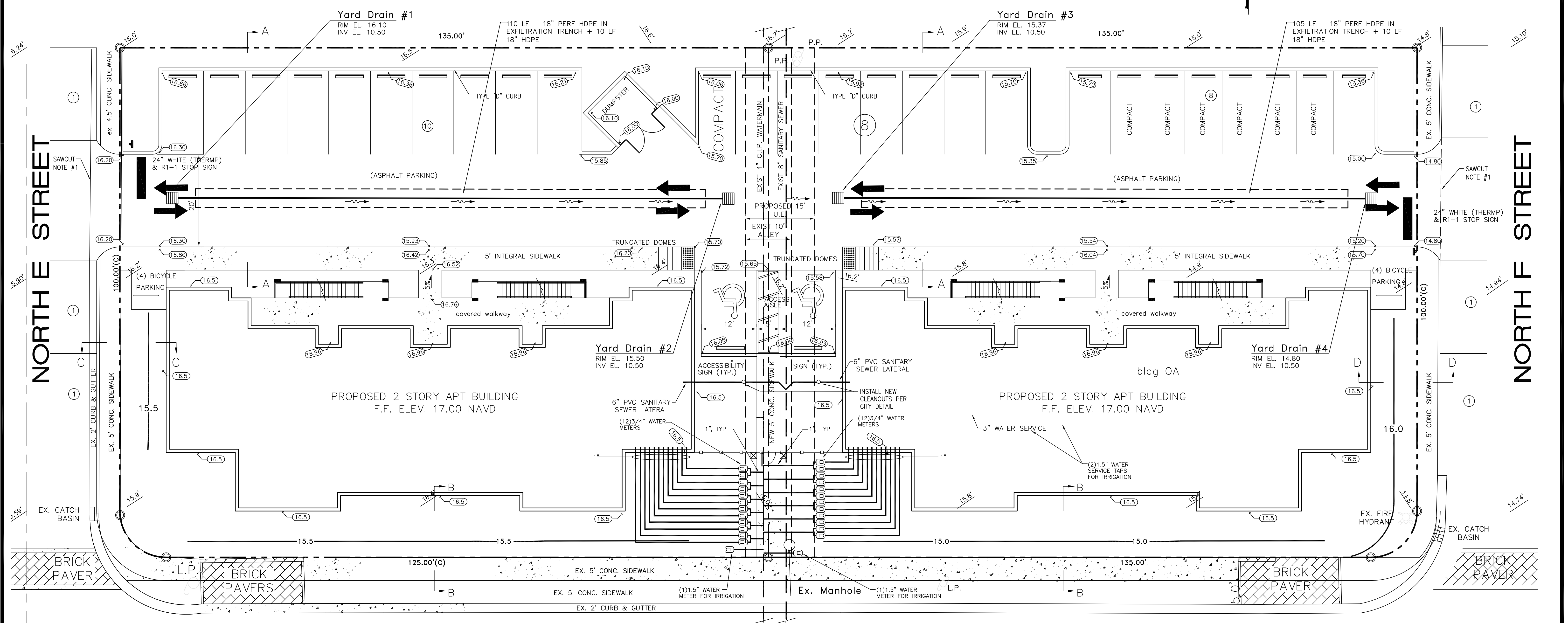
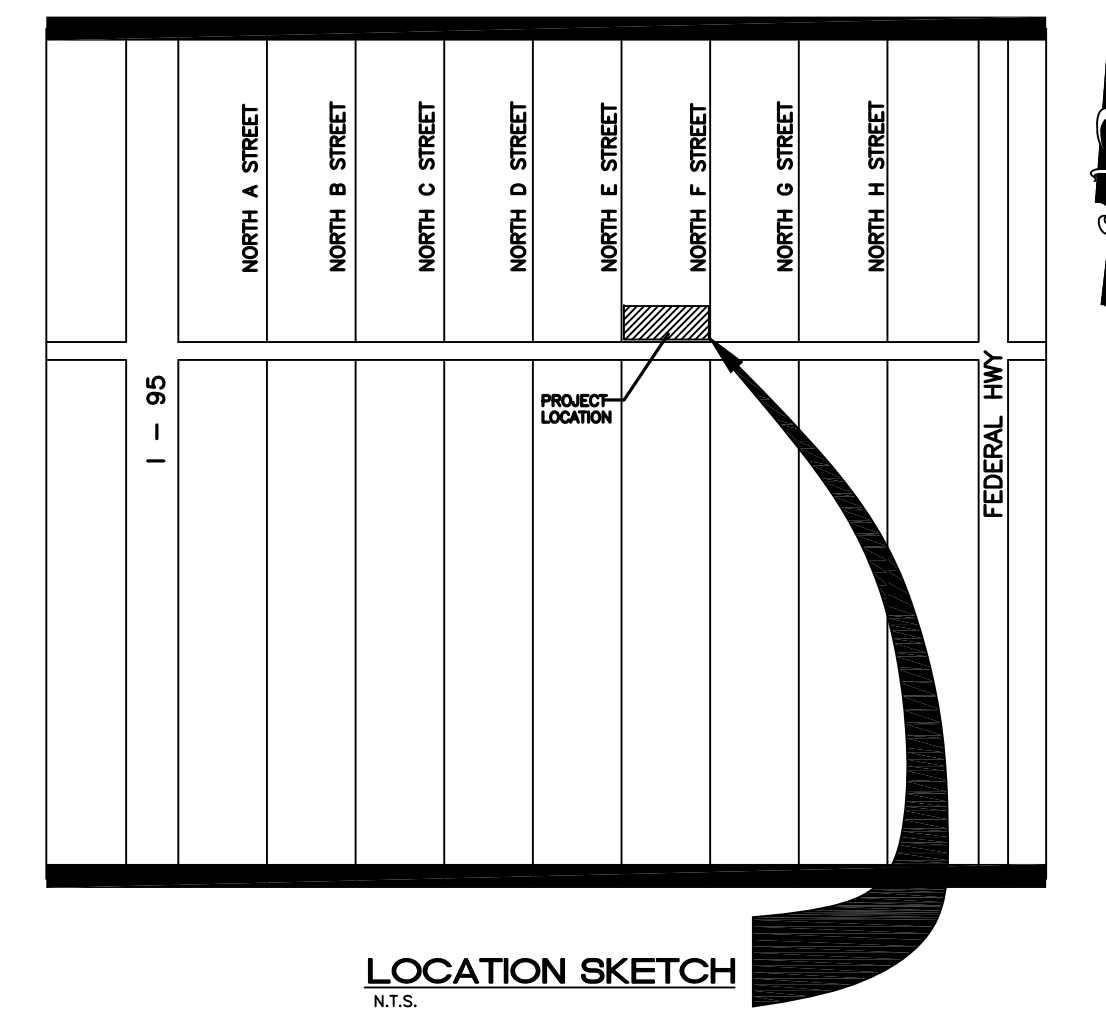


- LEGEND:**
- EXISTING ELEVATION
  - PROPOSED ELEVATION
  - RUNOFF FLOW
  - PROPOSED BRICK PAVERS
  - PROPOSED CONCRETE SIDEWALK
  - EXISTING CONCRETE
  - TO BE REMOVED
  - TO BE VERIFIED
  - 7.0' SWALE CONTOUR
  - PROPERTY LINE
  - ELEC OVERHEAD WIRES
- AREA COVERAGES:**
- |                         |             |              |        |
|-------------------------|-------------|--------------|--------|
| BUILDING FOOTPRINT AREA | = 8,550 SF  | = 0.196 ACRE | 27.8 % |
| PAVEMENT AREA           | = 13,126 SF | = 0.301 ACRE | 42.7 % |
| PERVIOUS AREA           | = 9,082 SF  | = 0.208 ACRE | 29.5 % |
| TOTAL AREA              | = 30,758 SF | = 0.706 ACRE | 100 %  |

- NOTES:**
- LOCAL DRAINAGE DISTRICT: TOWN OF LAKE WORTH
  - WET SEASON WATER TABLE = 8.0 NAVD
  - 10 YEAR - 1 DAY RAINFALL = 10.0 INCHES
  - 25 YEAR - 1 DAY RAINFALL = 12.0 INCHES
  - 100 YEAR - 1 DAY RAINFALL = 16.0 INCHES
  - 3 YEAR - 1 HOUR RAINFALL = 2.6 INCHES
- CONSTRUCTION NOTES:**
- CONTRACTOR TO FIELD LOCATE SIZE, DEPTH, MATERIAL AND LOCATION OF EXISTING WATER SERVICE TO BUILDING PRIOR TO CONSTRUCTION. NOTIFY ENGINEER WITH INFORMATION.
  - CONTRACTOR TO FIELD LOCATE SIZE, DEPTH, MATERIAL AND LOCATION OF EXISTING SANITARY SEWER LATERAL SERVICE TO BUILDING PRIOR TO CONSTRUCTION. NOTIFY ENGINEER WITH INFORMATION.
  - EXISTING TOPOGRAPHIC INFORMATION PROVIDED BY MILLER LAND SURVEYING, INC.
  - ALL CONSTRUCTION SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE TOWN OF LAKE WORTH BEACH ENGINEERING.
  - PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL GIVE TIMELY NOTIFICATION TO ALL UTILITY COMPANIES WITH FACILITIES IN THE AREA.
  - THE LOCATION OF EXISTING FACILITIES WERE PLOTTED FROM AVAILABLE RECORDS. THE CONTRACTOR SHALL FIELD LOCATE ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
  - THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO SAFEGUARD ALL EXISTING STRUCTURES, UTILITIES, AND SURVEY MARKERS.
  - ALL SIDEWALKS AND PATIOS SHALL BE SLOPED AWAY FROM HOUSE.
  - MAXIMUM GRASS SLOPES SHALL NOT EXCEED 4:1.
  - CONTRACTOR SHALL COORDINATE GRADING PLAN WITH LANDSCAPE ARCHITECT.
  - REMOVE ALL ORGANIC AND DELERIOUS MATERIAL BETWEEN THE EDGE OF PAVEMENT AND RIGHT OF WAY LINE (14' SODDED SWALE). NO MATERIAL OF F.D.O.T. CLASS A-5, A-7 OR A-8 SHALL BE ALLOWED IN THE RIGHT OF WAY.
  - ALL ELEVATIONS SHOWN ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988.

- SAWCUT NOTES:**
- SAWCUT EXISTING ASPHALT PAVEMENT. MATCH NEW ASPHALT GRADE TO EXISTING ASPHALT GRADE.
- NOTES:**
- FLOOD ZONE : X  
 BASE FLOOD ELEVATION : N/A  
 CONTROL PANEL NUMBER : 120213-05931-F  
 DATE : 10-5-17



NOTE : OWNER SHALL SUBMIT FINAL SURVEY TO THE CITY WITH SUFFICIENT TOPOGRAPHY TO VERIFY CONFORMANCE TO DESIGN

Designed J.J.H.  
 Drawn E.L.H.  
 Checked J.J.H.

NO.	DATE	REVISION	BY
3-22-21		Revised per city comments	

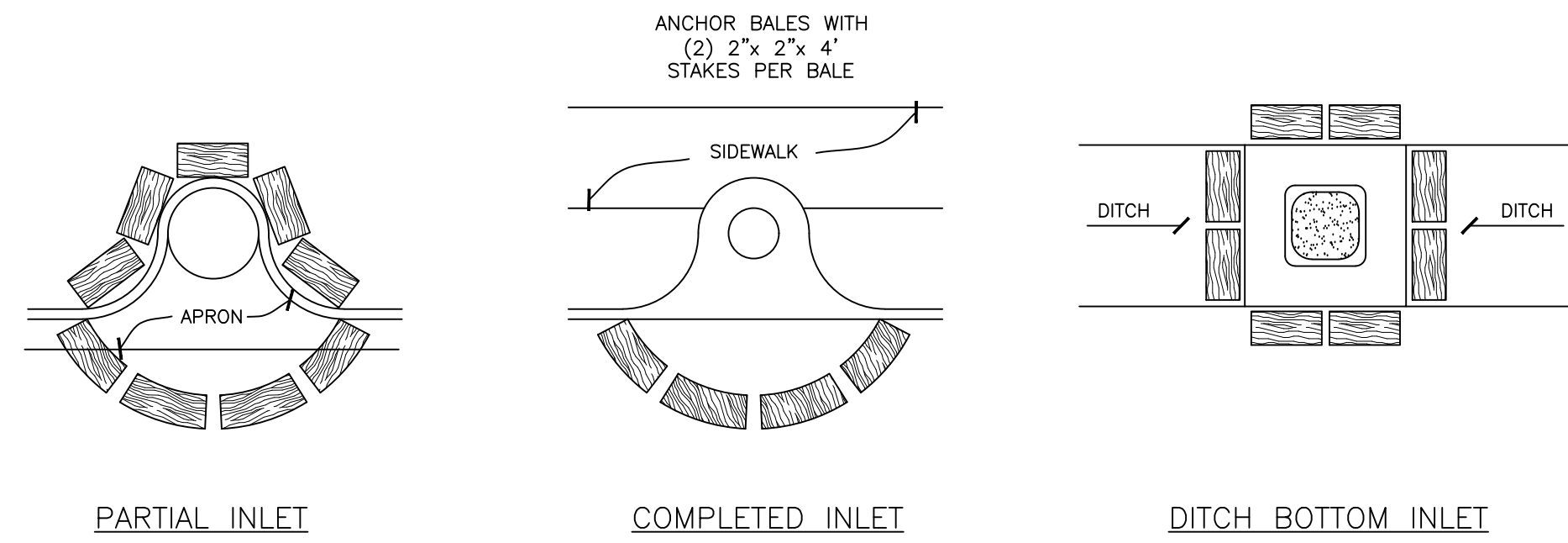
**HALEY ENGINEERING, INC.**  
 CIVIL ENGINEERING SERVICES.  
 1680 SE 4th Street - Deerfield Beach, Fla. 33441  
 Phone: (954) 260-6194  
 Email: johnhaley@comcast.net  
 F.B.P.E. Authorization No. 9463

**APARTMENT BUILDINGS**  
 10TH AVENUE NORTH  
 LAKE WORTH, FLORIDA

**WATER, SEWER, PAVING  
 AND DRAINAGE PLAN**

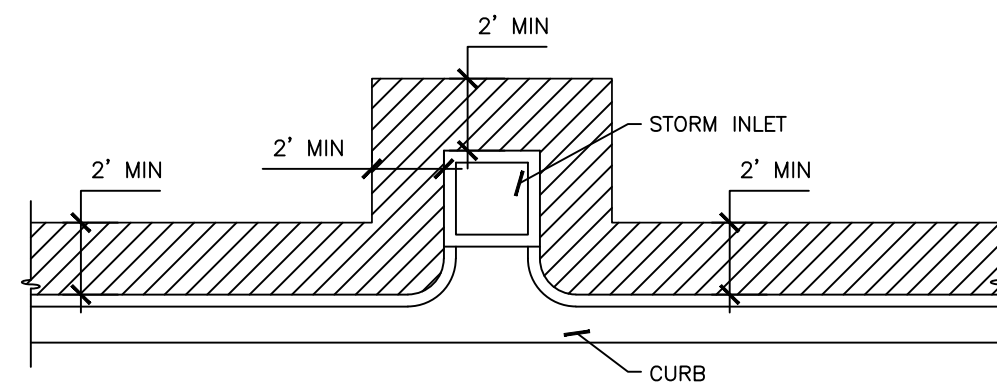
APPROVED: \_\_\_\_\_  
 DATE: \_\_\_\_\_  
 JOHN J. HALEY, P.E.  
 REGISTERED ENGINEER NO. 40023  
 STATE OF FLORIDA

SCALE	PROJECT NUMBER	1
1" = 10'	20-2714	5



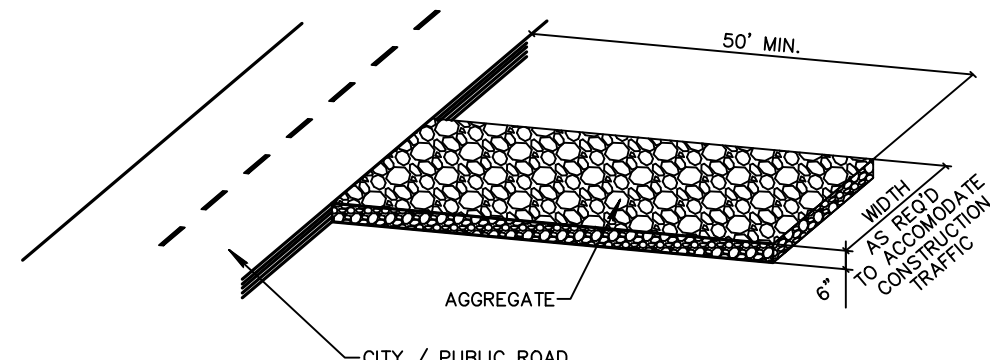
PROTECTION AROUND INLETS OR SIMILAR STRUCTURES  
N.T.S.

FIGURE 6



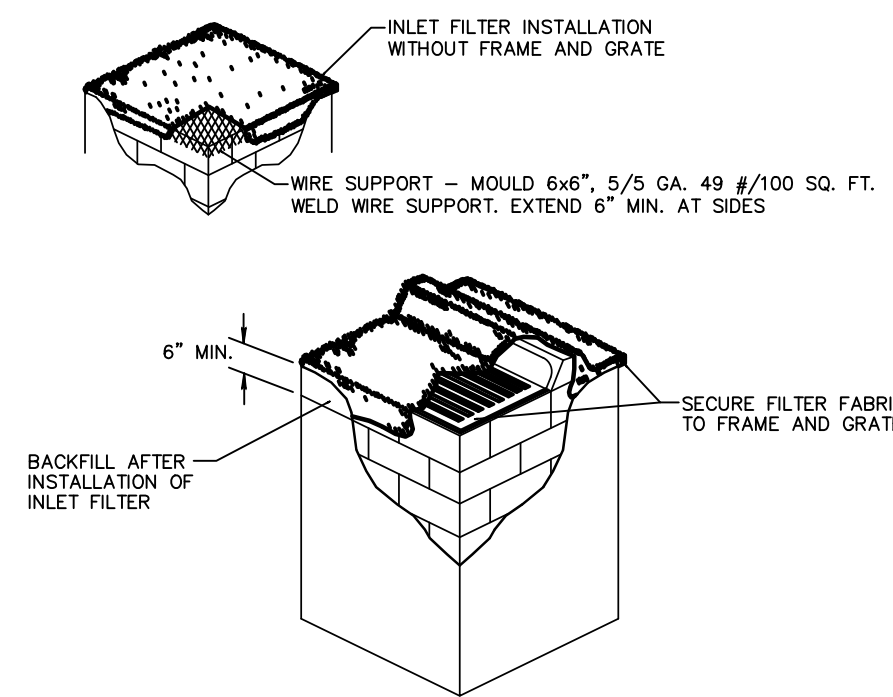
SOD ALONG CURB  
AND AROUND INLET  
N.T.S.

FIGURE 9



NOTE:  
A CONSTRUCTION ENTRANCE SHALL BE CONSTRUCTED AND CONTAIN AN AGGREGATE LAYER (FOOT AGGREGATE NO.1), AT LEAST 6-INCHES THICK. IT MUST EXTEND TO THE WIDTH OF THE VEHICULAR INGRESS AND EGRESS AREA.

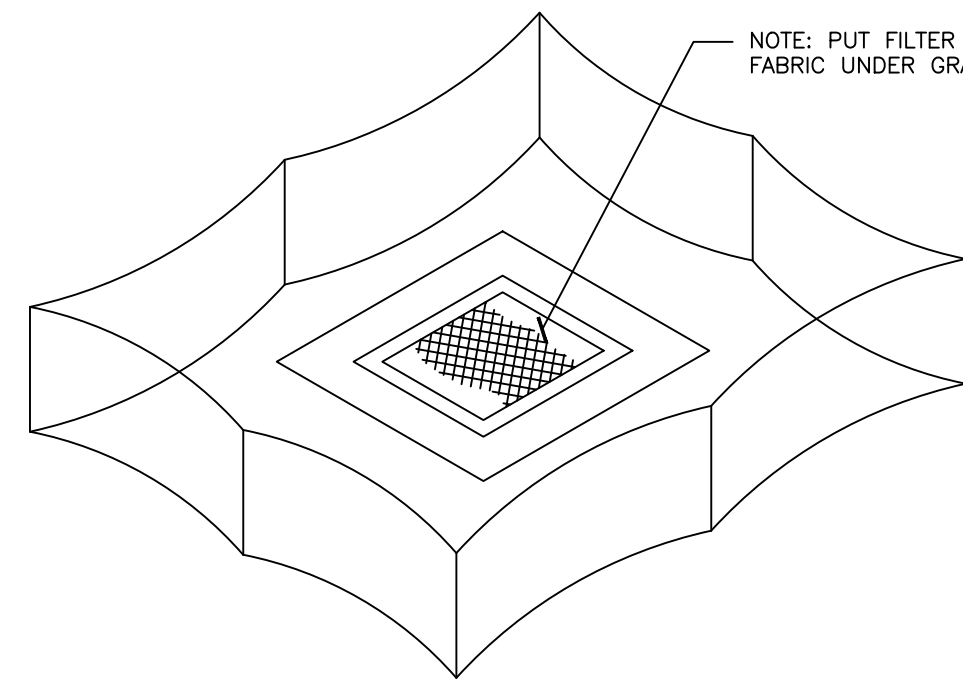
STABILIZED CONSTRUCTION ENTRANCE DETAIL D9.1C



NOTES:  
1. CONTRACTOR IS TO CLEAN INLET FILTER AFTER EVERY STORM.  
2. CONTRACTOR TO REMOVE FABRIC JUST PRIOR TO PAVING.  
A SEDIMENT TRAP WILL BE EXCAVATED BEHIND THE CURB AT THE INLET. THE BASIN SHALL BE AT LEAST 12 TO 14 INCHES IN DEPTH, APPROXIMATELY 36 INCHES IN WIDTH, AND APPROXIMATELY 7 TO 10 FEET IN LENGTH PARALLEL TO THE CURB.  
STORM WATER WILL REACH THE SEDIMENT TRAP VIA CURB CUTS ADJACENT TO EACH SIDE OF THE INLET STRUCTURE. THESE OPENINGS SHALL BE AT LEAST 12 INCHES IN LENGTH. STORM WATER MAY ALSO REACH THE BASIN VIA OVERLAND FLOW LAND AREA BEHIND THE CURB. THE CURB CUTS SHALL BE REPAIRED WHEN THE SEDIMENT TRAP IS REMOVED.

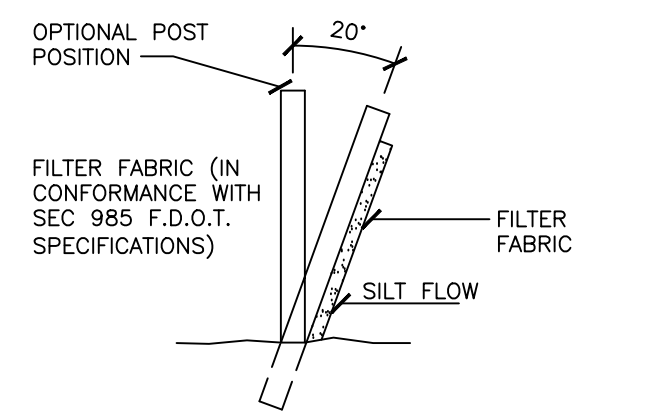
INLET FILTER DETAIL D 8.1

EROSION CONTROL NOTES DETAIL D9.1



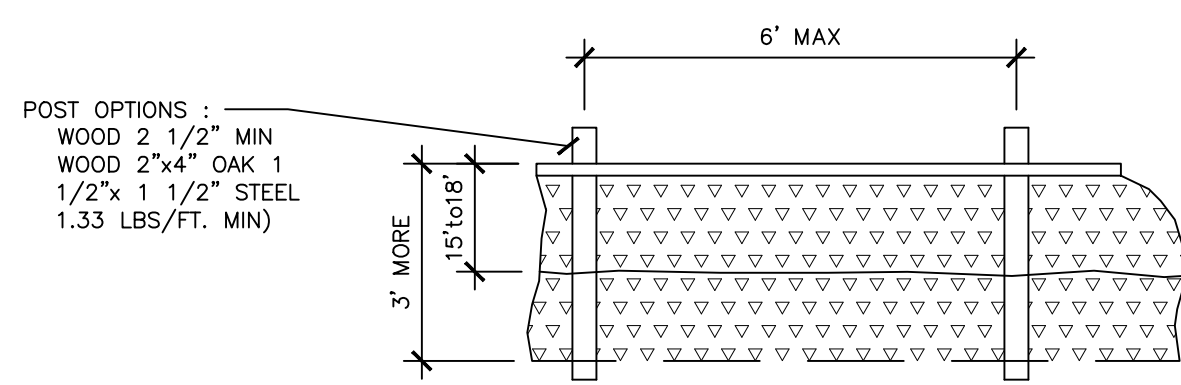
STAKED SILK BARRIER OR SILT FENCE  
PROTECTION AROUND DITCH BOTTOM  
INLETS  
N.T.S.

FIGURE 7



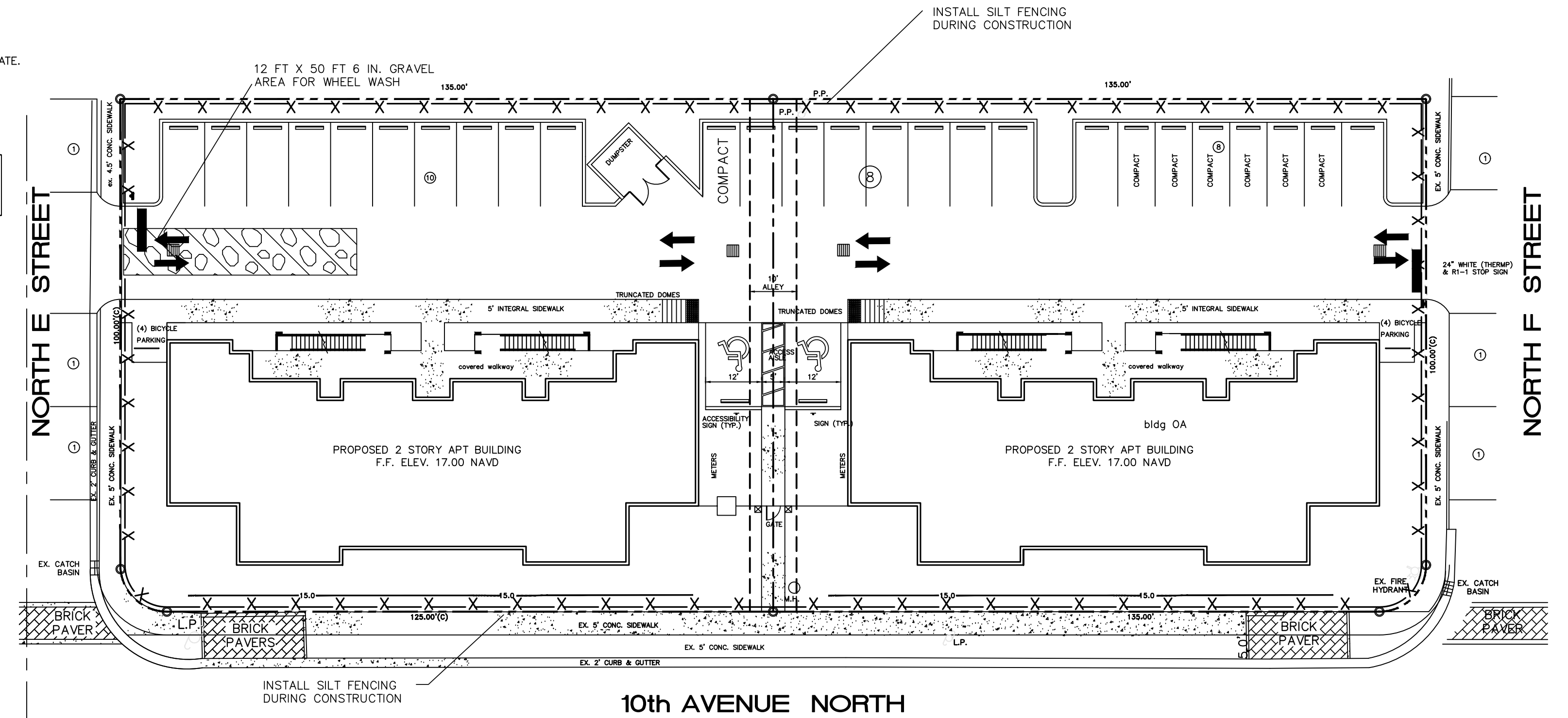
TYPICAL SILT FENCE  
N.T.S.

FIGURE 2



CONSTRUCTION ENTRANCE SECTION

BEST MANAGEMENT  
PRACTICES PLAN  
SCALE 1"=20'-0"



BEST MANAGEMENT PRACTICES

SECTION A GENERAL EROSION CONTROL

- A.1 General erosion control BMP's shall be employed to minimize soil erosion and potential lake slope cave-ins. While the various techniques required will be site and plan specific, they should be employed as soon as possible during construction activities.
- A.2 Cleared site development areas not continually scheduled for construction activities shall be covered with hay or overseeded and periodically watered sufficient to stabilize the temporary groundcover.
- A.3 Slopes of banks retention/detention ponds shall be constructed not steeper than 4H:1V from top of bank to two feet below normal water level as shown in Figure 5.
- A.4 All grass slopes constructed steeper than 4H:1V shall be sodded as soon as practical after their construction as shown in Figure 8.
- A.5 Sod shall be placed for a 3-foot wide strip adjoining all curbing and around all inlets as shown in Figure 9. Sod shall be placed before silt barriers, shown in Figure 6, are removed.
- A.6 Where required to prevent erosion from sheet flow across bare ground from entering a lake or swale, a temporary sediment sump shall be constructed as shown in Figure 10. The temporary sediment sump shall remain in place until vegetation is established on the ground draining to the sump.

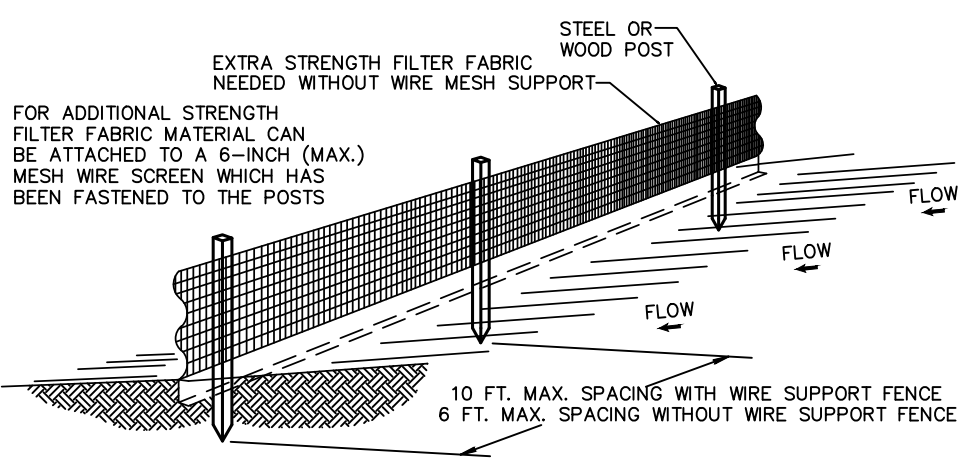
SECTION B PROTECTION OF SURFACE WATER QUALITY DURING AND AFTER CONSTRUCTION

- B.1 Surface water quality shall be maintained by employing the following BMP's in the construction planning and construction of all improvements.
- B.2 Where practical, stormwater shall be conveyed by swales. Swales shall be constructed as shown in Figure 5.
- B.3 Erosion control measures shall be employed to minimize turbidity of surface waters located downstream of any construction activity. While the various measures required will be site specific, they shall be employed as needed in accordance with the following:
  - a. In general erosion shall be controlled at the furthest practical upstream location.
  - b. Stormwater inlets shall be protected during construction as shown in Figures 6 and 7. Protection measures shall be employed as soon as practical during the various stages of inlet construction. Silt barriers shall remain in place until sodding around inlets is complete.

- B.4 Heavy construction equipment parking and maintenance areas shall be designed to prevent oil, grease and lubricants from entering site drainage features in cluding stormwater collection and treatment systems. Contractors shall provide broad dikes, hay bales or silt screens around, and sediment sumps within, such areas as required to contain spills of oil, grease or lubricants. Contractors shall have available, and shall use absorbent filter pads to clean up spills as soon as possible after occurrence.
- B.5 Silt barriers, any silt which accumulates behind the barriers, and any fill used to anchor the barriers shall be removed promptly after the end of the maintenance period specified for the barriers.

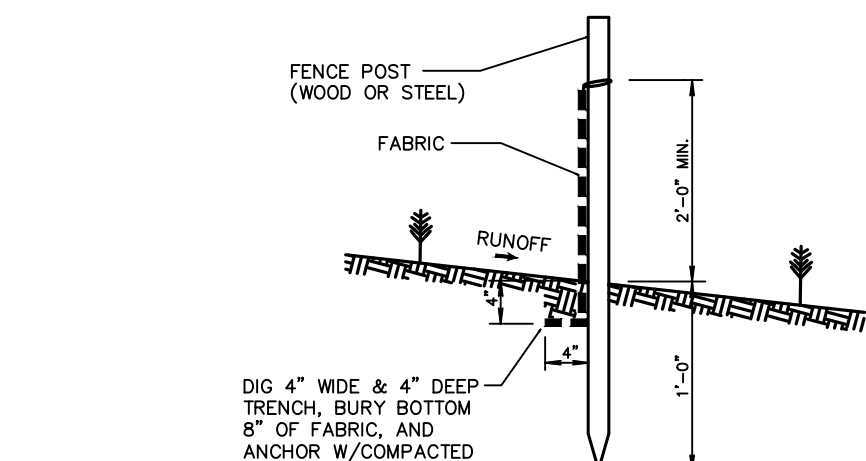
SECTION C CONTROL OF WIND EROSION

- C.1 Wind erosion shall be controlled by employing the following methods as necessary and appropriate:
  - a. Bare earth areas shall be watered during construction as necessary to minimize the transport of fugitive dust. It may be necessary to limit construction vehicle speed if bare earth has not been effectively watered. In no case shall fugitive dust be allowed to leave the site under construction.
  - b. As soon as practical after completion of construction, bare earth areas shall be vegetated.
  - c. At any time both during and after site construction that watering and/or vegetation are not effective in controlling wind erosion and/or transport of fugitive dust, other methods as are necessary for such control shall be employed. These methods may include erection of dust control fences. If required, dust control fences shall be constructed in accordance with the detail for a silt fence shown in Figure 2, except the minimum height shall be 4 feet.



NOTES:  
1. THE HEIGHT OF A SILT FENCE SHALL NOT EXCEED 36 INCHES (90 CM).  
2. THE FILTER FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL OUT TO THE LENGTH OF THE BARRIER TO AVOID THE USE OF JOINTS.  
3. POSTS SHALL BE SPACED A MAXIMUM OF 10 FEET (3 M) APART AT THE BARRIER LOCATION AND DRIVEN SECURELY INTO THE GROUND A MINIMUM OF 12 INCHES (30 CM). WHEN EXTRA STRENGTH FABRIC IS USED WITHOUT THE WIRE SUPPORT FENCE, POST SPACING SHALL NOT EXCEED 6 FEET (1.8 M).  
4. A TRENCH SHALL BE EXCAVATED APPROXIMATELY 4 INCHES (10 CM) WIDE AND 4 INCHES (10 CM) DEEP ALONG THE LINE OF POSTS AND UPSLOPE FROM THE BARRIER.  
5. WHEN STANDARD STRENGTH FILTER FABRIC IS USED, A WIRE MESH SUPPORT FENCE SHALL BE FASTENED SECURELY TO THE UPSLOPE USING HEAVY DUTY WIRE STAPLES AT LEAST 1 INCH (25 MM) LONG, TIE WIRES, OR HOG RINGS. THE WIRE SHALL EXTEND INTO THE TRENCH A MINIMUM OF 2 INCHES (5 CM) AND SHALL NOT EXTEND MORE THAN 36 INCHES (90 CM) ABOVE THE ORIGINAL GROUND SURFACE.  
6. THE STANDARD STRENGTH FILTER FABRIC SHALL BE STAPLED OR WIRED TO THE FENCE, AND 8 INCHES (20 CM) OF THE FABRIC SHALL BE EXTENDED INTO THE TRENCH. THE FABRIC SHALL NOT EXTEND MORE THAN 36 INCHES (90 CM) ABOVE THE ORIGINAL GROUND SURFACE.  
7. THE TRENCH SHALL BE BACKFILLED AND THE SOIL COMPACTED OVER THE FILTER FABRIC.  
8. ALL PROJECTS REQUIRE SUBMITTAL OF POLLUTION PREVENTION PLAN (PPP).  
9. ALL PROJECTS 1 AC. OR MORE MUST SUBMIT NOTICE OF INTENT (NOI) TO DEP.

SILT FENCE INSTALLATION DETAIL D 9.1a



NOTES:  
1. PLACE THE END POST OF THE SECOND FENCE INSIDE THE END POST OF THE FIRST FENCE.  
2. ROTATE BOTH POSTS AT LEAST 90 DEGREES IN A CLOCKWISE DIRECTION TO CREATE A TIGHT SEAL WITH THE FABRIC MATERIAL.  
3. DRIVE BOTH POSTS ABOUT 18 INCHES INTO THE GROUND AND BURY FLAP.

ATTACHING TWO SILT FENCES  
NOT TO SCALE

SILT FENCE INSTALLATION DETAIL D 9.1b

Designed	J.J.H.
Drawn	E.L.H.
Checked	J.J.H.

NO.	DATE	REVISION	BY

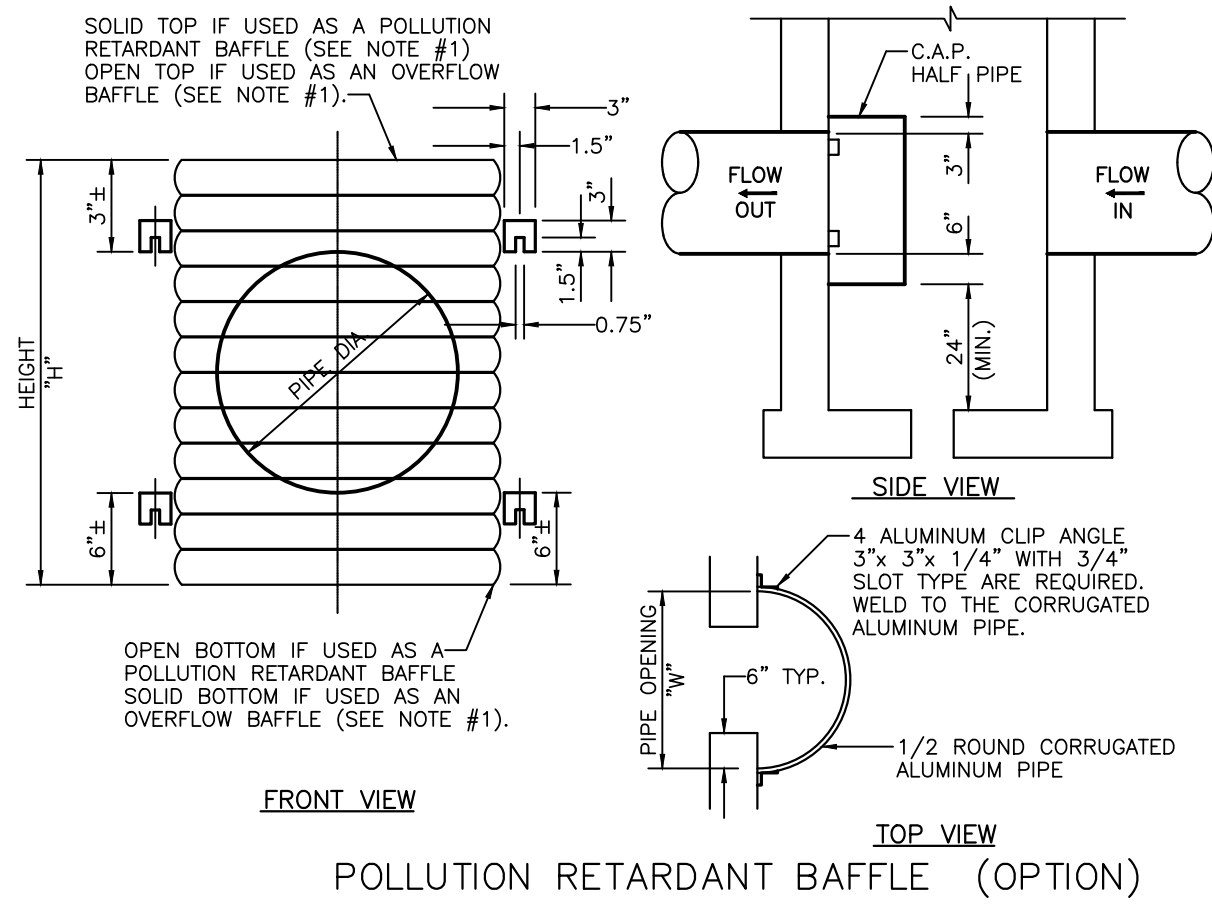
**HALEY ENGINEERING, INC.**  
CIVIL ENGINEERING SERVICES.  
1680 SE 4th Street - Deerfield Beach, Fla. 33441  
Phone: (954) 260-6194  
Email: johnjhaley@comcast.net  
F.B.P.E. Authorization No. 9463

**APARTMENT BUILDINGS**  
10TH AVENUE NORTH  
LAKE WORTH, FLORIDA

**BEST MANAGEMENT PRACTICES DETAILS**

APPROVED: \_\_\_\_\_  
DATE: \_\_\_\_\_  
JOHN J. HALEY, P.E.  
REGISTERED ENGINEER NO. 40023  
STATE OF FLORIDA

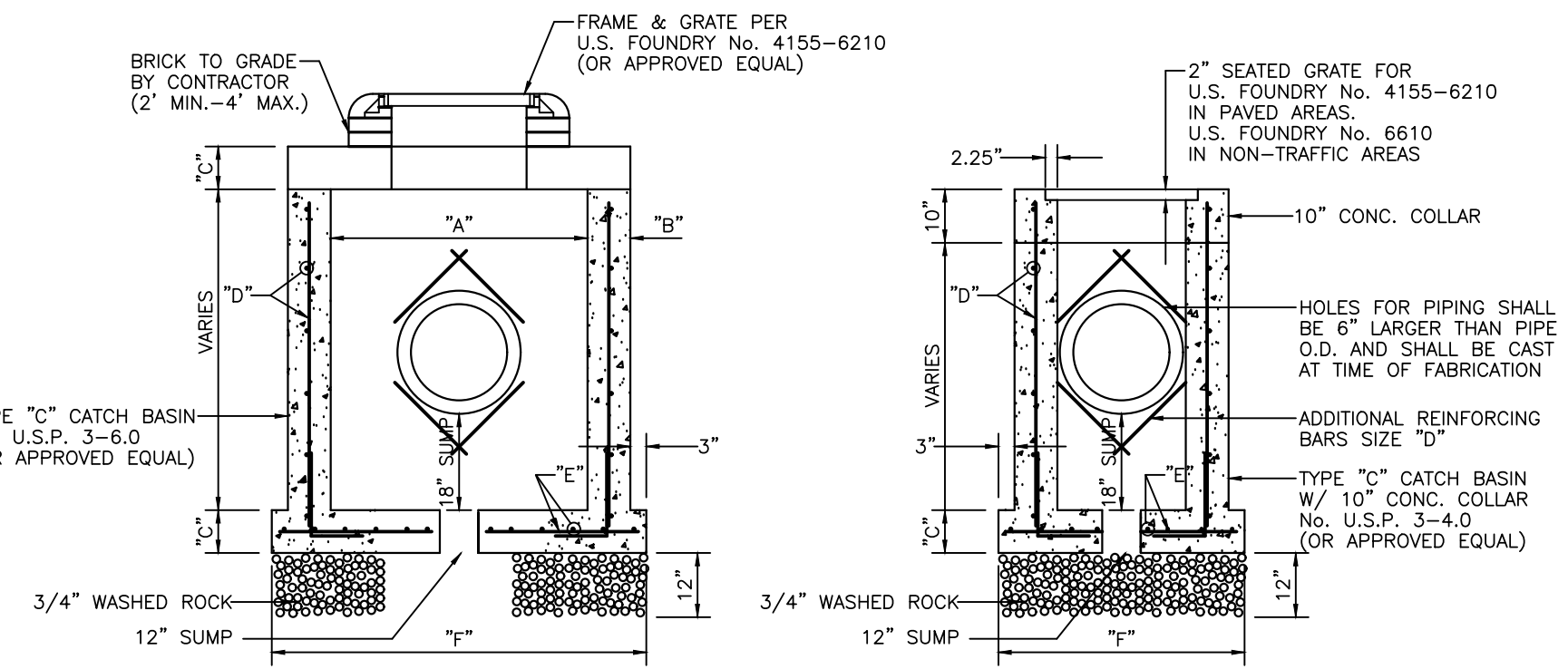
SCALE	PROJECT NUMBER	2
N.T.S.	20-2714	5



**STANDARD DIMENSIONS**

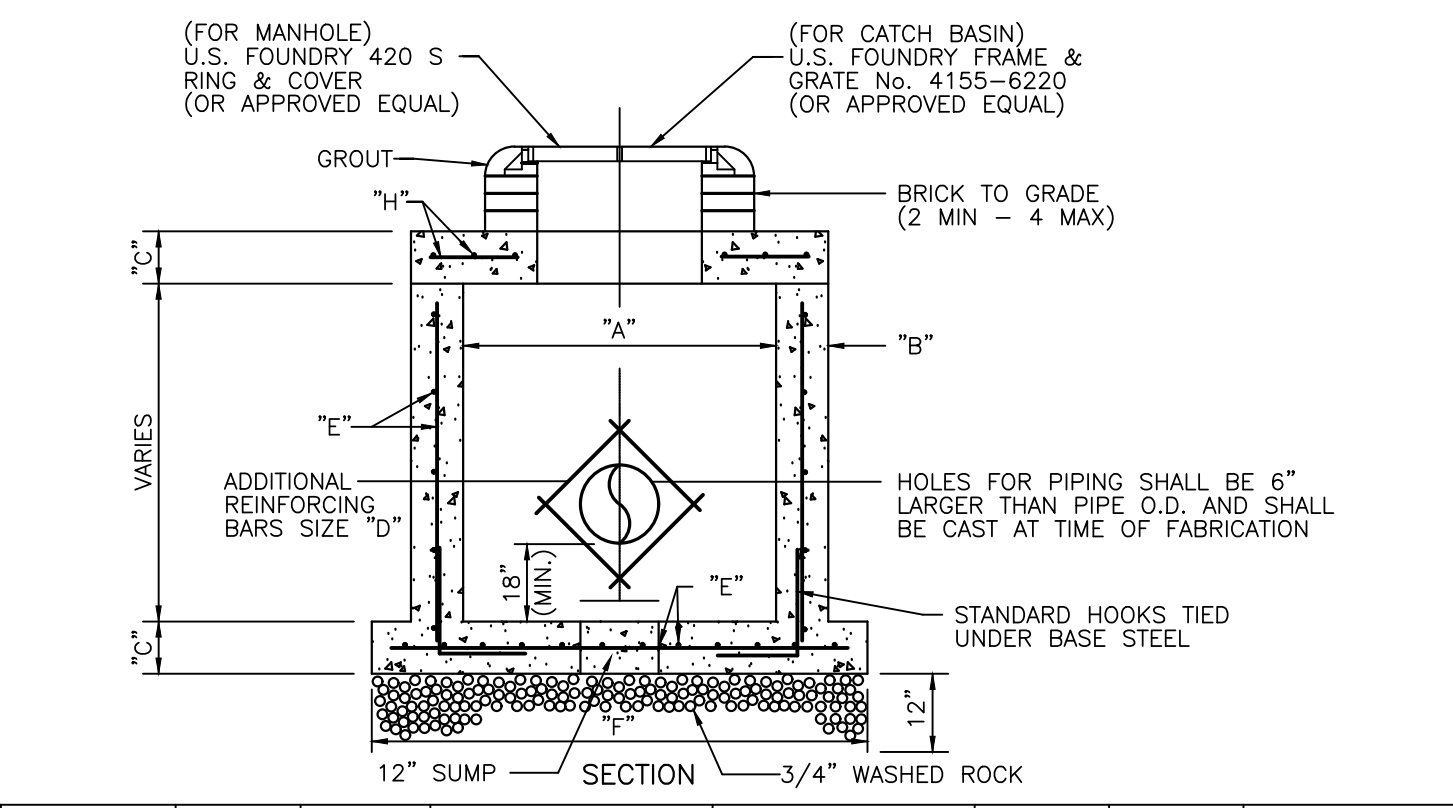
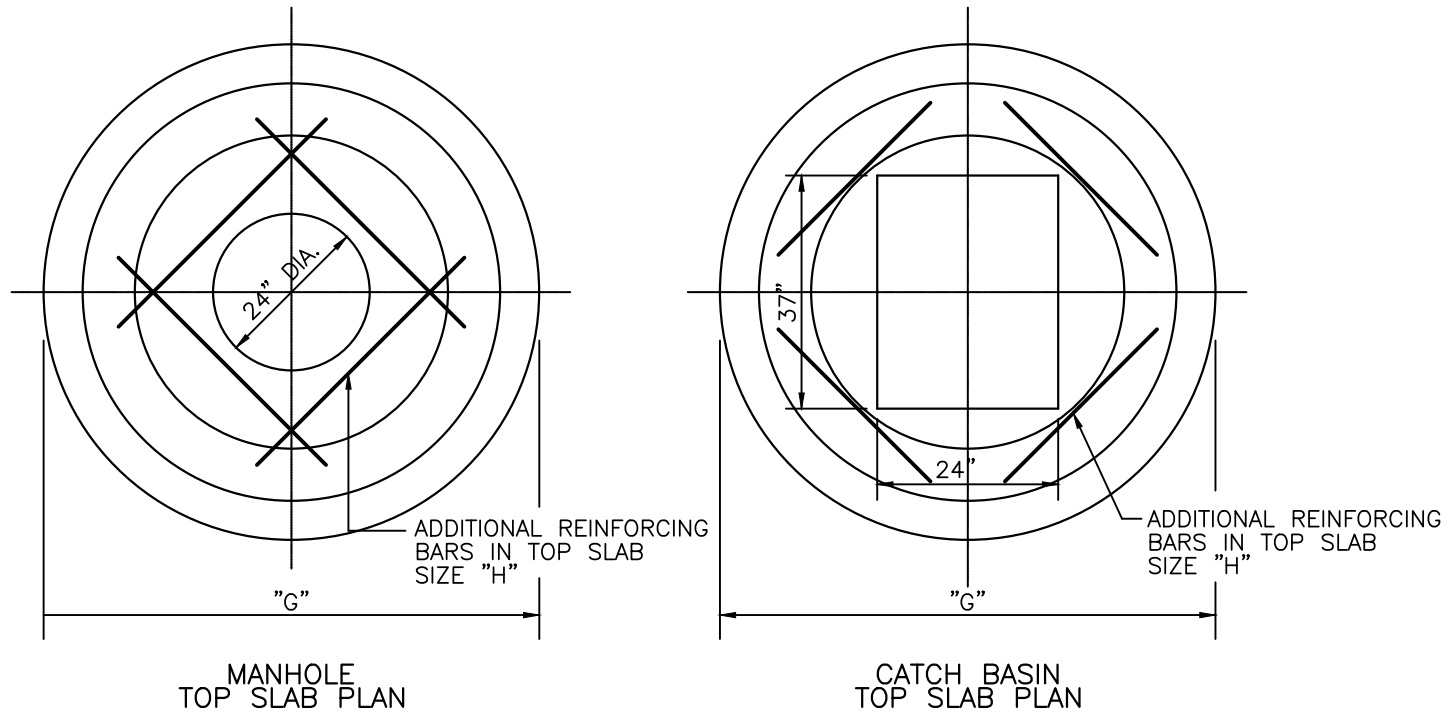
PIPE DIA. (INCHES)	W (INCHES)	T (GAUGE)	H (INCHES)
18"	30"	16	27"
24"	36"	16	33"
30"	42"	14	39"
36"	48"	14	45"
42"	54"	14	51"
48"	60"	14	57"
54"	66"	14	63"

- NOTES:**
1. ALUMINUM SHEET OF SAME THICKNESS (GAGE) AS PIPE SHALL BE WELDED TO CLOSE OPENING.
  2. BAFFLE SHALL BE AS MANUFACTURED BY SOUTHERN CULVERT OR ENGINEER'S APPROVED EQUAL.
  3. NEOPRENE GASKET (3/8" x 2") SHALL BE INSTALLED AT ALL BAFFLES.
  4. POLLUTION RETARDANT BAFFLE TO BE ATTACHED TO STRUCTURE W/ 3/8" x 2" STAINLESS STEEL BOLTS.
  5. MINIMUM ELEVATION ON POLLUTION RETARDANT BAFFLE TO BE 2' BELOW CONTROL ELEVATION.



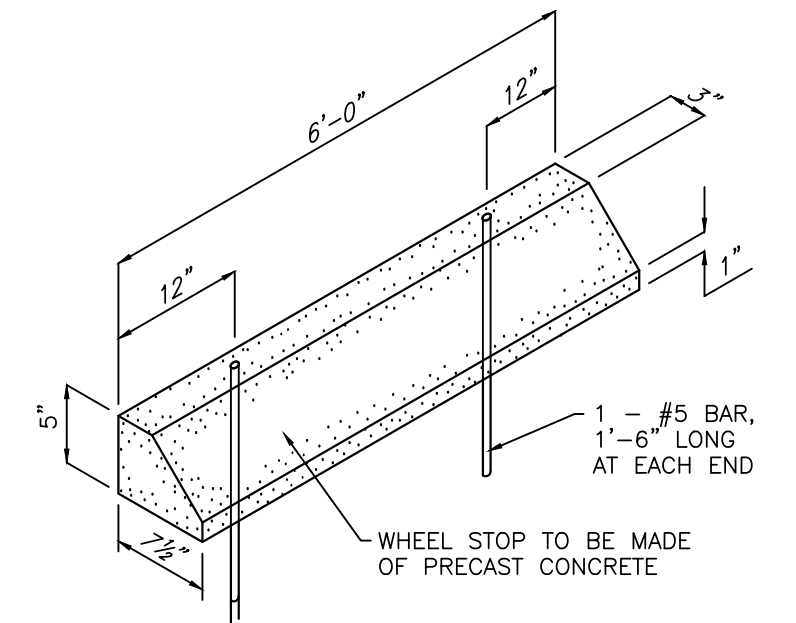
TYPE	"A"	"B"	"C"	"D"	"E"	"F"
INLET	24" x 37"	8"	8"	#4 @ 12" C.C.E.W.	#4 @ 12" C.C.E.W.	46" x 59"
INLET*	42" x 48"	6"	8"	#4 @ 12" C.C.E.W.	#4 @ 9" C.C.E.W.	60" x 66"

PRECAST INLET TYPE "C" (OPTION)  
\* USE U.S. FOUNDRY GRATE No. 6626 FOR F.D.O.T. INLET (OR APPROVED EQUAL)

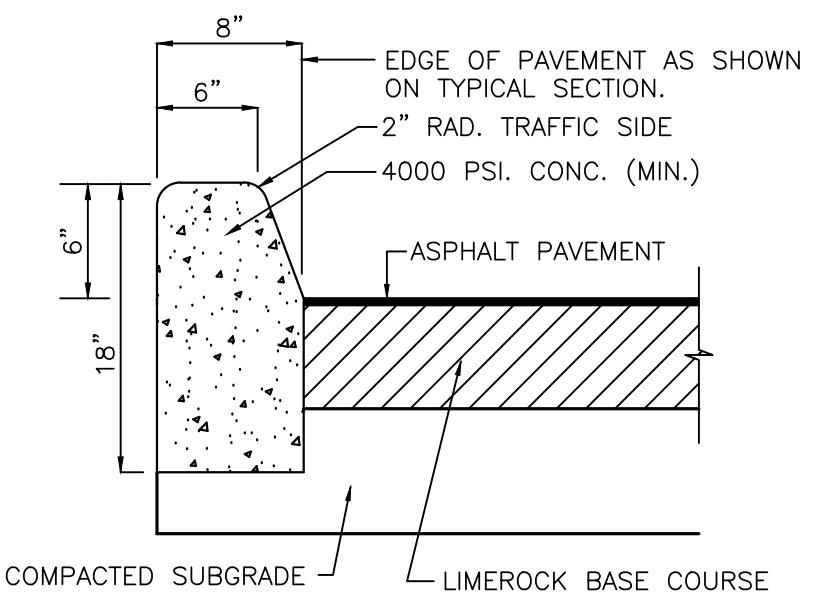


TYPE	"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"
C-4/M-4	4'-0" φ	8"	8"	#4 @ 12" C.C.E.W.	#4 @ 12" C.C.E.W.	6'-4" φ	5'-4" φ	#4 @ 6" C.C.E.W.
C-5/M-5	5'-0" φ	8"	8"	#5 @ 12" C.C.E.W.	#5 @ 12" C.C.E.W.	7'-4" φ	6'-4" φ	#5 @ 8" C.C.E.W.
C-6/M-6	6'-0" φ	8"	8"	#5 @ 6" C.C.E.W.	#5 @ 6" C.C.E.W.	8'-4" φ	7'-4" φ	#5 @ 6" C.C.E.W.

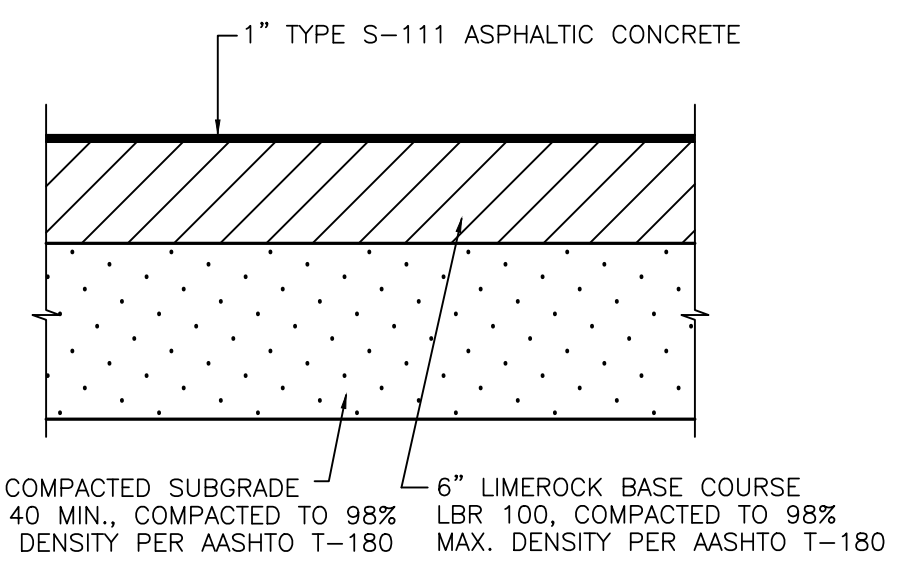
PRECAST CATCH BASIN AND MANHOLE



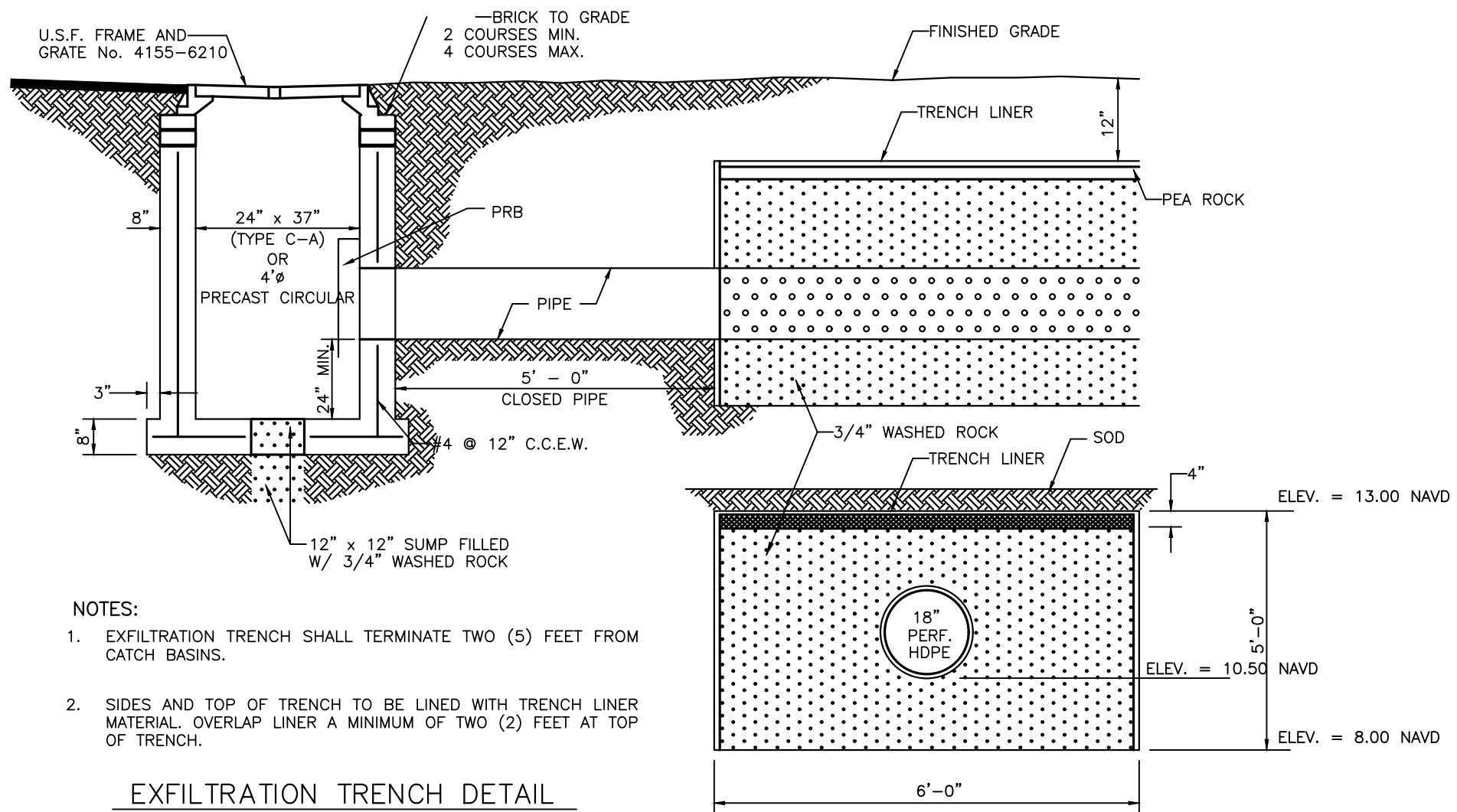
WHEELSTOP



TYPE "D" CONC. CURB



PAVING SECTION A-A



- NOTES:**
1. EXFILTRATION TRENCH SHALL TERMINATE TWO (5) FEET FROM CATCH BASINS.
  2. SIDES AND TOP OF TRENCH TO BE LINED WITH TRENCH LINER MATERIAL. OVERLAP LINER A MINIMUM OF TWO (2) FEET AT TOP OF TRENCH.

EXFILTRATION TRENCH DETAIL

Designed	J.J.H.				
Drawn	E.L.H.				
Checked	J.J.H.				
NO.	DATE	REVISION	BY		

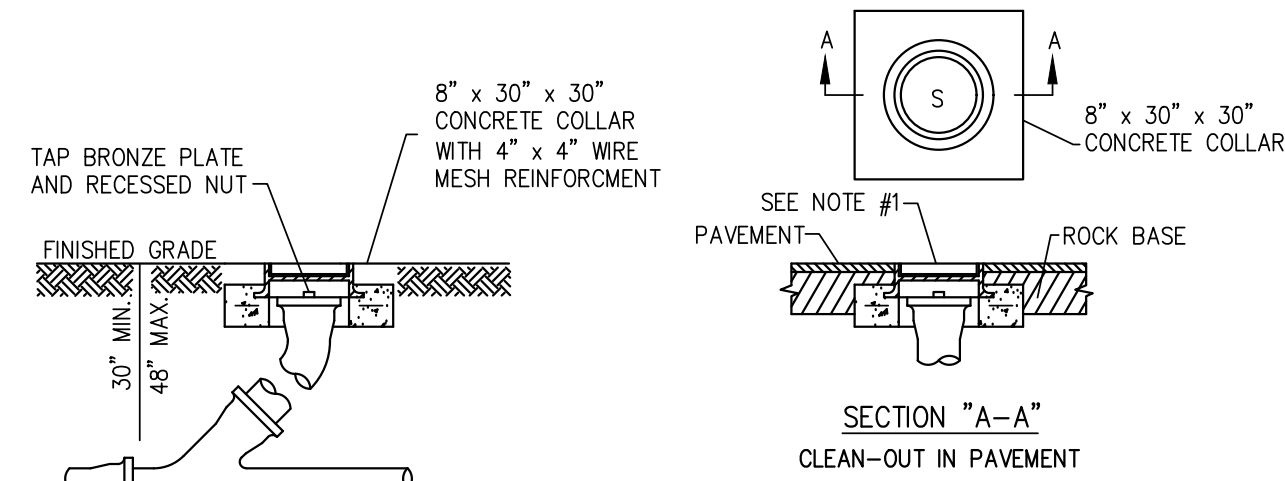
**HALEY ENGINEERING, INC.**  
CIVIL ENGINEERING SERVICES.  
1680 SE 4th Street - Deerfield Beach, Fla. 33441  
Phone: (954) 260-6194  
Email: johnjhaley@comcast.net  
F.B.P.E. Authorization No. 9463

**APARTMENT BUILDINGS**  
10TH AVENUE NORTH  
LAKE WORTH, FLORIDA

**PAVING AND DRAINAGE DETAILS**

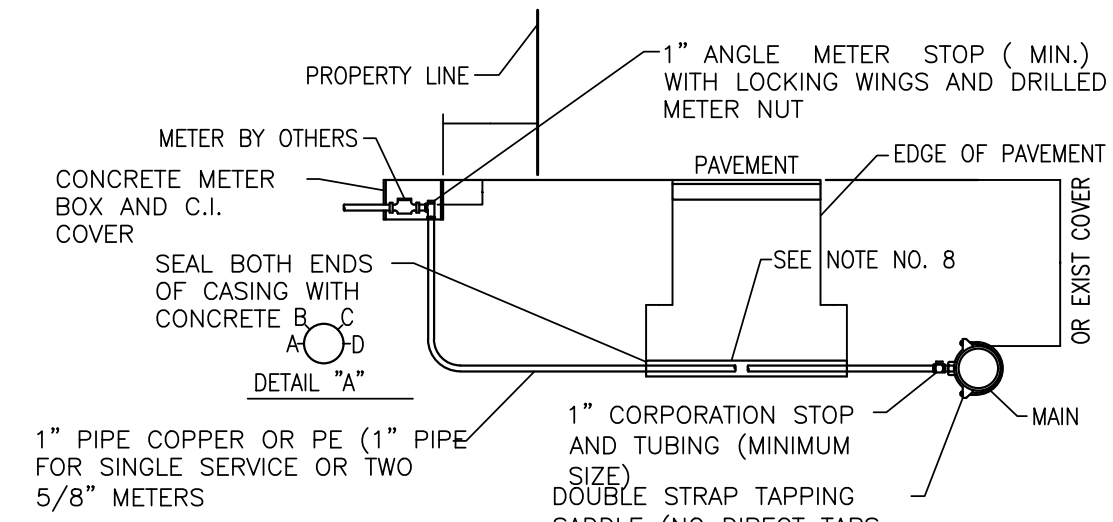
APPROVED: \_\_\_\_\_  
DATE: \_\_\_\_\_  
JOHN J. HALEY, P.E.  
REGISTERED ENGINEER NO. 40023  
STATE OF FLORIDA

SCALE	PROJECT NUMBER	3
N.T.S.	20-2714	
		5



- NOTES:
1. U.S. FOUNDRY NO. 7621 REVERSIBLE HANDHOLE RING AND COVER OR APPROVED EQUAL SHALL BE USED, COVER TO BE CAST WITH "S" IN THE CENTER.
  2. CLEAN OUT REQUIRED ON ALL SERVICES AT PROPERTY LINE.
  3. STANDARD WYE SHALL BE USED AT CLEAN OUT.
  4. ALL PIPE AND CLENOUT SHALL BE 6" MIN.

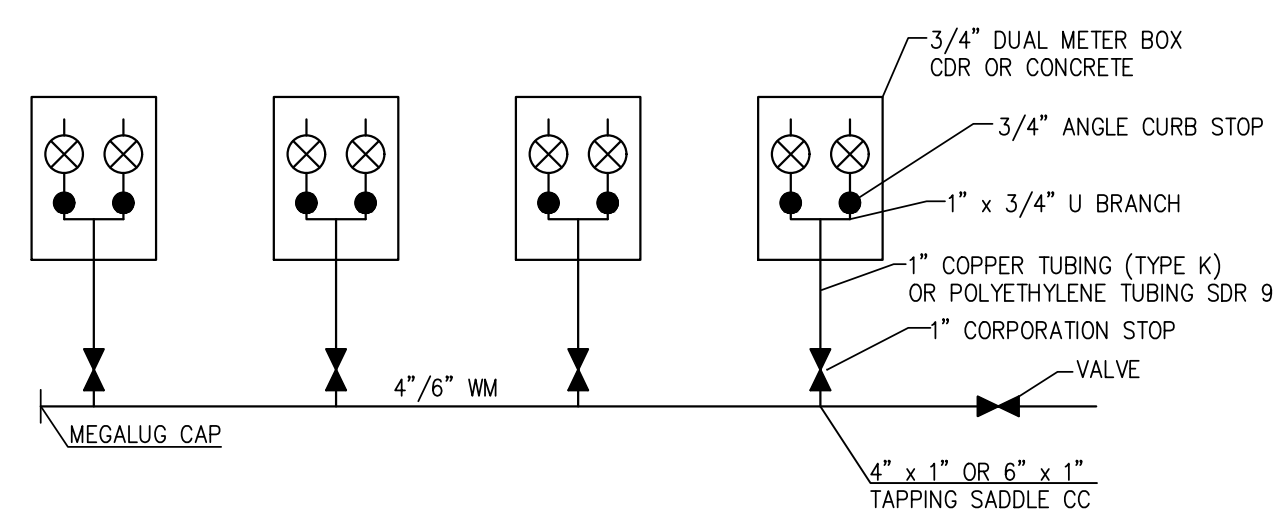
CLEANOUT DETAIL



- NOTES:
1. SUCCESSIVE TAPS INTO THE WATER MAIN SHALL BE SPACED A MINIMUM OF 18" OFFSET AND AT 45° FROM THE CENTERLINE (ON MAINS WITH GREATER THAN 30" OF COVER. SEE DETAIL "A").
  2. WHERE NO SIDEWALK EXISTS, METER BOXES SHALL BE SET TO CONFORM TO FINISH GRADE..
  3. COPPER TUBING SHALL BE TYPE "K" WITH COMPRESSION FITTINGS. POLYETHYLENE TUBING SHALL BE SDR 9, COPPER SIZE TUBING.
  4. ROTATE THE CORPORATION STOP SO THAT THE OPERATING NUT IS ACTUATED FROM THE VERTICAL POSITION RATHER THAN THE HORIZONTAL.
  5. COPPER SERVICE LINES SHALL BE CONTINUOUS FROM CORPORATION STOP TO ANGLE METER STOP WITH NO FITTINGS IN BETWEEN.
  6. TAPPING SADDLES AND CORPORATION STOPS SHALL HAVE CC THREADS.
  7. SERVICE CASING SHALL NOT BE INSTALLED BY WATER JETTING UNDER ROADWAY.
  8. GALVANIZED CASING REQUIRED FOR JACK AND BORE IN MOST CASES, SCHEDULE 40 PVC MAY BE USED WITH THE APPROVAL OF THE ENGINEER. CASING SHOULD EXTEND SIX (6) FEET BEYOND EDGE OF PAVEMENT AND SIZED AS FOLLOWS  
A. 1" SERVICE USE 2" CASING  
B. 2" SERVICE USE 4" CASING
  9. METER BOX TO BE SET TWO FEET BEHIND PROPERTY LINE AND TWO FEET INSIDE SIDE PROPERTY LINE ON EITHER SIDE OF PROPERTY.
  10. PIPING LAYOUT SHOWN IS TYPICAL FOR 2" SERVICE.

TAPPING SADDLE 1" - JDM 402-CC  
MULLERS PARTS MATERIAL OR A. Y. McDONALD ONLY  
CORPORATION STOP  
CURB STOP  
ANGLE CURB STOP  
METER COUPLING - 3/4" OR 1"  
U-BRANCH CONNECTION - 1" x 3/4" x 6 1/2"

MULLER A. Y. McDONALD  
H-15008 XXX  
B-25170 XXX  
H-14265 XXX  
H-10890 XXX  
H-15365 XXX



MULTIPLE WATER SERVICES

WATER SERVICE FOR 1" OR 2" PIPE

Designed J.J.H.  
Drawn E.L.H.  
Checked J.J.H.

NO.	DATE	REVISION	BY

**HALEY ENGINEERING, INC.**  
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1680 SE 4th Street - Deerfield Beach, Fla. 33441  
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**APARTMENT BUILDINGS**  
**10TH AVENUE NORTH**  
**LAKE WORTH, FLORIDA**

**WATER AND**  
**SEWER DETAILS**

APPROVED: \_\_\_\_\_  
DATE: \_\_\_\_\_  
JOHN J. HALEY, P.E.  
REGISTERED ENGINEER NO. 40023  
STATE OF FLORIDA

SCALE \_\_\_\_\_  
PROJECT NUMBER \_\_\_\_\_  
N.T.S. \_\_\_\_\_  
20-2714

4  
5

**GENERAL NOTES**

**A. APPLICABLE CODES**

1. ALL CONSTRUCTION AND MATERIALS SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE CITY, COUNTY AND STATE.
2. CONSTRUCTION SAFETY - ALL CONSTRUCTION SHALL BE DONE IN A SAFE MANNER, SPECIFICALLY, THE RULES AND REGULATIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA), AND THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) SHALL BE STRICTLY OBSERVED.
3. THE CONTRACTOR SHALL BE REQUIRED TO COMPLY WITH CHAPTER 90-96 OF THE LAWS OF FLORIDA (THE TRENCH SAFETY ACT) AND OSHA STANDARD 29 C.F.R. SECTION 1926.650 SUBPART F. THE CONTRACTOR SHALL SUBMIT WITH HIS CONTRACT A COMPLETED, SIGNED, AND NOTARIZED COPY OF THE TRENCH SAFETY ACT COMPLIANCE STATEMENT. THE CONTRACTOR SHALL ALSO SUBMIT A SEPARATE COST ITEM IDENTIFYING THE COST OF COMPLIANCE WITH THE APPLICABLE TRENCH SAFETY CODES.
4. NO CONSTRUCTION MAY COMMENCE UNTIL THE APPROPRIATE PERMITS HAVE BEEN OBTAINED FROM ALL LOCAL, STATE AND FEDERAL AGENCIES.

**B. PRE CONSTRUCTION RESPONSIBILITIES**

1. UPON RECEIPT OF NOTICE OF AWARD, THE CONTRACTOR SHALL ARRANGE A PRE CONSTRUCTION CONFERENCE TO INCLUDE ALL INVOLVED GOVERNMENTAL AGENCIES, ALL AFFECTED UTILITY OWNERS, THE OWNER, THE ENGINEER AND HIMSELF.
2. THE CONTRACTOR SHALL OBTAIN AN EIGHTH STATE ONE CALL OF FLORIDA CERTIFICATION NUMBER AT LEAST 48 HOURS PRIOR TO PRIOR TO BEGINNING ANY EXCAVATION.
3. PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL VERIFY THE SIZE, LOCATION AND MATERIAL OF ALL EXISTING UTILITIES WITHIN THE AREA OF CONSTRUCTION.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO ANY EXISTING UTILITIES FOR WHICH HE FAILS TO REQUEST LOCATIONS FROM THE UTILITY OWNER. HE IS RESPONSIBLE AS WELL FOR DAMAGE TO ANY EXISTING UTILITIES WHICH ARE PROPERLY LOCATED.
5. IF UPON EXCAVATION, AN EXISTING UTILITY IS FOUND TO BE IN CONFLICT WITH THE PROPOSED CONSTRUCTION OR TO BE OF A SIZE OR MATERIAL DIFFERENT FROM THAT SHOWN ON THE PLANS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER.

**C. INSPECTIONS**

1. THE OWNER, ENGINEER, AND LOCAL PERMITTING AGENCIES MAY MAKE INSPECTIONS OF THE WORK AT ANY TIME. THE CONTRACTOR SHALL COOPERATE FULLY WITH ALL INSPECTIONS.

**D. SHOP DRAWINGS**

1. THE CONTRACTOR SHALL SUBMIT (5) FIVE SETS OF SHOP DRAWINGS FOR APPROVAL TO THE ENGINEER OF RECORD PRIOR TO FABRICATION OR CONSTRUCTION FOR ALL MATERIALS USED ON THE PROJECT. APPROVED SHOP DRAWINGS FROM THE ENGINEER SHALL THEN BE SUBMITTED BY THE CONTRACTOR TO THE COUNTY OR CITY FOR THEIR APPROVAL. NO CONSTRUCTION SHALL COMMENCE UNTIL THE APPROVED SHOP DRAWINGS HAVE BEEN OBTAINED BY THE CONTRACTOR FROM THE ENGINEER, CITY, AND/OR COUNTY.
2. INDIVIDUAL SHOP DRAWINGS FOR ALL PRECAST STRUCTURES ARE REQUIRED. CATALOG LITERATURE WILL NOT BE ACCEPTED FOR PRECAST STRUCTURES.

**E. TEMPORARY FACILITIES**

1. TEMPORARY UTILITIES - IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ARRANGE FOR OR SUPPLY TEMPORARY WATER SERVICE, SANITARY FACILITIES AND ELECTRICITY TO HIS EMPLOYEES AND SUBCONTRACTORS FOR THEIR USE DURING CONSTRUCTION.
2. TRAFFIC REGULATION - MAINTENANCE OF TRAFFIC IN THE PUBLIC RIGHT-OF-WAY SHALL BE IN ACCORDANCE WITH THE MUTCD AND THE FDOT STANDARD SPECIFICATIONS.
3. 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. NO HOLES SHALL BE LEFT OPEN OVERNIGHT.

**F. PROJECT SITE**

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

**G. PROJECT RECORD DOCUMENTS**

1. THE CONTRACTOR SHALL MAINTAIN ACCURATE AND COMPLETE RECORDS OF WORK ITEMS COMPLETED, INFORMATION RELATIVE TO MANHOLES, VALVES, SERVICES, FITTINGS, LENGTH OF PIPE, INVERT ELEVATIONS, FINISHED GRADE ELEVATIONS AND THE LIKE. SHALL BE ACCURATELY RECORDED BY THE CONTRACTOR. TOP ELEVATIONS @ 100' O.C.
2. PRIOR TO THE PLACEMENT OF ANY ASPHALT OR CONCRETE PAVEMENT, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER OF RECORD "AS-BUILT" PLANS SHOWING LIMEROCK BASE GRADES, ALL DRAINAGE, WATER, AND SEWER IMPROVEMENTS, PAVING OPERATIONS. SHALL NOT COMMENCE UNTIL THE ENGINEER HAS REVIEWED THE "AS-BUILTS" AND THE ENGINEER HAS APPROVED PAVING TO COMMENCE.
3. ALL REQUIRED DENSITY AND LBR TEST RESULTS FOR SUBGRADE SHALL BE PROVIDED TO THE ENGINEER PRIOR TO PLACING LIMEROCK BASE MATERIAL.
4. ALL REQUIRED DENSITY AND LBR TEST RESULTS FOR LIMEROCK SHALL BE PROVIDED TO THE ENGINEER PRIOR TO PLACING ASPHALT.
5. ALL "AS-BUILT" INFORMATION SUBMITTED TO THE ENGINEER SHALL BE SUFFICIENTLY ACCURATE, CLEAR AND LEGIBLE TO SATISFY THE ENGINEER AND ANY APPLICABLE REVIEWING AGENCY THAT THE INFORMATION PROVIDES A TRUE REPRESENTATION OF THE IMPROVEMENTS CONSTRUCTED.
6. UPON COMPLETION OF CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER OF RECORD FIVE COMPLETE SETS OF "AS-BUILT" CONSTRUCTION DRAWINGS (PRINTS) AND ONE MYLAR ORIGINAL. THESE DRAWINGS SHALL BE MARKED TO SHOW "AS-BUILT" CONSTRUCTION CHANGES AND DIMENSIONED LOCATIONS AND ELEVATIONS OF ALL IMPROVEMENTS AND SHALL BE SIGNED BY THE CONTRACTOR.
7. ALL "AS-BUILT" INFORMATION ON ELEVATIONS OF PAVING, DRAINAGE, WATER, AND SEWER SHALL BE CERTIFIED BY A REGISTERED LAND SURVEYOR.

8. IT IS THE INTENT THAT THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, DATED 1991 TOGETHER WITH SUPPLEMENTAL SPECIFICATIONS TO THE 1991 STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION DATED 1991 BE USED WHERE APPLICABLE FOR THE VARIOUS WORK, AND THAT WHERE SUCH WORDING THEREIN REFERS TO THE STATE OF FLORIDA AND ITS DEPARTMENT OF TRANSPORTATION AND PERSONNEL, SUCH WORDING IS INTENDED TO BE REPLACED WITH THE WORDING WHICH WOULD PROVIDE PROPER TERMINOLOGY; THEREBY MAKING SUCH STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AS THE STANDARD SPECIFICATIONS FOR THIS PROJECT. IF WITHIN A PARTICULAR SECTION, ANOTHER SECTION, ARTICLE OR PARAGRAPH IS REFERRED TO, IT SHALL BE PART OF THE STANDARD SPECIFICATIONS ALSO. THE CONTRACTOR SHALL ADHERE TO ALL LOCAL AND STATE LAWS, REGULATIONS AND BUILDING CODES WHICH HAVE JURISDICTION IN THE AREA.

**H. EARTHWORK AND COMPACTION**

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

**I. STORM DRAINAGE**

1. CONTRACTOR MAY UTILIZE ONE OF THE FOLLOWING MATERIALS.
  - a. ALUMINUM:
    - A. PIPE SHALL BE ALUMINUM, MANUFACTURED IN CONFORMANCE WITH ASTM B209.
    - B. PIPE SHALL BE SPIRAL RIB DRAINAGE PIPE WITH 3/4" BY 3/4" RIBS, APPROXIMATELY 7-1/2" ON CENTER. GAUGE THICKNESS SHALL MEET FDOT STANDARD 945-1.
    - C. PIPE COUPLING BANDS SHALL BE 1/2" WIDE STANDARD SPLIT BANDS OF THE SAME ALLOY AS THE PIPE AND MAY BE ONE GAUGE LIGHTER THAN THE PIPE.
    - D. POLYURETHANE OR OTHER SEALANT SHALL BE USED WITH COUPLING BANDS ON ALL NON-PERFORATED PIPE.
  2. REINFORCED CONCRETE PIPE (RCP):
    - A. BEDDING AND INITIAL BACKFILL OVER DRAINAGE PIPES SHALL BE SAND WITH NO ROCK LARGER THAN 1/2" DIAMETER.
    - B. BACKFILL MATERIAL UNDER PAVED AREAS SHALL BE COMPACTED TO 98% OF THE MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180.
    - C. BACKFILL MATERIAL UNDER AREAS NOT TO BE PAVED SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180.
    - D. CATCH BASINS SHALL BE PRECAST MINIMUM 3000 PSI CONCRETE AND GRADE 40 REINFORCED STEEL.
2. INSTALLATION:
  - A. PIPE SHALL BE PLACED ON STABLE GRANULAR MATERIAL FREE OF ROCK FORMATION OTHER FOREIGN FORMATIONS, AND CONSTRUCTED TO UNIFORM GRADE AND LINE.
  - B. BACKFILL MATERIAL SHALL BE WELL GRADED GRANULAR MATERIAL WELL TAMPED IN LAYERS NOT TO EXCEED SIX INCHES (6").
  - C. PROVIDE A MINIMUM PROTECTIVE COVER OF 18 INCHES OVER STORM SEWER AND AVOID UNNECESSARY CROSSING BY HEAVY CONSTRUCTION VEHICLES DURING CONSTRUCTION.
  - D. THE CONTRACTOR SHALL NOTIFY THE LOCAL WATER CONTROL DISTRICT AT LEAST 24 HOURS PRIOR TO THE START OF THE CONSTRUCTION AND INSPECTION.
3. HOPE DRAINAGE PIPE SHALL CONFORM TO AASHTO M294, STANDARD SPECIFICATION FOR CORRUGATED POLYETHYLENE PIPE, 12" TO 36" DIAMETER, SMOOTH LINED INSIDE WALLS.

**J. STORM DRAINAGE PRE-TREATMENT/EXFILTRATION SYSTEM**

- a. ANY CONFLICT WITH EXISTING OR PROPOSED UTILITIES SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER. ANY IMPERMEABLE MATERIAL ENCOUNTERED IN THE EXCAVATION FOR THE DRAIN FIELD SHALL BE REMOVED AS DIRECTED BY THE ENGINEER.
- b. THE TRENCH LINER SHALL BE TYPAR SPUN BONDED POLYPROPYLENE FILTER FABRIC AS MANUFACTURED BY THE DUPONT COMPANY, OR APPROVED EQUAL. IT SHALL BE USED ON THE SIDES AND TOP OF DRAIN FIELD DITCH. THE TOP SECTION OF THE MATERIALS SHALL BE LAPPED A MINIMUM OF 24 INCHES AND THE CONTRACTOR SHALL TAKE EXTREME CARE IN BACKFILLING TO AVOID BUNCHING OF THE FABRIC.
- c. PERFORATED PIPE WITHIN THE DRAIN FIELD SHALL HAVE 3/8" INCH PERFORATIONS 360° AROUND THE PIPE WITH APPROXIMATELY 120 PERFORATIONS PER FOOT OF PIPE.
- d. PERFORATED PIPE SHALL TERMINATE FIVE FEET (5') FROM THE DRAINAGE STRUCTURE. THE REMAINING FIVE FEET (5') SHALL BE NON-PERFORATED PIPE.
- e. PIPES SHALL TERMINATE TWO FEET (2') FROM THE END OF THE TRENCH OR CONNECT TO ADDITIONAL CATCH BASINS.

**K. PAVING**

1. ALL UNDERGROUND UTILITIES SHALL BE COMPLETED PRIOR TO THE CONSTRUCTION OF LIMEROCK BASE AND PRIOR TO PLACEMENT OF THE PAVEMENT.
  2. ALL EXISTING PAVEMENT CUT OR DAMAGED BY CONSTRUCTION SHALL BE PROPERLY RESTORED AT THE CONTRACTOR'S EXPENSE.
  3. WHERE PROPOSED PAVEMENT IS TO BE CONNECTED TO EXISTING PAVEMENT, THE EXISTING EDGE OF PAVEMENT SHALL BE SAW CUT.
  4. ALL STREET CORNER PAVEMENT RADII SHALL BE 25 FEET UNLESS OTHERWISE NOTED ON THE PLANS.
  5. UPON COMPLETION OF DRAINAGE IMPROVEMENTS AND LIMEROCK BASE CONSTRUCTION (AND BEFORE PLACING ASPHALT PAVEMENT), THE CONTRACTOR SHALL FURNISH THE ENGINEER OF RECORD AND THE CITY OF LAKE WORTH "AS-BUILT" PLANS FOR THESE IMPROVEMENTS, SHOWING THE LOCATIONS AND THE PERTINENT GRADES OF ALL DRAINAGE INSTALLATIONS AND THE FINISHED ROCK GRADES OF THE ROAD CROWN AND EDGE OF PAVEMENT AT 50 FEET INTERVALS. THESE "AS-BUILTS" SHALL BE APPROVED BY THE CITY PRIOR TO THE PLACEMENT OF ASPHALT.
- a. MATERIALS:
    1. BASE COURSE SHALL BE CRUSHED LIMEROCK MIAMI OOLITE WITH A MINIMUM OF 70% CARBONATES OF CALCIUM AND MAGNESIUM (60% FOR LOCAL STREETS AND PARKING AREAS) AND A MINIMUM LIMEROCK BEARING RATIO 100.
    2. PRIME COAT AND TACK COAT SHALL MEET F.D.O.T. STANDARDS.
    3. SURFACE COURSE SHALL BE EQUAL TO F.D.O.T. TYPE S-3 ASPHALT.
    4. REINFORCED CONCRETE SLABS SHALL BE CONSTRUCTED OF CLASS I CONCRETE WITH A MINIMUM STRENGTH OF 3,000 PSI AND SHALL BE REINFORCED WITH A 6" X 6" NO. 6 GAUGE WIRE MESH.
  - b. INSTALLATION:
    1. LIMEROCK BASE MATERIAL SHALL BE 6 INCHES THICK AND SHALL BE COMPACTED TO 98% OF THE MAXIMUM DENSITY AS DETERMINED BY AASHTO T80-C.
    2. LIMEROCK BASE MATERIAL SHALL BE PLACED IN MAXIMUM 6" LIFTS. BASES GREATER THAN 6" SHALL BE PLACED IN TWO OR MORE EQUAL LIFTS.
    3. ASPHALTIC CONCRETE SHALL BE A MINIMUM OF 1" THICK.

NOTE: LBR AND PROCTOR REPORTS TO BE PROVIDED FOR ALL SUBGRADE AND LIMEROCK BASE MATERIALS PRIOR TO SCHEDULING THE REQUIRED TESTING AND INSPECTIONS.

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

**d. TESTING:**

1. ALL SUBGRADE, LIMEROCK AND ASPHALT TESTS REQUIRED SHALL BE TAKEN AT THE DIRECTION OF THE ENGINEER AND/OR THE CITY OF LAKE WORTH.
2. DENSITY TESTS SHALL BE TAKEN BY AN INDEPENDENT TESTING LABORATORY, CERTIFIED BY THE STATE OF FLORIDA, AND TAKEN AS DIRECTED BY THE ENGINEER AND THE CITY OF LAKE WORTH.
3. ALL TESTING COSTS (PAVING) SHALL BE PAID FOR BY THE OWNER EXCEPT THOSE TESTS FAILING TO MEET THE SPECIFIED REQUIREMENTS, WHICH ARE TO BE PAID BY THE CONTRACTOR.

**PAVEMENT MARKING SPECIFICATIONS**

All Pavement markings to be installed per these typicals, plans and specifications, and as directed by the City Engineer and shall conform to the requirements of F.D.O.T. and the manual on uniform traffic control devices, (MUTCD).

**PERMANENT MARKINGS**

- Installation:
- All markings shall be installed by the extruded method.
  - Markings shall be free of weaves, bows, drips, drags, and other degrading items.
  - Chalk shall be used for all layout markings.

- Materials:
- All materials shall be alkyl or hydrocarbon thermoplastic meeting all FDOT specifications.

- Thickness:
- All markings shall be installed to yield 90 mils of material measured above the pavement surface.

- Spheres:
- Reflective glass spheres are to be applied to all stripes and markings per FDOT specifications.

- Alternate Material:
- STAYMARK marking tape, or equivalent may be used, as approved or directed by the City Engineer.

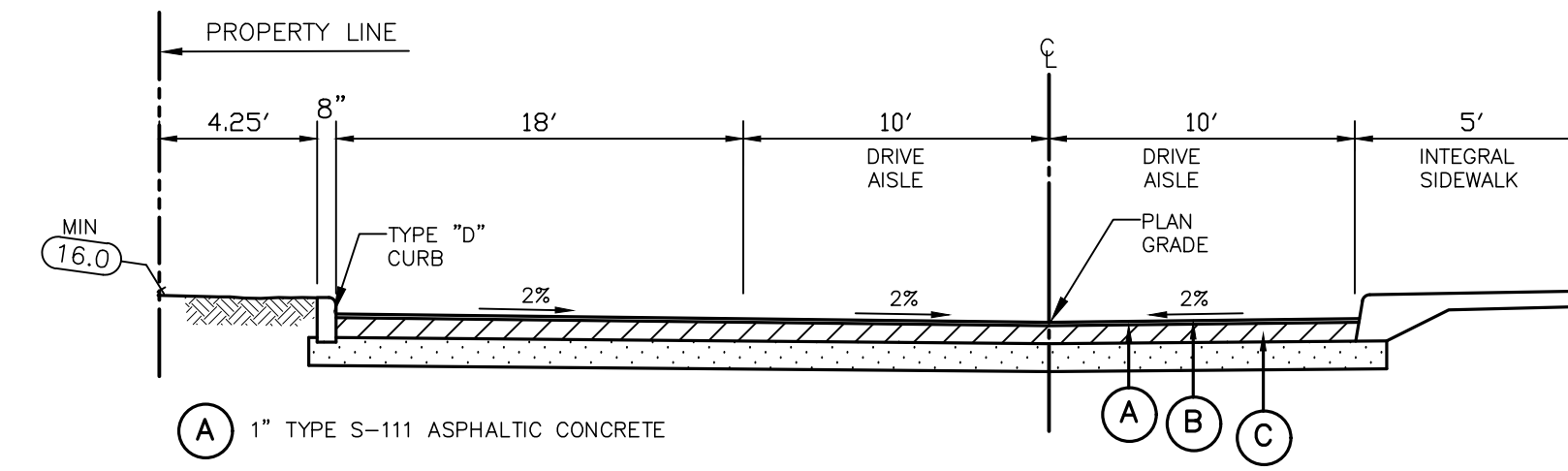
- Layout:
- Layout shall be made using marking chalk.
  - It is recommended that marking layout be inspected by the City Engineer prior to the placement of final markings.

**TEMPORARY MARKINGS**

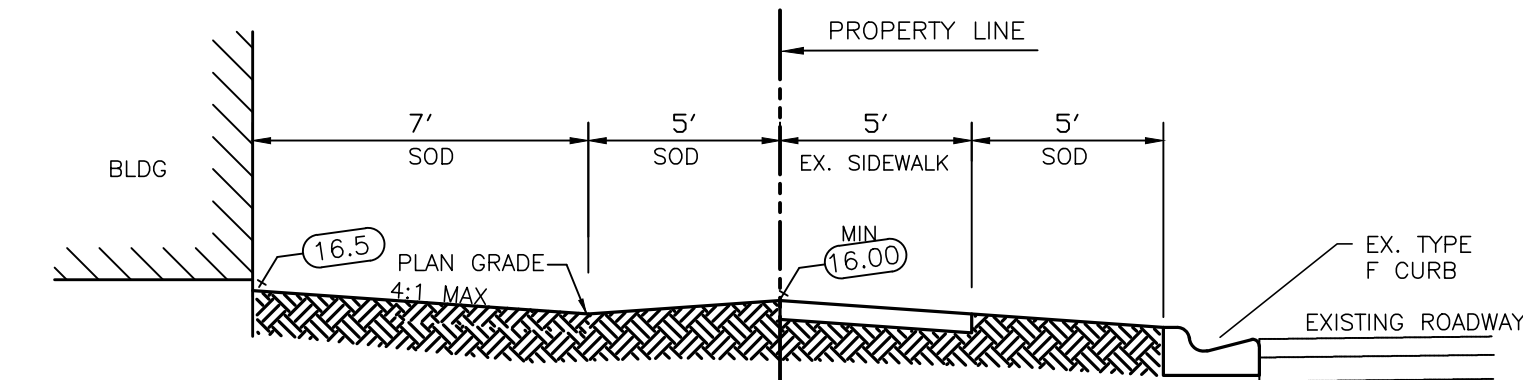
Temporary markings may be used only as specified in this section, or as approved or directed by the City Engineer.

- Final Pavement Surface:
- Only foil backed marking tape is allowed.
  - All tape shall be totally removed concurrent with permanent marking placement.

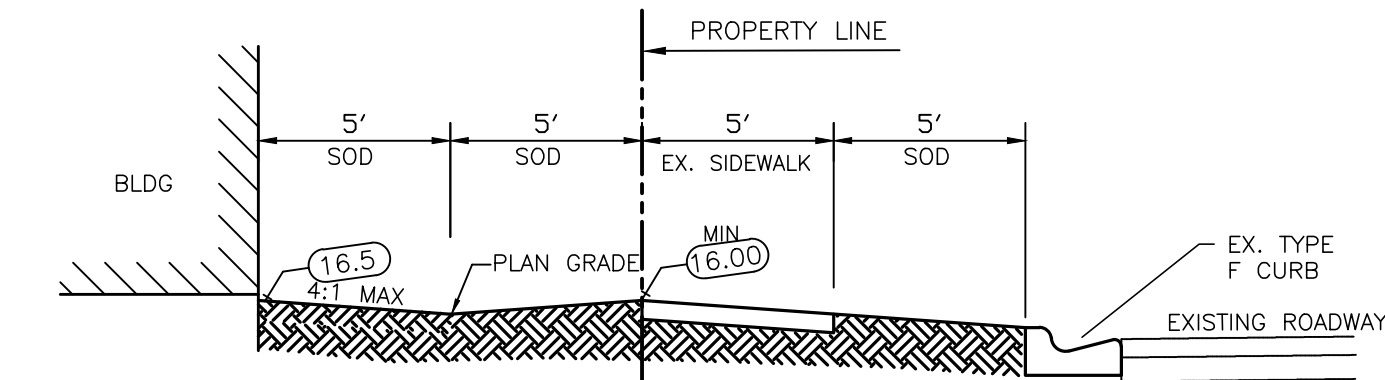
- Other Pavement Surfaces:
- Intermediate pavement surfaces may be marked with FDOT approved materials, designs, and specifications.



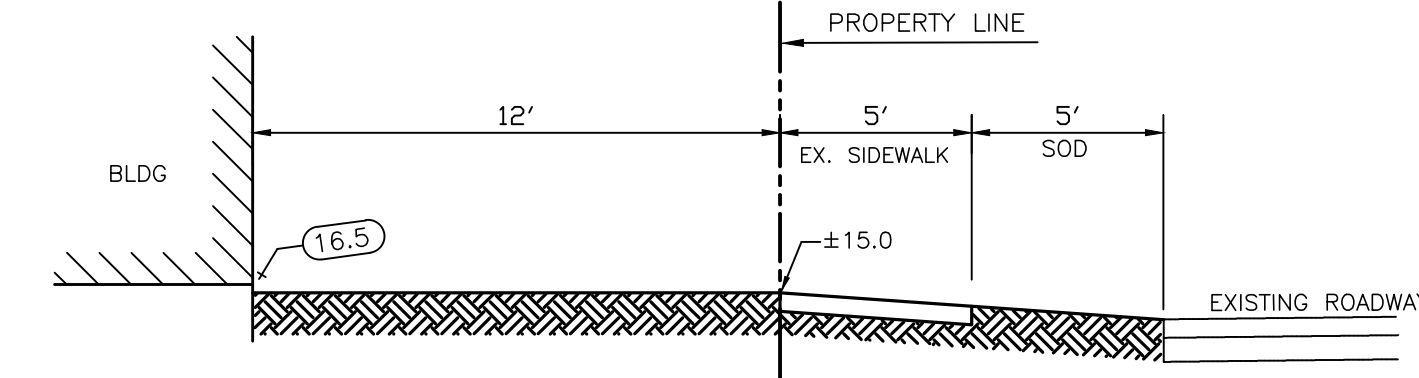
- (A) 1" TYPE S-111 ASPHALTIC CONCRETE
- (B) 6" LIMEROCK BASE COURSE LBR 100, COMPACTED TO 98% MAX. DENSITY PER AASHTO T-180
- (C) 12" COMPACTED SUBGRADE LBR 40 MIN., COMPACTED TO 98% MAX. DENSITY PER AASHTO T-180



**SECTION B-B**  
N.T.S.



**SECTION C-C**  
N.T.S.



**SECTION D-D**  
N.T.S.

Designed	J.J.H.				
Drawn	E.L.H.				
Checked	J.J.H.				
		NO.	DATE	REVISION	BY

**HALEY ENGINEERING, INC.**  
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F.B.P.E. Authorization No. 9463

**APARTMENT BUILDINGS**  
**10TH AVENUE NORTH**  
**LAKE WORTH, FLORIDA**

**NOTES AND SPECIFICATIONS**

APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_  
JOHN J. HALEY, P.E.  
REGISTERED ENGINEER NO. 40023  
STATE OF FLORIDA

SCALE	PROJECT NUMBER	5
N.T.S.	20-2714	
		5