

# SIERRA RANCH

## SECTION 18, TOWNSHIP 50 S, RANGE 41 E

### BROWARD COUNTY, FLORIDA

DWG NO:	DRAWING TITLE
C-1	CIVIL ENGINEERING COVER SHEET
C-2	GENERAL NOTES & SPECIFICATIONS
C-3	DEMOLITION PLAN
C-4	OVERALL DRAINAGE PLAN
C-5 THRU C-7	PAVING, GRADING & DRAINAGE PLANS
C-8	OVERALL WATER & SEWER PLAN
C-9 THRU C-11	WATER & SEWER PLANS
C-12 THRU C-14	SANITARY SEWER PROFILES
C-15	EROSION CONTROL PLAN
C-16 THRU C-18	PAVEMENT MARKING AND SIGNAGE PLANS
C-19	FIRE ACCESS PLAN
C-20 THRU C-23	PAVING, GRADING AND DRAINAGE DETAILS
C-24	TYPICAL SECTIONS
C-25	CITY OF SUNRISE STANDARD WATER DETAILS AND NOTES
C-26	CITY OF SUNRISE GENERAL WATER AND SANITARY SEWER DETAILS AND NOTES
C-27	CITY OF SUNRISE STANDARD SANITARY SEWER DETAILS AND NOTES
1 of 1	BOUNDARY SURVEY



### LOCATION MAP

SCALE: 1" = 300'±

## PREPARED FOR: HOME DYNAMICS CORPORATION

#### LEGAL DESCRIPTION

THE NORTH 1/2 OF THE NORTH 1/2 OF THE FOLLOWING DESCRIBED PROPERTY:

BEGINNING AT THE SOUTHWEST CORNER OF SECTION 18, TOWNSHIP 50 SOUTH, RANGE 41 EAST, ACCORDING TO THE PLAT OF NEWMAN'S SURVEY, RECORDED IN PLAT BOOK 2, PAGE 26, OF THE PUBLIC RECORDS OF MIAMI-DADE COUNTY, FLORIDA; THENCE RUN NORTH 88°52'50" EAST ALONG THE SOUTH BOUNDARY OF SAID SECTION 2626.40 FEET, MORE OR LESS, TO THE EAST BOUNDARY OF THE WEST 1/2 OF SAID SECTION; THENCE CONTINUE NORTH 88°52'50" EAST 30.30 FEET TO A POINT; THENCE RUN NORTH 0°15'20" EAST, 2724.4 FEET, MORE OR LESS, TO A POINT ON THE NORTH BOUNDARY OF THE SOUTH 1/2 OF SAID SECTION, LOCATED 127.15 FEET EAST OF THE CENTER OF SAID SECTION; THENCE RUN WEST ALONG SAID NORTH BOUNDARY 127.15 FEET TO THE CENTER OF SAID SECTION; THENCE CONTINUE WEST ALONG SAID NORTH LINE 2773.31 FEET, MORE OR LESS, TO THE EAST BOUNDARY LINE OF RANGE 40 EAST; THENCE RUN SOUTHERLY ALONG SAID EAST BOUNDARY OF RANGE 40 EAST, 2724.7 FEET, MORE OR LESS, TO THE SOUTH LINE OF SAID SECTION 18 EXTENDED WESTERLY; THENCE RUN NORTH 88°52'50" EAST 244.10 FEET TO THE POINT OF BEGINNING; LESS THE WESTERLY 53 FEET THEREOF. SAID LANDS SITUATE, LYING AND BEING IN BROWARD COUNTY, FLORIDA.

THE SOUTH 1/2 OF THE NORTH 1/2 OF THE FOLLOWING DESCRIBED PROPERTY:

BEGINNING AT THE SOUTHWEST CORNER OF SECTION 18, TOWNSHIP 50 SOUTH, RANGE 41 EAST, ACCORDING TO THE PLAT OF NEWMAN'S SURVEY, RECORDED IN PLAT BOOK 2, PAGE 26 OF THE PUBLIC RECORDS OF MIAMI-DADE COUNTY, FLORIDA; THENCE RUN NORTH 88°52'50" EAST ALONG THE SOUTH BOUNDARY OF SAID SECTION 2626.40 FEET, MORE OR LESS, TO THE EAST BOUNDARY OF THE WEST 1/2 OF SAID SECTION; THENCE CONTINUE NORTH 88°52'50" EAST 30.30 FEET TO A POINT; THENCE RUN NORTH 0°15'20" EAST, 2724.4 FEET, MORE OR LESS, TO A POINT ON THE NORTH BOUNDARY OF THE SOUTH 1/2 OF SAID SECTION, LOCATED 127.15 FEET EAST OF THE CENTER OF SAID SECTION; THENCE RUN WEST ALONG SAID NORTH BOUNDARY 127.15 FEET TO THE CENTER OF SAID SECTION; THENCE CONTINUE WEST ALONG SAID NORTH LINE 2773.31 FEET, MORE OR LESS, TO THE EAST BOUNDARY LINE OF RANGE 40 EAST; THENCE RUN SOUTHERLY ALONG SAID EAST BOUNDARY OF RANGE 40 EAST, 2724.7 FEET, MORE OR LESS, TO THE SOUTH LINE OF SAID SECTION 18 EXTENDED WESTERLY; THENCE RUN NORTH 88°52'50" EAST 244.10 FEET TO THE POINT OF BEGINNING; LESS THE WESTERLY 53 FEET THEREOF. SAID LANDS SITUATE, LYING AND BEING IN BROWARD COUNTY, FLORIDA.

ALSO KNOWN AS:

ALL OF THE PLAT OF "SIERRA ESTATES", ACCORDING TO THE PLAT THEREOF, AS RECORDED IN PLAT BOOK 173, PAGE 152, OF THE PUBLIC RECORDS OF BROWARD COUNTY, FLORIDA.

BENCHMARK REFERENCE: BROWARD COUNTY BENCHMARK #2352 BROWARD COUNTY ENGINEERING BRASS DISC AT THE NORTHEAST CORNER OF SECTION 13-50-40, ELEVATION = 7.16

#### SITE DATA

LAND USE: RESIDENTIAL

ZONING: R-1 ESTATE DWELLING (LOTS 1, 45-48)  
R-2 LOW DENSITY DWELLING (REMAINDER OF PROPERTY)

FOLIO NUMBER: 5041 1817 0010

#### NATIONAL FLOOD INSURANCE PROGRAM

NEW FLOOD PANEL NO.: 12011C0535H  
NEW NAVD 88 ELEVATION: 6  
NEW FLOOD ZONE: AH  
EFFECTIVE DATE: 8/18/14

#### NOTES:

- 1.) ALL ELEVATIONS SHOWN ON THE CONSTRUCTION DRAWINGS ARE BASED ON THE NATIONAL GEODETICAL VERTICAL DATUM OF 1929, (N.G.V.D.), UNLESS OTHERWISE NOTED.
- 2.) CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CITY OF SUNRISE MINIMUM DESIGN AND CONSTRUCTION STANDARDS.

#### CONSTRUCTION IN THE PUBLIC RIGHT-OF-WAY

THE PUBLIC ROADWAYS INDICATED IN THESE PLANS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE "MANUAL OF UNIFORM MINIMUM STANDARDS FOR DESIGN, CONSTRUCTION AND MAINTENANCE FOR STREETS AND HIGHWAYS OF FLORIDA"

#### PROJECT TEAM

**OWNER / DEVELOPER:** HOME DYNAMICS CORPORATION  
4755 TECHNOLOGY WAY, SUITE 210  
BOCA RATON, FLORIDA 33431  
(561) 869-1800  
EMAIL: ADELFINO@HOMEDYNAMICS.COM

**AGENT / PLANNER:** DESIGN AND ENTITLEMENT CONSULTANTS, LLC  
1402 ROYAL PALM BEACH BOULEVARD, SUITE 102  
ROYAL PALM BEACH, FLORIDA 33411  
(561) 707-3410  
EMAIL: KEN@DESIGNANDENTITLEMENT.COM

**CIVIL ENGINEER AND LANDSCAPE ARCHITECT:** CRAVEN THOMPSON & ASSOCIATES, INC.  
3563 N.W. 53RD STREET  
FORT LAUDERDALE, FLORIDA 33309  
(954) 739-6400  
EMAIL: CEDWARDS@CRAVENTHOMPSON.COM  
EMAIL: SPEAVLER@CRAVENTHOMPSON.COM

**SURVEYOR:** ABSOLUTE SURVEYING INC.  
215 GOOLSBY BOULEVARD  
DEERFIELD BEACH, FLORIDA 33442  
(954) 421-4170  
EMAIL:

**ENVIRONMENTAL CONSULTANT:** EW CONSULTANTS, INC.  
601 HERITAGE DRIVE, SUITE 124  
JUPITER, FLORIDA 33458  
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EMAIL: MLINDGREN@EWCONSULTANTS.COM

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



LEAVE BLANK - FOR CITY USE ONLY

DATE:	10/28/16			
SCALE:	AS NOTED			
DESIGNED BY:	M.R.N.			
DRAWN BY:	E.H.M.			
CHECKED BY:	C.E.E.			
APPROVED BY:	C.E.E.			
	DESCRIPTION	BY:	DATE:	

**CRAVEN THOMPSON AND ASSOCIATES, INC.**  
ENGINEERS • PLANNERS • SURVEYORS  
3563 N.W. 53RD STREET, FORT LAUDERDALE, FLORIDA 33309  
FAX: (954) 739-6409 TEL: (954) 739-6400  
FLORIDA LICENSED ENGINEERING, SURVEYING & MAPPING BUSINESS NO. 271  
FLORIDA LICENSED LANDSCAPE ARCHITECTURE BUSINESS NO. 500014  
WE STRONGLY RECOMMEND THE SERVICES OF QUALIFIED PROFESSIONAL ENGINEERS, ARCHITECTS, AND OTHERS IN THE FIELD OF DESIGN AND CONSTRUCTION. WE ARE NOT RESPONSIBLE FOR THE DESIGN OR CONSTRUCTION OF ANY STRUCTURE OR SYSTEM. OUR LIABILITY IS LIMITED TO THE SERVICES PROVIDED BY US AND OUR ASSOCIATES.

**SIERRA RANCH**  
PREPARED FOR:  
HOME DYNAMICS CORPORATION  
4755 TECHNOLOGY WAY, SUITE 210  
BOCA RATON, FLORIDA 33431

#### COVER SHEET

Chad E. Edwards, P.E.  
Florida P.E. No. 59306  
February 1, 2017

PROJECT #:  
12-0093-001-06

DATE:  
10/28/16

DRAWING NO.  
C-1

**I. APPLICABLE CODES**

- A. ALL CONSTRUCTION AND MATERIALS SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE TOWN OF DAVIE, CITY OF SUNRISE (WATER AND SEWER), AND ALL OTHER LOCAL, STATE AND NATIONAL CODES WHERE APPLICABLE. IN THE EVENT OF A CONFLICT, TOWN OF DAVIE AND CITY OF SUNRISE (WATER AND SEWER) SPECIFICATIONS WILL GOVERN.
- B. ALL CONSTRUCTION SHALL BE DONE IN A SAFE MANNER AND IN STRICT COMPLIANCE WITH ALL THE REQUIREMENTS OF FEDERAL, OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970, AND ALL STATE AND LOCAL SAFETY AND HEALTH REGULATIONS.
- C. ALL ELEVATIONS SHOWN ON THE CONSTRUCTION DRAWINGS ARE BASED ON THE NATIONAL GEODETICAL VERTICAL DATUM OF 1929, (N.G.V.D.), UNLESS OTHERWISE NOTED.

**II. PRECONSTRUCTION RESPONSIBILITIES**

- A. UPON THE RECEIPT OF THE "NOTICE TO PROCEED", THE CONTRACTOR SHALL CONTACT THE ENGINEER OF RECORD AND ARRANGE A PRECONSTRUCTION CONFERENCE TO INCLUDE ALL INVOLVED GOVERNMENTAL AGENCIES, UTILITY OWNERS, THE OWNER AND THE ENGINEER OF RECORD.
- B. THE CONTRACTOR SHALL OBTAIN A SUNSHINE CERTIFICATION NUMBER AT LEAST 48 HOURS PRIOR TO BEGINNING ANY EXCAVATION, CALL 811 OR 1-800-432-4770.
- C. ALL UTILITY EASEMENTS TO BE SECURED PRIOR TO CONSTRUCTION (IF REQUIRED).
- D. LOCATION OF EXISTING FACILITIES AS SHOWN ON CONSTRUCTION DRAWINGS ARE DRAWN FROM AVAILABLE RECORDS. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THE FACILITIES SHOWN OR FOR ANY FACILITY NOT SHOWN. THE CONTRACTOR SHALL VERIFY, IF POSSIBLE, THE ELEVATIONS AND LOCATIONS OF EXISTING FACILITIES PRIOR TO CONSTRUCTION. IF AN EXISTING FACILITY IS FOUND TO CONFLICT WITH THE PROPOSED CONSTRUCTION UPON EXCAVATION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF RECORD SO THAT APPROPRIATE MEASURES CAN BE TAKEN TO RESOLVE THE PROBLEM. AT LEAST TWO (2) DAYS PRIOR TO THE START OF CONSTRUCTION.
- E. THE OWNER SHALL SUBMIT A "NOTICE OF INTENT (N.O.I.) TO USE GENERIC PERMIT FOR STORMWATER DISCHARGE FROM CONSTRUCTION ACTIVITIES THAT DISTURB FIVE OR MORE ACRES OF LAND" FORM (D.E.P. FORM #62-621.300(4)(B)) TO F.D.E.P. NOTICES CENTER. THE CONTRACTOR WILL BE RESPONSIBLE FOR THE STORM WATER POLLUTION PREVENTION PLAN (S.W.P.P.P.) REQUIRED FOR N.O.I. SUBMITTAL AND SHALL RETAIN A COPY ON-SITE FROM THE DATE OF PROJECT INITIATION TO THE DATE OF FINAL SITE STABILIZATION. A "NOTICE OF TERMINATION" (N.O.T.) OF GENERIC PERMIT COVERAGE" FORM (D.E.P. FORM #2-621-300(6)) MUST BE SUBMITTED TO F.D.E.P. TO DISCONTINUE PERMIT COVERAGE SUBSEQUENT TO COMPLETION OF CONSTRUCTION. FOR ADDITIONAL INFORMATION, SEE F.D.E.P. WEBSITE: HTTP://WWW.DEP.STATE.FL.US/WATER/STORMWATER/NPDES

**III. INSPECTIONS**

- A. THE CONTRACTOR SHALL NOTIFY THE TOWN OF DAVIE, CITY OF SUNRISE (WATER AND SEWER), THE ENGINEER OF RECORD, AND ANY OTHER GOVERNMENTAL AGENCIES HAVING JURISDICTION AT LEAST 48 HOURS PRIOR TO BEGINNING CONSTRUCTION AND PRIOR TO THE INSPECTION OF THE FOLLOWING ITEMS, WHERE APPLICABLE:
  - 1. CLEARING AND FILLING
  - 2. STORM DRAINAGE SYSTEM
  - 3. SANITARY SEWER SYSTEM
  - 4. WATER DISTRIBUTION SYSTEM
  - 5. SUBGRADE
  - 6. LIMEROCK BASE
  - 7. ASPHALTIC CONCRETE
  - 8. SIDEWALK
  - 9. FINAL

**IV. SHOP DRAWINGS**

- A. PRIOR TO THEIR CONSTRUCTION OR INSTALLATION, SHOP DRAWINGS SHALL BE SUBMITTED TO AND APPROVED BY THE ENGINEER OF RECORD, TOWN OF DAVIE, CITY OF SUNRISE (WATER AND SEWER) FOR THE FOLLOWING: SANITARY MANHOLES, STORM DRAIN MANHOLES, CATCH BASINS, FIRE HYDRANTS, PIPING, VALVES AND ALL REQUIRED ACCESSORIES. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN ALL OTHER AGENCY APPROVALS IF REQUIRED.

**V. TEMPORARY FACILITIES**

- A. TEMPORARY FACILITIES:
  - 1. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ARRANGE FOR OR SUPPLY TEMPORARY WATER SERVICE, SANITARY FACILITIES AND ELECTRICITY.
- B. TRAFFIC REGULATION:
  - 1. MAINTENANCE OF TRAFFIC IN THE PUBLIC RIGHTS-OF-WAY SHALL BE IN ACCORDANCE WITH THE M.U.T.C.D.
  - 2. ALL OPEN TRENCHES AND HOLES ADJACENT TO ROADWAYS OR WALKWAYS SHALL BE PROPERLY MARKED AND BARRICADED TO ASSURE THE SAFETY OF BOTH VEHICULAR AND PEDESTRIAN TRAFFIC.
  - 3. NO TRENCHES OR HOLES NEAR WALKWAYS, IN ROADWAYS OR THEIR SHOULDERS ARE TO BE LEFT OPEN DURING NIGHTTIME HOURS WITHOUT EXPRESS PERMISSION OF THE TOWN OF DAVIE.
  - 4. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR FOR ANY NECESSARY CONSTRUCTION, PAVEMENT MARKING AND SIGNAGE OR ANY PEDESTRIAN SIGNALIZATION AND/OR SIGNAL MODIFICATION TO ACCOMMODATE AN ALTERNATE SAFE WALK ROUTE.

**VI. STORM DRAINAGE**

- A. GENERAL:
  - 1. DISTANCES AND LENGTHS SHOWN ON PLANS AND PROFILE DRAWINGS ARE REFERENCED TO THE CENTER OF STRUCTURES.
  - 2. ALL MUCK AND NON-PERVIOUS MATERIALS SHALL BE REMOVED FROM THE DRY RETENTION AND EXFILTRATION TRENCH AREAS AND REPLACED WITH CLEAN FILL MATERIAL ACCEPTABLE TO THE TOWN OF DAVIE.
- B. MATERIALS:
  - 1. REINFORCED CONCRETE PIPE (R.C.P.) SHALL MEET THE REQUIREMENTS OF ASTM C-76, LATEST REVISION, RUBBER GASKETS OR OTHER MANUFACTURER SUPPLIED JOINT SEALER SHALL BE USED.
  - 2. MITERED END SECTIONS SHALL BE CONSTRUCTED PER FDOT INDEX NO. 272.
  - 3. ALL DRAINAGE STRUCTURES SHALL BE PRECAST CONCRETE AND SHALL MEET THE REQUIREMENTS OF ASTM C-478. THE MINIMUM WALL THICKNESS AND MINIMUM TOP AND BOTTOM SLAB THICKNESS SHALL BE 8 INCHES. THE MINIMUM REINFORCING SHALL BE NO. 4 BARS AT 12 INCHES EACH WAY UNLESS OTHERWISE INDICATED. CONCRETE SHALL BE MINIMUM OF 4000 PSI AT 28 DAYS.

**C. INSTALLATION:**

- 1. PIPE SHALL BE PLACED ON A MINIMUM OF 8" STABLE GRANULAR MATERIAL FREE OF ROCK FORMATION AND OTHER FOREIGN FORMATIONS, AND CONSTRUCTED TO A UNIFORM GRADE AND LINE.
- 2. BACK FILL MATERIAL SHALL BE WELL GRADED GRANULAR MATERIAL, WELL TAMPED IN LAYERS NOT TO EXCEED 6 INCHES TO A HEIGHT OF 12 INCHES ABOVE PIPE AS SHOWN ON THE PLANS.
- 3. PROVIDE A MINIMUM PROTECTIVE COVER OF 18 INCHES OVER STORM SEWER AND AVOID UNNECESSARY CROSSING BY HEAVY CONSTRUCTION VEHICLES DURING CONSTRUCTION.
- 4. THE CONTRACTOR SHALL NOTIFY THE TOWN OF DAVIE AND THE ENGINEER OF RECORD AT LEAST 7 DAYS PRIOR TO THE START OF CONSTRUCTION.

**D. TESTING:**

- 1. ON COMPLETION OF EACH SECTION OF DRAINAGE SYSTEM, THE SECTION OF THE SYSTEM IS TO BE CLEANED AND INSPECTED. INSPECTION SHALL BE PERFORMED BY LAMPING, EACH SECTION BETWEEN STRUCTURES. IN EXAMINATION FROM EITHER END, SHALL SHOW A FULL CIRCLE OF LIGHT. ALL REPAIRS SHOWN NECESSARY BY THE INSPECTION ARE TO BE MADE: COLLAPSED PIPE REPLACED, ALL DEPOSITS REMOVED AND THE DRAIN LINE LEFT TRUE TO LINE AND GRADE ENTIRELY CLEAN AND READY FOR USE.

**VII. PAVING**

**A. GENERAL:**

- 1. ALL MUCK AND YIELDING MATERIAL WITHIN THE LIMIT OF CONSTRUCTION SHALL BE REMOVED AND REPLACED WITH CLEAN FILL MATERIAL WHICH SHALL BE COMPACTED AND SHAPED TO CONFORM TO THE REQUIRED SECTION. NO MATERIAL OF F.D.O.T. CLASS A-5, A-7 OR A-8 WILL BE ALLOWED. COMPACTED AREAS, AS SHOWN ON THE PLANS AND/OR AS DETERMINED BY THE ENGINEER, SHALL BE COMPACTED TO NOT LESS THAN 100% OF MAXIMUM DRY DENSITY PER AASHTO T-99-C. AREAS TO BE STABILIZED AS DETERMINED BY THE ENGINEER, SHALL HAVE A MINIMUM LBR-40.
- 2. ALL UNDERGROUND UTILITIES SHALL BE COMPLETE PRIOR TO FINISHED GRADING AND COMPACTION OF SUBGRADE.
- 3. ALL EXISTING PAVEMENT, CUT OR DAMAGED BY CONSTRUCTION, SHALL BE PROPERLY RESTORED AT THE CONTRACTOR'S EXPENSE.
- 4. WHERE ANY PROPOSED PAVEMENT IS TO BE CONNECTED TO EXISTING PAVEMENT, THE EXISTING EDGE OF PAVEMENT SHALL BE CLEANLY SAW CUT TO ENSURE A PROPER JOINT.

**B. MATERIALS:**

- 1. BASE COURSE SHALL BE CRUSHED LIME ROCK COMPACTED TO 98% MAX. DRY DENSITY W/ MINIMUM LBR-100.
- 2. ASPHALT SURFACES FOR PAVED AREAS SHALL CONFORM WITH THE FOLLOWING:
  - DRIVES TO BE 1 3/4" ASPHALT, 1ST LIFT 3/4" TYPE S-III AND 2ND LIFT 1" TYPE S-III; (WITH SECOND LIFT INSTALLED AFTER FINAL LANDSCAPING AND IRRIGATION INSPECTION). 8" LIMEROCK BASE, 12" STABILIZED SUBGRADE.
- 3. MINIMUM SIDEWALK CONSTRUCTION SHALL BE 4" INCH THICK (6" INCH THICK AT DRIVEWAYS AND IN COUNTY RIGHT-OF-WAY) CONCRETE, MINIMUM 3000 PSI COMPRESSIVE STRENGTH AT 28 DAYS. SAWCUT CONSTRUCTION JOINTS 5 FOOT O.C. WITHIN 48 HOURS OF PLACING, EXPANSION JOINTS SHALL BE 20' FOOT O.C. NO EXPANSION JOINTS ARE TO BE INSTALLED WITHIN RIGHT-OF-WAY.
- 4. CURBS AND GUTTERS, CONCRETE 3000 PSI COMPRESSIVE STRENGTH AT 28 DAYS, SAWCUT CONSTRUCTION JOINTS 10' FOOT O.C. WITHIN 48 HOURS OF PLACING.

**C. INSTALLATION:**

- 1. SUBGRADE FOR PAVEMENT AREAS SHALL BE COMPACTED TO A MINIMUM OF 98% OF THE MAXIMUM DENSITY (AASHTO T-180), AND SHALL HAVE A MINIMUM LBR OF 40.
- 2. BASE COURSE MATERIAL FOR PAVED AREAS SHALL CONFORM TO FOLLOWING: MINIMUM THICKNESS OF 8 INCHES, AND SHALL BE CONSTRUCTED IN TWO 4 INCH LAYERS.
- 3. BASE COURSE SHALL BE COMPACTED TO 98% OF THE MAXIMUM DENSITY AS PER AASHTO T-180 AND SHALL HAVE A MINIMUM LBR 100.
- 4. A PRIME COAT SHALL BE APPLIED TO THE BASE COURSE AND A TACK COAT SHALL BE APPLIED BETWEEN PAVING COURSES.
- 5. INSTALLATION OF THE WEARING SURFACE AND FRICTION COURSE SHALL CONFORM WITH THE REQUIREMENTS OF THE F.D.O.T. STANDARD SPECIFICATIONS.
- 6. ALL PAVEMENT RESTORATION TO BE MADE IN ACCORDANCE WITH THE CITY, COUNTY, OR STATE OF FLORIDA D.O.T. SPECIFICATIONS, WHERE APPLICABLE.

**D. TESTING:**

- 1. THE FINISHED SURFACE OF THE BASE COURSE AND THAT OF THE WEARING SURFACE SHALL NOT VARY MORE THAN 1/4" IN ANY 14' SEGMENT FROM PROPOSED GRADES. ANY IRREGULARITIES EXCEEDING THIS LIMIT SHALL BE CORRECTED.
- 2. DENSITY TESTS SHALL BE TAKEN BY AN INDEPENDENT TESTING LABORATORY CERTIFIED BY THE STATE OF FLORIDA, WHERE DIRECTED BY THE ENGINEER.
- 3. ALL TESTING COSTS SHALL BE PAID FOR BY THE OWNER EXCEPT THOSE TESTS FAILING TO MEET THE SPECIFIED REQUIREMENTS WHICH ARE TO BE PAID BY THE CONTRACTOR.
- 4. DENSITY TESTS ON THE STABILIZED SUBGRADE SHALL BE SUPPLIED TO THE ENGINEER OF RECORD, AND APPROVED BEFORE ANY LIME ROCK BASE IS CONSTRUCTED.
- 5. DENSITY TESTS AND AS-BUILTS ON THE FINISHED LIMEROCK BASE SHALL BE SUPPLIED TO THE ENGINEER OF RECORD, AND APPROVED BEFORE ANY ASPHALTIC PAVEMENT IS CONSTRUCTED.

**VIII. DEWATERING**

- 1. DEWATERING (IF REQUIRED) MUST BE PERFORMED IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY DEWATERING PERMITS AND APPROVALS.

**IX. PAVEMENT MARKING AND SIGNAGE**

- 1. ALL PAVEMENT MARKINGS AND SIGNAGE SHALL BE IN ACCORDANCE WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS," LATEST EDITION; AND BROWARD COUNTY TRAFFIC ENGINEERING STANDARDS (CURRENT EDITION). STANDARDS & SPECIFICATIONS FOR PAVEMENT MARKING REQUIREMENTS.

**X. ENGINEER'S AS BUILT REQUIREMENTS**

- 1. DURING THE DAILY PROGRESS OF THE JOB, THE CONTRACTOR SHALL RECORD ON HIS SET OF CONSTRUCTION DRAWINGS THE EXACT LOCATION, LENGTH, MATERIAL AND ELEVATION OF ANY FACILITY NOT BUILT EXACTLY ACCORDING TO PLANS.

**2. AS-BUILTS OF WATER LINES SHALL INCLUDE THE FOLLOWING:**

- a. TOP OF PIPE ELEVATIONS EVERY 100 LINEAR FEET.
- b. LOCATIONS AND ELEVATIONS OF ALL FITTINGS INCLUDING BENDS, TEES, GATE VALVES, DOUBLE DETECTOR CHECK VALVES, FIRE HYDRANTS, ETC.
- c. ALL TIE INS TO EXISTING LINES SHALL BE AS BUILT.
- d. THE TERMINATION OF ALL WATER SERVICES SHALL BE SHOWN.

**3. AS-BUILTS OF ALL THE GRAVITY SANITARY SEWER LINES SHALL INCLUDE THE FOLLOWING INFORMATION:**

- a. RIMS, INVERTS, AND LENGTH OF PIPING BETWEEN STRUCTURES, AS WELL AS PIPE SLOPES.
- b. LOCATIONS OF ALL STUB ENDS OF ALL SEWER LATERALS, INVERT ELEVATIONS AND LOCATIONS OF ALL CLEAN OUTS.
- c. LIFT STATION AS-BUILTS SHALL CONSIST OF THE TOP OF WET WELL ELEVATION, INVERT ELEVATIONS OF THE INCOMING LINE, BOTTOM OF THE WET WELL AND AS-BUILTS OF THE COMPOUND AREA.

**4. FORCE MAIN AS-BUILTS SHALL BE PREPARED THE SAME AS THE WATER MAIN AS-BUILTS DESCRIBED ABOVE.**

**5. AS-BUILTS OF ALL DRAINAGE LINES SHALL INCLUDE THE FOLLOWING INFORMATION:**

- a. RIMS, INVERTS, AND LENGTH OF PIPING BETWEEN STRUCTURES, AND WEIR ELEVATIONS WHERE APPLICABLE.
- b. THE SIZE OF THE PIPING SHALL BE VERIFIED BY THE SURVEY FIELD CREW AT THE TIME OF AS-BUILT.

**6. ALL ROCK AS-BUILTS FOR DRIVE AREAS SHALL CONSIST OF THE FOLLOWING INFORMATION:**

- a. ROCK ELEVATIONS AT ALL HIGH AND LOW POINTS, AND AT ENOUGH INTERMEDIATE POINTS TO CONFIRM SLOPE CONSISTENCY.
- b. ROCK AS-BUILTS SHALL BE TAKEN AT ALL LOCATIONS WHERE THERE IS A FINISHED GRADE ELEVATION SHOWN ON THE DESIGN PLANS.
- c. ALL CATCH BASIN AND MANHOLE RIM ELEVATIONS SHALL BE SHOWN.
- d. ELEVATIONS AROUND ISLANDS SHALL ALSO BE SHOWN.
- e. WHERE CONCRETE IS TO BE USED AS A FINISHED PRODUCT FOR THE ROADWAY OR PARKING LOT, ROCK AS-BUILTS WILL BE REQUIRED AS INDICATED ABOVE, AS WELL AS AS-BUILTS ON THE FINISHED CONCRETE AT LOCATIONS WHERE THERE IS A FINISHED GRADE ELEVATION SHOWN ON THE DESIGN PLANS.
- f. AS-BUILTS SHALL BE TAKEN ON ALL PAVED AND UNPAVED SWALES, PRIOR TO PLACEMENT OF ASPHALT OR TOPSOIL OR SOD, AT ENOUGH INTERMEDIATE POINTS TO CONFIRM SLOPE CONSISTENCY AND CONFORMANCE TO THE PLANS.

**7. LAKE AND CANAL BANK AS-BUILTS SHALL INCLUDE A KEY SHEET OF THE LAKE FOR THE LOCATIONS OF CROSS SECTIONS. LAKE AND CANAL BANK CROSS SECTIONS SHALL BE PLOTTED AT A MINIMUM OF EVERY 100 LINEAR FEET UNLESS OTHERWISE SPECIFIED. AS-BUILTS SHALL CONSIST OF THE LOCATION AND ELEVATION OF THE TOP OF BANK, EDGE OF WATER AND THE DEEP CUT LINE, WITH THE DISTANCE BETWEEN EACH SHOWN ON THE DRAWING.**

**8. RETENTION AREA AS-BUILT ELEVATIONS SHALL BE TAKEN AT THE BOTTOM OF THE RETENTION AREA AND AT THE TOP OF BANK. AS-BUILT OF CONTOURS SHALL BE SHOWN, WHERE APPLICABLE.**

**9. UPON COMPLETION OF THE WORK, THE CONTRACTOR SHALL PREPARE RECORD DRAWINGS, ON FULL SIZE REPRODUCIBLE MATERIAL. ONE SET OF REPRODUCIBLE RECORD DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD, ALONG WITH EIGHT SETS OF BLUE OR BLACK LINE DRAWINGS. THESE DRAWINGS SHALL BE SIGNED AND SEALED BY A FLORIDA REGISTERED LAND SURVEYOR. ADDITIONALLY, AN ELECTRONIC COPY OF THESE RECORD DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER IN AUTOCAD, ".DWG" OR ".DXF" FORMAT.**

**10. THE FOLLOWING SUBMITTALS TO THE TOWN OF DAVIE ARE REQUIRED AFTER THE PROJECT IS COMPLETED AND APPROVED BY THE TOWN OF DAVIE:**

- a. TWO (2) COMPLETE "AS-BUILT" SETS OF BLUEPRINTS SIGNED AND SEALED BY A REGISTERED ENGINEER.
- b. ONE (1) COMPLETE "AS-BUILT" SET OF MYLAR.
- c. TWO (2) "AS-BUILT" CDS IN AUTOCAD.

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

**Sunshine811.com**

LEAVE BLANK - FOR CITY USE ONLY

DATE:	10/28/16				
SCALE:	AS NOTED				
DESIGNED BY:	M.R.N.				
DRAWN BY:	E.H.M.				
CHECKED BY:	C.E.E.				
APPROVED BY:	C.E.E.				
	DESCRIPTION	BY:	DATE:		

**CRAVEN THOMPSON AND ASSOCIATES, INC.**  
 ENGINEERS • PLANNERS • SURVEYORS  
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 FAX: (954) 739-6409 TEL: (954) 739-6400  
 FLORIDA LICENSED ENGINEERING, SURVEYING & MAPPING BUSINESS NO. 271  
 FLORIDA LICENSED LANDSCAPE ARCHITECTURE BUSINESS NO. 500014  
WE HEREBY CERTIFY THAT THE DESIGN OF THIS PROJECT WAS PREPARED BY A REGISTERED PROFESSIONAL ENGINEER OR ARCHITECT IN THE STATE OF FLORIDA. THE DESIGN OF THIS PROJECT WAS PREPARED BY A REGISTERED PROFESSIONAL ENGINEER OR ARCHITECT IN THE STATE OF FLORIDA.

**SIERRA RANCH**  
 PREPARED FOR:  
**HOME DYNAMICS CORPORATION**  
 4755 TECHNOLOGY WAY, SUITE 210  
 BOCA RATON, FLORIDA 33431

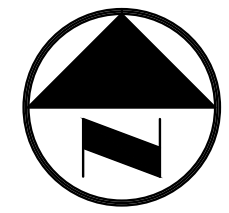
**GENERAL NOTES AND SPECIFICATIONS**

DATE: **10/28/16**

Chad E. Edwards, P.E.  
 Florida P.E. No. 59306  
 February 1, 2017

PROJECT #:  
 12-0093-001-06

DRAWING NO.  
**C-2**

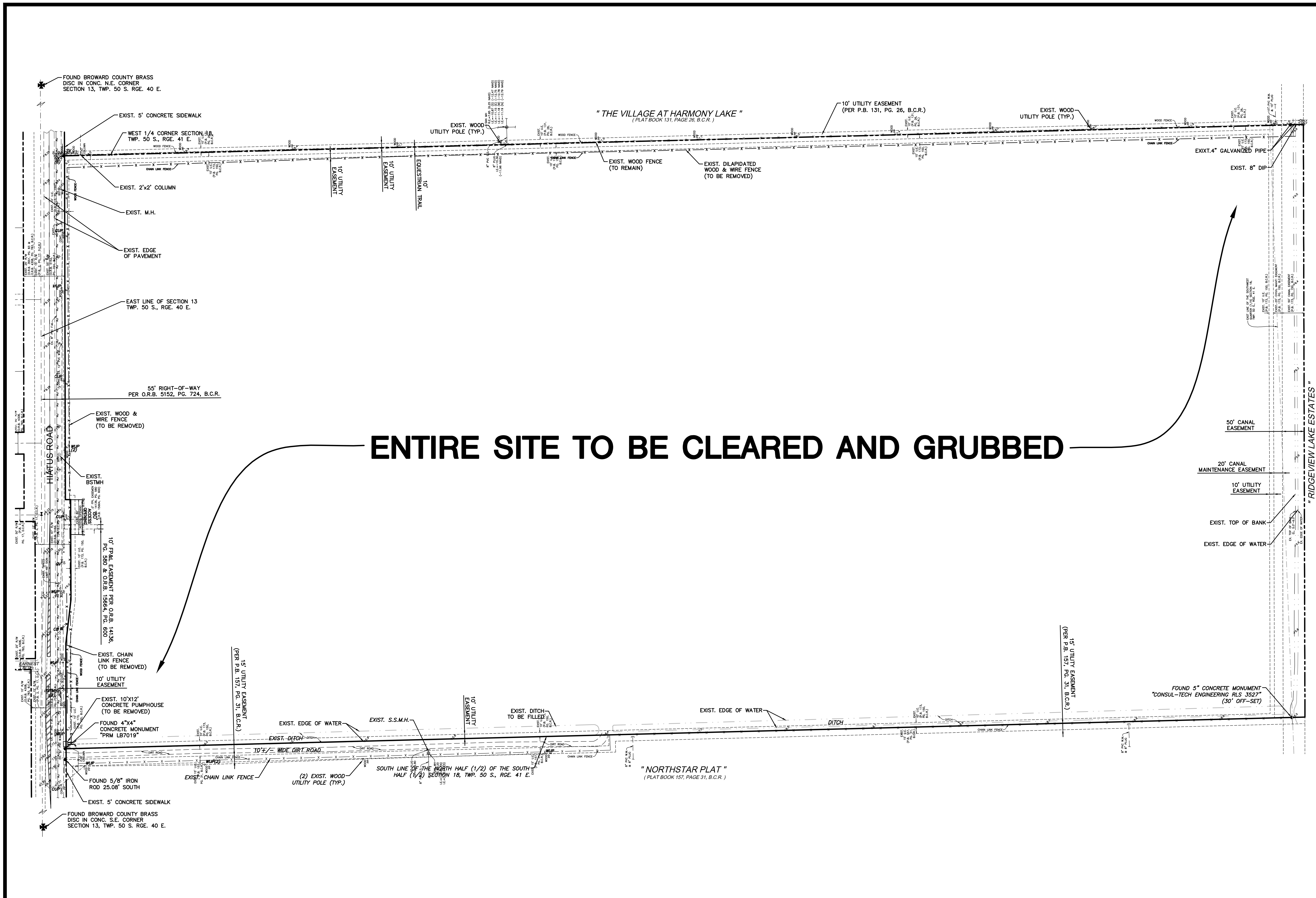


**DEMOLITION NOTES:**

- REFER TO TREE REMOVAL/RELOCATION PLANS FOR DETAILS REGARDING EXISTING TREES TO BE REMOVED-RELOCATED OR TO REMAIN.
- REFER TO ENVIRONMENTAL PLANS FOR WETLAND DELINEATION AND REQUIREMENTS

**LEGEND:**

- X EXISTING FENCE
- X 1.7 EXISTING SPOT ELEVATION
- WOOD EXISTING WOOD POWER POLE
- PP EXISTING CONCRETE POWER POLE
- GV EXISTING GATE VALVE
- FH EXISTING FIRE HYDRANT
- ⊙ EXISTING BELL SOUTH MANHOLE
- ⊙ EXISTING SANITARY SEWER MANHOLE
- WM EXISTING WATER MAIN
- FM EXISTING FORCE MAIN
- CB EXISTING CATCH BASIN



**ENTIRE SITE TO BE CLEARED AND GRUBBED**

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

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DATE:	10/28/16				
SCALE:	AS NOTED				
DESIGNED BY:	M.R.N.				
DRAWN BY:	E.H.M.				
CHECKED BY:	C.E.E.				
APPROVED BY:	C.E.E.				
	DESCRIPTION	BY:	DATE:		

**Craven Thompson and Associates, Inc.**  
 ENGINEERS • PLANNERS • SURVEYORS  
 3563 N.W. 53RD STREET, FORT LAUDERDALE, FLORIDA 33309  
 FAX: (954) 739-6409 TEL: (954) 739-6400  
 FLORIDA LICENSED ENGINEERING, SURVEYING & MAPPING BUSINESS NO. 271  
 FLORIDA LICENSED LANDSCAPE ARCHITECTURE BUSINESS NO. 5000114

**SIERRA RANCH**  
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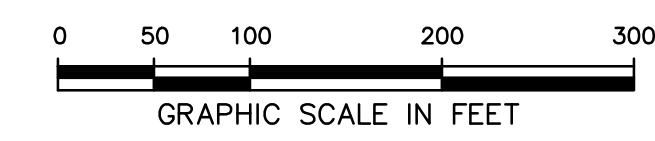
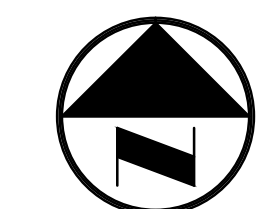
**DEMOLITION PLAN**

DATE: **10/28/16**

DRAWING NO. **C-3**

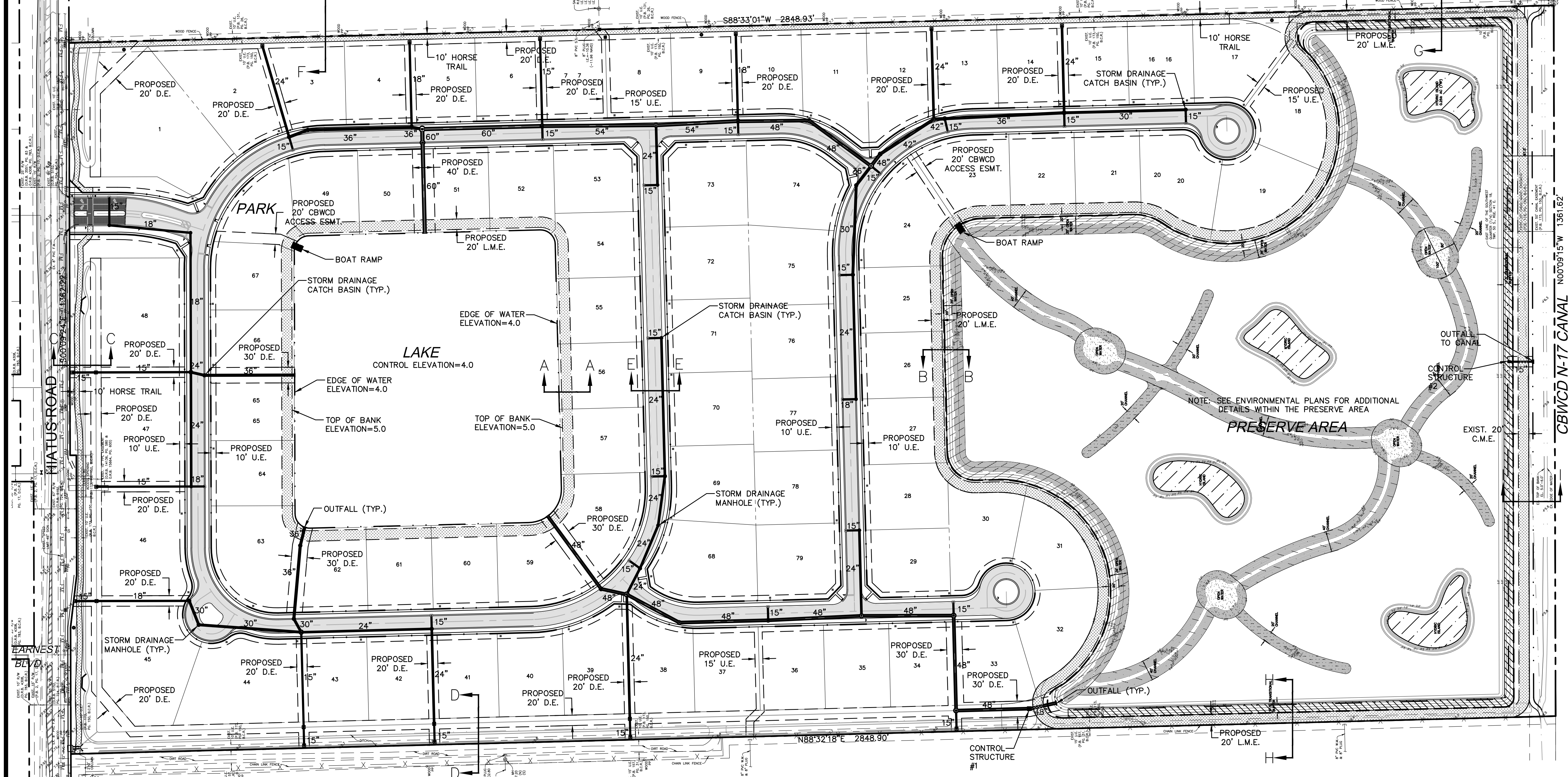
PROJECT # **12-0093-001-06**

Chad E. Edwards, P.E.  
 Florida P.E. No. 59306  
 February 1, 2017



**"THE VILLAGE AT HARMONY LAKE"**  
(PLAT BOOK 131, PAGE 26, B.C.R.)

NOTE: HORSE TRAIL TO BE CONSTRUCTED BY THE DEVELOPER AND MAINTAINED BY THE HOMEOWNERS ASSOCIATION. ALL DRAINAGE STRUCTURES, PIPES, LAKE AND PRESERVE AREA TO BE MAINTAINED BY THE HOMEOWNERS ASSOCIATION.



- LEGEND:**
- H.P. ROADWAY HIGH POINT
  - L.P. ROADWAY LOW POINT
  - DRAINAGE CATCH BASIN
  - DRAINAGE MANHOLE
  - YARD DRAIN WITH CONCRETE APRON
  - HDPE HIGH DENSITY POLYETHYLENE PIPE
  - INDICATES STORM DRAIN STRUCTURE NUMBER
  - R.E.# INDICATES STORM DRAIN RIM ELEVATION
  - I.E.# INDICATES STORM DRAIN INVERT ELEVATION
  - INDICATES STORM DRAIN STRUCTURE TYPE
  - DRAINAGE OUTFALL
  - FLOW ARROW
  - PROPOSED SPOT ELEVATION
  - EXISTING SPOT ELEVATION
  - F.F. BUILDING FINISHED FLOOR ELEVATION
  - D.E. DRAINAGE EASEMENT
  - L.M.E. LAKE MAINTENANCE EASEMENT
  - U.E. UTILITY EASEMENT
  - CBWCD CENTRAL BROWARD WATER CONTROL DISTRICT
  - ASPHALT PAVEMENT
  - CONCRETE SIDEWALK
  - STABILIZED SOG

**"NORTHSTAR PLAT"**  
(PLAT BOOK 157, PAGE 31, B.C.R.)

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DRAWN BY:	E.H.M.
CHECKED BY:	C.E.E.
APPROVED BY:	C.E.E.

DESCRIPTION	BY:	DATE:

**CrAVEN THOMPSON AND ASSOCIATES, INC.**  
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3563 N.W. 53RD STREET, FORT LAUDERDALE, FLORIDA 33309  
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FLORIDA LICENSED LANDSCAPE ARCHITECTURE BUSINESS NO. 5000114

**SIERRA RANCH**  
PREPARED FOR:  
**HOME DYNAMICS CORPORATION**  
4755 TECHNOLOGY WAY, SUITE 210  
BOCA RATON, FLORIDA 33431

**OVERALL DRAINAGE PLAN**

DATE:	10/28/16
DRAWING NO.:	C-4
PROJECT #:	12-0093-001-06

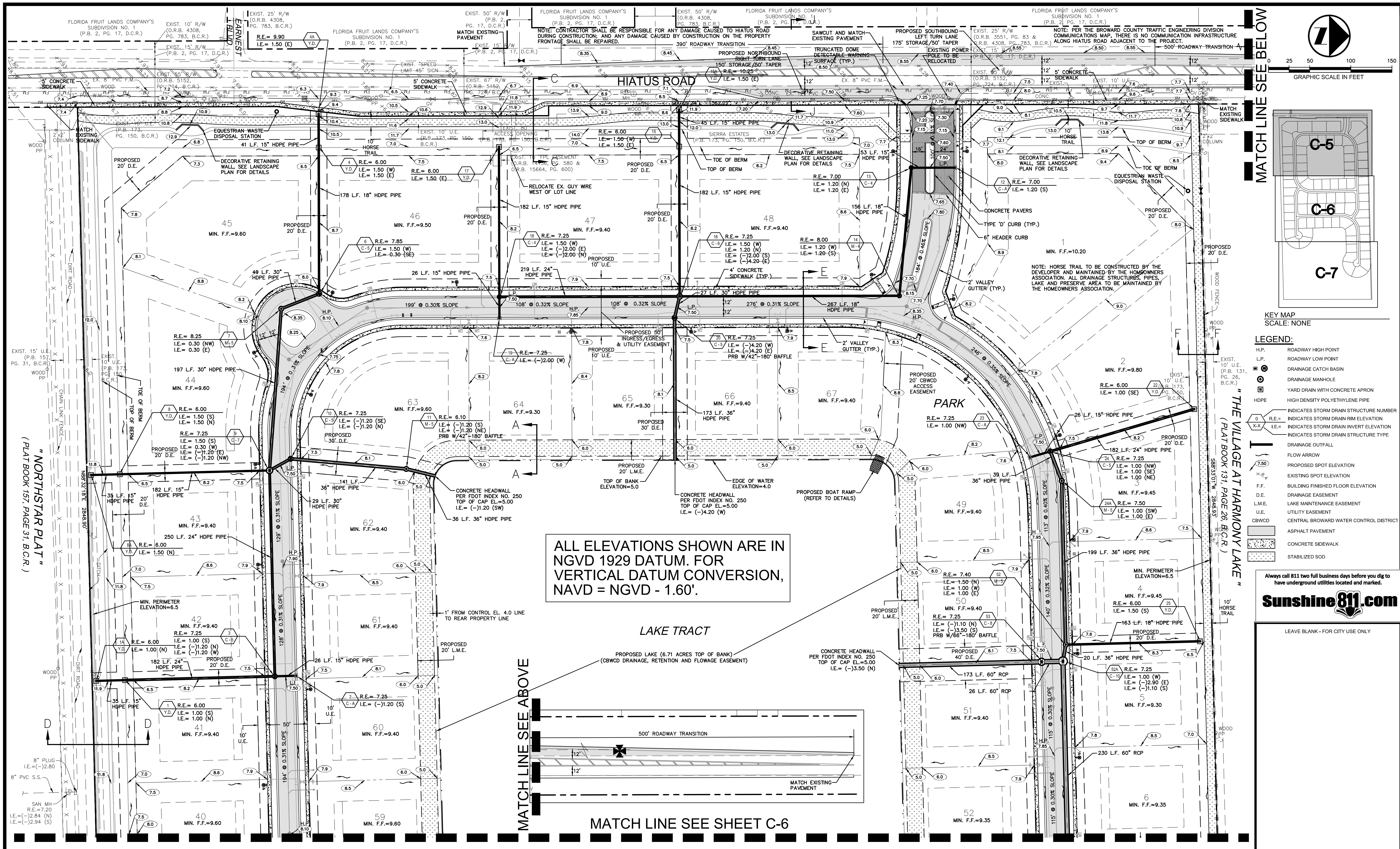
Chad E. Edwards, P.E.  
Florida P.E. No. 59306  
August 16, 2017

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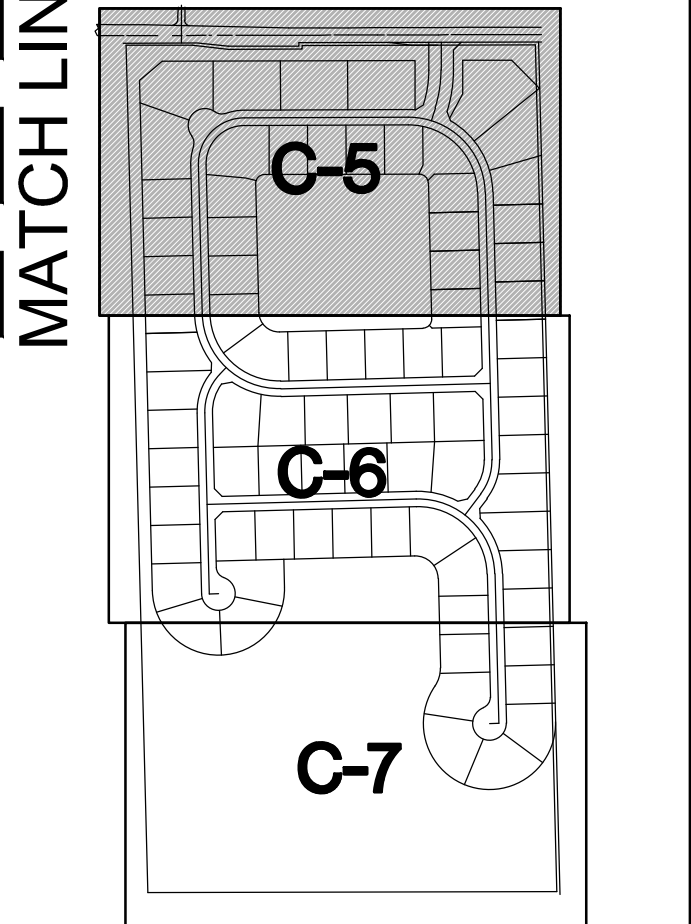
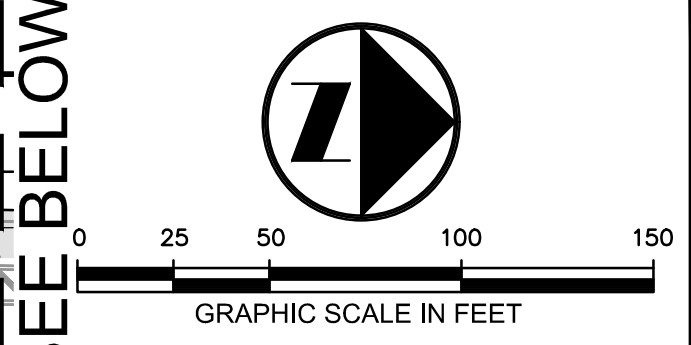
Permit No. 06-07569-P

Exhibit No. 2.0 Plans

Page 4 of 13



ALL ELEVATIONS SHOWN ARE IN NGVD 1929 DATUM. FOR VERTICAL DATUM CONVERSION, NAVD = NGVD - 1.60'



KEY MAP SCALE: NONE

- LEGEND:**
- H.P. ROADWAY HIGH POINT
  - L.P. ROADWAY LOW POINT
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  - I.E. INDICATES STORM DRAIN INVERT ELEVATION
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  - DRAINAGE OUTFALL
  - FLOW ARROW
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  - ASPHALT PAVEMENT
  - CONCRETE SIDEWALK
  - STABILIZED SOG

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CHECKED BY:	C.E.E.
APPROVED BY:	C.E.E.
DESCRIPTION:	
BY:	DATE:

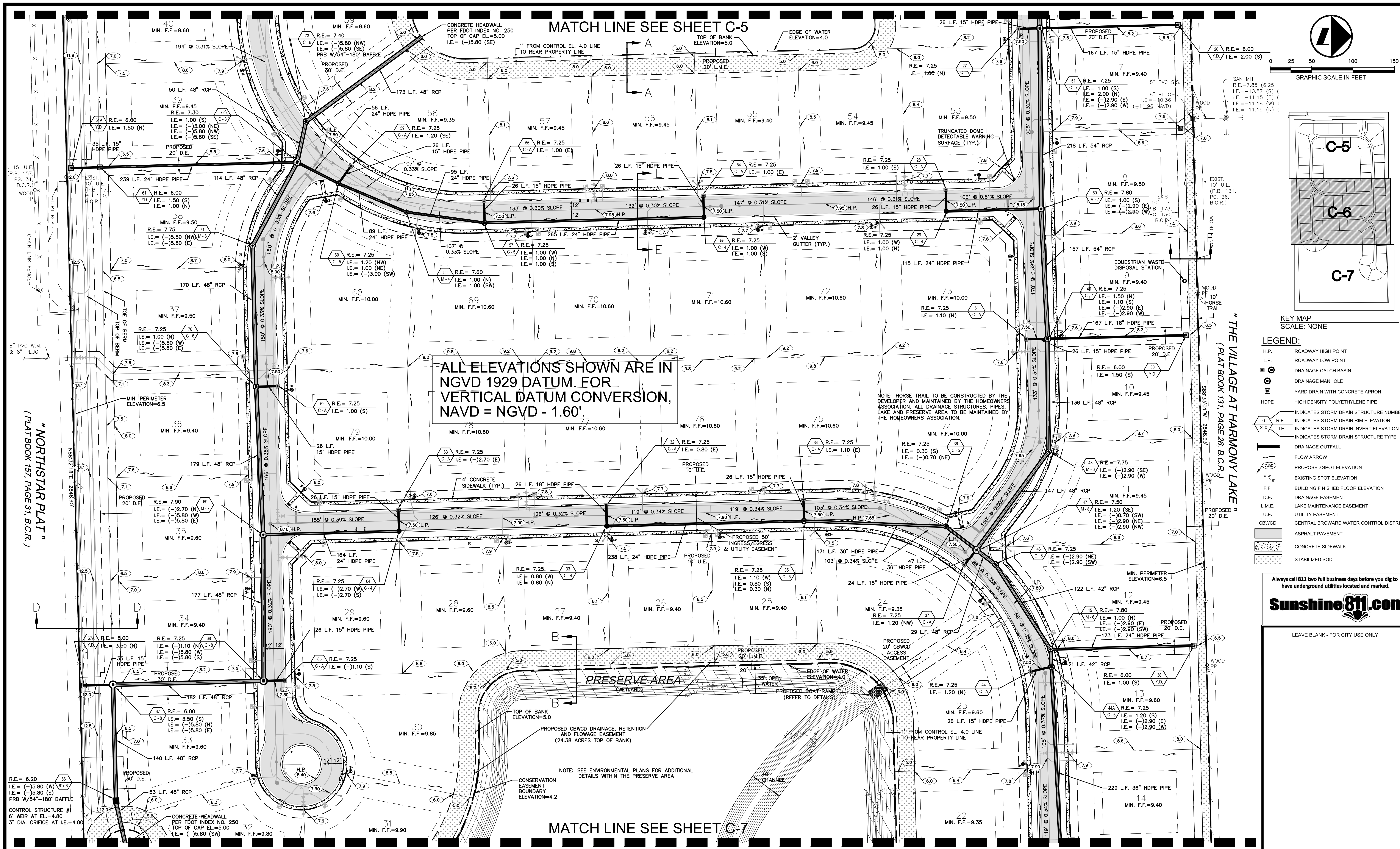
**Craven Thompson and Associates, Inc.**  
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 FAX: (954) 739-6409 TEL: (954) 739-6400  
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 FLORIDA LICENSED ENGINEERING, SURVEYING & MAPPING BUSINESS NO. 271  
 FLORIDA LICENSED LANDSCAPE ARCHITECTURE BUSINESS NO. 0000114

**SIERRA RANCH**  
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 4755 TECHNOLOGY WAY, SUITE 210  
 BOCA RATON, FLORIDA 33431

**PAVING, GRADING  
 AND DRAINAGE PLAN**

DATE:	10/28/16
DRAWING NO.:	C-5
PROJECT #:	12-0093-001-06
Chad E. Edwards, P.E. Florida P.E. No. 59306 August 16, 2017	

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MATCH LINE SEE SHEET C-5

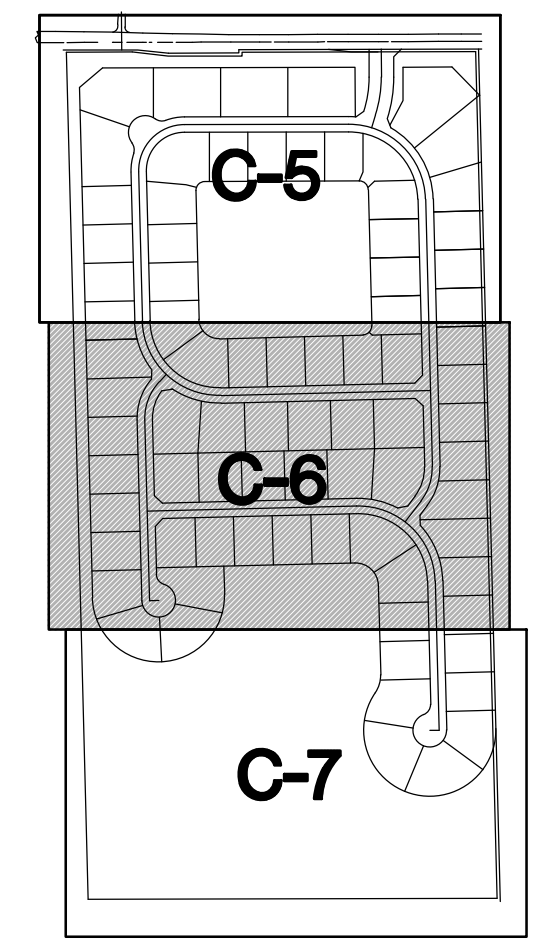
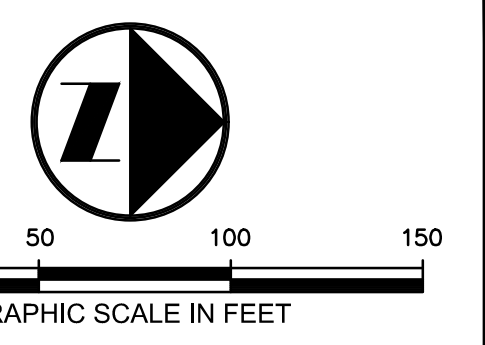
MATCH LINE SEE SHEET C-7

ALL ELEVATIONS SHOWN ARE IN NGVD 1929 DATUM. FOR VERTICAL DATUM CONVERSION, NAVD = NGVD + 1.60'

NOTE: HORSE TRAIL TO BE CONSTRUCTED BY THE DEVELOPER AND MAINTAINED BY THE HOMEOWNERS ASSOCIATION. ALL DRAINAGE STRUCTURES, PIPES, LAKE AND PRESERVE AREA TO BE MAINTAINED BY THE HOMEOWNERS ASSOCIATION.

PRESERVE AREA (WETLAND)

NOTE: SEE ENVIRONMENTAL PLANS FOR ADDITIONAL DETAILS WITHIN THE PRESERVE AREA



KEY MAP SCALE: NONE

- LEGEND:**
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  - L.P. ROADWAY LOW POINT
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  - DRAINAGE MANHOLE
  - YARD DRAIN WITH CONCRETE APRON
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  - INDICATES STORM DRAIN STRUCTURE NUMBER
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  - I.E. = INDICATES STORM DRAIN INVERT ELEVATION
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  - ASPHALT PAVEMENT
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DRAWN BY:	E.H.M.
CHECKED BY:	C.E.E.
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 FLORIDA LICENSED ENGINEERING, SURVEYING & MAPPING BUSINESS NO. 271  
 FLORIDA LICENSED LANDSCAPE ARCHITECTURE BUSINESS NO. 2000114

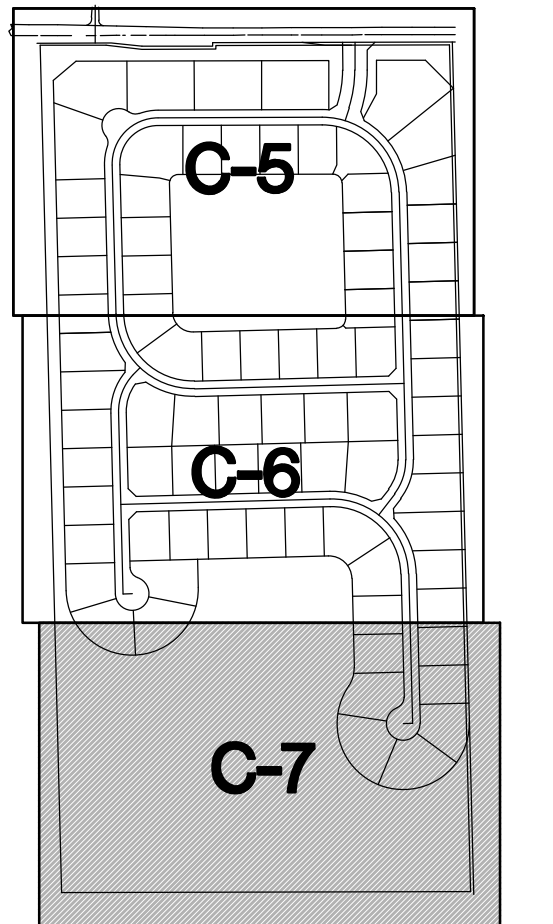
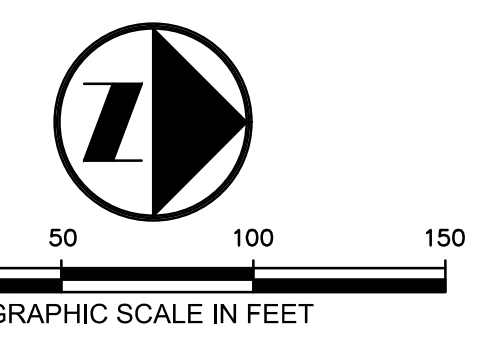
**SIERRA RANCH**  
 PREPARED FOR:  
 HOME DYNAMICS CORPORATION  
 4755 TECHNOLOGY WAY, SUITE 210  
 BOCA RATON, FLORIDA 33431

**PAVING, GRADING  
 AND DRAINAGE PLAN**

DATE:	10/28/16
DRAWING NO.	C-6
PROJECT #:	12-0093-001-06

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MATCH LINE SEE SHEET C-6

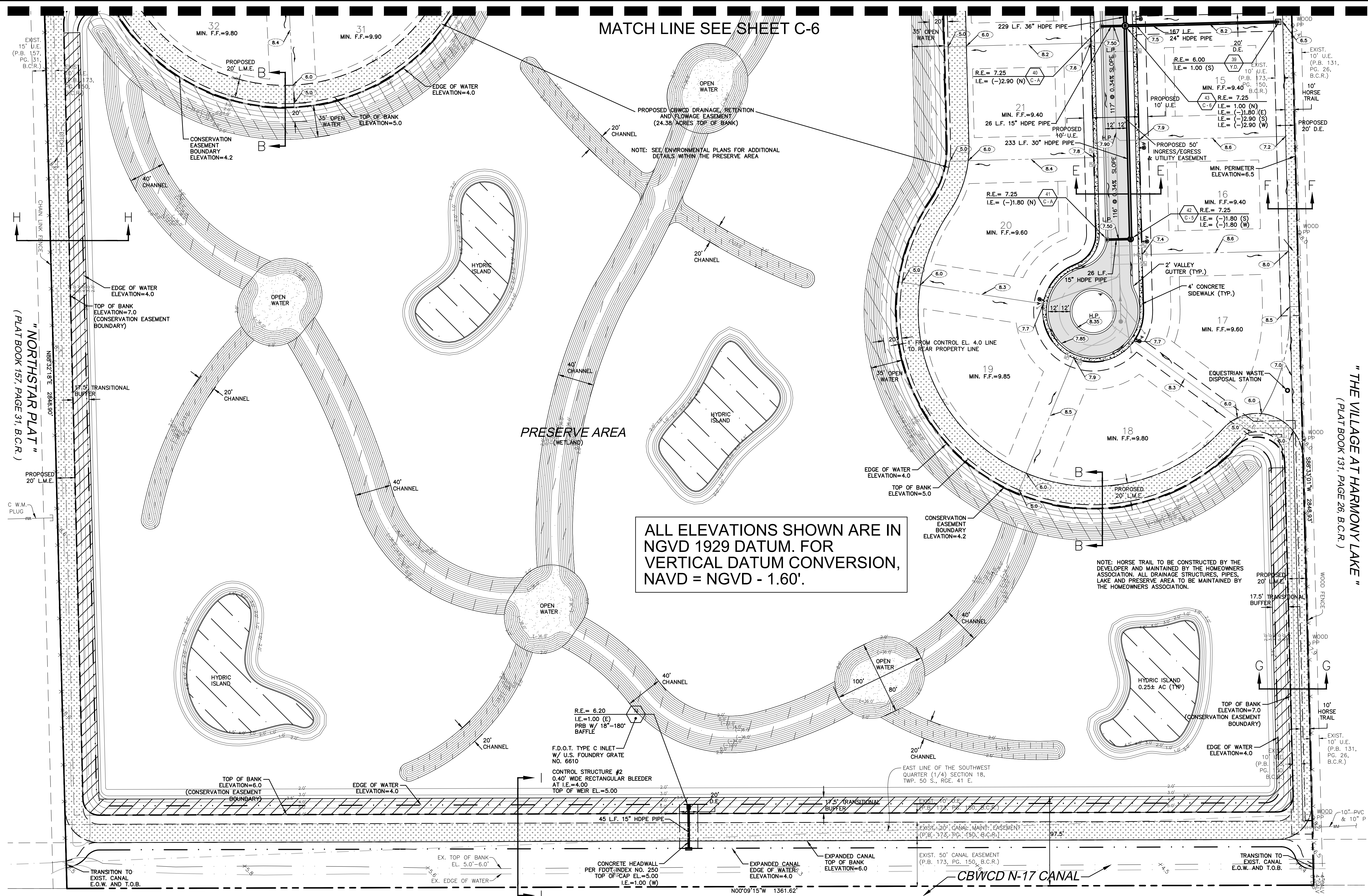


KEY MAP  
SCALE: NONE

- LEGEND:**
- H.P. ROADWAY HIGH POINT
  - L.P. ROADWAY LOW POINT
  - ⊕ DRAINAGE CATCH BASIN
  - ⊙ DRAINAGE MANHOLE
  - ⊙ YARD DRAIN WITH CONCRETE APRON
  - HDPE HIGH DENSITY POLYETHYLENE PIPE
  - INDICATES STORM DRAIN STRUCTURE NUMBER
  - R.E.= INDICATES STORM DRAIN RIM ELEVATION
  - I.E.= INDICATES STORM DRAIN INVERT ELEVATION
  - X-X INDICATES STORM DRAIN STRUCTURE TYPE
  - ┆ DRAINAGE OUTFALL
  - FLOW ARROW
  - 7.50' PROPOSED SPOT ELEVATION
  - ⊙ EXISTING SPOT ELEVATION
  - F.F. BUILDING FINISHED FLOOR ELEVATION
  - D.E. DRAINAGE EASEMENT
  - L.M.E. LAKE MAINTENANCE EASEMENT
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DRAWN BY:	E.H.M.
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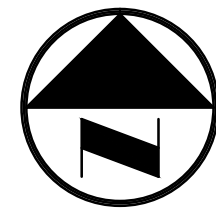
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**SIERRA RANCH**  
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HOME DYNAMICS CORPORATION  
4755 TECHNOLOGY WAY, SUITE 210  
BOCA RATON, FLORIDA 33431

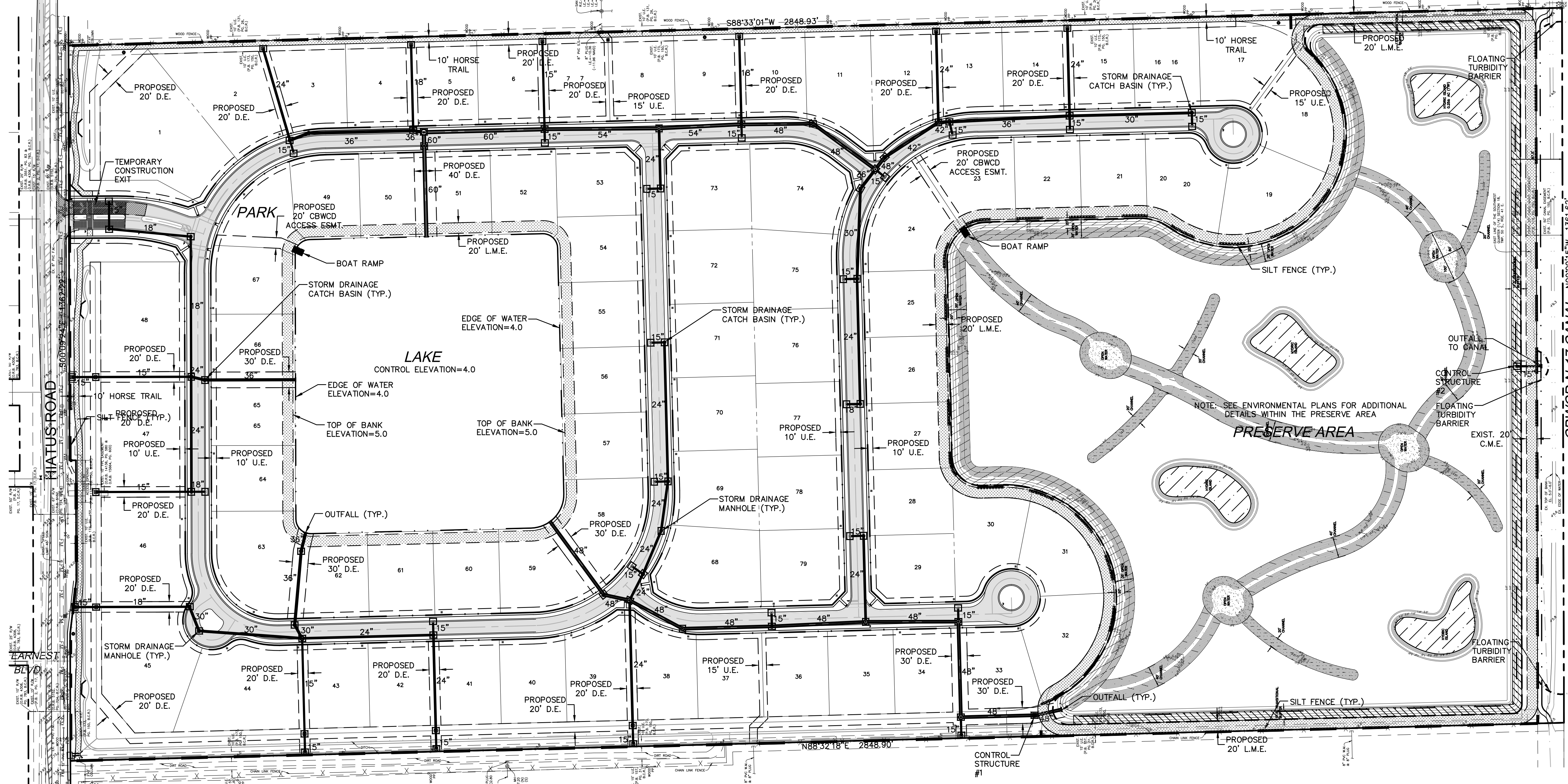
**PAVING, GRADING  
AND DRAINAGE PLAN**

DATE:	10/28/16
DRAWING NO.	C-7
PROJECT #:	12-0093-001-06

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" THE VILLAGE AT HARMONY LAKE " ( PLAT BOOK 131, PAGE 26, B.C.R. )



PROPOSED EROSION CONTROL LEGEND

- PROPOSED CATCH BASIN PROTECTED W/ HAY BALES AND FILTER FABRIC
- SILT FENCE

- NOTES:
- 1.) CONTRACTOR SHALL ASSUME ANY AND ALL RESPONSIBILITIES FOR ANY WATER CONTROL VIOLATIONS RESULTING FROM FAILURE TO ELIMINATE AND/OR CONTROL TURBID RUNOFF FROM LEAVING THE SITE AS ISSUED BY ANY AGENCY HAVING JURISDICTION.
  - 2.) CONTRACTOR SHALL PROVIDE TEMPORARY DEWATERING AREA(S) PRIOR TO ANY EXCAVATION FOR PIPE INSTALLATION. DEWATERING AREA(S) SHALL BE PROTECTED WITH SILT SCREENS. ALL DEWATERING OPERATIONS SHALL DISCHARGE INTO TEMPORARY DEWATERING AREA(S) AND NO DIRECT DISCHARGE INTO THE EXISTING OR NEW DITCHES, STORM DRAINS, AND/OR PUBLIC RIGHT OF WAY WILL BE ALLOWED.
  - 3.) CONTRACTOR SHALL MAINTAIN A POLLUTION PREVENTION CONTROL LOG AND CONDUCT WEEKLY INSPECTIONS AND WITHIN 24 HOURS OF A 0.25" STORM EVENT.
  - 4.) CONTRACTOR TO EMPLOY BEST MANAGEMENT PRACTICES THROUGHOUT CONSTRUCTION IN ORDER TO ENSURE POLLUTION PREVENTION. CONTRACTOR TO COMPLY WITH ALL LOCAL, STATE, AND OTHER LOCAL GOVERNMENTAL ENVIRONMENTAL REGULATIONS THROUGHOUT CONSTRUCTION.
  - 5.) DURING CONSTRUCTION, ALL CATCH BASINS TO BE EQUIPPED WITH FILTER FABRIC AND HAY BALES OVER GRATES.
  - 6.) ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE STABILIZED WITHIN A REASONABLE PERIOD OF TIME TO ASSURE MINIMUM EROSION OF SOILS.
  - 7.) NO LAND CLEARING OR GRADING SHALL BEGIN UNTIL ALL EROSION CONTROL MEASURES HAVE BEEN INSTALLED.
  - 8.) ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED IF DEEMED NECESSARY. ADDITIONAL CONTROL MEASURES SHALL BE INSTALLED AT CONTRACTOR'S EXPENSE.
  - 9.) CONTRACTOR SHALL CLEAN ANY DEBRIS, DIRT OR MATERIAL FROM HIATUS ROAD ON A DAILY BASIS.
  - 10.) A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) SHALL BE SUBMITTED WITH ENGINEERING PERMITS THAT MEETS THE FLORIDA ADMINISTRATIVE CODE.

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

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" NORTHSTAR PLAT " ( PLAT BOOK 157, PAGE 31, B.C.R. )

DATE:	10/28/16
SCALE:	AS NOTED
DESIGNED BY:	M.R.N.
DRAWN BY:	E.H.M.
CHECKED BY:	C.E.E.
APPROVED BY:	C.E.E.
DESCRIPTION	BY: DATE:

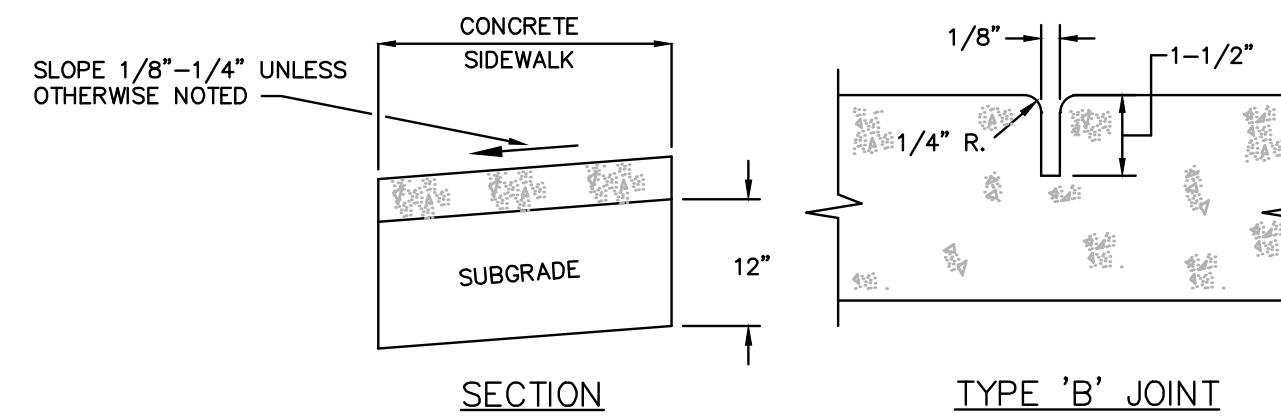
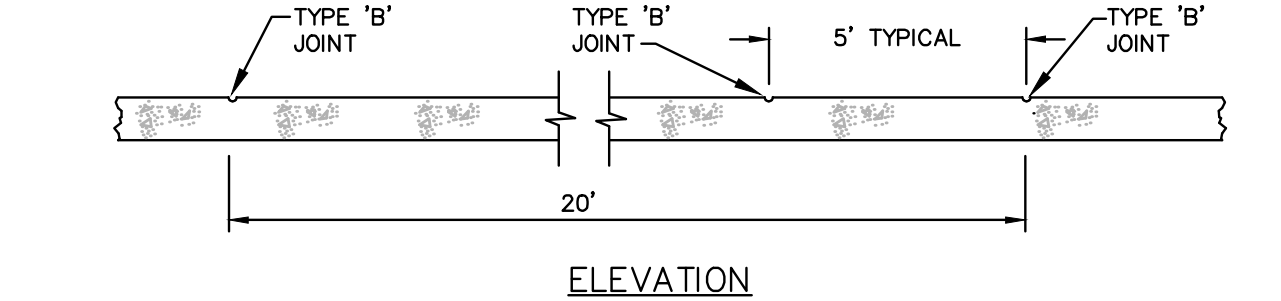
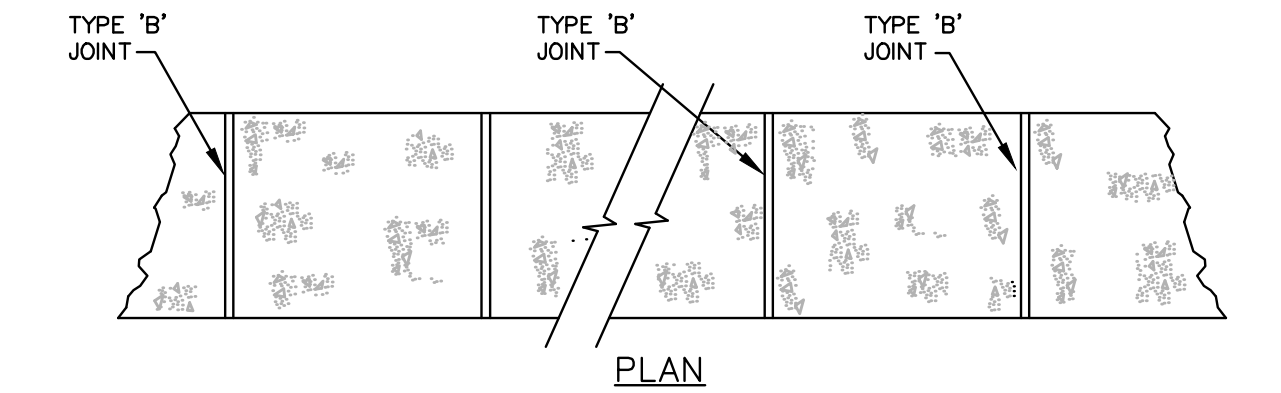
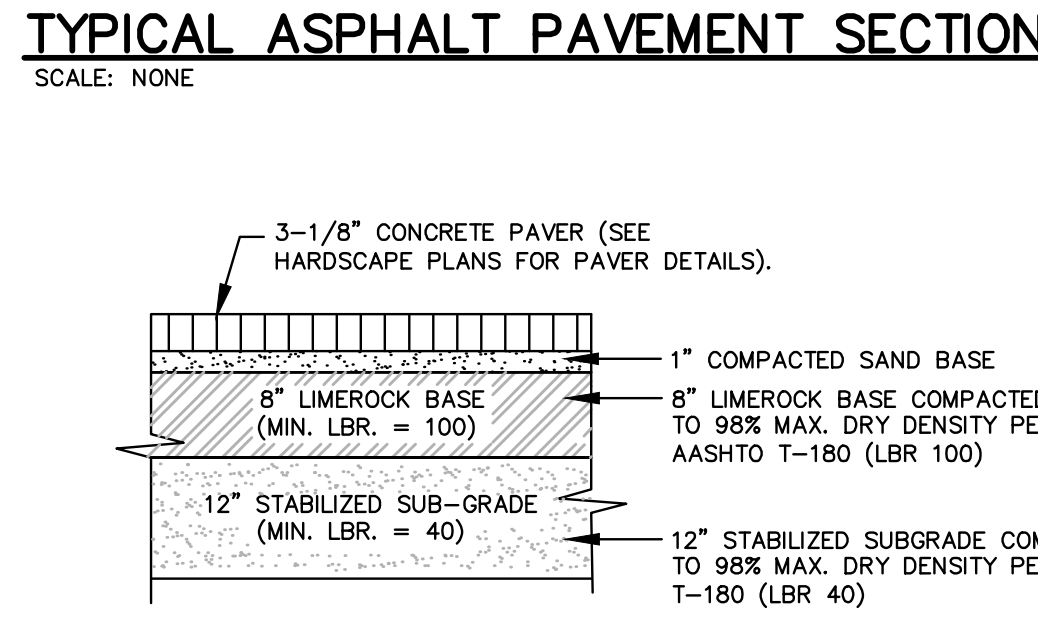
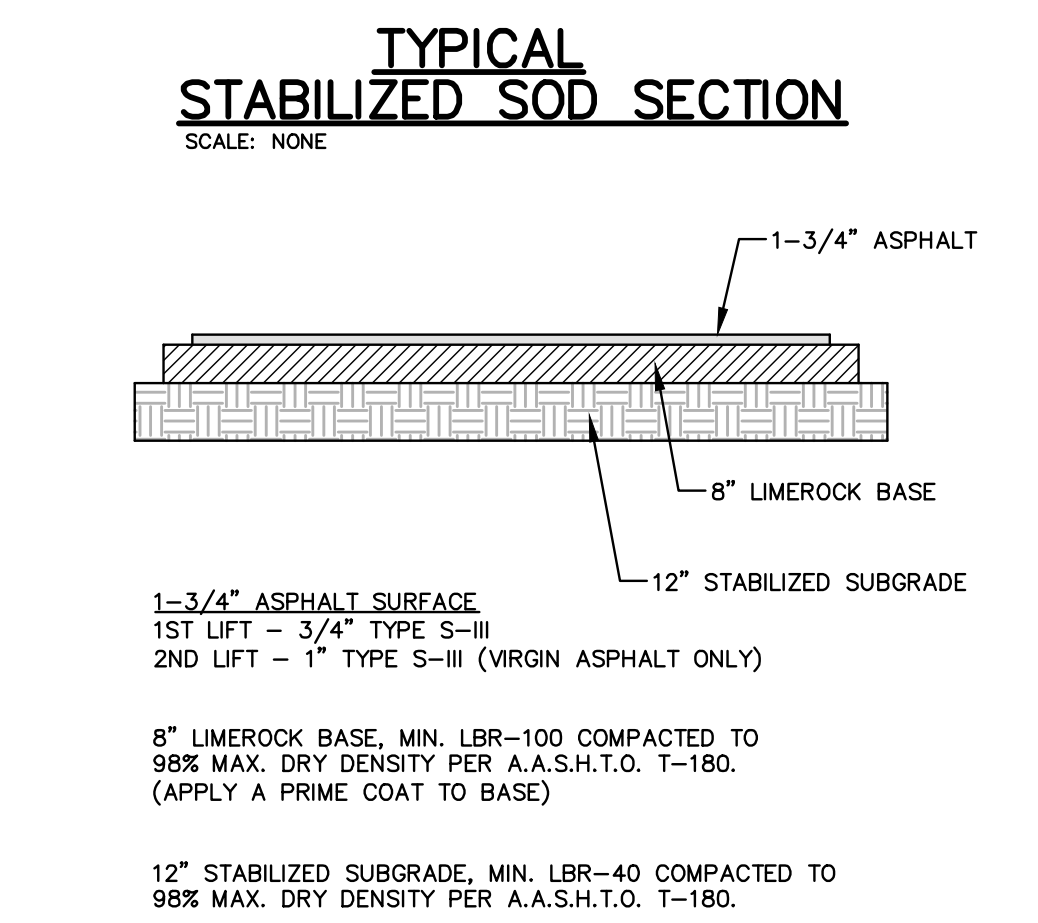
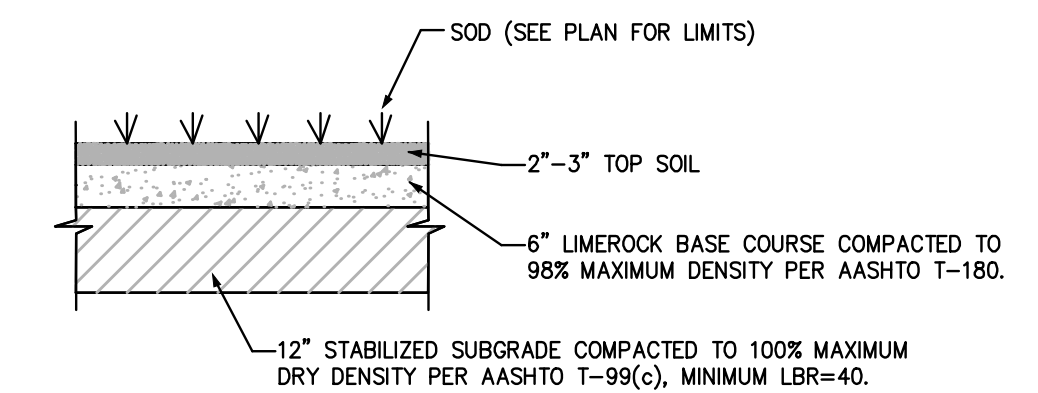
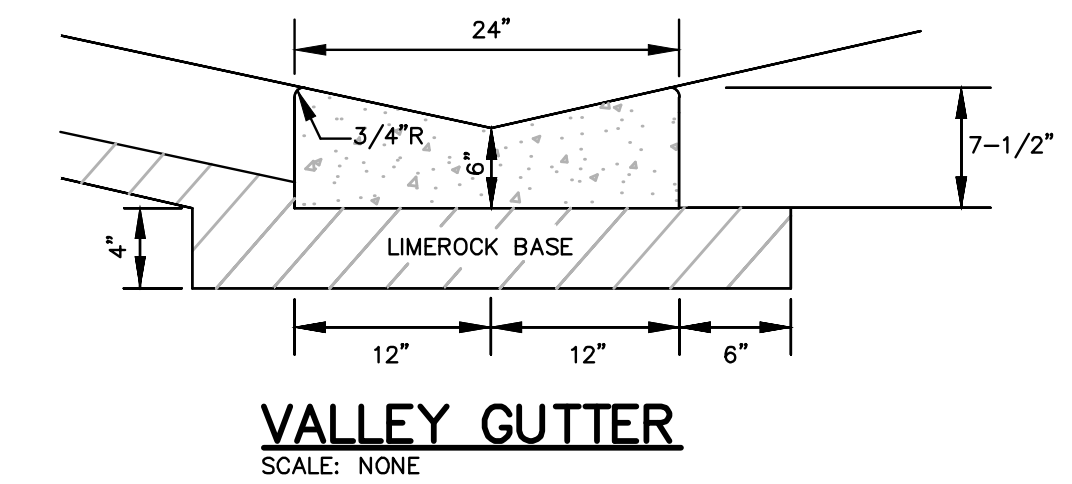
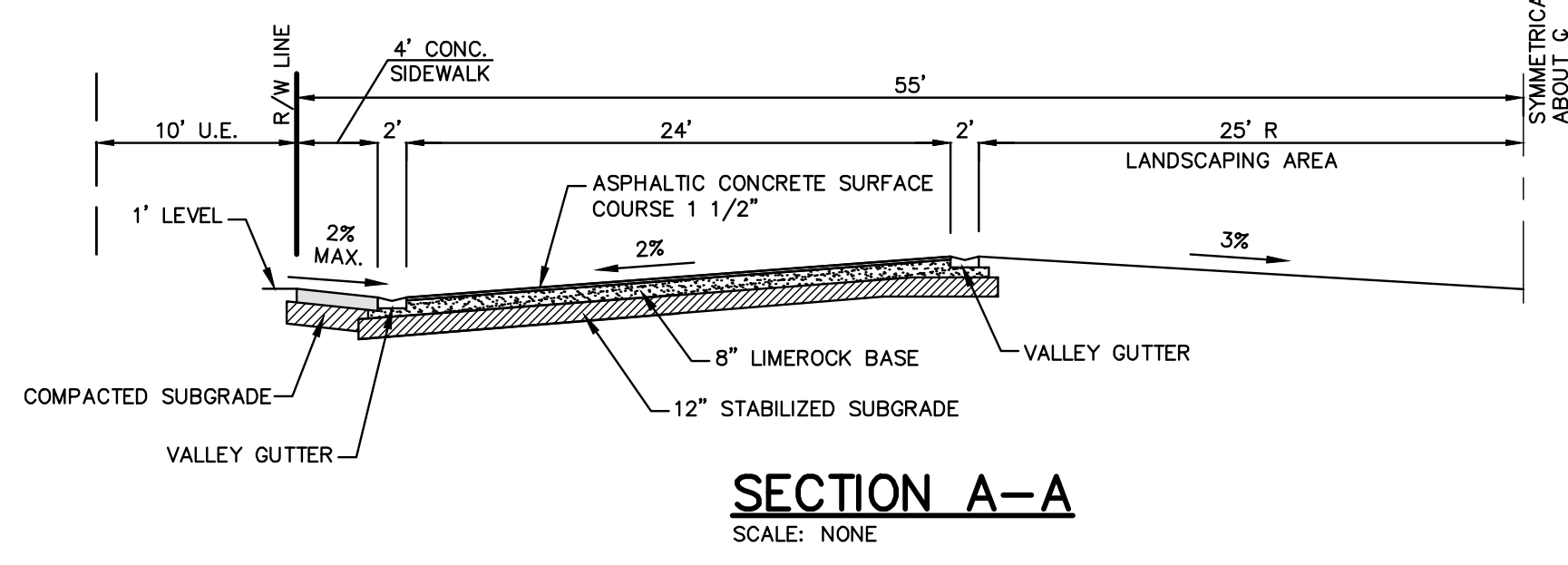
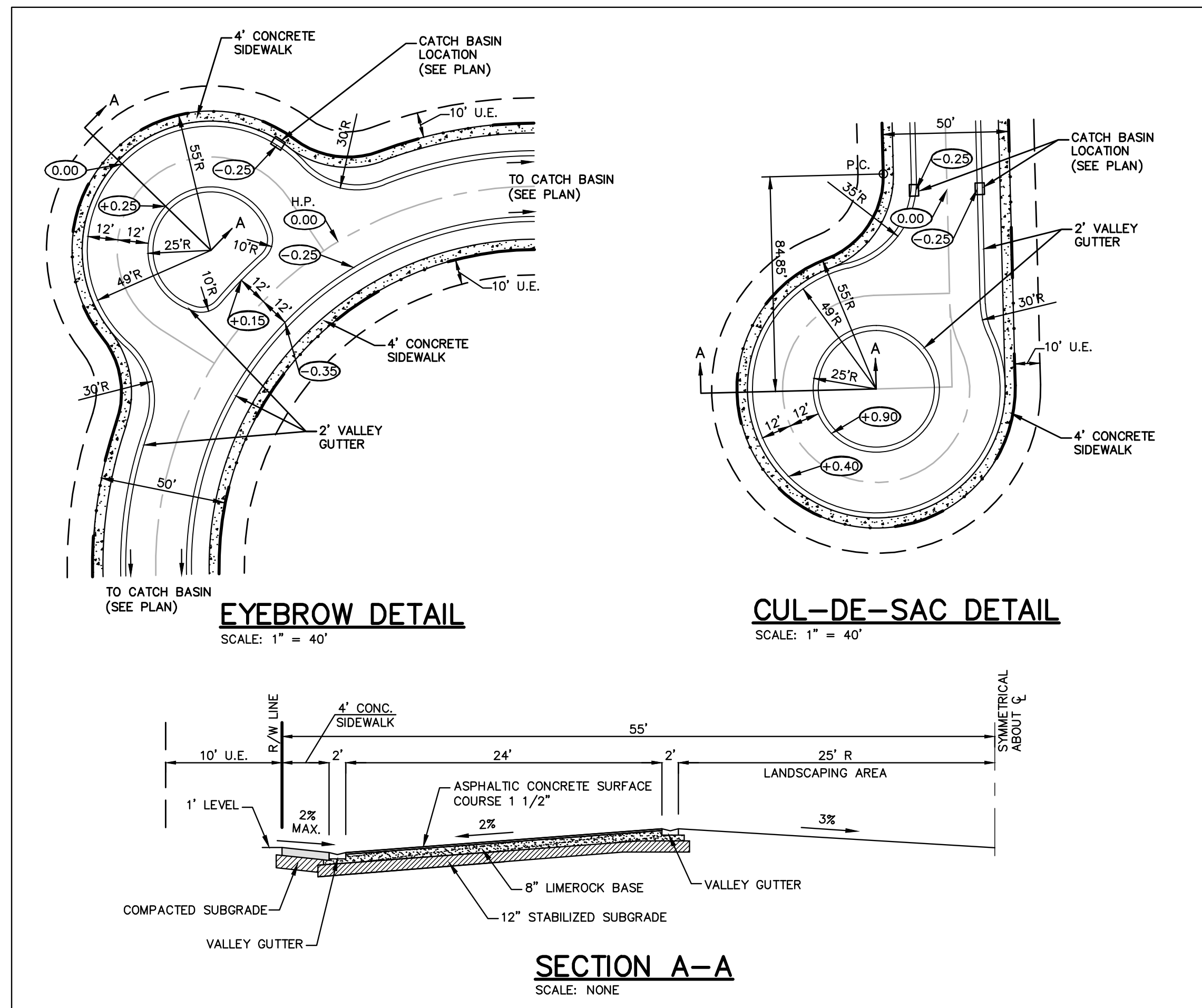
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**SIERRA RANCH**  
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 BOCA RATON, FLORIDA 33431

**EROSION CONTROL PLAN**

DATE:	10/28/16
DRAWING NO.:	C-15
PROJECT #:	12-0093-001-06

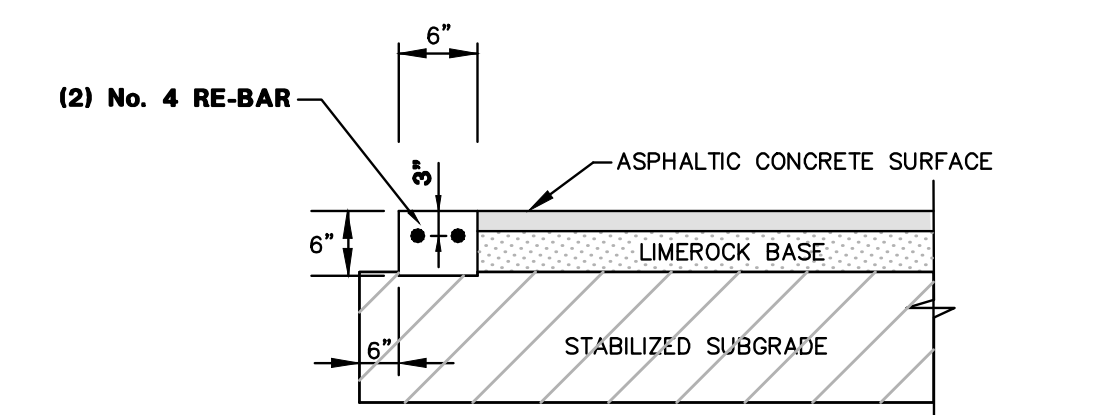
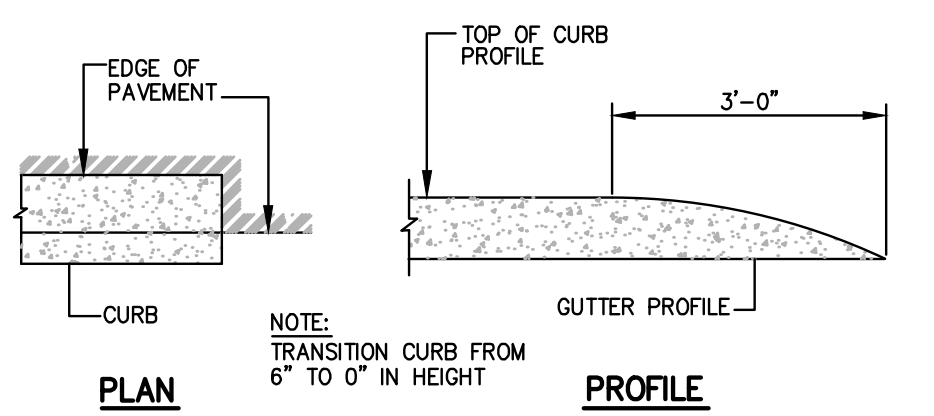




- NOTES: SIDEWALK SHALL BE 4" THICK EXCEPT IN DRIVEWAYS WHERE THE THICKNESS SHALL BE 6".
- SUBGRADE BELOW SIDEWALK SHALL BE A MIN. L.B.R. 40 COMPACTED TO 98% OF MAX. DENSITY PER A.A.S.H.T.O. T-180.
- CONCRETE STRENGTH SHALL BE MIN. 3000 PSI @ 28 DAYS.

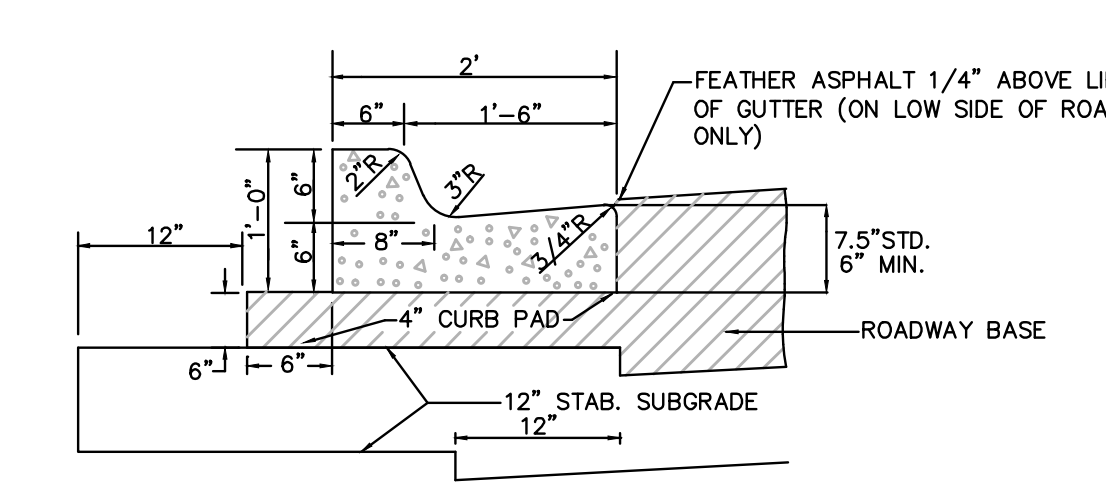
TYPE	LOCATION
'B'	5 FEET CENTER TO CENTER ON SIDEWALKS.

**SIDEWALK DETAILS**  
SCALE: NONE



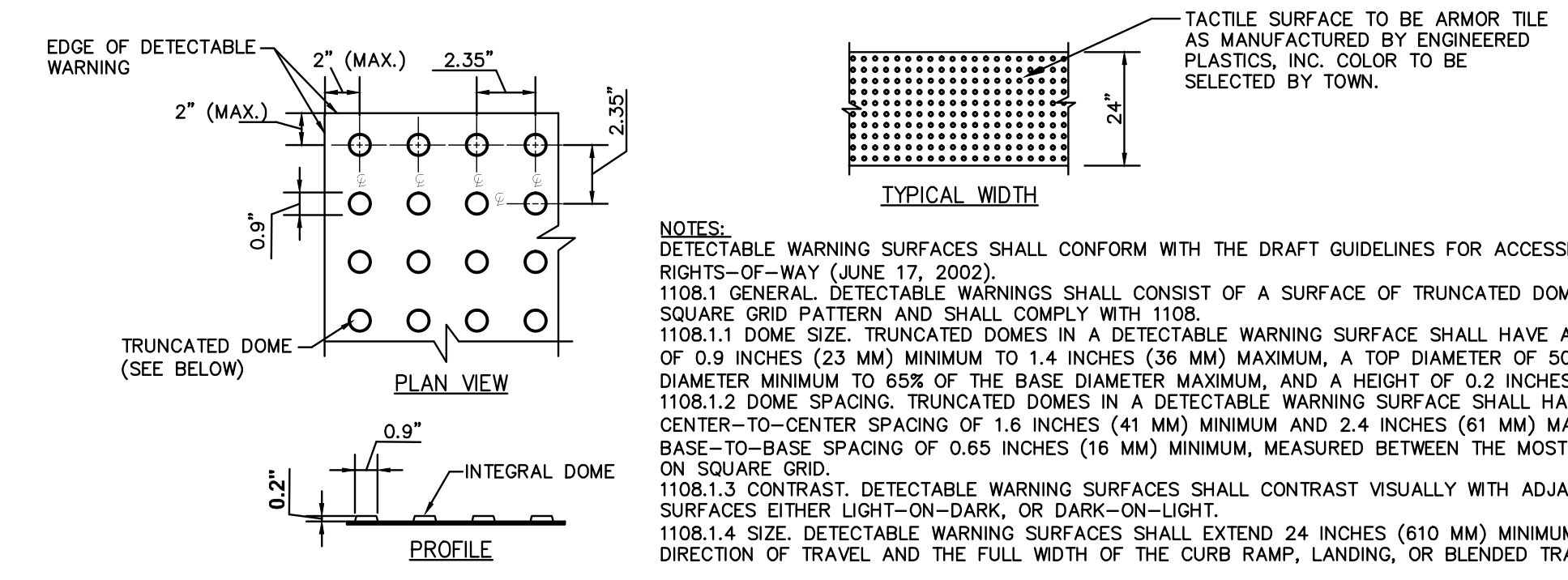
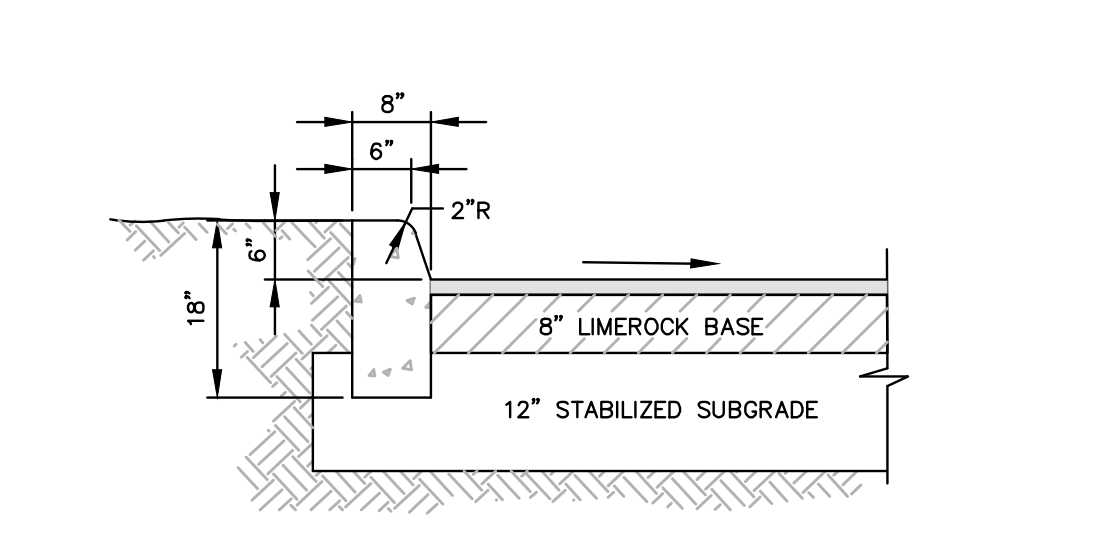
- SAWCUT CONTRACTION JOINTS @ 10' O.C.
- PROVIDE 12" COMPACTED SUBGRADE BASE BELOW LIMEROCK BASE.
- CONCRETE HEADER TO BE 3,000 PSI STANDARD MIX CONCRETE.

**6"x6" CONCRETE HEADER CURB**  
SCALE: NONE

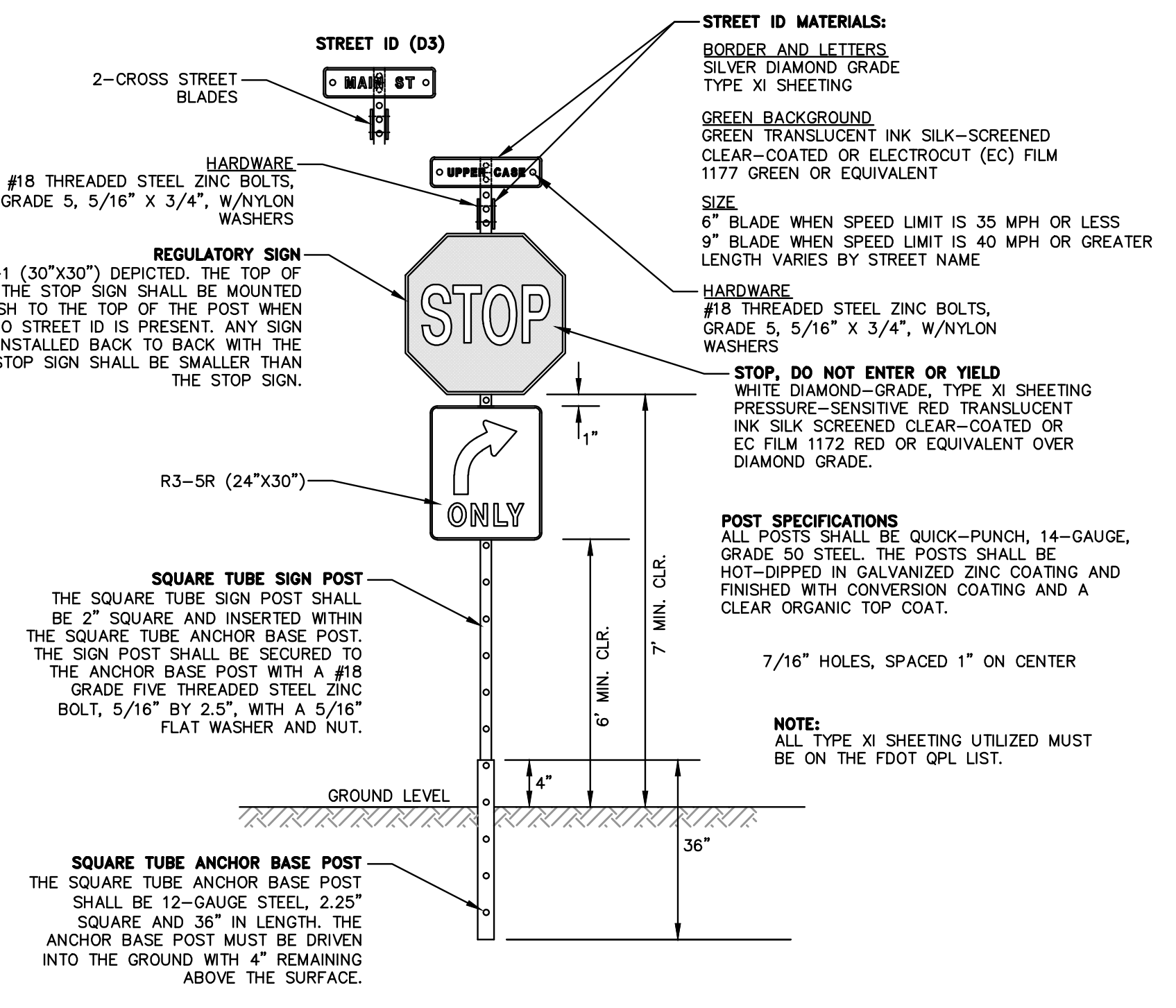
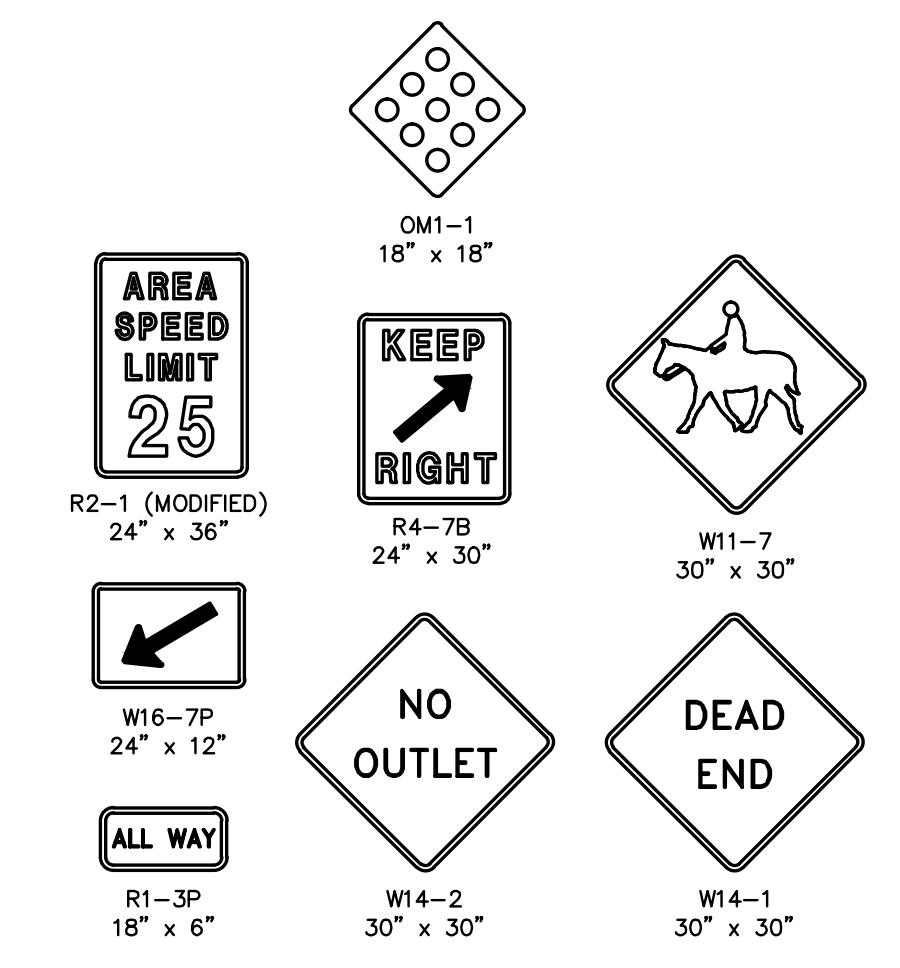


NOTE: WHEN USED ON HIGH SIDE OF ROADWAYS THE CROSS SLOPE OF THE GUTTER SHALL MATCH THE CROSS SLOPE OF THE ADJACENT PAVEMENT AND THE THICKNESS OF THE LIP SHALL BE 6" ONSTEAD OF 7 1/2".

**TYPE "D" CONCRETE CURB**  
SCALE: NONE



NOTES:  
 1108.1 GENERAL. DETECTABLE WARNINGS SHALL CONFORM WITH THE DRAFT GUIDELINES FOR ACCESSIBLE PUBLIC RIGHTS-OF-WAY (JUNE 17, 2002).  
 1108.1.1 DOME SIZE. TRUNCATED DOMES IN A DETECTABLE WARNING SURFACE SHALL HAVE A BASE DIAMETER OF 0.9 INCHES (23 MM) MINIMUM TO 1.4 INCHES (36 MM) MAXIMUM, A TOP DIAMETER OF 50% OF THE BASE DIAMETER MINIMUM TO 65% OF THE BASE DIAMETER MAXIMUM, AND A HEIGHT OF 0.2 INCHES (5 MM).  
 1108.1.2 DOME SPACING. TRUNCATED DOMES IN A DETECTABLE WARNING SURFACE SHALL HAVE A CENTER-TO-CENTER SPACING OF 1.6 INCHES (41 MM) MINIMUM AND 2.4 INCHES (61 MM) MAXIMUM, AND A BASE-TO-BASE SPACING OF 0.65 INCHES (16 MM) MINIMUM, MEASURED BETWEEN THE MOST ADJACENT DOMES ON SQUARE GRID.  
 1108.1.3 CONTRAST. DETECTABLE WARNING SURFACES SHALL CONTRAST VISUALLY WITH ADJACENT WALKING SURFACES EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT.  
 1108.1.4 SIZE. DETECTABLE WARNING SURFACES SHALL EXTEND 24 INCHES (610 MM) MINIMUM IN THE DIRECTION OF TRAVEL AND THE FULL WIDTH OF THE CURB RAMP, LANDING, OR BLENDED TRANSITION.



**STOP SIGN AND STREET IDENTIFICATION ASSEMBLY**  
SCALE: NONE

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

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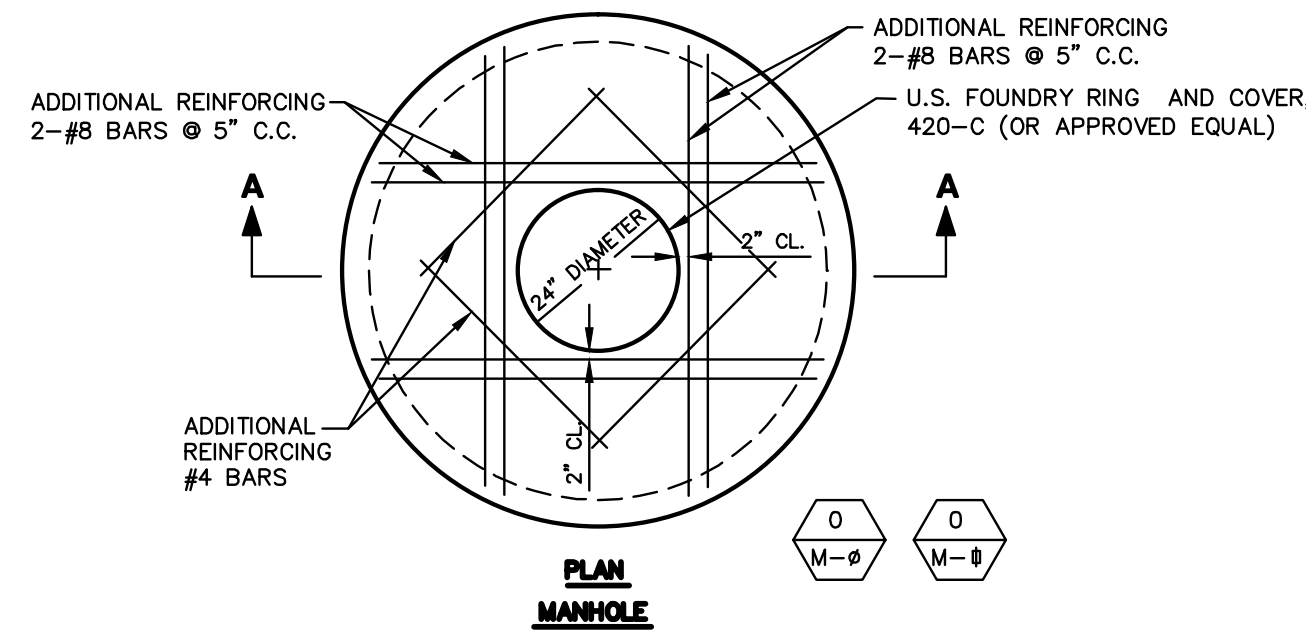
DATE:	10/28/16
SCALE:	AS NOTED
DESIGNED BY:	M.R.N.
DRAWN BY:	E.H.M.
CHECKED BY:	C.E.E.
APPROVED BY:	C.E.E.
DESCRIPTION	BY: DATE:

**CRAVEN THOMPSON AND ASSOCIATES, INC.**  
 ENGINEERS • PLANNERS • SURVEYORS  
 3563 N.W. 53RD STREET, FORT LAUDERDALE, FLORIDA 33309  
 FAX: (954) 739-6409 TEL: (954) 739-6400  
 FLORIDA LICENSED ENGINEERING, SURVEYING & MAPPING BUSINESS NO. 271  
 FLORIDA LICENSED LANDSCAPE ARCHITECTURE BUSINESS NO. 2000114

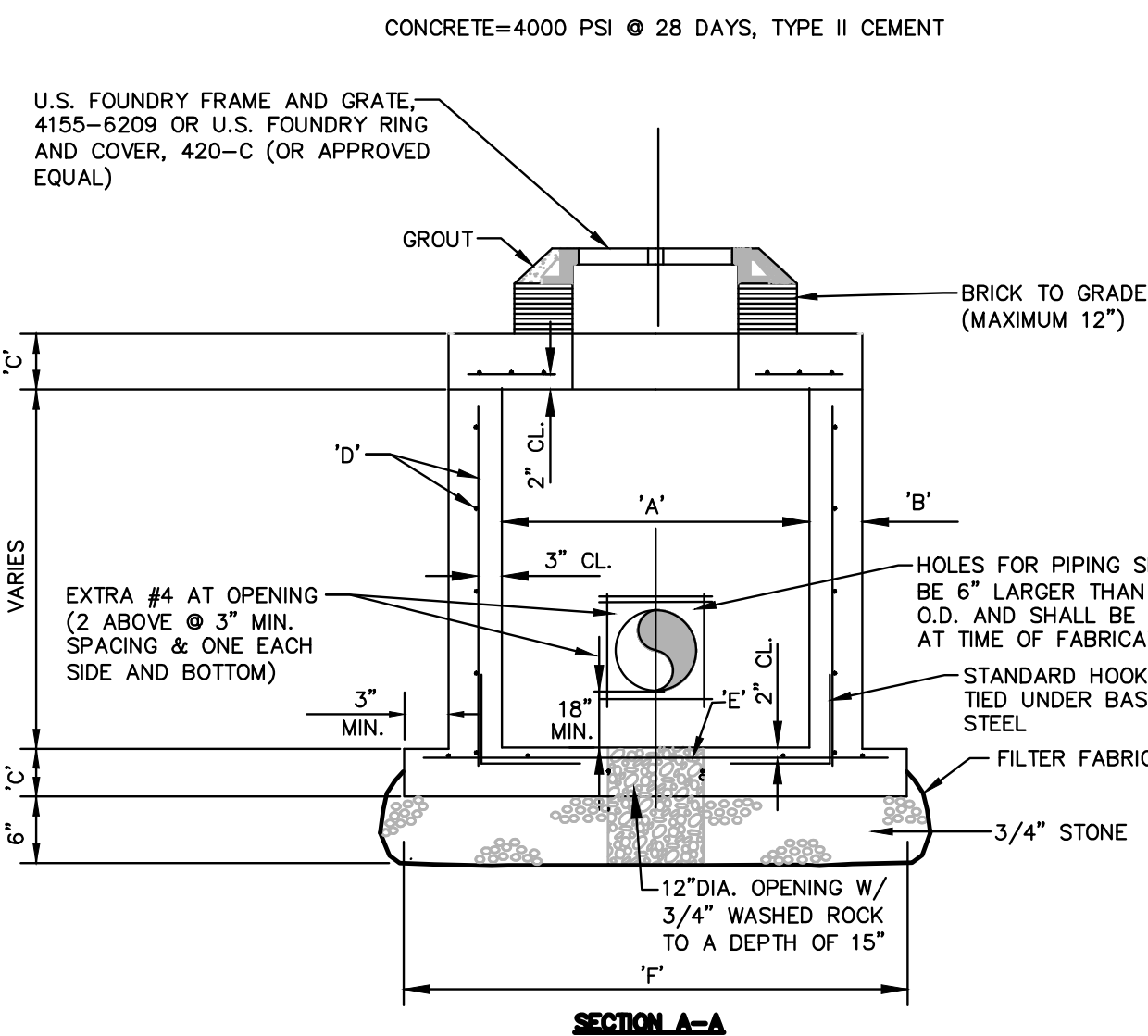
**SIERRA RANCH**  
 PREPARED FOR:  
 HOME DYNAMICS CORPORATION  
 4755 TECHNOLOGY WAY, SUITE 210  
 BOCA RATON, FLORIDA 33431

**PAVING, GRADING AND DRAINAGE DETAILS**

DATE:	10/28/16
DRAWING NO.:	C-20
PROJECT #:	12-0093-001-06



**PLAN MANHOLE**

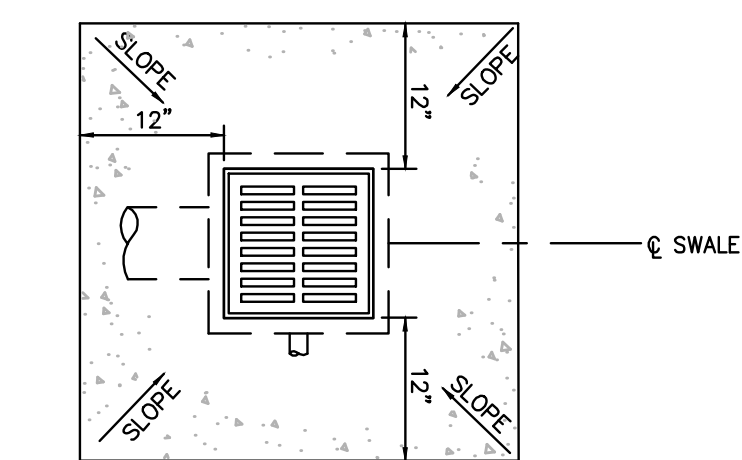


**SECTION A-A**

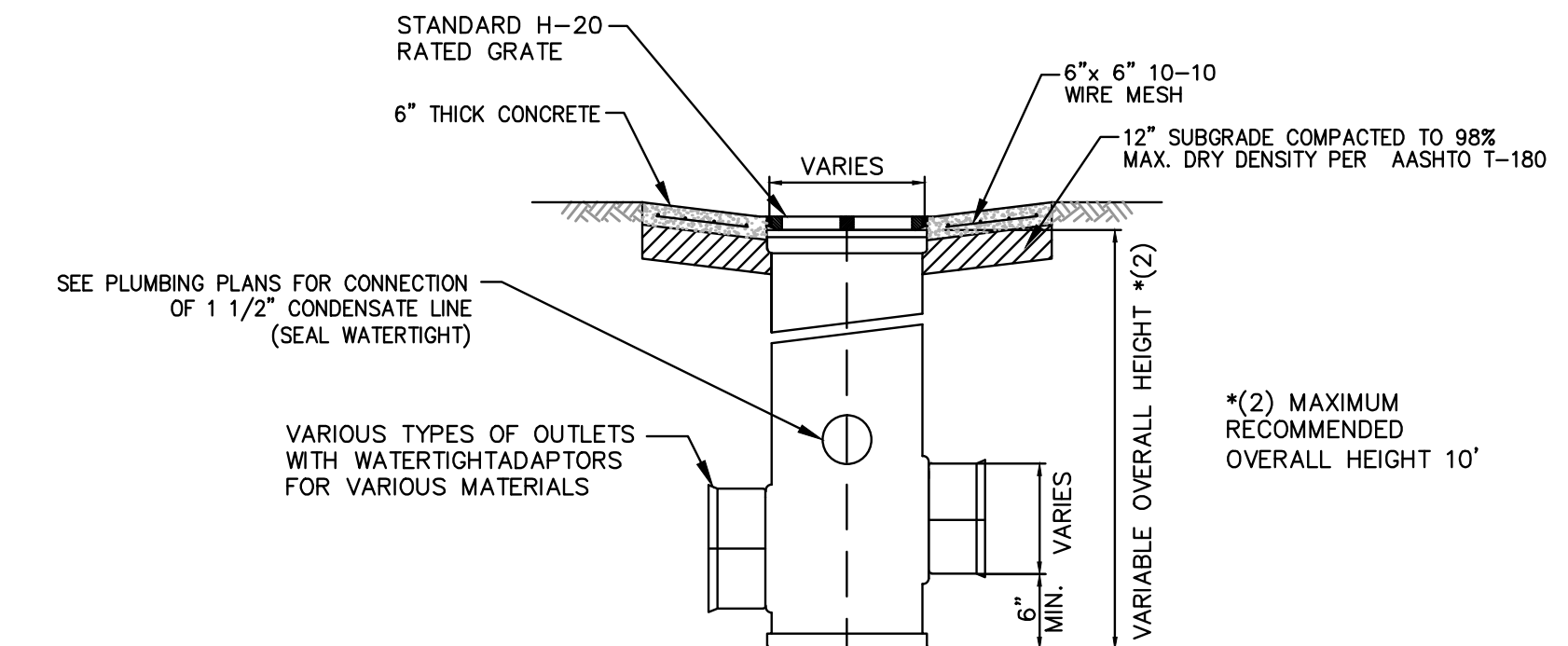
TYPE	"A"	"B"	"C"	"D"	"E"	"F"
P	3'-6"	6"	8"	4 @ 12" C.C.E.W.	4 @ 12" C.C.E.W.	5'-0"
C-4	4'-0"	8"	8"	4 @ 12" C.C.E.W.	4 @ 12" C.C.E.W.	6'-4"
C-5	5'-0"	8"	8"	5 @ 12" C.C.E.W.	5 @ 12" C.C.E.W.	7'-4"
C-6	6'-0"	8"	10"	5 @ 12" C.C.E.W.	5 @ 6" C.C.E.W.	8'-4"
C-7	7'-0"	8"	10"	5 @ 12" C.C.E.W.	5 @ 6" C.C.E.W.	9'-4"
C-8	8'-0"	10"	10"	5 @ 12" C.C.E.W.	5 @ 6" C.C.E.W.	10'-8"
C-10	10'-0"	10"	10"	5 @ 12" C.C.E.W.	5 @ 6" C.C.E.W.	12'-8"

**PRECAST SQUARE DRAINAGE STRUCTURES**

SCALE: NONE  
REINFORCEMENT SHALL BE ASTM A615/A615M GRADE 60 STEEL



**PLAN (DRAIN BASIN)**

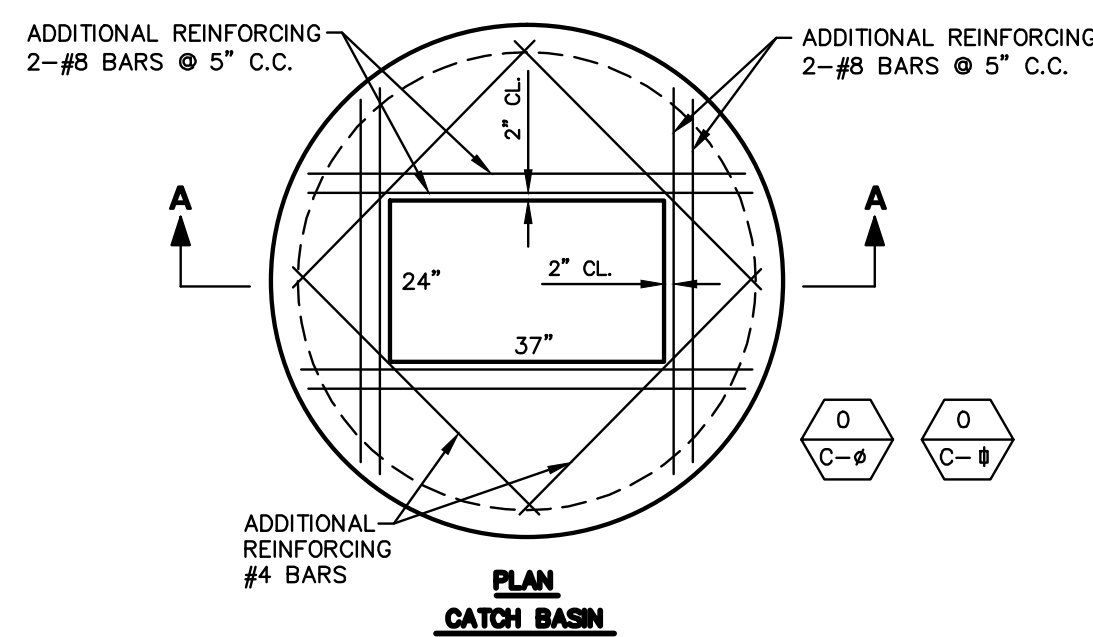


**SECTION**

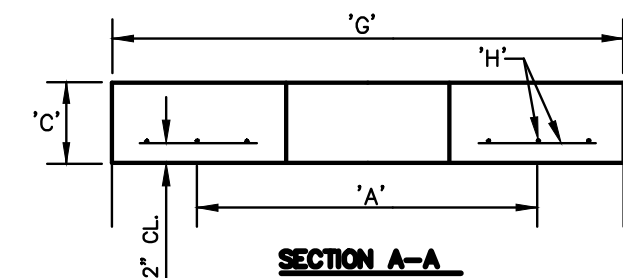
- NOTES:
1. APRON AROUND CATCH BASIN TO BE 6" THICK CONCRETE ON COMPACTED SUBGRADE.
  2. FOR CATCH BASINS CONSTRUCT 12" WIDE (MIN.) APRON ON ALL (4) SIDES.
  3. FOR YARD DRAINS CONSTRUCT 6" WIDE (MIN.) APRON ON ALL (4) SIDES.
  4. CONCRETE APRON SHALL BE INSTALLED AROUND ALL CATCH BASINS AND DRAIN BASINS WITHIN GREEN AREAS.
  5. ALL YARD DRAINS SHALL BE MANUFACTURED BY A.D.S. OR APPROVED EQUAL DRAIN BASINS.
  6. ALL PVC PIPE SHALL BE SDR-35.

**DRAIN BASIN AND DRAIN BASIN APRON DETAIL**

N.T.S.



**PLAN CATCH BASIN**

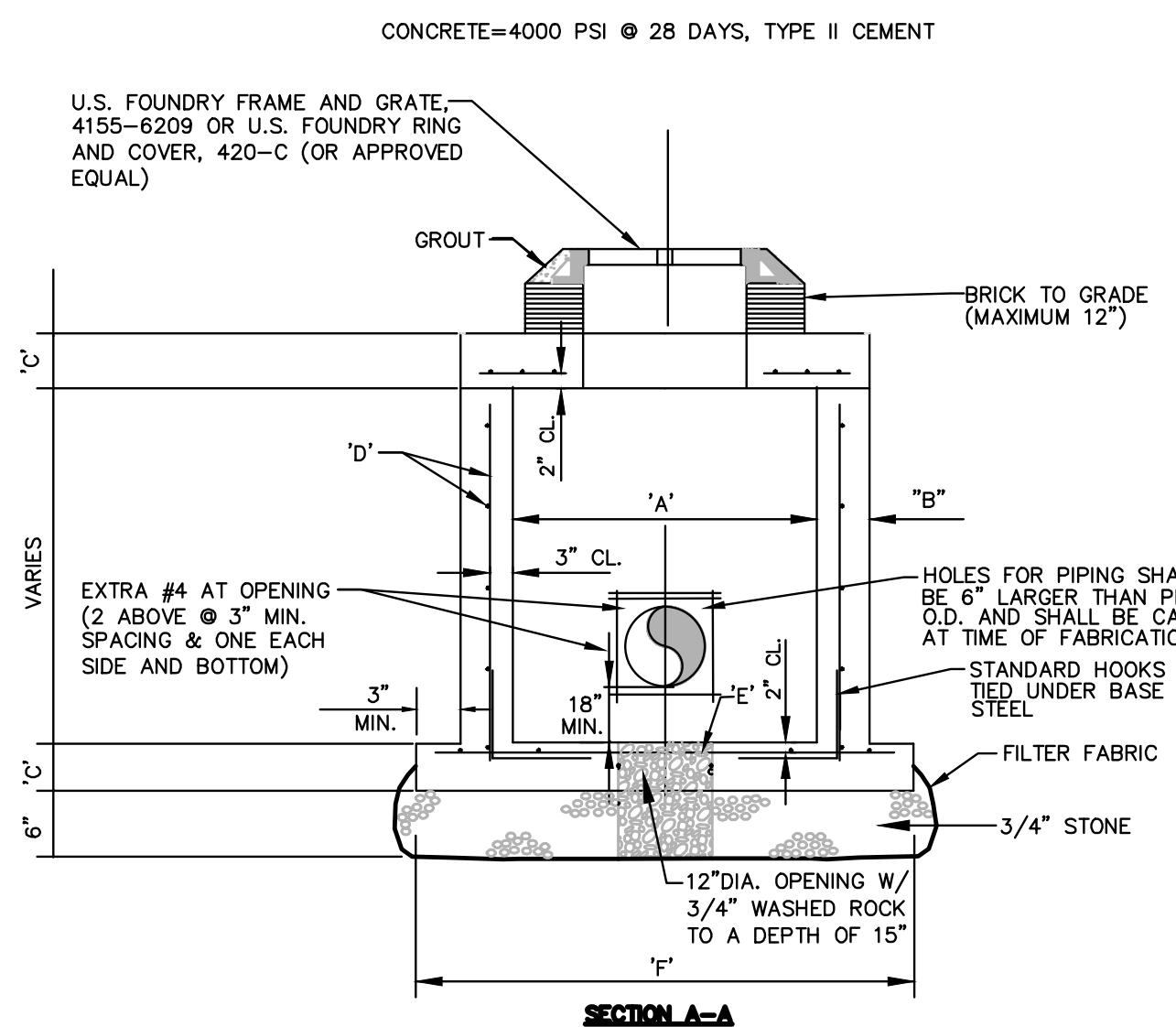


**SECTION A-A**

"A"	"C"	"G"	"H"
3'-6"	8"	4'-6"	# 4 @ 6" C.C.E.W.
4'-0"	8"	5'-4"	# 4 @ 6" C.C.E.W.
5'-0"	8"	6'-4"	# 4 @ 6" C.C.E.W.
6'-0"	10"	7'-4"	# 5 @ 6" C.C.E.W.
7'-0"	10"	8'-4"	# 5 @ 6" C.C.E.W.
8'-0"	10"	9'-8"	# 5 @ 6" C.C.E.W.
10'-0"	12"	11'-8"	# 6 @ 5" C.C.E.W.

**PRECAST CONCRETE-TOP SLAB**

SCALE: NONE

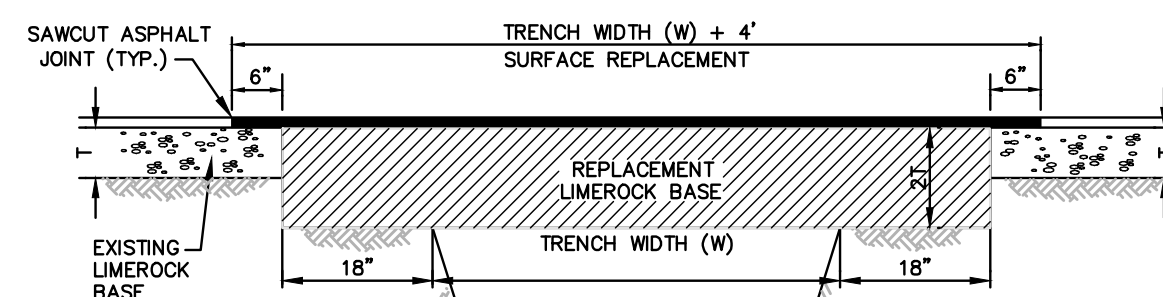


**SECTION A-A**

TYPE	"A"	"B"	"C"	"D"	"E"	"F"
P	3'-6"	6"	8"	4 @ 12" C.C.E.W.	4 @ 12" C.C.E.W.	5'-0"
C-4	4'-0"	8"	8"	4 @ 12" C.C.E.W.	4 @ 12" C.C.E.W.	6'-4"
C-5	5'-0"	8"	8"	5 @ 12" C.C.E.W.	5 @ 12" C.C.E.W.	7'-4"
C-6	6'-0"	8"	10"	5 @ 12" C.C.E.W.	5 @ 6" C.C.E.W.	8'-4"
C-7	7'-0"	8"	10"	5 @ 12" C.C.E.W.	5 @ 6" C.C.E.W.	9'-4"
C-8	8'-0"	10"	10"	5 @ 12" C.C.E.W.	5 @ 6" C.C.E.W.	10'-8"
C-10	10'-0"	10"	10"	5 @ 12" C.C.E.W.	5 @ 6" C.C.E.W.	12'-8"

**PRECAST CIRCULAR DRAINAGE STRUCTURES**

SCALE: NONE  
REINFORCEMENT SHALL BE ASTM A615/A615M GRADE 60 STEEL

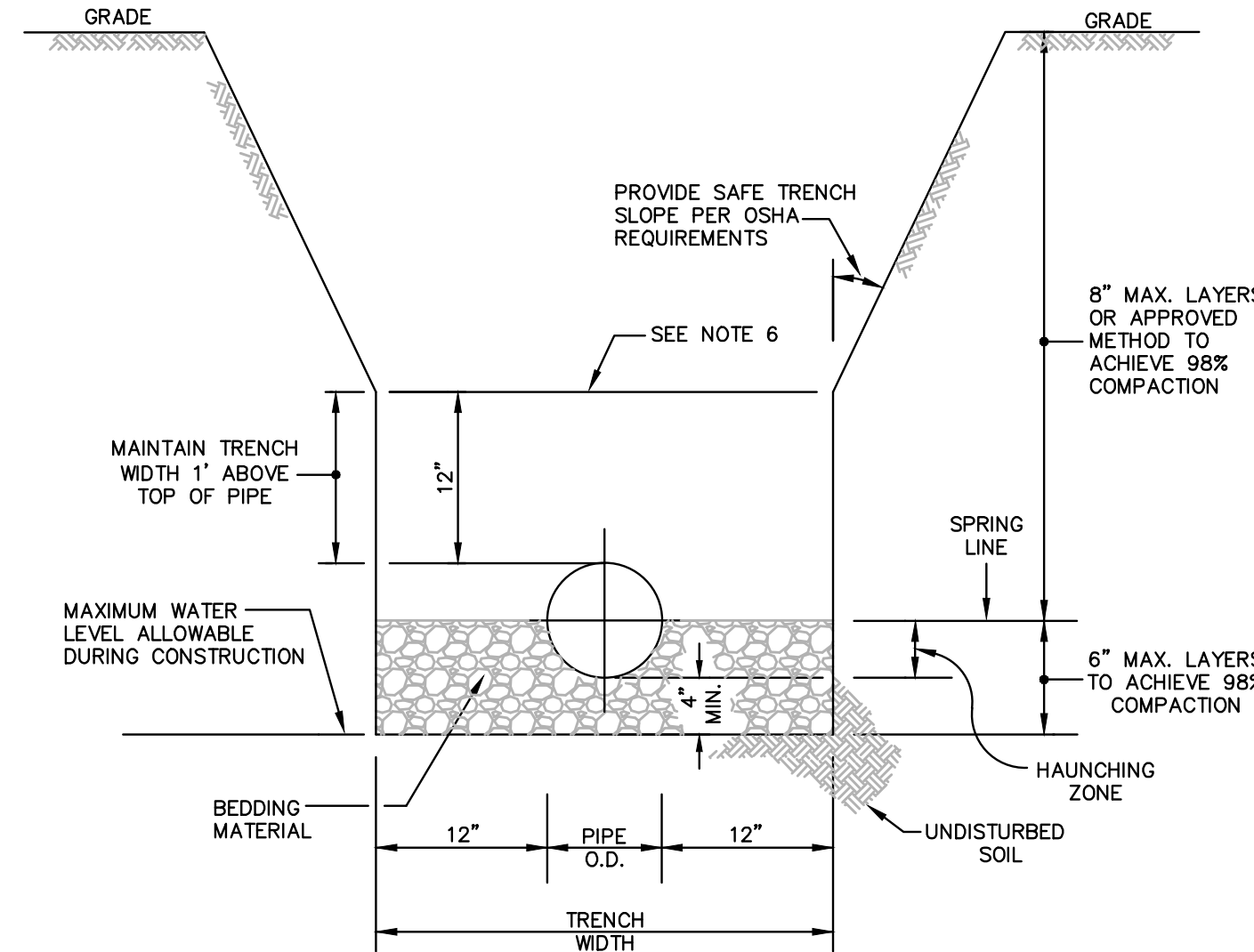


**NOTES:**

1. REPLACED BASE MATERIAL OVER TRENCH SHALL BE TWICE THE THICKNESS OF THE ORIGINAL BASE, MINIMUM 6", MAXIMUM 18".
2. BASE MATERIAL SHALL BE PLACED IN 6" MAXIMUM (LOOSE MEASUREMENT) LAYERS AND EACH LAYER THOROUGHLY ROLLED OR TAMPED TO 98% OF MAXIMUM DENSITY, PER AASHTO T-180.
3. SUBGRADE MATERIAL SHALL BE GRANULAR AND ANGULAR AND SHALL HAVE A MINIMUM LBR OF 40.
4. ASPHALT CONCRETE PAVEMENT JOINTS SHALL BE MECHANICALLY SAWED PARALLEL TO OR PERPENDICULAR TO THE ROADWAY.
5. SURFACE TREATED PAVEMENT JOINTS SHALL BE LAPPED.
6. SURFACE MATERIAL SHALL BE CONSISTENT WITH THE SURROUNDING SURFACE (MINIMUM 1" THICKNESS).
7. BASE MATERIAL SHALL HAVE A MINIMUM LBR OF 100 AND A MINIMUM CARBONATE CONTENT OF 70% (60% FOR LOCAL STREETS).
8. IF THE TRENCH IS FILLED TEMPORARILY, IT SHALL BE COVERED WITH A 2" ASPHALTIC CONCRETE PATCH TO KEEP THE FILL MATERIAL FROM RAVELING UNTIL REPLACED WITH A PERMANENT PATCH.

**PAVEMENT RESTORATION DETAIL**

SCALE: NONE

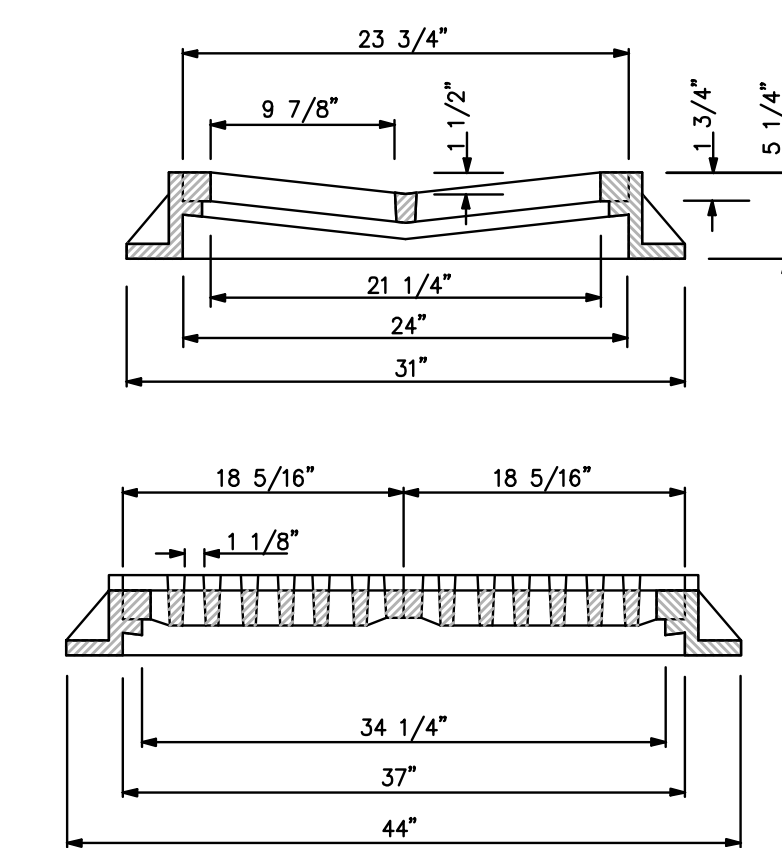


**NOTES:**

1. WHERE SOIL CONDITIONS CAN NOT BE MAINTAINED AS SHOWN ABOVE, PROVIDE APPROVED MEANS OF CONSTRUCTION.
2. BEDDING MATERIAL SHALL CONSIST OF WELL GRADED ASTM C33 #67 ROCK (3/4" TO No.4) AND BE PLACED TO SPRING LINE OF PIPE.
3. SHEETING WILL BE REQUIRED AS DETERMINED IN THE FIELD.
4. REFER TO SPECIFICATIONS FOR EXCAVATION IN MUCK OR OTHER UNSUITABLE MATERIAL.
5. COMPACTION PERCENTAGES SHOWN REFER TO AASHTO T-180.
6. MECHANICAL COMPACTION NOT ALLOWED BELOW THIS LEVEL (WITHIN 12" OF TOP OF PIPE).
7. THOROUGHLY WORK IN AND TAMP THE BEDDING MATERIAL IN THE HAUNCHING ZONE BEFORE PLACING AND COMPACTING REMAINDER OF BACKFILL.

**TRENCH DETAIL**

SCALE: NONE



**FRAME AND GRATE DETAIL**

U.S.F. No. 5113-6194 N.T.S.

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



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DATE:	10/28/16
SCALE:	AS NOTED
DESIGNED BY:	M.R.N.
DRAWN BY:	E.H.M.
CHECKED BY:	C.E.E.
APPROVED BY:	C.E.E.

DESCRIPTION	BY:	DATE:
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**Craven Thompson and Associates, Inc.**  
ENGINEERS • PLANNERS • SURVEYORS  
3563 N.W. 53RD STREET, FORT LAUDERDALE, FLORIDA 33309  
FAX: (954) 739-6409 TEL: (954) 739-6400  
FLORIDA LICENSED ENGINEERING, SURVEYING & MAPPING BUSINESS NO. 271  
FLORIDA LICENSED LANDSCAPE ARCHITECTURE BUSINESS NO. 5000114

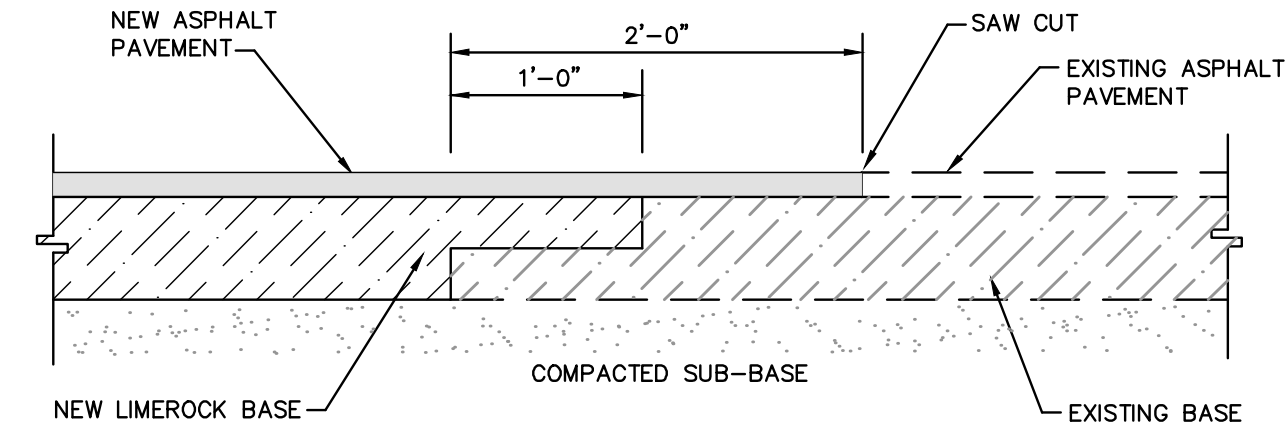
**SIERRA RANCH**  
PREPARED FOR:  
**HOME DYNAMICS CORPORATION**  
4755 TECHNOLOGY WAY, SUITE 210  
BOCA RATON, FLORIDA 33431

**PAVING, GRADING AND DRAINAGE DETAILS**

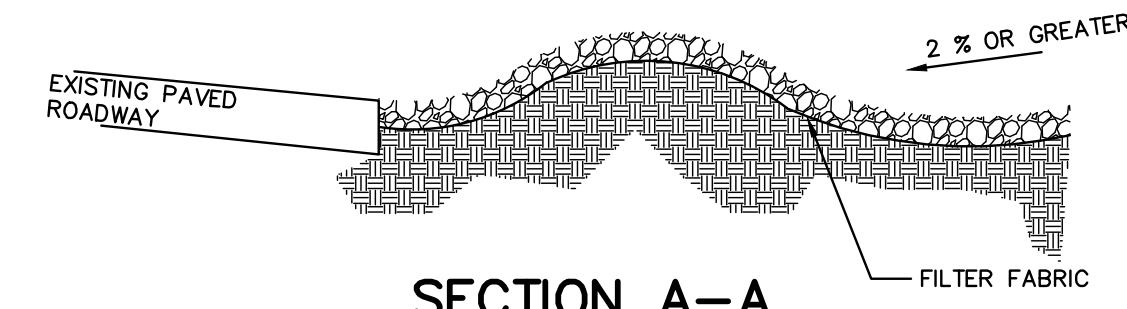
DATE:	10/28/16
DRAWING NO.:	C-21
PROJECT #:	12-0093-001-06

**CRWCD GENERAL NOTES**

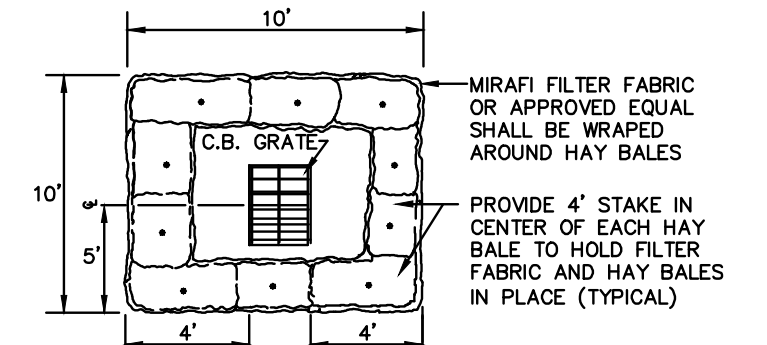
01. THE FOLLOWING GENERAL NOTES ARE REQUIRED BY CENTRAL BROWARD WATER CONTROL DISTRICT. THEY ARE NOT MEANT TO BE ALL INCLUSIVE, AND IT IS THE ENGINEERS' RESPONSIBILITY TO ADD ANY NOTES WHICH WILL INFORM THE OWNER AND THE CONTRACTOR OF ANY ADDITIONAL REQUIREMENT OF CENTRAL BROWARD WATER CONTROL DISTRICT.
02. LIMEROCK BASE COURSE SHALL CONFORM TO THE REQUIREMENTS OF SECTION 911 OF FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, EXCEPT THE MINIMUM PERCENTAGE OF CARBONATES OF CALCIUM AND MAGNESIUM SHALL BE SIXTY PERCENT (60 %).
03. CENTRAL BROWARD WATER CONTROL DISTRICT WILL BE CALLED 24 HOURS PRIOR TO BACK-FILLING OF DRAINAGE TRENCH AND PRIOR TO THE PLACEMENT OF ASPHALT. CALL (954) 432-5110.
04. ANY REVISIONS TO THESE PLANS MUST BE APPROVED BY CENTRAL BROWARD WATER CONTROL DISTRICT PRIOR TO CONSTRUCTION.
05. BONDS AND INSPECTIONS:  
1. UPON DISTRICT BOARD OF COMMISSIONERS APPROVAL OF PLANS, BUT BEFORE CONSTRUCTION CAN COMMENCE, THE FOLLOWING ITEMS MUST BE COMPLIED WITH:  
A. BOND (CASH OR SURETY), IN THE DISTRICT'S FAVOR, MUST BE POSTED IN THE AMOUNT OF 110 PERCENT OF THE DEVELOPER'S ENGINEER'S (ENGINEER OF RECORD) ESTIMATE OF COST OF CONSTRUCTION OF THE PAVING AND DRAINAGE WORKS. (SUBJECT TO APPROVAL OF THE COST ESTIMATE BY THE DISTRICT ENGINEERS.)  
B. ALL EASEMENTS, DEED RESTRICTIONS, MAINTENANCE AGREEMENTS, AND DEEDS AS REQUIRED BY THE BOARD SHALL BE PRESENTED TO THE DISTRICT SECRETARY AND ATTORNEY FOR APPROVAL BEFORE RECORDATION. ALL COSTS OF RECORDING THE APPLICABLE INSTRUMENT WILL BE BORNE BY THE DEVELOPER.  
C. UPON COMPLIANCE WITH THE CONDITIONS REQUIRED BY THE BOARD FOR APPROVAL, AND RECEIPT OF APPROVED PLANS FROM THE DISTRICT ENGINEER, THE DISTRICT SECRETARY WILL MARK THE PLANS "APPROVED"; SIGN SAME, AND DISTRIBUTE THE APPROVED PLANS TO THE GOVERNMENTAL AGENCY INVOLVED, THE DEVELOPER, AND THE DISTRICT FILES.  
D. THE DISTRICT'S BOND FORM IS THE ONLY FORM APPROVED FOR USE, AND IT SHALL BE A RECORDED INSTRUMENT. RELEASE OR REDUCTION FROM THE RECORDED INSTRUMENT SHALL BE THE RESPONSIBILITY OF THE APPLICANT.  
E. BONDS SHALL BE PROVIDED BY THE PRINCIPALS OF DEVELOPMENT ONLY. CONTRACTOR OR SUB-CONTRACTOR BONDS ARE NOT ACCEPTABLE.
2. WHEN CONSTRUCTION IS IN PROGRESS, THE DISTRICT'S INSPECTOR WILL INSPECT THE INSTALLATION OF DRAINAGE WORKS, ACCORDING TO AN INSPECTION SCHEDULE ESTABLISHED BY THE BOARD OF COMMISSIONERS. INSPECTION MUST BE MADE BY DISTRICT PERSONNEL OF ALL UNDERGROUND STORM DRAIN FACILITIES BEFORE BACKFILLING; CALL (954) 432-5110 FOR AN INSPECTION APPOINTMENT A MINIMUM OF TWENTY-FOUR (24) HOURS IN ADVANCE. ALL COSTS OF PERIODIC INSPECTIONS OF CONSTRUCTION BY THE DISTRICT SHALL BE BORNE BY THE DEVELOPER.
3. SWALES, LAKE BANKS, SLOPES, CANALS, AND OTHER EXCAVATIONS SHALL BE BONDED SEPARATELY FROM OTHER DRAINAGE IMPROVEMENTS, AND WILL BE HELD BY THE DISTRICT UNTIL SUCCESSFUL COMPLETION. THE AMOUNT OF THIS SEPARATE BOND WILL BE DETERMINED BY THE DISTRICT BOARD OF COMMISSIONERS AND BY RECOMMENDATION OF THE DISTRICT SECRETARY.
4. CERTIFIED "AS-BUILT" PLANS FROM THE ENGINEER OF RECORD WILL BE REQUIRED BEFORE RELEASE OF PERFORMANCE BONDS. AS-BUILTS SHALL BE PROVIDED AS AN OVERLAY ON THE APPROVED CONSTRUCTION DRAWINGS AT THE SAME SCALE FOR COMPARISON PURPOSES. AS-BUILT SUBMITTALS SHALL FOLLOW THE SAME FORMAT OF GENERAL REVIEW AS OUTLINED IN SECTION 3.2 (2) OF CENTRAL BROWARD WATER CONTROL DISTRICT'S CRITERIA.
06. LAKE AND CANAL AS-BUILTS WILL BE CROSS SECTIONED SHOWING THE DESIGNED SECTION AS DASHED, AS-BUILT SECTION AS SOLID, AND HAVE THE TOP OF BANK REFERENCE TO THE LAKE/CANAL MAINTENANCE EASEMENT. SPACING BETWEEN EACH CROSS-SECTION SHALL BE SUCH AS TO PROVIDE ENOUGH DATA TO DETERMINE IF THE LAKE/CANAL WAS CONSTRUCTED AS DESIGNED.
07. UPON SUCCESSFUL COMPLETION OF CONSTRUCTION, AND ACCEPTANCE OF "AS-BUILTS"; A PERCENTAGE OF THE PERFORMANCE BOND AS DETERMINED BY THE DISTRICT BOARD, AND RETAINED BY THE DISTRICT, MAY BE RELEASED. THE BALANCE OF BOND SHALL REMAIN IN FULL FORCE AND EFFECT FOR AN ADDITIONAL TWELVE (12) MONTHS AFTER FINAL INSPECTION AND APPROVAL, UNLESS SUPPLEMENTED BY NEW BOND FORMS IN THE REQUIRED AMOUNTS, AND APPROVED BY THE DISTRICT ATTORNEY.



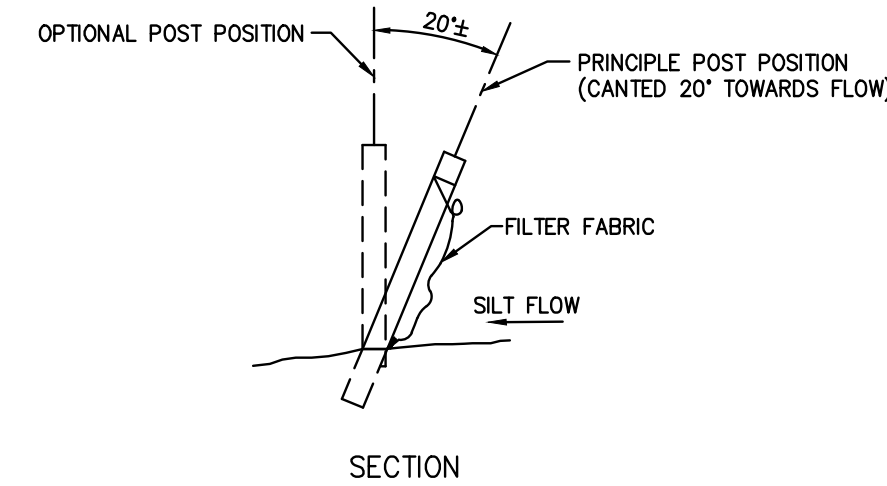
**TYPICAL PAVEMENT INTERFACE**  
SCALE: NONE



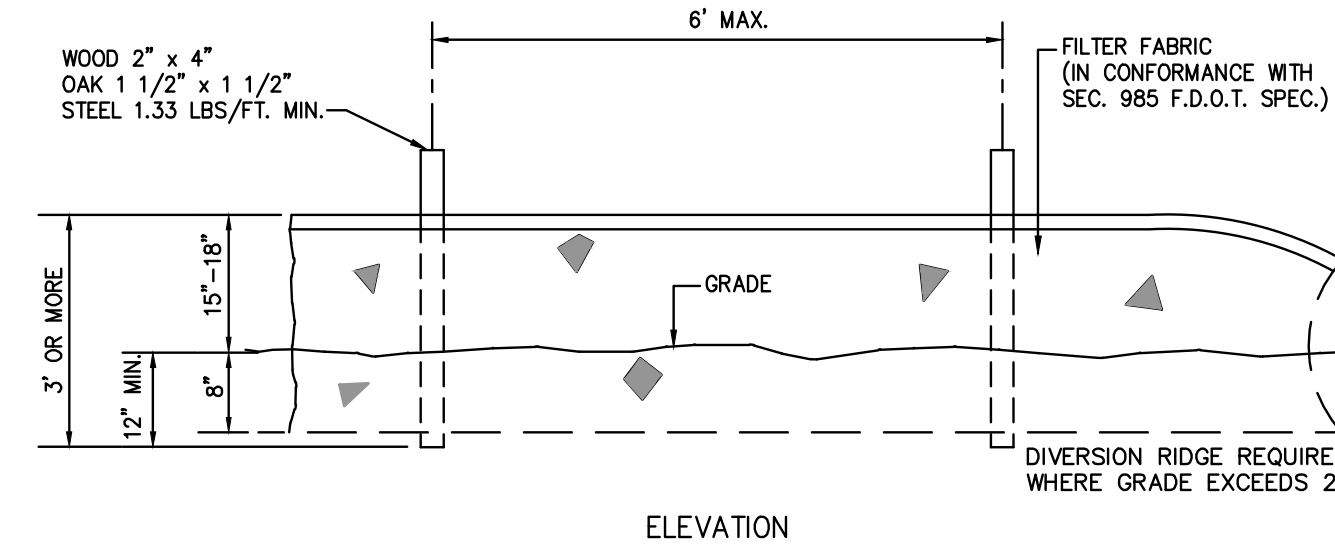
NOTES:  
USE SANDBAGS, STRAW BALES OR OTHER APPROVED METHODS TO CHANNELIZE RUNOFF TO BASIN AS REQUIRED



**HAY BALE DETAIL**  
N.T.S.

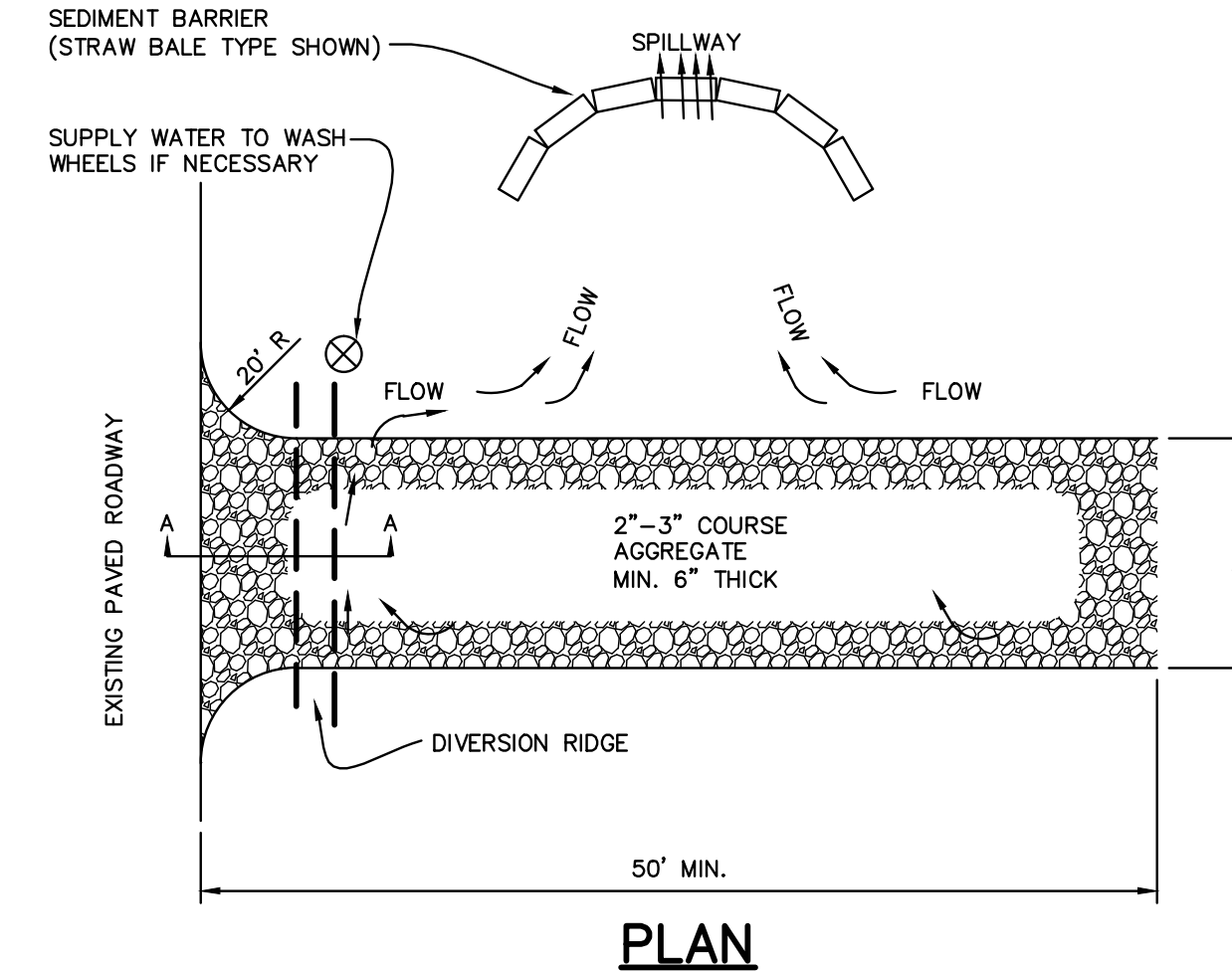


SECTION



ELEVATION

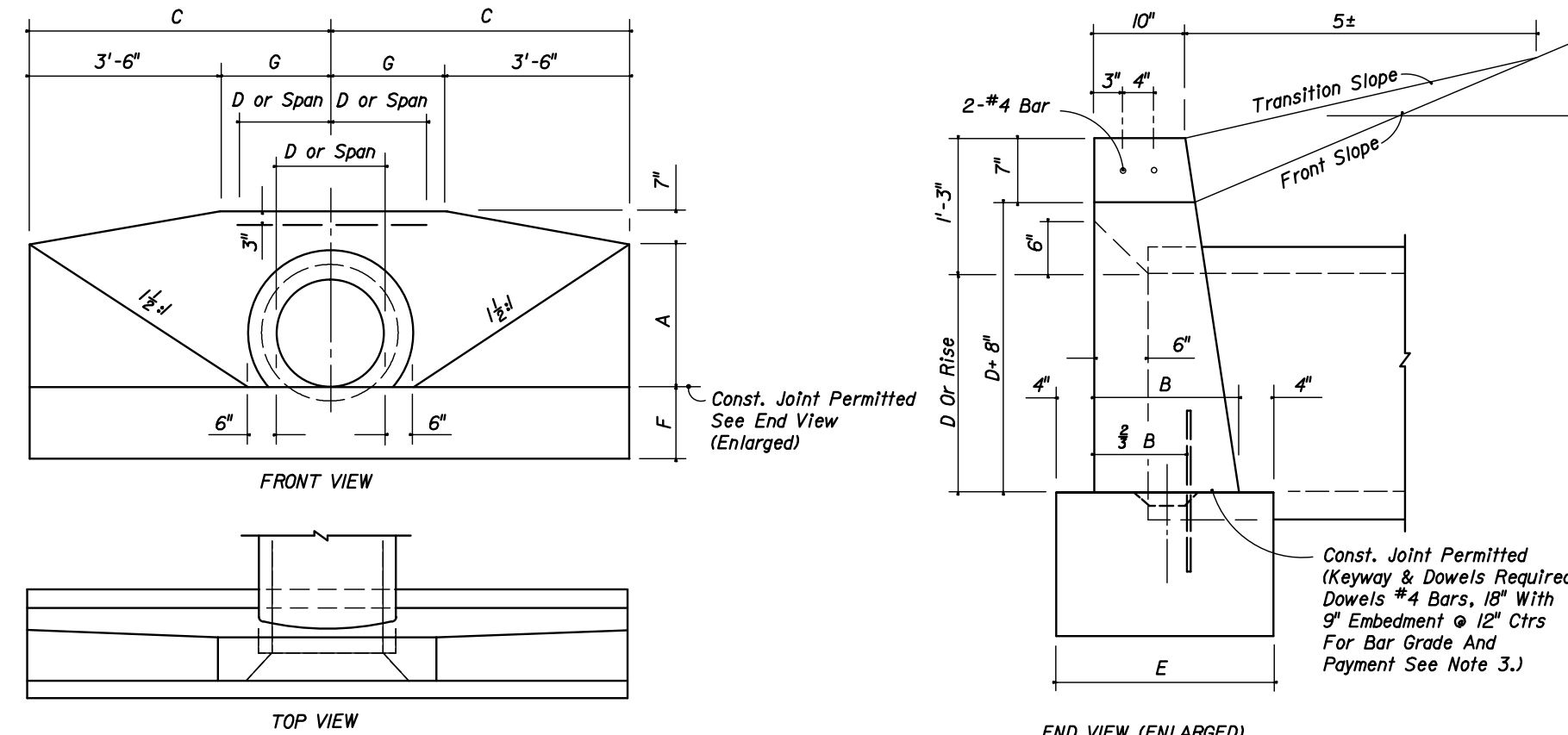
**TYPE III SILT FENCE**  
N.T.S.



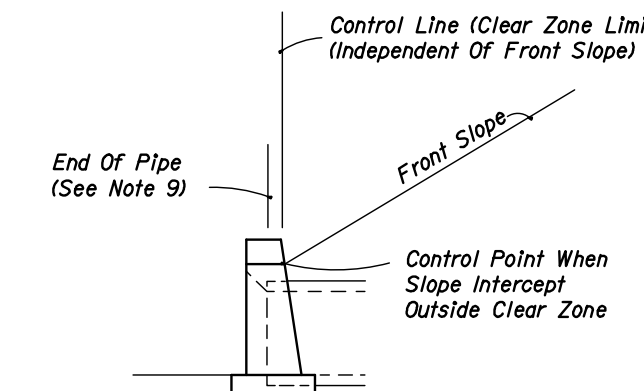
PLAN

- NOTES:  
1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS 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 ONTO 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 GRAVEL CONSTRUCTION ENTRANCE**  
N.T.S.



ENDWALL DIMENSIONS (EXCLUSIVE OF MULTIPLE PIPE SPACING)



**STANDARD LOCATION CONTROL**

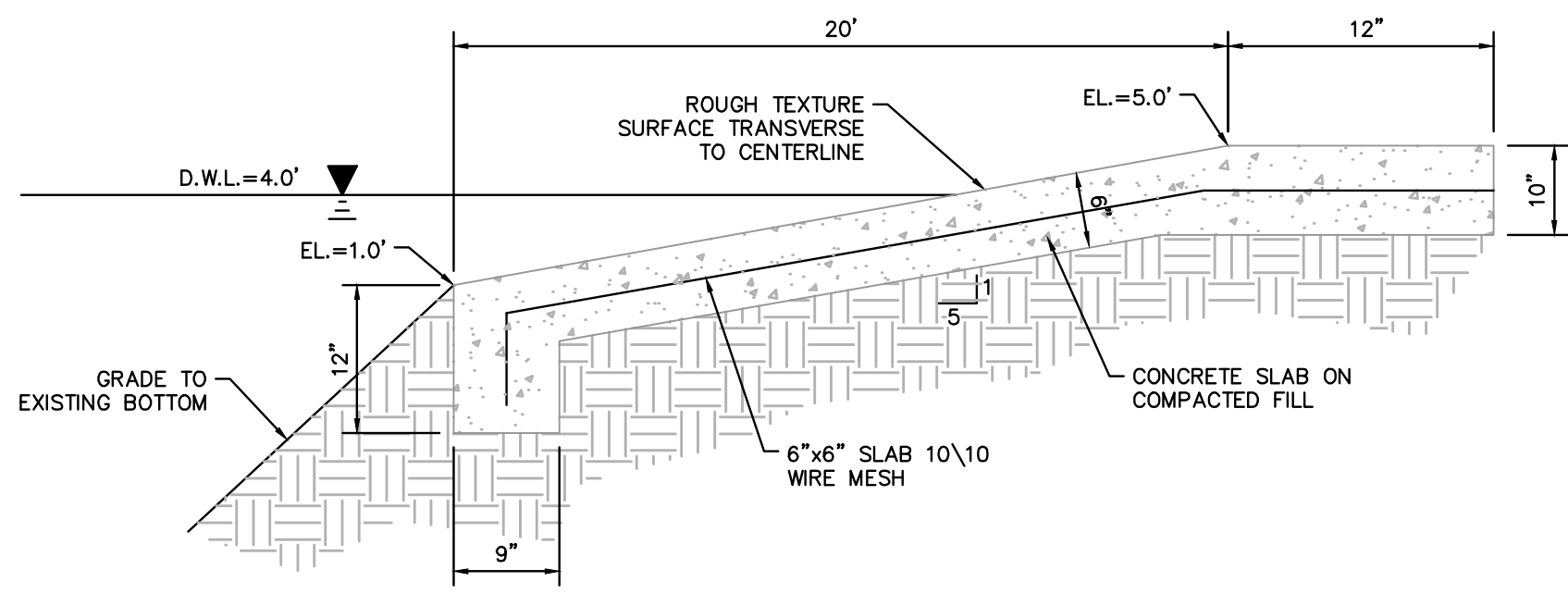
**GENERAL NOTES**

1. Endwall dimensions, locations and positions are for round and elliptical concrete pipe and for round and pipe-arch corrugated metal pipe. Round concrete pipe shown.  
2. Front slope and ditch transitions shall be in accordance with Index No. 280.  
3. Endwalls may be cast in place or precast concrete. Reinforcing steel shall be Grades 40 or 60. Additional reinforcement necessary for handling precast units shall be determined by the Contractor or the supplier. Cost of reinforcement shall be included in the contract unit price for concrete, endwalls.

4. All exposed corners and edges of concrete are to be chamfered 1/4\"/>  
5. Concrete meeting the requirements of ASTM C-478 (4000 psi) may be used in lieu of Class I concrete in precast items manufactured in plants which are under the Standard Operating Procedures for the Inspection of precast drainage products.  
6. On outfall ditches with side slopes flatter than 1 1/2:1, provide 20' transitions from the endwall to the flatter side slopes, right of way permitting.  
7. For sodding around endwalls see Index No. 281.  
8. Payment for concrete quantities for endwalls skewed to the pipe shall be made on the following basis:  

Endwall Skew To Pipe	Use Tabulated Value
0° to 5°	0%
6° to 15°	15%
16° to 30°	30%
31° or over	45%

  
9. Pipe length plan quantities shall be based on the pipe end locations shown in the standard location control and view, or lengths based on special endwall locations called for in the plans.  
10. Payment for pipe in pipe culverts shall be based on plan quantities, adjusted for endwall locations subsequently established by the Engineer.  
11. Endwalls to be paid for under the contract unit price for Class I Concrete (Endwalls), CY.



**BOAT RAMP DETAIL**  
N.T.S.

**DATA AND ESTIMATED QUANTITIES FOR ONE ENDWALL**  
Note: Use the guidelines of General Note No. 8 for selecting tabular quantities.

D	Opening Area (SF)	Dimensions																				D																					
		Single										Class I Concrete (CY)																															
		Number And Type Of Pipe And Skew Angle Of Pipe										Number And Type Of Pipe And Skew Angle Of Pipe																															
		Double					Triple					Quadruple					Metal																										
15'	1.23	2.46	3.69	4.92	1'-11"	1'-2"	4'-0"	1'-10"	1'-2"	0'-6"	2'-7"	2'-7"	2'-8"	3'-0"	3'-8"	1.23	1.24	1.59	1.60	1.65	1.74	1.62	1.63	1.68	1.78	1.94	1.96	2.05	2.23	1.99	2.02	2.11	2.30	2.30	2.34	2.47	2.74	2.37	2.41	2.75	2.84	15'	
18'	1.77	3.54	5.31	7.08	2'-2"	1'-3"	4'-6"	1'-11"	1'-3"	1'-0"	2'-10"	2'-10"	2'-11"	3'-3"	4'-0"	1.56	1.59	1.99	2.01	2.06	2.17	2.04	2.06	2.11	2.23	2.43	2.46	2.56	2.79	2.51	2.54	2.65	2.89	2.86	2.91	3.06	3.40	2.96	3.01	3.17	3.53	18'	
24'	3.14	6.28	9.42	12.56	2'-8"	1'-4"	5'-0"	2'-0"	1'-4"	1'-6"	3'-2"	3'-2"	3'-3"	3'-8"	4'-6"	1.97	2.00	2.44	2.47	2.51	2.61	2.51	2.53	2.58	2.74	2.94	2.97	3.07	3.32	3.04	3.07	3.17	3.43	3.43	3.53	3.83	3.83	3.93	4.23	4.23	4.33	4.63	24'
27'	3.98	7.96	11.94	15.92	2'-11"	1'-5"	6'-0"	2'-1"	1'-5"	2'-6"	3'-10"	3'-10"	4'-0"	4'-5"	5'-5"	2.73	2.76	3.24	3.27	3.31	3.41	3.31	3.33	3.38	3.54	3.74	3.77	3.87	4.12	3.84	3.87	3.97	4.23	4.23	4.33	4.63	4.63	4.73	5.03	5.03	5.13	5.43	27'
30'	4.91	9.82	14.73	19.64	3'-2"	1'-6"	6'-6"	2'-2"	1'-6"	3'-0"	4'-3"	4'-3"	4'-5"	4'-11"	6'-0"	3.26	3.34	4.13	4.16	4.26	4.49	4.28	4.31	4.43	4.67	4.98	5.04	5.25	5.69	5.20	5.27	5.49	5.97	5.84	5.93	6.24	6.91	6.13	6.23	6.56	7.29	30'	
36'	7.07	14.14	21.21	28.28	3'-8"	1'-8"	7'-6"	2'-4"	1'-8"	4'-0"	5'-1"	5'-1"	5'-3"	5'-10"	7'-2"	4.53	4.64	5.73	5.77	5.92	6.23	5.95	6.00	6.15	6.49	6.92	7.00	7.29	7.91	7.25	7.34	7.65	8.33	8.13	8.26	8.69	9.62	8.57	8.71	9.18	10.20	36'	
42'	9.62	19.24	28.86	38.48	4'-2"	1'-10"	8'-6"	2'-6"	2'-0"	5'-0"	6'-0"	6'-0"	6'-3"	6'-11"	8'-6"	6.33	6.49	8.11	8.17	8.39	8.85	8.43	8.50	8.73	9.23	9.90	10.02	10.45	11.38	10.38	10.52	10.98	11.99	11.68	11.87	12.51	13.89	12.32	12.52	13.22	14.73	42'	
48'	12.57	25.14	37.71	50.28	4'-8"	2'-1"	9'-6"	2'-9"	2'-0"	6'-0"	6'-9"	6'-9"	7'-0"	7'-10"	9'-7"	8.15	8.38	10.40	10.48	10.75	11.33	10.85	10.94	11.23	11.87	12.64	12.80	13.34	14.50	13.34	13.51	14.11	15.39	14.89	15.13	15.93	17.68	15.82	16.08	16.97	18.90	48'	
54'	15.90	31.80	47.70	63.60	5'-2"	2'-6"	10'-6"	3'-2"	2'-3"	7'-0"	7'-8"	7'-8"	7'-8"	7'-11"	10'-10"	11.71	11.77	15.23	15.35	15.78	16.69	16.15	16.24	16.58	17.34	18.24	18.42	19.02	20.28	18.77	19.02	19.86	21.69	20.28	20.52	21.52	23.76	21.82	22.14	23.27	25.80	54'	

**STRAIGHT CONCRETE ENDWALLS**  
**SINGLE AND MULTIPLE PIPE**  
N.T.S. PER FOOT INDEX #250

DATE:	10/28/16					
SCALE:	AS NOTED					
DESIGNED BY:	M.R.N.					
DRAWN BY:	E.H.M.					
CHECKED BY:	C.E.E.					
APPROVED BY:	C.E.E.	DESCRIPTION	BY:	DATE:		

**Craven Thompson and Associates, Inc.**  
ENGINEERS • PLANNERS • SURVEYORS  
3563 N.W. 53RD STREET, FORT LAUDERDALE, FLORIDA 33309  
FAX: (954) 739-6409 TEL: (954) 739-6400  
FLORIDA LICENSED ENGINEERING, SURVEYING & MAPPING BUSINESS NO. 271  
FLORIDA LICENSED LANDSCAPE ARCHITECTURE BUSINESS NO. 200014

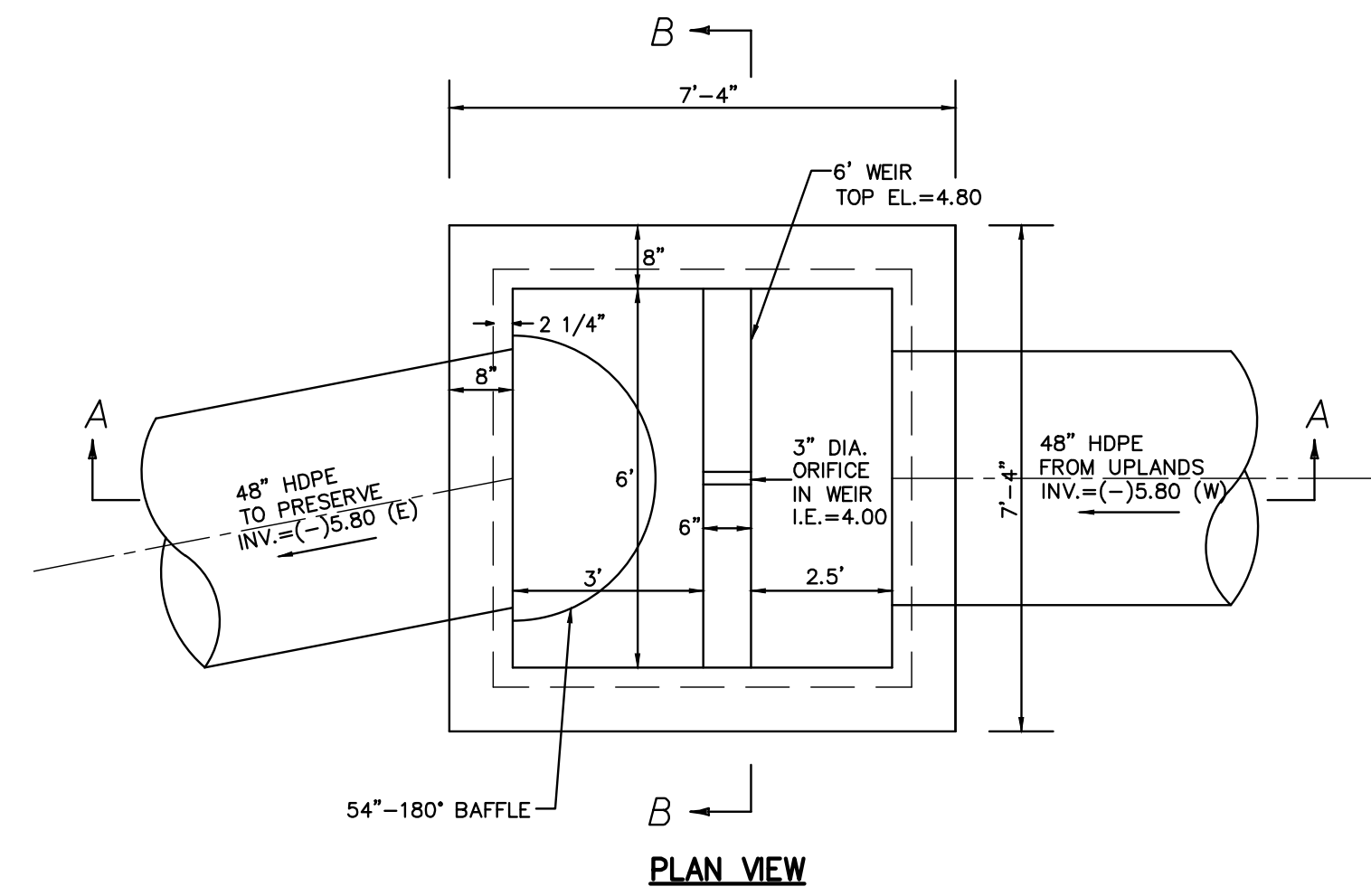
**SIERRA RANCH**  
PREPARED FOR:  
HOME DYNAMICS CORPORATION  
4755 TECHNOLOGY WAY, SUITE 210  
BOCA RATON, FLORIDA 33431

**PAVING, GRADING AND DRAINAGE DETAILS**

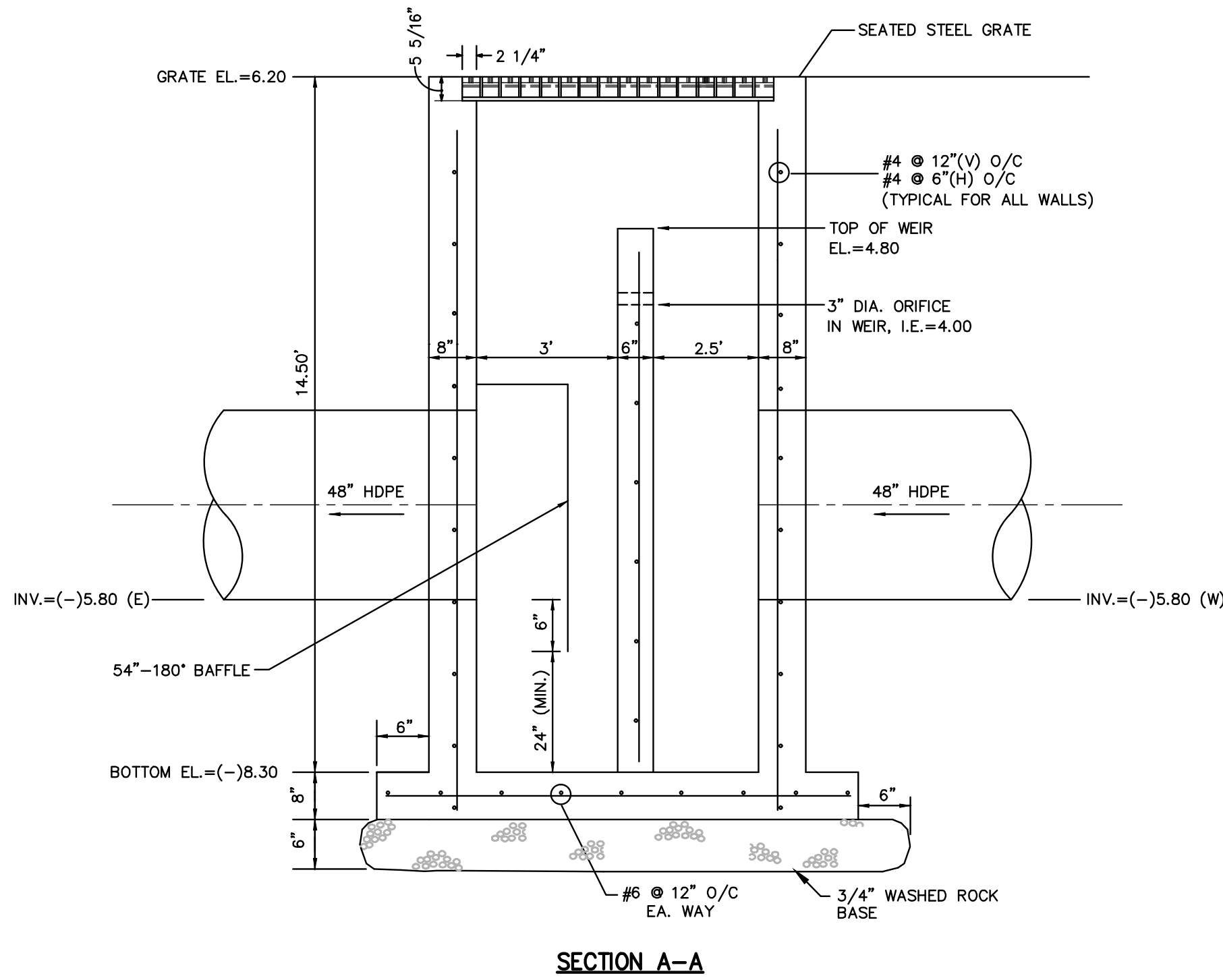
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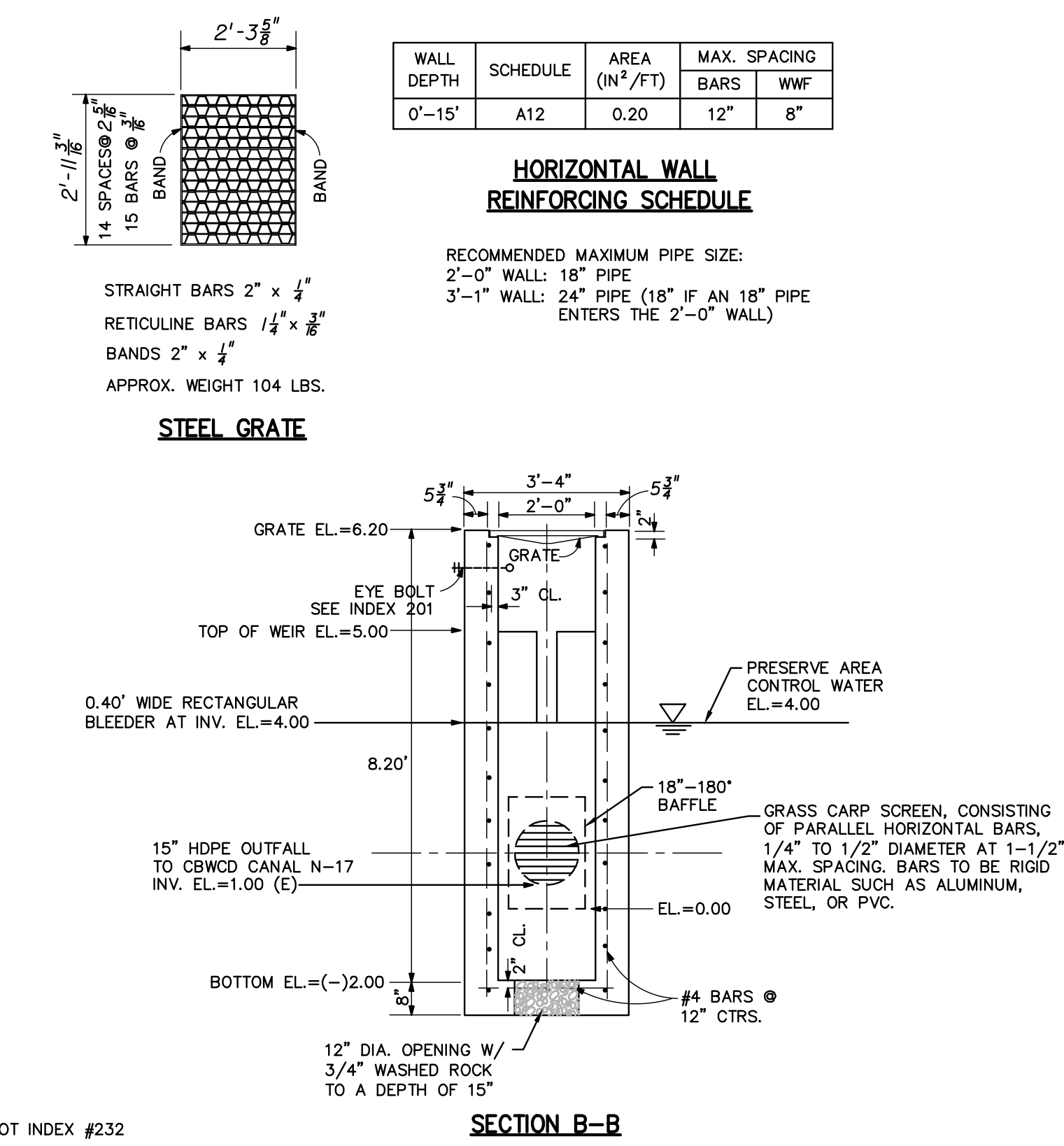
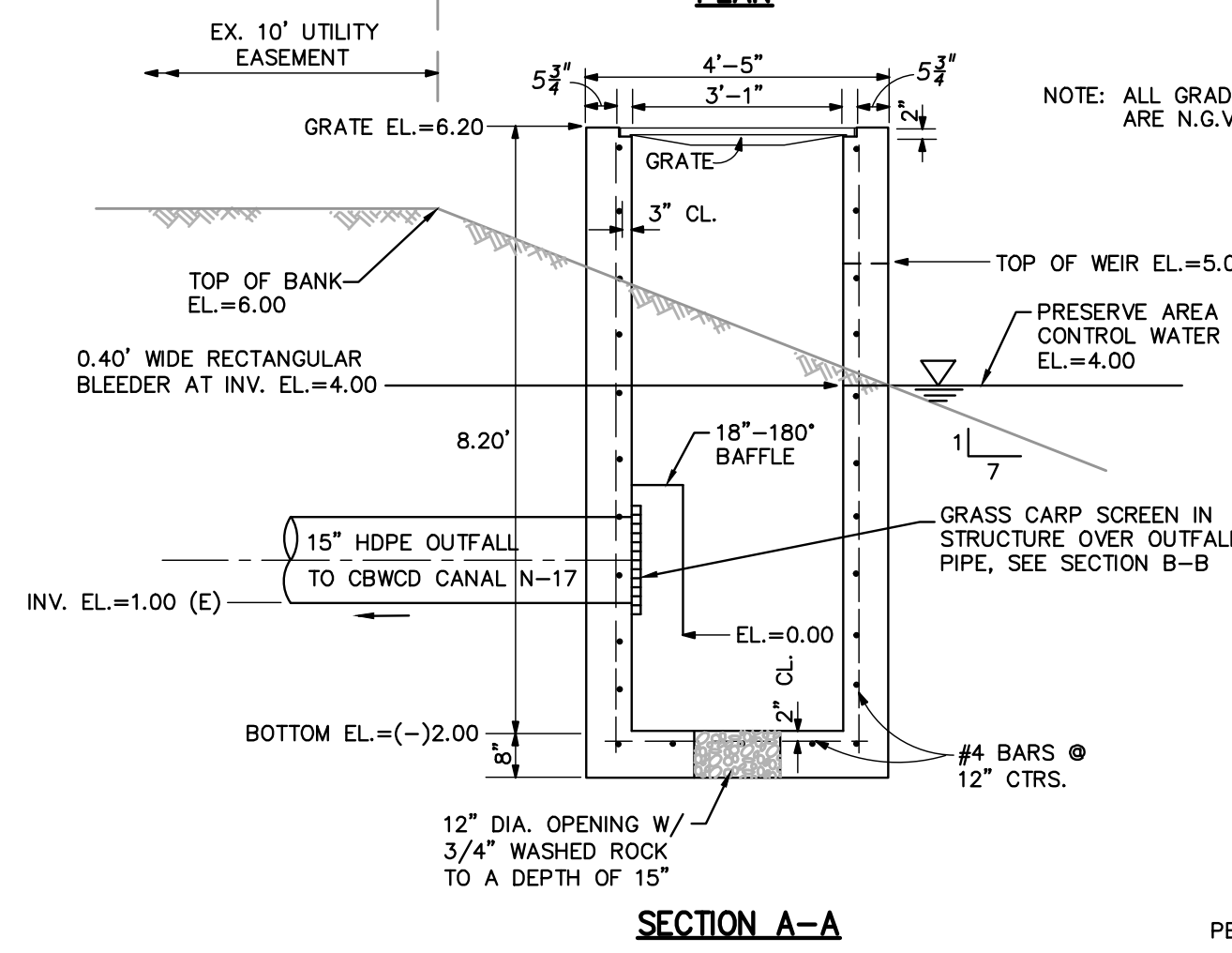
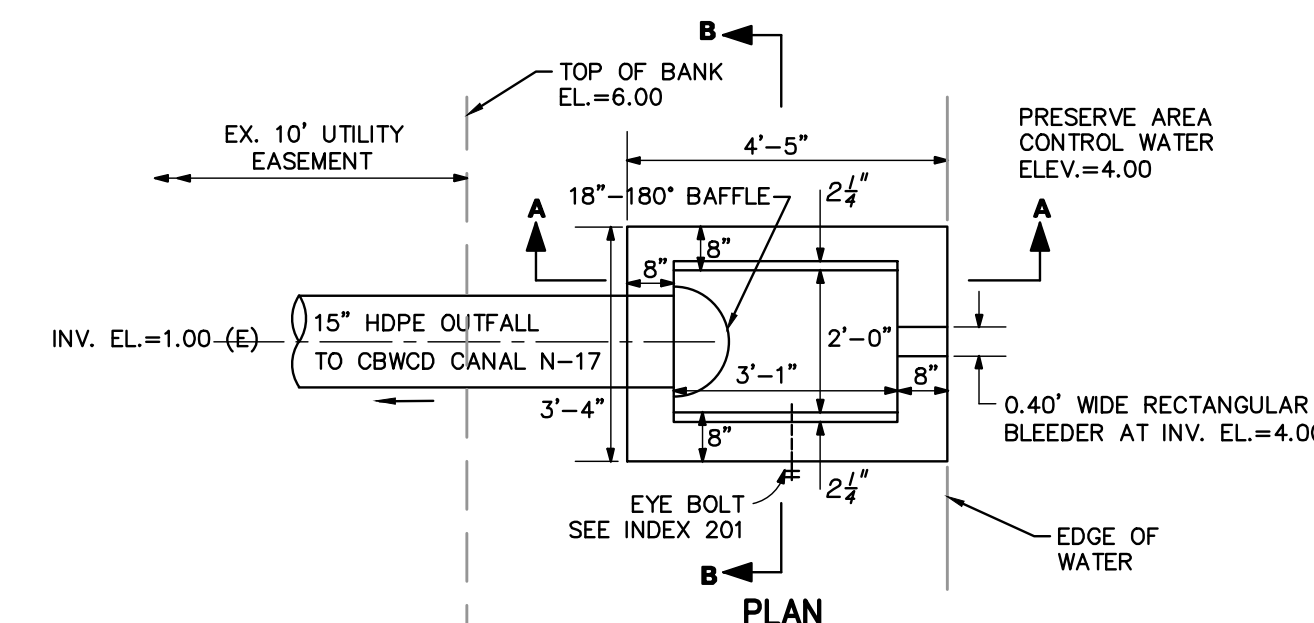
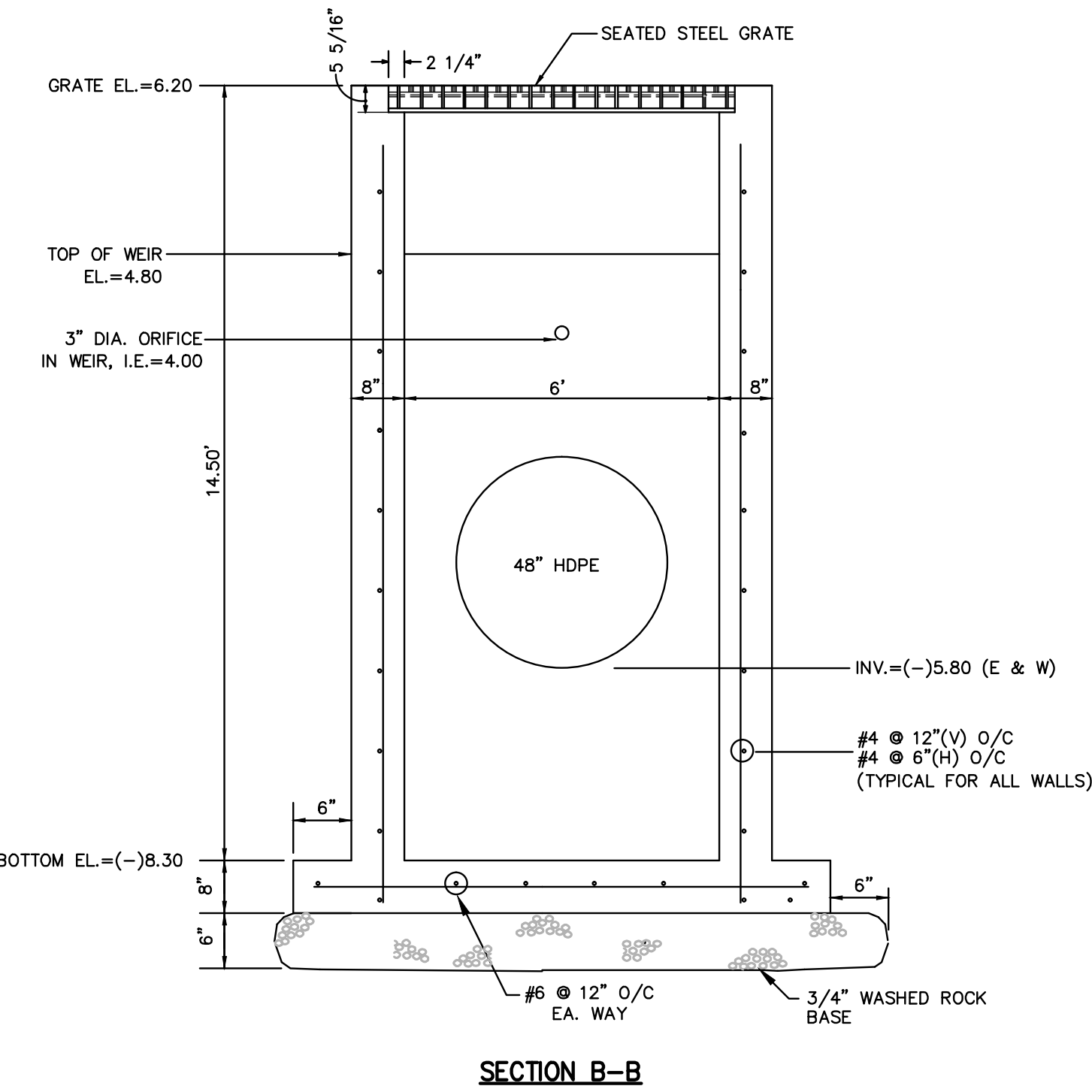
DATE: 10/28/16  
DRAWING NO. C-22  
PROJECT #: 12-0093-001-06  
Chad E. Edwards, P.E.  
Florida P.E. No. 59306  
February 1, 2017



- NOTES:
- 6' X 6' STORM INLET PER U.S. PRECAST COMPANY
  - CONCRETE = 4000 PSI @ 28 DAYS.
  - HOLES FOR PIPING SHALL BE 6" LARGER THAN PIPE O.D. AND SHALL BE CAST AT TIME OF FABRICATION
  - WATER TABLE ELEVATION=4.0' N.G.V.D.
  - PROVIDE 4 ADDITIONAL (DIAGONAL) TYPE 'D' REINFORCEMENT AROUND PIPE OPENING



**CONTROL STRUCTURE #1**  
**6' X 6' INLET**  
STRUCTURE #66 SCALE: NONE



**CONTROL STRUCTURE #2**  
**FDOT TYPE C INLET**  
STRUCTURE # 74 SCALE: NONE

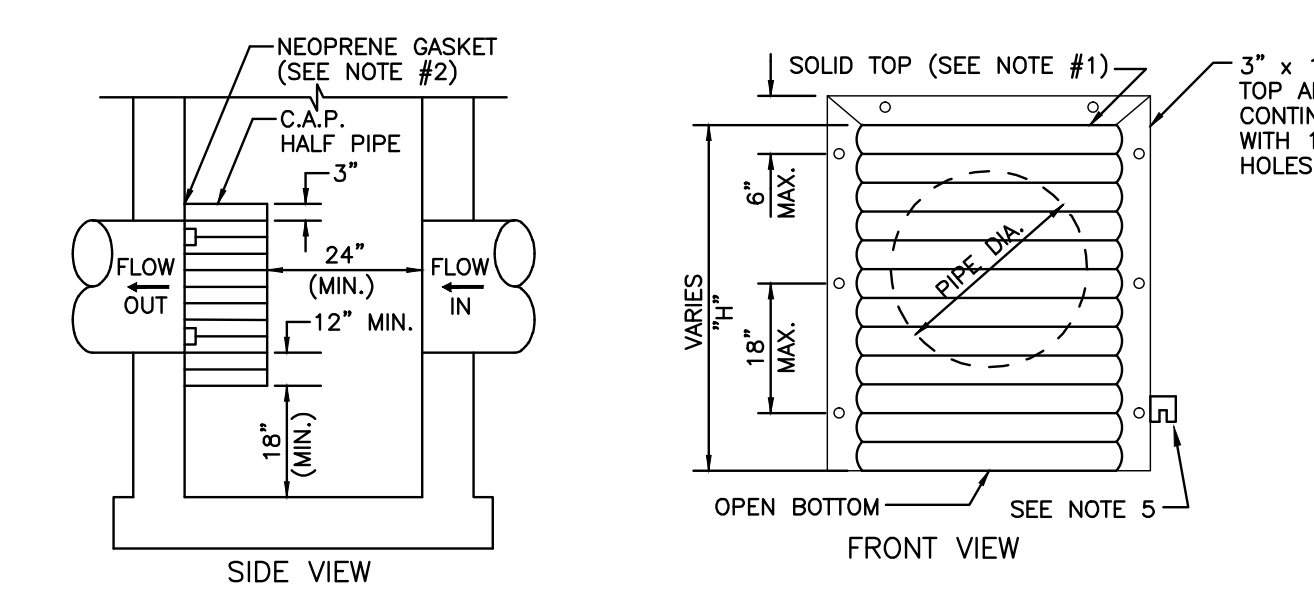
WALL DEPTH	SCHEDULE	AREA (IN <sup>2</sup> /FT)	MAX. SPACING BARS	WWF
0'-15'	A12	0.20	12"	8"

**HORIZONTAL WALL REINFORCING SCHEDULE**

RECOMMENDED MAXIMUM PIPE SIZE:  
2'-0" WALL: 18" PIPE  
3'-1" WALL: 24" PIPE (18" IF AN 18" PIPE ENTERS THE 2'-0" WALL)

STRAIGHT BARS 2" x 1/4"  
RETICULINE BARS 1/4" x 3/8"  
BANDS 2" x 1/4"  
APPROX. WEIGHT 104 LBS.

**STEEL GRATE**



PIPE DIA.	W <sup>1</sup> (IN)	W <sup>2</sup> (IN)	T (GAUGE)	H (IN)
15"	21"	21"	16	VARIES
18"	24"	24"	16	VARIES
21"	30"	30"	16	VARIES
24"	30"	36"	16	VARIES
30"	36"	42"	14	VARIES
36"	42"	54"	14	VARIES

- NOTES:
- ALUMINUM SHEET OF SAME THICKNESS (GAUGE) AS PIPE SHALL BE WELDED TO CLOSE OPENING AT THE TOP.
  - NEOPRENE ADHESIVE BACKED GASKET, OR APPROVED EQUAL (1" x 2") SHALL BE INSTALLED ON THE SIDES AND TOP OF ALL BAFFLES.
  - POLLUTION RETARDANT BAFFLE TO BE FASTENED IN PLACE WITH 3/8"x4" STAINLESS STEEL "RED HEADS", OR APPROVED EQUAL.
  - FIBERGLASS BAFFLES ARE NOT PERMITTED.
  - MOUNTING BRACKETS MAY BE ADDED TO FLAT BARS TO EASE INSTALLATION IN ROUND STRUCTURES. SPACING TO MATCH HOLES IN FLAT BARS.

**POLLUTION RETARDANT BAFFLE**  
SCALE: NONE

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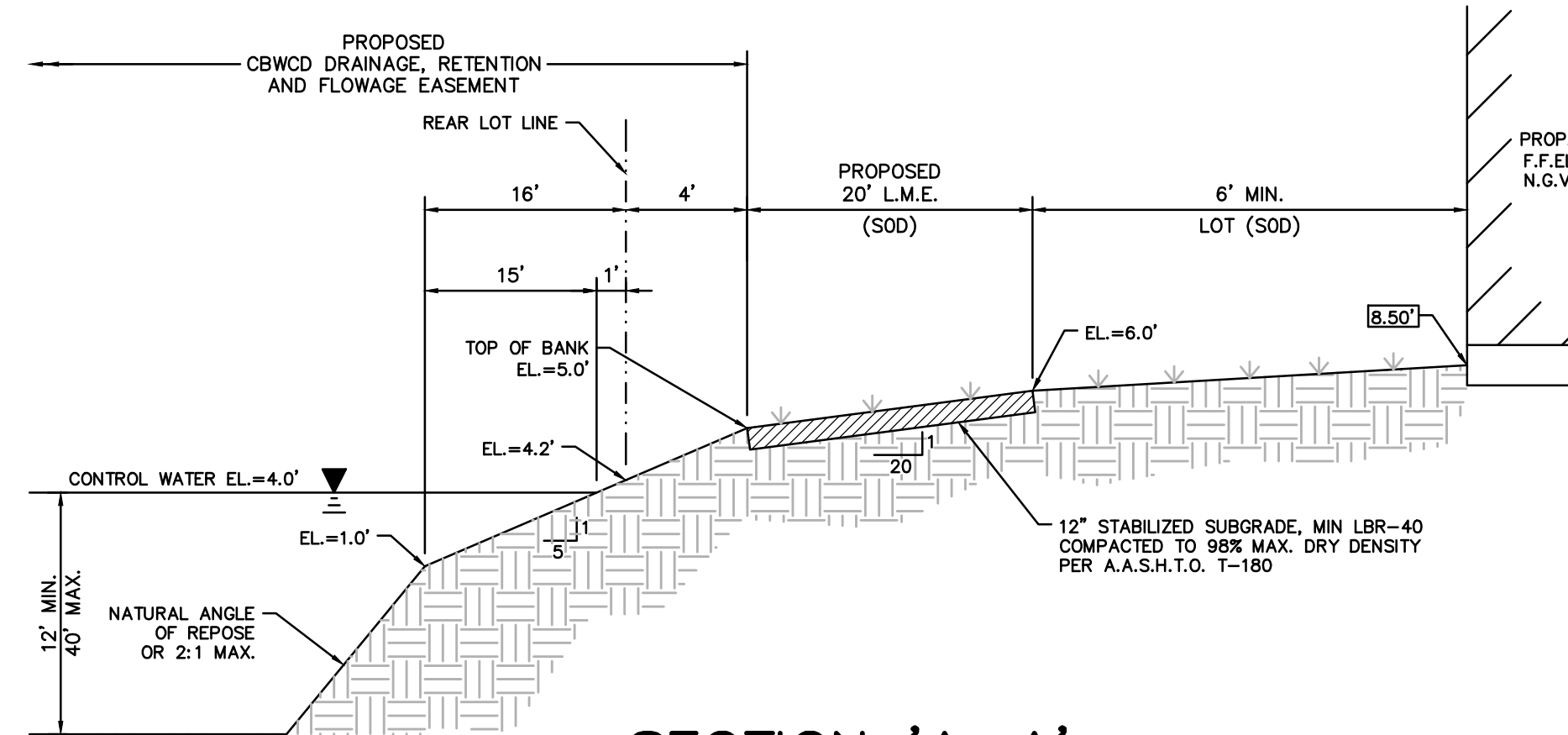
DATE:	10/28/16			
SCALE:	AS NOTED			
DESIGNED BY:	M.R.N.			
DRAWN BY:	E.H.M.			
CHECKED BY:	C.E.E.			
APPROVED BY:	C.E.E.			
DESCRIPTION		BY:	DATE:	

**CRAVEN THOMPSON AND ASSOCIATES, INC.**  
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FLORIDA LICENSED ENGINEERING, SURVEYING & MAPPING BUSINESS NO. 271  
FLORIDA LICENSED LANDSCAPE ARCHITECTURE BUSINESS NO. 5000114

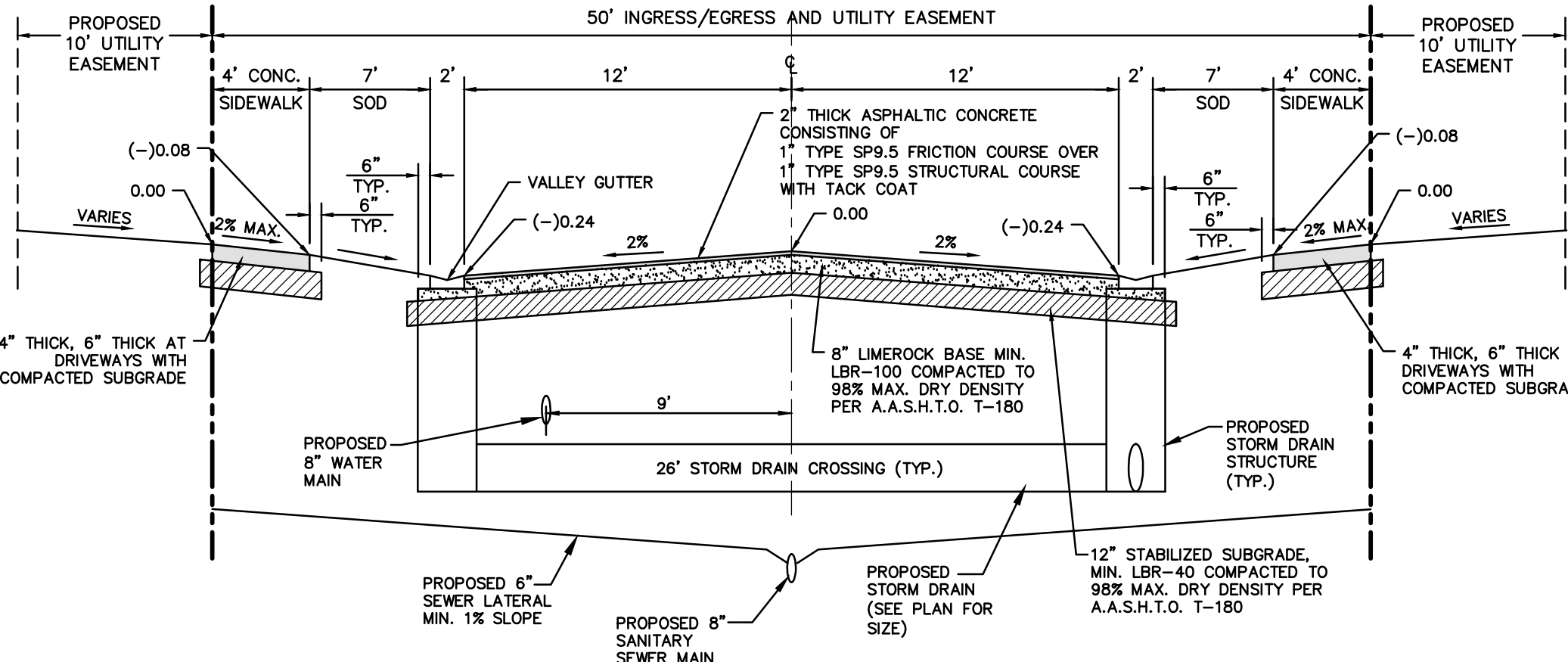
**SIERRA RANCH**  
PREPARED FOR:  
**HOME DYNAMICS CORPORATION**  
4755 TECHNOLOGY WAY, SUITE 210  
BOCA RATON, FLORIDA 33431

**PAVING, GRADING AND DRAINAGE DETAILS**

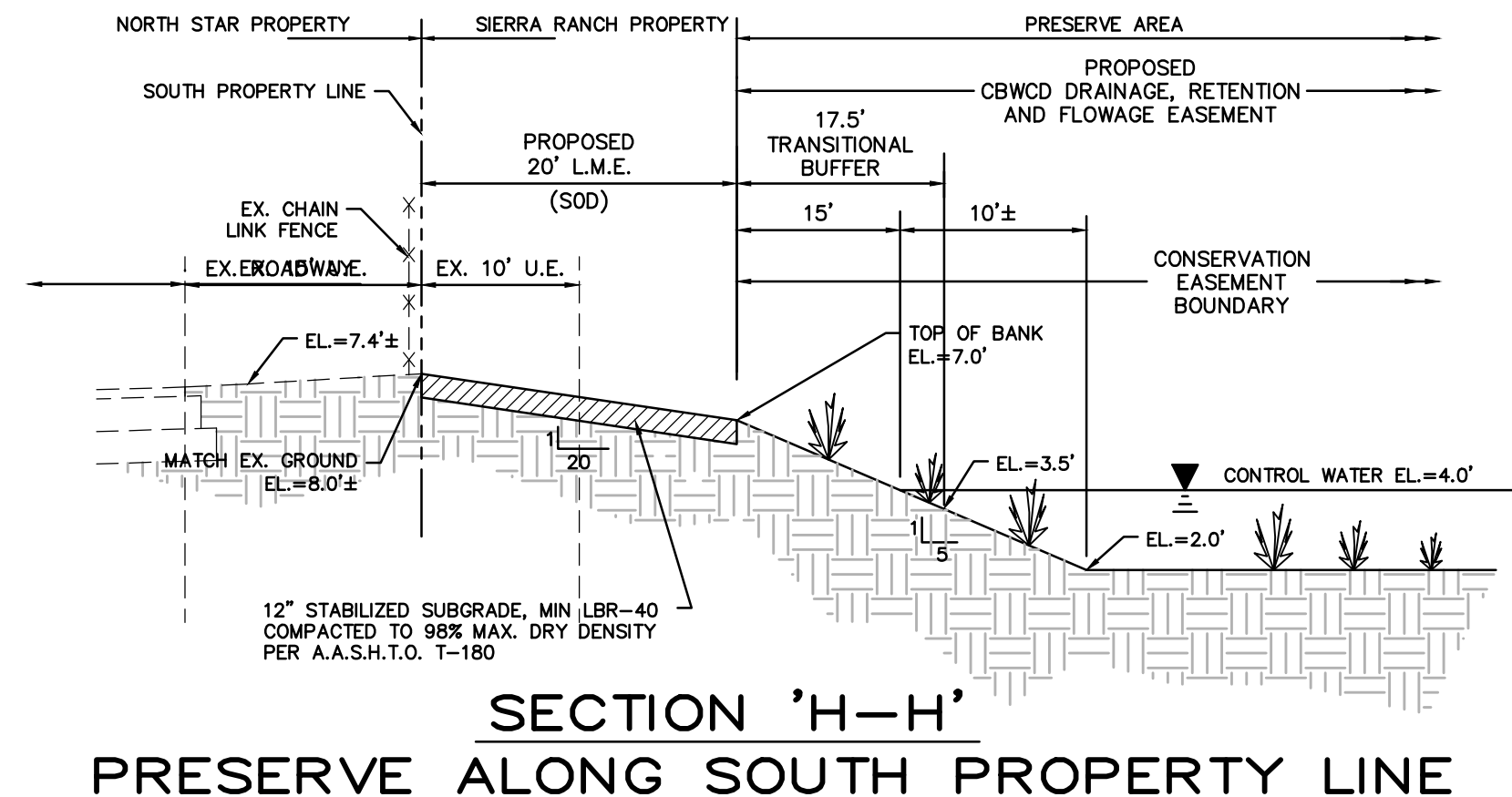
DATE: 10/28/16  
DRAWING NO. C-23  
PROJECT #: 12-0093-001-06  
Chad E. Edwards, P.E.  
Florida P.E. No. 59306  
February 1, 2017



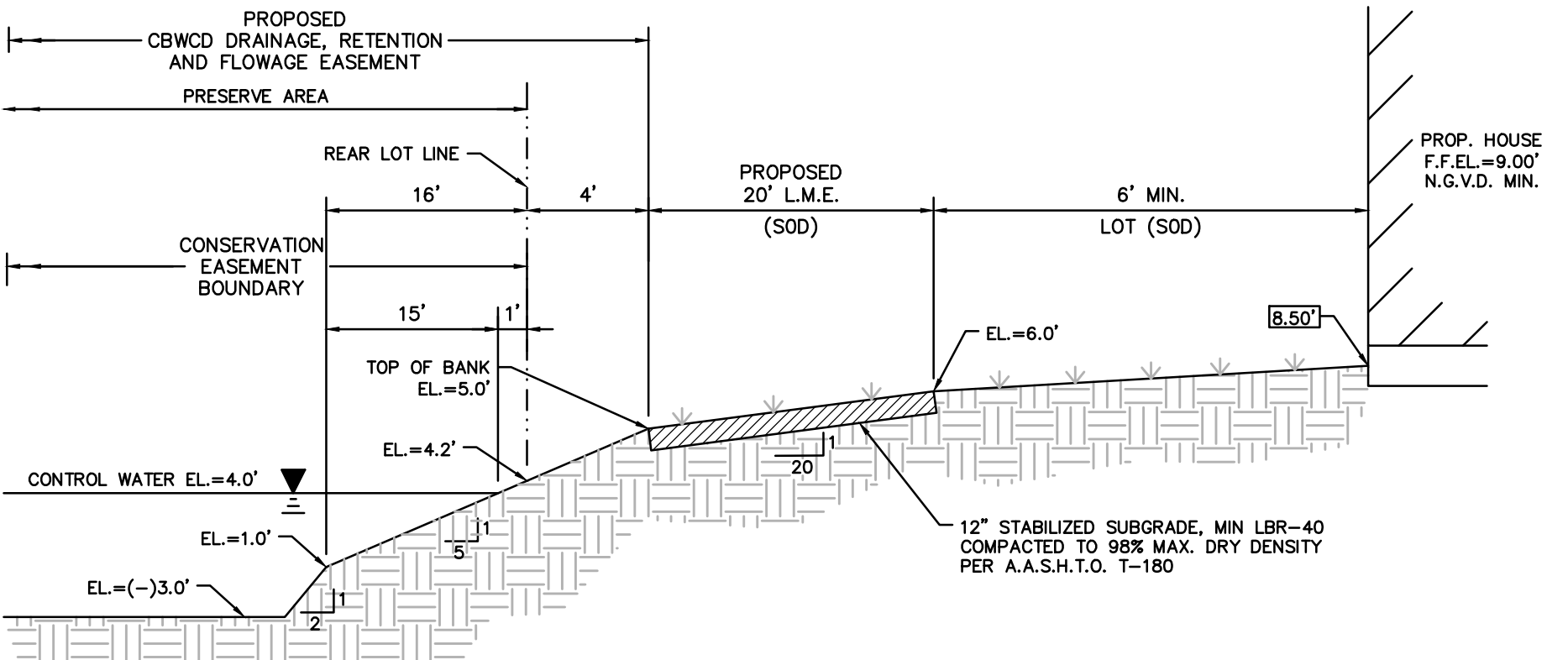
**SECTION 'A-A'**  
TYPICAL LAKE BANK SECTION  
N.T.S.



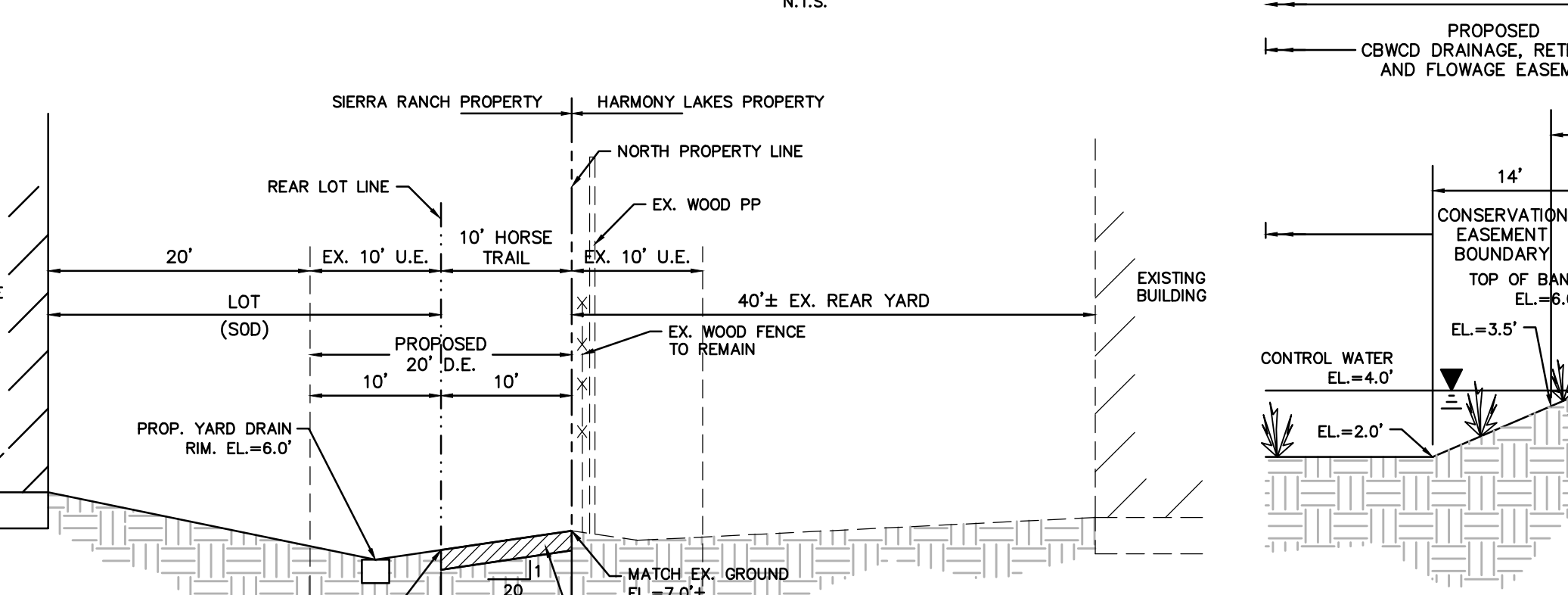
**SECTION 'E-E'**  
TYPICAL ROADWAY SECTION  
N.T.S.



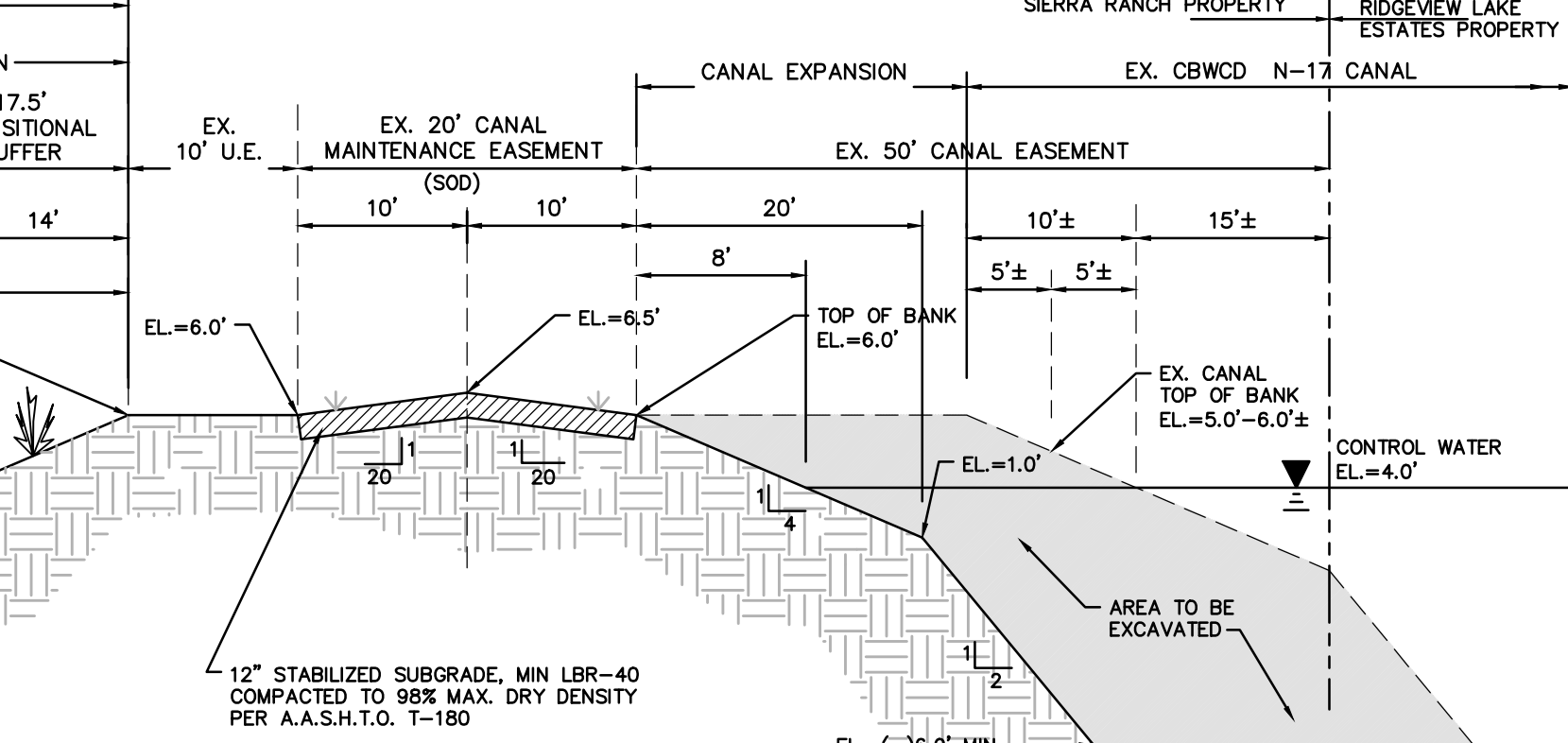
**SECTION 'H-H'**  
PRESERVE ALONG SOUTH PROPERTY LINE  
N.T.S.



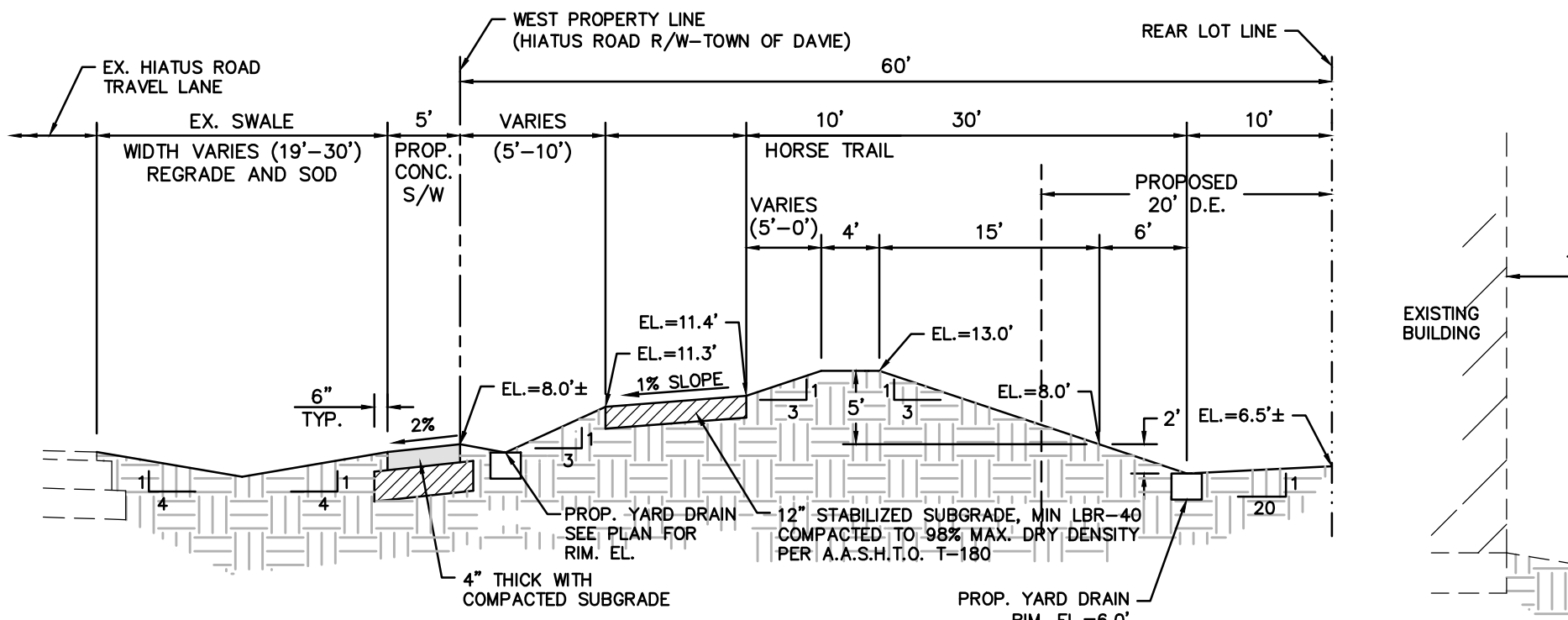
**SECTION 'B-B'**  
TYPICAL PRESERVE BANK SECTION  
N.T.S.



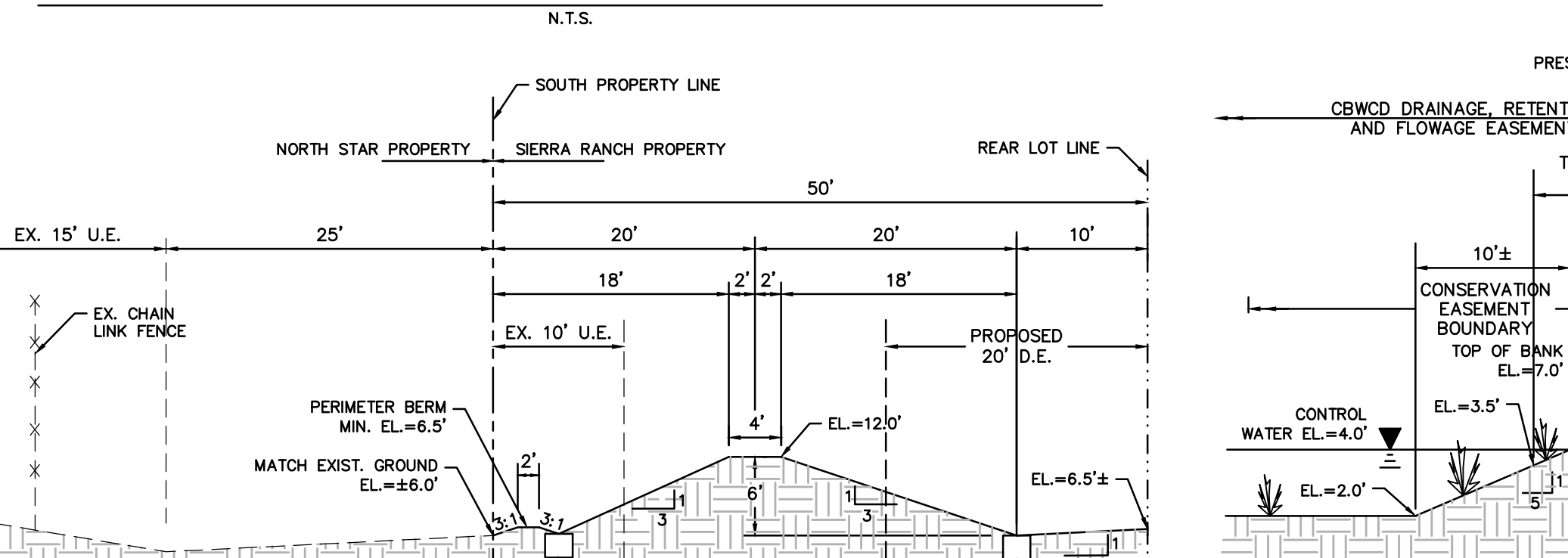
**SECTION 'F-F'**  
SWALE ALONG NORTH PROPERTY LINE  
N.T.S.



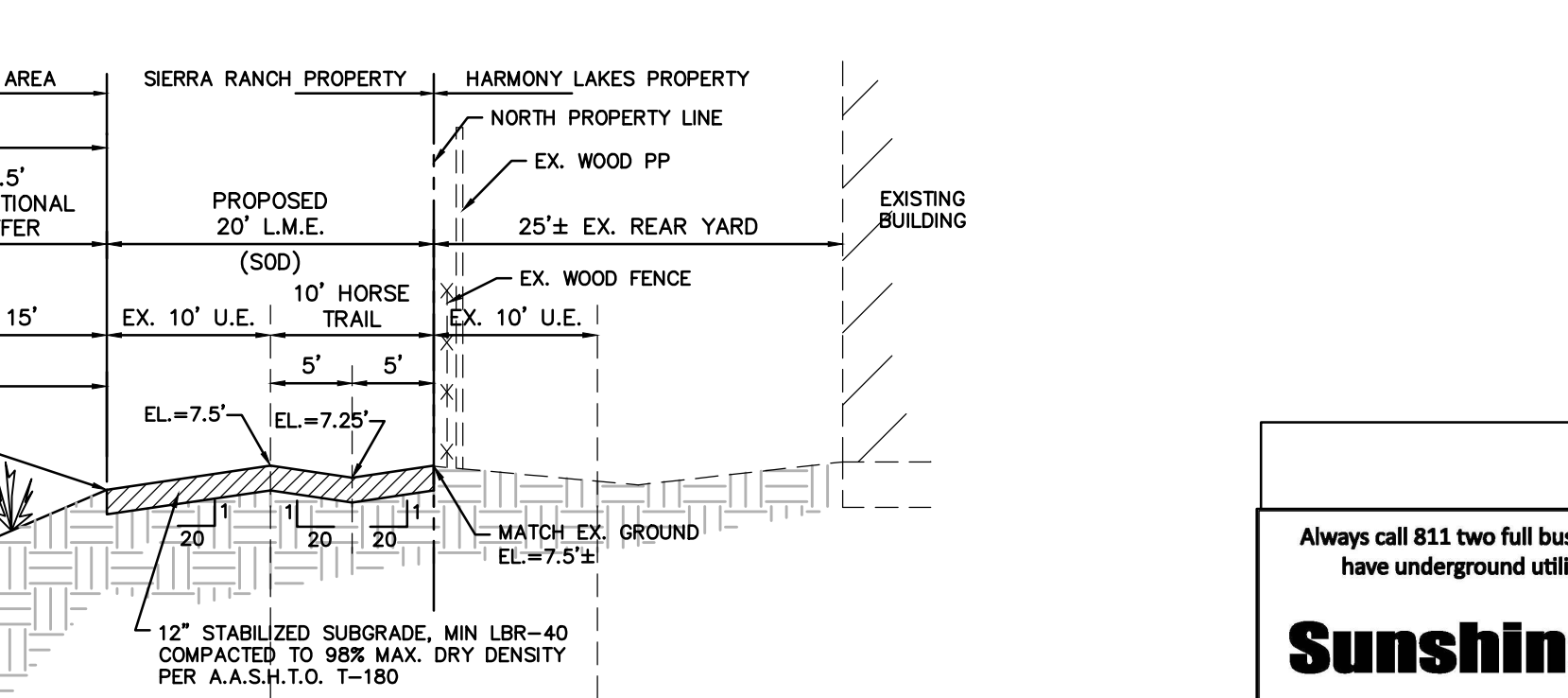
**SECTION 'I-I'**  
PRESERVE ALONG EAST PROPERTY LINE  
N.T.S.



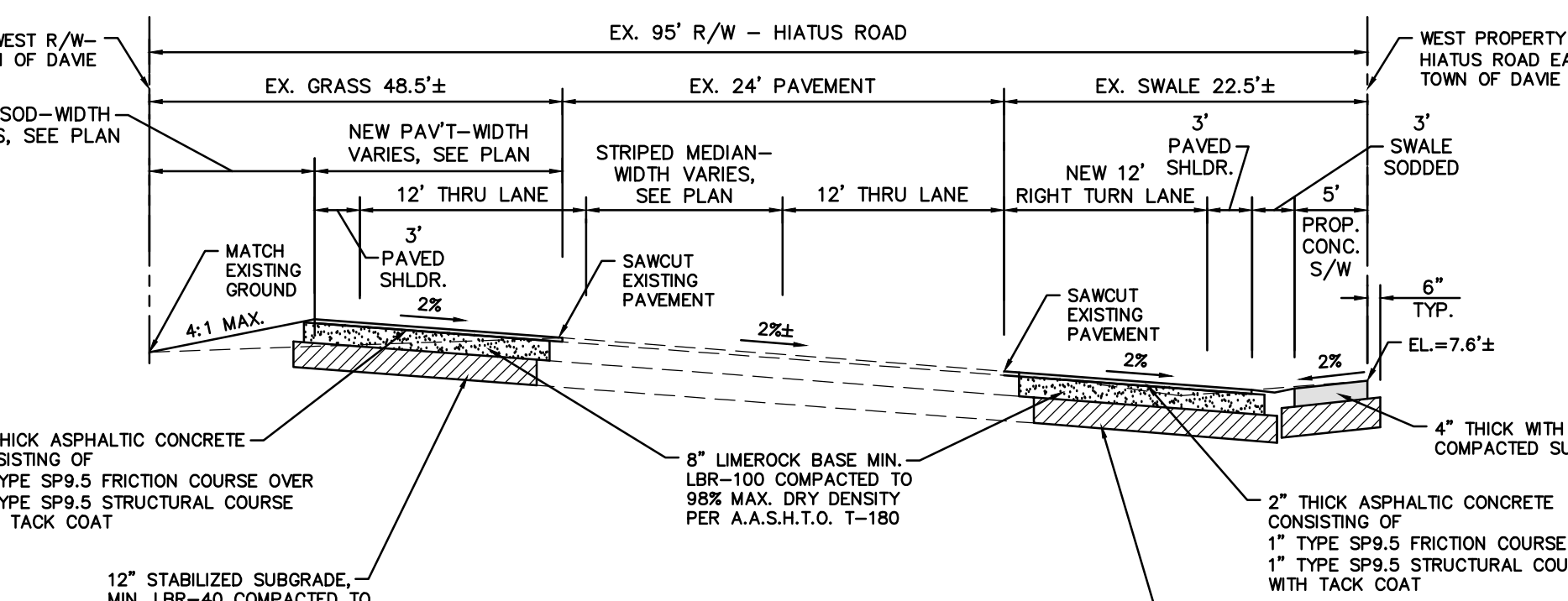
**SECTION 'C-C'**  
BERM ALONG WEST PROPERTY LINE  
N.T.S.



**SECTION 'D-D'**  
BERM ALONG SOUTH PROPERTY LINE  
N.T.S.



**SECTION 'G-G'**  
PRESERVE ALONG NORTH PROPERTY LINE  
N.T.S.



**SECTION 'J-J'**  
HIATUS ROAD TURN LANES  
N.T.S.

NOTE: HORSE TRAIL TO BE CONSTRUCTED BY THE DEVELOPER AND MAINTAINED BY THE HOMEOWNERS ASSOCIATION. ALL DRAINAGE STRUCTURES, PIPES, LAKE AND PRESERVE AREA TO BE MAINTAINED BY THE HOMEOWNERS ASSOCIATION.

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DATE:	10/28/16			
SCALE:	AS NOTED			
DESIGNED BY:	M.R.N.			
DRAWN BY:	E.H.M.			
CHECKED BY:	C.E.E.			
APPROVED BY:	C.E.E.			
	DESCRIPTION	BY:	DATE:	

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**SIERRA RANCH**  
PREPARED FOR:  
HOME DYNAMICS CORPORATION  
4755 TECHNOLOGY WAY, SUITE 210  
BOCA RATON, FLORIDA 33431

**TYPICAL SECTIONS**

DATE:	10/28/16
DRAWING NO.:	C-25
PROJECT #:	12-0093-001-06

C:\2012\12-0093-001-06\Sierra Ranch\Current\12-0093-001-06.dwg, C-25 - Typical Sections, 8/16/2017, 8:14:42 AM, mironick.dwg to PDF.plt, ARCH expand D (Color), 3600 inches, 11