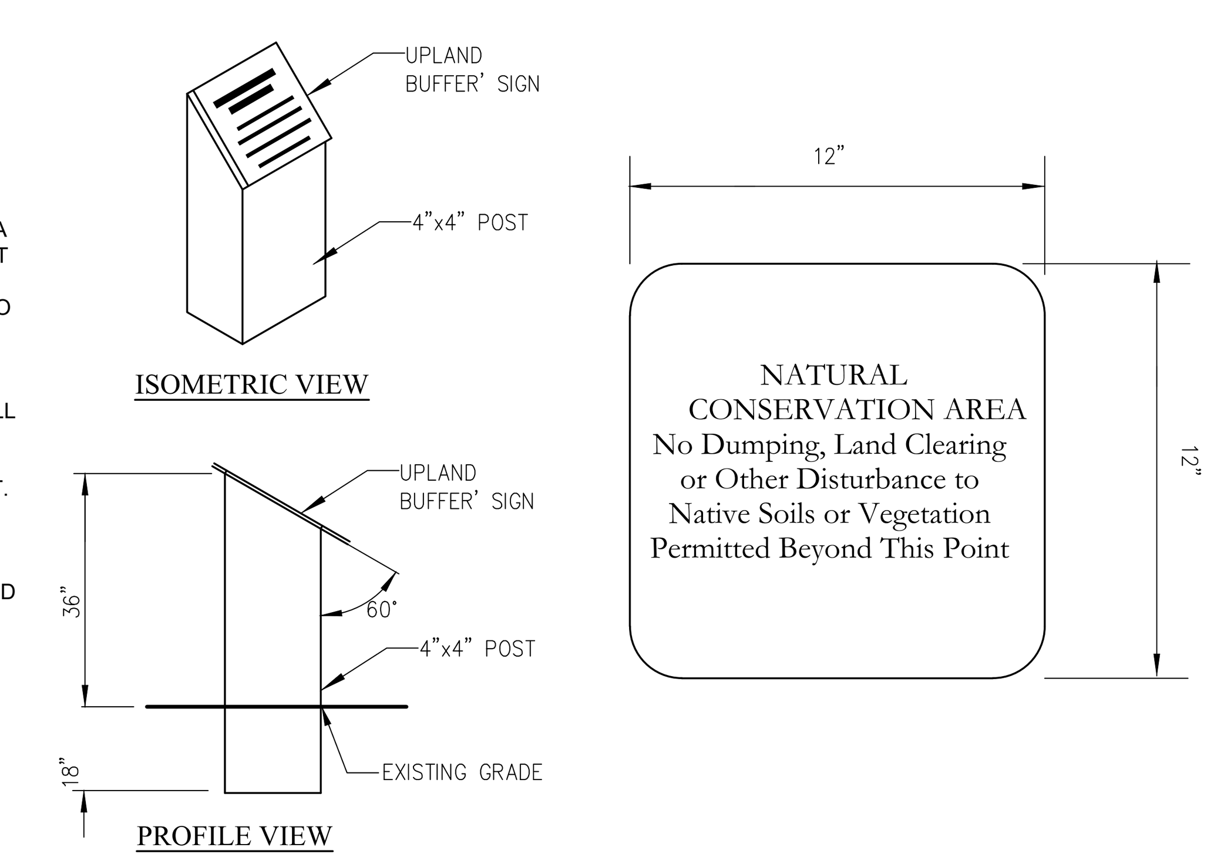


THICKENED EDGE SIDEWALK DETAIL

NTS

NOTE: PRIOR TO THE START OF LAND DISTURBING ACTIVITIES, WHICH INCLUDES DEMOLITION, EARTHWORK AND/OR CONSTRUCTION, THE DEVELOPER/CONTRACTOR SHALL PREPARE A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) AND SUBMIT TO THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP) A NOTICE OF INTENT (NOI) TO OBTAIN COVERAGE UNDER THE NPDES GENERIC PERMIT FOR STORMWATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES (CGP) PURSUANT TO THE REQUIREMENTS OF 62-621.300(4)(A) F.A.C. A COPY OF THE NOI SHALL BE SUBMITTED TO THE OPERATOR(S) OF THE MS4. COPIES OF THE SWPPP, NOI, AND FDEP ACKNOWLEDGEMENT LETTER ARE TO BE KEPT ON THE PROJECT SITE AND MADE AVAILABLE UPON REQUEST. UPON COMPLETION OF ALL LAND DISTURBING ACTIVITIES AND AFTER FINAL STABILIZATION OF THE SITE IS COMPLETE, THE DEVELOPER/CONTRACTOR SHALL SUBMIT TO FDEP A NOTICE OF TERMINATION (NOT) TO END THEIR COVERAGE UNDER THE CGP AND PROVIDE A COPY OF THE NOT TO THE OPERATOR(S) OF THE MS4.



420 / – TYPICAL CONSERVATION SIGN

N.T.S.

MADDEN
MOORHEAD & STOKES, LLC
CIVIL ENGINEERS
431 E. Horatio Avenue
Suite 260
Maitland, Florida 32751
(407) 629-8330
CA# 0007723

CONSTRUCTION DETAILS
FOR
LAKE HILLS MAIN BLVD. & MASS GRADING
HOWEY-IN-THE-HILLS FLORIDA

READER & PARTNERS, LLC
5850 TG LEE BOULEVARD SUITE 200
ORLANDO, FL 32822
(407) 856-4899

	DATE	REVISIONS
1		
2		
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DAVID ASHLEY STOKES LICENSE NO. 66527 STATE OF FLORIDA PROFESSIONAL ENGINEER

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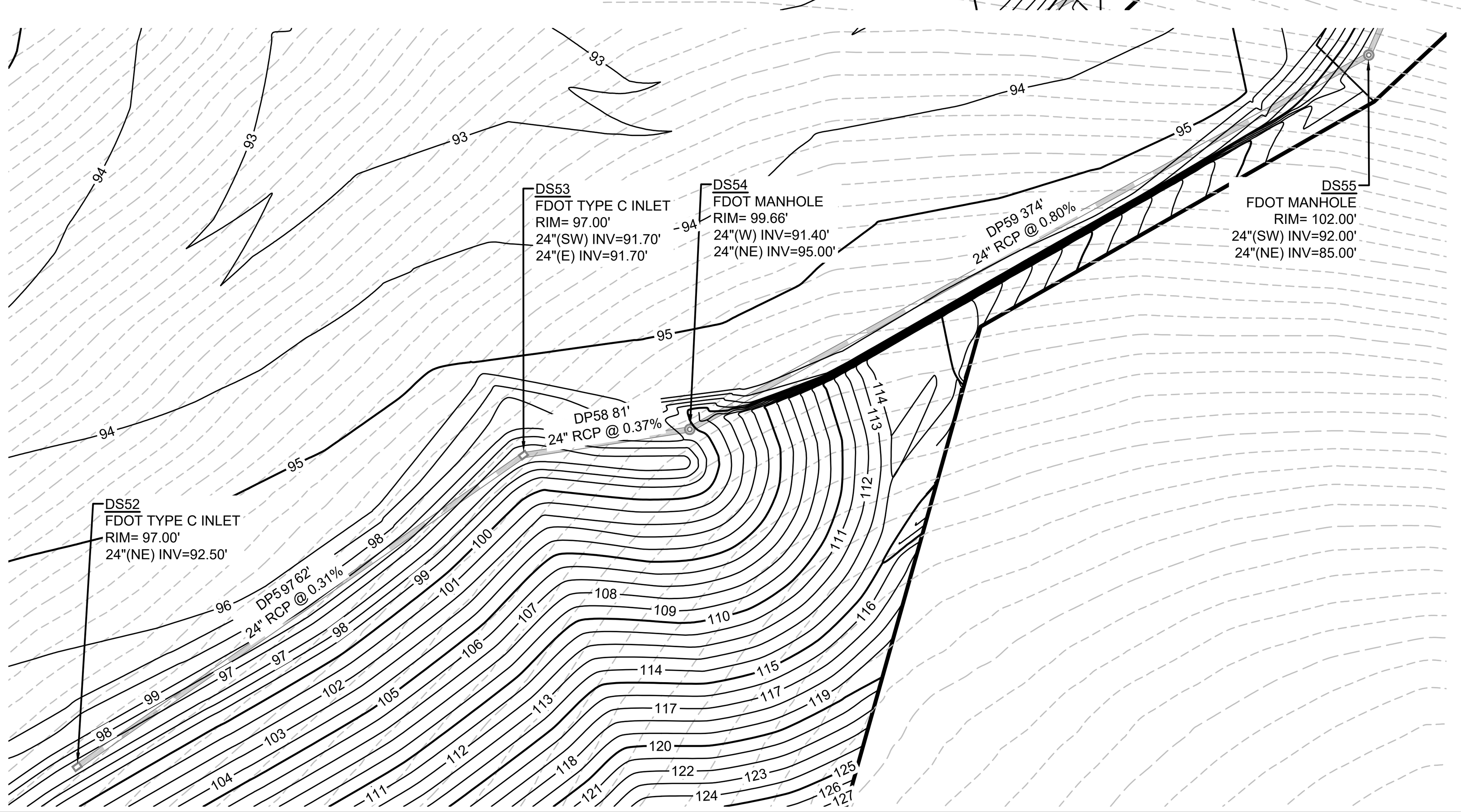
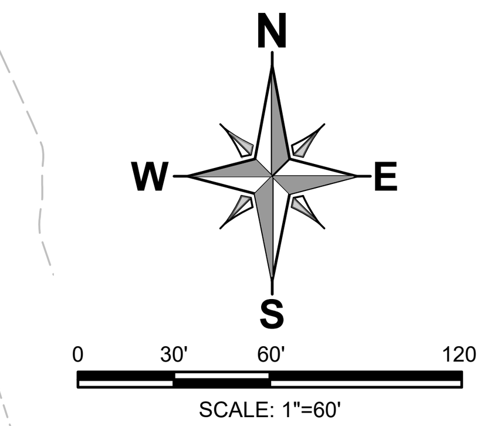
ENGINEER OF RECORD
November 7, 2024

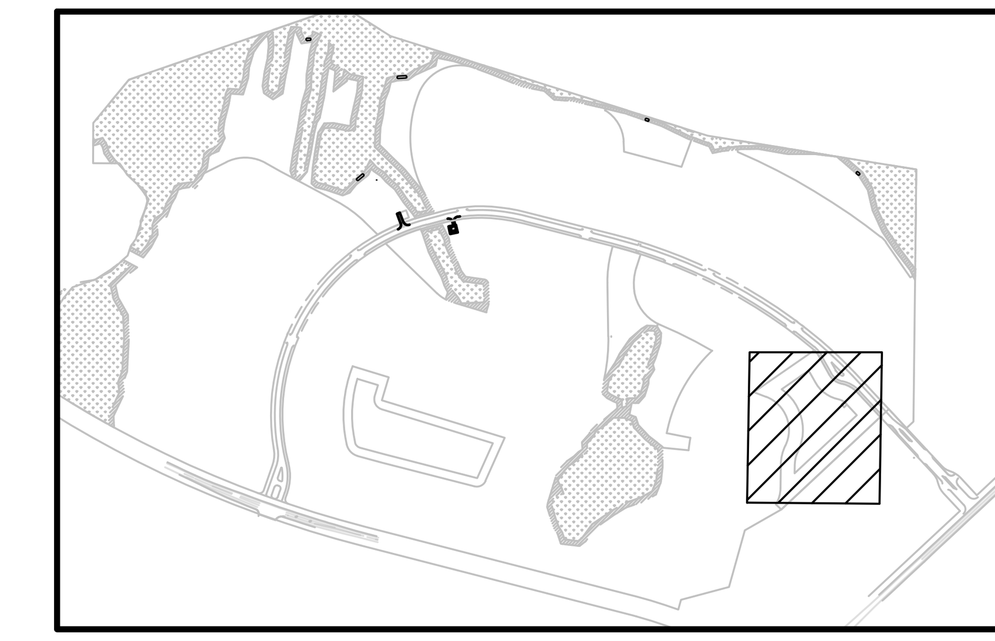
JOB #: 23019
DATE: 11/7/24
DATUM: NAVD 88
DESIGNED BY: KAC
DRAWN BY: JSK
APPROVED BY: DAS

C900



POND P1
SCALE: 1" = 60'





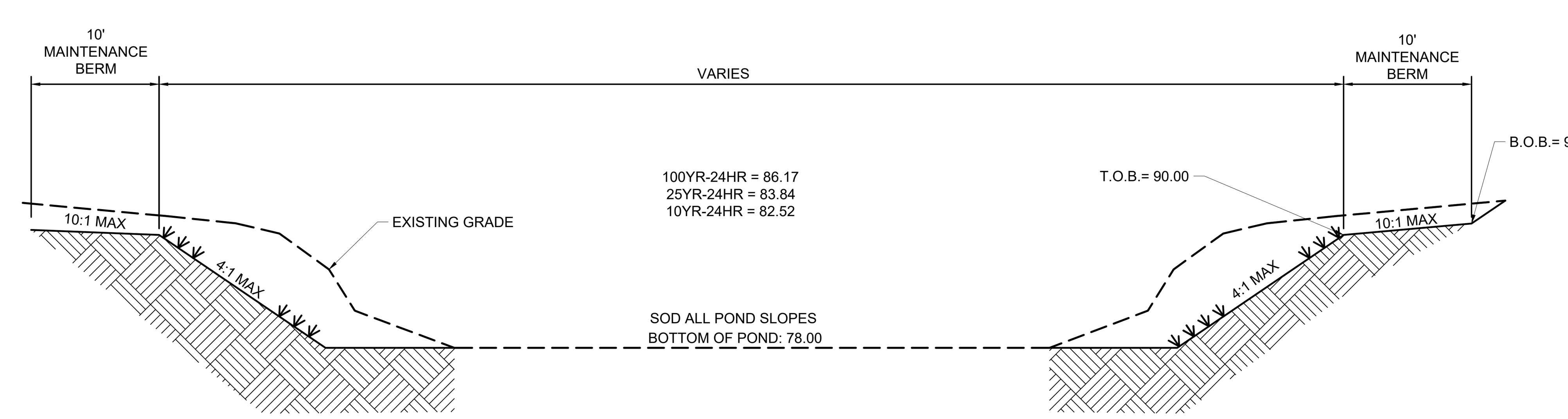
KEY MAP
NTS

LEGEND

EXISTING	PROPOSED	
		BOUNDARY
		DRAINAGE EASEMENT (D.E.)
		TOP OF BANK
		TOE OF SLOPE
30	30	CONTOUR (MAJOR)
29	29	CONTOUR (MINOR)
		DIRECTION OF SURFACE FLOW
		FEMA FLOODPLAIN ZONE
		NORMAL WATER LEVEL
		SEASON HIGH WATER LEVEL
		POND MAINTENANCE BERM
ST-10	ST-10	STORM STRUCTURE NUMBER
		STORM DRAINAGE MANHOLE
	OR OR	STORM DRAINAGE INLET
		CONTROL STRUCTURE
	OR	OUTFALL STRUCTURE
	OUT-1	PIPE END (OUTFALL)

NOTES:

1. HYDRAULICALLY RESTRICTIVE CLAYEY SANDS, DENSE/ VERY DENSE SOIL, & MUCK/ ORGANICS NEED TO BE EXCAVATED FROM POND FOOTPRINT AND REPLACED WITH CLEAN SAND.



POND P1

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CA# 0007723

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HOWEY-IN-THE-HILLS FLORIDA

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5850 TG LEE BOULEVARD SUITE 200
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NO.	DATE	REVISIONS
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DAVID ASHLEY STOKES
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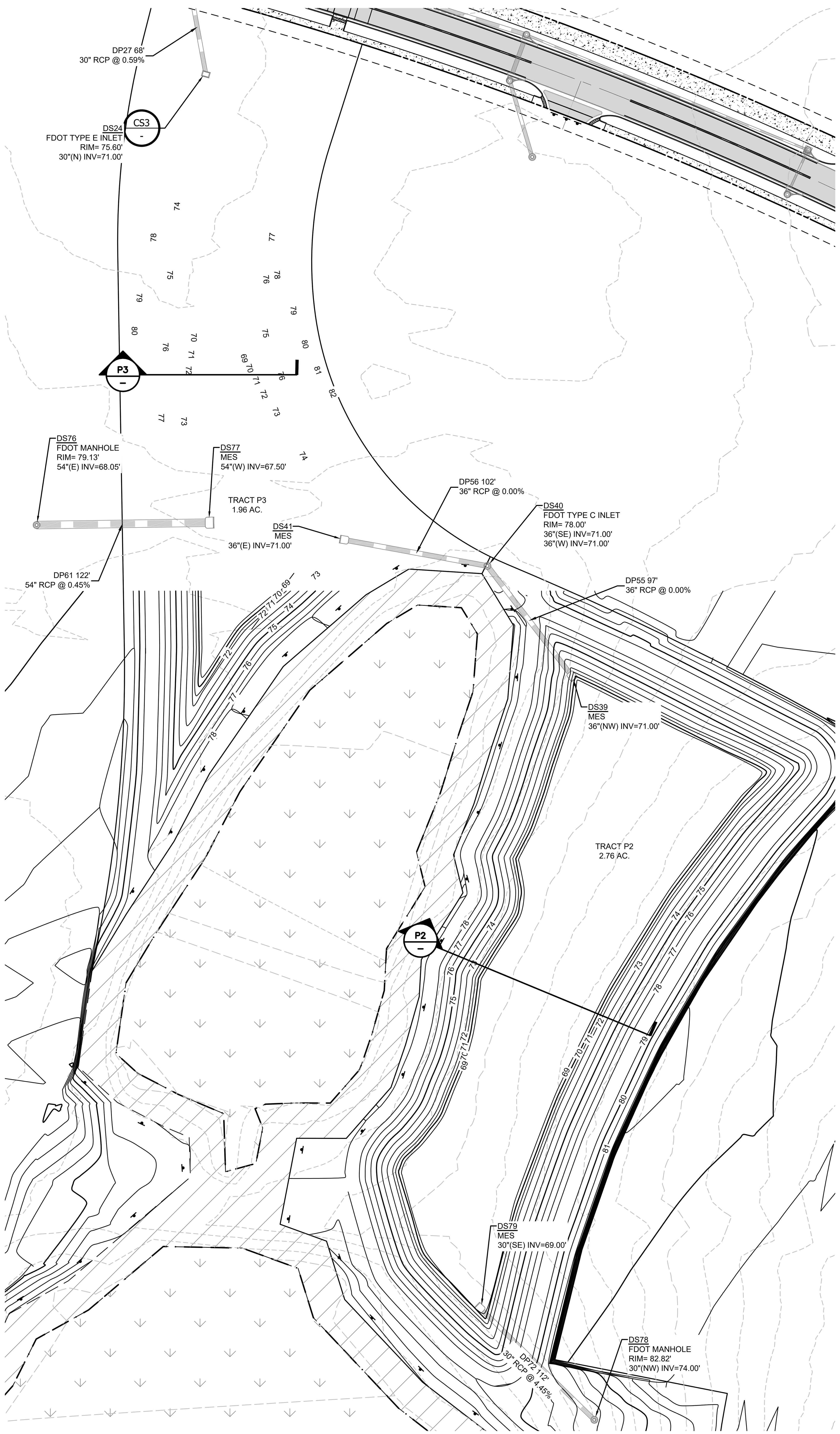
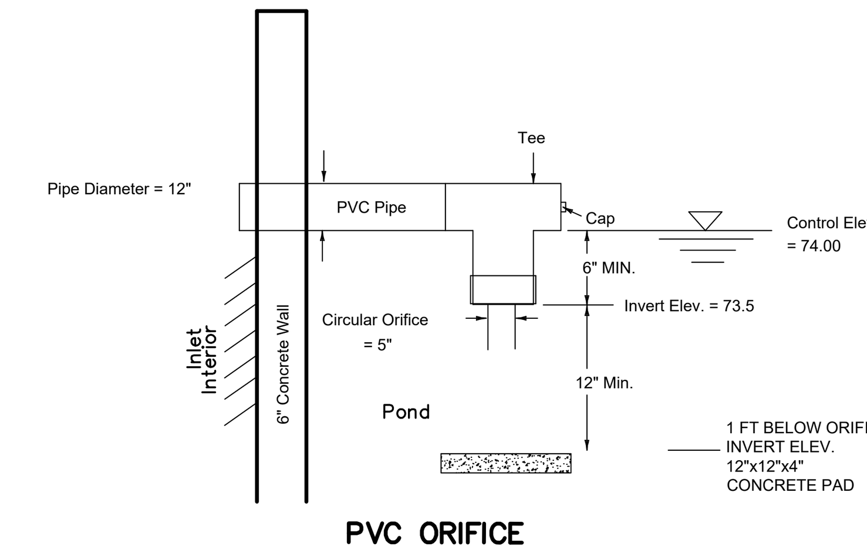
ENGINEER OF RECORD
November 7, 2024

JOB #:	23019
DATE:	11/7/24
DATUM:	NAVD 88
DESIGNED BY:	KAC
DRAWN BY:	JSK
APPROVED BY:	DAS

C901



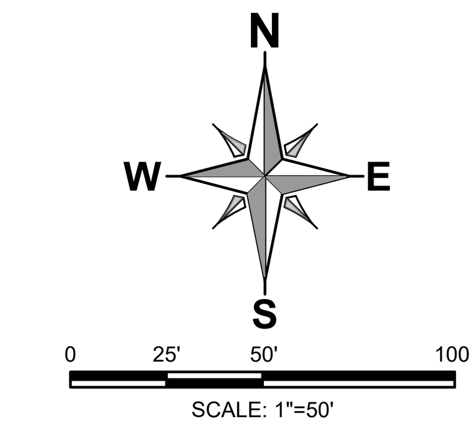
POND P2 & P3
SCALE: 1" = 50'

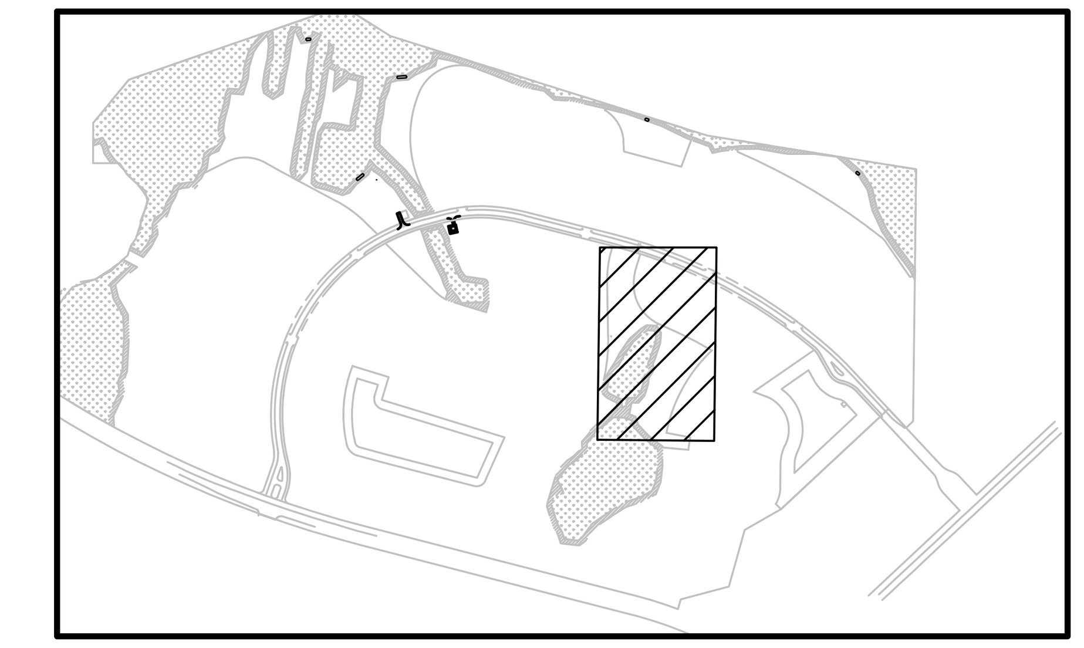


PVC ORIFICE

Hole faces down by using elbow to prevent hole blockage. Control Elevation of pipe to be placed at Average Seasonal High Ground Water Elevation (Avg.S.H.G.W.). See pond details.

PVC – ORIFICE DETAIL

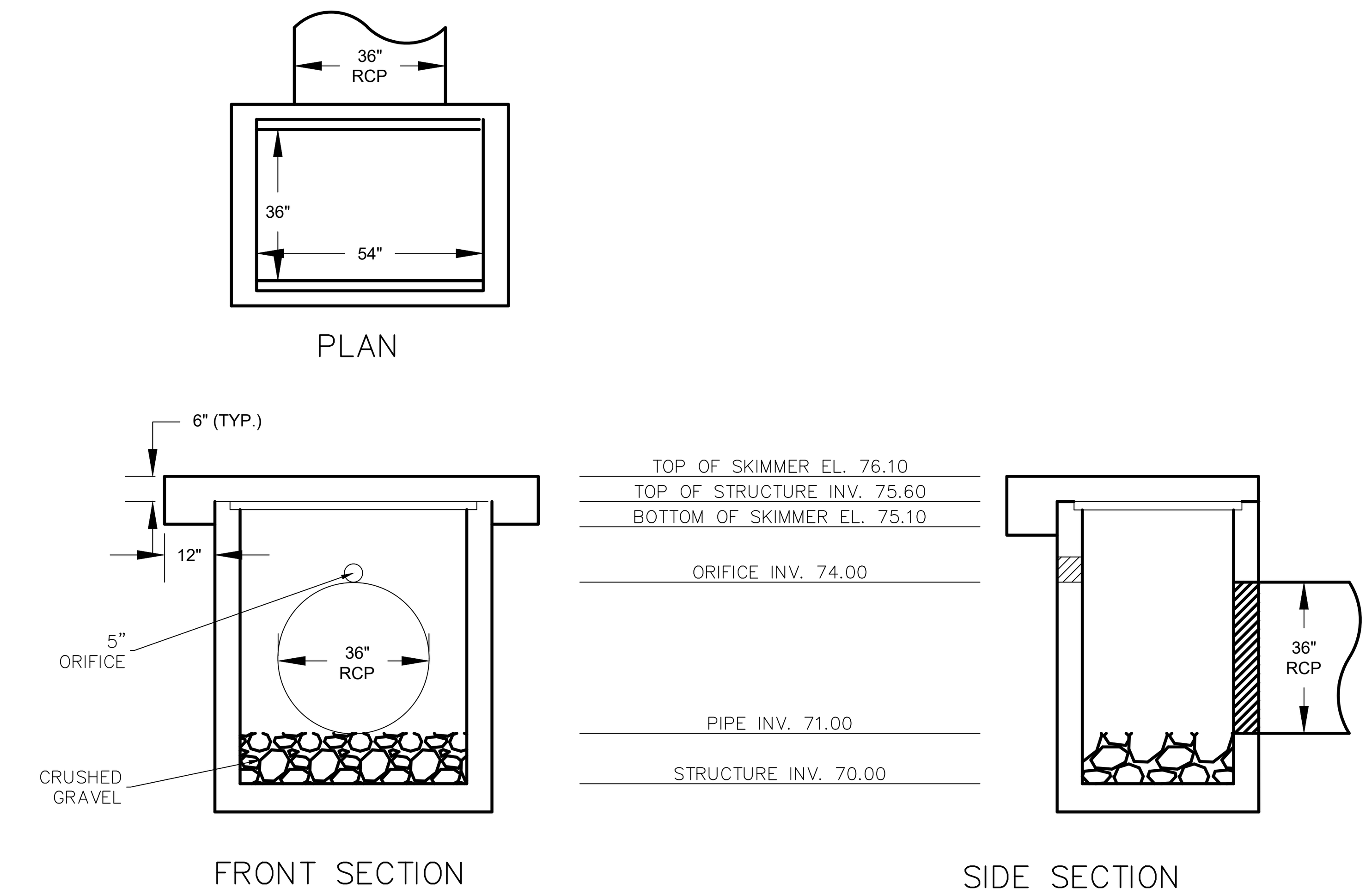




KEY MAP
NTS

LEGEND

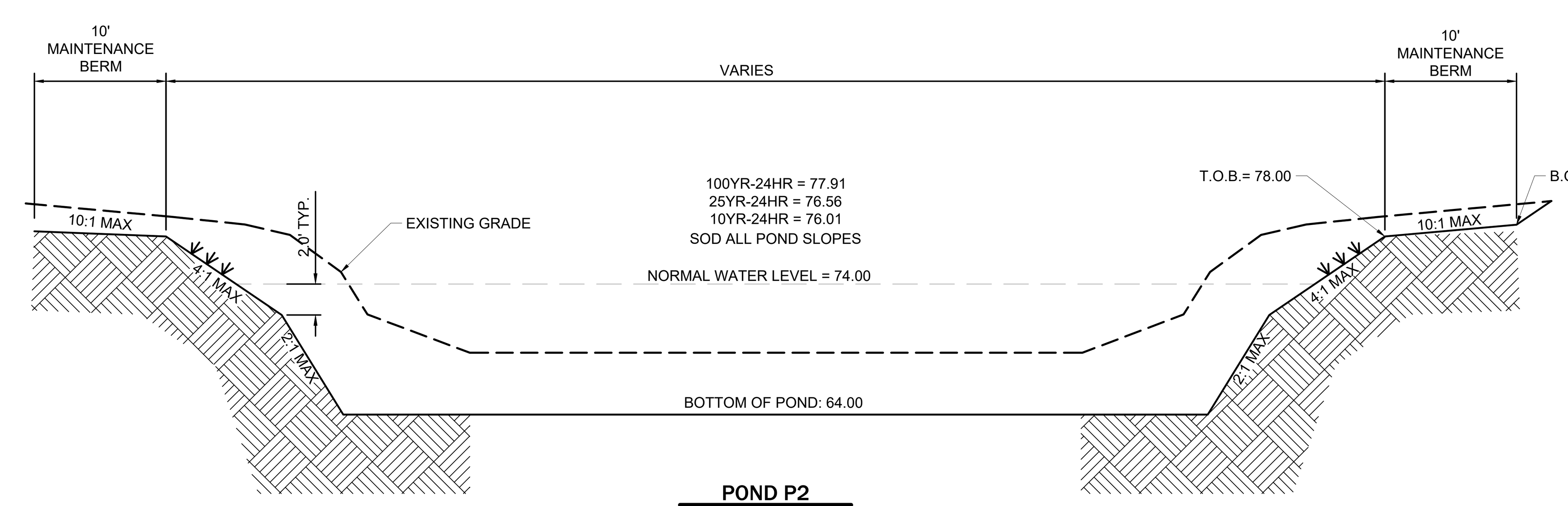
EXISTING	PROPOSED	
		BOUNDARY
		DRAINAGE EASEMENT (D.E.)
		TOP OF BANK
		TOE OF SLOPE
30	30	CONTOUR (MAJOR)
29	29	CONTOUR (MINOR)
		DIRECTION OF SURFACE FLOW
		FEMA FLOODPLAIN ZONE
		NORMAL WATER LEVEL
		SEASON HIGH WATER LEVEL
		POND MAINTENANCE BERM
ST-10	ST-10	STORM STRUCTURE NUMBER
		STORM DRAINAGE MANHOLE
	OR OR	STORM DRAINAGE INLET
		CONTROL STRUCTURE
	OR	OUTFALL STRUCTURE
	OUT-1	PIPE END (OUTFALL)



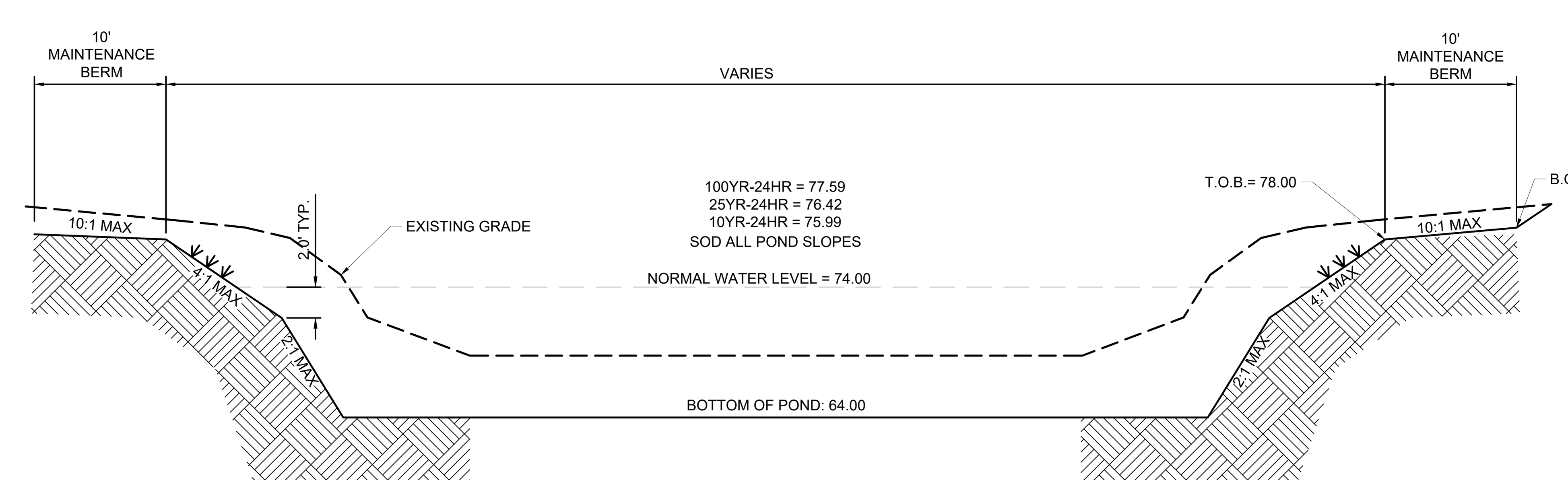
CS3 – FDOT MODIFIED TYPE "E" INLET
N.T.S.

NOTES:

1. HYDRAULICALLY RESTRICTIVE CLAYEY SANDS, DENSE/ VERY DENSE SOIL, & MUCK/ ORGANICS NEED TO BE EXCAVATED FROM POND FOOTPRINT AND REPLACED WITH CLEAN SAND.



POND P2



POND P3

MADDEN
MOORHEAD & STOKES, LLC
CIVIL ENGINEERS
431 E. Horatio Avenue
Suite 260
Maitland, Florida 32751
(407) 629-8330
CA# 0007723

CONSTRUCTION DETAILS
FOR
LAKE HILLS MAIN BLVD. & MASS GRADING
HOWEY-IN-THE-HILLS FLORIDA

READER & PARTNERS, LLC
5850 TG LEE BOULEVARD, SUITE 200
ORLANDO, FL 32822
(407) 856-4899

	DATE	REVISIONS
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DAVID ASHLEY STOKES
LICENSE
NO. 66527
STATE OF FLORIDA
PROFESSIONAL ENGINEER

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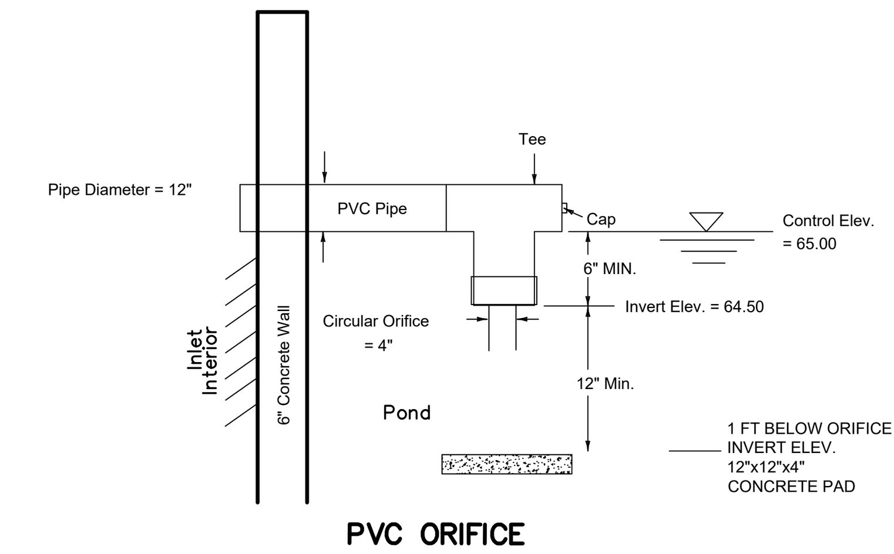
ENGINEER OF RECORD
November 7, 2024

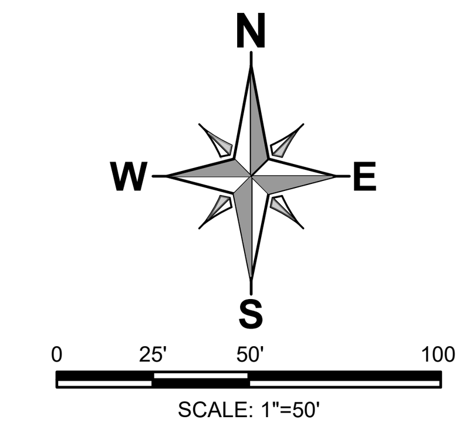
JOB #	23019
DATE:	11/7/24
DATUM:	NAVD 88
DESIGNED BY:	KAC
DRAWN BY:	JSK
APPROVED BY:	DAS

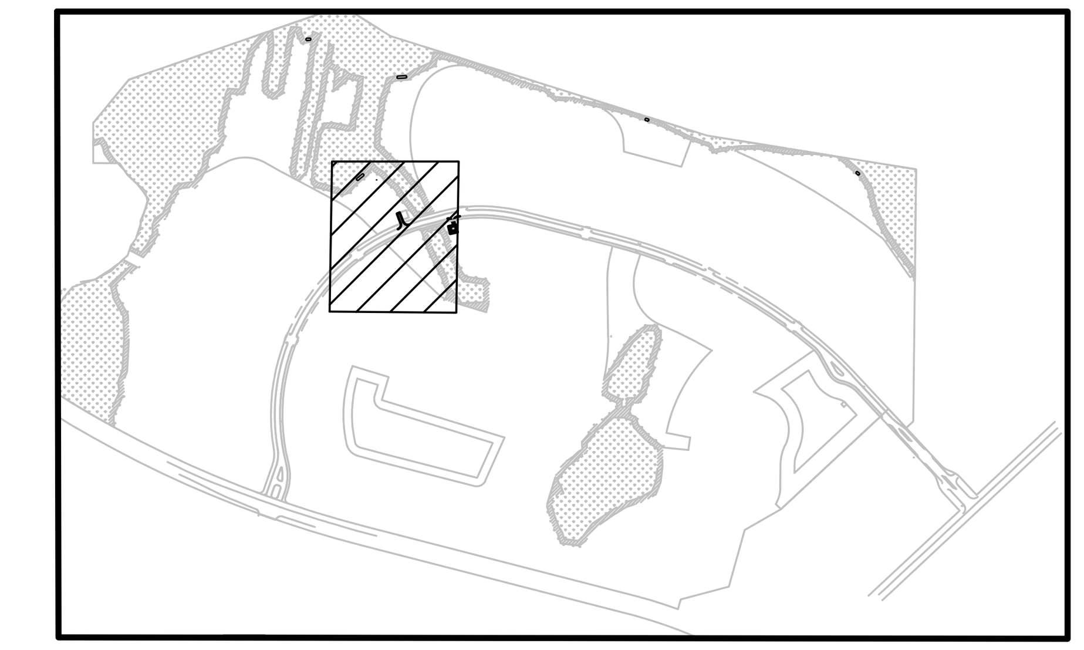
C902



Hole faces down by using elbow to prevent hole blockage. Control Elevation of pipe to be placed at Average Seasonal High Ground Water Elevation (Avg.S.H.G.W.). See pond details.

PVC – ORIFICE DETAIL





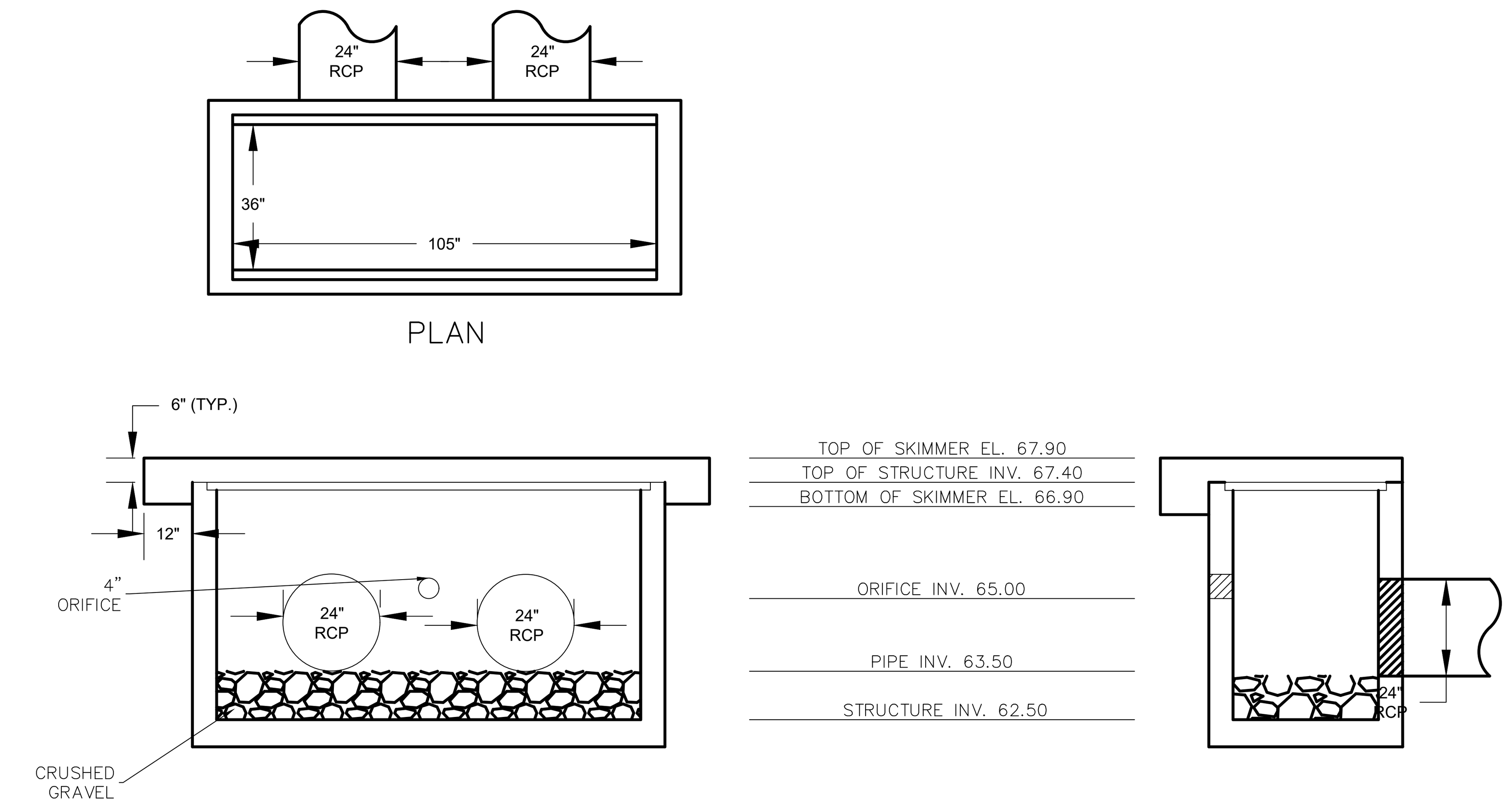
KEY MAP
NTS

LEGEND

EXISTING	PROPOSED	
		BOUNDARY
		DRAINAGE EASEMENT (D.E.)
		TOP OF BANK
		TOE OF SLOPE
30	30	CONTOUR (MAJOR)
29	29	CONTOUR (MINOR)
		DIRECTION OF SURFACE FLOW
		FEMA FLOODPLAIN ZONE
		NORMAL WATER LEVEL
		SEASON HIGH WATER LEVEL
		POND MAINTENANCE BERM
ST-10	ST-10	STORM STRUCTURE NUMBER
		STORM DRAINAGE MANHOLE
	OR OR	STORM DRAINAGE INLET
		CONTROL STRUCTURE
	OR	OUTFALL STRUCTURE
	OUT-1	PIPE END (OUTFALL)

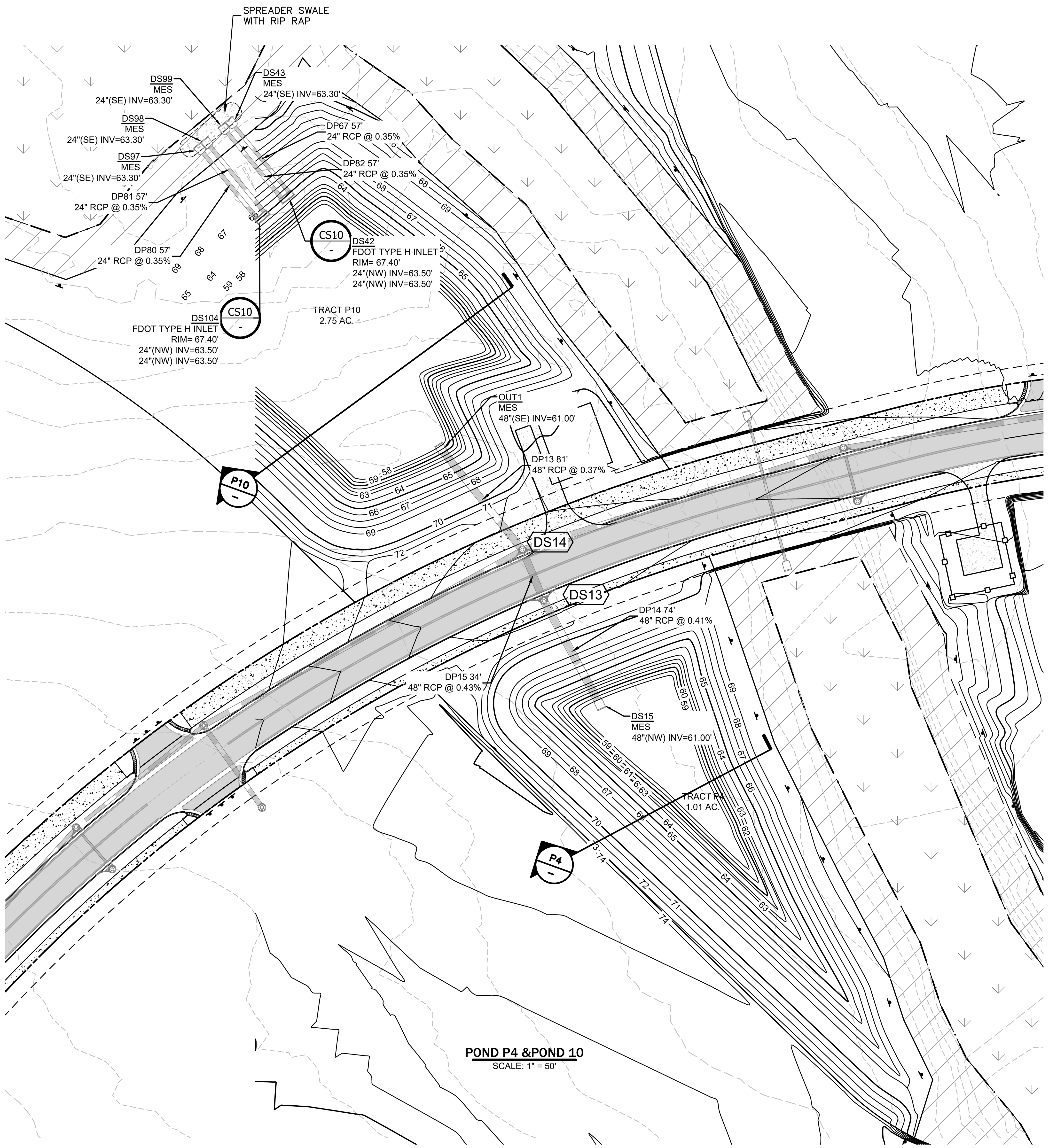
NOTES:

1. HYDRAULICALLY RESTRICTIVE CLAYEY SANDS, DENSE/ VERY DENSE SOIL, & MUCK/ ORGANICS NEED TO BE EXCAVATED FROM POND FOOTPRINT AND REPLACED WITH CLEAN SAND.

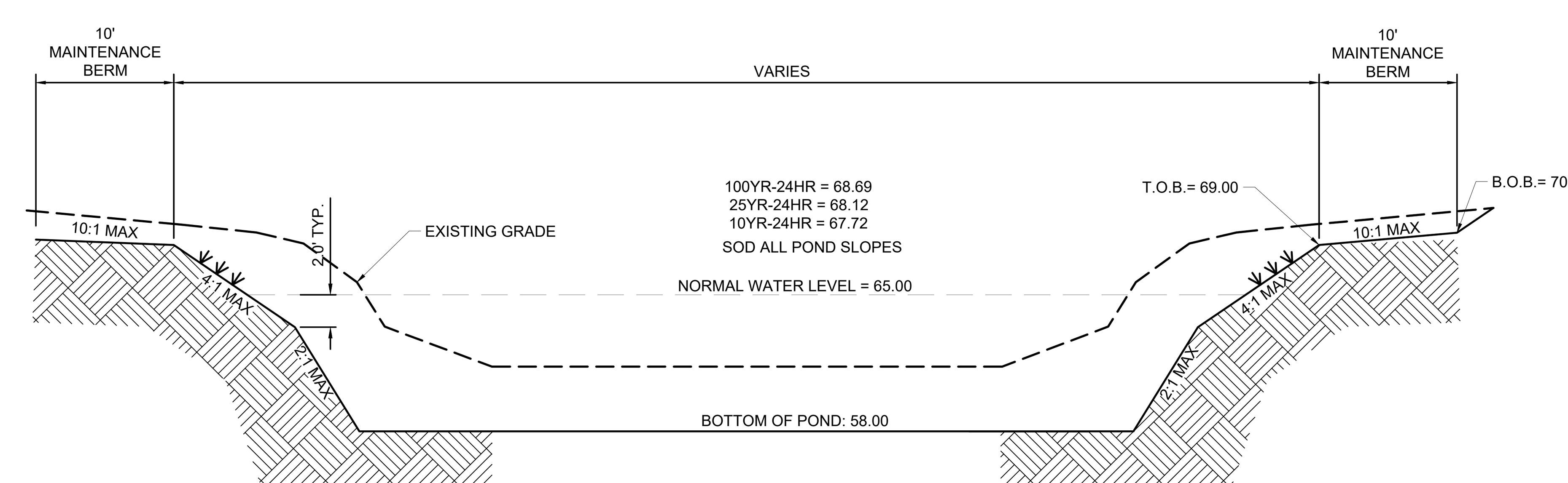


CS10 – FDOT MODIFIED TYPE "H" INLET
N.T.S.

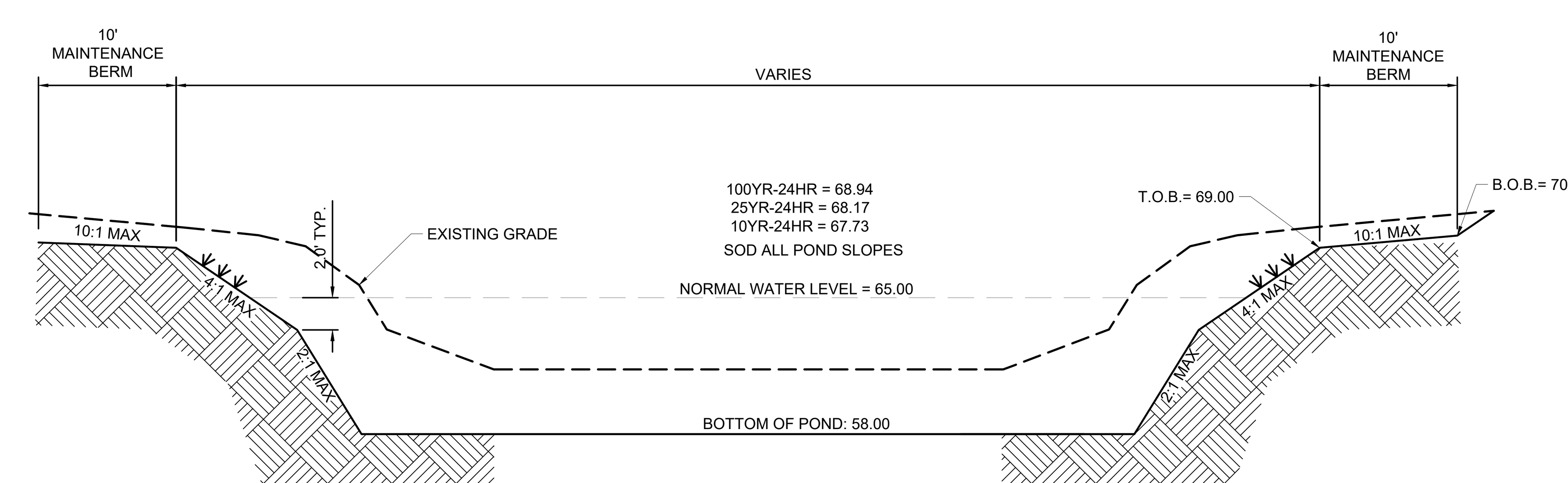
PLAN REQUIRES TWO STRUCTURES FOR THESE PONDS



POND P4 &POND 10
SCALE: 1" = 50'



POND P10
-



POND P4
-

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CIVIL ENGINEERS
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Suite 260
Maitland, Florida 32751
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CA# 0007723

CONSTRUCTION DETAILS
FOR
LAKE HILLS MAIN BLVD. & MASS GRADING
HOWEY-IN-THE-HILLS FLORIDA

READER & PARTNERS, LLC
5850 TG LEE BOULEVARD SUITE 200
ORLANDO, FL 32822
(407) 856-4899

	DATE	REVISIONS
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DAVID ASHLEY STOKES
LICENSE
NO. 66527
STATE OF FLORIDA
PROFESSIONAL ENGINEER

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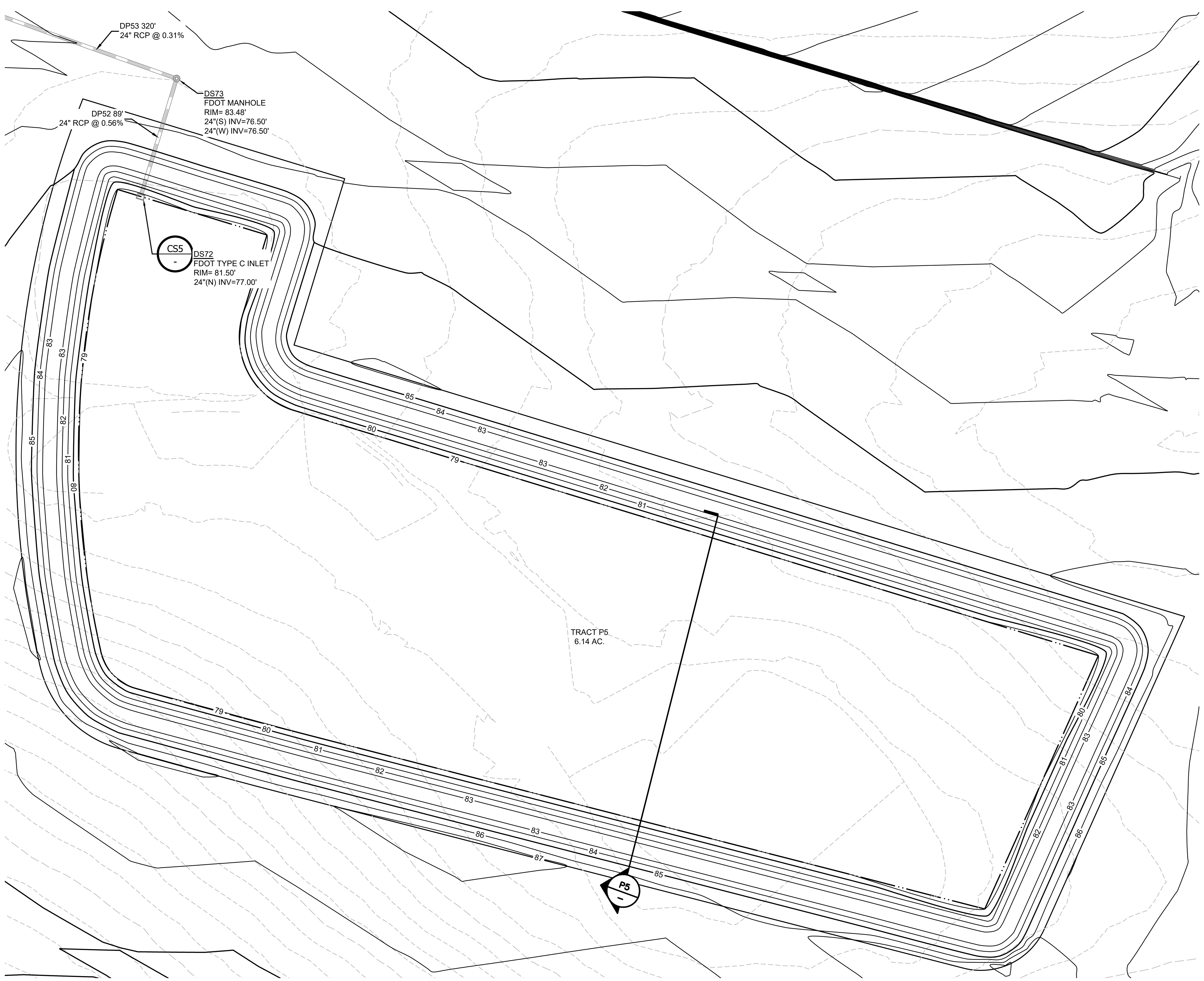
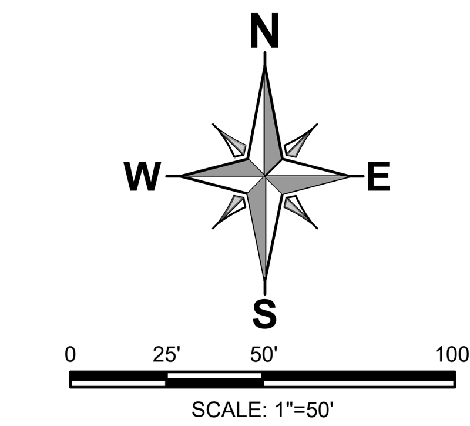
ENGINEER OF RECORD
November 7, 2024

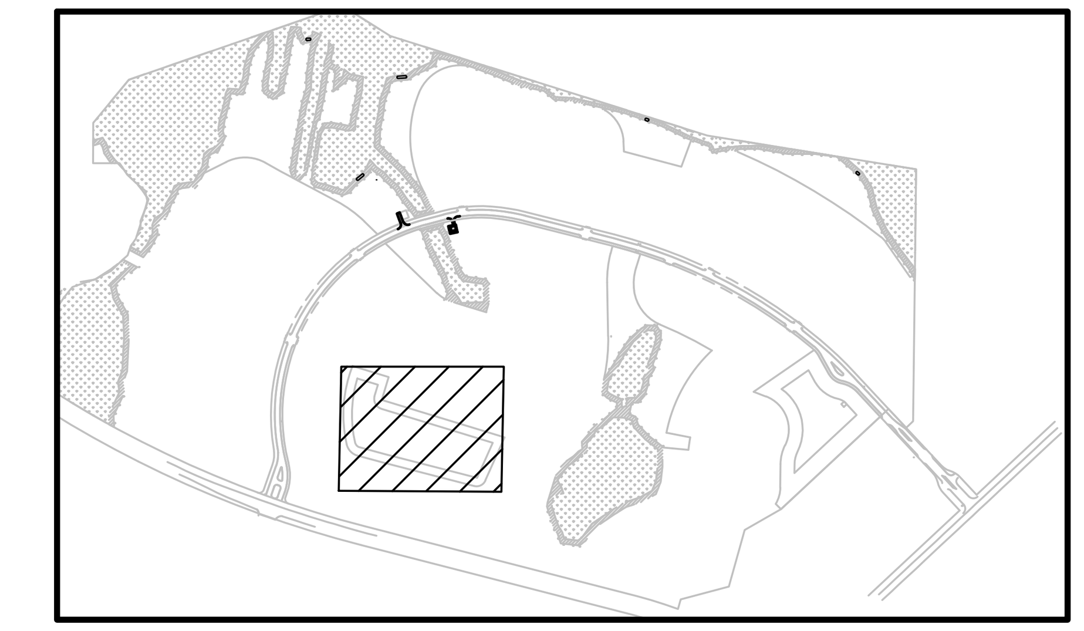
JOB #	23019
DATE:	11/7/24
DATUM:	NAVD 88
DESIGNED BY:	KAC
DRAWN BY:	JSK
APPROVED BY:	DAS

C903



POND P5
SCALE: 1" = 50'





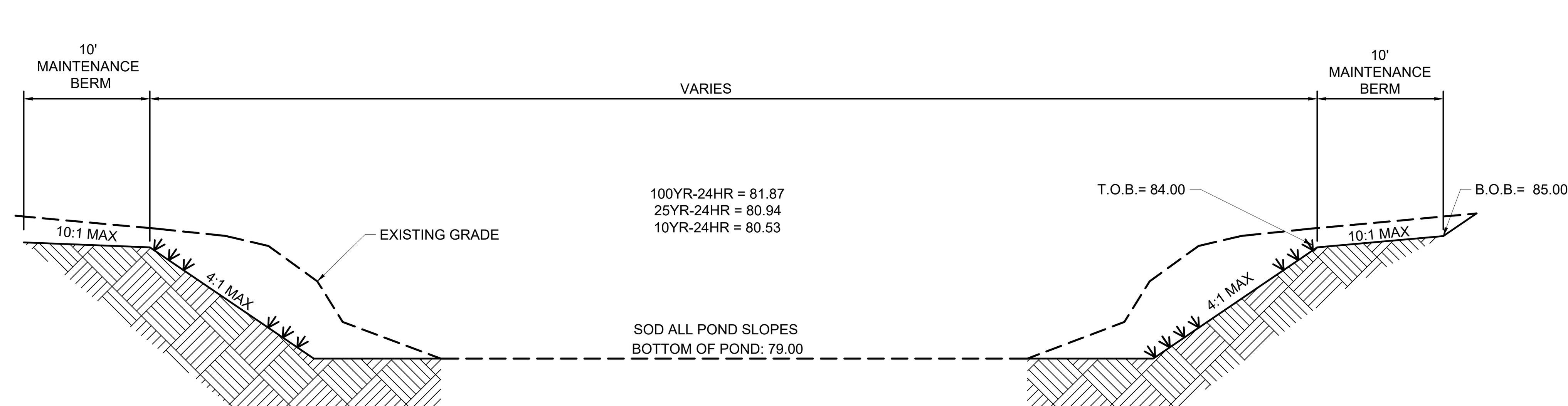
KEY MAP
NTS

LEGEND

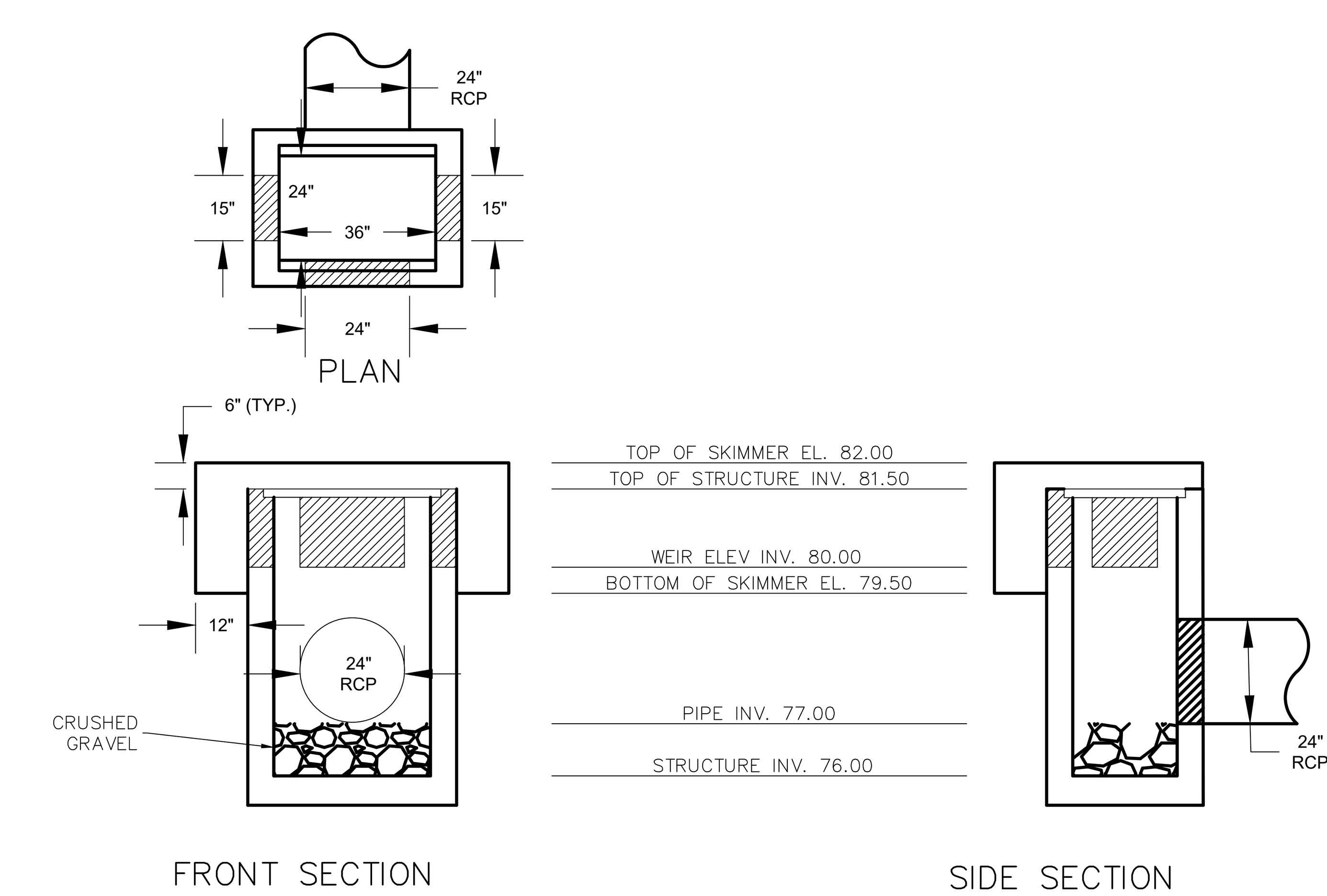
EXISTING	PROPOSED	
		BOUNDARY
		DRAINAGE EASEMENT (D.E.)
		TOP OF BANK
		TOE OF SLOPE
30	30	CONTOUR (MAJOR)
29	29	CONTOUR (MINOR)
		DIRECTION OF SURFACE FLOW
		FEMA FLOODPLAIN ZONE
		NORMAL WATER LEVEL
		SEASON HIGH WATER LEVEL
		POND MAINTENANCE BERM
ST-10	ST-10	STORM STRUCTURE NUMBER
		STORM DRAINAGE MANHOLE
	OR OR	STORM DRAINAGE INLET
		CONTROL STRUCTURE
	OR	OUTFALL STRUCTURE
	OUT-1	PIPE END (OUTFALL)

NOTES:

1. HYDRAULICALLY RESTRICTIVE CLAYEY SANDS, DENSE/ VERY DENSE SOIL, & MUCK/ ORGANICS NEED TO BE EXCAVATED FROM POND FOOTPRINT AND REPLACED WITH CLEAN SAND.



POND P5



CS5 FDOT MODIFIED TYPE "C" INLET
N.T.S.

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MOORHEAD & STOKES, LLC
CIVIL ENGINEERS
431 E. Horatio Avenue
Suite 260
Maitland, Florida 32751
(407) 629-8330
CA# 0007723

CONSTRUCTION DETAILS
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HOWEY-IN-THE-HILLS FLORIDA

READER & PARTNERS, LLC
5850 TG LEE BOULEVARD SUITE 200
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	DATE	REVISIONS
1		
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DAVID ASHLEY STOKES
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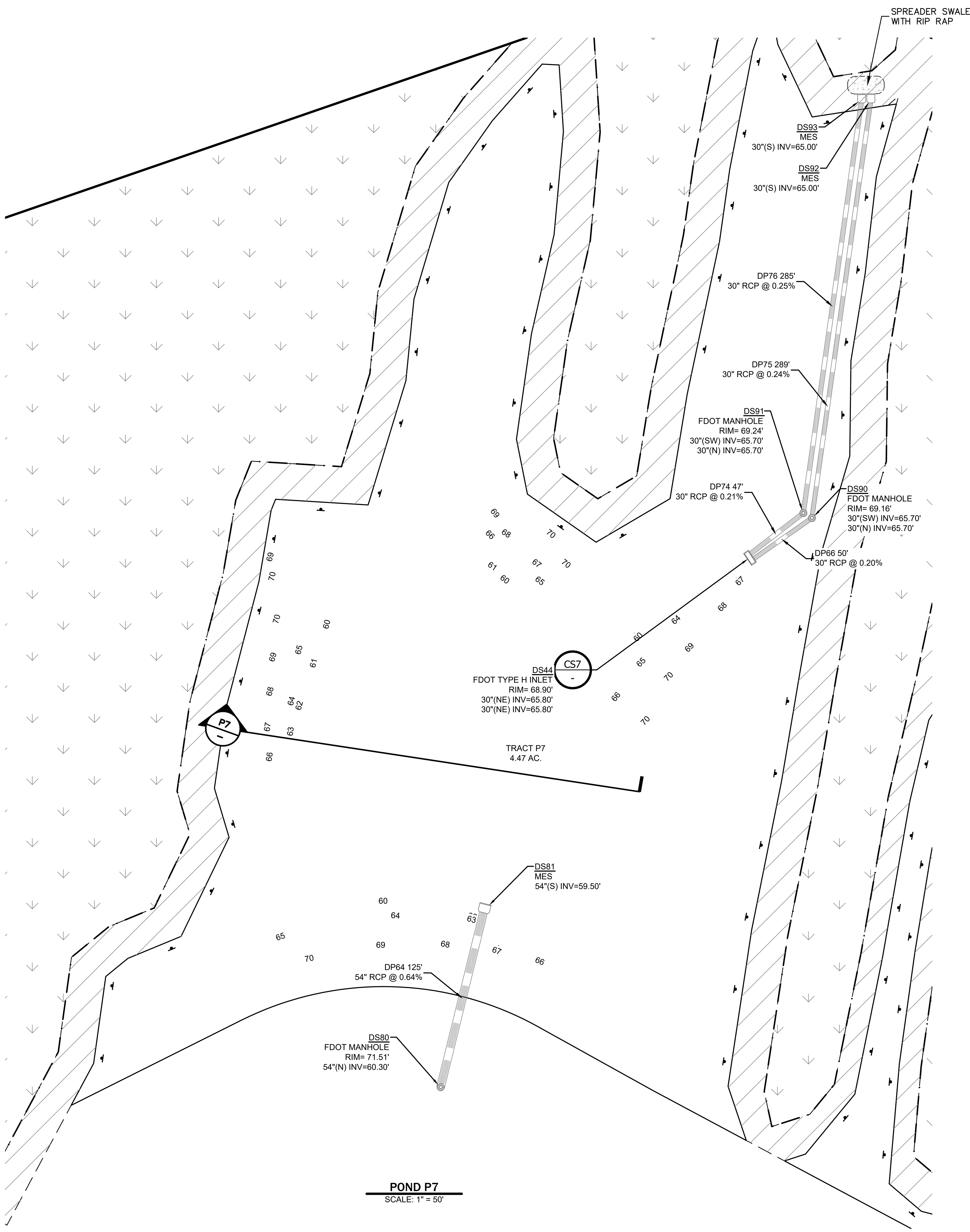
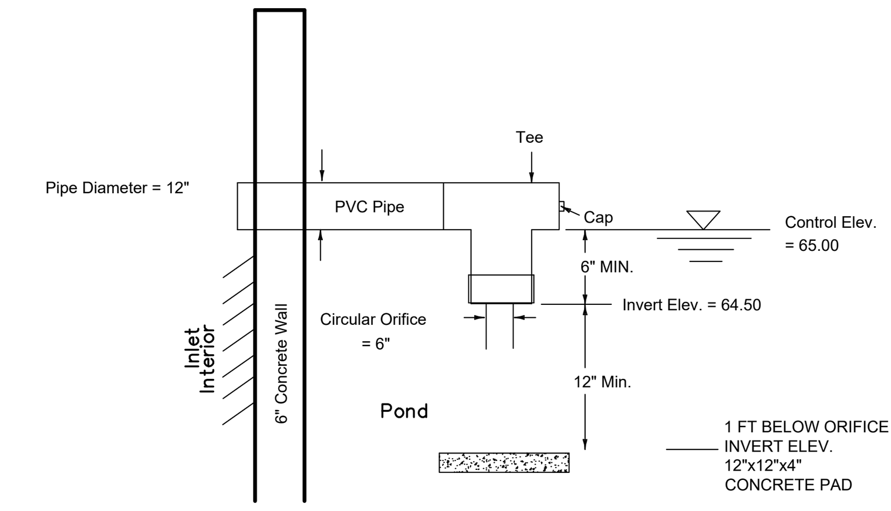
DATE:	11/7/24
DATUM:	NAVD 88
DESIGNED BY:	KAC
DRAWN BY:	JSK
APPROVED BY:	DAS

C904



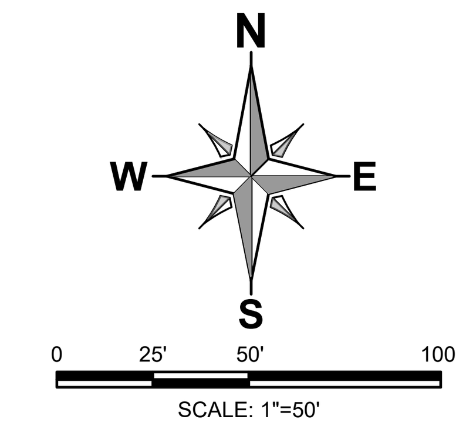
POND P7
SCALE: 1" = 50'

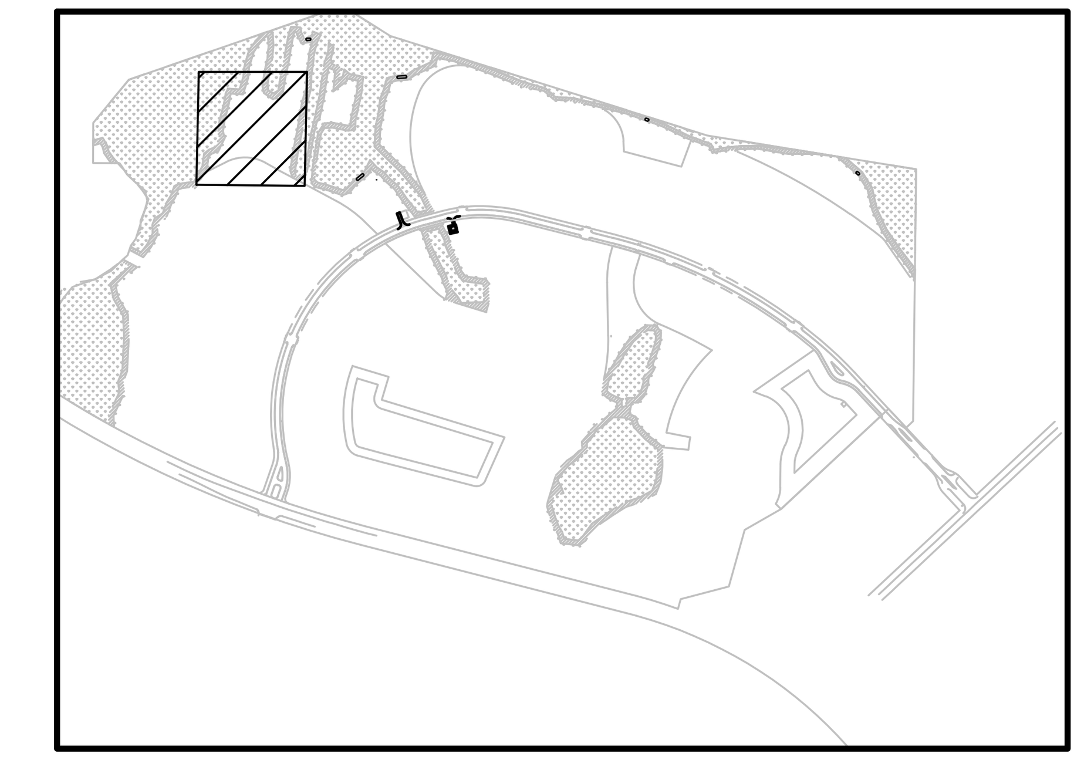


PVC ORIFICE

Hole faces down by using elbow to prevent hole blockage. Control Elevation of pipe to be placed at Average Seasonal High Ground Water Elevation (Avg.S.H.G.W.). See pond details.

PVC ORIFICE DETAIL





KEY MAP
NTS

LEGEND

EXISTING	PROPOSED	
		BOUNDARY
		DRAINAGE EASEMENT (D.E.)
		TOP OF BANK
		TOE OF SLOPE
30	30	CONTOUR (MAJOR)
29	29	CONTOUR (MINOR)
		DIRECTION OF SURFACE FLOW
		FEMA FLOODPLAIN ZONE
		NORMAL WATER LEVEL
		SEASON HIGH WATER LEVEL
		POND MAINTENANCE BERM
ST-10	ST-10	STORM STRUCTURE NUMBER
		STORM DRAINAGE MANHOLE
	OR OR	STORM DRAINAGE INLET
		CONTROL STRUCTURE
	OR	OUTFALL STRUCTURE
	OUT-1	PIPE END (OUTFALL)

NOTES:

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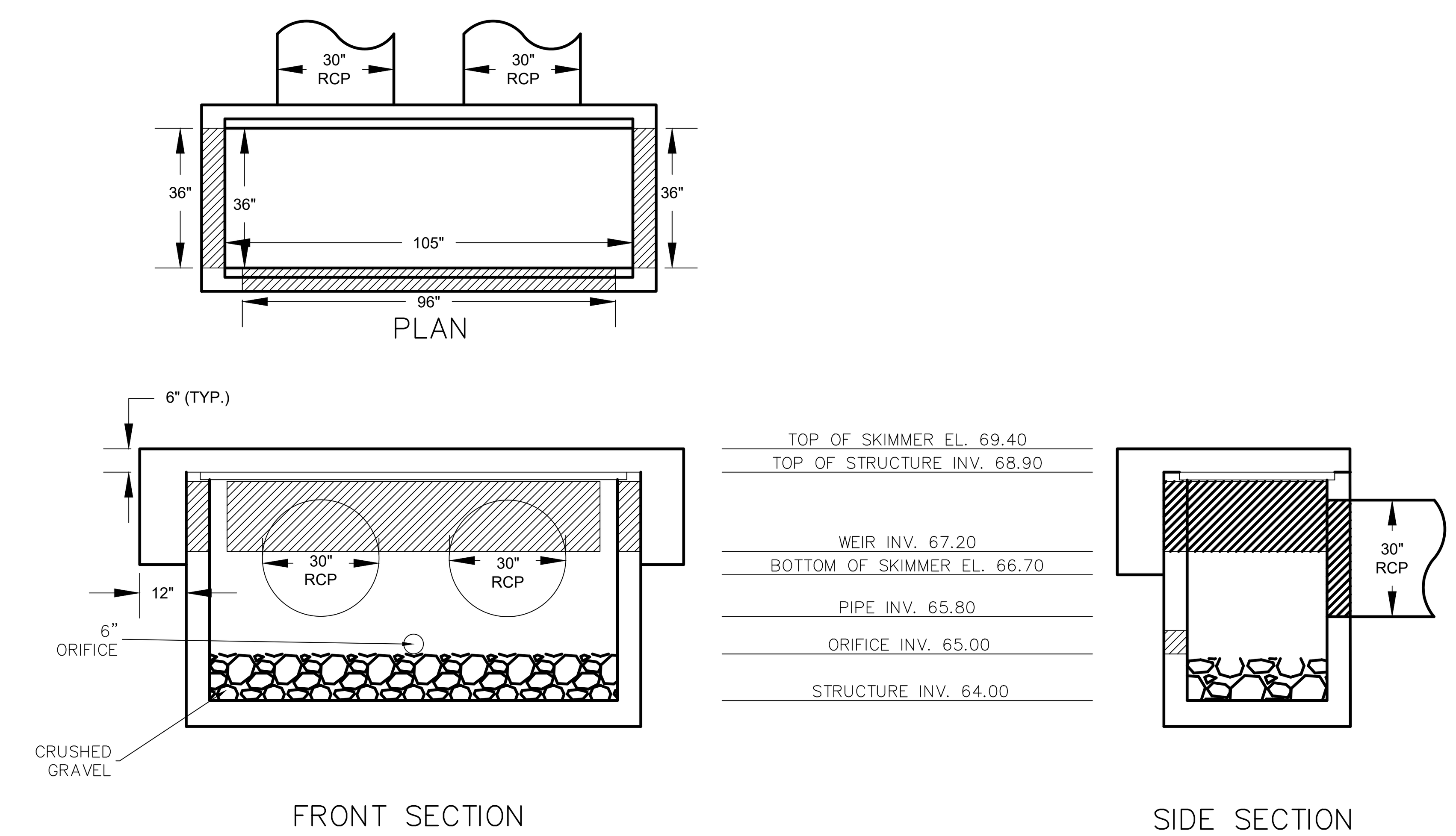
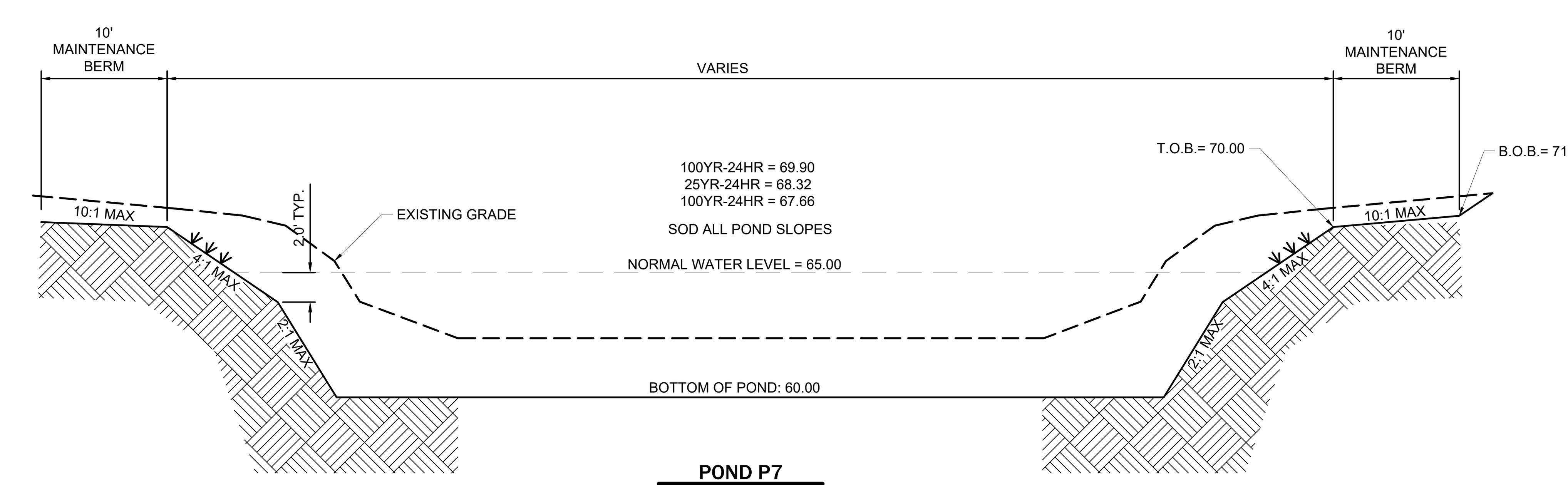


CS7 FDOT MODIFIED TYPE "H" INLET
N.T.S.



POND P7

MADDEN
MOORHEAD & STOKES, LLC
CIVIL ENGINEERS
431 E. Horatio Avenue
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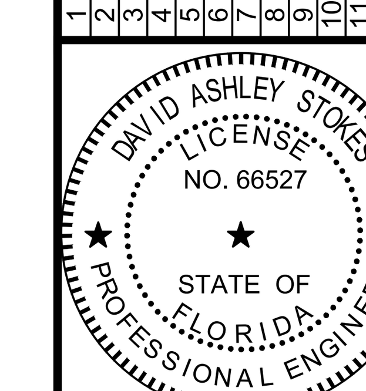

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November 7, 2024

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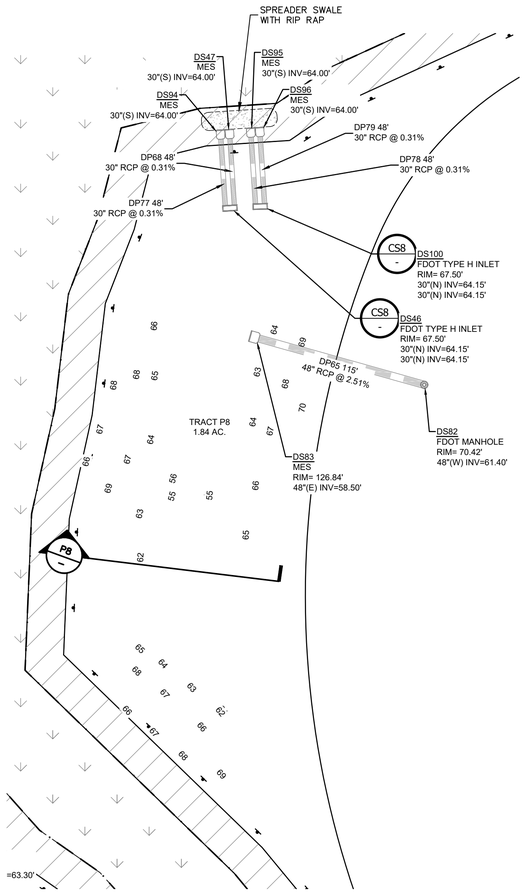
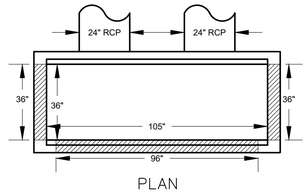
DESIGNED BY:	KAC
DRAWN BY:	JSK
APPROVED BY:	DAS

C905

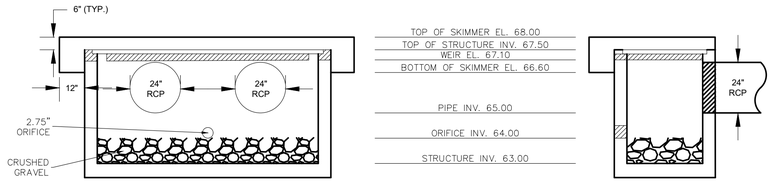
H:\Data\23MMS0190-Lake Hills PD\howeyin the Hills\Eng\Final\Mass Infrastructure (00'ROW)\SHEETS\23019-C900-CONSTRUCTION DETAILS.dwg November 7, 2024 9:56 AM



POND P8
SCALE: 1" = 50'



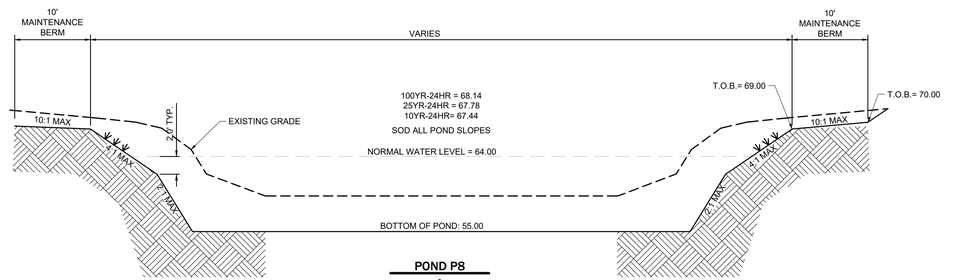
PLAN



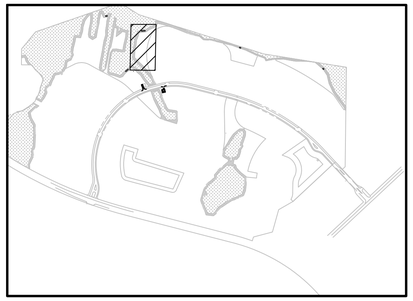
FRONT SECTION SIDE SECTION

CS10 – FDOT MODIFIED TYPE "H" INLET N.T.S.

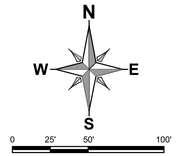
PLAN REQUIRES TWO STRUCTURES FOR THESE PONDS



POND P8
-



KEY MAP
NTS



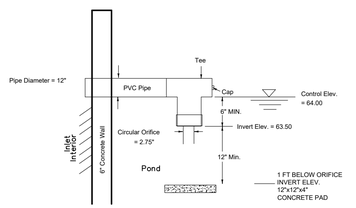
SCALE: 1"=50'

LEGEND

EXISTING	PROPOSED	
		BOUNDARY
		DRAINAGE EASEMENT (D.E.)
		TOP OF BANK
		TOE OF SLOPE
30	30	CONTOUR (MAJOR)
29	29	CONTOUR (MINOR)
		DIRECTION OF SURFACE FLOW
		FEMA FLOODPLAIN ZONE
		NORMAL WATER LEVEL
		SEASON HIGH WATER LEVEL
		POND MAINTENANCE BERM
ST-10	ST-10	STORM STRUCTURE NUMBER
		STORM DRAINAGE MANHOLE
	OR OR	STORM DRAINAGE INLET
		CONTROL STRUCTURE
	OR	OUTFALL STRUCTURE
	OUT-1	PIPE END (OUTFALL)

NOTES:

1. HYDRAULICALLY RESTRICTIVE CLAYEY SANDS, DENSE/ VERY DENSE SOIL, & MUCK/ ORGANICS NEED TO BE EXCAVATED FROM POND FOOTPRINT AND REPLACED WITH CLEAN SAND.



PVC ORIFICE

Hole faces down by using elbow to prevent hole blockage.
Control Elevation of pipe to be placed at Average Seasonal
High Ground Water Elevation (Avg.S.H.G.W.). See pond details.

PVC – ORIFICE DETAIL

MADDEN
MOORHEAD & STOKES, LLC
CIVIL ENGINEERS
431 E. Horatio Avenue
Suite 260
Maitland, Florida 32751
(407) 629-8330
CA# 0007723

CONSTRUCTION DETAILS
FOR
LAKE HILLS MAIN BLVD. & MASS GRADING
FLORIDA
HOWEY-IN-THE-HILLS

READER & PARTNERS, LLC
5859 TG LEE BOULEVARD, SUITE 200
ORLANDO, FL 32822
(407) 658-4899

	DATE	REVISIONS
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DAVID ASHLEY STOKES
LICENSE
NO. 66527
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

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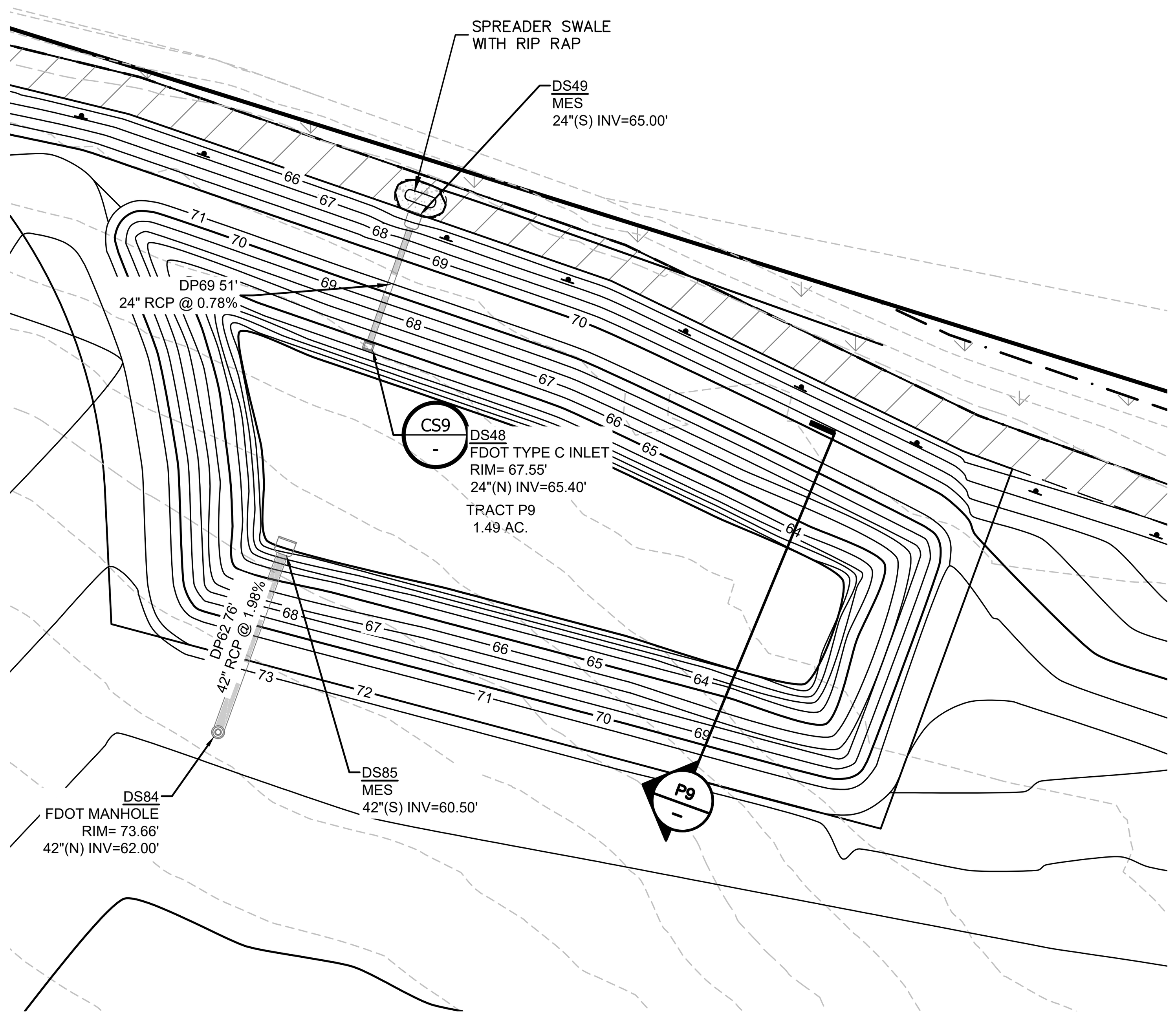
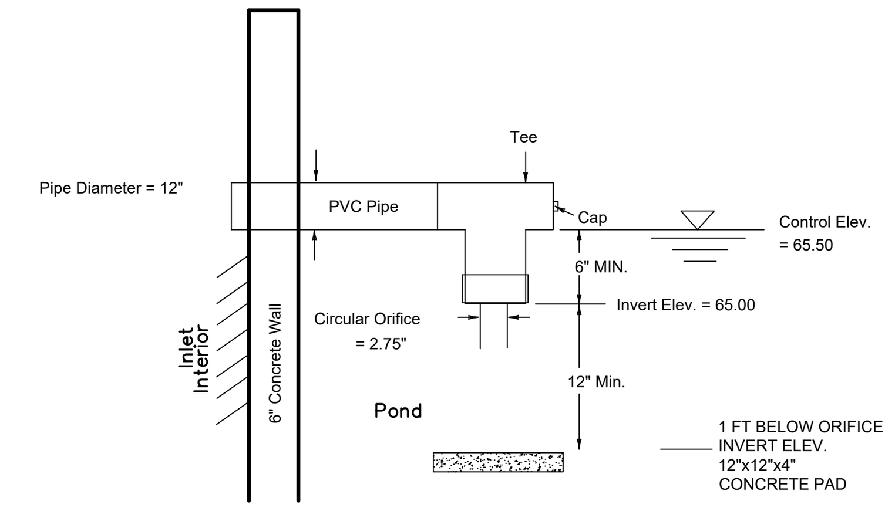
ENGINEER OF RECORD
November 7, 2024

JOB #	23019
DATE:	11/7/24
DATUM:	NAVD 88
DESIGNED BY:	KAC
DRAWN BY:	JSK
APPROVED BY:	DAS

C906



POND P9
SCALE: 1" = 50'



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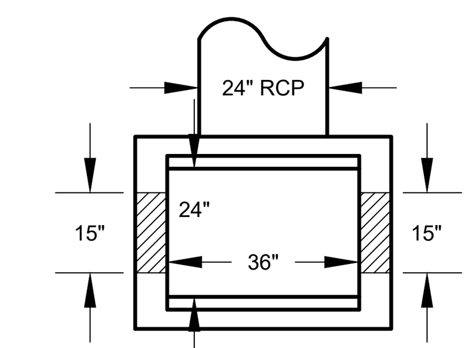
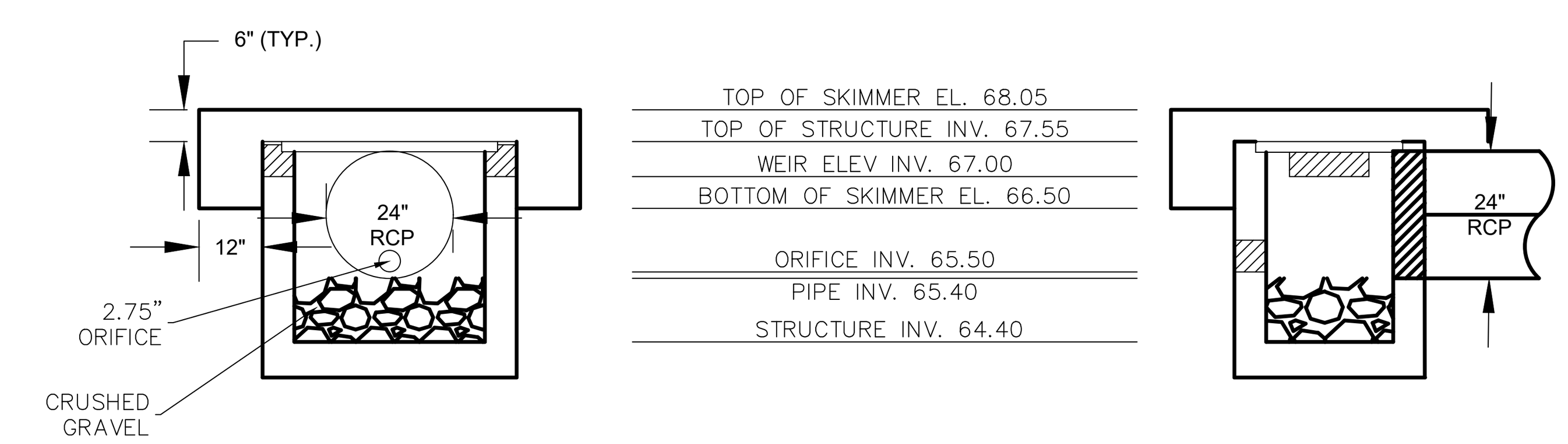
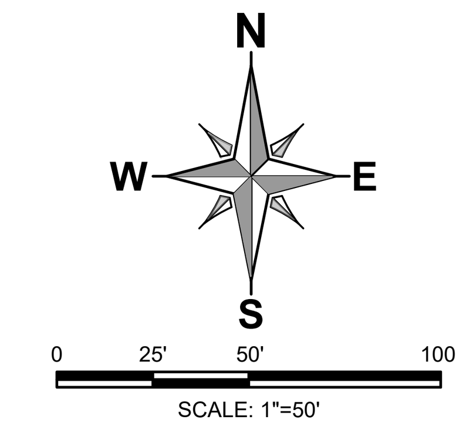
PVC – ORIFICE DETAIL

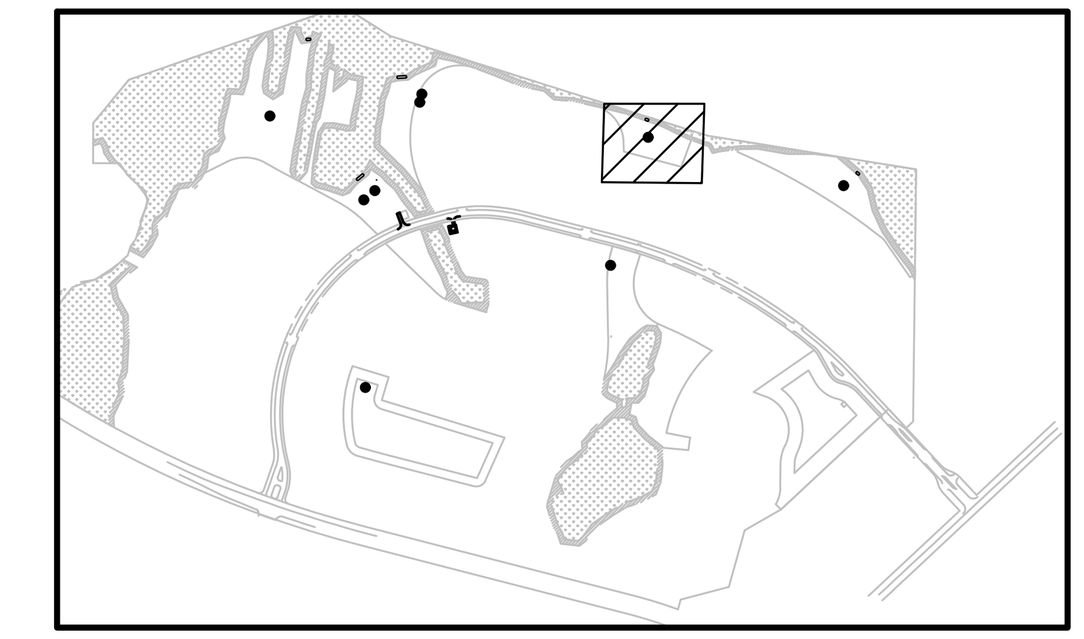




FRONT SECTION SIDE SECTION

CS9 – FDOT MODIFIED TYPE "C" INLET
N.T.S.





KEY MAP
NTS

LEGEND

EXISTING	PROPOSED	
		BOUNDARY
		DRAINAGE EASEMENT (D.E.)
		TOP OF BANK
		TOE OF SLOPE
30	30	CONTOUR (MAJOR)
29	29	CONTOUR (MINOR)
		DIRECTION OF SURFACE FLOW
		FEMA FLOODPLAIN ZONE
		NORMAL WATER LEVEL
		SEASON HIGH WATER LEVEL
		POND MAINTENANCE BERM
ST-10	ST-10	STORM STRUCTURE NUMBER
		STORM DRAINAGE MANHOLE
	OR OR	STORM DRAINAGE INLET
		CONTROL STRUCTURE
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	OUT-1	PIPE END (OUTFALL)

NOTES:

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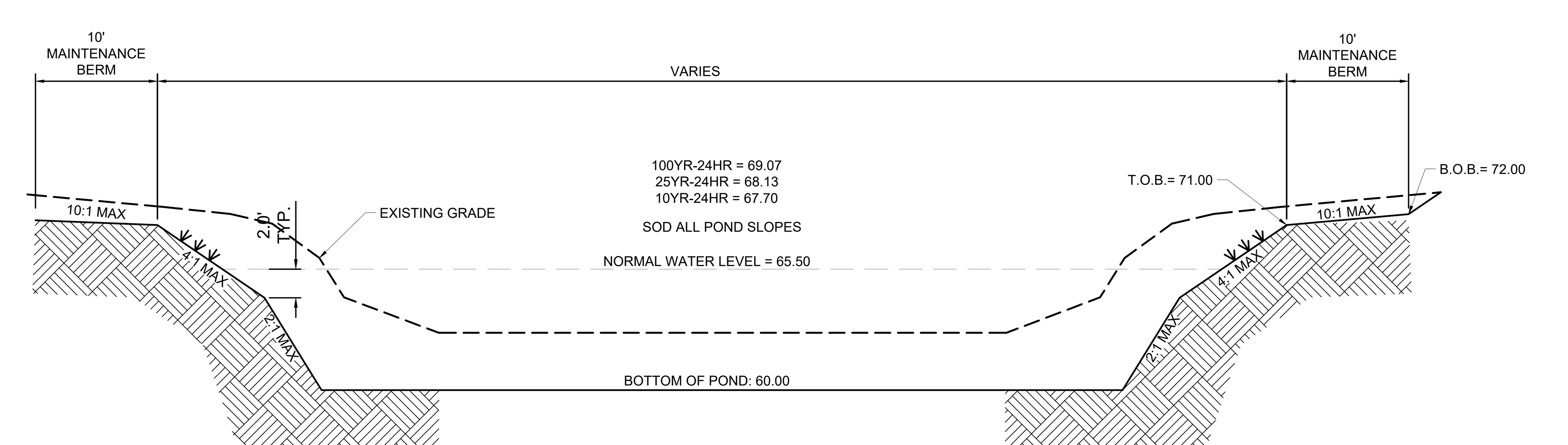

POND P9
-

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FOR
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READER & PARTNERS, LLC
5850 TG LEE BOULEVARD, SUITE 200
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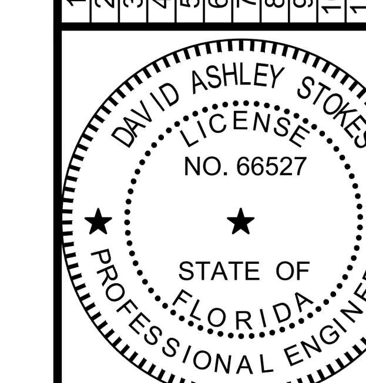

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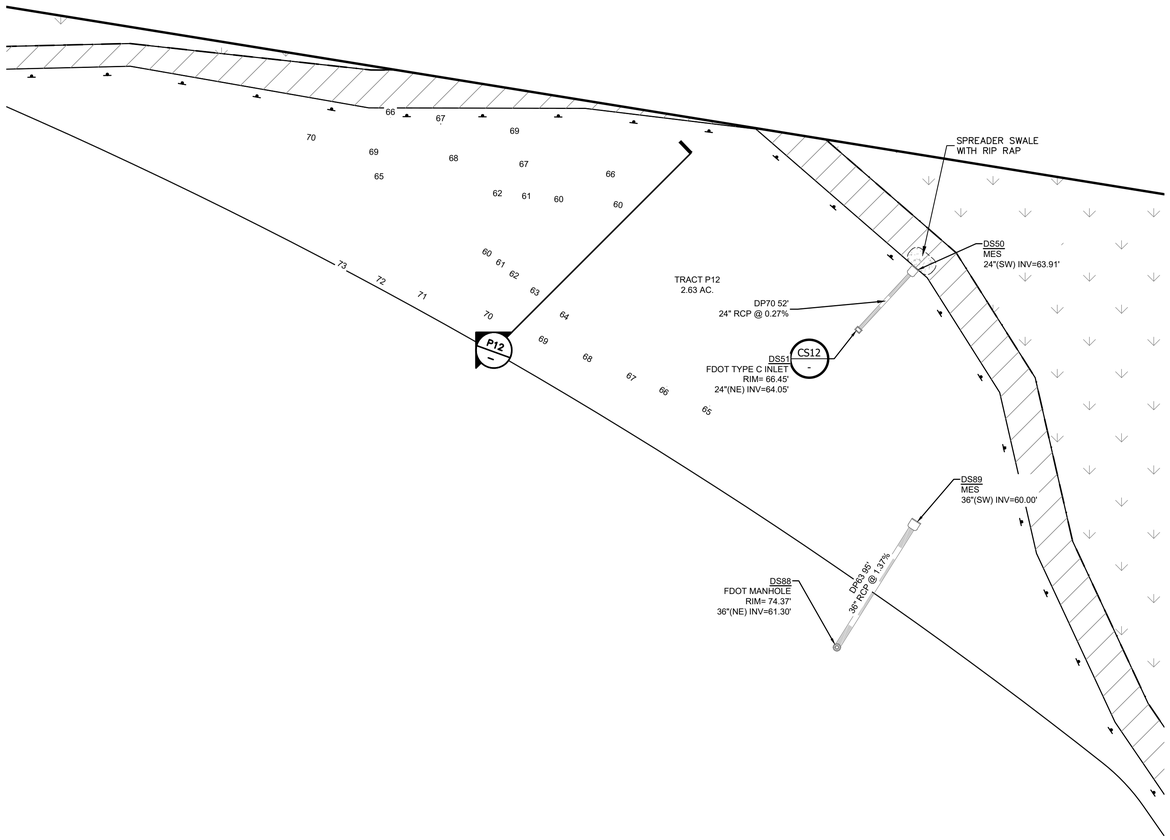
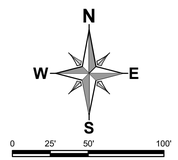
C907



POND P12
SCALE: 1" = 50'



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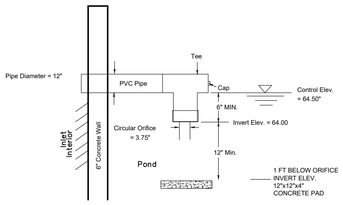

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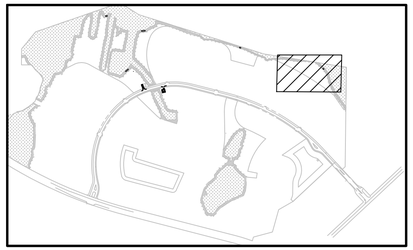
High Ground Water Elevation (Avg.S.H.G.W.). See pond details.

PVC — ORIFICE DETAIL



KEY MAP
NTS

LEGEND

EXISTING	PROPOSED	
		BOUNDARY
		DRAINAGE EASEMENT (D.E.)
		TOP OF BANK
		TOE OF SLOPE
30	30	CONTOUR (MAJOR)
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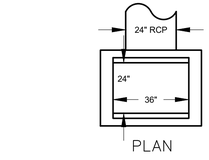
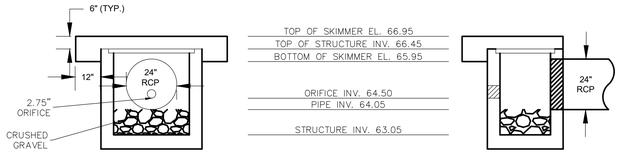
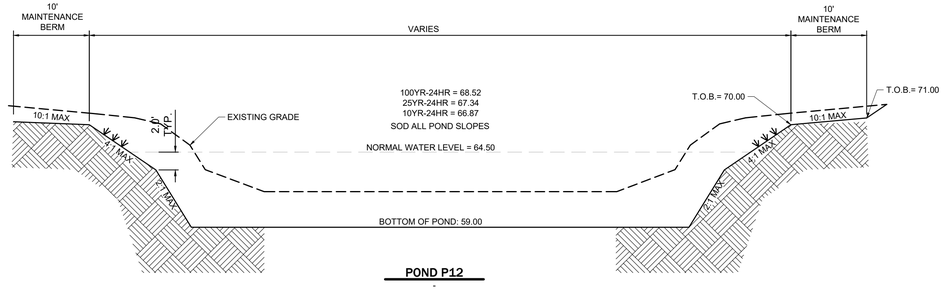


PLAN



FRONT SECTION SIDE SECTION

CS12 — FDOT MODIFIED TYPE "C" INLET
N.T.S.



POND P12
-

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HOWEY-IN-THE-HILLS FLORIDA

READER & PARTNERS, LLC
3850 TG LEE BOULEVARD, SUITE 200
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APPROVED BY: DAS

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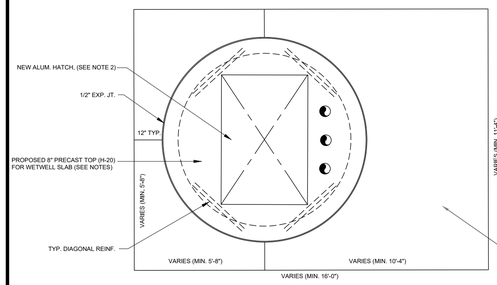
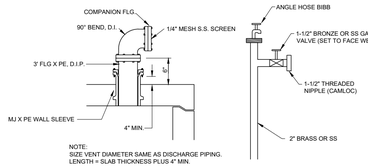
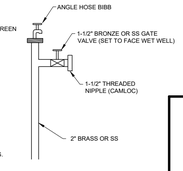


LIFT STATION SLAB NOTES:
1. SAWCUT 2" DEEP JOINT AS SHOWN. SAW CUTTING TO BE PERFORMED IMMEDIATELY AFTER PLACEMENT, AS SOON AS THE CONCRETE IS FIRM ENOUGH TO SUPPORT THE SAW AND TO NOT BE TORN OR DAMAGED BY THE BLADE.
2. ALUMINUM ACCESS HATCH SHALL BE BY HALLIDAY MODEL SERIES W25 WITH FALL PROTECTION GRATING OR TWA APPROVED EQUAL. APPLY A BITUMINOUS COATING WHERE ALUMINUM IS IN CONTACT WITH CONCRETE.
3. PROVIDE SAWCUTS EVERY 12' IN LENGTH AND WIDTH OF ACCESS DRIVEWAY AND LIFT STATION SLAB AND AS SHOWN.
4. SEE CIVIL DRAWINGS FOR SLAB LOCATION AND DIMENSIONS.

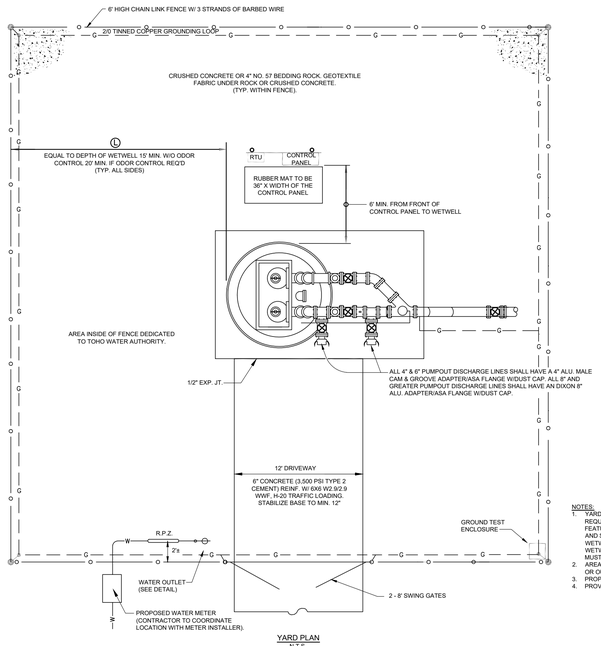
TYPICAL LIFT STATION SLAB DETAIL
N.T.S.



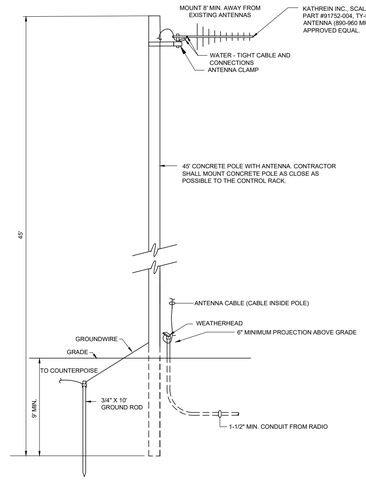
VENT DETAIL
N.T.S.



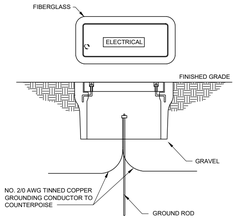
WATER OUTLET DETAIL
N.T.S.



YARD PLAN
N.T.S.



POLE MOUNTED ANTENNA DETAIL
N.T.S.

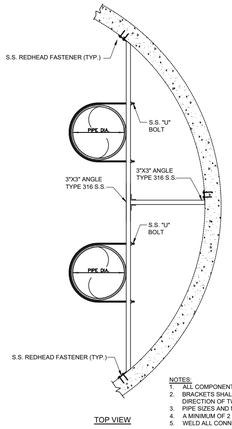


GROUND TEST ENCLOSURE
N.T.S.

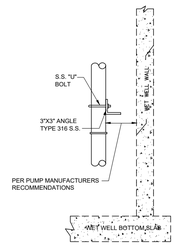
THE GROUNDED COUNTERPOISE LOOP SHALL BE BONDED BY CADWELL TO GROUND RODS AND GROUND WIRE PIGTAILS.

THE FOLLOWING SHALL BE MECHANICALLY BONDED TO THE COUNTERPOISE LOOP:

1. CORNER POSTS
2. GATE POSTS, GATE AND FENCE
3. WATER SERVICE
4. CONTROL PANEL
5. WET WELL HATCH AND HANDRAIL
6. DISCHARGE PIPING
7. ALL CONDUIT ENTRIES (METAL) INTO CONTROL PANEL BY MEANS OF GROUNDING BUSHINGS.
8. MAIN DISCONNECT SWITCH
9. UTILITY COMPANY TRANSFORMER
10. GENERATOR
11. ODOR CONTROL
12. SERVICE DISCONNECT SWITCH
13. TELEMETRY PANEL
14. TELEMETRY MAST



TOP VIEW



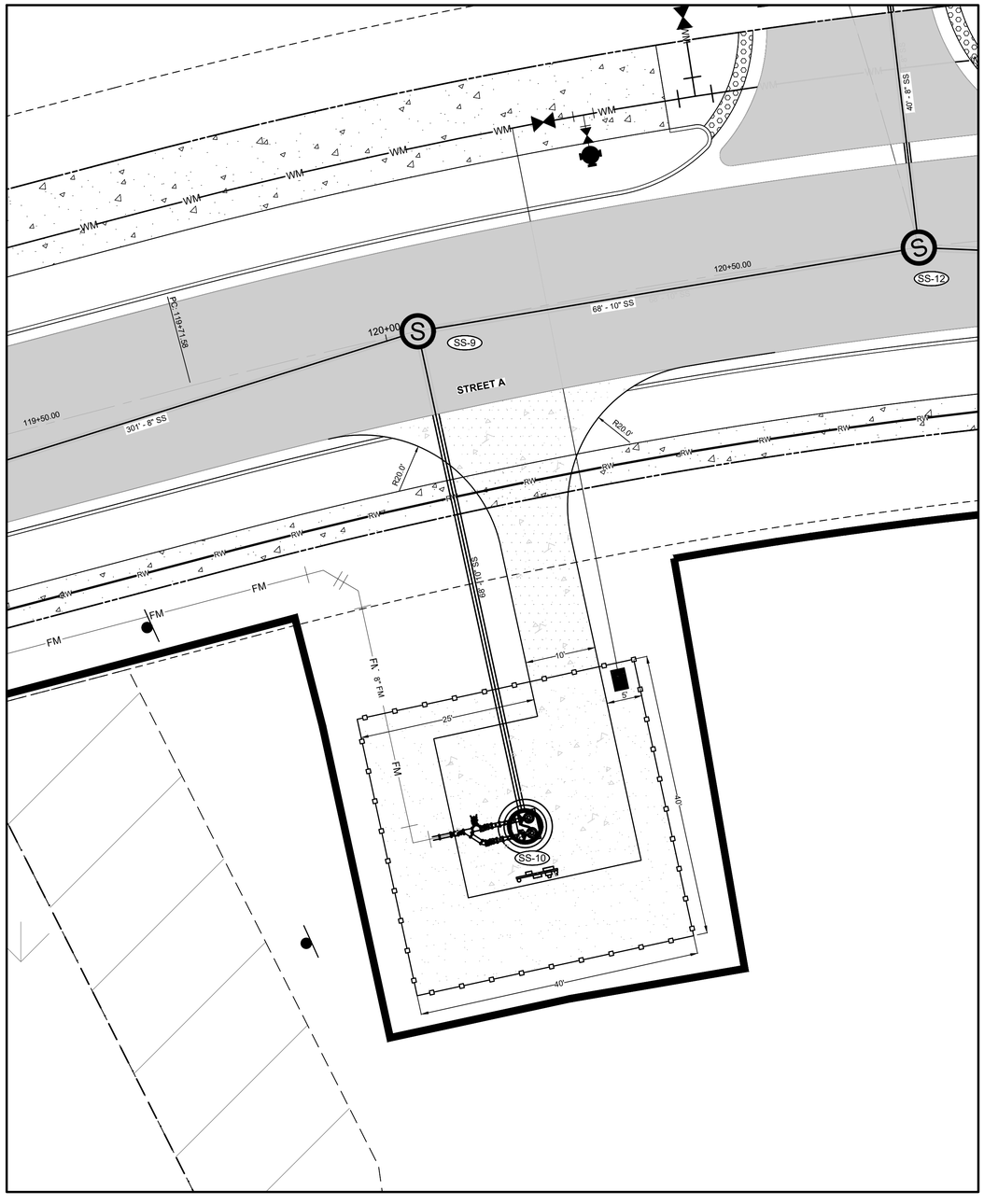
SECTION VIEW

NOTES:
1. ALL COMPONENTS AND BRACKET ASSEMBLY SHALL BE GRADE 316 STAINLESS STEEL.
2. BRACKETS SHALL BE SPACED AS INDICATED IN THE CONSTRUCTION DRAWING OR AT THE DIRECTION OF TWA.
3. PIPE SIZES AND MATERIALS SHALL BE AS INDICATED IN THE CONSTRUCTION DRAWINGS.
4. A MINIMUM OF 2 BRACKETS REQUIRED. MAX. 10' SPACING.
5. WELD ALL CONNECTIONS EXCEPT U-BOLTS.

PIPE FASTENING BRACKET
N.T.S.

TWA-31.1
2017

NOTES:
1. YARD PIPING PLAN IS A GENERIC PLAN SHOWING REQUIRED PIPING. A SPECIFIC SITE PLAN IS REQUIRED IDENTIFYING LOCATION OF DRIVEWAY/ACCESS ROADS AND ALL OTHER RELEVANT SITE FEATURES. LAYOUT MUST INCLUDE SITE GRADING TO SHOW DRAINAGE AWAY FROM STRUCTURE AND SITE. A LAYOUT DEVIATING FROM THIS DETAIL MUST BE DRAWN TO SCALE AND SHOW ALL WETWELL PUMPS AND INFLUENT & EFFLUENT PIPING TO ENSURE SUFFICIENT SPACE WITH THE WETWELL TO ACCOMMODATE ALL MECHANICAL EQUIPMENT PIPING. ELECTRICAL TRANSFORMERS MUST BE LOCATED OUTSIDE THE FENCED AREA.
2. AREA TO BE DEDICATED/CONVEYED TO TOHO WATER AUTHORITY SHALL EXTEND MIN. 1.0' BEYOND OR OUTSIDE PROPOSED SECURITY FENCING.
3. PROPOSED 12' DRIVEWAY TO EXTEND TO PUBLIC/PRIVATE PAVED ROADWAY.
4. PROVIDE A PROJECT SPECIFIC YARD PLAN DETAIL.



LIFT STATION SITE PLAN
SCALE: 1" = 10'

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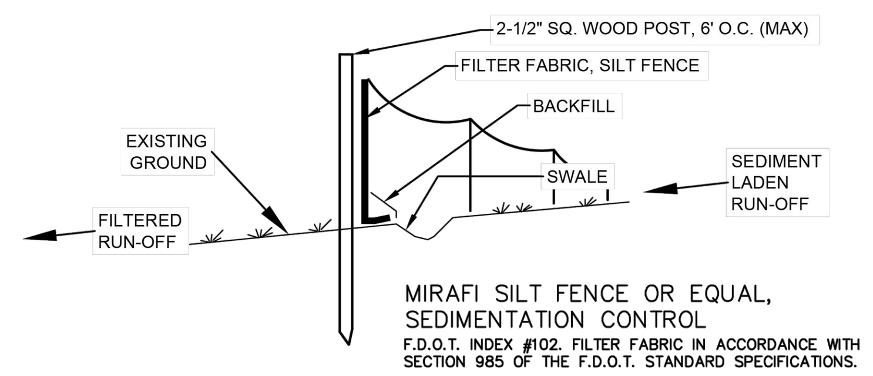
C920

H:\Data\23MMS\190-Lake Hills PD\Howeyin the Hills\Eng\Final\Mass Infrastructure (8)* ROW\SHEETS\2320\19-C920-LIFT STATION PLAN.dwg November 7, 2024 8:37 AM



MIRAFI SILT FENCE OR EQUAL, SEDIMENTATION CONTROL
F.D.O.T. INDEX #102. FILTER FABRIC IN ACCORDANCE WITH SECTION 985 OF THE F.D.O.T. STANDARD SPECIFICATIONS.

NOTES:

1. TEMPORARY EROSION CONTROL STRUCTURE TO BE UTILIZED DURING CONSTRUCTION AT AREAS DESIGNATED BY ENGINEER OR AREAS ON-SITE WHERE UNSTABILIZED GRADES MAY CAUSE EROSION PROBLEMS. EROSION CONTROL STRUCTURE MAY BE REMOVED AFTER UPSLOPE AREA HAS BEEN STABILIZED BY SOD, OR COMPACTED AS DETERMINED BY CONTRACTOR.
2. CONSTRUCT STORMWATER SYSTEMS BEFORE ANY BUILDING OR ROAD CONSTRUCTION IS STARTED.
   a.) PROTECT SYSTEM FROM SILTING AND DEBRIS BY METHODS PROVIDED IN DETAILS.
   b.) PROTECT SWALE BOTTOM FROM SEALING BY EXCAVATING ALL SILT DEPOSITS DURING CONSTRUCTION. THIS SHALL BE DONE BEFORE SOD & SEEDING & MULCHING IS FINISHED

THE FOLLOWING LIST REPRESENTS A BASIC EROSION AND SEDIMENT CONTROL PROGRAM WHICH IS TO BE IMPLEMENTED TO HELP PREVENT OFF-SITE SEDIMENTATION DURING AND AFTER CONSTRUCTION OF THE PROJECT.

PERMANENT EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED AT THE EARLIEST PRACTICAL TIME CONSISTENT WITH GOOD CONSTRUCTION PRACTICES. ONE OF THE FIRST CONSTRUCTION ACTIVITIES SHOULD BE THE PLACEMENT OF PERMANENT AND TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES AROUND THE PERIMETER OF THE PROJECT OR THE INITIAL WORK AREA TO PROTECT THE PROJECT, ADJACENT PROPERTIES AND WATER RESOURCES.

TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE COORDINATED WITH PERMANENT MEASURES TO ASSURE ECONOMICAL, EFFECTIVE AND CONTINUOUS CONTROL THROUGHOUT THE CONSTRUCTION PHASE. TEMPORARY MEASURES SHALL NOT BE CONSTRUCTED FOR EXPEDIENCY IN LIEU OF PERMANENT MEASURES.

EROSION AND SEDIMENT CONTROL MEASURES SHALL BE ADEQUATELY MAINTAINED TO PERFORM THEIR INTENDED FUNCTION DURING CONSTRUCTION OF THE PROJECT.

NECESSARY REPAIRS TO BARRIERS OR REPLACEMENT OF BARRIERS SHALL BE ACCOMPLISHED PROMPTLY.

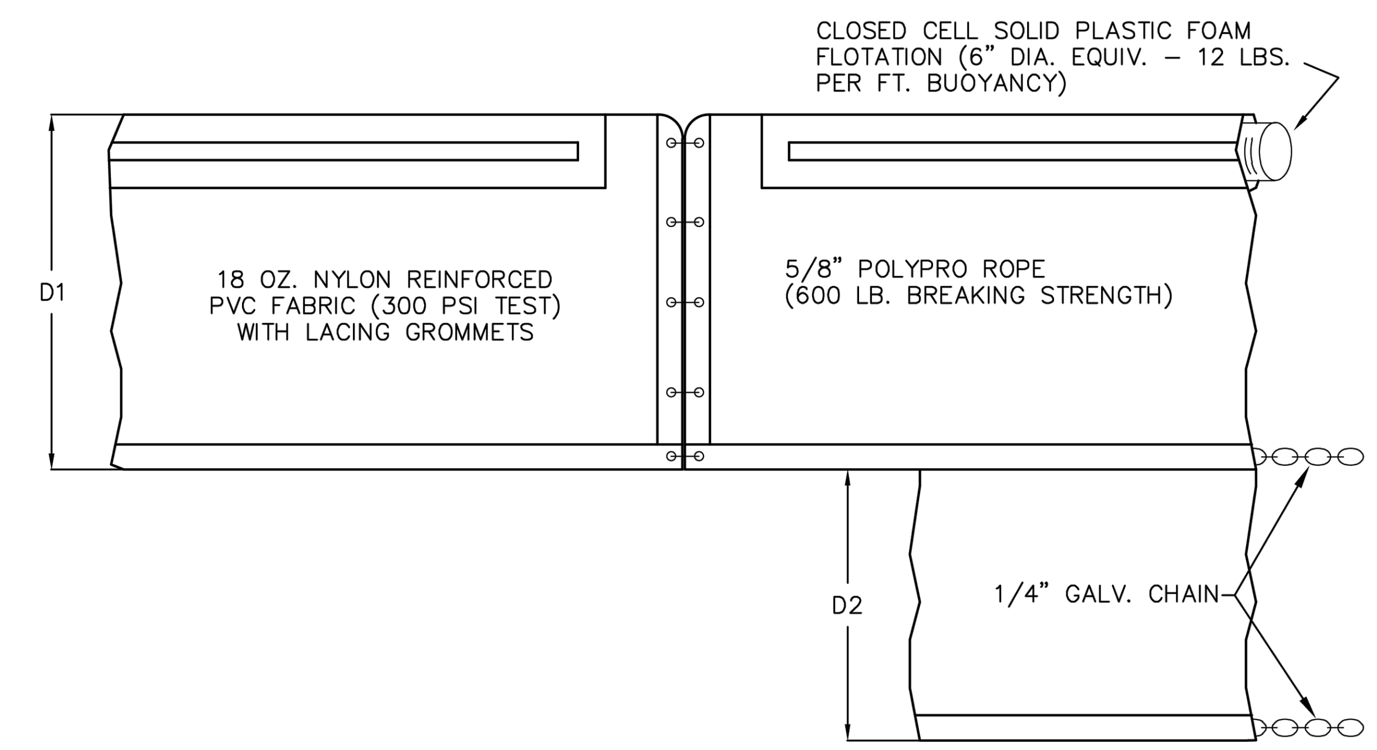
SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH RAINFALL. THEY MUST BE REMOVED WHEN THE LEVEL OF DEPOSITION REACHES APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER.

MATERIAL FROM SEDIMENT TRAPS SHALL NOT BE STOCKPILED OR DISPOSED OF IN A MANNER WHICH MAKES THEM READILY SUSCEPTIBLE TO BEING WASHED INTO ANY WATERCOURSE BY RUNOFF OR HIGH WATER.

ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE BARRIERS ARE NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED.

EROSION & SEDIMENT CONTROL
(N.T.S.)

Howey-in-the-Hills Standard Details | DATE: FEB 2022 | DETAIL G-1



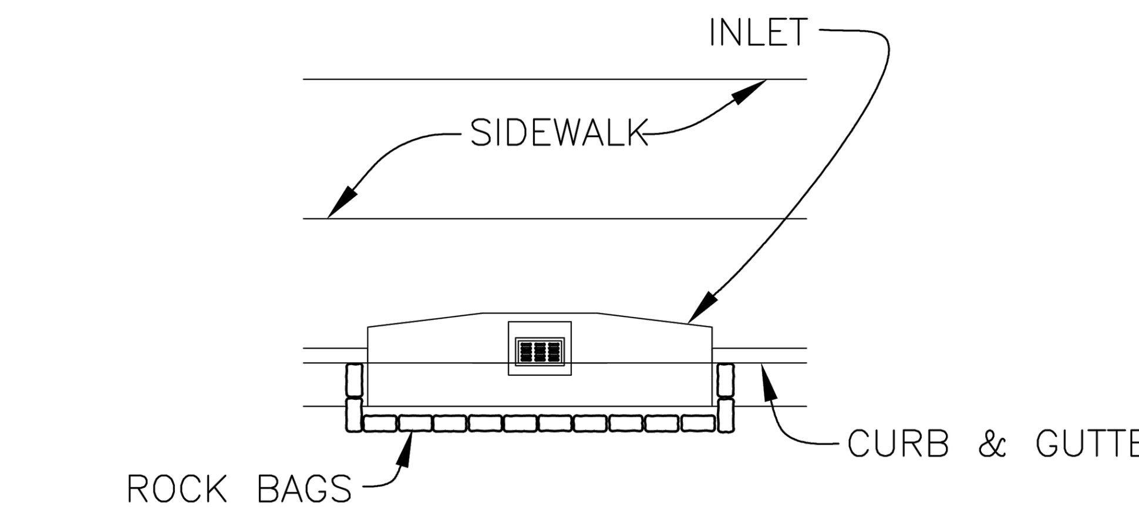
D1 - 5 FT. STANDARD, SINGLE PANEL FOR DEPTHS 5 FT. OR LESS

D2 - 5 FT. STANDARD, ADDITIONAL PANEL FOR DEPTHS GREATER THAN 5 FT.

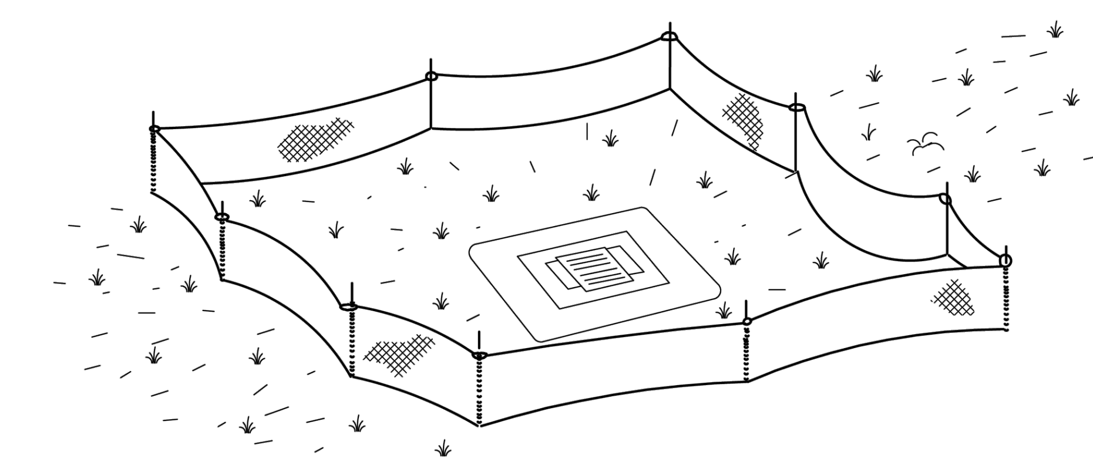
CURTAIN TO REACH BOTTOM UP TO DEPTHS OF 10 FT. TWO PANELS TO BE USED FOR DEPTHS GREATER THAN 10 FT., UNLESS SPECIAL DEPTH CURTAINS SPECIFICALLY CALLED FOR IN PLANS OR DESIGNATED BY ENGINEER.

FLOATING TURBIDITY BARRIER (N.T.S.)

Howey-in-the-Hills Standard Details | DATE: FEB 2022 | DETAIL G-2



CURB INLET

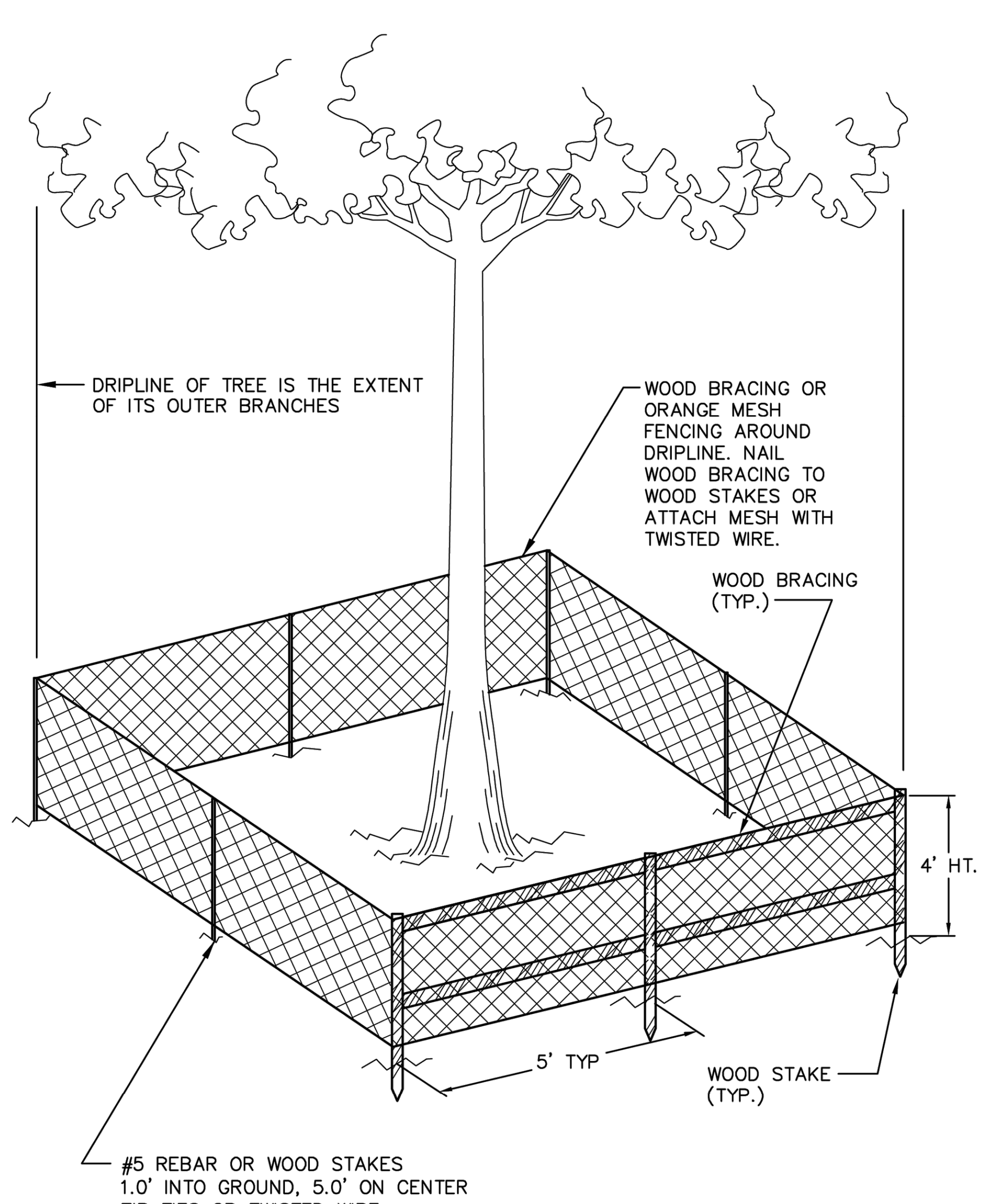


TYPE III SILT FENCE PROTECTION AROUND DITCH BOTTOM INLETS

ALTERNATE DESIGNS MAY BE PROPOSED BY ENGINEER

INLET PROTECTION (N.T.S.)

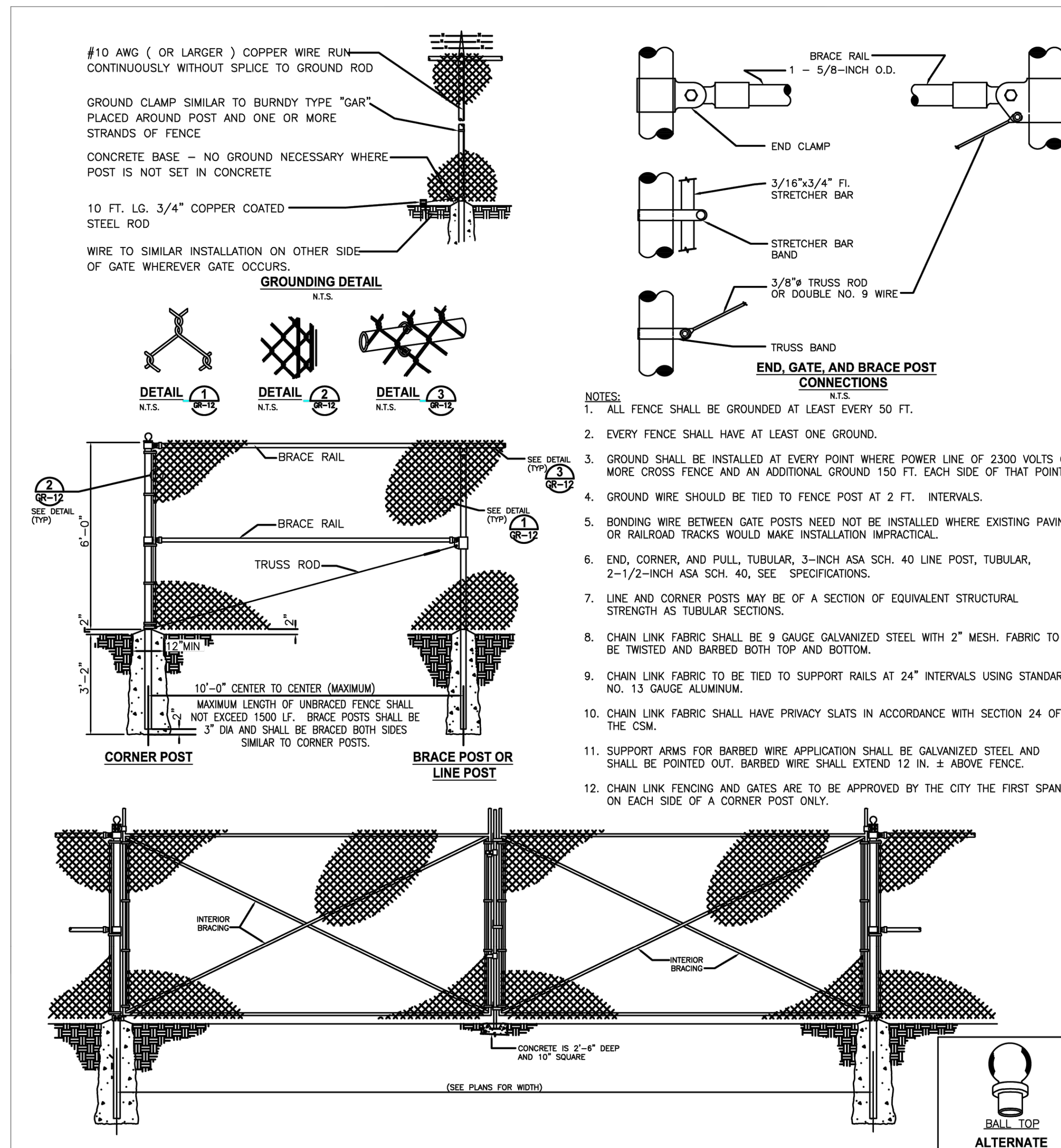
Howey-in-the-Hills Standard Details | DATE: FEB 2022 | DETAIL G-3



NOTE: BARBED WIRE FENCING IS NOT PERMISSIBLE

TREE PROTECTION (N.T.S.)

Howey-in-the-Hills Standard Details | DATE: FEB 2022 | DETAIL G-4



NOTES:
1. ALL FENCE SHALL BE GROUNDED AT LEAST EVERY 50 FT.
2. EVERY FENCE SHALL HAVE AT LEAST ONE GROUND.
3. GROUND SHALL BE INSTALLED AT EVERY POINT WHERE POWER LINE OF 2300 VOLTS OR MORE CROSS FENCE AND AN ADDITIONAL GROUND 150 FT. EACH SIDE OF THAT POINT.
4. GROUND WIRE SHOULD BE TIED TO FENCE POST AT 2 FT. INTERVALS.
5. BONDING WIRE BETWEEN GATE POSTS NEED NOT BE INSTALLED WHERE EXISTING PAVING OR RAILROAD TRACKS WOULD MAKE INSTALLATION IMPRACTICAL.
6. END, CORNER, AND PULL, TUBULAR, 3-INCH ASA SCH. 40 LINE POST, TUBULAR, 2-1/2-INCH ASA SCH. 40, SEE SPECIFICATIONS.
7. LINE AND CORNER POSTS MAY BE OF A SECTION OF EQUIVALENT STRUCTURAL STRENGTH AS TUBULAR SECTIONS.
8. CHAIN LINK FABRIC SHALL BE 9 GAUGE GALVANIZED STEEL WITH 2" MESH. FABRIC TO BE TWISTED AND BARBED BOTH TOP AND BOTTOM.
9. CHAIN LINK FABRIC TO BE TIED TO SUPPORT RAILS AT 24" INTERVALS USING STANDARD NO. 13 GAUGE ALUMINUM.
10. CHAIN LINK FABRIC SHALL HAVE PRIVACY SLATS IN ACCORDANCE WITH SECTION 24 OF THE CSM.
11. SUPPORT ARMS FOR BARBED WIRE APPLICATION SHALL BE GALVANIZED STEEL AND SHALL BE POINTED OUT. BARBED WIRE SHALL EXTEND 12 IN. ± ABOVE FENCE.
12. CHAIN LINK FENCING AND GATES ARE TO BE APPROVED BY THE CITY THE FIRST SPAN ON EACH SIDE OF A CORNER POST ONLY.

CHAIN LINK FENCE & GATE (N.T.S.)

Howey-in-the-Hills Standard Details | DATE: FEB 2022 | DETAIL G-6

1. ALL RECLAIMED WATER PIPING TO BE OWNED AND MAINTAINED BY THE TOWN SHALL BE A SOLID PANTONE PURPLE COLOR.
2. RECLAIMED WATER MAINS SHALL BE PVC CONFORMING TO AWWA C-900, DR 18 FOR PIPE SIZES 4"-12". PIPES 14" & LARGER SHALL BE AWWA C-905, DR 25. PRESSURE CLASS 350 DIP IS AN ACCEPTABLE ALTERNATE. ALL COUPLINGS, CLEANING COMPOUNDS, SOLVENTS, LUBRICANTS, AND PIPE PREPARATION FOR LAYING SHALL BE IN ACCORDANCE WITH THE PIPE MANUFACTURERS LATEST RECOMMENDATIONS.
3. DEPTH OF RECLAIMED WATER LINES TO BE 36" MIN. BELOW FINISHED GRADE.
4. RECLAIMED WATER MAINS TO BE LOCATED 5' FROM BACK OF CURB OR EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.
5. ALL PIPING CLEARANCES SHALL BE IN ACCORDANCE WITH CHAPTER 62-555.314, F.A.C.
6. ALL RECLAIMED WATER MAINS UNDER PAVEMENT SHALL BE DUCTILE IRON PIPE AND SHALL EXTEND 5' BEYOND THE EDGE OF PAVEMENT OR BACK OF CURB, EXCEPT DIRECTIONAL BORES, WHICH SHALL BE SDR-11 HDPE.
7. ALL IRRIGATION SLEEVING UNDER PAVEMENT SHALL EXTEND 5' BEYOND THE EDGE OF PAVEMENT OR BACK OF CURB.
8. ALL OTHER REQUIREMENTS OF THE TOWN WATER SYSTEM SHALL APPLY TO THE RECLAIMED WATER SYSTEM.
9. PROPER SIGNAGE FOR PUBLIC ACCESS IRRIGATION AREAS TO BE SUPPLIED BY THE DEVELOPER / CONTRACTOR, IN ACCORDANCE WITH CHAPTER 62-610.418, F.A.C.

GENERAL RECLAIMED WATER NOTES

Howey-in-the-Hills Standard Details | DATE: FEB 2022 | DETAIL RW-1

MADDEN
MOORHEAD & STOKES, LLC
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431 E. Horatio Avenue
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(407) 629-8330
CA# 0007723

HOWEY-IN-THE-HILLS STANDARD DETAILS
FOR
LAKE HILLS MAIN BLVD. & MASS GRADING
HOWEY-IN-THE-HILLS FLORIDA

READER & PARTNERS, LLC
5850 TG LEE BOULEVARD SUITE 200
ORLANDO, FL 32822
(407) 856-4899

No.	DATE	REVISIONS
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DAVID ASHLEY STOKES LICENSE NO. 66527 STATE OF FLORIDA PROFESSIONAL ENGINEER

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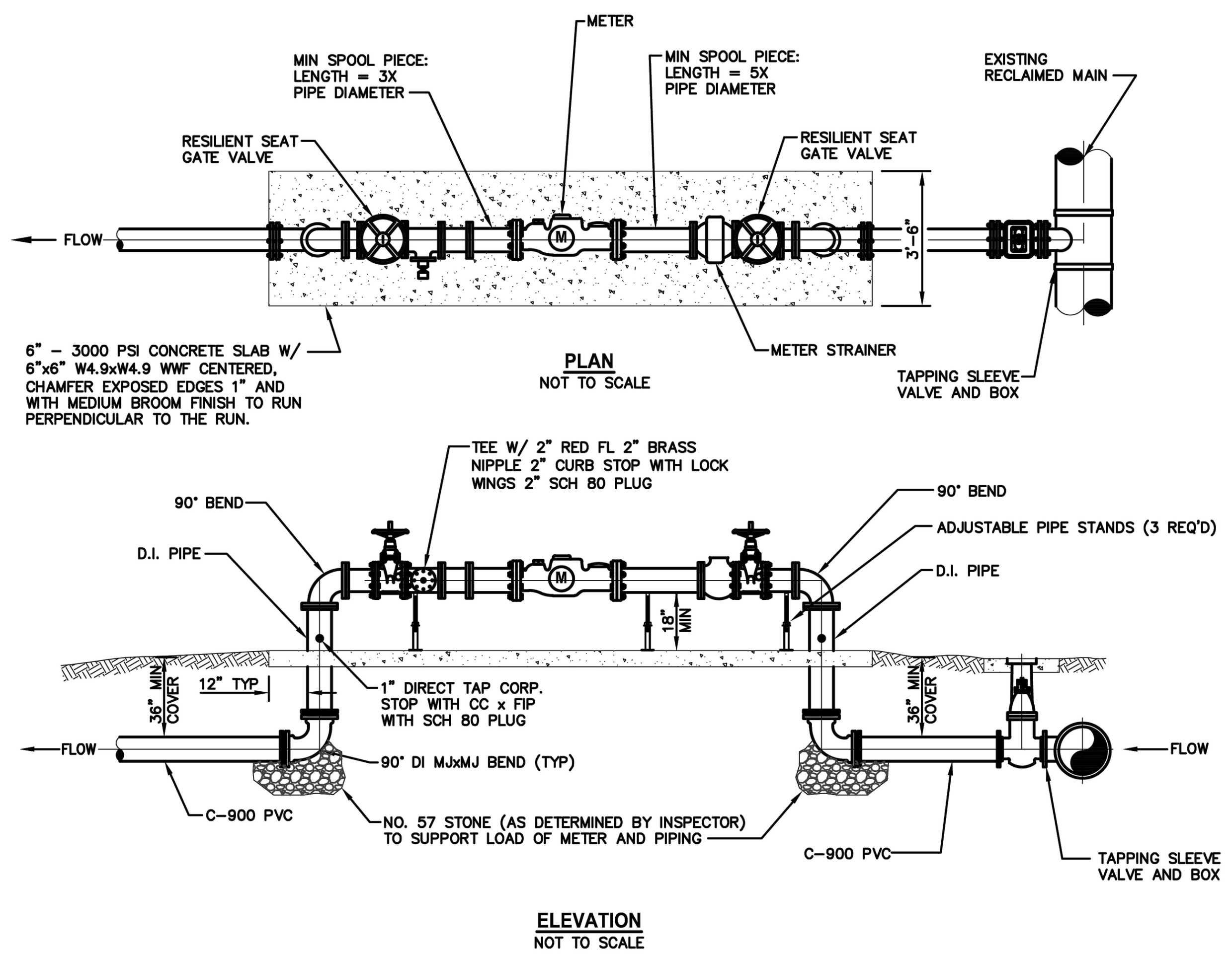
ENGINEER OF RECORD
November 7, 2024

JOB #	23019
DATE:	11/7/24
DATUM:	NAVD 88
DESIGNED BY:	KAC
DRAWN BY:	JSK
APPROVED BY:	DAS

C930



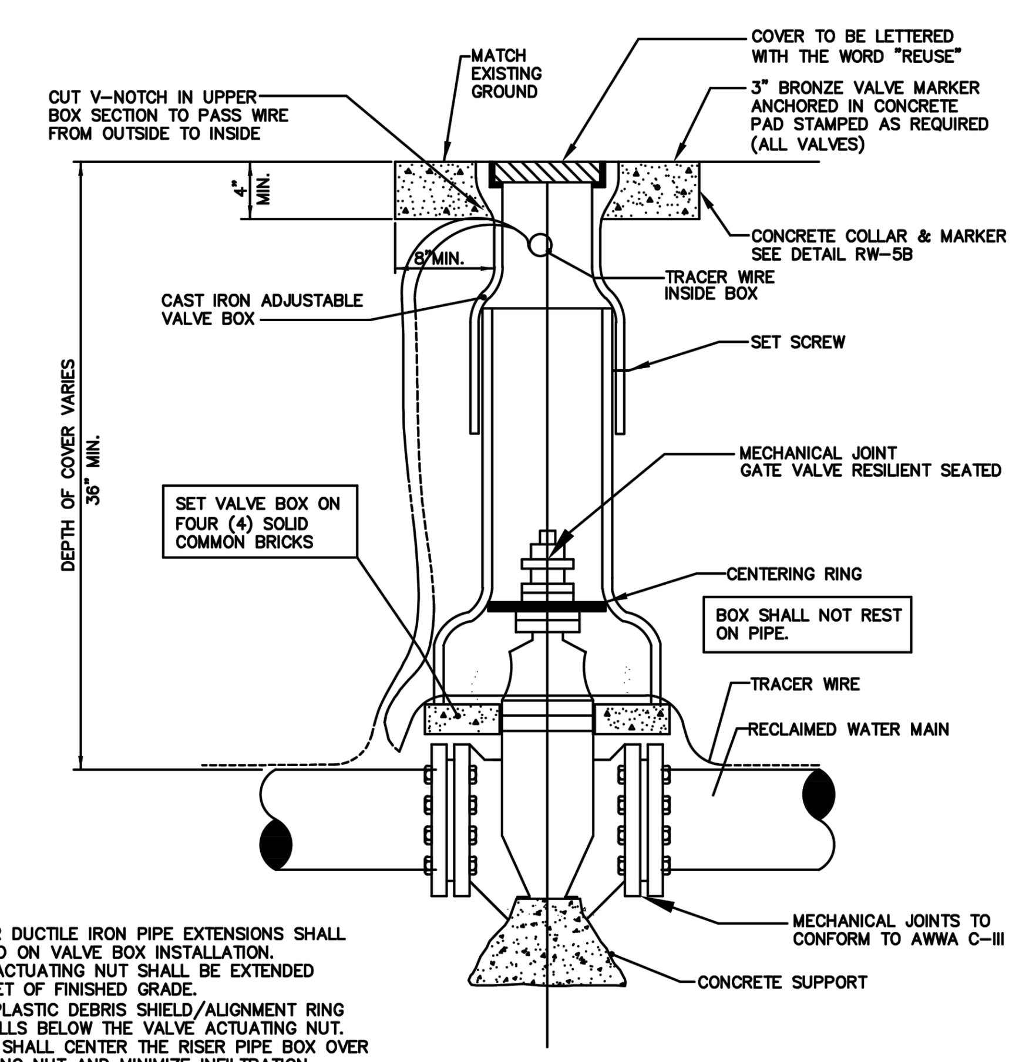
NOTES:
1. ALL ABOVE GROUND PIPE TO BE PAINTED WITH 2 COATS OF APPROVED PANTONE PURPLE PAINT.

RECLAIMED WATER METERING

NOT TO SCALE
(NOTE: METERS TO BE INSTALLED BY CITY OF TAVARES.)

Howey–in–the–Hills
Standard Details

DATE: FEB 2022
DETAIL RW–4



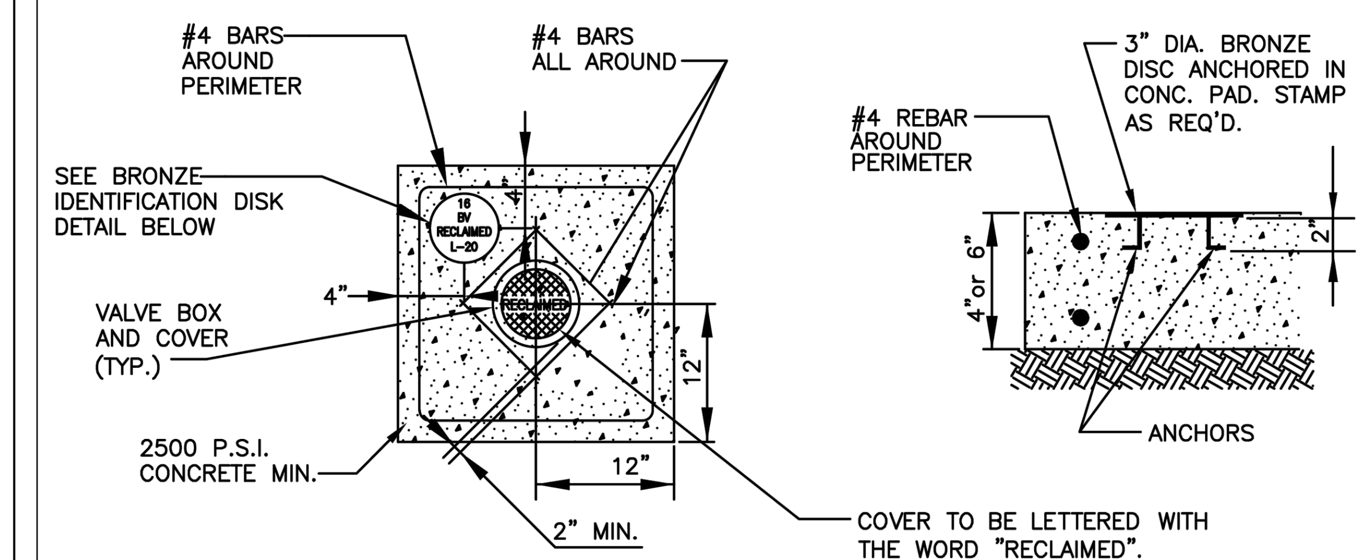
NOTES
1. PVC PIPE OR DUCTILE IRON PIPE EXTENSIONS SHALL NOT BE USED ON VALVE BOX INSTALLATION.
2. THE VALVE ACTUATING NUT SHALL BE EXTENDED WITHIN 2 FEET OF FINISHED GRADE.
3. PROVIDE A PLASTIC DEBRIS SHIELD/ALIGNMENT RING WHICH INSTALLS BELOW THE VALVE ACTUATING NUT. THIS SHIELD SHALL CENTER THE RISER PIPE BOX OVER THE ACTUATING NUT AND MINIMIZE INFILTRATION.
4. FOR NEW CONSTRUCTION, THE VALVE BOX SHALL BE ADJUSTED TO MIDRANGE TO ALLOW FOR FUTURE BOX ADJUSTMENTS.
5. VALVE BOX SHALL BE A TWO PIECE SCREW TYPE.

GATE VALVE AND BOX

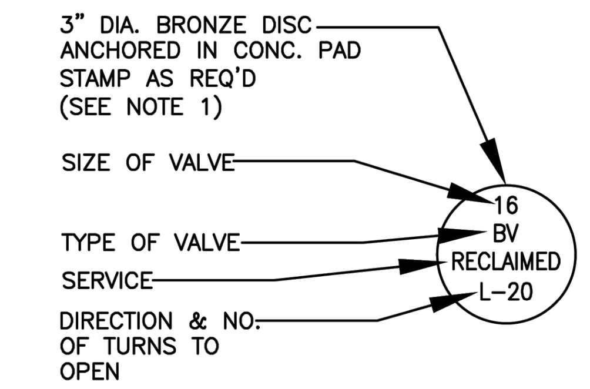
NOT TO SCALE

Howey–in–the–Hills
Standard Details

DATE: FEB 2022
DETAIL RW–5A



NOTE:
1. BRONZE IDENTIFICATION DISC SHALL BE REQUIRED FOR ALL VALVES.
2. 6" THICK CONCRETE PAD IN ROADWAY OR PAVED AREAS, 4" THICK CONCRETE PAD IN OTHER AREAS.



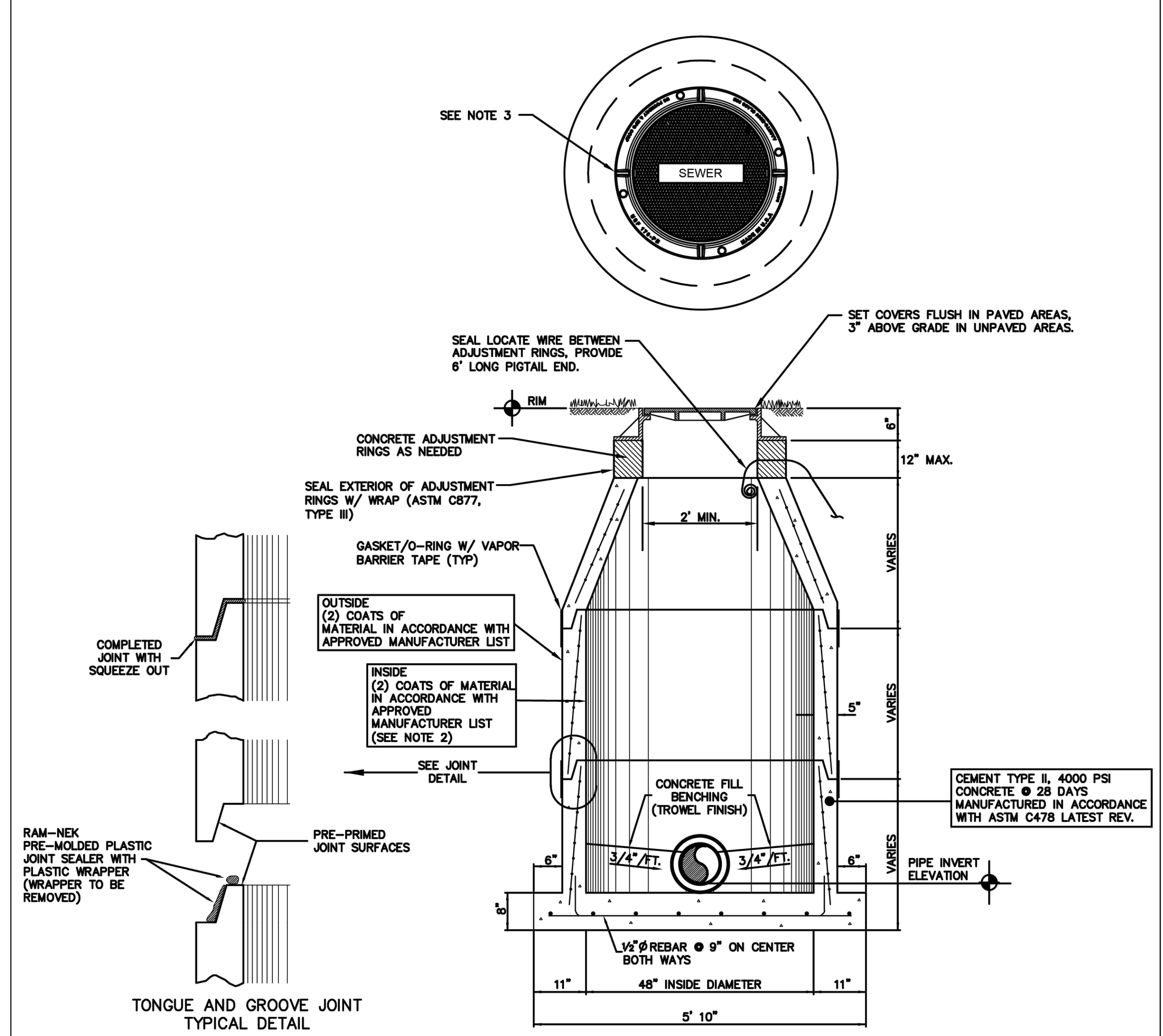
BRONZE IDENTIFICATION DISC DETAIL

VALVE COLLAR

NOT TO SCALE

Howey–in–the–Hills
Standard Details

DATE: FEB 2022
DETAIL RW–5B



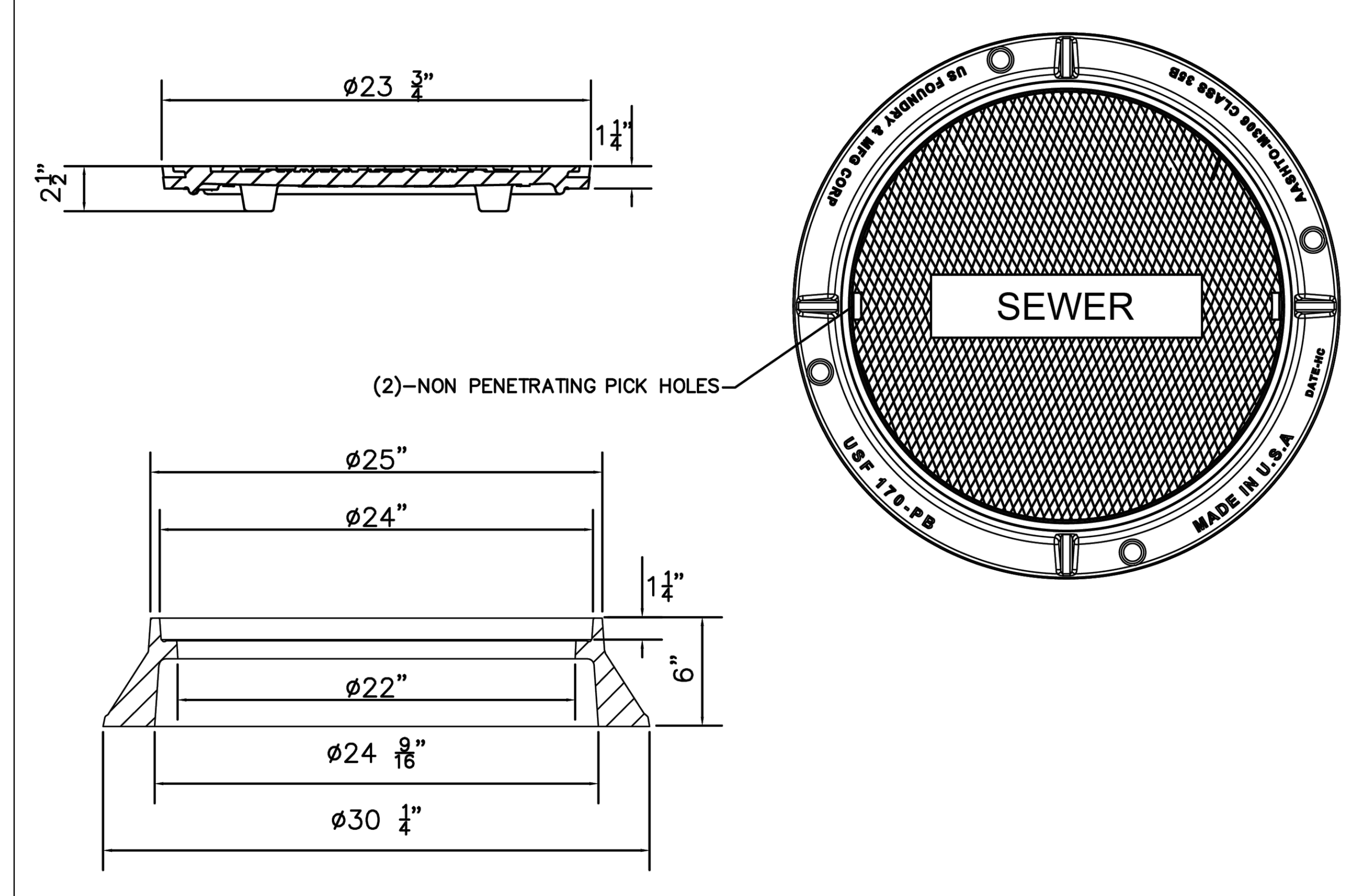
NOTES
1. ALTERNATE–PRECAST MANHOLE TOPS MUST BE APPROVED IN ADVANCE.
2. LINER (150 MILS DFT) SHALL BE USED WHERE SHOWN ON DRAWINGS AND/OR REQUIRED BY THE CITY.
3. MANHOLE LID TO BE CENTERED OVER EFFLUENT PIPE.
4. INSTALL ONE CONTINUOUS PIECE OF RAM–NEK AROUND ENTIRE MATING SURFACE BETWEEN ADJUSTMENT RINGS AND MANHOLE FRAME.

SANITARY PRECAST MANHOLE

NOT TO SCALE

Howey–in–the–Hills
Standard Details

DATE: FEB 2022
DETAIL WW–1



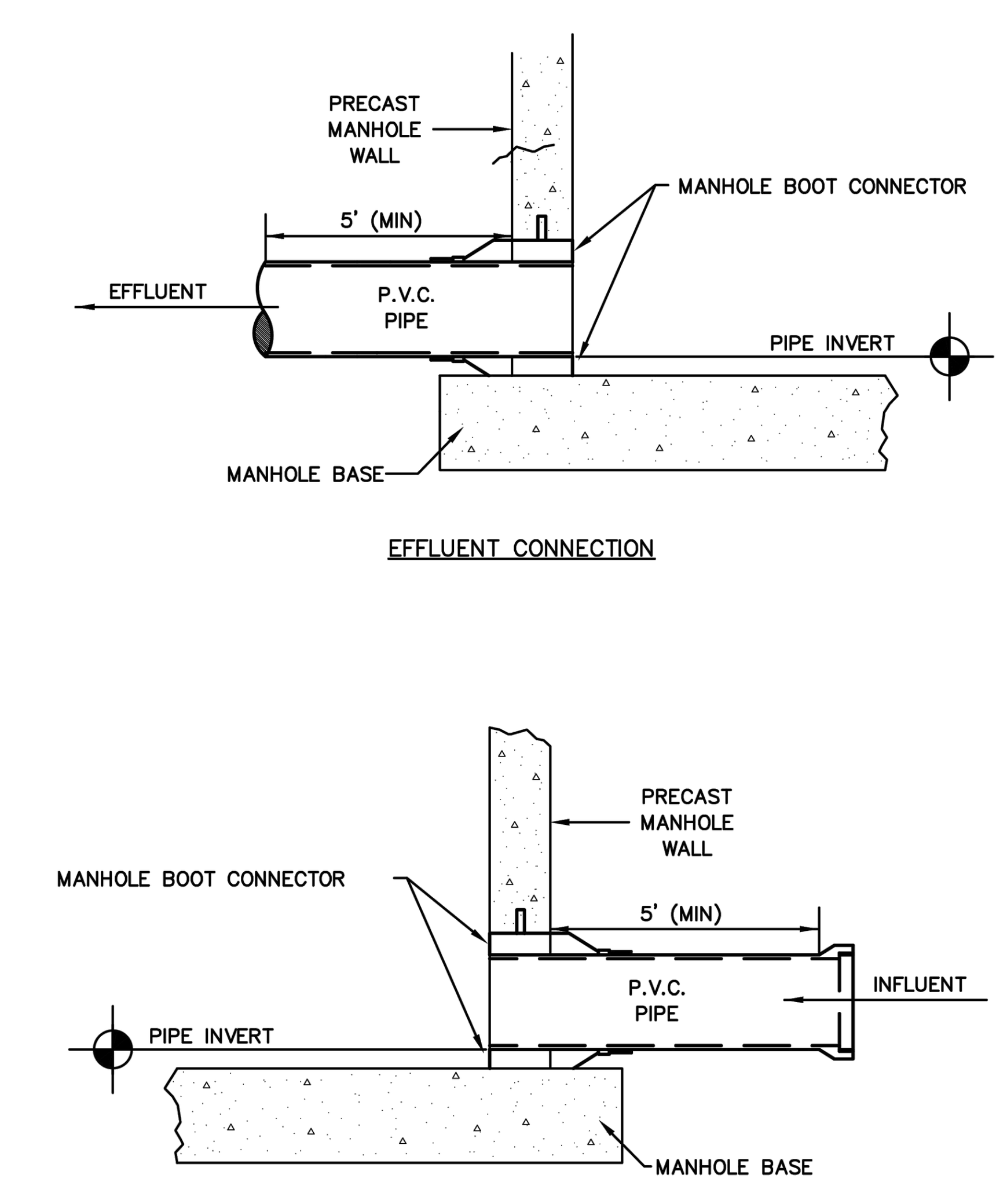
*MODEL USF 170–PB RING AND CE–PB COVER
RING NO. 8021468
COVER NO. 8017774
MATERIAL AASHTO M306 GRAY CAST IRON CLASS 35B

SANITARY MANHOLE COVER

NOT TO SCALE

Howey–in–the–Hills
Standard Details

DATE: FEB 2022
DETAIL WW–2



PIPE CONNECTION TO PRECAST SANITARY MANHOLE

NOT TO SCALE

Howey–in–the–Hills
Standard Details

DATE: FEB 2022
DETAIL WW–3

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HOWEY-IN-THE-HILLS STANDARD DETAILS
FOR
LAKE HILLS MAIN BLVD. & MASS GRADING
HOWEY-IN-THE-HILLS FLORIDA

READER & PARTNERS, LLC
5850 TG LEE BOULEVARD SUITE 200
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(407) 856-4899

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DAVID ASHLEY STOKES
LICENSE
NO. 66527
STATE OF FLORIDA
PROFESSIONAL ENGINEER

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ENGINEER OF RECORD
November 7, 2024

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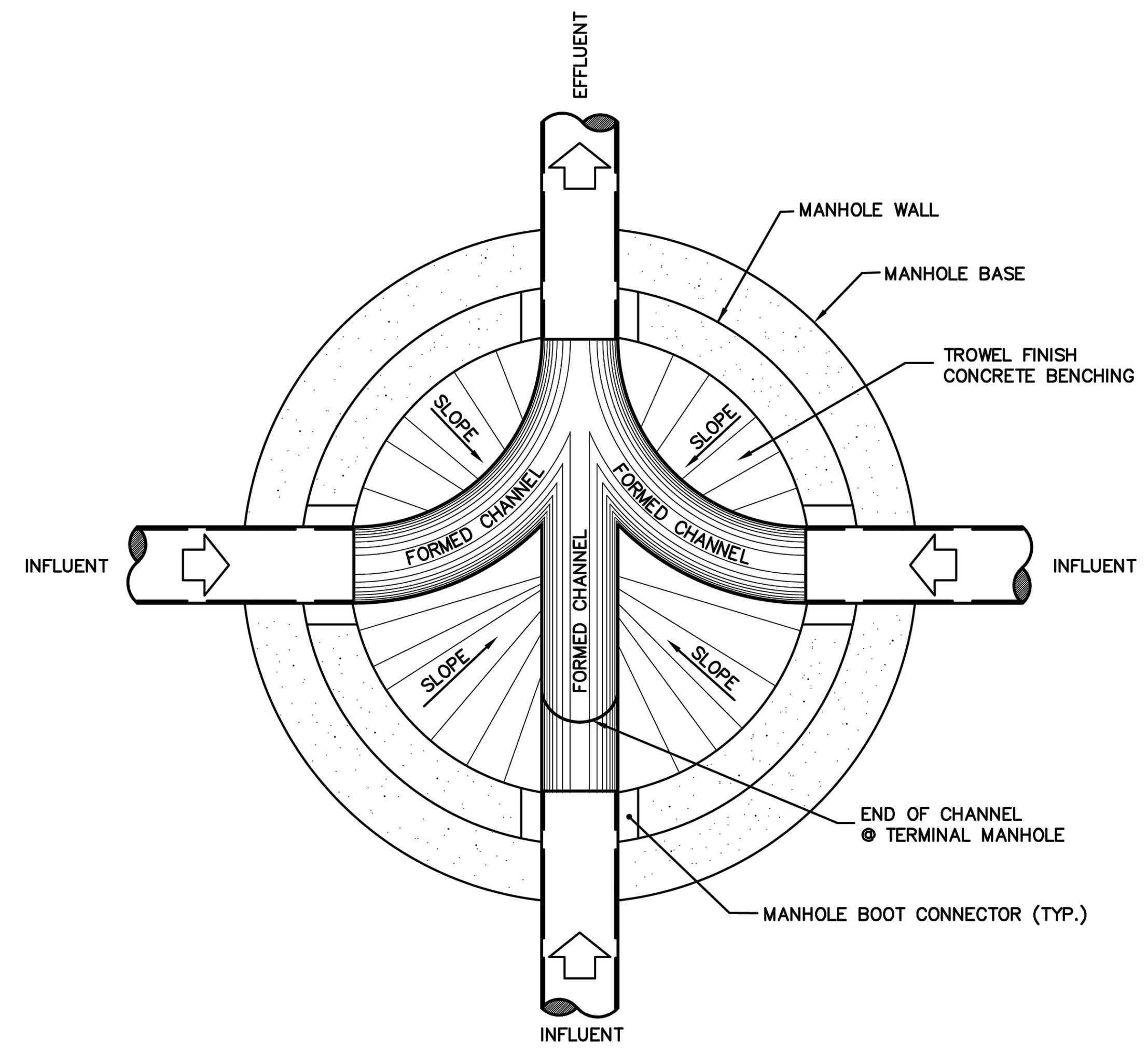
DRAWN BY:	JSK
APPROVED BY:	DAS

C931



FLOW PATTERNS FOR INVERT CHANNELS

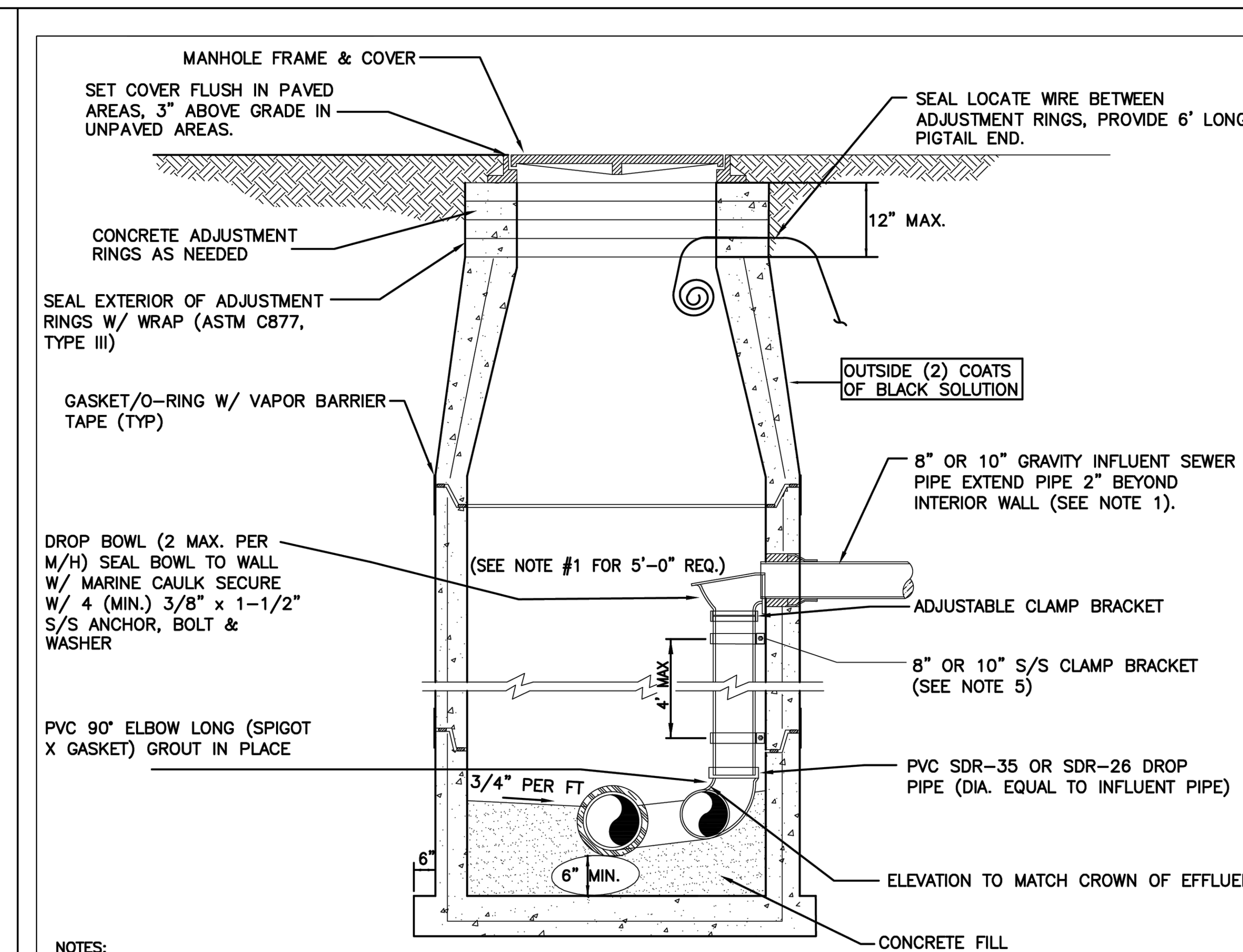
NOTES:

1. INVERT CHANNELS TO BE CONSTRUCTED FOR SMOOTH FLOW WITH NO OBSTRUCTIONS. HALF PIPE INVERT CHANNELS.
2. SPILLWAYS SHALL BE CONSTRUCTED BETWEEN PIPES WITH DIFFERENT INVERT ELEVATIONS PROVIDING FOR SMOOTH FLOWS.
3. CHANNELS FOR FUTURE CONNECTIONS (STUBS) SHALL BE CONSTRUCTED, FILLED WITH SAND AND COVERED WITH 1" OF MORTAR.

TYPICAL MANHOLE PLAN

NOT TO SCALE

Howey–in–the–Hills Standard Details	DATE: FEB 2022 DETAIL WW–4



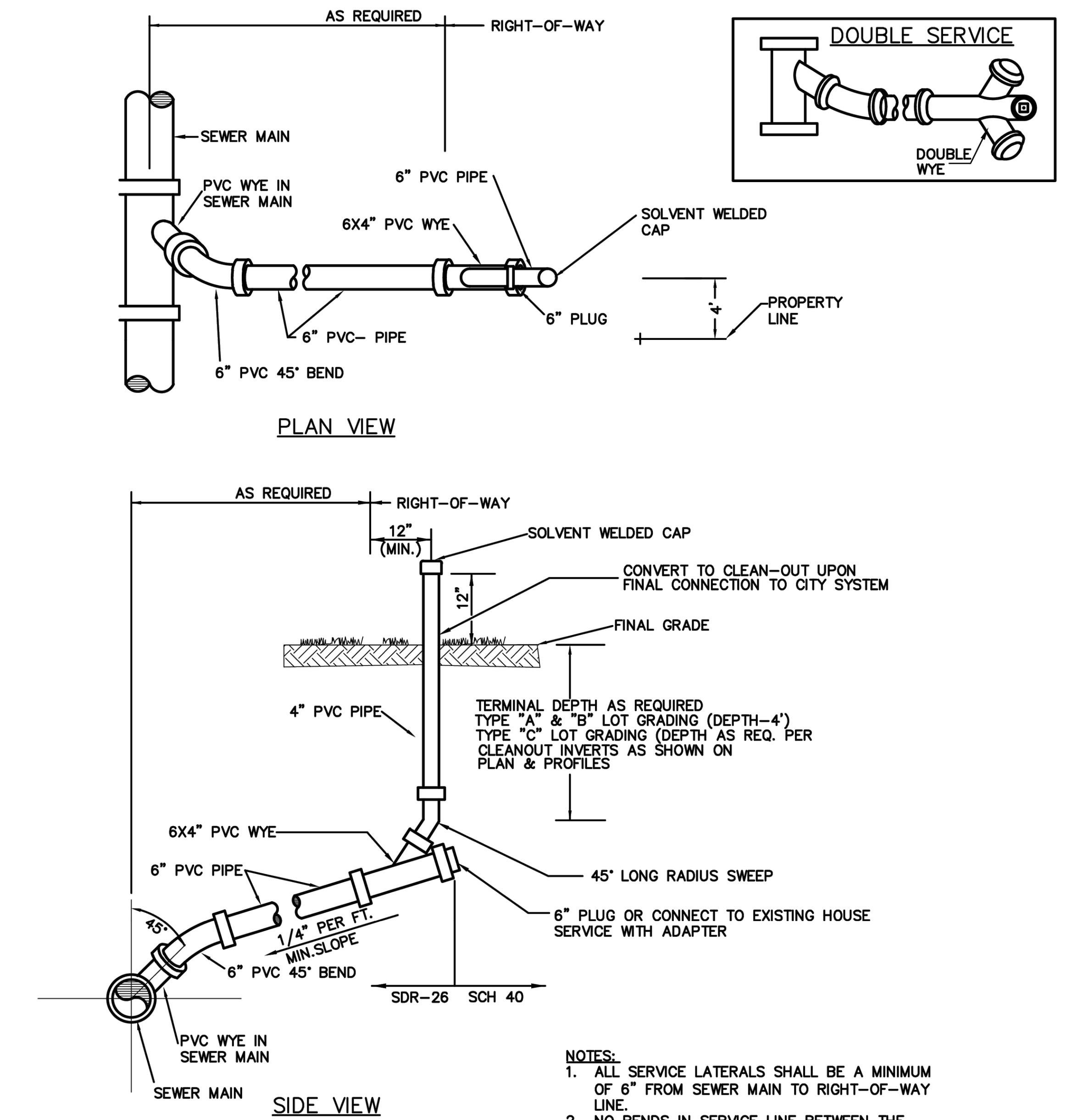
NOTES:

1. THIS ASSEMBLY IS FOR 8" OR 10" GRAVITY INFLUENT LINES ONLY. NO DROPS ALLOWED FOR FORCE MAINS. MAXIMUM OF 2 INSIDE DROP BOWLS PER MANHOLE. A 5'–0" DIA. MANHOLE (6" THICK WALLS) IS REQUIRED. THE INSIDE DROP FOR 8" HIGH–LINE SHALL BE CONSTRUCTED SIMILAR TO ABOVE.
2. PRECAST MANHOLE SECTIONS TO BE MANUFACTURED IN ACCORDANCE WITH THE LATEST EDITIONS OF A.S.T.M. C–478 WITH 4000 LB. CONC., TYPE II CEMENT. ALL LIFTING HOLES AND OUTSIDE INSERTS SHALL BE FILLED WITH NON–SHRINK GROUT AND COATED WITH BITUMINOUS WATERPROOFING MATERIAL.
3. THE INTERIOR OF MANHOLE AND THE INTERIOR OF ADJUSTMENT RINGS SHALL BE LINED (150 MILS DFT) AS INDICATED ON THE DRAWINGS AND/OR REQUIRED BY THE CITY.
4. THE DROP BOWL ASSEMBLY SHALL BE INSTALLED PRIOR TO APPLICATION OF SPECIALTY LINING MATERIAL.
5. ADJUSTABLE CLAMPING BRACKET (MIN. 2 PER DROP BOWL ASSY). 1–1/2" WIDE, 11 GA. W/ 3/8" DIA. 18–8 PINCH BOLTS AND NUTS. SECURE TO M/H WALL WITH (2) 3/8" X 1" BOLT, ANCHOR & WASHER PER BRACKET ASSY. ALL 316 STAINLESS STEEL MATERIALS.
6. INSTALL ONE CONTINUOUS PIECE OF RAM–NEK AROUND ENTIRE MATING SURFACE BETWEEN ADJUSTMENT RINGS AND MANHOLE FRAME.
7. MANHOLE LID SHALL BE CENTERED OVER DROP BOWL.

INSIDE DROP STANDARD PRECAST MANHOLE

NOT TO SCALE

Howey–in–the–Hills Standard Details	DATE: FEB 2022 DETAIL WW–5

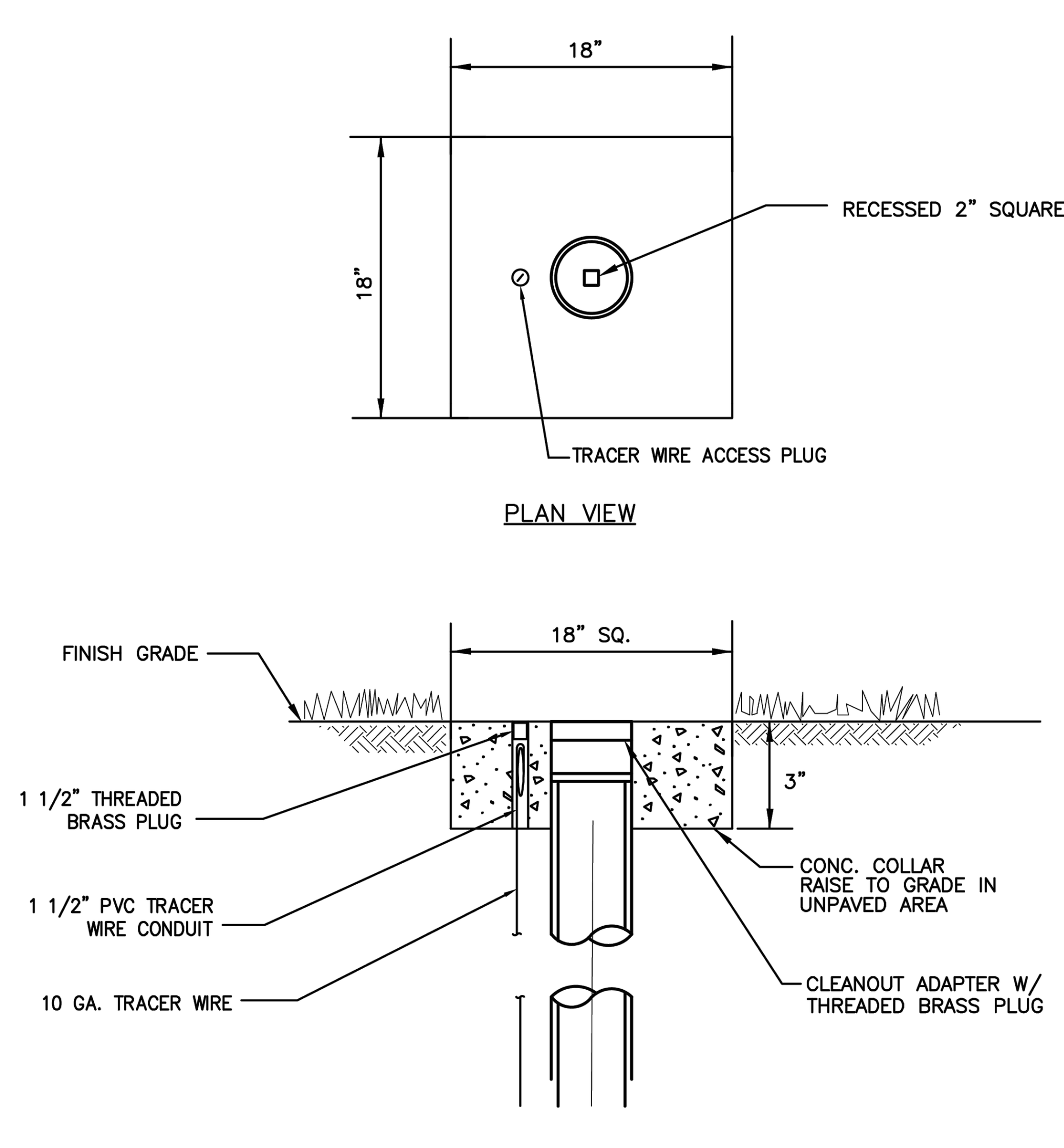


NOTES:
1. ALL SERVICE LATERALS SHALL BE A MINIMUM OF 6" FROM SEWER MAIN TO RIGHT–OF–WAY LINE.
2. NO BENDS IN SERVICE LINE BETWEEN THE PROPERTY LINE AND THE WYE CONNECTOR.

SANITARY SEWER SERVICE

PVC SEWER SERVICE – NOT TO SCALE

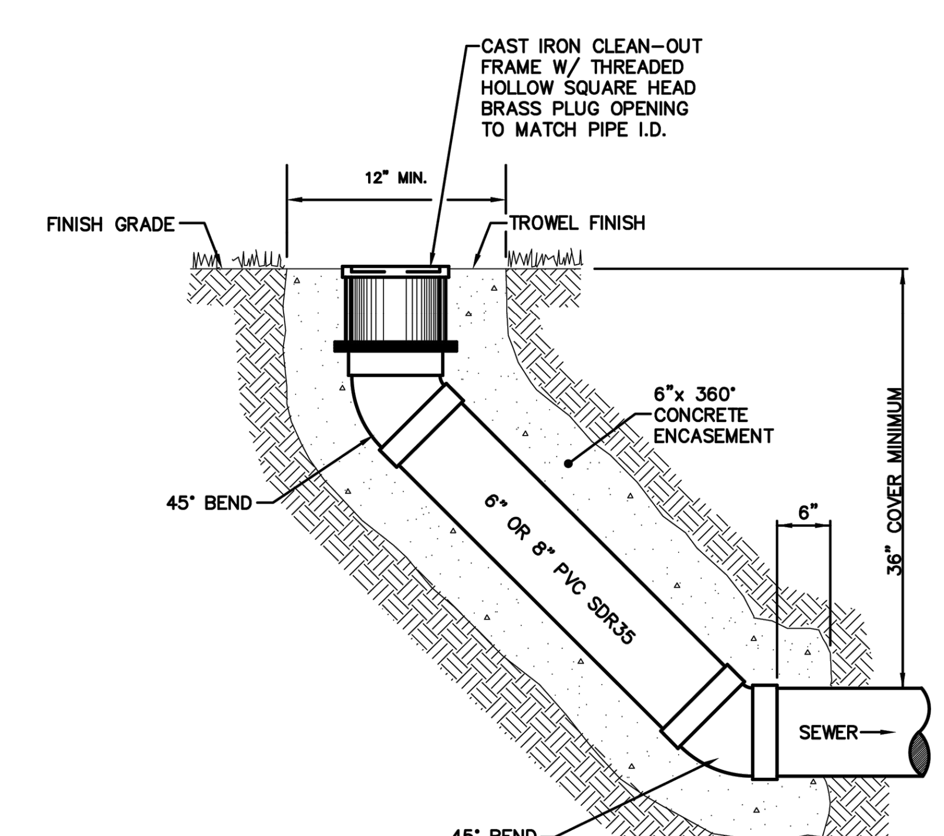
Howey–in–the–Hills Standard Details	DATE: FEB 2022 DETAIL WW–6



SERVICE CLEANOUT

NOT TO SCALE

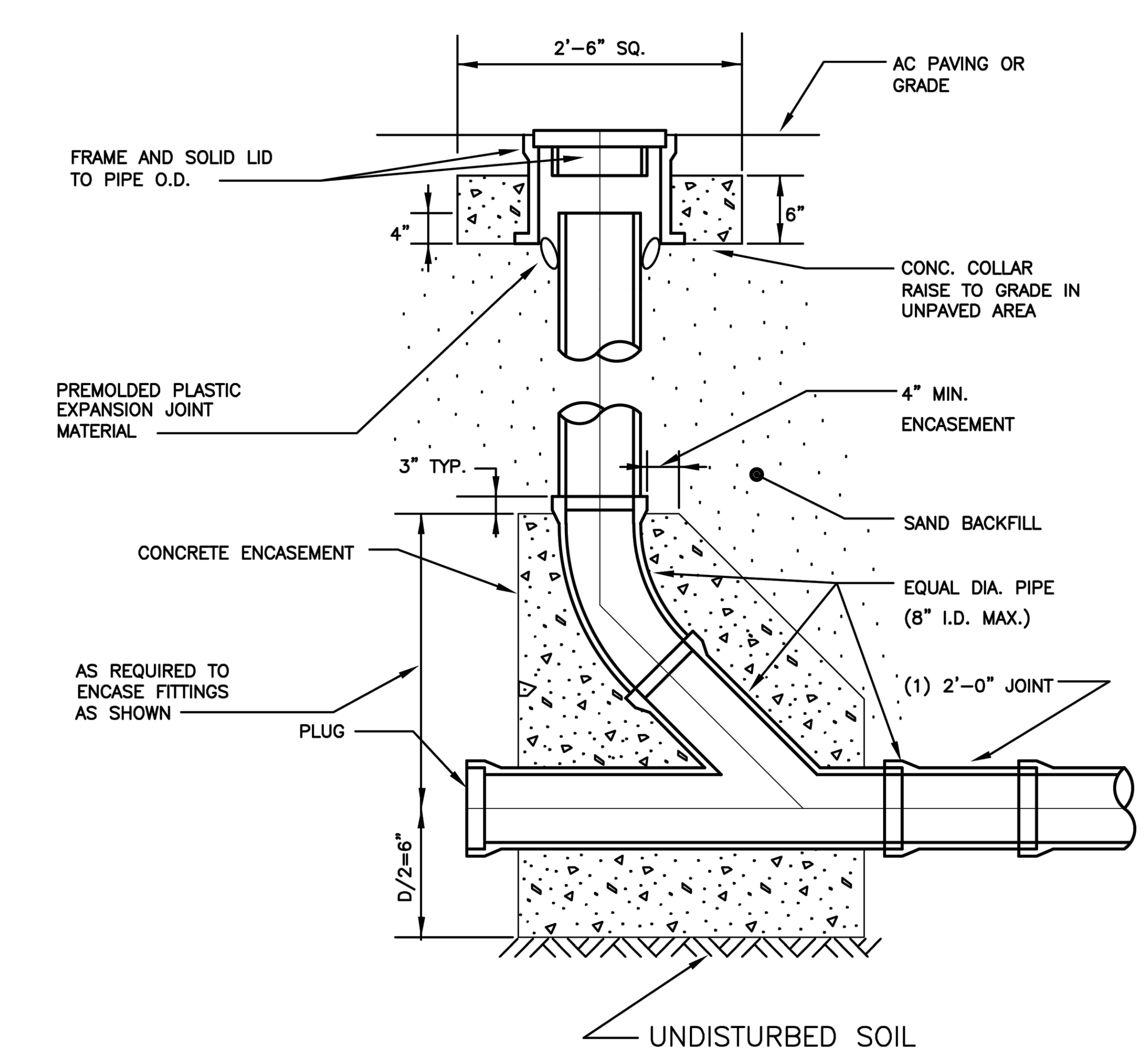
Howey–in–the–Hills Standard Details	DATE: FEB 2022 DETAIL WW–7



TRUNK LINE CLEAN–OUT

NOT TO SCALE

Howey–in–the–Hills Standard Details	DATE: FEB 2022 DETAIL WW–8



GRAVITY CLEAN–OUT

NOT TO SCALE

Howey–in–the–Hills Standard Details	DATE: FEB 2022 DETAIL WW–9

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HOWEY-IN-THE-HILLS STANDARD DETAILS

FOR

LAKE HILLS MAIN BLVD. & MASS GRADING

HOWEY-IN-THE-HILLS FLORIDA

READER & PARTNERS, LLC
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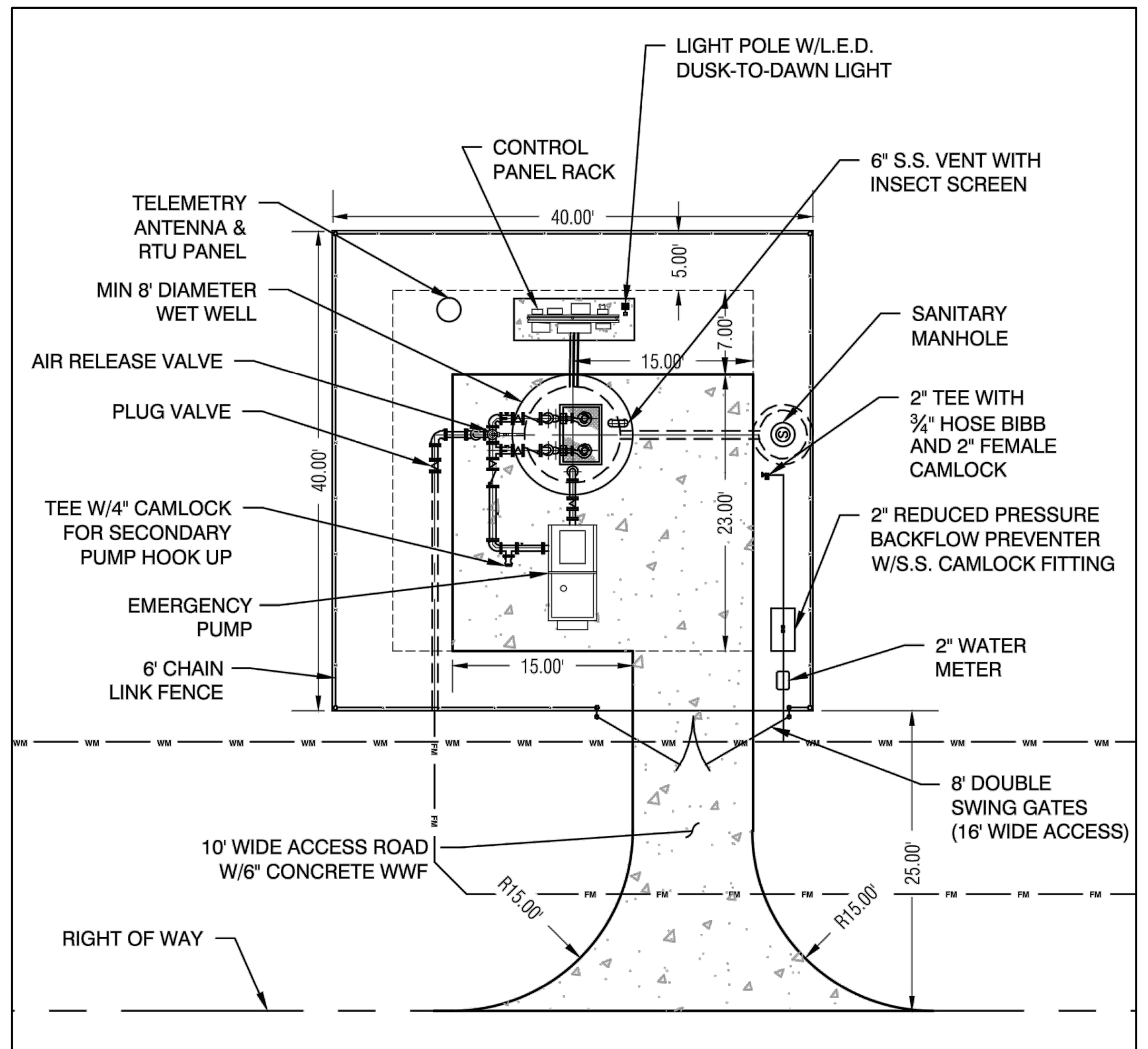
C932



NOTES:

1. FENCED AREA SHALL BE LAID WITH A MINIMUM OF 6" OF ¾" WASHED ROCK OVER FILTER CLOTH.
2. INFLUENT AND EFFLUENT MAINS SHALL BE CLEAR OF PANEL.
3. PLAN MAY VARY BASED UPON SPECIFIC SITE REQUIREMENTS UPON APPROVAL FROM CITY

LIFT STATION SITE LAYOUT

NOT TO SCALE

Beautiful HOWEY-IN-THE-HILLS

Howey-in-the-Hills Standard Details

DATE: DEC 2023

DETAIL WW-10

1. ALL PUMP STATIONS SHALL BE PROVIDED WITH A SUITABLY-SIZED, ENGINE-DRIVEN STANDBY EMERGENCY BYPASS PUMP ASSEMBLY, TO BE SIZED BY THE PROJECT ENGINEER. THE BYPASS PUMP SHALL BE A HORIZONTAL END SUCTION SOLIDS HANDLING CENTRIFUGAL PUMP CAPABLE OF HANDLING THE DESIGN FLOW OF THE PUMP STATION AND BE SELF-PRIMING FROM DRY CONDITIONS.
2. THE BYPASS PUMP SHALL BE FULLY AUTOMATIC, UTILIZING AUTO-START CONTROLS INTEGRATED INTO THE MAIN CONTROL PANEL THAT RESPOND TO VARYING LIQUID LEVELS VIA FLOAT SWITCHES. AUTOMATION SHALL ALLOW FOR PUMP STATION OPERATION IN THE EVENT OF A POWER OUTAGE OR SUBMERSIBLE PUMP FAILURE. THE CONTROLLER SHALL BE EQUIPPED WITH AUTOMATIC AND MANUAL OPERATION MODES.
3. THE SUB-BASE DUAL WALL FUEL TANK SHALL BE THE MANUFACTURER'S STANDARD UNIT, SIZED TO PROVIDE A MINIMUM OF 24-HOURS OF FUEL TO OPERATE THE BYPASS PUMP. HOWEVER, THE FUEL TANK SHALL BE LESS THAN 500 GALLONS IN SIZE.
4. THE MAXIMUM SOUND LEVEL WITH THE COMPLETE BYPASS PUMP ASSEMBLY OPERATING SHALL NOT EXCEED 72 DBA AT 23 FEET. EXHAUST SYSTEM SHALL BE IN COMPLIANCE WITH EPA TIER 2 EXHAUST EMISSION REQUIREMENTS.
5. THE UNIT SHALL BE PROVIDED WITH AN APPROPRIATE BLOCK HEATER FOR COLD STARTS. THE TRANSFORMER FOR PROVIDING POWER TO THE BLOCK HEATER SHALL BE PLACED SEPARATELY FROM THE CONTROL PANEL AND THE BYPASS PUMP UNIT.
6. BYPASS PUMP ASSEMBLY INCLUDING BASE AND VIBRATION ISOLATORS SHALL BE ANCHORED TO A SUITABLY-SIZED CONCRETE PAD IN NEARBY PROXIMITY TO THE PUMP STATION.
7. THE BYPASS PUMP UNIT SHALL BE AS MANUFACTURED BY THOMPSON PUMP & MANUFACTURING OR APPROVED EQUAL.
8. THE BYPASS PUMP SET SHALL BE SHOP PRIMED AND FINISH COATED IN ACCORDANCE WITH THE MANUFACTURER'S STANDARD PRACTICE. AN ADEQUATE SUPPLY OF TOUCH-UP PAINT SHALL BE PROVIDED.
9. A REPRESENTATIVE OF HOWEY-IN-THE-HILLS SHALL BE PRESENT FOR THE INITIAL START-UP OF THE BYPASS PUMP ASSEMBLY. SPECIAL TOOLS AND SPARE PARTS AS REQUIRED SHALL BE PROVIDED TO THE TOWN.
10. THE FOLLOWING TABLE SHALL BE COMPLETED AND SHOWN ON THE PLANS.

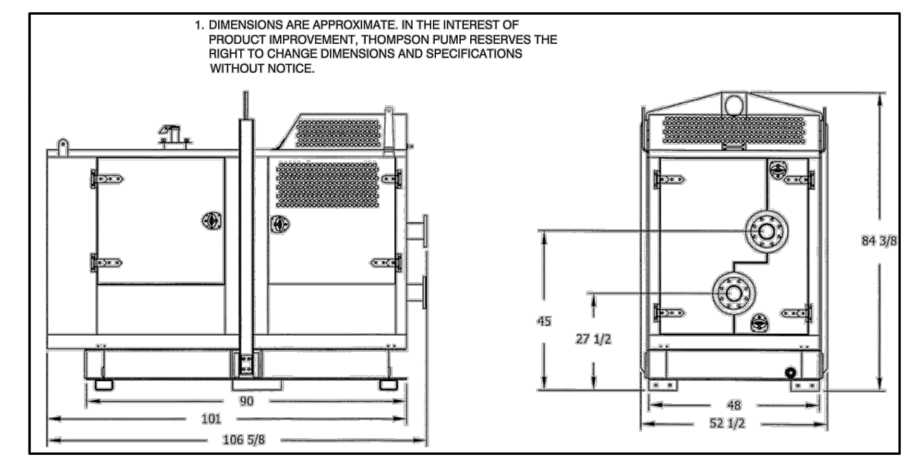
THOMPSON PUMP MODEL NO.: ________________________________

MUFFLERS RESIDENTIAL GRADE, BATTERY CHARGER, DUAL WALL SUBBASE FUEL STORAGE TANK ______ GALLONS

SOUND ATTENUATED OUTDOOR ENCLOSURE

RAINHOODS: ________ YES ________ NO

DISTRIBUTION PANEL: _______ FACTORY MOUNTED ________ ADJACENT TO GENERATOR ASSEMBLY



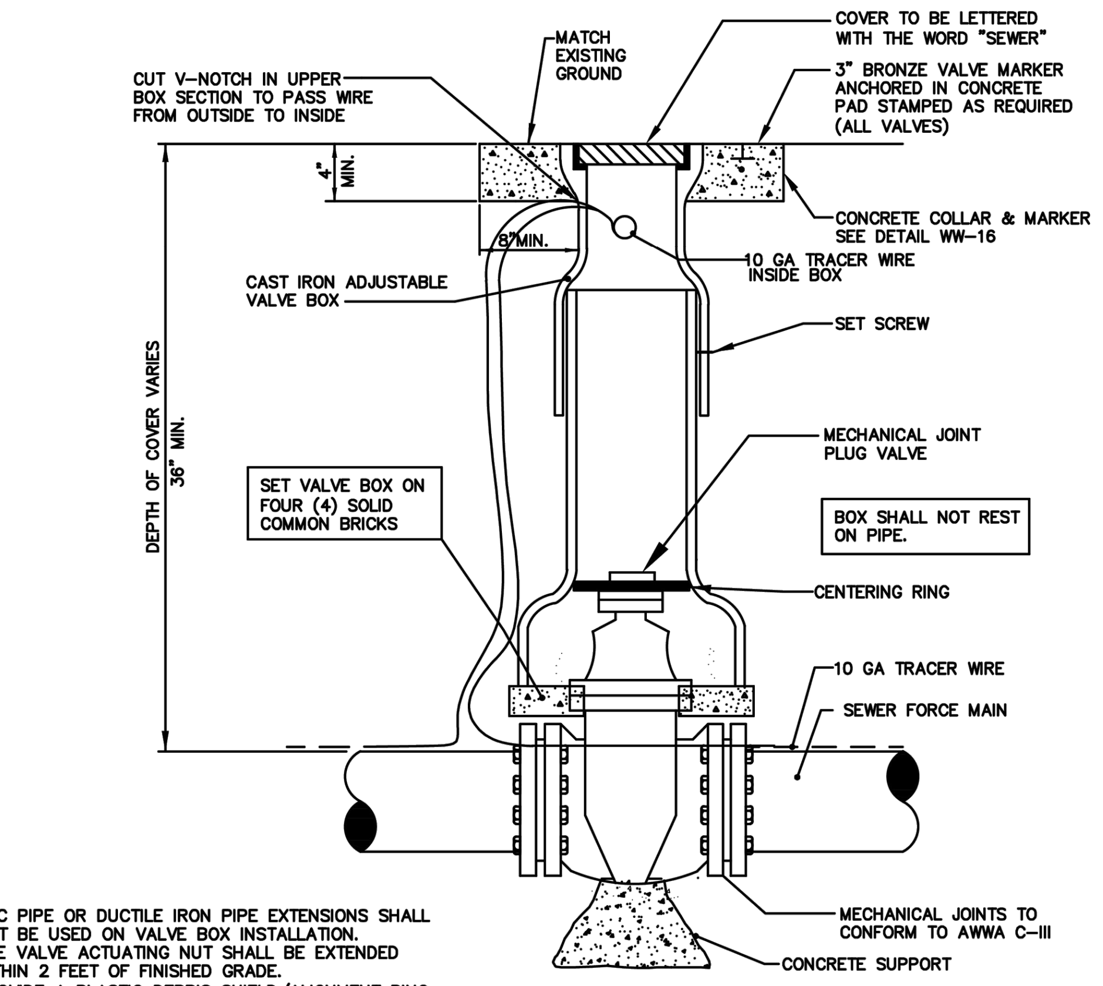
LS BYPASS PUMP NOTES & DIMENSIONS

Beautiful HOWEY-IN-THE-HILLS

Howey-in-the-Hills Standard Details

DATE: DEC 2023

DETAIL WW-10A



NOTES

1. PVC PIPE OR DUCTILE IRON PIPE EXTENSIONS SHALL NOT BE USED ON VALVE BOX INSTALLATION.
2. THE VALVE ACTUATING NUT SHALL BE EXTENDED WITHIN 2 FEET OF FINISHED GRADE.
3. PROVIDE A PLASTIC DEBRIS SHIELD/ALIGNMENT RING WHICH INSTALLS BELOW THE VALVE ACTUATING NUT. THIS SHIELD SHALL CENTER THE RISER PIPE BOX OVER THE ACTUATING NUT AND MINIMIZE INFILTRATION.
4. FOR NEW CONSTRUCTION, THE VALVE BOX SHALL BE ADJUSTED TO MIDRANGE TO ALLOW FOR FUTURE BOX ADJUSTMENTS.
5. VALVE BOX SHALL BE A TWO PIECE SCREW TYPE.

PLUG VALVE AND BOX

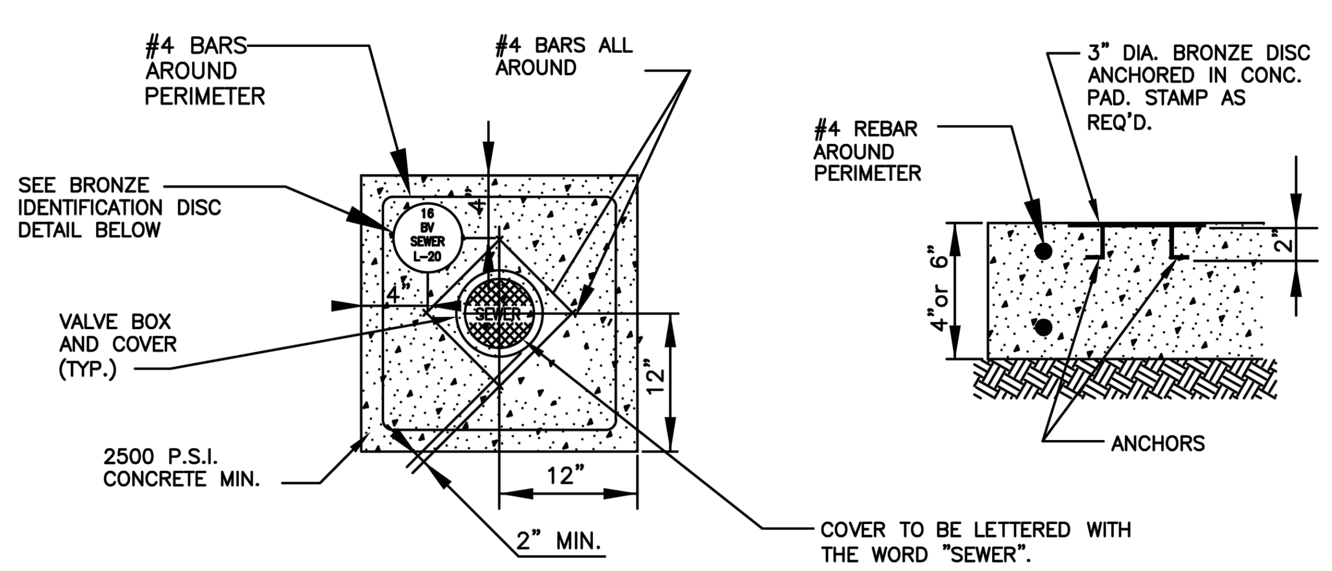
NOT TO SCALE

Beautiful HOWEY-IN-THE-HILLS

Howey-in-the-Hills Standard Details

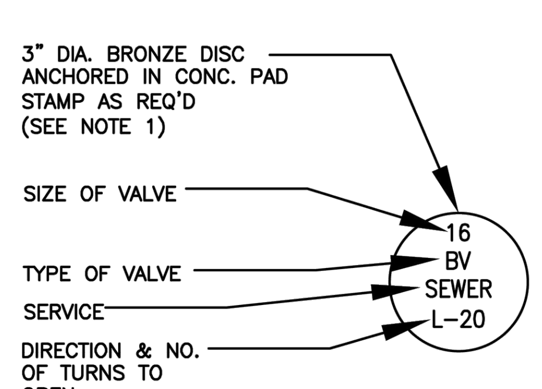
DATE: FEB 2022

DETAIL WW-13



NOTE:

1. BRONZE IDENTIFICATION DISC SHALL BE REQUIRED FOR ALL VALVES.
2. 6" THICK CONCRETE PAD IN ROADWAY OR PAVED AREAS.



BRONZE IDENTIFICATION DISC DETAIL

VALVE COLLAR

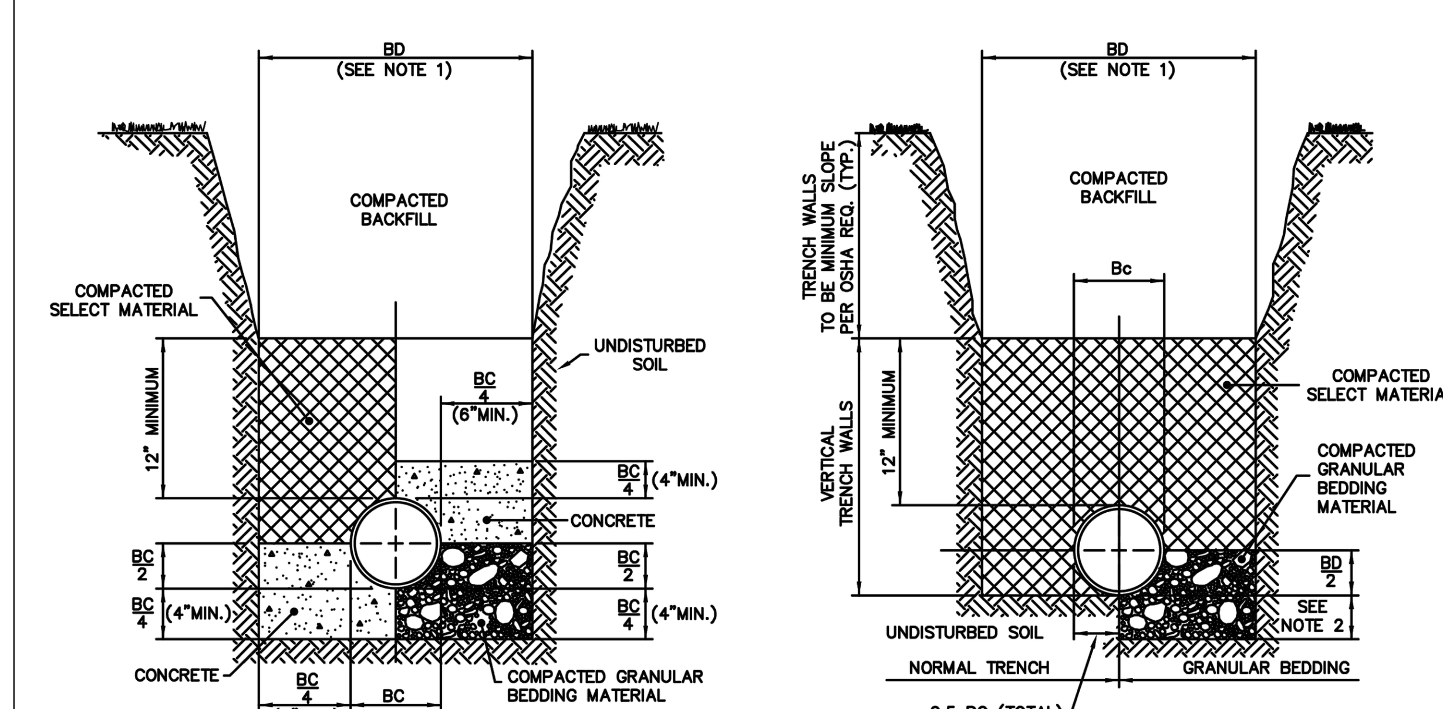
NOT TO SCALE

Beautiful HOWEY-IN-THE-HILLS

Howey-in-the-Hills Standard Details

DATE: FEB 2022

DETAIL WW-15



CLASS "A" BEDDING
SPECIAL CONDITIONS

CLASS "B" BEDDING
NORMAL CONDITIONS

NOTES: FOR BEDDING AND TRENCHING

1. DIMENSION BC = PIPE O.D.
   DIMENSION BD = TRENCH WIDTH AT TOP OF PIPE
   MAXIMUM BD = BC + 30"
   MINIMUM BD = MAXIMUM DIMENSION OF BELL + 8" (UNSHEETED TRENCH)
2. DEPTH FOR REMOVAL FOR UNSUITABLE MATERIAL SHALL BE AS REQUIRED TO REACH SUITABLE FOUNDATION. FOR ROCK OR OTHER NON-CUSHIONING MATERIAL, DEPTH SHALL BE 6" BELOW BOTTOM OF UTILITY.
3. ALL BACKFILL AND SELECT MATERIAL UNDER ALL ROADWAYS, DRIVES (INCLUDING DIRT DRIVES), AND PARKING AREAS SHALL BE COMPACTED TO 98% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY. (AASHTO T-180). BACKFILL AND SELECT MATERIAL UNDER ALL OTHER AREAS SHALL BE COMPACTED AS FOLLOWS: FROM BOTTOM OF TRENCH TO 12" ABOVE TOP OF PIPE – 95% OF MODIFIED PROCTOR MAXIMUM DRY DENSITY (AASHTO T-180). FROM 12" ABOVE TOP OF PIPE TO TOP OF BACKFILL – 90% OF MODIFIED PROCTOR MAXIMUM DRY DENSITY (AASHTO T-180)

TRENCHING AND BEDDING

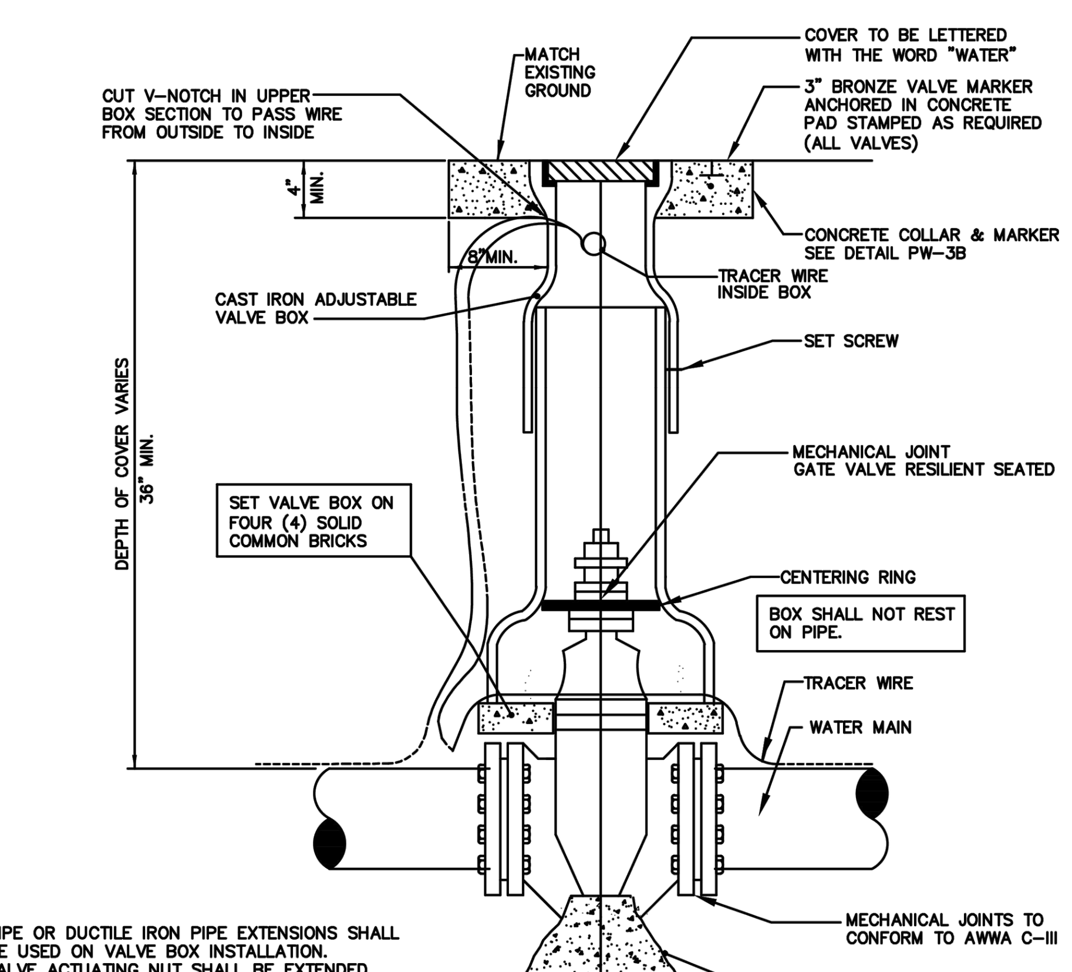
NOT TO SCALE

Beautiful HOWEY-IN-THE-HILLS

Howey-in-the-Hills Standard Details

DATE: FEB 2022

DETAIL PW-2



NOTES

1. PVC PIPE OR DUCTILE IRON PIPE EXTENSIONS SHALL NOT BE USED ON VALVE BOX INSTALLATION.
2. THE VALVE ACTUATING NUT SHALL BE EXTENDED WITHIN 2 FEET OF FINISHED GRADE.
3. PROVIDE A PLASTIC DEBRIS SHIELD/ALIGNMENT RING WHICH INSTALLS BELOW THE VALVE ACTUATING NUT. THIS SHIELD SHALL CENTER THE RISER PIPE BOX OVER THE ACTUATING NUT AND MINIMIZE INFILTRATION.
4. FOR NEW CONSTRUCTION, THE VALVE BOX SHALL BE ADJUSTED TO MIDRANGE TO ALLOW FOR FUTURE BOX ADJUSTMENTS.
5. VALVE BOX SHALL BE A TWO PIECE SCREW TYPE.

GATE VALVE AND BOX

NOT TO SCALE

Beautiful HOWEY-IN-THE-HILLS

Howey-in-the-Hills Standard Details

DATE: FEB 2022

DETAIL PW-3A

MADDEN MOORHEAD & STOKES, LLC
CIVIL ENGINEERS
431 E. Horatio Avenue
Suite 260
Maitland, Florida 32751
(407) 629-8330
CA# 0007723

HOWEY-IN-THE-HILLS STANDARD DETAILS FOR LAKE HILLS MAIN BLVD. & MASS GRADING

HOWEY-IN-THE-HILLS FLORIDA

READER & PARTNERS, LLC
5850 T.G. LEE BOULEVARD, SUITE 200
ORLANDO, FL 32822
(407) 856-4899

NO.	DATE	REVISIONS
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DAVID ASHLEY STOKES LICENSE NO. 66527 STATE OF FLORIDA PROFESSIONAL ENGINEER

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ENGINEER OF RECORD
November 7, 2024

JOB #: 23019
DATE: 11/7/24
DATUM: NAVD 88
DESIGNED BY: KAC
DRAWN BY: JSK
APPROVED BY: DAS

C933

PLAN VIEW

NOT TO SCALE

TONGUE AND GROOVE JOINT TYPICAL DETAIL

PUMP DATA

WETWELL INSIDE DIA. 6'

SUBMERSIBLE PUMPS

MODEL NUMBER NP 3153 HT 3~462

IMPELLER 276 mm R.P.M. 1760

PUMP SIZE -- HORSE POWER 20

G.P.M. 302 T.D.H. 105

ELECTRICAL REQUIREMENTS

*NOTE: ELECTRICAL REQUIREMENT TO BE VERIFIED BY CONTRACTOR.

SECTION

NOT TO SCALE

DUPLEX LIFT STATION

NOT TO SCALE

HOSE BIBB DETAIL

NOT TO SCALE

PRESSURE GAUGE DETAIL

NOT TO SCALE

NOTES:

1. PUMPS: SHALL HAVE (2) 2" STAINLESS STEEL GUIDE RAILS PER PUMP AND A BPI FRONT DUPLEX SYSTEM.
2. LEVEL CONTROLS: SHALL BE IN ACCORDANCE WITH SECTION 17 OF THE CITY UTILITY MANUAL.
3. WET WELL ACCESS COVER: SHALL HAVE CLEAR OPENING OF 36"x48". ACCESS FRAME AND COVER SHALL HAVE A 1/4" THICK ONE-PIECE, MILL FINISH, EXTRUDED ALUMINUM FRAME, INCORPORATING A CONTINUOUS CONCRETE ANCHOR. DOOR PANEL(S) SHALL BE 1/4" ALUMINUM DIAMOND PLATE, REINFORCED TO WITHSTAND A LIVE LOAD OF 300 PSF. DOOR(S) SHALL OPEN TO 90° AND AUTOMATICALLY LOCK WITH STAINLESS STEEL HOLD OPEN ARMS WITH ALUMINUM RELEASE HANDLES. DOOR(S) SHALL CLOSE FLUSH WITH THE FRAME. UNIT SHALL LOCK WITH A NONCORROSIVE LOCKING BAR. FRAME SHALL SUPPORT GUIDE RAILS AND CABLE HOLDER FOR ELECTRICAL WIRING. ALL ACCESS FRAME, COVER, AND HARDWARE SHALL BE CONSTRUCTED OF STAINLESS STEEL. ALL SURFACES IN CONTACT WITH CONCRETE SHALL HAVE A SHOP COAT OF ZINC CHROMATIC PRIMER APPROVED ALKALI RESISTANT PAINT OR APPROVED PROTECTIVE COATING. DOUBLE DOOR ACCESS COVERS SHALL HAVE REMOVABLE CENTER BAR SUPPORT. COVER MUST BE COMPATIBLE WITH PUMP.
4. VALVE VAULT ACCESS COVER: SHALL HAVE CLEAR OPENING OF 36"x72" ACCESS AS MANUFACTURED IN ACCORDANCE WITH APPENDIX A, APPROVED MANUFACTURER LIST OF THE CITY CSM. ACCESS FRAME AND COVER SHALL HAVE A 1/4" THICK ONE-PIECE, MILL FINISH, EXTRUDED ALUMINUM FRAME, INCORPORATING A CONTINUOUS CONCRETE ANCHOR. DOOR PANEL(S) SHALL BE 1/4" ALUMINUM DIAMOND PLATE, REINFORCED TO WITHSTAND A LIVE LOAD OF 300 PSF. DOOR(S) SHALL OPEN TO 90° AND AUTOMATICALLY LOCK WITH STAINLESS STEEL HOLD OPEN ARMS WITH ALUMINUM RELEASE HANDLES. DOOR(S) SHALL CLOSE FLUSH WITH THE FRAME. UNIT SHALL LOCK WITH A NONCORROSIVE LOCKING BAR. ALL ACCESS FRAME, COVER, HARDWARE, AND FASTENERS SHALL BE CONSTRUCTED OF 316 STAINLESS STEEL. ALL SURFACES IN CONTACT WITH CONCRETE SHALL HAVE A SHOP COAT OF ZINC CHROMATIC PRIMER, APPROVED ALKALI RESISTANT PAINT OR APPROVED PROTECTIVE COATING. DOUBLE DOOR ACCESS COVERS SHALL HAVE REMOVABLE CENTER BAR SUPPORT. COVER MUST BE COMPATIBLE WITH PUMP.
5. ELECTRICAL SERVICE ENTRANCE: PROVIDE METER SOCKET AND MAIN DISCONNECT MEETING APPLICABLE ELECTRIC CODES AND REQUIREMENTS OF POWER COMPANY. LIGHTNING AND VOLTAGE SURGE PROTECTION TO BE PROVIDED.COST FOR THE ELECTRICAL SERVICE AND COORDINATION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
6. CONTROL PANEL: SHALL BE IN ACCORDANCE WITH SECTION 17 OF THE CITY CSM. PANEL SHALL BE EQUIPPED WITH THREE, 2" X 6" ALUMINUM NIPPLES TO THE SEALOFFS, WITH SCH 80 PVC TO WET WELL.
7. PAINT: INSIDE AND OUTSIDE OF VALVE VAULT SHALL BE PAINTED WITH TWO COATS OF MATERIAL IN ACCORDANCE WITH APPENDIX A, APPROVED MANUFACTURER LIST OF THE CITY CSM APPLIED AS PER MANUFACTURER'S RECOMMENDATIONS.
8. VALVE VAULT: - PRECAST CONCRETE 60"x 84" (MINIMUM) INSIDE DIMENSIONS.
9. STEEL PLACED IN BOTTOM SLAB IS TO BE IDENTICAL TO THE TOP SLAB EXCEPT THAT DIAGONAL BARS AND OPENINGS ARE ELIMINATED. STEEL IS CONTINUOUS AND SLAB IS SOLID.
10. CONTRACTOR TO CONFIRM SERVICE ARRANGEMENTS WITH POWER COMPANY BEFORE COMMENCING WORK. CONTRACTOR TO RUN UNDERGROUND WIRING TO NEAREST TRANSFORMER OR HAND HOLE.
11. ALL FASTENERS ON FLANGES AND ETC. INSIDE WET WELL WILL BE STAINLESS STEEL.
12. DIMENSIONS BETWEEN CENTERLINE OF PIPES ARE STANDARD FOR PIPE SIZES SPECIFIED.
13. SHOP DRAWINGS OF ENTIRE INSTALLATION MUST BE APPROVED BY CITY PRIOR TO PLACEMENT OF ORDER.
14. PLUG VALVES SHALL BE CONSTRUCTED WITH RESILIENT FACED PLUGS. ON BY-PASS LINES, VALVES SHALL BE BURIED WITH ACCESS THROUGH CAST IRON VALVE BOXES. VALVES SHALL HAVE A 2" OPERATION NUT. ONE(1) 5' LONG VALVE WRENCH SHALL BE PROVIDED TO THE CITY OF TAVARES PER LIFT STATION. ALL PLUG VALVES 8" AND SMALLER SHALL BE 1/4 TURN TYPE.
15. ALL EXPOSED AND EMBEDDED CONDUITS TO BE SCHEDULE 80 PVC.
16. ALL EXPOSED METAL SHALL BE PAINTED WITH TWO (2) COATS OF EXTERIOR BLACK ENAMEL PAINT.
17. ALL EXTERNAL PIPING SHALL BE DUCTILE IRON CLASS 50 (FLANGED JOINT FOR EXPOSED PIPE & MECHANICAL JOINT FOR BURIED PIPE). ALL INTERNAL WET WELL PIPING FROM THE PUMP DISCHARGE ELBOW TO THE VALVE BOX SHALL BE MINIMUM SDR-11 HDPE.
18. ALL DIMENSIONS AND LOCATIONS OF UTILITIES TO BE FIELD VERIFIED BY CONTRACTOR.
19. PRESSURE GAUGES SHALL BE STAINLESS STEEL WITH STAINLESS STEEL DIAPHRAGM, LIQUID FILLED, 4" DIAMETER DIAL WITH 0-100 PSI RANGE. CHECK VALVES SHALL OUTSIDE LEVER AND WEIGHT.
20. PADLOCKS FOR ACCESS COVERS AND CONTROL PANEL SHALL BE KEYED ALIKE, FURNISH TWO (2) KEYS PER LOCK. BOLTS IN LOCKING DEVICE SHALL BE STAINLESS STEEL.
21. WET WELL TO BE H.D.P.E. LINED WITH A MINIMUM THICKNESS OF 2 MM, MECHANICALLY ANCHORED TO THE CONCRETE. ALL JOINTS SHALL BE EXTRUSION WELDED BY CERTIFIED WELDERS.
22. SOD ALL AREAS DISTURBED BY CONSTRUCTION.
23. ALL ALUMINUM SURFACES IN CONTACT WITH CONCRETE WILL REQUIRE SHOP COATING OF SUITABLE PROTECTIVE COATING TO RESIST CORROSION.
24. BYPASS PUMPING: CONTRACTOR SHALL BE RESPONSIBLE FOR ALL BYPASS PUMPING. A BYPASS PUMPING PLAN SHALL BE SUBMITTED AT THE TIME OR PERMIT APPLICATION TO THE ENVIRONMENTAL SERVICES DIRECTOR. CITIZEN CONSIDERATION WILL BE REVIEWED WHEN BYPASS PUMPING EQUIPMENT IS REQUIRED. SOUND ATTENUATING ENCLOSURES MAY BE REQUIRED, AT THE DISCRETION OF THE ENVIRONMENTAL SERVICES DIRECTOR.
25. FIELD TESTING: THE CONTRACTOR SHALL FURNISH THE SERVICES OF THE SYSTEM SUPPLIER'S SERVICEMAN, ALL SPECIAL TOOLS, CALIBRATION EQUIPMENT, AND LABOR TO PERFORM THE TESTS. CERTIFIED COPIES OF THE TESTS SHALL BE FURNISHED IN DUPLICATE TO THE CITY ENGINEER PRIOR TO FINAL APPROVAL.
26. DRIVEWAY SHALL HAVE A MINIMUM WIDTH OF 12 FEET.

DATE: FEB 2022

DETAIL WW-11

Howey-in-the-Hills

Standard Details

MADDEN
MOORHEAD & STOKES, LLC
CIVIL ENGINEERS
431 E. Horatio Avenue
Suite 260
Maitland, Florida 32751
(407) 629-8330
CA# 0007723

HOWEY-IN-THE-HILLS STANDARD DETAILS

FOR

LAKE HILLS MAIN BLVD. & MASS GRADING

HOWEY-IN-THE-HILLS FLORIDA

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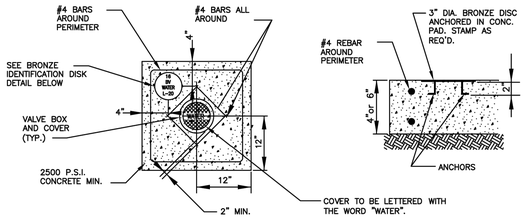
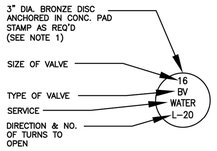
C934



NOTE:

1. BRONZE IDENTIFICATION DISC SHALL BE REQUIRED FOR ALL VALVES.
2. 6" THICK CONCRETE PAD IN ROADWAY OR PAVED AREAS, 4" THICK CONCRETE PAD IN OTHER AREAS.

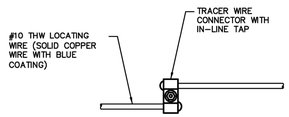


BRONZE IDENTIFICATION DISC DETAIL

VALVE COLLAR

NOT TO SCALE

Howey-in-the-Hills Standard Details	DATE: FEB 2022
	DETAIL PW-3B



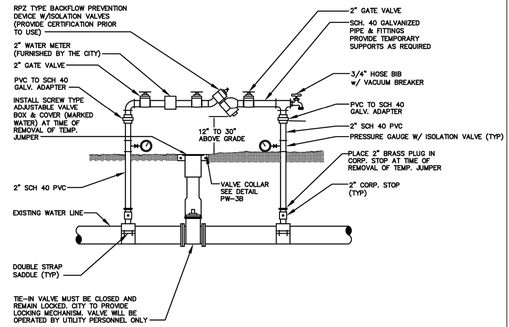
NOTES:

1. TRACER WIRE CONNECTOR SHALL BE DIRECT BURY, SELF-STRIPPING, LOCKING.
2. AFTER INSTALLATION OF THE LOCATING WIRE THE SYSTEM SHALL BE SUBJECTED TO TESTING, IN THE PRESENCE OF CITY UTILITY DIRECTOR OR HIS DESIGNEE PRIOR TO BACKFILL, IN ORDER TO CONFIRM THAT THE SYSTEM IS FUNCTIONAL.

LOCATING WIRE SPLICING

NOT TO SCALE

Howey-in-the-Hills Standard Details	DATE: FEB 2022
	DETAIL PW-5



TEMPORARY JUMPER CONNECTION

NOT TO SCALE

NOTE: LOCATION TO BE DETERMINED AT TIME OF PRECONSTRUCTION CONFERENCE W/ CITY.

Howey-in-the-Hills Standard Details	DATE: FEB 2022
	DETAIL PW-6A

TEMPORARY JUMPER CONNECTION NOTES

1. A TEMPORARY JUMPER CONNECTION IS REQUIRED AT ALL CONNECTIONS BETWEEN EXISTING ACTIVE WATER MAINS AND PROPOSED NEW WATER MAIN IMPROVEMENTS.
2. THE DETAILS TO BE USED FOR FILLING ANY WATER MAIN OF ANY SIZE FROM EXISTING ACTIVE WATER MAINS AND FOR FLUSHING OF NEW MAINS UP TO 8" DIAMETER (2.5 FPS MINIMUM VELOCITY) AND FOR PULLING BACTERIOLOGICAL SAMPLES FROM ANY NEW WATER MAIN OF ANY SIZE. THE JUMPER CONNECTION SHALL BE MAINTAINED UNTIL AFTER FILLING, FLUSHING, TESTING AND DISINFECTION OF THE NEW MAIN HAS BEEN SUCCESSFULLY COMPLETED AND CLEARANCE FOR USE FROM THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP) AND OTHER PERTINENT AGENCIES HAS BEEN RECEIVED. THE JUMPER CONNECTION SHALL ALSO BE USED TO MAINTAIN A MINIMUM PRESSURE OF 20 PSI IN THE NEW MAINS ALL THE TIME AFTER DISINFECTION AND UNTIL THE FDEP CLEARANCE LETTER IS OBTAINED. ADEQUATE RESTRAINTS SHALL BE PROVIDED TEMPORARILY, AS REQUIRED. PIPE AND FITTINGS USED FOR CONNECTING THE NEW PIPE TO THE EXISTING PIPE SHALL BE DISINFECTED PRIOR TO INSTALLATION IN ACCORDANCE WITH AWWA C651, LATEST EDITION. THIS TAPPING SLEEVE AND THE EXTERIOR OF THE MAIN TO BE TAPPED SHALL BE DISINFECTED BY SPRAYING OR SWABBING PER SECTION II OF AWWA C561, LATEST EDITION.
3. FLUSHING OF 10" DIAMETER AND LARGE WATER MAINS MAY BE DONE THROUGH THE TIE-IN VALVE, IN THE PRESENCE OF THE UTILITY DIRECTOR OR HIS DESIGNEE. THE UTILITY DEPARTMENT WILL NOTIFIED IN WRITING 48 HOURS PRIOR TO THE FLUSHING OF SAID MAINS.

   THE FOLLOWING PROCEDURES SHALL BE FOLLOWED:

   A. THE TIE-IN VALVES SHALL BE OPERATED AND PRESSURE TESTED IN THE PRESENCE OF THE UTILITY COMPANY AND ENGINEER TO VERIFY WATER TIGHTNESS PRIOR TO THE TIE-IN. VALVES WHICH ARE NOT WATERTIGHT SHALL BE REPLACED OR A NEW VALVE INSTALLED IMMEDIATELY ADJACENT TO THE LEAKING VALVE.

   B. THE TEMPORARY JUMPER CONNECTION SHALL BE CONSTRUCTED AS DETAILED. THE JUMPER CONNECTION SHALL BE USED TO FILL THE NEW WATER MAIN AND FOR PROVIDING WATER FOR BACTERIOLOGICAL SAMPLING OF THE NEW MAIN AS REQUIRED BY THE FDEP PERMIT.

      – FLUSHING SHALL NOT BE ATTEMPTED DURING PEAK DEMAND HOURS OF THE EXISTING WATER MAIN.

      – ALL DOWNSTREAM VALVES IN THE NEW SYSTEM MUST BE OPEN PRIOR TO OPENING THE TIE-IN VALVE.

      – PROVIDE FOR AND MONITOR THE PRESSURE AT THE TIE-IN POINT, THE PRESSURE IN THE EXISTING MAIN MUST NOT DROP BELOW 35 psi.

      – TIE-IN VALVE SHALL BE OPENED A FEW TURNS ONLY, ENSURING A PRESSURE DROP ACROSS THE VALE IS ALWAYS GRATER THAN 10 psi.

   C. THE TIE-IN VALVE SHALL BE LOCKED CLOSED BY THE CITY UNTIL FLUSHING BEGINS.

   D. THE TIE-IN VALVE SHALL BE OPENED ONLY A FEW TURNS FOR FLUSHING OF THE NEW MAIN. THE PROCEDURE SHALL BE DIRECTED BY THE CITY AND OBSERVED BY THE ENGINEER.

   E. AFTER FLUSHING, THE TIE-IN VALVE SHALL BE CLOSED AND LOCKED IN THE CLOSED POSITION BY THE CITY.
4. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION DEMONSTRATING THAT THE RPZ BACKFLOW PREVENTION DEVICE HAS BEEN TESTED WITHIN ONE YEAR AT THE TIME OF INSTALLATION AND IS IN GOOD WORKING ORDER AT THE TIME OF INSTALLATION. THE TEST SHALL BE PERFORMED BY A QUALIFIED BACKFLOW PREVENTION TECHNICIAN.
5. EXCEPT AS REQUIRED TO FLUSH LINES OF GREATER THAN 8" IN DIAMETER, THE TIE-IN VALVE SHALL REMAIN CLOSED AND SHALL BE LOCKED IN THE CLOSED POSITION BY THE CITY. THE TIE-IN VALVE SHALL REMAIN LOCKED CLOSED UNTIL THE NEW SYSTEM HAS BEEN CLEARED FOR USE BY FDEP AND ALL OTHER PERTINENT AGENCIES.
6. UPON RECEIPT OF CLEARANCE FOR USE FROM FDEP AND ALL OTHER PERTINENT AGENCIES, THE CONTRACTOR SHALL REMOVE THE JUMPER CONNECTION. THE CORPORATION STOPS ARE TO BE CLOSED AND PLUGGED WITH 2" BRASS PLUGS.
7. ALL INSTALLATION AND MAINTENANCE OF THE TEMPORARY JUMPER CONNECTION AND ASSOCIATED BACKFLOW PREVENTION DEVICE FITTINGS, VALVE, ETC., SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

Howey-in-the-Hills Standard Details	DATE: FEB 2022
	DETAIL PW-6B

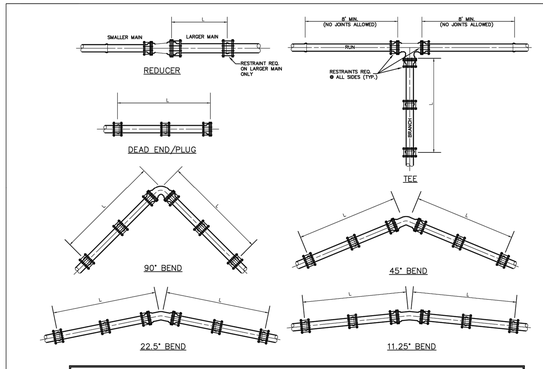


TABLE OF THRUST RESTRAINT LENGTHS

PIPE SIZE (inches)	90° BEND		45° BEND		22 1/2° BEND		11 1/4° BEND		TEES			DEAD END & PLUG		REDUCER		
	P.V.C. (L)	DUCTILE IRON (L)	P.V.C. (L)	DUCTILE IRON (L)	P.V.C. (L)	DUCTILE IRON (L)	P.V.C. (L)	DUCTILE IRON (L)	P.V.C. (L)	DUCTILE IRON (L)		P.V.C. (L)	DUCTILE IRON (L)	PIPE SIZES	P.V.C. (L)	DUCTILE IRON (L)
4	20'	16'	8'	7'	4'	3'	2'	2'	15'	10'	45'	29'		6"x4"	3'	21'
6	28'	22'	12'	9'	6'	4'	3'	2'	33'	21'	63'	40'		8"x6"	34'	22'
8	36'	29'	15'	12'	7'	6'	4'	3'	52'	33'	82'	52'		10"x8"	33'	21'
10	43'	34'	18'	14'	9'	7'	4'	3'	68'	43'	98'	63'		12"x10"	34'	22'
12	50'	40'	21'	17'	10'	8'	5'	4'	84'	54'	116'	74'		16"x12"	63'	40'
16	63'	51'	26'	21'	13'	10'	6'	5'	116'	74'	148'	94'		18"x16"	33'	21'
18	70'	56'	29'	23'	14'	11'	7'	6'	131'	83'	163'	103'		20"x18"	33'	21'
20	75'	61'	31'	25'	15'	12'	7'	6'	145'	92'	178'	113'		20"x20"	62'	39'
24	86'	70'	36'	29'	17'	14'	9'	7'	173'	110'	207'	132'				

THRUST RESTRAINT DESIGN NOTES

1. RESTRAINT JOINTS, FITTINGS, & VALVE REQUIREMENTS CALCULATED BY THE THRUST RESTRAINT DESIGN PROGRAM PROVIDED BY EBBA IRON SALES, INC.
2. DATA BASED ON MAX. PRESSURE OF 150 p.s.i., THE UNIFIED SOILS CLASSIFICATION SYSTEM (SOIL TYPE SP), THE PIPE BEDDED IN NATIVE SOIL w/ A MINIMUM OF 2.5" COMPACTED FILL OVER THE PIPE, AND USING A SAFETY FACTOR OF 1.5 FOR THE DATA.
3. ALL FITTINGS & VALVES SHALL HAVE RESTRAINED WITH "MEGA-LUG" RESTRAINTS, & ALL BELL & SPIGOT JOINTS TO BE RESTRAINED WITH A RESTRAINING HARNESS WITHIN THE REQUIRED LENGTH OF RESTRAINED PIPE (L).

THRUST RESTRAINT

NOT TO SCALE

Howey-in-the-Hills Standard Details	DATE: FEB 2022
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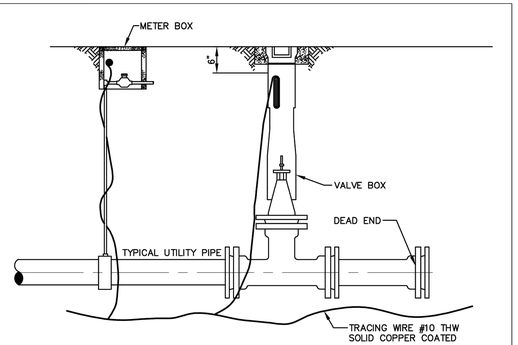

ALL PIPE INSTALLED VIA OPEN CUT SHALL BE INSTALLED WITH #10 THW SOLID COPPER COATED TRACING WIRE. ALL PIPE INSTALLED VIA HDD SHALL BE INSTALLED WITH TWO #10 COPPER CLAD STEEL WIRES.

THE TRACING WIRE MUST BE INSTALLED DIRECTLY BELOW THE PIPE AND BROUGHT TO THE SURFACE AT 500' MINIMUM INTERVALS. WIRE SHALL EXTEND A MINIMUM OF 12" ABOVE GRADE AT EACH INTERVAL AND BE COILED AND PLACED IN A VALVE BOX, METER BOX, MANHOLE, CLEANOUT, LOCATE WIRE BOX, OR OTHER APPLICABLE STRUCTURE.

COLOR CODING:

POTABLE WATER SYSTEM: BLUE
REUSE WATER SYSTEM: PANTONE PURPLE
SANITARY SEWER, FORCE MAINS AND LOW PRESSURE SEWER SYSTEMS: GREEN

1. FOR LOW PRESSURE SEWER, POTABLE WATER AND REUSE WATER SYSTEMS: WIRE SHALL BE INSTALLED BELOW ALL MAINS AND SERVICE LINES AND ATTACHED TO VALVES, HYDRANTS AND FITTINGS. WIRE INSTALLED WITH SERVICE LINES SHALL CONNECT TO THE WIRE INSTALLED BELOW THE MAIN AND EXTEND TO THE CURB STOP.
2. FIRE SPRINKLER LINES: WIRE SHALL CONNECT TO THE WIRE INSTALLED BELOW THE MAIN AND EXTEND TO THE RISER CONNECTION.
3. SANITARY SEWER FORCE MAINS: WIRE SHALL BE INSTALLED BELOW THE FORCE MAIN AND ATTACHED TO ALL VALVES AND FITTINGS AND BROUGHT TO THE SURFACE AND PLACED IN A METAL CITY OF TAVARES APPROVED, VALVE BOX.
4. DEAD END MAINS: WIRE SHALL BE PLACED IN A PROPERLY IDENTIFIED METAL VALVE BOX AT THE END OF THE RUN.
5. WIRE SHALL NOT BE FASTENED OR COILED TO VALVE OPERATING NUT.
6. UTILITY TRACING WIRE SHALL BE IN ACCORDANCE WITH CITY CSM AND PER CITY'S APPROVED MANUFACTURER LIST.

UTILITY PIPE LOCATION MATERIAL – WIRE

NOT TO SCALE

Howey-in-the-Hills Standard Details	DATE: FEB 2022
	DETAIL PW-8

MADDEN
MOORHEAD & STOKES, LLC
CIVIL ENGINEERS
431 E. Horatio Avenue
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HOWEY-IN-THE-HILLS STANDARD DETAILS FOR LAKE HILLS MAIN BLVD. & MASS GRADING
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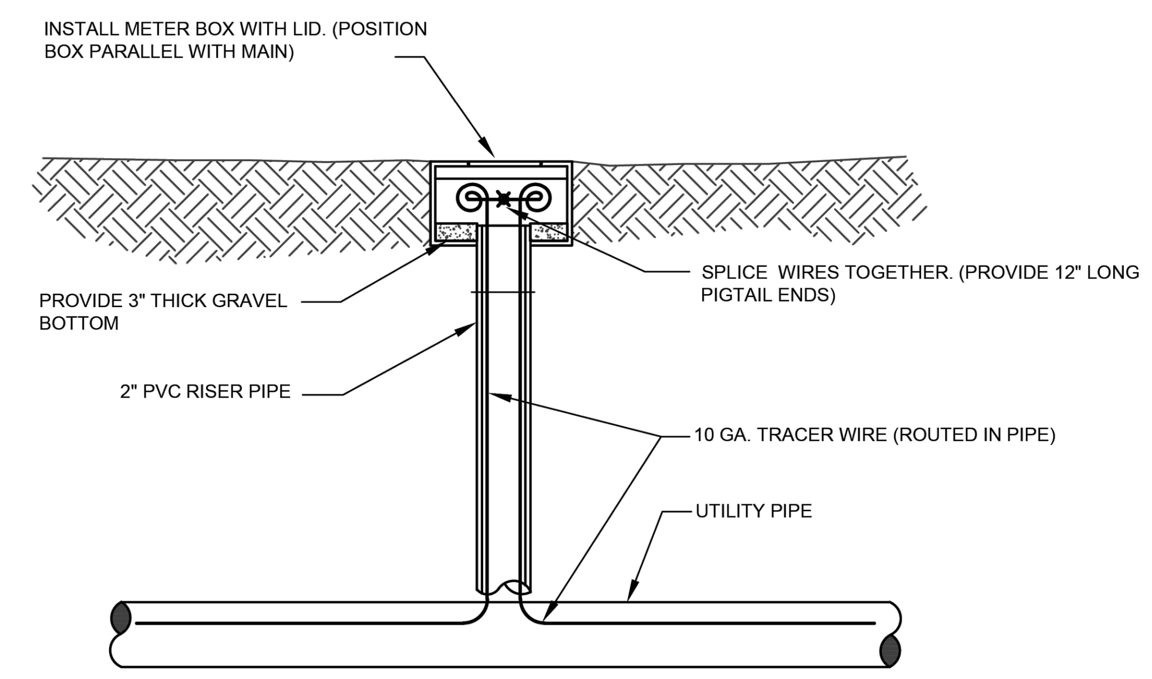


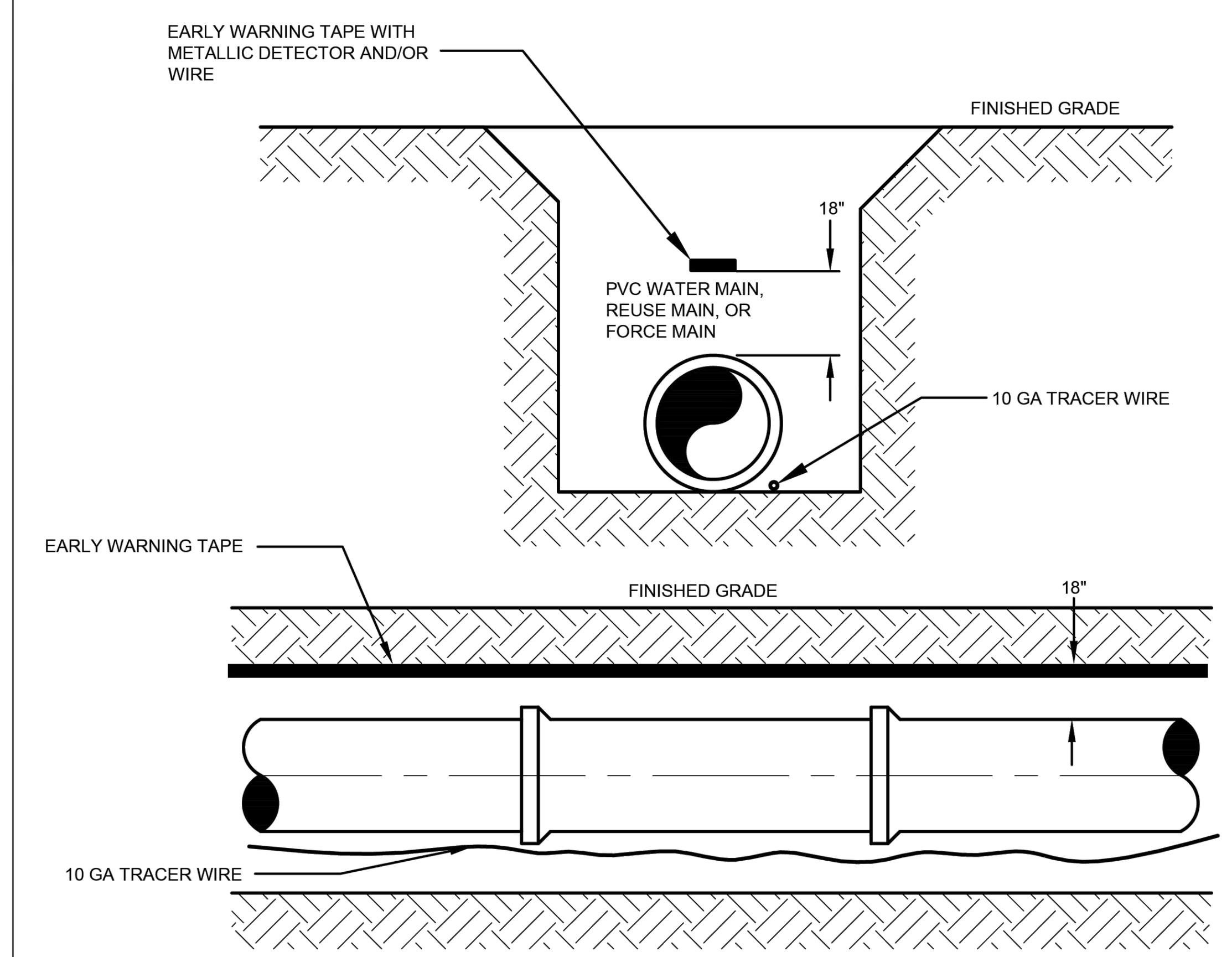
TRACER WIRE BOX UTILIZING METER BOX

NOTES:

1. TRACER WIRE STATION BOX TO BE INSTALLED WHERE THE WIRE CANNOT BE BROUGHT TO GRADE IN A VALVE BOX WITHIN THE MANDATORY 500 FOOT INTERVAL OR WHERE A SPLICE MUST BE MADE ON THE TRACER WIRING. NO UNDERGROUND SPLICES.
2. BOXES SHALL NOT BE LOCATED IN ROADWAYS OR DRIVEWAYS.
3. BOX AND LID PER DETAIL PW-19.
4. TRAFFIC RATED LID (STANDARD-NON BOLT DOWN)
5. LID COLOR SHALL BE PRE-MANUFACTURED OR PAINTED TO MATCH SERVICE (BLUE= POTABLE WATER, GREEN=WASTEWATER, PANTONE PURPLE=RECLAIMED WATER)

TRACER WIRE BOX

Howey-in-the-Hills
NOT TO SCALE
Standard Details
DATE: FEB 2022
DETAIL PW-9



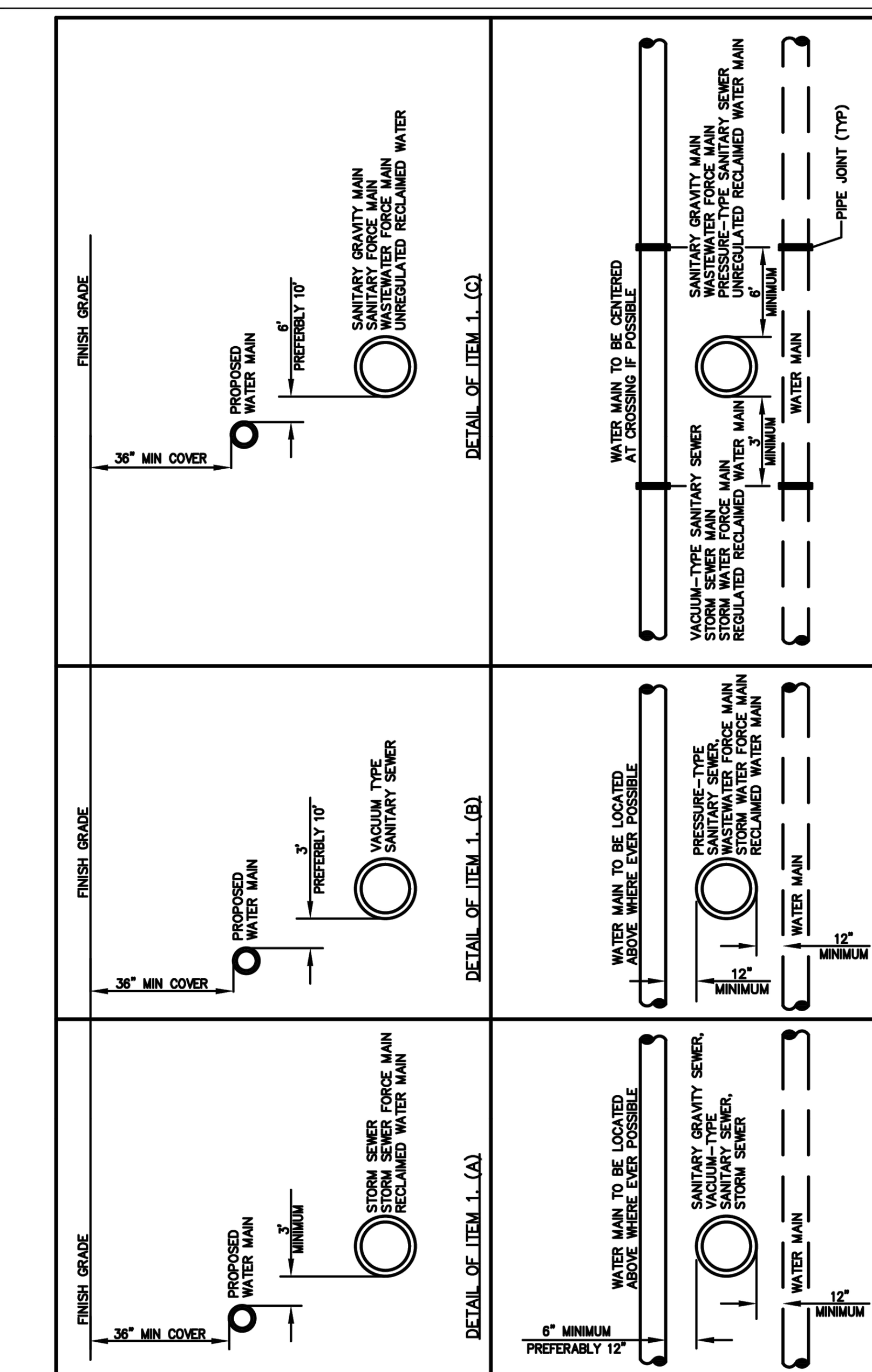
NOTES:

1. ALL MAINS INSTALLED BY OPEN CUT SHALL HAVE AN "EARLY WARNING" PROTECTION TAPE AND WIRE INSTALLED CONTINUOUSLY ALONG THE ALIGNMENT. THE PROTECTION TAPE SHALL BE PER THE CITY'S APPROVED MANUFACTURER LIST. TAPE SHALL BE INSTALLED DURING BACKFILLING 18" ABOVE THE PIPE AND SHALL BE CONTINUOUSLY MARKED FOR THE TYPE OF PIPE (EXAMPLE: CAUTION, WATER MAIN BURIED BELOW"). THE TAPE SHALL HAVE A METALLIC DETECTABLE STRIP INCLUDED AND COLOR CODED AS FOLLOWS:
   BLUE - POTABLE WATER
   GREEN - SANITARY FORCE MAIN, GRAVITY SEWER, LOW PRESSURE MAIN
   PANTONE PURPLE - RECLAIMED WATER
   RED - DEDICATED FIRE LINE
2. ALL PVC MAINS SHALL BE A SOLID COLOR AS DESCRIBED ABOVE.
   ALL DUCTILE IRON MAINS SHALL BE WRAPPED WITH COLOR CODED BAGS.
   ALL POTABLE WATER PIPE SHALL BEAR THE NATIONAL SANITATION FOUNDATION (NSL) SEAL OF APPROVAL.

UTILITY PIPE LOCATION MATERIAL – TAPE

NOT TO SCALE

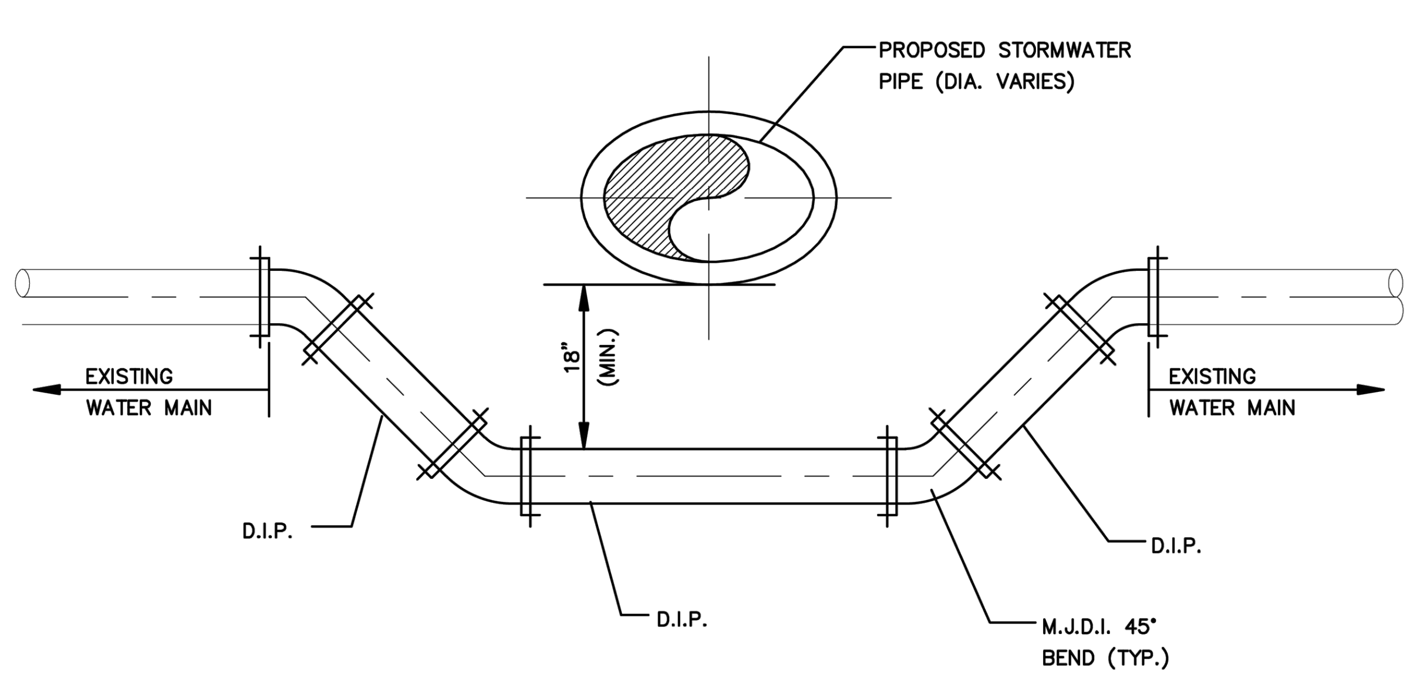
Howey-in-the-Hills
Standard Details
DATE: FEB 2022
DETAIL PW-10



UTILITY SEPARATION

NOT TO SCALE

Howey-in-the-Hills
Standard Details
DATE: FEB 2022
DETAIL PW-11A



NOTES:

1. ALL PROPOSED JOINTS SHALL BE RESTRAINED.
2. ALL EXISTING JOINTS WITHIN SHALL BE RESTRAINED IN ACCORDANCE WITH GR-6.
3. ALL PIPING CLEARANCES SHALL BE IN ACCORDANCE WITH CHAPTER 62-555.314 F.A.C.

WATER LINE CROSSING

NOT TO SCALE

Howey-in-the-Hills
Standard Details
DATE: FEB 2022
DETAIL PW-11B

GENERAL WATER NOTES

1. WATER SYSTEM COMPONENTS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH ALL LOCAL CODES AND REGULATIONS, CLEANED, DISINFECTED AND BACTERIOLOGICALLY CLEARED FOR SERVICE IN ACCORDANCE WITH THE LATEST AWWA STANDARDS AND CHAPTER 62-555 FLORIDA ADMINISTRATIVE CODE.
2. ALL PIPING SHALL BEAR THE "NSF" SEAL FOR POTABLE WATER.
3. WATER MAINS SHALL BE PVC CONFORMING TO AWWA C-900, DR 18 FOR PIPE SIZES 4"-12". PIPES 14" OR LARGER SHALL BE AWWA C-905, DR 18. ALL COUPLINGS, CLEANING COMPOUNDS, SOLVENTS, LUBRICANTS, AND PIPE PREPARATION, FOR LAYING, SHALL BE IN ACCORDANCE WITH THE PIPE MANUFACTURER'S LATEST RECOMMENDATIONS.
4. DEPTH OF WATER LINES TO BE 36" MINIMUM COVER FROM FINISH GRADE.
5. WATER MAINS TO BE LOCATED 5' FROM BACK OF CURB OR EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.
6. ALL WATER MAINS UNDER PAVEMENT SHALL BE DUCTILE IRON.
7. ALL CASINGS UNDER PAVEMENT SHALL EXTEND 5' BEYOND THE BACK OF CURB.
8. DISINFECTING: FOLLOWING THE PRESSURE TESTING, THE CONTRACTOR SHALL DISINFECT ALL SECTIONS OF THE NEW WATER DISTRIBUTION SYSTEM. DISINFECTION SHALL BE IN ACCORDANCE WITH THE APPLICABLE PROVISIONS OF AWWA STANDARD C651 "DISINFECTING WATER MAINS", AND ALL APPROPRIATE AGENCY APPROVAL.
9. ALL HYDROSTATIC TESTS SHALL BE IN ACCORDANCE WITH AWWA C600 FOR DUCTILE IRON PIPE AND C605/M23 FOR PVC PIPE.
10. ALL WATER MAINS SHALL BE INSTALLED, PRESSURE AND LEAK TESTED IN ACCORDANCE WITH AWWA C600, (62-555.320(21)(B)1 AND 62-555.330, F.A.C. ALL INSTALLATION, TESTING AND FIELD PROCEDURES MUST BE PROVIDED AND MUST CONFORM TO THE APPLICABLE AWWA STANDARDS.
11. ALL PIPING MATERIALS AND SPECIFICATIONS COVERING PIPES, JOINTS AND PACKING MATERIALS, INTERNAL COATING AND LININGS, FITTINGS, SPECIALS AND APPURTENANCES SHALL ALL BE IN ACCORDANCE WITH THE CORRESPONDING AWWA STANDARDS AND BE CONFORMING TO NSF REQUIREMENTS, AS MAY BE APPLICABLE, WITH EXCEPTIONS ALLOWED ONLY IF DOCUMENTATION AND ASSURANCES ARE PROVIDED IN COMPLIANCE WITH PARAGRAPHS 62-555.320(3) (D), 622-555.320 (3) (B), AND 62-555.320 (21) (C), F.A.C. THE LEAD USE PROHIBITION IN RULE 62-555.322, F.A.C. SHALL ALSO APPLY. POLYETHYLENE TUBING SHALL BE PER AWWA C901. UNDERGROUND SERVICE LINES AND VALVES SHALL BE PER AWWA C800.

COLOR CODING

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.) [FAC 62\CELL 555.320(21)(B)3]

UNLESS DESCRIBED IN THE CITY CSM ELSEWHERE, ALL WATER MAINS SHALL BE INSTALLED IN ACCORDANCE WITH **CHAPTER 62-555.314, F.A.C.,** AND ANY UPDATES TO THE F.A.C., AND IN CONFORMANCE WITH ALL SEPARATION REQUIREMENTS AS FOUND THEREIN.

62-555.314 LOCATION OF PUBLIC WATER SYSTEM MAINS.

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

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

(A) NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST THREE FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED STORM SEWER, STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C

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

(C) NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST SIX FEET, AND PREFERABLY TEN FEET, BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED GRAVITY- OR PRESSURE-TYPE SANITARY SEWER, WASTEWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C. THE MINIMUM HORIZONTAL SEPARATION DISTANCE BETWEEN WATER MAINS AND GRAVITY-TYPE SANITARY SEWERS SHALL BE REDUCED TO THREE FEET WHERE THE BOTTOM OF THE WATER MAIN IS LAID AT LEAST SIX INCHES ABOVE THE TOP OF THE SEWER.

Howey-in-the-Hills
Standard Details
DATE: FEB 2022
DETAIL PW-11C

GENERAL WATER NOTES

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

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

(A) NEW OR RELOCATED, UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED GRAVITY- OR VACUUM-TYPE SANITARY SEWER OR STORM SEWER SHALL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST SIX INCHES, AND PREFERABLY 12 INCHES, ABOVE OR AT LEAST 12 INCHES BELOW THE OUTSIDE OF THE OTHER PIPELINE. HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE OTHER PIPELINE.

(3) SEPARATION BETWEEN WATER MAINS AND SANITARY OR STORM SEWER MANHOLES:

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

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

1. TECHNICAL OR ECONOMIC JUSTIFICATION FOR EACH CONFLICT MANHOLE.
2. A STATEMENT IDENTIFYING THE PARTY RESPONSIBLE FOR MAINTAINING EACH CONFLICT MANHOLE.
3. ASSURANCE OF COMPLIANCE WITH THE DESIGN AND CONSTRUCTION REQUIREMENTS IN SUB-PARAGRAPHS A. THROUGH D. BELOW. - 361

A. EACH WATER MAIN PASSING THROUGH A CONFLICT MANHOLE SHALL HAVE A FLEXIBLE, WATERTIGHT JOINT ON EACH SIDE OF THE MANHOLE TO ACCOMMODATE DIFFERENTIAL SETTLING BETWEEN THE MAIN AND THE MANHOLE.

B. WITHIN EACH CONFLICT MANHOLE, THE WATER MAIN PASSING THROUGH THE MANHOLE SHALL BE INSTALLED IN A WATERTIGHT CASING PIPE HAVING HIGH IMPACT STRENGTH (I.E., HAVING IMPACT STRENGTH AT LEAST EQUAL TO THAT OF 0.25-INCH-THICK DUCTILE IRON PIPE).

C. EACH CONFLICT MANHOLE SHALL HAVE AN ACCESS OPENING, AND SHALL BE SIZED, TO ALLOW FOR EASY CLEANING OF THE MANHOLE.

D. GRATINGS SHALL BE INSTALLED AT ALL STORM SEWER INLETS UPSTREAM OF EACH CONFLICT MANHOLE TO PREVENT LARGE OBJECTS FROM ENTERING THE MANHOLE.

(4) SEPARATION BETWEEN FIRE HYDRANT DRAINS AND SANITARY OR STORM SEWERS, WASTEWATER OR STORMWATER FORCE MAINS, RECLAIMED WATER PIPELINES, AND ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEMS.

(A) NEW OR RELOCATED FIRE HYDRANTS WITH UNDERGROUND DRAINS SHALL BE LOCATED SO THAT THE DRAINS ARE AT LEAST THREE FEET FROM ANY EXISTING OR PROPOSED STORM SEWER, STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.; AT LEAST THREE FEET, AND PREFERABLY TEN FEET, FROM ANY EXISTING OR PROPOSED VACUUM-TYPE SANITARY SEWER; AT LEAST SIX FEET, AND PREFERABLY TEN FEET, FROM ANY EXISTING OR PROPOSED GRAVITY- OR PRESSURE-TYPE SANITARY SEWER, WASTEWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.; AND AT LEAST TEN FEET FROM ANY EXISTING OR PROPOSED "ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEM" AS DEFINED IN SECTION 381.0065(2), F.S., AND RULE 64E-6.002, F.A.C.

Howey-in-the-Hills
Standard Details
DATE: FEB 2022
DETAIL PW-11D

MADDEN
MOORHEAD & STOKES, LLC
CIVIL ENGINEERS
431 E. Horatio Avenue
Suite 260
Maitland, Florida 32751
(407) 629-8330
CA# 0007723

HOWEY-IN-THE-HILLS STANDARD DETAILS
FOR
LAKE HILLS MAIN BLVD. & MASS GRADING
HOWEY-IN-THE-HILLS FLORIDA

READER & PARTNERS, LLC
5850 TG LEE BOULEVARD, SUITE 200
ORLANDO, FL 32822
(407) 856-4899

	DATE	REVISIONS
1		
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8		
9		
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11		

DAVID ASHLEY STOKES
LICENSE
NO. 66527
STATE OF FLORIDA
PROFESSIONAL ENGINEER

This item has been digitally signed and sealed by David Ashley Stokes, PE on the date adjacent to the seal.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

ENGINEER OF RECORD
November 7, 2024

JOB # 23019
DATE: 11/7/24
DATUM: NAVD 88
DESIGNED BY: KAC
DRAWN BY: JSK
APPROVED BY: DAS

C936

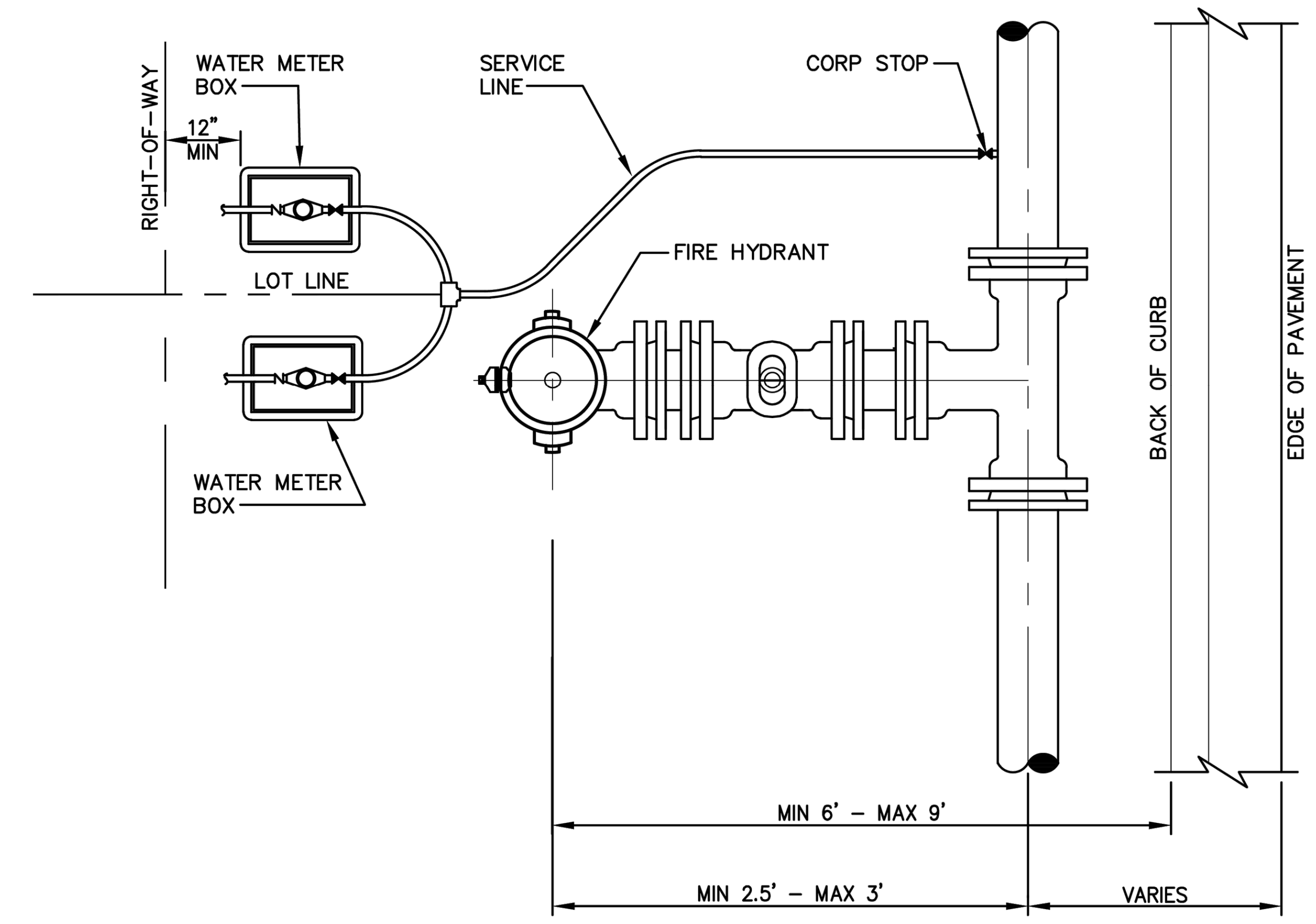
GENERAL WATER NOTES

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

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

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

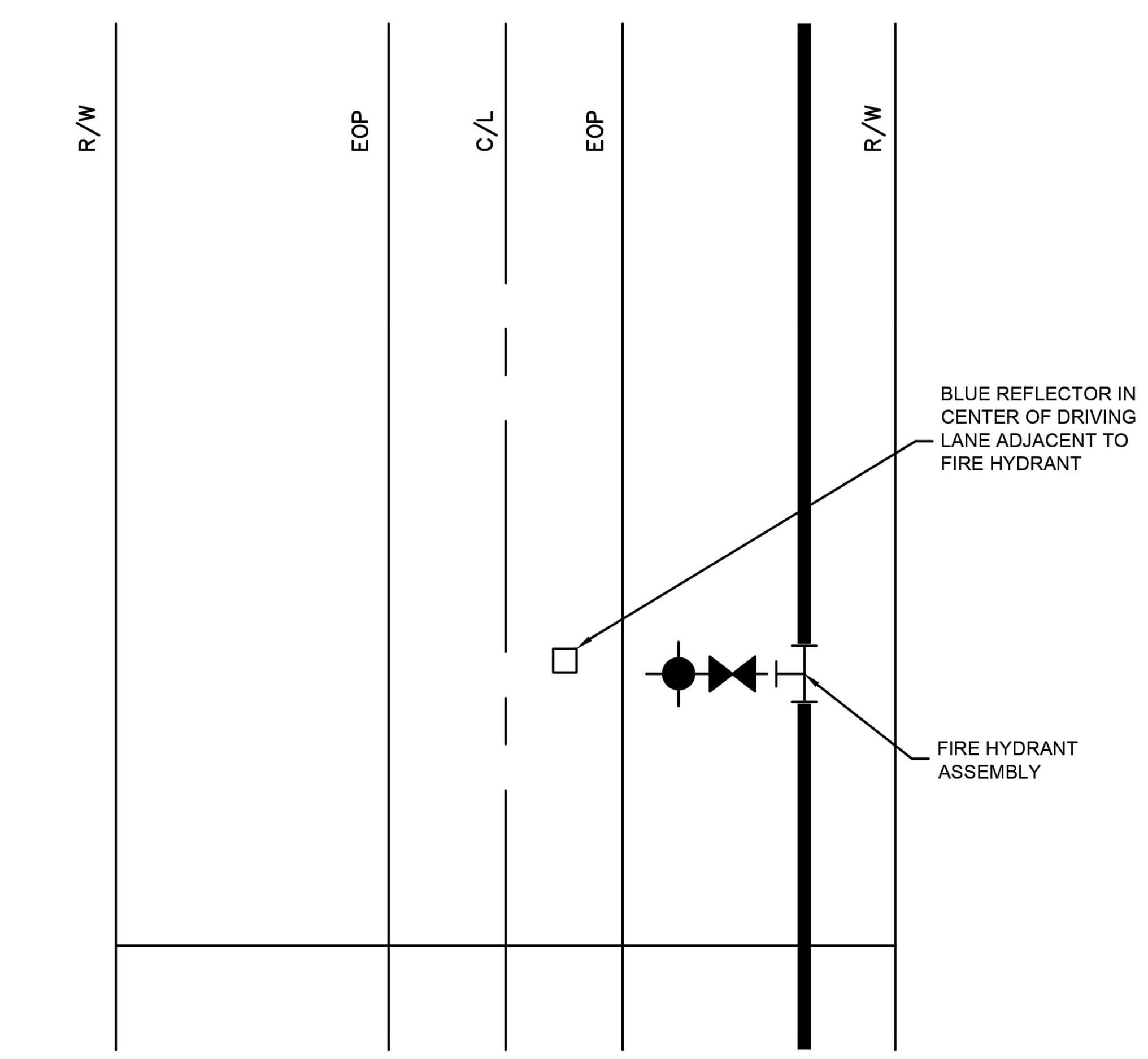
Howey-in-the-Hills Standard Details — DATE: FEB 2022 — DETAIL PW-11E



NOTES:
1. ALL METER BOXES TO BE LOCATED INSIDE ROAD R/W LINE
2. DETAIL TO BE USED WHERE FIRE HYDRANTS AND WATER SERVICES ARE LOCATED ON PLANS AND CONFLICT APPEARS APPARENT.

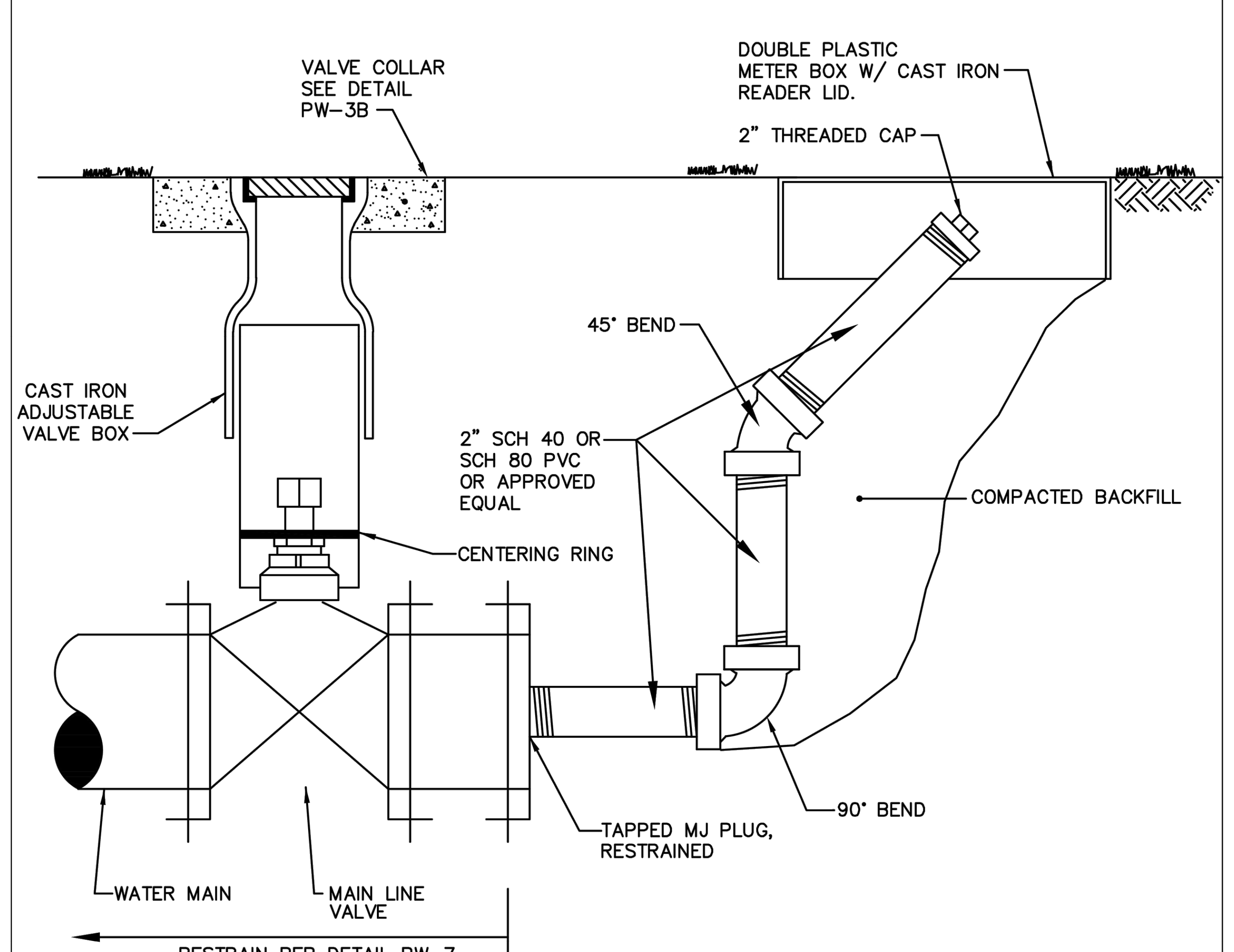
TYPICAL WATER SERVICE AND HYDRANT LOCATION
NOT TO SCALE

Howey-in-the-Hills Standard Details — DATE: FEB 2022 — DETAIL PW-14



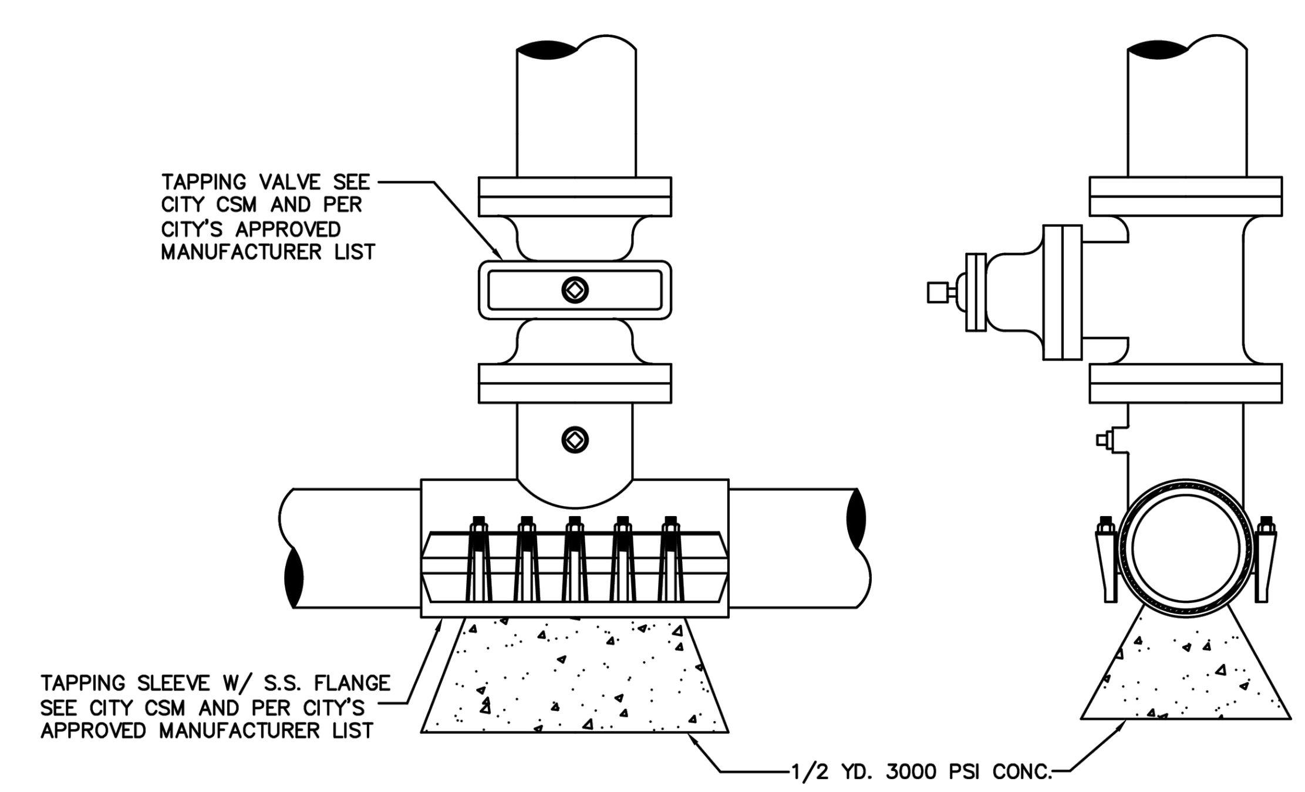
FIRE HYDRANT REFLECTOR
NOT TO SCALE

Howey-in-the-Hills Standard Details — DATE: FEB 2022 — DETAIL PW-15



BLOWOFF VALVE
NOT TO SCALE

Howey-in-the-Hills Standard Details — DATE: FEB 2022 — DETAIL PW-16



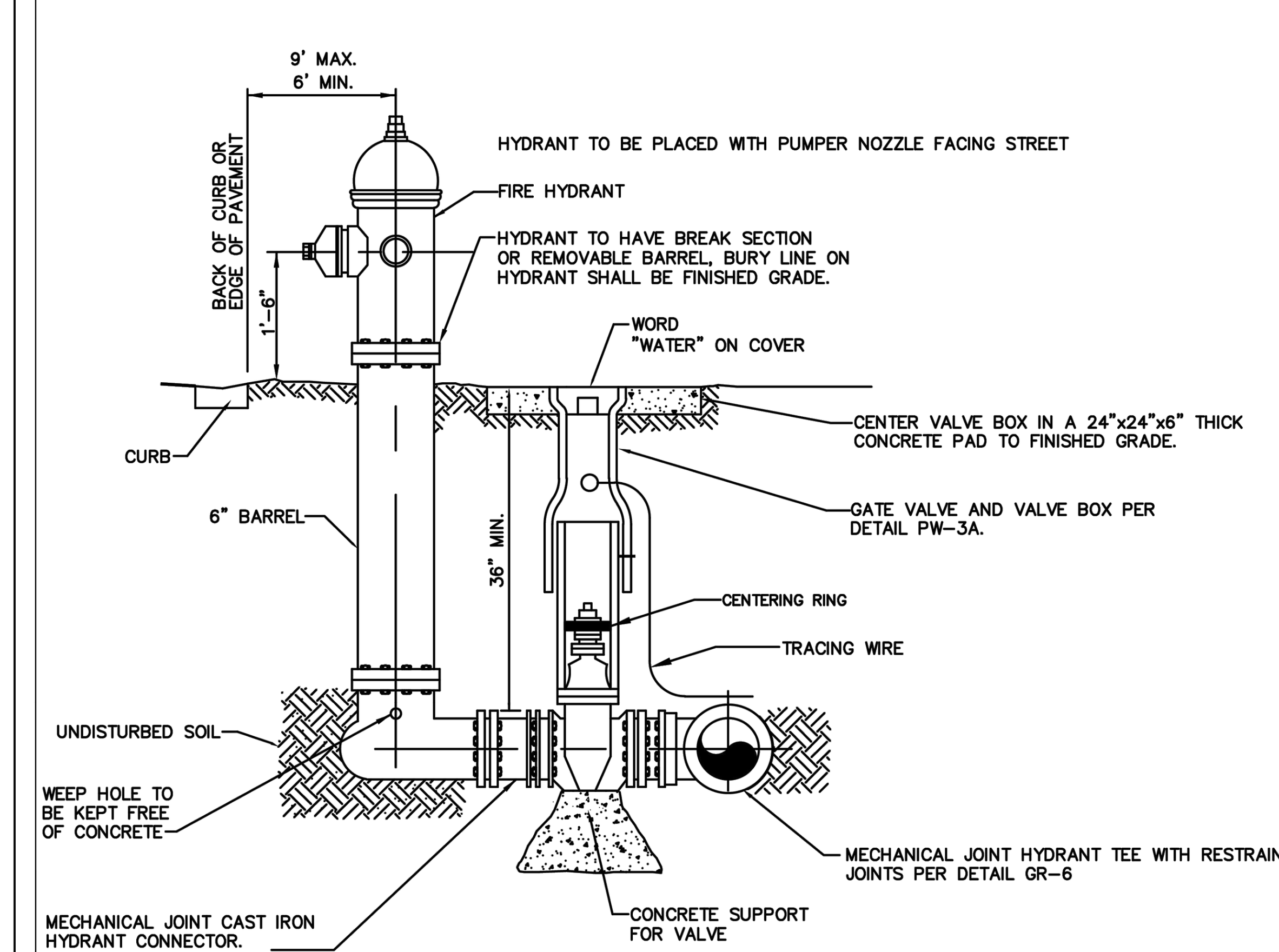
WET TAP SLEEVE AND TAPPING VALVE
NOT TO SCALE

Howey-in-the-Hills Standard Details — DATE: FEB 2022 — DETAIL PW-17

PAINTING
1. APPLY TWO COATS OF OSHA SAFETY INDUSTRIAL RED PAINT TO HYDRANT BARREL.
2. APPLY TWO COATS OF OSHA SAFETY INDUSTRIAL ENAMEL PAINT TO THE BONNET AND NOZZLE CAPS. THE UTILITY DEPARTMENT INSPECTOR WILL DETERMINE THE COLOR TO PAINT THE HYDRANT BONNET AND NOZZLE CAPS BY FLOW TESTING HYDRANT.

BLUE	1500 GPM OR MORE (SHERWIN WILLIAMS #SW4086)
GREEN	1000 GPM TO 1499 GPM (SHERWIN WILLIAMS #B54614)
ORANGE	500 GPM TO 999 GPM (SHERWIN WILLIAMS #B54E39)
RED	499 GPM OR LESS (SHERWIN WILLIAMS #B54R38)
RED	HYDRANT BARREL (SHERWIN WILLIAMS #B54R38)

SPECIFICATIONS
1. AWWA SPECIFICATIONS C-502
2. TWO 2-1/2" HOSE NOZZLE DISCHARGE
3. ONE 4-1/2" PUMPER NOZZLE DISCHARGE
4. ONE 1-1/2" OPERATING NUT, LEFT
5. ALL HYDRANTS SHALL BE EQUIPPED WITH FITTINGS TO ALLOW FOR ELEVATION ADJUSTMENTS.
6. 5¼" MAIN VALVE OPENING
7. RESTRAINED JOINTS OR ALL THREADED ROD REQUIRED TO SECURE PIPE, RISER AND VALVE IN THE FIRE HYDRANT ASSEMBLY TO THE MAIN



FIRE HYDRANT WITH VALVE
NOT TO SCALE
(STANDARD FIRE HYDRANT ASSEMBLY)

Howey-in-the-Hills Standard Details — DATE: FEB 2022 — DETAIL PW-18

MADDEN MOORHEAD & STOKES, LLC
CIVIL ENGINEERS
431 E. Horatio Avenue
Suite 260
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(407) 629-8330
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HOWEY-IN-THE-HILLS STANDARD DETAILS
FOR
LAKE HILLS MAIN BLVD. & MASS GRADING
HOWEY-IN-THE-HILLS FLORIDA

READER & PARTNERS, LLC
5850 TG LEE BOULEVARD SUITE 200
ORLANDO, FL 32822
(407) 856-4899

REVISIONS: 1 2 3 4 5 6 7 8 9 10 11 — DATE

DAVID ASHLEY STOKES LICENSE NO. 66527 STATE OF FLORIDA PROFESSIONAL ENGINEER

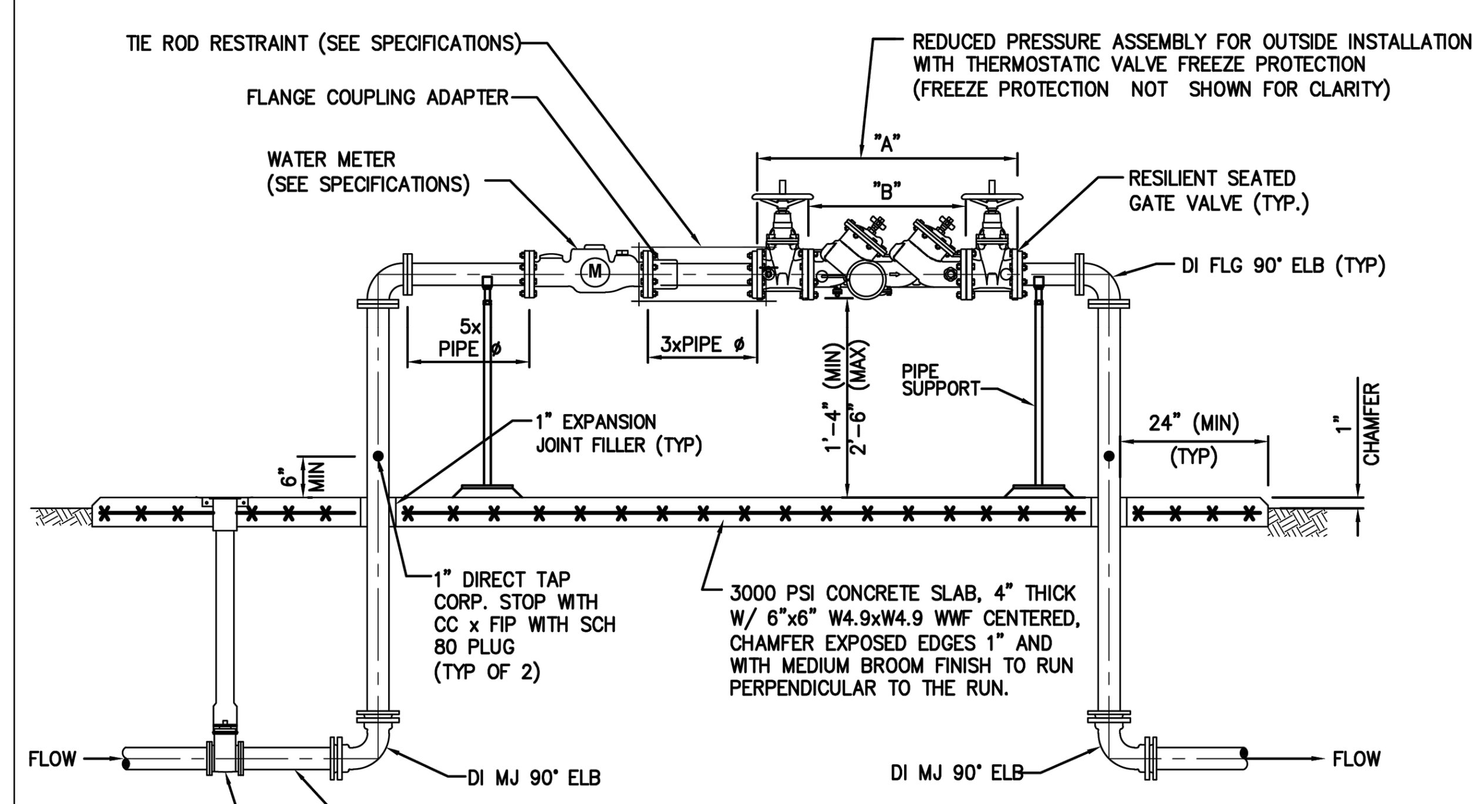
This item has been digitally signed and sealed by David Ashley Stokes, PE on the date adjacent to the seal.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

ENGINEER OF RECORD
November 7, 2024

JOB #	23019
DATE:	11/7/24
DATUM:	NAVD 88
DESIGNED BY:	KAC
DRAWN BY:	JSK
APPROVED BY:	DAS

C937



DIMENSIONS			
PIPE SIZE	A	B	WT
	IN		LBS
3	41 11/16	25 9/16	213
4	50 7/16	32 5/16	360
6	59 11/16	38 9/16	601
8	69 3/16	46 1/16	892
10	84 3/16	58 1/16	1593

NOTES:
1. ALL ABOVE GROUND PIPE TO BE PAINTED WITH 2 COATS OF APPROVED BLUE PAINT.

REDUCED PRESSURE BACKFLOW PREVENTER W/ WATER METER DETAIL

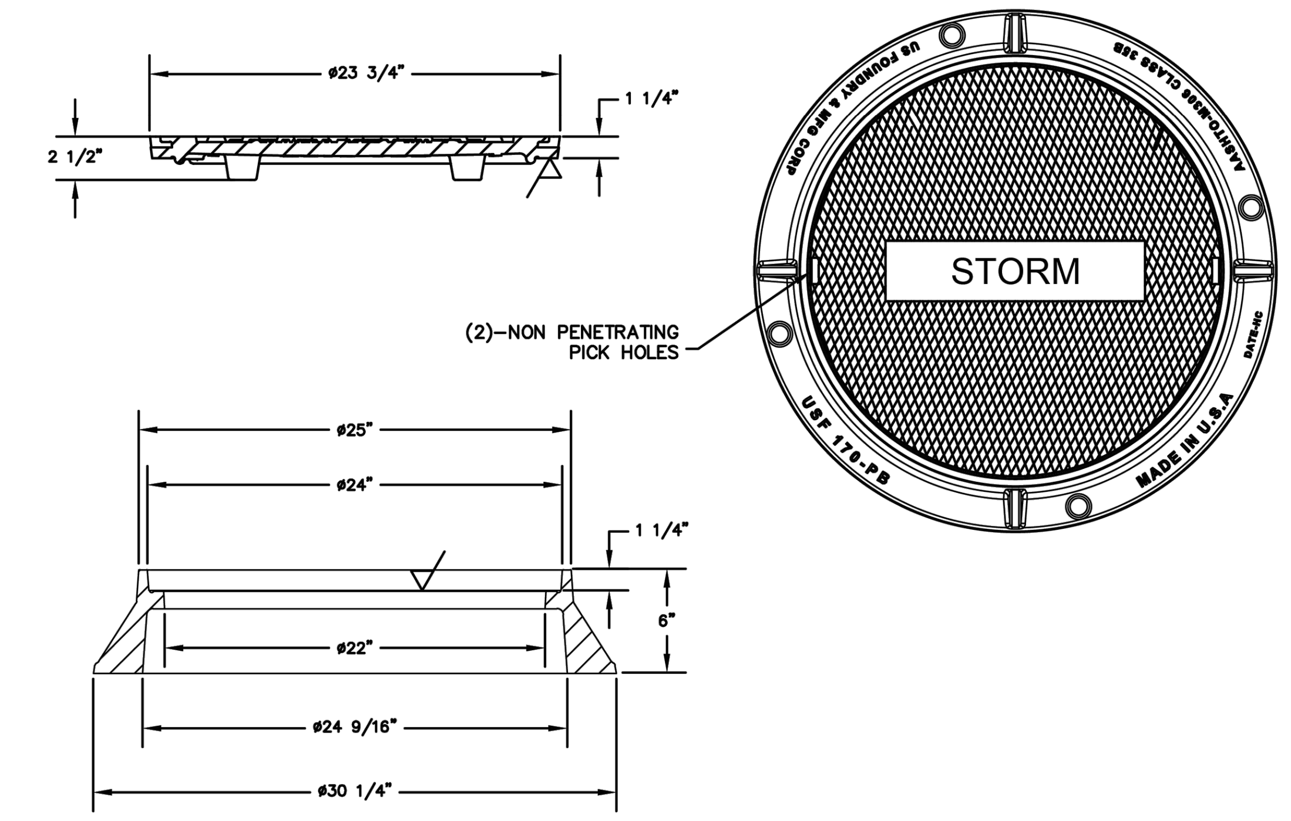
NOT TO SCALE

Howey—in—the—Hills

Standard Details

DATE: FEB 2022

DETAIL PW—23



*MODEL USF 170-PB RING AND CE-PB COVER
RING NO. 8021468
COVER NO. 8017533
MATERIAL AASHTO M306 GRAY IRON CLASS35B

STORMWATER MANHOLE COVER

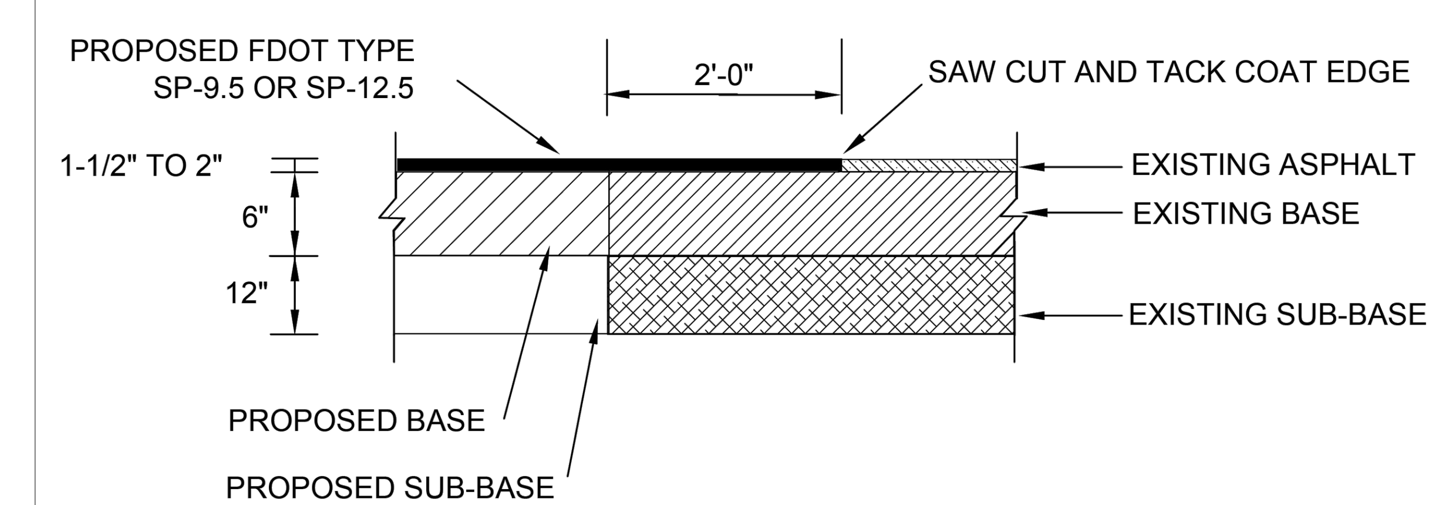
NOT TO SCALE

Howey—in—the—Hills

Standard Details

DATE: FEB 2022

DETAIL SW—1



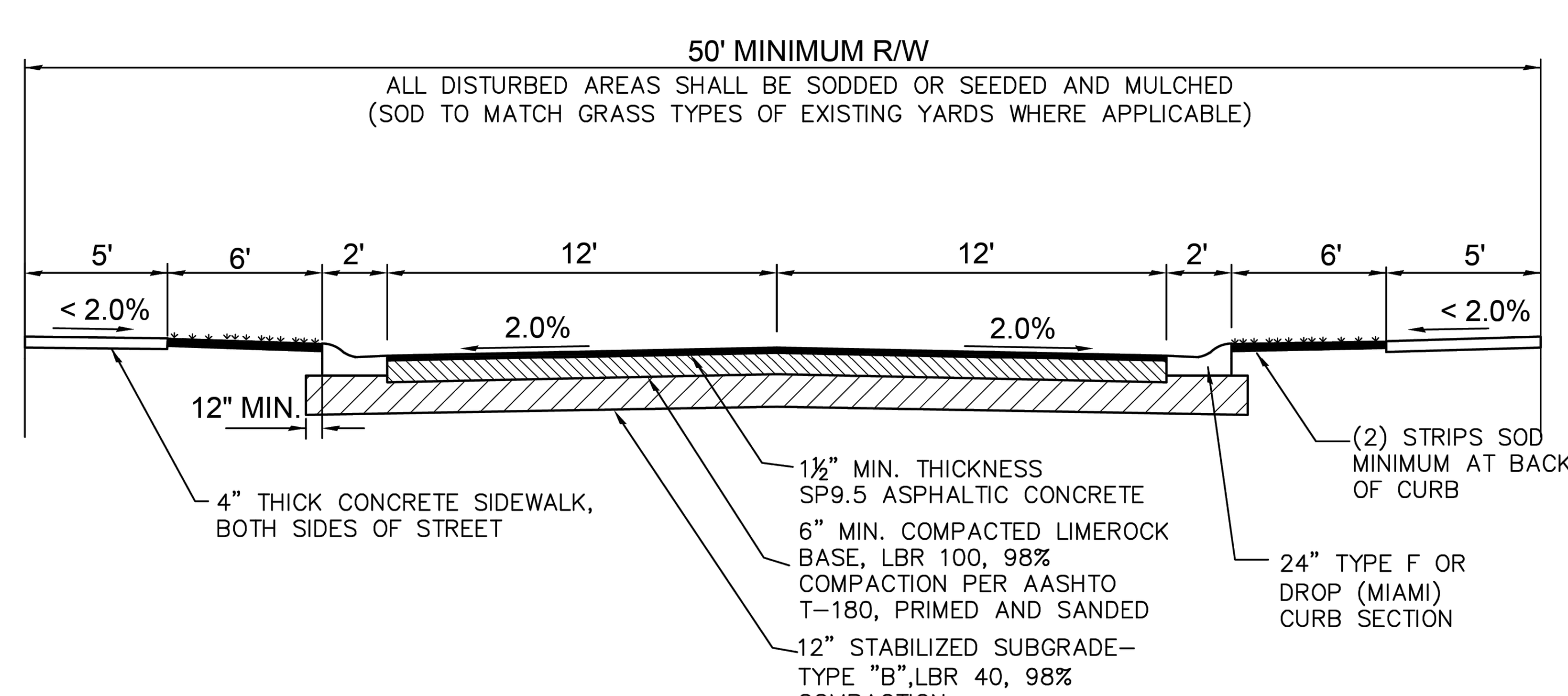
PAVEMENT BUTT JOINT (N.T.S.)

Howey—in—the—Hills

Standard Details

DATE: FEB 2022

DETAIL R—7



HEAVY DUTY ROADS
BASE: 8" LIMEROCK CONSTRUCTED IN (2) LIFTS.
ASPHALT: 2" SP12.5 + 1" FRICTION COURSE

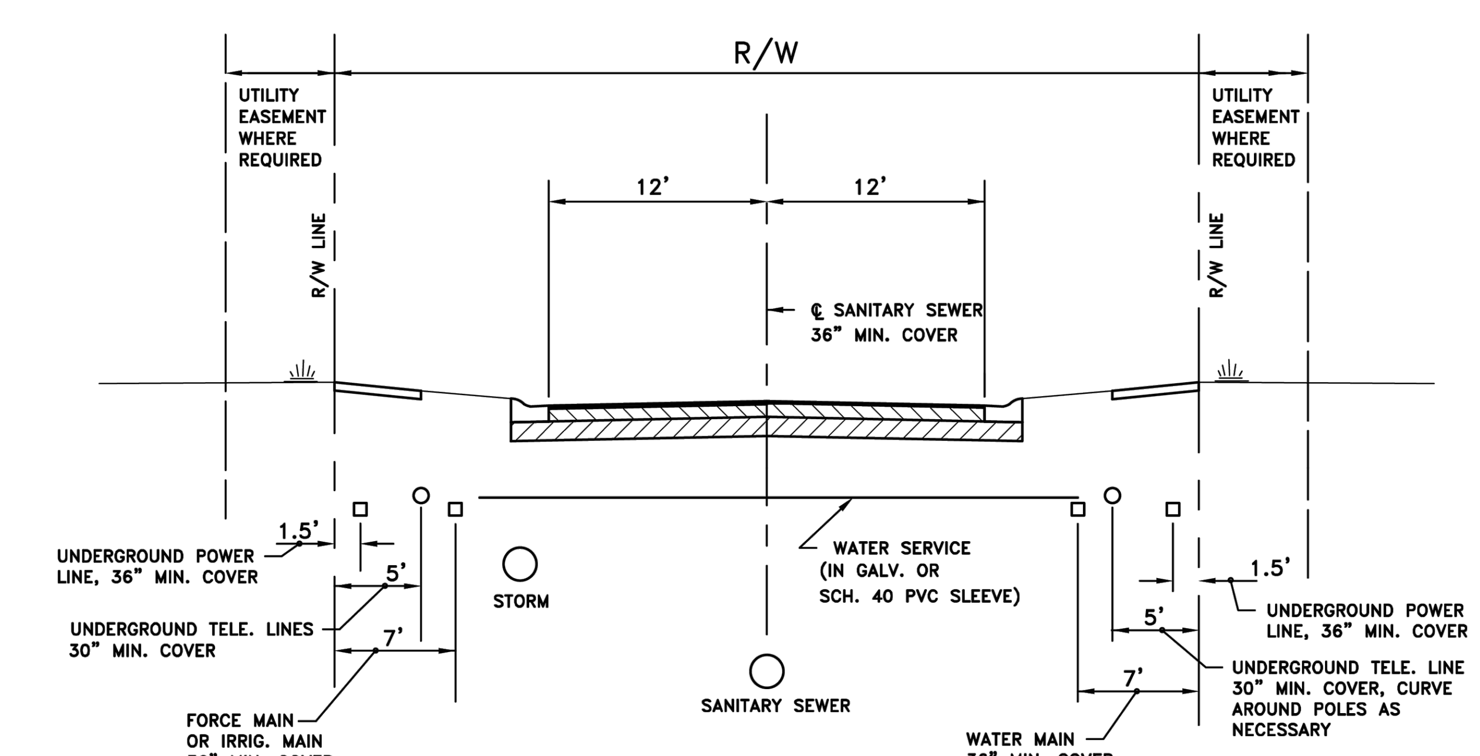
LOCAL STREET CROSS SECTION (N.T.S.)

Howey—in—the—Hills

Standard Details

DATE: FEB 2022

DETAIL R—1



NOTES:
1. REFER TO THE TOWN UTILITY CONSTRUCTION SPECIFICATION MANUAL FOR DETAILS OF UTILITY DESIGN AND CONSTRUCTION.
2. FIRE HYDRANTS SHALL BE INSTALLED SUCH TO MINIMIZE THEIR VULNERABILITY TO TRAFFIC.

TYPICAL UTILITY LOCATIONS (N.T.S.)

Howey—in—the—Hills

Standard Details

DATE: JAN 2023

DETAIL R—2

MADDEN
MOORHEAD & STOKES, LLC
CIVIL ENGINEERS
431 E. Horatio Avenue
Suite 260
Maitland, Florida 32751
(407) 629-8330
CA# 0007723

HOWEY-IN-THE-HILLS STANDARD DETAILS

FOR

LAKE HILLS MAIN BLVD. & MASS GRADING

HOWEY-IN-THE-HILLS FLORIDA

READER & PARTNERS, LLC
5850 TG LEE BOULEVARD SUITE 200
ORLANDO, FL 32822
(407) 856-4899

	DATE	REVISIONS
1		
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11		

DAVID ASHLEY STOKES
LICENSE
NO. 66527
STATE OF FLORIDA
PROFESSIONAL ENGINEER

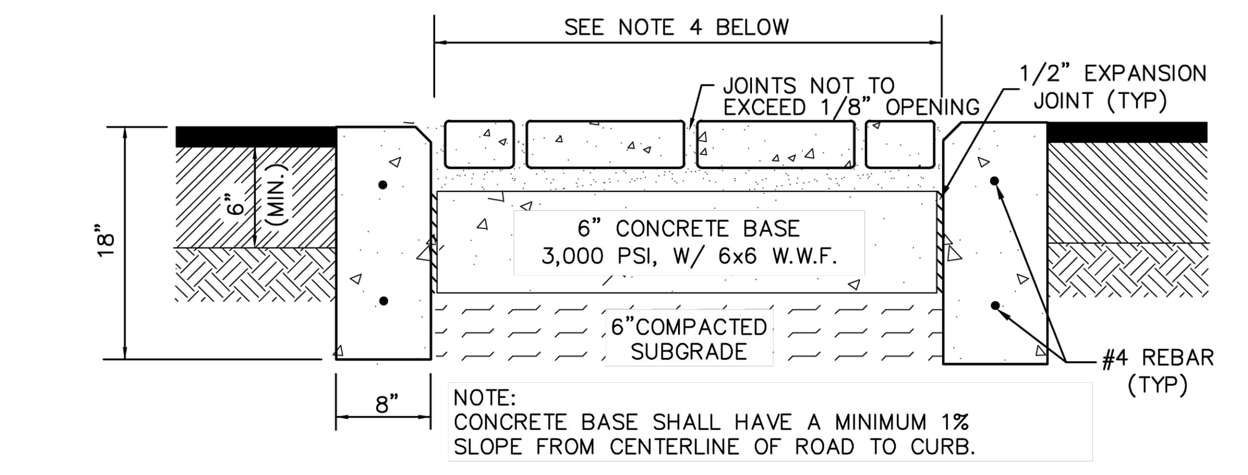
This item has been digitally signed and sealed by David Ashley Stokes, PE on the date adjacent to the seal.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

ENGINEER OF RECORD
November 7, 2024

JOB # 23019
DATE: 11/7/24
DATUM: NAVD 88
DESIGNED BY: KAC
DRAWN BY: JSK
APPROVED BY: DAS

C938



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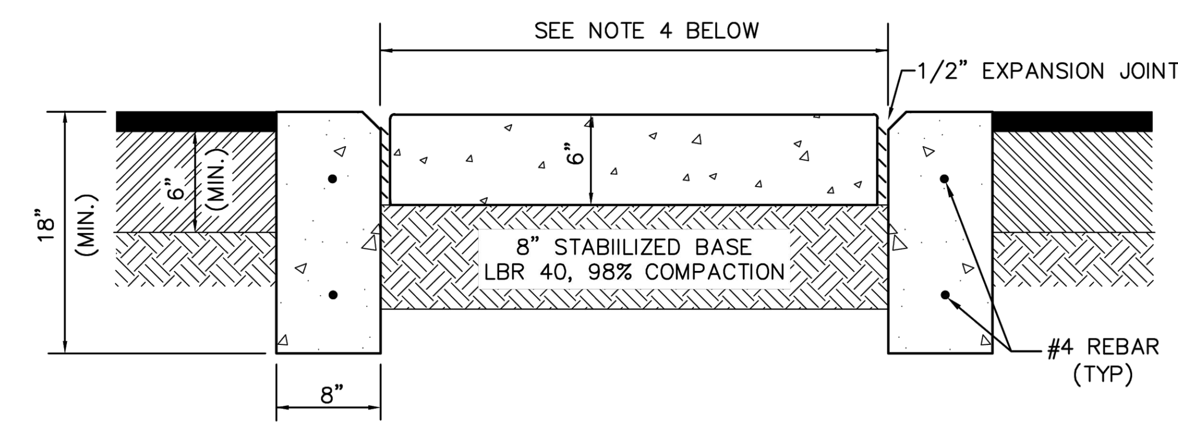


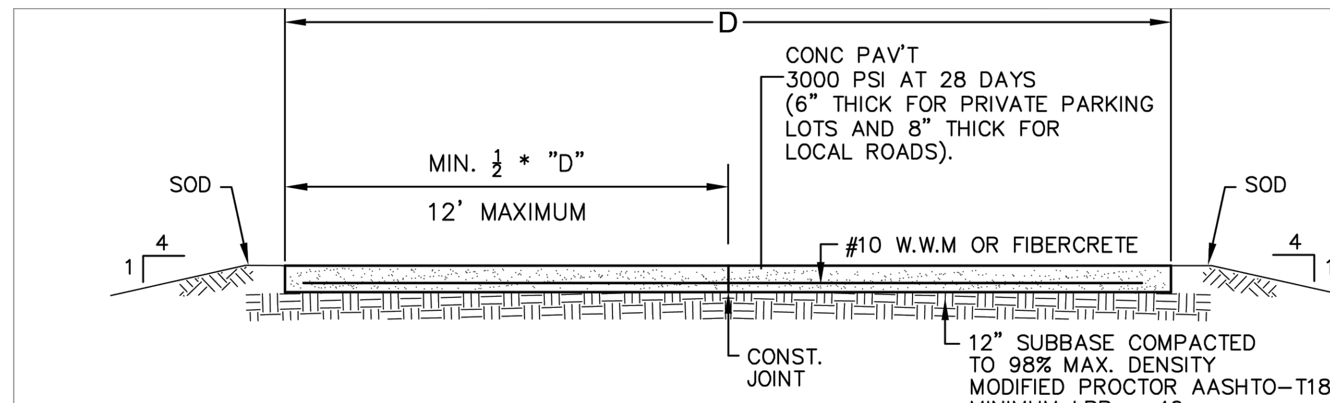
PATTERNED CONCRETE

NOTES:

1. CURB RAMPS PER A.D.A. SPECIFICATIONS SHALL BE PROVIDED WHERE CROSSWALK MEETS SIDEWALKS AND CURBS.
2. PAVERS SHALL BE 3-1/8" MINIMUM THICKNESS BEDDED IN 1-1/2" MINIMUM OF SAND OR CRUSHED STONE SCREENINGS.
3. CONCRETE AND PAVER PATTERN AND COLOR SHALL BE DETERMINED BY THE TOWN.
4. MIN. WIDTH OF CROSSWALKS SHALL BE 5 FEET, CROSS SLOPE SHALL NOT EXCEED 1/4" PER LF.
5. SEE STREET SECTIONS FOR BASE AND SUB-BASE REQUIREMENTS OF ROADWAY.

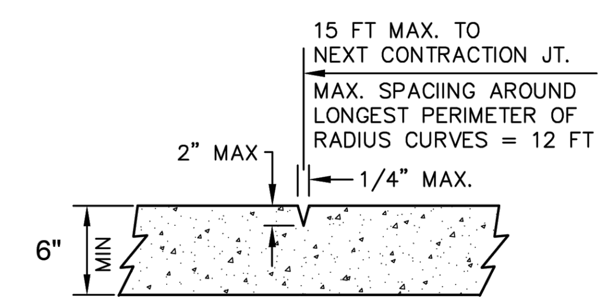
CROSSWALK PAVER & DECORATIVE CONCRETE (N.T.S.)

Howey-in-the-Hills Standard Details | DATE: FEB 2022 | DETAIL R-8

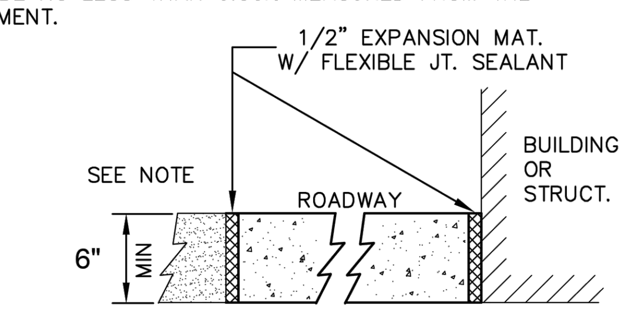


TYPICAL PAVEMENT SECTION

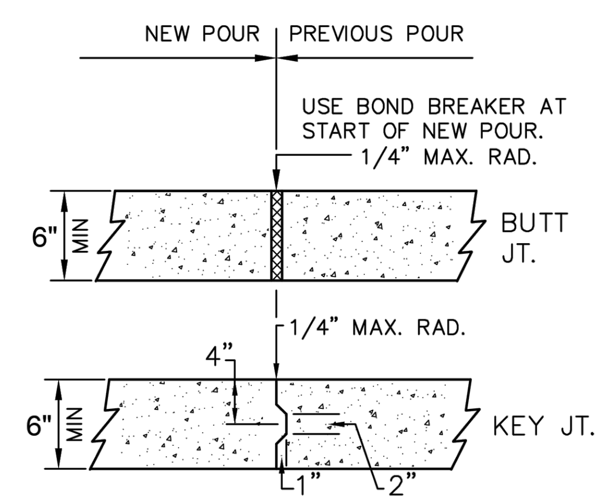
NOTE: FOR ROADWAYS, THE CROSSSLOPE SHALL BE 1/4" PER FOOT. FOR PRIVATE PARKING AREAS THE MINIMUM ALLOWABLE PAVEMENT SLOPE SHALL BE NO LESS THAN 0.50% MEASURED FROM THE RECEIVING INLET, GUTTER, OR FLUME TO ANY PAVEMENT.



CONTRACTION JOINT



EXPANSION JOINT



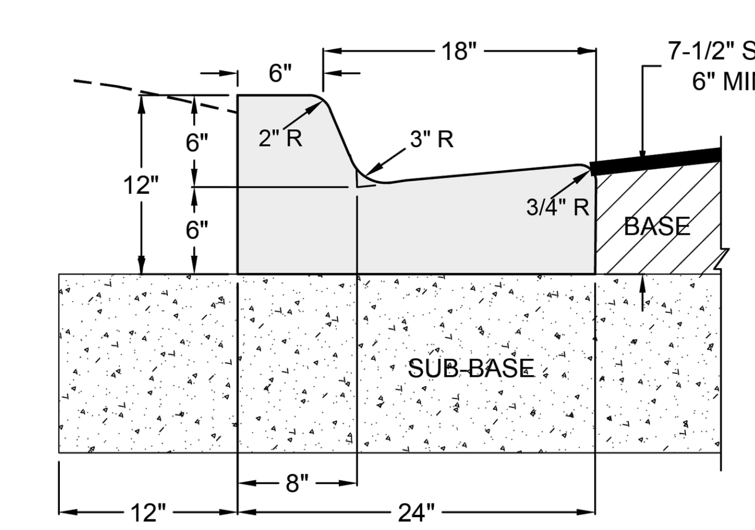
CONSTRUCTION JOINT

NOTES:

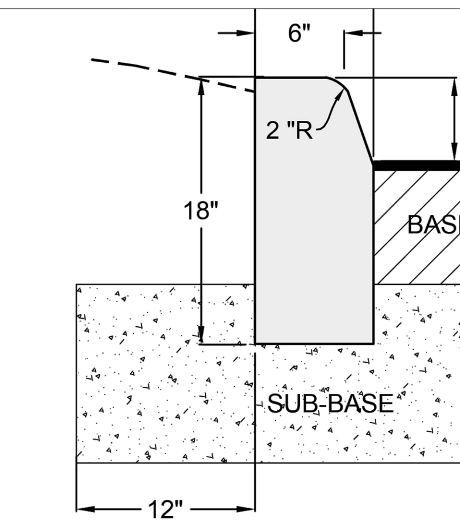
1. CONTRACTION JTS. MAY BE HAND FORMED, SAWED OR CONSTRUCTED W/ A 1/4" PREMOLDED FILLER JT. JOINTS MUST BE SAW CUT THE SAME DAY AS THE POUR.
2. EXPANSION JOINTS TO BE PLACED BETWEEN ROADWAY AND CURB. ALSO AT ANY PERMANENT STRUCTURE ABUTTING OR WITHIN THE PAVED AREA INCLUDING SIDEWALKS.
3. USE OF WOOD IS NOT AN ACCEPTABLE ALTERNATIVE TO FLEXIBLE JOINT SEALANTS.
4. FINAL DETERMINATION OF CONSTRUCTION JOINT SELECTION AND APPLICATION SHALL BE MADE BY THE ENGINEER OF RECORD BASED ON PROJECT REQUIREMENTS AND LOCATION.
5. CONSTRUCTION JOINTS WITHIN THE SLAB AREA SHOULD NOT CONTAIN PREMOLDED EXPANSION JOINT FILLER.

CONCRETE PAVEMENT (N.T.S.)

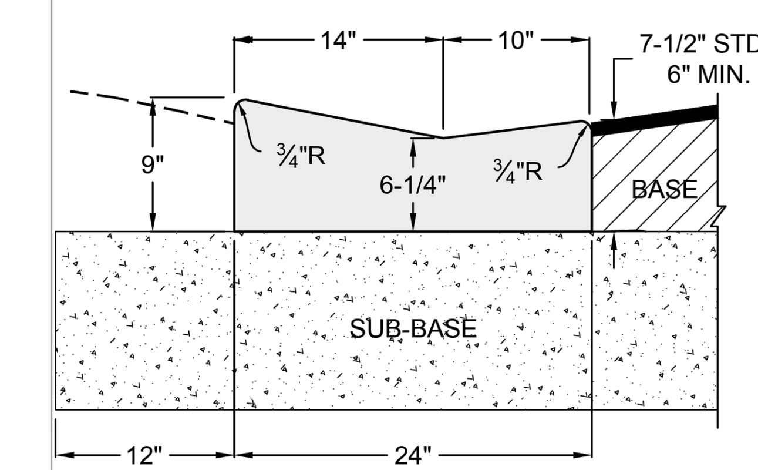
Howey-in-the-Hills Standard Details | DATE: FEB 2022 | DETAIL R-10



TYPE "F" CURB



TYPE "D" CURB



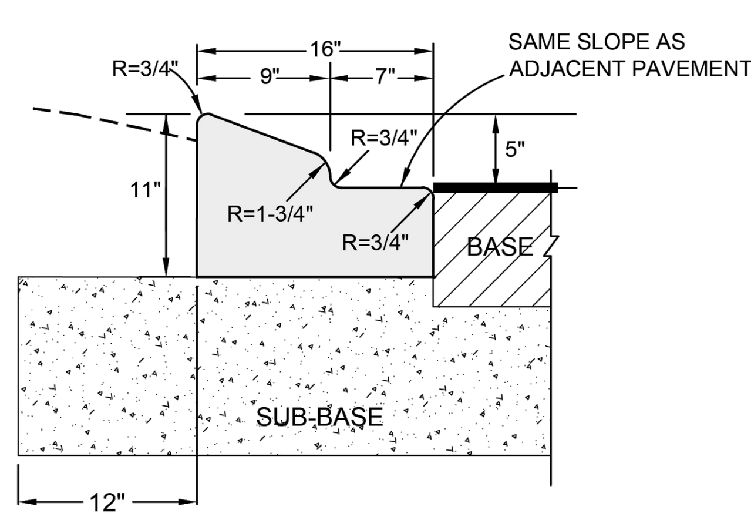
DROP CURB (MIAMI TYPE)

NOTES:

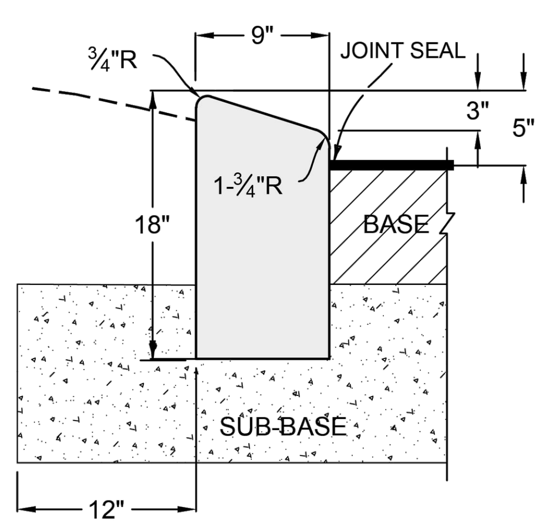
1. ALL CURBS TO BE CONSTRUCTED OF 28 DAY, 3,000 P.S.I. CONCRETE.
2. 1/2" PRE-MOLDED EXPANSION JOINT REQUIRED EVERY 500'. CONSTRUCTION JOINT REQUIRED EVERY 10' MAXIMUM (4' MINIMUM).
3. 1/2" PRE-MOLDED EXPANSION JOINT REQUIRED AT EACH SIDE OF ALL STORM INLET STRUCTURES AND AT ALL RADIUS POINTS.
4. SUB-BASE TO BE COMPACTED AND TESTED TO 98% MINIMUM DENSITY WITH MINIMUM L.B.R. 40 BASED ON AASHTO T-180 MODIFIED PROCTOR TEST.
5. EXPANSION JOINT MATERIAL MUST COVER THE ENTIRE CROSS SECTION OF CURB.

CONCRETE CURB (1) (N.T.S.)

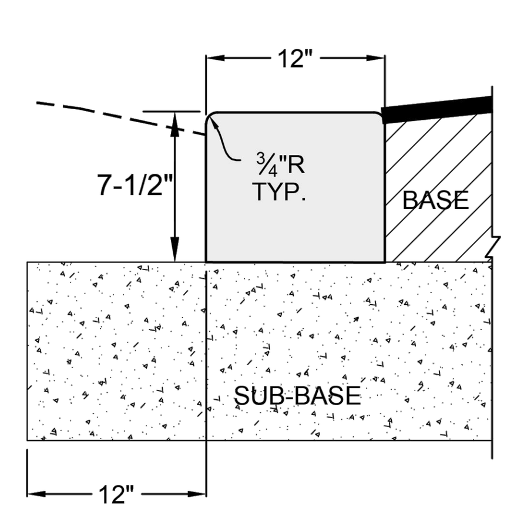
Howey-in-the-Hills Standard Details | DATE: FEB 2022 | DETAIL R-11



TYPE "A" CURB



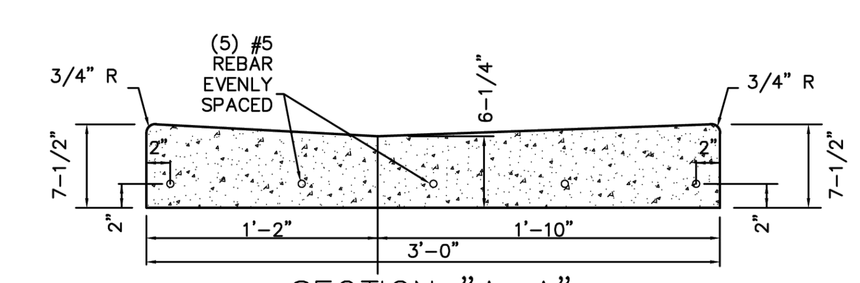
TYPE "B" CURB



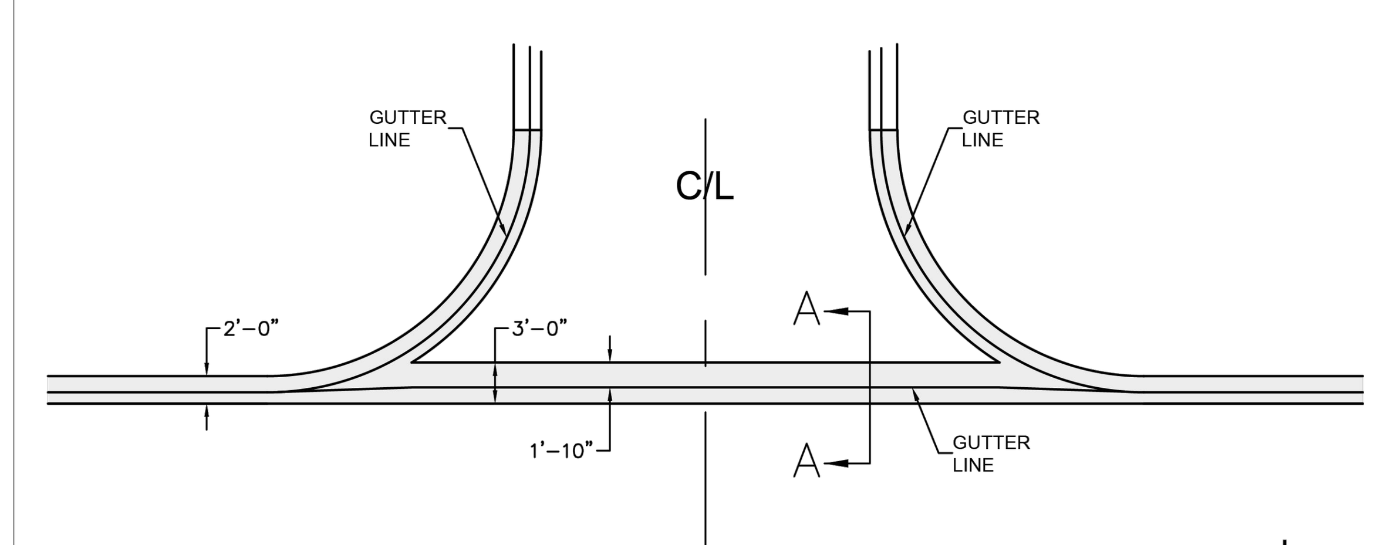
RIBBON CURB

CONCRETE CURB (2) (N.T.S.)

Howey-in-the-Hills Standard Details | DATE: FEB 2022 | DETAIL R-11A



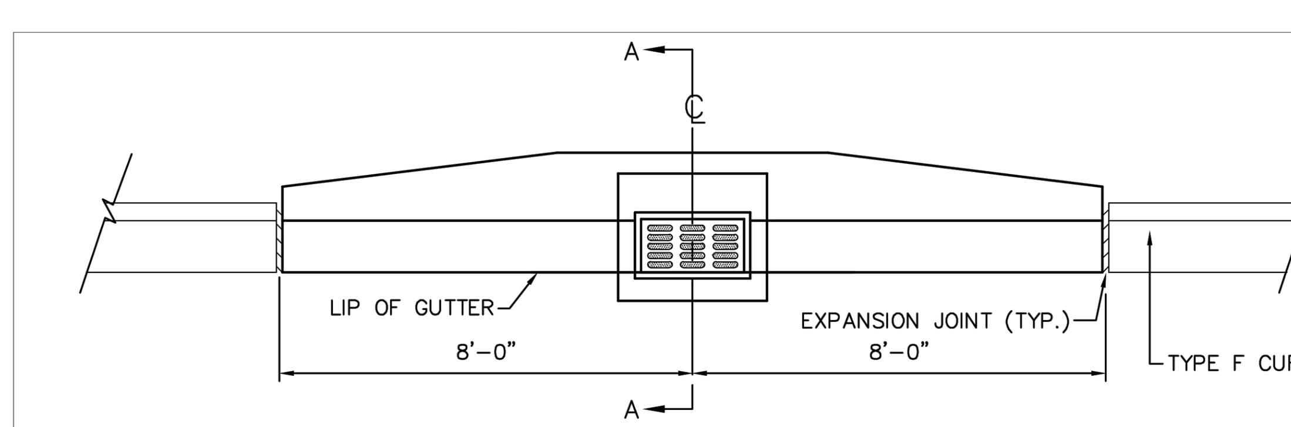
SECTION "A-A"
CONCRETE VALLEY GUTTER



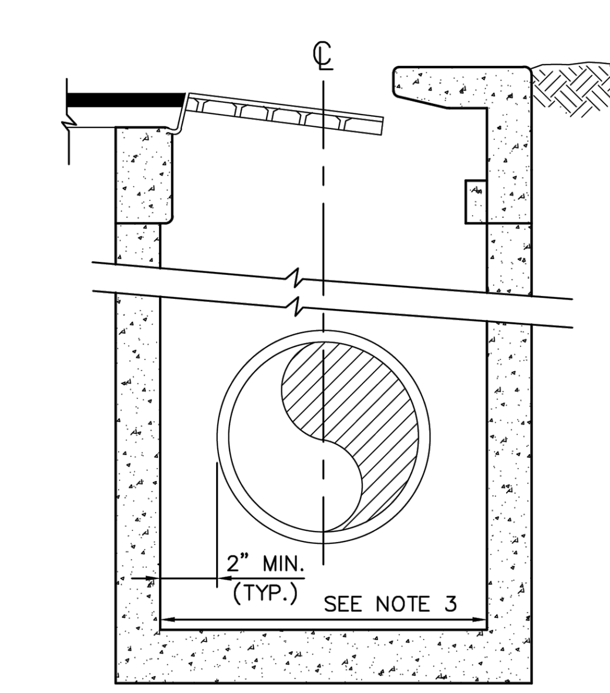
PLAN VIEW

CONCRETE VALLEY GUTTER (N.T.S.)

Howey-in-the-Hills Standard Details | DATE: FEB 2022 | DETAIL R-13



PLAN



SECTION "A-A"

NOTES:

1. CURB INLET TOPS SHALL BE FDOT TYPE 5 OR TYPE 6. (TYPE 6 SHOWN). FRAME AND COVER SHALL BE STEEL MEETING ASTM A-36 OR CAST IRON, CLASS No. 30 IN ACCORDANCE WITH ASTM A-48.
2. PRECAST STRUCTURES SHALL BE FDOT TYPE P OR J AND MAY BE CIRCULAR, SQUARE OR RECTANGULAR, WALL THICKNESS AND REINFORCEMENT SHALL BE IN ACCORDANCE WITH ASTM C-478.
3. MINIMUM INSIDE DIMENSIONS SHALL BE 4' DIAMETER FOR CIRCULAR AND 3'-6" FOR SQUARE OR RECTANGULAR.
4. ALTERNATE DRAINAGE INLET DESIGNS MAY BE PROPOSED BY ENGINEER.

CURB INLET (N.T.S.)

Howey-in-the-Hills Standard Details | DATE: FEB 2022 | DETAIL R-14

MADDEN
MOORHEAD & STOKES, LLC
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431 E. Horatio Avenue
Suite 260
Maitland, Florida 32751
(407) 629-8330
CA# 0007723

HOWEY-IN-THE-HILLS STANDARD DETAILS
FOR
LAKE HILLS MAIN BLVD. & MASS GRADING
HOWEY-IN-THE-HILLS FLORIDA

READER & PARTNERS, LLC
5850 TG LEE BOULEVARD SUITE 200
ORLANDO, FL 32822
(407) 856-4899

REVISIONS | DATE
1 2 3 4 5 6 7 8 9 10 11

DAVID ASHLEY STOKES
LICENSE NO. 66527
STATE OF FLORIDA
PROFESSIONAL ENGINEER

This item has been digitally signed and sealed by David Ashley Stokes, PE on the date adjacent to the seal.
Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.
ENGINEER OF RECORD
November 7, 2024

JOB #	23019
DATE:	11/7/24
DATUM:	NAVD 88
DESIGNED BY:	KAC
DRAWN BY:	JSK
APPROVED BY:	DAS

C939