



6675 PENSACOLA BOULEVARD PENSACOLA, FL 32505

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## EROSION CONTROL & WATER QUALITY FLORIDA DEP 2600 BLAIR STONE RD.

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ESCAMBIA COUNTY DEVELOPMENT SERVICES DEPARTMENT 3363 WEST PARK PLACE PENSACOLA, FL 32505 CONTACT: ROZA SESTNOV TEL: (850) 595-3411

# LOCATION MAP

- COVER SHEET
- SURVEY PLAN
- DEMOLITION PLAN
- SITE DETAILS
- SITE DETAILS SITE DETAILS
- UTILITY PLAN
- UTILITY DETAILS
- GRADING PLAN
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- STORM PROFILES
- STORM PROFILES STORM DETAILS
- EROSION CONTROL PLAN PH. I
- EROSION CONTROL PLAN PH. 2 EROSION CONTROL DETAILS
- EROSION CONTROL DETAILS
- LANDSCAPE PLAN

# **REVISIONS:**

1 2016-03-02 UTILITY/STORM REVISIONS

# ENGINEER:

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GREENVILLE, S.C. 29609

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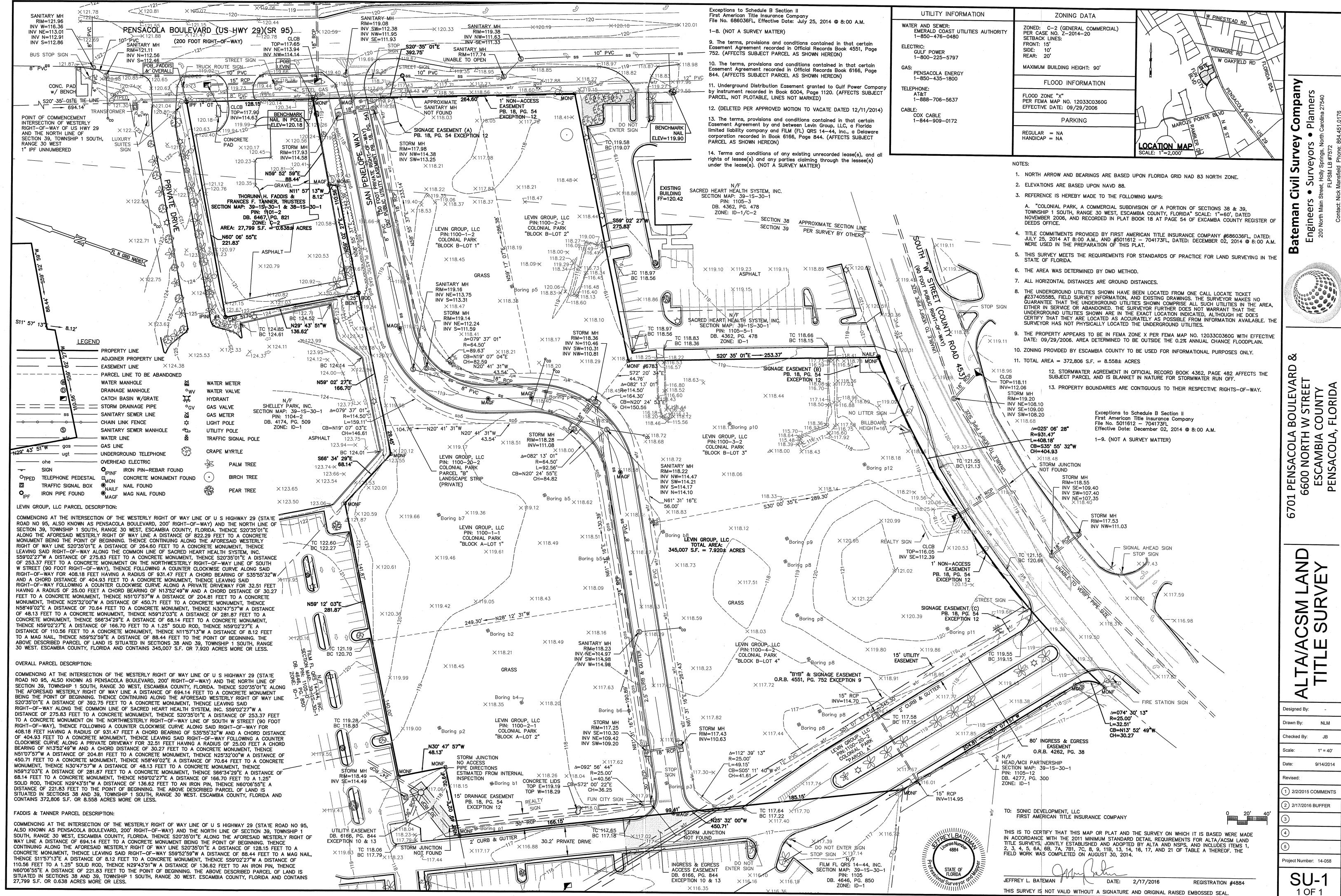
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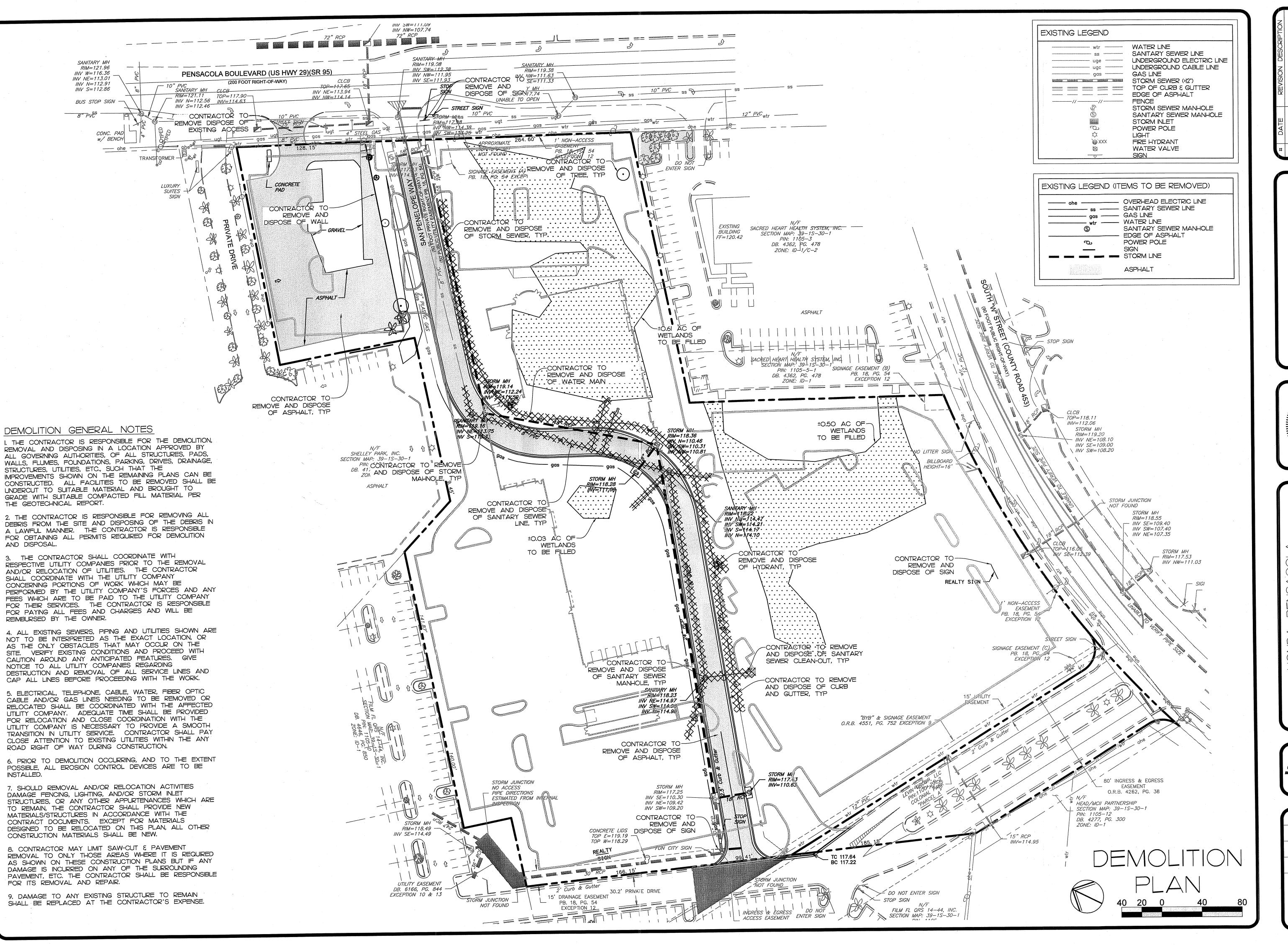
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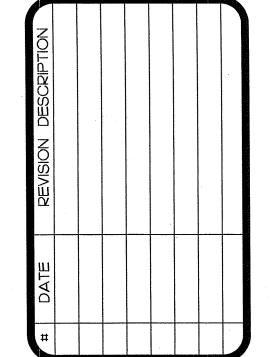
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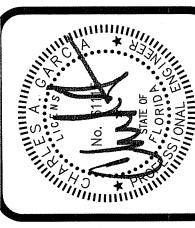
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FEBRUARY 15, 2016





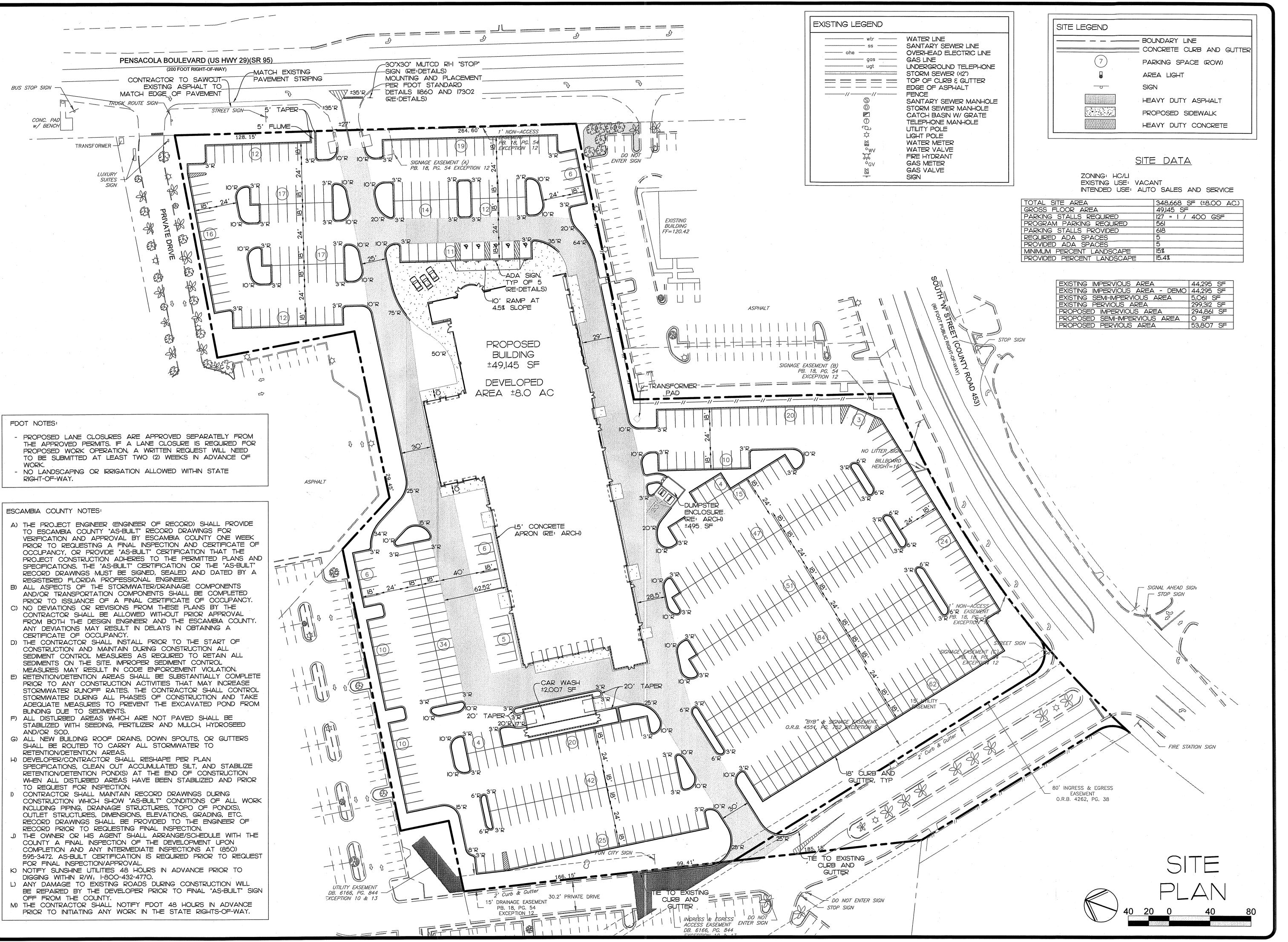


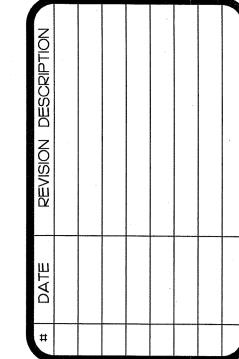


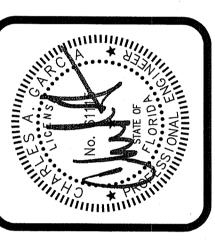
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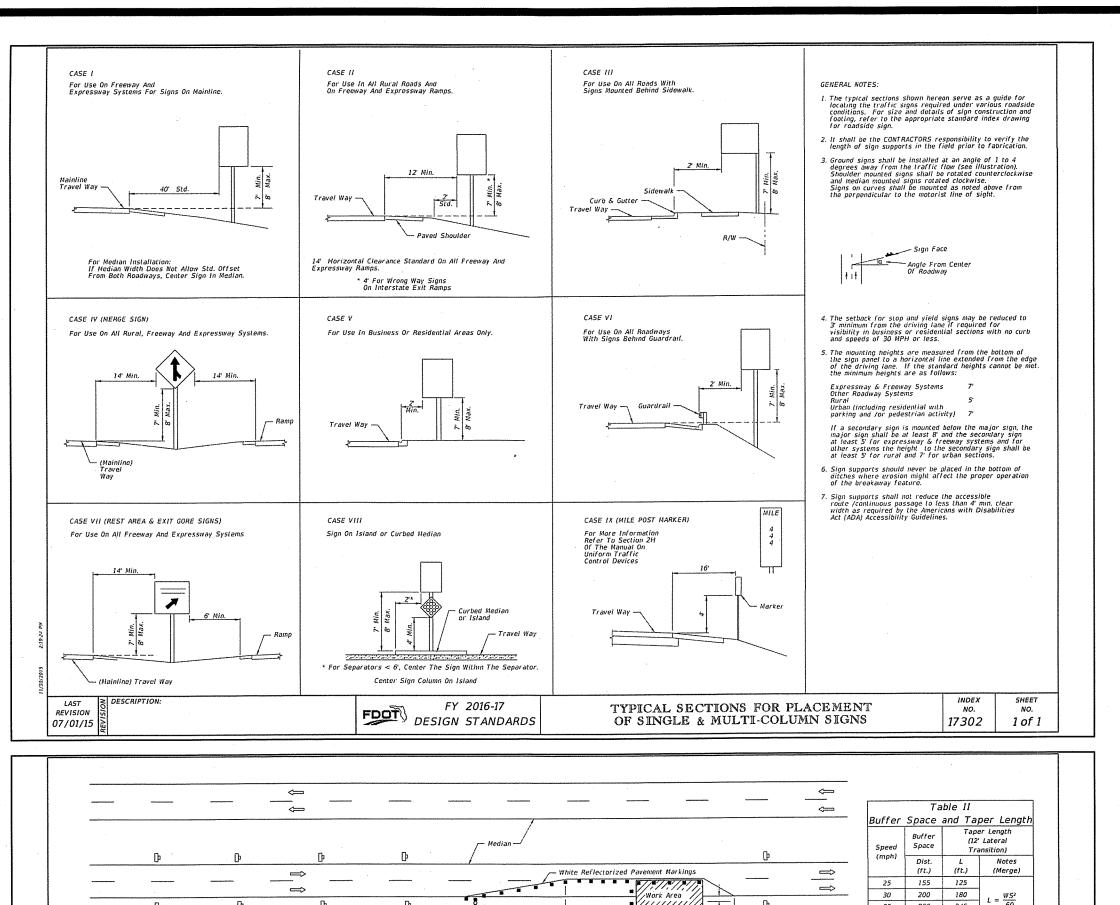


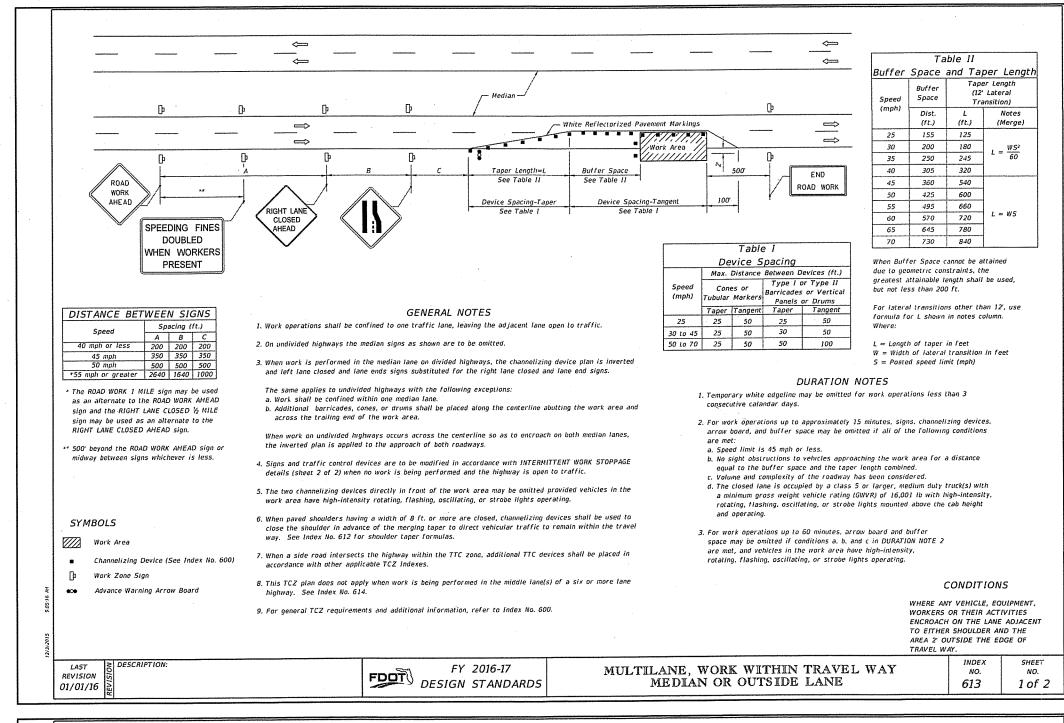


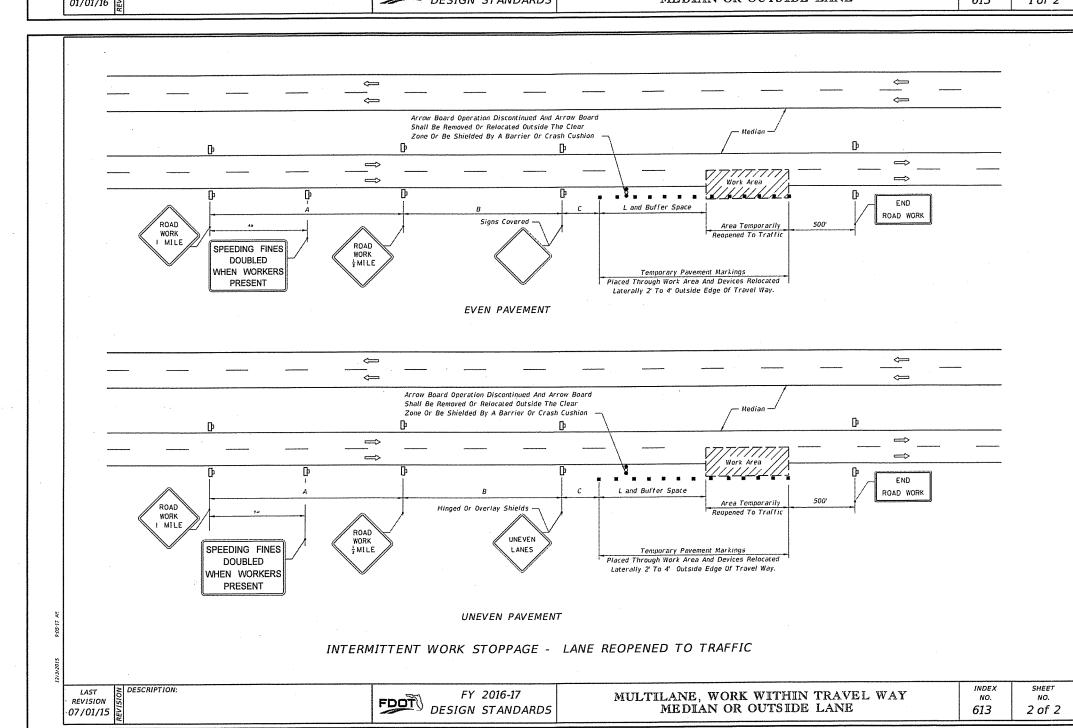
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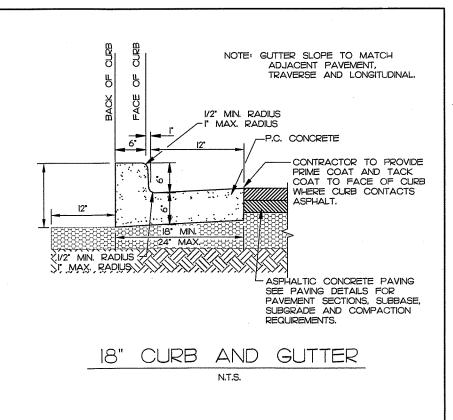


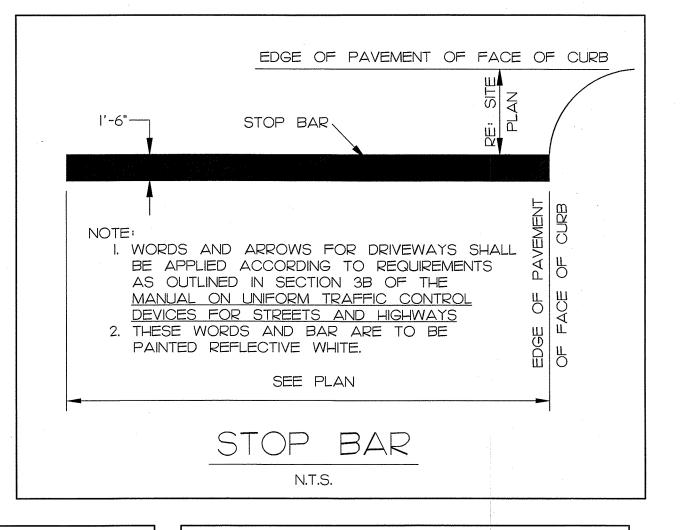
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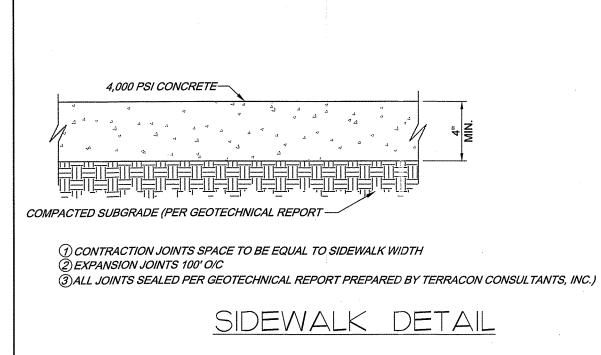


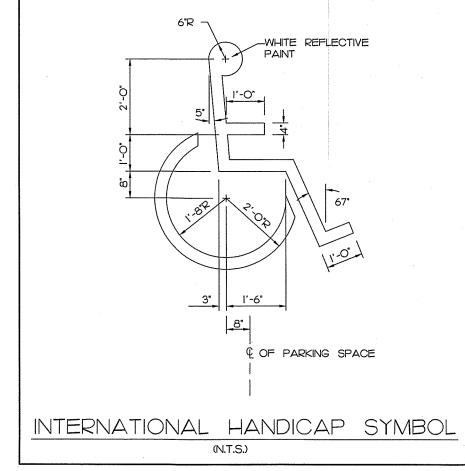


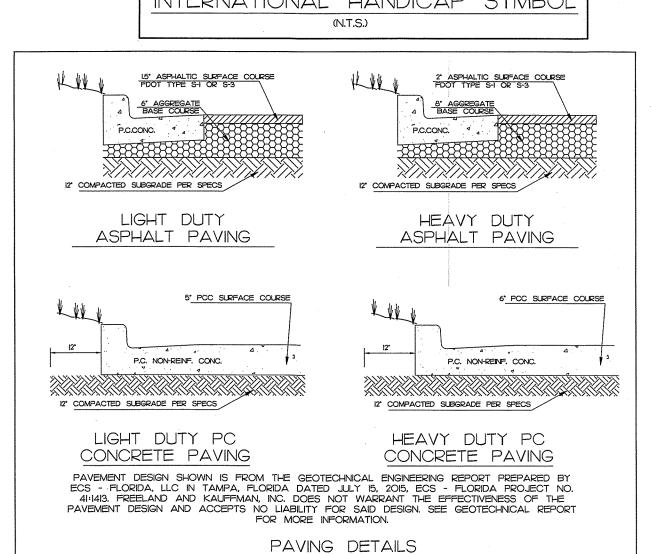


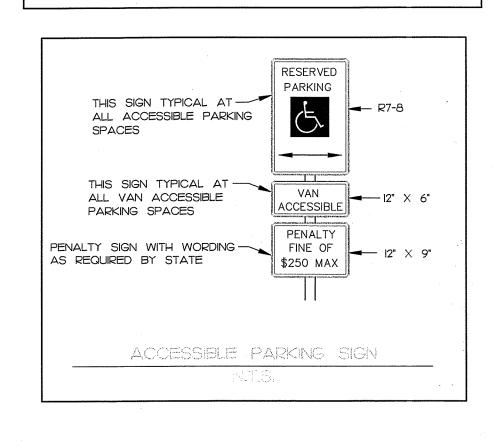








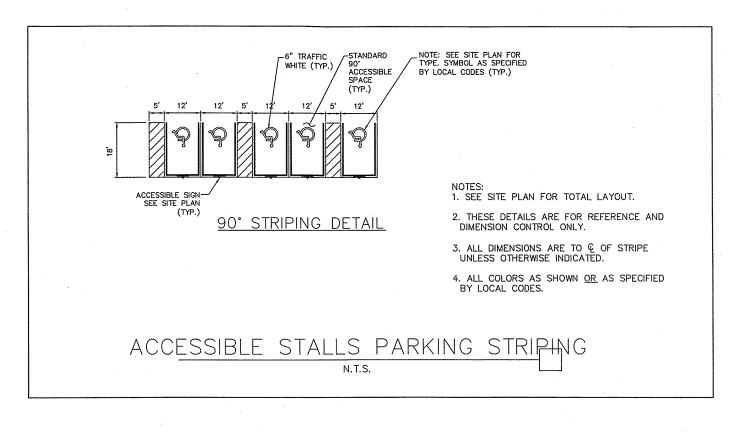


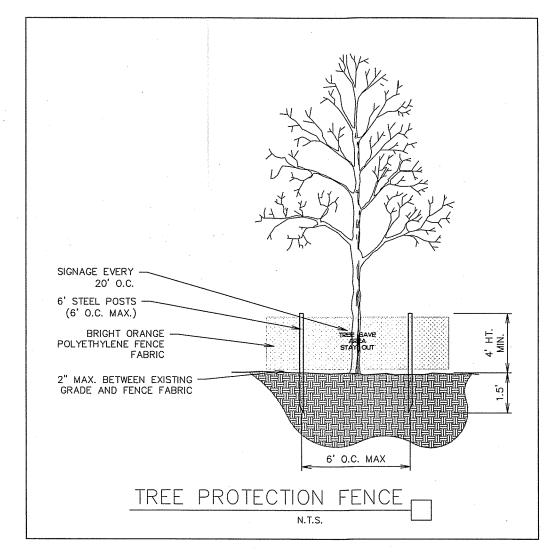


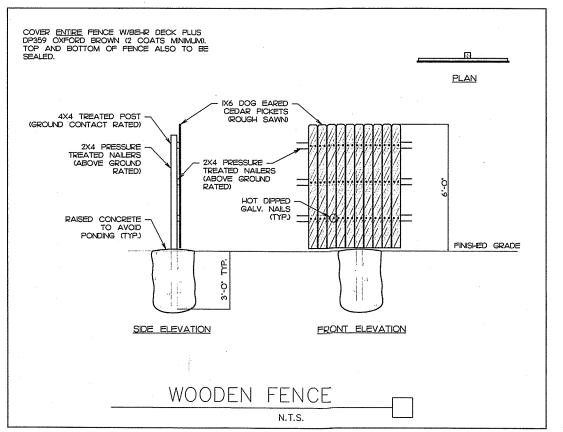
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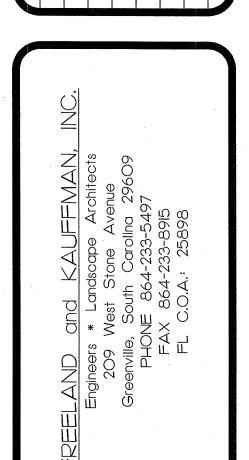
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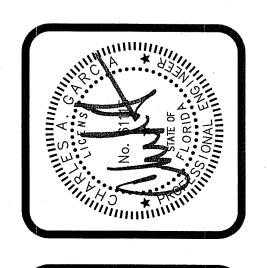
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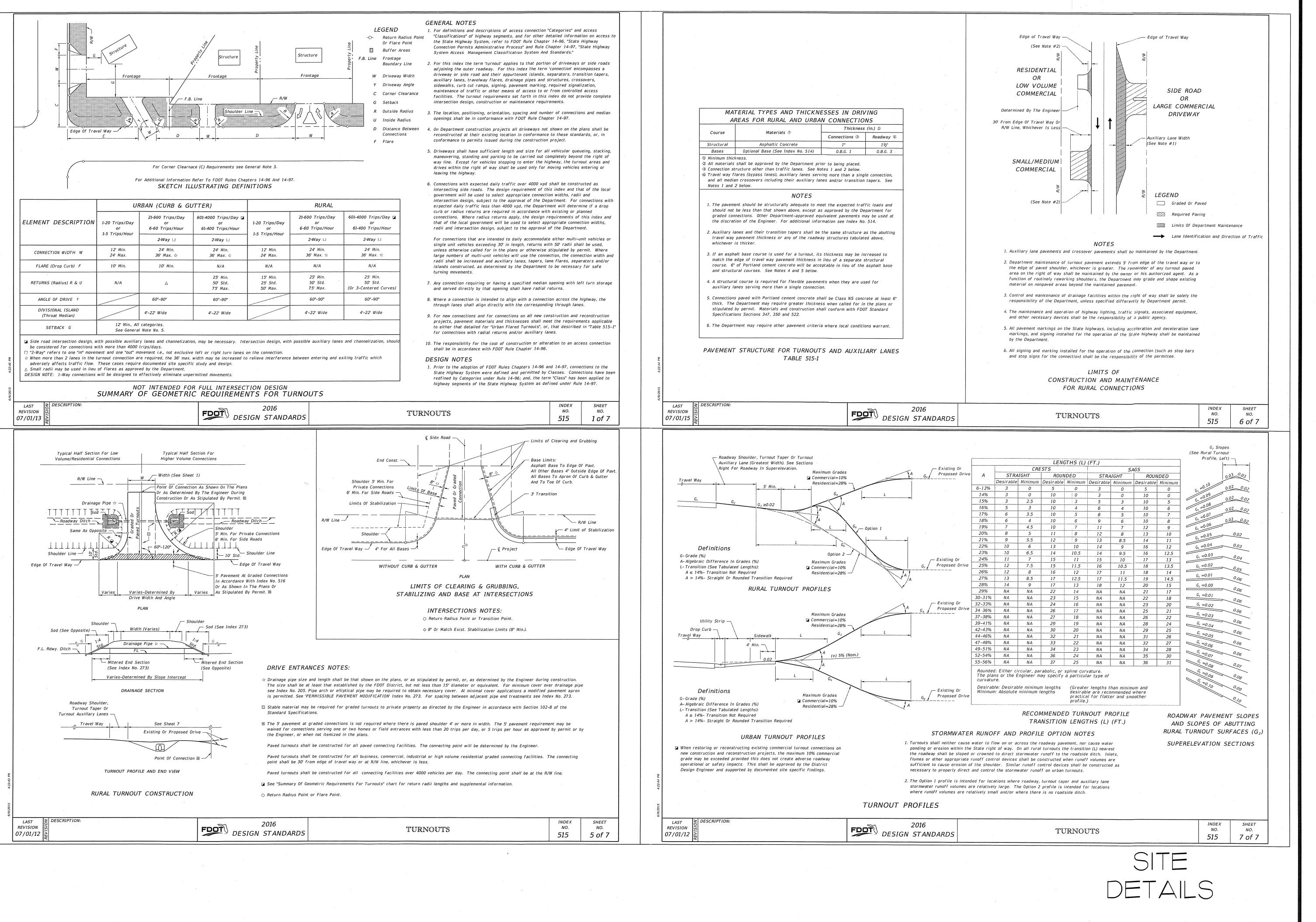
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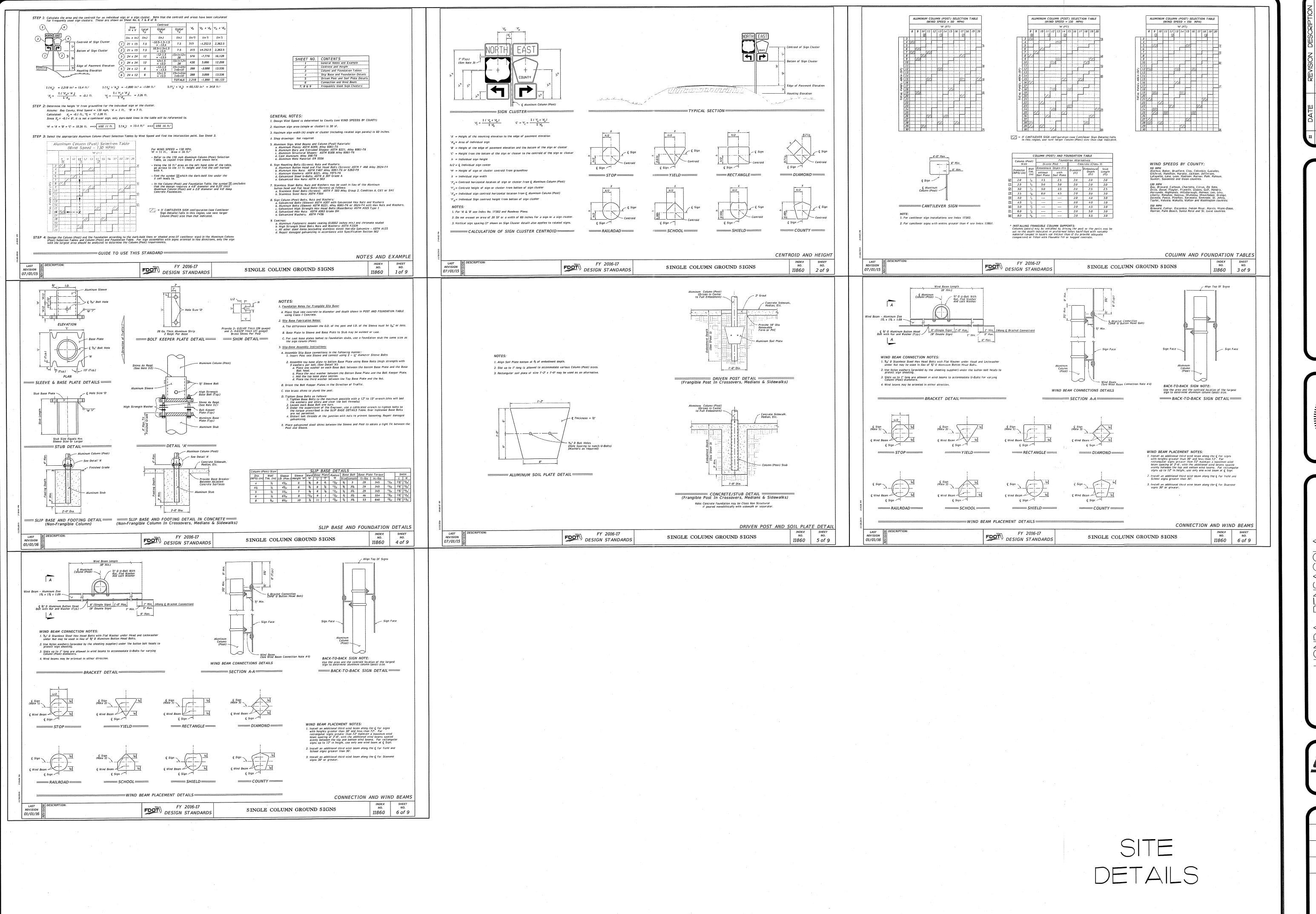


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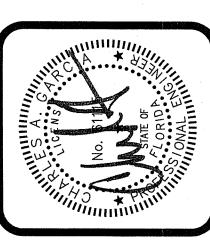
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# DATE REVISION DESCRIPTION

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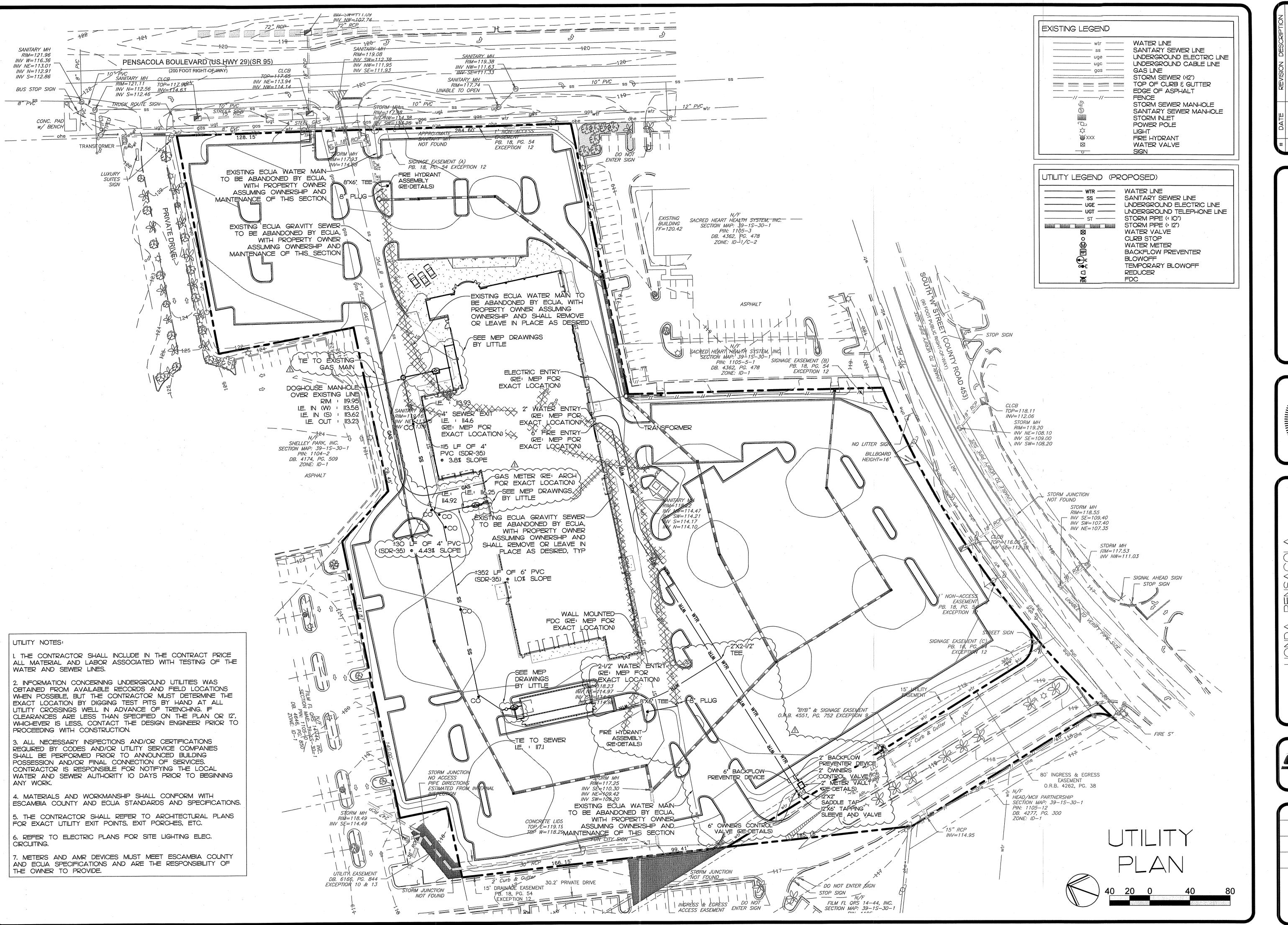
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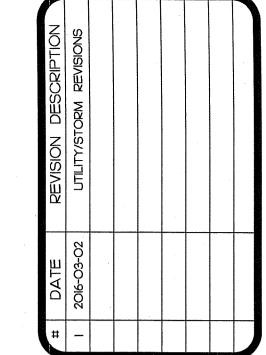
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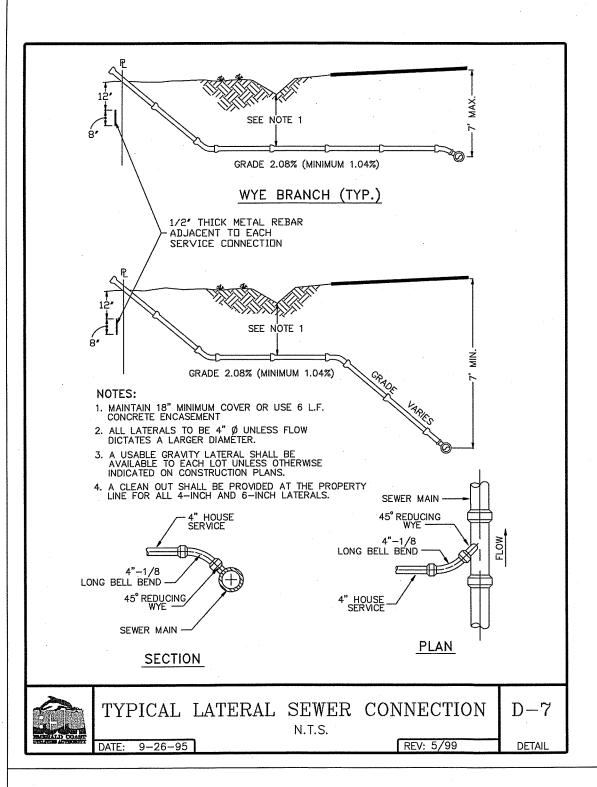
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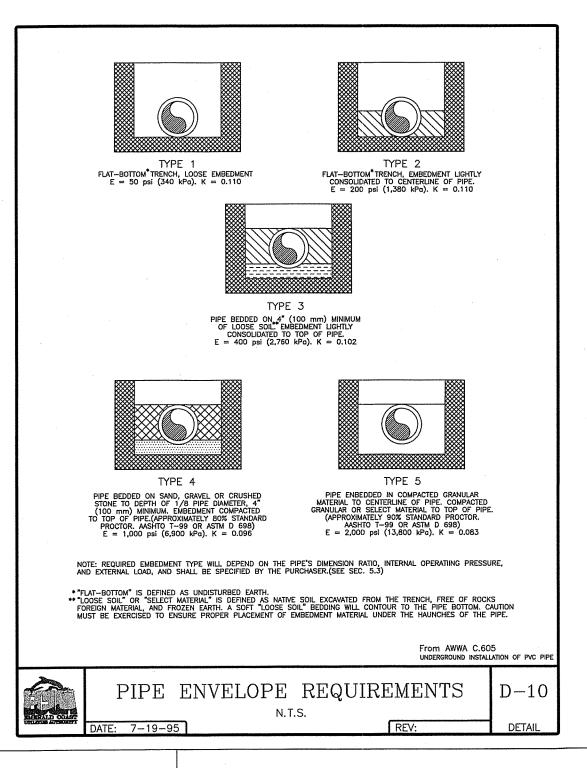
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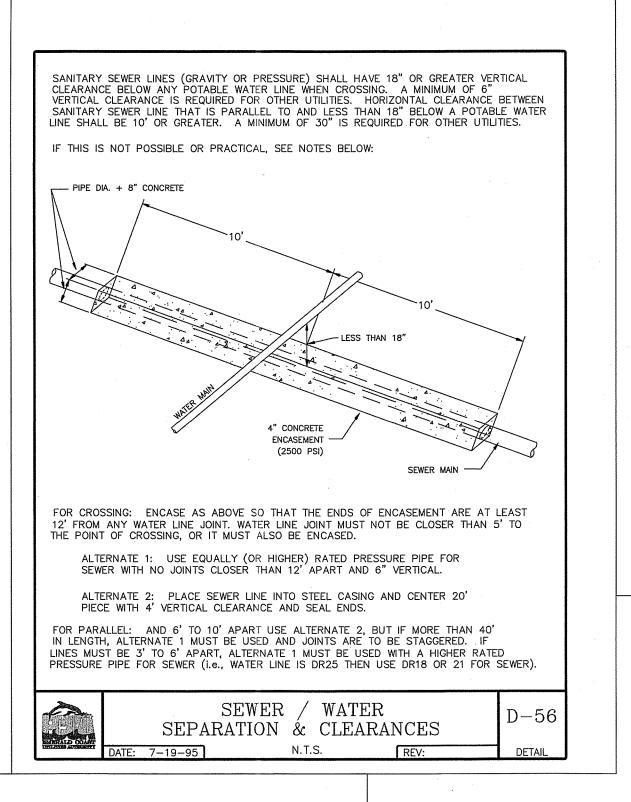
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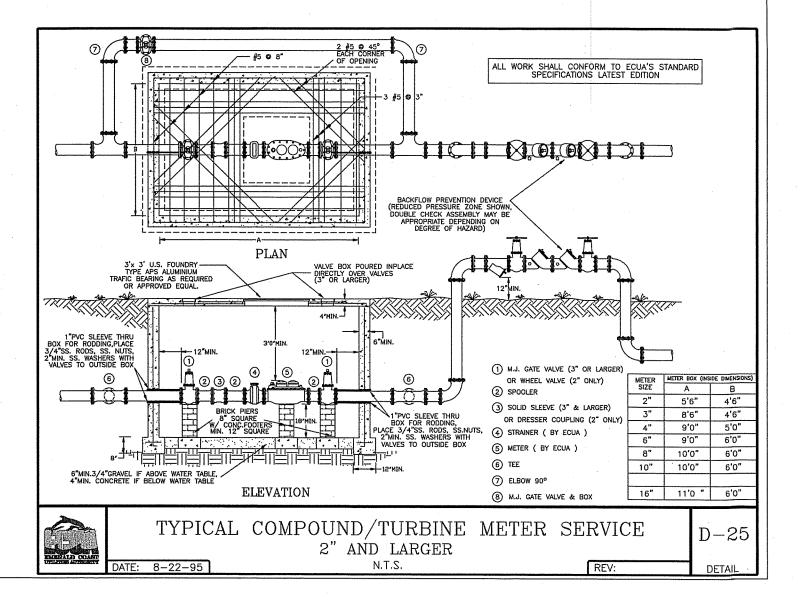
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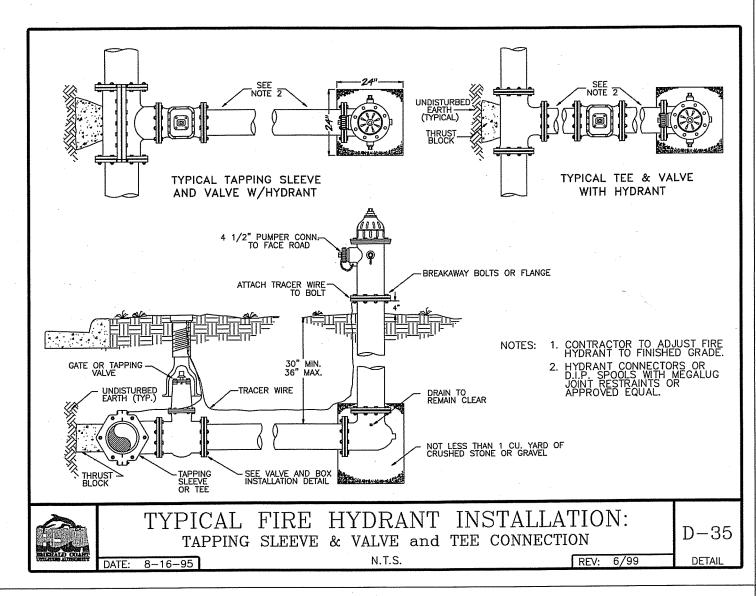
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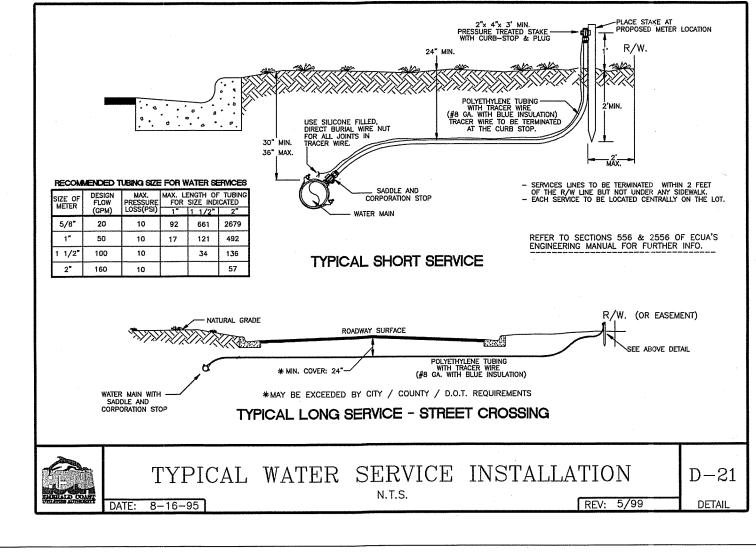


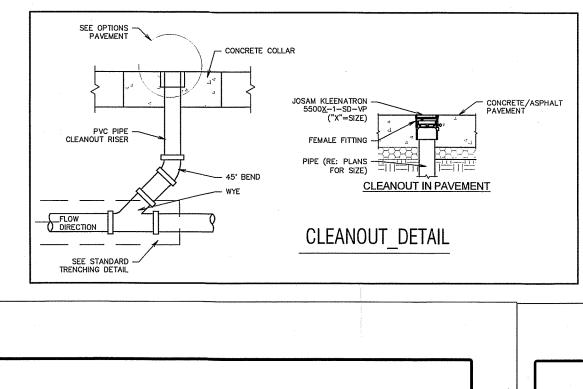


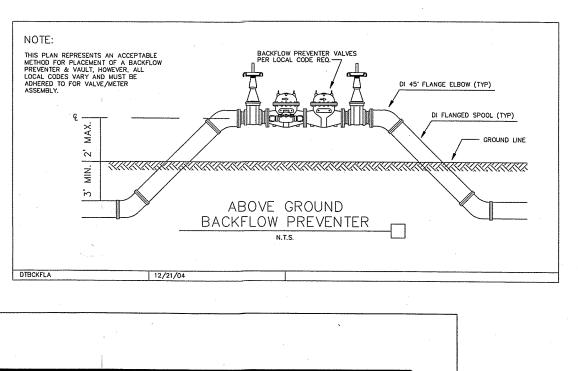


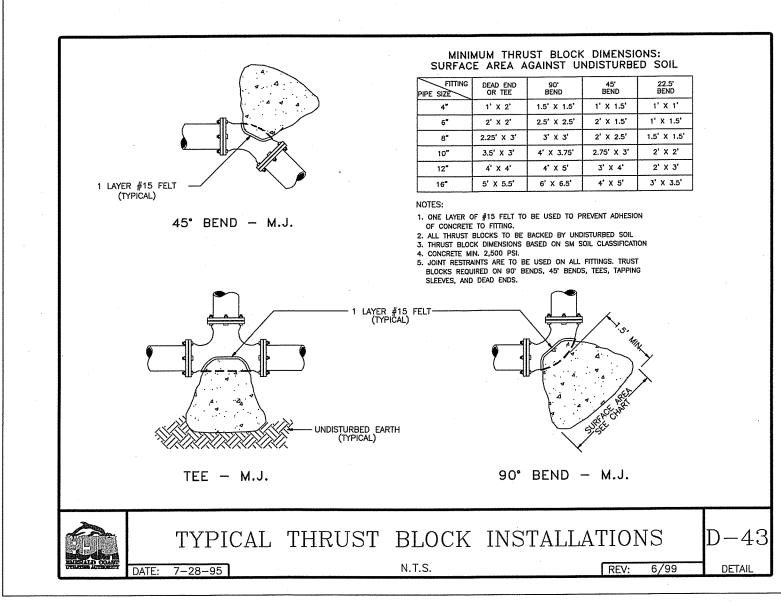


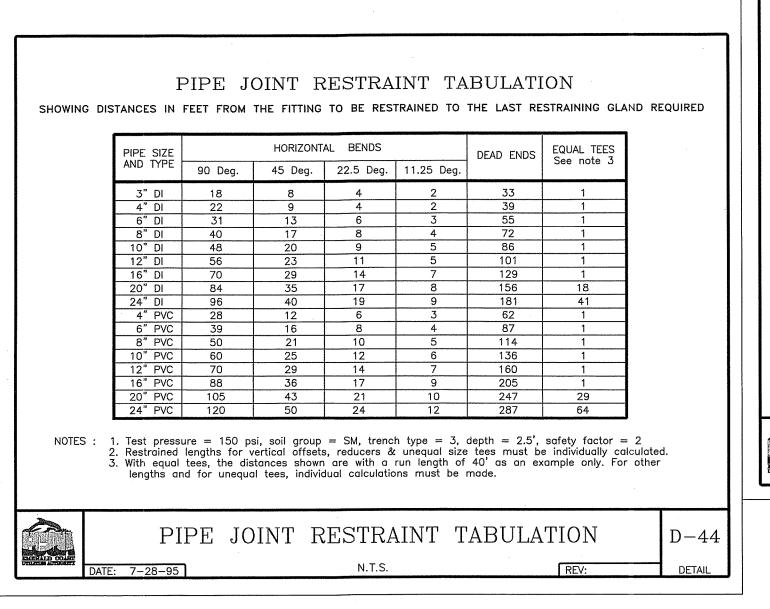


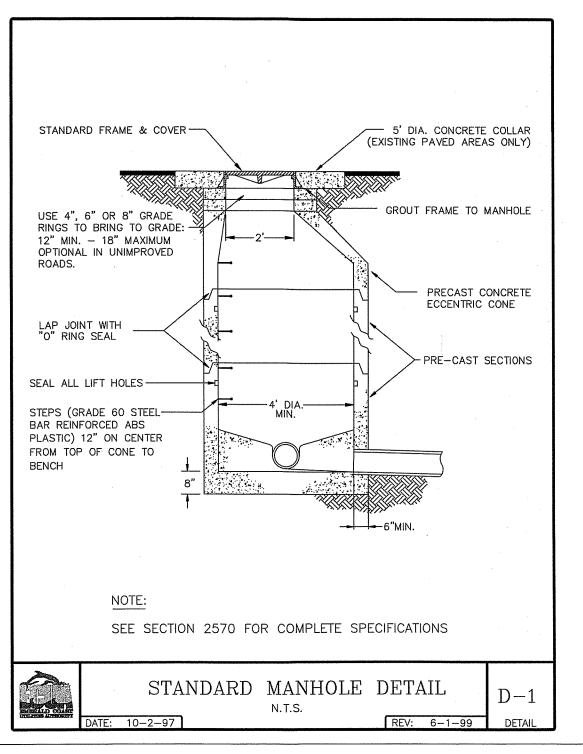


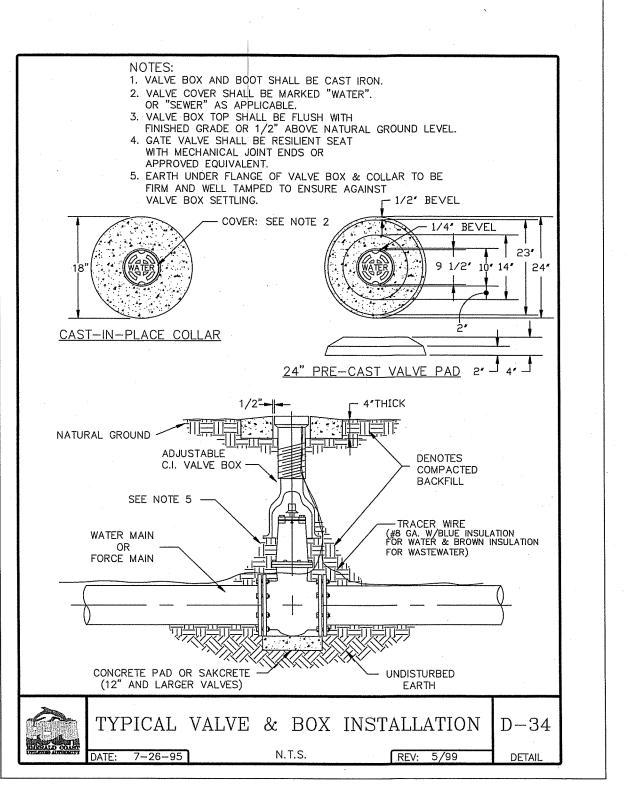




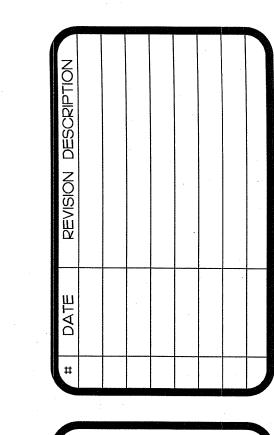




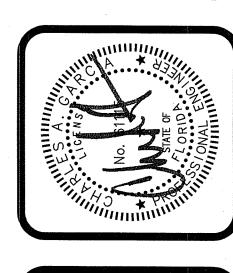




UTILITY
DETAILS



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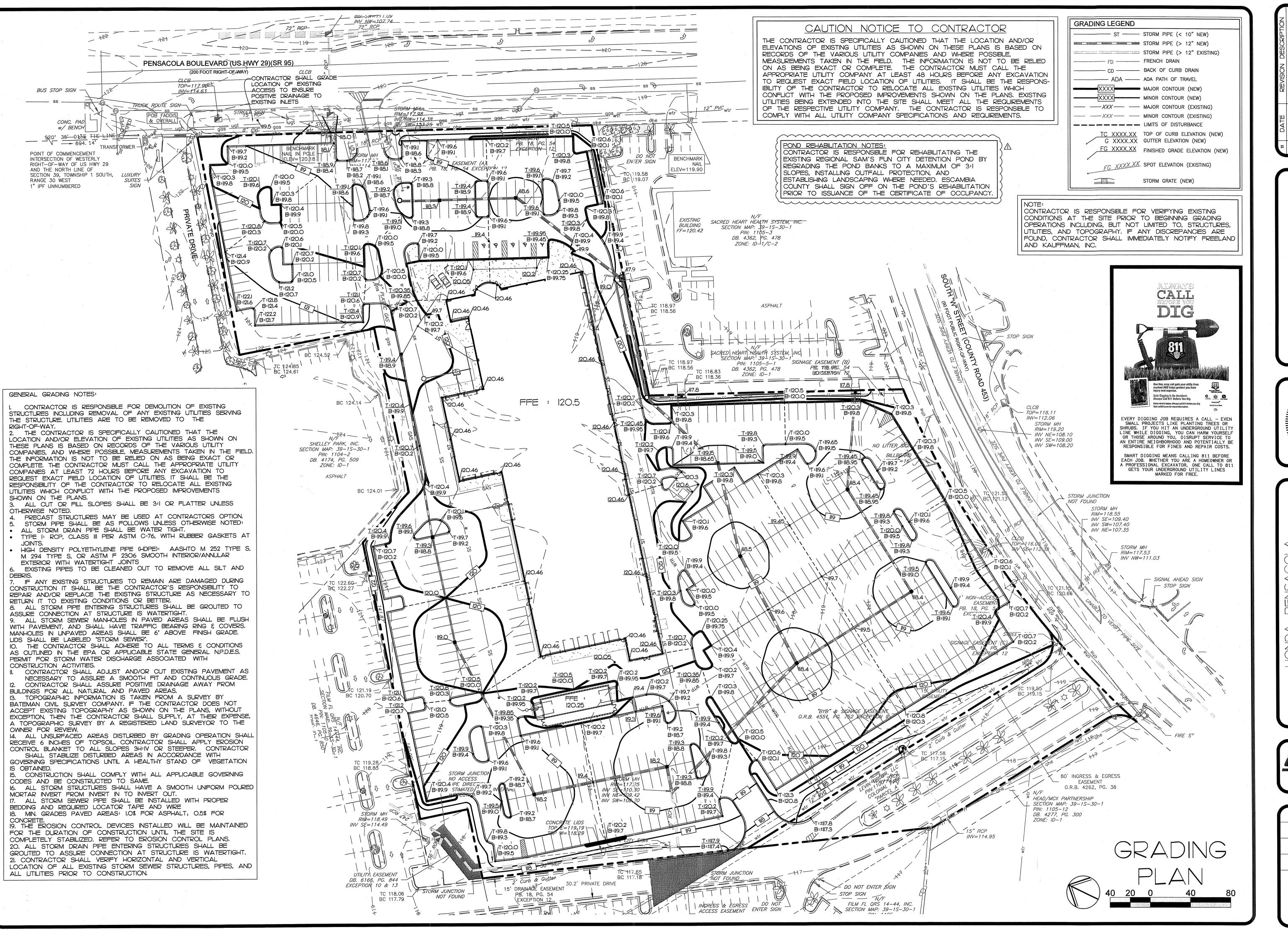
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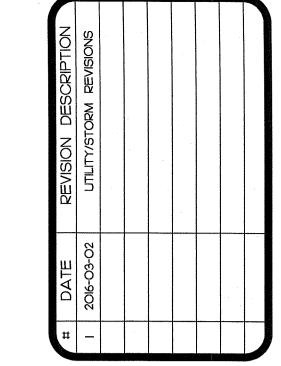
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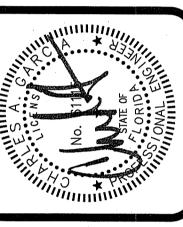
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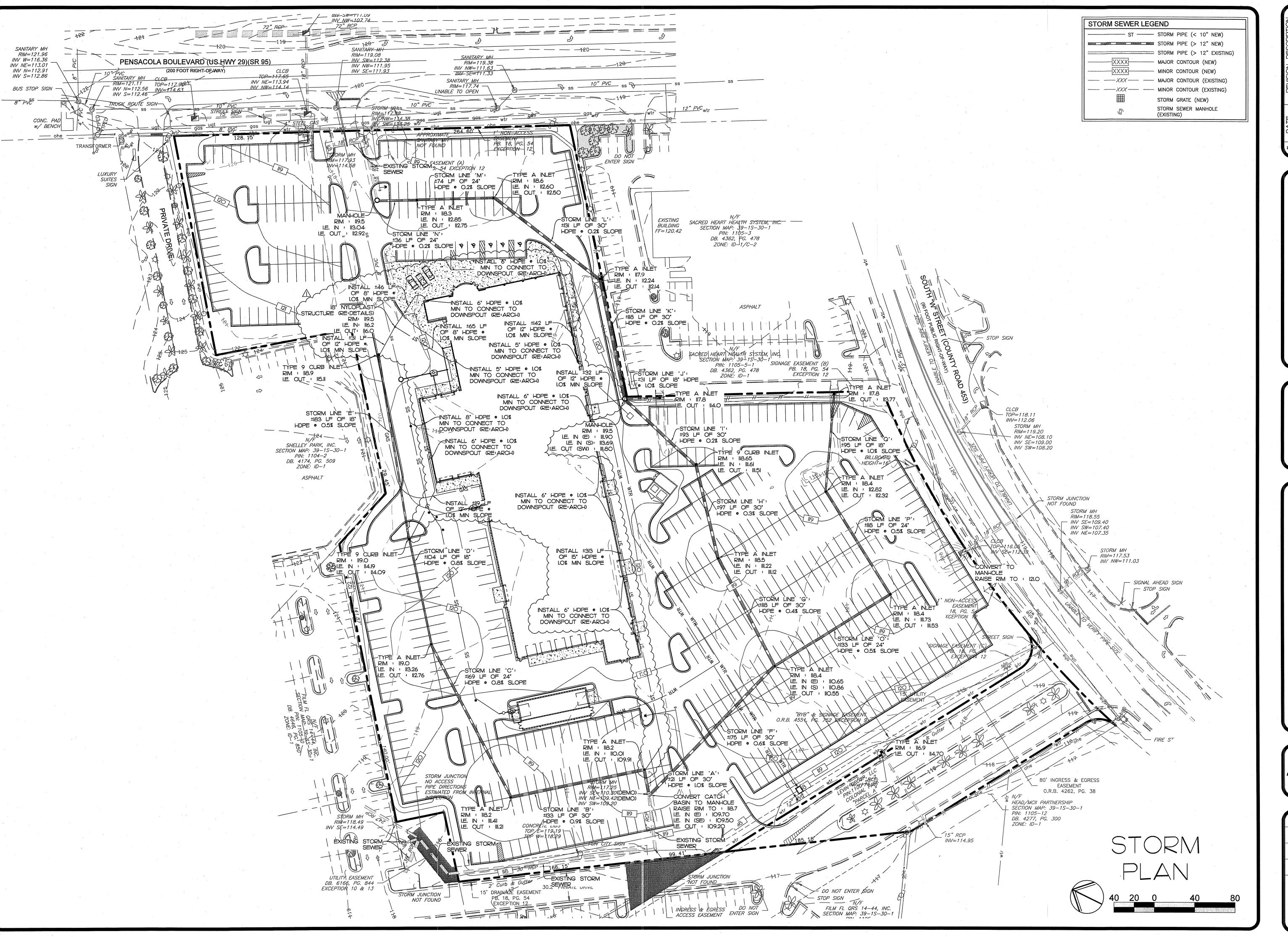


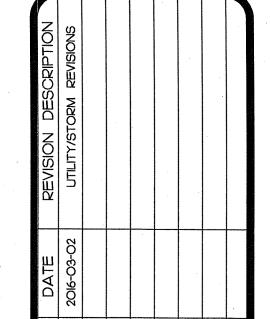






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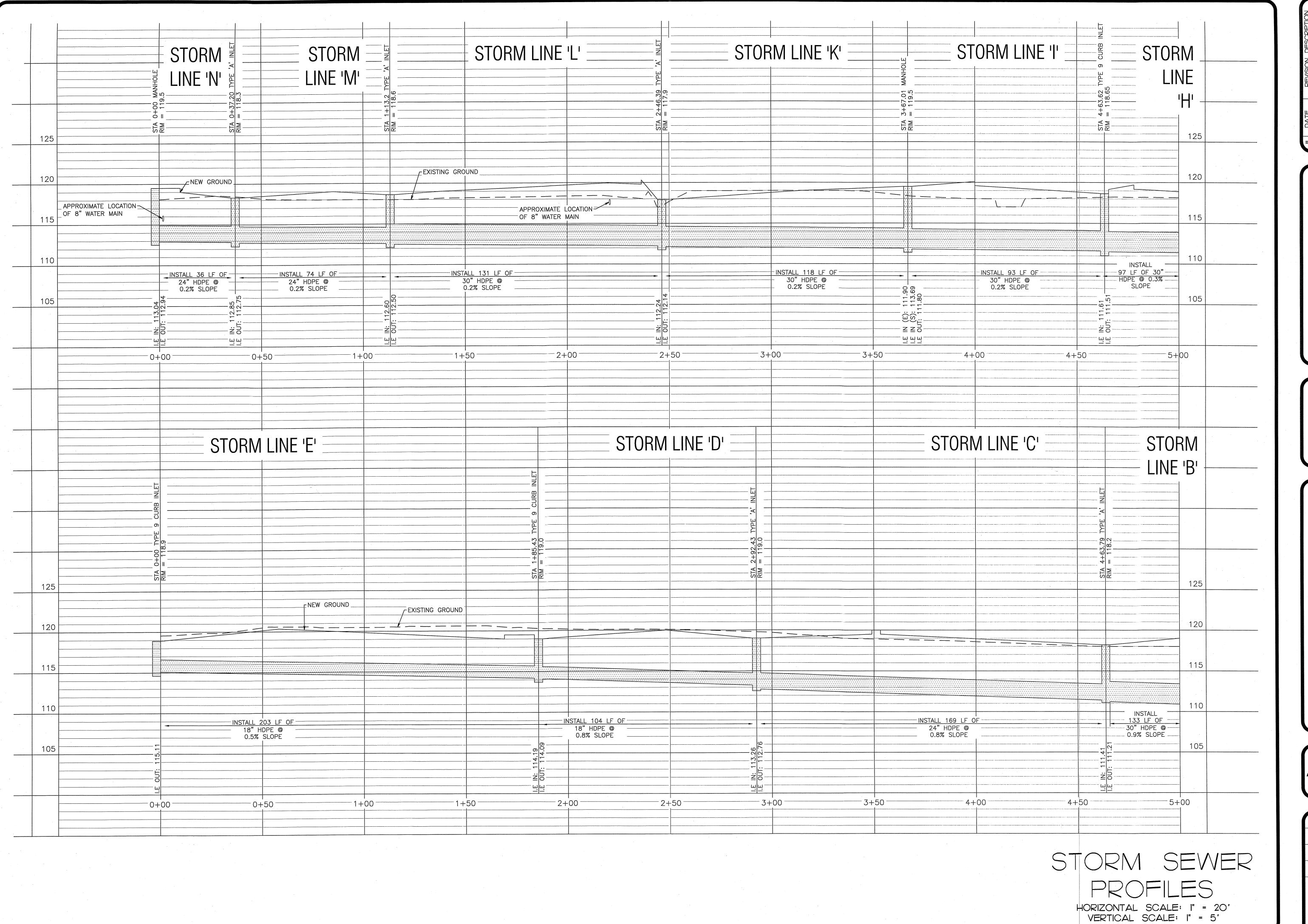
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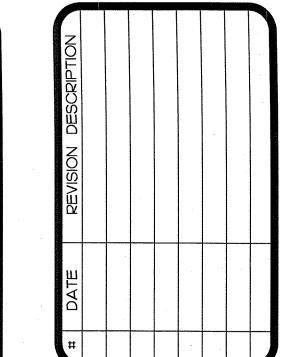


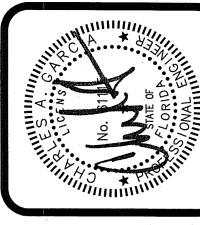
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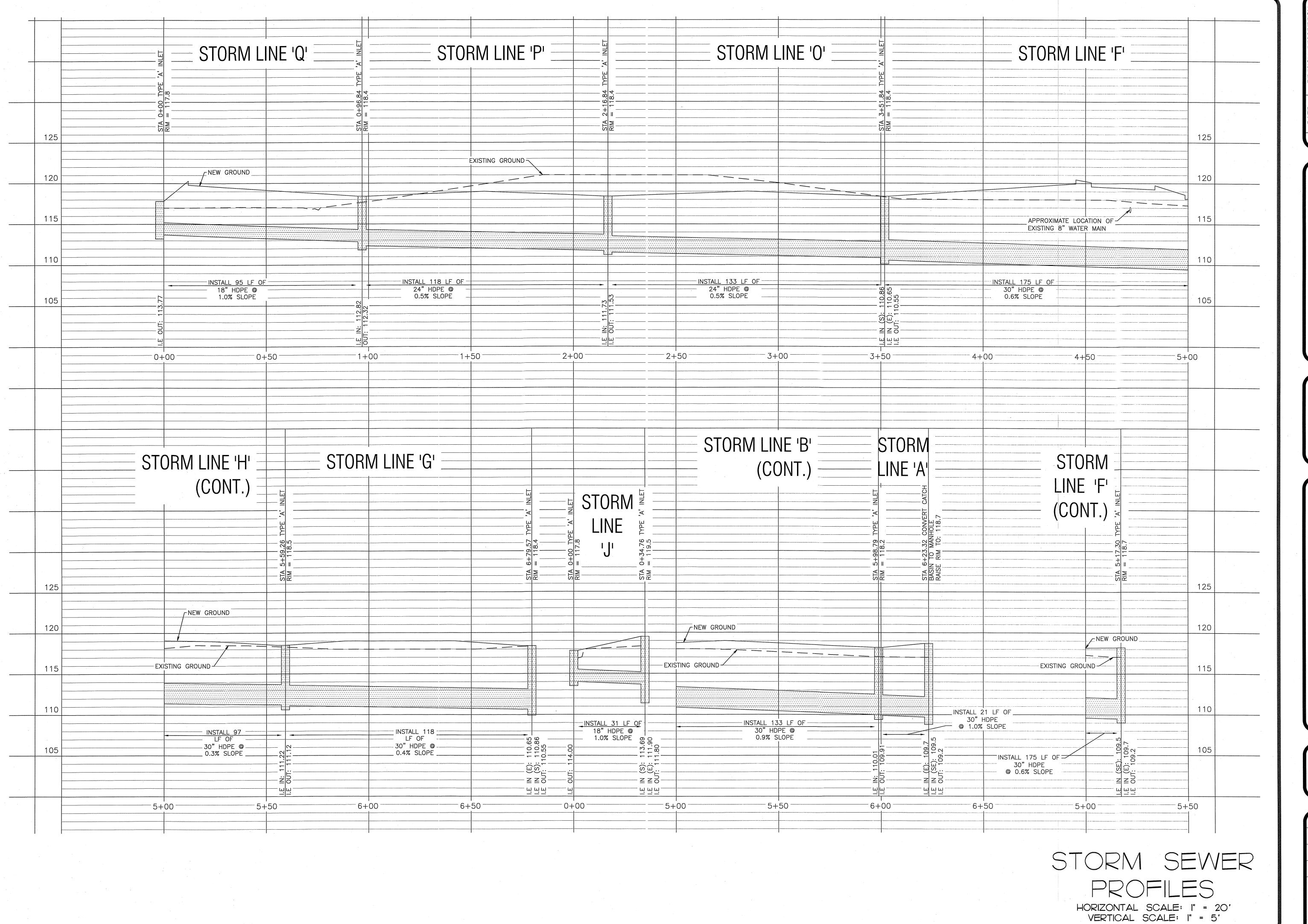
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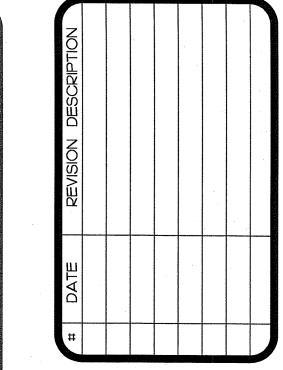
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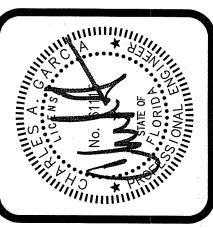
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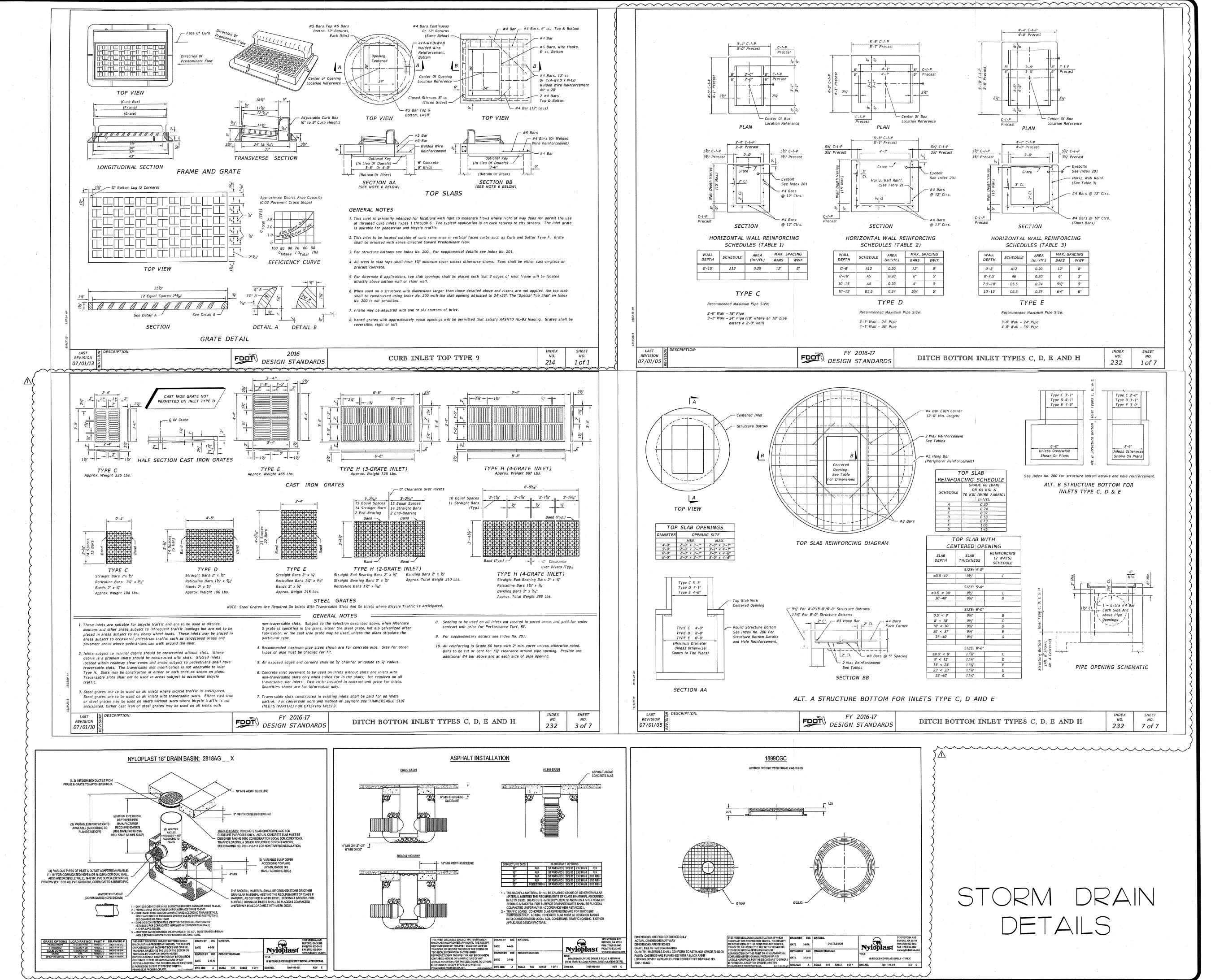




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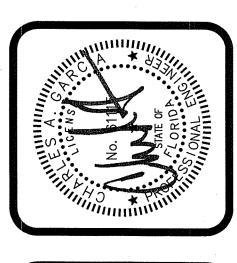


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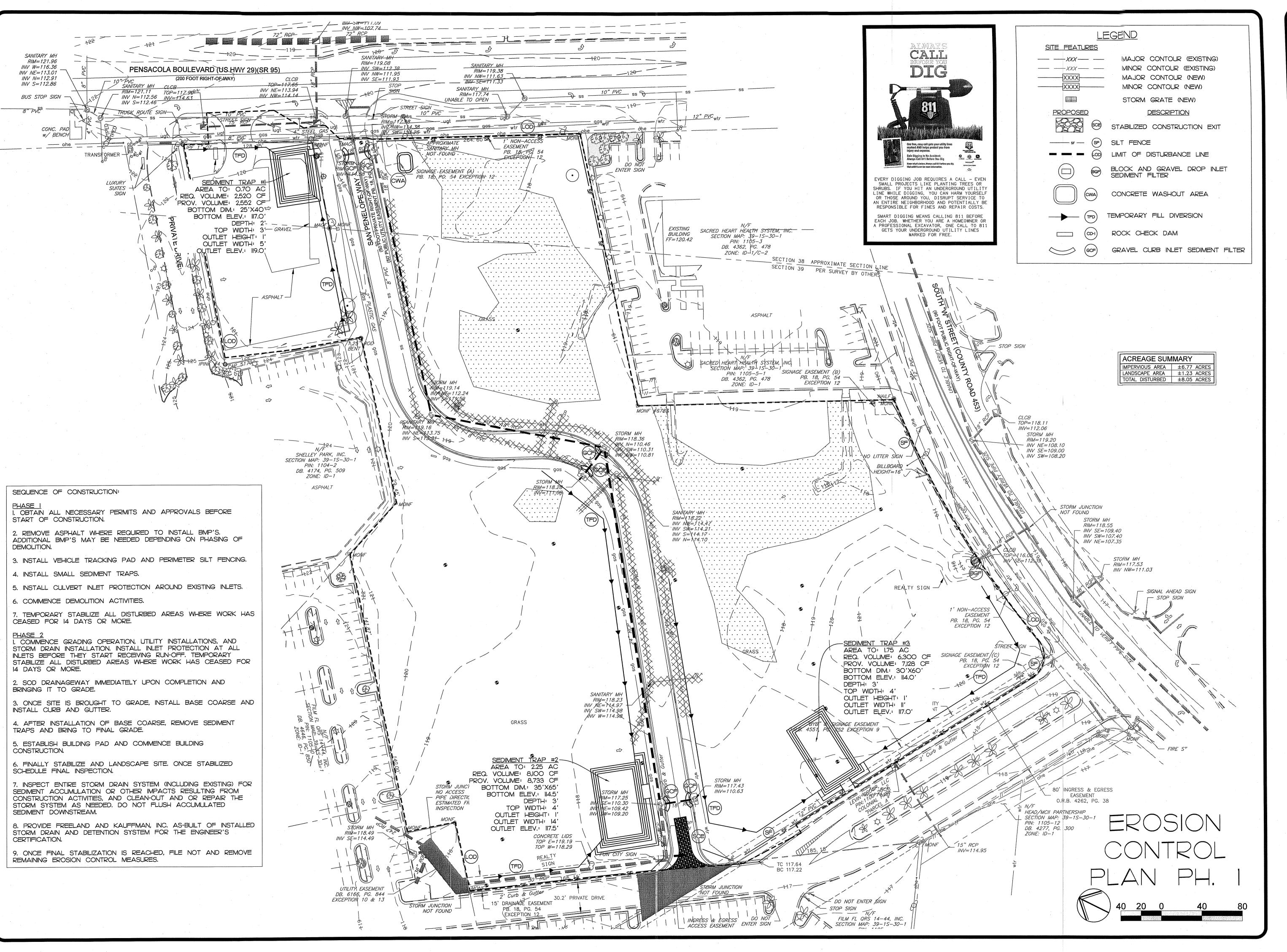
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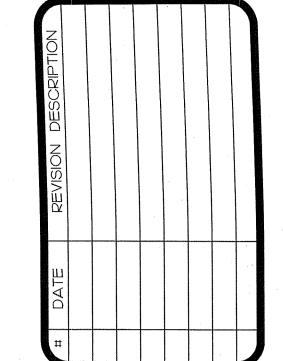
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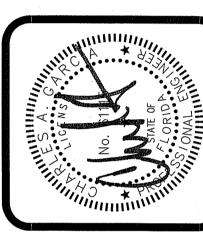
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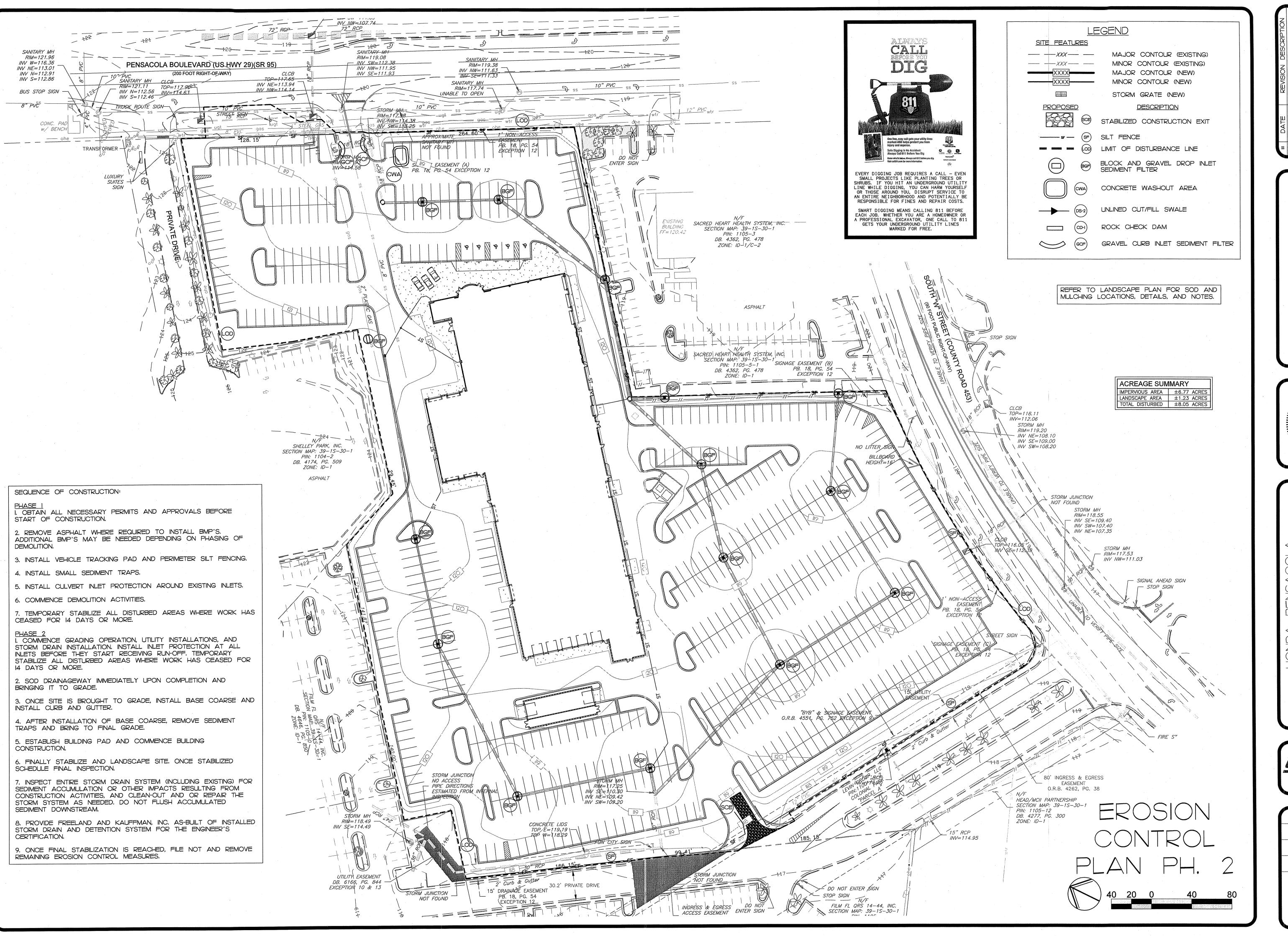
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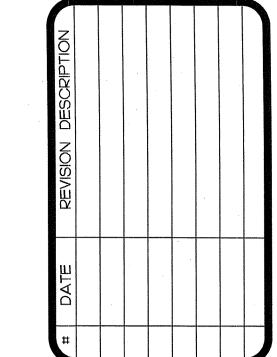
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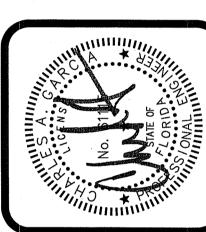
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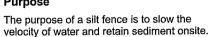
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A temporary sediment barrier consisting of a filter fabric stretched across and attached to supporting posts and entrenched. Some silt

fence is wire reinforced for support.



A silt fence should only be installed for sediment capture under sheetflow conditions. It should not be installed for channel flow conditions or in live streams or waterways.

Silt fences can trap a much higher percentage of suspended sediments than straw bales and are preferable to straw barriers in many cases. The most effective application is to install two parallel silt fences spaced a minimum of three feet apart. The installation and maintenance methods outlined here can improve performance.

Silt fences composed of a wire support fence with attached synthetic filter fabric slow the flow rate significantly and have high filtering efficiency. Both woven and nonwoven synthetic fabrics are commercially available. The woven fabrics are generally stronger than the nonwoven fabrics. When tested under acid and alkaline water conditions, most of the woven fabrics increase in strength. There is a variety of reactions among the nonwoven fabrics. The same is true of testing under extensive ultraviolet radiation. Permeability rates vary regardless of fabric type. While all of the fabrics demonstrate high filtering efficiencies for sandy sediments, there is considerable variation among both woven and nonwoven fabrics when filtering finer silt and clay particles.

#### Design Criteria

- 1. No formal design is required for many small projects and for minor and
- 2. Silt fences shall have an expected usable life of six months. They are applicable around perimeters and stockpiles, and at temporary locations where continuous construction changes the earth contour and runoff characteristics.
- 3. Silt fences have limited applicability to situations in which only sheet or overland flows are expected. They normally cannot filter the volumes of water generated by channel flows, and many fabrics do not have sufficient structural strength to support the weight of water ponded behind the fence

# CHAPTER 4: BEST MANAGEMENT PRACTICES FOR EROSION AND SEDIMENTATION CONTROL

#### **Construction Specifications**

- Synthetic filter fabric shall be a pervious sheet of propylene, nylon. polyester, or polyethylene yarn. It shall contain ultraviolet ray inhibitors and stabilizers to provide a minimum of 6 months of expected usable construction life at a temperature range of 0 °F. to 120 °F. (-17 °C. to 49 °C.).
- 2. The stakes for a silt fence shall be 1 x 2 inches (2.5 x 5 cm) wood (preferred), or equivalent metal with a minimum length of 3 feet (90 cm). 3. Wire fence reinforcement for silt fences using standard-strength filter cloth shall be a minimum of 36 inches (90 cm) in height, shall be a minimum of 14 gauge, and shall have a maximum mesh spacing of 6 inches (15 cm).

#### Sheetflow Application: Silt Fence This sediment barrier uses standard-strength or extra-strength synthetic filter fabrics. It

- is designed for situations in which only sheet or overland flows are expected (see Figures 4.4a and 4.4b): 1. The height of a silt fence shall not exceed 36 inches (90 cm). Higher fences may impound volumes of water sufficient to cause failure of the
- structure. 2. The filter fabric shall be purchased in a continuous roll cut to the length of the barrier to avoid the use of joints. When joints are necessary, filter cloth
- shall be spliced as described in Item 8 below. 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 side of the posts using heavyduty 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. When extra-strength filter fabric and closer post spacing are used, the wire mesh support fence may be eliminated. In this case, the filter fabric is stapled or wired directly to the posts with all other provisions of Item 6

CHAPTER 4: BEST MANAGEMENT PRACTICES FOR EROSION AND SEDIMENTATION CONTROL

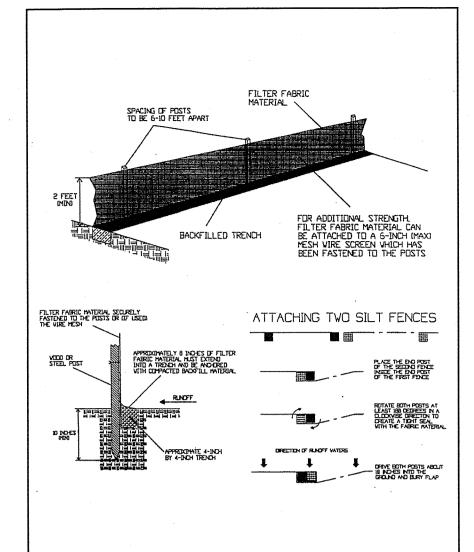


Figure 4.4b. Installing a Filter Fabric Silt Fence Source: HydroDynamics, Inc.

## CHAPTER 4: BEST MANAGEMENT PRACTICES FOR EROSION AND SEDIMENTATION CONTROL

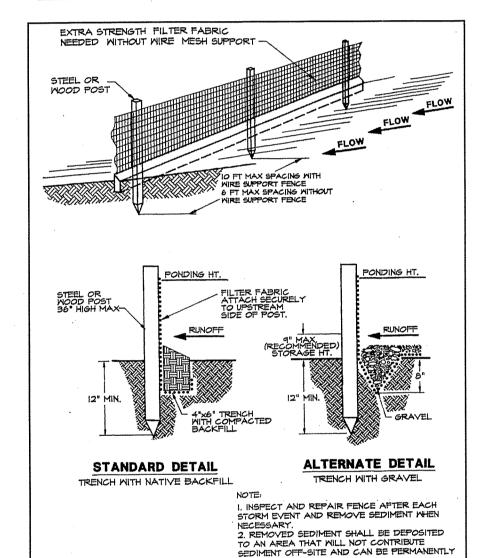


Figure 4.4a. Silt Fence

Source: Erosion Draw

# CHAPTER 4: BEST MANAGEMENT PRACTICES FOR EROSION AND SEDIMENTATION CONTROL

STABILIZED.

3. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.

- 8. When attaching 2 silt fences together, place the end post of the second fence inside the end post of the first fence. Rotate both posts at least 180 degrees in a clockwise direction to create a tight seal with the filter fabric. Drive both posts into the ground and bury the flap (see Figure 4.4b).
- 9. The trench shall be backfilled and the soil compacted over the filter fabric. 10. The most effective application consists of a double row of silt fences spaced a minimum of 3 feet apart, so that if the first row collapses it will not fall on the second row. Wire or synthetic mesh may be used to reinforce the first row (see Figure 4.4c).
- 11. When used to control sediments from a steep slope, silt fences should be placed away from the toe of the slope for increased holding capacity (see

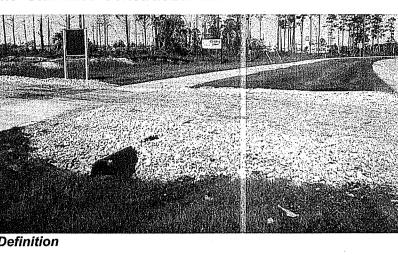
#### 12. Silt fences shall be removed when they have served their useful purpose, but not before the upslope area has been permanently stabilized.

and seeded.

- 1. Silt fences shall be inspected within 24 hours after each 1/2-inch rainfall event and at least once a week. Any required repairs shall be made
- 2. Should the fabric on a silt fence decompose or become ineffective before the end of the expected usable life and the barrier is still necessary, the fabric shall be replaced promptly.
- 3. Sediment deposits should be removed when deposits reach approximately one-half the height of the barrier.
- 4. Any sediment deposits remaining in place after the silt fence is no longer required shall be dressed to conform with the existing grade, prepared,

CHAPTER 4: BEST MANAGEMENT PRACTICES FOR EROSION AND SEDIMENTATION CONTROL

## 4.3 Stabilized Construction Exit



A stabilized pad located at points where vehicles enter and leave a construction site.

To reduce the amount of sediment transported onto public roads by motor vehicles or

## Conditions Where Practice Applies

Wherever traffic will be leaving a construction site and moving directly onto a public road or other paved area.

## Planning Considerations

Construction entrances provide an area where mud can be removed from construction vehicle tires before they enter a public road. If the action of the vehicle traveling over the stabilized pad is not sufficient to remove most of the mud, then the tires must be washed before the vehicle enters a public road. If tire washing is provided, provisions must be made to intercept the wash water and trap the sediment before it is carried offsite. Construction entrances should be used in conjunction with the stabilization of construction roads to reduce the amount of mud picked up by construction vehicles.

#### Design Criteria

#### Aggregate Size

If stone is utilized, FDOT No. 1 Coarse Aggregate, 11/2 to 31/2 inch (4 to 9 cm) stone is suggested. Wood chips may be used for single-family residential construction, provided that they can be prevented from floating away during a storm event. Manufactured products also are available to prevent or reduce the amount of sediment tracked onto

## CHAPTER 4: BEST MANAGEMENT PRACTICES FOR EROSION AND SEDIMENTATION CONTROL

roadways. If a stabilized exit is not sufficient, street sweeping can be provided as an additional measure.

If stone is used, then the aggregate layer must be at least 6 inches (15 cm) thick. It must extend the FULL WIDTH of the vehicular ingress and egress area. The length of the entrance must be at least 50 feet (20 m). The exit should widen at its connection to the roadway to accommodate the turning radius of large trucks (see Figure 4.3a).

If conditions on the site are such that most of the mud is not removed by the vehicles traveling over the stone, then the vehicle tires must be washed before entering a public road. Wash water must be carried away from the entrance to a settling area to remove sediment (see Figure 4.3b). A wash rack may also be used to make washing more convenient and effective (see Figure 4.3c).

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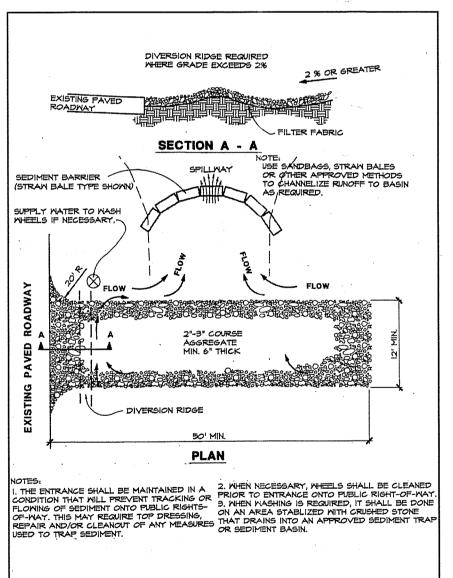


Figure 4.3a. Temporary Gravel Construction Entrance

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## 4.6 Temporary Sediment Trap

A small, temporary ponding area formed by excavation and/or an embankment across a drainageway.

# Purpose

To detain sediment-laden runoff from small disturbed areas long enough to allow most of the sediment to settle out, thus protecting drainageways, properties, and rights of way from

#### Conditions Where Practice Applies

- 1. A sediment trap is usually installed in a drainageway, at a storm drain inlet,
- or at other points of discharge from a disturbed area. 2. It is installed below drainage areas of 5 acres (2 ha) or less.
- 3. It is installed where the sediment trap will be used less than 18 months.

#### 4. The sediment trap may be constructed either independently or in conjunction with TEMPORARY DIVERSION BERM (Chapter 4).

Planning Considerations The sediment trap should be located to obtain the maximum storage benefit from the terrain, for ease of cleaning out and disposing of the trapped sediment and to minimize interference with construction activities.

#### Sediment traps should be used only for small drainage areas. If the contributing drainage area is greater than 5 acres (2 ha), refer to Temporary Sediment Basin (listed

under PERIMETER CONTROLS in Chapter 4). Sediment must be periodically removed from the trap. Plans should detail how this sediment is to be disposed of, such as by use in fill areas onsite or removal to an

Sediment traps, along with other perimeter controls, shall be installed before any land disturbance takes place in the drainage area.

## Design Criteria

approved offsite dump.

#### Trap Capacity

The sediment trap must have an initial storage volume of 134 cubic yards, or 3,600 cubic feet per acre (252 m³/ha) of drainage area, measured from the low point of the ground to

## CHAPTER 4: BEST MANAGEMENT PRACTICES FOR EROSION AND SEDIMENTATION CONTROL

the crest of the gravel outlet. Sediment should be removed from the basin when the

For a natural basin, the volume may be approximated as follows:

A =the surface area of the flood area at the crest of the outlet, in square feet ( $ft^2$ ).

If excavation is necessary to attain the required storage volume, the side slopes should be no steeper than 2:1.

## **Embankment Cross-Section**

The outlets shall be designed, constructed, and maintained so that sediment does not leave the trap and erosion of the outlet does not occur. A trap may have several different outlets, with each outlet conveying part of the flow based on the criteria below. The combined outlet capacity shall be sufficient for the drainage area. For example, a 12 foot (3.6 m) earth outlet, adequate for 2 acres (0.8 ha), and a 12 inch (30 cm) pipe outlet, adequate for 1 acre (0.4 ha), could be used for a 3 acre (1.2 ha) drainage area.

volume is reduced by one-half.

## $V = 0.4 \times A \times D$

## V =the storage volume in cubic feet (ft<sup>3</sup>).

D = the maximum depth, measured from low point in trap to crest of outlet, in ft.

## Excavation

The maximum height of the sediment trap embankment shall be 5 feet (1.5 m) as measured from the low point. Table 4.2 shows minimum top widths (W) and outlet heights (Ho) for various embankment heights (H). The side slopes of the embankment shall be 2:1 or flatter.

# Table 4.2. Minimum Top Width (W) and Outlet Height (Ho) Required for

H Side Side	Ho	W
2.0	1.0	2.0
2.5	1.5	2.5
3.0	2.0	2.5
3.5	2.5	3.0
4.0	3.0	3.0
4.5	3.5	4.0
5.0	4.0	4.5

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located at the low point in the basin. The minimum length of the outlet

shall be 6 feet times the acreage of the drainage area (4.5 m x ha). The

embankment, to ensure that the flow will travel over the stone and not the

embankment. The outlet shall be constructed of FDOT No. 1 size crushed

crest of the outlet must be at least 1 foot (30 cm) below the top of the

4. A Storm Inlet Sediment Trap consists of a basin formed by excavation or

natural ground that discharges through an opening in a storm drain inlet

structure. This opening can either be the inlet opening or a temporary opening made by omitting bricks or blocks in the inlet. The trap shall be

between 1 and 2 feet (30 to 60 cm) deep, measured from the low point of

the inlet. A yard drain inlet or an inlet in the median strip of a dual highway

would require a temporary opening (see Figure 4.6f). The trap should be

on the opposite side of the opening and diverting water from the roadway

1. The area under the embankment shall be cleared, grubbed, and stripped of

2. Fill material for the embankment shall be free of roots or other woody

vegetation, organic material, large stones, and other objectionable

3. The earthen embankment shall be seeded with temporary or permanent

4. Construction operations shall be carried out so that erosion and water

5. The structure shall be removed and the area stabilized when the upslope

vegetation (see Chapter 7) within 15 days of construction.

any vegetation and root mat. To facilitate cleanout, the pool area should

material. The embankment should be compacted in 8 inch (20 cm) layers

to the trap is one means of accomplishing this.

5. Other Applications. At times a small

channel using the culvert for a road

crossing. Straw bales or gravel-filled

are no gaps in the installation (see

Figures 4.6g and 4.6h). In larger

traps, baffles may be required to

ensure adequate flow length and

prevent short-circuiting).

Construction Specifications

pollution are minimized.

drainage area has been stabilized.

bags may be used, provided that there

by traversing it with construction equipment.

trap may be constructed in a drainage

out of the roadway to avoid interference with construction. Placing the trap

would use the inlet opening for an outlet (see Figure 4.6e). A curb inlet

3. A Stone Outlet Sediment Trap consists of a basin formed by an embankment or excavation and an embankment. The outlet for the sediment trap shall consist of a crushed stone section of the embankment

stone (see Figure 4.6c).

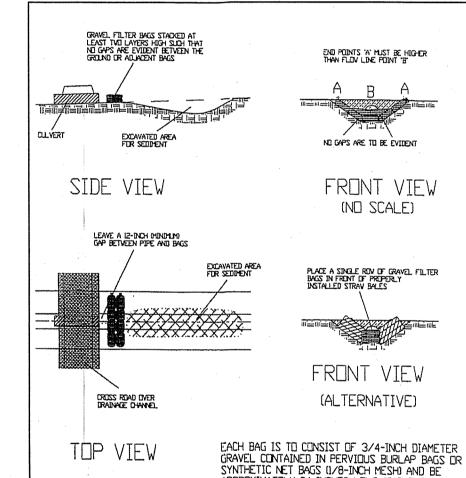


Figure 4.6g. Small Sediment Trap Located in a Stormwater Conveyance Source: HydroDynamics, Inc

# Maintenance

1. Sediment shall be removed and the trap restored to its original dimensions when the sediment has accumulated to one-half the design volume of the trap. Sediment removed from the basin shall be deposited in a suitable area and in such a manner that it will not erode.

APPROXIMATELY 24 INCHES LONG 12 INCHES VIDE

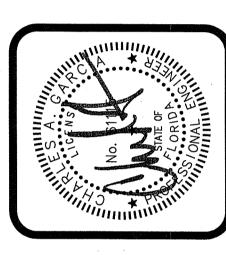
2. The structure should be checked regularly to ensure that it is structurally sound and has not been damaged by erosion or construction equipment. The height of the outlet should be checked to ensure that its center is at least 1 foot (30 cm) below the top of the embankment

Plans should show how the site of the sediment trap is to be graded and stabilized after

Sediment traps must be removed after the contributing drainage area is stabilized.

removal.

EROSION AND SEDIMENT CONTROL DETAILS

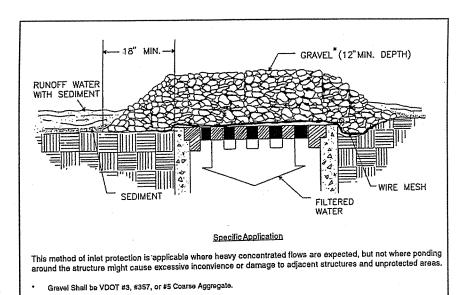


**Automotive** 

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## CHAPTER 4: BEST MANAGEMENT PRACTICES FOR EROSION AND SEDIMENTATION CONTROL



# Figure 4.5c. Gravel and Wire Mesh Drop Inlet Sediment Filter

#### Block and Gravel Drop Inlet Sediment Filter

- 1. Place concrete blocks lengthwise on their sides in a single row around the perimeter of the inlet, with the ends of adjacent blocks abutting. The height of the barrier can be varied, depending on design needs, by stacking combinations of 4, 8, and 12 inch wide (10, 20, and 30 cm) blocks. The barrier of blocks shall be at least 12 inches (30 cm) high and no greater than 24 inches (60 cm) high.
- 2. Wire mesh shall be placed over the outside vertical face (webbing) of the concrete blocks to prevent stone from being washed through the holes in the blocks. Hardware cloth or comparable wire mesh with ½ inch (13 mm) openings shall be used (see Figure 4.5d).
- Stone shall be piled against the wire to the top of the block barrier. Suitable coarse aggregate shall be used (see Figure 4.5d).
- 4. If the stone filter becomes clogged with sediment so that it no longer adequately performs its function, the stone must be pulled away from the
- blocks, cleaned, and replaced.

## CHAPTER 4: BEST MANAGEMENT PRACTICES FOR EROSION AND SEDIMENTATION CONTROL

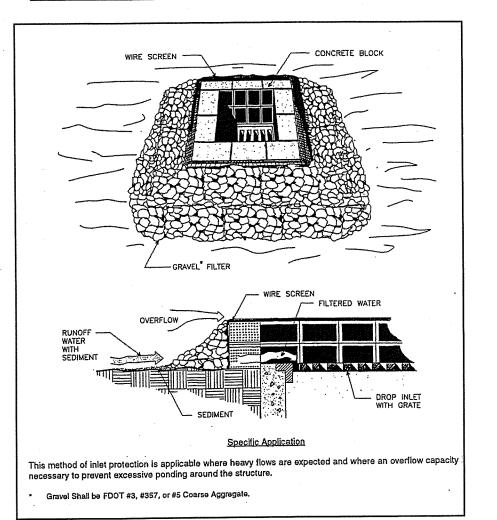


Figure 4.5d. Block and Gravel Drop Inlet Sediment Filter

Source: Michigan Soil Erosion and Sedimentation Control Guidebook

#### CHAPTER 4: BEST MANAGEMENT PRACTICES FOR EROSION AND SEDIMENTATION CONTROL

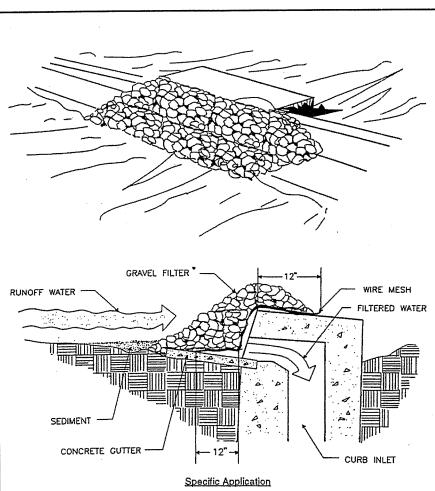
#### **Gravel Curb Inlet Sediment Filter**

- 1. Hardware cloth or comparable wire mesh with ½ inch (13 mm) openings shall be placed over the curb inlet opening so that at least 12 inches (30 cm) of wire extends across the top of the inlet cover and at least 12 inches (30 cm) of wire extends across the concrete gutter from the inlet opening (see Figure 4.5g).
- 2. Stone shall be piled against the wire so as to anchor it against the gutter and inlet cover and to cover the inlet opening completely. FDOT No. 1 Coarse Aggregate shall be used.
- 3. An overflow weir can be constructed of 2 x 4 inch (5 x 10 cm) boards to
- lessen ponding from this practice (see Figure 4.5h). 4. If the stone filter becomes clogged with sediment so that it no longer adequately performs its function, the stone must be pulled away from the

#### block, cleaned, and replaced. Block and Gravel Curb Inlet Sediment Filter

- 1. Two concrete blocks shall be placed on their sides abutting the curb at
- either side of the inlet opening (see **Figure 4.5i**). 2. A 2 x 4 inch (5 x 10 cm) board shall be cut and placed through the outer
- holes of each spacer block to help keep the front blocks in place.
- 3. Concrete blocks shall be placed on their sides across the front of the inlet and abutting the spacer blocks (see Figure 4.5j).
- 4. Wire mesh shall be placed over the outside vertical face (webbing) of the concrete blocks to prevent stone from being washed through the holes in
- the blocks. Hardware cloth with ½ inch (13 mm) openings shall be used. 5. FDOT No. 1 Coarse Aggregate shall be piled against the wire to the top of

## CHAPTER 4: BEST MANAGEMENT PRACTICES FOR EROSION AND SEDIMENTATION CONTROL



This method of inlet protection is applicable at curb inlets where ponding in front of the structure is not likely to cause inconvenience or damage to adjacent structures and unprotected ares. Gravel Shall be VDOT #3, #357, or #5 Coarse Aggregate.

Figure 4.5g. Gravel Curb Inlet Sediment Filter

#### CHAPTER 4: BEST MANAGEMENT PRACTICES FOR EROSION AND SEDIMENTATION CONTROL

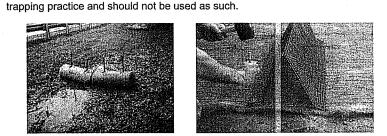
#### 4.8 Temporary Check Dam

A small, temporary dam constructed across a swale or stormwater conveyance channel.

## Purpose

To reduce the velocity of concentrated stormwater flows, thus reducing erosion of the swale or ditch. This practice also traps small amounts of sediment generated in the ditch itself. These sediments require periodic removal. However, this is not a sediment-





## Conditions Where Practice Applies

This practice is limited to use in small, open channels that drain 10 acres (4 ha) or less, and should not be used in a live stream. It is especially applicable to sloping sites where the gradient of waterways is close to the maximum for a grass lining. Some specific applications include the following:

- 1. Temporary ditches or swales that, because of their short length of service, cannot receive a nonerodible lining but still need some protection to reduce
- 2. Permanent ditches or swales that for some reason cannot receive a
- permanent, nonerodible lining for an extended period. 3. Either temporary or permanent ditches or swales that need protection during the establishment of grass linings.

## Planning Considerations

Temporary check dams can be constructed of stone, filter socks, or a variety of prefabricated products.

## Construction Specifications

No formal design is required for a temporary check dam; however, a number of criteria should be adhered. The drainage area of the ditch or swale being protected should not exceed 10 acres (4 ha). The maximum height of the check dam should be 2 feet (60 cm). The center of the check dam must be at least 6 inches (15 cm) lower than the outer edges (see Figure 4.8a). The maximum spacing between the dams should be

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## CHAPTER 4: BEST MANAGEMENT PRACTICES FOR EROSION AND SEDIMENTATION CONTROL

#### such that the toe of the upstream dam is at the same elevation as the top of the downstream dam (see Figure 4.8a).

Stone check dams should be constructed of FDOT No. 1 Coarse Aggregate (1.5 to 3.5 inch) (4 to 9 cm) stone. The stone should be placed according to the configuration in Figure 4.8b. Hand or mechanical placement will be necessary to achieve complete coverage of the ditch or swale and to ensure that the center of the dam is lower than the ends (see Figure 4.8b).

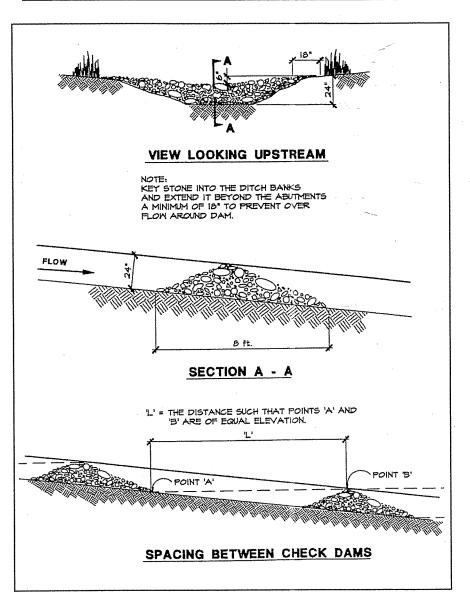


Figure 4.8a. Rock Check Dam Source: Erosion Draw

## CHAPTER 4: BEST MANAGEMENT PRACTICES FOR EROSION AND SEDIMENTATION CONTROL

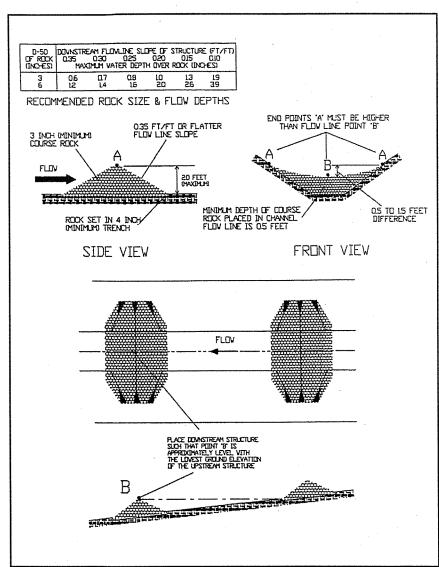


Figure 4.8b. Rock Check Dam Details

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Check dams should be checked for sediment accumulation after each significant rainfall. Sediment should be removed when it reaches one-half of the original height or before. Regular inspections should be made to ensure that the center of the dam is lower than the edges. Erosion caused by high flows around the edges of the dam should be corrected immediately.

Check dams must be removed when their useful life has been completed. In temporary ditches and swales, check dams should be removed and the ditch filled in when it is no longer needed. In permanent structures, check dams should be removed when a permanent lining can be installed. In grass-lined ditches, check dams should be removed when the grass has matured sufficiently to protect the ditch or swale. The area beneath the check dams should be seeded and mulched or sodded (depending on velocity) immediately after the dams are removed.

If stone check dams are used in grass-lined channels that will be mowed, care should be taken to remove all the stone from the dam when the dam is removed. This should include any stone that has washed downstream.

## CHAPTER 4: BEST MANAGEMENT PRACTICES FOR EROSION AND SEDIMENTATION CONTROL

## 4.4.4 Temporary Fill Diversion

A channel with a supporting ridge on the lower side cut along the top of an active earth

To divert storm runoff away from the unprotected slope of the fill to a stabilized outlet or

## sediment-trapping facility

**Conditions Where Practice Applies** Where the drainage area at the top of an active earth fill slopes toward the exposed slope and where continuous fill operations make the use of a **DIVERSION** (**Chapter 6**) unfeasible. This temporary structure should remain in place for less than one week.

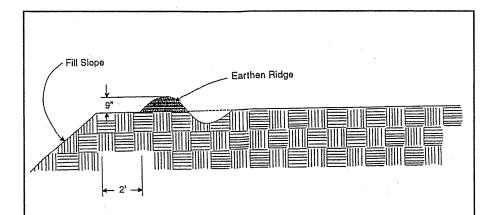
## Planning Considerations

One important principle of erosion and sediment control is to keep stormwater runoff away from exposed slopes. This is often accomplished by installing a berm, diversion, or paved ditch at the top of a slope to carry the runoff away from the slope to a stabilized outlet or downdrain. In general, these measures are installed after the final grade has been reached. On cuts, the measures may be installed at the beginning, since the work proceeds from the top and the measures have little chance of being covered or damaged. On fills, the work proceeds from the bottom to the top and the elevation changes daily. It is therefore not feasible to construct a compacted berm or permanent diversion that may be covered by the next day's activity.

The temporary fill diversion is intended to provide some slope protection on a daily basis until final elevations are reached and a more permanent measure can be constructed. This measure can be carried out using a motor grader or one of the smaller bulldozers. To shape the diversion, the piece of machinery used may run near the edge of the fill with its blade tilted to form the channel, as described in Figure 4.4f. This work should be done at the end of the working day and should provide a channel with a berm on the lower side to protect the slope. Wherever possible, the temporary diversion should be sloped to direct water to a stabilized outlet. If the runoff is diverted over the fill itself, the practice may cause more problems than it solves by concentrating water at a single

Good timing is essential to fill construction. The filling operation should be completed as quickly as possible and the permanent slope protection measures and slope stabilization measures installed as soon after completion as possible. With quick and proper construction, the developer or contractor will save both time and money in building, repairing, and stabilizing the fill area. The longer the period for construction and stabilization, the more prone the fill operation is to erosion damage. Repairing the damage adds time and expense to the project.

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#### Figure 4.4f. Temporary Fill Diversion Source: Virginia DSWC

## Design Criteria

No formal design is required. The following criteria shall be met:

## Drainage Area

The maximum allowable drainage area is 5 acres (2 ha).

## The minimum height of the supporting ridge shall be 9 inches (23 cm) (see Figure 4.4f).

# The channel shall have a positive grade to a stabilized outlet.

The diverted runoff should be released through a stabilized outlet, slope drain, or sediment-trapping measure.

# **Construction Specifications**

- 1. The diversion shall be constructed at the top of the fill at the end of each
- workday as needed. 2. The diversion shall be located at least 2 feet (60 cm) inside the top edge of
- the fill (see Figure 4.4f). 3. The supporting ridge of the lower side shall be constructed with a uniform

## height along its entire length.

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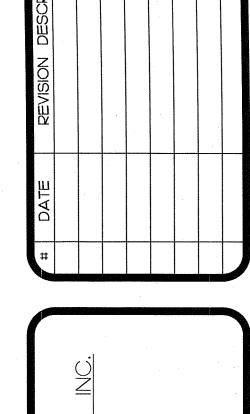
Since the diversion is temporary and under most situations will be covered the next workday, the maintenance required should be low. If it is to remain in use for more than one day, the structure must be inspected at the end of each workday and repairs made if needed. The contractor should avoid placing any material over the structure while it is in use. Construction traffic should not be permitted to cross the diversion.

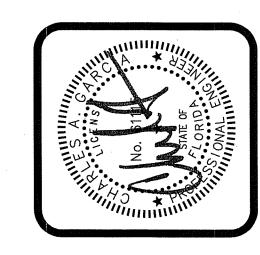
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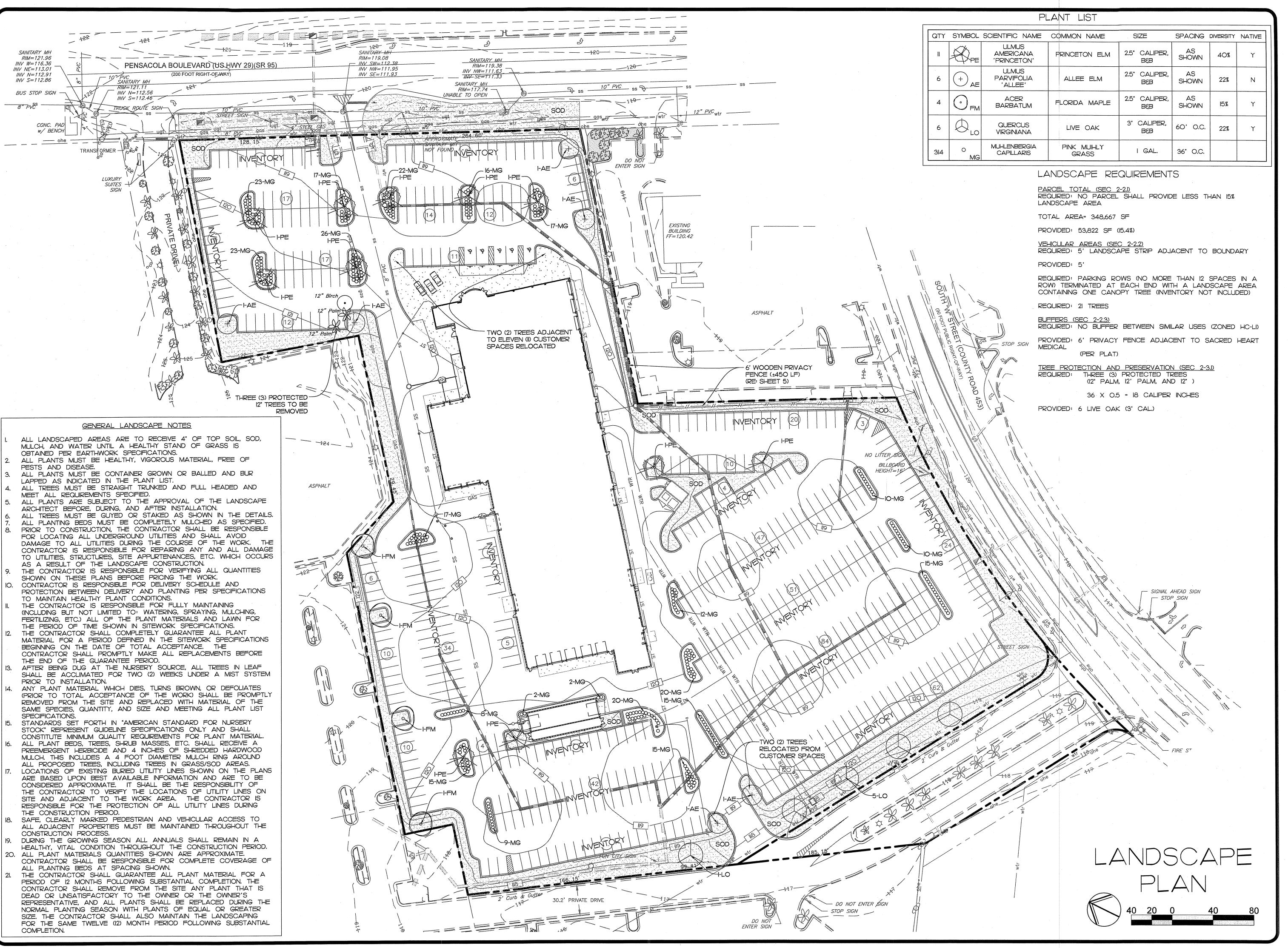
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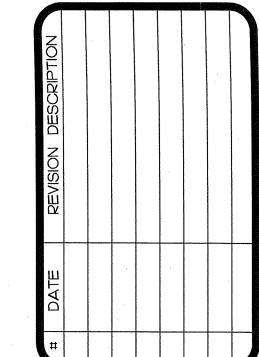
EROSION AND SEDIMENT CONTROL DETAILS



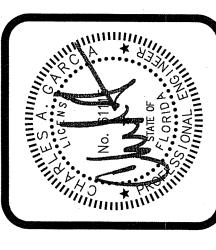








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